Standard Fieldnames for the SOHO On-line Catalog

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22 October 1996

The following is a proposed standard list of keywords for the SOHO on-line catalog. Any comments would be appreciated. Please note the questions at the end. See also the document "Proposed Keywords for SOHO" for descriptions of the various keywords (fieldnames).

In earlier versions of this document, I tried to define the terms "observing program", "observing sequence", "observation", and "experiment". This was not entirely successful for a number of reasons. It now seems better to not try to define these terms, but to allow each instrument team to come up with their own plan as to how their data fits into the catalog scheme.

The catalogs defined here are intended for the EOF core system. Catalogs maintained on individual instrument workstations may differ from these in structure, and/or the addition or removal of various fields.

1 Standard formats

The solution that's been adopted for a standard date format is to store all dates in an ECS-style format, including DATE_MOD. The general structure is

yyyy/mm/dd hh:mm:ss.sss

For example,

1995/03/09 18:23:59.123

For some dates, such as the start and stop dates of coordinated observing programs, only the date is stored. Also, when the time is included, the full accuracy will only be used where appropriate; for example, the values of DATE_MOD in the various catalogs do not need to be stored to millisecond accuracy. However, the start and end times of observations must be specified to full accuracy.

All date/time values are in UTC.

2 The MAIN Catalog

The MAIN catalog contains information about observing programs and targets. Each entry in this catalog represents a unique observing program and target combination. In other words, if an observing program covered several similar targets, then each target would rate a separate entry in the catalog.

The proposed fields in this catalog are listed in Table 1. The primary key fields (those fields which make each record unique) for this catalog are INSTRUME and PROG_NUM.

Two keywords that are very similar are PROG_NUM and PROG_ID. Both are numbers associated with catalog entries. The difference is that PROG_NUM is required to be unique for each record with the same value of INSTRUME, since the combination of the two makes up the primary key. On the other, PROG_ID is used to asociate individual records together as being part of the same observing program. In particular, an observing program that is not contiguous in time, for instance an observation made at the same time each day, or once every solar rotation, could be identified by giving all the records from this observing program the same value for PROG_ID.

Some fields (keywords) may not be applicable to all instruments. In particular, the fields "XCEN", "YCEN", "ANGLE", "IXWIDTH", and "IYWIDTH" may not pertain to the SWAN instrument, since it uses a different coordinate system.

Please note that the keywords have been selected with imaging experiments in mind. This is primarily because the keywords for the other kind of experiments have not been defined yet. When they are defined, then they will be added to the catalog as well.

3 The EXPERIMENT Catalog

The EXPERIMENT catalog contains information about the individual observing sequences that make up an observation program. Each entry in this catalog represents a specific data object (file). If a file contains data from different observing modes, then each observing mode will have a unique entry in this catalog. For every entry in the MAIN catalog, there will be one or more associated entries in EXPERIMENT. The proposed fields in this catalog are listed in Table 2. The primary key fields are INSTRUME and SEQ_NUM.

Associated with the EXPERIMENT catalog is a WAVELENGTHS catalog. This contains a listing of the wavelengths that are associated with each entry in EXPERIMENT. It has the format given by Table 3. For each entry in EXPERIMENT there can be one or more entries in WAVELENGTHS.

Optionally, one can elect to use the LINELIST table instead of the WAVELENGTHS table. This table has the form given by Table 4. To use this table, one must set the WAVE_ID parameter in the EXPERIMENT table to the correct (non-zero) value. The value of using the LINELIST table instead of the WAVELENGTHS table is that it takes up less room in the database–the same linelist can be used over and over.

Note that for any given EXPERIMENT entry, one would specify the wavelengths either through the WAVELENGTHS or LINELIST mechanism, but not both.

4 The COORDINATED and INSTITUTES Catalogs

The COORDINATED catalog maintains information about coordinated observing programs. This includes, but is not limited to, campaigns and Joint Observing Programs (JOPs). The proposed fields are listed in Table 5. The primary key field is CMP_NO.

In addition there is also an INSTITUTES catalog listing the various institutes associated with the coordinated observing program, including the SOHO instrument teams taking part. The pro-

Table 1: The MAIN catalog.

Field	Type	Description
INSTRUME	Character	"CDS", "SUMER", etc.
PROG_NUM	Integer	Unique identifier for this observing program. Note that the combination of INSTRUME and PROG_NUM forms the "primary key" for this catalog.
PROG_ID	Integer	Observing program identification number. See the text for the distinction between PROG_NUM and PROG_ID.
OBS_PROG	Character (80)	Name of the observing program.
SCI_OBJ	Character (80)	Science objective.
SCI_SPEC	Character (160)	More specific scientific objective.
CMP_NAME	Character (120)	Name of a coordinated observing program.
CMP_NO	Integer	Unique identifier for the coordinated observing program. Link to Table 5.
OBJECT	Character (3)	Generic name for the object that was planned to be observed, e.g. "PROMINENCE". This is actually a link to Table 8.
OBJ_ID	Character (12)	Unique identifier for the object that was planned to be observed, e.g. active region number.
DATE_OBS	Date	Start date and time of observing program (UT).
DATE_END	...	End date and time of observing program (UT).
XCEN	Float	Together with YCEN, gives the center of the instrument field-of-view in solar coordinates. In units of arcseconds.
YCEN	...	...
ANGLE	Float	Orientation of vertical axis of instrument field-of-view relative to solar north.
IXWIDTH	Float	Together with IYWIDTH, gives the size of the instrument field of view in its own coordinate frame.
IYWIDTH	...	...
SEQ_FROM	Integer	Range of observing sequence numbers. These correspond to the field SEQ_NUM found in the EXPERIMENT catalog.
SEQ_TO	...	...
COMMENTS	Character (1)	Either "Y" or "N".
DATE_MOD	Date	Date and time when catalog record was last modified.

Table 2: The EXPERIMENT catalog.

Field	Type	Description
INSTRUME	Character	This field, together with PROG_NUM, associates this record with the observing program record in the MAIN catalog.
PROG_NUM	Integer	...
SEQ_NUM	Integer	Unique identifier for this experiment. Note that the combination of INSTRUME and SEQ_NUM forms the "primary key" for this catalog.
FILENAME	Character (256)	Name of Level 1 file containing the experiment.
FILEPATH	Character (256)	Directory path to data file on the SOHO archive system. A blank string can be used to signify that the data is not yet on the SOHO archive system.
OBS_SEQ	Character (40)	Name of the observing sequence used.
OBS_MODE	Character (40)	Observing mode.
DATE_OBS	Date	Start date and time of experiment (UT).
DATE_END	...	End date and time of experiment (UT).
COUNT	Integer	Number of repeated observing sequences making up this experiment.
XCEN	Float	Together with YCEN, gives the center of the instrument field-of-view in solar coordinates. In units of arcseconds.
YCEN	...	...
ANGLE	Float	Orientation of vertical axis of instrument field-of-view relative to solar north.
IXWIDTH	Float	Together with IYWIDTH, gives the size of the instrument field of view in its own coordinate frame.
IYWIDTH	...	...
SEQVALID	Character (1)	Either "Y" or "N" to denote whether the data is of useful scientific value.
DETECTOR	Character (40)	Detector used.
EXPTIME	Float	Exposure time.
EXPCOUNT	Integer	Number of exposures per observing sequence.
WAVE_ID	Integer	An optional ID number pointing to a list of wavelengths observed (Table 4), or zero otherwise.
COMMENTS	Character (1)	Either "Y" or "N".
DATE_MOD	Date	Date and time when catalog record was last modified.

Table 3: The WAVELENGTHS catalog.

Field	Type	Description
INSTRUME	Character	This field, together with SEQ_NUM, associates this record with the corresponding record in the EXPERIMENT catalog.
SEQ_NUM	Integer	...
WAVE_IND	Integer	Wavelength index number, from 1 to N. Note that the combination of INSTRUME, SEQ_NUM, and WAVE_IND forms the "primary key" for this catalog.
WAVEMIN	Float	Minimum observed wavelength, in Ångstroms.
WAVEMAX	Float	Maximum observed wavelength, in Ångstroms.
DATE_MOD	Date	Date and time when catalog record was last modified.

Table 4: The LINELIST catalog.

Field	Type	Description
INSTRUME	Character	This field, together with WAVE_ID forms a unique identification for the linelist.
WAVE_ID	Integer	...
WAVE_IND	Integer	Wavelength index number, from 1 to N. Note that the combination of INSTRUME, WAVE_ID, and WAVE_IND forms the "primary key" for this catalog.
WAVEMIN	Float	Minimum observed wavelength, in Ångstroms.
WAVEMAX	Float	Maximum observed wavelength, in Ångstroms.
DATE_MOD	Date	Date and time when catalog record was last modified.

Table 5: The COORDINATED catalog.

Field	Type	Description
CMP_NO	Integer	Unique number for each record in the catalog.
CMP_NAME	Character	Name of the coordinated observing program.
CMP_TYPE	Character	Type of coordinated observing program, e.g. "JOP" or "Campaign".
CMP_DESC	Character	The scientific objective for the coordinated observing program as a whole.
DATE_OBS	Date	Starting date for the coordinated observing program.
DATE_END	Date	Ending date for the coordinated observing program.
OBSERVER	Character	Name of the observer in overall charge of the coordinated observing program.
COMMENTS	Character (1)	Either "Y" or "N".
DATE_MOD	Date	Date when catalog record was last modified.

Table 6: The INSTITUTES catalog.

Field	Type	Description
CMP_NO	Integer	Link into the COORDINATED catalog.
INST_IND	Integer	Institution index. Note that the combination of CMP_NO and INST_IND forms the primary key for this catalog.
INSTITUT	Character	Institution taking part in the coordinated observing program. If one of the SOHO instrument teams, then the value of this field will be the name of the instrument.
OBSERVER	Character	Observer overseeing the intitution's contribution to the coordinated observing program.
COMMENTS	Character (1)	Either "Y" or "N".
DATE_MOD	Date	Date and time when catalog record was last modified.

posed fields for this catalog are listed in Table 6. The primary key fields are CMP_NO and INSTITUT.

5 The EVENTS Catalog

This catalog contains information about solar and spacecraft events. As such, it serves as an "observatory log". There are two principal kinds of events that will stored in this catalog:

Spacecraft Events: These include events such as spacecraft rolls, loss of telemetry, station-keeping maneuvers—in general anything that would be of importance to the scientific interpretation of the data. *Not* stored in this catalog would be time anomaly events—these are stored in a separate database.

Solar Events: The exact nature of the solar events to be stored in this catalog has yet to be determined. Most likely this will be determined empirically from the amount of effort involved balanced against the desirability of including the data in the catalog.

The suggested fields for this catalog are listed in Table 7. The primary key is EVENT_NO. (Note that this information, with a somewhat different structure, was at one time referred to as GEN-EVENTS.) Some information in this catalog may be difficult to quantify exactly, such as the starting and ending positions and times. It is anticipated that these numbers will represent "best effort" approximate values rather than precise figures. For long duration events, the ending times and positions will roll forward as new information is obtained. Position information for anything other than solar events will be considered meaningless, and will be ignored.

Table 7: The EVENTS catalog.

Field	Type	Description
EVENT_NO	Integer	Unique identifier.
EV_CLASS	Character	Code distinguishing different broad classes of events, e.g. "SOLAR", "SPACECRAFT", possibly others.
EV_TYPE	Character	Type of event, e.g. "ROLL", "FLARE", etc.
EV_DESC	Character	A more detailed description of the event than represented by EV_TYPE.
DATE_EV	Date	Start date and time of event (UT).
DATE_END	...	End date and time of event (UT).
Y_POS	Float	Together with Z_POS, gives the position of a solar event in heliocentric coordinates, at the time given by DATE_EV. Not applicable to spacecraft events.
Z_POS	...	...
Y_END	Float	Together with Z_END, gives the position of a solar event in heliocentric coordinates at the time given by DATE_END.
Z_END	...	...
ORIGIN	Character	Origin of event report, e.g. "SMOCC", "BIG BEAR".
COMMENTS	Character (1)	Either "Y" or "N".
DATE_MOD	Date	Date and time when catalog record was last modified.

Table 8: The OBJECTS catalog.

Field	Type	Description
OBJECT	Character (3)	Three-letter object code
OBJ_DESC	Character (30)	Expanded-out name of the object

Table 9: Generic structure of the comment catalogs.

Field	Type	Description
...	...	Primary key fields from the catalog these comments apply to.
COMM_NO	Integer	Unique comment number. This field, together with INSTRUME if present, or by itself if not, forms the primary key for this catalog.
COMMENT	Character (2000)	Character string comment.
DATE_MOD	Date	Date and time when catalog record was last modified.

6 The Objects Catalog

To save space in the catalog, it is suggested that the value of OBJECT be restricted to a set of standard abbreviations of 2–3 characters. The definitions of the abbreviations would be stored in another catalog, OBJECTS, described by Table 8. This is described in more detail in the World Wide Web document

```
http://orpheus.nascom.nasa.gov/objects_philosophy.html
```

which also includes a suggested table of abbreviations and their definitions. A copy of this table is included in Appendix C; however, one should check the above URL for the up-to-date list.

7 The Comment Catalogs

The comment catalogs associated with the above catalogs described above all have essentially the same format. Each comments catalog file would include the primary key fields needed to relate the comments file to its associated catalog file. The only other fields the comments catalog would have are listed in Table 9.

The principle reason for having a separate comments catalog file, instead of just making it a field in the other catalogs, is that of space. Not all records will have a comment attached to it, and this scheme avoids wasting space on blank comment fields. Also, with this scheme, one could have more than one comment associated with a given record.

Note that the primary keys for the comments catalogs depend on the catalog being commented. If the INSTRUME field is present, as it is for the MAIN and EXPERIMENT catalogs, then the primary key is INSTRUME and COMM_NO. This allows the information for the individual instruments to be maintained on the various workstations, and then uploaded to the EOF core system without modification. However, if the INSTRUME field is not present, as is the case for the COORDINATED and INSTITUTES catalogs, then the primary key is simply COMM_NO. This means that these catalogs must be maintained on the core system directly.

8 Examples

The following sample catalogs show how the INSTRUME, PROG_NUM, and SEQ_NUM keywords interact with the catalogs.

First, we look at the sample MAIN catalog. Note that the PROG_NUM values increase independently for each instrument. It is the combination of the INSTRUME and PROG_NUM keywords that makes each row unique.

Sample MAIN Catalog

INSTRUME	PROG_NUM	OBS_PROG	SEQ_FROM	SEQ_TO	···
UVCS	1	B.P.S	1	3	
UVCS	2	Q.S.	4	7	
CDS	1	B.P.S	1	21	
CDS	2	Q.S.	22	46	
UVCS	3	B.P.S	8	10	
UVCS	4	Q.S.	11	25	
⋮					

Next we look at the sample EXPERIMENT catalog. Again, note that the SEQ_NUM values increase independently for each instrument. Note also that the SEQ_NUM number continues to increase even when PROG_NUM changes.

Sample EXPERIMENT Catalog

INSTRUME	PROG_NUM	SEQ_NUM	OBS_MODE	COUNT	···
UVCS	1	1	LYA	4	
UVCS	1	2	OVI	6	
UVCS	1	3	VLD	9	
UVCS	2	4	LYA	4	
UVCS	2	5	OVI	5	
UVCS	2	6	VLD	9	
UVCS	2	7	LYA	3	
CDS	1	1	NI	50	
⋮					

Please note that the field SEQ_IND (formally OBS_IND) has been removed from the EXPERIMENT catalog. This is because the use of this fieldname was unnecessary, and because it had the potential for causing inconsistencies between instrument teams (see Appendix A). However, it can appear in catalogs maintained on individual instrument workstations.

It would also be instructive to look at a sample comments catalog, in this case for the EXPERIMENT catalog. Note that the primary key fields from EXPERIMENT are replicated in this catalog. Note also that the COMM_NO values increase independently for each instrument.

Sample Comments Catalog for EXPERIMENT

INSTRUME	SEQ_NUM	COMM_NO	COMMENT	...
UVCS	3	1	Flare occurred	
UVCS	7	2	Another flare	
CDS	1	1	Lots of bright points	

APPENDICES

A Changes from previous versions

This appendix lists the changes made from earlier versions of this document. Changes are listed in chronological order.

14 March 1992 Made changes based on changes in "Proposed Keywords for SOHO".

14 March 1992 Added a number of additional keywords to MAIN and EXPERIMENT.

14 March 1992 Changed COMMENTED, DATE_MODIFIED, and TIME_MODIFIED to COMMENTS, DATE_MOD, and TIME_MOD to be more compatible with the other keywords.

15 March 1992 Removed SEQ_IND from the EXPERIMENT catalog. This is because SEQ_IND represents the index within a repeated sequence. However, an observing program could use several different and distinct observing sequences. Also, an entry in EXPERIMENT could either represent one observing sequence, or a repeated sequence.

5 April 1992 Added CAMPAIGN, INSTITUTES and comments catalogs. Added sections for the events, ORBITAL, TIME, and DATA catalogs, although these catalogs have yet to be defined.

10 September 1992 Defined the EVENTS catalog.

8 June 1994 Changed the way dates are stored in the catalogs. Removed all "TIME_" keywords. Changed SCI_OBJ to CMP_DESC in the CAMPAIGN catalog to remove the possibility of confusion. Changed YCEN,ZCEN to XCEN,YCEN, and WIDTH,HEIGHT to IXWIDTH,IYWIDTH. Removed references to ORBITAL, TIME, and DATA catalogs.

30 January 1995 Split off WAVEMIN and WAVEMAX to separate WAVELENGTHS database.

2 February 1995 Added SCI_SPEC to MAIN database.

10 February 1995 Added DATE_MOD to Table 3, added INST_IND to Table 6, and added Appendix B.

14 February 1995 Added OBJECTS table.

21 February 1995 Added Appendix C

27 February 1995 Renamed CAMPAIGN to COORDINATED. Added CMP_TYPE to COORDINATED table.

9 March 1995 Removed requirement that DATE_MOD be in native date format. Clarified Section 1.

18 August 1995 Removed "Questions" section. Added Table 4. Added Appendix D. Changed nm units to Ångstroms.

7 November 1995 Added field FILEPATH to EXPERIMENT catalog. Added section B.2.

Table 10: File header for the Catalog Input File.

Keyword	Description
DATATYPE	"INSTRUMENTER INPUT TO THE SOHO CATALOG"
FILENAME	Name of this file: iiicccccccccc.CIF (see Appendix A of the ICD)
INSTRUME	Instrument that this catalog data applies to
ORIG_ID	ID of originating entity (IWS ID or remote host)
OBSERVER	Person who generated this file
DATE_CRE	Date file was created YYYY/MM/DD HH:MM:SS (GMT)
STARTIME	Start time of period covered YYYY/MM/DD HH:MM:SS (GMT)
ENDTIME	End time of period covered YYYY/MM/DD HH:MM:SS (GMT)
COMMENT	Free text. This keyword may be repeated to allow several comment lines.
END	

9 September 1996 Added string lengths where available.

22 October 1996 Added more detail on the CIF format. Updated object list.

B Proposed input/output format

In order for information to pass between the instrument teams and the centralized database, there must be an agreed upon interchange format. It is proposed that this format mimic the keyword format of the ICD.

B.1 Catalog Input File format

The Catalog Input File (CIF) contains the input from the instrumenter team to the centralized SOHO catalog. The file header is defined by Table 10.

The individual entries are organized by which table they are destined for. They are in Keyword=value format, and include a keyword for each field in the relevant table. The sole exception is INSTRUME which appears in the header. In what follows, only a few keywords are listed to demonstrate the format. The different entries are:

The MAIN catalog (Table 1)

```
MAIN
    PROG_NUM=
    PROG_ID=
       ⋮
    DATE_MOD=
```

The MAIN Comments catalog (cf. Table 9)

```
MAIN_COMMENT
    PROG_NUM=
    COMM_NO=
      ⋮
    DATE_MOD=
```

The EXPERIMENT catalog (Table 2)

```
EXPERIMENT
    PROG_NUM=
    SEQ_NUM=
      ⋮
    DATE_MOD=
```

The EXPERIMENT Comment catalog (cf. Table 9)

```
EXPERIMENT_COMMENT
    SEQ_NUM=
    COMM_NO=
      ⋮
    DATE_MOD=
```

The WAVELENGTHS catalog (Table 3)

```
WAVELENGTH
    SEQ_NUM=
    WAVE_IND=
      ⋮
    DATE_MOD=
```

The LINELIST catalog (Table 4)

```
LINELIST
    WAVE_ID=
    WAVE_IND=
      ⋮
    DATE_MOD=
```

The CIF file must contain a header as the first entry in the file. The word "END" in the header must be present. A blank line, i.e. a line with no characters in it, must be present between the

Table 11: File header for the Catalog Modification File.

Keyword	Description
DATATYPE	"INSTRUMENTER MODIFICATION TO THE SOHO CATALOG"
FILENAME	Name of this file: iiicccccccccc.CMF (see Appendix A of the ICD)
INSTRUME	Instrument that this catalog data applies to
ORIG_ID	ID of originating entity (IWS ID or remote host)
OBSERVER	Person who generated this file
DATE_CRE	Date file was created YYYY/MM/DD HH:MM:SS (GMT)
STARTIME	Start time of period covered YYYY/MM/DD HH:MM:SS (GMT)
ENDTIME	End time of period covered YYYY/MM/DD HH:MM:SS (GMT)
COMMENT	Free text. This keyword may be repeated to allow several comment lines.
END	

header and the next record. Also between two records, there should be one blank line. The table name must appear by itself on the line. After the last record in the CIF, there should be two blank lines, to signal the end of the file.

B.2 Catalog Modification File format

The CIF format discussed in the previous section allows one to modify the information in the catalog by resending the changed records. However, the Catalog Modification File (CMF) provides a simpler way for instrumenters to upload changes to existing records, by only sending the necessary information.

The CMF file header is defined by Table 11. The body of the file has the same format as the CIF file, except that each entry need only contain those fields in the three following classes:

1. The fields needed to uniquely find the entry in the database. Also known as the "primary key". The required fields are listed in Table 12.
2. The fields which are to be changed in the catalog.
3. The field DATE_MOD which must be later than the date stored in the catalog.

B.3 Catalog Output File format

The Catalog Output File (COF) contains data from the centralized SOHO database that is distributed to the instrument teams. The file header is defined by Table 13.

Table 12: Required fields for each entry type in a CMF file. The DATE_MOD field is also required for all entries.

Entry type	Required fields
MAIN	PROG_NUM
MAIN_COMMENT	PROG_NUM, COMM_NUM
EXPERIMENT	SEQ_NUM
EXPERIMENT_COMMENT	SEQ_NUM, COMM_NUM
WAVELENGTH	SEQ_NUM, WAVE_IND
LINELIST	WAVE_ID, WAVE_IND

Table 13: File header for the Catalog Output File.

Keyword	Description
DATATYPE	"SOHO CATALOG DATA"
FILENAME	Name of this file: iiicccccccccc.COF (see Appendix A of the ICD)
ORIG_ID	ID of originating entity
OBSERVER	Person who generated this file
DATE_CRE	Date file was created YYYY/MM/DD HH:MM:SS (GMT)
STARTIME	Start time of period covered YYYY/MM/DD HH:MM:SS (GMT)
ENDTIME	End time of period covered YYYY/MM/DD HH:MM:SS (GMT)
COMMENT	Free text. This keyword may be repeated to allow several comment lines.
END	

The entries in this file include all the entries in the CIF (Section B.1, except that INSTRUME keyword is added to each of the entries. Thus, in the COF, entries from the MAIN catalog would have the format:

The MAIN catalog (Table 1)

```
MAIN
    INSTRUME=
    PROG_NUM=
    PROG_ID=
      ⋮
    DATE_MOD=
```

and the other entries would be similarly modified. Also, there would be the following additional entry types:

The COORDINATED catalog (Table 5)

```
COORDINATED
    CMP_NO=
    CMP_NAME=
      ⋮
    DATE_MOD=
```

The COORDINATED Comments catalog (cf. Table 9)

```
COORDINATED_COMMENT
    CMP_NO=
    COMM_NO=
      ⋮
    DATE_MOD=
```

The INSTITUTES catalog (Table 6)

```
INSTITUTE
    CMP_NO=
    INST_IND=
      ⋮
    DATE_MOD=
```

The INSTITUTES Comments catalog (cf. Table 9)

```
INSTITUTE_COMMENT
    CMP_NO=
    INST_IND=
    COMM_NO=
      ⋮
    DATE_MOD=
```

The EVENTS catalog (Table 7)

```
EVENT
    EVENT_NO=
    EV_CLASS=
      ⋮
    DATE_MOD=
```

The EVENTS Comments catalog (cf. Table 9)

```
EVENT_COMMENT
    EVENT_NO=
    COMM_NO=
      ⋮
    DATE_MOD=
```

The OBJECTS catalog (Table 8)

OBJECT
  OBJECT=
  OBJ_DESC=

C The Objects List

The following is a list of standard abbreviations and their associated names to be used in the OBJECTS field. However, one should check the URL

`http://orpheus.nascom.nasa.gov/objects_philosophy.html`

for the up-to-date list. The abbreviations will be stored in the database to save space. The full name should appear in the FITS header.

```
ARC Arcade
AFS Arch Filament System
ANE Anemone
AR  Active Region
BP  Bright Point
CR  Coronal Rain
CH  Coronal Hole
COM Comet
COR Corona
CHR Chromosphere
CS  Coronal Streamer
CT  Coronal Transient
CUS Cusp
DB  Disparation Brusque
DC  Disk Center
DFL Disappearing Filament
DFX Disappearing Flux
DF  Downflow
EFL Emerging Flux
EPR Eruptive Prominence
EFI Erupting Filament
EVF Evershed Flow
FAC Faculae
FC  Filament Channel
FLC Flux Cancellation
FLG Filigree
FIL Filament
FLR Flare
FP  Footpoint
```

```
FS  Full Sun / Full Disk
FL  Flow
GR  Granulation
HR  Hedge Row
JET Jet
LB  Loop Brightening
LE  Loop Evacuation
LMB Solar Limb
LO  Loop
CME Coronal Mass Ejection
MHR MDI High Resolution Field
MS  Magnetic Shear
MT  Mercury Transition
MW  Moreton Wave
NET Network
NL  Neutral Line
PAR Partial Image
PC  Polar Crown
PCH Polar Coronal Hole
PEN Sunspot Penumbra
PFL Postflare Loops
PHO Photosphere
PLG Plage
POR Pore
PP  Polar Plume
PR  Prominence
PLT Planet
QS  Quiet Sun
RIB Two-ribbon Flare
SPR Spray
SG  Supergranulation
SPI Spicule
SR  Surge
SS  Sunspot
ST  Star
SW  Solar Wind
SYN Synoptic Observation
TR  Transition Region
UF  Upflow
UMB Sunspot Umbra
VT  Venus Transition
WAV Wave
WLF White Light Flare
```

D Examples

The following is an example of entering in two experiment entries using the WAVELENGTHS mechanism. Note that each EXPERIMENT entry must have associated WAVELENGTHS entries.

```
MAIN
    PROG_NUM = 2
    PROG_ID  = 0
    OBS_PROG = EMSQS
    SCI_OBJ  = Emission Measure Study of the Quiet Sun/1
    SCI_SPEC =
    OBJECT   =
    OBJ_ID   =
    DATE_OBS = 1996/01/01 01:38:02.094
    DATE_END = 1996/01/01 06:59:58.999
    XCEN     = -838.610
    YCEN     = 215.783
    ANGLE    = 0
    IXWIDTH  = 240
    IYWIDTH  = 240
    SEQ_FROM = 2
    SEQ_TO   = 3
    COMMENTS = N
    DATE_MOD = 1996/02/28 19:12:31

EXPERIMENT
    PROG_NUM = 2
    SEQ_NUM  = 2
    FILENAME = S2R0
    FILEPATH =
    OBS_SEQ  = R4V1
    OBS_MODE = N4R4L4
    DATE_OBS = 1996/01/01 01:38:02.094
    DATE_END = 1996/01/01 04:45:00.000
    COUNT    = 1
    XCEN     = -838.610
    YCEN     = 215.783
    ANGLE    = 0
    IXWIDTH  = 240
    IYWIDTH  = 240
    SEQVALID = Y
    DETECTOR = NIS
    EXPTIME  = 1.00000
    EXPCOUNT = 120
    WAVE_ID  = 0
    COMMENTS = N
    DATE_MOD = 1996/02/28 19:12:31
```

```
WAVELENGTH
    SEQ_NUM  = 2
    WAVE_IND = 1
    WAVEMIN  = 275
    WAVEMAX  = 278
    DATE_MOD = 1996/02/28 19:12:31

EXPERIMENT
    PROG_NUM = 2
    SEQ_NUM  = 3
    FILENAME = S2R1
    FILEPATH =
    OBS_SEQ  = R4V1
    OBS_MODE = N4R4L4
    DATE_OBS = 1996/01/01 04:45:00.000
    DATE_END = 1996/01/01 06:59:58.999
    COUNT    = 1
    XCEN     = -838.610
    YCEN     = 215.783
    ANGLE    = 0
    IXWIDTH  = 240
    IYWIDTH  = 240
    SEQVALID = Y
    DETECTOR = NIS
    EXPTIME  = 1.00000
    EXPCOUNT = 120
    WAVE_ID  = 0
    COMMENTS = N
    DATE_MOD = 1996/02/28 19:12:31

WAVELENGTH
    SEQ_NUM  = 3
    WAVE_IND = 1
    WAVEMIN  = 266.5
    WAVEMAX  = 268.3
    DATE_MOD = 1996/02/28 19:12:31

WAVELENGTH
    SEQ_NUM  = 3
    WAVE_IND = 2
    WAVEMIN  = 270.9
    WAVEMAX  = 273.2
    DATE_MOD = 1996/02/28 19:12:31

WAVELENGTH
    SEQ_NUM  = 3
    WAVE_IND = 3
```

```
    WAVEMIN  = 276.0
    WAVEMAX  = 278.9
    DATE_MOD = 1996/02/28 19:12:31

WAVELENGTH
    SEQ_NUM  = 3
    WAVE_IND = 4
    WAVEMIN  = 287.1
    WAVEMAX  = 288.5
    DATE_MOD = 1996/02/28 19:12:31
```

And here is an example of adding two experiment entries using the LINELIST mechanism. Note that the linelist only needs to be entered in once—it can be reused over and over again for the rest of the mission as long as it doesn't change.

```
LINELIST
    WAVE_ID  = 21
    WAVE_IND = 1
    WAVE_MIN = 442.8
    WAVE_MAX = 445.0
    DATE_MOD = 1996/02/28 19:12:31

LINELIST
    WAVE_ID  = 21
    WAVE_IND = 1
    WAVE_MIN = 446.9
    WAVE_MAX = 449.2
    DATE_MOD = 1996/02/28 19:12:31

EXPERIMENT
    PROG_NUM = 9
    SEQ_NUM  = 10
    FILENAME = S9R0
    FILEPATH =
    OBS_SEQ  = R5V1
    OBS_MODE = N4R5L21
    DATE_OBS = 1996/01/01 18:35:00.690
    DATE_END = 1996/01/01 22:35:00.690
    COUNT    = 1
    XCEN     = 0
    YCEN     = 0
    ANGLE    = 0
    IXWIDTH  = 240
    IYWIDTH  = 240
    SEQVALID = Y
    DETECTOR = NIS
    EXPTIME  = 10.0000
    EXPCOUNT = 120
```

```
    WAVE_ID  = 21
    COMMENTS = N
    DATE_MOD = 1996/02/28 19:12:31

EXPERIMENT
    PROG_NUM = 9
    SEQ_NUM  = 511
    FILENAME = S510R0
    FILEPATH =
    OBS_SEQ  = R5V1
    OBS_MODE = N4R5L21
    DATE_OBS = 1996/02/11 18:35:00.690
    DATE_END = 1996/02/11 22:35:00.690
    COUNT    = 1
    XCEN     = 100
    YCEN     = 100
    ANGLE    = 0
    IXWIDTH  = 240
    IYWIDTH  = 240
    SEQVALID = Y
    DETECTOR = NIS
    EXPTIME  = 10.0000
    EXPCOUNT = 120
    WAVE_ID  = 21
    COMMENTS = N
    DATE_MOD = 1996/02/28 19:12:31
```

Finally, we have an example of a CMF file, changing the single parameter FILEPATH.

```
EXPERIMENT
    SEQ_NUM  = 10
    FILEPATH = /soho-archive/public/data/processed/cds
    DATE_MOD = 1996/03/05 11:47:23
```