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MONTHLY REPORT

for

JULY 1978

VISSR Atmospheric Sounder (VAS)  
Development and Performance Evaluation

Contract No.: NAS5-21965

Prepared by

Space Science and Engineering Center  
University of Wisconsin  
Madison, WI

for

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

## I. General

On July 11, 1978, D. Small of NOAA and R. Dedecker, P. Menzel, and J. T. Young of SSEC attended the VAS Working Group Meeting held in Greenbelt, Maryland. Presentations were given on VAS calibration coefficient determination from thermal vacuum test data, recent developments in navigation, and the status of the University of Wisconsin data processing system. In addition, the protocol for the ground system communications was discussed.

## II. Data Processing System Development

Work has been done to determine the modifications necessary in the VISSR cassette archive to accommodate the VAS mode AA format. Some timing changes must be implemented and some additional microprocessor memory must be added on. Design of the VAS cassette archive is underway. In addition, a picture logging printer has been implemented in the cassette archive so that for a given cassette a table of contents can be printed or displayed upon user request.

Work on implementing the disc management software for the 300 Mbyte disc into the Data Base Manager is continuing. Protocol for communications between the DBM and the Applications Processor has been decided. Testing of the data base management system software is underway.

The TIROS-N receiving system has progressed in the following areas. The antenna controller microprocessor was hooked up to the antennas and commands for positioning were relayed and executed successfully. Proper setting of the elevation and azimuth angle orientation must still be accomplished. The systems software in the antenna controller is nearly complete, and the applications software for orbit determination and antenna pointing is being rewritten in machine language for insertion into the

system. The main microprocessor input and output direct memory access boards are constructed and are being inserted. Ingest software testing with a recorded TIP history tape is planned for the next month.

### III. Development of VAS Data Processing Techniques

Software is being written and inserted into the McIDAS system to enable the production of soundings from TIROS-N HIRS and MSU data in an operational scenerio. This involves ingestion, calibration, location, limb correction, colocation of infrared and microwave, clear column radiance retrieval, and retrieval of meteorological parameters. It is anticipated that the insertion and testing of this software will be completed before launch in mid-September.

### IV. VAS Instrument Support

Work has begun to evaluate the number of non-redundant calibration initialization parameters and to provide a typical set.



SPACE SCIENCE AND ENGINEERING CENTER

UNIVERSITY of WISCONSIN - MADISON  
1225 West Dayton Street  
Madison, Wisconsin 53706  
TWX 910 286-2771

10 August 1978

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 July 1978.

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

Sincerely,

Paul Menzel  
Program Manager

WPM/rmk

Enclosure

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