Reference Guide and Complete History of FOS Calibration Reference Files and Tables ("The Good, The Bad, and The Ugly")

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Abstract

Complete tabulations of *recommended* FOS reference files (*except* flat field, inverse sensitivity, and dead diodes) and reference tables *AS OF 12 AUGUST 1994* are specified in convenient matrix format. Lists of recommended flat fields are covered in CAL/FOS-090 (C. D. Keyes and C. J. Taylor, April, 1993), inverse sensitivity is in CAL/FOS-093 (C. J. Taylor and C. D. Keyes, June, 1993), and dead diodes is in CAL/FOS-112 (C. J. Taylor, August, 1994) and current lists of all three are found on STEIS in the /instrument_news/fos directory. ASCII and Postscript versions of the lists of recommended FOS reference files and tables covered in this report are posted on STEIS in the /instrument_news/fos directory.

A complete history of all reference files and tables delivered to Calibration Data Base System (CDBS) *including superceded, redundant, and erroneous deliveries* is also provided. Current recommendation lists and histories are to be maintained and made available to the FOS Calibration team, analysis group, and the archive group. The history of all reference files and tables is not planned to be posted on STEIS. This report is aimed at internal users rather than the general observing community.

I. Introduction

There are currently six reference file types and eleven reference table types used in calibration (see Table 1). Two reference file types, Point Spread Function and Line Spread Function, are not used in CALFOS. Determining the correct file to use can be daunting, as there are thousands of reference files. This report will list the recommended files as well as the history of all the files delivered to CDBS. While the IRAF/STSDAS task **getreffile** and the Calibration Reference screens in StarView will list the recommended reference files and tables for a particular observation, it is a good idea to double check this report and the latest versions of the flat field, inverse sensitivity (IVS), and dead diodes recommendation lists on STEIS.

In the future there will be one new reference file type and four new reference table types. The reference file will be an Average Inverse Sensitivity (not to be confused with the current Inverse Sensitivity reference file). The four new reference tables will be: HST Focus History, Relative

aperture throughput, Relative aperture throughput versus focus, and Time changes in inverse sensitivity. An upcoming Instrument Science Report will explain the new file and tables. Future updates to the recommendation list and history list will contain these new files.

Table 1: FOS Reference Files and Tables Types

CDBS relation	CALFOS Header Keyword	Filename Extension	Contents
cybacr	BACHFILE	.r0h & .r0d	Default background file (count rate)
cyfltr	FLnHFILE	.r1h & .r1d	Flat field file
cyivsr	IVnHFILE	.r2h & .r2d	Inverse Sensitivity file (ergs cm^{-2} Å^{-1})
cyretr	RETHFILE	.r3h & .r3d	Retardation file for polarimetry data
cyddtr	DDTHFILE	.r4h & .r4d	Dead (Disabled) Diode file
cyqinr	DQnHFILE	.r5h & .r5d	Data Quality Initialization file
cypsf	N/A	.r6h & .r6d	Point Spread Function files
cylsf	N/A	.r7h & .r7d	Line Spread Function files
cyccs0r	CCS0	.cy0	Aperture areas
cyccs1r	CCS1	.cy1	Aperture positions
cyccs2r	CCS2	.cy2	Sky emission line position
cyccs3r	CCS3	.cy3	Sky/background filter widths
cyccs4r	CCS4	.cy4	Wollaston/waveplate parameters (Polarimetry)
cyccs5r	CCS5	.cy5	Sky shift parameters
cyccs6r	CCS6	.cy6	Wavelength parameters
cyccs7r	CCS7	.cy7	GIMP scale factors
cyccs8r	CCS8	.cy8	Mean background count rate
cyccs9r	CCS9	.cy9	Scattered light correction
coccg2r	CCG2	.cmg	Paired-pulse parameters (with GHRS)

The three reference file types that are covered in CAL/FOS-090, 093, and 112 (flat fields, inverse sensitivity, and dead diodes, respectively) are time variable and have more complex recommendations. The reference files and tables in this report have more straightforward

recommendations. Tables 2-8 are recommended reference files and tables. Two types of reference files, the Data Quality Initialization and Line Spread Functions, have too many files to be easily presented in a table. However, ASCII tables of the recommended files are posted on STEIS as fos_qin_recommend.txt (for Data Quality Initialization) and fos_lsf_recommend.txt (for Line Spread Function) in the /instrument_news/fos directory.

Tables 9-28 show the complete history of all files delivered to CDBS. All known deliveries are listed, including bad files that should not be used. In the case of Dead Diodes, there is even a table of files that have been delivered to Post-Observation Data Processing System (PODPS), but have subsequently been deleted from CDBS.

II. Lists of Recommended Files and Tables ("The Good")

The common and/or supported configurations of the recommended files and tables are presented in Tables 2-8. The columns vary according to type of reference file and table and depend on the CDBS selection criteria. However, each entry does have the same format: the USEAFTER date as *yyyymmdd* and the filename with both the header and data file extensions.

This section contains a brief description and the selection criteria used by CDBS (except USEAFTER) to determine the correct file. The selection criteria are from the Calibration Data Base Design, Version 6.0 (April, 1994).

Background Reference File (Table 2):
This reference file is the default background in count rate. The CDBS selection criteria are detector and overscan. However Table 2 shows the files for the default, overscan=5.

Flat Field Reference File (not listed here):
The recommended flat field files are listed in CAL/FOS-090 and in updated files (in both ASCII and Postscript formats) on STEIS in the /instrument_news/fos directory. The updated files are: flat_field_tables_*mmmyy*.ps, flat_field_tables_*mmmyy*.txt, post_costar_flat_field_*mmmyy*.ps, and post_costar_flat_field_*mmmyy*.txt, where *mmmyy* is month the posting date in month and year, ".ps" indicates the Postscript version, and ".txt" is the ASCII text version.

The CDBS selection criteria are: detector, overscan, aperture id, aperture position, filter grating wheel id, polarizer id, and pass direction. The tables in CAL/FOS-090 and the updated tables on STEIS are for overscan=5.

Inverse Sensitivity Reference File (not listed here):
The recommended IVS files are listed in CAL/FOS-093 and in updated files (in both ASCII and Postscript formats) on STEIS in the /instrument_news/fos directory. The updated files are: ivs_tables_*mmmyy*.ps, ivs_tables_*mmmyy*.txt, post_costar_ivs_*mmmyy*.ps, and post_costar_ivs_*mmmyy*.txt, where *mmmyy* is the posting date in month and year, ".ps" indicates

the Postscript version, and ".txt" is the ASCII text version.

The CDBS selection criteria are: detector, overscan, aperture id, aperture position, filter grating wheel id, polarizer id, and pass direction. The tables in CAL/FOS-093 and the updated tables on STEIS are for overscan=5.

Retardation Reference Files (Tables 3-6):

The retardation files are used during polarimetry calibration to create the observation matrix $f(w)$. Tables 3 and 4 show the reference files for the supported configurations. The recommended files are ground based numbers based on recent inflight wavelength dispersion and were created by Richard Allen.

Tables 5 and 6 show the reference files for the non-supported configurations. As you will see in the history section (Section III), the non-supported configuration files are not the most recent.

The CDBS selection criteria are: detector, overscan, polarizer id, and filter grating wheel id.

Dead (Disabled) Diode Reference Files (not listed):

The recommended dead diode files are listed in CAL/FOS-112 and in updated files (in both ASCII and Postscript formats) on STEIS in the /instrument_news/fos directory. The updated files are: dead_diode_tables_mmmyy.ps and dead_diode_tables_mmmyy.txt, where mmmyy is month the posting date in month and year, ".ps" indicates the Postscript version, and ".txt" is the ASCII text version.

The CDBS selection criterion is detector.

Quality Initialization Reference Files (not listed):

Because there are almost 1800 different recommended quality initialization files, tables of recommended files are not listed here. Posted on STEIS in the /instrument_news/fos is an ASCII table of the recommended files, fos_qin_recommend.txt. The table columns are: useafter, detector, overscan, aper_id, aper_pos, fgwa_id, polar_id, pass_dir, and header_file. **WARNING, THE FILE IS MORE THAN 80 CHARACTERS WIDE.**

The quality initialization files are used to flag intermittent or noisy diodes but *have not been kept up to date.* Current lists of intermittent and noisy diodes are included in the recommended list of dead diode reference files posted on STEIS and are available from the Research Support Branch Analysis Hot Line (telephone: (410) 338-1082 or e-mail: *analysis@stsci.edu*).

The CDBS selection criteria are: detector, overscan, aperture id, aperture position, filter grating wheel id, polarizer id, and pass direction.

Point Spread Function Reference Files (Table 7):

FOS point spread function (PSF) reference files are not used in CALFOS calibration steps. They have been delivered to CDBS for reference. The PSF's are Pre-COSTAR only. Refer to CAL/FOS-104 (I. N. Evans, September, 1993) for more details.

The CDBS selection criteria are: detector and wavelength.

Line Spread Function Reference Files (not listed here):

Because there are 513 Line spread function (LSF) reference files, tables of the recommended files are not listed here. Posted on STEIS in the /instrument_news/fos directory is an ASCII table of the recommended files, fos_lsf_recommend.txt. The table columns are: useafter, detector, aper_id, wavelength, and header_file. The LSF are Pre-COSTAR only. For more details, please refer to CAL/FOS-104.

The CDBS criteria are: detector, wavelength, and aperture id.

Aperture Areas Reference Table (Table 8):

This reference table contains the areas of the FOS entrance apertures and is used to scale the sky spectrum to the object spectrum. The appropriate table entry is determined by: detector, aperture id, and aperture position.

Aperture Positions Reference Table (Table 8):

This reference table is used to determine which aperture (UPPER or LOWER) of a paired aperture was used. The appropriate table entry is determined by: detector and filter grating wheel id.

Sky Emission Line Position Reference Table (Table 8):

This reference table specifies spectral regions in a sky spectrum known to have emission lines. The regions are not smoothed before the sky is subtracted from the object spectrum. The appropriate table entry is determined by: detector, filter grating wheel id, first channel (diode), and NXSTEPS. Note that these are the pre-launch values. The Science Verification data has never been confirmed due to poor table design.

Sky/Background Filter Widths Reference Table (Table 8):

This reference table specifies the mean and median filter widths for smoothing the background and sky spectra. The appropriate table entry is determined by detector.

Wollaston/Waveplate Parameters Reference Table (Table 8):

This reference table is used in the polarimetry calibration. It contains the angles of each of the two pass directions with respect to the Q=1 coordinate axis of the polarization reference frame. The

appropriate table entry is determined by: detector and polarizer id.

The difference between the b9d1019my.cy4 table and the e5v13262y.cy4 tables is that the latter table has the first inflight calibrated Red side (Amber) values and updated Blue side values. Only the supported configurations were updated.

Sky Shift Parameters Reference Table (Table 8):
This reference table gives the shift (in data points) used to align the sky spectrum with the object spectrum before subtracting. The appropriate table entry is determined by: detector, aperture id, aperture position, filter grating wheel id, and NXSTEPS.

Wavelength Parameters Reference Table (Table 8):
This reference table gives the dispersion relation used to compute the wavelength of each data point from the diode position. The appropriate table entry is determined by: detector, filter grating wheel id, aperture id, aperture position, polarizer id, and pass direction.

The difference between the two tables, bck10546y.cy6 and e5v11576y.cy6, is that the latter contains the first calibrated Red side (Amber) polarimetry wavelengths and updated Blue side polarimetry wavelengths. Only supported polarimetry configurations were updated.

GIMP Scale Factors Reference Table (Table 8):
This reference table contains the scale factors used for scaling the model geomagnetic field strength calculations in CALFOS. These calculations are used to correct the geomagnetically induced image motion problem (GIMP). The appropriate table entry is determined by detector.

Starting in April, 1993 the GIMP has been corrected onboard by default. If the science header keyword YFGIMPEN is equal to FALSE, then the onboard correction was not performed and this calibration table is used in CALFOS.

Mean Background Count Rates Reference Table (Table 8):
This reference table contains the predicted mean background count rates as a function of geomagnetic latitude and longitude. The mean background count rate at the position and time of the observation is interpolated from the table and scales the reference background file in CALFOS. The appropriate table entry is determined by: detector, geomagnetic latitude, and geomagnetic longitude.

Scattered Light Correction Reference Table (Table 8):
This reference table contains the beginning and ending diode ranges which define the region of the spectral data from which the amplitude of scattered light will be measured. These regions correspond to spectral regions that have no sensitivity to dispersed light. Some gratings lack regions of no sensitivity and therefore contain zeros for the range specification. The appropriate

table entry is determined by: detector and filter grating wheel id.

Paired-Pulse Parameters Reference Table (Table 8):

This reference table contains the paired-pulse parameters used to correct for non-linearity at high count rates. This table is shared with GHRS. The appropriate table entry is determined by: instrument and detector.

III. History of Reference Files and Tables ("The Bad and The Ugly")

Tables 9-28 contain brief histories of all files currently in CDBS. The table columns are: filename, detector, USEAFTER date (the reference file or table should be applied to data taken on or after this date), CDBS Entry date, source, and comment. For most of the filenames, only the first 3 characters of the rootname are specified. This is because multiple files with different configurations but with the same history were delivered at the same time. The full list of files and configurations can be obtained using the STSDAS task **query** (see Section IV).

The filenames, detector, USEAFTER, CDBS entry date, and source are obtained from querying the CDBS (see Section IV for details). The comments come from private communication, various Instrument Science Reports, and the "TIB TO PODPS DATA TRACKING FORM". Source of the comment information and references to the appropriate Instrument Science Reports will be included in the general summary for each file and table below.

The CDBS Entry date for early files, particularly pre-launch, is unreliable, but gives the general time frame of when it was delivered. Other files were superceding correct deliveries that were delivered with the same reference file name.

Background Reference File History (Table 9):
Source of the comments were taken from the FOS SV Report (FOS Investigation Definition Team and Associates, May, 1992). Please refer to CAL/FOS-071 (E. I. Rosenblatt *et al*, April, 1992) and CAL/FOS-080 (R. Lyons *et al*, March, 1992) for more information.

Flat Field Reference File History (Table 10):
Source of the comments were taken from the FOS SV Report, CAL/FOS-075 (S. F. Anderson, February 1992), CAL/FOS-088 (D. Lindler *et al*, March, 1993), and private communication with: Scott Anderson, George Hartig, Don Lindler, and Richard Allen (for polarimetric flat field files). Plus CAL/FOS-090 and the updated tables of recommended flat fields on STEIS provide a brief description and history of recent flats.

Inverse Sensitivity Reference File History (Table 11):
Source of the comments were from history section of the IVS header file, "TIB TO PODPS DATA

TRACKING FORM", CAL/FOS-077 (J. D. Neill *et al*, April 1992), and from private communication with Don Neill, Ralph Bohlin, and Richard Allen (for polarimetric flat field files). CAL/FOS-093 and the updated tables of recommended IVS on STEIS provide a brief description and history of recent IVS. The following Instrument Science Reports provide more information on IVS reference files and related topics: CAL/FOS-077, CAL/FOS-084 (R. C. Bohlin and J. D. Neill, July, 1992), CAL/FOS-085 (D. Lindler and R. Bohlin, August, 1992), CAL/FOS-091 (K. Horne and M. Eracleous, August, 1993), CAL/FOS-097 (R. Bohlin, August, 1993), CAL/FOS-102 (D. J. Lindler and R. C. Bohlin, August, 1993), CAL/FOS-105 (I. N. Evans, September, 1993), CAL/FOS-106 (R. C. Bohlin, October, 1993), CAL/FOS-118 (C. Keyes *et al*, January, 1994), CAL/FOS-120 (R. C. Bohlin, February, 1994), and CAL/FOS-125 (D. J. Lindler and R. C. Bohlin, June, 1994).

Retardation Reference File History (Table 12):
Source of the comments is from "TIB TO PODPS DATA TRACKING FORM" and private communication with Richard Allen. The following Instrument Science Report offers more information: CAL/FOS-078 (R. G. Allen and P. S. Smith, March, 1992).

Note that the INFLIGHT data is ground based retardation angles with inflight wavelengths. No records could be found for the error delivery to CDBS that the "b6o" set replaced. Also no reason could be found for why the b7p125325y.r3h file replaces b6o10475y.r3h.

Dead (Disabled) Diode Reference File History (Tables 13 and 14):
Table 13 is the history of all dead diode reference files currently in CDBS. Some files had been delivered to CDBS and PODPS but then deleted from CDBS due to errors in the files as shown in Table 14. These two tables were also presented at the HST Calibration Workshop in November, 1993.

The source of the comments is from "TIB TO PODPS DATA TRACKING FORM" and the history in the dead diode reference file header.

The dead diode tables had to be redelivered in March, 1992 with USEAFTER dates. Because the default location of where CALFOS finds the list of disabled diodes changed from onboard telemetry in the UDL (.ulh files) to the dead diode reference file, new files had to be created to correspond to dates when diodes died or were disabled.

Data Quality Initialization Reference File History (Table 15):
Comments come from querying the CDBS database. Due to limited resources and poor calibration design, the files are not kept up to date, however current lists of intermittent and noisy diodes can be obtained from STEIS in the dead diode update tables and from Research Support Branch Analysis Hot Line.

Point Spread Function Reference File History (Table 16):

Please refer to CAL/FOS-104 (I. N. Evans, September, 1993) for details. These files are Pre-COSTAR only.

Line Spread Function Reference File History (Table 17):

Please refer to CAL/FOS-104 (I. N. Evans, September, 1993) for details. These files are Pre-COSTAR only.

Aperture Areas Reference Table History (Table 18):

Source of the comment is from querying the CDBS. The SV Report states that the pre-launch values were retained due to the PSF and refers to the never completed CAL/FOS-072 (R. Harms and L. Dressel) for more information.

Aperture Position Parameters Reference Table History (Table 19):

Source of the comments is from querying the CDBS and from private communication with George Hartig and Ian Evans.

Sky Emission Line Position Reference Table History (Table 20):

Source of the comments is from querying the CDBS and from private communication with Ian Evans and George Hartig. The problem with the reference table structure is that it only allows one diode range for each spectral element, where more than one is needed.

Sky/Background Filter Width Reference Table History (Table 21):

Source of the comment is from querying the CDBS.

Wollaston/Waveplate (Polarimetry Reduction) Parameters Reference Table History (Table 22):

Source of the comments is from querying the CDBS and private communication with George Hartig and Richard Allen. Please refer to CAL/FOS-078 (R. G. Allen and P. S. Smith, March, 1992) for more information.

Sky Shift Parameters Reference Table History (Table 23):

Source of the comment is from querying the CDBS and from private communication with George Hartig.

Wavelength Parameters Reference Table History (Table 24):

Source of the comments is from "TIB TO PODPS DATA TRACKING FORM" and private communication with George Hartig and Richard Allen. Please refer to CAL/FOS-067 (G. A. Kriss *et al*, April, 1992) and CAL/FOS-070 (G. A. Kriss *et al*, February, 1992) for more

information.

Scale Factors for GIMP Correction Reference Table History (Table 25):

Please refer to CAL/FOS-066 (V. T. Junkkarinen *et al*, April, 1992) and CAL/FOS-082 (E. A. Beaver and P. Foster, August 1992).

Mean Background Count Rates Reference Table History (Table 26):

Please refer to the following Instrument Science Reports for more information: CAL/FOS-071 (E. I. Rosenblatt *et al*, April, 1992), CAL/FOS-076 (E. Beaver and R. W. Lyons, April, 1992), CAL/FOS-079 (W. A. Baity *et al*, March, 1992), and CAL/FOS-080 (R. Lyons *et al*, March, 1992).

Scattered Light Correction Parameters Reference Table History (Table 27):

Please refer to the following Instrument Science Reports for more information: CAL/FOS-073 (F. Bartko *et al*, April, 1992), CAL/FOS-101 (E. Kinney and R. Gilmozzi, June, 1994) and CAL/FOS-114 (M. Rosa, October, 1993).

Paired Pulse Parameters Reference Table History (Table 28):

Source of the comments is from querying the CDBS and private communication with George Hartig.

IV. Location of Reference Files and Tables

Unless otherwise noted, all the reference files and tables listed in this report are in CDBS, PODPS, and the Archive. The files and tables are first delivered to CDBS and then get released to PODPS and delivered to Archive.

In addition, copies of the files are made available in /cdbs/yref (for reference files) and /cdbs/ytab (for reference tables) directories on: Tib, Nemesis, Icarus, Sol, VAX Science Cluster, and are posted on STEIS. New files and tables are copied nightly via daemon from the Tib cluster to STEIS and Nemesis (the UNIX science clusters then point to Nemesis). However, the files and tables must be manually put on Tib and the VAX Science Cluster by Calvin Tullos in the Science Observatory Branch. Outside users can get them from STEIS in the /cdbs/yref or /cdbs/ytab directories, or retrieve them from Archive using the Files or Dataset screen. Remember that the files and tables will be in UNIX format on STEIS and VAX format from the Archive. Use the STSDAS tasks, **vax2sun** and **sun2vax**, to convert to the appropriate format.

The easiest methods to determine if you have the correct reference file or table for your observation are to run STSDAS **getreffile** (in stlocal.cdbsutil) or use the Calibration Reference screen in StarView (see HST Data Handbook, "Identifying the Best Files Using StarView", page 71). Both programs use the date of the observation and the USEAFTER dates of the reference

files and tables to determine the correct file. The most recent version of the file will be chosen if there are multiple files with the same USEAFTER date. We urge you to check the results with the tables of recommended files posted on STEIS. Note that **getreffile** is available only at STScI.

If you want to find the files for a particular configuration, then the best way is to use the STSDAS task, **query**, in the stlocal.cdbsutil package (again only at STScI). You'll have to use the CDBS Relation name in Table 1 to as the parameter id in **query**. The CDBS selection criteria are listed in Section II for each reference file and table. Refer to the Calibration Data Base Design (Version 6.0, April, 1994) for the list of columns available for each reference file and table. In order to find out the "filename" for the reference tables, you'll have to use the STSDAS task, **inquiry** (in stlocal.cdbsutil). The parameter id "relinfo_sdas" contains the names of the reference tables. These tasks will give you the reference file or table that fulfills the specified search parameters, but it will not tell you if it is an appropriate file. Please refer to tables of recommended files and the history tables to verify if it is an appropriate file or table. All information in this report from the CDBS was obtained using **query** and **inquiry**.

V. Availability of Information and Updates

Periodically updated ASCII text and Postscript versions of Tables 2-8 will be maintained in the /instrument_news/fos directory on STEIS and will be available for anonymous ftp from *stsci.edu*. The files will be named "ref_files_tables_*mmmyy*.ps" and "ref_files_tables_*mmmyy*.txt", where *mmmyy* is the posting date in month and year, the extension ".ps" denotes the Postscript version, and ".txt" denotes the ASCII version. For example, the first files delivered are "ref_files_tables_aug94.ps" and "ref_files_tables_aug94.ps". Remember this is for all reference files and tables except for flat fields, IVS, and dead diodes which have their own recommended lists (flat_field_tables_*mmmyy*.*, post_costar_flat_fields_*mmmyy*.*, ivs_tables_*mmmyy*.*, post_costar_ivs_*mmmyy*.*, and dead_diodes_*mmmyy*.* - where * is ".txt" or ".ps").

The history tables (Tables 9-28) will not be made available on STEIS. These tables are intended primarily for internal use rather than for the general observing community. However, copies and updates can be obtained from the Research Support Branch Analysis Hot Line (telephone: (410) 338-1082 or e-mail: *analysis@stsci.edu*).

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Notes for Table Interpretation:

"*": wildcard

yyyymmdd: USEAFTER date (4 digit year A.D., 2-digit month, 2-digit day) {in Tables 2-8}

abcdefghi.r*h,(.r*d): rootname of reference file and extensions for header (and data) files

abcdefghi.cy* or *.cm**: rootname and extension of reference table

The letter "l" in rootnames in the tables is italicized ("*l*") to make it more legible.

RECOMMENDED FOS BACKGROUND REFERENCE FILES (.r0h)

Table 2: FOS BACKGROUND REFERENCE FILES

Detector	USEAFTER and File
AMBER	19900101 b3m1128fy.r0h,.r0d
BLUE	19900101 b3m1128my.r0h,.r0d

RECOMMENDED FOS RETARDATION REFERENCE FILES (.r3h)

Table 3: AMBER RETARDATION REFERENCE FILES for SUPPORTED CONFIGURATIONS

Grating	Pol A	Pol B
H19	Not supported	19900101 a4n1540sy.r3h,.r3d 19930608 e5v1122ry.r3h,.r3d
H27	Not supported	19900101 a4n15413y.r3h,.r3d 19930608 e5v1122sy.r3h,.r3d
H40	19900101 b6o10478y.r3h,.r3d 19930608 e5v1122ty.r3h,.r3d	Not supported

Table 4: BLUE RETARDATION REFERENCE FILES for SUPPORTED CONFIGURATIONS

Grating	Pol A	Pol B
H13	Not supported	19900101 b6o10471y.r3h,.r3d
		19930608 e5v11230y.r3h,.r3d
H19	Not supported	19900101 b7p12535y.r3h,.r3d
		19930608 e5v11231y.r3h,.r3d
H27	Not supported	19900101 b6o10478y.r3h,.r3d
		19930608 e5v11232y.r3h,.r3d

Table 5: AMBER RETARDATION REFERENCE FILES for NON -SUPPORTED CONFIGURATIONS

Grating	Pol A	Pol B
H19	19900101 a4n1540py.r3h,.r3d	Supported
H27	19900101 a4n15410y.r3h,.r3d	Supported
H40	Supported	19900101 a4n15418y.r3h,.r3d
H57	19900101 a4n1541by.r3h,.r3d	19900101 a4n1541ey.r3h,.r3d
H78	19900101 a4n1541jy.r3h,.r3d	19900101 a4n1541ly.r3h,.r3d
L15	19900101 a4n1541oy.r3h,.r3d	19900101 a4n1541qy.r3h,.r3d
L65	19900101 a4n1541sy.r3h,.r3d	19900101 a4n15421y.r3h,.r3d
PRISM	19900101 a4n15423y.r3h,.r3d	19900101 a4n15426y.r3h,.r3d

Table 6: BLUE RETARDATION REFERENCE FILES for NON -SUPPORTED CONFIGURATIONS

Grating	Pol A	Pol B
H13	19900101 a4n15429y.r3h,.r3d	Supported
H19	19900101 a4n1542fy.r3h,.r3d	Supported
H27	19900101 a4n1542ny.r3h,.r3d	Supported
H40	19900101 b6o1047ay.r3h,.r3d	19900101 a4n1543ky.r3h,.r3d
H57	19900101 a4n1543oy.r3h,.r3d	19900101 a4n1543qy.r3h,.r3d
L15	19900101 a4n1543ty.r3h,.r3d	19900101 a4n15442y.r3h,.r3d
L65	19900101 a4n15445y.r3h,.r3d	19900101 a4n15449y.r3h,.r3d
PRISM	19900101 a4n1544cy.r3h,.r3d	19900101 a4n1544fy.r3h,.r3d

RECOMMENDED FOS DATA QUALITY INITIALIZATION REFERENCE FILES (.r5h)
See ASCII table fos_qin_recommend.txt

RECOMMENDED FOS POINT SPREAD FUNCTION FILES (.r6h)

Table 7: FOS POINT SPREAD FUNCTION FILES

AMBER		BLUE	
Wavelength	USEAFTER and Filename	Wavelength	USEAFTER and Filename
1600	19900101 dbb1015ry.r6h,.r6d	1200	19900101 dbb10189y.r6h,.r6d
1800	19900101 dbb1016oy.r6h,.r6d	1400	19900101 dbb1018ey.r6h,.r6d
2000	19900101 dbb10163y.r6h,.r6d	1600	19900101 dbb1018hy.r6h,.r6d
2200	19900101 dbb10166y.r6h,.r6d	1800	19900101 dbb1018jy.r6h,.r6d
2400	19900101 dbb10168y.r6h,.r6d	2000	19900101 dbb1018ly.r6h,.r6d
2600	19900101 dbb1016ay.r6h,.r6d	2200	19900101 dbb1018py.r6h,.r6d
2800	19900101 dbb1016cy.r6h,.r6d	2400	19900101 dbb1018ry.r6h,.r6d
3000	19900101 dbb1016ey.r6h,.r6d	2600	19900101 dbb10190y.r6h,.r6d
3200	19900101 dbb1016gy.r6h,.r6d	2800	19900101 dbb10192y.r6h,.r6d
3400	19900101 dbb1016iy.r6h,.r6d	3000	19900101 dbb10194y.r6h,.r6d
3600	19900101 dbb1016ly.r6h,.r6d	3200	19900101 dbb10196y.r6h,.r6d
3800	19900101 dbb1016my.r6h,.r6d	3400	19900101 dbb10199y.r6h,.r6d
4000	19900101 dbb1016py.r6h,.r6d	3600	19900101 dbb1019by.r6h,.r6d
4200	19900101 dbb1016ry.r6h,.r6d	3800	19900101 dbb1019ey.r6h,.r6d
4400	19900101 dbb1016ty.r6h,.r6d	4000	19900101 dbb1019hy.r6h,.r6d
4600	19900101 dbb10171y.r6h,.r6d	4200	19900101 dbb1019ky.r6h,.r6d
4800	19900101 dbb10172y.r6h,.r6d	4400	19900101 dbb1019ly.r6h,.r6d

Table 7: FOS POINT SPREAD FUNCTION FILES

AMBER		BLUE	
Wavelength	USEAFTER and Filename	Wavelength	USEAFTER and Filename
5000	19900101 dbb10174y.r6h,.r6d	4600	19900101 dbb1019ny.r6h,.r6d
5200	19900101 dbb10176y.r6h,.r6d	4800	19900101 dbb1019py.r6h,.r6d
5400	19900101 dbb10178y.r6h,.r6d	5000	19900101 dbb1019ry.r6h,.r6d
5600	19900101 dbb1017ay.r6h,.r6d	5200	19900101 dbb1019ty.r6h,.r6d
5800	19900101 dbb1017dy.r6h,.r6d	5400	19900101 dbb10201y.r6h,.r6d
6000	19900101 dbb1017fy.r6h,.r6d		
6200	19900101 dbb1017iy.r6h,.r6d		
6400	19900101 dbb1017ky.r6h,.r6d		
6600	19900101 dbb1017ly.r6h,.r6d		
6800	19900101 dbb1017ny.r6h,.r6d		
7000	19900101 dbb1017py.r6h,.r6d		
7200	19900101 dbb1017ry.r6h,.r6d		
7400	19900101 dbb1017ty.r6h,.r6d		
7600	19900101 dbb10180y.r6h,.r6d		
7800	19900101 dbb10182y.r6h,.r6d		
8000	19900101 dbb10183y.r6h,.r6d		
8200	19900101 dbb10184y.r6h,.r6d		
8400	19900101 dbb10186y.r6h,.r6d		

RECOMMENDED FOS LINE SPREAD FUNCTION FILES (.r7h)
See ASCII table fos_lsf_recommend.txt.

RECOMMENDED FOS REFERENCE TABLES

Table 8: RECOMMENDED FOS REFERENCE TABLES

Table Description	Keyword	USEAFTER and Filename
Aperture areas	CCS0	19900101 a3d1145dy.cy0
Aperture positions	CCS1	19900101 aaj0732ay.cy1
Sky emission line position	CCS2	19900101 a3d1145fy.cy2
Sky/background filter widths	CCS3	19900101 a3d1145gy.cy3
Wollaston/waveplate parameters (polarimetry)	CCS4	19900101 b9d1019my.cy4
		19930608 e5v13262y.cy4
Sky shift parameters	CCS5	19900101 a3d1145jy.cy5
Wavelength parameters	CCS6	19900101 bck10546y.cy6
		19930608 e5v11576y.cy6
GIMP scale factors	CCS7	19900101 ba910502y.cy7
Mean background count rates	CCS8	19900101 ba31407ly.cy8
Scattered light correction	CCS9	19900101 e3i09491y.cy9
Paired-pulse parameters	CCG2	19900101 a3d1145ly.cmg

FOS BACKGROUND REFERENCE FILE HISTORY (.r0h)

Table 9: FOS BACKGROUND REFERENCE FILES IN CDBS

Filename	Detector	USEAFTER Date	CDBS Entry Date	Source	Comment
9461658oy.r0h	AMBER	1 Jan 1990	19 Dec 1989	GROUND	Pre-launch version
94616594y.r0h	BLUE	1 Jan 1990	19 Dec 1989	GROUND	Pre-launch version
b3m1128fy.r0h	AMBER	1 Jan 1990	22 Mar 1991	INFLIGHT	SV data from prop 1316.
b3m1128my.r0h	BLUE	1 Jan 1990	22 Mar 1991	INFLIGHT	SV data from prop 1316.

FOS FLAT FIELD REFERENCE FILE HISTORY (.r1h)

Table 10: FOS FLAT FIELD REFERENCE FILES IN CDBS

Filename	Detector	USEAFTER Date	CDBS Entry Date	Source	Comment
946*****y.r1h	BOTH	1 Jan 1990	13 Nov 1989	DUMMY	Pre-launch Unity flats covering all filter and grating combinations.
9ba*****y.r1h.	BOTH	1 Jan 1990	13 Nov 1989	DUMMY	
9be*****y.r1h	BOTH	1 Jan 1990	13 Nov 1989	DUMMY	
abq*****y.r1h	AMBER	1 Jan 1990	26 Nov 1990	INFLIGHT	SV data from prop 1318. Single positions only. All gratings except H78.
b2t*****y.r1h	BLUE	1 Jan 1990	01 Feb 1991	INFLIGHT	SV data from prop 1318. Single positions only. All gratings except H78.

Table 10: FOS FLAT FIELD REFERENCE FILES IN CDBS

Filename	Detector	USEAFTER Date	CDBS Entry Date	Source	Comment
baf*****y.r1h	BOTH	1 Jan 1990	15 Oct 1991	INFLIGHT	SV data. Single positions only. Corrected for GIMP. All gratings except H78. Average of G191-B2B & KDP0005 except for Amber H57 which is G191-B2B only.
baf1443ty.r1h	AMBER	1 Jan 1990	15 Oct 1991	INFLIGHT	SV data. **UNVERIFIED - NOT DELIVERED TO PODPS!** Grating L15, single apers. G191-B2B only.
baf14443y.r1h	AMBER	1 Jan 1990	15 Oct 1991	INFLIGHT	SV data. **UNVERIFIED - NOT DELIVERED TO PODPS!** Grating H19, single apers. G191-B2B only.
baf14441y.r1h	AMBER	1 Jan 1990	15 Oct 1991	INFLIGHT	SV data. **UNVERIFIED - NOT DELIVERED TO PODPS!** Grating L15, single apers. G191-B2B & KDP0005 average.
baf14444y.r1h	AMBER	1 Jan 1990	15 Oct 1991	INFLIGHT	SV data. **UNVERIFIED - NOT DELIVERED TO PODPS!** Grating H19, single apers. G191-B2B & KDP0005 average.
bbj******y.r1h	BLUE	1 Jan 1990	19 Nov 1991	INFLIGHT	Polarimetry Flats from Rich Allen. A-1 & B-3 apers. H13, H19, H27 gratings, Pol B.
c3a******y.r1h	AMBER	1 Jan 1990	13 Mar 1992	INFLIGHT	**BAD FILES! INCORRECT USEAFTER VALUE & APER_POS!** Based on prop 3975 data - 2 Jan 92. For H19, H27, L15 gratings.

Table 10: FOS FLAT FIELD REFERENCE FILES IN CDBS

Filename	Detector	USEAFTER Date	CDBS Entry Date	Source	Comment
c3q*****y.r1h	AMBER	14 Nov 1991	25 Aug 1992	INFLIGHT	**BAD FILES! INCORRECT APER_POS & APER_ID VALUES!** Based on prop 3975 data - 2 Jan 92 and 29 Jan 92 data. For H19, H27, L15 gratings.
c3q*****y.r1h	AMBER	14 Jan1992	25 Aug 1992	INFLIGHT	
c9b*****y.r1h	AMBER	01 Jan 1990	11 Sep 1992	INFLIGHT	**BAD FILES! INCORRECT APER_POS FOR PAIRED APERTURES!** Redelivery of 4 epochs of H19, H27, L15 gratings.
c9b*****y.r1h	AMBER	01 Feb 1991	11 Sep 1992	INFLIGHT	
c9b*****y.r1h	AMBER	14 Nov 1991	11 Sep 1992	INFLIGHT	
c9b*****y.r1h	AMBER	14 Jan 1992	11 Sep 1992	INFLIGHT	
cbj*****y.r1h	BLUE	01 Jan 1990	19 Nov 1992	INFLIGHT	Copies of "bbj*****y.r1h" B-3 aperture flats for B-1 aperture. H13, H19, H27 gratings.
d1c*****y.r1h	AMBER	01 Jan 1990	12 Jan 1993	INFLIGHT	Redelivery of all 4 epochs of H19, H27, L15 gratings. Correct aper_id and aper_pos (except paired apertures still have single aper_pos).
d1c*****y.r1h	AMBER	01 Feb 1991	12 Jan 1993	INFLIGHT	
d1c*****y.r1h	AMBER	14 Nov 1991	12 Jan 1993	INFLIGHT	
d1c*****y.r1h	AMBER	14 Jan 1992	12 Jan 1993	INFLIGHT	
d23*****y.r1h	AMBER	15 Sep 1992	16 Feb 1993	INFLIGHT	H19, H27, L15 gratings flats based on prop 3975 aperture A-1 data in Nov '92. All apertures (correct aper_pos).
d24*****y.r1h	AMBER	15 Sep 1992	16 Feb 1993	INFLIGHT	H19, H27, L15 gratings C-2 (SLIT) APERTURE ONLY. Replaces the above files for slit configurations.

Table 10: FOS FLAT FIELD REFERENCE FILES IN CDBS

Filename	Detector	USEAFTER Date	CDBS Entry Date	Source	Comment
d2f*****y.r1h	BLUE	01 Jan 1992	16 Feb 1993	INFLIGHT	Blue "SUPERFLAT" based on prop 2821. For all apertures. H13, H19, H27, H40, L15, PRISM gratings.
d2m*****y.r1h	AMBER	10 Feb 1992	22 Feb 1993	INFLIGHT	UNVERIFIED - NOT DELIVERED TO PODPS! Flats from individual epochs of prop 3975. H19, H27, L15 gratings.
d2m*****y.r1h	AMBER	05 Mar 1992	22 Feb 1993	INFLIGHT	
d2m*****y.r1h	AMBER	10 Apr 1992	22 Feb 1993	INFLIGHT	
d2m*****y.r1h	AMBER	08 May 1992	22 Feb 1993	INFLIGHT	
d2m*****y.r1h	AMBER	13 Jun 1992	22 Feb 1993	INFLIGHT	
d3n*****y.r1h	AMBER	31 Dec 2047	23 Mar 1993	INFLIGHT	UNVERIFIED - NOT DELIVERED TO PODPS! "SUPERFLATS" - suffers from ringing. All gratings. All apertures except C-3 and C-4.
d3t*****y.r1h	AMBER	01 Jan 1990	29 Mar 1993	DUMMY	Unity flats for apertures B-4, C-3, and C-4 all gratings.
d3t*****y.r1h	AMBER	01 Feb 1991	29 Mar 1993	DUMMY	
d3t*****y.r1h	AMBER	14 Nov 1991	29 Mar 1993	DUMMY	
d3t*****y.r1h	AMBER	14 Jan 1992	29 Mar 1993	DUMMY	
d3t*****y.r1h	AMBER	15 Sep 1992	29 Mar 1993	DUMMY	
d3t*****y.r1h	BLUE	01 Jan 1990	29 Mar 1993	DUMMY	
d3t*****y.r1h	BLUE	01 Jan 1992	29 Mar 1993	DUMMY	

Table 10: FOS FLAT FIELD REFERENCE FILES IN CDBS

Filename	Detector	USEAFTER Date	CDBS Entry Date	Source	Comment
e5v*****y.r1h	AMBER	08 Jun 1993	31 May 1994	INFLIGHT	Polarimetry flats based on BD+28D4211 in prop 5051 from Rich Allen. A-1 aperture only. H19, H27 with Pol B, H40 with Pol A.
e5v*****y.r1h	BLUE	08 Jun 1993	31 May 1994	INFLIGHT	Polarimetry flats based on BD+28D4211 (prop 4697) from Rich Allen. A-1 and B-3 apertures only. H13, H19, H27 with Pol B.
e78*****y.r1h	AMBER	01 Feb 1994	08 Jul 1994	INFLIGHT	POST-COSTAR SMOV "SUPERFLATS" based on G191-B2B (prop 4776). Single apertures only. H19, H27, H40, H57, and H78 gratings only.
e78*****y.r1h	BLUE	01 Feb 1994	08 Jul 1994	INFLIGHT	POST-COSTAR SMOV "SUPERFLATS" based on G191-B2B (prop 4776). Single apertures only. H13, H19, H27, H40 gratings only.

FOS INVERSE SENSITIVITY REFERENCE FILE HISTORY (.r2h)

Table 11: FOS INVERSE SENSITIVITY REFERENCE FILES IN CDBS

Filename	Detector	USEAFTER Date	CDBS Entry Date	Source	Comment
8cj*****y.r2h	BOTH	01 Jan 1990	19 Dec 1988	GROUND	Initial delivery. All combinations. Substantial differences with actual inflight values.
9ar*****y.r2h	BOTH	01 Jan 1990	19 Dec 1988	GROUND	
9au*****y.r2h	BOTH	01 Jan 1990	19 Dec 1988	GROUND	

Table 11: FOS INVERSE SENSITIVITY REFERENCE FILES IN CDBS

Filename	Detector	USEAFTER Date	CDBS Entry Date	Source	Comment
b31*****y.r2h	AMBER	01 Jan 1990	01 Mar 1991	INFLIGHT	SV data based on BD+75D325, HZ-44, BD+33D2642, BD+28D4211 (props 1320, 3106, and 2823). Single apertures (except for C-3 and C-4). All supported gratings (H19, H27, H40, H57, H78, L15, L65, PRI).
b31*****y.r2h	BLUE	01 Jan 1990	01 Mar 1991	INFLIGHT	SV data based on BD+75D325, HZ-44, BD+33D2642, BD+28D4211 (props 1320, and 3106). Single apertures (except for C-3 and C-4). All supported gratings (H13, H19, H27, H40, L15, PRI).
c1e*****y.r2h	BLUE	01 Jan 1990	14 Jan 1992	INFLIGHT	Polarized IVS based on BD+28D4211 (prop 3235). H13, H19, H27 gratings Pol B.
c39*****y.r2h	BOTH	01 Jan 1990	09 Mar 1992	INFLIGHT	BAD DATA!
c3u*****y.r2h	BOTH	01 Jan 1990	30 Mar 1992	INFLIGHT	Cycle 1 data based on BD+28D4211, HZ-44, and BD+75D325. Single apertures (except for C-3 and C-4). All supported gratings (see above for list).
d3u*****y.r2h	BOTH	01 Jan 1990	01 Apr 1993	DUMMY	UNITY IVS for Paired apertures (A-2, A-3, A-4, C-1) and Barred apertures (C-3, C-4). All gratings.
d4s*****y.r2h	AMBER	01 Jan 1990	28 Apr 1993	DUMMY	UNITY IVS for Polarimetry. A-1, B-1, B-3 apertures, gratings H19, H27 with Pol B, and H40 with Pol A.

Table 11: FOS INVERSE SENSITIVITY REFERENCE FILES IN CDBS

Filename	Detector	USEAFTER Date	CDBS Entry Date	Source	Comment
d4s*****y.r2h	BLUE	01 Jan 1990	28 Apr 1993	DUMMY	UNITY IVS for aperture B-1 Polarimetry. Gratings H13, H19, H27 with Pol B.
d4u*****y.r2h	BLUE	01 Jan 1990	30 Apr 1993	DUMMY	UNITY IVS for gratings H57 and L65. Single apertures (except C-3 and C-4).
e1p*****y.r2h	BOTH	26 Dec 1993	25 Jan 1994	DUMMY	Temporary UNITY IVS for POST-COSTAR. All single apertures, all supported gratings.
e3h*****y.r2h	BOTH	01 Feb 1994	18 Mar 1994	INFLIGHT	POST-COSTAR SMOV based on A-1 and B-3 observations (other gratings theoretically derived from them). Apertures A-1, A-2, A-3, B-1, B-2, B-3, C-1, C-2. All supported gratings.
e5r*****y.r2h	AMBER	08 Jun 1993	27 May 1994	INFLIGHT	Polarimetry (Pre-COSTAR) IVS from Rich Allen. A-1 aperture only. H19, H27 with Pol B, H40 with Pol A.
e5r*****y.r2h	BLUE	08 Jun 1993	27 May 1994	INFLIGHT	Polarimetry (Pre-COSTAR) IVS from Rich Allen. A-1 aperture only. H13, H19, H27 with Pol B.

FOS RETARDATION REFERENCE FILE HISTORY (.r3h)

Table 12: FOS RETARDATION REFERENCE FILES IN CDBS

Filename	Detector	USEAFTER Date	CDBS Entry Date	Source	Comment
97a1036iy.r3h	AMBER	01 Jan 1990	30 Nov 1989	GROUND	Pre-launch H40 with Pol A.
a4n*****y.r3h	BOTH	01 Jan 1990	23 Apr 1990	GROUND	Pre-launch. All gratings, both polarizers.
b6o*****y.r3h	BLUE	01 Jan 1990	24 Jun 1991	INFLIGHT	SV data from Rich Allen. Ground based numbers with inflight wavelengths. H40 with Pol A. H13, H19, and H27 with Pol B. This replaced a bad set which was deleted from CDBS.
b7p12535y.r3h	BLUE	01 Jan 1990	25 Jul 1991	INFLIGHT	From Rich Allen. Replaces b6o10475y.r3h. Ground based numbers with inflight wavelengths. H19 with Pol B.
e5v*****y.r3h	AMBER	08 Jun 1993	31 May 1994	INFLIGHT	Cycle 3 data from Rich Allen. Ground based numbers with inflight wavelengths. H19, H27 with Pol B, H40 with Pol A.
e5v*****y.r3h	BLUE	08 Jun 1993	31 May 1994	INFLIGHT	Cycle 2 data from Rich Allen. Ground based numbers with inflight wavelengths. H13, H19, and H27 with Pol B.

FOS DEAD DIODE REFERENCE FILE HISTORY (.r4h)

Table 13: FOS DEAD DIODE REFERENCE FILES IN CDBS

Filename	Detector	USEAFTER Date	CDBS Entry Date	Comment (Diodes are on 0-511 scale)
8cd1134iy.r4h	AMBER	1 Jan 1990	21 Feb 1989	No original USEAFTER - replaced by c5s1508ay.r4h
8cd1134qy.r4h	BLUE	1 Jan 1990	21 Feb 1989	No original USEAFTER - replaced by c6q16023y.r4h
a9412493y.r4h	AMBER	1 Jan 1990	4 Sept 1990	No original USEAFTER - replaced by c5s15083y.r4h
b3e1056fy.r4h	AMBER	1 Jan 1990	14 Mar 1991	No original USEAFTER - replaced by c5s15084y.r4h
b3e1056hy.r4h	BLUE	1 Jan 1990	14 Mar 1991	No original USEAFTER - replaced by c6q1601ny.r4h
b811640ny.r4h	BLUE	1 Jan 1990	2 Aug 1991	No original USEAFTER - replaced by c6q1601ry.r4h
bbj09?6fy.r4h	BLUE	1 Jan 1990	19 Nov 1991	No original USEAFTER - replaced by c6q16020y.r4h
bcb1250hy.r4h	AMBER	1 Jan 1990	11 Dec 1991	No original USEAFTER - replaced by c5s15088y.r4h
c1m1438ay.r4h	AMBER	1 Jan 1990	22 Jan 1992	No original USEAFTER - replaced by c5s15080y.r4h
c481104ry.r4h	BLUE	13 April 1992	8 April 1992	Incorrect diodes disabled[a] - replaced by c6p1432my.r4h
c5t11032y.r4h	BLUE	13 April 1992	29 May 1992	Incorrect diodes disabled[b] - replaced by c6p1432my.r4h
c7u1508gy.r4h	RED	3 Aug 1992	30 July 1992	Detector listed as Red instead of Amber - replaced by c861559ay.r4h
c5s1508ay.r4h	AMBER	24 April 1990	25 Aug 1992	Replaces 8cd1134iy.r4h[c] - includes correct USEAFTER
c5s15086y.r4h	AMBER	27 Aug 1990	25 Aug 1992	Added to reflect correct date of enabling diodes 235, 261, 344, and 381- includes correct USEAFTER
c5s15083y.r4h	AMBER	14 Sept 1990	25 Aug 1992	Replaces a9412493y.r4h[d] - includes correct USEAFTER
c5s15084y.r4h	AMBER	15 Dec 1990	25 Aug 1992	Replaces b3e1056fy.r4h - includes correct USEAFTER

Table 13: FOS DEAD DIODE REFERENCE FILES IN CDBS

Filename	Detector	USEAFTER Date	CDBS Entry Date	Comment (Diodes are on 0-511 scale)
c5s15088y.r4h	AMBER	27 Oct 1991	25 Aug 1992	Replaces bcb1250hy.r4h[e] - includes correct USEAFTER
c5s15080y.r4h	AMBER	14 Dec 1991	25 Aug 1992	Replaces c1m1438ay.r4h[f] - includes correct USEAFTER
c6q16023y.r4h	BLUE	24 April 1990	25 Aug 1992	Replaces 8cd1134qy.r4h[g] - includes correct USEAFTER
c6q1601jy.r4h	BLUE	18 May 1990	25 Aug 1992	Added to reflect correct date of disabling diode 225 - includes correct USEAFTER
c6q1601gy.r4h	BLUE	11 June 1990	25 Aug 1992	Added to reflect correct date of enabling diode 225 - includes correct USEAFTER
c6q1601dy.r4h	BLUE	1 Nov 1990	25 Aug 1992	Added to reflect correct date of disabling diodes 31, 225, 235, 241, and 497 - includes correct USEAFTER
c6q1601ny.r4h	BLUE	20 Feb 1991	25 Aug 1992	Replaces b3e1056hy.r4h[h] - includes correct USEAFTER
c6q16019y.r4h	BLUE	1 June 1991	25 Aug 1992	Added to reflect correct date of disabling diode 471 - includes correct USEAFTER
c6q1601ry.r4h	BLUE	20 June 1991	25 Aug 1992	Replaces b811640ny.r4h[i] - includes correct USEAFTER
c6q16020y.r4h	BLUE	28 Aug 1991	25 Aug 1992	Replaces bbj0956fy.r4h - includes correct USEAFTER
c861559ay.r4h	AMBER	3 Aug 1992	25 Aug 1992	Replaces c7u1508gy.r4h - detector correctly listed as AMBER
c6p1432my.r4h	BLUE	13 April 1992	25 Aug 1992	Replaces c481104ry.r4h and c5t11032y.r4h - correct diodes
d2a16223y.r4h	BLUE	15 Feb 1993	16 Feb 1993	Noisy diode 415 disabled
d4s1044fy.r4h	BLUE	3 May 1993	28 April 1993	Noisy diode 144 disabled

Table 13: FOS DEAD DIODE REFERENCE FILES IN CDBS

Filename	Detector	USEAFTER Date	CDBS Entry Date	Comment (Diodes are on 0-511 scale)
d9h1244ay.r4h	BLUE	7 Sept 1993j	17 Sept 1993	Delivered with incorrect USEAFTER date - replaced by das1303py.r4h
da80843ny.r4h	AMBER	11 Oct 1993	8 Oct 1993	Noisy diodes 381 and 412 disabled
dap1024ay.r4h	AMBER	12 Oct 1993	25 Oct 1993	Diode 308 died
das1303py.r4h	BLUE	7 Sept 1993	28 Oct 1993	Diode 292 died - correct USEAFTER date

a. Diodes 47, 55, and 101 should have been disabled and diode 189 should have been not disabled.

b. Diodes 47, 55, and 101 should have been disabled and diode 189 should have been not disabled. Error version accidently delivered to PODPS.

c. File c5s1508ay.r4h includes diode 486 which was disabled pre-launch, but was in disabled in 8cd1134ty.r4h.

d. File c5s15083y.r4h has same diodes disabled as a9412493y.r4h, but files c5s1508ay.r4h, c5s15086y.r4h, and c5s15083y.r4h show correct sequence of diode disabling.

e. File c5s15088y.r4h reflects the date that diode 29 died and has diode 189 enabled. File bcb1250hy.r4h has diode 189 disabled and diode 29 enabled.

f. File c5s15080y.r4h reflects correct diode 189 disable date and has same diodes disabled as c1m1438ay.r4h.

g. File c6q16023y.r4h includes diodes 73, 284, and 415 which were disabled pre-launch but not disabled in 8cd1134qy.r4h. diodes 31 and 225 were disabled in 8cd1134qy.r4h but enabled in c6q16023y.r4h.

h. File c6q1601ny.r4h has same diodes disabled as b3e1056hy.r4h, but files c6q16023y.r4h, c6q1601jy.r4h, c6q1601gy.r4h, c6q1601dy.r4h, and c6q1601dy.r4h show correct sequence of diode disabling and re-enabling.

i. File c6q1601ry.r4h has same diodes disabled as b811640ny.r4h, but files c6q16019y.r4h and c6q1601ry.r4h show correct sequence of diode disabling.

j. Accidently delivered to PODPS with USEAFTER date of 17 Sept 1993, USEAFTER date was corrected in CDBS.

Table 14: FOS DEAD DIODE REFERENCE FILES IN PODPS BUT DELETED FROM CDBS (Error Versions)

Filename	Detector	USEAFTER Date	Comment (Diodes are on 0-511 scale)
c3o0841ry.r4h	AMBER	24 April 1990	Incorrect diodes disabled and wrong USEAFTER date in header - replaced by c5s1508ay.r4h
c3o0841oy.r4h	AMBER	27 Aug 1990	Incorrect diodes disabled - replaced by c5s15086y.r4h
c3o0841ky.r4h	AMBER	14 Sept 1990	Incorrect diodes disabled - replaced by c5s15083y.r4h
c3o0841my.r4h	AMBER	15 Dec 1990	Incorrect diodes disabled - replaced by c5s15084y.r4h
c3o0841py.r4h	AMBER	27 Oct 1991	Incorrect diodes disabled - replaced by c5s15088y.r4h
c3o0841iy.r4h	AMBER	14 Dec 1991	Incorrect HISTORY comment - replaced by c5s15080y.r4h
c3o0841gy.r4h	BLUE	24 April 1990	Incorrect USEAFTER date in header and incorrect diodes disabled - replaced by c5s13501y.r4h
c3o08419y.r4h	BLUE	18 May 1990	Incorrect diodes disabled - replaced by c5s1347jy.r4h
c3o08417y.r4h	BLUE	11 June 1990	Incorrect diodes disabled - replaced by c5s1347hy.r4h
c3o08415y.r4h	BLUE	1 Nov 1990	Incorrect diodes disabled - replaced by c5s1347fy.r4h
c3o0841by.r4h	BLUE	20 Feb 1991	Incorrect USEAFTER date in header and incorrect diodes disabled - replaced by c5s1347ky.r4h
c3o08413y.r4h	BLUE	1 June 1991	Incorrect USEAFTER date in header and incorrect diodes disabled - replaced by c5s1347dy.r4h
c3o0841dy.r4h	BLUE	20 June 1991	Incorrect USEAFTER date in header and incorrect diodes disabled - replaced by c5s1347my.r4h
c3o0841fy.r4h	BLUE	28 Aug 1991	Incorrect USEAFTER date in header and incorrect diodes disabled - replaced by c5s1347ny.r4h

Table 14: FOS DEAD DIODE REFERENCE FILES IN PODPS BUT DELETED FROM CDBS (Error Versions)

Filename	Detector	USEAFTER Date	Comment (Diodes are on 0-511 scale)
c5s13501y.r4h	BLUE	24 April 1990	X-wired diodes 47 and 55 not disabled - replaced by c6q16023y.r4h
c5s1347jy.r4h	BLUE	18 May 1990	X-wired diodes 47 and 55 not disabled - replaced by c6q1601jy.r4h
c5s1347hy.r4h	BLUE	11 June 1990	X-wired diodes 47 and 55 not disabled - replaced by c6q1601gy.r4h
c5s1347fy.r4h	BLUE	1 Nov 1990	X-wired diodes 47 and 55 not disabled - replaced by c6q1601dy.r4h
c5s1347ky.r4h	BLUE	20 Feb 1991	X-wired diodes 47 and 55 not disabled - replaced by c6q1601ny.r4h
c5s1347dy.r4h	BLUE	1 June 1991	X-wired diodes 47 and 55 not disabled - replaced by c6q16019y.r4h
c5s1347my.r4h	BLUE	20 June 1991	X-wired diodes 47 and 55 not disabled - replaced by c6q1601ry.r4h
c5s1347ny.r4h	BLUE	28 Aug 1991	X-wired diodes 47 and 55 not disabled - replaced by c6q16020y.r4h

FOS DATA QUALITY INITIALIZATION REFERENCE FILE HISTORY (.r5h)

Table 15: FOS DATA QUALITY INITIALIZATION REFERENCE FILES IN CDBS

Filename	Detector	USEAFTER Date	CDBS Entry Date	Source	Comment
8cd11359y.r5h	AMBER	01 Jan 1990	21 Feb 1989	GROUND	BAD Load? No expansion for polarizer, grating, aperture, etc.
8cd1135ey.r5h	BLUE	01 Jan 1990	21 Feb 1989	GROUND	
a1t15486y.r5h	AMBER	01 Jan 1990	29 Jan 1990	GROUND	
a1t15477y.r5h	BLUE	01 Jan 1990	29 Jan 1990	GROUND	
a4n1532qy.r5h	AMBER	01 Jan 1990	23 Apr 1990	GROUND	
a4n1532jy.r5h	BLUE	01 Jan 1990	23 Apr 1990	GROUND	
a6i*****y.r5h	BOTH	01 Jan 1990	12 Jul 1990	INFLIGHT	MIRROR. All apertures and aperture positions (including SINGLE for pairs).
a5p*****y.r5h	BOTH	01 Jan 1990	13 Jul 1990	INFLIGHT	All gratings, apertures, and aperture positions (including SINGLE for pairs). Polarimetry for single apertures but have pass_dir 0 & 1 (should be pass_dir 1 & 2).
a6i*****y.r5h	BOTH	01 Jan 1990	09 Aug 1990	INFLIGHT	Redelivery. Aperture positions now correct, but Polarimetry still have incorrect pass_dir.
a5p*****y.r5h	BOTH	01 Jan 1990	09 Aug 1990	INFLIGHT	
a8a*****y.r5h	AMBER	01 Jan 1990	10 Aug 1990	INFLIGHT	Grating H13, all apertures. Polarimetry for single apertures (correct pass_dir).
a8a*****y.r5h	BLUE	01 Jan 1990	10 Aug 1990	INFLIGHT	Grating H78, all apertures. Polarimetry for single apertures (correct pass_dir).

Table 15: FOS DATA QUALITY INITIALIZATION REFERENCE FILES IN CDBS

Filename	Detector	USEAFTER Date	CDBS Entry Date	Source	Comment
a94*****y.r5h	AMBER	01 Jan 1990	07 Sep 1990	INFLIGHT	All gratings (including H13) and MIRROR. All apertures. Polarimetry for single apertures (correct pass_dir).
b2f*****y.r5h	BOTH	01 Jan 1990	19 Feb 1991	INFLIGHT	All gratings and MIRROR. All apertures. Polarimetry for single apertures (correct pass_dir).

FOS POINT SPREAD FUNCTION FILES HISTORY (.r6h)

Table 16: FOS POINT SPREAD FUNCTION FILES IN CDBS

Filename	Detector	USEAFTER Date	CDBS Entry Date	Source	Comment
dbb*****y.r6h	AMBER	01 Jan 1990	11 Nov 1993	MODEL	PRE-COSTAR - see CAL/FOS-104 for details.
dbb*****y.r6h	BLUE	01 Jan 1990	11 Nov 1993	MODEL	

FOS LINE SPREAD FUNCTION FILES HISTORY (.r7h)

Table 17: FOS LINE SPREAD FUNCTION FILES IN CDBS

Filename	Detector	USEAFTER Date	CDBS Entry Date	Source	Comment
dat*****y.r7h	AMBER	01 Jan 1990	25 Jan 1994	MODEL	PRE-COSTAR for all apertures except C-3 and C-4. See CAL/FOS-104 for details.
dat*****y.r7h	BLUE	01 Jan 1990	25 Jan 1994	MODEL	

FOS APERTURE AREAS REFERENCE TABLE HISTORY (.cy0)

Table 18: FOS APERTURE AREAS REFERENCE TABLES IN CDBS

Filename	Detector	USEAFTER Date	CDBS Entry Date	Source	Comment
a3d1145dy.cy0	BOTH	01 Jan 1990	23 Mar 1990	GROUND	Pre-launch.

FOS APERTURE POSITION PARAMETERS REFERENCE TABLE HISTORY (.cy1)

Table 19: FOS APERTURE POSITION PARAMETERS REFERENCE TABLES IN CDBS

Filename	Detector	USEAFTER Date	CDBS Entry Date	Source	Comment
a3d1145ey.cy1	BOTH	01 Jan 1990	5 Oct 1988	GROUND	Pre-launch.
a8109371y.cy1	BOTH	01 Jan 1990	21 Aug 1990	INFLIGHT	OV Data.
aaj0732ay.cy1	BOTH	01 Jan 1990	18 Oct 1990	INFLIGHT	Final version.

FOS SKY EMISSION LINE POSITION REFERENCE TABLES HISTORY (.cy2)

Table 20: FOS SKY EMISSION LINE POSITION REFERENCE TABLES IN CDBS

Filename	Detector	USEAFTER Date	CDBS Entry Date	Source	Comment
a3d1145fy.cy2	BOTH	01 Jan 1990	25 Apr 1989	GROUND	Pre-launch.
-	BOTH	01 Jan 1990	04 Feb 1992	INFLIGHT	NOT DELIVERED or signed off. Bad table design - information not useful.

FOS SKY/BACKGROUND FILTER WIDTH REFERENCE TABLE HISTORY (.cy3)

Table 21: FOS SKY/BACKGROUND FILTER WIDTH REFERENCE TABLES IN CDBS

Filename	Detector	USEAFTER Date	CDBS Entry Date	Source	Comment
a3d1145gy.cy3	BOTH	01 Jan 1990	02 Aug 1988	GROUND	Pre-launch.

FOS WOLLASTON/WAVEPLATE PARAMETERS REFERENCE TABLES HISTORY (.cy4)
(POLARIMETRY REDUCTION PARAMETERS)

Table 22: FOS WOLLASTON/WAVEPLATE PARAMETERS REFERENCE TABLES IN CDBS

Filename	Detector	USEAFTER Date	CDBS Entry Date	Source	Comment
a3d1145iy.cy4	BOTH	01 Jan 1990	04 Feb 1989	GROUND	Table not completely delivered.
a5810415y.cy4	BOTH	01 Jan 1990	23 Apr 1990	GROUND	Complete table.
b6o1642cy.cy4	BOTH	01 Jan 1990	29 May 1991	GROUND	Intermediate version with ground based angles.
b9d1019my.cy4	BOTH	01 Jan 1990	13 Sep 1990	INFLIGHT	Updated Blue values.
e5v13262y.cy4	BOTH	08 Jun 1993	31 May 1994	INFLIGHT	Ground based angles with updated inflight wavelengths. Updated Blue values, plus Amber calibration. From Rich Allen.

FOS SKY SHIFT PARAMETERS REFERENCE TABLES HISTORY (.cy5)

Table 23: FOS SKY SHIFT PARAMETERS REFERENCE TABLES IN CDBS

Filename	Detector	USEAFTER Date	CDBS Entry Date	Source	Comment
a3d1145jy.cy5	BOTH	01 Jan 1990	02 Aug 1988	GROUND	Pre-launch.

FOS WAVELENGTH PARAMETERS HISTORY (.cy6)

Table 24: FOS WAVELENGTH PARAMETERS REFERENCE TABLES IN CDBS

Filename	Detector	USEAFTER Date	CDBS Entry Date	Source	Comment
a3d1145ky.cy6	BOTH	01 Jan 1990	30 Nov 1989	GROUND	Pre-launch.
a9508460y.cy6	AMBER	01 Jan 1990	28 Aug 1990	INFLIGHT	OV data for Amber. Blue still pre-launch.
abe1441my.cy6	BLUE	01 Jan 1990	26 Nov 1990	INFLIGHT	OV data for Blue.
b6o1640gy.cy6	BLUE	01 Jan 1990	29 May 1991	INFLIGHT	Polarimetry data for Blue from Rich Allen.
bb81606qy.cy6	BOTH	01 Jan 1990	08 Nov 1991	INFLIGHT	Adjusted for GIMP.
bck10546y.cy6	BOTH	01 Jan 1990	20 Dec 1991	INFLIGHT	Adjusted for GIMP and internal/external offsets applied. SV data.
e5v11576y.cy6	BOTH	08 Jun 1993	31 May 1994	INFLIGHT	Polarimetry for Amber and Blue from Rich Allen.

FOS SCALE FACTORS FOR GIMP CORRECTIONS REFERENCE TABLE HISTORY (.cy7)

Table 25: FOS SCALE FACTORS FOR GIMP CORRECTIONS REFERENCE TABLES IN CDBS

Filename	Detector	USEAFTER Date	CDBS Entry Date	Source	Comment
ba9t0502y.cy7	BOTH	01 Jan 1990	30 Jul 1991	INFLIGHT	

FOS MEAN BACKGROUND COUNT RATES REFERENCE TABLE HISTORY (.cy8)

Table 26: FOS MEAN BACKGROUND COUNT RATES REFERENCE TABLES IN CDBS

Filename	Detector	USEAFTER Date	CDBS Entry Date	Source	Comment
ba31407ly.cy8	BOTH	01 Jan 1990	03 Oct 1991	INFLIGHT	

FOS SCATTERED LIGHT CORRECTION PARAMETERS REFERENCE TABLE HISTORY (.cy9)

Table 27: FOS SCATTERED LIGHT CORRECTION PARAMETERS REFERENCE TABLES IN CDBS

Filename	Detector	USEAFTER Date	CDBS Entry Date	Source	Comment
e3i0949ly.cy9	BOTH	01 Jan 1990	17 Mar 1994	INFLIGHT	

PAIRED PULSE PARAMETERS REFERENCE TABLE HISTORY (.cmg)
(GHRS AND FOS)

Table 28: PAIRED PULSE PARAMETERS REFERENCE TABLES IN CDBS

Filename	Detector	USEAFTER Date	CDBS Entry Date	Source	Comment
a3d1145ly.cmg	BOTH	01 Jan 1990	04 Dec 1989	GROUND	Pre-launch. No further update planned.