

The
Annual Report
for the
GOES Pathfinder Grant
NAGW-3286

15 July 1994

Introduction

This year has been highly productive for the GOES Pathfinder effort. We have achieved many of our long sought after goals. The Data Processing system was implemented, the Benchmark period data were processed, and we are now beginning to disseminate the products to the user community.

Management

General

The major accomplishments this past year included completion of the pipeline processing system, the processing of the data for the benchmark period, and the production of the 70 km products. The pipeline process was fully implemented and production started nine months after the original milestone, due for the most part, to errors in the IBM documentation of the IBM RS/6000 architecture. The production effort was completed in 4.1 months rather than the original projection of 6 months. Efforts were started to make these data and products available to the community.

Staffing

Staffing in the operations area required three full-time operators to staff 24 hours per day five days per week. As the production cycle came to a close two of the operators were moved to other jobs. One operator and a Manager remain on the staff to support Pathfinder data dissemination and User services.

Development

IBM System Problems

The device driver for the ingestor was a major problem, and, as previously stated, caused significant delays in the implementation. As a stopgap, the device driver was rewritten to use programmed I/O rather than DMA transfers. This allowed the pipeline processing to run at real-time rate. We were able run the playback at 2.2 times real time rate during the production phase.

Transcriber

The transcription of the 19 month benchmark was completed. The 1717 tapes were quality checked as the data were processed into products.

Ancillary data

Navigation, calibration and quality assessment processes were run on the data during the pipeline processing. Some work remains to upgrade the navigation data base for the benchmark period.

Data sets were provided to Robert Frouin for use in developing a better visible data calibration technique. The results of this effort have not been communicated to us, and therefore, we have not incorporated the new technique into the processing system.

Product Development

The equal area 70 km statistics package was fully implemented and integrated into the pipeline. The process of integrating this package was difficult for the Investigator and our staff. The principal problem was the lack of a common set of terms and development environment. This was further complicated by a lack of appreciation by the investigator for the complexities of pipeline processing systems. Once all the issues were communicated both ways, solutions were found. It was more time consuming than we had predicted.

All of the Investigator's requirements were addressed, a 30 day sample product set was provided to the PI for validation. The PI confirmed that the algorithms produced valid results before production started.

Operations

Production

Production processing started on 1 September 1994. By the end of October 50% on the data had been processed. 74% was done by the end on November, and 98.6% by the end of December. Processing was completed on 6 January 1994.

Several reprocessing tasks were required. The Investigators working on the Visible sensor calibration determined that they needed the IR data as well as the Vis cal chips, so the appropriate images were reprocessed to product vis and IR cal chip.

Distribution

Dr. Rossow's initial GOES Archive request has been completed. We have contacted him for guidelines on the order of data to be processed. We have processed 104 days of data and there are 53 days left. We will continue processing until we exhaust the funds allocated. We have about \$6,000 left of the \$20,000 allocated.

The GOES Pathfinder distribution plan provided two different avenues for potential users: tape copies and Internet. For those users wanting the entire data set and products, we plan to provide these on 8 mm tapes. The number of tapes for the benchmark period is 137. There are 120 tapes in the 8 km product data set, and 5 tapes in the 70 km statistical data set. We are procuring an 8 mm tape copy device to satisfy this community's requests.

We acquired a redundant array of independent disks (RAID) system with 46 GBytes of usable storage. The RAID has been put on-line to Internet with Gopher and FTP servers. The Gopher server provides image browse capability to the user community and FTP server enables the community to access the raw data files. The 70 km products for the entire period have been loaded onto the RAID. As the various data are loaded onto the RAID, browse products are being generated. Since the raw data files total 620 GBytes only 20 GBytes portions can be loaded at a time. The schedule for each portion will be announced.