SPACE SCIENCE AND ENGINEERING CENTER

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Applications of the AVE-Sesame Data Sets to Mesoscale Studies

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Significant events

1. BLM Lightning Data Concentrator

The system was installed in May 1983. Data was collected during the summer of 1983 and the equipment was removed in October of 1983. Data that were collected are available for research.

2. Mark III McIDAS

The Mark III McIDAS is installed and operating successfully. This capability provides greater flexibility for the Marshall user community and serves as a model of future UW McIDAS to remote computer links.

3. Design Study for a Three Dimensional Display Terminal

A number of display techniques have been investigated for the display of dynamic 3-D data sets. To date the most promising display technology is a polarized two CRT perspective display which allows both dynamic 3-D images and graphics presentations with full color capability. Algorithms for the preparation and display of conventional and satellite based weather data in 3-D have been developed. These include gridding, contouring, and streamlining processors which operate on both real time and case study data bases. An upper air trajectory model has been implemented which creates a display of air parcel trajectories in perspective 3-D. A subsystem for the generation of 3-D solid surface display with shading and hidden surface removal has been tested and its products are currently being evaluated. Motion parallax introduced by moving the point of observation during display is an important depth cue, which, when added to the perspective parallax has been found to create a very realistic appearing display.

Current Research Activities

We are continuing the development or improvement of the various algorithms to achieve the maximum information content for the display of a variable. We are beginning the investigation of multivariant data displays, and combinations and correlations of vectors and scalars which we expect will finalize the meteorology display system specifications.

Plans for FY-85

We plan to refine our computer analysis and display algorithms, develop the stereo display terminal hardware specifications, and begin the testing and implementation of a terminal design tailored to this display concept.

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