ReadMe for Ulysses KET Full Resolution Data Set Files

The KET full resolution data set contains readout-by-readout values of all science data quantities returned from the Ulysses COSPIN KET. The data set consists of one set of 3 files for each day in which data were returned during the Ulysses mission. If no data were returned during a day or the instrument has been operated in calibration mode, no files have been generated for that day. The 3 files each contain a distinct type of measurement returned by the KET. The pulse-height analysis (PHA) files include some base (unconverted) data in the form of PHA channels that are used to derive the physical unit quantities (energy losses, photon numbers, etc.).

Detailed descriptions of the content and format of each file type are given in header files. For energy ranges, particle types, and more details concerning the data quantities reported, see "A&A Article" on the UDS COSPIN Home Page (http://helio.estec.esa.nl/ulysses/archive/cospin.html) which reproduces Simpson et al., Astron. Astrophys. Suppl. Set: 92, 365-399 (1992).

The file naming convention is

ucosket[I][YEAR][DOY].[FILETYPE]

where YEAR = year (range 1990 – 2009)
DOY = day of year (Jan.1 = 001)
I = Version number of data
FILETYPE is one of the following

int: contains start-times, accumulation intervals, and counts for the spin-averaged coincidence counting rates, each of which are recorded in the spacecraft superformat.

Accumulation intervals are synchronized to the spacecraft spin rather than to the telemetry sequence. Thus each accumulation interval corresponds to an integral number of spins, but the number of spins (and thus seconds) in an accumulation interval varies from readout to readout, usually in a cyclic pattern determined by beating between the length of the telemetry cycle (determined by the telemetry bit rate) and the spacecraft spin period.

Energy ranges and particle types are given in the UDS KET Usernotes at http://.

pha: Definition and interpretation of quantities in this file is complex. See Simpson et al. (1992) for a description of the PHA capabilities of the KET.

This file contains results of **pulse-height analysis** (PHA) of signals produced by an incident particle in the semiconductors D1 and D2, the two Cherenkov C1 and C2 and the scintillation S2 as raw PHA channels. To insure accuracy of the conversion from

channel to energy loss or photon number, a calibration of the system on the detectors is measured by the pulse of relativistic protons performed monthly.

sect: contains start-times, accumulation intervals for all sectors and for each sector in ms, and counts for the **8-sectored coincidence counting rate E4 and P4**, which responds to electrons in the approximate energy range ~2-7 MeV and protons in the energy range from 5.4 to 25 MeV, respectively.

As for the spin-averaged rates, accumulation intervals are spin-synchronous so that each accumulation interval corresponds to an integral number of spins.