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Issued: 10 May 1979

MONTHLY REPORT

for

APRIL 1979

VISSR Atmospheric Sounder (VAS)
Development and Performance Evaluation

Contract No.: NAS5-21965

Prepared by

Space Science and Engineering Center
The University of Wisconsin
Madison, WI

for

National Aeronautics and Space Administration
Goddard Space Flight Center
Greenbelt, MD

I. General

Data processing of TIROS-N and VISSR data continues on the DBM-3AP-5UT configuration. Data sets are being prepared to support the Sesame '79 Regional Sub-Program during April and May of 1979.

II. Data Processing System Development

The design work for an improved wideband communications link from the Data Base Manager (DBM) to the Applications Processors (AP) was completed. The appropriate hardware has been ordered and construction of the necessary memory and control boxes has begun.

The ADCCP (Advanced Data Communications Control Protocol) communications network from SSEC to GSFC and Wallops has been constructed and testing has begun. Hardware and software debugging will continue for the next month. Level III software still requires some coordination with GSFC personnel and writing.

The VAS preprocessor design is almost complete. The averaging, reformatting, and recalibration of VAS data will be accomplished with microprocessors adequately buffered to handle the VAS data volume. The recalibration task will be minimal since the major portion of the calibration will be accomplished at the Wallops Synchronizer Data Buffer. The averaging of IR data during a sounding sequence will be paired with visible data from the middle of the sounding sequence. No attempt will be made to average the visible data during a dwell sounding sequence. All IR documentation will be retained on a spin by spin basis to monitor changes in beta angle, phase lock loop error, and root mean square IR differences.

The dial up link to the Weather Bureau Remote Radar (WBRR) is awaiting delivery of bi synch cards so that implementation into the DBM and testing can begin.

The NESS User Terminal is under construction. All parts were ordered last

month and delivery of memory boards and the color monitor will dictate when the terminal will be ready.

III. Development of VAS Data Processing Techniques

The daily archiving of soundings generated from TIROS-N and conventional weather data and wind fields derived from VISSR, TIROS-N, and conventional weather data continues. The supporting software is settling down and fewer modifications have been necessary as the launch of the second TIROS-N nears. The techniques for manual editing of the data at the user terminal are now becoming well established. Internally consistent data sets are emerging more regular

Support of the Sesame Regional Sub Program has involved the assimilation of four dimensional data sets for two of the three minute days in the last month. Subsequent comparison of this data with that derived from the special rawinsonde network is planned.

The first three of four parts of the ANMRC (Australian Numerical Meteorology Research Center) semi-implicit numerical weather prediction model have been implemented and are being tested on the CRAY-1 computer at NCAR. Data processing, analyses, and model initialization are all being checked out daily on the remote job terminal. The model itself has not been implemented yet. Early feedback from the analyses portion of the model indicated some improvements in the processing and editing of polar orbiter and radiosonde wind sets; anomalous gradients that were producing spurious winds are now being edited out.

IV. VAS Instrument Support

The effort to calibrate the VISSER radiances from intercomparison with TIROS-N data slowly continues. Software difficulties are gradually disappearing and the generation of data sets for statistical correlation seems imminent.

SPACE SCIENCE AND ENGINEERING CENTER
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THE UNIVERSITY OF WISCONSIN

10 May 1979

Mr. J.B. Connor
Contracting Officer, Code 289
NASA--Goddard Space Flight Center
Greenbelt, MD 20771

Dear Mr. Connor:

In accordance with Article III of Contract NAS5-21965, I am submitting the required Progress Report for the month of April 1979.

If you have any questions or desire further information, please contact me at (608) 262-0118.

Sincerely,

Paul Menzel

Paul Menzel
Program Manager

WPM/jal

Enclosure

cc: H. Montgomery, Code 942 (10 copies)