CORONAL DIAGNOSTIC SPECTROMETER
SoHO

CDS SOFTWARE NOTE No. 19

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OTHER SOHO INTEROPERABILITY SOFTWARE

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1 Overview

This document describes the known interoperability of SoHO instruments other than CDS. The software is available from URL

ftp://umbra.gsfc.nasa.gov/pub/soho/interop

and the various subdirectories under it.

2 EIT

Taken mostly verbatim from the README file

The routine EIT_IMAGE is designed to read images from FITS files and return a byte-scaled version using a logarithmic scaling. (The scaling may be changed to depend on multilayer channel in a future version.) Although the sample data distributed with this routine are in fact Yohkoh SXT data from 5 February, 1993, any square FITS array of dimension 2^n, n integer, should work.

Note that the IDL astronomy library routine READFITS and various procedures it calls from the same library are necessary to run this routine.

A typical call simply to view an EIT image stored in FITS format would be:

```
b = eit_image(file_name, /show)
```

where "file_name" is a literal string containing the file specification for the FITS file. If one wanted the original, long integer or (in this case) floating-point values, one could use the original_image keyword. The scaling factor for the byte display, FITS header, and FITS header TIME-OBS and DATE-OBS information are also accessible via keywords.

Likely future enhancements:

- when Sun center offset information is added to the EIT FITS header, a wrapper routine to allow point-and-click coordinate readback will be provided.
- similarly, for integrated planning with EIT, a grid of subfields can be plotted over the image, with point-and-click highlighting.
- if demand is sufficient, a Stoneyhurst grid could be superposed on the EIT image.
- a compound widget version could offer a pull-down menu to access the most recent image in any of the four multilayer bands.
- whatever the other experiment groups demand.

3 SUMER

The data files that SUMER has made available for interoperability are *not* in FITS format. Thus, it is questionable how relevant what is in there now will be during operations.

To run the SUMER software, one types

```
IDL> .run sumer_main
```

This then brings up a series of images. The words “Continue”, “Print” and “Exit” appear across the bottom of each window that is created. One executes them by clicking on these words with the mouse.

By examining the file “sumer_main.pro”, one finds that the following commands are needed to read the SUMER “.ir” files.

```
openr,2,tabfile(i)
READ_HEADER_DES,n,ih_desc,ier
READ_HEADER,2,n,ih_desc,0,image_type,date,time,npop,ier
READ_IMAGE,2,image_type,image,ier
close,2
```

The images are then displayed with the commands

```
title=strarr(3)
title(0)=date
title(1)=time
title(2)=npop
DISPLAY_IMAGE,image_type,image,title,selectend
```