CORONAL DIAGNOSTIC SPECTROMETER
SoHO

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# IDL access to CDS telemetry files

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# 1 Introduction

All raw CDS data will be made available in telemetry (tm) files which each store one hour's worth of science stream telemetry packets. The science telemetry monitor (STM) will normally be used in realtime to display and monitor the science telemetry, but if lower-level access is required to the tm files themselves, use can be made of a number of routines that have been developed for a variety of reasons. The routines involved are:

| Name | Purpose |
|---|---|
| CHK_TMFILE | Checks file for misplaced APIDs |
| CHK_CHKSUM | Checks file for bad checksums and out of sequence packets counters |
| CHK_TM_TIME | Checks file for misplaced packet time stamps |
| SHOW_TM_PKT | Shows details of individual packets |
| TLM_SUMMARY | Summarizes the file in terms of packets types |
| WHERE_RASTER | Locates start of raster packets. |

Table 1: Telemetry file access routines

These routines are described individually below.

# 2 CHK_TMFILE

The format of the packets in a tm file is obviously fixed unless the file has been corrupted. CHK_TMFILE searches for the four allowed APIDs of CDS data and checks their location within the packet. It reports if this is non-standard.

# 3 CHK_CHKSUM

Each packet has a checksum byte embedded in it. This routine recalculates the checksum from the received packet and compares with the embedded value. It reports any discrepancies. In addition each packet group (HK, Science, Engineering) has its own packet counter which should increment sequentially. If this does not happen, CHK_CHKSUM also reports that.

# 4 CHK_TM_TIME

Under normal operations, the time stamp in the packets should increase sequentially. This routine checks for this and reports any packets out of time order. The science and housekeeping packets are treated separately.

# 5 SHOW_TM_PKT

Any specified packets can be displayed at a variety of levels using this routine. The level of information is controlled with keywords and ranges from a simple interpretation of the header ID to a full binary or hex dump.

# 6 TLM_SUMMARY

Collects statistics on the occurrence of packets of particular types. Details are listed relating to the chosen type (eg raster, exposure or data) and a statistical summary of all packets seen is given at the end.

# 7 WHERE_RASTER

A wrapper for tlm_summary which exclusively returns the packet number of raster header packets.