



Header Specifications

Return to: [References Index](#)

Contents:

- [Index Files, Versioning, Archiving](#)
- [Directory Structure](#)
- [Required Keywords](#)
- [ICD References](#)
- [Existing CALDB Coordinate Boundary Names](#)
- [Existing CALDB CCNMmmmm Values](#)
- [CALDB File Specifications](#)
 - ◆ [ACIS](#)
 - ◆ [HRC](#)
 - ◆ [HRMA](#)
 - ◆ [Grating](#)
 - ◆ [SIM](#)
 - ◆ [PCAD](#)
 - ◆ [EPHIN](#)
 - ◆ [PIXLIB](#)

Index Files, Versioning, Archiving

There shall be one .indx file per instrument. The names of the index files shall be caldbNnnnn.indx, where nnnn is a version number. In addition, there shall be a caldb.indx symbolic link to the most recent caldbNnnnn.indx (i.e., the one with the highest nnnn).

Every time a new ARD that is a CALDB member is ingested, new index files are created with the next higher version number and the symbolic links are moved, but no index files are deleted. The symbolic links ensure that by default the most recent version is used. The retention of previous versions of the index files not only allow access to those previous versions of the CALDB members but also ensure consistency between the various CALDB members.

All CALDB members will be identified by the CONTENT keyword in the header of their principal HDUs, which value will begin with "CDB_<instrument>_". The metadata kept on each file will include the values of the principal extension's CONTENT and CVSDnnnn keywords.

Directory Structure

```
$CALDB/data/chandra/
    pcf/      acis/
              hrc/
              pcad/
```

Header Specifications – CALDB 2

```

sim/
tel/      hrma/
          grating/ letg/
          hetg/
acis/    index/
          bcf/      grade/
          badpix/
          gain/
          cti/
          evtsplt/
          qe/
          gtilim/
          cpf/      detmap/
          ebounds/
          fefs/      FP-90/
                   FP-100/
                   FP-110/
          rmf/
          arf/
          osip/
          rpsf/
          2dpsf/
epihin/  index/
          bcf/      geom/
hrc/     index/
          bcf/      badpix/
          gain/
          adc/
          degap/
          qe/
          hesf/
          fptest/
          eptest/
          sattest/
          gtilim/
          tapring/
          cpf/      detmap/
          rmf/
          arf/
          rpsf/
          2dpsf/
pcad/    index/
          bcf/      align/
          sfma/
          iru/
          ccd/
          image/
          cti/
          rws/
          fdc/
          badpix/
sim/     index/
          bcf/      pos/
          poscorr/
tel/     index/
          bcf/      aimpts/
          geom/
          sky/
          tdet/
          otol/
          hrma/    bcf/      effarea/
                   vignet/
                   cpf/      wpsf/
                   rpsf/
                   2dpsf/
          grating/ letg/    bcf/      greff/
                   cpf/      lsf/

```

Header Specifications – CALDB 2

```

                                xdsf /
                                2dpsf /
                                arf /
                                rmf /
    hetg/      bcf /      greff /
              cpf /      lsf /
                                xdsf /
                                2dpsf /
                                arf /
                                rmf /
    
```

Structure changes as of 2000-01-05: hrma, letg, and hetg calibration files are now subsumed under the "tel" instrument specification. All of those files are to be indexed at the tel/index level, in the same file. The pcad directory has been added as of this date as well, including the nine subdirectories under bcf corresponding to each CCNM spec.

Filenames (2000/01/24):

All filenames are now set by this prescription. There is no uncertainty about this. If new conventions must be added, they will be.

General filename structure: <detnam>D<yyyy-mm-dd><ccnm>N<version>.fits

Exceptions:

1. DETNAM absent or 'NONE': Use INSTRUME value:
 <instrument>D<yyyy-mm-dd><ccnm>N<version>.fits
2. DETNAM = 'GRATING' (Keyword GRATING must be set = HETG or LETG):
 <grating>[<grattype><order>]D<yyyy-mm-dd><ccnm>N<version>.fits
3. Detector-specific grating functions:
 <instrument><grattype><order>D<yyyy-mm-dd><ccnm>N<version>.fits

NOTE: Use no underscores or additional tags. Use no dashes excluding the date convention above. Here are the allowed values:

- <detnam> – acisi, aciss, acisn (n=0,9), hrci, hrca, hrma, acap, acar, rwa, gyro, fssa, cssa (DO NOT USE "grating".)
- Exception 1 above: <instrument> – acis, pcad, hrc, sim (DO NOT USE "tel".)
- Exception 2 above:
 - <grating> – hetg, letg
 - <grattype> – heg, meg, leg (DO NOT USE "leg" with "letg")
 - <order> – [p|m|b]n (n=0,1,...); p(lus), m(inus), b(oth) not required for n=0
 - <effective date> – Observation date after which these data may be used. For BCF's this may not be trivial, requires CAL group input. NOTE: Effective date is NOT the file creation date in general!
 - <ccnm> – see table below for translation of CCNMmmmm keyword values to <ccnm>
 - <version> – this is determined by what is already in the CALDB for a given effective date. It is therefore set by the manager.

CCNMmmmm	<ccnm>	Description
DET_POS	pos	SIM position file (OBISIM_ARD)
DET_POSCORR	poscorr	SIM delta (corrections) file (SIM_DELTA_ARD)
CTI	cti	CCD charge transfer inefficiency
EVTSPILT	evtsplt	Event and split thresholds
GRADE	grade	Detector grades
BADPIX	badpix	Detector bad pixel list

Header Specifications – CALDB 2

DET_GAIN	gain	Detector gain map
QE	qe	Mean quantum efficiency
QEU	qeu	QE Uniformity map
QEXYE	qexye	QE(x,y,E) local QE
EFTEST	eftest	Event flatness test coefficient table
FPTTEST	fptest	Event hyperbolic test coefficient table
SATTEST	sattest	Event amp saturation test coefficient table
TAPRINGTEST	tapring	Event tap-ringing test coefficient table
GTI_LIM	gtilim	Parameter limits for GTI
DETMAP	detmap	Archived instrument maps
SPECRESP	arf	Ancillary response function, Aeff
MATRIX	rmf	Redistribution (and spectral response) matrix
IRM	irmf	Pulse-invariant rmf table
EBOUNDS	ebounds	Energy bounds bintable
RPSF	rpsf	Radial point spread function
REEF	reef	Radial encircled energy fraction
2D_PSF	2dpsf	2-dimensional point spread function
GMAP	gain	Detector gain map
ADC	adc	Detector ADC correction table
DEGAP	gap	Detector gap map (HRC)
HESF	hesf	High energy suppression filter
AXEFFA	axeffa	Axial effective area
EFFAREA	effa	Off-axis effective area
VIGNET	vignet	Vignetting function from effa
WPSF	wpsf	PSF width
FEF_PI	fefpi	Pulse-invariant FITS-embedded function
FEF_PHA	fefpha	PHA FITS-embedded function
GREFF	greff	Grating efficiency
LSF	lsf	Grating line spread function
XDSF	xdsf	Grating cross-dispersion function
GYRO_SFMA	sfma	PCAD GYRO scale factor misalignment matrix
IRU_CHAR	char	PCAD IRU characteristics
RWA_BSPD	bspd	PCAD RWA bad reaction wheel speeds
ALIGN	align	PCAD "CALALIGN" file
CCD_CHAR	ccd	ACA CCD characteristics
CTI	cti	ACA charge transfer inefficiency
FDC	fdc	ACA field distortion coefficients
CCD_RESP	resp	ACA response image
DARK_CURR	dark	ACA dark current image
GEOM	geom	Geometric factors/Detector geometry
AIMPTS	aimpts	Detector aimpoint positions
SKY	sky	Focal plane sky coordinate system
TDET	tdet	Tile detector coordinate system

Required Keywords

```
MISSION = 'AXAF'
TELESCOP= 'CHANDRA'
INSTRUME= 'ACIS'/'HRC'/'HRC-I'/'HRC-S'/'TEL'
DETNAM   = 'NONE'/'ACIS-n'/'HRC-I'/'HRC-S'/'HRMA'/'GRATING' / Default: NONE
FILTER   = 'NONE' / Default: NONE
GRATING  = 'NONE'/'LETG'/'HETG' / Default: NONE
EXTNAME
CONTENT
HDUCLASS
HDUCLAS1
HDUCLAS2
HDUCLAS3
CCLSmmmmm
CDTPmmmm
CCNMmmmm
CBDnmmmm / Default: no boundaries
CVSDmmmm= 'yyyy-mm-ddThh:mm:ss' / Start date and time of validity in TT
CVSTmmmm= 'hh:mm:ss' / Start time of validity in TT
```

Header Specifications – CALDB 2

CDESmmmm

The CVSTmmmm keyword is added to accommodate the HEASARC indexing software, which does not at this point use the FITS Y2K standard for the CVSDmmmm keyword illustrated above. The hh:mm:ss are to be specified in *both* CVSD and CVST keywords, and must be identical.

TELESCOP is to be set to 'CHANDRA' for CALDB files until further notice. INSTRUME='HRC' is allowed and will be assumed to apply to both HRC-I and HRC-S.

For documentation on the CALDB required keywords, see [Required/Recommended FITS Keywords for Calibration Files](#).

Section 3 is especially important. It defines the syntax of the CBDnmmmm boundary keywords that specify the restrictions on applicability of the CALDB HDUs. Below, I have generally set CBDnmmmm='none', indicating that the files apply to the entire instrument or detector. However, individual HDUs in the files may be subject to restrictions and CBDnmmmm keywords should be added as appropriate. An example would be a PSF HDU that covers energies 1–8 keV and off-axis angles 0' – 10':

```
CBD10001= 'ENERG(1-8)keV'  
CBD20001= 'THETA(0-10)arcmin'
```

If there are no boundaries, CBDnmmmm keywords should be omitted.

ICD References

1. ARD for ACIS Level 1 & 2 Pipelines and Tools
2. ARD for Exposure Maps and Grating Levels 1.5–2 Pipelines
3. ARD for HRC Level 1 Pipelines
4. ARD for PSF Library

References are written as <document reference number>–<section number>.

Existing CALDB Coordinate Boundary Names

General:

RAWX
RAWY
DETX
DETY
PHYX
PHYX
THETA
PHI
ALPHA
BETA
CHAN
ENERG
HV
MODE
PANG
PICH
TEMP
ECHO
GRADE
SPLIT

Header Specifications – CALDB 2

Mission-specific to AXAF:

FP_TEMP	ACIS focal plane temperature
CHANTYPE	PHA or PI
CHIPX	CHIP Pixel coordinate system, X
CHIPY	CHIP Pixel coordinate system, Y
GRATING	Grating related CALDB files, HETG or LETG
GRATTYPE	Grating CALDB files, HEG, MEG, or LEG
CCD_ID	ACIS chip number, 0-9
TG_M	Grating order
SHELL	HRMA shell
CD1_1	x PSF pixel size (PSF Library)
CD2_2	y PSF pixel size
MLAM_MIN	m*lambda_min, Product(order, minimum wavelength)
OBS_MODE	

Existing CALDB CCNMmmmm Values

RAW2PHY
RAW2LIN
LIN2EQU
PHY2ECL
LIN2XMA
EQU2PHY
ADC
BADPIX
CTI
BKGRND_EVTS
DEGAP
DETEFF
DETMSK
DET_EFF
DET_ENRES
DET_GAIN
DET_POS
DET_POSCORR
DET_POSRES
EFFAREA
EVSPLT
FATOM
FTRANS
HKCONV
IRM
OBSCFACT
TEMP
TVIGNET
VIGNET
WATOM
WTRANS
XSECT
EFTEST
FPTEST
SATTEST
TAPRINGTEST
GTI_LIM
GEOM
SKY
AIMPTS
TDET
OTOL
OTOL_SEC

2D_PSF
EEF

Header Specifications – CALDB 2

ENERGY_GRID
 REEF
 RPSF
 WPSF

 DETMAP
 EBOUNDS
 MATRIX
 SPECRESP
 SPECRESP MATRIX
 FEF_PHA
 FEF_PI

 GYRO_SFMA
 IRU_CHAR
 RWA_BSPD
 ALIGN
 FID_POS
 CCD_CHAR
 FDC
 CCD_RESP
 DARK_CURR

Summary Table 1

INSTRUME	Reference	CCLS	CCNM	CDES
ACIS	1-4	BCF	GRADE	Detector grade table
ACIS	2-7	BCF	BADPIX	Detector bad pixel list
ACIS	1-7	BCF	DET_GAIN	Detector gain table
ACIS	1-8	BCF	CTI	Charge Transfer correction
ACIS	1-9	BCF	EVTSPILT	Event and Split Thresholds
ACIS	2-4	BCF	QE	Quantum Efficiency table
ACIS		BCF	GTI_LIM	Parameter limits for GTI
ACIS		CPF	DETMAP	Instrument map
ACIS		CPF	SPECRESP	Spectral response
ACIS		CPF	MATRIX	Redistribution and spectral response matrix
ACIS	2-8	CPF	IRM	Integrated redistribution matrix
ACIS	2-11	CPF	EBOUNDS	Energy bounds
ACIS	4-3	CPF	RPSF	Radial point spread function
ACIS	4-3	CPF	REEF	Radial encircled energy fraction
ACIS	4-3	CPF	2D_PSF	Two-dimensional point spread function
ACIS		CPF	FEF_PI	FEF for RMF's using MKRMF
ACIS		CPF	FEF_PHA	FEF for RMF's using MKRMF
HRC	3-7	BCF	BADPIX	Bad pixel list
HRC	3-4	BCF	GMAP	Detector gain correction map
HRC	3-5	BCF	ADC	Detector ADC correction table
HRC	3-6	BCF	DEGAP	Degap correction table
HRC	2-4	BCF	QE	Quantum Efficiency table
HRC	2-13	BCF	HESF	Drake flat High Energy Suppression Filter
HRC	3-8	BCF	FPTEST	Event hyperbolic test coefficient table
HRC	3-9	BCF	EFTEST	Event flatness test coefficient table
HRC	3-10	BCF	SATTEST	Event amp saturation test coefficient table
HRC	3-11	BCF	TAPRINGTEST	Event tap-ringing test coefficient table
HRC		BCF	GTI_LIM	Parameter limits for GTI
HRC		CPF	DETMAP	Instrument map
HRC		CPF	SPECRESP	Spectral response
HRC		CPF	MATRIX	Redistribution and spectral response matrix
HRC		CPF	RPSF	Radial point spread function
HRC		CPF	REEF	Radial encircled energy fraction
HRC		CPF	2D_PSF	Two-dimensional point spread function
TEL		BCF	AIMPTS	Detector aimpoint positions
TEL		BCF	GEOM	Detector geometry
TEL		BCF	SKY	Focal plane sky coordinate system
TEL		BCF	TDET	Tile detector coordinate system

Header Specifications – CALDB 2

TEL/HRMA	2-3	BCF	AXEFFA	Telescope on-axis effective area table
TEL/HRMA	2-4	BCF	EFFAREA	Telescope effective area map
TEL/HRMA	2-5	BCF	VIGNET	Telescope vignetting map
TEL/HRMA	2-7	CPF	WPSF	PSF widths
TEL/HRMA	4-3	CPF	RPSF	Radial point spread function
TEL/HRMA	4-3	CPF	REEF	Radial encircled energy fraction
TEL/HRMA	4-3	CPF	2D_PSF	Two-dimensional point spread function
TEL/HETG	2-9	BCF	GREFF	Grating efficiency
TEL/HETG		CPF	LSF	Point spread function along dispersion direction
TEL/HETG		CPF	XDSF	Point spread function across dispersion direction
TEL/HETG	4-3	CPF	2D_PSF	Two-dimensional point spread function
TEL/LETG	2-9	BCF	GREFF	Grating efficiency
TEL/LETG		CPF	LSF	Point spread function along dispersion direction
TEL/LETG		CPF	XDSF	Point spread function across dispersion direction
TEL/LETG	4-3	CPF	2D_PSF	Two-dimensional point spread function
PCAD		BCF	GYRO_SFMA	Gyro scale factor misalignment matrix
PCAD		BCF	IRU_CHAR	IRU characteristics
PCAD		BCF	ALIGN	Alignment matrix
PCAD		BCF	FID_POS	Fid light positions
PCAD		BCF	RWA_BSPD	Bad reaction wheel speeds
PCAD		BCF	CCD_CHAR	CCD characteristics
PCAD		BCF	CTI	CCD charge transfer inefficiency
PCAD		BCF	FDC	ACA field distortion coefficients
PCAD		BCF	CCD_RESP	CCD response image
PCAD		BCF	DARK_CURR	CCD dark current image
EPHIN		BCF	GEOM	Geometric factors

Summary Table 2

CONTENT	Reference	CCNM	HDUNAME	HDUCLASS	HDUCLAS1	HDUCLAS2	HDUCLAS3
CDB_ACIS_GRADE	1-4	GRADE	AXAF_GRADE	ASC	DETCHAR	GRADE	
CDB_ACIS_BADPIX	2-7	BADPIX	AXAF_BADPIX	ASC	REGION	STANDARD	BADPIX
CDB_ACIS_GAIN	1-7	DET_GAIN	AXAF_DET_GAIN	ASC	DETCHAR	DET_GAIN	
CDB_ACIS_CTI	1-8	CTI	AXAF_CTI	ASC	DETCHAR	CTI	
CDB_ACIS_EVTSPLT	1-9	EVT_SPLT	AXAF_EVT_SPLT	ASC	DETCHAR	EVT_SPLT	
CDB_ACIS_QE	2-4	QE	AXAF_QE	ASC	DETCHAR	QE	MEAN
CDB_ACIS_QEU	2-4	QEU	AXAF_QEU	ASC	DETCHAR	QE	UNIF
CDB_ACIS_QEXYE	2-4	QEXYE	AXAF_QEXYE	ASC	DETCHAR	QE	XY_ENERGY
CDB_ACIS_GTILIM		GTI_LIM	AXAF_LIMITS	ASC	GTI	LIMITS	
CDB_ACIS_DETMAP		DETMAP	AXAF_DETMAP	OGIP	IMAGE	DETMAP	
CDB_ACIS_ARF		SPECRESP	AXAF_ARF	OGIP	RESPONSE	SPECRESP	
CDB_ACIS_RMF		MATRIX	AXAF_RMF	OGIP	RESPONSE	RSP_MATRIX	REDIST
CDB_ACIS_IRM	2-8	IRM	AXAF_IRM	ASC	RESPONSE	CCD	
CDB_ACIS_EBOUNDS	2-11	EBOUNDS	AXAF_EBOUNDS	OGIP	RESPONSE	EBOUNDS	
CDB_ACIS_RPSF	4-3	RPSF	AXAF_RPSF	ASC	RESPONSE	PSF	RPSF
CDB_ACIS_REEF	4-3	REEF	AXAF_REEF	ASC	RESPONSE	PSF	REEF
CDB_ACIS_2DPSF	4-3	2D_PSF	AXAF_2DPSF	ASC	RESPONSE	PSF	2DPSF
CDB_HRCI_BADPIX		BADPIX	AXAF_BADPIX	ASC	REGION	STANDARD	BADPIX
CDB_HRCS_BADPIX		BADPIX	AXAF_BADPIX	ASC	REGION	STANDARD	BADPIX
CDB_HRCI_GAIN	3-4	GMAP	AXAF_GAINMAP	ASC	IMAGE	GAINMAP	
CDB_HRCS_GAIN	3-4	GMAP	AXAF_GAINMAP	ASC	IMAGE	GAINMAP	
CDB_HRCI_ADC	3-5	ADC	AXAF_ADC	ASC	DETCHAR	ADC	
CDB_HRCS_ADC	3-5	ADC	AXAF_ADC	ASC	DETCHAR	ADC	
CDB_HRCI_DEGAP	3-6	DEGAP	AXAF_DEGAP	ASC	DETCHAR	DEGAP	
CDB_HRCS_DEGAP	3-6	DEGAP	AXAF_DEGAP	ASC	DETCHAR	DEGAP	
CDB_HRCI_QE	2-4	QE	AXAF_QE	ASC	DETCHAR	QE	MEAN
CDB_HRCI_QEU	2-4	QEU	AXAF_QEU	ASC	DETCHAR	QE	UNIF
CDB_HRCI_QEXYE	2-4	QEXYE	AXAF_QEXYE	ASC	DETCHAR	QE	XY_ENERGY
CDB_HRCS_QE	2-4	QE	AXAF_QE	ASC	DETCHAR	QE	MEAN
CDB_HRCS_QEU	2-4	QEU	AXAF_QEU	ASC	DETCHAR	QE	UNIF
CDB_HRCS_QEXYE	2-4	QEXYE	AXAF_QEXYE	ASC	DETCHAR	QE	XY_ENERGY
CDB_HRCI_HESF	2-10	HESF	AXAF_HESF	ASC	RESPONSE	FILTER	HESF
CDB_HRCS_HESF	2-10	HESF	AXAF_HESF	ASC	RESPONSE	FILTER	HESF
CDB_HRCI_GTILIM		GTI_LIM	AXAF_LIMITS	ASC	GTI	LIMITS	

Header Specifications – CALDB 2

CDB_HRCS_GTILIM		GTI_LIM	AXAF_LIMITS	ASC	GTI	LIMITS	
CDB_HRCI_EFTEST	3-8	EFTEST	AXAF_EFTEST	ASC	DETCHEAR	EFTEST	
CDB_HRCS_EFTEST	3-8	EFTEST	AXAF_EFTEST	ASC	DETCHEAR	EFTEST	
CDB_HRCI_FPTEST	3-9	FPTEST	AXAF_FPTEST	ASC	DETCHEAR	FPTEST	
CDB_HRCS_FPTEST	3-9	FPTEST	AXAF_FPTEST	ASC	DETCHEAR	FPTEST	
CDB_HRCI_SATTEST	3-10	SATTEST	AXAF_SATTEST	ASC	DETCHEAR	SATTEST	
CDB_HRCS_SATTEST	3-10	SATTEST	AXAF_SATTEST	ASC	DETCHEAR	SATTEST	
CDB_HRCI_TAPRINGTEST	3-11	TAPRINGTEST	AXAF_TAPRINGTEST	ASC	DETCHEAR	TAPRINGTEST	
CDB_HRCS_TAPRINGTEST	3-11	TAPRINGTEST	AXAF_TAPRINGTEST	ASC	DETCHEAR	TAPRINGTEST	
CDB_HRCI_DETMAP		DETMAP	AXAF_DETMAP	OGIP	IMAGE	DETMAP	
CDB_HRCS_DETMAP		DETMAP	AXAF_DETMAP	OGIP	IMAGE	DETMAP	
CDB_HRCI_ARF		SPECRESP	AXAF_ARF	OGIP	RESPONSE	SPECRESP	
CDB_HRCS_ARF		SPECRESP	AXAF_ARF	OGIP	RESPONSE	SPECRESP	
CDB_HRCI_RMF		MATRIX	AXAF_RMF	OGIP	RESPONSE	RSP_MATRIX	REDIST
CDB_HRCS_RMF		MATRIX	AXAF_RMF	OGIP	RESPONSE	RSP_MATRIX	REDIST
CDB_HRCI_RPSF	4-3	RPSF	AXAF_RPSF	ASC	RESPONSE	PSF	RPSF
CDB_HRCS_RPSF	4-3	RPSF	AXAF_RPSF	ASC	RESPONSE	PSF	RPSF
CDB_HRCI_REEF	4-3	REEF	AXAF_REEF	ASC	RESPONSE	PSF	REEF
CDB_HRCS_REEF	4-3	REEF	AXAF_REEF	ASC	RESPONSE	PSF	REEF
CDB_HRCI_2DPSF	4-3	2D_PSF	AXAF_2DPSF	ASC	RESPONSE	PSF	2DPSF
CDB_HRCS_2DPSF	4-3	2D_PSF	AXAF_2DPSF	ASC	RESPONSE	PSF	2DPSF
CDB_HRMA_AXEFFA	2-3	AXEFFA	AXAF_AXEFFA	ASC	RESPONSE	EFF	AXEFFA
CDB_HRMA_EFFA	2-4	EFFAREA	AXAF_EFFAREA	ASC	IMAGE	EFFAREA	
CDB_HRMA_VIGNET	2-5	VIGNET	AXAF_VIGNET	ASC	IMAGE	VIGNETTING	
CDB_HRMA_WPSF	2-7	WPSF	AXAF_WPSF	ASC	RESPONSE	PSF	WPSF
CDB_HRMA_RPSF	4-3	RPSF	AXAF_RPSF	ASC	RESPONSE	PSF	RPSF
CDB_HRMA_REEF	4-3	REEF	AXAF_REEF	ASC	RESPONSE	PSF	REEF
CDB_HRMA_2DPSF	4-3	2D_PSF	AXAF_2DPSF	ASC	RESPONSE	PSF	2DPSF
CDB_HETG_GREFF	2-9	GREFF	AXAF_GREFF	ASC	RESPONSE	EFF	GREFF
CDB_HETG_LSF		LSF	AXAF_LSF	ASC	RESPONSE	PSF	LSF
CDB_HETG_XDSF		XDSF	AXAF_XPSF	ASC	RESPONSE	PSF	XPSF
CDB_HETG_2DPSF		2D_PSF	AXAF_2DPSF	ASC	RESPONSE	PSF	2DPSF
CDB_LETG_GREFF	2-9	GREFF	AXAF_GREFF	ASC	RESPONSE	EFF	GREFF
CDB_LETG_LSF		LSF	AXAF_LSF	ASC	RESPONSE	PSF	LSF
CDB_LETG_XDSF		XDSF	AXAF_XPSF	ASC	RESPONSE	PSF	XPSF
CDB_LETG_2DPSF		2D_PSF	AXAF_2DPSF	ASC	RESPONSE	PSF	2DPSF
CDB_DET_POS		DET_POS	OBISIM_ARD	ASC	CONFIG	POS	
CDB_DET_POSCORR		DET_POSCORR	SIM_DELTA_ARD	ASC	CONFIG	POSCORR	
CDB_GYRO_SFMA		GYRO_SFMA	CALSFMA	ASC	CONFIG	GYRO_SFMA	
CDB_IRU_CHAR		IRU_CHAR	CALIRU	ASC	CONFIG	IRU_CHAR	
CDB_RWA_BSPD		RWA_BSPD	CALRWS	ASC	CONFIG	RWA_BSPD	
CDB_PCAD_ALIGN		ALIGN	CALALIGN	ASC	CONFIG	ALIGN	
CDB_FID_POS		FID_POS	CALALIGN1	ASC	CONFIG	FID_POS	
CDB_ACA_CCD		CCD_CHAR	CALCCD	ASC	DETCHEAR	CCD	
CDB_ACA_CTI		CTI	CALCTI	ASC	DETCHEAR	CTI	
CDB_ACA_FDC		FDC	CALFDC	ASC	DETCHEAR	FDC	
CDB_ACA_CCD_RESP		CCD_RESP	PRIMARY	ASC	RESPONSE	CCD	
CDB_ACA_DARK_CURR		DARK_CURR	PRIMARY	ASC	RESPONSE	DARK_CURR	
CDB_EPHIN_GEOM		GEOM	EPHGF_ARD	ASC	CHAR		
CDB_DET_AIMPOINTS		AIMPTS	AIMPOINTS	ASC	DETECTOR	AIMPOINTS	
CDB_DET_GEOMETRY		GEOM	GEOMETRY	ASC	DETCHEAR	GEOMETRY	
CDB_FP_SKY_COORDS		SKY	FPSYS	ASC	COORDINATES	FOCAL_PLANE	
CDB_TDET_COORDS		TDET	TDET_INDEX	ASC	COORDINATES	TDET	

Individual Products

ACIS CALDB File Specifications

• ACIS Grade Table

Reference: 1-4

Header Specifications – CALDB 2

Directory: \$CALDB/data/chandra/acis/bcf/grade
File names: acisDyyyy-mm-ddgradeN0000.fits
CALDB call: quzcif chandra acis - - grade yyyy-mm-dd hh:mm:ss\
 expr='MODE.eq.TIMED' or CONTINUOUS'
 (Date and Time from *_evt2.fits DATE-OBS keyword.)

MISSION AXAF
TELESCOP CHANDRA
INSTRUME ACIS
DETNAM <This keyword must not be specified>
FILTER NONE
GRATING NONE
EXTNAME AXAF_GRADE
CONTENT CDB_ACIS_GRADE
HDUCLASS ASC
HDUCLAS1 DETCHAR
HDUCLAS2 GRADE
CCLSmmmmm BCF
CDTPmmmm DATA
CCNMmmmm GRADE
CBD1mmmm MODE(TIMED) or MODE(CONTINUOUS)
CDESmmmmm Detector grade table

• *ACIS Bad Pixel List*

A detailed bad pixel list is bundled with data products, based in part on the archive bad pixel list.

Reference: 2-7
Directory: \$CALDB/data/chandra/acis/bcf/badpix
File names: acisDyyyy-mm-ddbadpixN0000.fits
CALDB call: quzcif chandra acis acis-n - badpix yyyy-mm-dd hh:mm:ss\
 expr='fp_temp.eq.xxx.xx'
 (Date and Time from *_evt2.fits DATE-OBS keyword.)

MISSION AXAF
TELESCOP CHANDRA
INSTRUME ACIS
DETNAM ACIS-n
FILTER NONE
GRATING NONE
EXTNAME AXAF_BADPIX
CONTENT CDB_BADPIX
HDUCLASS ASC
HDUCLAS1 REGION
HDUCLAS2 BADPIX
HDUCLAS3 STANDARD
CCLSmmmmm BCF
CDTPmmmm DATA
CCNMmmmm BADPIX
CBD1mmmm FP_TEMP(???.??-???.??)K
CDESmmmmm ACIS Bad pixel list

• *ACIS Bias Map*

The most recent bias map(s) is(are) bundled with data products.

• *ACIS Gain Table*

Reference: 1-7
Directory: \$CALDB/data/chandra/acis/bcf/gain
File names: acisDyyyy-mm-ddgainN0000.fits

Header Specifications – CALDB 2

CALDB call: quzCIF chandra acis - - det_gain yyyy-mm-dd hh:mm:ss\
 expr='fp_temp.eq.xxx.xx'
 (Date and Time from *_evt2.fits DATE-OBS keyword.)

MISSION	AXAF
TELESCOP	CHANDRA
INSTRUME	ACIS
DETNAM	<This keyword must not be specified>
FILTER	NONE
GRATING	NONE
EXTNAME	AXAF_DET_GAIN
CONTENT	CDB_ACIS_GAIN
HDUCLASS	ASC
HDUCLAS1	DETCHAR
HDUCLAS2	DETGAIN
CCLSmmmmm	BCF
CDTPmmmm	DATA
CCNMmmmm	DET_GAIN
CBD1mmmm	FP_TEMP(???.??-???.??)K
CBD2mmmm	CCD_ID(0-9)
CDESmmmmm	Detector gain table

• **ACIS CTI Table** (not yet implemented)

Reference: 1-8

Directory: \$CALDB/data/chandra/acis/bcf/cti

File names: acisDyyyy-mm-ddctiN0000.fits

MISSION	AXAF
TELESCOP	CHANDRA
INSTRUME	ACIS
DETNAM	ACIS-n
FILTER	NONE
GRATING	NONE
EXTNAME	AXAF_CTI
CONTENT	CDB_ACIS_CTI
HDUCLASS	ASC
HDUCLAS1	DETCHAR
HDUCLAS2	CTI
CCLSmmmmm	BCF
CDTPmmmm	DATA
CCNMmmmm	CTI
CBDnmmmm	none
CDESmmmmm	Charge Transfer correction

• **ACIS Event and Split Thresholds Table**

Reference: 1-9

Directory: \$CALDB/data/chandra/acis/bcf/evtsplt

File names: acisDyyyy-mm-ddevtspltN0000.fits

CALDB call: quzCIF chandra acis - - evtsplt yyyy-mm-dd hh:mm:ss -
 (Date and Time from *_evt2.fits DATE-OBS keyword.)

MISSION	AXAF
TELESCOP	CHANDRA
INSTRUME	ACIS
DETNAM	NONE
FILTER	NONE
GRATING	NONE
EXTNAME	AXAF_EVTSPLT
CONTENT	CDB_ACIS_EVTSPLT
HDUCLASS	ASC

Header Specifications – CALDB 2

HUCLAS1	DETCHAR
HUCLAS2	EVTSPILT
CCLSmmmmm	BCF
CDTPmmmmm	DATA
CCNMmmmmm	EVTSPILT
CBDnmmmmm	none
CDESmmmmmm	Event and Split Thresholds

• *ACIS QE Table*

Three files: Mean QE, QE Uniformity, Discrete QE vs. Position and Energy

Reference: 2-2

Directory: \$CALDB/data/chandra/acis/bcf/qe

File names: acisDyyyy-mm-ddqeN0000.fits
 acisDyyyy-mm-ddqeuN0000.fits
 acisDyyyy-mm-ddqexyeN0000.fits

CALDB call: quzCIF chandra acis acis-n - qe yyyy-mm-dd hh:mm:ss -
 quzCIF chandra acis acis-n - qeu yyyy-mm-dd hh:mm:ss\
 expr='fp_temp.eq.xxx.xx'
 (Date and Time from *_evt2.fits DATE-OBS keyword.)
 qexye is not yet implemented

MISSION	AXAF
TELESCOP	CHANDRA
INSTRUME	ACIS
DETNAM	ACIS-n
FILTER	NONE
GRATING	NONE
EXTNAME	AXAF_QE AXAF_QEU AXAF_QEXYE
CONTENT	CDB_ACIS_QE CDB_ACIS_QEU CDB_ACIS_QEXYE
HUCLASS	ASC
HUCLAS1	DETCHAR
HUCLAS2	QE
HUCLAS3	MEAN, UNIF, XY_ENERGY
CCLSmmmmm	BCF
CDTPmmmmm	DATA
CCNMmmmmm	QE, QEU, QEXYE
CBD1mmmmm	ENERG(???-???)keV
CBD2mmmmm	FP_TEMP(???-??-???.??)K (QEU only)
CDESmmmmmm	Mean Quantum Efficiency Quantum Efficiency Uniformity Discrete Quantum Efficiency vs Position and Energy

• *ACIS GTI limits*

Reference: None

Directory: \$CALDB/data/chandra/acis/bcf/gtilim

File names: acisDyyyy-mm-ddgtilimN0000.fits

CALDB call: quzCIF chandra acis - - gti_lim yyyy-mm-dd hh:mm:ss -
 (Date and Time from *_evt2.fits DATE-OBS keyword.)

MISSION	AXAF
TELESCOP	CHANDRA
INSTRUME	ACIS
DETNAM	NONE
FILTER	NONE
GRATING	NONE

Header Specifications – CALDB 2

EXTNAME	LIMITS
CONTENT	CDB_ACIS_GTILIM
HUCLASS	ASC
HUCLAS1	GTI
HUCLAS2	LIMITS
CCLSmmmmm	BCF
CDTPmmmm	DATA
CCNMmmmm	GTI_LIM
CBDnmmmm	none
CDESmmmm	Parameter limits for GTI

• *ACIS Exposure Map*

Bundled with data products, derived from instrument map (DETMAP).

• *ACIS Instrument Map* (not included in CALDB)

Reference:

Directory: \$CALDB/data/chandra/acis/cpf/detmap

File names: acisDyyyy-mm-dddetmapN0000.fits

MISSION	AXAF
TELESCOP	CHANDRA
INSTRUME	ACIS
DETNAM	ACIS-n
FILTER	NONE
GRATING	NONE
EXTNAME	AXAF_DETMAP
CONTENT	CDB_ACIS_DETMAP
HUCLASS	OGIP
HUCLAS1	IMAGE
HUCLAS2	DETMAP
CCLSmmmmm	CPF
CDTPmmmm	DATA
CCNMmmmm	DETMAP
CBDnmmmm	none
CDESmmmm	ACIS Instrument map

• *ACIS AR* (not included in CALDB)

Reference:

Directory: \$CALDB/data/chandra/acis/cpf/arf

File names: acisDyyyy-mm-ddarfN0000.fits

MISSION	AXAF
TELESCOP	CHANDRA
INSTRUME	ACIS
DETNAM	ACIS-n
FILTER	NONE
GRATING	NONE
EXTNAME	AXAF_ARF
CONTENT	CDB_ACIS_ARF
HUCLASS	OGIP
HUCLAS1	RESPONSE
HUCLAS2	SPECRESP
CCLSmmmmm	CPF
CDTPmmmm	DATA
CCNMmmmm	SPECRESP
CBDnmmmm	none
CDESmmmm	Spectral response

• *ACIS Fits-embedded function* (for mkrmf)

Reference:

Header Specifications – CALDB 2

Directory: \$CALDB/data/chandra/acis/cpf/fefs/FP<tempC>

File names: acis<ccd_id>X<xrange>Y<yrange>Dyyyy-mm-ddfefpiN0000.fits
 acis<ccd_id>X<xrange>Y<yrange>Dyyyy-mm-ddfefphaN0000.fits

CALDB call: quzcif chandra acis - - fef_pha/fef_pi yyyy-mm-dd hh:mm:ss\
 expr='fp_temp.eq.???.???'
 (Date and Time from *_evt2.fits DATE-OBS keyword.)

MISSION	AXAF
TELESCOP	CHANDRA
INSTRUME	ACIS
DETNAM	NONE
FILTER	NONE
GRATING	NONE
EXTNAME	FUNCTION
CONTENT	CDB_ACIS_FEF_PI/CDB_ACIS_FEF_PHA
HDUCLASS	ASC
HDUCLAS1	FUNCTION
HDUCLAS2	PI/PHA
CCLSmmmm	CPF
CDTPmmmm	FEF
CCNMmmmm	FEF_PI/FEF_PHA
CBD1mmmm	CHIPX(1-1024)
CBD2mmmm	CHIPY(1-1024)
CBD3mmmm	FP_TEMP(???.??-???.??)K
CBD4mmmm	CHANTYPE(PHA or PI)
CBD5mmmm	CCD_ID(0-9)
CDESmmmm	'FEF for RMFs with mkrmf'

• **ACIS RMF (PHA)** (not included in CALDB)

Reference:

Directory: \$CALDB/data/chandra/acis/cpf/rmf

File names: acisDyyyy-mm-ddrmfn0000.fits

MISSION	AXAF
TELESCOP	CHANDRA
INSTRUME	ACIS
DETNAM	ACIS-n
FILTER	NONE
GRATING	NONE
EXTNAME	AXAF_RMF
CONTENT	CDB_ACIS_RMF
HDUCLASS	OGIP
HDUCLAS1	RESPONSE
HDUCLAS2	RSP_MATRIX
HDUCLAS3	REDIST
CCLSmmmm	CPF
CDTPmmmm	DATA
CCNMmmmm	MATRIX
CBD1mmmm	Same as corresponding FEF
CBD2mmmm	Same as corresponding FEF
CBD3mmmm	Same as corresponding FEF
CDESmmmm	Redistribution and spectral response matrix

• **ACIS RMF (PI)** (not included in CALDB)

Reference:

Directory: \$CALDB/data/chandra/acis/cpf/rmf

File names: acisDyyyy-mm-ddrmfpiN0000.fits

MISSION	AXAF
TELESCOP	CHANDRA

Header Specifications – CALDB 2

INSTRUME	ACIS
DETNAM	ACIS-n
FILTER	NONE
GRATING	NONE
EXTNAME	AXAF_RMF
CONTENT	CDB_ACIS_RMF
HDUCLASS	OGIP
HDUCLAS1	RESPONSE
HDUCLAS2	PI_MATRIX
HDUCLAS3	REDIST
CCLSmmmmm	CPF
CDTPmmmmmm	DATA
CCNMmmmmmm	MATRIX
CBD1mmmmmm	Same as corresponding FEF
CBD2mmmmmm	Same as corresponding FEF
CBD3mmmmmm	Same as corresponding FEF
CDESmmmmmm	Spectral redistribution matrix

• **ACIS IRMF**

Reference:

Directory: \$CALDB/data/chandra/acis/cpf/rmf

File names: acisDyyyy-mm-ddirmN0000.fits

CALDB call: quzCIF chandra acis - - irm yyyy-mm-dd hh:mm:ss -
(Date and Time from *_evt2.fits DATE-OBS keyword.)

MISSION	AXAF
TELESCOP	CHANDRA
INSTRUME	ACIS
DETNAM	ACIS-n
FILTER	NONE
GRATING	NONE
EXTNAME	AXAF_IRM
CONTENT	CDB_ACIS_IRM
HDUCLASS	ASC
HDUCLAS1	RESPONSE
HDUCLAS2	CCD
CCLSmmmmm	CPF
CDTPmmmmmm	DATA
CCNMmmmmmm	IRM
CBDnmmmmmm	none
CDESmmmmmm	ACIS Integrated redistribution matrix

• **ACIS OSIP** (replaces IRMF)

Reference:

Directory: \$CALDB/data/chandra/acis/cpf/osip

File names: acisDyyyy-mm-ddosipN0000.fits

CALDB call: quzCIF chandra acis - - osip yyyy-mm-dd hh:mm:ss\
 expr='fp_temp.eq.xxx.xx'
(Date and Time from *_evt2.fits DATE-OBS keyword.)

MISSION	AXAF
TELESCOP	CHANDRA
INSTRUME	ACIS
DETNAM	NONE
FILTER	NONE
GRATING	NONE
EXTNAME	AXAF_OSIP
CONTENT	CDB_ACIS_OSIP
HDUCLASS	ASC
HDUCLAS1	RESPONSE

Header Specifications – CALDB 2

HUCLAS2	CCD
CCLSmmmmm	CPF
CDTPmmmmm	DATA
CCNMmmmmm	OSIP
CBD1mmmmm	FP_TEMP(???.??-???.??)K
CBD2mmmmm	CCD_ID(0-9)
CDESmmmmmm	ACIS order-sorting and integrated power table

• **ACIS Energy Bounds** (not indexed separately)

Reference: 2-11

Directory: \$CALDB/data/chandra/acis/cpf/ebounds

File names: acisDyyyy-mm-ddeboundsN0000.fits

MISSION	AXAF
TELESCOP	CHANDRA
INSTRUME	ACIS
DETNAM	ACIS-n
FILTER	NONE
GRATING	NONE
EXTNAME	AXAF_EBOUNDS
CONTENT	CDB_ACIS_BNDS
HUCLASS	OGIP
HUCLAS1	RESPONSE
HUCLAS2	EBOUNDS
CCLSmmmmm	CPF
CDTPmmmmm	DATA
CCNMmmmmm	EBOUNDS
CBDnmmmmmm	none
CDESmmmmmm	ACIS Energy Bounds

• **ACIS RPSF** (not yet implemented)

Reference:

Directory: \$CALDB/data/chandra/acis/cpf/rpsf

File names: acisDyyyy-mm-ddrpsfn0000.fits

MISSION	AXAF
TELESCOP	CHANDRA
INSTRUME	ACIS
DETNAM	ACIS-n
FILTER	NONE
GRATING	NONE
EXTNAME	AXAF_RPSF
CONTENT	CDB_ACIS_RPSF
HUCLASS	ASC
HUCLAS1	RESPONSE
HUCLAS2	PSF
HUCLAS3	RPSF
CCLSmmmmm	CPF
CDTPmmmmm	DATA
CCNMmmmmm	RPSF
CBDnmmmmmm	none
CDESmmmmmm	Radial point spread function

• **ACIS REEF** (not yet implemented)

Reference:

Directory: \$CALDB/data/chandra/acis/cpf/reef

File names: acisDyyyy-mm-ddreefn0000.fits

MISSION	AXAF
TELESCOP	CHANDRA

Header Specifications – CALDB 2

INSTRUME	ACIS
DETNAM	ACIS-n
FILTER	NONE
GRATING	NONE
EXTNAME	AXAF_REEF
CONTENT	CDB_ACIS_REEF
HUCLASS	ASC
HUCLAS1	RESPONSE
HUCLAS2	PSF
HUCLAS3	REEF
CCLSmmmmm	CPF
CDTPmmmmmm	DATA
CCNMmmmmmm	REEF
CBDnmmmmmm	none
CDESmmmmmm	Radial encircled energy function

• **ACIS 2DPSF**

Reference:

Directory: \$CALDB/data/chandra/acis/cpf/2dpsf

File names: acisDyyyy-mm-dd2dpsf~~n~~N0000.fits

CALDB call: quzCIF chandra acis acis-i - 2d_psf **yyyy-mm-dd hh:mm:ss** expr='cd1_1.eq.???'
 quzCIF chandra acis acis-s - 2d_psf **yyyy-mm-dd hh:mm:ss** expr='cd1_1.eq.???'
 (Date and Time from *_evt2.fits DATE-OBS keyword.)

MISSION	AXAF
TELESCOP	CHANDRA
INSTRUME	ACIS
DETNAM	ACIS-I / ACIS-S
FILTER	NONE
GRATING	NONE
EXTNAME	AXAF_2DPSF
CONTENT	CDB_ACIS_2DPSF
HUCLASS	ASC
HUCLAS1	RESPONSE
HUCLAS2	PSF
HUCLAS3	2DPSF
CCLSmmmmm	CPF
CDTPmmmmmm	DATA
CCNMmmmmmm	2D_PSF
CBD1mmmmmm	SAOSAC_AZ(-??-??)arcmin
CBD2mmmmmm	SAOSAC_EL(-??-??)arcmin
CBD3mmmmmm	ENERG(?.???-?.??)keV
CBD4mmmmmm	DEFOCUS(0-0)um
CBD5mmmmmm	CD1_1(?.???)mm / X pixel size in mm
CBD6mmmmmm	CD2_2(?.???)mm / Y pixel size in mm
CDESmmmmmm	Two-dimensional point spread function

HRC CALDB File Specifications

• **HRC Bad Pixel Map**

Reference: 3-7

Directory: \$CALDB/data/chandra/hrc/bcf/badpix

File names: hrciDyyyy-mm-ddbadpixN0000.fits
 hrCsDyyyy-mm-ddbadpixN0000.fits

CALDB call: quzCIF chandra hrc hrc-i/s - badpix yyyy-mm-dd hh:mm:ss -

Header Specifications – CALDB 2

(Date and Time from *_evt2.fits DATE-OBS keyword.)

MISSION	AXAF
TELESCOP	CHANDRA
INSTRUME	HRC-I/S
DETNAM	HRC-I/S
FILTER	NONE
GRATING	NONE
EXTNAME	AXAF_BADPIX
CONTENT	CDB_HRCI_BADPIX CDB_HRCS_BADPIX
HDUCLASS	ASC
HDUCLAS1	REGION
HDUCLAS2	STANDARD
HDUCLAS3	BADPIX
CCLSmmmmm	BCF
CDTPmmmmmm	DATA
CCNMmmmmmm	BADPIX
CBDNmmmmmm	none
CDESmmmmmm	Bad pixel list

• *HRC Gain Map*

Reference: 3-4

Directory: \$CALDB/data/chandra/hrc/bcf/gain

File names: hrciDyyyy-mm-ddgainN0000.fits
hrscDyyyy-mm-ddgainN0000.fits

CALDB call: quzCIF chandra hrc hrc-i - gmap yyyy-mm-dd hh:mm:ss -
quzCIF chandra hrc hrc-s - gmap yyyy-mm-dd hh:mm:ss -
(Date and Time from *_evt2.fits DATE-OBS keyword.)

MISSION	AXAF
TELESCOP	CHANDRA
INSTRUME	HRC
DETNAM	HRC-I/S
FILTER	NONE
GRATING	NONE
EXTNAME	AXAF_GAINMAP
CONTENT	CDB_HRCI_GAIN CDB_HRCS_GAIN
HDUCLASS	ASC
HDUCLAS1	IMAGE
HDUCLAS2	GAINMAP
CCLSmmmmm	BCF
CDTPmmmmmm	DATA
CCNMmmmmmm	GMAP
CBDNmmmmmm	none
CDESmmmmmm	Detector gain correction map

• *HRC ADC correction table* (not yet implemented)

Reference: 3-5

Directory: \$CALDB/data/chandra/hrc/bcf/adc

File names: hrciDyyyy-mm-ddadcN0000.fits
hrscDyyyy-mm-ddadcN0000.fits

MISSION	AXAF
TELESCOP	CHANDRA
INSTRUME	HRC
DETNAM	HRC-I/S
FILTER	NONE
GRATING	NONE
EXTNAME	AXAF_ADC

Header Specifications – CALDB 2

CONTENT	CDB_HRCI_ADC
	CDB_HRCS_ADC
HUCLASS	ASC
HUCLAS1	DETCHAR
HUCLAS2	ADC
CCLSmmmmm	BCF
CDTPmmmm	DATA
CCNMmmmm	ADC
CBDnmmmm	none
CDESmmmm	Detector ADC correction table

• *HRC Degap Correction Table*

Reference: 3-6

Directory: \$CALDB/data/chandra/hrc/bcf/degap

File names: hrciDyyyy-mm-ddgapN0000.fits
hrscDyyyy-mm-ddgapN0000.fits

MISSION	AXAF
TELESCOP	CHANDRA
INSTRUME	HRC
DETNAM	HRC-I/S
FILTER	NONE
GRATING	NONE
EXTNAME	AXAF_DEGAP
CONTENT	CDB_HRCI_DEGAP
	CDB_HRCS_DEGAP
HUCLASS	ASC
HUCLAS1	DETCHAR
HUCLAS2	DEGAP
CCLSmmmmm	BCF
CDTPmmmm	DATA
CCNMmmmm	DEGAP
CBDnmmmm	none
CDESmmmm	Detector degap correction table

• *HRC QE Table*

Three pairs of files: Mean QE, QE Uniformity, and Discrete QE vs. Position and Energy.

Reference: 2-2

Directory: \$CALDB/data/chandra/hrc/bcf/qe

File names: hrciDyyyy-mm-ddqeN0000.fits
hrscDyyyy-mm-ddqeN0000.fits
hrciDyyyy-mm-ddqeuN0000.fits
hrscDyyyy-mm-ddqeuN0000.fits
hrciDyyyy-mm-ddqexyeN0000.fits
hrscDyyyy-mm-ddqexyeN0000.fits

CALDB calls: quzCIF chandra hrc hrc-i - qe/qeu yyyy-mm-dd hh:mm:ss -
quzCIF chandra hrc hrc-Sn - qe/qeu yyyy-mm-dd hh:mm:ss -
n is 1, 2 (where n is for the specific plate)
(Date and Time from *_evt2.fits DATE-OBS keyword.)

MISSION	AXAF
TELESCOP	CHANDRA
INSTRUME	HRC
DETNAM	HRC-I/Sn
FILTER	NONE
GRATING	NONE
EXTNAME	AXAF_QE
	AXAF_QEU
	AXAF_QEXYE
CONTENT	CDB_HRCI_QE / CDB_HRCS_QE

Header Specifications – CALDB 2

	CDB_HRCI_QEU / CDB_HRCS_QEU
	CDB_HRCI_QEXYE / CDB_HRCS_QUXYE
HUCLASS	ASC
HUCLAS1	DETCHAR
HUCLAS2	QE
HUCLAS3	MEAN, UNIF, XY_ENERGY
CCLSmmmmm	BCF
CDTPmmmm	DATA
CCNMmmmm	QE, QEU, QEXYE
CBDnmmmm	ENERG(???-???)keV
CDESmmmm	Quantum efficiency table
	Quantum Efficiency Uniformity
	Discrete Quantum Efficiency vs Position and Energy

• ***HRC High Energy Suppression Filter*** (not yet implemented)

Reference: 2-13

Directory: \$CALDB/data/chandra/hrc/bcf/hesf

File names: hrciDyyyy-mm-ddhesfN0000.fits
hrscDyyyy-mm-ddhesfN0000.fits

MISSION	AXAF
TELESCOP	CHANDRA
INSTRUME	HRC
DETNAM	HRC-I/S
FILTER	HESF
GRATING	NONE
EXTNAME	AXAF_HESF
CONTENT	CDB_HRCI_HESF
	CDB_HRCS_HESF
HUCLASS	ASC
HUCLAS1	RESPONSE
HUCLAS2	FILTER
HUCLAS3	HESF
CCLSmmmmm	BCF
CDTPmmmm	DATA
CCNMmmmm	HESF
CBDnmmmm	none
CDESmmmm	High Energy Suppression Filter (Drake Flat)

• ***HRC Event Flatness Test Coefficients***

Reference: 3-9

Directory: \$CALDB/data/chandra/hrc/bcf/efstest

File names: hrciDyyyy-mm-ddefstestN0000.fits
hrscDyyyy-mm-ddefstestN0000.fits

CALDB calls: quzcif chandra hrc hrc-i - efstest yyyy-mm-dd hh:mm:ss -
quzcif chandra hrc hrc-s - efstest yyyy-mm-dd hh:mm:ss -
(Date and Time from *_evt2.fits DATE-OBS keyword.)

MISSION	AXAF
TELESCOPE	CHANDRA
INSTRUME	HRC
DETNAM	HRC-I/S
FILTER	NONE
GRATING	NONE
EXTNAME	AXAF_EFTEST
CONTENT	CDB_HRCI/S_EFTEST
HUCLASS	ASC
HUCLAS1	DETCHAR
HUCLAS2	EFTEST
CCLSmmmmm	BCF
CDTPmmmm	DATA

Header Specifications – CALDB 2

CCNMmmmm EFTEST / Mission-specific to AXAF/HRC
CBDnmmmm none
CDESmmmm Event flatness test coefficient table

• *HRC Hyperbolic Test Coefficients*

Reference: 3-8
Directory: \$CALDB/data/chandra/hrc/bcf/fptest
Filenames: hrciDyyyy-mm-ddfptestN0000.fits
hrscDyyyy-mm-ddfptestN0000.fits
CALDB calls: quzCIF chandra hrc hrc-i - fptest yyyy-mm-dd hh:mm:ss -
quzCIF chandra hrc hrc-s - fptest yyyy-mm-dd hh:mm:ss -
(Date and Time from *_evt2.fits DATE-OBS keyword.)

MISSION AXAF
TELESCOPE CHANDRA
INSTRUME HRC
DETNAM HRC-I/S
FILTER NONE
GRATING NONE
EXTNAME AXAF_FPTEST
CONTENT CDB_HRCI/S_FPTEST
HDUCLASS ASC
HDUCLAS1 DETCHAR
HDUCLAS2 FPTEST
CCLSmmmmm BCF
CDTPmmmm DATA
CCNMmmmm FPTEST / Mission-specific to AXAF/HRC
CBDnmmmm none
CDESmmmm Event hyperbolic test coefficient table

• *HRC Amp Saturation Test Coefficients*

Reference: 3-10
Directory: \$CALDB/data/chandra/hrc/bcf/satatest
Filenames: hrciDyyyy-mm-ddsatatestN0000.fits
hrscDyyyy-mm-ddsatatestN0000.fits
CALDB calls: quzCIF chandra hrc hrc-i - satatest yyyy-mm-dd hh:mm:ss -
quzCIF chandra hrc hrc-s - satatest yyyy-mm-dd hh:mm:ss -
(Date and Time from *_evt2.fits DATE-OBS keyword.)

MISSION AXAF
TELESCOPE CHANDRA
INSTRUME HRC
DETNAM HRC-I/S
FILTER NONE
GRATING NONE
EXTNAME AXAF_SATTEST
CONTENT CDB_HRCI/S_SATTEST
HDUCLASS ASC
HDUCLAS1 DETCHAR
HDUCLAS2 SATTEST
CCLSmmmmm BCF
CDTPmmmm DATA
CCNMmmmm SATTEST / Mission-specific to AXAF/HRC
CBDnmmmm none
CDESmmmm Event amp saturation test coefficient table

• *HRC Tap-ringing test coefficients*

Reference: 3-11
Directory: \$CALDB/data/chandra/hrc/bcf/tapring

Header Specifications – CALDB 2

FileNames: hrciD<yyyy-mm-dd>tapringN0000.fits
 hrCsD<yyyy-mm-dd>tapringN0000.fits

CALDB calls: quzCIF chandra hrc hrc-i - tapringtest yyyy-mm-dd hh:mm:ss -
 quzCIF chandra hrc hrc-s - tapringtest yyyy-mm-dd hh:mm:ss -
 (Date and Time from *_evt2.fits DATE-OBS keyword.)

MISSION	AXAF
TELESCOP	CHANDRA
INSTRUME	HRC
DETNAM	HRC-I/HRC-S
GRATING	NONE
FILTER	NONE
EXTNAME	AXAF_TAPRINGTEST
CONTENT	CDB_HRCI_TAPRINGTEST/CDB_HRCS_TAPRINGTEST
HDUCLASS	ASC
HDUCLAS1	DETCHAR
HDUCLAS2	TAPRINGTEST
CCLS0001	BCF
CDTP0001	DATA
CCNM0001	TAPRINGTEST
CBDn0001	none
CDES0001	'Event tap ringing test coefficient table'

• *HRC-S/LETG Bowtie Region*

Reference:

Directory: \$CALDB/data/chandra/hrc/bcf/tgmask2

Filename: letgDyyyy-mm-ddregN0000.fits

CALDB call: quzCIF chandra hrc hrc-s - tgmask2 yyyy-dd-mm hh:mm:ss expr='grating.eq.letg'
 (Date and Time from *_evt2.fits DATE-OBS keyword.)

MISSION	AXAF
TELESCOP	CHANDRA
INSTRUME	HRC
DETNAM	HRC-S
FILTER	NONE
GRATING	LETG
EXTNAME	REGION
CONTENT	CDB_HRCS_LETG_TGMASK2
HDUCLASS	ASC
HDUCLAS1	TG
CCLS0001	BCF
CDTP0001	DATA
CCNM0001	TGMASK2
CBD10001	GRATING(LETG)
CDES0001	LETGS spectral region filter

• *HRC GTI limits*

Reference: None

Directory: \$CALDB/data/chandra/hrc/bcf/gtilim

File names: hrciDyyyy-mm-ddgtilimN0000.fits
 hrCsDyyyy-mm-ddgtilimN0000.fits

CALDB calls: quzCIF chandra hrc hrc-i - gti_lim yyyy-mm-dd hh:mm:ss -
 quzCIF chandra hrc hrc-s - gti_lim yyyy-mm-dd hh:mm:ss -
 (Date and Time from *_evt2.fits DATE-OBS keyword.)

MISSION	AXAF
TELESCOP	CHANDRA
INSTRUME	HRC

Header Specifications – CALDB 2

DETNAM	HRC-I/S
FILTER	NONE
GRATING	NONE
EXTNAME	LIMITS
CONTENT	CDB_HRCI_GTILIM CDB_HRCS_GTILIM
HUCLASS	ASC
HUCLAS1	GTI
HUCLAS2	LIMITS
CCLSmmmmm	BCF
CDTPmmmm	DATA
CCNMmmmm	GTI_LIM
CBDnmmmm	none
CDESmmmmm	Parameter limits for GTI

• *HRC Exposure Map*

Bundled with data products, derived from instrument map (DETMAP).

• *HRC Instrument Map* (not included in CALDB)

Reference:

Directory: \$CALDB/data/chandra/hrc/cpf/detmap

File names: hrciDyyyy-mm-dddetmapN0000.fits
hrscDyyyy-mm-dddetmapN0000.fits

MISSION	AXAF
TELESCOP	CHANDRA
INSTRUME	HRC
DETNAM	HRC-I/S
FILTER	NONE
GRATING	NONE
EXTNAME	AXAF_DETMAP
CONTENT	CDB_HRCI_DETMAP CDB_HRCS_DETMAP
HUCLASS	OGIP
HUCLAS1	IMAGE
HUCLAS2	DETMAP
CCLSmmmmm	CPF
CDTPmmmm	DATA
CCNMmmmm	DETMAP
CBDnmmmm	none
CDESmmmmm	HRC Instrument map

• *HRC ARF* (not included in CALDB)

Reference:

Directory: \$CALDB/data/chandra/hrc/cpf/arf

File names: hrciDyyyy-mm-ddarfN0000.fits
hrscDyyyy-mm-ddarfN0000.fits

MISSION	AXAF
TELESCOP	CHANDRA
INSTRUME	HRC
DETNAM	HRC-I/S
FILTER	NONE
GRATING	NONE
EXTNAME	AXAF_ARF
CONTENT	CDB_HRCI_ARF CDB_HRCS_ARF
HUCLASS	OGIP
HUCLAS1	RESPONSE
HUCLAS2	SPECRESP
CCLSmmmmm	CPF

Header Specifications – CALDB 2

CDTPmmmm	DATA
CCNMmmmm	SPECRESP
CBDnmmmm	none
CDESmmmm	Spectral response

• **HRC RMF** (not yet implemented)

Reference:

Directory: \$CALDB/data/chandra/hrc/cpf/rmf

File names: hrciDyyyy-mm-ddrmfN0000.fits
hrCsDyyyy-mm-ddrmfN0000.fits

MISSION	AXAF
TELESCOP	CHANDRA
INSTRUME	HRC
DETNAM	HRC-I/S
FILTER	NONE
GRATING	NONE
EXTNAME	AXAF_RMF
CONTENT	CDB_HRCI_RMF CDB_HRCS_RMF
HUCLASS	OGIP
HUCLAS1	RESPONSE
HUCLAS2	RSP_MATRIX
HUCLAS3	REDIST
CCLSmmmmm	CPF
CDTPmmmm	DATA
CCNMmmmm	MATRIX
CBDnmmmm	none
CDESmmmm	Redistribution and spectral response matrix

• **HRC RPSF** (not yet implemented)

Reference:

Directory: \$CALDB/data/chandra/hrc/cpf/rpsf

File names: hrciDyyyy-mm-ddrpsfN0000.fits
hrCsDyyyy-mm-ddrpsfN0000.fits

MISSION	AXAF
TELESCOP	CHANDRA
INSTRUME	HRC
DETNAM	HRC-I/S
FILTER	NONE
GRATING	NONE
EXTNAME	AXAF_RPSF
CONTENT	CDB_HRCI_RPSF CDB_HRCS_RPSF
HUCLASS	ASC
HUCLAS1	RESPONSE
HUCLAS2	PSF
HUCLAS3	RPSF
CCLSmmmmm	CPF
CDTPmmmm	DATA
CCNMmmmm	RPSF
CBDnmmmm	none
CDESmmmm	Radial point spread function

• **HRC REEF** (not yet implemented)

Reference:

Directory: \$CALDB/data/chandra/hrc/cpf/rpsf

File names: hrciDyyyy-mm-ddreefN0000.fits
hrCsDyyyy-mm-ddreefN0000.fits

Header Specifications – CALDB 2

MISSION	AXAF
TELESCOP	CHANDRA
INSTRUME	HRC
DETNAM	HRC-I/S
FILTER	NONE
GRATING	NONE
EXTNAME	AXAF_REEF
CONTENT	CDB_HRCI_REEF CDB_HRCS_REEF
HUCLASS	ASC
HUCLAS1	RESPONSE
HUCLAS2	PSF
HUCLAS3	REEF
CCLSmmmmm	CPF
CDTPmmmm	DATA
CCNMmmmm	REEF
CBDnmmmm	none
CDESmmmm	Radial encircled energy fraction

• **HRC 2DPSF**

Reference:

Directory: \$CALDB/data/chandra/hrc/cpf/2dpsf

File names: hrciDyyyy-mm-dd2dpsf<n>N0000.fits
hrscDyyyy-mm-dd2dpsf<n>N0000.fits

CALDB call: quzCIF chandra hrc hrc-i - 2d_psf **yyyy-mm-dd hh:mm:ss** expr='cd1_1.eq.???'
quzCIF chandra hrc hrc-s - 2d_psf **yyyy-mm-dd hh:mm:ss** expr='cd1_1.eq.???'
(Date and Time from *_evt2.fits DATE-OBS keyword.)

MISSION	AXAF
TELESCOP	CHANDRA
INSTRUME	HRC
DETNAM	HRC-I/S
FILTER	NONE
GRATING	NONE
EXTNAME	AXAF_2DPSF
CONTENT	CDB_HRCI_2DPSF CDB_HRCS_2DPSF
HUCLASS	ASC
HUCLAS1	RESPONSE
HUCLAS2	PSF
HUCLAS3	2DPSF
CCLSmmmmm	CPF
CDTPmmmm	DATA
CCNMmmmm	2D_PSF
CBDnmmmm	none
CDESmmmm	Two-dimensional point spread function

HRMA CALDB File Specifications

• **HRMA On-axis Effective Area**

Reference:

Directory: \$CALDB/data/chandra/tel/hrma/bcf/effarea

File names: hrmaDyyyy-mm-ddaxeffaN0000.fits

CALDB call: quzCIF chandra tel hrma - axeffa yyyy-mm-dd hh:mm:ss expr='shell.eq.????'
(Date and Time from *_evt2.fits DATE-OBS keyword.)

Header Specifications – CALDB 2

MISSION	AXAF
TELESCOP	CHANDRA
INSTRUME	TEL
DETNAM	HRMA
FILTER	NONE
GRATING	NONE
EXTNAME	AXAF_AXEFFA
CONTENT	CDB_HRMA_AXEFFA
HDUCLASS	ASC
HDUCLAS1	RESPONSE
HDUCLAS2	EFF
HDUCLAS3	AXEFFA
CCLSmmmmm	CPF
CDTPmmmm	DATA
CCNMmmmm	AXEFFA
CBD1mmmm	ENERG_LO(?-?)keV
CBD2mmmm	THETA(0)arcmin / Axial effective area only
CBD3mmmm	PHI(0)arcmin / Axial effective area only
CBD4mmmm	SHELL(????)
CBD5mmmm	ENERG_HI(?-?)keV
CDESmmmm	Telescope on-axis effective area table

• *HRMA Effective Area* (not yet implemented)

Reference:

Directory: \$CALDB/data/chandra/tel/hrma/bcf/effarea

File names: hrmaDyyyy-mm-ddeffan0000.fits

MISSION	AXAF
TELESCOP	CHANDRA
INSTRUME	TEL
DETNAM	HRMA
FILTER	NONE
GRATING	NONE
EXTNAME	AXAF_EFFAREA
CONTENT	CDB_HRMA_EFFA
HDUCLASS	ASC
HDUCLAS1	IMAGE
HDUCLAS2	EFFAREA
CCLSmmmmm	CPF
CDTPmmmm	DATA
CCNMmmmm	EFFAREA
CBDnmmmm	none
CDESmmmm	Telescope effective area map

• *HRMA Vignetting*

Reference:

Directory: \$CALDB/data/chandra/tel/hrma/bcf/vignet

File names: hrmaDyyyy-mm-ddvignetN0000.fits

CALDB call: quzCIF chandra tel hrma - vignet yyyy-mm-dd hh:mm:ss expr='SHELL.eq.????'
(Date and Time from *_evt2.fits DATE-OBS keyword.)

MISSION	AXAF
TELESCOP	CHANDRA
INSTRUME	TEL
DETNAM	HRMA
FILTER	NONE
GRATING	NONE
EXTNAME	AXAF_VIGNET
CONTENT	CDB_HRMA_VIGNET
HDUCLASS	ASC
HDUCLAS1	IMAGE

Header Specifications – CALDB 2

HUCLAS2	VIGNETTING
CCLSmmmmm	BCF
CDTPmmmmm	DATA
CCNMmmmmm	VIGNET
CBD1mmmmm	ENERG_LO(?-?)keV
CBD2mmmmm	THETA(0.00-??)arcmin
CBD3mmmmm	PHI(0.00-??)arcmin
CBD4mmmmm	SHELL(????)
CBD5mmmmm	ENERG_HI(?-?)keV
CDESmmmmmm	Telescope vignetting map

• *HRMA PSF Widths*

Reference: 2-10

Directory: \$CALDB/data/chandra/tel/hrma/cpf/wpsf

File names: hrmaDyyyy-mm-ddwpsfN0000.fits

CALDB call: quzcif chandra tel hrma - wpsf yyyy-mm-dd hh:mm:ss -
(Date and Time from *_evt2.fits DATE-OBS keyword.)

MISSION	AXAF
TELESCOP	CHANDRA
INSTRUME	TEL
DETNAM	HRMA
FILTER	NONE
GRATING	NONE
EXTNAME	AXAF_WPSF
CONTENT	CDB_HRMA_WPSF
HUCLASS	ASC
HUCLAS1	RESPONSE
HUCLAS2	PSF
HUCLAS3	WPSF
CCLSmmmmm	CPF
CDTPmmmmm	DATA
CCNMmmmmm	WPSF
CBDmmmmmmm	none
CDESmmmmmm	Radial point spread function widths

• *HRMA RPSF*

Reference:

Directory: \$CALDB/data/chandra/tel/hrma/cpf/rpsf

File names: hrmaDyyyy-mm-ddrpsfN0000.fits

CALDB call: quzcif chandra tel hrma - rpsf yyyy-mm-dd hh:mm:ss -
(Date and Time from *_evt2.fits DATE-OBS keyword.)

MISSION	AXAF
TELESCOP	CHANDRA
INSTRUME	TEL
DETNAM	HRMA
FILTER	NONE
GRATING	NONE
EXTNAME	AXAF_RPSF
CONTENT	CDB_HRMA_RPSF
HUCLASS	ASC
HUCLAS1	RESPONSE
HUCLAS2	PSF
HUCLAS3	RPSF
CCLSmmmmm	CPF
CDTPmmmmm	DATA
CCNMmmmmm	RPSF
CBDmmmmmmm	none
CDESmmmmmm	Radial point spread function

Header Specifications – CALDB 2

• *HRMA REEF* (not yet implemented)

Reference:

Directory: \$CALDB/data/chandra/tel/hrma/cpf/rpsf

File names: hrmaDyyyy-mm-ddreefN0000.fits

MISSION	AXAF
TELESCOP	CHANDRA
INSTRUME	TEL
DETNAM	HRMA
FILTER	NONE
GRATING	NONE
EXTNAME	AXAF_REEF
CONTENT	CDB_HRMA_REEF
HDUCLASS	ASC
HDUCLAS1	RESPONSE
HDUCLAS2	PSF
HDUCLAS3	REEF
CCLSmmmmm	CPF
CDTPmmmmm	DATA
CCNMmmmmm	RPSF
CBDnmmmmmm	none
CDESmmmmmm	Radial encircled energy fraction

• *HRMA 2DPSF* (not yet implemented)

Reference:

Directory: \$CALDB/data/chandra/tel/hrma/cpf/2dpsf

File names: hrmaDyyyy-mm-dd2dpsfn0000.fits

MISSION	AXAF
TELESCOP	CHANDRA
INSTRUME	TEL
DETNAM	HRMA
FILTER	NONE
GRATING	NONE
EXTNAME	AXAF_2DPSF
CONTENT	CDB_HRMA_2DPSF
HDUCLASS	ASC
HDUCLAS1	RESPONSE
HDUCLAS2	PSF
HDUCLAS3	2DPSF
CCLSmmmmm	CPF
CDTPmmmmm	DATA
CCNMmmmmm	2D_PSF
CBDnmmmmmm	none
CDESmmmmmm	Two-dimensional point spread function

Grating CALDB File Specifications

• *LETG Efficiency*

Reference: 2-12

Directory: \$CALDB/data/chandra/tel/grating/letg/cpf/greff

File names: letgDyyyy-mm-ddgreffn0000.fits

CALDB call: quzCIF chandra tel grating - greff yyyy-mm-dd hh:mm:ss expr='GRATING.eq.LETG.and.
(Date and Time from *_evt2.fits DATE-OBS keyword.)

Header Specifications – CALDB 2

MISSION	AXAF
TELESCOP	CHANDRA
INSTRUME	TEL
DETNAM	GRATING
FILTER	NONE
GRATING	LETG
EXTNAME	AXAF_GREFF
CONTENT	CDB_LETG_GREFF
HDUCLASS	ASC
HDUCLAS1	RESPONSE
HDUCLAS2	EFF
HDUCLAS3	GREFF
CCLSmmmmm	BCF
CDTPmmmm	DATA
CCNMmmmm	GREFF
CBDnmmmm	none
CDESmmmmm	Grating efficiency

• **HETG Efficiency**

Reference: 2-12

Directory: \$CALDB/data/chandra/tel/grating/hetg/cpf/greff

File names: hetgDyyyy-mm-ddgreffN0000.fits

CALDB call: quzCIF chandra tel grating - greff yyyy-mm-dd hh:mm:ss expr='GRATING.eq.HE'
(Date and Time from *_evt2.fits DATE-OBS keyword.)

MISSION	AXAF
TELESCOP	CHANDRA
INSTRUME	TEL
DETNAM	GRATING
FILTER	NONE
GRATING	HETG
EXTNAME	AXAF_GREFF
CONTENT	CDB_HETG_GREFF
HDUCLASS	ASC
HDUCLAS1	RESPONSE
HDUCLAS2	EFF
HDUCLAS3	GREFF
CCLSmmmmm	BCF
CDTPmmmm	DATA
CCNMmmmm	GREFF
CBDnmmmm	none
CDESmmmmm	Grating efficiency

• **LETG/HRC-S Grating RMF**

Reference:

Directory: \$CALDB/data/chandra/tel/grating/letg/cpf/rmf

File name: hrcleg#yyyy-mm-ddrmfN0000.fits
is the grating order

CALDB call: quzCIF chandra hrc hrc-s - matrix yyyy-mm-dd hh:mm:ss expr='GRATING.eq.LET'
(Date and Time from *_evt2.fits DATE-OBS keyword.)
NOTE: This file is stored in TEL branch, indexed in HRC branch.

MISSION	AXAF
TELESCOP	CHANDRA
INSTRUME	HRC
DETNAM	HRC-S
FILTER	NONE
GRATING	LETG
GRATTYPE	LEG

Header Specifications – CALDB 2

TG_M	?
MLAM_MIN	?
CONTENT	CDB_HRCS_LETG_RMF
EXTNAME	AXAF_RMF
HDUCLASS	ASC
HDUCLAS1	RESPONSE
HDUCLAS2	RSP_MATRIX
HDUCLAS3	REDIST
CCLSmmmmm	CPF
CDTPmmmm	DATA
CCNMmmmm	MATRIX
CBD1mmmm	THETA(0.0-?.??)arcmin
CBD2mmmm	ENERG_LO(?.???-?.???)keV
CBD3mmmm	GRATING(LETG)
CBD4mmmm	GRATTYPE(LEG)
CBD5mmmm	TG_M(?)
CBD6mmmm	MLAM_MIN(?.?)angstrom
CDESmmmmm	Grating redistribution matrix

• *LETG/ACIS-S Grating RMF*

Reference:

Directory: \$CALDB/data/chandra/tel/grating/letg/cpf/rmf

File name: acisleg#yyyy-mm-ddrmfN0000.fits
 # is the grating order

CALDB call: quzCIF chandra acis acis-456789 - matrix yyyy-mm-dd hh:mm:ss expr='GRATING.eq.LETG
 (Date and Time from *_evt2.fits DATE-OBS keyword.)
 NOTE: This file is stored in TEL branch, indexed in ACIS branch.

MISSION	AXAF
TELESCOP	CHANDRA
INSTRUME	ACIS
DETNAM	ACIS-456789
FILTER	NONE
GRATING	LETG
GRATTYPE	LEG
TG_M	?
MLAM_MIN	?
CONTENT	CDB_ACISS_LETG_RMF
EXTNAME	AXAF_RMF
HDUCLASS	ASC
HDUCLAS1	RESPONSE
HDUCLAS2	RSP_MATRIX
HDUCLAS3	REDIST
CCLSmmmmm	CPF
CDTPmmmm	DATA
CCNMmmmm	MATRIX
CBD1mmmm	THETA(0.0-?.??)arcmin
CBD2mmmm	ENERG_LO(?.???-?.???)keV
CBD3mmmm	GRATING(LETG)
CBD4mmmm	GRATTYPE(LEG)
CBD5mmmm	TG_M(?)
CBD6mmmm	MLAM_MIN(?.?)angstrom
CDESmmmmm	Grating redistribution matrix

• *HETG/ACIS-S Grating RMF*

Reference:

Directory: \$CALDB/data/chandra/tel/grating/letg/cpf/rmf

File name: acisshg#yyyy-mm-ddrmfN0000.fits
 acisshg#yyyy-mm-ddrmfN0000.fits
 # is the grating order

Header Specifications – CALDB 2

CALDB call: quzCIF chandra acis acis-456789 - matrix yyyy-mm-dd hh:mm:ss expr='GRATTYPE'
 (Date and Time from *_evt2.fits DATE-OBS keyword.)
 NOTE: This file is stored in TEL branch, indexed in ACIS branch.

MISSION	AXAF
TELESCOP	CHANDRA
INSTRUME	ACIS
DETNAM	ACIS-456789
FILTER	NONE
GRATING	HETG
GRATTYPE	HEG / MEG
TG_M	?
MLAM_MIN	?
CONTENT	CDB_ACISS_LETG_RMF
EXTNAME	AXAF_RMF
HUCLASS	ASC
HUCLAS1	RESPONSE
HUCLAS2	RSP_MATRIX
HUCLAS3	REDIST
CCLSmmmmm	CPF
CDTPmmmm	DATA
CCNMmmmm	MATRIX
CBD1mmmm	THETA(0.0-?.??)arcmin
CBD2mmmm	ENERG_LO(?.???-?.???)keV
CBD3mmmm	GRATING(HETG)
CBD4mmmm	GRATTYPE(???)
CBD5mmmm	TG_M(?)
CBD6mmmm	MLAM_MIN(?.?)angstrom
CDESmmmm	Grating redistribution matrix

• **LETG Point Spread Function along Dispersion Direction** (not yet implemented)

Reference:

Directory: \$CALDB/data/chandra/tel/grating/letg/cpf/lSF

File names: letgDyyyy-mm-ddlSFN0000.fits

MISSION	AXAF
TELESCOP	CHANDRA
INSTRUME	TEL
DETNAM	GRATING
FILTER	NONE
GRATING	LETG
EXTNAME	AXAF_LSF
CONTENT	CDB_LETG_LSF
HUCLASS	ASC
HUCLAS1	RESPONSE
HUCLAS2	PSF
HUCLAS3	LSF
CCLSmmmmm	CPF
CDTPmmmm	DATA
CCNMmmmm	LSF
CBDnmmmm	none
CDESmmmm	Point spread function along dispersion direction

• **LETG Point Spread Function across Dispersion Direction** (not yet implemented)

Reference:

Directory: \$CALDB/data/chandra/tel/grating/letg/cpf/xdsf

File names: letgDyyyy-mm-ddxdsfN0000.fits

MISSION	AXAF
TELESCOP	CHANDRA
INSTRUME	TEL
DETNAM	GRATING

Header Specifications – CALDB 2

FILTER	NONE
GRATING	LETG
EXTNAME	AXAF_XPSF
CONTENT	CDB_LETG_XDSF
HUCLASS	ASC
HUCLAS1	RESPONSE
HUCLAS2	PSF
HUCLAS3	XPSF
CCLSmmmmm	CPF
CDTPmmmm	DATA
CCNMmmmm	XDSF
CBDMmmmm	none
CDESmmmmm	Point spread function across dispersion direction

• ***LETG Two-dimensional Point Spread Function*** (not yet implemented)

Reference:

Directory: \$CALDB/data/chandra/tel/grating/letg/cpf/2dpsf

File names: letgDyyyy-mm-dd2dpsfN0000.fits

MISSION	AXAF
TELESCOP	CHANDRA
INSTRUME	TEL
DETNAM	GRATING
FILTER	NONE
GRATING	LETG
EXTNAME	AXAF_2DPSF
CONTENT	CDB_LETG_2DPSF
HUCLASS	ASC
HUCLAS1	RESPONSE
HUCLAS2	PSF
HUCLAS3	2DPSF
CCLSmmmmm	CPF
CDTPmmmm	DATA
CCNMmmmm	2D_PSF
CBDMmmmm	none
CDESmmmmm	Two-dimensional point spread function

• ***HETG Point Spread Function along Dispersion Direction*** (not yet implemented)

Reference:

Directory: \$CALDB/data/chandra/tel/grating/hetg/cpf/lsf

File names: hetgDyyyy-mm-ddlsfN0000.fits

MISSION	AXAF
TELESCOP	CHANDRA
INSTRUME	TEL
DETNAM	GRATING
FILTER	NONE
GRATING	HETG
EXTNAME	AXAF_LSF
CONTENT	CDB_HETG_LSF
HUCLASS	ASC
HUCLAS1	RESPONSE
HUCLAS2	PSF
HUCLAS3	LSF
CCLSmmmmm	CPF
CDTPmmmm	DATA
CCNMmmmm	LSF
CBDMmmmm	none
CDESmmmmm	Point spread function along dispersion direction

• ***HETG Point Spread Function across Dispersion Direction*** (not yet implemented)

Reference:

Header Specifications – CALDB 2

Directory: \$CALDB/data/chandra/tel/grating/hetg/cpf/xdsf

File names: hetgDyyyy-mm-ddxdsfn0000.fits

MISSION AXAF
TELESCOP CHANDRA
INSTRUME TEL
DETNAM GRATING
FILTER NONE
GRATING HETG
EXTNAME AXAF_XPSF
CONTENT CDB_HETG_XDSF
HDUCLASS ASC
HDUCLAS1 RESPONSE
HDUCLAS2 PSF
HDUCLAS3 XPSF
CCLSmmmmm CPF
CDTPmmmm DATA
CCNMmmmm XDSF
CBDnmmmm none
CDESmmmmm Point spread function across dispersion direction

• ***HETG Two-dimensional Point Spread Function*** (not yet implemented)

Reference:

Directory: \$CALDB/data/chandra/tel/grating/hetg/cpf/2dpsf

File names: hetgDyyyy-mm-dd2dpsfn0000.fits

MISSION AXAF
TELESCOP CHANDRA
INSTRUME TEL
DETNAM GRATING
FILTER NONE
GRATING HETG
EXTNAME AXAF_2DPSF
CONTENT CDB_HETG_2DPSF
HDUCLASS ASC
HDUCLAS1 RESPONSE
HDUCLAS2 PSF
HDUCLAS3 2DPSF
CCLSmmmmm CPF
CDTPmmmm DATA
CCNMmmmm 2D_PSF
CBDnmmmm none
CDESmmmmm Two-dimensional point spread function

SIM CALDB File Specifications

• ***SIM Focus Position File***

Reference:

Directory: \$CALDB/data/chandra/sim/bcf/pos

Filename: simD<yyyy-mm-dd>posN0000.fits

MISSION AXAF
TELESCOP CHANDRA
INSTRUME SIM
DETNAM <This keyword must be excluded.>
FILTER NONE
GRATING NONE

Header Specifications – CALDB 2

EXTNAME	OBISIM_ARD
CONTENT	CDB_DET_POS
HUCLASS	ASC
HUCLAS1	CONFIG
HUCLAS2	POS
CCLSmmmmm	BCF
CDTPmmmm	DATA
CCNMmmmm	DET_POS
CBDnmmmm	none
CDESmmmm	Default in-focus positions

• *SIM Detector Position Correction File*

Reference:

Directory: \$CALDB/data/chandra/sim/bcf/pos

Filename: simD<yyyy-mm-dd>poscorrN0000.fits

MISSION	AXAF
TELESCOP	CHANDRA
INSTRUME	SIM
DETNAM	<This keyword must be excluded.>
FILTER	NONE
GRATING	NONE
EXTNAME	SIM_DELTA_ARD
CONTENT	CDB_DET_POSCORR
HUCLASS	ASC
HUCLAS1	CONFIG
HUCLAS2	POSCORR
CCLSmmmmm	BCF
CDTPmmmm	DATA
CCNMmmmm	DET_POSCORR
CBDnmmmm	none
CDESmmmm	Detector position corrections

PCAD CALDB File Specifications

• *PCAD Gyro Scale Factor Misalignment Matrix*

Reference: http://hea-www.harvard.edu/asclocal/doss/docs/aldcroft_02-Jul-97.ps

Directory: \$CALDB/data/chandra/pcad/bcf/sfma

Filenames: gyroDyyyy-mm-ddsfmaN0000.fits

MISSION	AXAF
TELESCOP	CHANDRA
INSTRUME	PCAD
DETNAM	GYRO
FILTER	NONE
GRATING	NONE
EXTNAME	CALSFMA
CONTENT	CDB_GYRO_SFMA
HUCLASS	ASC
HUCLAS1	CONFIG
HUCLAS2	GYRO_SFMA
CCLSmmmmm	BCF
CDTPmmmm	DATA
CCNMmmmm	GYRO_SFMA
CBDnmmmm	none
CDESmmmm	Gyro scale factor misalignment matrix

• *PCAD IRU Characteristics*

Header Specifications – CALDB 2

Reference: http://hea-www.harvard.edu/asclocal/doss/docs/aldcroft_02-Jul-97.ps

Directory: \$CALDB/data/chandra/pcad/bcf/iru

Filenames: iruDyyyy-mm-ddcharN0000.fits

MISSION	AXAF
TELESCOP	CHANDRA
INSTRUME	PCAD
DETNAM	IRU
FILTER	NONE
GRATING	NONE
EXTNAME	CALIRU
CONTENT	CDB_IRU_CHAR
HDUCLASS	ASC
HDUCLAS1	CONFIG
HDUCLAS2	IRU_CHAR
CCLSmmmmm	BCF
CDTPmmmm	DATA
CCNmmmmm	IRU_CHAR
CBDnmmmm	none
CDESmmmmm	PCAD IRU characteristics

• *PCAD Bad Reaction Wheel Speeds*

Reference: http://hea-www.harvard.edu/asclocal/doss/docs/aldcroft_02-Jul-97.ps

Directory: \$CALDB/data/chandra/pcad/bcf/rws

Filenames: rwaDyyyy-mm-ddbspdN0000.fits

MISSION	AXAF
TELESCOP	CHANDRA
INSTRUME	PCAD
DETNAM	RWA
FILTER	NONE
GRATING	NONE
EXTNAME	CALRWS
CONTENT	CDB_RWA_BSPD
HDUCLASS	ASC
HDUCLAS1	CONFIG
HDUCLAS2	RWA_BSPD
CCLSmmmmm	BCF
CDTPmmmm	DATA
CCNmmmmm	RWA_BSPD
CBDnmmmm	none
CDESmmmmm	Bad reaction wheel speeds

• *PCAD ACA Alignment Matrix*

Reference: http://hea-www.harvard.edu/asclocal/doss/docs/aldcroft_02-Jul-97.ps

Directory: \$CALDB/data/chandra/pcad/bcf/align

File names: pcadDyyyy-mm-ddalignDN0000.fits

EXTENSION: CALALIGN

MISSION	AXAF
TELESCOP	CHANDRA
INSTRUME	PCAD
DETNAM	<This keyword must be excluded.>
FILTER	NONE
GRATING	NONE
EXTNAME	CALALIGN
CONTENT	CDB_PCAD_ALIGN
HDUCLASS	ASC
HDUCLAS1	CONFIG

Header Specifications – CALDB 2

HDUCLAS2	ALIGN
CCLSmmmmm	BCF
CDTPmmmm	DATA
CCNMmmmm	ALIGN
CBDnmmmm	none
CDESmmmm	Alignment matrix

EXTENSION: CALALIGN1

MISSION	AXAF
TELESCOP	CHANDRA
INSTRUME	PCAD
DETNAM	<This keyword must be excluded.>
FILTER	NONE
GRATING	NONE
EXTNAME	CALALIGN1
CONTENT	CDB_FID_POS
HDUCLASS	ASC
HDUCLAS1	CONFIG
HDUCLAS2	FID_POS
CCLSmmmmm	BCF
CDTPmmmm	DATA
CCNMmmmm	FID_POS
CBDnmmmm	none
CDESmmmm	Fid light positions

• *PCAD ACA CCD Characteristics*

Reference: http://hea-www.harvard.edu/asclocal/doss/docs/aldcroft_02-Jul-97.ps

Directory: \$CALDB/data/chandra/pcad/bcf/ccd

Filenames: acapDyyyy-mm-ddccdN0000.fits

MISSION	AXAF
TELESCOP	CHANDRA
INSTRUME	PCAD
DETNAM	ACA-P
FILTER	NONE
GRATING	NONE
EXTNAME	CALCCD
CONTENT	CDB_ACA_CCD
HDUCLASS	ASC
HDUCLAS1	DETCHAR
HDUCLAS2	CCD
CCLSmmmmm	BCF
CDTPmmmm	DATA
CCNMmmmm	CCD_CHAR
CBDnmmmm	none
CDESmmmm	CCD characteristics

• *PCAD ACA CCD Charge Transfer Inefficiency*

Reference: http://hea-www.harvard.edu/asclocal/doss/docs/aldcroft_02-Jul-97.ps

Directory: \$CALDB/data/chandra/pcad/bcf/cti

Filenames: acapDyyyy-mm-ddctiN0000.fits

MISSION	AXAF
TELESCOP	CHANDRA
INSTRUME	PCAD
DETNAM	ACA-P
FILTER	NONE
GRATING	NONE
EXTNAME	CALCTI
CONTENT	CDB_ACA_CTI
HDUCLASS	ASC

Header Specifications – CALDB 2

HUCLAS1	DETCHAR
HUCLAS2	CTI
CCLSmmmmm	BCF
CDTPmmmmm	DATA
CCNMmmmmm	CTI
CBDnmmmmm	none
CDESmmmmm	ACA charge transfer inefficiency

• **PCAD ACA Field Distortion Coefficients**

Reference: http://hea-www.harvard.edu/asclocal/doss/docs/aldcroft_02-Jul-97.ps

Directory: \$CALDB/data/chandra/pcad/bcf/fdc

Filenames: acapDyyyy-mm-ddfdcN0000.fits

MISSION	AXAF
TELESCOP	CHANDRA
INSTRUME	PCAD
DETNAM	ACA-P
FILTER	NONE
GRATING	NONE
EXTNAME	CALFDC
CONTENT	CDB_ACA_FDC
HUCLASS	ASC
HUCLAS1	DETCHAR
HUCLAS2	FDC
CCLSmmmmm	BCF
CDTPmmmmm	DATA
CCNMmmmmm	FDC
CBDnmmmmm	none
CDESmmmmm	ACA field distortion coefficients

• **PCAD ACA CCD Response Image**

Reference: http://hea-www.harvard.edu/asclocal/doss/docs/aldcroft_02-Jul-97.ps

Directory: \$CALDB/data/chandra/pcad/bcf/image

Filenames: acapDyyyy-mm-ddrespN0000.fits

MISSION	AXAF
TELESCOP	CHANDRA
INSTRUME	PCAD
DETNAM	ACA-P
FILTER	NONE
GRATING	NONE
EXTNAME	PRIMARY
CONTENT	CDB_ACA_CCD_RESP
HUCLASS	ASC
HUCLAS1	RESPONSE
HUCLAS2	CCD
CCLSmmmmm	BCF
CDTPmmmmm	DATA
CCNMmmmmm	CCD_RESP
CBDnmmmmm	none
CDESmmmmm	ACA response image

• **PCAD ACA CCD Dark Current Image**

Reference: http://hea-www.harvard.edu/asclocal/doss/docs/aldcroft_02-Jul-97.ps

Directory: \$CALDB/data/chandra/pcad/bcf/image

Filenames: acapDyyyy-mm-dddarkN0000.fits

MISSION	AXAF
TELESCOP	CHANDRA
INSTRUME	PCAD

Header Specifications – CALDB 2

DETNAM	ACA-P
FILTER	NONE
GRATING	NONE
EXTNAME	PRIMARY
CONTENT	CDB_ACA_DARK_CURR
HDUCLASS	ASC
HDUCLAS1	RESPONSE
HDUCLAS2	DARK_CURR
CCLSmmmmm	BCF
CDTPmmmmm	DATA
CCNMmmmmm	DARK_CURR
CBDnmmmmm	none
CDESmmmmmm	ACA dark current image

EPHIN CALDB File Specifications

• *EPHIN Geometric Factors*

Reference:

Directory: \$CALDB/data/chandra/ephin/bcf/geom

Filename: ephinD<yyyy-mm-dd>geomN0000.fits

CALDB call: quzCIF chandra ephin - - geom yyyy-mm-dd hh:mm:ss -
(Date and Time from *_evt2.fits DATE-OBS keyword.)

MISSION	AXAF
TELESCOP	CHANDRA
INSTRUME	EPHIN
DETNAM	<This keyword must be excluded.>
FILTER	NONE
GRATING	NONE
EXTNAME	EPHGF_ARD
CONTENT	CDB_EPHIN_GEOM
HDUCLASS	ASC
HDUCLAS1	CHAR
CCLSmmmmm	BCF
CDTPmmmmm	DATA
CCNMmmmmm	GEOM
CBDnmmmmm	none
CDESmmmmmm	Geometric factors

PIXLIB Coordinate Library CALDB File Specifications

• *PIXLIB Aimpoint Positions*

Reference:

Directory: \$CALDB/data/chandra/tel/bcf/aimpts

Filename: telD<yyyy-mm-dd>aimptsN0000.fits

CALDB call: quzCIF chandra tel - - aimpts yyyy-mm-dd hh:mm:ss -
(Date and Time from *_evt2.fits DATE-OBS keyword.)

MISSION	AXAF
TELESCOP	CHANDRA
INSTRUME	TEL
DETNAM	NONE
FILTER	NONE

Header Specifications – CALDB 2

GRATING	NONE
CONTENT	CDB_DET_AIMPOINTS
EXTNAME	AIMPOINTS
HDUCLASS	ASC
HDUCLAS1	DETECTOR
HDUCLAS2	AIMPOINTS
CCLS0001	BCF
CDTP0001	DATA
CCNM0001	AIMPTS
CBDn0001	none
CDES0001	'Detector aimpoint positions'

• *PIXLIB Geometry*

Reference:

Directory: \$CALDB/data/chandra/tel/bcf/geom

Filename: telD<yyyy-mm-dd>geomN0000.fits

CALDB call: quzCIF chandra tel - - geom yyyy-mm-dd hh:mm:ss -
(Date and Time from *_evt2.fits DATE-OBS keyword.)

MISSION	AXAF
TELESCOP	CHANDRA
INSTRUME	TEL
DETNAM	NONE
FILTER	NONE
GRATING	NONE
CONTENT	CDB_DET_GEOMETRY
EXTNAME	INSTRUMENTS
HDUCLASS	ASC
HDUCLAS1	DETCHAR
HDUCLAS2	GEOMETRY
CCLS0001	BCF
CDTP0001	DATA
CCNM0001	GEOM
CBDn0001	none
CDES0001	'Detector geometry'

• *PIXLIB Sky Coordinates*

Reference:

Directory: \$CALDB/data/chandra/tel/bcf/sky

Filename: telD<yyyy-mm-dd>skyN0000.fits

CALDB call: quzCIF chandra tel - - sky yyyy-mm-dd hh:mm:ss -
(Date and Time from *_evt2.fits DATE-OBS keyword.)

MISSION	AXAF
TELESCOP	CHANDRA
INSTRUME	TEL
DETNAM	NONE
FILTER	NONE
GRATING	NONE
CONTENT	CDB_FP_SKY_COORDS
EXTNAME	FPSYS
HDUCLASS	ASC
HDUCLAS1	COORDINATES
HDUCLAS2	FOCAL_PLANE
HDUCLAS3	SKY
CCLS0001	BCF
CDTP0001	DATA
CCNM0001	SKY
CBDn0001	none
CDES0001	'Focal plane sky coordinate system'

Header Specifications – CALDB 2

• *PIXLIB Tile Detector Coordinates*

Reference:

Directory: \$CALDB/data/chandra/tel/bcf/tdet

Filename: telD<yyyy-mm-dd>tdetN0000.fits

CALDB call: quzCIF chandra tel - - tdet yyyy-mm-dd hh:mm:ss -
(Date and Time from *_evt2.fits DATE-OBS keyword.)

MISSION	AXAF
TELESCOP	CHANDRA
INSTRUME	TEL
DETNAM	NONE
FILTER	NONE
GRATING	NONE
CONTENT	CDB_TDET_COORDS
EXTNAME	TDET_INDEX
HDUCLASS	ASC
HDUCLAS1	COORDINATES
HDUCLAS2	TDET
CCLS0001	BCF
CDTP0001	DATA
CCNM0001	TDET
CBDn0001	none
CDES0001	'Tile detector coordinate system'

• *OBIDET Tolerances* (implementation in progress)

Reference:

Directory: \$CALDB/data/chandra/tel/bcf/otol

File name: telDyyyy-mm-ddotolN0000.fits

CALDB call: quzCIF chandra tel - - otol yyyy-mm-dd hh:mm:ss expr='OBS_MODE.eq.???'
(Date and Time from *_evt2.fits DATE-OBS keyword.)

MISSION	AXAF
TELESCOP	CHANDRA
INSTRUME	TEL
DETNAM	NONE
FILTER	NONE
GRATING	NONE
CONTENT	CDB_OBI_TOLERANCES
EXTNAME	OBI_TOLERANCES
HDUCLASS	ASC
HDUCLAS1	OBIDET
HDUCLAS2	TOLERANCES
CCLS0001	BCF
CDTP0001	DATA
CCNM0001	OTOL
CBD10001	OBS_MODE(???, ???, ???, ...)
CDES0001	'Observation interval mode tolerances'

Return to: [References Index](#)