```
SIMPLE  =                     T / Standard FITS            TIMEZERO=  0.0000000000000E+00 / [s] Clock correction
BITPIX  =                    32 / bits/pixel               TIMEUNIT= 's        '          / Time unit
NAXIS   =                     2 / number of axes           BTIMNULL=  2.8648251009781E+08 / Basic Time offset (s)
NAXIS1  =                  1024 / x axis dimension         BTIMRATE=  2.5625001217902E-01 / Basic Time clock rate (s / VCDUcount)
NAXIS2  =                  1024 / y axis dimension         BTIMDRFT= -1.3406304501375E-19 / Basic Time clock drift (s / VCDUcount^2)
HDUNAME = 'EVENTS  '            / ASCDM block name         BTIMCORR=  0.0000000000000E+00 / Correction applied to Basic Time rate (s)
COMMENT                         +------------------+       TIMEREF = 'LOCAL   '          / Time reference (barycenter/local)
COMMENT                         | AXAF FITS   File |       TASSIGN = 'SATELLITE'          / Time assigned by clock
COMMENT                         +------------------+       CLOCKAPP=                     T / default
COMMENT ****************************************************  TIERRELA=  1.0000000000000E-09 / default
COMMENT >    This file is written following certain AXAF-ASC    <  TIERABSO=  5.0000000000000E-05 / default
COMMENT >    conventions which are documented in ASC-FITS-2.0   <  TIMVERSN= 'ASC-FITS-2'         / Timing system definition
COMMENT ****************************************************  TSTART  =  2.8883600553466E+08 / [s] Observation start time (MET)
COMMENT                                                   TSTOP   =  2.8899620689227E+08 / [s] Observation end time (MET)
COMMENT                         / Configuration control block-------------------  OBS_MODE= 'POINTING'          / Observation mode
COMMENT                                                   STARTOBT=  0.0000000000000E+00 / On-Board MET close to STARTMJF and STARTMNF
ORIGIN  = 'ASC     '            / Source of FITS file      TIMEPIXR=  5.0000000000000E-01 / default
CREATOR = 'cxc - Version DS10.9' / tool that created this output  DATACLAS= 'OBSERVED'          / default
ASCDSVER= '10.9.2  '            / ASCDS version number     RADESYS = 'ICRS    '          / default
ASOLFILE= 'pcadf07437_000N001_asol1.fits'                 TIMEDEL =  3.2410400000000E+00 / [s] timedel Lev1
THRFILE = 'acisD2005-07-01evtspltN0002.fits'              COMMENT
TLMVER  = 'P014    '            / Telemetry revision number (IP&CL)  COMMENT                         / Observation information block----------------
REVISION=                     4 / Processing version of data  COMMENT
CONTENT = 'EVT2    '            / What data product        MISSION = 'AXAF    '          / Mission
HDUSPEC = 'Grating Data Products: Level 1.5 ICD, V1.6' / ICD ref.  TELESCOP= 'CHANDRA '          / Telescope
HDUDOC  = 'ASC-FITS-2.0: McDowell, Rots: ASC FITS File Designers Guide'  SIM_X   = -6.8282252473119E-01 / [mm] SIM focus pos
HDUVERS = '1.0.0   '                                      SIM_Y   =  0.0000000000000E+00 / [mm] SIM orthogonal axis pos
HDUCLASS= 'OGIP    '                                      SIM_Z   = -1.9014006604987E+02 / [mm] SIM translation stage pos
HDUCLAS1= 'EVENTS  '                                      FOC_LEN =  1.0070000000000E+04 / [mm] HRMA focal length
HDUCLAS2= 'ACCEPTED'                                      INSTRUME= 'ACIS    '          / Instrument
HDUCLAS3= 'RESOLVED'            / CXC definition for TG coord. events  GRATING = 'HETG    '          / Grating
OSIPFILE= 'acisD2000-01-29osip_ctiN0006.fits' / E_lo, E_hi vs energy table vs CC  DETNAM  = 'ACIS-456789'       / Detector
RAND_TG =  0.0000000000000E+00 / pixel randomization width  RA_PNT  =  1.6545728459497E+02 / [deg] Pointing RA
PIX_ADJ = 'EDSER   '            / Subpixel adjustment algorithm  DEC_PNT = -3.4711154867771E+01 / [deg] Pointing Dec
RAND_SKY=  0.0000000000000E+00                            ROLL_PNT=  5.1524758861371E+00 / [deg] Pointing Roll
SUBPIXFL= 'acisD1999-07-22subpixN0001.fits'               RA_TARG =  1.6546666700000E+02 / [deg] Observer's specified target RA
RAND_PI =  1.0000000000000E+00                            DEC_TARG= -3.4704694000000E+01 / [deg] Observer's specified target Dec
COMMENT This FITS file may contain long string keyword values that are  DEFOCUS =  1.4449365687057E-03 / [mm] SIM defocus
COMMENT continued over multiple keywords.  This convention uses the  '&'  RA_NOM  =  1.6545728459497E+02 / [deg] Nominal RA
COMMENT character at the end of a string which is then continued  DEC_NOM = -3.4711154867771E+01 / [deg] Nominal Dec
COMMENT on subsequent keywords whose name = 'CONTINUE'    ROLL_NOM=  5.1524758861371E+00 / [deg] Nominal Roll
COMMENT                                                   COMMENT
COMMENT                         / Time information block------------------------  COMMENT AXAF FITS File ACIS specific keywords
COMMENT                                                   COMMENT
DATE    = '2020-12-16T12:19:09' / Date and time of file creation  READMODE= 'TIMED   '          / Read mode
MJD-OBS =  5.4157009323318E+04 / Modified Julian date of observation  ACSYS1  = 'CHIP:AXAF-ACIS-1.0' / reference for chip coord system
DATE-OBS= '2007-02-26T00:13:25' / Observation start date   ACSYS2  = 'TDET:ACIS-2.2'      / reference for tiled detector coord system
DATE-END= '2007-02-27T20:43:26' / Observation end date     ACSYS3  = 'DET:ASC-FP-1.1'     / reference for focal plane coord system
TIMESYS = 'TT      '            / Time system              ACSYS4  = 'SKY:ASC-FP-1.1'     / reference for sky coord system
MJDREF  =  5.0814000000000E+04 / [d] MJD zero point for times  ACSYS5  = 'GDP:ASC-GDP-1.1'    / Grating coordinate system
```

```
ORD_ADJ = 'NONE    '           / NONE or HETG (for hetgCC 2ndRun)        HISTORY  PARM  :template=/vobs/ASC_DR_TLM/src/dr/tlm/template_dir/acis_dASC00014
GAINFILE= 'acisD2000-01-29gain_ctiN0008.fits'                            HISTORY  CONT  :eahk_dp_info.dat@@/main/1                         ASC00015
CTI_CORR=                    T                                           HISTORY  PARM  :template=/vobs/ASC_DR_TLM/src/dr/tlm/template_dir/acis_cASC00016
CTI_APP = 'PPPPPBPBPP'                                                   HISTORY  CONT  :ommon_dp_info.dat@@/main/9                        ASC00017
CTIFILE = 'acisD2005-01-01ctiN0009.fits'                                 HISTORY  PARM  :template=/vobs/ASC_DR_TLM/src/dr/tlm/template_dir/acis_cASC00018
MTLFILE = 'acisf07437_000N004_mtl1.fits'                                 HISTORY  CONT  :al_info.dat@@/main/2                              ASC00019
TGAINCOR= 'T       '                                                     LONGSTRN= 'OGIP 1.0'            / The HEASARC Long String Convention may be used.
TGAINFIL= 'acisD2007-02-01t_gainN0008.fits'                              COMMENT   This FITS file may contain long string keyword values that are
GRD_FILE= 'acisD1996-11-01gradeN0004.fits'                              COMMENT   continued over multiple keywords.  The HEASARC convention uses the &
CORNERS =                    2 / num adjacent side pix > threshold to include co   COMMENT   character at the end of each substring which is then continued
GRADESYS= 'ASCA    '           / grade system: ASCA, ACIS, or USER       COMMENT   on the next keyword which has the name CONTINUE.
BPIXFILE= 'acisf07437_000N004_bpix1.fits'                                TITLE   = 'Accretion or a Corona? Definitive Observations of the Young Accreti&'
DATAMODE= 'FAINT   '           / Data mode                               CONTINUE  'ng Star TW Hydrae'  / Proposal title
RUN_ID  =                    1 / Science run index                      OBSERVER= 'Dr. Nancy Brickhouse' / Principal investigator
FSW_VERS=                   31 / ACIS flight software version number     OBJECT  = 'TW Hya  '           / Source name
STARTBEP=           1571668859 / BEP timer value at TSTART               DS_IDENT= '10.25574/07437'     / Dataset Identifier: DOI
STOPBEP =            295582955 / BEP timer value at TSTOP                OBS_ID  = '7437    '           / Observation id
COMMENT                                                                  SEQ_NUM = '200448  '           / Sequence number
COMMENT Product specific keywords are inserted here                      HISTORY  TOOL  :acis_format_events   2020-12-16T11:31:32        ASC00020
COMMENT                                                                  HISTORY  PARM  :infile=@/dsops/repro5/sdp.1/opus/prs_run/tmp//ACIS_F_L1_ASC00021
TIMEDELA= 3.2410400000000E+00 / Inferred duration of primary exposure (s)   HISTORY  CONT  :724400982n381/input/acisf07437_000N004_evt0.lis   ASC00022
TIMEDELB= 0.0000000000000E+00 / Inferred duration of secondary exp. (s)  HISTORY  STCK  :/dsops/repro5/sdp.1/opus/prs_run/tmp//ACIS_F_L1_72440098ASC00023
FLSHTIME= 0.0000000000000E+00 / [s]                                      HISTORY  CONT  :2n381/input/acisf288836947N003_0_evt0.fits[time=28883600ASC00024
EXPTIME = 3.2000000000000E+00 / [s]                                      HISTORY  CONT  :5.5346600:288996206.8922700]                      ASC00025
DTYCYCLE=                    0                                           ONTIME  = 1.5902719940764E+05 / [s] Sum of GTIs
FIRSTROW=                    1 / Index of first row of CCD (sub)array readout   ONTIME7 = 1.5902719940764E+05 / [s] Sum of GTIs
NROWS   =                 1024 / Number of rows in (sub)array readout    ONTIME4 = 1.5901747644645E+05 / [s] Sum of GTIs
FLSHTIMA= 0.0000000000000E+00 / Inferred duration of flush before primary fram   ONTIME5 = 1.5902719940764E+05 / [s] Sum of GTIs
FLSHTIMB= 0.0000000000000E+00 / Inferred duration of flush before secondary fr   ONTIME6 = 1.5902071739697E+05 / [s] Sum of GTIs
CYCLE   = 'P       '           / events from which exps? Prim/Second/Both   ONTIME8 = 1.5902719940764E+05 / [s] Sum of GTIs
COMMENT                                                                  ONTIME9 = 1.5902395840734E+05 / [s] Sum of GTIs
COMMENT                        / Column format information block---------------   LIVETIME= 1.5701350125405E+05 / [s] Livetime
COMMENT                                                                  LIVTIME7= 1.5701350125405E+05 / [s] Livetime
COMMENT                        / History information block--------------------   LIVTIME4= 1.5700390141086E+05 / [s] Livetime
COMMENT                                                                  LIVTIME5= 1.5701350125405E+05 / [s] Livetime
HISTNUM =                  673                                           LIVTIME6= 1.5700710132251E+05 / [s] Livetime
HISTORY  TOOL  :ade                                            ASC00001  LIVTIME8= 1.5701350125405E+05 / [s] Livetime
HISTORY  PARM  :infile=/dsops/repro5/sdp.1/opus/prs_run/tmp//TP_ADE____7ASC00002  LIVTIME9= 1.5701030129326E+05 / [s] Livetime
HISTORY  CONT  :24368256n682/input/acisf288835511N003_SR0.strip   ASC00003  EXPOSURE= 1.5701350125405E+05 / [s] Exposure time
HISTORY  PARM  :template=/vobs/ASC_DR_TLM/src/dr/tlm/template_dir/acis_sASC00004  EXPOSUR7= 1.5701350125405E+05 / [s] Exposure time
HISTORY  CONT  :trip_file_info.dat@@/main/2                       ASC00005  EXPOSUR4= 1.5700390141086E+05 / [s] Exposure time
HISTORY  PARM  :template=/vobs/ASC_DR_TLM/src/dr/tlm/template_dir/acis_fASC00006  EXPOSUR5= 1.5701350125405E+05 / [s] Exposure time
HISTORY  CONT  :ile_info.dat@@/main/12                            ASC00007  EXPOSUR6= 1.5700710132251E+05 / [s] Exposure time
HISTORY  PARM  :template=/vobs/ASC_DR_TLM/src/dr/tlm/template_dir/acis_cASC00008  EXPOSUR8= 1.5701350125405E+05 / [s] Exposure time
HISTORY  CONT  :onfig_file.dat@@/main/2                           ASC00009  EXPOSUR9= 1.5701030129326E+05 / [s] Exposure time
HISTORY  PARM  :template=/vobs/ASC_DR_TLM/src/dr/tlm/template_dir/acis_gASC00010  DTCOR   = 9.8733739787229E-01 / Dead time correction
HISTORY  CONT  :roup_info.dat@@/main/12                           ASC00011  HISTORY  STCK  :/dsops/repro5/sdp.1/opus/prs_run/tmp//ACIS_F_L1_72440098ASC00026
HISTORY  PARM  :template=/vobs/ASC_DR_TLM/src/dr/tlm/template_dir/acis_dASC00012  HISTORY  CONT  :2n381/input/acisf288836947N003_1_evt0.fits[time=28883600ASC00027
HISTORY  CONT  :p_info.dat@@/main/21                              ASC00013  HISTORY  CONT  :5.5346600:288996206.8922700]                      ASC00028
                                                                        HISTORY  STCK  :/dsops/repro5/sdp.1/opus/prs_run/tmp//ACIS_F_L1_72440098ASC00029
```

```
HISTORY  CONT  :2n381/input/acisf288836947N003_2_evt0.fits[time=28883600ASC00030
HISTORY  CONT  :5.5346600:288996206.8922700]                          ASC00031
HISTORY  STCK  :/dsops/repro5/sdp.1/opus/prs_run/tmp//ACIS_F_L1_72440098ASC00032
HISTORY  CONT  :2n381/input/acisf288836947N003_3_evt0.fits[time=28883600ASC00033
HISTORY  CONT  :5.5346600:288996206.8922700]                          ASC00034
HISTORY  STCK  :/dsops/repro5/sdp.1/opus/prs_run/tmp//ACIS_F_L1_72440098ASC00035
HISTORY  CONT  :2n381/input/acisf288836947N003_4_evt0.fits[time=28883600ASC00036
HISTORY  CONT  :5.5346600:288996206.8922700]                          ASC00037
HISTORY  STCK  :/dsops/repro5/sdp.1/opus/prs_run/tmp//ACIS_F_L1_72440098ASC00038
HISTORY  CONT  :2n381/input/acisf288836947N003_5_evt0.fits[time=28883600ASC00039
HISTORY  CONT  :5.5346600:288996206.8922700]                          ASC00040
HISTORY  PARM  :biasfile=@/dsops/repro5/sdp.1/opus/prs_run/tmp//ACIS_F_LASC00041
HISTORY  CONT  :1_724400982n381/input/acisf07437_000N004_bias0.lis     ASC00042
HISTORY  STCK  :/dsops/repro5/sdp.1/opus/prs_run/tmp//ACIS_F_L1_72440098ASC00043
HISTORY  CONT  :2n381/input/acisf288835629N003_0_bias0.fits            ASC00044
HISTORY  STCK  :/dsops/repro5/sdp.1/opus/prs_run/tmp//ACIS_F_L1_72440098ASC00045
HISTORY  CCONT :2n381/input/acisf288835629N003_1_bias0.fits            ASC00046
HISTORY  STCK  :/dsops/repro5/sdp.1/opus/prs_run/tmp//ACIS_F_L1_72440098ASC00047
HISTORY  CONT  :2n381/input/acisf288835629N003_2_bias0.fits            ASC00048
HISTORY  STCK  :/dsops/repro5/sdp.1/opus/prs_run/tmp//ACIS_F_L1_72440098ASC00049
HISTORY  CONT  :2n381/input/acisf288835629N003_3_bias0.fits            ASC00050
HISTORY  STCK  :/dsops/repro5/sdp.1/opus/prs_run/tmp//ACIS_F_L1_72440098ASC00051
HISTORY  CONT  :2n381/input/acisf288835629N003_4_bias0.fits            ASC00052
HISTORY  STCK  :/dsops/repro5/sdp.1/opus/prs_run/tmp//ACIS_F_L1_72440098ASC00053
HISTORY  CONT  :2n381/input/acisf288835629N003_5_bias0.fits            ASC00054
HISTORY  PARM  :exrfile=/dsops/repro5/sdp.1/opus/prs_run/tmp//ACIS_F_L1_ASC00055
HISTORY  CONT  :724400982n381/output/acisf288836947N003_0_deltexr0.fits ASC00056
HISTORY  CONT  :/dsops/repro5/sdp.1/opus/prs_run/tmp//ACIS_F_L1_72440098ASC00057
HISTORY  CONT  :2n381/output/acisf288836947N003_1_deltexr0.fits /dsops/rASC00058
HISTORY  CONT  :epro5/sdp.1/opus/prs_run/tmp//ACIS_F_L1_724400982n381/ouASC00059
HISTORY  CONT  :tput/acisf288836947N003_2_deltexr0.fits /dsops/repro5/sdASC00060
HISTORY  CONT  :p.1/opus/prs_run/tmp//ACIS_F_L1_724400982n381/output/aciASC00061
HISTORY  CONT  :sf288836947N003_3_deltexr0.fits /dsops/repro5/sdp.1/opusASC00062
HISTORY  CONT  :/prs_run/tmp//ACIS_F_L1_724400982n381/output/acisf288836ASC00063
HISTORY  CONT  :947N003_4_deltexr0.fits /dsops/repro5/sdp.1/opus/prs_runASC00064
HISTORY  CONT  :/tmp//ACIS_F_L1_724400982n381/output/acisf288836947N003_ASC00065
HISTORY  CONT  :5_deltexr0.fits                                        ASC00066
HISTORY  PARM  :outfile=/dsops/repro5/sdp.1/opus/prs_run/tmp//ACIS_F_L1_ASC00067
HISTORY  CONT  :724400982n381/output/acisf07437_000N004_epr1.fits       ASC00068
HISTORY  PARM  :outbias=/dsops/repro5/sdp.1/opus/prs_run/tmp//ACIS_F_L1_ASC00069
HISTORY  CONT  :724400982n381/output/acisf07437_000N004                 ASC00070
HISTORY  PARM  :expstatsfile=/dsops/repro5/sdp.1/opus/prs_run/tmp//ACIS_ASC00071
HISTORY  CONT  :F_L1_724400982n381/output/acisf07437_000N004_stat1.fits ASC00072
HISTORY  PARM  :obsfile=/dsops/repro5/sdp.1/opus/prs_run/tmp//ACIS_F_L1_ASC00073
HISTORY  CONT  :724400982n381/input/axaff07437_000N001_obs1.par         ASC00074
HISTORY  PARM  :logfile=/dsops/repro5/sdp.1/opus/prs_run/tmp//ACIS_F_L1_ASC00075
HISTORY  CONT  :724400982n381/output/acis_format_events.log             ASC00076
HISTORY  PARM  :pbkfile=@/dsops/repro5/sdp.1/opus/prs_run/tmp//ACIS_F_L1ASC00077
HISTORY  CONT  :_724400982n381/input/acisf07437_000N004_pbk0.lis        ASC00078
HISTORY  STCK  :/dsops/repro5/sdp.1/opus/prs_run/tmp//ACIS_F_L1_72440098ASC00079

HISTORY  CONT  :2n381/input/acisf288836947N003_pbk0.fits[time=288836005.ASC00080
HISTORY  CONT  :5346600:288996206.8922700]                             ASC00081
HISTORY  PARM  :bias_correct=yes                                        ASC00082
HISTORY  PARM  :oc_correct=yes                                          ASC00083
HISTORY  PARM  :badoclkfile=/dsops/repro5/sdp.1/opus/prs_run/tmp//ACIS_FASC00084
HISTORY  CONT  :_L1_724400982n381/output/acisf07437_000N004_badoclk1.fitASC00085
HISTORY  CONT  :s                                                       ASC00086
HISTORY  PARM  :geompar=geom                                            ASC00087
TIME_ADJ= 'NONE    '              / time adjustment algorithm
ASPTYPE = 'KALMAN  '
HISTORY  PARM  :eventdef={d:time,i:expno,s:chipx,s:chipy,s:phas,s:ccd_idASC00088
HISTORY  CONT  :,s:node_id,x:status}                                    ASC00089
HISTORY  PARM  :telev1={d:time,i:expno,s:chipx,s:chipy,s:phas,s:ccd_id,sASC00090
HISTORY  CONT  :::node_id,x:status}                                     ASC00091
HISTORY  PARM  :vflev1={d:time,i:expno,s:chipx,s:chipy,s:phas,s:ccd_id,sASC00092
HISTORY  CONT  :::node_id,x:status}                                     ASC00093
HISTORY  PARM  :cclev1={d:time,i:expno,s:chipx,s:chipy,s:phas,s:ccd_id,sASC00094
HISTORY  CONT  :::node_id,x:status}                                     ASC00095
HISTORY  PARM  :tegrflev1={d:time,i:expno,s:chipx,s:chipy,l:pha,s:fltgraASC00096
HISTORY  CONT  :de,s:corn_pha,s:ccd_id,s:node_id,x:status}              ASC00097
HISTORY  PARM  :ccgrlev1={d:time,i:expno,s:chipx,s:chipy,l:pha,s:fltgradASC00098
HISTORY  CONT  :e,s:corn_pha,s:ccd_id,s:node_id,x:status}               ASC00099
HISTORY  PARM  :verbose=0                                               ASC00100
HISTORY  PARM  :tempbias=no                                             ASC00101
HISTORY  PARM  :clobber=no                                              ASC00102
HISTORY  PARM  :PIXLIB Version: 4.0.0                                   ASC00103
HISTORY  PARM  :******      PIXLIB Parameter File      *****            ASC00104
HISTORY  PARM  :/dsops/repro5/sdp.1/opus/prs_run/tmp/ACIS_F_L1_724400982ASC00105
HISTORY  CONT  :n381/output/param/geom.par:                            ASC00106
HISTORY  PARM  :instruments  = /data/chandra_caldb/sdp/data/chandra/defaASC00107
HISTORY  CONT  :ult/geom/telD1999-07-23geomN0006.fits(CALDB)           ASC00108
HISTORY  PARM  :aimpoints    = /data/chandra_caldb/sdp/data/chandra/defaASC00109
HISTORY  CONT  :ult/aimpts/telD1999-07-23aimptsN0002.fits(CALDB)       ASC00110
HISTORY  PARM  :tdet         = /data/chandra_caldb/sdp/data/chandra/defaASC00111
HISTORY  CONT  :ult/tdet/telD1999-07-23tdetN0001.fits(CALDB)           ASC00112
HISTORY  PARM  :sky          = /data/chandra_caldb/sdp/data/chandra/defaASC00113
HISTORY  CONT  :ult/sky/telD1999-07-23skyN0002.fits(CALDB)             ASC00114
HISTORY  PARM  :shell        = /data/chandra_caldb/sdp/data/chandra/defaASC00115
HISTORY  CONT  :ult/sgeom/telD1999-07-23sgeomN0001.fits(CALDB)         ASC00116
HISTORY  PARM  :obsfile      = 2007-02-26T00:13:25(/dsops/repro5/sdp.1/oASC00117
HISTORY  CONT  :pus/prs_run/tmp//ACIS_F_L1_724400982n381/input/axaff0743ASC00118
HISTORY  CONT  :7_000N001_obs1.par)                                     ASC00119
HISTORY  PARM  :******      PIXLIB System Configuration     ******      ASC00120
HISTORY  PARM  :Telescope = axaf                                        ASC00121
HISTORY  PARM  :Focal Length (mm) = 10070.000                          ASC00122
HISTORY  PARM  :Detector = ACIS                                         ASC00123
HISTORY  PARM  :Focal Plane Sys. = FP-1.1                              ASC00124
HISTORY  PARM  :Tiled Detector Plane Sys. = ACIS-2.2                    ASC00125
HISTORY  PARM  :SIM Offset (mm) = (0.684 0.75 236.552)                  ASC00126
HISTORY  PARM  :Aim Point(AI1) (mm) = (-0.782348 0 -237.5)              ASC00127
```