omthconv

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Abstract

Converts OM tracking-history data into tracking-star count-rates time series

1 Instruments/Modes

Instrument	Mode
OM	TRACKING

2 Use

pipeline processing	yes
interactive analysis	yes

3 Description

In order to perform accurate tracking throughout an exposure, software onboard the Optical Monitor(OM) selects n (up to 10) guide stars visible within the FOV and monitors their position and counts during the exposure. This information is logged in the ODF OM tracking history data auxiliary file.

This task produces a PPS Product OM OSW FITS tracking star timeseries file containing rates for all guide stars, one column per star, providing serendipitous information on guide star variability.

4 Parameters

This section documents the parameters recognized by this task (if any).

Parameter	Mand	Type	Default	Constraints
thxset	yes	string	none	

name of ODF OM tracking history data auxiliary file

nphset	yes	string	none	

name of ODF OM Nonperiodic Housekeeping file

outset	yes	string	none	

name of output OM OSW FITS tracking star timeseries file

modeset	no	integer	0	

specifies the instrument mode

5 Errors

This section documents warnings and errors generated by this task (if any). Note that warnings and errors can also be generated in the SAS infrastructure libraries, in which case they would not be documented here. Refer to the index of all errors and warnings available in the HTML version of the SAS documentation.

badFileMode *(fatal)*
The datamode for the tracking history file is not set to TRACKING

ZERODRFIT *(warning)*
No tracking history data is present for this exposure so not timeseries information can be plotted
corrective action: No timeseries product files will be generated

6 Input Files

1. ODF OM Nonperiodic Housekeeping file
2. ODF OM Tracking History Data Auxiliary File

7 Output Files

1. PPS Product OM OSW FITS tracking star timeseries file (input to LCPLOT)

8 Algorithm

```
subroutine omthconv
```

```
Read in parameters.

Get a handle on the ODF OM Tracking History Data Auxiliary File.

Determine datamode from keyword in primary header.

Get a handle on the tracking history data binary table extension.

Get start and end of exposure time stamps (OBT) from the ODF Non-Periodic Housekeeping File

Convert Onboard start/end Timestamps (OBT) to event time tags (elapsed seconds since mission
reference time 1998-01-01T00:00:00) using OAL_obtToTimeTag call

Create and get handle on output event list file.

Write required keywords from Tracking History primary header to output file primary header.

Create and get a handle on RATES extension.

Write attributes

Write RATEn columns

Free up memory and pointers.

Release handles on data.

end subroutine  omthconv
```

9 Comments

- The Intermediate OM Tracking History Data Auxiliary file (output of OMPREP) contains the required header information needed by the output data product file as stated in [2].

10 Future developments

- None

References