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MONTHLY REPORT

for

FEBRUARY 1977

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

Submission of a definitive proposal of the Space Science and Engineering Center's participation to the conclusion of the VAS Demonstration is scheduled for 1 April 1977. Much of the VAS effort here for the past month has been focussed on preparation of this document. The content of the proposal has been defined and it is now being written.

II. VAS Instrument Support

A review of the analysis of the last thermal vacuum test results reinforced our opinion that an additional heater should be placed on the secondary mirror shield or the baffle forward. It is anticipated that the resulting better determination of the most significant fore optics calibration coefficients would reduce the errors from $1° \pm 1°C$ to about $.3° \pm .2°C$. The heater should be added since it has not yet been shown that adequate calibration can be obtained using ground truth or intercomparison with polar orbiter satellites.

III. Development of VAS Data Processing Techniques

The HIRS and SCAMS data of August 25, 1975, is being investigated on McIDAS. In coordination with the UW Meteorology department, we are evaluating objective clear column radiance retrievals versus more subjective man interactive retrievals. This work is just beginning.

IV. Data Processing System Development

Work on the RF feed for the VAS Antenna suffered a setback. The Aertech paramp was destroyed during testing when a thermal control switch failed. Repair is delayed by legal considerations and funding constraints. Alternatives

are being considered but overall antenna testing delay seems likely.

A general VAS system architecture and several modifications were investigated. A design incorporating a distributed processor system is most favored. The network of similar processors is arranged so that no single processor is responsible for more than one class of time critical tasks. Problems of interfacing, maintenance, and system growth are best addressed by such a system. More details are forthcoming in the proposal.

SPACE
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THE UNIVERSITY OF WISCONSIN

10 March 1977

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 February, 1977.

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

Sincerely,

Paul Menzel

Paul Menzel
Program Manager

WPM/rmk

Enclosure

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