Miscellaneous Collection Description

The following information was compiled from three PDS3 catalog files during the PDS4 migration. The information below describes the three data directories found in the miscellaneous data collection in the IRAS bundle:

- **FPA** - The Filter curves and detector parameters for the IRAS Focal Plane Array (FPA)
- **Filter** - The template for 4 datasets containing the transmission profiles of the IRAS broadband filters
- **Scan** - Spacecraft position vectors and individual scan parameters for the IRAS mission.

Focal Plane Array States Description

Data Set Overview

This data presented with this data set include

FPA.TAB - The IRAS Detector File which provides for each detector of the focal plane array its operational status, associated filter, location, dimension, sterradiance, and readout time offset.

BAND1_12MU.TAB - The transmission and response values given in this table are to energy/wavelength and represent averages over all of the IRAS detectors of Band 1 (12 microns).

BAND2_25MU.TAB - The transmission and response values given in this table are to energy/wavelength and represent averages over all of the IRAS detectors of Band 2 (25 microns).

BAND3_60MU.TAB - The transmission and response values given in this table are to energy/wavelength and represent averages over all of the IRAS detectors of Band 3 (60 microns).

BAND4_100MU.TAB - The transmission and response values given in this table are to energy/wavelength and represent averages over all of the IRAS detectors of Band 4 (100 microns).

Modification History

In Feb. 2002 this data set was reviewed internally as part of a general inventory review and upgrade. At that time in addition to minor format editing the following changes were made to the label files:

- The names of the filter files were changed to reflect the band number and center wavelength. These changes were propagated to this file as well.

- The PRODUCT_NAME field was modified to include the name of the spacecraft.

The associated catalog files, including this one, were upgraded to current standards at the same time.

Review

FPA.TAB underwent peer review on March 24, 1997.

FILTER1.TAB, FILTER2.TAB, FILTER3.TAB, and FILTER4.TAB were peer reviewed on April 26, 1993, and updated on March 24, 1997.

Focal Plane Model

An explication of the focal plane model adopted here is given in McCallon (1992) [MCCALLON1992].

Detector Spectral Response

The detector spectral response of the Ge:Ga detectors used at 100 microns was assumed to be the same as that of the 60 micron detectors even though the material came from a different source. Limits on out-of-band leaks, at short and long wavelengths, are tabulated in Beichman et. al (1988) [BEICHMANETAL1988]. At 12 and 25 microns, these leaks effect the calibration by less than 0.02 percent. At 60 and 100 microns, the effect is less than 10 percent."

Filters

The Infrared Astronomical Satellite provides radiometry for the celestial sphere in four filter passbands. This dataset contains the detailed optical system transmission, detector spectral response, and overall relative spectral response for each band.

CONFIDENCE LEVEL NOTE

The detector spectral response of the Ge:Ga detectors used at 100 microns was assumed to be the same as that of the 60 micron detectors even though the material came from a different source. Limits on out-of-band leaks, at short and long wavelengths, are tabulated in Beichman etal 1988. At 12 and 25 microns, these leaks effect the calibration by less than 0.02 percent. At 60 and 100 microns, the effect is less than 10 percent.

Satellite Position and Scan History

Data Set Overview

This data presented with this data set include

IRASPOS.TAB - The IRAS Position File describes the position of the satellite in its orbit about the Earth at 200-second intervals in heliocentric ecliptic rectangular coordinates (B1950), where the X axis points to the First Point of Ares. In addition an Earth ephemeris is also included, which was generated by Miles Standish at JPL using the information that was available in 1983 to best approximate the knowledge of the Earth's position that was used in the reduction of the IRAS data. Finally, the geocentric position of the satellite is calculated using the above information.

SCAN.TAB - The IRAS Scan History File describes the pointing geometry and length of each survey-mode scan (by SOP OBS) over the entire mission.

Modification History

As part of a general review of holdings in February 2002, the labels and catalog files associated with this data set underwent minor editing to bring them up to current PDS and SBN

standard. No data files were changed during this editing process.