most cases an inappropriate circular edge is used to represent circles and semicircles as viewed from various perspectives; less frequently an inappropriate straight line is used to represent such circular arcs. Appropriate visual schemes, utilizing the elliptical projection of circles and circular arcs, underlie such diverse astronomical paradigms as the understanding of seasons, lunar phases, binary orbits and galaxy classification. It is argued that student lack of an appropriate "visual grammar of space" creates problems in astronomy education analogous to those to be encountered were one to study history without explicit distinctions between present and past tenses. Some successful and/or possible pedagogical strategies are also discussed.

Periodic stripes in the skyflux images are removed in the frequency domain. These stripes are an artifact of the original data processing and are visible in the low and high frequencies. An automatic assessment of the background flux (after flattening) determines the direction of the stripes so that no user interaction is necessary to destripe images. Several destriping passes might be necessary depending on the composition of the IPAC data product. The scientist decides the level of destriping needed for a specific application.

The poster paper will show intermediary and final results of both algorithms; applications of the use of these algorithms will also be presented, such as color transformations of the lower IRAS bands for visual pattern recognition.

The efforts were partly sponsored by NASA grant NAGW-1902.

23.02

STAR—A Scientific Toolkit for Astrophysical Research


Scientists at the Center for Astrophysics and Space Astronomy (CASA) strengthen their software support for research involving multi-mission data analysis. In a joint effort between computer scientists and astrophysicists a software system STAR (Scientific Toolkit for Astrophysical Research) is being developed to investigate the challenges of mixing

- multi-wavelengths,
- multi-dimensional and
- multi-resolution data sets.

The ongoing project concentrates on improving all four domains of astrophysical data analysis, namely

- access to data and databases,
- preprocessing,
- quantitative measurements and
- data visualization.

Special attention is being given to the development of the user interface to provide easy to use tools for scientists.

The poster paper will present STAR's analysis loop, its interface design and first results of its use in multi-wavelengths analysis.

The development of STAR is supported under NASA grant NAGW-1902.

23.03

Astronomical Software Development at the IUE RDAF

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In 1982 the International Ultraviolet Explorer (IUE) project established two Regional Data Analysis Facilities (RDAF's) to aid in the analysis of observations made with the IUE satellite, one located at NASA/GSFC, and one at the University of Colorado. The RDAF's offer data analysis software packages for UNIX and Vax/VMS computers based on the Interactive Data Language (IDL) and will also be nodes for the Astrophysics Data System (ADS) currently scheduled to become operational in late 1990. Researchers may schedule visits to the RDAF's or access the facilities remotely via SPAN, Internet, or dialup modems.