ABSTRACTS

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 visualisation.

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.

Session 23: Working Group on Astronomical Software Display Session, Ballroom C

23.01
Applications of IRAS Preprocessing at the Workstation
G. O. Domik, E. W. Brugel, R. E. Stencel (CASA), S. Vasudevan (Dept. of ECE), J. Pang (Dept. of Physics)

We have developed and implemented computer algorithms to remove two types of degradations in IRAS ICON skyflux images: slowly varying background illumination and periodic stripes. These algorithms provide an assessment of skyflux degradations independent of the new skyflux data soon to be available at IPAC, the Infrared Processing and Analysis Center. Interactive manipulation by the researcher offers an improved understanding of degradations and restoration methods involved.

Numerical or visual interpretation of data is affected by gradient background flux increase or decrease. In order to compare data on the same skyflux plate in a meaningful way, flattening of background flux is necessary. The computer implemented algorithm automatically examines the background and creates a degradation model. This model is then used to adjust background flux levels by simply subtracting the degradation model from the skyflux image.

23.03
Astronomical Software Development at the IUE RDAF

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.