



## Indexing System

[Index File Columns](#) | [Quality Keyword](#) | [Adding & Removing Files](#)

The most vital characteristic of the CALDB structure is the indexing system. The index works with the header specifications in the various data files to ensure unambiguous file selection.

Special FITS files named `caldb.idx` contain the lists of CALDB keywords for the principle header data unit (HDU) of each calibration file; there is one index file for each instrumental branch. The `caldb.idx` files are actually links to the latest versioned files in the appropriate `index` directory; see the [Versioning](#) page for more information.

The index file format is prescribed in the HEASARC reference "[Calibration Index Files](#)" (CAL/GEN/92-008).

### Index File Columns

The columns included in each index file are listed in [Table 1](#). There is one line in the table for each data set (each HDU) that has been entered into the index. Some files have only one HDU indexed; others, such as the ACIS bad pixel files, have one extension for each detector chip.

*Table 1: CALDB index file columns.*

<i>Name</i>	<i>Format and length</i>	<i>Source/Description</i>
TELESCOP	10A	TELESCOP header keyword
INSTRUME	10A	INSTRUME header keyword
DETNAM	20A	DETNAM header keyword
FILTER	10A	FILTER header keyword
CAL_DEV	20A	Logical link necessary for CALDB access
CAL_DIR	70A	Subdirectory location of file
CAL_FILE	80A	CALDB filename being indexed
CAL_CLASS	3A	CCLS0001 keyword value
CAL_DTYP	4A	CDTP0001 keyword value
CAL_CNAM	20A	CCNM0001 keyword value
CAL_CBD	630A70	CBDn0001 keyword values

## Indexing System – CALDB 2

CAL_XNO	I	Extension number within the fits file of the dataset
CAL_VSD	10A	CVSD0001 keyword value (date only)
CAL_VST	8A	CVST0001 keyword value
REF_TIME	8-byte double (D)	CVSD0001 converted into modified Julian date
CAL_QUAL	I	Calibration quality value, 0=good, 5=bad; see the <u>Quality Keyword</u> section.
CAL_DATE	10A	Date the HDU was indexed in the CALDB
CAL_DESC	70A	CDES0001 keyword value

### Quality Keyword

Only two values of the quality keyword, CAL\_QUAL, are currently used in the Chandra CALDB: 0 and 5. Good quality is indicated by the value 0. A value of 5 indicates that the calibration data has been replaced by better dataset.

Only the good files can be retrieved by a CALDB query. There must be only one good file for a given full specification, otherwise multiple datasets would be returned. Files marked as bad are kept as options for custom processing requests or for manual selection by the user.

### Adding & Removing Files

Adding new files to the database is the responsibility of the Chandra CALDB manager. These files will be announced in an official patch to the CALDB and will be posted on the Download page. When you install the update, it will automatically write the calibration files, create a new versioned index file, and update the `caldb.indx` link for each affected branch.

***You should not attempt to index your own files.*** If the local index files are changed, updates from the download page may not occur properly. Additionally, your internal changes will be overwritten by the CALDB upgrade.

It is also the responsibility of the CALDB manager to inform users when files have been retired from the CALDB. In general, it is unnecessary to remove files from the database unless there are disk space issues; files are simply marked as bad instead (see the Quality Keyword section). Retired files will be removed from the CALDB tarfiles on integral version updates (e.g. 3.0, 4.0).

---

The Chandra X-Ray Center (CXC) is operated for NASA by the  
Smithsonian Astrophysical Observatory.  
60 Garden Street, Cambridge, MA 02138 USA.  
Smithsonian Institution, Copyright © 1998–2004. All rights reserved.

URL:  
[http://cxc.harvard.edu/caldb/about\\_CALDB/indexing.html](http://cxc.harvard.edu/caldb/about_CALDB/indexing.html)  
Last modified: 14 September 2004