WWW Query Tool for CDBS

C. Tullos
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ABSTRACT

Using the World Wide Web, direct query-access has been made to the Calibration Database. All eight science instruments' reference data, plus photometric and spectrophotometric standards can be seen. By using wildcards, a user may retrieve information on all reference datasets or by using various qualifiers, the user has the ability to narrow the search down to very particular sets. The information retrieved not only lists the existence of filenames for particular modes of operation, but critical information about when the reference data has been archived and when it has been installed for pipeline calibrations.

1. Introduction

The calibration database holds calibration reference data for all of the science instruments which have ever existed on board the Hubble Space Telescope. The database holds over forty-four thousand distinct modes of operation for all eight science instruments. These modes manifest as database entries for calibration parameters or pointers to over ten thousand differerent reference files. Other information is available for each set of reference data, such as the DADS archive date, useafter dates (which define the time period for which each calibration file is applicable), the date/time when the installation took place in OPUS, plus the observation begin and end dates, indicating when the observations were taken to produce the calibration reference data.

2. Science Instruments and Modes

Numerous parameters for each science instrument define its operating modes. These act as dependencies in which each reference data set is chosen, depending on each calibration type.

Table 1. Observation Parameters for Science Instruments

NICMOS

NREAD	CAMERA	FILTER	READOUT	SAMP_SEQ

FOC

CAMMODE	LINEOFF	LINEPFM	OPTCRLY	OPTELT1
OPTELT2	PXFORMT	SAMPOFF	SAMPPLN	SMMMODE
WAVELENGTH	UNI_FILE_NAME			

WFPC2

MODE	ATODGAIN	FILTER1	FILTER2	SERIALS	SHUTTER

FOS

FCHNL	APER_ID	FGWA_ID	NXSTEPS	APER_POS
DETECTOR	OVERSCAN	PASS_DIR	POLAR_ID	WAVELENGTH

STIS

CCDAMP	SCLAMP	CCDGAIN	CENWAVE	CRSPLIT	LAMPSET
OBSTYPE	APERTURE	BINAXIS1	BINAXIS2	CCDOFFST	DETECTOR
OPT_ELEM					

SYNPHOT

COMPNAME

MULTI

FLD_NAME	TARGETID	OBSMODE

WFPC

CLOCK	MODE	CAMERA
FILTER1	FILTER2	SHUTTER
FILTNAM1	FILTNAM2	PHOTMODE

HSP

TYPE	THRESH	VGAIND	DET_NUM	VOLTAGE	APER_NAME

GHRS

GRATING	SPORDER	APERTURE	DETECTOR	TARGETID

3. The Query Tool

CGI scripts and Perl are used to access the Sybase database holding all of HST's calibration data. The query tool allows the user to retrieve with specialized queries using the various forms, depending on instrument and calibration type, or more generalized queries using wildcards for the reference file names. Each specialized search gives a list of calibration file type dependencies to be used in the search (as shown above). The query tool also allows searches to be made using *Observation Dates* or *Useafter Dates*.

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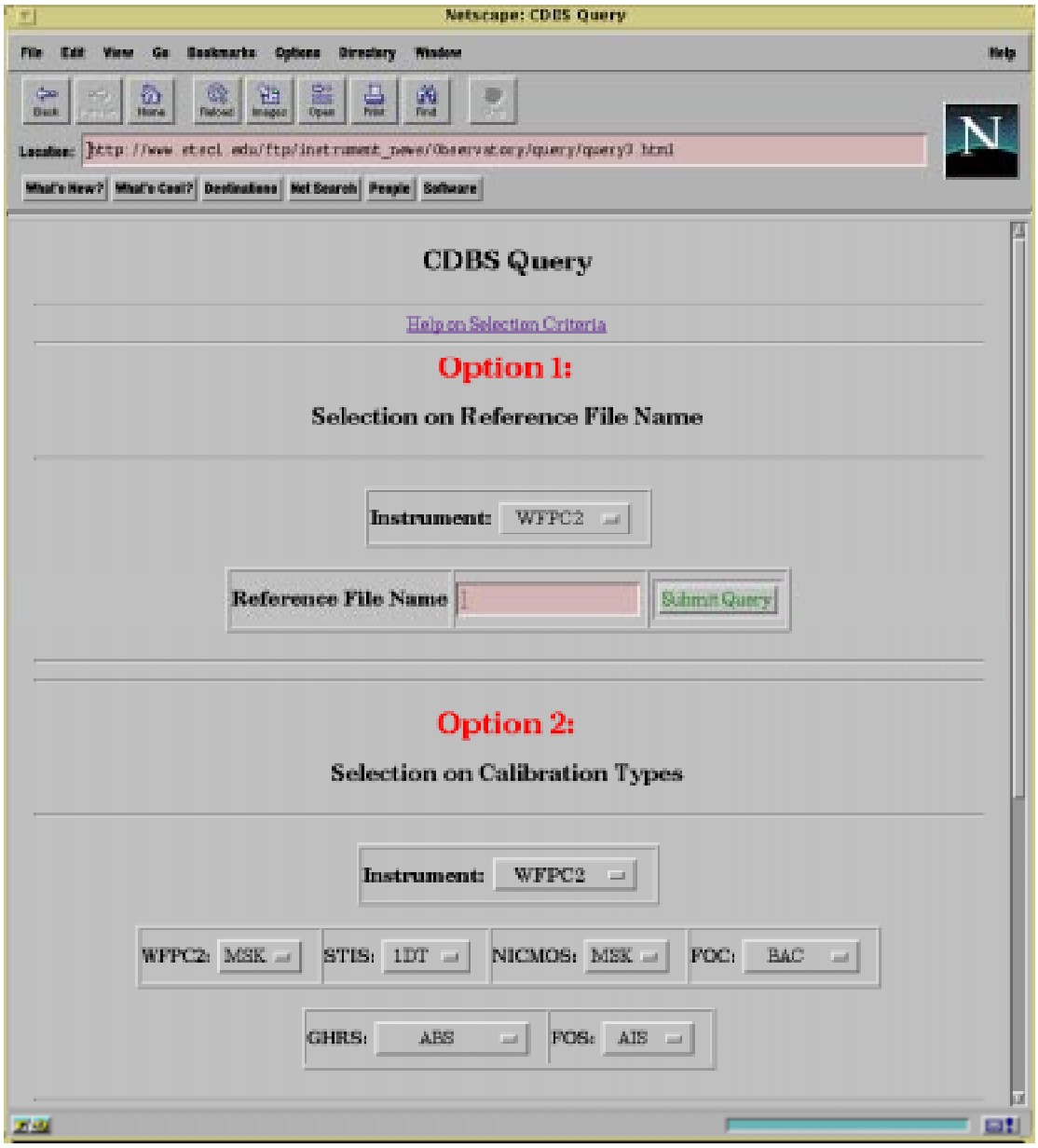
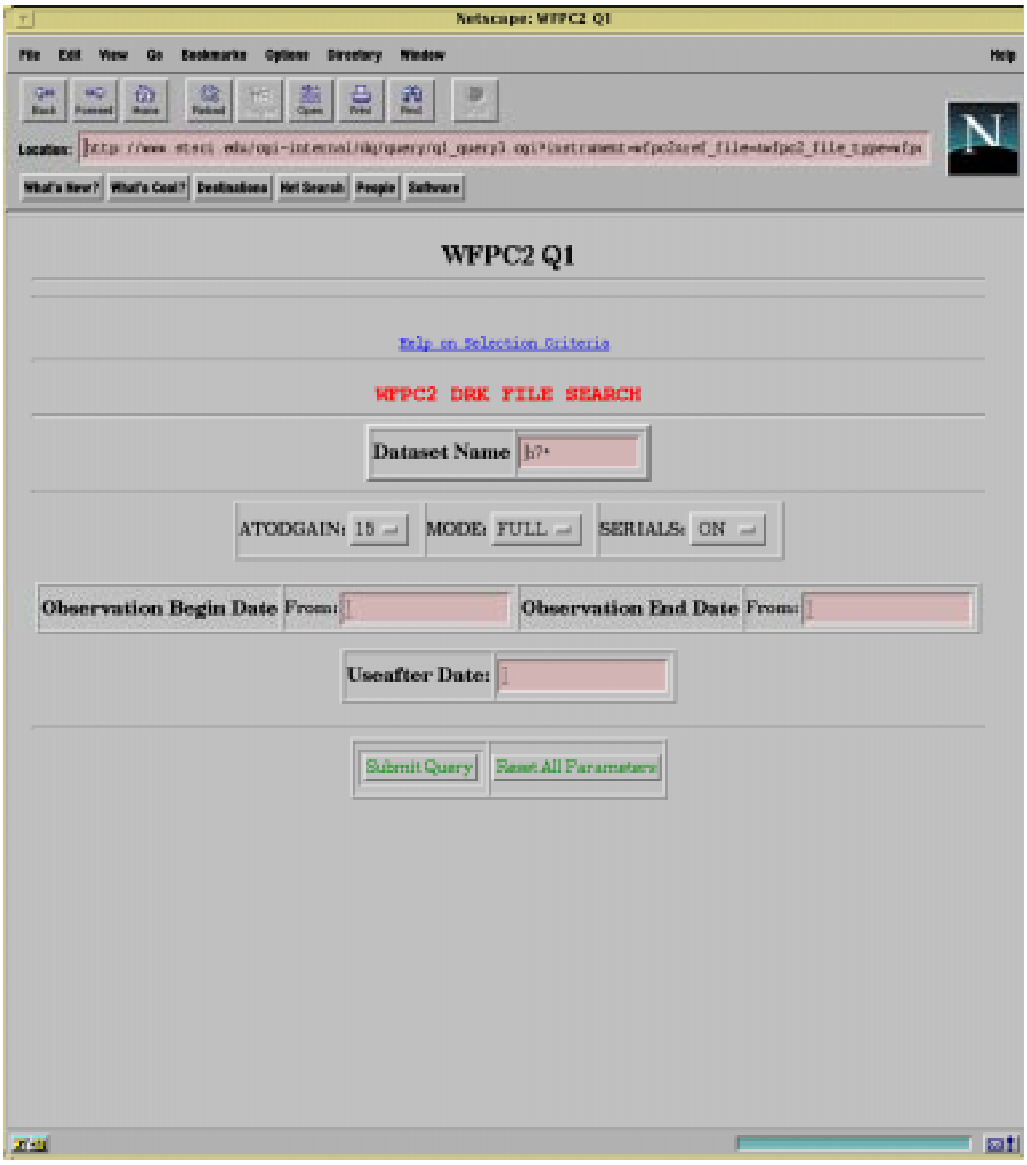
After an instrument is selected, the user must supply a reference file name (with wild-card options), or choose a calibration type. If a wildcard is used, one might retrieve, a list of all WFPC2 calibration reference files. This is not recommended, for the return from the database will be very large. Using various forms of a wildcard input, the user can pare down the search.



Specfic Calibration File-Type Page

For example, the WFPC2 was chosen along with a calibration type of *DRK. A* page specific to that instrument/calibration type appears, only giving the parameter choices which are defined by the file-type dependencies. Again, wildcards may be used. Any combination of the options and input boxes is allowed.



Preliminary Results Page

After specifying the values of the query parameters, the tool gives a set of preliminary results. This is a subset of the total information about the reference data. It is intended for a quick look at the information retrieved. Each instrument group can define exactly what they want to see at each level. At this stage, a user would determine if the retrieval has been successful, and has the option to complete the process by displaying an expanded information set.

Expanded Results Page

For this example, the WFPC2 /DRK (Mode=FULL, A2DGAIN=15, and SERIALS=ON), has given all of the information which is known about each calibration reference set. This includes information about the configuration of the science instrument, when and how the data was taken by HST, when the data was put into CDBS, OPUS, DADS, and all available comments.

4. Conclusion

The CDBS Web Query Tool provides an easy way to review the database for current and superceded instruments. Comprehensive information about each calibration reference dataset is available. Since most of the calibration data is online, plans for linking this tool directly to the data via the Internet is planned.

To access the CDBS Web Query Tool, enter the following URL:

http://www.stsci.edu/ftp/instrument_news/Observatory/query/query4.html