

THE TROPICAL WIND, ENERGY CONVERSION, AND REFERENCE LEVEL
EXPERIMENT

(TWERLE)

TWERLE FLIGHT TEST PROGRAM
DATA SUMMARY

(October-November 1971 and July-August 1972)

December 1972

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PREFACE

The data presented in this report have been collected, compiled and partially analyzed from 59 flights in the TWERLE Flight Test Program launched from Ascension Island, and Christchurch, New Zealand.

This report also includes design considerations for the TWERLE flight system and calibrations for sensors.

The computer printout (see Appendix) includes available data through 30 September 1972. As the remaining data is processed after this date, an addendum to this report will be published.

I. INTRODUCTION

The initial TWERLE test flights from Ascension Island started 21 October 1971, and ended 10 November 1971. During this period 30 flights were made to evaluate the launch technique, mobile launcher, superpressure balloon at two different altitudes and early designs of the TWERLE flight electronics.

The second series of test flights from Ascension were made during the period from 3 July 1972 to 4 August 1972. These flights were launched during the same season as the satellite series which are planned for launch in 1974. Therefore, the trajectories were of prime interest and at the same time the latest electronic designs were tested.

During November 10-18, 1971, ten TWERLE balloons were launched from Christchurch, New Zealand, as "control" flights for performance comparison with the tropical flights from Ascension.

As a part of the launch site survey in the Central Pacific, two TWERLE balloons were launched from Pago Pago, American Samoa, on 17 and 19 August 1972. These trajectories were of interest, as well as an evaluation of the existing launch facilities.

Table 1-1 includes the instrumentation of each TWERLE flight, launch date, balloon configuration and manufacturer's serial number, and code letter identifier.

TABLE 1 includes the instrumentation of each TWERLE flight, launch date, balloon configuration and manufacturer's serial number, and code letter identifier.

TABLE I-1. TWERLE TEST BALLOONS

<u>58202 A</u>	Launched 21 October 1971	Capped (R-105)
A	Sun Angle	
	Float Altitude 200 mb	
<u>59206 C</u>	Launched 21 October 1971	Clear (R-119)
C	Sun Angle	
	Float Altitude 200 mb	
<u>60155 R</u>	Launched 22 October 1971	Capped (R71-4)
R	Sun Angle	
	Float Altitude 150 mb	
<u>61153 K/D</u>	Launched 22 October 1971	Clear (S71-7)
K	Sun Angle	
D	Reference (CosMos)	
	Float Altitude 150 mb	
<u>62154 H/R</u>	Launched 25 October 1971	Clear (S71-8)
H	Sun Angle	
R	Package Temperature (CosMos)	
	Float Altitude 150 mb	
<u>63157 G/A</u>	Launched 25 October 1971	Capped (S71-13)
G	Sun Angle	
A	Balloon Gas Temperature	
	Float Altitude 150 mb	

TABLE 1

<u>64202 J</u>	Launched 25 October 1971	Clear (R-104)
J	Sun Angle	
	Float Altitude 200 mb	
<u>65206 F</u>	Launched 25 October 1971	Capped (R-134)
F	Sun Angle	
	Float Altitude 200 mb	
<u>66203 B</u>	Launched 26 October 1971	Clear (R-103)
B	Sun Angle	
	Float Altitude 200 mb	
<u>67205 N</u>	Launched 26 October 1971	Capped (R-135)
N	Sun Angle	
	Float Altitude 200 mb	
<u>68157 Q/D</u>	Launched 27 October 1971	Clear (S71-10)
Q	Sun Angle	
D	Balloon Gas Temperature	
	Float Altitude 150 mb	
<u>69154 L/TA</u>	Launched 27 October 1971	Capped (S71-12)
L	Sun Angle	
TA	Balloon Gas Temperature	
	Float Altitude 150 mb	
<u>70152 EF</u>	Launched 28 October 1971	Clear (S71-11)
EF	Sun Angle	
	Float Altitude 150 mb	
<u>71156 P</u>	Launched 28 October 1971	Capped (S71-15)
P	Sun Angle	
	Float Altitude 150 mb	

TABLE 1

<u>72153 EG/A</u>	Launched 29 October 1971	Clear (S71-9)
EG	Sun Angle	
A	Balloon Gas Temperature	
Float Altitude 150 mb		
<u>73157 Z/U</u>	Launched 29 October 1971	Capped (S71-16)
Z	Sun Angle	
U	Balloon Gas Temperature	
Float Altitude 150 mb		
<u>74154 W/RR</u>	Launched 1 November 1971	Capped (R71-5)
W	Sun Angle	
RR	Digi-GHOST - Altitude	
	Radio Altimeter Temperature	
	Solar Panel Current	
	Digi-package Temperature	
Float Altitude 150 mb		
<u>75152 EL/R</u>	Launched 1 November 1971	Clear (R71-12)
EL	Sun Angle	
R	Radiometer Temperature	
Float Altitude 150 mb		
<u>76155 D/UD</u>	Launched 2 November 1971	Clear (R-71-13)
D	Sun Angle	
UD	Digi-GHOST - Altitude	
	Radio Altimeter Temperature	
	Solar Panel Current	
	Digi-package Temperature	
Float Altitude 150 mb		
<u>77153 P/U</u>	Launched 2 November 1971	Capped (R71-8)
P	Sun Angle	
U	Radiometer Temperature	
Float Altitude 150 mb		

TABLE 1

<u>78154 Z/OK</u>	Launched 3 November 1971	Clear (R71-14)
Z	Sun Angle	
OK	Digi-GHOST - Altitude	
	Oven - Inside Temperature	
	Oven - Outside Temperature	
	Solar Panel Temperature	
	Float Altitude 150 mb	
<u>79152 X/A</u>	Launched 3 November 1971	Capped (R71-6)
X	Sun Angle	
A	Radiometer Temperature	
	Float Altitude 150 mb	
<u>80156 EB/KR</u>	Launched 4 November 1971	Clear (R71-15)
EB	Sun Angle	
KR	Digi-GHOST - Altitude	
	Radio Altimeter Temperature	
	Oven Temperature	
	Digi-package Temperature	
	Float Altitude 150 mb	
<u>81153 Y/R</u>	Launched 4 November 1971	Capped (R71-7)
Y	Sun Angle	
R	Radiometer Temperature	
	Float Altitude 150 mb	
<u>82104 Q/RO</u>	Launched 5 November 1971	Clear (R-140)
Q	Sun Angle	
RO	Digi-GHOST - Altitude	
	Temperature (Alum. Sphere)	
	Reference (33K)	
	Digi-package Temperature	
	Float Altitude 100 mb	
<u>83157 TA</u>	Launched 8 November 1971	Clear (R71-16)
TA	Sun Angle	
	Float Altitude 150 mb	

TABLE 1

<u>84153</u> TN	Launched 8 November 1971	Capped (S71-14)
TN	Sun Angle	
	Float Altitude 150 mb	
<u>85204</u> C	Launched 9 November 1971	Clear (R-120)
C	Sun Angle	
	Float Altitude 200 mb	
<u>86206</u> Y	Launched 9 November 1971	Capped (R-132)
Y	Sun Angle	
	Float Altitude 200 mb	
<u>87205</u> J	Launched 10 November 1971	Clear (R-133)
J	Sun Angle	
	Float Altitude 200 mb	
<u>88207</u> EU	Launched 10 November 1971	Capped (R-131)
EU	Sun Angle	
	Float Altitude 200 mb	
NOTE: The following 150 mb balloons were launched from Christchurch, N.Z.		
<u>251156</u> L	Launched 10 November 1971	Capped (R71-9)
L	Sun Angle	
<u>252157</u> K	Launched 10 November 1971	Clear (R71-18)
K	Sun Angle	
<u>253157</u> B	Launched 11 November 1971	Capped (S71-20)
B	Sun Angle	
<u>254152</u> U	Launched 11 November 1971	Clear (S71-17)
U	Sun Angle	

TABLE 1

<u>255153</u>	G	Launched 12 November 1971	Capped (S71-19)
	G	Sun Angle	
<u>256156</u>	EW	Launched 12 November 1971	Clear (S71-21)
	EW	Sun Angle	
<u>257152</u>	F	Launched 13 November 1971	Capped (R71-11)
	F	Sun Angle	
<u>258155</u>	X	Launched 13 November 1971	Clear (S71-18)
	X	Sun Angle	
<u>259157</u>	W	Launched 18 November 1971	Capped (R71-10)
	W	Sun Angle	
<u>260153</u>	V	Launched 18 November 1971	Clear (R71-17)
	V	Sun Angle	
NOTE: Float Altitude for following Raven Balloons is 150 mb.			
<u>89154</u>	B/D	Launched 3 July 1972	Capped (72-18)
	B	Sun Angle	
	D	Package Temperature Digi - 10K YSI	
<u>90152</u>	B/L	Launched 3 July 1972	Clear (72-19)
	B	Sun Angle	
	L	Temperature - University of Wisconsin Thermal Oven - 10K YSI (white sphere with 3" black stripe around center)	
<u>91153/6</u>	NABL/SD	Launched 5 July 1972	Capped (72-02)
	N	Sun Angle	
	A	Gas Temperature - 3K YSI	
	B	Strain	
	L	Reference	
	SD	Altimeter - SN 36 - = 1.35×10^{-6} Air Temperature - SN 8 Pressure - S/N A01 Pressure Temperature - 10K YSI - 2" black stripe	

TABLE 1

<u>92158 AN</u>	Launched 5 July 1972	Clear (72-22)
AN	Sun Angle	
<u>93155 RDP</u>	Launched 7 July 1972	Capped (72-17)
R	Sun Angle	
D	Current to Oven	
P	Temperature - Active oven in white sphere - 10K YSI	
C	Reference	
<u>94157 B/J</u>	Launched 7 July 1972	Clear (72-23)
B	Sun Angle	
J	Temperature - C. Morel thermal package - 30K YSI	
<u>95152/4 AC/SG</u>	Launched 10 July 1972	Capped (72-08)
AC	Sun Angle	
SG	Altimeter - S/N 38	
	Air Temperature - S/N 7 (shorted sensor)	
	Pressure Temperature - 10K YSI and 7.47K resistor in series	
<u>96156 AK</u>	Launched 10 July 1972	Clear (72-21)
AK	Sun Angle	
<u>97152/5 BLCP/UK</u>	Launched 13 July 1972	Capped (72-03)
B	Sun Angle	
L	Gas Temperature - 3K YSI	
C	Strain	
P	Reference	
UK	Altimeter - S/N 31	
	Air Temperature - S/N 13	
	Pressure - S/N 8	
	Pressure Temperature - 10K YSI	
<u>98157 AL</u>	Launched 13 July 1972	Clear (72-20)
AL	Sun Angle	
<u>99151/3 AB/WO</u>	Launched 14 July 1972	Capped (72-07)
AB	Sun Angle	
WO	Altimeter (dual)	
	Air Temperature - S/N 3 (shorted sensor)	
	Switch	
	Internal Temperature - 2-10K in series	

TABLE 1

<u>100155/2</u>	AJ/RG	Launched 19 July 1972	Capped (72-05)
Loss of payload on rocks due to crosswind at launch			
<u>101151/5</u>	AP/KW	Launched 19 July 1972	Capped (72-04)
AP	Sun Angle		
KW	Altimeter - S/N 30		
	Air Temperature - S/N 14		
	Pressure -A05		
	Pressure Temperature - 10K YSI		
<u>102156</u>	B/G	Launched 21 July 1972	Capped (72-01)
B	Sun Angle		
G	Temperature - University of Wisconsin silver and white ball (silver up) - 10K YSI		
<u>103153</u>	B/N	Launched 26 July 1972	Capped (72-16)
B	Sun Angle		
N	Temperature - Black thermal enclosure - 30K YSI		
<u>104155</u>	B/F	Launched 27 July 1972	Capped (72-13)
B	Sun Angle		
F	Temperature - Black thermal enclosure - 30K YSI (hat)		
<u>105151</u>	B/C	Launched 28 July 1972	Capped (72-14)
B	Sun Angle		
C	Temperature - White thermal enclosure - 10K YSI (hat)		
<u>106154</u>	AG	Launched 2 August 1972	Capped (72-15)
AG	Sun Angle		
<u>10753</u>	AS	Launched 3 August 1972	Capped (72-12)
AS	Sun Angle		
<u>108154</u>	B/K	Launched 4 August 1972	Capped (72-11)
B	Sun Angle		
K	Reference - 49.9K resistor		

TABLE 1

<u>*109156</u>	DZ	Launched 17 August 1972	Capped (72-9)
	DZ	Sun Angle	
<u>*110158</u>	AV	Launched 19 August 1972	Capped (72-10)
	AV	Sun Angle	

*Launched from Pago Pago Airport, American Samoa

II. BALLOONS

A. PRESSURE CALIBRATION

During the period from 4 July to 4 August 1972, the altitude of the 150 millibar surface at Ascension Island, on the basis of 30 radiosonde flights, averaged 14,197 meters. The standard deviation was 17.45 meters. If we assume a roundoff error of 2.9 meters (altitudes are given in tens of meters) and a radiosonde measurement error of 14 meters (corresponding to a systematic temperature error of $0.1\% \left[.25^{\circ}\text{C} \right]$ the standard deviation of the height of the surface was 10 meters. The equivalent pressure variation for a given altitude was 0.25 millibars. Thus, the variation is less than the accuracy with which we can measure. Larger values of standard deviation at other locations are probably due to less accurate measurements (Ascension radiosondes flights were conducted by two highly skilled operators with over 30 years field experience and computations were made on a central computer at Patrick AFB).

We can fairly assume that the pressure at float altitude on any balloon flight can be estimated from the altimeter measurement more accurately than we can measure with an aneroid. A logical inference is that the means of calibrating a pressure element in the deep tropics is to assign a pressure to the altitude indicated by the altimeter. For the period from 4 July to 4 August 1972, near Ascension Island, the appropriate expression may be written:

$$P = 150 - \Delta z \cdot \rho \cdot g$$

$$P = 150 - (z - 14197) \cdot \frac{0.3485 \times 9.8}{100} \left(\frac{P + P_{150}}{T + T_{150}} \right)$$

$$P = 150 - (z - 14197) \left(\frac{5}{T} \right)$$

Note that the use of the radio altimeter to calibrate the pressure element at altitude eliminates any offset in the altimeter since the pressure element calibration will be equally offset.

B. THE BALLOON AS A DENSITY MEASURING DEVICE

All balloons flown from Ascension Island during the July 1972 series were calibrated at the factory. Two balloons were measured to determine the shape of the balloon. An equivalent diameter was computed from weighing functions and measurements of diameter along the balloon. For the TWERLE balloons flown in July 1972, the relation was

$$D \text{ (equivalent)} = 0.9983 D \text{ (equator)}$$

$$\text{Volume} = \frac{\pi}{6} 0.9983 \bar{D} \text{ (equator)}^3$$

\bar{D} (equator) is the average diameter in meters of mid-gore and seam measurements at the equator.

Measurements were made at a skin stress of 500 psi at $20^{\circ}\text{C} \pm 2^{\circ}$.

The mass of the flight system was computed as follows to fly at the "150 mb" density surface ($\rho = 0.2412$).

$$\text{System mass} = M_s = V(5000 \text{ psi}) \times 0.2412$$

Balloon mass + load + helium mass

$$\text{Helium mass} = \frac{4.003}{28.966} (1 + f^1) (M_s)$$

$$\text{where } f^1 = \frac{\text{Free lift}}{M_s}$$

The results of flight of those balloons tracked by radar are tabulated below:

<u>Flight No.</u>	<u>A</u> Radar Alt at First Peak	<u>B</u> Altitude of .2412 <u>Density Level</u>	<u>A-B</u>
89	14505		.
91	14515	14440	+75
93	14585	14500	+85
95	14745	14610	+135
97	14575	14560	+15
99	14520	14540	-20
100	15720*	14530	
101	14595	14520	+75
102	14570	14500	+70
103	14465	14460	+5
104	14615	14535	+80
105	14635	14510	+125
106	14600	14500	+100
107	14620	14490	+130
108	14525	14475	+50

* Balloon payload torn off. Flight went into altitude with 40% free lift.

The average difference was 71 meters too high. We, therefore, had calibrated our balloons at too low a stress level. (Balloon super-temperature was higher than estimated.) An increase in the stress level to 7,500 psi for calibration should compensate for the error; or a reduction in free lift will have a similar effect.

The standard deviation of the altitude differences was 46 meters. Since this includes radar errors (approximately 20 meters) and radiosonde errors (approximately 25 meters), the estimated deviation of the balloon from its average altitude for the 13 flights is 33 meters. It appears that we can realistically expect to hit our design density altitude within 50 meters by careful factory calibration of the balloon. Without factory calibration, the expected deviation should be between 100 and 200 meters, depending on factory procedures.

The present plan for future flights of metallized cap balloons at 150 mb in the tropics is to use 6% free lift rather than 8% and to calibrate balloons at 7000 psi.

C. BALLOON OSCILLATIONS

The metallized cap balloons were tracked into altitude by the AN/FPS-16 radar. A total of 12 flights provided acceptable radar data into altitude. Five of the flights provided useful data for 30 minutes after reaching altitude. Four of the five flights showed no tendency for the oscillation to dampen out. On the fifth flight the oscillations were the most severe (35 meter amplitude) but damped out to 15 meters on the sixth cycle.

The average amplitude for all oscillations was 11 meters, corresponding to a pressure cycling of 0.28 millibars amplitude. Since the lapse rate was approximately 4° per kilometer, the temperature oscillation should have an amplitude of $.05^{\circ}\text{C}$.

The natural oscillation period of a balloon which has been displaced from its neutrally buoyant density altitude is:

$$\tau = 2\pi \sqrt{\frac{T}{g \left(\frac{\partial T}{\partial Z} - \frac{T}{p} \frac{\partial p}{\partial Z} \right)}}$$

$$\tau = 2 \sqrt{\frac{T}{\frac{\partial T}{\partial Z} + 3.42 \times 10^{-2}}}$$

$$\text{for } \frac{\partial T}{\partial Z} = -.004 \quad \text{and} \quad T = 206^{\circ}\text{K}$$

$$\tau = 165 \text{ seconds.}$$

The actual period measured was 200 seconds for the oscillations measured. We have no satisfactory explanation at this time for the increase in period over the expected natural period of 165 seconds. (An adiabatic lapse rate will increase the period only to 184.5 seconds.)

The plotted curves of altitude versus time for the balloons are shown as Figures 2-1 through 2-11.

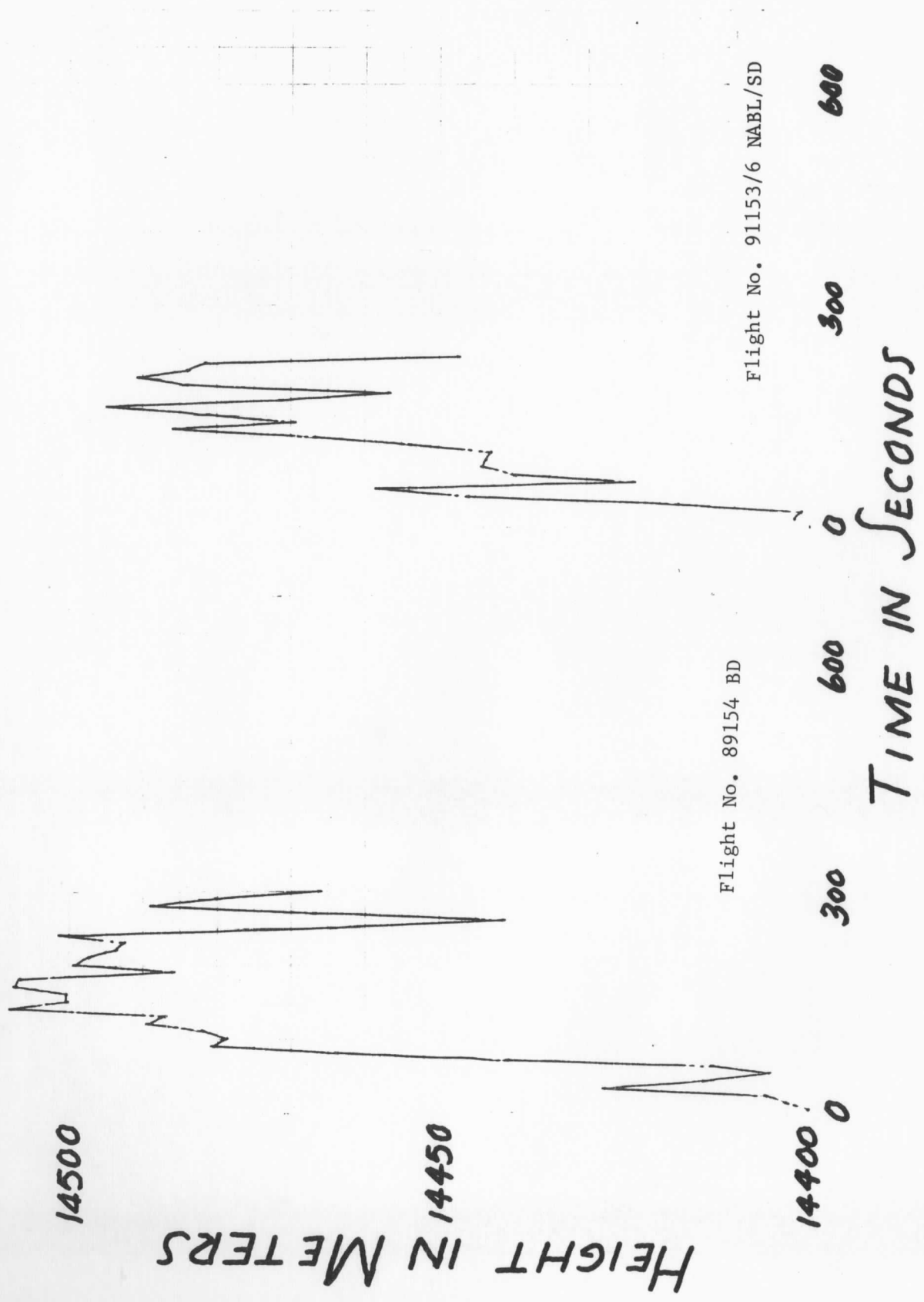
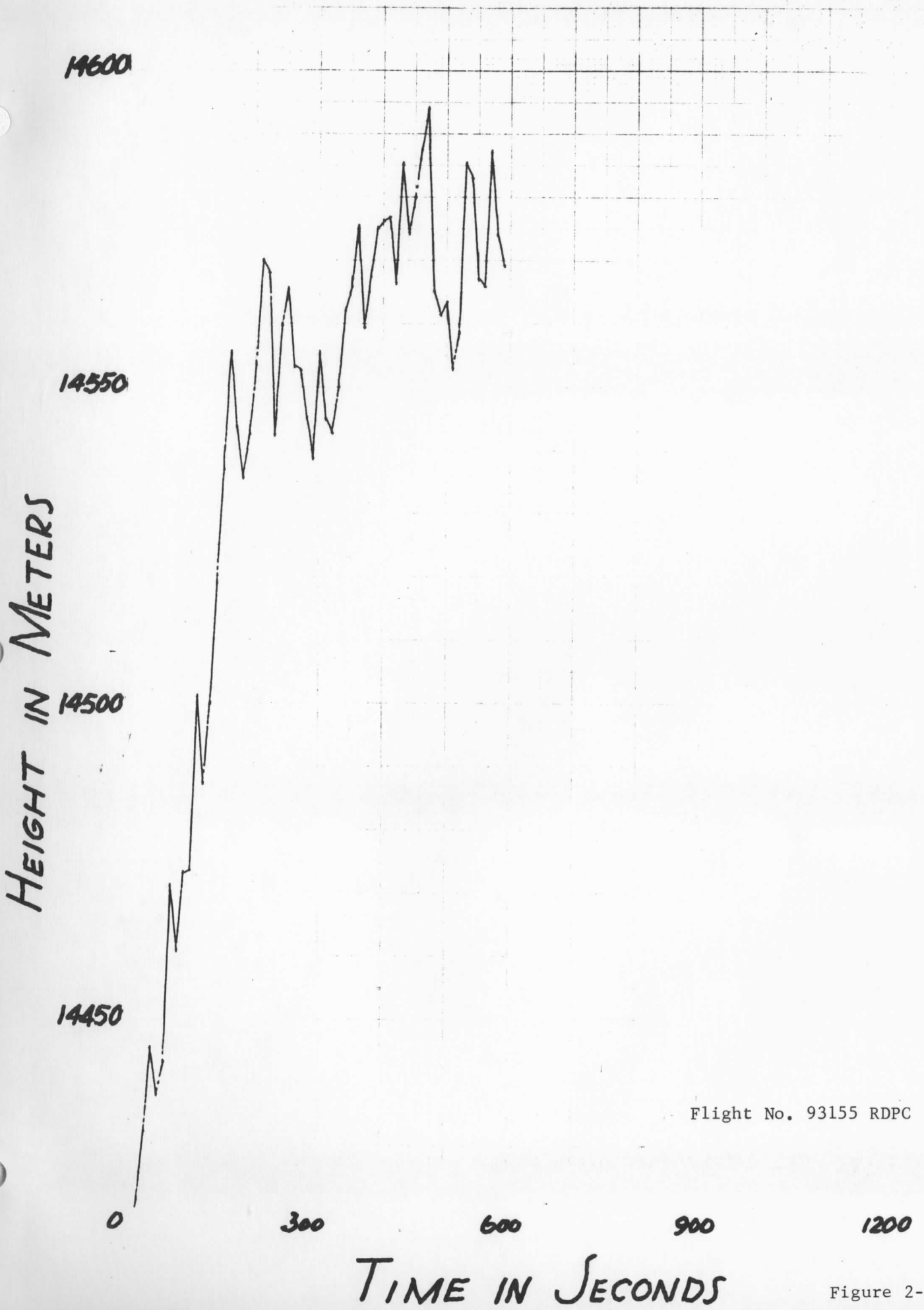


Figure 2-1



Flight No. 93155 RDPC

TIME IN SECONDS

Figure 2-2

Flight No. 95152/4 AC/SG

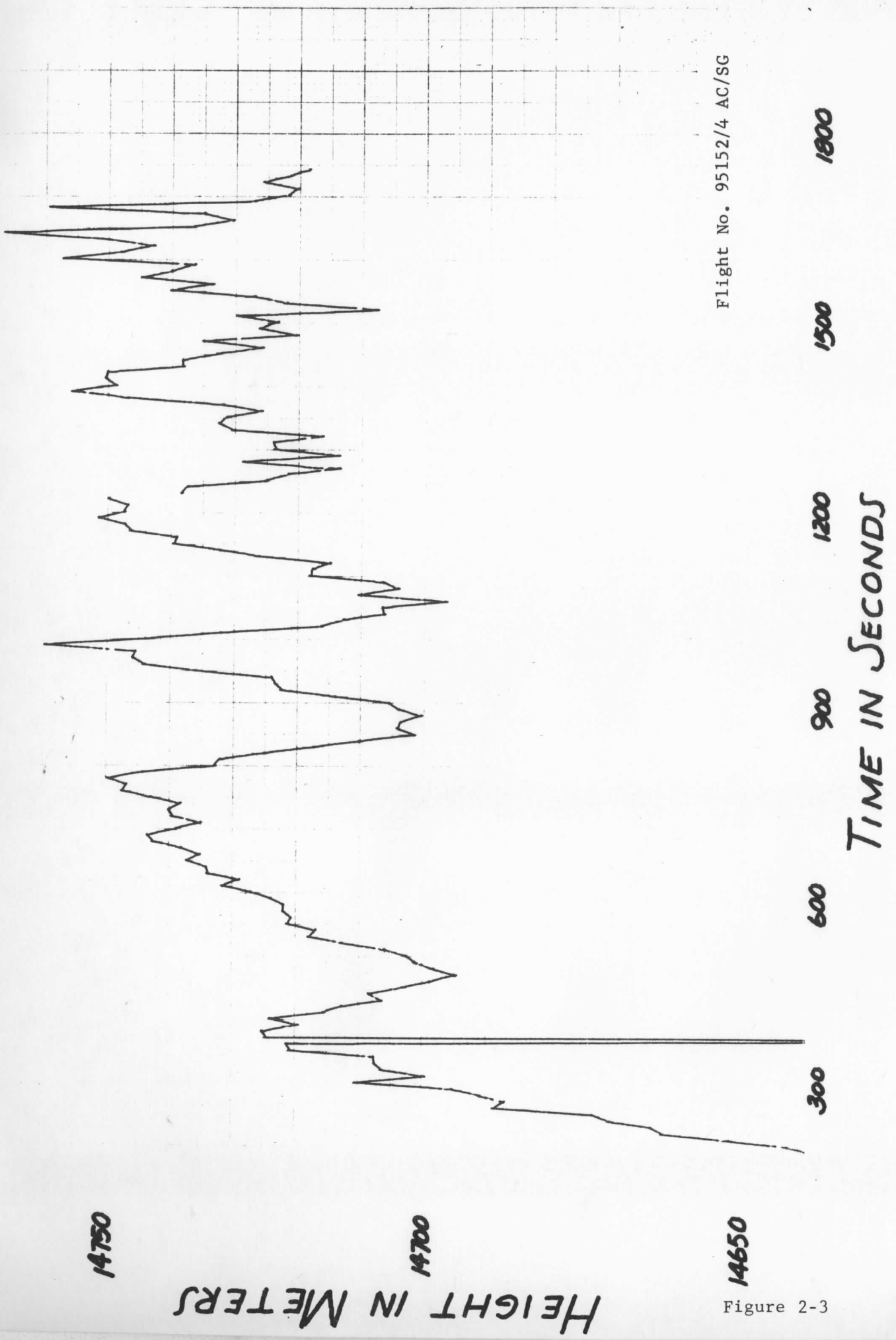
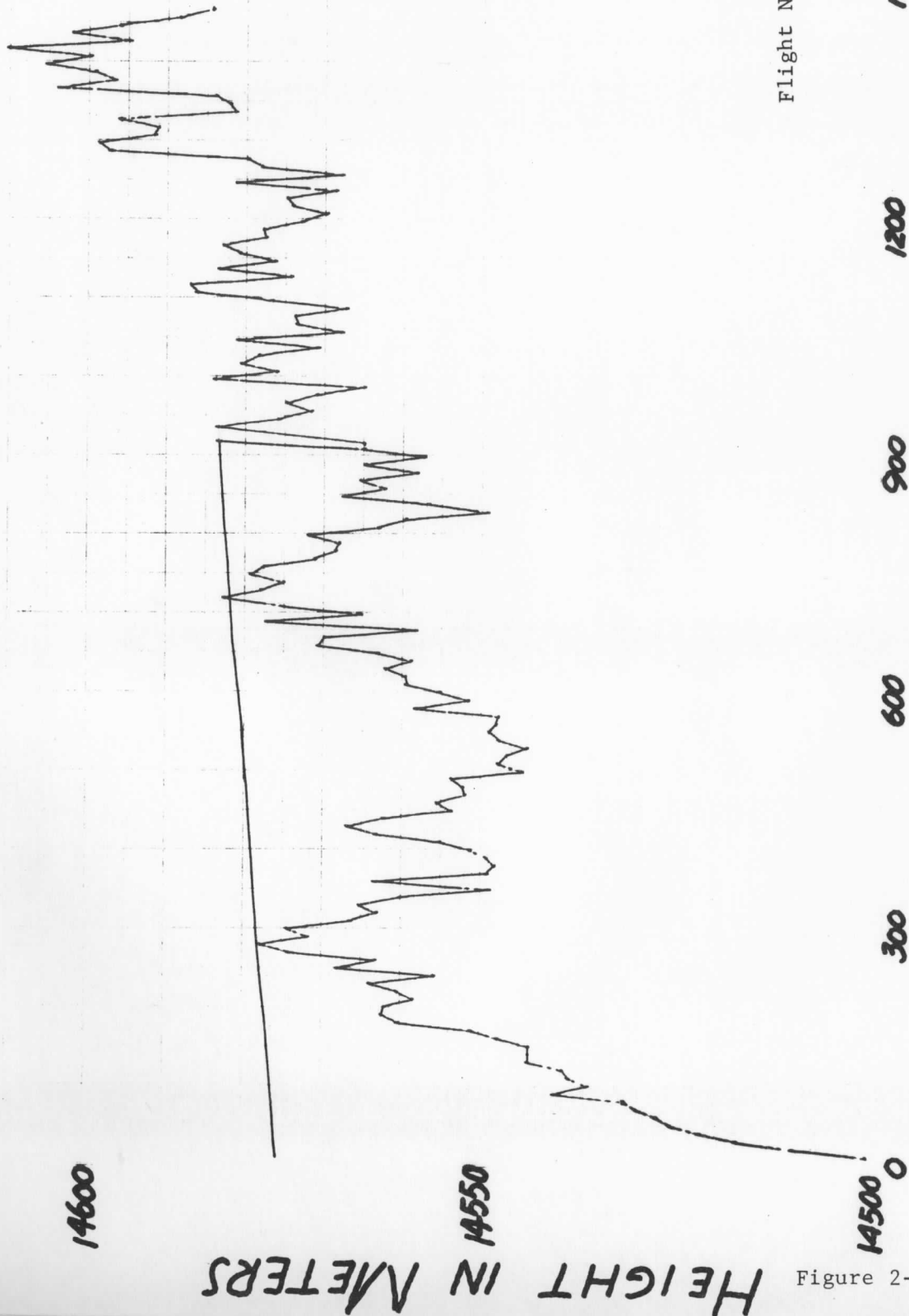
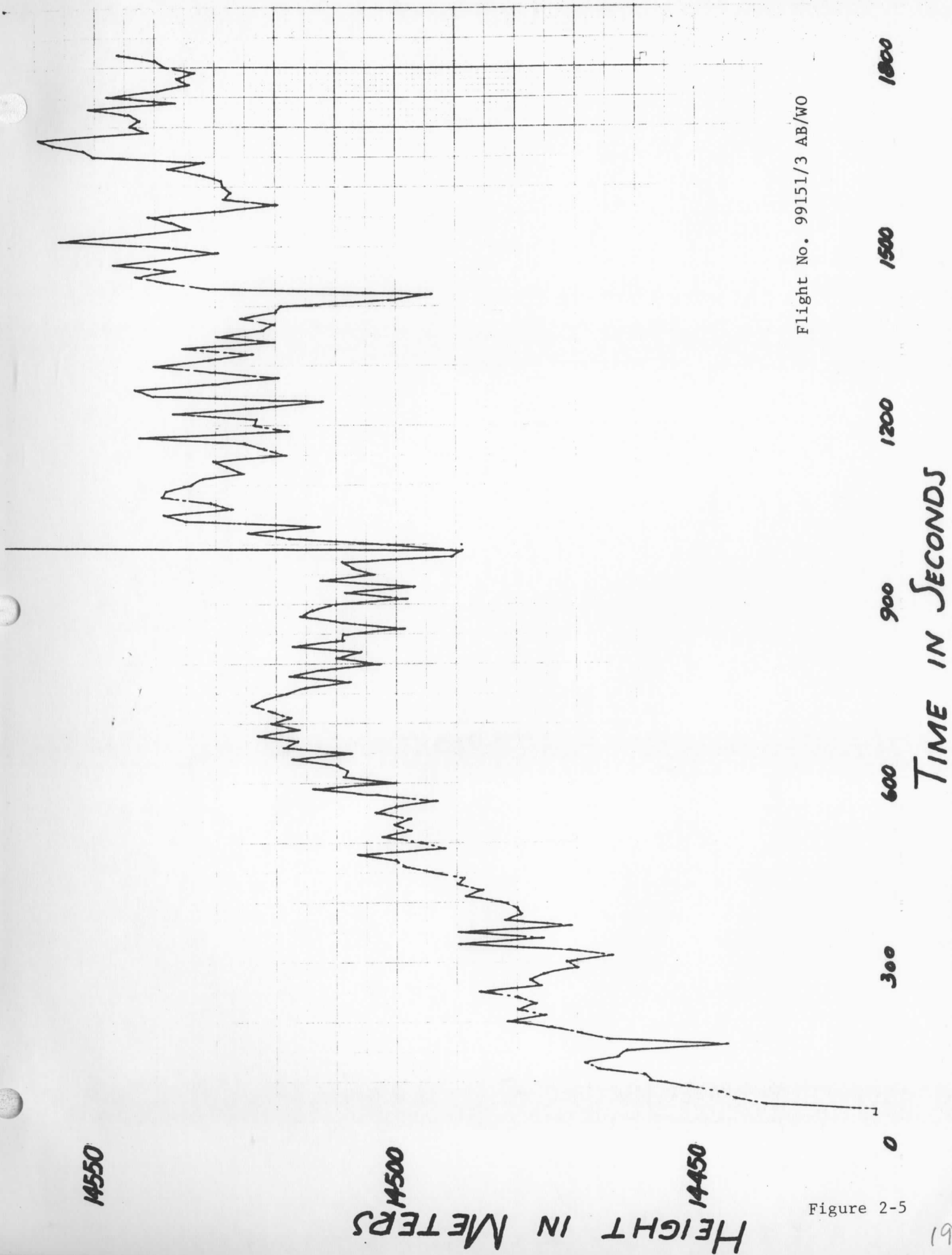


Figure 2-3



Flight No. 97152/5 BLCP/UK

Figure 2-4



Flight No. 99151/3 AB/WO

Figure 2-5

Flight No. 101151 AP

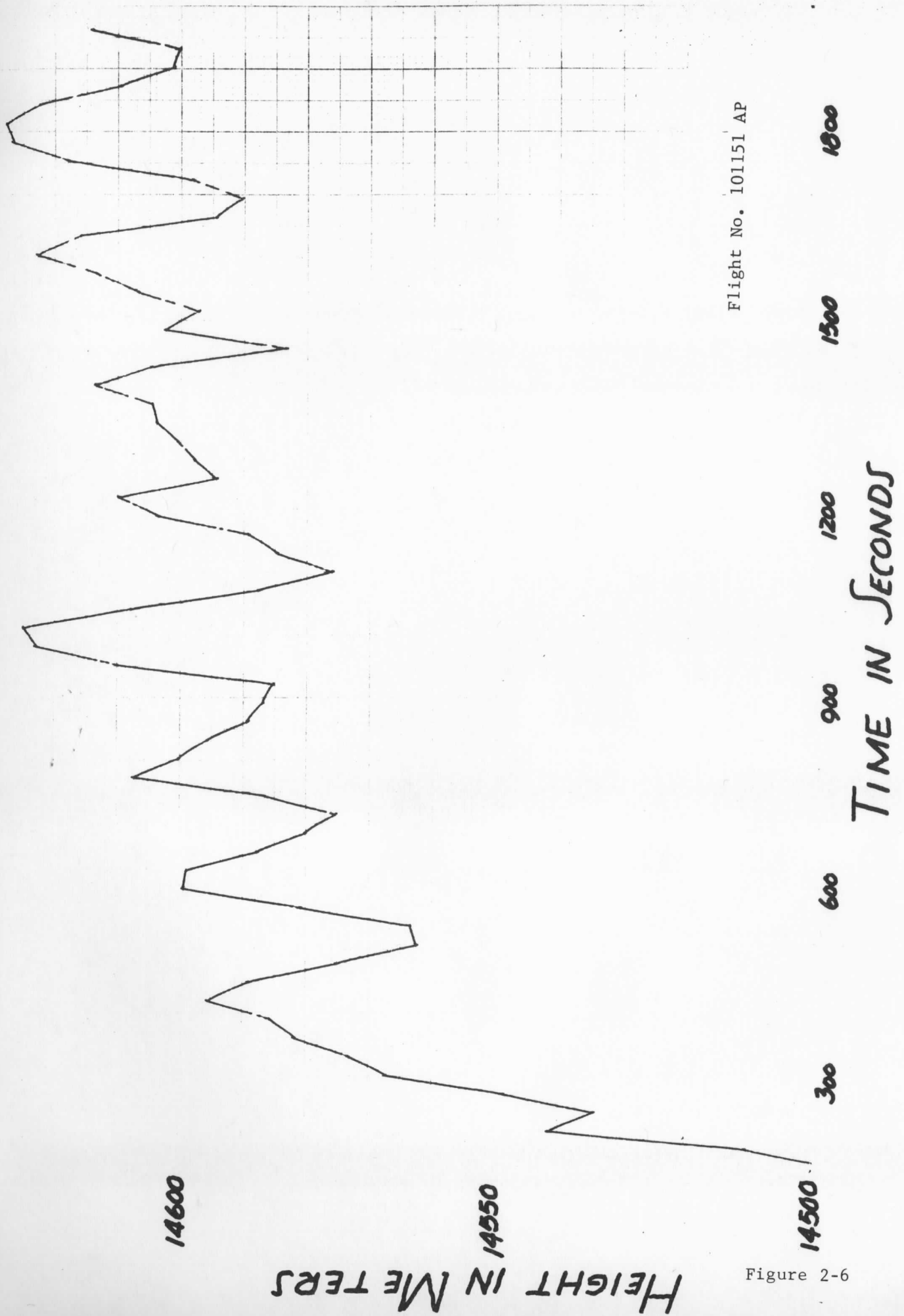


Figure 2-6

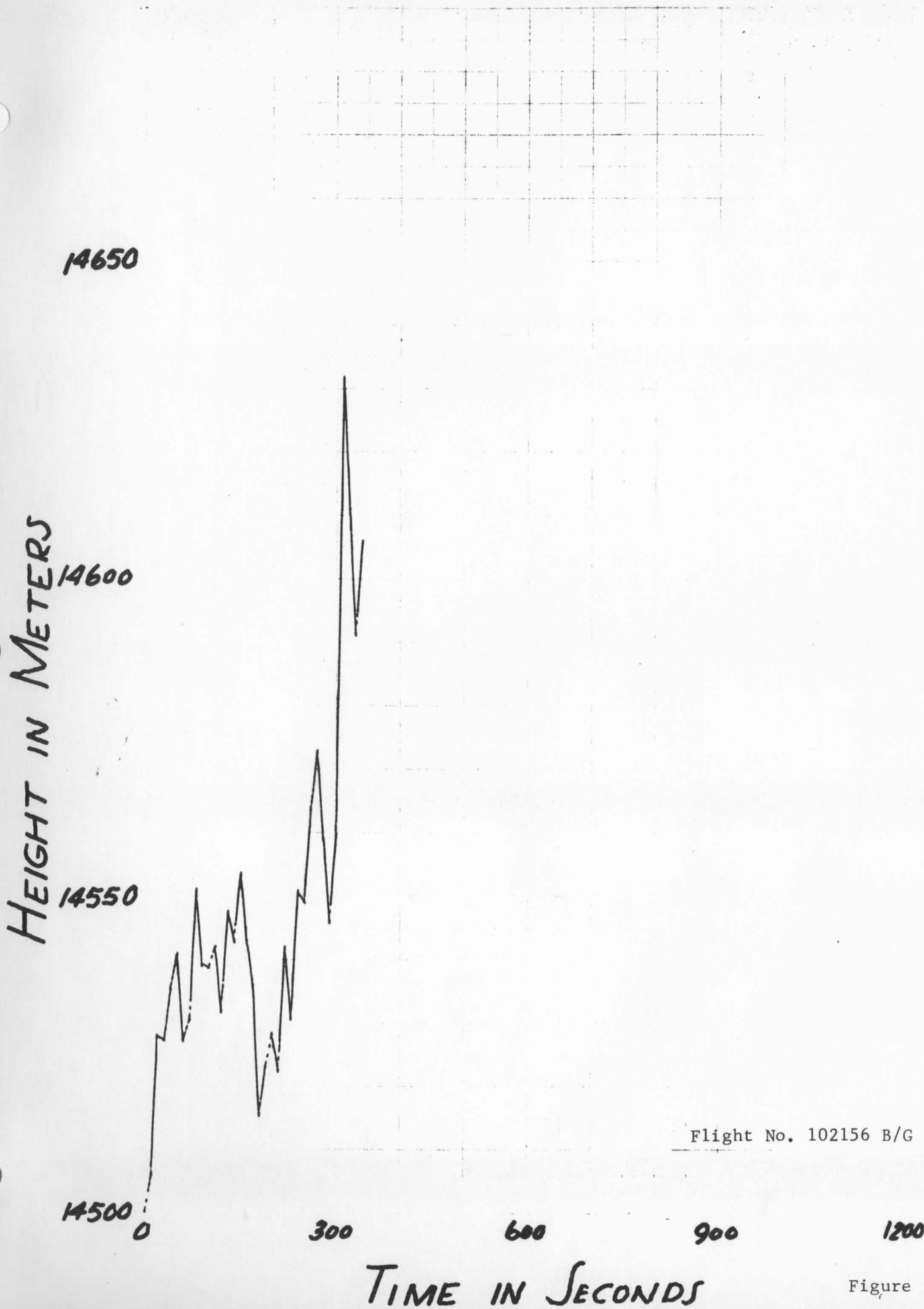


Figure 2-7
21

14500

14450

14400

HEIGHT IN METERS

Flight No. 103153 B/N

1200

900

600

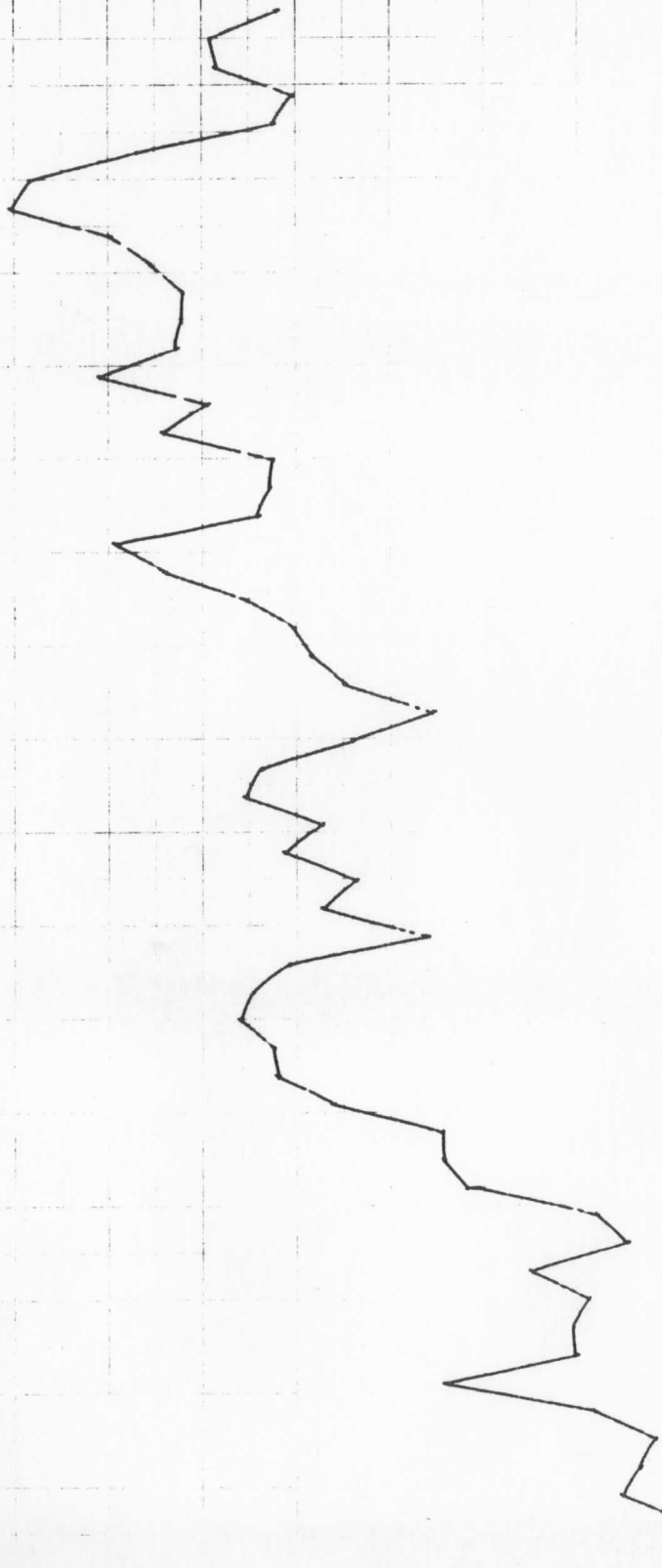
300

1800

1500

TIME IN SECONDS

Figure 2-8



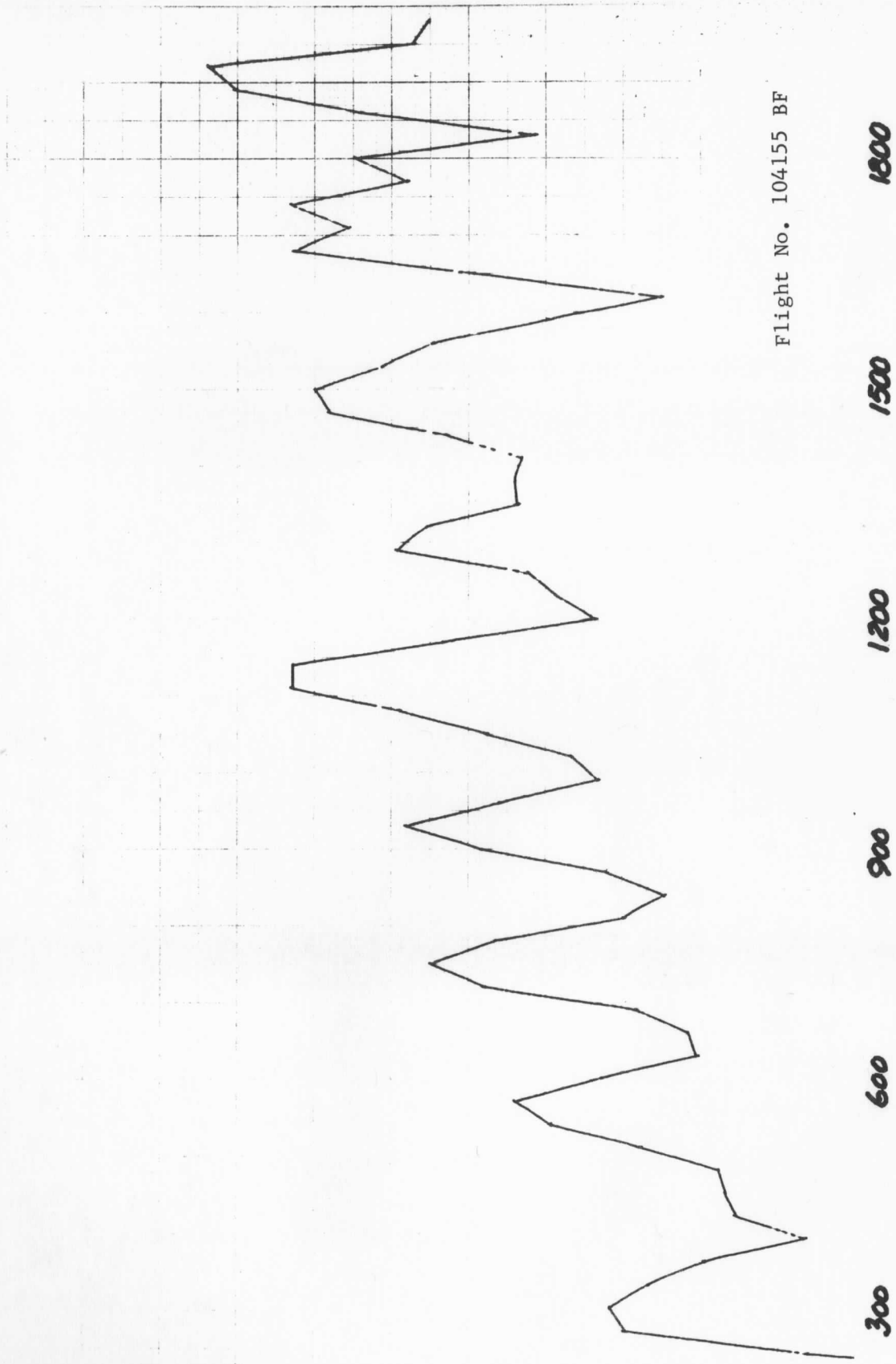
14700

HEIGHT IN METERS

14650

14600

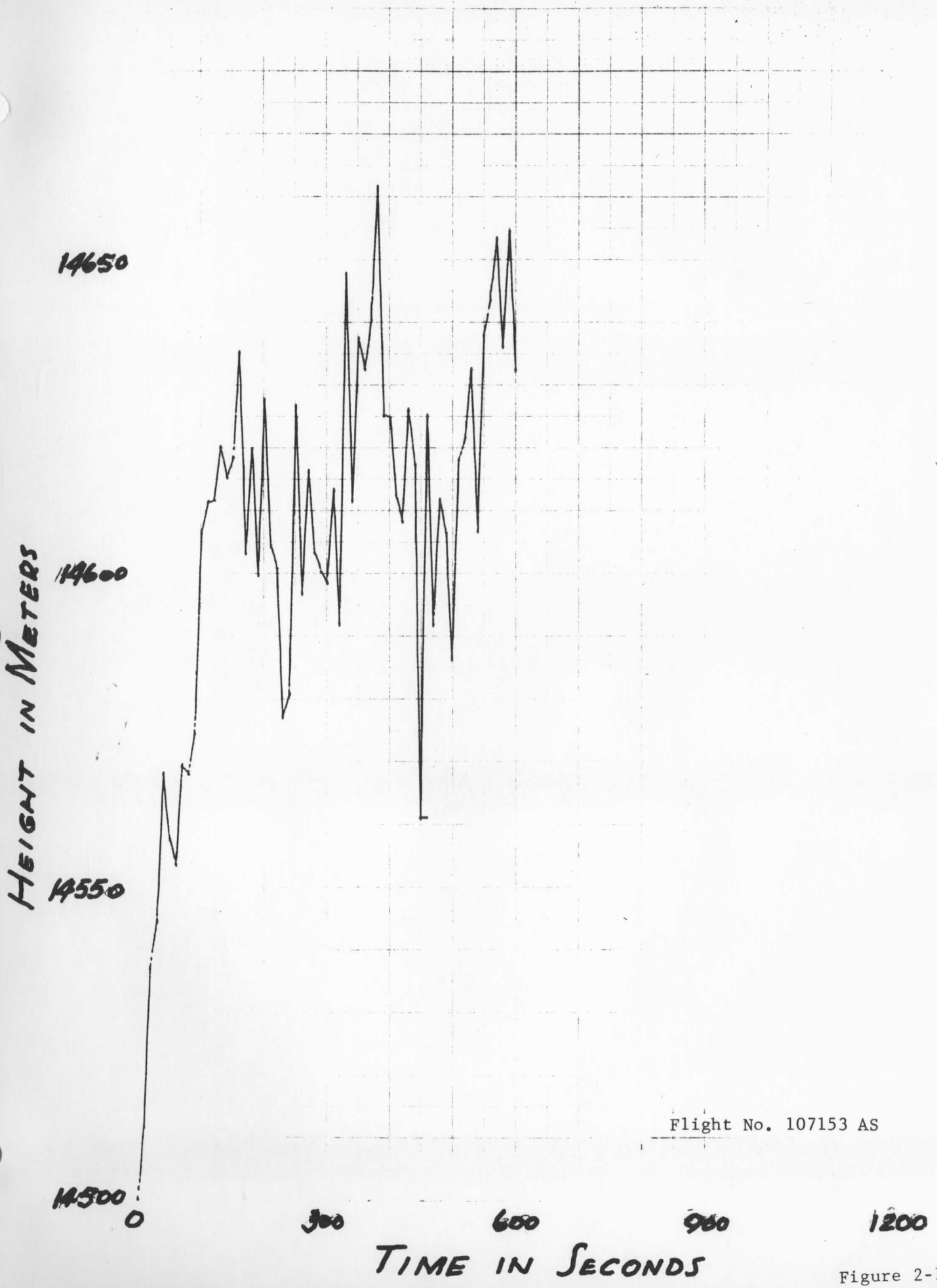
14570



Flight No. 104155 BF

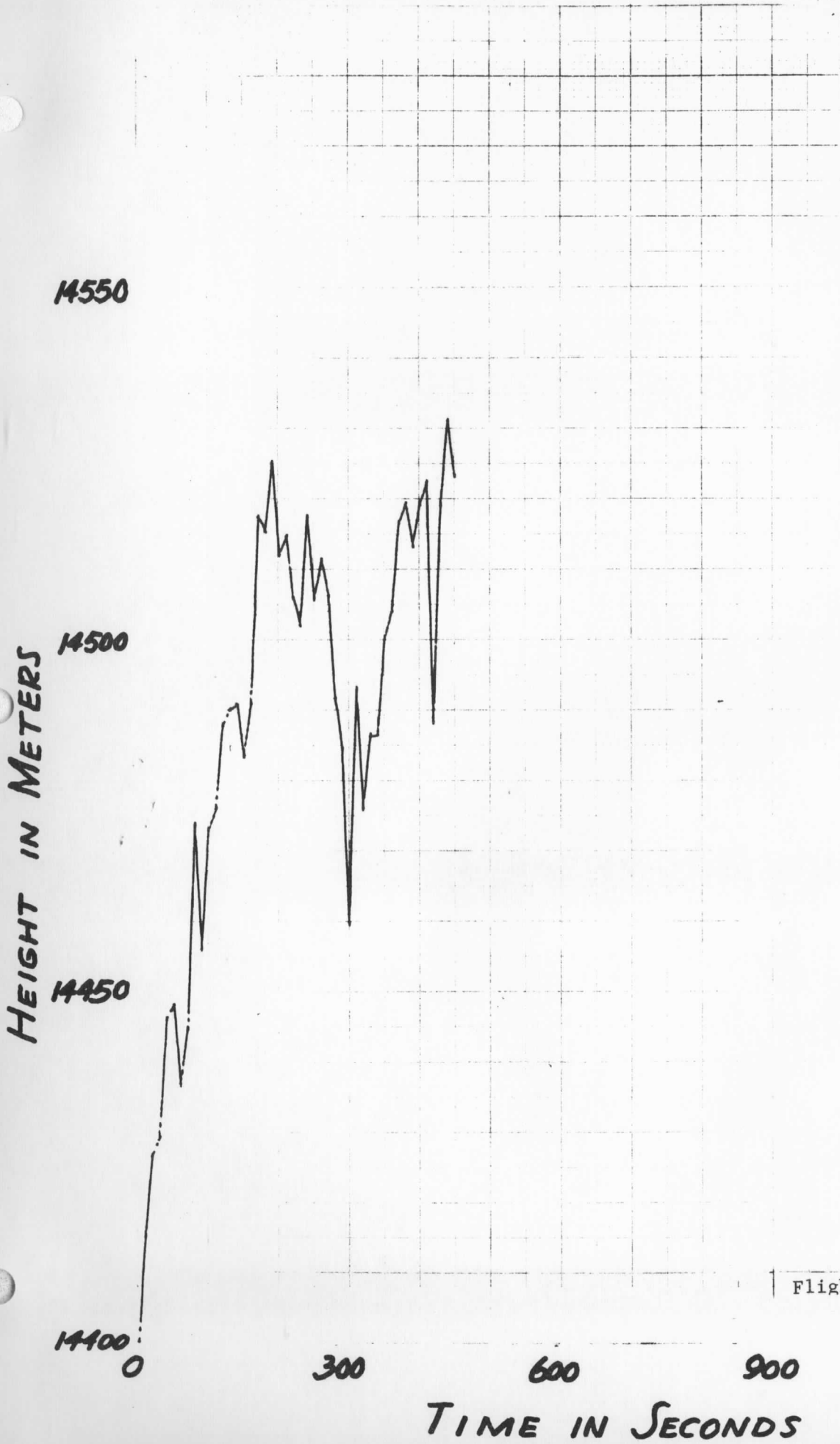
Figure 2-9

TIME IN SECONDS



Flight No. 107153 AS

Figure 2-10 24



Flight No. 108154 B/K

TIME IN SECONDS

Figure 2-11

III. SENSORS

A. AIR TEMPERATURE SENSOR

The thermistor is a superior sensor for temperature measurements because it permits large variations in resistance with relatively small changes in the ambient temperature. However, during balloon-borne measurements at float altitude, where there is no ventilation to compensate for radiative heating of the packages, two phenomena occur which affect the temperature measurements. One, the thermistor will want to sense its own temperature which is influenced by radiation and two, the proximity of other heat sources, especially the thermistor mount, will create within the vicinity of the thermistor microturbulences which will also affect the reading.

Fourrier, et. al., (1970) describes this problem in detail and proposes a solution in what we shall refer to as "the glass mount". First, they use a microbead thermistor to minimize its own heating due to solar radiation, second, they mount the thermistor on the end of an extension perpendicular to the balloon train and long enough to avoid the ascending convective current along the train of the balloon, and third, they mount the thermistor on a thin plate of glass with good transmission characteristics, thus minimizing the heating of the mount by solar radiation.

To build such a device would require quite a sophisticated and very expensive technique. In addition, the glass plate has to remain clean in order to conserve its transmissive characteristics (dust accumulations, etc.).

These considerations led us to study another approach while keeping in mind the same basic principles employed by the French. It was also our intention to evaluate our approach by comparison with the glass mount which has performed well.

1. Wire Hoop Thermistor Mount

As shown in Fig. 3-1, the 60 cm long extension is made from 2.5 mm nickel-plated brass tubing 1. On the far end of the extension at B, a

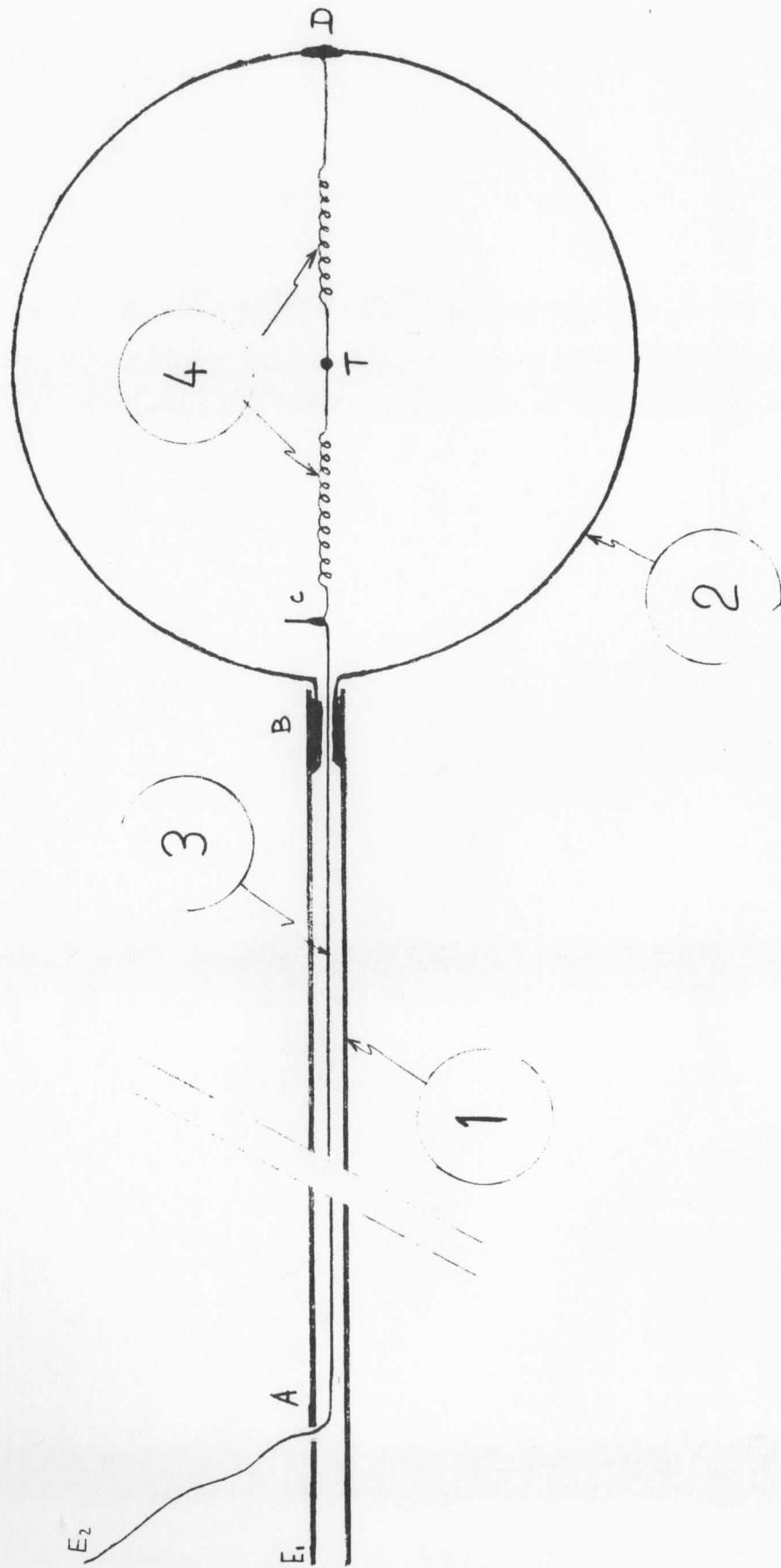


Figure 3-1. Wire Loop Thermistor Mount

100 cm hoop 2 made of thin piano wire is soldered to the tubing. An insulated wire 3 is placed through the tubing at A, the end is bent at C. The thermistor leads 4, spiraled in order to resist shocks and vibrations, are soldered at C to the insulated wire and at D to the hoop. The system is then connected at E, and E₂ to the measurement circuit.

2. Thermistor Response to Heat Sources

To investigate quantitatively the influence of the heat sources, we use empirical formulas given by Fourier, et. al., (1970).

The thermistor bead is heated by absorbing direct solar radiation. The equilibrium temperature is reached when the heat loss to the surrounding air balances the solar radiation input. The excess equilibrium temperature can be written as:

$$\Delta T = \frac{r \alpha E}{4K}$$

r, radius of the thermistor

α , absorptivity of thermistor surface

E, solar radiation flux (.1 W cm⁻²)

K, thermal conductivity of air (2.3 x 10⁻⁴ W cm⁻¹ sec⁻¹ C⁻¹)

With a 10-mil aluminized bead, r = 1.27 cm and $\alpha \cong .15$, the excess temperature is about 0.2°C.

The excess temperature above that of the surrounding air, for the case of a long cylinder is approximately:

$$\Delta T = \frac{R \alpha E}{\pi K} \ln\left(\frac{L}{R}\right)$$

R, radius of the cylinder

L, length of the cylinder

α , E, K, as already mentioned

For the hoop (R = 0.023 cm, $\alpha = 1$, L \cong 31.4 cm), the excess

temperature is 23°C ; for the extension ($R \sim$, 125 cm, $L = 60$ cm, $\alpha = .15$), it is 16°C . The thermistor leads are about 6.9 cm long and very thin (radius 0.00127 cm). D. C. Thompson (1966) has shown that radiation heating of the leads can be neglected when they are long enough. Thus, the excess temperature above the surrounding air, due to conduction from the hoop, would be less than 0.05°C at the location of the thermistor and can be neglected.

The other heat sources are convective phenomena that can not be computed in a practical way. Test flights, which are described in another paragraph, show that the extension is long enough to remove the thermistor from the warm ascending current along the train of the balloon, and that the hoop diameter is large enough to remove it from microturbulences generated by the mount itself.

3. The Problem of Thermistor Aging

Another source of error in this temperature measuring device may be an aging of the thermistor. An investigation showed that after nine months the calibration changed by a maximum of 1.5% of resistance or 0.25°C .

4. Electronic Circuit for Measuring Thermistor Resistance

A constraint on the circuit used in measuring the thermistor resistance is that it must not dissipate an excessive amount of power into the thermistor. A 10-mil metallized bead thermistor is self-heated 1°C for each 0.09 milliwatt of power into the thermistor. Thermistors are highly non-linear sensors (see Fig. 3-2). It is desirable that the measurement circuit incorporate a means for improving the linearity of measurement. The only justification for improving linearity is to avoid concentrating all the measurement sensitivity at one end of the measurement range. A circuit was developed that linearizes the thermistor and at the same time does not self-heat the thermistor more than 0.5°C (see Fig. 3-3). It should be pointed out that self-heating does not necessarily cause a measurement error. The amount that a thermistor is self-heated is predictable and can be included in the calibration.

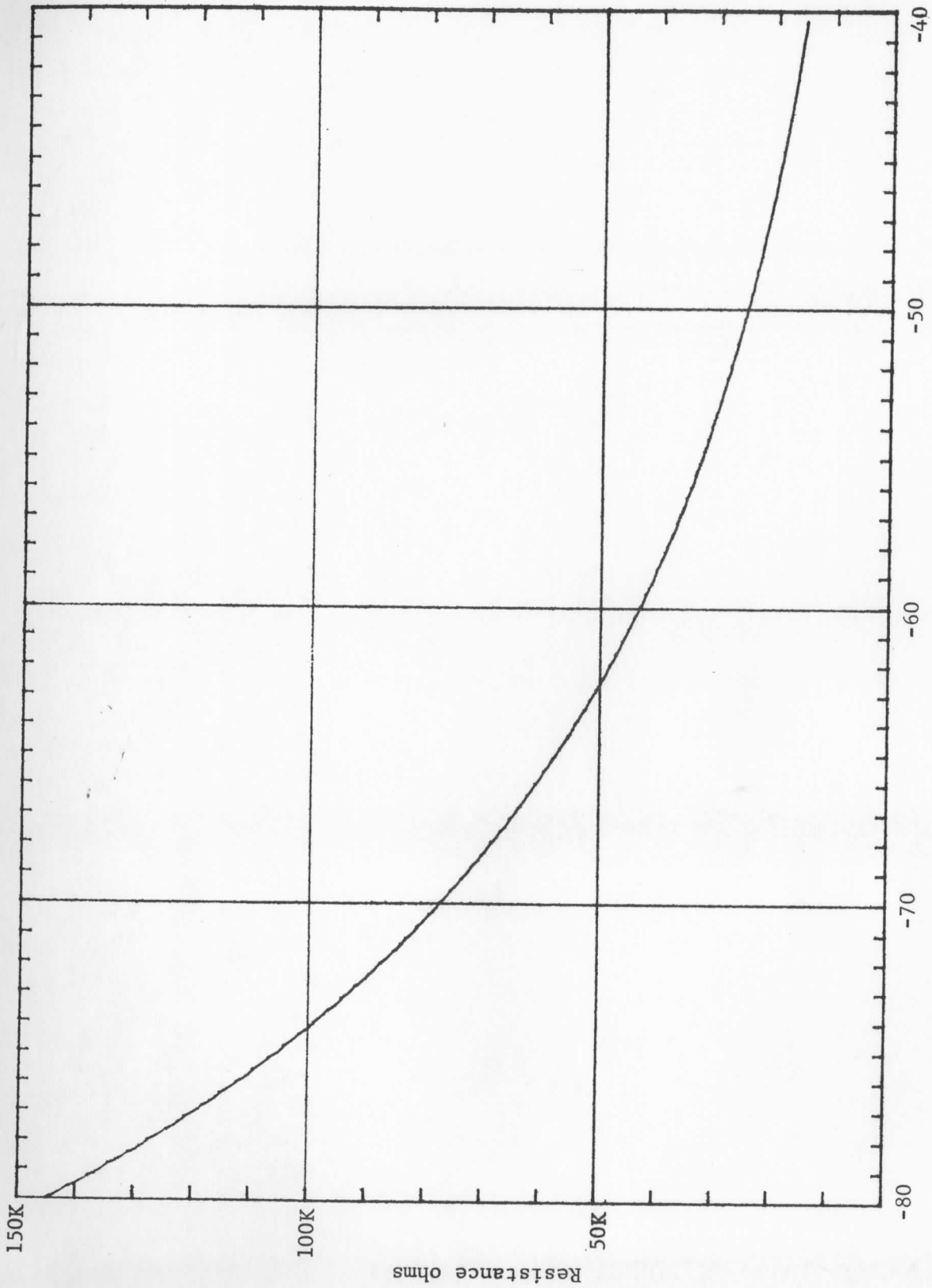


Figure 3-2. Resistance of 10 mil Aluminized Bead Thermistor as a Function of Temperature

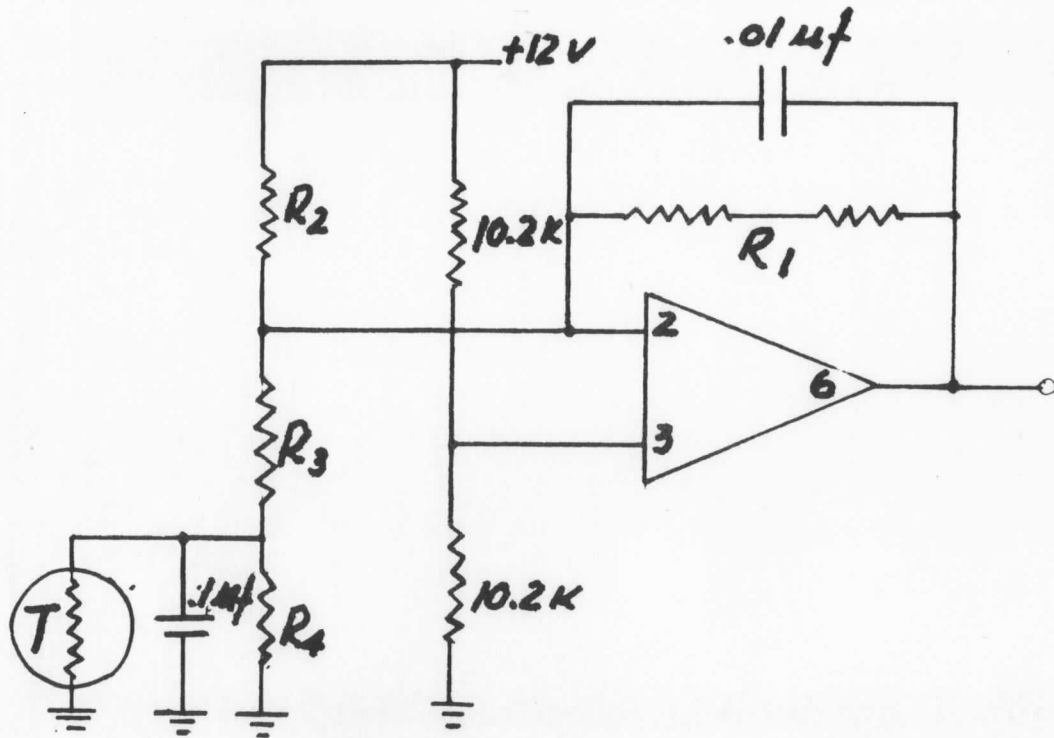


Figure 3-3. Thermistor Linearization Circuit

Design equations were developed to compute the optimum values for resistors R_1 , R_2 , R_3 , and R_4 . The input parameters to the design equations are the thermistor resistance at -80°C , -60°C and -40°C , and the maximum allowable self-heating. The equations and their derivations are included as section 7. Figure 3-4 shows the voltage out of the measurement circuit as a function of air temperature. After the operational amplifier circuit shown in Figure 3-3 has amplified and linearized the temperature measurement, it is digitized by using a voltage-controlled oscillator to convert the amplifier output to a frequency. A counter with a fixed-time gate converts frequency to a binary number. A temperature reference and up/down counter are used to compensate for amplifier and VCO drift. The temperature reference is a fixed resistance that has approximately the same resistance as the thermistor at -40°C . The measurement sequence is to count up for one time period with the thermistor in the circuit. Then, to count down for one time period with the reference replacing the thermistor. The count difference is the measurement that is transmitted through the telemetry system. Figure 3-5 is a diagram of the complete measurement circuit. The up/down count technique completely corrects for amplifier and VCO drift for measurements at the reference temperature (-40°C). The further the measurement is from -40°C the greater the effect of drift. Figure 3-6 shows the effect of change in electronic temperature to system accuracy.

5. Test Flight Program

A group of test flights were flown from Ascension Island and one flight from Boulder, Colorado. The purpose of these flights was to determine if the temperature measurement system could accurately measure air temperature while suspended from a free-floating super-pressure balloon. From the test flights, we hoped to investigate the following:

- a. The effect of convection from flight train components on the thermistor,
- b. the noise in measurement,
- c. The effect of solar radiation upon the thermistor.

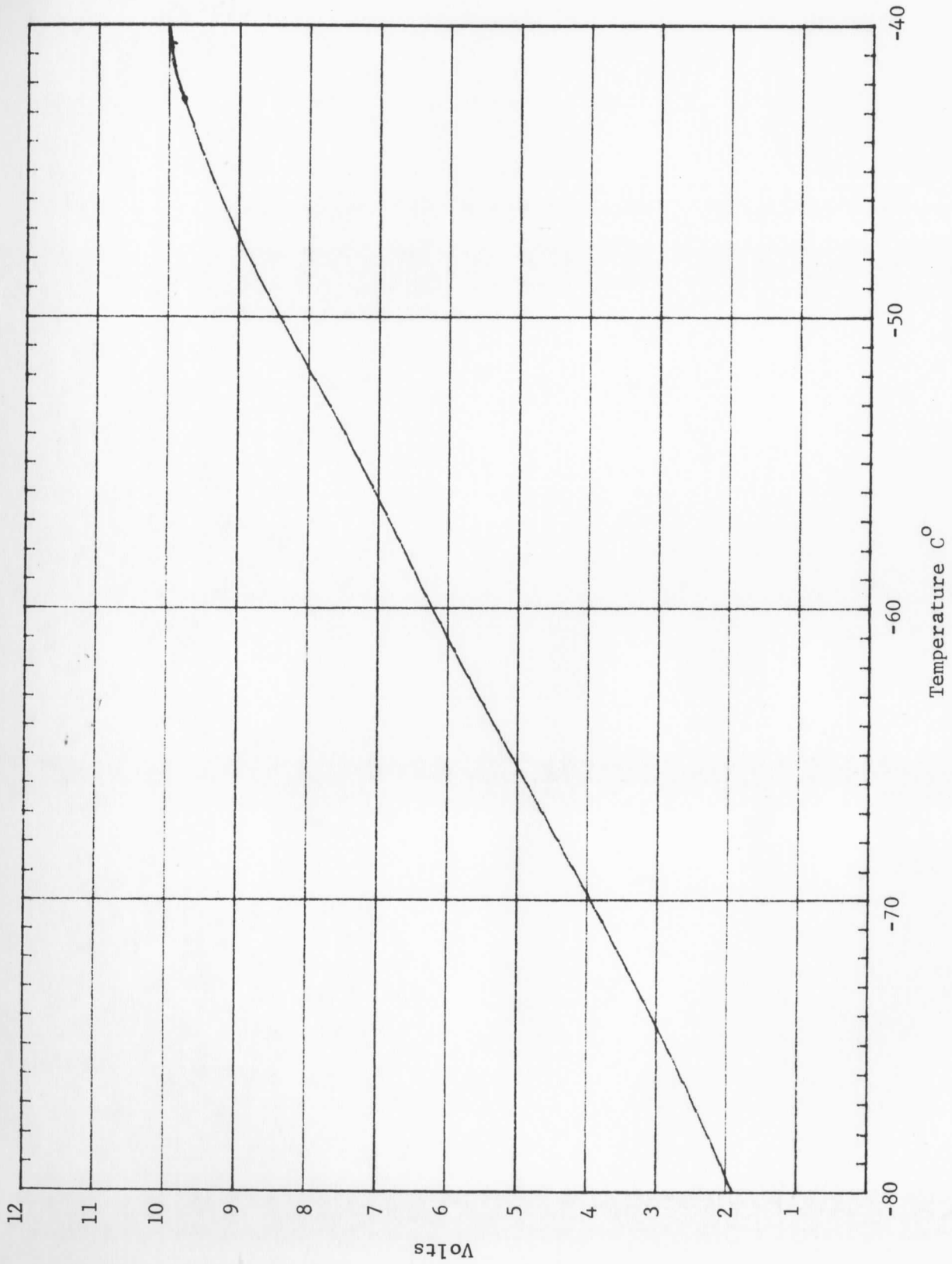


Figure 3-4. Voltage output of Linearization Circuit as Function of Air Temperature

Digitized Number Out as Function of Air Temperature

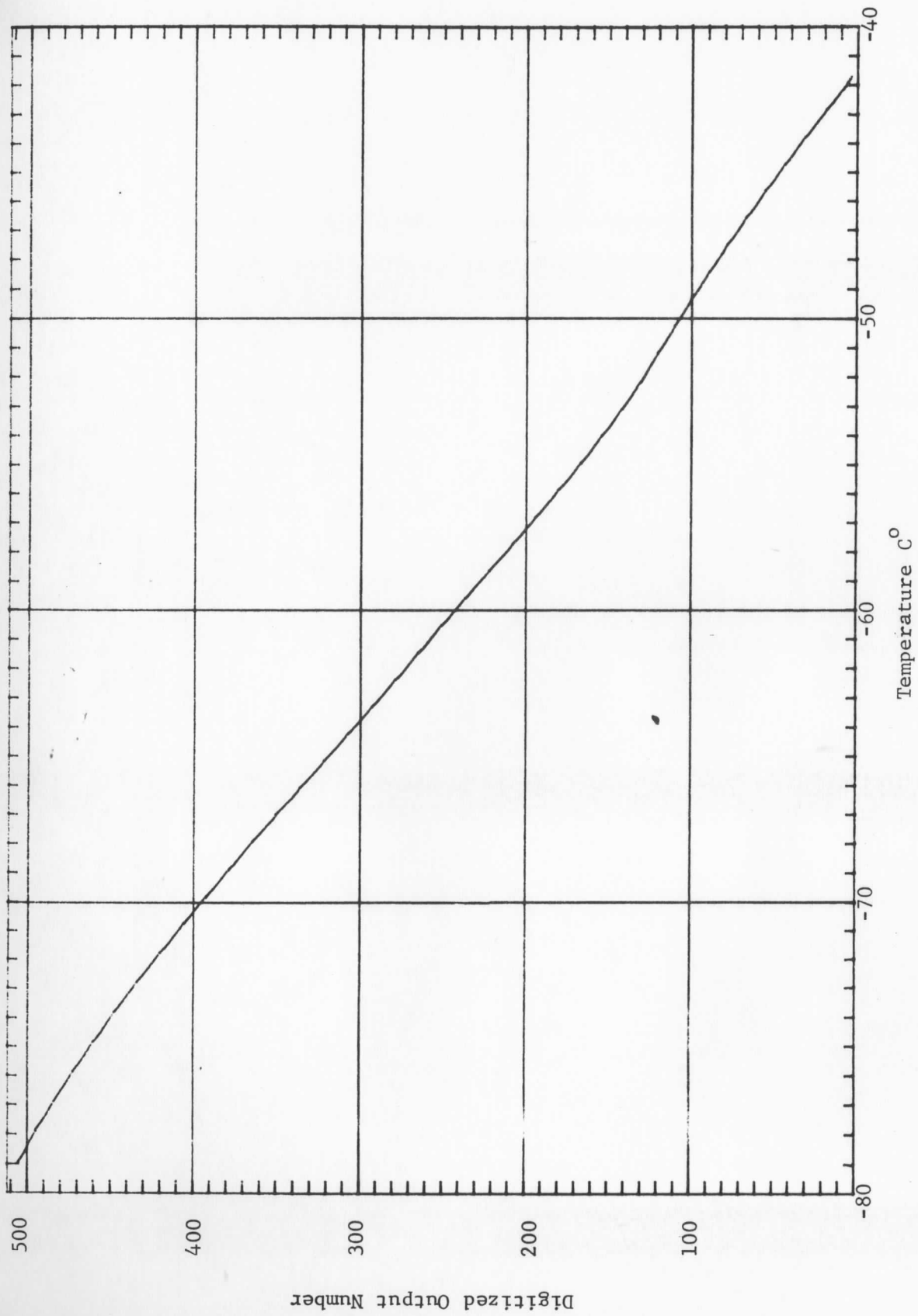


Figure 3-4a. Digitized Number versus Air Temperature

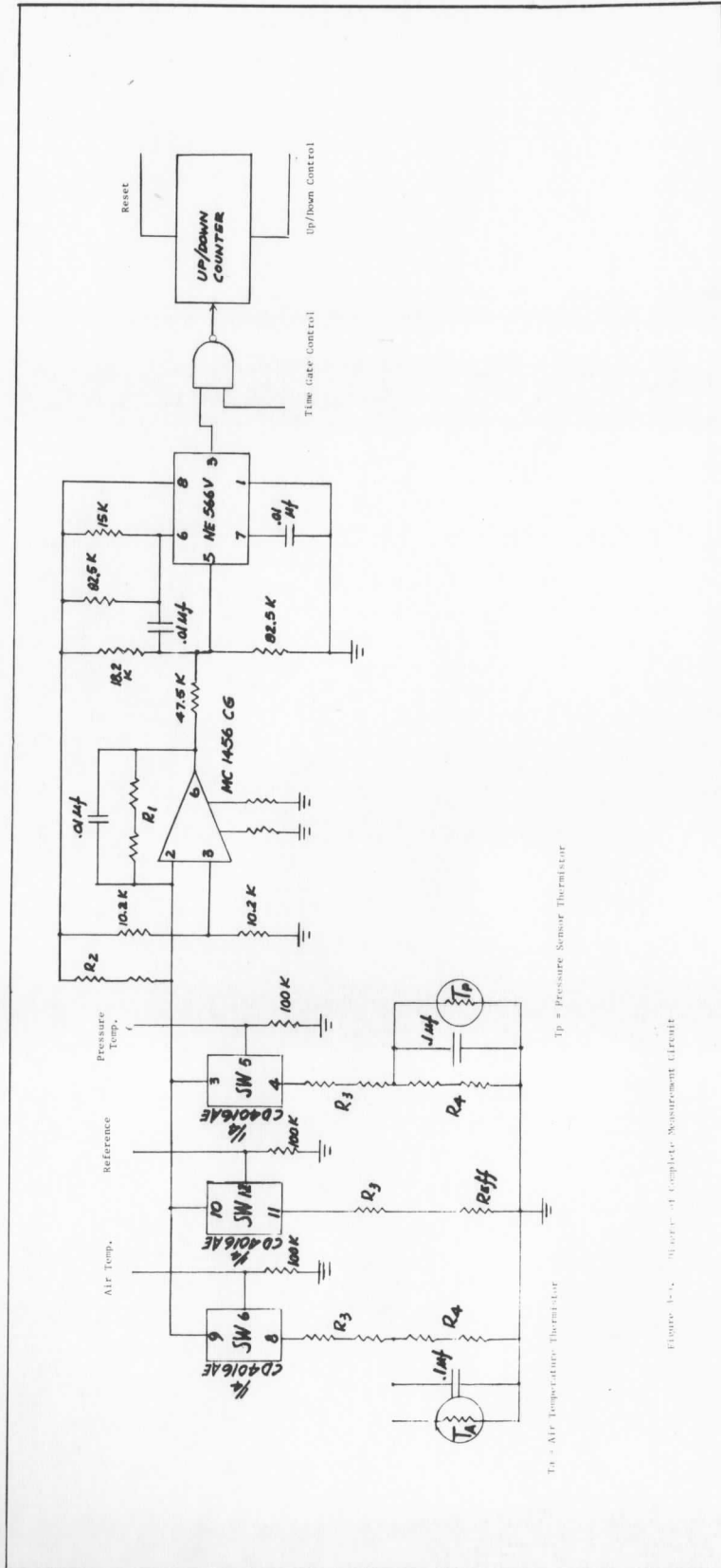
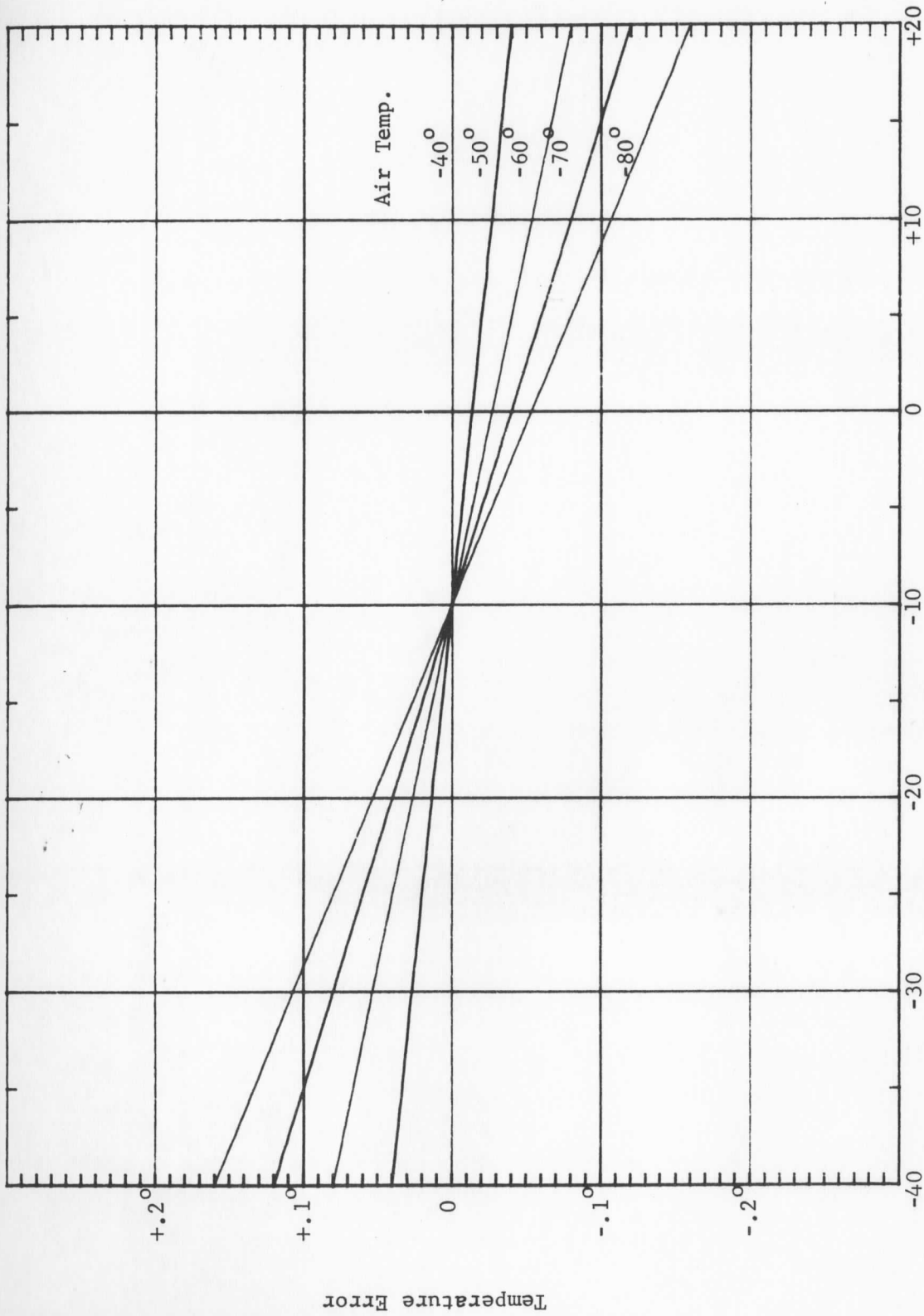


Figure 1-1. Source of Complete Measurement Circuit



Electronic Temperature
 Figure 3-6. Air Temperature versus Electronic Temperature

at altitude and then watch the effect of the night-to-day transition. The nighttime data (see Fig. 3-9) was extremely quiet. Temperature variations had an amplitude of less than $.2^{\circ}\text{C}$. After sunrise, the temperature variation started to increase. Unfortunately, not much daytime data was recovered because the balloon flew out of radio line-of-sight. On the second day, data was received via skip radio propagation. This time we recovered almost a full day of data, including the transition from day to night. Figures 3-10A and 3-10B show a typical section of daytime data. They show the same noisy characteristic that the Ascension flights did. The interesting section of data was the day-to-night transition (Fig. 3-10C). Note that the temperature fluctuations decrease in amplitude with time after sunset.

The results of this data clarify much that was left unclear from the Ascension Island flights. The following observations can be deduced from the day/night temperature data.

- a. Nighttime temperature variations are small (standard deviation 0.03 to 0.1°C). Fig. 3-9.
- b. The daytime temperature variations are larger (standard deviation, 0.44 to 0.8°). Fig. 3-10A, 3-10B.
- c. The amplitude of the temperature variation does not increase abruptly at the night/day transition. However, there is very small increase in the standard deviation that occurs at sunrise (see Fig. 3-12). This increase is most probably due to the effect of solar radiation on the measurement system. The change in the standard deviation is approximately 0.1°C . Fig. 3-8.
- d. The amplitude of the temperature variation decays gradually after sunset. Fig. 3-10.
- e. There is a day/night temperature offset. But this offset is in the opposite direction from what would be expected if solar radiation were effecting the sensor. The measurement system measures a lower temperature in the daytime. This offset can be accounted for by the balloon flying higher in the daytime (see Fig. 3-9), which, of course, is what happens

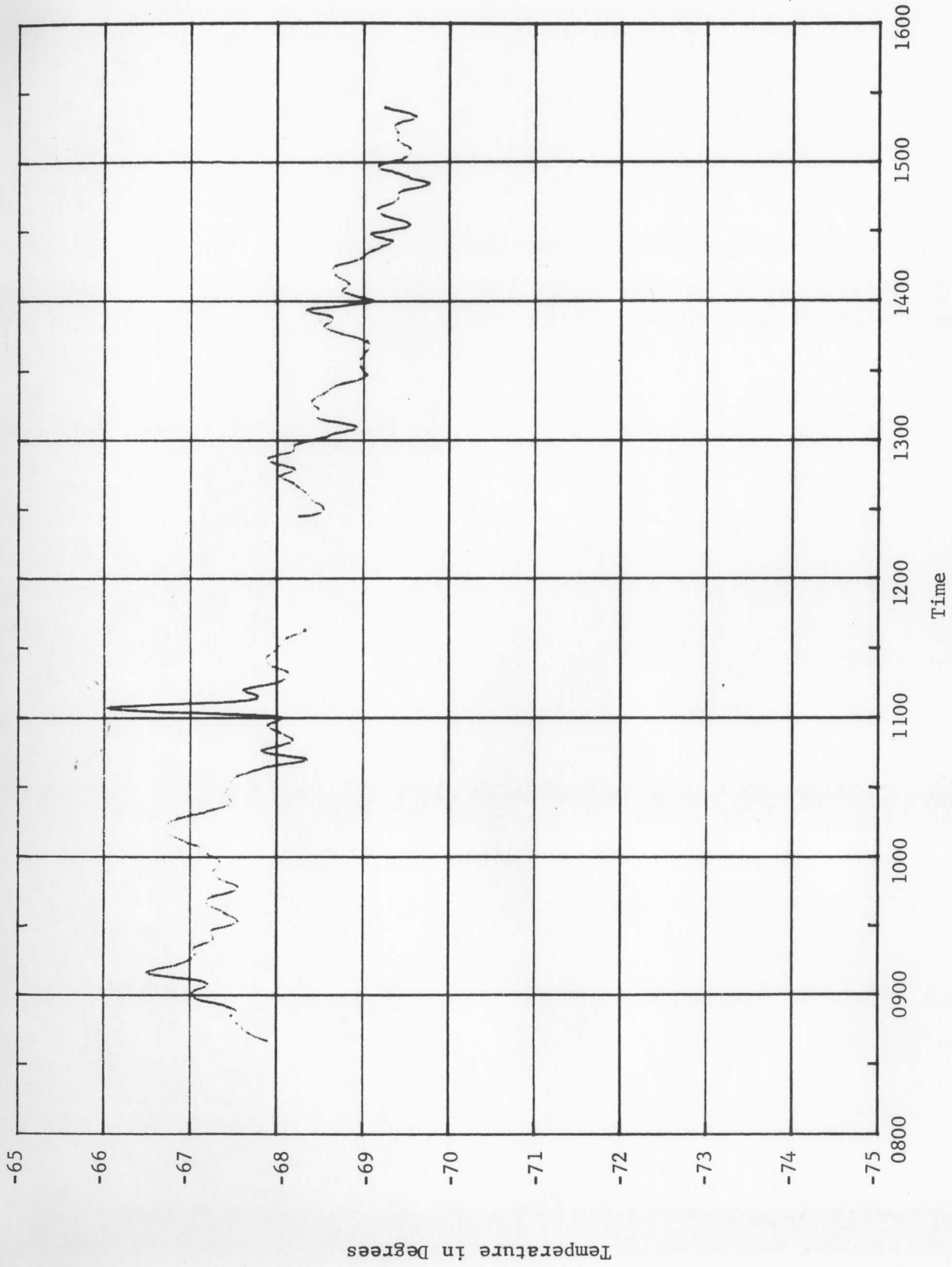


Figure 3-7. Ascension Temperature Data

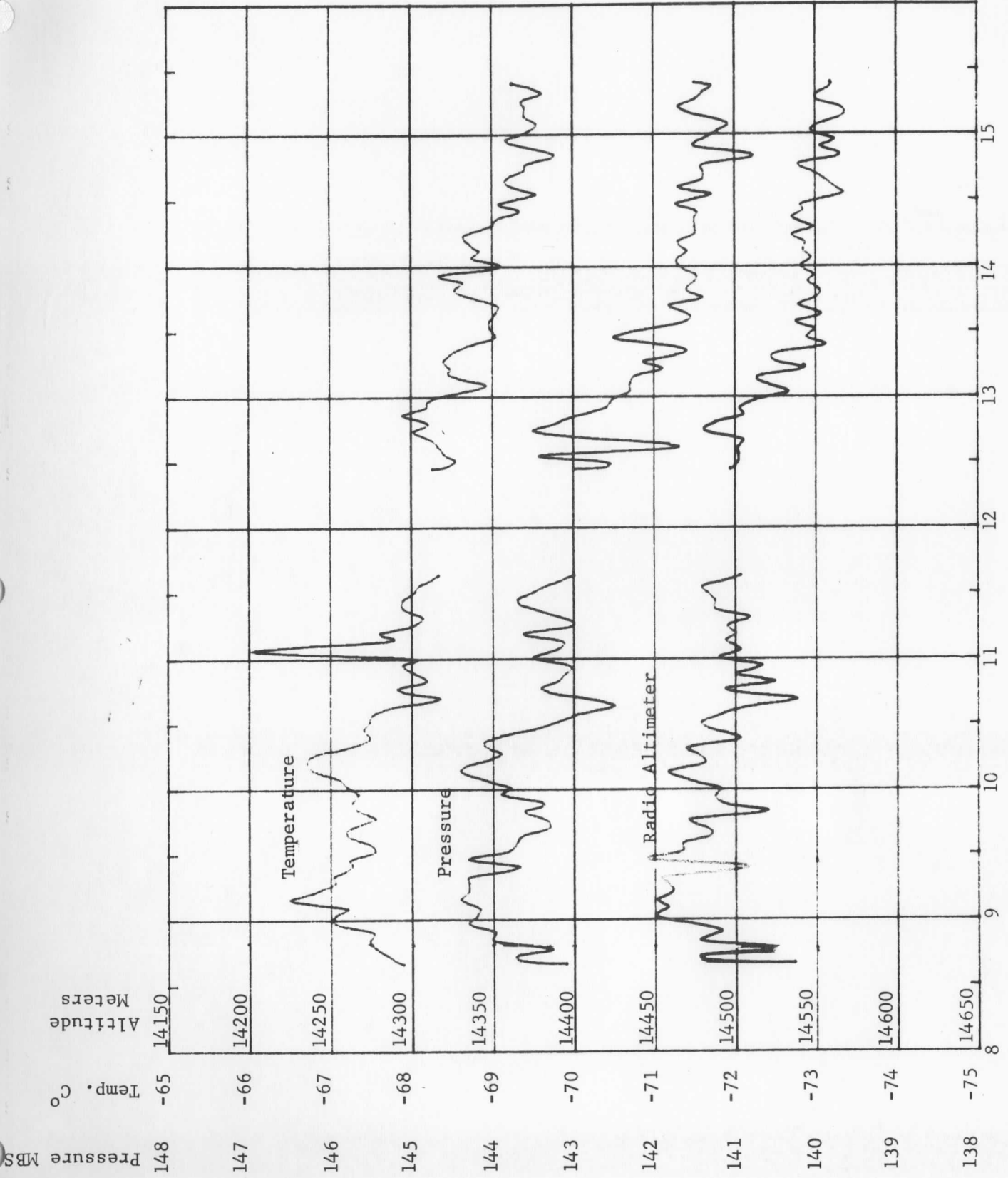


Figure 3-8. Comparison of Data from Radio Altimeter, Air Temperature and Pressure Sensors

62

63

64

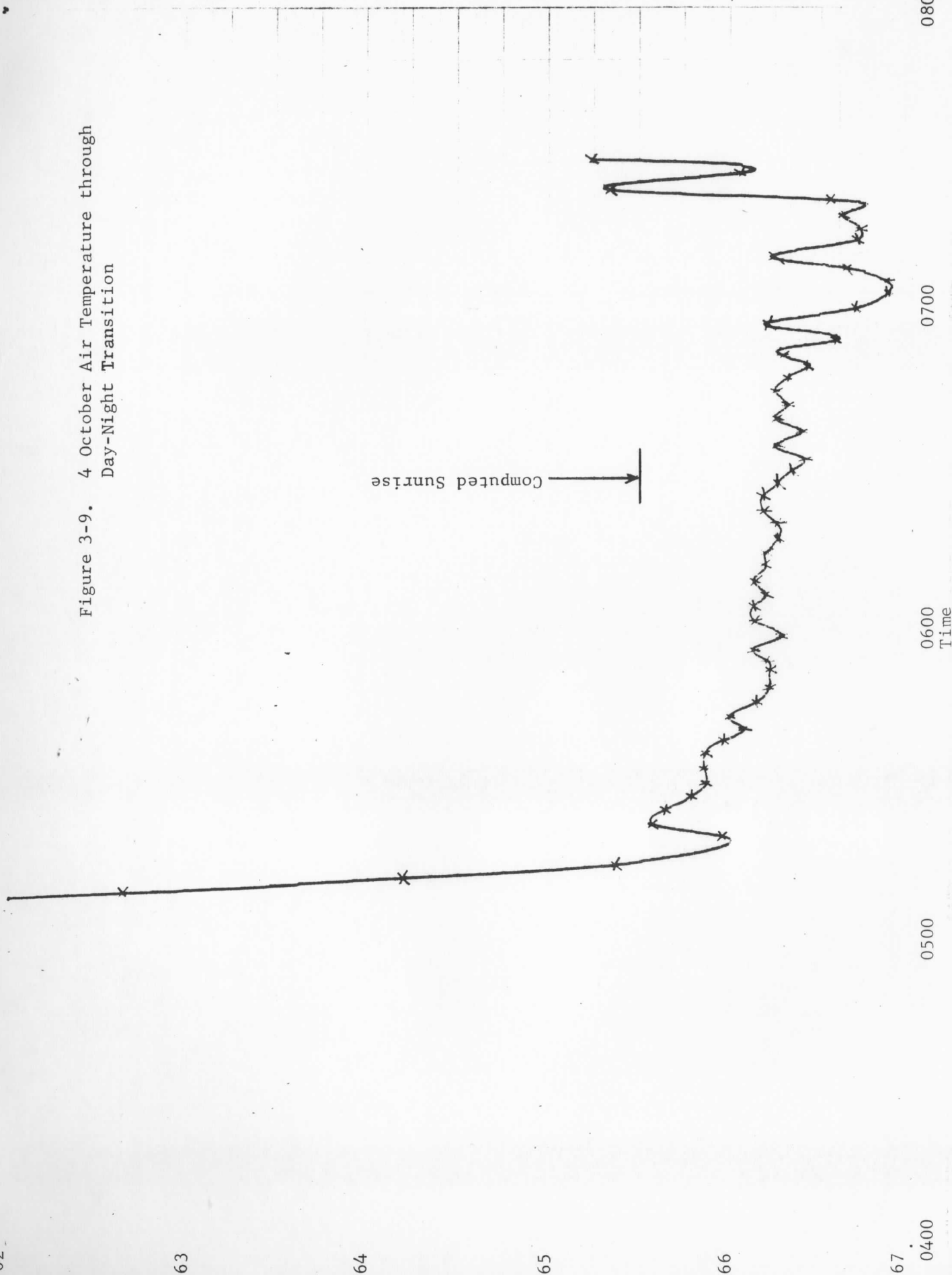
65

66

67

Temperature in Degrees C

Figure 3-9. 4 October Air Temperature through Day-Night Transition



0600
Time

0500

0400

0700

0800

-65

-66

-67

-68

-69

-70

-71

-72

-73

-74

-75

1000

1100

1200

1300

1400

F

Figure 3-10a. 5 October Temperature Data

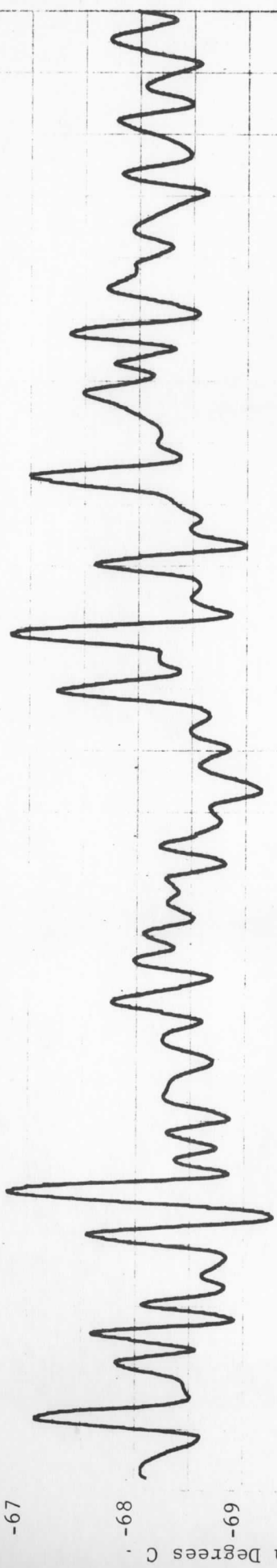


Figure 3-10b, 5 October Temperature Data

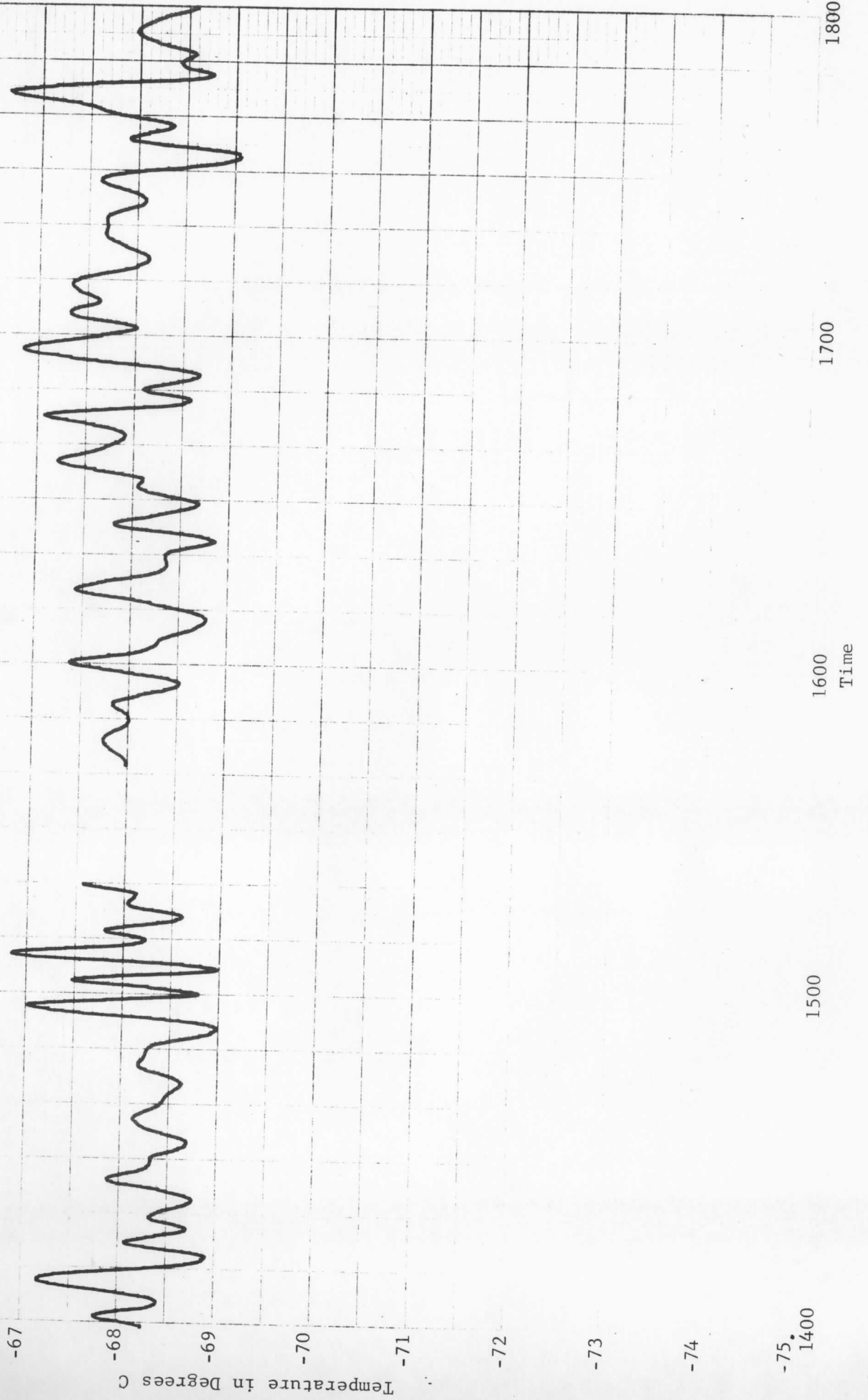
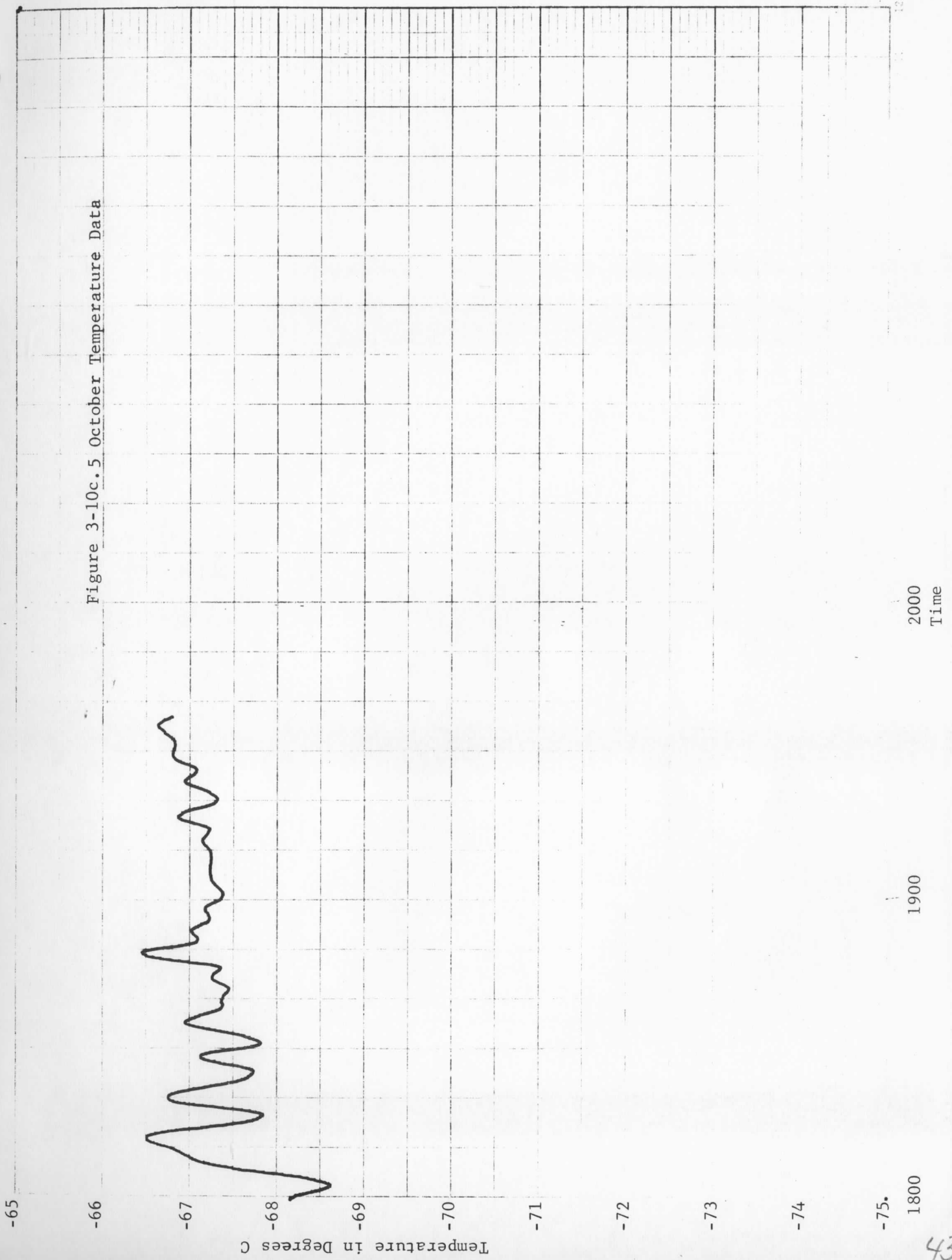


Figure 3-10c.5 October Temperature Data



2000
Time

1900

1800

Temperature in Degrees C

Figure 3-11a. 6 October Temperature Data

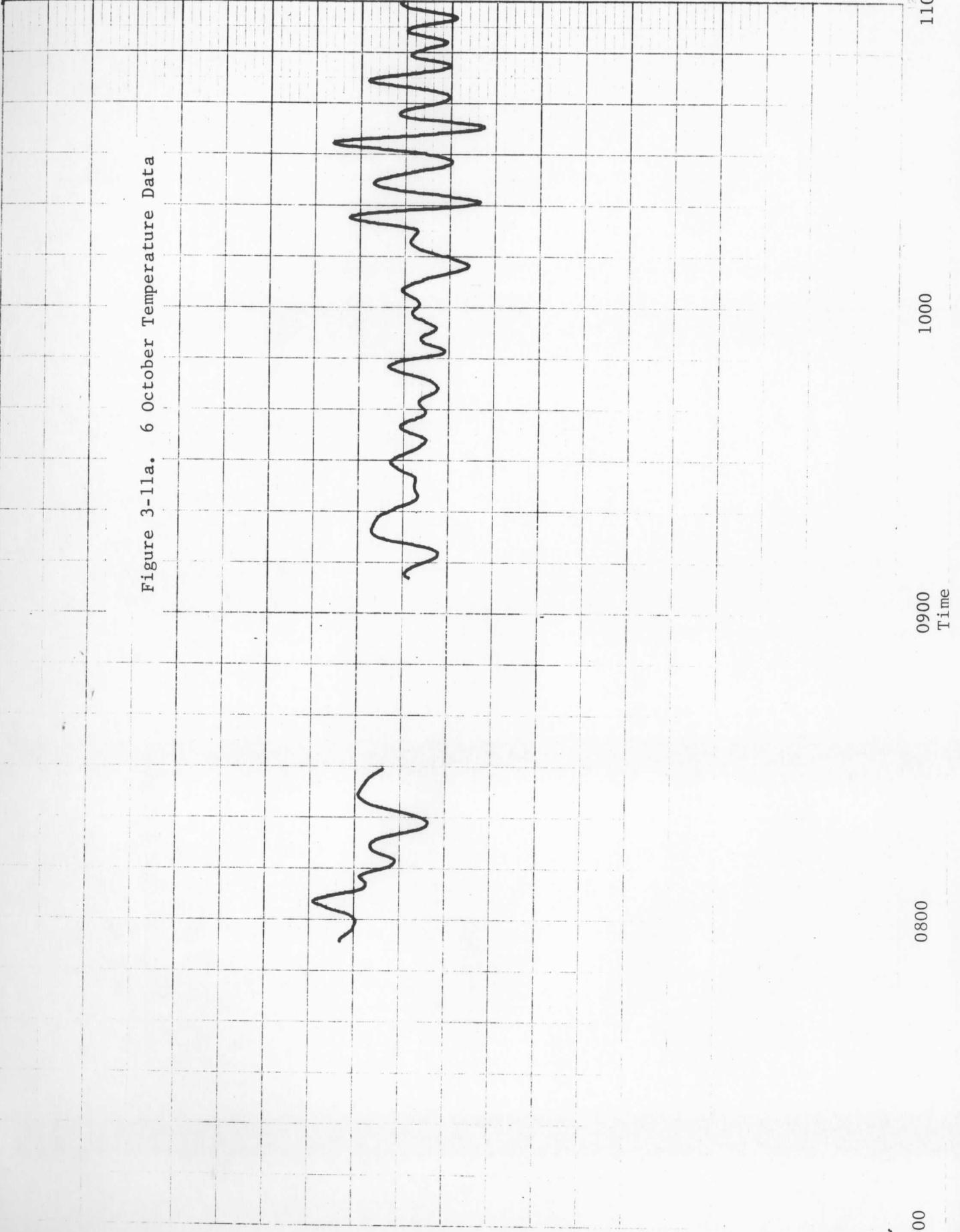


Figure 3-11b. 6 October Temperature Data

Temperature in Degrees C



-75.
1100

1200

1300
Time

1400

1500

-65°

Temperature in Degrees C

-70

-75

1500

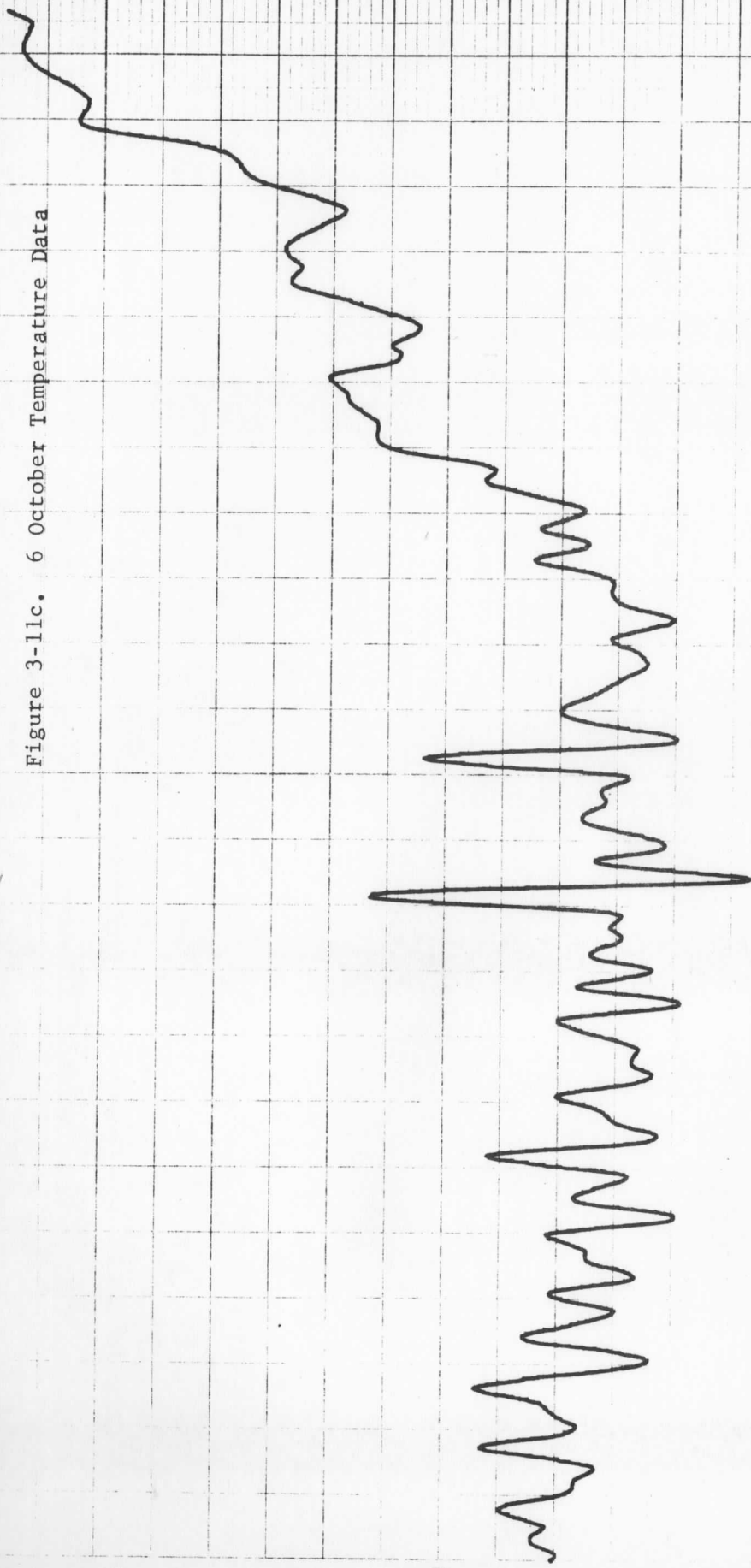
1600

1700
Time

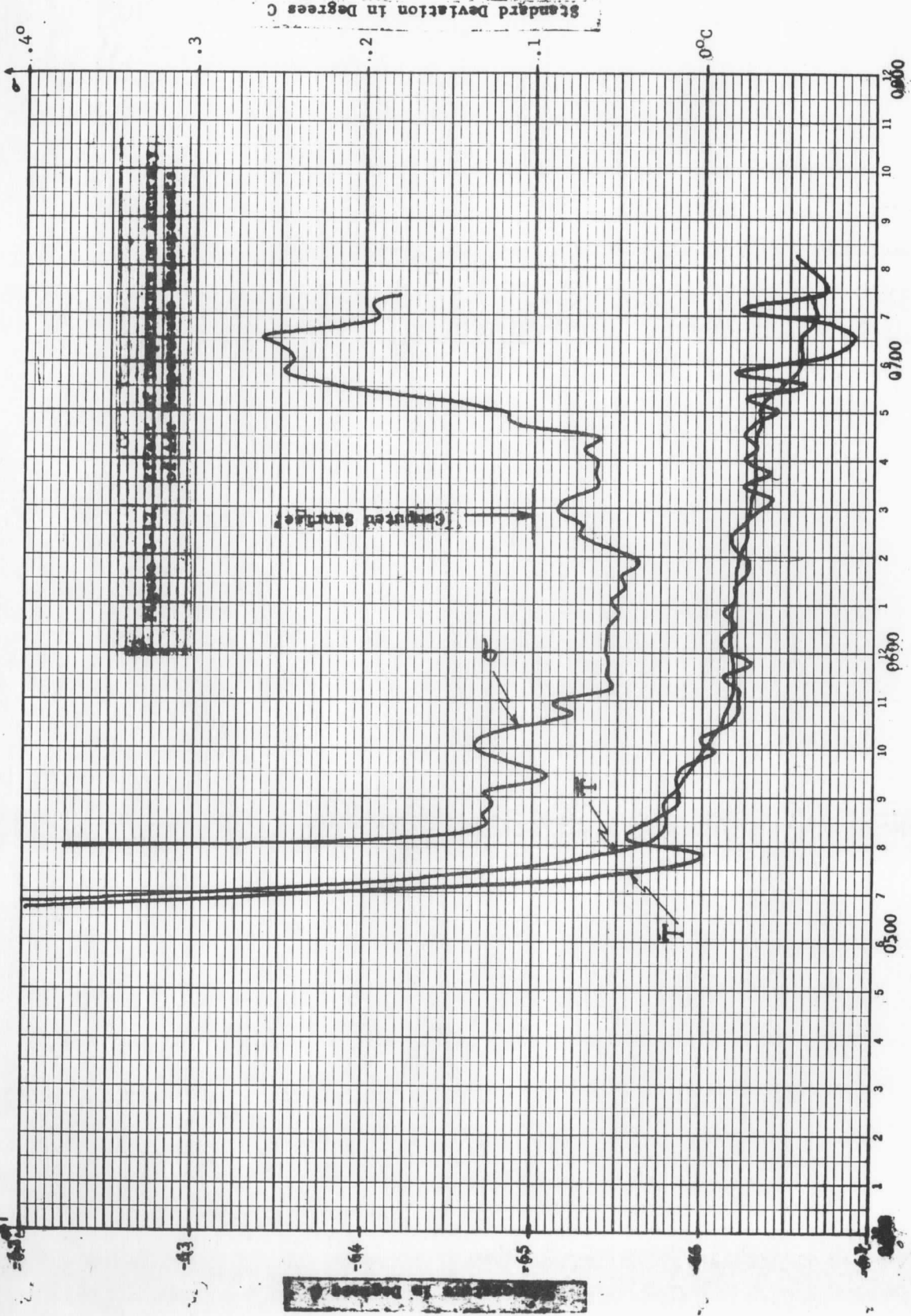
1800

1900

Figure 3-11c. 6 October Temperature Data



K&E 1 DAY BY HOURS 46 2050
X 100 DIVISIONS MADE IN U.S.A.
KEUFFEL & ESSER CO.



-60°

-61

-62

-63

-64

-65

-66

-67

-68

-69

-70

Temperature in Degrees C

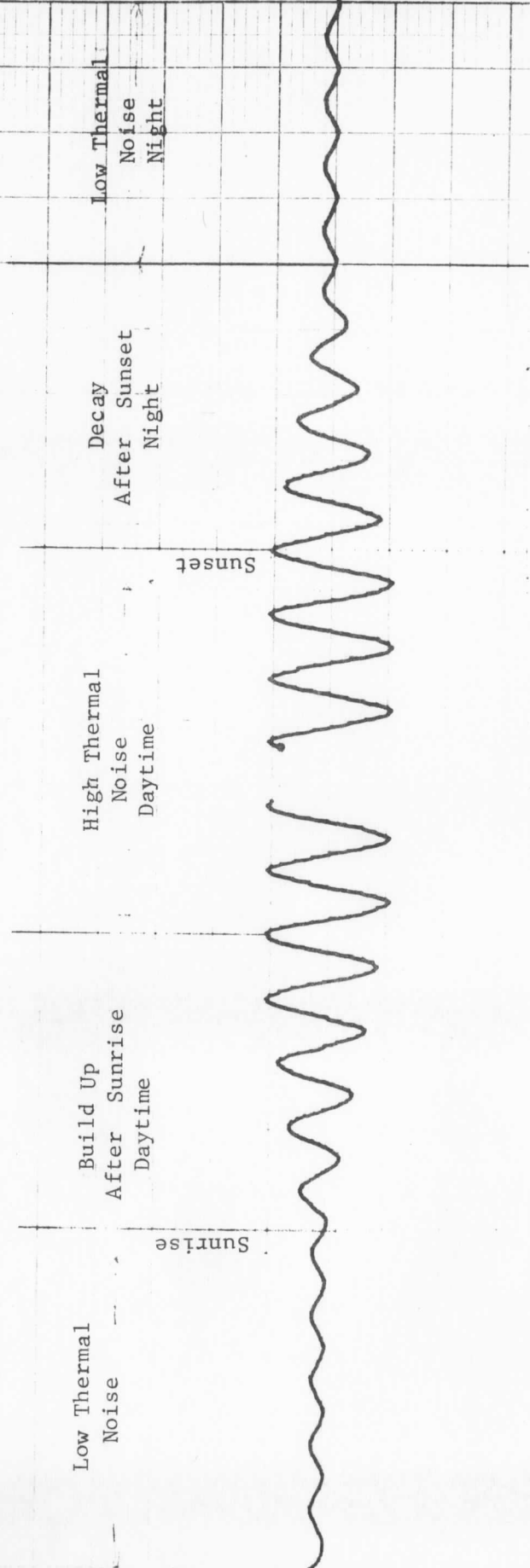


Figure 3-13. Graphic Description of Day-Night Transition

Time

since the gas in the balloon is heated, and the increased pressure makes the balloon a little larger. This change in flight altitude obscures any day/night offset that may be due to radiation on the sensor.

The results of the test flights indicate that the temperature environment is relatively quiet at night but builds up to a noisy state after sunrise and dampens out after sunset. Figure 3-13 is an over simplified description of this day/night phenomenon.

6. Conclusions

- a. Solar radiation causes a noise error that is less than 0.1°C.
- b. The steady state offset due to solar radiation can not be accurately defined, but is probably less than 0.3°C (0.2°C is the computed effect on the thermistor).
- c. The greatest source of inaccuracy for daytime measurements is the real temperature variation in the atmosphere.
- d. The best way to improve the accuracy of temperature measurement is by averaging many readings over a time period.

7. Design Equations for Thermistor Calibration and Sensor Circuit Linearization

- a. Thermistor Resistance as a Function of Temperature

Thermistors are furnished with three calibration points:

- 80°C	193°K
- 60°C	213°K
- 40°C	233°K

With these three points we can define an empirical fitting formula

$$R_T = \rho_o \exp(-AT + \frac{B}{T}) \quad (1)$$

A, B and ρ_o are computed with the following formulas

$$\left\{ \begin{array}{l} A = \frac{1}{40} L_2 - \frac{213}{800} L_3 \\ B = \frac{193 \times 213 \times 233}{800} L_3 \\ \rho_o = R_{60} \exp\left(213A - \frac{B}{213}\right) \end{array} \right.$$

$$L_2 = \ln \frac{R_{80}}{R_{40}} \quad , \quad L_3 = \ln \frac{R_{80} \times R_{40}}{R_{60}^2}$$

Figure 3- shows the circuit used to linearize the temperature measurement. The operational amplifier and the four resistances, R_1, R_2, R_3, R_4 , give a voltage output E .

$$E = 6 - 6 \frac{R_1}{R_2} + 6 R_1 \frac{R_T + R_4}{R_T (R_3 + R_4) + R_3 R_4} \quad (2)$$

The power dissipated by the thermistor is

$$P = 36 R_4^2 \frac{R_T}{\{R_T (R_3 + R_4) + R_3 R_4\}} \quad (3)$$

We need four relations to determine the four resistances. These four relations are deduced from:

- a. Thermistor self-heating requirement.
- b. Linearization of $E - E(T)$: the simplest way to do this is to write the equality of slopes at both ends of the temperature range.
- c. Range of voltage output versus temperature range.

Self-heating requirement: to get a good measurement it is necessary to limit the maximum power dissipated by the thermistor. We observe that R_T is constantly decreasing with temperature, thus the maximum power is determined from equation (3).

$$\frac{dP}{dR_T} = 36 R_4^2 \frac{R_3 R_4 - R_T (R_3 + R_4)}{\{R_T (R_3 + R_4) + R_3 R_4\}^3}$$

$$\frac{dP}{dR_T} = 0 \implies R_T = \frac{R_3 R_4}{R_3 + R_4}$$

For this value of R_T

$$P \Rightarrow P_{\max} = 9 \frac{R_4}{R_3} \frac{1}{R_3 + R_4}$$

let δ be the dissipation constant, and θ the temperature increase due to self-heating, and θ_o the maximum self-heating

$$\theta = \frac{P}{\delta} \quad \theta_o = \frac{P_{\max}}{\delta}$$

which gives the first relation

$$R_3 \left(1 + \frac{R_3}{R_4} \right) = \frac{100}{\theta_o} \quad (4)$$

with R_3, R_4 in $k\Omega$, since $\delta = .09MW (^\circ C)^{-1}$, and the value of self-heating temperature

$$\theta = \theta_o \frac{P}{P_{\max}}$$

$$\theta = 4 \frac{X R_T}{(R_T + X)^2} \quad (5)$$

$$\text{with } X = \frac{R_3 R_4}{R_3 + R_4}$$

1) Linearization:

$$\text{Write } \frac{dE}{dT} (-80^\circ) = \frac{dE}{dT} (-40^\circ C)$$

$$\frac{dE}{dT} = \frac{dE}{dR_T} \frac{dR_T}{dT}$$

$$\frac{dE}{dR_T} = 6 R_1 \frac{R_4^2}{\left\{ R_T R_3 + R_4 + R_3 R_4 \right\}^2} \quad \frac{dR_T}{dT} = - R_T \left(A + \frac{B}{T^2} \right)$$

$$\frac{R_{80} \left(A + \frac{B}{193^2} \right)}{\left\{ R_{80} (R_3 + R_4) + R_3 R_4 \right\}^2} = \frac{R_{40} \left(A + \frac{B}{233^2} \right)}{\left\{ R_{40} (R_3 + R_4) + R_3 R_4 \right\}^2}$$

$$\text{calling } \mu = \frac{R_{80}}{R_{40}} \frac{A + \frac{B}{193^2}}{A + \frac{B}{233^2}}$$

$$\text{we get } \left(\frac{R_{80} + X}{R_{40} + X} \right)^2 = \mu$$

second degree equation to be solved for X

$$X^2 (\mu - 1) + 2X(\mu R_{40} - R_{80}) + \mu R_{40}^2 - R_{80}^2 = 0$$

$$X = - \frac{\mu R_{40} - R_{80} + \epsilon \sqrt{\mu} (R_{80} - R_{40})}{\mu - 1}$$

$$\epsilon = \pm 1 \implies 1 = \epsilon^2$$

$$\mu - 1 = \mu - \epsilon^2$$

$$X = - \frac{R_{40} \sqrt{\mu} (\mu - \epsilon) + \epsilon R_{80} (\sqrt{\mu} - \epsilon)}{(\sqrt{\mu} - \epsilon) (\sqrt{\mu} + \epsilon)}$$

$$X = - \frac{\epsilon R_{80} + R_{40} \sqrt{\mu}}{\sqrt{\mu} + \epsilon}$$

X, ratio of resistance has to be > 0 : $\sqrt{\mu} > 1 \implies \sqrt{\mu} + \epsilon > 0$, so the numerator $\epsilon R_{80} + R_{40} \sqrt{\mu} < 0$, since $R_{80} > R_{40} \sqrt{\mu}$, $\epsilon = -1$

$$X = \frac{R_3 R_4}{R_3 + R_4} = \frac{R_{80} - R_{40} \sqrt{\mu}}{\sqrt{\mu} - 1} \quad (6)$$

combination of (5) and (6) gives R_3 and R_4

$$R_3 = 10 \sqrt{\frac{X}{\theta_o}} \quad (7) \quad R_4 = \frac{\theta_o R_3^2}{100 - \theta_o R_3} \quad (8)$$

Notice that this computation would need theoretically to consider $\frac{dE}{dT}$, derivative of E with respect to ambient temperature and not with respect to thermistor temperature. However, since the maximum self-heating we consider is of the order of $.5^\circ\text{C}$, the difference is negligible.

2) Computation of R_1 and R_2

We want the voltage output to be more than two and less than 10, so we write

$$E(-40^\circ\text{C}) = 10 = 6 - 6 \frac{R_1}{R_2} + 6 R_1 \frac{R_{40} + R_4}{R_{40}(R_3 + R_4) + R_3 R_4}$$

$$E(-80^\circ\text{C}) = 2 = 6 - 6 \frac{R_1}{R_2} + 6 R_1 \frac{R_{80} + R_4}{R_{80}(R_3 + R_4) + R_3 R_4}$$

by subtraction

$$\frac{4}{3R_1} = \frac{R_{40} + R_4}{R_{40}(R_3 + R_4) + R_3 R_4} - \frac{R_{80} + R_4}{R_{80}(R_3 + R_4) + R_3 R_4}$$

$$R_1 = \frac{4}{3}(R_3 + R_4) \left\{ \frac{R_{40} + R_4}{R_{40} + X} - \frac{R_{80} + R_4}{R_{80} + X} \right\}^{-1} \quad (9)$$

by addition

$$R_2 = 2(R_3 + R_4) \left\{ \frac{R_{40} + R_4}{R_{40} + X} + \frac{R_{80} + R_4}{R_{80} + X} \right\}^{-1} \quad (10)$$

3) Summary

Having determined the coefficient, A, B, θ_0 characteristic of the thermistor, we compute R_1, R_2, R_3, R_4 with the following

$$\mu = \frac{R_{80}}{R_{40}} \frac{A + B/193^2}{A + B/233^2}$$

Preliminary
Computation

$$x = \frac{R_{80} - R_{40} \sqrt{\mu}}{\sqrt{\mu} - 1}$$

choosing θ_0 to be of the order of .5

$$R_3 = 10 \frac{X}{\theta_0}$$

$$R_4 = \frac{\theta_0 R_3^2}{100 - \theta_0 R_3}$$

$$R_1 = \frac{4}{3} (R_3 + R_4) \left\{ \frac{R_{40} + R_4}{R_{40} + X} - \frac{R_{80} + R_4}{R_{80} + X} \right\}^{-1}$$

$$R_2 = 2 (R_3 + R_4) \left\{ \frac{R_{40} + R_4}{R_{40} + X} + \frac{R_{80} + R_4}{R_{80} + X} \right\}^{-1}$$

Remark: The 10 in relation (7) implies the use of $k\Omega$ as unit for all resistances.

Fig. 4 gives the plotting of $E = E(t)$.

B. THE STRAIN GAUGE AS A PRESSURE SENSOR

Two flights were made from Ascension Island with strain gauge sensors. Diameter measurements were made at the factory and balloon volume computed as a function of resistance readings on a strain gauge potentiometer. These resistance readings were converted to code periods for the GHOST analog telemetry system. Telemetry accuracy was about 1% for potentiometer readings. Potentiometer stiction limited reading accuracy to 3%. This corresponds to a strain change of 0.00037 or a volume change of 0.001.

On flight 91153/6 NABL/SD, the balloon volume measured at the first maximum altitude indicated by the radar was 23.623 m³. Since system mass was 5.696 kilograms, the computed density level was 0.2411 Kg/m³. Air temperature was not measured at this time because of moisture problems in the Digi-GHOST. If we use the air temperature for the 5 July radiosonde of 207.6°K at the density level of 0.2411, the pressure can be calculated.

$$P = \frac{\rho T}{.3485} = 143.6 \text{ mb}$$

The altitude based on radiosonde data of the 143.6 mb pressure level is 14,440 meters. Radar data indicates an altitude of 14,485 meters, although radar range was excessive for good accuracy.

The volume at the first maximum for flight 97 BLCP/UK was 23.718 m³. Measured air temperature was 203.6°.

$$P = \frac{203.6 \times .2408}{.3485} = 140.7 \text{ mb}$$

The radiosonde for this date shows the altitude of the 140.7 mb surface as 14,590 meters. The radar height for this first maximum was 14,575 meters. (Digi-GHOST data gives an altimeter reading of 14,570 meters and a pressure reading of 144.0 millibars.) It is clear that for this flight, the strain gauge provided a pressure measurement within 0.5 millibars of actual while the aneroid indicated more than 2 mb above the actual pressure.

$$\text{Aneroid} = 144.0 - \frac{30^*}{40} = 143.2 \text{ mb}$$

$$\text{Most probable pressure} = 141.1 \text{ mb}$$

*Correction of aneroid altitude to balloon altitude. (Aneroid 30 meters below balloon).

The strain gauge adjustments were based on lower balloon stresses than were experienced. As a result, both gauges were near limits at mid-day in the tropics. When the balloons move to mid-latitudes, it will be possible to compare the stability of the aneroid element versus the volume measurements inferred from strain. This analysis will be made after sufficient mid-latitude data are available.

C. FLIGHT DATA OF TEMPERATURE, PRESSURE AND ALTITUDE, FLIGHTS 97152 BLCP/UK
AND 101151 AP/KW

The following data is representative of temperature, pressure and altitude measurements from two flights during July 1972.

0
-10
-20
-30
-40
-50

TEMPERATURE °C

B/D TEMP CALIB.
10 K YSI

$$T = (-0.001876)(C.P)^3 + (0.175769)(C.P)^2 + (-6.835664)(C.P) + 65.718838$$

FLIGHT 89154
D = DIGI-GHOST PACKAGE

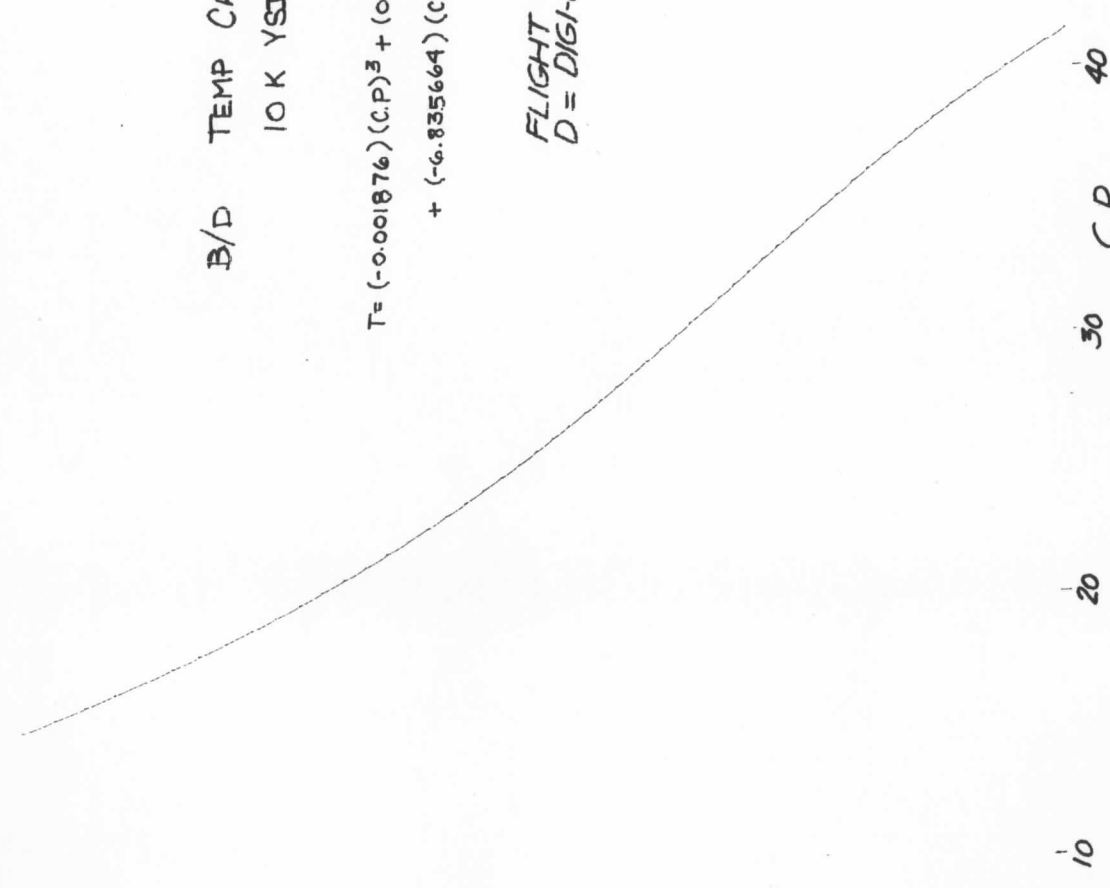


Figure 3-14

FLIGHT 90152
L = WISCONSIN THERMAL OVEN

B/L TEMP. CALIB
10 K YSI

$$T = (-0.001968)(C.P.)^3 + (0.181980)(C.P.)^2 + (-7.233964)(C.P.) + 73.373799$$

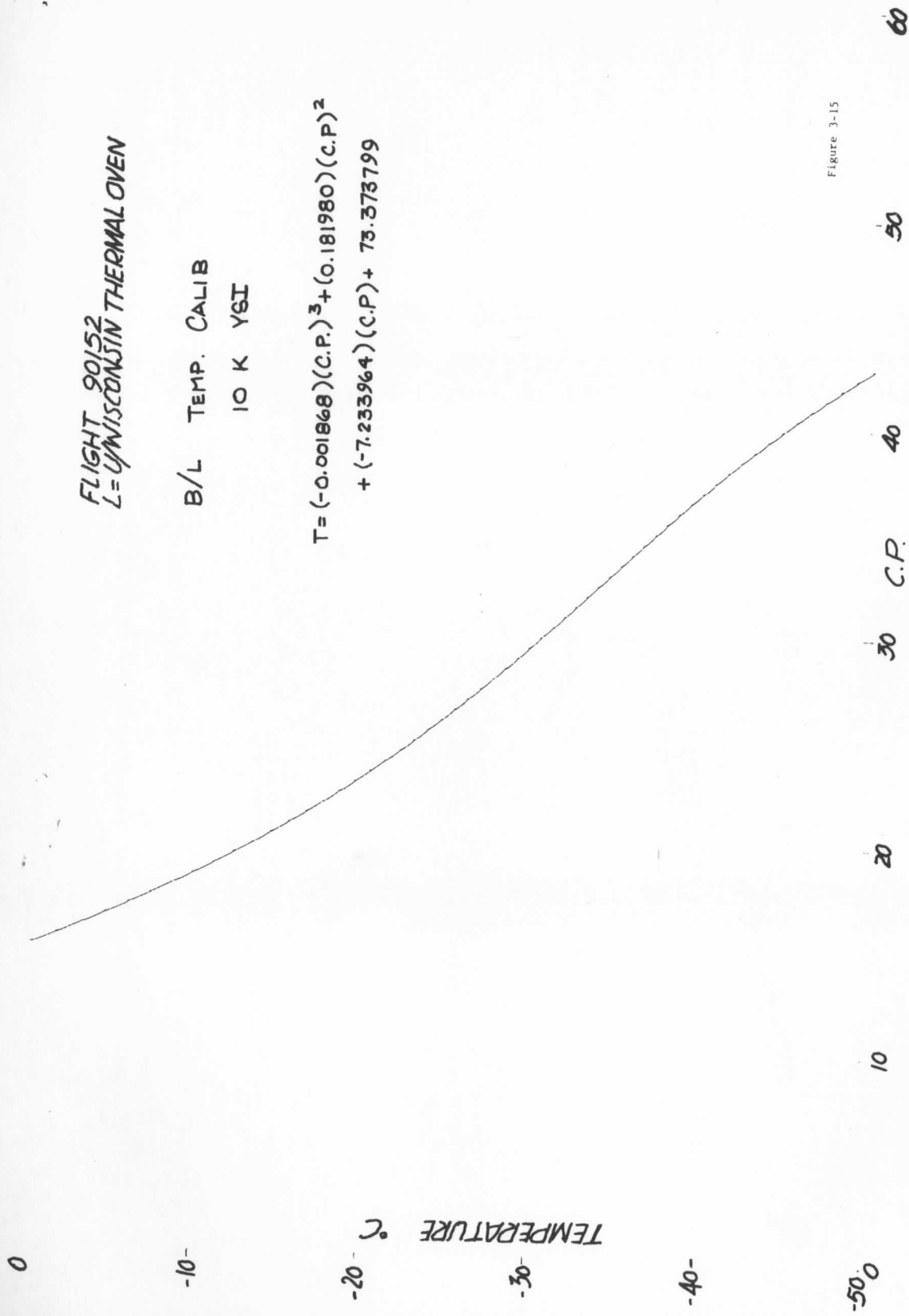
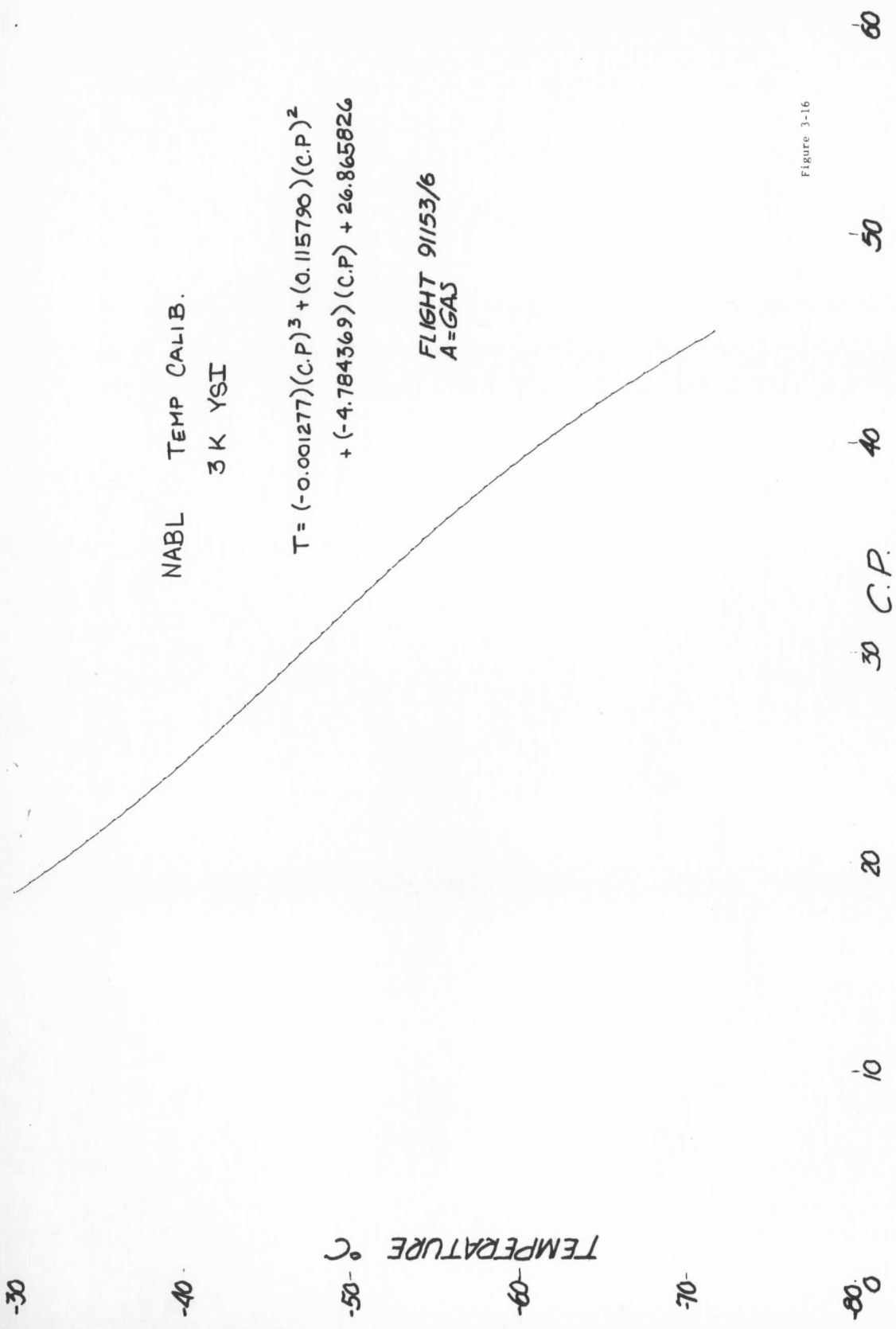


Figure 3-15



NABL TEMP CALIB.
3 K YSI

$$T = (-0.001277)(C.P)^3 + (0.115790)(C.P)^2 + (-4.784369)(C.P) + 26.865826$$

FLIGHT 91153/6
A=GAS

Figure 3-16

-80

-70

TEMPERATURE °C

-60

-50

-40

-30 0

100

200

300

400

500-512

FLIGHT 91153/6

SD air temp calibration

Sensor # S/N 8

$$R = \frac{(33.932) [(-303.0175) - N]}{[N - (-303.0175) - (1024.1534)]}$$

$$T = \frac{1}{2 \left(\frac{R}{.015991} \right)} \left[-\ln \left(\frac{R}{.238587} \right) + \sqrt{\left(\ln \left(\frac{R}{.238587} \right) \right)^2 + 4 \left(.015991 \right) (1832.98)} \right]$$

Figure 3-17

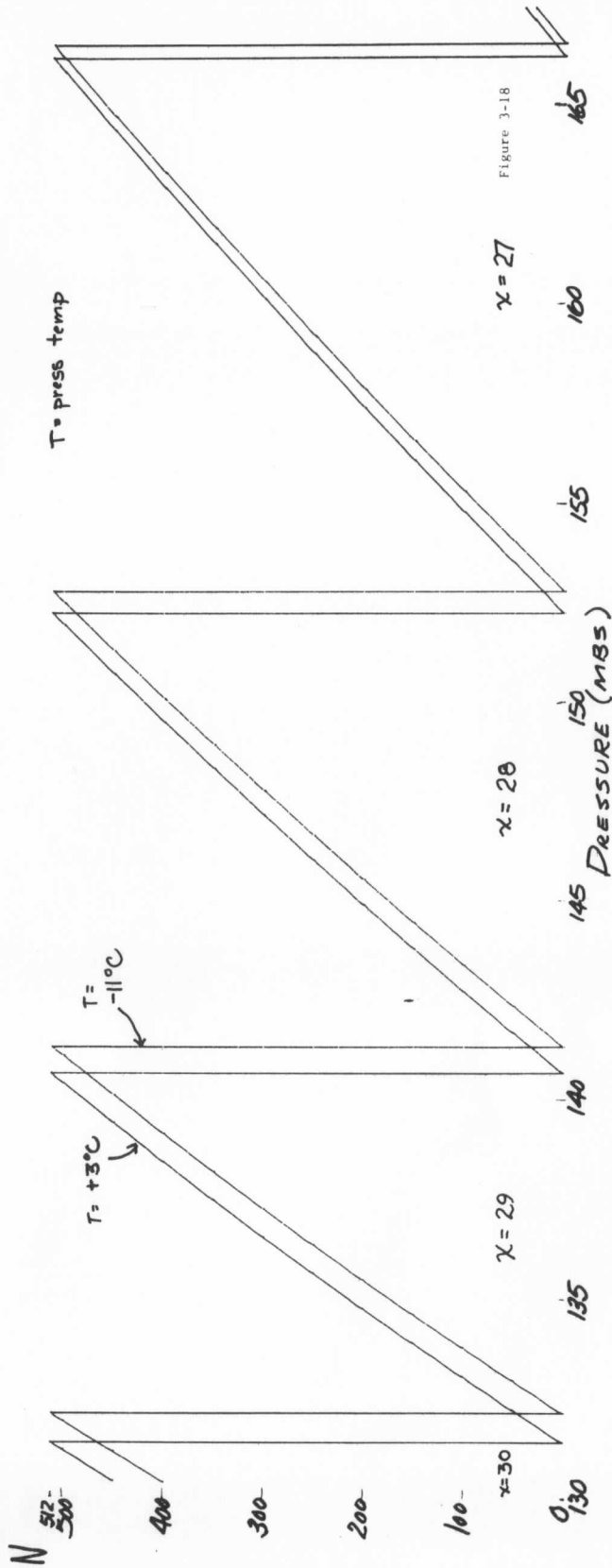
FLIGHT 91153/6

SD pressure calibration

sensor S/N A 01

$$\Delta f = \frac{(512-N)8+4096x}{1.28}$$

$$p = (.115052)(\Delta f)^2 + (-23.875696)(\Delta f) + (1356.283270) + \left(\frac{T-3}{14}\right) [(.004578)(\Delta f)^2 + (-0.847508)(\Delta f) + (38.613601)]$$



-30

-20

-10

0

+10

+20

TEMPERATURE °C

100

200

300

400

500

512

FLIGHT 91153/6
SD press. temp calibration

10 K YSI

$$R = \frac{(33.5861)(-305.0736) - N}{[N - (-305.0736) - (1036.742)]}$$

$$T = \frac{1}{2(0.009770)} \left[-\frac{\ln R}{(0.19431)} + \sqrt{\left(\frac{\ln R}{(0.19431)}\right)^2 + 4(0.009770)(2729.83)} \right]$$

Figure 3-19

FLIGHT 93155 RDPC
CURRENT CALIBRATION

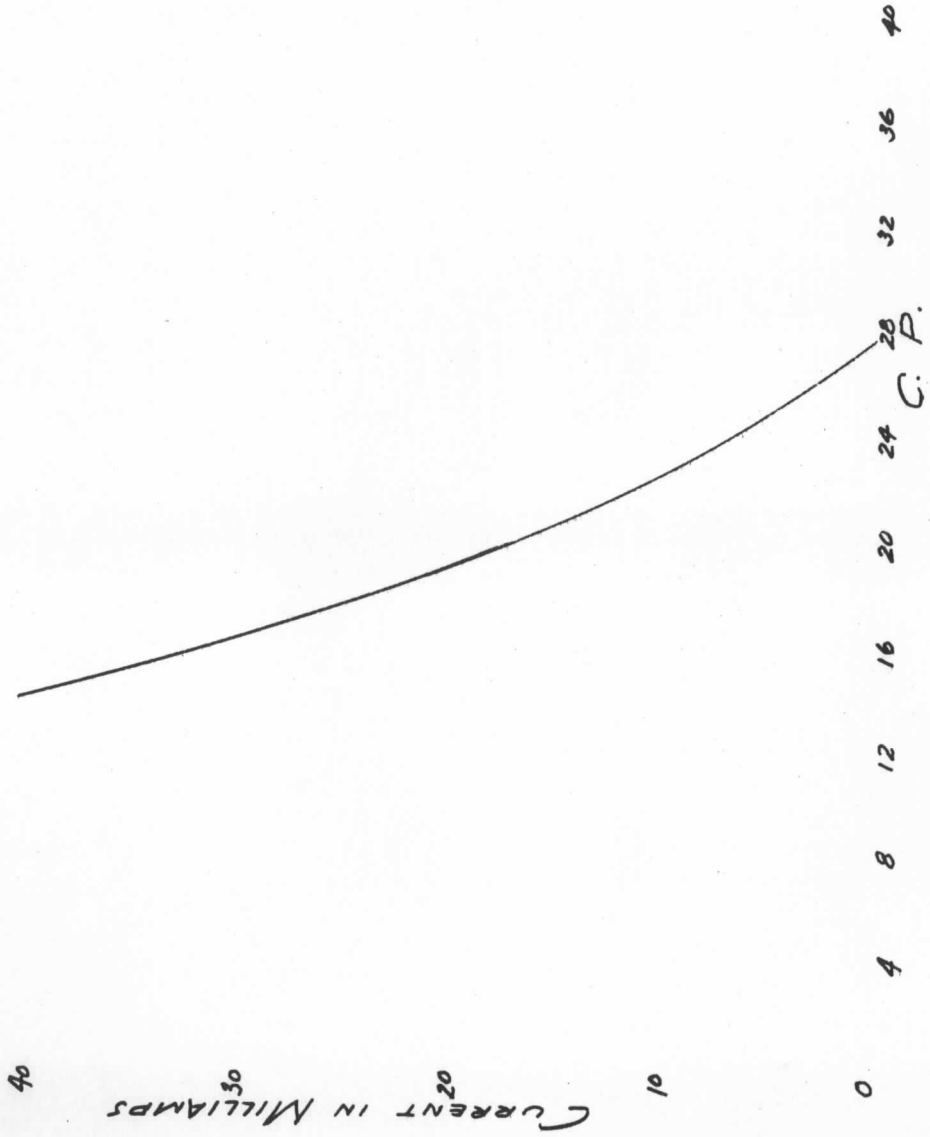


Figure 3-20

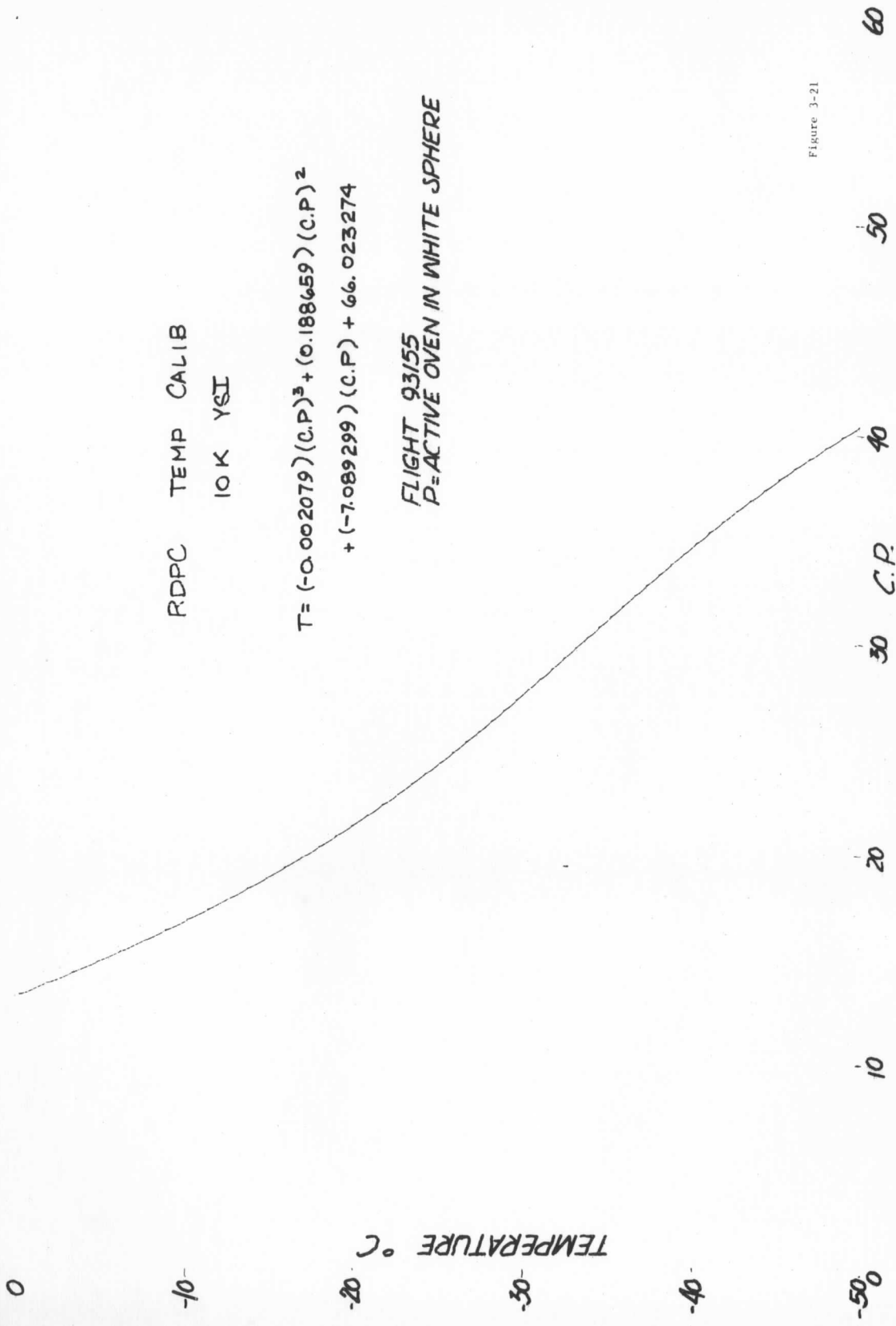
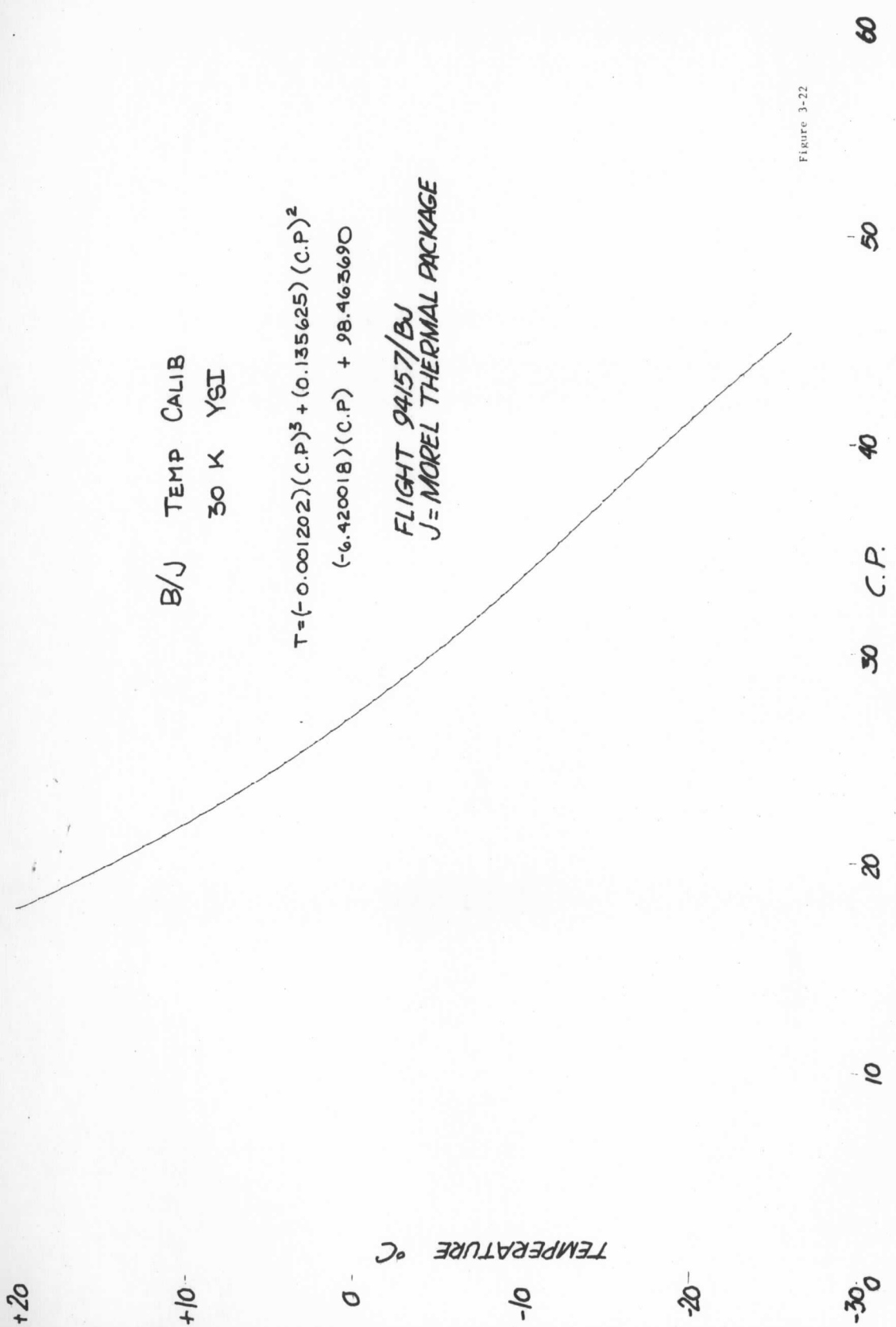


Figure 3-21



B/J TEMP CALIB
30 K YSI

$$T = (-0.001202)(C.P.)^3 + (0.135625)(C.P.)^2 - 6.420018(C.P.) + 98.463690$$

FLIGHT 94157/BJ
J = MOREL THERMAL PACKAGE

Figure 3-22

-80
-70
-60
-50
-40
-30 0

TEMPERATURE °C

FLIGHT 95152/4

SG air temp calibration
sensor SN 7

$$R = \frac{(33.1899) [N + (-319.9726)]}{[N - (-319.9726) - (1047.2381)]}$$

$$T = \frac{1}{2(.011423)} \left[-\frac{R}{(.023731)} + \sqrt{\left(\frac{R}{(.023731)}\right)^2 + 4(.011423)(2100.26)} \right]$$

100 200 300 N 400 500 512

Figure 3-23

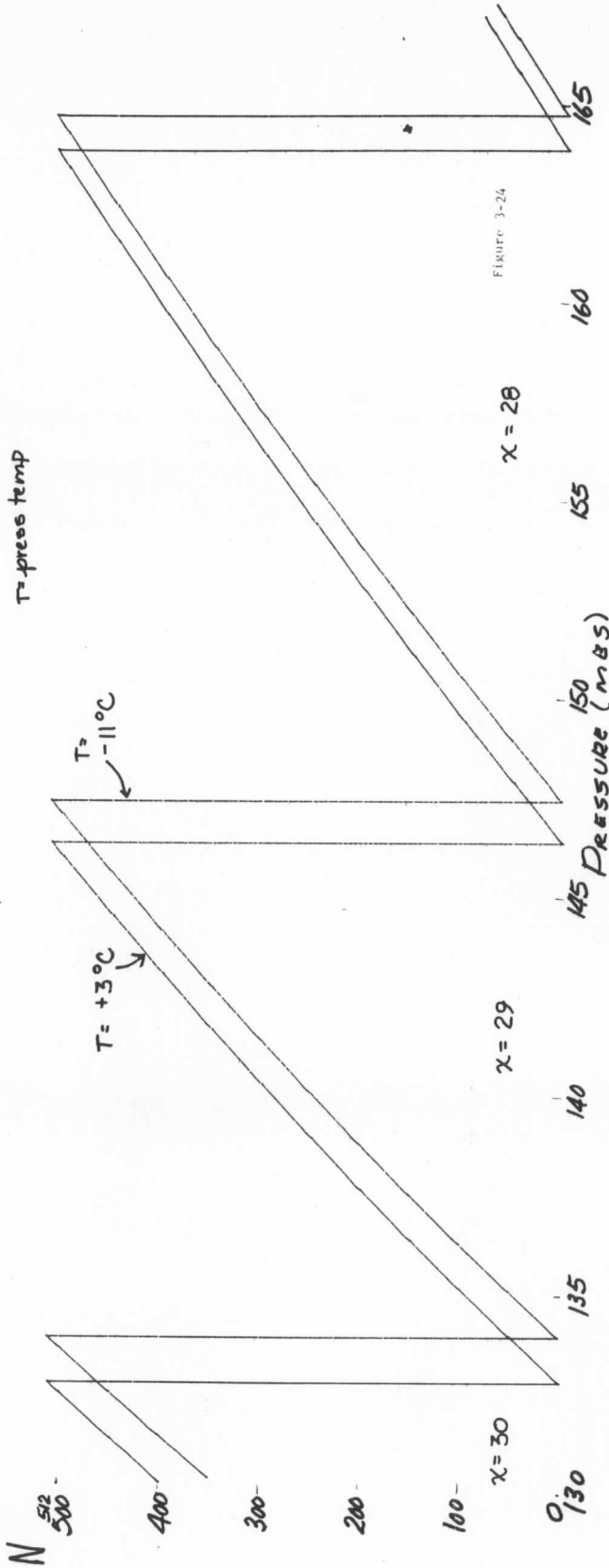
FLIGHT 95152/A

SG pressure calibration

sensor #9

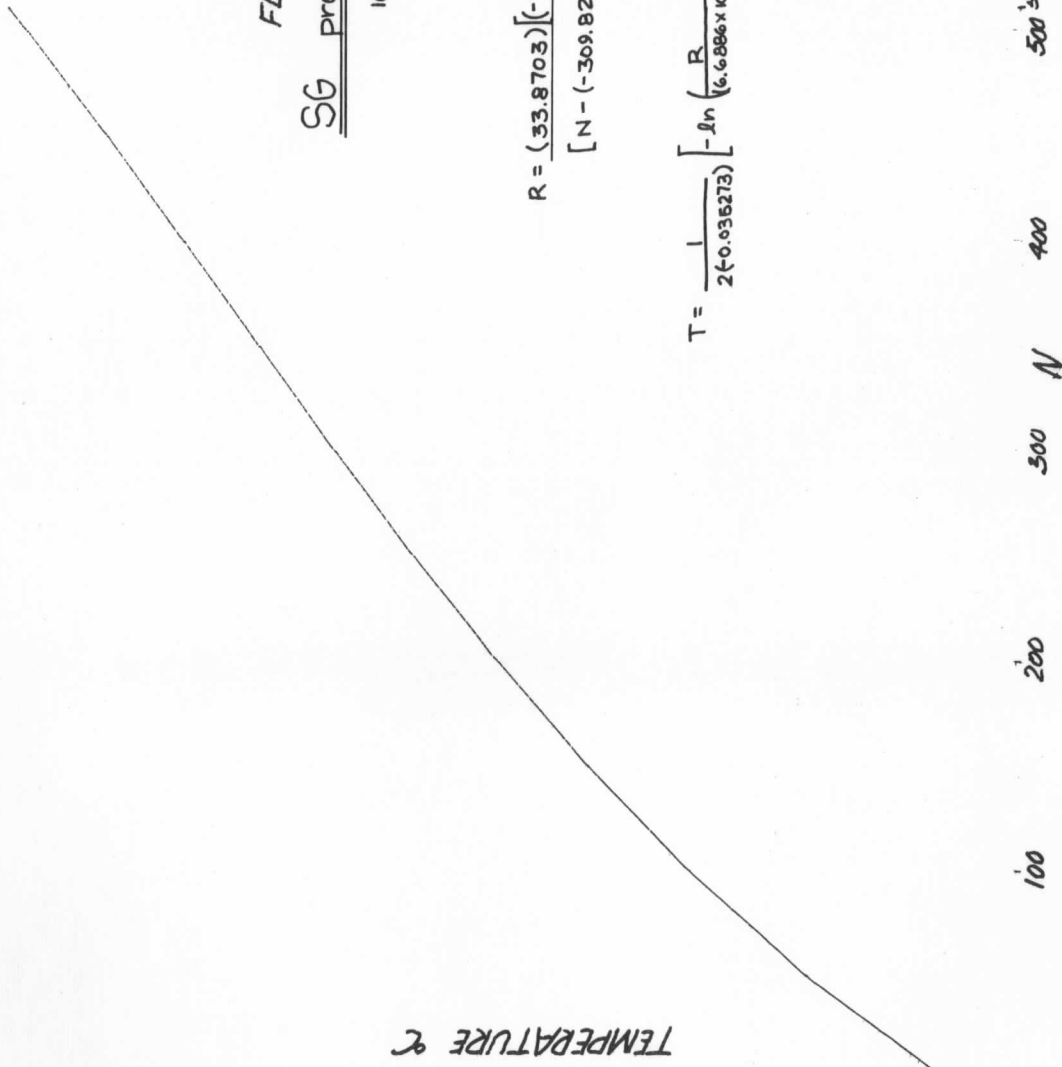
$$\Delta f = \frac{(512 - N) 8 + 4096 x}{1.28}$$

$$p = (.188638)(\Delta f)^2 + (-39.867230)(\Delta f) + (2221.564706) + \left(\frac{T-3}{14}\right) [(.005960)(\Delta f)^2 + (-1.149228)(\Delta f) + 54.275860]$$



-30
-20
-10
0
+10
+20
+30
+35

TEMPERATURE °C



FLIGHT 95152/4

SG press. temp. calibration

10K YSI + 7.47 K resistor
(in series)

$$R = \frac{(33.8703)(-309.8259) - N}{[N - (-309.8259) - (1041.9992)]}$$

$$T = \frac{1}{2(-0.036273)} \left[-2n \left(\frac{R}{(6.6886 \times 10^{-13})} \right) + \sqrt{\left(2n \left(\frac{R}{(6.6886 \times 10^{-13})} \right) \right)^2 + 4(-0.036273)(5362.87)} \right]$$

Figure 3-25

-80

-70

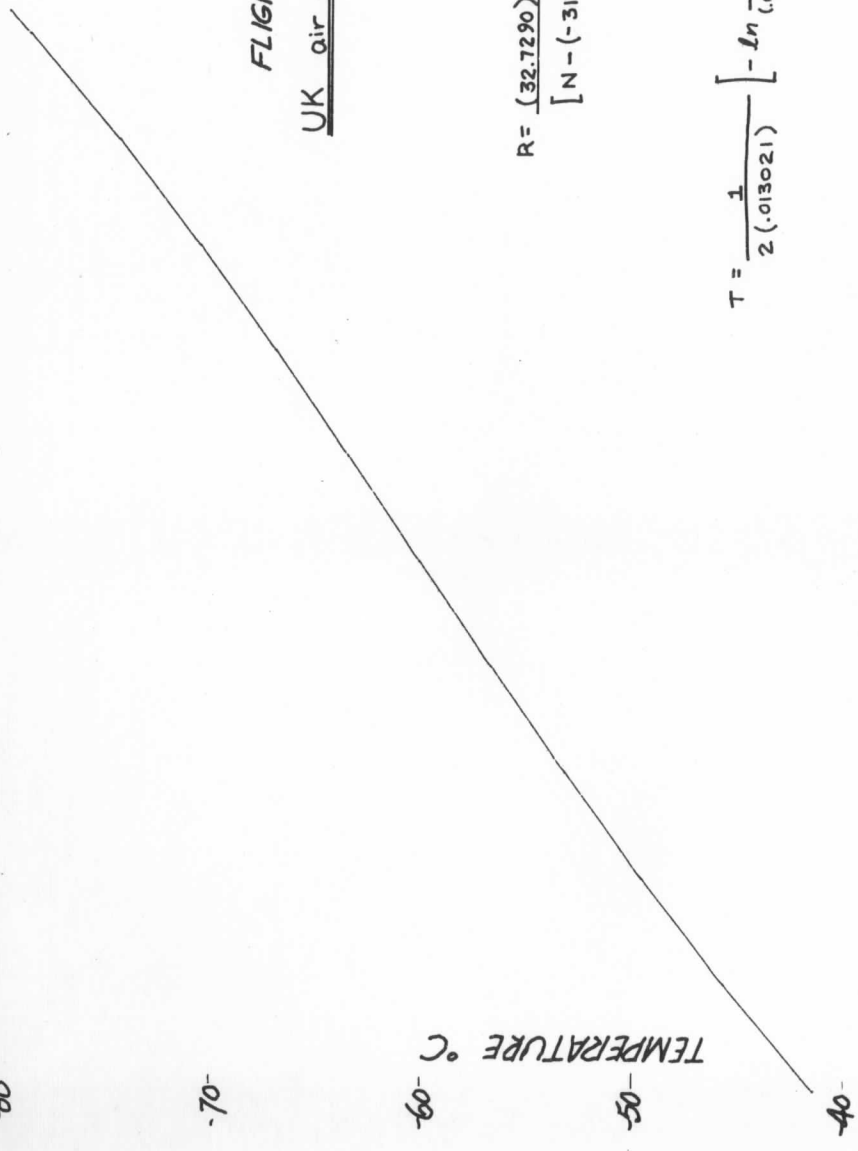
-60

-50

-40

-30

TEMPERATURE °C



FLIGHT 97152/5

UK air temp calibration

sensor S/N 13

$$R = \frac{(32.7290) [(-313.9258) - N]}{[N - (-313.9258) - 1021.1645]}$$

$$T = \frac{1}{2(.013021)} \left[-\ln \frac{R}{(.045796)} + \sqrt{\left(\ln \frac{R}{(.045796)} \right)^2 + 4(.013021)(2054.01)} \right]$$

Figure 3-26

0 100 200 300 400 500 N

FLIGHT 97152/5

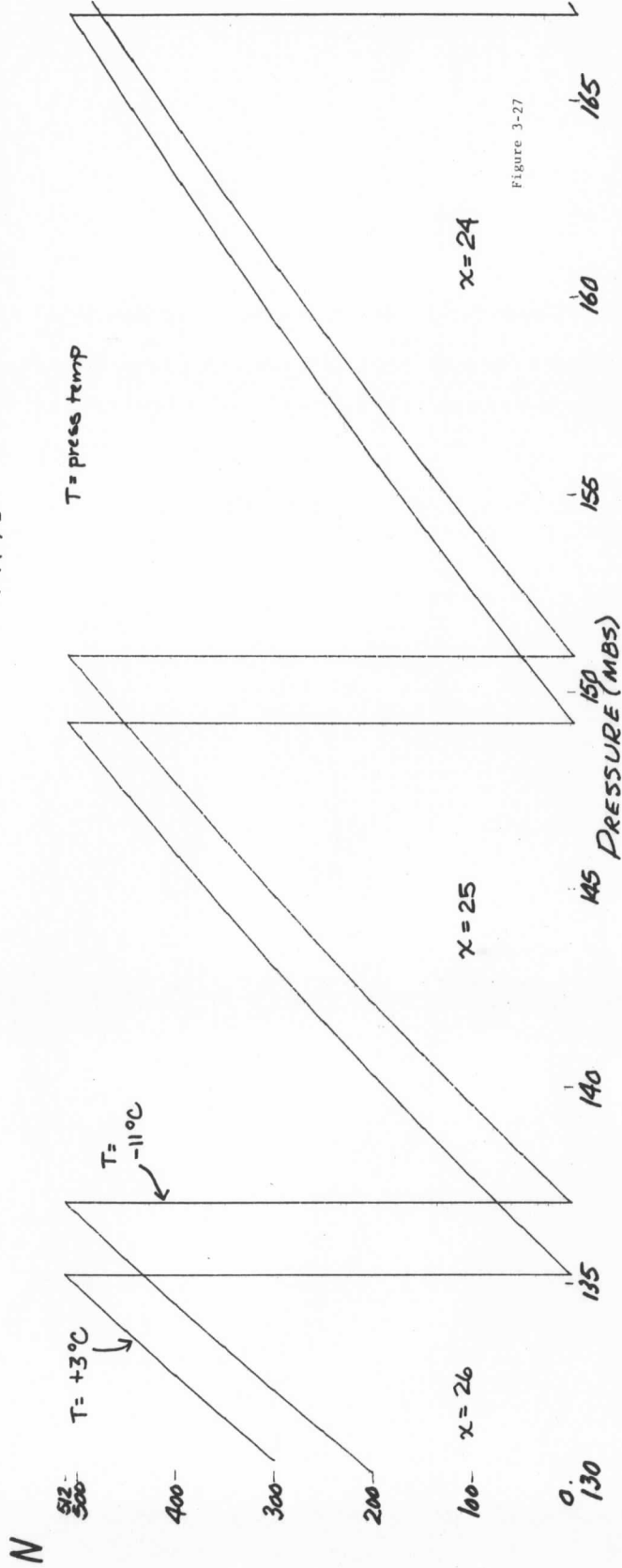
UK pressure calibration

sensor s/n 8

$$\Delta f = \frac{(512-N) 8 + 4096 x}{1.28}$$

$$p = (.190488)(\Delta f)^2 + (-35.468503)(\Delta f) + 1767.604543$$

$$+ \left(\frac{T-3}{14}\right) [(.022308)(\Delta f)^2 + (-3.676568)(\Delta f) + 149.631136]$$



-30

-20

-10
0
+10
TEMPERATURE °C

+20

FLIGHT 97152/5

UK press. temp. calibration

10 K Y6I

$$R = \frac{(32.3927) [(-318.0741) - N]}{[N - (-318.0741) - (1023.9165)]}$$

$$T = \frac{1}{2(.009770)} \left[-4m \frac{R}{(.019431)} + \sqrt{\left(4m \frac{R}{(.019431)}\right)^2 + 4(.009770)(2729.83)} \right]$$

100

200

300

400

500

500 52

N

Figure 3-28

-80

-70

-60

-50

-40

-30

TEMPERATURE °C

FLIGHT 99151/3

WO air temp. Calibration

Sensor S/N 3

$$R = \frac{(32.9617) [N + (-319.4425)]}{[N - (-319.4425)] - (0.341901)}$$

$$T = \frac{1}{2(0.006449)} \left[-2n \frac{R}{(0.002886)} + \sqrt{\left(2n \frac{R}{(0.002886)}\right)^2 + 4(0.006449)(2323.66)} \right]$$

100

200

300

N

400

500

Figure 3-29

FLIGHT 9915/3

WO int. temp calibration

2-10K YSI in series

$$R = \frac{(32.9617)(-319.4425) - N}{(N - (-319.4425)) - (1034.1901)}$$

$$T = \frac{1}{2(0.009770)} \left[-\frac{R}{(0.038862)} + \sqrt{\left(\frac{R}{(0.038862)}\right)^2 + 4(0.009770)(2729.63)} \right]$$

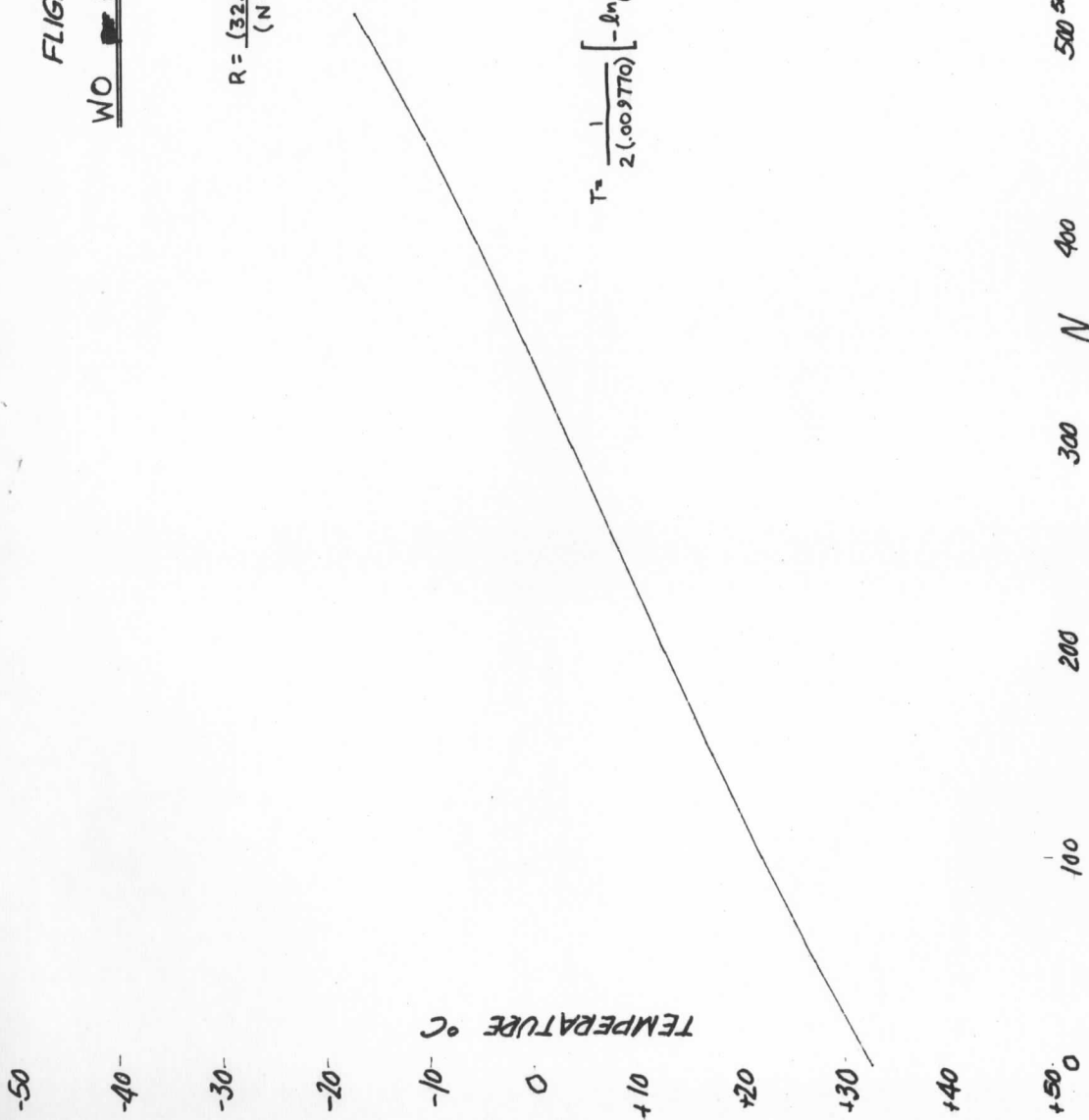


Figure 3-30

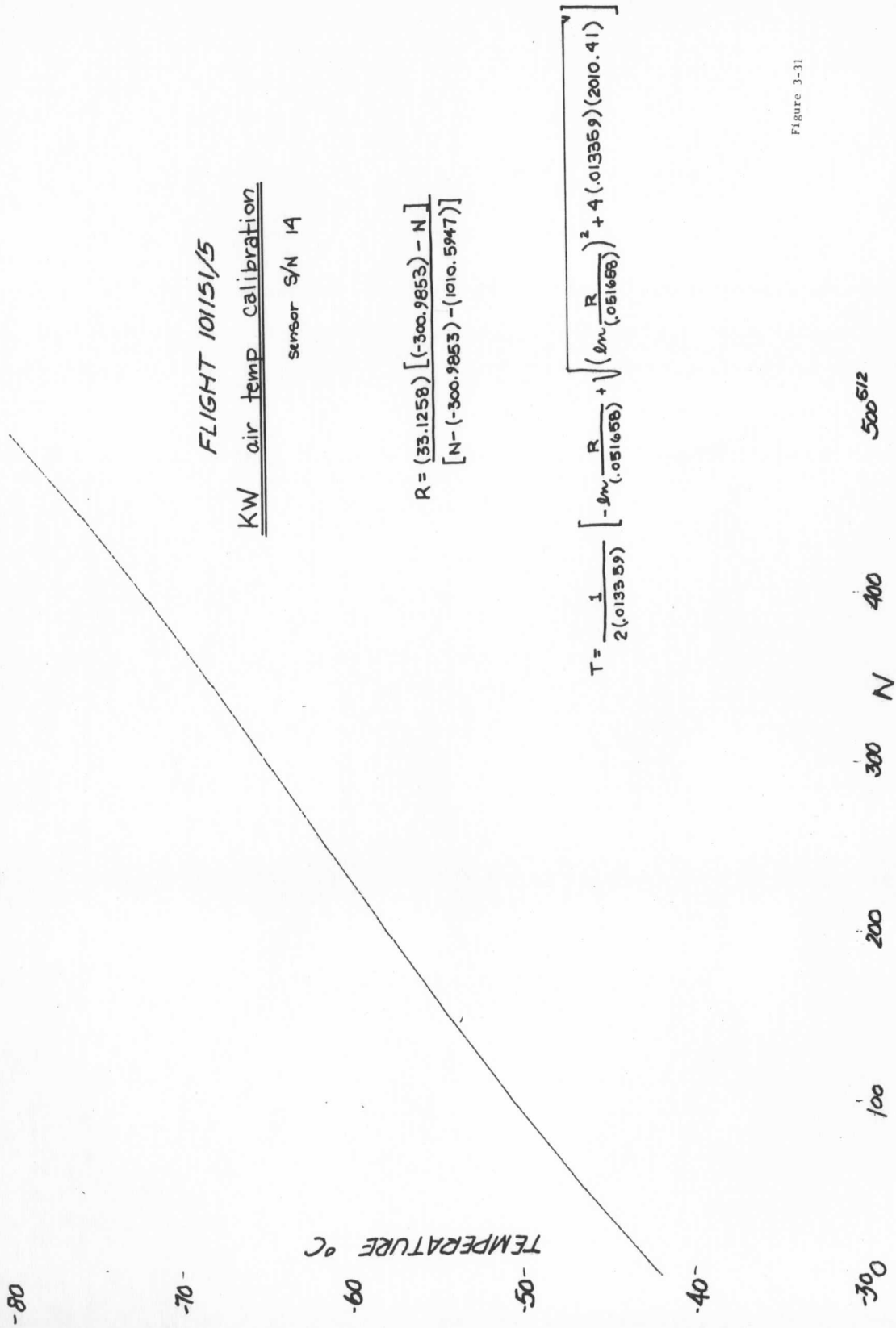


Figure 3-31

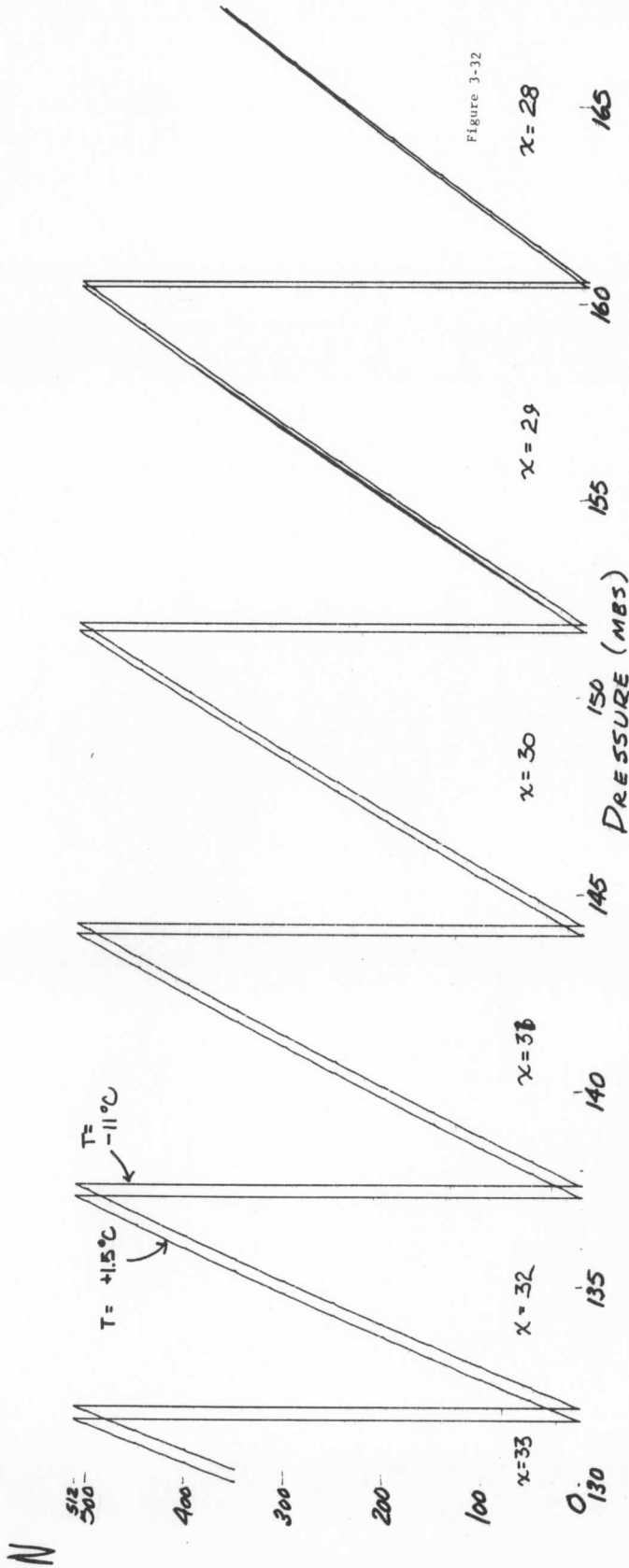
FLIGHT 101151/5

KW pressure calibration

sensor A05

$$\Delta f = \frac{(512 - N)8 + 4096 \times}{1.28}$$

$$p = (.050602)(\Delta f)^2 + (-12.289971)(\Delta f) + (865.162720) + \left(\frac{T - 1.5}{12.5}\right) [(1.001090)(\Delta f)^2 + (-0.231598)(\Delta f) + 11.999417]$$



-30

-20

-10

0

+10

+20

TEMPERATURE °C

FLIGHT 101151/5

KW press temp calibration

10 K YSI

$$R = \frac{(33.4162) [(-300.7089 - N)]}{(N - (-300.7089) - 1015.8005)}$$

$$T = \frac{1}{2(.009770)} \left[-\ln \frac{R}{(.019431)} + \sqrt{\left(\ln \frac{R}{(.019431)} \right)^2 + 4(.009770)(2729.65)} \right]$$

500 512

400

N

300

200

100

Figure 3-33

0
-10-
-20-
-30-
-40-
-50-
0

TEMPERATURE °C

G TEMP CALIB
10 K YSI

$$T = (-0.001929)(C.P)^3 + (0.179725)(C.P)^2 + (-6.916264)(C.P) + 66.034195$$

FLIGHT 102156
G = U/WISCONSIN SILVER & WHITE BALL

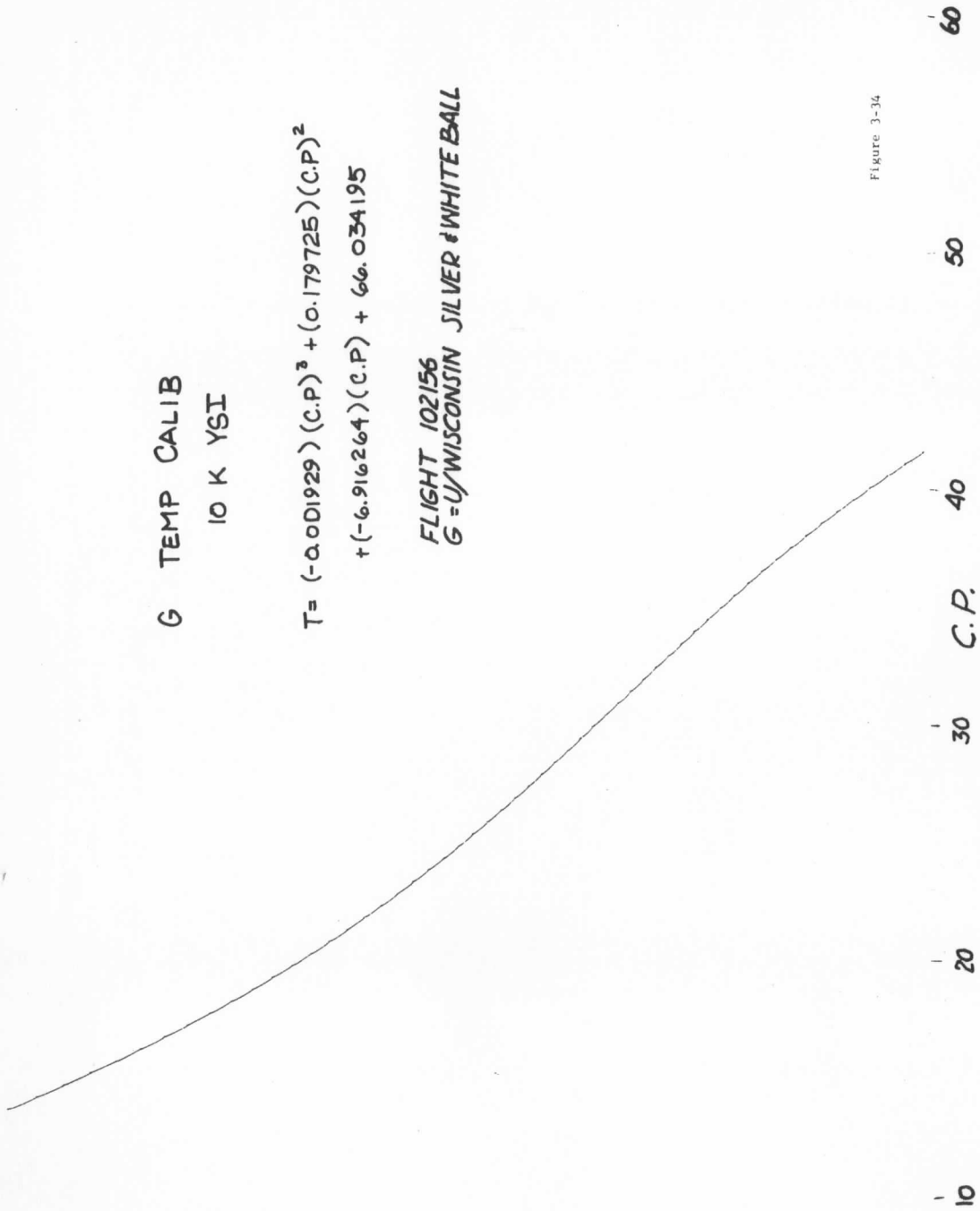


Figure 3-34

Altitude calibration

$$H = (1.4989 \times 10^8) \left[\frac{\overset{\text{harmonic}}{\chi} (3)}{8N + 40\% \overset{\text{overflow}}{\chi}} - (1.35 \times 10^{-6}) \right]$$

FLIGHTS

- 91156 JD
- 95154 JG
- 97155 UK
- 99153 WO
- 101155 KW

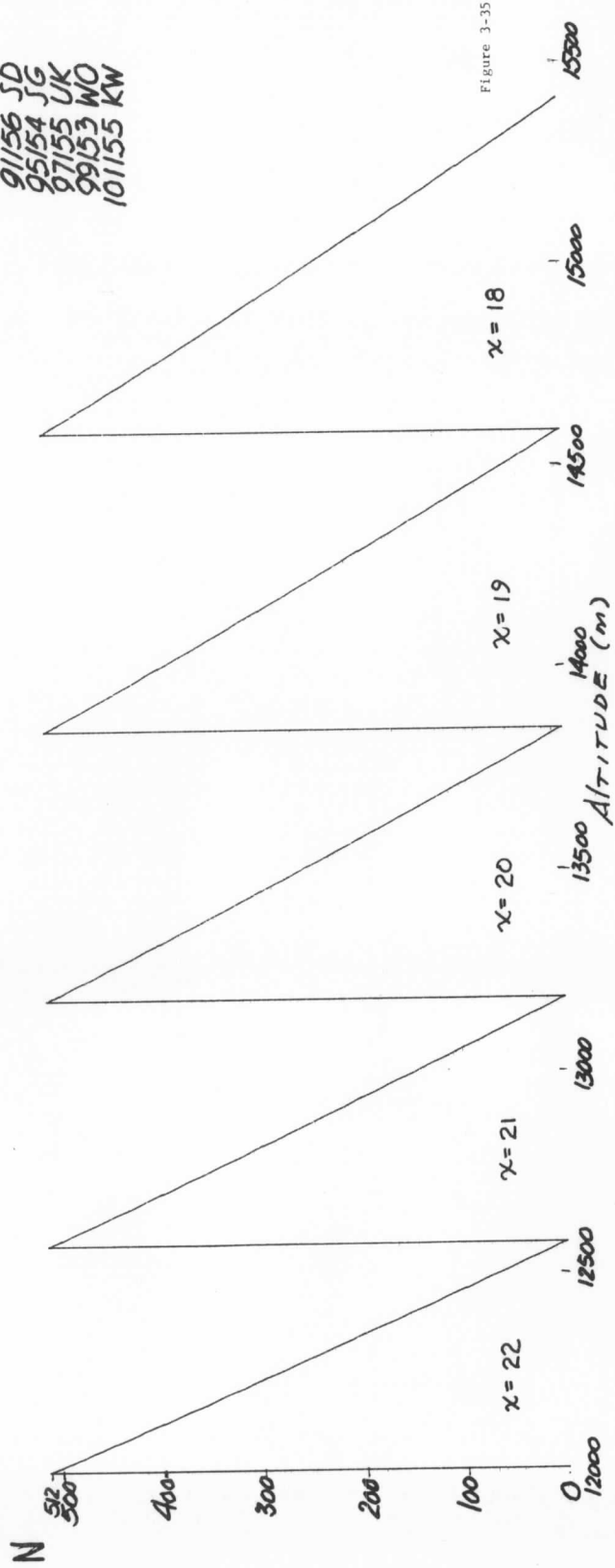


Figure 3-35

IV. DATA REDUCTION

A. SENSOR CALIBRATIONS

1. Thermistor Calibration

The VECO 10-mil aluminized bead thermistors are calibrated by the manufacturer at three points; -40°C , -60°C and -80°C . To obtain points within, the following equations are used:

$$(1) \quad R_t = \rho e^{-AT + \frac{B}{T}}$$

$$(2) \quad T = \frac{1}{2A} \left\{ -\ln \frac{R_t}{\rho} + \sqrt{\left(\ln \frac{R_t}{\rho}\right)^2 + 4AB} \right.$$

R_t = Resistance of thermistor in K ohms

T = Temperature in degrees Kelvin

ρ = Constant for thermistor

A = Constant for thermistor

B = Constant for thermistor

Equation (2) is equation (1) rewritten in a form that T can be computed when R is known.

2. Radio Altimeter Calibrations

$$H = \left(\frac{N}{f} - \lambda \right) \frac{C}{2}$$

H = altitude in meters

N = mode (mode = 3 for TWERLE)

λ = time delay internal to radio altimeter in sec, $\lambda = 1.35 \times 10^{-6}$ sec for Ascension

C = velocity of light 2.9978×10^8 m/sec

f = frequency output from radio altimeter

3. Pressure Sensor Calibration

The pressure sensor output consists of two frequencies. One frequency is proportional to pressure and the other frequency is a reference. The output switches between pressure frequency and reference on control from the data encoder. The data encoder up counts on the reference and down counts on the pressure. The result is that the difference between the

two frequencies is the number that is encoded.

$$(3) \quad P = a(\Delta f)^2 + b(\Delta f) + c$$

P = pressure in mb

Δf = difference frequency in Hertz

$\left. \begin{array}{l} a \\ b \\ c \end{array} \right\}$ = constants computed using three, P and three Δf calibration points

4. Temperature Correction

Since the calibration of the pressure sensor is temperature dependent, the sensor is calibrated at two temperatures, T_1 and T_2 . This gives two calibration equations.

$$P_1 = a_1(\Delta f)^2 + b_1(\Delta f) + c \quad (\text{calibrated at } T_1)$$

$$P_2 = a_2(\Delta f)^2 + b_2(\Delta f) + c_2 \quad (\text{calibrated at } T_2)$$

$$(4) \quad P = P_1 + \left(\frac{T - T_1}{T_2 - T_1} \right) (P_2 - P_1)$$

P_1 = pressure calculated from T_1 calibration in millibars

P_2 = pressure calculated from T_2 calibration in millibars

T = temperature measured at pressure sensor in degrees centigrade

Equation (4) is used to compute the temperature corrected pressure

$$(5) \quad P = d(\Delta f)^2 + e\Delta f + g + \frac{T - 3}{14} \left[h(\Delta f)^2 + j\Delta f + k \right]$$

$$d = a_1$$

$$h = a_1 - a_2$$

$$e = b_1$$

$$j = b_1 - b_2$$

$$g = c_1$$

$$k = c_1 - c_2$$

Equation (5) is used to compute the corrected pressure directly using Δf and T as input parameters.

B. DATA ENCODER CALIBRATIONS

Digi-GHOST data is transmitted in three letter Morse code words. Each letter is actually a digit in an octal number. Figure 3 shows the conversion from code to letter to octal.

<u>Octal to Decimal Conversion</u>		
Code	Letter	Octal
...	S	0
- ..	D	1
· _ ·	R	2
- - ·	G	3
· · _	U	4
- · -	K	5
· - -	W	6
- - -	O	7

The octal number is transmitted in reverse order from the way numbers are conventionally written.

x y z

x = least significant digits

y = middle digit

z = most significant digit

The procedure for converting to a decimal number is as follows:

$$(6) \quad x + 8y + 64z = N$$

N = decimal number

x = octal equivalent of first letter

y = octal equivalent of second letter

z = octal equivalent of third letter

Example: Convert DOG to decimal

D = 1

O = 7

G = 3

$$N = 1 + 8 \times 7 + 64 \times 3 = N$$

$$N = 1 + 56 + 192 = 248$$

1. Digi Altimeter Calibration

$$(7) \quad f = \frac{8N + 4096x}{2.56}$$

f = frequency output from altimeter

N = decimal number from octal to decimal conversion

x = number of times counter overflows

Overflows as a function of altitude:

x	altitude range in meters	
18	15,411	14,589
19	14,589	13,850
20	13,850	13,181
21	13,181	12,572

2. Digi Pressure Sensor Calibration

$$(8) \quad \Delta f = \frac{(512 - N)8 + 4096x}{1.28}$$

Δf = difference frequency

N = decimal number from octal to decimal conversion

x = number of times counter overflows

3. Digi Temperature Calibration

$$(9) \quad R = \frac{C_n(N - A_n)}{B_n + A_n - N}$$

R = resistance in K ohms

N = decimal number from octal to decimal conversion

$\left. \begin{matrix} A_n \\ B_n \\ C_n \end{matrix} \right\} = \text{coefficients computed using three R, and three N calibration points}$

C. DATA REDUCTION PROCESS

1. Altimeter Data Reduction Process

a. Convert Digi code to decimal number.

b. Convert Decimal number to altimeter frequency:

$$(7) \quad f = \frac{8N + 4096x}{2.56}$$

c. Convert frequency to altitude:

$$H = \left(\frac{3}{f} - 1.35 \times 10^{-6} \right) \frac{2.9978 \times 10^{+8}}{2}$$

x	Altitude	Range
18	15,411	14,589
19	14,589	13,850
20	13,850	13,181
21	13,181	12,572

2. Temperature Data Reduction Process

a. Convert Digi code to decimal number: use octal to decimal conversion.

b. Convert decimal number to resistance value

$$R = \frac{C_n (N - A_n)}{B_n + A_n - N}$$

Digi ID	Air Temperature		
	A _n	B _n	C _n
SD	-303.0175	1034.1534	33.932
SG	-----	shorted sensor	-----
UK	-313.9258	1021.1645	32.7290
WO	-----	shorted sensor	-----
KW	-303.9853	1010.5947	33.1258

Digi
ID

Pressure Temperature

	A _n	B _n	C _n
SD	-305.0736	1036.742	33.5861
SG	-309.8254	1041.9992	33.8703
UK	-318.0741	1023.9165	32.3927
WO*	-319.4425	1034.1901	32.9617
KW	-300.7089	1015.8005	33.4162

*WO is an internal temperature

3. Convert resistance to temperature

$$T = \frac{1}{2A} \left\{ - \ln \frac{R}{\rho} + \sqrt{\left(\ln \frac{R}{\rho} \right)^2 + 4AB} \right.$$

SN	ID	Air Temperature		
		ρ	A	B
8	SD	.238587	.015991	1832.98
7	SG	-----	shorted sensor	-----
13	UK	.045796	.013021	2034.01
3	WO	-----	shorted sensor	-----
14	KW	.051658	.013359	2010.41

Type	ID	Pressure Temperature		
		ρ	A	B
10K YSI	SD	.019431	.009770	2729.83
Δ	SG	6.6886×10^{-12}	-.035273	5382.87
10K YSI	UK	.019431	.009770	2729.83
*	WO	.038862	.009770	2729.83
10K YSI	KW	.019431	.009770	2729.83

Δ 10K YSI in series with 7.47K ohms

* 2-10K YSI thermistors in series

3. Pressure Sensor Data Reduction Process

- a. Convert Digi code to decimal number.
- b. Convert decimal number to pressure sensor frequency difference

$$\Delta f = \frac{(512 - N) 8 + 4096x}{1.28}$$

See calibration charts for selecting correct overflow.

- c. Convert frequency to pressure.

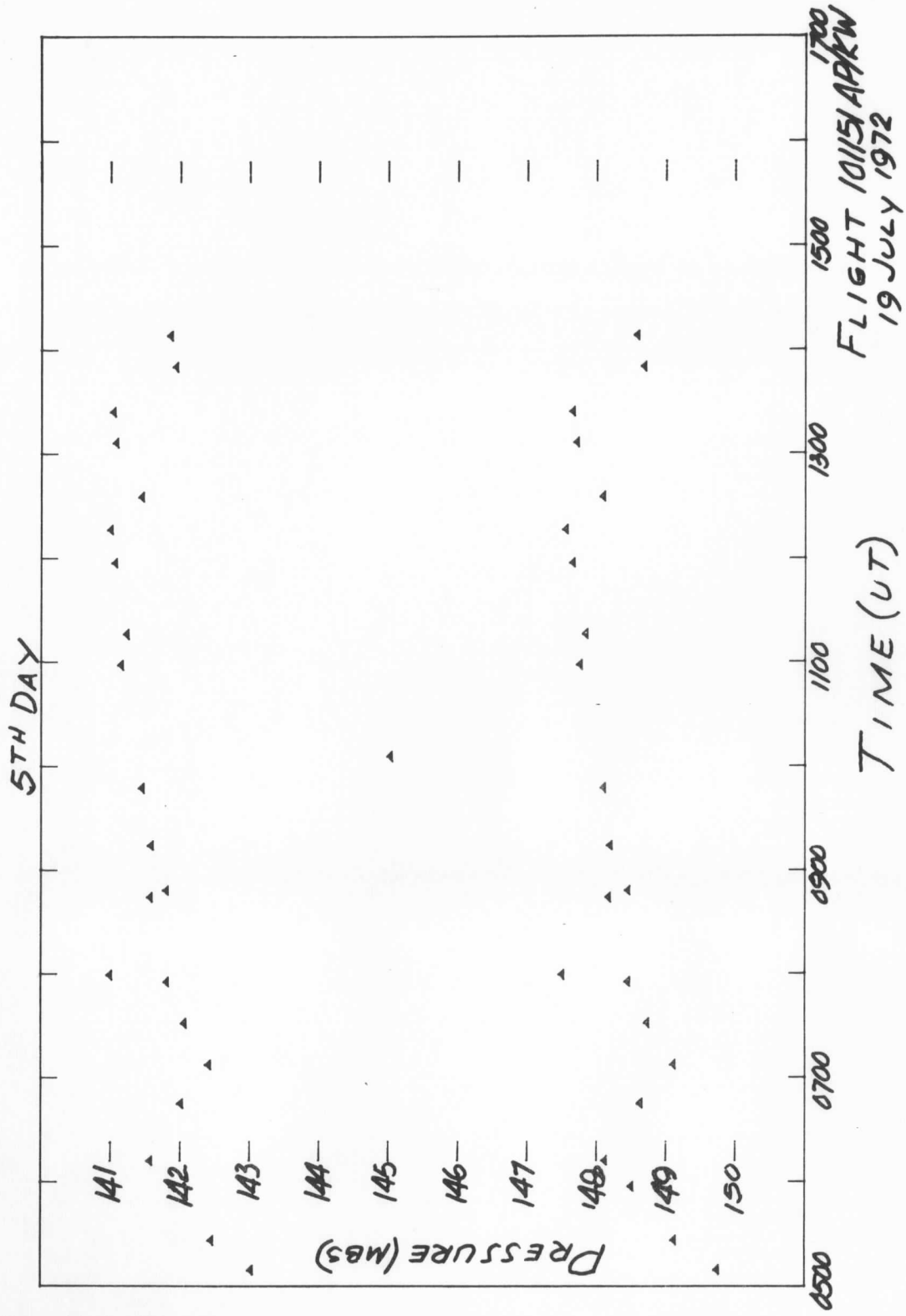
$$= d(\Delta f)^2 + e(\Delta f) + g + \frac{T - 3}{14} \left[h(\Delta f)^2 + j(\Delta f) + k \right]^*$$

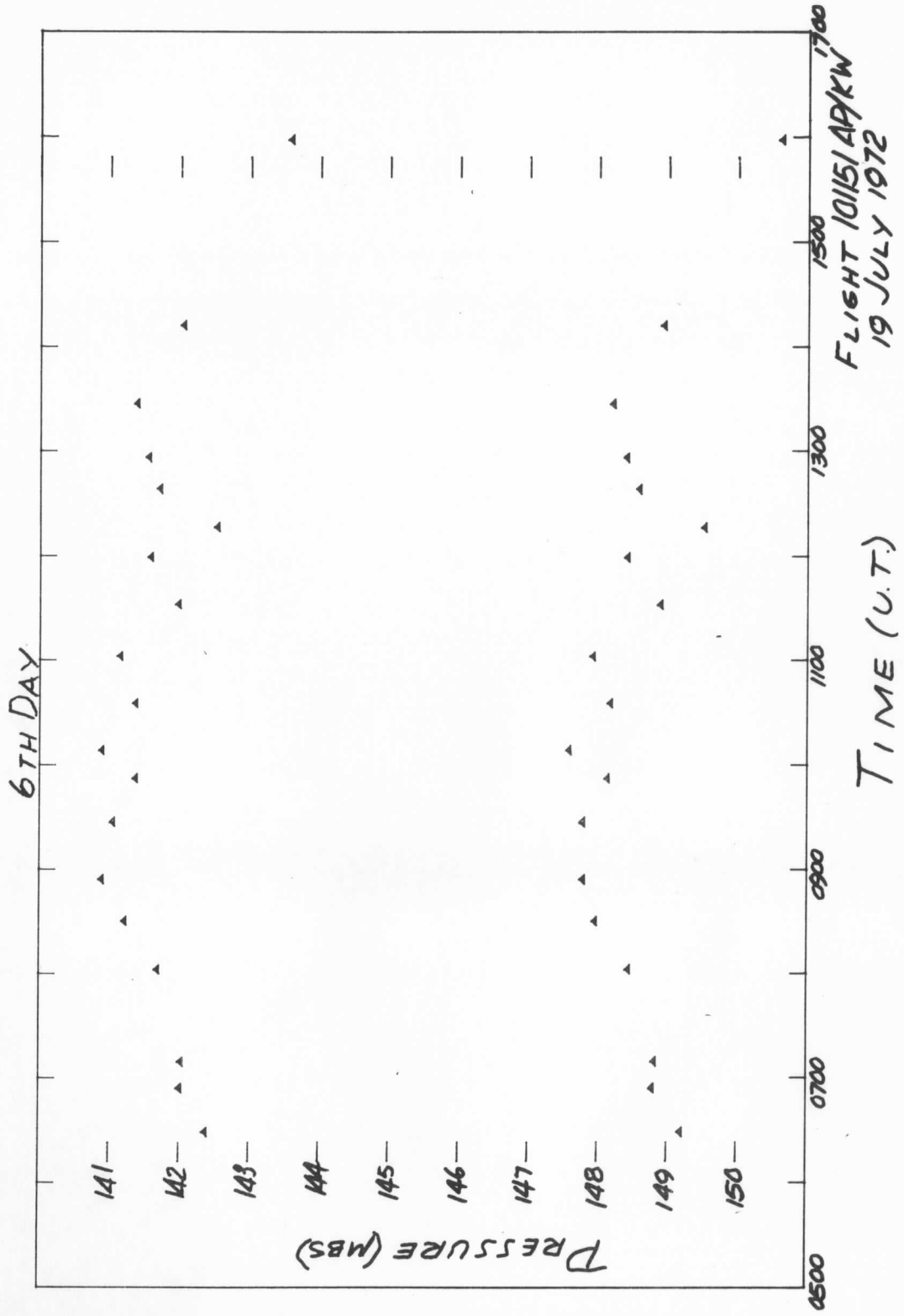
* Note: for KW, replace 3 with 1.5
 replace 14 with 12.5

Coefficients - N p Equations

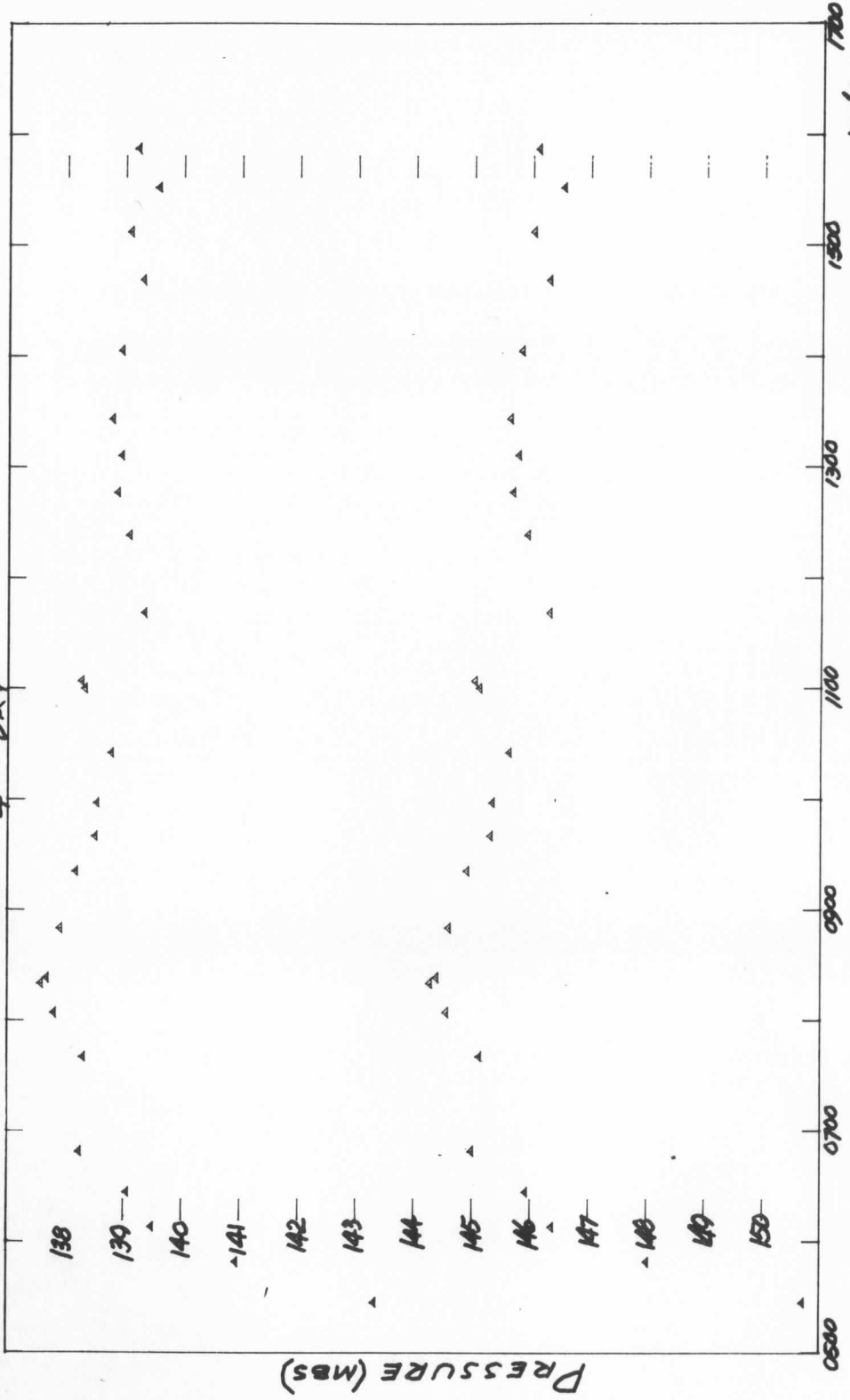
Balloon	d	e	g	h	j	k
97152 UK	.190488	-35.468503	1767.604543	.022308	-3.676568	149.631136
95152 SG	.188638	-39.867230	2221.564706	.005960	-1.149228	54.275850
91153 SD	.115052	-23.875696	1356.283270	.004578	-0.847508	38.513601
101151 KW	.050602	-12.289971	865.162720	.001090	-0.231598	11.999417

D. CALIBRATION CHARTS





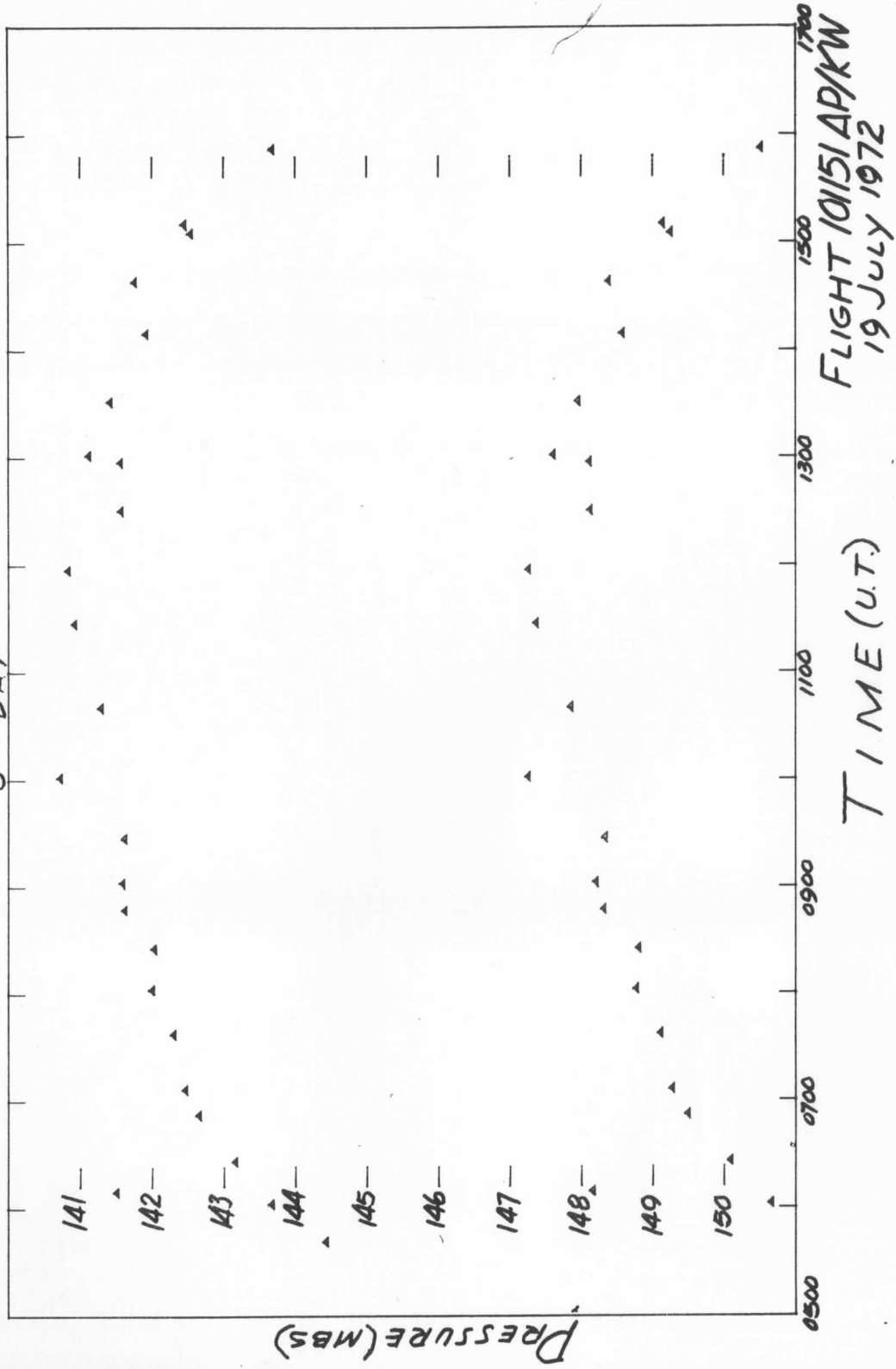
4TH DAY



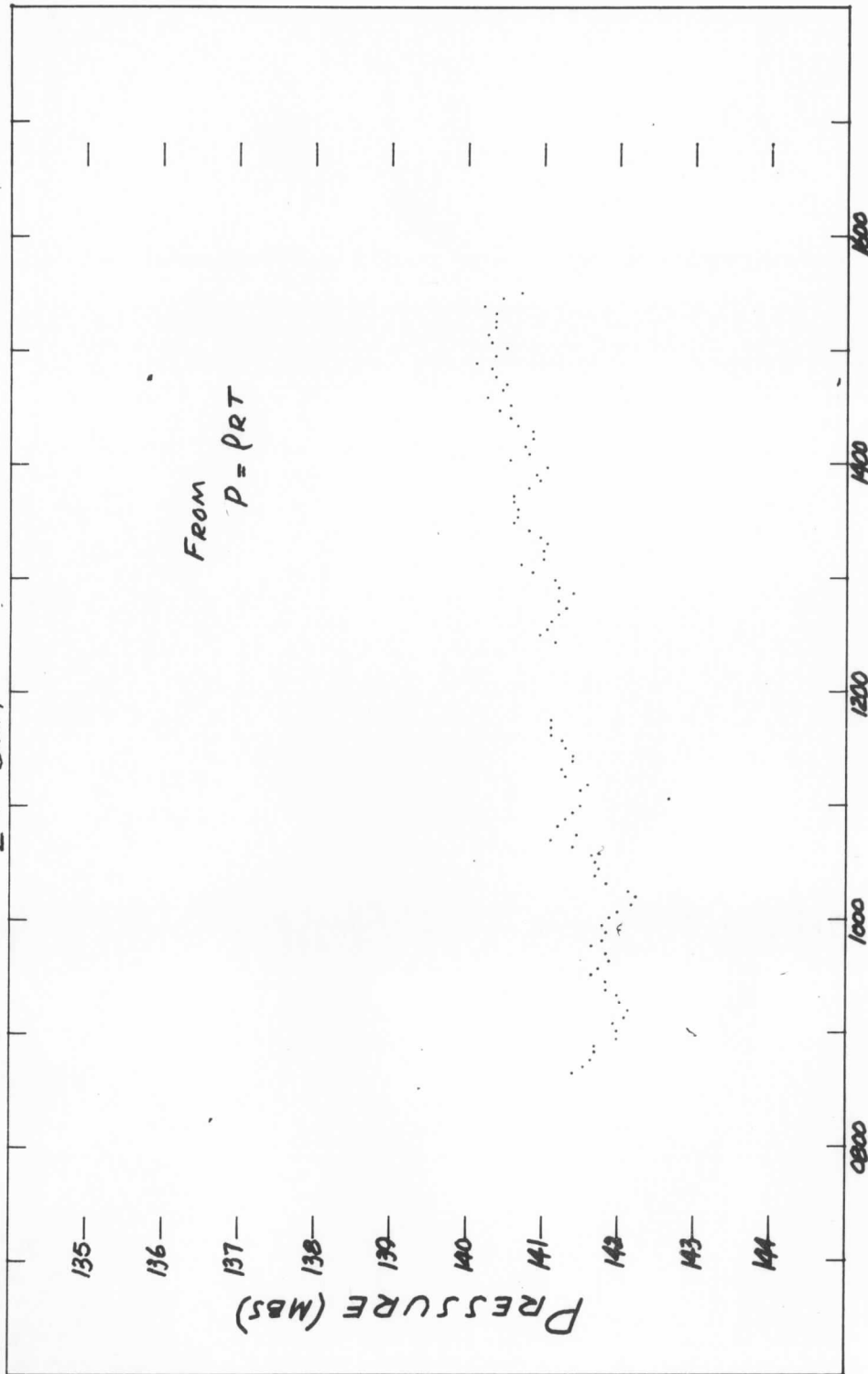
FLIGHT 101151 AP/KW
19 JULY 1972

TIME (U.T.)

3RD DAY

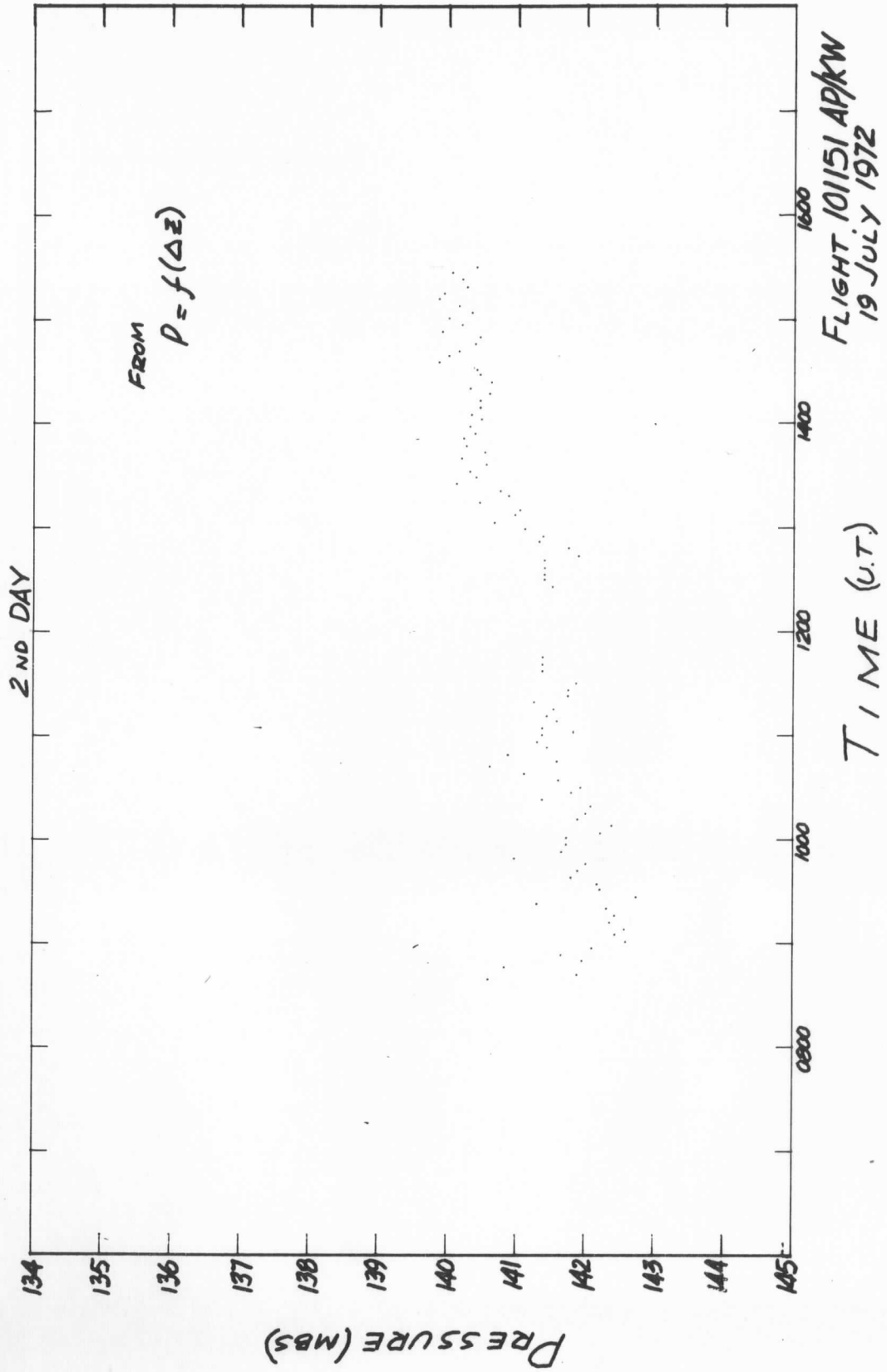


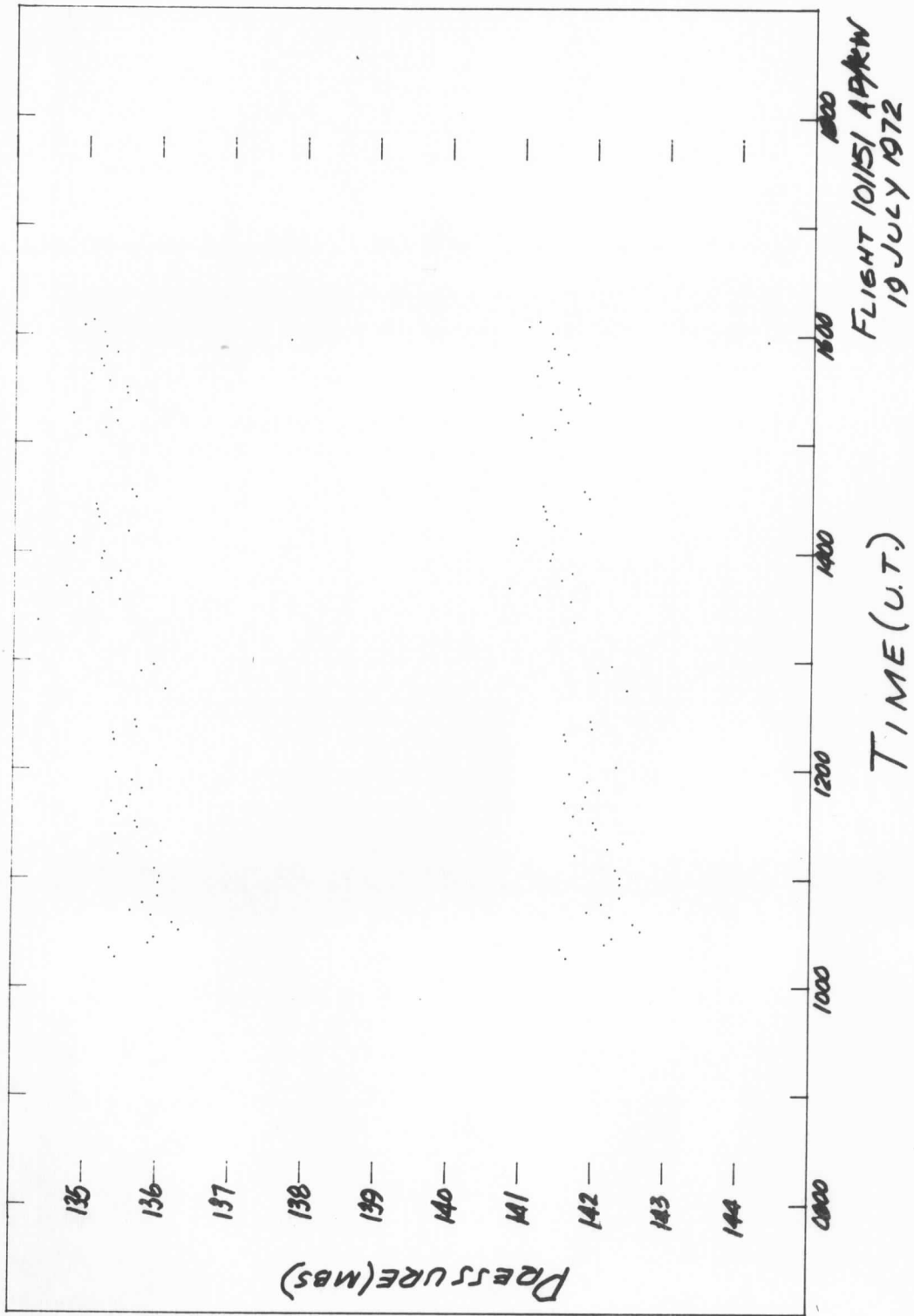
2ND DAY

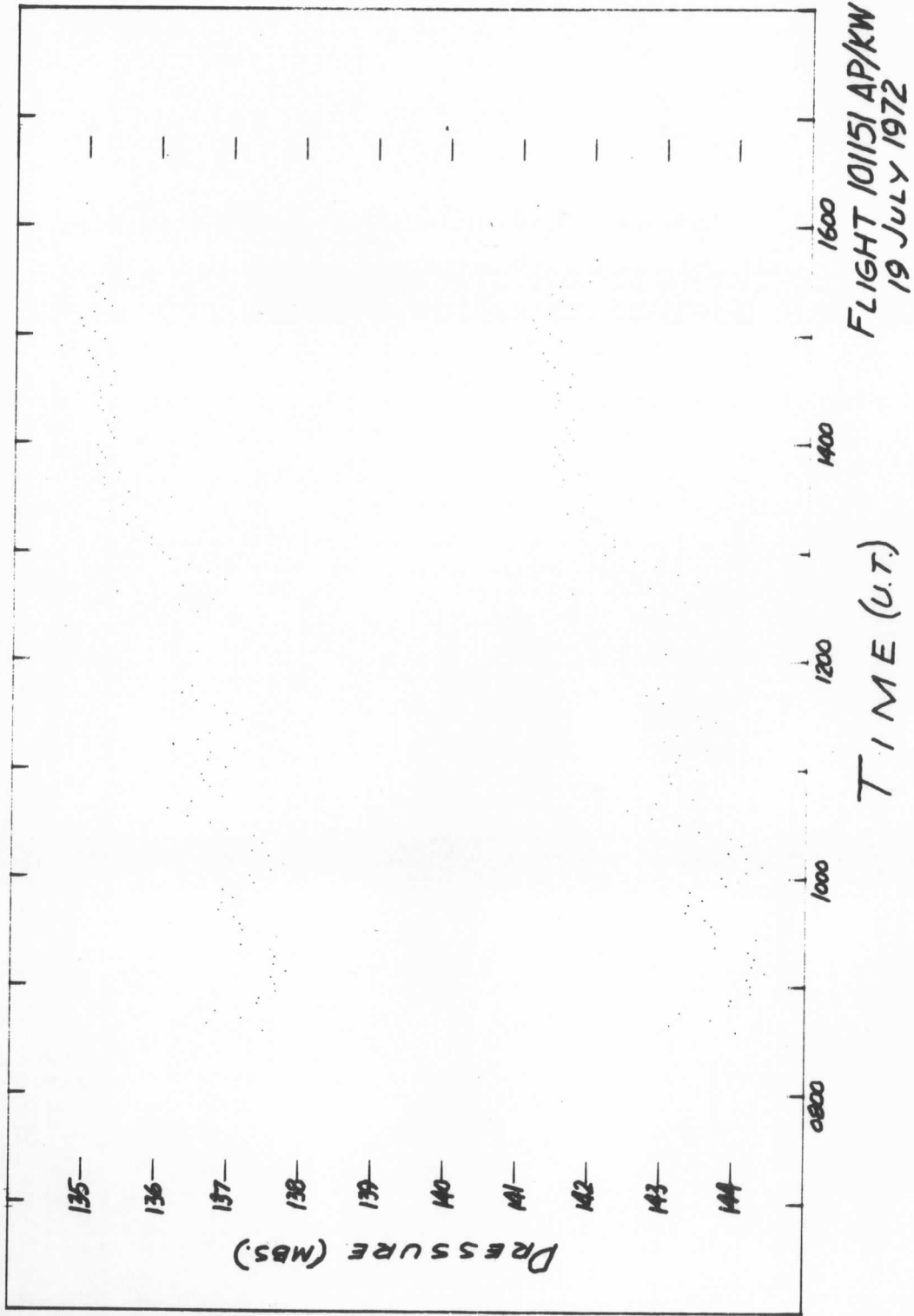


FLIGHT 101151 AP/UK
19 JULY 1972

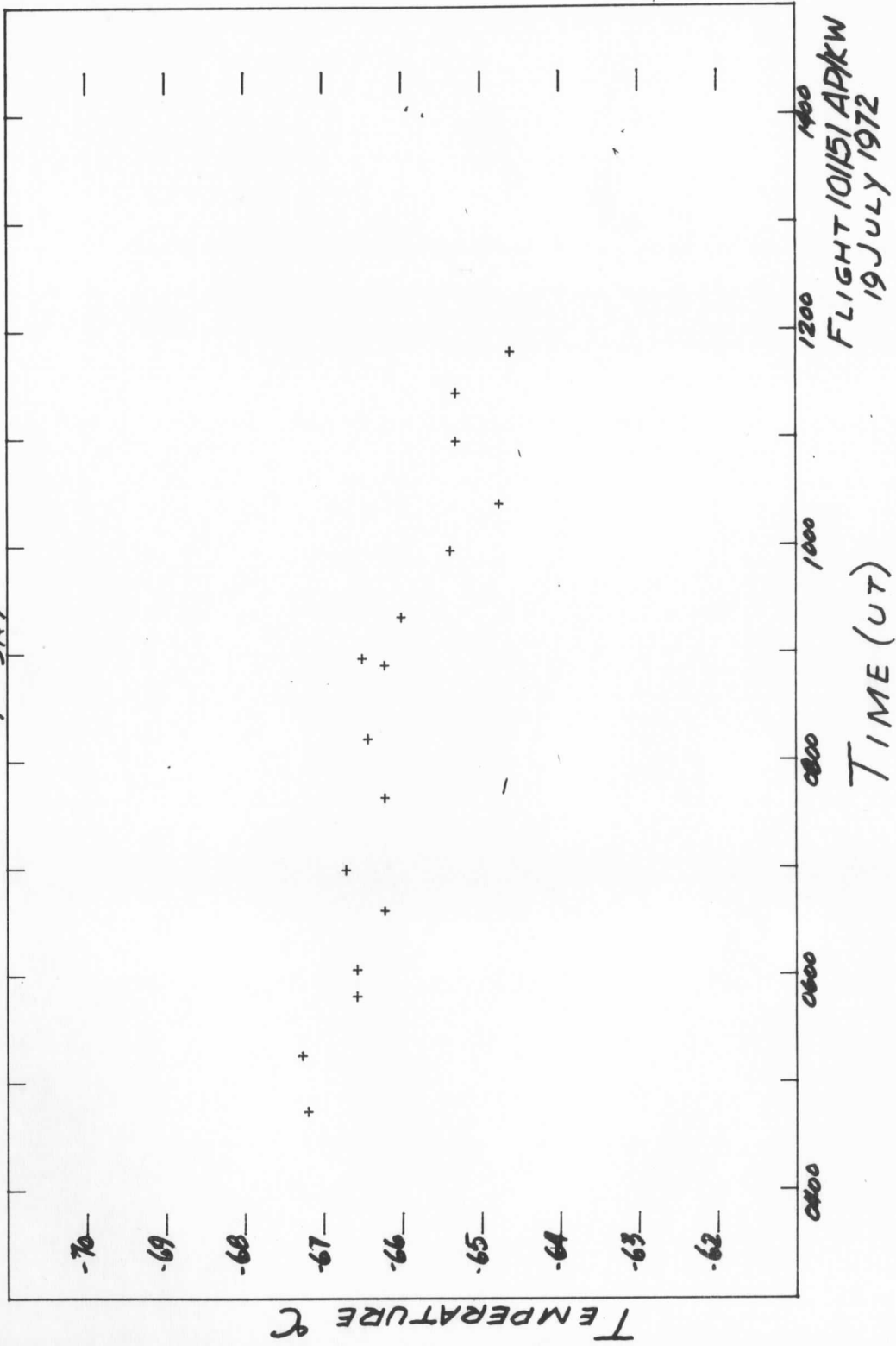
TIME (U.T.)



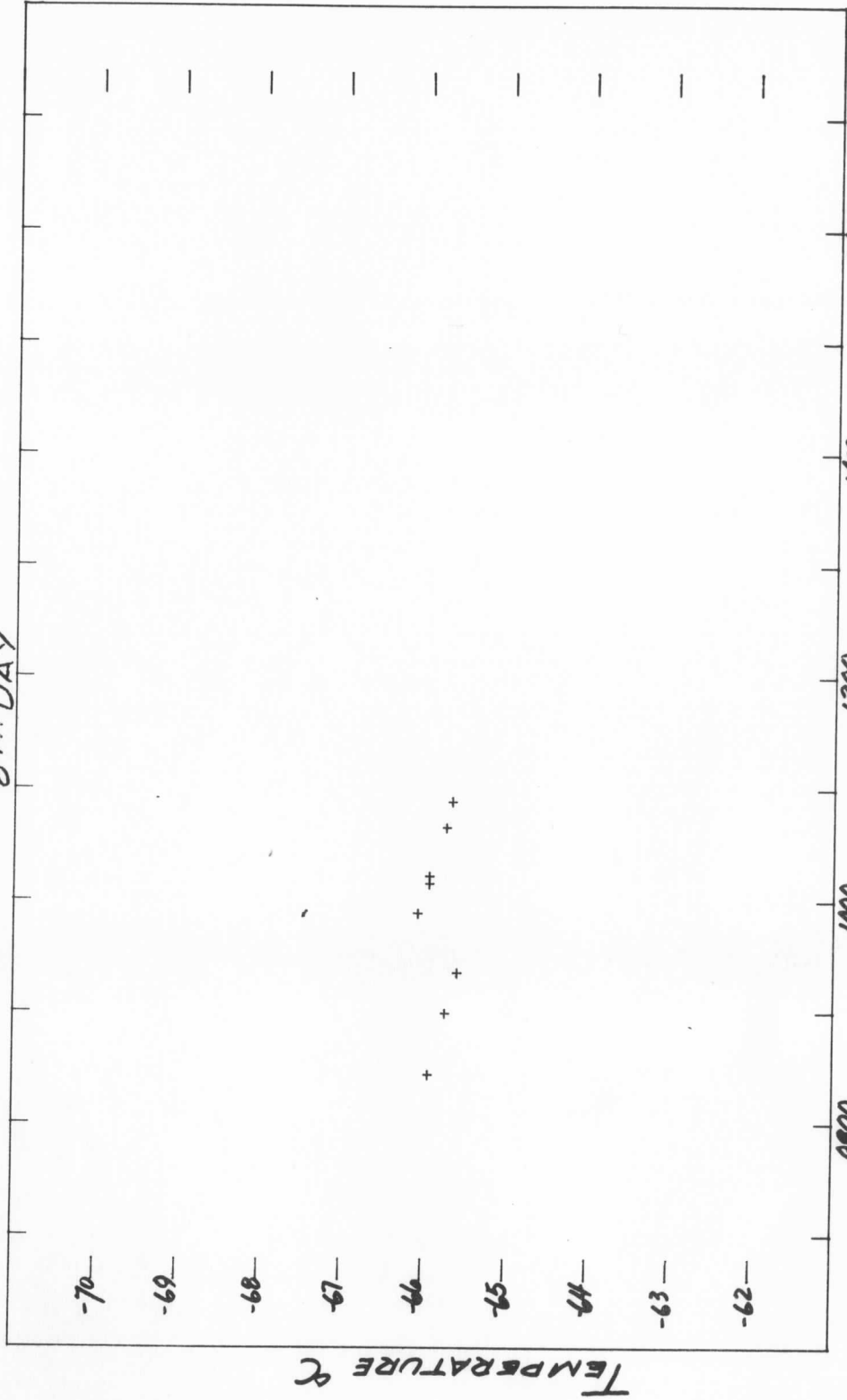




7TH DAY

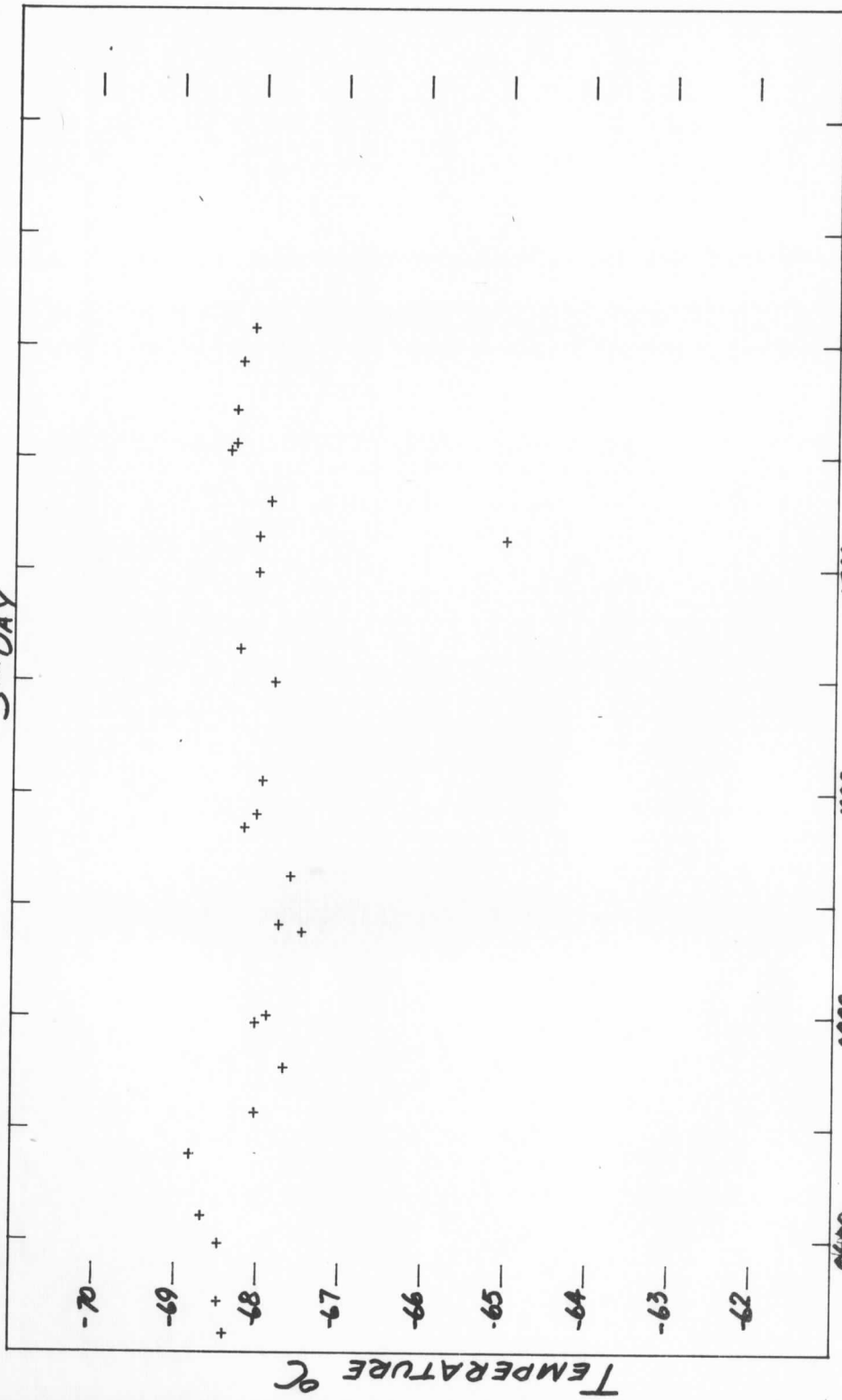


8TH DAY



FLIGHT 101151 AP/KW
19 JULY 1972
TIME (U.T.)

5TH DAY

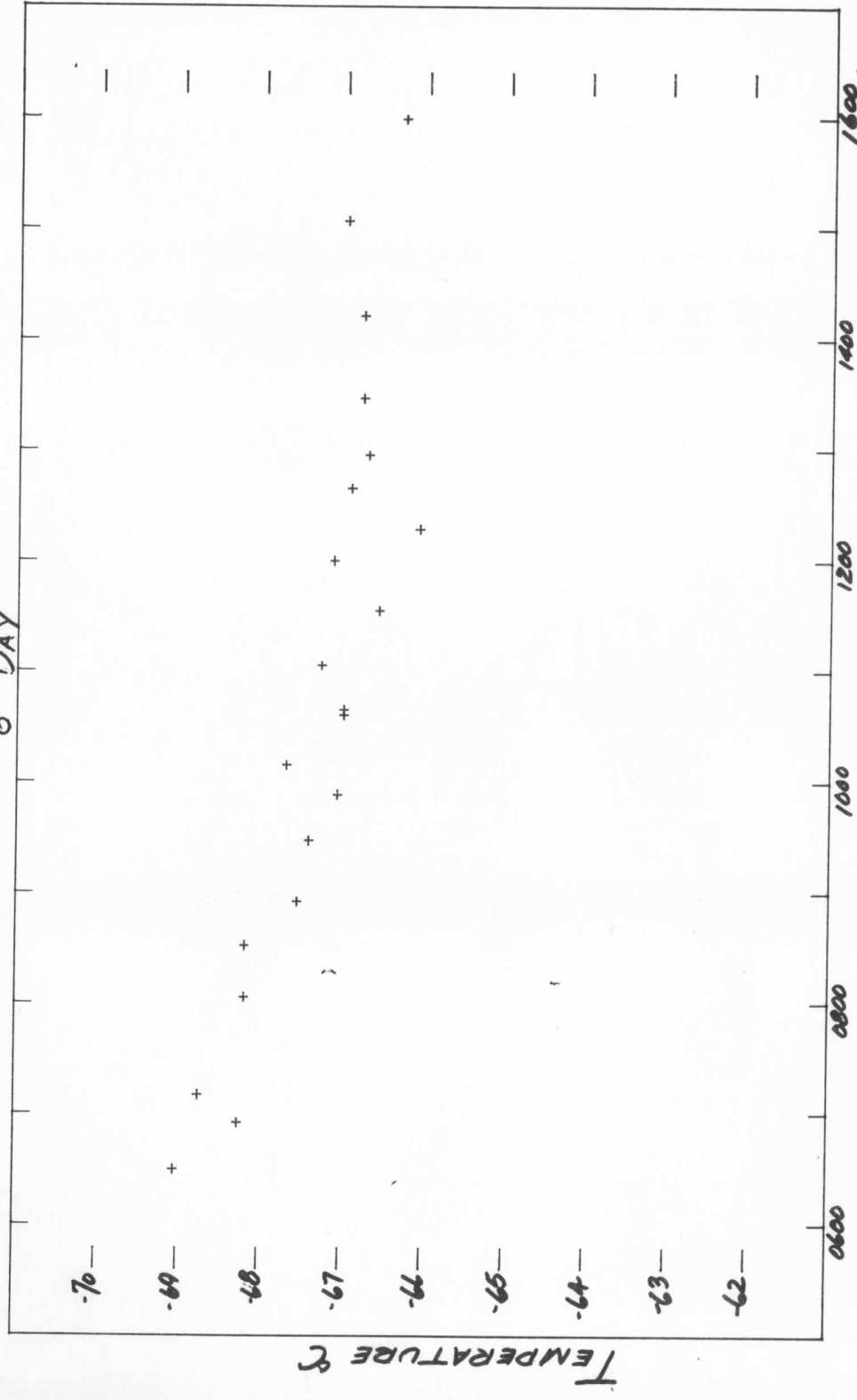


FLIGHT 101151 AP/KW
19 JULY 1972

TIME (U.T.)

KW 64 July 1972

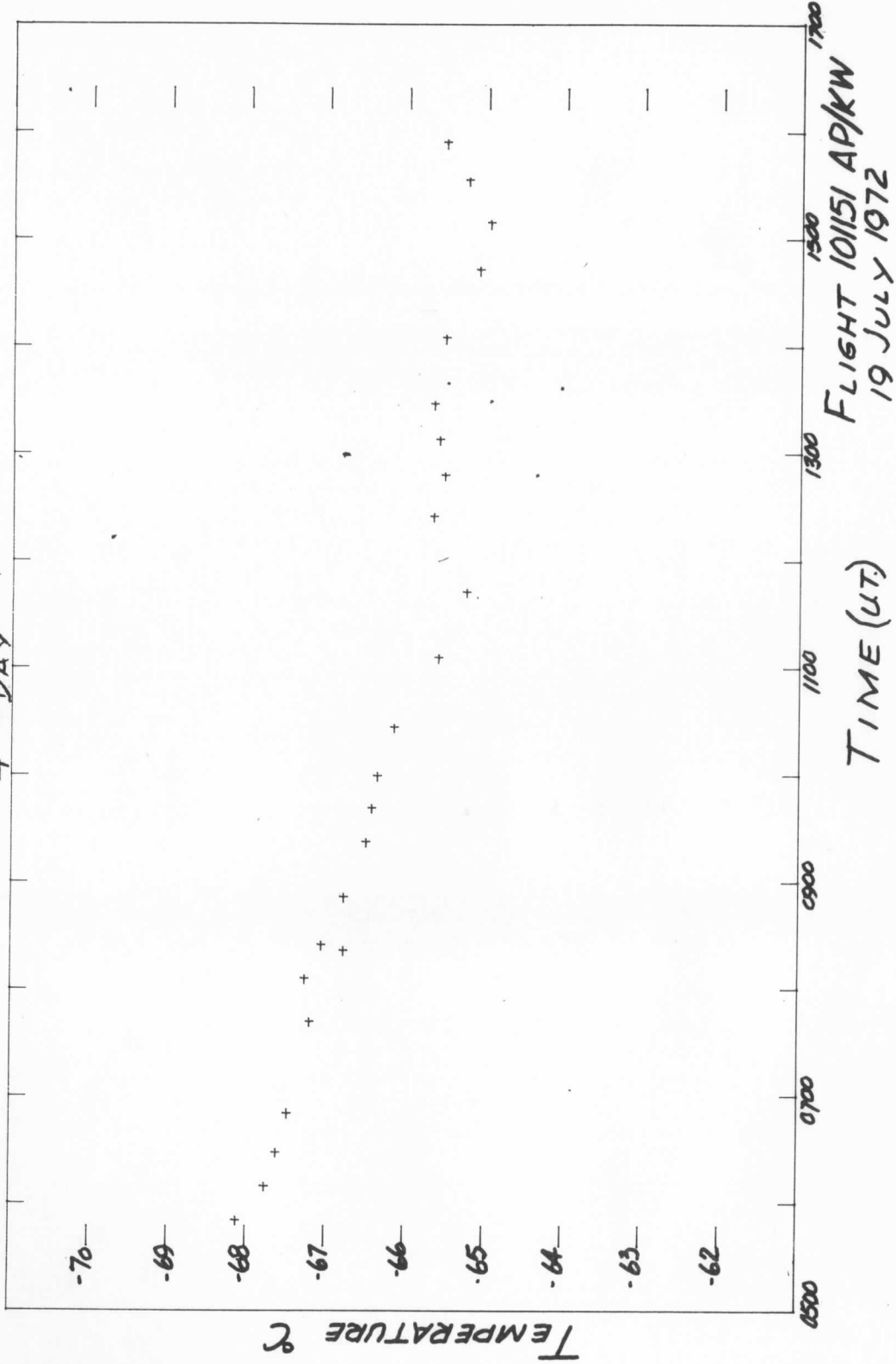
6TH DAY



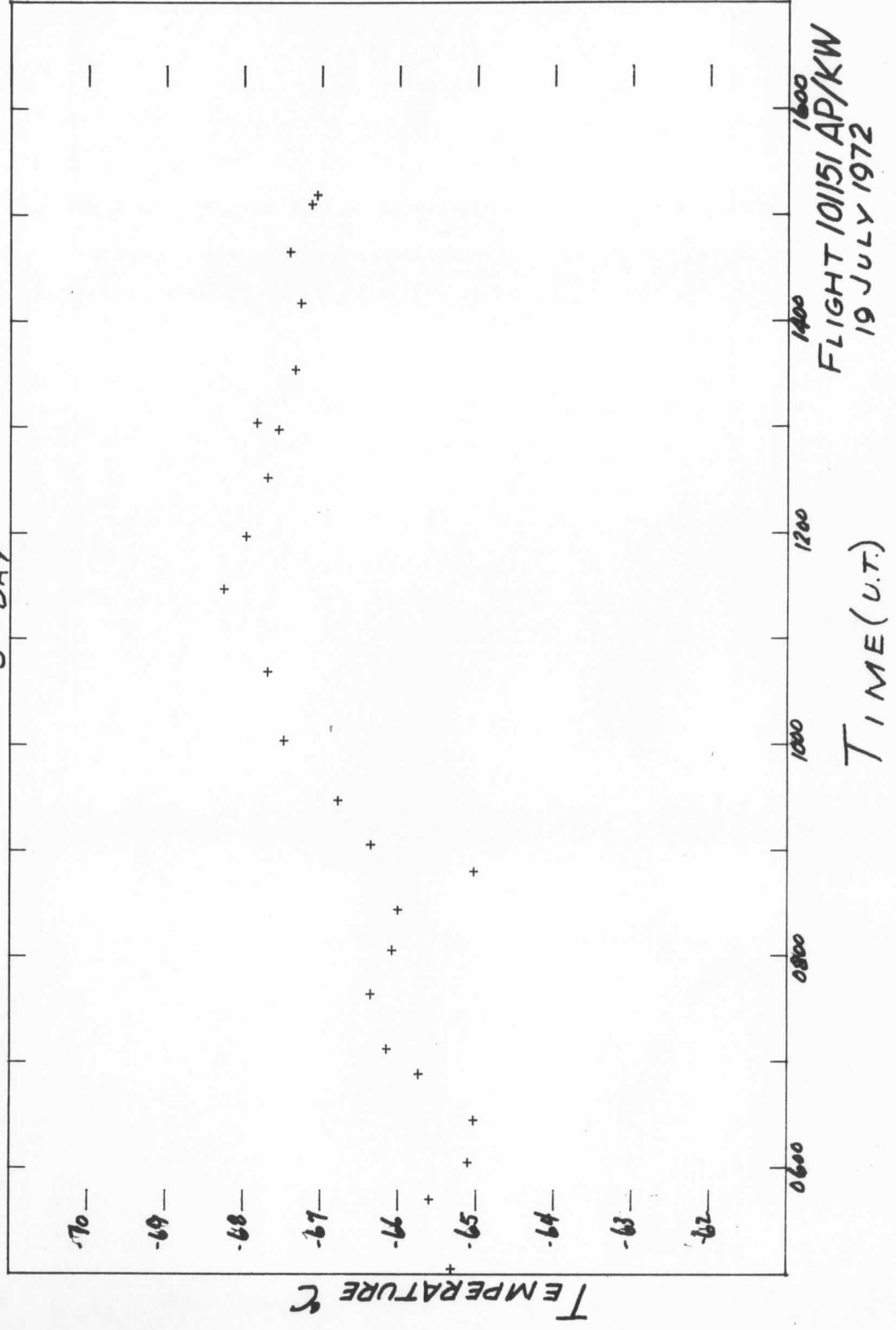
FLIGHT 101151 AP/KW
19 July 1972

TIME (U.T.)

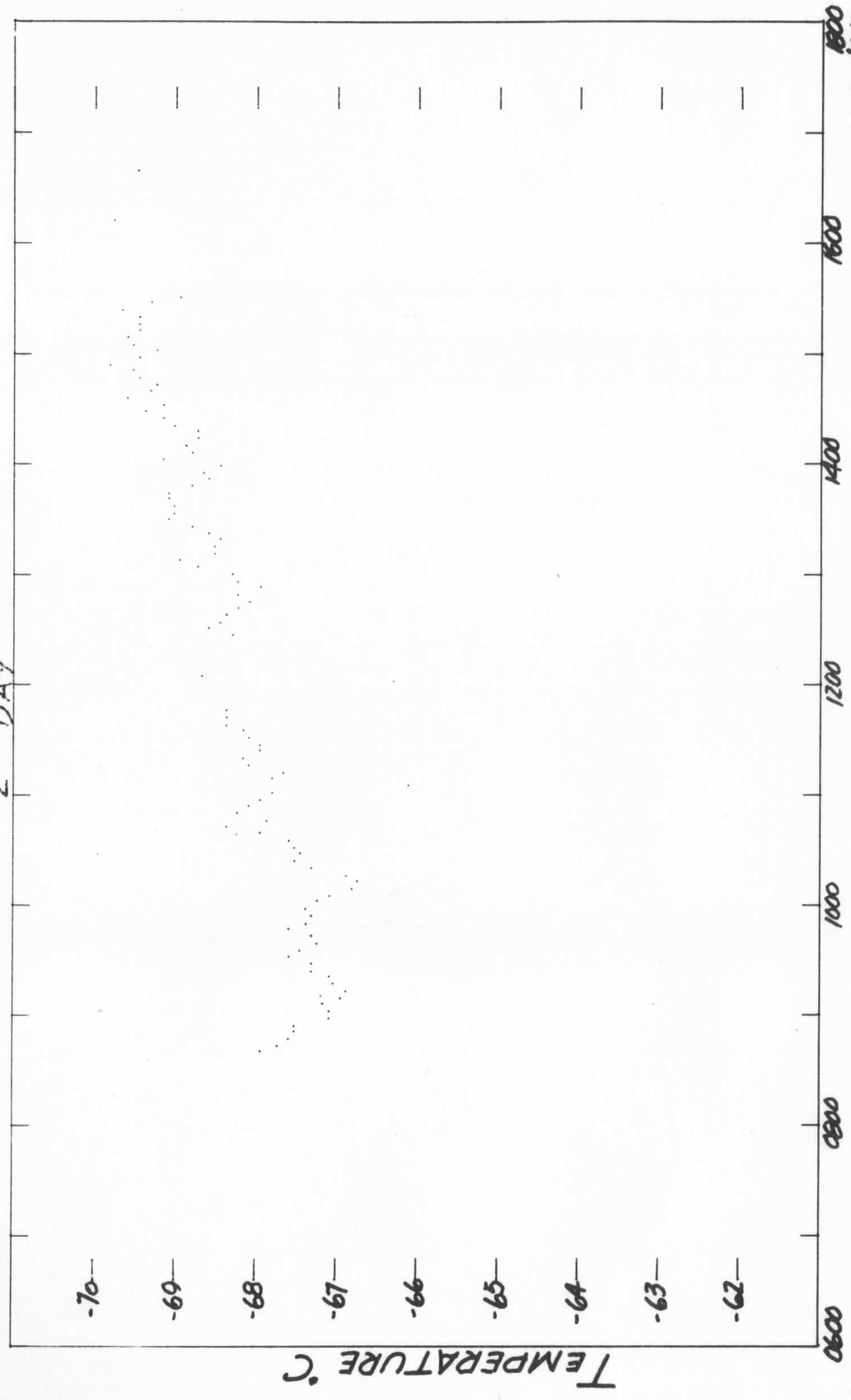
4TH DAY



3RD DAY

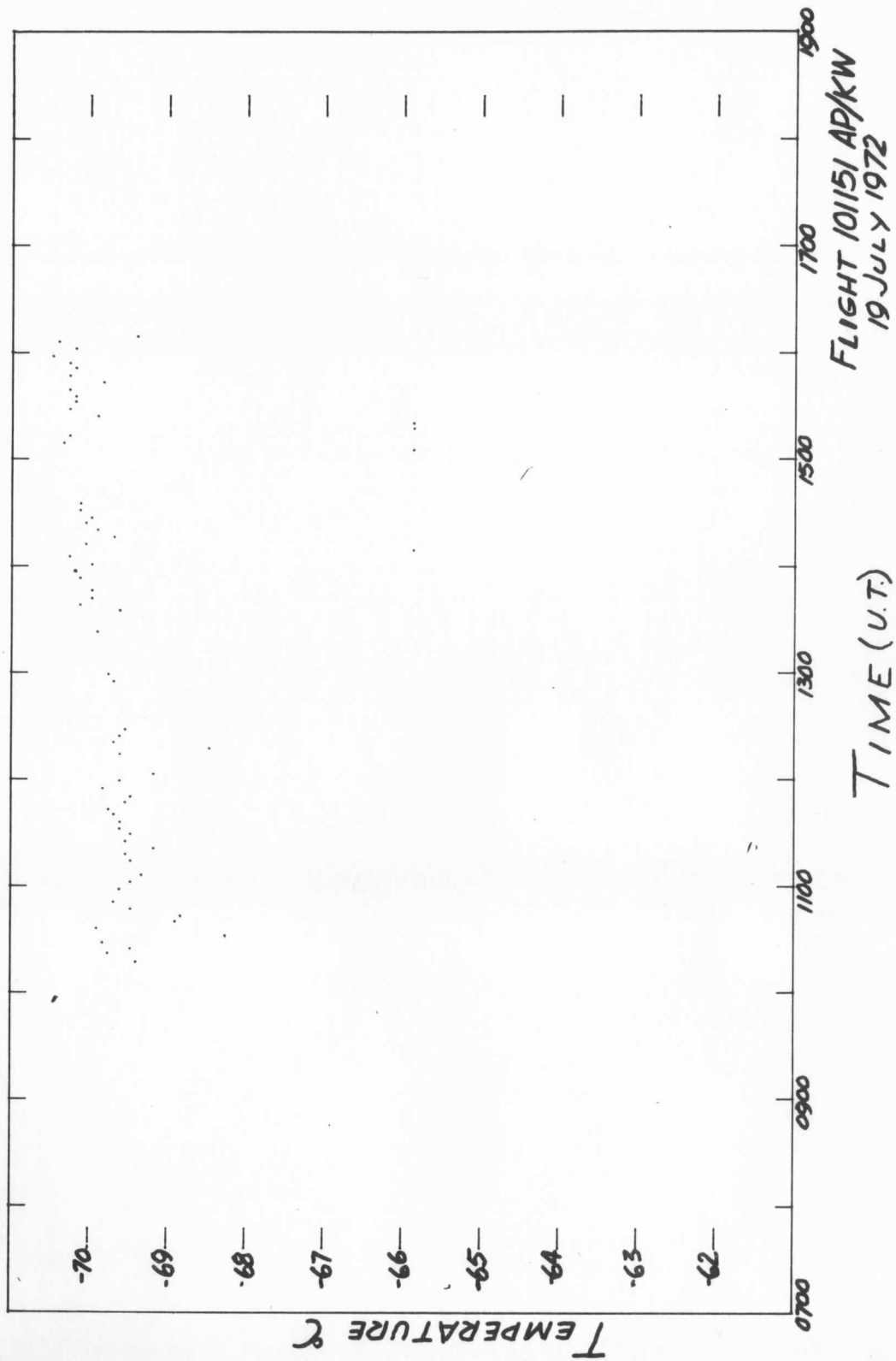


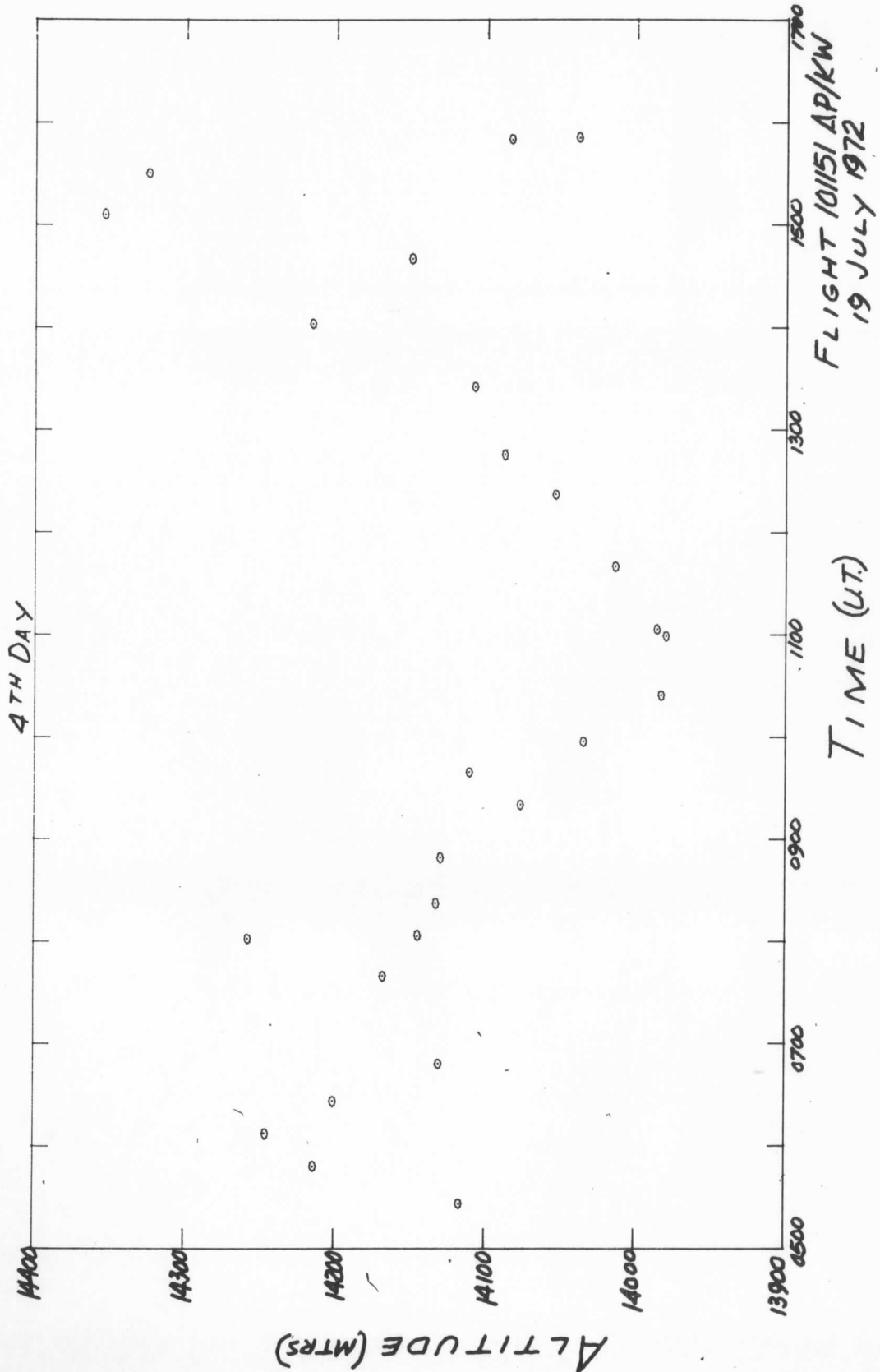
2ND DAY

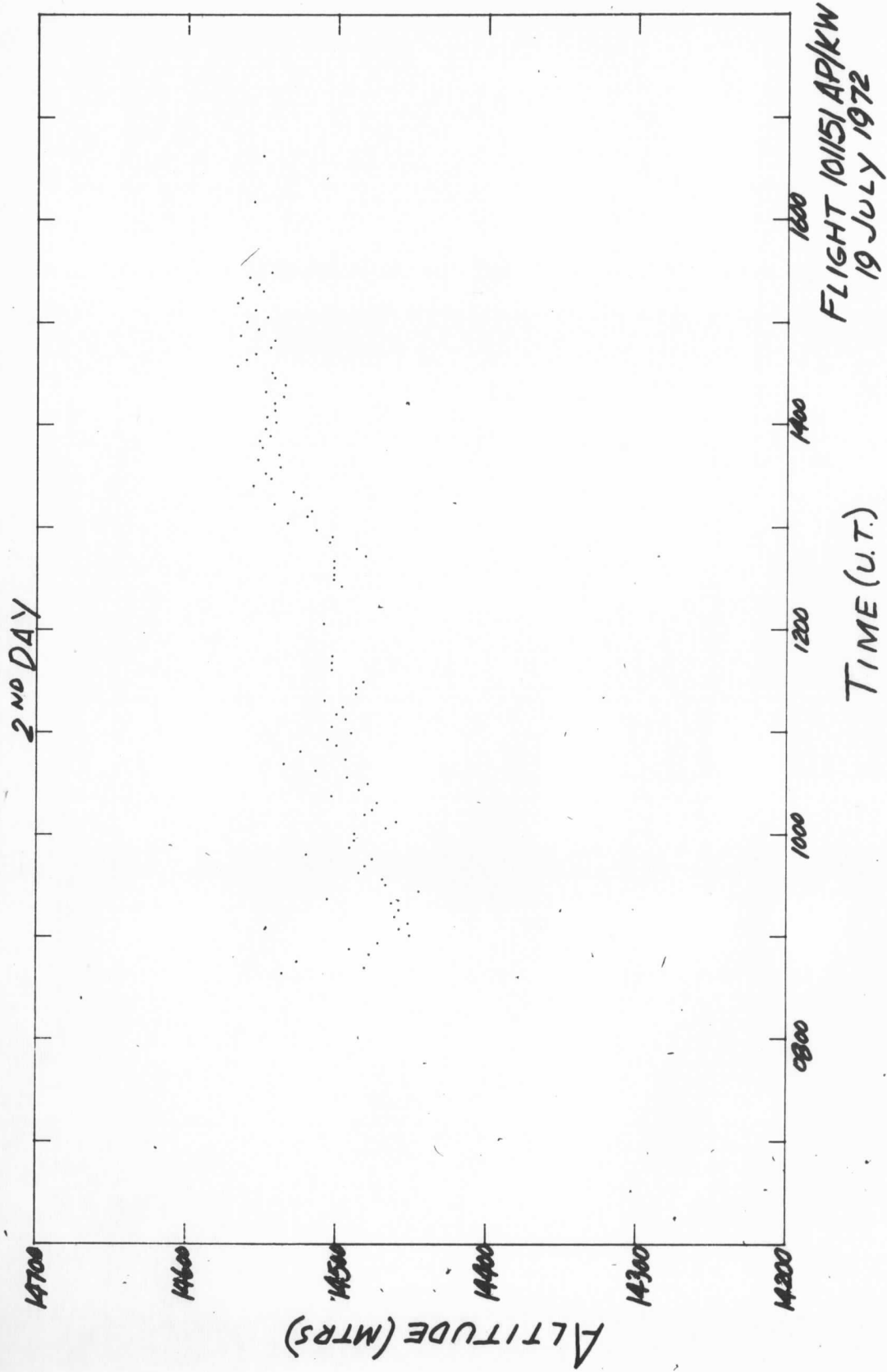


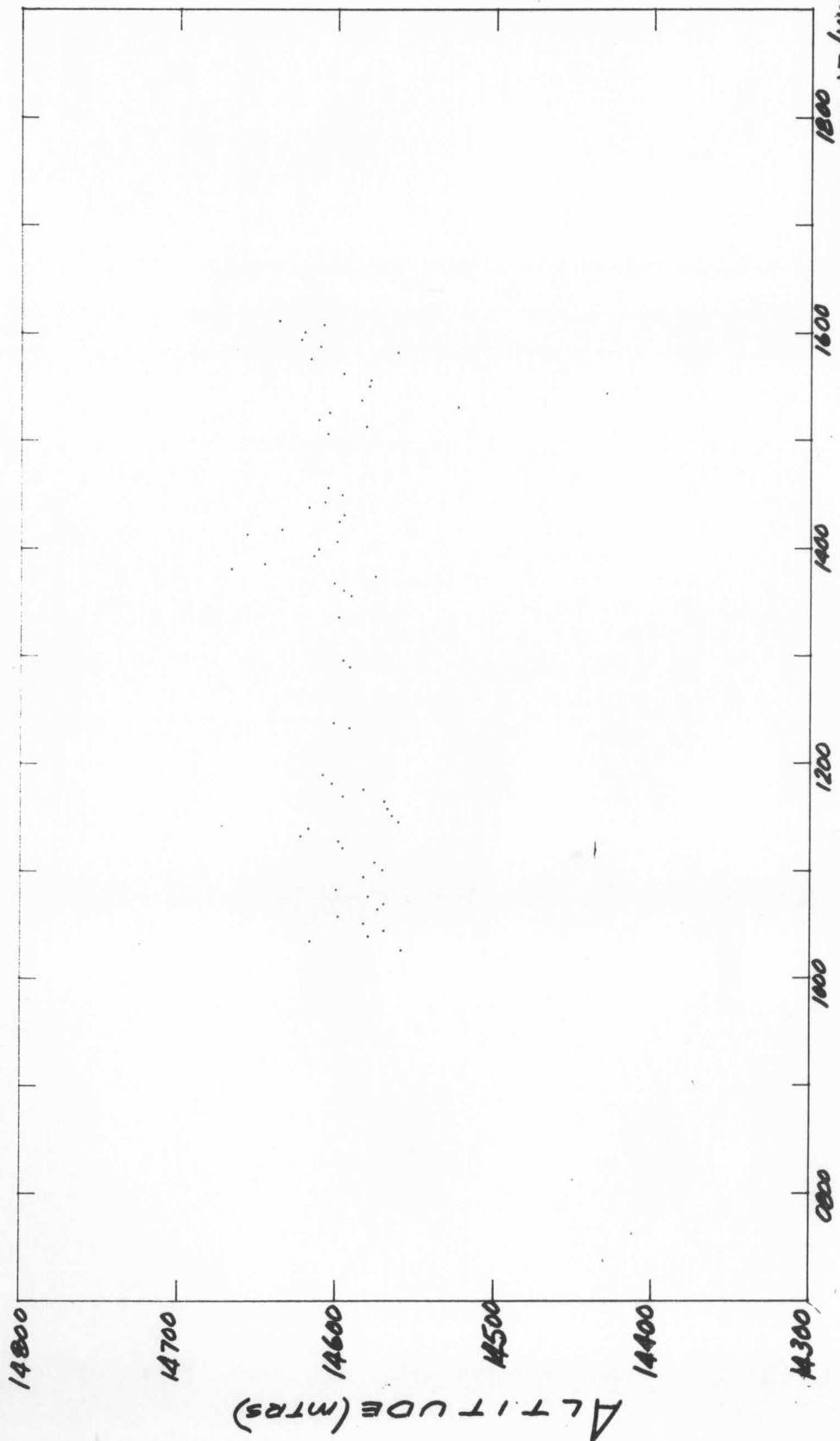
FLIGHT 101151 KN/AP
19 JULY 1972

TIME (U.T.)



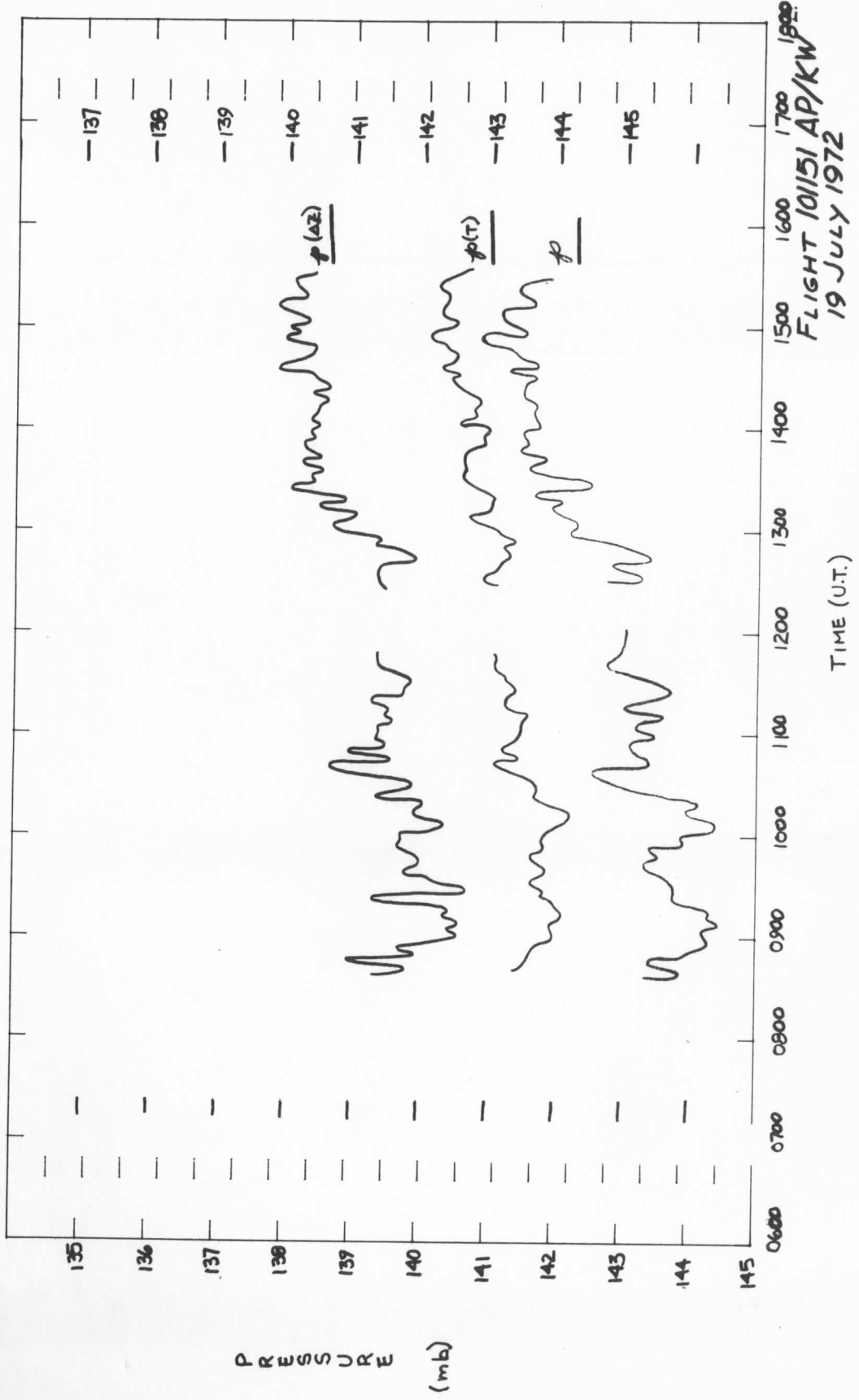




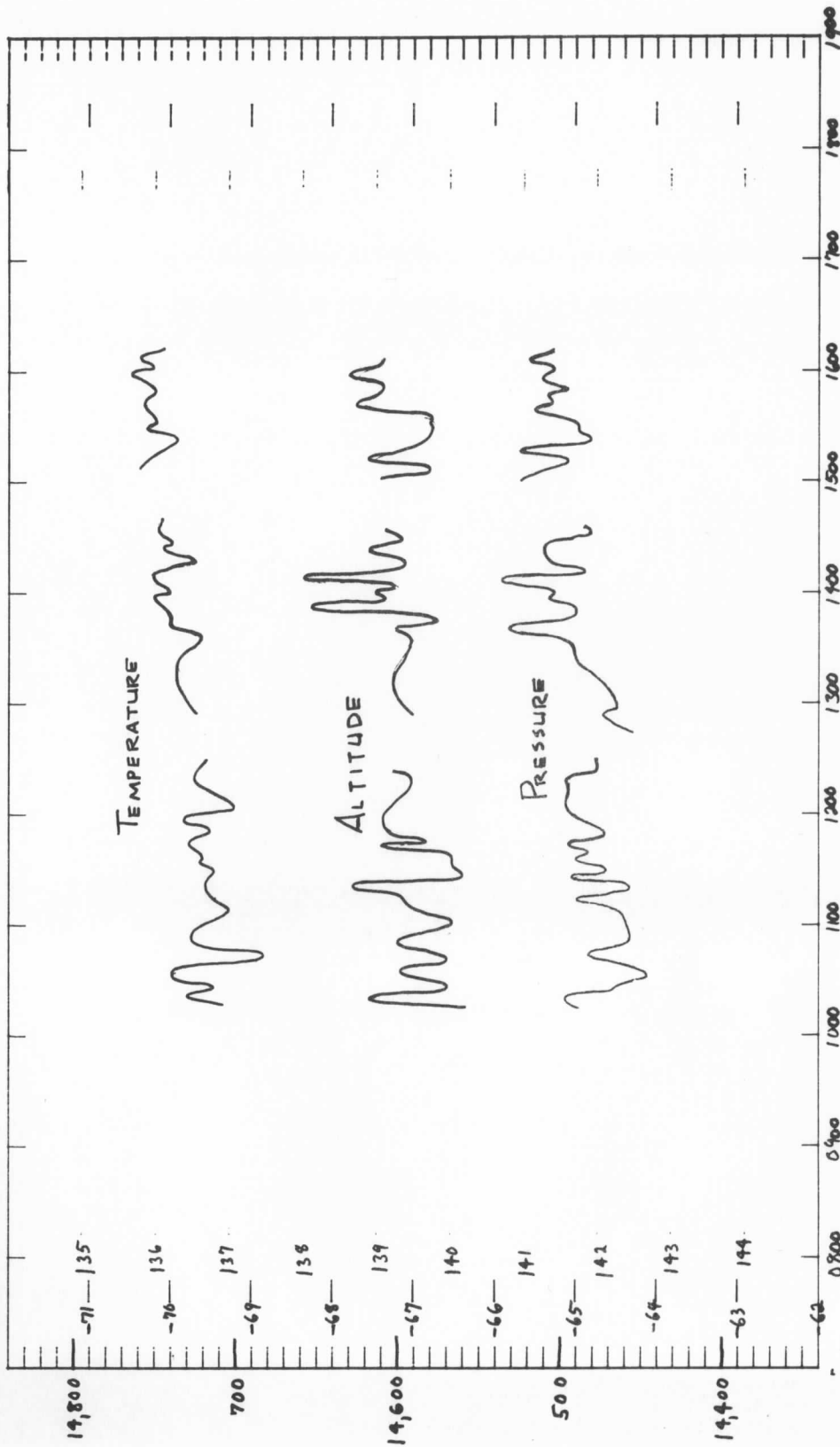


FLIGHT 101/51 AP/KW
19 JULY 1972

TIME (U.T.)

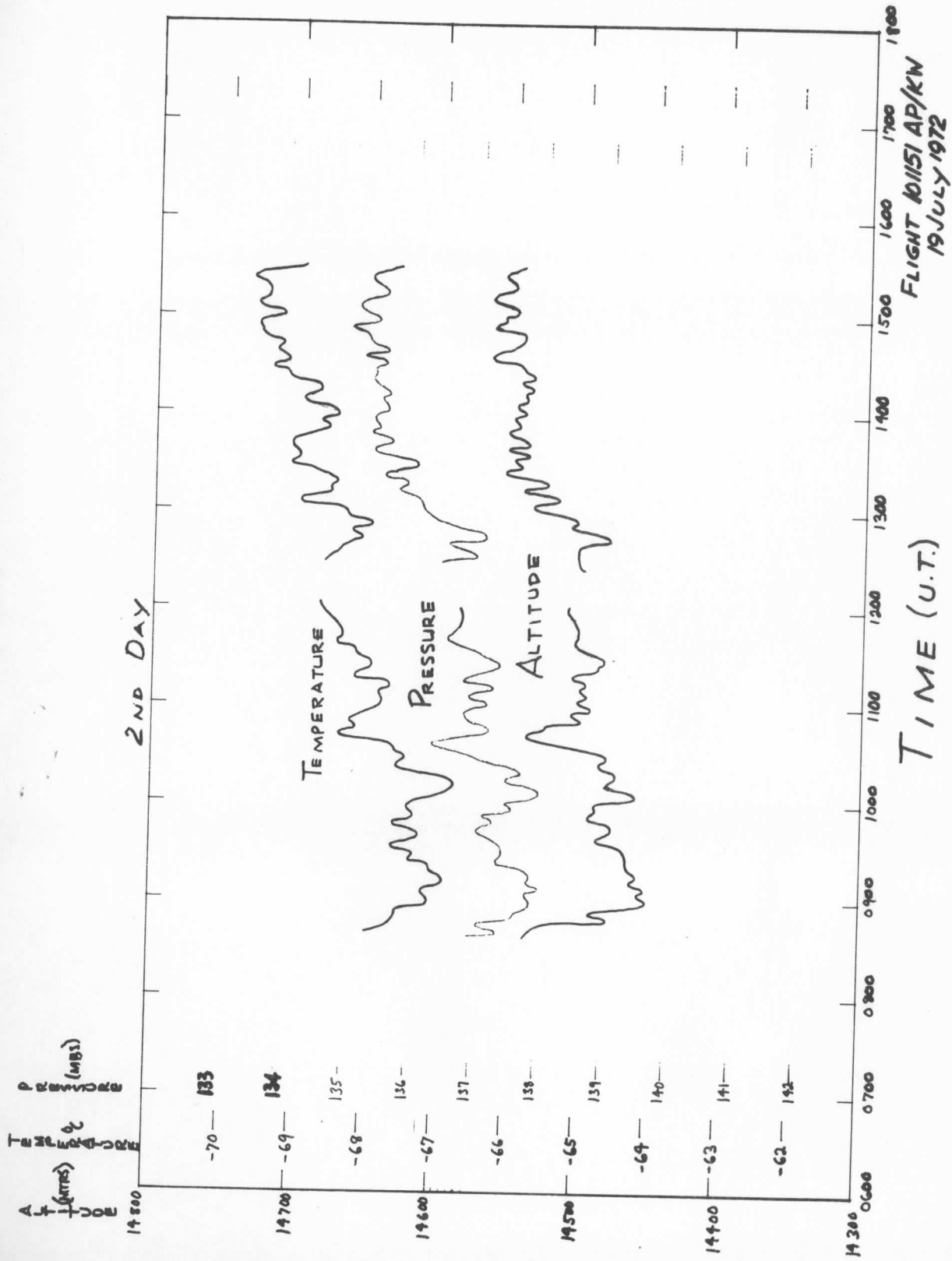


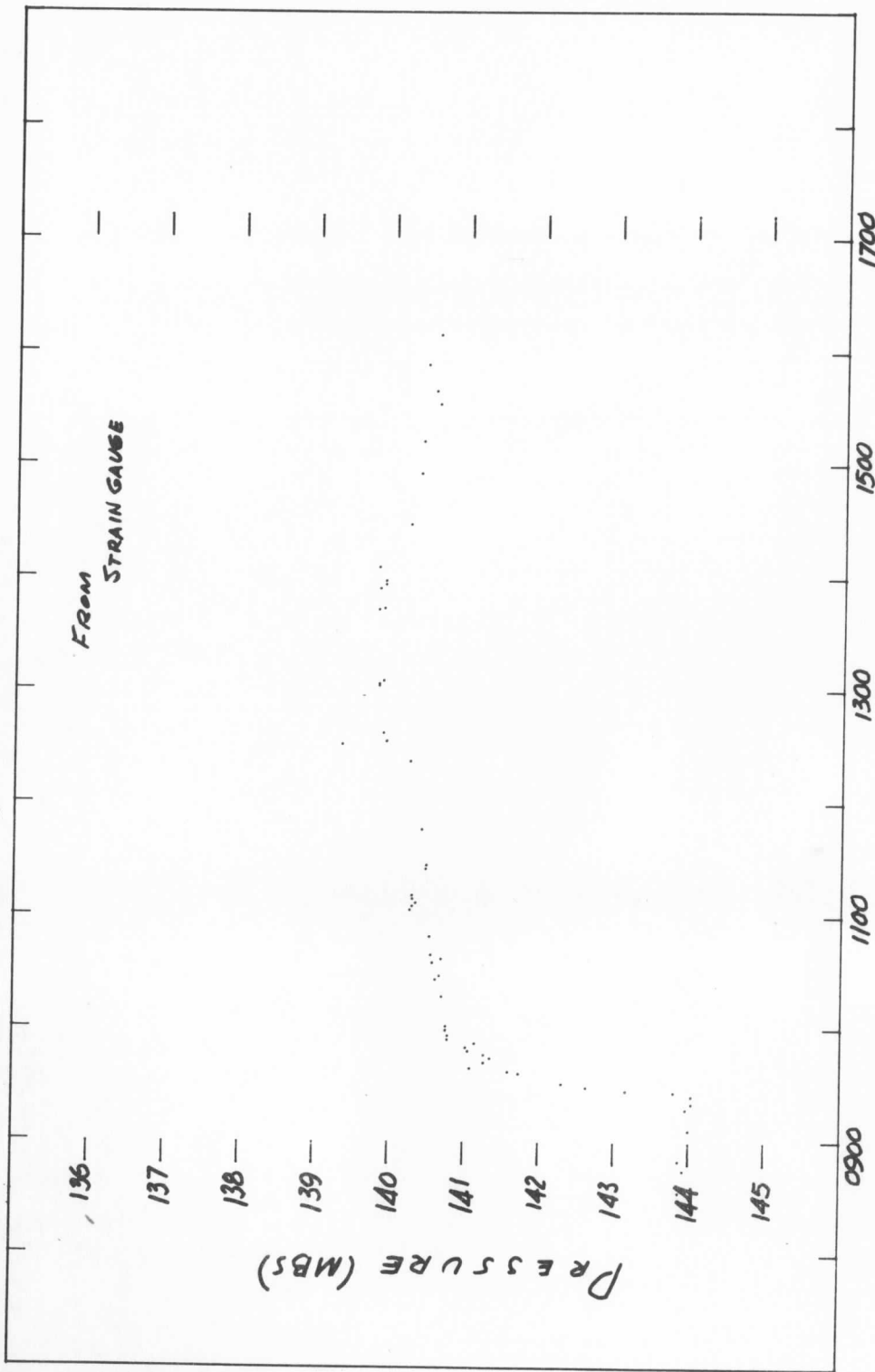
↑ (ft/min)
PRESSURE
↑ (ft/min)
PRESSURE



FLIGHT 101151 AP/RW
19 JULY 1972

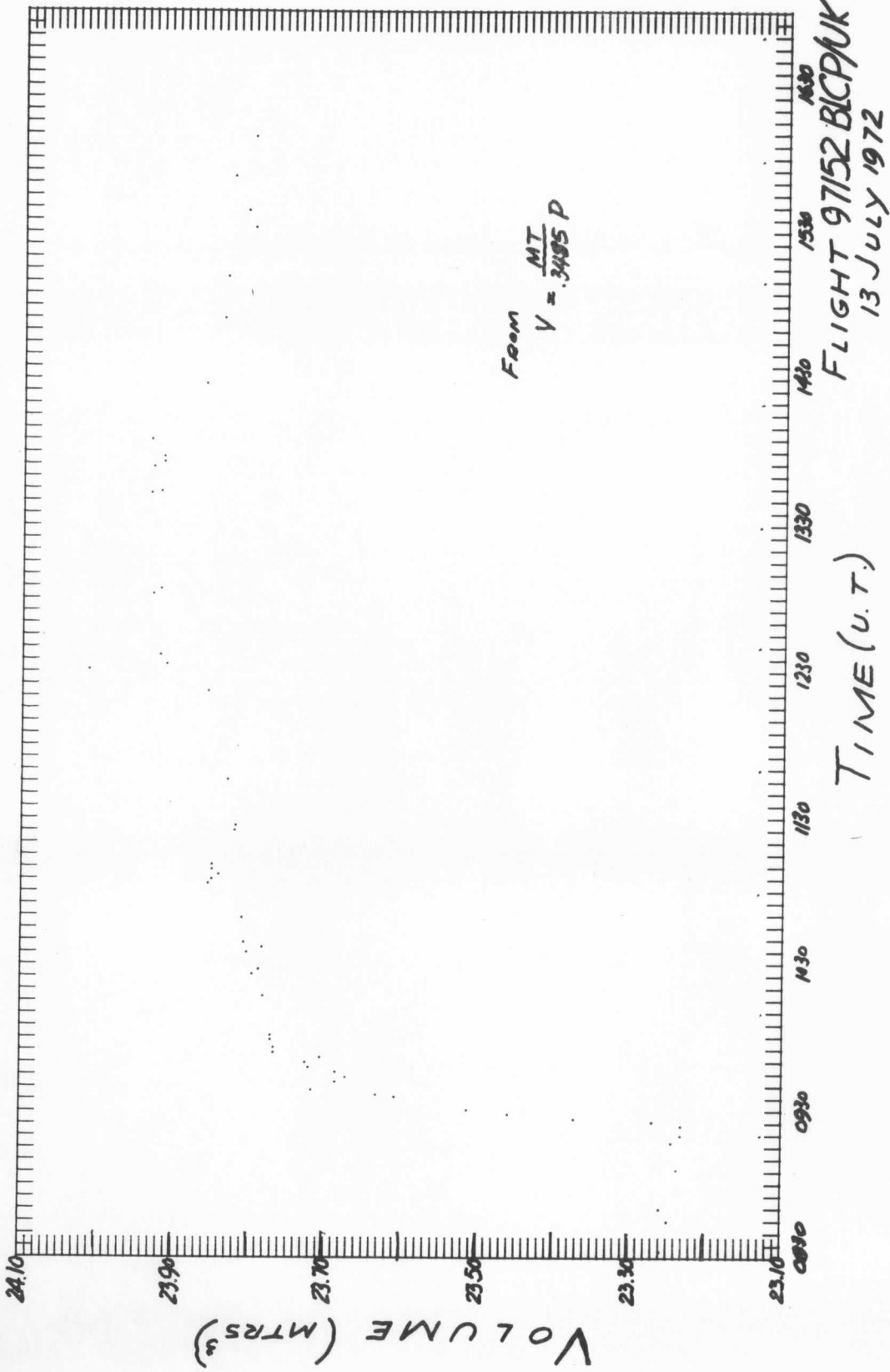
TIME (U.T.)

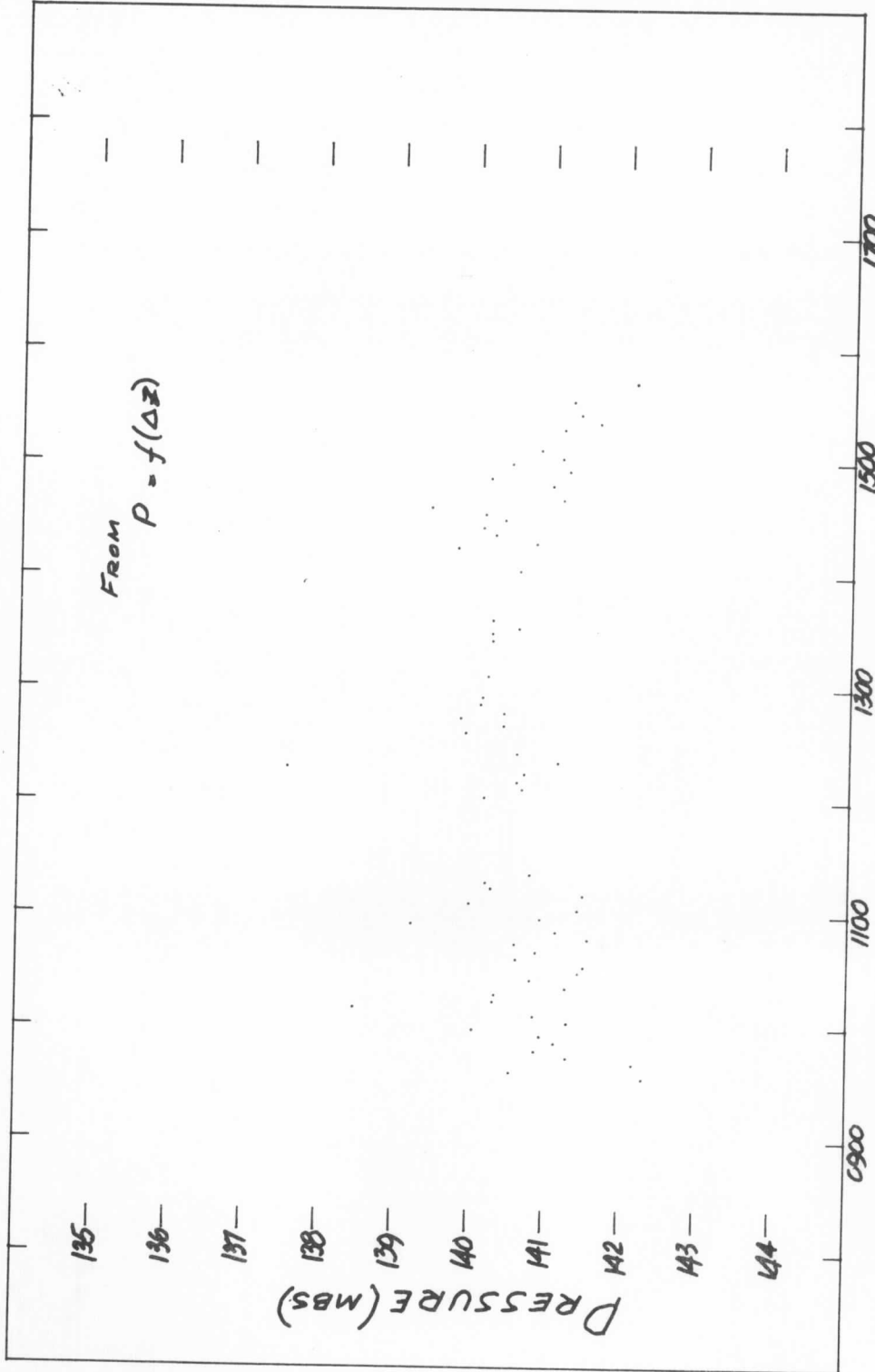




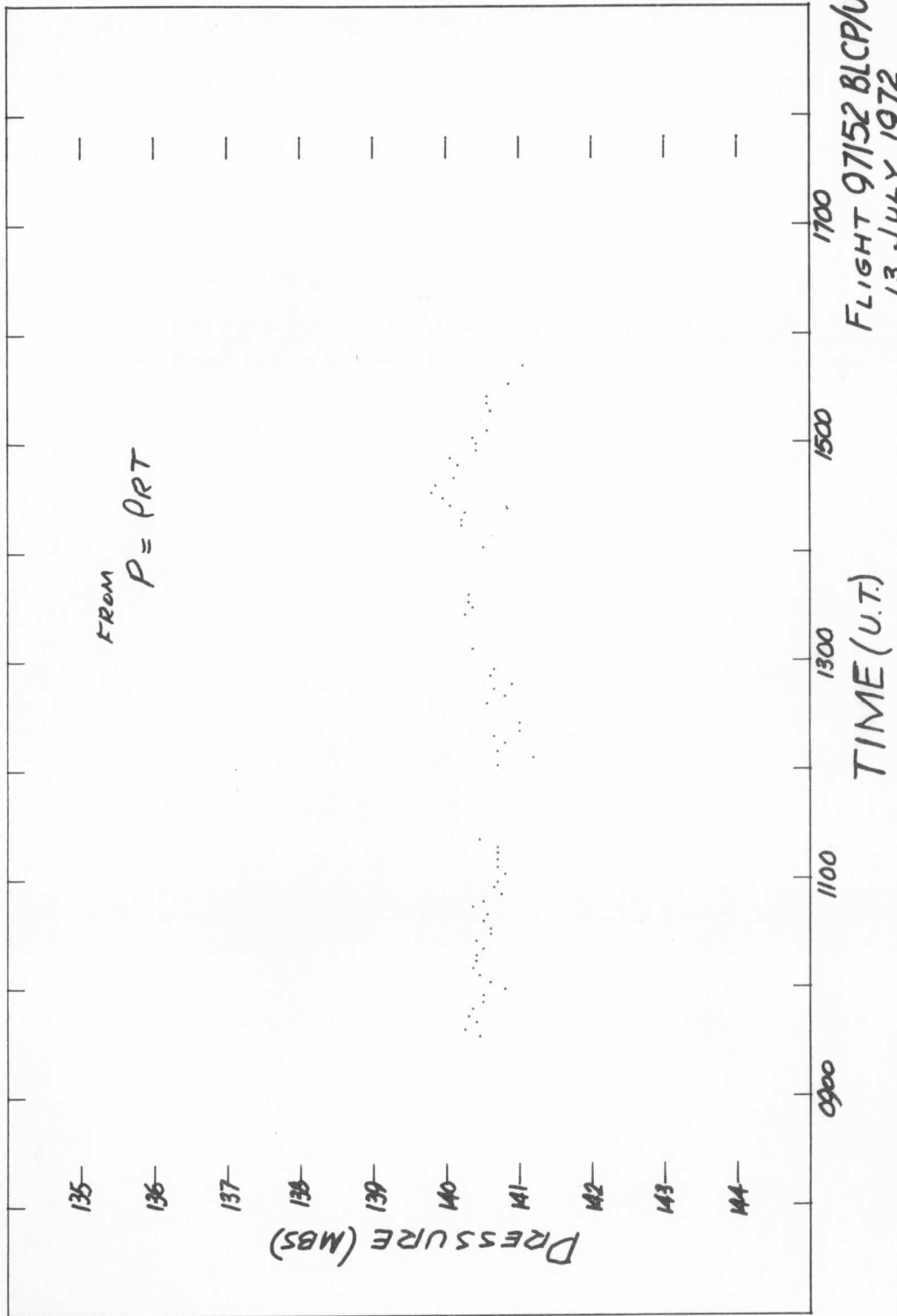
FLIGHT 97152 BLCF/UK
13 JULY 1972

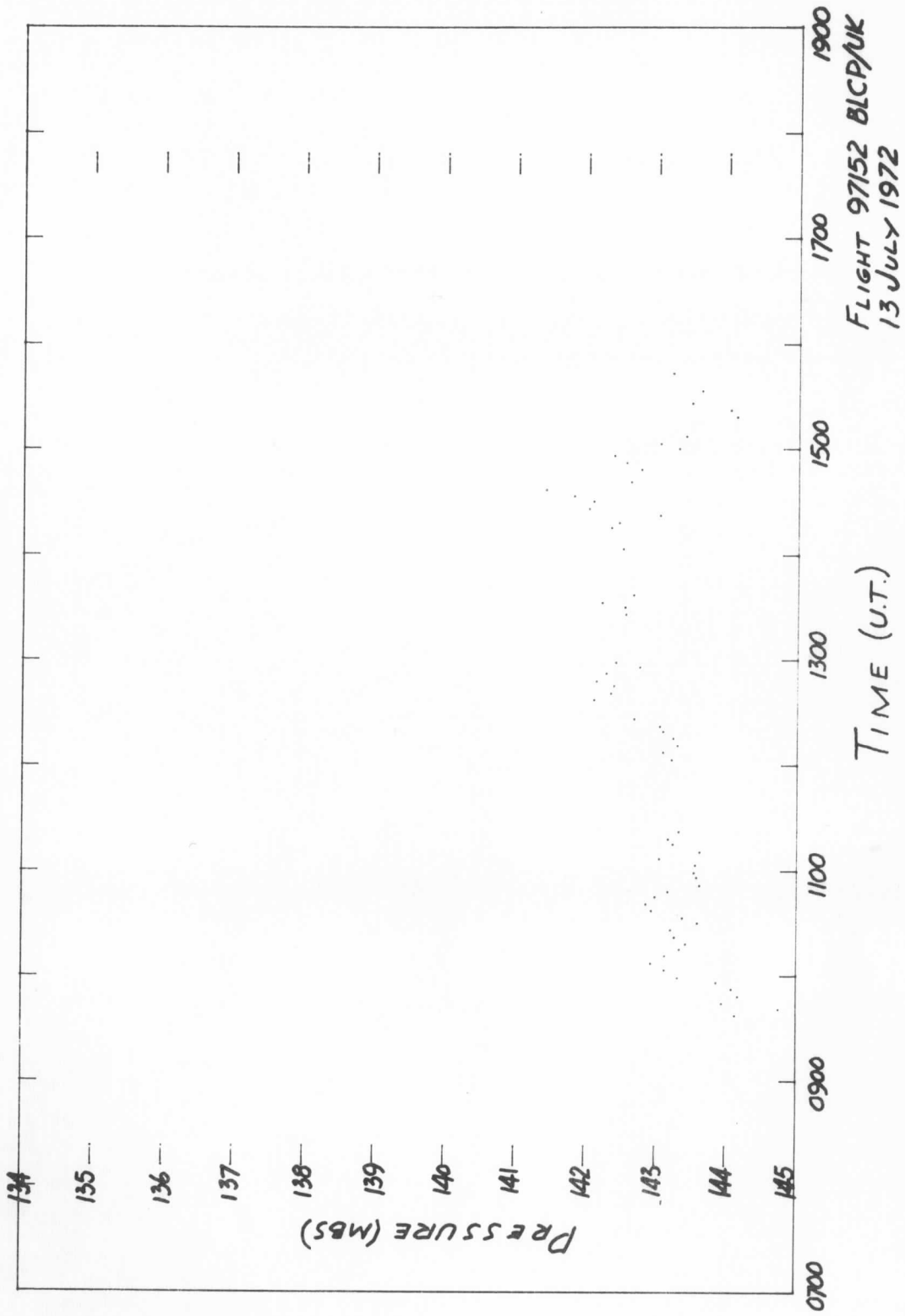
TIME (U.T.)

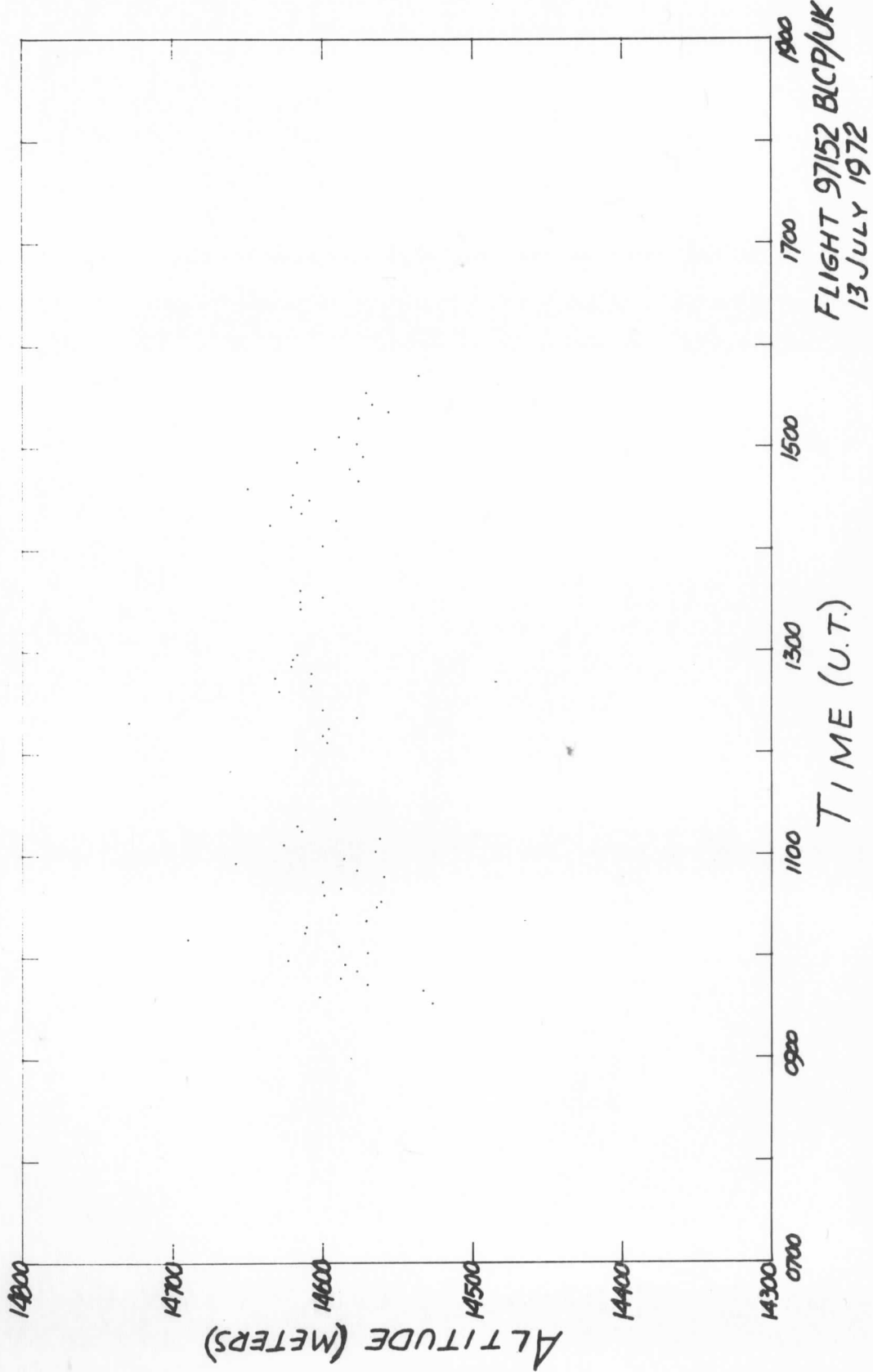


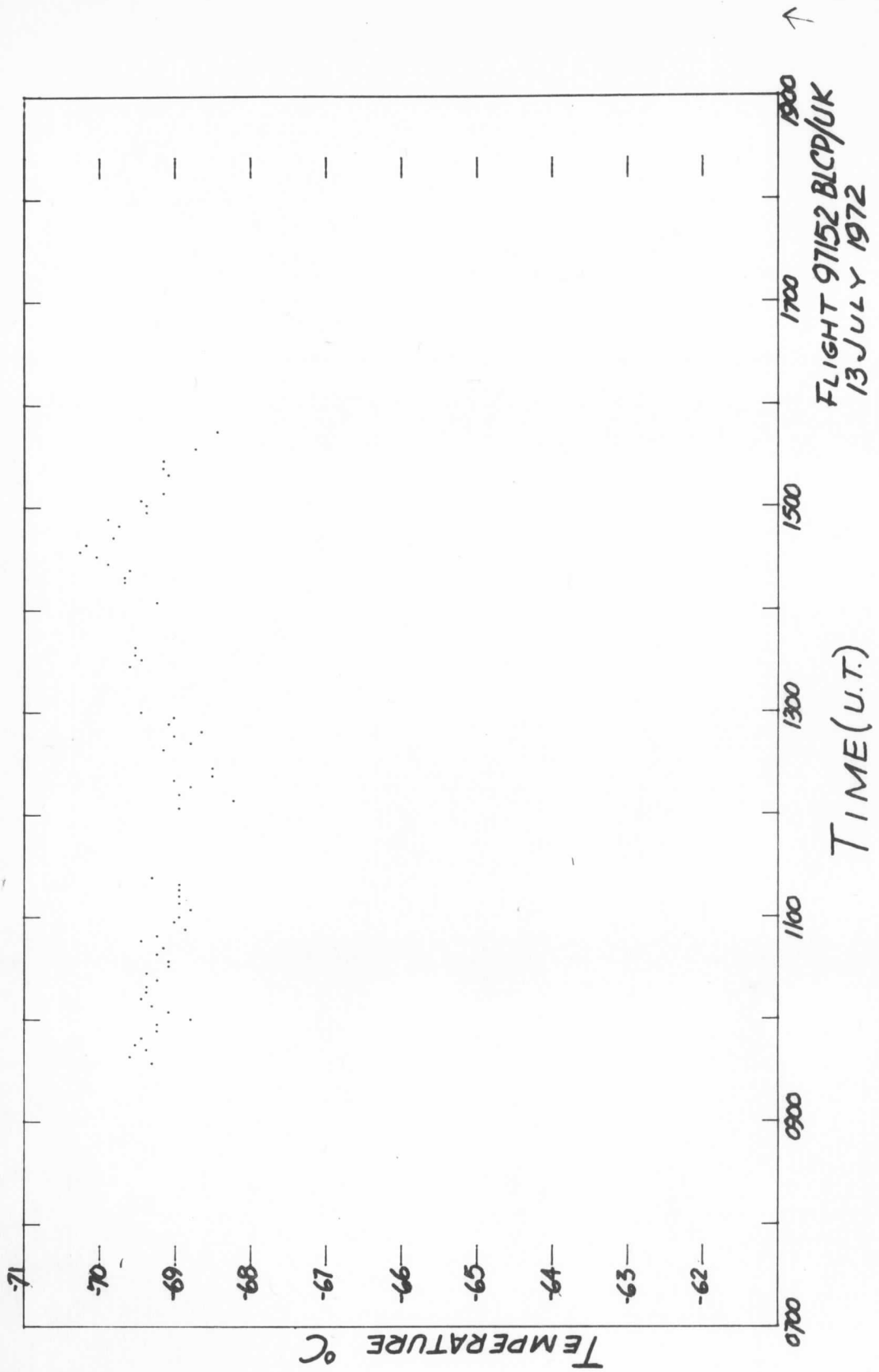


FLIGHT 97152 BLCF/JUK
13 JULY 1972

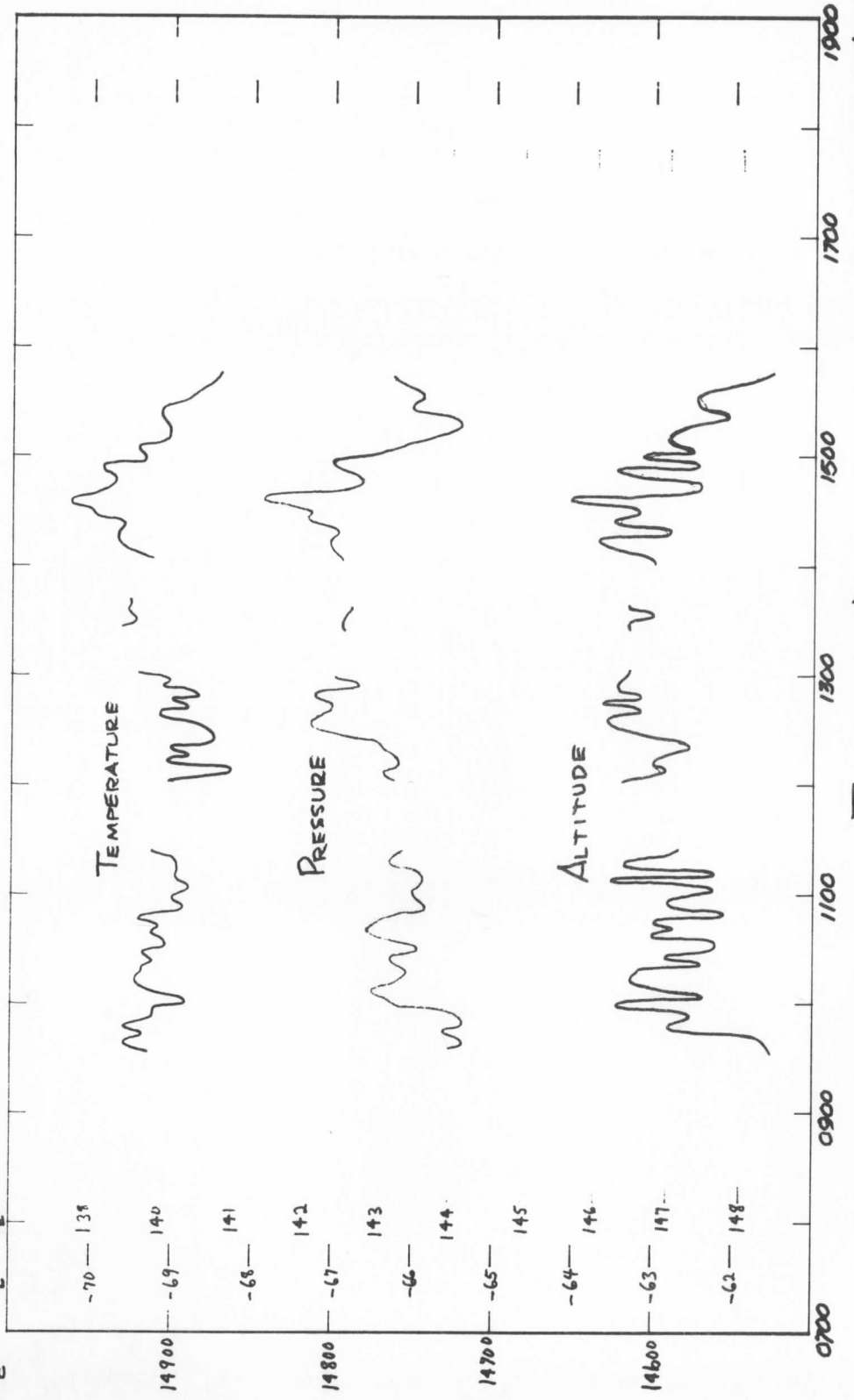








ALT (MTRS) →
 TEMP (°C) →
 PRESSURE (MBS) →



FLIGHT 97152 BICP/UK
 13 JULY 1972

TIME (UT)

V. THERMAL ENCLOSURES FOR FLIGHT PACKAGES

A. DESCRIPTION OF DESIGNS CONSIDERED

This section attempts to answer the question: What is the best configuration to maintain the internal temperature of a balloon-borne package as constant as possible?

The internal package temperature results from a balance between energy input by radiation and energy losses due to radiation, conduction and convection. If the major input were direct solar radiation, the best design would be a sphere, since conduction and convection are essentially governed by air temperature which can be considered constant for this problem. This configuration was investigated by the University of Wisconsin. However, the package also receives radiative energy from surrounding clouds and the earth below. This additional input can vary considerably with time and geographic position.

In an attempt to compensate for these variations, we experimented with the configuration shown in Figure 1. The package consists of a cylinder C of 80 mm diameter, and a height h, placed above a brim of diameter d. The brim shields the package from most of the upwelling radiation. For the TWERLE program, we investigated the use of a white foam brim to preclude any interference with the associated antenna pattern. The white foam brim would also rediffuse the solar radiation.

B. FLIGHT TEST DATA

A preliminary experiment was devised to evaluate the contribution of the brim to the package temperature, and to determine if the white foam brim can be considered an isotropic diffuser. In fact, if the diffusive characteristics of the brim are isotropic it is possible to make a mathematical analysis and find the optimum geometry of the package. Two packages with the same dimensions (h = 77.3 mm, d = 400 mm) were flown on the same flight. One with a white polystyrene brim, the other, used as a reference, with aluminum foil covering the brim. The aluminum acts as a mirror with a reflective power approximately $\tau = 0.7$. The sun angle and the internal temperature of each package were

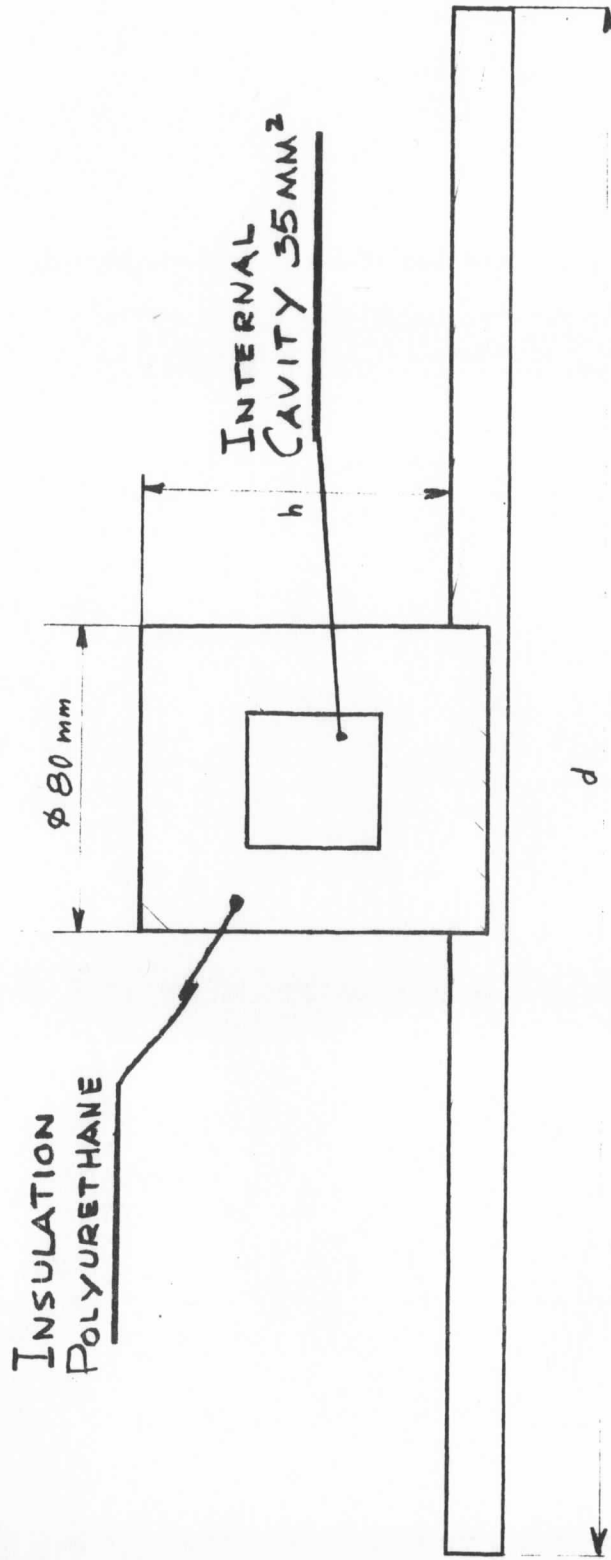


Figure 1. Package Configuration

measured during flight.

In Figure 2.a, temperature and sun angle are plotted against time. In Figure 2.b, the temperatures are plotted against the sun angle.

The scattering of temperature for similar values of the sun angle, first indicates that even with d as large as 40 cm, the package still receives variable radiative input from the clouds. It is encouraging to notice that the temperature range is less than 7.2°C for sun angles greater than 34° . It is even less than 4.3°C for sun angles greater than 45° if we exclude the measurements between 13:24 and 13:50 for which both temperatures show a shift probably due to the shadow of a cloud.

From Figure 2.b, we also conclude that white polystyrene is not an isotropic diffuser. The maximum of a curve fitted to the data should occur at a much higher value of sun angle.

C. EVALUATION OF DESIGNS

We thus had to use an empirical approach to the problem and four experimental packages were designed empirically and flown from Ascension Island, all with a white brim of diameter $d = 300$ mm, and with different values for h . Three of the cylinders were black and one white. The geometry of each package, together with the plot of temperature versus sun angle, are represented in Figures 3.a, 3.b, 3.c, 3.d. On each plot, the thick curve is a polynomial least squares fitting. For each of these packages, a day by day plot of temperature versus time can be found at the end of this section.

D. CONCLUSION

Of the four Ascension flights, the package contained on flight 104155 B/F, gives the flattest temperature curve. If the increase in weight is not prohibitive, an increase of d to 40 cm would probably reduce the dispersion of temperature to less than 10°C for 95% of the measurements, and the package temperature could easily be accurately controlled by additional electric heating.

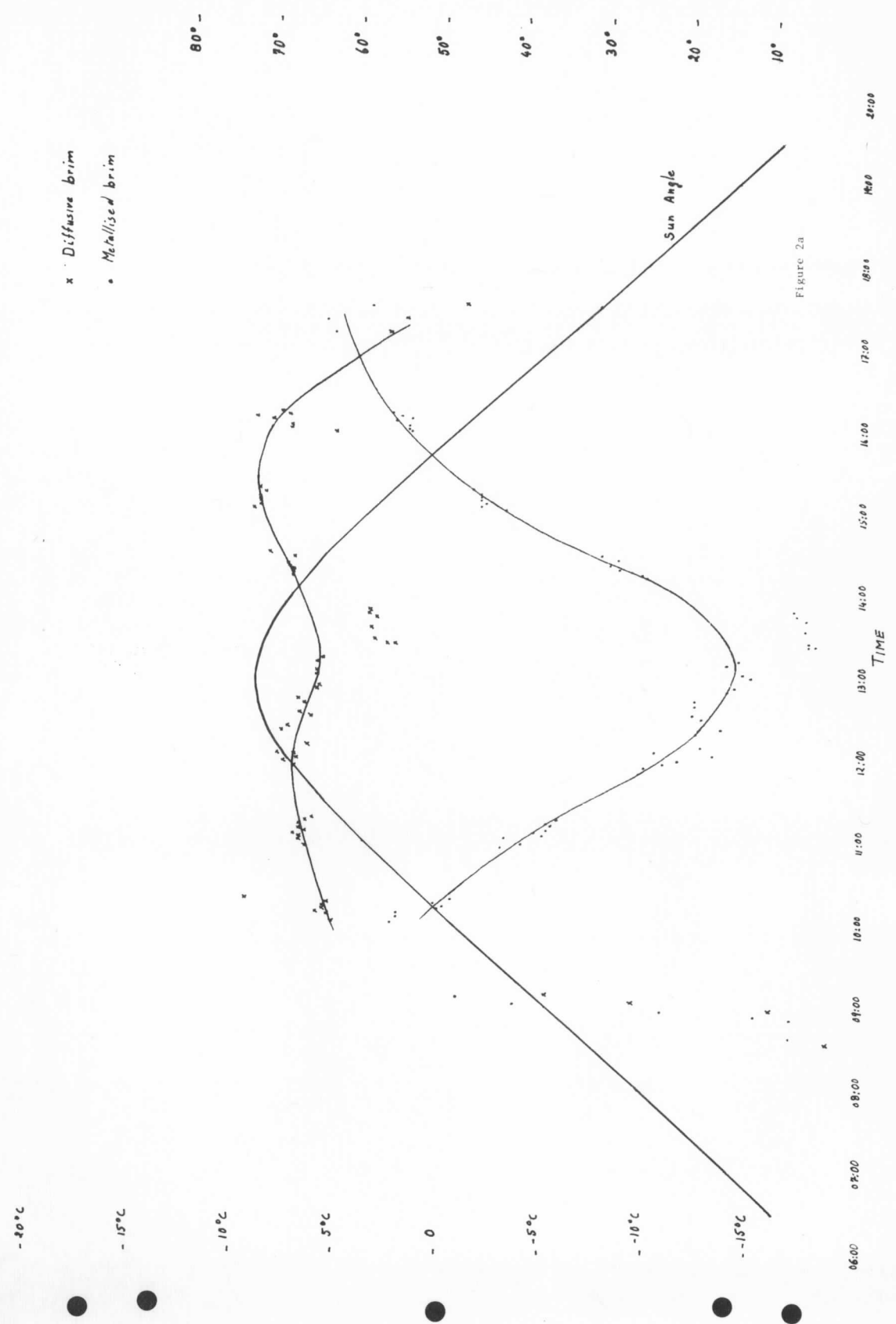
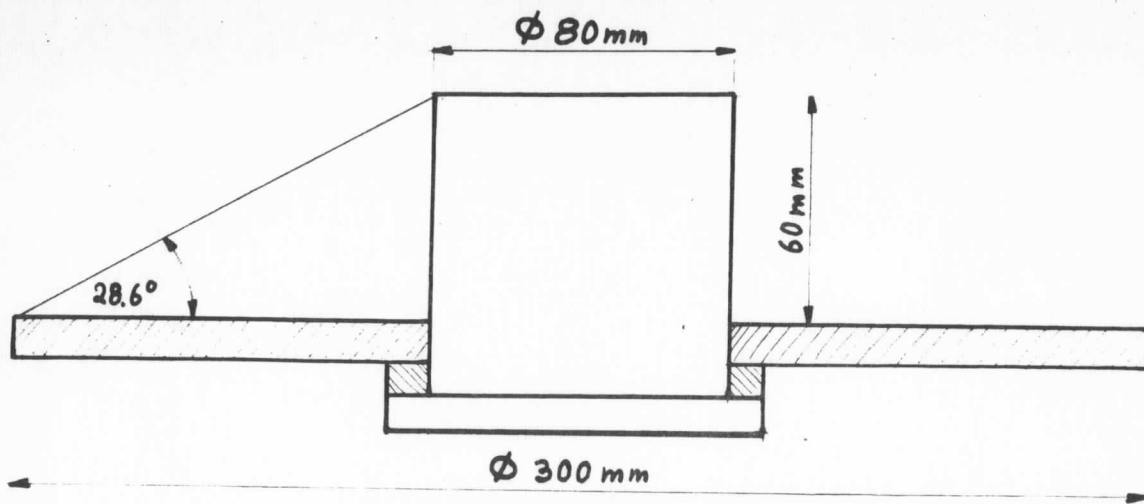


Figure 2a





94157 B/U - 1972 (642 POINTS)

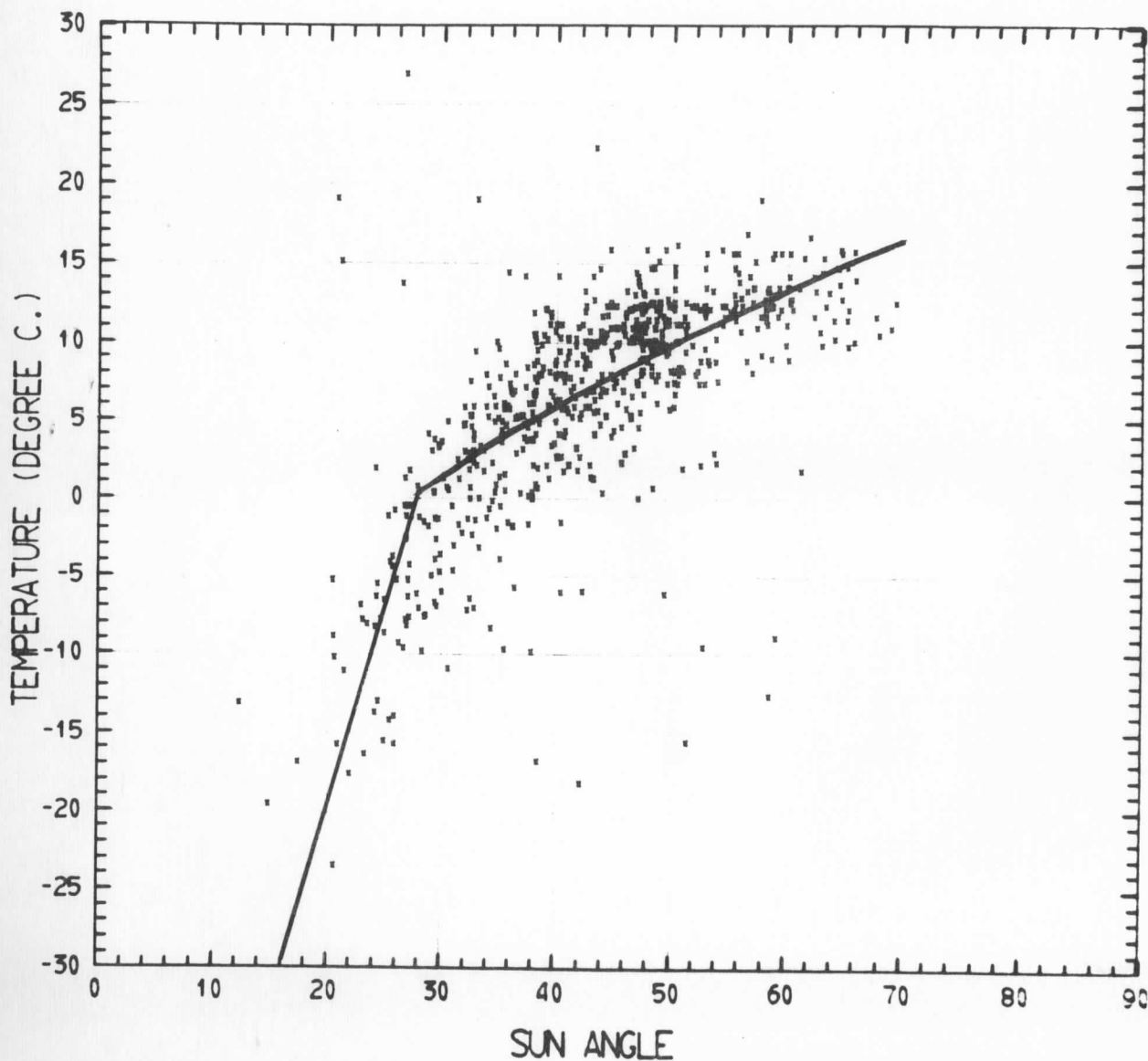
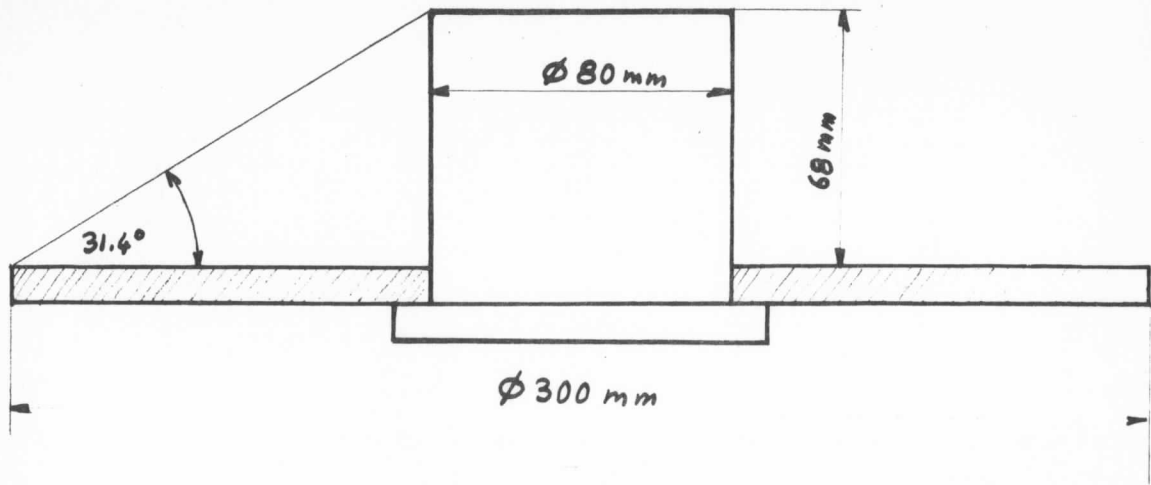


Figure 3.a



103153 B/N

- 1972 (399 POINTS)

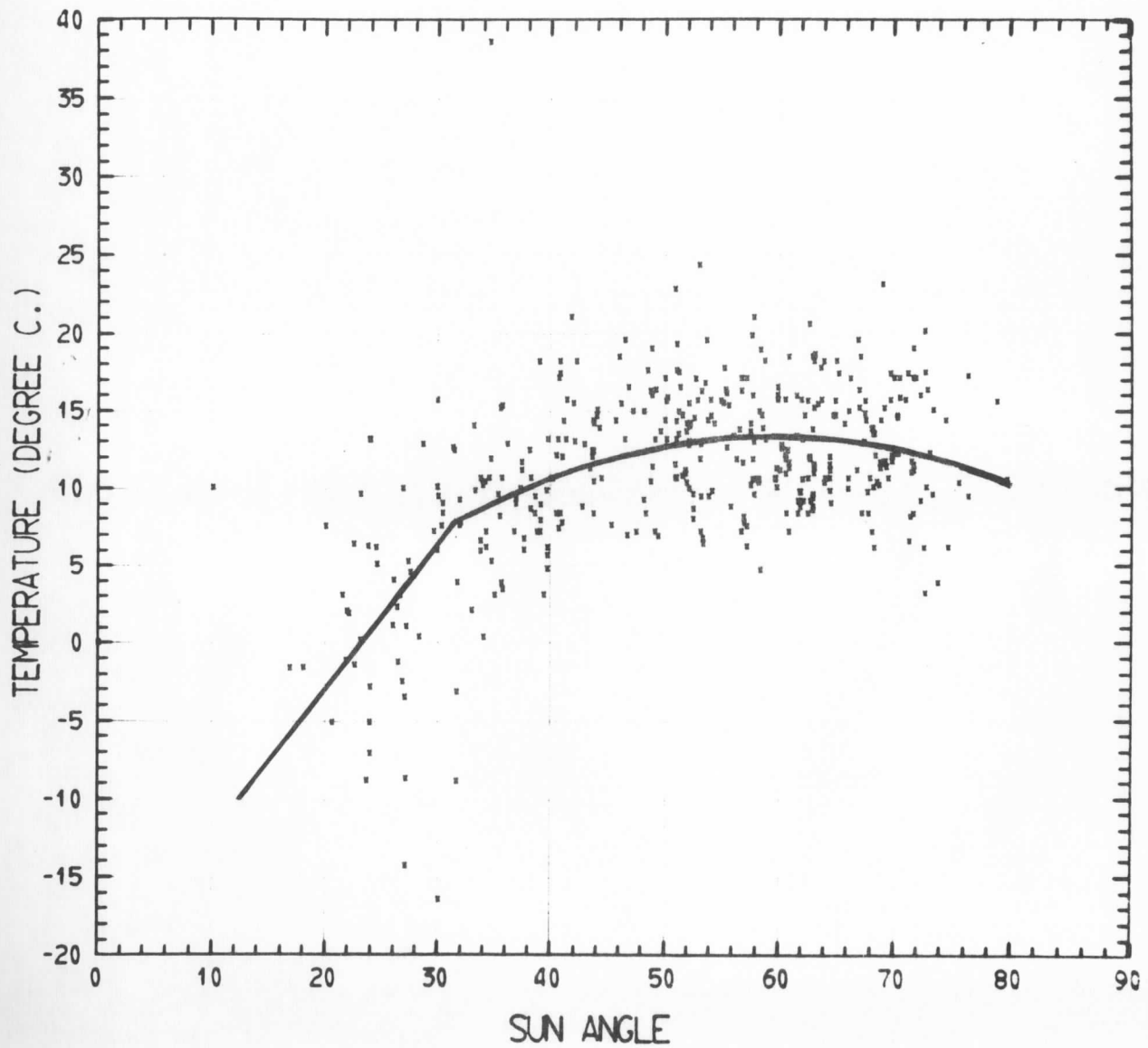
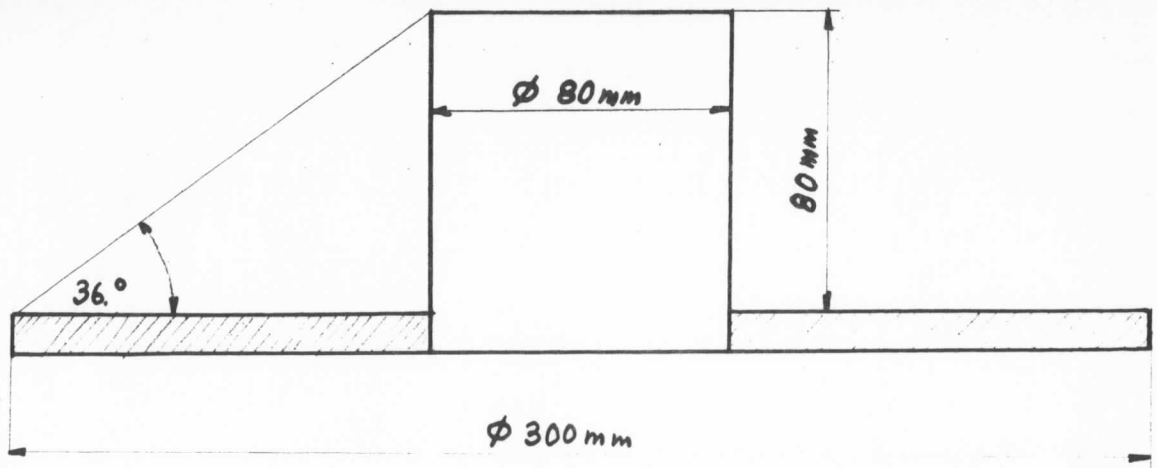


Figure 3.b



104155 B/F - 1972 (401 POINTS)

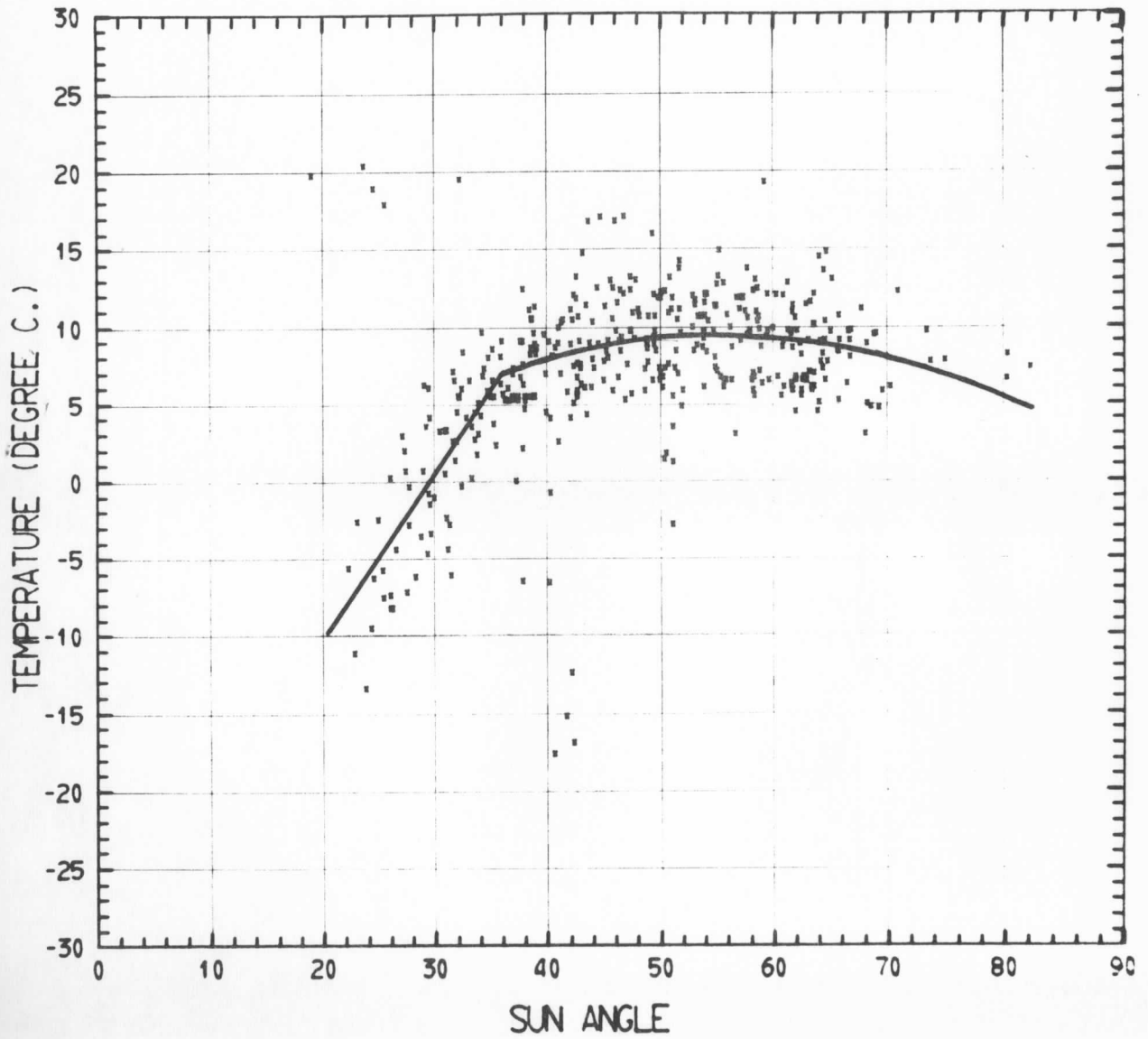
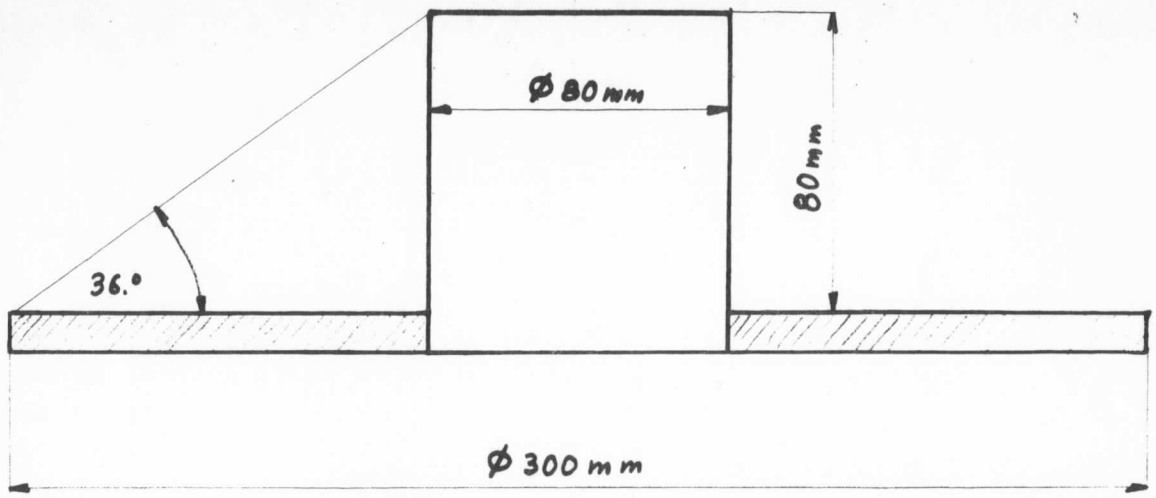


Figure 3.c



105151 B/C :. - 1972 (223 POINTS)

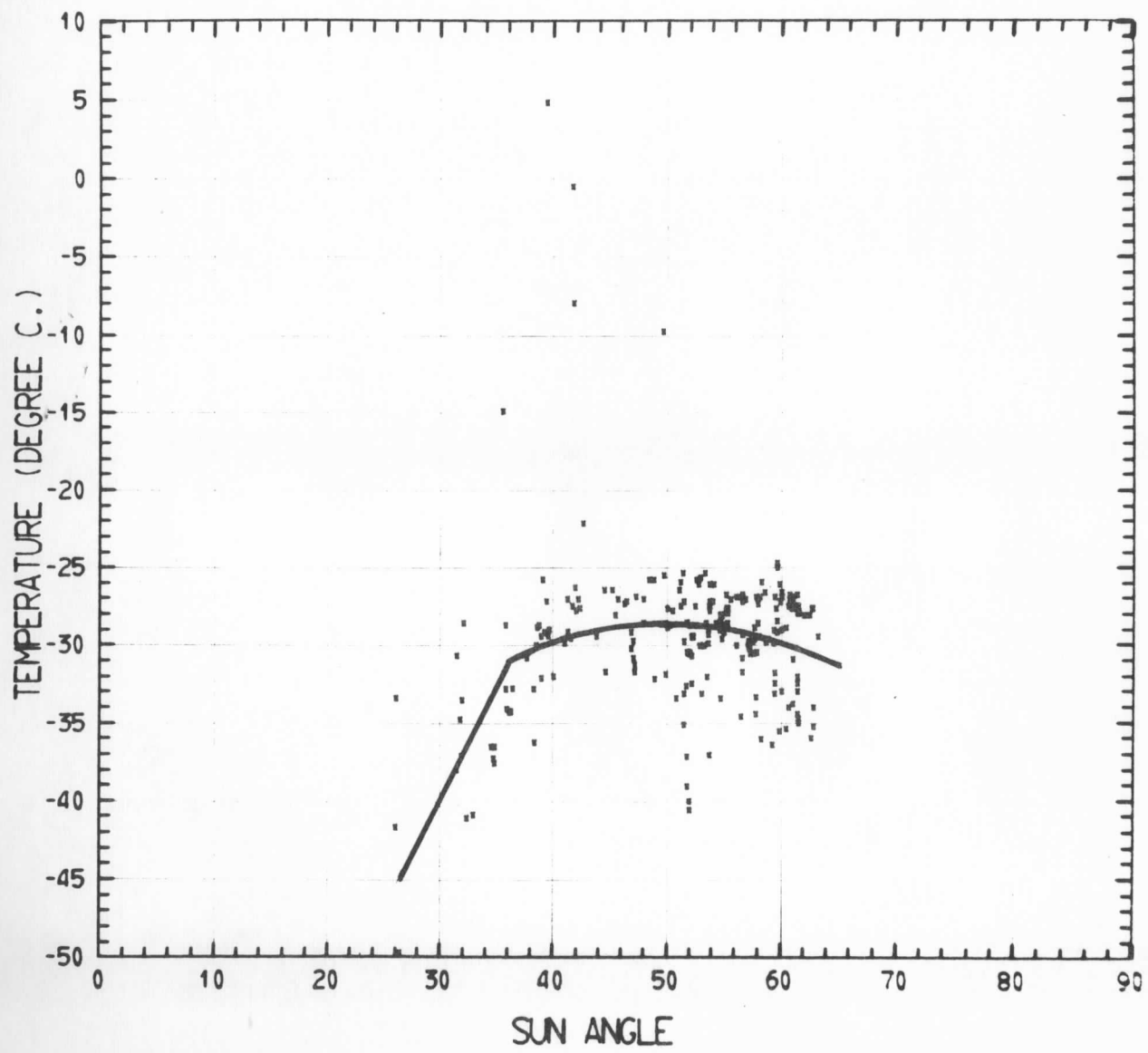
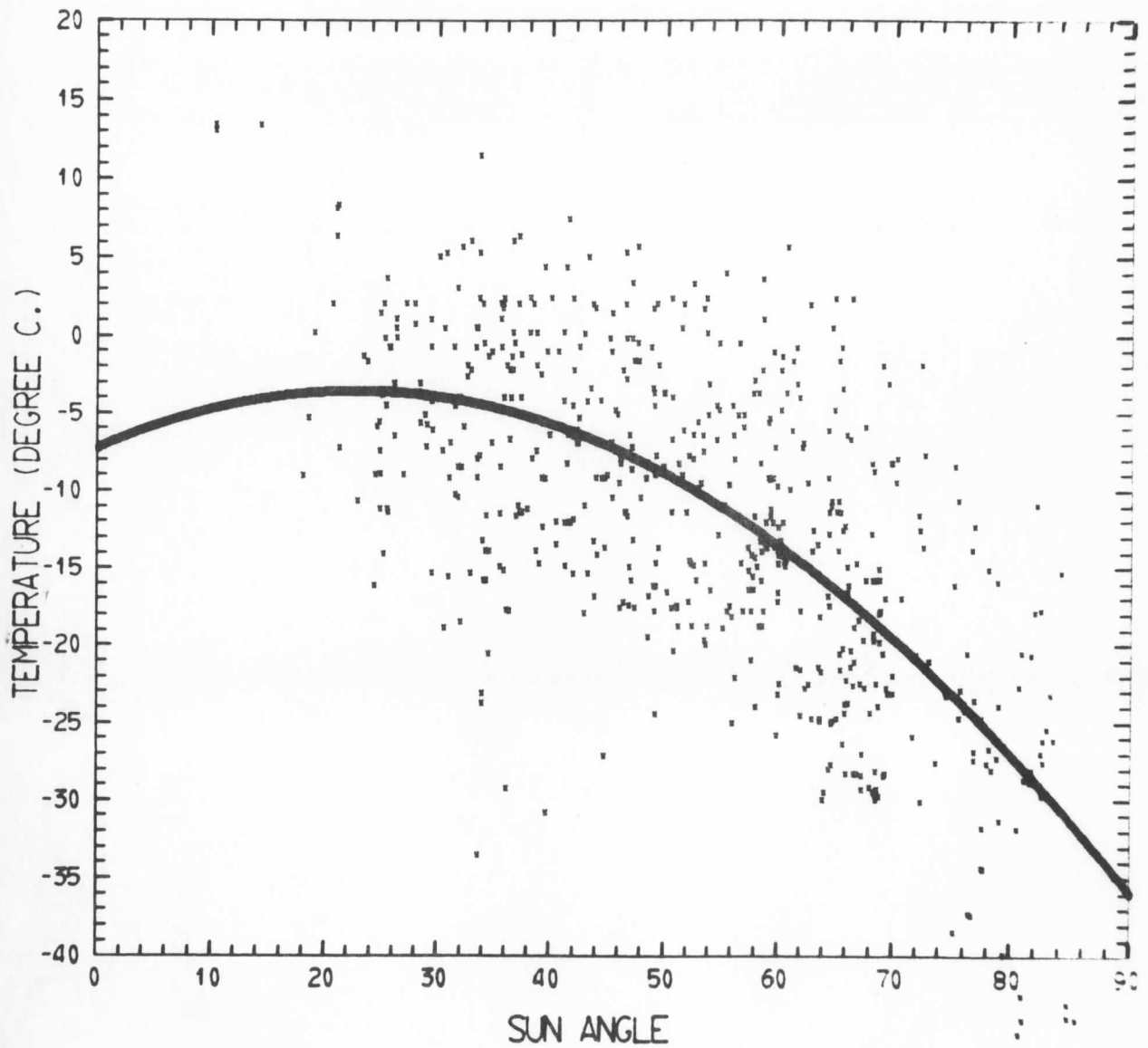
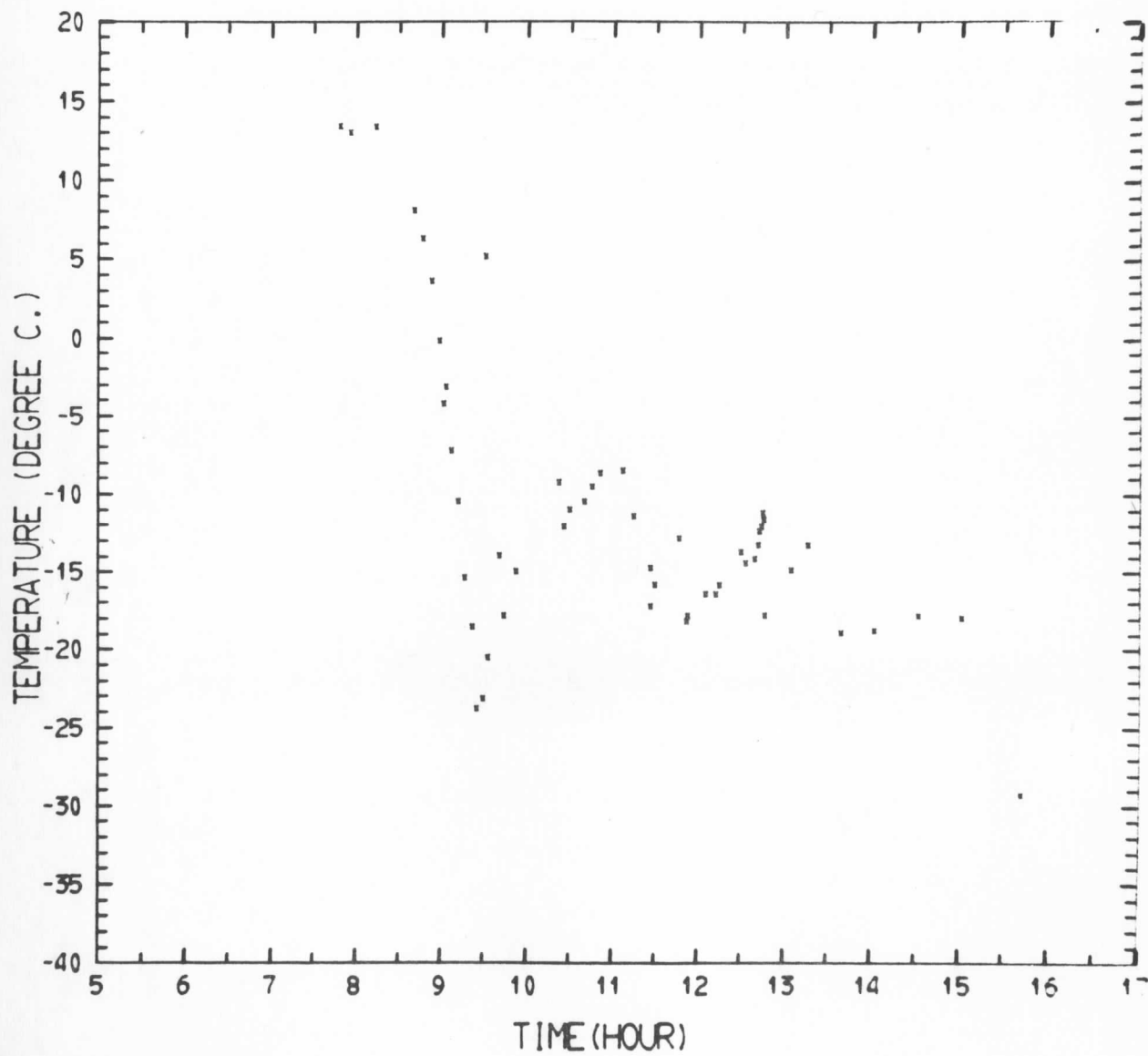


Figure 3.d

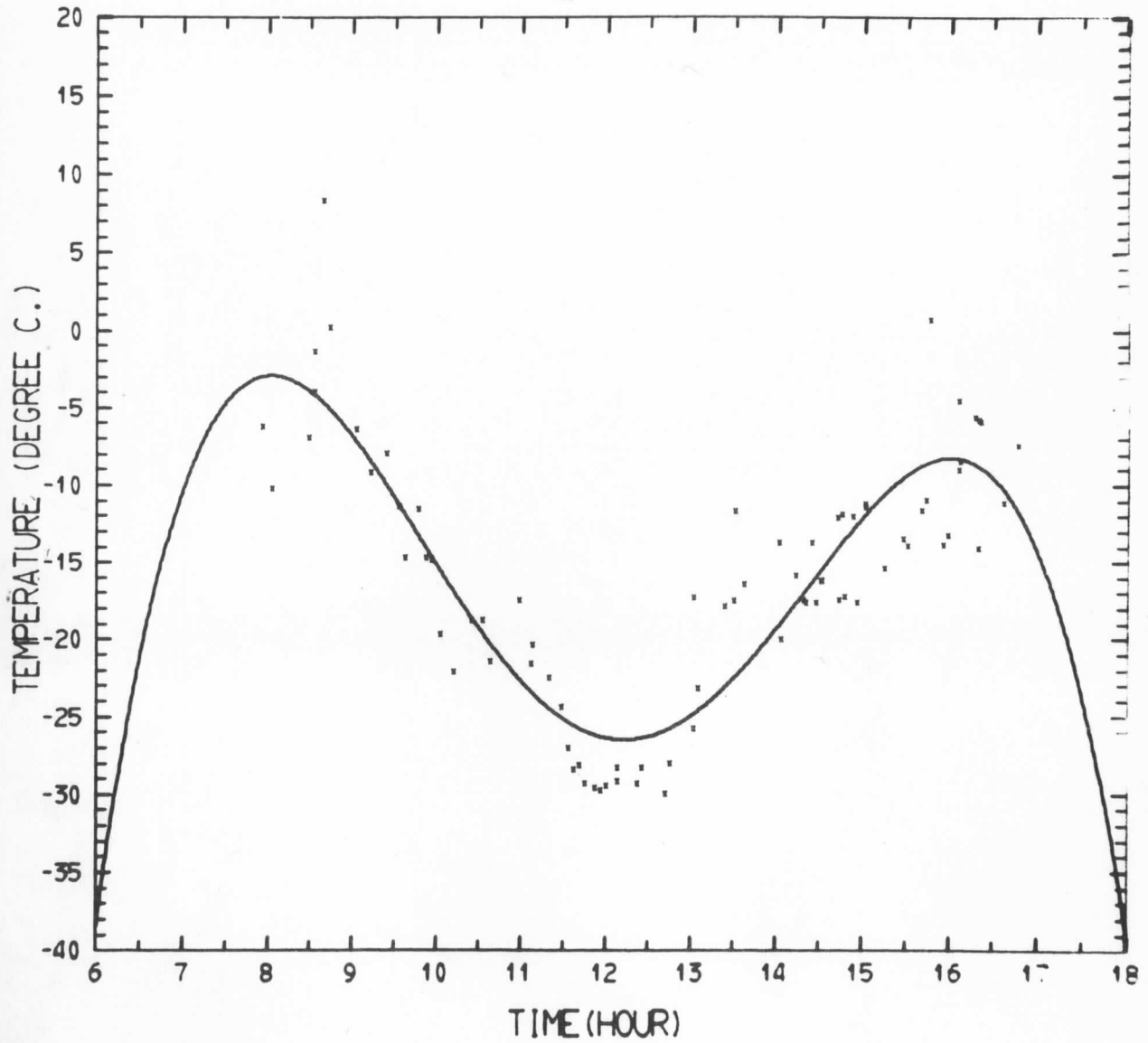
89154 B/D - 1972 (574 POINTS)



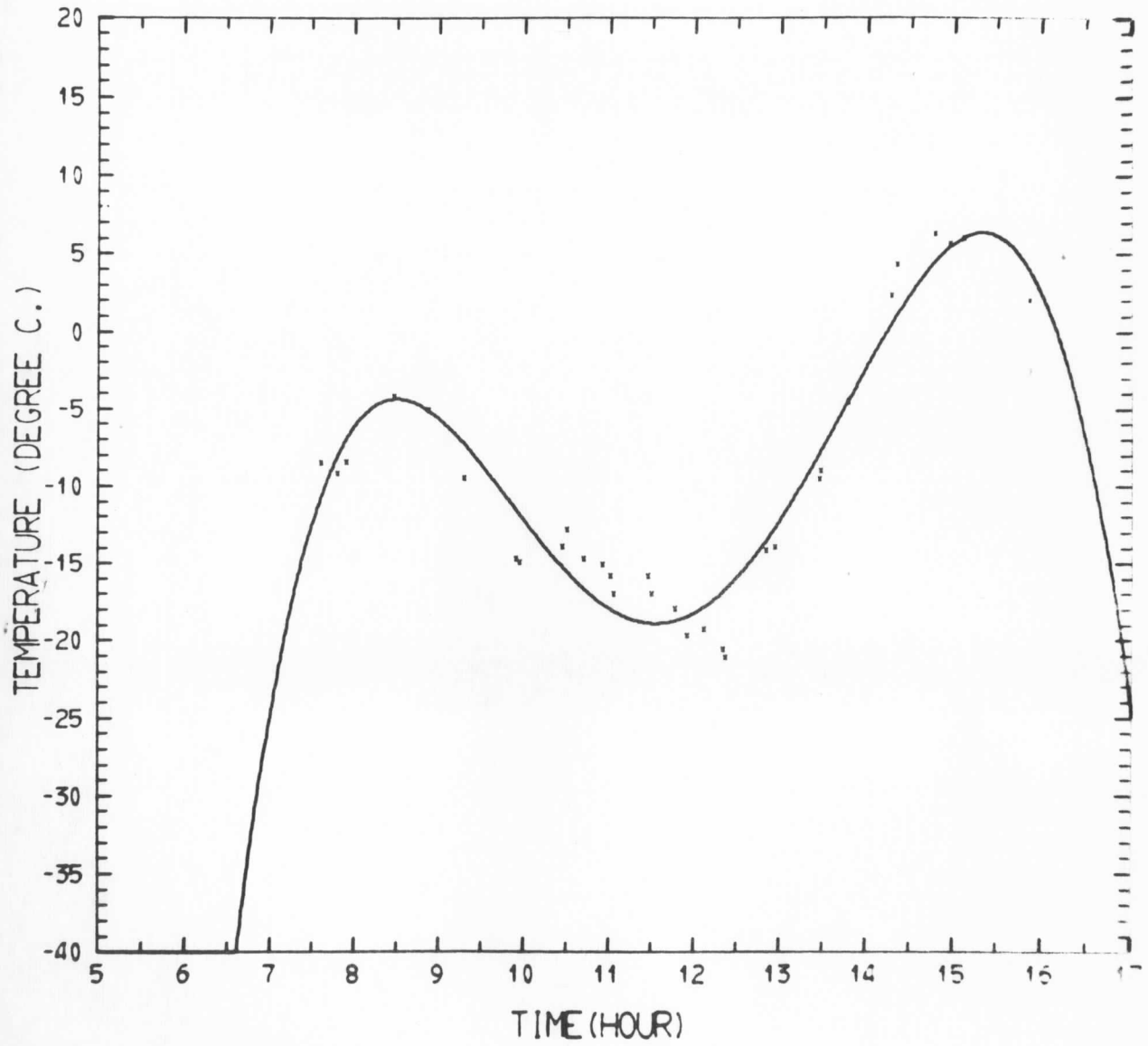
89154 B/D (7- 3-1972)



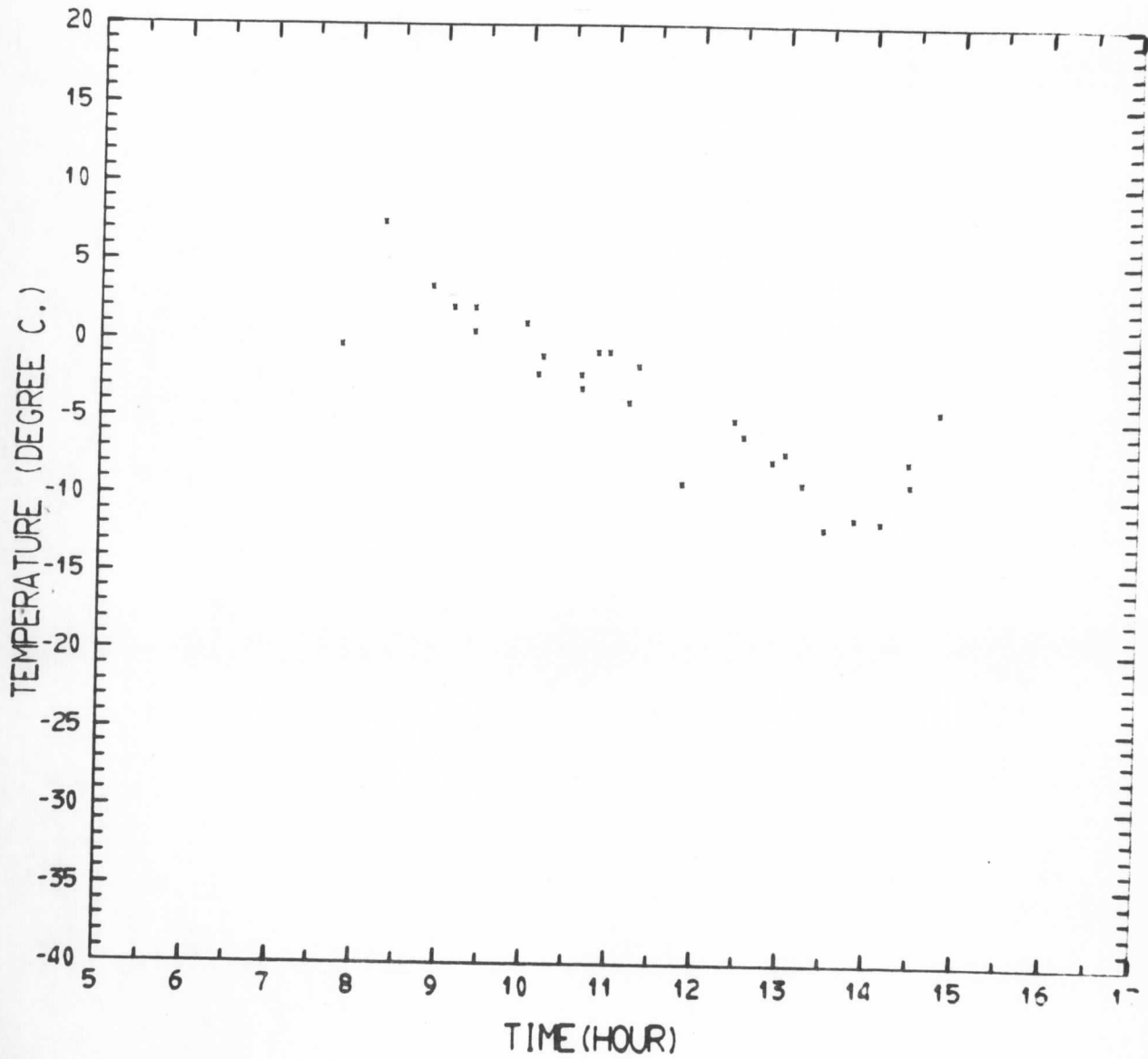
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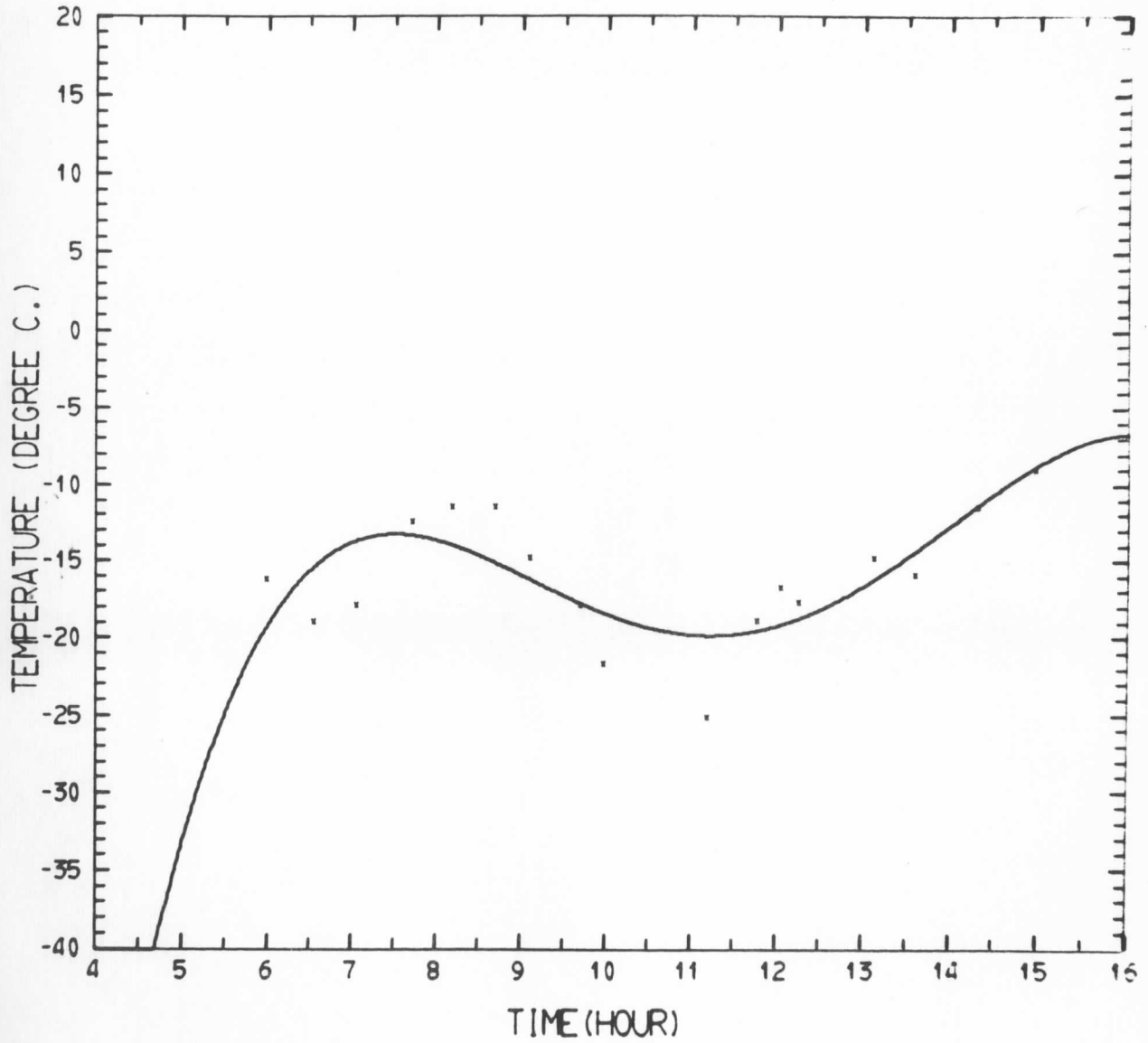
89154 B/D (7-5-1972)



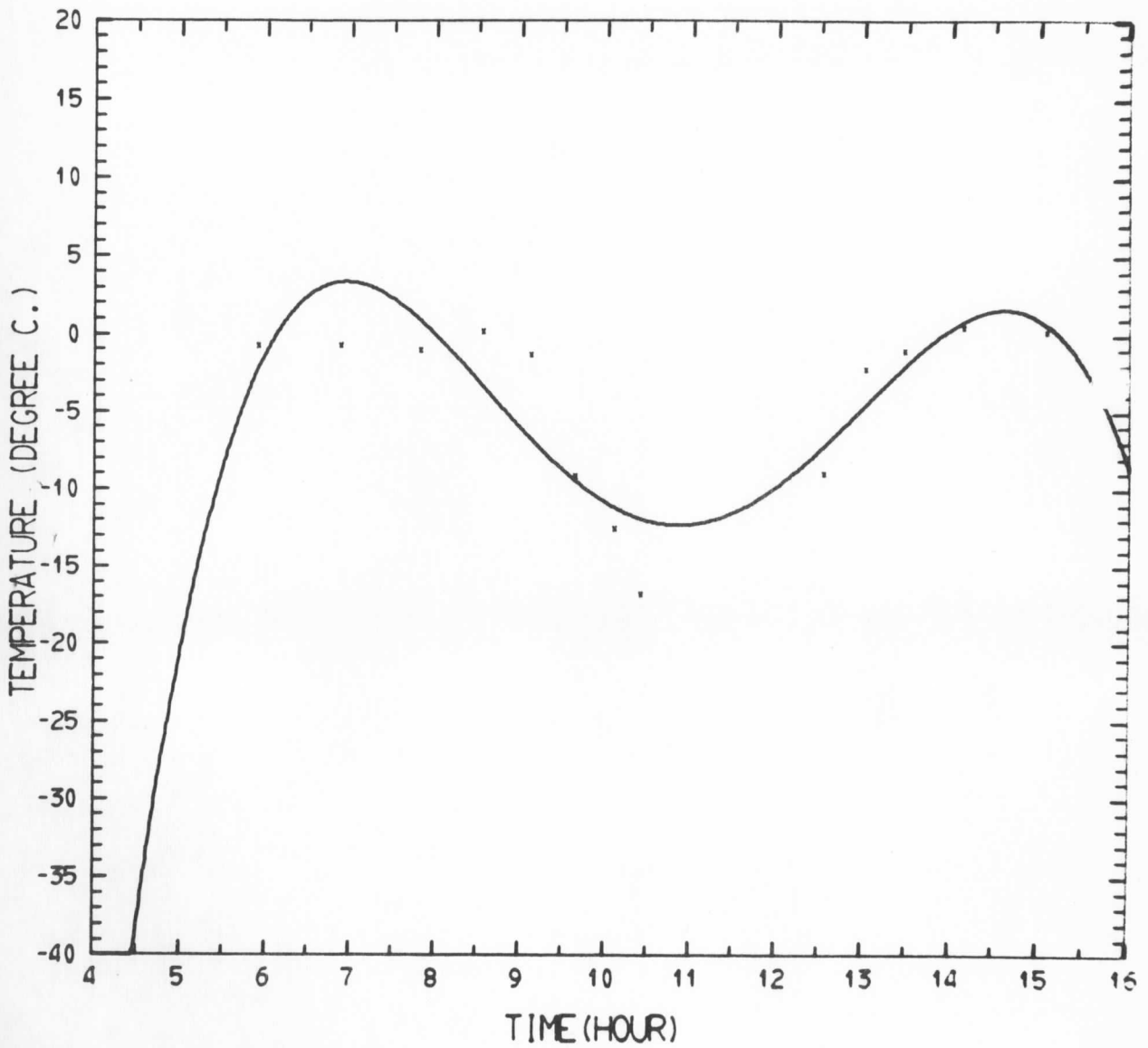
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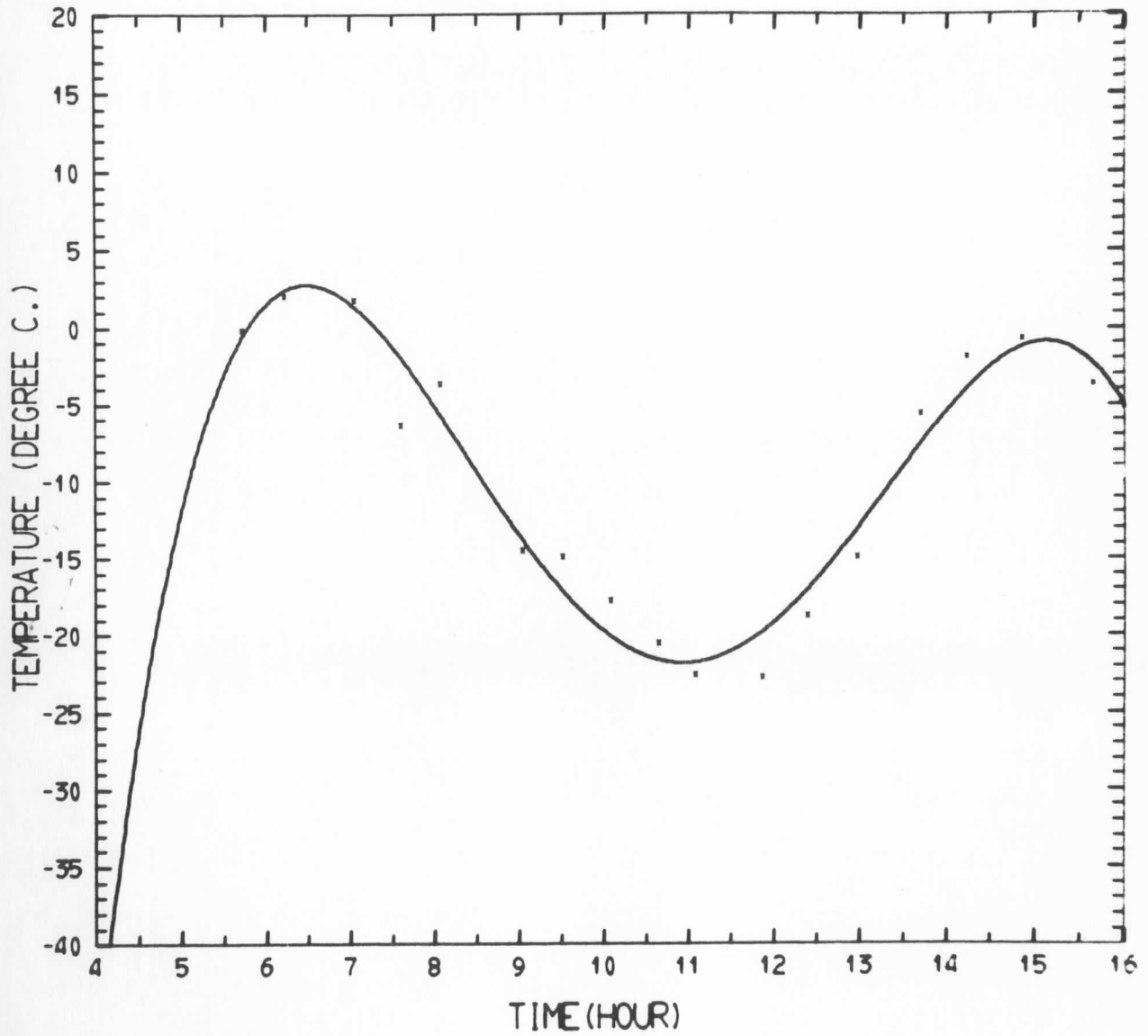
89154 B/D (7- 7-1972)



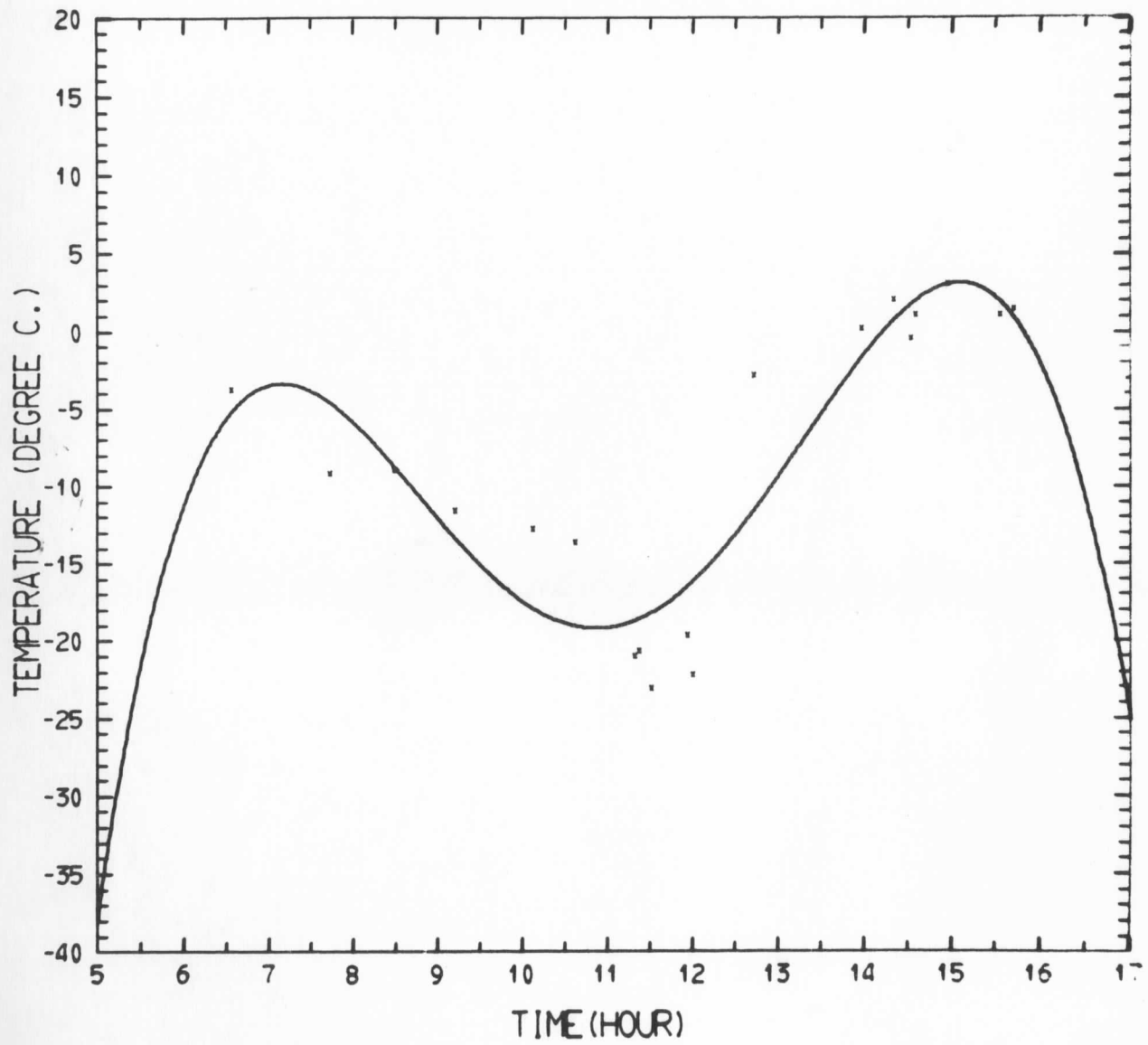
89154 B/D (7- 8-1972)



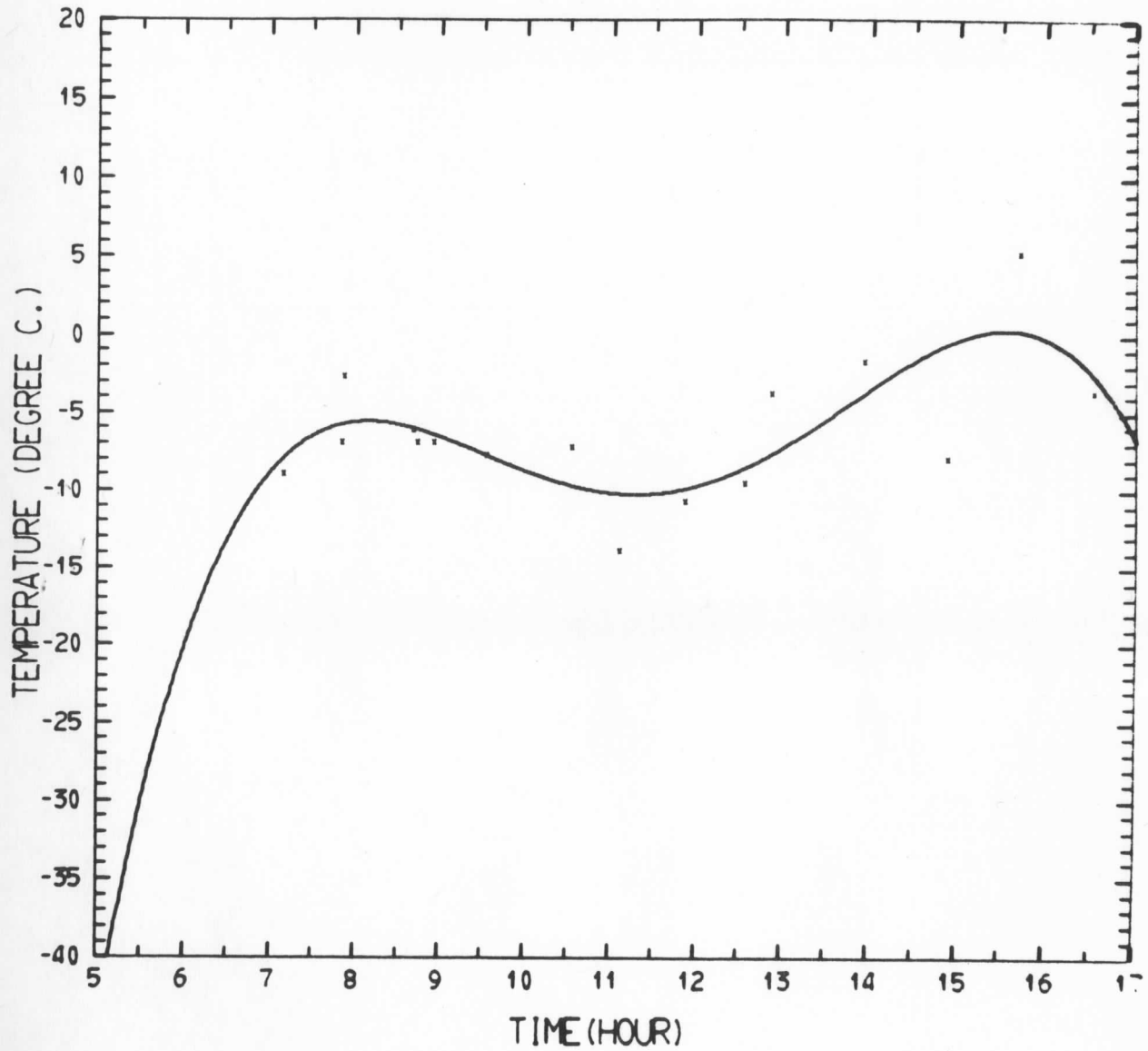
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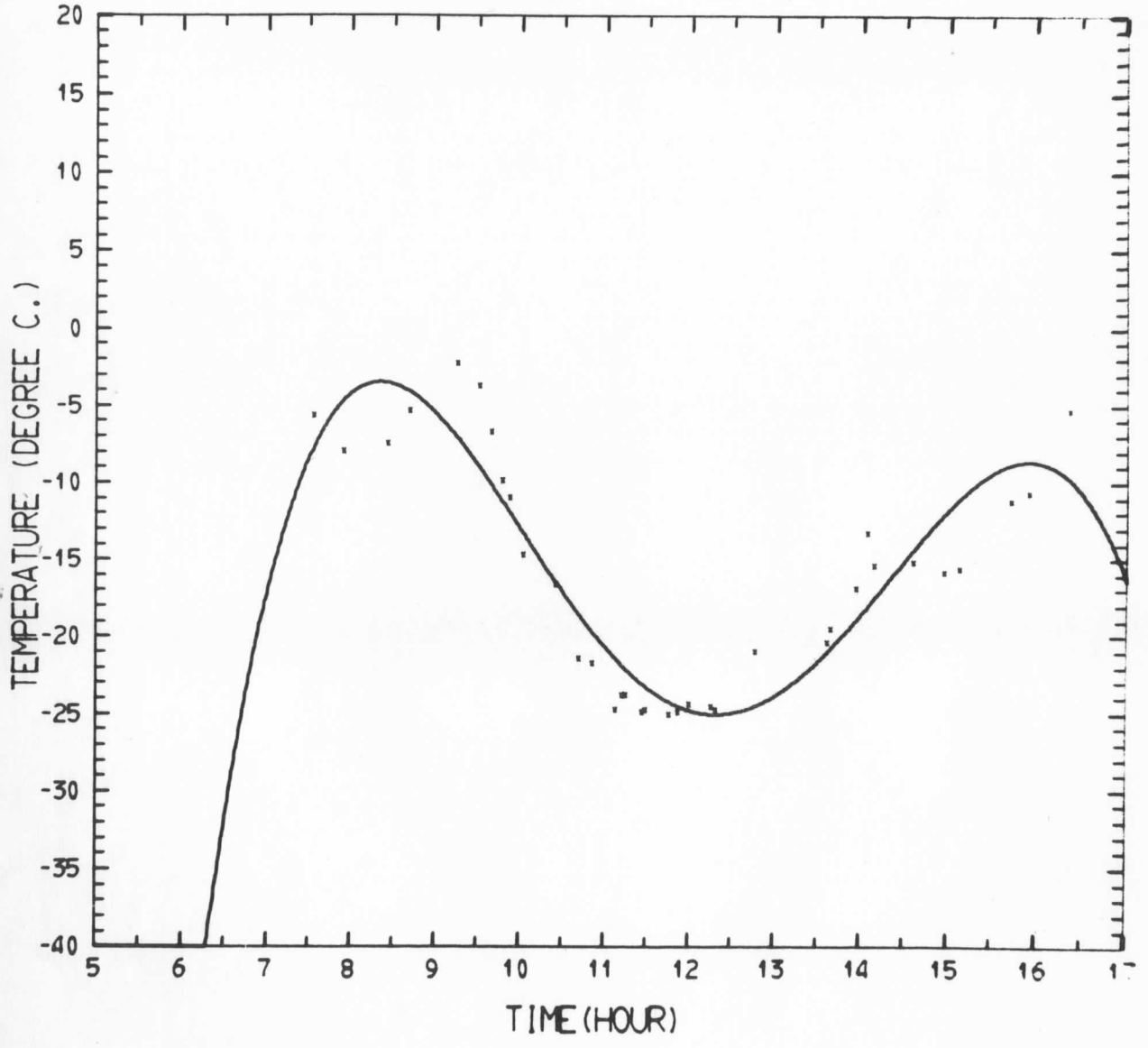
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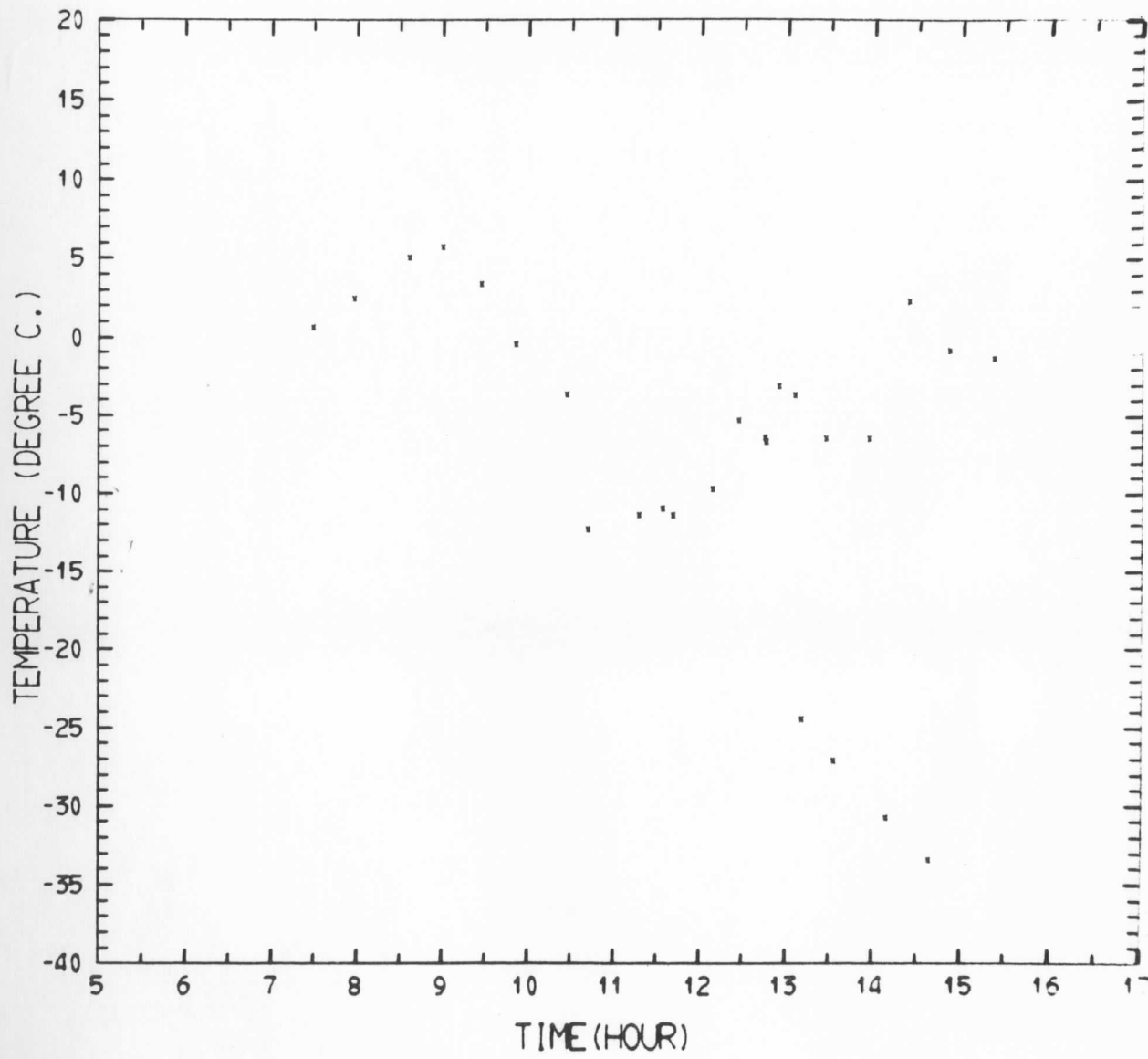
89154 B/D (7-11-1972)



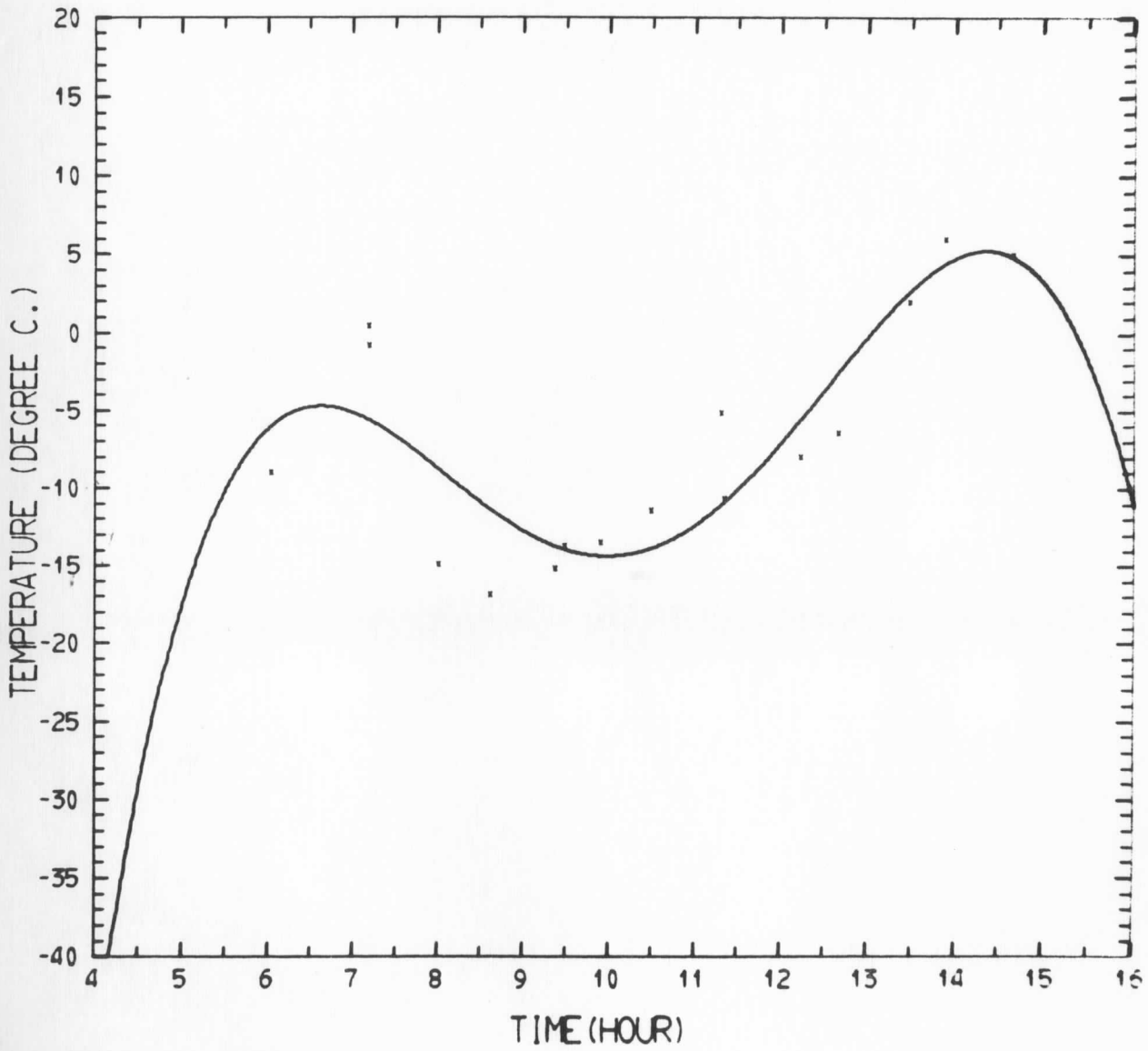
89154 B/D (7-12-1972)



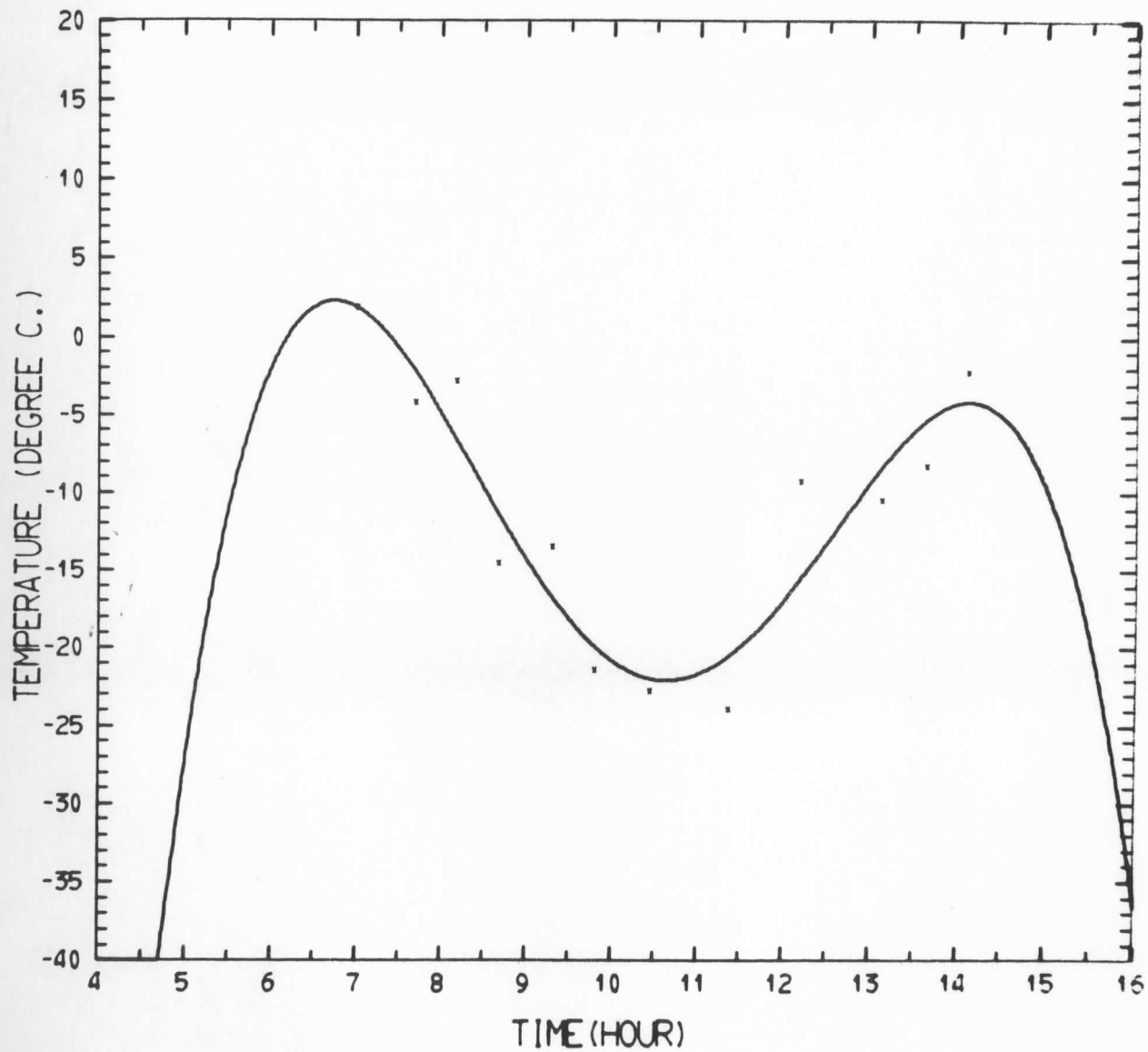
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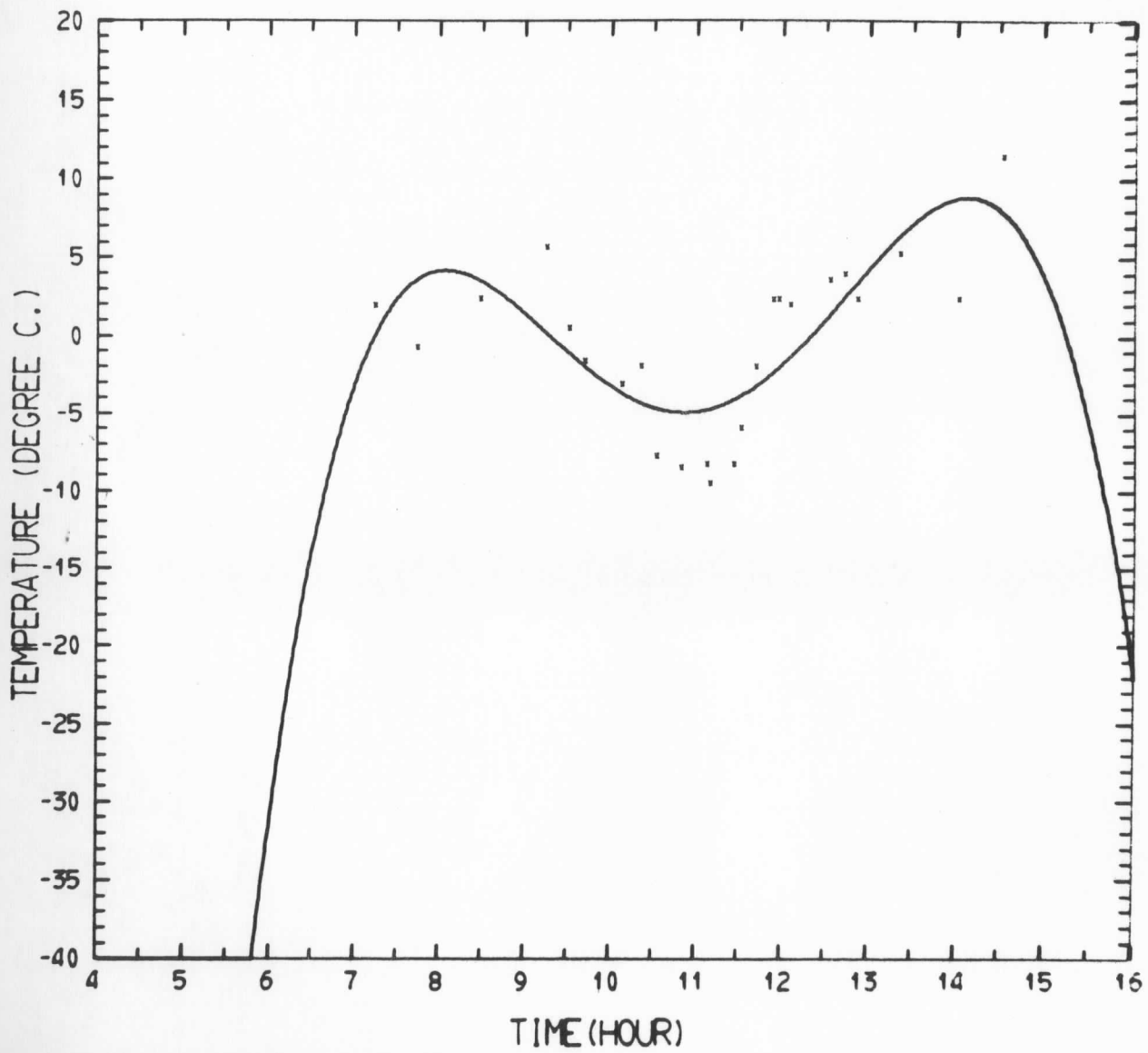
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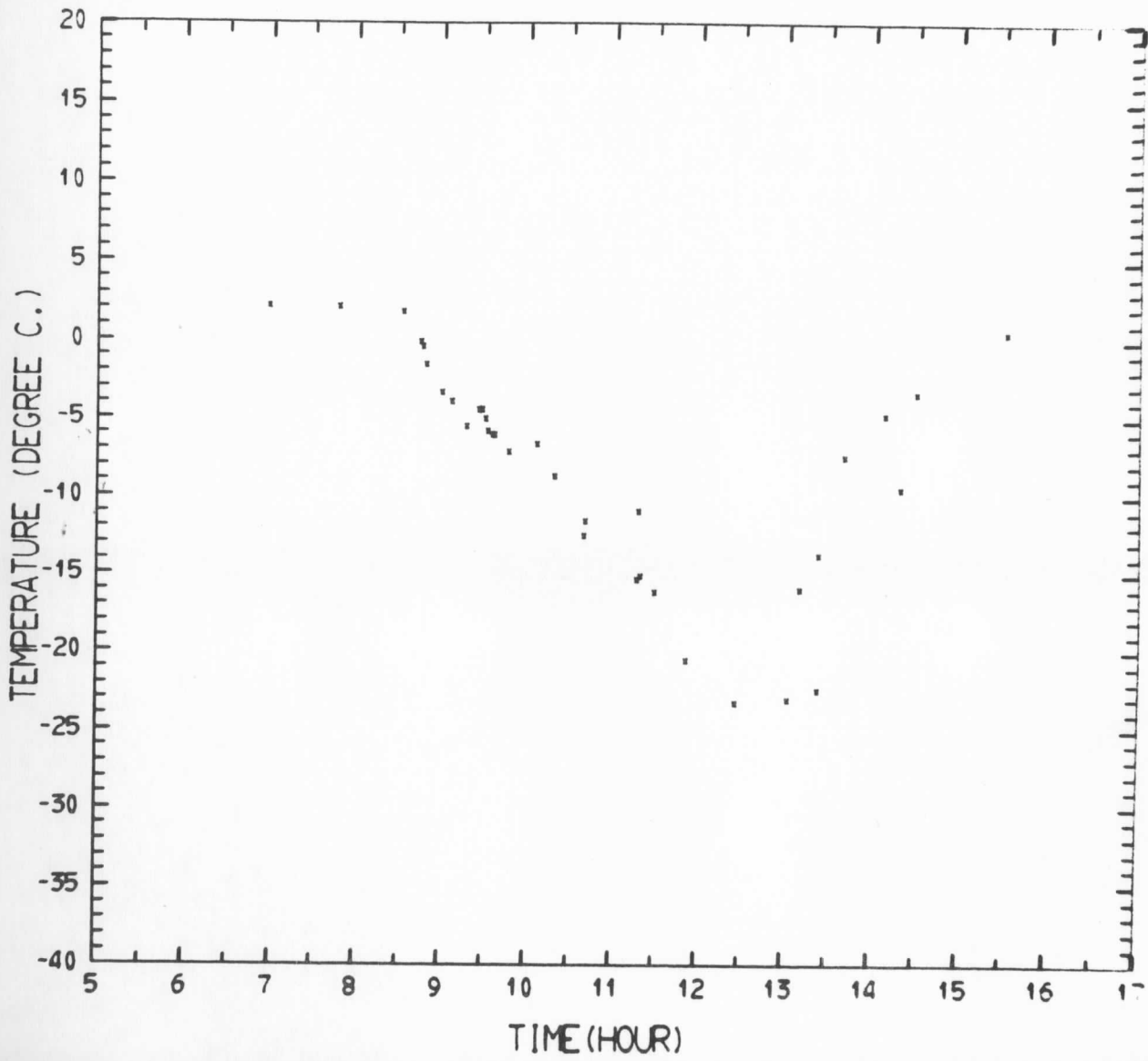
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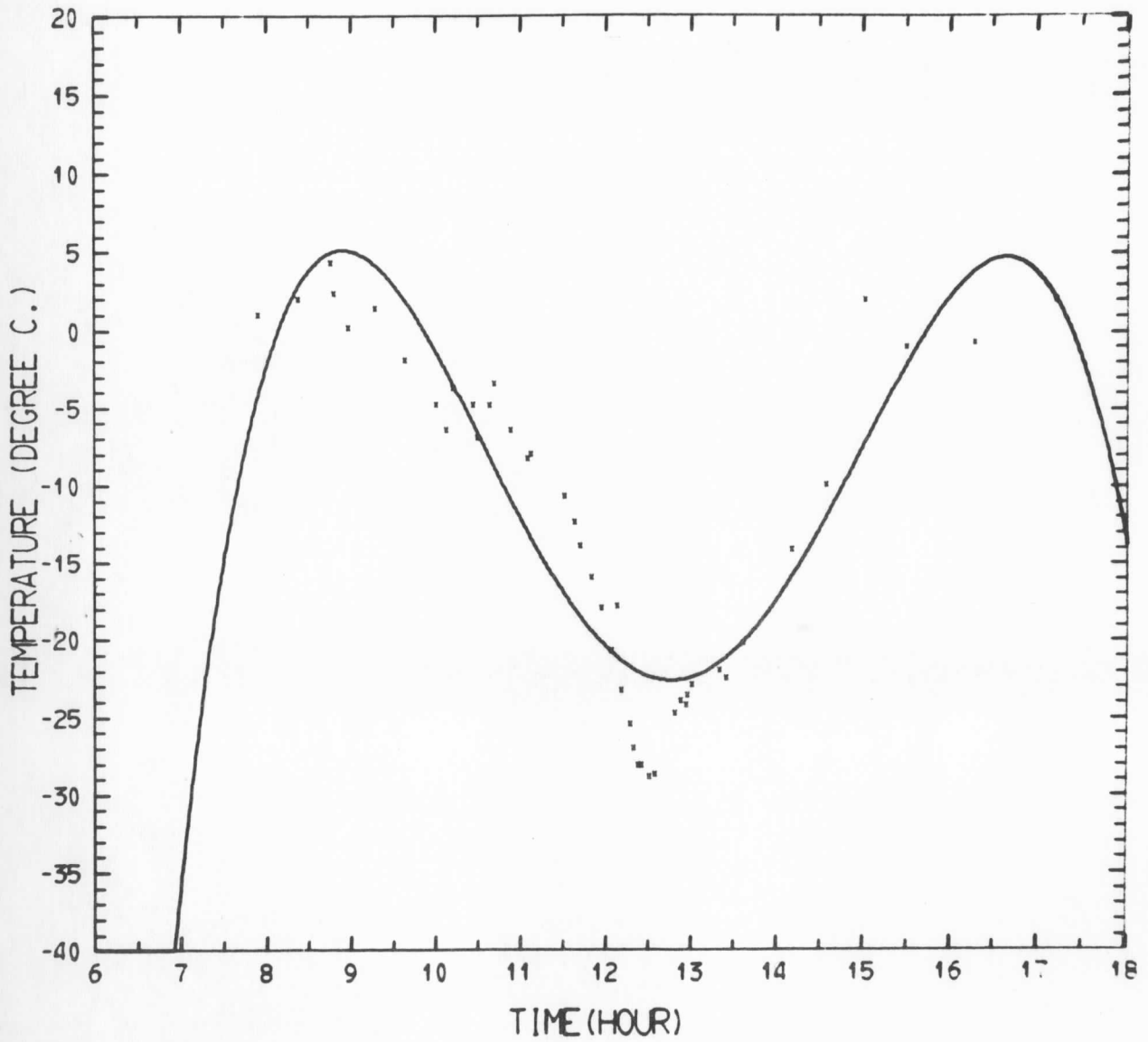
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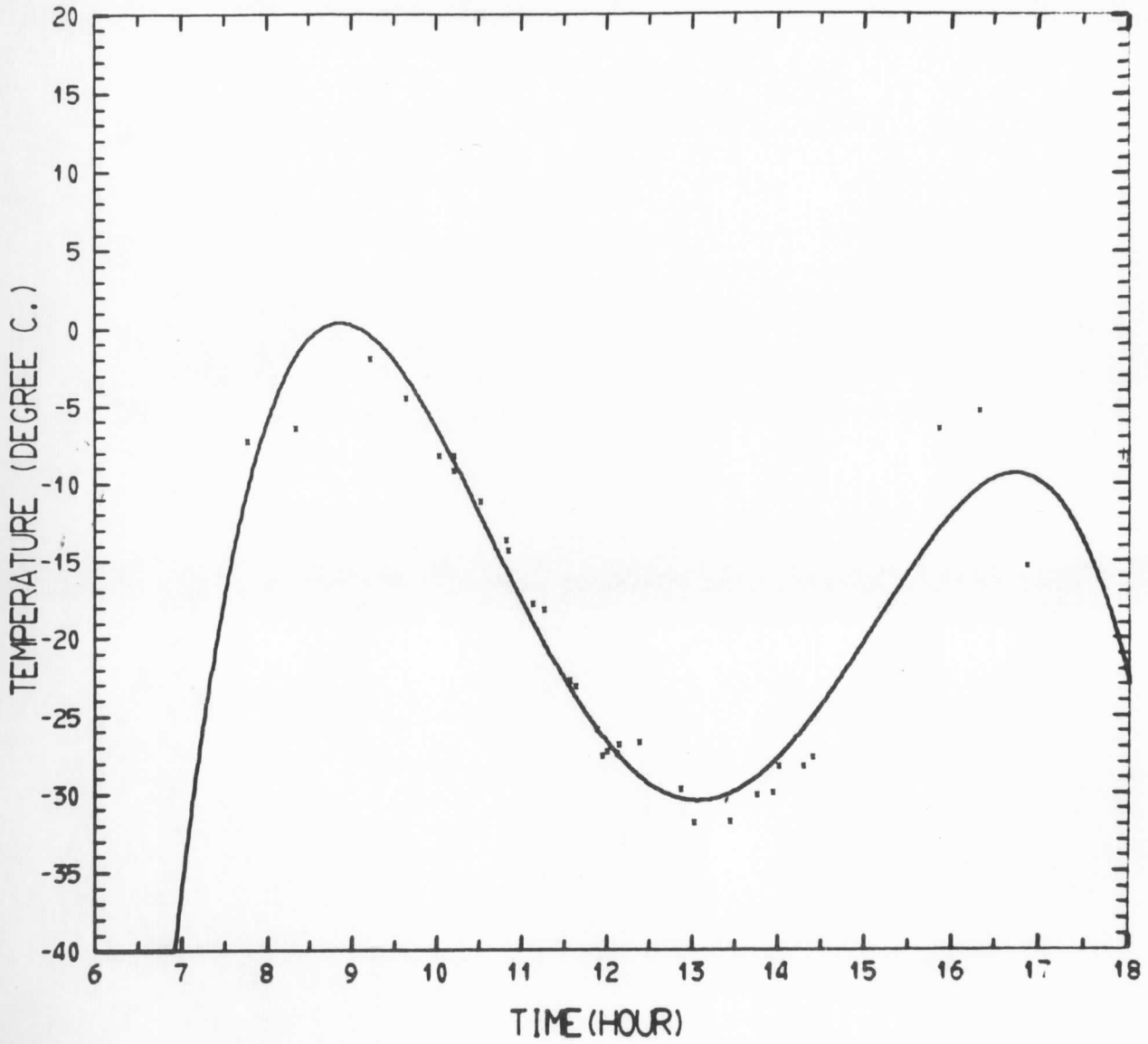
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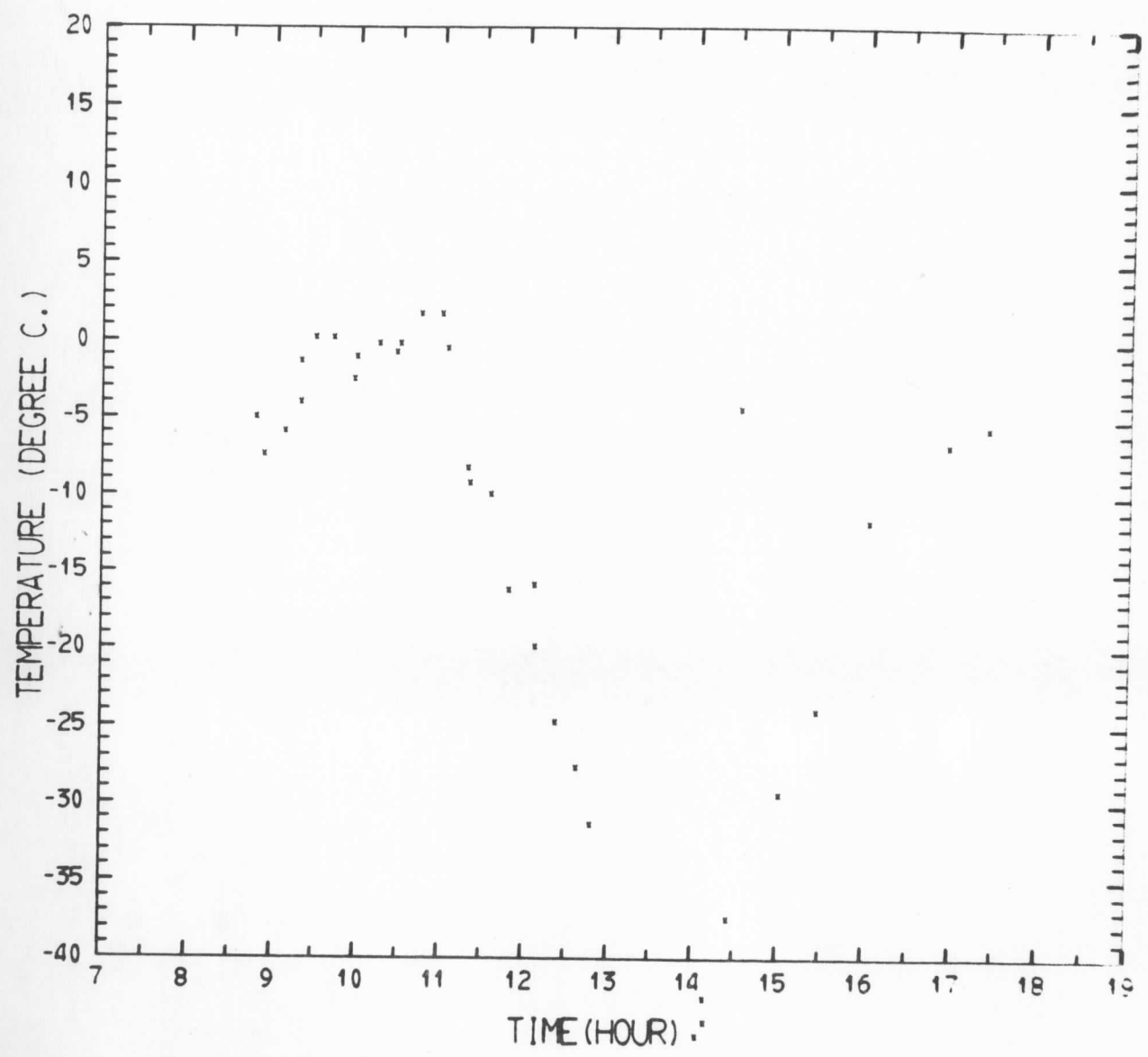
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89154 B/D (7-19-1972)



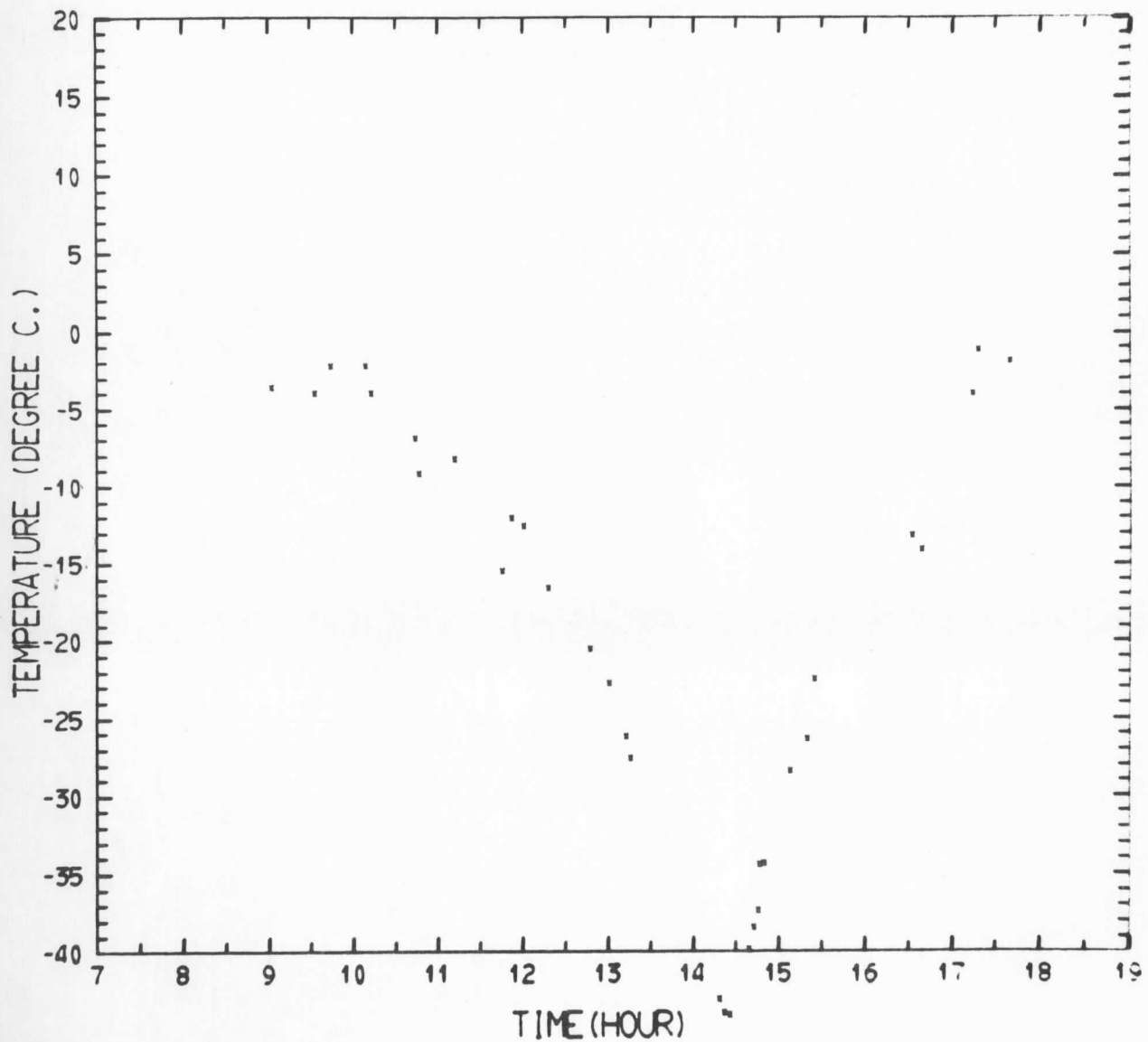
89154 B/D (7-20-1972;



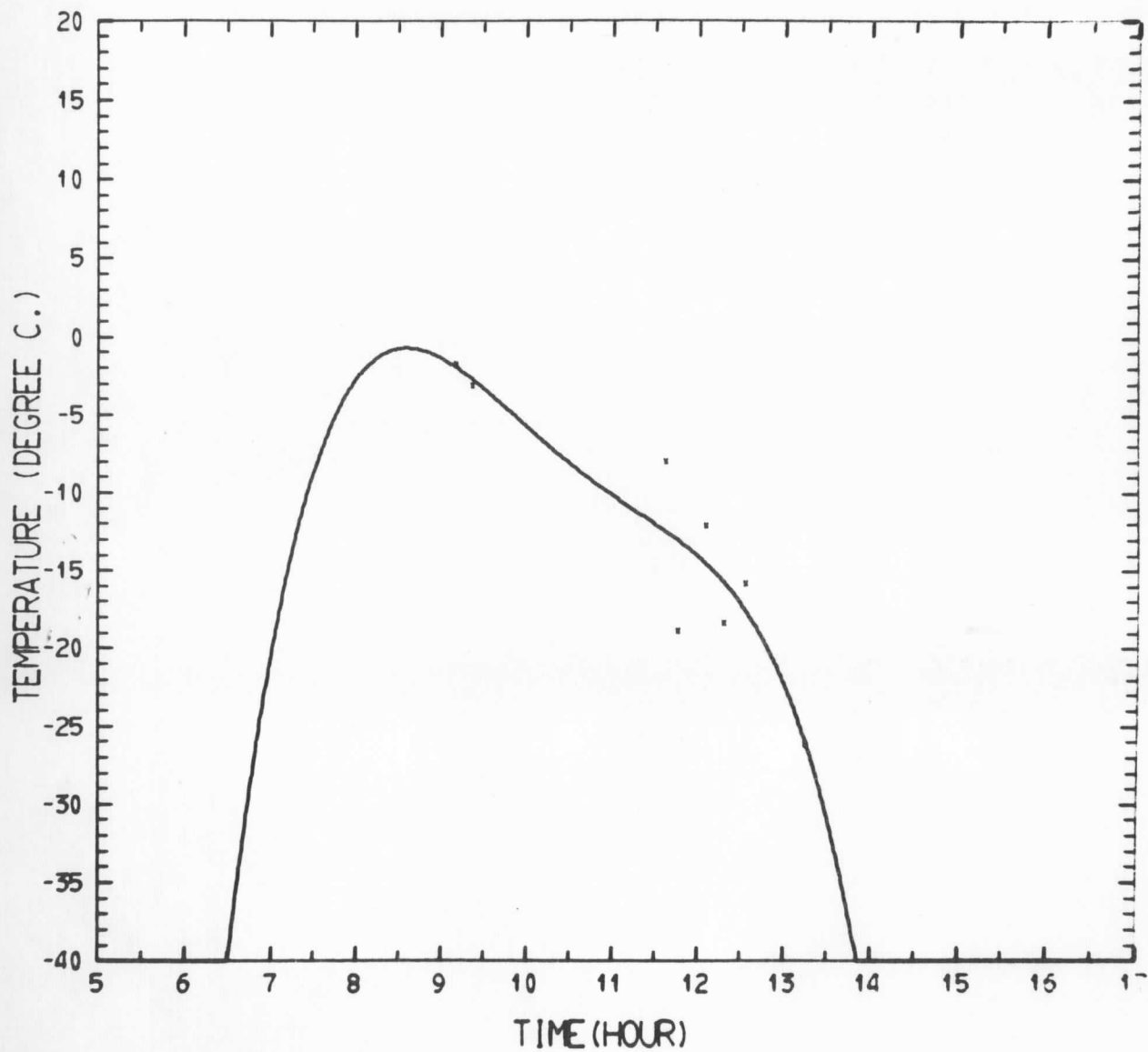
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B/D

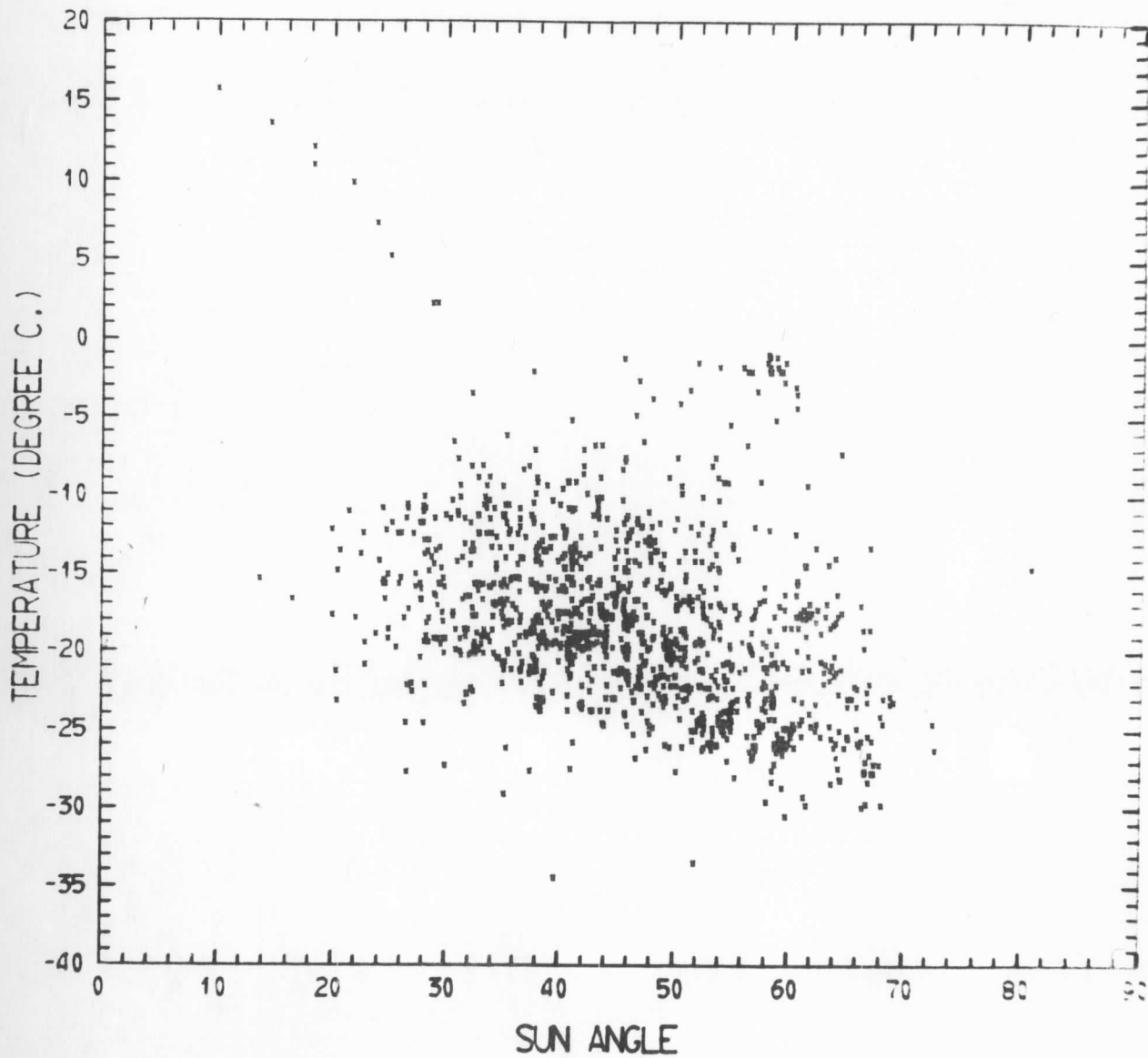
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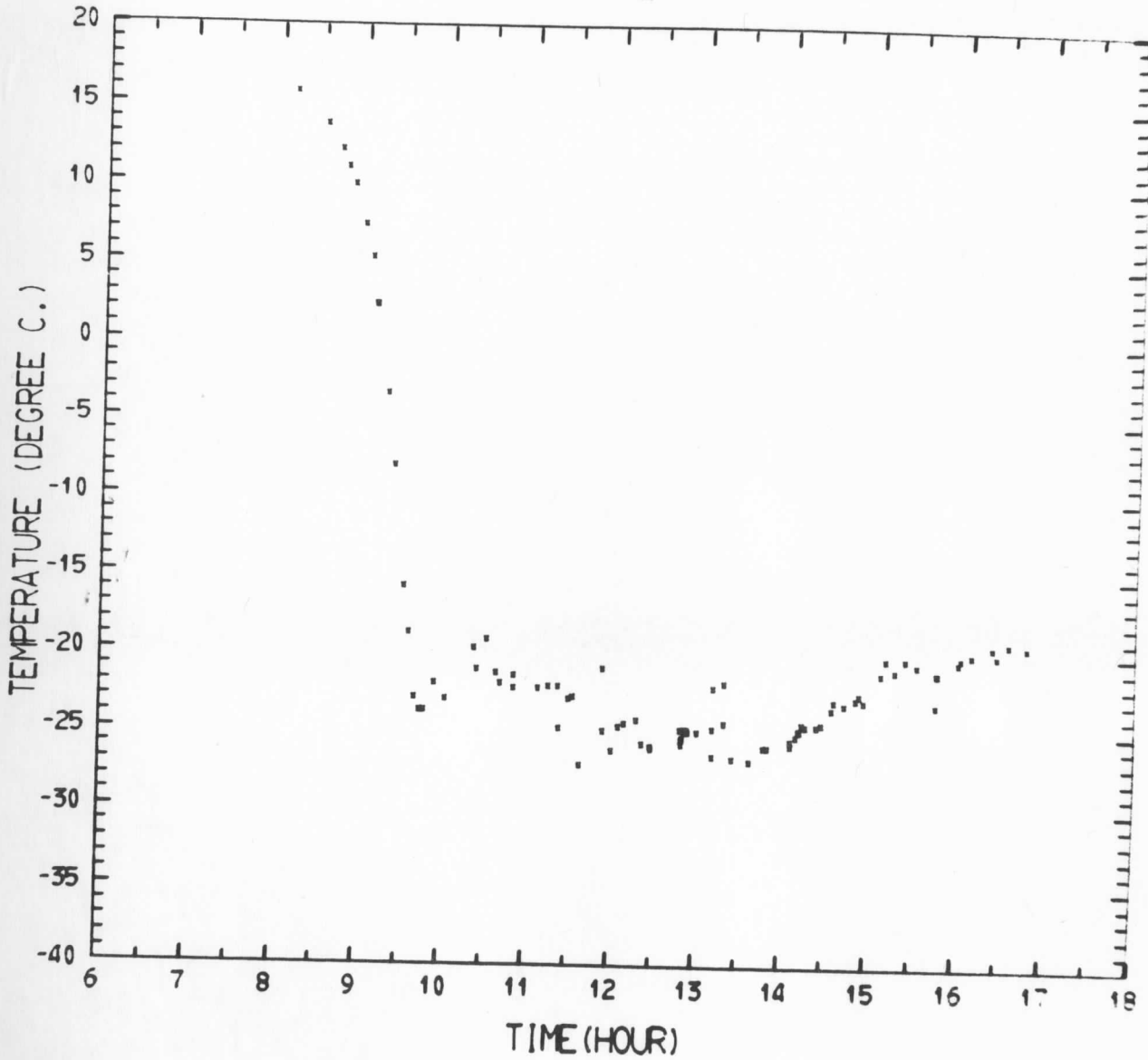
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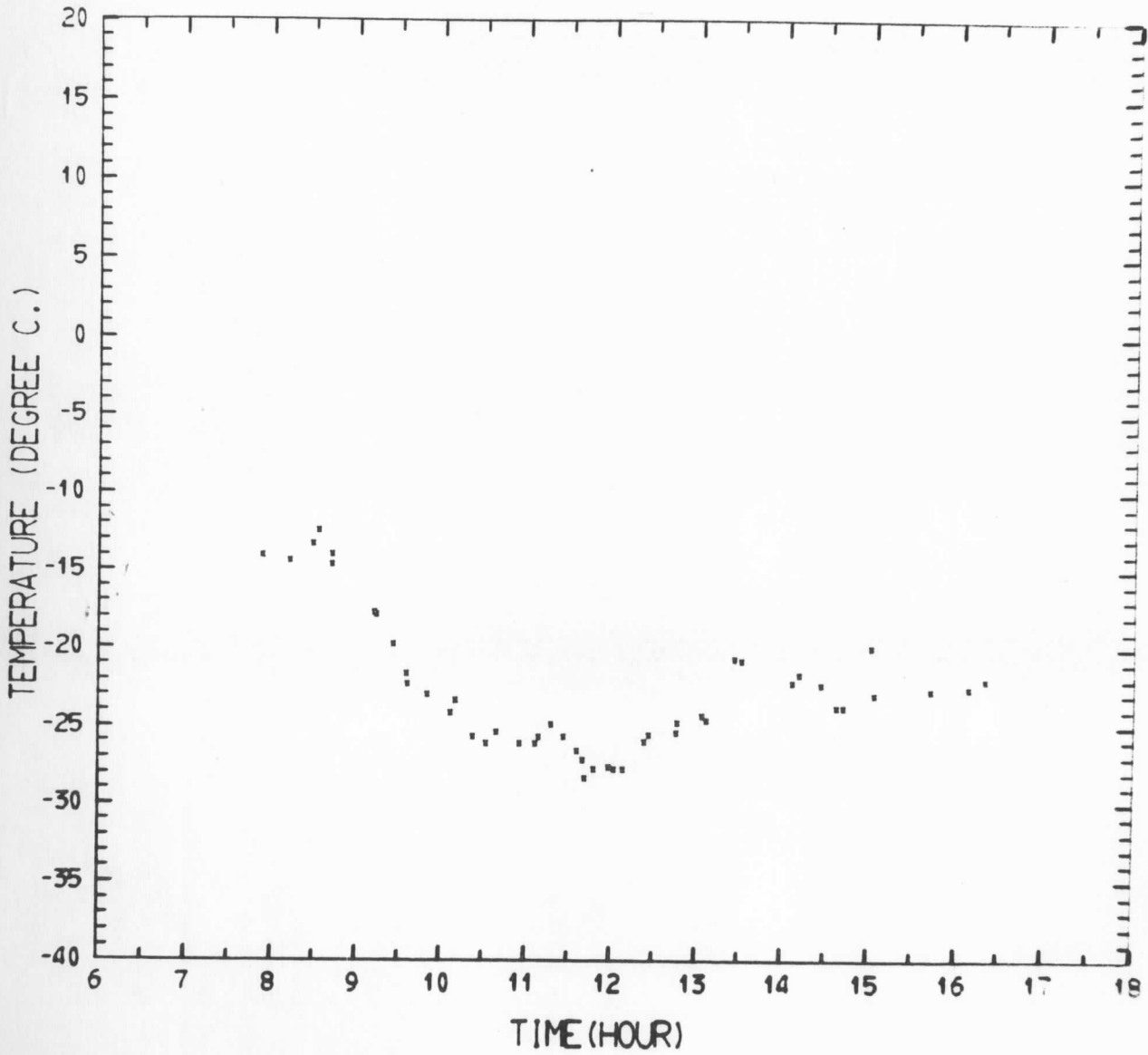
90152 B/L - 1972 (1133 POINTS)



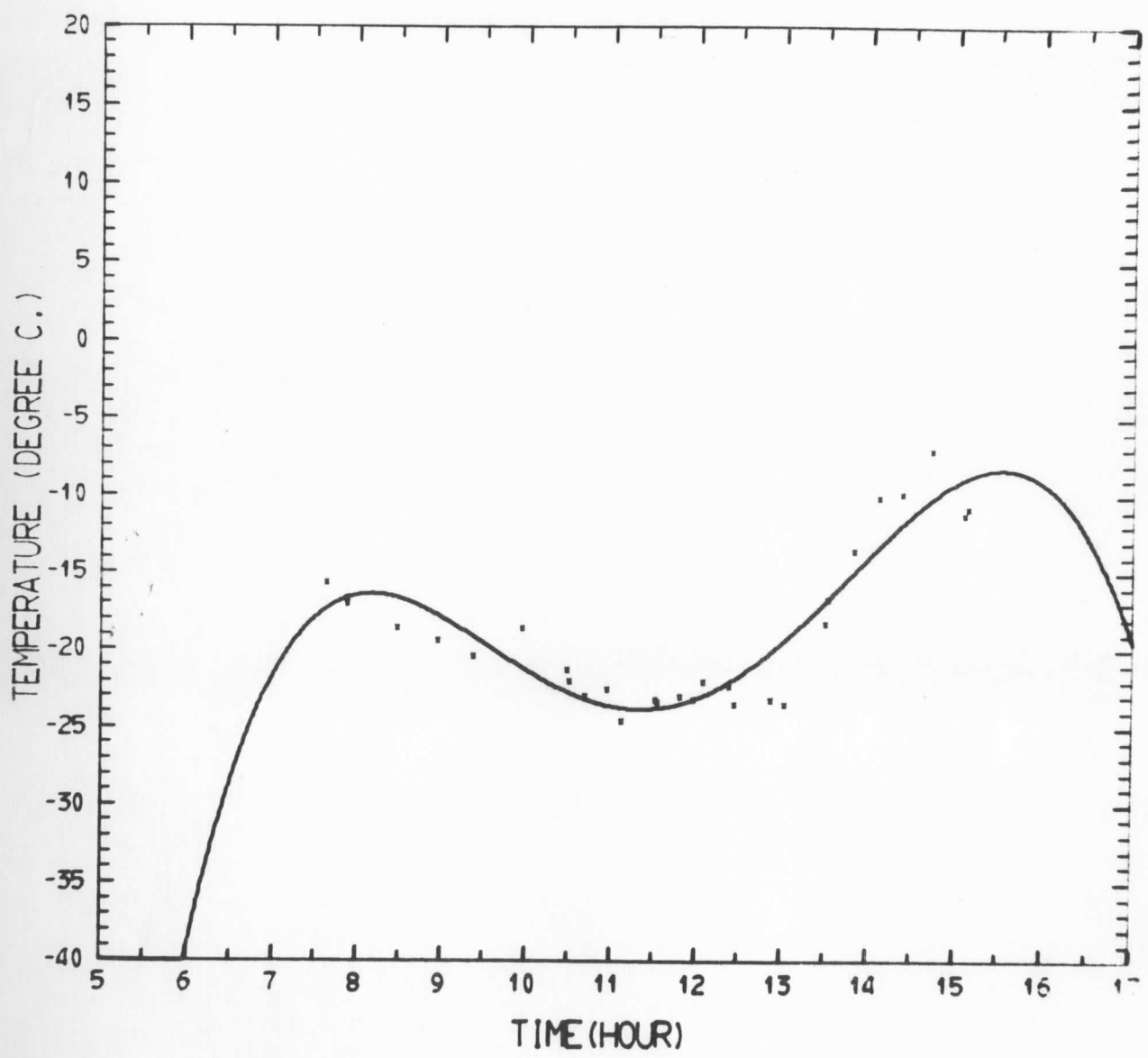
90152 B/L (7- 3-1972)



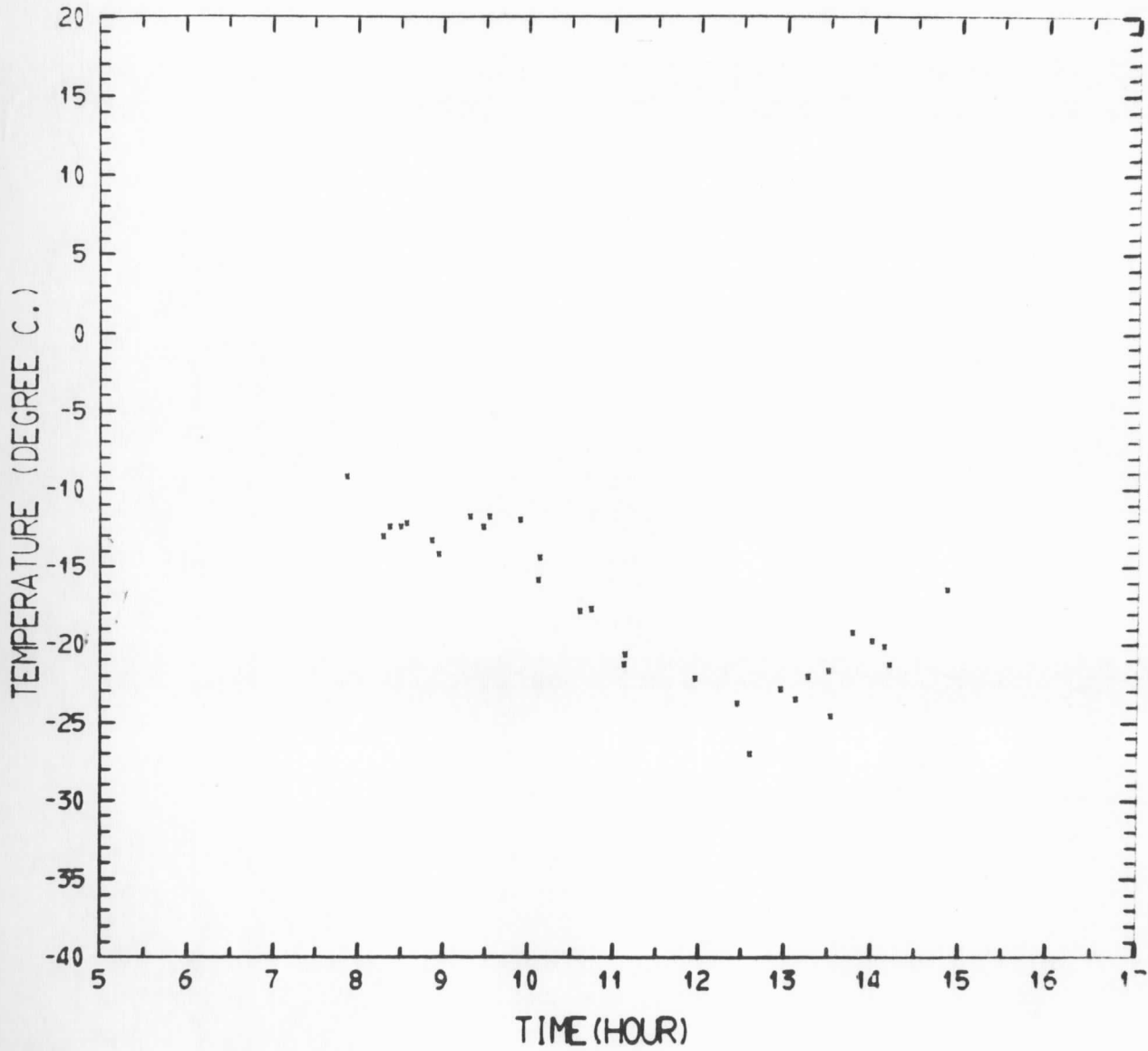
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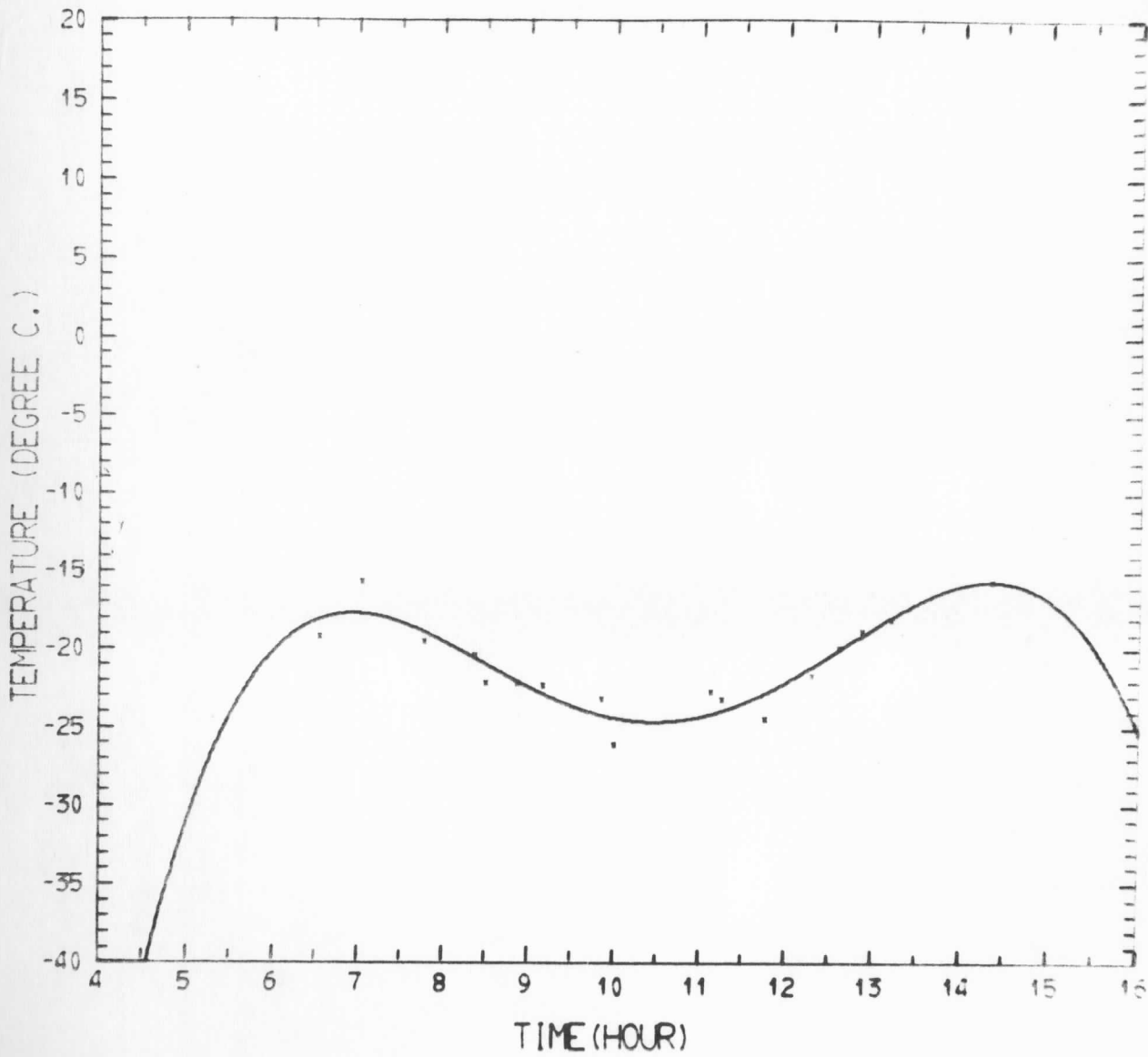
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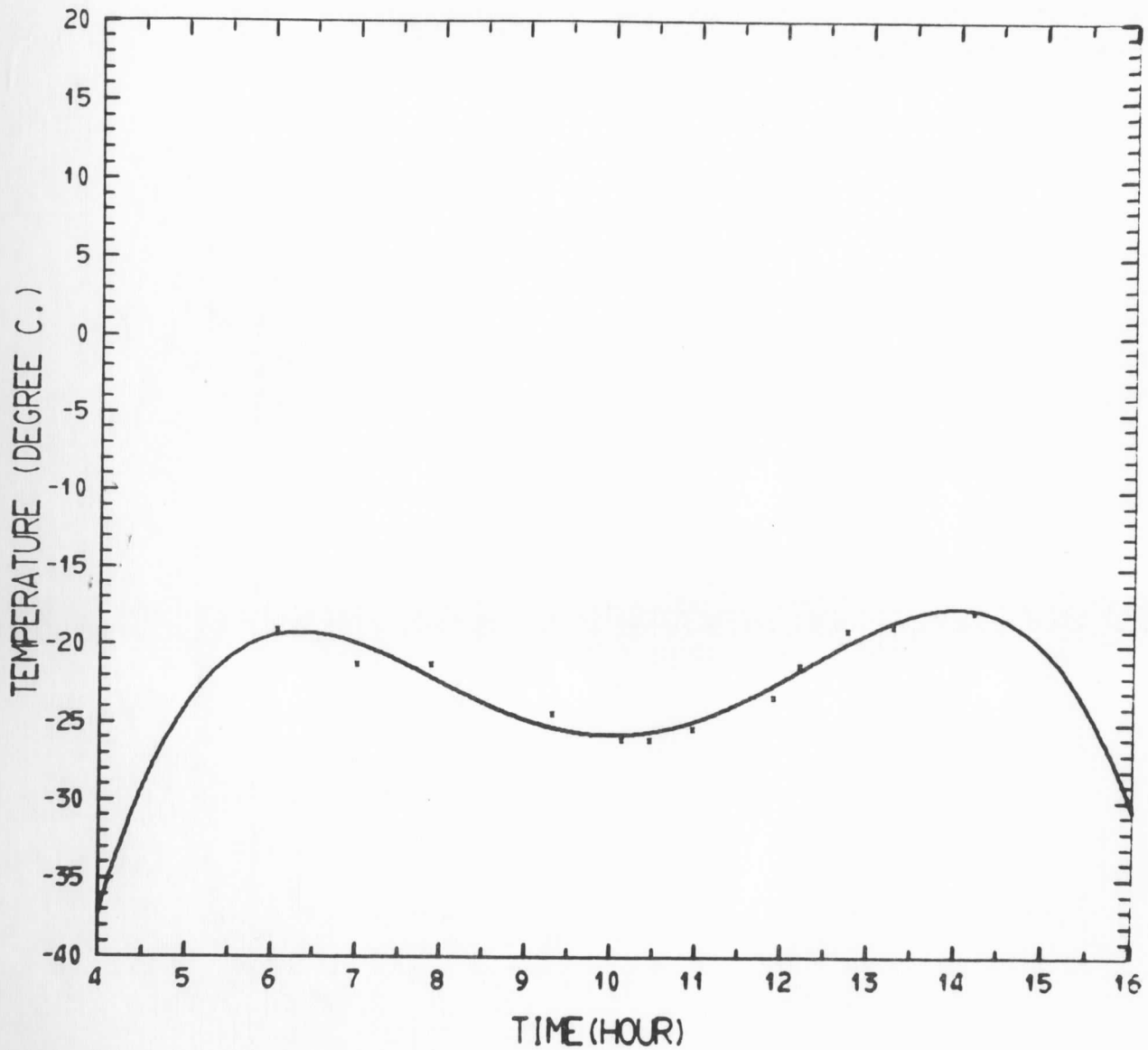
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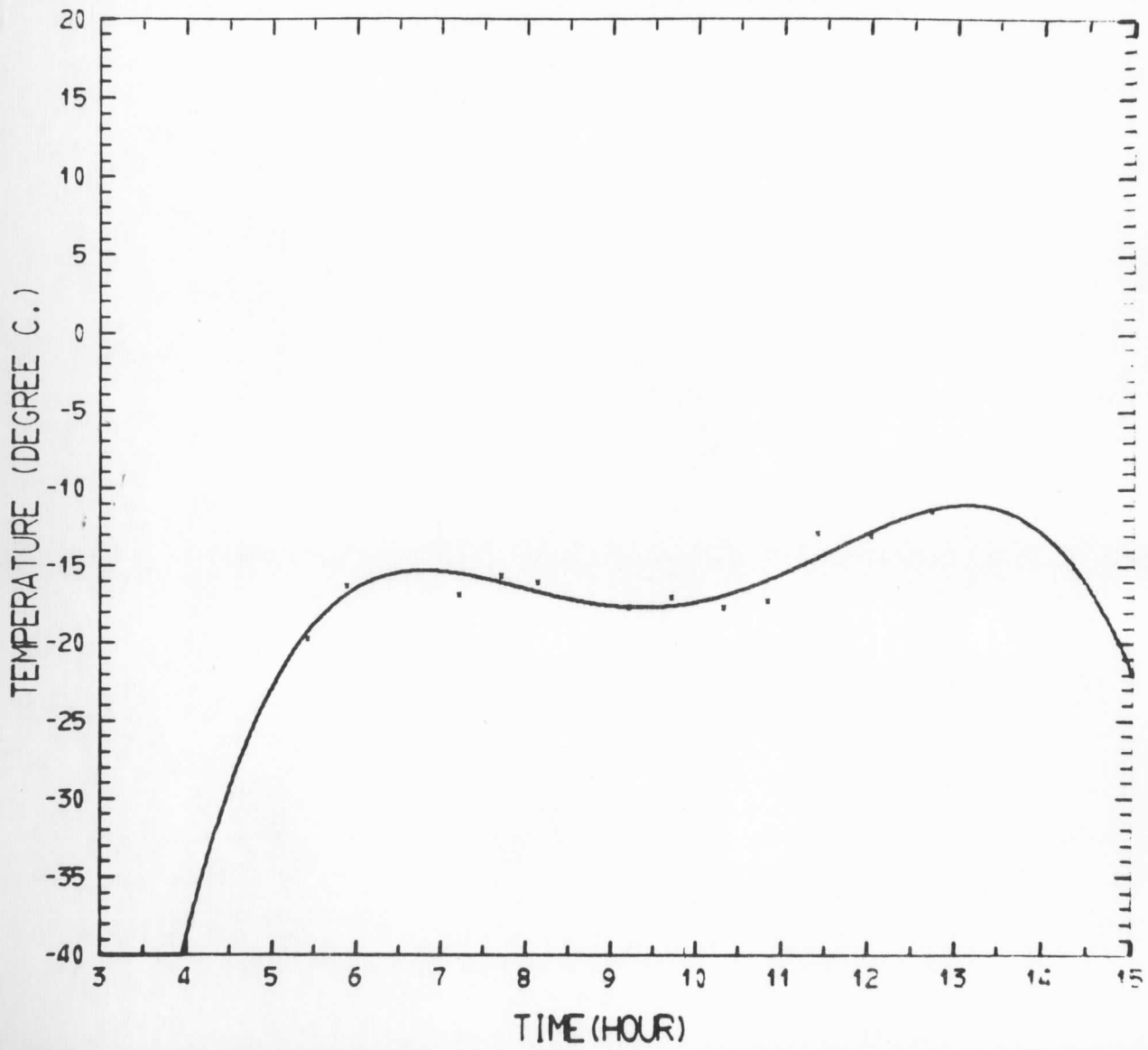
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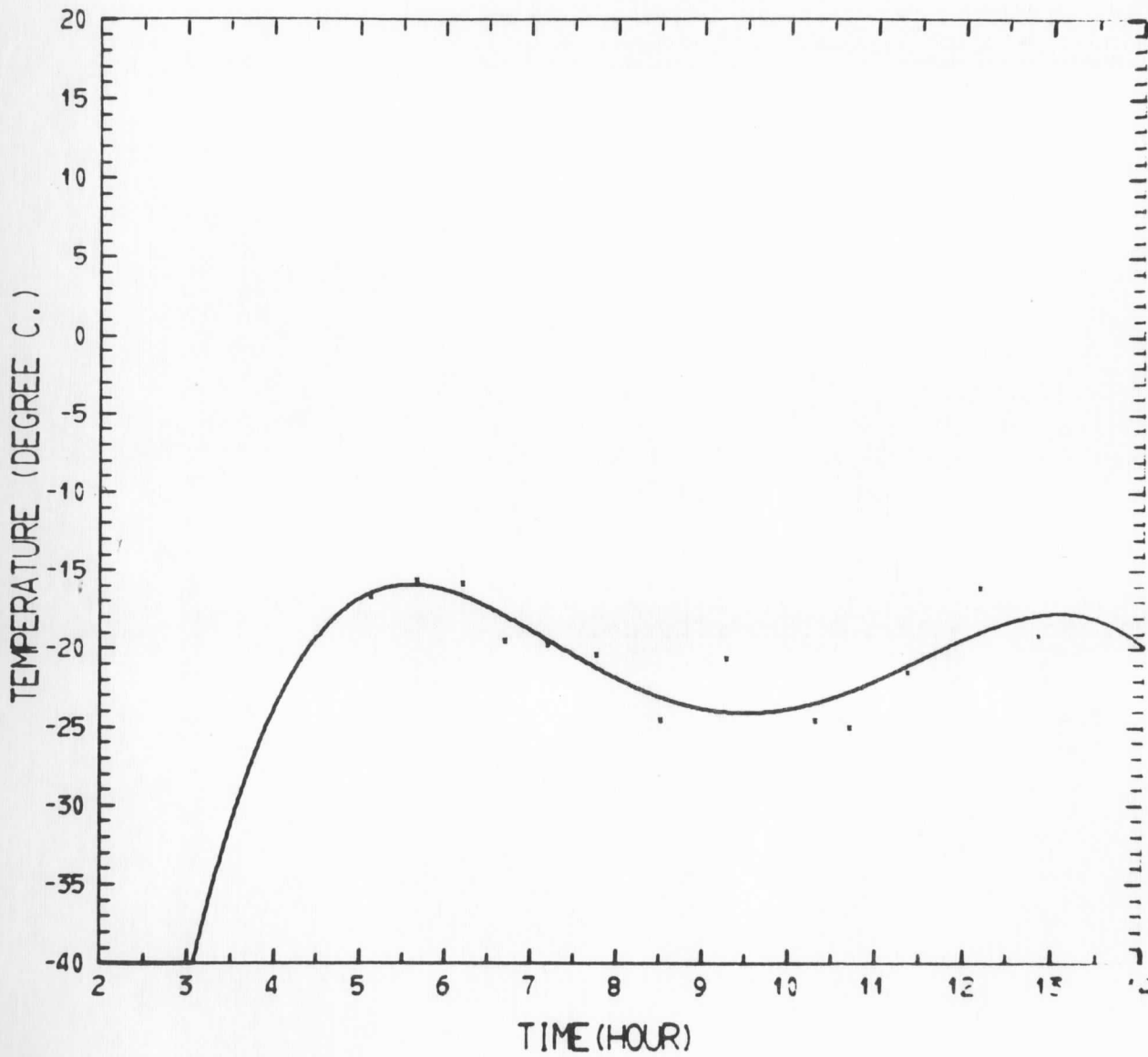
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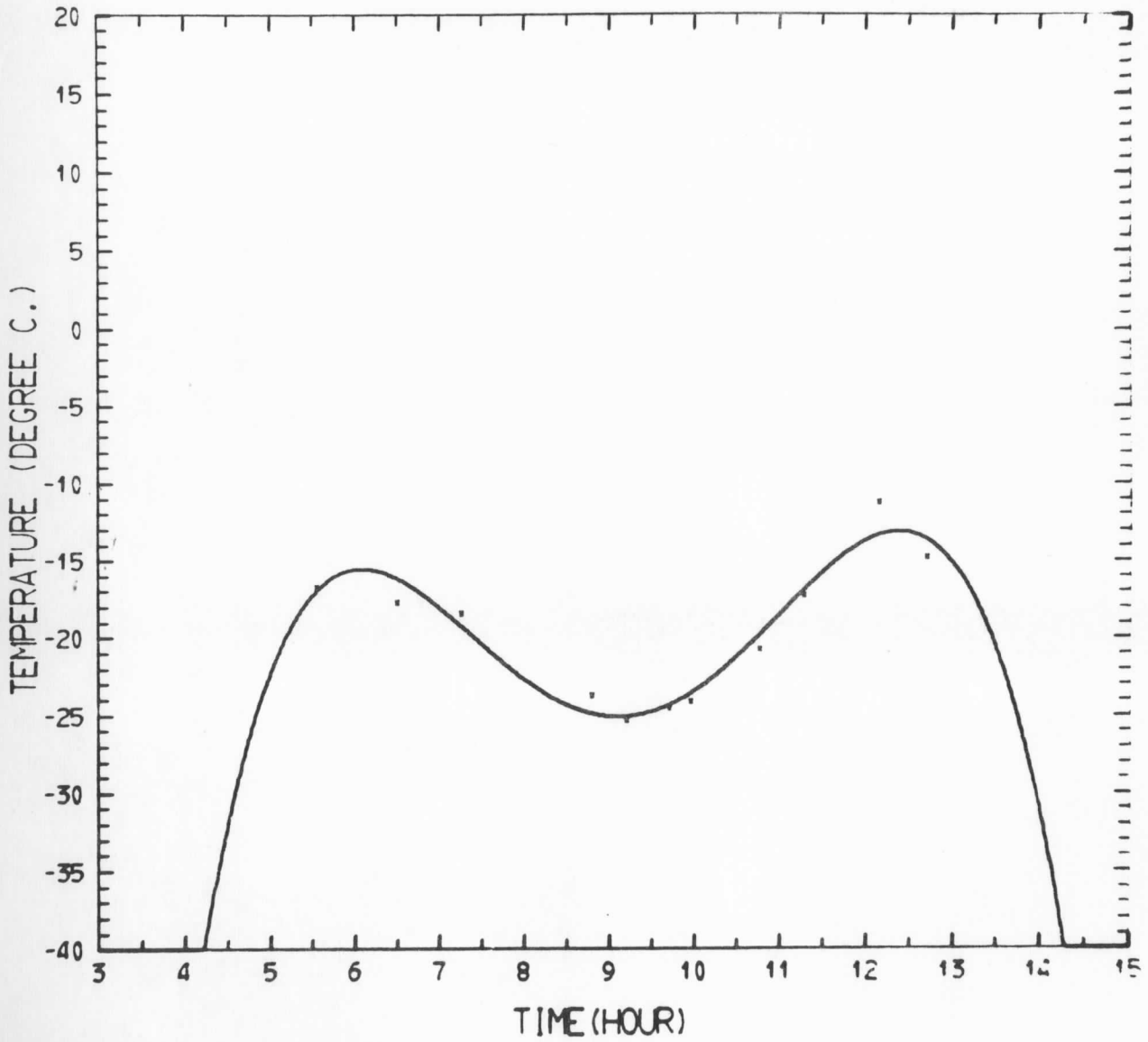
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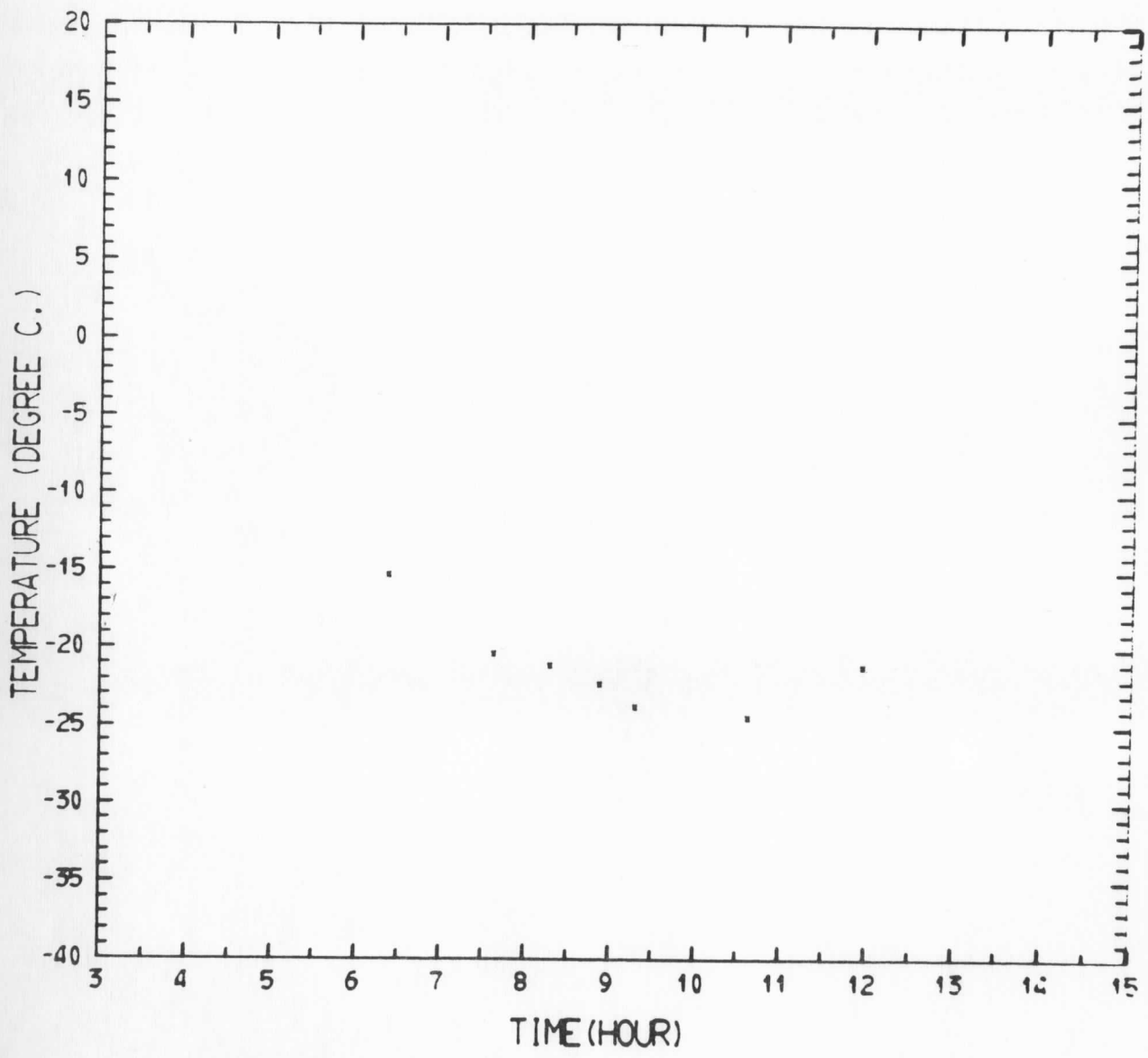
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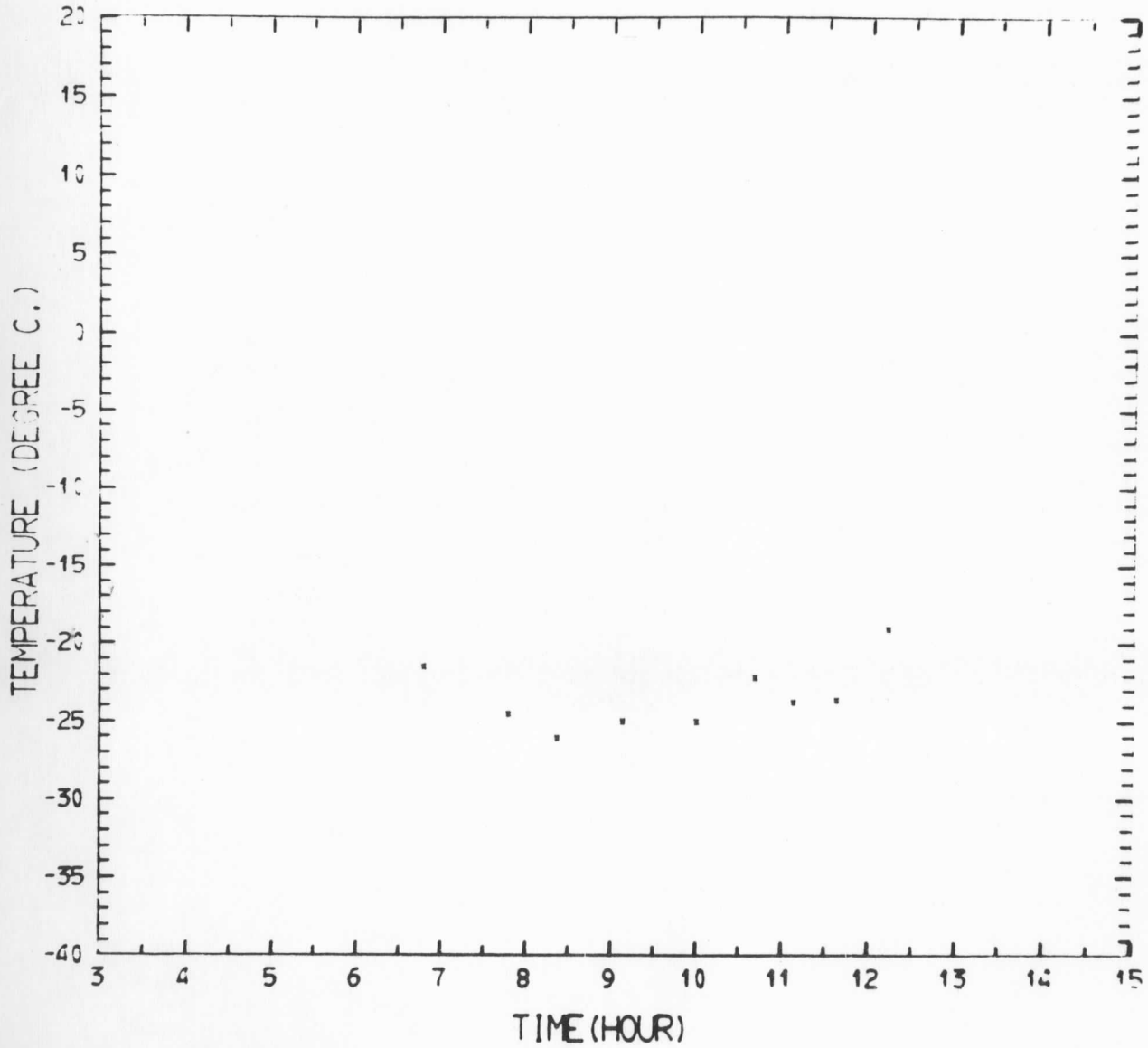
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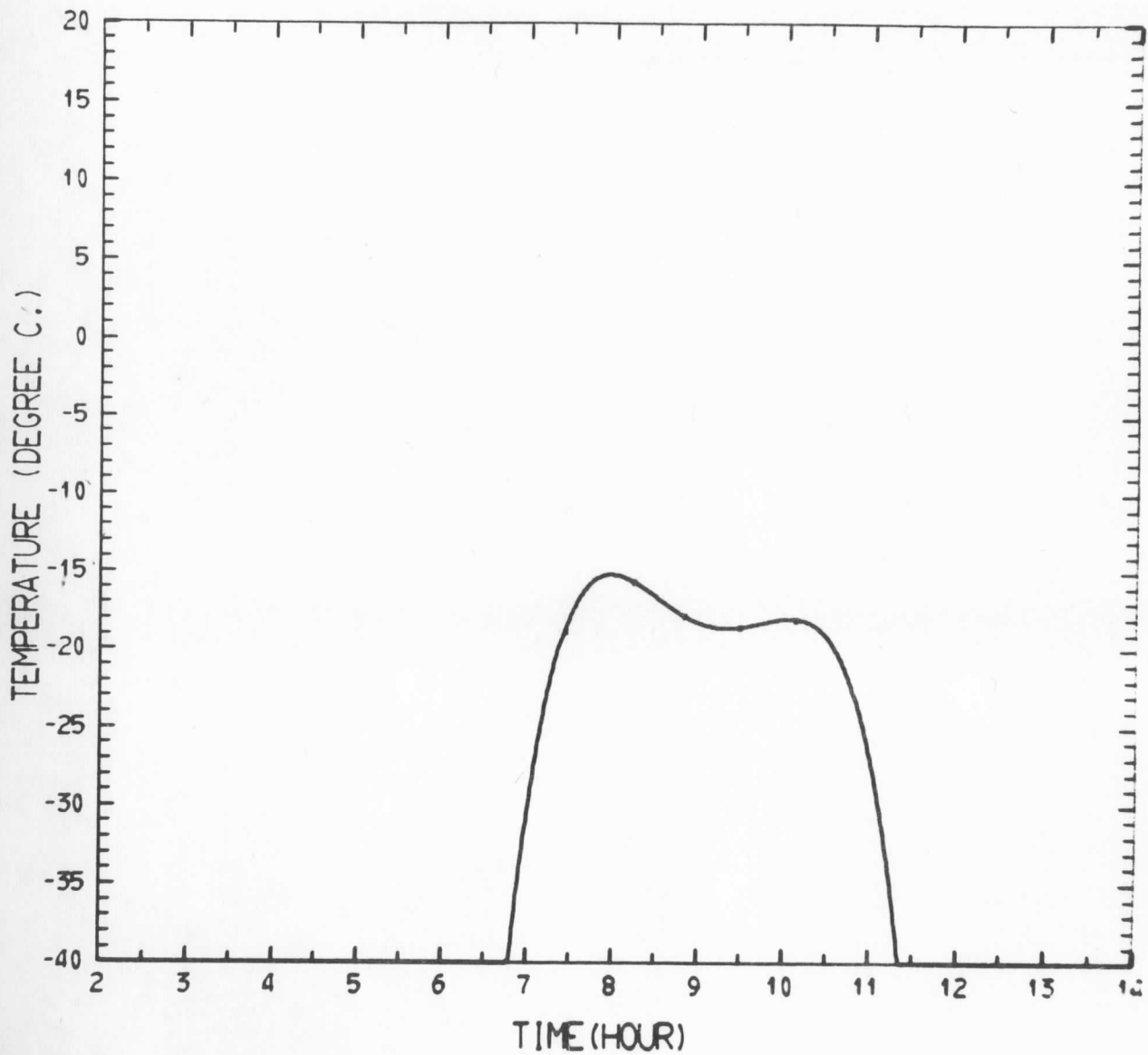
90152 B/L (7-12-1972)



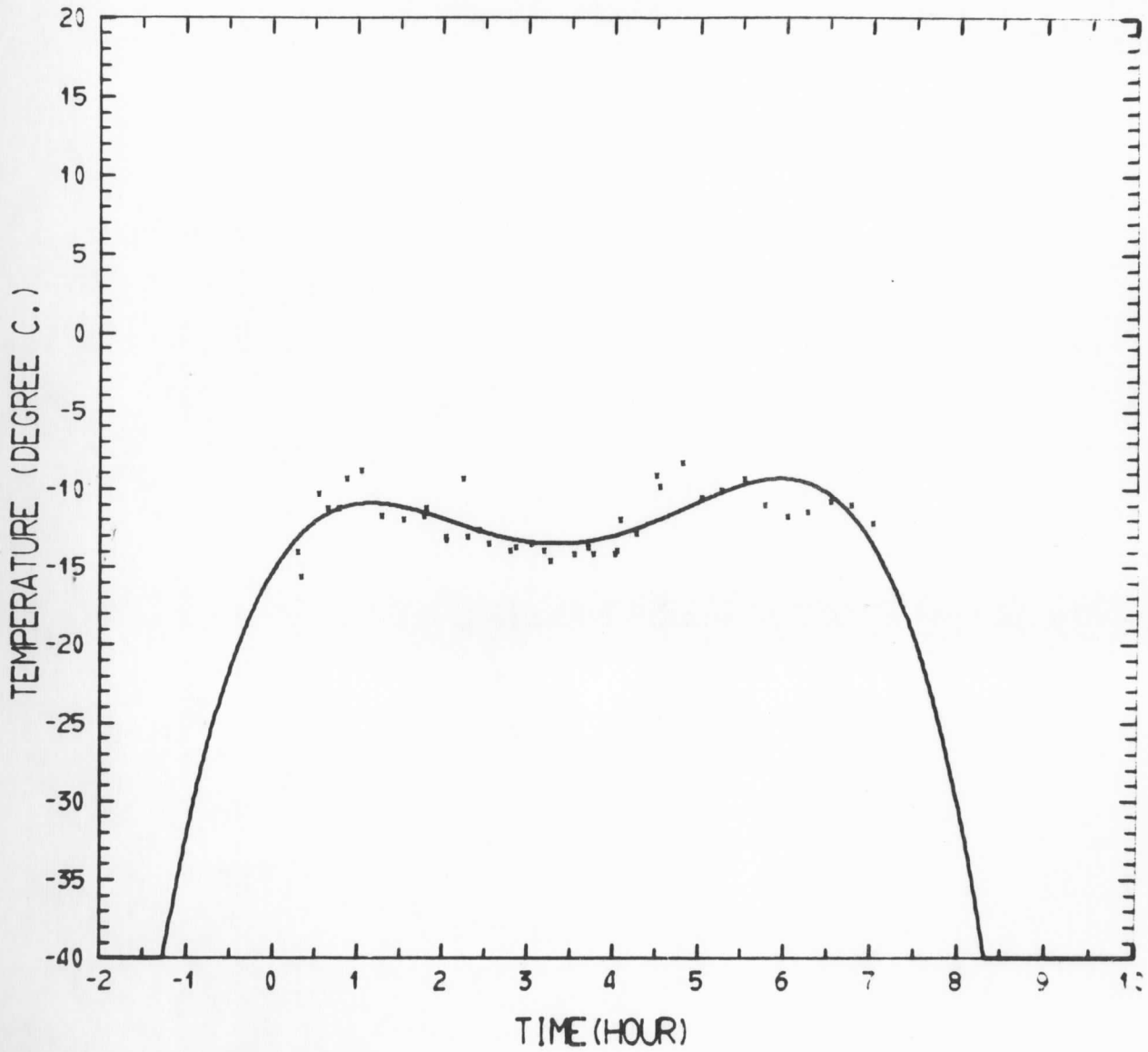
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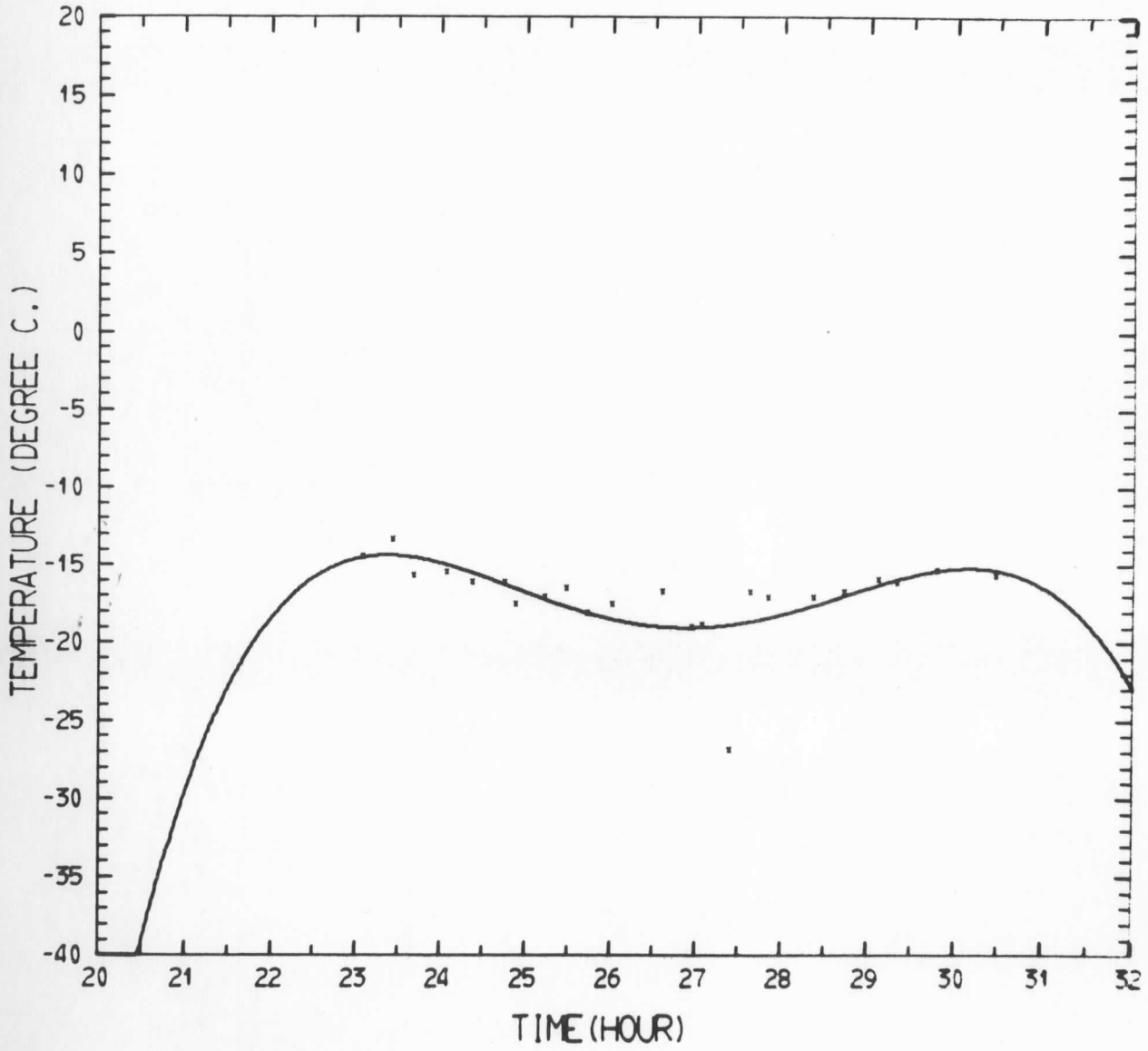
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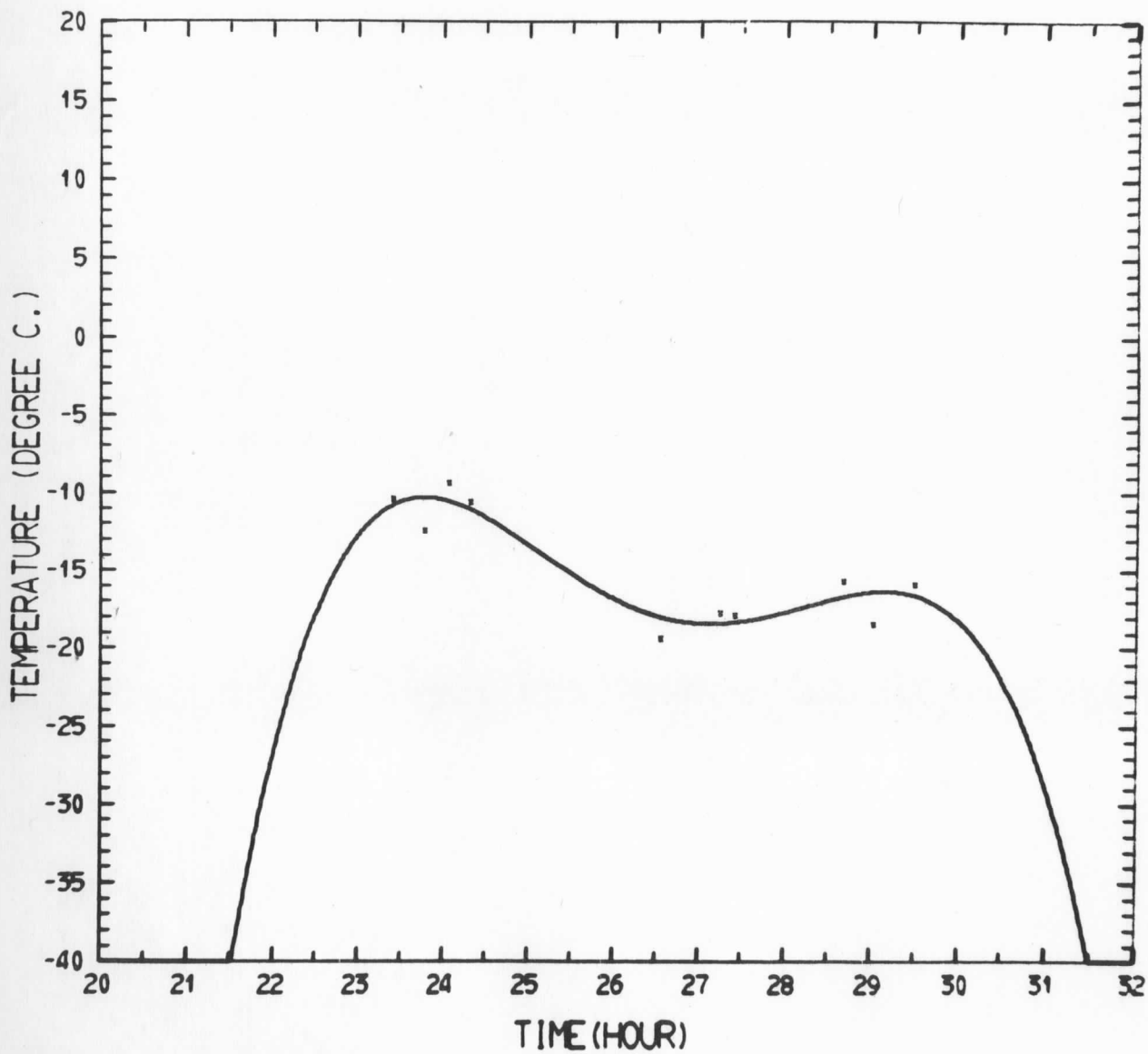
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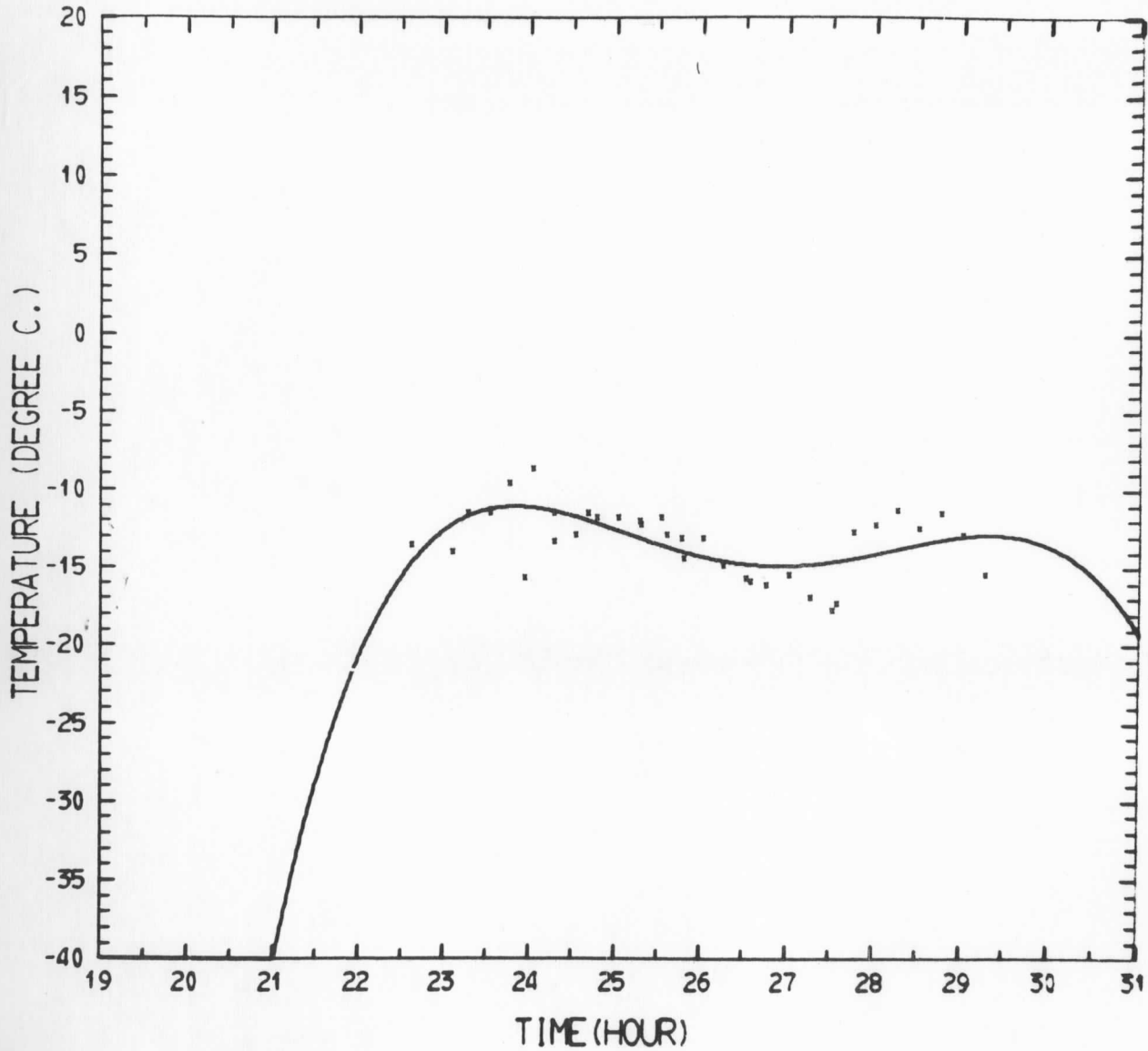
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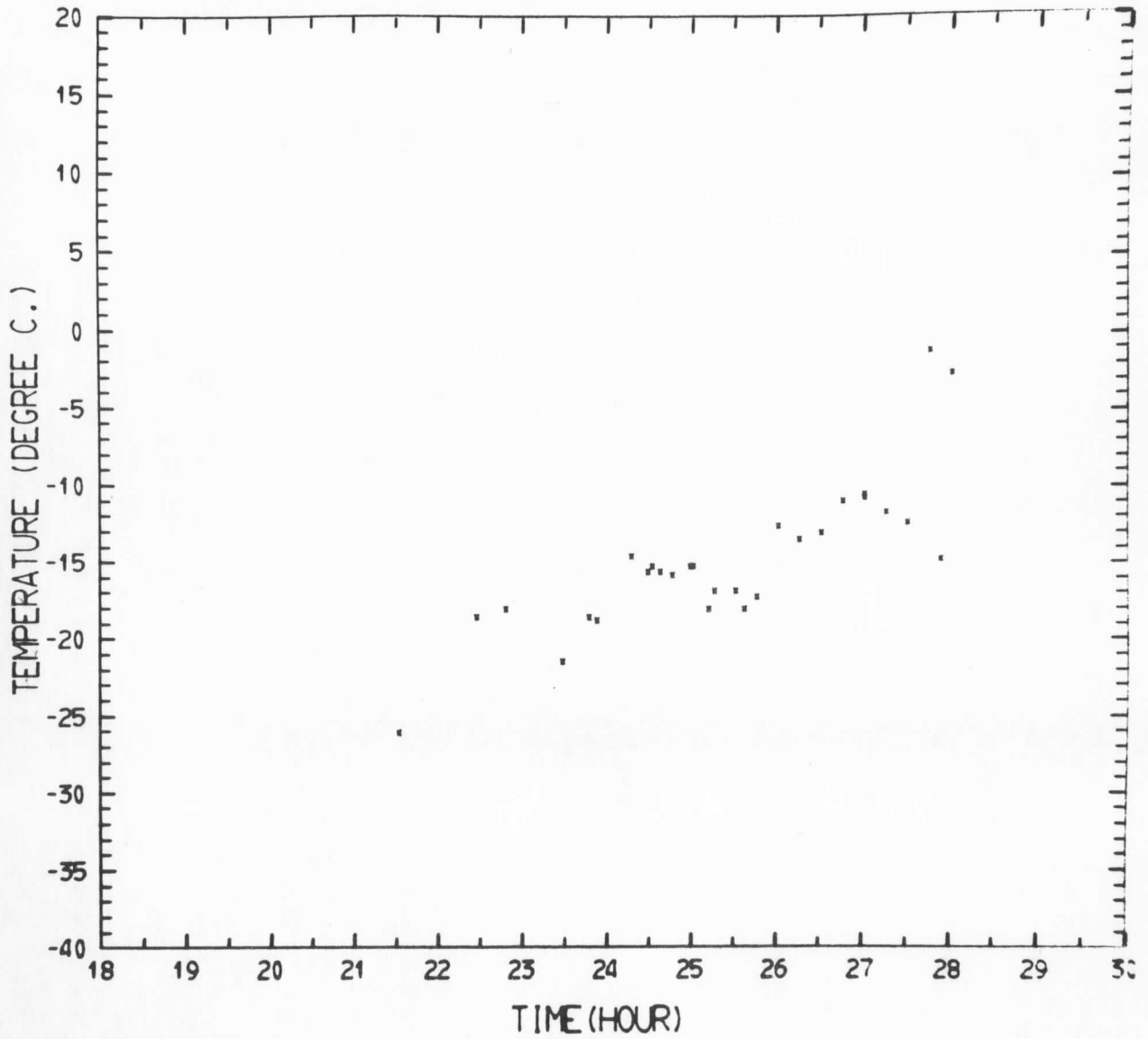
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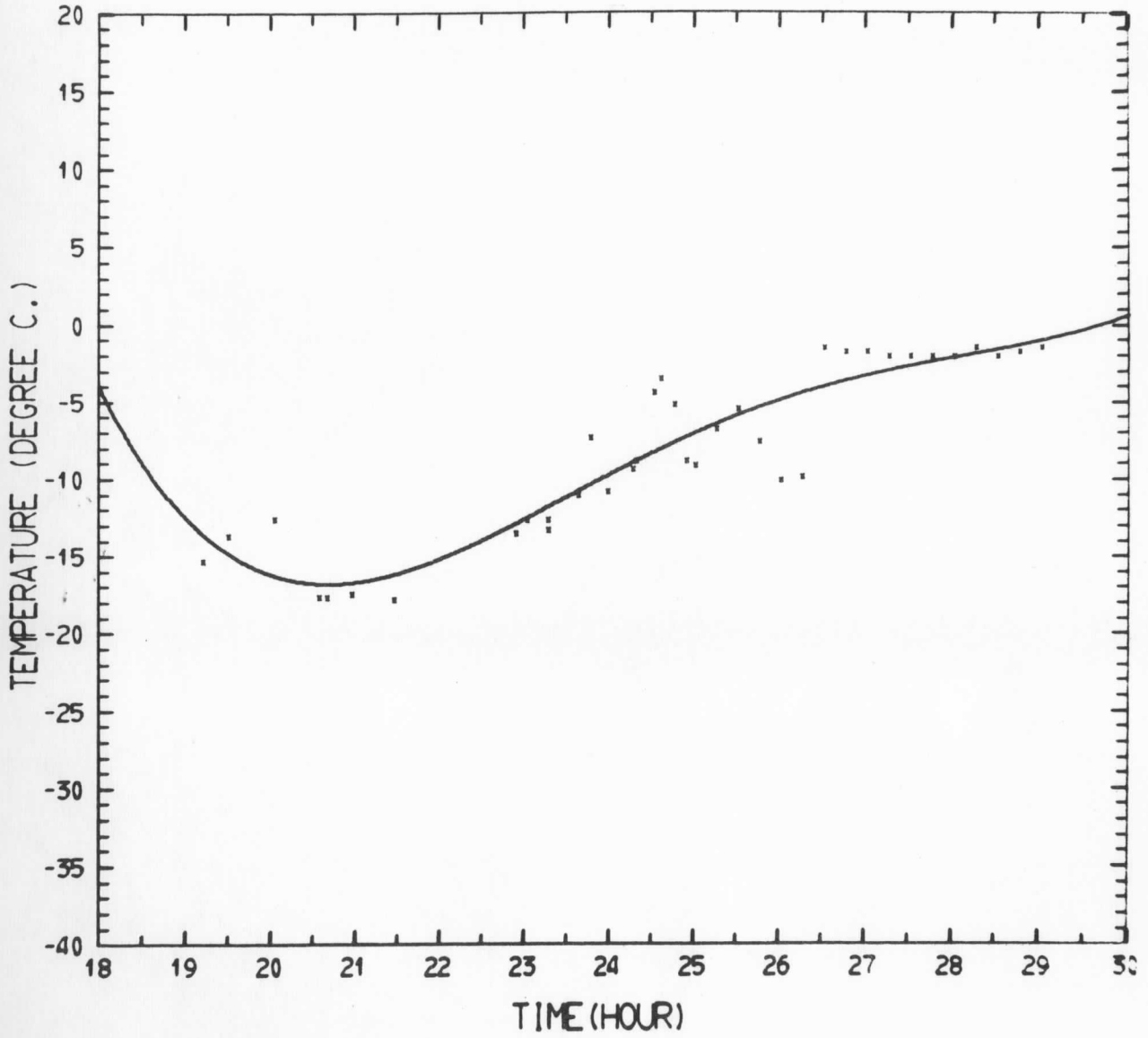
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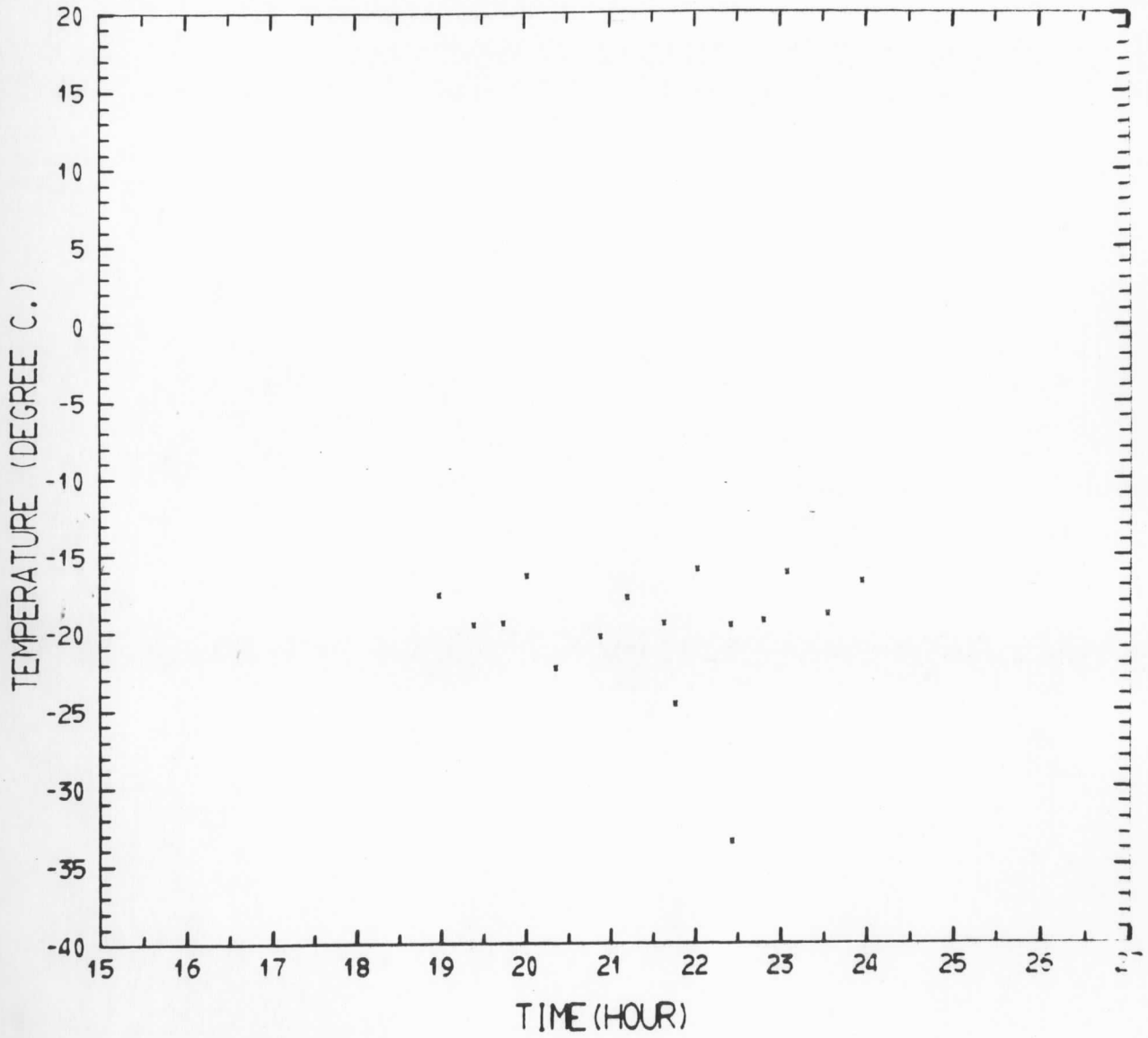
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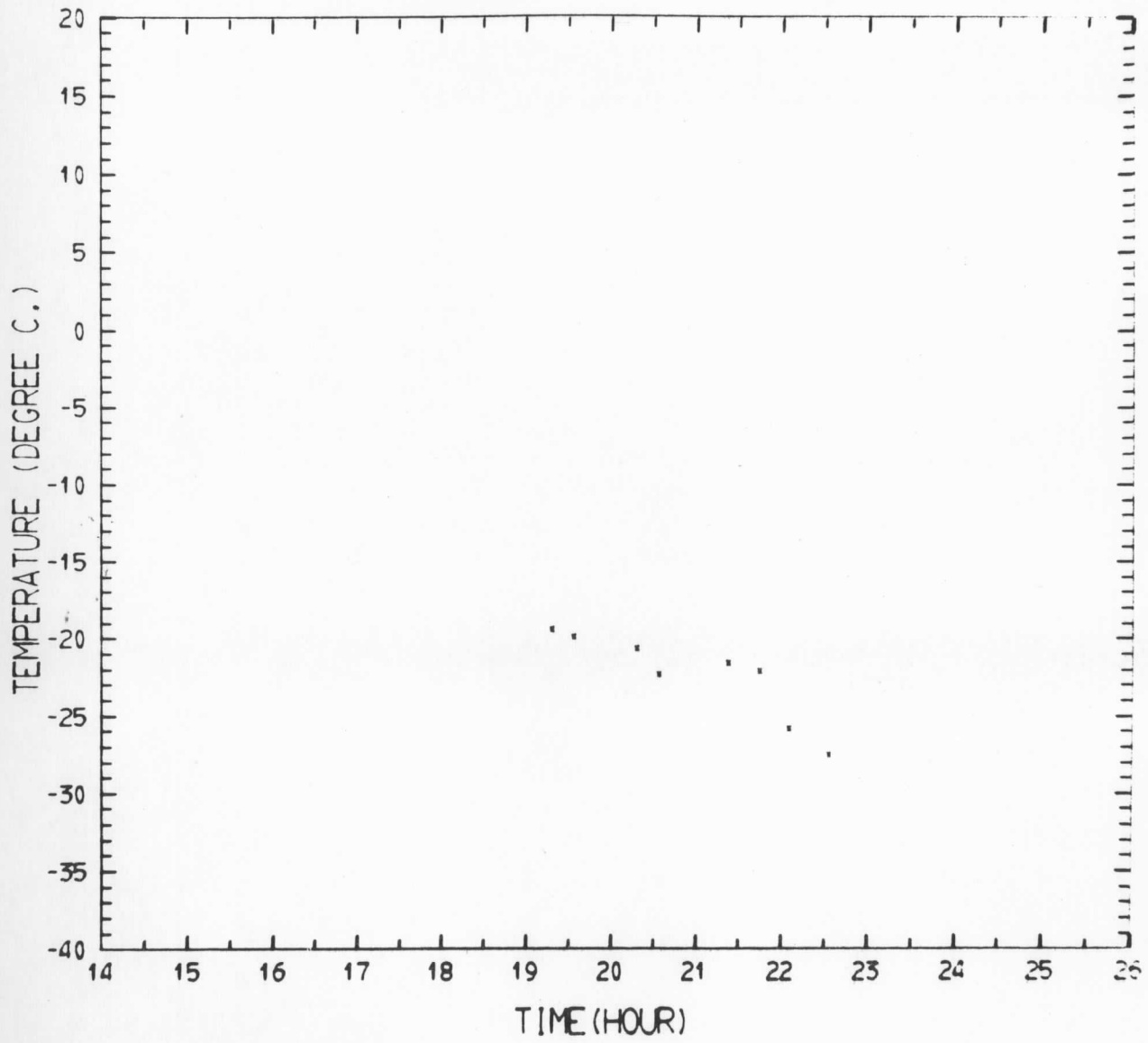
90152 B/L (7-21-1972)



90152 B/L (7-22-1972)



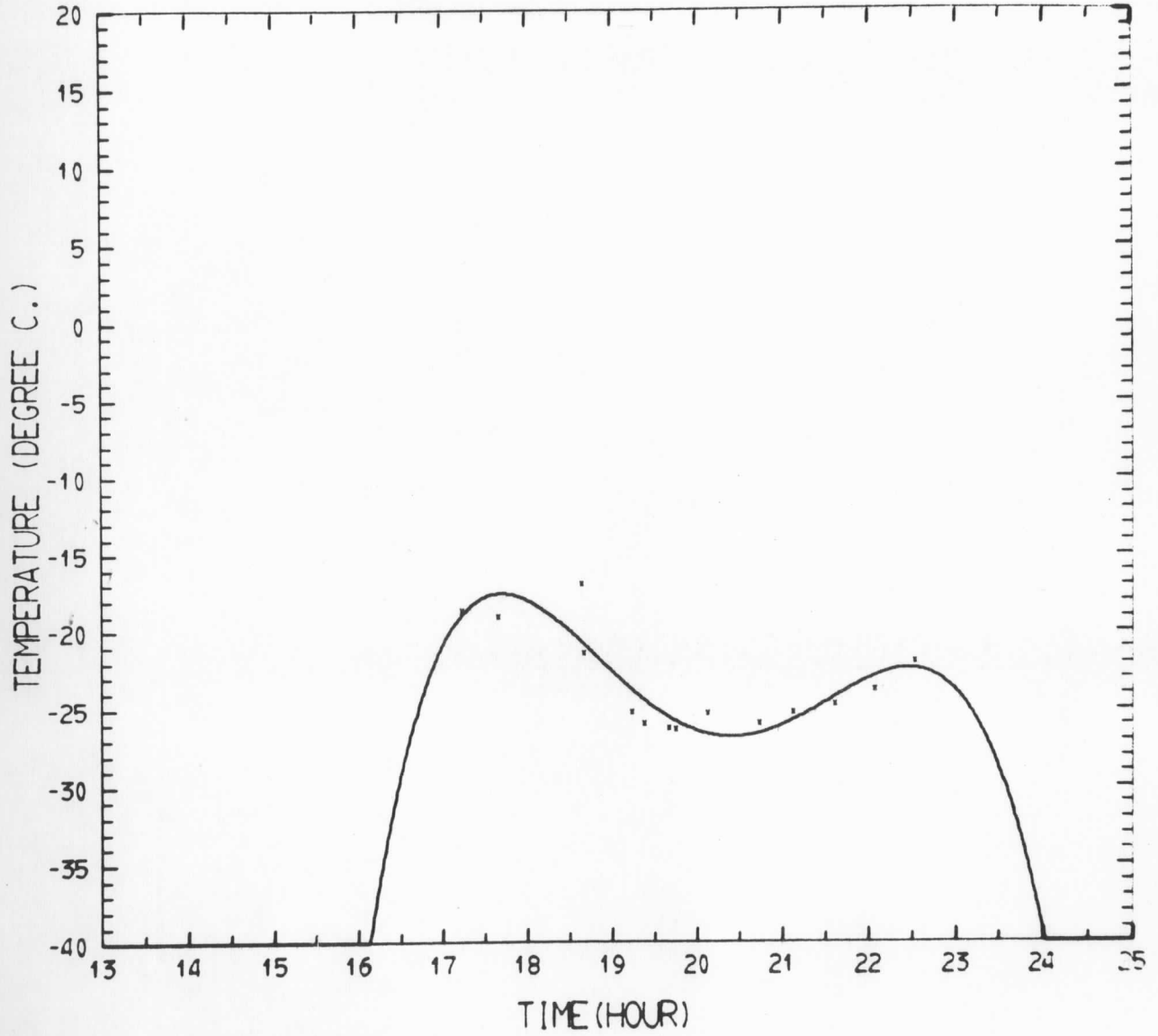
90152 B/L (7-23-1972)



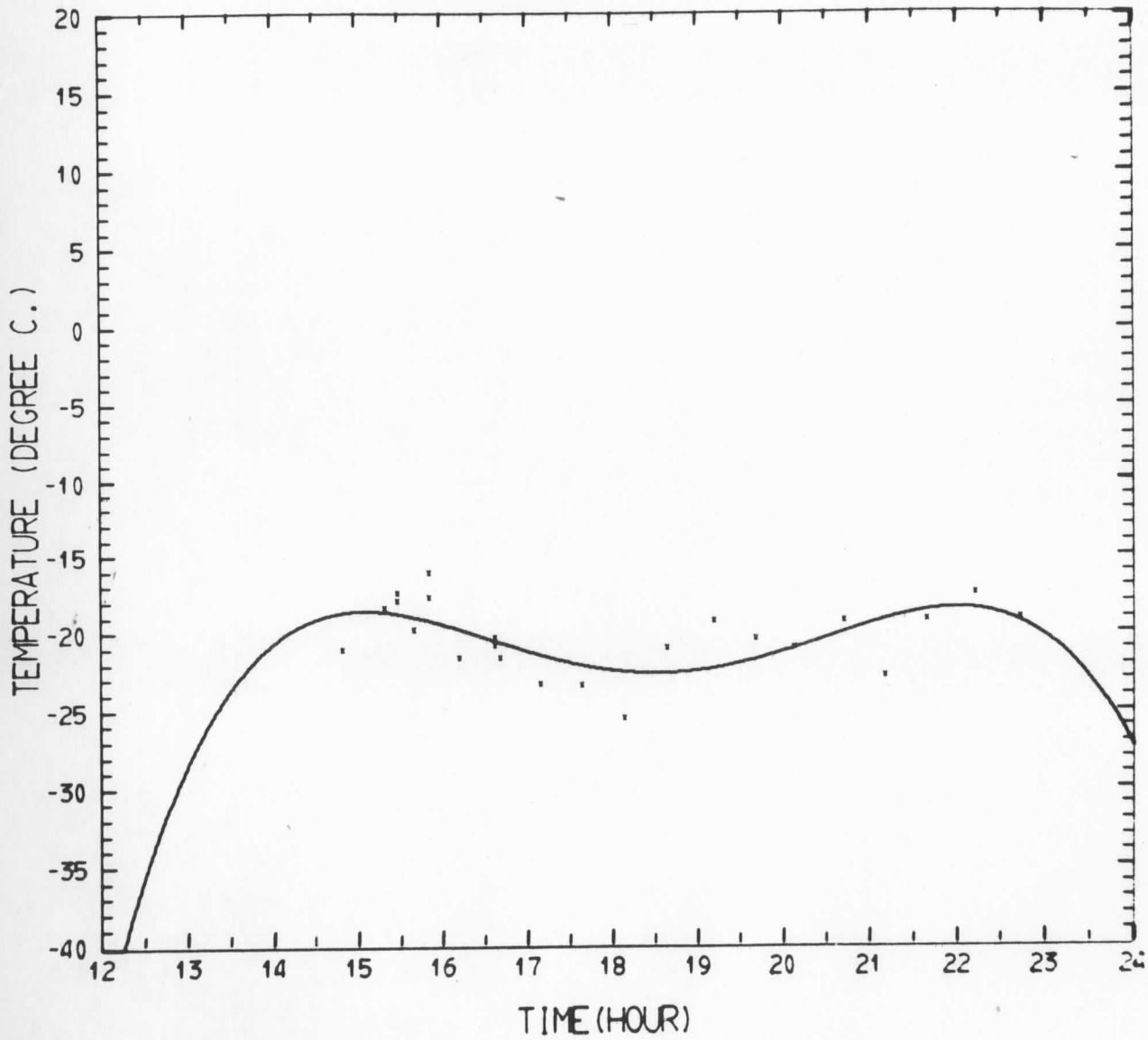
90152

B/L

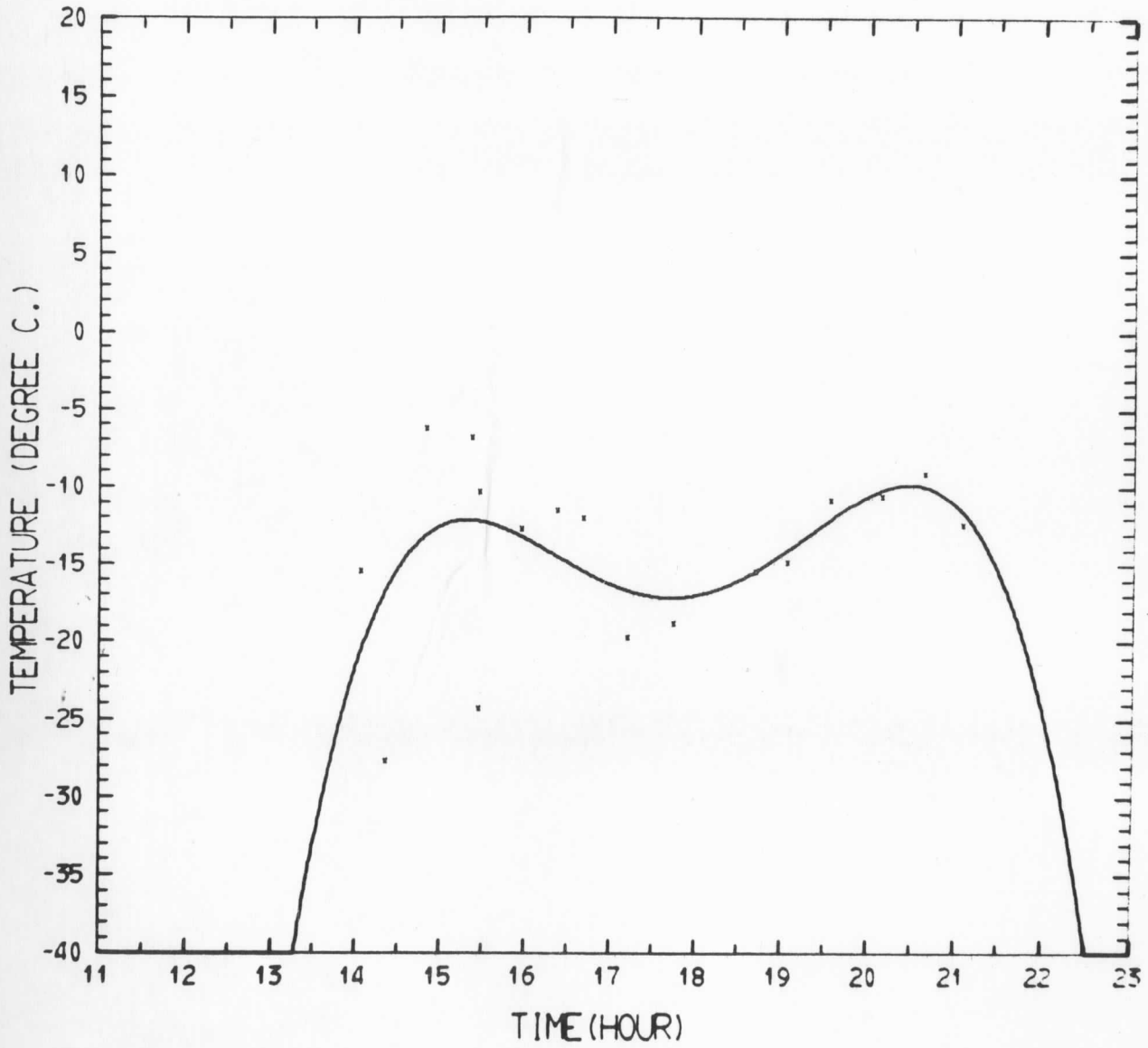
(7-24-1972)



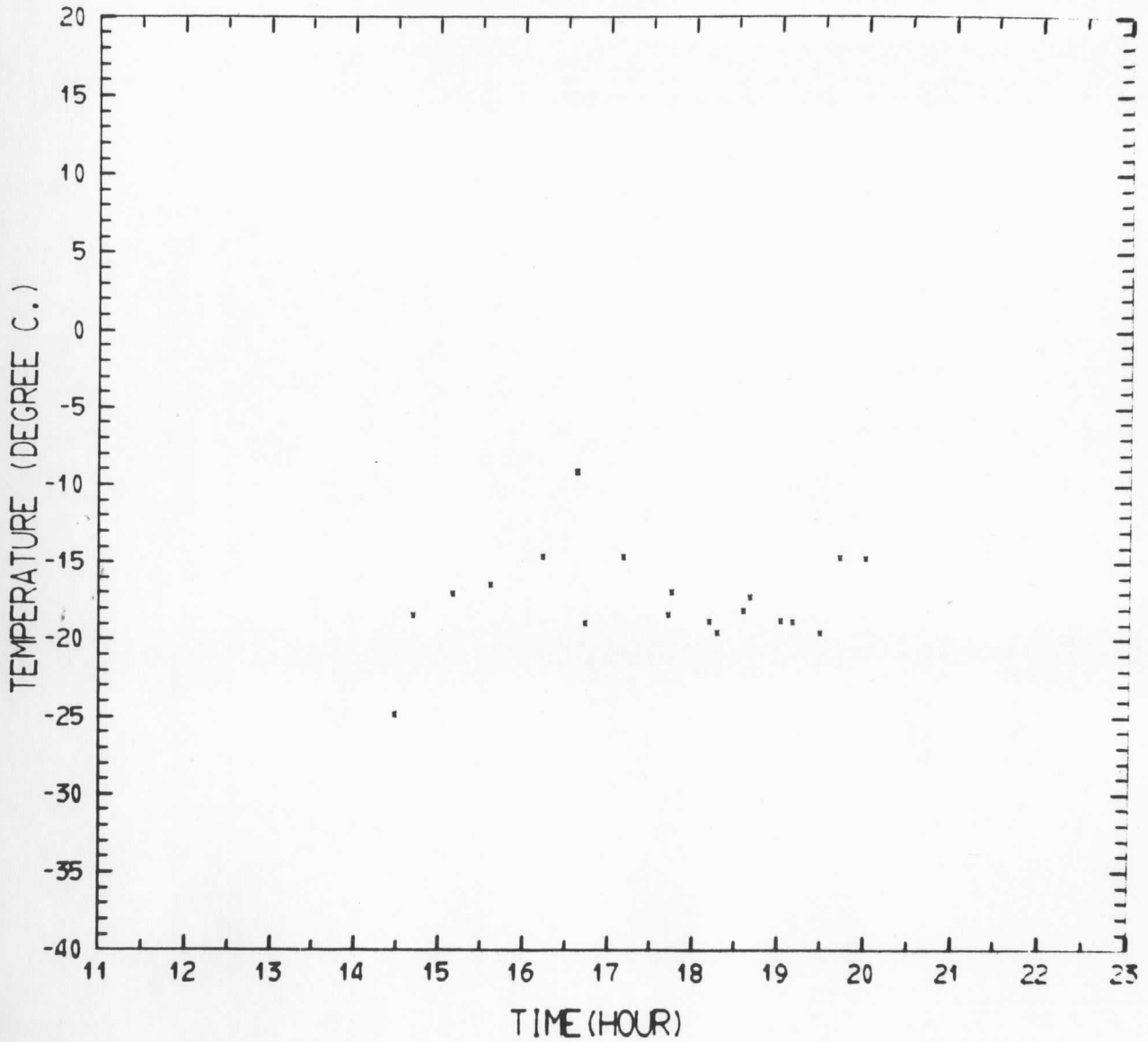
90152 B/L (7-25-1972)



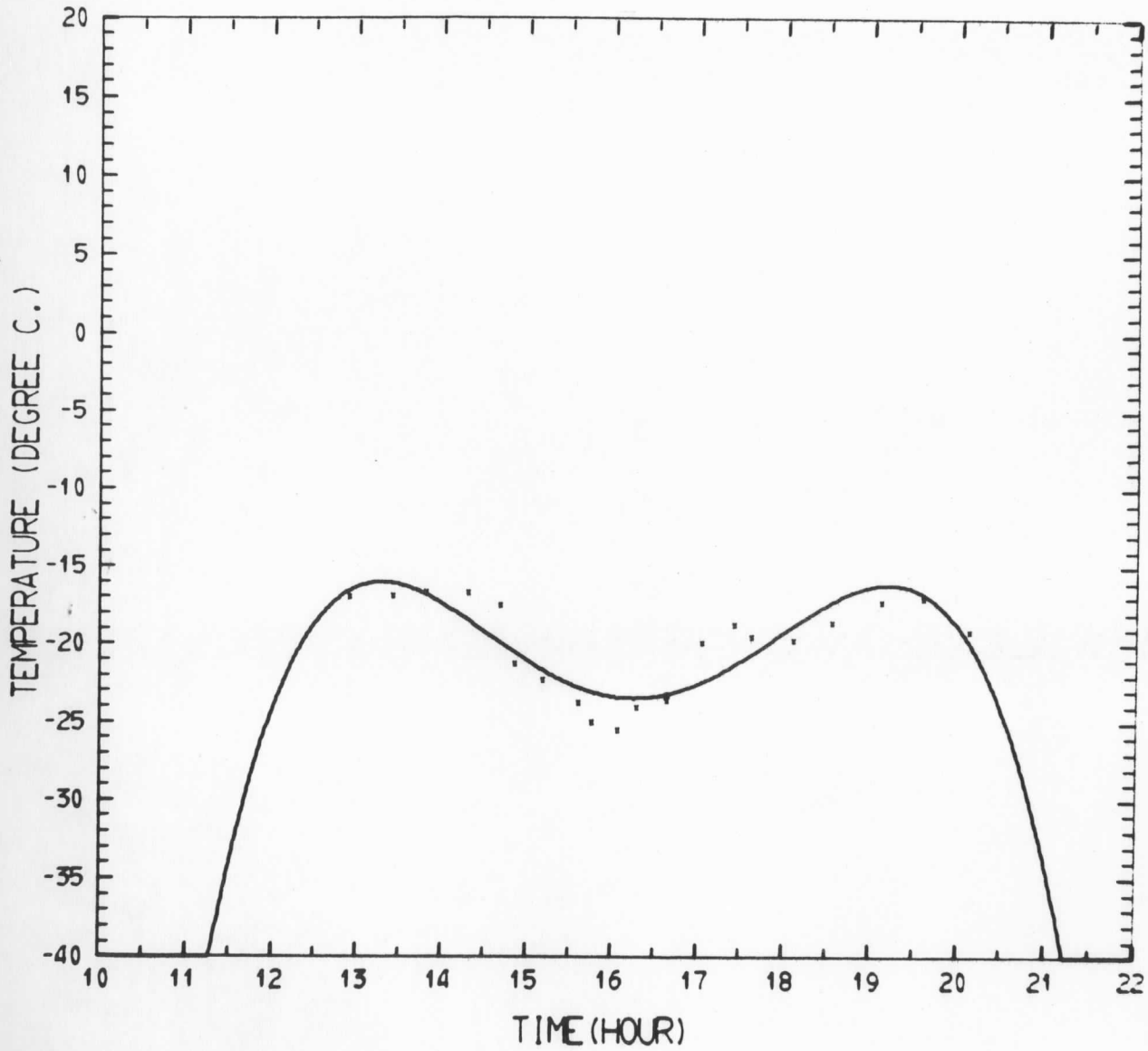
90152 B/L (7-25-1972)



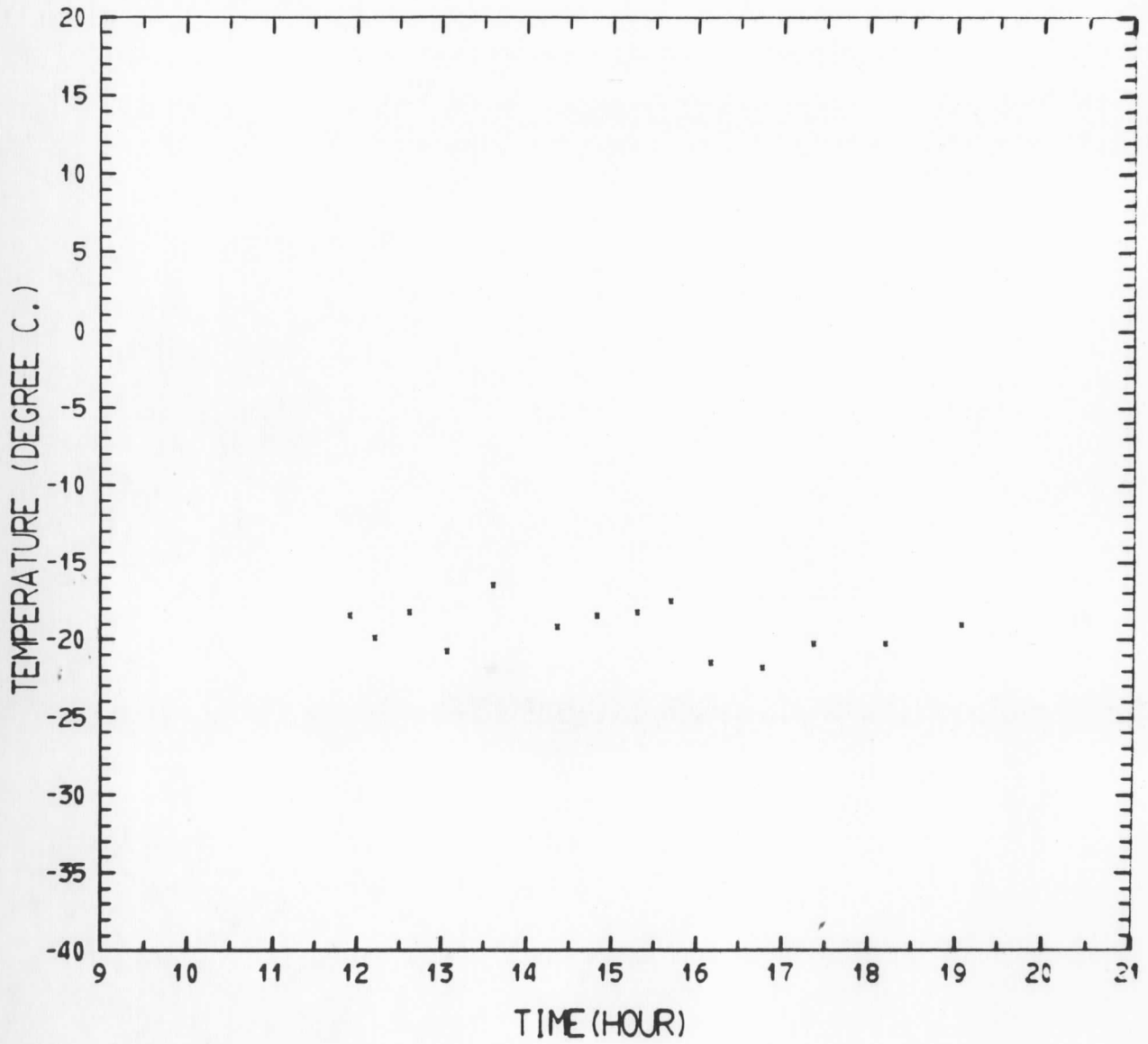
90152 B/L (7-27-1972)



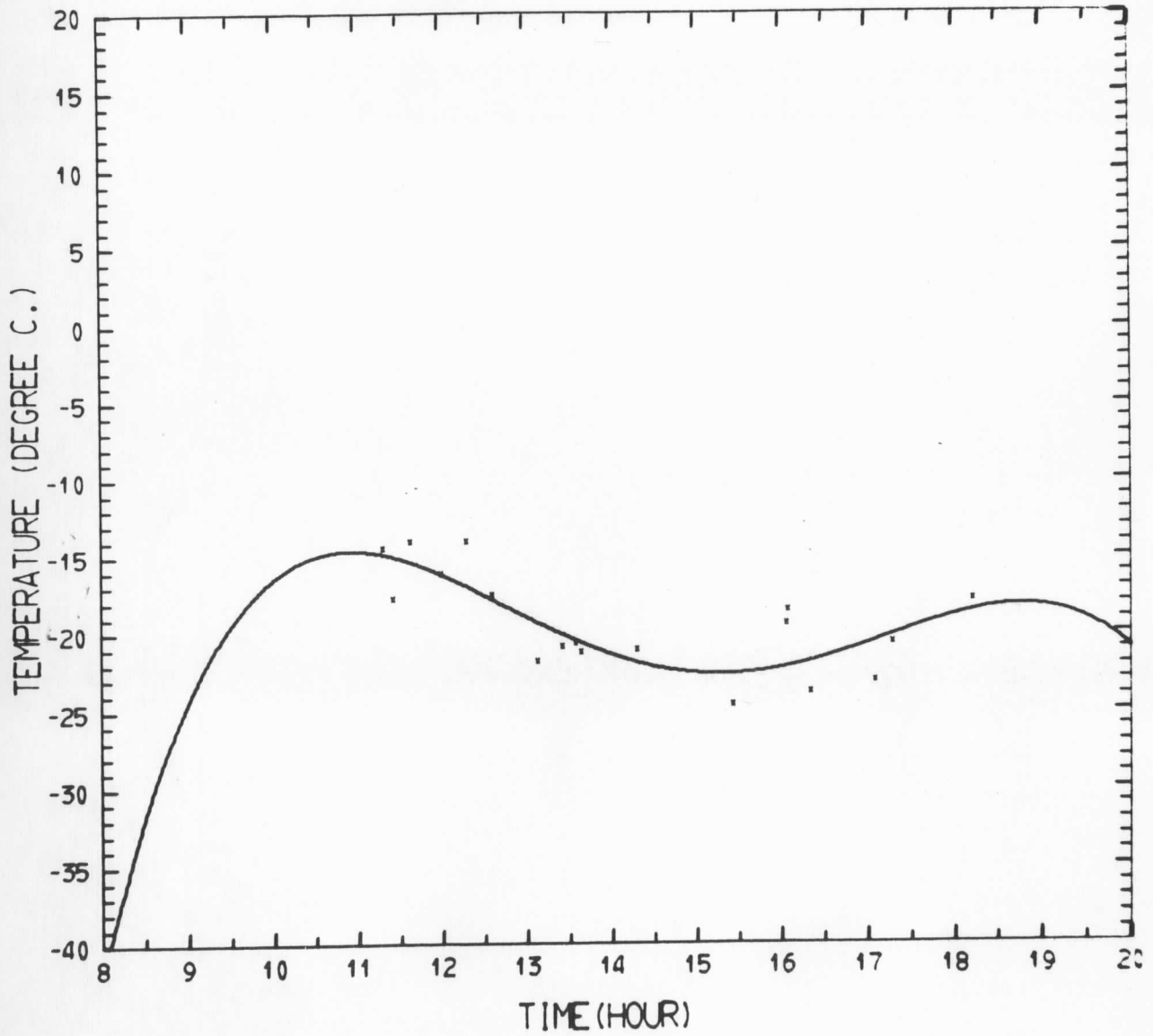
90152 B/L (7-28-1972)



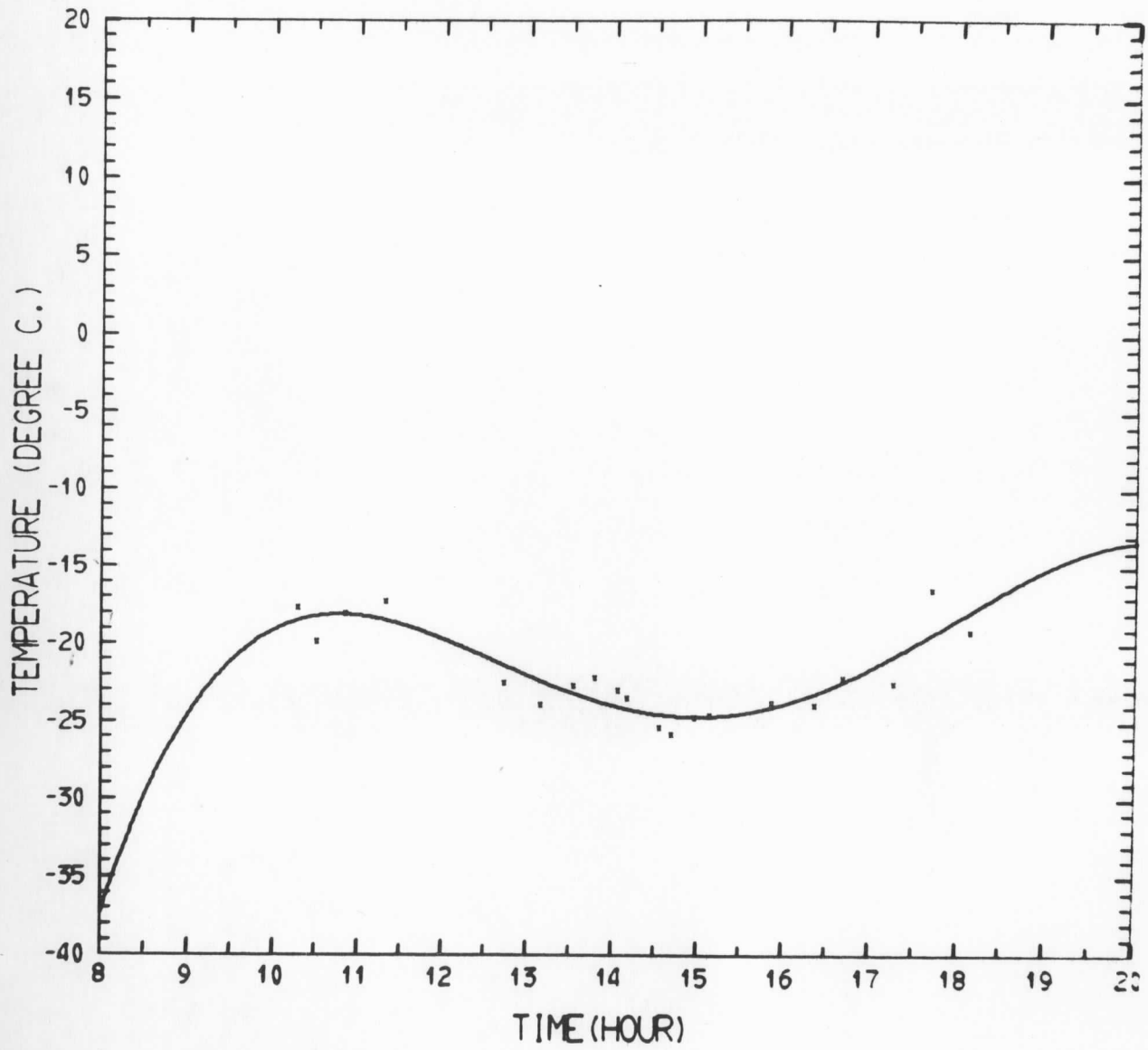
90152 B/L (7-29-1972)



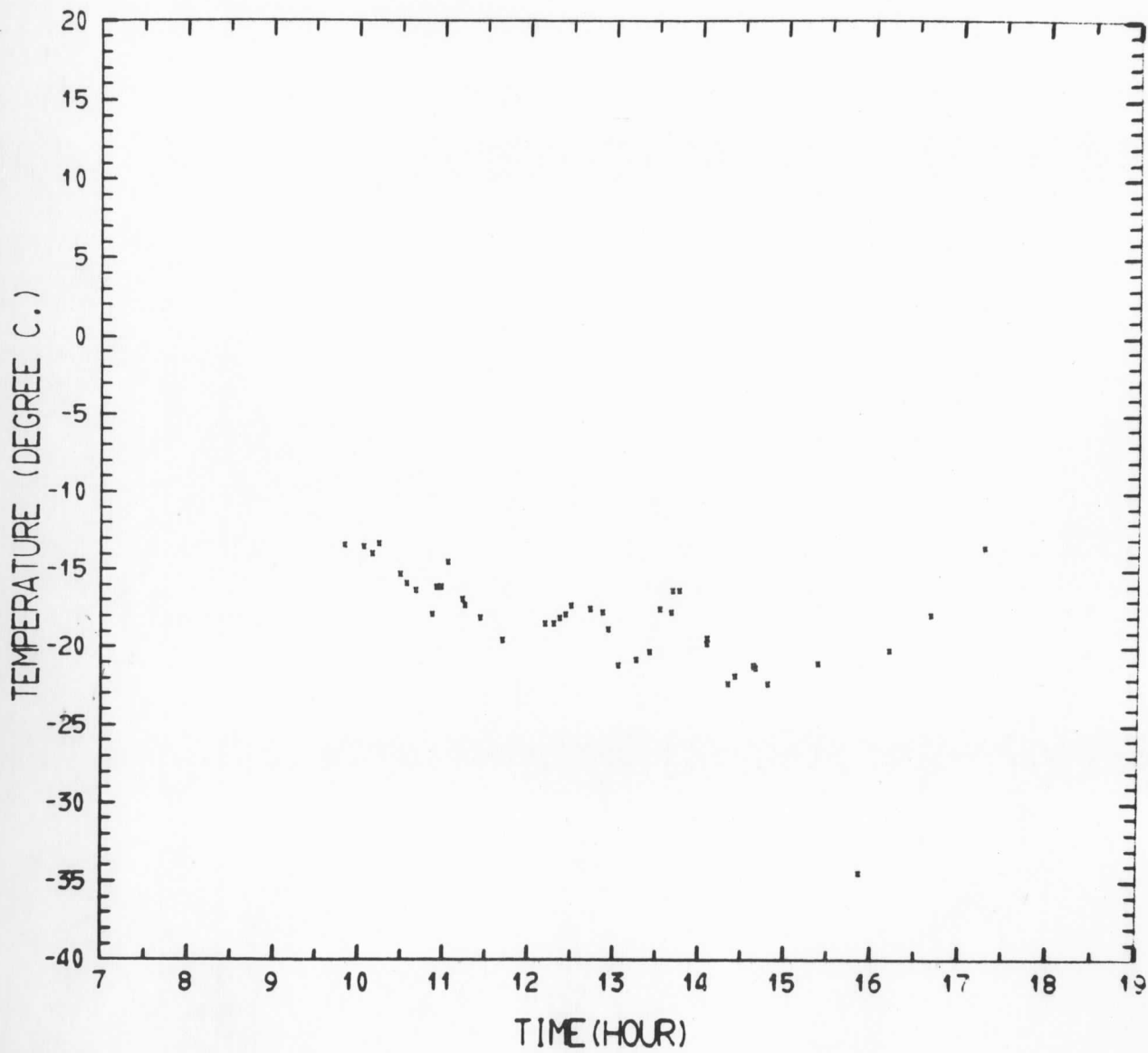
90152 B/L (7-30-1972)



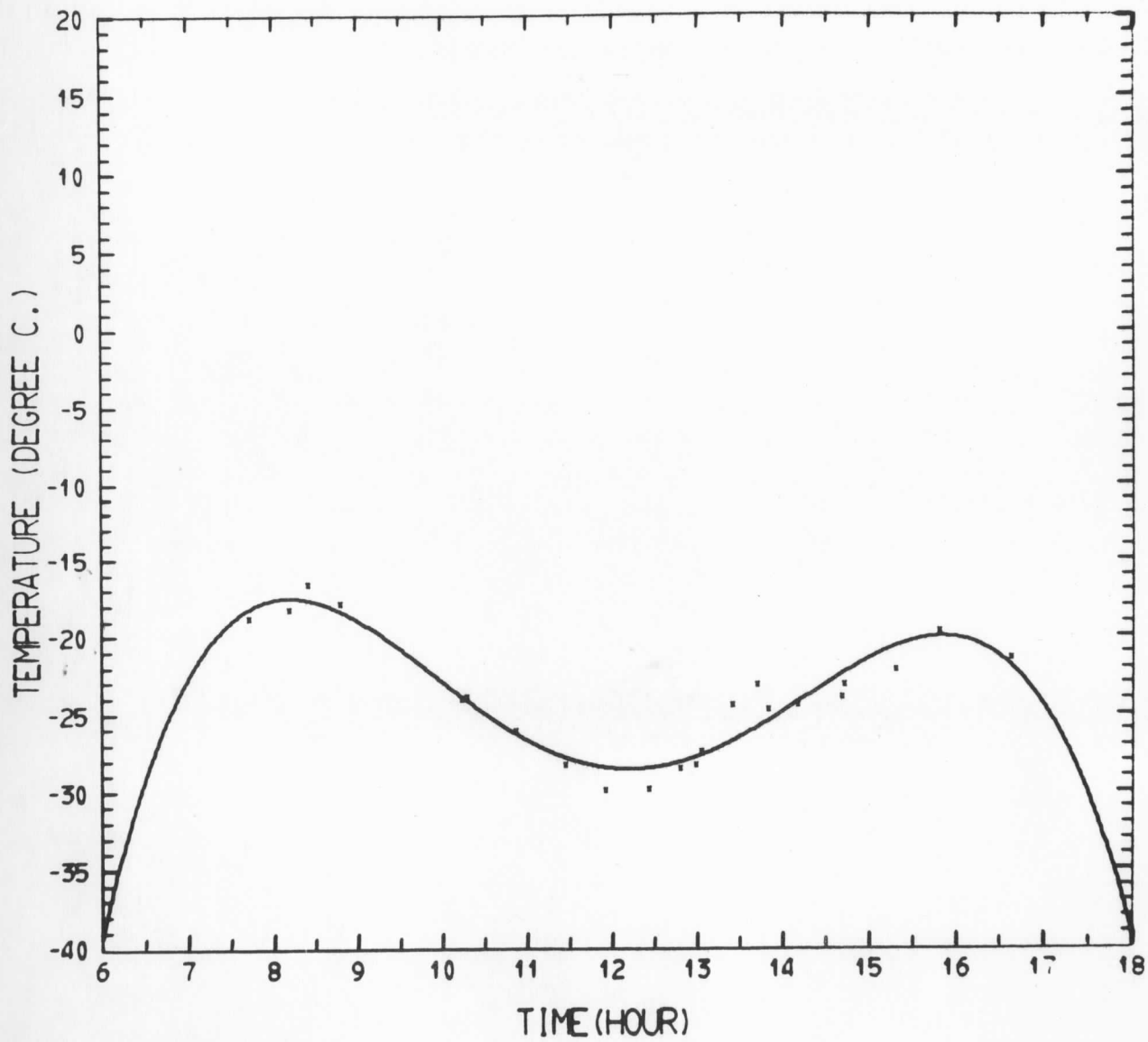
90152 B/L (7-31-1972)



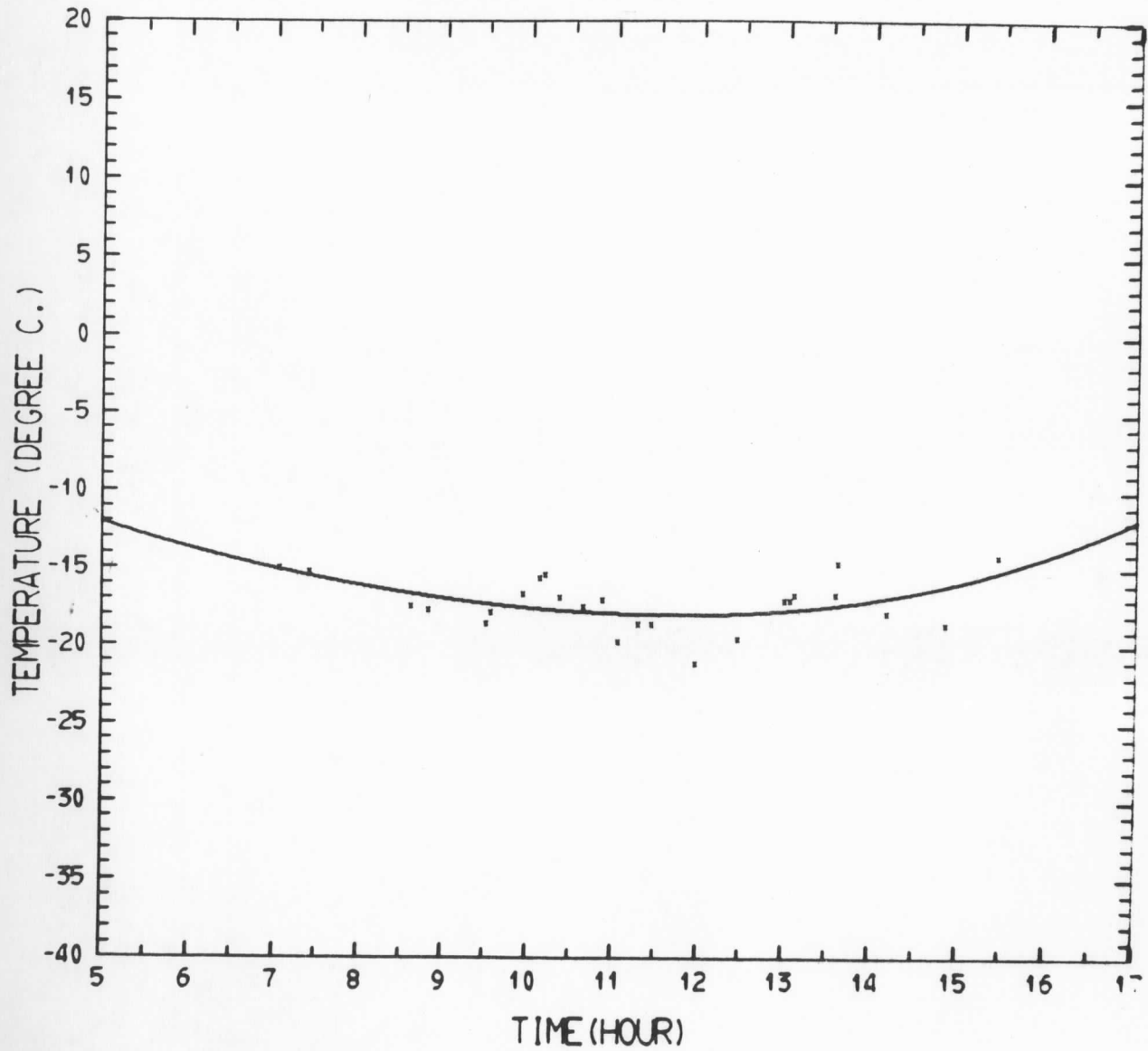
90152 B/L (8- 1-1972)



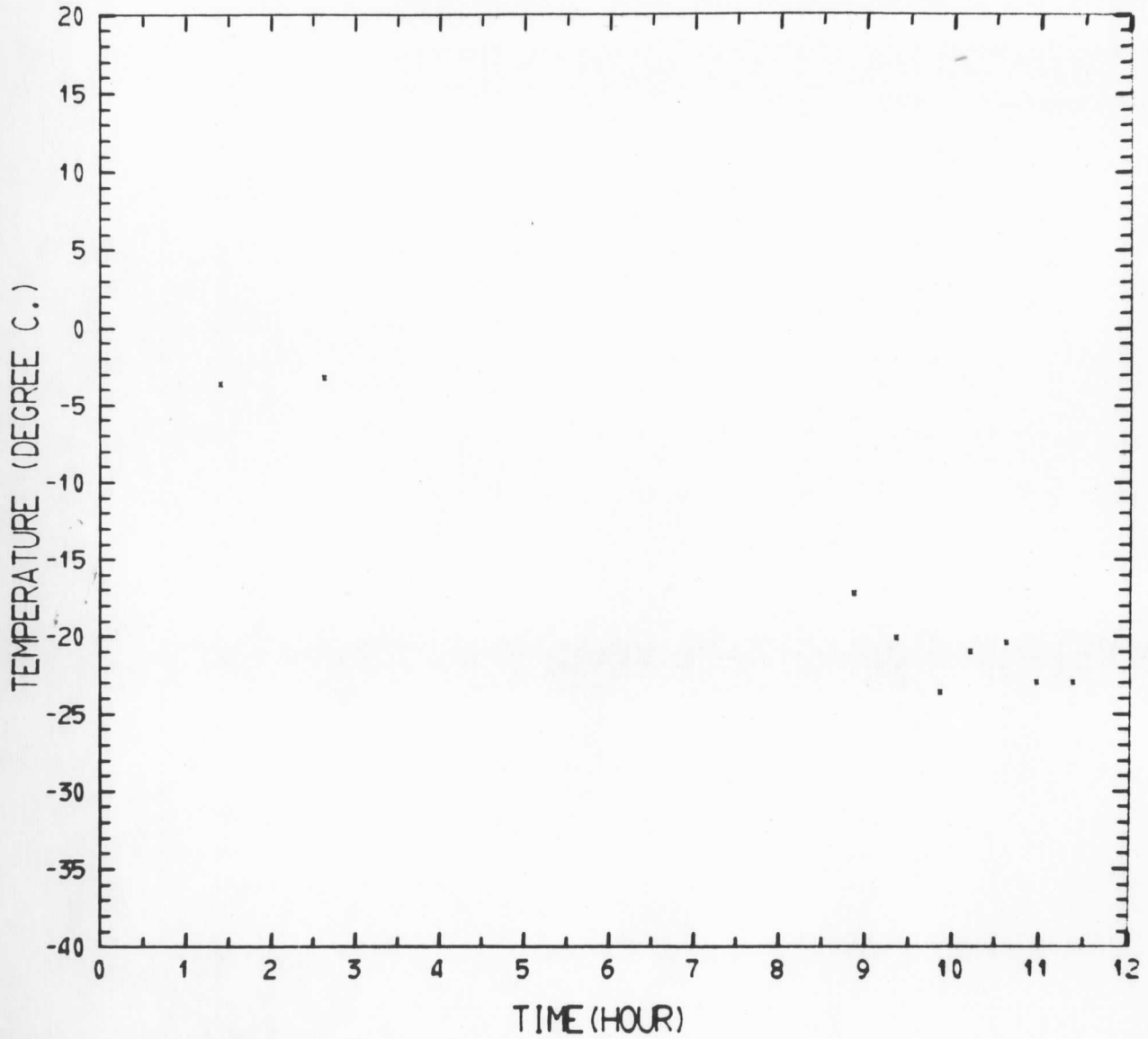
90152 B/L (8- 2-1972)



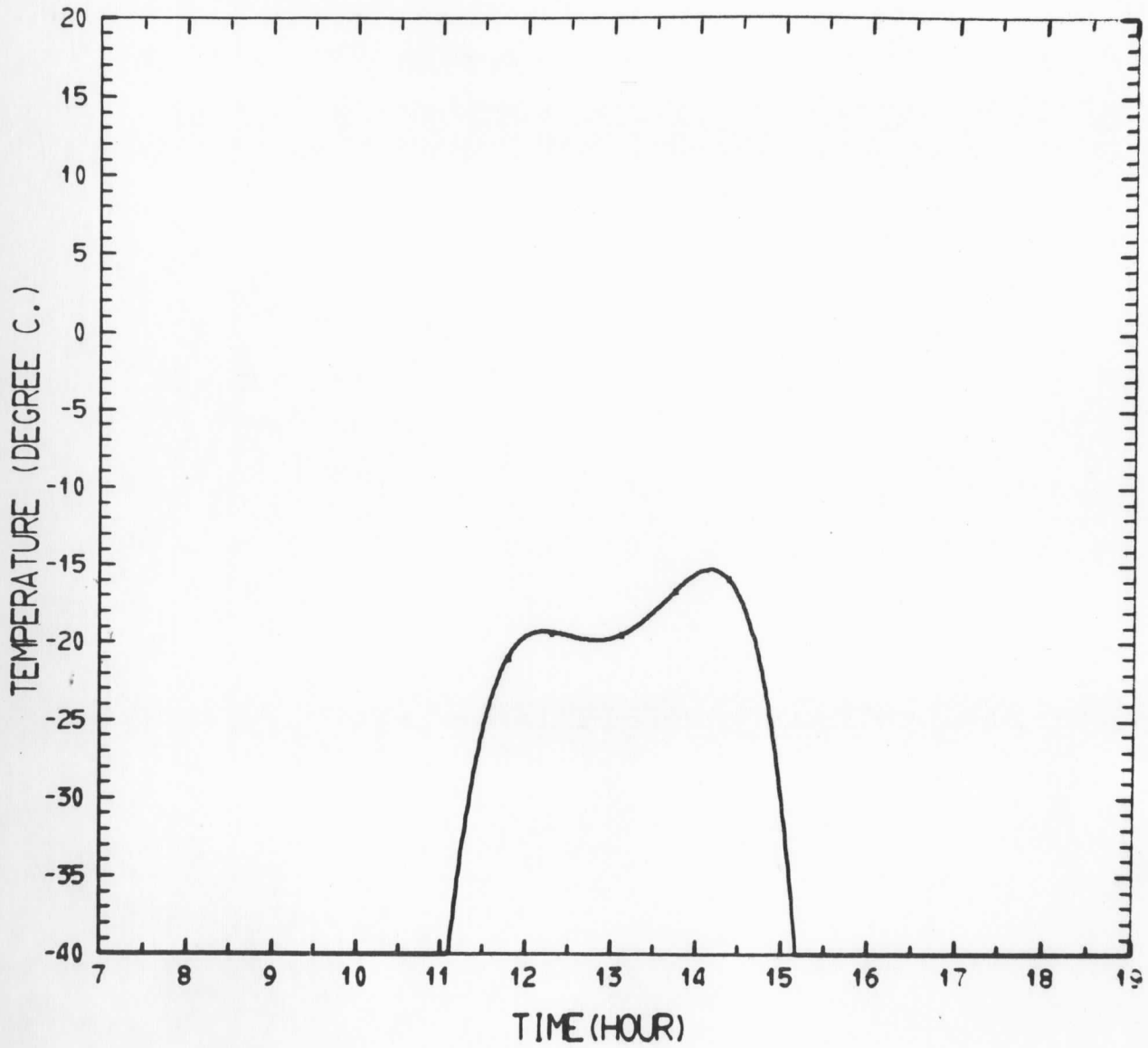
90152 B/L (8-3-1972)



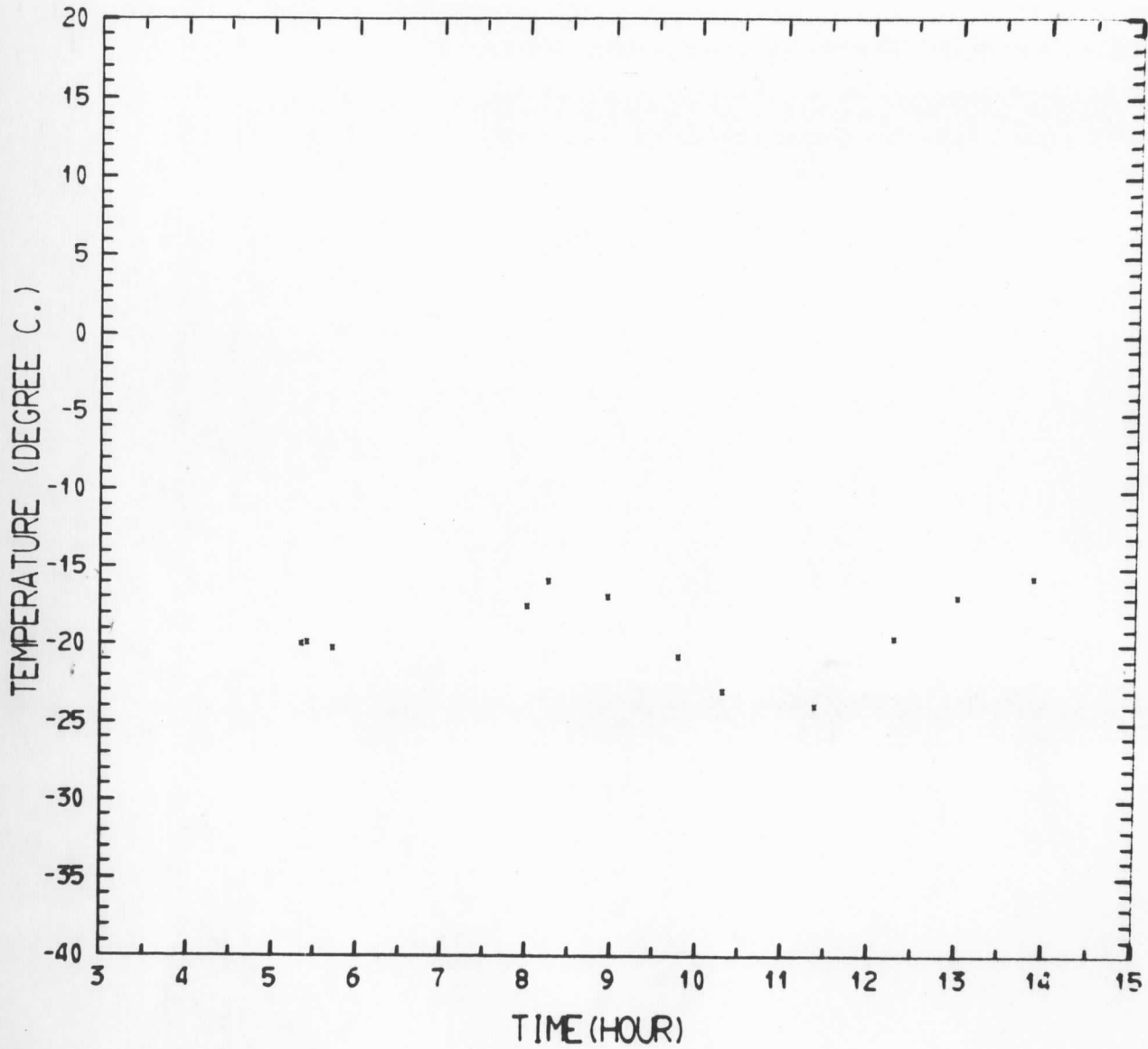
90152 B/L (8- 4-1972)



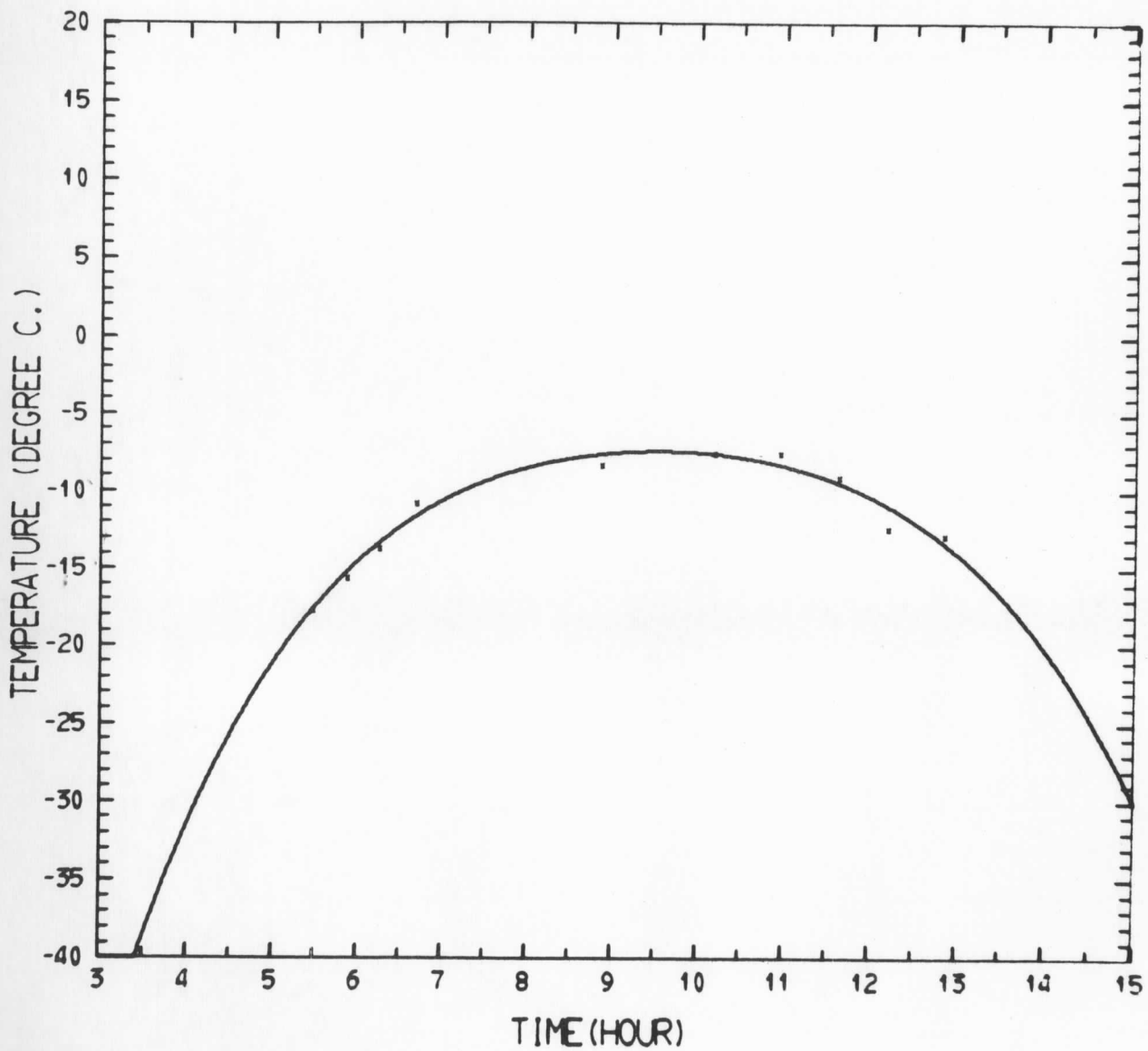
90152 B/L (8-4-1972)



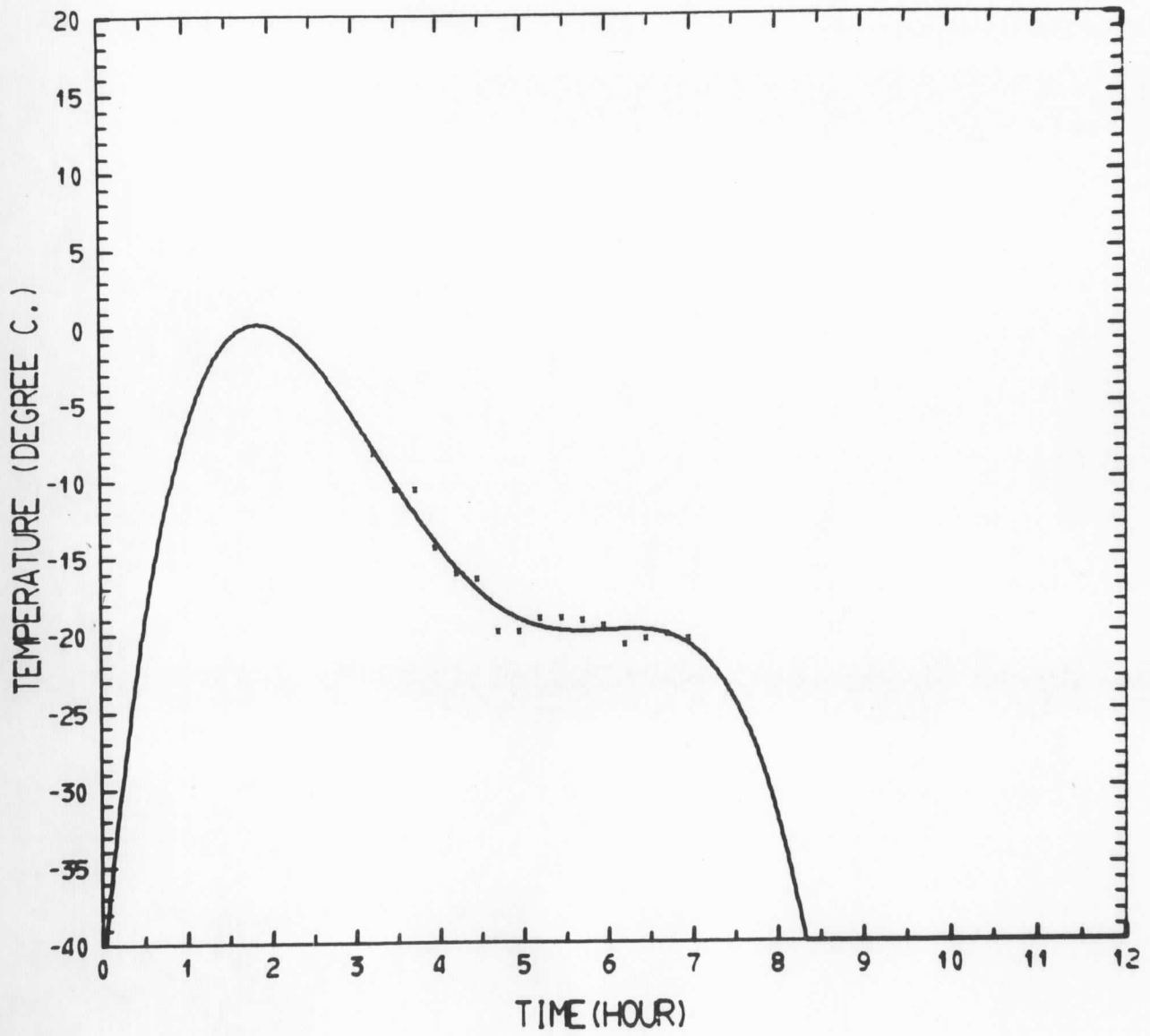
90152 B/L (8- 5-1972)



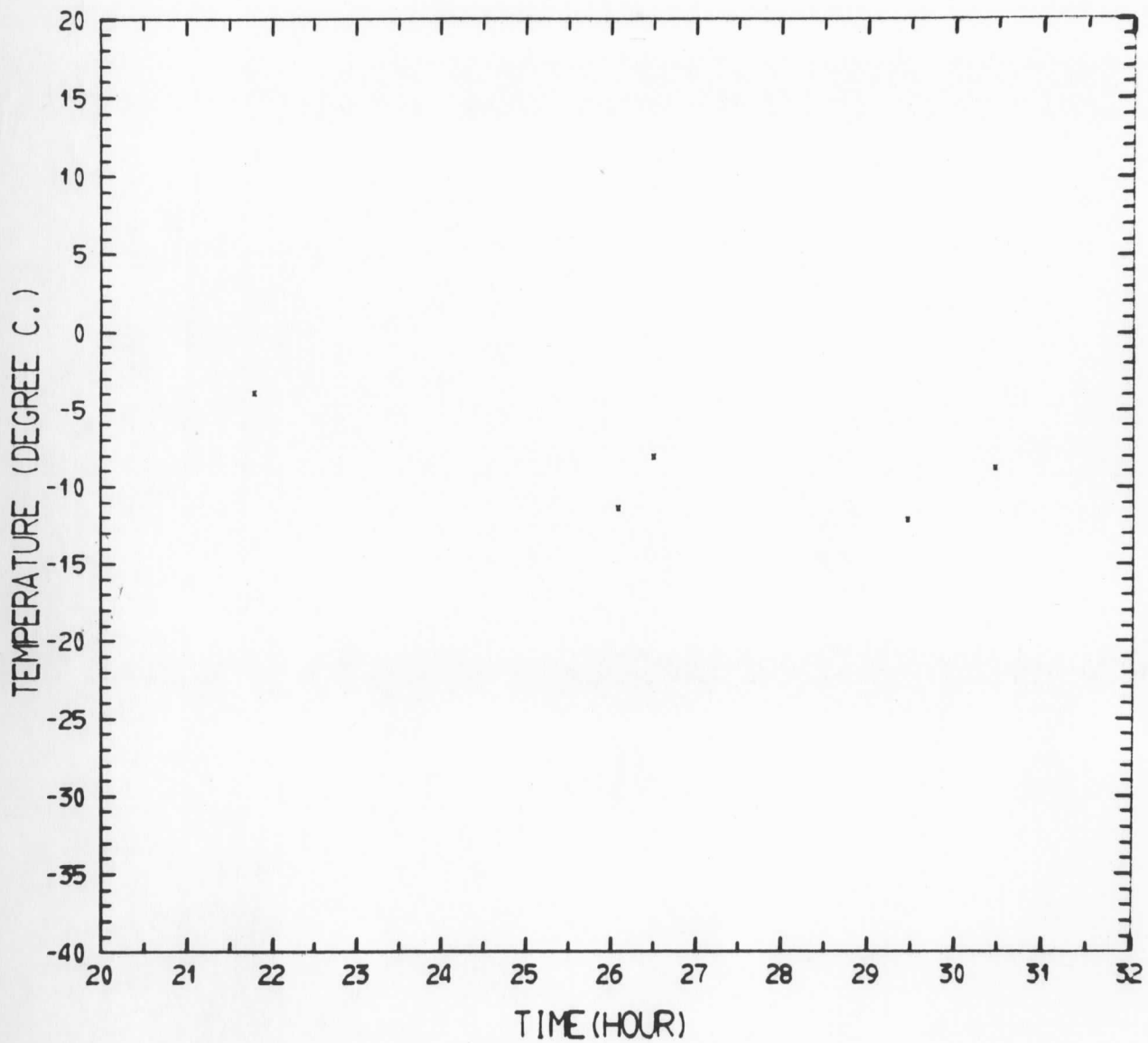
90152 B/L (8- 6-1972)



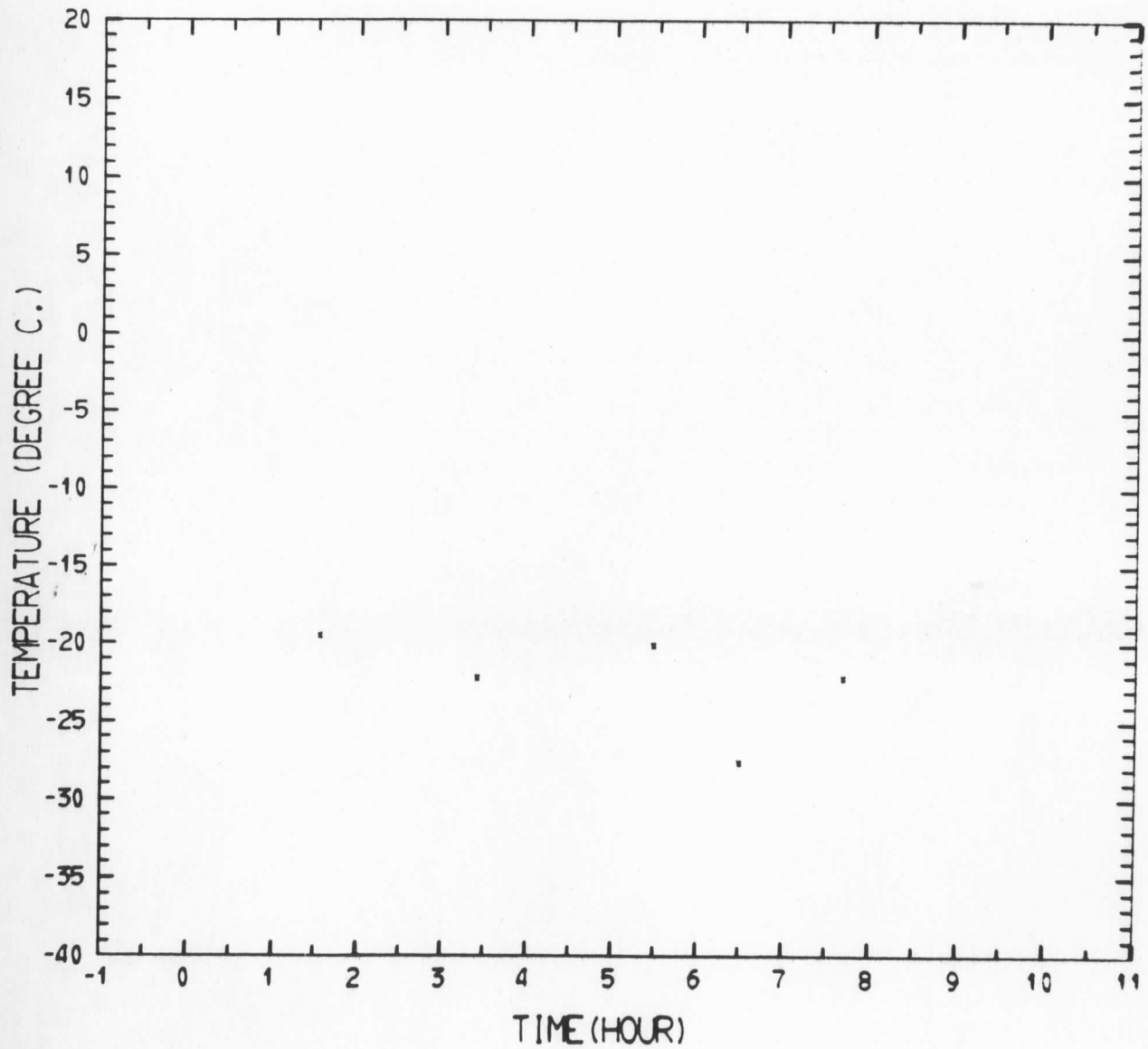
90152 B/L (8- 8-1972)



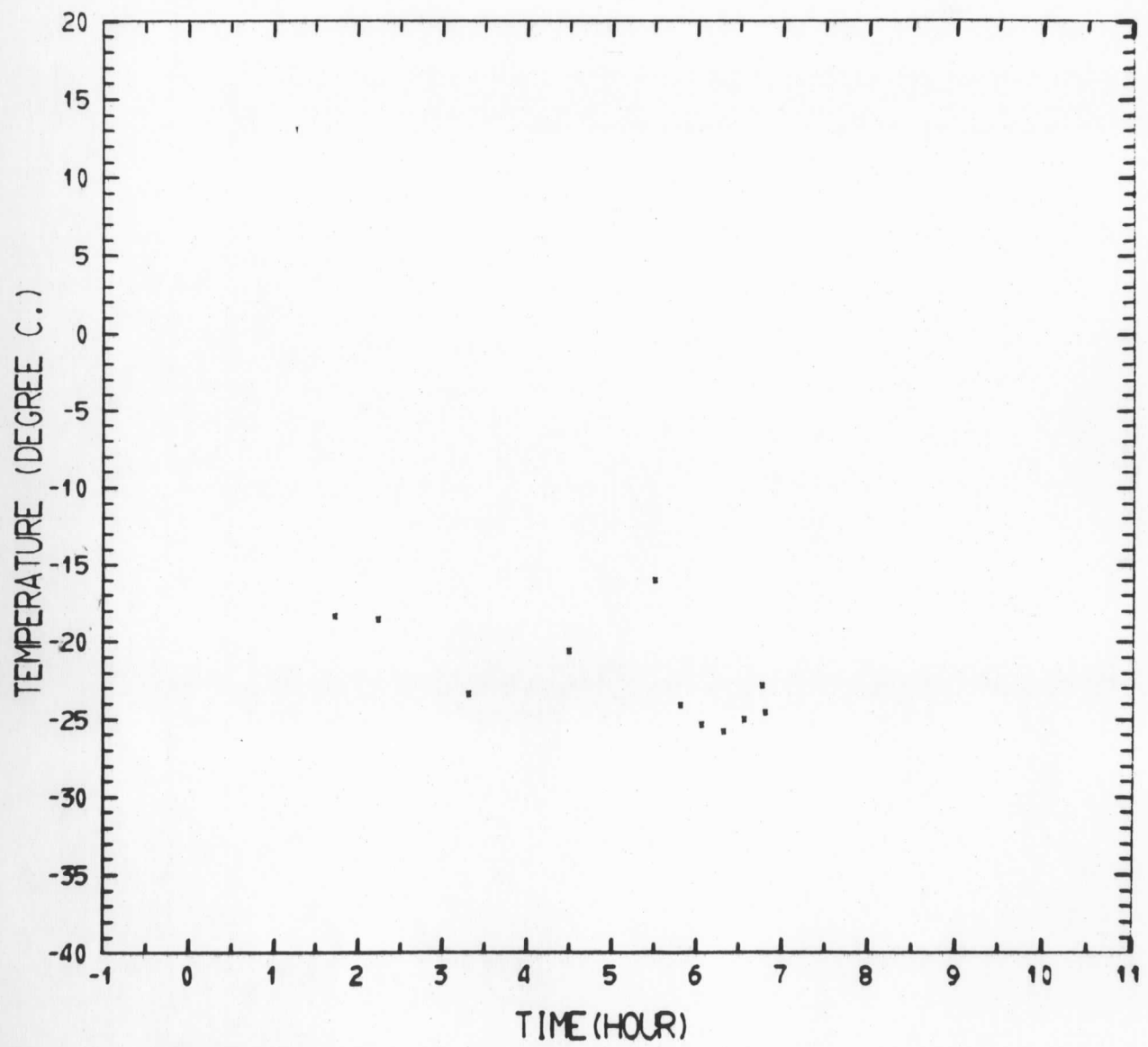
90152 B/L (8- 8-1972)



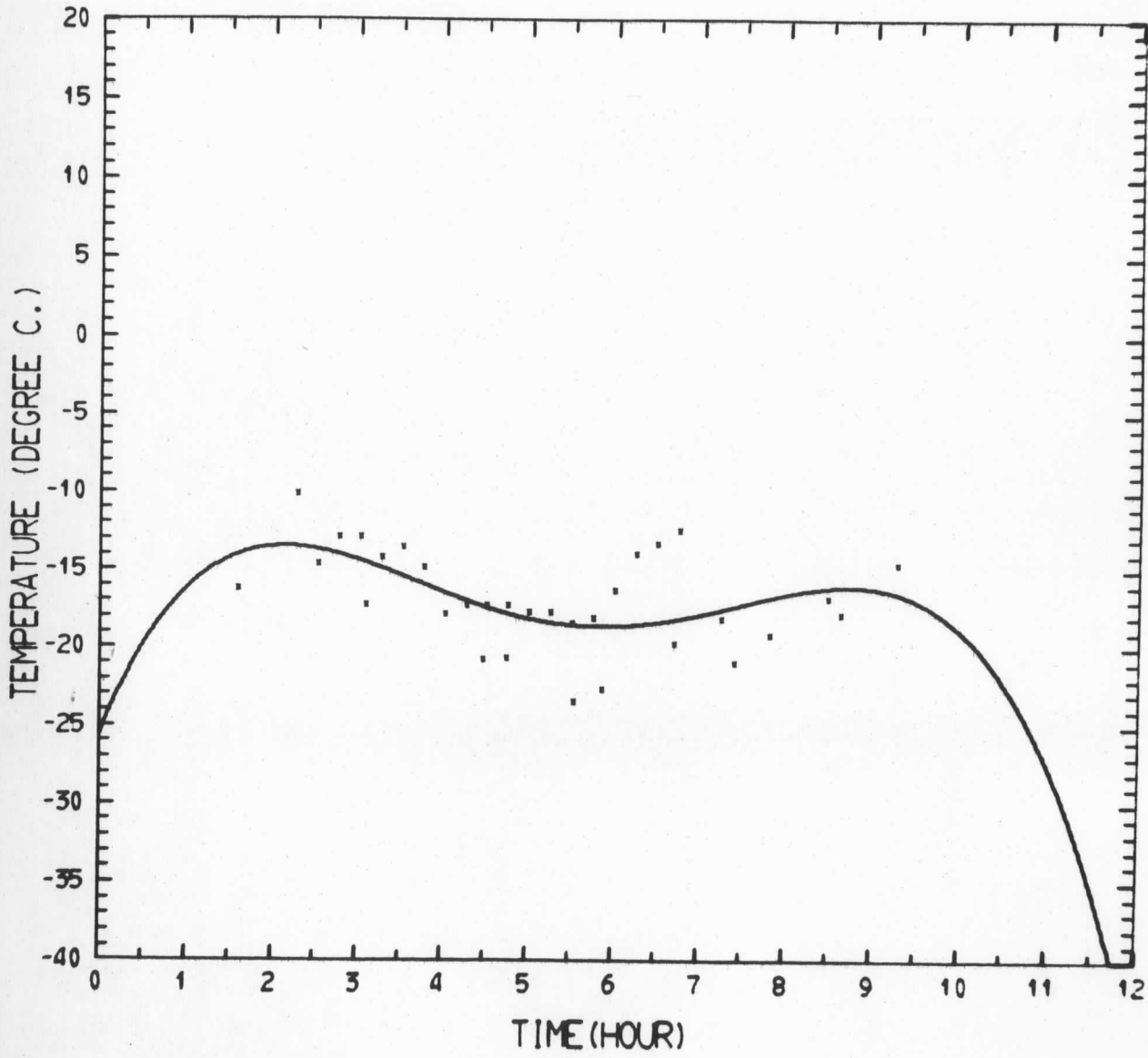
90152 B/L (8-13-1972)



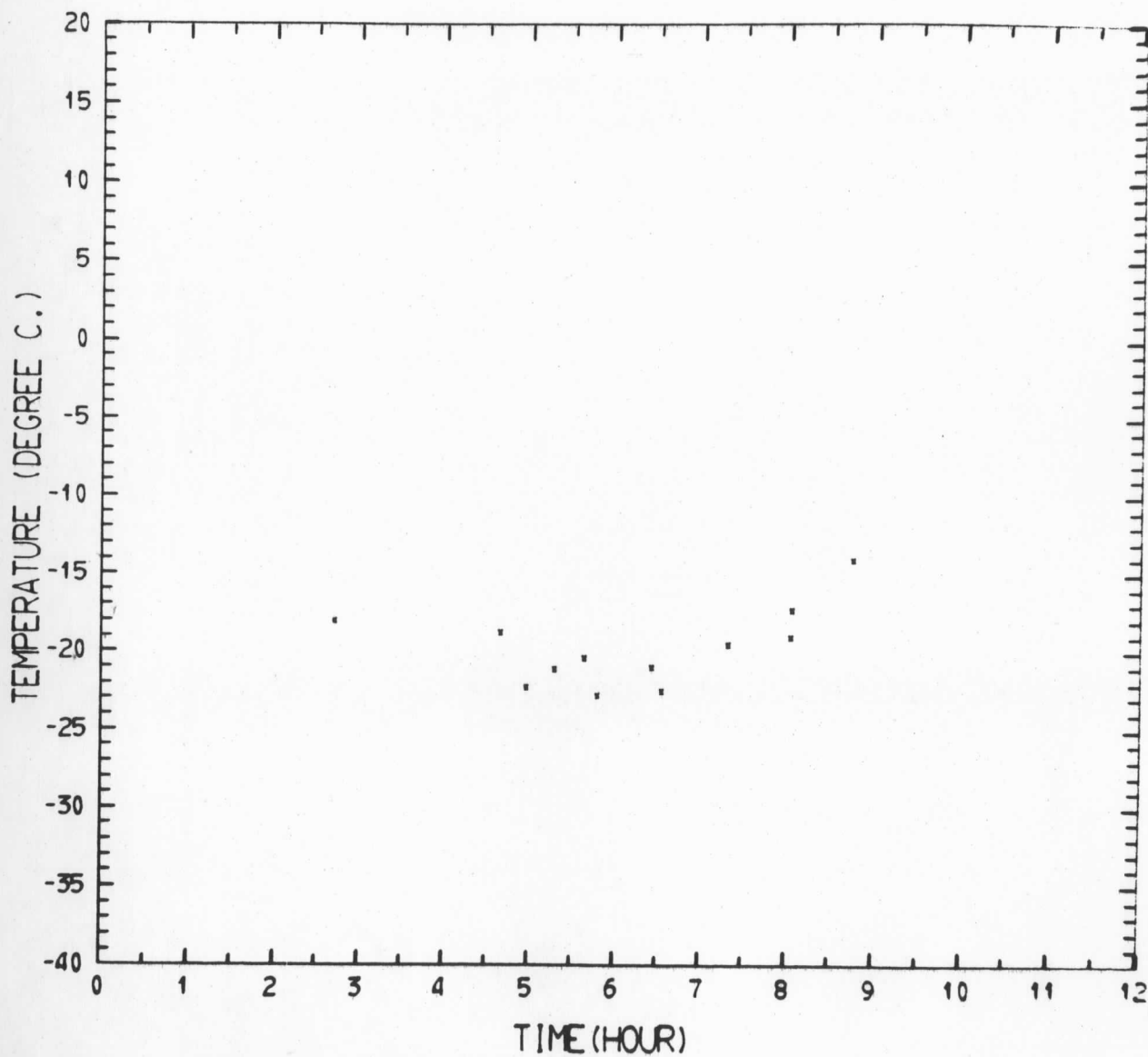
90152 B/L (8-14-1972)



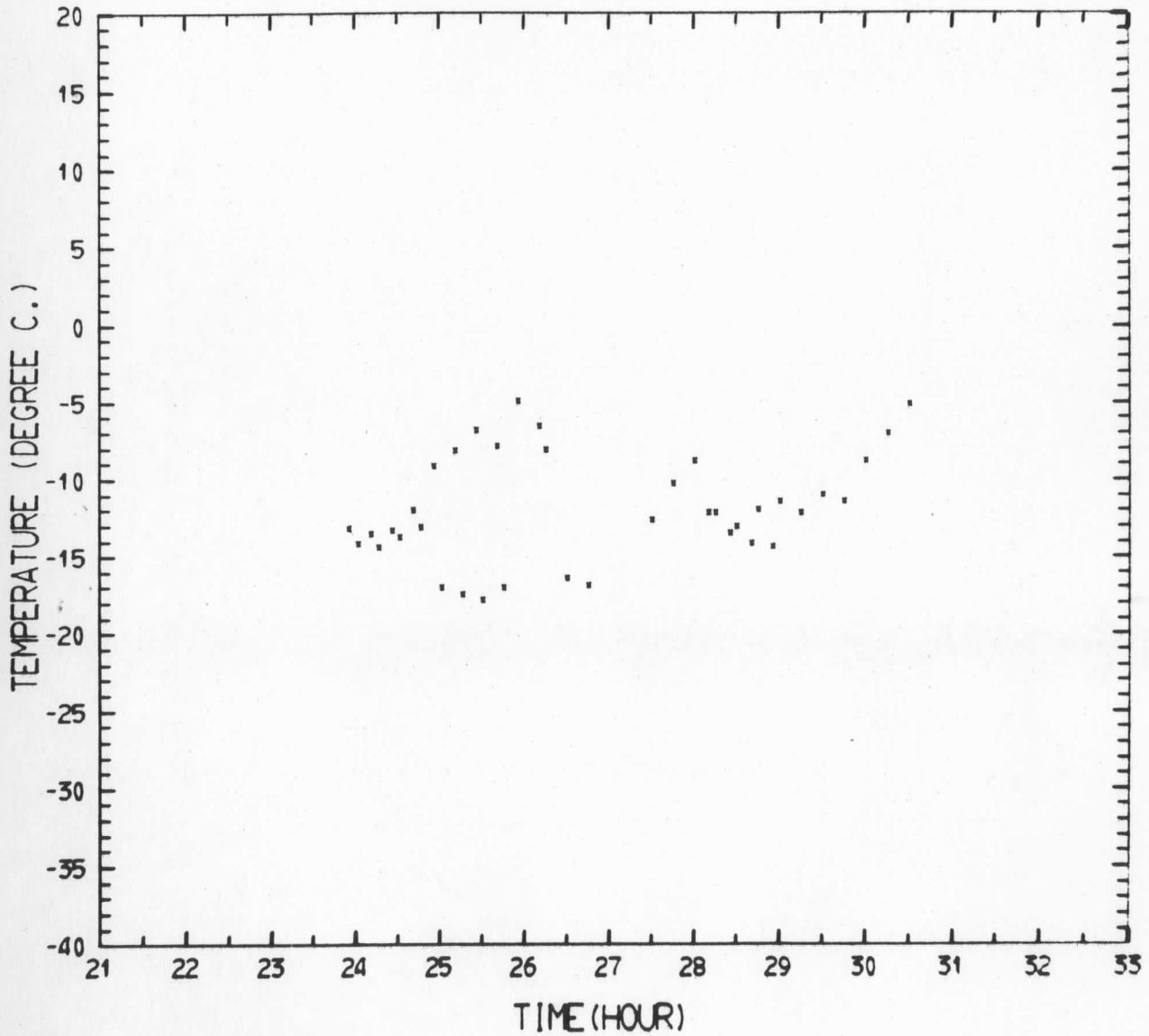
90152 B/L (8-15-1972)



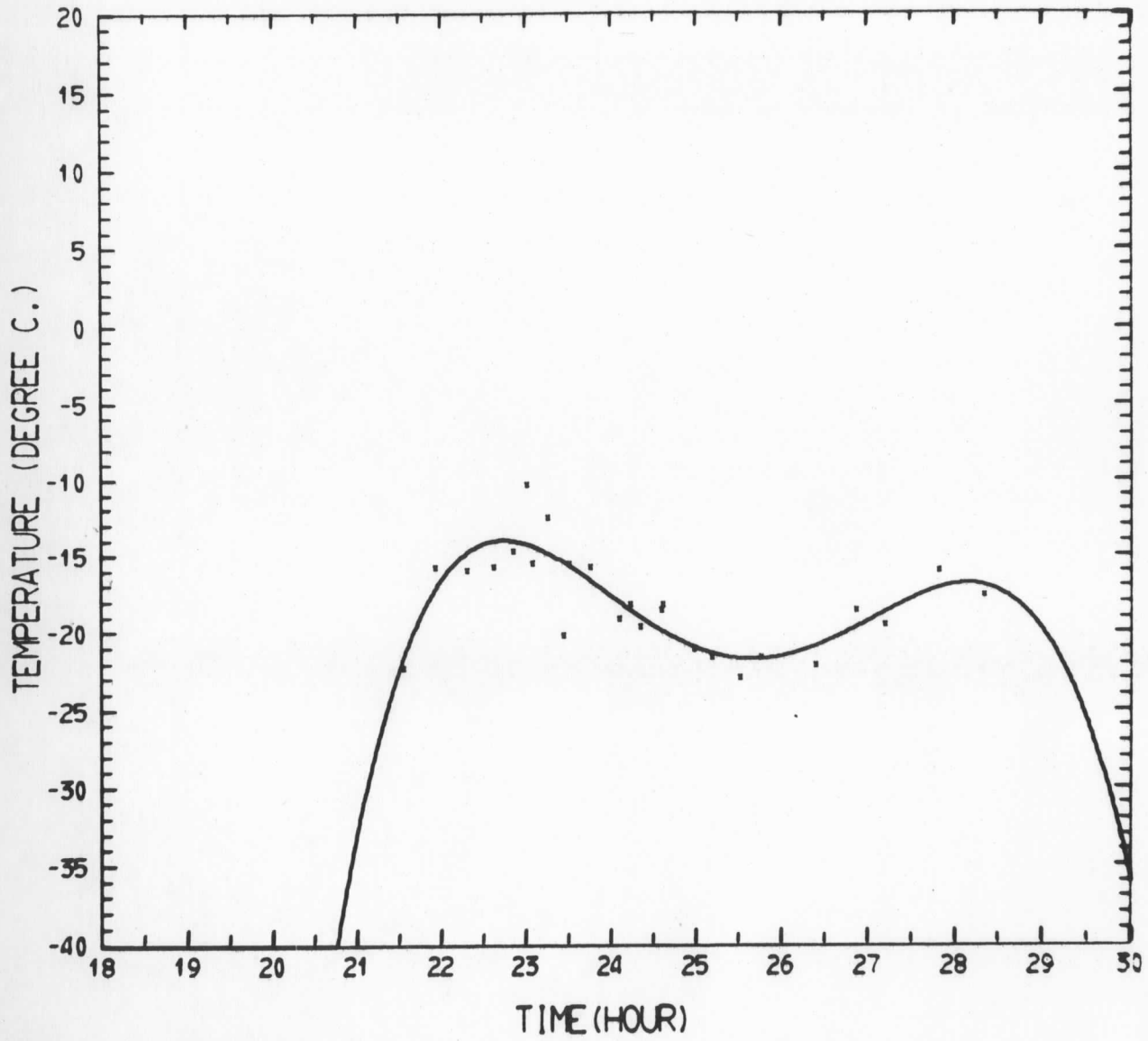
90152 B/L (8-16-1972)



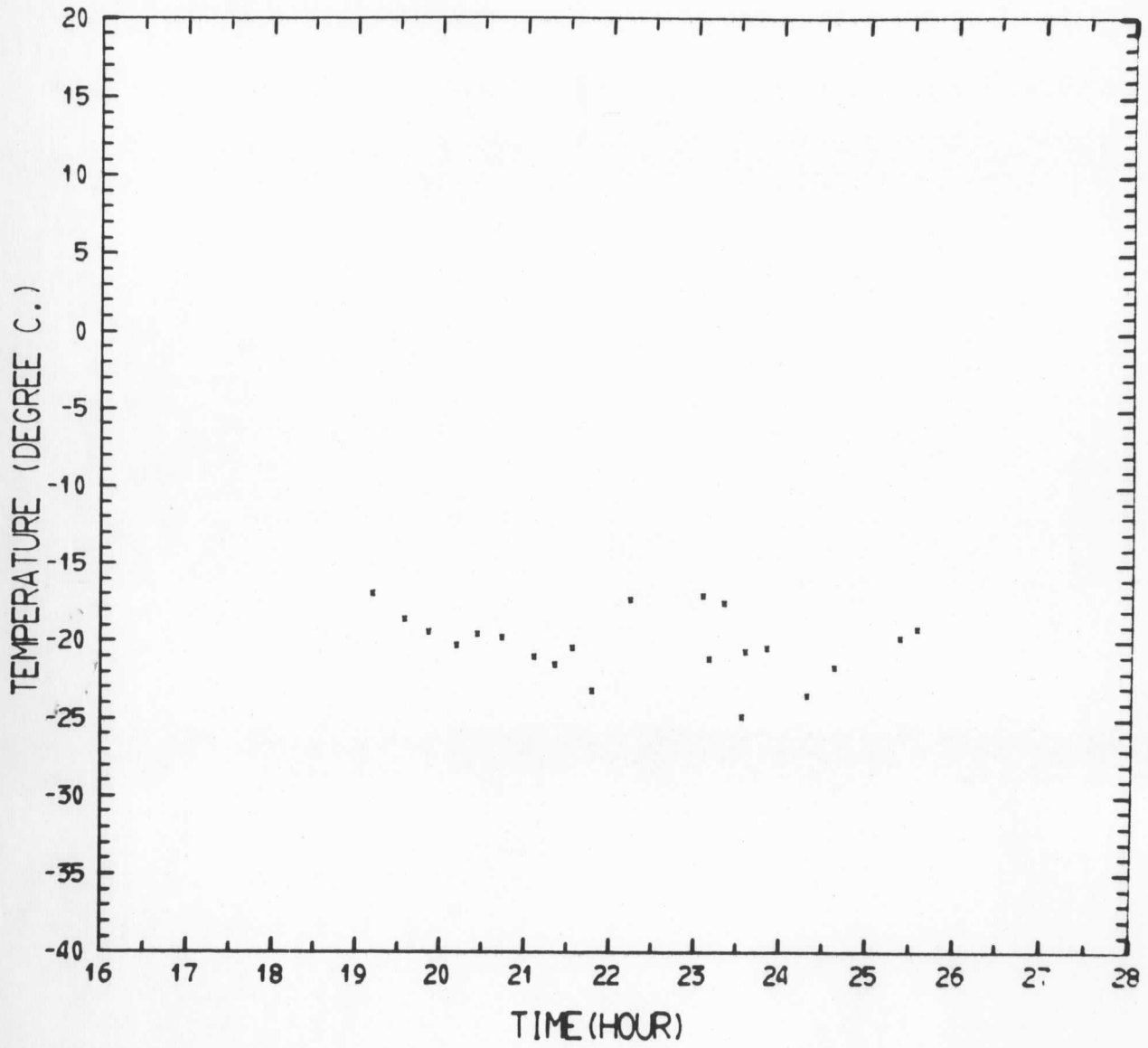
90152 B/L (8-16-1972)



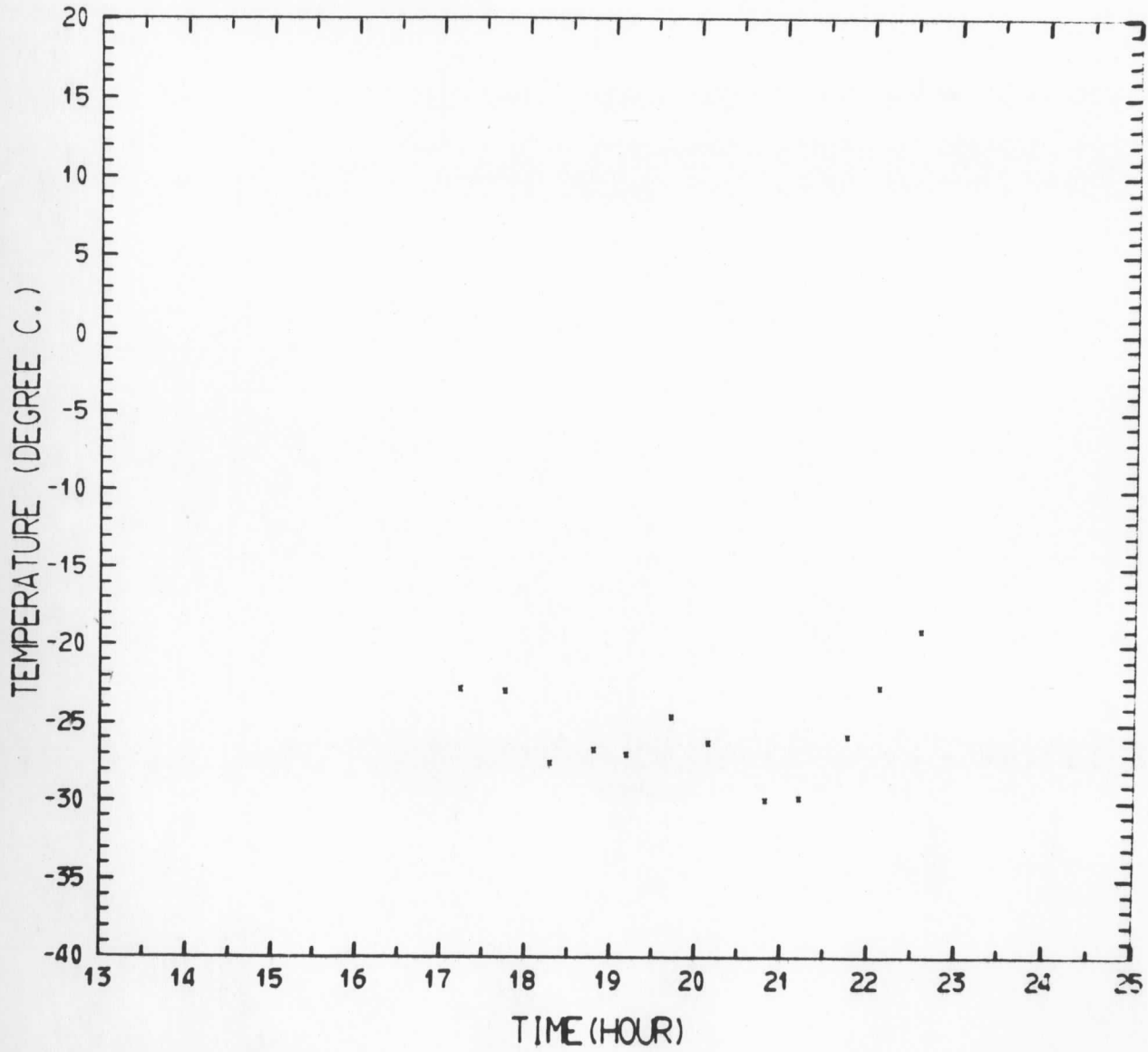
90152 B/L (8-17-1972)



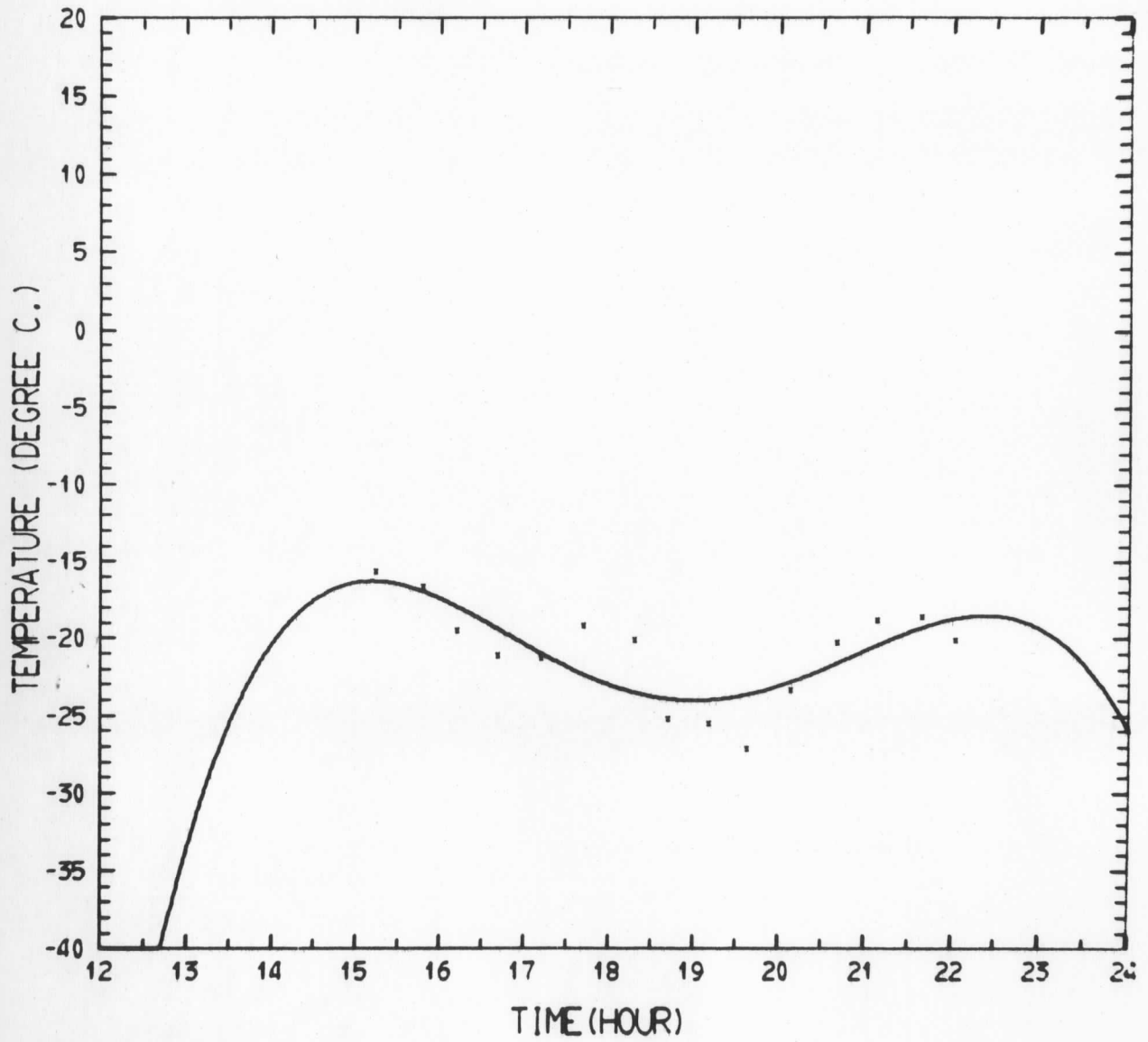
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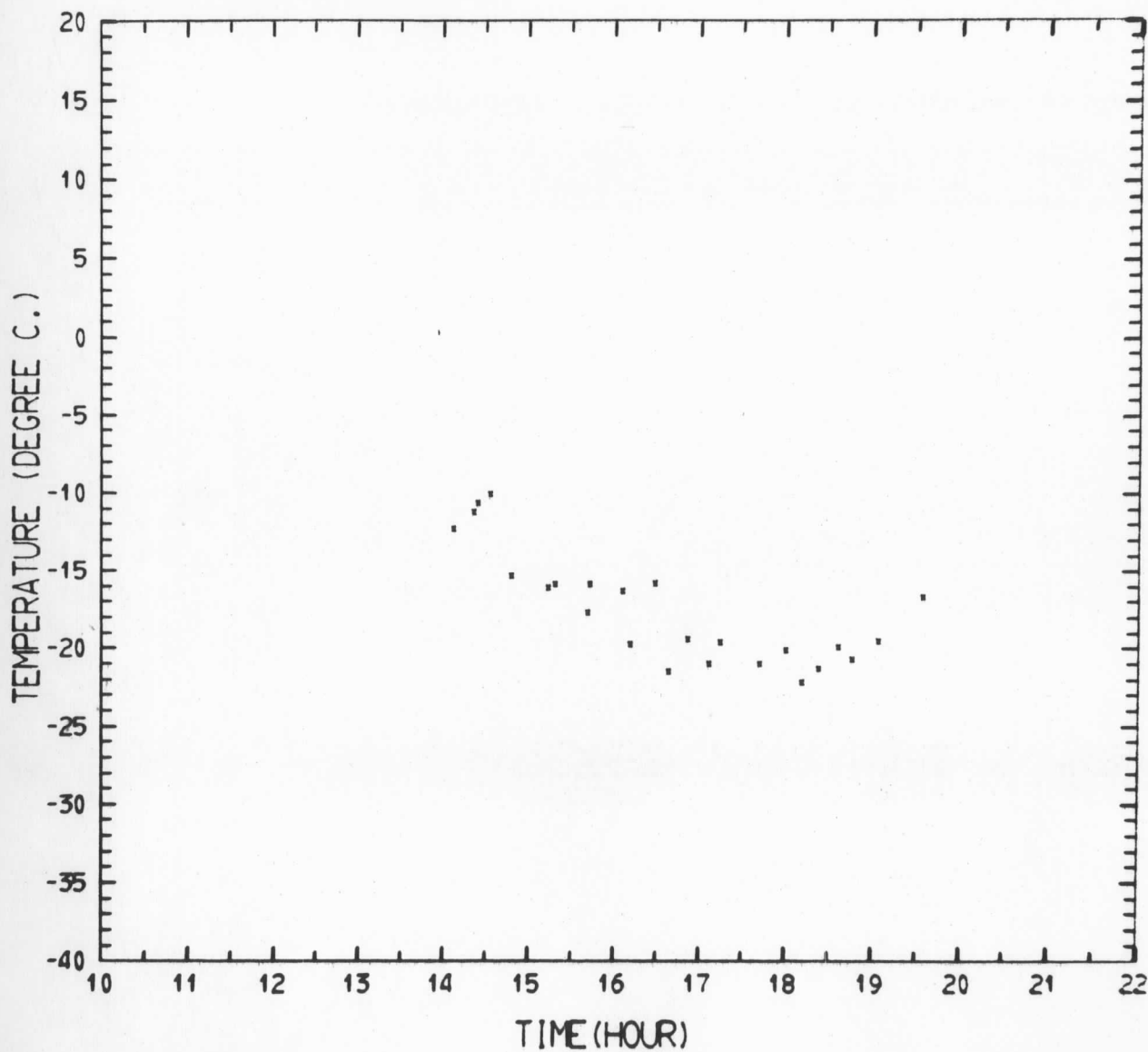
90152 B/L (8-22-1972)



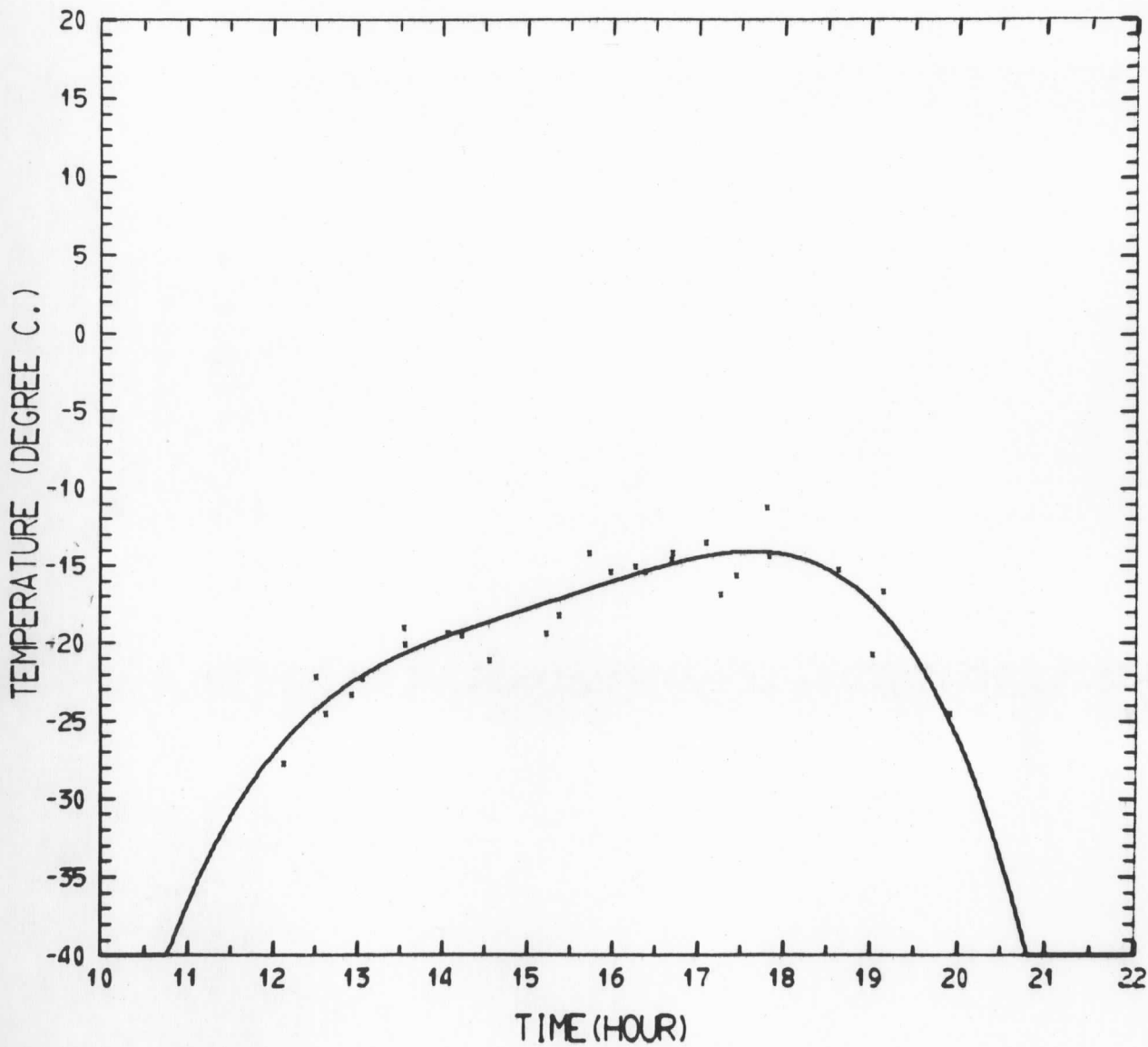
90152 B/L (8-23-1972)



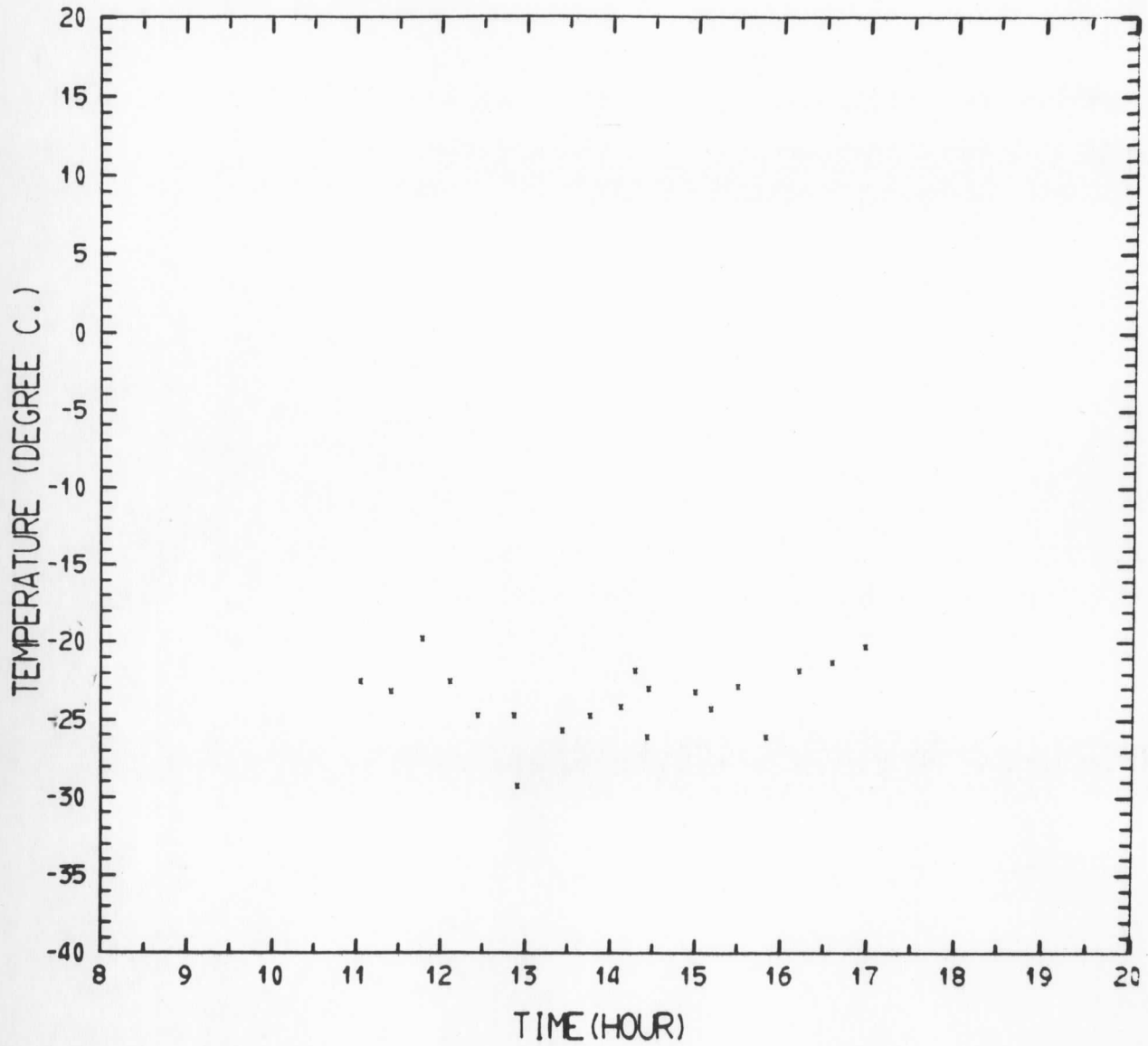
90152 B/L (8-24-1972)



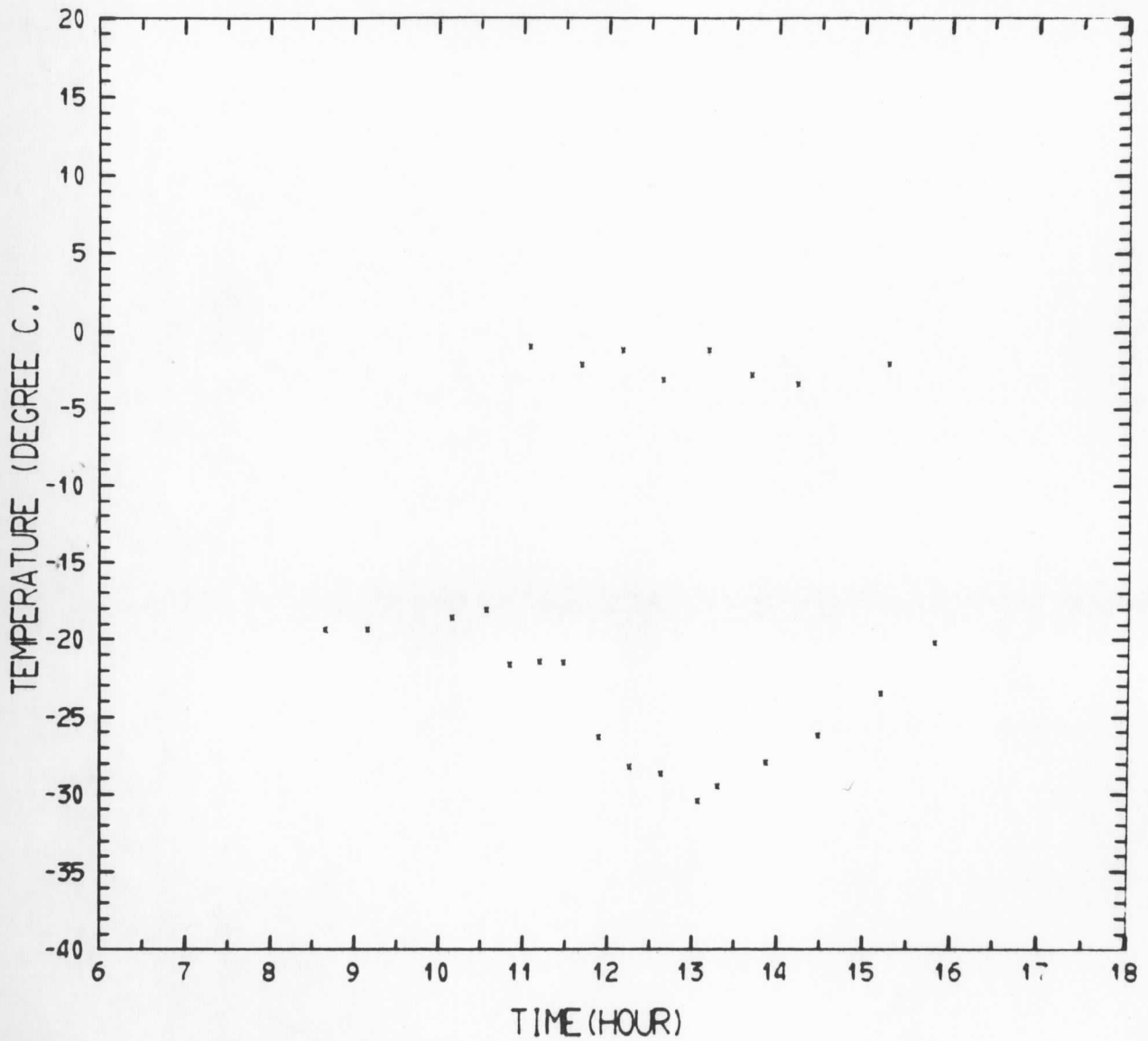
90152 B/L (8-25-1972)



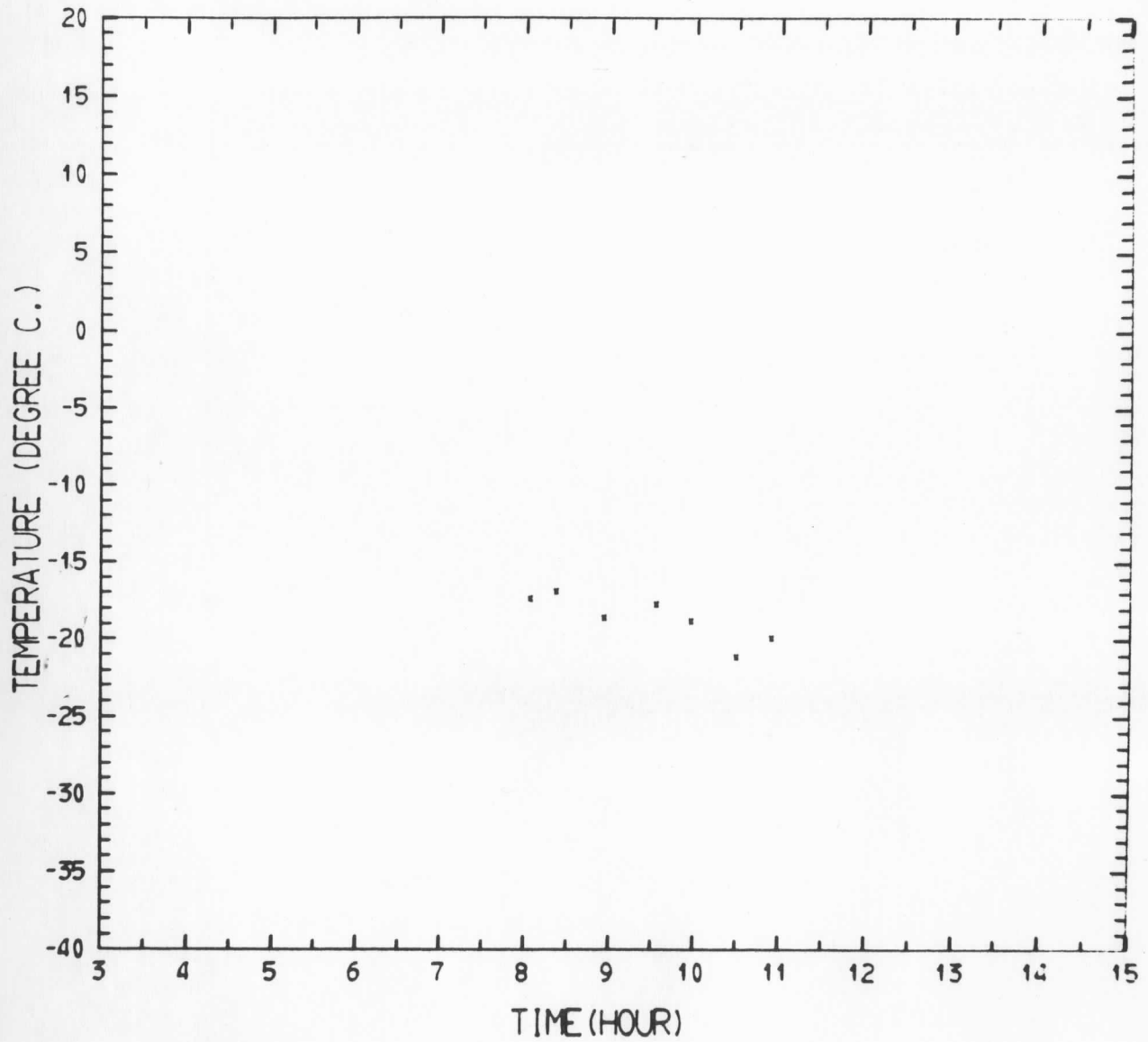
90152 B/L (8-26-1972)



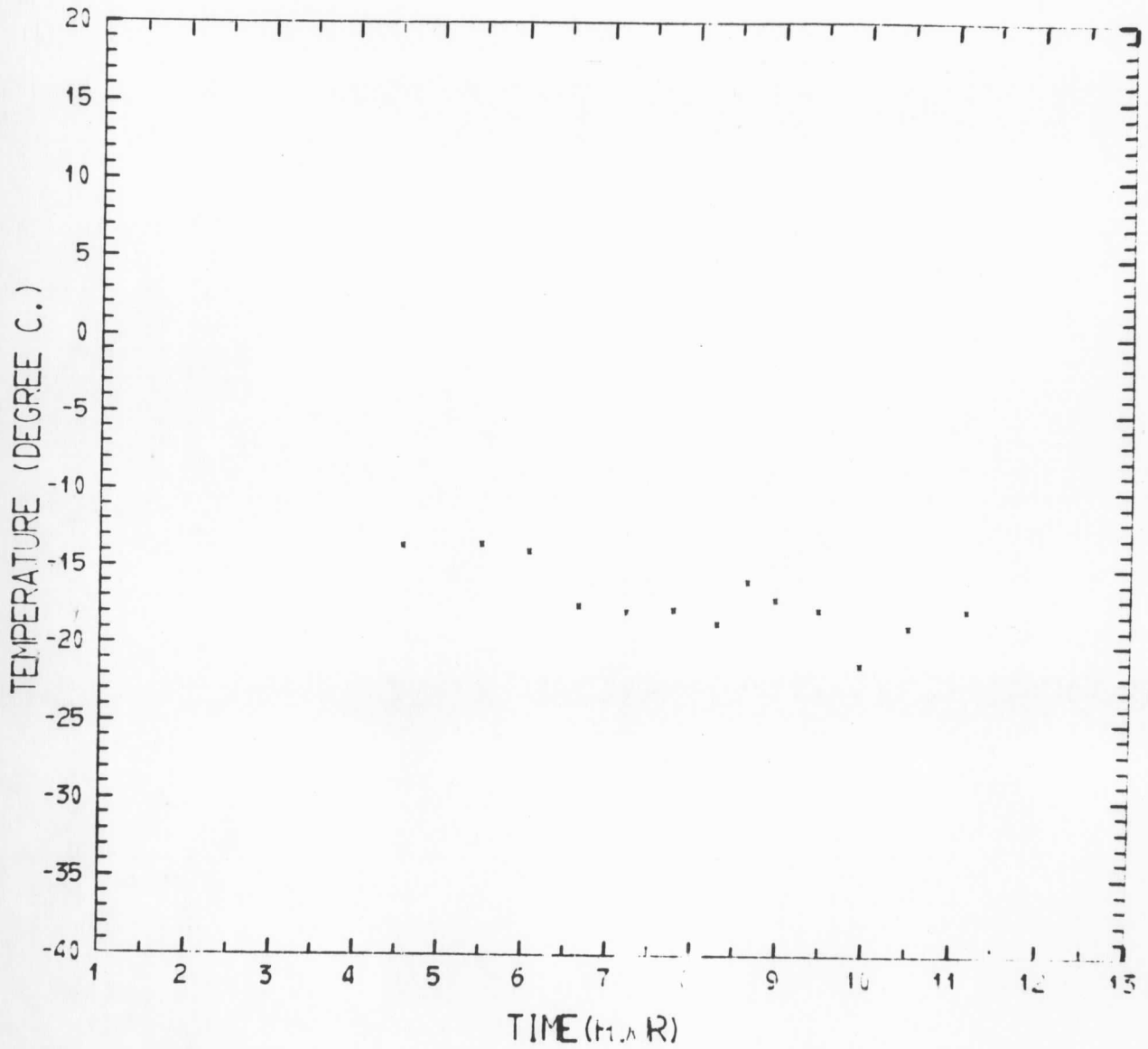
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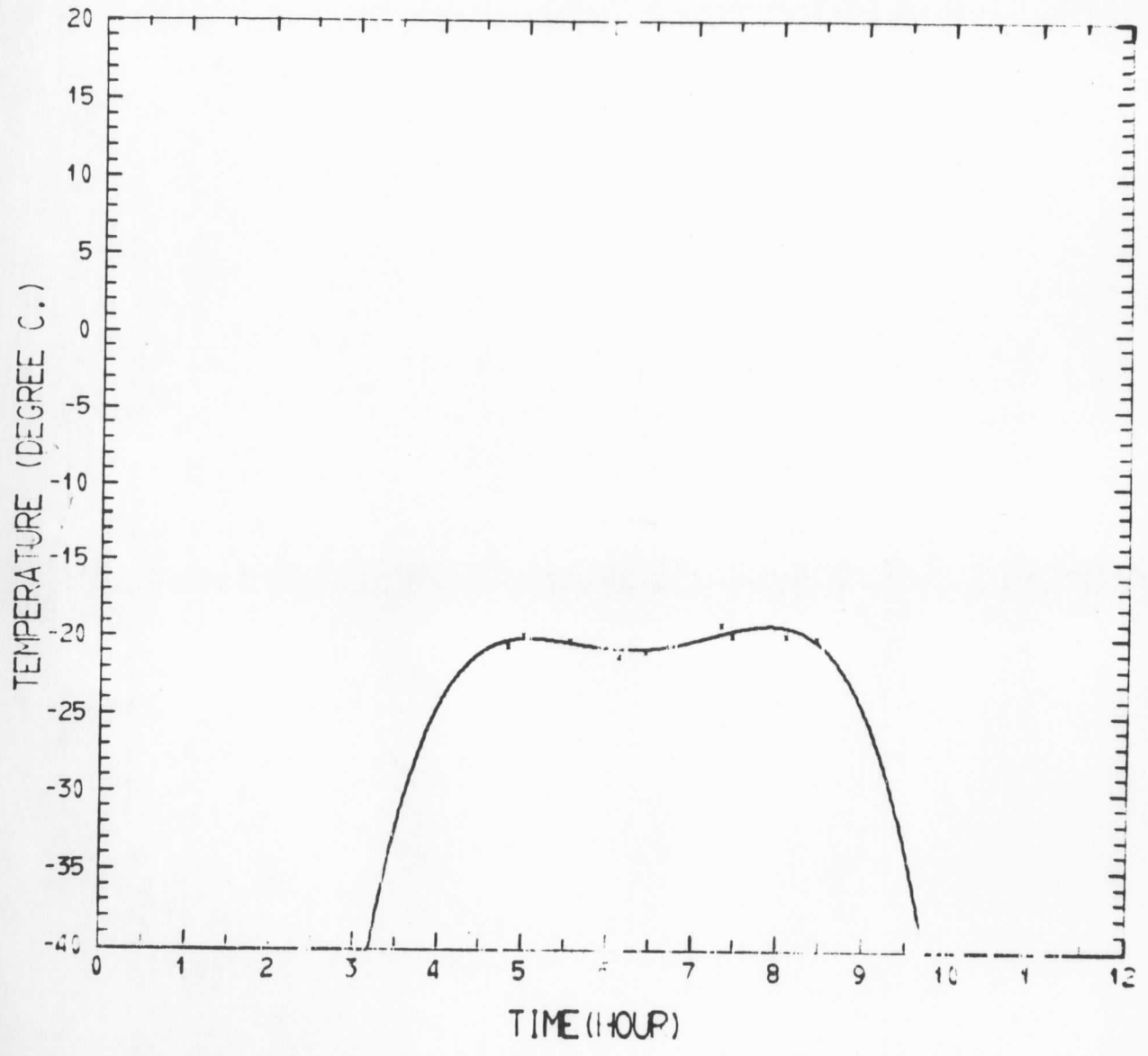
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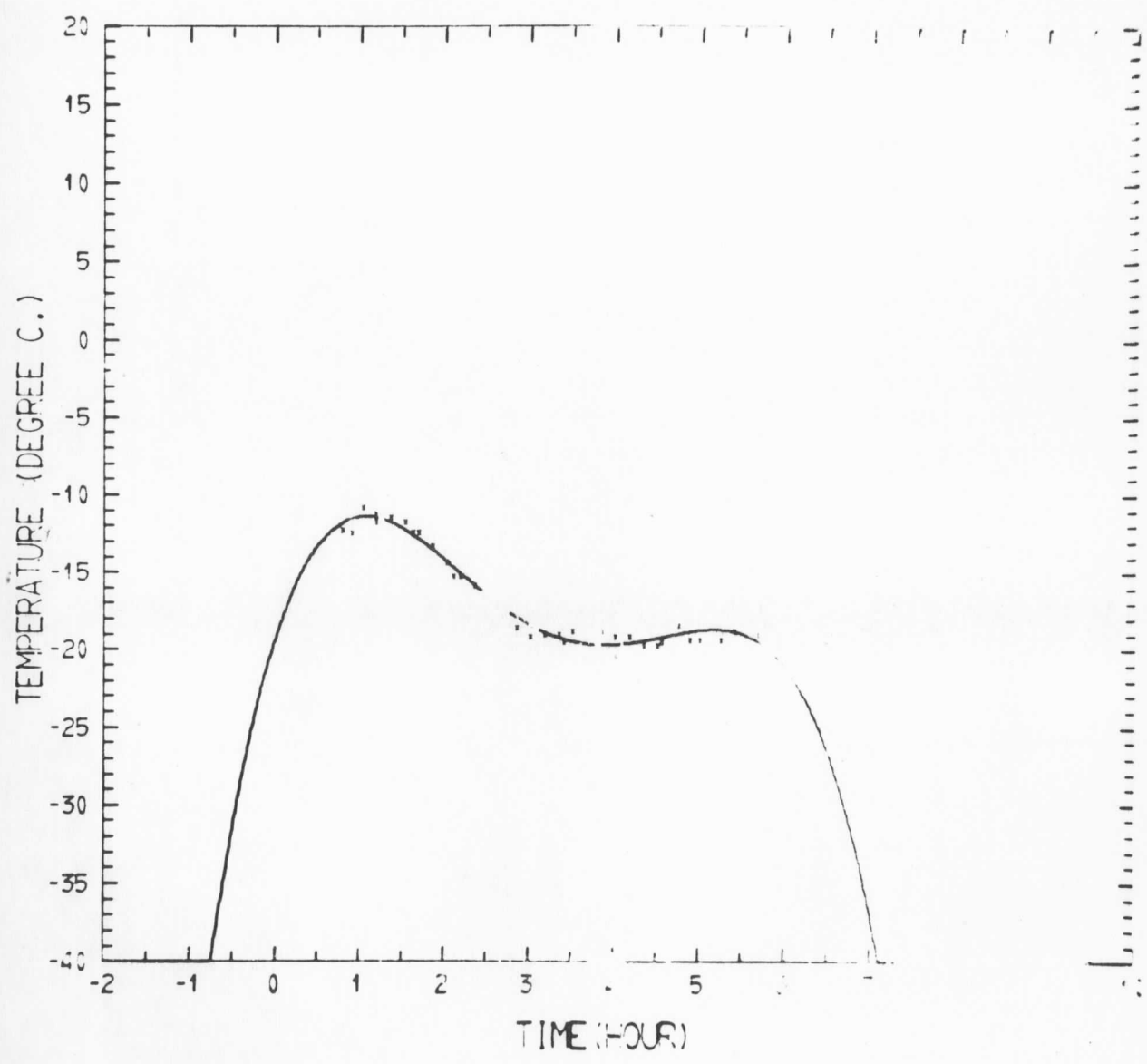
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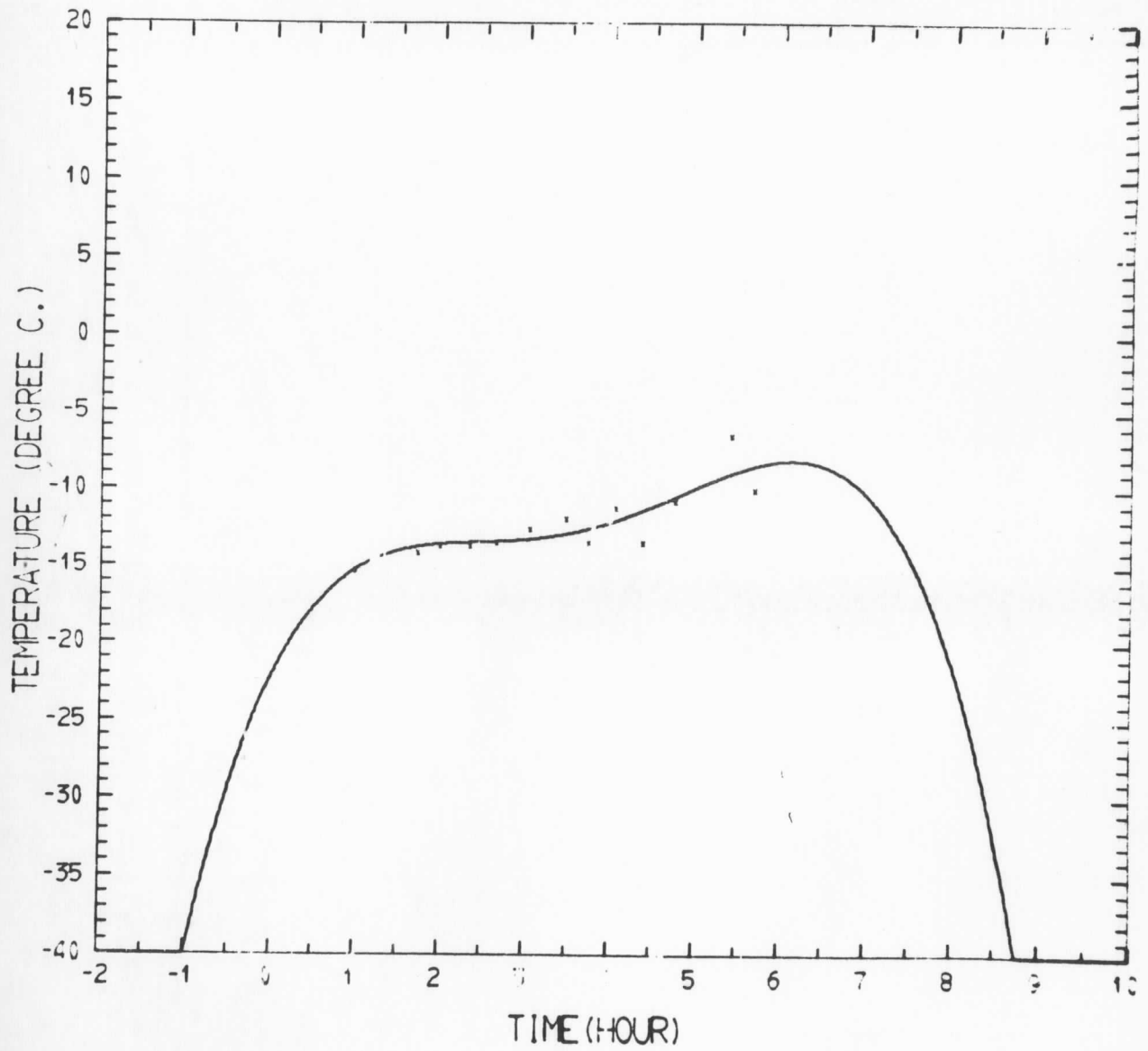
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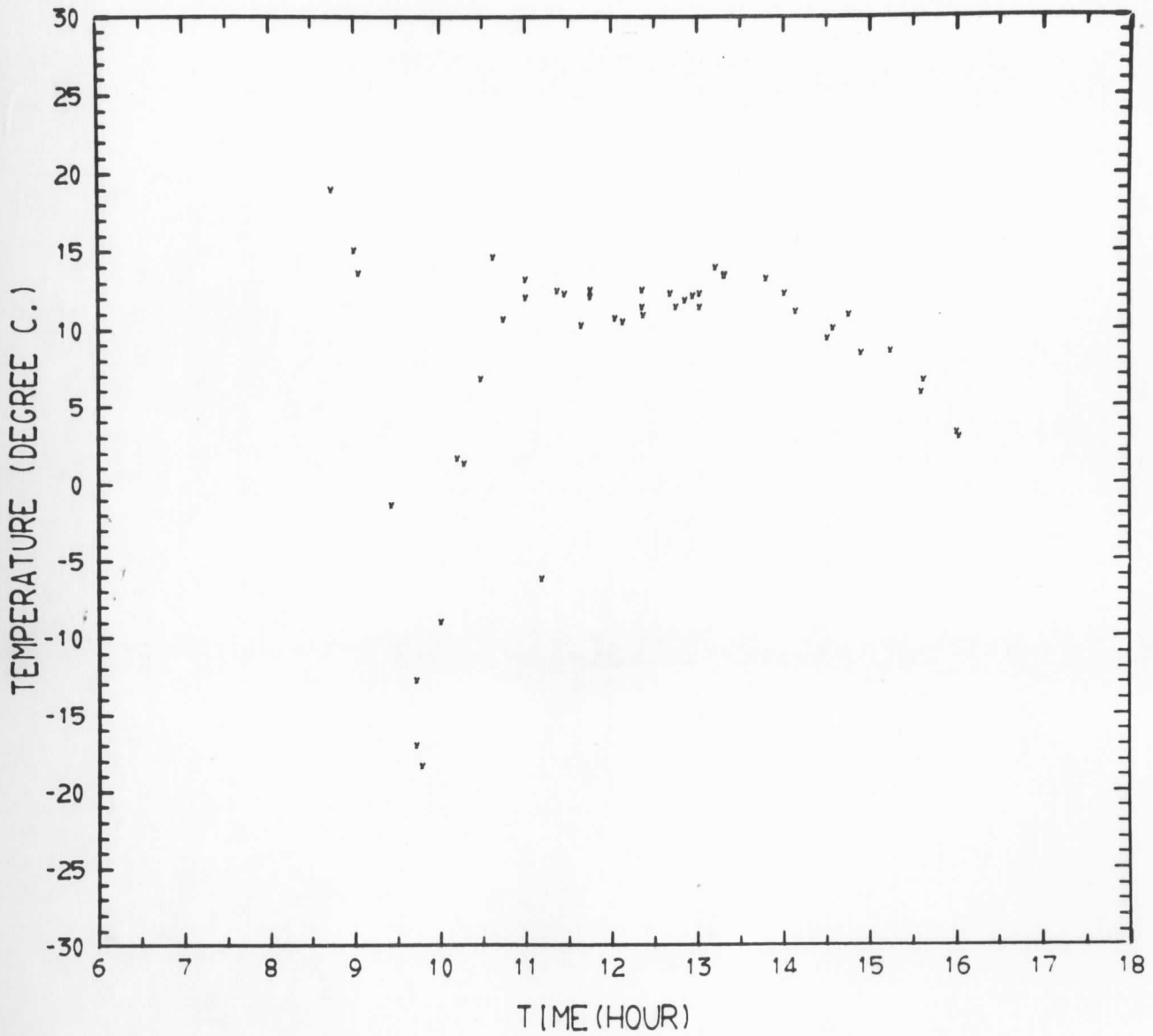
90152 B/L (8-31 1972.



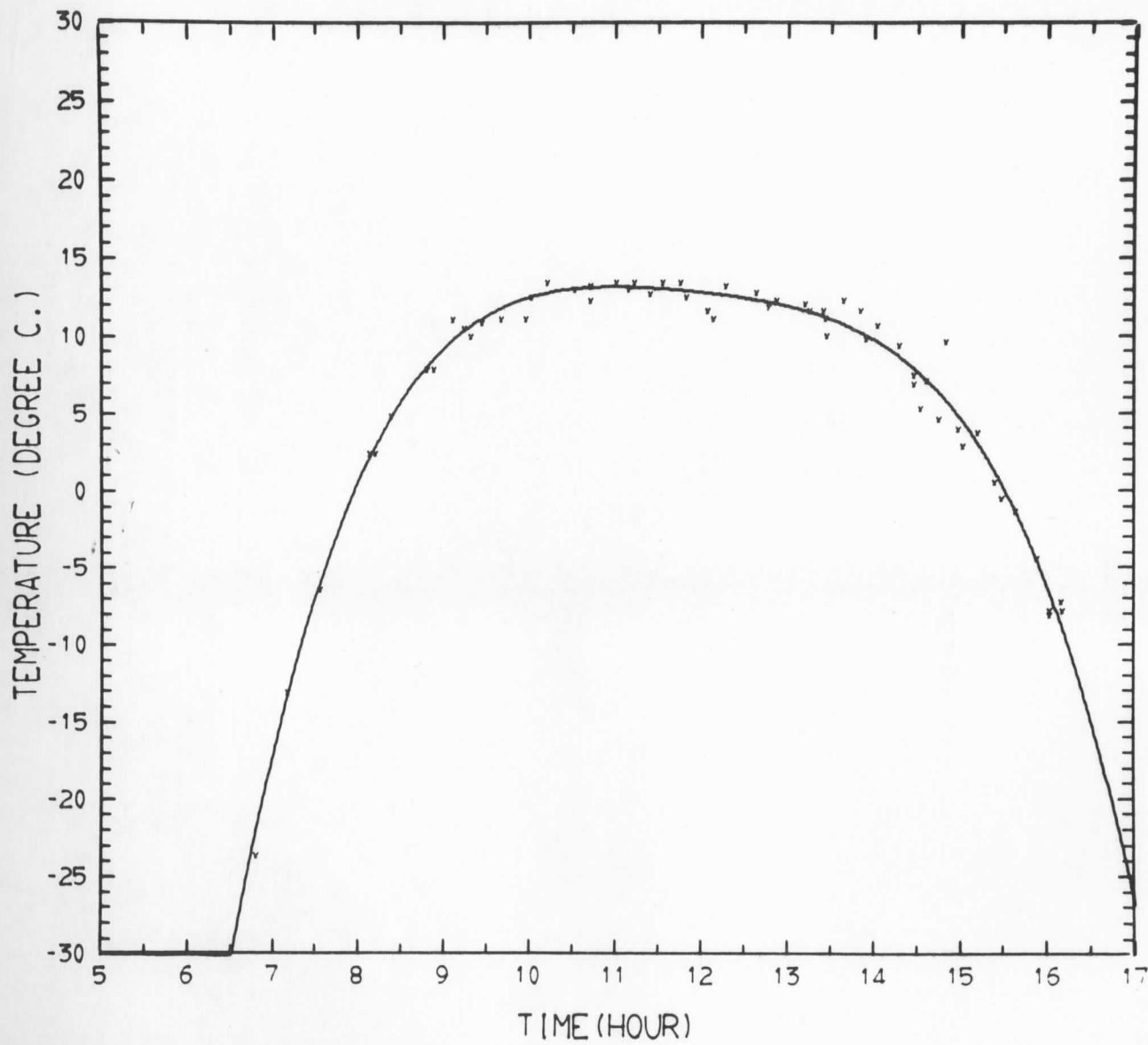
90152 B/L (9- 1-1972)



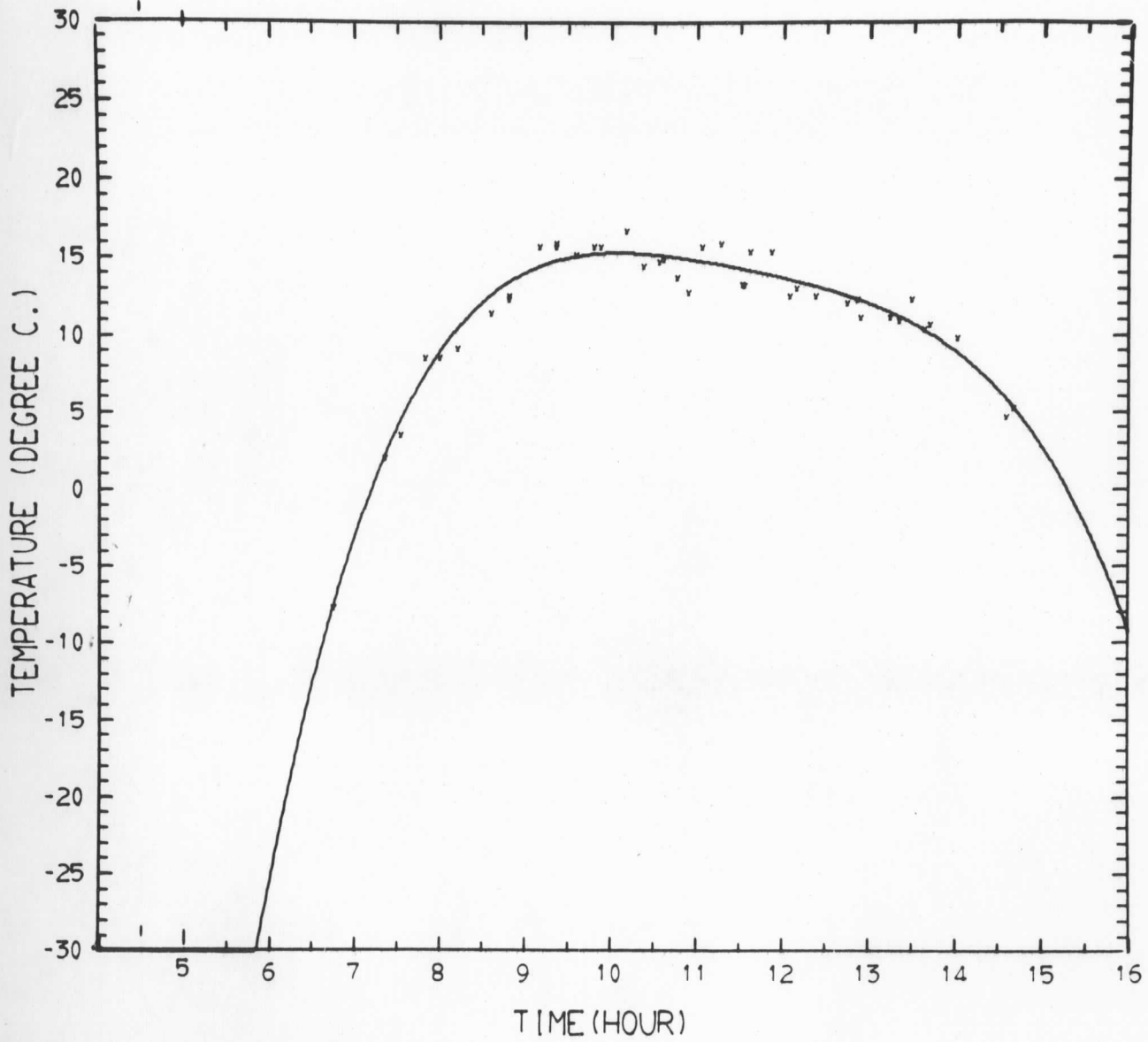
94157 B/J (7-7-1972)



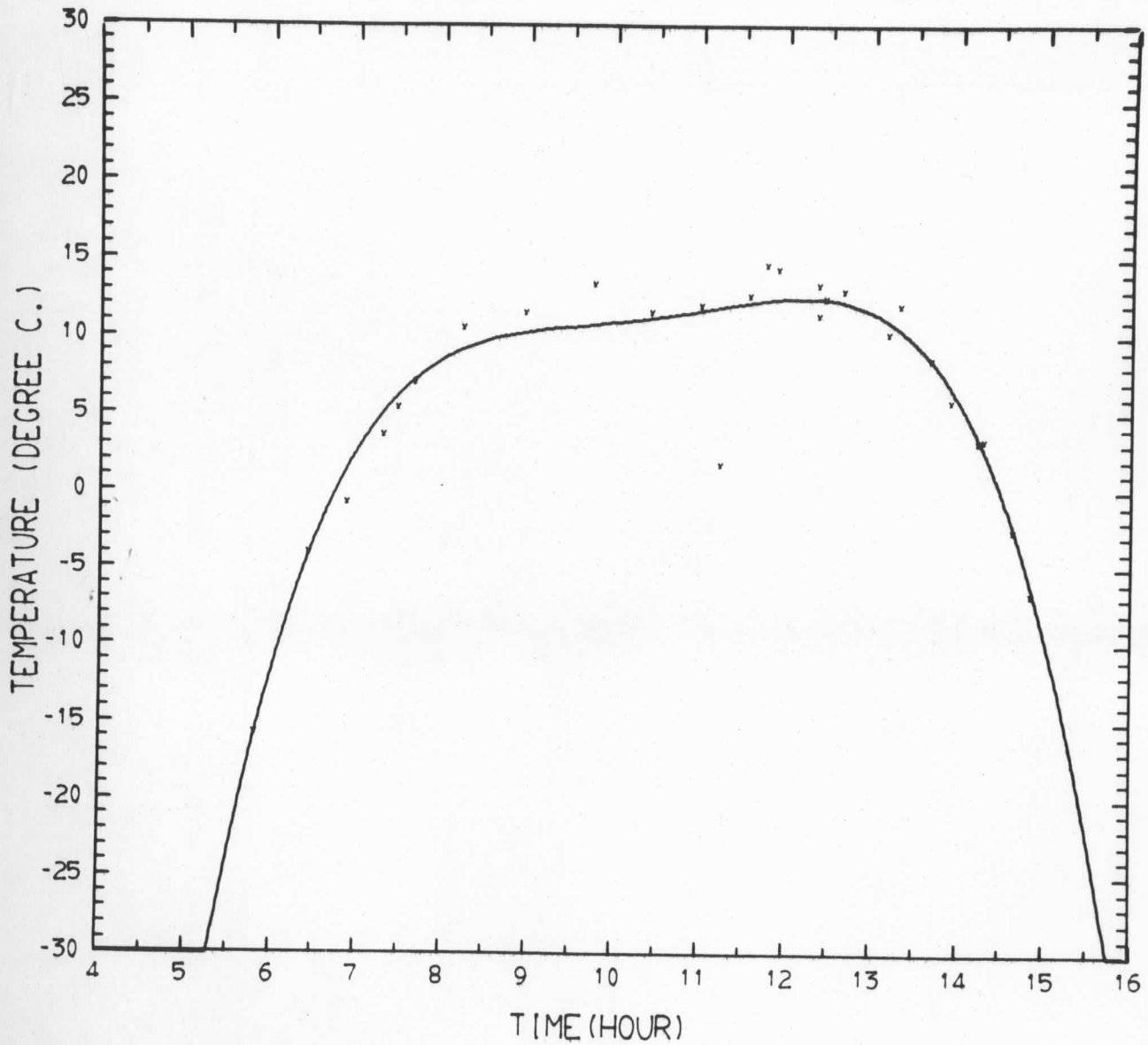
94157 B/J (7-8-1972)



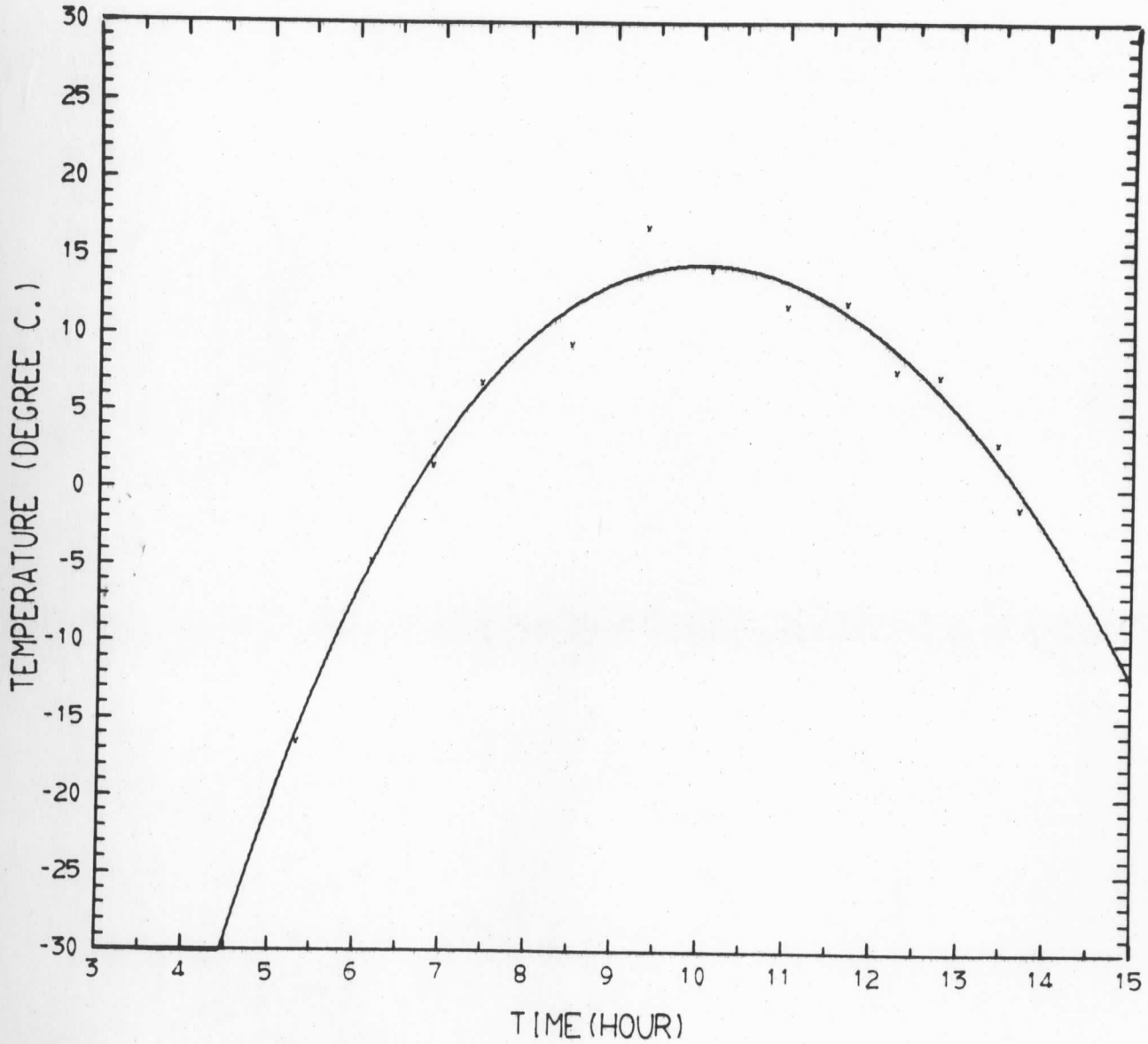
94157 B/J (7- 9-1972)



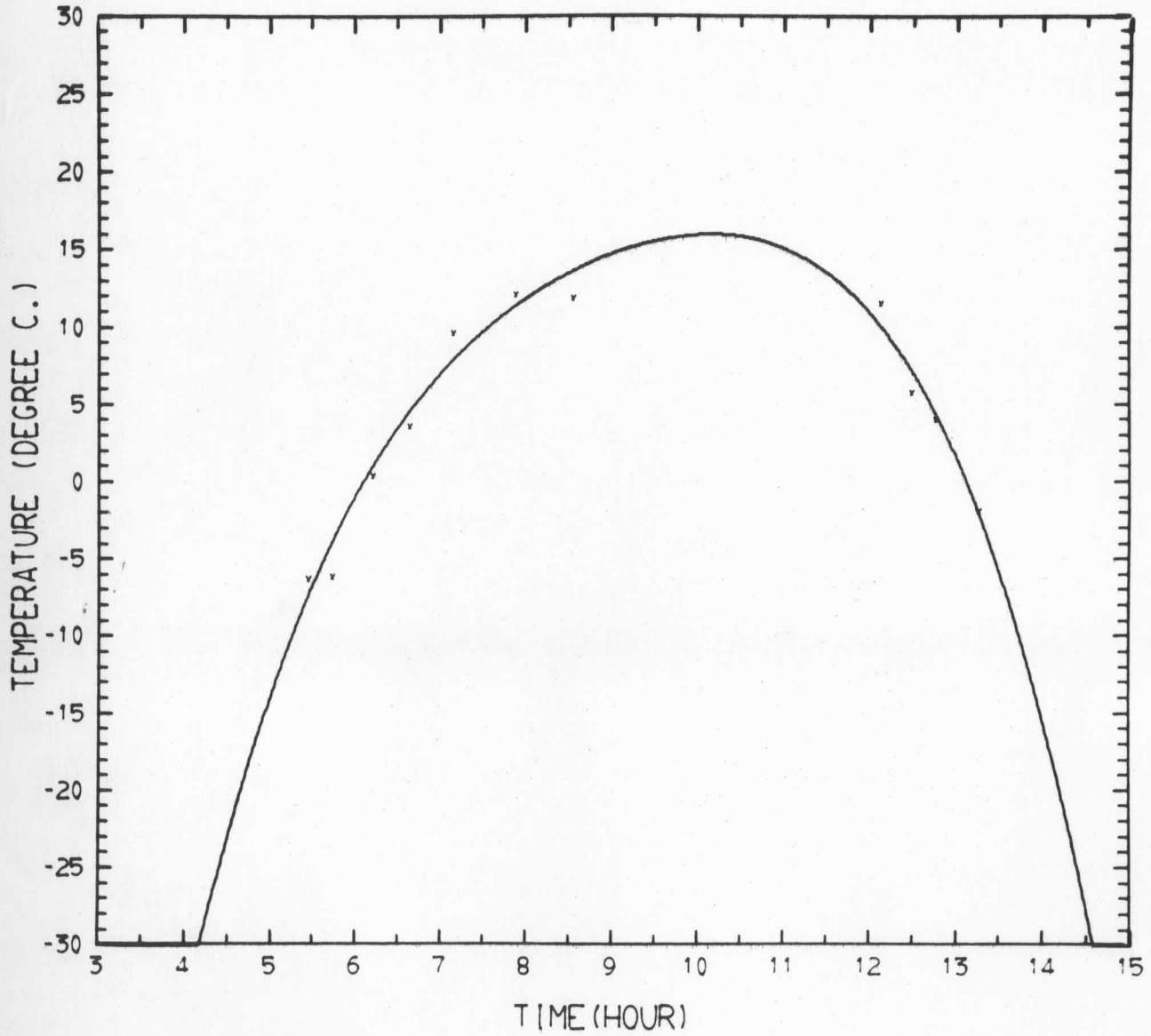
94157 B/J (7-10-1972)



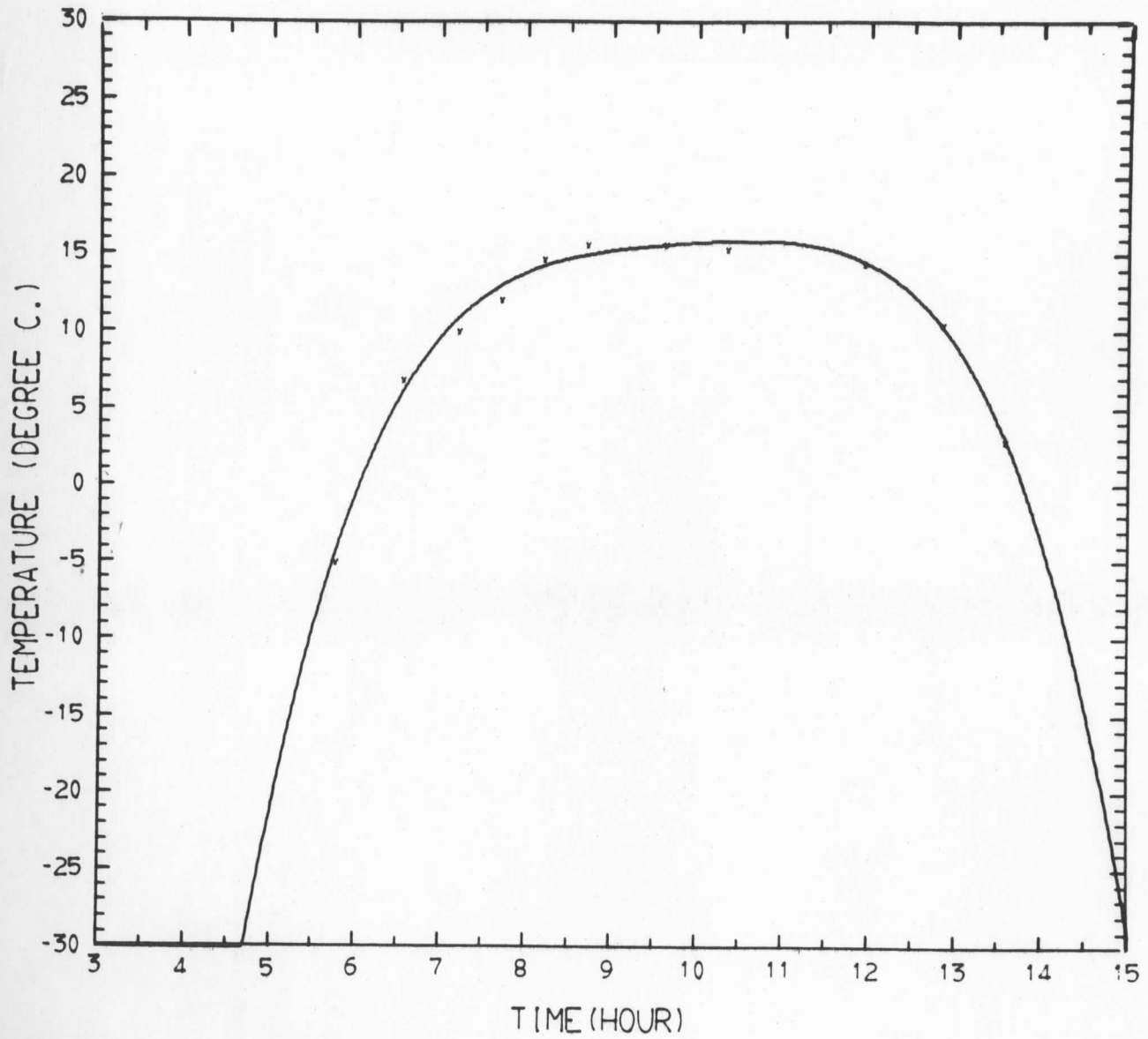
94157 B/J (7-11-1972)



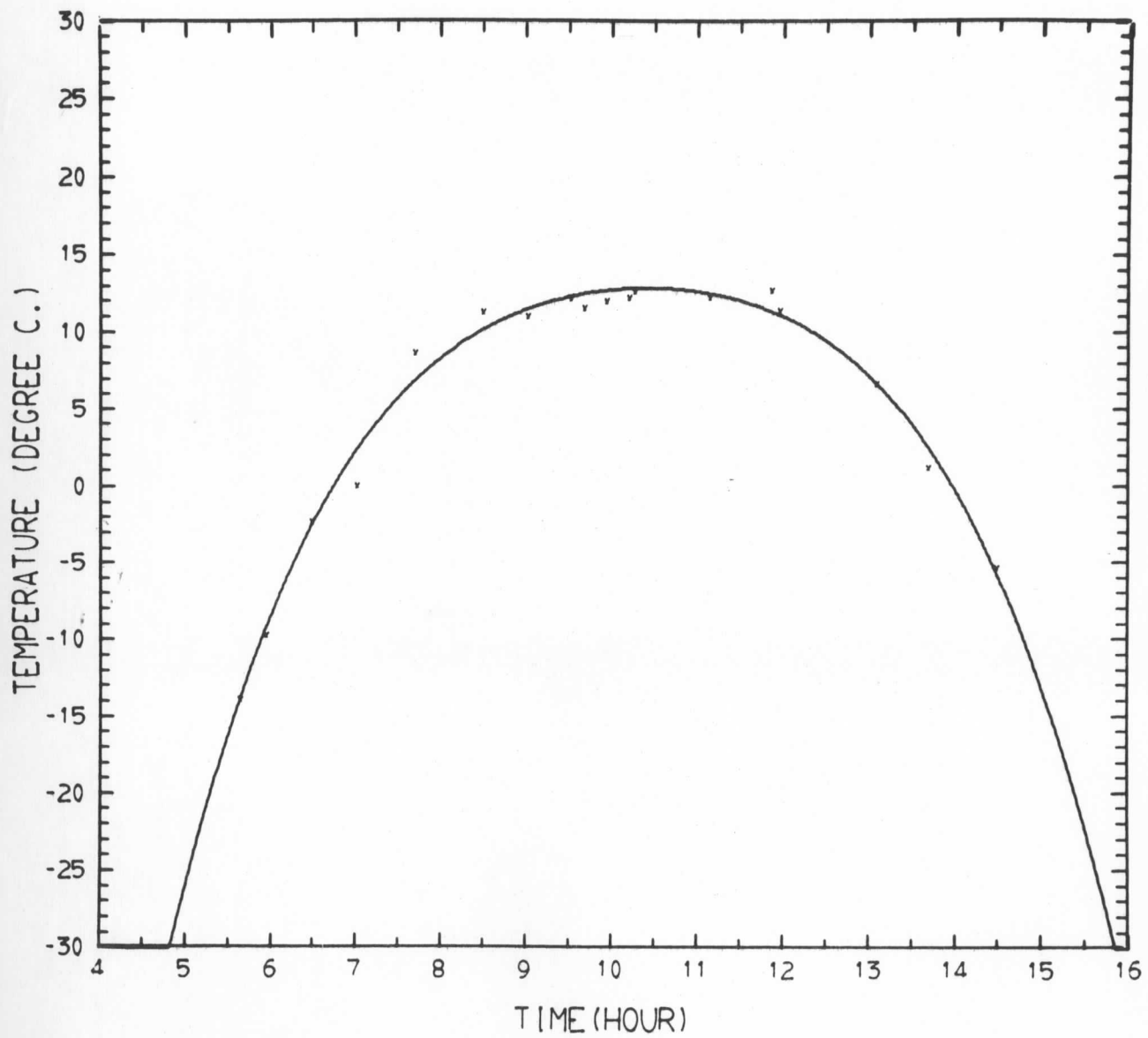
94157 B/J (7-12-1972)



94157 B/J (7-13-1972)

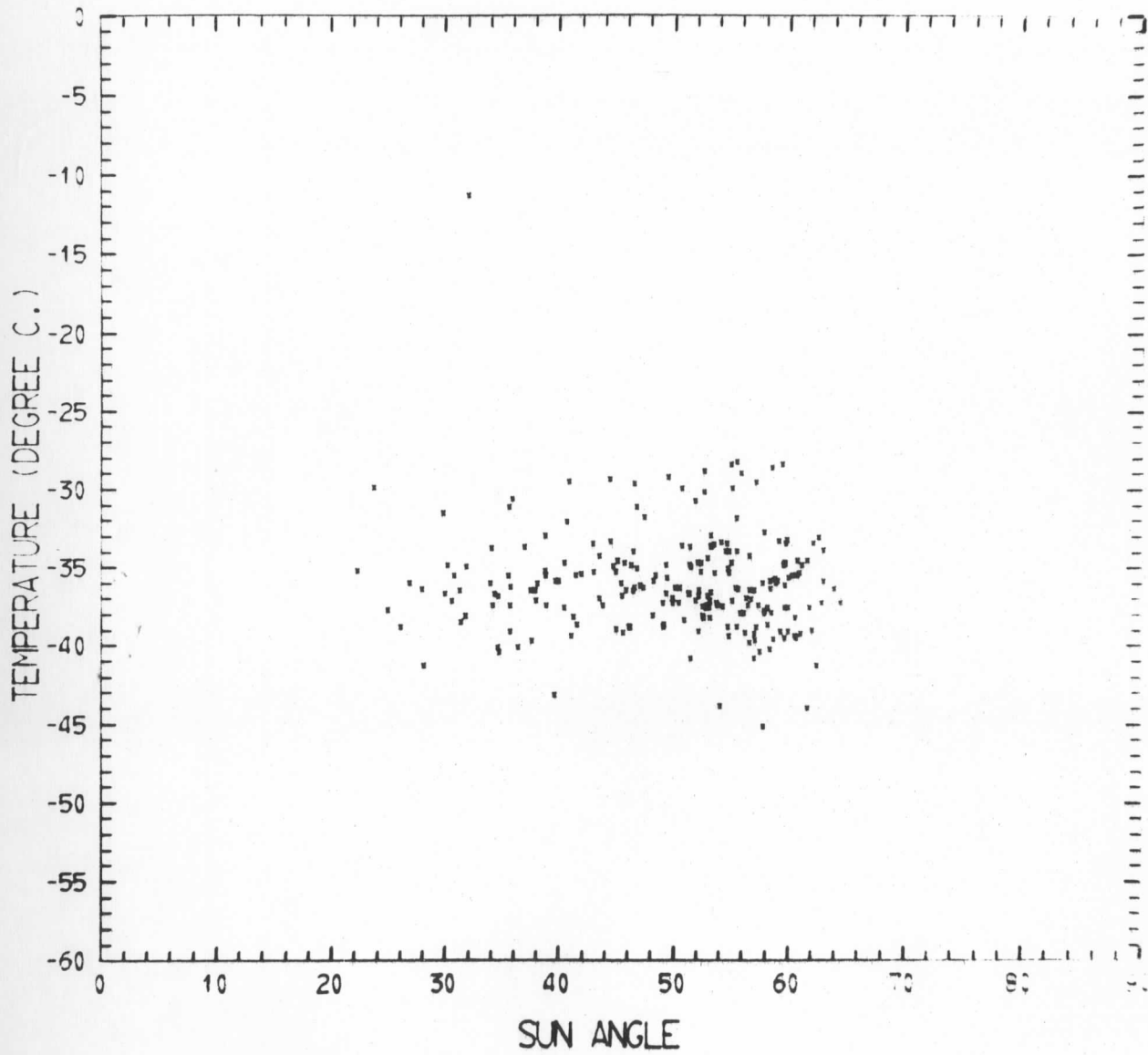


94157 B/J (7-14-1972)

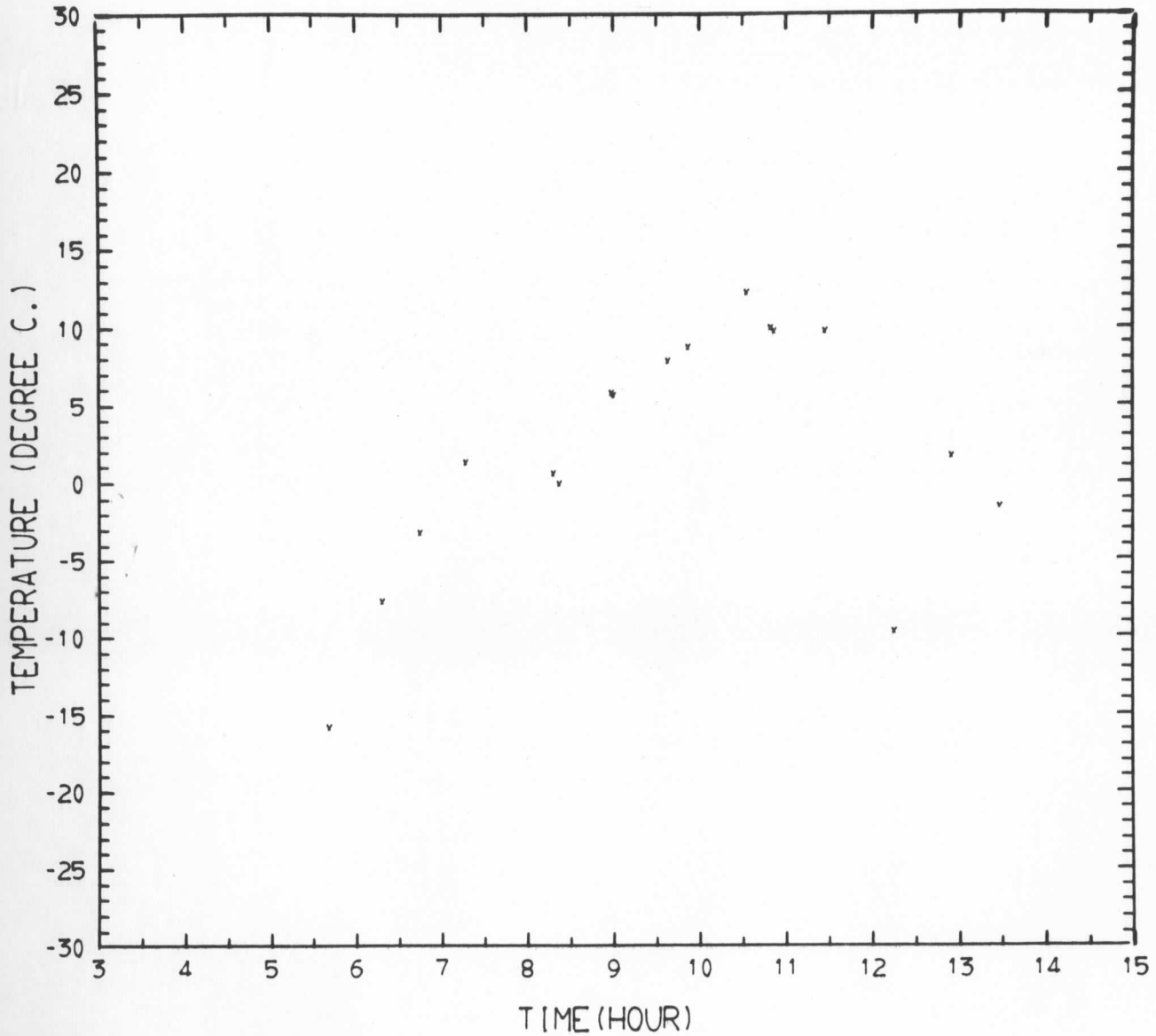


102155 B/G

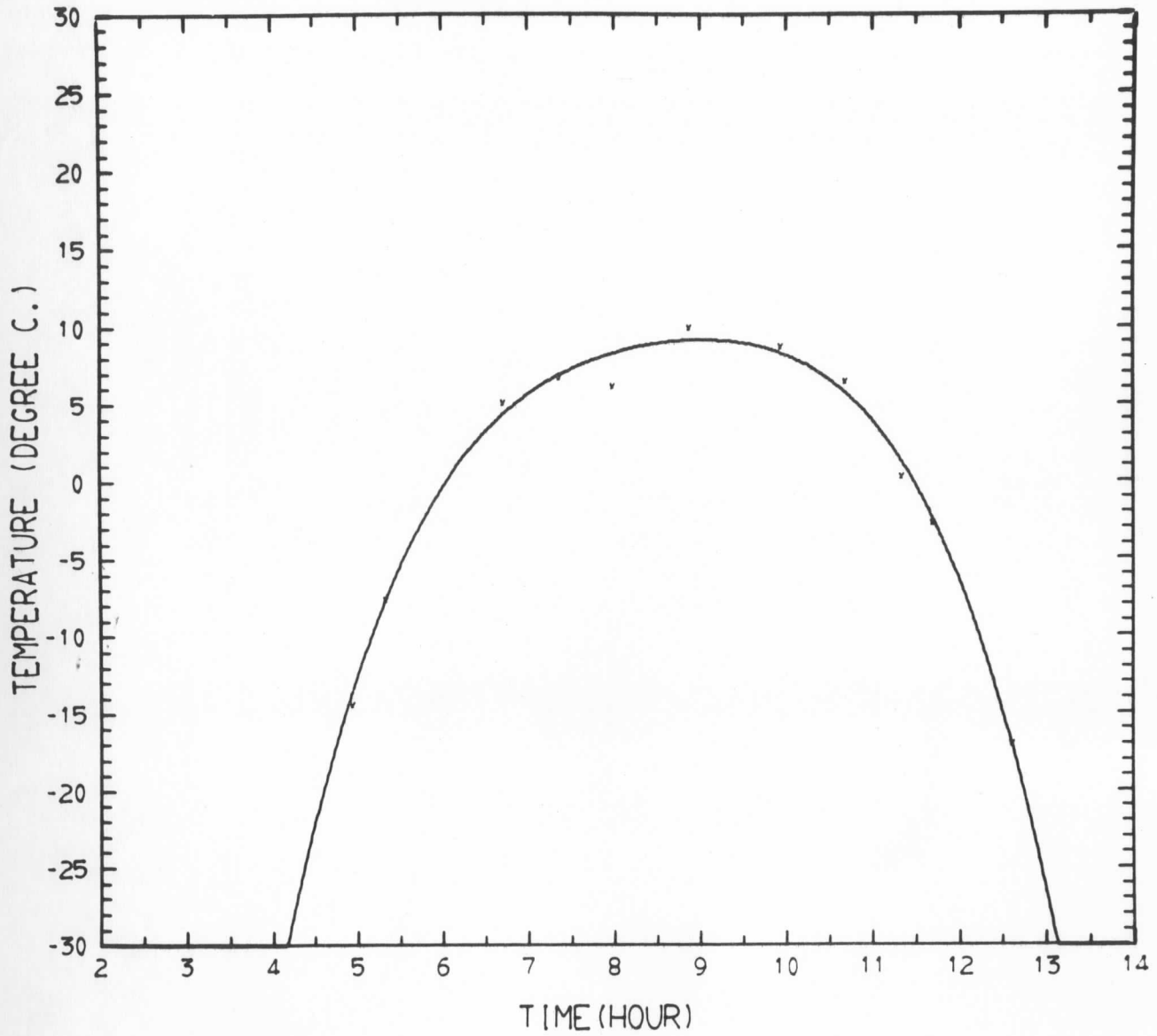
- 1972 (223 POINTS)



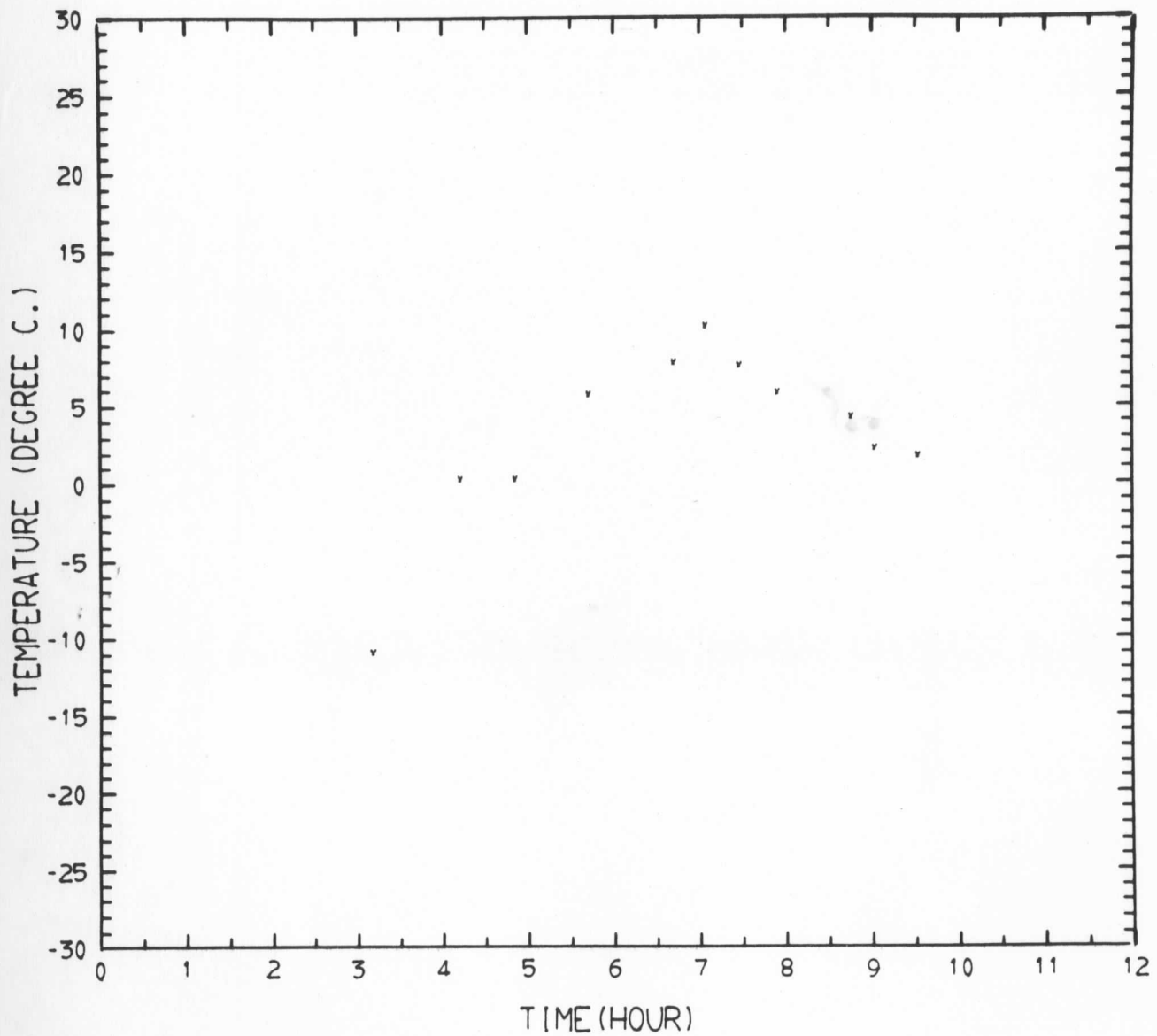
94157 B/J (7-15-1972)



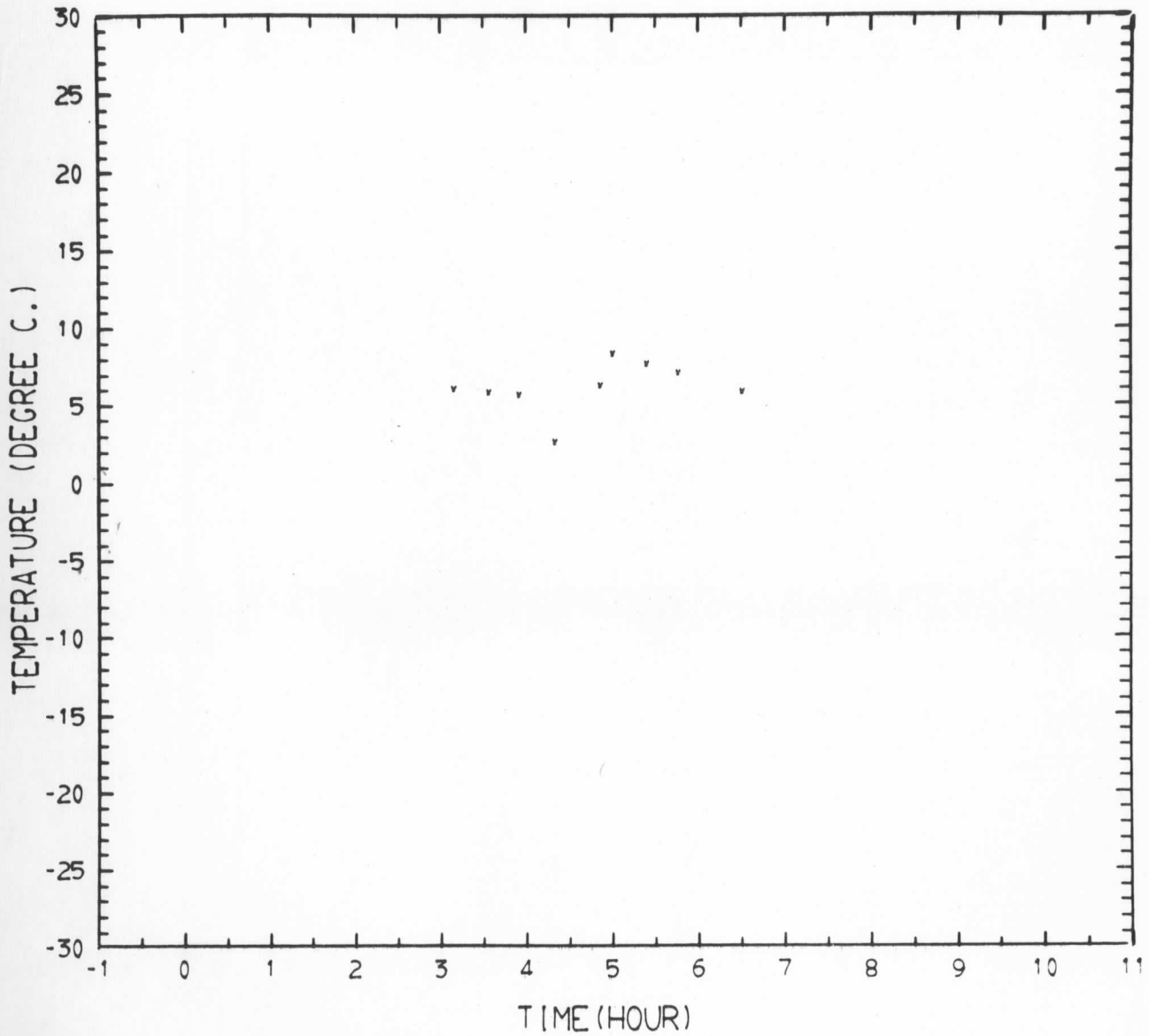
94157 B/J (7-16-1972)



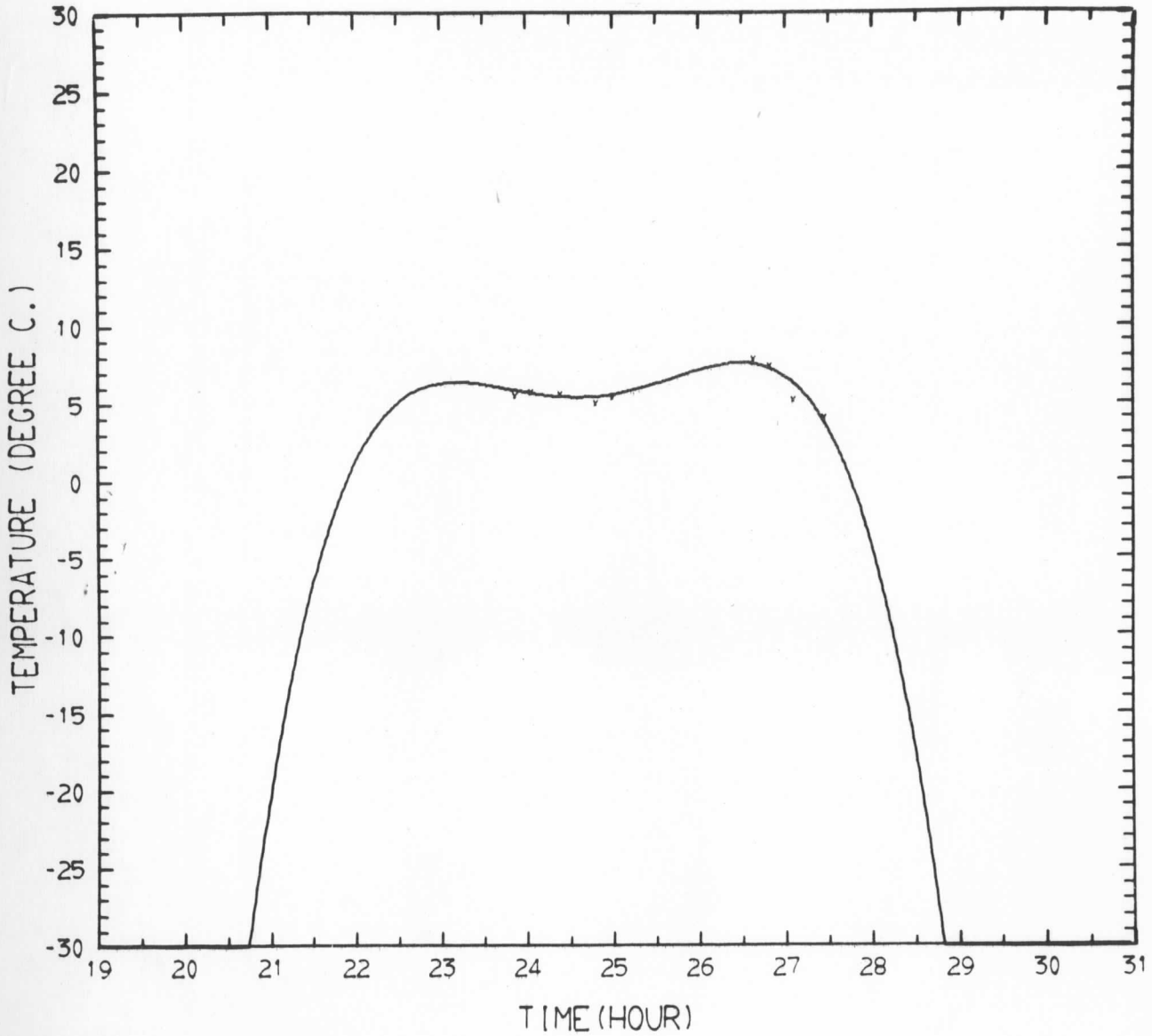
94157 B/J (7-17-1972)



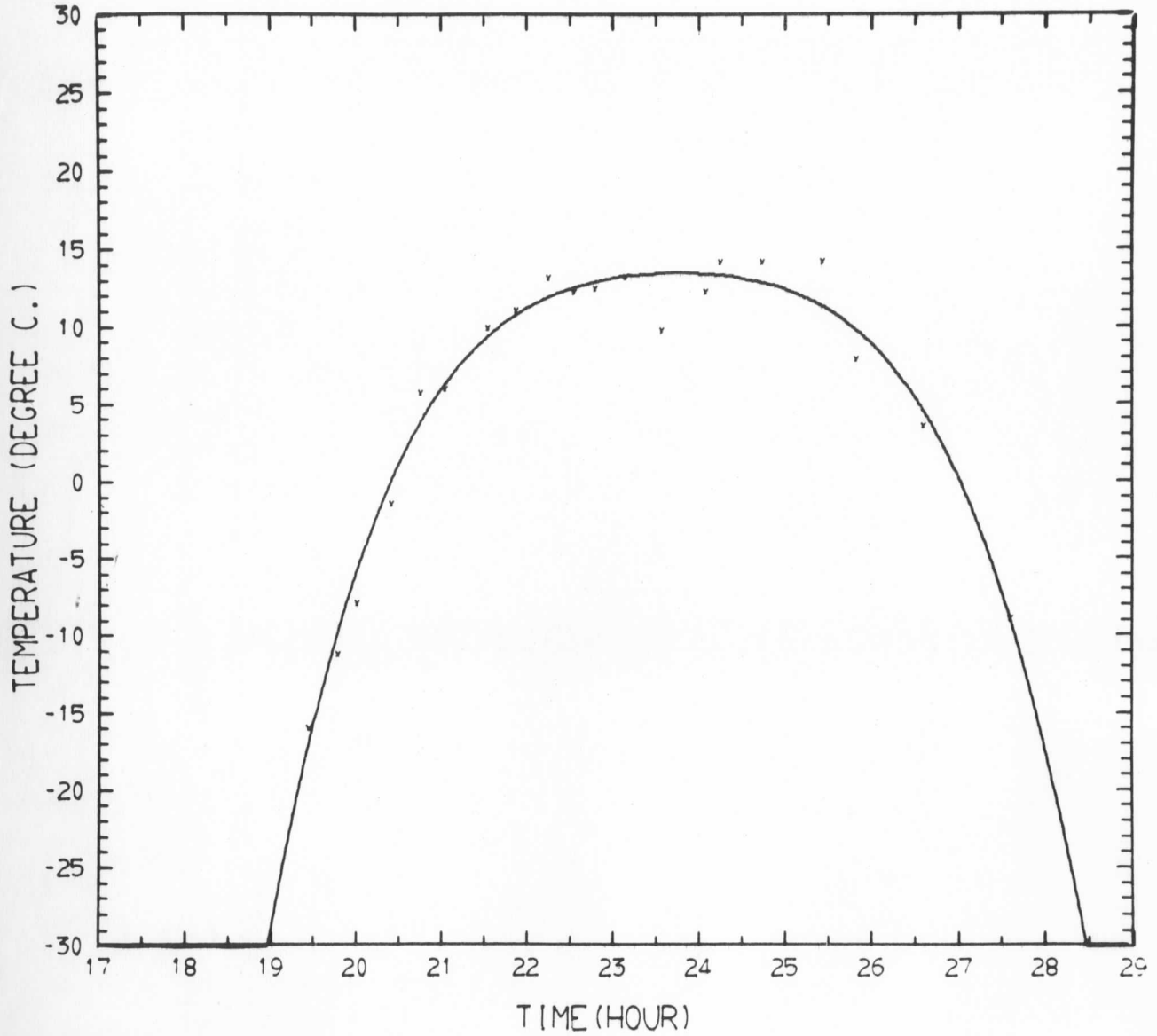
94157 B/J (7-18-1972)



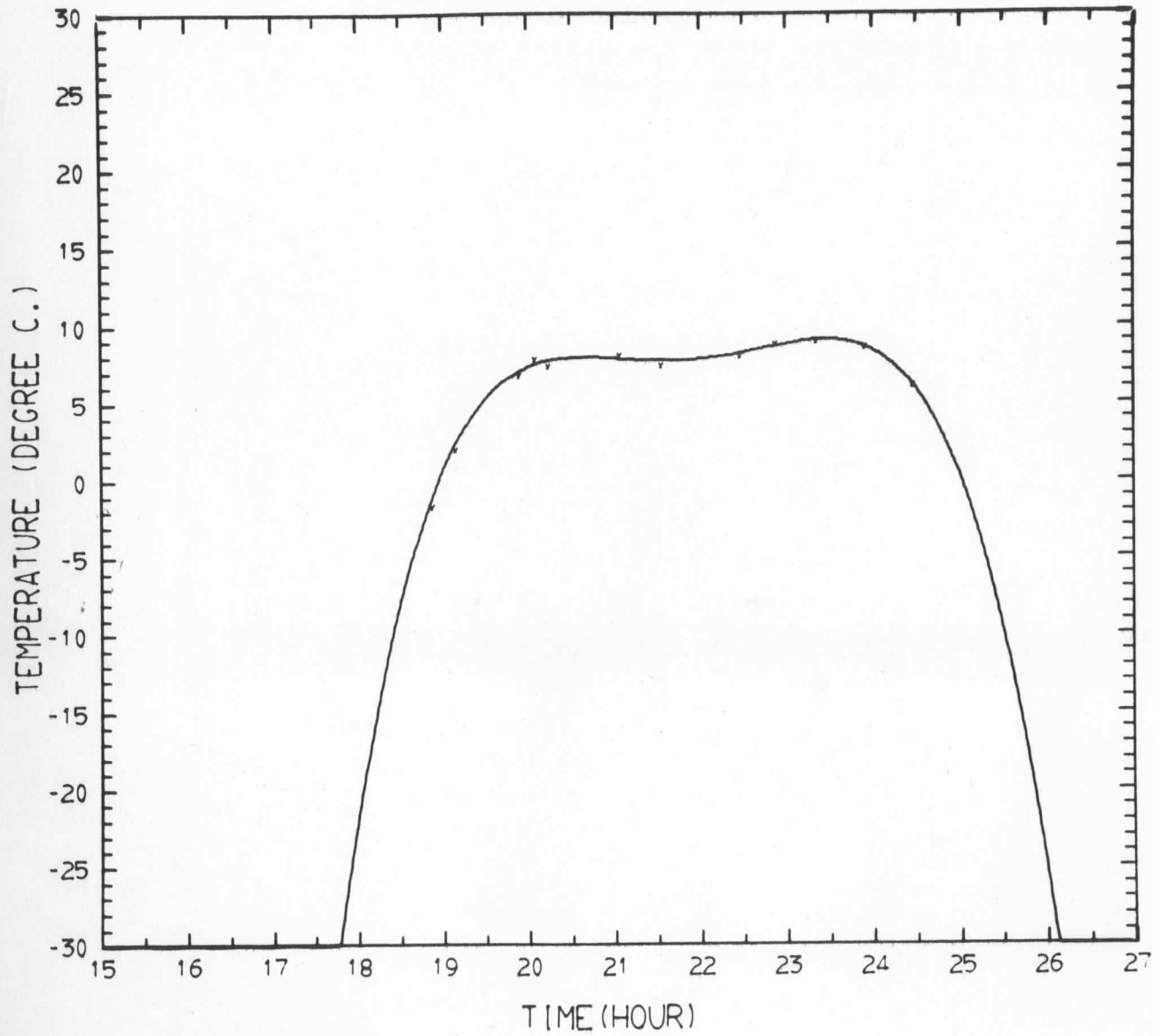
94157 B/J (7-18-1972)



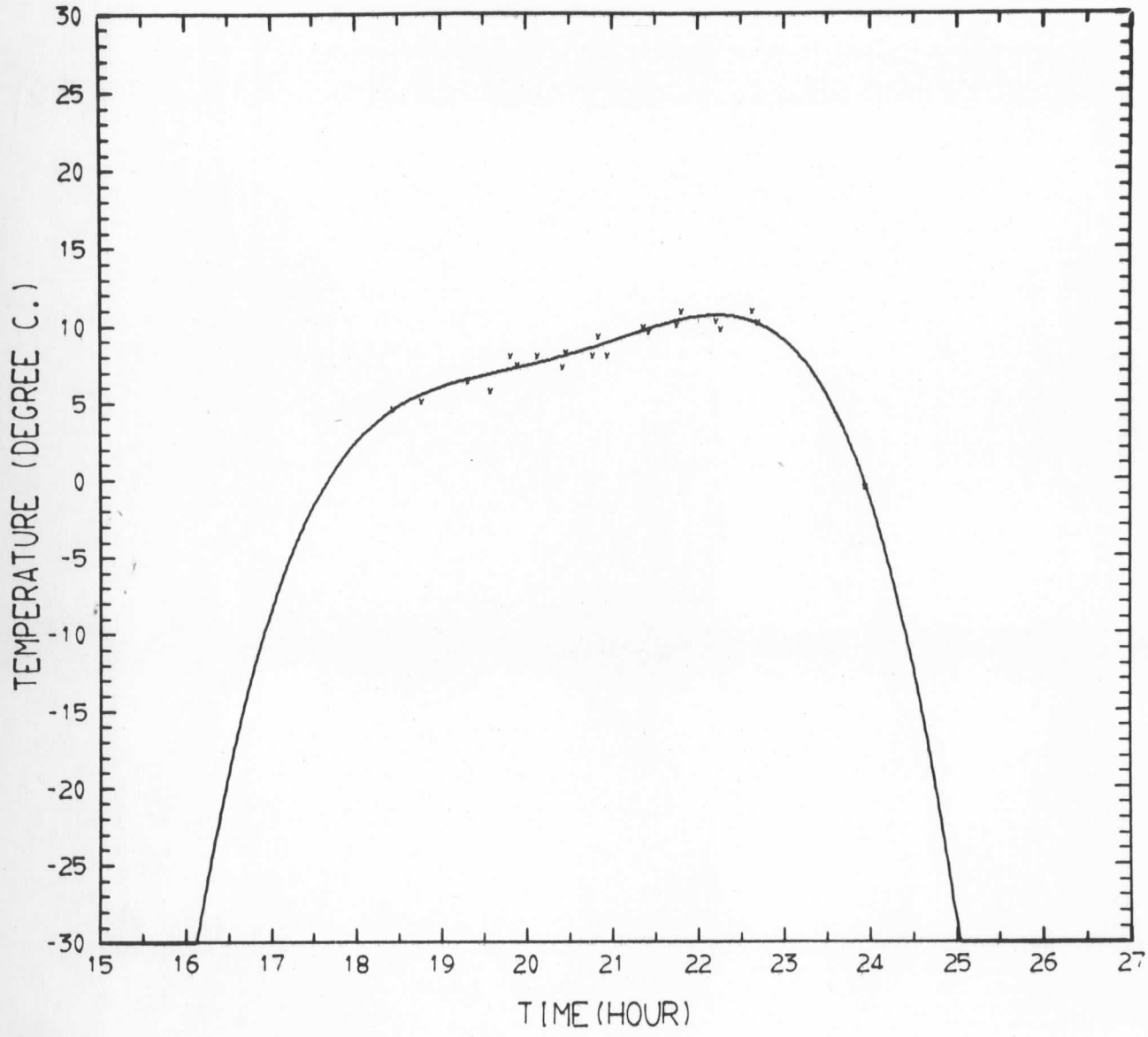
94157 B/J (7-19-1972)



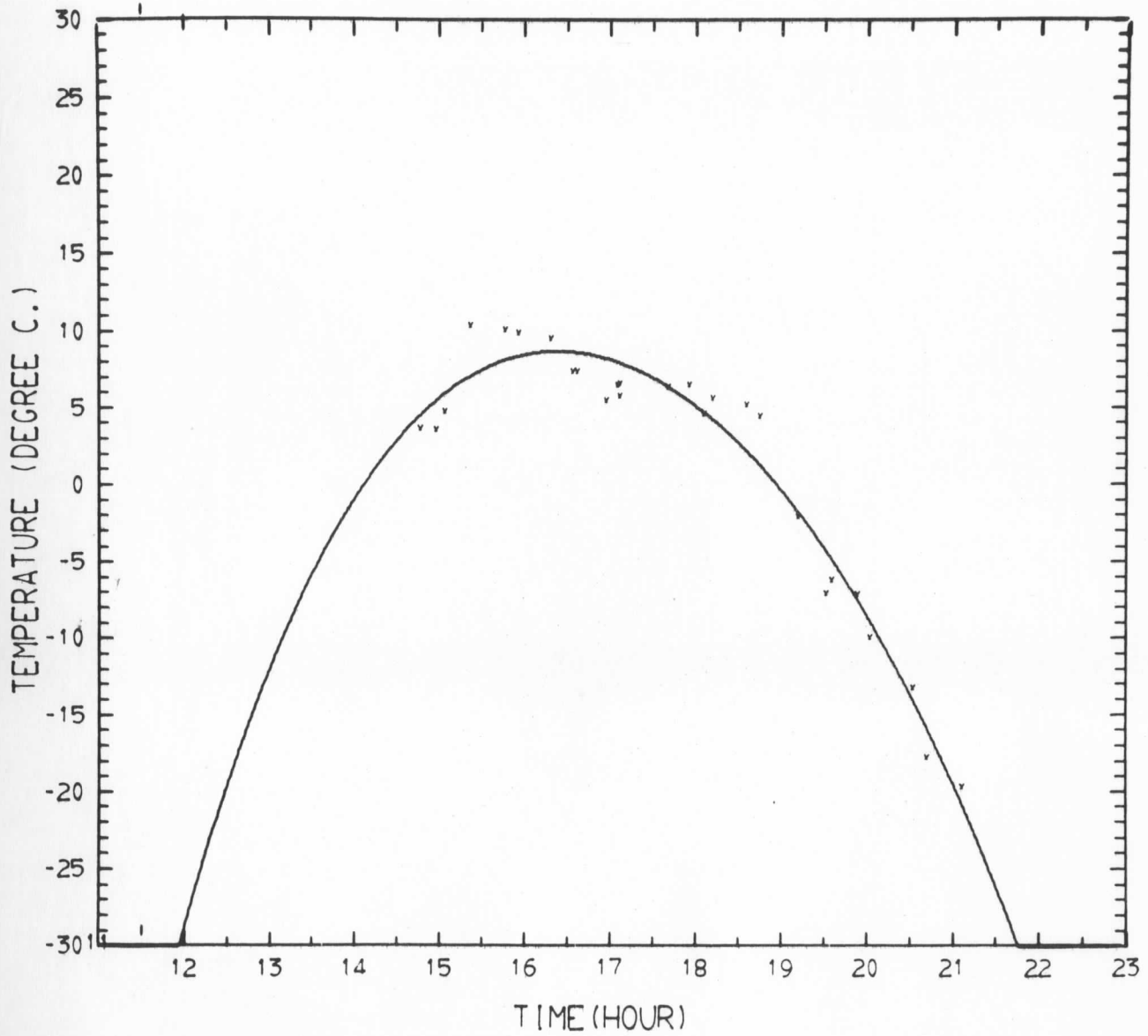
94157 B/J (7-20-1972)



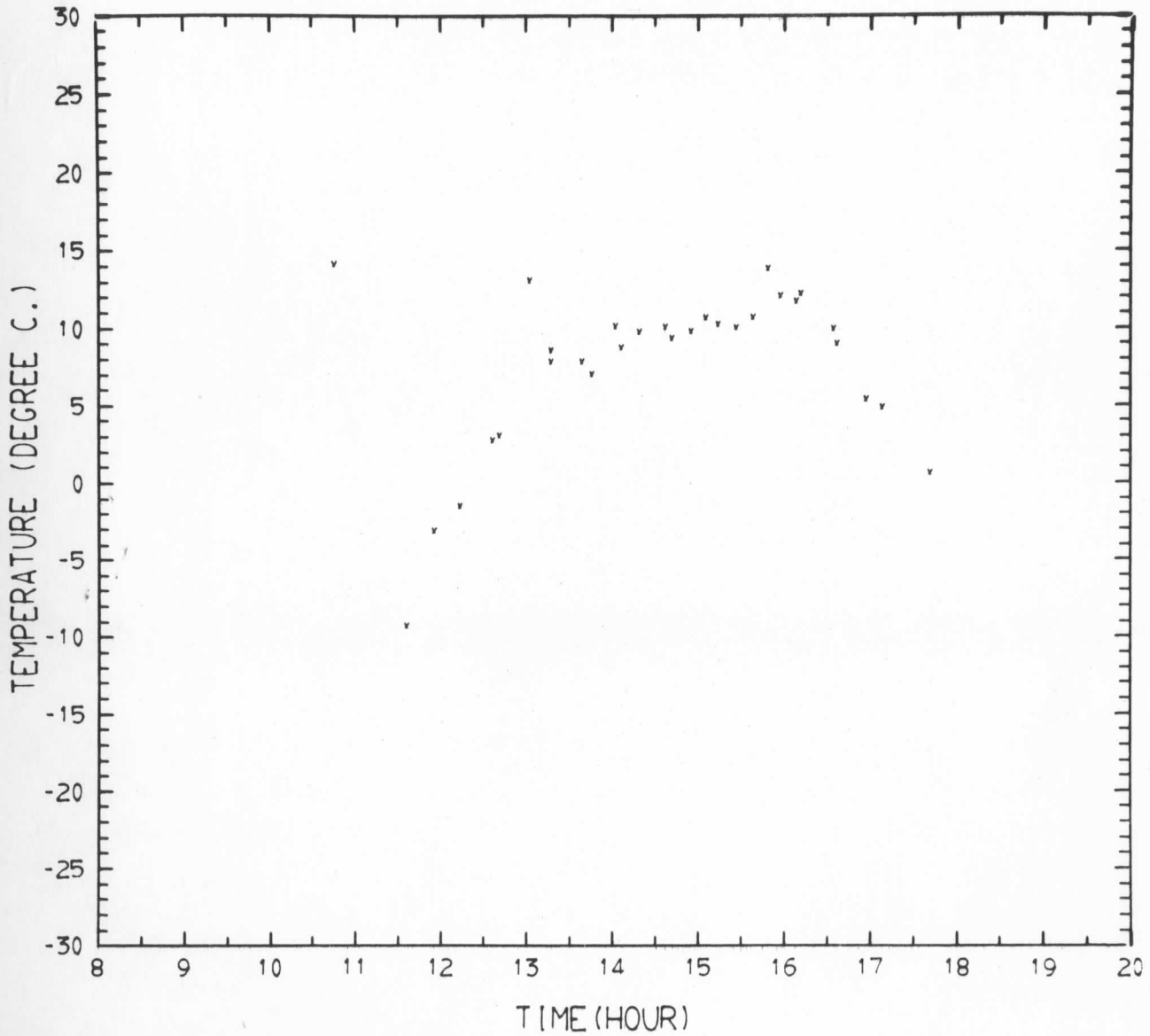
94157 B/J (7-21-1972)



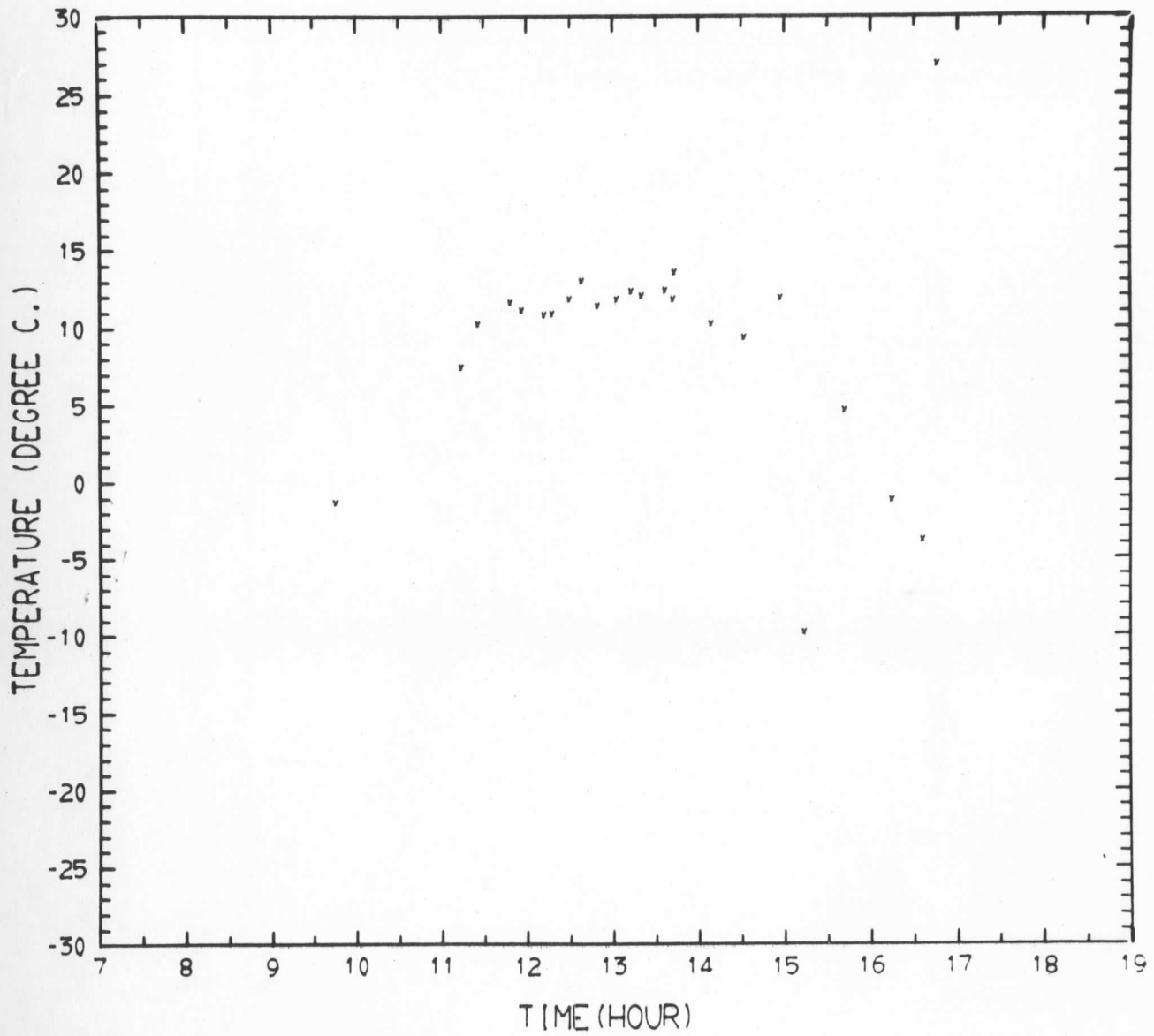
94157 B/J (7-23-1972)



94157 B/J (7-24-1972)



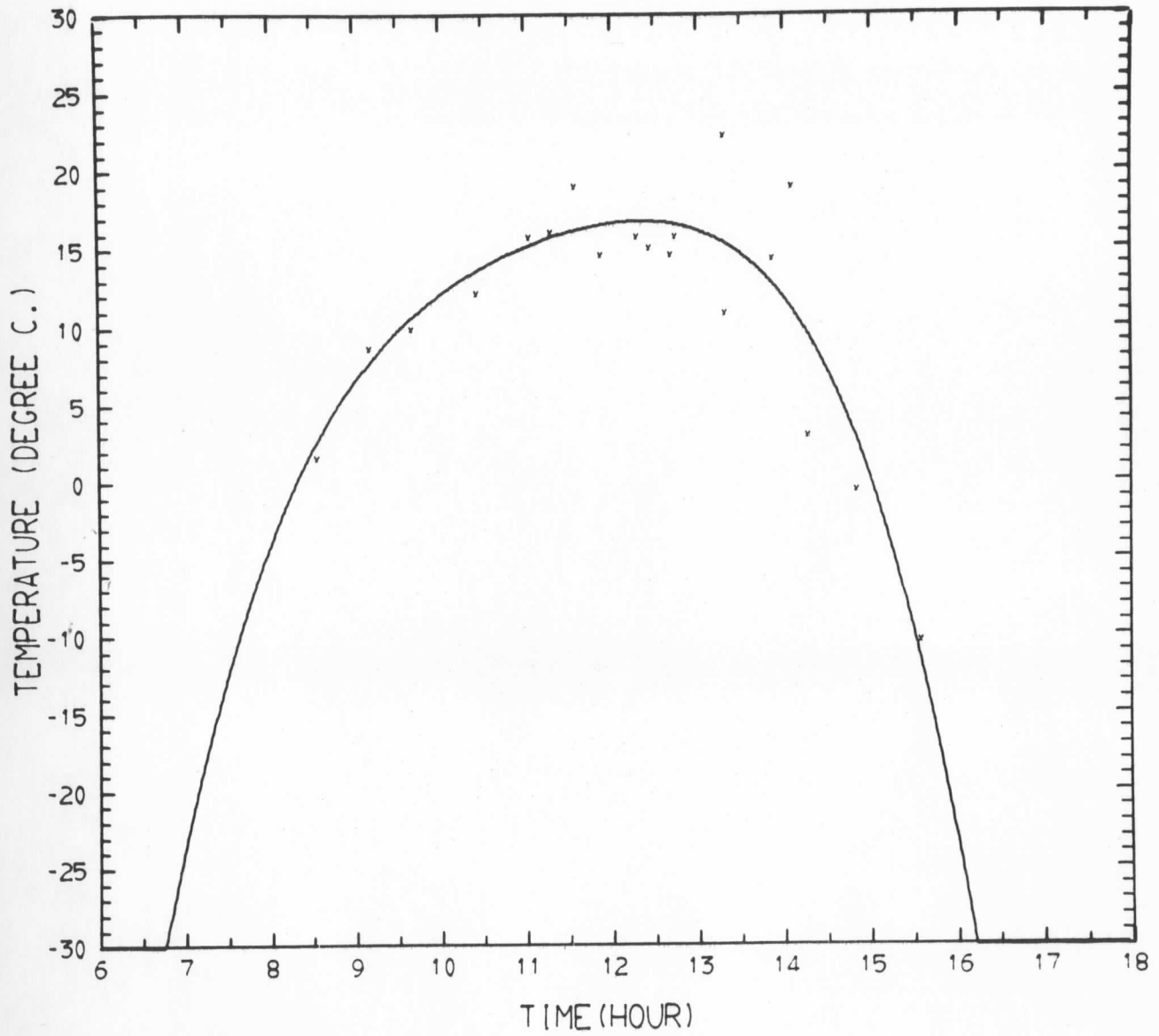
94157 B/J (7-25-1972)



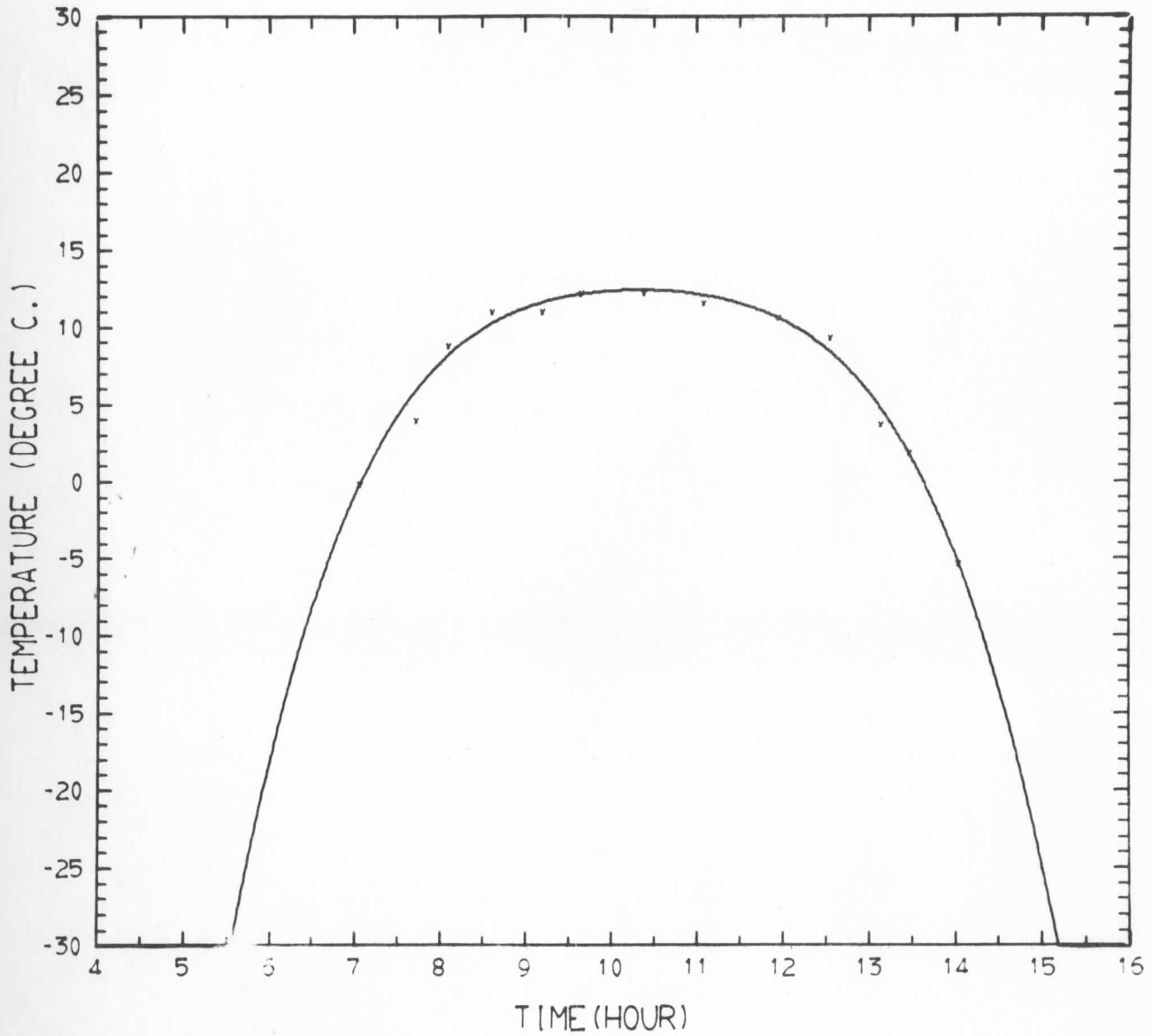
94157

B/J

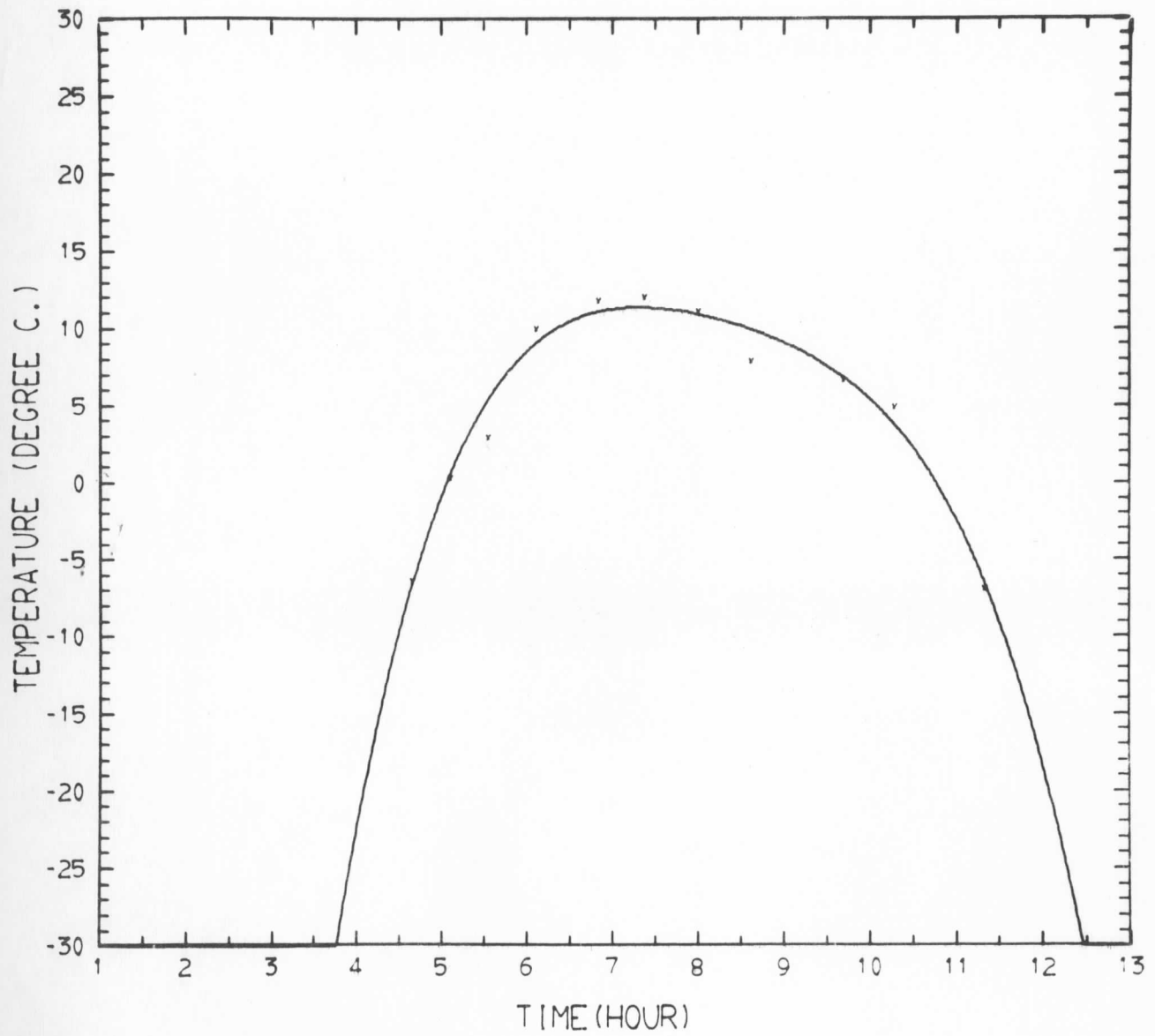
(7-26-1972)



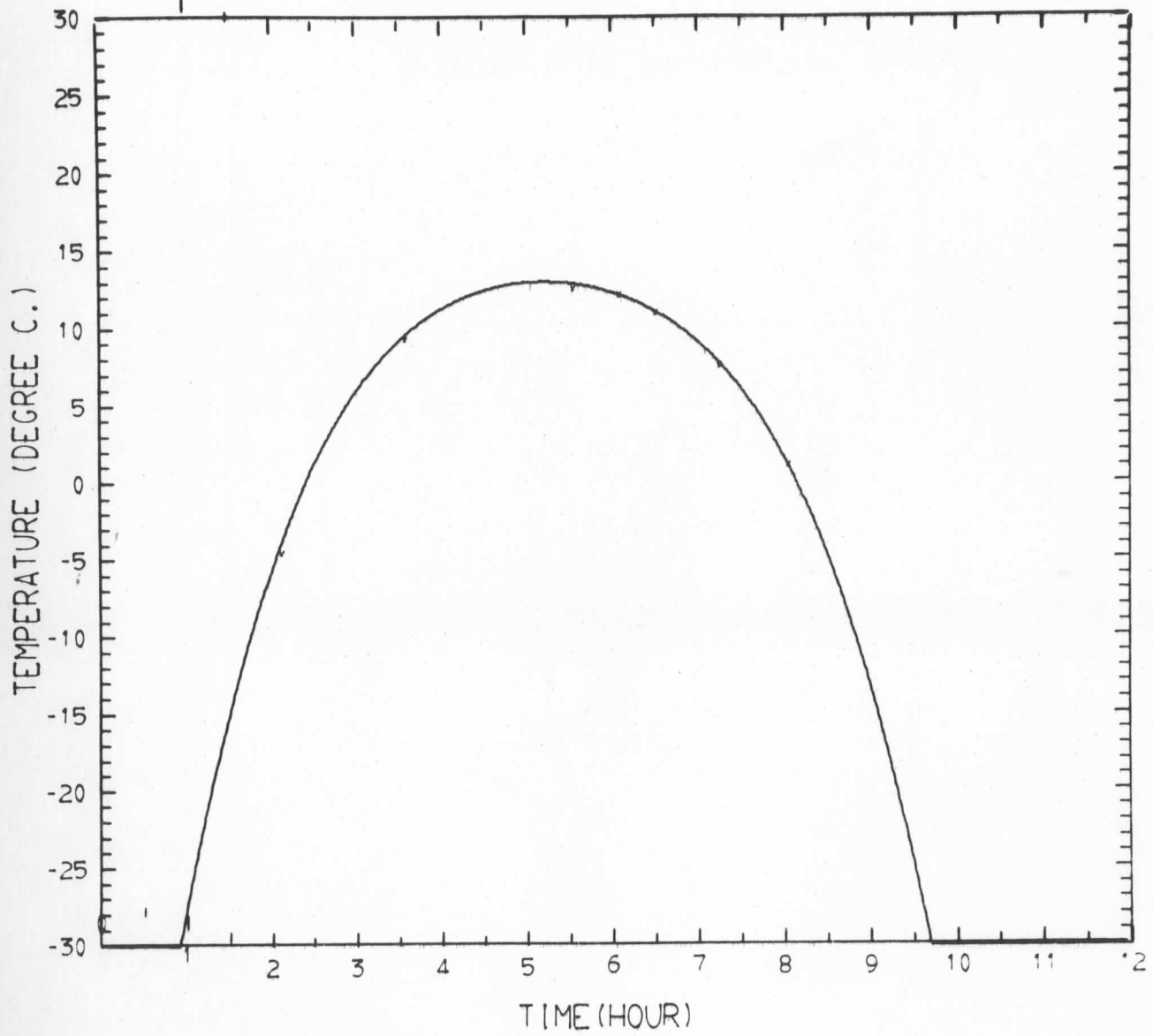
94157 B/J (7-27-1972)



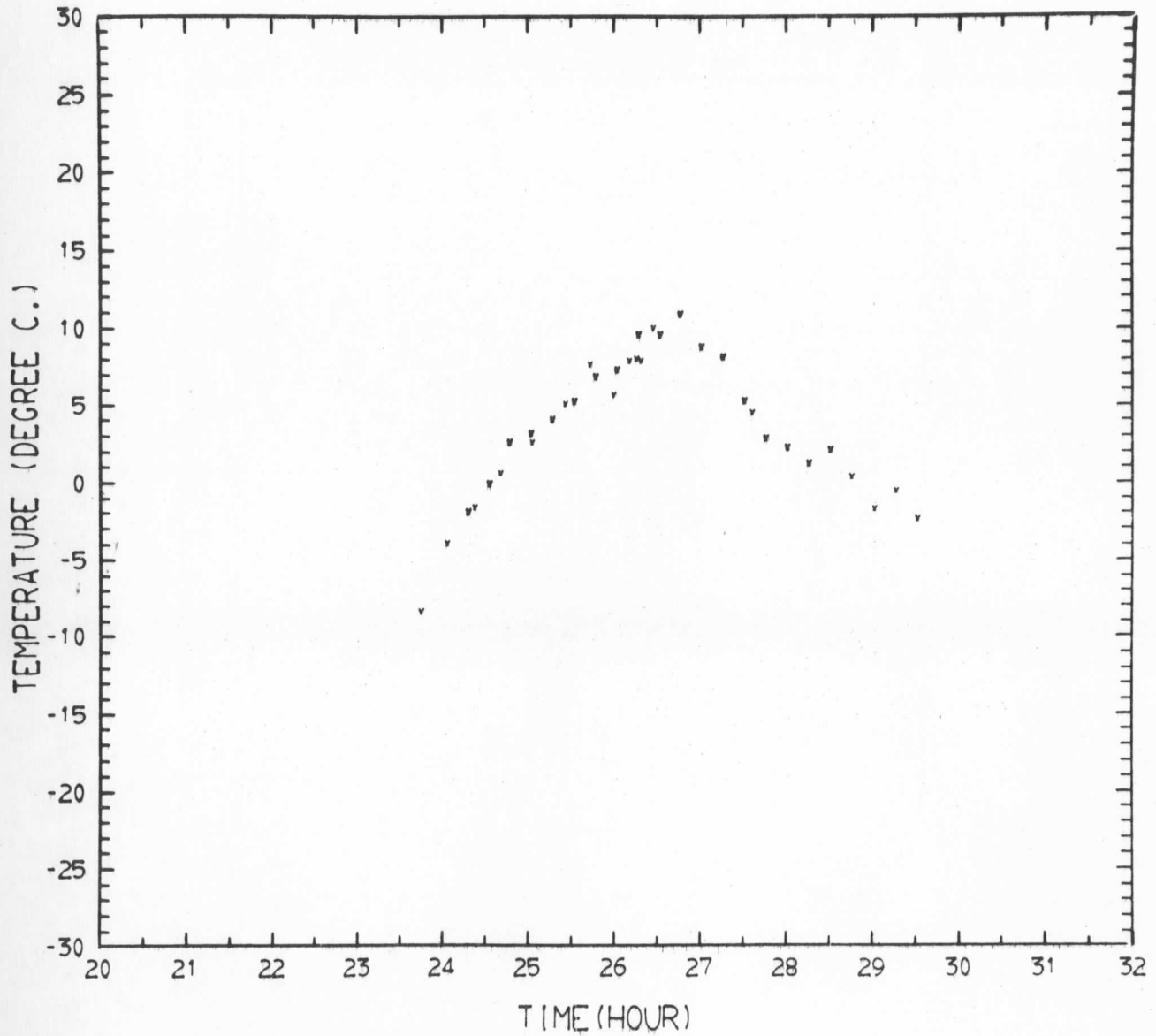
94157 B/J (7-28-1972)



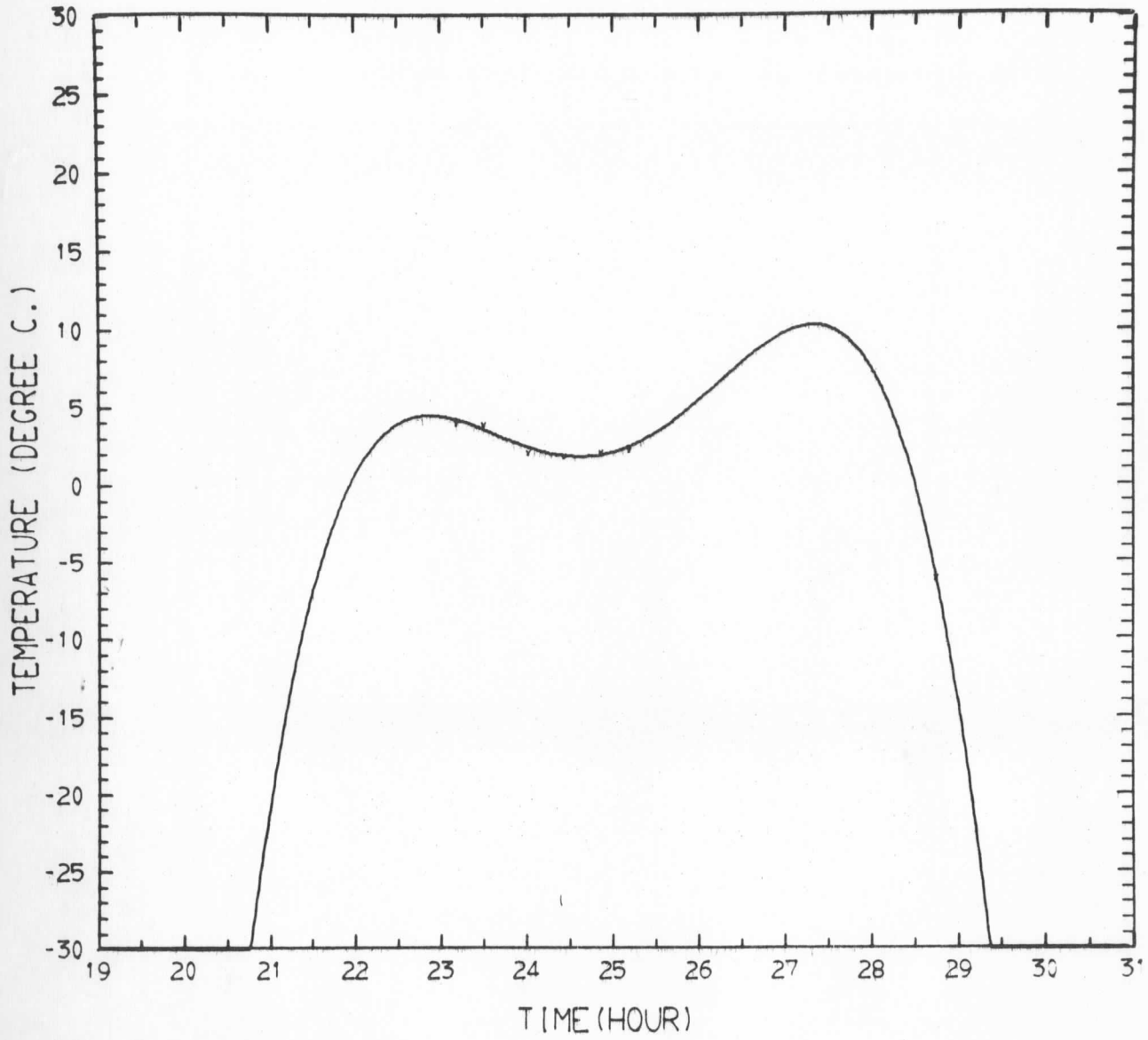
94157 B/J (7-29-1972)



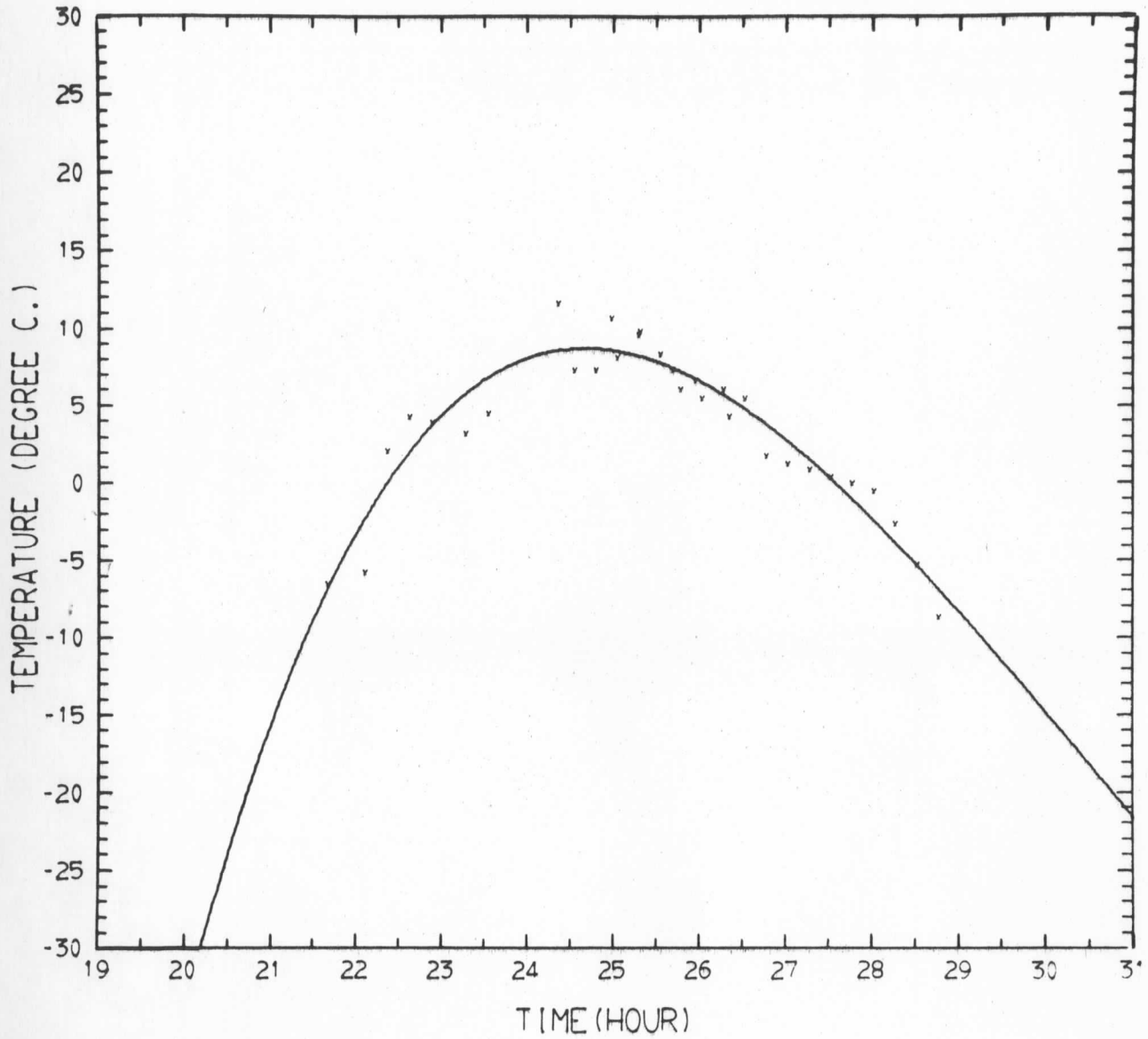
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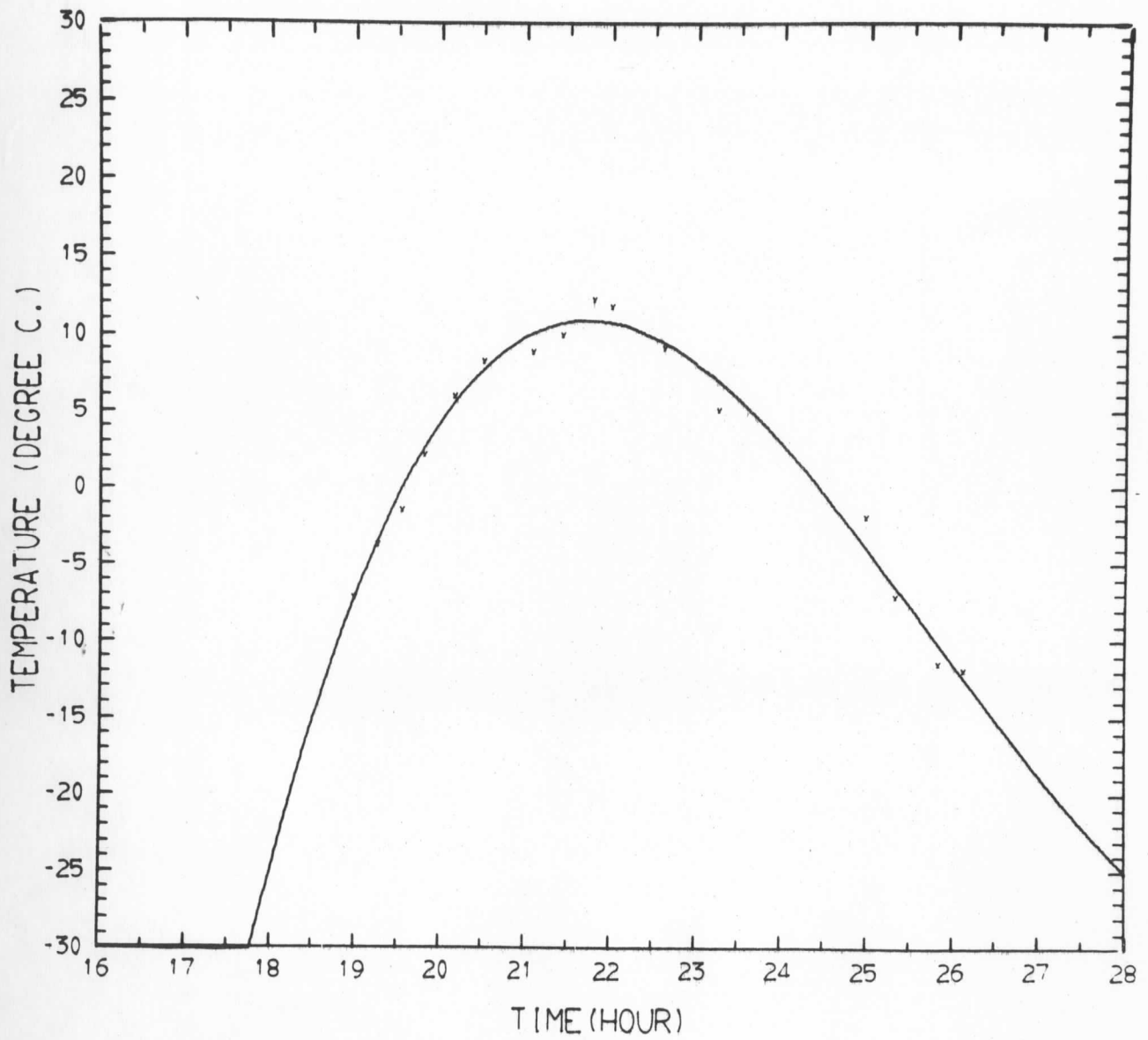
94157 B/J (7-30-1972)



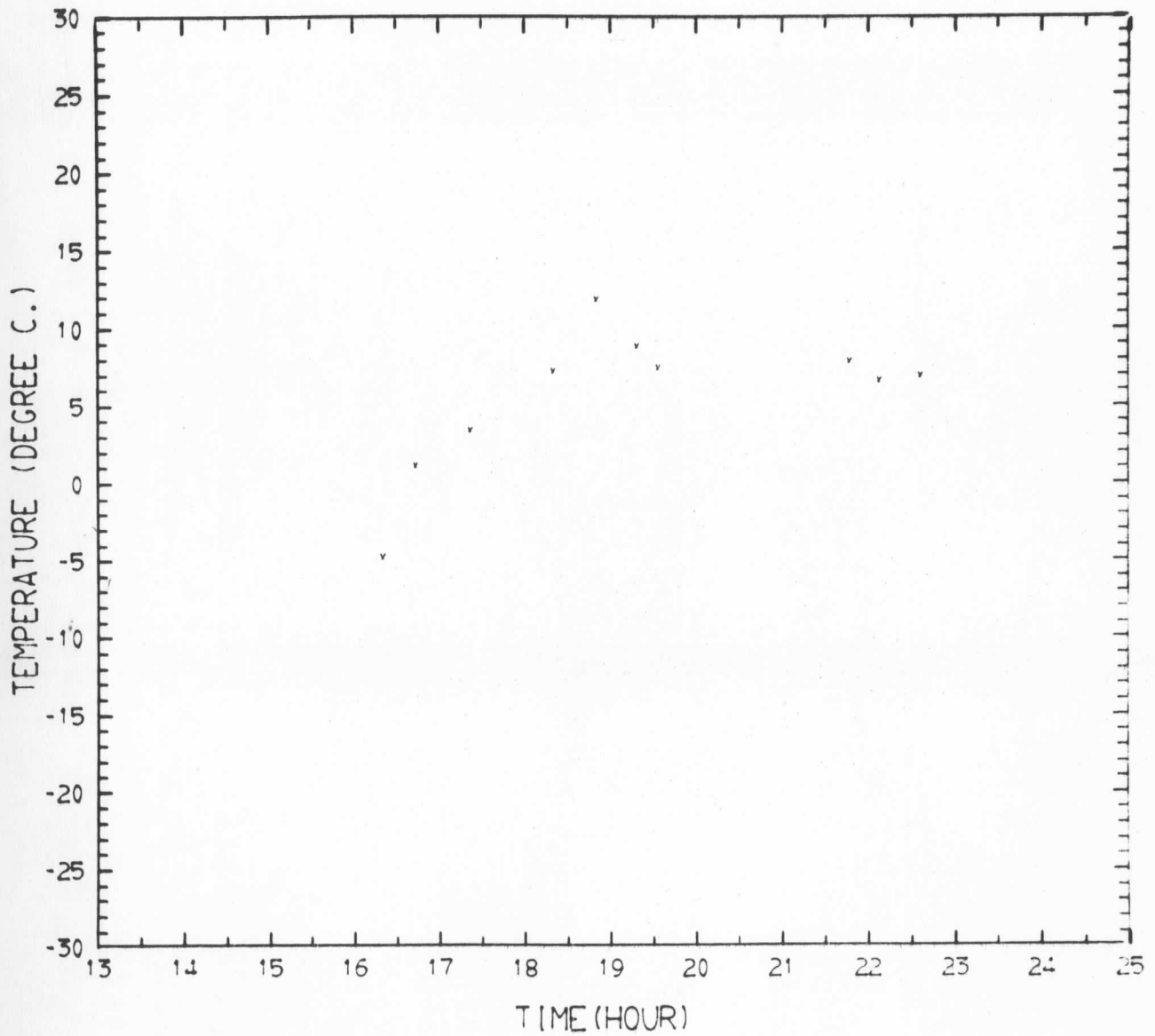
94157 B/J (7-31-1972)



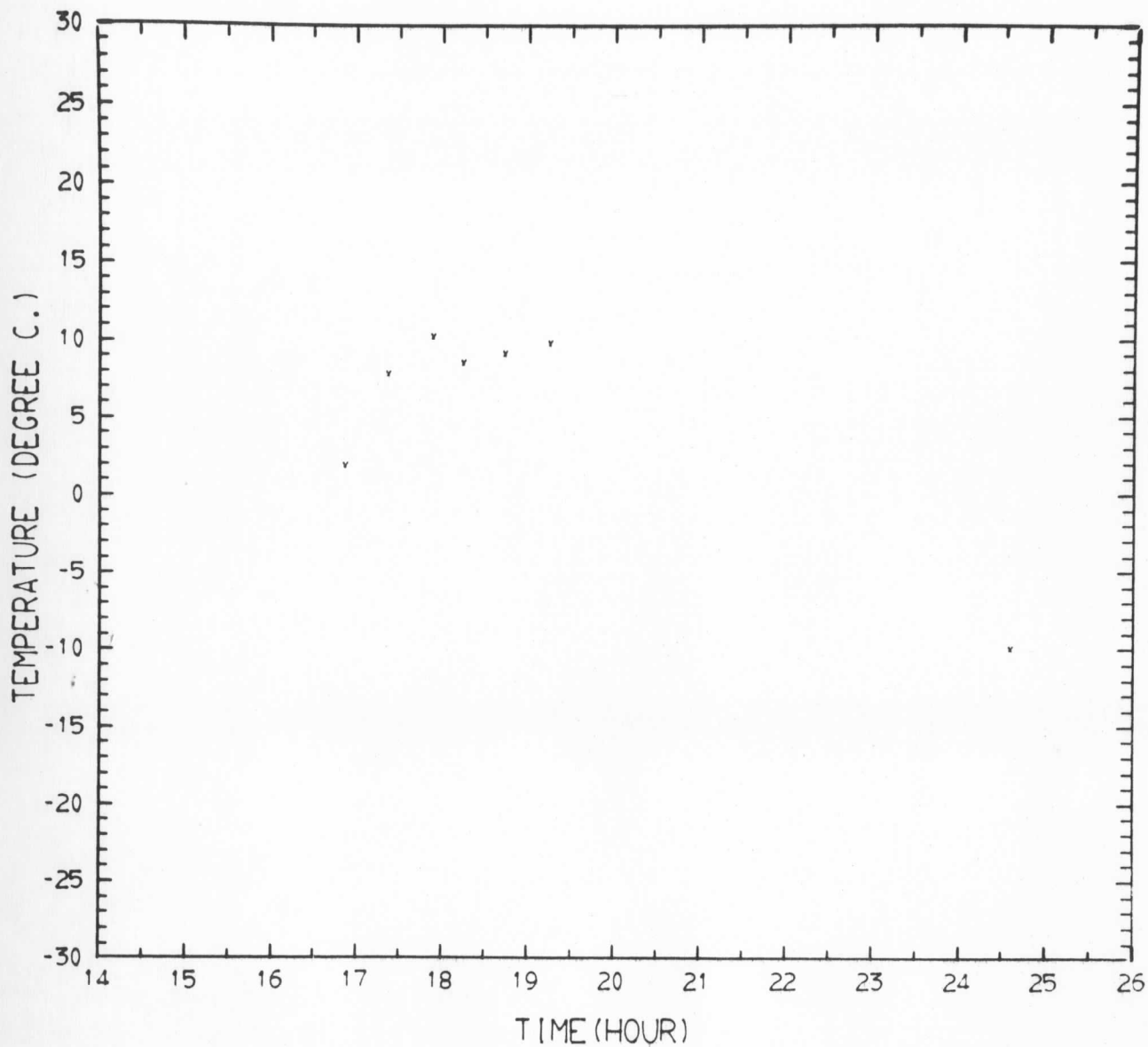
94157 B/J (8- 1-1972)



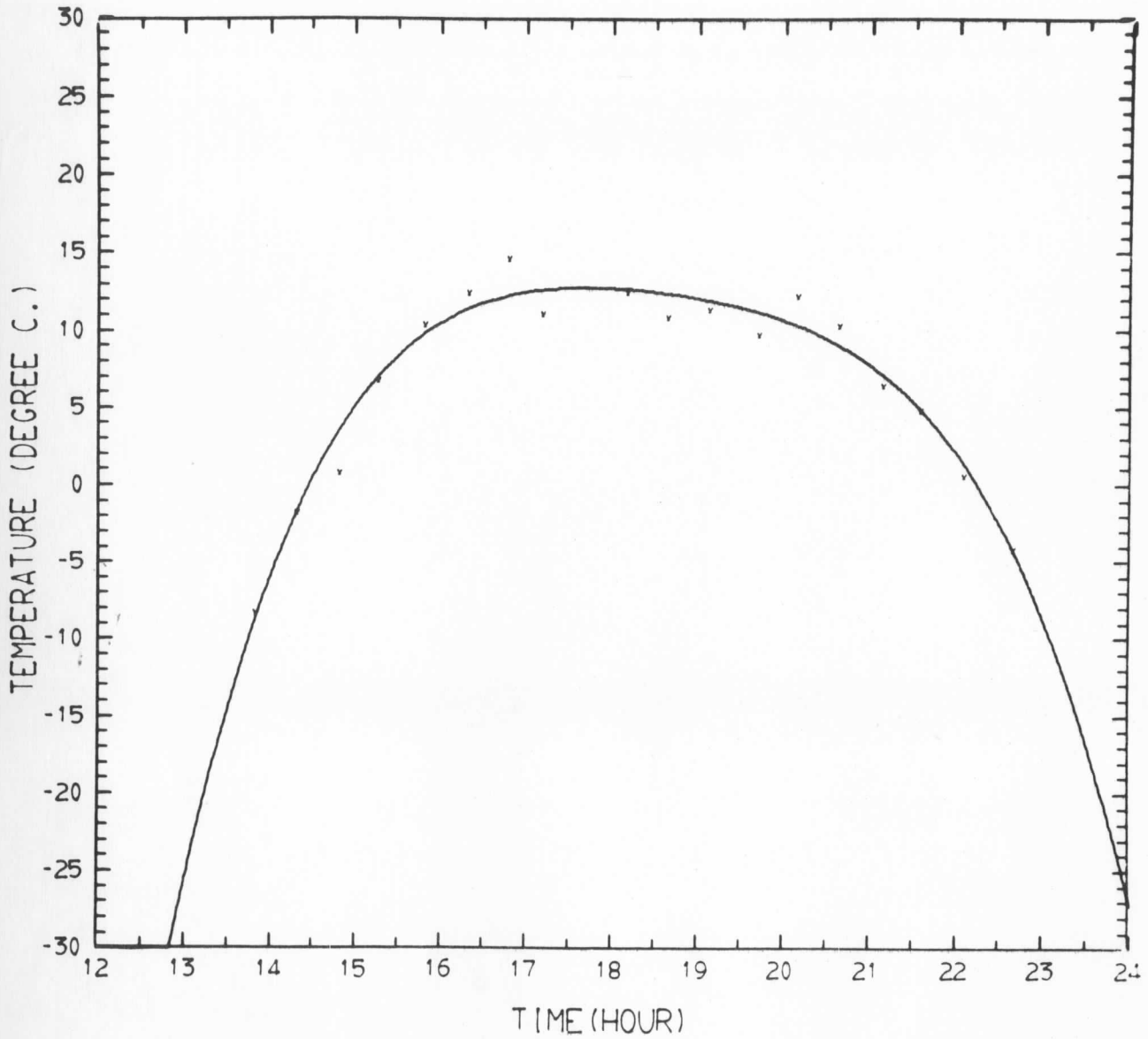
94157 B/J (8- 4-1972)



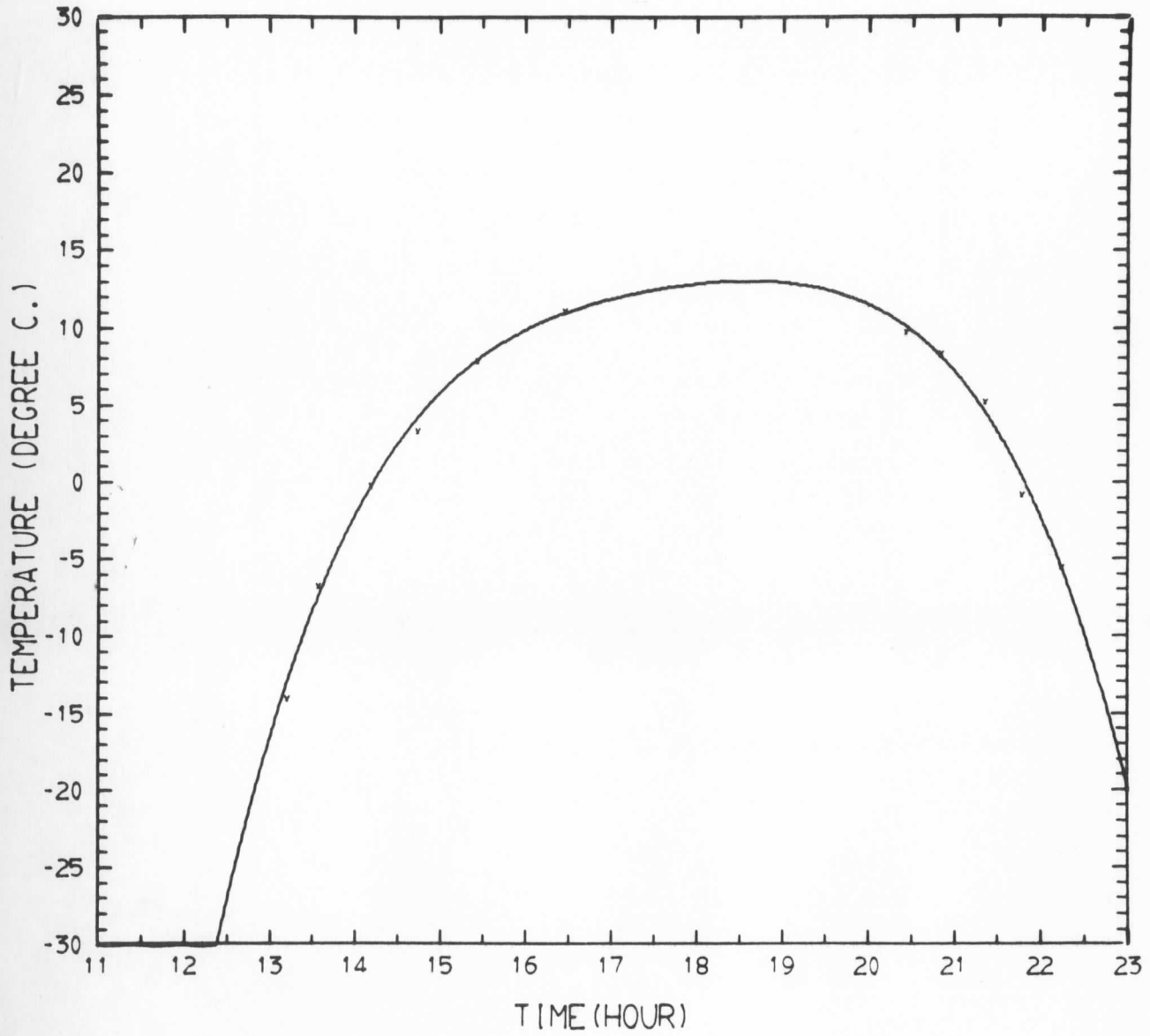
94157 B/J (8- 5-1972)



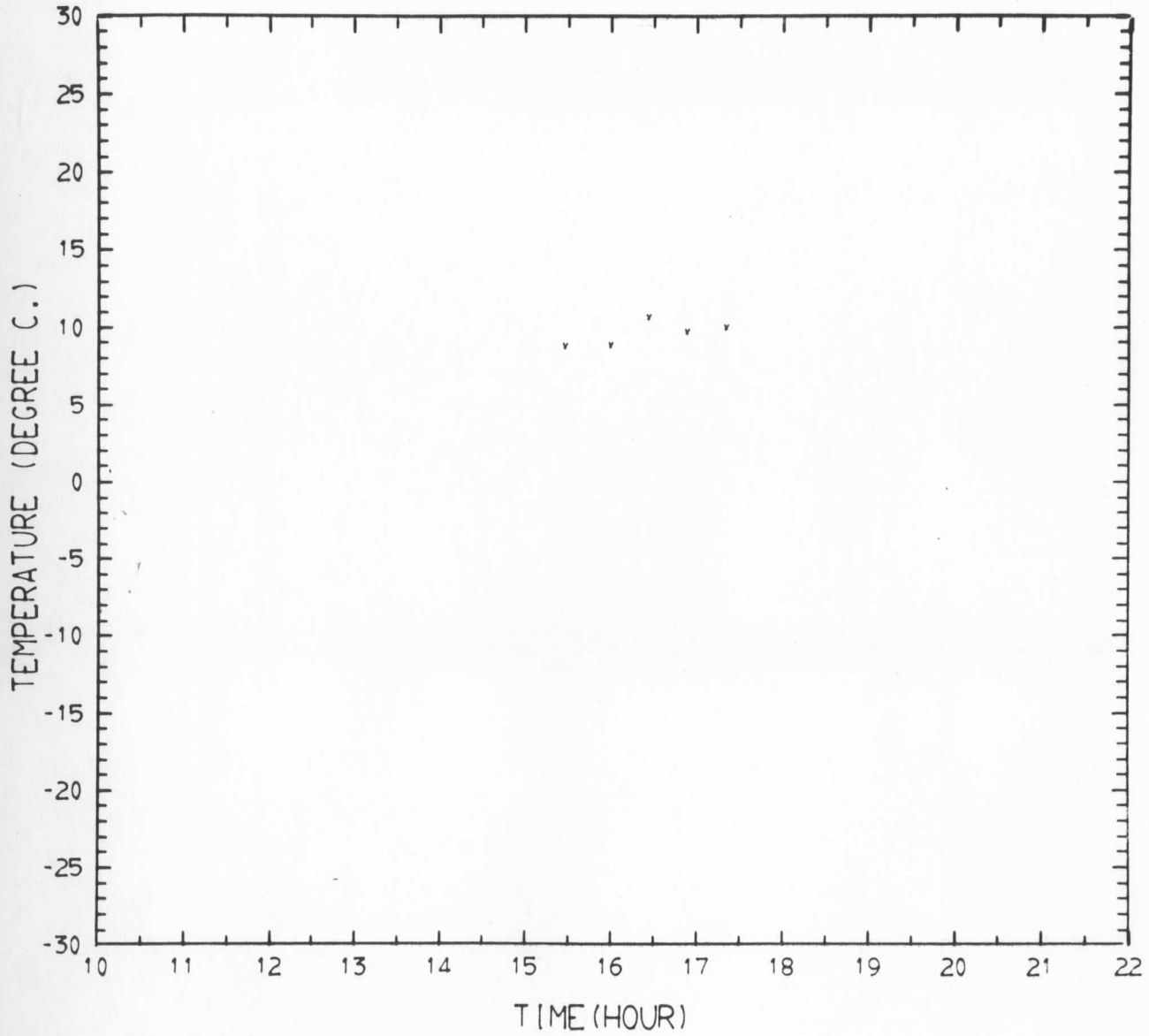
94157 B/J (8- 8-1972)



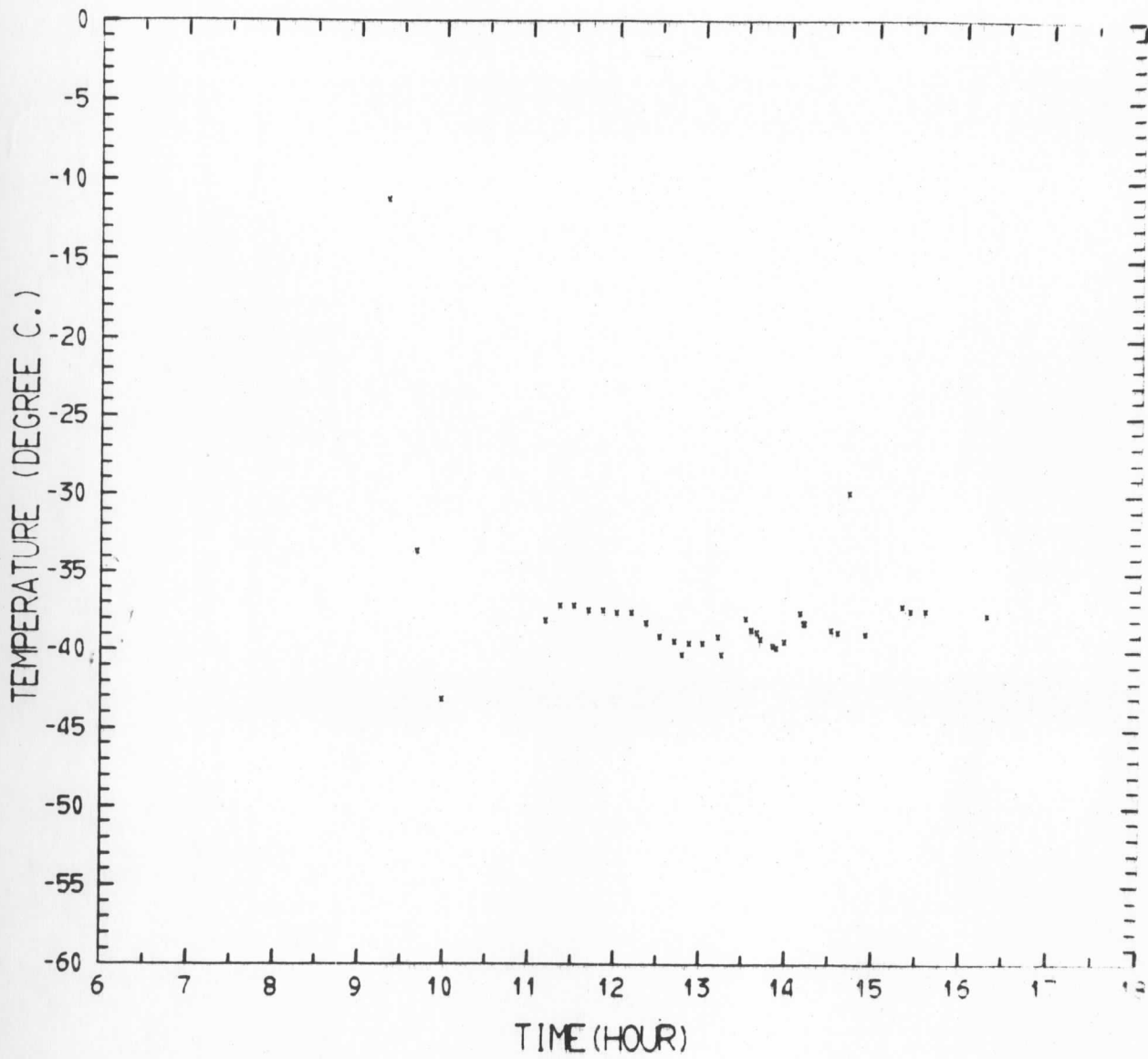
94157 B/J (8- 9-1972)



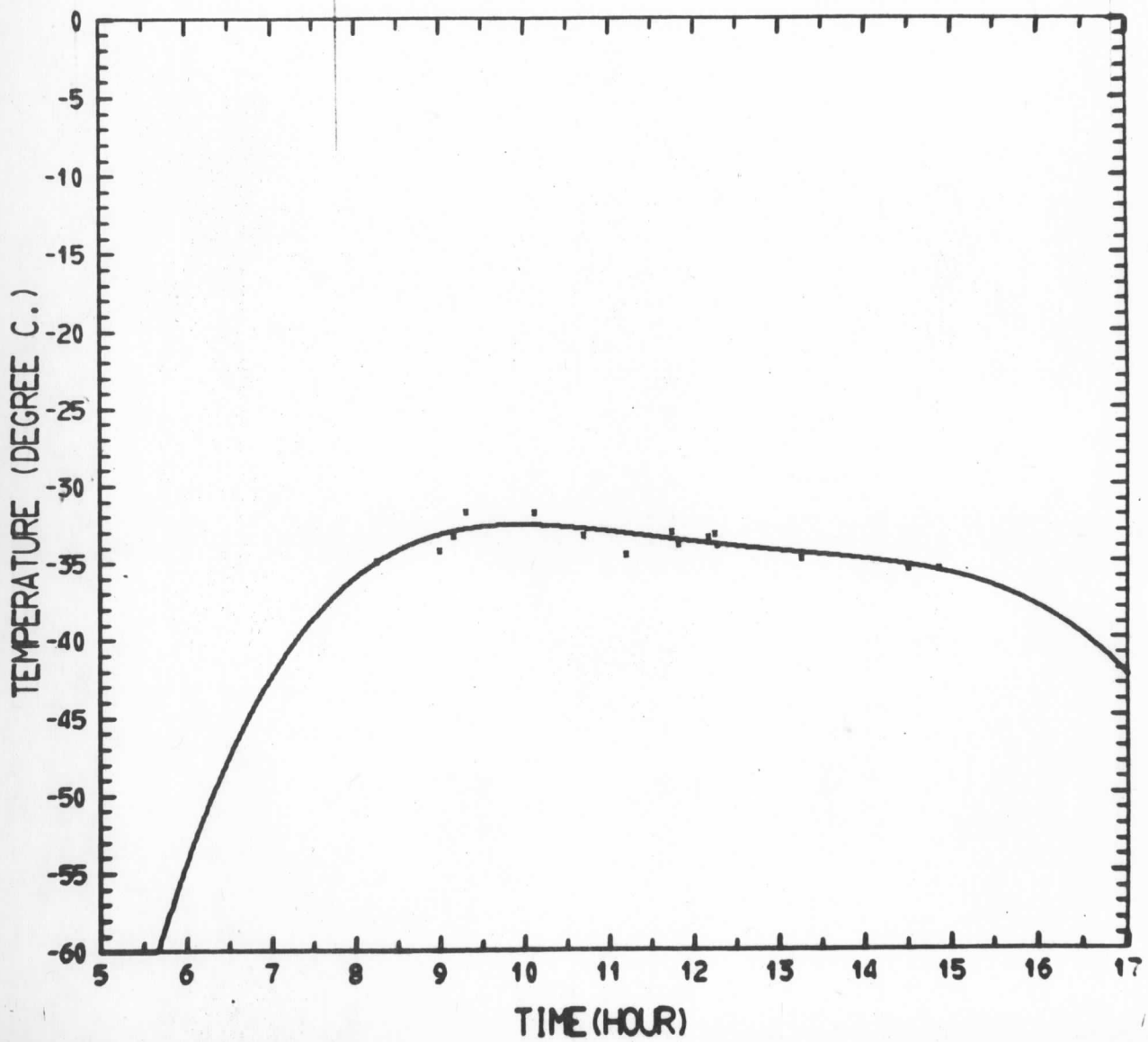
94157 B/J (8-10-1972)



102155 B/G (7-21-1972)

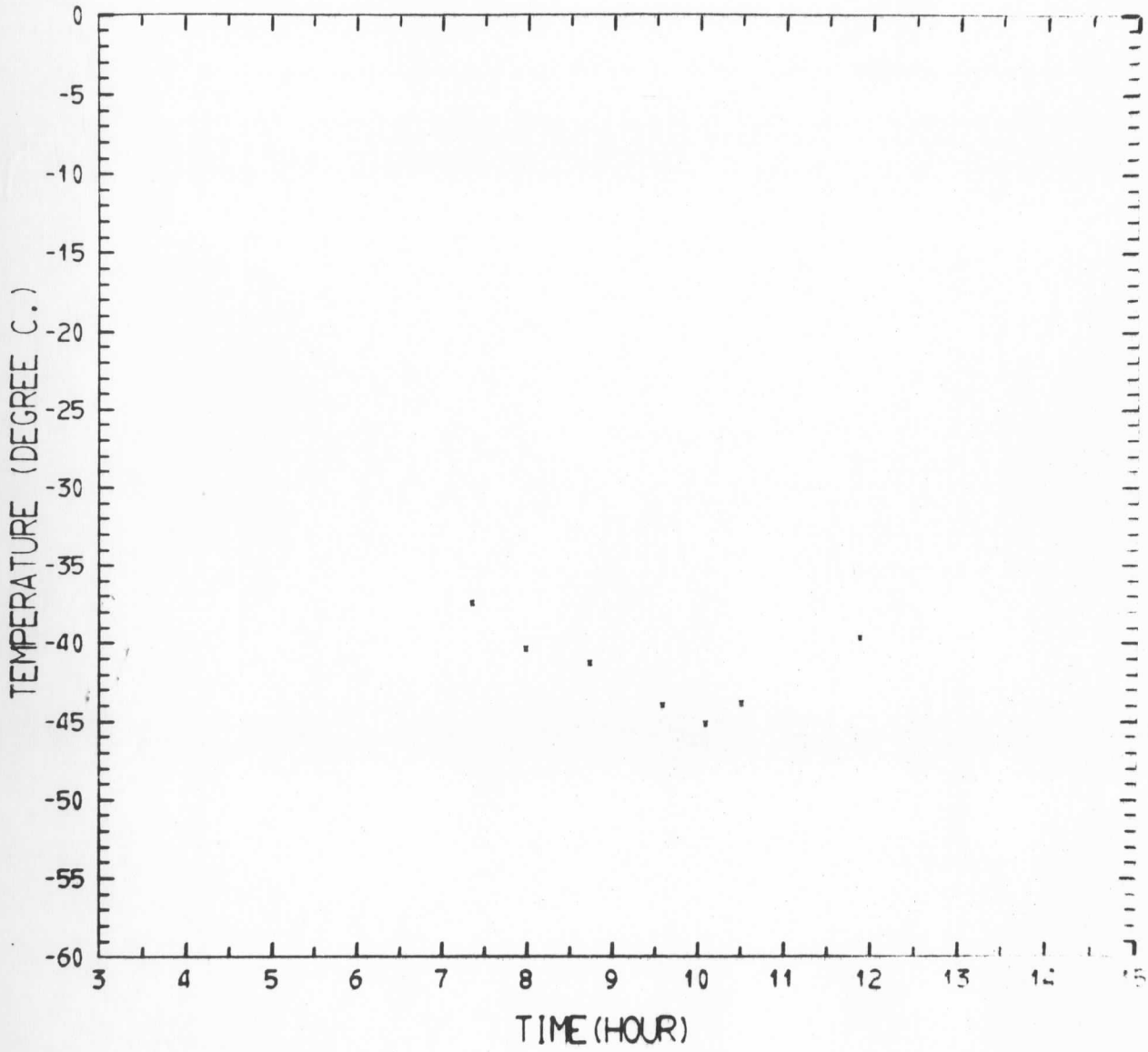


102156 B/G (7-22-1972)



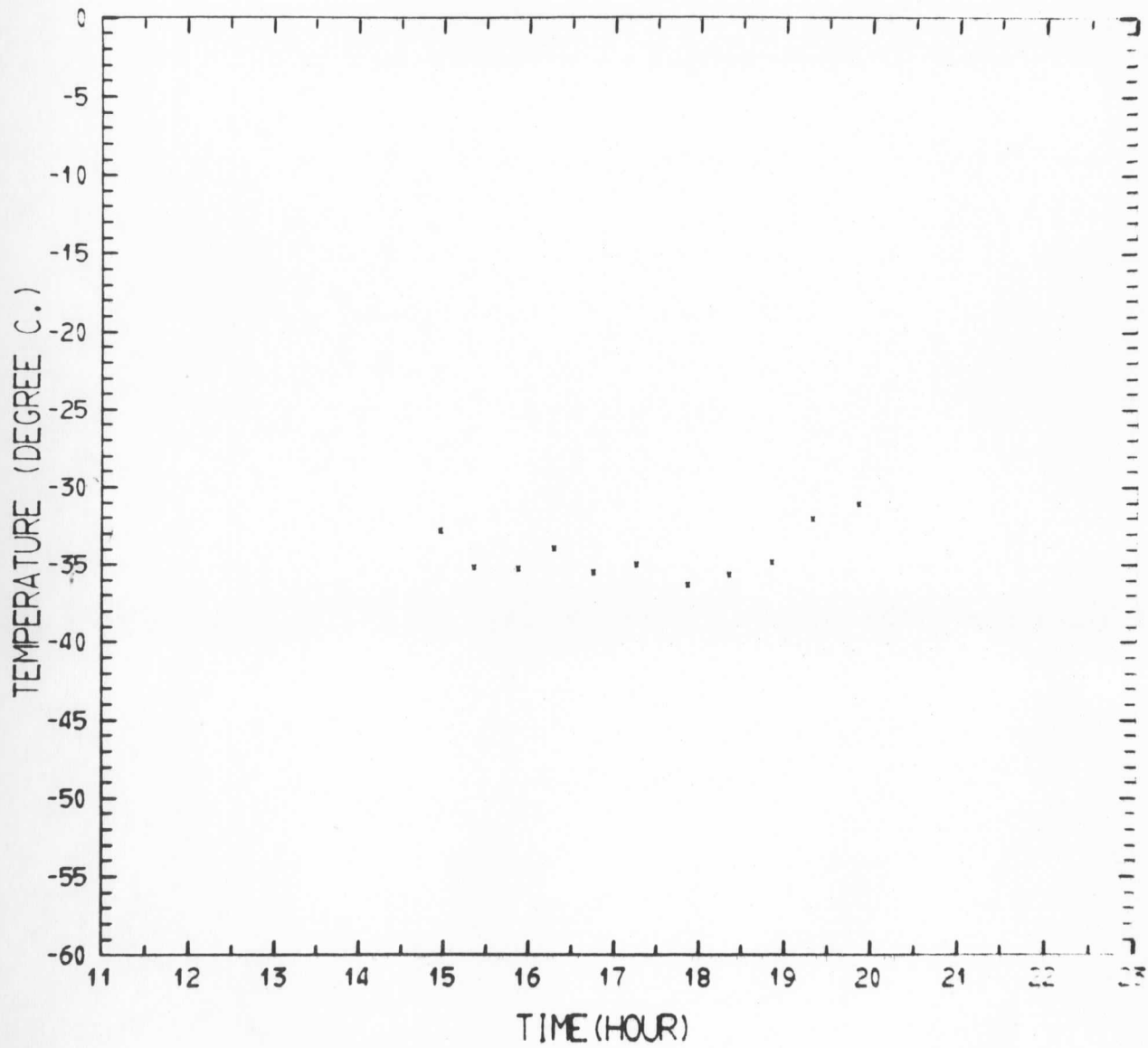
102155 B/G

(7-25-1972)

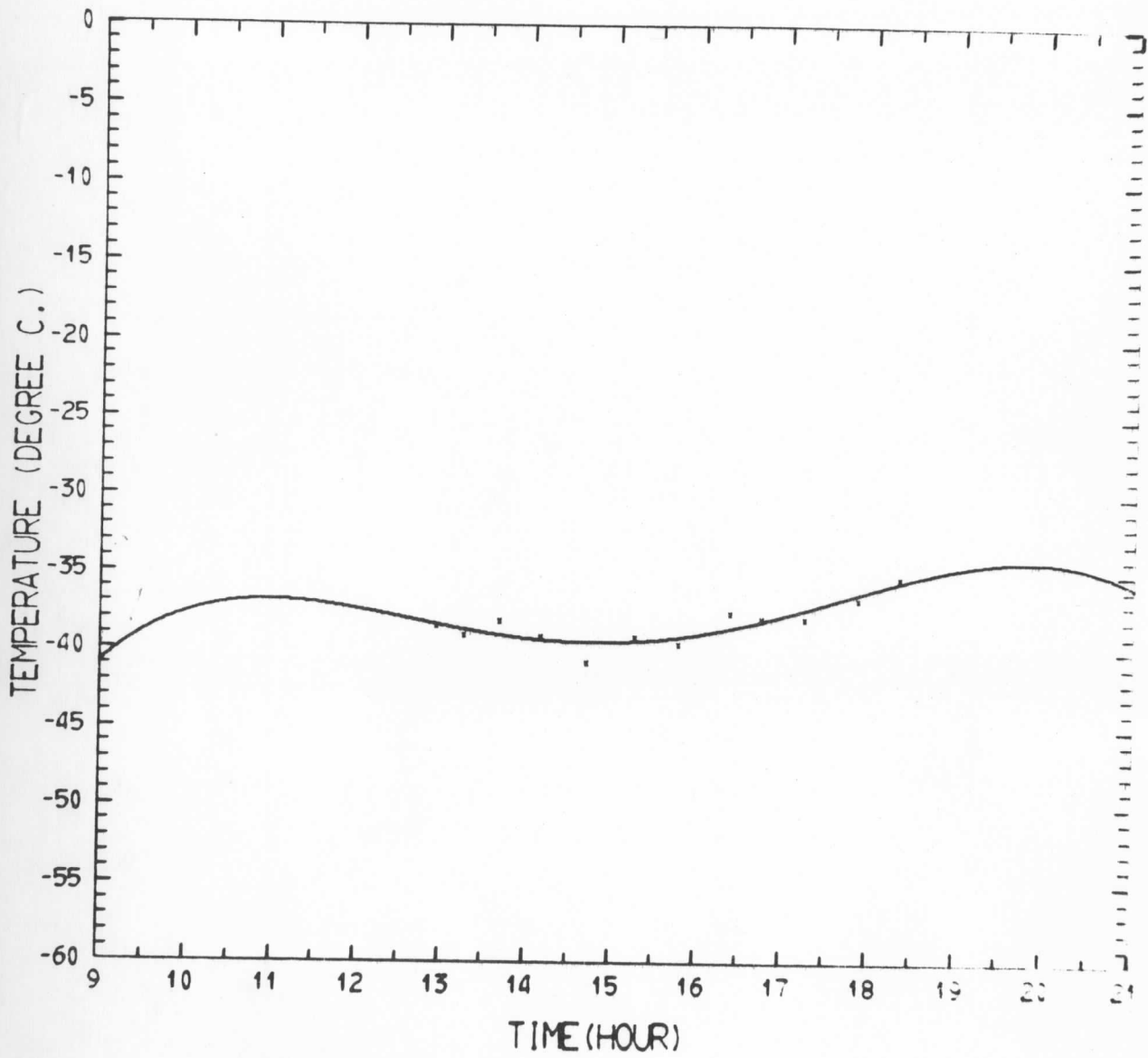


102156 B/G

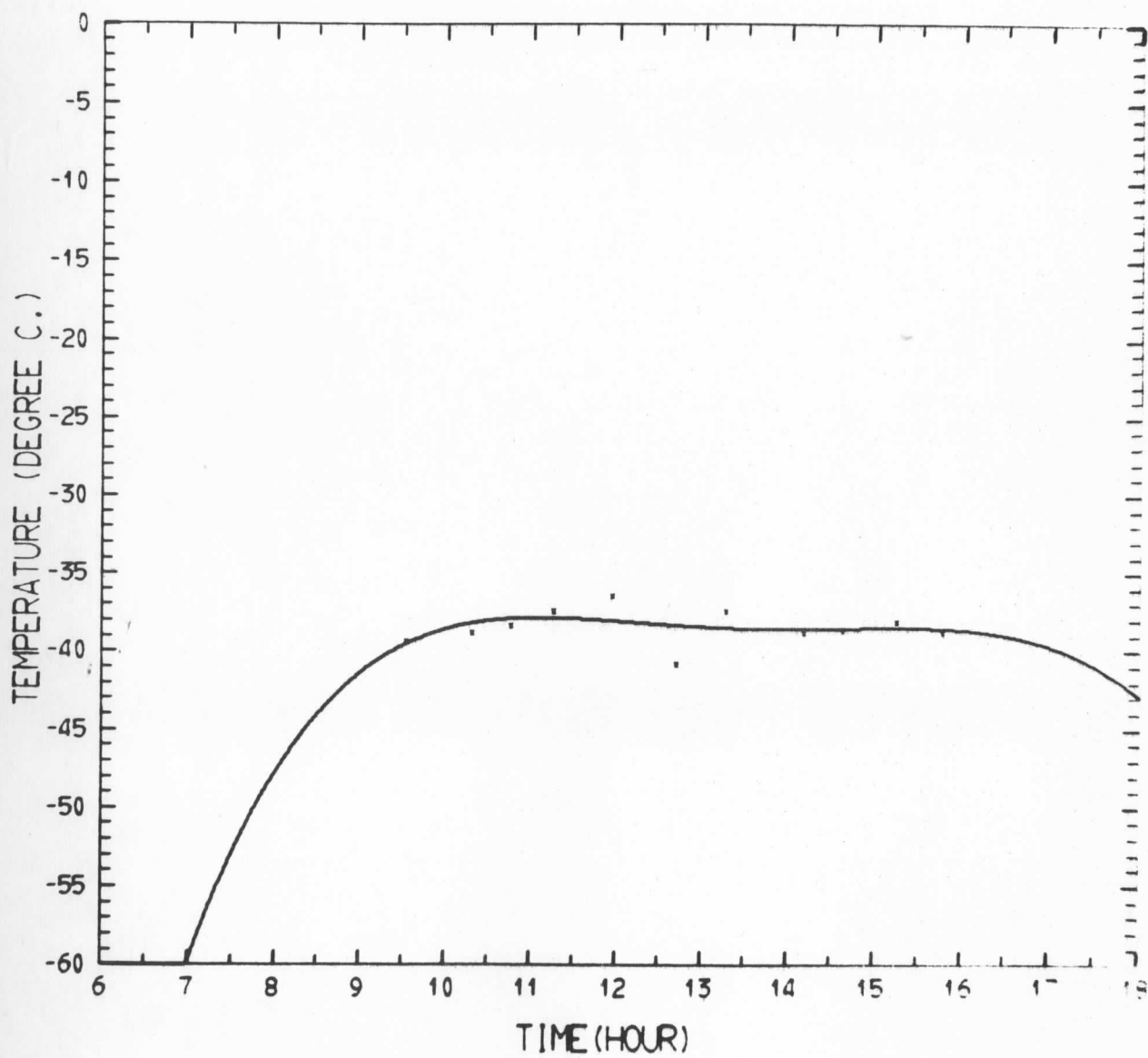
(8-10-1972)



102156 B/G (8-11-1972)

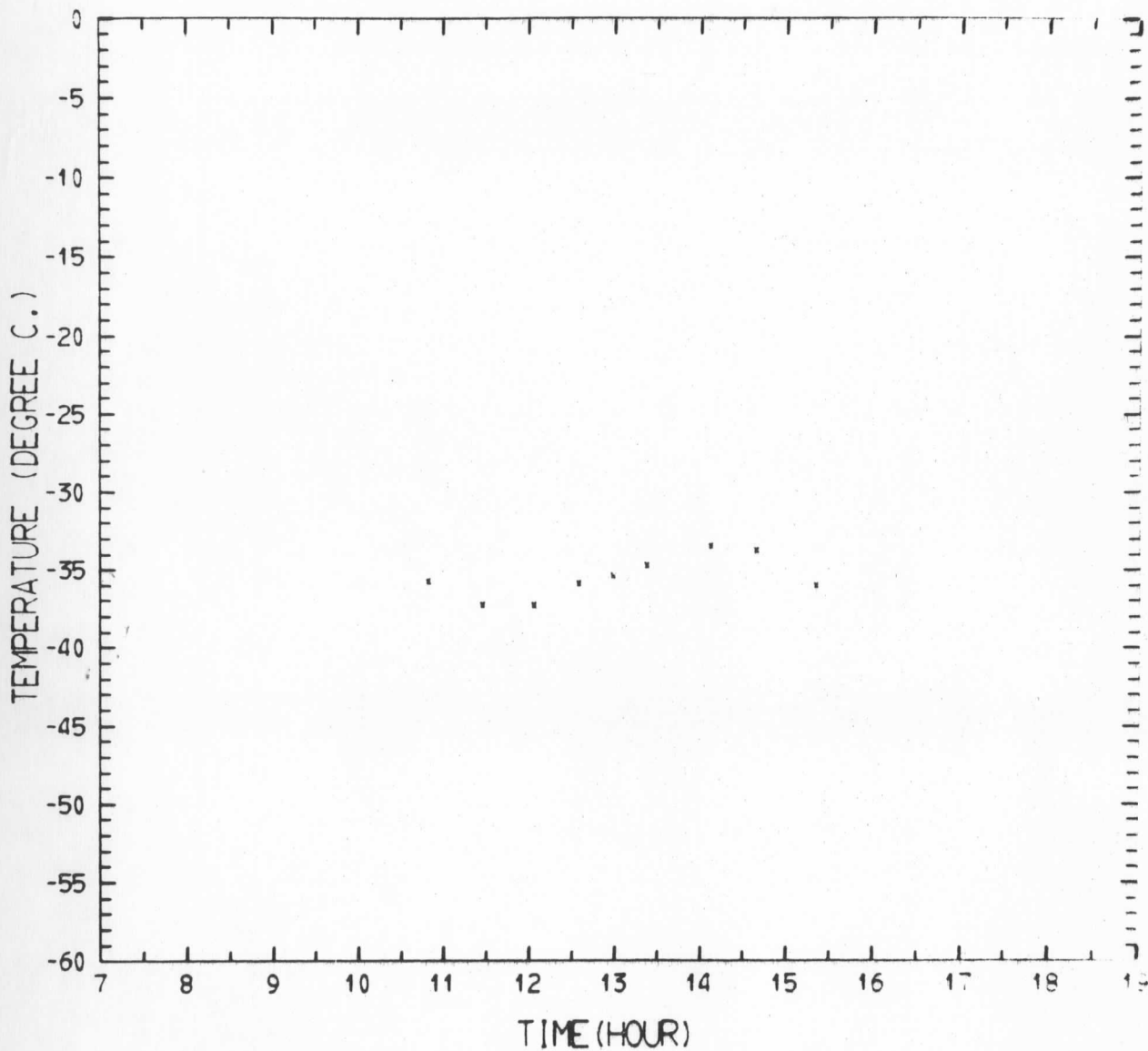


102156 B/G (8-15-1972)



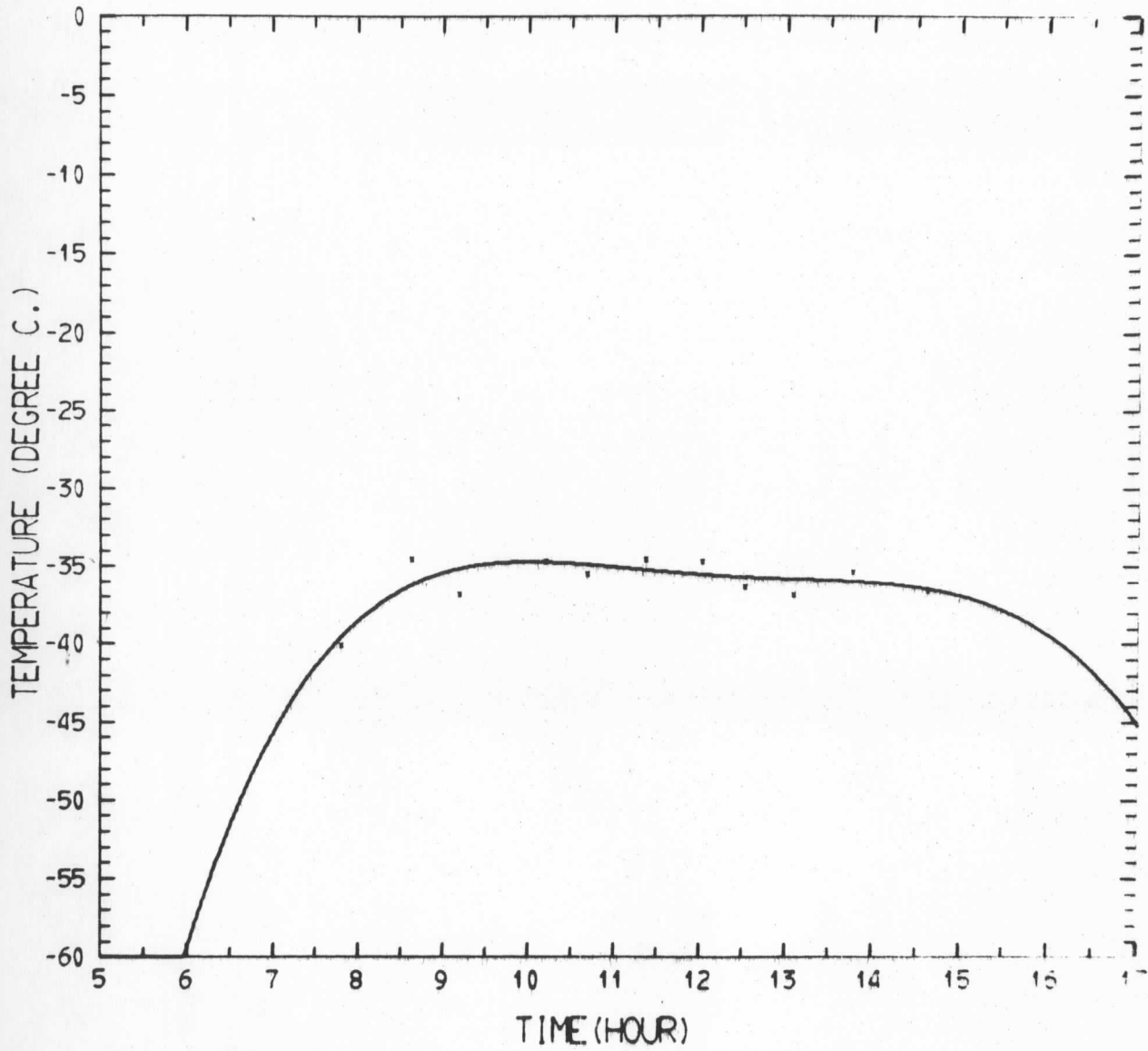
102155 B/G

(8-16-1972)

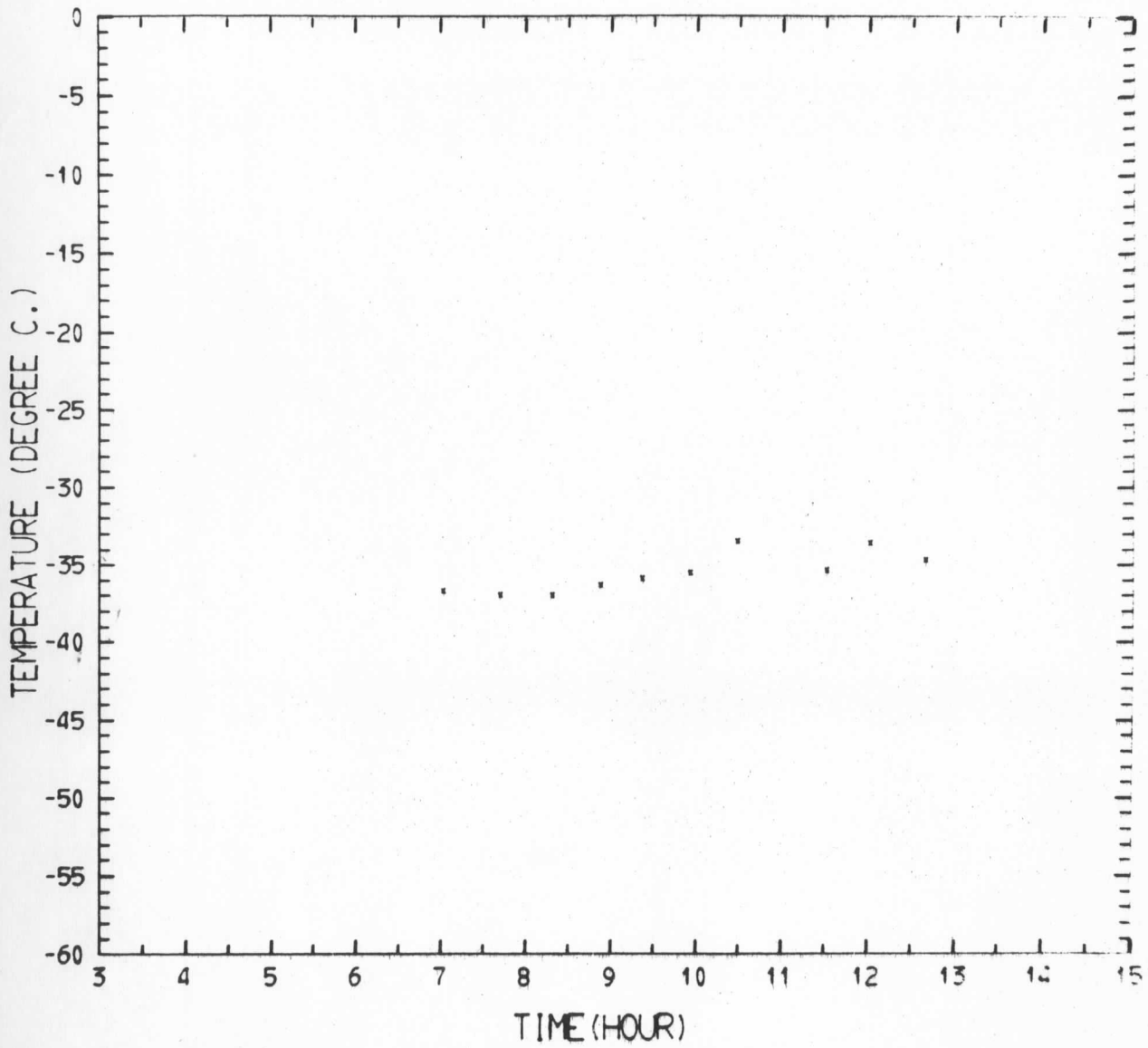


102156 B/G

(8-17-1972)

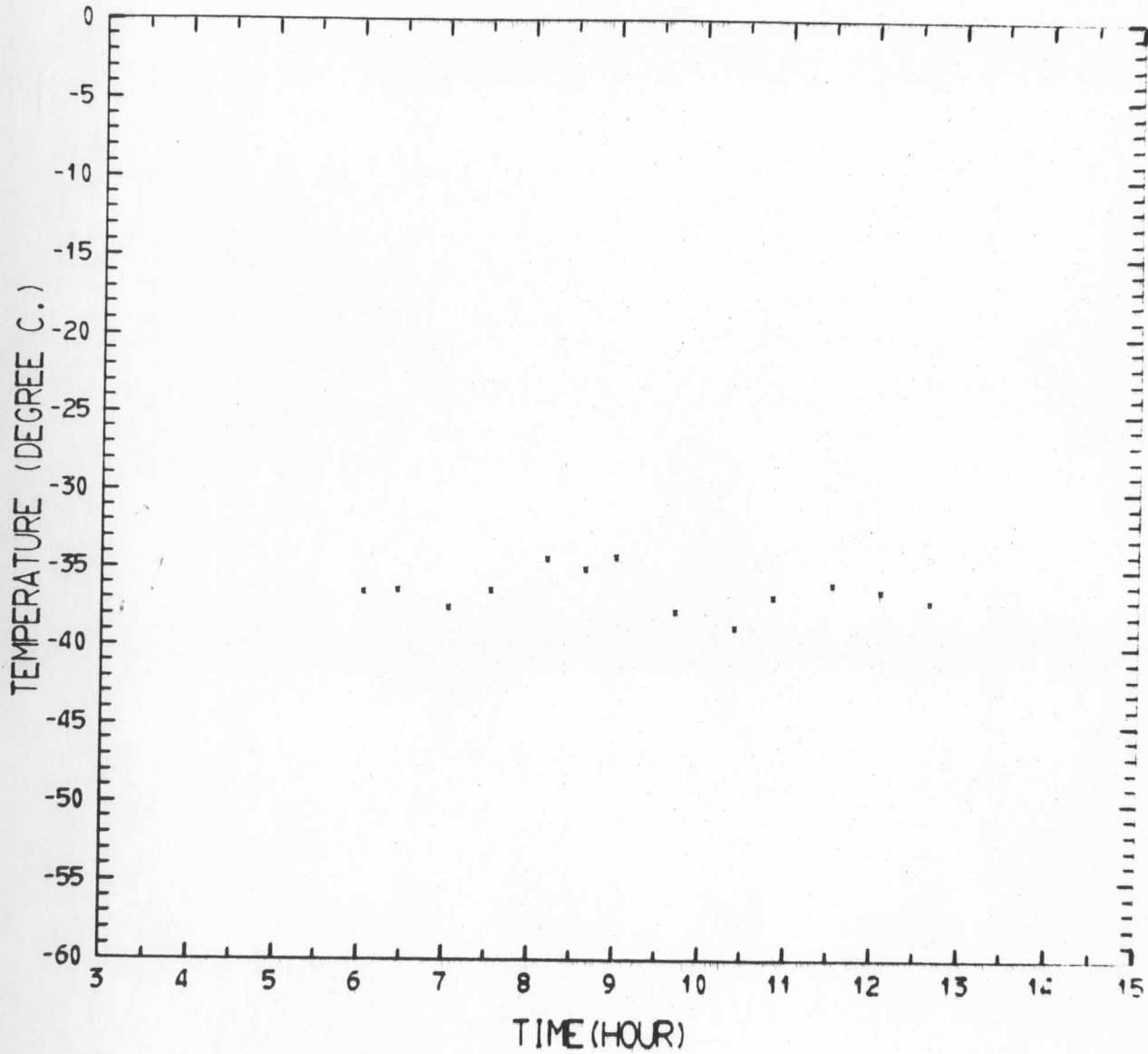


102156 B/G (8-18-1972)



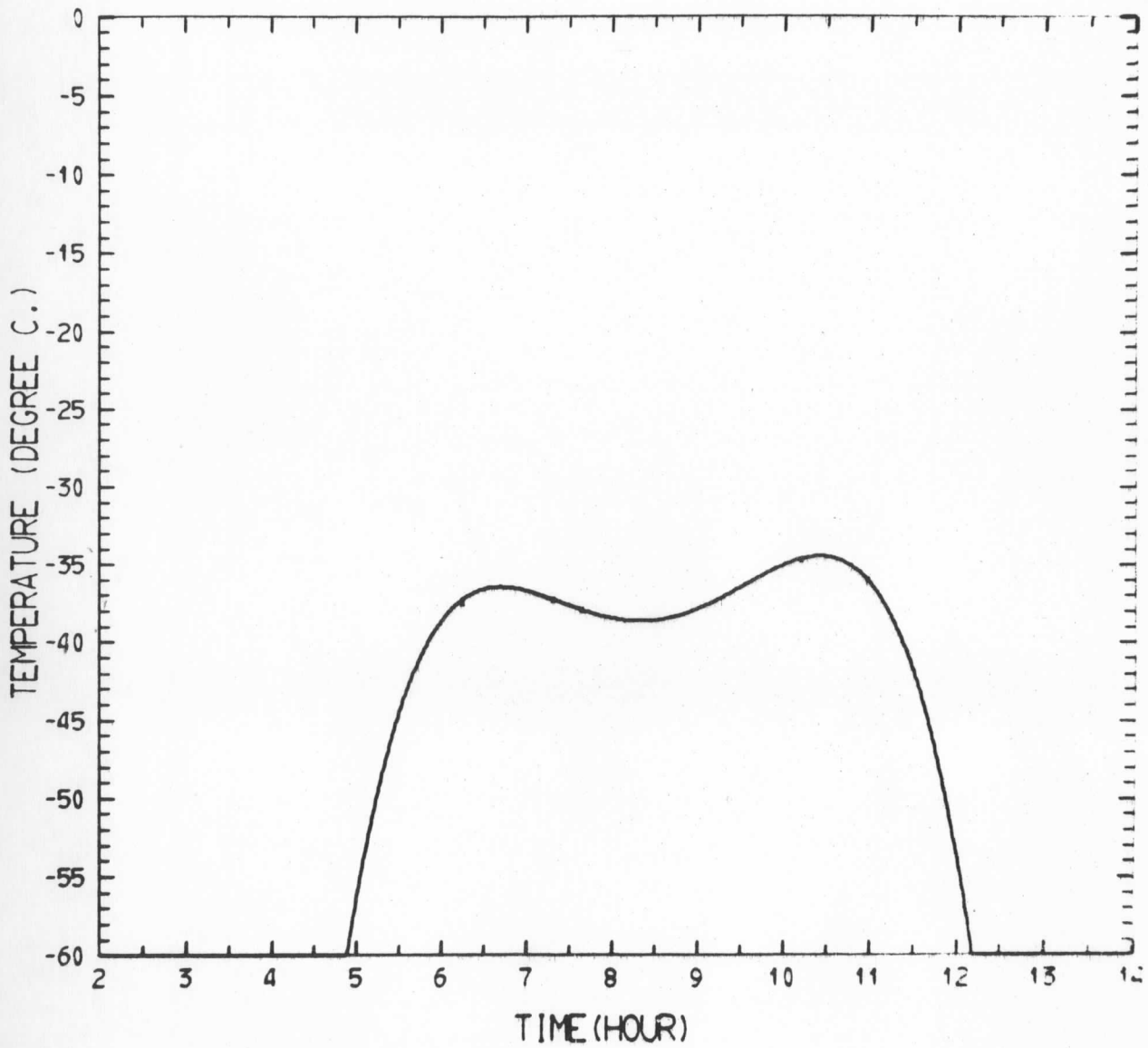
102156 B/G

(8-19-1972)



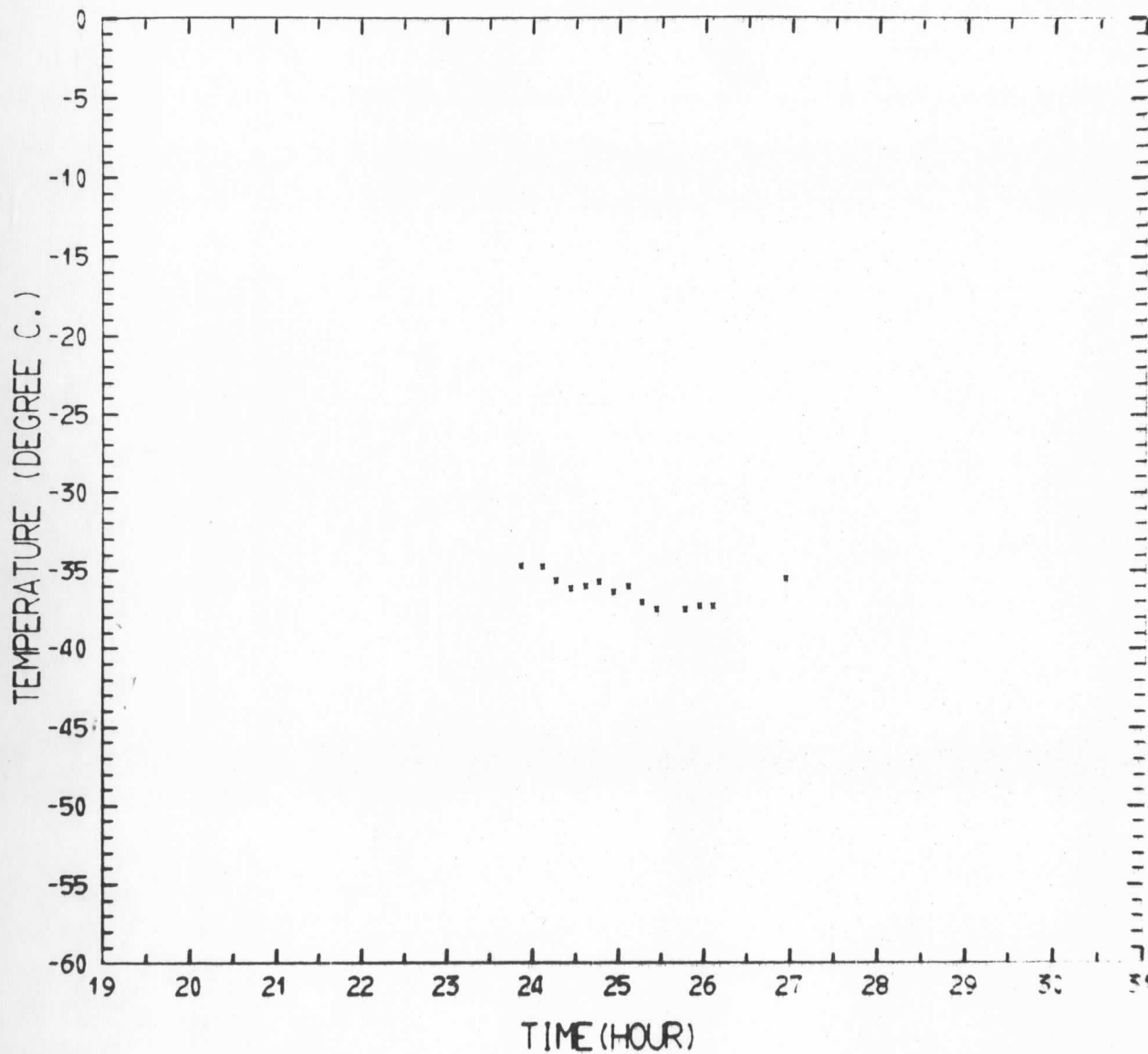
102156 B/G

(8-20-1972)



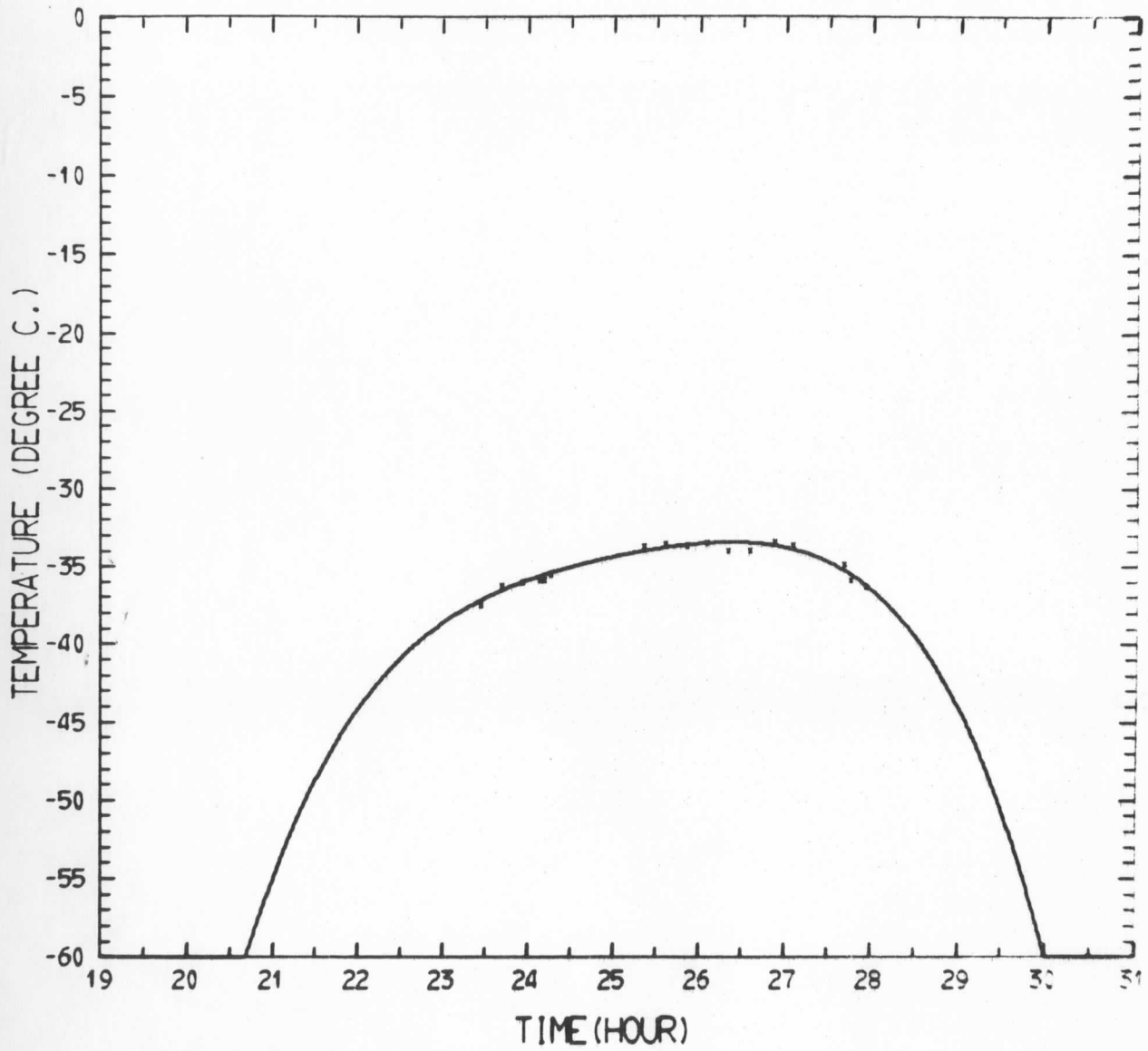
102156 B/G

(8-23-1972)



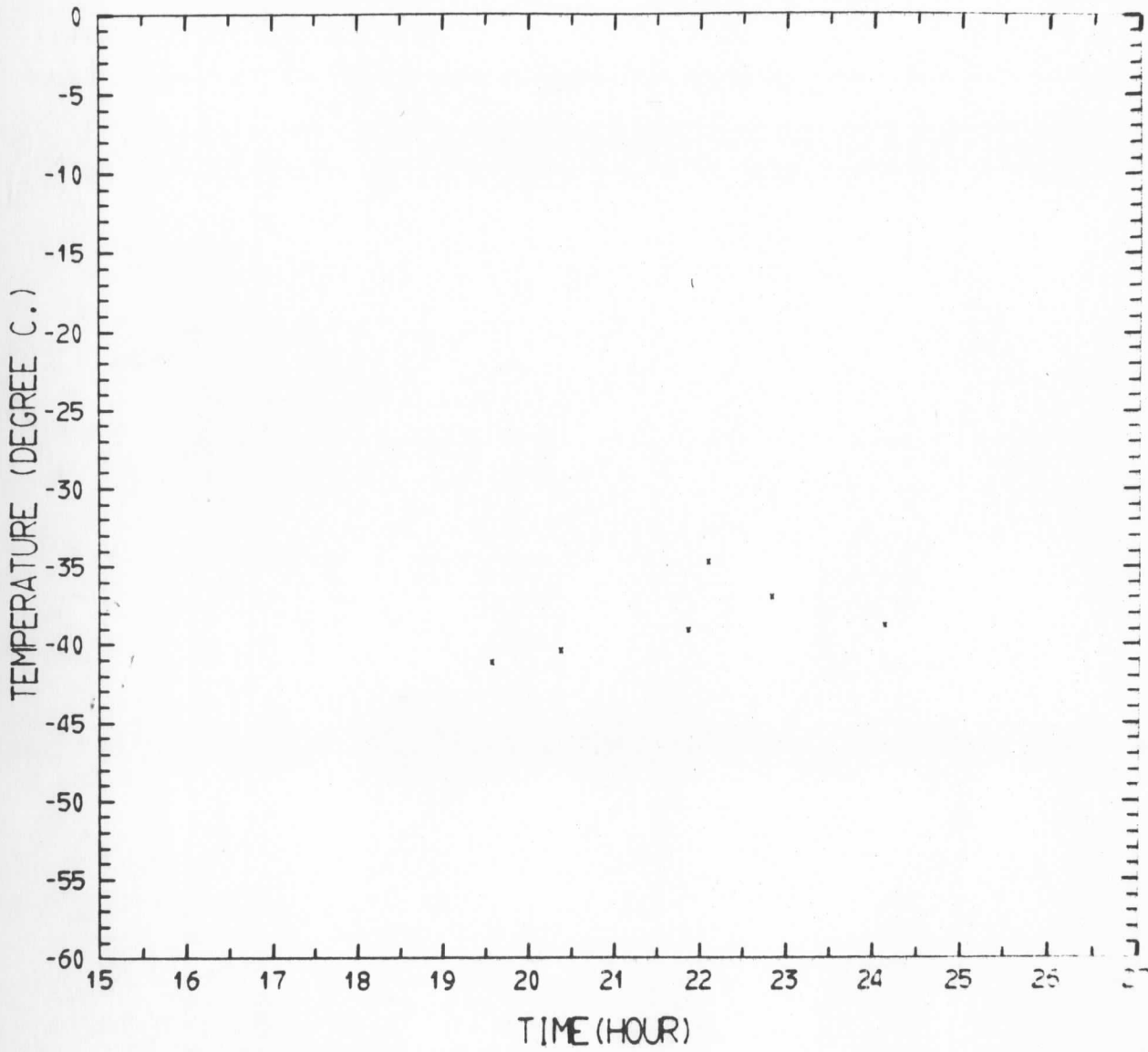
102156 B/G

(8-24-1972)



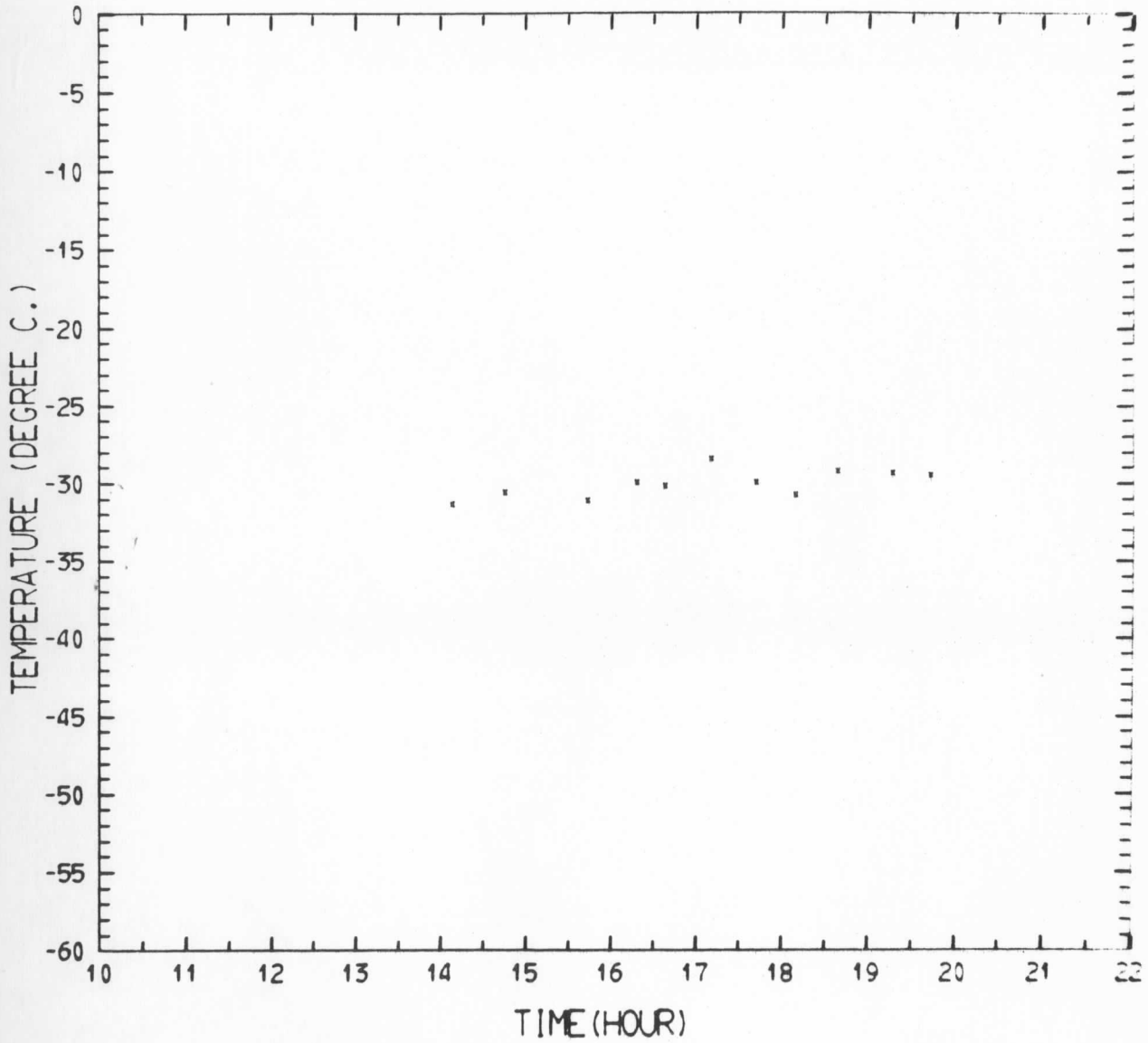
102156 B/G

(8-26-1972)

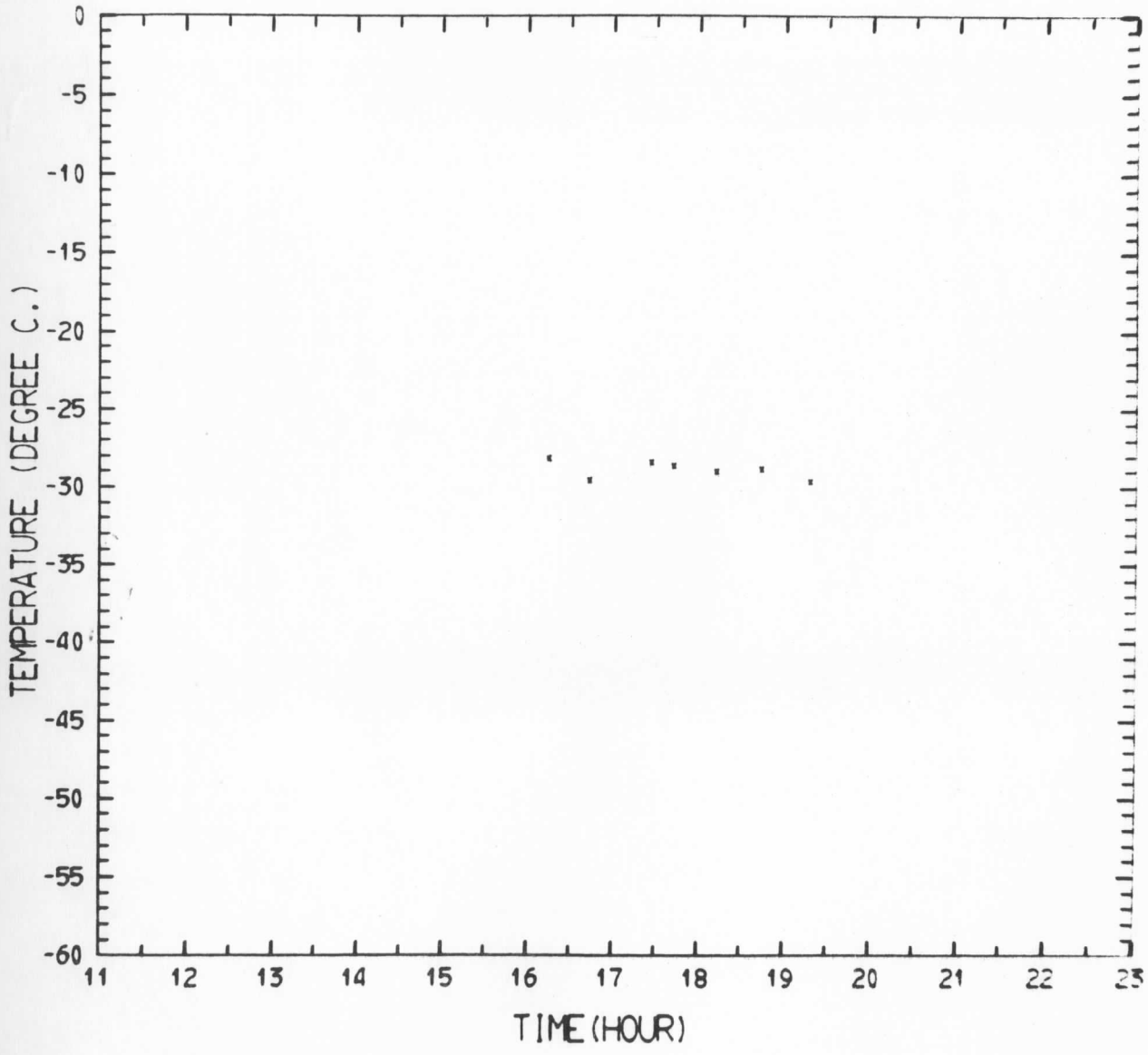


102156 B/G

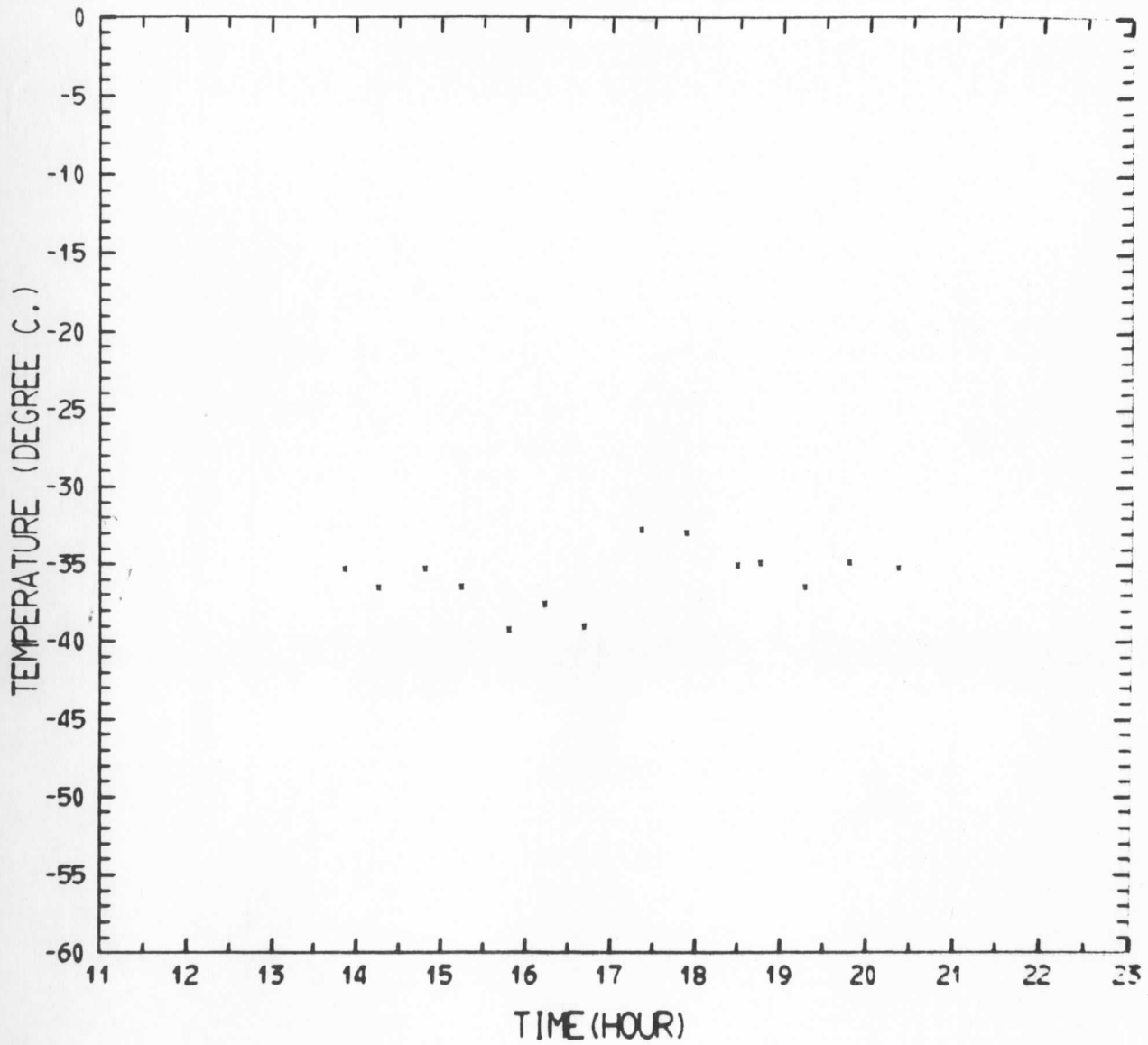
(8-29-1972)



102156 B/G (8-30-1972)

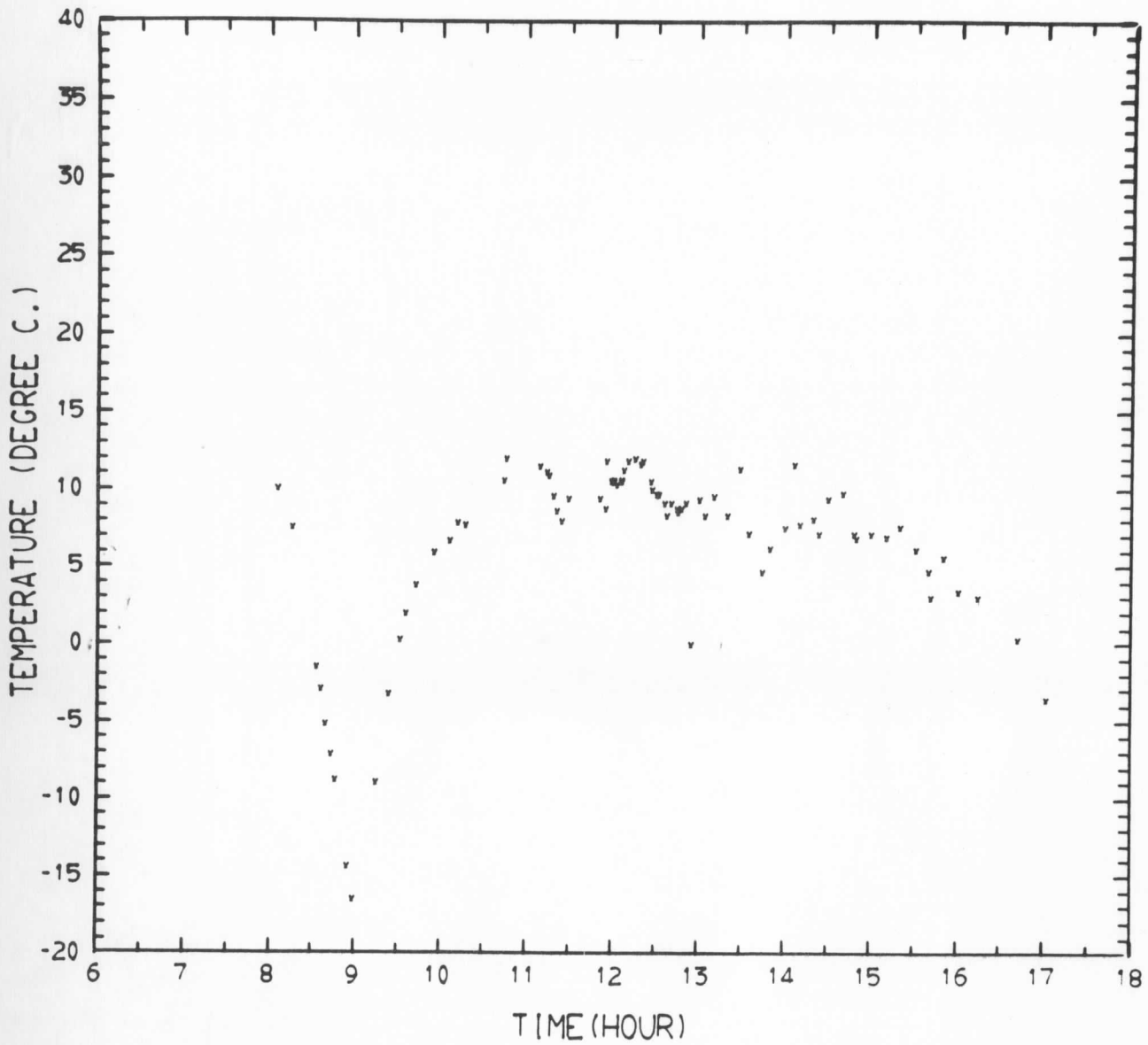


102156 B/G (8-31-1972)



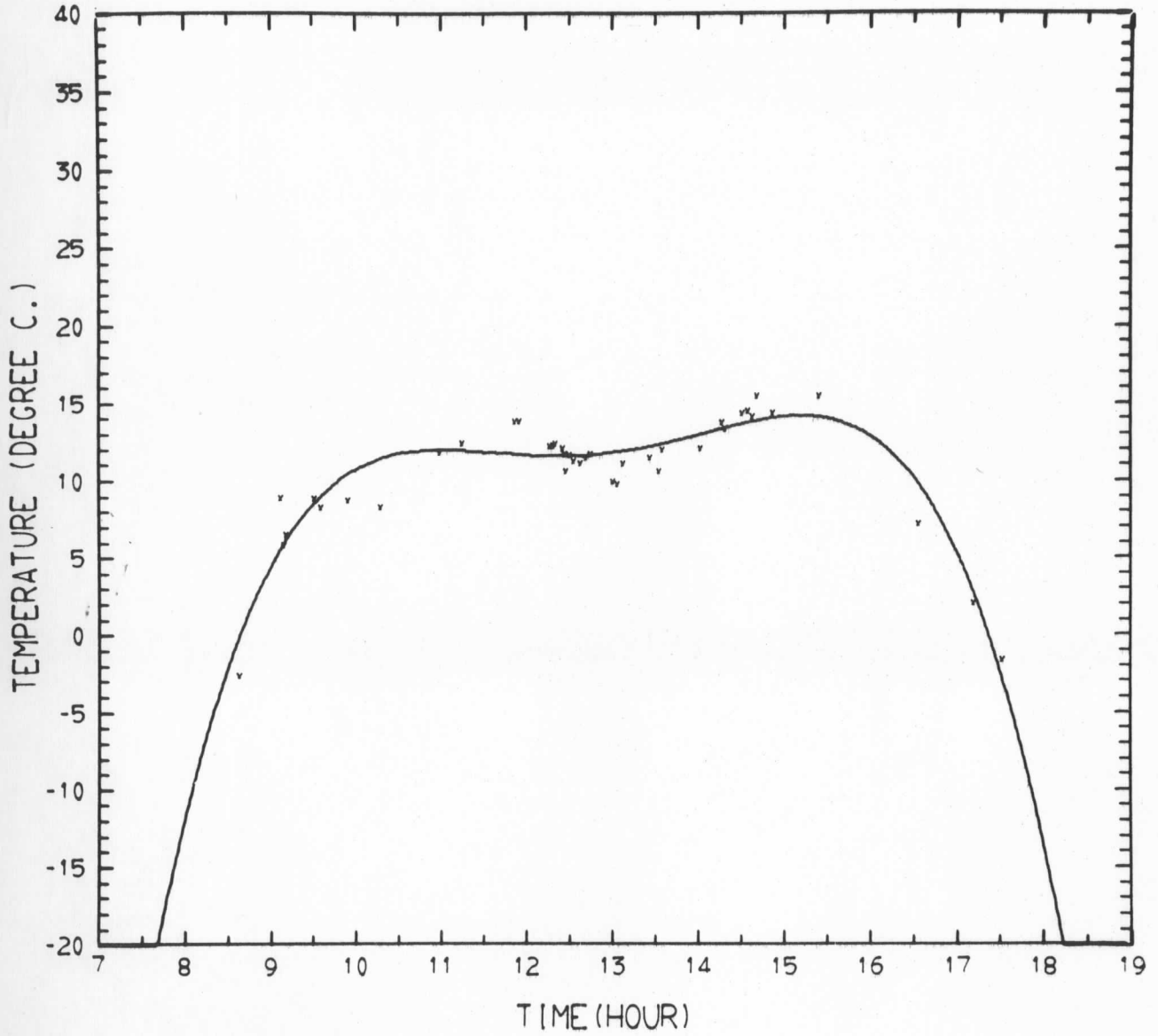
103153 B/N

(7-26-1972)



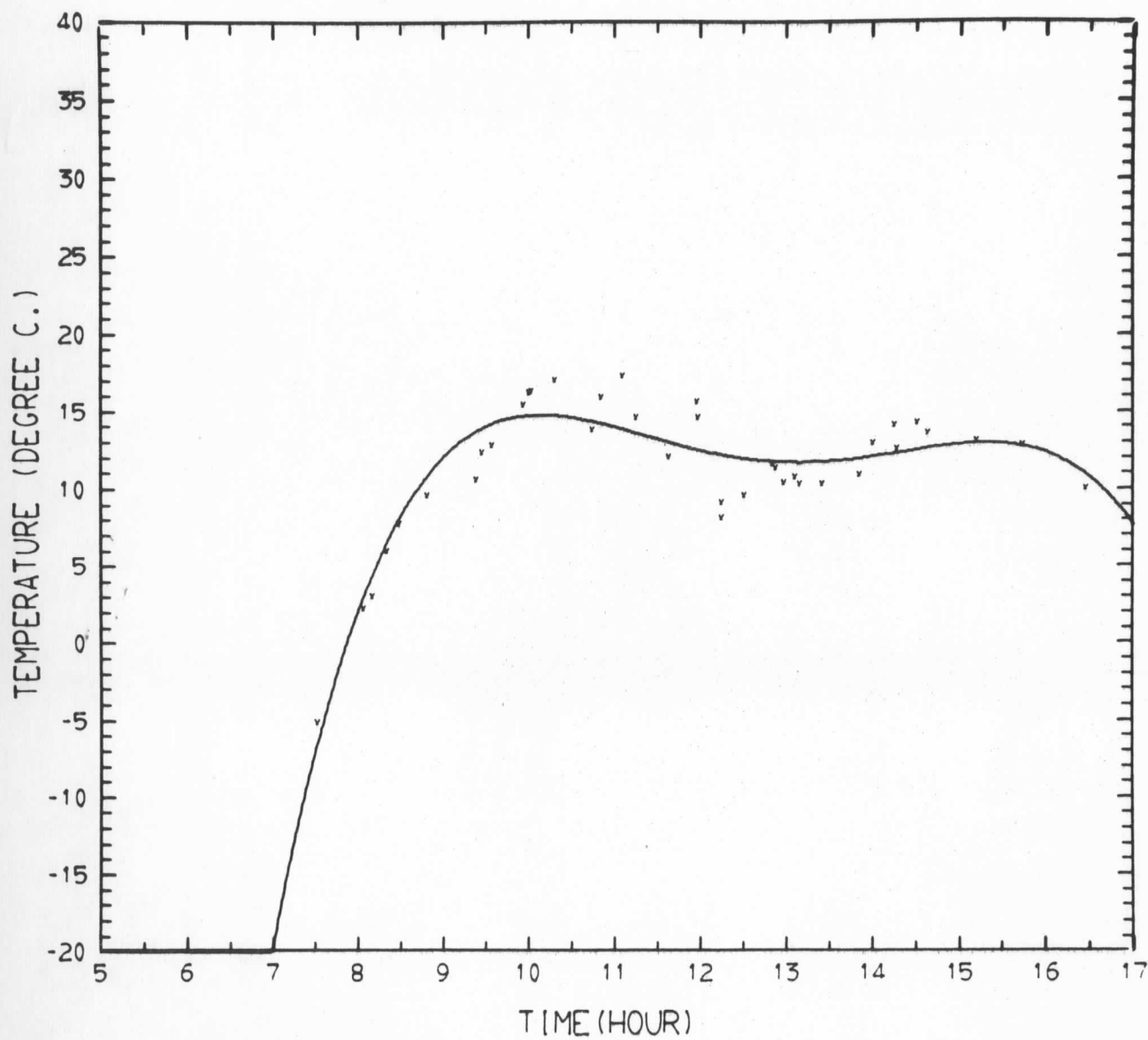
103153 B/N

(7-27-1972)



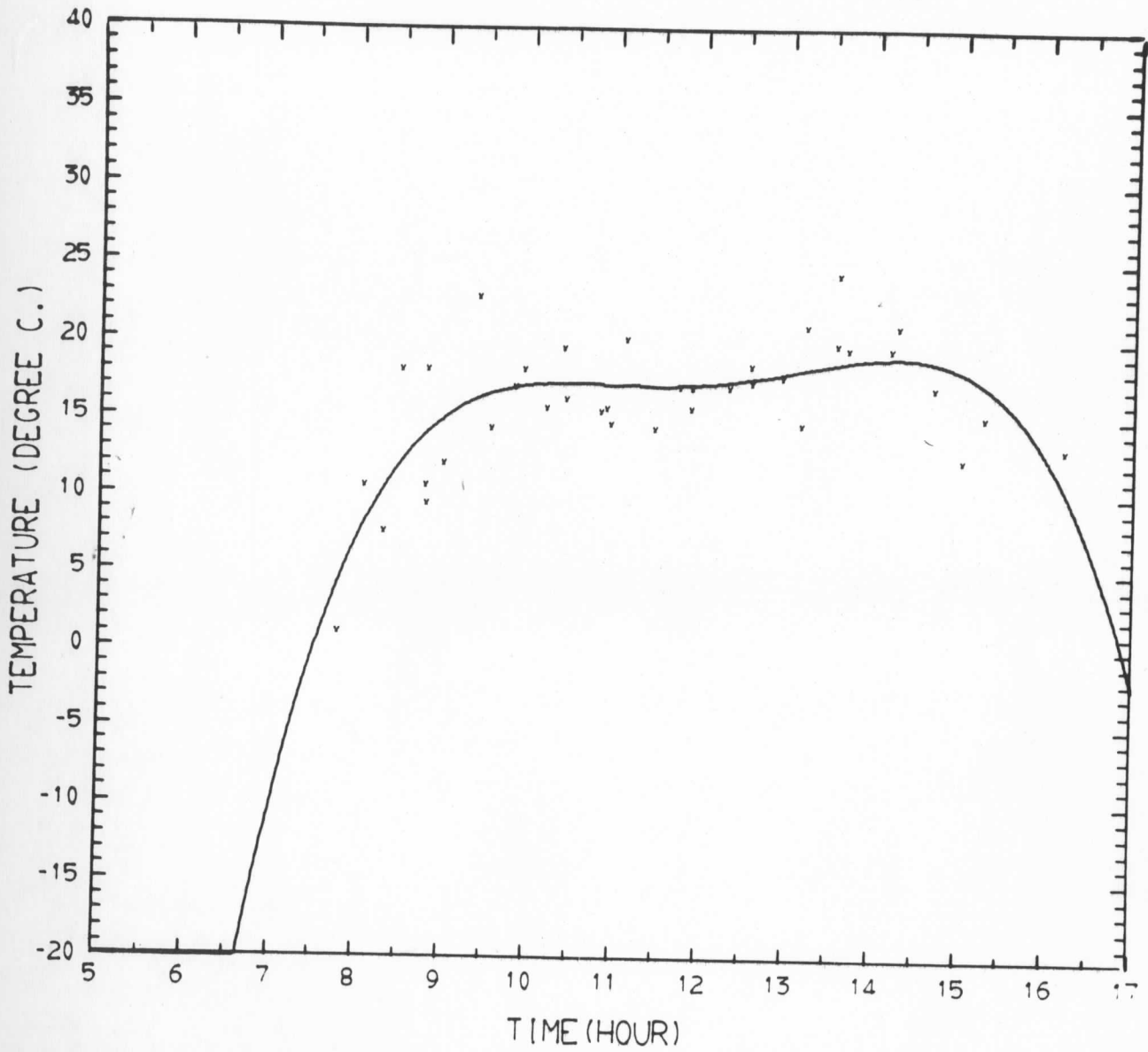
103153 B/N

(7-28-1972)



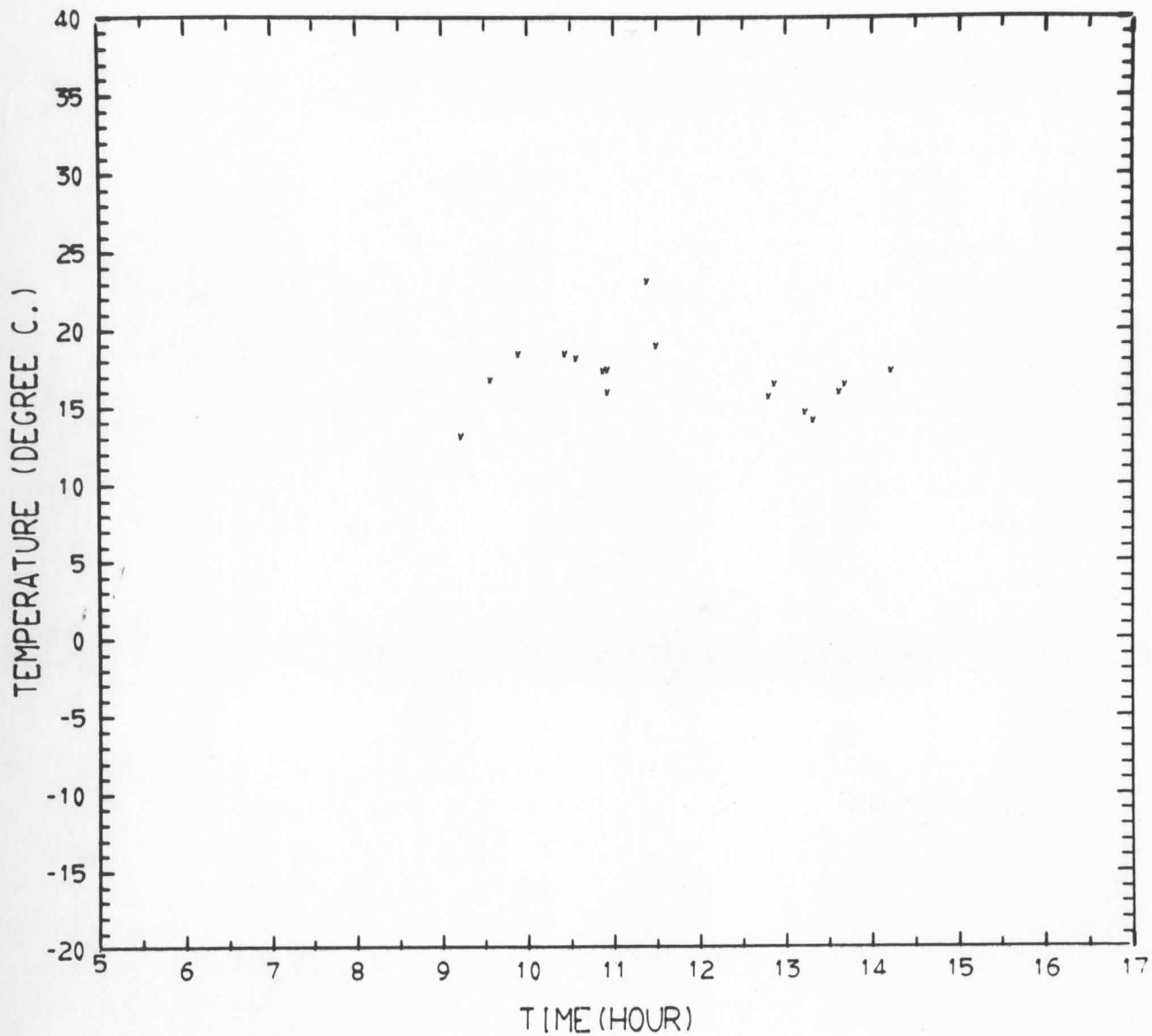
103153 B/N

(7-29-1972)



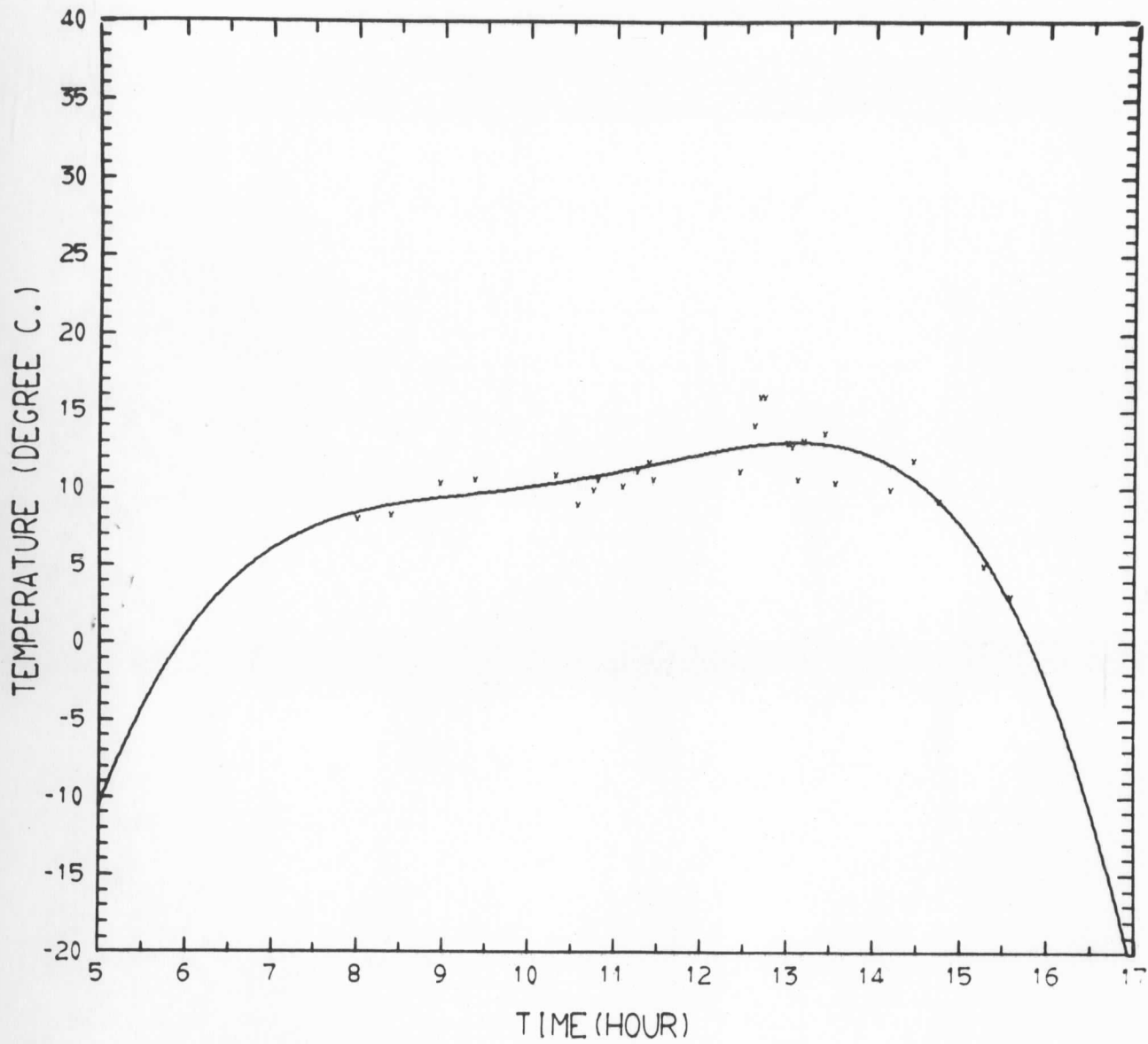
103153 B/N

(7-31-1972)



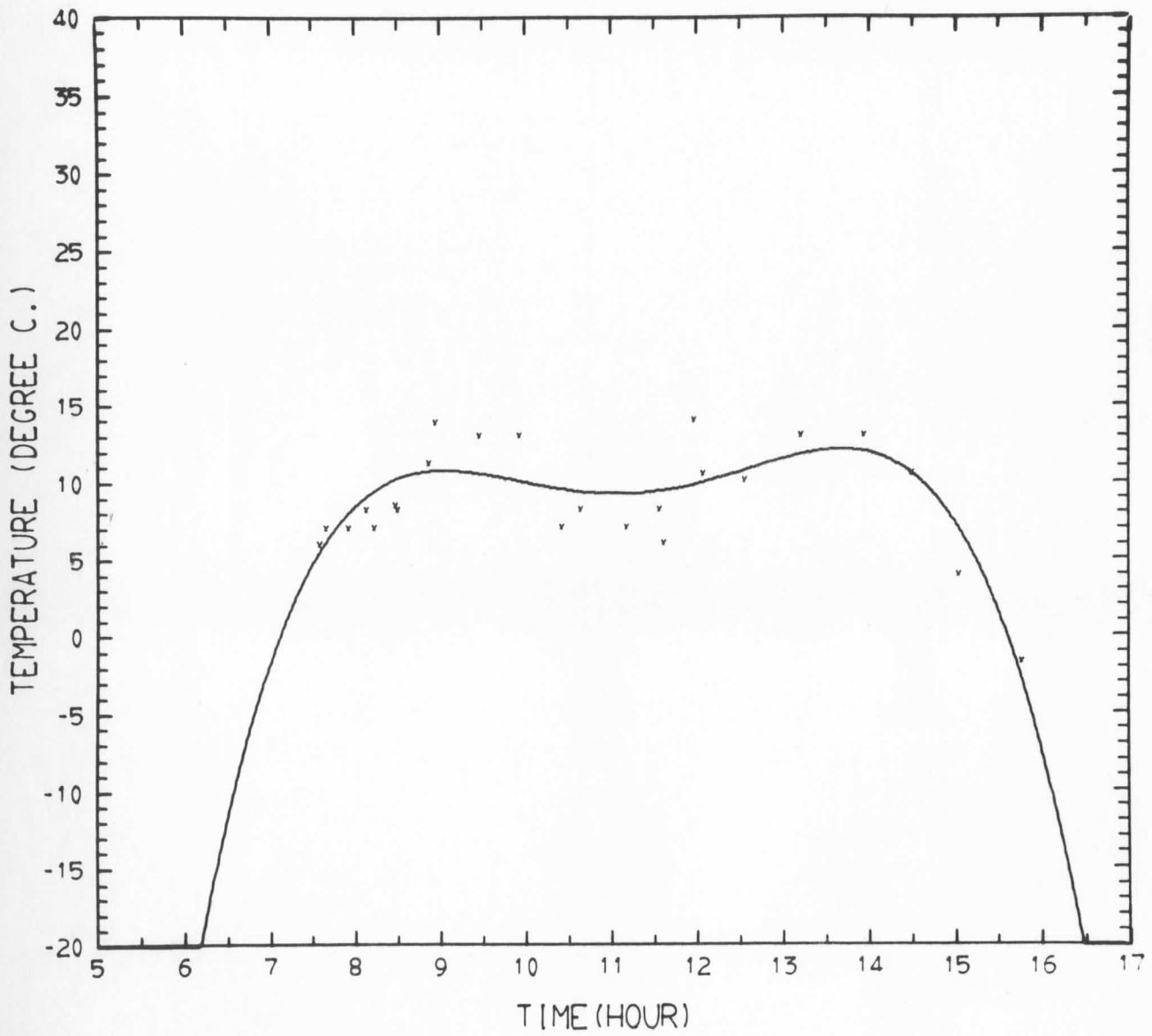
103153 B/N

(8- 1-1972)



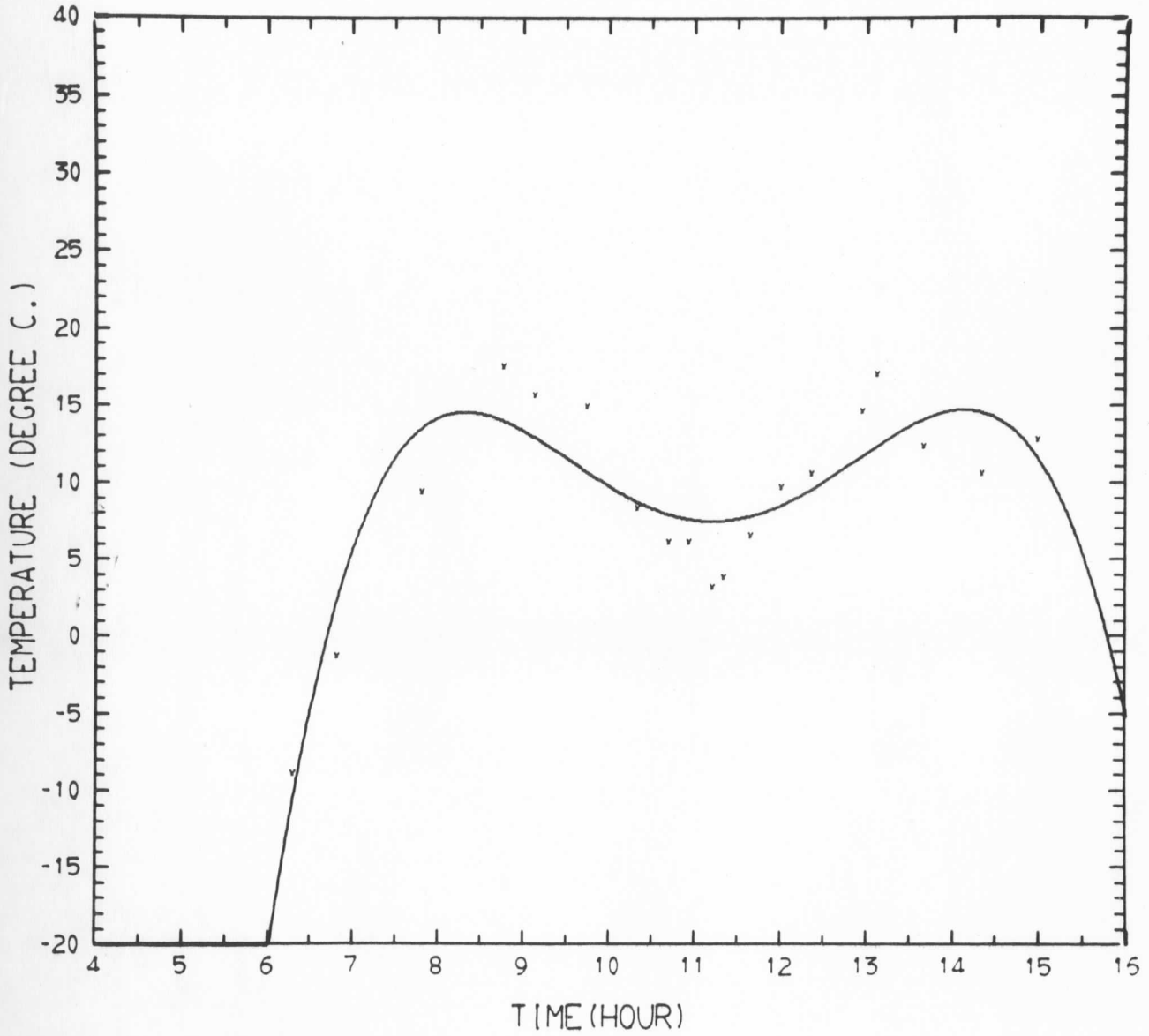
103153 B/N

(8- 2-1972)



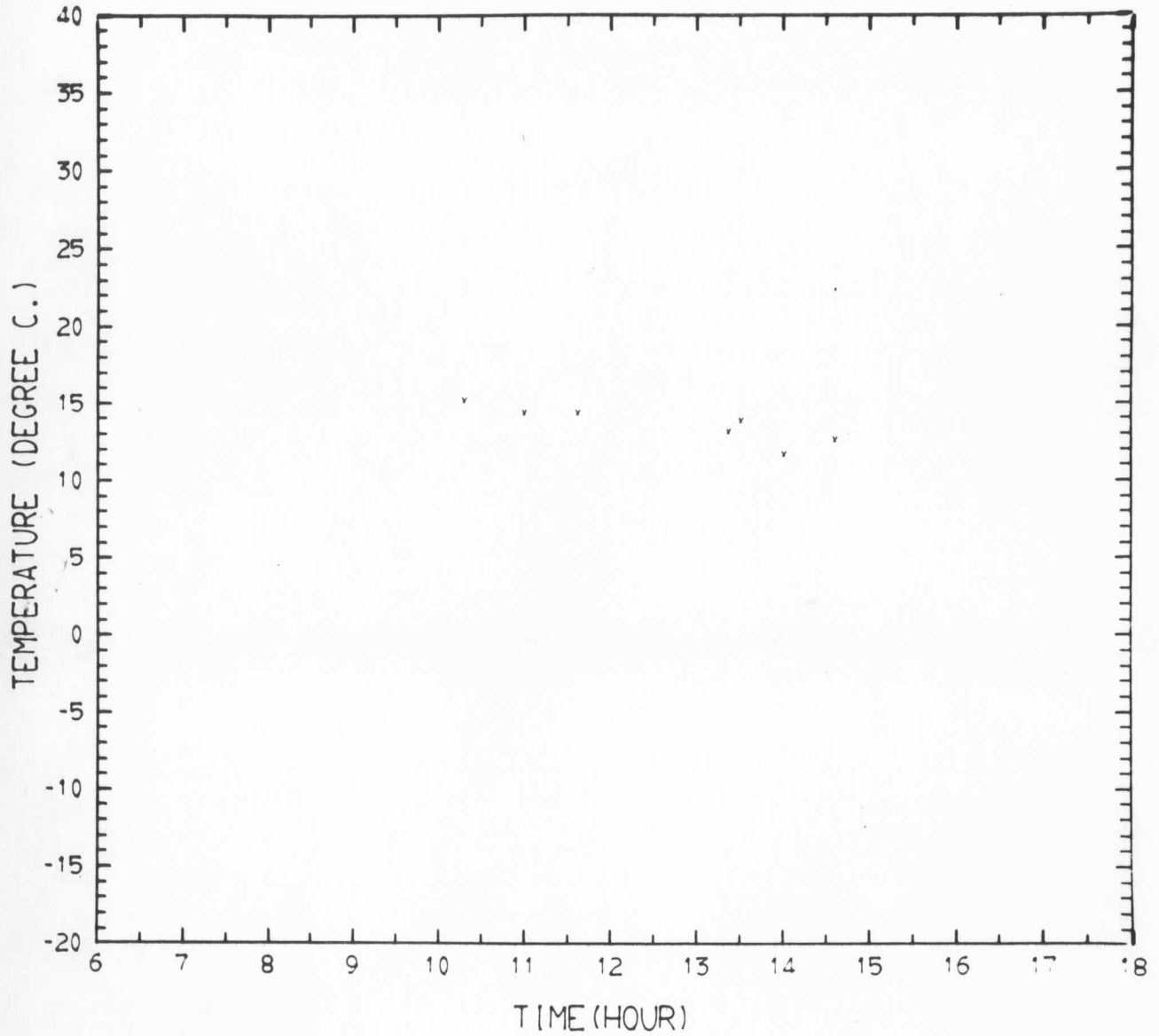
103153 B/N

(8- 3-1972)



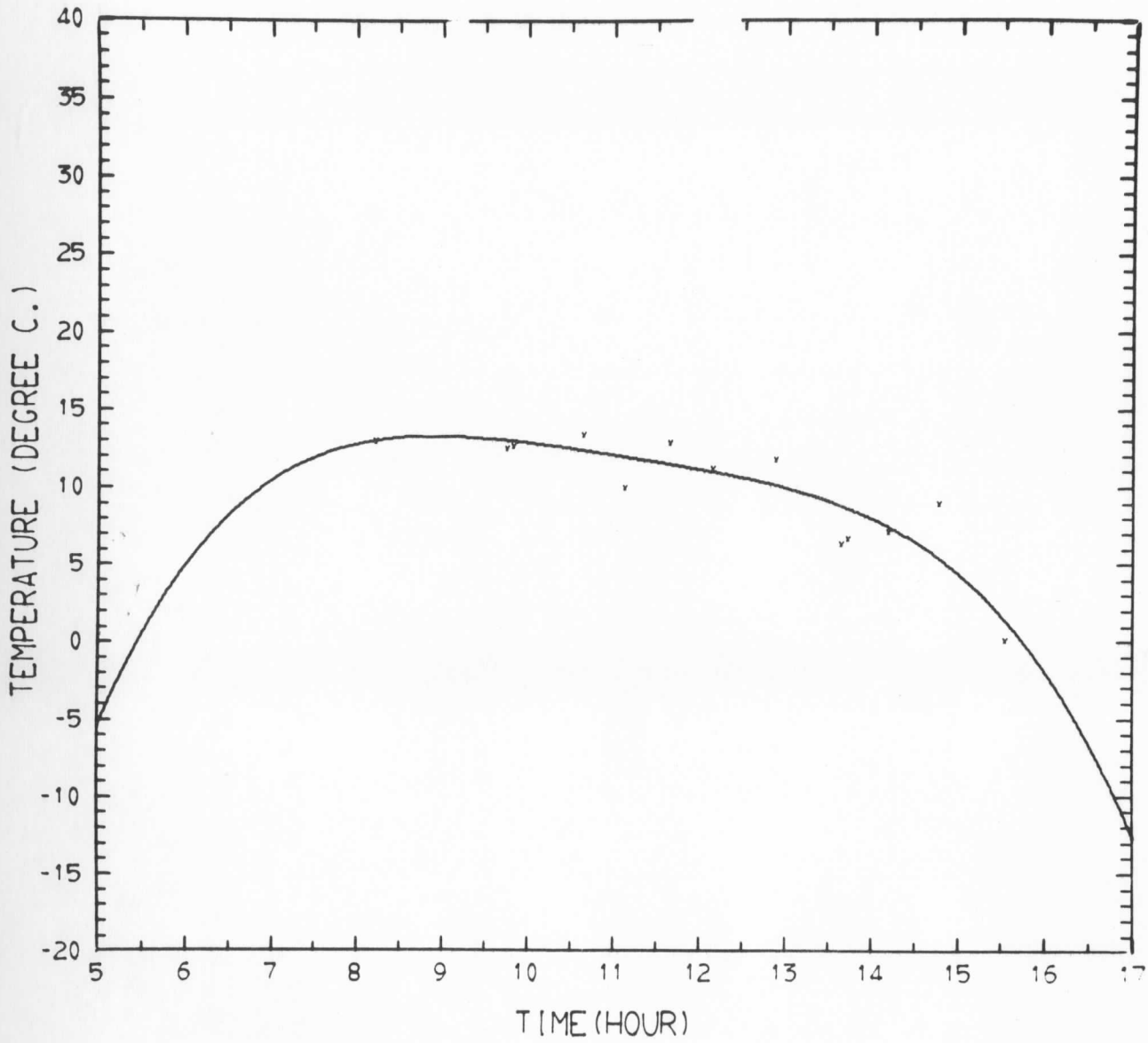
103153 B/N

(8- 4-1972)



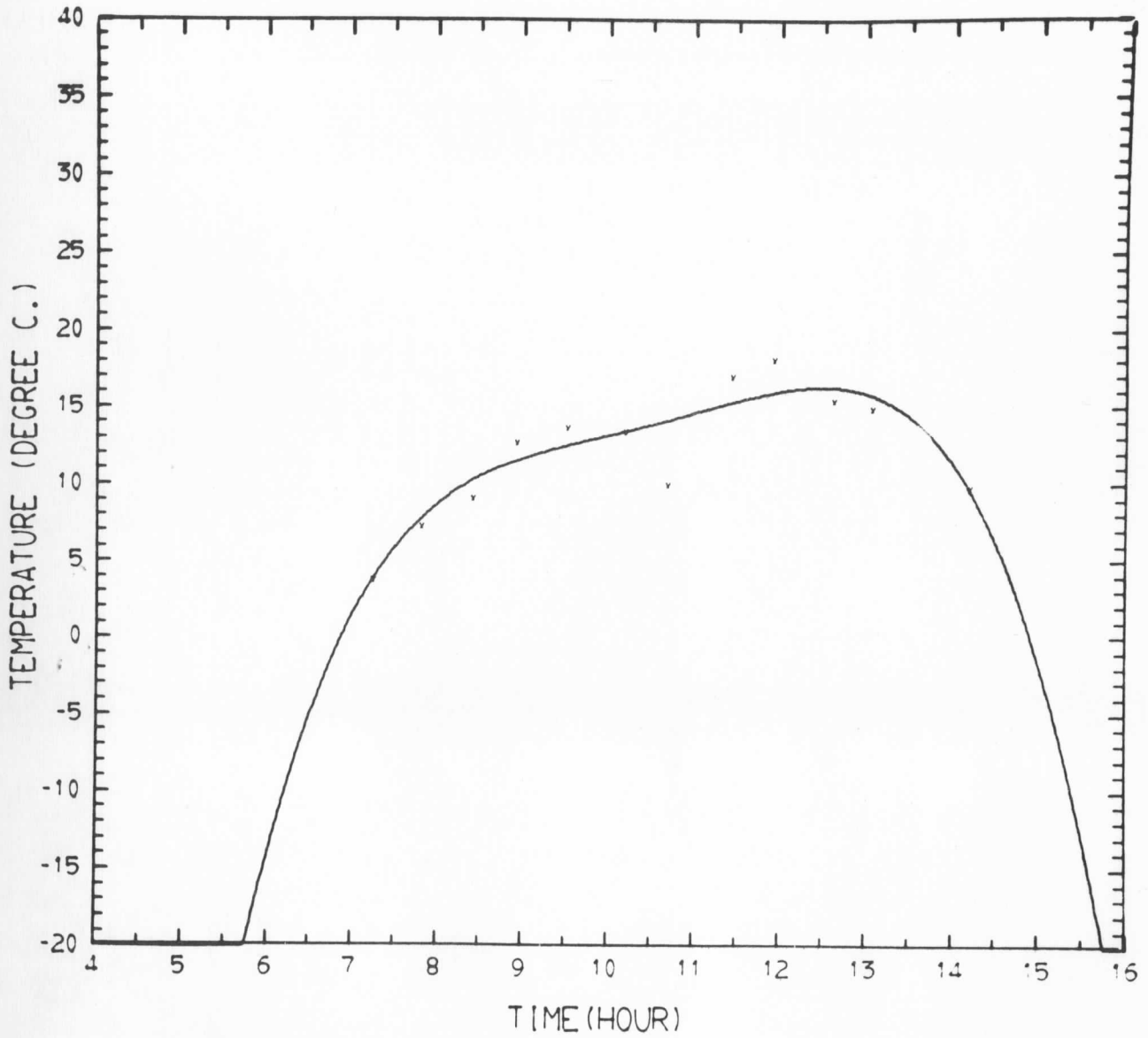
103153 B/N

(8- 5-1972)



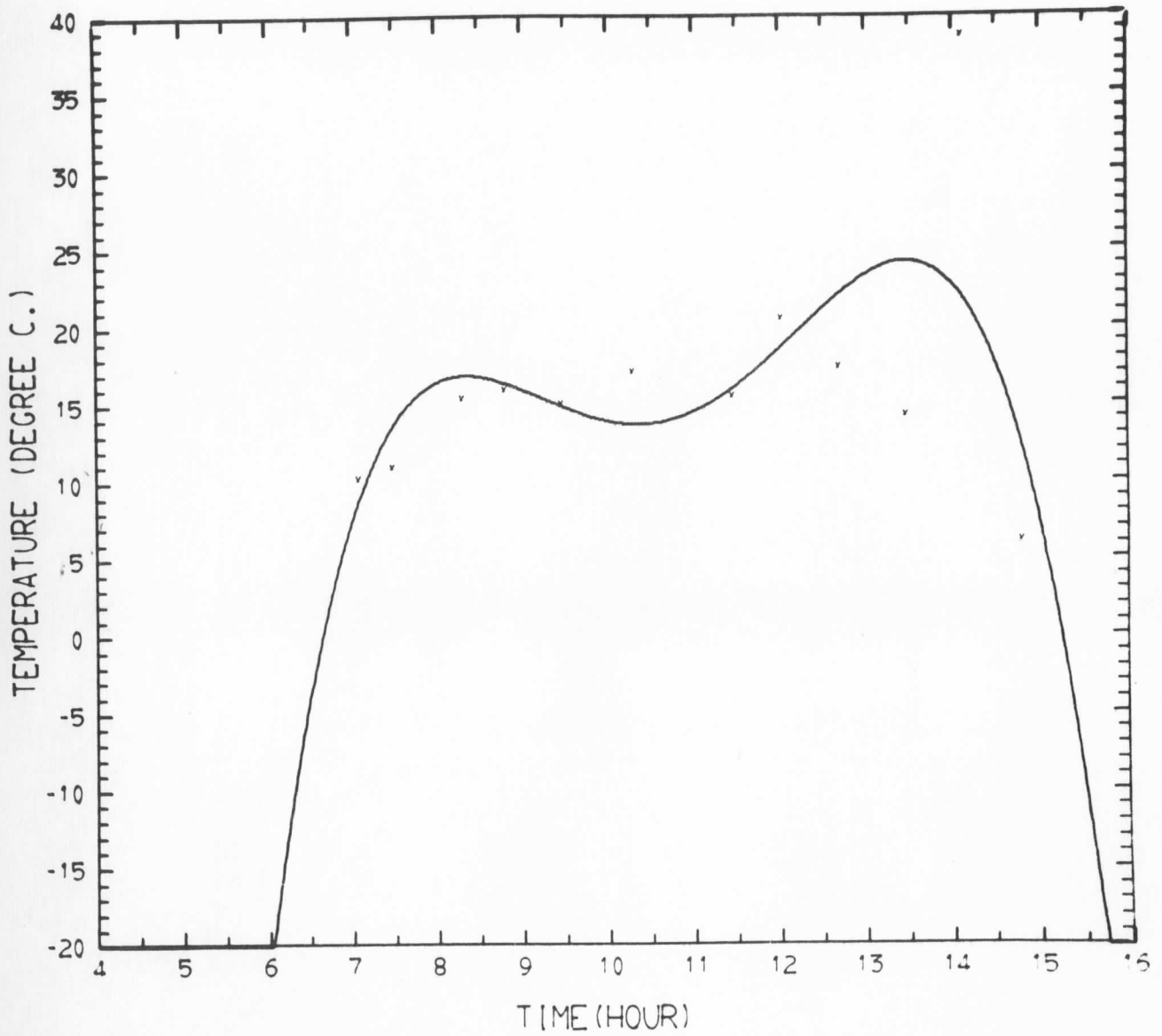
103153 B/N

(8- 6-1972)



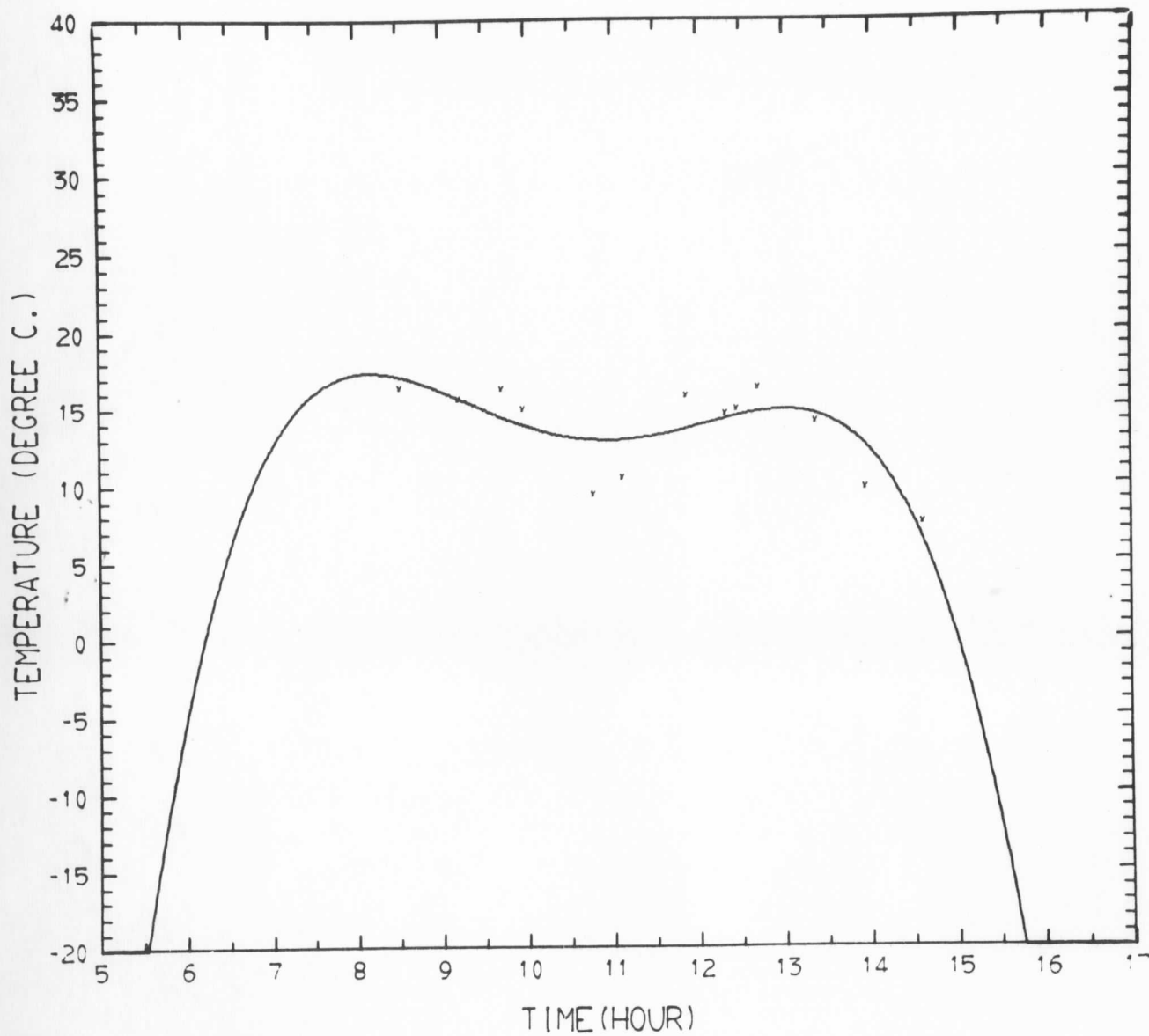
103153 B/N

(8- 7-1972)



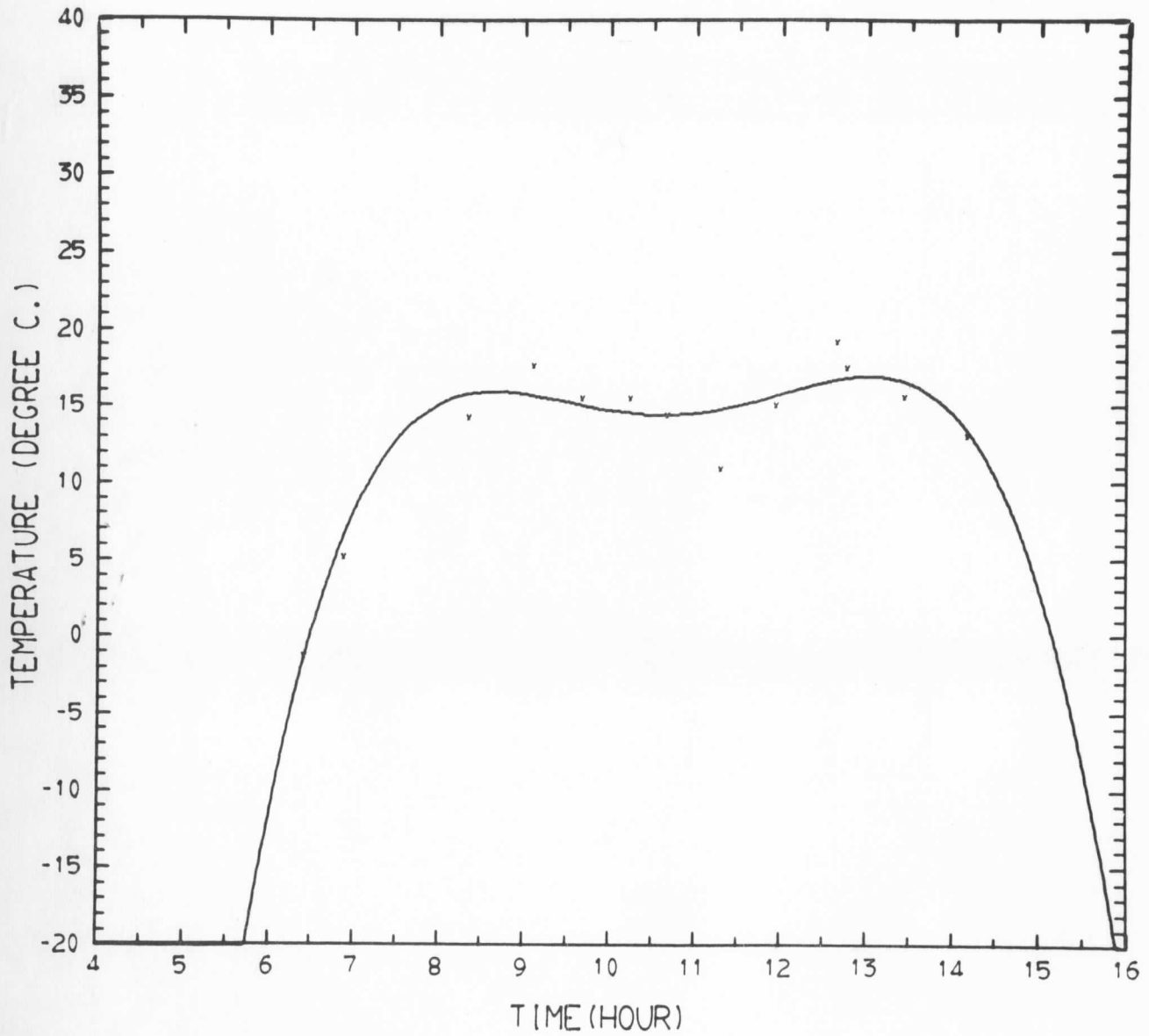
103153 B/N

(8- 8-1972)



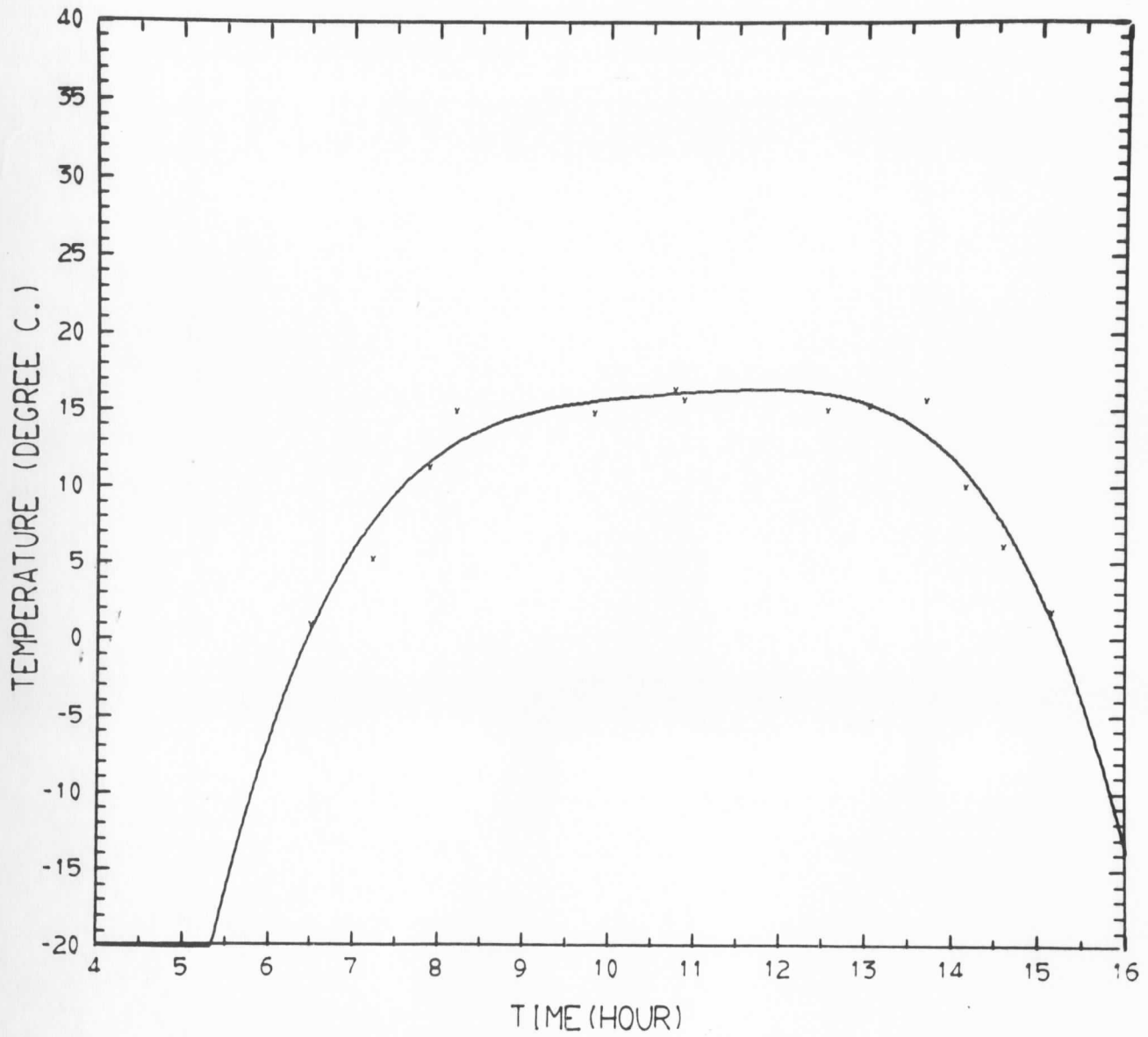
103153 B/N

(8- 9-1972)



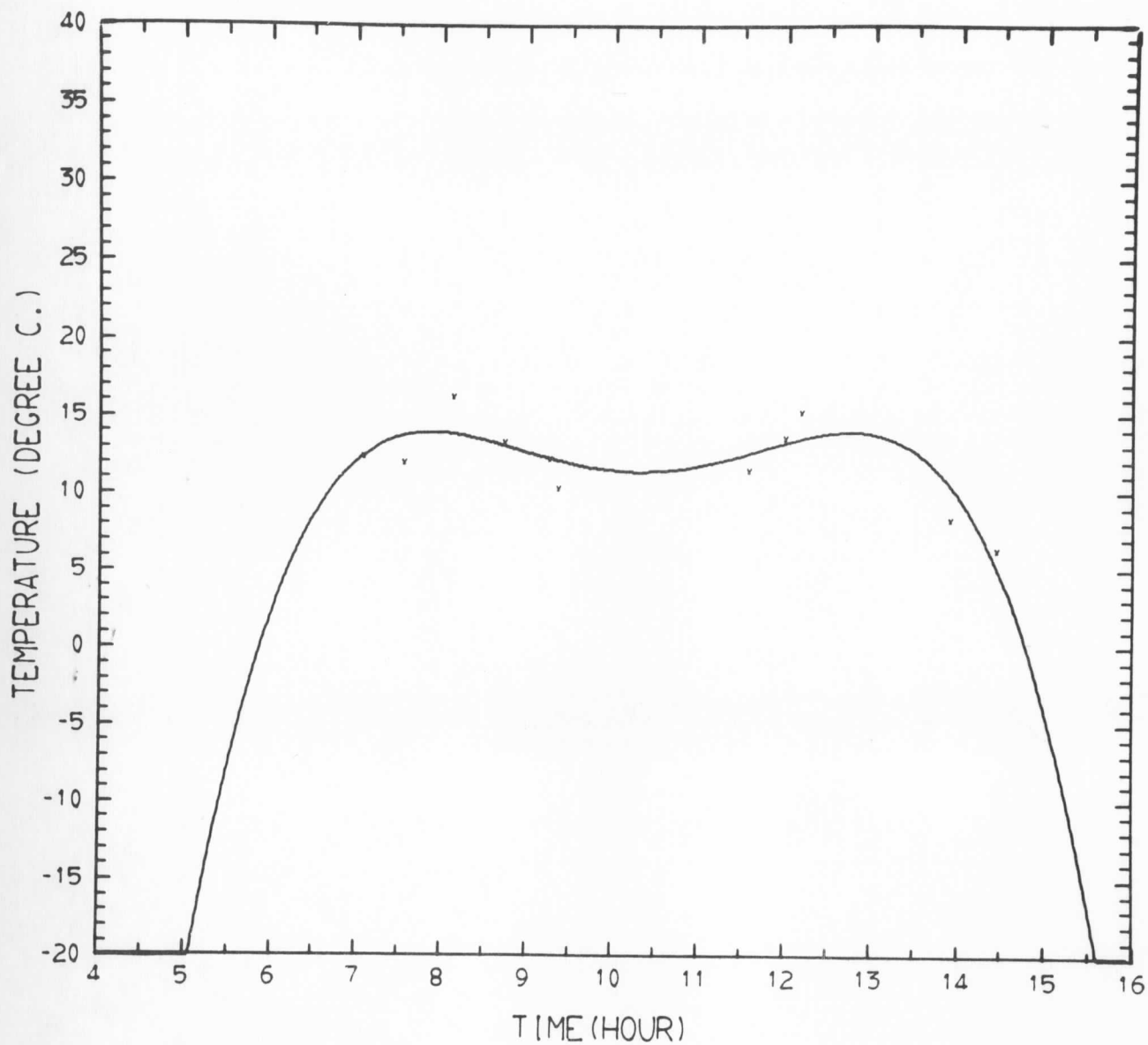
103153 B/N

(8-10-1972)



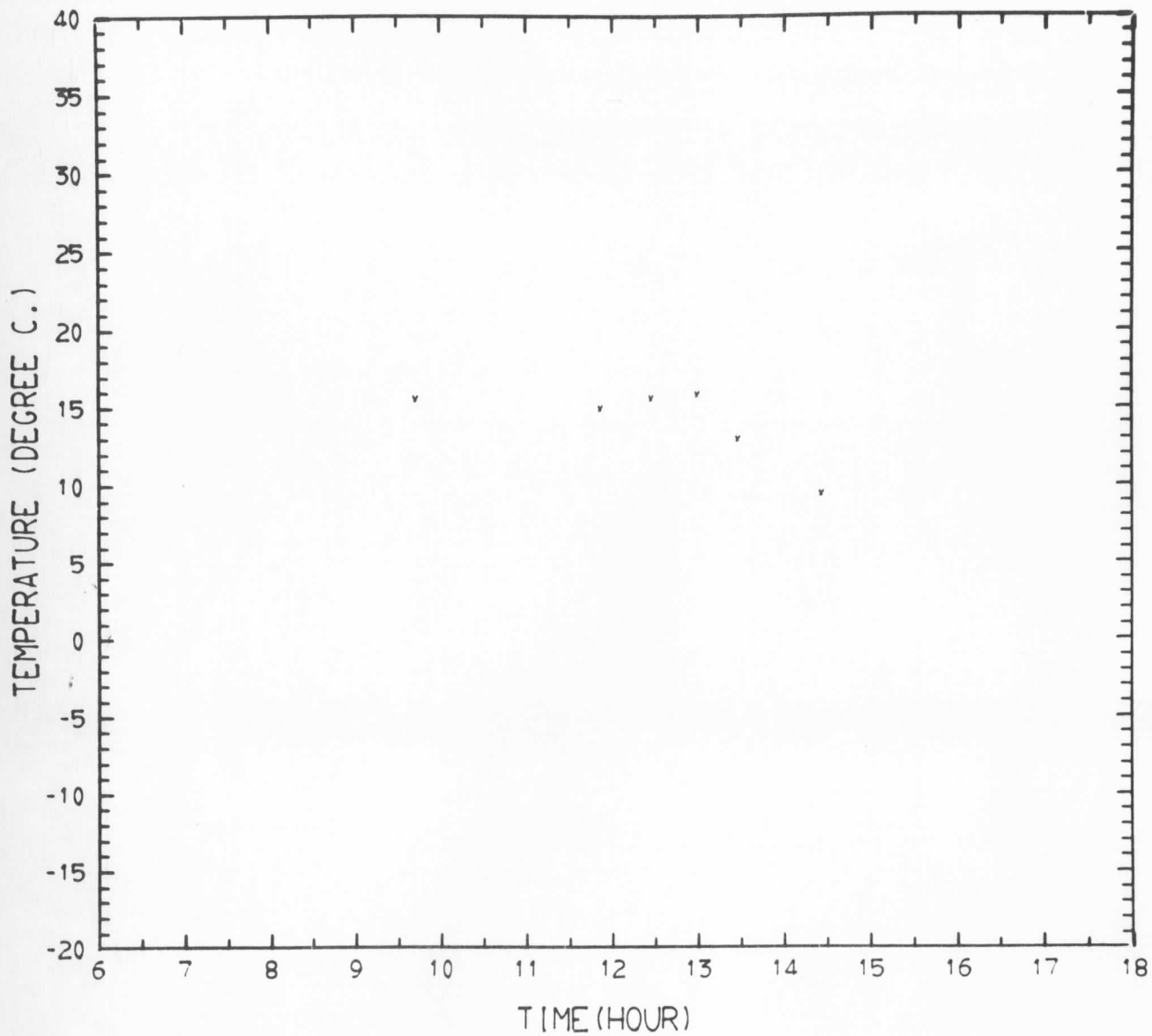
103153 B/N

(8-11-1972)



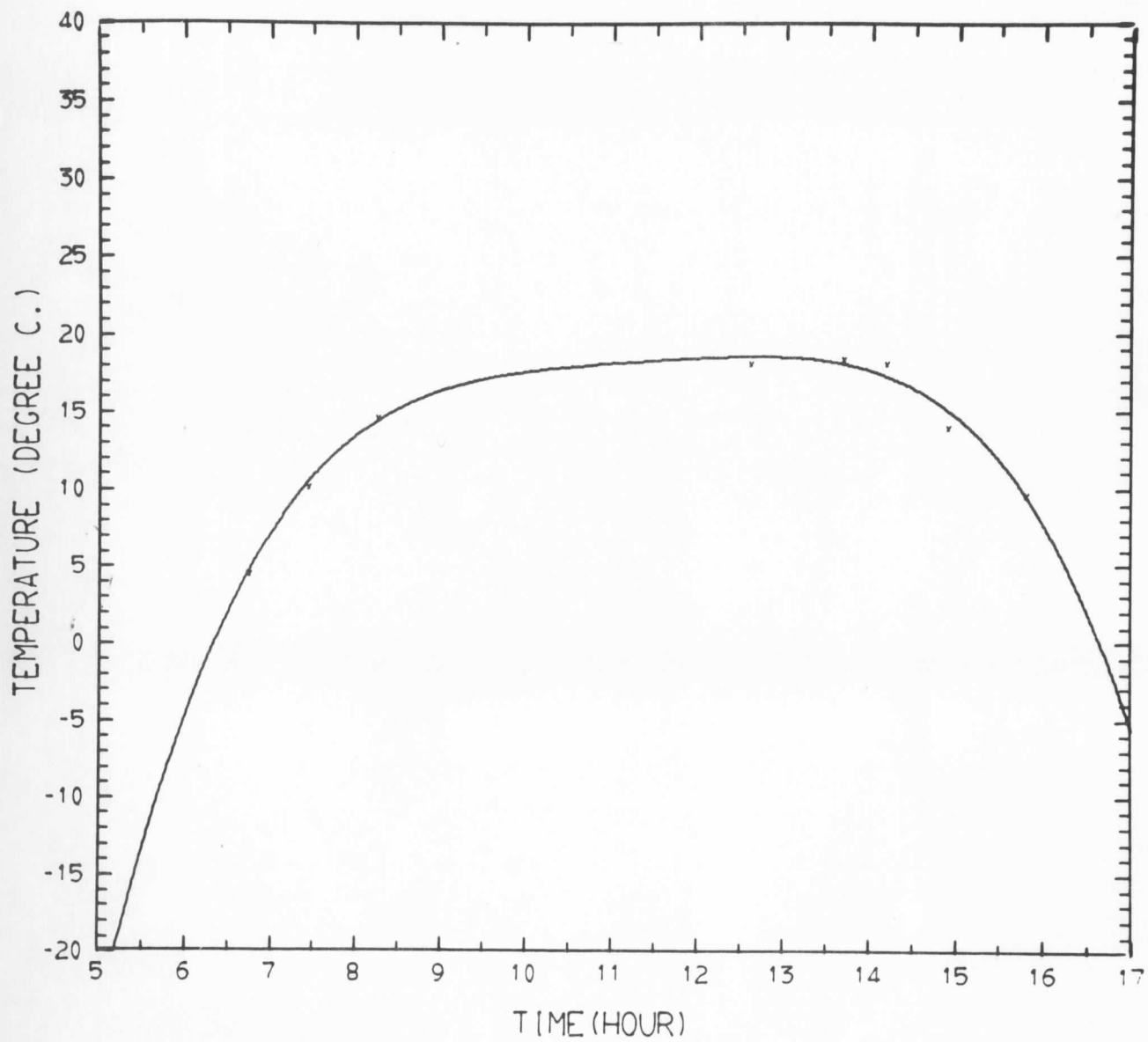
103153 B/N

(8-12-1972)



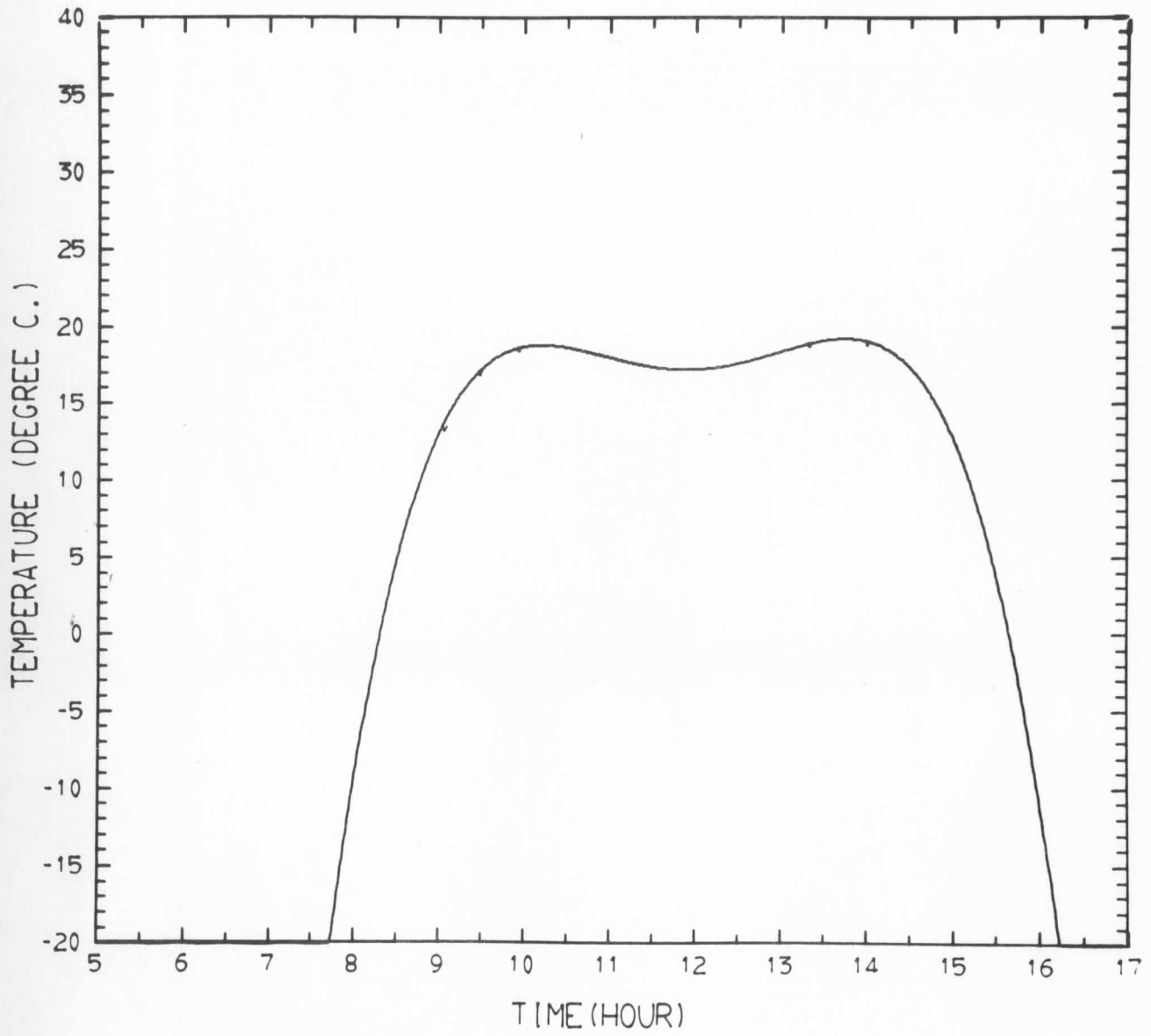
103153 B/N

(8-13-1972)



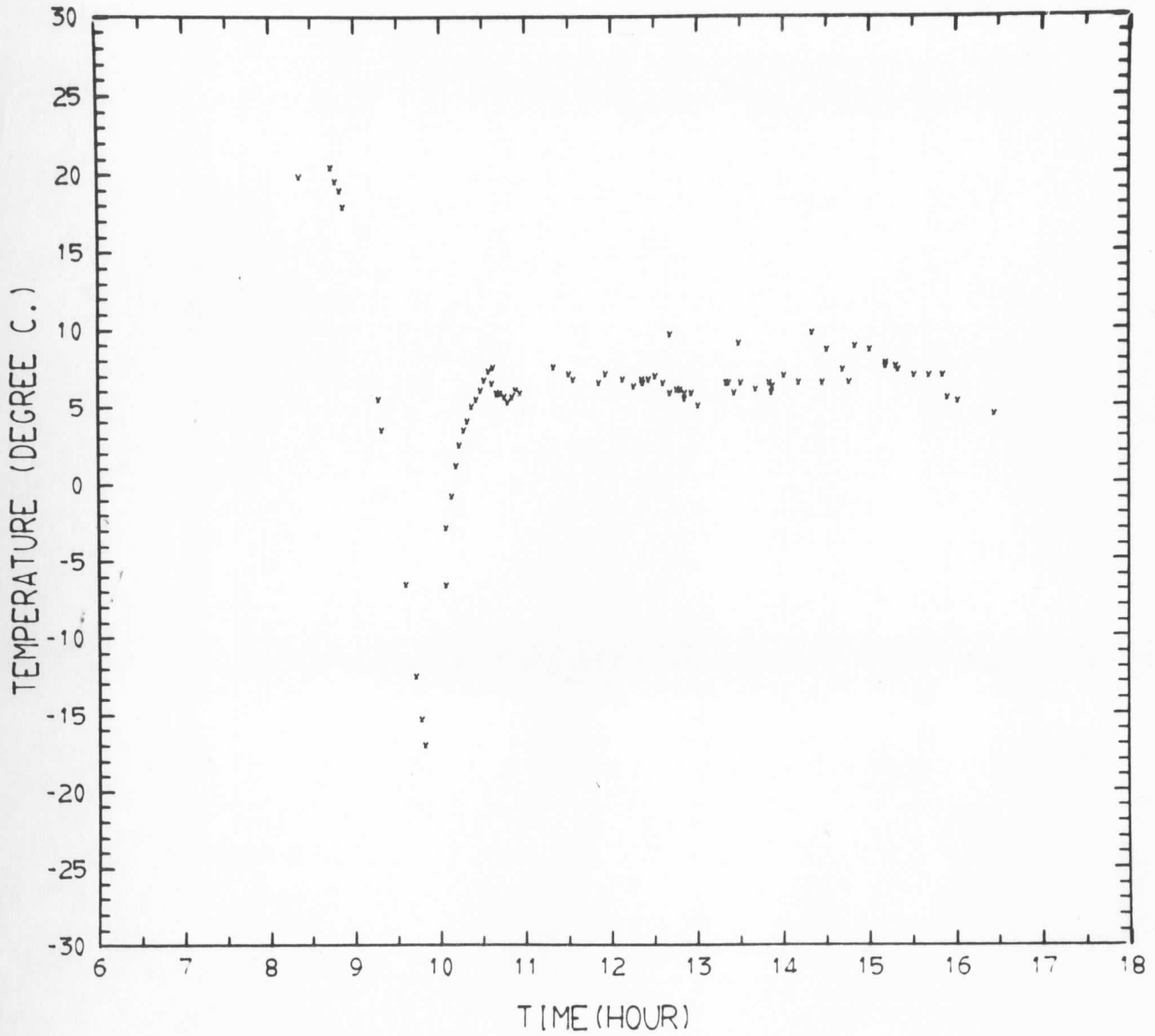
103153 B/N

(8-14-1972)



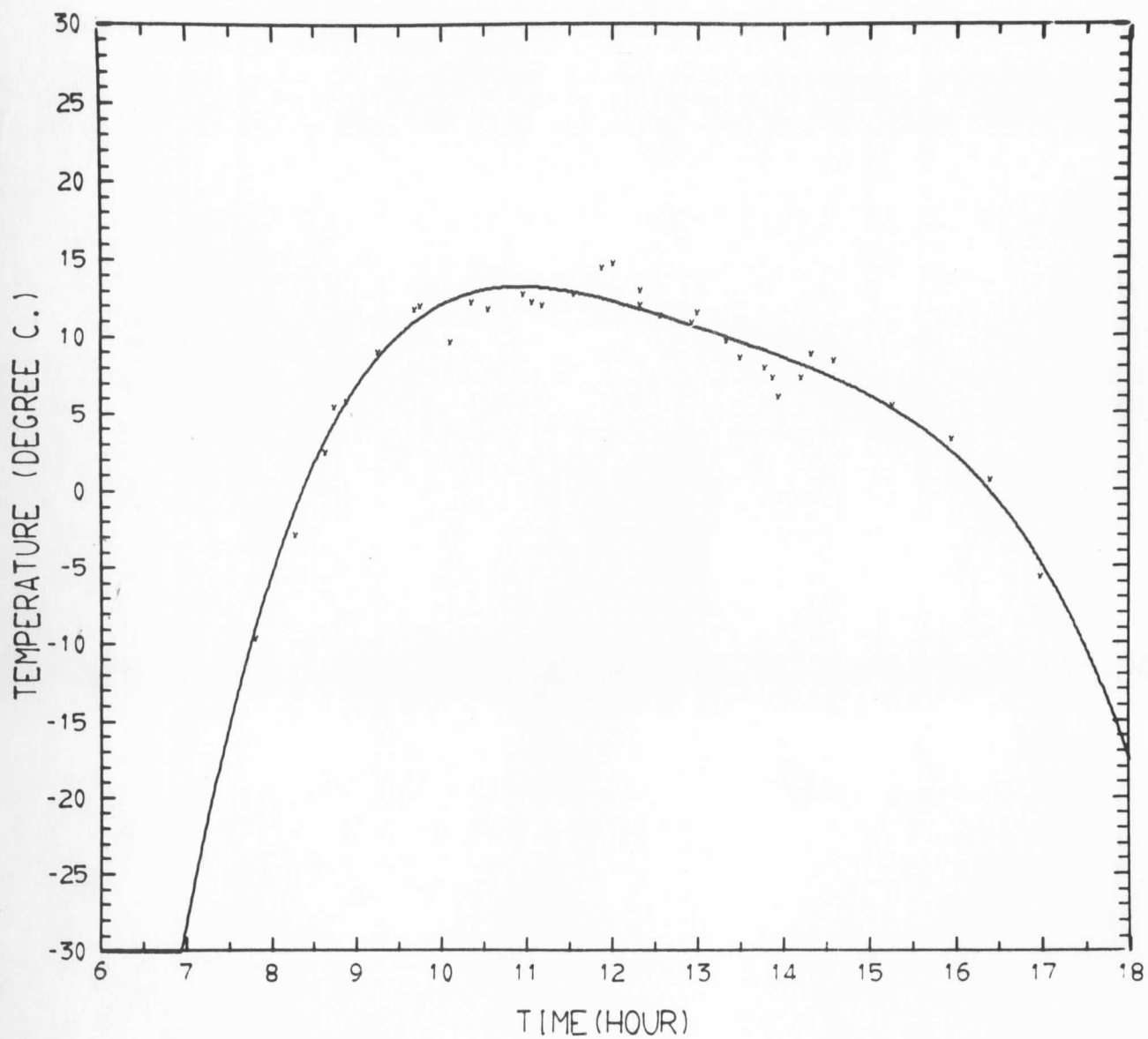
104155 B/F

(7-27-1972)



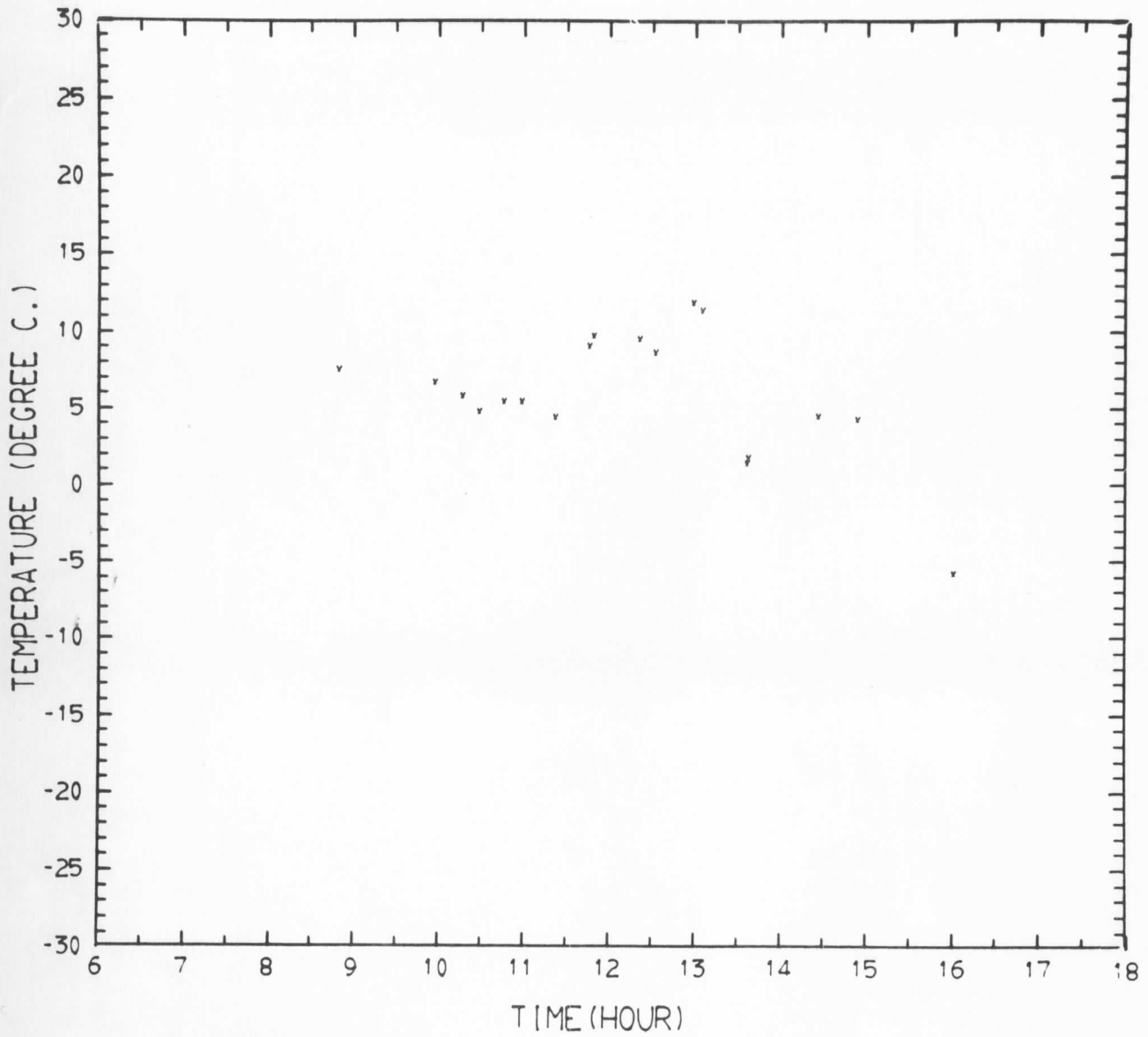
104155 B/F

(7-28-1972)



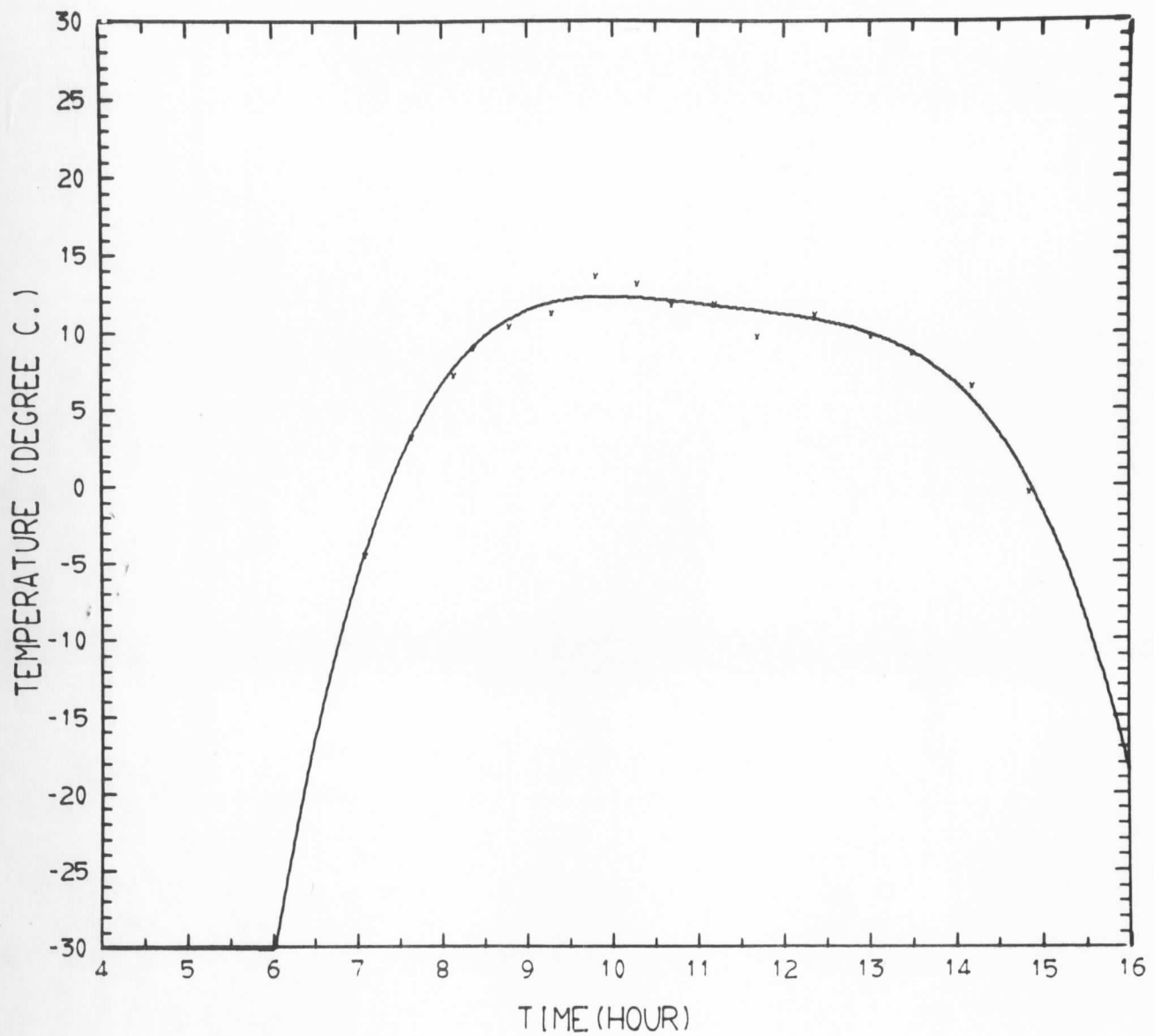
104155 B/F

(7-29-1972)

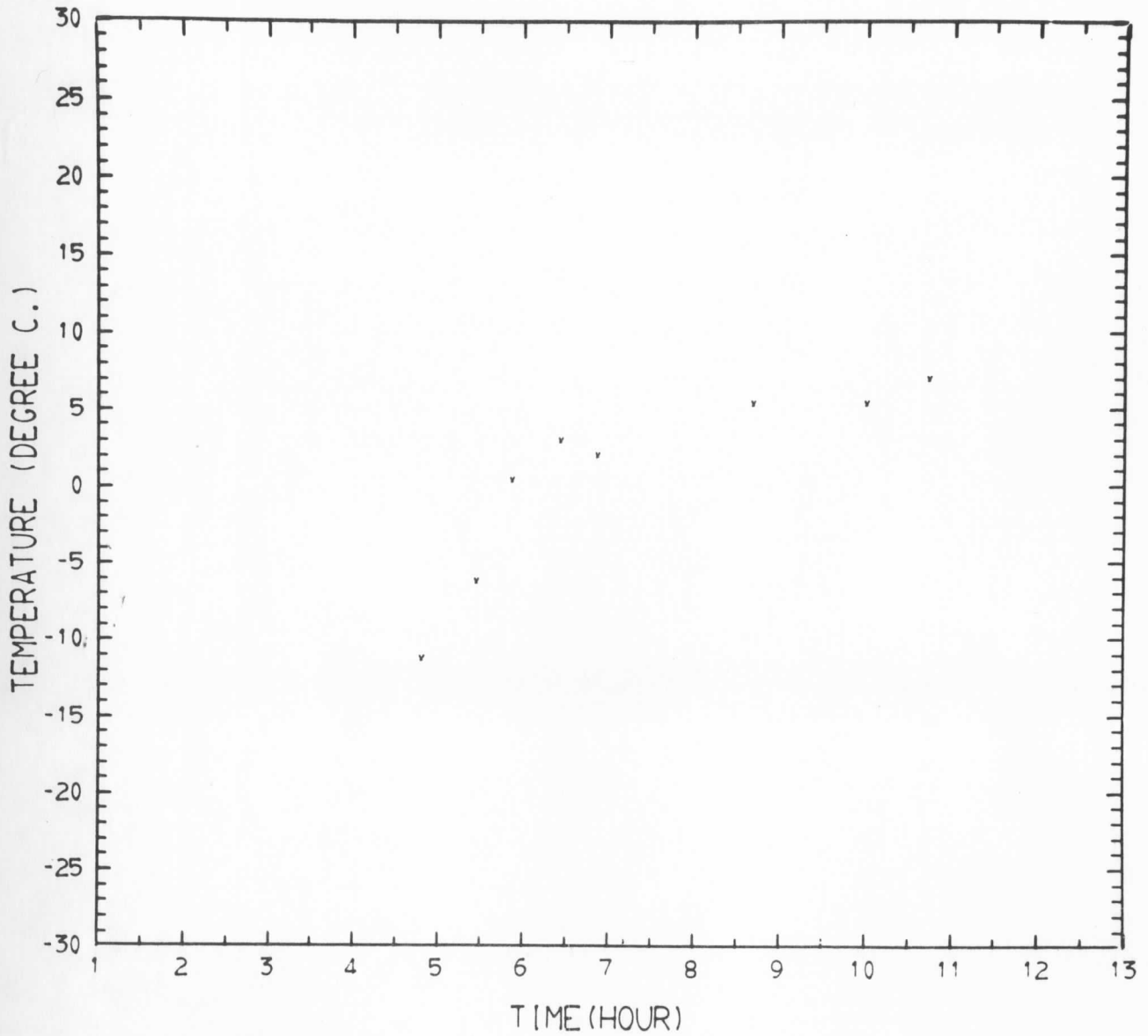


104155 B/F

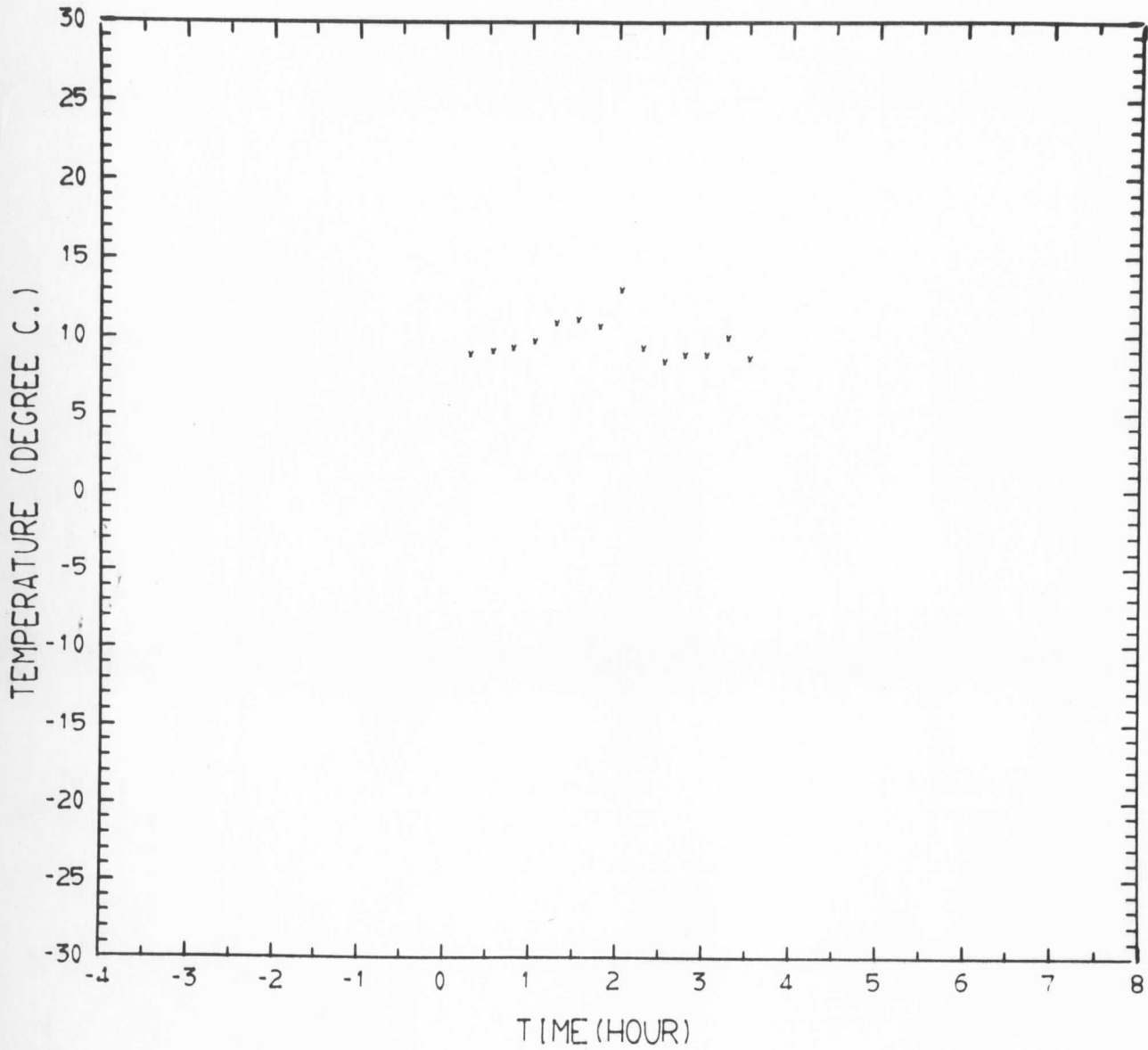
(7-30-1972)



104155 B/F (8- 1-1972)

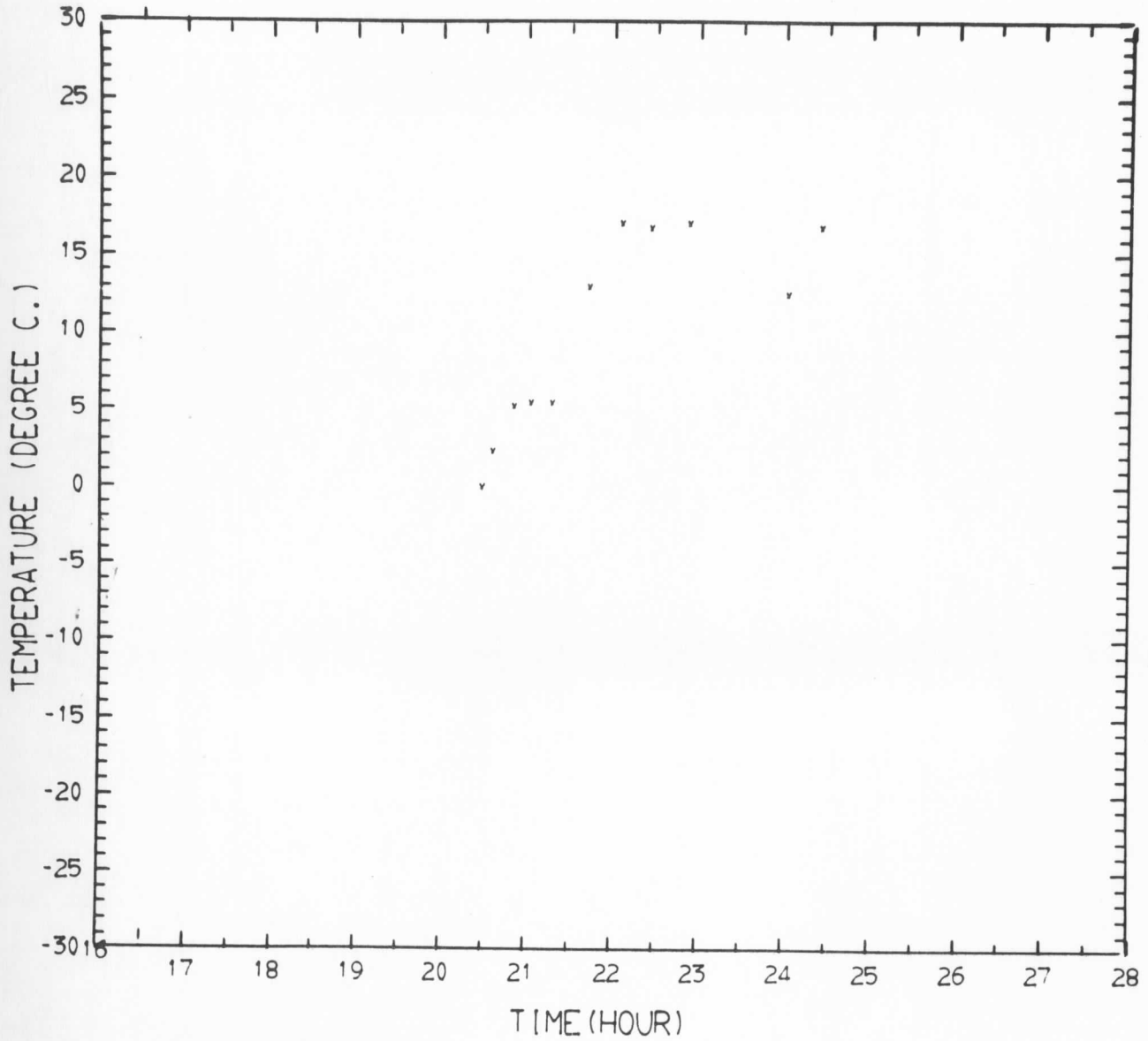


104155 B/F (8-5-1972)

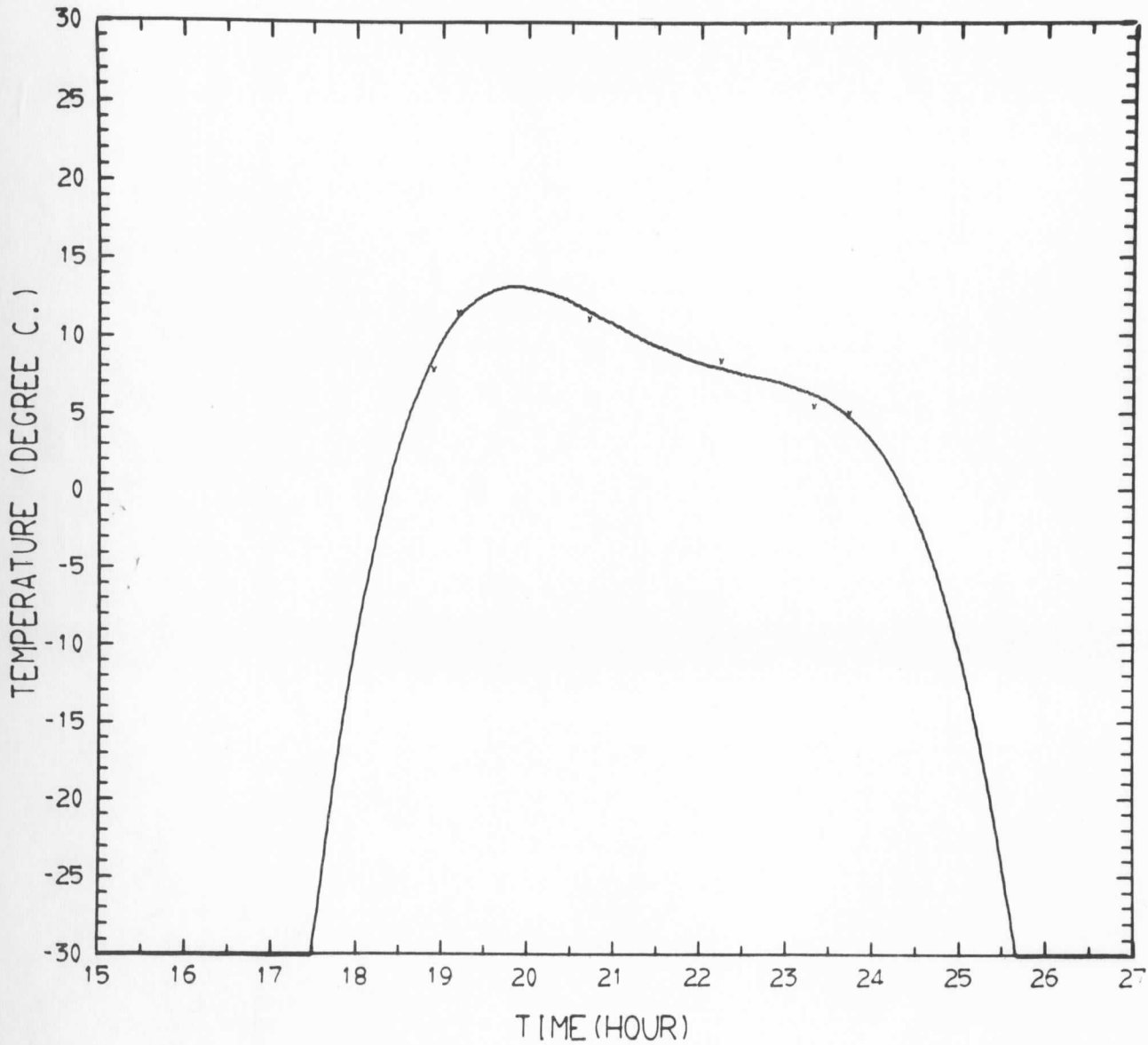


104155 B/F

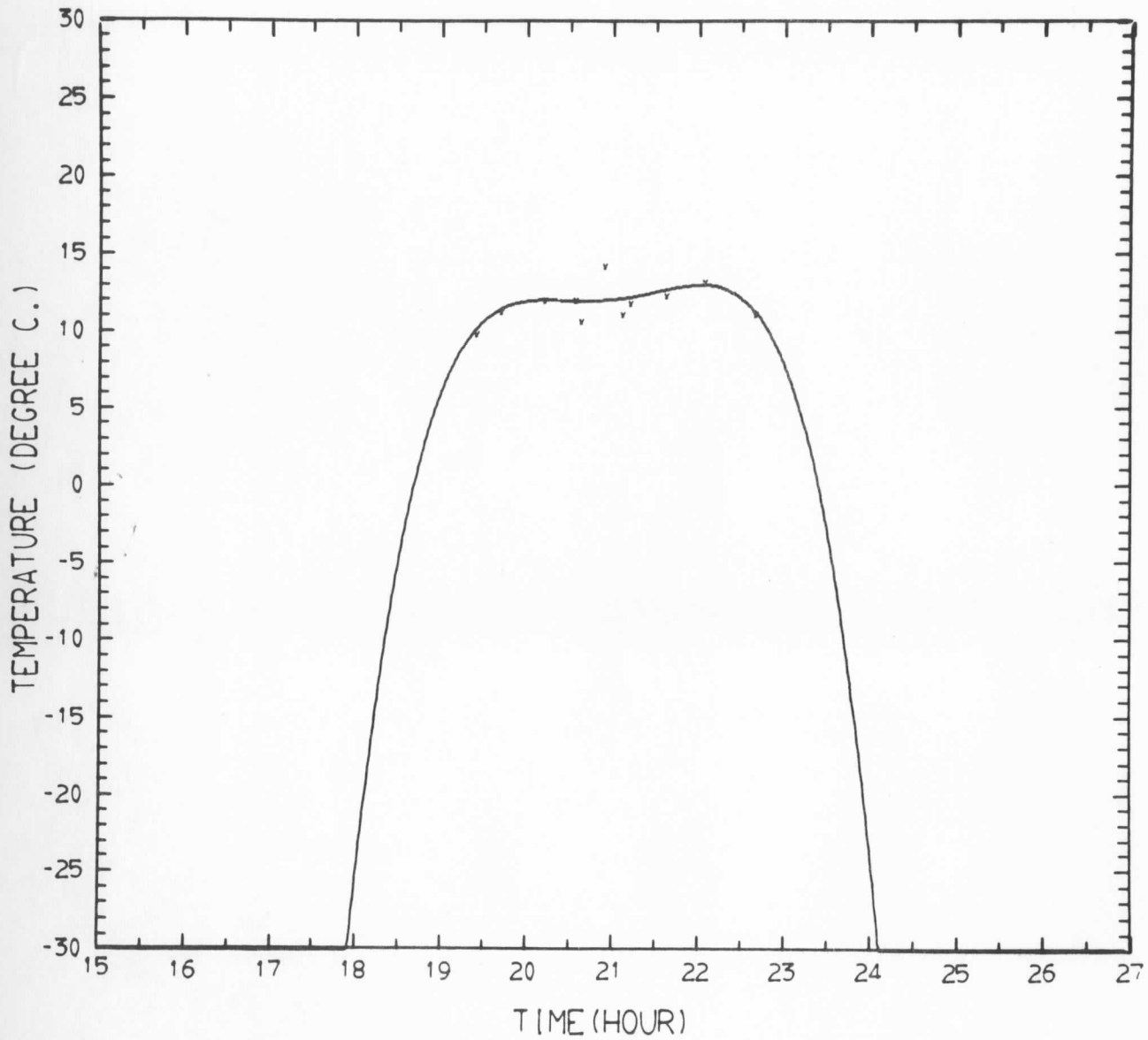
(8- 5-1972)



104155 B/F (8-12-1972)

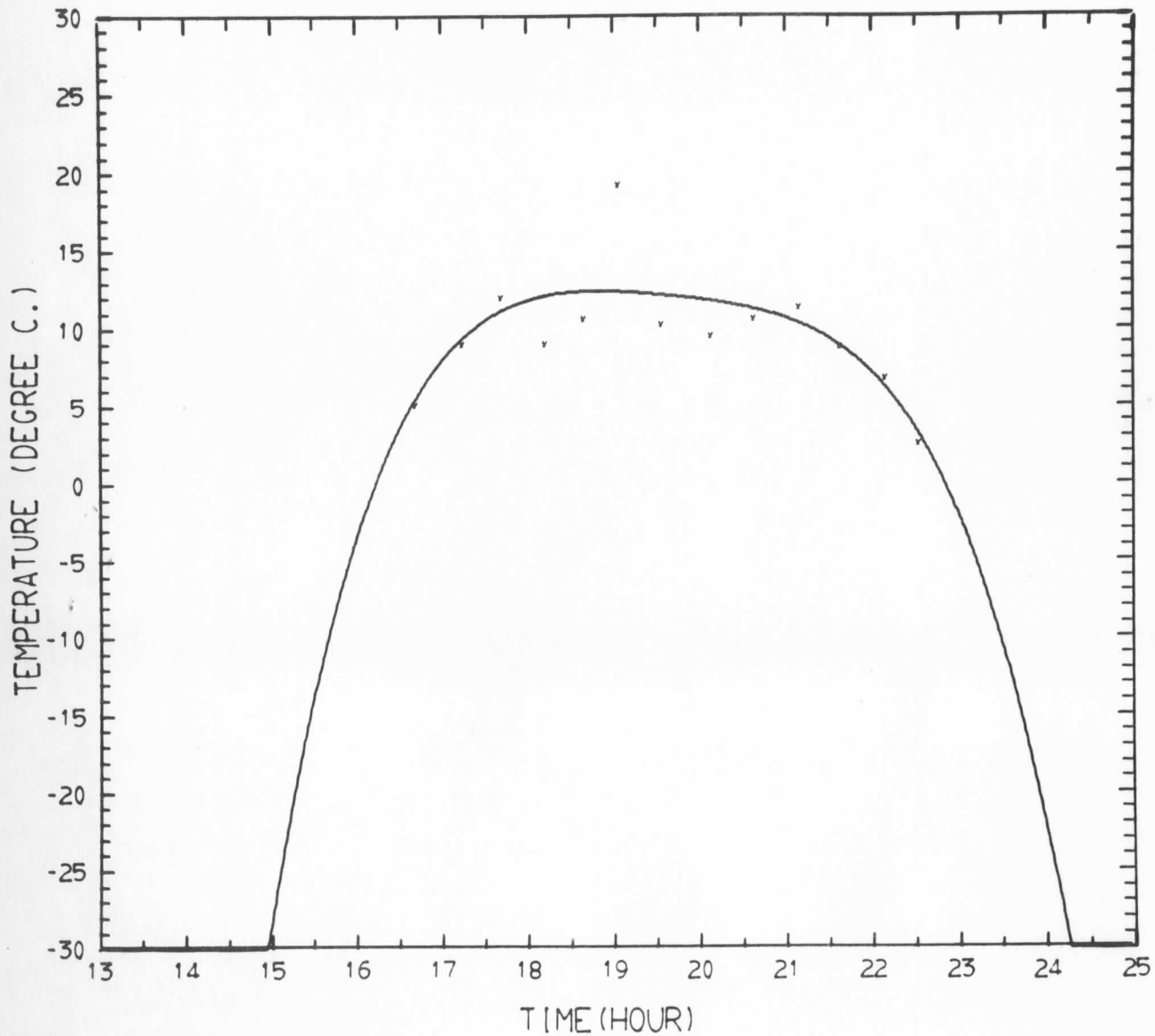


104155 B/F (8-13-1972)



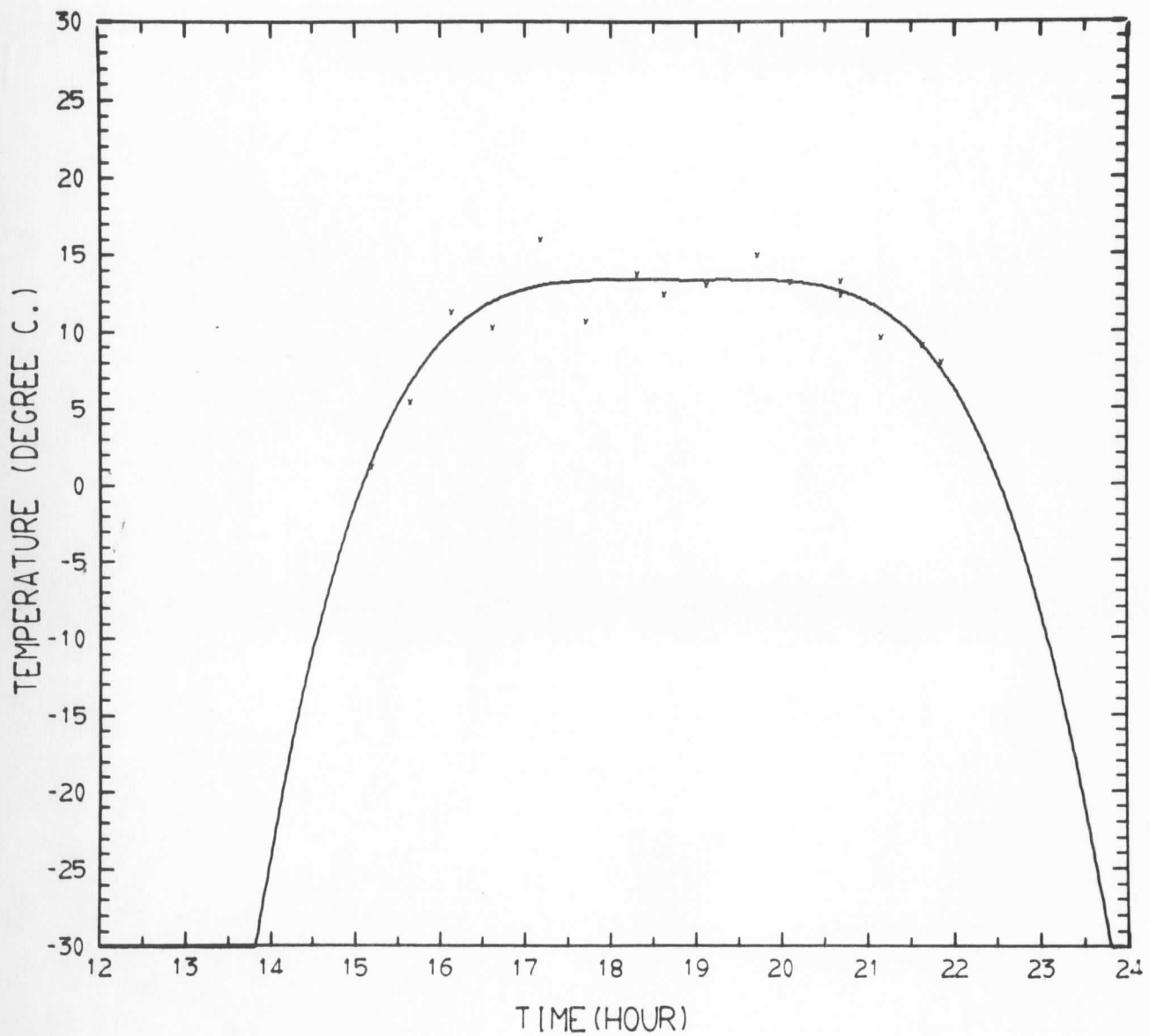
104155 B/F

(8-14-1972)

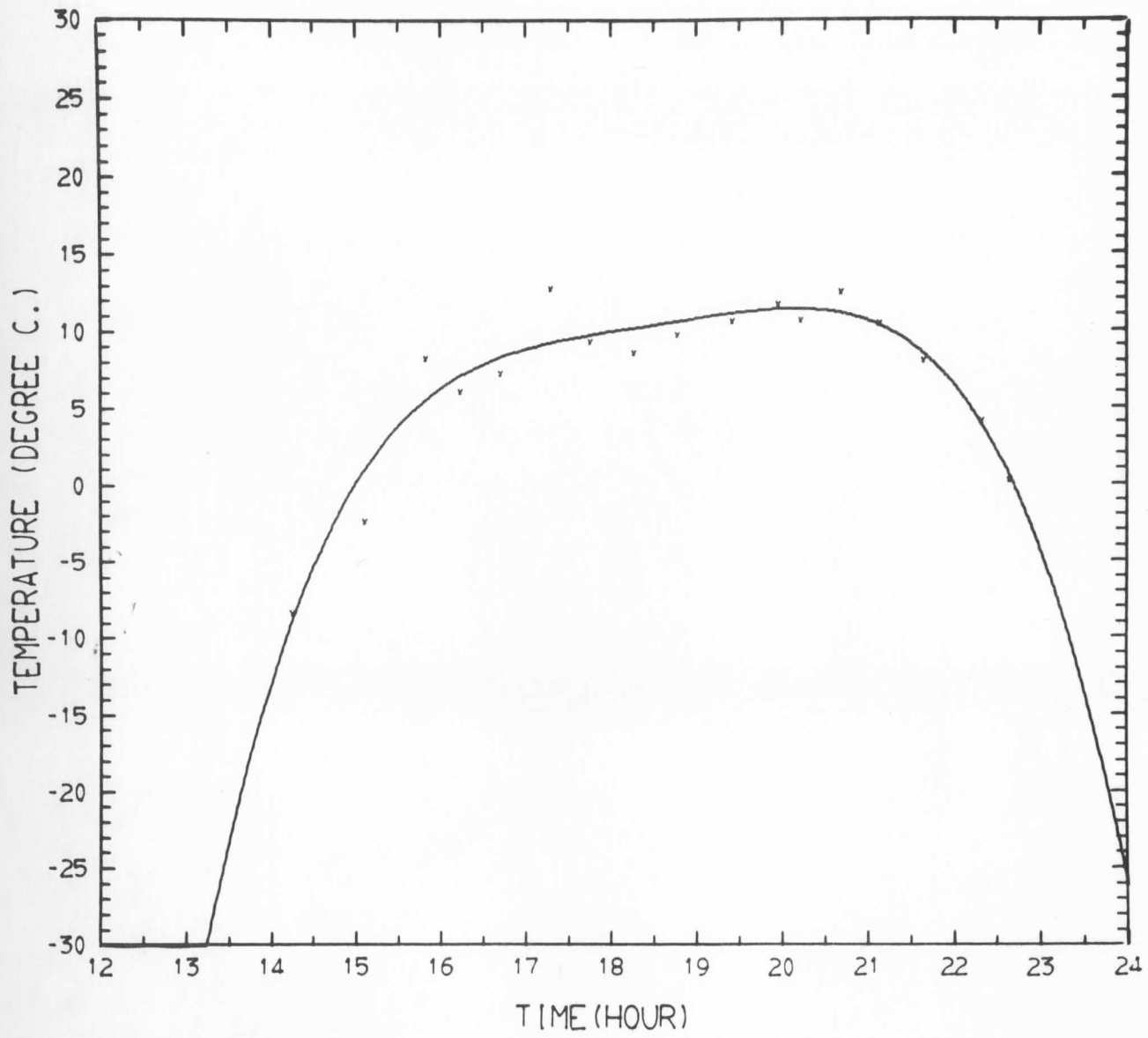


104155 B/F

(8-15-1972)

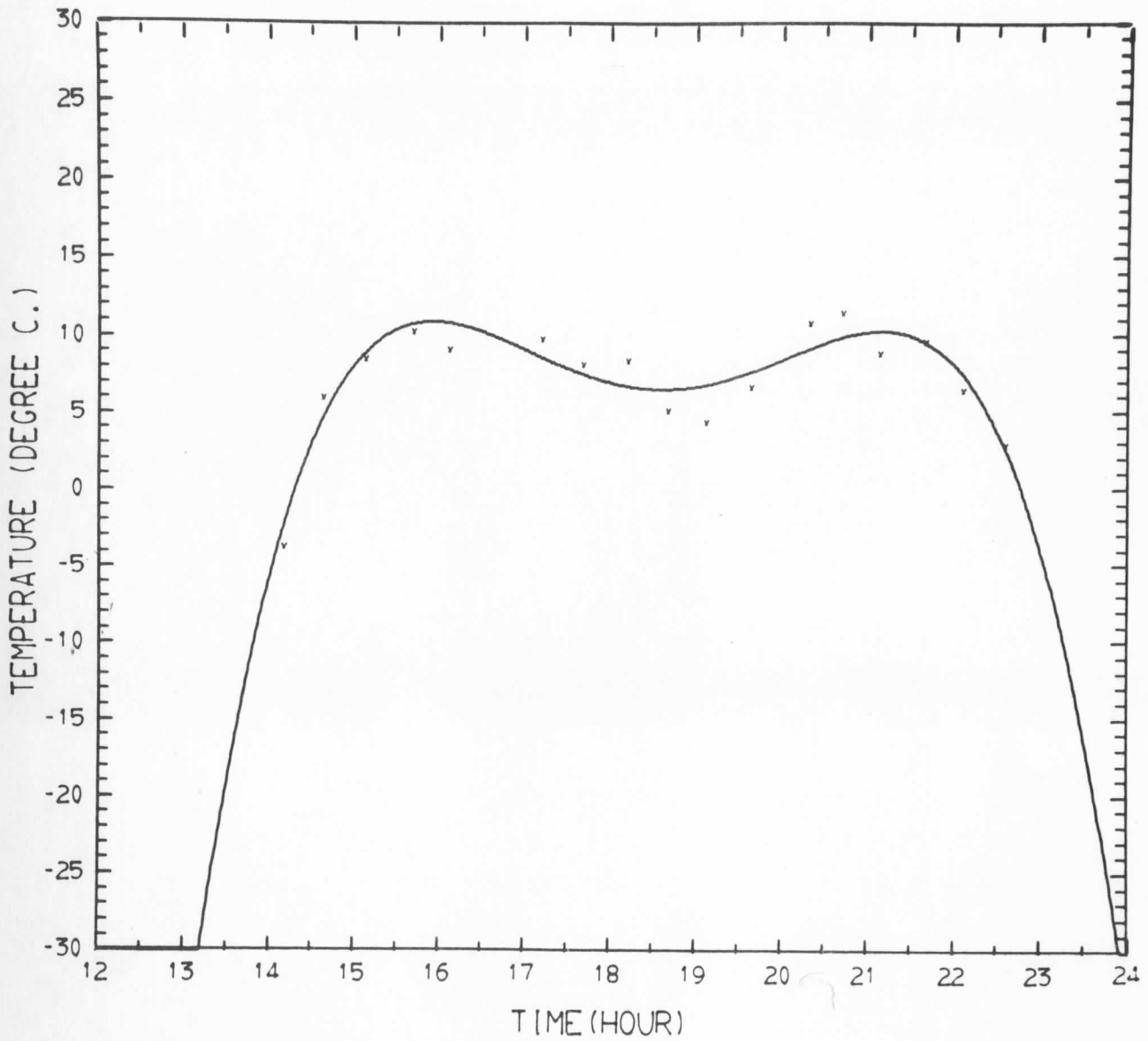


104155 B/F (8-16-1972)



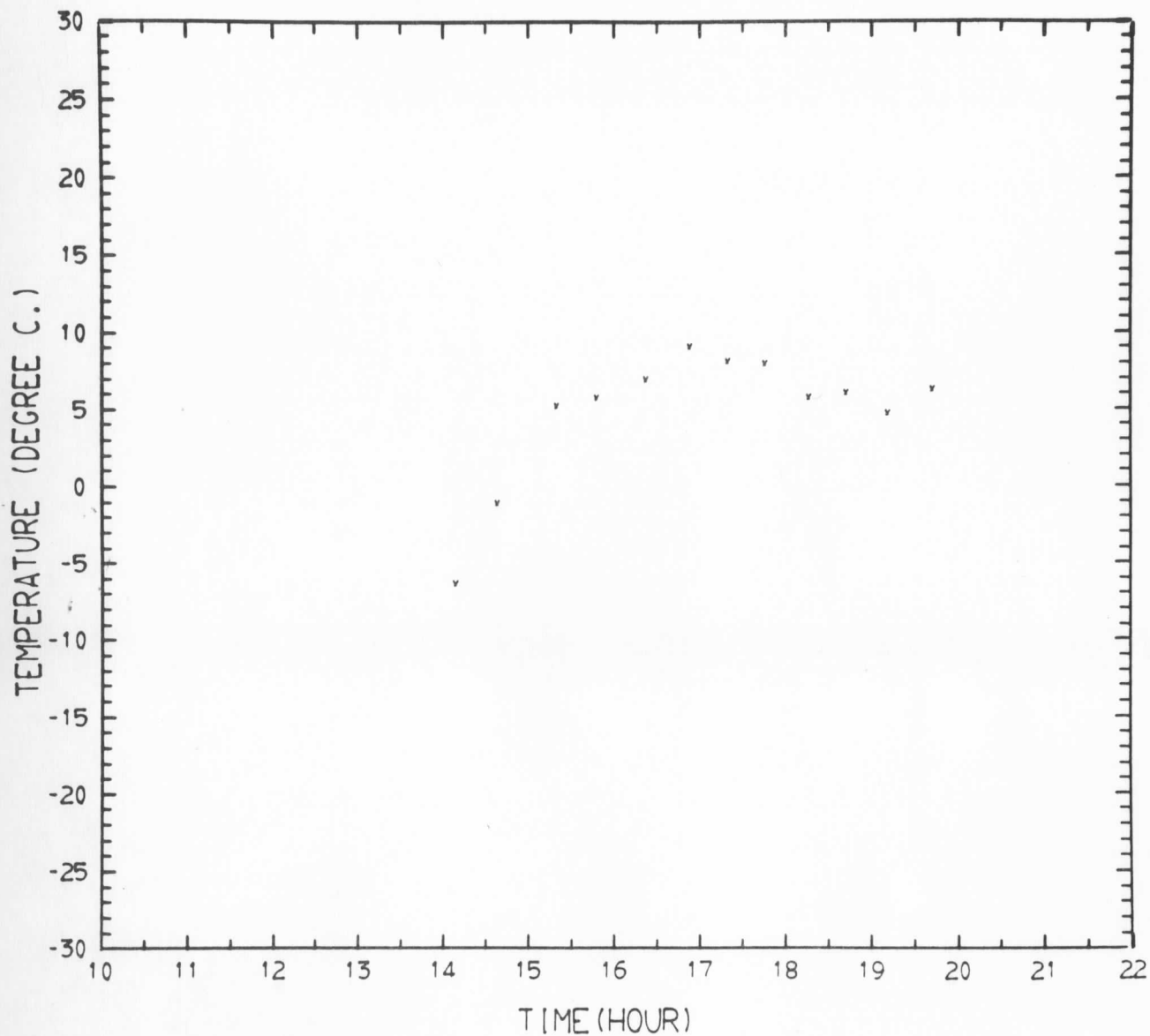
104155 B/F

(8-17-1972)



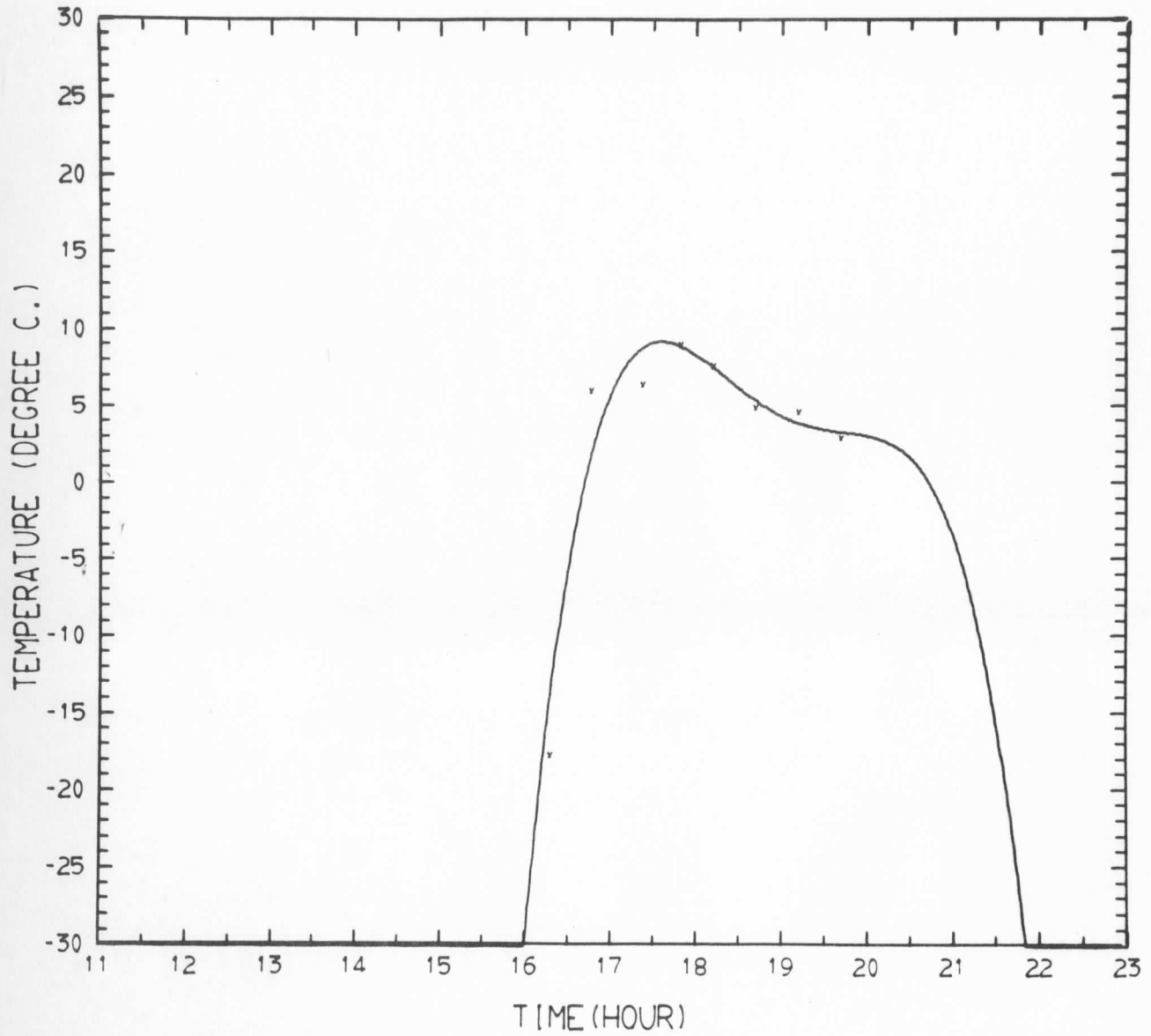
104155 B/F

(8-18-1972)



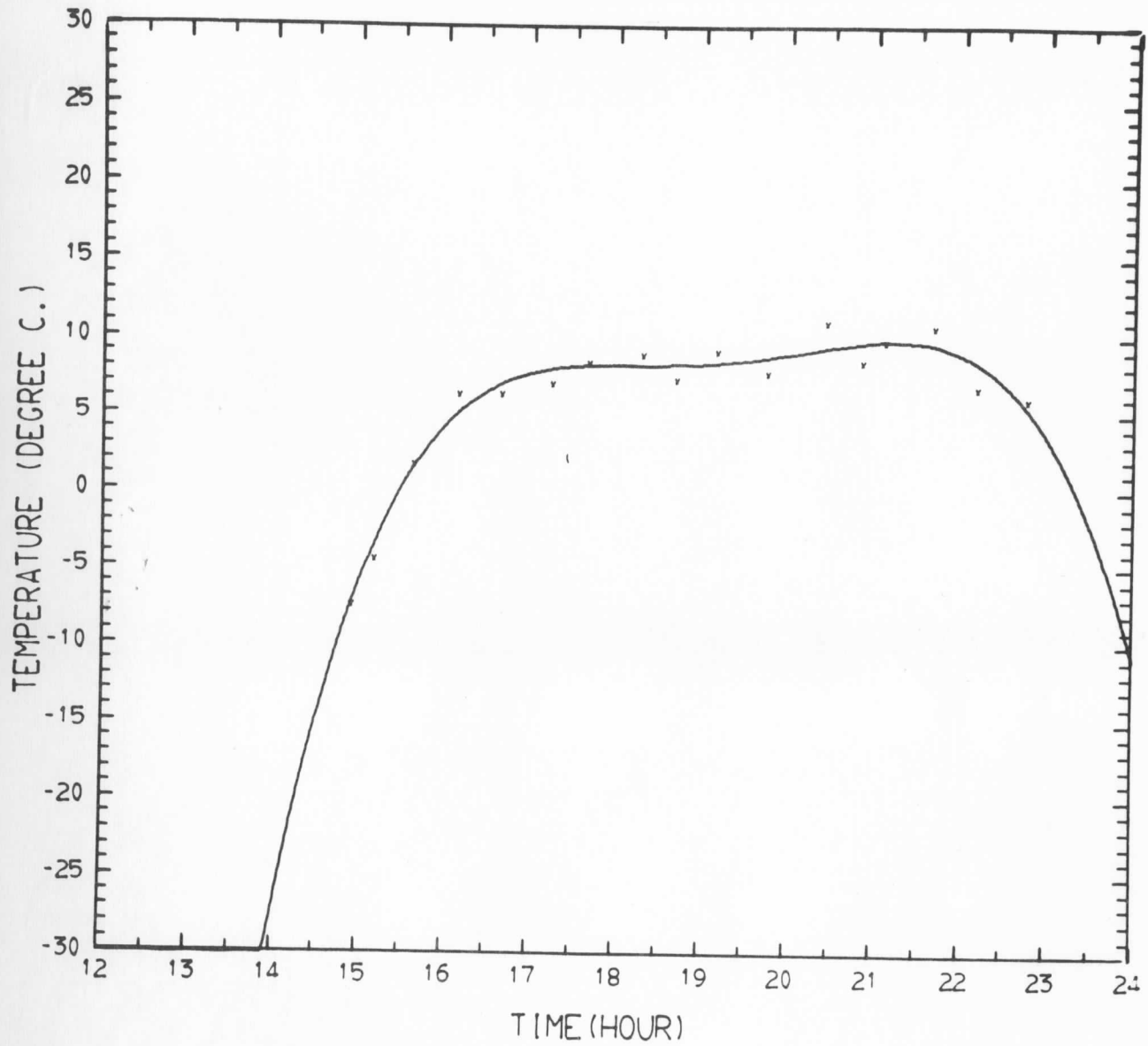
104155 B/F

(8-19-1972)



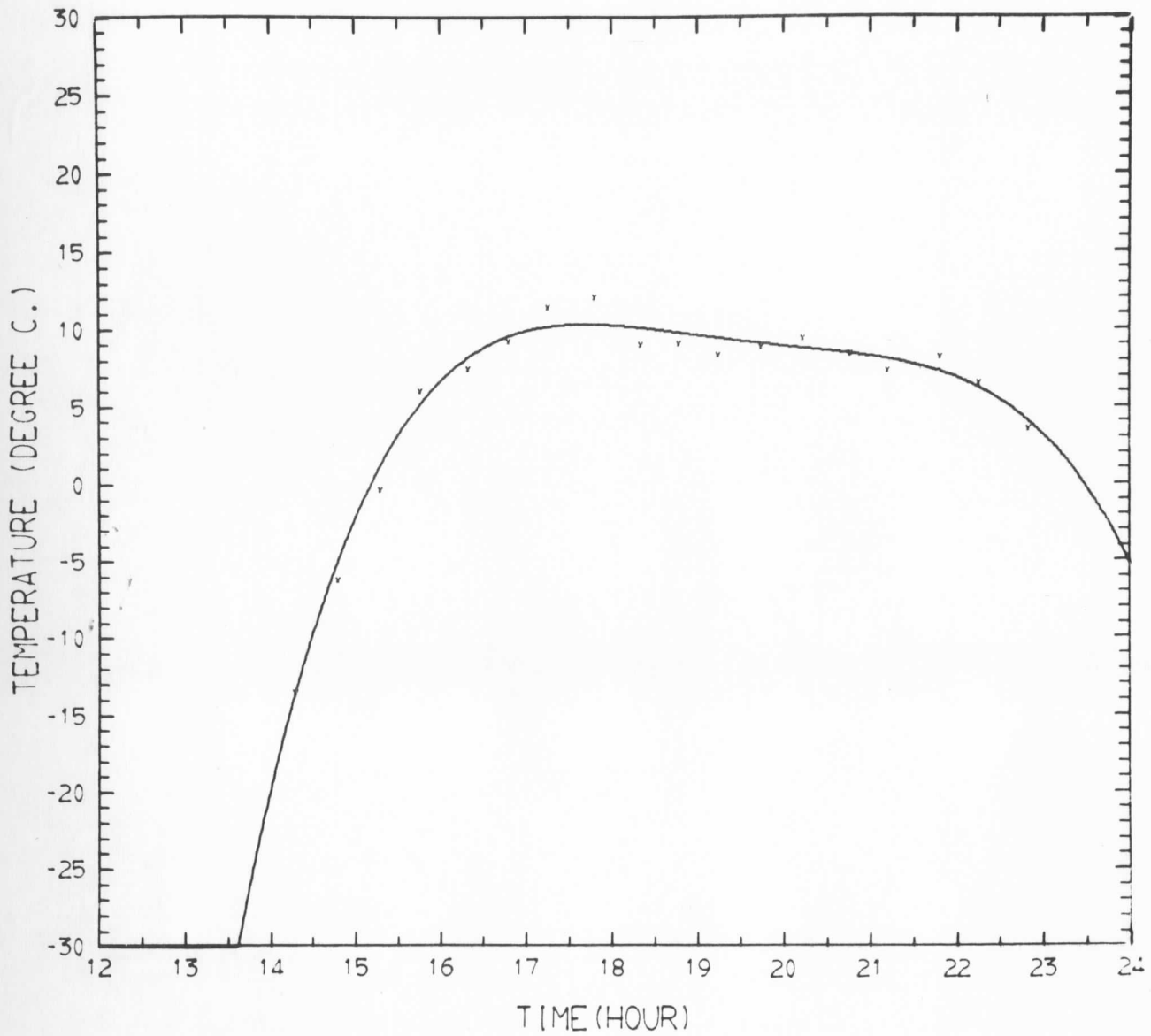
104155 B/F

(8-20-1972)



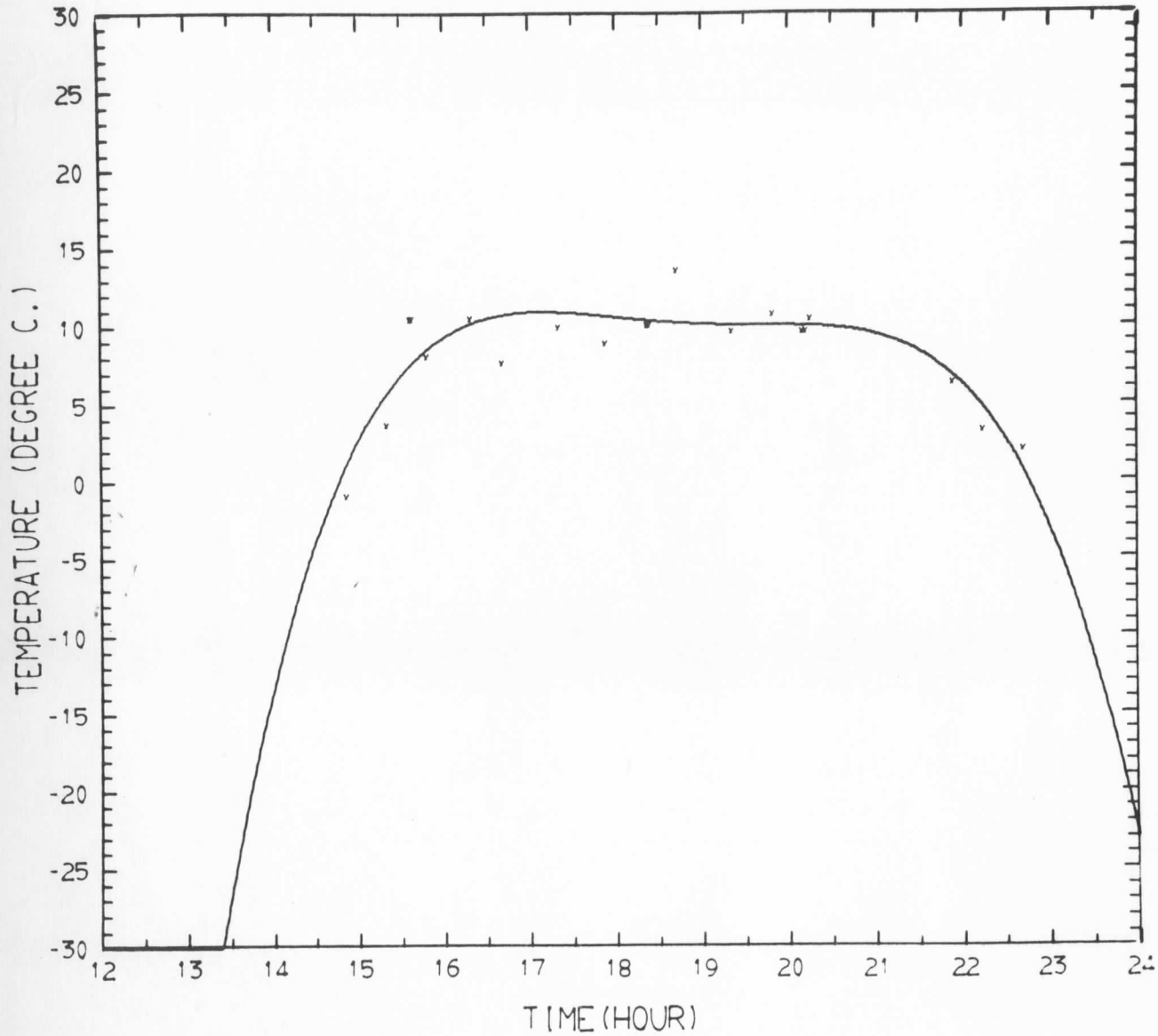
104155 B/F

(8-21-1972)



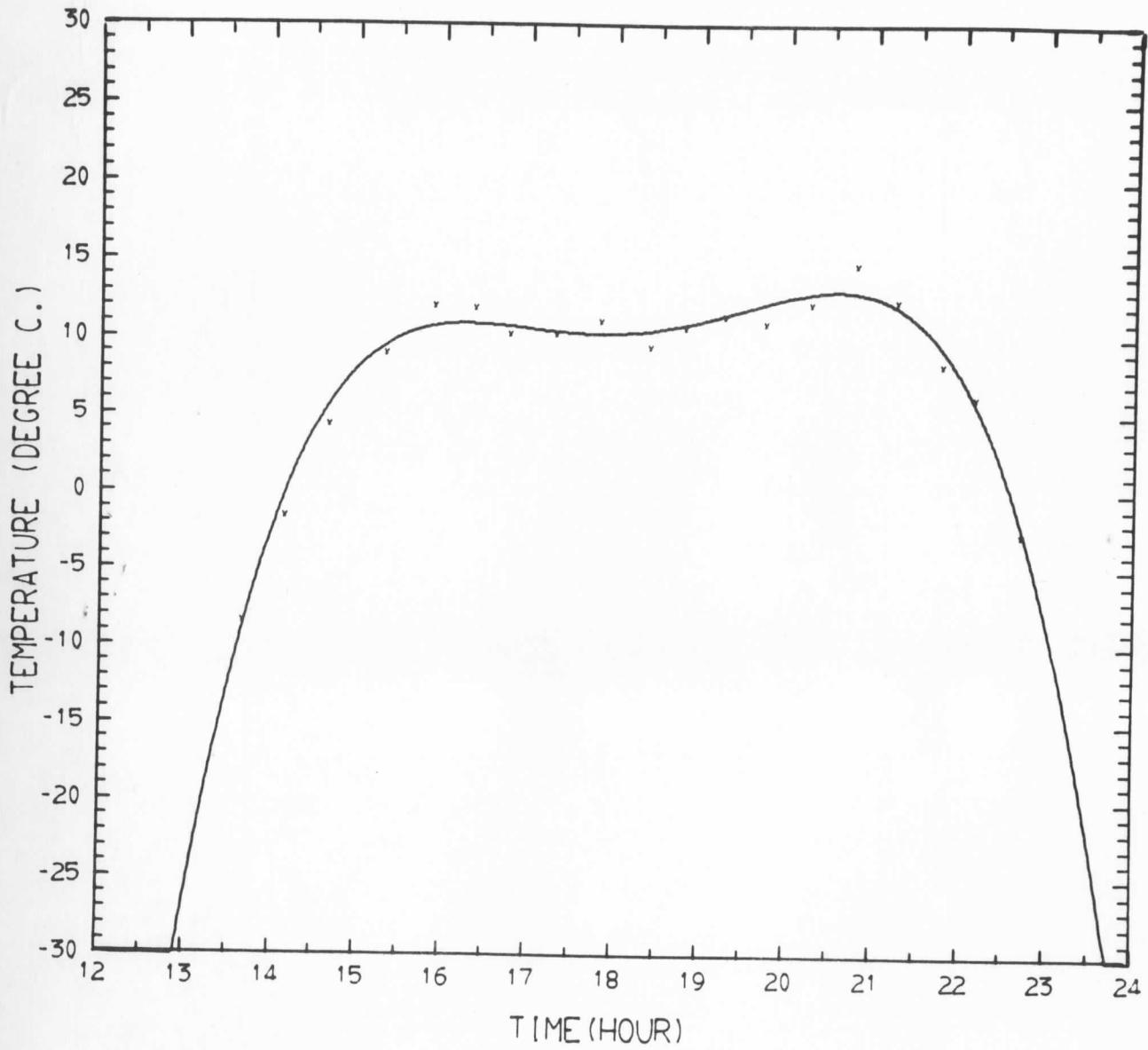
104155 B/F

(8-22-1972)



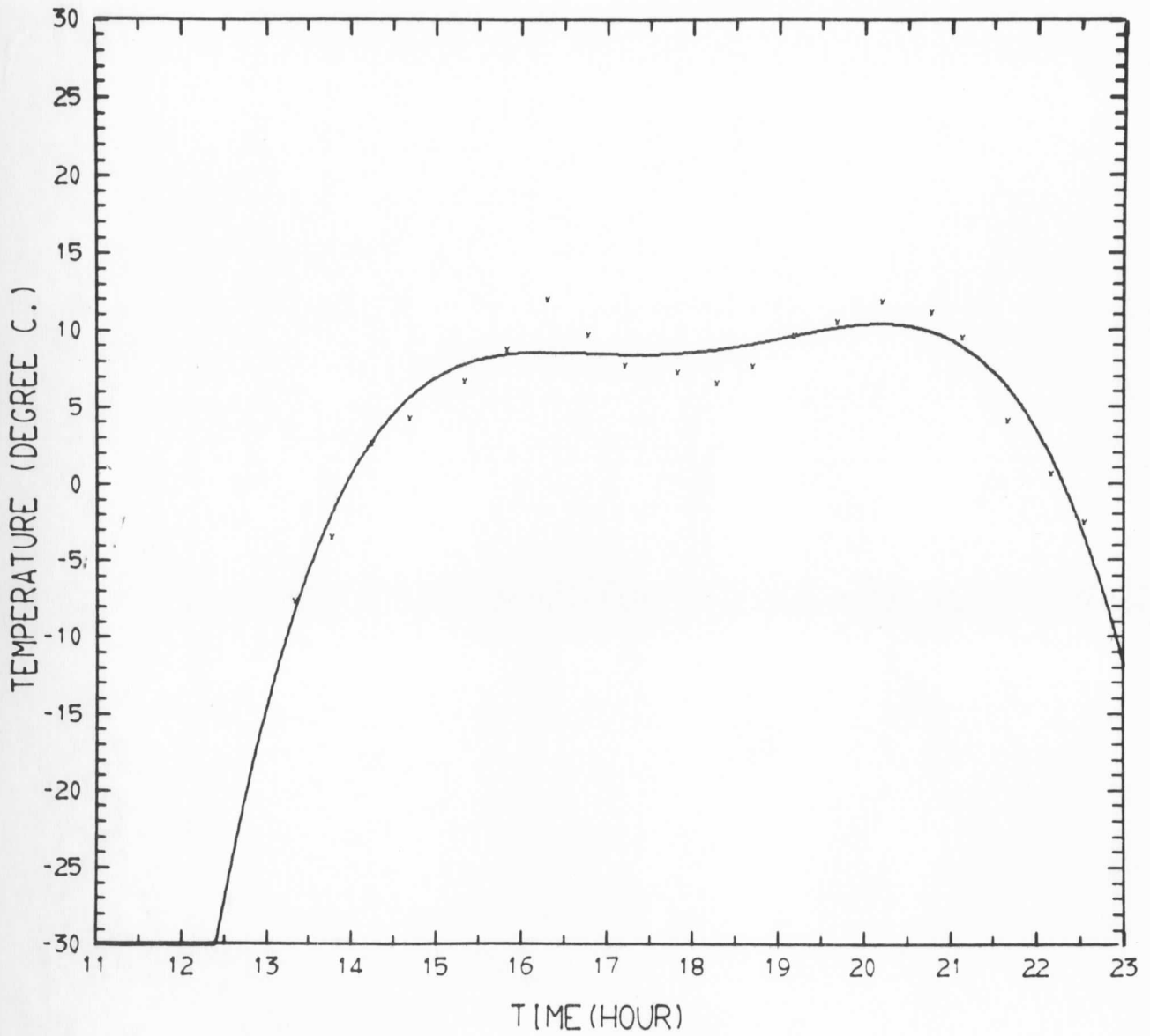
104155 B/F

(8-23-1972)



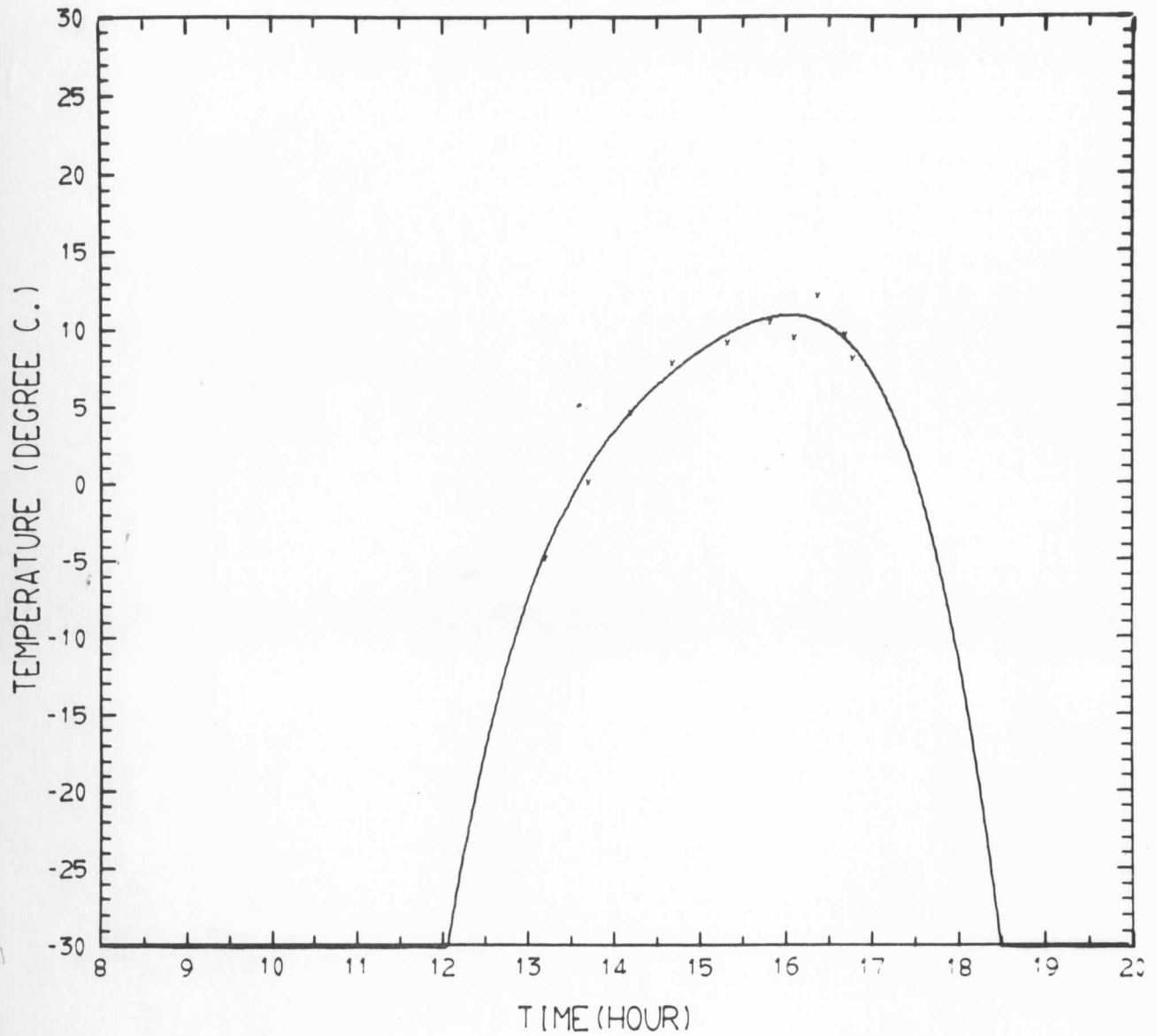
104155 B/F

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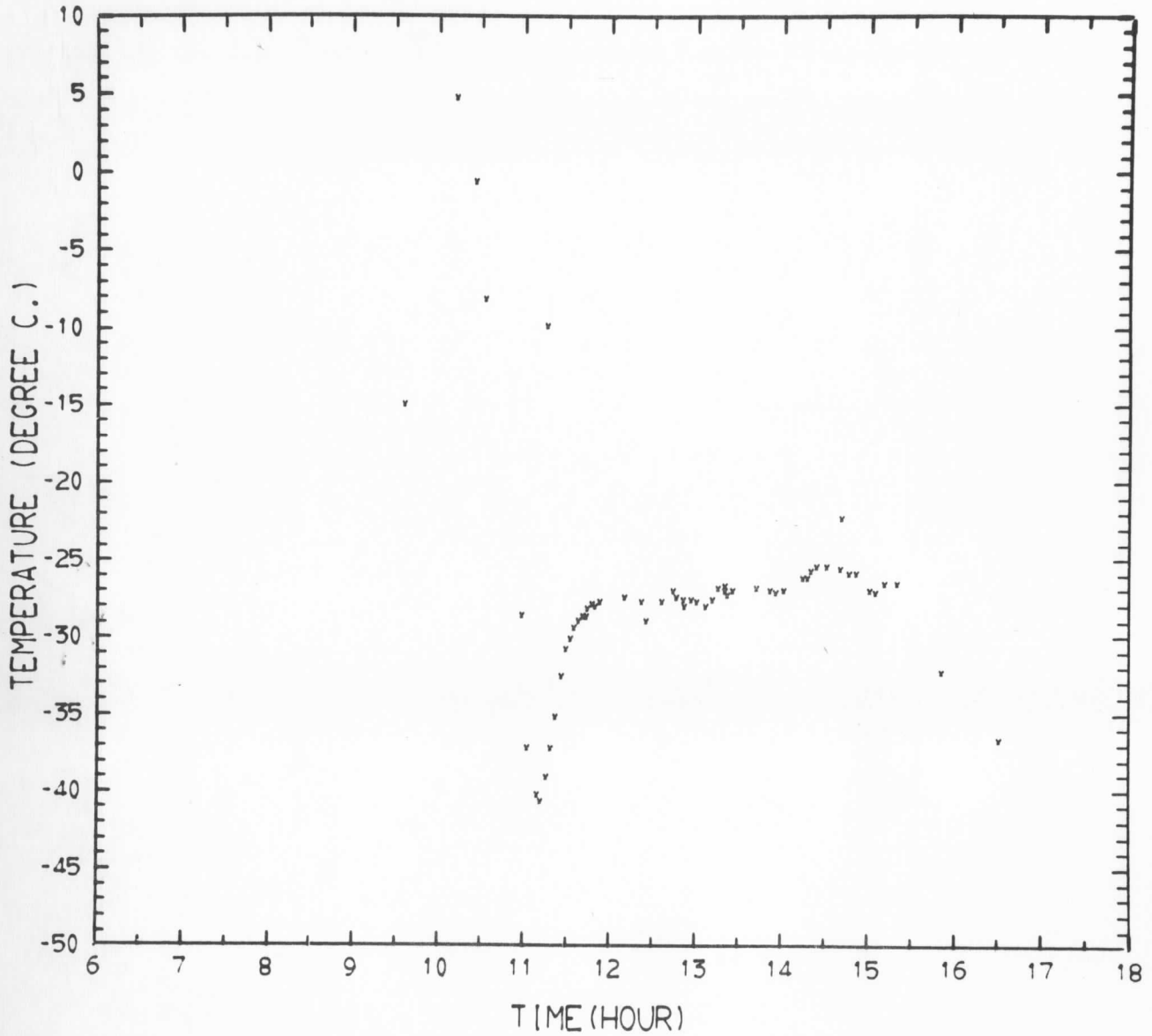
104155 B/F

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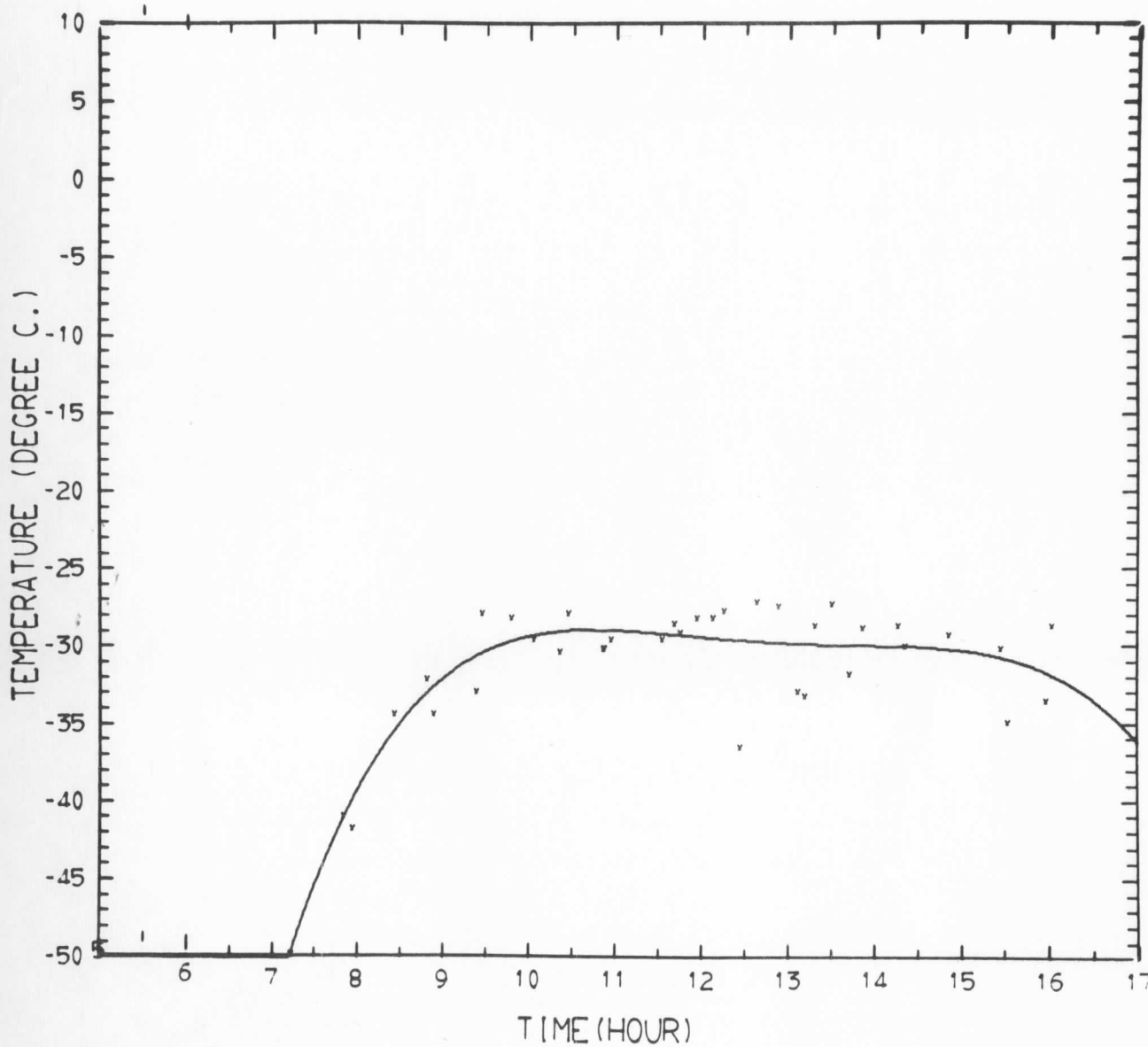
105151 B/C

(7-28-1972)



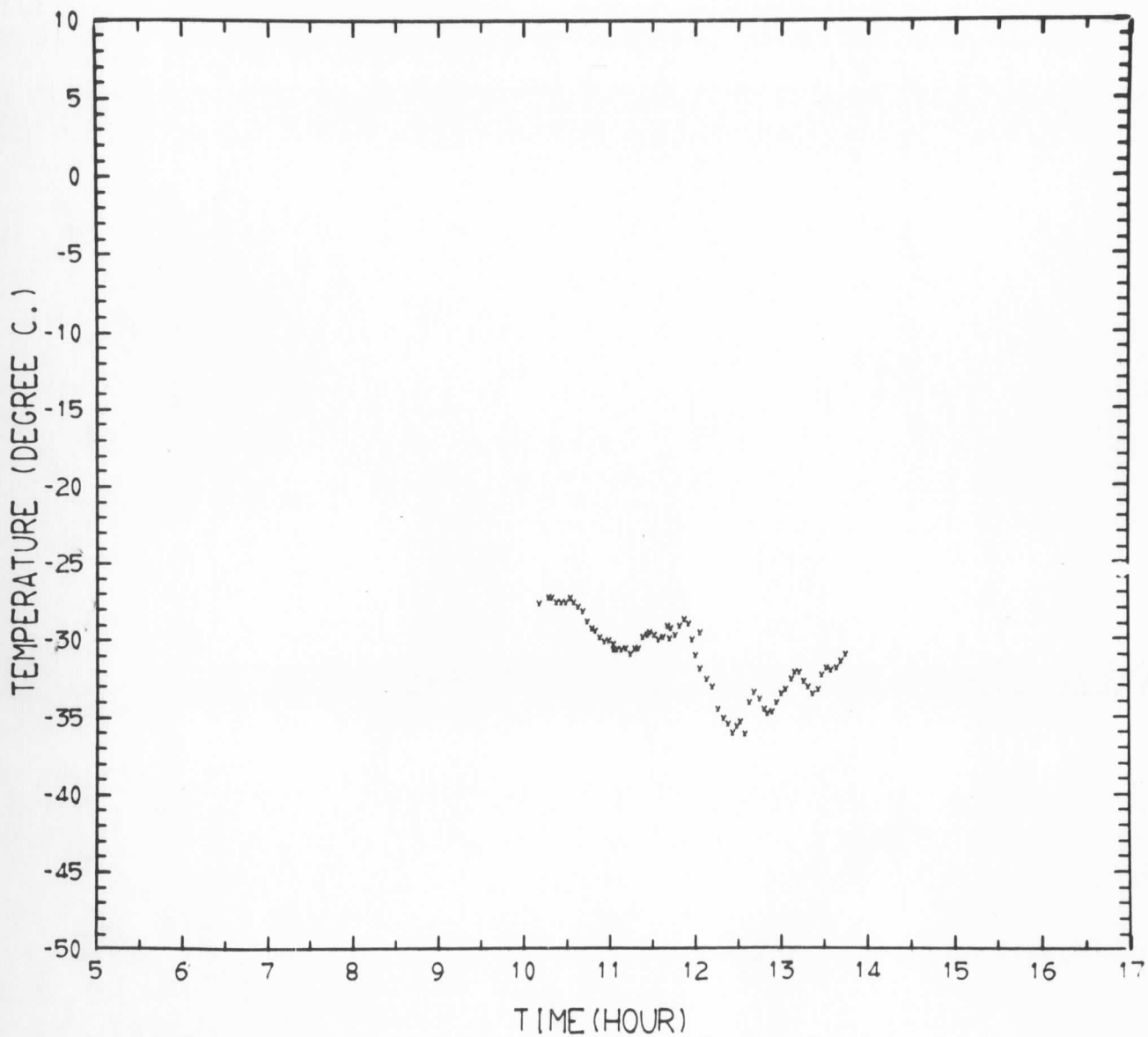
105151 B/C

(7-29-1972)



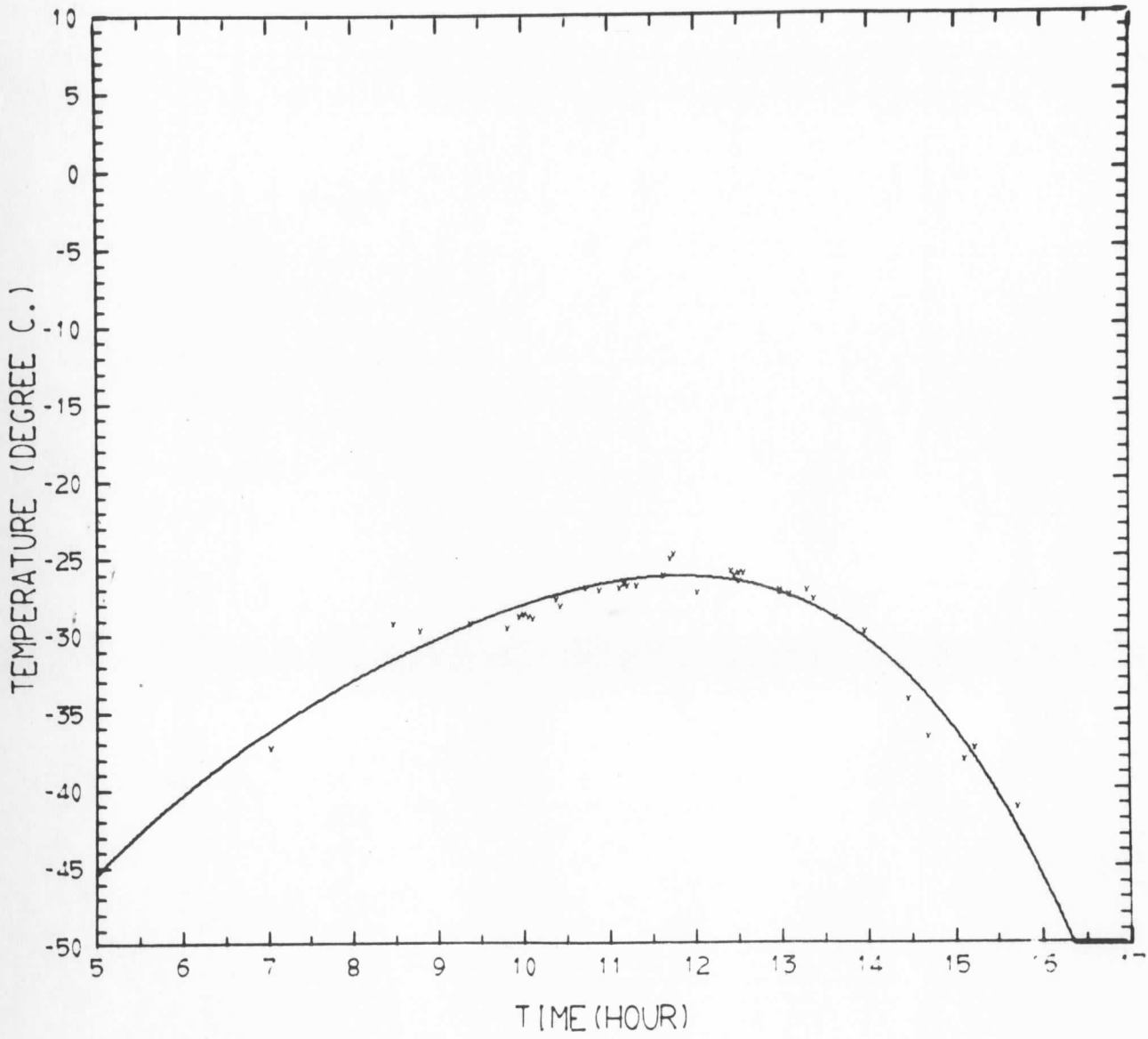
105151 B/C

(7-30-1972)



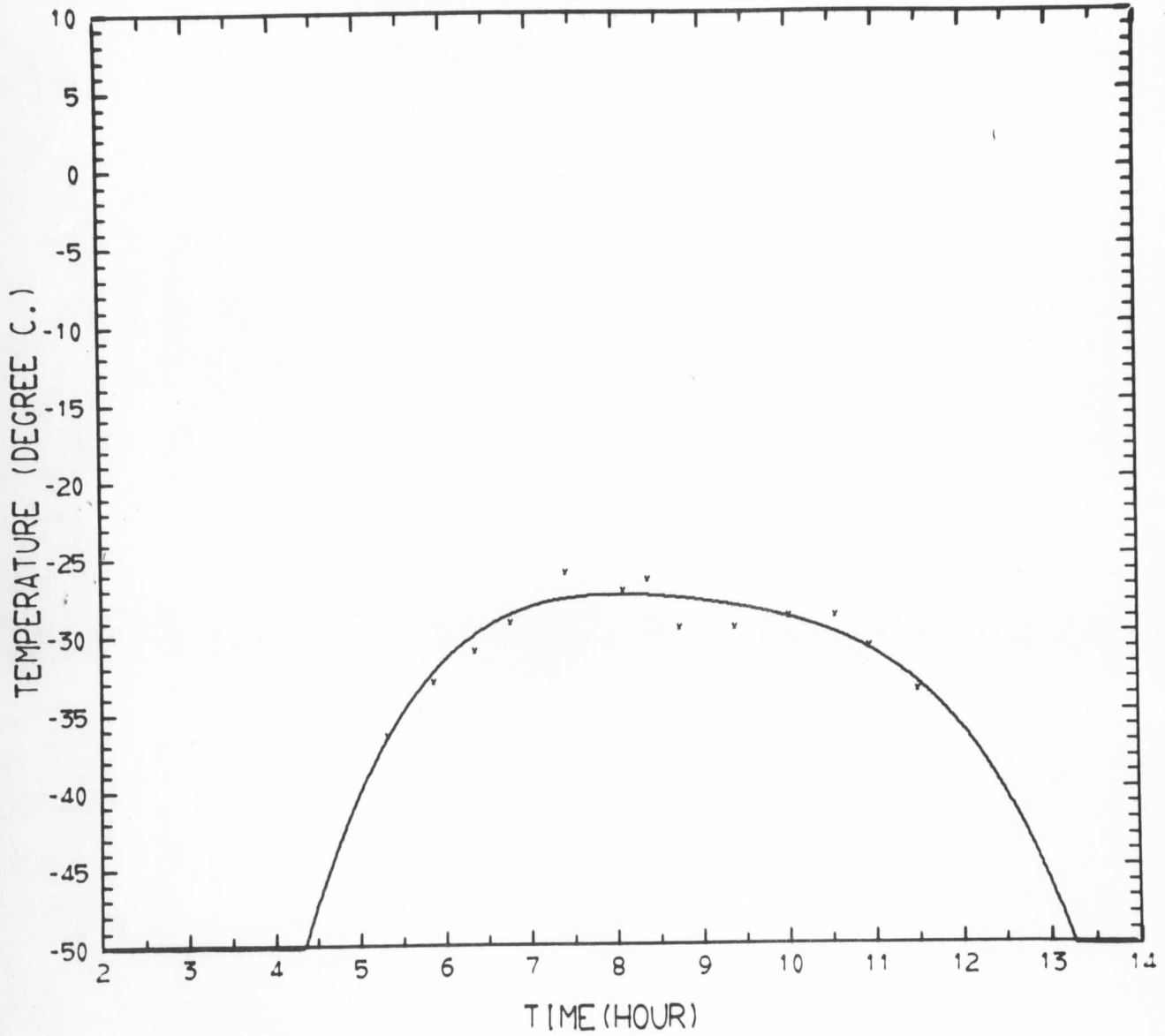
105151 B/C

(7-31-1972)



105151 B/C

(8- 2-1972)



VI. WINDS ALOFT, ASCENSION ISLAND JULY-AUGUST 1972

A. TABLE VI-1. 150 MB CONDITIONS

DATE	FLIGHT NO.	RADAR WIND @FLOAT ALT.	150 MB			RAWINSONDE	
			Height (meters)	Temperature (degrees)	Wind (knots)	Elevation (K feet)	Wind (knots)
3 July 72	89154 B/D	258/51	14200	-63.7	260/59	45 49	265/73 260/42
4 July 72			14200	-64.3	280/71	46	280/75
5 July 72	91153/6 NABL/SD	266/66	14180	-64.5	260/64	46	260/67
6 July 72			14170	-64.1	255/61	45	255/70
7 July 72	93155 RDPC	275/63	14170	-66.5	280/63	47	280/62
10 July 72	95152/4 AC/SG	244/38	14230	-68.9	255/37	47	255/37
11 July 72			14190	-67.7	245/32	46 48	245/34 245/30
12 July 72			14200	-66.3	245/19	47	250/18
13 July 72	97152/5 BLCP/UK	281/39	14210	-68.1	285/42	47	230/47
14 July 72	99151/3	262/31	14220	-66/1	270/42	48	260/38
15 July 72			14230	-64.5	265/38	48	255/34
16 July 72			14210	-64.7	265/46	46 48	270/44 255/49
17 July 72	100155 A/J		14200	-67.1	235/30	46 48	245/46 220/30
18 July 72			14200	-66.9	255/20	47	255/19
19 July 72	101151/5 AP/KW	304/21	14200	-66.9	275/26	47	280/25
20 July 72			14200	-63.9	280/49	46 48	280/50 280/46
21 July 72	102156 B/G	285/74	14200	-66.1	290/69	47	290/69
22 July 72			14160	-68.1	290/76	46	290/76
23 July 72			14190	-67.9	275/54	48	275/52
24 July 72			14170	-67.3	260/27	45 49	255/21 265/35
25 July 72			14180	-65.1	265/37	48	270/34

DATE	FLIGHT NO.	RADAR WIND @FLOAT ALT.	150 MB			RAWINSONDE	
			Height (meters)	Temperature (degrees)	Wind (knots)	Elevation (K ft)	Wind (knots)
26 July 72	103153 B/N	249/34	14230	-66.3	255/39	48	255/41
27 July 72	104144 B/F	261/40	14190	-67.7	260/39	45 49	260/35 250/42
28 July 72	105151 B/C	No Radar	14200	-65.9	260/29	47	260/30
29 July 72			14200	-65.5	265/26	47	265/25
30 July 72			14200	-64.7	295/31	48	300/19
31 July 72			14200	-64.9	300/33	47	300/32
1 August 72			14210	-64.7	265/46	47	265/46
2 August 72	106154 AG	256/61	14190	-66.3	260/64	46	260/65
3 August 72	107153 AS	236/59	14190	-65.7	245/60	46 48	250/62 240/57
August 72	108151 B/K	248/53	14180	-65.9	260/56	47	255/55

VI-2

B. WIND PROFILES

ASCENSION ISLAND DATA FOR OCT 1971

M/S

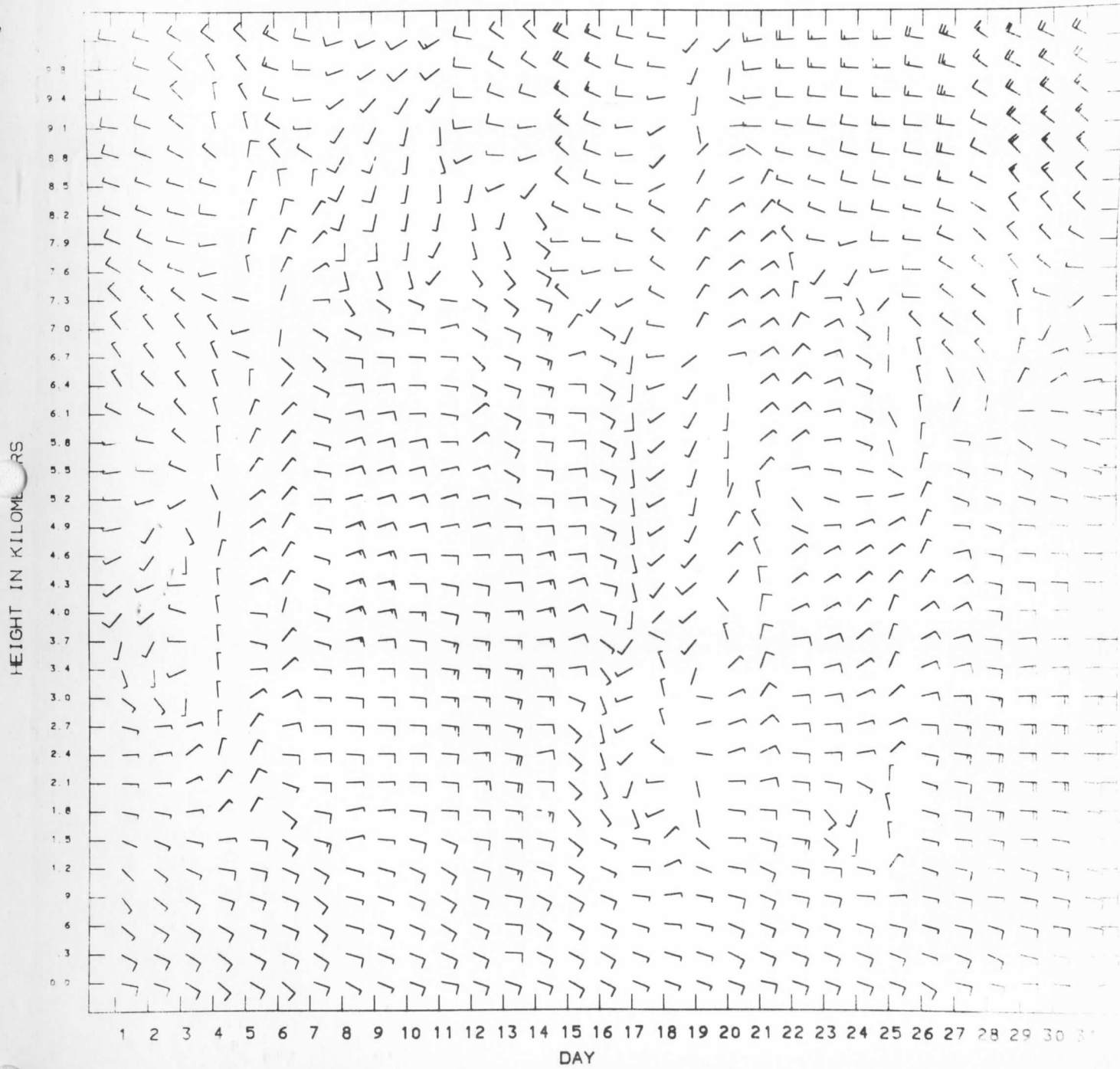


Figure 6-1

ENSION ISLAND DATA FOR OCT 1971

47

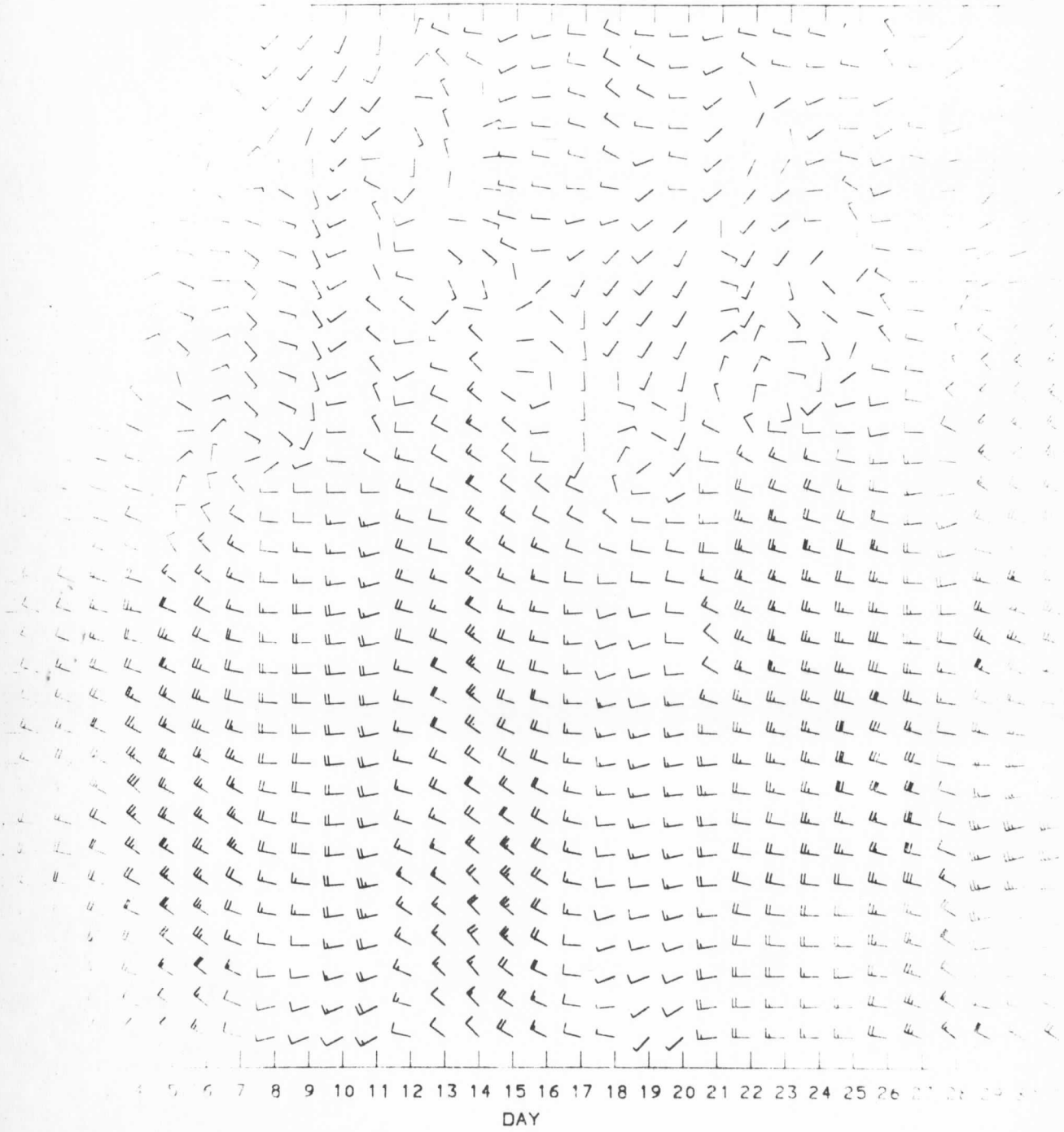


Figure 6-2

ASCENSION ISLAND DATA FOR OCT 1971

M

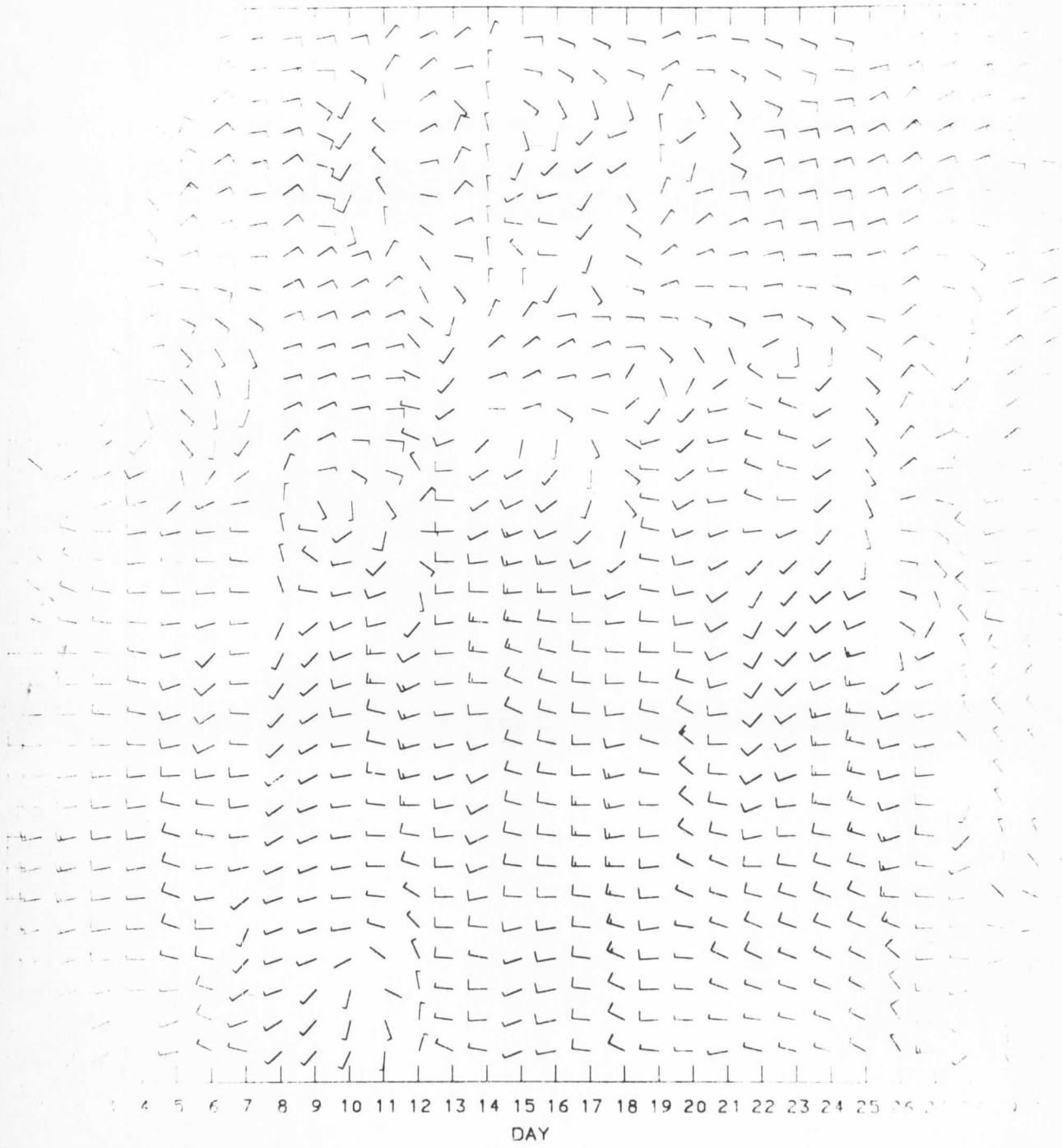


Figure 6-3

ENSION ISLAND DATA FOR NOV 1971

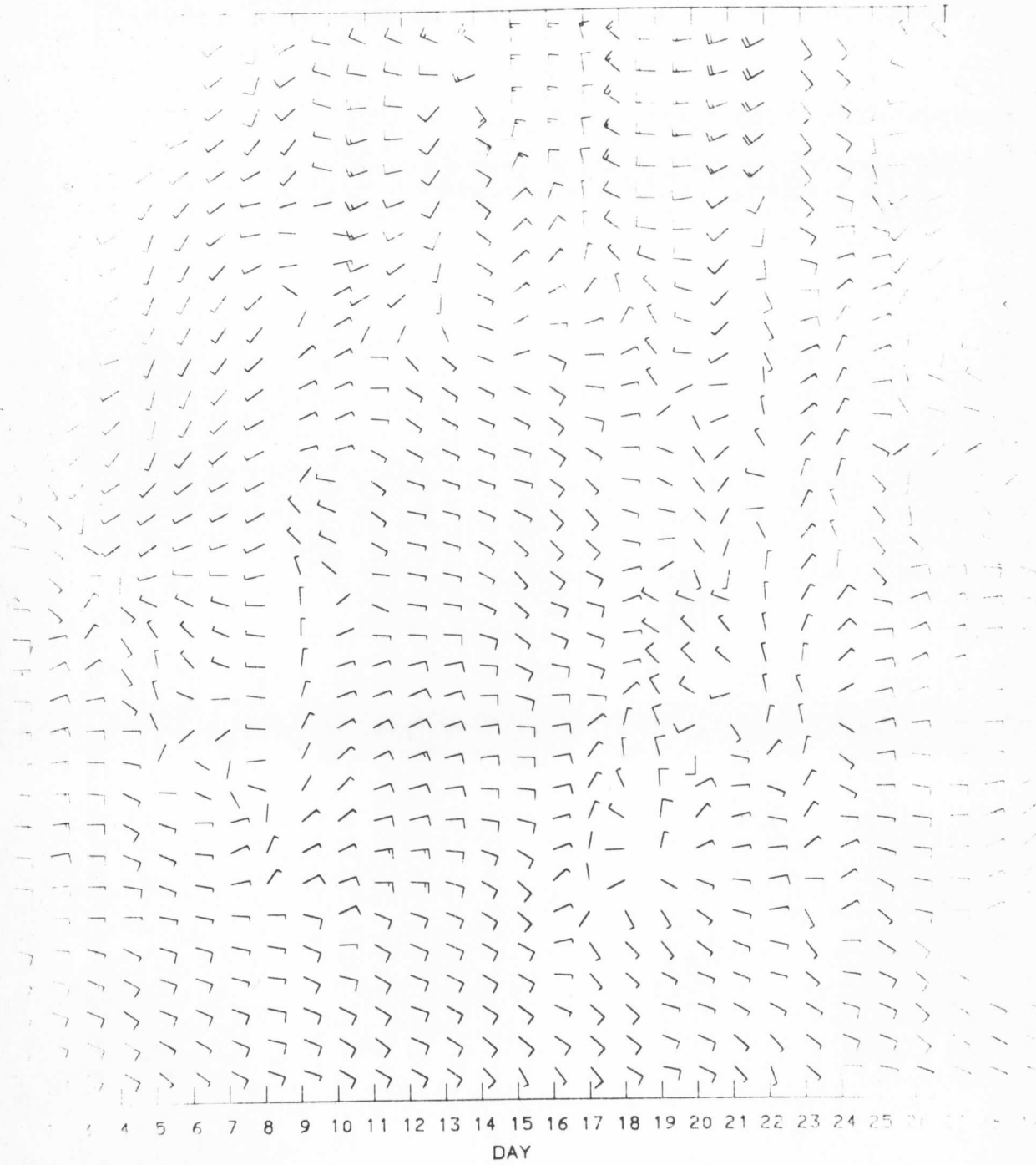


Figure 6-4

SCENSION ISLAND DATA FOR NOV 1971

M4

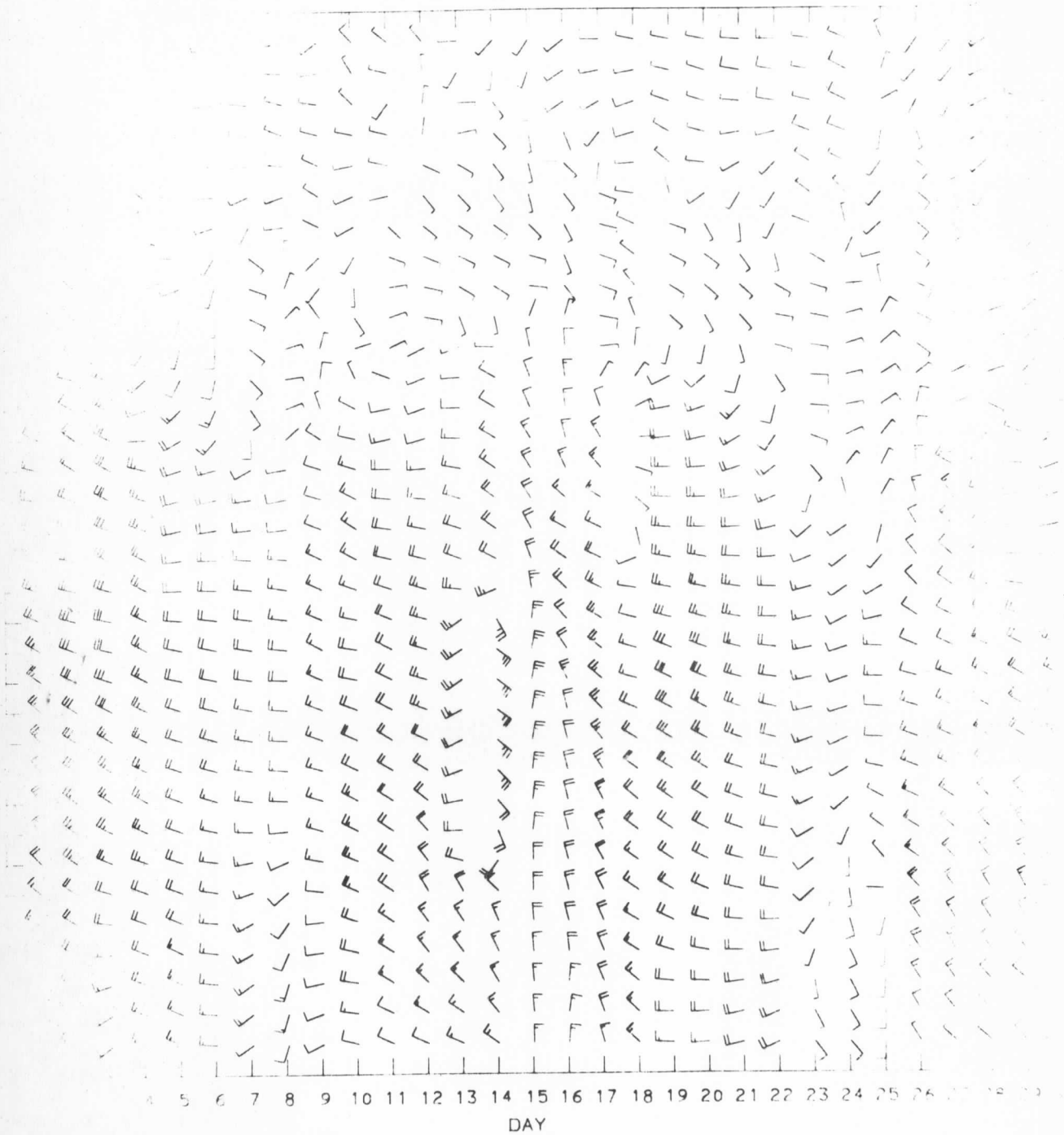


Figure 6-5

ACCENSION ISLAND DATA FOR NOV 1971

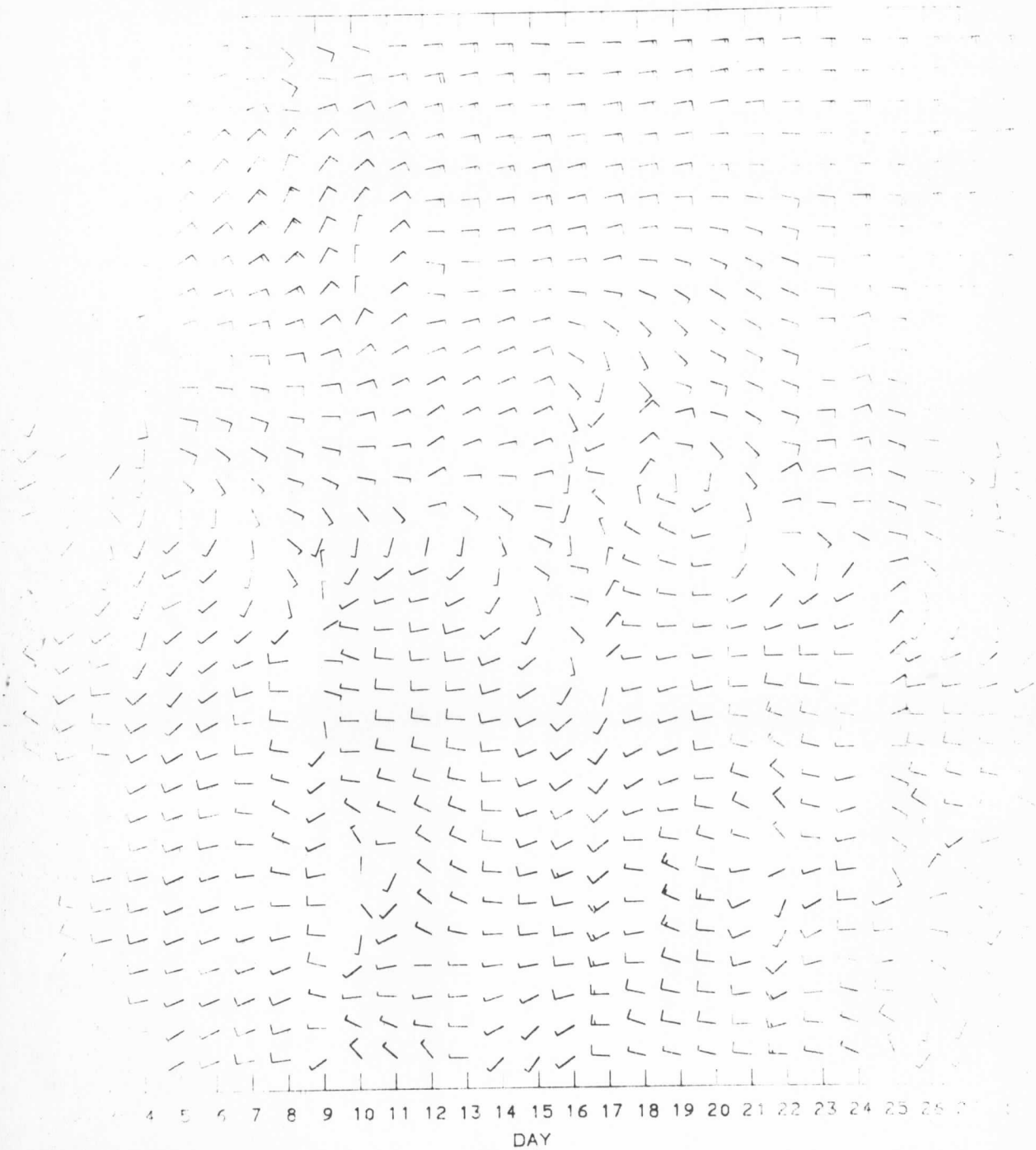


Figure 6-6

ASCENSION ISLAND DATA FOR JUL 1972

M/S

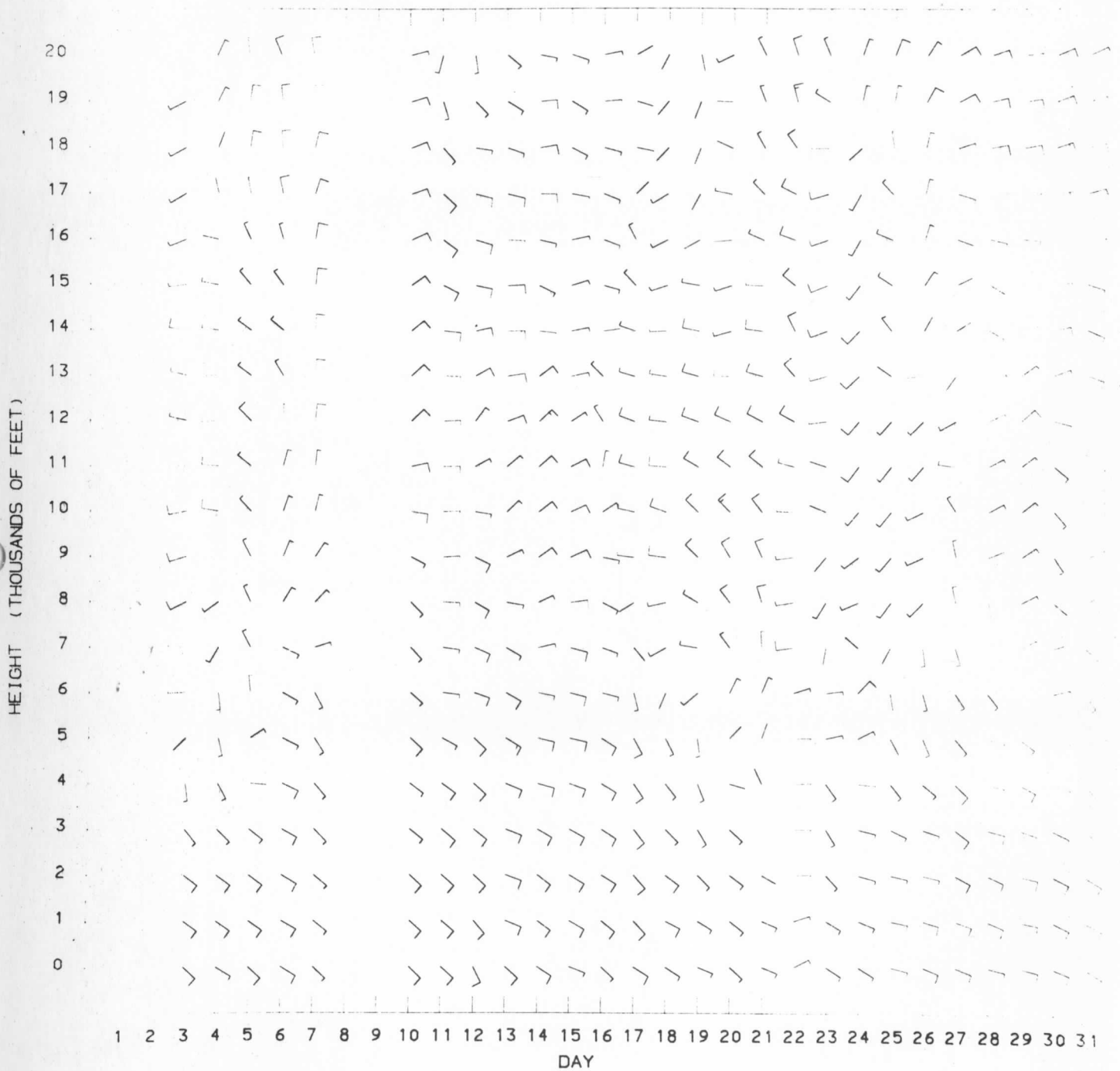


Figure 6-7

ASCENSION ISLAND DATA FOR JUL 1972

M/S

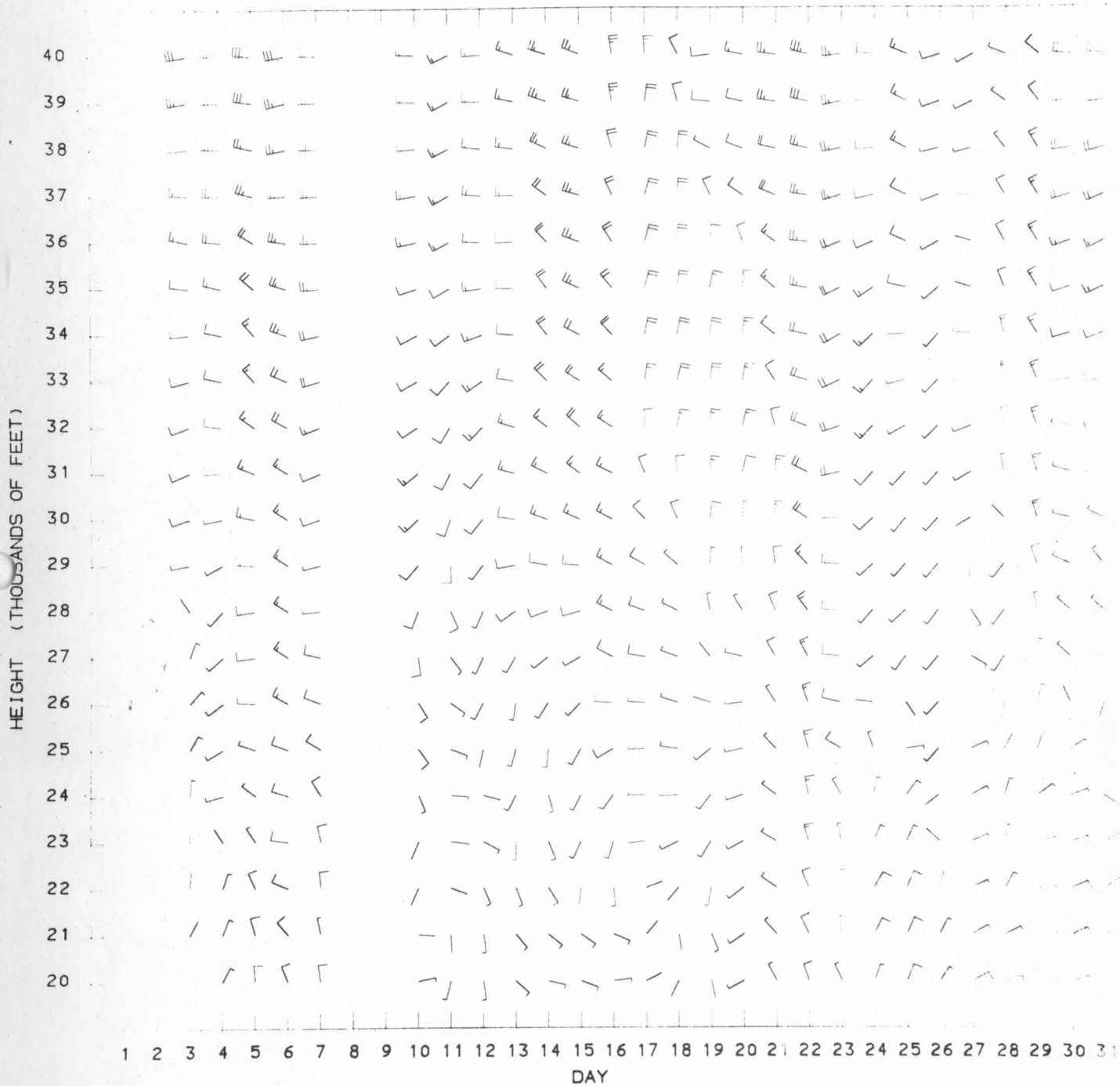


Figure 6-8

ASCENSION ISLAND DATA FOR JUL 1972

M/S

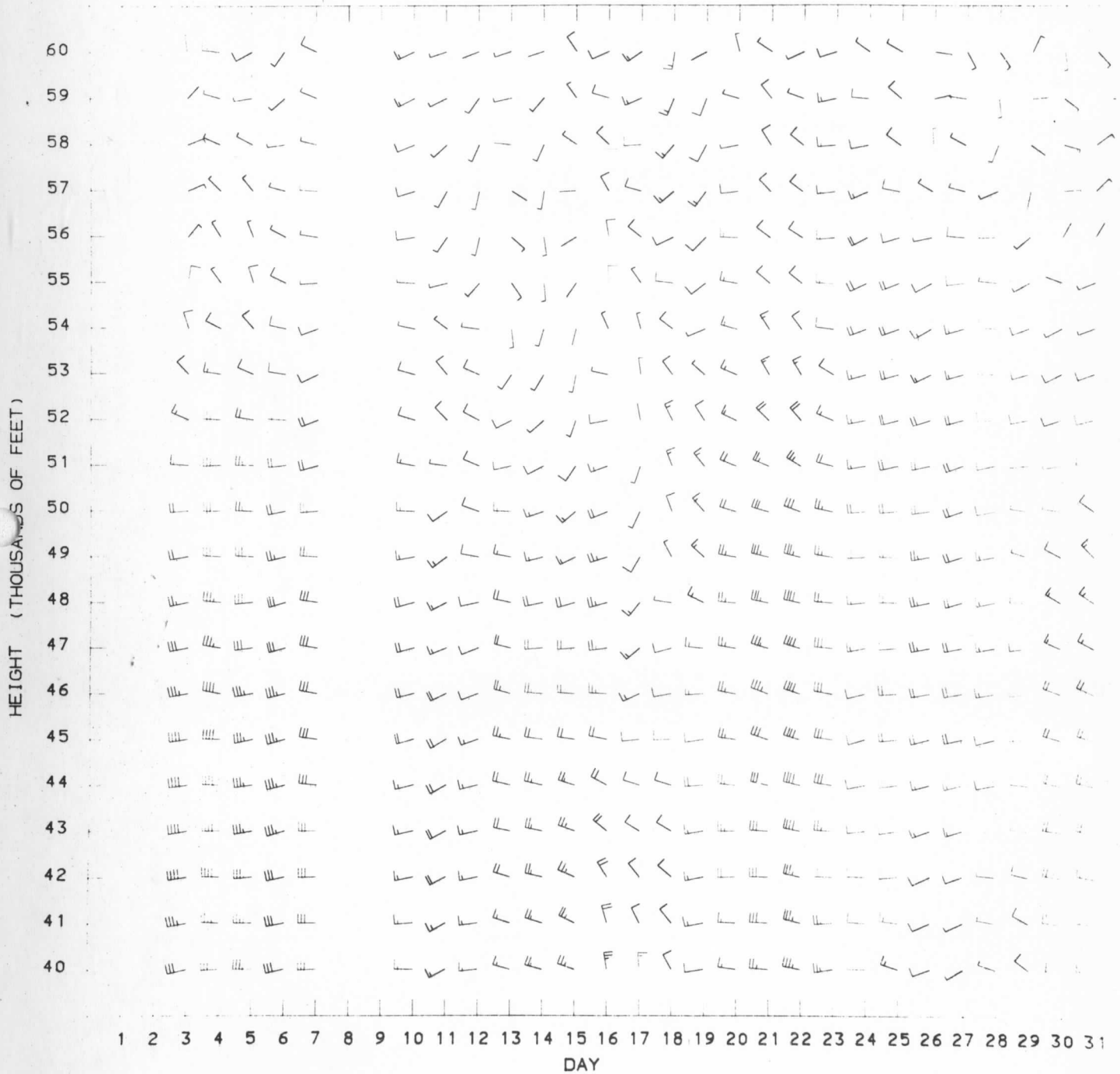


Figure 6-9

ASCENSION ISLAND DATA FOR JUL 1972

M/S

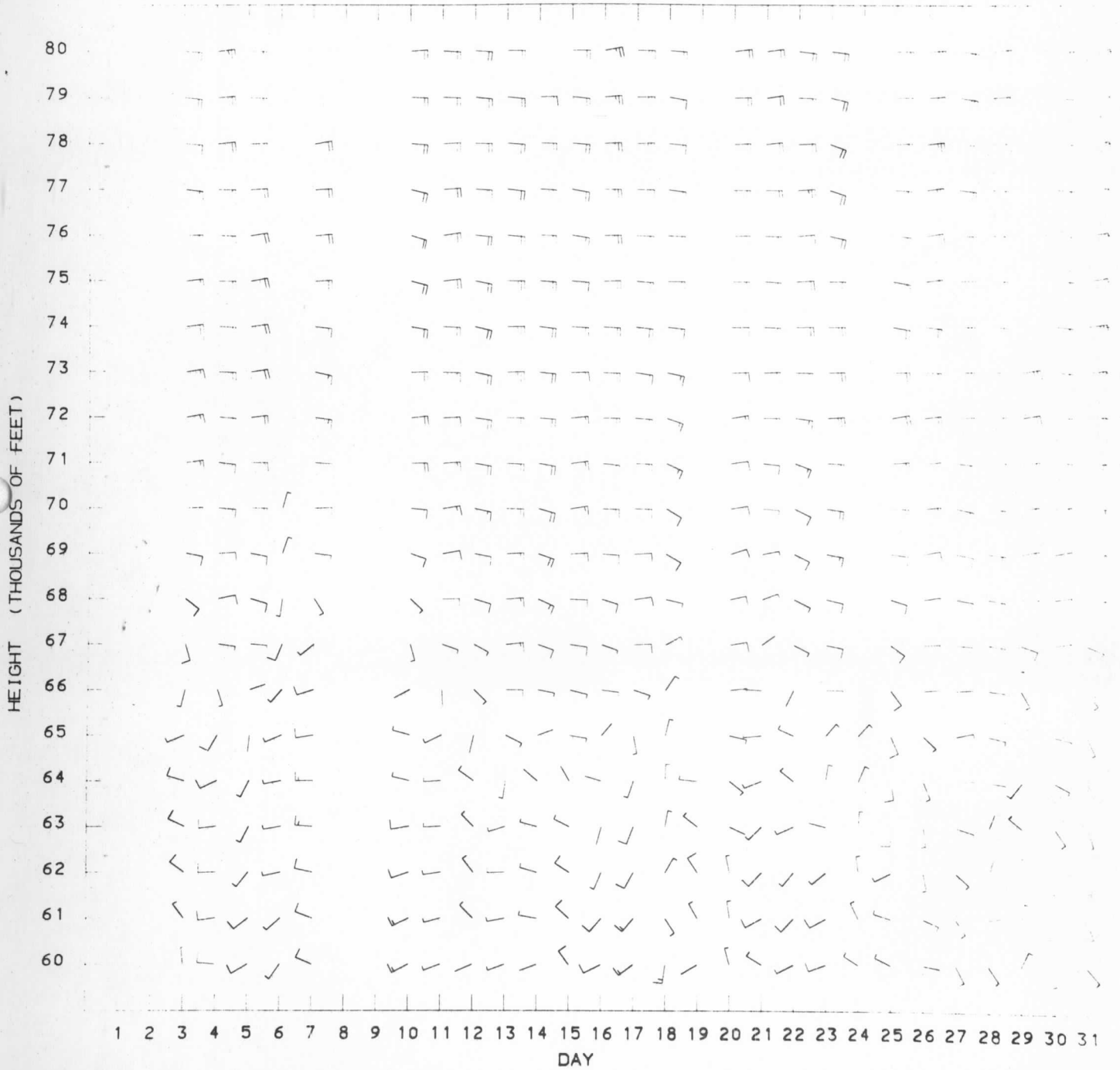


Figure 6-10

ASCENSION ISLAND DATA FOR JUL 1972

M/S

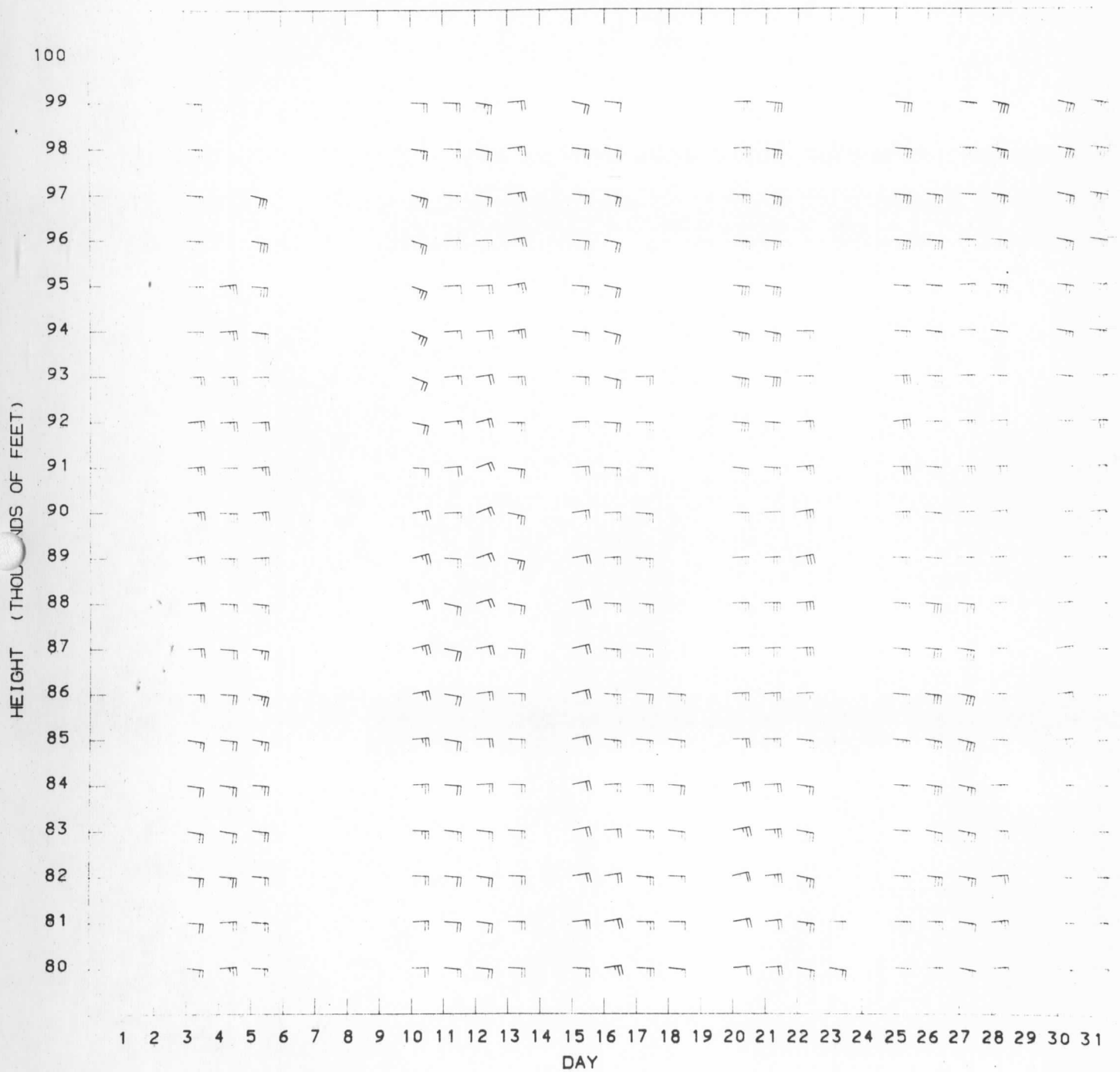


Figure 6-11

ASCENSION ISLAND DATA FOR AUG 1972

M/S

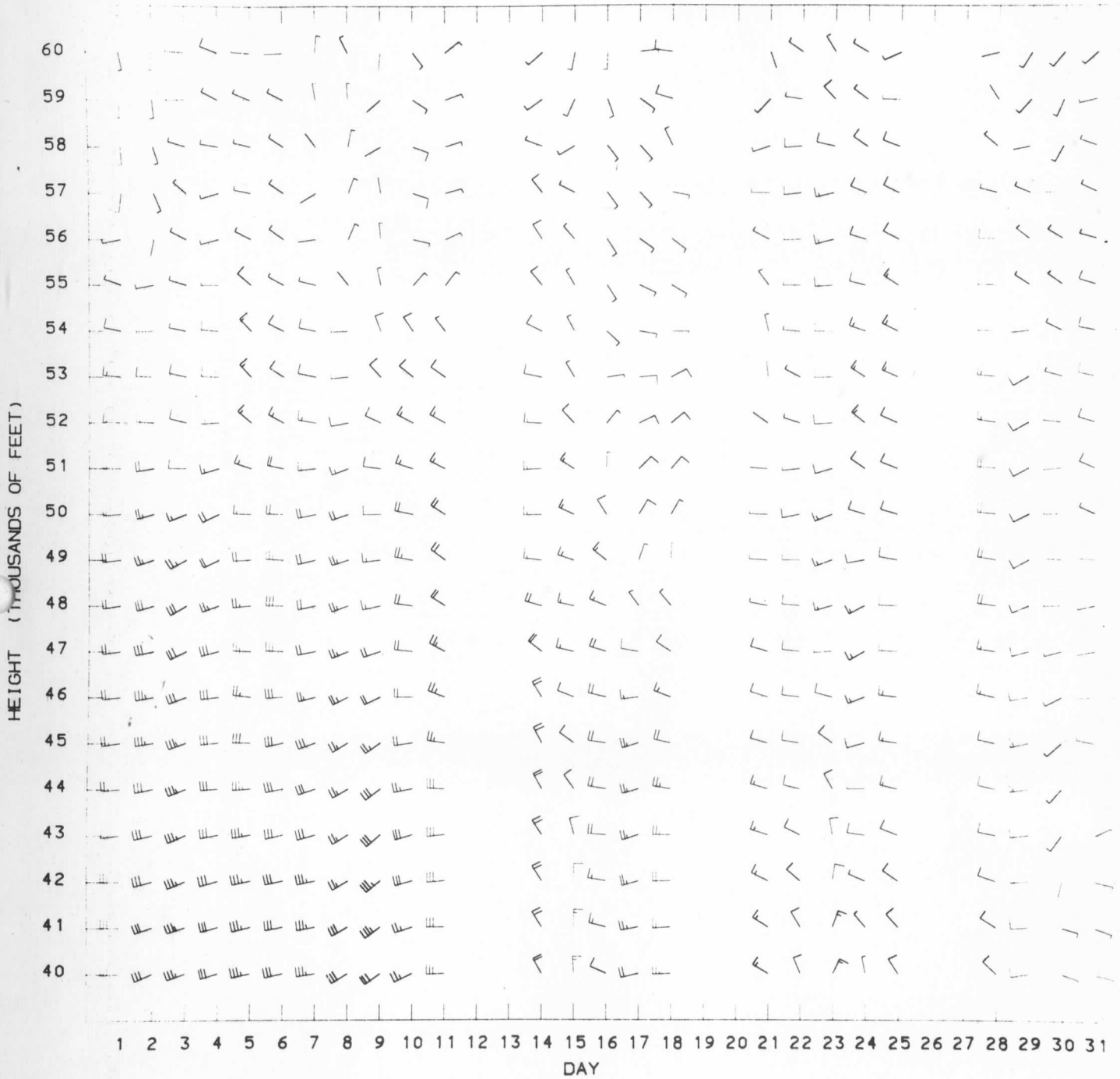


Figure 6-13

ASCENSION ISLAND DATA FOR AUG 1972

M/S

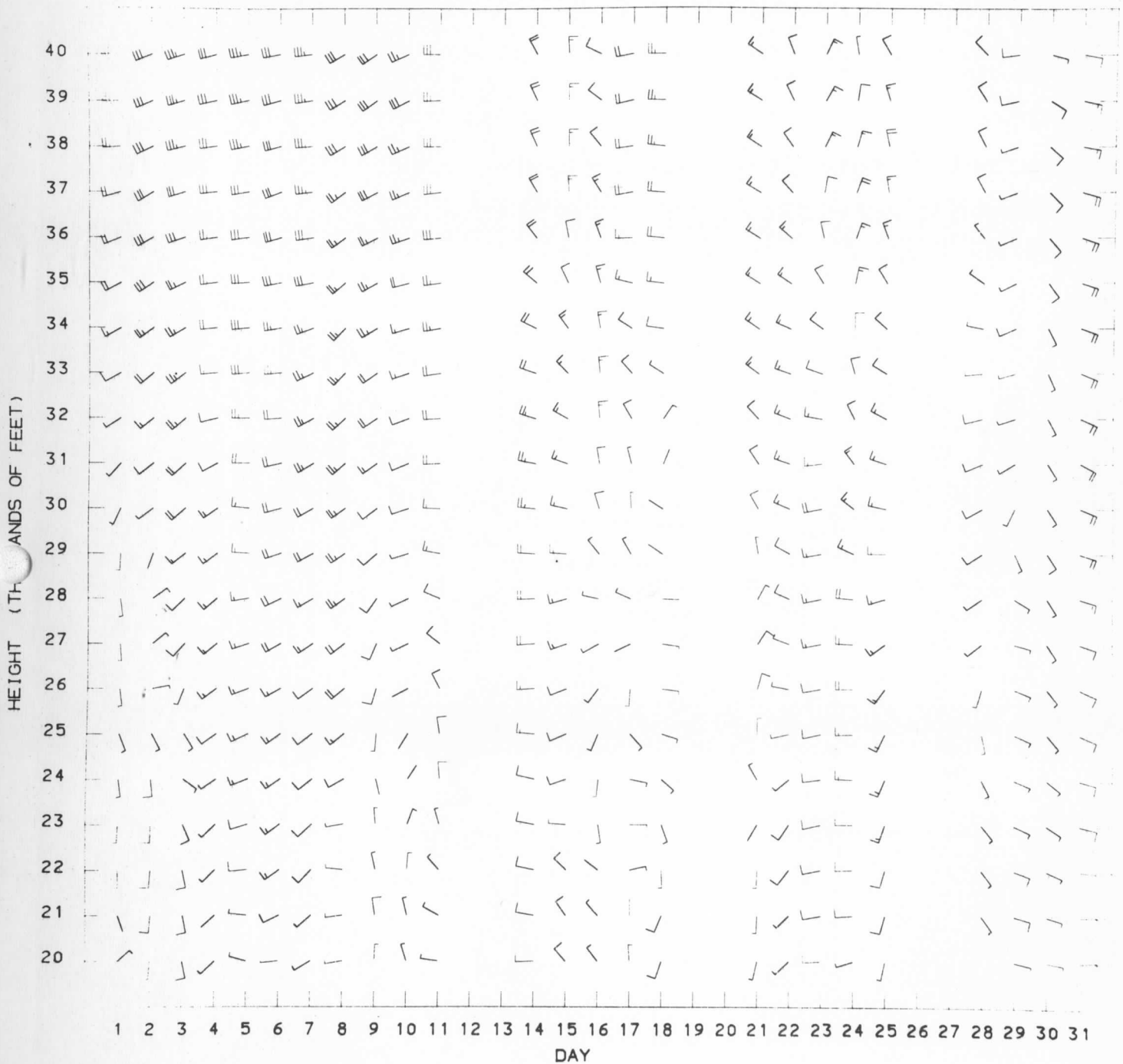


Figure 6-14

ASCENSION ISLAND DATA FOR AUG 1972

M/S

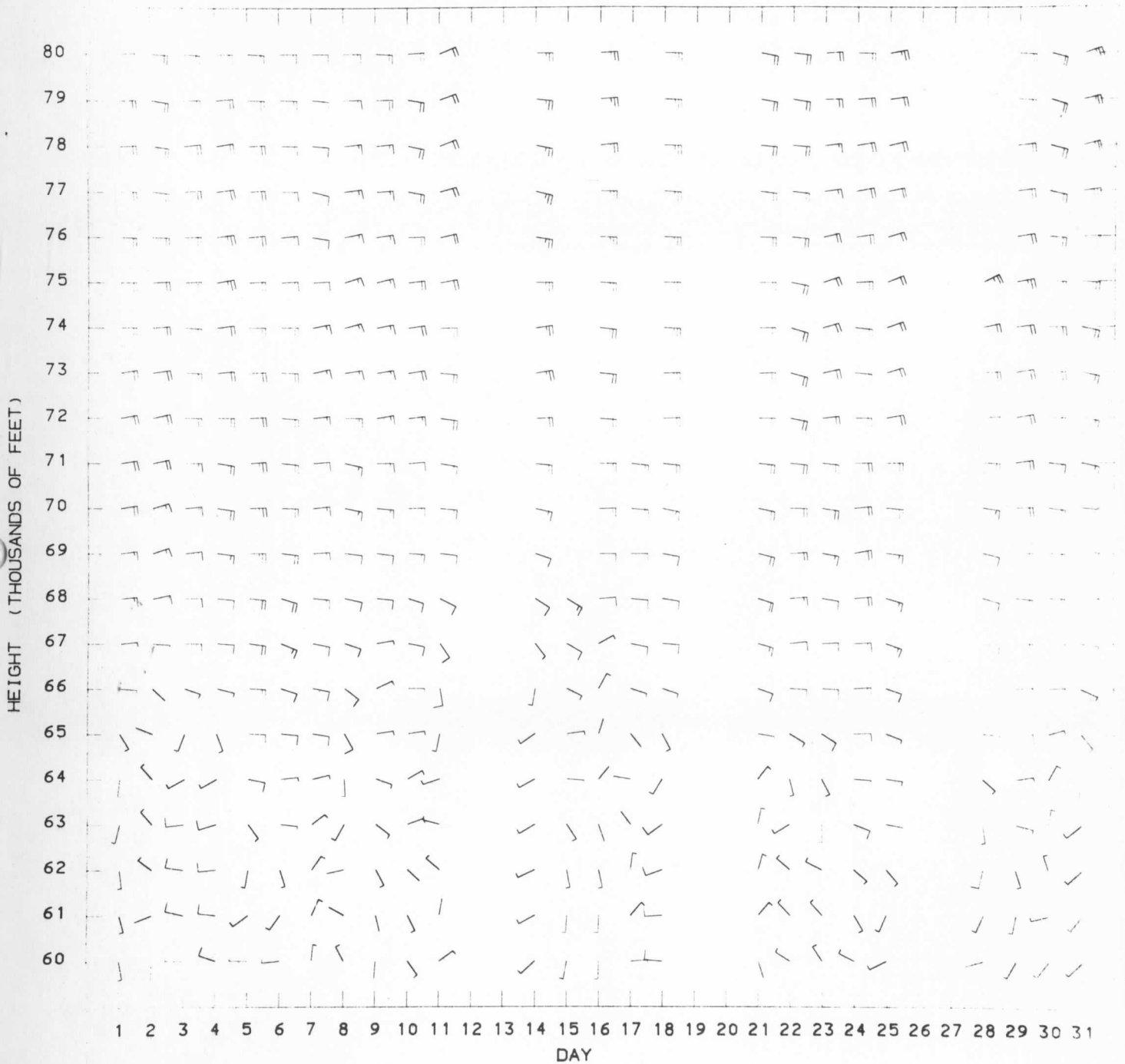


Figure 6-15

ASCENSION ISLAND DATA FOR AUG 1972

M/S

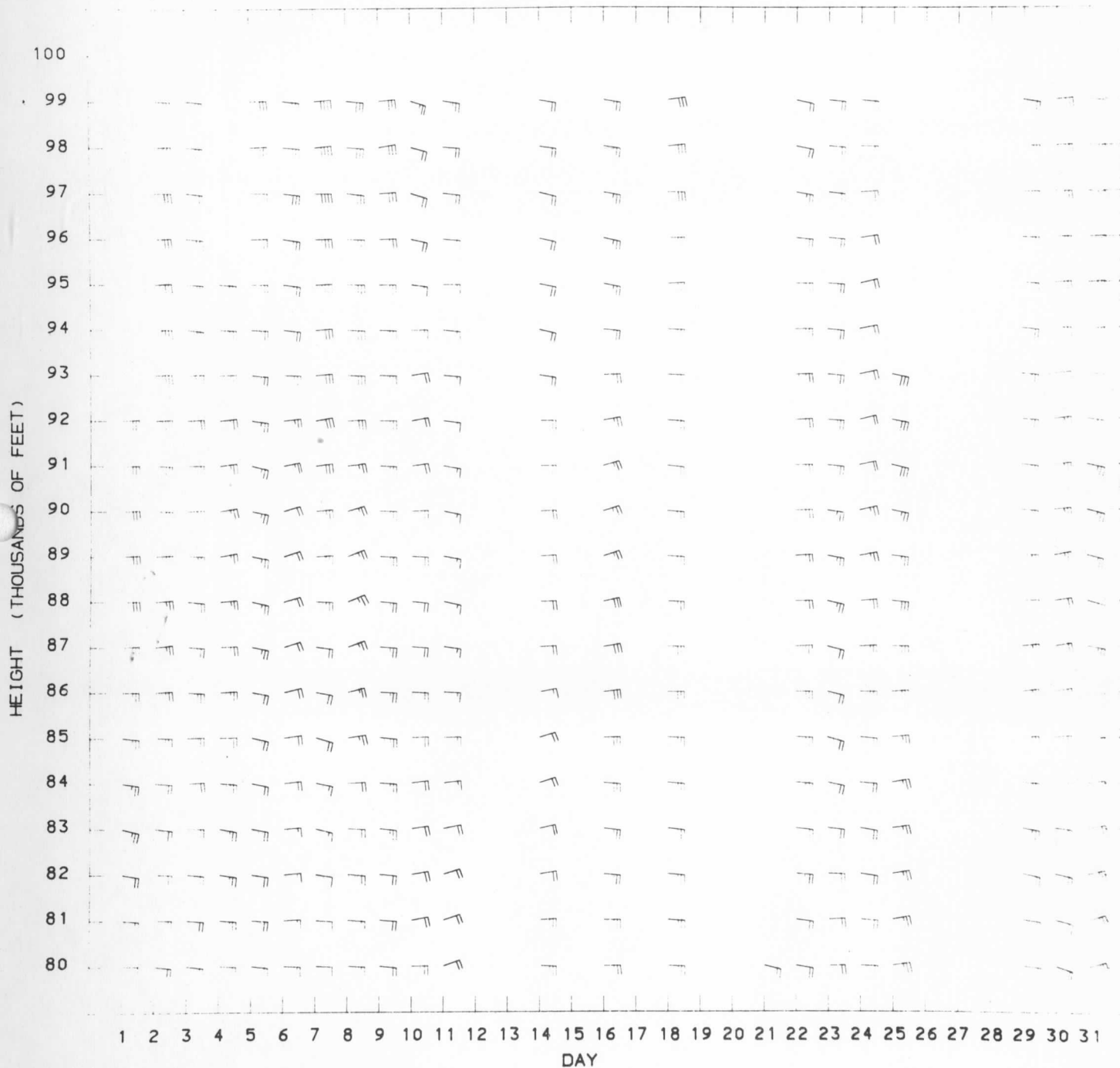


Figure 6-16

VII. LIFE HISTORY OF TWERLE BALLOONS AT 150 MB

INTRODUCTION. Climatology for October - November 1971 and July - August 1972.

The 150 millibar tropical circulation during both launch series was dominated by westerlies. Whereas, normally in July and August there usually is a disturbed circulation producing small scale phenomena which results in a confused pattern. Two prominent features present during October-November were responsible for several short-lived flights. These were the high frequency of occurrence of thunderstorms over equatorial and southern Africa as shown by Figure 7-1, and a low pressure trough at 150 millibars in the north Atlantic extending southeastward toward the equator into western Africa. In this circulation, several balloons moved northward over central Africa to 23° north latitude and terminated.

A comparison of the latitudinal distributions of October-November and July-August series is shown in Figure 7-2. This data indicates the short flight durations of the balloons in the deep tropics (north of 15°S), particularly in the October-November series there were only two balloons flying in the tropics after ten weeks compared to six in the July-August series. Similarly, in an overall comparison of flight duration, regardless of latitude, after ten weeks there were two more flying from the July-August series than the earlier series.

A. TIME IN THE TROPICS

A latitudinal distribution, in percent, of the balloons launched in October and November 1971 and flying after a number of days is depicted in Figure 7-3. These are as follows:

After 30 days, 48% are N of 15°S; 57% are N of 30°S

After 60 days, 17% are N of 15°S; 22% are N of 30°S

After 90 days, 5% are N of 15°S; 9% are N of 30°S

In the July-August series (see Figure 7-4), the balloons were latitudinally distributed as follows:

After 30 days, 40% are N of 15°S; 74% are N of 30°S
 After 60 days, 18% are N of 15°S; 40% are N of 30°S
 After 90 days, 9% are N of 15°S; 20% are N of 30°S

The curve depicting the percentage of balloons north of 15° South is influenced by the relatively small sample of balloons and their scatter. The histograms of Figure 7-5 show how the balloons were distributed weekly, up to twelve weeks. Due to the small number of balloons, it was assumed that they were evenly distributed throughout the 15° latitudinal segment. At twelve weeks there were four balloons all north of 30° South.

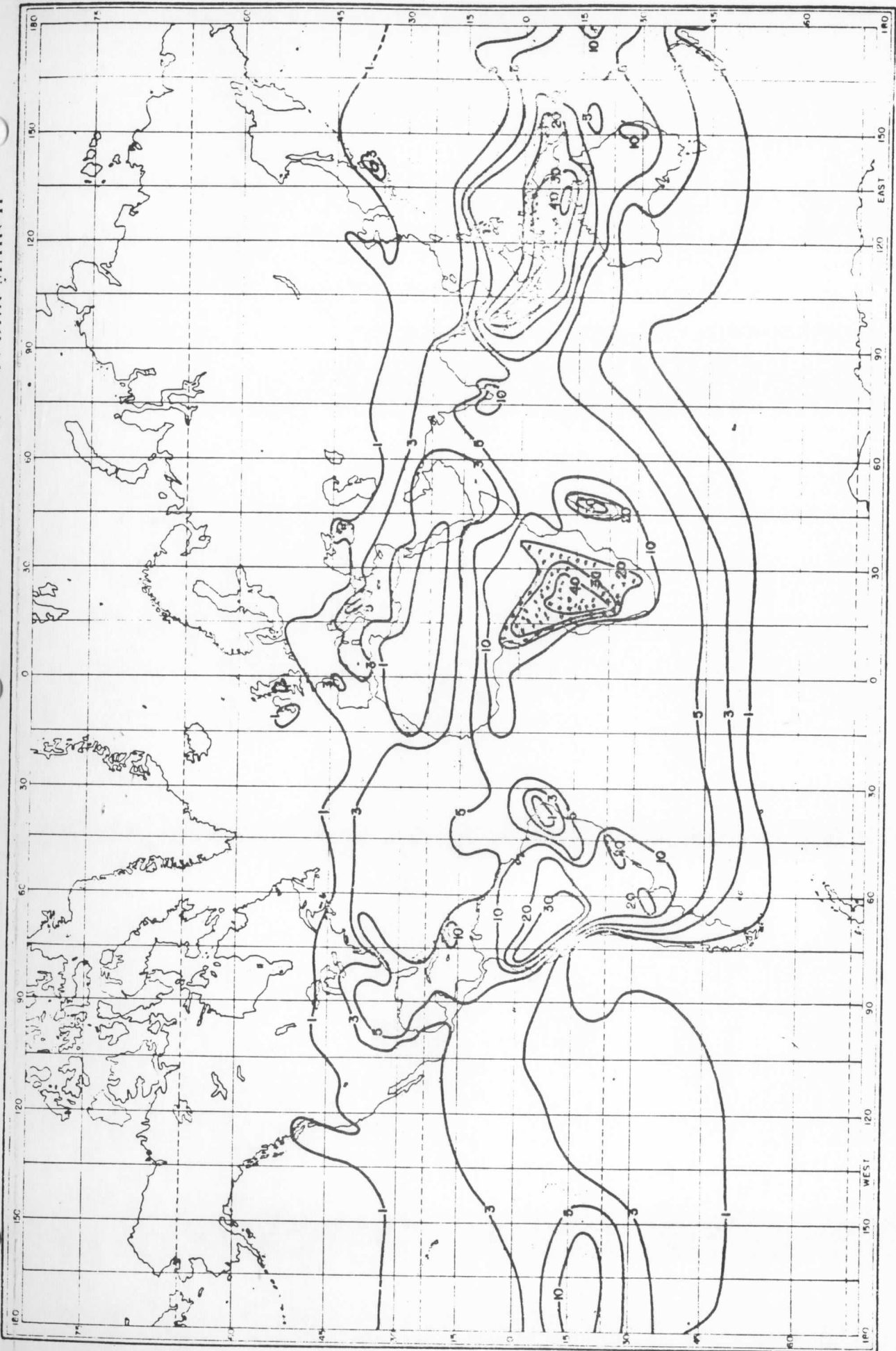
B. DURATIONS OF TWERLE TEST FLIGHTS

1. Flight durations for October-November 1971 and July-August 1972 are shown in Figures 7-6 and 7-7.
2. Ten 150 millibar flights were launched from Christchurch, New Zealand, between the 11th and 18th of November, 1971. These flights stayed at mid-latitude with the following durations:

3 flights	20 days or less
2 flights	92 and 97 days
1 flight	141 days
1 flight	287 days
3 flights	365 days (still flying)

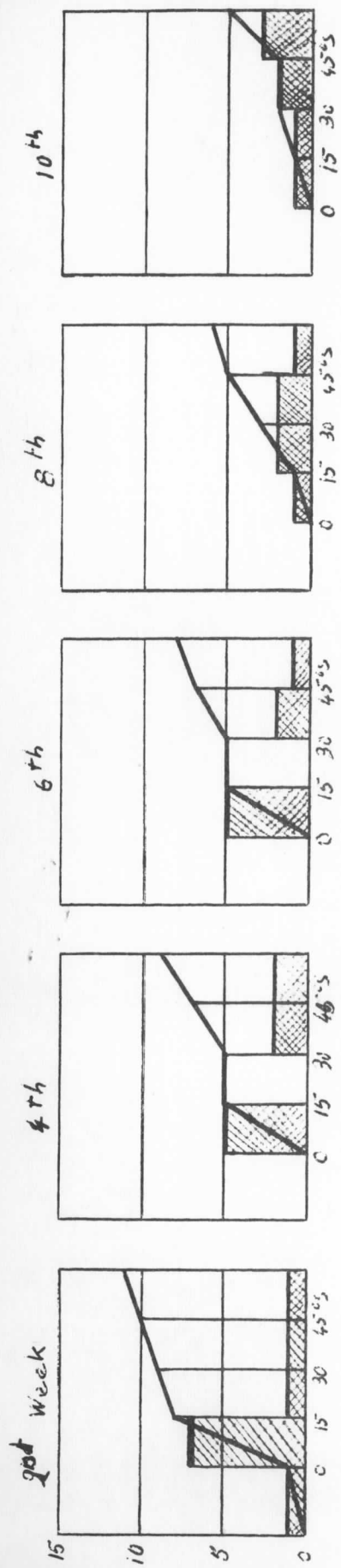
Four of these balloons periodically wintered in the Antarctic night from about April to the latter part of August, substantiating the long duration potential of mid-latitude flights.

AVERAGE FREQUENCY OF HURDERSTORMS FOR OCTOBER-MARCH

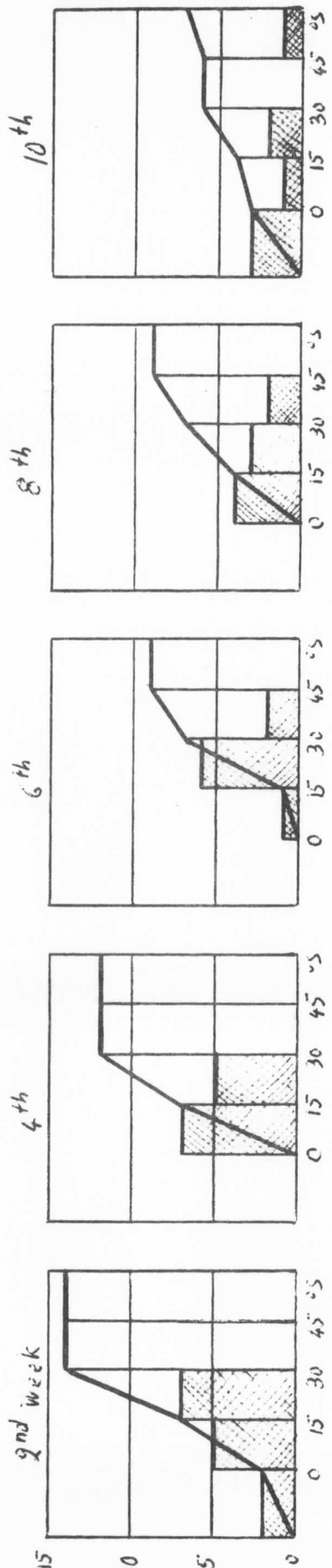


To accompany Hunwiltz and Austin Climatology, Copyright, 1944 McGraw-Hill Book Co., Inc.

Figure 7-1



OCTOBER - NOVEMBER 1971



JULY - AUGUST 1972

BALLOON LATITUDE DISTRIBUTION

Figure 7-2

FALL 1951

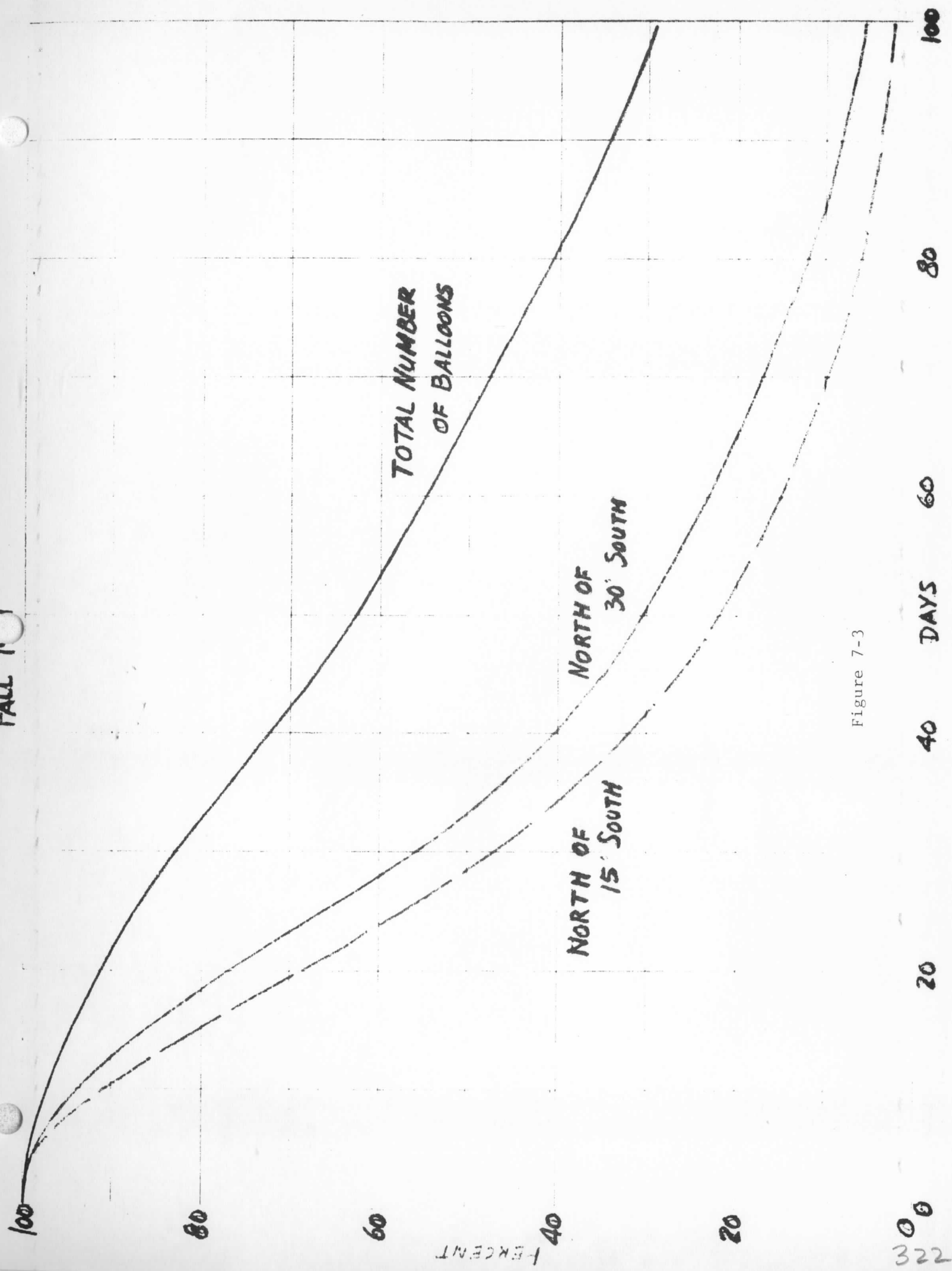
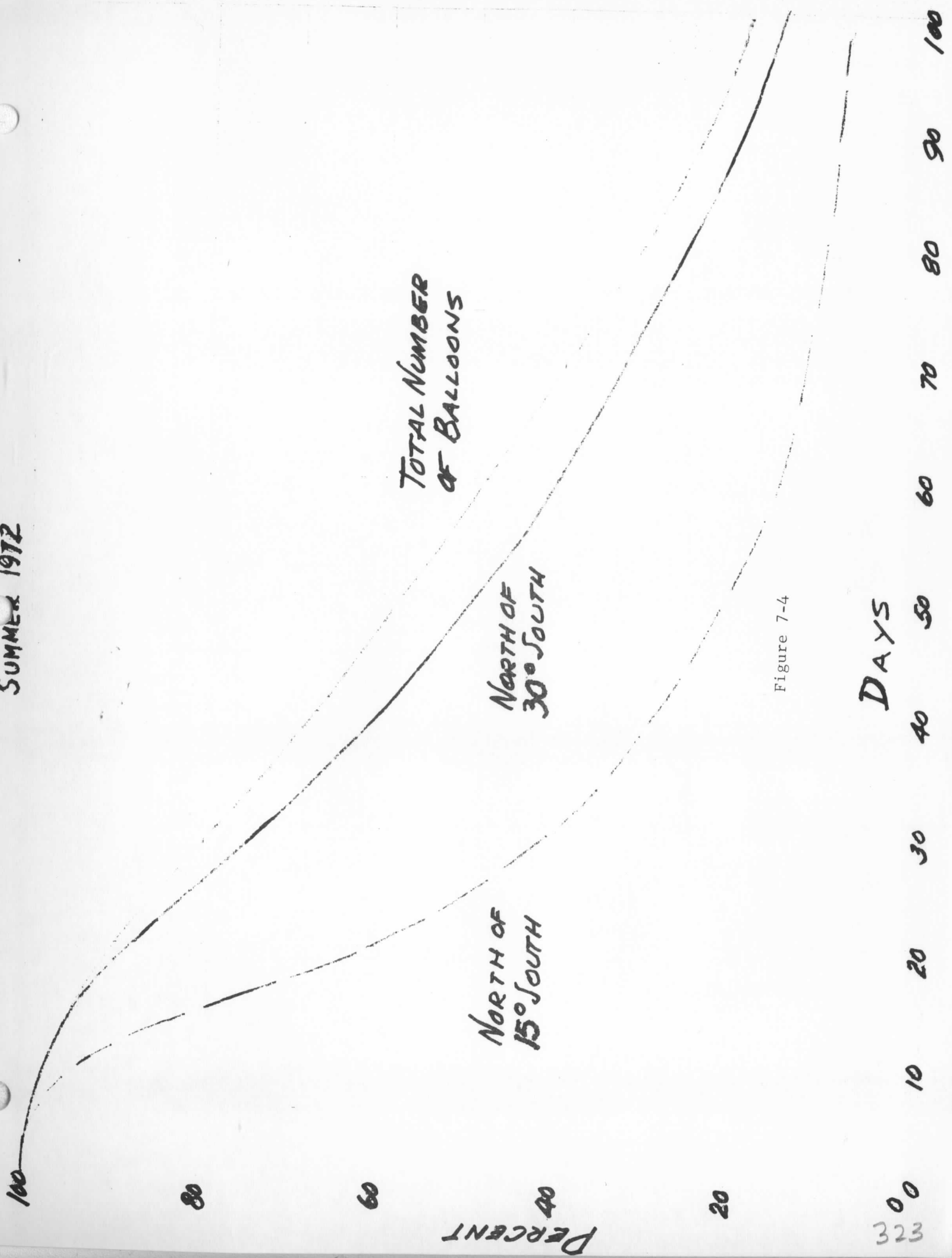


Figure 7-3

SUMMER 1972



TOTAL NUMBER
OF BALLOONS

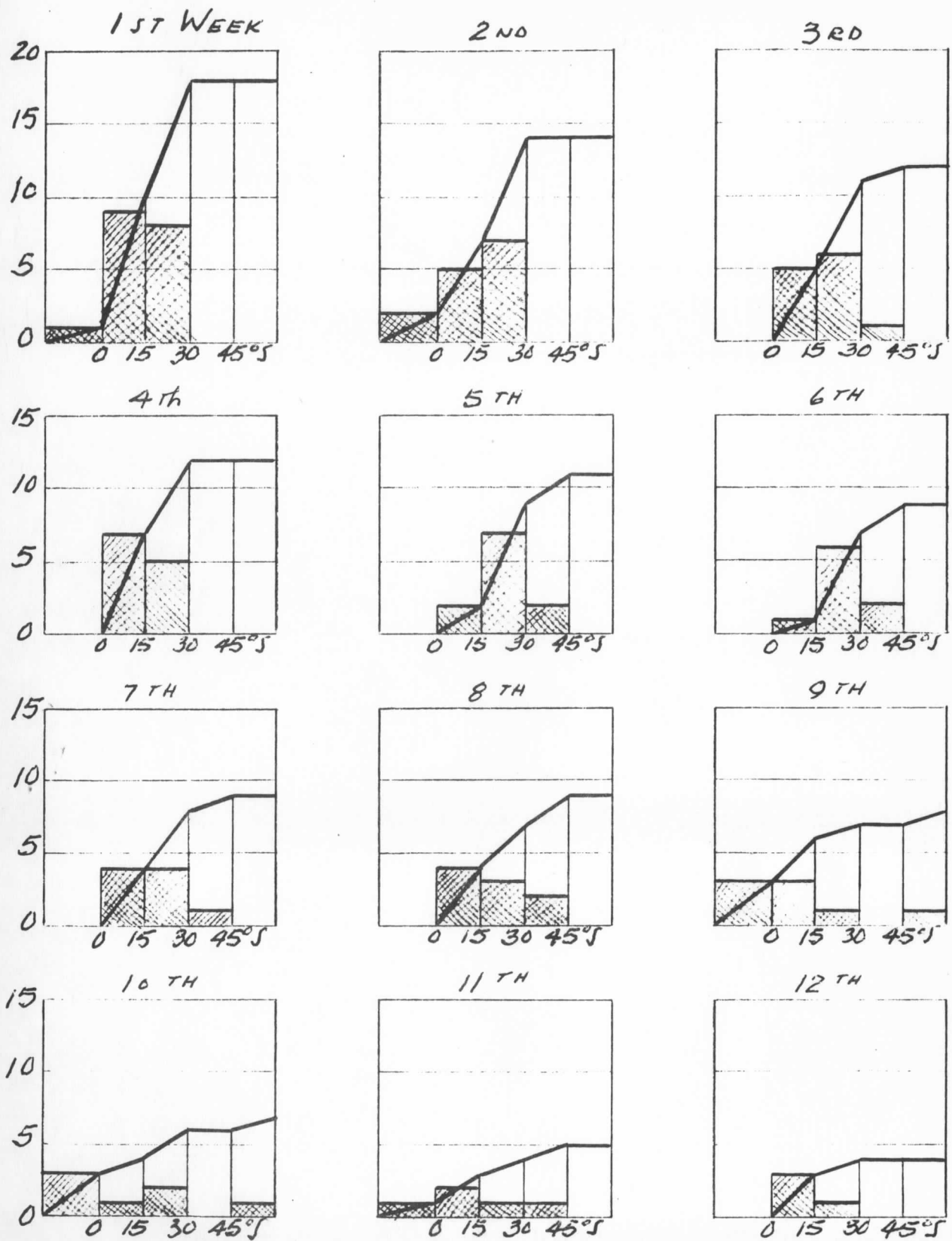
NORTH OF
30° SOUTH

NORTH OF
15° SOUTH

Figure 7-4

DAYS

PERCENT



BALLOON LATITUDE DISTRIBUTION

(JULY - AUGUST 1972)

Figure 7-5

C. TABLE VII-1. SUMMARY OF DURATIONS AND LAST KNOWN POSITIONS

LAUNCH SITE	BOX NUMBER	FLIGHT NUMBER	CAP/ UNCAP	NCAR CODE NO.	DURATION	APPROXIMATE LOCATION
ASI	3	89154 B/D	C	R-72-18	20	20N/27W
ASI	3	90152 B/L	U	R-72-19	128	14N/77W
ASI	1	91153/6 NABL/SD	C	R-72-2	92	5N/68E
ASI	3	92158 AN	U	R-72-22	10	7N/19E
ASI	3	93155 RDPC	C	R-72-17	89	19S/82E
ASI	3	94157 B/J	U	R-72-23	46	17S/4E
ASI	3	95152/4 AC/SG	C	R-72-8	58	0/22E
ASI	3	96156 AK	U	R-72-21	72	48S/114E
ASI	1	97152/5 BLCP/UK	C	R-72-3	126	10N/36E
ASI	3	98157 AL	U	R-72-20	63	13S/34E
ASI	1	99151/3 AB/WO	C	R-72-7	20	5N/18W
ASI	1	100155 AJ/RG	C	R-72-5	Abort	
ASI	1	101151/5 AP/KW	C	R-72-4	77	17N/90E
ASI	1	102156 B/G	C	R-72-1	75	16S/73E
ASI	2	103153 B/N	C	R-72-16	40	1S/52E
ASI	2	104155 B/F	C	R-72-13	31	5S/73W
ASI	2	105151 B/C	C	R-72-14	6	31S/54E
ASI	2	106154 AG	C	R-72-15	11	31S/91E
ASI	2	10753 AS	C	R-72-12	10	8N/5E
ASI	2	108154 B/K	C	R-72-11	11	11S/51E
Pago	2	109156 DZ	C	R-72-9	3	16S/179W
Pago	2	110158 AV	C	R-72-10	97	47S/65W

D. FACTS RELATING TO FLIGHTS 103 THROUGH 110, WHICH HAD AN ABNORMALLY SHORT LIFETIME

Factors to consider in balloon failure analysis.

1. Materials

Material for gores

Material for end caps

Sealing tapes

Load line assembly

Inflation fitting

End cap adhesive

Metallized cap assembly

Launch sleeve

2. Assembly and Testing

Sealing - test results

End cap assembly

Load line assembly - line length

Pressure test

Leak test

Inflation fitting assembly

Handling

Folding and packing

Gore cutting and material handling

3. Potential Failure Modes

Balloon : Mfg. - test - handling - shipping -

Launch Prep: Weigh off error - improper ballast -

Transmitter: Tx malfunction
Cutdown : Premature activation
Weather : Electrical, icing

4. Comments

- a. Flights 103 through 110 are the flights in question.
- b. Balloons from these flights were NCAR code numbers R-72-9 through R-72-16.
- c. These balloons were the last six flights made from ASI during the TWERLE-3 test, plus 1 launched from Pago Pago.
- d. These balloons all came from the same packing box.
- e. These balloons are from the middle of the balloon production run, i.e., eight balloons made before and eight balloons made after these units.
- f. These balloons all had the same outside tape on the seams as determined by the manufacturer. Balloons built before and after these used a different tape lot.

5. Balloon Storage and Handling from Manufacture Time Until Launch Release

After the balloons had been built, tested and folded, they were stored in several layers of protective material until the moment of release. A polyethylene sleeve used for weigh-off and launching was placed around the balloon after folding. This was sealed air-tight by the balloon manufacturer. The sleeved balloon was next folded and placed in an individual cardboard carton. Eight of these cartons are placed in a fiber-board box lined with a vapor barrier that is sealed air-tight during box closing. This seal was broken shortly before the balloons were to be flown. The first balloons were flown about three days after unsealing and the last balloons were flown about two weeks later. Compared to boxes No. 1

and No. 3, box No. 2 was unsealed the shortest time before the last balloon was released.

All three balloon boxes received the best possible storage and handling conditions available at the field site. The temperature range was 65 to 90°F, and the humidity range was 60 to 40%. Box No. 2 balloons were the last to be flown thus having the longest storage time, but on similar previous projects, balloons have been stored much longer (months and even years) with no noticeable degradation in performance.

During launch preparation, the sleeved balloons are removed from their cartons and placed in a special inflation chamber. The chamber was cleaned daily to insure no sharp foreign particles could damage the balloon. The sleeve was opened at both top and bottom ends to remove end cap padding prior to inflation. The balloon was then filled with helium gas until the sleeve was fully deployed. A weigh-off was made by attaching the sleeve to a balance scale where final adjustments were made on the gas volume. Most balloons were held overnight while waiting for launch times, usually the next morning. A few balloons were held up to five days and some held only a few hours depending on weather conditions and start of inflation.

After a launch decision was made, the sleeved balloon was carefully removed from the chamber and attached to the launch truck. The flight line was fastened to the balloon, a "pull open" line tied to the tear tab on the sleeve. When the truck was moving at wind speed on the runway, the sleeve was opened and the balloon

with flight line released. This was the first time the balloon was unprotected by the sleeve since the manufacturer's plant. At no time during shipment, handling, inflation and weigh-off, did the balloon come in direct contact with any materials or surfaces which might scratch or damage the balloon. The sleeves were used only once to prevent contamination to successive balloons.

TABLE VII-2

6. FAILURE ANALYSIS FOR FLIGHTS 103 THROUGH 110

<u>PROBLEM</u>	<u>CAUSES</u>	<u>RESULT</u>
Weigh-off error	Scale malfunction, human error, incorrect cuts on balloon, correction factor error, gauges out of adjustment.	Over or under pressure causing short balloon life.
Flight line separation	Improperly tied knots, partially cut line.	Balloon bursts at float altitude, rapid ascent and descent.
Ruptured ballast bag	No air vent hole, defective bag.	Over pressure balloon-burst. Rapid ascent and descent.
Leaky balloon	Holes in balloon, unsealed inflation fitting, defective seals.	Slow balloon descent. (Short balloon flight)
Rough launch	Unusual wind conditions, unskilled operators, launch equipment malfunction.	Holes in balloon - damaged instruments.
Cutdown activated	Flight blown too far north, cutdown malfunction	Balloon separated from payload.
Transmitter failure	Power supply breakdown, transmitter component breakdown, wire connection failure, severe electrical discharges encountered, unusual moisture and thermal conditions during ascent.	Lost signal - system still flying unheard.
Ice accumulation	Weather conditions cause excessive moisture build-up on balloon and flight train.	Flight descends to surface.
Damaged balloon	Holes in material made by too rapid ascent, improper handling during inflation and launch, defective launch sleeve.	Slow descent to surface.
Burst balloon	Over inflation, overheated, weight loss, balloon defect.	Rapid descent to surface.

OCTOBER - NOVEMBER 1971

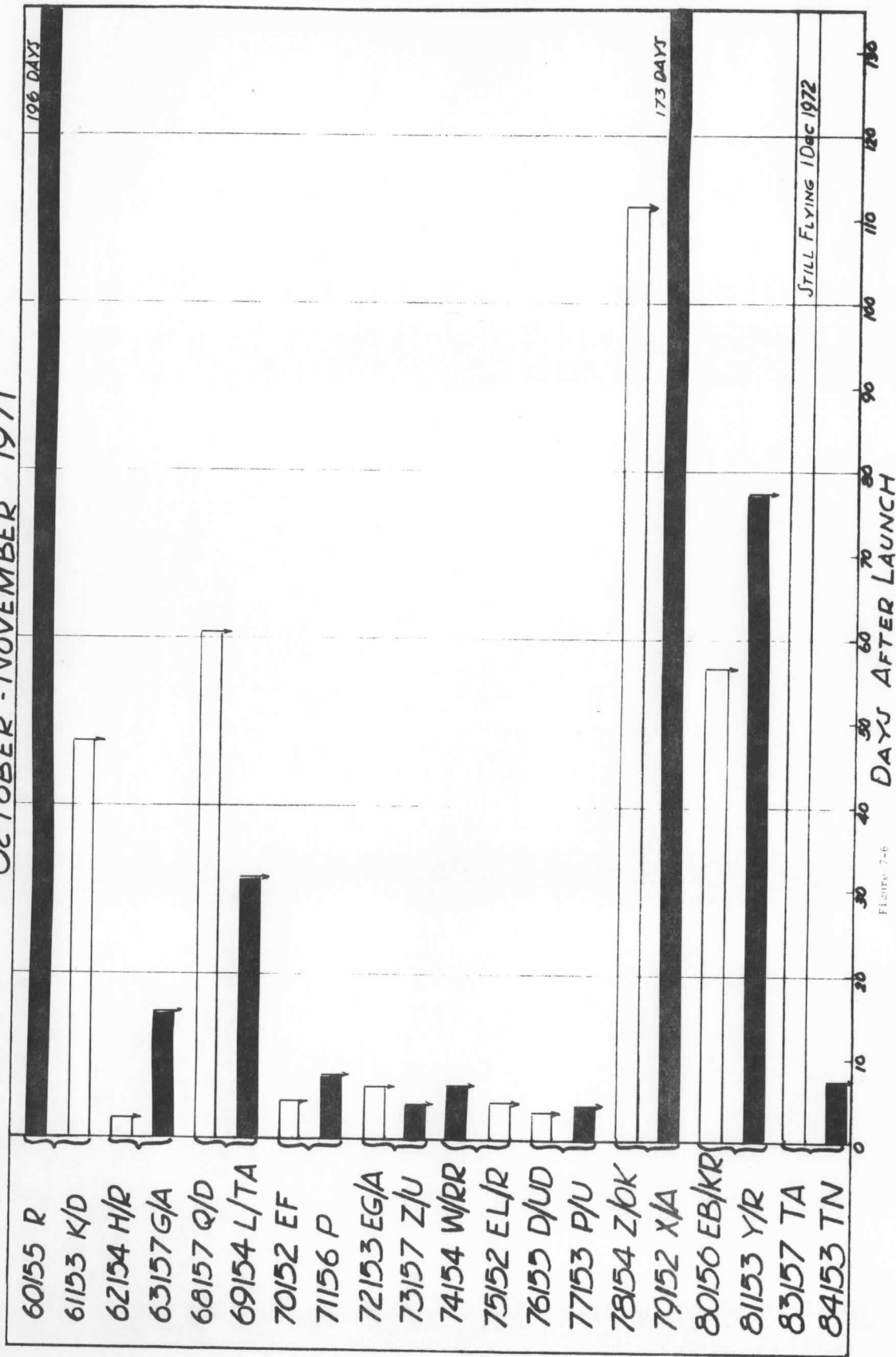


Figure 7-6

JULY-AUGUST 1972

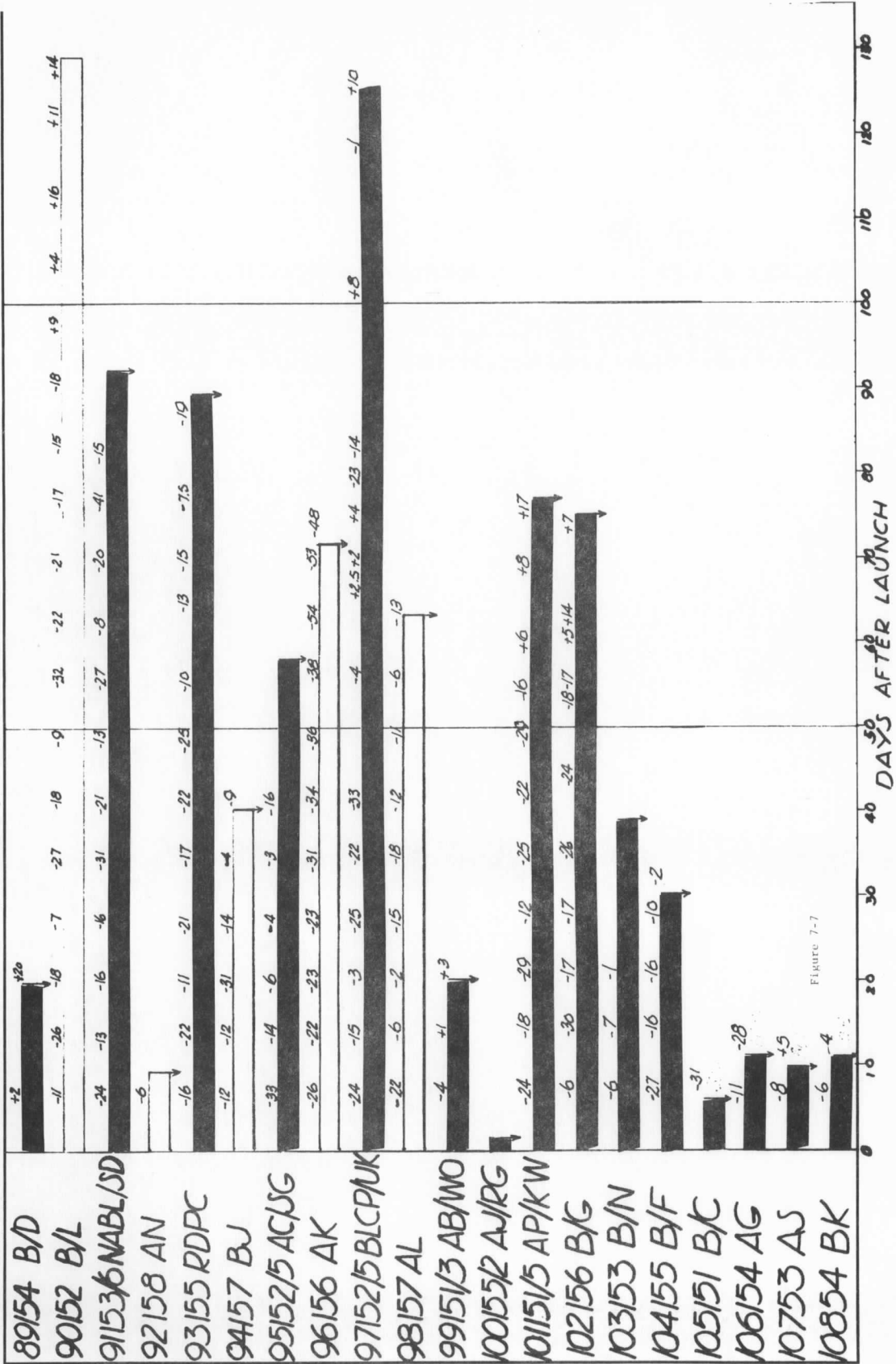


Figure 7-7

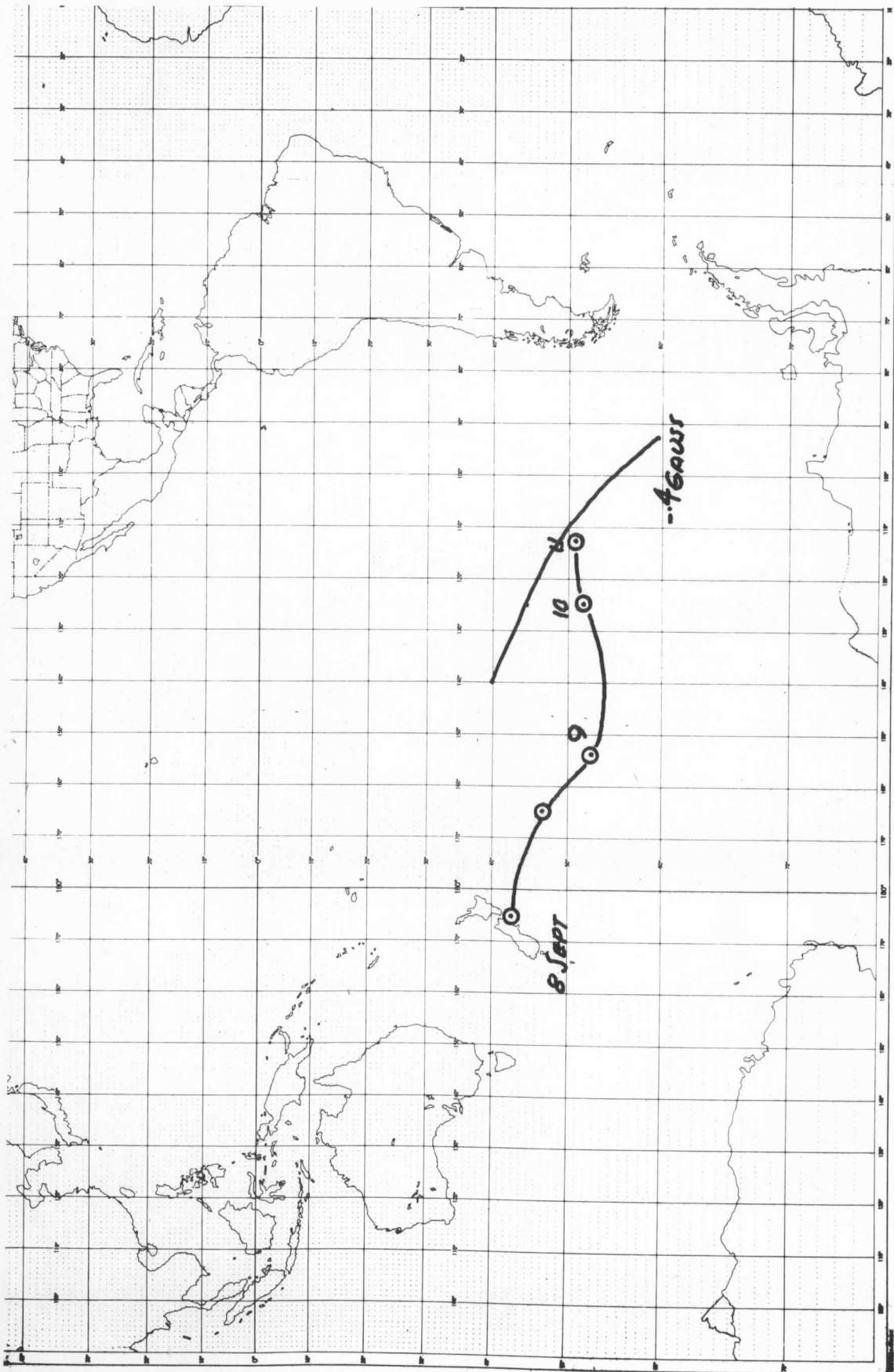
VIII. CUTDOWN DEVICE PERFORMANCE

A. NUMBER OF BALLOONS CUT DOWN BY MAGNETOMETER

In preparation for the first TWERLE flight series, flight 248204 AAA was launched from Christchurch, N. Z., on 7 September 1971, with a magnetometer device to test cutdown performance. This flight flew for 4 days as per trajectory in Figure 8-1, and upon crossing the -0.4 gauss line (vertical component of earth's magnetic field) the cutdown was activated and occurred at 51S x 105W.

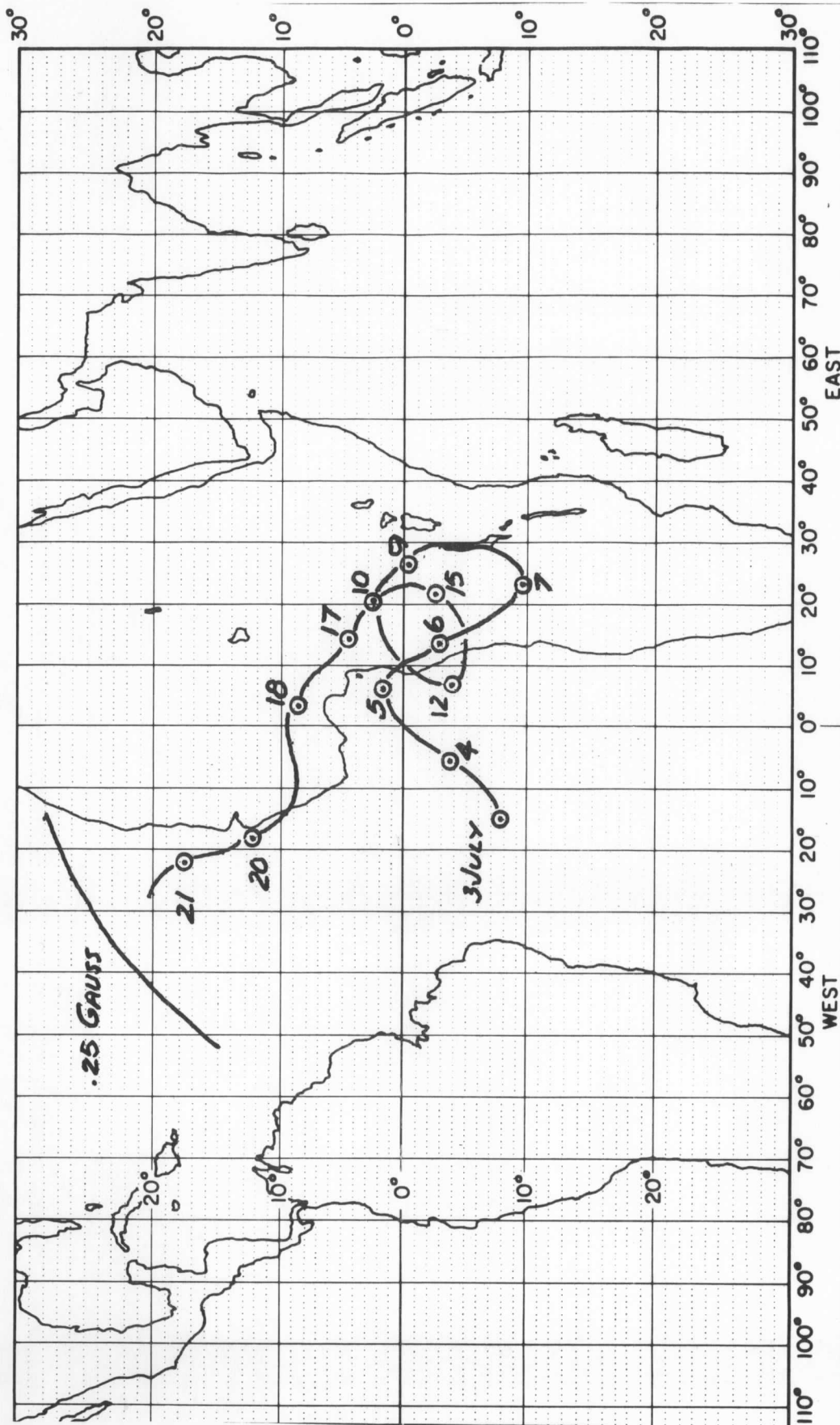
During the first and second flight series from Ascension Island, the magnetometer cutdown device was set to activate upon crossing the +.25 gauss line in the northern hemisphere. Three flights 71156 P, 74156 W, and 77153 P, were cut down during the first Ascension series and one flight, 89154 B/D in the second series. Trajectories of these flights are illustrated in Figures 8-2, 8-3, 8-4 and 8-5.

B. TRAJECTORIES LEADING TO CUTDOWN



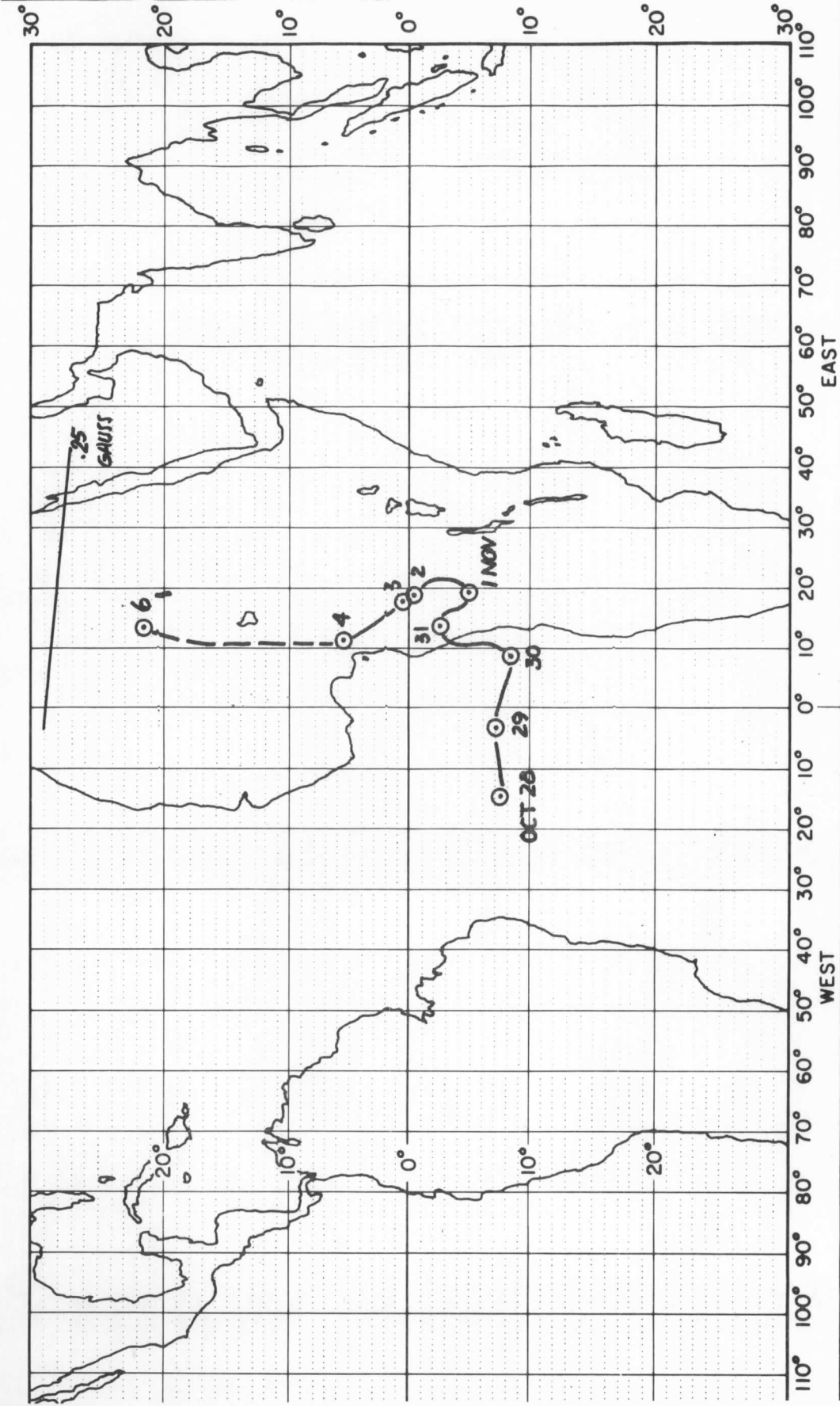
248204 AAA

Figure 8-1



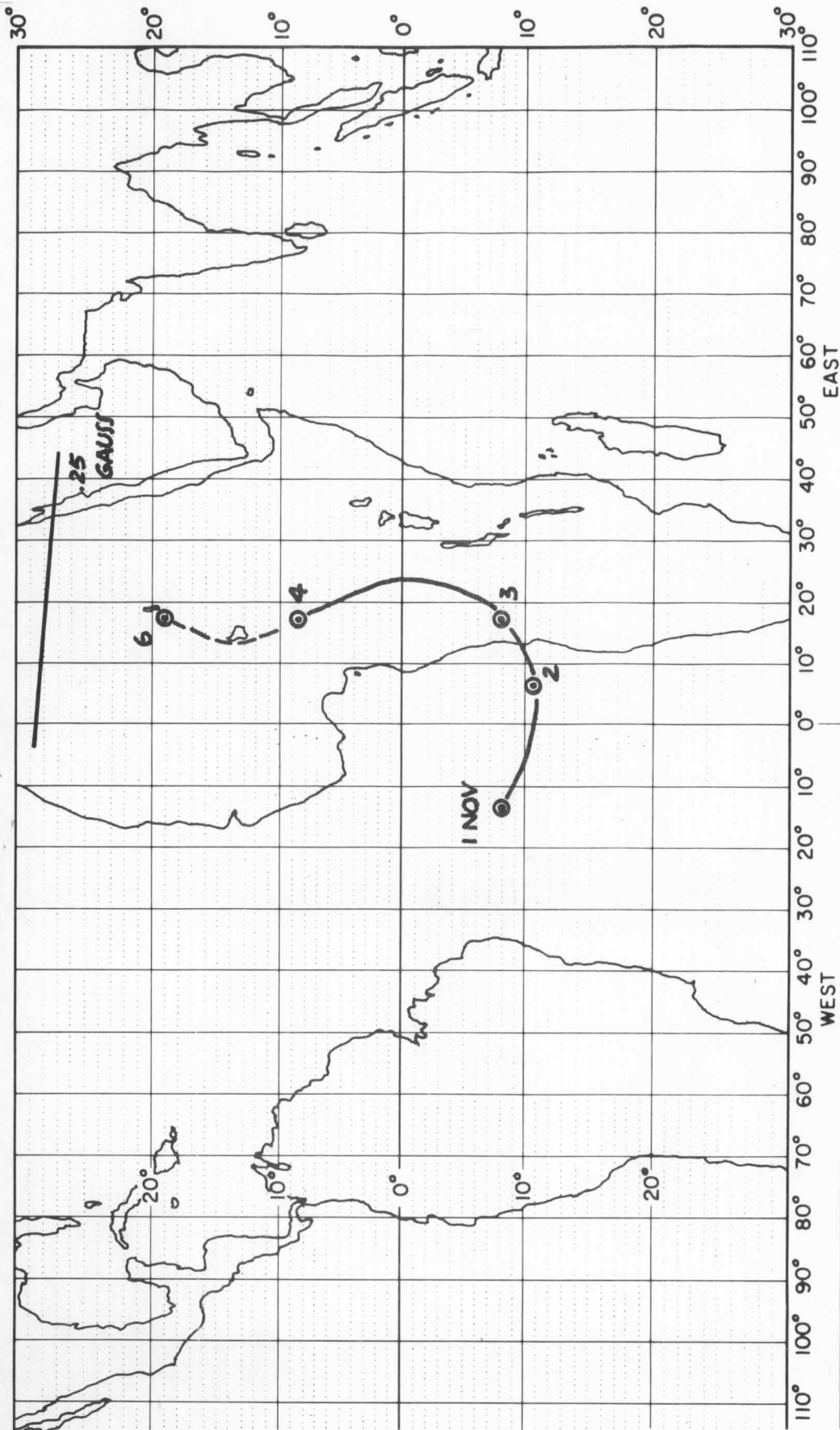
89154 BD

Figure 8-2



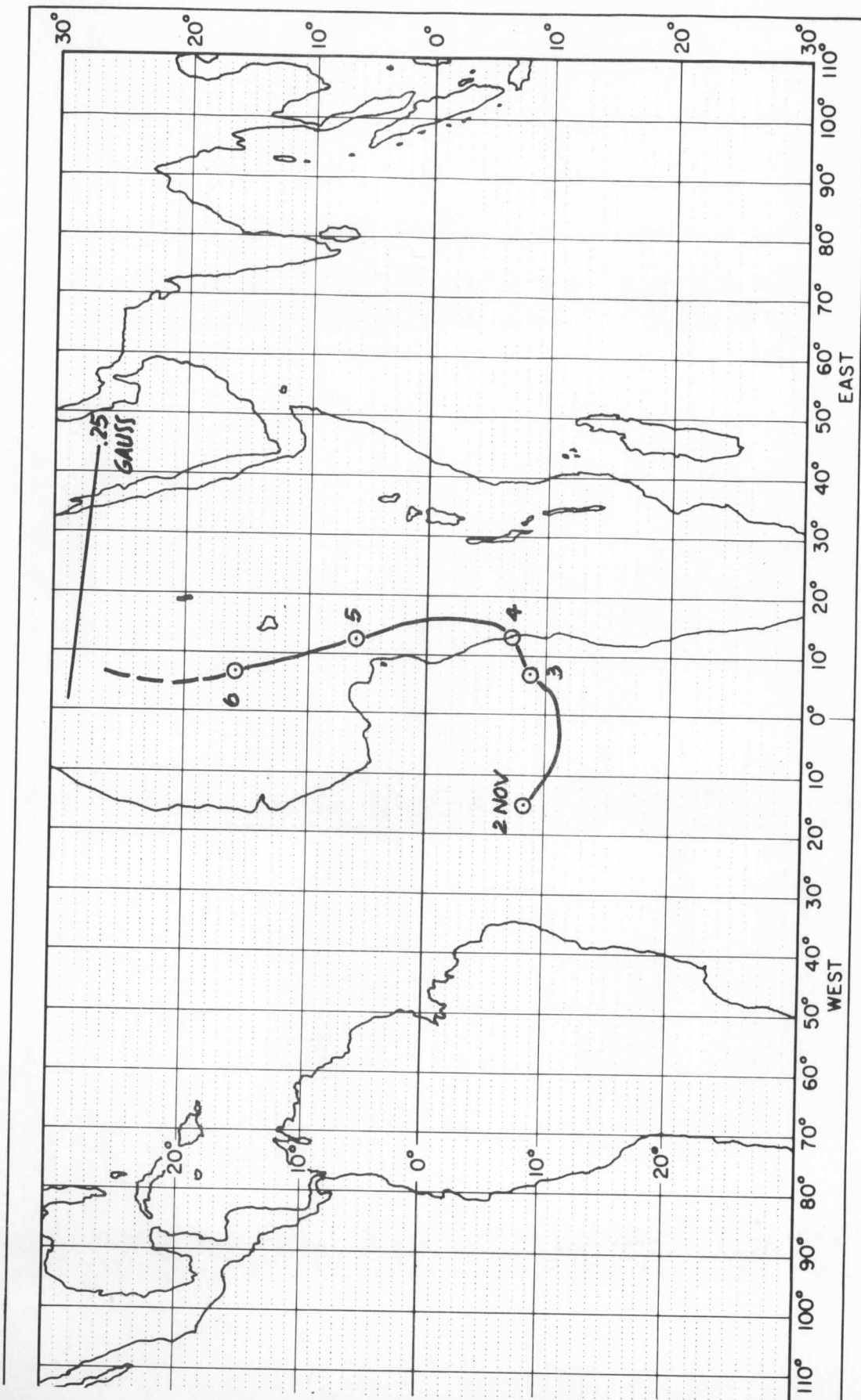
C71156 P

Figure 8-3



C 74156 W

Figure 8-4



C77153 P

Figure 8-5

IX. TWERLE SOLAR PANEL

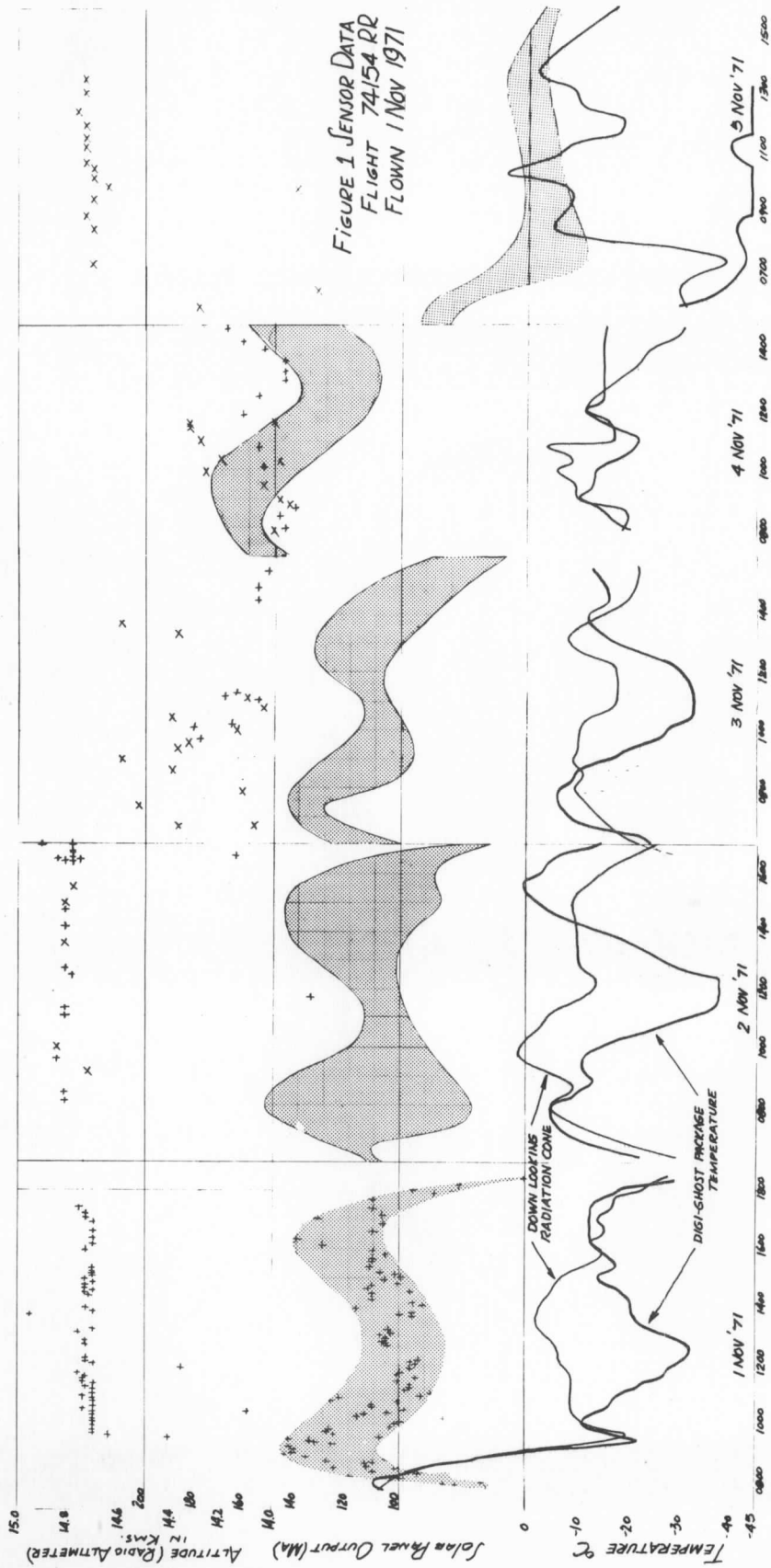
A. TEST FLIGHT DATA

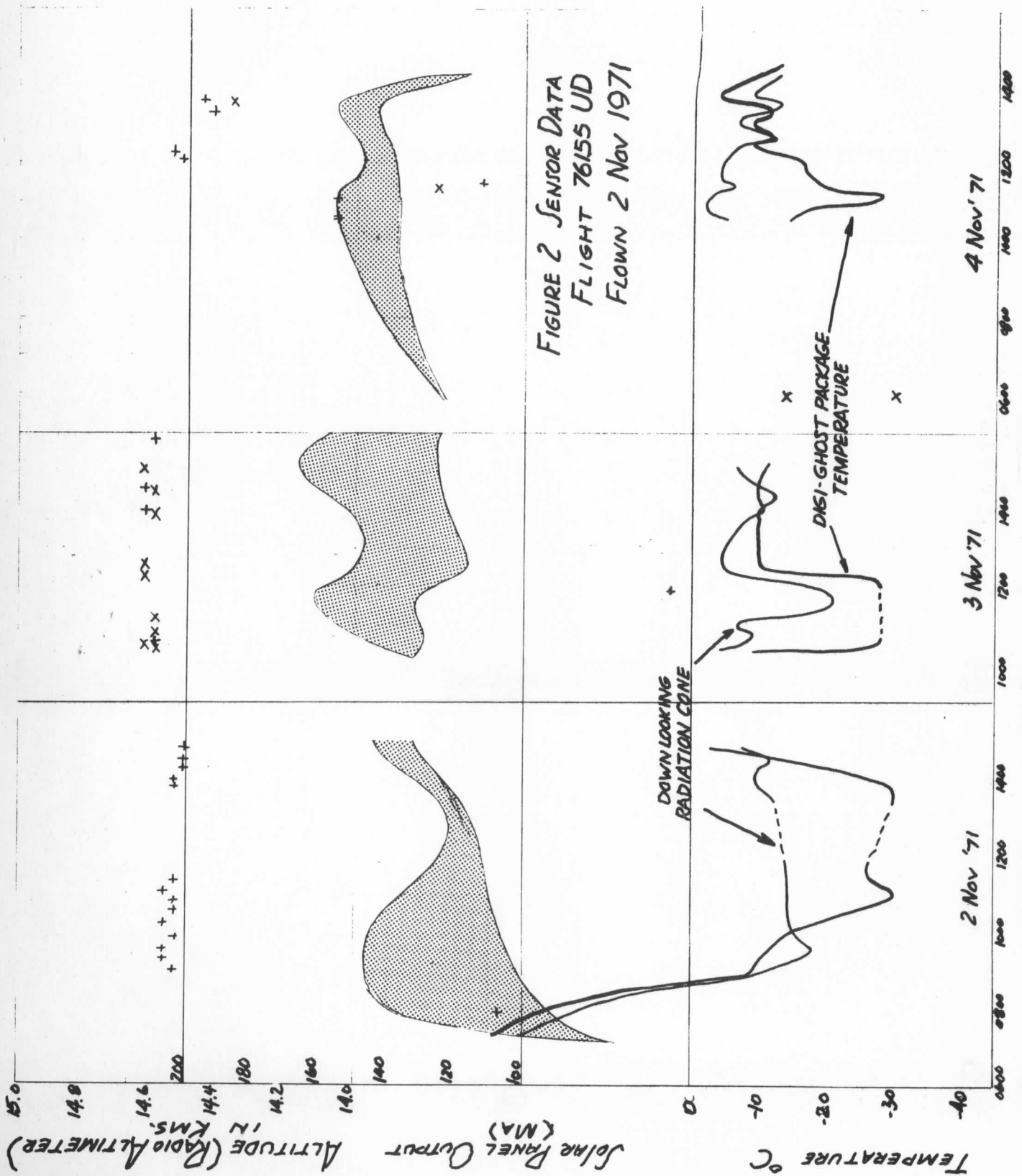
The TWERLE Solar Panel is a three-sided pyramid constructed from equilateral triangle sections. This design was chosen because it gives a near-constant power output for all solar angles.

During the November 1971 test flight series, two solar panel test flights were flown. The performance of the solar panel was monitored by measuring the current through the voltage regulator. The voltage regulator is a shunt regulator which functions by drawing enough current from the solar panel to pull the output voltage down to the regulation voltage (12 volts). Current measurements are made during a period when very little system power is being consumed. So the current through the regulator is directly proportional to the power output capability of the solar panel. Power from the panel is computed by the relation $24 \times I$ (I = current in amps.). Figure 9-1 is a presentation of data received from the balloon Digi-GHOST telemetry system. The shaded portion on the plot includes all solar panel current data points. Observe that on November 4, there was an increase in solar panel output. This is due to an increase in the amount of solar radiation reflected up from below. On November 5, there is a large decrease in power output caused by the sun being obscured by clouds. These conclusions are verified by other experiments on the flight. Note that on November 5, the Digi-GHOST package is very cold and the down-looking cone becomes warm. The down-looking cone sees a warm surface below, but the Digi-GHOST package is shielded from the sun by a cloud above and becomes cold.

The upper plot for Figure 9-1 is altitude measured by a radio altimeter. November 1, 2 and 5 were days when the balloon was over open sea. On November 3 and 4, the balloon crossed Africa. The spread in the data points is due to variations in the altitude of the land surface.

Figure 9-2 shows similar data for flight 76155 UD on 2, 3 and 4 November 1971.





X. FIELD REMARKS

A. Digi-GHOST 15 MHz ANTENNA

The first two Digi-GHOST flights used an antenna configuration that included many of the flight train components as part of the radiating antenna. See Figure 10-1. On these flights, the transmitter had a frequency chirp and the received power seemed lower than normal. These are both indications of a transmitter mismatch. To correct for this mismatch an alternate antenna configuration was improvised. The improvised design used parallel resonant isolation networks that block 15 MHz RF power but pass power and modulation signals. See Figure 10-2. The new antenna design gave a marked improvement in transmitter performance.

B. DOUBLE CODING OF DIGI-PACKAGE

Several of the Digi-GHOST units switched into a mode where they telemetered erratic data. When in this mode, the Morse code bits stream was transmitted at two times the normal rate. This undesired operation was duplicated on the ground by spraying circuit coolant on the crystal oscillator circuit. It was observed that cooling had no effect, but the moisture that was condensing on the circuit board caused double coding. On the following flights, the circuit board was sprayed with silicon oil to protect it from water. (This was not completely successful.) On one flight, the package was purged with helium before launch. This system flew without double coding. The double coding problem persisted intermittently for several days and then cleared up. The evidence indicates the problem was condensed moisture. The

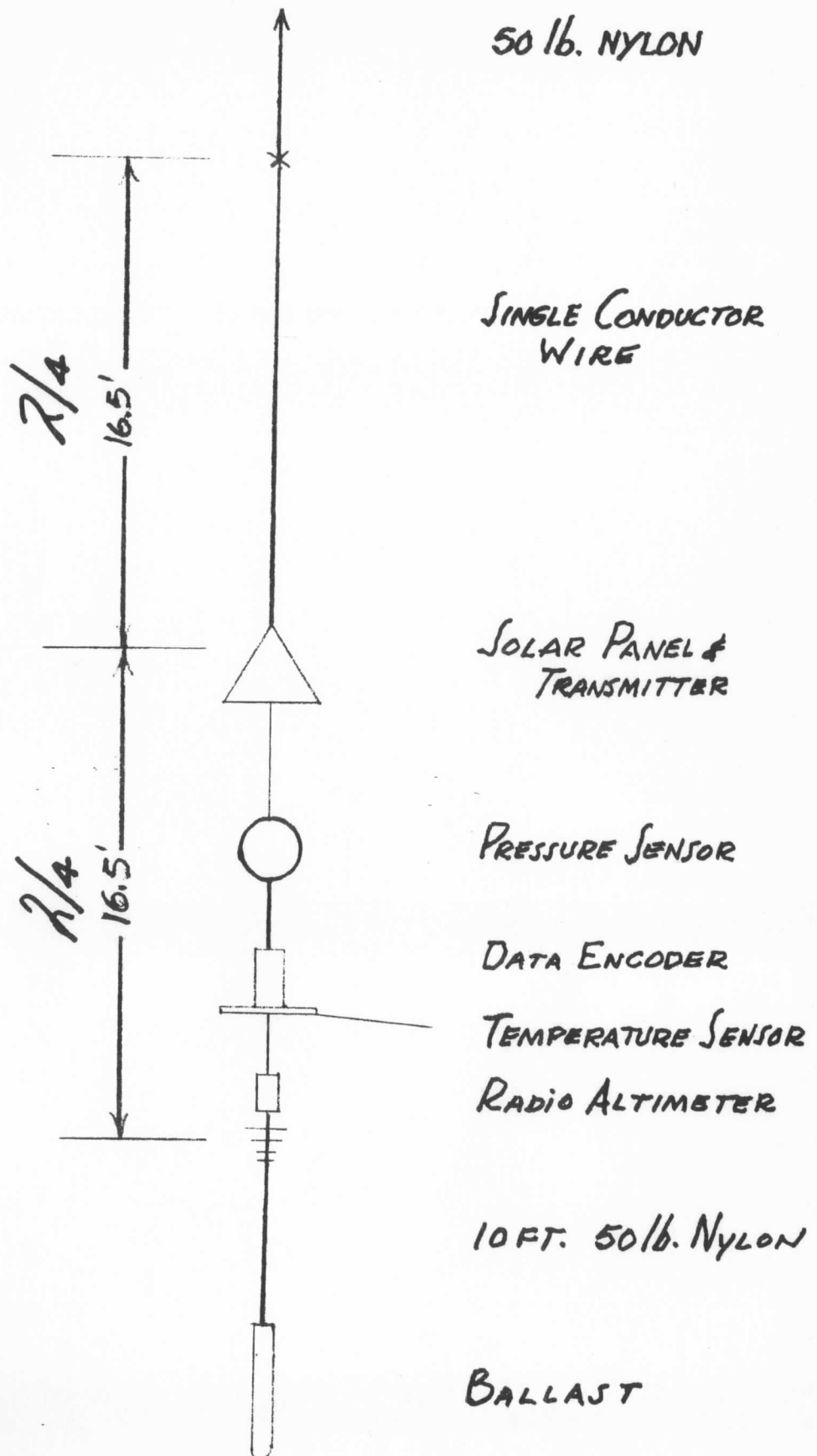


FIGURE 10-1 - DIGI-GHOST FLIGHT TRAIN CONFIGURATION

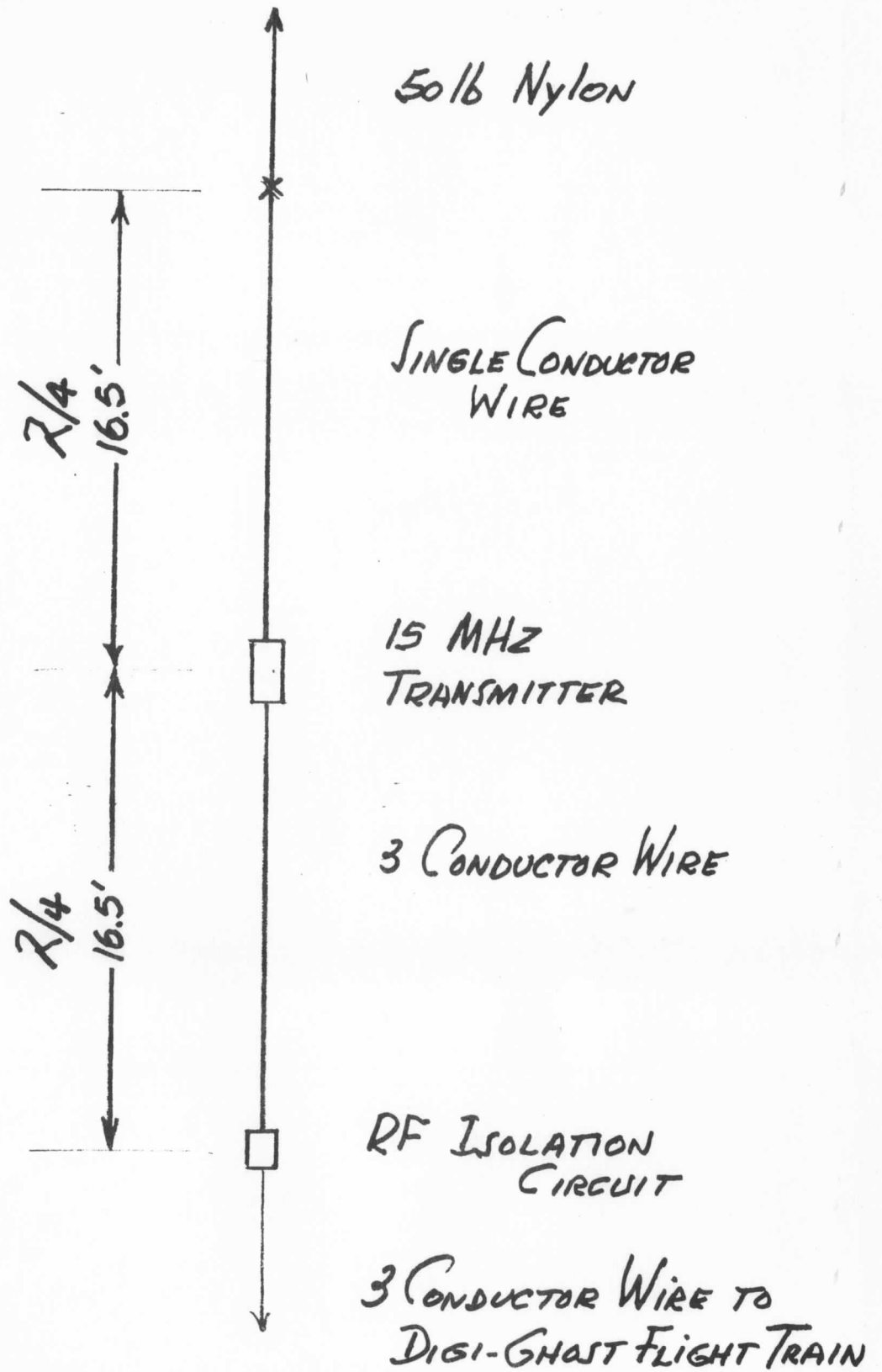


FIGURE 10-2 . DIGI-GHOST ANTENNA CONFIGURATION WITH RF ISOLATION CIRCUIT

tight foam enclosure probably aggravated the problem by confining the moist sea level air inside. Once the moisture had frozen on the circuit board, it took several days to sublimate away. It is recommended that moisture protection schemes be investigated. Suggested protection techniques are a conformal coating that keeps moisture from getting on the circuit, and a more open packaging technique that allows the system to purge moist surface air.

C. SENSOR INTERFERENCE

On the first Digi-GHOST flight, the air temperature appeared to be very steady for several readings and then to jump to a new steady temperature. Ground tests were performed on the second Digi-GHOST circuit before flight. It was found that the voltage-controlled oscillator in the temperature measurement circuit was phase locking to a sub-harmonic of the pressure sensor frequency. A circuit was devised to switch the +12 volts to the pressure sensor. The +12 was only turned on when the pressure sensor channel was being commutated. The ground test was performed by replacing the pressure sensor with a decade resistance box. The resistance was changed in small steps. When the pressure sensor was turned off, the digitized temperature reading followed with corresponding small steps. When the pressure sensor was on the temperature output locked to one value over several resistance steps and then suddenly jumped to a new reading. See Figure 10-3.

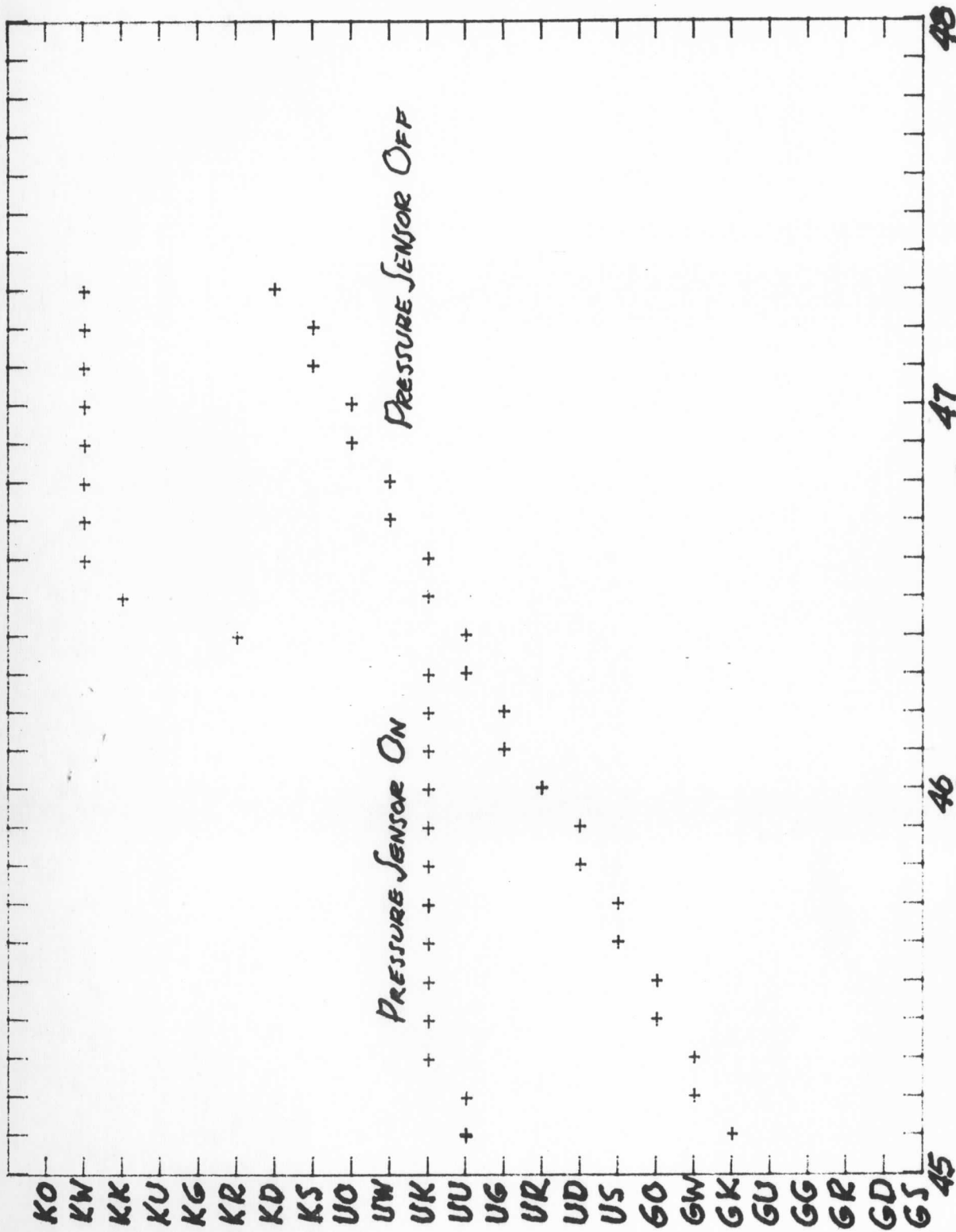


FIGURE 10-3 DIGI-GHOST OUTPUT AS A FUNCTION OF AIR TEMPERATURE SENSOR RESISTANCE WITH & WITHOUT INTERFERENCE FROM PRESSURE SENSOR

D. SHORTED TEMPERATURE SENSORS

Telemetry data on two Digi-GHOST flights indicate that the air temperature thermistor was shorted. One other thermistor was found to be shorted in the pre-flight checkout. It is almost certain that the cause of shorting is damage to insulation at the point where the center conductor comes out of the nickel-plated tube to make connection with thermistor lead. The design will be changed to prevent this.

E. MOBILE LAUNCHER MODIFICATIONS

The operational launch trucks will have improvements to facilitate flight instrument preparation. Since the packages and line lengths will be the same on each flight, special mounts will be built into the instrument set-up table. The balloon trough will be varied in size depending on launch site altitude. If a site well above sea level is chosen, the trough will be shorter and wider to compensate for a larger volume balloon in the less dense atmosphere.

F. BALLOON INFLATION BOX (BIB)

The balloon inflation area will have two chambers for filling and weighing-off balloons. A maximum of three balloons, one in each chamber, plus one mounted on the launcher, can be prepared in advance to a launch period. The Balloon Inflation Box (BIB) will use an improved design compared to the one tested during TWERLE-3. Two small access doors will be added to the sides at either end to avoid having to open the large door when balloon adjustments are needed. Only one large door at one end, for balloon insertion and removal, will be used.

G. TWERLE ASSEMBLY BUILDING

Current plans for the TWERLE assembly building require a rectangular 32 X 60 foot structure, (floor plan shown in Figure 10-4). The building will be divided in five sections: storage, office, electronics, balloon inflation and launcher set-up areas. The building will be air-conditioned for accurate balloon inflation, to prevent excessive moisture contact with flight components and to provide comfortable working conditions for operators. A minimum of doors and windows are planned to reduce thermal flux and to prevent dust and dirt from entering the building.

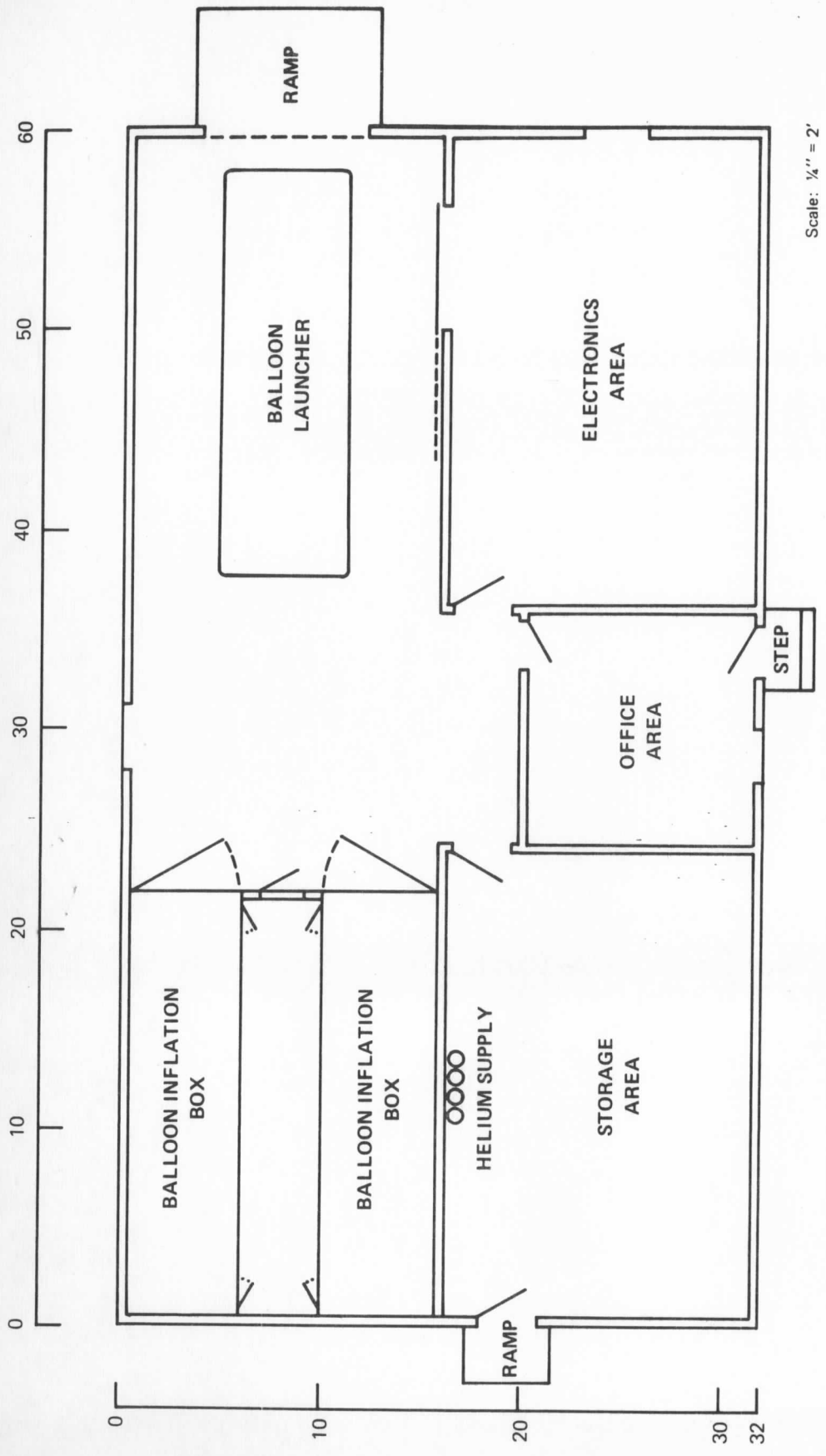
H. FIELD NOTES ON FLIGHT OPERATIONS DISCREPANCIES

1. Balloon Shipping Box

Two of three boxes arrived upside down due to the lack of pallets and "UP " mark on the box. Both of these details had been specified. Luckily, none of the balloons were damaged due to being overturned.

Box contents, i.e., balloon serial numbers, were not marked on the outside of the box, thus the vapor seals on all boxes had to be broken before actual needed time to find the uncapped balloons that were required for the first flight.

The cardboard puncture-resistant cover placed on top of the top balloon in each box was found ineffective because moisture and humidity had made it soft and soggy. Since the bottom of the box was unprotected by a pallet it was also vulnerable to puncture penetrations, but none had occurred. A change to masonite hard-board will be made to packaging specifications.



TWERLE LAUNCH BUILDING

Figure 10-4

The cardboard box used was very lightweight and easy to handle. Eight balloons per box made an ideal package.

The use of plastic banding is essential since the boxes tend to crush and shrink slightly due to handling, so steel bands become loose when used.

An inner puncture protective sheet of hardboard on top of the box is needed. The cardboard sheet used was ineffective because it became soft and soggy due to moisture, especially when outside the vapor liner.

2. Cardboard Cartons

The inner carton containing the balloons lacked an inner protective liner to prevent abrasion between the balloon sleeve and the cardboard carton. This was not a requirement for these balloons, but will be an addition to future orders.

The carton design consisted of a full-slotted top and bottom which had a butt joint opening along the full top and bottom. This design is not desirable since the balloon and sleeve is exposed along the crack. A carton design with the joint along the edges will be used on future orders.

3. Balloon Inflation Fitting

One inflation fitting on balloon R-72-6 was inoperative because of tight threads. Attempt to operate the fitting with three different adaptors and lubricant were unsuccessful. Consequently, the balloon could not be flown and was returned as a reject. The holding tab

tape fastened under the fitting was very useful in final sealing after inflation.

4. Balloon Inflation Sleeve

A small nylon line loop used to suspend the balloon during weigh-off failed due to improper installation in the load tape. Repair was easily made, since special tools were available, but additional instructions will be needed to prevent reoccurrence of this failure.

The balloon inflation sleeve for sphere R-72-12 was found to have a defective seam. As the balloon was installed on the launch truck, a three-foot long section of the seam separated. The bulging balloon was contained by pressure sensitive tape during launch. Tighter controls on the sleeve sealing process or seam sample tests will be required to prevent a reoccurrence of this type failure.

The rip panel pulled open reliably each time and balloon folding inside the sleeve achieved the desired cylindrical-shaped balloon when inflated. A "cut here" mark on the sleeve and where the inflation fitting is to be inserted will be added on future orders.

A weight attachment pocket will be added to each end of the sleeve to simplify adding ballast needed for weigh-off. This can be a sealed area added to the flap that extends at the sleeve ends.

5. Balloon

The balloon itself appeared satisfactory in all respects. Packing and protective pads allowed the balloons to survive shipment with no apparent damage. The load suspension lines and attachment tabs worked well.

6. Other Launch Support Equipment

a. Balloon Inflation Box (BIB)

A new, prefabricated, rigid BIB was installed and used satisfactorily on this test. Its assembly was considered slightly difficult and some changes in set-up can be made to correct this situation on future units.

Window, door and walk-ways added since last time were useful improvements.

A fold-out side platform with steps will be needed to facilitate access to the scales located on top of the box.

Internally mounted temperature and humidity instruments were found easy to use and provided improved accuracy in weigh-off correction measurements.

b. Inflation Hose

The 1/2-inch I.D. inflation hose coupled with 1/2-inch I.D. inflation fitting allowed rapid inflation without excess noise or balloon flutter. This size hose was considered satisfactory and will be used in the future.

7. Summary of Suggested Improvements

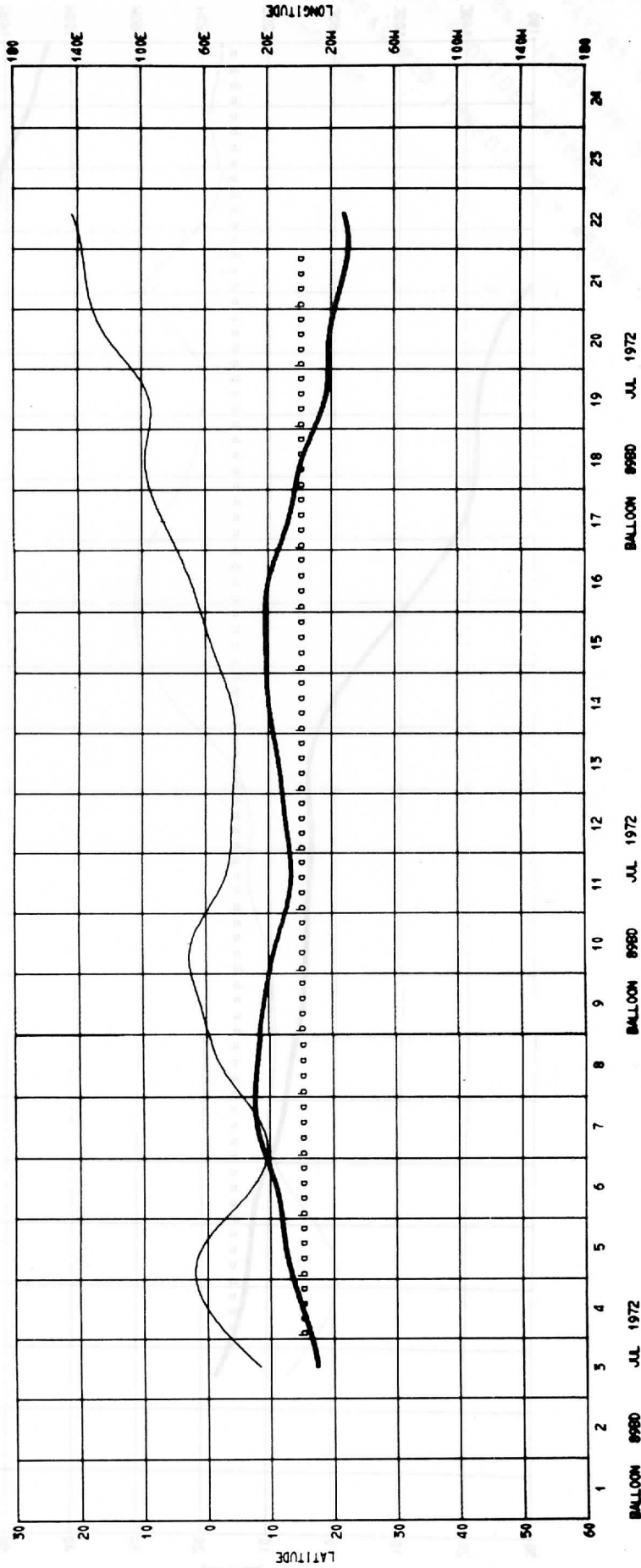
- a. Properly mark balloon contents on boxes.
- b. Mark "UP " on all four sides of boxes.
- c. Band boxes to pallets with plastic band and label boxes "not to be removed from pallets."
- d. Install hardboard protective sheets inside vapor liners (top and bottom of box).

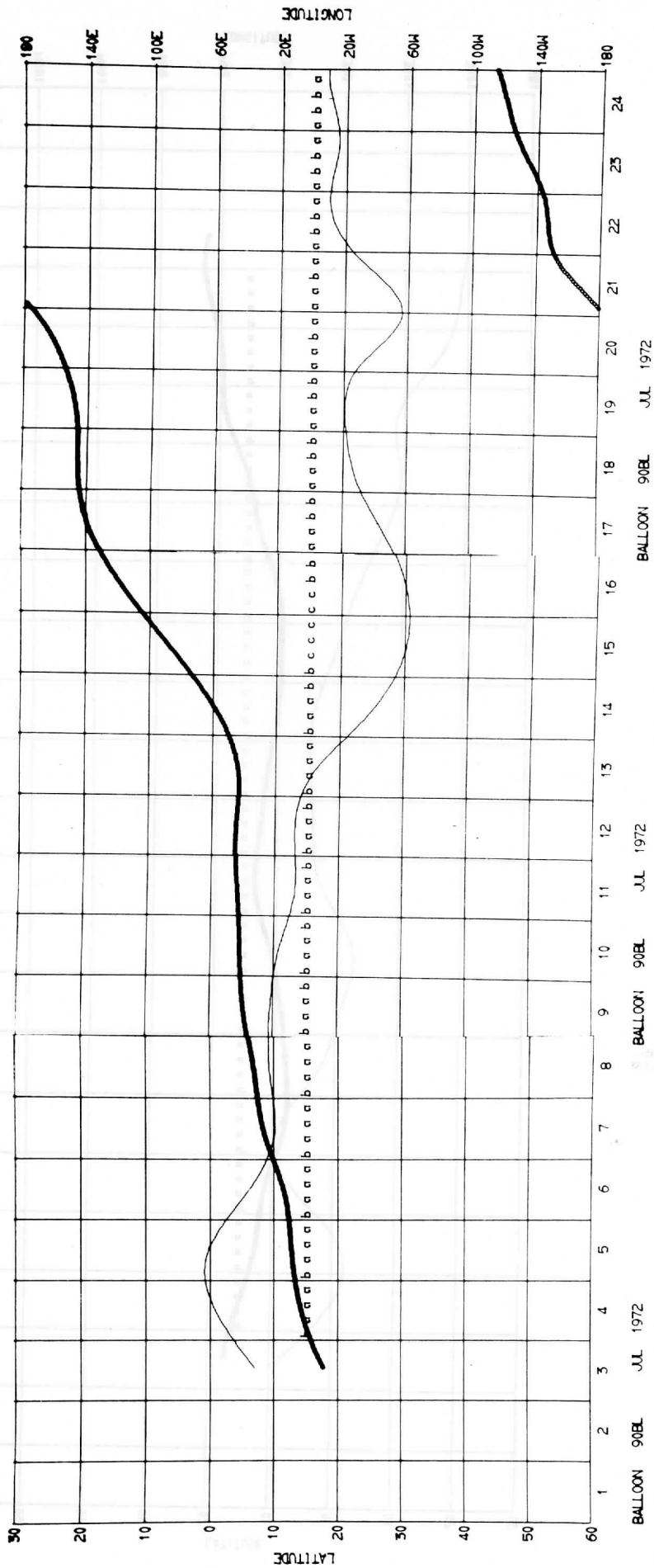
- e. Use balloon carton design with joint at overlapped edges.
- f. Place a plastic protective liner in the carton before packing sleeved balloon.
- g. Check inflation fittings to insure they work free and easy before shipping.
- h. Add a "cut here" mark on the end of the inflation sleeve.
- i. Add weight holder pockets to both ends of the sleeve.

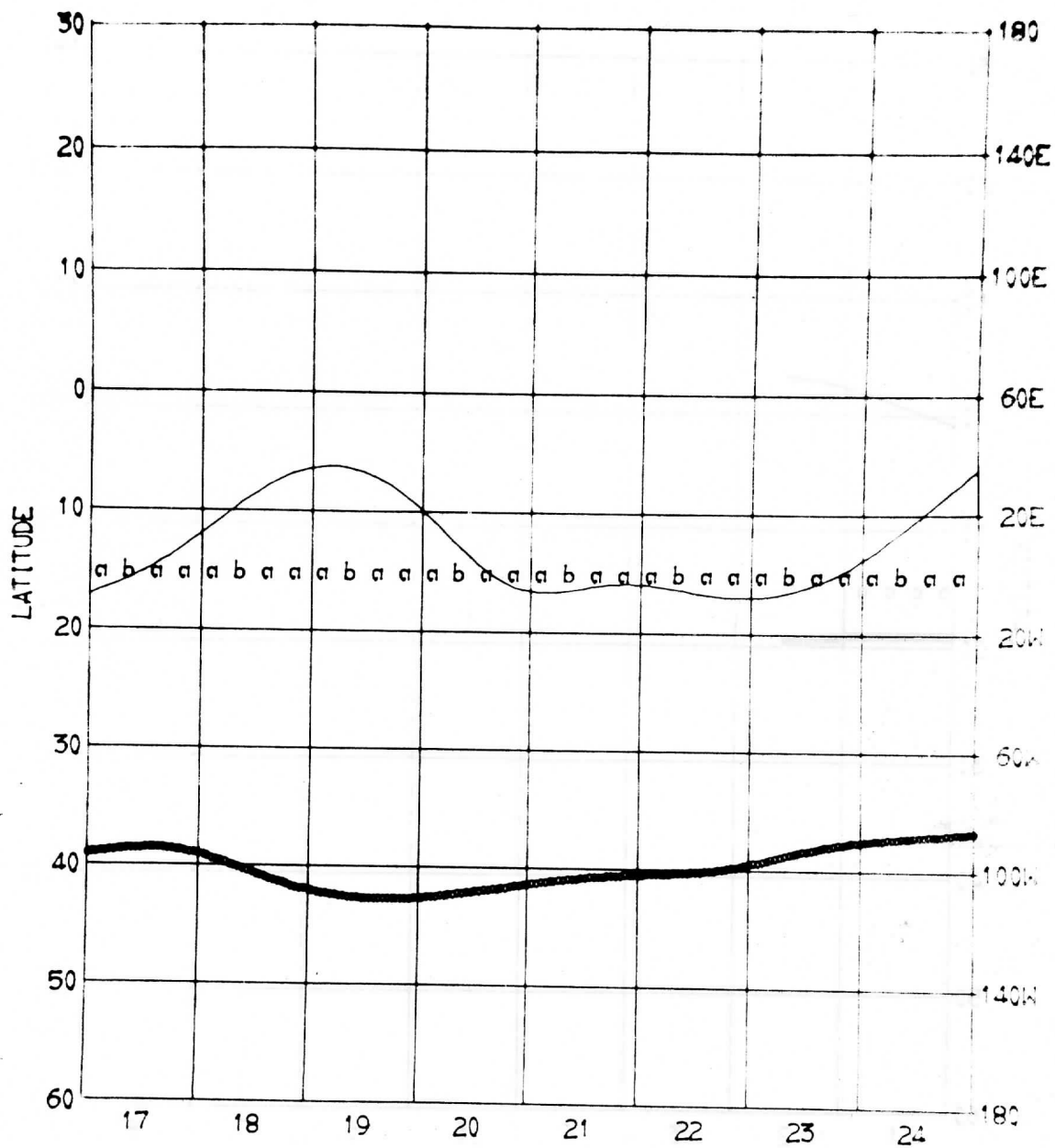
APPENDIX. BALLOON TELEMETRY DATA

A. LATITUDE/LONGITUDE PLOTS (JULY-AUGUST 1972), FOR 1, 2 AND 4-CODERS.

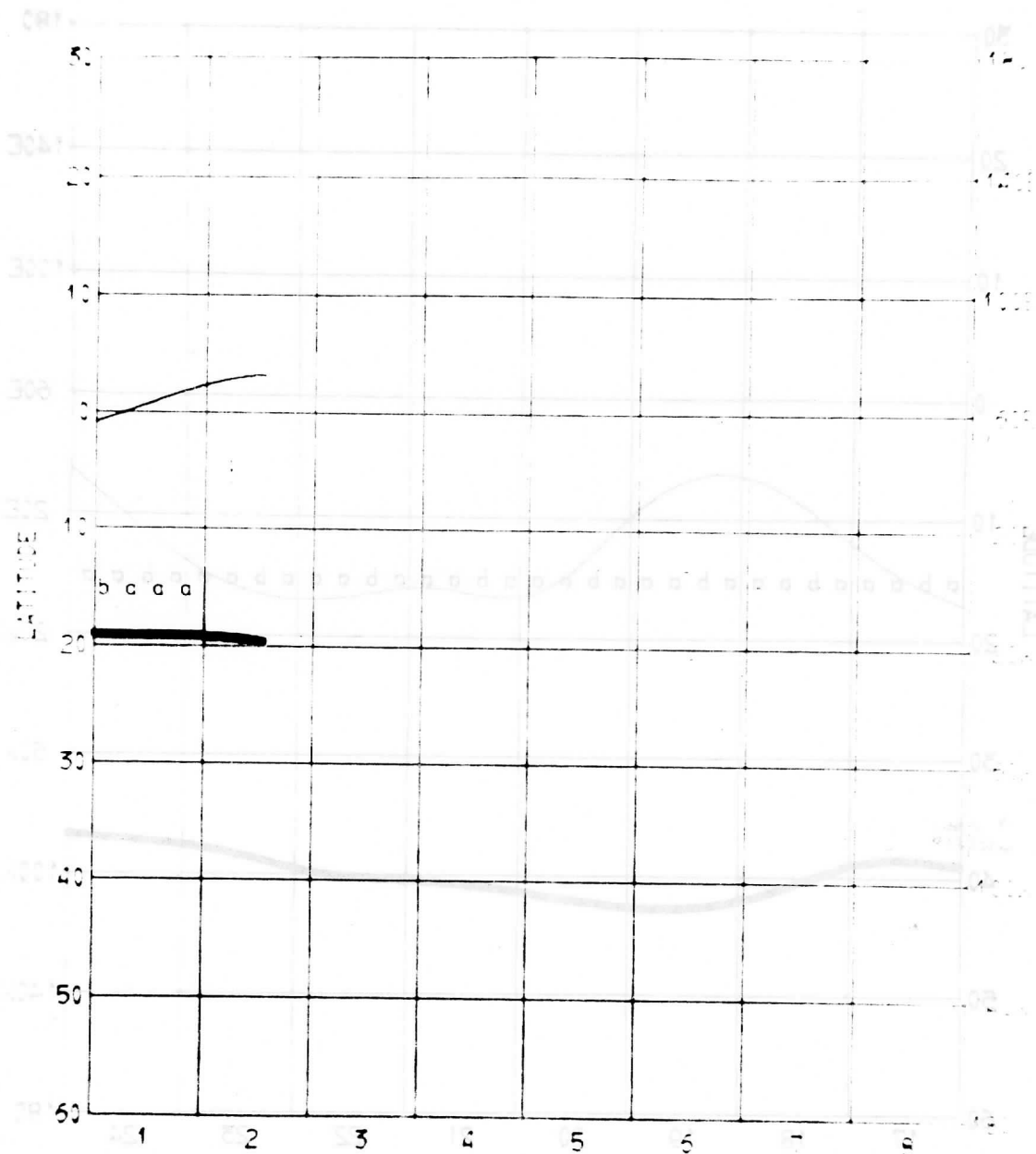
89154 B/D
90152 B/L
91153 NABL
92158 AN
93155 RDPC
94157 B/J
95152 AC
96156 AK
97152 BLCF
98157 AL
99151 AB
101151 AP
102156 B/G
103153 B/N
104155 B/F
105151 B/C
106154 AG
107153 AS
108154 B/K
11015 AV



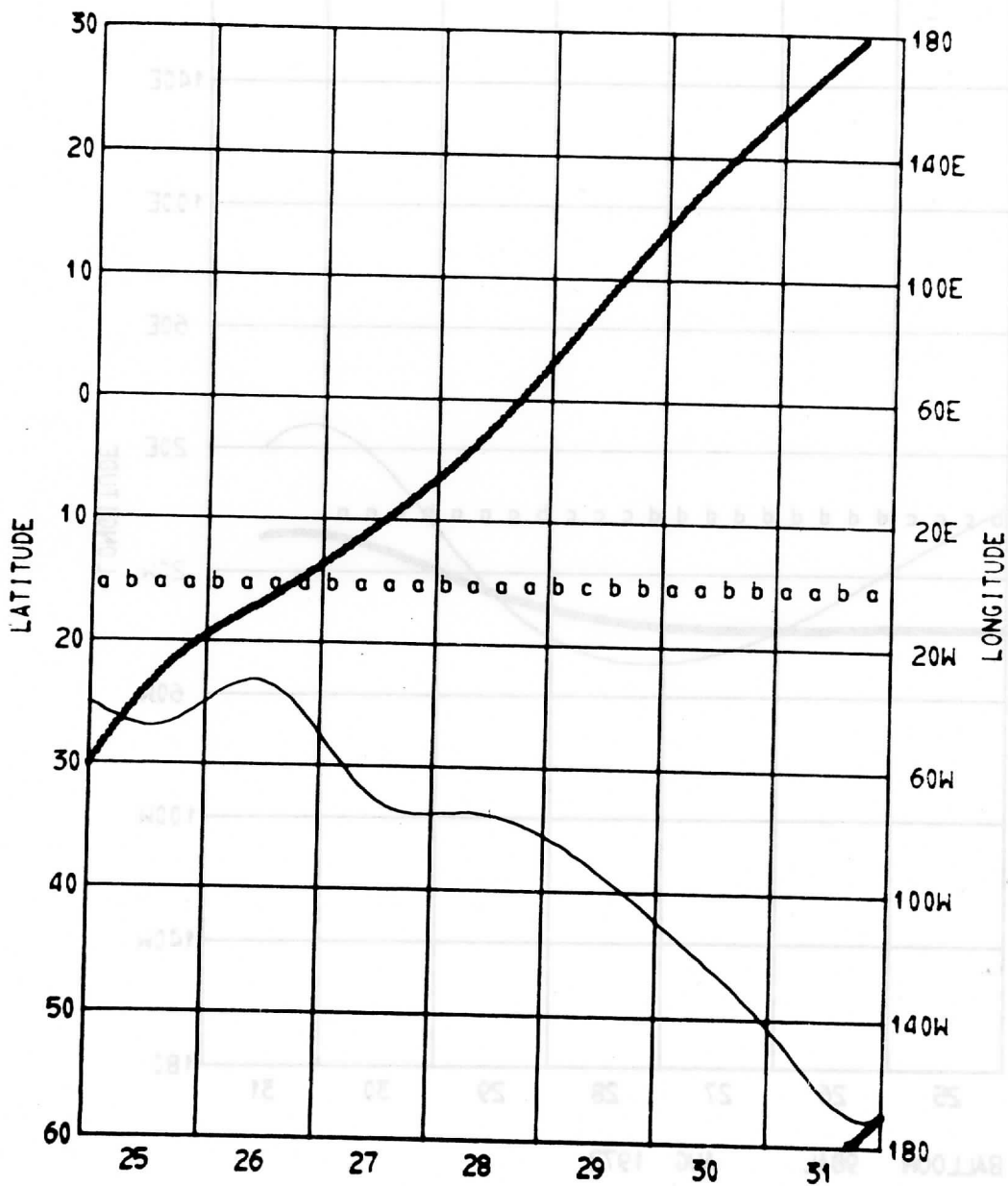




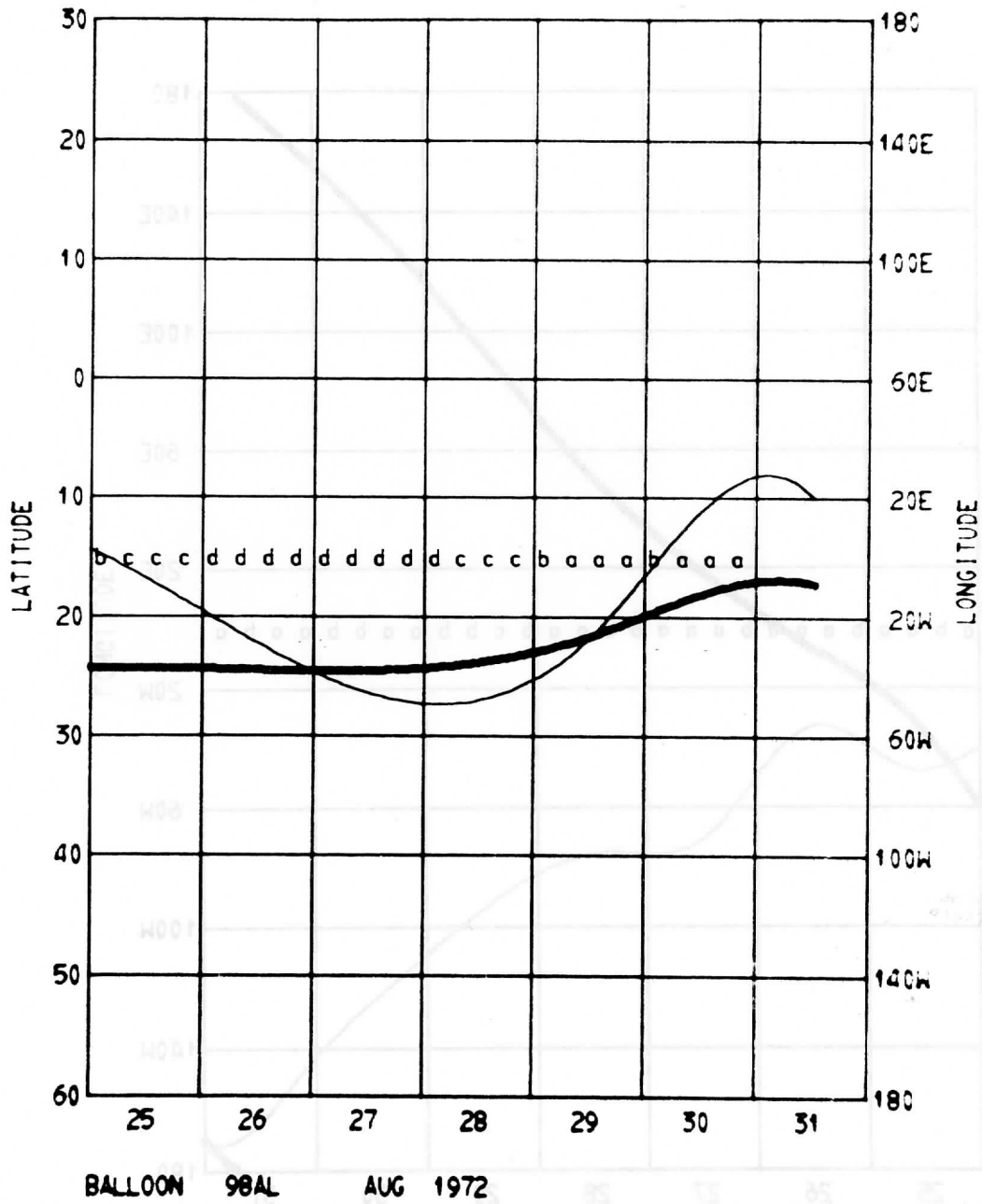
BALLOON 104BF AUG 1972

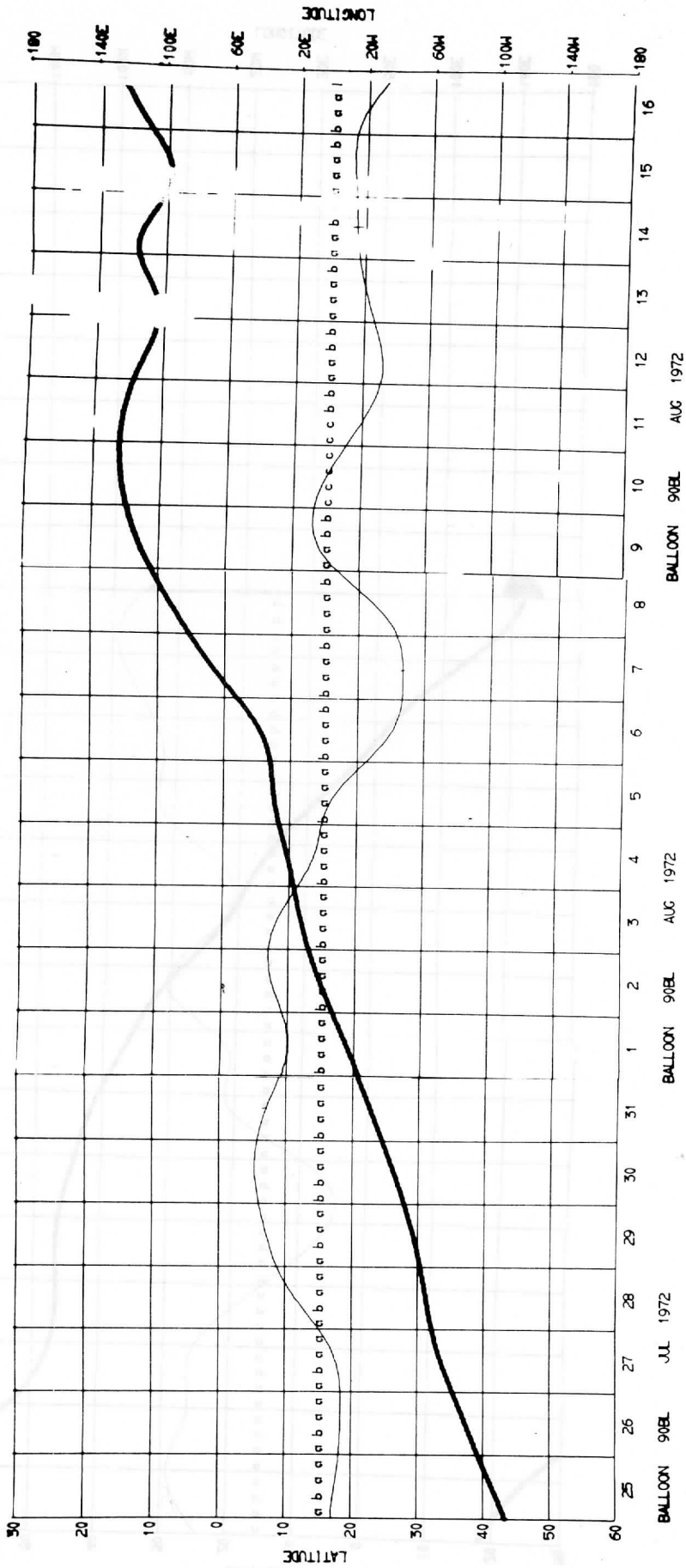


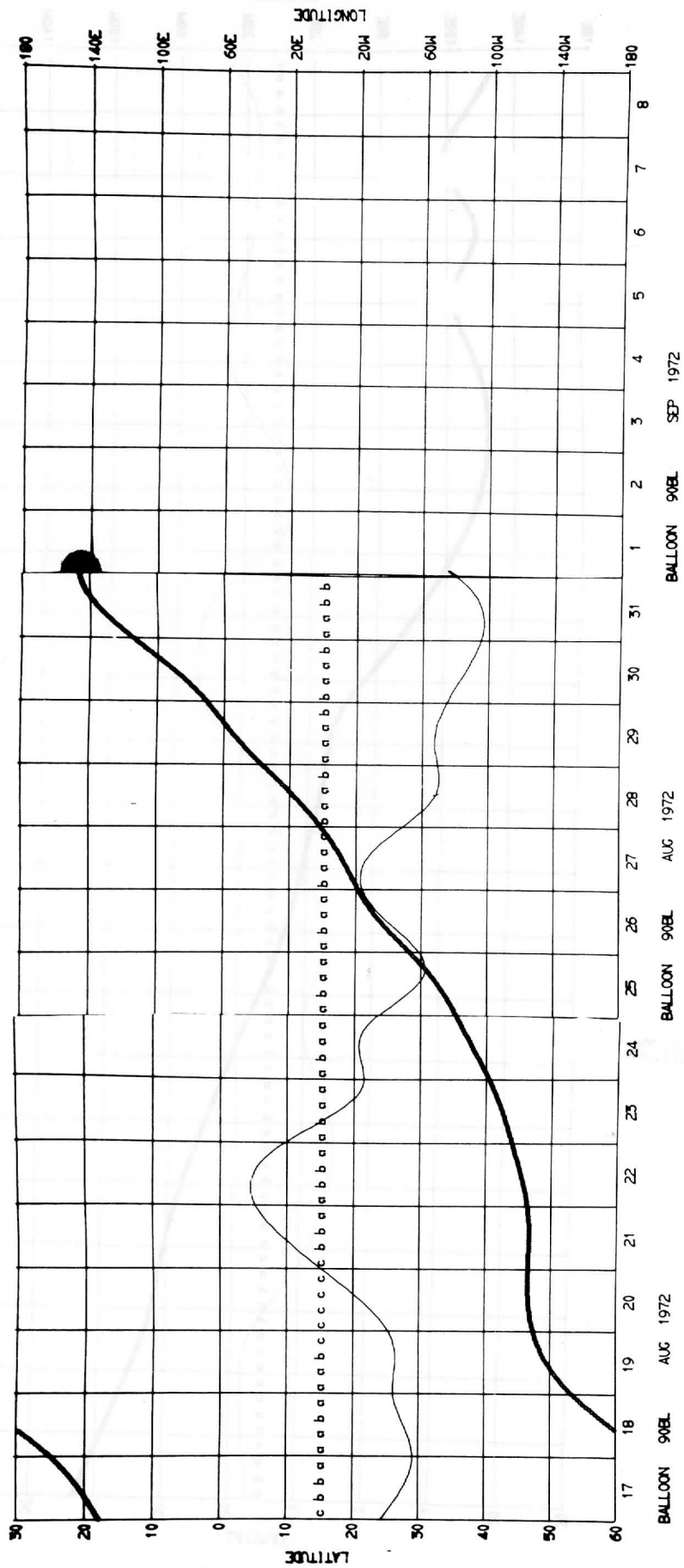
BALLOON 99AB AUG 1972 STATION QUA 18401 MOON LAB

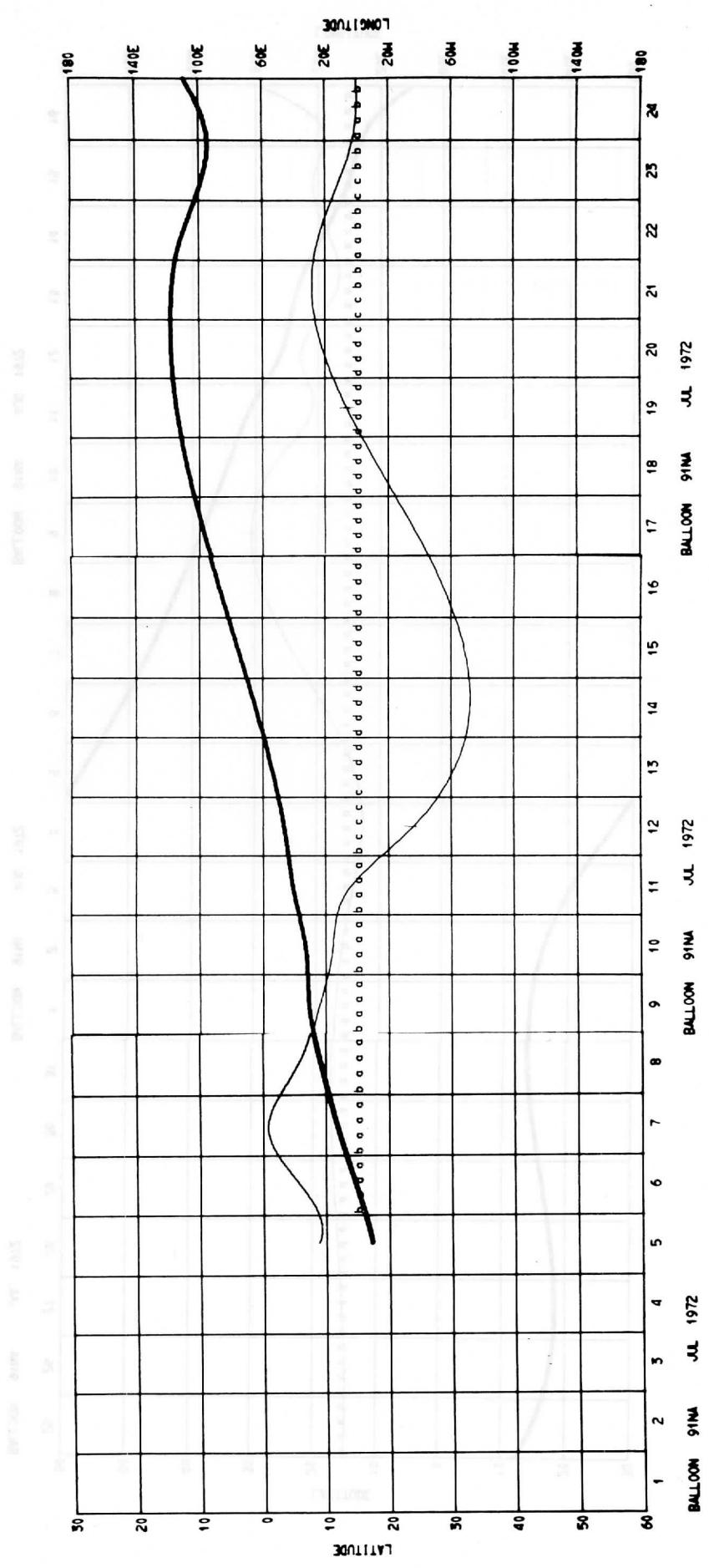


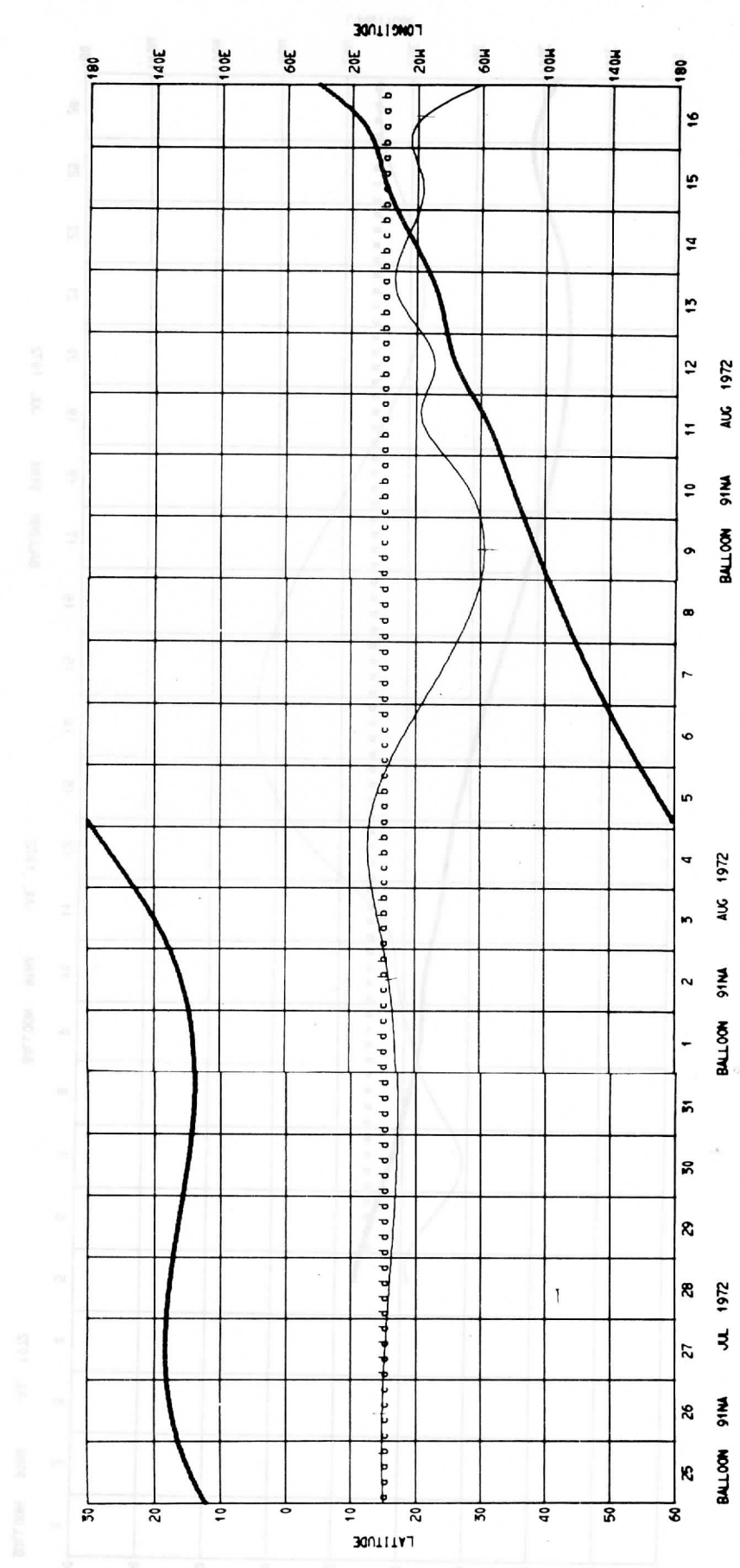
BALLOON 96AK AUG 1972

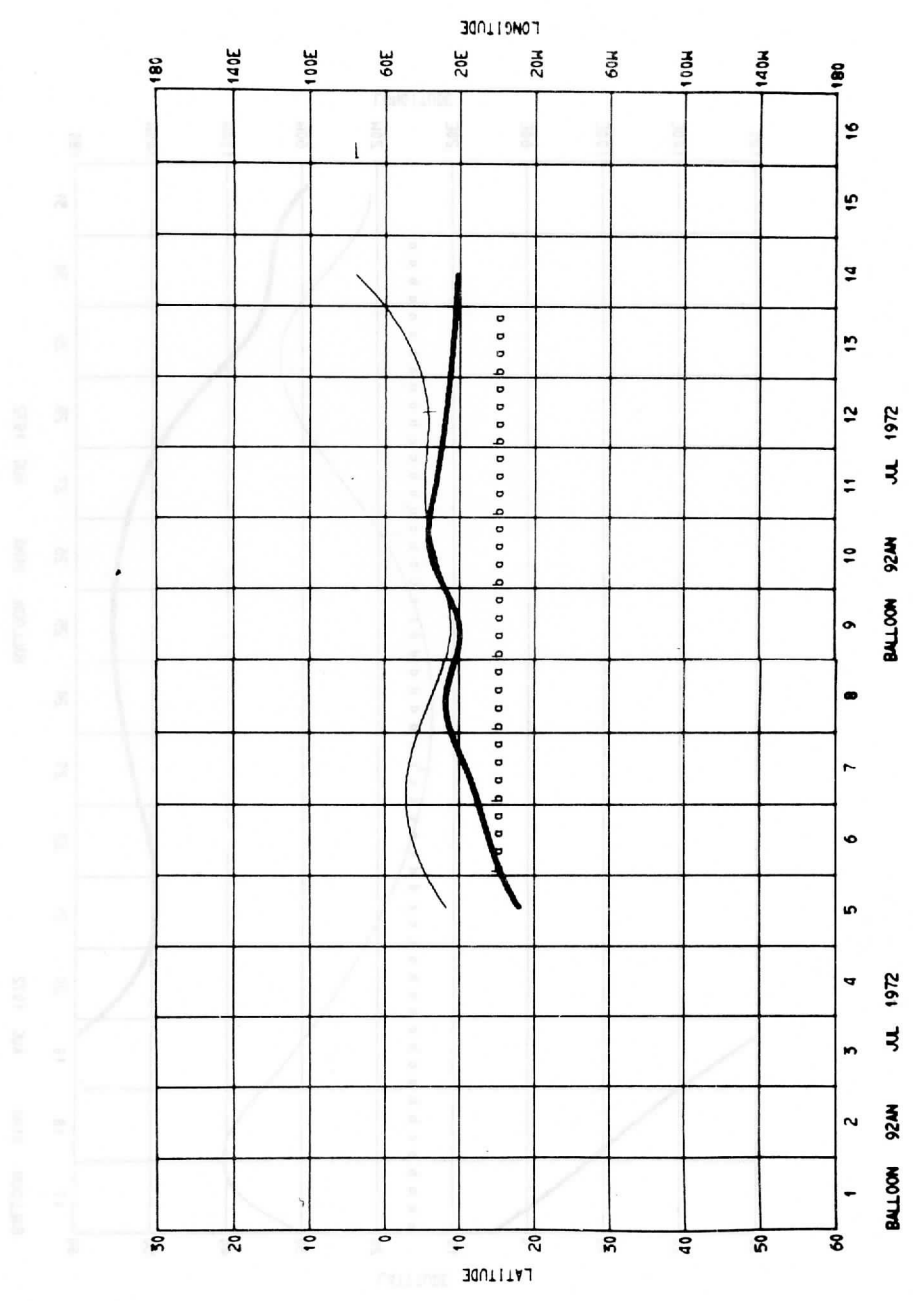


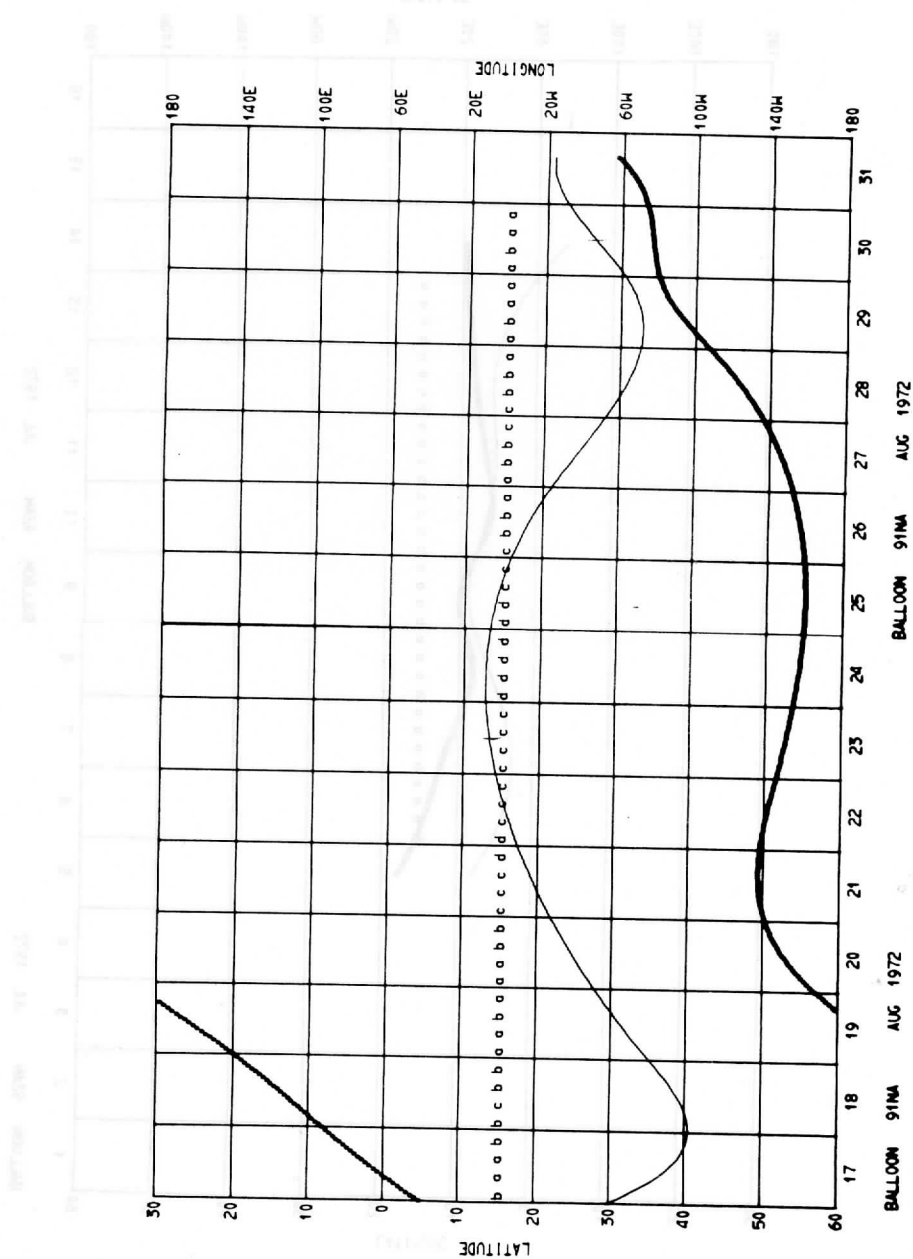


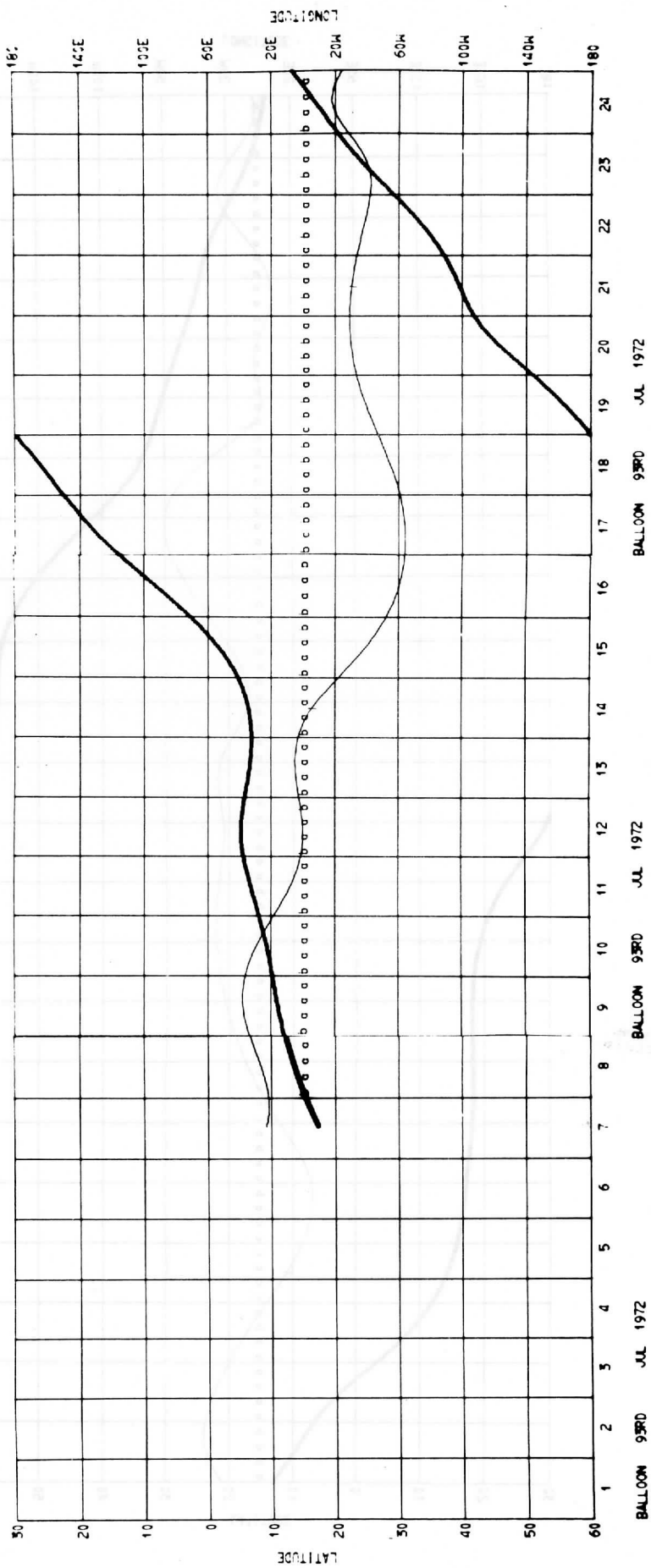


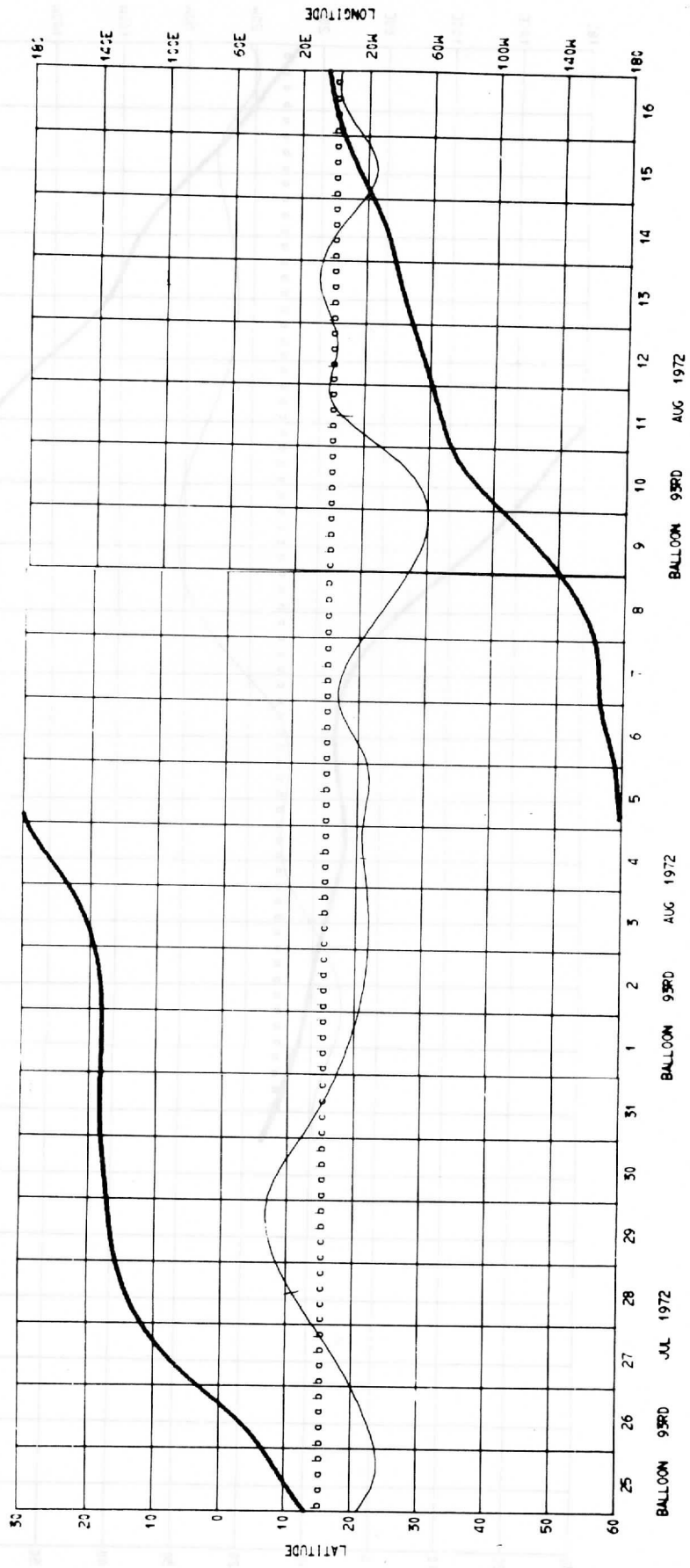


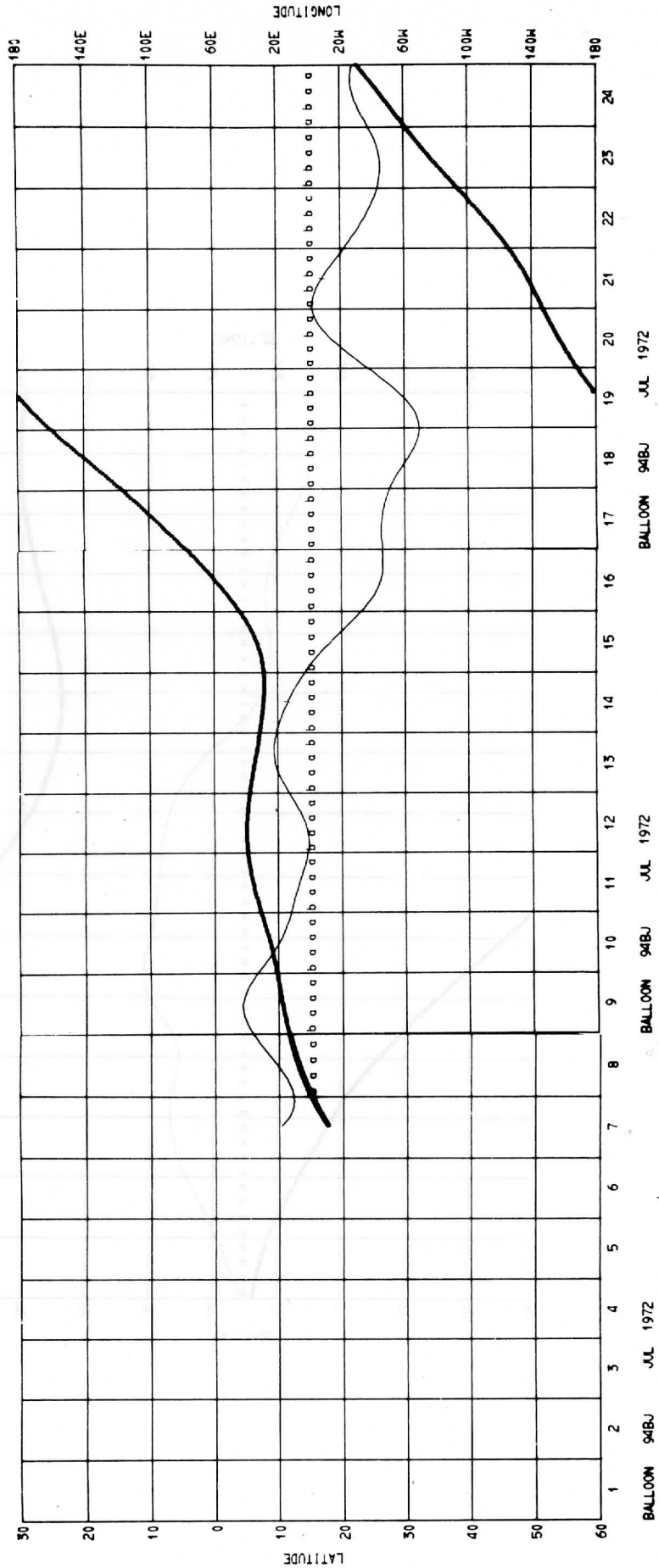




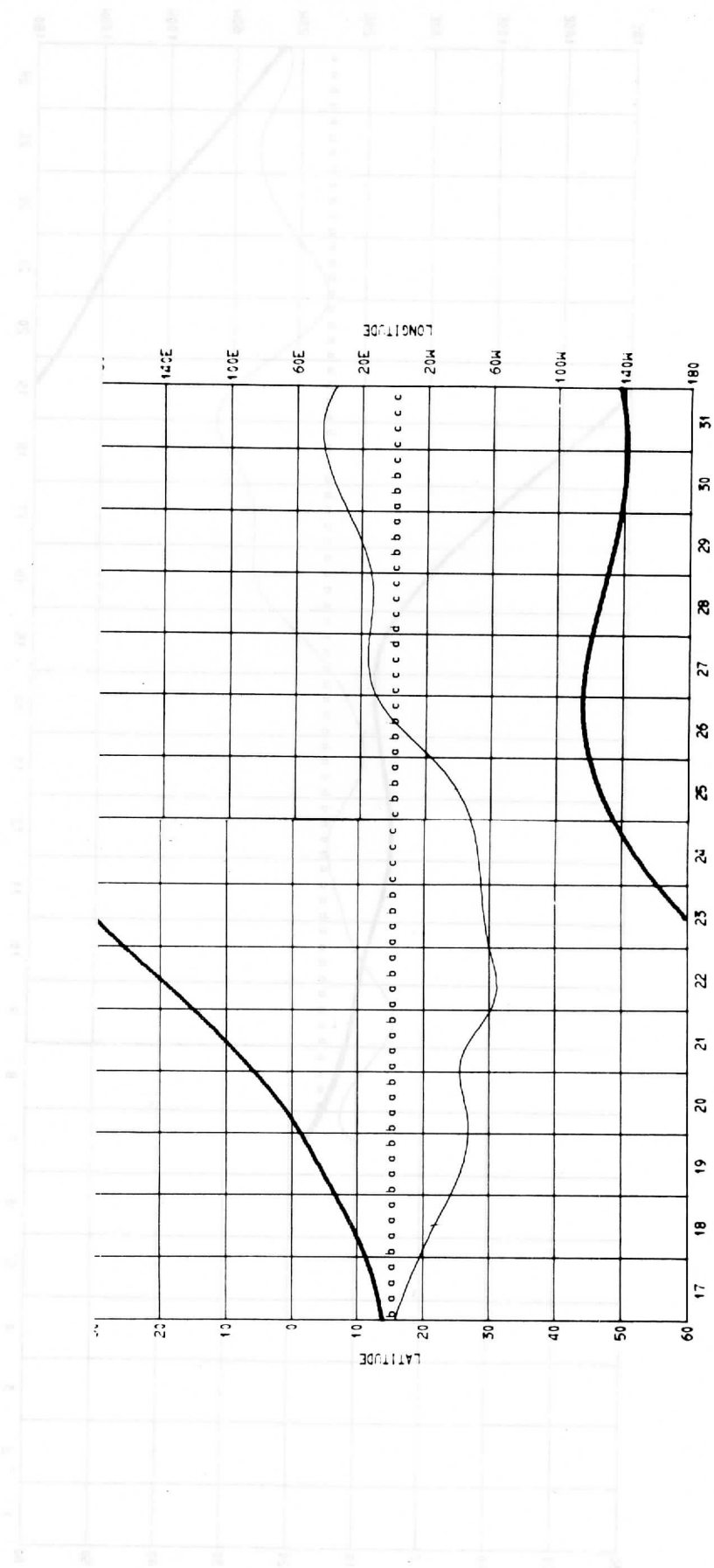




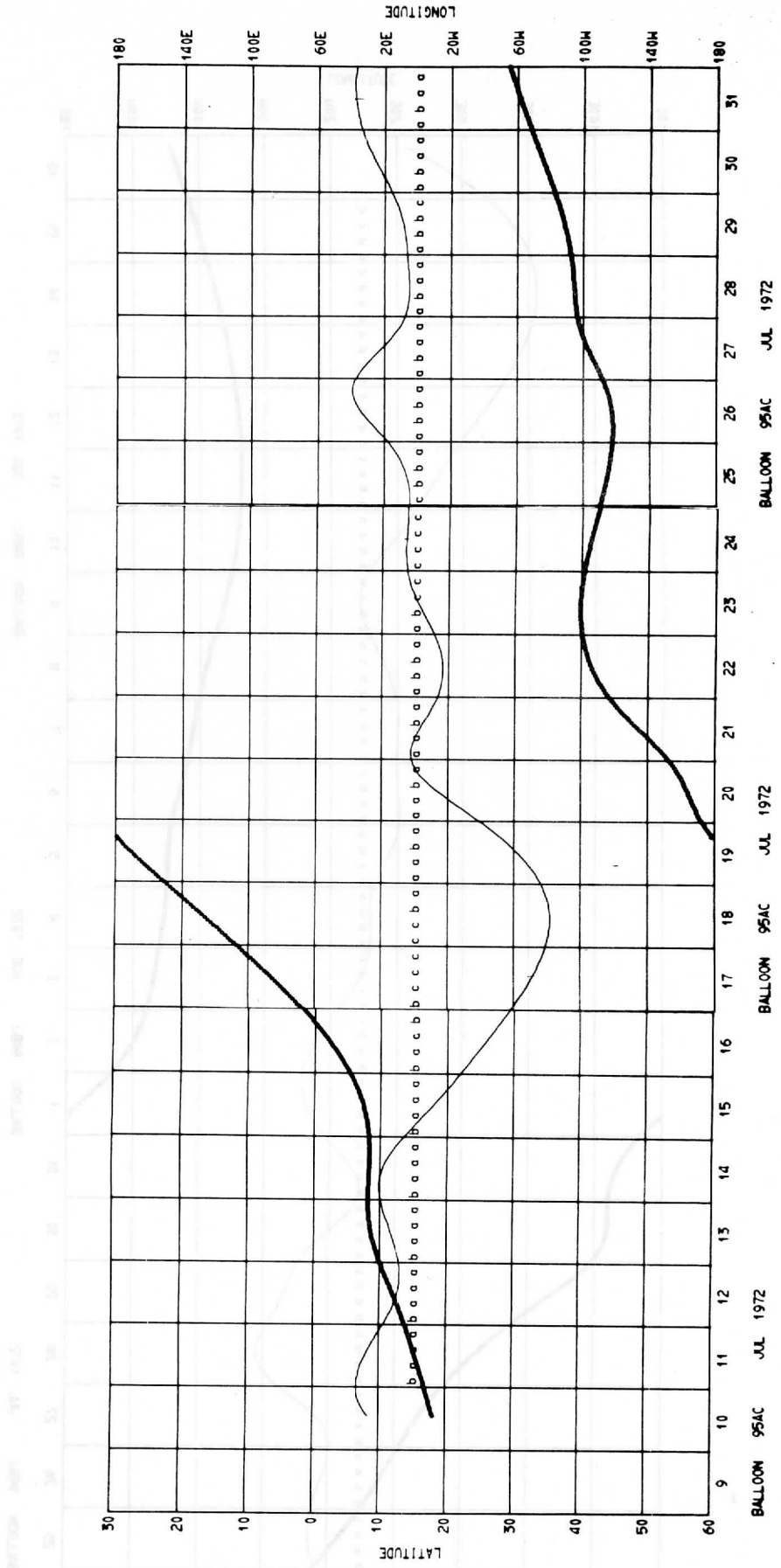


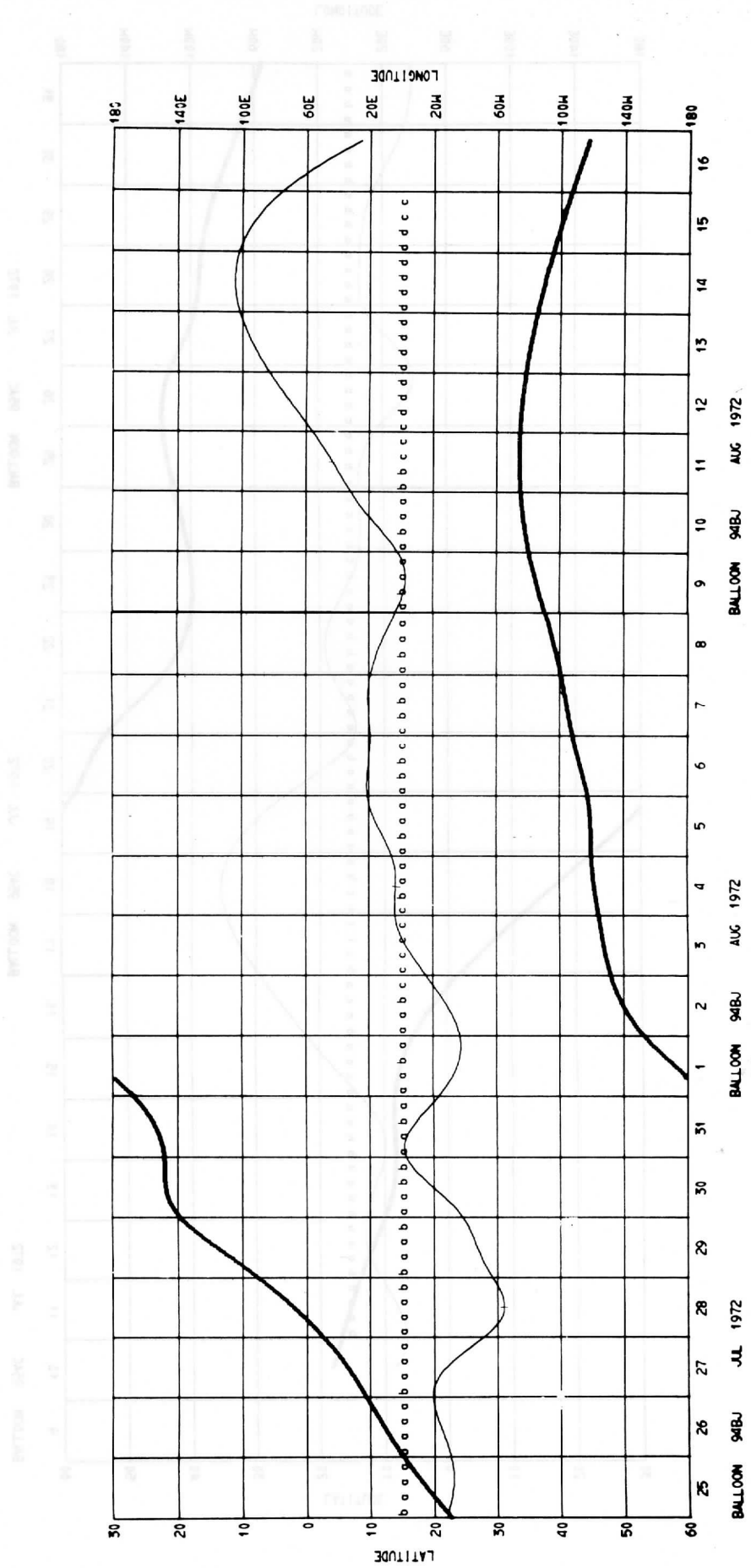


BALLOON 95RD AUG 1972



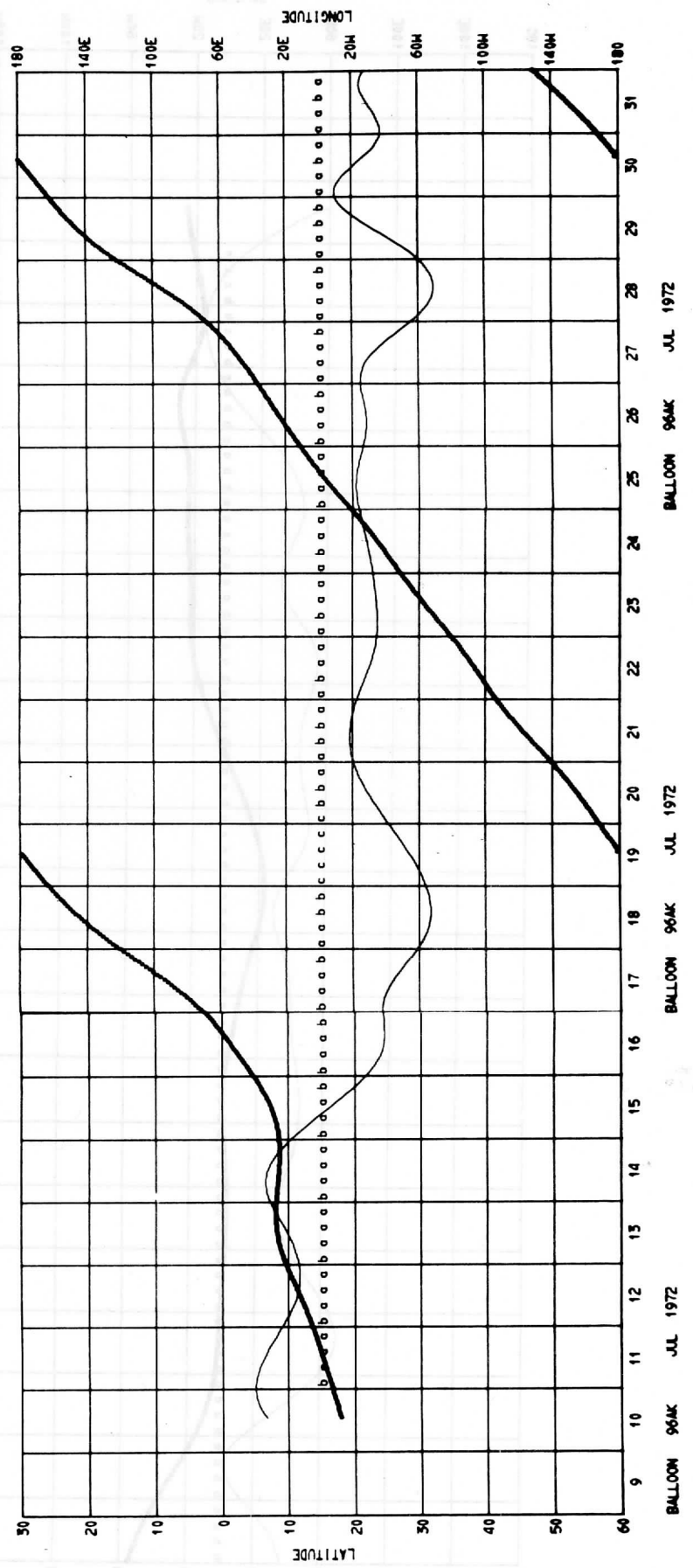
BALLOON 95RD AUG 1972

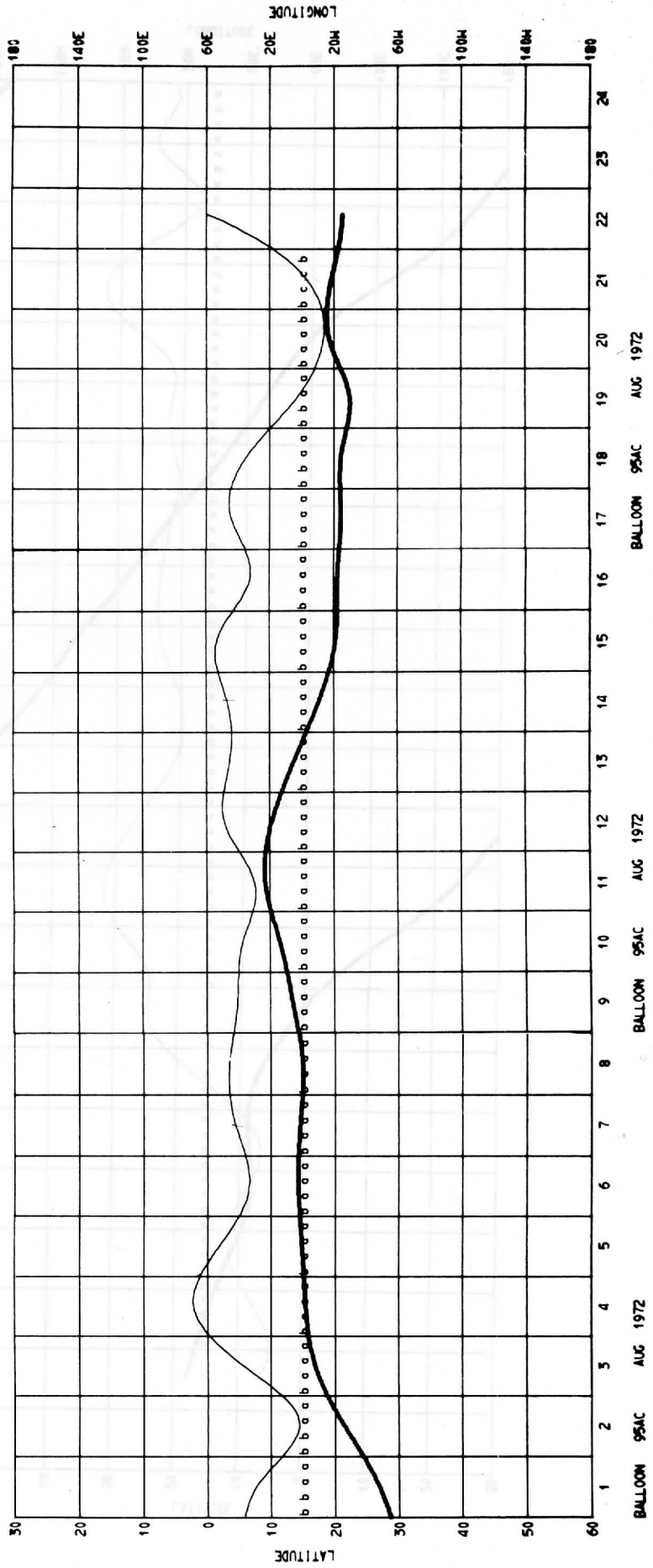


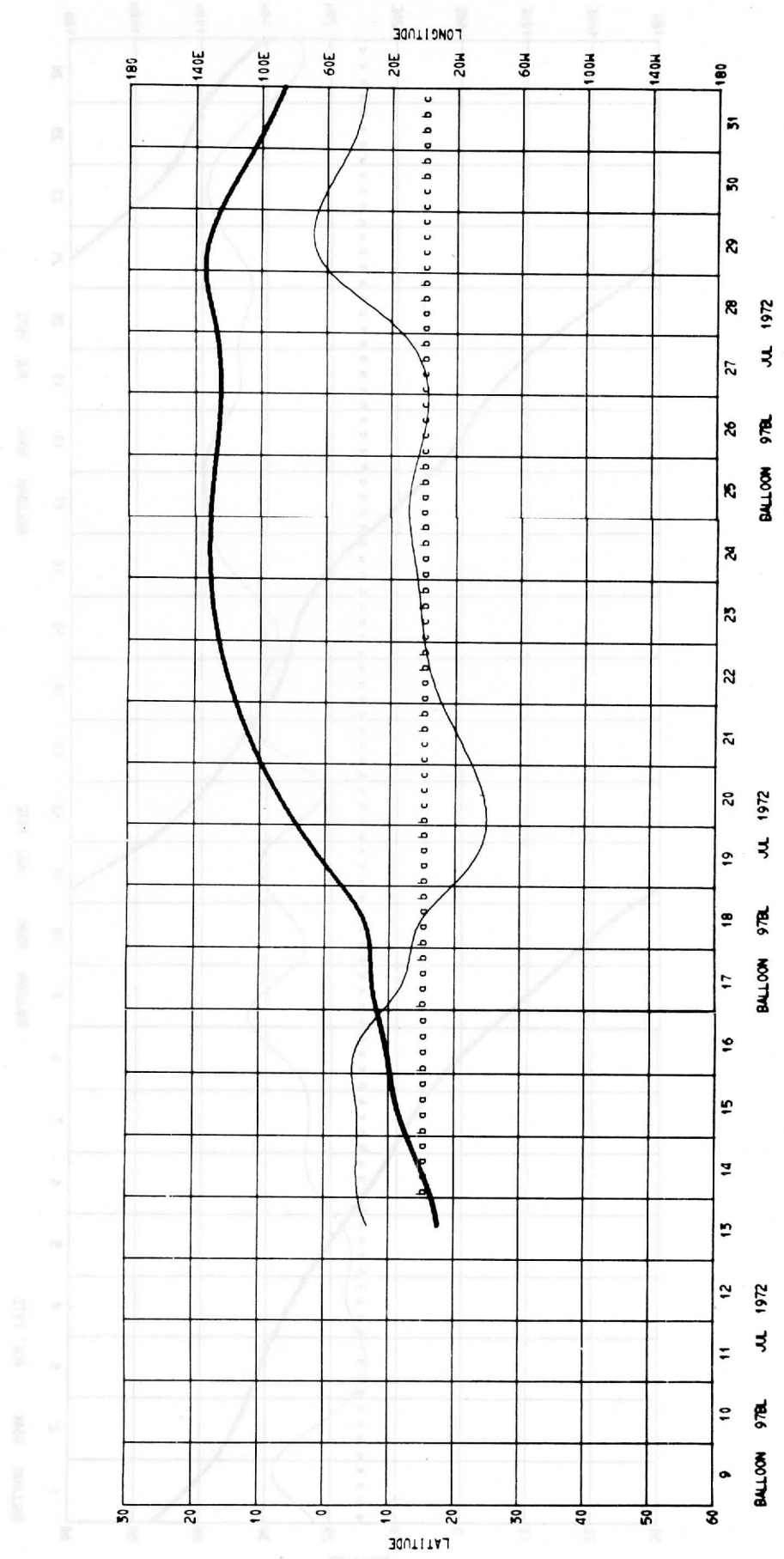


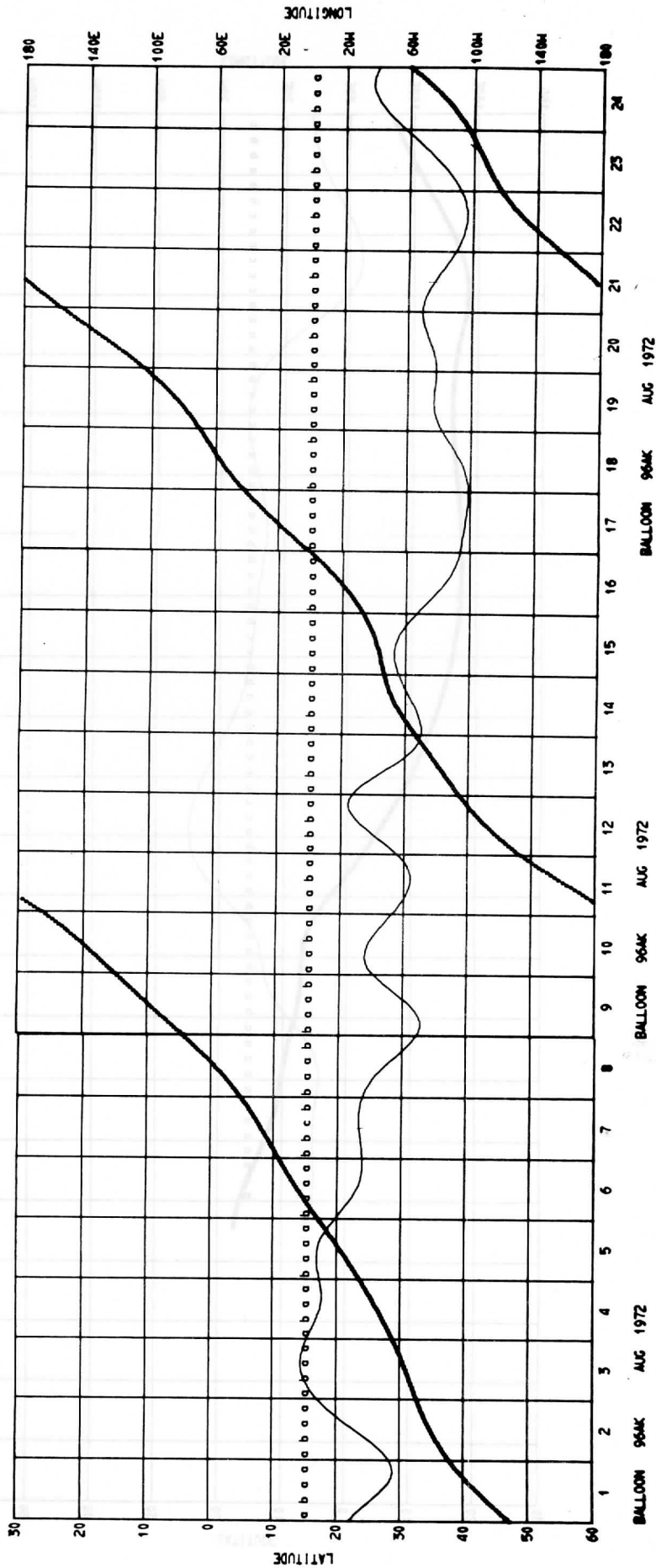
72C

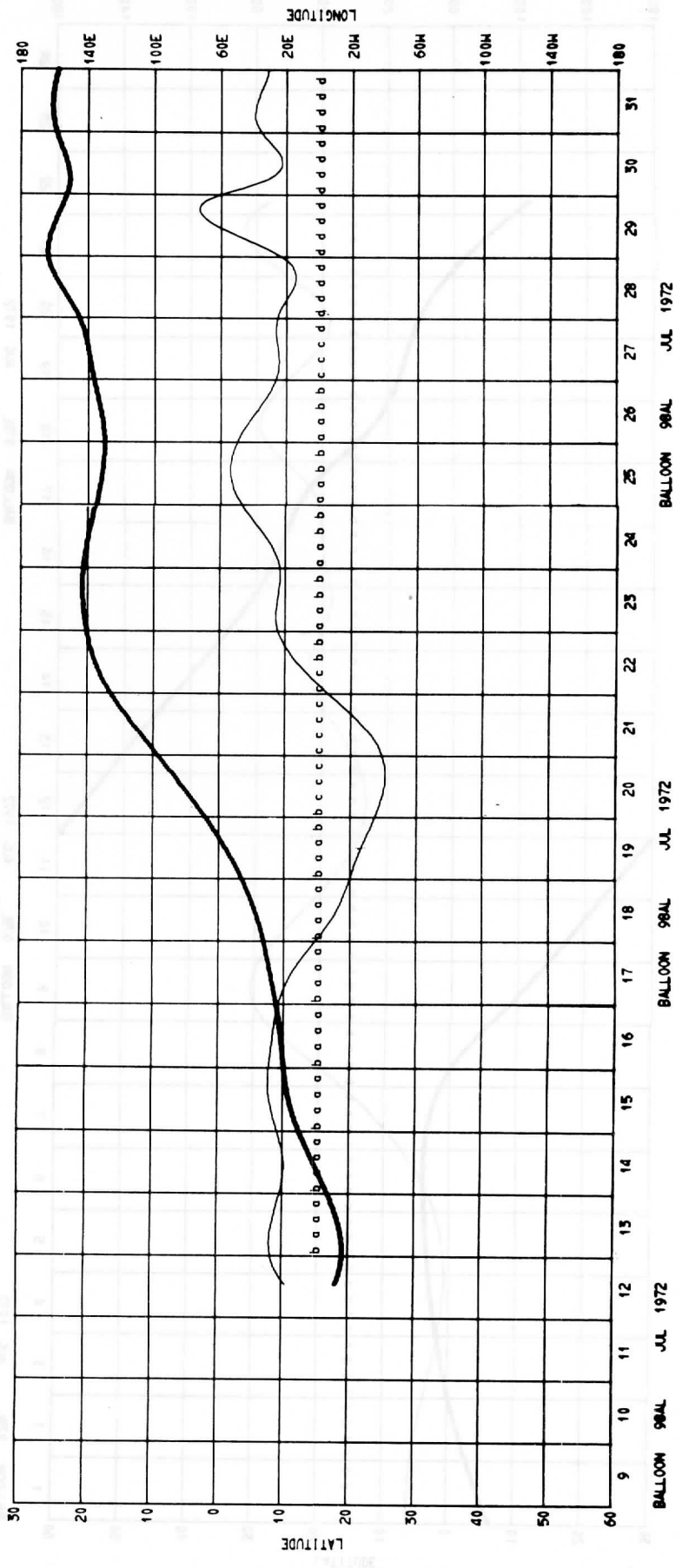
BALLOON 96AK JUL 1972

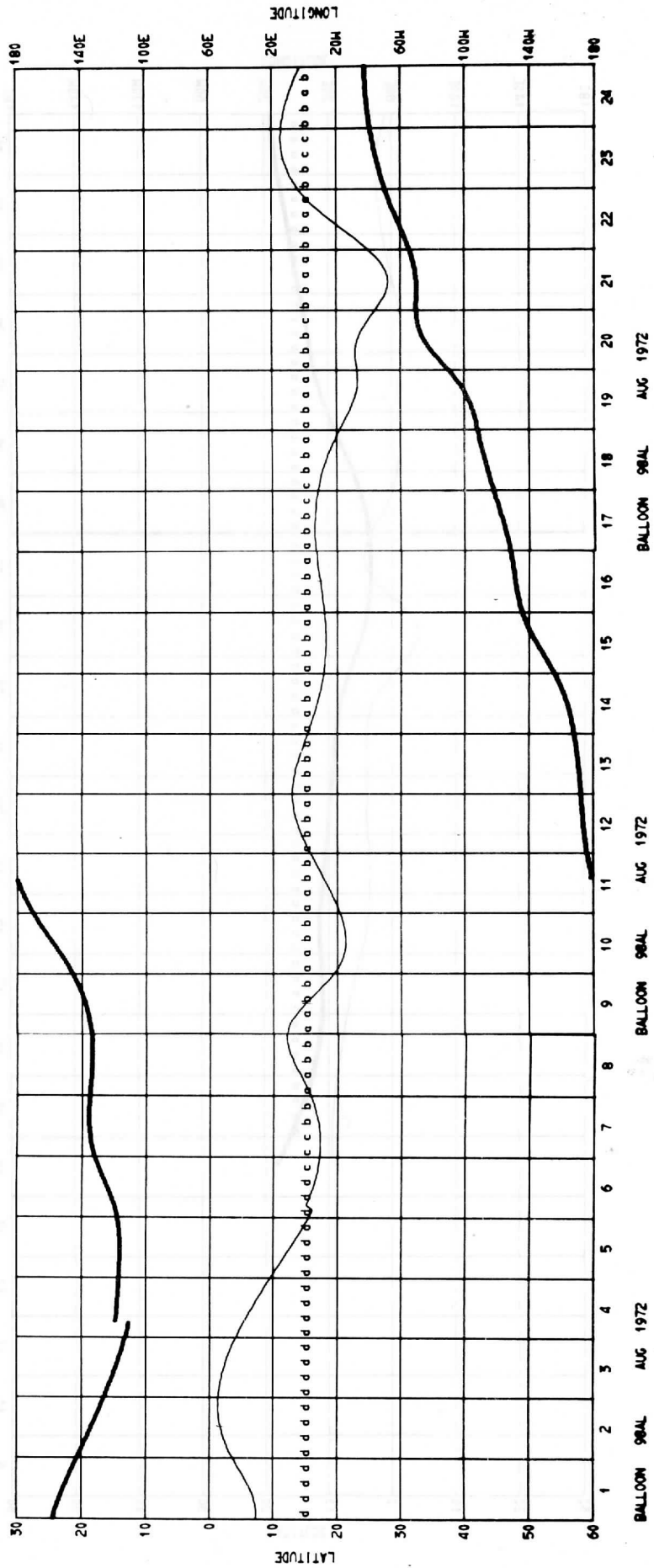


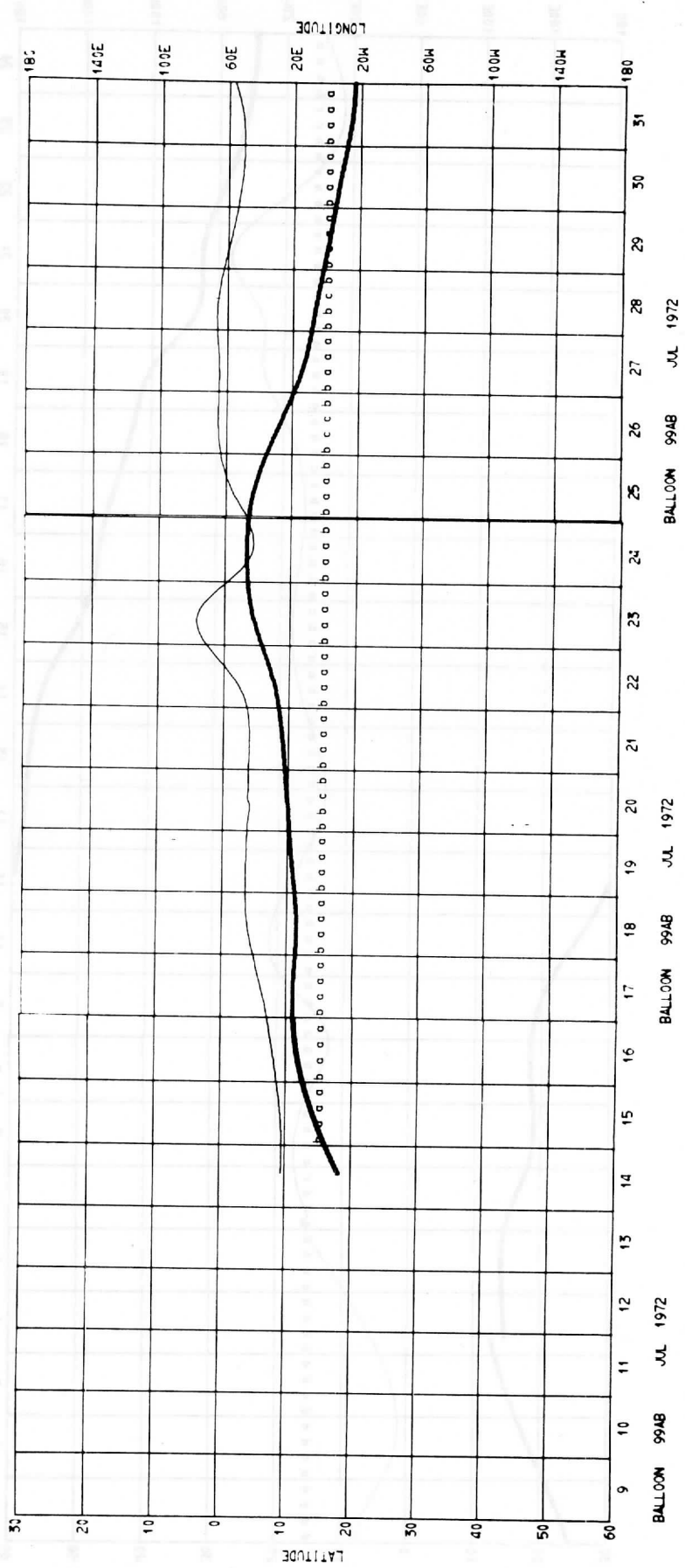


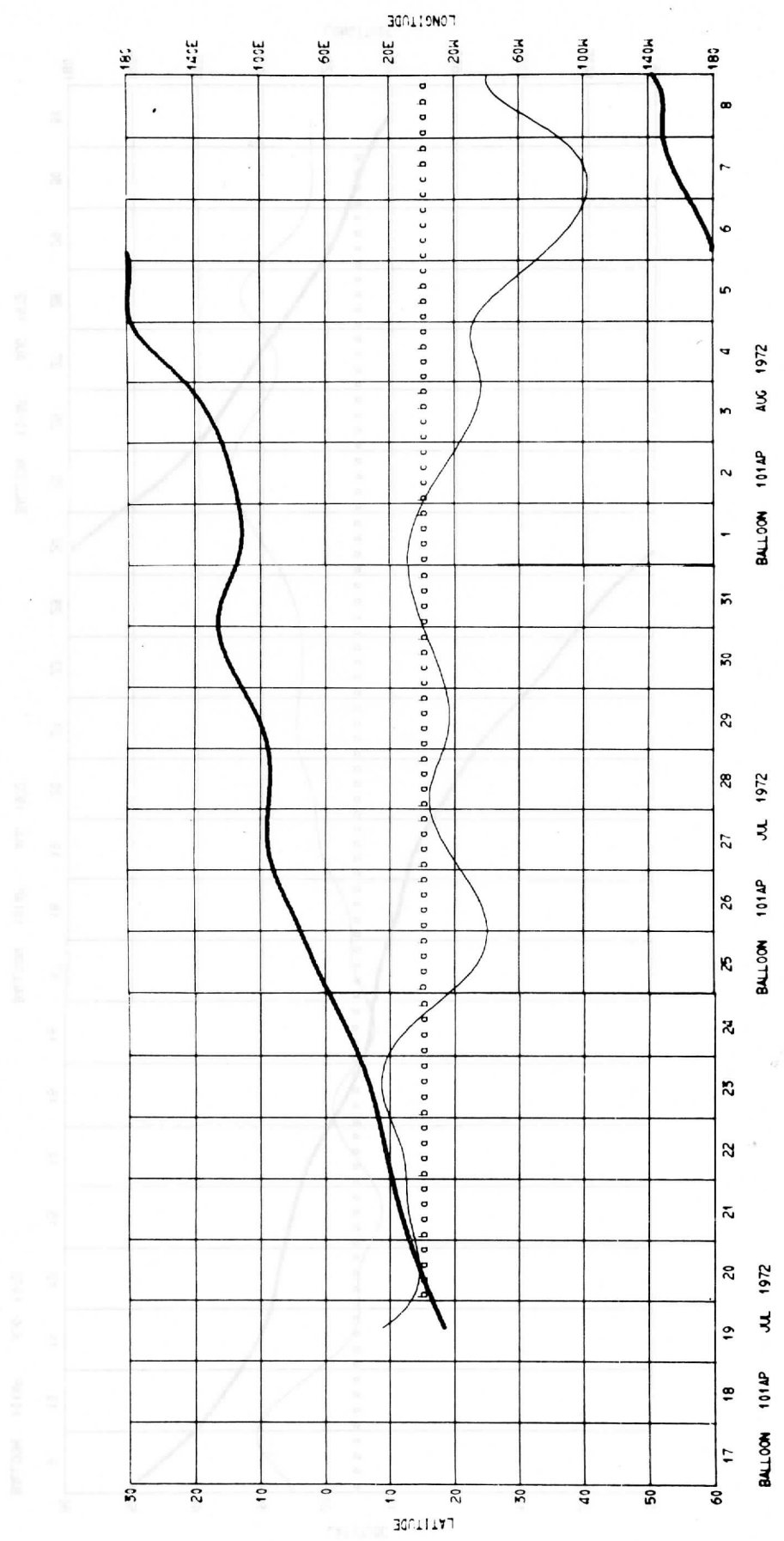


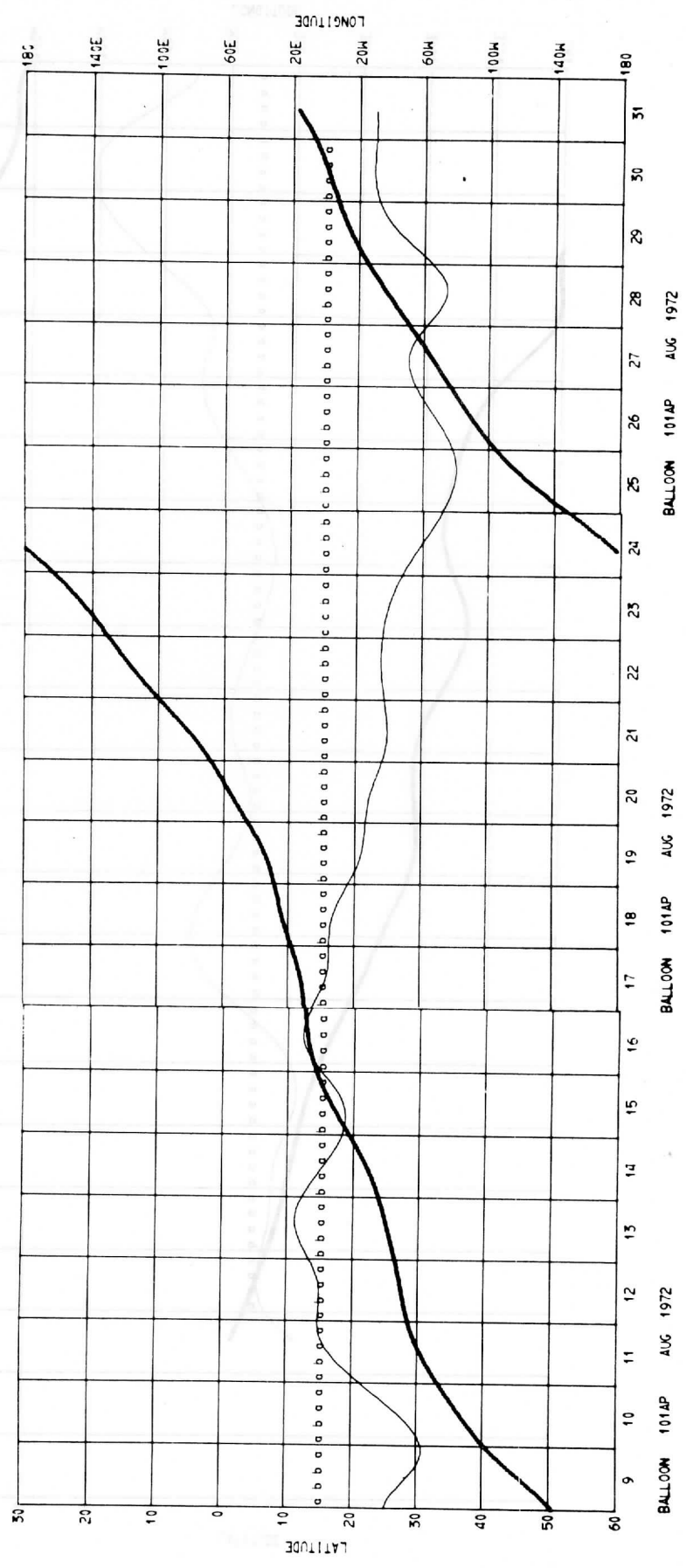


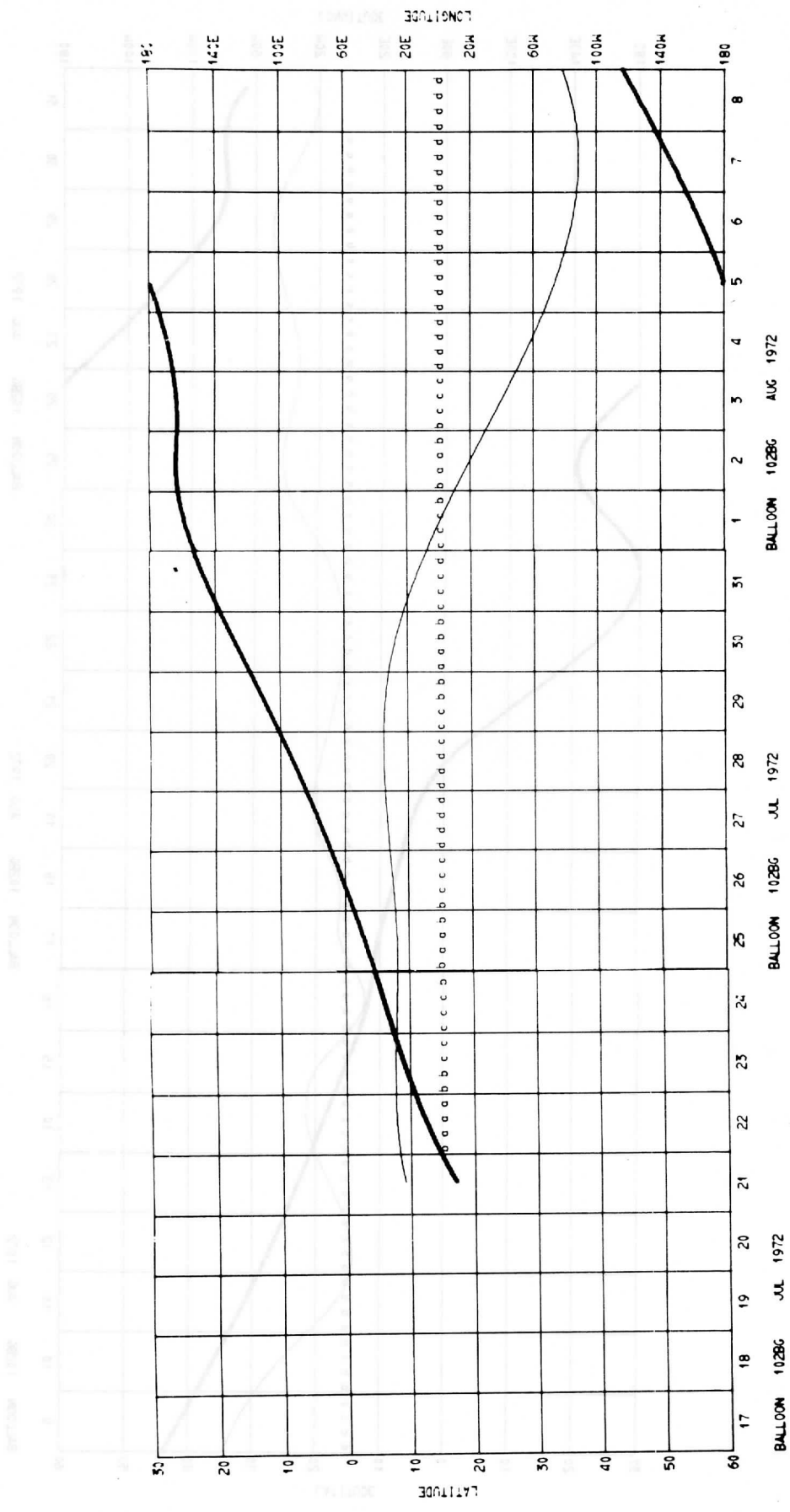


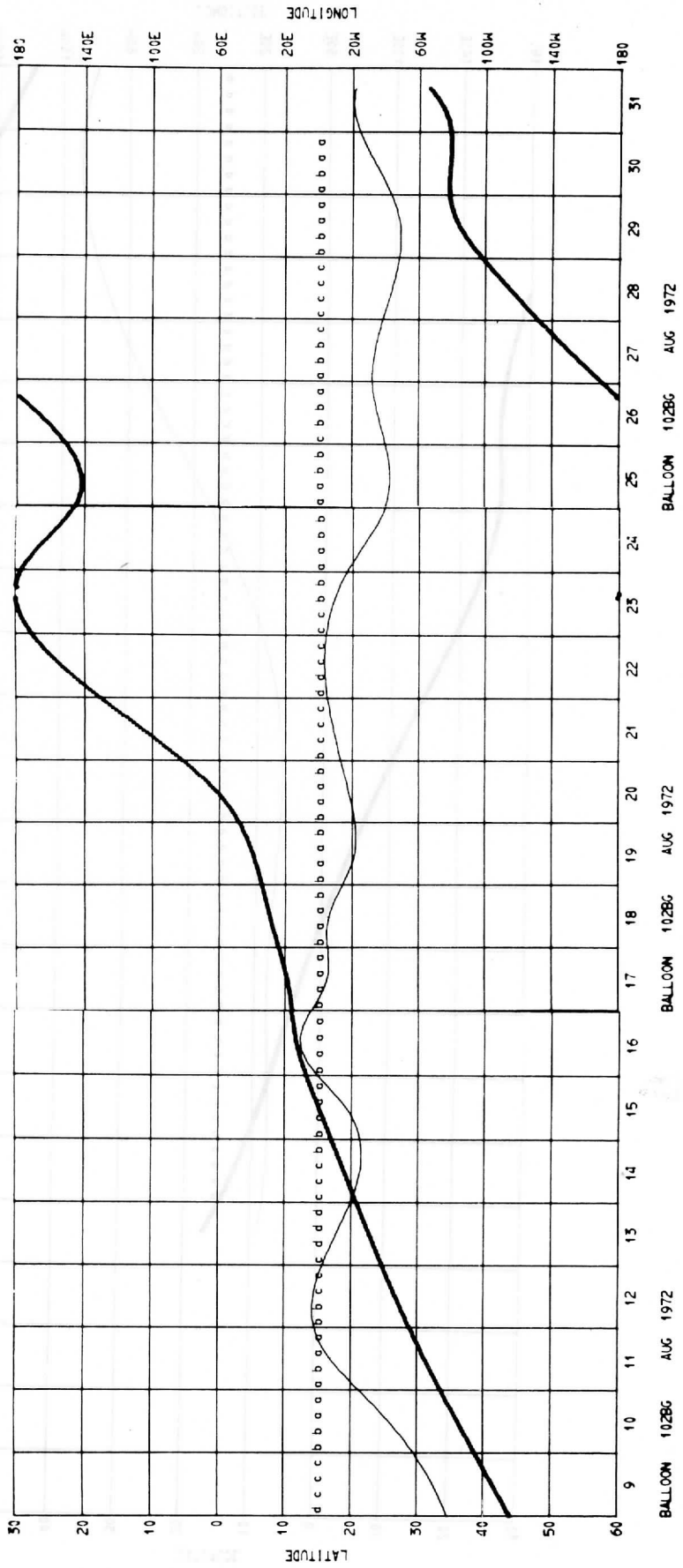


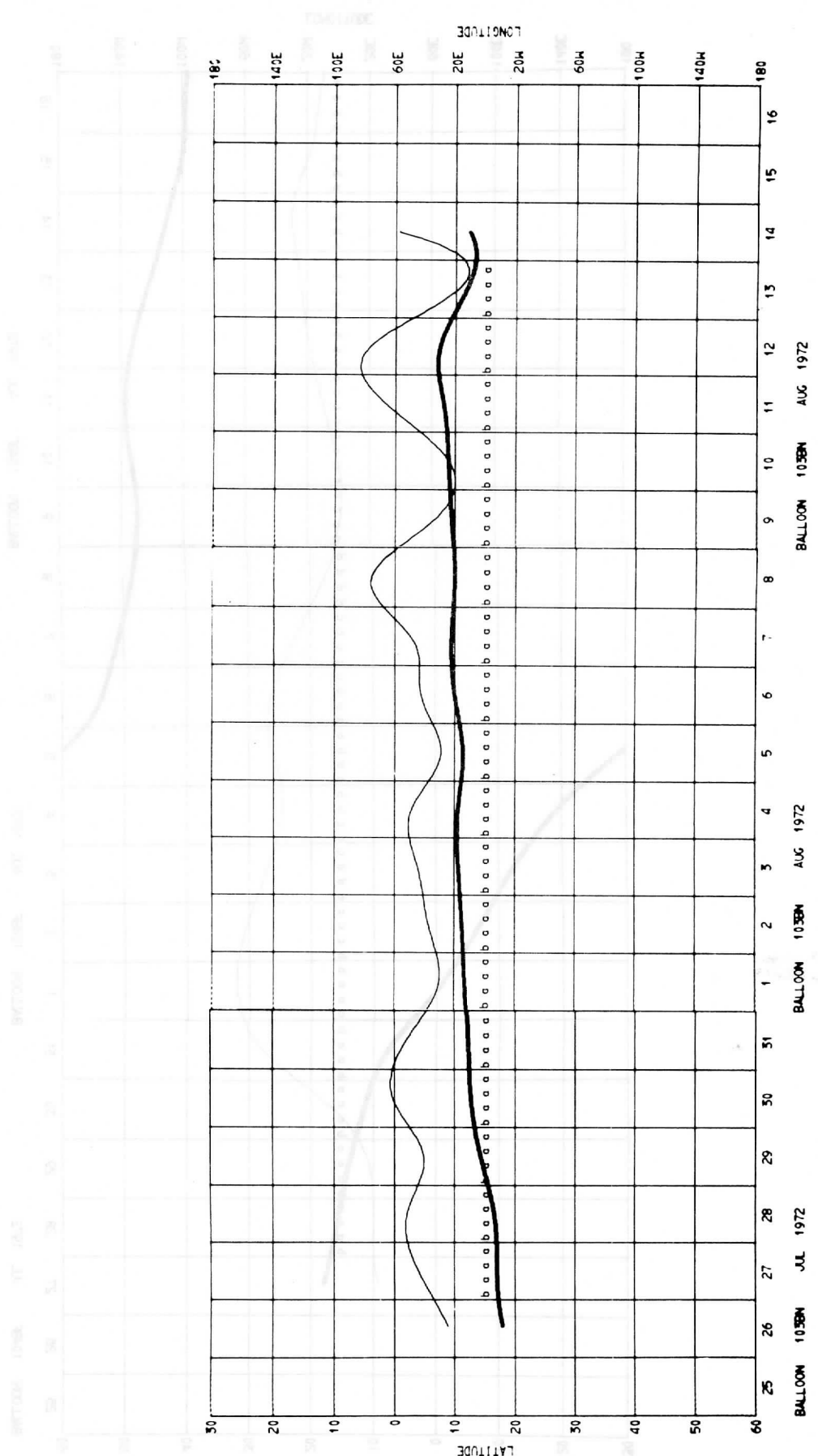


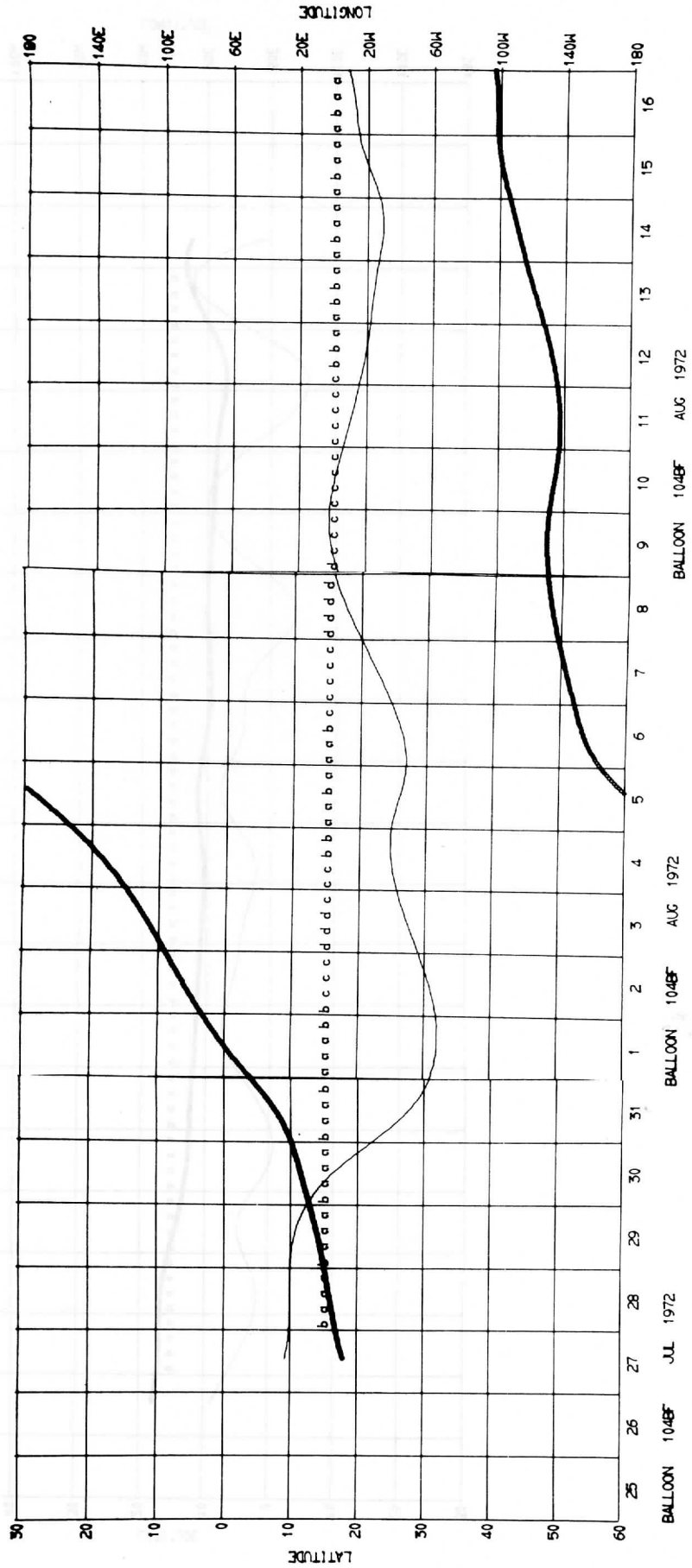


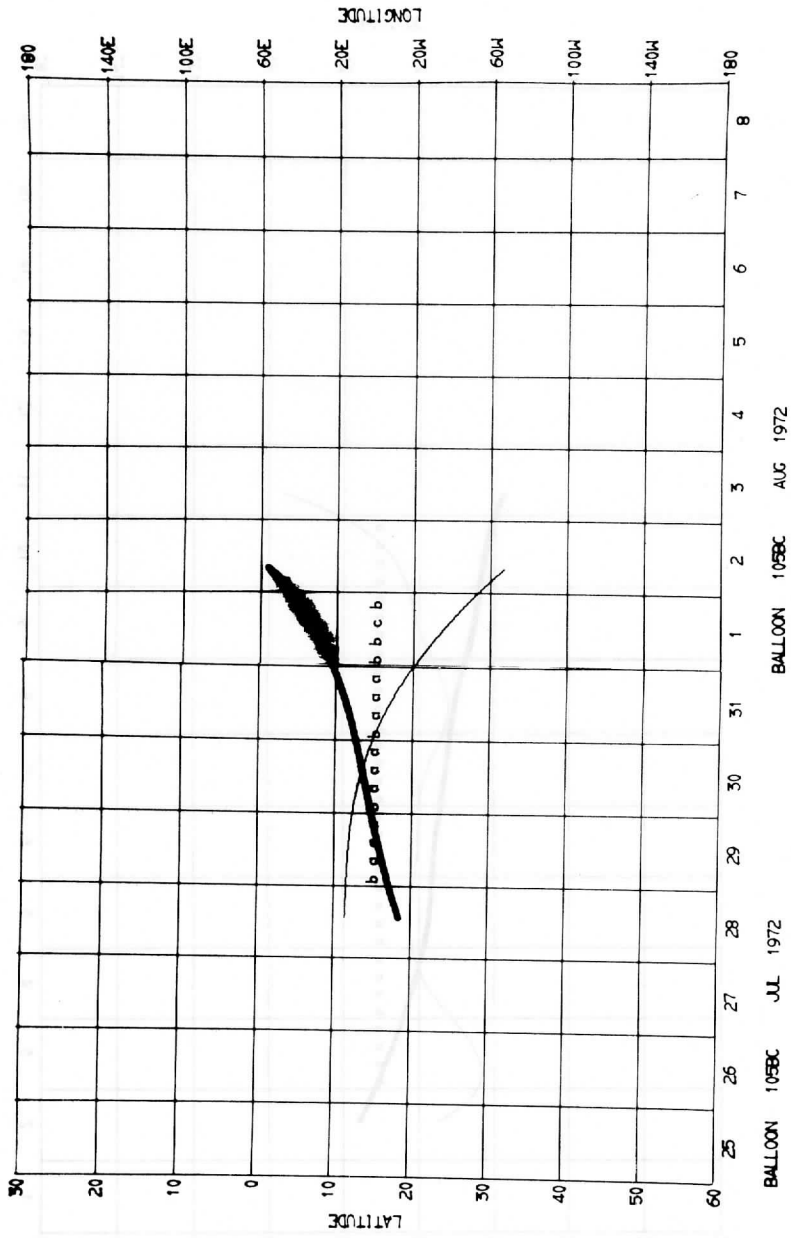


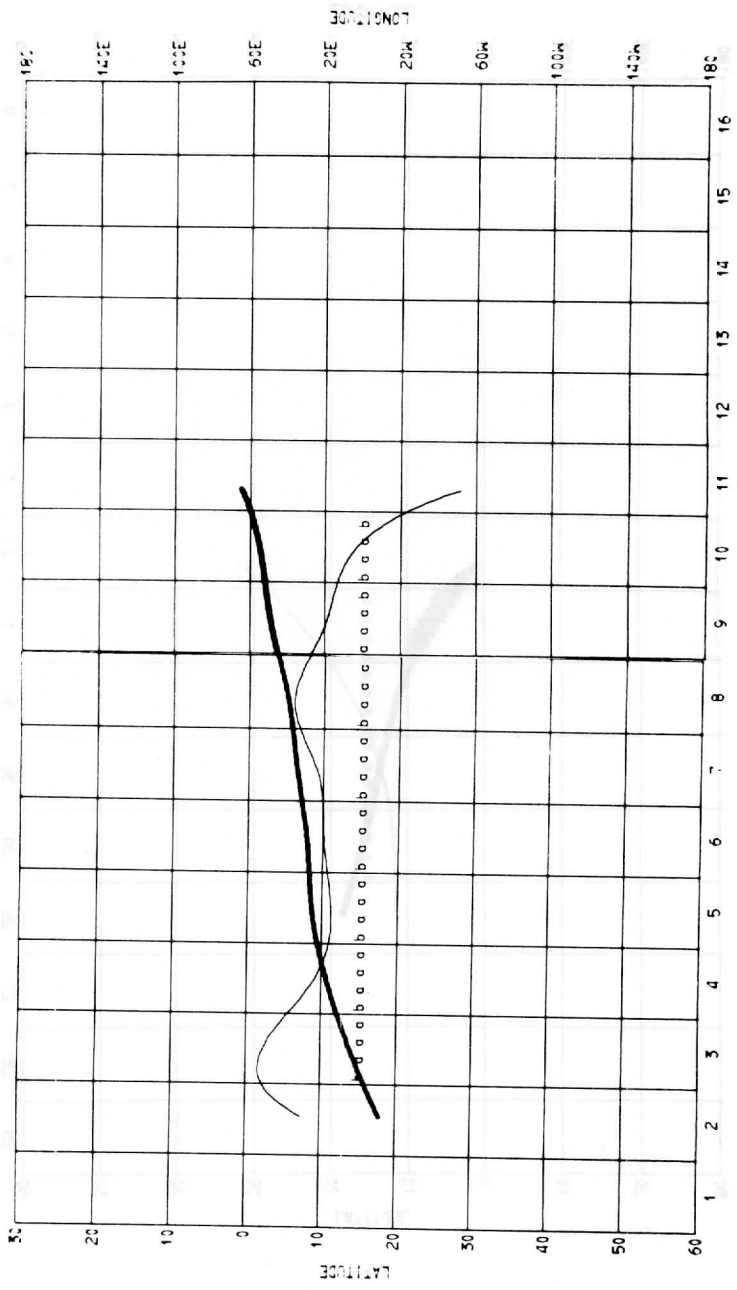




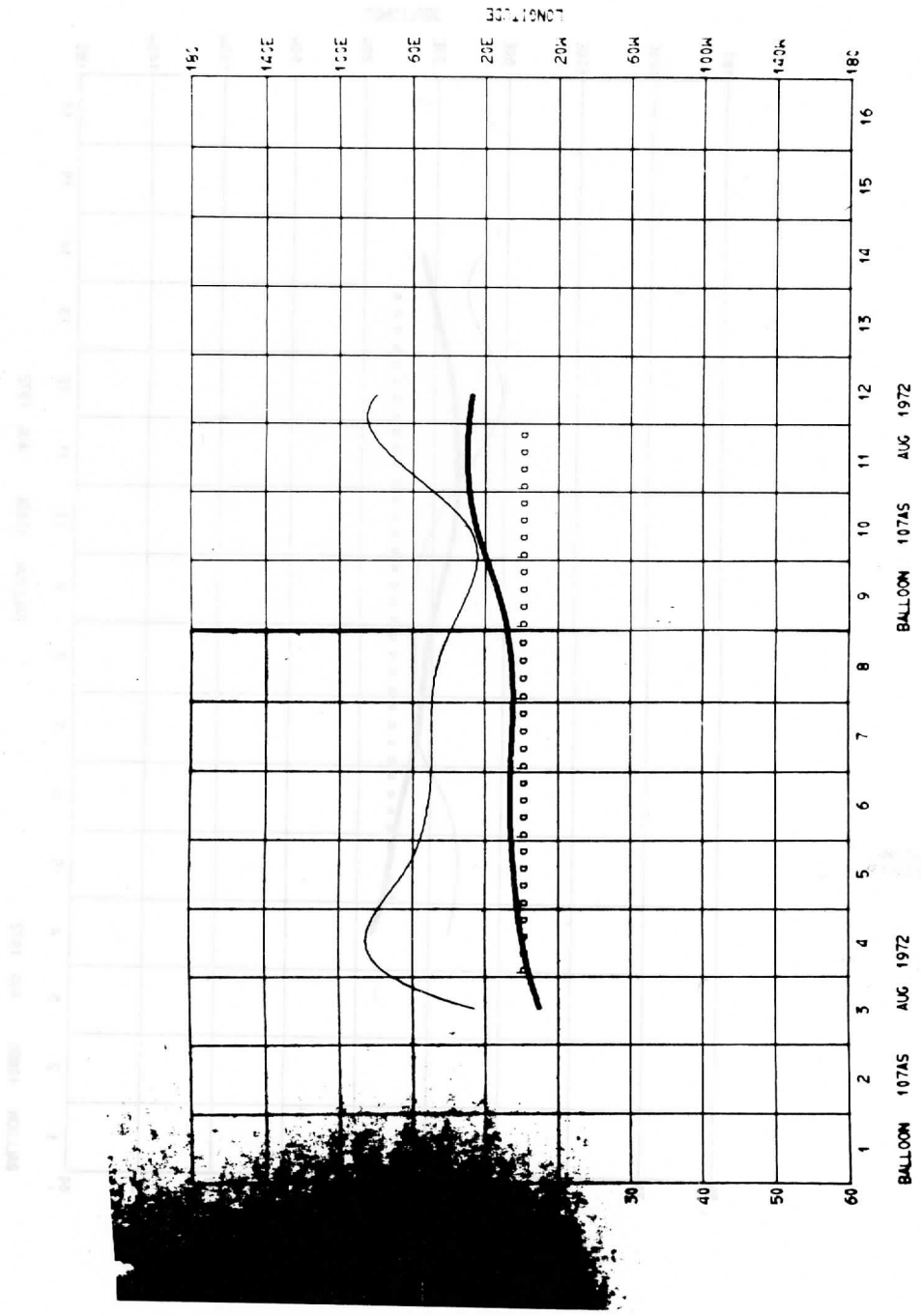


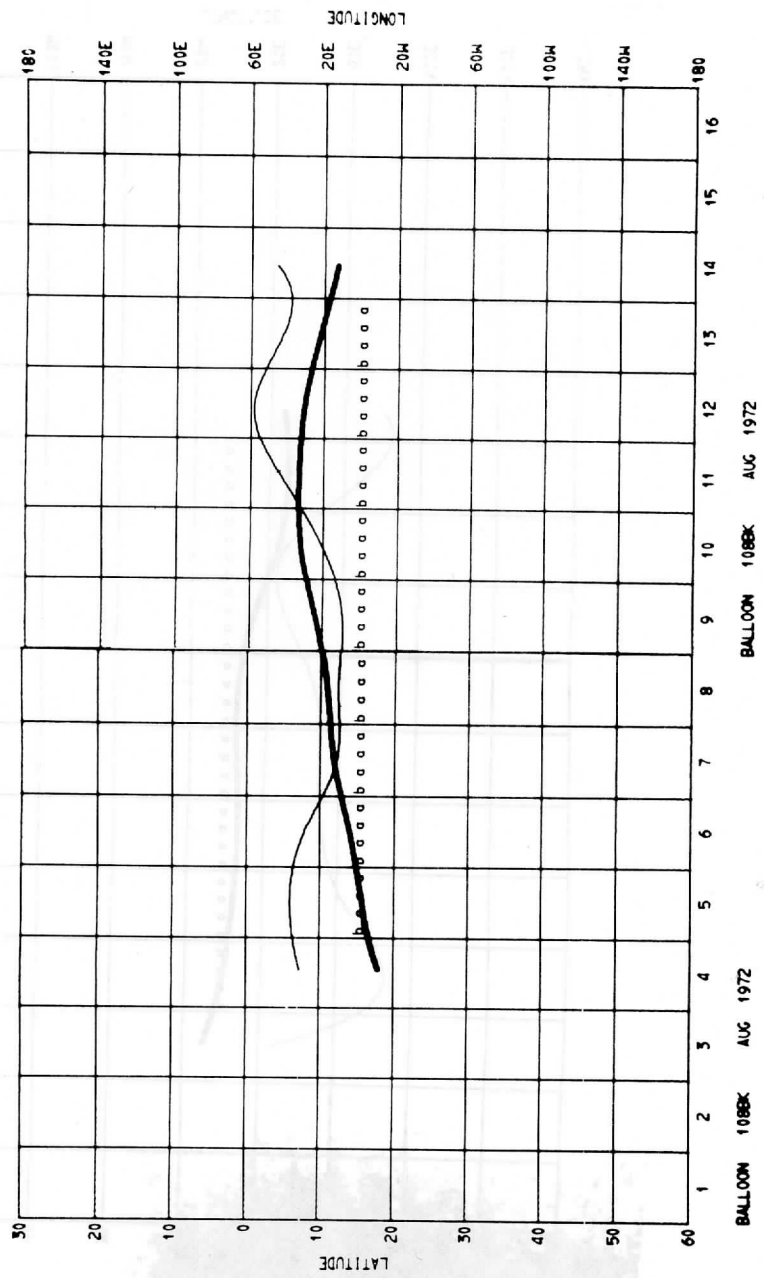






BALLOON 106AG AUG 1972 BALLOON 106AG AUG 1972





APPENDIX. BALLOON TELEMETRY DATA

B. TABULATED DATA (JULY-AUGUST 1972), FOR 2 AND 4-CODERS AND DIGI-GHOST.*

89154 B/D
90152 B/L
91153/6 NABL/SD
93155 RDPC
94157 B/J
95152/4 AC/SG
97152/5 BLCP/UK
99151/3 AB/WO
101151/5 AP/KW
102156 B/G
103153 B/N
104155 B/F
105151 B/C

*Occasionally, poor or missing readings are found with a reading of "SSS".

If it gives a unique reading, it can be ignored.

(SD-SG) The data are incorrect on 7/5 between 0831 and 1000 and on 7/10 between 0710 and 0945, respectively, since there are not enough overflow values available in the program to treat the data while the balloon was ascending.

(SG-WO) There is no Air Temperature because of a broken thermistor.

(SG) The pressure is constant for the ideal pressure since a temperature of -69°C was assumed.

(WO) The pressure columns designate which altimeter was providing the reading.

APPENDIX . BALLOON TELEMETRY DATA

TABLE I. OBSERVED DATA (JULY-AUGUST 1952), TOR 2 AND 4-COBERS AND DIGI-CROST

00151	00151
00152	00152
00153	00153
00154	00154
00155	00155
00156	00156
00157	00157
00158	00158
00159	00159
00160	00160
00161	00161
00162	00162
00163	00163
00164	00164
00165	00165
00166	00166
00167	00167
00168	00168
00169	00169
00170	00170
00171	00171
00172	00172
00173	00173
00174	00174
00175	00175
00176	00176
00177	00177
00178	00178
00179	00179
00180	00180
00181	00181
00182	00182
00183	00183
00184	00184
00185	00185
00186	00186
00187	00187
00188	00188
00189	00189
00190	00190
00191	00191
00192	00192
00193	00193
00194	00194
00195	00195
00196	00196
00197	00197
00198	00198
00199	00199
00200	00200

Occasionally, poor or missing readings are found with a reading of "252".
 If a reading is a unique reading, it can be ignored.
 (20-25) The data are incorrect on 7/5 between 0831 and 1000 and on 7/10 between 0710 and 0923, respectively, since there are not enough overflow values available in the program to treat the data while the balloon was ascending.
 (20-40) There is no Air Temperature because of a broken thermometer.
 (20) The pressure is constant for the ideal pressure since a temperature of -57°C was assumed.
 (20) The pressure column designates which altimeter was providing the

FLIGHT INFORMATION FORM

FLIGHT NO. ~~89154~~

Float Altitude 150 mb
150/mb

89154 B/D

Diagram of Flight Train

GHOST Frequency = 15.02⁴ MHz
Sun Angle I.D. Code B

Calibration Data

20 DEG	35.6
35 DEG	30.4
60 DEG	20.2

2nd Package Frequency = 15.02 MHz

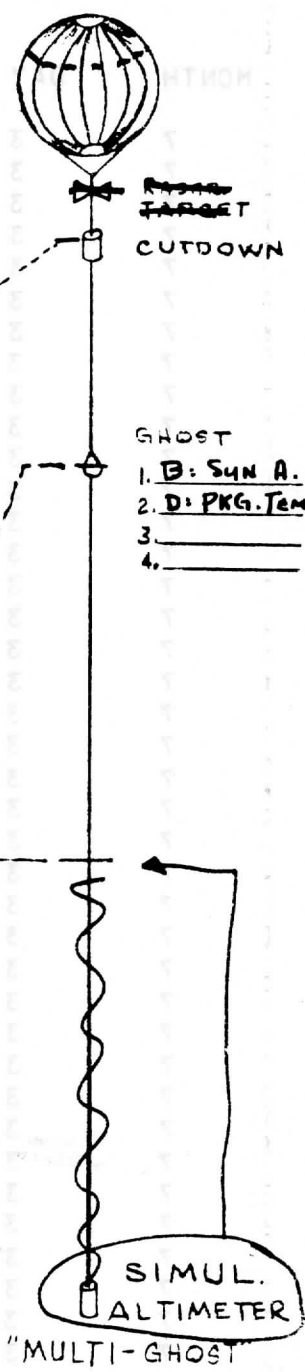
I.D. Code _____

Code Letter D Sensor Blue Package Temp.

Calibration Data

BALLOON DATA

Balloon ID# (Mfg*) R 72-18
 Launch date 3 July 72
 Launch site Ascension
 Film Celanar (Capped)
 Diameter Seam 3.5672 m X Gore 3.5646 m
 Volume 23,261 cu.m.
 Balloon Weight 3393 g
 Payload Weight 1462 g
 Duration _____
 Last Known Position _____



FROM TARGET
CUTDOWN
GHOST
1. B: SUN A.
2. D: PKG. TEMP
3. _____
4. _____

REMARKS

Surface conditions at launch _____

* R = Raven Industries, Inc.
S = G. T. Schjeldahl Co.

TWERLE BALLCON 89154 B/D

1972

MONTH	DAY	TIME	SUN ANGLE	PKG TEMP	LATITUDE	LONGITUDE
7	3	748	10.29	13.45		
7	3	755	10.29	13.06		
7	3	813	14.24	13.45		
7	3	840	20.93	8.21		
7	3	846	20.93	6.45		
7	3	853	25.47	3.74		
7	3	858	26.35	-0.07		
7	3	901	29.33	-4.16		
7	3	903	28.38	-3.03		
7	3	907	28.95	-7.13		
7	3	912	31.75	-10.37		
7	3	916	29.52	-15.28		
7	3	922	32.03	-18.45		
7	3	925	33.93	-23.68		
7	3	930	33.93	-23.03		
7	3	931	33.66	5.42		
7	3	933	34.47	-20.47		
7	3	941	34.47	-13.79		
7	3	944	36.07	-17.69		
7	3	953	35.54	-14.86		
7	3	1023	39.44	-9.15		
7	3	1026	41.66	-12.01		
7	3	1030	42.95	-10.85		
7	3	1040	45.40	-10.37		
7	3	1046	46.03	-9.40		
7	3	1051	47.09	-8.51		
7	3	1107	49.95	-8.41		
7	3	1115	50.66	-11.31		
7	3	1127	52.07	-17.10		
7	3	1127	60.00	-14.65		
7	3	1130	52.77	-15.69		
7	3	1147	54.75	-12.69		
7	3	1152	55.94	-18.07		
7	3	1153	55.57	-17.69		
7	3	1206	57.43	-16.31		
7	3	1213	57.84	-16.31		
7	3	1215	58.50	-15.69		
7	3	1230	59.06	-13.57		
7	3	1233	60.70	-14.33		
7	3	1240	60.00	-14.01		
7	3	1242	60.23	-13.13		
7	3	1243	60.00	-12.24		
7	3	1243			8.2S	9.4W
7	3	1244	59.53	-12.01		
7	3	1245	59.29	-11.08		
7	3	1246	59.29	-11.55		
7	3	1247	57.66	-17.69		
7	3	1305	60.58	-14.76		
7	3	1317	58.46	-13.13		
7	3	1340	55.15	-18.83		
7	3	1403	52.44	-18.64		

MONTH	DAY	TIME	SUN ANGLE	PKG TEMP	LATITUDE	LONGITUDE
7	3	1433	49.14	-17.69		
7	3	1502	42.90	-17.88		
7	3	1542	36.07	-29.20		
7	4	755	29.52	-6.07		
7	4	802	31.48	-10.13		
7	4	828	34.74	-6.87		
7	4	832	36.49	-1.28		
7	4	832	35.80	-3.88		
7	4	838	21.05	8.50		
7	4	843	38.67	.24		
7	4	902	41.46	-6.34		
7	4	912	43.94	-9.15		
7	4	923	46.13	-7.90		
7	4	932	46.51	-11.31		
7	4	937	49.24	-14.65		
7	4	946	35.51	-11.48		
7	4	952	52.30	-14.65		
7	4	956	52.63	-14.74		
7	4	1002	53.57	-19.57		
7	4	1012	56.27	-22.03		
7	4	1024	58.36	-18.64		
7	4	1032	58.60	-18.64		
7	4	1038	61.64	-21.34		
7	4	1058	64.47	-17.30		
7	4	1107	65.42	-21.52		
7	4	1108	66.37	-20.29		
7	4	1120	67.09	-22.37		
7	4	1128	68.06	-24.32		
7	4	1133	67.33	-26.90		
7	4	1137	67.29	-28.35		
7	4	1141	68.54	-28.07		
7	4	1145	68.66	-29.20		
7	4	1152	68.54	-29.48		
7	4	1156	68.78	-29.62		
7	4	1200	68.30	-29.34		
7	4	1205			.1N	.1E
7	4	1208	66.66	-28.21		
7	4	1208	68.06	-29.06		
7	4	1222	67.29	-29.20		
7	4	1225	66.85	-28.21		
7	4	1242	63.95	-29.90		
7	4	1245	64.47	-27.92		
7	4	1302	59.90	-25.71		
7	4	1302	60.00	-17.10		
7	4	1305	60.00	-23.03		
7	4	1324	56.92	-17.73		
7	4	1330	55.80	-17.30		

TWERLE BALLOON 89154 B/D 1972

MCNTH	DAY	TIME	SUN ANGLE	PKG TEMP	LATITUDE	LCNGITUDE
7	4	1331	57.90	-11.55		
7	4	1337	54.13	-16.31		
7	4	1402	49.48	-13.57		
7	4	1403	53.71	-19.93		
7	4	1414	47.09	-15.69		
7	4	1419	51.13	-17.30		
7	4	1421	51.13	-17.50		
7	4	1425	44.67	-13.57		
7	4	1428	50.66	-17.50		
7	4	1431	49.24	-16.10		
7	4	1432	49.00	-16.10		
7	4	1443	41.16	-12.01		
7	4	1444	46.85	-17.30		
7	4	1446	41.96	-11.78		
7	4	1448	46.37	-17.10		
7	4	1453	40.48	-11.87		
7	4	1456	46.13	-17.50		
7	4	1502	37.32	-11.31		
7	4	1502	37.90	-11.08		
7	4	1515	41.96	-15.28		
7	4	1528	40.45	-13.35		
7	4	1531	38.67	-13.79		
7	4	1541	36.85	-11.55		
7	4	1544	37.12	-10.85		
7	4	1546	27.92	.86		
7	4	1556	34.20	-13.79		
7	4	1559	33.93	-13.13		
7	4	1606	31.48	-4.44		
7	4	1606	26.93	-8.91		
7	4	1607	31.75	-8.41		
7	4	1617	24.70	-5.54		
7	4	1619	28.95	-5.67		
7	4	1619	25.08	-14.01		
7	4	1621	24.58	-5.81		
7	4	1637	24.87	-11.08		
7	4	1646	24.87	-7.39		
7	5	735	32.03	-8.41		
7	5	747	33.39	-9.15		
7	5	753	35.54	-8.41		
7	5	827	41.06	-4.16		
7	5	852	45.79	-4.99		
7	5	917	51.27	-9.40		
7	5	954	62.30	-14.65		
7	5	957	58.13	-14.86		
7	5	1027	62.96	-13.79		
7	5	1030	64.47	-12.69		
7	5	1042	66.85	-14.65		

TWERLE BALLOON 89154 B/D 1972

MONTH	DAY	TIME	SUN ANGLE	PKG TEMP	LATITUDE	LONGITUDE
7	5	1055	68.86	-14.97		
7	5	1101	67.67	-15.69		
7	5	1103	69.27	-16.91		
7	5	1123			1.2N	10.6E
7	5	1128	68.20	-15.69		
7	5	1130	70.73	-16.91		
7	5	1147	68.78	-17.88		
7	5	1155	67.43	-19.57		
7	5	1207	68.30	-19.20		
7	5	1221	65.37	-20.47		
7	5	1222	66.61	-21.00		
7	5	1251	60.23	-14.01		
7	5	1257	58.55	-13.79		
7	5	1328	53.24	-9.40		
7	5	1329	51.51	-8.91		
7	5	1348	49.00	-4.44		
7	5	1417	41.81	2.44		
7	5	1421	41.21	4.41		
7	5	1447	37.12	6.45		
7	5	1457	32.03	5.76		
7	5	1507	32.85	6.10		
7	5	1552	25.11	2.12		
7	6	748	34.04	-.37		
7	6	817	41.41	7.50		
7	6	852	47.09	3.41		
7	6	907	49.24	2.12		
7	6	922	51.46	.55		
7	6	922	51.60	2.12		
7	6	958	58.60	1.17		
7	6	1007	58.55	-2.16		
7	6	1010	59.53	-.98		
7	6	1037	60.23	-2.16		
7	6	1038	61.64	-3.03		
7	6	1049	65.42	-.68		
7	6	1057	61.54	-.68		
7	6	1101			6.7S	16.1E
7	6	1111	61.83	-3.88		
7	6	1117	61.17	-1.57		
7	6	1149	59.53	-9.15		
7	6	1225	53.75	-4.99		
7	6	1232	51.60	-6.07		
7	6	1252	49.24	-7.64		
7	6	1301	47.04	-7.13		
7	6	1313	44.43	-9.15		
7	6	1329	41.61	-12.01		
7	6	1349	37.38	-11.31		
7	6	1407	34.20	-11.55		

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MCNTH	DAY	TIME	SUN ANGLE	PKG TEMP	LATITUDE	LONGITUDE
7	6	1426	33.66	-7.64		
7	6	1427	30.92	-9.15		
7	6	1447	25.35	-4.44		
7	7	559	24.34	-16.10		
7	7	632	30.59	-18.83		
7	7	703	36.33	-17.69		
7	7	742	39.23	-12.24		
7	7	811	46.61	-11.31		
7	7	842	51.88	-11.31		
7	7	906	53.61	-14.65		
7	7	942	58.78	-17.69		
7	7	958	62.01	-21.52		
7	7	1014			9.1S	28.0E
7	7	1112	56.04	-24.94		
7	7	1147	51.27	-18.64		
7	7	1203	50.19	-16.51		
7	7	1216	47.38	-17.50		
7	7	1308	38.93	-14.65		
7	7	1337	33.99	-15.69		
7	7	1419	25.53	-11.31		
7	7	1458	24.40	-8.91		
7	8	553	25.70	-.68		
7	8	652	35.59	-.68		
7	8	749	45.30	-.98		
7	8	833	53.70	.24		
7	8	907	60.28	-1.28		
7	8	939	64.42	-9.15		
7	8	1006	65.61	-12.46		
7	8	1010			2.6S	28.9E
7	8	1025	64.37	-16.71		
7	8	1233	44.87	-8.91		
7	8	1302	41.91	-2.16		
7	8	1329	34.74	-.98		
7	8	1409	26.17	.55		
7	8	1505	18.99	.24		
7	9	542	25.23	-.07		
7	9	612	27.92	-2.12		
7	9	702	35.69	1.80		
7	9	735	42.01	-6.34		

TWERLE BALLOON 89154 B/D 1972

MONTH	DAY	TIME	SUN ANGLE	PKG TEMP	LATITUDE	LONGITUDE
7	9	804	49.00	-3.60		
7	9	902	60.60	-14.44		
7	9	931	66.04	-14.86		
7	9	1005	68.87	-17.69		
7	9	1029			1.0N	24.1E
7	9	1039	69.12	-20.47		
7	9	1105	66.56	-22.53		
7	9	1152	62.39	-22.70		
7	9	1224	53.75	-18.64		
7	9	1259	46.90	-14.86		
7	9	1342	39.18	-5.54		
7	9	1414	32.57	-1.87		
7	9	1452	25.64	-.68		
7	9	1539	18.61	-3.60		
7	10	633	28.26	-3.60		
7	10	742	39.13	-9.15		
7	10	828	49.14	-8.91		
7	10	912	56.50	-11.55		
7	10	1007	68.15	-12.69		
7	10	1037	72.56	-13.57		
7	10	1101			2.6N	16.3E
7	10	1119	73.07	-21.00		
7	10	1122	71.96	-20.65		
7	10	1131	69.99	-23.03		
7	10	1156	68.29	-19.57		
7	10	1200	65.98	-22.20		
7	10	1243	57.89	-2.74		
7	10	1358	42.80	-.24		
7	10	1420	38.41	2.12		
7	10	1432	36.69	-.37		
7	10	1435	35.53	1.17		
7	10	1457	31.64	3.09		
7	10	1533	26.23	1.17		
7	10	1542	24.87	1.48		
7	11	708	24.81	-8.91		
7	11	749	31.03	-6.87		
7	11	751	32.56	-2.57		
7	11	840	42.20	-6.07		
7	11	843	42.35	-6.87		
7	11	855	42.20	-6.87		
7	11	932	52.11	-7.64		
7	11	1032	62.14	-7.13		
7	11	1106	65.27	-13.79		

TWERLE BALLOON 89154 B/D 1972

MONTH	DAY	TIME	SUN ANGLE	PKG TEMP	LATITUDE	LONGITUDE
7	11	1141			2.5S	6.3E
7	11	1152	65.31	-10.61		
7	11	1234	62.57	-9.40		
7	11	1252	57.75	-3.60		
7	11	1356	47.71	-1.57		
7	11	1454	38.25	-7.90		
7	11	1542	30.64	5.42		
7	11	1632	19.37	-3.60		
7	12	732	28.37	-5.54		
7	12	753	33.39	-7.90		
7	12	825	38.66	-7.39		
7	12	841	42.45	-5.26		
7	12	915	46.31	-2.16		
7	12	931	49.94	-3.60		
7	12	939	50.65	-6.60		
7	12	947	53.02	-9.79		
7	12	953	55.32	-10.85		
7	12	1002	56.72	-14.65		
7	12	1025	59.98	-16.51		
7	12	1042	63.60	-21.34		
7	12	1051	63.74	-21.69		
7	12	1108	63.65	-24.63		
7	12	1113	65.88	-23.68		
7	12	1115	66.14	-23.73		
7	12	1127	63.70	-24.79		
7	12	1129	65.17	-24.63		
7	12	1129			4.0S	9.4E
7	12	1146	64.69	-24.94		
7	12	1152	64.74	-24.79		
7	12	1200	65.88	-24.32		
7	12	1216	62.00	-24.47		
7	12	1219	63.03	-24.63		
7	12	1247	57.65	-20.82		
7	12	1337	50.83	-20.29		
7	12	1340	48.51	-19.39		
7	12	1357	43.78	-16.71		
7	12	1405	43.68	-13.13		
7	12	1410	43.19	-15.28		
7	12	1437	35.85	-15.07		
7	12	1458	34.20	-15.69		
7	12	1508	30.97	-15.49		
7	12	1543	25.46	-11.08		
7	12	1555	22.82	-10.61		
7	12	1622	18.54	-5.26		

TWERLE BALLCON 89154 B/D 1972

MCNTH	DAY	TIME	SUN ANGLE	PKG TEMP	LATITUDE	LCNGITUDE
7	13	729	30.58	.55		
7	13	757	33.65	-2.44		
7	13	836	43.19	-5.08		
7	13	900	47.56	-5.76		
7	13	927	52.52	-3.41		
7	13	951	56.58	-.37		
7	13	1027	60.68	-3.60		
7	13	1042	65.88	-12.24		
7	13	1111			4.5S	13.8E
7	13	1117	65.16	-11.31		
7	13	1134	64.64	-10.85		
7	13	1141	64.45	-11.31		
7	13	1209	59.88	-9.65		
7	13	1227	59.28	-5.26		
7	13	1245	56.02	-6.34		
7	13	1246	54.62	-6.60		
7	13	1255	53.92	-3.03		
7	13	1306	49.93	-3.60		
7	13	1311	49.22	-24.47		
7	13	1327	46.84	-6.34		
7	13	1333	44.66	-27.05		
7	13	1357	39.88	-6.34		
7	13	1410	39.68	-30.72		
7	13	1424	35.84	-2.44		
7	13	1439	33.65	-33.43		
7	13	1452	29.34	-.68		
7	13	1522	23.37	-1.28		
7	14	601	17.97	-8.91		
7	14	710	33.38	.55		
7	14	710	33.38	-.68		
7	14	800	41.24	-14.86		
7	14	836	48.70	-16.71		
7	14	922	57.50	-15.07		
7	14	928	59.74	-13.57		
7	14	954	63.50	-13.35		
7	14	1029	65.49	-11.31		
7	14	1046			4.2S	20.1E
7	14	1118	56.48	-4.99		
7	14	1121	64.63	-10.61		
7	14	1214	56.15	-7.90		
7	14	1240	53.36	-6.34		
7	14	1329	43.58	2.12		
7	14	1353	36.63	6.10		
7	14	1439	30.07	5.08		

TWERLE BALLOON 89154 B/D 1972

MONTH	DAY	TIME	SUN ANGLE	PKG TEMP	LATITUDE	LONGITUDE
7	15	700	33.92	2.12		
7	15	741	44.31	-4.16		
7	15	810	46.59	-2.74		
7	15	840	52.18	-14.44		
7	15	918	58.89	-13.35		
7	15	948	66.39	-21.34		
7	15	1027	69.43	-22.70		
7	15	1038				
7	15	1122	68.70	-23.84	1.0S	22.1E
7	15	1212	59.22	-9.15		
7	15	1308	47.88	-10.37		
7	15	1339	41.29	-8.15		
7	15	1407	36.31	-2.16		
7	16	713	37.04	2.12		
7	16	743	42.43	-.68		
7	16	828	50.53	2.44		
7	16	915	60.71	5.76		
7	16	931	64.67	-.55		
7	16	942	65.28	-1.57		
7	16	1008	69.52	-3.03		
7	16	1021	72.42	-1.87		
7	16	1032	72.63	-7.64		
7	16	1044			2.2N	20.7E
7	16	1050	75.28	-8.41		
7	16	1108	69.81	-8.15		
7	16	1110	70.20	-9.40		
7	16	1127	69.76	-8.15		
7	16	1132	67.53	-5.81		
7	16	1142	68.98	-1.87		
7	16	1154	66.33	2.44		
7	16	1158	64.90	2.44		
7	16	1206	62.73	2.12		
7	16	1233	58.56	3.74		
7	16	1244	55.30	4.07		
7	16	1252	53.58	2.44		
7	16	1322	46.44	5.42		
7	16	1402	38.03	2.44		
7	16	1432	33.64	11.53		
7	17	658	27.09	2.12		
7	17	747	35.51	2.12		
7	17	832	43.81	1.80		

TWERLE BALLOON 89154 B/D 1972

MONTH DAY TIME SUN ANGLE PKG TEMP LATITUDE LONGITUDE

7	17	845	46.58	-.07		
7	17	846	47.54	-.37		
7	17	849	47.30	-1.57		
7	17	900	48.97	-3.32		
7	17	907	50.62	-3.88		
7	17	917	52.87	-5.54		
7	17	926	54.60	-4.44		
7	17	928	55.99	-4.44		
7	17	931	56.92	-4.99		
7	17	932	56.92	-5.81		
7	17	935	64.42	-6.07		
7	17	937	61.24	-6.07		
7	17	947	59.72	-7.13		
7	17	1007	66.28	-6.60		
7	17	1020	68.37	-8.66		
7	17	1040	72.29	-12.46		
7	17	1041	72.21	-11.55		
7	17	1117	84.22	-15.28		
7	17	1118	82.14	-10.85		
7	17	1120	78.07	-15.07		
7	17	1130	75.27	-16.10		
7	17	1136			6.6N	7.6E
7	17	1152	81.02	-20.47		
7	17	1227	74.52	-23.19		
7	17	1303	74.52	-23.01		
7	17	1311	64.14	-15.90		
7	17	1324	60.08	-22.38		
7	17	1324	60.09	-13.64		
7	17	1341	53.39	-7.39		
7	17	1409	45.61	-4.72		
7	17	1420	55.72	-9.52		
7	17	1430	43.41	-3.32		
7	17	1531	33.48	.55		

7	18	753	29.32	1.17		
7	18	822	35.72	2.12		
7	18	845	39.40	4.41		
7	18	847	39.96	2.44		
7	18	857	41.09	.24		
7	18	916	45.28	1.48		
7	18	938	49.43	-1.87		
7	18	1000	54.82	-4.72		
7	18	1007	52.54	-6.34		
7	18	1012	58.24	-3.60		
7	18	1026	60.18	-4.72		
7	18	1029	62.24	-6.87		
7	18	1038	64.89	-4.72		
7	18	1041	65.60	-3.32		

TWERLE BALLOON 89154 B/D 1972

MONTH	DAY	TIME	SUN ANGLE	PKG TEMP	LATITUDE	LONGITUDE
7	18	1053	66.00	-6.34		
7	18	1105	68.09	-8.15		
7	18	1107	70.26	-7.90		
7	18	1131	75.53	-10.61		
7	18	1138	76.91	-12.24		
7	18	1142	76.68	-13.79		
7	18	1150	78.95	-15.90		
7	18	1157	82.06	-17.88		
7	18	1204	81.79	-20.65		
7	18	1208	82.58	-17.69		
7	18	1211	83.38	-23.19		
7	18	1212			9.5N	1.3W
7	18	1217	83.04	-25.40		
7	18	1220	82.58	-26.90		
7	18	1223	81.79	-28.07		
7	18	1225	78.41	-28.07		
7	18	1231	81.63	-28.78		
7	18	1235	81.14	-28.64		
7	18	1249	77.48	-24.63		
7	18	1253	79.05	-23.84		
7	18	1257	76.18	-24.16		
7	18	1258	76.91	-23.52		
7	18	1301	75.71	-22.86		
7	18	1321	69.86	-21.86		
7	18	1325	68.55	-22.37		
7	18	1337	65.70	-20.11		
7	18	1411	57.66	-14.01		
7	18	1435	52.68	-9.89		
7	18	1502	46.45	2.12		
7	18	1530	39.56	-0.98		
7	18	1617	31.39	-0.68		
7	18	1712	20.60	2.12		
7	19	745	21.22	-7.13		
7	19	819	26.03	-6.34		
7	19	912	36.03	-1.87		
7	19	938	41.82	-4.44		
7	19	1001	46.08	-8.15		
7	19	1012	48.48	-8.15		
7	19	1012	48.38	-9.15		
7	19	1031	55.05	-11.08		
7	19	1049	57.37	-13.57		
7	19	1050	57.98	-14.22		
7	19	1108	62.00	-17.69		
7	19	1116	63.69	-18.07		
7	19	1134	67.51	-22.70		
7	19	1138	69.56	-23.03		
7	19	1153	71.65	-25.86		

TWERLE BALLOON 89154 B/D 1972

MONTH	DAY	TIME	SUN ANGLE	PKG TEMP	LATITUDE	LONGITUDE
7	19	1157	73.67	-27.49		
7	19	1200	78.94	-27.20		
7	19	1207	76.95	-27.34		
7	19	1209	76.90	-26.76		
7	19	1223	78.19	-26.61		
7	19	1252	82.62	-29.62		
7	19	1302	80.55	-31.81		
7	19	1312			8.9N	16.4W
7	19	1327	77.64	-31.68		
7	19	1346	72.40	-30.03		
7	19	1357	68.52	-29.90		
7	19	1401	69.32	-28.21		
7	19	1418	65.95	-28.21		
7	19	1425	64.69	-27.63		
7	19	1552	41.87	-6.34		
7	19	1619	38.32	-5.26		
7	19	1652	32.87	-15.28		
7	20	848	28.75	-4.99		
7	20	853	30.33	-7.39		
7	20	908	32.27	-5.81		
7	20	919	34.43	-1.28		
7	20	919	31.83	-3.88		
7	20	930	36.55	-2.24		
7	20	942	38.11	-2.24		
7	20	957	39.09	-2.45		
7	20	959	40.53	-0.98		
7	20	1015	45.11	-0.07		
7	20	1027	48.80	-0.68		
7	20	1030	47.04	-0.07		
7	20	1045	48.95	1.80		
7	20	1100	53.36	1.80		
7	20	1104	54.81	-0.37		
7	20	1119	58.45	-8.15		
7	20	1120	59.09	-9.15		
7	20	1135	61.02	-9.89		
7	20	1149	66.14	-16.10		
7	20	1207	68.85	-15.69		
7	20	1208	68.78	-19.75		
7	20	1223	75.60	-24.63		
7	20	1238	78.04	-27.63		
7	20	1248	79.08	-31.27		
7	20	1322			15.6N	18.7W
7	20	1342	87.61	-49.91		
7	20	1347	85.06	-51.33		
7	20	1351	86.95	-49.91		
7	20	1406	80.90	-44.81		
7	20	1410	81.11	-42.37		

TWERLE BALLOON 89154 B/D 1972

MONTH	DAY	TIME	SUN ANGLE	PKG TEMP	LATITUDE	LONGITUDE
7	20	1411	81.18	-43.98		
7	20	1426	76.77	-37.24		
7	20	1432	43.10	-4.16		
7	20	1502	64.11	-29.34		
7	20	1527	58.06	-23.84		
7	20	1603	46.70	-11.55		
7	20	1657	36.34	-6.60		
7	20	1724	59.18	-5.54		
7	21	902	24.96	-3.60		
7	21	932	28.74	-3.88		
7	21	944	32.81	-2.16		
7	21	1008	36.55	-2.16		
7	21	1012	37.28	-3.88		
7	21	1044	45.34	-6.87		
7	21	1046	44.66	-9.15		
7	21	1112	51.25	-8.15		
7	21	1146	57.70	-15.45		
7	21	1152	58.89	-12.01		
7	21	1201	63.12	-12.46		
7	21	1218	66.07	-16.51		
7	21	1247	76.37	-20.47		
7	21	1301	80.78	-22.70		
7	21	1313	82.77	-26.16		
7	21	1316	82.77	-27.49		
7	21	1359			18.8N	28.0W
7	21	1419	84.90	-43.01		
7	21	1422	84.90	-43.81		
7	21	1426	85.65	-43.98		
7	21	1440	79.52	-39.80		
7	21	1443	75.23	-38.36		
7	21	1446	76.57	-37.24		
7	21	1447	77.73	-34.37		
7	21	1450	77.59	-34.24		
7	21	1508	69.18	-28.35		
7	21	1520	65.69	-26.31		
7	21	1525	62.73	-22.37		
7	21	1633	47.21	-13.11		
7	21	1639	43.98	-14.01		
7	21	1714	36.44	-3.88		
7	21	1718	37.33	-1.13		
7	21	1739	38.64	-1.87		
7	22	909	23.64	-1.57		
7	22	921	26.02	-3.03		

TWERLE BALLCON 89154 B/D 1972

MONTH	DAY	TIME	SUN ANGLE	PKG TEMP	LATITUDE	LONGITUDE
7	22	1137	52.46	-7.90		
7	22	1146	66.66	-18.83		
7	22	1206	60.38	-12.01		
7	22	1218	67.07	-18.27		
7	22	1233	68.56	-15.69		
7	22	1315	83.63	-26.16		



REMARKS

Surface conditions at launch

FLIGHT INFORMATION FORM

FLIGHT NO. 90152 B/L

Float Altitude 150 mb

Diagram of Flight Train

GHOST Frequency = 15.02 2 MHz

Sun Angle I.D. Code B

Calibration Data

20 DEG	38.0
35 DEG	33.9
60 DEG	23.4

2nd Package Frequency = 15.02 MHz

I.D. Code L

Code Letter	Sensor
<u>L</u>	<u>Oven Temp. (UWISC)</u>

Calibration Data

BALLOON DATA

Balloon ID# (Mfg*) R 72-19

Launch date 3 JULY 72

Launch site Ascension

Film Celanar (Clear)

Diameter Seam 3.5593 m X Gore 3.5692 m

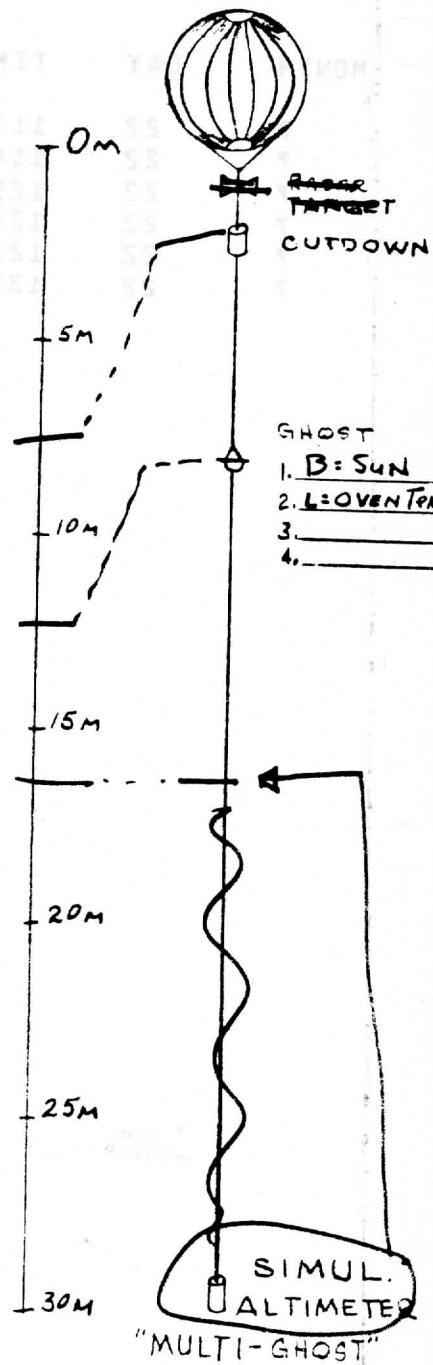
Volume 23.525 cu. m.

Balloon Weight 3226

Payload Weight 1563

Duration

Last Known Position



- GHOST
1. B: SUN
 2. L: OVEN TEM
 3.
 4.

REMARKS

Surface conditions at launch

* R = Raven Industries, Inc.
S = G. T. Schjeldahl Co.

TWERLE BALLCON 90152 9/L 1972

MCNTH	DAY	TIME	SUN ANGLE	PKG TEMP	LATITUDE	LCNGITUDE
7	3	810	9.86	15.72		
7	3	831	14.49	13.73		
7	3	842	18.22	12.17		
7	3	847	18.22	11.03		
7	3	852	21.71	9.91		
7	3	900	23.78	7.38		
7	3	905	24.97	5.30		
7	3	908	29.08	2.35		
7	3	909	28.72	2.32		
7	3	918	32.16	-3.43		
7	3	923	33.13	-8.01		
7	3	931	38.23	-15.79		
7	3	935	38.51	-18.73		
7	3	940	37.95	-22.93		
7	3	944	38.23	-23.73		
7	3	947	38.23	-23.73		
7	3	954	38.23	-21.93		
7	3	1002	55.58	-22.97		
7	3	1022	42.27	-19.65		
7	3	1024	63.56	-21.04		
7	3	1031	44.04	-19.10		
7	3	1038	45.13	-21.26		
7	3	1041	46.00	-21.93		
7	3	1050	47.04	-22.26		
7	3	1050	47.04	-21.42		
7	3	1108	51.04	-22.26		
7	3	1115	52.35	-22.10		
7	3	1122	52.26	-22.10		
7	3	1123	53.42	-24.83		
7	3	1129	52.99	-22.93		
7	3	1132	68.79	-22.76		
7	3	1138	67.92	-27.16		
7	3	1153	57.88	-20.90		
7	3	1154	57.58	-24.99		
7	3	1200	57.13	-26.20		
7	3	1205	57.78	-24.68		
7	3	1209	57.37	-24.44		
7	3	1217	58.39	-24.21		
7	3	1221	58.83	-25.75		
7	3	1228	59.80	-25.90		
7	3	1228	59.80	-26.05		
7	3	1248	59.80	-24.83		
7	3	1248			6.9S	10.8W
7	3	1249	60.00	-25.75		
7	3	1249	59.31	-25.45		
7	3	1250	60.20	-25.29		
7	3	1251	60.39	-24.83		
7	3	1253	59.60	-24.83		
7	3	1254	60.20	-24.99		
7	3	1300	60.20	-24.99		
7	3	1311	59.51	-26.49		

TWERLE BALLCON 90152 B/L 1972

MONTH	DAY	TIME	SUN ANGLE	PKG TEMP	LATITUDE	LCNGITUDE
7	3	1311	60.49	-24.76		
7	3	1311	49.03	-22.13		
7	3	1319	52.13	-24.37		
7	3	1319	57.82	-21.79		
7	3	1325	56.96	-26.64		
7	3	1337	56.84	-26.79		
7	3	1347	56.96	-25.90		
7	3	1350	57.17	-25.90		
7	3	1406	53.33	-25.75		
7	3	1406	54.69	-25.45		
7	3	1410	54.37	-25.14		
7	3	1411	54.27	-24.83		
7	3	1412	52.56	-24.83		
7	3	1414	54.27	-24.37		
7	3	1416	54.27	-24.52		
7	3	1424	52.13	-24.52		
7	3	1427	52.13	-24.37		
7	3	1434	50.15	-23.41		
7	3	1436	48.85	-22.93		
7	3	1443	49.25	-23.09		
7	3	1451	47.65	-22.76		
7	3	1453	46.24	-22.43		
7	3	1456	44.59	-22.93		
7	3	1508	37.83	-21.16		
7	3	1511	44.04	-20.19		
7	3	1518	43.04	-20.90		
7	3	1525	41.23	-20.19		
7	3	1533	39.89	-20.55		
7	3	1546	35.67	-21.07		
7	3	1546	38.23	-23.09		
7	3	1547	36.50	-21.07		
7	3	1601	34.39	-20.37		
7	3	1603	34.08	-20.01		
7	3	1610	32.48	-19.83		
7	3	1624	28.36	-19.28		
7	3	1627	31.16	-19.92		
7	3	1635	31.16	-19.10		
7	3	1648	32.48	-19.28		
7	4	753	30.82	-14.11		
7	4	812	32.03	-14.32		
7	4	829	35.61	-13.24		
7	4	833	36.21	-12.34		
7	4	842	37.95	-13.89		
7	4	842	40.32	-14.54		
7	4	912	43.60	-17.59		
7	4	914	44.54	-17.78		
7	4	926	47.88	-19.65		

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MONTH	DAY	TIME	SUN ANGLE	PKG TEMP	LATITUDE	LONGITUDE
7	4	935	49.48	-21.59		
7	4	936	50.95	-22.26		
7	4	950	53.84	-22.93		
7	4	1007	54.90	-24.05		
7	4	1010	56.56	-23.25		
7	4	1023	59.20	-25.60		
7	4	1032	60.48	-26.05		
7	4	1039	61.19	-25.29		
7	4	1056	63.96	-26.05		
7	4	1107	64.86	-26.05		
7	4	1109	66.30	-25.60		
7	4	1118	65.91	-24.83		
7	4	1127	67.28	-25.60		
7	4	1136	67.08	-26.49		
7	4	1140	67.47	-27.08		
7	4	1142	66.96	-28.22		
7	4	1148	67.47	-27.65		
7	4	1151			1.0S	3.4E
7	4	1158	66.69	-27.51		
7	4	1202	67.20	-27.65		
7	4	1209	66.69	-27.65		
7	4	1224	66.11	-25.90		
7	4	1227	65.17	-25.45		
7	4	1246	62.78	-25.29		
7	4	1247	63.56	-24.68		
7	4	1304	61.19	-24.21		
7	4	1307	61.03	-24.52		
7	4	1327	54.69	-20.55		
7	4	1332	55.11	-20.72		
7	4	1407	49.62	-22.10		
7	4	1412	48.57	-21.59		
7	4	1427	45.27	-22.26		
7	4	1438	43.54	-23.73		
7	4	1443	42.78	-23.73		
7	4	1502	35.31	-19.83		
7	4	1504	38.51	-22.93		
7	4	1543	31.76	-22.60		
7	4	1609	26.89	-22.43		
7	4	1620	26.89	-21.93		
7	5	737	33.13	-15.59		
7	5	752	35.85	-17.00		
7	5	752	34.70	-16.60		
7	5	827	42.94	-18.54		
7	5	857	47.37	-19.28		
7	5	922	52.09	-20.37		
7	5	957	58.39	-18.54		
7	5	1028	64.15	-21.24		

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MCNTH	DAY	TIME	SUN ANGLE	PKG TEMP	LATITUDE	LCNGITUDE
7	5	1030	63.13	-21.93		
7	5	1041	65.13	-22.93		
7	5	1057	66.85	-22.43		
7	5	1107	68.25	-24.52		
7	5	1126			.4N	9.7E
7	5	1131	69.10	-23.09		
7	5	1132	68.79	-23.25		
7	5	1148	68.25	-22.93		
7	5	1158	66.85	-23.09		
7	5	1205	67.08	-21.93		
7	5	1223	65.91	-22.26		
7	5	1227	65.95	-23.41		
7	5	1252	61.19	-23.09		
7	5	1302	58.75	-23.41		
7	5	1330	53.21	-18.16		
7	5	1332	50.73	-16.60		
7	5	1350	50.82	-13.46		
7	5	1407	43.49	-10.00		
7	5	1423	42.27	-9.76		
7	5	1444	37.66	-6.98		
7	5	1506	34.95	-11.19		
7	5	1508	33.45	-10.72		
7	6	752	34.95	-9.27		
7	6	817	47.88	-13.02		
7	6	822	40.37	-12.34		
7	6	830	43.04	-12.34		
7	6	834	44.79	-12.11		
7	6	852	55.11	-13.24		
7	6	857	46.43	-14.11		
7	6	919	52.35	-11.65		
7	6	928	52.05	-12.34		
7	6	932	54.27	-11.65		
7	6	954	56.97	-11.89		
7	6	1007	57.86	-15.79		
7	6	1008	63.37	-14.32		
7	6	1036	61.19	-17.78		
7	6	1044	60.88	-17.59		
7	6	1107	63.09	-21.24		
7	6	1108	62.78	-20.55		
7	6	1108			5.9S	14.4E
7	6	1157	58.95	-22.10		
7	6	1227	55.11	-23.73		
7	6	1236	54.69	-26.93		
7	6	1257	49.26	-22.76		
7	6	1307	49.03	-23.41		
7	6	1316	47.88	-21.93		
7	6	1330	48.34	-21.59		

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MONTH	DAY	TIME	SUN ANGLE	PKG TEMP	LATITUDE	LONGITUDE
7	6	1332	43.70	-24.52		
7	6	1347	40.70	-19.10		
7	6	1400	38.79	-19.65		
7	6	1409	35.43	-20.01		
7	6	1412	3E.50	-21.24		
7	6	1452	28.94	-16.40		
7	7	632	29.65	-19.10		
7	7	702	34.76	-15.59		
7	7	746	40.70	-19.47		
7	7	822	45.90	-20.37		
7	7	830	50.15	-22.10		
7	7	852	52.22	-22.10		
7	7	910	52.74	-22.26		
7	7	951	58.71	-23.09		
7	7	1000	59.20	-26.05		
7	7	1018			10.1S	26.9E
7	7	1108	56.56	-22.60		
7	7	1116	55.19	-23.09		
7	7	1146	52.65	-24.37		
7	7	1218	45.76	-21.59		
7	7	1237	45.52	-19.83		
7	7	1253	41.75	-18.73		
7	7	1313	38.23	-17.97		
7	7	1422	24.58	-15.59		
7	8	603	28.15	-18.91		
7	8	659	37.72	-21.24		
7	8	752	45.85	-21.24		
7	8	918	57.33	-24.37		
7	8	953			9.3S	33.1E
7	8	1007	58.79	-26.05		
7	8	1027	59.31	-26.05		
7	8	1057	57.01	-25.29		
7	8	1154	48.16	-23.25		
7	8	1212	44.74	-21.24		
7	8	1245	38.06	-18.91		
7	8	1317	32.61	-18.73		
7	8	1412	21.97	-17.78		
7	9	524	25.52	-19.65		
7	9	552	28.87	-16.20		

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MONTH	DAY	TIME	SUN ANGLE	PKG TEMP	LATITUDE	LONGITUDE
7	9	712	44.83	-16.80		
7	9	742	49.66	-15.59		
7	9	808	52.52	-16.00		
7	9	912	58.75	-17.59		
7	9	927			9.4S	39.6E
7	9	942	59.11	-17.00		
7	9	1019	56.96	-17.59		
7	9	1050	54.35	-17.20		
7	9	1125	48.20	-12.79		
7	9	1202	41.28	-13.02		
7	9	1244	33.76	-11.42		
7	10	507	24.57	-16.60		
7	10	539	29.29	-15.59		
7	10	612	35.31	-15.79		
7	10	642	40.69	-19.47		
7	10	712	45.51	-19.65		
7	10	746	50.86	-20.37		
7	10	831	57.41	-24.52		
7	10	916			10.6S	42.5E
7	10	917	58.79	-20.55		
7	10	1018	54.93	-24.52		
7	10	1042	51.95	-24.99		
7	10	1122	45.99	-21.42		
7	10	1211	37.89	-16.00		
7	10	1250	29.15	-19.10		
7	11	532	27.70	-16.60		
7	11	629	38.05	-17.59		
7	11	715	45.61	-18.35		
7	11	847	55.60	-23.73		
7	11	908			13.2S	44.4E
7	11	912	56.46	-25.29		
7	11	942	54.68	-24.52		
7	11	957	52.64	-24.05		
7	11	1046	47.36	-20.72		
7	11	1117	41.48	-17.20		
7	11	1209	34.88	-11.19		
7	11	1242	28.36	-14.75		
7	12	622	37.37	-15.38		
7	12	737	50.36	-20.37		

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MONTH	DAY	TIME	SUN ANGLE	PKG TEMP	LATITUDE	LONGITUDE
7	12	817	53.66	-21.07	13.0S	46.1E
7	12	852	54.51	-22.26		
7	12	902				
7	12	917	54.80	-23.73		
7	12	1037	47.64	-24.37		
7	12	1157	35.06	-21.07		
7	13	647	40.84	-21.59	15.8S	44.7E
7	13	747	53.87	-24.52		
7	13	822	52.63	-26.05		
7	13	908	54.96	-24.99		
7	13	908				
7	13	1000	51.55	-24.99		
7	13	1041	47.07	-22.10		
7	13	1108	42.67	-23.73		
7	13	1138	38.22	-23.57		
7	13	1214	31.62	-18.91		
7	14	726	43.33	-18.73	24.2S	57.6E
7	14	814	43.38	-15.59		
7	14	816				
7	14	850	43.93	-17.78		
7	14	929	40.73	-18.54		
7	14	1008	35.72	-17.97		
7	15	505	35.10	-29.06		
7	16	543	30.93	-7.50		
7	17	17	28.63	-13.89		
7	17	19	29.41	-15.59		
7	17	32	30.46	-10.24		
7	17	38	34.98	-11.19		
7	17	46	30.93	-11.19		
7	17	52	33.43	-9.27		

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MONTH	DAY	TIME	SUN ANGLE	PKG TEMP	LATITUDE	LONGITUDE
7	17	116	35.22	-11.65		
7	17	132	36.42	-11.89		
7	17	146	37.58	-11.65		
7	17	148	37.35	-11.19		
7	17	202	39.04	-13.24		
7	17	202	38.06	-13.02		
7	17	214	50.56	-9.27		
7	17	217	32.22	-13.02		
7	17	225	39.04	-12.57		
7	17	232	40.83	-13.46		
7	17	247	40.93	-13.89		
7	17	251	41.59	-13.68		
7	17	302	41.20	-13.46		
7	17	306			27.7S	135.2E
7	17	311	42.11	-13.89		
7	17	316	41.77	-14.54		
7	17	332	41.30	-14.11		
7	17	342	42.50	-13.68		
7	17	346	40.93	-14.11		
7	17	401	39.75	-14.11		
7	17	402	40.13	-13.89		
7	17	405	40.13	-11.89		
7	17	416	38.37	-12.79		
7	17	430	37.92	-9.02		
7	17	432	37.75	-9.76		
7	17	448	36.71	-8.27		
7	17	502	35.10	-10.48		
7	17	516	33.36	-10.00		
7	17	532	31.20	-9.27		
7	17	546	30.93	-10.95		
7	17	602	27.91	-11.65		
7	17	616	26.42	-11.42		
7	17	632	24.32	-10.72		
7	17	646	21.36	-10.95		
7	17	701	19.89	-12.11		
7	17	2304	28.88	-14.32		
7	17	2325	29.41	-13.24		
7	17	2340	32.46	-15.59		
7	18	4	35.58	-15.38		
7	18	22	37.91	-16.00		
7	18	45	40.39	-16.00		
7	18	53	42.62	-17.39		
7	18	113	43.38	-17.00		
7	18	128	44.01	-16.40		
7	18	143	37.58	-18.01		
7	18	201	40.26	-17.39		
7	18	224			22.5S	145.8E

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MONTH	DAY	TIME	SUN ANGLE	PKG TEMP	LATITUDE	LONGITUDE
7	18	236	46.79	-16.60		
7	18	257	41.59	-18.86		
7	18	304	47.14	-18.73		
7	18	324	46.67	-26.79		
7	18	338	44.75	-16.60		
7	18	351	44.75	-17.00		
7	18	422	43.63	-17.00		
7	18	444	35.28	-16.60		
7	18	507	33.74	-15.79		
7	18	520	32.78	-16.00		
7	18	548	25.92	-15.17		
7	18	628	32.76	-15.59		
7	18	2323	33.74	-10.24		
7	18	2346	35.43	-12.34		
7	19	4	38.75	-9.27		
7	19	19	39.98	-10.48		
7	19	218			20.3S	147.2E
7	19	233	49.43	-19.28		
7	19	315	41.77	-17.62		
7	19	325	46.67	-17.78		
7	19	441	37.34	-15.59		
7	19	502	34.97	-18.35		
7	19	530	29.76	-15.79		
7	19	2236	28.34	-13.46		
7	19	2305	36.47	-13.89		
7	19	2316	36.41	-11.42		
7	19	2332	37.62	-11.42		
7	19	2346	40.17	-9.51		
7	19	2357	40.92	-15.59		
7	20	2	41.91	-8.52		
7	20	17	43.50	-13.24		
7	20	17	43.29	-11.42		
7	20	32	44.78	-12.79		
7	20	41	44.00	-11.42		
7	20	47	45.51	-11.65		
7	20	102	46.66	-11.65		
7	20	117	47.04	-11.89		
7	20	118	46.19	-12.11		
7	20	132	48.70	-11.65		
7	20	136	47.36	-12.79		
7	20	143			22.2S	155.9E
7	20	147	47.64	-13.02		
7	20	148	48.75	-14.32		

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MCNTH	DAY	TIME	SUN ANGLE	PKG TEMP	LATITUDE	LCNGITUDE
7	20	202	46.71	-13.02		
7	20	216	45.90	-14.75		
7	20	232	46.09	-15.59		
7	20	235	45.47	-15.79		
7	20	246	45.13	-16.00		
7	20	302	43.39	-15.38		
7	20	317	41.86	-16.80		
7	20	332	38.86	-17.59		
7	20	335	45.47	-17.20		
7	20	347	36.93	-12.57		
7	20	402	35.51	-12.11		
7	20	417	32.71	-11.19		
7	20	432	32.71	-12.34		
7	20	447	28.84	-11.42		
7	20	502	27.97	-12.79		
7	20	517	24.39	-15.38		
7	20	2131	35.27	-26.20		
7	20	2227	34.04	-18.54		
7	20	2248	35.27	-17.97		
7	20	2328	40.92	-21.42		
7	20	2347	40.70	-18.54		
7	20	2353	43.50	-18.73		
7	21	17	40.38	-14.54		
7	21	19			29.0S	176.9E
7	21	29	43.24	-15.59		
7	21	32	40.54	-15.17		
7	21	38	41.17	-15.59		
7	21	47	40.11	-15.79		
7	21	59	40.91	-15.17		
7	21	102	38.96	-15.17		
7	21	113	39.29	-17.97		
7	21	117	39.07	-16.80		
7	21	132	38.35	-16.80		
7	21	138	37.90	-17.97		
7	21	147	36.10	-17.20		
7	21	202	34.35	-12.57		
7	21	217	32.38	-13.46		
7	21	232	31.52	-13.02		
7	21	247	27.89	-10.95		
7	21	302	26.55	-10.48		
7	21	302	26.55	-10.72		
7	21	317	25.10	-11.65		
7	21	332	22.69	-12.34		
7	21	347	45.51	-1.10		
7	21	355	20.41	-14.75		
7	21	402	46.75	-2.57		

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MONTH	DAY	TIME	SUN ANGLE	PKG TEMP	LATITUDE	LCNGITUDE
7	21	1912	39.56	-15.38		
7	21	1930	40.36	-13.68		
7	21	2003	40.38	-12.57		
7	21	2034	40.91	-17.59		
7	21	2040	41.70	-17.59		
7	21	2057	43.99	-17.39		
7	21	2127	45.94	-17.78		
7	21	2213			21.8S	151.6W
7	21	2254	48.28	-13.46		
7	21	2302	41.76	-12.57		
7	21	2317	67.07	-13.24		
7	21	2317	45.94	-12.57		
7	21	2339	43.24	-10.95		
7	21	2347	64.46	-7.24		
7	21	2359	40.64	-10.72		
7	22	17	61.54	-9.27		
7	22	20	37.89	-8.77		
7	22	32	60.47	-4.28		
7	22	37	60.47	-3.43		
7	22	47	58.71	-5.11		
7	22	55	33.72	-8.77		
7	22	102	57.50	-9.02		
7	22	117	56.27	-6.72		
7	22	132	54.82	-5.38		
7	22	147	53.47	-7.50		
7	22	202	52.40	-10.00		
7	22	217	50.52	-9.76		
7	22	232	51.93	-1.40		
7	22	247	53.77	-1.69		
7	22	302	55.86	-1.69		
7	22	317	56.31	-1.99		
7	22	332	58.10	-1.99		
7	22	347	58.22	-1.99		
7	22	402	59.07	-1.99		
7	22	417	59.51	-1.40		
7	22	432	59.19	-1.99		
7	22	447	58.79	-1.69		
7	22	502	57.98	-1.40		
7	22	517	58.10	-1.69		
7	22	1858	34.03	-17.59		
7	22	1923	39.29	-19.47		
7	22	1944	43.23	-19.28		
7	22	2001	44.48	-16.20		
7	22	2021	48.27	-22.26		

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MONTH	DAY	TIME	SUN ANGLE	PKG TEMP	LATITUDE	LONGITUDE
7	22	2053	49.41	-20.19		
7	22	2112	52.49	-17.59		
7	22	2138	52.49	-19.28		
7	22	2141			17.5S	143.5W
7	22	2146	52.49	-24.62		
7	22	2202	53.56	-15.79		
7	22	2225	51.84	-19.47		
7	22	2226	51.84	-33.48		
7	22	2248	48.04	-19.10		
7	22	2305	45.93	-16.00		
7	22	2333	42.21	-18.73		
7	22	2357	40.90	-16.60		
7	23	1918	45.93	-19.47		
7	23	1933	41.94	-19.83		
7	23	2018	51.81	-20.55		
7	23	2034	50.66	-22.26		
7	23	2034			18.8S	126.6W
7	23	2123	50.05	-21.50		
7	23	2145	46.91	-22.01		
7	23	2206	41.16	-25.73		
7	23	2233	40.97	-27.47		
7	24	1713	37.59	-18.50		
7	24	1739	36.36	-18.95		
7	24	1839	50.44	-16.80		
7	24	1840	45.07	-21.33		
7	24	1914	52.54	-25.14		
7	24	1923	53.75	-25.90		
7	24	1940	53.33	-26.20		
7	24	1945	52.54	-26.27		
7	24	1947			17.1S	115.0W
7	24	2008	53.39	-25.28		
7	24	2044	53.68	-25.90		
7	24	2108	47.86	-25.14		
7	24	2137	43.82	-24.69		
7	24	2205	40.67	-23.70		
7	24	2233	36.56	-21.91		
7	25	1448	22.71	-20.76		
7	25	1518	28.17	-18.07		
7	25	1527	32.26	-17.59		

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MONTH	DAY	TIME	SUN ANGLE	PKG TEMP	LATITUDE	LONGITUDE
7	25	1527	32.26	-17.10		
7	25	1539	32.33	-19.56		
7	25	1550	34.77	-15.79		
7	25	1550	34.77	-17.39		
7	25	1612	37.31	-21.33		
7	25	1637	40.88	-20.01		
7	25	1637	40.88	-20.55		
7	25	1641	42.43	-21.38		
7	25	1709	46.44	-23.06		
7	25	1739	46.50	-23.12		
7	25	1809	46.49	-25.22		
7	25	1839	54.29	-20.72		
7	25	1846			18.0S	99.7W
7	25	1912	53.43	-18.91		
7	25	1941	50.92	-20.10		
7	25	2008	50.65	-20.72		
7	25	2043	48.14	-18.91		
7	25	2111	39.35	-22.51		
7	25	2140	33.31	-18.90		
7	25	2213	26.61	-17.18		
7	25	2244	23.72	-18.82		
7	26	1402	13.57	-15.28		
7	26	1420	50.25	-27.67		
7	26	1449	35.24	-6.06		
7	26	1521	42.95	-6.72		
7	26	1527	55.11	-24.27		
7	26	1527	39.31	-10.24		
7	26	1557	39.42	-12.57		
7	26	1622	46.71	-11.42		
7	26	1640	47.94	-11.89		
7	26	1712	50.93	-19.65		
7	26	1744	50.80	-18.73		
7	26	1746			18.5S	84.7W
7	26	1842	48.72	-15.38		
7	26	1904	45.59	-14.75		
7	26	1934	41.14	-10.72		
7	26	2010	43.23	-10.48		
7	26	2039	41.22	-9.02		
7	26	2105	25.92	-12.34		
7	27	1428	54.16	-24.97		
7	27	1441	44.04	-18.35		
7	27	1509	47.40	-17.00		
7	27	1536	50.10	-16.40		

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MONTH	DAY	TIME	SUN ANGLE	PKG TEMP	LATITUDE	LONGITUDE
7	27	1613	53.00	-14.54		
7	27	1637	54.16	-9.02		
7	27	1638	54.56	-9.02		
7	27	1643	61.53	-18.84		
7	27	1650			16.9S	70.8W
7	27	1710	53.78	-14.54		
7	27	1742	54.04	-18.26		
7	27	1744	52.38	-16.80		
7	27	1811	48.94	-18.73		
7	27	1817	49.03	-19.47		
7	27	1835	45.99	-17.97		
7	27	1840	38.56	-17.10		
7	27	1901	37.72	-18.63		
7	27	1910	41.24	-18.73		
7	27	1929	33.05	-19.47		
7	27	1942	40.95	-14.54		
7	27	2000	34.31	-14.64		
7	28	1253	34.31	-16.00		
7	28	1324	34.98	-16.80		
7	28	1348	42.63	-16.60		
7	28	1418	42.09	-16.60		
7	28	1441	41.33	-17.39		
7	28	1451	58.19	-21.24		
7	28	1511	53.07	-22.26		
7	28	1536	58.04	-23.73		
7	28	1546	62.42	-24.99		
7	28	1604	63.76	-25.45		
7	28	1617	45.69	-23.97		
7	28	1619			10.3S	62.9W
7	28	1638	62.44	-23.25		
7	28	1639	41.98	-23.17		
7	28	1639	41.98	-23.57		
7	28	1703	60.72	-19.83		
7	28	1726	56.77	-18.63		
7	28	1738	54.84	-19.47		
7	28	1807	50.45	-19.65		
7	28	1834	45.84	-18.54		
7	28	1908	38.69	-17.20		
7	28	1937	34.18	-17.00		
7	28	2008	28.90	-19.10		
7	29	1154	30.77	-18.54		
7	29	1212	30.74	-19.83		
7	29	1237	35.43	-18.16		

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MONTH	DAY	TIME	SUN ANGLE	PKG TEMP	LATITUDE	LONGITUDE
7	29	1304	34.91	-20.72		
7	29	1336	52.06	-16.40		
7	29	1422	53.99	-19.10		
7	29	1450	59.66	-18.35		
7	29	1518	63.92	-18.16		
7	29	1542	62.04	-17.39		
7	29	1546			6.7S	54.6W
7	29	1610	63.94	-21.42		
7	29	1647	63.55	-21.76		
7	29	1722	64.00	-20.19		
7	29	1812	47.10	-20.19		
7	29	1904	33.01	-18.91		
7	30	1117	61.43	-14.32		
7	30	1124	45.97	-17.59		
7	30	1137	35.15	-13.89		
7	30	1159	40.47	-16.00		
7	30	1217	44.68	-13.89		
7	30	1235	46.36	-17.39		
7	30	1308	53.56	-21.76		
7	30	1325	63.76	-20.81		
7	30	1335	59.54	-20.55		
7	30	1339	61.17	-21.12		
7	30	1418	56.30	-21.00		
7	30	1457			5.3S	42.6W
7	30	1526	57.80	-24.60		
7	30	1604	47.22	-19.28		
7	30	1605	50.78	-18.45		
7	30	1621	47.22	-23.81		
7	30	1706	50.78	-23.04		
7	30	1718	35.11	-20.55		
7	30	1813	26.20	-17.78		
7	31	1016	30.55	-17.59		
7	31	1030	32.87	-19.83		
7	31	1050	36.53	-17.97		
7	31	1119	42.65	-17.20		
7	31	1243	58.68	-22.43		
7	31	1309	61.86	-23.89		
7	31	1332	64.41	-22.60		
7	31	1347	65.77	-22.10		
7	31	1402			7.3S	28.7W
7	31	1404	65.51	-22.93		
7	31	1410	65.12	-23.41		
7	31	1433	65.12	-25.29		

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MONTH	DAY	TIME	SUN ANGLE	PKG TEMP	LATITUDE	LCNGITUDE
7	31	1442	64.21	-25.75		
7	31	1458	61.99	-24.68		
7	31	1509	60.41	-24.52		
7	31	1552	51.66	-23.73		
7	31	1622	45.66	-23.89		
7	31	1642	41.98	-22.10		
7	31	1717	32.38	-22.43		
7	31	1743	31.66	-16.40		
7	31	1809	24.81	-19.10		
8	1	949	32.05	-13.46		
8	1	1003	38.66	-13.46		
8	1	1009	37.88	-13.89		
8	1	1014	40.82	-13.24		
8	1	1029	42.51	-15.17		
8	1	1034	41.87	-15.79		
8	1	1040	44.88	-16.20		
8	1	1052	45.70	-17.78		
8	1	1055	49.20	-16.00		
8	1	1058	48.86	-16.00		
8	1	1103	61.43	-14.43		
8	1	1113	61.78	-16.80		
8	1	1115	51.52	-17.20		
8	1	1126	53.88	-17.97		
8	1	1142	56.53	-19.47		
8	1	1212	60.23	-18.35		
8	1	1218	60.79	-18.35		
8	1	1222	62.37	-17.97		
8	1	1226	61.48	-17.78		
8	1	1230	62.47	-17.20		
8	1	1243	60.99	-17.39		
8	1	1252	63.15	-17.59		
8	1	1256	62.76	-18.73		
8	1	1303	61.82	-21.07		
8	1	1303			10.1S	14.0W
8	1	1316	63.22	-20.72		
8	1	1325	61.74	-20.19		
8	1	1332	61.65	-17.39		
8	1	1340	60.63	-17.59		
8	1	1341	60.59	-16.20		
8	1	1346	59.66	-16.20		
8	1	1406	57.79	-19.28		
8	1	1406	56.65	-19.65		
8	1	1421	55.13	-22.26		
8	1	1425	54.71	-21.76		
8	1	1438	52.17	-21.07		
8	1	1440	52.49	-21.24		
8	1	1448	51.52	-22.26		

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MCNTH DAY TIME SUN ANGLE PKG TEMP LATITUDE LONGITUDE

8	1	1523	43.85	-20.90		
8	1	1552	39.54	-34.43		
8	1	1612	32.57	-20.01		
8	1	1641	28.41	-17.78		
8	1	1717	20.54	-13.46		
8	2	742	24.88	-18.54		
8	2	811	29.68	-17.97		
8	2	824	32.04	-16.40		
8	2	847	36.47	-17.59		
8	2	1013	54.21	-23.89		
8	2	1017	54.49	-23.73		
8	2	1052	49.20	-25.90		
8	2	1127	64.57	-28.08		
8	2	1155	68.13	-29.75		
8	2	1200			7.5S	1.6E
8	2	1226	66.84	-29.62		
8	2	1248	63.80	-28.36		
8	2	1259	64.60	-28.08		
8	2	1303	29.86	-27.22		
8	2	1325	58.82	-24.21		
8	2	1343	56.42	-22.93		
8	2	1351	54.57	-24.52		
8	2	1411	50.49	-24.21		
8	2	1442	44.23	-23.73		
8	2	1444	44.05	-22.93		
8	2	1519	34.94	-21.93		
8	2	1549	29.47	-19.47		
8	2	1638	20.27	-21.24		
8	3	703	24.72	-14.96		
8	3	724	29.67	-15.17		
8	3	836	43.54	-17.39		
8	3	849	46.20	-17.59		
8	3	930	53.53	-18.54		
8	3	933	52.83	-17.78		
8	3	956	57.88	-16.60		
8	3	1008	60.76	-15.59		
8	3	1012	60.76	-15.38		
8	3	1022	63.24	-16.80		
8	3	1039	64.53	-17.39		
8	3	1052	66.24	-17.00		
8	3	1103	66.51	-19.65		
8	3	1113			8.2S	13.4E
8	3	1117	67.02	-18.54		

TWERLE BALLOON 90152 B/L 1972

MONTH	DAY	TIME	SUN ANGLE	PKG TEMP	LATITUDE	LONGITUDE
8	3	1127	66.47	-18.54		
8	3	1158	64.56	-21.07		
8	3	1228	58.93	-19.47		
8	3	1300	53.99	-17.00		
8	3	1304	53.07	-17.00		
8	3	1307	51.54	-16.60		
8	3	1336	45.63	-16.60		
8	3	1337	45.58	-14.54		
8	3	1411	37.86	-17.78		
8	3	1452	31.57	-18.54		
8	3	1527	24.01	-14.11		
8	4	124	47.92	-3.72		
8	4	237	51.27	-3.15		
8	4	852	50.26	-17.20		
8	4	922	52.90	-20.01		
8	4	952	57.79	-23.57		
8	4	1012	59.07	-20.90		
8	4	1037	57.62	-20.37		
8	4	1040			13.5S	21.7E
8	4	1057	60.47	-22.93		
8	4	1122	58.51	-22.93		
8	4	1147	55.05	-20.90		
8	4	1217	51.87	-19.28		
8	4	1307	41.27	-19.47		
8	4	1345	33.12	-16.60		
8	4	1422	27.23	-15.79		
8	5	520	49.95	-20.01		
8	5	524	47.71	-19.83		
8	5	542	45.73	-20.19		
8	5	800	45.56	-17.39		
8	5	815	48.41	-15.79		
8	5	857	53.90	-16.80		
8	5	947	58.58	-20.72		
8	5	1005			16.4S	30.4E
8	5	1018	58.01	-22.93		
8	5	1122	52.50	-23.89		
8	5	1217	42.95	-19.47		
8	5	1300	33.99	-16.80		
8	5	1352	27.59	-15.59		

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MONTH	DAY	TIME	SUN ANGLE	PKG TEMP	LATITUDE	LONGITUDE
8	6	527	19.90	-17.59		
8	6	552	24.38	-15.59		
8	6	615	28.02	-13.68		
8	6	641	34.17	-10.72		
8	6	852	45.40	-8.27		
8	6	936			24.6S	37.5E
8	6	1012	50.10	-7.50		
8	6	1058	45.55	-7.50		
8	6	1139	40.51	-9.02		
8	6	1213	33.80	-12.34		
8	6	1252	28.38	-12.79		
8	7	752			26.8S	63.5E
8	7	903	44.07	-22.10		
8	7	957	37.70	-20.37		
8	7	1028	32.19	-20.01		
8	7	1152	16.40	-16.60		
8	8	312	32.12	-8.01		
8	8	327	33.21	-10.48		
8	8	342	35.37	-10.48		
8	8	357	38.25	-14.32		
8	8	412	39.84	-16.00		
8	8	427	42.81	-16.40		
8	8	442	43.91	-19.83		
8	8	457	45.95	-19.83		
8	8	512	47.21	-18.91		
8	8	527	49.27	-18.91		
8	8	542	50.11	-19.10		
8	8	557	49.40	-19.47		
8	8	612	49.76	-20.72		
8	8	612			24.3S	88.4E
8	8	627	49.80	-20.37		
8	8	642	49.76	-20.01		
8	8	657	49.85	-20.37		
8	8	2147	50.37	-4.00		
8	9	205	30.31	-11.42		
8	9	230	37.17	-8.01		
8	9	449			15.0S	109.2E
8	9	528	58.27	-12.11		
8	9	627	49.43	-8.77		

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MONTH	DAY	TIME	SUN ANGLE	PKG TEMP	LATITUDE	LONGITUDE
8	10	539	27.18	-14.96		
8	12	143	37.58	-10.36		
8	12	358	40.93	-10.91		
8	12	423			22.9S	115.5E
8	12	448	36.71	-13.96		
8	13	133	44.01	-19.58		
8	13	324	46.67	-22.15		
8	13	506			20.9S	104.8E
8	13	529	29.76	-20.03		
8	13	630	37.37	-27.60		
8	13	742	53.87	-22.10		
8	14	142	37.58	-18.43		
8	14	213	50.56	-18.50		
8	14	318	41.77	-23.33		
8	14	414			19.0S	117.9E
8	14	429	37.92	-20.55		
8	14	530	27.70	-15.95		
8	14	548	68.02	-24.05		
8	14	603	66.94	-25.29		
8	14	619	66.05	-25.75		
8	14	633	64.46	-24.99		
8	14	646	40.69	-22.78		
8	14	648	62.48	-24.52		
8	15	135	36.42	-16.08		
8	15	216	43.09	-10.00		
8	15	231	44.81	-14.54		
8	15	246	45.65	-12.79		
8	15	301	48.20	-12.79		
8	15	305	41.20	-17.21		
8	15	316	50.32	-14.11		
8	15	331	51.73	-13.46		

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MONTH	DAY	TIME	SUN ANGLE	PKG TEMP	LATITUDE	LONGITUDE
8	15	346	53.85	-14.75		
8	15	401	56.73	-17.78		
8	15	416	57.04	-17.20		
8	15	428	37.92	-20.67		
8	15	431	59.64	-17.20		
8	15	445	36.71	-20.63		
8	15	446	61.32	-17.20		
8	15	501	61.81	-17.59		
8	15	516	64.25	-17.59		
8	15	531	63.57	-18.35		
8	15	531			18.4S	98.5E
8	15	532	58.50	-23.41		
8	15	546	64.05	-17.97		
8	15	552	58.50	-22.60		
8	15	601	64.15	-16.20		
8	15	616	63.95	-13.89		
8	15	631	62.30	-13.24		
8	15	643	54.89	-19.65		
8	15	646	60.53	-12.34		
8	15	716	45.61	-18.07		
8	15	725	51.04	-20.90		
8	15	750	45.27	-19.10		
8	15	830	57.41	-16.72		
8	15	839	34.92	-17.78		
8	15	918	29.44	-14.54		
8	16	242	40.93	-18.12		
8	16	423			19.0S	115.4E
8	16	439	37.34	-18.71		
8	16	458	57.76	-22.26		
8	16	518	54.95	-21.07		
8	16	539	27.70	-20.33		
8	16	548	53.41	-22.76		
8	16	626	37.37	-20.91		
8	16	633	51.28	-22.43		
8	16	720	43.69	-19.47		
8	16	803	37.02	-18.91		
8	16	804	52.52	-17.16		
8	16	846	55.60	-13.96		
8	16	2355	34.57	-13.24		
8	17	1	51.67	-14.11		
8	17	11	37.77	-13.46		
8	17	16	53.27	-14.32		
8	17	26	37.91	-13.24		

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MONTH	DAY	TIME	SUN ANGLE	PKG TEMP	LATITUDE	LONGITUDE
8	17	31	53.58	-13.68		
8	17	41	38.33	-11.89		
8	17	46	55.04	-13.02		
8	17	56	40.62	-9.02		
8	17	101	55.24	-17.00		
8	17	111	41.92	-8.01		
8	17	116	55.65	-17.39		
8	17	126	43.55	-6.72		
8	17	131	55.45	-17.78		
8	17	141	45.61	-7.76		
8	17	146	55.24	-17.00		
8	17	156	46.44	-4.83		
8	17	211	47.14	-6.45		
8	17	216	53.18	-8.01		
8	17	231	51.24	-16.40		
8	17	246	51.24	-16.80		
8	17	331	53.18	-12.57		
8	17	346	53.81	-10.24		
8	17	401	53.71	-8.77		
8	17	411	40.47	-12.11		
8	17	416	53.29	-12.11		
8	17	426	38.45	-13.46		
8	17	431	52.97	-13.02		
8	17	441	37.75	-14.11		
8	17	446	51.37	-11.89		
8	17	456	36.18	-14.32		
8	17	501	50.17	-11.42		
8	17	516	49.95	-12.11		
8	17	531	47.71	-10.95		
8	17	546	45.73	-11.42		
8	17	601	43.43	-8.77		
8	17	616	41.92	-6.98		
8	17	631	40.88	-5.11		
8	17	2132	28.13	-22.10		
8	17	2155	37.91	-15.59		
8	17	2218	38.74	-15.79		
8	17	2237	34.10	-15.59		
8	17	2251	80.75	-14.54		
8	17	2301	45.38	-10.24		
8	17	2305	35.01	-15.38		
8	17	2316	45.85	-12.34		
8	17	2327	40.62	-20.01		
8	17	2331	47.60	-15.38		
8	17	2346	47.37	-15.59		
8	18	6	51.03	-18.91		
8	18	14	46.07	-17.97		
8	18	21	50.26	-19.47		

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MONTH	DAY	TIME	SUN ANGLE	PKG TEMP	LATITUDE	LONGITUDE
8	18	36	49.05	-18.35		
8	18	37	48.15	-17.97		
8	18	59	48.82	-20.90		
8	18	112	50.15	-21.42		
8	18	113			29.1S	162.9E
8	18	132	50.37	-22.76		
8	18	147	48.82	-21.42		
8	18	225	48.37	-21.93		
8	18	253	42.91	-18.35		
8	18	313	39.54	-19.28		
8	18	350	33.78	-15.79		
8	18	421	30.55	-17.39		
8	18	1911	29.18	-17.00		
8	18	1934	31.88	-18.54		
8	18	1951	33.78	-19.28		
8	18	2011	37.61	-20.19		
8	18	2026	40.07	-19.47		
8	18	2043	42.66	-19.65		
8	18	2106	47.00	-20.90		
8	18	2121	45.83	-21.42		
8	18	2133	49.49	-20.37		
8	18	2147	20.37	-23.09		
8	18	2214	50.15	-17.20		
8	18	2225			26.3S	155.4W
8	18	2306	35.01	-17.00		
8	18	2310	52.53	-21.07		
8	18	2321	40.62	-17.39		
8	18	2333	48.15	-24.83		
8	18	2336	47.60	-20.55		
8	18	2351	34.57	-20.37		
8	19	19	41.88	-23.41		
8	19	38	38.43	-21.59		
8	19	123	32.51	-19.65		
8	19	135	29.86	-19.10		
8	19	1958	51.22	-22.10		
8	19	2005			26.1S	130.8W
8	21	2141	64.33	-27.37		
8	21	2208			5.7S	125.3W
8	21	2209	59.02	-26.34		

TWERLE BALLOON 90152 B/L 1972

MCNTH	DAY	TIME	SUN ANGLE	PKG TEMP	LATITUDE	LONGITUDE
8	21	2236	53.04	-25.75		
8	22	1713	44.81	-22.93		
8	22	1745	51.14	-22.93		
8	22	1817	58.60	-27.51		
8	22	1848	64.17	-26.64		
8	22	1911	66.74	-26.93		
8	22	1943	72.47	-24.52		
8	22	1952			7.4S	117.3W
8	22	2009	72.67	-26.20		
8	22	2049	66.49	-29.89		
8	22	2113	61.62	-29.75		
8	22	2146	53.16	-25.75		
8	22	2208	48.68	-22.60		
8	22	2236	41.22	-18.91		
8	23	1513	25.70	-15.59		
8	23	1547	31.32	-16.60		
8	23	1612	36.00	-19.47		
8	23	1641	40.65	-21.07		
8	23	1712	47.02	-21.24		
8	23	1742	52.21	-19.10		
8	23	1818	56.84	-20.01		
8	23	1842	59.04	-25.14		
8	23	1902			20.8S	104.9W
8	23	1911	59.55	-25.45		
8	23	1938	58.84	-27.08		
8	23	2009	54.97	-23.25		
8	23	2041	49.31	-20.19		
8	23	2109	43.97	-18.73		
8	23	2140	33.28	-18.54		
8	23	2203	33.28	-20.01		
8	24	1407	27.03	-12.34		
8	24	1421	32.76	-11.19		
8	24	1424	27.87	-10.60		
8	24	1433	31.18	-10.00		
8	24	1448	36.39	-15.28		
8	24	1514	38.71	-16.00		
8	24	1519	40.24	-15.79		
8	24	1542	44.46	-17.59		
8	24	1543	42.69	-15.79		

TWERLE BALLCON 90152 B/L 1972

MONTH	DAY	TIME	SUN ANGLE	PKG TEMP	LATITUDE	LONGITUDE
8	24	1606	49.15	-16.20		
8	24	1612	49.13	-19.65		
8	24	1629	52.19	-15.69		
8	24	1639	54.41	-21.42		
8	24	1652	55.93	-19.28		
8	24	1707	58.18	-20.90		
8	24	1715	58.04	-19.56		
8	24	1743	59.88	-20.90		
8	24	1746			21.3S	85.9W
8	24	1801	58.54	-20.01		
8	24	1812	58.08	-22.10		
8	24	1824	55.82	-21.24		
8	24	1837	56.65	-19.83		
8	24	1847	54.60	-20.63		
8	24	1905	52.34	-19.47		
8	24	1935	46.52	-16.60		
8	25	1207	26.51	-27.65		
8	25	1230	26.49	-22.10		
8	25	1237	27.97	-24.52		
8	25	1255	31.54	-23.25		
8	25	1303	32.17	-22.26		
8	25	1332	38.62	-18.91		
8	25	1333	36.43	-20.01		
8	25	1404	40.98	-19.28		
8	25	1413	42.42	-19.47		
8	25	1433	45.25	-21.07		
8	25	1513	49.77	-19.28		
8	25	1522	46.29	-18.16		
8	25	1543	52.36	-14.11		
8	25	1558	50.88	-15.38		
8	25	1616	50.91	-14.96		
8	25	1617			30.6S	63.8W
8	25	1623	42.29	-15.38		
8	25	1641	48.95	-14.54		
8	25	1642	47.90	-14.11		
8	25	1706	45.70	-13.46		
8	25	1716	45.54	-16.80		
8	25	1727	44.99	-15.59		
8	25	1748	45.80	-11.18		
8	25	1750	46.87	-14.32		
8	25	1838	35.67	-15.17		
8	25	1902	41.01	-20.72		
8	25	1909	27.64	-16.60		
8	25	1955	26.39	-24.52		

TWERLE BALLOON 90152 B/L 1972

MONTH	DAY	TIME	SUN ANGLE	PKG TEMP	LATITUDE	LONGITUDE
8	26	1102	31.77	-22.60		
8	26	1123	38.53	-23.09		
8	26	1146	38.05	-19.65		
8	26	1206	42.65	-22.43		
8	26	1226	45.92	-24.68		
8	26	1252	47.88	-24.68		
8	26	1254	61.41	-29.20		
8	26	1326	51.61	-25.60		
8	26	1346	54.96	-24.68		
8	26	1405			23.9S	30.8W
8	26	1407	53.88	-24.05		
8	26	1417	54.45	-21.76		
8	26	1426	49.64	-26.05		
8	26	1427	58.69	-22.93		
8	26	1500	57.97	-23.09		
8	26	1511	52.36	-24.21		
8	26	1530	53.25	-22.76		
8	26	1550	50.73	-26.05		
8	26	1613	42.78	-21.76		
8	26	1636	38.60	-21.24		
8	26	1659	31.28	-20.19		
8	27	838	22.76	-19.47		
8	27	908	28.01	-19.28		
8	27	1009	37.53	-18.54		
8	27	1034	42.56	-17.97		
8	27	1050	46.83	-21.59		
8	27	1105	58.02	- .80		
8	27	1112	49.09	-21.42		
8	27	1128	53.26	-21.42		
8	27	1141	56.61	-2.00		
8	27	1154	56.62	-26.34		
8	27	1210	58.12	-1.05		
8	27	1216	58.62	-28.22		
8	27	1238	59.57	-28.65		
8	27	1239	60.44	-2.97		
8	27	1241			21.8S	9.9W
8	27	1304	59.85	-30.43		
8	27	1311	58.77	-1.05		
8	27	1318	58.14	-29.48		
8	27	1341	59.45	-2.64		
8	27	1352	55.33	-27.94		
8	27	1414	57.07	-3.29		
8	27	1429	47.61	-26.20		
8	27	1512	37.87	-23.41		
8	27	1517	37.48	-1.99		
8	27	1549	31.95	-20.19		

TWERLE BALLOON 90152 B/L 1972

MCNTH	DAY	TIME	SUN ANGLE	PKG TEMP	LATITUDE	LONGITUDE
8	28	804	29.61	-17.39		
8	28	822	34.80	-16.80		
8	28	856	39.70	-18.54		
8	28	933	44.45	-17.59		
8	28	958	46.86	-18.73		
8	28	1030	48.13	-21.07		
8	28	1053			31.6S	17.2E
8	28	1055	49.56	-19.83		
8	29	433	22.33	-13.68		
8	29	529	28.98	-13.46		
8	29	603	31.34	-13.89		
8	29	639	39.73	-17.39		
8	29	713	43.95	-17.78		
8	29	746	47.57	-17.59		
8	29	817	49.67	-18.54		
8	29	834			31.8S	51.7E
8	29	838	49.62	-15.79		
8	29	858	50.15	-17.00		
8	29	928	47.61	-17.59		
8	29	957	45.53	-21.24		
8	29	1030	48.21	-18.73		
8	29	1110	32.57	-17.59		
8	30	448	40.64	-20.37		
8	30	459	40.61	-19.65		
8	30	532	40.61	-20.01		
8	30	607	45.37	-21.07		
8	30	626	47.36	-20.72		
8	30	634			35.1S	81.8E
8	30	643	45.84	-20.37		
8	30	720	43.95	-18.91		
8	30	728	44.56	-19.65		
8	30	806	40.09	-19.65		
8	30	827	49.62	-19.83		
8	31	46	24.62	-12.11		
8	31	53	25.58	-12.34		

TWERLE BALLCON 90152 B/L 1972

MONTH	DAY	TIME	SUN ANGLE	PKG TEMP	LATITUDE	LONGITUDE
8	31	101	28.14	-10.72		
8	31	111	27.61	-11.65		
8	31	111	29.88	-11.19		
8	31	121	31.54	-11.42		
8	31	131	32.03	-11.65		
8	31	137	32.82	-12.34		
8	31	141	33.44	-12.34		
8	31	151	33.91	-13.24		
8	31	201	34.36	-14.32		
8	31	206	36.28	-15.17		
8	31	211	36.13	-15.17		
8	31	221	37.83	-15.79		
8	31	231	38.92	-17.00		
8	31	241	39.86	-17.78		
8	31	251	40.77	-18.54		
8	31	301	41.67	-19.10		
8	31	311	41.67	-18.91		
8	31	321	42.05	-18.91		
8	31	324	42.56	-19.47		
8	31	331	42.56	-18.73		
8	31	341	42.81	-18.73		
8	31	347			39.1S	123.3E
8	31	351	43.18	-18.73		
8	31	401	42.31	-19.10		
8	31	401	42.56	-20.37		
8	31	411	41.55	-19.10		
8	31	421	41.93	-19.65		
8	31	431	41.55	-19.65		
8	31	434	40.64	-19.47		
8	31	446	40.38	-18.35		
8	31	454	38.79	-19.28		
8	31	501	39.59	-19.28		
8	31	516	38.24	-19.28		
8	31	525	36.99	-18.73		
8	31	542	33.60	-18.91		
9	1	58	44.62	-15.17		
9	1	143	45.92	-14.11		
9	1	159	49.09	-13.68		
9	1	211			33.7S	147.2E
9	1	220	47.87	-13.68		
9	1	239	48.43	-13.46		
9	1	303	47.75	-12.57		
9	1	328	47.07	-11.89		
9	1	345	44.97	-13.46		
9	1	404	42.79	-11.19		
9	1	423	38.63	-13.46		
9	1	446	36.40	-10.72		

TWERLE BALLCON 90152 B/L 1972

MONTH	DAY	TIME	SUN ANGLE	PKG TEMP	LATITUDE	LONGITUDE
9	1	525	30.54	-6.45		
9	1	542	27.95	-10.00		



REMARKS

surface conditions at launch

GHOST Frequency = 12.02 MHz
 Sun Angle I.D. Code
 Calibration Data
 40 Mils 11.5
 20 Mils 10.5
 40 Mils 10.0
 15 Mils 9.8
 Ion Package Frequency = 12.02 MHz
 I.D. Code
 Code Index
 = 400 (1000) = 400 (1000)
 = 400 (1000) = 400
 Calibration Data
 BALLOON DATA
 Balloon (Mils) 12.02
 Launch date JUL 5 1972
 Launch site
 Film
 Manufacturer
 Volume
 Balloon Weight
 Payload Weight
 Location
 Loss Report Position

FLIGHT INFORMATION FORM

FLIGHT NO. 91153 NABL/GSD Float Altitude 150 mb

Diagram of Flight Train

GHOST Frequency = 15.02 3 MHz

Sun Angle I.D. Code N

Calibration Data

60 DEG	21.2
50 DEG	26.5
40 DEG	30.0
15 DEG	36.8

2nd Package Frequency = 15.02 6 MHz

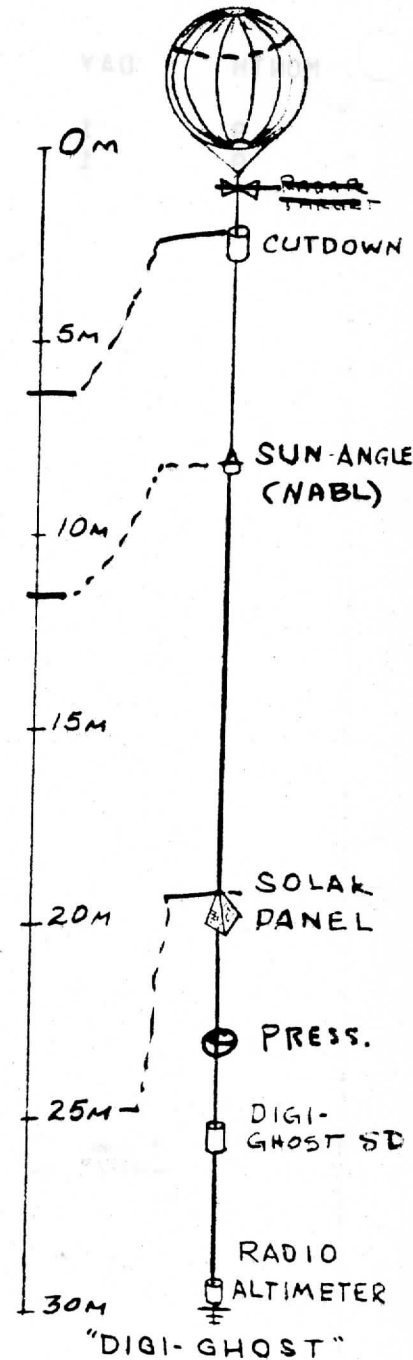
I.D. Code SD

Code Letter Sensor
 N = Sun Angle; A = Gas Temp.
 B = Strain Gage; L = Ref.

Calibration Data

BALLOON DATA

Balloon ID# (Mfg*) R 72-2
 Launch date JUL 5 1972
 Launch site Ascension
 Film Celanar (Capped)
 Diameter Seam 3.5670 m X Gore 3.5642 m
 Volume 23.615 m³
 Balloon Weight 3579
 Payload Weight 1275
 Duration _____
 Last Known Position _____



REMARKS

Surface conditions at launch _____

* R = Raven Industries, Inc.
 S = G. T. Schjeldahl Co.

TWERLE BALLOON 91153/6 NABL/SD 1972

MCNTH	DAY	TIME	SUN ANGLE	GAS TEMP	VOLUME	LATITUDE	LONGITUDE
7	5	824	6.91	-3.75	23.093		
7	5	835	10.25	-4.52	23.142		
7	5	902	54.82	-6.67	23.140		
7	5	939	29.67	-25.50	23.141		
7	5	944	36.41	-25.09	23.132		
7	5	952	39.03	-37.67	23.124		
7	5	1000	40.64	-40.30	23.116		
7	5	1008	41.59	-32.69	23.510		
7	5	1018	40.00	-24.45	23.623		
7	5	1027	41.59	-25.08	23.649		
7	5	1034	41.91	-20.36	23.712		
7	5	1038	44.38	-24.47	23.687		
7	5	1100	50.35	-21.20	23.704		
7	5	1109	50.81	-21.20	23.708		
7	5	1110	49.88	-22.14	23.720		
7	5	1126	53.11	-21.83	23.700		
7	5	1133	54.41	-22.98	23.691		
7	5	1142	16.40	-21.26	23.720		
7	5	1144	56.49	-21.40	23.723		
7	5	1145	55.36	-22.38	23.722		
7	5	1150	57.17	-21.40	23.691		
7	5	1213	56.00	-30.75	23.678		
7	5	1226	59.62	-32.40	23.664		
7	5	1232	59.81	-30.81	23.636		
7	5	1241				8.7S	8.9W
7	5	1250	57.54	-30.75	23.678		
7	5	1308	59.26	-31.19	23.664		
7	5	1314	57.51	-30.40	23.649		
7	5	1341	56.83	-32.95	23.662		
7	5	1342	54.59	-31.62	23.649		
7	5	1353	55.29	-31.22	23.666		
7	5	1404	52.31	-32.53	23.670		
7	5	1413	52.11	-32.61	23.632		
7	5	1423	51.65	-30.05	23.666		
7	5	1424	50.35	-32.10	23.674		
7	5	1515	40.00	-30.51	23.666		
7	5	1542	34.61	-28.42	23.668		
7	5	1550	33.39	-27.51	23.683		
7	5	1608	29.17	-24.88	23.683		
7	5	1632	23.56	-28.83	23.689		
7	5	1642	21.61	-30.84	23.685		
7	5	1644	21.22	-28.79	23.676		
7	5	1647	20.83	-28.79	23.672		
7	5	1650	19.24	-22.98	23.666		
7	5	1654	19.24	-24.07	23.666		
7	5	1657	18.44	-28.25	23.678		
7	5	1700	17.63	-23.22	23.666		
7	5	1707	16.01	-29.37	23.678		
7	5	1712	14.38	-30.10	23.678		
7	5	1715	14.38	-28.25	23.670		

TWERLE BALLOON 91153/6 NABL/SD 1972

MONTH	DAY	TIME	SUN ANGLE	GAS TEMP	VOLUME	LATITUDE	LONGITUDE
7	6	825	36.41	-33.77	23.785		
7	6	835	33.73	-32.99	23.711		
7	6	900	37.07	-31.22	23.704		
7	6	911	42.03	-28.59	23.674		
7	6	926	43.77	-32.61	23.670		
7	6	937	45.97	-28.79	23.672		
7	6	949	51.04	-31.89	23.698		
7	6	1003	53.49	-29.20	23.723		
7	6	1014	54.77	-32.40	23.685		
7	6	1018	53.57	-34.57	23.691		
7	6	1042	58.37	-37.00	23.702		
7	6	1050	58.37	-35.08	23.668		
7	6	1101	58.72	-36.37	23.662		
7	6	1126	61.96	-32.12	23.674		
7	6	1160				5.8S	1.4E
7	6	1206	61.96	-31.27	23.699		
7	6	1236	58.37	-31.96	23.702		
7	6	1301	58.72	-29.94	23.693		
7	6	1320	55.98	-29.04	23.709		
7	6	1333	51.69	-29.78	23.730		
7	6	1341	54.01	-27.27	23.703		
7	6	1420	46.46	-28.06	23.748		
7	6	1503	35.08	-29.87	23.682		
7	7	728	28.59	-26.70	23.700		
7	7	757	34.07	-23.65	23.753		
7	7	1036	64.01	-21.40	23.749		
7	7	1113				1.0S	13.1E
7	7	1435	32.35	-17.42	23.771		
7	8	636	22.63	-27.30	23.732		
7	8	705	30.74	-26.69	23.720		
7	8	836	50.11	-30.93	23.712		
7	8	911	54.98	-29.51	23.732		
7	8	1016	60.37	-26.69	23.682		
7	8	1033				5.2S	23.1E
7	8	1239	49.48	-28.59	23.732		
7	8	1313	41.08	-31.68	23.769		
7	8	1313	49.48	-28.59	23.732		
7	8	1347	43.15	-20.36	23.766		
7	8	1425	21.61	-16.37	23.526		
7	8	1444	17.63	-0.00	23.742		

TWERLE BALLOON 91153/6 NABL/SD 1972

MONTH	DAY	TIME	SUN ANGLE	GAS TEMP	VOLUME	LATITUDE	LCNGITUDE
7	8	1446	24.32	-22.74	23.740		
7	9	603	22.55	-41.21	23.482		
7	9	708	36.35	-31.43	23.784		
7	9	739	43.83	-26.32	23.771		
7	9	811	51.08	-26.90	23.767		
7	9	907	55.08	-30.07	23.781		
7	9	935	58.93	-23.01	23.791		
7	9	1002				8.7S	31.0E
7	9	1012	58.79	-24.05	23.831		
7	9	1046	56.35	-44.73	23.311		
7	9	1116	52.31	-25.90	23.808		
7	9	1159	48.56	-25.90	23.784		
7	9	1234	42.84	-25.30	23.783		
7	9	1311	33.45	-27.08	23.783		
7	9	1348	24.40	-29.33	23.766		
7	10	751	45.79	-28.78	23.774		
7	10	840	52.71	-24.05	23.788		
7	10	930	56.89	-23.65	23.816		
7	10	953				11.0S	33.3E
7	10	1010	58.79	-22.54	23.809		
7	10	1050	56.35	-18.25	23.824		
7	10	1131	50.94	-17.39	23.843		
7	10	1216	42.78	-18.01	23.816		
7	10	1247	33.79	-17.63	23.793		
7	10	1424	14.17	-23.90	23.723		
7	11	635	36.80	-18.25	23.808		
7	11	754	46.43	-16.67	23.852		
7	11	854	53.97	-23.22	23.816		
7	11	922				13.3S	41.0E
7	11	940	55.60	-22.58	23.791		
7	11	1040	51.42	-22.58	23.808		
7	11	1112	44.37	-21.93	23.820		
7	11	1203	36.87	-20.81	23.837		
7	11	1310	21.69	-24.07	23.799		

TWERLE BALLOON 91153/6 NABL/SD 1972

MONTH	DAY	TIME	SUN ANGLE	GAS TEMP	VOLUME	LATITUDE	LONGITUDE
7	12	738				22.2S	46.0E
7	12	813	45.02	-28.59	23.774		
7	22	227	52.24	-31.37	23.744		
7	22	314	56.75	-29.76	23.800		
7	22	433				8.4S	113.6E
7	22	505	61.29	-26.21	23.696		
7	22	647	49.61	-26.78	23.813		
7	24	336	40.24	-23.17	23.803		
7	24	404	49.35	-15.69	23.867		
7	24	542				14.8S	96.3E
7	24	608	53.55	-18.31	23.855		
7	24	700	50.79	-22.60	23.813		
7	25	209	39.28	-25.27	23.843		
7	25	231	39.18	-29.57	23.820		
7	25	408	54.80	-30.61	23.842		
7	25	433				15.0S	113.4E
7	25	447	56.26	-27.62	23.839		
7	25	604	48.00	-26.76	23.862		
7	25	759	26.17	-25.44	23.835		
7	26	516	61.29	-28.97	23.805		
7	26	742	26.17	-27.12	23.793		
8	3	259	54.02	-27.06	23.870		
8	3	301	59.95	-21.57	23.740		
8	3	303	54.38	-19.46	23.720		
8	3	305	54.02	-8.69	23.430		
8	3	308	54.38	-22.08	23.870		
8	3	311	53.84	-23.98	23.930		
8	3	313	54.91	-25.47	23.890		
8	3	314				15.0S	133.2E
8	3	315	59.03	-20.53	23.860		
8	3	317	55.42	-19.52	23.860		

TWERLE BALLOON 91153/6 NABL/SD 1972

MONTH	DAY	TIME	SUN ANGLE	GAS TEMP	VOLUME	LATITUDE	LONGITUDE
8	3	320	56.10	-18.71	23.870		
8	3	322	57.29	-23.08	23.880		
8	3	324	54.02	-23.31	23.890		
8	3	326	54.73	-20.00	23.860		
8	3	329	55.77	-18.88	23.880		
8	3	331	54.91	-20.31	23.840		
8	3	333	53.09	-24.29	23.880		
8	3	336	55.77	-24.77	23.890		
8	3	338	56.10	-23.84	23.890		
8	3	340	55.94	-19.25	23.870		
8	3	342	56.27	-30.24	23.870		
8	3	345	57.46	-24.54	23.850		
8	3	347	57.46	-24.53	23.860		
8	3	349	55.25	-24.55	23.870		
8	3	352	53.47	-24.05	23.760		
8	3	354	53.09	-23.81	23.900		
8	3	357	52.11	-19.69	23.890		
8	3	359	53.66	-23.31	23.900		
8	3	401	42.11	-23.80	23.890		
8	3	403	52.11	-25.70	23.890		
8	3	406	52.71	-25.70	23.870		
8	3	409	52.71	-27.52	23.890		
8	3	411	52.71	-21.57	23.890		
8	3	413	53.09	-19.42	23.900		
8	3	415	54.02	-27.30	23.900		
8	3	418	52.90	-16.70	23.880		
8	3	420	53.47	-17.42	23.900		
8	3	423	53.66	-17.83	23.890		
8	3	425	54.20	-20.00	23.900		
8	3	427	51.06	-24.99	23.890		
8	3	448	43.29	-20.91	23.893		
8	3	516	37.26	-25.49	23.950		
8	3	519	35.94	-23.80	23.901		
8	3	521	37.26	-24.88	23.881		
8	3	523	36.60	-26.12	23.883		
8	3	526	65.12	-25.29	23.721		
8	3	528	30.13	-25.28	23.792		
8	3	531	32.57	-26.31	23.888		
8	3	533	31.88	-25.70	23.889		
8	3	536	33.60	-25.09	23.869		
8	3	551	26.86	-24.85	23.907		
8	4	319	51.27	-31.93	23.790		
8	4	2305	56.76	-24.07	23.830		

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MONTH	DAY	TIME	SUN ANGLE	GAS TEMP	VOLUME	LATITUDE	LONGITUDE
8	4	2308	54.01	-27.07	23.730		
8	4	2312	54.89	-0.00	23.850		
8	4	2315	55.24	-32.58	23.850		
8	4	2317	57.44	-31.47	23.810		
8	4	2319	57.44	-29.88	23.850		
8	4	2322	55.92	-27.75	23.860		
8	4	2324	56.60	-27.73	23.830		
8	4	2327	56.93	-27.54	23.860		
8	4	2329	57.44	-23.55	23.820		
8	4	2331	56.60	-24.04	23.840		
8	4	2334	58.30	-24.99	23.880		
8	4	2336	57.78	-26.62	23.730		
8	5	15					
8	5	202	54.02	-23.36	23.862	12.8S	177.9E
8	10	1712				26.6S	76.6W
8	10	1811	47.00	-17.33	23.800		
8	10	1841	42.36	-12.84	23.850		
8	10	1909	40.71	-15.36	23.840		
8	10	1939	36.36	-17.05	23.810		
8	10	2015	29.32	-16.03	23.820		
8	10	2052	24.47	-19.63	23.790		
8	10	2128	14.72	-25.90	23.770		
8	11	1248	23.03	-27.06	23.790		
8	11	1322	33.62	-29.16	23.790		
8	11	1350	37.54	-25.40	23.830		
8	11	1352	33.52	-40.59	23.630		
8	11	1416	41.33	-26.11	23.840		
8	11	1440	45.86	-23.14	23.800		
8	11	1448	49.44	-25.78	23.840		
8	11	1506	50.38	-17.88	23.840		
8	11	1531	50.04	-22.68	23.890		
8	11	1536	51.50	-22.53	23.870		
8	11	1610	46.43	-24.03	23.870		
8	11	1611				20.8S	61.3W
8	11	1613	52.74	-21.68	23.850		
8	11	1633	43.80	-24.50	23.220		
8	11	1636	53.25	-26.51	23.840		
8	11	1656	49.56	-22.36	23.850		
8	11	1706	51.17	-25.25	23.840		
8	11	1719	50.72	-23.49	23.730		
8	11	1742	49.56	-24.10	23.820		
8	11	1744	47.12	-22.05	23.840		
8	11	1808	40.70	-25.09	23.860		

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MONTH	DAY	TIME	SUN ANGLE	GAS TEMP	VOLUME	LATITUDE	LONGITUDE
8	11	1813	41.30	-25.16	23.840		
8	11	1838	34.70	-26.48	23.870		
8	11	1838	37.82	-23.84	23.800		
8	11	1909	31.63	-21.39	23.830		
8	11	1939	22.95	-29.27	23.820		
8	12	1119	25.67	-32.74	23.480		
8	12	1222	31.10	-27.22	23.860		
8	12	1243				22.8S	43.6W
8	12	1302	44.68	-27.30	23.380		
8	12	1333	49.06	-23.42	23.370		
8	12	1407	50.25	-24.26	23.310		
8	13	946	39.08	-23.33	23.800		
8	13	1122	40.13	-23.79	23.830		
8	13	1149	40.13	-27.53	23.710		
8	13	1309	53.82	-29.83	23.870		
8	13	1319	52.09	-33.25	23.800		
8	13	1320	52.35	-32.31	23.780		
8	13	1409	54.91	-22.03	23.240		
8	13	1418				17.1S	33.3W
8	13	1424	55.42	-33.45	23.780		
8	13	1458	54.91	-22.25	23.220		
8	13	1505	53.96	-32.31	23.840		
8	13	1555	50.23	-23.36	23.830		
8	13	1647	42.49	-23.80	23.870		
8	13	1701	33.67	-32.68	23.890		
8	13	1723	31.99	-25.90	23.790		
8	13	1726	36.98	-25.29	23.800		
8	13	1754	25.21	-24.04	23.800		
8	14	1147	46.93	-30.54	23.810		
8	15	857	29.80	-23.39	23.850		
8	15	1004	39.18	-24.46	23.880		
8	15	1101	52.74	-27.89	23.860		
8	15	1147	55.08	-25.70	23.870		
8	15	1202				20.7S	.1E
8	15	1234	54.73	-27.30	23.840		

TWERLE BALLOON 91153/6 NABL/SD 1972

MCNTH	DAY	TIME	SUN ANGLE	GAS TEMP	VOLUME	LATITUDE	LCNGITUDE
8	15	1344	45.33	-21.63	23.860		
8	15	1420	39.50	-18.68	23.890		
8	15	1504	28.66	-21.37	23.920		
8	16	644	20.50	-28.68	23.830		
8	16	730	27.56	-30.17	23.850		
8	16	828	39.74	-26.92	23.880		
8	16	950	55.06	-24.86	23.900		
8	16	1031	56.64	-24.25	23.880		
8	16	1101	54.99	-24.67	23.900		
8	16	1137	53.43	-23.38	23.890		
8	16	1154				20.5S	16.0E
8	17	555	29.99	-18.20	23.720		
8	17	645	38.83	-18.92	23.750		
8	17	722	41.24	-12.40	23.760		
8	17	805				35.7S	59.8E
8	17	827	40.86	-13.92	23.740		
8	17	924	37.41	-11.08	23.670		
8	17	956	29.49	-13.65	23.680		
8	17	1032	23.74	-18.63	23.620		
8	17	1112	19.79	-23.38	23.610		
8	18	301	41.85	21.88	23.740		
8	18	304	43.08	21.96	23.730		
8	18	306	44.29	21.78	23.740		
8	18	308	43.99	21.81	23.720		
8	18	312	44.58	21.71	23.730		
8	18	318	43.99	21.86	23.730		
8	18	321	44.29	21.86	23.720		
8	18	323	47.13	21.71	23.720		
8	18	326	47.13	21.71	23.720		
8	18	329	47.13	21.91	23.730		
8	18	331	46.86	22.17	23.720		
8	18	333	47.93	22.17	23.710		
8	18	335	47.13	21.83	23.740		
8	18	337	47.40	22.32	23.730		
8	18	339	47.93	22.17	23.730		
8	18	341	46.86	22.58	23.740		
8	18	343	47.67	22.32	23.750		
8	18	346	46.86	22.37	23.760		
8	18	348	48.19	22.37	23.770		

TWERLE BALLOON 91153/6 NABL/SD 1972

MONTH	DAY	TIME	SUN ANGLE	GAS TEMP	VOLUME	LATITUDE	LONGITUDE
8	18	350	50.37	22.47	23.770		
8	18	352	50.14	22.53	23.770		
8	18	354	47.93	22.53	23.770		
8	18	356	48.19	22.42	23.770		
8	18	358	49.68	22.42	23.760		
8	18	400	49.91	22.53	23.770		
8	19	256	52.62	-13.93	23.740		
8	19	258	51.83	-16.83	23.740		
8	19	421				34.0S	148.9E
8	19	446	39.63	-17.05	23.750		
8	19	448	39.95	-14.14	23.740		
8	19	450	41.21	-13.93	23.720		
8	19	452	39.63	-15.41	23.710		
8	19	454	41.21	-15.41	23.730		
8	26	1937	41.09	-33.63	23.860		
8	26	2108	56.15	-29.69	23.860		
8	26	2127	56.15	-26.73	23.860		
8	26	2149	58.02	-29.74	23.880		
8	26	2208	59.65	-24.44	23.860		
8	26	2218				20.7S	154.0W
8	26	2227	60.23	-29.60	23.820		
8	27	1949	51.67	-24.02	23.810		

ID	DATE	TIME	---DIGI CODE---			-DEC DIGI NUM--			---ALTITUDE---		AIR T	PTEMP	PID	PRES	30	31	32	33			
			ALT	AT	P	PT	PT	(18)	(19)	(C)	(C)										
SD	7	12	648	SSS	KSM	SWD	HGU	0	389	112	286	15411	14589	-68.14	141.5	133.8	126.4	121.2	118.3	117.7	119.4
SD	7	12	713	KOS	RSM	SSS	SSS	61	386	0	0	15309	14497	-67.92	142.1	130.7	123.9	115.5	117.5	118.0	121.0
SD	7	12	716	S6S	KOW	GSD	SDM	24	445	67	392	15371	14553	-72.38	139.0	133.5	126.3	121.2	116.4	117.8	119.4
SD	7	12	1334	MKU	CUM	KRR	SSS	302	423	149	0	14916	14144	-70.67	140.2	133.2	125.6	120.5	117.8	117.6	119.9
SD	8	2	809	ODU	USO	DUS	KOK	271	452	33	381	14965	14189	-72.93	138.6	132.9	125.8	120.9	116.3	117.8	119.6
SD	8	11	1406	KKR	RUM	OKD	DUR	173	418	111	161	15123	14331	-70.29	139.7	134.1	126.8	121.6	118.6	117.7	119.7
SD	8	13	1215	KWU	DMH	UDD	RGO	309	433	79	474	14905	14134	-71.44	140.5	133.3	125.9	120.8	116.1	117.7	119.1
SD	8	13	1755	ODU	GKM	WOS	RUU	313	427	62	482	14905	14134	-71.44	139.7	134.1	126.8	121.6	118.6	117.8	119.1
SD	8	14	1128	KUU	KWM	KSD	OKM	296	437	69	431	14925	14128	-70.98	140.0	133.9	126.6	121.5	118.6	117.8	119.2
SD	8	14	1207	KUU	KWM	KDD	GRW	293	437	77	403	14930	14157	-71.75	139.4	133.7	126.4	121.4	118.5	117.8	119.3
SD	8	15	928	UGO	UUM	SGO	RMU	476	423	472	306	14644	13339	-70.67	140.2	140.5	131.5	124.7	120.2	118.0	119.3
SD	8	15	934	KHG	URO	GKO	ROD	245	468	491	394	15007	14256	-74.22	137.7	141.2	132.1	125.2	120.6	118.0	117.9
SD	8	15	957	SMG	KRO	SSS	SSS	240	469	0	0	15015	14233	-74.30	137.7	141.2	132.1	125.2	120.6	118.0	117.9
SD	8	15	1015	KKG	ORO	GJO	HMK	237	471	75	374	15020	14238	-74.47	137.6	133.6	126.3	121.2	118.4	117.9	119.4
SD	8	15	1353	KSO	DKM	OSO	KRU	453	425	455	277	14680	13931	-70.83	140.1	140.0	131.1	124.4	120.0	117.9	119.4
SD	8	15	1436	RUG	GGO	SGO	DDK	226	475	472	377	15037	14254	-72.80	137.3	140.8	131.8	125.0	120.4	118.1	119.0
SD	8	15	1656	MOG	SRO	MRS	GSM	254	464	22	387	14992	14213	-73.89	138.0	132.8	125.7	120.9	118.2	117.9	119.7
SD	8	16	831	SUR	GOC	RDS	SUM	160	507	10	416	15145	14350	-77.54	135.4	132.7	125.7	120.9	118.3	117.9	119.7
SD	8	16	843	KJR	MSC	KSS	RUM	162	494	5	416	15141	14347	-73.09	138.5	132.6	125.6	120.8	118.2	117.9	119.7
SD	8	16	1028	DJR	GSO	GRS	RKU	145	451	19	298	15169	14372	-72.85	138.7	132.4	125.3	120.6	118.1	117.9	119.9
SD	8	16	2028	GSM	SUM	OSR	RWD	387	416	135	498	14782	14023	-70.14	140.6	135.1	127.6	122.1	118.9	117.9	119.9
SD	8	19	2045	KGG	GDK	UMG	UGO	221	331	244	473	15046	14261	-63.98	144.8	136.9	128.9	123.6	119.3	117.8	118.8
SD	8	19	2103	GGG	WRK	OUR	UOO	223	342	191	508	15042	14258	-64.76	144.3	136.2	128.3	122.7	119.2	117.8	118.6
SD	8	19	2148	GKR	RUK	URU	MHO	171	354	140	502	15127	14334	-65.61	143.7	135.2	127.6	122.2	118.9	117.8	118.6
SD	8	19	2218	DGR	RUK	SKD	RRR	153	354	104	466	15156	14360	-65.61	143.7	134.5	127.0	121.8	118.7	117.8	118.6
SD	8	19	2248	MKS	MKW	KOW	OSM	46	430	445	391	15334	14520	-71.21	139.8	140.3	131.4	124.7	120.3	118.0	118.0
SD	8	19	2348	KGR	KUK	JMD	DKK	157	357	113	361	15150	14354	-65.82	143.5	134.1	126.7	121.5	118.5	117.8	119.2
SD	8	20	9	GDD	RKK	DOS	RSW	123	362	57	386	15206	14405	-66.18	143.3	133.3	126.1	121.1	118.3	117.8	119.5
SD	8	20	35	SSS	RKK	GDD	GRK	0	362	99	339	15411	14589	-66.18	142.7	133.6	126.4	121.3	118.4	117.8	119.4
SD	8	20	59	RSR	MHK	WRD	RRK	130	374	86	338	15194	14394	-67.04	142.7	133.6	126.3	121.2	118.4	117.8	119.4
SD	8	20	207	GDD	GUK	DRD	DOU	123	355	81	441	15206	14405	-65.68	143.6	134.0	126.6	121.5	118.5	117.8	119.2
SD	8	20	222	OSR	UUK	RSD	ORR	135	356	68	438	15186	14387	-65.75	143.6	133.7	126.5	121.4	118.5	117.8	119.3
SD	8	20	239	GMU	RSD	SSS	ORR	307	450	0	471	14980	14137	-72.77	138.7	132.4	125.8	121.0	118.3	117.8	119.5
SD	8	29	1637	KGD	SRK	GDR	DOU	93	336	139	313	15235	14449	-64.33	144.6	134.4	126.8	121.5	118.5	117.7	119.2
SD	9	5	847	USO	UMH	RSG	SGS	452	436	194	24	14681	13933	-71.67	139.5	134.1	126.3	121.0	118.1	117.6	119.5
SD	9	5	849	KOW	DMH	MKR	SGS	445	433	174	24	14692	13942	-71.44	139.7	133.7	126.0	120.8	118.0	117.6	119.7
SD	9	5	853	DMH	SOM	RRR	SKS	433	440	146	16	14711	13959	-71.98	139.3	133.2	125.7	120.5	117.9	117.8	119.7
SD	9	5	856	UUM	DOM	USR	SMD	423	441	132	496	14726	13973	-72.06	139.2	135.1	127.5	122.1	118.9	117.8	119.8
SD	9	6	929	SSS	KRO	OUO	DKO	0	469	487	489	15411	14589	-74.30	137.7	141.6	132.5	125.6	120.9	118.3	117.9
SD	9	6	931	MRS	KRO	OUO	DKO	214	469	437	489	15057	14271	-74.30	137.7	141.6	132.5	125.6	120.9	118.3	117.9
SD	9	6	931	SSS	OKO	KRO	DOU	0	495	469	481	15411	14589	-76.49	136.2	141.2	132.2	125.4	120.7	118.2	117.9
SD	9	6	935	KRG	ORO	SKO	DOU	213	471	488	481	15058	14272	-74.47	137.6	141.5	132.5	125.6	120.8	118.3	117.9
SD	9	6	935	GKG	MRO	SOU	DOU	235	470	430	491	15023	14241	-74.38	137.6	141.4	132.3	125.5	120.8	118.2	117.9
SD	9	6	1311	MDO	KRM	OSS	OKR	462	405	7	175	14666	13919	-69.32	141.1	131.7	124.7	120.1	117.9	117.9	120.4
SD	9	6	1359	RRG	MRO	KSC	GDK	210	470	453	331	15063	14277	-74.38	137.6	140.2	131.3	124.6	120.1	118.0	118.0
SD	9	7	1227	SKG	KSO	JRS	SUK	232	453	17	352	15028	14245	-73.01	138.6	132.5	125.5	120.7	118.2	117.9	119.8
SD	9	7	1229	OUG	KSO	DGS	UGK	231	453	25	348	15028	14245	-73.01	138.6	132.7	125.6	120.8	118.2	117.9	119.8

THERLE BALLOON 91153/6 NABL/SD 1972

ID	DATE	TIME	---DIGI CODE---			-DEC DIGI NUM--			---ALTITUDE---			AIR T (C)	PIEMP (C)	PID	PRES							
			ALT	AT	P	PT	PT	(18)	(19)	28	29				30	31	32	33				
SD	7	6	1301	KMG	UDD	WDD	DRD	245	460	78	465	15007	14226	-73.57	-23.88	138.2	134.0	126.7	121.6	118.6	117.8	119.2
SD	7	6	1303	KMG	UDD	WDD	DRD	245	460	78	465	15007	14226	-73.57	-23.88	138.2	134.0	126.7	121.6	118.6	117.8	119.2
SD	7	6	1303	WKG	GDD	OJD	SRO	246	459	79	464	15005	14225	-73.49	-23.79	138.2	134.0	126.7	121.6	118.6	117.8	119.2
SD	7	6	1306	KOG	RDD	RKR	SRO	253	458	170	464	14994	14214	-73.41	-23.79	138.3	135.6	127.5	122.3	118.9	117.8	118.7
SD	7	6	1309	R6G	RDM	R5O	WGM	258	402	450	414	14986	14207	-69.10	-19.28	141.3	140.5	131.6	124.5	120.4	118.1	118.0
SD	7	6	1313	OUO	ORM	OSR	OGM	487	407	135	415	14628	13884	-69.47	-19.37	141.0	134.8	127.2	121.8	118.7	117.7	119.0
SD	7	6	1317	KMO	OKM	OMR	SGM	501	407	183	408	14606	13865	-69.47	-18.76	141.0	135.5	127.8	122.2	118.9	117.7	118.8
SD	7	6	1319	DMO	OKK	OGM	GDD	497	367	415	459	14612	13870	-66.54	-23.32	143.1	140.0	131.3	124.7	120.3	118.0	119.0
SD	7	6	1322	SSS	ODC	SKD	GDD	0	457	104	459	15411	14589	-73.33	-23.32	138.4	134.4	127.0	121.7	118.7	117.8	119.0
SD	7	6	1324	KOO	DDO	KGD	SSS	509	457	93	0	14594	13854	-73.33	15.83	138.4	132.2	124.5	120.1	117.7	117.8	120.3
SD	7	6	1328	UKG	UDD	WSD	DRD	236	460	70	465	15021	14239	-73.57	-23.88	138.2	133.9	126.6	121.5	118.5	117.8	119.2
SD	7	6	1348	UMG	GDD	GSD	GGO	244	459	67	475	15008	14227	-73.49	-24.83	138.2	133.9	126.6	121.5	118.6	117.8	119.2
SD	7	7	608	GOS	KRM	WKK	DGS	11	405	350	25	15393	14573	-69.32	14.16	141.1	136.9	128.4	122.3	118.7	117.5	118.7
SD	7	7	638	GMW	ODD	RKD	WDD	+11	463	106	486	14745	13990	-73.81	-25.90	138.0	134.6	127.1	121.9	118.7	117.8	119.0
SD	7	7	715	MKM	DRD	WUJ	DRD	430	465	102	465	14715	13963	-73.97	-23.88	137.9	134.4	127.0	121.7	118.7	117.8	119.0
SD	7	7	720	DSM	DRD	ORD	DRD	291	465	87	465	14933	14160	-73.97	-23.88	137.9	134.2	126.8	121.6	118.6	117.8	119.1
SD	7	7	722	DSM	DRD	ORD	DRD	291	465	87	465	14933	14160	-73.97	-23.88	137.9	134.2	126.8	121.6	118.6	117.8	119.1
SD	7	7	724	SSS	DRD	DRD	RRD	385	465	88	466	14785	14026	-73.97	-23.98	137.9	134.2	126.8	121.6	118.6	117.8	119.1
SD	7	7	726	UGM	GDD	SSS	SSS	+12	459	0	0	14743	13988	-73.49	10.83	138.2	130.7	123.9	119.5	117.5	118.0	121.0
SD	7	7	739	MKS	RRO	RJD	ORD	374	466	74	471	14802	14042	-74.06	-24.45	137.6	134.0	126.7	121.5	118.6	117.8	119.2
SD	7	7	816	WKS	ROU	KGW	RGO	14	464	413	474	15388	14568	-73.89	-24.73	138.0	140.0	131.3	124.7	120.3	118.1	120.1
SD	7	7	920	ODU	DWM	SSS	RGU	271	433	0	282	14565	14189	-71.44	-9.35	139.7	132.0	125.0	120.4	118.0	117.9	120.1
SD	7	7	923	RSU	ODM	DKU	OKU	258	419	297	303	14986	14207	-70.37	-13.05	140.4	137.1	128.9	122.9	119.2	117.7	118.5
SD	7	7	1304	UMG	WGM	SSS	SSS	244	414	0	0	15008	14227	-69.39	16.83	140.7	130.7	123.9	119.5	117.5	118.0	121.0
SD	7	7	1308	RKM	WGM	SMS	UUU	+02	414	48	292	14759	14002	-69.39	9.16	140.7	130.7	123.9	119.5	117.5	118.0	121.0
SD	7	7	1311	MKR	WGM	UKS	UUU	174	414	44	292	15122	14330	-69.39	-3.16	140.7	130.7	123.9	119.5	117.5	118.0	121.0
SD	7	7	1314	RKR	RUM	UGS	UUU	170	418	28	289	15128	14335	-69.39	-3.16	140.7	132.7	125.6	120.7	118.1	117.8	119.8
SD	7	7	1318	GWR	RUM	SRS	UUU	179	418	16	288	15114	14322	-70.29	-8.52	140.5	132.5	125.4	120.6	118.1	117.9	119.9
SD	7	7	1321	OSD	GGH	SSS	KGU	455	411	55	285	14677	13928	-69.77	-8.60	140.8	132.9	125.7	120.8	118.2	117.8	119.7
SD	7	7	1326	GJO	UGM	ODD	GUK	+59	412	103	331	14670	13923	-69.84	-12.32	140.8	133.9	126.5	121.3	118.4	117.8	119.4
SD	7	7	1326	WRO	WRM	JKS	KGU	470	406	41	285	14654	13908	-69.33	-3.60	141.1	132.7	125.5	120.7	118.1	117.8	119.8
SD	7	7	1329	WRG	DRM	OOS	SKU	214	401	57	296	15057	14271	-69.02	-9.48	141.3	133.0	125.8	120.8	118.2	117.8	119.8
SD	7	7	1333	DMG	ODM	SRS	UUU	241	392	59	307	15013	14232	-68.36	-10.37	141.8	133.0	125.8	120.9	118.2	117.8	119.7
SD	7	7	1418	DMR	DUM	SRS	UUU	177	417	16	298	14325	14325	-70.22	-8.84	140.5	132.3	125.3	120.5	118.1	117.9	120.0
SD	7	7	1513	OSG	UGM	MDS	WRW	199	412	14	406	15001	14293	-69.84	-19.59	140.8	132.7	125.7	120.5	118.3	117.9	120.7
SD	7	8	533	WOU	ODM	WKG	GGG	510	399	350	27	14592	13353	-68.87	13.96	141.4	136.9	128.4	122.3	118.7	117.5	118.7
SD	7	8	611	KDG	GDD	UUU	DKO	205	459	100	489	15071	14284	-73.44	-26.19	138.3	133.0	126.0	121.1	118.3	117.8	119.5
SD	7	8	653	ODU	WDM	UUU	SSO	271	398	119	448	14965	14189	-73.09	-22.31	141.5	134.6	127.1	121.8	118.7	117.8	119.0
SD	7	8	641	KDM	RDD	WKS	COM	337	458	22	447	14766	14009	-73.41	-22.22	138.3	133.0	126.0	121.1	118.3	117.8	119.5
SU	7	8	801	SGM	RDD	OOS	UKK	408	458	60	364	14749	13994	-73.44	-15.13	138.3	133.3	126.1	121.1	118.3	117.8	119.5
SD	7	8	921	DSM	WSD	RJD	GKK	385	454	74	363	14785	14026	-73.09	-14.95	138.5	133.5	126.2	121.2	118.4	117.8	119.5
SD	7	8	900	WKO	KSC	SMS	GRM	502	453	48	403	14605	13884	-73.01	-18.33	138.6	133.3	126.1	121.1	118.4	117.8	119.5
SD	7	8	924	ODK	WSD	USO	GKK	377	454	68	363	14798	14038	-73.09	-14.95	138.5	133.4	126.2	121.1	118.3	117.8	119.5
SD	7	8	944	ODK	OSO	MSO	SSS	103	455	70	0	15239	14434	-73.17	16.83	138.5	131.8	124.7	119.9	117.7	117.8	120.4
SD	7	8	1231	OSR	GDD	OOS	UUU	153	459	57	457	15156	14360	-73.49	-23.13	138.2	133.6	126.4	121.4	118.5	117.8	119.5
SD	7	8	1253	RUG	ODD	UUU	WUG	226	455	52	230	15037	14254	-73.17	-4.15	138.5	133.3	125.9	120.5	118.2	117.8	119.7
SD	7	8	1256	ODD	GDD	OOS	SKM	121	459	59	424	14908	14088	-73.49	-20.15	138.2	133.5	126.3	121.3	118.4	117.8	119.4
SD	7	8	1324	SSR	ODD	KSK	SSS	128	457	325	0	15197	14397	-73.33	16.83	138.4	136.3	127.5	122.0	118.5	117.4	118.8

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TWERLE BALLOON 91153/6 NABL/SJ 1972

ID	DATE	TIME	---DIGI CODE---			-DEG DIGI NUM--			---ALTITUDE---			AIR I	PTEMP	PIC	PRES	30	31	32	33		
			ALT	AT	P	PT	ALT	AT	P	PT	(18)	(19)	(C)	(C)							
SD	7	1407	WSK	KSU	MSD	RUO	134	453	70	432	15187	14388	-73.01	-25.51	138.6	134.0	123.7	121.5	118.6	117.8	119.1
SD	7	1425	KRO	GUC	SSS	SSS	469	459	C	0	14655	13909	-73.49	16.83	138.2	130.7	126.9	119.5	117.5	118.0	124.0
SD	7	1428	SRO	WSC	KOS	GKO	484	454	61	491	14663	13916	-73.09	-26.39	138.5	133.9	126.6	121.5	118.6	117.8	119.2
SD	7	1445	RKM	UOO	OSO	SGO	425	460	455	472	14721	13909	-73.57	-24.54	138.2	140.8	131.9	125.2	120.6	118.2	117.9
SD	7	1455	GRO	GKO	ROS	GDO	467	491	58	459	14658	13312	-76.14	-23.32	136.4	133.7	126.4	121.4	118.5	117.8	119.3
SD	7	1518	W30	MSO	OSD	DKO	478	454	71	489	14641	13397	-73.09	-29.19	138.5	134.0	126.7	121.6	118.5	117.8	119.1
SD	7	1533	SSO	UOO	SKS	KOO	448	460	40	509	14687	13938	-73.57	-28.21	138.2	133.6	126.5	121.4	118.5	117.8	119.2
SD	7	501	DUS	KOM	GUK	URS	33	397	331	20	15355	14539	-66.72	14.68	141.5	136.5	128.1	122.1	118.6	117.5	119.8
SD	7	542	UGS	OSC	RUS	UDS	28	449	34	12	15364	14547	-72.69	15.53	138.8	131.3	124.3	119.7	117.6	117.5	120.7
SD	7	558	GJG	USO	GOD	UDS	203	449	123	12	15075	14287	-72.69	15.53	138.8	132.8	125.4	120.4	117.8	117.7	120.0
SD	7	618	KAD	MSO	UUD	GDS	117	454	100	11	15215	14414	-73.09	15.64	138.5	132.4	125.1	120.2	117.7	117.8	120.2
SD	7	638	SSG	WOM	KMD	UDS	192	446	117	12	15093	14303	-72.45	15.53	139.0	132.7	125.3	120.3	117.8	117.7	120.1
SD	7	653	ROR	ROW	ROD	UDS	146	442	122	12	15102	14312	-72.14	15.53	139.2	132.8	125.3	120.4	117.8	117.7	120.0
SD	7	727	KUR	GOM	UUD	GOD	165	443	97	507	15137	14343	-72.22	-28.01	139.1	134.6	127.1	121.9	118.7	117.7	120.0
SD	7	800	KDD	UOM	UUD	DKO	77	447	97	489	15282	14473	-72.53	-26.19	138.3	134.5	127.0	121.8	118.7	117.8	119.0
SD	7	827	GSD	DSO	URU	KUD	67	449	84	435	15298	14488	-72.69	-25.80	138.3	134.2	126.9	121.7	118.6	117.8	119.1
SD	7	1101	UOS	OOM	GJD	UGM	60	447	75	412	15310	14499	-72.53	-19.10	138.9	133.7	126.4	121.3	118.5	117.8	119.3
SD	7	1142	GOS	OOM	UUD	KKM	53	447	73	429	15312	14500	-72.53	-20.60	138.9	133.8	126.5	121.4	118.5	117.8	119.3
SD	7	1255	GJR	OOM	UUD	KKM	133	447	76	429	15179	14391	-72.53	-20.60	138.9	133.8	126.5	121.4	118.5	117.8	119.3
SD	7	1325	KMD	KOM	MWS	SSM	117	445	54	384	15215	14414	-72.38	-15.71	139.0	133.3	126.1	121.1	118.3	117.8	119.5
SD	7	1338	WMO	KOM	ROD	UAK	118	445	83	372	15245	14412	-72.38	-19.70	139.0	133.3	126.1	121.1	118.3	117.8	119.5
SD	7	1402	GDD	MOM	UUD	SKM	123	446	73	424	15206	14405	-72.45	-21.25	139.0	133.7	126.4	121.3	118.4	117.8	119.4
SD	7	703	SGS	CSC	KGD	UOD	24	449	93	508	15371	14553	-72.69	-28.11	138.8	134.5	127.1	121.8	118.7	117.8	119.0
SD	7	738	SKG	RSC	KGD	UOD	232	450	95	459	15028	14245	-72.77	-23.32	138.9	134.3	126.8	121.7	118.6	117.8	119.1
SD	7	800	SJG	UOM	URD	ORU	224	447	94	471	15041	14256	-72.53	-24.45	138.9	134.2	126.8	121.6	118.6	117.8	119.1
SD	7	822	RKR	UOM	ROD	GUD	178	447	74	459	15115	14324	-72.53	-23.32	138.9	133.9	126.6	121.5	118.5	117.8	119.2
SD	7	953	W3D	RSD	MSD	RUM	94	450	70	418	15254	14448	-72.77	-19.63	138.7	133.7	126.4	121.3	118.5	117.8	119.3
SD	7	1236	DUW	ROM	URD	RRK	393	442	84	338	14773	14015	-72.14	-12.89	139.2	133.6	126.2	121.2	118.4	117.8	119.5
SD	7	1347	GRG	HKK	GDR	ORK	211	366	139	343	15062	14275	-66.47	-13.30	143.1	134.5	126.9	121.6	118.6	117.8	119.2
SD	7	1421	WJU	ROM	JGD	UGM	270	442	89	415	14967	14190	-72.14	-13.37	139.2	134.0	126.6	121.5	118.5	117.8	119.2
SD	7	1436	GSD	MWM	SSS	DMW	67	438	0	433	15298	14488	-71.83	-21.95	139.4	132.6	125.6	120.9	118.3	117.9	119.7
SD	7	1439	SSS	KWM	SGD	SSS	0	437	88	0	15411	14589	-71.75	10.83	139.4	132.1	124.9	120.1	117.7	117.8	120.3
SD	7	1448	SSS	UUD	GWM	SSS	0	103	435	0	15411	14589	-47.63	16.83	156.1	138.4	129.5	123.1	119.0	117.5	118.3
SD	7	532	KOK	ROM	OKD	KKM	381	442	111	429	14791	14032	-72.14	-20.60	139.2	134.4	127.0	121.7	118.6	117.8	119.1
SD	7	618	UGG	OKK	WSR	SSM	217	383	134	384	15052	14267	-67.70	-16.71	142.2	134.6	127.0	121.7	118.6	117.7	119.4
SD	7	658	DUG	GOK	WOD	SGU	225	379	126	280	15039	14255	-67.41	-8.19	142.5	134.0	126.5	121.3	118.4	117.7	119.4
SD	7	721	KSG	KOK	UUD	RRU	137	391	103	274	15084	14296	-67.55	-7.71	142.4	133.6	126.2	121.1	118.3	117.8	119.5
SD	7	747	RUR	KSM	UMD	RWG	138	389	116	242	15181	14383	-68.14	-5.12	141.9	133.7	126.3	121.1	118.3	117.8	119.5
SD	7	817	KOO	SUM	MUG	SSO	503	416	230	448	14594	13854	-70.14	-22.31	140.6	136.5	128.6	122.8	119.2	117.8	118.5
SD	7	917	GKK	UOM	UUD	URM	339	447	72	404	14857	14091	-72.53	-13.41	138.9	133.7	126.6	121.3	118.4	117.8	119.3
SD	7	1002	DGR	UOM	UUD	KKM	153	447	78	429	15156	14360	-72.53	-20.60	138.9	133.9	126.6	121.4	118.5	117.8	119.2
SD	7	1032	SSS	KSC	SSS	SSS	0	453	0	0	15411	14589	-73.01	-16.83	138.6	130.7	123.6	119.5	117.5	118.0	121.0
SD	7	1039	GSW	SSO	RSD	GWM	367	448	66	435	14782	14023	-72.61	-21.13	138.8	133.7	126.4	121.4	118.5	117.8	119.3
SD	7	1055	UGM	COM	UUD	DMW	409	447	39	441	14748	13993	-72.53	-21.67	138.5	133.3	126.3	121.3	118.4	117.8	119.4
SD	7	1125	UOM	UOM	UUD	UUM	444	444	03	420	14694	13944	-72.30	-13.80	139.1	133.6	126.3	121.3	118.4	117.8	119.4
SD	7	1353	KOK	DSO	UMD	SSS	381	449	49	462	14791	14032	-72.69	-23.60	138.8	133.5	126.3	121.3	118.5	117.8	119.3
SD	7	1404	SKK	GOM	UUD	SSS	360	443	76	0	14824	14062	-72.22	-16.83	139.1	131.9	124.7	120.0	117.7	117.8	120.4
SD	7	629	RSR	KSO	MSD	RRM	130	450	70	402	15194	14394	-72.77	-18.24	138.7	133.6	126.3	121.3	118.4	117.8	119.4

TWERLE BALLOON 9115376 NABL/SD 1972

ID	DATE	TIME	---DIGI CODE---		-DEC DIGI NUM--		---ALTITUDE---		AIR T	PTEMP	PID	PRES			31	32	33					
			ALT	AT	P	PT	(18)	(19)	(C)	(C)		28	29	30								
SD	7	5	837	DKR	HUM	ORG	GS0	163	422	209	431	15130	14337	-70.60	-23.58	140.2	136.2	128.3	122.6	119.1	117.0	118.6
SD	7	5	839	USU	KUM	UGD	GU0	452	421	39	459	14681	13333	-70.52	-23.32	140.3	134.2	126.8	121.6	118.6	117.0	118.1
SD	7	5	909	URS	GUM	UGD	GUS	20	419	460	11	15377	14559	-70.37	15.64	140.4	139.0	130.0	123.4	119.2	117.5	118.2
SD	7	5	941	DKK	SKO	UKM	DKG	361	438	428	345	14823	14060	-75.89	-13.47	136.6	139.8	130.9	124.4	120.0	117.9	118.1
SD	7	5	1014	GWR	SUK	ORK	UOW	179	352	343	444	15114	14322	-65.47	-21.37	143.8	138.6	130.1	123.5	119.8	117.9	118.2
SD	7	5	1018	MSW	SMK	OKS	SMK	330	368	47	368	14777	14019	-66.61	-15.34	143.0	133.1	125.9	121.0	118.3	117.8	119.6
SD	7	5	1047	ROU	OUM	SGR	MGM	314	423	152	414	14897	14127	-70.67	-19.28	140.2	135.0	127.4	122.0	118.8	117.7	118.9
SD	7	5	1054	WUJ	SKM	QGR	RRW	310	424	159	402	14903	14133	-70.75	-13.24	140.1	135.1	127.4	122.0	118.8	117.7	119.0
SD	7	5	1057	WJU	GKM	RRR	KDM	236	427	146	397	14941	14167	-70.98	-17.81	140.0	134.9	127.3	121.9	118.7	117.7	119.0
SD	7	5	1311	WGD	URK	DWG	KDM	94	340	241	397	15254	14448	-64.61	-17.81	144.4	136.5	128.5	122.7	119.1	117.7	118.6
SD	7	5	1314	OMU	UKM	KDR	SSO	311	427	141	448	14302	14131	-70.98	-22.31	140.0	135.0	127.4	122.0	118.8	117.8	118.9
SD	7	5	1316	SSK	SKM	KDR	SSO	320	423	144	449	14887	14118	-70.67	-22.40	140.2	135.0	127.4	122.0	118.8	117.8	118.9
SD	7	5	1318	SSK	SKM	KDR	SSO	320	424	141	450	14887	14118	-70.75	-22.40	140.1	135.0	127.4	122.0	118.8	117.8	118.9
SD	7	5	1418	WMD	GUK	DUG	G00	118	347	249	507	15214	14412	-65.11	-28.01	144.0	137.2	129.1	123.2	119.4	117.8	118.4
SD	7	5	1511	SOU	CHK	MOR	UU0	312	369	142	484	14900	14130	-66.68	-25.70	143.0	135.2	127.6	122.1	118.9	117.8	118.8
SD	7	5	1523	OMU	URK	SGR	UU0	311	401	152	484	14302	14131	-69.02	-25.70	141.3	135.4	127.7	122.2	118.9	117.8	118.8
SD	7	5	1538	OUU	UKM	KUR	UU0	313	425	141	484	14898	14128	-70.83	-25.70	140.1	135.2	127.6	122.1	118.9	117.8	118.8
SD	7	5	1558	UOW	DKM	KDR	UU0	444	425	142	434	14694	13944	-70.83	-25.70	140.1	135.2	127.6	122.1	118.9	117.8	118.8
SD	7	5	1612	RMD	GUK	KWG	G00	114	347	245	507	15220	14418	-65.11	-28.01	144.0	137.1	129.1	123.2	119.4	117.8	118.4
SD	7	5	1616	OGD	SRK	SUG	S00	95	336	224	504	15252	14446	-64.33	-27.70	144.6	136.7	128.8	123.0	119.3	117.8	118.5
SD	7	5	1619	WMD	GUK	DUG	G00	118	347	249	507	15214	14412	-65.11	-28.01	144.0	137.2	129.1	123.2	119.4	117.8	118.4
SD	7	5	1623	RMU	GUK	RDU	UU0	114	347	266	511	15220	14418	-65.11	-28.01	144.0	137.3	129.1	123.2	119.5	117.8	118.3
SD	7	5	1627	RKD	GUK	UGD	UU0	100	347	255	511	15234	14430	-65.11	-28.42	144.0	137.3	129.1	123.2	119.5	117.8	118.3
SD	7	5	1631	WGD	GUK	UGK	UU0	94	347	235	508	15254	14448	-65.11	-28.42	144.0	136.9	128.9	123.1	119.4	117.8	118.4
SD	7	5	1645	SRD	ODK	GOG	UU0	80	335	251	15	15277	14469	-64.26	15.21	144.6	135.0	127.0	121.4	118.2	117.5	119.2
SD	7	5	1649	UUU	GRK	SSU	UU0	100	339	256	15	15244	14439	-64.54	15.21	144.4	135.0	127.0	121.4	118.2	117.5	119.2
SD	7	5	1652	RMD	GRK	DUG	UU0	114	339	249	15	15220	14418	-64.54	15.21	144.4	135.0	127.0	121.4	118.2	117.5	119.2
SD	7	5	1653	RMU	GRK	JUG	UU0	114	339	249	15	15220	14418	-64.54	15.21	144.4	135.0	127.0	121.4	118.2	117.5	119.2
SD	7	5	1656	UUU	GRK	JUG	UU0	97	339	241	15	15249	14443	-64.54	15.21	144.4	134.9	126.9	121.3	118.2	117.5	119.3
SD	7	5	1700	OKD	GRK	MUG	UU0	87	339	230	15	15255	14458	-64.54	15.21	144.4	134.7	126.7	121.2	118.1	117.5	119.3
SD	7	5	1704	KUD	GRK	RMG	UU0	101	339	242	15	15242	14437	-64.54	15.21	144.4	134.9	126.9	121.3	118.2	117.5	119.2
SD	7	5	1707	OGD	GRK	UGK	URS	95	339	243	23	15252	14446	-64.54	15.21	144.4	134.9	126.9	121.4	118.2	117.5	119.3
SD	7	5	1711	UUU	GUK	SMW	UU0	109	339	428	24	15229	14426	-64.54	14.27	144.4	138.4	129.5	123.1	119.1	117.5	118.3
SD	7	5	1716	UUU	KKM	ORC	UU0	316	429	87	12	14894	14124	-71.13	15.53	139.9	132.2	124.5	120.1	117.7	117.8	120.3
SD	7	5	1718	KOU	DKM	QSR	UU0	317	425	130	12	14892	14123	-70.83	15.53	140.1	132.9	125.4	120.4	117.8	117.7	120.0
SD	7	5	1720	GMU	SKM	KOD	SSS	307	424	125	0	14908	14137	-70.75	19.83	140.1	132.7	125.3	120.3	117.8	117.7	120.0
SD	7	5	1722	KMU	DKM	UUU	GU0	309	425	127	11	14905	14134	-70.83	15.64	140.1	132.8	125.4	120.4	117.8	117.7	120.0
SD	7	5	1725	UKU	DKM	QSR	UU0	300	425	129	11	14919	14147	-70.83	15.64	140.1	132.9	125.4	120.4	117.8	117.7	120.0
SD	7	5	1727	UMU	DKM	UUU	GU0	305	425	121	12	14911	14140	-70.83	15.53	140.1	132.7	125.3	120.3	117.8	117.7	120.0
SD	7	5	1731	OKU	DKM	QSR	UU0	301	425	130	12	14917	14145	-70.83	15.53	140.1	132.9	125.4	120.4	117.8	117.7	120.0
SD	7	5	1732	SSS	DKM	USR	SDS	0	425	129	8	15411	14589	-70.83	15.96	140.1	132.9	125.4	120.4	117.8	117.7	120.0
SD	7	5	1734	UUU	UKM	JUG	UU0	292	425	121	7	14932	14158	-70.83	16.07	140.1	132.7	125.3	120.3	117.8	117.7	120.1
SD	7	6	828	GSU	SOU	RKC	UU0	259	456	106	12	14984	14206	-73.25	15.53	136.4	132.5	125.1	120.2	117.8	117.7	120.1
SD	7	6	1054	USU	WSD	RJD	SSS	259	454	74	0	14988	14209	-73.09	16.83	138.5	131.9	124.7	120.0	117.7	117.8	120.4
SD	7	6	1056	GUG	OUU	WMO	DKO	251	463	502	439	14997	14217	-73.81	-26.19	138.0	141.9	132.7	125.8	121.0	118.3	117.8
SD	7	6	1108	KSS	KUU	WSD	DOW	5	461	454	441	15403	14582	-73.65	-21.67	138.1	140.7	131.8	125.0	120.5	118.1	117.9

TWERLE BALLOON 91153/6 NABL/SD 1972

ID	DATE	TIME	ALT AT	P	PT	DEC	DIGI	NUM	PT	PT	ALTITUDE	AIR T	PIEMP	P10	PRES	28	29	30	31	32	33
SD	9	25	933	RDW	OKM	S00	S0K	394	425	456	376	14014	-70.83	140.1	140.5	131.5	124.8	120.3	118.0	118.0	118.0
SD	9	28	239	DGW	UWM	GGR	DGS	+09	436	155	25	14748	-71.67	139.5	133.4	125.8	120.7	117.9	117.6	117.6	119.8

UNOFFICIAL REPORT

1154

FLIGHT INFORMATION FORM

FLIGHT NO. 93155 RDPC Float Altitude 150 mb

Diagram of Flight Train

GHOST Frequency = 15.02 5 MHz

Sun Angle I.D. Code R

Calibration Data

30 DEG	32.1
50 DEG	24.7
60 DEG	20.4

2nd Package Frequency = 15.02 MHz

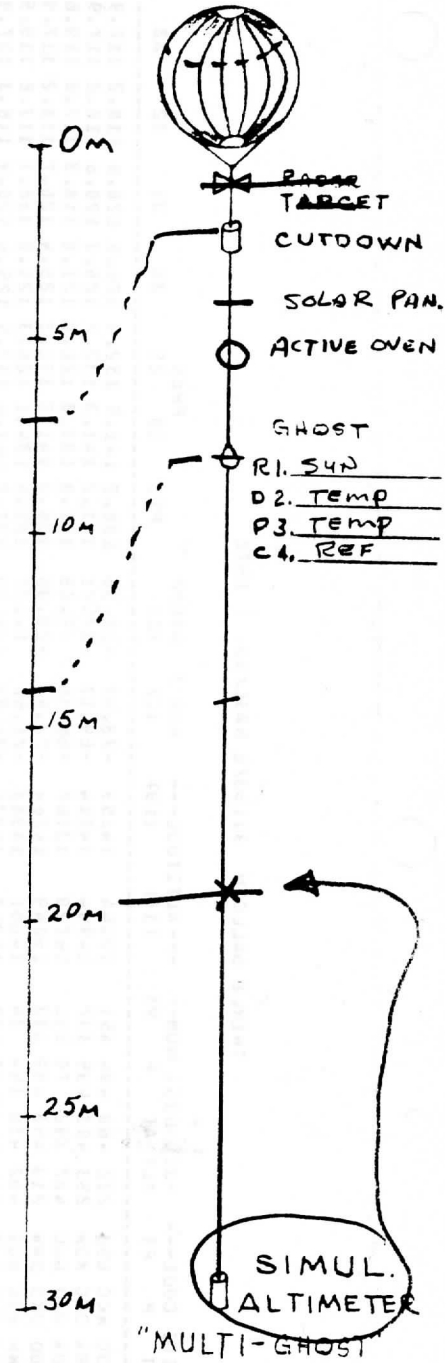
I.D. Code

Code Letter Sensor
 R = Sun Angle; D = Temp
 P = Temp; C = Ref.

Calibration Data

BALLOON DATA

Balloon ID# (Mfg*) R 72-17
 Launch date JUL 7 1972
 Launch site Ascension
 Film Celanar (Capped)
 Diameter Seam 3.5659 m X Gore 3.5677 m
 Volume 23.638 m³
 Balloon Weight 3397
 Payload Weight 1461
 Duration
 Last Known Position



REMARKS

Surface conditions at launch

* R = Raven Industries, Inc.
 S = G. T. Schjeldahl Co.

TWERLE BALLCON 93155 ROPC 1972

MONTH	DAY	TIME	SUN ANGLE	OVEN TEMP	CURRENT	LATITUDE	LONGITUDE
7	7	838	20.25	14.82	7.720		
7	7	856	23.77	17.12	6.440		
7	7	859	21.11	11.32	4.330		
7	7	920	33.93	9.75	4.530		
7	7	932	39.02	5.06	4.580		
7	7	940	41.17	6.76	4.310		
7	7	946	42.23	1.73	7.320		
7	7	952	40.91	3.97	7.800		
7	7	958	39.56	1.00	8.440		
7	7	1003	39.56	-.28	8.060		
7	7	1004	41.07	2.52	10.110		
7	7	1016	43.01	-.93	6.610		
7	7	1028	44.30	.62	9.600		
7	7	1044	47.07	.96	7.340		
7	7	1103	49.51	.34	6.980		
7	7	1123	52.85	1.00	6.060		
7	7	1124	51.62	2.86	5.560		
7	7	1144	53.79	.67	6.280		
7	7	1154	52.94	.86	7.600		
7	7	1204	57.25	1.00	6.280		
7	7	1224	58.17	.38	5.930		
7	7	1240	59.54	.86	5.930		
7	7	1243				9.1S	9.3W
7	7	1249	58.83	5.75	10.350		
7	7	1251	54.17	.76	7.330		
7	7	1254	58.99	-12.63	.330		
7	7	1257	59.77	.67	5.610		
7	7	1323	56.34	.34	6.740		
7	7	1335	55.55	.82	7.960		
7	7	1348	53.55	.67	6.510		
7	7	1432	49.27	.34	5.390		
7	7	1446	47.56	1.12	7.580		
7	7	1504	42.07	2.19	8.820		
7	7	1543	36.01	-.60	9.880		
7	7	1614	34.05	.54	8.570		
7	8	744	29.99	-2.90	6.440		
7	8	815	36.52	-.35	9.330		
7	8	823	35.73	.54	9.070		
7	8	824	36.80	-.35	9.600		
7	8	833	37.08	-.39	9.200		
7	8	851	40.37	-1.81	7.420		
7	8	904	41.96	.25	7.710		
7	8	905	41.38	.77	8.330		
7	8	920	45.06	-.07	8.440		
7	8	934	46.57	.21	9.070		
7	8	936	47.80	-.39	6.090		
7	8	956	51.19	-.93	6.150		

TWERLE BALLOON 93155 RDPC 1972

MONTH	DAY	TIME	SUN ANGLE	OVEN TEMP	CURRENT	LATITUDE	LONGITUDE
7	8	1003	51.71	-.43	7.360		
7	8	1015	52.85	.86	6.440		
7	8	1029	56.33	.54	7.600		
7	8	1045	59.31	-.35	4.680		
7	8	1051	58.67	-.74	7.130		
7	8	1056	59.54	.54	8.570		
7	8	1117	59.99	.86	6.440		
7	8	1120	61.45	.69	6.520		
7	8	1129	61.13	.91	6.090		
7	8	1136	60.63	2.47	6.790		
7	8	1143				8.4S	5.8E
7	8	1147	62.04	.62	6.190		
7	8	1201	60.45	.54	5.350		
7	8	1201	58.63	2.58	6.770		
7	8	1221	58.85	.54	7.130		
7	8	1249	54.72	.62	6.870		
7	8	1257	54.02	.54	7.360		
7	8	1320	52.61	2.64	4.680		
7	8	1334	48.88	1.85	8.320		
7	8	1336	50.47	-1.06	6.040		
7	8	1348	49.27	1.05	7.570		
7	8	1401	43.68	.51	7.170		
7	8	1401	45.31	.82	7.960		
7	8	1416	40.37	2.30	9.330		
7	8	1435	39.83	.47	7.800		
7	8	1439	37.84	-.41	9.120		
7	8	1447	36.69	.54	10.110		
7	8	1452	37.64	1.15	8.300		
7	8	1504	35.67	-.03	10.670		
7	8	1517	34.51	-.24	5.570		
7	8	1523	30.86	.21	5.350		
7	8	1527	30.31	-.93	5.700		
7	8	1541	28.73	-.90	6.250		
7	8	1548	28.41	-.90	6.020		
7	8	1605	27.12	-1.34	7.470		
7	9	626	7.23	-31.66	21.550		
7	9	654	29.81	-2.32	6.440		
7	9	730	35.21	.21	10.110		
7	9	741	36.52	-.93	8.560		
7	9	756	38.63	-.64	7.690		
7	9	756	40.90	.25	8.820		
7	9	818	44.80	-.32	7.690		
7	9	832	46.57	-.32	7.940		
7	9	852	49.99	-.03	6.640		
7	9	855	48.49	-1.51	6.480		
7	9	905	51.67	.54	7.130		
7	9	925	57.94	.30	6.410		

TWERLE BALLCON 93155 ROPC 1972

MONTH	DAY	TIME	SUN ANGLE	OVEN TEMP	CURRENT	LATITUDE	LONGITUDE
7	9	926	53.97	.21	6.900		
7	9	939	57.48	-.03	6.870		
7	9	951	59.31	-.03	6.190		
7	9	1001	60.63	.86	6.000		
7	9	1014	60.45	.86	4.930		
7	9	1028	64.25	.28	7.380		
7	9	1031	63.27	-.48	6.440		
7	9	1103				5.5S	15.8E
7	9	1122	64.09	-.60	5.480		
7	9	1133	64.31	-.03	8.070		
7	9	1144	62.27	.54	6.440		
7	9	1155	60.45	-.03	6.410		
7	9	1201	64.36	.54	7.130		
7	9	1207	60.68	-.03	6.870		
7	9	1218	58.67	.49	6.790		
7	9	1227	55.87	.30	6.870		
7	9	1240	54.48	.96	6.410		
7	9	1303	50.62	.54	6.220		
7	9	1338	43.73	.25	7.710		
7	9	1407	39.02	.21	7.840		
7	9	1437	35.67	-.53	8.560		
7	9	1438	35.09	-.57	8.180		
7	9	1444	32.98	.91	8.570		
7	9	1531	26.53	.21	9.330		
7	10	602	39.61	-25.30	17.910		
7	10	704	35.61	.25	9.720		
7	10	738	42.22	-.07	9.460		
7	10	826	49.27	.82	8.450		
7	10	908	56.97	.01	6.280		
7	10	959	62.95	1.37	6.380		
7	10	1032	63.08	.49	7.960		
7	10	1035				7.3S	22.7E
7	10	1113	60.72	.54	6.220		
7	10	1118	59.08	.25	5.220		
7	10	1153	53.55	.21	7.130		
7	10	1200	53.55	.25	7.470		
7	10	1206	52.33	.54	7.600		
7	10	1227	50.95	-.32	6.510		
7	10	1241	46.91	.54	6.220		
7	10	1349	41.38	.49	10.500		
7	10	1452	26.26	.21	7.600		
7	11	624	32.86	-.90	9.480		
7	11	702	37.30	2.64	10.130		

TWERLE BALLOON 93155 RDPG 1972

MO	MCNTH	DAY	TIME	SUN ANGLE	OVEN TEMP	CURRENT	LATITUDE	LONGITUDE
7	11	737	44.85	.21	8.820			
7	11	840	51.33	.21	8.700			
7	11	931	57.02	-.07	5.650			
7	11	956				12.5S	32.4E	
7	11	1016	56.92	.54	6.670			
7	11	1102	52.93	-.74	7.360			
7	11	1155	44.19	.25	8.200			
7	11	1234	39.88	.21	10.110			
7	11	1352	27.51	.54	7.840			
7	12	600	34.10	.21	11.850			
7	12	654	39.61	.54	8.570			
7	12	730	45.30	.21	7.600			
7	12	756	48.09	.21	7.360			
7	12	853	53.87	.21	7.360			
7	12	928				15.0S	39.6E	
7	12	929	54.33	.21	6.670			
7	12	1029	51.66	.54	7.360			
7	12	1119	46.86	.21	7.600			
7	12	1143	42.48	.54	7.690			
7	12	1222	37.13	.21	8.950			
7	12	1300	32.92	.21	10.110			
7	13	559	33.86	.54	7.360			
7	13	640	35.83	-.78	9.450			
7	13	723	44.08	.86	8.820			
7	13	802	48.13	-1.06	8.820			
7	13	853	54.51	.77	6.470			
7	13	943	58.24	-1.06	8.820			
7	13	948				13.8S	34.6E	
7	13	1036	54.24	-2.60	6.220			
7	13	1101	52.13	-2.60	6.900			
7	13	1129	46.65	.68	10.080			
7	13	1207	42.58	-.15	9.200			
7	13	1311	38.51	-1.06	11.470			
7	14	524	39.60	-39.03	22.820			
7	14	621	33.45	.21	7.600			
7	14	633	33.92	1.60	12.050			
7	14	705	38.79	-1.22	7.930			
7	14	730	39.93	.54	11.470			
7	14	827	46.90	.54	9.330			

TWERLE BALLOON 93155 ROPC 1972

MONTH	DAY	TIME	SUN ANGLE	OVEN TEMP	CURRENT	LATITUDE	LONGITUDE
7	14	914	53.11	.54	10.110		
7	14	949	53.06	.67	5.390		
7	14	949				15.9S	34.3E
7	14	1025	52.40	1.19	8.820		
7	14	1115	49.69	1.47	7.720		
7	14	1210	40.89	.21	8.820		
7	14	1319	29.42	.54	7.600		
7	15	525	43.71	-6.17	23.070		
7	15	606	35.99	.21	10.640		
7	15	656	38.95	-.11	9.850		
7	15	749	43.19	1.19	8.820		
7	15	833	46.79	.21	9.590		
7	15	847				23.7S	49.8E
7	15	909	44.63	.54	6.900		
7	15	1003	42.68	.54	8.820		
7	15	1045	36.67	.21	9.850		
7	15	1142	32.67	.54	8.820		
7	16	628	40.83	1.85	10.110		
7	16	745				29.5S	85.3E
7	16	803	33.32	-.07	9.990		
7	16	838	29.73	.54	8.820		
7	16	901	26.05	-1.06	6.000		
7	17	200	46.28	-.03	10.670		
7	17	241				31.0S	120.3E
7	17	323	40.61	-.72	10.200		
7	17	2309	27.75	-1.03	3.810		
7	17	2328	30.90	-1.78	2.740		
7	17	2343	32.72	-.90	10.850		
7	18	7	33.90	-1.22	8.950		
7	18	24	35.06	-.86	10.440		
7	18	42	37.33	-1.73	7.510		
7	18	55	37.33	-3.10	8.820		
7	18	111	38.16	-.57	9.750		
7	18	125	40.07	-2.38	8.550		
7	18	203	41.40	-2.38	7.510		

TWERLE BALLOON 93155 ROPC 1972

MONTH	DAY	TIME	SUN ANGLE	OVEN TEMP	CURRENT	LATITUDE	LONGITUDE
7	18	215				30.0S	152.8E
7	18	216	39.26	-.53	7.550		
7	18	238	40.07	.21	9.850		
7	18	311	37.61	.72	11.260		
7	18	329	33.31	1.05	9.880		
7	18	400	30.59	1.29	9.600		
7	18	416	30.28	-1.54	6.710		
7	18	447	28.07	-1.19	5.660		
7	18	505	27.10	.21	9.590		
7	18	527	25.11	.49	10.500		
7	19	235	40.07	-.60	8.560		
7	19	1935	36.20	-1.19	16.600		
7	19	1942	41.66	-1.42	8.950		
7	19	2012	41.66	-4.53	3.590		
7	19	2022	41.66	-.76	6.660		
7	19	2044	43.23	.38	9.340		
7	19	2130	44.25	-.86	8.050		
7	19	2155				23.6S	147.0W
7	19	2332	41.40	2.52	8.820		
7	20	1932				22.3S	111.3W
7	20	1939	76.24	-.69	8.380		
7	20	2023	46.52	-5.11	7.400		
7	20	2044	43.48	.56	8.910		
7	20	2112	42.99	.28	7.870		
7	20	2140	39.52	-1.28	8.960		
7	20	2215	34.42	-.48	10.240		
7	20	2243	30.74	-1.03	7.950		
7	21	1425	32.85	-40.28	14.840		
7	21	1448	40.59	-24.25	25.090		
7	21	1521	30.42	-4.97	6.150		
7	21	1549	35.27	-.32	11.090		
7	21	1619	38.50	-3.09	5.540		
7	21	1640	49.81	.17	7.720		
7	21	1711	43.82	-.26	8.520		
7	21	1743	45.76	-.39	9.620		

TWERLE BALLOON 93155 RDPG

1972

MONTH	DAY	TIME	SUN ANGLE	OVEN TEMP	CURRENT	LATITUDE	LONGITUDE
7	21	1817				23.0S	92.6W
7	21	1819	46.77	-.15	6.630		
7	21	1834	45.76	1.12	8.270		
7	21	1907	45.26	1.21	7.530		
7	21	1935	46.26	-1.80	12.810		
7	21	2008	40.05	-25.46	-0.000		
7	21	2037	36.40	-2.02	8.950		
7	21	2109	31.31	2.32	13.470		
7	21	2132	27.38	-1.17	7.080		
7	22	1255	37.31	-14.31	14.240		
7	22	1316	49.55	-17.70	31.660		
7	22	1318	48.61	-11.39	6.250		
7	22	1342	41.64	-14.01	5.970		
7	22	1352	34.03	-2.58	15.510		
7	22	1417	36.89	-.35	9.860		
7	22	1424	42.82	-10.49	7.250		
7	22	1446	37.96	-4.56	4.160		
7	22	1447	43.28	-1.78	6.490		
7	22	1516	41.51	-.91	7.200		
7	22	1518	43.85	-1.76	6.930		
7	22	1536	43.59	-3.57	3.720		
7	22	1544	43.54	-2.53	7.230		
7	22	1556	46.38	4.98	7.930		
7	22	1617	43.59	-2.62	9.150		
7	22	1630	46.50	-1.78	7.530		
7	22	1637				25.0S	67.6W
7	22	1645	41.72	-4.47	6.740		
7	22	1658	45.75	.34	7.210		
7	22	1733	43.21	.25	8.200		
7	22	1802	39.78	-.60	9.080		
7	22	1838	37.67	-.55	9.030		
7	22	1843	36.19	-1.78	9.630		
7	22	1906	35.90	-2.11	9.630		
7	22	1909	37.91	-34.35	9.750		
7	22	1938	27.97	-4.27	2.690		
7	22	1953	30.03	-.03	-0.000		
7	22	2041	27.92	-3.20	3.310		
7	23	1107	31.79	-3.75	5.270		
7	23	1137	31.49	.58	12.190		
7	23	1203	41.53	1.08	9.450		
7	23	1211	36.46	-1.45	7.280		
7	23	1237	38.00	.62	9.330		
7	23	1258	36.89	-.03	10.940		

TWERLE BALLCON 93155 ROPC 1972

MONTH	DAY	TIME	SUN ANGLE	OVEN TEMP	CURRENT	LATITUDE	LONGITUDE
7	23	1321	49.45	-1.12	6.410		
7	23	1323	42.68	-1.48	7.170		
7	23	1345	44.35	-2.11	6.790		
7	23	1407	44.86	-1.45	6.790		
7	23	1422				24.7S	33.8W
7	23	1430	47.11	.86	10.380		
7	23	1445	39.66	-.73	8.890		
7	23	1446	44.12	.21	8.080		
7	23	1454	47.11	.58	9.460		
7	23	1454	46.89	.02	7.030		
7	23	1516	43.04	.21	7.600		
7	23	1519	44.35	.25	3.810		
7	23	1545	44.07	-.12	6.720		
7	23	1545	44.07	.15	7.120		
7	23	1546	44.35	1.19	8.080		
7	23	1548	41.48	.54	7.360		
7	23	1619	40.57	-.20	11.230		
7	23	1625	38.96	-.60	10.110		
7	23	1703	34.87	-.86	9.910		
7	23	1809	27.08	-.90	7.190		
7	24	853	41.57	-22.63	25.670		
7	24	924	56.47	1.05	9.580		
7	24	954	36.63	.54	9.850		
7	24	1023	41.10	-.50	7.660		
7	24	1031	39.92	-.90	7.930		
7	24	1037	42.15	-.50	7.660		
7	24	1103	44.93	.67	8.440		
7	24	1103	44.73	-.20	7.550		
7	24	1105	45.99	-.20	7.550		
7	24	1108	46.24	.13	7.300		
7	24	1110	46.49	.13	7.300		
7	24	1112	45.49	-.16	6.930		
7	24	1134	48.70	.13	6.350		
7	24	1136	49.43	.13	6.350		
7	24	1137	49.18	-.20	6.350		
7	24	1147	50.39	.47	6.580		
7	24	1148	49.14	1.34	6.280		
7	24	1149	49.67	.47	6.580		
7	24	1151	50.86	.47	5.890		
7	24	1215	51.34	.13	6.120		
7	24	1217	50.86	.13	6.350		
7	24	1219	50.86	.43	6.710		
7	24	1223	50.53	1.19	6.900		
7	24	1231	50.63	.18	5.980		
7	24	1231				19.5S	6.0W
7	24	1233	50.63	.13	6.120		
7	24	1235	50.63	.43	6.710		

TWERLE BALLOON 93155 ROPC

1972

MONTH	DAY	TIME	SUN ANGLE	OVEN TEMP	CURRENT	LATITUDE	LONGITUDE
7	24	1249	50.96	-.64	6.310		
7	24	1314	50.15	.13	6.350		
7	24	1315	50.15	1.05	7.080		
7	24	1318	49.43	.13	6.350		
7	24	1321	48.80	.25	8.200		
7	24	1338	48.70	.18	6.220		
7	24	1340	47.72	.13	6.820		
7	24	1342	47.23	.13	7.060		
7	24	1351	44.22	.49	9.450		
7	24	1416	43.71	-.46	7.040		
7	24	1423	41.21	.05	7.570		
7	24	1433	40.57	.47	8.820		
7	24	1441	40.57	-.57	7.190		
7	24	1451	39.09	-1.42	7.900		
7	24	1500	35.89	-1.22	8.310		
7	24	1501	36.60	-1.42	7.900		
7	24	1508	36.74	-.50	8.690		
7	24	1518	35.46	-.76	9.220		
7	24	1529	34.02	-1.36	8.690		
7	24	1533	32.81	.25	11.070		
7	24	1539	31.79	-2.08	5.260		
7	24	1550	29.47	-2.77	2.870		
7	24	1609	26.48	-.71	7.230		
7	24	1619	25.42	-2.41	5.260		
7	24	1628	25.42	-2.11	5.850		
7	24	1644	26.35	-4.33	11.920		
7	25	647	23.72	-58.27	7.420		
7	25	726	42.51	-27.13	27.950		
7	25	804	34.16	-1.39	5.130		
7	25	830	36.51	-.07	7.600		
7	25	908	39.22	-.07	9.720		
7	25	958	44.97	-1.22	6.250		
7	25	1002	44.72	.38	8.310		
7	25	1014	46.53	.21	6.440		
7	25	1047	46.23	-.09	7.430		
7	25	1047				23.5S	20.0E
7	25	1108	45.07	.54	8.820		
7	25	1117	47.71	.43	6.710		
7	25	1121	46.97	.05	7.320		
7	25	1135	45.58	.54	7.210		
7	25	1155	44.72	-.09	7.680		
7	25	1200	42.09	.21	8.820		
7	26	819	45.57	-.03	6.870		

TWERLE BALLOON 93155 ROPC

1972

MONTH	DAY	TIME	SUN ANGLE	OVEN TEMP	CURRENT	LATITUDE	LONGITUDE
7	26	902	49.75	.21	4.730	22.7S	46.1E
7	26	902					
7	26	946	47.90	.54	7.360		
7	26	1019	45.42	.49	10.230		
7	26	1056	41.40	.54	8.820		
7	26	1135	35.59	.54	11.470		
7	26	1210	30.24	.21	10.110		
7	26	1248	26.01	-.90	5.570		
7	27	459	33.32	.54	10.380	18.7S	88.8E
7	27	528	37.33	.54	10.110		
7	27	551					
7	27	612	38.82	-.03	9.600		
7	27	643	38.93	.21	9.200		
7	27	713	35.59	.21	9.460		
7	29	45	43.92	-7.29	6.550		
7	30	230	45.33	.17	7.330	7.3S	129.8E
7	30	328					
7	30	329	39.94	-1.07	4.050		
7	30	447	49.50	-14.77	6.380		
7	30	554	53.02	-5.91	8.160		
7	31	221	54.55	-13.60	11.810	12.7S	133.3E
7	31	248					
7	31	316	62.51	-12.10	6.450		
8	3	452	49.50	-.03	9.080		
8	4	22	44.12	-5.23	5.490		
8	4	55	49.31	-.20	6.820		

TWERLE BALLOON 93155 ROPC

1972

MONTH	DAY	TIME	SUN ANGLE	OVEN TEMP	CURRENT	LATITUDE	LONGITUDE
						21.6S	155.6E
8	4	144					
8	4	236	48.58	-.34	4.550		
8	4	352	50.98	.13	7.390		
8	4	354	49.07	.95	7.800		
8	4	356	50.74	-.87	7.790		
8	4	358	49.55	-.57	7.240		
8	4	400	46.38	-1.28	7.090		
8	4	403	47.36	-.20	6.700		
8	4	404	47.85	-.61	8.530		
8	4	406	46.62	-1.32	6.970		
8	4	408	48.10	-.24	7.390		
8	4	410	45.13	.13	8.240		
8	4	412	44.62	-1.68	7.520		
8	4	414	44.12	-.20	8.380		
8	4	416	43.35	-1.62	7.500		
8	4	418	44.12	-.33	10.310		
8	4	421	45.88	-2.02	7.650		
8	4	423	45.13	.13	8.240		
8	4	425	45.63	-1.90	5.400		
8	4	427	45.88	-1.65	9.120		
8	4	429	46.13	-.24	10.340		
8	4	431	44.12	-.87	8.080		
8	4	433	44.12	-.20	7.800		
8	4	435	44.37	.79	9.110		
8	4	437	42.05	-.05	10.590		
8	4	2025	41.53	-28.93	30.770		
8	4	2120	34.95	3.31	14.750		
8	4	2136	36.09	2.98	13.610		
8	4	2156	41.00	-.42	16.960		
8	4	2210	40.47	-.57	8.430		
8	4	2229	44.12	-3.03	8.820		
8	4	2245	45.13	.65	8.820		
8	4	2300	46.62	-.68	5.910		
8	4	2315	51.22	2.13	8.430		
8	4	2333	51.69	1.00	4.690		
8	4	2349	53.80	1.30	5.260		
8	5	12				20.9S	178.5E
8	5	33	52.85	-2.29	4.800		
8	5	2014	39.93	8.32	11.040		
8	5	2026	36.92	-1.75	9.220		
8	5	2038	38.85	.91	12.770		
8	5	2049	41.26	-5.23	8.950		
8	5	2103	41.52	.38	11.260		

TWERLE BALLOON 93155 ROPC

1972

MONTH	DAY	TIME	SUN ANGLE	OVEN TEMP	CURRENT	LATITUDE	LONGITUDE
8	5	2117	43.08	-1.64	6.350		
8	5	2205	44.36	-2.38	6.280		
8	5	2253	54.48	2.76	8.310		
8	6	1	54.00	.47	6.820		
8	6	28	53.77	1.34	7.940		
8	6	1911	42.03	-10.36	34.240		
8	6	2041	40.98	-5.53	6.280		
8	6	2056	42.03	-.60	6.610		
8	6	2120	46.60	-.24	6.480		
8	6	2138	48.56	-.60	8.560		
8	6	2154	51.90	-.90	7.680		
8	6	2207	53.07	-.03	6.410		
8	6	2223	54.23	.25	4.010		
8	6	2237	56.53	-.96	7.210		
8	6	2252	56.99	-.43	9.070		
8	6	2305	57.22	-.11	7.600		
8	6	2311				17.0S	166.2W
8	6	2331	56.07	-.74	7.600		
8	6	2356	54.92	-.11	6.900		
8	7	9	53.75	.54	5.780		
8	7	26	53.75	.54	7.600		
8	7	41	50.23	-.43	9.070		
8	7	1952	34.34	-1.78	8.300		
8	7	2012	39.37	-.53	8.820		
8	7	2027	42.54	-.90	8.180		
8	7	2122	47.08	-.03	8.070		
8	7	2151	52.59	1.19	8.320		
8	7	2216	52.59	-.90	6.950		
8	7	2234	55.14	-.60	6.150		
8	7	2253	53.75	.62	7.340		
8	7	2256				20.2S	162.6W
8	7	2316	51.88	-.03	8.070		
8	7	2347	51.88	.54	8.320		
8	8	230	28.90	-.03	5.310		
8	9	1857	47.30	-.01	8.490		
8	9	1920	42.91	-1.47	8.540		
8	9	1948	42.16	.71	8.390		
8	9	2011	42.06	-.66	7.520		
8	9	2033				30.1S	111.1W

TWERLE BALLOON 93155 RDPC

1972

MCNTH	DAY	TIME	SUN ANGLE	OVEN TEMP	CURRENT	LATITUDE	LONGITUDE
8	9	2042	39.99	.02	8.890		
8	9	2109	36.60	-2.58	8.390		
8	9	2140	34.94	.48	10.740		
8	9	2209	30.17	2.45	13.860		
8	10	1406	29.08	-1.59	6.220		
8	10	1422	31.72	-.55	9.680		
8	10	1514	39.33	-.99	8.170		
8	10	1546	39.33	-.18	7.420		
8	10	1613	43.97	-1.24	6.050		
8	10	1639	47.83	.52	7.250		
8	10	1708	49.62	-.13	7.720		
8	10	1725				26.0S	79.9W
8	10	1739	49.72	-.30	7.370		
8	10	1815	48.44	-.23	6.490		
8	10	1826	46.42	.91	9.460		
8	10	1846	44.92	-.03	10.130		
8	10	1913	41.72	-.01	8.000		
8	10	1944	37.35	.35	10.360		
8	10	2020	32.58	-1.06	9.110		
8	10	2042	31.35	-9.11	9.220		
8	11	1510	54.62	1.19	7.740		
8	11	1541	58.83	.34	6.820		
8	11	1618	60.19	-.22	5.770		
8	11	1624				15.2S	64.7W
8	11	1640	60.53	-.04	7.880		
8	11	1710	58.72	-1.41	5.240		
8	11	1817	49.07	.02	7.140		
8	11	1843	44.48	.15	12.970		
8	11	1915	40.20	3.53	14.870		
8	12	1157	31.33	-1.25	8.030		
8	12	1223	32.33	-1.66	8.370		
8	12	1246	38.46	-1.45	9.520		
8	12	1318	42.79	1.59	34.120		
8	12	1337	50.74	-5.86	.430		
8	12	1411	54.59	-4.21	1.850		
8	12	1522	60.10	2.41	8.970		
8	12	1537				15.8S	52.9W
8	12	1547	60.85	2.75	9.620		
8	12	1551	59.71	2.86	8.820		

TWERLE BALLOON 93155 ROPC

1972

MONTH	DAY	TIME	SUN ANGLE	OVEN TEMP	CURRENT	LATITUDE
8	12	1618	57.39	4.35	14.080	
8	12	1650	55.45	-4.10	34.880	
8	12	1741	46.63	-.63	6.880	
8	12	1810	45.89	-.35	7.240	
8	12	1833	38.01	1.14	11.180	

8	13	1004	49.11	-16.03	25.830	
8	13	1034	42.15	.05	6.380	
8	13	1105	54.99	-2.41	4.390	
8	13	1135	37.74	-.76	9.500	
8	13	1144	38.17	.30	9.300	
8	13	1201	34.95	-.16	7.660	
8	13	1207	42.06	.39	7.980	
8	13	1221	45.92	-.16	7.420	
8	13	1247	49.53	1.07	8.440	
8	13	1311	50.15	-.96	6.740	
8	13	1312	53.18	-.47	5.510	
8	13	1320	48.33	-1.54	8.310	
8	13	1333	57.70	-.53	6.350	
8	13	1338	58.99	1.61	8.880	
8	13	1425	63.82	3.70	12.020	
8	13	1439	63.76	.40	7.890	
8	13	1449				12.9S
8	13	1512	64.44	-1.38	7.070	41.1W
8	13	1514	39.10	.09	6.480	
8	13	1540	60.94	.13	6.190	
8	13	1602	29.50	-1.09	8.690	
8	13	1609	58.65	1.14	11.590	
8	13	1704	46.99	.54	8.820	
8	13	1709	53.30	.76	6.950	
8	13	1718	45.19	-.51	7.760	
8	13	1734	41.10	-.32	7.690	
8	13	1742	40.49	3.76	15.060	
8	13	1744	38.41	1.80	9.030	
8	13	1819	33.75	-1.22	10.290	
8	13	1849	29.35	.54	8.320	

8	14	1011	30.02	-8.17	.100	
8	14	1114	38.42	-1.30	7.660	
8	14	1119	38.36	-1.54	8.690	
8	14	1119	40.08	-6.43	11.660	
8	14	1133	48.70	-.46	7.280	
8	14	1139	42.13	-.79	9.580	
8	14	1157	45.48	.21	7.600	
8	14	1203	47.81	-.04	7.840	

TWERLE BALLOON 93155 RDPG

1972

MCNTH	DAY	TIME	SUN ANGLE	OVEN TEMP	CURRENT	LATITUDE	LONGITUDE
8	14	1205	46.85	-2.38	8.030		
8	14	1232	52.41	-.13	4.880		
8	14	1300	58.65	.21	7.130		
8	14	1315	58.65	.62	6.640		
8	14	1317	59.16	.51	8.710		
8	14	1334	62.72	.06	15.640		
8	14	1340	61.48	2.18	4.840		
8	14	1344	.82	.54	8.080		
8	14	1353	62.83	.70	10.110		
8	14	1407				16.4S	30.5W
8	14	1419	62.81	-.64	6.770		
8	14	1509	57.02	-.07	5.560		
8	14	1540	49.97	-.07	7.470		
8	14	1619	44.78	.86	8.320		
8	14	1717	46.48	-1.65	15.510		
8	14	1724	33.10	-.35	10.270		
8	14	1747	41.66	-1.46	14.990		
8	14	1806	26.40	-.68	7.580		
8	15	954	35.91	-.93	9.470		
8	15	1046	46.23	-.20	7.680		
8	15	1054	41.59	.21	8.080		
8	15	1112	46.08	-.25	7.890		
8	15	1139	51.13	-.07	8.440		
8	15	1144	51.85	-.71	9.920		
8	15	1213	54.02	-.11	8.080		
8	15	1220	55.80	.35	8.960		
8	15	1256				21.4S	12.9W
8	15	1259	55.72	.21	6.670		
8	15	1312	50.15	-.64	7.210		
8	15	1329	53.70	1.37	8.450		
8	15	1414	51.09	.54	7.130		
8	15	1454	45.77	.21	8.820		
8	15	1525	38.45	-.90	6.950		
8	15	1559	35.00	2.11	6.040		
8	15	1634	28.45	-1.51	4.160		
8	15	1704	22.90	-3.43	5.480		
8	16	818	29.69	-.07	5.870		
8	16	846	34.76	-.07	9.720		
8	16	944	44.25	-.11	10.380		
8	16	1016	49.74	-.93	6.870		
8	16	1038	42.15	-.32	7.450		
8	16	1044	54.51	.82	8.950		
8	16	1117	60.19	-1.06	7.840		

TWERLE BALLOON 93155 ROPC

1972

MONTH	DAY	TIME	SUN ANGLE	OVEN TEMP	CURRENT	LATITUDE	LONGITUDE
8	16	1149	61.91	-1.06	7.360		
8	16	1200				16.1S	1.1E
8	16	1220	61.41	-2.30	8.700		
8	16	1244	59.79	-.74	4.930		
8	16	1324	55.29	.21	8.320		
8	16	1359	48.64	.21	7.360		
8	16	1429	41.00	.21	8.570		
8	16	1530	32.25	.21	10.380		
8	16	1605	25.53	-.11	5.140		
8	17	659	39.02	-31.37	26.090		
8	17	734	28.62	-2.60	6.440		
8	17	814	33.94	.54	10.110		
8	17	845	39.18	.21	9.590		
8	17	918	45.53	.25	8.440		
8	17	950	51.00	.21	8.080		
8	17	1025	56.50	-.11	7.600		
8	17	1051	47.22	-2.58	8.950		
8	17	1103	60.67	.21	7.130		
8	17	1139				17.3S	8.6E
8	17	1136	61.88	.54	8.080		
8	17	1220	59.22	-.74	7.840		
8	17	1300	52.59	.54	6.670		
8	17	1327	48.33	.21	7.840		
8	17	1414	48.33	.21	7.360		
8	17	1445	33.06	.21	11.470		
8	17	1517	28.56	-2.60	8.570		
8	17	1602	29.50	-1.81	6.350		
8	18	615	38.73	-33.32	22.170		
8	18	656	31.26	.21	8.440		
8	18	733	35.30	.25	9.720		
8	18	817	41.81	-.32	8.440		
8	18	848	48.31	-.60	6.380		
8	18	930	53.68	-.32	6.280		
8	18	1006	57.52	.21	6.900		
8	18	1034				21.4S	22.6E
8	18	1124	54.42	.38	6.850		
8	18	1141	53.22	.25	5.650		
8	18	1214	47.29	-.32	7.690		
8	18	1248	43.15	.25	7.230		
8	18	1333	36.15	.54	9.590		

THERLE BALLOON 93155 ROPC 1972

MONTH	DAY	TIME	SUN ANGLE	OVEN TEMP	CURRENT	LATITUDE	LONGITUDE
8	19	549	27.84	-2.87	6.640		
8	19	619	32.80	-.57	9.480		
8	19	656	38.45	-.93	8.560		
8	19	726	41.89	2.52	9.850		
8	19	810	49.68	-.07	7.820		
8	19	837	49.68	.54	7.130		
8	19	906	52.41	.54	7.130		
8	19	916				25.7S	42.1E
8	19	937	53.34	.25	7.230		
8	19	1011	49.11	-.07	7.230		
8	19	1043	46.59	-.64	6.280		
8	19	1123	39.63	.86	9.850		
8	19	1201	34.95	.25	10.520		
8	19	1233	35.17	.21	10.110		
8	20	517	37.83	-.03	9.330		
8	20	607	43.01	-.07	9.850		
8	20	710	50.80	-3.20	9.070		
8	20	749	52.07	-.90	5.790		
8	20	751				26.7S	63.2E
8	20	826	51.36	1.19	8.440		
8	20	1004	39.24	.54	9.850		
8	20	1047	33.43	-1.19	9.210		
8	20	1133	26.21	-.93	5.930		
8	21	302	38.09	-.43	9.490		
8	21	327	39.97	-.50	8.690		
8	21	427	48.83	.54	8.820		
8	21	459	49.50	.54	7.600		
8	21	546	53.48	-.42	5.490		
8	21	551	53.02	.18	6.450		
8	21	553				25.9S	92.5E
8	21	556	53.48	.76	7.930		
8	21	601	53.02	.76	7.190		
8	21	605	52.23	.21	7.600		
8	21	606	53.25	.47	7.300		
8	21	611	53.25	.43	7.430		
8	21	616	53.25	.43	6.950		
8	21	621	52.56	.13	6.580		
8	21	626	52.56	.47	6.580		
8	21	631	52.09	.47	6.580		
8	21	636	50.92	.47	6.580		
8	21	641	49.97	.47	6.350		
8	21	641	50.21	.38	5.480		

TWERLE BALLCON 93155 ROPC 1972

MONTH	DAY	TIME	SUN ANGLE	OVEN TEMP	CURRENT	LATITUDE	LONGITUDE
8	21	646	49.26	.18	5.980		
8	21	651	49.74	.18	5.980		
8	21	656	49.07	-.11	6.900		
8	21	743	42.32	-.53	8.300		
8	21	758	40.97	-.07	8.950		
8	21	837	37.76	.54	9.200		
8	21	946	29.70	.54	6.220		
8	22	30	30.61	-1.48	4.660		
8	22	47	34.73	-4.62	9.360		
8	22	51	33.00	-.12	9.630		
8	22	104	35.86	-.65	8.280		
8	22	159	41.01	-.62	8.570		
8	22	245	46.33	-.12	12.220		
8	22	304	47.56	-.90	6.710		
8	22	336				30.8S	126.9E
8	22	416	46.82	-1.19	6.580		
8	22	417	46.82	-.20	7.550		
8	22	419	46.58	.09	7.680		
8	22	421	46.82	-.20	7.060		
8	22	427	46.58	-.20	7.060		
8	22	435	45.34	.18	6.450		
8	22	436	44.85	-4.54	2.290		
8	22	437	46.33	.13	6.580		
8	22	439	45.59	.18	6.450		
8	22	443	45.84	.18	6.690		
8	22	446	45.59	.47	7.550		
8	22	448	45.34	.13	7.060		
8	22	451	43.33	.13	7.800		
8	22	453	44.34	.76	7.930		
8	22	453	43.33	-.46	7.040		
8	22	455	44.09	.13	7.300		
8	22	457	44.09	.18	6.690		
8	22	502	43.08	.76	7.430		
8	22	504	42.31	.18	6.930		
8	22	506	42.57	.13	7.300		
8	22	508	42.05	.13	7.060		
8	22	510	42.05	.47	7.550		
8	22	518	41.53	1.49	7.800		
8	22	534	38.62	-4.20	2.880		
8	22	556	35.30	-.79	9.090		
8	22	558	36.42	-.46	8.820		
8	22	601	36.42	-.46	8.820		
8	22	606	35.30	-.79	8.560		
8	22	611	34.16	-.79	8.300		
8	22	616	34.73	-1.09	8.160		
8	22	621	33.00	-1.42	7.900		
8	22	626	32.11	-.79	8.560		

TWERLE BALLOON 93155 ROPC

1972

MONTH	DAY	TIME	SUN ANGLE	OVEN TEMP	CURRENT	LATITUDE	LONGITUDE
8	22	631	32.11	-1.09	6.900		
8	22	636	30.61	-1.12	6.320		
8	22	641	30.61	-1.16	5.980		
8	22	646	29.69	-1.19	5.440		
8	22	651	27.16	-1.16	5.090		
8	22	2149	33.29	-2.38	7.770		
8	22	2204	32.70	-2.69	6.630		
8	22	2240	36.42	-3.49	4.110		
8	22	2309	39.15	-.50	7.660		
8	22	2342	44.09	-1.06	6.280		
8	23	16	48.50	-3.20	.970		
8	23	27	48.74	-.76	5.720		
8	23	53	48.98	1.57	9.460		
8	23	106				29.9S	164.3E
8	23	122	48.98	-2.69	5.670		
8	23	158	46.81	-.50	7.420		
8	23	216	45.33	-1.09	6.180		
8	23	240	44.07	-.72	6.820		
8	23	304	42.29	-.12	9.090		
8	23	325	39.94	-2.38	7.770		
8	23	336	35.00	-2.03	7.380		
8	25	1919	57.50	1.62	8.820		
8	25	1940				22.0S	114.5W
8	25	2146	48.70	-4.19	1.400		
8	25	2204	46.52	-1.12	7.040		
8	25	2218	41.48	-2.81	1.400		
8	25	2242	41.74	-.12	6.550		
8	25	2258	38.03	-3.52	4.870		
8	25	2317	35.54	.95	9.770		
8	25	2333	31.77	-.53	13.690		
8	26	1929				18.2S	47.4W
8	26	1941	64.45	.47	6.350		
8	27	1945	66.90	-.90	5.130		

TWERLE BALLOON 93155 ROPC 1972

MONTH	DAY	TIME	SUN ANGLE	OVEN TEMP	CURRENT	LATITUDE	LCNGITUDE
8	28	1951	66.42	.54	5.780	9.7S	137.1E
8	28	2003					
8	28	2015	68.69	-.03	8.320		
8	29	1836	52.15	-3.35	7.510	8.3S	137.4W
8	29	1856	54.22	-2.06	5.810		
8	29	1914	58.53	-.46	9.630		
8	29	1930	61.22	-1.36	6.380		
8	29	1949	65.27	.76	8.690		
8	29	2003	67.07	-5.53	2.120		
8	29	2018	68.21	.26	4.500		
8	29	2034	71.41	-1.45	7.040		
8	29	2103	72.82	-5.82	8.950		
8	29	2111					
8	31	1825	49.57	-2.50	6.950		
8	31	1836	52.15	-5.23	6.420		
8	31	1859	58.98	1.05	13.720		
8	31	1922	62.34	-2.87	9.080		
8	31	1938	64.82	-1.75	4.820		
8	31	2015	69.11	-0.00	5.350		
8	31	2041	67.98	1.19	8.080		

FLIGHT INFORMATION FORM

FLIGHT NO. 94157B

Float Altitude 150 mb

Diagram of Flight Train

GHOST Frequency = 15.02 7 MHz

Sun Angle I.D. Code B

Calibration Data

30 DEG 37.0

50 DEG 28.9

60 DEG 24.2

2nd Package Frequency = 15.02 MHz

I.D. Code

Code Letter Sensor

B = Sun Angle

J = Package Temp.

Calibration Data

BALLOON DATA

Balloon ID# (Mfg*) R 72-23

Launch date JUL 7 1972

Launch site Ascension

Film Celanar (Clear)

Diameter Seam 3.577 m X Gore 3.5726 m

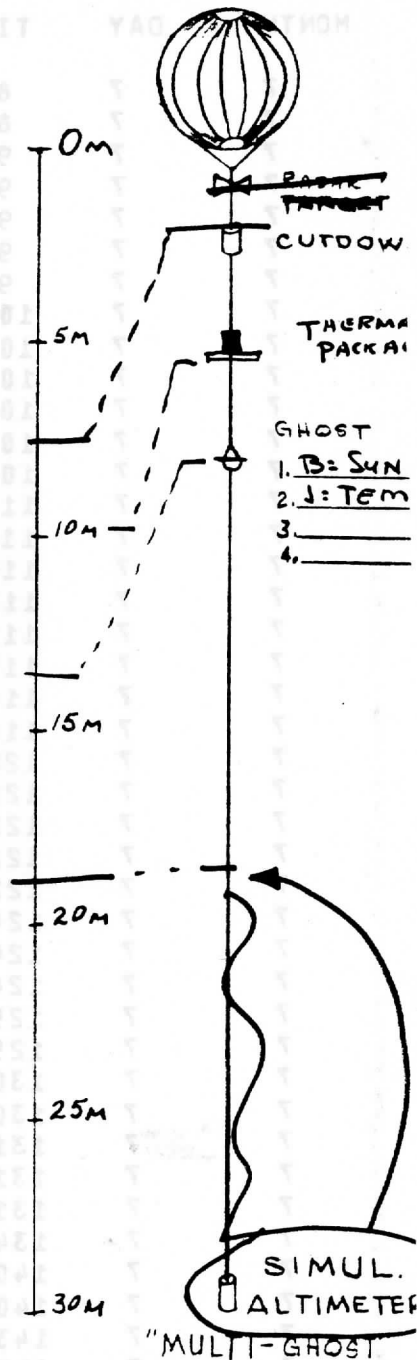
Volume 23.798 m³

Balloon Weight 3234

Payload Weight 1610

Duration

Last Known Position



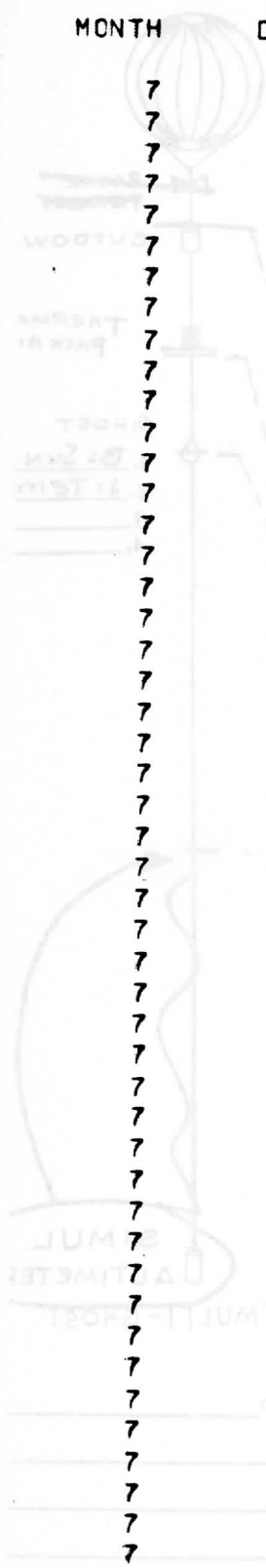
REMARKS

Surface conditions at launch _____

* R = Raven Industries, Inc.
 S = G. T. Schjeldahl Co.

FLIGHT INFORMATION FORM
 THERLE BALLOON 94157 B/J 1972

MONTH	DAY	TIME	SUN ANGLE	PKG TEMP	LATITUDE	LONGITUDE
7	7	842	20.72	19.03		
7	7	859	21.11	15.19		
7	7	902	26.43	13.73		
7	7	925	33.93	-1.35		
7	7	942	38.46	-16.93		
7	7	942	58.78	-12.70		
7	7	946	42.23	-18.27		
7	7	1000	59.20	-8.90		
7	7	1012	40.63	1.74		
7	7	1016	43.01	1.38		
7	7	1028	44.30	6.89		
7	7	1037	43.73	14.70		
7	7	1044	47.07	10.73		
7	7	1100	48.66	13.26		
7	7	1100	48.66	12.09		
7	7	1111	49.55	-6.18		
7	7	1122	48.94	12.55		
7	7	1127	52.09	12.32		
7	7	1139	53.94	10.29		
7	7	1145	50.22	12.55		
7	7	1145	50.22	12.09		
7	7	1202	56.11	10.73		
7	7	1208	68.06	10.51		
7	7	1221	55.60	12.55		
7	7	1221	55.60	11.41		
7	7	1222	57.45	10.96		
7	7	1241	63.42	12.32		
7	7	1245	65.25	11.41		
7	7	1247				
7	7	1251	58.29	11.86	10.3S	10.3W
7	7	1257	58.22	12.14		
7	7	1302	58.25	12.32		
7	7	1302	58.25	11.41		
7	7	1313	65.91	13.97		
7	7	1319	57.16	13.49		
7	7	1319	57.16	13.49		
7	7	1348	53.55	13.26		
7	7	1401	52.94	12.32		
7	7	1409	50.44	11.18		
7	7	1431	44.67	9.41		
7	7	1435	47.31	10.07		
7	7	1446	47.56	10.96		
7	7	1455	48.21	8.45		
7	7	1515	40.73	8.56		
7	7	1537	35.75	5.89		
7	7	1538	38.00	6.69		
7	7	1601	33.31	3.29		
7	7	1603	32.72	3.01		



TWERLE BALLOON 94157 B/J 1972

MONTH	DAY	TIME	SUN ANGLE	PKG TEMP	LATITUDE	LONGITUDE
7	8	646	20.59	-23.55		
7	8	709	24.42	-12.97		
7	8	732	27.03	-6.32		
7	8	807	32.23	2.46		
7	8	811	31.40	2.46		
7	8	822	34.65	4.91		
7	8	847	38.51	7.92		
7	8	852	39.95	7.92		
7	8	905	42.18	11.18		
7	8	913	44.27	10.55		
7	8	918	44.08	10.07		
7	8	926	44.69	10.96		
7	8	939	47.65	11.18		
7	8	957	49.55	11.18		
7	8	1001	51.20	12.55		
7	8	1012	53.04	13.49		
7	8	1031	55.49	13.02		
7	8	1042	56.19	12.32		
7	8	1042	56.55	13.26		
7	8	1100	58.43	13.49		
7	8	1109	58.83	13.02		
7	8	1113	59.37	13.49		
7	8	1124	58.62	12.79		
7	8	1132	60.10	13.49		
7	8	1135			9.9S	7.8E
7	8	1145	60.10	13.49		
7	8	1149	60.33	12.55		
7	8	1204	59.27	11.63		
7	8	1208	58.33	11.18		
7	8	1217	58.33	13.26		
7	8	1238	56.04	12.83		
7	8	1247	55.13	11.86		
7	8	1252	54.43	12.32		
7	8	1312	52.40	12.09		
7	8	1315	54.65	11.63		
7	8	1325	49.20	11.63		
7	8	1326	49.77	11.18		
7	8	1327	50.54	10.07		
7	8	1339	47.31	12.32		
7	8	1351	45.94	11.63		
7	8	1355	43.09	9.85		
7	8	1403	43.84	10.73		
7	8	1418	40.24	9.41		
7	8	1428	38.25	7.51		
7	8	1428	43.25	6.89		
7	8	1433	36.99	5.30		
7	8	1437	37.24	7.10		
7	8	1445	35.64	4.65		
7	8	1450	34.91	9.63		
7	8	1459	35.18	3.95		
7	8	1502	32.45	2.83		
7	8	1512	32.77	3.76		
7	8	1524	30.56	.51		
7	8	1529	26.67	-.52		

TWERLE BALLOON 94157 B/J 1972

MONTH	DAY	TIME	SUN ANGLE	PKG TEMP	LATITUDE	LONGITUDE
7	8	1538	29.42	-1.35		
7	8	1553	25.58	-4.38		
7	8	1602	23.42	-8.05		
7	8	1602	24.60	-7.77		
7	8	1610	32.20	-7.20		
7	8	1611	23.10	-7.77		
7	9	643	28.44	-7.63		
7	9	720	32.99	2.10		
7	9	731	35.17	3.57		
7	9	749	38.00	8.56		
7	9	759	39.87	8.56		
7	9	812	42.18	9.20		
7	9	835	46.85	11.41		
7	9	848	48.21	12.55		
7	9	848	48.99	12.32		
7	9	909	53.04	15.68		
7	9	921	55.39	15.68		
7	9	921	54.41	15.93		
7	9	935	57.28	15.19		
7	9	947	58.95	15.68		
7	9	952	59.53	15.68		
7	9	1010	61.96	16.69		
7	9	1022	63.10	14.45		
7	9	1033	64.45	14.70		
7	9	1036	65.30	14.87		
7	9	1046	64.55	13.73		
7	9	1054	64.76	12.79		
7	9	1055			4.2S	17.6E
7	9	1103	64.76	15.68		
7	9	1117	64.66	15.93		
7	9	1132	62.52	13.26		
7	9	1133	63.66	13.23		
7	9	1137	63.21	15.43		
7	9	1152	61.55	15.43		
7	9	1205	58.28	12.55		
7	9	1210	59.26	13.02		
7	9	1223	57.07	12.55		
7	9	1245	53.26	12.09		
7	9	1252	52.05	12.32		
7	9	1255	51.31	11.18		
7	9	1315	47.76	11.18		
7	9	1322	45.24	10.96		
7	9	1330	44.66	12.32		

TWERLE BALLOON 94157 B/J 1972

MONTH	DAY	TIME	SUN ANGLE	PKG TEMP	LATITUDE	LONGITUDE
7	9	1339	44.08	10.40		
7	9	1343	42.78	10.73		
7	9	1402	38.70	9.85		
7	9	1436	31.95	4.71		
7	9	1441	32.50	5.30		
7	10	547	24.97	-15.61		
7	10	625	29.42	-3.91		
7	10	652	34.12	-0.69		
7	10	717	37.75	3.76		
7	10	727	37.85	5.49		
7	10	739	41.41	7.12		
7	10	813	46.99	10.73		
7	10	857	52.95	11.63		
7	10	945	61.07	13.49		
7	10	1025	62.44	11.63		
7	10	1026			9.7S	25.0E
7	10	1100	60.49	12.09		
7	10	1114	61.44	1.74		
7	10	1134	58.11	12.79		
7	10	1146	55.47	14.70		
7	10	1154	55.81	14.45		
7	10	1222	50.21	13.38		
7	10	1222	49.41	11.41		
7	10	1227	48.93	12.55		
7	10	1240	47.53	13.02		
7	10	1311	40.29	10.29		
7	10	1319	39.00	12.09		
7	10	1341	35.49	8.56		
7	10	1355	34.65	5.89		
7	10	1414	29.65	3.20		
7	10	1418	29.71	3.38		
7	10	1438	26.85	-2.49		
7	10	1451	24.91	-6.59		
7	11	517	23.22	-16.40		
7	11	610	29.76	-4.68		
7	11	653	35.54	1.56		
7	11	727	42.80	6.89		
7	11	829	51.22	9.41		
7	11	922	56.56	16.94		
7	11	944			13.0S	35.4E
7	11	1007	56.77	14.21		
7	11	1100	52.95	11.86		
7	11	1142	47.53	12.09		

TWERLE BALLOON 94157 B/J 1972

MONTH	DAY	TIME	SUN ANGLE	PKG TEMP	LATITUDE	LCNGITUDE
7	11	1217	39.84	7.72		
7	11	1247	35.95	7.30		
7	11	1327	29.13	3.01		
7	11	1342	25.21	-1.19		
7	12	525	27.77	-6.18		
7	12	542	29.93	-6.03		
7	12	611	35.48	.51		
7	12	637	37.94	3.76		
7	12	708	43.46	9.85		
7	12	752	50.12	12.32		
7	12	832	55.46	12.09		
7	12	925			14.6S	40.3E
7	12	1209	39.49	11.63		
7	12	1230	35.74	5.89		
7	12	1247	32.77	4.14		
7	12	1317	28.78	-1.85		
7	13	544	29.13	-4.98		
7	13	632	36.05	6.89		
7	13	712	42.84	10.07		
7	13	742	47.61	12.09		
7	13	812	52.86	14.70		
7	13	842	55.75	15.68		
7	13	937	60.35	15.68		
7	13	944			10.0S	35.6E
7	13	1021	58.73	15.43		
7	13	1157	46.84	14.45		
7	13	1252	38.09	10.51		
7	13	1335	53.80	2.83		
7	14	537	24.10	-13.76		
7	14	556	26.60	-9.59		
7	14	628	31.72	-2.17		
7	14	700	37.58	.16		
7	14	741	42.55	8.77		
7	14	829	49.71	11.41		
7	14	901	54.48	11.18		
7	14	931	58.72	12.32		
7	14	940	57.76	11.63		
7	14	956	59.56	12.09		
7	14	1008			11.1S	29.6E

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MONTH	DAY	TIME	SUN ANGLE	PKG TEMP	LATITUDE	LONGITUDE
7	14	1012	58.81	12.32		
7	14	1016	60.39	12.79		
7	14	1109	54.73	12.32		
7	14	1152	49.62	12.79		
7	14	1158	48.64	11.41		
7	14	1306	38.09	6.69		
7	14	1342	30.10	1.21		
7	14	1430	26.06	-5.29		
7	15	539	25.81	-15.87		
7	15	617	27.13	-7.63		
7	15	644	33.19	-3.13		
7	15	716	35.00	1.38		
7	15	818	48.41	.68		
7	15	822	47.20	-.01		
7	15	858	50.19	5.89		
7	15	900	49.84	5.69		
7	15	938	52.15	7.92		
7	15	952	52.50	8.77		
7	15	957			17.4S	32.4E
7	15	1033	51.76	12.32		
7	15	1050	50.41	10.07		
7	15	1052	49.48	9.85		
7	15	1128	45.18	9.85		
7	15	1216	52.89	-9.59		
7	15	1256	33.62	1.74		
7	15	1329	28.43	-1.52		
7	16	454	25.39	-14.29		
7	16	519	28.60	-7.48		
7	16	642	36.61	5.30		
7	16	721	41.24	6.89		
7	16	758	43.35	6.29		
7	16	828			25.6S	54.6E
7	16	852	43.54	10.07		
7	16	956	39.92	8.77		
7	16	1041	34.52	6.49		
7	16	1121	29.23	-.33		
7	16	1142	26.77	-2.65		
7	16	1237	17.43	-16.93		
7	17	309	30.54	-10.96		

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MONTH	DAY	TIME	SUN ANGLE	PKG TEMP	LATITUDE	LONGITUDE
7	17	412	44.05	.33		
7	17	450	36.91	.33		
7	17	542	41.57	5.89		
7	17	619			26.3S	87.0E
7	17	642	43.91	7.92		
7	17	704	41.67	10.29		
7	17	728	41.19	7.72		
7	17	755	39.23	5.97		
7	17	846	35.20	4.33		
7	17	903	32.75	2.28		
7	17	933	27.13	1.74		
7	18	308	39.96	6.09		
7	18	333	39.34	5.89		
7	18	353			28.4S	123.2E
7	18	354	40.82	5.69		
7	18	420	40.45	2.64		
7	18	451	40.21	6.29		
7	18	500	38.72	8.34		
7	18	524	38.10	7.72		
7	18	546	34.06	7.10		
7	18	631	32.75	5.89		
7	18	2350	35.90	5.69		
7	19	2	33.82	5.89		
7	19	23	35.40	5.69		
7	19	47	36.44	5.10		
7	19	59	40.93	5.49		
7	19	119			32.4S	162.0E
7	19	238	33.82	7.92		
7	19	249	32.47	7.51		
7	19	306	32.47	5.30		
7	19	327	28.82	4.14		
7	19	1925	20.83	-15.87		
7	19	1946	21.48	-11.09		
7	19	2000	26.76	-7.77		
7	19	2024	29.68	-1.35		
7	19	2045	31.92	5.89		
7	19	2102	35.40	6.09		
7	19	2132	38.22	10.07		
7	19	2152	40.45	11.18		

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MONTH	DAY	TIME	SUN ANGLE	PKG TEMP	LATITUDE	LONGITUDE
7	19	2215	42.38	13.26		
7	19	2232	45.20	12.32		
7	19	2247	44.74	12.55		
7	19	2309	46.12	13.26		
7	19	2322			24.8S	168.8W
7	19	2334	45.20	9.85		
7	20	5	44.26	12.32		
7	20	15	43.09	14.21		
7	20	44	40.20	14.21		
7	20	126	37.20	14.21		
7	20	150	36.43	7.92		
7	20	237	29.96	3.57		
7	20	337	20.50	-8.90		
7	20	1850	40.44	-1.52		
7	20	1908	37.96	2.10		
7	20	1953	38.21	6.89		
7	20	2004	38.71	7.92		
7	20	2013	45.20	7.51		
7	20	2103	49.94	8.13		
7	20	2132	54.05	7.51		
7	20	2201			15.8S	148.4W
7	20	2228	57.07	8.09		
7	20	2252	56.55	8.77		
7	20	2321	47.48	8.98		
7	20	2355	42.85	8.56		
7	21	28	37.95	6.09		
7	21	1824	38.46	4.73		
7	21	1845	41.31	5.20		
7	21	1918	46.57	6.49		
7	21	1934	42.84	5.89		
7	21	1948	47.48	8.13		
7	21	1953	48.61	7.53		
7	21	2007	51.03	8.13		
7	21	2024	50.28	7.41		
7	21	2027	50.81	8.34		
7	21	2043			19.6S	129.0W
7	21	2046	50.37	8.13		
7	21	2050	49.76	9.41		
7	21	2056	50.37	8.13		
7	21	2121	48.53	9.96		
7	21	2125	47.48	9.63		
7	21	2145	46.25	10.07		
7	21	2148	47.02	10.96		

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MONTH	DAY	TIME	SUN ANGLE	PKG TEMP	LATITUDE	LONGITUDE
7	21	2213	46.57	10.29		
7	21	2216	41.67	9.74		
7	21	2238	45.19	10.96		
7	21	2242	39.15	10.18		
7	21	2357	27.35	-0.52		
7	22	2211	51.54	-15.72		
7	22	2236	24.12	-8.20		
7	23	1445	37.18	3.85		
7	23	1457	37.41	3.76		
7	23	1503	39.93	4.91		
7	23	1521	38.82	10.51		
7	23	1546	40.98	10.18		
7	23	1555	45.41	9.96		
7	23	1618	42.83	9.63		
7	23	1633	43.59	7.51		
7	23	1636	47.01	7.51		
7	23	1647			25.8S	70.1W
7	23	1657	43.58	5.59		
7	23	1705	43.78	6.59		
7	23	1706	42.50	5.89		
7	23	1706	42.50	6.69		
7	23	1740	41.67	6.45		
7	23	1755	38.07	6.59		
7	23	1806	43.81	4.67		
7	23	1812	40.42	5.69		
7	23	1836	37.09	5.30		
7	23	1845	37.44	4.52		
7	23	1912	34.84	-1.96		
7	23	1932	29.59	-6.97		
7	23	1936	40.42	-6.10		
7	23	1954	32.86	-7.05		
7	23	2003	28.31	-9.85		
7	23	2033	12.23	-13.10		
7	23	2042	22.01	-17.66		
7	23	2107	14.83	-19.60		
7	24	1044	47.07	14.21		
7	24	1135	26.26	-9.25		
7	24	1155	31.07	-2.97		
7	24	1213	32.89	-1.39		

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MONTH	DAY	TIME	SUN ANGLE	PKG TEMP	LATITUDE	LONGITUDE
7	24	1236	36.51	2.83		
7	24	1241	37.10	3.16		
7	24	1302	47.42	13.16		
7	24	1317	41.77	8.66		
7	24	1317	40.66	7.92		
7	24	1339	44.68	7.92		
7	24	1346	45.03	7.10		
7	24	1402	47.23	10.18		
7	24	1406	47.23	8.83		
7	24	1419	48.13	9.85		
7	24	1437	48.58	10.09		
7	24	1442	48.58	9.37		
7	24	1455	49.07	9.85		
7	24	1457			21.8S	42.9W
7	24	1506	49.10	10.73		
7	24	1514	64.21	10.29		
7	24	1527	47.86	10.07		
7	24	1539	47.70	10.73		
7	24	1549	47.11	13.85		
7	24	1558	46.27	12.09		
7	24	1609	44.45	11.75		
7	24	1612	46.77	12.21		
7	24	1635	43.06	9.96		
7	24	1637	40.96	9.05		
7	24	1658	42.11	5.39		
7	24	1709	37.84	4.91		
7	24	1742	32.44	.68		
7	25	944	27.98	-1.35		
7	25	1113	40.60	7.51		
7	25	1125	40.97	10.29		
7	25	1148	43.92	11.63		
7	25	1156	45.76	11.18		
7	25	1212	45.83	10.84		
7	25	1217	46.54	10.96		
7	25	1229	39.43	11.86		
7	25	1238	46.77	13.02		
7	25	1249	48.01	11.41		
7	25	1301			23.0S	13.5W
7	25	1302	47.40	11.86		
7	25	1313	47.42	12.39		
7	25	1320	46.49	12.09		
7	25	1336	48.15	12.44		
7	25	1342	46.03	11.86		
7	25	1343	47.16	13.64		
7	25	1409	43.81	10.29		
7	25	1432	41.04	9.41		
7	25	1457	42.46	11.98		

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MONTH	DAY	TIME	SUN ANGLE	PKG TEMP	LATITUDE	LONGITUDE
7	25	1514	35.53	-9.73		
7	25	1542	31.89	4.71		
7	25	1615	26.80	-1.19		
7	25	1637	25.66	-3.76		
7	25	1646	26.59	27.06		
7	26	831	32.38	1.74		
7	26	909	38.27	8.77		
7	26	939	42.47	10.07		
7	26	1025	47.75	12.32		
7	26	1102	49.45	15.93		
7	26	1117	50.46	16.18		
7	26	1122			21.1S	11.3E
7	26	1134	57.74	19.16		
7	26	1152	50.20	14.70		
7	26	1217	47.80	15.93		
7	26	1226	48.89	15.19		
7	26	1241	48.45	14.70		
7	26	1244	44.64	15.93		
7	26	1318	43.28	22.33		
7	26	1319	41.80	10.96		
7	26	1352	35.67	14.45		
7	26	1406	32.97	19.03		
7	26	1417	33.62	3.01		
7	26	1451	26.91	-0.52		
7	26	1535	20.55	-10.28		
7	27	702	32.48	-0.01		
7	27	742	40.25	4.14		
7	27	805	42.56	8.98		
7	27	836	47.34	11.18		
7	27	912	49.44	11.18		
7	27	939	50.01	12.32		
7	27	956			21.2S	32.7E
7	27	1023	49.75	12.32		
7	27	1105	67.73	11.63		
7	27	1157	39.81	10.73		
7	27	1233	32.81	9.41		
7	27	1309	29.30	3.76		
7	27	1329	24.17	1.92		
7	27	1403	20.41	-5.29		

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MONTH	DAY	TIME	SUN ANGLE	PKG TEMP	LATITUDE	LONGITUDE
7	28	438	24.23	-6.32		
7	28	505	29.24	.33		
7	28	532	31.93	3.01		
7	28	606	34.72	10.07		
7	28	650	37.96	11.86		
7	28	722	39.11	12.09		
7	28	758			30.6S	62.2E
7	28	800	39.99	11.18		
7	28	837	40.29	7.92		
7	28	942	36.07	6.69		
7	28	1018	30.43	4.91		
7	28	1120	22.85	-6.91		
7	29	205	27.10	-4.36		
7	29	334	38.25	9.54		
7	29	517			28.0S	102.4E
7	29	532	43.26	12.79		
7	29	605	42.55	12.32		
7	29	630	39.35	11.18		
7	29	715	35.03	7.72		
7	29	803	26.72	1.21		
7	29	2344	34.29	-8.34		
7	30	3	35.07	-3.91		
7	30	18	36.21	-1.85		
7	30	18	36.21	-1.85		
7	30	23	35.85	-1.52		
7	30	33	37.89	-.01		
7	30	33	37.89	-.01		
7	30	41	38.39	.68		
7	30	47	40.08	2.64		
7	30	47	40.08	2.64		
7	30	102	41.72	3.20		
7	30	102	41.72	3.20		
7	30	103	42.06	2.64		
7	30	117	43.29	4.14		
7	30	117	43.29	4.14		
7	30	126	42.06	5.10		
7	30	132	44.28	5.30		
7	30	132	44.28	5.30		
7	30	143	44.88	7.72		
7	30	147	45.81	6.89		
7	30	147	45.81	6.89		
7	30	200	46.04	5.69		
7	30	202	47.04	7.30		

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MONTH	DAY	TIME	SUN ANGLE	PKG TEMP	LATITUDE	LONGITUDE
7	30	202	47.04	7.30		
7	30	211	47.40	7.92		
7	30	216	39.36	8.05		
7	30	217	48.30	9.63		
7	30	217	48.30	9.63		
7	30	219	48.30	7.92		
7	30	228	48.30	10.07		
7	30	232	48.65	9.63		
7	30	232	48.65	9.63		
7	30	237			23.7S	142.4E
7	30	247	48.52	10.96		
7	30	247	48.52	10.96		
7	30	302	47.85	8.77		
7	30	302	47.85	8.77		
7	30	317	47.49	8.13		
7	30	317	47.49	8.13		
7	30	332	46.49	5.30		
7	30	332	46.49	5.30		
7	30	337	45.71	4.52		
7	30	347	45.99	2.83		
7	30	347	45.99	2.83		
7	30	402	45.67	2.28		
7	30	402	45.67	2.28		
7	30	417	43.20	1.21		
7	30	417	43.20	1.21		
7	30	432	41.00	2.10		
7	30	432	41.00	2.10		
7	30	447	37.89	.33		
7	30	503	37.54	-1.68		
7	30	518	35.13	-.52		
7	30	533	32.62	-2.33		
7	30	2309	38.14	4.14		
7	30	2329	40.61	3.95		
7	31	1	42.88	2.10		
7	31	25	51.04	1.92		
7	31	51	52.56	2.10		
7	31	111	53.95	2.28		
7	31	211			15.4S	149.0E
7	31	445	42.29	-6.03		
7	31	2138	32.40	-6.47		
7	31	2205	36.36	-5.73		
7	31	2221	39.13	2.10		
7	31	2237	40.72	4.33		

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MONTH	DAY	TIME	SUN ANGLE	PKG TEMP	LATITUDE	LONGITUDE
7	31	2253	44.76	3.95		
7	31	2316	46.82	3.20		
7	31	2332	47.16	4.52		
8	1	21	51.14	11.63		
8	1	32	52.44	7.30		
8	1	47	52.95	7.30		
8	1	50			21.1S	169.1E
8	1	58	51.25	10.73		
8	1	102	52.35	8.13		
8	1	117	52.87	9.63		
8	1	118	51.79	9.85		
8	1	132	50.66	8.34		
8	1	141	49.61	7.30		
8	1	147	48.77	6.09		
8	1	157	47.60	6.69		
8	1	202	47.24	5.49		
8	1	217	45.28	6.09		
8	1	221	44.98	4.33		
8	1	232	43.23	5.49		
8	1	247	41.80	1.74		
8	1	302	39.32	1.21		
8	1	317	38.13	.86		
8	1	332	34.59	.33		
8	1	347	33.26	-.01		
8	1	402	30.85	-.52		
8	1	417	29.44	-2.65		
8	1	432	27.00	-5.29		
8	1	447	24.89	-8.62		
8	1	1857	28.03	-7.05		
8	1	1915	29.89	-3.60		
8	1	1932	32.26	-1.35		
8	1	1948	34.40	2.28		
8	1	2009	37.62	6.09		
8	1	2030	42.40	8.34		
8	1	2105	44.86	8.98		
8	1	2125	46.70	10.07		
8	1	2147	47.38	12.32		
8	1	2200	48.94	11.86		
8	1	2226			24.3S	154.8W
8	1	2237	49.50	9.20		
8	1	2316	46.47	5.10		
8	2	100	*310.00	-1.85		
8	2	121	*460.00	-7.05		
8	2	151	*730.00	-11.36		
8	2	208	*990.00	-11.77		

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MONTH	DAY	TIME	SUN ANGLE	PKG TEMP	LATITUDE	LONGITUD.
8	3	2142	53.20	8.90		
8	3	2211			14.1S	124.6W
8	3	2212	48.43	9.48		
8	3	2240	45.99	8.13		
8	4	1619	30.97	-4.68		
8	4	1642	31.41	1.21		
8	4	1721	39.83	3.53		
8	4	1820	50.49	7.30		
8	4	1850	55.18	11.98		
8	4	1918	58.75	8.98		
8	4	1933	42.13	7.53		
8	4	2006			14.0S	119.9W
8	4	2148	50.64	7.92		
8	4	2208	50.32	6.69		
8	4	2237	43.90	6.99		
8	5	1650	38.34	1.92		
8	5	1721	45.78	7.82		
8	5	1753	49.12	10.29		
8	5	1814	53.28	8.56		
8	5	1843	57.87	9.20		
8	5	1915	63.04	9.85		
8	5	1959			10.0S	118.2W
8	6	37	37.89	-9.87		
8	6	2140	45.86	10.51		
8	6	2210	39.47	6.79		
8	6	2211			10.0S	108.4W
8	6	2242	34.93	5.10		
8	7	1813	62.44	14.33		
8	7	1855			9.8S	102.1W
8	7	2210	32.58	4.52		
8	7	2239	27.81	.73		

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MONTH	DAY	TIME	SUN ANGLE	PKG TEMP	LATITUDE	LONGITUDE
8	8	1348	26.92	-8.20		
8	8	1418	31.43	-1.68		
8	8	1448	34.76	.86		
8	8	1515	36.33	6.89		
8	8	1548	37.95	10.51		
8	8	1619	48.32	12.55		
8	8	1647	48.12	14.72		
8	8	1711	50.78	11.18		
8	8	1810	69.40	12.55		
8	8	1819			12.9S	93.2W
8	8	1839	68.98	10.96		
8	8	1908	64.03	11.41		
8	8	1943	59.89	9.85		
8	8	2010	52.85	12.32		
8	8	2039	46.88	10.40		
8	8	2110	39.61	6.49		
8	8	2136	35.20	4.91		
8	8	2206	30.37	.68		
8	8	2240	25.45	-4.07		
8	9	1310	25.86	-14.01		
8	9	1333	29.40	-6.69		
8	9	1410	34.40	-.18		
8	9	1443	39.58	3.38		
8	9	1526	48.81	7.92		
8	9	1627	60.03	11.13		
8	9	1737			15.6S	82.7W
8	9	2027	42.80	9.74		
8	9	2051	37.36	8.34		
8	9	2122	34.06	5.20		
8	9	2147	25.83	-.77		
8	9	2215	24.34	-5.50		
8	10	1527	53.94	8.77		
8	10	1559	60.20	8.87		
8	10	1626	62.84	10.73		
8	10	1653	65.35	9.74		
8	10	1710			8.9S	76.0W
8	10	1721	65.89	10.02		

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MONTH	DAY	TIME	SUN ANGLE	PKG TEMP	LATITUDE	LONGITUDE
8	16	1645	65.35	12.09	8.7S	117.1W
8	16	1705	65.89	15.81		
8	16	1800	50.28	14.33		
8	16	1823	55.87	13.85		
8	16	1953				
8	21	1609	60.20	14.21		

FLIGHT INFORMATION FORM

FLIGHT NO. ~~95152~~

Float Altitude 150 mb

95152 AC/4-SG

Diagram of Flight Train

GHOST Frequency = 15.02 2 MHz

Sun Angle I.D. Code AC

Calibration Data

70 DEG 19.3

50 DEG 28.6

30 DEG 34.4

2nd Package Frequency = 15.02 4 MHz

I.D. Code SG

Code Letter Sensor
 Radio Altimeter, Air Temp;
 Pressure; Press. Sensor Temp.

Calibration Data

BALLOON DATA

Balloon ID# (Mfg*) R 72-8

Launch date 10 July 1972

Launch site Ascension

Film Celanar (Capped)

Diameter Seam 3.5546 m X Gore 3.5535 m

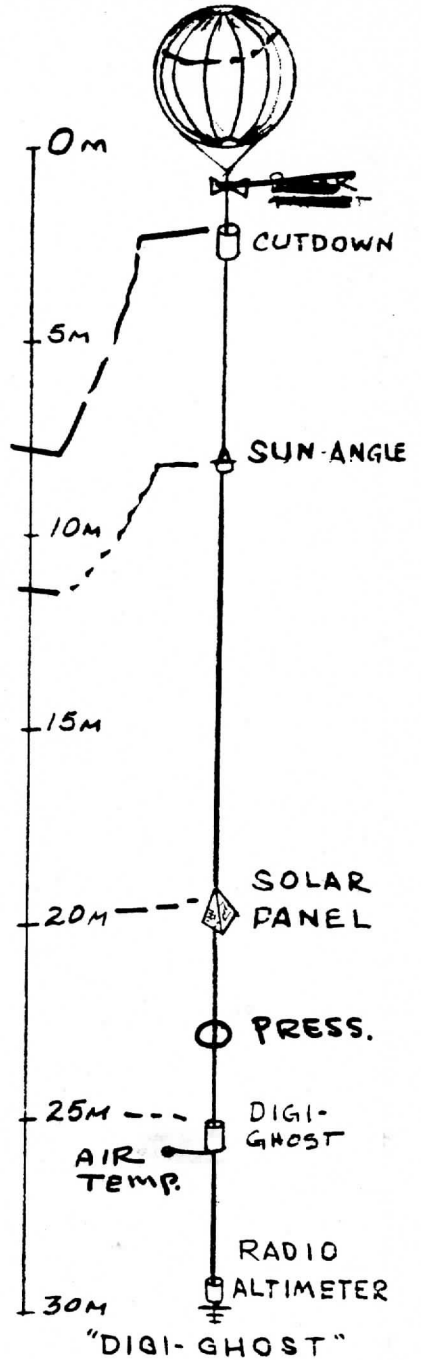
Volume 23.386 m³

Balloon Weight 3380 g

Payload Weight 1427 g

Duration

Last Known Position



REMARKS

Surface conditions at launch

* R = Raven Industries, Inc.
 S = G. T. Schjeldahl Co.



TWERLE BALLOON 95152/4 AC/SG 1972

ID	DATE	TIME	---DIGI CCODE---			-DEC DIGI NUM--			---ALTITUDE---		AIR T (C)	PTEMP (C)	PID	PRES			32	33				
			ALT AT	P	PT	ALT AT	F	PT	(18)	(19)				28	29	30			31			
SG	8	13	656	KGR	SOM	ROD	MKO	157	392	122	494	15150	14354	0.00	-29.48	141.3	152.3	138.0	127.3	120.2	116.7	116.9
SG	8	13	718	KOK	GDM	SSS	RSO	381	395	0	450	14791	14032	0.00	-21.05	141.3	148.2	134.7	124.9	118.7	116.2	117.4
SG	8	13	721	KGO	SRM	G00	K0M	477	400	507	445	14643	13898	0.00	-20.55	141.3	165.1	148.0	134.6	124.8	118.7	116.2
SG	8	13	750	SWR	MSM	SR0	USM	176	390	464	388	15119	14327	0.00	-15.07	141.3	163.2	146.3	133.2	123.7	118.0	115.9
SG	8	13	812	RGS	DRM	SSS	SHK	26	401	0	368	15367	14550	0.00	-13.16	141.3	147.6	134.1	124.3	118.2	115.9	117.2
SG	8	13	815	USS	SSS	RDM	KKK	4	0	394	365	15404	14583	0.00	-12.88	141.3	160.5	144.1	131.5	122.5	117.3	115.8
SG	8	13	854	KUO	RUM	DRU	SOU	485	418	273	312	14631	13887	0.00	-7.80	141.3	156.0	140.4	128.6	120.6	116.4	115.9
SG	8	13	1001	DOU	SKM	DDG	GRU	313	424	201	275	14898	14128	0.00	-4.17	141.3	153.3	138.2	127.0	119.5	115.9	116.0
SG	8	13	1021	SKU	OUM	ROG	SRU	296	423	250	272	14925	14153	0.00	-3.87	141.3	154.9	139.5	127.9	120.1	116.0	115.8
SG	8	13	1047	KRO	GUM	DKG	MGU	469	419	233	286	14655	13909	0.00	-5.26	141.3	154.5	139.2	127.7	120.0	116.0	115.9
SG	8	13	1149	OOM	SUM	DSU	GGU	447	416	257	283	14689	13940	0.00	-4.96	141.3	155.2	139.8	128.1	120.2	116.1	115.8
SG	8	13	1503	OSO	SKM	DDG	MOK	455	424	249	382	14677	13928	0.00	-1.49	141.3	155.6	140.3	128.7	120.8	116.6	116.2
SG	8	14	1059	MHK	DSK	SKS	OGU	374	321	40	287	14802	14042	0.00	-5.36	141.3	148.2	134.4	124.3	118.0	115.6	116.9
SG	8	15	1116	OUM	ORM	GSM	MDM	423	407	259	398	14726	13973	0.00	-16.02	141.3	156.1	140.7	129.0	121.0	116.8	116.2
SG	8	15	1124	SKM	KRM	SSU	DRM	424	405	256	401	14724	13972	0.00	-16.31	141.3	156.0	140.6	129.0	121.0	116.8	116.2
SG	8	16	1424	R50	DGM	DOU	ODS	450	409	313	15	14684	13935	0.00	29.49	141.3	154.9	138.6	128.4	118.4	114.4	114.5
SG	8	17	1124	OAM	KGM	MUG	UOK	439	413	230	380	14701	13951	0.00	-1.43	141.3	155.0	139.8	128.3	120.6	116.5	116.2
SG	8	17	1216	KUO	SGM	SSS	GMU	485	408	0	307	14631	13887	0.00	-7.31	141.3	147.2	133.6	123.8	117.8	115.6	117.2
SG	8	17	1223	R3M	ODM	USG	DMU	386	399	196	305	14784	14025	0.00	-7.12	141.3	153.3	138.4	127.1	119.7	116.0	116.1
SG	8	17	1234	ROK	KRM	ORU	UUU	378	405	191	292	14796	14036	0.00	-5.85	141.3	153.1	138.1	126.9	119.5	115.9	116.1
SG	8	17	1238	KRM	GRM	GWR	RUU	405	403	179	290	14754	13998	0.00	-5.65	141.3	152.7	137.8	126.7	119.4	115.9	116.1
SG	8	17	1242	MKK	DGM	D0G	MGU	342	409	249	286	14853	14087	0.00	-5.26	141.3	155.0	139.6	128.0	120.1	116.1	115.9
SG	8	22	937	MRM	URM	RSK	U00	406	404	322	460	14752	13997	0.00	-22.03	141.3	158.6	142.9	130.7	122.3	117.4	116.3
SG	8	22	1415	OKM	RRM	ODU	GWM	431	402	271	435	14714	13962	0.00	-19.58	141.3	156.7	141.3	129.5	121.4	117.0	116.3

TWERLE BALLOON 95152/4 AC/SG 1972

ID	DATE	TIME	---DIGI CODE---			-DEC DIGI NUM--			---ALTITUDE---			AIR T	PTEMP	PID	PRES	30	31	32	33	
			ALT	AT	P	PT	ALT	AT	P	PT	(C)	(C)		28	29					
SG	7	20	2234	GDS	HMK	SSM	SDH	11	374	384	392	15393	14573	141.3	160.3	144.1	131.5	122.6	117.4	116.0
SG	7	20	2237	DDS	HMK	SOK	OSM	9	374	376	391	15396	14576	141.3	160.1	143.8	131.3	122.5	117.4	116.0
SG	7	20	2241	000	UOK	SSM	KSM	505	380	384	389	14600	13859	141.3	160.3	144.0	131.5	122.6	117.4	115.9
SG	7	20	2245	000	UOK	USM	RSM	508	380	388	386	14596	13855	141.3	160.4	144.1	131.5	122.6	117.4	115.9
SG	7	20	2248	DSS	SOK	USM	KOK	1	376	388	383	15409	14568	141.3	160.4	144.1	131.5	122.6	117.4	115.9
SG	7	20	2252	GDS	SSS	WMK	KOK	11	0	398	381	15393	14573	141.3	160.8	144.4	131.7	122.7	117.5	115.9
SG	7	20	2256	UDS	SSS	SSS	KOK	12	0	0	381	15391	14571	141.3	157.3	140.5	127.7	119.1	114.5	114.1
SG	7	20	2300	GRS	SOK	GSM	SSS	19	376	387	0	15379	14561	141.3	160.5	144.2	131.5	122.6	117.4	115.9
SG	7	20	2303	SSS	ROK	WSM	OKK	0	378	390	383	15411	14589	141.3	160.9	144.5	131.8	122.8	117.5	115.9
SG	7	20	2307	KDS	ROK	SRM	DSM	13	378	400	385	15389	14570	141.3	161.4	144.9	132.1	123.0	117.6	115.9
SG	7	20	2314	OSS	SSS	HGM	SSM	1	0	414	384	15409	14588	141.3	157.3	140.4	127.7	119.0	114.5	114.1
SG	7	20	2318	MSS	OMK	ASM	SSS	6	375	386	0	15401	14580	141.3	144.2	130.4	120.8	115.3	113.8	116.6
SG	7	20	2325	SOS	OMK	SSS	SSS	8	375	0	0	15398	14577	141.3	147.4	133.9	124.1	119.1	115.8	117.2
SG	7	20	2359	UKR	ROU	SSS	ORK	172	314	0	343	15125	14332	141.3	161.1	144.6	131.8	122.7	117.4	115.8
SG	7	21	145	KSS	SMK	KGW	OKG	5	368	413	351	15403	14582	141.3	159.1	143.0	130.6	121.9	117.0	115.8
SG	7	21	149	MSS	GMK	UUK	DUK	6	371	356	353	15401	14580	141.3	161.3	144.7	131.9	122.8	117.4	115.8
SG	7	21	153	RSS	RMK	DUK	GUK	2	370	417	355	15408	14586	141.3	161.4	144.8	132.0	122.8	117.5	115.8
SG	7	21	156	000	DMK	HUM	GUK	511	375	419	357	14591	13851	141.3	161.4	144.8	132.0	122.8	117.5	115.8
SG	7	21	200	000	DMK	HUM	GUK	505	369	422	355	14600	13859	141.3	160.0	143.7	131.1	122.3	117.2	115.8
SG	7	21	204	KSS	SMK	KKM	SUK	37	368	429	352	15349	14533	141.3	161.7	145.1	132.1	122.9	117.5	115.8
SG	7	21	208	KSS	SMK	KKM	SUK	37	368	429	352	15367	14550	141.3	161.5	144.9	132.0	122.8	117.4	115.8
SG	7	21	212	RGS	KKK	UJM	MGK	26	365	423	350	15389	14570	141.3	161.1	144.6	131.8	122.7	117.4	115.8
SG	7	21	216	KRS	OMK	UJM	MGK	18	367	413	350	15389	14570	141.3	161.1	144.6	131.8	122.7	117.4	115.8
SG	7	21	219	RDS	OMK	UJM	DUK	18	369	417	353	15381	14562	141.3	161.3	144.7	131.9	122.8	117.4	115.8
SG	7	21	223	UDS	GMK	GGM	KUK	12	371	411	357	15391	14571	141.3	161.1	144.6	131.8	122.7	117.4	115.8
SG	7	21	227	DDS	OMK	OGM	UUK	9	369	415	356	15396	14576	141.3	161.2	144.7	131.9	122.8	117.4	115.8
SG	7	21	230	DDS	SOK	KUM	UUK	9	376	421	356	15396	14576	141.3	161.4	144.9	132.0	122.9	117.5	115.8
SG	7	21	234	UDS	KKK	KGW	KUK	4	365	413	357	15404	14583	141.3	161.2	144.6	131.8	122.8	117.4	115.8
SG	7	21	238	MSS	MMK	OGM	UUK	6	373	415	356	15401	14580	141.3	161.2	144.7	131.9	122.8	117.4	115.8
SG	7	21	241	SRS	MMK	OGM	UUK	16	374	419	356	15384	14565	141.3	161.4	144.8	131.9	122.8	117.4	115.8
SG	7	21	244	GRS	SOK	DKM	WUK	19	376	425	358	15379	14561	141.3	161.6	145.0	132.1	122.9	117.5	115.8
SG	7	21	306	SRS	UOK	UJM	WUK	16	377	441	372	15384	14561	141.3	162.3	145.5	132.5	123.5	117.7	115.9
SG	7	21	310	DRS	MMK	WSO	OMK	17	374	454	375	15382	14564	141.3	162.8	145.9	132.5	123.5	117.8	115.9
SG	7	21	314	ODS	MMK	SDO	GOK	15	374	456	379	15386	14567	141.3	162.9	146.0	132.9	123.5	117.9	115.9
SG	7	21	318	SGS	OMK	USO	OKK	24	375	452	383	15371	14553	141.3	162.7	145.8	132.9	123.5	117.9	115.9
SG	7	21	321	DRS	MMK	DDO	DSM	17	374	457	385	15382	14564	141.3	162.9	146.1	133.0	123.6	117.9	115.9
SG	7	21	325	RRS	UMK	KDO	MSM	18	372	461	390	15381	14562	141.3	163.1	146.3	133.1	123.7	118.0	115.9
SG	7	21	329	URS	OMK	SRD	DDM	20	375	464	393	15377	14559	141.3	163.2	146.4	133.2	123.8	118.0	115.9
SG	7	21	332	KRS	RMK	ORM	DDM	21	370	407	399	15376	14558	141.3	161.2	144.8	132.0	123.0	117.6	116.0
SG	7	21	336	US	RMK	HUO	KRM	32	370	486	405	15357	14541	141.3	164.1	147.1	133.8	124.2	118.2	116.0
SG	7	21	340	MGS	UMK	KWC	UGM	30	369	501	412	15361	14544	141.3	164.7	147.6	134.2	124.5	118.4	116.0
SG	7	21	344	KDS	MMK	KWO	GUW	13	374	501	419	15389	14570	141.3	164.7	147.6	134.2	124.5	118.4	116.0
SG	7	21	347	KDS	MMK	DSS	GKM	13	373	1	427	15389	14570	141.3	164.7	147.6	134.2	124.5	118.4	116.0
SG	7	21	351	GOD	UMK	ODS	DKM	123	369	15	425	15206	14405	141.3	148.5	134.5	125.0	118.7	116.1	117.2
SG	7	21	1919	GMW	SSS	MDK	RDW	435	0	334	394	14707	13956	141.3	158.6	142.7	130.5	121.9	117.1	116.0
SG	7	21	1922	SRO	UDM	OSK	GDW	464	398	327	395	14663	13916	141.3	158.4	142.5	130.3	121.9	117.1	116.0
SG	7	21	1927	SSS	UDM	OSK	GDW	0	333	340	394	15411	14589	141.3	158.8	142.8	130.6	122.0	117.2	116.0
SG	7	21	1930	SRM	UDM	KRK	CSW	400	333	341	391	14762	14005	141.3	158.8	142.5	130.6	122.0	117.2	116.0

TWERLE BALLCON 95152/4 AC/SG 1972

ID	DATE	TIME	---DIGI CODE---	ALT AT	P	PT	---ALTITUDE---	AIR T	PIEMP	PID	PRES	30	31	32	33
			ALT AT	F	PT	(18)	(19)	(C)	(G)		28	29			
SG	7	21	1934 000	DDM	DKG	USM	14674	13926	0.00	141.3	158.9	142.9	130.6	122.0	117.2
SG	7	21	1956 000	GRM	SKK	SMH	14700	13949	0.00	141.3	159.7	143.7	131.3	122.6	117.5
SG	7	21	1959 000	WDM	DUK	SSS	14602	13861	0.00	141.3	156.1	139.5	127.0	118.6	114.4
SG	7	21	2003 000	WDM	DUK	RUW	14687	13938	0.00	141.3	159.4	143.4	131.0	122.0	117.4
SG	7	27	1414 000	SUM	WMD	SUO	14768	14011	0.00	141.3	152.0	137.7	127.1	120.0	116.6
SG	7	27	1444 000	SRM	KWU	COK	14749	13994	0.00	141.3	157.4	141.7	129.7	121.4	116.9
SG	7	27	1605 000	WSM	SUH	SSU	14777	14019	0.00	141.3	155.3	135.8	128.1	120.3	116.2
SG	7	27	1539 000	GRM	DMG	OKU	14895	14125	0.00	141.3	154.8	139.5	127.9	120.2	115.9
SG	7	28	1456 000	SKM	OUW	WOG	14824	14062	0.00	141.3	152.6	136.8	125.1	117.5	114.0
SG	7	28	1414 000	SUM	WMD	SUO	14768	14011	0.00	141.3	152.0	137.7	127.1	120.0	116.6
SG	7	28	1444 000	SRM	KWU	COK	14749	13994	0.00	141.3	157.4	141.7	129.7	121.4	116.9
SG	7	28	1456 000	SKM	OUW	WOG	14824	14062	0.00	141.3	152.6	136.8	125.1	117.5	114.0
SG	7	28	1513 000	SOK	RKM	GGG	14799	14039	0.00	141.3	154.4	139.2	127.8	120.2	116.3
SG	7	28	1543 000	DKM	GUM	DUG	14798	14038	0.00	141.3	154.5	139.5	127.9	120.2	115.9
SG	7	28	1544 000	SRM	KWU	COK	14777	14019	0.00	141.3	154.3	139.1	127.7	120.0	116.0
SG	7	28	1545 000	KDM	WDM	ODM	14777	14019	0.00	141.3	154.3	139.1	127.7	120.0	116.0
SG	7	31	1545 000	KDM	WDM	ODM	14777	14019	0.00	141.3	154.3	139.1	127.7	120.0	116.0
SG	7	31	1604 000	DSR	WDM	JRU	14597	13857	0.00	141.3	156.4	141.0	129.2	121.2	116.8
SG	7	31	1633 000	DWD	URM	KUU	15222	14420	0.00	141.3	157.3	141.7	129.8	121.5	117.0
SG	7	31	1736 000	WMD	DKU	OKU	15214	14412	0.00	141.3	157.4	141.7	129.8	121.5	117.0
SG	8	3	1206 000	ODM	WKM	RKO	14638	13894	0.00	141.3	160.6	144.5	132.0	123.2	117.9
SG	8	3	1208 000	GSM	SGK	GKO	14646	13901	0.00	141.3	159.6	143.7	131.4	122.8	117.8
SG	8	5	1354 000	URK	UUM	SDG	14856	14090	0.00	141.3	153.6	138.6	127.4	119.9	116.1
SG	8	5	1402 000	KKM	KUM	GOR	14791	14032	0.00	141.3	153.1	138.2	127.0	119.7	116.2
SG	8	5	1420 000	KSM	UUM	ODG	14779	14021	0.00	141.3	150.9	135.5	124.2	117.0	113.9
SG	8	5	1433 000	RKM	GUM	OSG	14821	14059	0.00	141.3	153.4	138.4	127.2	119.7	116.0
SG	8	5	1437 000	GDM	SUM	KRG	14769	14012	0.00	141.3	153.8	138.7	127.4	119.8	116.0
SG	8	5	1633 000	DGM	UDU	GGK	14763	14007	0.00	141.3	156.0	140.5	128.8	120.8	116.5
SG	8	5	1715 000	SSS	SGM	GMU	15411	14589	0.00	141.3	156.0	140.5	128.8	120.8	116.5
SG	8	5	1718 000	KUM	SGM	DMU	14729	13976	0.00	141.3	157.2	141.5	129.4	121.2	116.7
SG	8	5	1721 000	WGM	DGM	RUU	14740	13986	0.00	141.3	157.3	141.5	129.5	121.2	116.6
SG	8	5	1725 000	KWM	DGM	KKU	14704	13954	0.00	141.3	156.7	141.1	129.1	121.0	116.6
SG	8	5	1621 000	SGM	OGM	KMG	14737	13983	0.00	141.3	155.3	140.0	128.4	120.6	116.5
SG	8	6	1644 000	UUM	OGM	UGG	14726	13973	0.00	141.3	155.8	140.4	128.0	120.9	116.7
SG	8	6	1704 000	WKM	WGM	RGU	14715	13963	0.00	141.3	156.8	141.3	129.4	121.3	116.8
SG	8	8	1258 000	OKM	OSM	ODU	14714	13962	0.00	141.3	156.7	141.2	129.5	121.4	117.0
SG	8	8	1716 000	GKM	ROM	HUK	14720	13967	0.00	141.3	159.8	143.8	131.4	122.7	117.6
SG	8	9	1244 000	USM	SRM	GSM	14780	14022	0.00	141.3	160.3	143.9	131.3	122.4	117.3
SG	8	9	1506 000	SSS	DGM	UOG	15411	14589	0.00	141.3	155.5	140.1	128.5	120.6	116.5
SG	8	9	1509 000	DGM	GGM	GSU	14748	13993	0.00	141.3	155.7	140.3	128.6	120.7	116.5
SG	8	9	1518 000	UKM	SGM	UDU	14718	13966	0.00	141.3	156.0	140.5	128.8	120.8	116.5
SG	8	10	1245 000	SSS	WDM	WKU	15411	14589	0.00	141.3	157.6	141.9	129.9	121.6	117.9
SG	8	10	1318 000	SSS	OSM	ODM	15411	14589	0.00	141.3	162.5	145.8	132.8	123.5	117.9
SG	8	10	1355 000	SGM	WOK	KGK	14650	14589	0.00	141.3	159.3	143.2	130.9	122.3	117.3
SG	8	10	1359 000	SOD	SSS	ODK	15211	14409	0.00	141.3	158.6	142.7	130.5	122.0	117.6
SG	8	10	1500 000	RSD	RKM	GUM	15300	14490	0.00	141.3	160.8	144.5	131.8	122.9	117.6
SG	8	13	653 000	MOD	DRM	RUD	15201	14400	0.00	141.3	149.8	135.5	125.0	118.3	115.5

TWERLE BALLOON 95152/4 AC/SG 1972

ID	DATE	TIME	---DIGI CODE---			-DEC DIGI NUM--			---ALTITUDE---		AIR T (C)	PIEMP (C)	PID	PRES			32	33				
			ALT	AT	P	PT	PT	PT	(18)	(19)				28	29	30			31			
SG	7	19	418	MDM	GUG	KKR	GGK	398	227	173	347	14765	14008	0.00	-11.16	141.3	152.9	138.1	127.0	119.7	116.1	116.3
SG	7	19	422	URM	SUG	KWR	UGK	404	224	181	348	14756	14000	0.00	-11.26	141.3	153.1	138.3	127.2	119.8	116.2	116.3
SG	7	19	426	OSW	DUG	UOR	MKG	391	225	188	350	14776	14018	0.00	-11.45	141.3	153.4	138.5	127.3	119.9	116.2	116.3
SG	7	19	430	DDM	DUG	MWR	MKG	393	224	182	350	14773	14015	0.00	-11.45	141.3	153.2	138.3	127.2	119.8	116.2	116.3
SG	7	19	1917	UGU	UGU	DUK	KUS	252	284	353	37	14996	14216	0.00	25.51	141.3	156.6	140.0	127.6	119.1	114.8	114.5
SG	7	19	1920	OSU	WRU	URK	MUS	263	278	340	38	14978	14200	0.00	25.34	141.3	156.1	139.7	127.3	119.0	114.7	114.6
SG	7	19	1924	OKG	RGU	KHU	OUS	239	282	309	39	14235	14235	0.00	25.17	141.3	155.0	138.8	126.7	118.6	114.6	114.7
SG	7	19	1928	SSS	ORU	RUU	SKS	0	279	290	40	15411	14589	0.00	25.00	141.3	154.3	138.3	126.3	118.4	114.6	114.8
SG	7	19	1931	KKG	URU	USU	SKS	237	276	260	40	15020	14238	0.00	25.00	141.3	153.3	137.5	125.8	118.1	114.5	114.9
SG	7	19	1935	GUG	RUU	OKG	RUS	227	290	239	34	15036	14252	0.00	26.03	141.3	152.5	136.9	125.3	117.8	114.3	115.0
SG	7	19	1938	SKG	SUU	UDG	GGG	232	288	204	27	15028	14245	0.00	27.27	141.3	151.2	135.8	124.5	117.3	114.2	115.1
SG	7	19	1942	DUG	UGU	DHR	RDS	225	287	193	18	15039	14255	0.00	28.92	141.3	150.7	135.4	124.2	117.1	114.1	115.2
SG	7	19	1946	OSG	UUU	DHR	RDS	199	292	177	10	15081	14293	0.00	30.46	141.3	150.1	134.9	123.8	116.8	114.0	115.2
SG	7	19	1949	URG	SKU	DKR	GSS	212	296	169	3	15060	14274	0.00	31.85	141.3	149.7	134.6	123.6	116.7	113.9	115.2
SG	7	19	1953	DUG	WUU	KRR	G00	225	294	149	507	15039	14255	0.00	-26.84	141.3	153.2	138.7	127.8	120.6	116.8	116.8
SG	7	19	1957	SRG	OKU	GDR	RMO	208	297	139	498	15067	14280	0.00	-25.90	141.3	152.8	138.4	127.6	120.4	116.8	116.8
SG	7	19	2000	DUG	KKU	ROD	RKO	225	301	122	490	15039	14255	0.00	-25.07	141.3	152.2	137.9	127.2	120.2	116.7	116.8
SG	7	19	2004	UGG	MKU	OWD	GUO	220	302	119	483	15047	14262	0.00	-24.35	141.3	152.1	137.8	127.1	120.1	116.6	116.8
SG	7	19	2008	WRG	MKU	RKD	KGO	206	302	106	477	15070	14283	0.00	-23.74	141.3	151.6	137.4	126.8	119.9	116.6	116.9
SG	7	19	2012	MGG	UKU	MUD	ORO	214	300	102	471	15057	14271	0.00	-23.13	141.3	151.5	137.3	126.7	119.8	116.5	116.9
SG	7	19	2015	OGG	KUU	UUD	RR0	223	293	100	466	15042	14258	0.00	-22.63	141.3	151.4	137.2	126.7	119.8	116.5	116.9
SG	7	19	2019	MOR	RKU	KRD	K00	190	298	85	461	15096	14306	0.00	-22.13	141.3	150.9	136.8	126.4	119.6	116.4	116.9
SG	7	19	2049	KRG	GKU	RKS	URM	213	299	42	404	15058	14272	0.00	-16.59	141.3	149.1	135.3	125.2	118.8	116.1	117.1
SG	7	19	2128	SSG	UMU	D00	SSK	192	308	505	320	15093	14303	0.00	-8.57	141.3	164.3	147.0	133.6	123.8	117.9	115.7
SG	7	19	2158	ODG	KMU	R00	DOU	201	309	506	313	15078	14290	0.00	-7.90	141.3	164.3	147.0	133.5	123.7	117.8	115.6
SG	7	19	2221	KUR	SOU	R00	DKK	165	312	490	328	15137	14343	0.00	-9.34	141.3	163.8	146.7	133.3	123.7	117.8	115.6
SG	7	19	2225	WUR	ROU	OKO	RDK	182	314	495	330	15109	14318	0.00	-9.53	141.3	164.0	146.8	133.4	123.8	117.9	115.7
SG	7	19	2228	WUR	SOU	OKO	UDK	178	312	495	332	15115	14324	0.00	-9.73	141.3	164.0	146.8	133.4	123.8	117.8	115.6
SG	7	19	2235	WUR	RMU	OSS	GDK	180	306	7	331	15112	14321	0.00	-9.63	141.3	147.6	134.0	124.1	118.1	115.7	117.1
SG	7	19	2243	WUR	OMU	K00	KDK	155	310	511	331	15153	14357	0.00	-9.82	141.3	164.6	147.3	133.8	124.0	118.0	115.7
SG	7	19	2247	SGR	KOU	O00	DRK	152	317	511	337	15158	14362	0.00	-10.21	141.3	164.6	147.4	133.8	124.0	118.0	115.7
SG	7	19	2250	WUR	KOU	O00	DRK	166	317	505	337	15135	14341	0.00	-10.11	141.3	164.4	147.2	133.7	124.0	118.0	115.7
SG	7	19	2254	OGU	OUU	SSS	SRK	159	316	0	336	15146	14352	0.00	-10.30	141.3	164.0	146.9	133.5	123.8	117.9	115.7
SG	7	19	2301	GUR	KOU	UKO	DRK	163	317	492	337	15140	14346	0.00	-10.21	141.3	163.9	146.8	133.4	123.8	117.9	115.7
SG	7	19	2305	UUR	OSK	MWO	KDK	164	321	502	333	15138	14344	0.00	-9.82	141.3	164.3	147.1	133.6	123.9	117.9	115.7
SG	7	19	2309	OKR	OMU	W00	GDK	175	311	498	331	15120	14328	0.00	-9.53	141.3	164.1	146.9	133.5	123.8	117.9	115.7
SG	7	19	2313	OKR	OMU	J00	RDK	175	318	505	330	15120	14328	0.00	-9.53	141.3	164.4	147.1	133.6	123.9	117.9	115.7
SG	7	19	2317	OKR	OUU	G00	RDK	191	316	507	330	15094	14305	0.00	-9.53	141.3	164.4	147.2	133.7	123.9	117.9	115.7
SG	7	19	2320	SSG	KOU	W00	RDK	192	317	510	330	15093	14303	0.00	-9.53	141.3	164.6	147.3	133.8	124.0	118.0	115.7
SG	7	20	22	WUR	OMU	R00	GGK	180	307	18	347	15112	14321	0.00	-11.16	141.3	148.0	134.3	124.4	118.2	115.8	117.1
SG	7	20	52	ODR	SMU	RGS	ODK	185	304	26	335	15104	14313	0.00	-10.01	141.3	148.2	134.4	124.5	118.2	115.8	117.0
SG	7	20	56	KOR	UUU	OUS	WDK	189	292	39	334	15097	14308	0.00	-9.92	141.3	148.6	134.7	124.7	118.3	115.8	117.0
SG	7	20	100	KDG	WUU	RUS	KDK	205	294	34	333	15071	14284	0.00	-9.82	141.3	148.4	134.6	124.6	118.3	115.8	117.0
SG	7	20	103	GRG	GUU	GUS	WDK	211	291	35	334	15062	14275	0.00	-9.92	141.3	148.4	134.6	124.6	118.3	115.8	117.0
SG	7	20	107	OUU	SUU	UUS	ODK	207	288	33	335	15068	14281	0.00	-10.01	141.3	148.4	134.6	124.6	118.3	115.8	117.0

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ID	DATE	TIME	---DIGI CODE---				-DEC DIGI NUM--				---ALTITUDE---		AIR T	PTEMP	PID	PRES			31	32	33
			ALT	AT	P	PT	ALT	AT	P	PT	(18)	(19)	(C)	(C)		28	29	30			
SG	7 20	111	UDG	UUU	UKS	ODK	204	295	44	335	15073	14286	0.00	-10.01	141.3	148.7	134.9	124.7	118.4	115.8	116.9
SG	7 20	114	GRG	MGU	GUS	KDK	211	286	35	333	15062	14275	0.00	-9.82	141.3	148.4	134.6	124.6	118.3	115.8	117.0
SG	7 20	118	GRG	OUU	GSU	GOK	241	293	11	331	15062	14275	0.00	-9.53	141.3	147.7	134.1	124.2	118.1	115.7	117.1
SG	7 20	122	OGG	KUU	RGS	ROK	217	293	26	330	15052	14267	0.00	-9.63	141.3	148.1	134.4	124.4	118.2	115.7	117.1
SG	7 20	125	SSS	UUU	ODS	GOK	0	292	9	331	15411	14589	0.00	-9.63	141.3	147.6	134.0	124.2	118.1	115.7	117.1
SG	7 20	129	UUG	UUU	UUS	UDK	228	292	36	332	15034	14251	0.00	-9.73	141.3	148.4	134.6	124.6	118.3	115.8	117.0
SG	7 20	133	RUG	UGU	SMS	ODK	226	284	48	335	15037	14254	0.00	-10.01	141.3	148.8	135.0	124.8	118.4	115.8	116.9
SG	7 20	136	GUG	RGU	DMS	WOK	227	282	49	334	15036	14252	0.00	-9.92	141.3	148.9	135.0	124.8	118.4	115.8	116.9
SG	7 20	140	OGG	SUU	OOS	ROK	217	288	63	330	15052	14267	0.00	-9.53	141.3	149.3	135.3	125.0	118.5	115.8	116.8
SG	7 20	144	MGU	UGU	KOS	SOX	222	284	61	328	15044	14259	0.00	-9.34	141.3	149.2	135.2	125.0	118.5	115.8	116.8
SG	7 20	147	GKG	OGU	OKS	OSK	235	287	47	327	15023	14241	0.00	-9.25	141.3	148.8	134.9	124.7	118.4	115.8	116.9
SG	7 20	334	GKG	RDU	SUD	GOK	235	266	96	347	15023	14241	0.00	-11.16	141.3	150.4	136.2	125.7	118.9	115.9	116.7
SG	7 20	341	RKG	MSU	OGD	GOK	234	262	95	345	15025	14242	0.00	-10.97	141.3	150.4	136.1	125.7	118.9	115.9	116.7
SG	7 20	345	SSS	SSS	SMR	KKK	0	0	176	365	15411	14589	0.00	-12.88	141.3	153.1	138.3	127.2	119.9	116.2	116.3
SG	7 20	345	UUG	OSU	KOD	SGK	252	263	125	344	14996	14216	0.00	-10.87	141.3	151.3	136.9	126.2	119.2	116.0	116.5
SG	7 20	348	OMG	SDU	UOD	SGK	247	264	124	344	15004	14223	0.00	-10.87	141.3	151.3	136.8	126.1	119.2	116.0	116.5
SG	7 20	352	DMG	MSU	WMD	ORK	241	262	118	343	15013	14232	0.00	-10.78	141.3	151.1	136.7	126.0	119.1	116.0	116.5
SG	7 20	355	SRG	ODU	UKD	SGK	208	271	108	344	15067	14280	0.00	-10.87	141.3	150.8	136.5	125.9	119.0	115.9	116.6
SG	7 20	400	OGG	KOU	SUD	RGK	223	269	96	346	15042	14258	0.00	-11.07	141.3	150.4	136.2	125.7	118.9	115.9	116.7
SG	7 20	403	MMG	UUU	WMD	UGK	246	268	118	348	15005	14225	0.00	-11.26	141.3	151.1	136.7	126.1	119.2	116.0	116.6
SG	7 20	407	KMG	DRU	DMD	GKG	245	273	113	349	15007	14226	0.00	-11.35	141.3	151.0	136.6	126.0	119.1	116.0	116.6
SG	7 20	411	RRG	SRU	KOD	RUK	210	272	125	354	15063	14277	0.00	-11.83	141.3	151.4	136.9	126.2	119.3	116.0	116.5
SG	7 20	414	KMG	ODU	RSR	OUK	207	271	130	359	15068	14281	0.00	-12.31	141.3	151.8	137.1	126.4	119.4	116.1	116.5
SG	7 20	418	OMG	UUU	SDR	KKK	245	268	136	365	15007	14226	0.00	-12.88	141.3	151.6	137.3	126.5	119.5	116.1	116.5
SG	7 20	422	DSU	SDU	RSR	SMK	257	264	130	368	14988	14209	0.00	-13.16	141.3	151.6	137.2	126.4	119.4	116.1	116.5
SG	7 20	425	WOG	MSU	DDR	KMK	254	262	137	373	14992	14213	0.00	-13.64	141.3	151.9	137.4	126.6	119.5	116.2	116.5
SG	7 20	429	GSU	MSU	WSR	GOK	259	262	134	347	14984	14206	0.00	-11.16	141.3	151.9	137.1	126.3	119.3	116.0	116.5
SG	7 20	433	MUG	MDU	ODU	USM	230	270	127	388	15031	14248	0.00	-15.07	141.3	151.7	137.3	126.5	119.5	116.2	116.6
SG	7 20	436	UKG	SGU	RKD	GDM	236	280	106	395	14239	14239	0.00	-15.73	141.3	151.9	137.5	126.7	119.6	116.3	116.6
SG	7 20	440	RKG	MGU	USR	MDM	234	286	132	398	15025	14242	0.00	-16.02	141.3	151.9	137.5	126.7	119.6	116.3	116.6
SG	7 20	1853	SSS	SUK	GMM	SRM	0	352	435	400	15411	14589	0.00	-16.21	141.3	162.2	145.6	132.6	123.4	117.8	116.0
SG	7 20	1857	SSS	SSS	SMH	SSS	0	0	431	0	15411	14589	0.00	32.46	141.3	159.0	141.8	128.7	119.7	114.8	114.0
SG	7 20	1901	SSS	SSS	OKM	SSS	0	0	431	0	15411	14589	0.00	32.46	141.3	159.0	141.8	128.7	119.7	114.8	114.0
SG	7 20	1905	SSS	SSS	SSS	MDM	0	0	0	398	15411	14589	0.00	-16.02	141.3	147.8	134.3	124.5	118.4	116.0	117.3
SG	7 20	1909	SOS	MUK	KOM	UDM	56	358	445	396	15317	14505	0.00	-15.83	141.3	162.6	145.8	132.0	123.5	117.9	115.9
SG	7 20	1916	SSS	MUK	MOM	RRM	0	358	446	402	15411	14589	0.00	-16.40	141.3	162.6	145.9	132.9	123.6	117.9	116.0
SG	7 20	1919	SSS	SKK	SSS	KRM	0	360	0	405	15411	14589	0.00	-16.69	141.3	147.9	134.4	124.6	118.5	116.0	117.3
SG	7 20	1923	UKS	UUK	UKM	ORM	44	356	428	407	15337	14523	0.00	-16.88	141.3	162.0	145.4	132.5	123.3	117.8	116.0
SG	7 20	1926	SUS	SSS	ODM	WRM	32	0	339	406	15357	14541	0.00	-16.78	141.3	161.0	144.6	131.9	122.9	117.6	116.0
SG	7 20	1930	RUS	UGK	SSS	WRM	34	348	0	406	15354	14538	0.00	-16.78	141.3	147.9	134.4	124.6	118.5	116.0	117.3
SG	7 20	1934	RUS	UKK	ODM	URM	34	364	447	404	15354	14538	0.00	-16.59	141.3	162.7	146.0	132.9	123.6	117.9	116.0
SG	7 20	1937	KUS	MKK	SOM	DRM	37	366	440	401	15349	14533	0.00	-16.31	141.3	162.4	145.7	132.7	123.5	117.9	116.0
SG	7 20	1953	SSS	SMK	SMH	RSN	0	368	432	386	15411	14589	0.00	-14.88	141.3	162.0	145.4	132.5	123.2	117.9	115.9
SG	7 20	2025	ORS	SMK	SSS	MSM	23	368	0	390	14555	14555	0.00	-15.26	141.3	147.8	134.3	124.5	118.4	116.0	117.3
SG	7 20	2050	RRS	OKK	OGM	SSS	18	367	415	0	15381	14562	0.00	32.46	141.3	158.4	141.3	128.3	119.4	114.7	114.0
SG	7 20	2054	UDS	KMK	SSS	SKM	12	373	0	424	15391	14571	0.00	-18.51	141.3	148.0	134.5	124.7	118.6	116.1	117.3
SG	7 20	2227	OSS	KMK	SSS	ROK	7	373	0	394	15399	14579	0.00	-15.64	141.3	147.8	134.3	124.5	118.4	116.0	117.3
SG	7 20	2230	RDS	KMK	SOK	SSS	10	373	376	0	15394	14574	0.00	32.46	141.3	156.9	140.1	127.5	118.9	114.5	114.2

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ID	DATE	TIME	---DIGI CODE---	-DEC DIGI NUM--	---ALTITUDE---	AIR T	PTEMP	PIO	28	29	30	31	32	33
		ALT AT	P	PT	ALT AT	P	PT	(18)	(19)	(C)	(C)			
SG	7 14	607	GDM WOK SVO KRO	395 382 480 469	14769	14012	0.00	141.3	164.3	147.4	134.2	124.6	110.6	116.3
SG	7 14	721	00K GSH GUK UKK	383 387 382 364	14029	14029	0.00	141.3	160.1	143.8	131.2	122.4	117.3	115.9
SG	7 14	822	SSS RSM RSK KOK	0 386 346 333	15411	14589	0.00	141.3	158.6	142.6	130.2	121.7	116.9	115.8
SG	7 14	825	SHM GSM RUK RRR	432 387 354 338	14712	13960	0.00	141.3	158.9	142.8	130.4	121.8	116.9	115.8
SG	7 14	839	RRS GSM SSS	18 387 0 0	15381	14562	0.00	141.3	144.2	130.4	120.8	115.3	113.8	116.6
SG	7 14	843	UGG GDM GUK MGK	220 369 355 350	15047	14262	0.00	141.3	159.1	142.9	130.6	121.9	117.0	115.8
SG	7 14	1000	UHK OSM DRK RHK	372 391 337 370	14805	14045	0.00	141.3	158.6	142.6	130.3	121.8	117.0	115.9
SG	7 14	1130	MOK KDM GSK ODM	382 397 347 399	14790	14031	0.00	141.3	159.1	143.1	130.8	122.2	117.2	116.0
SG	7 14	1152	GRG SRM WDK ORM	211 400 334 407	15062	14275	0.00	141.3	158.7	142.8	130.6	122.0	117.2	116.1
SG	7 14	1218	MDM SRM GUK DRM	398 400 355 401	14765	14008	0.00	141.3	159.4	143.3	130.9	122.3	117.3	116.0
SG	7 14	1233	SRM MKK UDM SSS	400 366 396 0	14762	14005	0.00	141.3	157.7	140.7	127.9	119.2	114.6	114.1
SG	7 14	1240	RKM SRM WUK SSS	426 400 358 0	14721	13969	0.00	141.3	156.3	139.6	127.1	118.7	114.4	114.2
SG	7 14	1328	GGG DRM DGK DSM	219 401 345 385	15049	14264	0.00	141.3	158.9	142.9	130.6	122.0	117.1	116.0
SG	7 14	1358	HGG GOK RKK RKK	222 379 362 362	14773	14015	0.00	141.3	159.4	143.2	130.8	122.1	117.1	115.9
SG	7 14	1422	DHR ODM SSM DKK	177 399 384 361	15117	14325	0.00	141.3	160.2	143.8	131.2	122.4	117.2	115.8
SG	7 14	1443	KRM SDM URM UHK	405 392 404 372	14754	13998	0.00	141.3	160.9	144.5	131.7	122.7	117.4	115.9
SG	7 14	1446	ROK GRM GRM KWK	378 403 403 373	14796	14036	0.00	141.3	160.9	144.5	131.7	122.7	117.4	115.9
SG	7 14	1520	MUR WRM RKM UOK	166 406 370 380	15135	14341	0.00	141.3	159.8	143.6	131.1	122.3	117.3	115.9
SG	7 15	603	DUK USM SKO KKO	353 388 488 493	14835	14071	0.00	141.3	164.7	147.8	134.5	124.9	118.8	116.4
SG	7 15	629	OKU KOK RKM WSO	303 357 426 454	14914	14143	0.00	141.3	162.2	145.7	132.9	123.6	116.1	116.2
SG	7 15	703	OKK SSK RRM SSS	351 376 402 0	14838	14074	0.00	141.3	157.9	140.9	128.0	119.3	114.6	114.1
SG	7 15	743	GUU WSM UHK SSM	291 390 372 384	14933	14160	0.00	141.3	159.9	143.7	131.2	122.4	117.3	115.9
SG	7 15	800	KOK OKK RDM MOK	381 393 394 374	14791	14032	0.00	141.3	160.6	144.2	131.6	122.6	117.4	115.9
SG	7 15	843	DRK KOK OOK SSK	337 381 383 376	14860	14094	0.00	141.3	160.2	143.9	131.3	122.5	117.3	115.9
SG	7 15	857	OKK SSM OUK GWK	367 384 359 371	14813	14052	0.00	141.3	159.3	143.2	130.8	122.1	117.1	115.9
SG	7 15	917	DKU WSK SOK HWK	297 374 376 374	14924	14151	0.00	141.3	159.9	143.7	131.2	122.4	117.3	115.9
SG	7 15	947	DRU WSK OGM SOK	305 373 415 376	14911	14140	0.00	141.3	161.4	144.8	132.0	122.9	117.5	115.9
SG	7 15	1028	OSR DMK SSS UOK	129 369 0 380	15196	14396	0.00	141.3	147.7	134.2	124.4	118.3	115.9	117.3
SG	7 15	1030	SSS SSS SSS DKW	0 0 0 425	15411	14589	0.00	141.3	148.0	134.5	124.7	118.6	116.1	117.3
SG	7 15	1124	GUS UHK KUM WUK	35 372 421 358	15352	14536	0.00	141.3	161.5	144.9	132.0	122.9	117.5	115.8
SG	7 15	1139	SQU WKK GUM SGK	280 366 419 344	14951	14176	0.00	141.3	161.3	144.7	131.9	122.7	117.4	115.8
SG	7 15	1233	RGR GWK GSK DKK	154 371 387 361	15155	14359	0.00	141.3	160.3	143.9	131.3	122.4	117.3	115.8
SG	7 16	709	GOR GDM SSS OMK	155 395 0 375	15153	14357	0.00	141.3	147.7	134.1	124.3	118.3	115.9	117.3
SG	7 16	718	MHU RDM KUK DHK	310 394 357 369	14903	14133	0.00	141.3	159.2	143.1	130.7	122.1	117.1	115.9
SG	7 16	752	SSS KSM WSK GUK	0 389 350 355	15411	14589	0.00	141.3	158.9	142.8	130.5	121.9	117.0	115.9
SG	7 16	755	OUS SSM ORK DUK	39 384 343 353	15345	14530	0.00	141.3	158.7	142.6	130.3	121.8	117.0	115.9
SG	7 16	735	RKO DDM SQU UUU	490 393 312 308	14623	13880	0.00	141.3	157.3	141.4	129.4	121.1	116.5	115.8
SG	7 16	908	SSS RUM SQU UUU	0 394 312 297	15411	14589	0.00	141.3	157.2	141.4	129.3	121.0	116.5	115.8
SG	7 16	912	MHO JDM WOU UUU	502 393 318 300	14605	13864	0.00	141.3	157.4	141.5	129.4	121.1	116.5	115.7
SG	7 16	1215	RRS GDM KOK SOK	18 395 381 376	15381	14562	0.00	141.3	160.1	143.9	131.3	122.4	117.3	115.9
SG	7 18	2224	KMW SUG OGG SGO	429 224 223 472	14717	13965	0.00	141.3	155.4	140.3	128.9	121.1	117.0	116.5
SG	7 18	2238	KSO WDG SKG USO	453 206 232 452	14680	13931	0.00	141.3	155.5	140.4	128.9	121.1	116.9	116.4
SG	7 18	2243	SSS GGG KUG UOM	0 203 229 444	15411	14589	0.00	141.3	155.4	140.3	128.8	121.0	116.9	116.4
SG	7 18	2247	O5O UDG JKG OWM	455 204 226 433	14677	13928	0.00	141.3	155.5	140.4	128.8	121.0	116.8	116.3
SG	7 18	2250	SDD GGG GUG RKM	456 203 227 426	14675	13927	0.00	141.3	155.2	140.1	128.6	120.9	116.8	116.3
SG	7 18	2254	KOM SRG SSS UUM	445 208 0 420	14692	13942	0.00	141.3	148.0	134.5	124.7	118.5	116.1	117.3
SG	7 18	2257	R5O UUG GSG RUM	450 204 195 418	14684	13935	0.00	141.3	154.1	139.2	128.0	120.4	116.6	116.4

ID	DATE	TIME	---DIGI CODE---	ALT AT	P	PT	---DIGI NUM---	ALT AT	P	PT	---ALTITUDE---	(19)	AIR T	PTEMP	PID	PRES	28	29	30	31	32	33
SG	7	18	2301	SGM	UDG	RSG	DUM	408	204	194	417	14749	13994	0.00	-17.84	141.3	154.0	139.1	127.9	120.4	116.6	116.4
SG	7	18	2304	SSO	KDG	DOR	GGW	448	205	185	411	14687	13938	0.00	-17.26	141.3	153.7	138.9	127.7	120.3	116.5	116.4
SG	7	18	2308	GOG	KSG	SSS	GRW	203	197	0	403	15075	14287	0.00	-16.50	141.3	147.9	134.4	124.6	110.4	116.0	117.3
SG	7	18	2315	GSO	SRG	MOR	SOK	451	208	190	376	14683	13934	0.00	-13.92	141.3	153.6	138.7	127.6	120.1	116.4	116.3
SG	7	18	2319	SDO	KOG	GSG	MKK	456	205	195	366	14683	13927	0.00	-12.97	141.3	153.7	138.8	127.6	120.1	116.3	116.3
SG	7	18	2323	OOM	MOR	OMR	OUK	447	190	183	359	14689	13940	0.00	-12.31	141.3	153.3	138.4	127.3	119.9	116.2	116.3
SG	7	18	2327	GHW	UDG	GOR	UUK	435	204	187	356	14707	13956	0.00	-12.02	141.3	153.4	138.5	127.4	119.9	116.2	116.3
SG	7	18	2331	SSS	SRG	SMR	UUK	0	208	176	356	15411	14589	0.00	-12.02	141.3	153.0	138.2	127.2	119.8	116.2	116.3
SG	7	18	2334	DHW	ODG	RMR	MUK	433	207	178	358	14711	13959	0.00	-12.21	141.3	153.1	138.3	127.2	119.8	116.2	116.3
SG	7	18	2338	KHW	ORG	OMR	GUK	437	215	183	355	14704	13954	0.00	-11.92	141.3	153.3	138.4	127.3	119.9	116.2	116.3
SG	7	18	2341	KUM	RRG	RWR	GUK	421	210	178	355	14729	13976	0.00	-11.83	141.3	153.3	138.4	127.3	119.9	116.2	116.3
SG	7	18	2345	SUM	SSS	UOR	RUK	416	0	188	354	14737	13983	0.00	-11.83	141.3	153.4	138.5	127.4	119.9	116.2	116.3
SG	7	19	7	DRW	SUG	ODR	GUK	401	224	185	355	14760	14004	0.00	-11.83	141.3	153.3	138.5	127.3	119.9	116.2	116.3
SG	7	19	27	SRW	OGG	KRR	ODK	400	223	149	335	14762	14005	0.00	-10.01	141.3	152.0	137.4	126.5	119.4	116.0	116.4
SG	7	19	110	SSS	MGG	OOD	RDK	0	222	127	330	15411	14589	0.00	-9.05	141.3	151.3	136.8	126.1	119.1	115.9	116.5
SG	7	19	113	SRW	UGG	WDR	KSK	400	220	142	325	14762	14005	0.00	-9.05	141.3	151.7	137.1	126.3	119.3	115.9	116.4
SG	7	19	132	RRW	GGG	KRR	RMU	402	218	149	306	14759	14002	0.00	-7.22	141.3	151.8	137.2	126.3	119.2	115.9	116.3
SG	7	19	134	MOK	KGG	DAR	OKU	382	221	145	303	14790	14031	0.00	-6.92	141.3	151.7	137.0	126.2	119.1	115.8	116.3
SG	7	19	139	SGW	GGG	ORR	WKU	408	219	151	302	14749	13994	0.00	-6.83	141.3	151.9	137.2	126.3	119.2	115.9	116.3
SG	7	19	142	URW	MGG	KRR	SMU	404	222	149	304	14755	14000	0.00	-7.02	141.3	151.8	137.2	126.3	119.2	115.9	116.3
SG	7	19	146	URW	KGG	WRR	SMU	404	221	150	306	14740	13986	0.00	-7.22	141.3	151.9	137.2	126.3	119.2	115.9	116.3
SG	7	19	150	MDM	KGG	SRR	MMU	398	221	144	310	14765	14008	0.00	-7.60	141.3	151.7	137.1	126.2	119.2	115.9	116.3
SG	7	19	154	GUM	MGG	RGR	ROU	411	222	154	314	14745	13990	0.00	-7.59	141.3	152.0	137.4	126.4	119.3	115.9	116.3
SG	7	19	158	SUM	DUG	MUR	KOU	416	225	166	317	14735	13983	0.00	-8.28	141.3	152.4	137.7	126.7	119.4	116.0	116.3
SG	7	19	201	DUM	UUG	GUR	SSK	417	225	163	320	14735	13981	0.00	-8.57	141.3	152.4	137.6	126.7	119.4	116.0	116.3
SG	7	19	205	GRW	OGG	KGR	GSK	403	217	157	323	14757	14001	0.00	-8.86	141.3	152.2	137.5	126.6	119.4	116.0	116.3
SG	7	19	209	DJW	GUG	UGR	GSK	417	227	156	323	14735	13981	0.00	-8.86	141.3	152.2	137.5	126.5	119.4	116.0	116.3
SG	7	19	212	DJW	OGG	OGR	USK	417	223	159	324	14735	13981	0.00	-8.96	141.3	152.3	137.6	126.6	119.4	116.0	116.3
SG	7	19	216	UHW	KGG	RGR	WSK	412	221	154	326	14743	13988	0.00	-9.15	141.3	152.1	137.5	126.5	119.4	116.0	116.3
SG	7	19	220	URW	OGG	GUR	DDK	404	223	163	329	14755	14000	0.00	-9.44	141.3	152.4	137.7	126.7	119.5	116.0	116.3
SG	7	19	224	SGW	DUG	KUR	KDK	408	225	165	333	14749	13994	0.00	-8.82	141.3	152.5	137.8	126.8	119.5	116.0	116.3
SG	7	19	227	SKW	UUG	RUR	SRK	424	228	162	336	14724	13972	0.00	-10.11	141.3	152.4	137.7	126.8	119.5	116.0	116.3
SG	7	19	231	ORW	KUG	RGR	GRK	407	229	154	339	14751	13995	0.00	-10.40	141.3	152.2	137.5	126.6	119.5	116.0	116.4
SG	7	19	249	RRW	UKG	UGR	GUK	402	236	156	355	14759	14002	0.00	-11.92	141.3	152.4	137.7	126.8	119.6	116.1	116.4
SG	7	19	303	KSW	KGG	KUR	MUK	389	235	165	358	14779	14021	0.00	-12.21	141.3	152.9	138.2	127.1	119.8	116.2	116.3
SG	7	19	322	OGM	RKG	UKR	DKK	391	234	172	361	14776	14018	0.00	-12.50	141.3	152.7	138.0	127.0	119.7	116.2	116.4
SG	7	19	334	OGW	RKG	UUR	DKK	409	234	164	361	14748	13993	0.00	-12.50	141.3	153.1	138.3	127.2	119.9	116.2	116.4
SG	7	19	338	MGW	MUG	DWR	RKK	414	230	177	362	14740	13986	0.00	-12.59	141.3	153.1	138.3	127.2	119.9	116.2	116.4
SG	7	19	342	RHW	MGG	GUR	UKK	410	222	163	364	14746	13991	0.00	-12.78	141.3	152.7	138.0	127.0	119.7	116.2	116.4
SG	7	19	348	SUM	RGG	DOR	GKK	416	218	185	363	14737	13983	0.00	-12.69	141.3	153.4	138.5	127.4	120.0	116.3	116.3
SG	7	19	352	OGM	DGG	OMR	GUK	415	217	183	355	14738	13984	0.00	-11.82	141.3	153.3	138.4	127.3	119.9	116.2	116.3
SG	7	19	356	ORW	OGG	UKR	DGK	407	223	172	345	14751	13995	0.00	-10.57	141.3	152.8	137.7	126.8	119.5	116.1	116.3
SG	7	19	400	RRW	SUG	DUR	GRK	406	224	161	339	14752	13997	0.00	-10.40	141.3	152.4	137.7	126.8	119.5	116.1	116.3
SG	7	19	404	MDM	SUG	GUR	KRK	398	227	163	341	14765	14008	0.00	-10.59	141.3	152.5	137.8	126.8	119.6	116.1	116.3
SG	7	19	407	SRW	GUG	GKR	ORK	400	227	171	343	14762	14029	0.00	-10.78	141.3	152.8	138.0	127.0	119.7	116.1	116.3
SG	7	19	411	OOK	SKG	OKR	WRK	383	232	175	342	14788	14029	0.00	-10.68	141.3	152.9	138.1	127.0	119.7	116.1	116.3
SG	7	19	415	SRW	OGG	DUR	DGK	400	223	161	345	14762	14005	0.00	-10.97	141.3	152.5	137.8	126.8	119.6	116.1	116.4

TWERLE BALLOON 95152/4 AC/SG 1972

ID	DATE	TIME	---DIGI CODE---	ALT AT	P	PT	---	ALT AT	F	PT	---	ALTITUDE---	AIR T	FTEMP	PID	28	29	30	31	32	33	
SG	7	10	710	OKR	DWH	RGW	KWS	175	433	410	53	15120	14328	0.00	22.84	141.3	158.8	141.9	129.0	120.1	115.2	114.4
SG	7	10	710	RRU	DWH	MGR	UWS	274	432	158	52	14960	14184	0.00	23.00	141.3	150.0	135.0	124.0	117.2	114.3	115.5
SG	7	10	740	000	MWH	GRR	KWS	511	438	147	53	14591	13851	0.00	22.84	141.3	149.6	134.7	123.9	117.1	114.3	115.6
SG	7	10	742	000	MWH	RDR	WWS	481	432	138	54	14637	13893	0.00	22.68	141.3	149.3	134.5	123.8	117.0	114.3	115.7
SG	7	10	750	KSK	SRR	WMD	ROS	325	444	118	58	14879	14111	0.00	22.04	141.3	148.7	134.1	123.5	116.9	114.3	115.8
SG	7	10	800	OWS	SRW	WDD	WOS	55	400	97	62	15319	14506	0.00	21.41	141.3	148.1	133.6	123.2	116.7	114.3	116.0
SG	7	10	803	RSD	MWH	RGD	OOS	66	432	90	63	15300	14490	0.00	21.25	141.3	147.9	133.5	122.1	116.7	114.3	116.0
SG	7	10	808	OWS	SRR	ODD	OSD	55	444	79	65	15319	14506	0.00	20.94	141.3	147.6	133.2	122.9	116.6	114.4	116.1
SG	7	10	811	MGG	MWH	USD	UUD	222	432	68	100	15044	14259	0.00	15.84	141.3	147.6	133.4	123.1	116.9	114.6	116.3
SG	7	10	815	MKD	MWH	OMS	OSD	110	432	55	71	15227	14424	0.00	20.03	141.3	146.8	132.7	122.6	116.5	114.4	116.3
SG	7	10	818	GOG	MWH	KUS	ODD	203	432	37	79	15075	14297	0.00	18.83	141.3	146.4	132.4	122.4	116.4	114.4	116.5
SG	7	10	822	RWH	MWH	URS	WDD	434	432	20	78	14709	13958	0.00	18.98	141.3	145.8	132.0	122.1	116.4	114.4	116.6
SG	7	10	825	OKG	MWH	RSS	WRD	239	432	2	86	15017	14235	0.00	17.81	141.3	145.4	131.7	121.9	116.2	114.5	116.8
SG	7	10	829	GSH	MWH	GGO	KGD	387	432	496	120	14782	14023	0.00	13.16	141.3	162.7	145.2	131.6	122.0	114.7	114.7
SG	7	10	832	OWS	MWH	GGO	SOD	65	432	475	93	15302	14491	0.00	16.82	141.3	161.6	144.3	130.9	121.4	116.0	114.6
SG	7	10	836	HKR	MWH	GSO	UUD	174	432	451	100	15122	14330	0.00	15.84	141.3	160.8	143.6	130.4	121.2	115.9	114.6
SG	7	10	839	DDU	MWH	KKM	GKD	265	432	429	107	14975	14197	0.00	14.89	141.3	160.0	143.0	130.0	120.9	115.8	114.7
SG	7	10	843	SKS	MWH	HRM	GMD	40	432	406	115	15344	14529	0.00	13.82	141.3	159.2	142.4	129.6	120.7	115.8	114.8
SG	7	10	847	USU	MWH	OOK	ROD	260	432	383	122	14983	14204	0.00	12.50	141.3	158.5	141.9	129.2	120.5	115.7	114.9
SG	7	10	850	SSD	MWH	SKK	GSR	64	432	360	131	15304	14493	0.00	11.75	141.3	157.7	141.3	128.8	120.3	115.6	115.0
SG	7	10	854	SSS	MWH	DRK	WRR	0	432	337	150	15411	14589	0.00	9.40	141.3	157.0	140.8	128.5	120.1	115.7	115.1
SG	7	10	858	OWM	MWH	ROU	RGR	440	432	314	154	14700	13949	0.00	7.38	141.3	155.9	140.0	128.0	119.8	115.6	115.3
SG	7	10	901	OKU	MWH	KKU	OUR	359	432	301	167	14826	14063	0.00	5.76	141.3	157.4	141.2	128.9	120.4	115.9	115.2
SG	7	10	905	UUK	WRO	GRK	KWR	333	470	339	181	14867	14100	0.00	4.08	141.3	157.0	140.9	128.7	120.4	115.9	115.3
SG	7	10	909	UUK	MOS	WSK	USG	356	14	326	196	14830	14067	0.00	2.23	141.3	147.7	133.8	123.7	117.5	115.2	116.7
SG	7	10	912	RGH	WRD	SKS	KRG	410	86	40	213	14736	13991	0.00	.22	141.3	155.1	139.5	127.8	119.9	115.9	115.7
SG	7	10	916	RSS	UUR	WSU	SKG	2	164	262	232	15408	14586	0.00	-1.85	141.3	161.3	144.5	131.5	122.3	116.9	115.4
SG	7	10	920	ROG	RKG	RHM	UOG	250	234	434	252	14999	14219	0.00	-3.87	141.3	149.9	135.6	125.1	110.5	115.6	116.5
SG	7	10	923	ROU	RKU	UUD	SRU	314	298	97	272	14897	14127	0.00	-5.95	141.3	156.6	140.9	128.5	120.8	116.4	115.8
SG	7	10	927	KOW	UGK	SKU	KUU	445	348	296	293	14692	13942	0.00	-7.60	141.3	149.1	135.1	124.8	118.4	115.7	116.8
SG	7	10	934	RSD	MRM	UKM	GSK	66	406	428	323	15300	14490	0.00	-8.86	141.3	161.5	144.8	131.9	122.7	117.3	115.7
SG	7	10	938	GUO	DKM	WUU	UOK	483	425	294	332	14634	13890	0.00	-8.73	141.3	156.8	141.1	129.2	121.0	116.6	115.9
SG	7	10	942	UKM	KKM	RGU	WRK	428	429	282	342	14718	13966	0.00	-10.68	141.3	156.5	140.9	129.0	120.9	116.6	115.9
SG	7	10	946	MKW	RHM	WVG	RGK	430	434	244	346	14715	13963	0.00	-11.07	141.3	155.2	139.9	128.3	120.5	116.4	116.1
SG	7	10	949	SDO	RHM	KSU	OGK	456	426	261	351	14675	13927	0.00	-11.54	141.3	155.8	140.4	128.7	120.7	116.5	116.0
SG	7	10	953	GOM	OKM	ODG	GUK	443	431	207	355	14695	13945	0.00	-11.92	141.3	154.0	139.0	127.7	120.1	116.3	116.2
SG	7	10	956	UOW	OKM	MOG	GUK	452	431	254	357	14681	13933	0.00	-12.11	141.3	155.6	140.3	128.6	120.7	116.5	116.1
SG	7	10	1000	WOW	OKM	SOG	GUK	446	431	248	355	14690	13941	0.00	-11.92	141.3	155.4	140.1	128.5	120.6	116.5	116.1
SG	7	10	1004	UHM	OKM	SOG	DUK	436	431	248	353	14706	13955	0.00	-11.73	141.3	155.4	140.1	128.5	120.6	116.5	116.1
SG	7	10	1009	UOW	KHM	UKG	OGK	423	437	236	351	14726	13973	0.00	-11.54	141.3	155.0	139.7	128.2	120.4	116.4	116.1
SG	7	10	1012	RHM	GHM	UOG	DUK	434	435	252	353	14709	13958	0.00	-11.73	141.3	155.5	140.2	128.5	120.6	116.5	116.1
SG	7	10	1016	MHM	MKM	KOG	UOK	438	430	253	359	14703	13952	0.00	-12.31	141.3	155.6	140.2	128.6	120.7	116.5	116.1
SG	7	10	1019	UOW	UKM	ROG	UKK	444	428	250	364	14694	13946	0.00	-12.78	141.3	155.5	140.2	128.6	120.7	116.5	116.1
SG	7	10	1023	KUM	MKM	MOG	GWK	421	430	254	371	14729	13976	0.00	-13.45	141.3	155.7	140.4	128.7	120.8	116.6	116.1
SG	7	10	1027	ORM	DMH	UUG	KMK	407	433	228	373	14751	13995	0.00	-13.64	141.3	154.9	139.7	128.2	120.5	116.5	116.2
SG	7	10	1030	UOW	DMH	DSU	SOK	444	433	257	376	14694	13944	0.00	-13.92	141.3	155.9	140.5	128.8	120.9	116.6	116.1
SG	7	10	1034	KHM	DMH	GRU	GOK	437	433	275	379	14704	13954	0.00	-14.21	141.3	156.5	141.0	129.2	121.1	116.7	116.1

TWERLE BALLOON 95152/4 AC/SG 1972

ID	DATE	TIME	---DIGI CODE---	ALT AT	P	PT	---DIGI NUM---	ALT AT	P	PT	---ALTITUDE---	(18)	(19)	AIR T	PTEMP	PID	PRES	28	29	30	31	32	33
SG	7	12	846	HRO	RRM	USK	DRK	470	402	324	337	14654	13908	0.00	-10.21	141.3	157.9	142.0	129.8	121.4	116.8	115.8	115.8
SG	7	12	849	R60	SGM	KSK	RRK	474	408	325	338	14647	13902	0.00	-10.30	141.3	157.9	142.0	129.9	121.4	116.8	115.8	115.8
SG	7	12	853	W60	KRM	OUU	SRK	478	405	319	336	14641	13897	0.00	-10.11	141.3	157.7	141.8	129.7	121.3	116.7	115.8	115.8
SG	7	12	857	W60	ORM	GOU	UOK	478	407	315	380	14641	13897	0.00	-14.30	141.3	157.9	142.1	130.0	121.6	116.9	116.0	116.0
SG	7	12	901	060	RGW	KWU	GDK	479	410	309	331	14640	13895	0.00	-9.63	141.3	157.3	141.5	129.5	121.2	116.6	115.9	115.9
SG	7	12	905	060	MGW	GJU	RDK	473	414	291	330	14649	13904	0.00	-9.53	141.3	156.7	141.0	129.1	121.0	116.5	115.9	115.9
SG	7	12	909	SSS	RGW	SMU	SSS	0	410	304	0	15411	14589	0.00	32.46	141.3	154.3	138.1	126.0	118.0	114.2	114.5	114.5
SG	7	12	912	WSD	GGW	KRK	KDK	454	411	341	333	14678	13930	0.00	-9.82	141.3	158.5	142.4	130.1	121.6	116.8	115.8	115.8
SG	7	12	916	000	MGW	RDK	ODK	457	414	330	335	14674	13926	0.00	-10.01	141.3	158.1	142.1	129.9	121.5	116.8	115.8	115.8
SG	7	12	920	URO	RGW	KSK	ODK	468	410	325	335	14657	13910	0.00	-10.01	141.3	157.9	142.0	129.8	121.4	116.7	115.8	115.8
SG	7	12	923	G00	UGW	SSS	ODK	459	412	0	335	14670	13923	0.00	-10.01	141.3	147.4	133.8	124.1	118.0	115.7	117.2	117.2
SG	7	12	1403	MRG	WRM	SSS	KDM	214	406	0	397	15057	14271	0.00	-15.52	141.3	147.8	134.3	124.5	118.4	116.0	117.3	117.3
SG	7	12	1514	DSM	SRM	OUK	ODK	385	400	359	383	14785	14026	0.00	-14.59	141.3	159.4	143.3	130.9	122.2	117.2	115.9	115.9
SG	7	12	1552	SSS	MOK	ORM	UOK	0	382	407	380	15411	14589	0.00	-14.30	141.3	161.1	144.6	131.9	122.8	117.5	115.9	115.9
SG	7	12	1554	UHD	SSS	ODM	GOK	116	0	399	379	15217	14415	0.00	-14.21	141.3	160.8	144.4	131.7	122.7	117.4	115.9	115.9
SG	7	12	1602	KGU	ODG	ODM	SSS	285	207	399	0	14943	14158	0.00	32.46	141.3	157.8	140.8	128.0	119.2	114.6	114.1	114.1
SG	7	12	1621	KSG	ODM	HUM	DSM	197	399	422	385	15084	14296	0.00	-14.78	141.3	161.7	145.1	132.2	123.1	117.6	115.9	115.9
SG	7	12	1625	WGR	SRM	R4M	KDM	158	400	334	397	15148	14353	0.00	-15.92	141.3	162.2	145.5	132.6	123.3	117.8	116.0	116.0
SG	7	12	1646	UKR	KDM	KUO	WHH	172	397	485	438	15125	14332	0.00	-19.87	141.3	164.3	147.3	134.0	124.4	118.4	116.1	116.1
SG	7	13	631	KDU	KRM	UDM	RGO	269	405	444	474	14968	14191	0.00	-23.43	141.3	163.0	146.4	133.4	124.1	118.3	116.3	116.3
SG	7	13	736	UHR	UDM	UDM	DKM	180	396	396	425	15112	14321	0.00	-18.61	141.3	161.0	144.6	132.0	123.0	117.7	116.1	116.1
SG	7	13	811	DHD	ROK	RUM	MUM	113	378	418	422	15222	14420	0.00	-18.32	141.3	161.7	145.2	132.4	123.3	117.8	116.0	116.0
SG	7	13	833	ROD	GWK	SSS	UGM	122	371	0	412	15207	14406	0.00	-17.36	141.3	147.9	134.4	124.6	118.5	116.1	117.3	117.3
SG	7	13	836	W40	GWK	OKM	GGM	502	371	431	411	14605	13864	0.00	-17.26	141.3	162.1	145.5	132.6	123.4	117.9	116.0	116.0
SG	7	13	906	MKO	UMK	KKM	GGM	494	372	429	411	14617	13875	0.00	-17.26	141.3	162.1	145.5	132.6	123.4	117.8	116.0	116.0
SG	7	13	928	KKS	MMK	MMK	OKR	45	374	374	175	15335	14521	0.00	6.45	141.3	158.6	142.1	129.5	120.8	116.0	115.1	115.1
SG	7	13	932	UGS	KKK	UUM	KGM	28	365	420	413	15364	14547	0.00	-17.46	141.3	161.8	145.2	132.4	123.3	117.8	116.0	116.0
SG	7	13	952	UKS	UMK	SSS	UGM	44	372	0	412	15337	14523	0.00	-17.36	141.3	147.9	134.4	124.6	118.5	116.1	117.3	117.3
SG	7	13	955	WDD	KKK	R4M	GGM	78	365	434	411	15280	14472	0.00	-17.26	141.3	162.2	145.6	132.7	123.4	117.9	116.0	116.0
SG	7	13	1032	OGS	RHK	OGM	RGW	31	370	415	410	15359	14542	0.00	-17.17	141.3	161.6	145.1	132.3	123.2	117.7	116.0	116.0
SG	7	13	1054	GHW	GSM	SSS	MGW	435	387	0	414	14707	13956	0.00	-17.55	141.3	147.9	134.4	124.6	118.5	116.1	117.3	117.3
SG	7	13	1057	SSS	KSM	DRM	UGM	0	389	401	412	15411	14589	0.00	-17.36	141.3	161.1	144.7	132.0	123.0	117.7	116.0	116.0
SG	7	13	1125	G00	USM	RDM	ORM	507	388	394	407	14597	13904	0.00	-16.88	141.3	160.8	144.5	131.8	122.8	117.6	116.0	116.0
SG	7	13	1129	SSS	KSM	WRM	MGW	0	389	406	414	15411	14589	0.00	-17.55	141.3	161.3	144.8	132.1	123.1	117.7	116.0	116.0
SG	7	13	1132	RMR	KSM	GGM	KGM	178	389	411	413	15115	14324	0.00	-17.46	141.3	161.4	145.0	132.2	123.1	117.7	116.0	116.0
SG	7	13	1153	G00	RSW	MKM	SUM	459	386	430	416	14670	13923	0.00	-17.74	141.3	162.1	145.5	132.6	123.4	117.9	116.0	116.0
SG	7	13	1249	ODU	KOK	RUM	SSM	265	381	418	0	14975	14197	0.00	32.46	141.3	158.5	141.4	128.4	119.5	114.7	114.0	114.0
SG	7	13	1328	UDM	ODK	GMU	URM	444	377	307	404	14694	13944	0.00	-16.59	141.3	157.7	142.0	130.0	121.7	117.0	116.0	116.0
SG	7	13	1359	OS0	MMK	ROM	ODM	455	374	442	399	14677	13928	0.00	-16.11	141.3	162.5	145.8	132.8	123.5	117.9	116.0	116.0
SG	7	13	1402	ODU	KMK	ODD	SRM	481	373	457	400	14637	13893	0.00	-16.21	141.3	163.0	146.2	133.1	123.7	118.0	116.0	116.0
SG	7	13	1439	DGO	UMK	SSS	SRM	473	372	0	400	14669	13904	0.00	-16.21	141.3	147.8	134.3	124.5	118.4	116.0	117.3	117.3
SG	7	13	1443	DKO	GWK	S60	DRM	489	371	472	401	14624	13881	0.00	-16.31	141.3	163.6	146.7	133.4	123.9	118.1	116.0	116.0
SG	7	13	1518	U00	ODK	MUG	SSS	508	377	230	0	14596	13855	0.00	32.46	141.3	151.7	136.1	124.6	117.2	114.0	114.8	114.8
SG	7	13	1523	ODS	ODK	U0G	DKK	9	377	252	361	15396	14576	0.00	-12.50	141.3	155.6	140.2	128.6	120.7	116.5	116.1	116.1
SG	7	13	1528	SSS	SSS	ODD	MSM	0	0	463	390	15411	14589	0.00	-15.26	141.3	163.2	146.3	133.2	123.7	118.0	115.9	115.9
SG	7	14	530	RSM	URS	SSS	SSS	386	57	20	0	14784	14025	0.00	32.46	141.3	144.8	130.9	121.1	115.4	113.8	116.4	116.4
SG	7	14	532	OUW	RSM	SSS	WDS	423	386	0	14	14726	13973	0.00	29.68	141.3	144.4	130.7	121.0	115.4	113.8	116.4	116.4
SG	7	14	552	GHW	MOK	S00	MUO	435	382	504	486	14707	13956	0.00	-24.65	141.3	165.3	148.2	134.8	125.1	118.9	116.4	116.4

THERLE BALLOON 95152/4 AC/SG 1972

ID	DATE	TIME	---DIGI CODE---	ALT AT	P	PT	---DIGI CODE---	ALT AT	F	PT	---ALTIUDE---	(19)	AIR T	PTEMP	PID	PRES	28	29	30	31	32	33
SG	7	10	1038	OWH	OKH	DDU	KOK	439	431	265	381	14701	13951	0.00	-14.40	141.3	156.2	140.7	129.0	121.0	116.7	116.1
SG	7	10	1042	WMM	OKM	GRU	OOK	436	431	275	383	14703	13952	0.00	-14.50	141.3	156.5	141.0	129.0	121.1	116.8	116.1
SG	7	10	1045	WMM	SHM	SOU	RSW	436	432	312	386	14706	13955	0.00	-14.88	141.3	157.8	142.0	130.0	121.6	117.0	116.0
SG	7	10	1049	OWH	KKW	OSU	USM	433	429	263	388	14711	13959	0.00	-15.07	141.3	156.1	140.7	129.0	121.0	116.7	116.1
SG	7	10	1053	OWH	MKW	URU	DDM	439	430	276	393	14712	13951	0.00	-15.94	141.3	156.6	141.1	129.3	121.2	116.8	116.1
SG	7	10	1057	SHM	GWH	HMG	KDM	432	435	246	397	14712	13960	0.00	-15.92	141.3	156.6	140.3	128.8	120.9	116.7	116.2
SG	7	10	1101	ROM	DKW	UGG	DRM	442	425	252	401	14697	13947	0.00	-16.31	141.3	155.9	140.5	128.9	121.0	116.7	116.2
SG	7	10	1104	OWH	RHM	HOG	KHM	433	434	254	437	14711	13959	0.00	-19.77	141.3	156.2	140.9	129.2	121.2	116.9	116.3
SG	7	10	1108	KKM	SSS	OMG	SGM	429	0	247	408	14717	13965	0.00	-16.98	141.3	155.7	140.5	128.9	121.0	116.8	116.2
SG	7	10	1112	SHM	SHM	HOG	RGW	432	432	254	410	14712	13960	0.00	-17.17	141.3	156.0	140.7	129.0	121.1	116.8	116.2
SG	7	10	1116	SOH	OKH	SSU	DGH	440	431	256	409	14700	13949	0.00	-17.07	141.3	156.0	140.9	129.0	121.1	116.8	116.2
SG	7	10	1120	SSS	SSS	OSU	ORM	0	0	263	407	15411	14589	0.00	-16.88	141.3	156.3	140.9	129.2	121.1	116.8	116.2
SG	7	10	1124	SSS	KKW	MSU	ORM	57	429	318	407	15315	14503	0.00	-16.88	141.3	156.2	140.8	129.1	121.1	116.8	116.1
SG	7	10	1124	SSS	KKW	MSU	ORM	442	428	274	410	14697	13947	0.00	-17.17	141.3	156.7	141.2	129.4	121.3	116.9	116.2
SG	7	10	1204	ROM	KKW	KSU	UHM	442	429	261	436	14697	13947	0.00	-19.68	141.3	156.4	141.0	129.3	121.3	117.0	116.3
SG	7	10	1319	DHM	SSS	GOG	DKM	433	0	251	425	14711	13959	0.00	-18.61	141.3	156.0	140.7	129.1	121.1	116.9	116.3
SG	7	10	1323	DKM	OKM	HOG	RKM	425	431	254	426	14723	13970	0.00	-18.71	141.3	156.1	140.8	129.1	121.2	116.9	116.3
SG	7	10	1327	KHM	GKM	UUU	RKM	437	427	289	426	14704	13954	0.00	-18.71	141.3	157.3	141.7	129.8	121.6	117.1	116.2
SG	7	10	1329	SSS	GKM	DSU	RKM	0	427	257	426	15411	14589	0.00	-18.71	141.3	156.2	140.9	129.2	121.2	116.9	116.3
SG	7	10	1653	SSS	GUM	WSU	OKU	0	419	262	303	15411	14589	0.00	-6.92	141.3	155.5	140.1	128.3	120.4	116.3	115.9
SG	7	11	836	R00	UGM	GKU	SMK	458	412	299	368	14672	13924	0.00	-13.16	141.3	157.2	141.5	129.6	121.3	116.8	116.0
SG	7	11	855	G50	GGM	OMU	SSS	451	411	305	0	14663	13934	0.00	32.46	141.3	154.4	138.1	126.0	118.1	114.2	114.4
SG	7	11	859	OKH	DGM	KKU	RGK	431	409	301	346	14714	13962	0.00	-11.07	141.3	157.0	141.4	129.4	121.2	116.7	115.9
SG	7	11	903	K00	GDM	KUU	RRK	461	395	298	338	14667	13920	0.00	-10.30	141.3	157.0	141.3	129.3	121.1	116.6	115.9
SG	7	11	907	MSO	DGM	KUU	DDK	454	409	293	329	14678	13930	0.00	-9.44	141.3	156.8	141.1	129.2	121.0	116.5	115.9
SG	7	11	914	SSS	DGM	KMU	GOK	0	409	309	331	15411	14589	0.00	-9.63	141.3	157.3	141.5	129.5	121.2	116.6	115.9
SG	7	11	918	ROM	MGM	SSS	ROK	442	414	0	330	14697	13947	0.00	-9.53	141.3	147.3	133.8	124.0	118.0	115.7	117.2
SG	7	11	922	SSS	KGM	OMU	RDK	0	413	311	330	15411	14589	0.00	-9.53	141.3	157.4	141.6	129.5	121.2	116.6	115.8
SG	7	11	939	SSS	SSS	SSS	SDK	0	0	328	0	15411	14589	0.00	-9.34	141.3	147.3	133.8	124.0	118.0	115.7	117.2
SG	7	11	1046	USO	SSS	SSS	SDK	452	0	0	328	14661	13933	0.00	-9.34	141.3	147.3	133.8	124.0	118.0	115.7	117.2
SG	7	11	1050	SSS	SGM	ORK	DMK	0	408	343	369	15411	14589	0.00	-13.26	141.3	158.8	142.7	130.5	121.9	117.0	115.9
SG	7	11	1109	KRO	RGW	RDK	UMK	463	410	330	372	14655	13909	0.00	-13.54	141.3	158.3	142.4	130.2	121.7	117.0	115.9
SG	7	11	1113	U00	WRH	WRK	WRK	484	406	342	374	14632	13988	0.00	-13.73	141.3	158.8	142.8	130.5	121.9	117.1	115.9
SG	7	11	1116	SKO	SGM	ORK	DMK	488	408	343	375	14632	13988	0.00	-13.83	141.3	158.8	142.8	130.5	121.9	117.1	115.9
SG	7	11	1120	URO	WRH	KRK	DDK	488	406	341	377	14657	13910	0.00	-14.02	141.3	158.7	142.8	130.5	121.9	117.1	115.9
SG	7	11	1124	0G0	GRM	HGK	GOK	479	403	350	379	14640	13895	0.00	-14.21	141.3	159.1	143.0	130.7	122.1	117.1	115.9
SG	7	11	1246	W00	WRM	MUK	GGW	462	406	358	411	14666	13919	0.00	-17.26	141.3	159.5	143.5	131.1	122.4	117.4	116.0
SG	7	11	1250	K00	ORM	DKG	OGM	490	407	345	415	14623	13980	0.00	-17.65	141.3	159.1	143.1	130.8	122.2	117.3	116.1
SG	7	11	1253	RGO	RRM	RKK	GUM	474	402	362	419	14647	13902	0.00	-18.03	141.3	159.7	143.6	131.2	122.5	117.4	116.1
SG	7	11	1257	OKO	GRM	UUU	KUM	495	403	356	421	14635	13973	0.00	-18.22	141.3	159.5	143.5	131.1	122.4	117.4	116.1
SG	7	11	1301	KUO	ORM	OKK	SKM	485	401	367	424	14631	13987	0.00	-18.51	141.3	159.9	143.8	131.4	122.6	117.5	116.1
SG	7	11	1305	UGO	URW	RWK	DKM	476	404	370	425	14644	13999	0.00	-18.61	141.3	160.1	143.9	131.4	122.6	117.5	116.1
SG	7	12	807	KGO	WRM	UUU	GUD	477	406	319	99	14643	13998	0.00	15.98	141.3	156.0	139.8	127.6	119.4	116.6	115.9
SG	7	12	820	SSS	SSS	DKU	GRK	0	0	297	339	15411	14589	0.00	-10.40	141.3	157.8	141.5	129.8	121.4	116.7	115.9
SG	7	12	824	GKO	SGM	DSK	GRK	491	408	321	339	14621	13979	0.00	-10.21	141.3	157.6	141.8	129.7	121.3	116.7	115.9
SG	7	12	828	U00	ORM	UUU	DRK	487	407	316	337	14628	13984	0.00	-10.21	141.3	157.6	141.8	129.7	121.3	116.7	115.9
SG	7	12	832	U00	ORM	UUU	DRK	484	407	316	337	14632	13988	0.00	-10.21	141.3	157.6	141.8	129.7	121.3	116.7	115.9

FLIGHT INFORMATION FORM

FLIGHT NO. 97152 BLCP/SUK Float Altitude 150 mb

Diagram of Flight Train

GHOST Frequency = 15.02 2 MHz

Sun Angle I.D. Code B

Calibration Data

30 DEG	30.6
50 DEG	24.9
70 DEG	15.7

2nd Package Frequency = 15.02 5 MHz

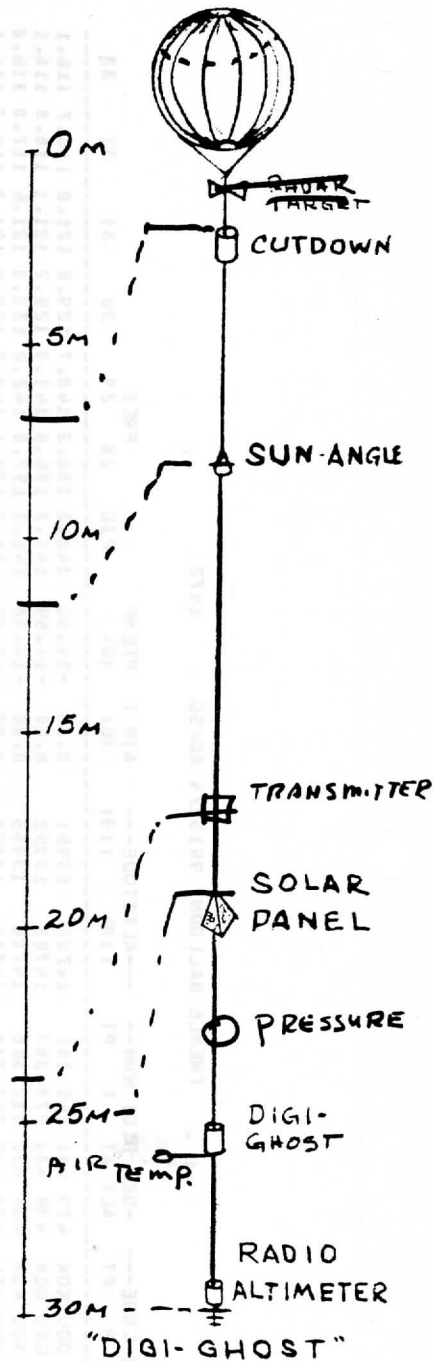
I.D. Code UK

Code Letter Sensor
 Altimeter; Air Temp;
 Pressure; Pressure Temp

Calibration Data

BALLOON DATA

Balloon ID# (Mfg*) R 72-03
 Launch date July 13, 1972
 Launch site Ascension
 Film Celanar (Capped)
 Diameter Seam= 3.5687 m Gore= 3.5690 m
 Volume 23,679 m³
 Balloon Weight 3577 g
 Payload Weight 1290 g
 Duration _____
 Last Known Position _____



REMARKS

Surface conditions at launch _____

* R = Raven Industries, Inc.
 S = G. T. Schjeldahl Co.

THERLE BALLOON 97152/5 BLCP/UK 1972

ID	DATE	TIME	---DIGI CODE---		-DEC DIGI NUM--		---ALTITUDE---		AIR T	FIEPP	PRES										
			ALT	AT	P	PT	PT	(18)	(19)	(C)	(C)	PIC	28	29	30	31	32	33			
UK	7	16	1424	UKG	KOK	KRK	KGU	236	381	341	285	15021	14239	-69.38	141.1	118.0	115.7	116.5	121.6	129.9	141.5
UK	7	16	1428	UGG	GOK	SSS	SSS	227	379	0	0	15036	14252	-69.24	141.2	117.1	120.3	127.7	139.5	155.6	176.1
UK	7	16	1438	UDS	GOK	UNK	KGM	12	347	372	413	15391	14571	-66.95	142.8	118.5	115.0	114.6	117.3	123.1	132.1
UK	7	19	509	ODS	SUK	GDM	HGG	57	352	395	222	15315	14503	-4.35	142.5	118.3	116.1	117.6	122.8	131.7	144.2
UK	7	19	537	SSS	DUK	RSM	KSU	0	353	386	261	15411	14589	-67.37	142.5	118.3	115.3	117.1	121.8	130.1	141.9
UK	7	30	2145	UOO	UDM	RRK	SGS	508	396	338	24	14596	13855	-70.48	140.3	117.4	117.5	121.8	130.3	143.1	160.1
UK	7	30	2149	GKO	RDW	SGK	DGS	431	394	344	25	14621	13879	-70.33	140.4	117.5	117.5	121.7	130.1	142.8	159.8
UK	7	30	2153	MSO	UDM	MDK	SGS	454	396	334	24	14678	13930	-70.48	140.3	117.4	117.5	121.8	130.4	143.2	160.2
UK	7	30	2201	DKO	OSM	DRK	RGS	489	391	337	26	14624	13891	-70.11	140.6	117.4	117.5	121.7	130.3	143.0	160.0
UK	7	30	2205	GRO	SDM	USK	KRS	467	392	324	21	14658	13912	-70.18	140.5	117.4	117.6	122.0	130.7	143.7	160.9
UK	8	11	2048	MDO	OMK	OSK	ROM	102	375	327	442	15240	14436	-68.95	141.4	118.2	114.6	114.1	116.6	122.2	130.8
UK	8	11	2053	RKD	GWK	OGK	OMW	106	371	351	439	15234	14430	-68.66	141.6	118.4	114.7	114.1	116.5	122.0	130.6
UK	8	11	2058	GDO	OUK	DUK	RKM	123	359	353	426	15206	14405	-67.80	142.2	118.4	114.8	114.4	117.0	122.7	131.5
UK	8	11	2048	MDO	OMK	OSK	ROM	102	375	327	442	15240	14436	-68.95	141.4	118.2	114.6	114.1	116.6	122.2	130.8
UK	8	11	2053	RKD	GWK	OGK	OMW	106	371	351	439	15234	14430	-68.66	141.6	118.4	114.7	114.1	116.5	122.0	130.6
UK	8	11	2058	GDO	OUK	DUK	RKM	123	359	353	426	15206	14405	-67.80	142.2	118.4	114.8	114.4	117.0	122.7	131.5
UK	8	11	2101	KUD	MSK	DRK	DUM	101	374	337	417	15242	14437	-68.87	141.4	118.2	114.8	114.6	117.4	123.4	132.5
UK	8	11	2105	UOO	SSS	SSS	SSS	97	0	0	0	15249	14443	-41.42	150.4	117.1	120.3	127.7	139.5	155.6	176.1
UK	8	11	2235	UOO	KOK	SSK	UWM	72	381	320	436	15290	14481	-69.38	141.1	118.1	114.6	114.2	116.9	122.6	131.4
UK	8	11	2239	RRD	OUK	MSK	KWM	82	380	326	430	15273	14466	-69.31	141.1	118.1	114.7	114.3	117.1	122.9	131.8
UK	8	11	2242	ODD	OUK	WRU	UOM	79	383	278	444	15278	14470	-69.53	141.0	117.7	114.4	114.2	116.9	122.8	131.7
UK	8	11	2246	ODD	SOK	SSK	OSO	97	376	320	455	15249	14443	-69.02	141.3	118.1	114.5	113.8	116.2	121.6	129.9
UK	8	11	2250	ODD	WOK	SGU	OSO	73	382	280	455	15288	14479	-69.45	141.0	117.7	114.3	113.9	116.5	122.1	130.7
UK	8	11	2253	KRD	GOK	ROU	SRO	85	379	314	464	15269	14461	-69.24	141.2	118.1	114.4	113.6	115.9	121.4	129.3
UK	8	11	2257	SRD	GOK	OKU	WOO	80	377	303	462	15277	14469	-69.09	141.3	118.0	114.3	113.7	116.1	121.4	129.3
UK	8	11	2301	GGO	OUK	SWU	DRO	91	380	304	465	15259	14452	-69.31	141.1	118.0	114.3	113.6	115.9	121.2	129.4
UK	8	11	2305	ORD	USM	UGU	ODO	87	388	284	457	15265	14458	-69.89	140.7	117.8	114.3	113.9	116.4	121.9	130.5
UK	8	11	2308	HDD	USM	GRU	ORO	78	388	275	471	15280	14472	-69.89	140.7	117.7	114.1	113.6	115.9	121.2	129.5
UK	8	11	2312	UOS	GSM	URU	RGO	60	387	276	474	15310	14499	-69.82	140.8	117.9	114.1	113.5	115.8	121.0	129.2
UK	8	11	2316	OOS	WSM	SKU	DUO	63	390	296	481	15305	14494	-70.04	140.6	117.9	114.1	113.3	115.4	120.3	128.2
UK	8	11	2319	GDD	KSM	GWU	WRO	75	389	307	470	15285	14476	-69.96	140.7	118.0	114.3	113.5	115.7	120.9	129.0
UK	8	11	2323	GSD	SUM	HGU	URO	67	392	286	468	15298	14488	-70.18	140.5	117.8	114.2	113.6	115.9	121.3	129.5
UK	8	11	2327	RDD	OSM	SUU	UGO	74	391	288	476	15287	14478	-70.11	140.6	117.8	114.2	113.4	115.6	120.7	128.8
UK	8	11	2330	GDD	MSM	RUU	RGO	75	390	290	474	15285	14476	-70.04	140.6	117.8	114.2	113.5	115.7	120.8	129.0
UK	8	11	2334	ODD	SDM	DRU	ODO	73	392	273	465	15288	14479	-70.18	140.5	117.7	114.2	113.7	116.2	121.6	130.0
UK	8	11	2336	ODD	SDM	DRU	ODO	73	392	273	465	15288	14479	-70.18	140.5	117.7	114.2	113.7	116.2	121.6	130.0
UK	8	15	1828	RGW	UUK	GSK	UUM	410	356	323	423	14746	13991	-67.59	140.5	117.7	114.2	113.7	116.2	121.6	130.0
UK	8	15	1850	MMK	SKK	OSK	DKM	374	360	327	425	14802	14042	-67.87	142.1	118.1	114.7	114.5	117.3	123.3	132.4
UK	8	15	2005	UDK	OUK	GKK	KUM	332	359	347	421	14868	14101	-67.80	142.2	118.3	114.8	114.5	117.2	123.1	132.0
UK	8	15	2030	OKU	RKK	KGU	DOU	303	362	285	313	14914	14143	-68.01	142.0	117.6	115.5	116.8	121.5	129.6	141.1
UK	8	16	1153	UUU	SRK	KSR	DKO	292	336	133	489	14932	14158	-66.18	143.3	116.4	113.4	113.4	116.2	122.0	130.6
UK	8	16	1325	OOM	KSK	DDM	DRM	447	325	393	401	14689	13940	-65.41	143.8	116.7	115.1	114.7	117.5	123.4	130.5
UK	8	17	1205	SSU	KOO	KGO	SSS	256	509	477	0	14989	14210	-79.71	133.9	118.0	117.2	120.6	128.4	140.5	156.9
UK	8	17	1206	SUU	OOO	SSS	SSS	264	255	0	0	14976	14199	-60.60	147.2	117.1	120.3	127.7	139.5	155.6	176.1
UK	8	17	1439	SRU	SUU	KKD	SSS	272	504	109	0	14964	14187	-79.24	134.3	117.0	119.2	125.8	136.7	151.9	171.4
UK	8	17	1444	GKU	WDG	GOU	KRD	299	206	507	85	14921	14148	-57.23	149.5	118.6	116.8	118.9	125.1	135.4	149.7
UK	8	18	727	RDS	UDO	SSS	SSS	10	460	0	0	15394	14574	-75.44	136.9	117.1	120.3	127.7	139.5	155.6	176.1
UK	8	18	729	RDS	KJK	KOO	DDO	10	333	509	457	15394	14574	-65.97	143.4	120.2	115.5	113.7	114.9	119.1	126.4

TWERLE BALLOON 97152/5 BLCF/JUK 1972

ID	DATE	TIME	---DIGI CODE---	ALT AT P	PT	---DEC DIGI NUM---	ALT AT F	PT	---ALTITUDE---	AIR T (C)	PTEMP (C)	PID	PRES	28	29	30	31	32	33
UK	8	18	934	KRR	ROU	WSM	USM	149	314	390	388	144.4	118.7	115.2	115.0	117.9	124.1	133.5	
UK	8	18	1406	KRR	SOU	GOM	KDM	170	312	395	397	144.5	118.7	115.2	114.8	117.6	123.6	132.7	
UK	8	18	1201	SJR	OKU	GOM	UGG	184	303	443	252	144.9	118.7	116.0	116.9	121.3	129.4	141.0	
UK	8	18	1348	USR	UMU	URM	DRR	132	308	404	145	144.6	118.1	116.5	118.8	125.0	135.0	148.9	
UK	8	18	1431	RKU	OSK	KRK	GSU	106	321	341	259	144.0	117.9	115.9	117.4	122.4	131.1	143.3	
UK	8	18	1450	SUD	DDK	MDK	WKG	96	329	334	238	143.6	117.8	116.0	117.8	123.2	144.9		
UK	8	18	1539	RDR	DDK	GRK	UGU	138	329	339	284	143.6	118.0	115.7	117.0	121.7	129.9	141.7	
UK	8	18	1603	WOD	WOK	OKU	OSO	126	334	303	455	143.4	117.9	114.4	113.9	116.3	121.8	130.3	
UK	8	20	618	UKD	WKD	DUK	URO	108	110	353	468	154.2	118.5	114.5	113.5	115.5	120.4	128.3	
UK	8	20	713	KMU	USK	KOK	RWK	117	324	391	370	143.9	118.5	115.2	118.6	125.1	134.9		
UK	8	20	755	KKO	WOK	OKU	ODU	109	334	377	271	143.7	118.2	115.8	117.0	121.6	129.8	141.5	
UK	8	20	909	SSS	SDK	KWK	UGW	0	328	373	412	143.7	118.6	115.0	114.6	117.3	123.1	132.1	
UK	8	20	937	SSS	WRR	WOK	RRW	0	150	382	402	152.2	118.6	115.1	114.7	117.5	123.5	132.7	
UK	8	20	947	GGR	SSK	KKK	SSS	319	373	368	0	141.5	117.5	117.5	121.9	130.6	143.6	161.0	
UK	8	20	1023	SSS	UDK	SSW	OGK	155	320	365	390	144.1	118.4	115.1	115.0	118.1	124.4	133.9	
UK	8	20	1026	SSS	RRK	KOK	MDK	0	338	381	334	143.5	118.5	115.4	115.6	119.1	126.0	136.1	
UK	8	20	1145	KGR	SSK	GRM	DOU	157	320	403	313	143.2	118.4	115.5	115.9	119.7	126.8	137.3	
UK	8	20	1149	UMR	UMU	SUM	GDU	130	308	416	267	144.1	118.6	115.7	116.2	120.1	127.4	138.2	
UK	8	20	1136	WOG	WUW	UGM	GKK	206	310	412	363	144.6	118.6	115.9	116.8	121.3	129.2	140.8	
UK	8	20	1252	RRG	GRU	UHW	DGK	210	307	436	345	144.7	119.0	115.6	115.5	118.5	124.9	134.7	
UK	8	20						210	307	436	345	144.7	119.0	115.6	115.5	118.5	124.9	134.7	

TWERLE BALLOON 97152/5 BLCPP/UK 1972

ID	DATE	TIME	ALT AT	P	PT	---DIGI CODE---	ALT AT	P	PT	---DIGI NUM---	ALT AT	P	PT	---ALTITUDE---	AIR T	PTEMP	PIC	PRES	28	29	30	31	32	33
UK	7	13	934	OKS	UOK	URU	ROW	41	390	273	394	15342	14527	-69.31	-13.75	141.1	117.6	114.8	115.2	118.8	125.6	135.6	135.6	
UK	7	13	938	S00	SSM	RKG	URW	504	384	234	404	14602	13861	-69.60	-19.64	140.9	117.3	114.6	115.2	116.9	125.7	135.7	135.7	
UK	7	13	942	KUS	OKK	WOG	GGW	37	381	254	411	15349	14533	-69.38	-20.28	141.1	117.4	114.6	114.9	118.4	125.0	134.8	134.8	
UK	7	13	945	KDS	OKK	DUG	DGW	13	383	225	409	15389	14570	-69.53	-20.10	141.0	117.2	114.6	115.1	118.8	125.6	135.6	135.6	
UK	7	13	949	DSS	WOK	GKG	KRW	1	382	235	405	15409	14588	-69.45	-19.73	141.0	117.3	114.6	115.1	118.8	125.7	135.6	135.6	
UK	7	13	953	S0S	GOK	OGK	USM	8	379	351	388	15398	14577	-69.24	-13.22	141.2	118.3	115.1	115.1	118.3	124.7	134.3	134.3	
UK	7	13	957	GSS	GOK	HUG	OSM	3	379	230	391	15406	14575	-69.24	-13.49	141.2	117.2	114.8	115.5	119.4	126.5	136.8	136.8	
UK	7	13	1000	RK0	KMK	MDG	MDH	490	373	206	398	14623	13880	-68.80	-13.11	141.5	117.0	114.6	115.4	119.4	126.5	136.9	136.9	
UK	7	13	1004	KDS	OKK	GDG	KSM	13	377	203	389	15389	14570	-69.09	-18.31	141.3	117.0	114.7	115.6	119.8	127.1	137.6	137.6	
UK	7	13	1008	SSS	UOK	KSG	OSM	0	390	137	395	15411	14589	-69.31	-17.96	141.1	117.0	114.8	115.8	120.0	127.4	138.1	138.1	
UK	7	13	1012	W0M	WOK	OGG	WRK	446	382	223	342	14690	13941	-69.45	-14.26	141.0	117.2	115.2	116.5	121.2	129.3	140.6	140.6	
UK	7	13	1016	DW0	KOK	UKG	RDK	497	381	236	330	14612	13870	-69.38	-13.25	141.1	117.3	115.3	116.7	121.5	129.7	141.2	141.2	
UK	7	13	1019	RW0	KOK	KJG	GUK	498	391	229	355	14611	13859	-69.38	-15.36	141.1	117.2	115.1	116.2	120.7	128.5	139.5	139.5	
UK	7	13	1023	UDS	GOK	KKG	OSK	12	379	237	321	15391	14571	-69.24	-12.50	141.2	117.3	115.4	116.9	121.8	130.1	141.8	141.8	
UK	7	13	1027	000	KOK	RMG	OKU	511	381	242	303	14591	13851	-69.38	-11.00	141.1	117.3	115.5	117.2	122.3	130.9	142.9	142.9	
UK	7	13	1031	OKS	OKK	WKG	SDK	17	377	238	328	15382	14564	-69.09	-13.08	141.3	117.3	115.3	116.7	121.5	129.7	141.3	141.3	
UK	7	13	1034	GRS	OKK	WKG	SDK	19	377	238	328	15379	14561	-69.09	-13.08	141.3	117.3	115.3	116.7	121.5	129.7	141.3	141.3	
UK	7	13	1038	R00	GOK	OKG	MGU	506	379	239	286	14599	13958	-69.24	-9.60	141.2	117.3	115.7	117.6	123.0	131.9	144.2	144.2	
UK	7	13	1042	DSS	ROK	SWG	URU	1	378	240	276	15409	14588	-69.16	-3.78	141.2	117.3	115.7	117.8	123.3	132.3	144.9	144.9	
UK	7	13	1046	000	WOK	WKG	KUU	505	382	238	293	14600	13859	-69.45	-10.18	141.0	117.2	115.6	117.4	122.7	131.5	143.8	143.8	
UK	7	13	1049	URS	GOK	WKG	KWU	20	379	238	309	15377	14559	-69.24	-11.50	141.2	117.3	115.5	117.4	122.2	131.7	142.6	142.6	
UK	7	13	1053	S0S	MWK	WOG	OWU	8	374	254	311	15398	14577	-68.87	-11.67	141.4	117.4	115.5	117.0	121.9	130.3	142.1	142.1	
UK	7	13	1057	GR0	SOK	RSU	OKU	467	376	258	297	14658	13912	-69.02	-10.51	141.3	117.4	115.6	117.2	122.3	130.9	142.9	142.9	
UK	7	13	1100	RSS	OKK	SOG	WOU	37	375	248	318	15408	14586	-69.95	-12.25	141.4	117.3	115.4	116.9	121.8	130.0	141.7	141.7	
UK	7	13	1104	SRS	KMK	DMG	DRK	16	375	241	337	15384	14555	-68.80	-13.84	141.5	117.3	115.2	116.5	121.2	129.2	140.6	140.6	
UK	7	13	1108	SK0	OKK	WGG	SRK	488	375	222	336	14626	13893	-68.95	-13.84	141.4	117.2	115.2	116.5	121.4	129.6	140.0	140.0	
UK	7	13	1112	RRS	OKK	WGG	SRK	18	375	244	336	15381	14562	-68.95	-13.75	141.4	117.3	115.3	116.5	121.2	129.2	140.5	140.5	
UK	7	13	1116	SW0	OKK	GKG	GSK	496	375	235	323	14614	13872	-68.95	-12.66	141.4	117.2	115.4	116.9	121.8	130.0	141.7	141.7	
UK	7	13	1119	W00	OKK	GKG	KOU	494	375	235	317	14617	13875	-68.95	-12.16	141.4	117.2	115.4	117.0	122.0	130.3	142.1	142.1	
UK	7	13	1123	W00	OKK	KKG	KSK	510	380	237	325	14592	13853	-69.31	-12.83	141.1	117.3	115.3	116.8	121.7	129.9	141.5	141.5	
UK	7	13	1204	KK0	OKK	UUG	RKK	493	375	228	338	14618	13876	-69.95	-13.92	141.4	117.2	115.2	116.6	121.3	129.4	140.8	140.8	
UK	7	13	1208	G00	KKK	UUG	OSK	507	365	228	327	14597	13857	-68.23	-13.00	141.9	117.2	115.3	116.8	121.7	129.0	141.6	141.6	
UK	7	13	1212	000	OKK	DMG	ROU	505	375	241	314	14600	13859	-68.95	-11.92	141.4	117.3	115.4	117.0	122.0	130.4	142.2	142.2	
UK	7	13	1216	U00	KMK	DMG	KUU	508	373	247	293	14596	13855	-68.80	-10.18	141.5	117.3	115.6	117.4	122.6	131.3	143.5	143.5	
UK	7	13	1220	KUM	SOK	KMG	KGU	421	376	245	285	14729	13976	-69.02	-9.52	141.3	117.3	115.7	117.5	122.9	131.8	144.1	144.1	
UK	7	13	1223	S0S	DMK	GMG	MGU	8	369	243	286	15398	14577	-68.51	-3.60	141.7	117.3	115.7	117.5	122.9	131.8	144.1	144.1	
UK	7	13	1227	000	DMK	UUG	OUU	505	369	228	289	14600	13859	-68.51	-9.85	141.7	117.2	115.6	117.6	123.0	131.9	144.3	144.3	
UK	7	13	1238	WU0	ROK	SUG	HWG	486	378	224	246	14629	13886	-69.16	-6.32	141.2	117.1	116.0	118.5	124.6	134.2	147.5	147.5	
UK	7	13	1242	WU0	KMK	OGG	ODU	500	373	233	271	14608	13866	-68.90	-8.37	141.5	117.1	115.8	118.0	123.7	133.0	145.7	145.7	
UK	7	13	1246	U00	SOK	RJG	OGU	484	376	218	287	14632	13888	-69.02	-9.68	141.3	117.1	115.7	117.7	123.2	132.2	144.7	144.7	
UK	7	13	1249	WU0	GMK	GRG	OGU	500	371	211	281	14608	13866	-68.66	-9.19	141.6	117.1	115.7	117.9	123.5	132.7	145.4	145.4	
UK	7	13	1253	GK0	OKK	WGG	GDU	491	377	222	267	14621	13879	-69.09	-8.04	141.3	117.1	115.8	118.1	123.9	133.2	146.0	146.0	
UK	7	13	1257	UK0	SOK	DMG	SOU	492	376	241	264	14620	13877	-69.02	-7.80	141.3	117.3	115.8	118.0	123.7	133.9	145.7	145.7	
UK	7	13	1308	WU0	MOK	RRG	KWU	494	382	210	309	14617	13875	-69.45	-11.50	141.0	117.1	115.5	117.3	122.6	131.3	143.4	143.4	
UK	7	13	1321	OK0	SSM	JRG	GSK	495	334	209	323	14615	13873	-69.60	-12.66	140.9	117.1	115.3	117.0	122.1	130.5	142.4	142.4	
UK	7	13	1337	OK0	WOK	KOG	UDK	495	382	205	332	14615	13873	-69.45	-13.42	141.0	117.0	115.3	116.9	121.8	130.2	141.8	141.8	
UK	7	13	1334	000	OKK	SSG	KDK	505	383	152	333	14600	13859	-69.53	-13.50	141.0	117.0	115.3	116.9	122.0	130.4	142.1	142.1	
UK	7	13	1338	OK0	OKK	ODG	RRK	495	383	207	338	14615	13873	-69.53	-13.92	141.0	117.1	115.2	116.7	121.6	129.8	141.4	141.4	

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ID	DATE	TIME	---DIGI CODE---	ALT AT P	PT	---ALTITUDE---	(18)	(19)	AIR T (C)	PTEMP (C)	PID	PRES	30	31	32	33	
UK	7	13	1404 D00 GOK MOR KKK	505	379	190	365	14600	13859	-16.22	141.2	116.9	114.5	116.2	120.8	128.7	139.0
UK	7	13	1416 R00 D00 JOR DKK	482	449	185	361	14635	13891	-15.87	137.5	116.9	115.0	116.4	121.0	129.0	140.2
UK	7	13	1419 S00 D00 SSM DGG SJK	511	385	193	352	14591	13851	-15.11	140.9	117.0	115.1	116.5	121.3	129.3	140.7
UK	7	13	1423 S00 SSM SGG WKK	496	384	216	350	14614	13872	-14.54	140.9	117.1	115.1	116.4	121.0	129.0	140.2
UK	7	13	1427 G00 USM GMR GKK	491	388	179	347	14621	13879	-14.68	140.7	116.9	115.1	116.7	121.6	129.8	141.4
UK	7	13	1431 G00 WSM OMR SGG	499	390	183	344	14609	13868	-14.43	140.6	116.9	115.2	116.7	121.7	129.9	141.5
UK	7	13	1434 UKO OUM OUR UUK	492	393	167	356	14620	13877	-15.45	140.5	116.8	115.0	116.6	121.4	129.6	141.0
UK	7	13	1438 SGO SDM KRR RKK	472	392	149	362	14650	13905	-15.96	140.5	116.7	115.0	116.6	121.4	129.6	141.0
UK	7	13	1442 D05 GSW SDG GKK	9	387	200	351	15396	14576	-15.02	140.8	117.0	115.1	116.5	121.2	129.2	140.6
UK	7	13	1449 KSS RSM SRG RKK	5	386	208	346	15403	14582	-14.60	140.8	117.1	115.1	116.5	121.3	129.3	140.7
UK	7	13	1453 MKO USM KUG KDK	494	388	205	333	14617	13875	-13.50	140.7	117.0	115.3	116.8	121.8	130.1	141.8
UK	7	13	1457 GDS KOK SDG RDK	11	381	200	330	15393	14573	-13.25	141.1	117.0	115.3	116.9	122.0	130.4	142.1
UK	7	13	1501 WMO KOK RUG WKK	502	381	226	350	14605	13864	-14.54	141.1	117.2	115.1	116.4	120.9	128.8	140.0
UK	7	13	1504 SDS WOK DRG OKK	8	382	209	367	15398	14577	-16.39	141.0	117.1	114.9	116.1	120.5	128.2	139.1
UK	7	13	1544 GUS SMK DRU DUG	35	368	273	225	15352	14571	-11.00	141.5	117.4	115.5	117.1	122.1	130.6	142.5
UK	7	13	753 SSS UDM SUU SUU	0	378	217	380	15411	14589	-17.52	141.2	117.1	114.8	115.8	119.9	127.3	138.0
UK	7	13	1519 JDS DOK UOG GKK	9	377	252	361	15396	14576	-15.87	141.3	117.4	115.0	116.0	120.2	127.7	138.5
UK	7	13	1523 HRS ROK WOG UGK	22	376	254	348	15374	14556	-14.77	141.2	117.4	115.2	116.2	120.7	128.4	139.4
UK	7	13	1527 ODS ROK DWG RDK	15	378	241	330	15386	14567	-13.25	141.2	117.3	115.3	116.7	121.4	129.6	141.1
UK	7	13	1534 UJS WKK USU OKU	12	372	257	303	15391	14571	-11.00	141.5	117.4	115.5	117.1	122.1	130.6	142.5
UK	7	13	753 SSS UDM SUU SUU	0	396	288	480	15411	14589	-24.94	141.7	117.4	116.1	118.5	124.5	134.2	147.5
UK	7	14	755 OMO SDH ROU SRO	503	392	314	464	14603	13862	-25.31	140.5	118.1	114.4	113.6	115.9	121.1	129.3
UK	7	14	802 OJO RDM SSS G00	487	394	0	459	14628	13884	-24.81	140.4	115.5	113.7	114.8	119.0	126.2	136.3
UK	7	14	808 R00 G0M G0U KRO	122	395	267	466	14667	14406	-70.41	140.4	117.6	114.2	113.7	116.2	121.6	130.1
UK	7	14	812 WGO UDM DRU KRO	478	396	273	469	14641	13897	-70.48	140.3	117.7	114.2	113.6	116.0	121.4	129.7
UK	7	14	937 W00 G0M GUG RSM	462	395	227	386	14666	13919	-18.44	140.4	117.2	114.8	115.6	119.6	126.8	137.3
UK	7	14	941 OGO WDM WUG DDM	473	398	230	393	14649	13904	-18.66	140.2	117.2	114.7	115.4	119.3	126.4	136.7
UK	7	14	1029 S00 SRM DGG MSU	456	400	201	282	14675	13927	-70.78	140.1	117.0	115.9	118.3	124.3	133.9	147.0
UK	7	14	1059 K00 KDM RRG KUG	461	397	210	229	14667	13920	-70.55	140.2	117.1	116.2	119.0	125.4	135.4	149.1
UK	7	14	1133 GRO ODM OGG WGU	467	399	223	286	14658	13912	-70.70	140.2	117.1	115.7	117.7	123.2	132.2	144.7
UK	7	15	954 SSS USM ODU DGG	0	388	271	201	15411	14589	-22.61	140.7	117.4	116.3	119.0	125.3	135.4	149.2
UK	7	16	623 MHU GKK DWK RWM	310	363	369	434	14903	14133	-68.08	142.0	118.6	114.8	114.2	116.6	122.1	130.6
UK	7	16	656 SMM OUM SDK ROM	432	399	328	442	14712	13960	-70.70	140.2	118.2	114.6	114.1	116.6	122.2	130.8
UK	7	16	726 MKO RRM KGU KKM	494	402	285	429	14617	13875	-70.92	140.0	117.7	114.6	114.5	117.5	123.5	132.7
UK	7	16	733 GOG OUK USM DGU	203	359	388	281	15075	14237	-67.80	142.2	118.4	115.8	116.7	121.2	129.1	140.6
UK	7	16	750 G00 UDM RKU WSM	483	396	298	390	14634	13890	-70.48	140.3	117.8	114.9	115.2	118.7	125.4	135.4
UK	7	16	818 WOG UKK OKK OGG	254	364	367	207	14992	14213	-68.16	141.3	118.0	116.2	118.1	123.7	133.0	146.0
UK	7	16	855 DKK RRM WDU SJK	361	402	270	368	14823	14060	-70.92	140.0	117.5	115.0	115.8	119.8	127.1	137.6
UK	7	16	931 SSM SGM WJU GKK	384	408	244	355	14787	14028	-71.37	139.7	117.8	115.1	116.2	120.5	128.2	139.2
UK	7	16	940 RMG WOK WJU KSK	242	362	308	325	15012	14238	-69.45	141.0	117.8	115.4	116.4	120.8	128.6	139.7
UK	7	16	944 UUG ODK SSS SSS	228	377	0	0	15034	14251	-69.09	141.3	117.1	120.3	127.7	139.5	155.6	176.1
UK	7	16	1038 KMD WOK KOU DUK	117	382	317	297	15215	14414	-69.45	141.0	117.8	115.6	116.9	121.6	129.7	141.4
UK	7	16	1052 SSS RRM USU GUK	192	402	259	348	15093	14303	-70.92	140.0	117.4	115.2	116.2	120.6	128.3	139.3
UK	7	16	1116 RKO URK SSS RUK	106	340	0	354	15234	14430	-66.46	143.1	115.9	115.2	117.9	123.8	133.1	145.6
UK	7	16	1119 UWR WDM KRU GRK	180	398	277	339	15112	14321	-70.63	140.2	117.6	115.3	116.3	120.7	128.4	139.5
UK	7	16	1122 OKD KRM GUR URK	111	405	275	340	15225	14423	-71.15	139.9	117.5	115.2	116.3	120.7	128.4	139.5
UK	7	16	1150 SUR KDM SUU DGG	136	397	288	345	15184	14385	-70.55	140.3	117.7	115.2	116.1	120.4	127.9	138.8
UK	7	16	1152 ORO SDM KSU OUK	471	392	261	359	14652	13906	-70.18	140.5	117.5	115.1	116.0	120.2	127.7	138.5

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MONTH	DAY	TIME	SUN ANGLE	GAS TEMP	VOLUME	LATITUDE	LONGITUDE
7	13	831	1.25	-4.74	23.258		
7	13	843	4.71	-8.78	23.249		
7	13	848	4.71	-10.89	23.259		
7	13	904	10.58	-15.07	23.237		
7	13	915	25.10	-22.23	23.244		
7	13	918	27.63	-26.97	23.232		
7	13	922	32.14	-25.73	23.232		
7	13	924	33.13	-23.78	23.270		
7	13	925	31.09	-21.11	23.373		
7	13	927	32.14	-18.94	23.460		
7	13	929	31.09	-21.18	23.514		
7	13	934	31.09	-23.62	23.609		
7	13	935	30.55	-23.82	23.633		
7	13	937	30.00	-22.96	23.718		
7	13	940	32.14	-22.03	23.687		
7	13	942	33.13	-20.68	23.673		
7	13	944	32.64	-21.80	23.687		
7	13	946	32.64	-21.60	23.722		
7	13	948	33.13	-21.37	23.727		
7	13	950	33.60	-21.64	23.707		
7	13	952	34.07	-19.96	23.768		
7	13	957	34.96	-18.51	23.772		
7	13	1015	40.98	-19.58	23.782		
7	13	1024	41.32	-16.56	23.797		
7	13	1026	42.30	-16.81	23.788		
7	13	1033	45.08	-20.48	23.804		
7	13	1037	45.08	-19.72	23.808		
7	13	1047	47.08	-18.32	23.811		
7	13	1101	49.48	-16.30	23.856		
7	13	1103	50.00	-17.57	23.851		
7	13	1107	50.00	-17.82	23.851		
7	13	1109	51.00	-16.56	23.851		
7	13	1123	54.32	-17.98	23.821		
7	13	1125	54.55	-18.07	23.820		
7	13	1147	55.63	-18.62	23.831		
7	13	1223	59.61	-12.98	23.857		
7	13	1231	59.39	-12.13	23.912		
7	13	1235	59.39	-12.03	23.920		
7	13	1246				6.6S	9.9W
7	13	1301	60.68	-14.28	23.930		
7	13	1303	60.25	-14.72	23.920		
7	13	1341	57.88	-13.41	23.933		
7	13	1343	57.88	-13.41	23.920		
7	13	1355	56.12	-14.02	23.917		
7	13	1357	56.35	-14.28	23.917		
7	13	1406	54.96	-14.98	23.933		
7	13	1430	51.15	-20.14	23.862		
7	13	1456	46.97	-22.40	23.840		
7	13	1511	42.94	-24.51	23.836		
7	13	1525	41.65	-24.40	23.812		
7	13	1533	37.87	-22.40	23.800		

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MCNTH	DAY	TIME	SUN ANGLE	GAS TEMP	VOLUME	LATITUDE	LCNGITUDE
7	13	1538	37.42	-23.66	23.809		
7	13	1552	33.13	-22.35	23.827		
7	13	1611	20.91	-18.97	23.800		
7	14	836	16.07	-16.52	23.805		
7	14	857	28.24	-17.94	23.816		
7	14	914	34.52	-16.19	23.762		
7	14	924	38.54	-15.96	23.885		
7	14	1000	47.35	-13.65	23.932		
7	14	1023	51.73	-13.10	23.973		
7	14	1100	56.56	-13.37	23.928		
7	14	1115	57.87	-16.74	23.885		
7	14	1133	59.39	-24.04	23.865		
7	14	1140	58.91	-22.65	23.829		
7	14	1153	58.09	-22.96	23.858		
7	14	1201				5.0S	1.4E
7	14	1220	59.82	-23.20	23.874		
7	14	1241	58.31	-23.27	23.858		
7	14	1250	57.13	-23.27	23.858		
7	14	1304	56.34	-29.46	23.838		
7	14	1316	50.24	-27.36	23.822		
7	14	1331	51.24	-25.51	23.856		
7	14	1342	49.99	-32.10	23.824		
7	14	1400	46.80	-32.17	23.833		
7	14	1409	45.19	-28.49	23.792		
7	14	1438	35.39	-25.74	23.813		
7	14	1451	33.69	-22.40	23.796		
7	14	1526	19.48	-24.54	23.774		
7	14	1555	8.66	-21.31	23.758		
7	15	847	44.77	-14.00	23.879		
7	15	934	52.25	-15.24	23.884		
7	15	1012	56.69	-18.00	23.889		
7	15	1016	58.52	-17.07	23.887		
7	15	1055	61.53	-22.51	23.858		
7	15	1104				5.0S	15.7E
7	15	1112	60.80	-25.55	23.845		
7	15	1149	58.95	-30.77	23.849		
7	15	1155	58.99	-25.57	23.849		
7	15	1244	52.16	-32.05	23.836		
7	15	1343	37.49	-30.11	23.798		
7	15	1415	30.44	-27.54	23.889		
7	15	1508	6.72	-30.87	23.802		

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MONTH	DAY	TIME	SUN ANGLE	GAS TEMP	VOLUME	LATITUDE	LONGITUDE
7	16	654	16.94	-29.41	23.694		
7	16	737	33.02	-32.88	23.717		
7	16	809	44.16	-28.11	23.752		
7	16	919	55.03	-29.41	23.752		
7	16	953	58.68	-26.57	23.796		
7	16	1017	59.20	-28.86	23.783		
7	16	1036				5.1S	22.7E
7	16	1134	56.77	-31.63	23.806		
7	16	1203	53.24	-26.57	23.824		
7	16	1223	50.23	-31.68	23.772		
7	16	1235	47.34	-29.69	23.801		
7	16	1259	41.24	-32.92	23.882		
7	16	1335	33.78	-32.21	23.824		
7	16	1412	17.06	-30.74	23.854		
7	17	630	14.49	-36.05	23.694		
7	17	711	30.32	-28.49	23.752		
7	17	735	37.93	-29.58	23.776		
7	17	838	49.41	-21.99	23.759		
7	17	924	54.39	-22.65	23.838		
7	17	953	56.50	-26.37	23.798		
7	17	1003				12.0S	31.0E
7	17	1021	54.53	-21.74	23.836		
7	17	1037	55.03	-27.15	23.831		
7	17	1103	51.32	-20.37	23.836		
7	17	1141	44.64	-20.42	23.911		
7	17	1207	40.36	-20.17	23.925		
7	17	1301	27.49	-20.83	23.827		
7	18	626	27.61	-25.16	23.734		
7	18	721	43.29	-27.34	23.755		
7	18	816	49.51	-28.85	23.781		
7	18	906	50.77	-29.65	23.820		
7	18	944				14.6S	35.7E
7	18	949	48.73	-29.23	23.783		
7	18	1056	37.24	-21.06	23.805		
7	19	803	47.25	-27.92	23.756		
7	19	808				22.3S	60.0E
7	19	837	44.75	-26.96	23.756		

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MONTH	DAY	TIME	SUN ANGLE	GAS TEMP	VOLUME	LATITUDE	LONGITUDE
7	19	925	36.92	-28.67	23.756		
7	19	1005	27.85	-27.54	23.730		
7	19	1041	16.56	-24.33	23.765		
7	22	417				17.1S	117.5E
7	23	332	56.26	-26.98	23.920		
7	23	334	54.47	-24.46	23.891		
7	23	337	54.93	-25.76	23.862		
7	23	341	45.59	-25.16	23.774		
7	23	343	54.93	-23.01	23.889		
7	23	345	54.24	-24.83	23.914		
7	23	347	54.70	-25.34	23.770		
7	23	349	54.93	-18.62	23.907		
7	23	351	54.47	-23.20	23.905		
7	23	353	55.15	-18.74	23.765		
7	23	355	54.70	-23.80	23.913		
7	23	357	54.93	-20.98	23.857		
7	23	359	54.70	-21.30	23.909		
7	23	401	54.70	-22.54	23.883		
7	23	403	54.24	-24.02	23.909		
7	23	405	53.55	-24.89	23.909		
7	23	407	55.60	-28.17	23.918		
7	23	409	54.24	-27.16	23.880		
7	23	412	52.62	-27.36	23.880		
7	23	414	52.62	-22.06	23.894		
7	23	416	53.32	-21.30	23.927		
7	23	418	54.02	-21.64	23.878		
7	23	424	54.24	17.13	23.889		
7	23	426	53.55	20.01	23.905		
7	23	428	52.14	26.78	23.956		
7	23	430	51.90	21.44	23.898		
7	23	448	49.92	21.64	23.905		
7	23	510	45.88	23.08	23.921		
7	23	520	45.30	22.76	23.910		
7	23	522	45.01	20.20	23.804		
7	23	524	44.42	18.75	23.908		
7	23	526	44.42	19.14	23.913		
7	23	528	44.11	22.86	23.928		
7	23	531	43.19	25.55	23.887		
7	23	533	42.88	26.15	23.923		
7	23	535	45.30	26.57	23.880		
7	23	537	40.92	21.37	23.894		
7	23	539	41.26	23.82	23.879		
7	23	541	39.90	25.53	23.902		

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MONTH	DAY	TIME	SUN ANGLE	GAS TEMP	VOLUME	LATITUDE	LONGITUDE
7	23	544	42.56	31.05	23.887		
7	23	546	37.36	30.04	23.881		
7	24	19	32.09	28.55	23.715		
7	24	37	33.08	29.01	23.840		
7	24	59	39.20	28.34	23.813		
7	24	102	40.25	29.11	23.817		
7	24	103	40.92	28.38	23.833		
7	24	105	38.48	27.56	23.806		
7	24	108	41.59	26.57	23.849		
7	24	110	44.41	22.29	23.813		
7	24	112	44.42	24.92	23.802		
7	24	114	42.88	27.58	23.824		
7	24	121	46.44	-25.74	23.833		
7	24	124	46.44	-25.34	23.820		
7	24	126	43.80	-21.87	23.824		
7	24	127	45.59	-22.20	23.893		
7	24	130	46.72	-0.00	-0.000		
7	24	158	50.92	-23.42	23.851		
7	24	200	61.23	-0.00	-0.000		
7	24	242	56.25	-19.63	23.872		
7	24	253	56.91	-20.52	23.858		
7	24	255	56.91	-20.91	23.872		
7	24	257	56.91	-26.15	23.886		
7	24	300	56.69	-20.99	23.845		
7	24	302	56.69	-25.33	23.867		
7	24	303	57.13	-24.93	-0.000		
7	24	322				13.9S	131.2E
7	24	516	46.72	-26.57	23.851		
7	24	518	47.28	-25.15	23.842		
7	24	520	46.16	-26.96	23.851		
7	24	522	45.59	-28.52	23.910		
7	24	524	45.30	-30.61	23.906		
7	24	527	45.87	-26.57	23.865		
7	24	529	44.41	-24.89	23.881		
7	24	531	44.41	-24.02	23.868		
7	24	533	44.11	-25.05	23.799		
7	24	535	43.49	-0.00	-0.000		
7	25	325				12.7S	130.5E
7	28	27	40.89	-31.05	23.789		

TWERLE BALLOON 97152/5 BLCP/UK 1972

MONTH	DAY	TIME	SUN ANGLE	GAS TEMP	VOLUME	LATITUDE	LCNGITUDE
7	28	31	41.56	-29.35	23.815		
7	28	33	41.88	-28.64	23.831		
7	28	36	46.13	-29.94	23.812		
7	28	42	40.22	-29.44	23.878		
7	28	45	42.53	-25.08	23.835		
7	28	47	44.98	-24.87	23.817		
7	28	49	44.08	-25.06	23.798		
7	28	53	45.56	-24.87	23.835		
7	28	55	44.68	-27.58	23.833		
7	28	58	43.47	-44.22	23.835		
7	28	100	44.98	-28.80	23.847		
7	28	102	54.66	-24.67	23.808		
7	28	104	44.68	-27.39	23.786		
7	28	106	49.12	-27.80	23.842		
7	28	130	53.98	-23.34	23.865		
7	28	132	48.33	-25.74	23.854		
7	28	134	52.58	-24.40	23.901		
7	28	140	56.00	-27.18	23.852		
7	28	142	53.05	-25.08	23.854		
7	28	144	53.28	-22.26	23.838		
7	28	147	52.10	-25.31	23.865		
7	28	151	52.81	-27.18	23.859		
7	28	155	53.28	-22.86	23.873		
7	28	157	53.52	-28.21	23.864		
7	28	159	54.43	-26.57	23.856		
7	28	201	53.98	-24.43	23.854		
7	28	203	55.33	-26.35	23.880		
7	28	205	56.22	-28.78	23.887		
7	28	207	56.66	-24.87	23.882		
7	28	209	55.33	-26.57	23.863		
7	28	213	55.33	-24.21	23.859		
7	28	216	56.66	-29.17	23.859		
7	28	218	56.22	-26.77	23.880		
7	28	220	56.00	-26.15	23.899		
7	28	222	59.26	-22.66	23.889		
7	28	224	57.75	-25.32	23.858		
7	28	226	57.54	-26.15	23.882		
7	28	230	58.19	-24.19	23.884		
7	28	234	58.19	-21.30	23.868		
7	28	236	58.83	-22.40	23.882		
7	28	242	59.05	-25.73	23.882		
7	28	244	58.62	-23.34	23.838		
7	28	245	58.19	-22.40	23.882		
7	28	250	60.55	-20.63	23.851		
7	28	256	58.83	-24.67	23.858		
7	28	258	60.12	-26.77	23.889		
7	28	300	59.48	-23.34	23.893		
7	28	302	59.05	-22.37	23.903		
7	28	304	59.91	-23.34	23.870		
7	28	334				10.2S	128.3E

TWERLE BALLOON 97152/5 BLCF/UK 1972

MONTH	DAY	TIME	SUN ANGLE	GAS TEMP	VOLUME	LATITUDE	LONGITUDE
7	29	48	51.61	-18.01	23.958		
7	29	53				10.1S	142.5E
7	29	58	51.61	-17.13	23.903		
7	30	106	63.73	-27.23	23.612		
8	2	302	69.42	-30.38	23.690		
8	6	840	55.44	-36.68	23.700		
8	6	854				2.6N	14.9E
8	6	908	53.63	-32.94	23.760		
8	8	606	40.58	-28.38	23.730		
8	8	723	51.68	-29.69	23.790		
8	8	757				20.4S	62.2E
8	8	844	49.55	-25.74	23.790		
8	8	926	42.92	-31.75	23.830		
8	8	1023	32.28	-23.25	23.810		
8	8	1126	9.12	-26.57	23.800		
8	9	542	43.15	-22.37	23.840		
8	9	553				29.8S	93.2E
8	9	610	43.34	-25.35	23.790		
8	9	724	37.82	-21.57	23.820		
8	9	834	23.02	-26.57	23.810		
8	11	38	49.96	-35.02	23.820		
8	11	40	49.45	-33.23	23.830		
8	11	42	49.95	-28.11	23.790		
8	11	44	49.70	-31.05	23.810		

TWERLE BALLOON 97152/5 BLCP/UK 1972

MONTH	DAY	TIME	SUN ANGLE	GAS TEMP	VOLUME	LATITUDE	LCNGITUDE
8	11	46	49.70	-34.43	23.810		
8	11	48	52.15	-33.33	23.810		
8	11	50	51.91	-31.05	23.830		
8	11	52	51.67	-27.24	23.820		
8	11	54	50.70	-31.41	23.820		
8	11	56	50.70	-35.73	23.830		
8	11	58	50.70	-34.66	23.830		
8	11	102	51.91	-30.03	23.820		
8	11	104	51.67	-31.25	23.830		
8	11	106	51.43	-32.77	23.820		
8	11	108	52.15	-33.19	23.840		
8	11	108				20.3S	151.8E
8	11	110	52.62	-31.25	23.830		
8	11	112	52.86	-30.03	23.820		
8	11	114	53.09	-33.51	23.830		
8	11	116	53.09	-32.04	23.840		
8	11	118	53.55	-30.82	23.840		
8	11	120	53.32	-31.05	23.820		
8	11	122	53.55	-35.91	23.790		
8	11	124	53.09	-32.62	23.810		
8	11	127	53.09	-33.19	23.850		
8	11	128	52.86	-33.98	23.840		
8	11	130	53.78	-30.26	23.850		
8	11	132	54.46	-28.34	23.830		
8	11	134	54.46	-26.79	23.850		
8	11	136	54.68	-27.90	23.820		
8	11	138	54.68	-29.61	23.810		
8	12	1912	28.07	-16.88	23.880		
8	12	1934	33.86	-19.87	23.930		
8	12	2003	42.99	-18.14	23.930		
8	12	2021	47.33	-22.89	23.820		
8	12	2041	50.93	-25.94	23.900		
8	12	2102	55.34	-30.19	23.910		
8	12	2213				13.6S	151.8W
8	12	2317	53.07	-27.63	23.950		
8	12	2347	48.92	-20.83	23.870		
8	13	5	46.22	-19.57	23.950		
8	13	29	40.04	-17.70	23.930		
8	13	50	35.58	-18.81	23.940		
8	13	1944	46.22	-19.34	23.780		
8	13	2010				18.4S	124.0W
8	13	2035	46.77	-19.58	23.790		
8	14	245	40.70	-26.97	23.630		

TWERLE BALLOON 97152/5 BLCF/UK 1972

MCNTH	DAY	TIME	SUN ANGLE	GAS TEMP	VOLUME	LATITUDE	LCNGITUDE
8	14	248	41.03	-26.70	23.630		
8	14	251	41.69	-26.70	23.610		
8	14	254	42.33	-26.70	23.610		
8	14	257	42.64	-26.84	23.610		
8	14	300	44.17	-26.70	23.620		
8	14	303	44.17	-26.57	23.620		
8	14	306	45.06	-26.57	23.610		
8	14	309	45.92	-26.43	23.600		
8	14	311	45.63	-26.15	23.580		
8	14	314	46.75	-26.43	23.580		
8	14	317	47.03	-26.57	23.560		
8	14	320	47.30	-26.70	23.560		
8	14	323	48.63	-26.43	23.550		
8	14	326	48.63	-26.02	23.520		
8	14	329	49.14	-26.29	23.540		
8	14	331	49.96	-25.90	23.510		
8	14	334	49.90	-26.57	23.500		
8	14	337	50.65	-26.05	23.480		
8	14	340	51.62	-26.83	23.480		
8	14	343	51.62	-26.57	26.480		
8	14	346	53.03	-26.69	23.470		
8	14	1606	34.89	-33.46	23.850		
8	14	1632	39.86	-24.39	23.840		
8	14	1632	39.86	-25.17	23.840		
8	14	1707	46.37	-28.78	23.800		
8	14	1735	47.16	-30.23	23.870		
8	14	1805	53.33	-29.95	23.800		
8	14	1821				22.0S	94.1W
8	14	1832	53.32	-30.80	23.780		
8	14	1914	49.65	-33.52	23.840		
8	14	1938	46.71	-35.71	23.830		
8	14	2002	43.87	-35.20	23.770		
8	14	2032	36.08	-35.39	23.810		
8	14	2102	26.98	-35.79	23.800		
8	14	2132	14.58	-35.27	23.830		
8	14	2204	5.12	-32.32	23.790		
8	15	1306	17.60	-29.12	23.800		
8	15	1334	30.68	-24.26	23.850		
8	15	1405	38.71	-32.09	23.870		
8	15	1444	47.46	-32.08	23.840		
8	15	1450	49.38	-30.61	23.650		
8	15	1502	51.54	-30.20	23.810		
8	15	1532	55.12	-28.72	23.900		

TWERLE BALLOON 97152/5 BLCF/UK 1972

MCNTH	DAY	TIME	SUN ANGLE	GAS TEMP	VOLUME	LATITUDE	LCNGITUDE
8	15	1606	55.94	-25.03	23.920		
8	15	1632	56.18	-29.07	23.860		
8	15	1704	55.39	-28.71	23.860		
8	15	1728	55.28	-27.19	23.860		
8	15	1736	50.68	-29.47	23.850		
8	15	1813	43.48	-27.77	23.900		
8	15	1819	44.75	-26.97	23.920		
8	15	1832	38.98	-27.55	23.920		
8	15	1853	37.34	-27.18	23.880		
8	15	1902	31.65	-26.87	23.900		
8	15	1929				19.0S	66.0W
8	15	1930	27.73	-28.22	23.870		
8	15	1937	14.84	-26.57	23.880		
8	15	1954	23.65	-22.51	23.840		
8	15	2019	15.96	-28.19	23.830		
8	16	1254	42.30	-28.18	23.620		
8	16	1315	44.97	-24.49	23.860		
8	16	1320	45.46	-33.91	23.510		
8	16	1332	47.67	-24.91	23.840		
8	16	1352	49.87	-32.54	23.450		
8	16	1402	52.06	-25.59	23.870		
8	16	1416	52.64	-26.57	23.430		
8	16	1432	55.16	-22.97	23.830		
8	16	1442	55.25	-27.45	23.960		
8	16	1504				20.1S	44.9W
8	16	1507	53.71	-24.86	23.900		
8	16	1510	56.90	-21.70	23.920		
8	16	1534	55.14	-27.02	23.910		
8	16	1544	51.74	-25.58	23.900		
8	16	1607	49.46	-19.00	23.920		
8	16	1608	50.86	-20.07	23.810		
8	16	1637	43.63	-23.64	23.860		
8	16	1710	39.86	-28.51	23.860		
8	16	1741	33.35	-22.93	23.790		
8	17	1212	30.85	-17.18	24.020		
8	17	1226	46.70	-15.99	23.950		
8	17	1251	50.84	-13.98	23.850		
8	17	1252	51.70	-11.19	23.800		
8	17	1314	43.46	-12.68	23.800		
8	17	1349	79.03	-9.97	23.820		
8	17	1349	50.96	-16.34	23.840		
8	17	1355				21.8S	27.6W
8	17	1359	49.04	-12.03	23.840		

TWERLE BALLOON 97152/5 BLCF/UK 1972

MONTH	DAY	TIME	SUN ANGLE	GAS TEMP	VOLUME	LATITUDE	LONGITUDE
8	17	1432	48.05	-10.38	23.790		
8	17	1453	40.66	-11.19	23.810		
8	17	1513	60.56	-11.35	23.840		
8	17	1534	35.03	-13.66	23.800		
8	18	755	3.99	-30.29	23.720		
8	18	905	25.78	-23.68	23.730		
8	18	951	35.56	-26.77	23.750		
8	18	1134				29.2S	7.6E
8	18	1152	47.77	-20.14	23.840		
8	18	1226	44.87	-19.49	23.810		
8	18	1256	40.37	-19.68	23.850		
8	18	1341	32.77	-18.75	23.890		
8	18	1423	14.50	-18.25	23.870		
8	18	1445	9.81	-17.95	23.890		
8	18	1523	1.07	-24.10	23.820		
8	20	558	16.66	-29.29	23.870		
8	20	630	27.13	-26.37	23.830		
8	20	705	37.08	-26.57	23.840		
8	20	800	50.43	-25.16	23.850		
8	20	834	53.87	-29.95	23.800		
8	20	858	56.44	-27.96	23.860		
8	20	914				19.1S	42.4E
8	20	950	56.18	-32.05	23.830		
8	20	1033	52.68	-27.58	23.870		
8	20	1111	43.35	-29.06	23.820		
8	20	1204	30.38	-30.16	23.820		
8	20	1240	15.45	-29.63	23.820		
8	20	1317	2.57	-26.36	23.840		
8	21	547	33.74	-24.30	23.830		
8	21	616	41.44	-22.18	23.830		
8	21	710	47.97	-22.62	23.830		
8	21	740	49.21	-28.55	23.840		
8	21	815	45.90	-28.30	23.810		
8	21	819	35.30	-30.43	23.820		
8	21	955	22.92	-27.54	23.800		

TWERLE BALLOON 97152/5 BLCF/UK 1972

MCNTH	DAY	TIME	SUN ANGLE	GAS TEMP	VOLUME	LATITUDE	LONGITUDE
8	22	243	41.23	-23.78	23.880		
8	22	247	40.57	-25.31	23.870		
8	22	251	40.57	-31.21	23.870		
8	22	300	42.19	-31.33	23.860		
8	22	306	43.74	-32.42	23.840		
8	22	310	43.13	-32.45	23.860		
8	22	318	45.20	-25.74	23.870		
8	22	321	46.61	-30.84	23.890		
8	22	324	48.21	-27.58	23.890		
8	22	326	47.95	-25.95	23.890		
8	22	328	48.21	-25.74	23.900		
8	22	343	50.49	-26.98	23.910		
8	22	345	50.24	-26.57	23.900		
8	22	355	51.69	-26.77	23.900		
8	22	406	50.49	-29.91	23.870		
8	22	408	50.49	-30.06	23.870		
8	22	410	51.46	-30.08	23.870		
8	22	2319	41.56	-27.24	23.840		
8	22	2321	42.51	-27.25	23.860		
8	22	2323	42.51	-26.57	23.850		
8	22	2326	42.51	-29.23	23.840		
8	22	2328	42.82	-29.00	23.830		
8	22	2330	42.82	-29.19	23.830		
8	22	2332	44.03	-28.78	23.840		
8	22	2335	44.03	-28.55	23.840		
8	22	2337	44.03	-28.80	23.850		
8	22	2339	44.33	-28.78	23.850		
8	22	2341	44.62	-28.55	23.840		
8	22	2344	45.20	-28.77	23.840		
8	22	2346	45.49	-30.49	23.850		
8	22	2348	45.49	-30.64	23.830		
8	22	2351	45.77	-31.66	23.870		
8	22	2351	37.04	-30.03	23.840		
8	22	2353	45.77	-29.84	23.840		
8	22	2355	46.33	-30.47	23.850		
8	22	2357	47.95	-29.80	23.850		
8	22	2359	47.69	-31.22	23.840		
8	23	2	48.19	-31.64	23.840		
8	23	4	49.73	-28.55	23.840		
8	23	6	48.45	-28.34	23.840		
8	23	8	49.47	-30.26	23.850		
8	23	11	49.73	-30.44	23.840		
8	31	2152	56.20	-28.27	23.930		

107152/5

Diagram of Flight Train

TWERLE BALLCON 97152/5 BLCF/UK 1972

MCNTH	DAY	TIME	SUN ANGLE	GAS TEMP	VOLUME	LATITUDE	LONGITUDE
8	31	2215	50.66	-29.27	23.950		
8	31	2242	42.13	-32.46	23.950		



GUST Frequency = 15.02 m/s
 Sun Angle I.D. Code
 Ind Package Frequency = 13.02 MHz
 I.D. Code
 Case Factor Sensor
 I = Sun Angle
 I = Thermal Package, Unit Ball
 (sensor at 10 m)
 Calibration Data

BALLOON DATA

Balloon ID# (NTR) 107152/5
 Launch Date July 31, 1972
 Launch Site
 Pilot (Name, Record)
 Diameter from 2.370m x 2.100m
 Volume 21,800 m³
 Balloon Weight 3300
 Payload Weight 1481
 Duration
 Last known Position

REMARKS

Surface conditions at launch

FLIGHT INFORMATION FORM

FLIGHT NO. 102156 B/G Float Altitude 150 mb

Diagram of Flight Train

GHOST Frequency = 15.02 6 MHz

Sun Angle I.D. Code B

Calibration Data

60.4 DEG	22.5
50.0 DEG	27.5
40.0 DEG	31.3

2nd Package Frequency = 15.02 MHz

I.D. Code

Code Letter Sensor
 B = Sun Angle

G = Thermal Package, UWISC ball,
 (silver side up)

Calibration Data

BALLOON DATA

Balloon ID# (Mfg*) R 72-1

Launch date July 21, 1972

Launch site Ascension

Film Celanar. (Gapped)

Diameter Seam 3.5704 m X Gore 3.5693 m

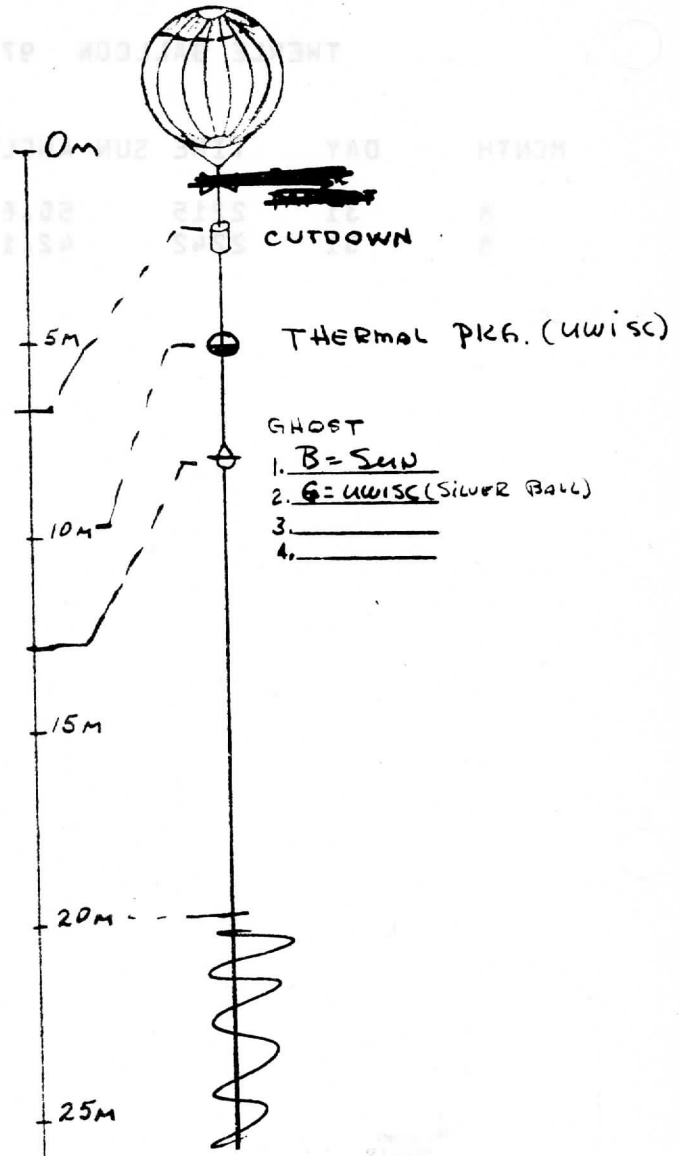
Volume 23.699 m³

Balloon Weight 3390

Payload Weight 1481

Duration

Last Known Position



REMARKS

Surface conditions at launch _____

* R = Raven Industries, Inc.
 S = G. T. Schjeldahl Co.

TWERLE BALLOON 102156 B/G 1972

MONTH	DAY	TIME	SUN ANGLE	PKG TEMP	LATITUDE	LONGITUDE
8	25	8	39.58	-35.80		
8	25	11	39.88	-35.80		
8	25	16	41.31	-35.40		
8	25	121	51.28	-33.59		
8	25	136	53.53	-33.45		
8	25	151	53.22	-33.59		
8	25	206	54.57	-33.39		
8	25	221	54.46	-33.92		
8	25	225			25.2S	144.3E
8	25	236	54.77	-33.86		
8	25	253	54.05	-33.32		
8	25	306	53.22	-33.52		
8	25	341	49.25	-34.79		
8	25	346	48.19	-35.80		
8	25	356	47.23	-36.21		
8	26	1934	27.98	-41.23		
8	26	2022	34.62	-40.32		
8	26	2151	52.13	-39.01		
8	26	2206	52.35	-34.59		
8	26	2250	56.26	-36.90		
8	26	2327			23.0S	171.2W
8	27	8	55.43	-38.72		
8	29	1408	29.64	-31.38		
8	29	1445	35.83	-30.50		
8	29	1543	46.63	-31.00		
8	29	1618	50.67	-29.89		
8	29	1638	52.56	-30.09		
8	29	1710	54.96	-28.29		
8	29	1723			26.8S	80.4W
8	29	1742	55.06	-29.82		
8	29	1810	51.81	-30.64		
8	29	1839	49.47	-29.13		
8	29	1917	44.26	-29.27		
8	29	1943	40.73	-29.41		
8	30	1615	55.52	-28.15		
8	30	1643	57.20	-29.48		
8	30	1717			22.3S	79.1W
8	30	1727	59.44	-28.29		
8	30	1743	58.52	-28.50		

TWERLE BALLOON 102156 B/G 1972

MONTH	DAY	TIME	SUN ANGLE	PKG TEMP	LATITUDE	LONGITUDE
8	30	1813	55.90	-28.92		
8	30	1844	52.64	-28.78		
8	30	1918	46.46	-29.55		
8	31	1351	41.87	-35.36		
8	31	1415	46.36	-36.42		
8	31	1448	52.32	-35.20		
8	31	1514	56.59	-36.35		
8	31	1548	61.04	-39.15		
8	31	1613	61.76	-37.49		
8	31	1624			20.4S	65.9W
8	31	1641	62.03	-38.94		
8	31	1721	57.89	-32.65		
8	31	1753	53.25	-32.85		
8	31	1829	46.66	-34.99		
8	31	1845	44.56	-34.86		
8	31	1917	37.39	-36.35		
8	31	1948	30.11	-34.79		
8	31	2022	22.18	-35.13		

TWERLE BALLOON 102156 B/G 1972

MONTH	DAY	TIME	SUN ANGLE	PKG TEMP	LATITUDE	LONGITUDE
8	16	1110			12.3S	13.5E
8	16	1127	64.50	-37.17		
8	16	1203	62.83	-37.17		
8	16	1235	58.37	-35.80		
8	16	1258	53.54	-35.26		
8	16	1322	51.99	-34.59		
8	16	1407	42.85	-33.39		
8	16	1439	33.97	-33.66		
8	16	1521	26.72	-35.94		
8	17	747	36.29	-40.03		
8	17	837	44.97	-34.46		
8	17	911	52.92	-36.76		
8	17	1012	59.59	-34.59		
8	17	1041	60.71	-35.40		
8	17	1050			16.1S	18.6E
8	17	1122	60.74	-34.46		
8	17	1202	54.97	-34.59		
8	17	1232	50.42	-36.21		
8	17	1306	45.44	-36.76		
8	17	1347	60.96	-35.26		
8	17	1438	53.22	-36.49		
8	18	701	34.54	-36.76		
8	18	742	43.42	-36.90		
8	18	819	49.81	-36.90		
8	18	853	55.35	-36.21		
8	18	922	58.99	-35.80		
8	18	956	60.30	-35.40		
8	18	1007			16.3S	29.2E
8	18	1029	59.76	-33.39		
8	18	1132	54.78	-35.26		
8	18	1202	50.63	-33.52		
8	18	1240	40.40	-34.59		
8	19	602	29.83	-36.62		
8	19	626	31.19	-36.35		
8	19	702	40.32	-37.45		
8	19	732	45.76	-36.35		
8	19	812	52.88	-34.32		
8	19	839	54.72	-34.99		
8	19	900	56.61	-34.19		

TWERLE BALLOON 102156 B/G 1972

MONTH	DAY	TIME	SUN ANGLE	PKG TEMP	LATITUDE	LONGITUDE
8	19	928			20.1S	38.9E
8	19	942	57.87	-37.73		
8	19	1024	54.64	-38.72		
8	19	1051	52.11	-36.76		
8	19	1132	45.25	-35.94		
8	19	1205	37.76	-36.35		
8	19	1239	30.48	-37.04		
8	20	613	43.76	-37.31		
8	20	717	53.71	-37.17		
8	20	738	56.11	-37.87		
8	20	815			19.8S	57.2E
8	20	1012	45.59	-34.59		
8	20	1058	33.78	-35.94		
8	23	332	49.25	-36.62		
8	23	409			16.3S	175.0E
8	23	447	51.25	-36.62		
8	23	834	52.15	-36.35		
8	23	2351	59.54	-34.79		
8	24	6	59.62	-34.66		
8	24	16	59.90	-35.60		
8	24	17			19.2S	176.4E
8	24	26	59.62	-36.08		
8	24	36	58.84	-35.94		
8	24	46	58.75	-35.67		
8	24	56	58.36	-36.28		
8	24	106	57.68	-35.94		
8	24	116	56.70	-36.97		
8	24	126	54.18	-37.38		
8	24	146	52.39	-37.38		
8	24	156	50.30	-37.17		
8	24	206	48.92	-37.17		
8	24	256	38.71	-35.40		
8	24	2326	33.99	-37.31		
8	24	2341	35.62	-36.14		
8	24	2356	37.96	-35.94		

TWERLE BALLOON 102156 B/G 1972

MONTH	DAY	TIME	SUN ANGLE	PKG TEMP	LATITUDE	LONGITUDE
7	22	1149	62.94	-33.79		
7	22	1210	62.13	-33.39		
7	22	1215	59.81	-33.12		
7	22	1217	55.52	-33.92		
7	22	1316	51.36	-34.73		
7	22	1430	35.39	-35.40		
7	22	1452	30.64	-35.40		
7	25	720	53.05	-37.45		
7	25	758	57.50	-40.32		
7	25	843	62.37	-41.23		
7	25	860			8.1S	46.8E
7	25	935	61.64	-43.93		
7	25	1005	57.74	-45.11		
7	25	1030	54.03	-43.76		
7	25	1152	37.46	-39.59		
7	30	224	55.62	-36.28		
7	30	333	63.83	-36.29		
7	30	358			7.2S	122.2E
7	30	456	61.08	-34.75		
8	2	624	48.02	-37.96		
8	2	720			13.8S	162.9E
8	2	815	27.84	-36.28		
8	3	323	46.47	-36.21		
8	3	324	46.97	-36.08		
8	3	324			10.7S	164.1E
8	3	431	34.24	-36.62		
8	10	1457	38.65	-32.88		
8	10	1520	38.65	-35.13		
8	10	1552	42.97	-35.20		
8	10	1617	46.40	-33.86		
8	10	1645	48.32	-35.40		

TWERLE BALLOON 102156 B/G 1972

MONTH	DAY	TIME	SUN ANGLE	PKG TEMP	LATITUDE	LONGITUDE
8	10	1715	51.38	-34.93		
8	10	1728			23.9S	80.5W
8	10	1751	50.02	-36.21		
8	10	1821	49.39	-35.60		
8	10	1851	46.17	-34.79		
8	10	1919	40.57	-31.99		
8	10	1951	35.55	-31.04		
8	11	1255	31.21	-38.44		
8	11	1315	35.57	-38.99		
8	11	1340	41.16	-38.04		
8	11	1409	45.46	-39.08		
8	11	1442	51.45	-40.77		
8	11	1516	56.14	-39.08		
8	11	1547	58.59	-39.51		
8	11	1607			15.9S	60.2W
8	11	1623	59.95	-37.45		
8	11	1645	58.46	-37.87		
8	11	1715	55.78	-37.87		
8	11	1752	51.20	-36.62		
8	11	1821	44.81	-35.24		
8	14	1148	49.88	-37.17		
8	14	1338	51.77	-37.04		
8	15	931	40.90	-39.30		
8	15	1018	46.04	-38.72		
8	15	1046	50.82	-38.29		
8	15	1116	53.77	-37.31		
8	15	1157	56.98	-36.35		
8	15	1222			19.3S	4.2W
8	15	1242	56.98	-40.77		
8	15	1317	52.83	-37.31		
8	15	1411	45.99	-38.72		
8	15	1438	41.42	-38.58		
8	15	1515	31.66	-38.01		
8	15	1547	25.96	-38.72		
8	16	1049	63.02	-35.80		

TWERLE BALLCON 102156 B/G

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MONTH	DAY	TIME	SUN ANGLE	PKG TEMP	LATITUDE	LONGITUDE
7	21	838	15.25	9.13		
7	21	919	31.93	-11.24		
7	21	940	36.94	-33.66		
7	21	958	39.55	-43.11		
7	21	1111	52.48	-38.01		
7	21	1121	53.13	-37.04		
7	21	1131	55.03	-37.04		
7	21	1141	56.46	-37.31		
7	21	1151	57.36	-37.31		
7	21	1201	58.16	-37.45		
7	21	1211	59.63	-37.45		
7	21	1221	60.50	-38.15		
7	21	1231	59.92	-39.01		
7	21	1240			9.1S	8.2W
7	21	1241	60.50	-39.30		
7	21	1247	34.56	-40.18		
7	21	1251	60.60	-39.44		
7	21	1301	59.63	-39.44		
7	21	1312	59.24	-39.01		
7	21	1314	58.37	-40.18		
7	21	1331	57.86	-37.87		
7	21	1335	58.16	-38.58		
7	21	1339	57.13	-38.72		
7	21	1341	56.96	-39.15		
7	21	1350	57.06	-39.59		
7	21	1352	56.56	-39.73		
7	21	1358	54.82	-39.30		
7	21	1409	52.70	-37.45		
7	21	1411	53.13	-38.15		
7	21	1412	52.52	-38.15		
7	21	1430	49.05	-38.58		
7	21	1435	49.05	-38.72		
7	21	1442	23.63	-29.75		
7	21	1454	44.90	-38.86		
7	21	1519	37.87	-37.04		
7	21	1525	38.80	-37.31		
7	21	1535	35.65	-37.31		
7	21	1617	24.85	-37.59		
7	22	814	31.72	-34.86		
7	22	859	43.41	-34.19		
7	22	909	44.39	-33.25		
7	22	918	47.34	-31.65		
7	22	1007	55.52	-31.78		
7	22	1042	59.15	-33.25		
7	22	1112	61.59	-34.46		
7	22	1129			7.8S	9.6E
7	22	1144	62.61	-32.99		

FLIGHT INFORMATION FORM

FLIGHT NO. 103153B/N

Float Altitude 150 mb

Diagram of Flight Train

GHOST Frequency = 15.02 3 MHz

Sun Angle I.D. Code B

Calibration Data

63.5 DEG	19.8
55.0 DEG	24.0
40.0 DEG	29.6

2nd Package Frequency = 15.02 MHz

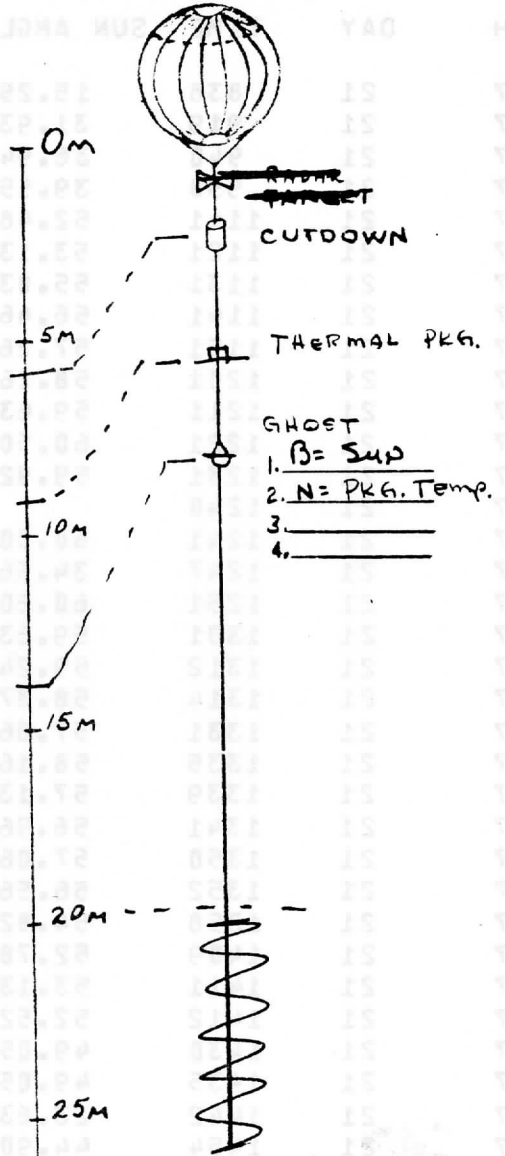
I.D. Code

Code Letter	Sensor
B	= Sun Angle
N	= Thermal Package

Calibration Data

BALLOON DATA

Balloon ID# (Mfg*) R 72-16
 Launch date July 26, 1972
 Launch site Ascension
 Film Celanar (Capped)
 Diameter Seam 3.5576 m X Gore 3.5602 m
 Volume 23.482 m³
 Balloon Weight 3382 gms
 Payload Weight 1444 gms
 Duration
 Last Known Position



REMARKS

Surface conditions at launch

* R = Raven Industries, Inc.
 S = G. T. Schjeldahl Co.

TWERLE BALLOON 103153 B/N

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MONTH	DAY	TIME	SUN ANGLE	PKG TEMP	LATITUDE	LONGITUDE
7	26	804	9.99	10.10		
7	26	815	19.99	7.58		
7	26	833	22.52	-1.41		
7	26	836	23.91	-2.80		
7	26	839	23.91	-5.12		
7	26	843	23.91	-7.09		
7	26	846	27.06	-8.69		
7	26	855	27.06	-14.26		
7	26	859	30.09	-16.39		
7	26	915	31.65	-8.84		
7	26	923	31.65	-3.14		
7	26	931	33.98	.40		
7	26	935	32.90	2.10		
7	26	942	35.63	3.88		
7	26	955	37.59	6.06		
7	26	1006	37.59	6.81		
7	26	1012	39.03	7.92		
7	26	1017	40.99	7.81		
7	26	1044	44.37	10.69		
7	26	1046	40.99	12.02		
7	26	1109	50.89	11.53		
7	26	1114	51.84	11.17		
7	26	1116	51.84	10.93		
7	26	1119	52.55	9.63		
7	26	1121	52.55	8.71		
7	26	1124	52.55	8.03		
7	26	1129	53.85	9.51		
7	26	1151	57.83	9.51		
7	26	1155	55.86	8.82		
7	26	1156	57.71	11.90		
7	26	1159	57.71	10.57		
7	26	1201	58.29	10.57		
7	26	1201	58.29	10.57		
7	26	1203	58.29	10.33		
7	26	1206	59.70	10.69		
7	26	1206	59.70	10.57		
7	26	1208	59.82	11.29		
7	26	1211	60.57	11.90		
7	26	1216	62.70	12.02		
7	26	1220	60.88	11.66		
7	26	1221	62.70	11.90		
7	26	1227	62.14	10.57		
7	26	1228	59.82	10.10		
7	26	1231	61.91	9.75		
7	26	1232	61.94	9.75		
7	26	1236	61.75	9.17		
7	26	1238	60.74	8.37		
7	26	1241	62.78	9.17		
7	26	1245	61.94	8.82		
7	26	1246	63.01	8.59		
7	26	1248	63.01	8.82		

TWERLE BALLOON 103153 B/N

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MONTH	DAY	TIME	SUN ANGLE	PKG TEMP	LATITUDE	LONGITUDE
7	26	1251	62.22	9.17		
7	26	1255			8.8S	12.0W
7	26	1301	63.01	9.40		
7	26	1305	61.73	8.37		
7	26	1311	63.01	9.63		
7	26	1321	62.62	8.37		
7	26	1329	63.11	11.41		
7	26	1336	60.96	7.25		
7	26	1345	58.48	4.70		
7	26	1351	57.28	6.27		
7	26	1401	57.28	7.58		
7	26	1407	56.89	11.66		
7	26	1411	56.97	7.81		
7	26	1421	56.97	8.14		
7	26	1425	53.19	7.25		
7	26	1431	53.22	9.51		
7	26	1441	54.22	9.86		
7	26	1449	49.15	7.25		
7	26	1451	49.42	6.92		
7	26	1501	47.42	7.25		
7	26	1511	46.67	7.03		
7	26	1521	45.29	7.69		
7	26	1532	39.65	6.17		
7	26	1541	39.65	4.80		
7	26	1542	39.39	3.08		
7	26	1551	39.65	5.64		
7	26	1601	35.72	3.48		
7	26	1615	35.03	3.08		
7	26	1642	28.30	.40		
7	26	1702	27.00	-3.47		
7	27	836	26.85	-2.45		
7	27	906	36.88	9.05		
7	27	908	33.70	5.95		
7	27	910	33.70	6.60		
7	27	930	39.06	8.94		
7	27	934	38.57	8.37		
7	27	953	42.72	8.82		
7	27	1016	48.32	8.37		
7	27	1058	56.32	11.90		
7	27	1114	60.79	12.52		
7	27	1151	68.15	13.91		
7	27	1154	68.22	13.91		
7	27	1216	70.29	12.27		
7	27	1218	70.29	12.27		
7	27	1220	70.29	12.39		
7	27	1224	69.80	12.15		
7	27	1226	69.80	11.78		

TWERLE BALLOON 103153 B/N

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MCNTH	DAY	TIME	SUN ANGLE	PKG TEMP	LATITUDE	LONGITUDE
7	27	1227	69.50	10.69		
7	27	1229	68.81	11.66		
7	27	1232	68.81	11.29		
7	27	1237	71.71	11.17		
7	27	1239			3.8S	8.0W
7	27	1241	71.71	11.53		
7	27	1244	71.46	11.78		
7	27	1300	52.13	9.98		
7	27	1303	64.44	9.86		
7	27	1307	64.44	11.17		
7	27	1326	64.44	11.53		
7	27	1332	64.48	10.69		
7	27	1335	64.44	12.02		
7	27	1402	60.63	12.15		
7	27	1417	56.53	13.78		
7	27	1419	56.10	13.40		
7	27	1431	53.84	14.42		
7	27	1435	52.58	14.55		
7	27	1438	52.19	14.17		
7	27	1441	52.11	15.47		
7	27	1452	50.05	14.42		
7	27	1525	41.93	15.47		
7	27	1634	29.56	7.25		
7	27	1712	21.83	2.10		
7	27	1732	16.82	-1.58		
7	28	729	20.61	-5.12		
7	28	802	26.36	2.29		
7	28	808	26.64	3.08		
7	28	819	29.91	6.06		
7	28	827	31.94	7.81		
7	28	847	35.34	9.63		
7	28	922	40.17	10.69		
7	28	926	43.71	12.39		
7	28	933	42.96	12.89		
7	28	955	46.22	15.47		
7	28	959	48.72	16.28		
7	28	1001	49.24	16.41		
7	28	1017	56.74	17.09		
7	28	1043	58.60	13.91		
7	28	1050	61.57	16.01		
7	28	1105	69.74	17.37		
7	28	1114	64.76	14.68		
7	28	1137	68.40	12.15		
7	28	1157	70.98	15.74		
7	28	1158	70.28	14.68		
7	28	1214	72.29	9.17		
7	28	1214	71.43	8.14		

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MONTH	DAY	TIME	SUN ANGLE	PKG TEMP	LATITUDE	LONGITUDE
7	28	1230	73.30	9.63		
7	28	1231			2.1S	6.0W
7	28	1250	69.16	11.66		
7	28	1252	69.29	11.41		
7	28	1258	68.55	10.45		
7	28	1306	51.55	10.81		
7	28	1309	51.91	10.33		
7	28	1325	64.02	10.33		
7	28	1351	60.57	10.93		
7	28	1400	57.88	13.02		
7	28	1415	54.37	14.17		
7	28	1417	55.51	12.64		
7	28	1431	51.07	14.30		
7	28	1438	49.64	13.65		
7	28	1512	40.57	13.15		
7	28	1544	36.14	12.89		
7	28	1627	26.85	9.98		
7	29	745	25.93	1.15		
7	29	803	34.51	10.69		
7	29	817	31.81	7.69		
7	29	829	38.95	18.20		
7	29	846	38.20	10.69		
7	29	847	38.61	9.51		
7	29	847	42.25	18.20		
7	29	859	40.47	12.15		
7	29	923	50.92	22.90		
7	29	932	45.72	14.42		
7	29	949	50.03	17.09		
7	29	955	58.81	18.20		
7	29	1011	54.10	15.74		
7	29	1023	66.91	19.63		
7	29	1024	56.74	16.28		
7	29	1049	63.45	15.47		
7	29	1053	63.81	15.74		
7	29	1056	65.01	14.68		
7	29	1106	72.66	20.21		
7	29	1127	67.65	14.42		
7	29	1144	70.02	17.09		
7	29	1152	69.67	15.74		
7	29	1153	71.70	17.09		
7	29	1153	71.88	17.09		
7	29	1155			4.8S	3.0E
7	29	1219	70.51	17.09		
7	29	1234	67.15	18.49		
7	29	1235	65.23	17.37		
7	29	1256	63.69	17.78		
7	29	1310	62.26	14.68		

TWERLE BALLOON 103153 B/N

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MONTH	DAY	TIME	SUN ANGLE	PKG TEMP	LATITUDE	LONGITUDE
7	29	1313	57.83	21.09		
7	29	1334	57.68	19.92		
7	29	1335	53.05	24.46		
7	29	1342	53.72	19.63		
7	29	1412	46.45	19.63		
7	29	1417	41.75	21.09		
7	29	1442	40.66	17.09		
7	29	1502	31.32	12.39		
7	29	1517	35.50	15.21		
7	29	1612	23.90	13.15		
7	30	1129			.2N	9.4E
7	31	912	51.01	13.15		
7	31	933	53.56	16.82		
7	31	953	60.96	18.49		
7	31	1025	63.00	18.49		
7	31	1033	65.10	18.20		
7	31	1052	71.23	17.37		
7	31	1055	72.24	16.01		
7	31	1055	72.66	17.51		
7	31	1122			1.8S	11.1E
7	31	1123	69.00	23.21		
7	31	1129	71.73	19.05		
7	31	1248	59.88	15.74		
7	31	1252	59.88	16.55		
7	31	1314	51.55	14.68		
7	31	1319	51.91	14.17		
7	31	1337	46.81	16.01		
7	31	1341	46.75	16.55		
7	31	1414	40.70	17.37		
8	1	757	35.37	8.14		
8	1	822	40.74	8.37		
8	1	857	48.75	10.45		
8	1	921	51.04	10.69		
8	1	1018	63.05	10.93		
8	1	1033	64.61	9.05		
8	1	1044	66.05	9.98		
8	1	1047	66.05	10.69		
8	1	1105	68.74	10.22		
8	1	1113			7.3S	13.4E

TWERLE BALLOON 103153 8/N

1972

MONTH	DAY	TIME	SUN ANGLE	PKG TEMP	LATITUDE	LCNGITUDE
8	1	1115	66.88	11.17		
8	1	1123	69.23	11.78		
8	1	1126	67.90	10.69		
8	1	1227	60.15	11.17		
8	1	1237	57.52	14.17		
8	1	1241	57.75	16.01		
8	1	1244	59.88	16.01		
8	1	1300	52.13	13.02		
8	1	1303	52.13	12.77		
8	1	1307	50.95	10.69		
8	1	1311	50.12	13.15		
8	1	1326	51.91	13.65		
8	1	1333	43.67	10.45		
8	1	1412	37.31	9.98		
8	1	1428	34.63	11.90		
8	1	1445	31.85	9.28		
8	1	1517	24.58	5.11		
8	1	1535	21.46	3.08		
8	2	733	34.21	6.17		
8	2	738	34.21	7.25		
8	2	754	38.78	7.25		
8	2	807	40.43	8.37		
8	2	812	39.03	7.25		
8	2	827	38.20	8.71		
8	2	829	43.71	8.37		
8	2	851	48.98	11.41		
8	2	856	52.20	14.04		
8	2	927	58.96	13.15		
8	2	955	62.07	13.15		
8	2	1024	56.74	7.25		
8	2	1038	67.79	8.37		
8	2	1105			5.7S	15.4E
8	2	1110	68.13	7.25		
8	2	1133	71.73	8.37		
8	2	1136	68.28	6.17		
8	2	1158	65.80	14.17		
8	2	1204	64.11	10.69		
8	2	1233	57.55	10.22		
8	2	1313	49.12	13.15		
8	2	1357	41.23	13.15		
8	2	1430	33.71	10.69		
8	2	1503	25.98	4.08		
8	2	1546	18.03	-1.58		

TWERLE BALLOON 103153 B/N

1972

MONTH	DAY	TIME	SUN ANGLE	PKG TEMP	LATITUDE	LONGITUDE
8	3	616	23.64	-8.84		
8	3	648	26.46	-1.23		
8	3	748	36.93	9.51		
8	3	846	48.41	17.65		
8	3	908	52.95	15.74		
8	3	944	58.33	14.95		
8	3	1020	67.28	8.37		
8	3	1042	72.59	6.17		
8	3	1056	74.63	6.17		
8	3	1056			3.9S	17.7E
8	3	1113	72.69	3.28		
8	3	1121	73.72	3.88		
8	3	1140	71.33	6.60		
8	3	1201	67.72	9.75		
8	3	1222	62.62	10.69		
8	3	1258	54.08	14.68		
8	3	1308	52.70	17.09		
8	3	1341	43.65	12.39		
8	3	1421	35.62	10.69		
8	3	1500	28.59	12.89		
8	4	1017	69.23	15.21		
8	4	1053			2.6S	18.2E
8	4	1100	74.48	14.42		
8	4	1137	68.93	14.42		
8	4	1323	46.43	13.15		
8	4	1332	44.18	13.91		
8	4	1402	37.39	11.66		
8	4	1437	31.22	12.64		
8	5	811	39.70	13.15		
8	5	944	60.27	12.64		
8	5	949	60.27	12.77		
8	5	1038	68.22	13.53		
8	5	1107	68.18	10.10		
8	5	1107			7.6S	14.9E
8	5	1139	67.44	13.02		
8	5	1209	60.88	11.29		
8	5	1253	53.11	11.90		
8	5	1339	53.40	6.38		
8	5	1344	53.40	6.81		
8	5	1412	36.65	7.25		
8	5	1447	30.34	9.05		
8	5	1533	23.02	.21		

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MONTH	DAY	TIME	SUN ANGLE	PKG TEMP	LATITUDE	LONGITUDE
8	6	713	31.69	3.88		
8	6	748	40.63	7.47		
8	6	824	48.20	9.28		
8	6	855	53.24	12.89		
8	6	931	63.00	13.78		
8	6	1012	68.30	13.53		
8	6	1042	72.74	10.10		
8	6	1045			4.3S	20.4E
8	6	1127	66.21	17.09		
8	6	1156	63.09	18.20		
8	6	1238	55.21	15.47		
8	6	1305	47.19	14.95		
8	6	1413	33.22	9.86		
8	7	703	34.17	10.45		
8	7	727	37.40	11.17		
8	7	817	50.11	15.61		
8	7	847	55.52	16.14		
8	7	927	67.01	15.21		
8	7	1017	76.37	17.23		
8	7	1035			2.9S	22.7E
8	7	1128	67.55	15.61		
8	7	1202	62.69	20.65		
8	7	1242	51.20	17.51		
8	7	1329	41.02	14.30		
8	7	1407	34.55	38.71		
8	7	1448	23.70	6.17		
8	8	829	51.28	16.55		
8	8	911	60.64	15.74		
8	8	942	67.01	16.41		
8	8	957	73.36	15.08		
8	8	1044			4.0N	20.6E
8	8	1046	76.37	9.51		
8	8	1106	79.56	10.57		
8	8	1151	70.53	15.87		
8	8	1219	58.49	14.68		
8	8	1227	51.20	14.95		
8	8	1242	55.41	16.41		
8	8	1322	43.68	14.17		
8	8	1357	39.56	9.86		
8	8	1437	30.25	7.58		

TWERLE BALLCON 103153 B/N

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MONTH	DAY	TIME	SUN ANGLE	PKG TEMP	LATITUDE	LONGITUDE
8	9	623	21.76	-1.14		
8	9	652	27.32	5.32		
8	9	820	43.72	14.42		
8	9	906	55.30	17.78		
8	9	940	62.56	15.61		
8	9	1014	64.99	15.61		
8	9	1036			6.0S	22.4E
8	9	1040	70.31	14.55		
8	9	1118	71.51	11.05		
8	9	1157	63.13	15.21		
8	9	1240	50.98	19.34		
8	9	1247	50.98	17.65		
8	9	1327	41.29	15.74		
8	9	1411	23.83	13.15		
8	10	628	27.10	1.05		
8	10	712	34.68	5.32		
8	10	753	43.41	11.29		
8	10	812	48.19	14.95		
8	10	949	67.58	14.82		
8	10	1027			9.3S	24.8E
8	10	1046	72.90	16.41		
8	10	1052	61.97	15.74		
8	10	1233	44.05	15.08		
8	10	1303	35.65	15.34		
8	10	1342	29.91	15.74		
8	10	1410	29.91	10.10		
8	10	1436	24.45	6.17		
8	10	1509	22.11	1.91		
8	11	703	38.12	12.52		
8	11	732	43.59	12.02		
8	11	807	53.34	16.28		
8	11	843	61.62	13.40		
8	11	915	73.03	12.27		
8	11	921	75.53	10.33		
8	11	1014			1.0N	27.8E
8	11	1135	63.09	11.53		
8	11	1200	57.54	13.65		
8	11	1211	55.72	15.34		
8	11	1356	30.34	8.37		

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MONTH	DAY	TIME	SUN ANGLE	PKG TEMP	LATITUDE	LCNGITUDE
8	11	1427	22.43	6.38		
8	12	941	78.83	15.61		
8	12	960			4.9N	31.4E
8	12	1151	66.13	14.95		
8	12	1227	55.01	15.61		
8	12	1259	50.26	15.87		
8	12	1328	42.05	13.02		
8	12	1426	29.95	9.51		
8	13	643	27.48	4.59		
8	13	726	33.88	10.22		
8	13	815	44.01	14.68		
8	13	1110			10.0S	13.7E
8	13	1237	63.98	18.20		
8	13	1342	46.01	18.49		
8	13	1412	40.79	18.20		
8	13	1455	33.09	14.04		
8	13	1549	23.10	9.63		
8	14	902	51.22	13.53		
8	14	928	57.30	17.09		
8	14	956	63.16	18.63		
8	14	1121			.5S	10.9E
8	14	1321	58.46	18.91		
8	14	1401	48.84	19.05		

FLIGHT INFORMATION FORM

FLIGHT NO. 104155 B/F Float Altitude 150 mb

Diagram of Flight Train

GHOST Frequency = 15.02 5 MHz

Sun Angle I.D. Code B

Calibration Data

63.5	DEG	22.4
45.0	DEG	30.5
40.0	DEG	32.0

2nd Package Frequency = 15.02 MHz

I.D. Code

Code Letter Sensor
 B = Sun Angle

F = Thermal Package

Calibration Data

BALLOON DATA

Balloon ID# (Mfg*) R 72-13

Launch date July 27, 1972

Launch site Ascension

Film Celinar (Capped)

Diameter Seam 3.5596 m X Gore 3.5585 m

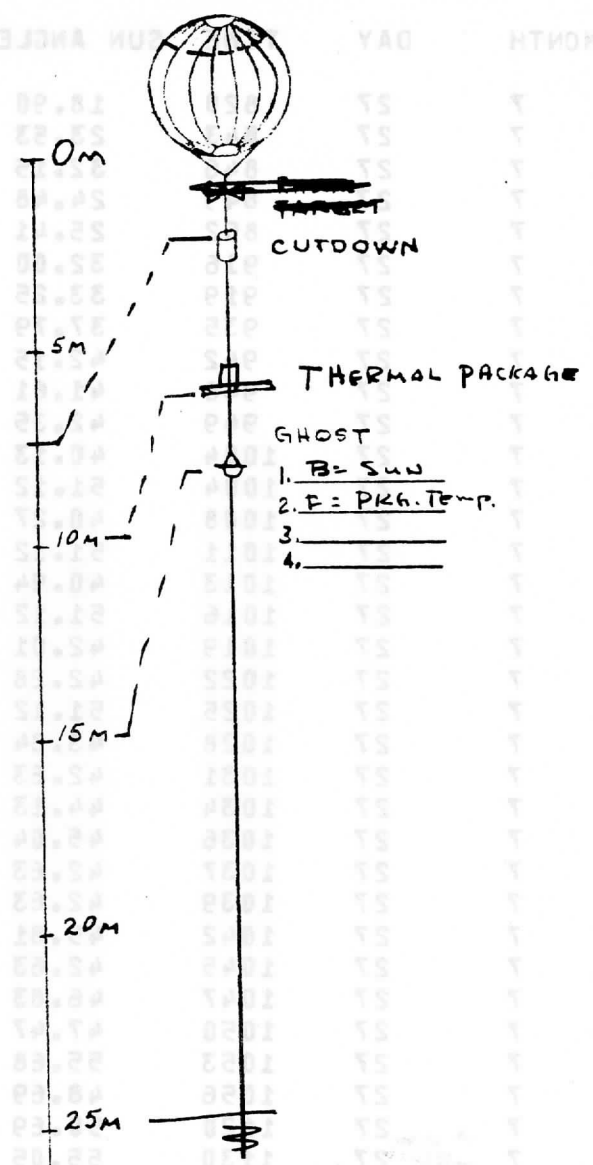
Volume 23,485 m³

Balloon Weight 3364

Payload Weight 1463

Duration

Last Known Position



REMARKS

Surface conditions at launch

* R = Raven Industries, Inc.
 S = G. T. Schjeldahl Co.

TWERLE BALLOON 104155 8/F 1972

MONTH	DAY	TIME	SUN ANGLE	PKG TEMP	LATITUDE	LONGITUDE
7	27	820	18.90	19.85		
7	27	843	23.53	20.42		
7	27	846	32.15	19.57		
7	27	849	24.48	19.02		
7	27	852	25.41	17.93		
7	27	916	32.00	5.48		
7	27	919	33.25	3.49		
7	27	935	37.79	-6.56		
7	27	942	42.15	-12.49		
7	27	946	41.61	-15.27		
7	27	949	42.35	-16.93		
7	27	1004	40.13	-6.56		
7	27	1004	51.12	-2.76		
7	27	1008	40.27	-.73		
7	27	1011	51.12	1.23		
7	27	1013	40.94	2.54		
7	27	1016	51.12	3.49		
7	27	1019	42.01	4.08		
7	27	1022	42.28	5.07		
7	27	1025	51.12	5.48		
7	27	1028	43.34	6.10		
7	27	1031	42.63	6.72		
7	27	1034	44.13	7.36		
7	27	1036	45.04	6.51		
7	27	1037	42.63	7.57		
7	27	1039	42.63	5.89		
7	27	1042	45.81	5.89		
7	27	1045	42.63	5.68		
7	27	1047	46.83	5.28		
7	27	1050	47.47	5.68		
7	27	1053	55.68	6.10		
7	27	1056	48.69	5.89		
7	27	1120	50.69	7.57		
7	27	1130	55.05	7.14		
7	27	1133	55.40	6.72		
7	27	1151	58.14	6.51		
7	27	1156	58.83	7.14		
7	27	1208	60.45	6.72		
7	27	1216	61.59	6.30		
7	27	1221	61.95	6.72		
7	27	1222	61.95	6.51		
7	27	1226	62.66	6.72		
7	27	1231	63.62	6.93		
7	27	1236	62.89	6.51		
7	27	1241	63.34	5.89		
7	27	1241	65.08	9.66		
7	27	1246	63.34	6.10		
7	27	1248	63.57	6.10		
7	27	1251	62.54	5.89		
7	27	1251	62.54	5.48		
7	27	1252			9.1S	11.1W

TWERLE BALLOON 104155 B/F 1972

MONTH DAY TIME SUN ANGLE PKG TEMP LATITUDE LONGITUDE

7	27	1256	61.66	5.89		
7	27	1301	63.95	5.07		
7	27	1321	62.89	6.51		
7	27	1322	62.58	6.51		
7	27	1326	61.67	5.89		
7	27	1329	64.52	9.10		
7	27	1331	64.52	6.51		
7	27	1341	60.91	6.10		
7	27	1351	59.60	6.51		
7	27	1352	58.21	5.89		
7	27	1353	59.06	6.30		
7	27	1401	58.29	6.93		
7	27	1411	49.94	6.51		
7	27	1421	54.77	9.77		
7	27	1428	56.40	6.51		
7	27	1431	56.40	8.66		
7	27	1442	50.42	7.36		
7	27	1447	49.35	6.51		
7	27	1451	48.85	8.88		
7	27	1501	38.51	8.66		
7	27	1512	45.04	7.78		
7	27	1512	47.03	7.57		
7	27	1519	42.89	7.57		
7	27	1521	42.89	7.36		
7	27	1532	41.17	6.93		
7	27	1542	39.90	6.93		
7	27	1552	36.89	6.93		
7	27	1555	36.89	5.48		
7	27	1602	36.18	5.28		
7	27	1627	31.90	4.47		

7	28	746	24.25	-9.52		
7	28	815	27.56	-2.76		
7	28	837	31.83	2.54		
7	28	843	32.15	5.48		
7	28	852	34.61	5.89		
7	28	914	37.78	9.10		
7	28	940	42.49	11.85		
7	28	944	42.35	12.09		
7	28	1005	47.33	9.77		
7	28	1020	50.41	12.33		
7	28	1032	51.12	11.85		
7	28	1057	55.68	12.81		
7	28	1103	58.20	12.33		
7	28	1110	60.28	12.09		
7	28	1132	61.29	12.81		
7	28	1152	64.12	14.54		
7	28	1200	64.69	14.79		

TWERLE BALLOON 104155 B/F 1972

MONTH	DAY	TIME	SUN ANGLE	PKG TEMP	LATITUDE	LONGITUDE
7	28	1219	63.62	12.09		
7	28	1219	65.14	13.06		
7	28	1219			9.8S	2.9W
7	28	1233	61.66	11.38		
7	28	1255	61.66	10.92		
7	28	1259	63.33	11.62		
7	28	1320	59.55	9.77		
7	28	1329	58.98	8.66		
7	28	1347	54.87	8.00		
7	28	1352	54.87	7.36		
7	28	1356	53.89	6.10		
7	28	1412	49.94	7.36		
7	28	1419	49.42	8.88		
7	28	1435	46.49	8.44		
7	28	1516	38.51	5.48		
7	28	1557	30.99	3.30		
7	28	1624	27.34	.69		
7	28	1659	22.19	-5.64		
7	29	848	37.78	7.57		
7	29	957	50.20	6.72		
7	29	1016	52.03	5.89		
7	29	1028	51.91	4.87		
7	29	1046	58.33	5.48		
7	29	1058	60.73	5.48		
7	29	1122	62.01	4.47		
7	29	1146	63.13	9.10		
7	29	1149	62.10	9.77		
7	29	1150			10.5S	4.5E
7	29	1221	61.65	9.55		
7	29	1232	60.78	8.66		
7	29	1259	56.79	11.85		
7	29	1306	54.96	11.38		
7	29	1337	50.37	1.42		
7	29	1338	50.57	1.79		
7	29	1427	39.82	4.47		
7	29	1455	34.00	4.28		
7	29	1602	25.21	-5.80		
7	30	704	26.39	-4.39		
7	30	738	30.91	3.30		
7	30	808	34.30	7.36		
7	30	822	37.60	9.10		
7	30	847	42.23	10.45		
7	30	917	45.11	11.38		

TWERLE BALLOON 104155 B/F 1972

MONTH	DAY	TIME	SUN ANGLE	PKG TEMP	LATITUDE	LONGITUDE
7	30	948	51.73	13.79		
7	30	1017	55.18	13.30		
7	30	1042	57.39	11.85		
7	30	1109			16.0S	14.3E
7	30	1112	57.25	11.85		
7	30	1142	57.90	9.77		
7	30	1222	51.68	11.15		
7	30	1302	46.09	9.77		
7	30	1330	40.62	8.66		
7	30	1412	33.08	6.51		
7	30	1452	27.62	-0.38		
7	31	637	27.39	-7.17		
7	31	702	31.29	-2.76		
7	31	817	40.23	4.08		
7	31	1014			27.0S	28.2E
7	31	1226	37.03	7.36		
8	1	447	22.71	-11.23		
8	1	527	31.35	-6.11		
8	1	552	30.83	.51		
8	1	626	33.80	3.11		
8	1	652	37.75	2.16		
8	1	821			31.8S	56.4E
8	1	842	42.63	5.48		
8	1	1002	35.18	5.48		
8	1	1045	31.55	7.14		
8	5	2	41.85	37.06		
8	5	17	43.69	8.88		
8	5	33	45.41	9.10		
8	5	47	46.53	9.32		
8	5	102	47.40	9.77		
8	5	117	47.60	10.92		
8	5	132	48.05	11.15		
8	5	137			24.9S	157.3E
8	5	147	48.20	10.68		
8	5	202	47.85	13.06		
8	5	217	49.45	9.32		
8	5	232	45.15	8.44		
8	5	247	44.48	8.88		
8	5	302	42.06	8.88		

TWERLE BALLOON 104155 B/F

1972

MONTH	DAY	TIME	SUN ANGLE	PKG TEMP	LATITUDE	LONGITUDE
8	5	317	40.94	10.00		
8	5	332	39.04	8.66		
8	5	2028	37.15	-0.03		
8	5	2036	35.43	2.35		
8	5	2051	37.43	5.28		
8	5	2103	37.99	5.48		
8	5	2118	38.82	5.48		
8	5	2143	45.59	13.06		
8	5	2206	44.68	17.13		
8	5	2227	45.97	16.86		
8	5	2254	46.74	17.13		
8	5	2308			26.9S	165.5W
8	6	3	44.41	12.57		
8	6	26	43.63	16.86		
8	7	5	36.85	5.28		
8	7	12	37.41	5.48		
8	7	17			24.6S	147.6W
8	7	28	35.99	5.68		
8	9	1953	60.05	9.88		
8	9	2016	63.20	7.04		
8	9	2034			14.5S	129.9W
8	9	2115	56.65	3.01		
8	10	2158	57.98	9.50		
8	10	2222	53.78	8.66		
8	10	2223			16.3S	135.8W
8	10	2248	48.88	8.61		
8	11	2004	55.89	6.51		

THERLE BALLOON 104155 B/F 1972

MONTH	DAY	TIME	SUN ANGLE	PKG TEMP	LATITUDE	LONGITUDE
8	12	1852	45.36	8.00		
8	12	1910	53.99	11.62		
8	12	2037			20.2S	127.8W
8	12	2042	57.04	11.15		
8	12	2214	49.63	8.44		
8	12	2319	38.74	5.48		
8	12	2344	33.87	5.07		
8	13	1923	52.89	10.00		
8	13	1941	54.91	11.38		
8	13	1953			21.4S	116.9W
8	13	2012	54.20	12.09		
8	13	2033	53.97	12.09		
8	13	2037	53.40	10.73		
8	13	2054	51.69	14.29		
8	13	2106	51.06	11.15		
8	13	2112	49.86	11.85		
8	13	2137	46.47	12.38		
8	13	2204	42.51	13.30		
8	13	2240	38.42	11.15		
8	14	1639	37.94	5.18		
8	14	1713	42.81	9.10		
8	14	1741	49.40	12.09		
8	14	1812	46.40	9.10		
8	14	1839	53.69	10.68		
8	14	1903	59.19	19.38		
8	14	1913			22.2S	107.1W
8	14	1933	54.30	10.34		
8	14	2008	51.84	9.57		
8	14	2038	48.91	10.68		
8	14	2110	43.41	11.45		
8	14	2138	38.87	8.88		
8	14	2210	34.21	6.85		
8	14	2233	31.55	2.55		
8	15	1509	31.73	1.33		
8	15	1538	34.88	5.48		
8	15	1607	38.89	11.38		
8	15	1636	44.05	10.34		
8	15	1710	49.33	16.07		
8	15	1742	53.97	10.68		

THERLE BALLOON 104155 B/F

1972

MONTH	DAY	TIME	SUN ANGLE	PKG TEMP	LATITUDE	LONGITUDE
8	15	1818	57.70	13.79		
8	15	1837	58.66	12.45		
8	15	1840			19.1S	98.6W
8	15	1907	58.48	13.06		
8	15	1943	55.27	14.92		
8	15	2006	50.85	13.18		
8	15	2041	47.34	12.40		
8	15	2041	47.34	13.30		
8	15	2110	38.78	9.61		
8	15	2138	35.89	9.10		
8	15	2152	34.73	8.00		
8	16	1413	26.11	-8.28		
8	16	1465	30.93	-2.38		
8	16	1549	38.93	8.28		
8	16	1613	43.90	6.10		
8	16	1642	48.65	7.25		
8	16	1717	55.04	12.76		
8	16	1745	59.45	9.32		
8	16	1816	61.66	8.55		
8	16	1831			17.7S	96.7W
8	16	1847	61.30	9.77		
8	16	1925	58.71	10.64		
8	16	1958	53.10	11.74		
8	16	2014	49.51	10.68		
8	16	2042	45.78	12.57		
8	16	2109	41.35	10.45		
8	16	2140	35.79	8.07		
8	16	2220	29.49	4.10		
8	16	2239	25.96	.24		
8	17	1408	28.65	-3.57		
8	17	1437	29.34	6.05		
8	17	1507	35.09	8.61		
8	17	1541	41.25	10.34		
8	17	1606	48.85	9.16		
8	17	1712	58.80	9.82		
8	17	1740	64.41	8.22		
8	17	1812	65.65	8.44		
8	17	1819			13.6S	93.8W
8	17	1840	65.76	5.18		
8	17	1907	63.83	4.47		
8	17	1939	58.39	6.78		
8	17	2020	50.74	10.92		
8	17	2043	46.22	11.62		

TWERLE BALLOON 104155 B/F

1972

MONTH	DAY	TIME	SUN ANGLE	PKG TEMP	LATITUDE	LONGITUDE
8	17	2109	40.96	8.94		
8	17	2141	34.11	9.66		
8	17	2207	31.68	6.51		
8	17	2236	26.96	2.95		
8	18	1408	24.43	-6.34		
8	18	1438	29.87	-1.06		
8	18	1520	36.62	5.26		
8	18	1547	41.78	5.79		
8	18	1622	49.99	6.93		
8	18	1653	57.13	9.10		
8	18	1720	62.52	8.17		
8	18	1746	66.75	8.00		
8	18	1817	69.50	5.79		
8	18	1843	70.18	6.10		
8	18	1905			7.0S	105.3W
8	18	1912	68.57	4.77		
8	18	1943	66.49	6.30		
8	19	1542	37.30	-52.63		
8	19	1617	40.58	-17.63		
8	19	1646	50.19	6.16		
8	19	1722	55.67	6.55		
8	19	1749	60.89	9.10		
8	19	1812	64.78	7.68		
8	19	1842	68.18	4.97		
8	19	1912	69.21	4.67		
8	19	1924			8.3S	109.9W
8	19	1942	67.98	3.01		
8	20	1453	25.92	-7.44		
8	20	1510	31.09	-4.42		
8	20	1538	33.71	1.79		
8	20	1609	37.91	6.30		
8	20	1639	43.03	6.30		
8	20	1715	51.58	6.93		
8	20	1740	54.23	8.33		
8	20	1818	68.18	8.88		
8	20	1842	64.38	7.25		
8	20	1907			16.1S	105.8W
8	20	1910	66.73	9.10		
8	20	1946	64.21	7.68		

TWERLE BALLOON 104155 B/F

1972

MCNTH	DAY	TIME	SUN ANGLE	PKG TEMP	LATITUDE	LCNGITUDE
8	20	2027	58.51	11.03		
8	20	2052	53.02	8.44		
8	20	2108	49.56	9.77		
8	20	2142	42.69	10.68		
8	20	2212	37.55	6.72		
8	20	2247	32.30	5.99		
8	21	1415	23.73	-13.49		
8	21	1446	28.16	-6.18		
8	21	1516	32.38	-.29		
8	21	1545	36.52	6.12		
8	21	1619	42.30	7.46		
8	21	1647	47.78	9.21		
8	21	1715	53.09	11.45		
8	21	1747	59.51	12.09		
8	21	1820	64.20	8.99		
8	21	1847	65.84	9.10		
8	21	1850			15.9S	101.6W
8	21	1914	65.77	8.33		
8	21	1944	62.40	8.90		
8	21	2014	57.72	9.43		
8	21	2047	51.41	8.44		
8	21	2113	51.31	7.36		
8	21	2149	38.52	8.20		
8	21	2216	35.12	6.51		
8	21	2250	29.19	3.49		
8	22	1449	29.38	-.82		
8	22	1519	35.25	3.71		
8	22	1535	38.59	10.57		
8	22	1537	38.59	10.57		
8	22	1547	40.45	8.17		
8	22	1618	45.80	10.57		
8	22	1640	48.98	7.68		
8	22	1720	56.31	10.00		
8	22	1752	62.35	8.92		
8	22	1821	63.55	10.11		
8	22	1823	63.55	10.11		
8	22	1839			17.0S	99.0W
8	22	1842	64.49	13.67		
8	22	1921	61.61	9.66		
8	22	1949	55.94	10.80		
8	22	2010	53.90	9.66		
8	22	2012	53.90	9.66		
8	22	2015	51.51	10.50		

TWERLE BALLOON 104155 B/F 1972

MONTH	DAY	TIME	SUN ANGLE	PKG TEMP	LATITUDE	LONGITUDE
8	22	2154	35.83	6.30		
8	22	2215	30.38	3.20		
8	22	2242	27.16	1.97		
8	23	1338	25.89	-8.28		
8	23	1408	29.51	-1.50		
8	23	1439	33.49	4.49		
8	23	1519	40.20	9.10		
8	23	1553	46.82	12.14		
8	23	1621	52.86	12.04		
8	23	1646	58.60	10.34		
8	23	1718	64.55	10.34		
8	23	1749	67.74	11.15		
8	23	1807			15.1S	90.9W
8	23	1824	68.78	9.43		
8	23	1848	65.72	10.68		
8	23	1916	62.85	11.45		
8	23	1944	57.52	11.03		
8	23	2016	50.04	12.28		
8	23	2048	43.13	14.79		
8	23	2116	37.81	12.45		
8	23	2148	32.45	8.39		
8	23	2211	29.03	6.26		
8	23	2243	22.96	-2.63		
8	24	1318	25.37	-7.54		
8	24	1345	29.56	-3.34		
8	24	1413	33.51	2.73		
8	24	1440	43.51	4.33		
8	24	1519	46.32	6.72		
8	24	1549	53.29	8.77		
8	24	1617	60.94	12.04		
8	24	1646	66.89	9.77		
8	24	1712	74.95	7.78		
8	24	1749	82.15	7.36		
8	24	1751			8.2S	87.1W
8	24	1817	80.19	6.62		
8	24	1842	73.70	7.68		
8	24	1911	66.51	9.66		
8	24	1941	57.72	10.59		
8	24	2013	50.02	11.90		
8	24	2047	41.99	11.15		
8	24	2108	39.67	9.55		
8	24	2140	32.77	4.14		
8	24	2210	28.85	.67		

FLIGHT INFORMATION FORM

FLIGHT NO. 105131 B/c

Float Altitude 150 mb

Diagram of Flight Train

GHOST Frequency = 15.02 1 MHz
 Sun Angle I.D. Code B

Calibration Data

34.6 DEG	40.0
30.0 DEG	55.0
24.0 DEG	67.0

2nd Package Frequency = 15.02 MHz

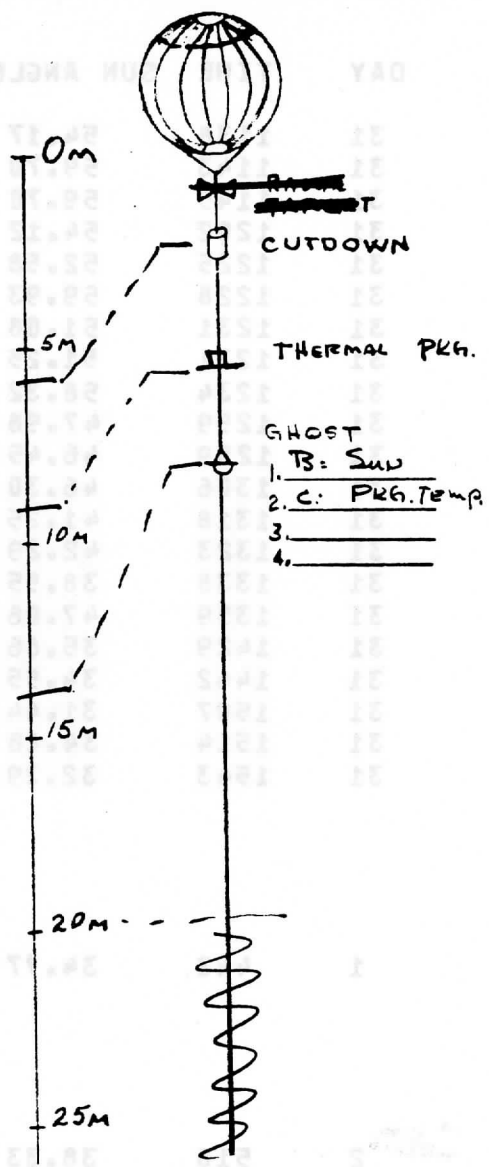
I.D. Code

Code Letter Sensor
 B = Sun Angle
 C = Thermal Package

Calibration Data

BALLOON DATA

Balloon ID# (Mfg*) R 72-14
 Launch date July 28, 1972
 Launch site Ascension
 Film Celinar (Capped)
 Diameter Seam 3.5565 m X Gore 3.5542 m
 Volume 23.411 m³
 Balloon Weight 3353
 Payload Weight 1459
 Duration
 Last Known Position



REMARKS

Surface conditions at launch

* R = Raven Industries, Inc.
 S = G. T. Schjeldahl Co.

WHERLE BALLOON 105151 B/C 1972

MONTH	DAY	TIME	SUN ANGLE	PKG TEMP	LATITUDE	LONGITUDE
7	31	1138	54.17	-26.11		
7	31	1143	59.70	-24.99		
7	31	1145	59.70	-24.67		
7	31	1202	54.12	-27.19		
7	31	1225	52.58	-25.79		
7	31	1228	59.93	-26.11		
7	31	1231	51.08	-26.42		
7	31	1231	51.25	-25.95		
7	31	1234	58.32	-25.95		
7	31	1259	47.98	-27.04		
7	31	1259	46.45	-27.19		
7	31	1306	46.30	-27.35		
7	31	1318	41.25	-27.04		
7	31	1323	42.29	-27.65		
7	31	1338	38.55	-28.85		
7	31	1359	47.06	-29.72		
7	31	1429	35.86	-34.13		
7	31	1442	34.55	-36.56		
7	31	1507	31.44	-38.02		
7	31	1514	34.68	-37.28		
7	31	1543	32.39	-41.08		
8	1	443	34.77	-37.58		
8	2	518	38.33	-36.27		
8	2	551	35.85	-32.86		
8	2	620	37.65	-30.88		
8	2	646	39.64	-28.99		
8	2	724	39.04	-25.79		
8	2	805	42.19	-27.04		
8	2	817			31.7S	57.3E
8	2	822	41.96	-26.27		
8	2	844	39.54	-29.43		
8	2	923	38.94	-29.43		
8	2	1001	38.74	-28.70		
8	2	1033	35.78	-28.70		
8	2	1057	31.43	-30.73		
8	2	1130	31.97	-33.57		

TWERLE BALLOON 105151 8/C

1972

MONTH	DAY	TIME	SUN ANGLE	PKG TEMP	LATITUDE	LONGITUDE
7	28	929	32.61	14.89		
7	28	933	33.10	12.83		
7	28	935	35.54	-14.89		
7	28	943	34.93	13.24		
7	28	1012	39.32	4.88		
7	28	1025	41.61	-.48		
7	28	1032	41.78	-8.05		
7	28	1058	51.82	-28.55		
7	28	1102	53.75	-37.14		
7	28	1109	52.00	-40.14		
7	28	1112	52.00	-40.60		
7	28	1116	49.69	-9.74		
7	28	1116	51.82	-39.06		
7	28	1119	51.82	-37.14		
7	28	1122	51.55	-35.13		
7	28	1126	52.22	-32.44		
7	28	1129	52.22	-30.73		
7	28	1132	53.27	-30.01		
7	28	1135	53.65	-29.29		
7	28	1138	53.74	-28.85		
7	28	1141	54.66	-28.55		
7	28	1143	54.36	-28.55		
7	28	1144	54.90	-28.10		
7	28	1147	55.29	-27.80		
7	28	1150	55.39	-27.95		
7	28	1153	55.39	-27.65		
7	28	1210	58.08	-27.35		
7	28	1222	62.76	-27.65		
7	28	1225	57.77	-28.85		
7	28	1236	59.61	-27.65		
7	28	1244	61.12	-26.89		
7	28	1247	61.12	-27.35		
7	28	1251	61.65	-27.50		
7	28	1252	61.60	-27.95		
7	28	1257	60.67	-27.50		
7	28	1301	61.05	-27.65		
7	28	1307	61.50	-27.95		
7	28	1309			11.4S	13.5W
7	28	1312	61.50	-27.50		
7	28	1316	61.50	-26.73		
7	28	1321	60.14	-26.58		
7	28	1321	60.14	-26.89		
7	28	1322	59.99	-27.19		
7	28	1326	59.53	-26.89		
7	28	1343	60.82	-26.73		
7	28	1352	58.22	-26.89		
7	28	1356	56.93	-27.04		
7	28	1402	56.20	-26.89		
7	28	1415	53.82	-26.11		
7	28	1418	52.83	-26.11		
7	28	1421	53.05	-25.64		

TWERLE BALLOON 105151 B/C

1972

MONTH	DAY	TIME	SUN ANGLE	PKG TEMP	LATITUDE	LONGITUDE
7	28	1425	53.40	-25.32		
7	28	1432	51.46	-25.32		
7	28	1441	49.79	-25.48		
7	28	1442	42.61	-22.21		
7	28	1448	48.82	-25.79		
7	28	1452	48.43	-25.79		
7	28	1502	47.23	-26.89		
7	28	1506	45.66	-27.04		
7	28	1512	45.23	-26.42		
7	28	1521	44.52	-26.42		
7	28	1552	38.93	-32.16		
7	28	1631	34.80	-36.56		
7	29	712	26.40	-49.73		
7	29	749	32.89	-40.92		
7	29	756	25.99	-41.72		
7	29	825	36.33	-34.28		
7	29	848	40.03	-32.02		
7	29	853	36.08	-34.28		
7	29	923	38.26	-32.86		
7	29	927	42.04	-27.80		
7	29	947	45.52	-28.10		
7	29	1003	43.80	-29.43		
7	29	1021	46.92	-30.30		
7	29	1027	50.54	-27.80		
7	29	1051	52.87	-30.01		
7	29	1052	56.19	-30.01		
7	29	1057	52.34	-29.43		
7	29	1132	58.13	-29.43		
7	29	1141	59.71	-28.40		
7	29	1145	60.13	-28.99		
7	29	1157	62.56	-28.10		
7	29	1208	62.13	-28.10		
7	29	1216	62.76	-27.65		
7	29	1218			11.8S	2.6W
7	29	1227	59.31	-36.41		
7	29	1239	60.78	-27.04		
7	29	1254	60.96	-27.35		
7	29	1307	36.39	-32.86		
7	29	1312	51.48	-33.15		
7	29	1319	58.08	-28.55		
7	29	1331	56.70	-27.19		
7	29	1343	44.56	-31.73		
7	29	1352	50.27	-28.70		
7	29	1417	48.00	-28.55		
7	29	1422	40.93	-29.87		
7	29	1452	41.21	-29.14		
7	29	1527	38.52	-30.01		

TWERLE BALLOON 105151 8/C 1972

MONTH	DAY	TIME	SUN ANGLE	PKG TEMP	LATITUDE	LONGITUDE
7	29	1532	31.78	-34.84		
7	29	1558	25.99	-33.43		
7	29	1602	32.00	-28.55		
7	30	1010	50.05	-27.65		
7	30	1017	39.32	-27.19		
7	30	1020	51.53	-27.19		
7	30	1023	52.53	-27.50		
7	30	1026	41.61	-27.50		
7	30	1029	51.26	-27.50		
7	30	1032	53.76	-27.19		
7	30	1035	53.76	-27.50		
7	30	1038	53.76	-27.80		
7	30	1041	54.76	-28.10		
7	30	1044	55.07	-28.70		
7	30	1047	55.07	-29.14		
7	30	1050	56.63	-29.29		
7	30	1053	57.28	-29.72		
7	30	1056	57.28	-30.01		
7	30	1059	57.28	-29.94		
7	30	1102	57.63	-30.59		
7	30	1102	57.28	-30.16		
7	30	1105	52.00	-30.59		
7	30	1108	57.34	-30.59		
7	30	1111	52.00	-30.45		
7	30	1114	56.63	-30.88		
7	30	1117	51.82	-30.52		
7	30	1120	57.98	-30.45		
7	30	1123	51.55	-29.72		
7	30	1126	57.75	-29.58		
7	30	1128	52.22	-29.43		
7	30	1131	58.90	-29.58		
7	30	1134	53.65	-29.87		
7	30	1137	57.51	-29.72		
7	30	1140	54.66	-28.99		
7	30	1142	58.73	-29.80		
7	30	1143	59.70	-29.14		
7	30	1143			13.2S	5.9E
7	30	1146	54.90	-29.58		
7	30	1149	59.41	-28.99		
7	30	1152	55.39	-28.55		
7	30	1155	60.49	-28.85		
7	30	1158	59.41	-29.87		
7	30	1200	61.06	-30.95		
7	30	1203	63.31	-29.43		
7	30	1203	59.53	-31.80		
7	30	1208	59.53	-32.44		
7	30	1212	61.51	-33.01		

TWERLE BALLOON 105151 8/C 1972

MONTH	DAY	TIME	SUN ANGLE	PKG TEMP	LATITUDE	LONGITUDE
7	30	1216	61.51	-34.42		
7	30	1220	61.59	-35.06		
7	30	1223	60.55	-35.41		
7	30	1226	62.66	-35.98		
7	30	1229	59.93	-35.55		
7	30	1232	62.89	-35.27		
7	30	1235	58.32	-36.05		
7	30	1238	62.89	-33.99		
7	30	1241	57.86	-33.36		
7	30	1245	61.12	-33.78		
7	30	1248	57.80	-34.42		
7	30	1251	61.65	-34.70		
7	30	1254	56.57	-34.56		
7	30	1257	60.67	-33.99		
7	30	1300	54.82	-33.43		
7	30	1303	53.12	-33.15		
7	30	1307	61.50	-32.44		
7	30	1310	53.57	-32.02		
7	30	1313	61.50	-32.02		
7	30	1316	51.73	-32.58		
7	30	1319	60.14	-33.01		
7	30	1322	50.84	-33.43		
7	30	1326	59.53	-33.15		
7	30	1329	48.99	-32.16		
7	30	1332	56.70	-31.73		
7	30	1335	49.93	-31.87		
7	30	1339	47.21	-31.73		
7	30	1342	47.21	-31.31		
7	30	1345	47.06	-30.88		
7	31	700	31.82	-37.14		
7	31	827	39.31	-29.14		
7	31	846	41.58	-29.58		
7	31	922	46.90	-29.14		
7	31	948	52.27	-29.43		
7	31	957	52.06	-28.70		
7	31	1000	53.49	-28.55		
7	31	1003	52.65	-28.70		
7	31	1006	50.05	-28.85		
7	31	1023	55.41	-27.65		
7	31	1025	54.75	-28.10		
7	31	1043	56.62	-26.89		
7	31	1053	55.70	-27.04		
7	31	1107	57.85	-26.89		
7	31	1107			16.9S	14.9E
7	31	1110	58.66	-26.58		
7	31	1113	56.63	-26.73		
7	31	1119	55.31	-26.73		

FLIGHT INFORMATION FORM

FLIGHT NO 101151AP/SKW

Float Altitude 150 mb

Diagram of Flight Train

GHOST Frequency = 15.02 1 MHz

Sun Angle I.D. Code AP

Calibration Data

35 DEG 30.3

45 DEG 26.2

60.6 DEG 18.6

2nd Package Frequency = 15.02 5 MHz

I.D. Code KW

Code Letter Sensor

 Altimeter; Air Temp;

 Pressure; Pressure Temp.

Calibration Data

BALLOON DATA

Balloon ID# (Mfg*) R 72-04

Launch date JUL 19 1972

Launch site Ascension

Film Celanar (CAPPED)

Diameter Seam= 3.5541 m Gore= 3.5532 m

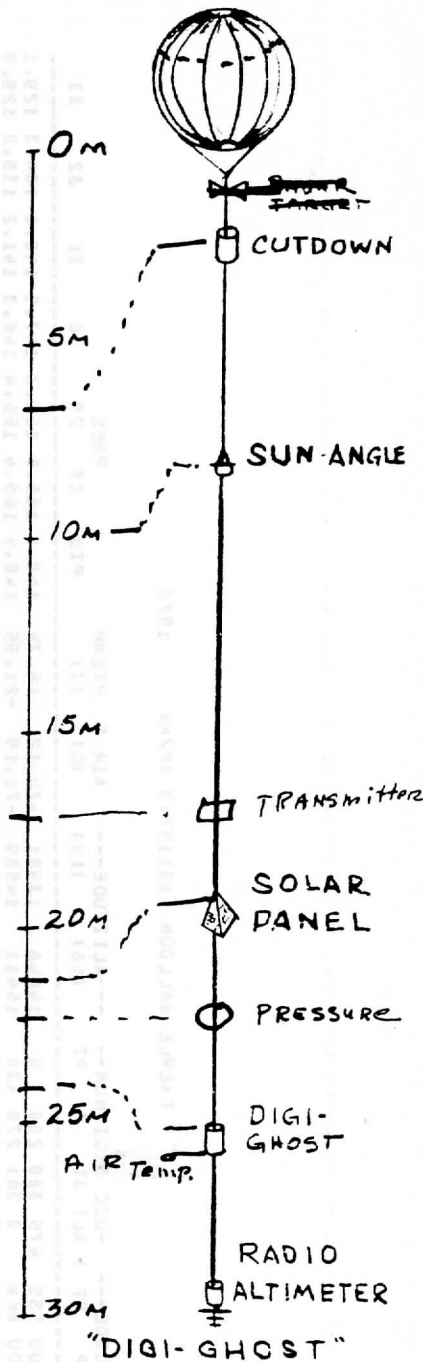
Volume 23.378 m³

Balloon Weight 3382 g

Payload Weight 1423 g

Duration

Last Known Position



REMARKS

Surface conditions at launch

* R = Raven Industries, Inc.
S = G. T. Schjeldahl Co.

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TWERLE BALLOON 101157/3 AP/KM 1972

ID	DATE	TIME	---DIGI CODE---			-DEC DIGI NUM--			---ALITUDE---		ATR T (C)	PTEMP (C)	PID	PRES			31	32	33		
			ALT AT	P	PT	ALT AT	F	PT	(18)	(19)				28	29	30					
KM	7 19	1353	GG	UOK	RUU	SSS	475	380	290	0	14646	13901	-70.12	16.75	140.6	165.6	156.3	147.5	140.6	134.3	129.1
KM	7 19	1356	SSS	KOK	MDU	MKM	0	381	270	430	15411	14589	-70.19	-21.55	140.5	165.6	156.4	148.3	141.2	135.0	129.9
KM	7 19	1357	OKO	KOK	HGU	MKM	495	381	286	430	14615	13873	-70.19	-21.55	140.5	165.9	156.7	148.5	141.4	135.2	130.0
KM	7 19	1359	DMO	ROK	OGU	SOM	497	378	287	440	14612	13870	-69.97	-22.48	140.7	165.9	156.7	148.6	141.4	135.2	130.0
KM	7 19	1401	DMO	ROK	OGU	SOM	497	378	287	440	14612	13870	-69.97	-22.48	140.7	165.9	156.7	148.6	141.4	135.2	130.0
KM	7 19	1405	DMO	ROK	OGU	SSO	505	382	247	448	14600	13859	-70.26	-23.23	140.5	165.1	156.1	148.0	140.9	134.8	129.7
KM	7 19	1409	URO	SSK	SGO	RSO	468	320	248	450	14657	13910	-65.87	-23.42	143.5	165.2	156.1	148.0	140.9	134.8	129.7
KM	7 19	1412	RJO	GOK	UDU	MOM	432	379	316	446	14635	13891	-70.05	-23.04	140.6	166.4	157.2	149.0	141.8	135.6	130.3
KM	7 19	1416	RMO	MHK	SUU	SOM	506	374	288	440	14599	13858	-69.69	-22.48	140.9	165.9	156.7	148.6	141.4	135.2	130.1
KM	7 19	1418	RMO	MHK	SUU	SOM	506	374	288	440	14599	13858	-69.69	-22.48	140.9	165.9	156.7	148.6	141.4	135.2	130.1
KM	7 19	1420	UOO	DOK	DGU	MHM	508	377	281	438	14596	13855	-69.90	-22.29	140.7	165.8	156.6	148.5	141.3	135.2	130.0
KM	7 19	1424	KMO	GOK	ORU	MHM	493	379	279	438	14618	13876	-70.05	-22.29	140.6	165.7	156.6	148.4	141.3	135.1	130.0
KM	7 19	1431	GMO	UOK	KSK	MOM	500	378	276	445	14608	13866	-69.97	-22.95	140.7	165.7	156.6	148.4	141.3	135.1	130.0
KM	7 19	1434	SSS	KOK	KSK	MOM	0	381	325	446	14597	13857	-70.12	-23.04	140.6	166.6	157.4	149.2	141.9	135.7	130.4
KM	7 19	1435	KMO	UOK	OUU	GSO	501	380	319	451	14606	14589	-70.19	-23.52	140.6	166.5	157.3	149.1	141.8	135.6	130.4
KM	7 19	1505	KMO	SSK	MSU	MOM	501	320	262	446	14606	13865	-65.87	-23.04	143.5	165.4	156.3	148.2	141.1	135.0	129.8
KM	7 19	1509	KSS	GOK	OGU	MOM	5	383	287	446	15403	14582	-70.34	-23.04	140.5	166.2	157.0	148.8	141.6	135.4	130.2
KM	7 19	1513	DMO	MOK	KKU	MOM	497	382	301	446	14612	13870	-70.26	-23.04	140.5	166.2	157.0	148.8	141.6	135.4	130.2
KM	7 19	1517	MOM	SSK	SRU	OUU	502	320	272	313	14605	13864	-65.87	-11.43	143.5	165.6	156.3	148.2	141.0	134.8	129.6
KM	7 19	1520	MOM	SSK	KUU	KOM	446	320	293	445	14690	13941	-65.87	-22.95	143.5	166.0	156.8	148.7	141.5	135.3	130.1
KM	7 19	1524	GSS	DOK	GSK	KSO	3	377	323	453	15406	14585	-69.90	-23.71	140.7	166.6	157.4	149.1	141.9	135.7	130.4
KM	7 19	1528	KMO	MOK	SOU	KSO	501	382	312	453	14606	13865	-70.26	-23.71	140.5	166.4	157.2	149.0	141.8	135.5	130.3
KM	7 19	1532	WSS	KOK	MHU	GDO	6	381	310	459	15401	14580	-70.19	-24.29	140.5	166.3	157.1	148.9	141.7	135.5	130.3
KM	7 19	1535	OSS	KOK	SUU	SRO	7	381	288	464	15399	14579	-70.19	-24.78	140.5	165.9	156.8	148.6	141.5	135.3	130.1
KM	7 19	1539	OOO	MOK	OUU	DRO	511	382	265	465	14591	13851	-70.26	-24.87	140.5	165.5	156.4	148.3	141.2	135.0	129.9
KM	7 19	1543	SSS	SOK	ORU	KRO	0	376	279	469	15411	14589	-69.83	-25.27	140.8	165.7	156.6	148.5	141.4	135.2	130.0
KM	7 19	1547	MKO	MOK	URU	KRO	494	382	276	469	14617	13875	-70.26	-25.27	140.5	165.7	156.6	148.5	141.4	135.2	130.0
KM	7 19	1551	RRS	KOK	SKU	SGO	18	391	296	472	15391	14562	-70.19	-25.57	140.5	166.1	156.9	148.8	141.6	135.4	130.2
KM	7 19	1554	RMO	MOK	RGU	SGO	498	382	282	472	14611	13869	-70.26	-25.57	140.5	165.8	156.7	148.6	141.4	135.2	130.1
KM	7 19	1558	RKO	DSM	MHO	MGO	490	385	502	478	14623	13880	-70.48	-26.17	140.3	170.0	160.5	151.9	144.4	137.8	132.2
KM	7 19	1559	RKD	DSM	MHG	MGO	106	385	246	478	15234	14430	-70.48	-26.17	140.3	165.1	156.1	148.0	141.0	134.9	129.8
KM	7 19	1602	GKO	KOK	SGU	MRO	491	381	280	470	14621	13879	-70.19	-25.37	140.5	165.8	156.6	148.5	141.4	135.2	130.1
KM	7 19	1606	GMO	SSM	OUU	MRO	499	384	255	470	14609	13868	-70.41	-25.37	140.4	165.3	156.2	148.1	141.1	134.9	129.8
KM	7 19	1609	UUU	MOK	UDU	SGO	481	370	266	472	14637	13893	-69.40	-25.57	141.1	165.5	156.4	148.3	141.2	135.1	129.9
KM	7 19	1625	UUU	MOK	MDO	RRD	511	382	270	466	14591	13851	-70.26	-24.97	140.5	165.6	156.5	148.4	141.2	135.1	130.0
KM	7 19	1656	KSS	ROK	OUU	MWO	5	378	289	502	15403	14582	-70.26	-28.66	140.7	165.9	156.8	148.7	141.6	135.4	130.2
KM	7 19	1713	KSS	MOK	KOU	SSS	5	382	317	0	15403	14582	-70.26	16.75	140.5	166.3	156.8	148.3	141.0	134.6	129.4
KM	7 20	840	GSS	GGK	KGU	URO	35	349	413	468	15352	14536	-67.90	-25.17	142.1	168.3	158.9	150.5	143.1	136.7	131.3
KM	7 20	843	SDD	RUK	SOU	GDO	72	346	456	459	15290	14481	-67.69	-24.29	142.3	169.1	159.7	151.2	143.7	137.2	131.7
KM	7 20	847	RKS	SGK	DKH	RDO	42	344	425	458	15340	14526	-67.55	-24.19	142.4	168.5	159.3	150.7	143.3	136.8	131.4
KM	7 20	851	RDO	ORK	KGU	SOU	74	343	477	448	15287	14478	-67.48	-23.23	142.4	169.5	160.0	151.5	144.0	137.4	131.9
KM	7 20	854	DSO	ORK	MGO	RSO	65	343	478	450	15302	14491	-67.48	-23.42	142.4	168.6	160.0	151.5	144.0	137.4	131.9
KM	7 20	856	MDD	DRK	DMO	CSO	73	337	497	455	15280	14472	-67.06	-23.90	142.7	169.9	160.4	151.8	144.3	137.7	132.1
KM	7 20	901	UGD	DRK	RMC	KOM	92	337	498	445	15257	14451	-67.06	-22.95	142.7	169.9	160.4	151.8	144.2	137.7	132.1
KM	7 20	905	GDD	RRK	RMC	GUM	87	338	458	419	15265	14458	-67.13	-20.54	142.6	169.9	160.4	151.8	144.2	137.6	132.0
KM	7 20	909	GGU	ODK	KSS	HRM	91	335	5	406	15259	14452	-66.92	-19.37	142.8	160.7	152.1	144.4	137.8	132.2	127.5
KM	7 20	913	KRD	WDK	UOO	MWK	95	334	508	374	15269	14461	-66.85	-18.57	142.8	170.1	160.5	151.9	144.3	137.6	132.0

TWERLE BALLOON 101157/3 AP/KM 1972

ID	DATE	TIME	---DIGI CODE---	ALT AT P	PT	---DIGI NUM---	ALT AT P	PT	---ALTITUDE---	(18)	(19)	AIR T (C)	PIEMP (C)	PID	PRES	28	29	30	31	32	33
KM	7	19	953	K00	KKR	DGK	SSS	0	14621	13379	-55.69	16.75	150.6	166.9	157.3	148.8	141.3	135.0	129.6		
KM	7	19	958	000	WOG	OGK	SSS	0	14591	13351	-61.33	16.75	146.7	167.0	157.4	148.9	141.4	135.0	129.7		
KM	7	19	1010	DUS	SMK	UOK	KOM	445	15355	14539	-69.25	-22.95	141.2	167.7	158.3	150.0	142.6	136.3	130.9		
KM	7	19	1014	U00	SMK	SSS	ROM	442	14596	13855	-69.25	-22.67	141.2	160.6	152.0	144.4	137.8	132.2	127.6		
KM	7	19	1017	URS	RHK	RHU	GWH	435	15377	14559	-69.40	-22.01	141.1	166.2	157.0	144.8	141.6	135.4	130.2		
KM	7	19	1022	WKO	OHK	UKL	UKM	428	14617	13875	-69.76	-21.36	140.8	166.1	156.5	148.7	141.5	135.3	130.1		
KM	7	19	1025	HSS	GHK	GGK	WKM	430	15401	14580	-69.47	-21.55	141.0	167.0	157.7	149.5	142.2	135.9	130.6		
KM	7	19	1028	KDS	SOK	JUK	WMM	438	15389	14570	-69.83	-22.29	140.8	167.1	157.9	149.6	142.3	136.0	130.7		
KM	7	19	1032	USS	RUK	OKK	RMM	434	15404	14583	-68.26	-21.92	141.9	167.7	158.4	150.0	142.7	136.3	130.9		
KM	7	19	1036	R00	DOK	ROK	RUM	418	14599	13859	-69.90	-20.45	140.7	167.6	159.3	149.9	142.6	136.2	130.8		
KM	7	19	1040	RDS	GKK	MUK	KSM	389	15394	14574	-68.90	-17.87	141.4	167.2	157.5	149.6	142.2	135.9	130.6		
KM	7	19	1043	KDS	RKK	GRK	DUK	353	15389	14570	-68.83	-14.78	141.5	166.8	157.5	149.2	141.9	135.6	130.3		
KM	7	19	1047	HSS	GHK	DUK	DKK	361	15401	14580	-69.47	-15.46	141.0	167.1	157.8	149.4	142.1	135.8	130.5		
KM	7	19	1051	D00	MHK	UMK	MUK	358	14600	13859	-69.69	-15.20	140.9	167.5	158.1	149.7	142.4	136.0	130.7		
KM	7	19	1058	USS	KHK	RMK	DMK	369	15404	14583	-69.61	-16.14	140.9	167.4	158.1	149.7	142.4	136.0	130.7		
KM	7	19	1102	UDS	GWK	GMK	KKK	365	15391	14571	-69.47	-15.80	141.0	167.5	158.1	149.7	142.4	136.0	130.7		
KM	7	19	1106	DUS	GWK	DMK	UGK	348	15396	14576	-69.33	-14.35	141.0	166.7	157.4	149.1	141.8	135.5	130.2		
KM	7	19	1110	DRS	GWK	GDK	OSK	327	15382	14564	-69.47	-12.59	141.0	166.7	157.4	149.0	141.7	135.4	130.2		
KM	7	19	1114	U00	GWK	GDK	ROU	314	14596	13855	-69.47	-11.51	141.0	166.7	157.4	149.0	141.7	135.4	130.2		
KM	7	19	1116	U00	GWK	GDK	ROM	442	14596	13855	-69.47	-22.67	141.0	166.7	157.5	149.2	142.0	135.7	130.5		
KM	7	19	1118	R00	UMK	KKK	GOU	315	14599	13858	-69.54	-11.59	141.0	167.3	157.9	149.6	142.0	135.7	130.4		
KM	7	19	1121	RK0	OKK	GOK	SOK	328	14623	13880	-69.18	-12.68	141.2	167.6	158.2	149.8	142.4	136.0	130.7		
KM	7	19	1124	S00	KWK	MDK	SUM	416	14602	13861	-69.61	-20.27	140.9	166.8	157.5	149.2	142.0	135.7	130.4		
KM	7	19	1125	KK0	UMK	GSK	SRK	336	14618	13876	-69.54	-13.35	141.0	166.5	157.2	149.0	141.7	135.4	130.2		
KM	7	19	1128	KS0	UMK	KDK	RGM	410	14680	13931	-69.54	-19.73	141.0	166.7	157.5	149.2	141.9	135.7	130.4		
KM	7	19	1129	GRS	GWK	MGK	MDK	334	15379	14561	-69.47	-13.18	141.0	167.1	157.7	149.4	142.0	135.7	130.4		
KM	7	19	1132	SRS	KWK	RGK	DgK	345	15394	14565	-69.61	-14.10	140.9	167.0	157.6	149.3	142.0	135.7	130.4		
KM	7	19	1136	WDS	KWK	RSK	UKK	364	15388	14568	-69.61	-15.71	140.9	166.8	157.5	149.2	141.9	135.6	130.3		
KM	7	19	1140	KDS	MHK	RDK	SOK	376	15389	14570	-69.69	-16.74	140.9	166.7	157.4	149.1	141.8	135.6	130.3		
KM	7	19	1143	U00	UMK	SOU	DMK	369	14596	13855	-69.76	-16.14	140.8	166.3	157.1	148.8	141.6	135.4	130.1		
KM	7	19	1147	USS	UMK	MDK	MWK	374	15404	14583	-69.54	-17.18	141.0	167.0	157.7	149.4	142.1	135.8	130.5		
KM	7	19	1150	OM0	GWK	GGK	KOK	381	14603	13862	-69.47	-17.18	141.0	166.8	157.5	149.2	141.9	135.6	130.3		
KM	7	19	1155	GW0	SOK	MDK	SSM	384	14609	13868	-69.83	-17.44	140.8	166.8	157.5	149.2	141.9	135.6	130.3		
KM	7	19	1159	SSS	OKK	UOU	ROK	378	15411	14589	-69.61	-16.92	140.9	166.4	157.2	148.9	141.7	135.4	130.2		
KM	7	19	1203	SSS	OKK	WKK	KWK	411	15411	14589	-69.18	-16.49	141.2	167.4	158.0	149.7	142.3	136.0	130.6		
KM	7	19	1217	SSS	KUK	GUU	GWM	411	15411	14589	-69.69	-19.73	140.9	166.2	157.0	148.8	141.6	135.4	130.2		
KM	7	19	1221	GK0	MHK	WOK	GOK	379	14621	13879	-69.69	-17.00	140.9	167.7	158.3	149.9	142.5	136.2	130.8		
KM	7	19	1255	W00	MWK	WRK	SRM	400	14592	13853	-69.69	-18.84	140.9	166.9	157.6	149.3	142.0	135.8	130.5		
KM	7	19	1259	U00	MWK	RUK	OGM	415	14596	13855	-69.76	-20.18	140.8	166.8	157.5	149.5	142.2	135.9	130.6		
KM	7	19	1312	KW0	KWK	KDK	GUM	419	14606	13865	-69.61	-20.54	140.9	166.8	157.5	149.2	142.0	135.7	130.4		
KM	7	19	1323	R00	OKK	JGK	OUR	161	14599	13858	-69.30	1.24	140.7	167.0	157.5	149.1	141.7	135.4	130.0		
KM	7	19	1332	RU0	KOK	WOK	GWM	435	14635	13891	-70.19	-22.01	140.5	166.8	157.5	149.3	142.0	135.4	130.2		
KM	7	19	1335	000	KWK	RWU	GOM	443	14591	13851	-69.61	-22.76	140.9	166.2	157.1	148.9	141.7	135.4	130.2		
KM	7	19	1338	U00	UOK	SRU	DSO	449	14596	13855	-70.12	-23.33	140.6	165.6	156.5	148.4	141.2	135.1	128.9		
KM	7	19	1342	S00	ROK	DMG	OMW	439	14602	13861	-69.97	-22.38	140.7	166.1	156.5	147.9	140.8	134.7	129.6		
KM	7	19	1346	DD5	ROK	RKU	MWK	430	15396	14376	-69.97	-21.55	140.7	166.1	156.5	148.7	141.5	135.3	130.1		
KM	7	19	1350	KD0	ROM	WUU	UKM	428	14667	13920	-74.79	-21.36	137.3	166.3	157.1	148.9	141.7	135.5	130.2		

TWERLE BALLOON 101157/3 AP/KM 1972

ID	DATE	TIME	---DIGI CODE---	ALT AT	P	PT	---	ALTITUDE---	AIR T	PTEMP	PID	PRES	30	31	32	33	
				ALT AT	F	PT	(18)	(19)	(C)	(C)		28	29				
KM	7 20	1212	SOS KUK DKM URU	56	357	276	15317	14505	-68.47	-8.37	141.7	168.5	159.0	150.4	142.9	136.5	131.0
KM	7 20	1227	KOS RUK RHM RSU	61	354	258	15309	14497	-68.26	-6.89	141.9	168.7	159.1	150.6	143.0	136.5	131.1
KM	7 20	1227	KOS RUK RHM KSU	61	354	261	15309	14497	-68.26	-7.14	141.9	168.7	159.1	150.6	143.0	136.5	131.1
KM	7 20	1231	ROS MUK UGM USU	58	358	412	15314	14502	-68.54	-7.06	141.8	169.0	159.4	150.9	142.7	136.3	130.8
KM	7 20	1234	ROS UUK USU KSU	58	356	422	15314	14502	-68.40	-7.14	141.8	169.0	159.4	150.9	142.7	136.3	130.8
KM	7 20	1238	ROS GUK DRK USU	58	355	327	15314	14502	-68.33	-7.06	141.8	166.8	157.4	149.1	141.7	135.4	130.1
KM	7 20	1242	ROS DUK SUM USU	58	353	416	15314	14502	-68.19	-7.06	141.9	168.3	158.8	150.3	142.8	136.3	130.9
KM	7 20	1245	SOD OGG JRO USU	72	351	465	15290	14481	-68.04	-7.06	142.0	169.3	159.7	151.1	143.5	136.9	131.4
KM	7 20	1249	USD DUK KDM USU	68	353	397	15297	14487	-68.19	-7.06	141.9	168.0	158.5	150.0	142.5	136.1	130.7
KM	7 20	1253	SOS KKK KUM UDU	56	349	421	15317	14505	-67.90	-7.71	142.1	168.4	158.9	150.4	142.9	136.4	131.0
KM	7 20	1258	DOS DUK SRM KSU	57	353	400	15315	14503	-68.19	-7.14	141.9	168.0	158.5	150.0	142.6	136.1	130.7
KM	7 20	1300	RMS RUK ODM GOG	50	354	393	15327	14514	-68.26	-6.31	141.9	167.9	158.4	149.9	142.5	136.0	130.6
KM	7 20	1304	KUS SKK WOK KKG	37	360	382	15349	14533	-68.68	-5.16	141.6	167.7	158.2	149.7	142.3	135.9	130.5
KM	7 20	1307	MKS GKK SSM SUG	46	363	384	15334	14520	-68.47	-4.08	141.4	167.7	158.2	149.6	142.2	135.8	130.4
KM	7 20	1311	SWS KUK OMK WRG	48	357	375	15330	14517	-68.47	-3.25	141.7	167.5	158.0	149.6	142.2	135.8	130.4
KM	7 20	1315	OGS KUK HUK RDG	31	357	358	15359	14542	-68.47	-2.24	141.7	167.2	157.7	149.3	141.9	135.6	130.2
KM	7 20	1319	GKS UUK RMK OOR	43	356	370	15339	14524	-68.40	-1.32	141.8	167.4	157.9	149.5	142.0	135.7	130.3
KM	7 20	1323	SKS WUK URK OMK	40	358	340	15344	14529	-68.54	-16.66	141.7	166.9	157.6	149.3	142.0	135.7	130.3
KM	7 20	1326	MRS DKK KUK RMR	22	361	357	15374	14556	-68.75	-2.22	141.5	167.2	157.7	149.3	141.9	135.5	130.2
KM	7 20	1330	HGS KKK UWK MWR	30	365	372	15361	14544	-69.04	.12	141.3	167.4	157.9	149.5	142.1	135.7	130.3
KM	7 20	1334	UUS UKK KKK GKR	36	364	365	15350	14535	-68.97	.38	141.4	167.3	157.8	149.4	142.0	135.6	130.2
KM	7 20	1337	RUS UKK SRK DKR	34	364	336	15354	14538	-68.97	.55	141.4	166.7	157.3	148.9	141.6	135.2	129.9
KM	7 20	1341	SGS KKK WRK MSR	24	365	342	15371	14553	-69.04	3.60	141.3	166.8	157.4	149.0	141.6	135.2	129.9
KM	7 20	1345	DUS KKK GUK RUR	33	365	355	15355	14539	-69.04	1.15	141.3	167.1	157.6	149.2	141.8	135.4	130.1
KM	7 20	1348	OGS DKK DDK WGR	26	361	329	15367	14550	-68.75	1.50	141.5	166.6	157.2	148.8	141.4	135.1	129.9
KM	7 20	1352	DGS WUK GRK GGR	25	358	339	15369	14552	-68.54	1.76	141.7	166.8	157.4	148.9	141.6	135.2	129.9
KM	7 20	1355	HGS OUK ODK DGR	29	359	335	15362	14545	-68.61	1.93	141.6	166.7	157.3	148.9	141.5	135.2	129.9
KM	7 20	1359	OGS UUK RDK UGR	27	356	330	15366	14548	-68.40	1.67	141.8	166.6	157.2	148.8	141.5	135.1	129.9
KM	7 20	1403	SUS MKK KKK GKR	32	366	349	15357	14541	-69.11	1.33	141.3	167.0	157.5	149.1	141.7	135.4	130.0
KM	7 20	1406	UGS DKK SGK UUR	28	361	344	15364	14547	-68.75	.58	141.5	166.9	157.4	149.0	141.6	135.3	130.0
KM	7 20	1410	OGS RKK KRK SUR	31	362	341	15359	14542	-68.83	1.33	141.5	166.8	157.4	149.0	141.6	135.3	130.0
KM	7 20	1414	OGS SKK KKK GGR	35	361	336	15359	14542	-68.68	1.67	141.6	167.0	157.5	149.1	141.7	135.4	130.0
KM	7 20	1418	GUS DKK SRK SGR	35	361	336	15352	14536	-68.75	2.02	141.5	166.7	157.3	148.9	141.5	135.2	129.9
KM	7 20	1421	GGG UKK GDK MRR	27	364	331	15366	14548	-68.97	2.19	141.4	166.6	157.2	148.8	141.5	135.1	129.9
KM	7 20	1425	UUS HKK MDK ORR	36	366	334	15350	14535	-69.11	2.11	141.3	166.7	157.3	148.9	141.5	135.2	129.9
KM	7 20	1429	OGS DKK UDK RGR	31	369	332	15359	14542	-69.33	1.84	141.1	166.7	157.2	148.8	141.5	135.2	129.9
KM	7 20	1432	HGS MKK DKK WGR	30	366	345	15361	14544	-69.11	1.50	141.3	166.9	157.5	149.0	141.7	135.3	130.0
KM	7 20	1436	ODS UWK UDU SUR	15	372	316	15386	14567	-69.54	1.33	141.0	166.4	157.0	148.6	141.3	135.0	129.7
KM	7 20	1440	GRS SMK GKK RUR	19	368	347	15379	14561	-69.25	1.15	141.2	167.0	157.5	149.1	141.7	135.3	130.0
KM	7 20	1443	ORS OKK DDK UGR	23	367	329	15372	14555	-69.18	1.67	141.2	166.6	157.2	148.8	141.4	135.1	129.9
KM	7 20	1447	HGS RMK SSK MWR	29	370	320	15362	14545	-69.40	.12	141.1	166.4	157.0	148.7	141.4	135.1	129.9
KM	7 20	1451	OGS GKK ORU OKR	31	371	314	15359	14542	-69.47	.04	141.0	166.3	156.9	148.6	141.3	135.0	129.8
KM	7 20	1454	SRS OMK ORU OMR	16	375	275	15384	14565	-69.76	-6.64	140.8	165.6	156.3	148.1	140.8	134.6	129.4
KM	7 20	1458	SGS RMK UDK SOR	24	370	332	15371	14553	-69.40	-7.73	141.1	166.7	157.3	148.9	141.5	135.2	129.9
KM	7 20	1502	GRS OKK ODU UOR	19	367	319	15379	14561	-69.18	-1.07	141.2	166.4	157.0	148.7	141.4	135.1	129.8
KM	7 20	1503	SGS RMK GDK SOR	24	370	331	15371	14553	-69.40	-7.73	141.1	166.6	157.2	148.9	141.5	135.2	129.9
KM	7 20	1505	UGS GKK SMU USG	28	371	304	15364	14547	-69.47	-1.49	141.0	166.1	156.8	148.5	141.2	134.9	129.7
KM	7 20	1509	ORS UWK KDU USG	23	372	301	15372	14555	-69.54	-1.74	141.0	166.1	156.7	148.4	141.1	134.9	129.7

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THERLE BALLOON 101157/3 AP/KM 1972

ID	DATE	TIME	---DIGI CODE---		-DEC DIGI NUM--		---ALTITUDE---		AIR T (C)	PIEMP (C)	PIO	PRES				31	32	33				
			ALT	P	PT	PT	(18)	(19)				28	29	30								
KM	7	20	916	ORD	DRK	OSS	KUK	87	337	1	357	14506	-67.06	-15.12	142.7	160.6	151.9	144.3	137.7	132.0	127.4	
KM	7	20	921	URD	DRK	KOO	RGK	84	337	509	346	14463	-67.06	-14.19	142.7	170.2	160.5	151.9	144.2	137.6	132.0	132.0
KM	7	20	924	OMS	URK	KGC	OGK	95	340	477	351	14506	-67.27	-15.61	142.5	169.5	159.9	151.4	143.8	137.2	131.7	131.7
KM	7	20	928	SUD	URK	DSS	OKK	96	340	1	367	14445	-67.27	-14.97	142.5	160.6	152.0	144.3	137.7	132.1	127.4	127.4
KM	7	20	932	DRD	SGK	ORR	GOK	81	344	471	379	14445	-67.27	-15.37	142.5	160.6	151.9	144.3	137.7	132.0	127.4	127.4
KM	7	20	935	SRD	WRK	RRO	WSM	80	342	466	390	14469	-67.55	-17.00	142.4	169.4	159.9	151.3	143.8	137.2	131.7	131.7
KM	7	20	940	SSS	GRK	RDO	ODM	0	339	458	399	14589	-67.20	-18.75	142.6	168.2	159.6	151.1	143.6	137.1	131.6	131.6
KM	7	20	942	KSD	GRK	RDO	ODM	69	339	458	399	14481	-67.20	-18.75	142.6	169.2	159.6	151.1	143.6	137.1	131.6	131.6
KM	7	20	943	SDD	URK	UHM	KGM	72	340	436	413	14520	-67.27	-20.00	142.5	168.7	159.3	150.8	143.3	136.9	131.4	131.4
KM	7	20	947	GDD	SGK	OMW	SUM	75	344	439	416	14476	-67.55	-20.27	142.4	168.8	159.3	150.9	143.4	136.9	131.4	131.4
KM	7	20	951	MKS	KRK	KSC	OGM	46	341	453	415	14520	-67.34	-20.18	142.5	169.1	159.6	151.1	143.6	137.1	131.6	131.6
KM	7	20	954	DSO	URK	SOM	UUM	65	340	440	420	14491	-67.27	-20.63	142.5	168.8	159.3	150.9	143.4	136.9	131.4	131.4
KM	7	20	955	DSO	URK	SOM	GGM	65	340	440	411	14491	-67.27	-19.82	142.5	168.8	159.3	150.9	143.4	136.9	131.4	131.4
KM	7	20	958	GSD	KRK	KGO	DUM	67	341	477	417	14488	-67.34	-20.36	142.5	169.5	160.0	151.5	143.9	137.4	131.8	131.8
KM	7	20	1002	GSD	GRK	OGU	UGM	67	339	473	412	14488	-67.20	-19.91	142.6	169.5	160.4	151.4	143.8	137.3	131.8	131.8
KM	7	20	1005	DRD	DRK	RDO	RGW	81	337	498	410	14467	-67.06	-19.73	142.7	169.9	160.4	151.8	144.2	137.6	132.0	132.0
KM	7	20	1009	WRD	KDK	USS	ROM	86	333	4	394	14460	-66.78	-18.31	142.9	160.7	152.0	144.4	137.8	132.1	127.5	127.5
KM	7	20	1013	SDD	UDK	SOM	DKK	72	332	504	361	14481	-66.71	-15.46	142.5	170.1	160.4	151.8	144.2	137.6	132.0	132.0
KM	7	20	1016	GDD	WDK	GKO	DSK	75	334	491	321	14476	-66.85	-12.09	142.8	169.8	160.2	151.5	143.9	137.3	131.7	131.7
KM	7	20	1020	KDD	URK	G3O	SKU	77	340	507	296	14473	-67.27	-10.02	142.5	170.1	160.4	151.8	144.1	137.5	131.9	131.9
KM	7	20	1024	DOS	URK	KOO	DMU	57	343	495	305	14503	-67.48	-10.77	142.4	169.9	160.2	151.6	144.0	137.3	131.7	131.7
KM	7	20	1028	KSD	WRK	KOO	DSK	69	342	461	321	14485	-67.41	-12.09	142.4	169.2	159.6	151.1	143.5	137.0	131.4	131.4
KM	7	20	1031	DDD	URK	OMW	DRK	73	343	439	337	14479	-67.48	-13.43	142.4	169.8	159.3	150.7	143.2	136.7	131.3	131.3
KM	7	20	1035	SSD	SGK	DGM	RUK	64	344	409	354	14493	-67.55	-14.86	142.4	168.2	158.8	150.4	142.9	136.5	131.0	131.0
KM	7	20	1039	RMS	KGK	OGK	MKK	50	349	382	366	14514	-67.90	-15.88	142.1	167.7	158.3	149.9	142.5	136.4	131.4	131.4
KM	7	20	1043	UUS	GUK	GOK	SMK	36	355	411	368	14535	-68.33	-16.06	141.8	168.2	158.8	150.4	142.9	136.5	131.1	131.1
KM	7	20	1046	OOS	UGK	R5O	UKK	63	348	450	364	14494	-67.83	-15.71	142.2	169.0	159.5	151.0	143.4	136.9	131.4	131.4
KM	7	20	1050	GKS	DUK	R4W	GUK	43	353	434	355	14524	-68.19	-14.95	141.9	168.7	159.2	150.7	143.2	136.6	131.2	131.2
KM	7	20	1054	GOS	OGK	UKW	SUK	59	351	428	352	14500	-68.04	-14.69	142.0	168.6	159.1	150.6	143.1	136.6	131.2	131.2
KM	7	20	1057	DMS	GGK	GKW	SGK	49	349	427	344	14515	-67.90	-14.02	142.1	168.5	159.1	150.6	143.1	136.6	131.2	131.2
KM	7	20	1101	RSD	GGK	DDO	WOK	66	347	457	334	14500	-67.76	-13.18	142.2	169.1	159.6	151.0	143.5	137.0	131.4	131.4
KM	7	20	1103	RSD	GGK	DDO	WOK	66	347	457	334	14490	-67.76	-13.18	142.2	169.1	159.6	151.0	143.5	137.0	131.4	131.4
KM	7	20	1105	DOS	GSK	UHM	DDK	57	323	436	329	14503	-66.08	-12.76	143.4	168.7	159.2	150.7	143.2	136.7	131.2	131.2
KM	7	20	1109	OOS	GGK	SOM	DDK	63	347	440	329	14494	-67.76	-12.76	142.2	168.8	159.3	150.8	143.2	136.7	131.3	131.3
KM	7	20	1112	GOS	OGK	GRO	GDK	59	345	467	331	14500	-67.62	-12.93	142.3	169.3	159.8	151.2	143.6	137.1	131.5	131.5
KM	7	20	1113	GOS	OGK	GRO	GDK	59	345	467	331	14500	-67.62	-12.93	142.3	169.3	159.8	151.2	143.6	137.1	131.5	131.5
KM	7	20	1118	MOS	OGK	HUM	ORK	62	351	422	343	14496	-68.04	-13.93	142.0	168.5	159.0	150.5	143.0	136.6	131.1	131.1
KM	7	20	1120	MWS	OGK	R4W	MKG	54	352	434	350	14508	-68.12	-14.52	142.0	168.7	159.2	150.7	143.2	136.7	131.2	131.2
KM	7	20	1124	UWS	GGK	GDO	SUK	68	349	459	352	14487	-67.90	-14.69	142.1	169.2	159.6	151.1	143.5	137.0	131.5	131.5
KM	7	20	1127	USD	GGK	DGO	RUK	68	349	473	354	14487	-67.90	-14.86	142.1	169.5	159.9	151.3	143.7	137.2	131.6	131.6
KM	7	20	1131	OSD	OGK	WSO	DUK	71	351	454	353	14482	-68.04	-14.78	142.0	169.1	159.5	151.0	143.5	137.0	131.4	131.4
KM	7	20	1135	SHW	SUK	DDO	GGK	432	352	441	347	13960	-68.12	-14.27	142.0	168.8	159.3	150.8	143.3	136.6	131.3	131.3
KM	7	20	1138	DOS	GUK	HUM	KDK	57	355	422	333	14503	-68.33	-13.09	141.8	168.5	158.0	150.5	143.0	136.5	131.1	131.1
KM	7	20	1142	DOS	GUK	WRM	USK	57	355	406	324	14503	-68.33	-12.34	141.8	168.5	158.0	150.5	143.0	136.5	131.1	131.1
KM	7	20	1146	DOS	GUK	GUM	GOU	57	355	419	315	14503	-68.33	-11.59	141.8	168.4	158.9	150.4	142.9	136.3	130.9	130.9
KM	7	20	1156	DMS	KUK	OGM	GUU	49	357	409	291	14515	-68.47	-9.61	141.7	168.2	158.7	150.2	142.8	136.3	130.9	130.9
KM	7	20	1205	KWS	SKK	OKM	URU	53	360	431	276	14509	-68.68	-8.37	141.6	168.6	159.1	150.5	143.0	136.5	131.1	131.1

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ID	DATE	TIME	---DIGI CODE---			-DEC DIGI NUM--			---ALTITUDE---			AIR T	PTEMP	PID	PRES						
			ALT	AT	P	PT	ALT	AT	P	PT	(C)	(C)		28	29	30	31	32	33		
KW	7	21	1259	WRK	SUK	OS0	RGO	372	352	455	474	14805	14045	-68.12	142.0	169.1	159.7	151.2	143.7	137.2	131.7
KW	7	21	1302	DRR	UGK	US0	UGO	145	348	452	476	15169	14372	-67.83	142.2	169.1	159.6	151.1	143.7	137.2	131.7
KW	7	21	1306	URR	GGK	R00	MGO	148	347	458	478	14368	14368	-67.76	142.2	169.2	159.7	151.2	143.8	137.3	131.8
KW	7	21	1310	MSR	GGK	OG0	SU0	134	347	479	480	15187	14388	-67.76	142.2	169.6	160.1	151.6	144.1	137.5	132.0
KW	7	21	1314	OSR	UGK	MU0	RU0	135	348	486	482	15186	14387	-67.83	142.2	169.7	160.2	151.7	144.2	137.6	132.0
KW	7	21	1318	SSM	SGK	OG0	GU0	384	344	473	483	14787	14028	-66.57	142.4	169.5	160.0	151.5	144.0	137.5	131.9
KW	7	21	1322	UOR	UGK	G0C	RU0	188	348	507	482	15099	14309	-67.83	142.2	170.1	160.6	152.0	144.4	137.9	132.3
KW	7	21	1325	GWM	RGK	SSS	KGO	435	346	0	477	14707	13956	-67.69	142.3	160.7	152.1	144.5	137.9	132.3	127.7
KW	7	21	1329	MSG	RGK	KUC	RGO	198	346	485	474	15083	14294	-67.69	142.3	169.7	160.2	151.7	144.1	137.6	132.0
KW	7	21	1331	MSG	RGK	KU0	RGO	198	346	485	474	15083	14294	-67.69	142.3	169.7	160.2	151.7	144.1	137.6	132.0
KW	7	21	1348	GGG	ORR	OG0	WR0	219	343	479	470	15049	14264	-67.48	142.4	169.6	160.1	151.6	144.0	137.5	131.9
KW	7	21	1352	WGM	RGK	UGM	DR0	414	346	412	465	14740	13986	-67.69	142.3	168.3	158.9	150.5	143.1	137.6	132.0
KW	7	21	1355	W00	SGK	KU0	RR0	462	344	485	466	14666	13919	-67.55	142.4	169.7	160.2	151.6	144.1	137.6	132.0
KW	7	21	1358	SSS	SGK	KU0	RR0	0	344	485	466	15411	14989	-67.55	142.2	169.0	159.5	151.1	143.6	137.1	131.6
KW	7	21	1359	UGM	UGK	US0	KD0	412	348	449	461	14743	13988	-67.83	142.2	169.0	159.5	151.1	143.6	137.1	131.6
KW	7	21	1402	UGM	UGK	US0	KD0	412	348	449	461	14743	13988	-67.83	142.2	169.0	159.5	151.1	143.6	137.1	131.6
KW	7	21	1403	WU0	RGK	RK0	S00	302	346	480	456	14916	14144	-67.69	142.3	169.8	160.3	151.7	144.2	137.6	132.0
KW	7	21	1407	OGU	ORR	OU0	W00	287	343	487	462	14940	14466	-67.34	142.4	169.7	160.2	151.7	144.1	137.6	132.0
KW	7	21	1432	OGU	ORR	OU0	W00	95	341	474	463	15252	14446	-67.34	142.4	170.2	160.6	152.0	144.4	137.6	132.0
KW	7	21	1510	RUU	URK	SRS	GDW	290	340	16	395	14935	14161	-67.27	142.5	160.9	152.2	144.6	137.9	132.3	127.6
KW	7	21	1539	SRS	MRK	OU0	GUM	16	342	511	419	15384	14565	-67.41	142.4	170.2	160.6	152.0	144.4	137.6	132.0
KW	7	21	1606	DGO	RRK	S00	G00	473	338	56	459	14649	13904	-67.13	142.6	161.5	153.0	145.2	138.5	132.8	128.1
KW	7	21	1611	S00	DRK	WKS	GGO	504	337	46	475	14602	13861	-67.06	142.7	161.5	153.0	145.2	138.5	132.8	128.1
KW	7	21	1623	DKM	SGK	SUM	GG5	437	88	132	33	14704	13354	-49.38	142.0	168.3	158.6	149.9	142.4	135.8	130.4
KW	7	22	528	OSK	OGK	USU	GG5	321	351	416	27	14886	14117	-68.04	142.0	168.3	158.6	149.9	142.4	135.8	130.4
KW	7	22	550	KOG	SGK	KMG	KGO	253	352	245	477	14994	14214	-68.12	142.0	168.3	158.6	149.9	142.4	135.8	130.4
KW	7	22	609	UUG	GGK	GDR	GKM	231	347	139	427	15029	14246	-67.76	142.2	163.1	154.3	146.4	139.5	133.6	128.7
KW	7	22	628	MSU	OGK	GDR	SKK	282	345	115	360	14980	14201	-67.62	142.3	162.7	153.8	145.9	139.1	133.2	128.4
KW	7	22	650	UMU	ORR	S0S	KMU	311	343	56	309	14902	14131	-67.48	142.4	161.5	152.8	145.0	138.2	132.5	127.8
KW	7	22	741	KGU	GRK	KD0	G0G	285	339	77	203	14943	14168	-67.20	142.6	161.9	153.0	145.1	138.3	132.5	127.7
KW	7	22	805	KKU	URR	KUS	DDG	301	340	37	201	14917	14145	-67.27	142.5	161.1	152.3	144.5	137.8	132.1	127.4
KW	7	22	821	SSS	KDK	ODS	GGG	0	333	15	219	15411	14589	-66.78	142.5	160.7	152.0	144.4	137.6	131.9	127.3
KW	7	22	824	MMU	DRK	MRS	GUG	310	337	22	227	14903	14133	-67.06	142.7	160.9	152.1	144.4	137.7	132.0	127.3
KW	7	22	851	SOU	KDK	UGS	G0K	312	333	25	331	14900	14130	-66.78	142.9	161.0	152.3	144.6	137.9	132.2	127.6
KW	7	22	922	KGK	DDK	OKS	UDK	349	329	47	332	14841	14077	-66.50	143.1	161.4	152.6	144.9	138.2	132.4	127.7
KW	7	22	935	DUK	KSK	GR0	SSS	353	325	83	0	14835	14071	-66.22	143.3	161.8	152.8	144.8	137.9	132.1	127.3
KW	7	22	941	KSK	SDK	ODJ	RKU	325	328	79	298	14879	14111	-66.43	143.1	162.0	153.1	145.3	138.5	132.7	127.9
KW	7	22	959	GOK	OSK	SRO	KMU	379	327	80	309	14794	14035	-66.36	143.2	162.0	153.2	145.3	138.5	132.7	127.9
KW	7	22	1026	SUM	USK	UUD	UMU	416	324	100	308	14737	13983	-66.15	143.3	162.3	153.5	145.6	138.8	132.9	128.1
KW	7	22	1105	HGM	UOU	MOS	SGU	414	316	62	280	14740	13986	-65.60	143.7	161.6	152.8	145.0	138.3	132.5	127.8
KW	7	22	1142	RDW	OMU	RDR	SOG	394	311	154	288	14771	14014	-65.25	143.9	163.3	154.3	146.3	139.3	133.4	128.5
KW	7	22	1224	KKK	KUU	RMD	SOK	365	317	114	376	14816	14054	-65.67	143.7	162.6	153.8	145.9	139.1	133.2	128.4
KW	7	22	1247	RRK	G0U	UG0	RGW	341	315	92	410	14854	14088	-65.53	143.8	162.3	153.5	145.7	138.9	133.1	128.3
KW	7	22	1307	GKU	UOU	UUD	OMK	107	316	103	375	15232	14428	-65.60	143.7	162.4	153.6	145.8	138.9	133.1	128.3
KW	7	22	1327	OSK	KUU	UUD	OMU	327	317	100	311	14876	14108	-65.67	143.7	162.3	153.5	145.6	138.8	133.0	128.2
KW	7	22	1404	UOG	G0U	KWD	G0U	252	315	117	283	14896	14216	-65.53	143.8	162.6	153.7	145.8	138.9	133.0	128.2
KW	7	22	1442	RKU	KMU	GGR	SUG	298	309	155	224	14922	14150	-65.11	144.0	163.3	154.3	146.3	139.3	133.4	128.4
KW	7	22	1508	KGR	G0U	OSR	DMG	157	307	135	241	15150	14354	-64.97	144.1	163.0	154.0	146.0	139.1	133.2	128.3

TWERLE BALLOON 101157/3 AP/KM 1972

ID	DATE	TIME	---DIGI CODE---		-DEC DIGI NUM--		---ALTITUDE---		AIR T	PTEMP	PRES						
			ALT	AT	P	PT	(18)	(19)	(C)	(C)	PIC	28	29	30	31	32	33
KW	7	20	1513	00S	RMK	SSK	GMR	15386	14567	-69.40	141.1	166.4	157.0	148.7	141.4	135.1	129.8
KW	7	20	1516	DRS	RMK	RGK	KGR	15382	14584	-69.40	141.1	166.9	157.5	149.1	141.7	135.3	130.0
KW	7	20	1520	RGS	RMK	DRK	MRR	15367	14550	-69.40	141.1	166.8	157.3	148.9	141.5	135.2	129.9
KW	7	20	1524	SGS	KMK	SSK	KGR	15371	14553	-69.61	140.9	166.5	157.1	148.7	141.4	135.1	129.8
KW	7	20	1528	URS	SMK	WOK	GGR	15377	14559	-69.25	141.2	166.7	157.3	148.9	141.5	135.2	129.9
KW	7	20	1531	MGS	GKK	WKK	SRR	15361	14544	-68.90	141.4	167.3	157.4	149.3	141.9	135.5	130.2
KW	7	20	1531	KGS	UMK	SSS	SSS	15362	14545	-69.33	141.1	160.3	151.4	143.7	136.9	131.3	126.7
KW	7	20	1612	MRS	OMK	WKU	CGG	15374	14556	-69.76	140.8	166.1	156.8	148.5	141.2	134.9	129.7
KW	7	20	1639	RJS	GMK	SDM	DOU	15367	14550	-69.47	141.0	167.9	158.4	149.9	142.5	136.1	130.7
KW	7	20	1708	RMR	SMK	SSS	UGK	15115	14324	-69.25	141.2	160.6	151.9	144.3	137.6	132.0	127.4
KW	7	20	1726	DMS	KMK	SSS	SUM	15329	14515	-69.61	140.9	160.6	152.0	144.4	137.8	132.1	127.5
KW	7	21	603	DMD	SOU	GRO	OKO	15222	14420	-65.32	143.9	169.3	159.9	151.4	143.9	137.4	131.9
KW	7	21	642	KGD	UOU	MGG	UMK	15255	14449	-65.60	143.7	164.6	155.6	147.5	140.4	134.4	129.3
KW	7	21	703	UGD	KMU	KKR	DKU	15257	14451	-65.11	144.0	163.7	154.7	146.7	139.7	133.7	129.7
KW	7	21	710	DKM	KKM	SSS	RGU	14723	13970	-73.78	138.0	160.5	151.8	144.2	137.5	131.9	127.3
KW	7	21	727	KSD	UOU	GDR	GOG	15295	14485	-65.04	144.1	163.0	154.1	146.1	139.2	133.2	128.3
KW	7	21	753	SDD	WOU	KGD	OGU	15290	14481	-65.74	143.6	162.2	153.3	145.5	138.6	132.8	128.0
KW	7	21	807	GOS	USK	ODD	URU	15312	14500	-66.15	143.3	161.9	153.1	145.3	138.5	132.7	127.9
KW	7	21	838	OUS	OSK	ROD	SUG	15345	14530	-66.36	143.2	161.8	153.0	145.1	138.3	132.5	127.7
KW	7	21	903	MOS	GSK	DMS	OUS	15307	14496	-66.08	143.4	161.4	152.6	144.8	138.0	132.3	127.6
KW	7	21	926	ODS	RSK	GMS	DKG	15315	14503	-66.01	143.4	161.4	152.6	144.8	138.0	132.3	127.6
KW	7	21	934	OMS	SSK	MOS	DMG	15319	14506	-65.87	143.5	161.6	152.8	145.0	138.2	132.4	127.7
KW	7	21	938	RRS	USK	ROD	UOG	15381	14562	-66.15	143.3	161.8	153.0	145.2	138.4	132.6	127.8
KW	7	21	942	GKS	RSK	ROD	ROG	15339	14524	-66.01	143.4	161.8	153.0	145.2	138.3	132.6	127.8
KW	7	21	945	RMS	UMU	KDS	USU	15327	14514	-65.04	144.1	160.7	152.0	144.3	137.6	132.0	127.3
KW	7	21	948	RMS	UMU	KDS	USU	15327	14514	-65.04	144.1	160.7	152.0	144.3	137.6	132.0	127.3
KW	7	21	1003	OKS	OSK	OSS	OMG	15342	14527	-66.36	143.2	160.6	151.5	144.2	137.5	131.9	127.2
KW	7	21	1011	SMS	OSK	SGS	OGG	15330	14517	-66.43	143.1	160.9	152.1	144.4	137.7	132.0	127.3
KW	7	21	1028	MGS	KDK	JRS	SGG	15361	14544	-66.78	142.9	160.8	152.1	144.3	137.6	131.9	127.3
KW	7	21	1033	DGS	MDK	RMO	UDG	15369	14552	-66.85	142.8	169.9	160.2	151.5	143.8	137.3	131.7
KW	7	21	1048	KGS	WRK	OGO	DGG	15362	14545	-67.41	142.8	169.6	159.9	151.2	143.6	137.0	131.4
KW	7	21	1102	SRS	ORK	RSO	OOG	15384	14565	-67.48	142.4	169.0	159.4	150.8	143.3	136.7	131.2
KW	7	21	1141	RUS	RGK	UGC	DDM	15354	14538	-67.69	142.3	169.5	160.0	151.4	143.8	137.3	131.7
KW	7	21	1206	JUS	OGK	UGO	SSO	15355	14539	-68.04	142.0	169.5	160.0	151.5	143.9	137.4	131.9
KW	7	21	1210	GOR	OGK	GSO	GSD	15101	14310	-68.04	142.0	169.0	159.6	151.1	143.6	137.1	131.6
KW	7	21	1214	KGS	SUK	ROM	ODD	15362	14545	-68.12	142.0	168.9	159.5	151.0	143.5	137.0	131.6
KW	7	21	1218	MOR	SUK	KOM	WDD	15174	14377	-68.12	142.0	168.9	159.5	151.0	143.6	137.0	131.6
KW	7	21	1221	OMR	KGK	ODM	GRO	15107	14316	-67.90	142.1	169.0	159.5	151.1	143.6	137.1	131.6
KW	7	21	1225	OSG	RUK	WKW	KRO	14293	14293	-68.26	141.9	168.6	159.2	150.8	143.4	136.9	131.5
KW	7	21	1228	OSG	RUK	WKW	KRO	15081	14293	-68.26	141.9	168.6	159.2	150.8	143.4	136.9	131.5
KW	7	21	1229	SRR	DUK	OKM	SGO	15171	14374	-68.19	141.9	168.6	159.2	150.8	143.4	136.9	131.5
KW	7	21	1232	JUU	DUK	GUO	GGO	14932	14158	-68.19	141.9	169.7	160.1	151.6	144.1	137.6	132.0
KW	7	21	1236	ROS	WUK	USC	UGO	15314	14502	-68.54	141.7	169.1	159.6	151.1	143.7	137.2	131.7
KW	7	21	1240	MDK	WUK	SDD	SGO	14865	14098	-68.19	141.9	169.1	159.7	151.2	143.7	137.2	131.7
KW	7	21	1248	SOK	SUK	KOM	ORO	14799	14039	-68.19	141.9	169.1	159.7	151.2	143.7	137.2	131.7
KW	7	21	1252	UGK	DUK	UDU	SGO	15146	14352	-68.19	142.0	168.9	159.5	151.0	143.6	137.1	131.6
KW	7	21	1255	ODR	WPK	KUM	RGO	15104	14313	-67.97	142.1	168.5	159.1	150.7	143.3	136.8	131.4
KW	7	21	1258	ODR	WPK	KUM	RGO	15104	14313	-67.97	142.1	168.5	159.1	150.7	143.3	136.8	131.4

ID	DATE	TIME	ALT AT	DIIGI CODE	PT	PT	ALT AT	F	NUM	PT	PT	ALTITUDE	AIR T	PTEMP	PID	PRES	30	31	32	33
KW	7	24	1304	SOS SRK SSS KKK	56	336	0	365	15317	14505	-66.99	-15.80	142.7	160.6	151.9	144.3	137.7	132.0	127.4	
KW	7	24	1359	SOD MSK WGG SSO	72	326	222	448	15290	14481	-66.29	-23.23	143.2	164.7	155.7	147.6	140.6	134.5	129.5	
KW	7	25	441	KUS UOD SSS OSO	37	124	0	455	15349	14534	-52.13	-23.90	153.0	160.6	152.1	144.5	137.9	132.2	127.6	
KW	7	25	444	OGS GRK GRD RDO	31	339	83	458	15359	14542	-67.20	-24.19	142.6	162.1	153.4	145.6	138.9	133.1	128.3	
KW	7	25	515	RRS URK ROD GOM	18	340	122	443	15381	14562	-67.27	-22.76	142.6	162.8	154.0	146.2	139.3	133.5	128.6	
KW	7	25	548	KUS RDK GSR KMW	37	330	131	309	15349	14533	-66.57	-11.10	143.0	162.9	154.0	146.1	139.2	133.3	128.4	
KW	7	25	603	JUS RDK SUK KRU	36	330	352	277	15350	14535	-66.57	-3.46	143.0	167.1	157.7	149.3	142.0	135.6	130.3	
KW	7	25	636	GOS KSK GRR OOK	59	325	147	383	15312	14500	-66.22	-17.35	143.3	163.3	154.3	146.4	139.5	133.6	128.7	
KW	7	25	659	DMS UDK RKD WMM	49	332	106	438	15329	14515	-66.71	-22.29	142.9	162.5	153.7	145.9	139.1	133.3	128.5	
KW	7	25	739	OUS KSK UMD KKK	39	325	116	365	15345	14530	-66.22	-15.80	143.3	162.9	153.0	146.2	139.3	133.5	128.6	
KW	7	25	812	HMS SDK KOD KKK	54	328	125	429	15320	14508	-66.43	-21.46	143.1	162.9	154.0	146.2	139.3	133.5	128.6	
KW	7	25	853	KKS KSK URR KUU	45	325	145	485	15335	14521	-66.22	-26.88	143.3	163.3	154.4	146.6	139.7	133.8	128.9	
KW	7	25	857	DGS ODK DWR OUU	25	329	177	487	15369	14552	-66.50	-27.08	143.4	163.2	154.0	147.0	140.1	134.1	129.2	
KW	7	25	920	DMS RSK RGR SSS	49	322	154	0	15329	14515	-66.01	16.75	143.4	163.2	154.0	145.9	138.8	132.8	127.9	
KW	7	25	957	DMS OOU KOD WMM	55	313	125	446	15319	14506	-65.39	-23.04	143.8	162.9	154.1	146.2	139.4	133.5	128.6	
KW	7	25	1023	UDD SHU ROR SOK	76	304	186	376	15283	14475	-64.77	-16.74	144.3	164.0	155.0	147.0	140.0	134.0	129.0	
KW	7	25	1058	GSD SOU KGR UOM	67	312	157	444	15298	14488	-65.32	-22.85	143.5	163.5	154.6	146.7	139.8	133.8	128.9	
KW	7	25	1125	GSD SOU KOR SSS	67	312	189	0	15298	14488	-65.32	16.75	143.9	163.8	154.6	146.4	139.3	133.2	128.2	
KW	7	25	1148	SRD WKU SSG KUU	80	302	192	461	15277	14469	-64.63	-24.48	144.4	164.1	155.2	147.2	140.2	134.2	129.2	
KW	7	26	232	HMS OOU RWU GUU	49	316	306	483	14515	14515	-65.60	-26.67	143.7	166.3	157.1	148.9	141.7	135.5	130.3	
KW	7	26	245	HMS OOU DGG GOM	54	319	203	433	15320	14508	-65.80	-22.76	143.6	164.3	155.3	147.3	140.3	134.3	129.3	
KW	7	26	318	SSS SSK RDR SSS	0	320	138	0	15411	14583	-65.87	16.75	143.5	162.9	153.7	145.6	138.6	132.7	127.8	
KW	7	26	634	SSS WOU USR WGU	0	318	132	286	15411	14589	-65.74	-9.20	143.6	162.9	154.0	146.0	139.1	133.2	128.4	
KW	7	26	826	OUS DSK SKR GOR	39	321	168	187	15345	14530	-65.94	-9.98	143.5	163.5	154.5	146.4	139.4	133.4	128.5	
KW	7	26	840	OKU OOR KOU KMS	303	143	317	53	14914	14143	-53.53	11.17	152.1	166.3	156.9	148.4	141.1	134.8	129.5	
KW	7	26	859	DOS WOU USR GKK	57	318	132	347	15315	14503	-65.74	-14.27	143.7	163.0	154.0	146.1	139.2	133.4	128.5	
KW	7	26	921	OUS OOU SDR KUU	36	316	136	293	15350	14535	-65.60	-9.77	143.7	163.0	154.0	146.1	139.2	133.3	128.5	
KW	7	26	953	KMS GSK KSR SSK	53	323	133	336	15322	14509	-66.08	-13.35	143.4	163.0	154.0	146.1	139.2	133.3	128.5	
KW	7	26	1009	SSS DSK KGR SSM	0	321	157	384	15411	14564	-65.94	-17.44	143.5	163.4	154.3	146.4	139.5	133.6	128.7	
KW	7	26	1013	DRS DSK ODR OUM	17	321	143	399	15382	14564	-65.94	-18.75	143.5	163.2	154.3	146.4	139.5	133.6	128.7	
KW	7	26	1039	OVS WOU DUR OUM	55	318	161	399	15319	14506	-65.74	-18.75	143.6	163.5	154.6	146.6	139.7	133.8	128.8	
KW	7	26	1053	SSS KOU SKR WKK	60	317	168	374	15310	14506	-65.67	-16.57	143.7	163.6	154.7	146.7	139.7	133.8	128.8	
KW	7	27	543	SSS RMK SRS OUM	0	370	16	441	15411	14589	-69.40	-22.57	141.1	160.9	152.3	144.7	138.0	132.4	127.7	
KW	7	27	547	UOU DMK UDS GMM	460	369	12	435	14669	13922	-69.33	-22.01	141.1	160.8	152.2	144.6	138.0	132.3	127.7	
KW	7	27	725	WRO ROK SSS SSS	470	378	0	0	14654	13808	-69.97	16.75	140.7	160.3	151.4	143.7	136.9	131.3	126.7	
KW	7	27	745	RJO DMK SSS RUU	482	375	0	290	14635	13891	-69.76	-9.53	140.8	160.5	151.8	144.2	137.5	131.9	127.3	
KW	7	29	740	KOK RSO DMK SSS	381	450	375	0	14791	14032	-75.42	16.75	136.9	167.5	157.8	149.3	141.7	135.3	129.9	
KW	7	28	938	DSS SUK RGM UGO	1	352	410	476	15409	14588	-68.12	-25.37	142.0	168.2	158.9	150.5	143.1	136.7	131.3	
KW	7	28	942	GSS RUK WJD SKO	3	354	78	488	15406	14585	-68.26	-27.19	141.9	162.1	153.3	145.6	138.9	133.1	128.3	
KW	7	29	740	KOK RSO DMK SSS	381	450	375	0	14791	14032	-75.42	16.75	136.9	167.5	157.8	149.3	141.7	135.3	129.9	
KW	8	1	155	SKO KKK SSO DMK	488	365	504	375	14626	13883	-69.04	-16.66	141.3	170.1	160.4	151.8	144.2	137.6	132.0	
KW	8	1	243	GRO WKK KUS KOK	467	366	37	333	14658	13912	-69.11	-13.09	141.3	161.2	152.5	144.8	138.1	132.1	127.7	
KW	8	1	524	SKO WUK SRS RDK	488	358	16	330	14626	13883	-68.54	-12.84	141.7	160.8	152.1	144.5	137.8	132.1	127.5	
KW	8	4	127	GDU URK JRU SSM	267	340	81	394	14972	14194	-67.27	-17.44	142.5	162.0	153.3	145.5	138.7	132.9	128.1	
KW	8	4	131	UOU SRK UKO SMK	268	336	108	368	14970	14193	-66.99	-16.06	142.7	162.5	153.7	145.8	139.0	133.2	128.3	
KW	8	4	134	WUO RRR KKO GUK	262	338	109	359	14980	14201	-67.13	-15.29	142.6	162.5	153.7	145.8	139.0	133.1	128.3	
KW	8	4	138	HGU URK GOU GUK	220	340	123	355	15067	14262	-67.27	-14.95	142.5	162.8	153.9	146.0	139.1	133.3	128.4	
KW	8	4	142	GKU DRK GDR WUK	235	337	139	358	15023	14241	-67.06	-15.20	142.7	163.1	154.2	146.3	139.4	133.5	128.6	

ID	DATE	TIME	---DIGI CODE---			-DEC DIGI NUM--			---ALTITUDE---		AIR T (C)	PTEMP (C)	PID	PRES						
			ALT AT	P	PT	ALT AT	P	PT	(18)	(19)				28	29	30	31	32	33	
KW	8	303	GKM	SWM	ODM	GWM	427	432	399	435	14720	13967	-74.01	137.9	168.0	158.6	150.3	142.9	136.5	131.1
KW	8	307	GUM	DGM	WRM	OSO	419	409	406	455	14732	13979	-72.25	139.1	168.2	158.8	150.4	143.0	136.6	131.2
KW	8	311	GKM	RGW	SWM	KDO	427	410	432	461	14720	13967	-72.33	139.0	168.7	159.2	150.8	143.4	136.9	131.5
KW	8	315	OUW	ORM	GWM	USO	423	410	432	452	14726	13973	-23.61	139.0	168.7	159.2	150.8	143.4	136.9	131.4
KW	8	318	OUW	RGW	DMW	GUM	423	410	433	419	14726	13973	-72.33	139.0	168.7	159.2	150.8	143.3	136.8	131.4
KW	8	322	UKW	ORM	SDO	GUM	432	407	456	419	14718	13966	-72.10	139.2	169.1	159.6	151.1	143.6	137.1	131.6
KW	8	326	SWM	ORM	WGO	UHM	432	407	478	436	14712	13960	-72.10	139.2	169.6	160.0	151.5	144.0	137.4	131.9
KW	8	332	ODM	RRM	KDO	SDO	441	402	461	456	14698	13948	-71.73	139.5	169.2	159.7	151.3	143.8	137.3	131.7
KW	8	1927	RSS	GKM	GUS	OSM	2	371	35	391	15408	14586	-69.47	141.0	161.2	152.5	144.8	136.1	132.4	127.8
KW	8	1930	SUS	DMK	KUS	OSM	32	369	37	391	15357	14541	-69.33	141.1	161.3	152.6	144.9	138.2	132.5	127.8
KW	8	1934	RRS	DMK	GGS	GSM	18	369	27	387	15381	14562	-69.33	141.1	161.3	152.6	144.9	138.0	132.4	127.7
KW	8	1938	MRS	UKK	OUS	OSM	22	364	33	391	15374	14556	-68.97	141.4	161.2	152.5	144.8	138.1	132.4	127.7
KW	8	1941	SUS	GKK	GGS	KSM	24	363	27	389	15371	14553	-68.90	141.4	161.1	152.4	144.7	138.0	132.4	127.7
KW	8	1945	RRS	SWM	ODS	WOK	18	368	15	382	15381	14562	-69.25	141.2	160.9	152.2	144.5	137.9	132.2	127.6
KW	8	1949	HGS	OKK	OUS	OOK	30	367	12	383	15361	14544	-69.18	141.2	160.8	152.1	144.5	137.8	132.2	127.6
KW	8	1953	GKS	OKK	KSS	UOK	43	367	5	380	15339	14524	-69.18	141.2	160.7	152.0	144.4	137.8	132.1	127.5
KW	8	1956	RUS	UKK	GDS	OOK	34	364	11	377	15354	14538	-68.97	141.4	160.8	152.1	144.5	137.8	132.1	127.5
KW	8	2000	GUS	OKK	SGS	OOK	35	367	24	377	15352	14536	-69.18	141.2	161.0	152.3	144.7	138.0	132.3	127.6
KW	8	2004	SUS	OKK	GKO	OOK	0	367	491	377	15411	14583	-69.15	141.2	160.9	152.2	144.5	137.9	132.2	127.6
KW	8	2007	SGS	SWM	JOO	OOK	24	368	508	377	15371	14553	-69.25	141.2	170.1	160.5	151.9	144.3	137.6	132.0
KW	8	2011	ODS	DMK	GGS	SWM	9	369	31	368	15396	14576	-69.33	141.1	161.1	152.4	144.7	138.0	132.4	127.7
KW	8	2015	URS	SWM	KSS	SOK	12	369	48	343	15377	14559	-69.25	141.2	160.7	152.0	144.4	137.7	132.1	127.5
KW	8	2018	URS	DMK	UOO	OKK	28	365	43	343	15391	14571	-69.33	141.1	169.7	160.1	151.5	143.9	137.3	131.7
KW	8	2022	URS	KKK	GKS	SGK	28	365	43	343	15364	14574	-69.04	141.3	161.3	152.6	144.9	138.1	132.4	127.7
KW	8	2026	GUS	MUK	SUS	SGK	35	358	32	344	15352	14536	-68.54	141.7	161.1	152.4	144.7	138.0	132.3	127.6
KW	8	1328	MSG	MUU	RSW	RRS	198	294	386	18	15083	14294	-64.08	144.8	167.7	158.0	149.5	141.9	135.5	130.1
KW	8	1424	UMR	GUU	UMG	ODK	180	291	299	383	15172	14321	-63.87	144.9	166.1	156.9	148.7	141.5	135.2	130.0
KW	8	1542	OUR	DMU	UMG	ODK	143	305	241	330	15173	14375	-64.84	144.2	165.0	155.8	147.7	140.6	134.5	129.4
KW	8	1604	UDU	SOU	UUK	DKM	268	264	356	425	14970	14193	-62.01	146.2	167.2	157.9	149.6	142.3	136.0	130.7
KW	8	1648	MGR	GMU	GSU	UKK	158	307	259	364	15148	14353	-64.97	144.1	165.3	156.2	148.0	140.9	134.8	129.6
KW	8	1652	OKR	UMU	URU	KUK	163	308	273	357	15130	14337	-65.04	144.1	165.6	156.4	148.2	141.1	134.9	129.7
KW	8	1729	OMR	SGU	SOU	GUK	183	280	312	355	15107	14316	-63.11	145.4	166.3	157.1	148.8	141.6	135.3	130.1
KW	8	2220	MOK	KMU	ODM	URS	382	309	399	20	14790	14031	-65.11	144.0	167.9	158.3	149.7	142.1	135.6	130.2
KW	8	1204	UUR	KKK	WRR	MUM	164	365	150	422	15138	14384	-69.04	141.3	163.3	154.4	146.5	139.6	133.7	128.8
KW	8	1232	OUW	ROK	WGS	SUK	423	378	30	352	14726	13973	-69.97	140.7	161.1	152.4	144.7	138.0	132.3	127.6
KW	8	1257	OAD	DMK	GGS	RGG	113	369	27	218	15222	14420	-69.33	141.1	161.0	152.2	144.4	137.7	132.0	127.3
KW	8	1343	SUD	GUK	OOD	UGU	96	355	127	284	14445	14445	-68.33	141.8	162.8	153.9	146.0	139.1	133.2	128.3
KW	8	1438	MKR	SSW	USS	SOG	174	364	4	248	15122	14330	-70.41	140.4	160.6	151.9	144.2	137.5	131.8	127.2
KW	8	1125	URU	RGK	ORU	OGO	276	346	279	479	14957	14181	-67.69	142.3	165.8	156.6	148.5	141.4	135.2	130.1
KW	8	1103	ODU	UKK	KDU	UUU	457	364	109	316	14674	13926	-68.97	141.4	162.5	153.6	145.8	138.9	133.1	128.2
KW	8	932	GMU	DUK	SKG	ORU	307	353	232	279	14908	14137	-68.19	141.9	164.8	155.6	147.5	140.4	134.3	129.2
KW	8	935	GMU	GGK	KSR	RGU	486	347	133	282	14629	13886	-67.76	142.2	162.9	154.0	146.1	139.1	133.2	128.4
KW	8	938	GSG	UMU	DKG	RGU	195	308	233	282	15088	14299	-65.04	144.1	164.8	155.7	147.5	140.4	134.3	129.2
KW	8	1043	MKK	RRK	KDG	SUU	374	338	205	288	14802	14042	-67.13	142.6	164.3	155.2	147.1	140.1	134.0	129.0
KW	8	1113	OKU	MOK	ODG	KUG	303	342	201	229	14919	14147	-67.41	142.4	164.2	155.1	147.0	139.9	133.9	128.8
KW	8	1136	GMU	WOK	ODG	SGU	443	334	207	280	14695	13445	-66.85	142.8	164.3	155.2	147.1	140.1	134.0	129.0
KW	8	1155	ODK	ROK	ODG	GMG	330	330	202	243	14871	14104	-66.57	143.0	164.2	155.1	147.0	139.9	133.9	128.9
KW	8	1205	UKG	GOU	SRR	ORG	236	315	144	215	15021	14239	-65.53	143.8	163.1	154.1	146.1	139.2	133.2	128.3

TWERLE BALLOON 101157/3 AP/KW 1972

ID	DATE	TIME	---DIGI CODE---			-DEC DIGI NUM--			---ALTITUDE---		AIR T (C)	PIEMP (C)	PRES	30	31	32	33			
			ALT	AT	P	PT	PT	PT	(18)	(19)										
KW	8	1223	UGK	GOU	SRR	ORG	236	315	144	215	15021	14239	-65.53	143.8	163.1	154.1	146.1	139.2	133.2	128.3
KW	8	1316	SOG	UDK	SKG	RUG	248	335	232	226	15002	14222	-66.92	142.8	164.8	155.6	147.4	140.3	134.2	129.1
KW	8	1334	WOG	GUK	ORG	SSS	254	331	215	0	14992	14211	-66.66	143.0	161.3	155.0	146.8	139.6	133.5	128.5
KW	8	1413	MKG	KGK	UGO	GUG	350	349	89	227	14840	14076	-67.90	142.1	162.1	153.2	145.3	138.5	132.7	127.9
KW	8	1433	UKD	KRK	MRR	UGG	108	341	150	231	15230	14427	-67.34	142.5	163.2	154.2	146.2	139.3	133.3	128.4
KW	8	1447	DSS	HGK	ODD	RDU	1	350	127	266	15409	14588	-67.75	142.1	162.8	153.9	145.9	139.0	133.0	128.3
KW	8	1501	UDR	DUK	SWC	RSU	460	353	112	258	14669	13922	-68.19	141.9	162.5	153.6	145.7	138.8	133.0	128.1
KW	8	1547	SGR	SKK	UMD	WMR	152	360	116	182	15158	14362	-68.68	141.6	162.6	153.6	145.7	138.7	132.9	128.0
KW	8	1626	ORK	RGK	GWR	HWG	343	346	179	246	14851	14086	-67.69	142.3	163.8	154.7	146.7	139.7	133.7	128.7
KW	8	1714	MUD	ORK	KMR	SOR	102	343	131	194	15240	14436	-67.48	142.4	163.8	154.7	146.6	139.6	133.6	128.6
KW	8	1736	KRG	KGK	GOD	GGG	213	349	123	219	15058	14272	-67.90	142.1	162.7	153.8	145.8	138.9	133.0	128.1
KW	8	1803	MKG	KGK	SMR	KSK	350	349	176	325	14840	14076	-67.90	142.1	163.8	154.7	146.7	139.8	133.8	128.8
KW	8	800	RGK	WOK	DMR	MUS	106	332	177	38	15234	14430	-70.26	140.8	163.8	154.4	146.3	139.2	133.2	128.2
KW	8	816	DKM	OKM	ODR	HSS	425	375	185	6	14723	13970	-69.76	140.8	163.8	154.5	146.4	139.2	133.2	128.2
KW	8	844	MOS	RMK	KSD	DGO	62	370	69	473	15307	14496	-69.40	141.1	161.9	153.2	145.5	138.7	133.0	128.2
KW	8	912	MKM	SOK	USD	GRO	430	376	68	467	14715	13963	-69.83	140.8	161.9	153.2	145.4	138.7	133.0	128.2
KW	8	942	LUS	OSM	HGS	KUO	36	331	30	485	15350	14535	-70.92	140.6	161.2	152.6	144.9	138.3	132.6	127.9
KW	8	1012	GMK	KUM	GWM	MRM	371	397	435	406	14807	14046	-71.36	139.7	160.7	159.2	150.8	143.3	136.8	131.4
KW	8	1052	GDK	RRM	RRD	MDM	371	402	466	398	14807	14046	-71.73	139.5	169.3	159.8	151.3	143.7	137.2	131.7
KW	8	1123	SOD	DSM	KRD	MSM	72	385	85	390	15290	14481	-70.48	140.3	162.1	153.3	145.5	138.7	133.0	128.2
KW	8	1145	DOS	UOK	URD	WUM	57	380	84	422	15315	14550	-70.12	140.6	162.1	153.4	145.6	138.8	133.0	128.2
KW	8	1221	UOU	ORM	GHO	URO	316	407	499	468	14694	14124	-72.10	139.2	170.0	160.4	151.9	144.3	137.7	132.1
KW	8	1230	MHO	MDM	MHO	KOO	502	398	503	461	14605	13864	-71.44	139.7	170.0	160.5	151.9	144.3	137.7	132.1
KW	8	1337	UOR	OGM	SKO	URM	364	411	488	404	14618	14056	-72.44	139.0	169.8	160.2	151.6	144.0	137.5	131.9
KW	8	1359	SOK	DGM	ORR	RWM	376	409	471	434	14799	14039	-72.25	139.1	169.4	159.9	151.4	143.9	137.3	131.8
KW	8	1430	MKM	COM	MRC	GDK	430	441	470	331	14715	13563	-74.71	137.4	169.4	159.8	151.2	143.7	137.1	131.6
KW	8	1457	GWM	RSO	UKG	SSS	411	450	236	0	14745	13990	-75.42	136.5	164.7	155.4	147.1	139.9	133.7	128.6
KW	8	1500	UWS	OGM	OOM	SOG	49	415	447	248	15329	14515	-72.71	138.8	168.9	159.3	150.8	143.2	136.7	131.2
KW	8	1512	USR	OGM	UKM	SKG	132	415	428	232	15191	14391	-72.71	138.8	168.6	159.3	150.4	142.9	136.4	130.9
KW	8	1600	RKD	RUM	KOM	SRG	106	418	445	208	15234	14430	-72.93	138.6	168.3	159.3	150.7	143.1	136.6	131.1
KW	8	1608	SUS	UUM	OKM	ODG	32	417	425	201	15357	14541	-72.86	139.7	168.5	158.9	150.3	142.8	136.3	130.9
KW	8	1700	UOM	KGW	RDO	UGU	444	413	458	284	14694	13944	-72.56	138.9	169.2	159.6	150.3	142.8	136.9	131.3
KW	8	1725	DSS	UUM	SUS	UDK	1	422	32	332	15409	14588	-73.24	138.4	161.1	152.4	144.7	138.0	132.3	127.6
KW	8	653	DKG	UGM	KUO	G00	345	412	485	507	14848	14083	-72.48	138.5	169.7	160.2	151.7	144.2	137.7	132.1
KW	8	740	SKM	KUM	SDM	DKU	424	421	392	297	14724	13972	-73.16	138.5	167.9	158.4	150.0	142.5	136.1	130.7
KW	8	813	ODR	SUM	KGK	HSK	327	416	349	326	15182	14384	-72.78	138.7	167.0	157.7	149.3	142.0	135.7	130.4
KW	8	936	DGR	KGM	RKA	GUK	153	413	426	355	15156	14360	-72.56	138.9	168.5	159.0	150.6	143.1	136.6	131.2
KW	8	1003	SUS	UUM	OKM	KOK	12	418	425	333	15391	14571	-72.93	138.6	168.5	159.0	150.5	143.0	136.6	131.1
KW	8	1026	SMK	UGM	KGW	SSK	308	409	477	320	14812	14050	-72.25	139.1	169.5	159.9	151.3	143.7	137.2	131.6
KW	8	1056	S00	GGM	RDM	U0U	456	411	394	316	14675	13927	-72.40	139.0	167.9	158.5	150.0	142.6	136.2	130.8
KW	8	1126	KRU	ORM	MGM	UUK	277	407	414	356	14956	14180	-72.10	139.2	168.3	158.8	150.4	142.9	136.5	131.1
KW	8	1141	SGU	RGW	UUM	R0K	280	410	420	330	14951	14176	-72.33	139.0	168.4	158.5	150.4	143.0	136.5	131.1
KW	8	1213	OMG	RGW	UKM	MKU	247	412	428	302	15004	14223	-72.33	139.0	168.6	159.0	150.5	143.0	136.6	131.1
KW	8	1241	OOH	UGM	SGW	GKU	447	412	408	299	14689	13940	-72.48	139.9	168.2	158.7	150.2	142.8	136.3	130.9
KW	8	1350	SOK	DDM	UDD	KOK	328	393	460	381	14875	14107	-71.07	139.5	169.2	159.7	151.1	143.6	137.1	131.5
KW	8	1318	ODU	RGW	SGO	G0K	319	410	472	315	14989	14120	-72.33	139.0	169.4	159.8	151.2	143.7	137.1	131.5
KW	8	1337	ODK	GMW	OKM	DRK	335	411	431	337	14864	14097	-72.40	139.0	168.6	159.1	150.6	143.1	136.7	131.2

THERLE BALLOON 101157/3 AP/KM 1972

ID	DATE	TIME			---DIGI CODE---			---DIGI NUM---			---ALTITUDE---			AIR T			PRES			30	31	32	33
		ALT	AT	P	PT	PT	PT	PT	ALT	AT	F	PT	(18)	(19)	(C)	(C)	PID	28	29				
KM	8	16	1400	MSO	WRM	DRO	OKM	454	406	465	431	14678	13930	-72.03	-21.64	139.3	169.3	159.8	151.3	143.8	137.2	131.7	
KM	8	16	1423	RKU	GGM	RGW	GMW	298	411	410	435	14922	14150	-72.40	-22.01	139.0	168.2	158.8	150.4	143.0	136.6	131.2	
KM	8	16	1431	UMO	RGW	MMW	OGM	500	410	438	415	14608	13866	-72.33	-20.18	139.0	168.8	159.3	150.8	143.4	136.9	131.4	
KM	8	16	1500	DOM	DGM	UUM	ODO	441	409	420	463	14698	13948	-72.25	-24.68	139.1	168.4	159.0	150.6	143.2	136.8	131.4	
KM	8	16	1533	SRG	SGM	OSD	MDM	208	408	455	398	15067	14280	-72.18	-13.66	139.1	169.1	159.6	151.1	143.6	137.1	131.5	
KM	8	16	1613	RGD	DGM	SOM	DMK	474	409	440	369	14647	13902	-72.25	-16.14	139.1	168.8	159.3	150.8	143.3	136.8	131.3	
KM	8	16	1648	MSG	ORM	UOD	WOK	198	407	508	332	15083	14294	-72.10	-17.26	139.2	170.1	160.5	151.9	144.3	137.7	132.0	
KM	8	17	549	RUU	GUK	OUR	SUS	290	331	161	32	14935	14161	-66.64	13.31	143.0	163.3	154.2	146.1	139.0	133.0	128.1	
KM	8	17	619	GUD	OSD	GOK	KSS	99	71	379	5	15245	14440	-48.04	16.20	152.5	167.5	157.9	149.3	141.8	135.4	130.0	
KM	8	17	636	KOW	USK	SUK	SRO	445	327	296	464	14692	13342	-66.36	-24.78	143.2	166.1	156.9	148.7	141.6	135.4	130.2	
KM	8	17	655	DKM	KSK	SUU	WOK	425	325	288	382	14723	13370	-66.22	-17.26	143.3	165.9	156.7	148.5	141.3	135.1	129.9	
KM	8	17	717	GRK	SDK	ODG	GGK	339	328	207	347	14857	14091	-66.43	-14.27	143.1	164.3	155.3	147.2	140.2	134.2	129.1	
KM	8	17	743	UKS	SDK	KUR	GRU	44	328	165	275	15337	14523	-66.43	-8.29	143.1	163.5	154.5	146.5	139.5	133.6	128.6	
KM	8	17	809	SKO	GOU	SRG	SOG	498	315	208	248	14626	13883	-65.53	-6.07	143.8	164.3	155.2	147.1	140.0	134.0	128.9	
KM	8	17	853	ODG	SDK	OWR	UUG	207	328	183	228	15068	14281	-66.43	-4.41	143.1	163.8	154.8	146.7	139.7	133.7	128.7	
KM	8	17	906	MRG	SDK	SGR	SUR	214	328	152	180	15057	14271	-67.06	1.33	143.1	163.2	154.2	146.1	139.2	133.2	128.3	
KM	8	17	939	SSK	DRK	MWS	SRU	320	337	54	272	14887	14118	-66.92	-8.64	142.7	161.5	152.7	144.9	138.1	132.4	127.7	
KM	8	17	1016	SRS	ODK	KJD	MKG	16	335	77	238	15384	14565	-66.92	-5.24	142.8	161.9	153.0	145.2	138.4	132.6	127.8	
KM	8	17	1041	URM	RRK	UOD	ORG	404	341	124	215	14755	14000	-67.34	-3.33	142.5	162.7	153.8	145.8	139.6	133.0	128.4	
KM	8	17	1103	SOU	GMD	KRG	SSS	504	115	213	0	14602	13861	-51.45	16.75	153.5	164.3	155.0	146.8	139.6	133.5	128.4	
KM	8	17	1107	WOK	ORK	SMD	KGG	382	343	112	221	14790	14031	-67.48	-3.83	142.4	162.5	153.6	145.7	138.8	132.9	128.1	
KM	8	17	1129	SSS	RGK	JMS	SRG	0	346	113	208	15411	14589	-67.69	-2.75	142.3	162.5	153.6	145.6	138.8	132.9	128.0	
KM	8	17	1151	OKO	MUK	RMS	DUG	435	358	50	225	14615	13873	-68.54	-4.16	141.7	161.4	152.6	144.8	138.0	132.3	127.6	
KM	8	17	1222	RGK	RuK	RKD	GUG	340	346	106	251	14846	14081	-67.69	-6.31	142.3	162.4	153.5	145.6	138.7	132.9	128.1	
KM	8	17	1303	SSS	UUK	ORD	GOR	0	356	87	187	15411	14589	-68.40	-9.98	141.8	162.0	153.1	145.2	138.4	132.9	127.8	
KM	8	17	1323	MUK	KGK	SKR	RGG	358	349	168	218	14827	14064	-67.90	-3.58	142.1	163.6	154.5	146.5	139.5	133.5	128.5	
KM	8	17	1411	UPO	UUK	SOD	KSG	516	350	120	197	14393	13844	-68.12	-1.82	141.8	162.7	153.7	145.7	138.8	132.9	128.1	
KM	8	17	1436	SMS	SUK	MKD	OGG	48	352	110	223	15330	14517	-67.90	-6.97	142.1	163.1	154.1	146.2	139.2	133.3	128.4	
KM	8	17	1506	OSS	GOK	SRR	GSU	7	349	144	259	15399	14579	-67.76	-7.88	142.2	163.5	154.5	146.5	139.5	133.5	128.6	
KM	8	17	1528	SUO	GGK	RUR	WOU	480	347	162	270	14638	13894	-67.76	-7.88	142.2	163.5	154.5	146.5	139.5	133.5	128.6	
KM	8	17	1531	WRO	GGK	DSR	OKU	470	347	129	303	14654	13908	-67.76	-10.60	142.2	162.9	153.9	146.0	139.1	133.2	128.4	
KM	8	17	1535	KMO	UGK	UUD	DSK	501	348	113	321	14606	13865	-67.83	-12.09	142.2	162.6	153.7	145.9	139.0	133.1	128.3	
KM	8	17	1538	OSG	OGK	UUR	RRK	199	345	164	338	15081	14293	-67.62	-13.51	142.3	163.5	154.6	146.6	139.6	133.7	128.7	
KM	8	17	1539	KMO	UGK	DKG	KKC	501	348	233	493	14606	13865	-67.83	-27.71	142.2	164.9	155.9	147.9	140.8	134.8	129.7	
KM	8	17	1627	DUO	URK	RKG	DUO	481	340	234	421	14637	13893	-67.27	-26.47	142.5	164.9	155.9	147.9	140.8	134.0	129.7	
KM	8	18	624	SUS	DMK	GWR	SKM	32	369	179	424	15357	14541	-69.33	-21.00	141.1	163.9	154.9	146.9	140.0	134.0	129.0	
KM	8	18	707	UOD	SMK	SMD	KGU	503	368	112	285	14603	13862	-69.25	-9.11	141.2	162.6	153.6	145.8	138.9	133.0	128.2	
KM	8	18	741	ORS	CHK	MKD	OGG	23	369	110	211	15372	14555	-69.33	-3.00	141.1	162.5	153.5	145.6	138.7	132.9	128.0	
KM	8	18	813	DDS	KMK	UOD	KRG	3	373	68	213	15396	14576	-69.61	-3.16	140.9	161.7	152.8	145.0	138.2	132.4	127.7	
KM	8	18	840	GJK	WSD	SGS	SSS	379	70	216	0	14794	14035	-47.96	16.75	155.9	164.4	155.1	146.8	139.6	133.5	128.5	
KM	8	18	843	UJG	GOK	OUS	OGG	204	379	39	223	15073	14286	-70.05	-4.00	140.6	161.2	152.4	144.6	137.9	131.9	127.5	
KM	8	18	921	KGO	RSM	GUS	UKG	477	366	11	236	14643	13898	-70.55	-5.07	140.3	160.7	151.9	144.2	137.6	131.9	127.3	
KM	8	18	1013	GKK	SSM	URS	WSU	363	334	20	262	14920	14057	-70.41	-7.22	140.4	160.9	152.1	144.4	137.7	132.0	127.4	
KM	8	18	1201	SGO	USM	DGO	SOK	472	388	473	328	14650	13905	-70.70	-12.69	140.2	169.5	159.9	151.3	143.7	137.1	131.6	
KM	8	18	1230	MSK	COK	WGS	KOR	326	383	14	189	14878	14110	-70.34	-1.15	140.4	160.7	151.9	144.2	137.5	131.8	127.2	
KM	8	18	1303	KGS	OOK	MGS	WOG	29	383	30	294	15362	14545	-70.34	-6.56	140.4	161.0	152.3	144.5	137.8	132.1	127.4	
KM	8	18	1323	USU	DSM	ORS	OWG	200	365	23	247	14933	14204	-70.48	-5.98	140.3	160.9	152.2	144.4	137.7	132.0	127.4	
KM	8	18	1355	GJK	KSM	OGO	RSK	355	339	479	322	14832	14069	-70.77	-12.18	140.1	169.6	160.0	151.4	143.8	137.2	131.6	

TWERLE BALLOON 101157/3 AP/KW 1972

ID	DATE	TIME	---CIGI CODE---	ALT AT P	PT	---ALTITUDE---	(19)	AIR T (C)	PTEMP (C)	PIO	28	29	30	31	32	33
KW	8	18	1436 S00 DSM DGS KHM	504	385	25	437	-70.48	-22.20	140.3	161.1	152.4	144.8	138.1	132.4	127.8
KW	8	18	1543 K0K GSH DGD MWM	333	387	88	446	-70.63	-23.04	140.2	162.2	153.5	145.7	138.9	133.1	128.3
KW	8	18	1604 GGU GSW ROS SSS	283	387	58	0	-70.63	16.75	140.2	161.4	152.4	144.5	137.6	131.8	127.1
KW	8	19	631 RJR ODM OSS OKO	138	393	1	471	-71.07	-25.47	139.9	160.7	152.1	144.5	137.9	132.3	127.9
KW	8	19	708 GOU UDM OKS OUM	315	396	41	417	-71.29	-20.36	139.8	161.3	152.7	145.0	138.3	132.6	127.9
KW	8	19	723 K4R GSM DMS UKK	131	387	49	364	-70.63	-15.71	140.2	161.5	152.7	145.0	138.3	132.5	127.8
KW	8	19	745 UUU ROK KGS KGU	292	378	29	285	-69.97	-9.11	140.7	161.0	152.3	144.6	137.9	132.2	127.5
KW	8	19	807 KKK GOK ODS RKK	301	379	15	298	-70.05	-10.19	140.6	160.8	152.1	144.4	137.7	132.1	127.4
KW	8	19	833 GWD GOK KRS UUK	115	379	21	356	-70.05	-15.03	140.6	160.9	152.3	144.6	137.9	132.2	127.6
KW	8	19	1000 S6D OMK GMS MOW	88	375	51	318	-69.76	-11.84	140.8	161.5	152.7	144.9	138.2	132.5	127.7
KW	8	19	1036 OSR MKK SJO OMG	135	366	72	247	-69.11	-5.58	141.3	161.8	152.9	145.1	138.3	132.5	127.8
KW	8	19	1042 KJR RKK KKO UKG	165	362	109	236	-68.83	-5.07	141.5	162.5	153.5	145.6	138.8	132.9	128.1
KW	8	19	1102 GJR UMD JMD SUG	163	116	116	224	-51.53	-4.08	153.4	162.6	153.6	145.7	138.8	132.9	128.1
KW	8	19	1121 GRK GUK GOD SRG	339	355	123	208	-68.33	-2.75	141.8	162.7	153.7	145.8	138.9	133.0	128.1
KW	8	19	1156 K3O OUK RSR SUG	85	359	130	224	-68.61	-4.08	141.6	162.9	153.9	145.9	139.0	133.1	128.2
KW	8	19	1223 D3R OUK GGR KDG	153	354	155	205	-68.26	-2.50	141.9	163.3	154.3	146.3	139.3	133.3	128.4
KW	8	20	731 RRR RKK ORR OMR	146	362	145	177	-68.83	-1.13	141.5	163.1	154.1	146.1	139.1	133.2	128.3
KW	8	20	1122 OKK KOD GUG SSS	361	125	227	0	-68.20	16.75	153.0	164.6	155.2	147.0	139.8	133.6	128.6
KW	8	20	1129 R00 SKK MKD DRU	506	360	110	273	-68.68	-8.13	141.6	162.5	153.6	145.7	138.8	133.0	128.1
KW	8	20	1151 SKM MUK GMD SSK	424	353	115	320	-68.54	-12.01	141.7	162.6	153.7	145.9	139.0	133.1	128.3
KW	8	21	446 KGG R0M SRS DRK	235	394	16	337	-71.14	-13.43	139.9	160.8	152.2	144.5	137.8	132.1	127.5
KW	8	21	511 KKK R0M G00 DUK	301	394	507	353	-71.14	-14.78	139.9	170.1	160.5	151.8	144.2	137.6	132.0
KW	8	21	553 OSG OSM DKS UKK	193	391	41	364	-70.92	-15.71	140.0	161.3	152.6	144.9	138.2	132.5	127.8
KW	8	21	652 HKS DDM OSM UUU	46	393	63	308	-71.07	-11.01	139.9	161.7	152.9	145.1	138.3	132.6	127.9
KW	8	21	721 RRO SSM DRD UUU	466	384	81	292	-70.41	-5.69	140.4	162.0	153.1	145.3	138.5	132.7	127.9
KW	8	21	750 SMU KSM KSD SWK	304	389	69	368	-70.77	-16.06	140.1	161.8	153.0	145.3	138.5	132.7	128.0
KW	8	21	753 OUS OSM OUS UUK	39	391	60	356	-70.92	-15.03	140.0	161.6	152.9	145.1	138.4	132.6	127.9
KW	8	21	832 OOS WSM OSD KRW	53	390	71	405	-70.85	-19.28	140.1	161.9	153.1	145.4	138.6	132.8	128.1
KW	8	21	913 OOR DSH WSD DKM	191	395	70	425	-70.48	-21.09	140.3	161.9	153.1	145.4	138.6	132.9	128.1
KW	8	21	1008 OOR OSM UUS KOK	191	391	36	333	-70.92	-13.09	140.0	161.2	152.6	144.9	138.0	132.3	127.6
KW	8	21	1023 SSS UUK GSW KUM	0	356	387	421	-68.40	-20.72	141.8	167.8	158.4	150.1	142.7	136.3	130.9
KW	8	21	1026 KSK KKM OMS MOW	325	429	55	446	-73.78	-23.04	138.0	161.6	152.9	145.2	138.5	132.8	128.0
KW	8	22	227 R4O DRW R0M URK	498	401	442	340	-71.66	-13.68	139.5	168.8	159.3	150.8	143.3	136.8	131.3
KW	8	22	234 SKR MGH ODO SMU	168	414	463	304	-72.63	-10.68	138.8	169.3	159.7	151.1	143.5	137.0	131.4
KW	8	22	533 OUM UDM GOS OOO	311	396	59	457	-71.29	-24.09	139.8	161.7	153.0	145.3	138.6	132.8	128.1
KW	8	22	647 DUU WRW ORO OOO	265	406	471	487	-70.34	-27.08	139.3	169.4	159.9	151.5	144.0	137.4	131.9
KW	8	22	2346 K4M OOK GSD OGM	437	383	67	415	-70.34	-20.18	140.4	161.8	153.1	145.3	138.6	132.8	128.1
KW	8	23	210 DSU USM GKO OKR	257	391	491	175	-70.92	.04	140.0	169.8	160.1	151.4	143.7	137.1	131.4
KW	8	23	2223 GRD WRU OKO USU	83	278	495	260	-62.98	-7.06	145.5	169.9	160.2	151.5	143.9	137.3	131.7
KW	8	23	2228 DUR UGU RGO OOG	161	284	474	255	-63.39	-6.64	145.2	169.5	155.8	151.2	143.6	137.0	131.4
KW	8	23	2232 KUG WRU RUO ROG	205	278	482	250	-62.98	-6.23	145.5	169.6	160.0	151.3	143.7	137.1	131.5
KW	8	23	2235 K4M RGU UMO SOG	430	292	500	248	-63.25	-6.07	145.3	170.0	160.3	151.6	143.9	137.3	131.7
KW	8	23	2239 OUU ORU UUU UUG	295	279	484	252	-63.05	-6.40	145.5	169.7	160.0	151.2	143.7	137.1	131.5
KW	8	23	2243 ORO WDU KUU RRU	471	270	485	274	-62.43	-8.21	145.9	169.7	160.4	151.2	143.8	137.2	131.6
KW	8	23	2247 RRK KRU ORO DUU	338	277	471	289	-62.91	-9.44	145.6	169.4	159.8	151.2	143.6	137.0	131.5
KW	8	23	2250 WOG SGU RSO SKU	254	280	450	296	-63.11	-11.02	145.4	169.0	159.4	150.9	143.3	136.8	131.3
KW	8	23	2254 KRO GGU ORO HKU	469	283	465	302	-63.32	-10.52	145.3	169.3	159.7	151.1	143.5	137.0	131.4

ID	DATE	TIME	---DIGI CODE---		-DEC DIGI NUM--		---ALTITUDE---		AIR T	PTEMP	PRES										
			ALT AT	P	PT	ALT AT	P	PT	(C)	(C)	P10	20	29	30	31	32	33				
KW	8	23	2258	GOK	DGU	WMH	MMU	379	281	438	310	14794	140355	-63.18	145.4	168.8	159.2	150.7	143.2	136.7	131.2
KW	8	23	2301	KUK	SUU	DMH	KSK	357	288	433	325	14829	140566	-12.43	145.0	168.7	159.1	150.6	143.1	136.7	131.2
KW	8	23	2305	SAR	GUU	MMH	GRK	176	291	434	339	15119	14327	-63.87	144.9	168.7	159.2	150.7	143.2	136.7	131.2
KW	8	23	2309	MUS	OUU	RRM	UUK	38	295	402	356	15347	14532	-64.15	144.7	168.1	158.6	150.2	142.8	136.4	130.9
KW	8	23	2313	SUG	SKU	SDM	SOK	224	296	392	376	15041	14256	-64.21	144.7	167.9	158.5	150.1	142.7	136.3	130.9
KW	8	23	2316	MUS	DKU	ODM	OSH	38	297	399	391	15347	14532	-64.28	144.6	168.0	158.6	150.2	142.8	136.4	131.0
KW	8	23	2320	DGD	RUU	UWK	ODM	89	290	372	399	15262	14455	-63.80	144.9	167.5	158.1	149.8	142.4	136.1	130.7
KW	8	23	2324	USU	DKU	OUK	SRM	260	297	377	400	14983	14204	-64.28	144.6	167.6	158.2	149.9	142.5	136.2	130.8
KW	8	23	2349	SSS	KUU	UDM	DRM	0	293	396	401	15411	14589	-64.01	144.8	168.0	158.6	150.2	142.8	136.4	131.0
KW	8	23	2352	UGH	SUU	OGM	URM	412	288	415	404	14743	13988	-63.66	145.0	168.3	158.9	150.5	143.0	136.6	131.2
KW	8	24	223	GKK	RUU	OUK	MRC	347	290	383	470	14845	14080	-63.80	144.9	167.7	158.4	150.1	142.7	136.4	131.0
KW	8	24	227	WMO	DUU	DRM	UDO	502	289	401	460	14605	13854	-63.73	145.0	168.1	158.7	150.3	143.0	136.6	131.2
KW	8	24	230	DVS	OGU	WDO	GSO	9	287	462	451	15396	14576	-63.60	145.1	169.2	159.8	151.3	143.8	137.3	131.7
KW	8	24	249	ODK	RGU	WGO	DRO	335	282	478	465	14864	14097	-63.25	145.3	169.6	160.1	151.5	144.0	137.5	131.9
KW	8	24	253	MUR	RUU	KDM	ORO	166	290	397	471	15135	14341	-63.80	144.5	168.0	158.6	150.3	142.9	136.5	131.2
KW	8	24	257	KGU	DUU	ORM	UGO	285	289	407	476	14943	14168	-63.73	145.0	168.2	158.8	150.5	143.1	136.7	131.3
KW	8	24	300	RKR	OGU	QGM	SUU	170	287	409	480	15128	14335	-63.60	145.1	168.2	158.9	150.5	143.1	136.7	131.3
KW	8	24	304	GUD	RUU	KAM	GUU	99	290	437	483	15245	14440	-63.80	144.9	168.8	159.4	150.9	143.5	137.0	131.6
KW	8	24	308	KAM	SGU	OKM	KGO	405	280	431	477	14754	13998	-63.11	145.4	168.6	159.2	150.8	143.4	136.9	131.5
KW	8	24	312	SRG	RUU	RUH	SUU	208	290	418	456	15067	14280	-63.80	144.9	168.4	159.0	150.6	143.2	136.7	131.3
KW	8	24	315	DKR	DUU	GDM	OKM	35	281	411	431	15352	14536	-63.18	145.4	168.3	158.8	150.4	143.0	136.6	131.2
KW	8	24	319	OKR	DUU	GDM	GKM	169	289	395	427	15337	14337	-21.27	145.0	167.9	158.6	150.2	142.8	136.4	131.0
KW	8	26	1336	OUU	KKS	KDU	OSS	295	45	269	7	14927	14154	-45.91	157.3	165.4	156.0	147.6	140.3	134.1	129.0
KW	8	26	1353	RKS	OMR	JSU	DDU	42	183	257	457	15340	14526	-56.40	150.1	165.3	156.2	148.2	141.0	134.9	129.8
KW	8	26	1436	MUK	DMR	GUU	KUK	358	177	267	357	14827	14054	-55.97	150.4	165.5	156.3	148.1	141.0	134.8	129.7
KW	8	26	1506	SUU	OMR	UGU	GSM	288	183	225	387	14938	14164	-56.40	150.1	164.7	155.6	147.6	140.5	134.4	129.4
KW	8	26	1536	UUK	UMR	GGU	KHM	332	180	283	437	14868	14101	-56.19	150.2	165.8	156.7	148.5	141.3	135.2	130.0
KW	8	26	1555	RGU	DMR	WKG	USU	218	185	238	260	15050	14265	-56.54	150.0	164.9	155.7	147.6	140.4	134.3	129.2
KW	8	26	1618	SWG	MWR	KOR	GMU	240	182	189	243	15015	14233	-59.88	150.1	164.0	154.9	146.8	139.8	133.8	128.8
KW	8	27	1147	UHO	DKG	UGG	KSS	500	263	217	5	14608	13866	10.20	147.7	164.4	155.1	146.8	139.7	133.5	128.5
KW	8	27	1246	GKD	USU	UGG	RMU	107	263	223	306	15232	14428	-61.95	146.2	164.6	155.5	147.4	140.3	134.2	129.2
KW	8	27	1317	DMH	WSU	SRO	RDU	433	262	444	458	14711	13959	-61.88	146.3	169.3	159.8	151.3	143.8	137.3	131.8
KW	8	27	1346	ODM	GUU	SUU	KSU	393	267	456	453	14773	14015	-62.22	146.0	169.1	159.7	151.2	143.7	137.2	131.7
KW	8	27	1423	UDU	MSU	KKS	SSM	263	262	21	334	14970	14193	-61.88	146.3	161.0	152.3	144.6	138.0	132.3	127.6
KW	8	27	1522	SGM	UDU	MWK	GKK	+08	268	374	363	14749	13994	-62.29	146.0	167.5	158.1	149.8	142.4	136.0	130.7
KW	8	27	1547	SSM	GUU	DRM	GUU	384	267	401	315	14787	14028	-62.22	146.0	168.0	158.6	150.1	142.7	136.3	130.9
KW	8	27	1655	GKG	GUU	KDM	DOG	213	267	397	249	15049	14264	-62.22	146.0	167.9	158.5	150.0	142.5	136.1	130.7
KW	8	27	1718	KDK	OUU	KRU	DOG	333	271	277	249	14867	14100	-62.50	145.9	165.6	156.4	148.1	140.9	134.7	129.6
KW	8	27	1813	SSS	GGU	KOU	OUU	0	293	317	161	15411	14589	-63.32	145.3	166.4	157.0	148.6	141.3	135.0	129.8
KW	8	27	1836	SGD	GRU	SJS	SSS	38	275	0	0	15264	14457	-62.77	145.7	160.3	151.4	143.7	136.9	131.3	126.7
KW	8	28	1016	SGM	SUU	RGD	SOM	440	238	90	440	14700	13949	-63.66	145.0	162.2	153.5	145.7	138.9	133.1	128.3
KW	8	28	1016	WGD	WGO	RGD	SOM	94	34	90	0	15254	14448	-49.85	154.6	162.0	152.9	144.9	138.0	132.2	127.4
KW	8	28	1018	DKR	GUU	URJ	SGM	109	231	87	403	14337	13887	-63.87	144.9	162.2	153.4	145.6	138.8	133.0	128.2
KW	8	28	1108	RKO	SKU	URM	MDU	+90	296	404	270	14623	13880	-64.21	144.7	168.1	158.6	150.1	142.7	136.2	130.8
KW	8	28	1133	GUR	SKU	JgK	USU	163	296	345	260	15140	14346	-64.21	144.7	166.9	157.6	149.2	141.8	135.5	130.8
KW	8	28	1153	KDK	SKU	GDK	GKG	333	296	331	219	14867	14100	-64.21	144.7	166.7	157.3	148.9	141.6	135.3	130.0
KW	8	28	1243	SSU	SUU	COU	UKR	94	288	319	172	15304	14493	-63.86	145.0	166.4	157.0	148.7	141.3	135.0	129.8
KW	8	28	1309	UUU	MUU	DJK	UGD	292	294	321	92	14932	14158	-64.08	144.8	166.4	157.0	148.6	141.2	134.9	129.8

TWERLE BALLOON 101157/3 AP/KW 1972

ID	DATE	TIME	---DIGI CODE---	ALT AT	P	PT	---DIGI NUM---	ALT AT	F	PT	---ALTITUDE---	ATR T	PTEMP	PID	PRES	28	29	30	31	32	33
KW	8	28	1329 SUU UUU UKK ORU	288	294	367	279	14938	14164	-64.08	-3.62	144.8	167.4	158.0	149.6	142.2	135.8	130.5	130.5	130.5	130.5
KW	8	28	1348 WSM UUU SMU KWD	390	294	304	117	14777	14019	-64.08	5.12	144.8	166.1	156.7	148.3	141.0	134.8	129.5	129.5	129.5	129.5
KW	8	28	1415 UKR UUU UUU KWD	364	293	289	117	14618	14056	-64.01	5.12	144.8	165.8	156.4	148.1	140.8	134.6	129.4	129.4	129.4	129.4
KW	8	28	1428 KOR UUU SUK GUD	189	292	352	99	15097	14308	-63.94	6.76	144.9	167.0	157.5	149.1	141.6	135.3	129.9	129.9	129.9	129.9
KW	8	28	1549 KRR UUU OKU RDR	149	296	303	138	15163	14366	-64.21	3.24	144.7	166.1	156.7	148.4	141.1	134.8	129.6	129.6	129.6	129.6
KW	8	28	1650 RGM SMU WDK OUR	410	304	334	167	14746	13991	-64.77	.72	144.3	166.7	157.2	148.9	141.5	135.2	129.9	129.9	129.9	129.9
KW	8	28	1729 UUM UUU KSM DKR	393	289	389	169	14773	14015	-63.73	.55	145.0	167.8	158.2	149.7	142.3	135.8	130.4	130.4	130.4	130.4
KW	8	28	1754 USK RKU UUK DOR	324	298	359	185	14881	14113	-64.35	-.81	144.6	167.2	157.7	149.3	141.9	135.5	130.2	130.2	130.2	130.2
KW	8	28	1822 DRD CGU UUM RHR	81	287	417	178	15275	14467	-63.60	-.22	145.1	168.3	158.7	150.2	142.7	136.2	130.7	130.7	130.7	130.7
KW	8	28	1854 OMS UUU KAM UKG	55	294	437	236	15319	14506	-64.08	-5.07	144.8	168.7	159.1	150.6	143.0	136.5	131.0	131.0	131.0	131.0
KW	8	29	905 ODS USK UUU KUU	9	324	288	303	15396	14576	-66.15	-11.10	143.3	165.9	156.6	148.4	141.2	135.0	129.8	129.8	129.8	129.8
KW	8	29	936 OGO KSK SMG USG	473	325	240	196	14649	13904	-66.22	-1.74	143.3	164.9	155.7	147.5	140.3	134.2	129.1	129.1	129.1	129.1
KW	8	29	956 OKO USK UGG DUG	495	324	217	225	14615	13873	-66.15	-4.16	143.3	164.5	155.3	147.2	140.1	134.0	129.0	129.0	129.0	129.0
KW	8	29	1125 KKK UKG UGG GDK	349	348	217	331	14841	14077	-67.83	-12.93	142.2	164.5	155.4	147.4	140.3	134.2	129.2	129.2	129.2	129.2
KW	8	29	1200 WMD UUU UGG RKK	118	344	244	362	15214	14412	-67.55	-13.54	142.4	165.0	155.9	147.8	140.7	134.6	129.5	129.5	129.5	129.5
KW	8	29	1253 SSS UKG OOR RKM	0	348	191	426	15411	14589	-67.93	-21.18	142.2	164.1	155.1	147.1	140.1	134.2	129.2	129.2	129.2	129.2
KW	8	29	1303 UUM MGG SOR RKM	417	350	184	426	14735	13981	-67.97	-21.18	142.1	164.0	155.0	147.0	140.1	134.1	129.1	129.1	129.1	129.1
KW	8	29	1327 SSS GKK KGG SSS	0	347	221	0	15411	14589	-67.76	16.75	142.2	164.5	155.1	146.9	139.7	133.6	128.5	128.5	128.5	128.5
KW	8	29	1346 WMR DKD RGG KGO	182	105	218	477	15109	14318	-50.70	-26.07	154.0	164.6	155.6	147.6	140.6	134.6	129.5	129.5	129.5	129.5
KW	8	29	1458 KDK GRK MSG UDU	333	349	198	463	14867	14100	-67.90	-24.68	142.1	164.2	155.3	147.3	140.3	134.3	129.3	129.3	129.3	129.3
KW	8	29	1528 GKR GRK KSU UKO	147	339	261	492	15166	14369	-67.20	-27.60	142.6	165.4	156.4	148.3	141.2	135.1	129.9	129.9	129.9	129.9
KW	8	29	1547 GRR UGG MGG GDU	147	347	246	507	15166	14369	-67.76	-29.20	142.2	165.1	156.1	148.1	141.0	134.9	129.8	129.8	129.8	129.8
KW	8	30	711 SRR UGG KKO DGO	144	351	493	473	15171	14374	-68.04	-25.66	142.0	169.9	160.3	151.8	144.2	137.7	132.1	132.1	132.1	132.1
KW	8	30	735 KOG SGG RMK GOK	253	344	370	331	14994	14214	-67.55	-12.93	142.4	167.4	158.0	149.7	142.3	135.9	130.6	130.6	130.6	130.6
KW	8	30	759 OUK MGG UUU RMG	351	350	318	242	14838	14074	-67.97	-5.57	142.1	166.4	157.1	148.7	141.4	135.2	129.9	129.9	129.9	129.9
KW	8	30	821 OOG RGG GGU MGG	249	346	283	246	15000	14220	-67.89	-5.90	142.3	165.7	156.5	148.2	141.0	134.8	129.6	129.6	129.6	129.6
KW	8	30	855 UUM KKK UUU ORG	447	341	295	215	14669	13990	-67.34	-3.33	142.5	166.0	156.6	148.4	141.1	134.9	129.7	129.7	129.7	129.7
KW	8	30	859 OSG KKK UJK ORG	193	341	321	215	15091	14302	-67.20	-3.33	142.5	166.5	157.1	148.8	141.4	135.2	129.9	129.9	129.9	129.9
KW	8	30	900 OSG GRK UJK ORG	193	339	321	215	15091	14302	-67.20	-3.33	142.6	166.5	157.1	148.8	141.4	135.2	129.9	129.9	129.9	129.9
KW	8	30	919 WRO SGG GGG OGG	470	344	251	249	14654	13908	-67.55	-6.15	142.4	165.1	155.9	147.7	140.6	134.4	129.3	129.3	129.3	129.3
KW	8	30	943 GUS WRK MGG SSS	11	342	206	256	15393	14573	-67.41	-6.73	142.4	164.3	155.2	147.1	140.0	134.0	129.9	129.9	129.9	129.9
KW	8	30	1006 GRU URK KUG UDU	275	340	229	270	14959	14183	-67.27	-7.88	142.5	164.7	155.6	147.4	140.3	134.2	129.2	129.2	129.2	129.2
KW	8	30	1021 OGS WRK UJK KGG	25	341	235	221	15369	14952	-67.34	-3.83	142.5	164.9	155.7	147.5	140.4	134.3	129.2	129.2	129.2	129.2
KW	8	30	1103 KKW WRK UJK MGG	429	342	196	214	14717	13985	-67.41	-3.25	142.4	164.1	155.0	146.9	139.8	133.8	128.8	128.8	128.8	128.8
KW	8	30	1048 KOG URK KDU SKG	253	340	269	232	14994	14214	-67.27	-4.74	142.5	165.5	156.2	148.0	140.8	134.6	129.5	129.5	129.5	129.5
KW	8	30	1124 KKG URK UDU OUG	237	348	263	231	15020	14238	-67.83	-4.66	142.2	163.1	154.1	147.9	140.7	134.5	129.4	129.4	129.4	129.4
KW	8	30	1145 GOU WRK KDR UDU	315	342	141	268	14895	14111	-67.41	-7.71	142.4	165.4	156.1	146.6	139.2	133.3	128.4	128.4	128.4	128.4
KW	8	30	1202 OGG GKK UGU UDU	255	331	237	311	14991	14212	-66.64	-11.26	143.0	165.8	156.6	148.4	141.2	135.0	129.8	129.8	129.8	129.8
KW	8	30	1229 KSK URK UDU RRM	325	340	267	0	14879	14111	-67.27	-11.26	142.5	165.3	155.9	147.6	140.3	134.1	129.8	129.8	129.8	129.8
KW	8	30	1302 UOK DRK KDU RRM	380	337	269	402	14793	14033	-67.06	-19.02	142.7	165.5	156.4	148.2	141.1	134.9	129.8	129.8	129.8	129.8
KW	8	30	1321 GUS OOK SSS OOK	11	335	0	383	15393	14573	-66.92	-17.35	142.8	160.6	152.0	144.3	137.7	132.1	127.5	127.5	127.5	127.5
KW	8	30	1350 GGU ROK UDU OGG	259	330	268	409	14984	14206	-66.57	-19.64	143.0	165.5	156.4	148.2	141.1	135.0	129.8	129.8	129.8	129.8
KW	8	30	1423 UDU UDK SOG GOK	257	332	248	331	14988	14209	-66.71	-12.93	142.9	165.1	156.0	147.8	140.7	134.6	129.5	129.5	129.5	129.5
KW	8	30	1457 KDU UDK SOG RSM	461	332	248	386	14667	13920	-66.71	-17.61	142.9	165.1	156.0	147.8	140.8	134.7	129.6	129.6	129.6	129.6
KW	8	30	1458 KDU UDK SOG RSM	461	332	248	386	14667	13920	-66.71	-17.61	142.9	165.1	156.0	147.8	140.8	134.7	129.6	129.6	129.6	129.6
KW	8	30	1528 UMO UDK UDU ROK	500	332	254	329	14608	13456	-66.71	-16.92	142.9	165.1	156.0	147.8	140.8	134.7	129.6	129.6	129.6	129.6
KW	8	30	1554 RGU UDK UDU UDK	282	331	314	378	14948	14173	-66.64	-12.76	143.0	166.4	157.1	148.8	141.5	135.3	130.1	130.1	130.1	130.1
KW	8	30	1611 UDS GSK RNU UDU	60	323	306	295	15310	14499	-66.08	-9.54	143.4	166.2	156.6	148.6	141.4	135.1	129.9	129.9	129.9	129.9

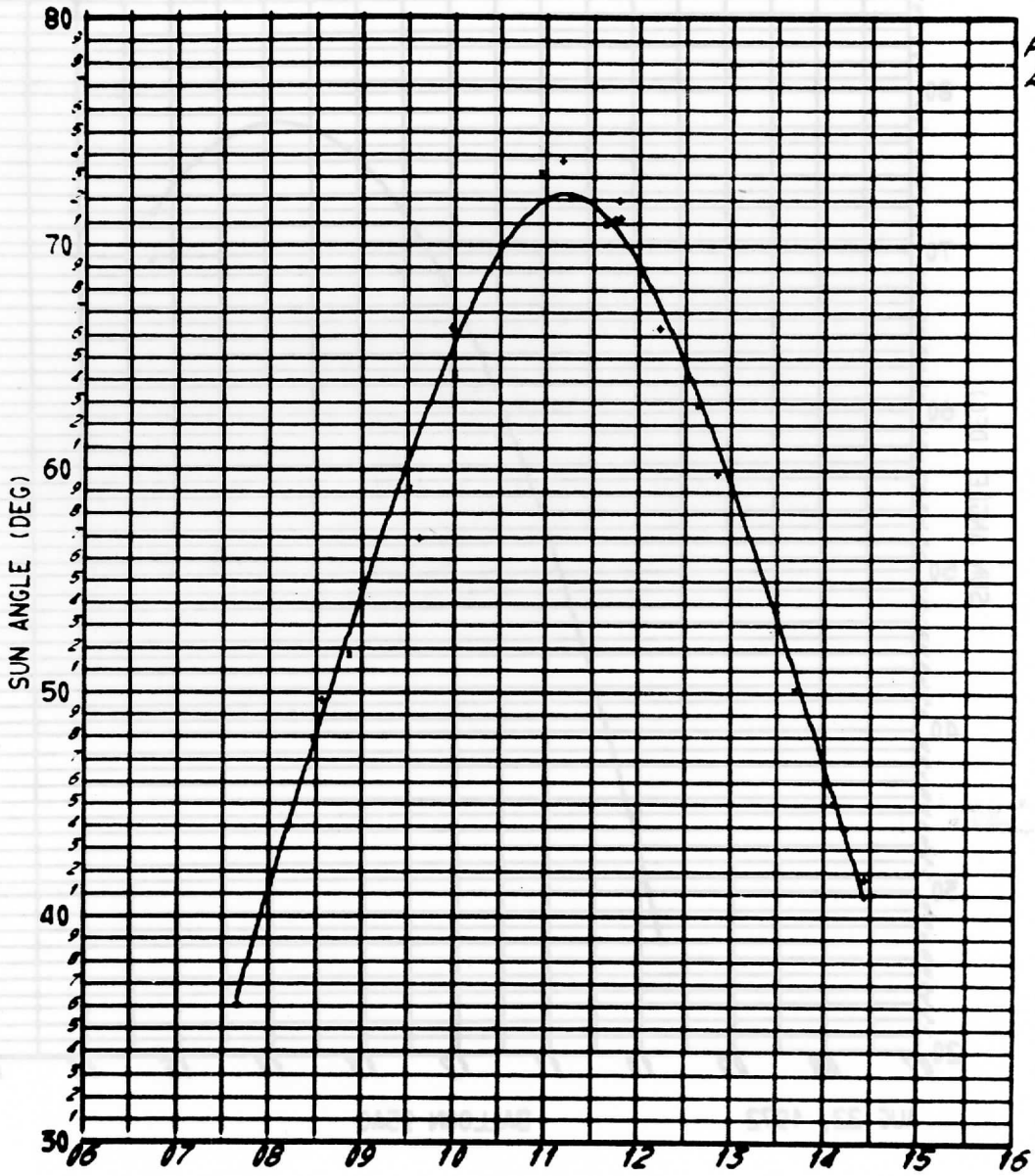
TWERLE BALLOON 101157/3 AP/KW 1972

ID	DATE	TIME	---DIGI CODE---			-DEC DIGI NUM--			---ALTITUDE---			AIR T	PTEMP	PID	PRES					
			ALT	AT	P	PT	ALT	AT	P	PT	(C)	(C)		28	29	30	31	32	33	
KW	8	1615	OKG	KSK	GGU	RKG	239	325	283	234	14235	-66.22	143.3	165.7	156.5	148.2	141.0	134.8	129.6	
KW	8	1619	WUJ	GDK	WSU	UMU	270	331	262	338	14967	-66.84	143.0	165.4	156.2	148.0	140.8	134.7	129.5	
KW	8	1623	MKR	RDG	ODG	RDK	174	330	255	330	15122	-12.84	143.0	165.2	156.1	147.5	140.8	134.6	129.5	
KW	8	601	UUK	KMU	UDU	OGS	356	309	120	31	14830	-65.11	144.0	162.6	153.5	145.4	138.5	132.6	127.7	
KW	8	619	GMD	OUU	UGS	RRS	115	313	28	18	15219	-14.78	143.8	160.8	151.9	144.1	137.3	131.6	126.9	
KW	8	653	UDG	KSK	ODM	KGM	204	325	399	413	15073	-66.22	143.3	168.0	150.6	150.2	142.8	136.4	130.3	
KW	8	716	SSG	OUU	UDK	MKG	192	319	332	350	15093	-14.52	143.6	166.7	157.4	149.1	141.8	135.5	130.3	
KW	8	742	UGG	KSK	KRU	KSM	220	325	277	389	15047	-17.87	143.3	165.7	156.5	148.3	141.2	135.0	129.8	
KW	8	818	KOK	SDK	UDU	KUK	381	328	268	357	14791	-15.12	143.1	165.5	156.3	148.2	141.0	134.8	129.7	
KW	8	841	ORW	GSK	SUU	MKK	407	323	288	342	14751	-13.85	143.4	165.9	156.6	148.4	141.2	135.0	129.8	
KW	8	859	RKO	KSK	ODU	RSK	490	325	265	322	14623	-66.22	143.3	165.4	156.2	148.1	140.9	134.7	129.6	
KW	8	928	UOO	KDK	SSG	OGK	508	333	192	351	14596	-66.78	142.9	164.1	155.0	147.0	140.0	134.0	129.0	
KW	8	951	RDW	SDK	MKG	MKU	394	328	238	302	14771	-66.43	143.1	164.9	153.8	147.6	140.5	134.4	129.3	
KW	8	1010	UGK	GDK	WSG	GKU	348	331	198	294	14843	-10.27	143.0	164.2	155.1	147.0	140.0	134.0	129.0	
KW	8	1033	OGG	UUK	KDG	DUU	207	332	205	289	15068	-9.44	142.9	164.3	155.2	147.1	140.1	134.0	129.0	
KW	8	1051	ODU	ODK	SKG	GGU	457	329	232	283	14674	-8.95	143.1	164.8	155.6	147.5	140.4	134.3	129.2	
KW	8	1109	GRR	ORU	ORG	KSU	143	330	215	261	15163	-7.20	143.2	164.8	155.7	147.6	140.4	134.3	129.2	
KW	8	1125	KRU	RUK	ORG	KSU	489	329	186	291	14624	-9.61	143.1	163.9	154.5	146.8	139.8	133.8	128.8	
KW	8	1142	OKO	ODK	ROR	GUU	367	326	202	271	14813	-7.14	143.0	164.5	155.3	147.2	140.1	134.1	129.0	
KW	8	1205	OKK	MSK	ROG	OUU	2	331	194	192	15408	-1.40	143.0	164.0	155.1	147.0	140.0	134.0	129.0	
KW	8	1238	RSS	GDK	RSQ	SSG	2	331	194	192	14586	-66.64	143.2	164.2	155.1	147.0	140.0	134.0	129.0	
KW	8	1300	RSG	SGG	SSS	SSS	194	216	0	0	15089	-58.71	148.5	160.3	151.4	143.7	136.9	131.3	126.7	
KW	8	1304	OWO	KDK	ODG	MGG	497	333	215	222	14612	-3.51	142.9	164.4	155.3	147.2	140.1	134.0	129.0	
KW	8	1341	USM	ODK	SDG	SUU	385	329	200	312	14785	-66.50	143.1	164.2	155.1	147.1	140.0	134.0	129.0	
KW	8	1403	GOK	UDK	SRG	OUU	374	332	208	276	14794	-66.71	142.9	164.3	155.2	147.1	140.1	134.0	129.0	
KW	8	1433	SRO	ROK	MKG	GRK	448	330	214	339	14687	-13.60	143.0	164.5	155.4	147.3	140.3	134.2	129.2	
KW	8	1452	ROU	UDK	GKG	RMU	442	329	235	306	14697	-66.50	143.1	164.9	155.7	147.6	140.5	134.4	129.3	
KW	8	1515	ROU	MSK	SMG	DUU	394	326	240	289	14771	-10.44	143.2	164.9	155.8	147.6	140.5	134.4	129.3	
KW	8	1548	OMU	GDU	DMG	MKG	119	315	241	350	15212	-65.53	143.8	165.0	155.9	147.7	140.6	134.5	130.4	
KW	8	1606	ROU	GDK	SKU	KOM	89	333	346	498	15287	-66.64	143.0	166.1	156.9	148.7	141.5	135.3	130.1	
KW	8	1626	ODU	KDK	RGK	RMO	89	333	346	498	14455	-66.78	142.9	167.0	157.8	149.6	142.3	136.0	130.7	
KW	9	733	RDD	KGU	GKK	SGK	74	265	363	344	14478	-63.46	145.2	167.3	157.9	149.6	142.2	135.9	130.5	
KW	9	1	754	OGK	SKU	JKO	KSM	351	272	495	369	14074	-62.56	145.8	169.9	160.3	151.7	144.1	137.5	131.9
KW	9	1	818	UUU	URU	UDU	SOM	292	276	460	440	14158	-22.48	145.6	169.2	159.7	151.2	143.7	137.2	131.7
KW	9	1	839	SRU	ORU	ODU	KUM	272	279	457	421	14964	-20.72	145.5	169.1	159.6	151.1	143.6	137.1	131.6
KW	9	1	906	DKU	ORU	WDO	UKK	297	279	462	390	14924	-17.09	145.5	169.2	159.7	151.2	143.6	137.1	131.6
KW	9	1	951	USR	KRU	RRC	KKK	132	277	466	365	14391	-62.91	145.6	169.3	159.8	151.2	143.7	137.1	131.6
KW	9	1	1009	URU	OSU	WSS	MUK	468	263	6	358	14057	-61.95	146.2	160.7	152.0	144.4	137.7	132.1	127.5
KW	9	1	1028	OOR	GKW	RSD	KUM	191	427	66	421	14305	-73.62	138.1	161.8	153.6	145.3	138.6	132.8	128.1
KW	9	1	1149	WJK	OKG	RUD	WRM	334	239	98	406	14098	-20.37	147.4	162.4	153.6	145.3	138.9	133.1	128.3
KW	9	1	1110	UDU	KMG	SKS	OSO	124	245	98	406	14403	-60.71	147.1	161.4	152.7	145.0	138.3	132.6	127.9
KW	9	1	1132	WSS	RWG	KRS	OSO	6	242	21	455	14580	-60.50	147.2	161.0	152.4	144.8	138.1	132.4	127.8
KW	9	1	1152	ODU	GDU	SSG	SSS	65	459	0	0	14491	-76.15	136.4	160.3	151.4	143.7	136.9	131.3	126.7
KW	9	1	1156	ODU	KKG	MKG	SKO	333	234	94	464	14007	-59.95	147.6	162.3	153.6	145.8	139.0	133.2	128.4
KW	9	1	1219	GKU	SRG	CHR	MGM	239	208	183	414	14148	-20.09	148.5	163.9	155.0	147.0	140.0	134.0	129.0
KW	9	1	1258	URU	UUG	JRR	UUM	84	220	144	444	14463	-58.98	148.3	163.2	154.4	146.5	139.6	133.7	128.8
KW	9	1	1301	OMW	KRG	JUR	GUW	439	213	167	411	14701	-13.82	148.6	163.6	154.7	146.8	139.8	133.9	128.9
KW	9	1	1322	ROO	ROG	UUR	DUG	474	218	164	225	14847	-4.16	148.4	163.5	154.4	146.4	139.4	133.5	128.5

TWERLE BALLOON 101157/3 AP/KW 1972

IO	DATE	TIME	---DIGI CODE---	ALT AT P	PT	-DEC DIGI NUM--	ALT AT F	PT	---ALITUDE---	AIR T (C)	PTEMP (C)	PID	28	29	PRES	30	31	32	33			
KW	9	1	1353	KW0	S60	S0*	GSM	501	88	440	387	14606	13865	-49.38	-17.70	154.9	168.8	159.3	150.8	143.3	136.9	131.4

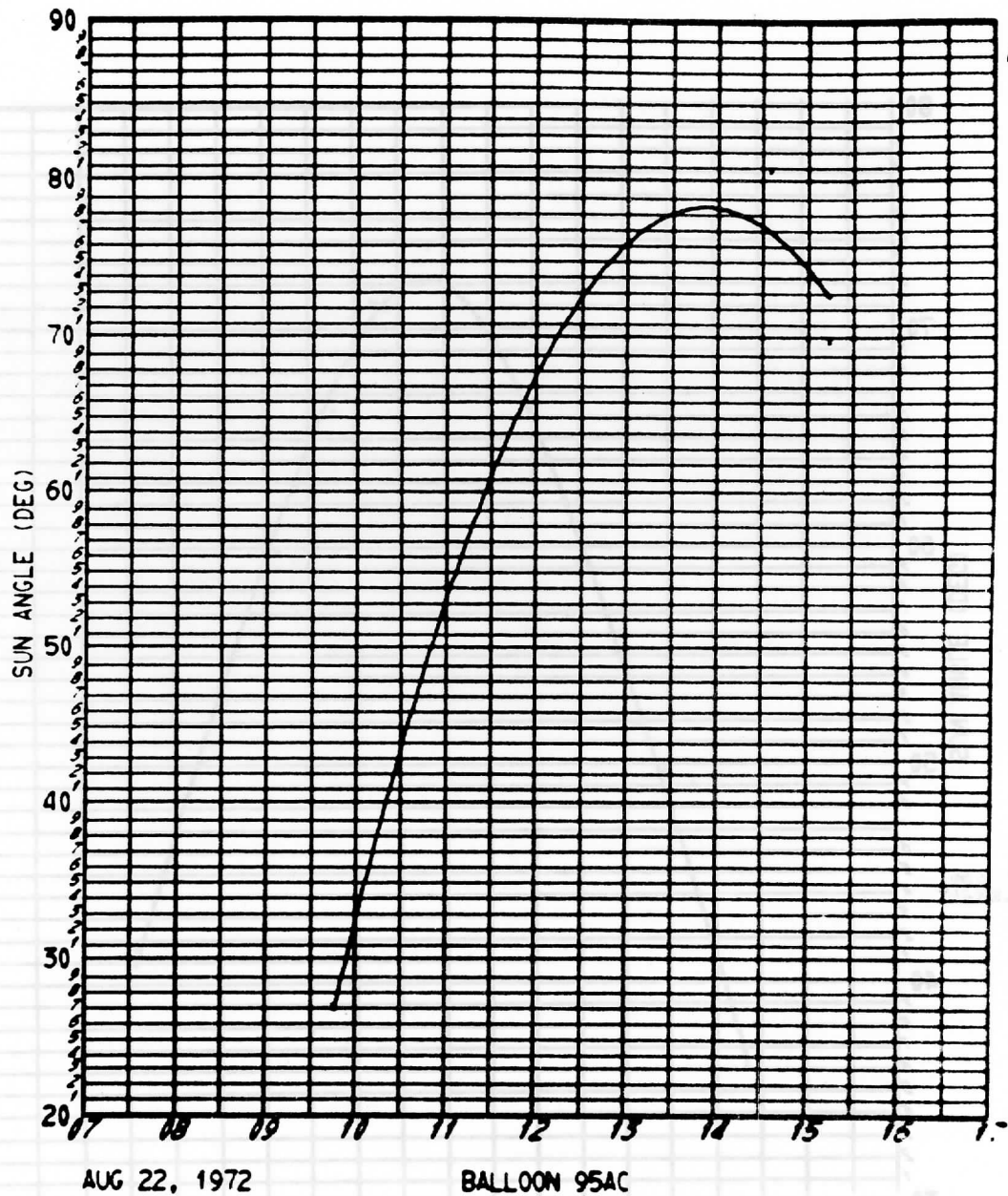
SUN ANGLE CURVES (JULY-AUGUST) FOR 2 AND 4-COVERS AND DIGI-CROSS
 APPENDIX BALLOON TELEMETRY DATA



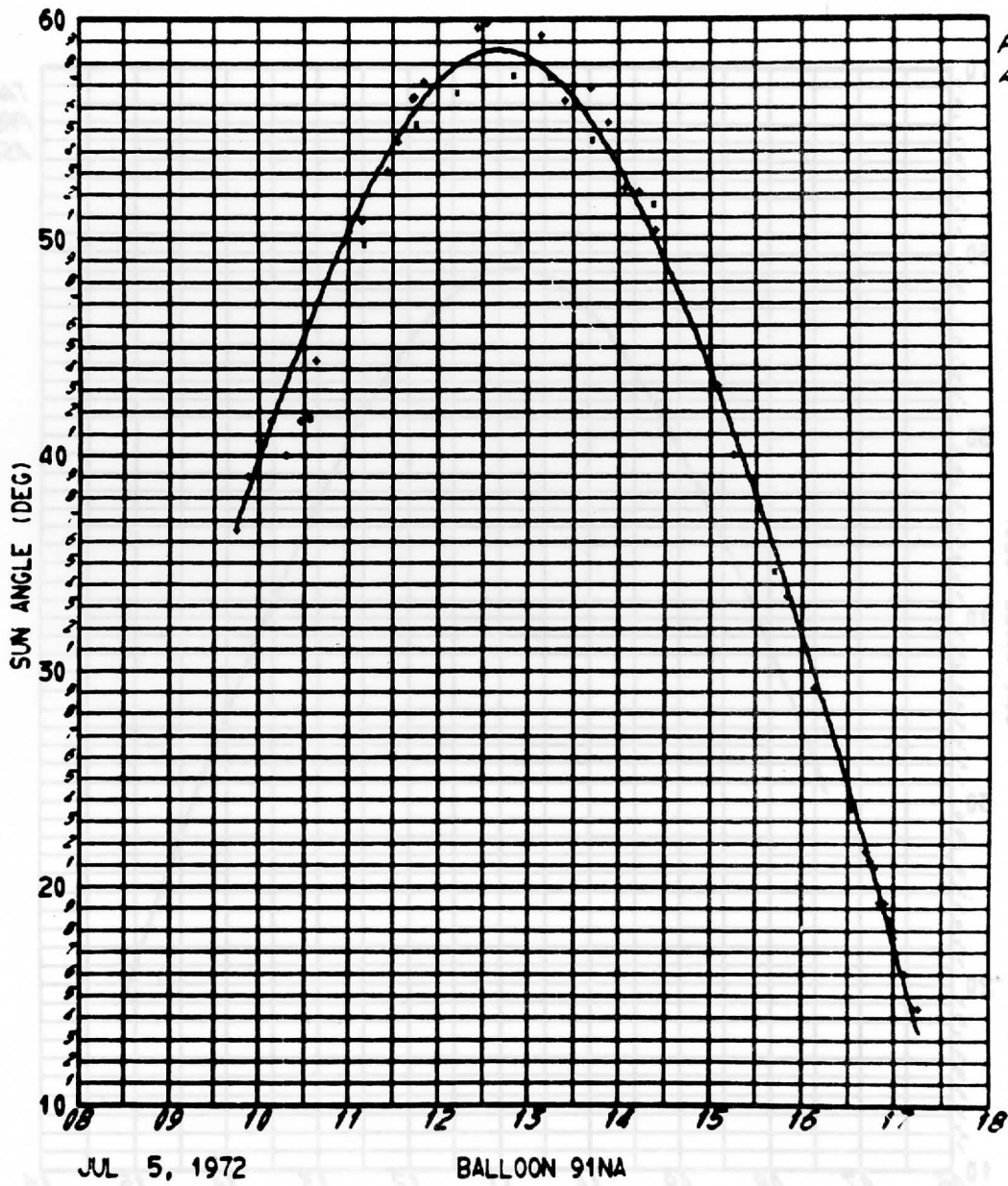
JUL 27, 1972

BALLOON 99AB

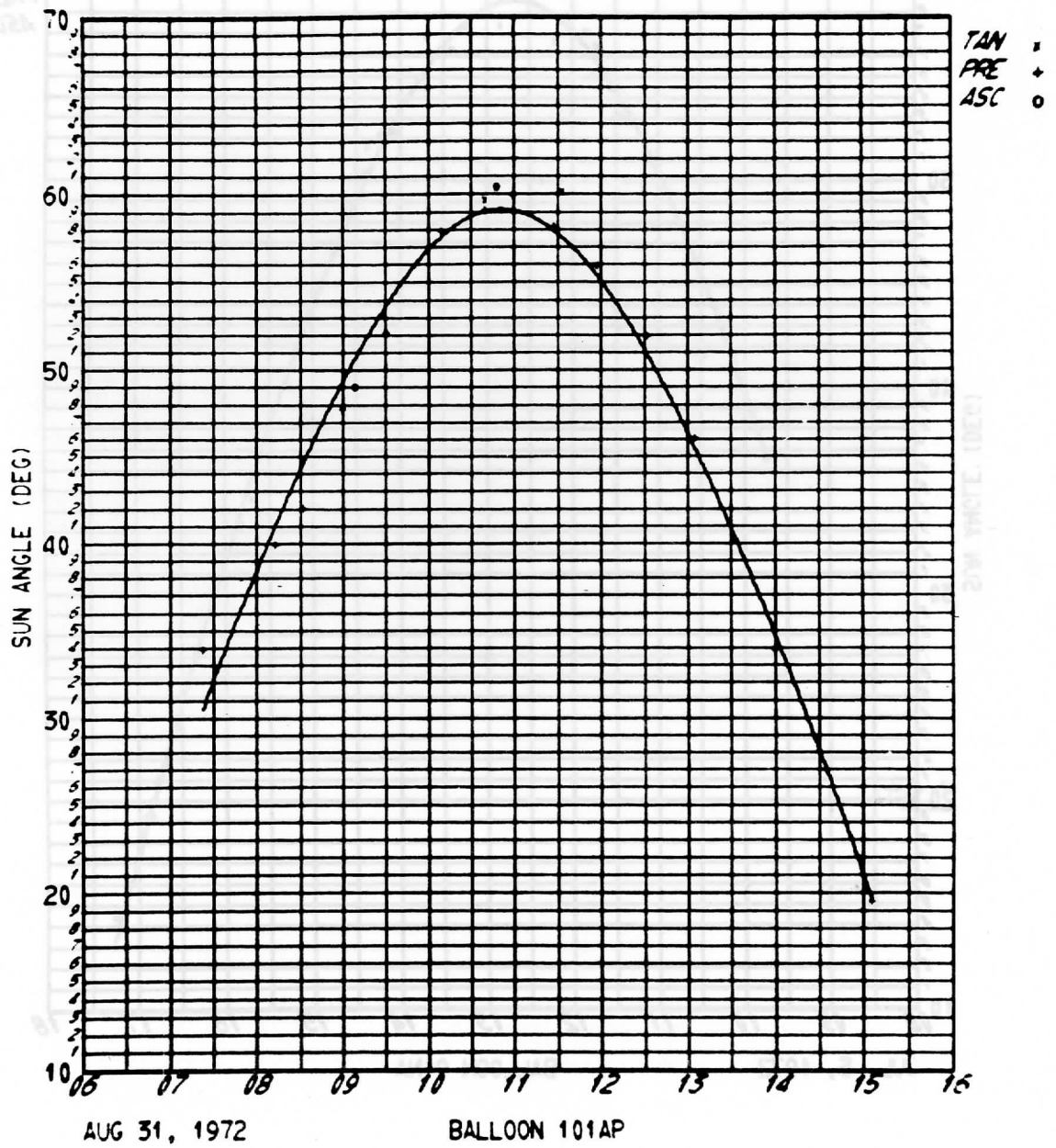
PRE ↗
ASC ↘



CYI .



PRE :
 ASC :



FLIGHT NO. 99151AB/3WO Float Altitude 150 mb

Diagram of Flight Train

GHOST Frequency = 15.02 1 MHz

Sun Angle I.D. Code AB

Calibration Data

70 DEG	16.0
50 DEG	25.2
30 DEG	31.0

2nd Package Frequency = 15.02 3 MHz

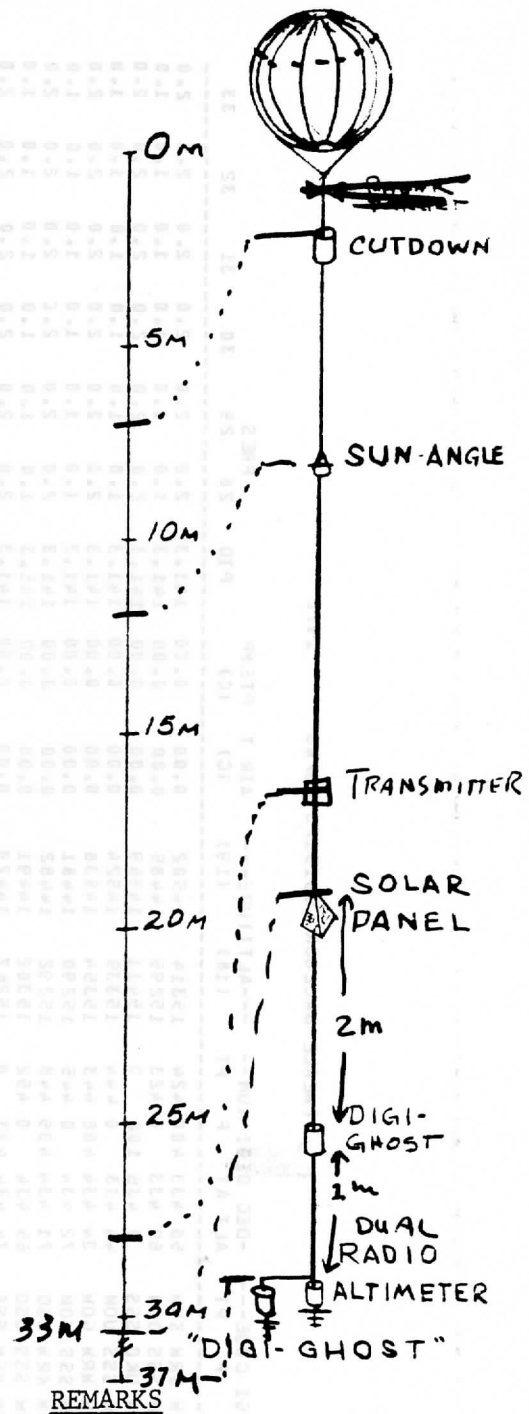
I.D. Code WO

Code Letter Sensor
Dual Altimeter; Air Temp;
Internal Temp.

Calibration Data

BALLOON DATA

Balloon ID# (Mfg*) R 72-07
 Launch date JUL 14 1972
 Launch site Ascension
 Film Celanar (Capped)
 Diameter Seam = 3.5654 m Gore = 3.5673 m
 Volume 23.629 m³
 Balloon Weight 3390 g
 Payload Weight 1467 g
 Duration _____
 Last Known Position _____



REMARKS
 Surface conditions at launch _____

* R = Raven Industries, Inc.
 S = G. T. Schjeldahl Co.

TWERLE BALLOON 99151/3 AB/MO 1972

ID	DATE	TIME	---DIGI CODE---			-DEC DIGI NUM--			---ALTITUDE---		AIR T	PTEMP	PID	PRES	30	31	32	33	
			ALT	AT	P	PT	ALT	AT	P	PT	(18)	(19)	(C)	(C)					
MO	7	14	850	UDU	UKM	SSS	SRD	268	428	0	80	14970	14193	0.00	0.00	141.3	1.0	1.0	1.0
MO	7	14	854	ROS	GKM	MWK	UUS	58	427	374	36	15314	14502	0.00	0.00	141.3	2.0	2.0	2.0
MO	7	14	857	SRW	RKM	SSS	GGG	400	426	0	27	14762	14005	0.00	0.00	141.3	1.0	1.0	1.0
MO	7	14	902	S30	RKM	SSS	URS	456	426	0	20	14675	13327	0.00	0.00	141.3	1.0	1.0	1.0
MO	7	14	906	KRG	RKM	MWK	SUS	213	426	368	32	15058	14272	0.00	0.00	141.3	2.0	2.0	2.0
MO	7	14	909	GRD	RKM	SSS	OUS	83	426	0	39	15272	14464	0.00	0.00	141.3	1.0	1.0	1.0
MO	7	14	913	DSU	RKM	SSM	SXS	257	426	384	40	14988	14209	0.00	0.00	141.3	2.0	2.0	2.0
MO	7	14	917	MRO	GKM	SSS	UWS	470	427	0	52	14654	13908	0.00	0.00	141.3	1.0	1.0	1.0
MO	7	14	920	SKU	GKM	UWK	RWS	296	427	372	50	14925	14153	0.00	0.00	141.3	2.0	2.0	2.0
MO	7	14	924	OSG	GKM	SSS	RDD	199	427	0	74	15081	14293	0.00	0.00	141.3	1.0	1.0	1.0
MO	7	14	928	SKR	GKM	GOK	UDD	168	427	375	76	15132	14338	0.00	0.00	141.3	2.0	2.0	2.0
MO	7	14	932	GKO	GKM	SSS	SUD	431	427	0	96	14621	13879	0.00	0.00	141.3	1.0	1.0	1.0
MO	7	14	935	SKR	GKM	MSM	DKD	168	427	390	105	15132	14338	0.00	0.00	141.3	2.0	2.0	2.0
MO	7	14	939	DDM	UKM	SSS	DWD	393	428	0	113	14773	14015	0.00	0.00	141.3	1.0	1.0	1.0
MO	7	14	943	DKR	UKM	ROK	MOD	169	428	378	126	15130	14337	0.00	0.00	141.3	2.0	2.0	2.0
MO	7	14	946	KSS	UKM	SSS	MGR	5	428	0	158	15403	14582	0.00	0.00	141.3	1.0	1.0	1.0
MO	7	14	950	GKK	UKG	SWO	GKK	347	236	496	347	14845	14080	0.00	0.00	141.3	2.0	2.0	2.0
MO	7	14	954	OGG	ORG	SWO	MUK	207	215	496	358	15068	14281	0.00	0.00	141.3	2.0	2.0	2.0
MO	7	14	956	OSD	ORG	SSS	SMK	71	215	0	368	15292	14482	0.00	0.00	141.3	1.0	1.0	1.0
MO	7	14	1010	UDU	ORG	SSS	DKM	316	215	0	425	14894	14124	0.00	0.00	141.3	1.0	1.0	1.0
MO	7	14	1011	RRD	ORG	SWO	URK	82	215	496	340	15273	14466	0.00	0.00	141.3	2.0	2.0	2.0
MO	7	14	1015	ODR	OKM	SSS	USH	191	431	0	388	15094	14305	0.00	0.00	141.3	1.0	1.0	1.0
MO	7	14	1018	OGG	SWM	KRM	SKM	223	432	405	424	15042	14258	0.00	0.00	141.3	2.0	2.0	2.0
MO	7	14	1022	OUK	SWM	SSS	KMM	359	432	0	437	14826	14063	0.00	0.00	141.3	1.0	1.0	1.0
MO	7	14	1026	RDG	SWM	UWK	GGM	202	432	404	411	15076	14289	0.00	0.00	141.3	2.0	2.0	2.0
MO	7	14	1051	GSR	GKM	ASM	SSU	131	427	390	256	15192	14393	0.00	0.00	141.3	2.0	2.0	2.0
MO	7	14	1104	OSD	MKM	SOK	SOR	71	430	376	184	15292	14482	0.00	0.00	141.3	2.0	2.0	2.0
MO	7	14	1108	GWS	MKM	SSS	KKR	51	430	0	173	15325	14512	0.00	0.00	141.3	1.0	1.0	1.0
MO	7	14	1133	UKS	OKM	KMK	KOG	44	431	373	253	15337	14523	0.00	0.00	141.3	2.0	2.0	2.0
MO	7	14	1141	ODS	MKM	KHR	DRG	63	430	181	209	15305	14494	0.00	0.00	141.3	2.0	2.0	2.0
MO	7	14	1145	UOS	MKM	SSS	OOG	60	430	0	255	15310	14499	0.00	0.00	141.3	1.0	1.0	1.0
MO	7	14	1148	USD	OKM	GUM	KDU	68	431	419	269	15297	14487	0.00	0.00	141.3	2.0	2.0	2.0
MO	7	14	1152	RUU	ORG	SSS	MDM	290	215	0	398	14935	14161	0.00	0.00	141.3	1.0	1.0	1.0
MO	7	14	1154	MGU	SGG	SWO	ORM	286	216	496	407	14941	14167	0.00	0.00	141.3	2.0	2.0	2.0
MO	7	14	1155	KGG	SGG	SSS	GOW	221	216	0	395	15046	14261	0.00	0.00	141.3	1.0	1.0	1.0
MO	7	14	1157	MGU	SGG	SWO	GRM	286	216	496	403	14941	14167	0.00	0.00	141.3	2.0	2.0	2.0
MO	7	14	1159	OUU	SGG	SSS	MGM	295	216	0	414	14927	14154	0.00	0.00	141.3	1.0	1.0	1.0
MO	7	14	1201	SRU	SGG	SWO	RUM	272	216	496	418	14964	14187	0.00	0.00	141.3	2.0	2.0	2.0
MO	7	14	1248	SDD	DMH	UUM	GMM	72	433	396	435	15290	14481	0.00	0.00	141.3	2.0	2.0	2.0
MO	7	14	1251	UOS	DMH	SSS	MHH	60	433	0	438	15310	14499	0.00	0.00	141.3	1.0	1.0	1.0
MO	7	14	1255	RSD	DMH	KDM	KMM	66	433	397	437	15300	14490	0.00	0.00	141.3	2.0	2.0	2.0
MO	7	14	1259	KSD	DMH	SSS	DMH	69	433	0	433	15295	14485	0.00	0.00	141.3	1.0	1.0	1.0
MO	7	14	1302	DMS	DMH	UUM	DKM	49	433	420	425	15329	14515	0.00	0.00	141.3	2.0	2.0	2.0
MO	7	14	1306	OMS	DMH	SSS	OUU	52	433	0	423	15324	14511	0.00	0.00	141.3	1.0	1.0	1.0
MO	7	14	1310	GOS	DMH	GRM	UUM	59	433	403	420	15312	14500	0.00	0.00	141.3	2.0	2.0	2.0
MO	7	14	1314	S00	DMH	SSS	RKM	504	433	0	426	14602	13861	0.00	0.00	141.3	1.0	1.0	1.0
MO	7	14	1317	ODS	DMH	RUM	KKM	57	433	418	429	15315	14503	0.00	0.00	141.3	2.0	2.0	2.0
MO	7	14	1321	ORS	DMH	SSS	SHM	23	433	0	432	15372	14555	0.00	0.00	141.3	1.0	1.0	1.0

TWERLE BALLOON 99151/3 AB/WO 1972

ID	DATE	TIME	---OIGI CODE---			-DEC DIGI NUM--			---ALTITUDE---			AIR T (C)	PTEMP (C)	PID	PRES			33				
			ALT	AT	P	PT	ALT	AT	P	PT	(18)				(19)	28	29		30	31	32	
WO	7	17	1103	SUO	SMH	RRW	MSK	480	432	402	326	14638	13894	141.3	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
WO	7	17	1104	GKS	SMH	SSS	SSS	43	432	0	0	15339	14524	141.3	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
WO	7	17	1107	KMS	SMH	MGM	GOK	53	432	414	379	15322	14509	141.3	0.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
WO	7	17	1111	HSG	DHW	SSS	MSW	198	433	0	390	15083	14294	141.3	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
WO	7	17	1126	SGG	SMH	SSS	SRK	216	432	0	336	15054	14268	141.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WO	7	17	1126	GWH	SMH	MUM	SRK	435	432	422	336	14707	13956	141.3	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
WO	7	17	1131	RDM	DHW	KUM	DSM	394	433	421	395	14771	14014	141.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WO	7	17	1134	RDM	DHW	SSS	MHK	394	433	0	374	14771	14014	141.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WO	7	17	1137	GUR	DHW	URM	MSW	163	433	404	390	15140	14346	141.3	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
WO	7	17	1141	SSS	DHW	SSS	SSS	0	433	0	0	15411	14589	141.3	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
WO	7	17	1144	GSS	SMH	SUM	SSS	3	432	416	0	15406	14585	141.3	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
WO	7	17	1147	GSS	SMH	SUM	DOK	3	432	416	377	15406	14585	141.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WO	7	17	1148	RDS	SMH	SSS	OOK	10	432	0	383	15394	14594	141.3	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
WO	7	17	1152	RWH	SMH	JGM	DGK	434	432	412	345	14709	13958	141.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WO	7	17	1155	R00	SMH	SSS	DGK	506	432	0	345	14599	13958	141.3	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
WO	7	17	1204	G0S	SMH	SSS	MKK	11	432	0	366	15393	14573	141.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WO	7	17	1225	GUS	DHW	SUM	KWK	35	433	416	373	15352	14536	141.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WO	7	17	1250	RDM	SMH	SSS	RKU	442	432	0	298	14697	13947	141.3	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
WO	7	17	1324	OUS	OKH	DGM	USU	39	431	409	260	15345	14530	141.3	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
WO	7	17	1411	UGO	WRG	SSS	KDK	476	214	0	333	14644	13899	141.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WO	7	17	1523	UGS	OKH	WRM	OKU	28	431	406	330	15364	14574	141.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WO	7	17	1548	MKH	SMH	SSS	DSU	430	432	0	257	14715	13963	141.3	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
WO	7	17	1558	SMH	WRM	SRU	SSS	432	406	272	0	14712	13960	141.3	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
WO	7	17	1600	UHM	MKH	SSS	UMG	436	430	0	244	14706	13955	141.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WO	7	17	1628	USM	OKH	SSS	SUU	388	431	0	264	14780	14022	141.3	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
WO	7	17	1657	OGK	DHW	KKM	GKM	351	435	429	427	14838	14074	141.3	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
WO	7	18	530	RKG	OWH	SSS	SMS	346	441	0	48	14846	14081	141.3	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
WO	7	18	555	GSO	UHM	SSS	OGU	451	436	0	479	14683	13934	141.3	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
WO	7	18	559	000	GWH	SSS	DKO	463	435	0	489	14664	13917	141.3	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
WO	7	18	621	SOG	UHM	SSS	000	248	436	0	511	15002	14222	141.3	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
WO	7	18	630	DGG	GWH	SSS	R00	217	435	0	482	15052	14267	141.3	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
WO	7	18	655	SRG	DHW	DUM	RWM	208	433	417	434	15067	14280	141.3	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
WO	7	18	718	SMH	SMH	MGM	MGK	432	432	414	350	14712	13360	141.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WO	7	18	734	000	SMH	SUM	00M	265	432	392	393	14975	14197	141.3	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
WO	7	18	808	SUM	WRG	SMO	00U	416	214	496	319	14737	13983	141.3	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
WO	7	18	811	KMS	WRG	SSS	S00	53	214	0	120	15322	14509	141.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WO	7	18	829	SUD	KKM	SSS	OKR	90	429	0	175	15250	14445	141.3	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
WO	7	18	958	GOK	MKH	SSS	KSU	331	430	0	261	14870	14103	141.3	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
WO	7	18	1050	GUM	SGG	KSM	00M	419	216	389	444	14732	13979	141.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WO	7	18	1115	GMO	GWH	RKM	SMO	439	435	426	496	14609	13868	141.3	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
WO	7	18	1149	UUS	RWH	SSS	S0S	36	434	0	8	15350	14535	141.3	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
WO	7	18	1207	DGU	RWH	GSO	KUO	281	434	451	495	14949	14174	141.3	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
WO	7	18	1352	RKK	UKW	KGK	DRR	170	428	349	145	15128	14335	141.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WO	7	18	1411	UDU	WRG	SMO	UMK	460	214	456	372	14569	13922	141.3	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
WO	7	19	622	OKU	SMH	00M	DKK	303	432	423	361	14314	14143	141.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WO	7	19	638	RKO	OKH	MGM	KOU	32	431	414	317	15273	14466	141.3	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
WO	7	19	706	00U	DHW	RSO	000	289	433	450	457	14936	14163	141.3	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0

TWERLE BALLOON 93151/3 AB/WO 1972

ID	DATE	TIME	---DIGI CODE---		-DEC DIGI NUM-		---ALTITUDE---		AIR T (C)	PTEMP (C)	PID	PRES			33							
			ALT	AT	P	PT	(18)	(19)				28	29	30		31	32					
7	15	1401	MUS	OKM	DSM	RDG	38	431	385	202	15347	14532	0.00	0.00	141.3	2.0	2.0	2.0	2.0	2.0	2.0	2.0
7	15	1440	SSS	OKM	SSS	UGK	0	425	0	348	15411	14589	0.00	0.00	141.3	1.0	1.0	1.0	1.0	1.0	1.0	1.0
7	15	1443	DRU	WRG	SMO	UKK	273	214	496	364	14962	14186	0.00	0.00	141.3	2.0	2.0	2.0	2.0	2.0	2.0	2.0
7	15	1510	DUU	ORG	SSS	RGK	265	215	0	346	14975	14197	0.00	0.00	141.3	1.0	1.0	1.0	1.0	1.0	1.0	1.0
7	15	1518	USU	ORG	SRG	KOK	260	215	464	381	14983	14204	0.00	0.00	141.3	2.0	2.0	2.0	2.0	2.0	2.0	2.0
7	15	1520	OSG	SGG	SMO	UKM	199	216	496	428	15081	14293	0.00	0.00	141.3	2.0	2.0	2.0	2.0	2.0	2.0	2.0
7	15	1527	RKG	SGG	SSS	KHK	234	216	0	373	15025	14242	0.00	0.00	141.3	1.0	1.0	1.0	1.0	1.0	1.0	1.0
7	16	526	000	WOM	SSS	MRS	511	446	0	22	14591	13851	0.00	0.00	141.3	1.0	1.0	1.0	1.0	1.0	1.0	1.0
7	16	543	00K	MHM	UDG	UGS	383	438	460	28	14788	14029	0.00	0.00	141.3	2.0	2.0	2.0	2.0	2.0	2.0	2.0
7	16	619	SMK	OGG	KSO	UKO	308	217	453	492	14812	14050	0.00	0.00	141.3	1.0	1.0	1.0	1.0	1.0	1.0	1.0
7	16	743	OUH	SGG	SSS	OSM	423	216	0	391	14726	13973	0.00	0.00	141.3	1.0	1.0	1.0	1.0	1.0	1.0	1.0
7	16	848	DUU	OKM	SSS	DOU	289	431	0	313	14936	14163	0.00	0.00	141.3	2.0	2.0	2.0	2.0	2.0	2.0	2.0
7	16	952	SHK	SGG	OKO	SKM	368	216	455	424	14812	14050	0.00	0.00	141.3	1.0	1.0	1.0	1.0	1.0	1.0	1.0
7	16	1108	KUR	SHM	SSS	RGK	162	432	0	346	15141	14347	0.00	0.00	141.3	1.0	1.0	1.0	1.0	1.0	1.0	1.0
7	16	1138	00M	DMH	SSS	MRD	447	433	0	86	14689	13940	0.00	0.00	141.3	1.0	1.0	1.0	1.0	1.0	1.0	1.0
7	16	1155	SDR	DMH	JKM	DKK	136	433	425	361	15184	14385	0.00	0.00	141.3	2.0	2.0	2.0	2.0	2.0	2.0	2.0
7	16	1223	GUO	DMH	SSS	OKU	483	433	0	359	14634	13990	0.00	0.00	141.3	1.0	1.0	1.0	1.0	1.0	1.0	1.0
7	16	1258	URD	DMH	SSS	OUK	84	433	0	303	15270	14463	0.00	0.00	141.3	1.0	1.0	1.0	1.0	1.0	1.0	1.0
7	16	1301	SRD	SMH	ODM	KOU	30	432	399	317	15277	14469	0.00	0.00	141.3	2.0	2.0	2.0	2.0	2.0	2.0	2.0
7	16	1305	UDD	DMH	SSS	MRK	76	433	0	342	15283	14475	0.00	0.00	141.3	1.0	1.0	1.0	1.0	1.0	1.0	1.0
7	16	1308	SMS	SMH	ODM	DSK	48	432	393	321	15330	14517	0.00	0.00	141.3	2.0	2.0	2.0	2.0	2.0	2.0	2.0
7	16	1312	KDD	SMH	SSS	SHU	77	432	0	304	15282	14473	0.00	0.00	141.3	1.0	1.0	1.0	1.0	1.0	1.0	1.0
7	16	1312	SMH	DSK	SSS	SSS	432	351	0	0	14712	13960	0.00	0.00	141.3	1.0	1.0	1.0	1.0	1.0	1.0	1.0
7	16	1315	KDD	SMH	SSS	SHU	77	432	0	304	15282	14473	0.00	0.00	141.3	1.0	1.0	1.0	1.0	1.0	1.0	1.0
7	16	1316	ORM	SMH	SSS	UOU	407	432	0	316	14751	13995	0.00	0.00	141.3	1.0	1.0	1.0	1.0	1.0	1.0	1.0
7	16	1320	OGS	SMH	SSS	SSS	31	432	0	0	15359	14542	0.00	0.00	141.3	1.0	1.0	1.0	1.0	1.0	1.0	1.0
7	16	1323	KHS	SMH	SSS	SSS	53	432	0	0	15322	14509	0.00	0.00	141.3	1.0	1.0	1.0	1.0	1.0	1.0	1.0
7	16	1341	MOR	SGG	SMO	SSS	190	216	496	0	15096	14306	0.00	0.00	141.3	2.0	2.0	2.0	2.0	2.0	2.0	2.0
7	16	1356	KDS	SGG	SSS	RRM	13	216	0	402	15389	14570	0.00	0.00	141.3	1.0	1.0	1.0	1.0	1.0	1.0	1.0
7	16	1420	MDS	SMH	SSS	SSS	14	432	0	0	15388	14568	0.00	0.00	141.3	1.0	1.0	1.0	1.0	1.0	1.0	1.0
7	16	1420	UDG	OKM	SSM	DKG	204	431	384	233	15073	14286	0.00	0.00	141.3	2.0	2.0	2.0	2.0	2.0	2.0	2.0
7	16	1442	DRU	SMH	DRM	UOU	273	432	401	311	14962	14186	0.00	0.00	141.3	2.0	2.0	2.0	2.0	2.0	2.0	2.0
7	16	1446	GKM	SMH	SSS	MUU	427	432	0	294	14720	13967	0.00	0.00	141.3	1.0	1.0	1.0	1.0	1.0	1.0	1.0
7	16	1554	SRR	SMH	SSS	GGK	144	432	0	347	15171	14374	0.00	0.00	141.3	1.0	1.0	1.0	1.0	1.0	1.0	1.0
7	17	539	GDK	GMM	ODM	GOM	331	435	447	443	14870	14103	0.00	0.00	141.3	2.0	2.0	2.0	2.0	2.0	2.0	2.0
7	17	543	MKG	GMM	SSS	RKM	350	435	0	426	14840	14076	0.00	0.00	141.3	1.0	1.0	1.0	1.0	1.0	1.0	1.0
7	17	609	KOM	000	SSS	SSS	445	511	0	0	14692	13942	0.00	0.00	141.3	1.0	1.0	1.0	1.0	1.0	1.0	1.0
7	17	613	RUU	GMM	SSS	UNO	290	435	0	500	14935	14161	0.00	0.00	141.3	1.0	1.0	1.0	1.0	1.0	1.0	1.0
7	17	628	KGR	RHM	SSS	WOM	154	434	0	446	15155	14359	0.00	0.00	141.3	1.0	1.0	1.0	1.0	1.0	1.0	1.0
7	17	736	SSS	ORG	SSS	RKK	0	215	0	362	15411	14589	0.00	0.00	141.3	1.0	1.0	1.0	1.0	1.0	1.0	1.0
7	17	739	SKO	ORG	RUK	MUK	488	215	354	353	14626	13883	0.00	0.00	141.3	2.0	2.0	2.0	2.0	2.0	2.0	2.0
7	17	953	RR0	SGG	DRK	UGM	466	216	337	412	14660	13913	0.00	0.00	141.3	2.0	2.0	2.0	2.0	2.0	2.0	2.0
7	17	1026	KSS	SGG	SSS	SMH	5	216	0	432	15403	14582	0.00	0.00	141.3	1.0	1.0	1.0	1.0	1.0	1.0	1.0
7	17	1049	OMO	SGG	SRM	RRK	503	216	400	338	14603	13862	0.00	0.00	141.3	2.0	2.0	2.0	2.0	2.0	2.0	2.0
7	17	1050	KUM	SMH	SSS	SSK	421	432	0	320	14729	13976	0.00	0.00	141.3	1.0	1.0	1.0	1.0	1.0	1.0	1.0
7	17	1054	GRK	SMH	DKM	ROU	339	432	425	314	14857	14091	0.00	0.00	141.3	2.0	2.0	2.0	2.0	2.0	2.0	2.0
7	17	1057	SSS	SMH	SSS	MDK	0	432	0	334	15411	14589	0.00	0.00	141.3	1.0	1.0	1.0	1.0	1.0	1.0	1.0
7	17	1101	SUO	SMH	RRM	MSK	480	432	402	326	14638	13894	0.00	0.00	141.3	2.0	2.0	2.0	2.0	2.0	2.0	2.0

TWERLE BALLCON 99151/3 AB/WO 1972

ID	DATE	TIME	ALT	AT	P	PT	CODE	ALT	AT	P	PT	NUM	DEC	ALT	AT	F	PT	ALTITUDE	AIR T	PTEMP	PID	28	29	30	31	32	33	
HO	7	21	1222	MGK	OKH	UKM	KKK	350	431	428	365	14876	14076	0.00	141.3	2.0	2.0	14076	0.00	0.00	141.3	2.0	2.0	2.0	2.0	2.0	2.0	2.0
HO	7	21	1302	WSM	MKG	ROK	MSM	391	430	378	390	14776	14018	0.00	141.3	2.0	2.0	14776	0.00	0.00	141.3	2.0	2.0	2.0	2.0	2.0	2.0	2.0
HO	7	21	1325	GOS	MKG	SSS	UUK	59	214	0	356	15312	14500	0.00	141.3	1.0	1.0	15312	0.00	0.00	141.3	1.0	1.0	1.0	1.0	1.0	1.0	1.0
HO	7	21	1355	R00	ORG	SSS	OKK	506	215	0	367	14599	13858	0.00	141.3	1.0	1.0	14599	0.00	0.00	141.3	1.0	1.0	1.0	1.0	1.0	1.0	1.0
HO	7	21	1437	GKO	ORG	SOS	SSS	491	215	56	0	14621	13879	0.00	141.3	2.0	2.0	14621	0.00	0.00	141.3	2.0	2.0	2.0	2.0	2.0	2.0	2.0
HO	7	21	1505	WSM	OKM	KRM	GSU	390	431	405	259	14777	14019	0.00	141.3	2.0	2.0	14777	0.00	0.00	141.3	2.0	2.0	2.0	2.0	2.0	2.0	2.0
HO	7	21	1536	UOM	OKM	HGM	ODK	444	431	414	335	14694	13544	0.00	141.3	2.0	2.0	14694	0.00	0.00	141.3	2.0	2.0	2.0	2.0	2.0	2.0	2.0
HO	7	22	536	OKR	KKM	SSS	OKK	343	429	0	343	14851	14086	0.00	141.3	1.0	1.0	14851	0.00	0.00	141.3	1.0	1.0	1.0	1.0	1.0	1.0	1.0
HO	7	22	606	ODR	HRO	SSS	SSS	143	470	0	0	15173	14375	0.00	141.3	1.0	1.0	15173	0.00	0.00	141.3	1.0	1.0	1.0	1.0	1.0	1.0	1.0
HO	7	22	632	MRK	GKM	MSM	KMD	150	427	390	117	15161	14365	0.00	141.3	2.0	2.0	15161	0.00	0.00	141.3	2.0	2.0	2.0	2.0	2.0	2.0	2.0
HO	7	22	636	DMS	MRG	SSS	RGK	49	214	0	346	15329	14515	0.00	141.3	1.0	1.0	15329	0.00	0.00	141.3	1.0	1.0	1.0	1.0	1.0	1.0	1.0
HO	7	22	655	GUG	UKM	GDM	KUR	227	428	395	165	15036	14252	0.00	141.3	2.0	2.0	15036	0.00	0.00	141.3	2.0	2.0	2.0	2.0	2.0	2.0	2.0
HO	7	22	747	MDK	GKM	SSS	USM	334	427	0	388	14865	14098	0.00	141.3	1.0	1.0	14865	0.00	0.00	141.3	1.0	1.0	1.0	1.0	1.0	1.0	1.0
HO	7	22	802	RUR	MRG	SSS	GKK	162	214	0	363	15141	14347	0.00	141.3	1.0	1.0	15141	0.00	0.00	141.3	1.0	1.0	1.0	1.0	1.0	1.0	1.0
HO	7	22	828	DWR	MRG	DGM	GRM	177	214	441	403	15117	14325	0.00	141.3	2.0	2.0	15117	0.00	0.00	141.3	2.0	2.0	2.0	2.0	2.0	2.0	2.0
HO	7	22	848	OMG	KKM	KGW	KOG	247	429	413	253	15004	14223	0.00	141.3	2.0	2.0	15004	0.00	0.00	141.3	2.0	2.0	2.0	2.0	2.0	2.0	2.0
HO	7	22	937	DKU	OKM	SSS	RDK	297	431	0	330	14924	14151	0.00	141.3	1.0	1.0	14924	0.00	0.00	141.3	1.0	1.0	1.0	1.0	1.0	1.0	1.0
HO	7	22	956	UUU	ORG	OKM	GDM	316	215	407	395	14894	14124	0.00	141.3	2.0	2.0	14894	0.00	0.00	141.3	2.0	2.0	2.0	2.0	2.0	2.0	2.0
HO	7	22	1021	UUU	MKG	KKM	SDK	268	430	429	328	14193	14193	0.00	141.3	2.0	2.0	14193	0.00	0.00	141.3	2.0	2.0	2.0	2.0	2.0	2.0	2.0
HO	7	22	1059	MKG	UKM	ODM	SKG	238	428	394	232	15018	14236	0.00	141.3	2.0	2.0	15018	0.00	0.00	141.3	2.0	2.0	2.0	2.0	2.0	2.0	2.0
HO	7	22	1145	MKM	MRG	SSS	SSS	430	214	0	0	14715	13363	0.00	141.3	1.0	1.0	14715	0.00	0.00	141.3	1.0	1.0	1.0	1.0	1.0	1.0	1.0
HO	7	22	1157	RSW	MRG	SSS	WOK	386	214	0	382	14784	14025	0.00	141.3	1.0	1.0	14784	0.00	0.00	141.3	1.0	1.0	1.0	1.0	1.0	1.0	1.0
HO	7	22	1245	UGR	MRG	SSS	GWK	155	214	0	371	15151	14356	0.00	141.3	1.0	1.0	15151	0.00	0.00	141.3	1.0	1.0	1.0	1.0	1.0	1.0	1.0
HO	7	22	1326	UKS	MRG	SSS	URM	44	214	0	404	15337	14523	0.00	141.3	1.0	1.0	15337	0.00	0.00	141.3	1.0	1.0	1.0	1.0	1.0	1.0	1.0
HO	7	22	1409	SKD	OKM	SSS	DGO	104	431	0	473	15237	14433	0.00	141.3	1.0	1.0	15237	0.00	0.00	141.3	1.0	1.0	1.0	1.0	1.0	1.0	1.0
HO	7	22	1440	SGU	KKM	UGH	UOK	280	429	412	380	14951	14176	0.00	141.3	2.0	2.0	14951	0.00	0.00	141.3	2.0	2.0	2.0	2.0	2.0	2.0	2.0
HO	7	22	1514	RMK	OKM	SSS	WOK	370	431	0	334	14809	14047	0.00	141.3	1.0	1.0	14809	0.00	0.00	141.3	1.0	1.0	1.0	1.0	1.0	1.0	1.0
HO	7	22	1536	RMK	GWM	SSS	RGS	370	435	0	28	14718	13966	0.00	141.3	1.0	1.0	14718	0.00	0.00	141.3	1.0	1.0	1.0	1.0	1.0	1.0	1.0
HO	7	23	435	SSS	SHM	SSS	GRO	0	432	0	467	15411	14589	0.00	141.3	1.0	1.0	15411	0.00	0.00	141.3	1.0	1.0	1.0	1.0	1.0	1.0	1.0
HO	7	23	439	ODM	ODM	ODM	GGO	79	399	442	475	15278	14470	0.00	141.3	2.0	2.0	15278	0.00	0.00	141.3	2.0	2.0	2.0	2.0	2.0	2.0	2.0
HO	7	23	448	GRW	SHM	ODM	GKO	403	432	442	491	14757	14001	0.00	141.3	2.0	2.0	14757	0.00	0.00	141.3	2.0	2.0	2.0	2.0	2.0	2.0	2.0
HO	7	23	550	USD	SHM	SOM	DKO	68	432	440	489	15297	14487	0.00	141.3	2.0	2.0	15297	0.00	0.00	141.3	2.0	2.0	2.0	2.0	2.0	2.0	2.0
HO	7	23	555	GDM	RKG	MKM	UUU	395	234	430	292	14769	14012	0.00	141.3	2.0	2.0	14769	0.00	0.00	141.3	2.0	2.0	2.0	2.0	2.0	2.0	2.0
HO	7	23	625	WGU	HRG	SUO	OKK	285	214	480	383	14941	14167	0.00	141.3	2.0	2.0	14941	0.00	0.00	141.3	2.0	2.0	2.0	2.0	2.0	2.0	2.0
HO	7	23	650	OJS	MKM	SSS	SKU	15	430	0	296	15386	14567	0.00	141.3	1.0	1.0	15386	0.00	0.00	141.3	1.0	1.0	1.0	1.0	1.0	1.0	1.0
HO	7	23	730	WRS	MKM	GKM	RSK	22	430	427	322	14356	14559	0.00	141.3	2.0	2.0	14356	0.00	0.00	141.3	2.0	2.0	2.0	2.0	2.0	2.0	2.0
HO	7	23	758	URS	SHM	SSS	OUO	20	432	0	487	15377	14559	0.00	141.3	1.0	1.0	15377	0.00	0.00	141.3	1.0	1.0	1.0	1.0	1.0	1.0	1.0
HO	7	23	844	ORS	RHM	SSS	GUO	51	434	0	433	15325	14512	0.00	141.3	1.0	1.0	15325	0.00	0.00	141.3	1.0	1.0	1.0	1.0	1.0	1.0	1.0
HO	7	23	908	ORS	UHM	UOM	RSO	23	433	444	450	15372	14555	0.00	141.3	2.0	2.0	15372	0.00	0.00	141.3	2.0	2.0	2.0	2.0	2.0	2.0	2.0
HO	7	23	938	OGS	UHM	KDM	MKM	25	433	461	430	14552	14552	0.00	141.3	2.0	2.0	14552	0.00	0.00	141.3	2.0	2.0	2.0	2.0	2.0	2.0	2.0
HO	7	23	1001	SHM	SKM	RUM	SSS	432	400	418	0	14712	13960	0.00	141.3	2.0	2.0	14712	0.00	0.00	141.3	2.0	2.0	2.0	2.0	2.0	2.0	2.0
HO	7	23	1016	OJS	SHM	GDM	DUM	25	432	459	417	15369	14552	0.00	141.3	2.0	2.0	15369	0.00	0.00	141.3	2.0	2.0	2.0	2.0	2.0	2.0	2.0
HO	7	23	1042	OJO	OKM	SSS	OMK	479	431	0	375	14640	13895	0.00	141.3	1.0	1.0	14640	0.00	0.00	141.3	1.0	1.0	1.0	1.0	1.0	1.0	1.0
HO	7	23	1101	RZS	DHM	KDM	KDO	10	433	445	461	15394	14574	0.00	141.3	2.0	2.0	15394	0.00	0.00	141.3	2.0	2.0	2.0	2.0	2.0	2.0	2.0
HO	7	23	1138	WMS	UKM	RKM	MKM	52	431	426	430	15324	14511	0.00	141.3	2.0	2.0	15324	0.00	0.00	141.3	2.0	2.0	2.0	2.0	2.0	2.0	2.0
HO	7	23	1203	GSR	UKM	SMD	DRK	131	428	496	337	15192	14393	0.00	141.3	2.0	2.0	15192	0.00	0.00	141.3	2.0	2.0	2.0	2.0	2.0	2.0	2.0
HO	7	23	1217	DMS	SHM	SSS	SMD	49	432	0	496	15329	14515	0.00	141.3	1.0	1.0	15329	0.00	0.00	141.3	1.0	1.0	1.0	1.0	1.0	1.0	1.0

TWERLE BALLOON 33151/3 AB/WO 1972

ID	DATE	TIME	---UIGI CODE---			-DEC UIGI NUM--			---ALTITUDE---		AIR T	PTEMP	PID	PRES	28	29	30	31	32	33
		ALT AT	P	PT	ALT AT	P	PT	(18)	(19)	(C)	(C)									
WO	7	19	723	SRU	OKM	SSS	MMU	272	431	0	310	14964	14187	0.00	0.00	141.3	1.0	1.0	1.0	1.0
WO	7	19	751	ROH	OKM	SSS	UGN	442	215	0	412	14697	13947	0.00	0.00	141.3	1.0	1.0	1.0	1.0
WO	7	19	813	USS	WKG	SSS	GGG	4	430	0	203	15404	14583	0.00	0.00	141.3	1.0	1.0	1.0	1.0
WO	7	19	902	00S	WKG	KDM	DGG	63	350	397	217	15305	14494	0.00	0.00	141.3	2.0	2.0	2.0	2.0
WO	7	19	916	KSD	KGK	OOK	UKG	69	349	383	236	15295	14495	0.00	0.00	141.3	2.0	2.0	2.0	2.0
WO	7	19	946	ODU	SMH	SSS	RWK	271	432	0	370	14965	14189	0.00	0.00	141.3	1.0	1.0	1.0	1.0
WO	7	19	1019	CDU	SMH	SSS	ROK	265	432	0	378	14975	14197	0.00	0.00	141.3	1.0	1.0	1.0	1.0
WO	7	19	1031	DSU	DMH	DKM	KKM	257	433	425	429	14988	14209	0.00	0.00	141.3	2.0	2.0	2.0	2.0
WO	7	19	1056	GGG	DMH	SSS	UOH	219	433	0	444	15049	14264	0.00	0.00	141.3	1.0	1.0	1.0	1.0
WO	7	19	1119	DGG	RHM	SSS	RGG	249	434	0	218	15000	14220	0.00	0.00	141.3	1.0	1.0	1.0	1.0
WO	7	19	1137	MKG	GMM	UKM	UOO	238	435	428	508	15018	14236	0.00	0.00	141.3	2.0	2.0	2.0	2.0
WO	7	19	1202	SOG	RHM	SSS	OMH	248	434	0	439	15002	14222	0.00	0.00	141.3	1.0	1.0	1.0	1.0
WO	7	19	1226	OKG	DMH	SSS	KGM	239	433	0	413	15017	14235	0.00	0.00	141.3	1.0	1.0	1.0	1.0
WO	7	19	1256	RAD	DMH	SSS	KMH	114	433	0	437	15020	14419	0.00	0.00	141.3	1.0	1.0	1.0	1.0
WO	7	19	1323	SSS	DMH	SSS	KKH	0	433	0	429	15411	14589	0.00	0.00	141.3	1.0	1.0	1.0	1.0
WO	7	19	1409	RDS	ORG	SSM	OKR	10	215	384	175	15394	14574	0.00	0.00	141.3	2.0	2.0	2.0	2.0
WO	7	19	1414	OSM	ORG	SSS	SMK	391	215	0	368	14776	14018	0.00	0.00	141.3	1.0	1.0	1.0	1.0
WO	7	20	911	KOU	OKM	SSS	MKK	317	431	0	366	14892	14123	0.00	0.00	141.3	1.0	1.0	1.0	1.0
WO	7	20	916	GKU	OKM	SSS	MKK	299	431	0	366	14921	14148	0.00	0.00	141.3	1.0	1.0	1.0	1.0
WO	7	20	916	GDK	OKM	RHM	GOK	331	431	418	379	14870	14103	0.00	0.00	141.3	2.0	2.0	2.0	2.0
WO	7	20	952	UKD	DMH	RHM	RRO	108	433	434	466	15230	14427	0.00	0.00	141.3	2.0	2.0	2.0	2.0
WO	7	20	1012	KOK	DMH	SSS	OUO	333	433	0	487	14867	14100	0.00	0.00	141.3	1.0	1.0	1.0	1.0
WO	7	20	1016	DSK	RHM	RHM	DSO	321	434	434	449	14886	14117	0.00	0.00	141.3	2.0	2.0	2.0	2.0
WO	7	20	1019	MJM	DMH	SSS	KSH	398	433	0	389	14765	14008	0.00	0.00	141.3	1.0	1.0	1.0	1.0
WO	7	20	1112	KSK	DMH	SSS	MGM	325	433	0	414	14879	14111	0.00	0.00	141.3	1.0	1.0	1.0	1.0
WO	7	20	1115	KMU	DMH	UOH	GKM	309	433	444	427	14905	14134	0.00	0.00	141.3	2.0	2.0	2.0	2.0
WO	7	20	1151	GKU	RHM	UOH	GOM	299	434	444	443	14921	14148	0.00	0.00	141.3	2.0	2.0	2.0	2.0
WO	7	20	1218	DDK	RHM	SSS	OOH	329	434	0	447	14873	14106	0.00	0.00	141.3	1.0	1.0	1.0	1.0
WO	7	20	1243	DDR	SMH	GOM	OMH	137	432	443	439	15182	14394	0.00	0.00	141.3	2.0	2.0	2.0	2.0
WO	7	20	1333	GKK	DMH	SSS	USO	363	433	0	452	14820	14057	0.00	0.00	141.3	1.0	1.0	1.0	1.0
WO	7	20	1417	MSK	SMH	SSS	KUM	326	432	0	421	14878	14110	0.00	0.00	141.3	1.0	1.0	1.0	1.0
WO	7	20	1433	UOK	ORG	UOH	GMM	380	215	417	435	14793	14033	0.00	0.00	141.3	2.0	2.0	2.0	2.0
WO	7	20	1619	OOK	SMH	SSS	GRK	383	432	0	339	14788	14029	0.00	0.00	141.3	1.0	1.0	1.0	1.0
WO	7	20	1642	OUU	KMH	SSS	UGS	319	437	0	28	14889	14120	0.00	0.00	141.3	1.0	1.0	1.0	1.0
WO	7	21	608	KDR	WKH	SSS	GMU	141	430	0	307	15176	14378	0.00	0.00	141.3	1.0	1.0	1.0	1.0
WO	7	21	635	RGD	WRG	SSS	ORK	90	214	0	343	15260	14454	0.00	0.00	141.3	1.0	1.0	1.0	1.0
WO	7	21	639	RGD	UKM	KSM	MSG	90	428	389	198	15260	14454	0.00	0.00	141.3	2.0	2.0	2.0	2.0
WO	7	21	710	DKM	KKM	SSS	RGU	425	429	0	282	14723	13970	0.00	0.00	141.3	1.0	1.0	1.0	1.0
WO	7	21	733	KOS	WRG	OOO	GMR	61	214	511	179	15309	14497	0.00	0.00	141.3	2.0	2.0	2.0	2.0
WO	7	21	745	DUK	UKM	SSS	SOG	353	428	0	248	14835	14071	0.00	0.00	141.3	1.0	1.0	1.0	1.0
WO	7	21	812	SGH	WRG	RGM	KGM	408	214	410	413	14749	13994	0.00	0.00	141.3	2.0	2.0	2.0	2.0
WO	7	21	921	OGO	ORG	URM	RSM	479	215	404	386	14640	13895	0.00	0.00	141.3	2.0	2.0	2.0	2.0
WO	7	21	943	KOS	OKM	WKH	DSK	61	431	435	321	15309	14497	0.00	0.00	141.3	2.0	2.0	2.0	2.0
WO	7	21	1008	SSS	WMH	SSS	DDR	0	430	0	137	15411	14589	0.00	0.00	141.3	1.0	1.0	1.0	1.0
WO	7	21	1012	DDR	WKH	UOH	WSK	145	430	420	326	15104	14313	0.00	0.00	141.3	2.0	2.0	2.0	2.0
WO	7	21	1058	KOU	OKM	OKM	SOK	317	431	415	376	14892	14123	0.00	0.00	141.3	2.0	2.0	2.0	2.0
WO	7	21	1132	SRK	WKH	KSU	SSS	336	430	261	0	14862	14096	0.00	0.00	141.3	2.0	2.0	2.0	2.0
WO	7	21	1136	KOD	WKH	SSS	RGU	125	430	0	282	15202	14402	0.00	0.00	141.3	1.0	1.0	1.0	1.0

TWERLE BALLOON 99151/3 AB/WO 1572

ID	DATE	TIME	---DIGI CODE---			-DEC UIGI NUM--			---ALTITUDE---		AIR T	PIEMP	PIC	PRES						
			ALT	AT	P	PT	ALT	AT	P	PT	(C)	(C)		28	29	30	31	32	33	
MO	7	23	1311	000	UDK	SSS	RRK	487	332	0	338	14628	13884	0.00	0.00	0.00	1.0	1.0	1.0	1.0
MO	7	23	1338	KGO	WRG	SNO	UMU	477	214	496	308	14643	13898	0.00	0.00	0.00	2.0	2.0	2.0	2.0
MO	7	23	1404	MUS	SMM	MUM	KGO	38	432	422	477	15347	14532	0.00	0.00	0.00	2.0	2.0	2.0	2.0
MO	7	23	1416	GGO	WRG	SSS	SGK	475	214	0	344	14646	13301	0.00	0.00	0.00	1.0	1.0	1.0	1.0
MO	7	23	1438	RHR	OKM	SKM	UDD	178	431	424	460	15115	14324	0.00	0.00	0.00	2.0	2.0	2.0	2.0
MO	7	23	1500	GKK	DMM	UJM	KRO	363	433	433	469	14820	14057	0.00	0.00	0.00	2.0	2.0	2.0	2.0
MO	7	23	1526	MOK	KMM	SSS	RGS	382	437	0	26	14790	14031	0.00	0.00	0.00	1.0	1.0	1.0	1.0
MO	7	25	449	ROU	ORG	SSS	GMK	314	215	0	371	14897	14127	0.00	0.00	0.00	1.0	1.0	1.0	1.0
MO	7	25	452	KKU	ORG	SNO	DUM	301	215	496	417	14917	14145	0.00	0.00	0.00	2.0	2.0	2.0	2.0
MO	7	25	611	KUD	UKM	SSS	UMG	101	428	0	244	15242	14437	0.00	0.00	0.00	1.0	1.0	1.0	1.0
MO	7	25	643	ODR	OKM	SSS	DUK	137	431	0	353	15182	14384	0.00	0.00	0.00	1.0	1.0	1.0	1.0
MO	7	25	703	KDG	KKM	SSS	SSK	205	429	0	320	15071	14284	0.00	0.00	0.00	1.0	1.0	1.0	1.0
MO	7	25	735	HUK	MKM	SSS	KKU	358	430	0	301	14827	14064	0.00	0.00	0.00	1.0	1.0	1.0	1.0
MO	7	25	815	SKM	MKM	MKM	KUK	424	430	430	357	14724	13972	0.00	0.00	0.00	1.0	1.0	1.0	1.0
MO	7	25	819	SSS	MKM	SSS	DSM	0	430	0	385	15411	14589	0.00	0.00	0.00	2.0	2.0	2.0	2.0
MO	7	25	903	KUK	SMM	OMM	MOM	357	432	439	446	14829	14066	0.00	0.00	0.00	1.0	1.0	1.0	1.0
MO	7	25	1000	HUG	SMM	KOM	GRM	230	432	445	403	15031	14248	0.00	0.00	0.00	2.0	2.0	2.0	2.0
MO	7	25	1027	MHR	SMM	SSS	UUM	182	432	0	381	15109	14318	0.00	0.00	0.00	2.0	2.0	2.0	2.0
MO	7	25	1103	KOG	OKM	SSS	KOK	253	431	0	420	14994	14214	0.00	0.00	0.00	1.0	1.0	1.0	1.0
MO	7	25	1226	OUG	RKM	RDW	DDG	231	426	394	201	15029	14246	0.00	0.00	0.00	2.0	2.0	2.0	2.0
MO	7	26	1231	MHK	MKM	SSS	SSS	374	430	0	0	14802	14042	0.00	0.00	0.00	1.0	1.0	1.0	1.0
MO	7	26	1234	OSM	KKM	MKM	SSS	391	429	430	0	14776	14018	0.00	0.00	0.00	2.0	2.0	2.0	2.0
MO	7	26	1242	SOM	HRG	SSS	UDW	440	214	0	396	14700	13949	0.00	0.00	0.00	1.0	1.0	1.0	1.0
MO	7	26	1238	SSS	MRG	SSS	GKK	0	214	0	363	15411	14589	0.00	0.00	0.00	1.0	1.0	1.0	1.0
MO	7	26	1316	SSS	MRG	UKK	CHM	0	214	364	433	15411	14539	0.00	0.00	0.00	1.0	1.0	1.0	1.0
MO	7	26	1337	M00	MKM	SSS	DKM	462	430	0	425	14666	13919	0.00	0.00	0.00	2.0	2.0	2.0	2.0
MO	7	26	1347	RRR	HRG	SSS	KHK	146	214	0	373	15168	14371	0.00	0.00	0.00	1.0	1.0	1.0	1.0
MO	7	26	1548	ORM	SMM	SSS	UDD	407	432	0	460	14751	13995	0.00	0.00	0.00	1.0	1.0	1.0	1.0
MO	7	26	1619	RGW	GMM	SSS	DDG	410	435	0	9	14746	13991	0.00	0.00	0.00	1.0	1.0	1.0	1.0
MO	7	27	735	OMR	UKM	DDM	SSS	183	428	393	0	15107	14316	0.00	0.00	0.00	2.0	2.0	2.0	2.0
MO	7	27	735	GRR	GRW	SSS	DKR	147	403	0	169	15166	14369	0.00	0.00	0.00	1.0	1.0	1.0	1.0
MO	7	27	738	GRR	GMM	SSS	SSS	147	427	0	0	15166	14369	0.00	0.00	0.00	1.0	1.0	1.0	1.0
MO	7	27	801	SSS	GKM	SSS	UGG	0	419	386	457	15411	14589	0.00	0.00	0.00	2.0	2.0	2.0	2.0
MO	7	27	804	GGO	GKM	SDM	KOG	91	427	0	220	15411	14589	0.00	0.00	0.00	1.0	1.0	1.0	1.0
MO	7	27	814	SSS	GKM	SSS	000	0	427	392	253	15259	14452	0.00	0.00	0.00	2.0	2.0	2.0	2.0
MO	7	27	817	SUK	RKM	UDM	KRG	352	426	396	213	14837	14073	0.00	0.00	0.00	1.0	1.0	1.0	1.0
MO	7	27	831	UUK	RKM	SDM	KOG	356	426	392	253	14830	14067	0.00	0.00	0.00	2.0	2.0	2.0	2.0
MO	7	27	848	KUG	RKM	SSS	WMR	205	426	0	182	15071	14284	0.00	0.00	0.00	2.0	2.0	2.0	2.0
MO	7	27	905	UHM	UKM	SSS	SOG	436	428	0	248	14706	13955	0.00	0.00	0.00	1.0	1.0	1.0	1.0
MO	7	27	908	KOM	GKM	SSS	00G	445	427	0	255	14692	13942	0.00	0.00	0.00	1.0	1.0	1.0	1.0
MO	7	27	909	KOM	GKM	SSS	00G	445	427	0	255	14692	13942	0.00	0.00	0.00	1.0	1.0	1.0	1.0
MO	7	27	912	RGO	KKM	GGW	SOG	474	423	411	248	14647	13902	0.00	0.00	0.00	1.0	1.0	1.0	1.0
MO	7	27	935	UGO	GKM	SSS	SDK	476	427	0	328	14644	13899	0.00	0.00	0.00	2.0	2.0	2.0	2.0
MO	7	27	938	MHM	KKM	HUM	KSU	438	429	422	261	14703	13952	0.00	0.00	0.00	1.0	1.0	1.0	1.0
MO	7	27	1007	KDS	MKM	SHM	SSS	13	430	432	0	15389	14570	0.00	0.00	0.00	2.0	2.0	2.0	2.0
MO	7	27	1011	UDM	OKM	SSS	DMK	460	430	0	369	14669	13922	0.00	0.00	0.00	1.0	1.0	1.0	1.0
MO	7	27	1020	UMH	OKM	SSS	SSS	436	431	0	0	14706	13955	0.00	0.00	0.00	1.0	1.0	1.0	1.0

TWERLE BALLOON 99151/3 AB/MO 1972

ID	DATE	TIME	---DIGI CODE---	ALT AT	P	PT	---DIGI NUM---	ALT AT	P	PT	---ALTITUDE---	(18)	(19)	AIR T	PTEMP	PID	28	29	30	31	32	33
MO	7	29	1420	RWO	UKW	SSS	WDU	498	428	0	270	14611	13869	0.00	0.00	141.3	1.0	1.0	1.0	1.0	1.0	1.0
MO	7	29	1429	OKD	MKW	RWM	DOU	111	430	434	313	15225	14423	0.00	0.00	141.3	2.0	2.0	2.0	2.0	2.0	2.0
MO	7	29	1430	UDM	UKW	SSS	DSK	396	428	0	321	14768	14011	0.00	0.00	141.3	1.0	1.0	1.0	1.0	1.0	1.0
MO	7	29	1433	SRO	KKW	DKW	SDU	80	429	425	254	15277	14459	0.00	0.00	141.3	2.0	2.0	2.0	2.0	2.0	2.0
MO	7	29	1434	SRO	KKW	DKW	SDU	80	429	425	264	15277	14469	0.00	0.00	141.3	2.0	2.0	2.0	2.0	2.0	2.0
MO	7	29	1500	KDM	GKW	SSS	KRU	397	427	0	277	14766	14009	0.00	0.00	141.3	1.0	1.0	1.0	1.0	1.0	1.0
MO	7	29	1501	DUG	UKW	DDW	DDU	225	428	393	281	15039	14255	0.00	0.00	141.3	2.0	2.0	2.0	2.0	2.0	2.0
MO	7	29	1521	SSS	URG	SSS	OUU	0	212	0	319	15411	14589	0.00	0.00	141.3	1.0	1.0	1.0	1.0	1.0	1.0
MO	7	29	1527	KMO	DKW	SSS	SSS	501	425	0	0	14606	13865	0.00	0.00	141.3	1.0	1.0	1.0	1.0	1.0	1.0
MO	7	29	1530	GUO	SKW	SSS	KSM	483	424	0	339	14634	13890	0.00	0.00	141.3	1.0	1.0	1.0	1.0	1.0	1.0
MO	7	29	1541	USM	UKW	MKW	MKU	388	428	430	302	14780	14022	0.00	0.00	141.3	2.0	2.0	2.0	2.0	2.0	2.0
MO	7	29	1542	USU	UKW	MKW	MKU	260	428	430	302	14983	14204	0.00	0.00	141.3	2.0	2.0	2.0	2.0	2.0	2.0
MO	7	29	1616	URS	UKW	SSS	RRU	20	428	0	274	15377	14559	0.00	0.00	141.3	1.0	1.0	1.0	1.0	1.0	1.0
MO	7	29	1658	DWS	KKW	SSS	DSK	49	429	0	321	15379	14515	0.00	0.00	141.3	1.0	1.0	1.0	1.0	1.0	1.0
MO	7	29	1718	SSS	GKW	GKM	RDU	0	427	427	266	15411	14589	0.00	0.00	141.3	2.0	2.0	2.0	2.0	2.0	2.0
MO	7	29	1721	ODD	KKW	SSS	OOG	79	429	0	255	15278	14470	0.00	0.00	141.3	1.0	1.0	1.0	1.0	1.0	1.0
MO	7	29	1740	KRD	KKW	HRW	RSU	85	429	406	258	15269	14461	0.00	0.00	141.3	2.0	2.0	2.0	2.0	2.0	2.0
MO	7	29	1758	MRO	MKW	SSS	MKK	278	430	0	342	14954	14178	0.00	0.00	141.3	1.0	1.0	1.0	1.0	1.0	1.0
MO	7	29	1813	MKD	SHW	MHW	RR0	110	432	438	466	15227	14424	0.00	0.00	141.3	2.0	2.0	2.0	2.0	2.0	2.0
MO	7	30	951	ORK	KRG	SWO	MKG	343	213	436	350	14851	14086	0.00	0.00	141.3	2.0	2.0	2.0	2.0	2.0	2.0
MO	7	30	956	SSS	SDW	SSS	SGK	0	392	0	344	15411	14589	0.00	0.00	141.3	1.0	1.0	1.0	1.0	1.0	1.0
MO	7	30	959	GDK	KRG	SWO	WRK	331	213	496	342	14870	14103	0.00	0.00	141.3	2.0	2.0	2.0	2.0	2.0	2.0
MO	7	30	1004	SSS	KRG	SSS	RUK	0	213	0	354	15411	14589	0.00	0.00	141.3	1.0	1.0	1.0	1.0	1.0	1.0
MO	7	30	1146	KRS	KKW	KUM	DRK	21	429	421	337	15376	14558	0.00	0.00	141.3	2.0	2.0	2.0	2.0	2.0	2.0
MO	7	30	1149	KSS	KKW	SSS	KRK	5	429	0	341	15403	14582	0.00	0.00	141.3	1.0	1.0	1.0	1.0	1.0	1.0
MO	7	30	1401	SSS	KKW	GRW	UKM	0	429	403	428	15411	14589	0.00	0.00	141.3	2.0	2.0	2.0	2.0	2.0	2.0
MO	7	30	1404	RSS	MKW	SSS	OKM	2	430	0	431	15408	14586	0.00	0.00	141.3	1.0	1.0	1.0	1.0	1.0	1.0
MO	7	30	1408	UMO	KKW	OKW	GRW	500	429	431	403	14608	13866	0.00	0.00	141.3	2.0	2.0	2.0	2.0	2.0	2.0
MO	7	30	1629	S00	KKW	MKW	RWG	504	426	373	242	14602	13861	0.00	0.00	141.3	2.0	2.0	2.0	2.0	2.0	2.0
MO	7	30	1633	SGS	DKW	SSS	UUG	24	425	0	228	15371	14553	0.00	0.00	141.3	1.0	1.0	1.0	1.0	1.0	1.0
MO	7	30	1637	G0S	DKW	KSM	DKG	11	425	389	233	15393	14573	0.00	0.00	141.3	2.0	2.0	2.0	2.0	2.0	2.0
MO	7	31	851	SK0	KKW	MKW	KDU	488	426	0	197	14626	13883	0.00	0.00	141.3	1.0	1.0	1.0	1.0	1.0	1.0
MO	7	31	1034	S0G	GKW	MKW	KDU	248	427	414	269	15002	14222	0.00	0.00	141.3	2.0	2.0	2.0	2.0	2.0	2.0
MO	7	31	1056	RWO	UKW	SSS	DKK	498	428	0	361	14611	13869	0.00	0.00	141.3	1.0	1.0	1.0	1.0	1.0	1.0
MO	7	31	1059	D0G	MKW	UGW	MKK	473	430	412	373	14649	13904	0.00	0.00	141.3	2.0	2.0	2.0	2.0	2.0	2.0
MO	7	31	1127	UGO	MKW	SSS	DDM	476	430	0	393	14644	13899	0.00	0.00	141.3	1.0	1.0	1.0	1.0	1.0	1.0
MO	7	31	1130	GUO	KKW	UKW	MKG	483	429	428	350	14634	13890	0.00	0.00	141.3	2.0	2.0	2.0	2.0	2.0	2.0
MO	7	31	1138	KMO	KKW	MKW	GKK	501	429	430	363	14606	13865	0.00	0.00	141.3	2.0	2.0	2.0	2.0	2.0	2.0
MO	7	31	1249	OMO	SSW	SSS	RUC	497	432	0	462	14612	13870	0.00	0.00	141.3	1.0	1.0	1.0	1.0	1.0	1.0
MO	7	31	1252	OMO	SSW	RKW	UUC	503	432	426	484	14603	13862	0.00	0.00	141.3	2.0	2.0	2.0	2.0	2.0	2.0
MO	7	31	1316	SWO	SSW	UOW	KMO	436	432	444	501	14614	13872	0.00	0.00	141.3	2.0	2.0	2.0	2.0	2.0	2.0
MO	7	31	1334	K00	SSW	SSS	W00	509	432	0	462	14594	13854	0.00	0.00	141.3	1.0	1.0	1.0	1.0	1.0	1.0
MO	7	31	1338	K0W	SSW	ORW	W00	445	432	407	462	14692	13342	0.00	0.00	141.3	2.0	2.0	2.0	2.0	2.0	2.0
MO	7	31	1355	RWO	OKW	UOW	KRO	493	431	444	469	14611	13869	0.00	0.00	141.3	2.0	2.0	2.0	2.0	2.0	2.0
MO	7	31	1416	RKO	SSW	WSO	MGO	430	432	454	478	14623	13880	0.00	0.00	141.3	2.0	2.0	2.0	2.0	2.0	2.0
MO	7	31	1417	RKO	SSW	WSO	MGO	490	432	454	478	14623	13880	0.00	0.00	141.3	2.0	2.0	2.0	2.0	2.0	2.0
MO	7	31	1435	SWO	OKW	SSS	CKM	430	431	0	425	14614	13372	0.00	0.00	141.3	1.0	1.0	1.0	1.0	1.0	1.0
MO	7	31	1439	KWO	OKW	MOW	MOW	501	431	446	446	14606	13365	0.00	0.00	141.3	2.0	2.0	2.0	2.0	2.0	2.0

TWERLE BALLOON 93151/3 AB/WO 1972

ID	DATE	TIME	---DIGI CODE---			-DEC DIGI NUM--			---ALTITUDE---		AIR T	FIEMP	PIC	PRES					
			ALT	AT	P	PT	ALT	AT	P	PT	(C)	(C)	28	29	30	31	32	33	
MO	7	29	731	KGU	URG	SSS	DMG	285	212	0	241	14943	14168	1.0	1.0	1.0	1.0	1.0	1.0
MO	7	29	748	WRU	KRG	SSS	KWK	278	213	0	373	14954	14178	1.0	1.0	1.0	1.0	1.0	1.0
MO	7	29	800	OJK	WRG	SSS	DUK	335	214	0	353	14864	14097	1.0	1.0	1.0	1.0	1.0	1.0
MO	7	29	801	DKS	WRG	SSS	UDK	41	214	0	332	15342	14527	1.0	1.0	1.0	1.0	1.0	1.0
MO	7	29	803	SGK	WRG	SUM	ORK	344	214	416	343	14849	14084	2.0	2.0	2.0	2.0	2.0	2.0
MO	7	29	822	SSK	WRG	SSS	SDK	320	214	0	328	14887	14118	1.0	1.0	1.0	1.0	1.0	1.0
MO	7	29	828	GGG	RKM	SSS	URG	27	426	0	212	15366	14548	1.0	1.0	1.0	1.0	1.0	1.0
MO	7	29	843	DUU	URG	SSS	MWK	289	212	0	374	14936	14163	1.0	1.0	1.0	1.0	1.0	1.0
MO	7	29	949	ROS	DKM	DSM	SMG	58	425	385	240	15314	14502	2.0	2.0	2.0	2.0	2.0	2.0
MO	7	29	953	DOG	DKM	SSG	DMG	57	425	192	241	15315	14503	2.0	2.0	2.0	2.0	2.0	2.0
MO	7	29	923	DOR	RKM	ODM	SUD	82	425	0	244	15307	14496	1.0	1.0	1.0	1.0	1.0	1.0
MO	7	29	936	SSS	RKM	SSS	SSR	185	426	359	96	15104	14313	2.0	2.0	2.0	2.0	2.0	2.0
MO	7	29	955	DUK	DRG	SNO	SSS	0	426	0	128	15411	14589	1.0	1.0	1.0	1.0	1.0	1.0
MO	7	29	1021	HSU	KRG	SSS	SOK	353	209	496	0	14835	14071	2.0	2.0	2.0	2.0	2.0	2.0
MO	7	29	1038	SUS	OKM	SSS	GMU	262	213	0	376	14980	14201	1.0	1.0	1.0	1.0	1.0	1.0
MO	7	29	1041	OUS	KKM	SGM	GMU	32	431	0	307	15357	14541	1.0	1.0	1.0	1.0	1.0	1.0
MO	7	29	1044	OGS	KKM	SGM	GMU	39	429	408	307	15345	14530	2.0	2.0	2.0	2.0	2.0	2.0
MO	7	29	1049	SSS	OKM	SMH	SSS	31	429	408	307	15359	14542	2.0	2.0	2.0	2.0	2.0	2.0
MO	7	29	1101	ORS	UKM	SSS	DUK	0	431	432	0	15411	14589	2.0	2.0	2.0	2.0	2.0	2.0
MO	7	29	1102	RRS	UKM	SSS	DUK	17	428	0	353	15382	14564	1.0	1.0	1.0	1.0	1.0	1.0
MO	7	29	1114	SRS	KKM	SSS	DUK	17	428	0	353	15382	14564	1.0	1.0	1.0	1.0	1.0	1.0
MO	7	29	1116	SRS	KKM	SSS	DUK	16	429	0	359	15384	14565	1.0	1.0	1.0	1.0	1.0	1.0
MO	7	29	1117	SRM	KKM	SSS	DUK	16	429	0	359	15384	14565	1.0	1.0	1.0	1.0	1.0	1.0
MO	7	29	1128	KKM	UKM	DDM	SSS	429	428	393	0	14717	13965	2.0	2.0	2.0	2.0	2.0	2.0
MO	7	29	1131	GUS	WKM	SSS	WOM	35	430	0	446	15352	14536	1.0	1.0	1.0	1.0	1.0	1.0
MO	7	29	1144	DSU	WKM	RWM	GRM	257	430	434	403	14988	14209	1.0	1.0	1.0	1.0	1.0	1.0
MO	7	29	1145	SSS	KKM	SSS	KDM	0	429	0	397	15411	14589	1.0	1.0	1.0	1.0	1.0	1.0
MO	7	29	1205	KRS	WKM	OKM	GKM	0	429	0	397	15411	14589	1.0	1.0	1.0	1.0	1.0	1.0
MO	7	29	1211	MGS	WKM	SKM	OGM	21	430	431	427	15376	14558	2.0	2.0	2.0	2.0	2.0	2.0
MO	7	29	1212	MGS	WKM	SKM	OGM	30	430	424	415	15361	14544	2.0	2.0	2.0	2.0	2.0	2.0
MO	7	29	1214	MRS	WRM	DSO	SSS	22	406	449	0	15374	14556	2.0	2.0	2.0	2.0	2.0	2.0
MO	7	29	1225	MDS	WKM	SSS	SSS	14	430	0	0	15388	14568	1.0	1.0	1.0	1.0	1.0	1.0
MO	7	29	1226	SSS	OKM	SSS	DUH	0	431	0	417	15411	14589	1.0	1.0	1.0	1.0	1.0	1.0
MO	7	29	1229	GUG	WKM	SSS	WRM	227	430	0	406	15036	14252	1.0	1.0	1.0	1.0	1.0	1.0
MO	7	29	1233	SSS	WKM	GKM	SGM	0	430	0	0	15411	14589	1.0	1.0	1.0	1.0	1.0	1.0
MO	7	29	1251	DDM	KKM	GKM	SGM	393	429	363	408	14773	14015	2.0	2.0	2.0	2.0	2.0	2.0
MO	7	29	1303	SSS	KWM	WKM	SDM	0	437	430	392	15411	14589	2.0	2.0	2.0	2.0	2.0	2.0
MO	7	29	1307	SUS	WKM	SSS	KUK	32	430	0	357	15357	14541	1.0	1.0	1.0	1.0	1.0	1.0
MO	7	29	1310	RRS	KKM	SMH	HWK	18	429	432	374	15381	14562	2.0	2.0	2.0	2.0	2.0	2.0
MO	7	29	1317	UGS	WKM	SSS	DUK	28	430	0	353	15364	14547	1.0	1.0	1.0	1.0	1.0	1.0
MO	7	29	1340	RKD	KKM	WKM	UGK	106	429	430	348	15234	14430	2.0	2.0	2.0	2.0	2.0	2.0
MO	7	29	1343	SSS	OKM	SSS	SUO	0	431	0	480	15411	14589	1.0	1.0	1.0	1.0	1.0	1.0
MO	7	29	1345	WKM	OKM	SSS	SSS	430	348	0	0	14715	13963	1.0	1.0	1.0	1.0	1.0	1.0
MO	7	29	1357	OKD	WKM	RWM	DOU	121	429	0	361	15209	14408	1.0	1.0	1.0	1.0	1.0	1.0
MO	7	29	1416	SOS	KKM	SSS	GKU	111	430	434	313	15225	14423	2.0	2.0	2.0	2.0	2.0	2.0
MO	7	29						56	429	0	299	15317	14505	1.0	1.0	1.0	1.0	1.0	1.0

TWERLE BALLOON 99151/3 AB/WO 1972

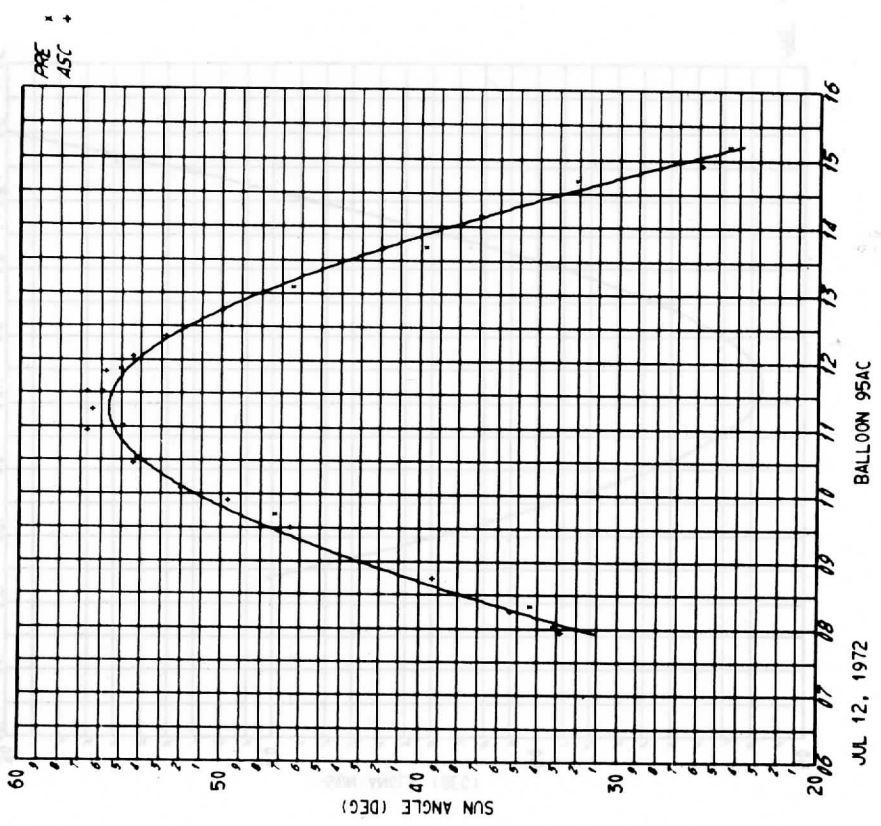
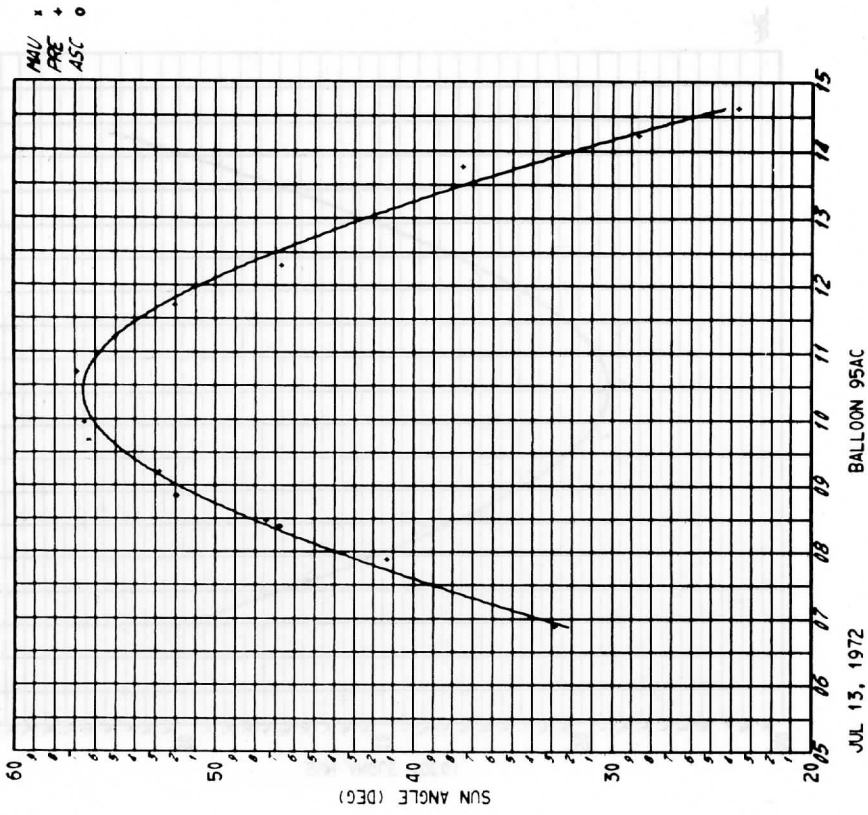
ID	DATE	TIME	---DIGI CODE---			-DEC DIGI NUM--			---ALTITUDE---		AIR T	PTEMP	PIC	PRES	30	31	32	33
			ALT	AT	P	PT	ALT	AT	P	PT	(C)	(C)						
WO 8	1	1225	DDS	KKM	SSS	GGK	9	429	0	347	15396	14576	0.00	141.3	1.0	1.0	1.0	
WO 8	1	1227	000	KKM	UGM	DRK	511	429	412	337	14591	13851	0.00	141.3	2.0	2.0	2.0	
WO 8	1	1231	S00	KKM	SSS	SSS	8	429	0	0	15398	14577	0.00	141.3	1.0	1.0	1.0	
WO 8	1	1235	U00	UKM	SHW	MOU	508	428	432	318	14596	13855	0.00	141.3	2.0	2.0	2.0	
WO 8	1	1238	USS	KKM	SSS	UOU	4	429	0	316	15404	14583	0.00	141.3	1.0	1.0	1.0	
WO 8	1	1242	G00	KKM	UKM	WSK	491	430	428	326	14621	13879	0.00	141.3	2.0	2.0	2.0	
WO 8	1	1246	KUO	UKM	SSS	USK	485	428	0	324	14631	13887	0.00	141.3	1.0	1.0	1.0	
WO 8	1	1249	G00	KKM	KKM	WUK	507	431	430	358	14597	13857	0.00	141.3	2.0	2.0	2.0	
WO 8	1	1253	M00	KKM	SSS	DOK	486	430	0	377	14629	13886	0.00	141.3	1.0	1.0	1.0	
WO 8	1	1257	DRS	KKM	SKM	ORM	17	430	424	407	15382	14564	0.00	141.3	2.0	2.0	2.0	
WO 8	1	1301	KRS	KKM	SSS	OUW	21	430	0	423	15376	14558	0.00	141.3	1.0	1.0	1.0	
WO 8	1	1304	ODS	KKM	RHM	WDM	15	430	434	398	15386	14567	0.00	141.3	2.0	2.0	2.0	
WO 8	1	1308	R0S	KKM	SSS	RHM	10	431	0	434	15394	14574	0.00	141.3	1.0	1.0	1.0	
WO 8	1	1312	G00	KKM	KOM	RSO	499	430	445	420	14609	13868	0.00	141.3	2.0	2.0	2.0	
WO 8	1	1323	U00	DKM	SSS	GRO	500	433	0	467	14608	13866	0.00	141.3	1.0	1.0	1.0	
WO 8	1	1327	DRS	KKM	ROW	GRO	17	431	442	467	15382	14564	0.00	141.3	2.0	2.0	2.0	
WO 8	1	1332	ORS	KKM	SSS	ORO	23	431	0	471	15372	14555	0.00	141.3	1.0	1.0	1.0	
WO 8	1	1349	HRS	KKM	KKM	KKM	22	431	437	429	15374	14556	0.00	141.3	2.0	2.0	2.0	
WO 8	1	1353	GKS	KKM	SSS	WSM	43	431	0	390	15339	14524	0.00	141.3	1.0	1.0	1.0	
WO 8	1	1411	GKS	KKM	SSS	OSM	43	430	0	391	15339	14524	0.00	141.3	1.0	1.0	1.0	
WO 8	1	1430	KKS	KKM	SSS	KKK	45	429	0	365	15335	14521	0.00	141.3	2.0	2.0	2.0	
WO 8	1	1434	R0S	KKM	DKM	WOK	10	429	433	382	15394	14574	0.00	141.3	1.0	1.0	1.0	
WO 8	1	1435	R0S	KKM	DKM	WOK	10	429	433	382	15394	14574	0.00	141.3	2.0	2.0	2.0	
WO 8	1	1451	OKS	KKM	RAM	KUK	47	430	434	357	15332	14518	0.00	141.3	1.0	1.0	1.0	
WO 8	1	1457	DWS	KKM	OKM	GDM	49	430	431	395	15329	14515	0.00	141.3	2.0	2.0	2.0	
WO 8	1	1500	HRS	KKM	SSS	KUM	22	430	0	421	15374	14556	0.00	141.3	1.0	1.0	1.0	
WO 8	1	1516	SWS	UKM	SSS	KOU	48	428	0	295	15330	14517	0.00	141.3	2.0	2.0	2.0	
WO 8	1	1532	RSU	URG	SMD	WOK	258	212	49E	382	14986	14207	0.00	141.3	1.0	1.0	1.0	
WO 8	1	1552	SKO	UGD	SSS	OGM	438	95	0	415	14626	13883	0.00	141.3	2.0	2.0	2.0	
WO 8	1	1620	SSS	WRG	SSS	GDM	0	214	0	395	15411	14589	0.00	141.3	1.0	1.0	1.0	
WO 8	1	1624	SMS	GKM	WDM	RDG	48	427	358	202	15330	14517	0.00	141.3	2.0	2.0	2.0	
WO 8	1	1653	GRU	KRG	SSS	URG	279	213	0	212	14952	14177	0.00	141.3	1.0	1.0	1.0	
WO 8	1	1657	UGU	KRG	SMD	WOK	294	213	49E	334	14944	14170	0.00	141.3	2.0	2.0	2.0	
WO 8	1	1708	UUU	WKR	SSS	SSS	292	174	0	0	14932	14158	0.00	141.3	1.0	1.0	1.0	
WO 8	1	1730	RGU	WRG	SSS	SKK	282	214	0	360	14948	14173	0.00	141.3	2.0	2.0	2.0	
WO 8	1	1743	SSS	SMD	GSM	SSS	0	496	387	0	15411	14583	0.00	141.3	1.0	1.0	1.0	
WO 8	1	1746	MUG	WRG	SSS	SSS	230	214	0	0	15031	14248	0.00	141.3	2.0	2.0	2.0	
WO 8	1	1751	M0S	RKM	SMD	KGM	254	426	49E	413	14992	14213	0.00	141.3	1.0	1.0	1.0	
WO 8	1	1809	DKK	URG	SMD	UOK	361	212	496	330	14923	14060	0.00	141.3	2.0	2.0	2.0	
WO 8	1	1828	DWS	KDM	OGM	ORU	55	397	415	279	15319	14506	0.00	141.3	1.0	1.0	1.0	
WO 8	2	739	S60	GWM	OOM	GGG	88	439	447	27	15264	14457	0.00	141.3	2.0	2.0	2.0	
WO 8	2	817	ORD	KKM	UHM	SSW	87	430	43E	384	15265	14457	0.00	141.3	1.0	1.0	1.0	
WO 8	2	831	RRD	UKM	RRM	KSM	82	428	402	389	15273	14466	0.00	141.3	2.0	2.0	2.0	
WO 8	2	834	SRD	UKM	SSS	WSK	30	428	0	326	15277	14409	0.00	141.3	1.0	1.0	1.0	
WO 8	2	839	URD	KKM	RRM	SSS	84	430	402	0	15270	14463	0.00	141.3	2.0	2.0	2.0	
WO 8	2	1130	MRD	GKM	SSS	GUG	86	427	0	227	15267	14460	0.00	141.3	1.0	1.0	1.0	
WO 8	2	1134	RRD	GKM	DDM	SRU	82	427	39E	272	15273	14466	0.00	141.3	2.0	2.0	2.0	
WO 8	2	1312	SSD	KKM	SSS	OUW	64	430	0	423	15304	14493	0.00	141.3	1.0	1.0	1.0	

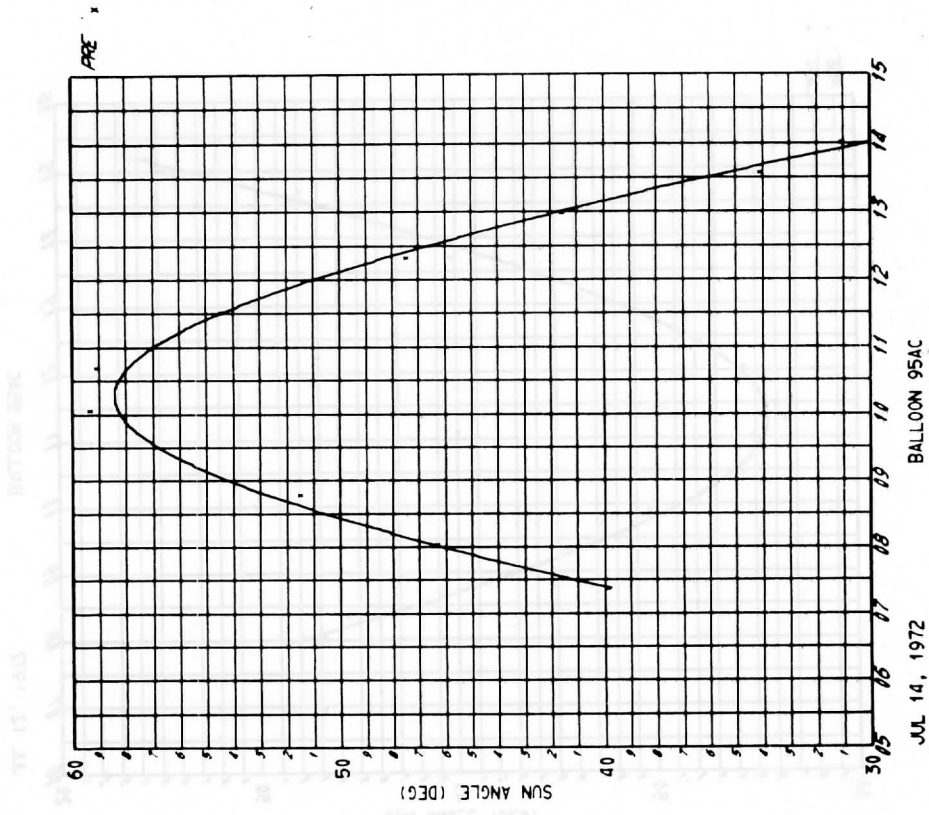
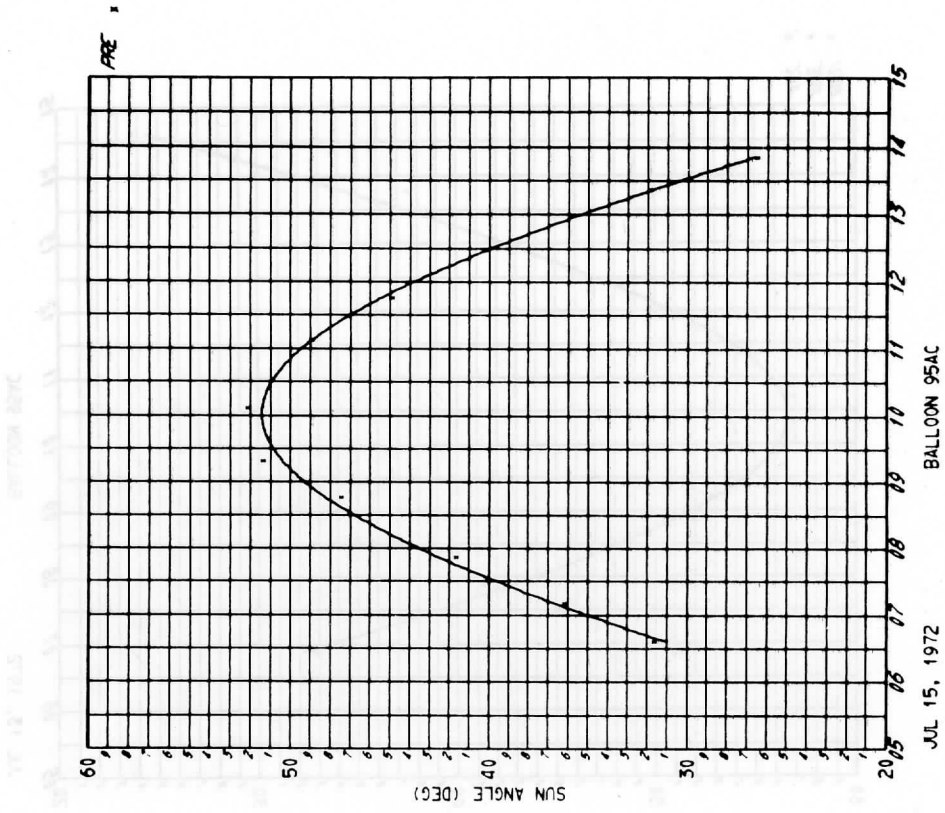
TWERLE BALLOON 99151/3 AB/MO 1972

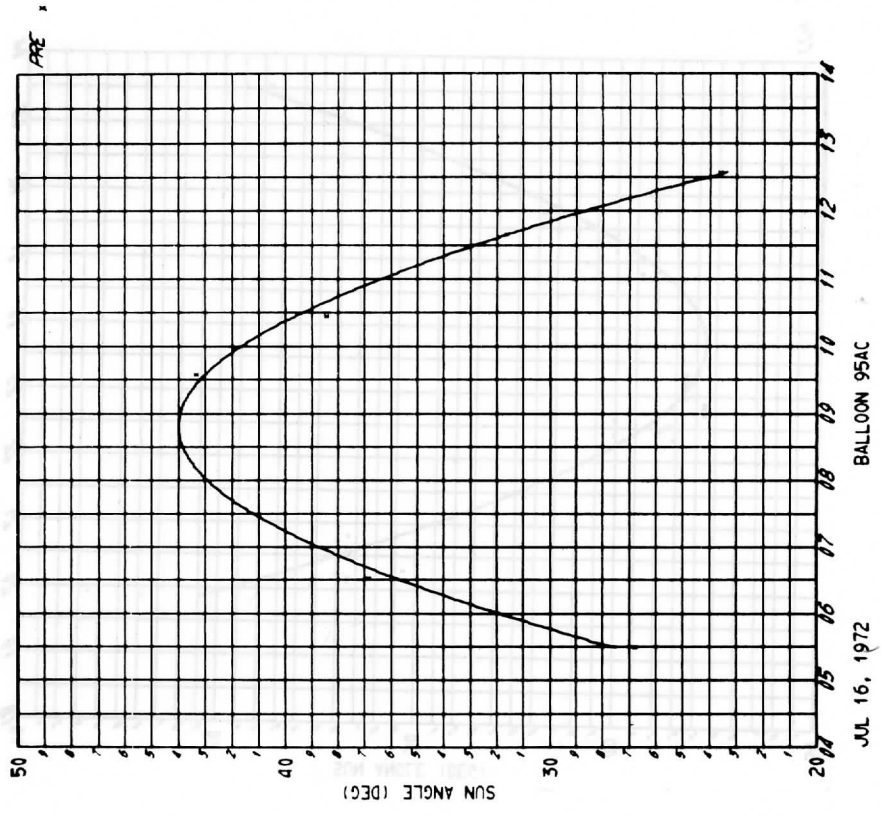
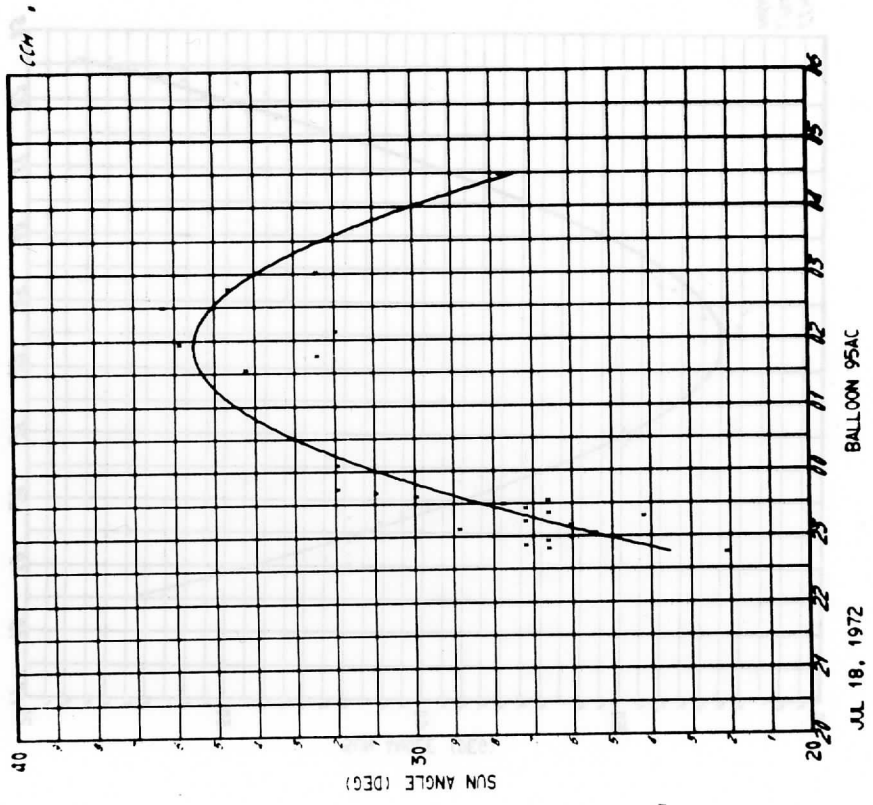
ID	DATE	TIME	ALT AT	UIGI CODE	PT	NUM	DEC	UIGI	NUM	PT	ALT	AT	F	PT	ALTITUDE	AIR T	PTEMP	PID	PRES	28	29	30	31	32	33
WO	7	31	1528	OWO	OKM	SSS	DR0	503	431	0	465	13862	0.00	0.00	141.3	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
WO	7	31	1531	GKO	SKM	OWM	OD0	491	432	441	463	14621	0.00	0.00	141.3	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
WO	7	31	1536	G00	OKM	SSS	KGO	507	431	0	477	14597	0.00	0.00	141.3	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
WO	7	31	1537	G00	OKM	SSS	KGO	507	431	0	477	14597	0.00	0.00	141.3	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
WO	7	31	1548	R00	OKM	OWM	GGO	505	431	446	475	14599	0.00	0.00	141.3	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
WO	7	31	1600	K00	OKM	SSS	G00	485	431	0	459	14631	0.00	0.00	141.3	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
WO	7	31	1623	GWO	WRG	SSS	DMK	499	214	0	369	14609	0.00	0.00	141.3	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
WO	7	31	1627	SSU	WRG	SSS	KSM	256	214	0	389	14989	0.00	0.00	141.3	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
WO	7	31	1631	UOG	WRG	WOK	SOK	252	214	382	376	14996	0.00	0.00	141.3	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
WO	7	31	1653	WOG	ORG	SSS	DDM	234	215	0	441	14992	0.00	0.00	141.3	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
WO	7	31	1713	WSS	OKM	SSS	UDU	6	428	0	268	15401	0.00	0.00	141.3	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
WO	7	31	1719	GRS	GKM	KKM	UGU	19	427	429	284	15379	0.00	0.00	141.3	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
WO	7	31	1737	UUG	WDD	SSS	KGO	231	78	0	477	15029	0.00	0.00	141.3	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
WO	7	31	1740	OSS	UKM	MDM	RKM	7	428	358	426	15399	0.00	0.00	141.3	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
WO	7	31	1746	GSS	KKM	UKM	GGO	3	429	428	475	15406	0.00	0.00	141.3	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
WO	7	31	1819	GUS	WRM	SSS	SSS	11	406	0	0	15393	0.00	0.00	141.3	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
WO	7	31	1821	MJS	MKM	SSS	RRM	14	430	0	402	15388	0.00	0.00	141.3	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
WO	7	31	1823	ODS	MKM	OWM	SSM	15	430	439	384	15386	0.00	0.00	141.3	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
WO	7	31	1835	SJS	OKM	ROM	MSO	8	431	442	454	15398	0.00	0.00	141.3	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
WO	8	1	758	UKS	MKM	SSS	RMU	44	430	0	306	15337	0.00	0.00	141.3	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
WO	8	1	811	MKS	OKM	SSS	SOG	46	428	0	248	15334	0.00	0.00	141.3	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
WO	8	1	950	GSS	OKM	WSM	RGR	3	425	390	154	15406	0.00	0.00	141.3	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
WO	8	1	952	DRS	OKM	SSS	WRG	17	425	0	214	15382	0.00	0.00	141.3	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
WO	8	1	1008	OKO	OKM	SSS	MSR	492	426	0	134	14615	0.00	0.00	141.3	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
WO	8	1	1012	GSS	SKM	SDM	RUD	3	424	392	98	15406	0.00	0.00	141.3	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
WO	8	1	1015	KKO	SKM	SSS	RKO	493	424	0	106	14618	0.00	0.00	141.3	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
WO	8	1	1019	UJO	OKM	OOK	WKR	463	425	383	174	14664	0.00	0.00	141.3	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
WO	8	1	1023	RMO	OKM	SSS	OMR	498	426	0	183	14611	0.00	0.00	141.3	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
WO	8	1	1027	KOO	RKM	DRM	USG	503	426	401	196	14594	0.00	0.00	141.3	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
WO	8	1	1030	ODS	RKM	SSS	MHR	9	426	0	182	15396	0.00	0.00	141.3	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
WO	8	1	1034	UWO	OKM	SSM	DSG	500	425	384	193	14608	0.00	0.00	141.3	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
WO	8	1	1038	KSS	OKM	SSS	GKO	5	425	0	107	15403	0.00	0.00	141.3	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
WO	8	1	1041	UJO	OKM	WSM	WRD	5	425	0	107	15403	0.00	0.00	141.3	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
WO	8	1	1045	WKO	SKM	SSS	GUD	494	424	0	99	14617	0.00	0.00	141.3	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
WO	8	1	1049	UJO	RKM	MDM	OMR	500	426	398	183	14608	0.00	0.00	141.3	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
WO	8	1	1053	DMO	RKM	SSS	SOG	497	426	0	200	14612	0.00	0.00	141.3	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
WO	8	1	1055	DUO	RKM	SSS	SDG	481	426	0	200	14637	0.00	0.00	141.3	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
WO	8	1	1056	KJO	KRG	SMC	GUG	481	213	436	227	14667	0.00	0.00	141.3	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
WO	8	1	1058	KJO	KRG	SMO	GUG	481	213	436	227	14667	0.00	0.00	141.3	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
WO	8	1	1100	OSS	RKM	SSS	ODG	1	426	0	207	15409	0.00	0.00	141.3	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
WO	8	1	1103	UUU	UDG	DDM	OGG	292	204	393	223	14932	0.00	0.00	141.3	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
WO	8	1	1209	WOO	GKM	SSS	SGU	510	427	0	280	14592	0.00	0.00	141.3	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
WO	8	1	1212	OWO	UKM	KGM	WGU	503	428	413	286	14603	0.00	0.00	141.3	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
WO	8	1	1216	SDS	UKM	SSS	KUU	8	428	0	293	15398	0.00	0.00	141.3	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
WO	8	1	1220	UWM	KKM	SKM	OUU	436	429	424	319	14706	0.00	0.00	141.3	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
WO	8	1	1223	ODS	KKM	SSS	GGK	9	429	0	347	15396	0.00	0.00	141.3	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0

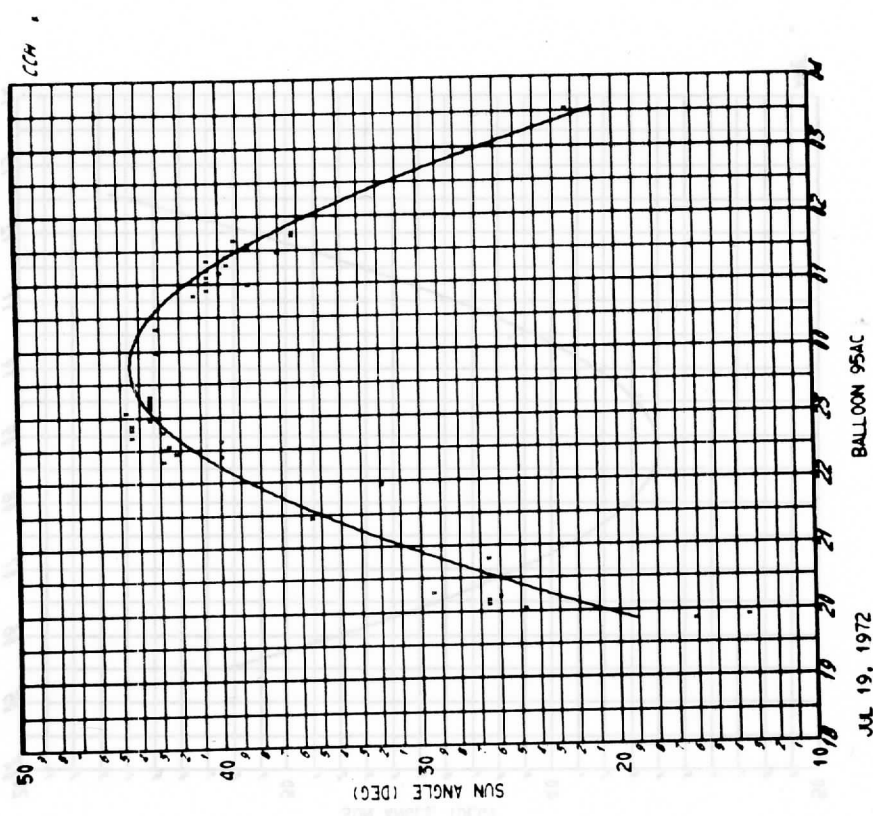
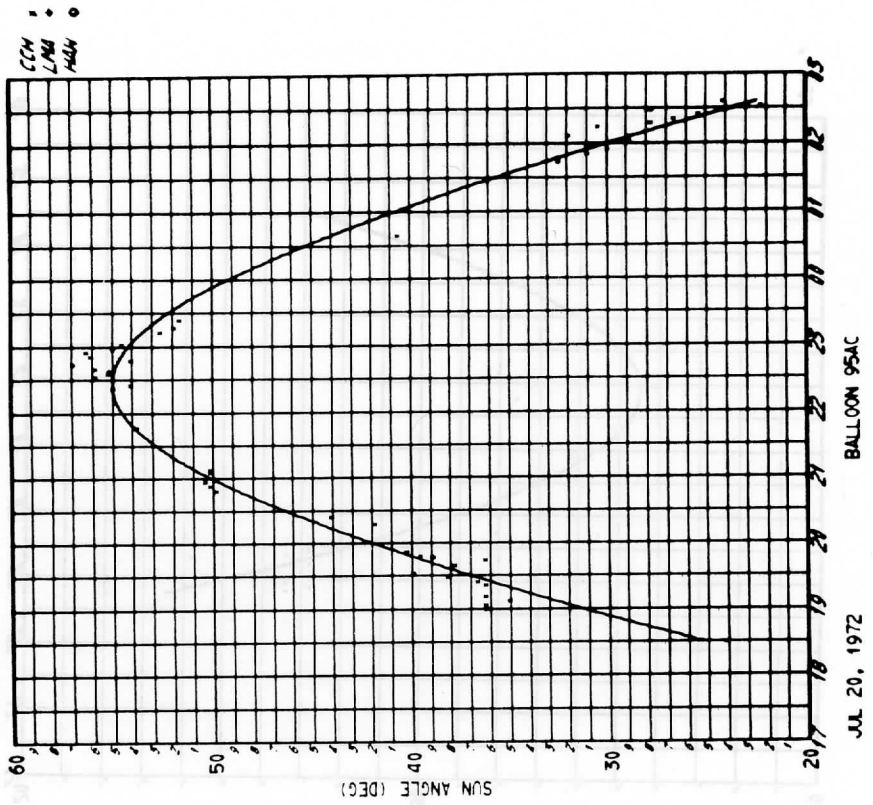
TWERLE BALLOON 99151/3 AB/WO 1972

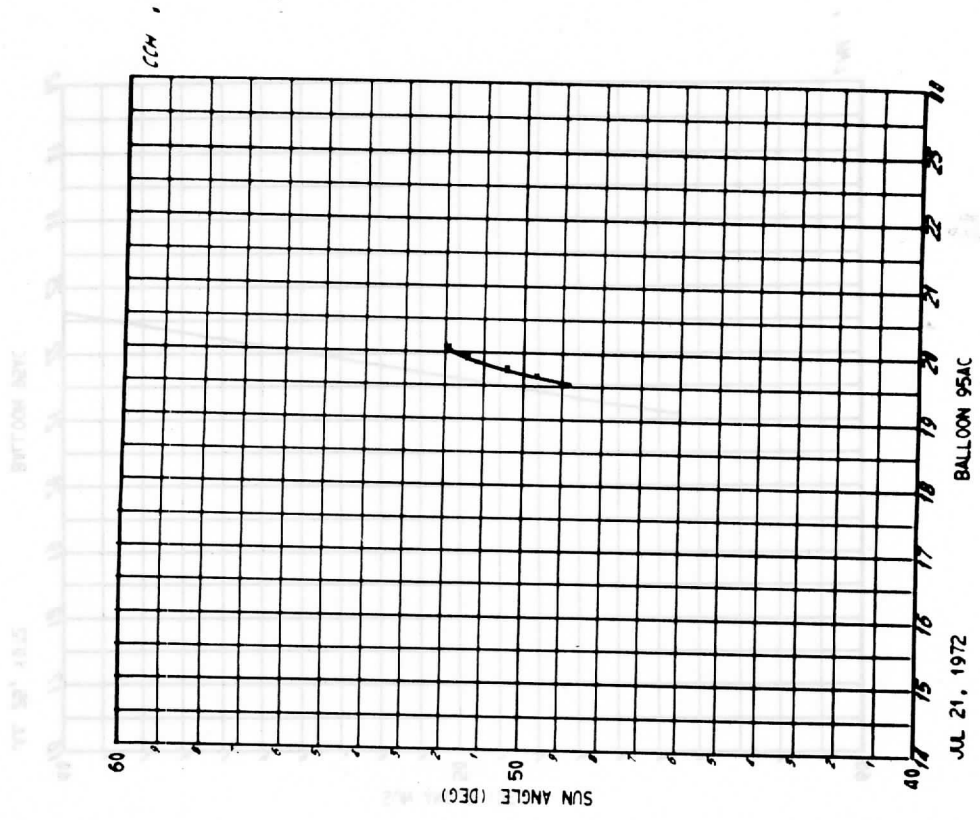
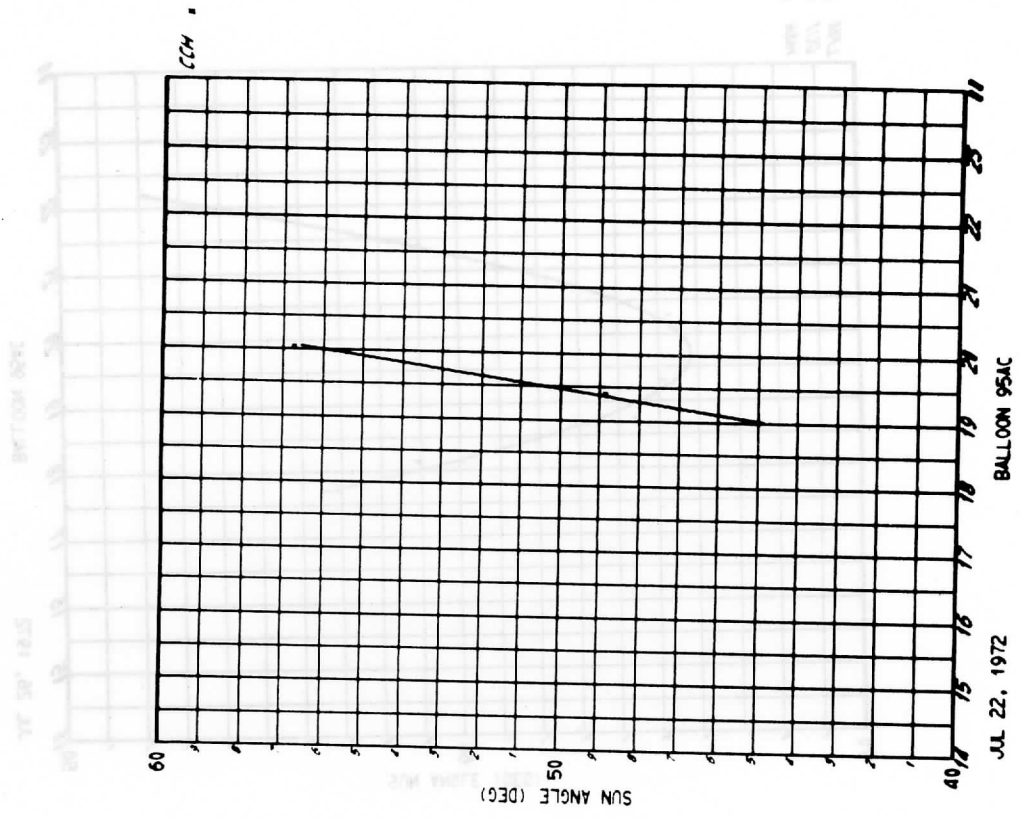
ID	DATE	TIME			---DIGI CODE---			-DEC DIGI NUM--			---ALTIUDE---			AIR T (C)	PTEMP (C)	PID	PRES		
		ALT	AT	P	ALT	AT	P	PT	PT	(18)	(19)	28	29				30	31	32
WO	8	2	1315	KMS	KKW	WOM	KKW	53	429	446	429	15322	14509	0.00	0.00	141.3	2.0	2.0	2.0
WO	8	2	1354	MWS	WKM	WOM	URM	54	430	440	404	15320	14508	0.00	0.00	141.3	2.0	2.0	2.0
WO	8	2	1357	UKS	WKM	SSS	UUM	44	430	0	396	15337	14523	0.00	0.00	141.3	1.0	1.0	1.0
WO	8	2	1403	UGS	KKW	WKK	RKM	28	429	366	426	15364	14547	0.00	0.00	141.3	2.0	2.0	2.0
WO	8	2	1416	KSD	UKM	GKM	DDK	69	428	427	329	15295	14485	0.00	0.00	141.3	2.0	2.0	2.0
WO	8	2	1419	SJD	UKM	SSS	SKU	72	428	0	324	15290	14481	0.00	0.00	141.3	1.0	1.0	1.0
WO	8	2	1437	SJD	UKM	SSS	UUU	113	427	0	294	15222	14420	0.00	0.00	141.3	1.0	1.0	1.0
WO	8	2	1449	OWD	GKM	SSS	OGU	48	427	431	287	15330	14517	0.00	0.00	141.3	2.0	2.0	2.0
WO	8	2	1510	ODD	DKM	UGM	WRR	79	425	412	273	15278	14470	0.00	0.00	141.3	1.0	1.0	1.0
WO	8	2	1534	DRD	DKM	SSS	DDR	81	425	0	150	15275	14467	0.00	0.00	141.3	2.0	2.0	2.0
WO	8	2	1539	MOS	DKM	UUM	SSR	62	425	393	137	15307	14496	0.00	0.00	141.3	2.0	2.0	2.0
WO	8	2	1606	GGD	DKM	SSS	SSR	91	425	0	128	15259	14452	0.00	0.00	141.3	1.0	1.0	1.0
WO	8	2	1622	URD	DKM	UUM	URD	84	425	377	84	15270	14463	0.00	0.00	141.3	2.0	2.0	2.0
WO	8	2	1649	OGD	DKM	UUM	DGR	95	425	417	153	15252	14446	0.00	0.00	141.3	2.0	2.0	2.0
WO	8	2	1714	DOU	URG	SSS	URM	313	212	0	404	14898	14128	0.00	0.00	141.3	1.0	1.0	1.0
WO	8	2	1740	SSS	URG	SMD	RKK	0	212	496	362	15411	14589	0.00	0.00	141.3	2.0	2.0	2.0
WO	8	2	1743	OKD	WRG	SSS	DKK	111	214	0	361	15225	14423	0.00	0.00	141.3	1.0	1.0	1.0
WO	8	2	1810	SSS	UKW	RGW	URK	0	428	410	340	15411	14589	0.00	0.00	141.3	2.0	2.0	2.0

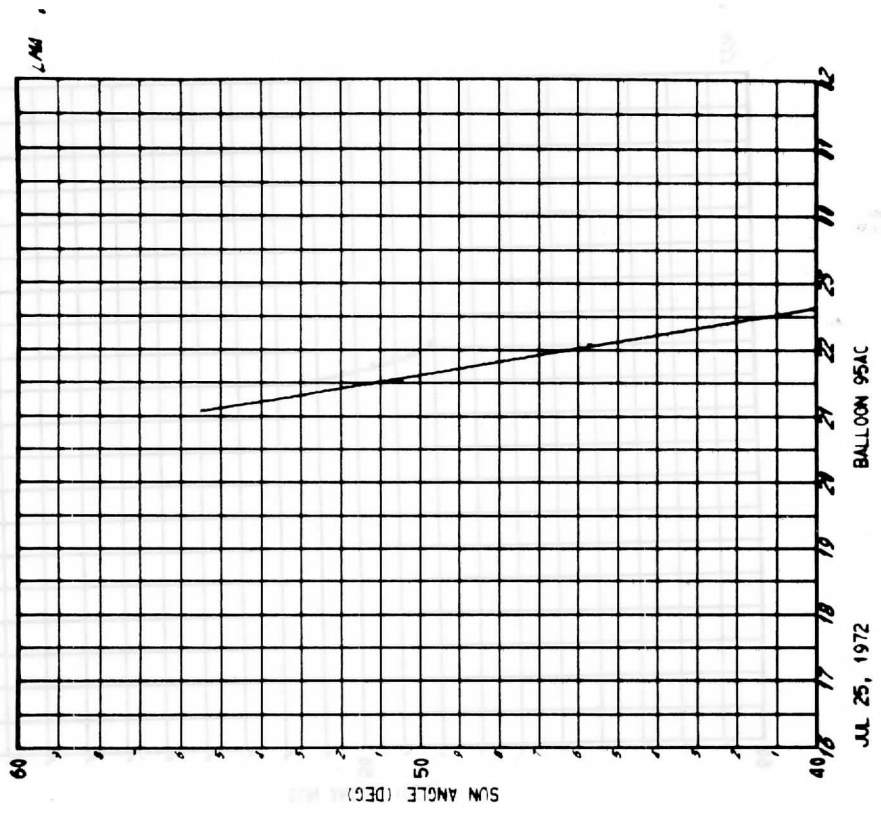
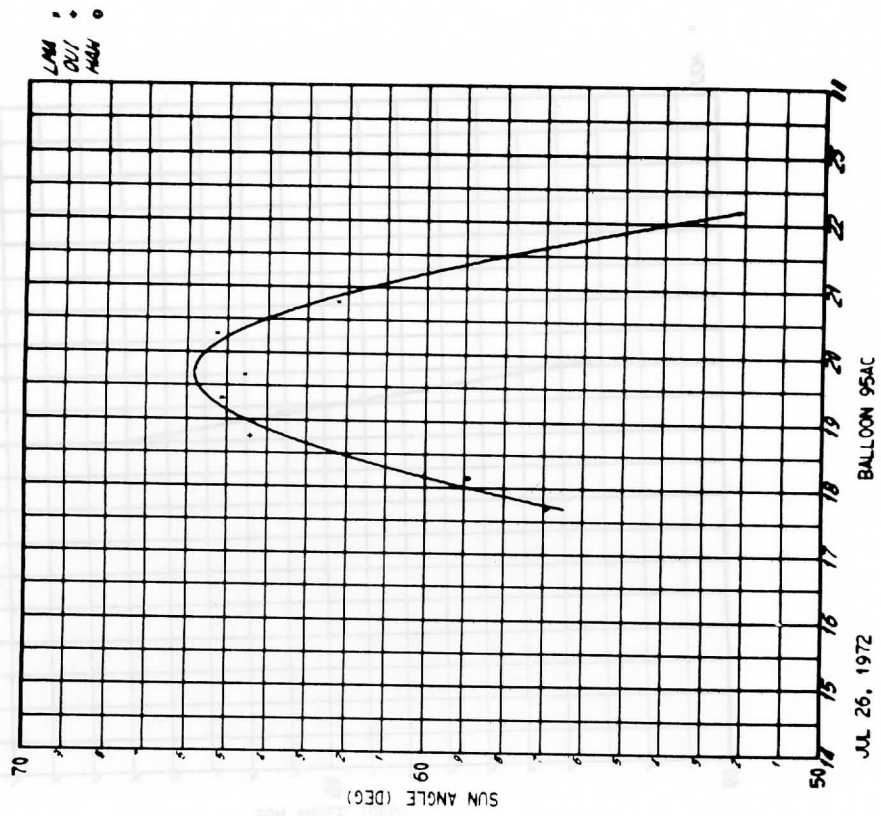




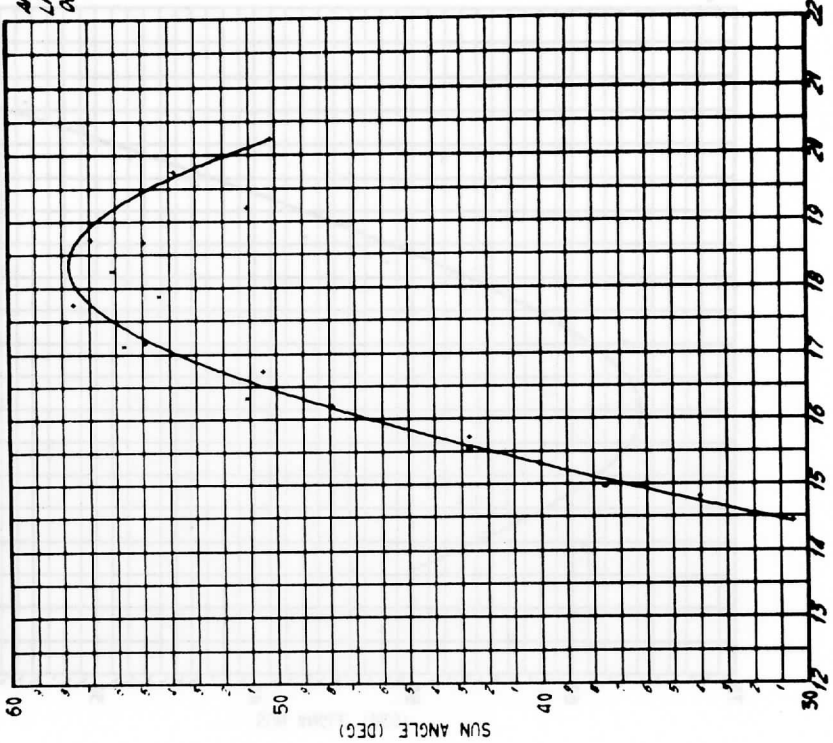




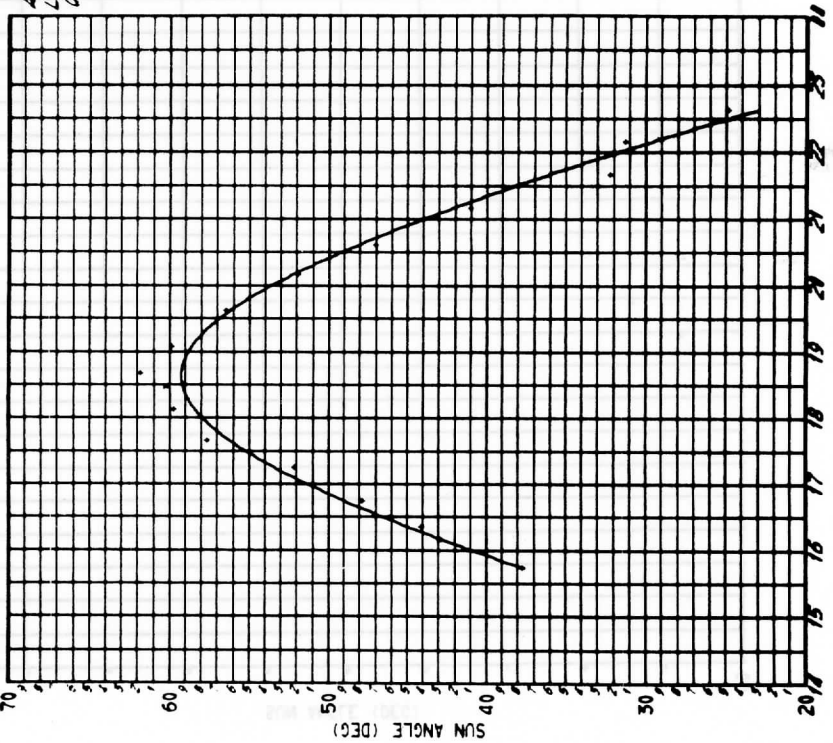


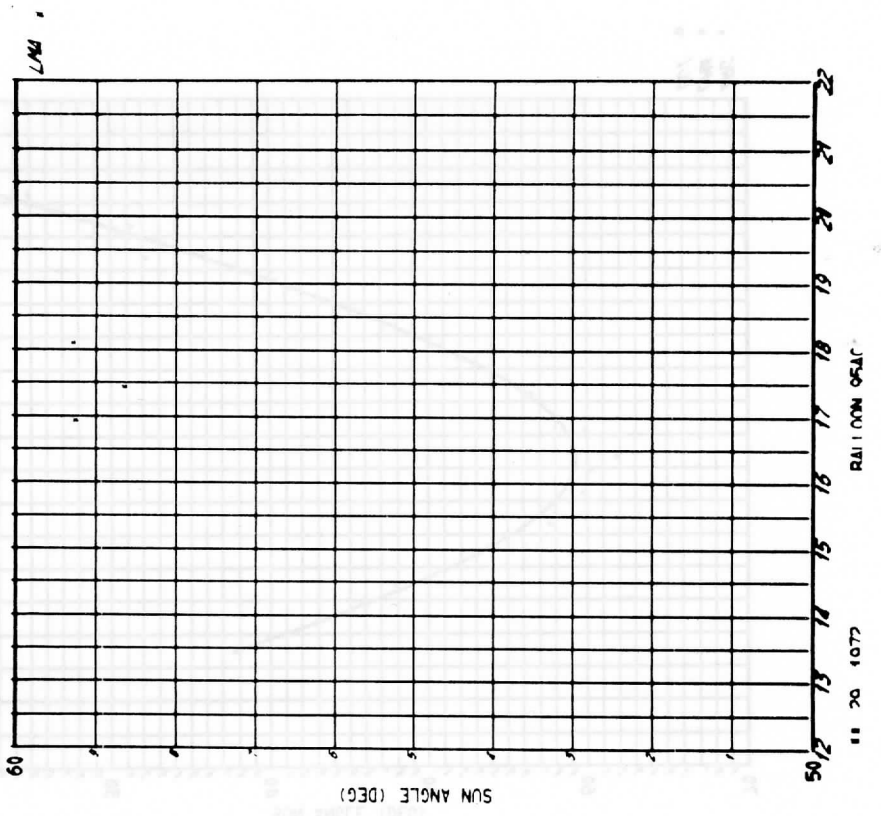
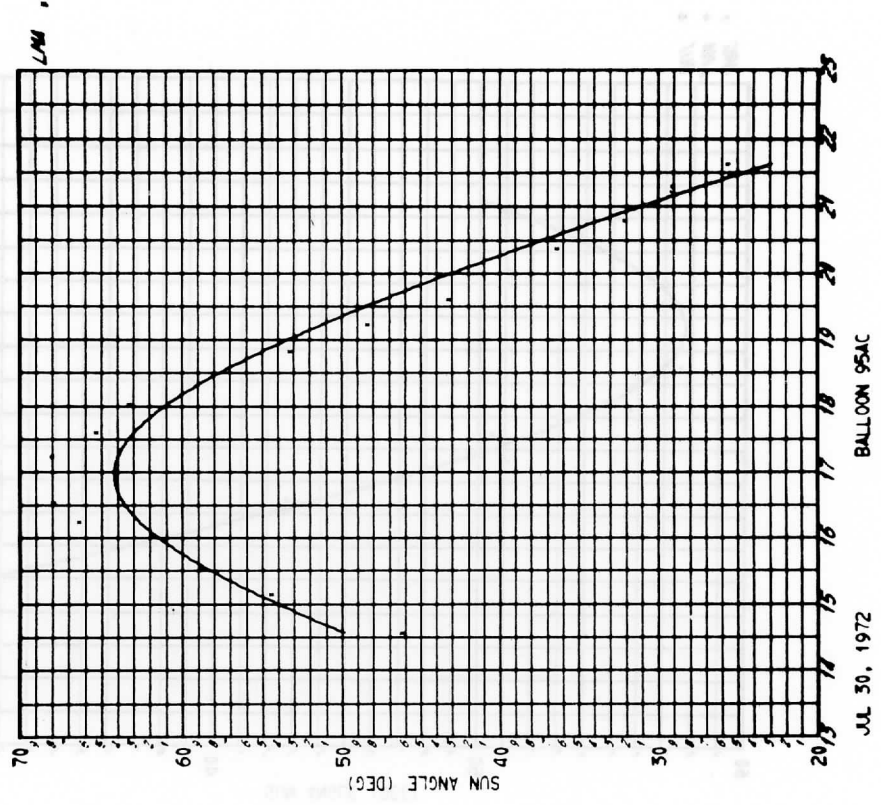


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DU1 :

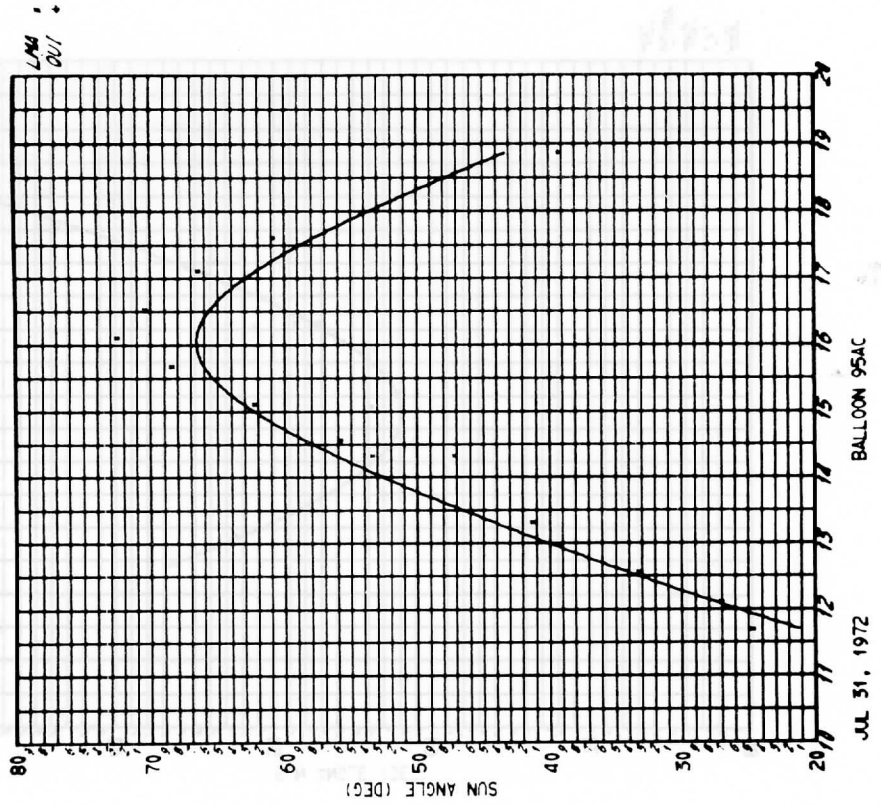
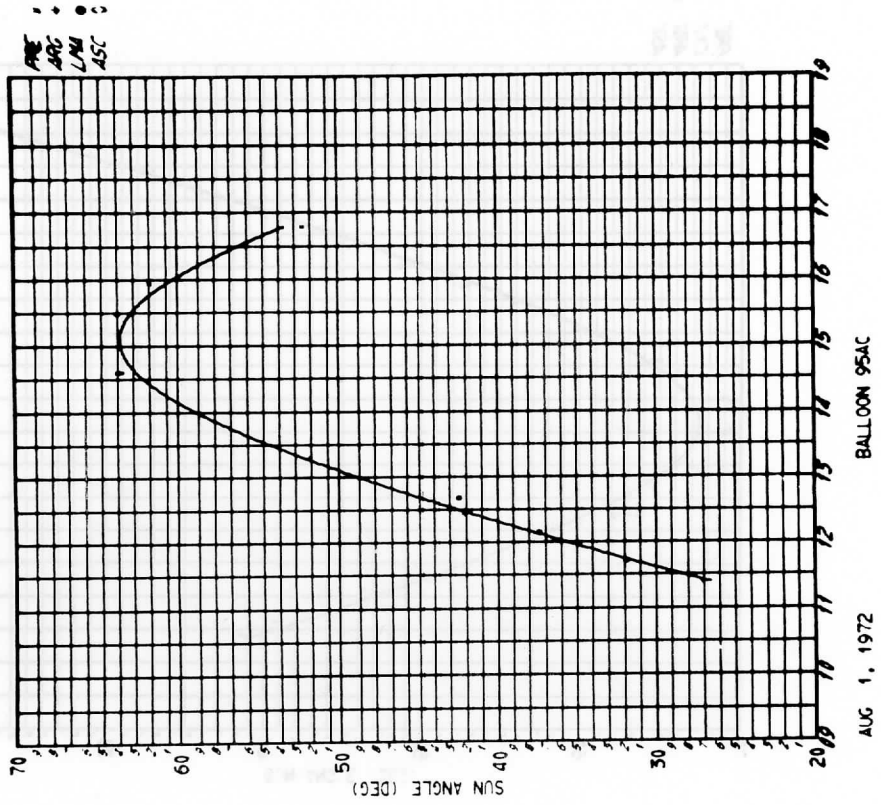


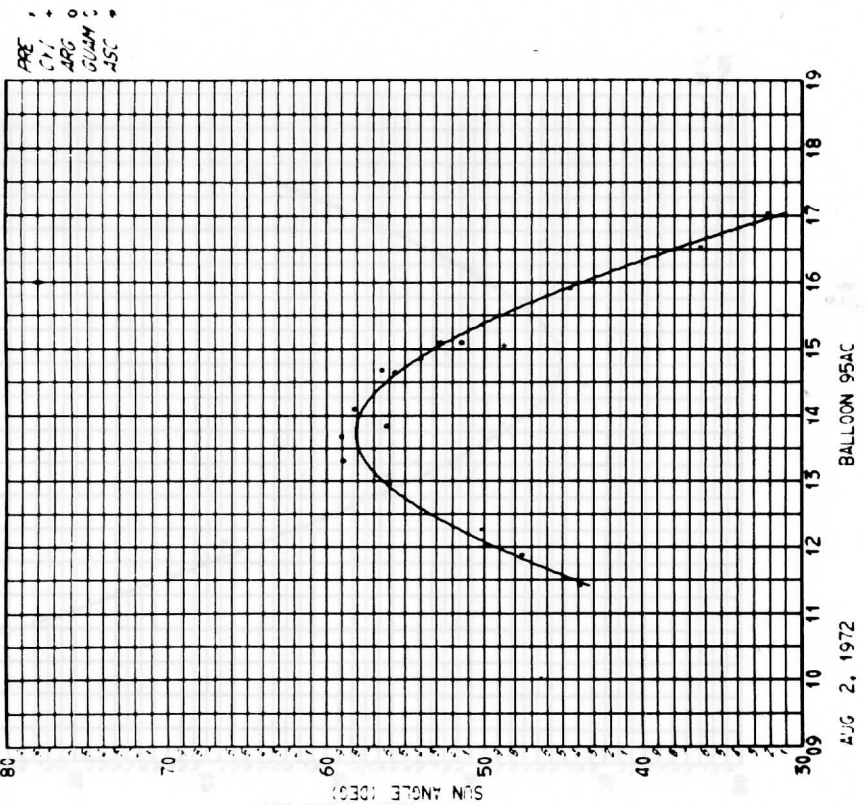
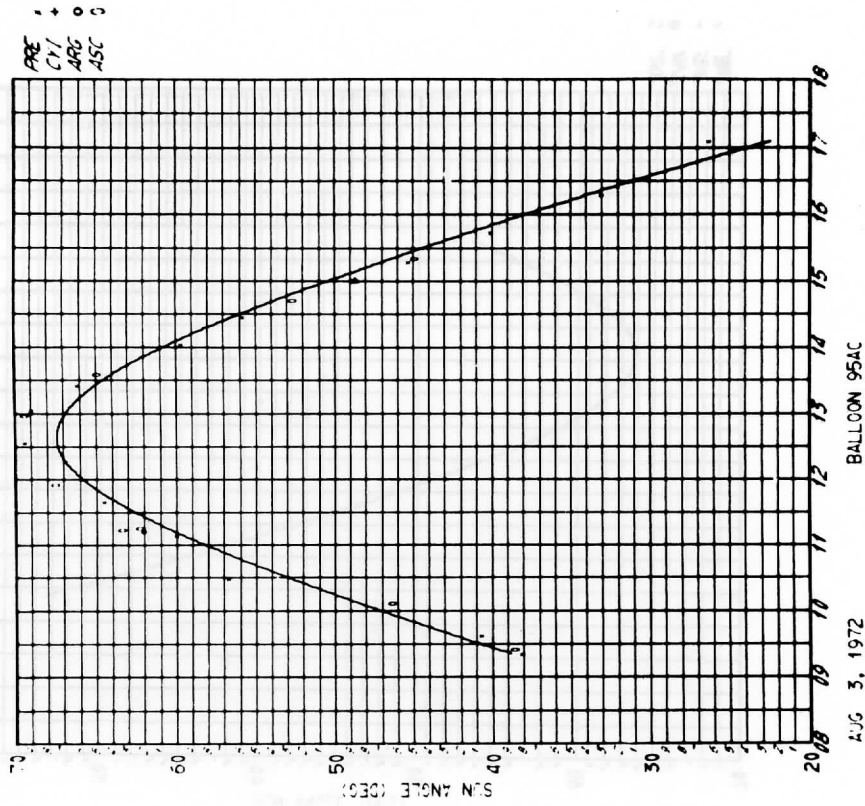
ARC :
LNI :
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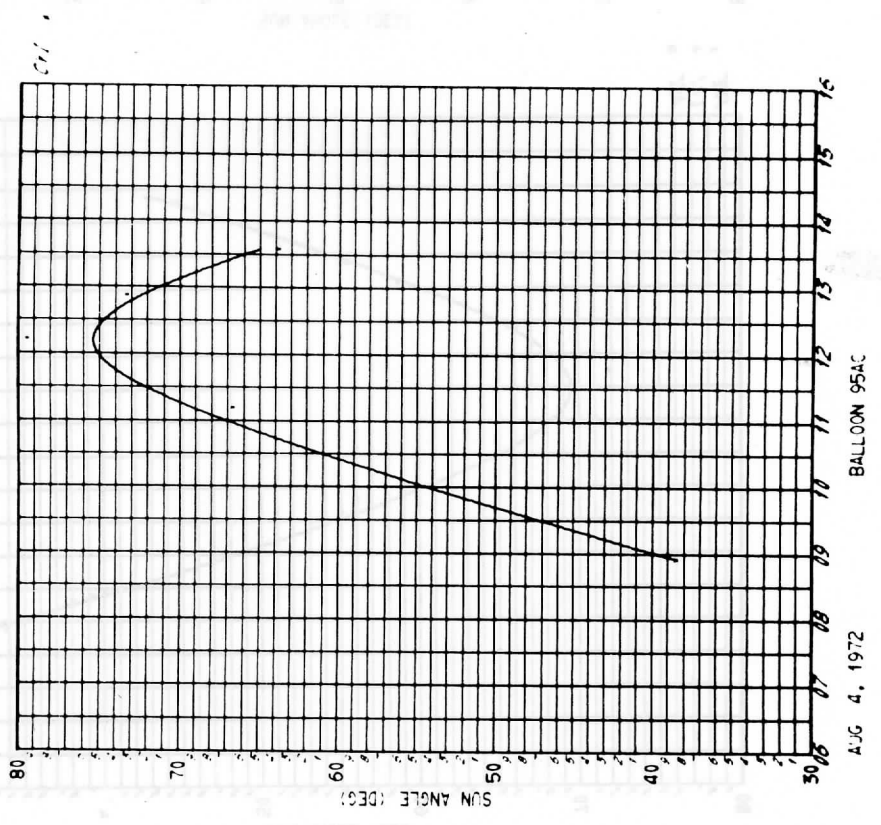
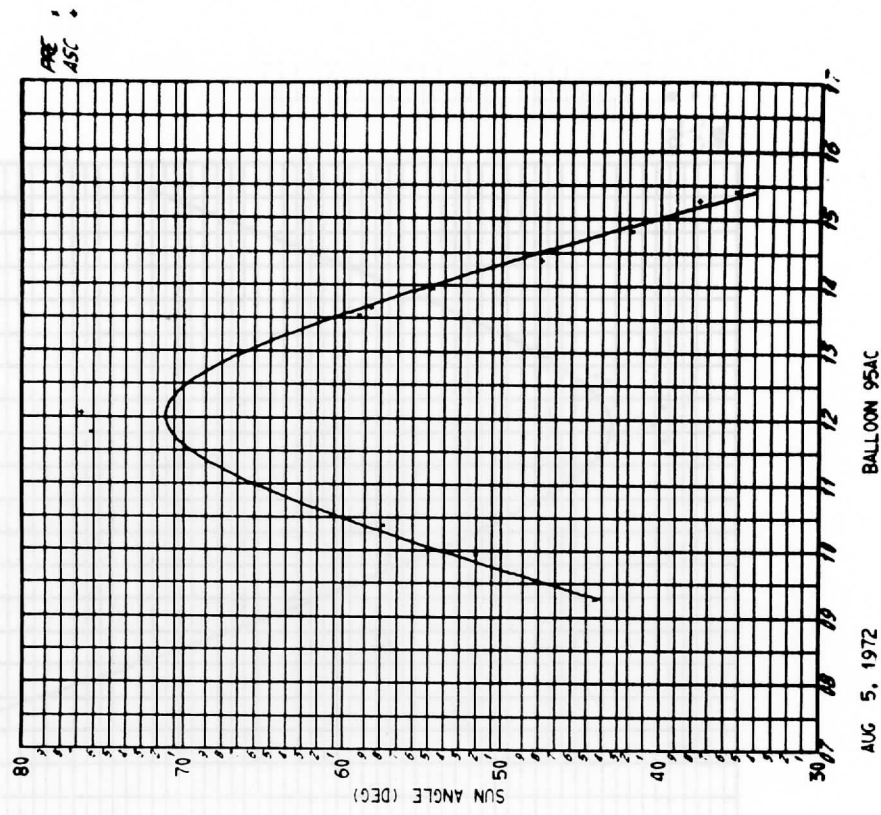


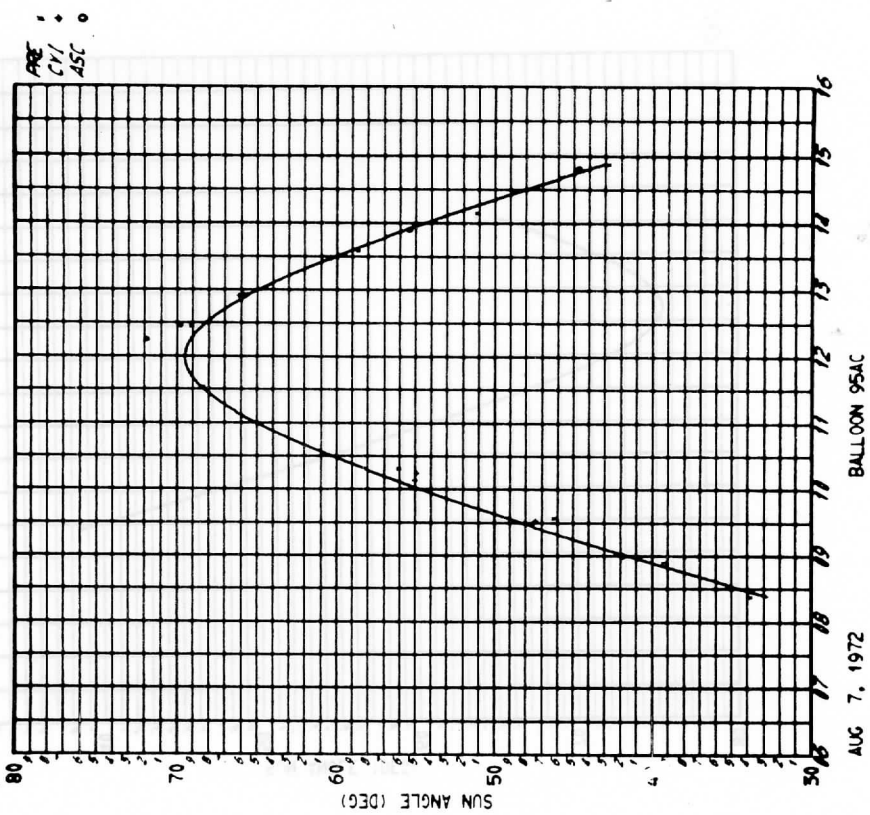
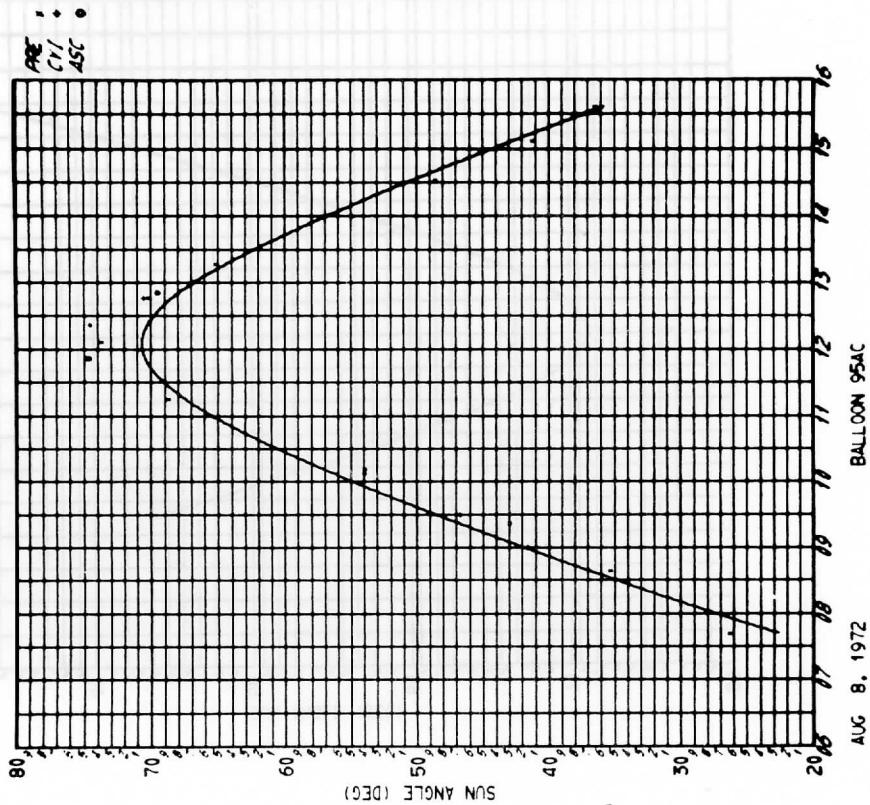


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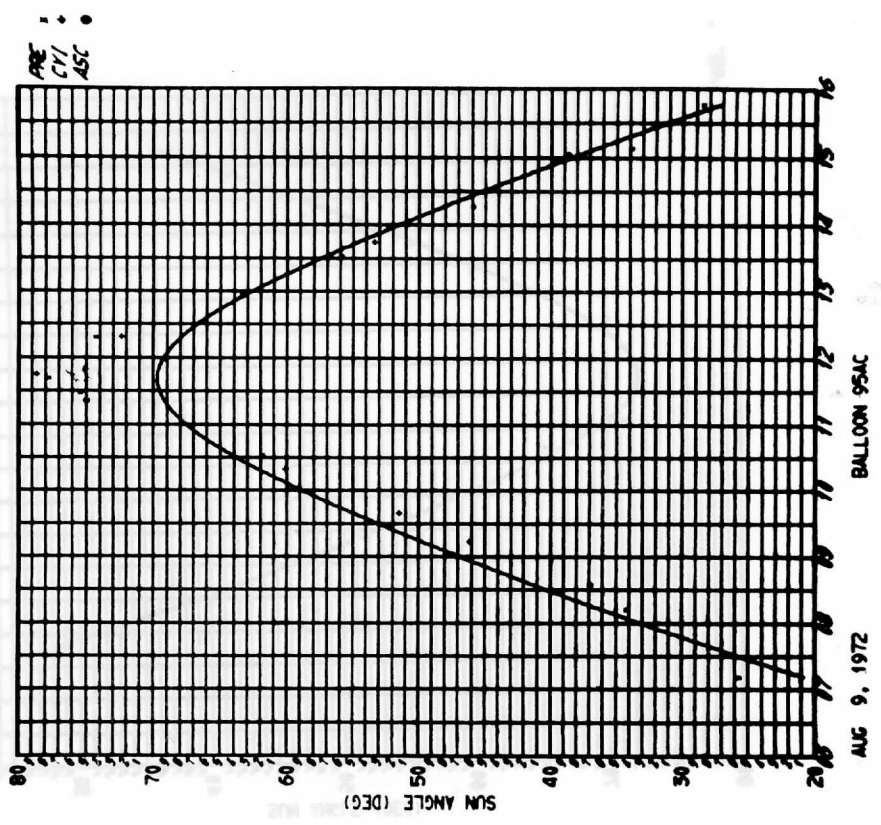
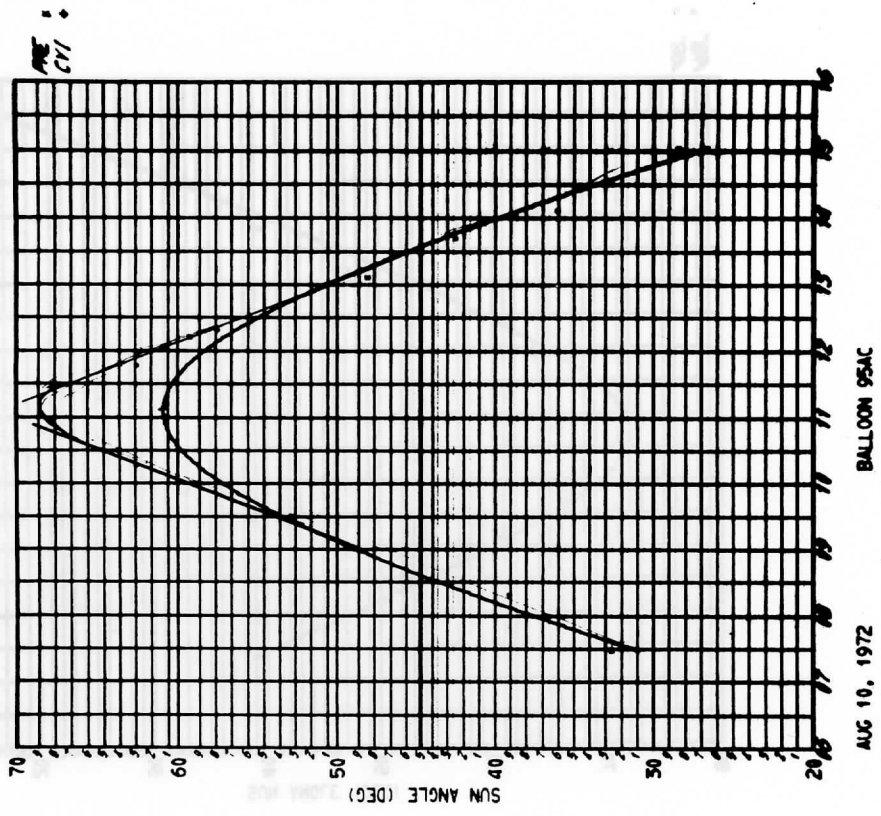
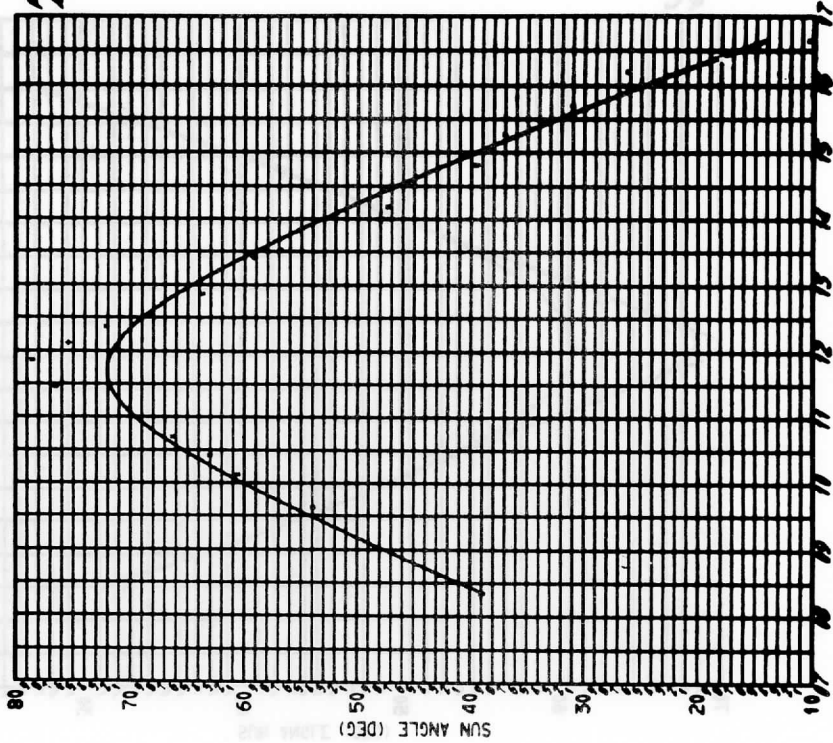


FIG 15' 10AS

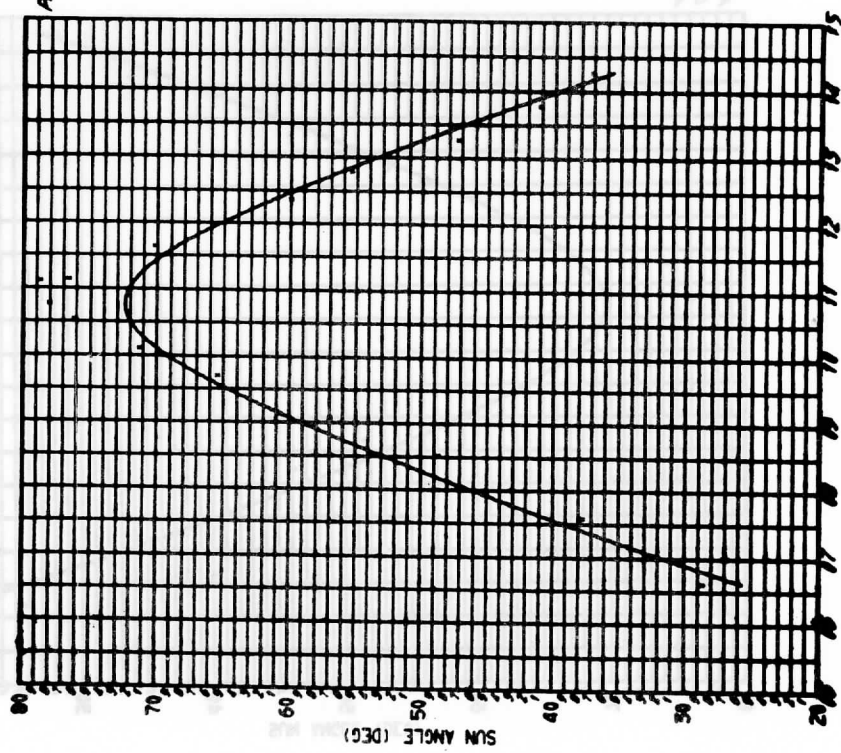
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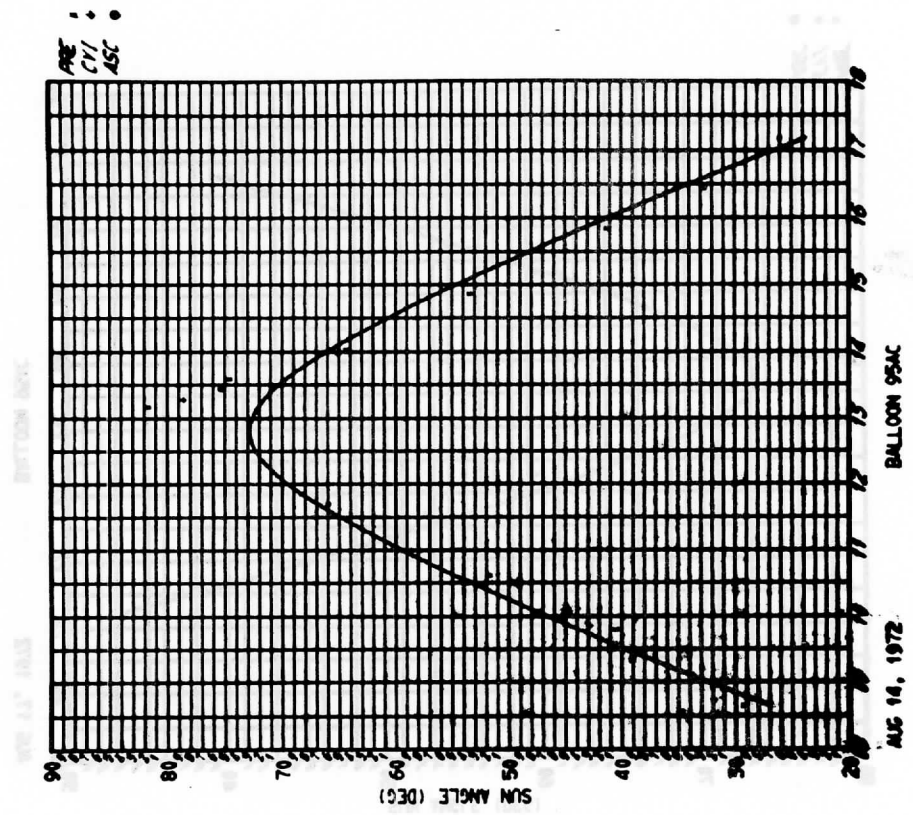
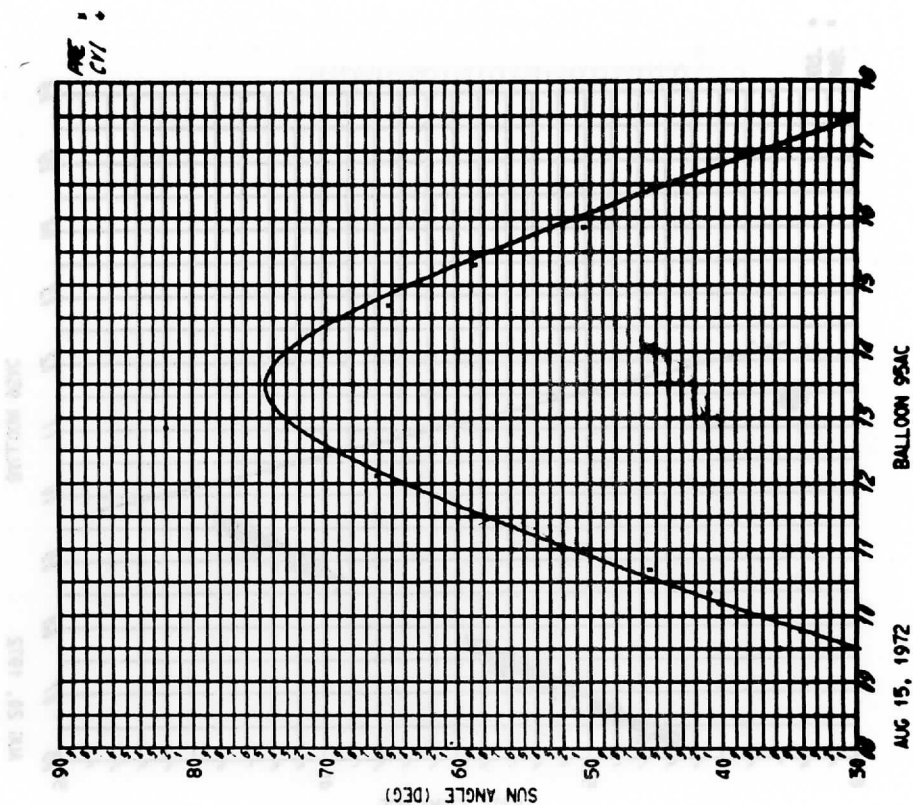
BALLOON 95AC
AUG 13, 1972

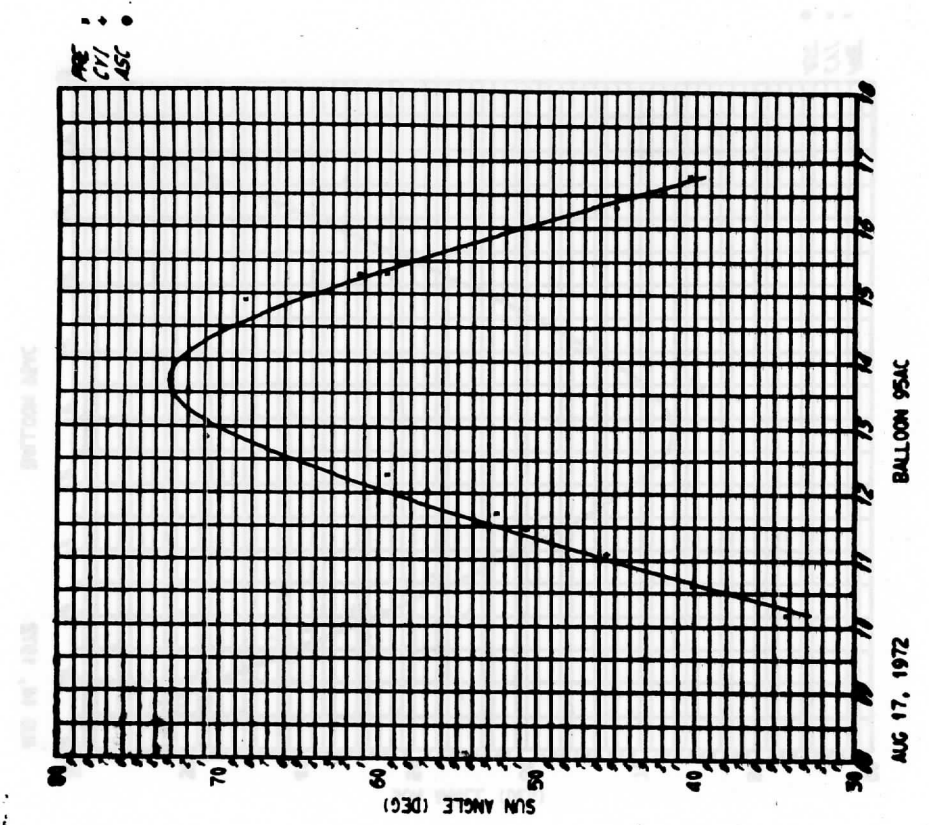
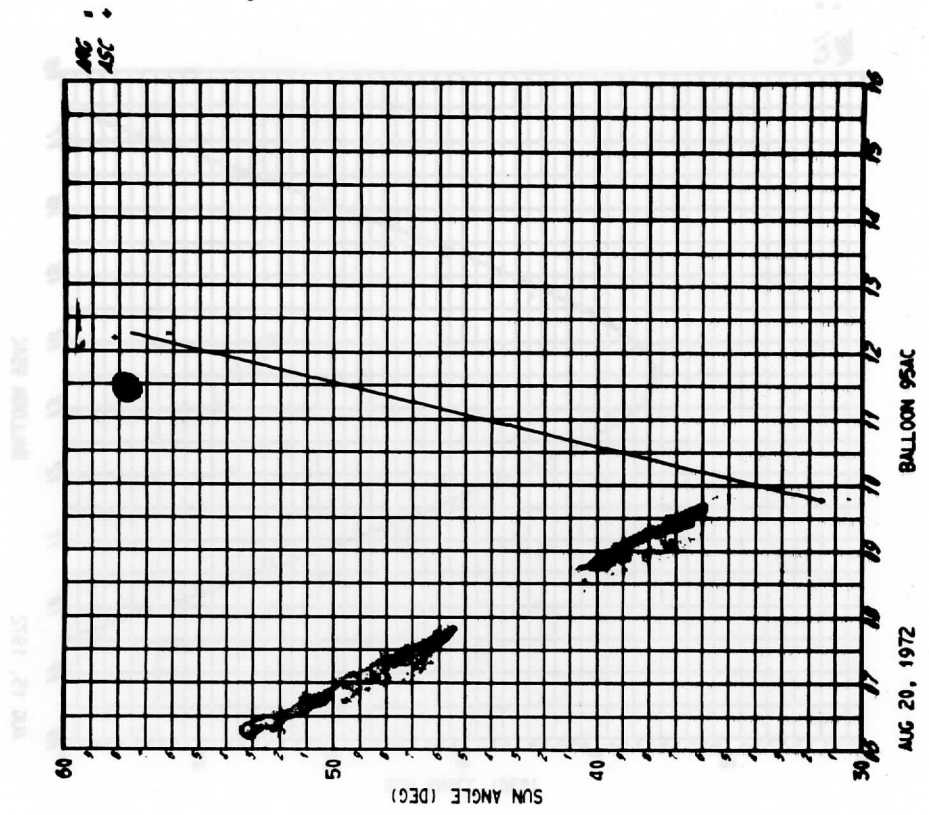
FIG 15' 10AS

PRE :
ASC :

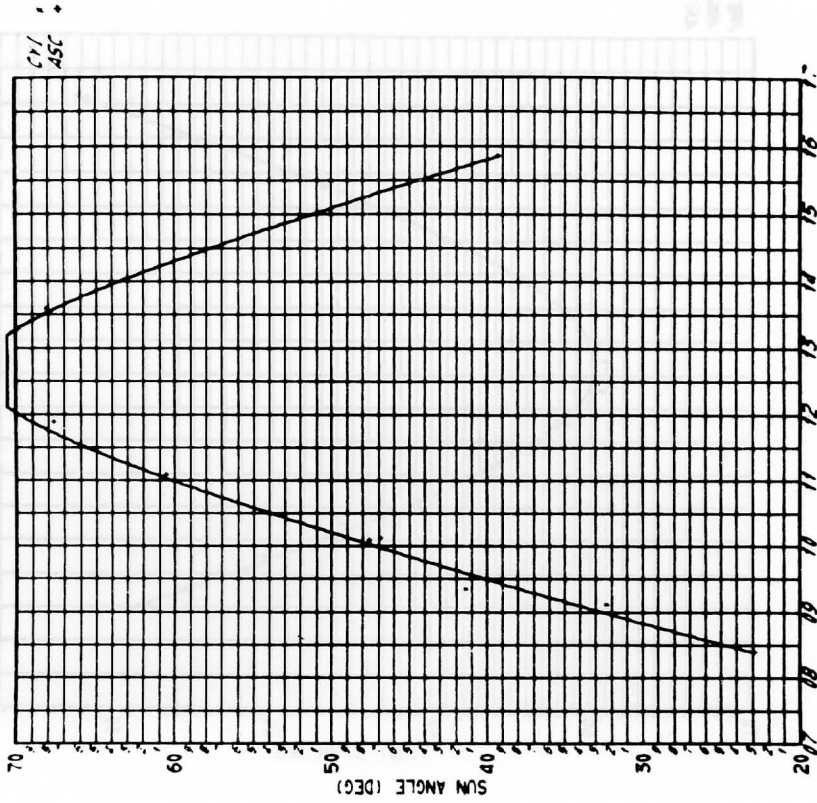


BALLOON 95AC
AUG 12, 1972



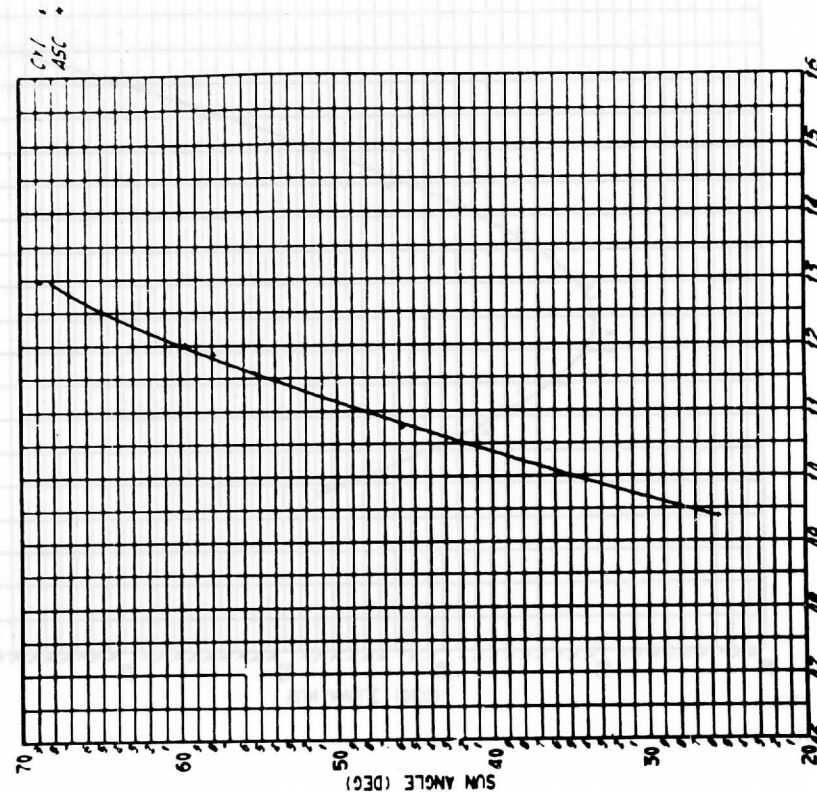


TOP 10' GAGE BOTTOM GAGE

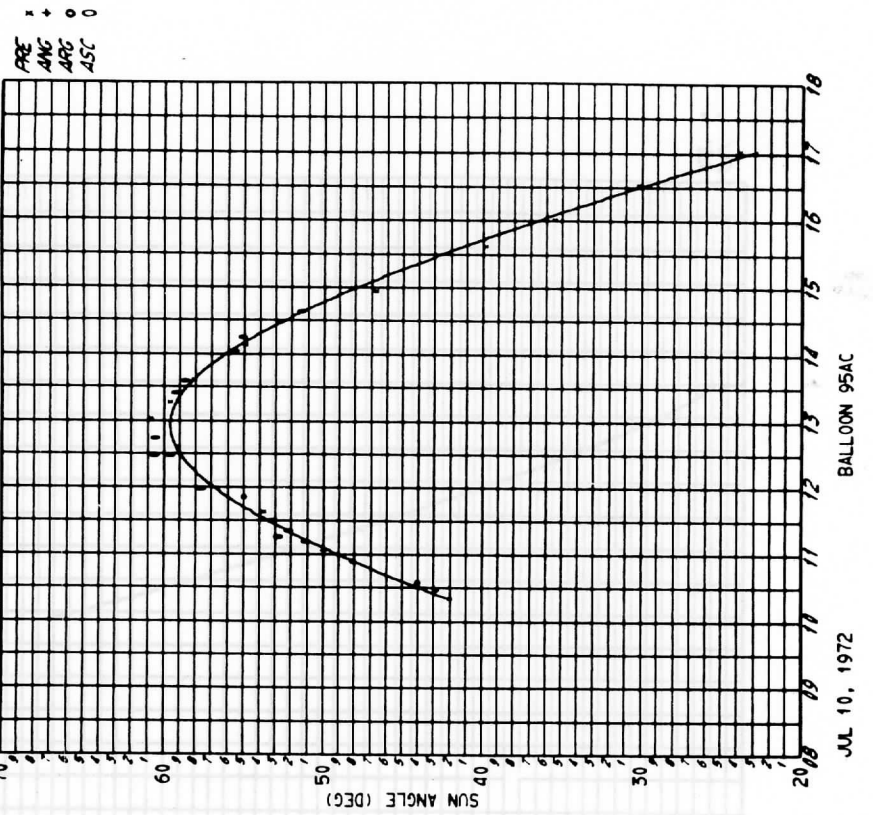
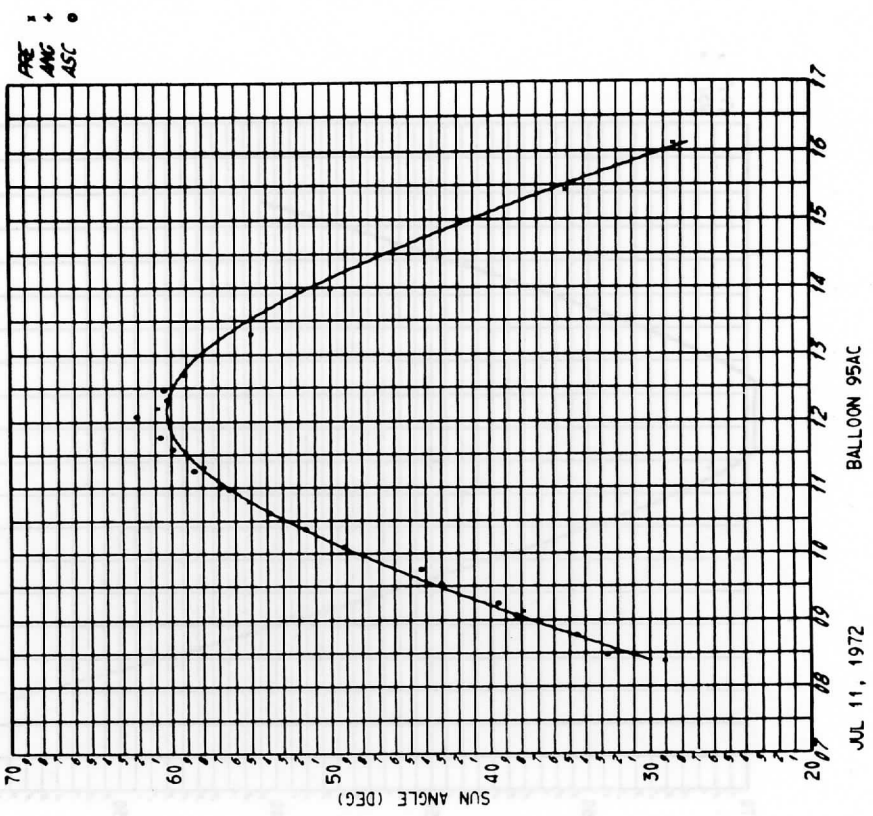


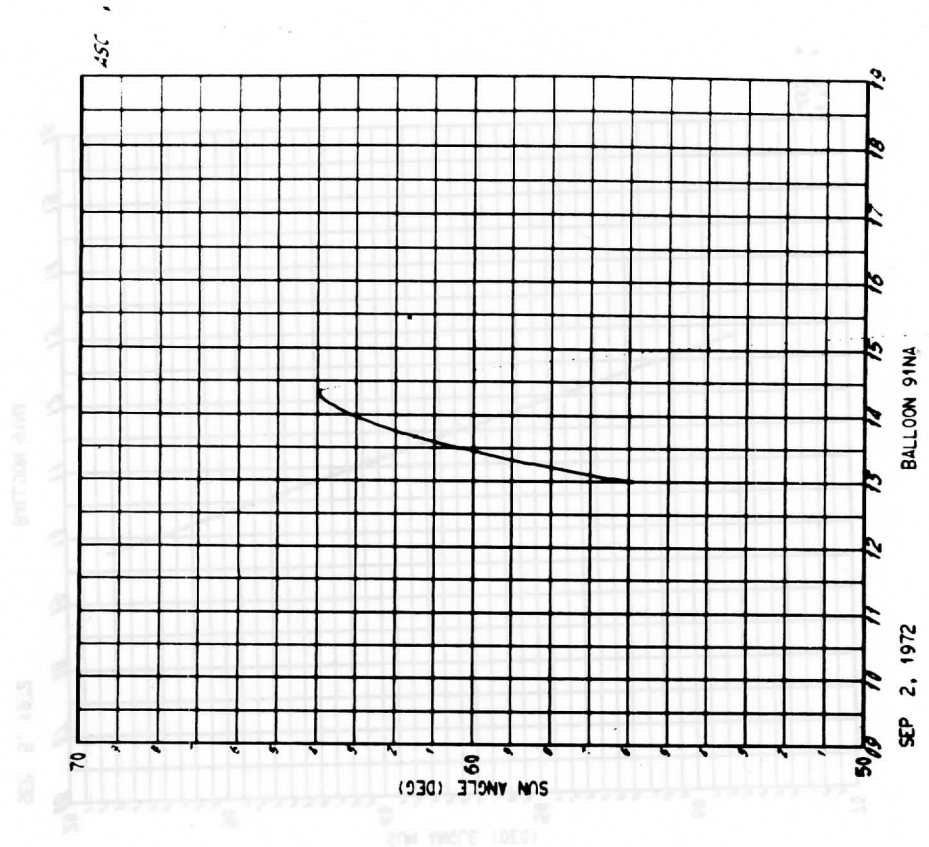
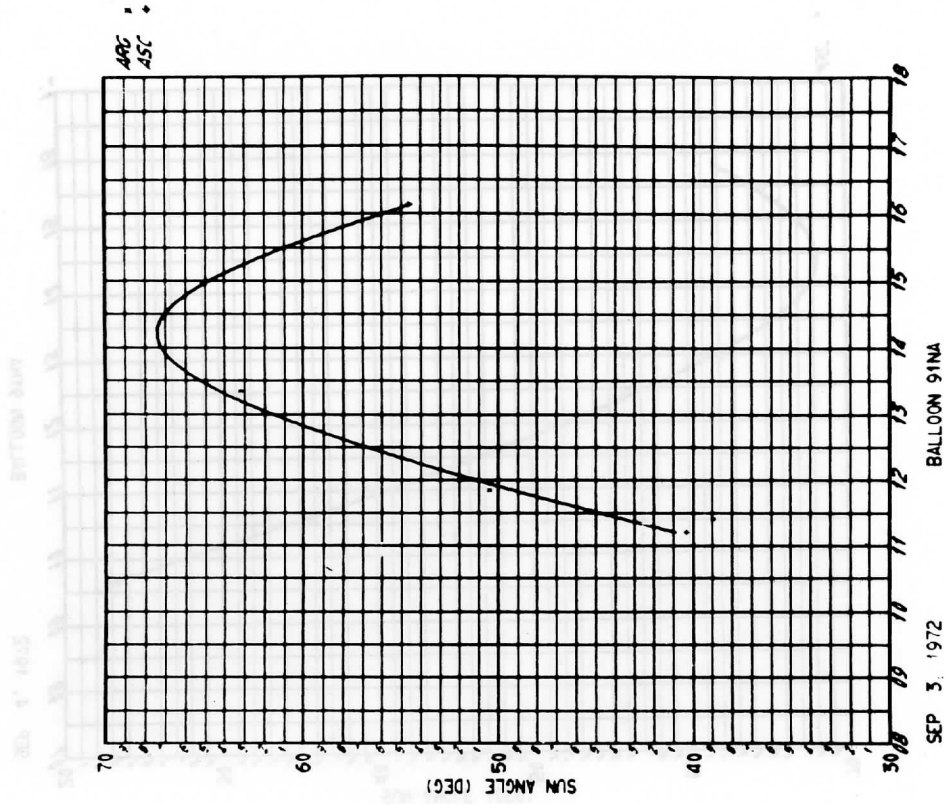
SEP 7, 1972 BALLOON 91NA

TOP 10' GAGE BOTTOM GAGE

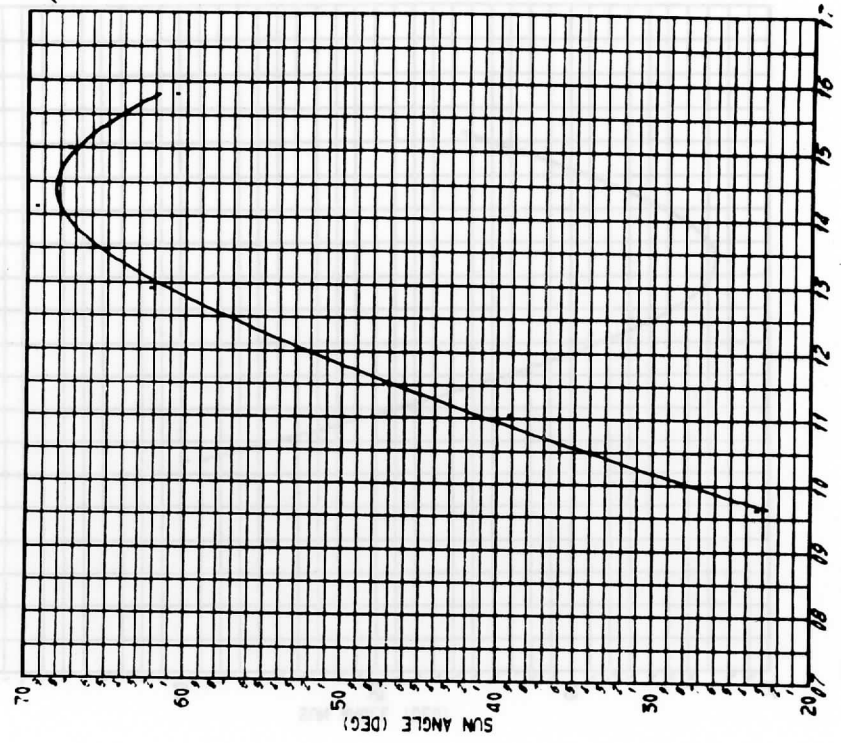


SEP 6, 1972 BALLOON 91NA



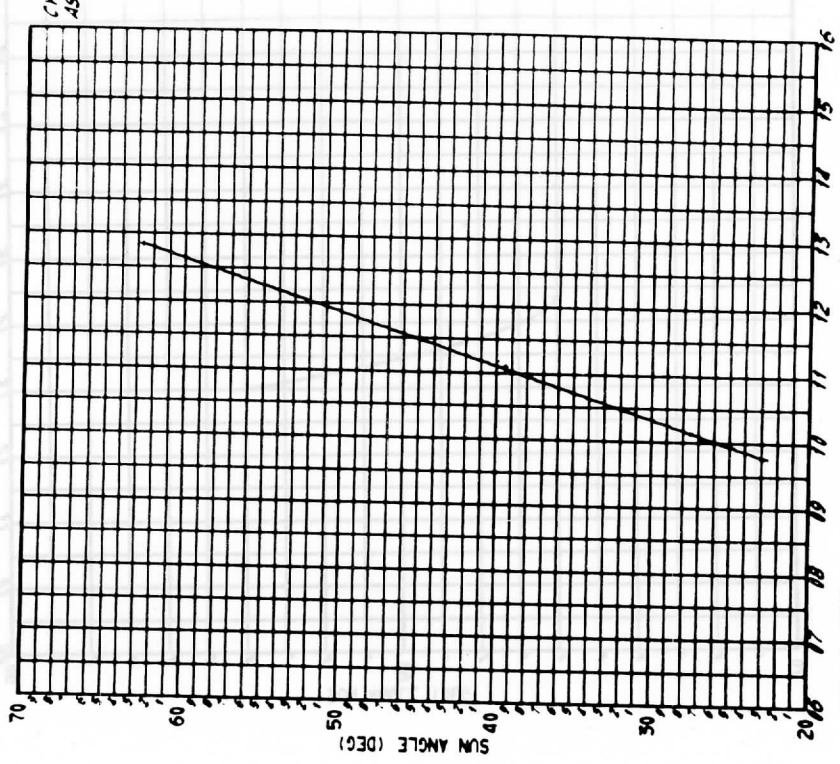


SEP 4 1972



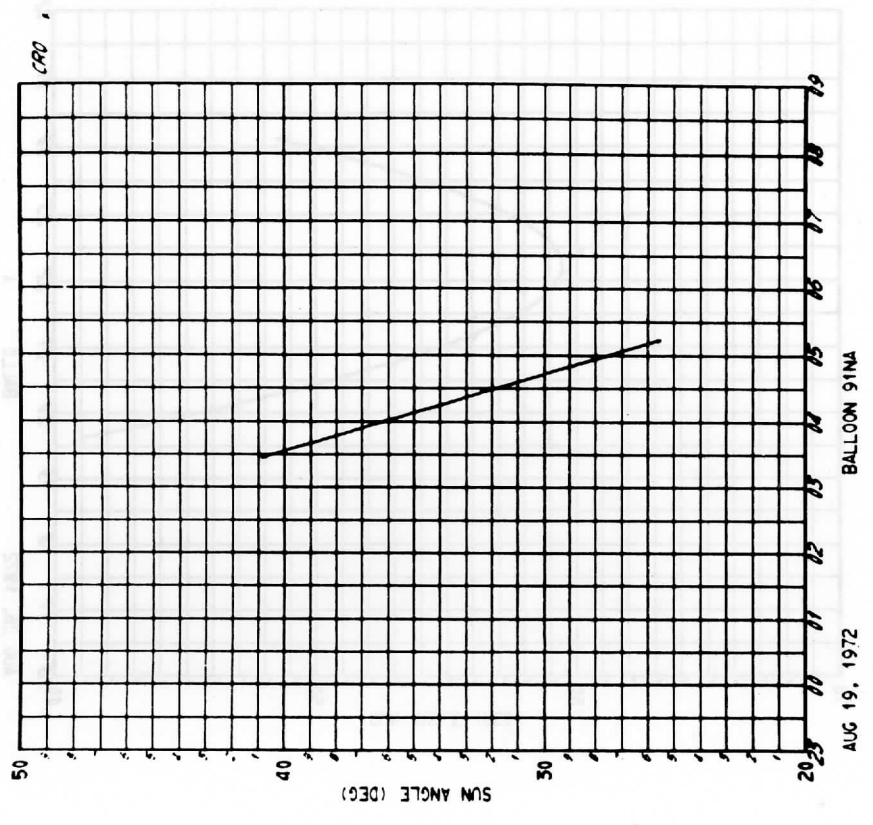
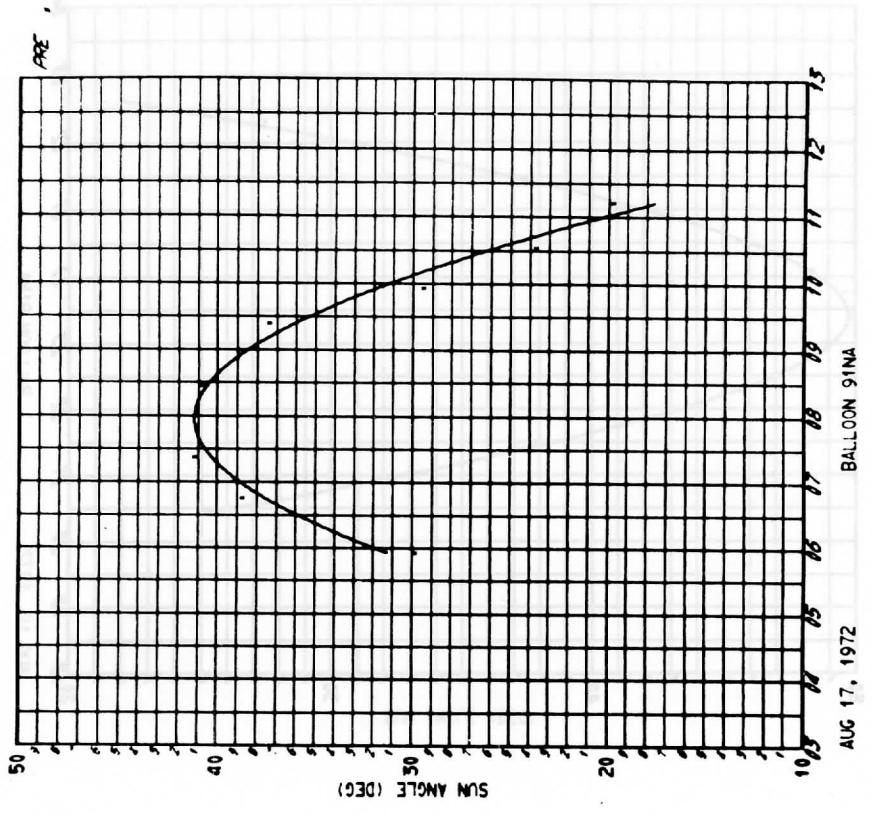
BALLOON 91NA

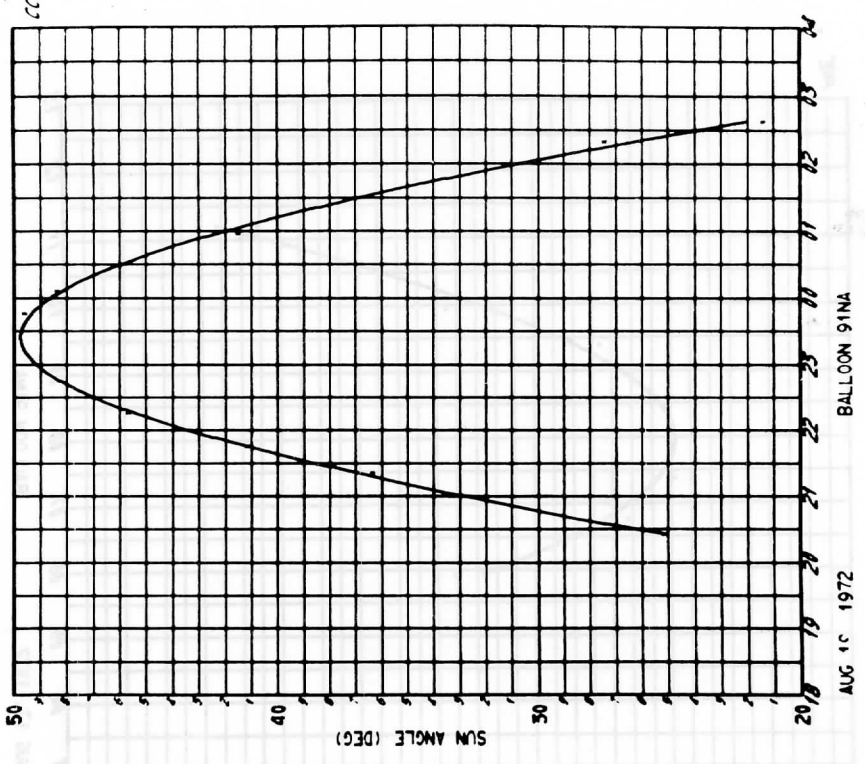
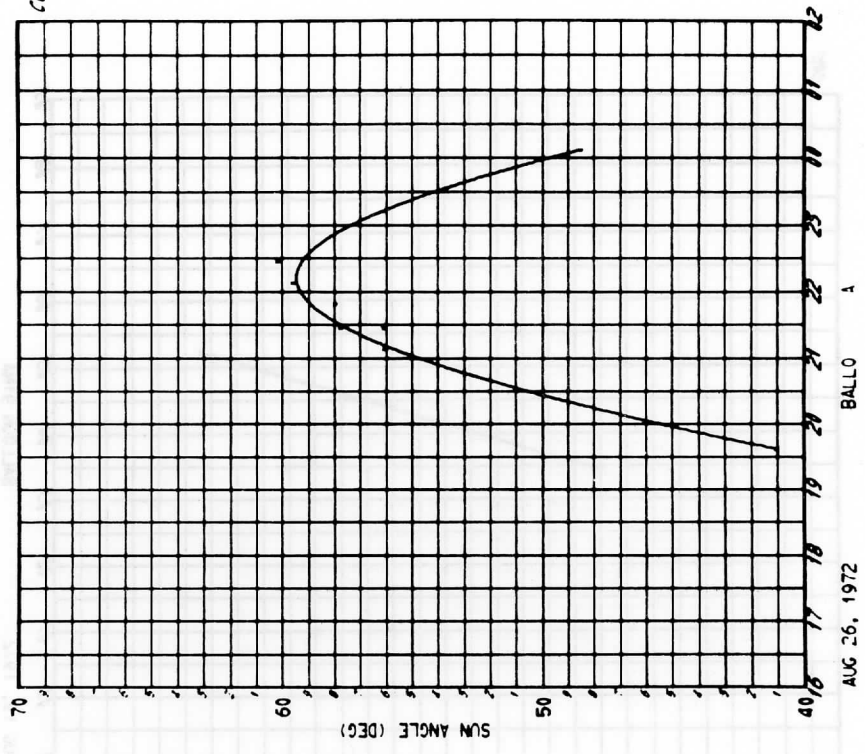
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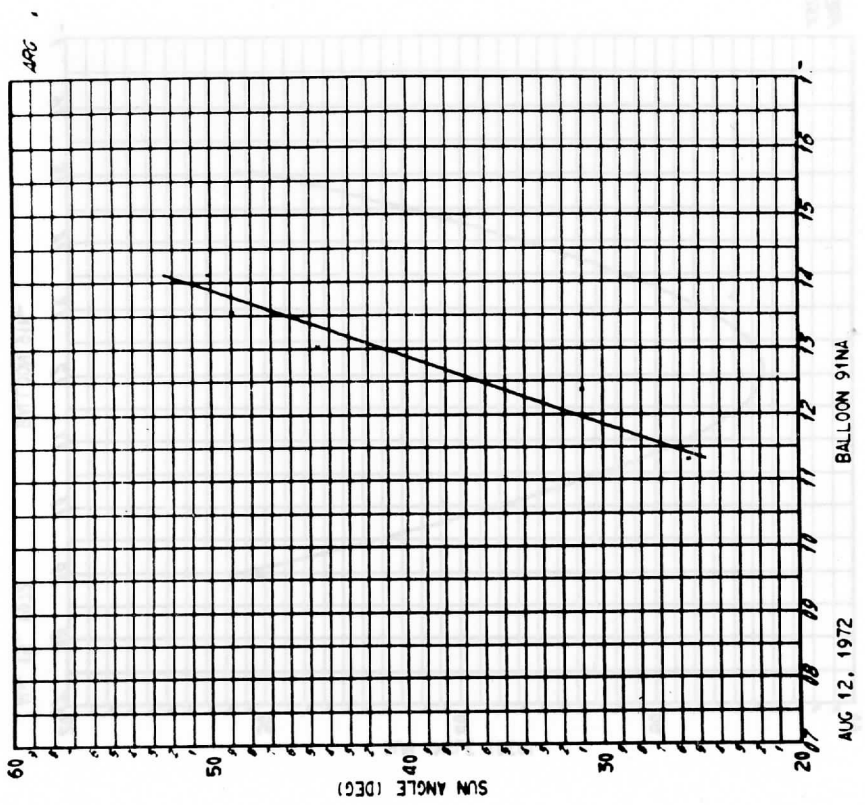
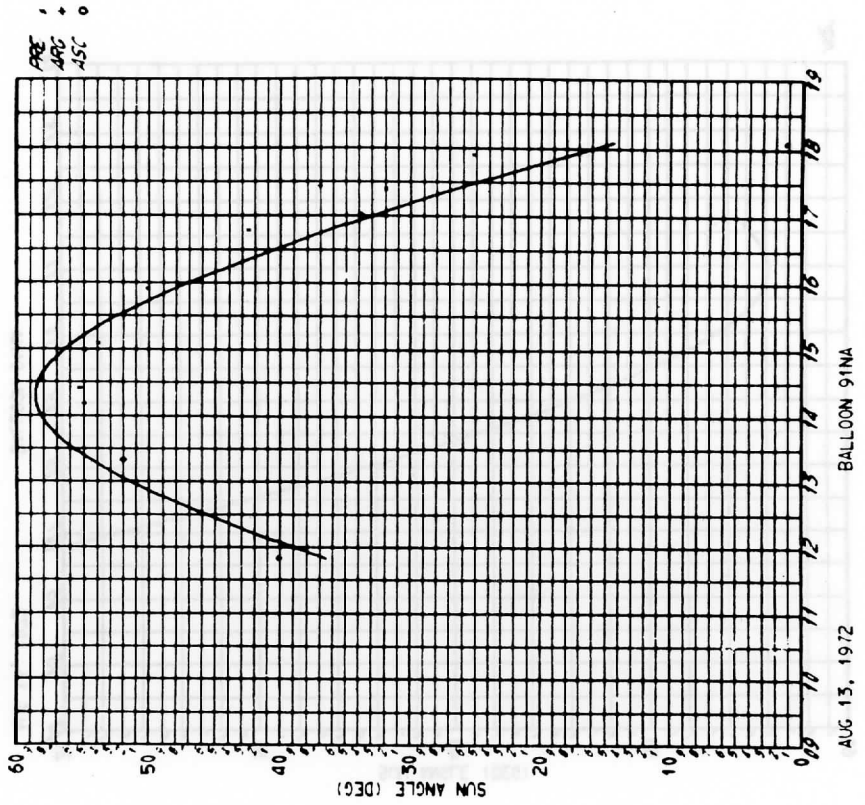


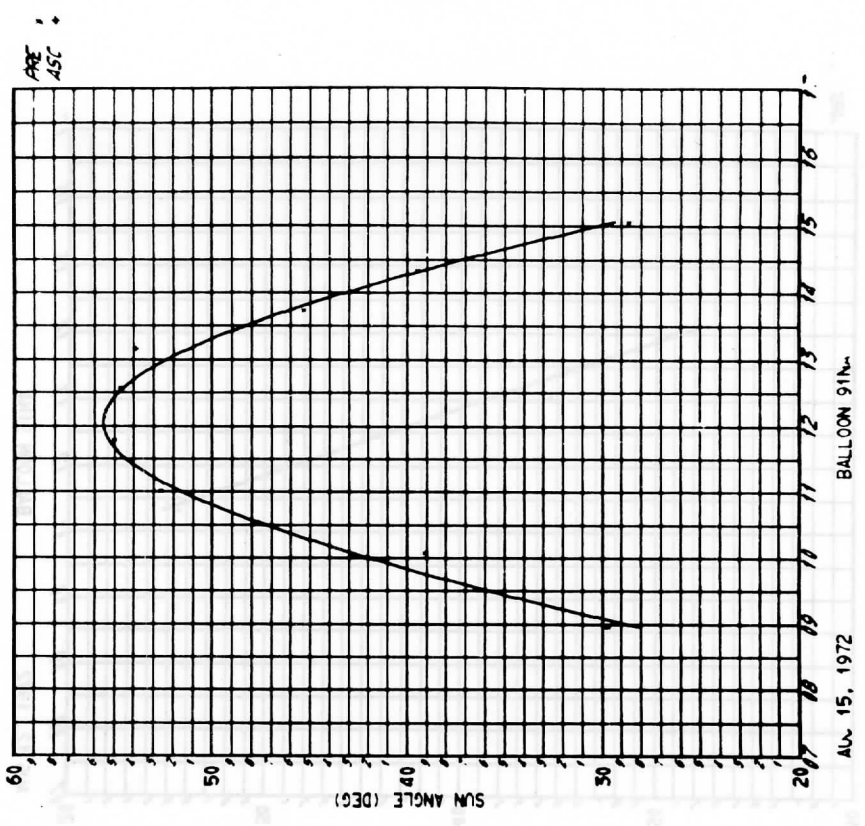
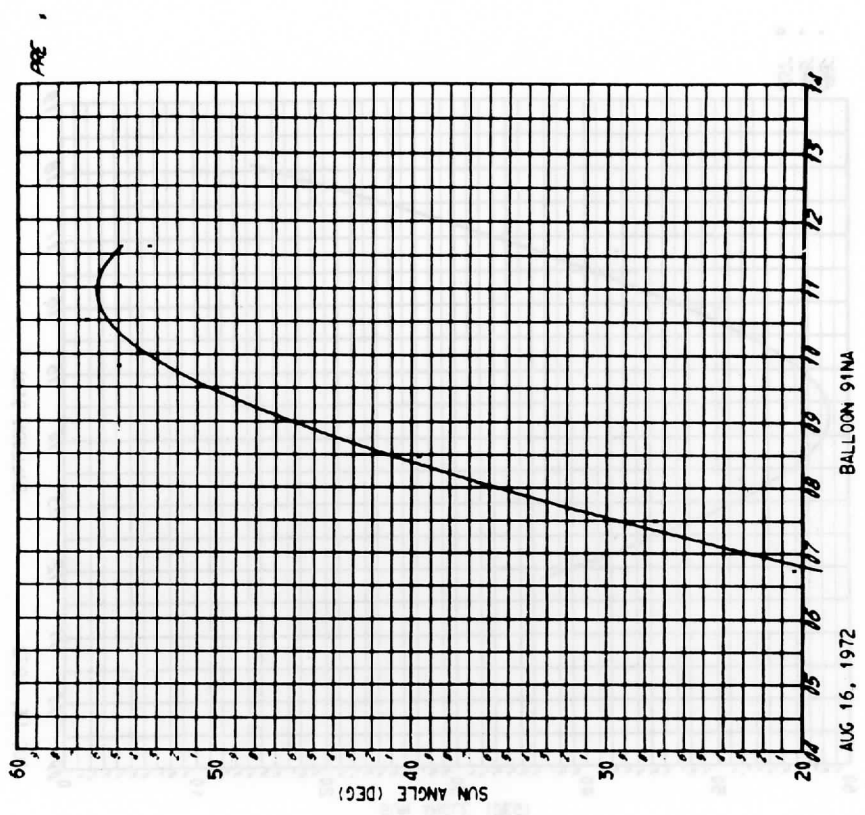
BALLOON 91NA

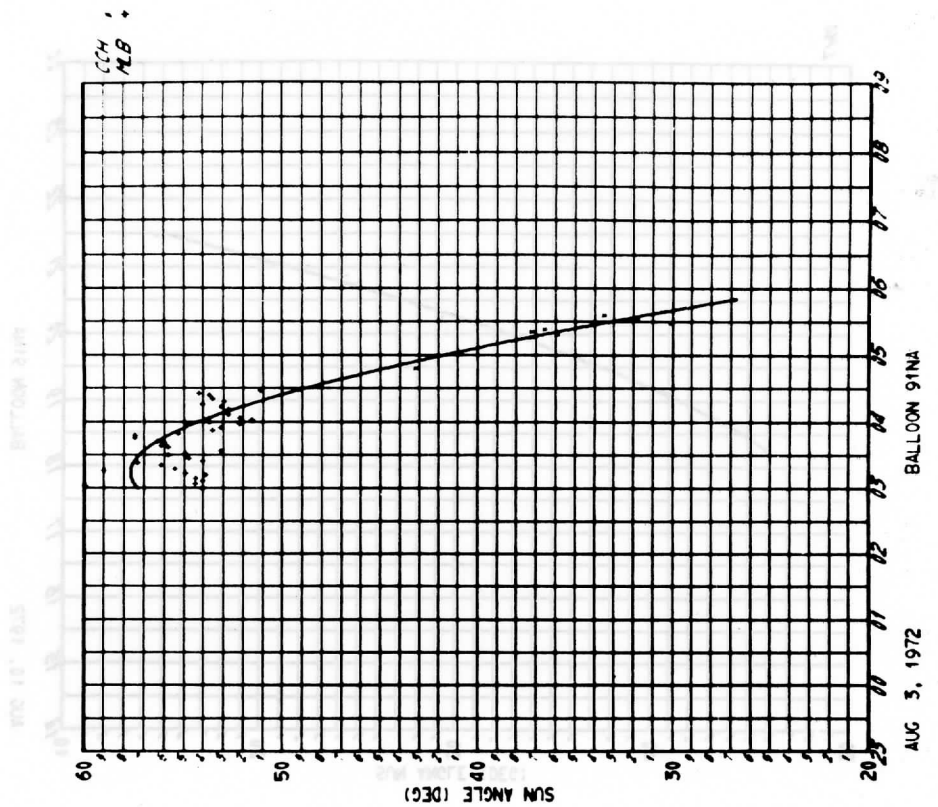
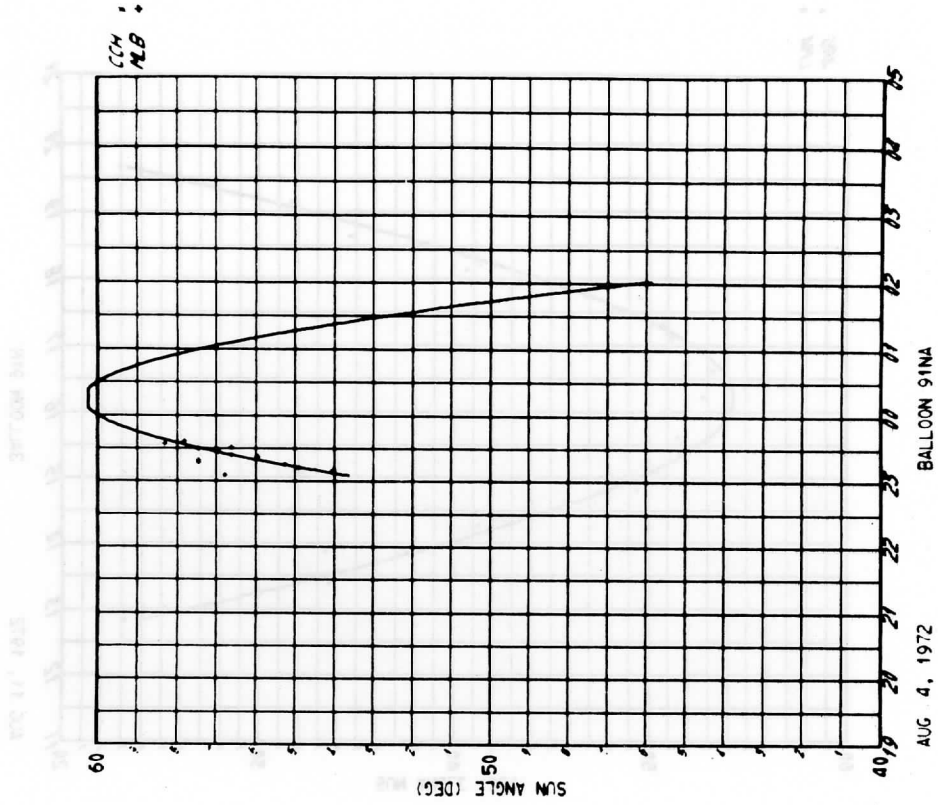
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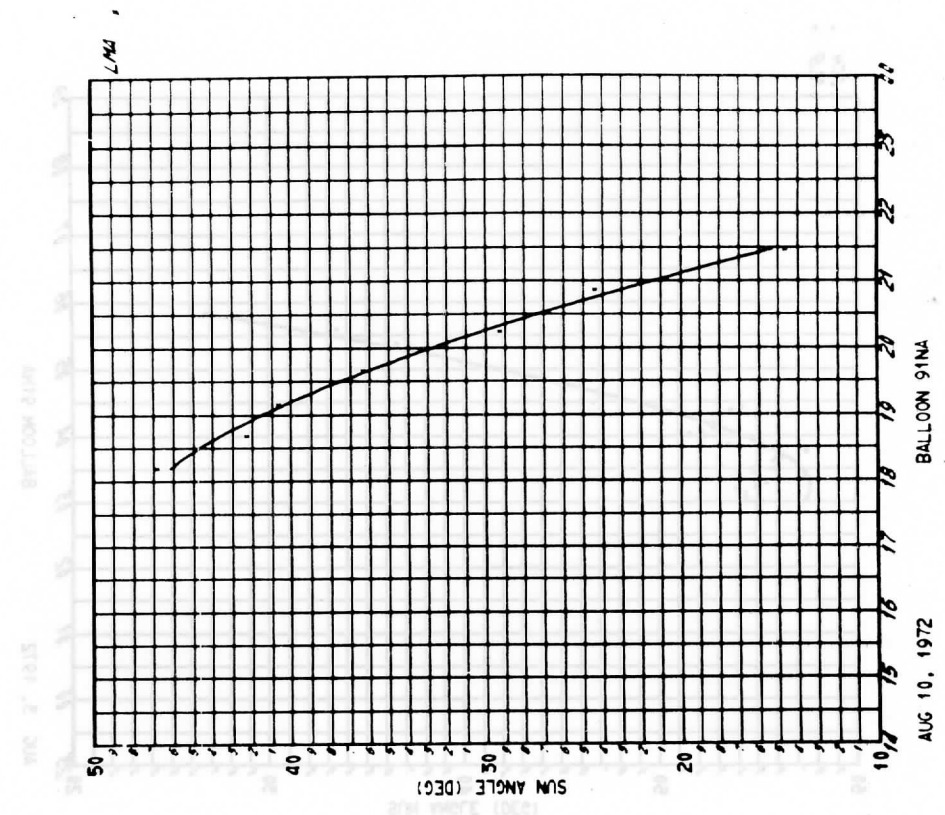
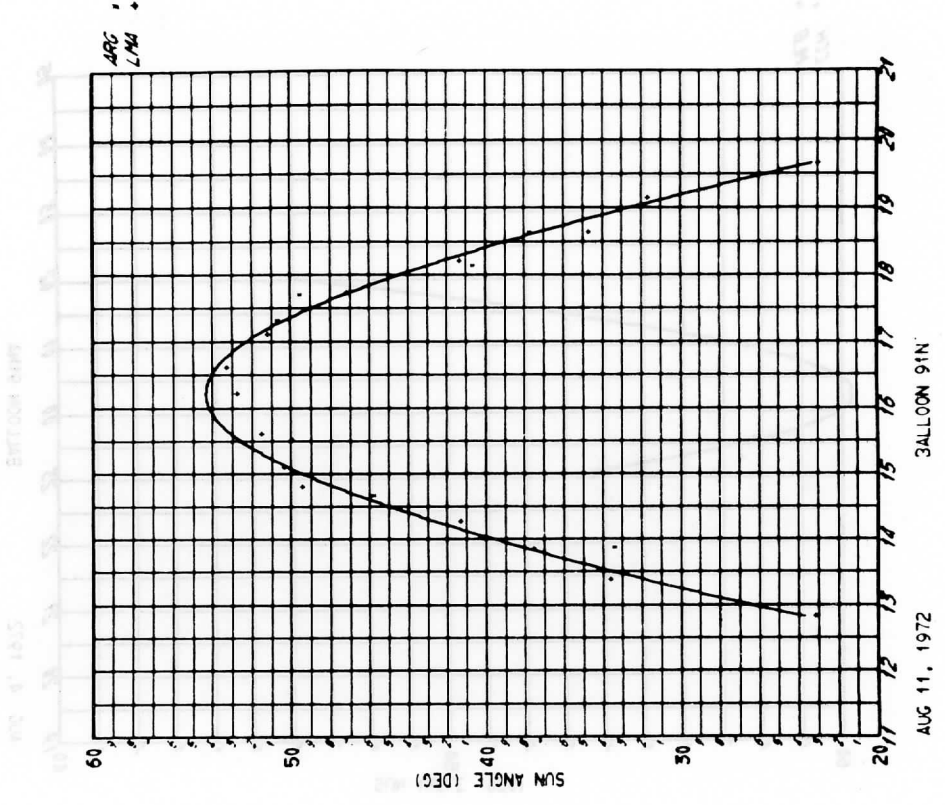


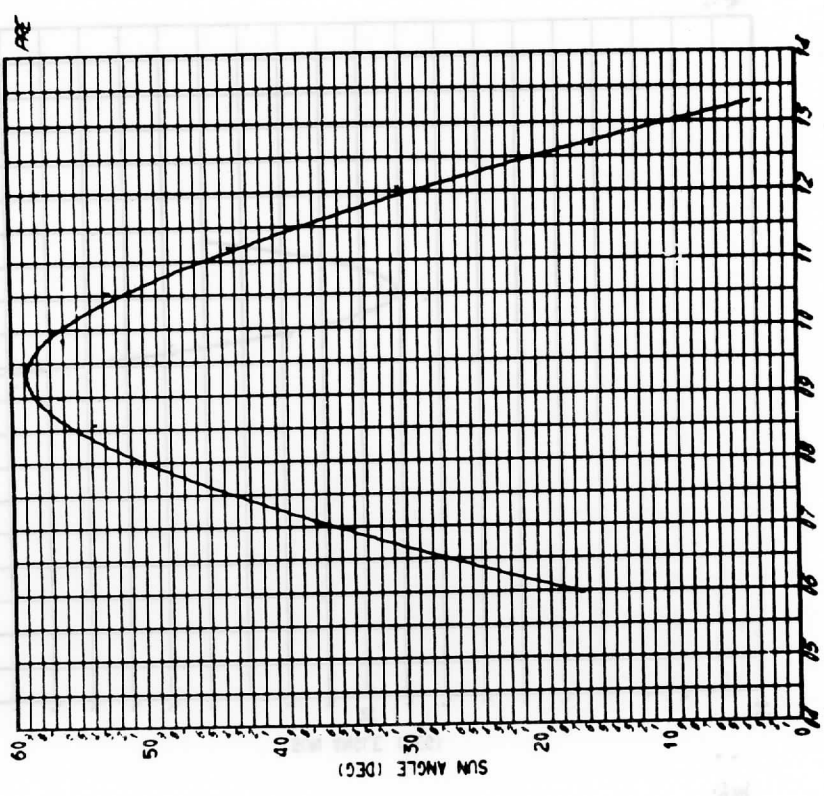






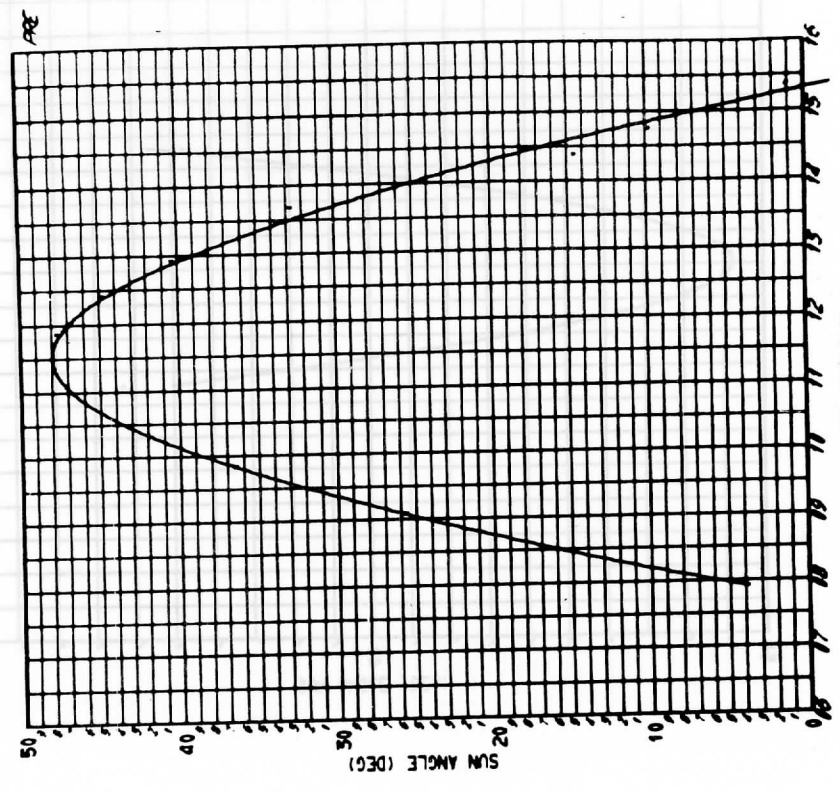






BALLOON 97BL

AUG 20, 1972

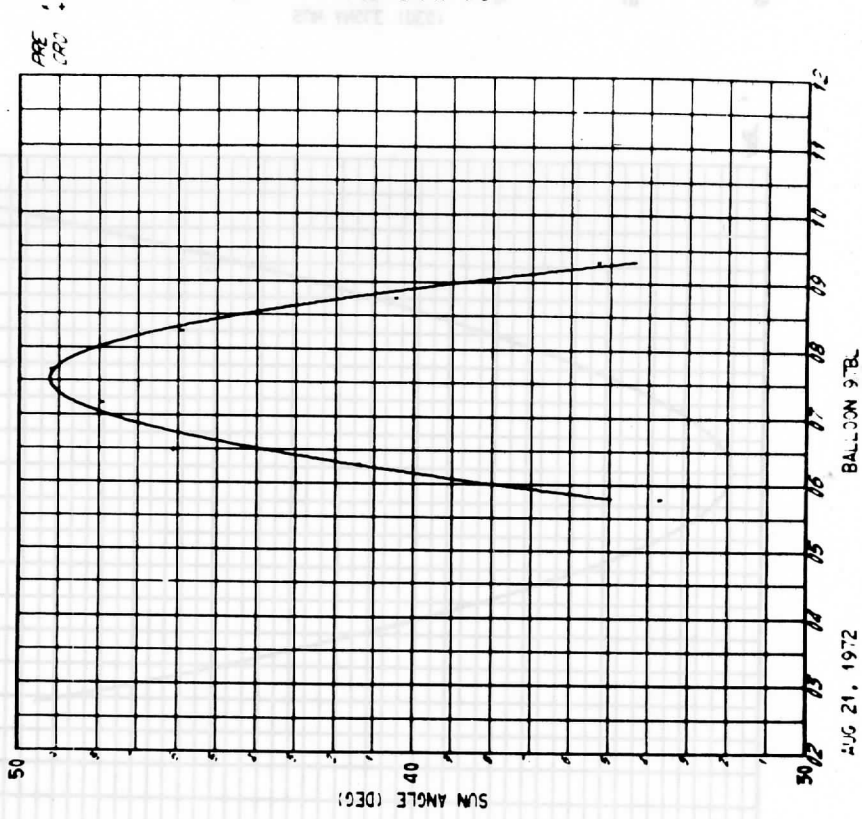


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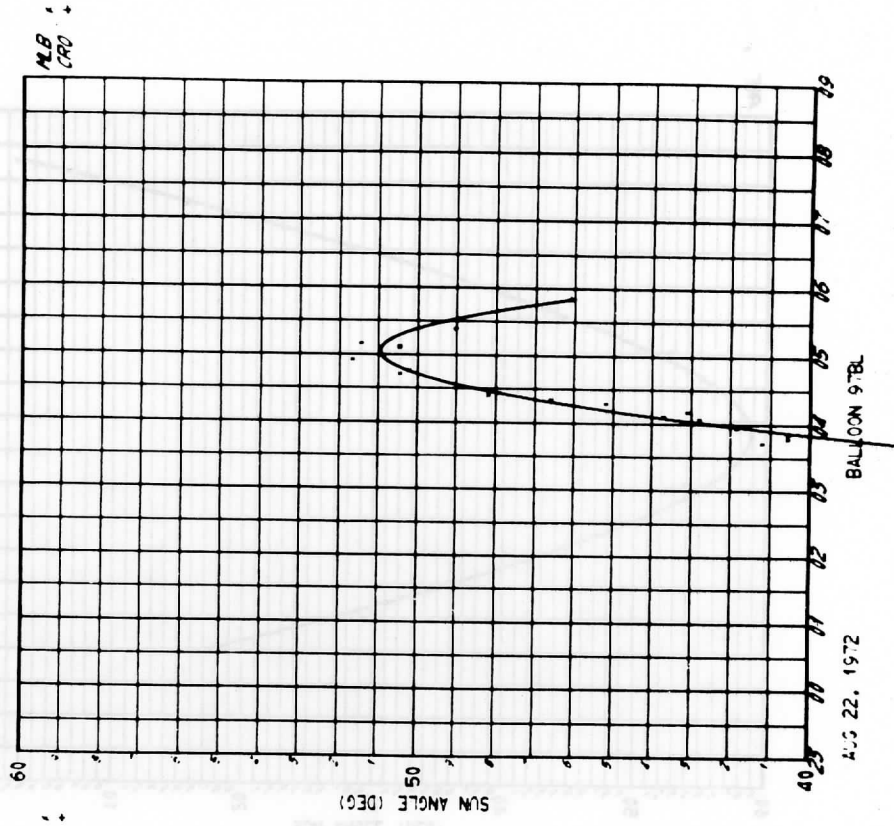
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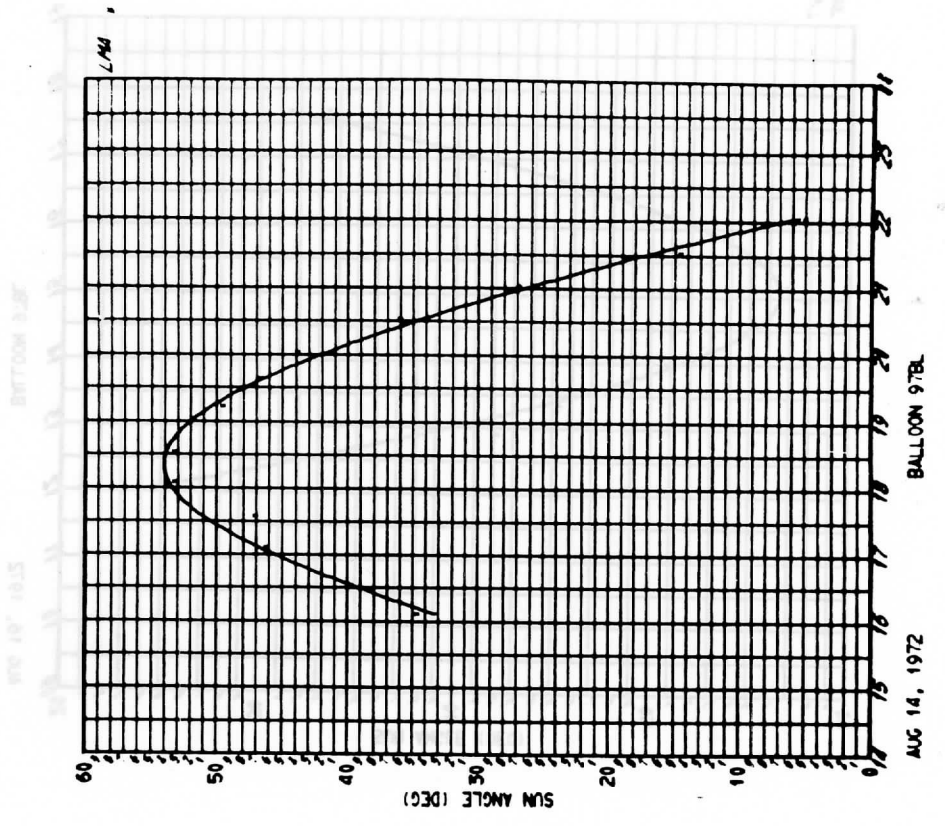
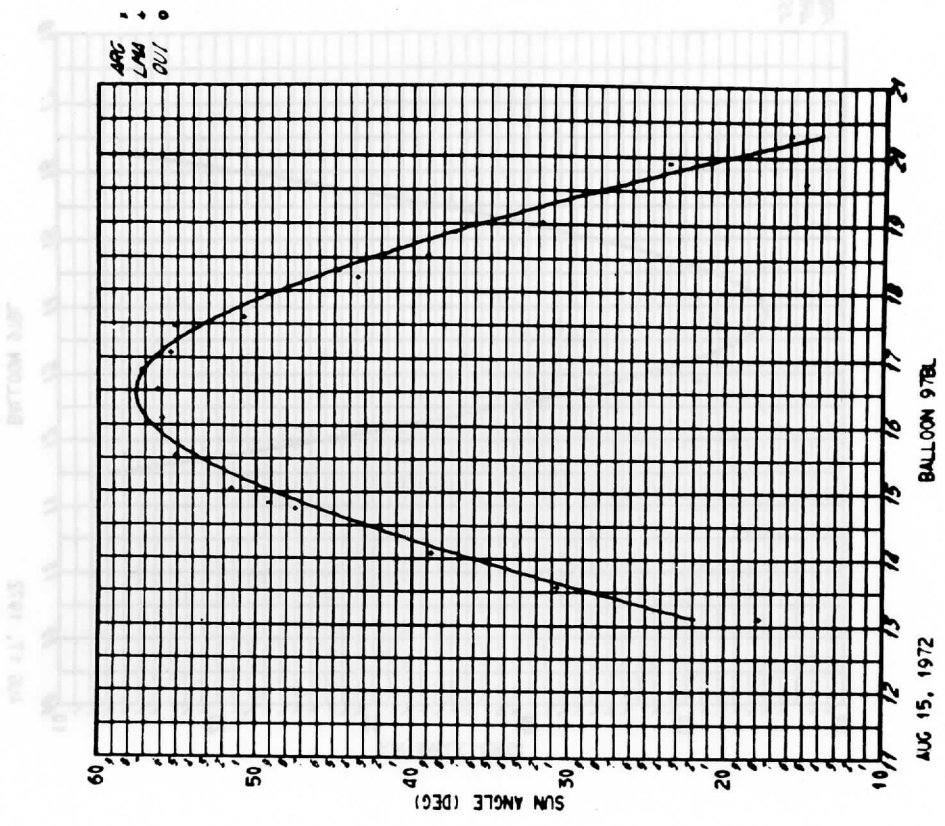
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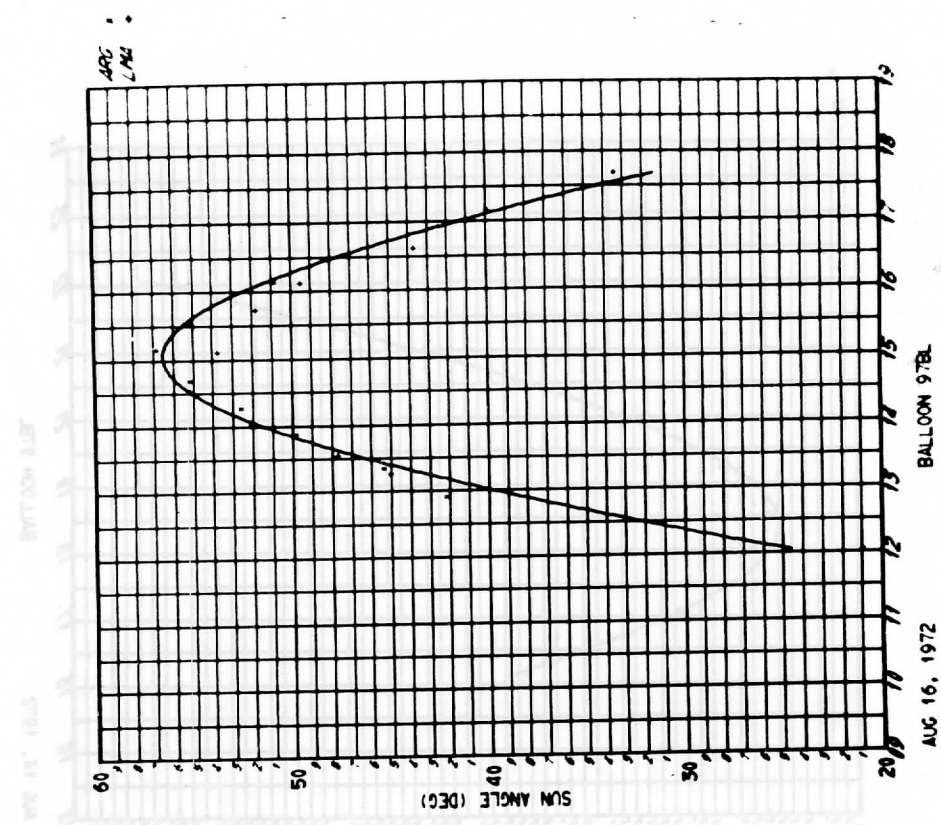
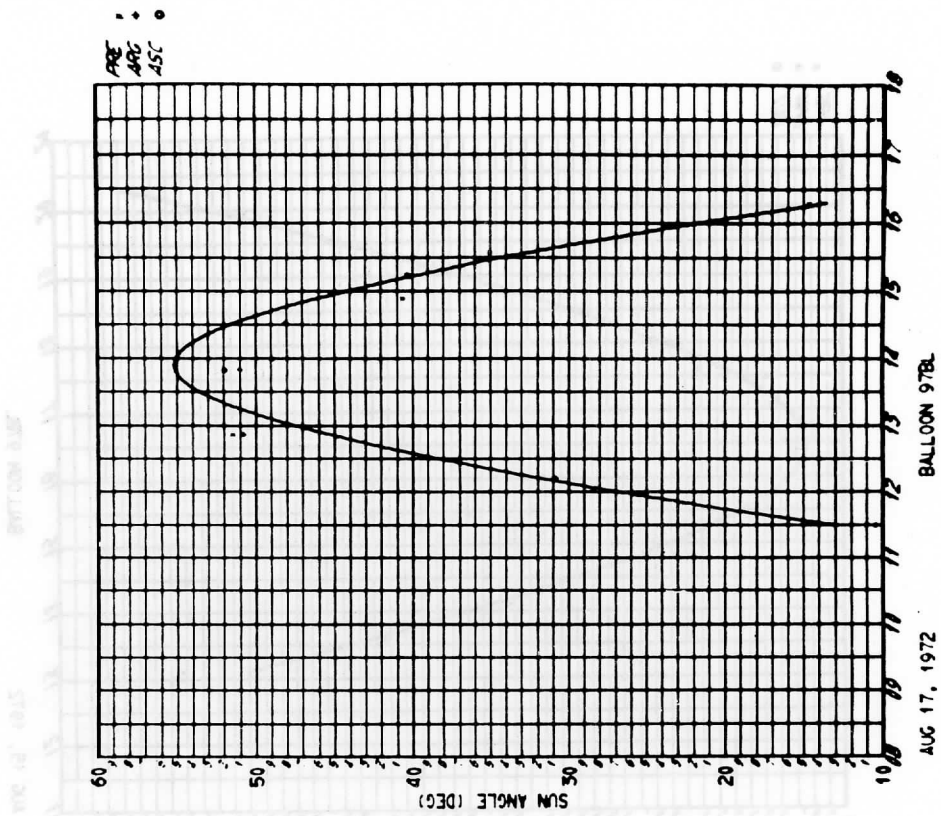


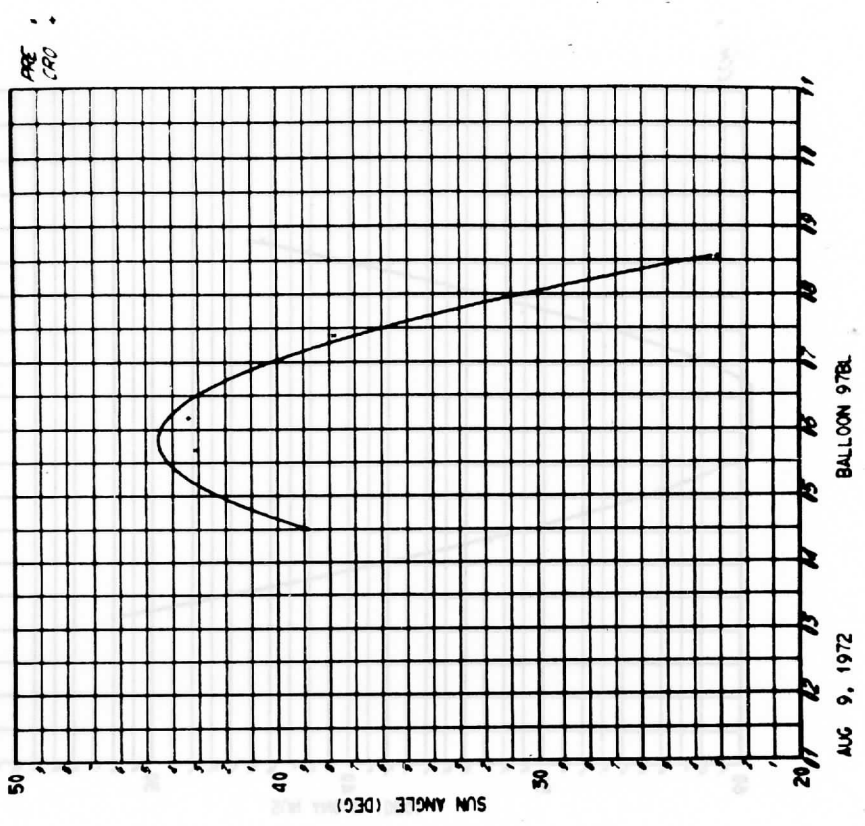
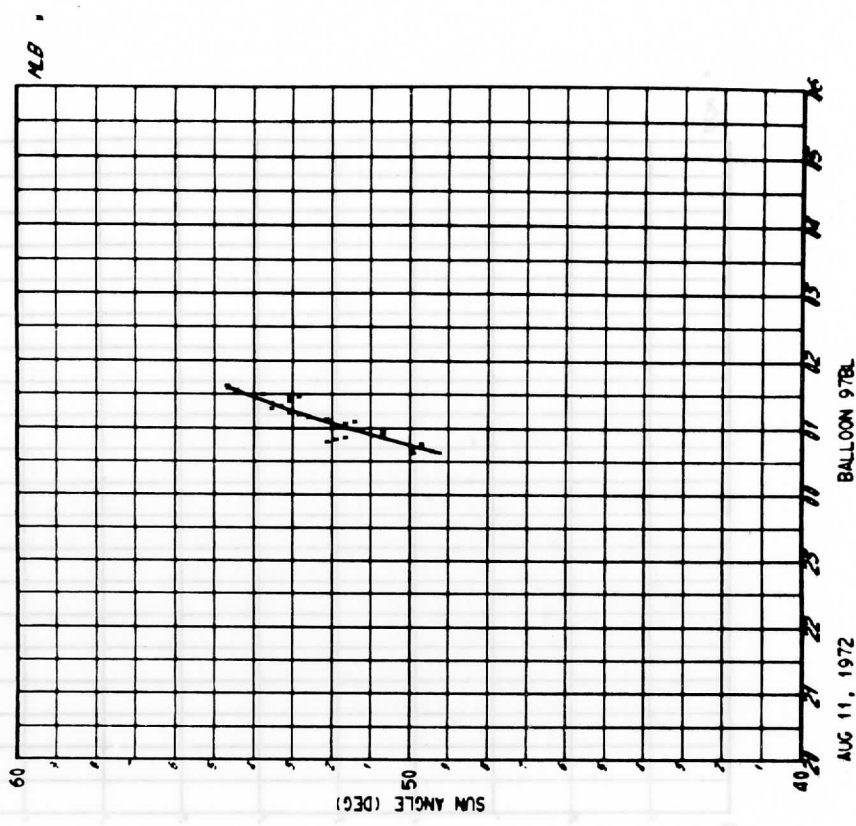
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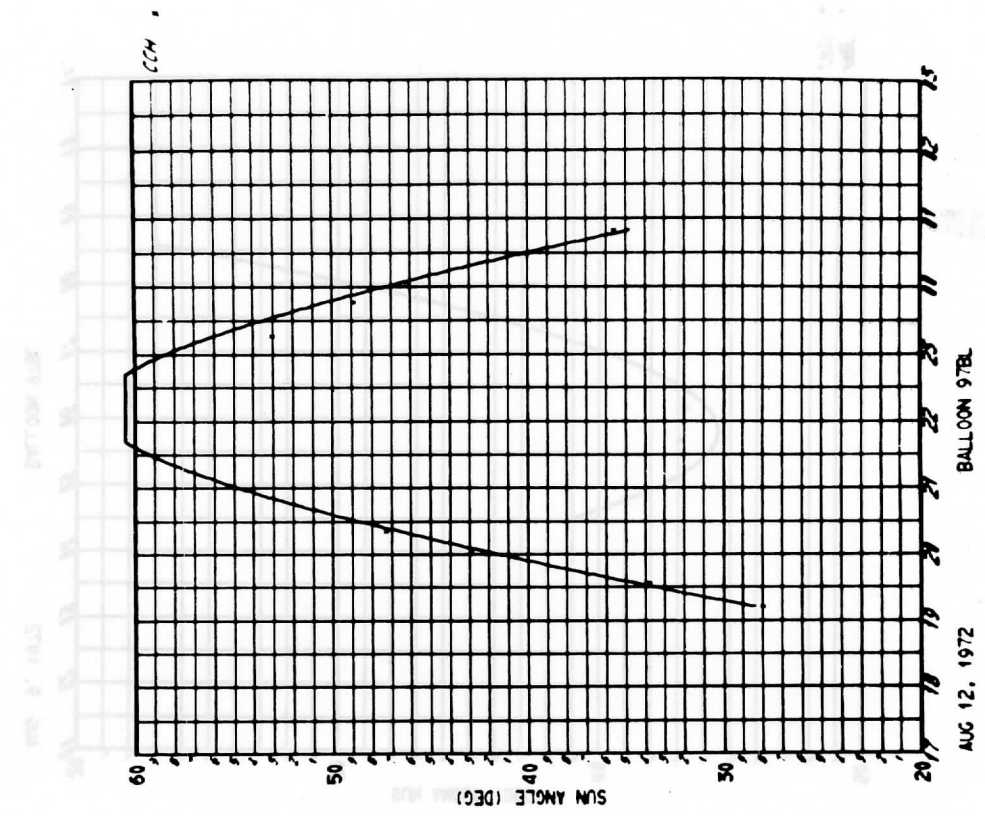
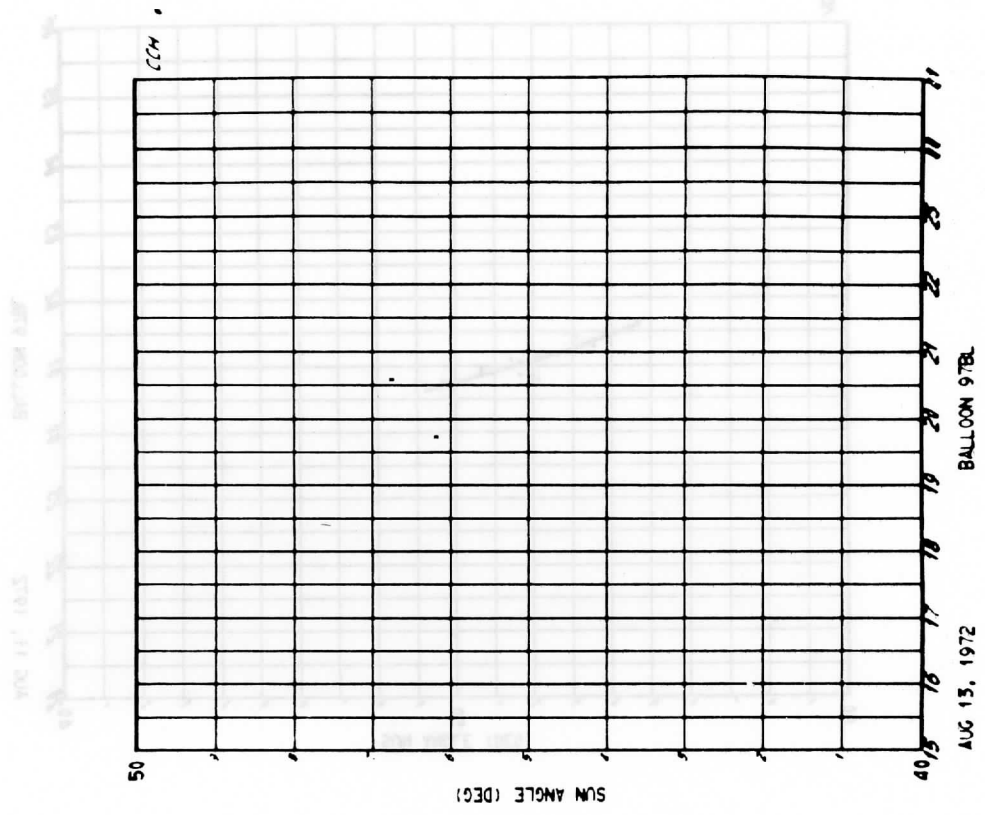
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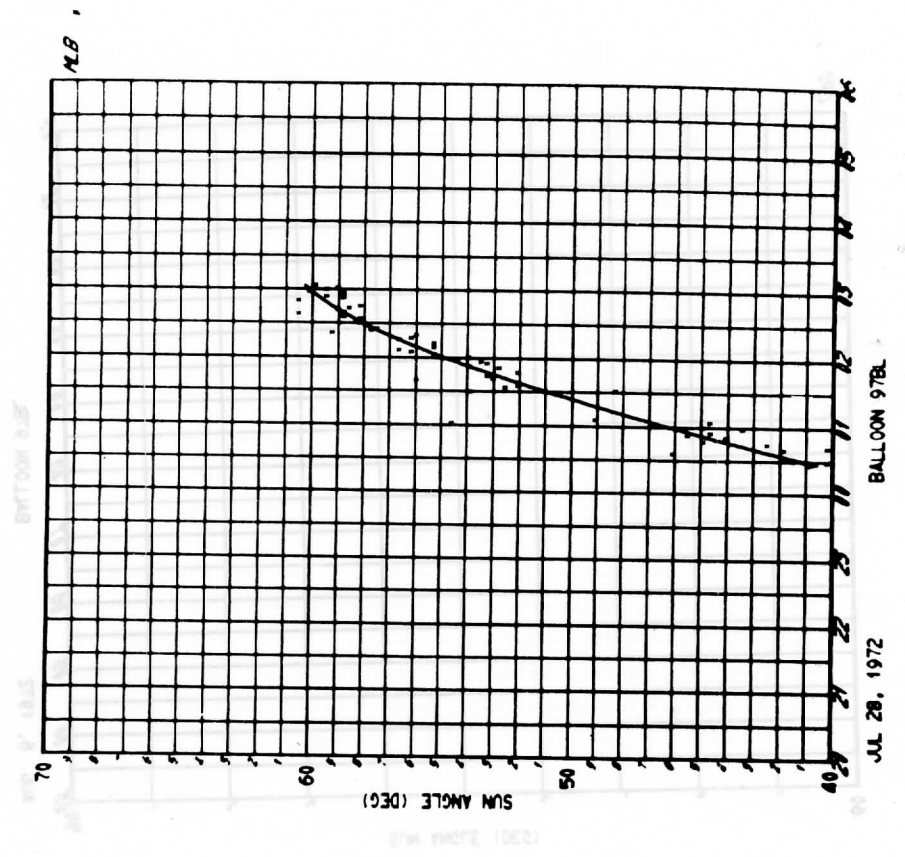
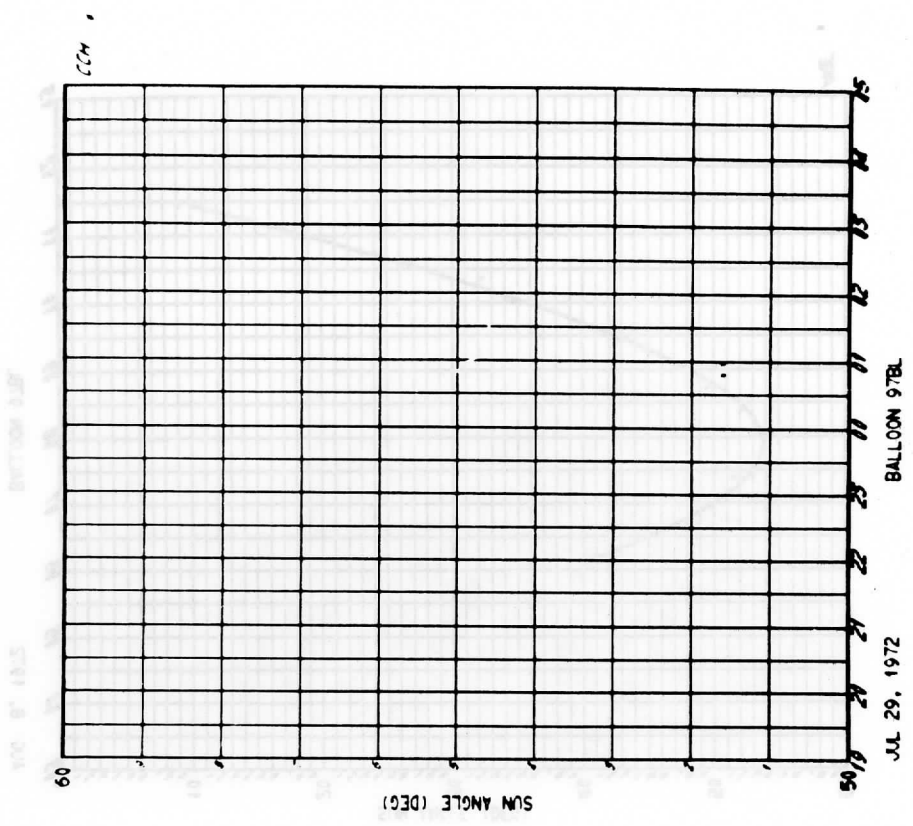


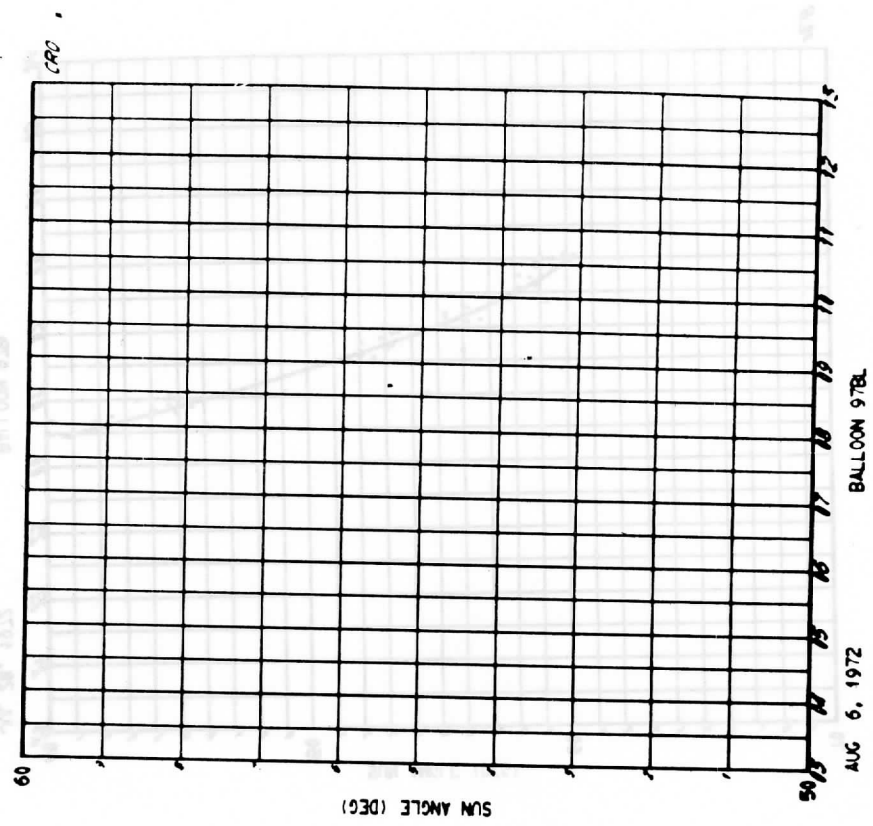
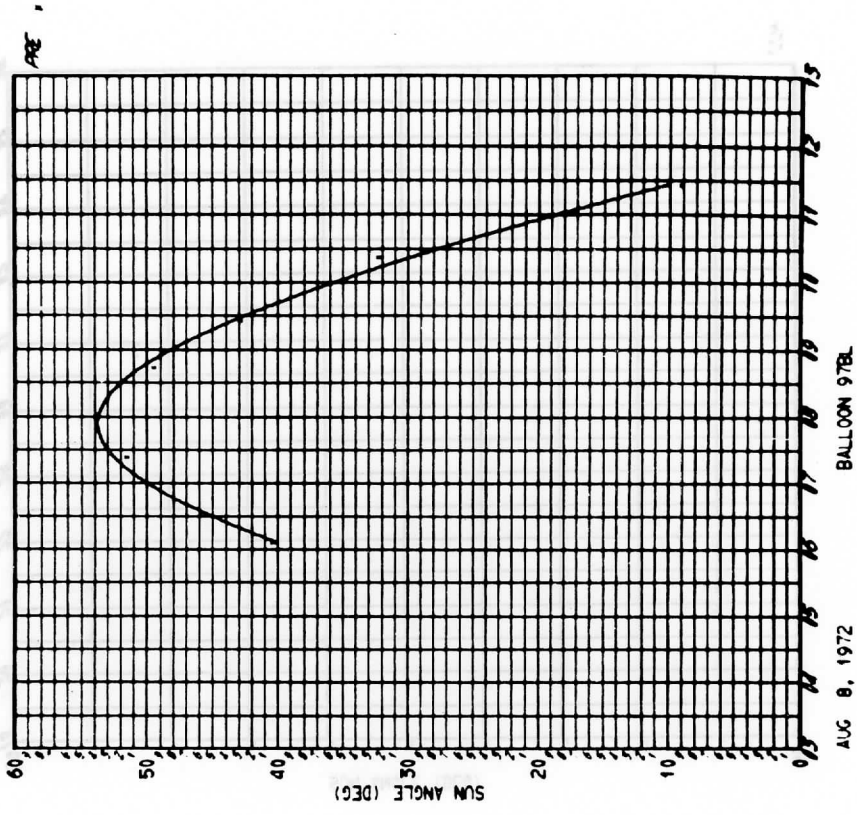


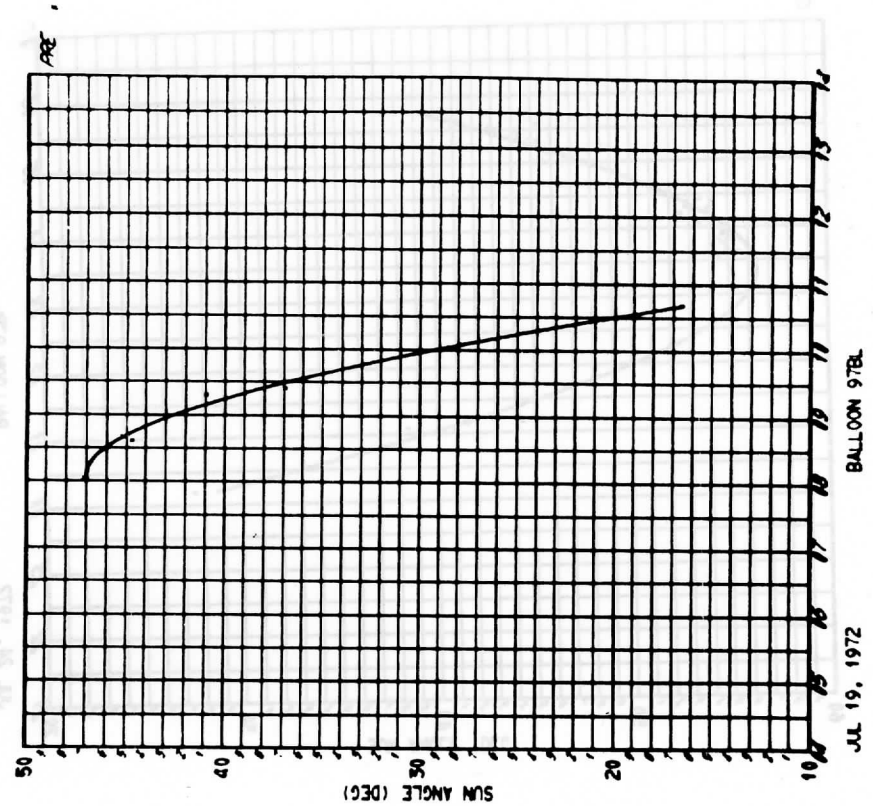
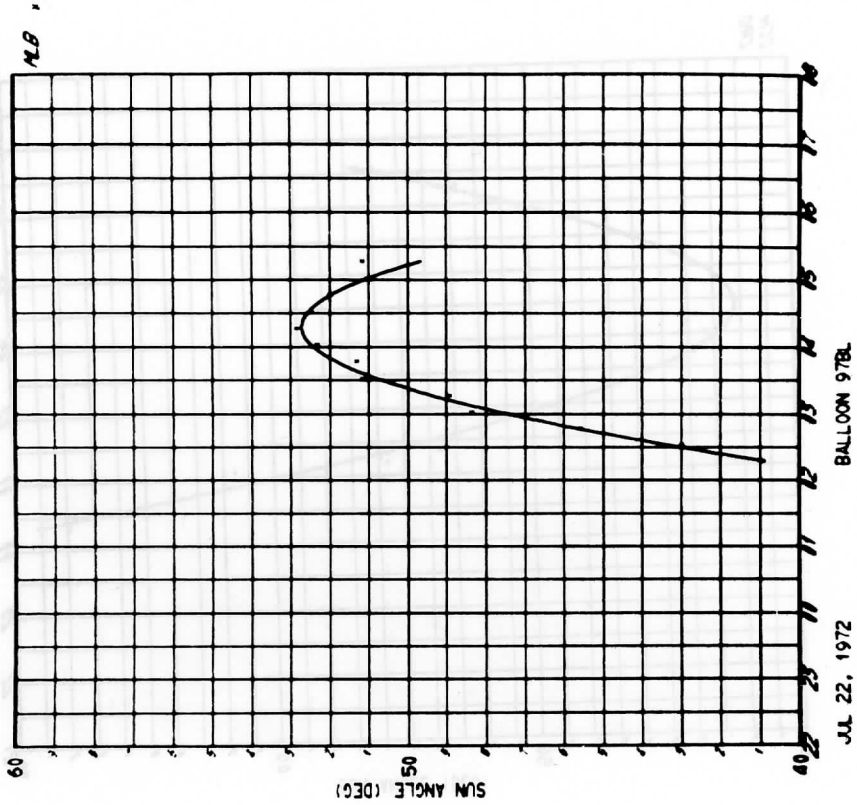


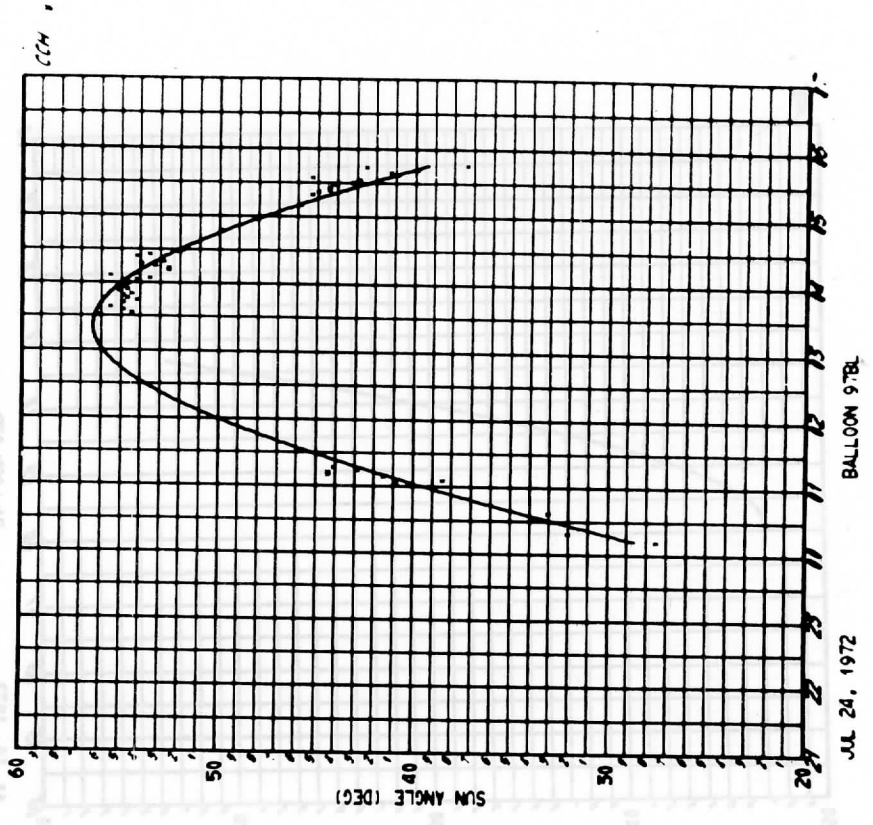
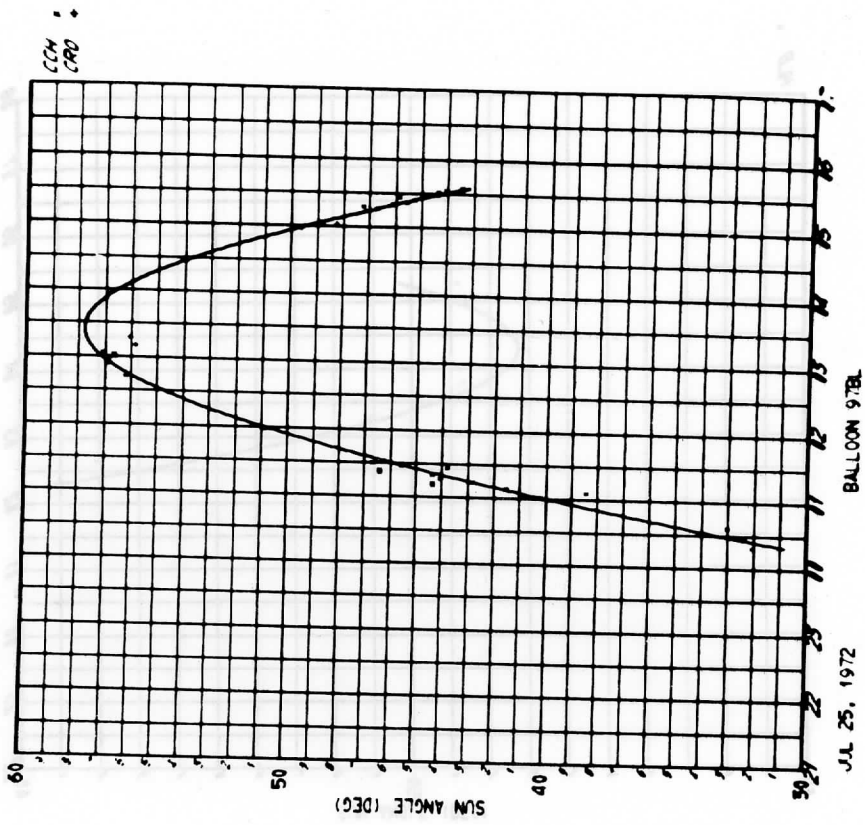


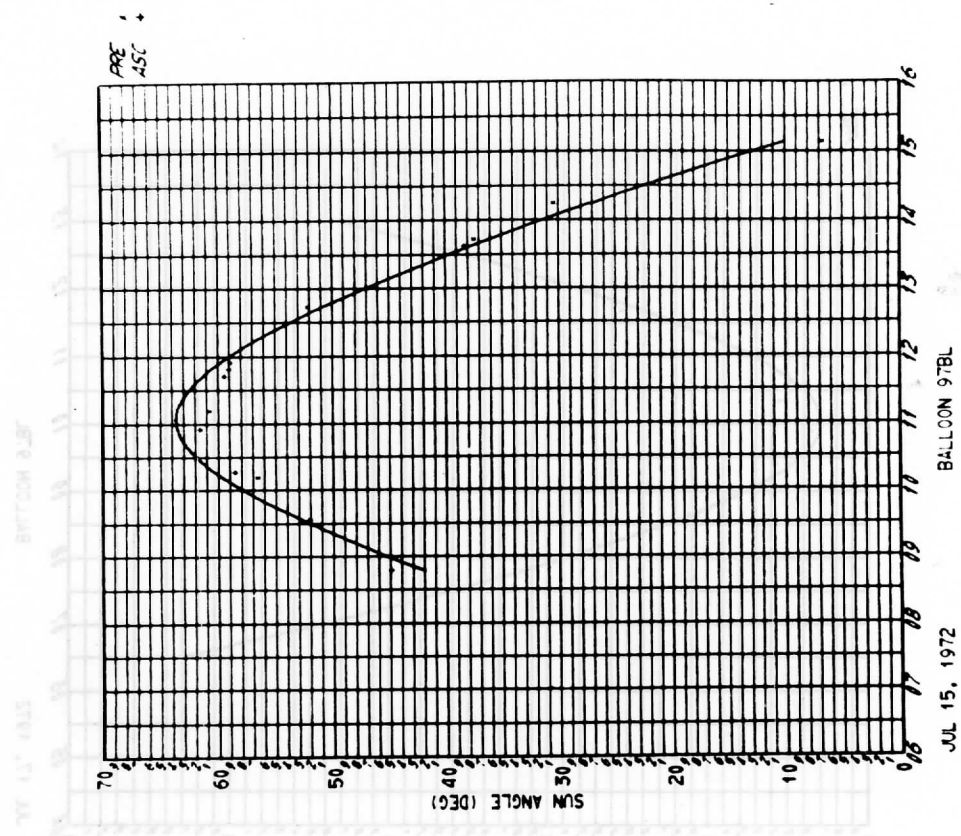
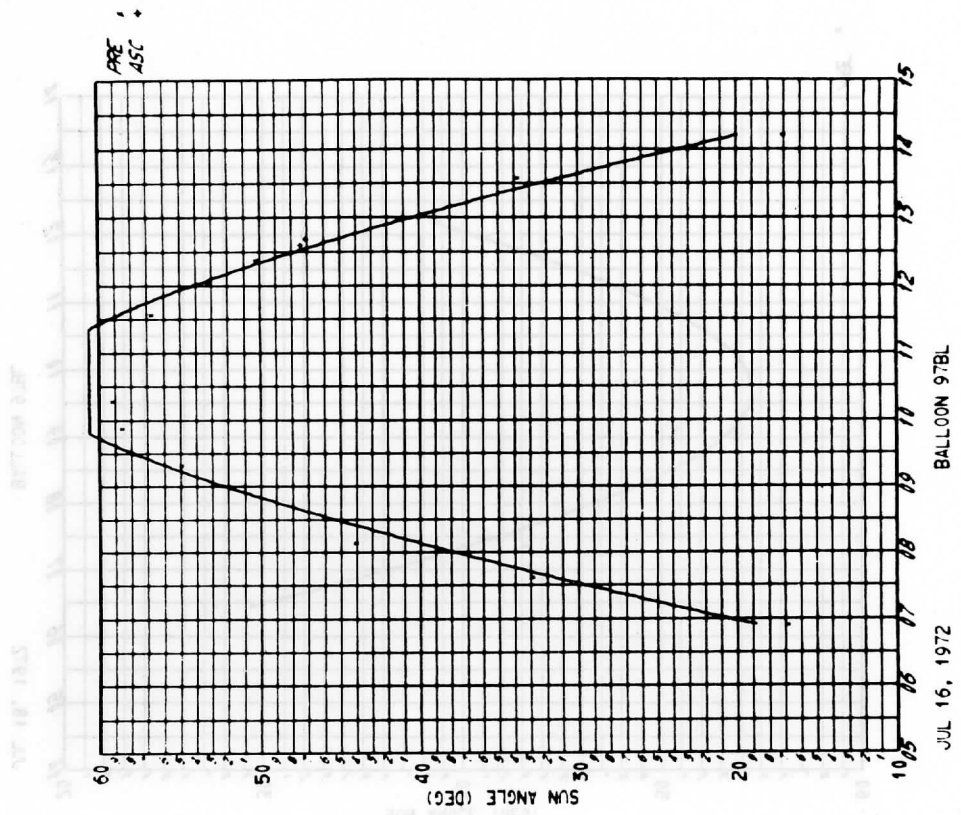


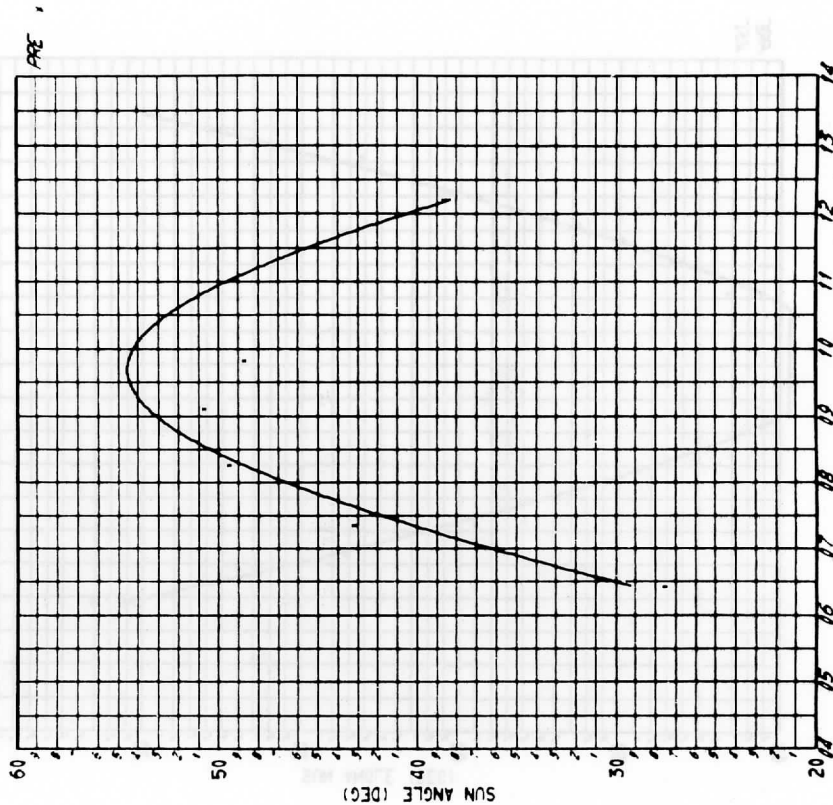




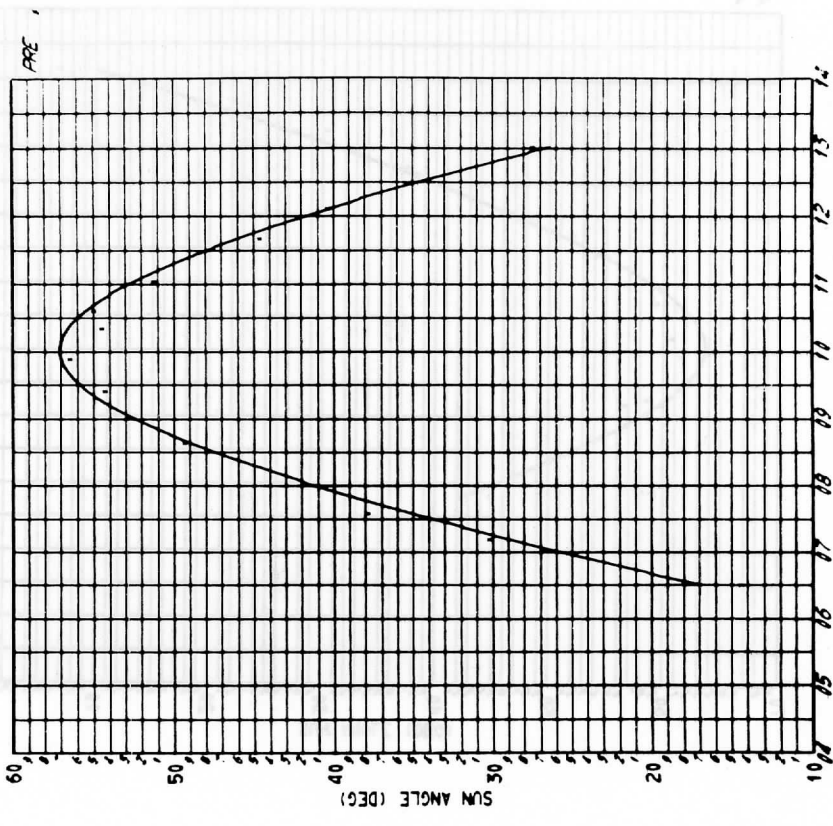








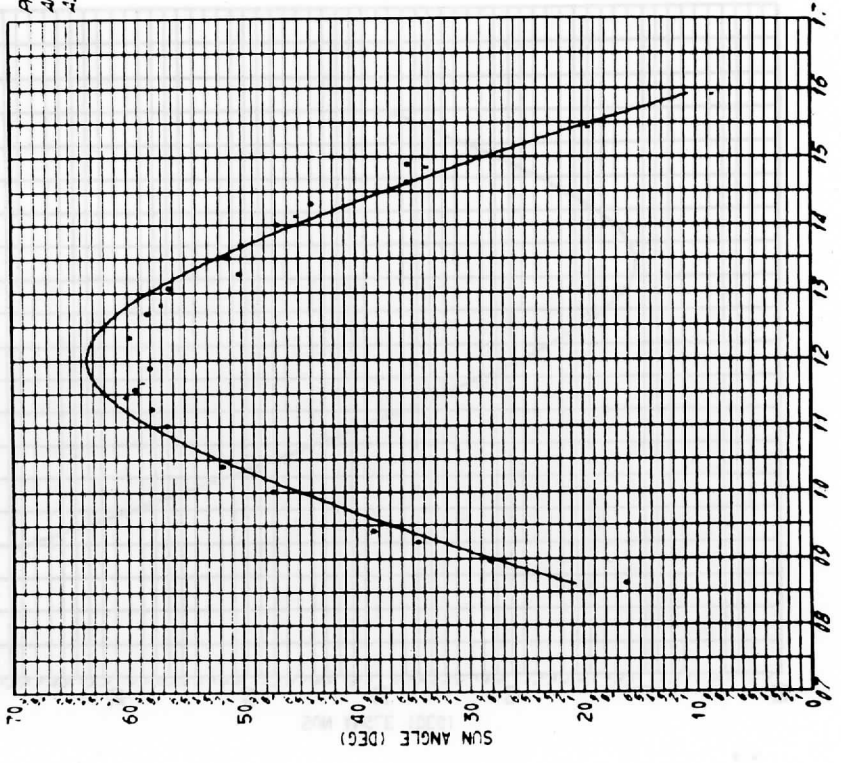
JUL 18, 1972 BALLOON 97BL



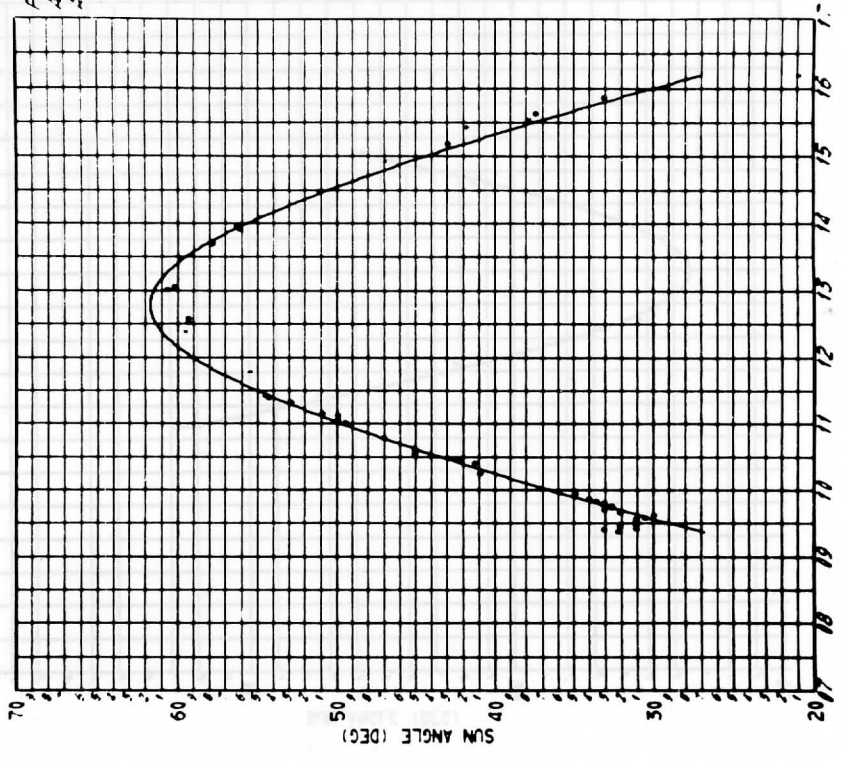
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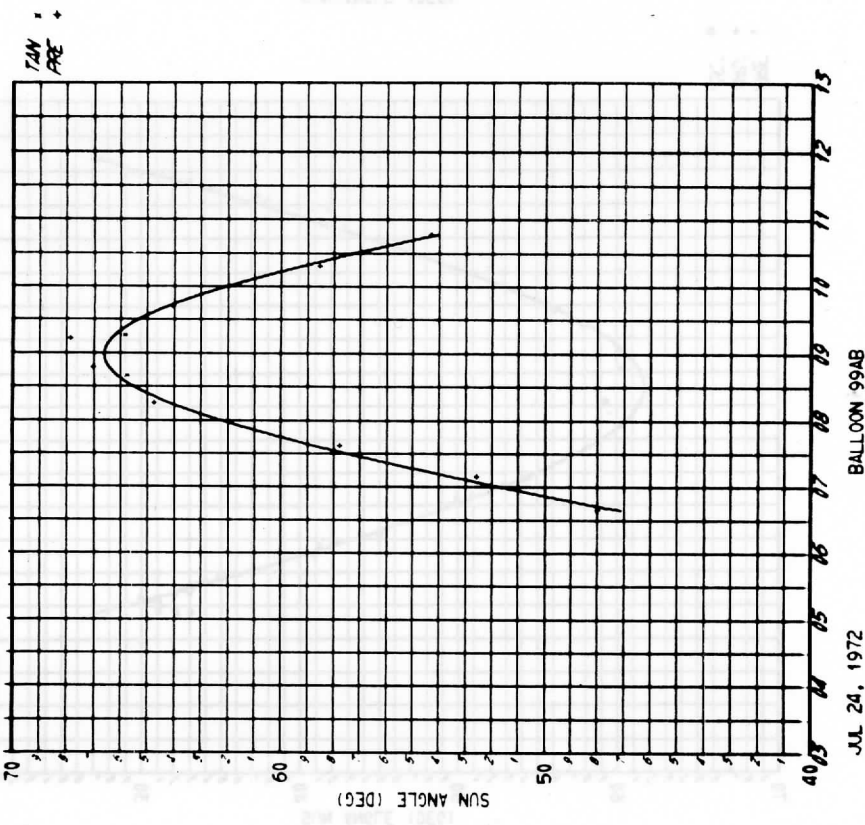
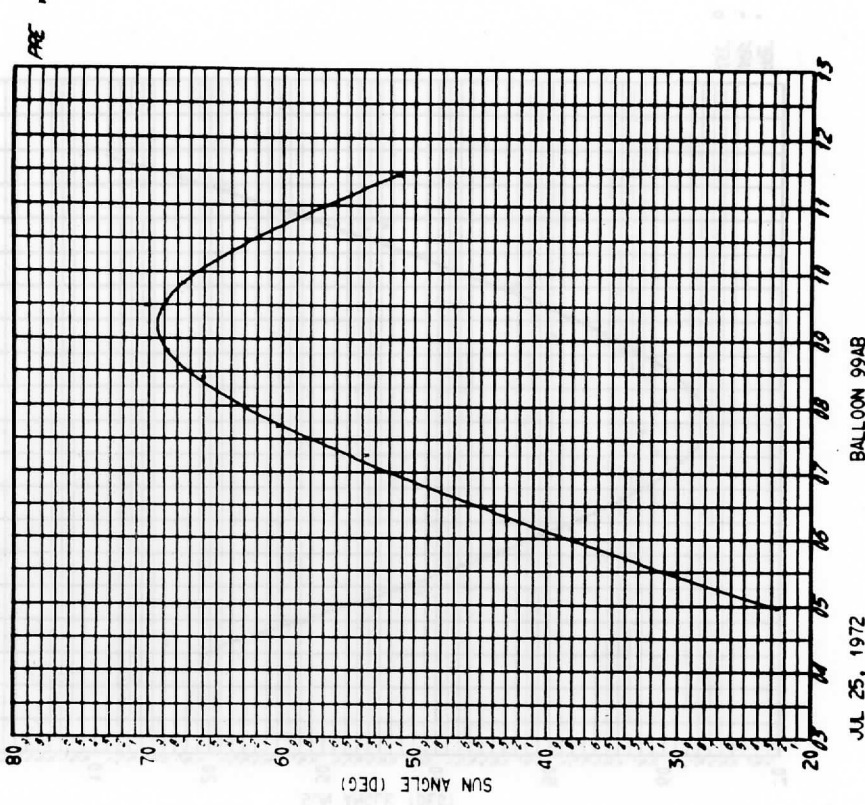
0234

PRE 1
ARG +
-51 0



PRE 1
ARG +
-51 0



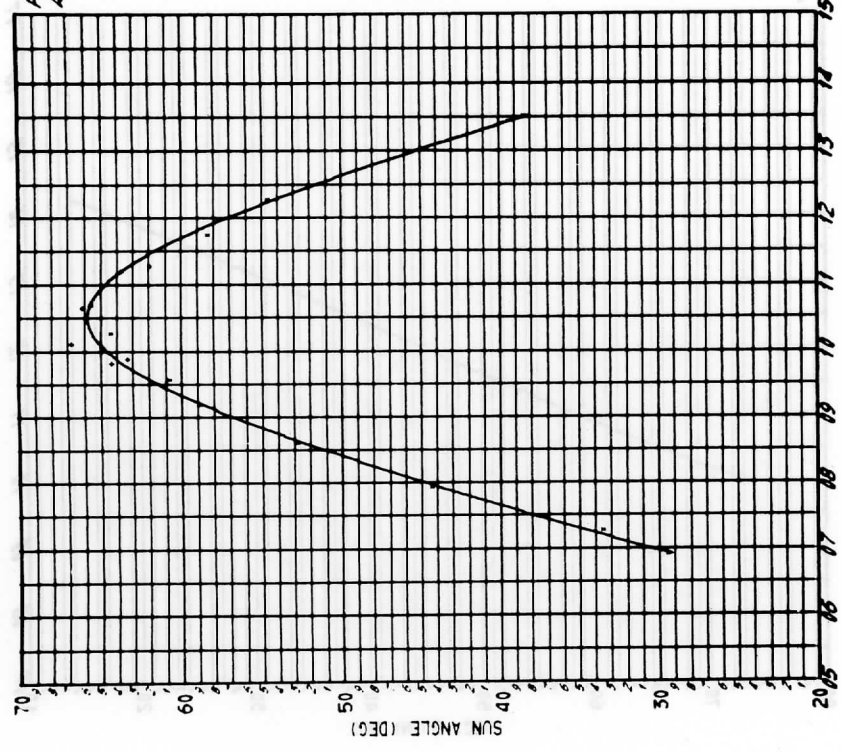


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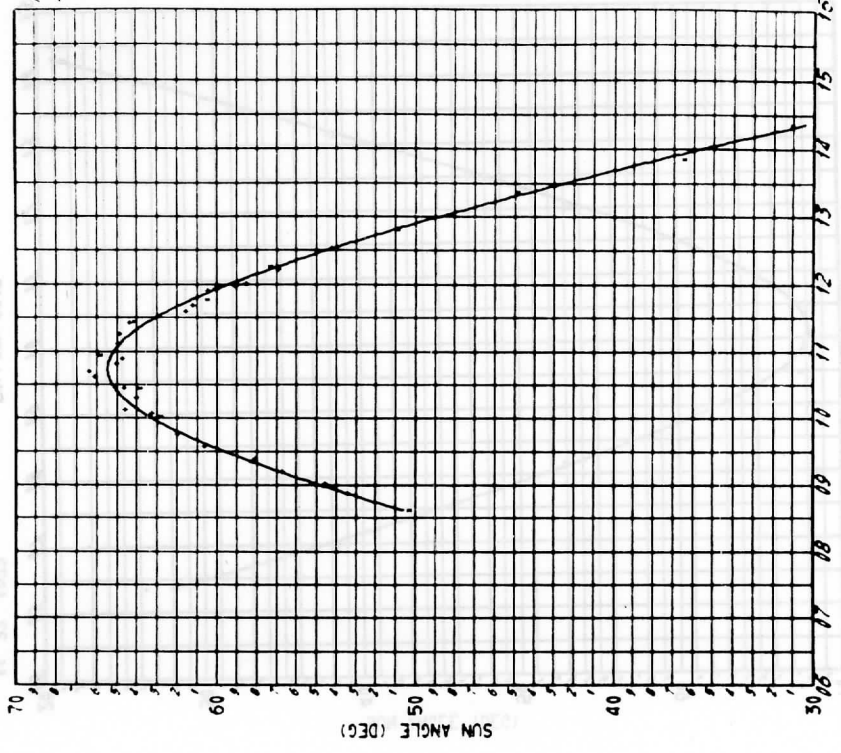
BT 30' 10.5

PRE
ASC

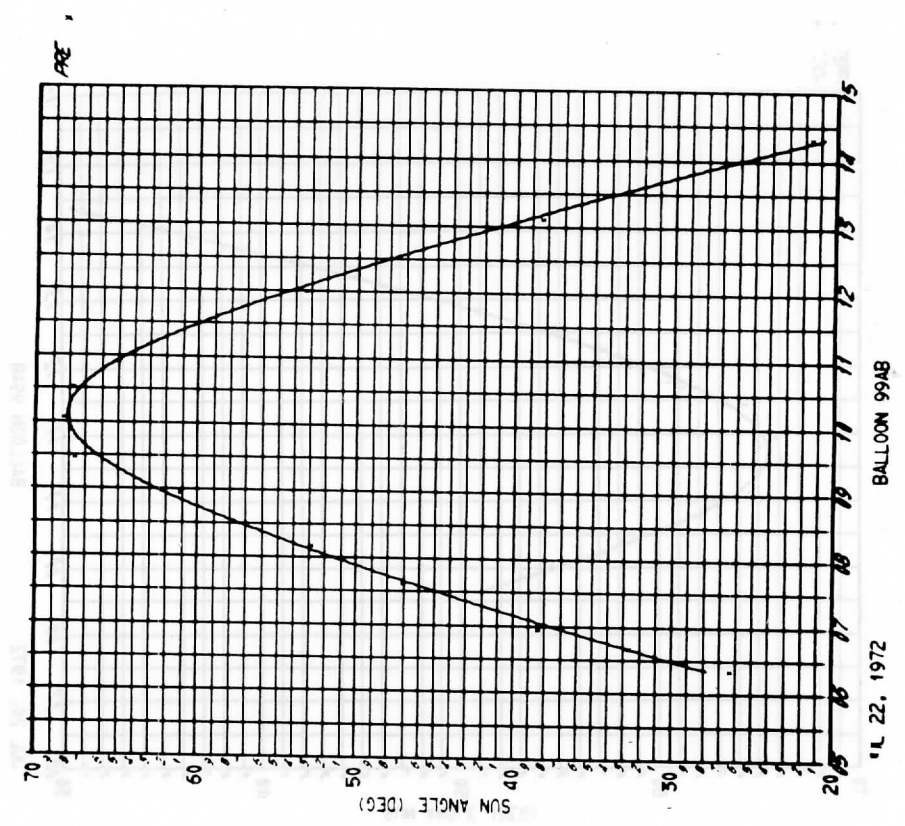
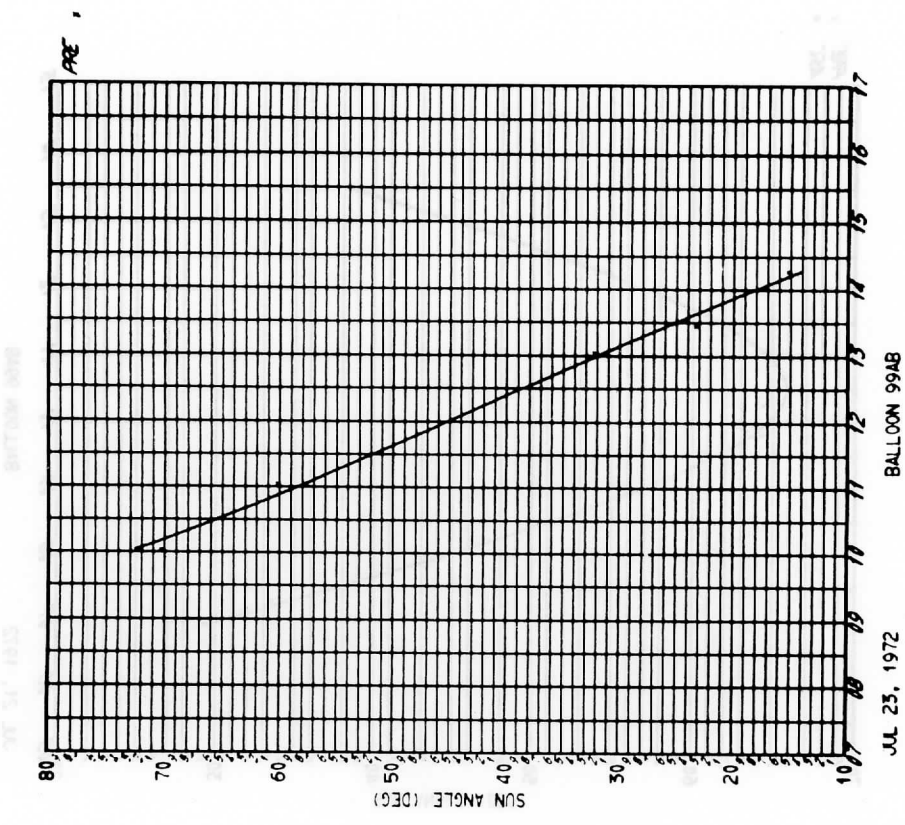
PRE
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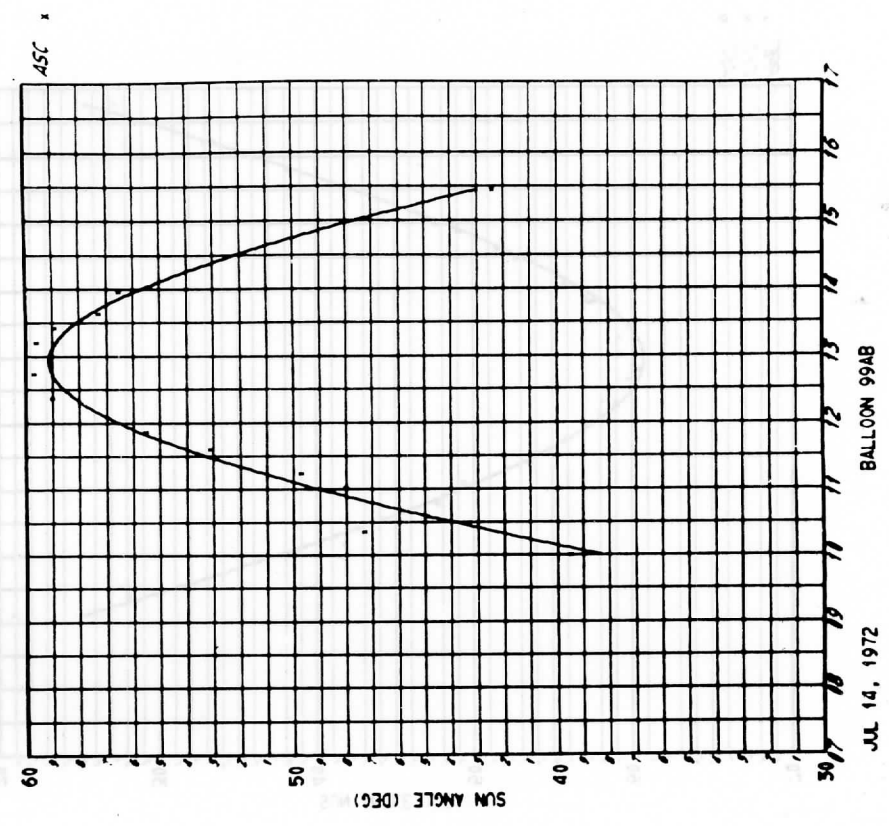
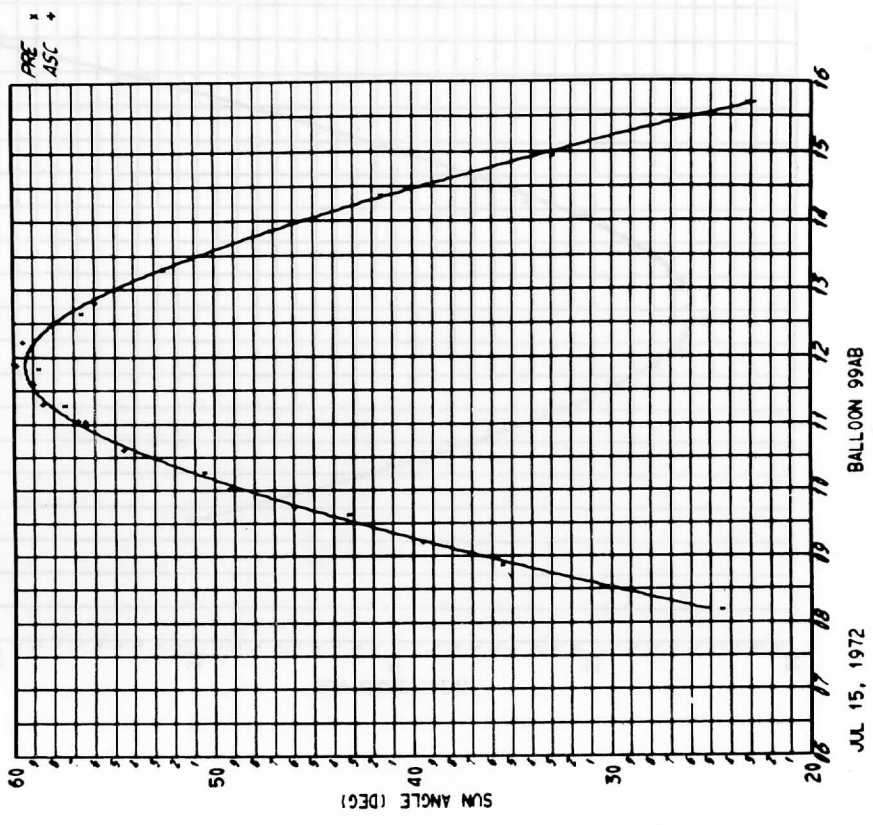


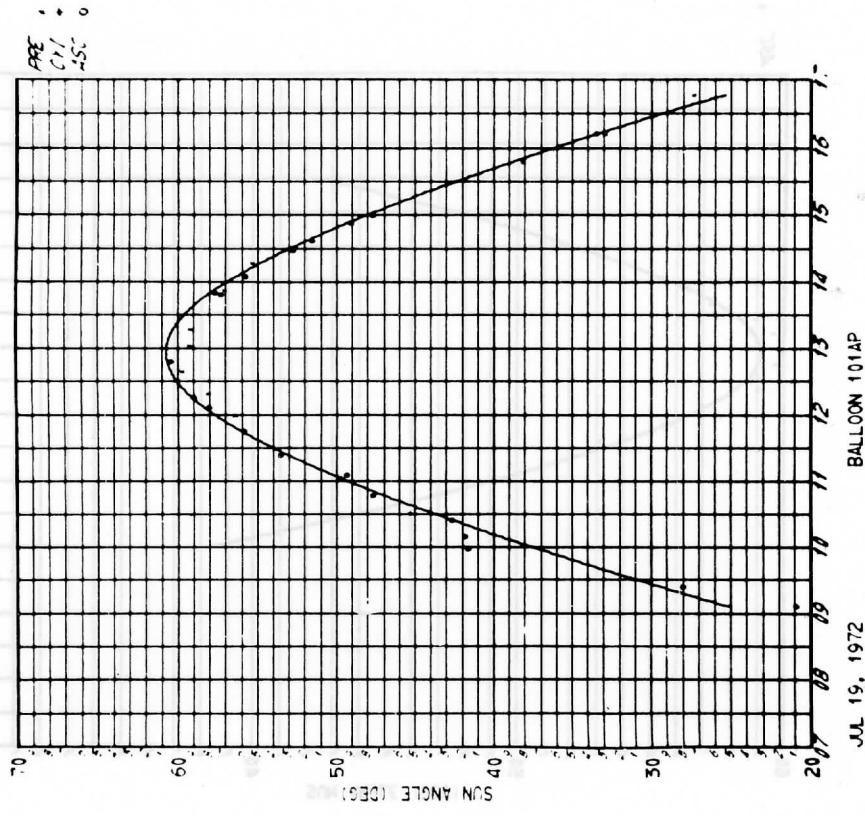
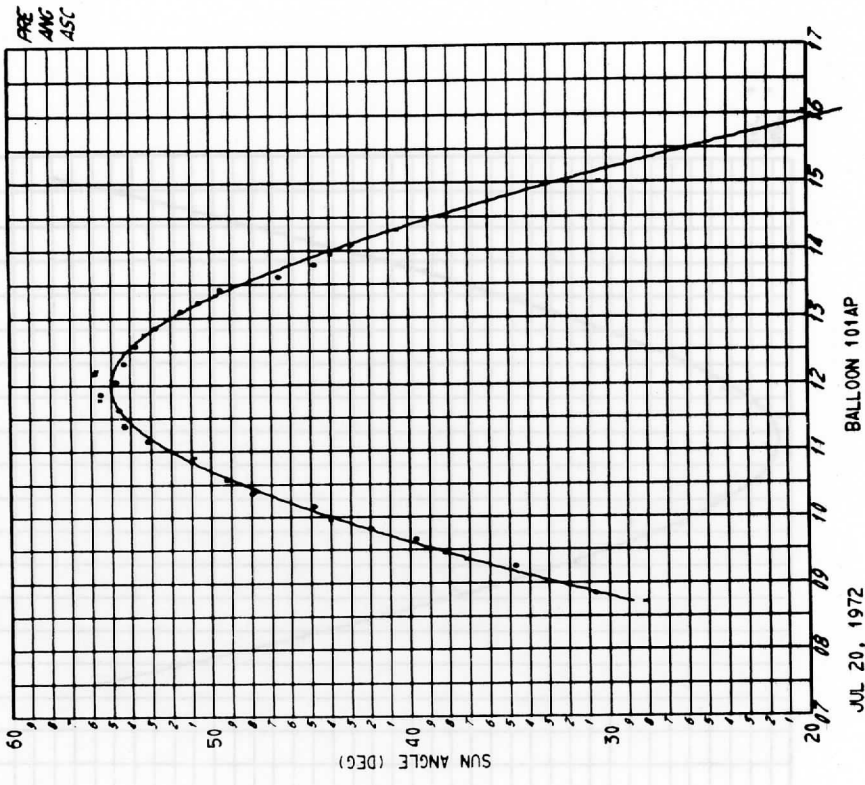
JUL 21, 1972
BALLOON 99AB



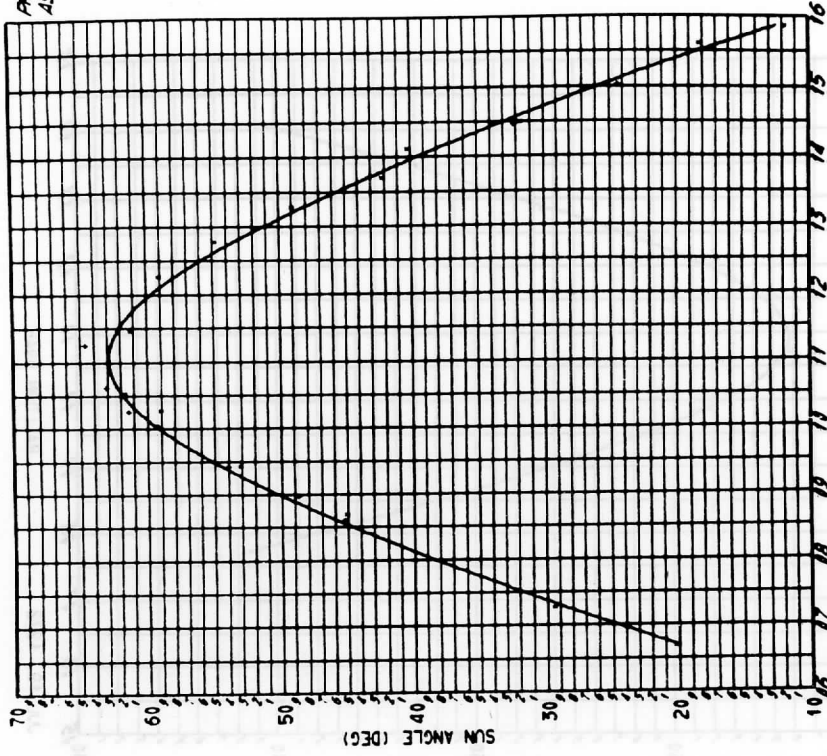
JUL 20, 1972
BALLOON 99AB





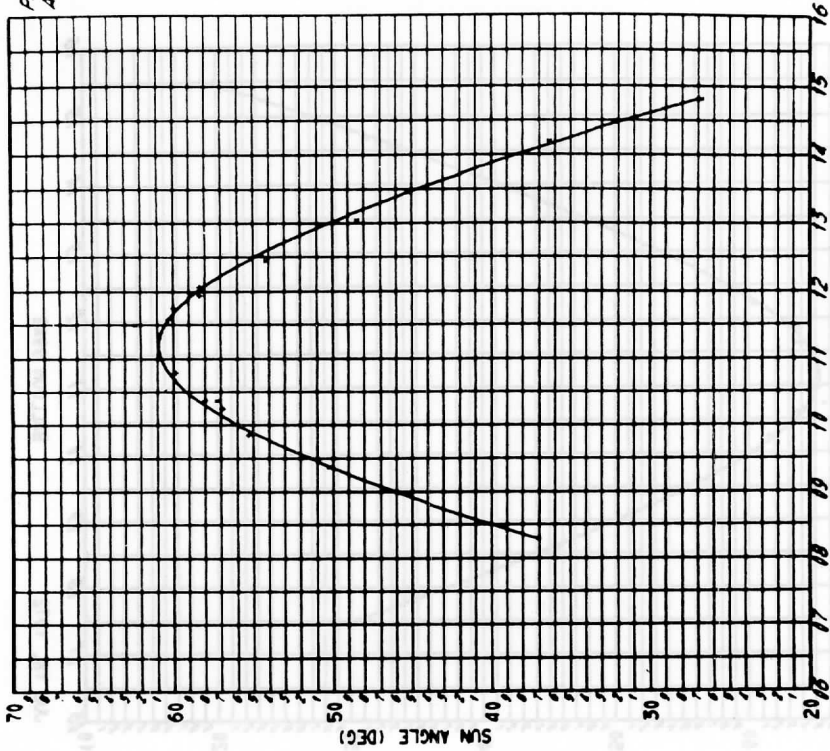


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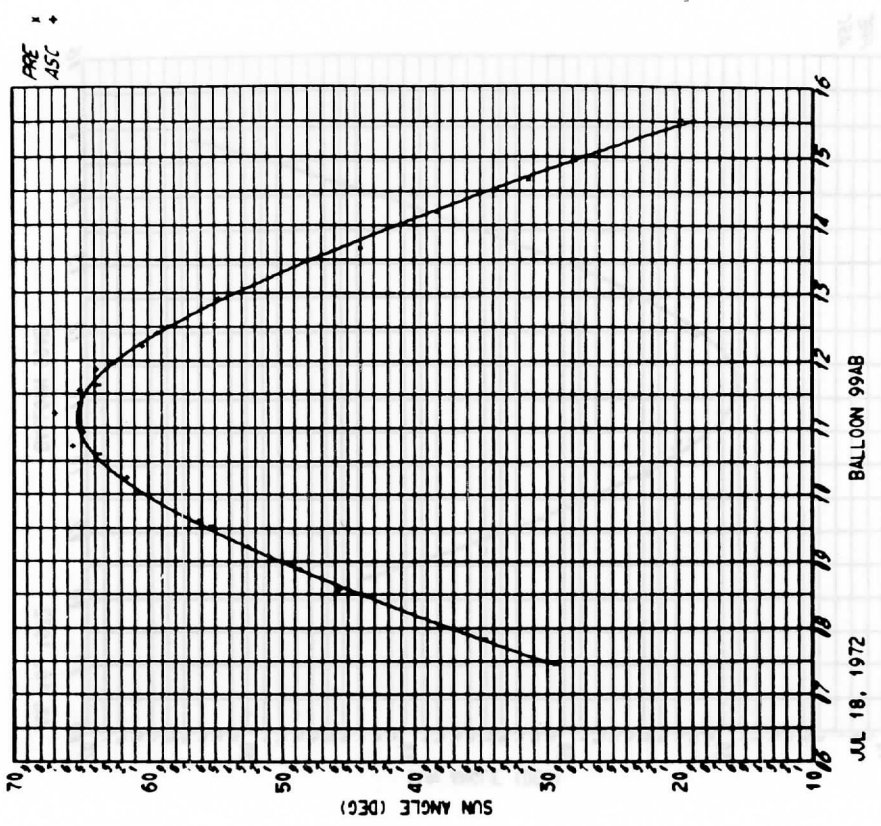
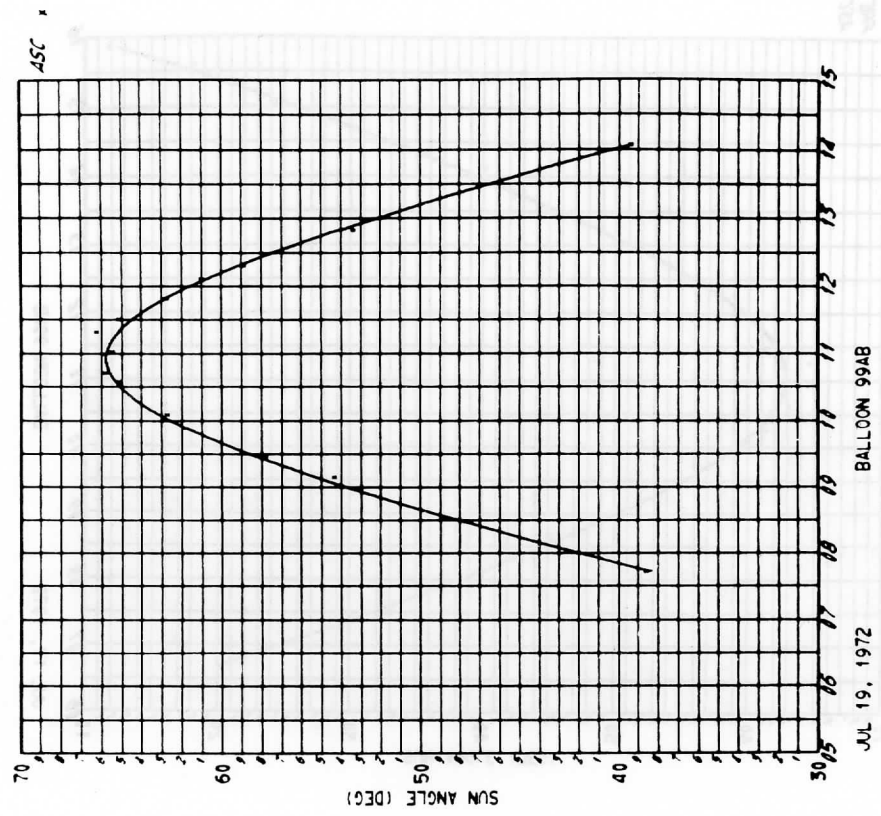


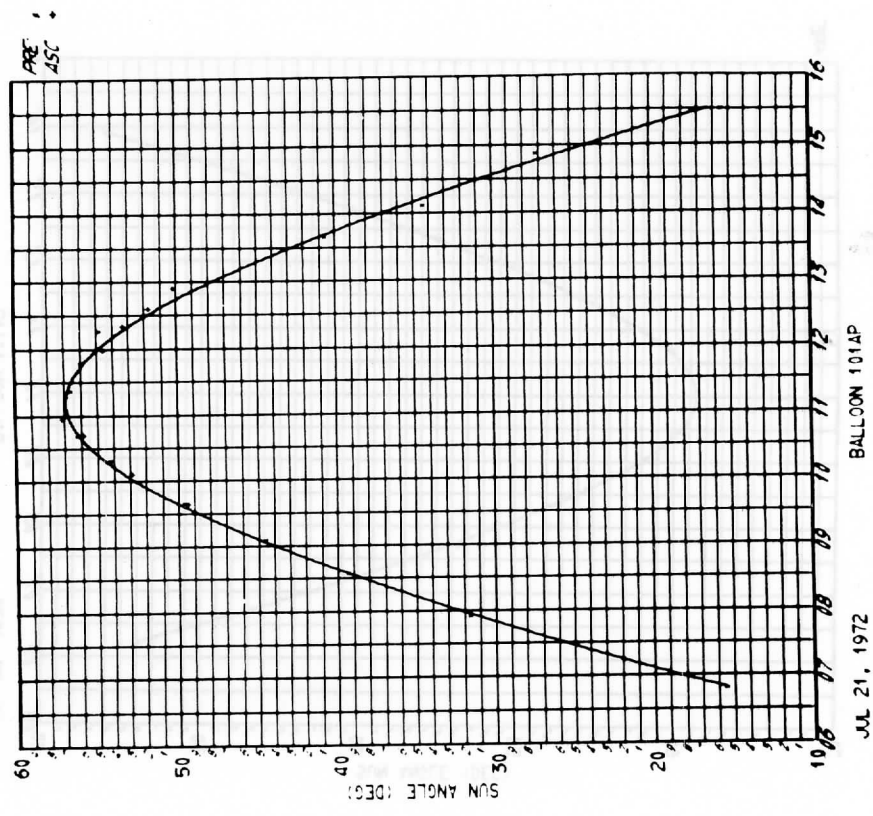
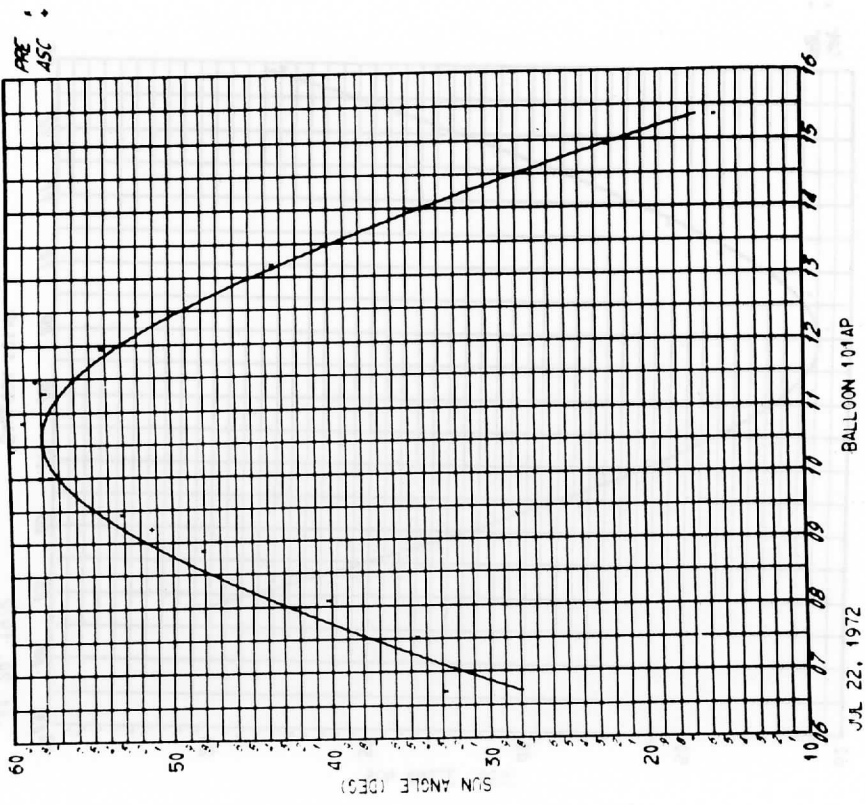
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BALLOON 99AB

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ASC : +

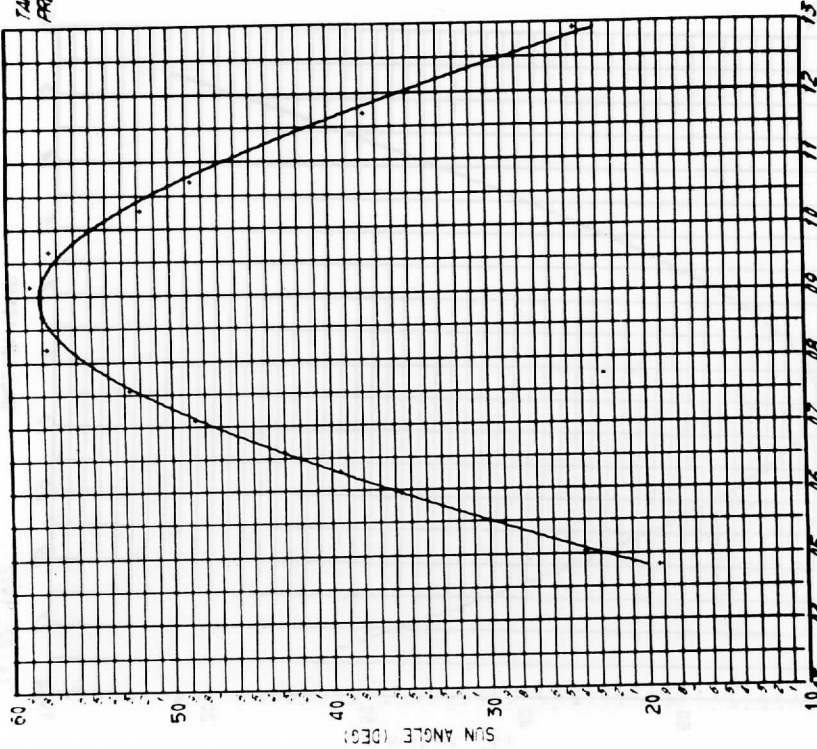


JUL 16, 1972
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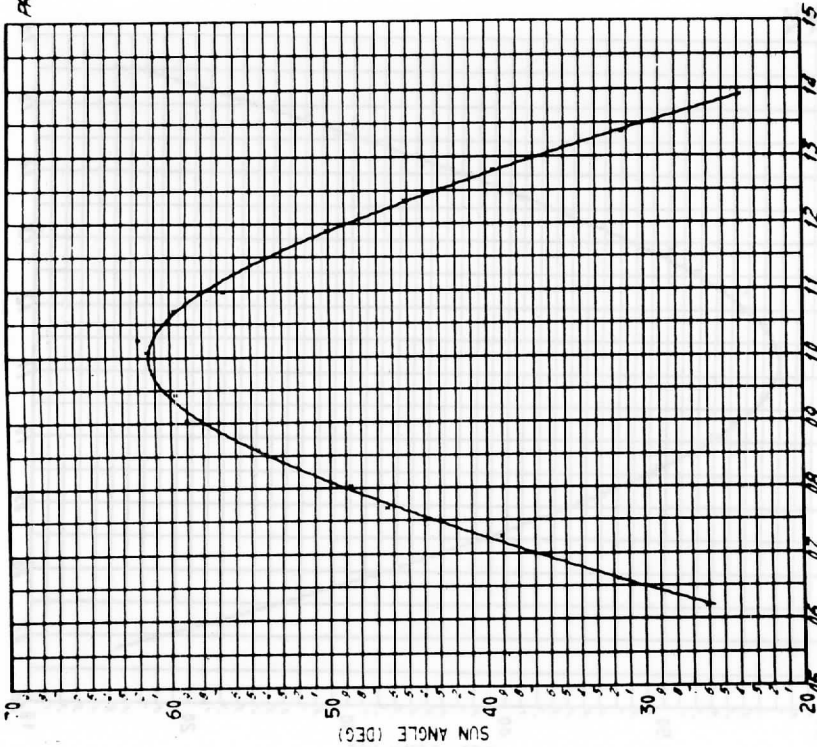
TAN
PRE



BALLOON 101AP

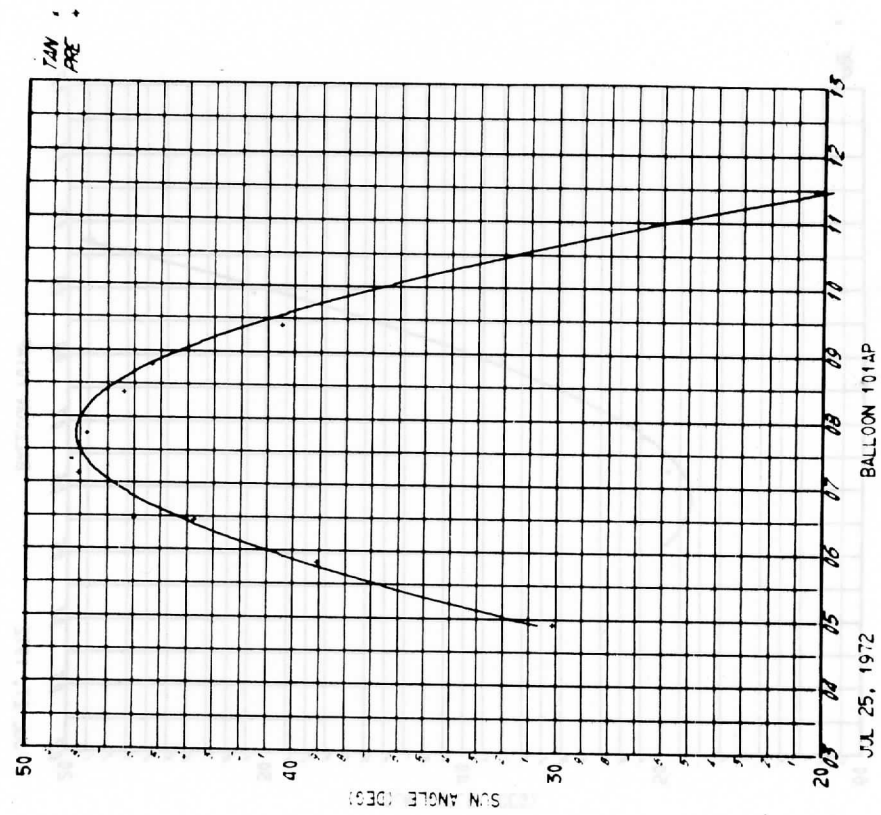
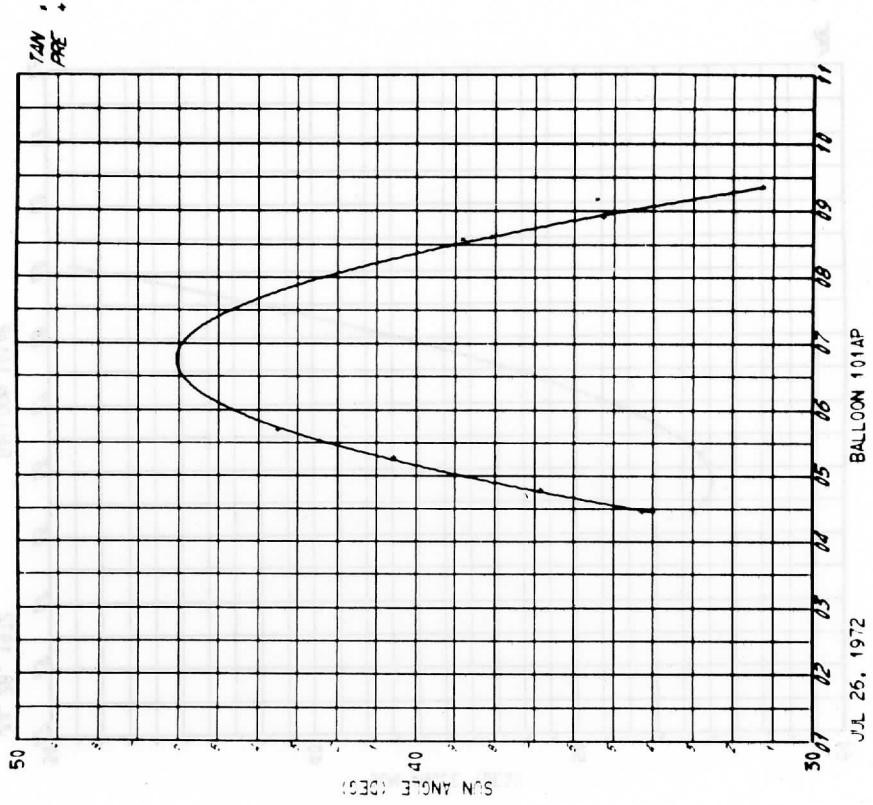
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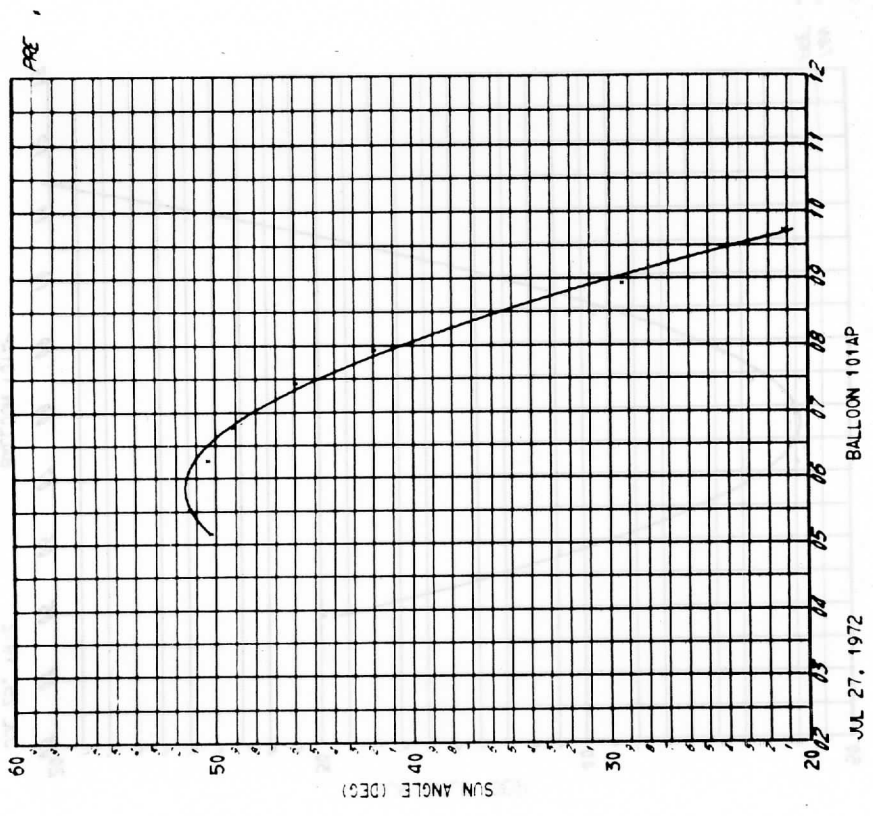
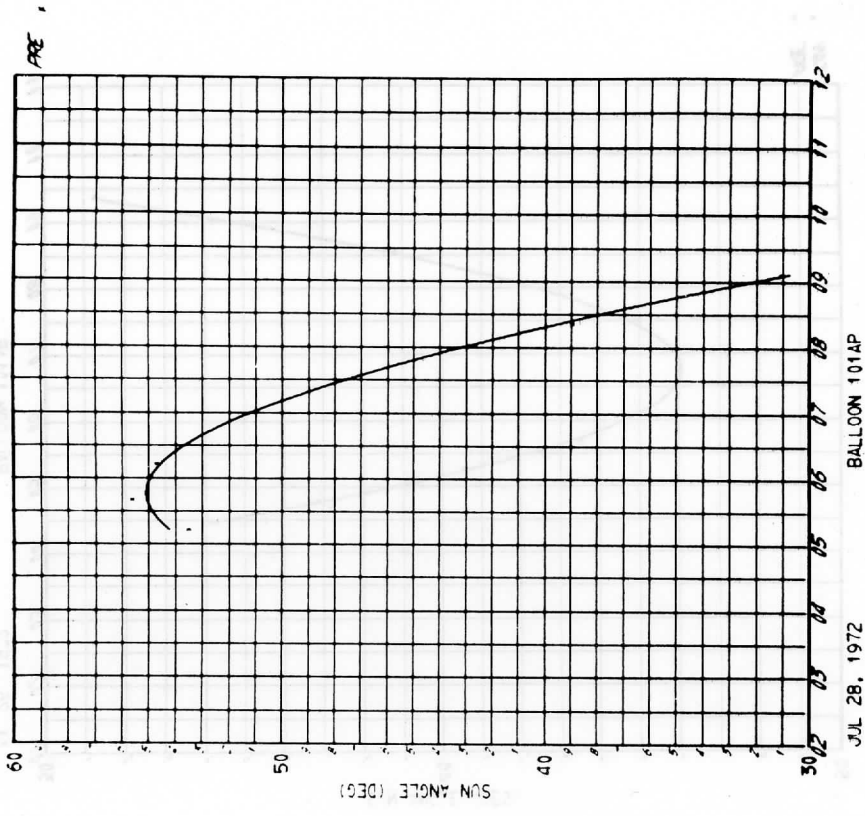
PRE

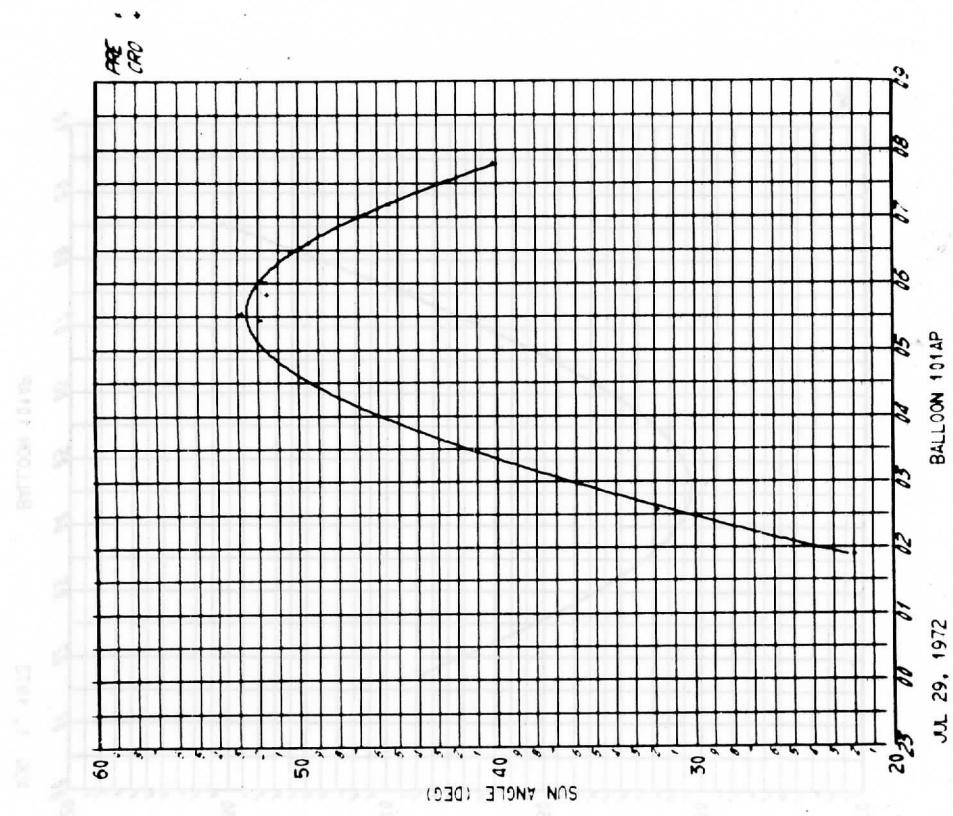
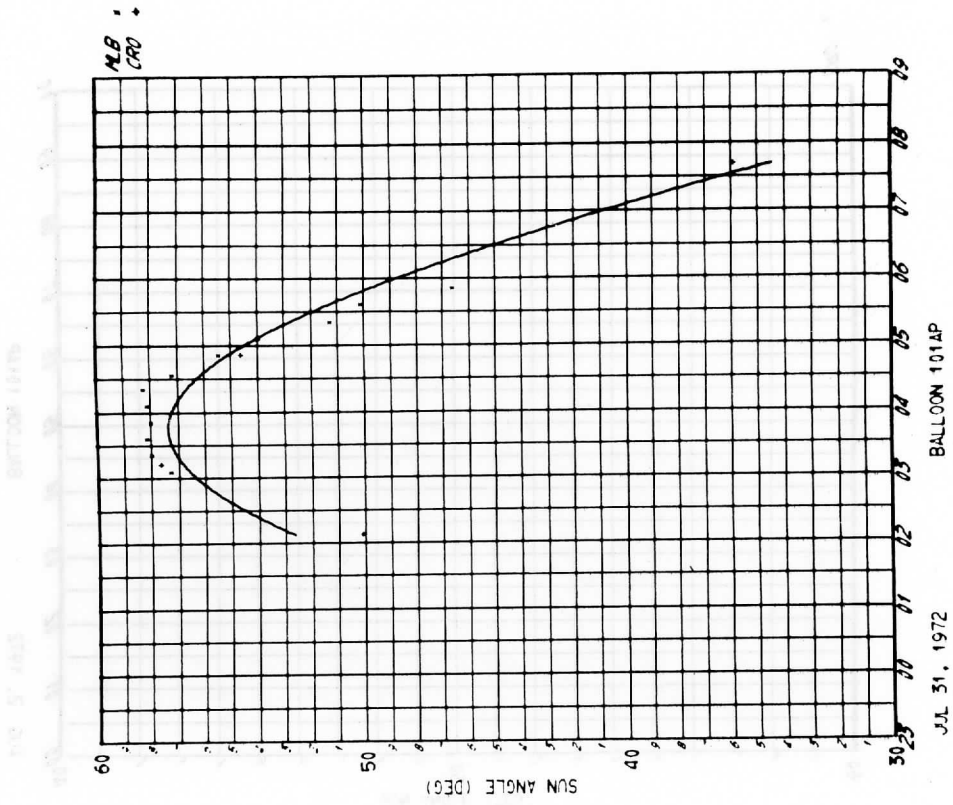


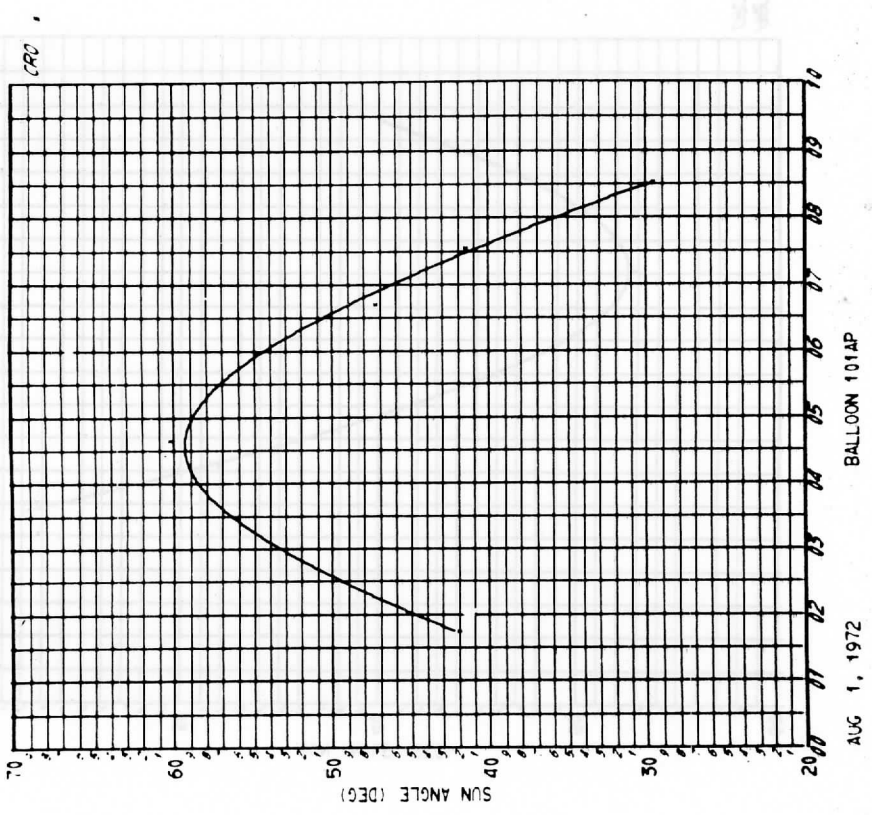
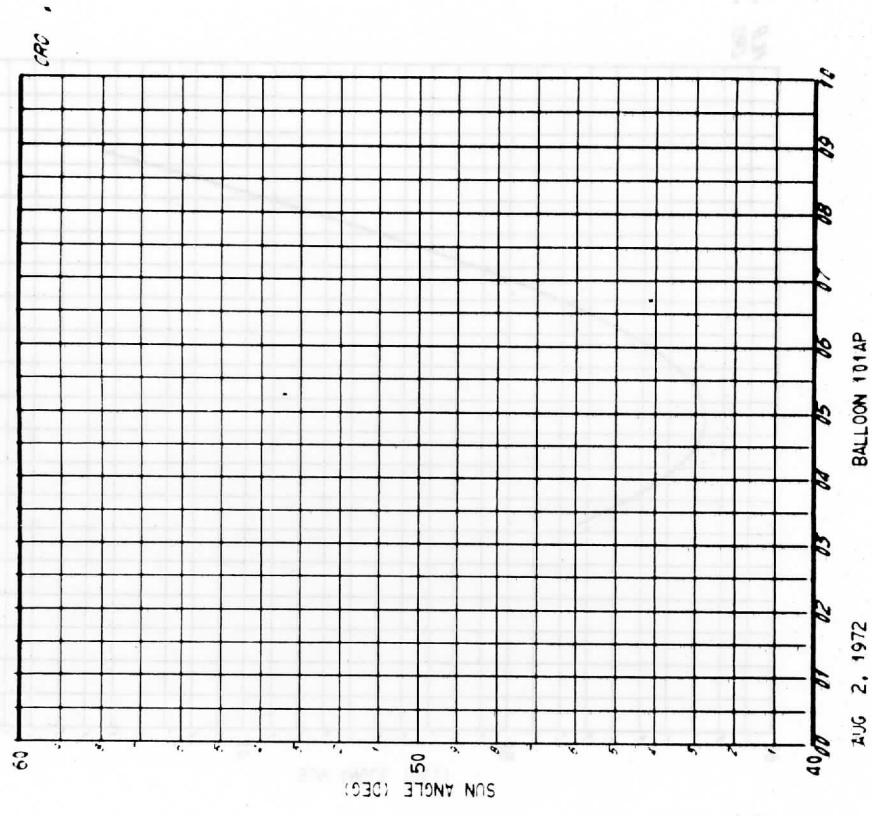
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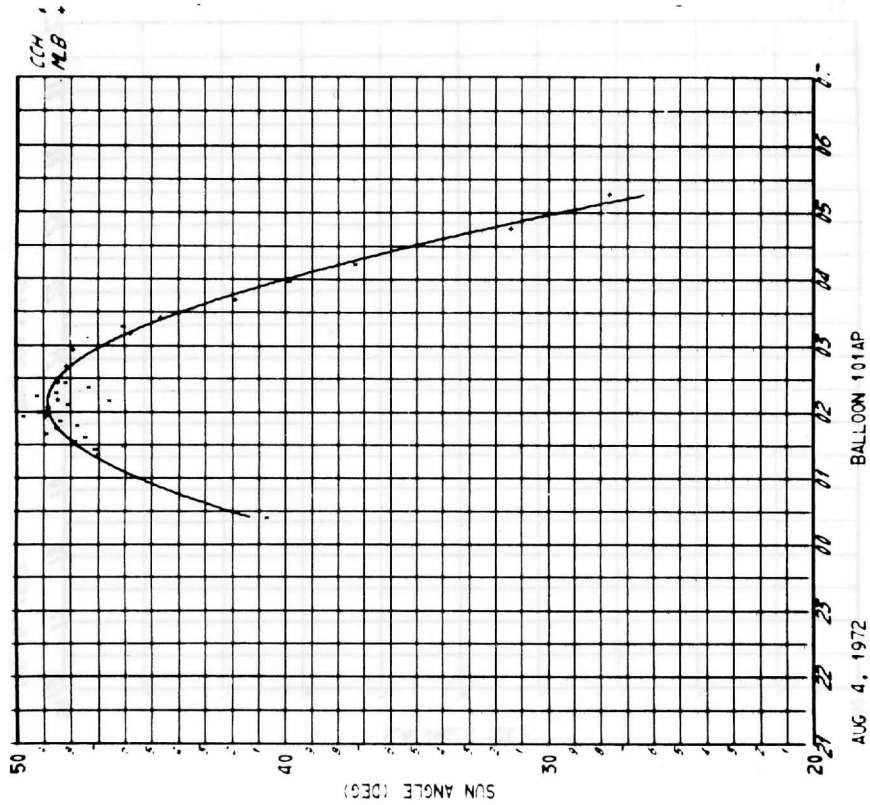
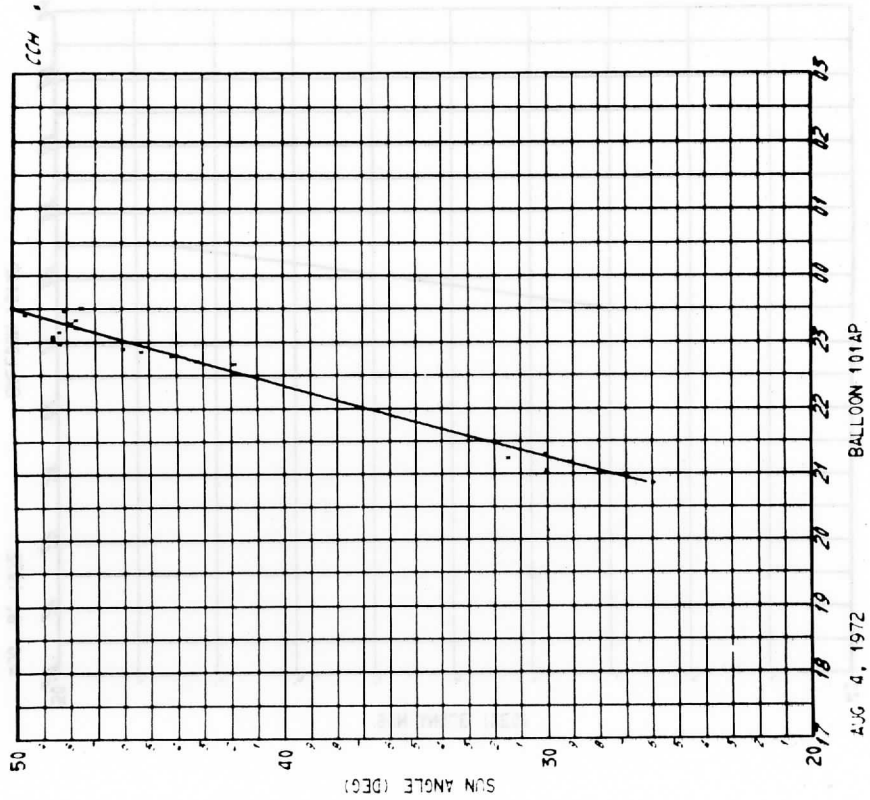
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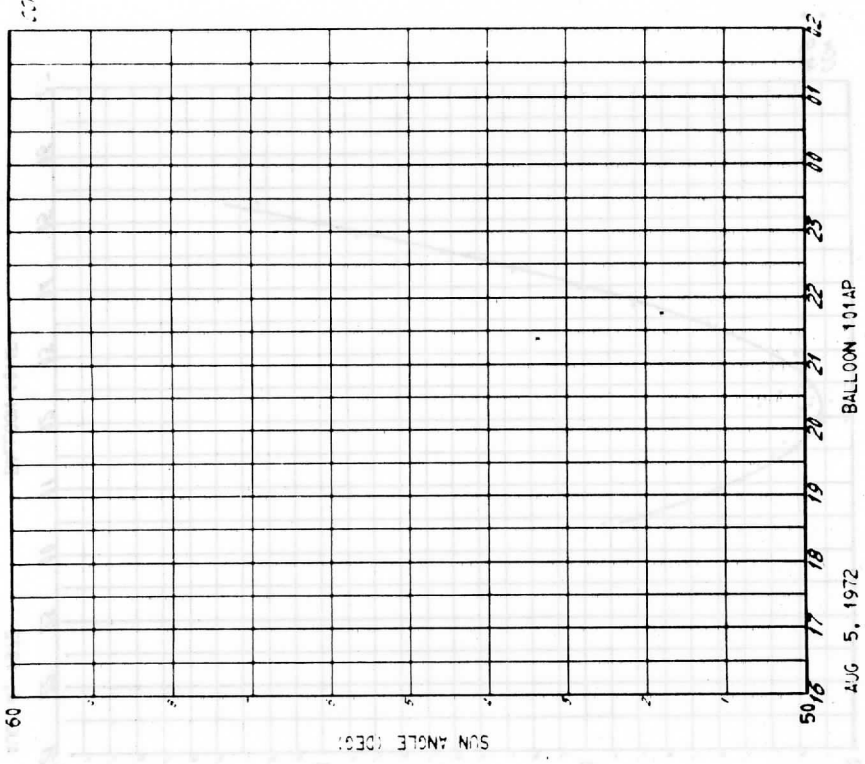
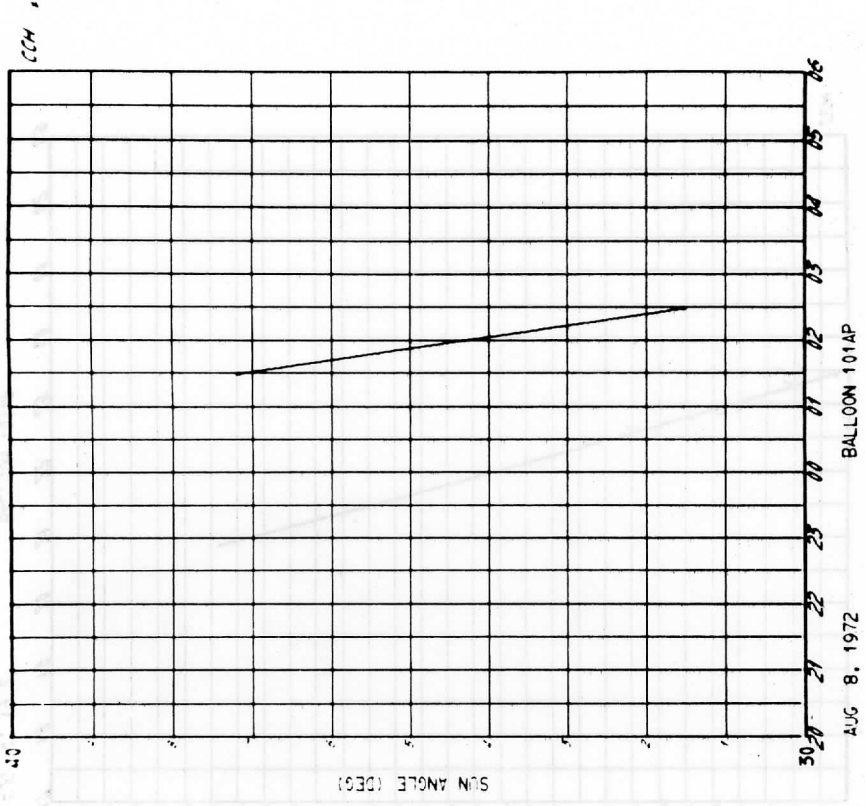


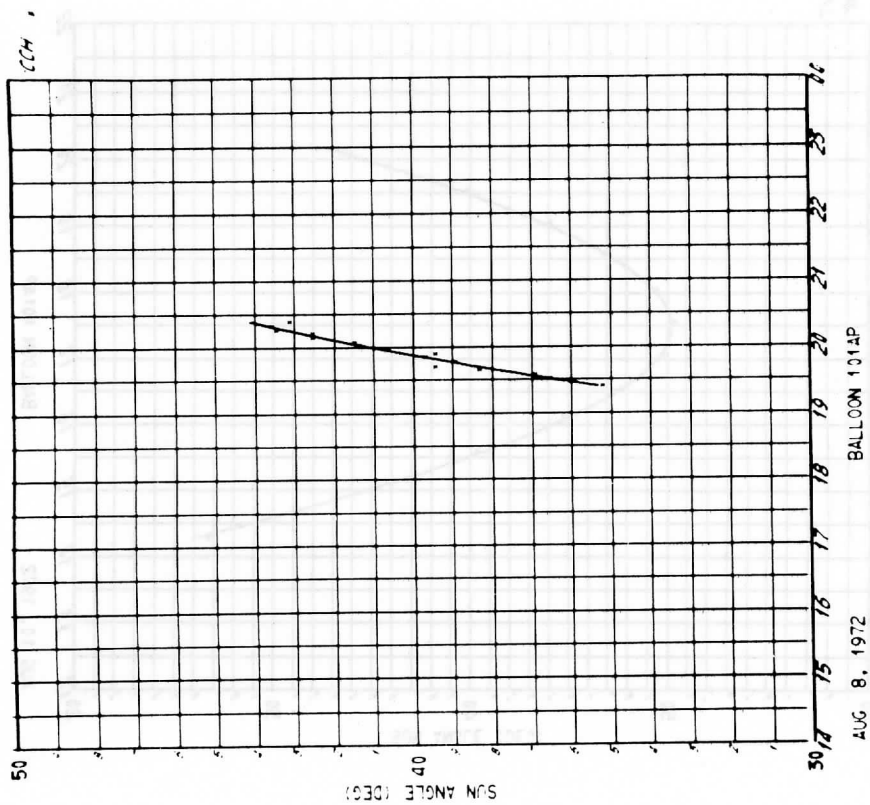
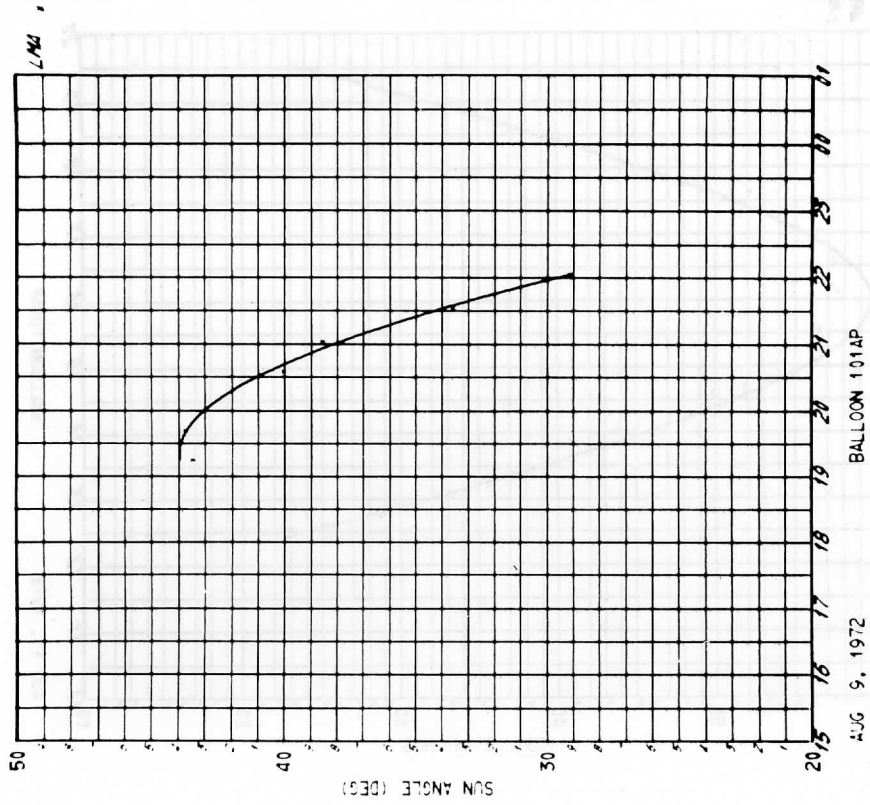


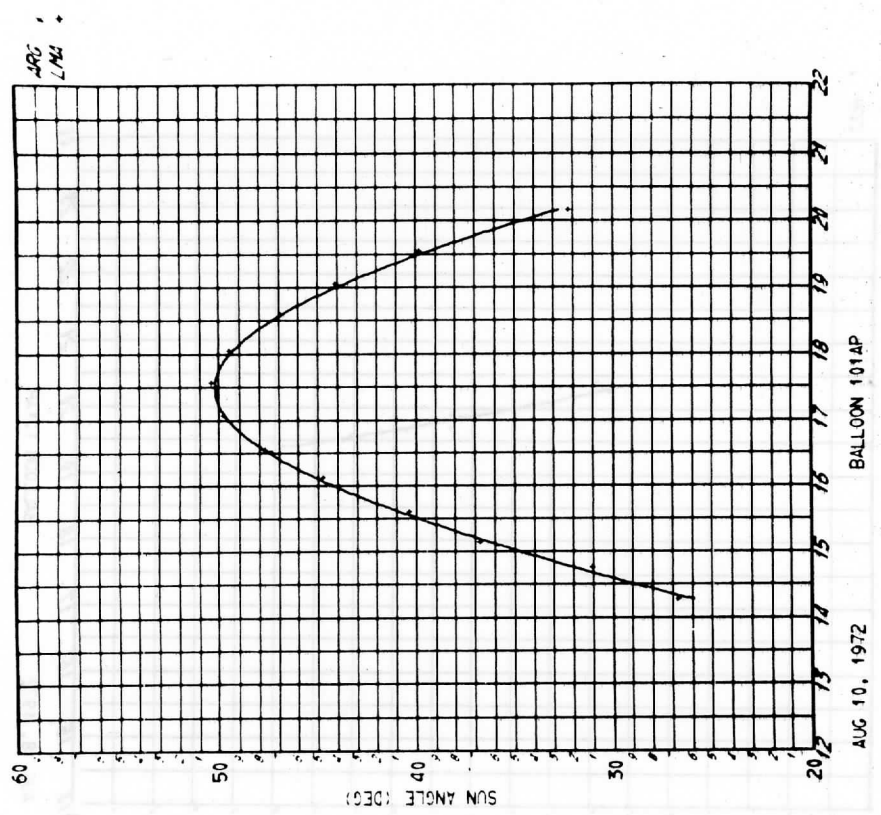
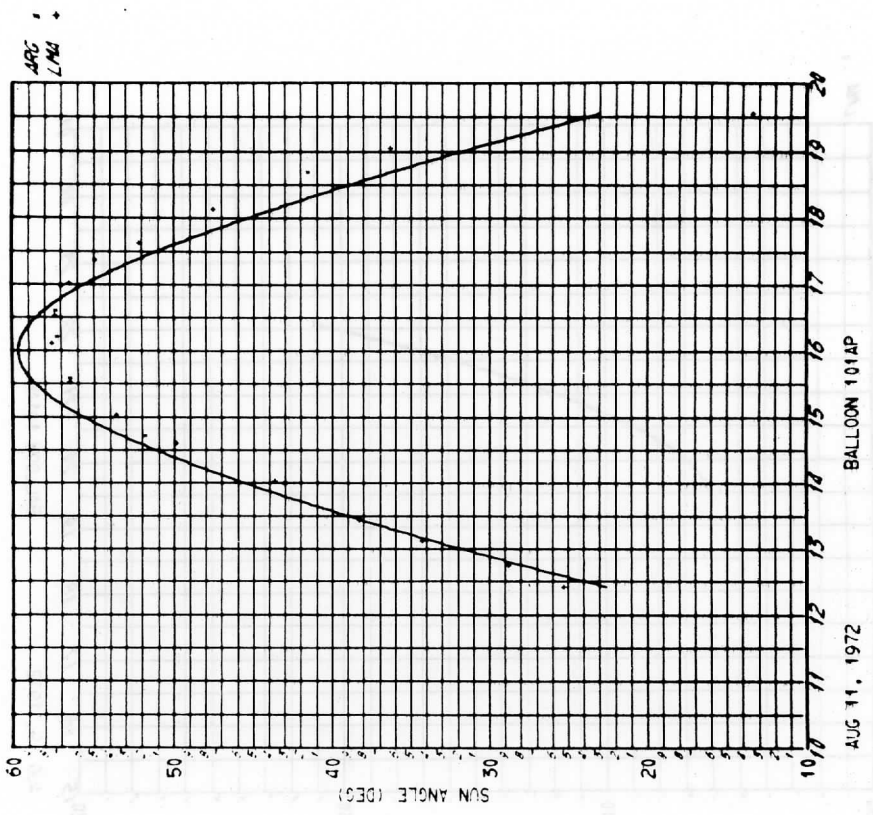


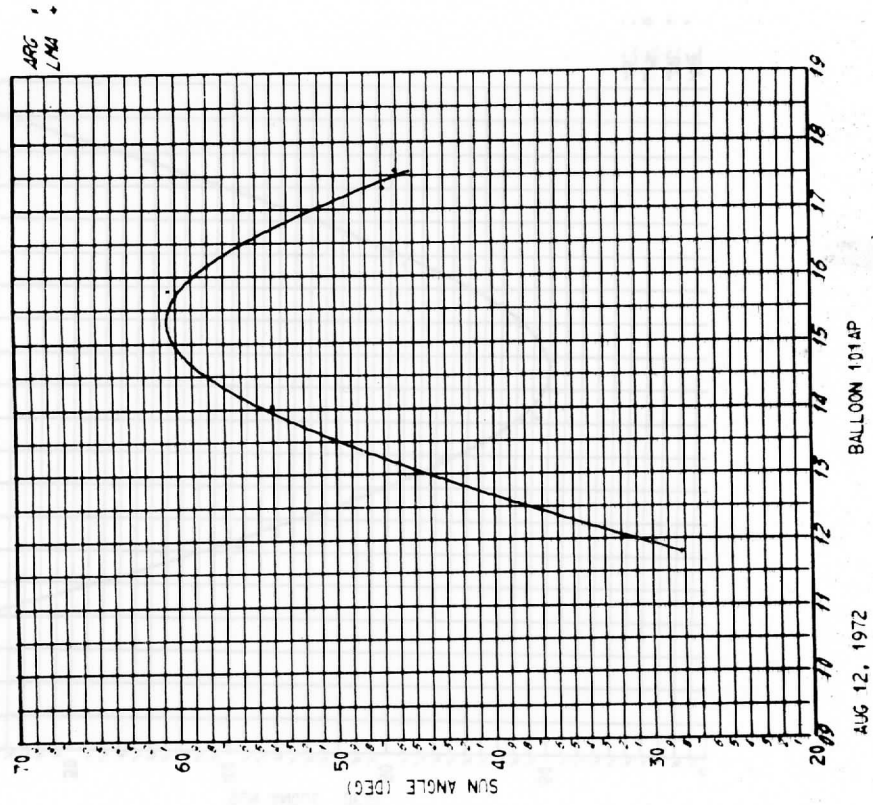
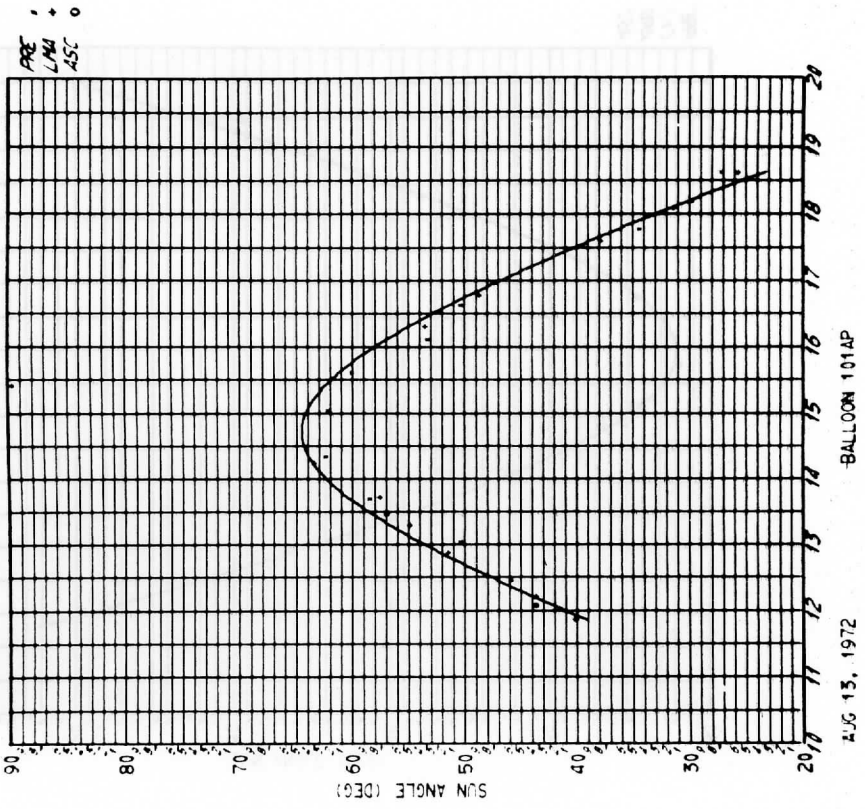


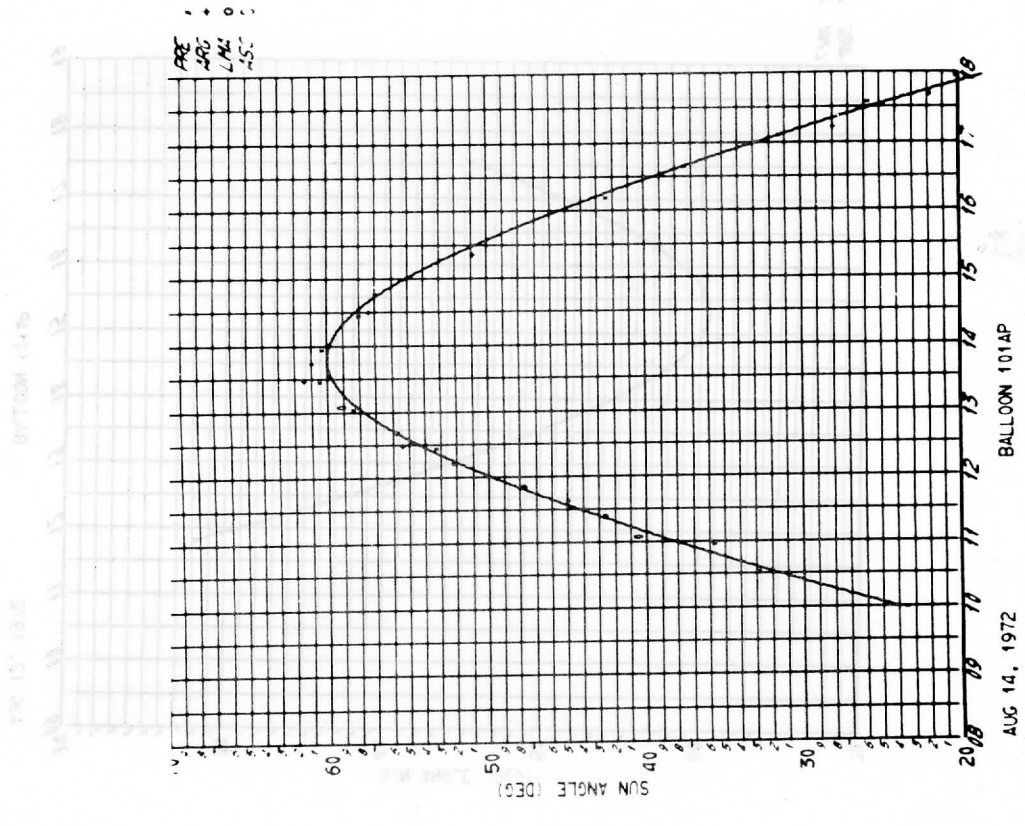
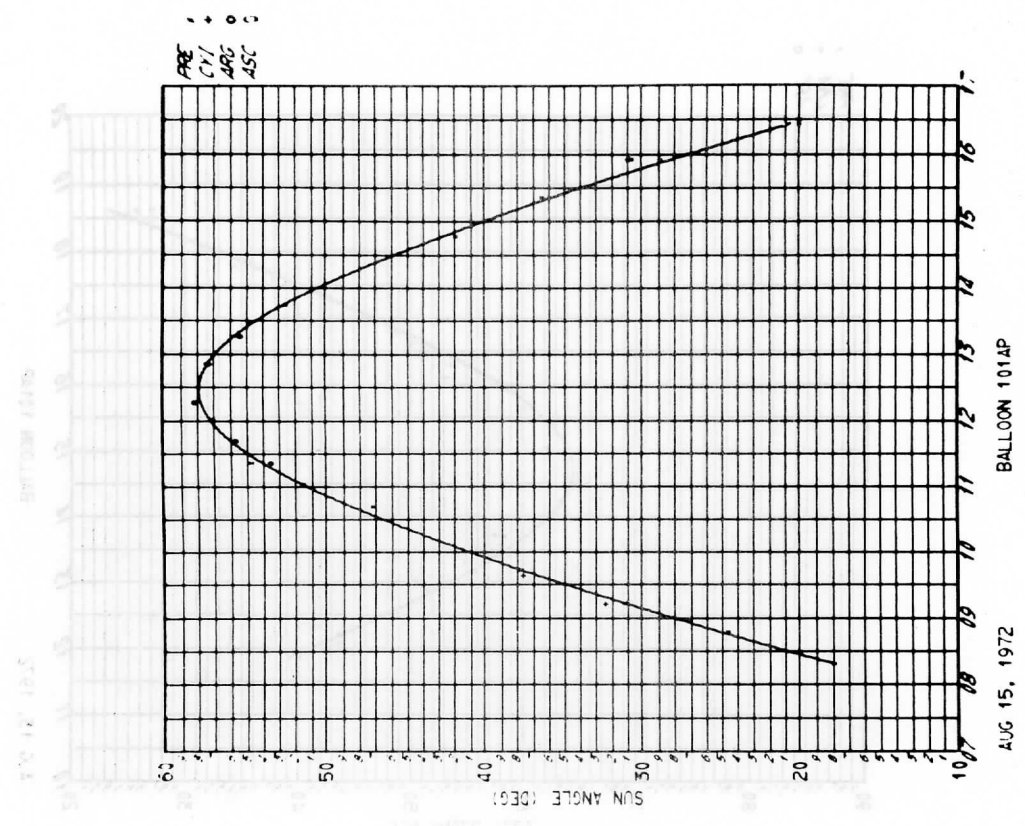












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