CORONAL DIAGNOSTIC SPECTROMETER
SoHO

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CDS TEMPERATURE MONITORING

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1 Introduction

The CDS science stream telemetry contains data from 48 temperature-related sensors. These data are contained in the Engineering A and B packets. In order to make the temperature history of CDS easily accessible, the temperature data can be extracted from the telemetry files using the IDL procedure EMON_TEMP_LOG. That procedure samples the telemetry stream and saves the selected data in an IDL save set. The procedure requires write access to a directory in order to create the log. The system MASTER user will have write access to the 'official' log directory, but other users may define the environment variable CDS_ENG_DATA_W to point to a PRIVATE directory and the log may then be written.

2 Running the log creation program

The procedure EMON_TEMP_LOG takes a single parameter which specifies the files from which the telemetry is to be read. A variety of formats is possible. See the header documentation for details. Since the telemetry is only sampled twice hourly (at approximately 15 and 45 minutes past the hour), the logging process is fast and takes just a few seconds to cover a complete day's tm files. Each time the logger is run, it appends the new data to any already there.

3 Accessing the temperature log

3.1 Using SHOW_CDS_TEMP

The simplest way to access the temperature log in order to inspect single, or variable groups of, temperatures is to use the IDL procedure SHOW_CDS_TEMP

This will present the user with a widget interface in which any of the temperature parameters can be selected and plotted. The on-line help describes each of the features in more detail.

One advantage of using this method is that the data are calibrated before being plotted.

It is possible to limit the time range of data plotted both within the program (using the cursor) and also on the command line (using the timerange keyword).

3.2 Using CDS_TEMP_ATLAS

The routine CDS_TEMP_ATLAS creates plots of nine specific groups of temperatures, all using selections from the 32 'BTM' temperature monitors. The data are taken from the temperature log. The start time and duration of the plot can be specified at run time - see the header documentation.

3.3 Using the saved structure directly

The temperature log is stored as an IDL SAVE file in the file:

$CDS_ENG_DATA/temperature_log

This file can be RESTORED directly and the information will be in a variable called CDS_TEMP_LOG. That is a structure with three tags which give the item's name, the time of the data sample and the raw telemetry data.

3.4 EMON

Remember also that the temperatures can be displayed directly from the telemetry using suitable parameter selection within the general engineering monitor program EMON (see software note 26).