

Software Platform

```
1 SIMPLE = T / Written by IDL: Sat Aug 6 03:37:49 2011
2 BITPIX = 16 / number of bits per data pixel
3 NAXIS = 2 / number of data axes
4 NAXIS1 = 1024 / length of data axis 1
5 NAXIS2 = 1024 / length of data axis 2
6 COMMENT
7 FILENAME= 'swap_lv1_20110806_000614.fits' / FITS filename
8 FILE_TMR= 'swap_00908512694209_aa56942a.fits' / SWTMR filename
9 FILE_RAW= 'BINSWAP201108060006280000379138PROCESSED' / raw telemetry filename
10 FILE_TAR= 'BINSWAP_5354_SVA1_20110806T03.26.56.tar' / raw telemetry package
11 COMMENT
12 DATE = '2011-08-06T03:37:49' / UTC time of FITS file creation
13 DATE-OBS= '2011-08-06T00:06:14.708' / UTC time of observation
14 COMMENT
15 LEVEL = 1 / data processing level
16 CREATOR = 'P2SW_PREP_PRO_V1.1' / FITS creation software
17 ORIGIN = 'ROB' / Royal Observatory of Belgium
18 TELESCOP= 'PROBA2' / satellite name
19 INSTRUME= 'SWAP' / instrument name
20 OBJECT = 'Sun EUV' / object observed
21 FILTER = 'Al' / Aluminum filter
22 DETECTOR= 'CMOS 1Kx1K' / HAS CMOS detector 1024x1024 pixels
23 WAVELNTH= 174 / [Angstrom] bandpass peak response
24 COMMENT
25 OBS_MODE= 'Variable off-pointing' / sun_cen, fix_off, var_off, cme_track
26 CAP_MODE= 'CDS' / (DS,CDS) capture mode
27 EXPTIME = 10.0000 / [s] commanded exposure time
28 BSCALE = 0.00625000 / ratio of physical to array value at 0 offset
29 BZERO = 204.800 / physical value for the array value 0
30 BUNIT = 'DN/s/pixel' / unit of physical value
31 DATAMIN = 0.00000 / minimum valid physical value
32 DATAMAX = 371.100 / maximum valid physical value
33 SWAVINT = 13.2449 / [DN/s] average intensity in calibrated image
34 COMMENT
35 FIRSTROW= 1 / first read-out detector row
36 LAST_ROW= 1024 / last read-out detector row
37 FIRSTCOL= 1 / first read-out detector column
38 LAST_COL= 1024 / last read-out detector column
39 REBIN = 'off' / on-board rebin (2x2 pixel average)
40 COMMENT
41 WCSNAME = 'Helioprojective-cartesian' / aligned with solar North
42 CTYPE1 = 'HPLN-TAN' / WCS axis X
43 CTYPE2 = 'HPLT-TAN' / WCS axis Y
44 CUNIT1 = 'arcsec' / WCS axis X units
45 CUNIT2 = 'arcsec' / WCS axis Y units
46 CD1_1 = 3.16226783969 / WCS coordinate description matrix
47 CD1_2 = 0.00000 / WCS coordinate description matrix
48 CD2_1 = 0.00000 / WCS coordinate description matrix
49 CD2_2 = 3.16226783969 / WCS coordinate description matrix
50 CDELT1 = 3.16226783969 / [arcsec] average pixel scale along axis 1
51 CDELT2 = 3.16226783969 / [arcsec] average pixel scale along axis 2
52 CRVAL1 = 0.00000 / [arcsec] reference point WCS axis X
53 CRVAL2 = 0.00000 / [arcsec] reference point WCS axis Y
54 CRPIX1 = 356.053 / [pixel] reference point axis 1
55 CRPIX2 = 493.145 / [pixel] reference point axis 2
56 LONPOLE = 180.000 / [deg] native longitude of the celestial pole
57 CROTA1 = 0.00000 / [deg] axis 1 to WCS rotation angle
58 CROTA2 = 0.00000 / [deg] axis 2 to WCS rotation angle
59 SWXCEN = 355.160 / [pixel] axis 1 location of solar center in lv0
60 SWYCEN = 503.870 / [pixel] axis 2 location of solar center in lv0
61 COMMENT
62 DTPLAR1 = 442.000 / [s] predicted time to prev large angle rotation
63 DTPLAR2 = 2000.00 / [s] predicted time to next large angle rotation
64 P2_X0 = -0.000939076308338 / [deg] s/c yaw
65 P2_Y0 = 0.136016732901 / [deg] s/c pitch
66 P2_ROLL = 270.002914893 / [deg] s/c roll
67 SOLAR_EP= 3.93240510615 / [deg] s/c ecliptic North to solar North angle
68 HGLT_OBS= 6.09954735628 / [deg] s/c heliographic latitude
69 HGLN_OBS= -0.00256070883134 / [deg] s/c heliographic longitude
70 RSUN_ARC= 946.000717646 / [arcsec] photospheric solar radius
71 DSUN_OBS= 151753900282. / [m] s/c distance from Sun
72 HEEX_OBS= 151753900116. / [m] s/c Heliocentric Earth Ecliptic X
73 HEY_OBS= -6575934.40209 / [m] s/c Heliocentric Earth Ecliptic Y
74 HEEZ_OBS= 2675581.07891 / [m] s/c Heliocentric Earth Ecliptic Z
75 GSEX_OBS= -17950.7202980 / [m] s/c Geocentric Solar Ecliptic X
76 GSEY_OBS= 6575934.40210 / [m] s/c Geocentric Solar Ecliptic Y
77 GSEZ_OBS= 2675581.07891 / [m] s/c Geocentric Solar Ecliptic Z
78 LOS_ALT = 720813.145355 / [m] s/c LOS altitude (1000000=no atmosphere)
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Fields Labeled, w/ units

Filename & Input Files

Observation & Processing Time

Institution & Instrument

Groupings of the Fields

Location (Pointing)

Location (Spacecraft)

Location (Spacecraft)

```
79 TRAPPROT= 0.00000 / [ct/cm^2/s] AP-8 MAX > 10MeV @ 725km model
80 TRAPELEC= 0.00000 / [ct/cm^2/s] AE-8 MAX > 1MeV @ 725km model
81 GEOD_ALT= 721479.056001 / [m] s/c WGS84 altitude
82 GEOD_LAT= 5.35086988157 / [deg] s/c sub-point geodetic latitude
83 GEOD_LON= -88.2890113983 / [deg] s/c sub-point longitude
84 COMMENT
85 TEMP1DET= 2.30999100000 / [Celsius] detector temperature (SW HK T CF)
86 TEMP2DET= 2.23000500000 / [Celsius] detector temperature (SW HK T CF)
87 TTEMP1 = '2011-08-06T00:05:51.000' / UTC time of detector temp 1st sample
88 TTEMP2 = '2011-08-06T00:06:21.000' / UTC time of detector temp 2nd sample
89 TEMP DARK= 2.24678072991 / [Celsius] temperature used in dark subtraction
90 COMMENT
91 IS_PROC = 1 / on-board image processing
92 TRANTIME= 908512694209. / [OBET] transferring time
93 SACQTIME= 908512466474. / [OBET] start acquisition time
94 EACQTIME= 908512694209. / [OBET] end acquisition time
95 LANG_ROT= -0.707106781900 / commanded large angle rotation component
96 PAV_ROT0= 0.00000 / commanded paving rotation component 0
97 PAV_ROT1= -0.00120000000000 / commanded paving rotation component 1
98 HASSTDBY= 0 / HAS detector standby mode
99 READRDIV= 0 / read-out rate divider
100 PGA_OFFS= 59 / PGA offset
101 PGA_GAIN= 1 / PGA gain
102 LED_POW = 'off' / calibration LED power
103 LED_SEL = 'a' / calibration LED selection
104 HASBLACK= 4 / HAS detector black level
105 HASOFFST= 11 / HAS detector offset level
106 ARTEFX = 'on' / (off,on,cosmic rays) on-board artefact removal
107 RECODING= 'fixed' / (off,fixed,adaptive) on-board recoding
108 RECNUM = 3600 / recoding upper limit
109 RECBIAS = 10 / recoding lower limit
110 COMPRESS= 'jpeg' / (off,lzw,jpeg) on-board compression algorithm
111 LZWDECOR= 'off' / LZW decorrelation
112 PN = 120 / on-board priority number
113 SIZCOMPI= 664688 / size of on-board compressed image
114 NPRESR = 0 / # preserved pixels - cosmic rays
115 NPRESLZW= 0 / # preserved pixels - LZW decorrelation
116 COMMENT
117 COMMENT $Id: swap_fits_template_3732_2010-09-28_20:42:23Z_bogdan_$
118 CHECKSUM= 'FFD7HD97FDA7FD97' / HDU checksum updated 2011-08-06T03:37:50
119 DATASUM = '1341923158' / data unit checksum updated 2011-08-06T03:37:50
120 COMMENT
121 HISTORY SWTMR 132602
122 HISTORY SWEDG 132606
123 HISTORY FITSHEAD2STRUCT run at: Sat Aug 6 03:37:43 2011
124 HISTORY p2sw_hdrchk v1.1 Computed detector temp.: 2.2467807 Celsius
125 HISTORY p2sw_pmcdiv v1.1 Reverted wrt swap_pmc_20100308_164500.fits
126 HISTORY p2sw_pixrep v1.1 Replaced wrt swap_satcnds_20100113_152800.fits
127 HISTORY p2sw_drksub v1.1 Subtracted modeled dark with coefficients in
128 HISTORY p2sw_drksub v1.1 swap_dark_coefs_20110101_000000.save using
129 HISTORY p2sw_drksub v1.1 T=275.40 K, dt=10.0000 s
130 HISTORY p2sw_pmcprep v1.1 Reverted wrt swap_pmc_20100308_164500.fits
131 HISTORY p2sw_ffcorr v1.1 Flat-field: swap_flatcnds_20100308_164500.fits
132 HISTORY p2sw_despike v1.1 Despiked at the 6.0-sigma level (8548 pix)
133 HISTORY p2sw_imgcor v1.1 Image scaled to square pixels
134 HISTORY p2sw_imgcor v1.1 Image rotated to solar North up
135 HISTORY p2sw_expnorm v1.1 Exposure time normalized data (DN/s/pixel)
136 COMMENT
137 COMMENT This is a level-1 SWAP FITS file produced by p2sw_prep v1.1 at the Royal
138 COMMENT Observatory of Belgium. If you have difficulty with this file or wish
139 COMMENT to make suggestions for improvements, please contact the SWAP
140 COMMENT Instrument Team via email at swap_lyra@oma.be.
141 COMMENT
142 END
```

Type of Processing

Checksums!

Type of Processing, Software used + version

Contact Info, Notes, declares file to be FITS

PROBA-II / SWAP Active Archive

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1 SIMPLE =          T /Dummy Created by MWRFITS v1.6a
2 BITPIX =          8 /Dummy primary header created by MWRFITS
3 NAXIS =           0 /No data is associated with this header
4 EXTEND =          T /Extensions may (will!) be present
5 END
6
7 ...
8
9 XTENSION= 'BINTABLE' /Binary table written by MWRFITS v1.6a
10 BITPIX =          8 /Required value
11 NAXIS =           2 /Required value
12 NAXIS1 =         108 /Number of bytes per row
13 NAXIS2 =         345600 /Number of rows
14 PCOUNT =          0 /Normally 0 (no varying arrays)
15 GCOUNT =          1 /Required value
16 TFIELDS =        28 /Number of columns in table
17 COMMENT
18 COMMENT *** End of mandatory fields ***
19 COMMENT
20 ORIGIN = 'SDO/EVE SPOC' // LASP, University of Colorado, Boulder
21 DATE = '2011-10-21T16:16:24.000Z' // UTC file creation time
22 TAI_OBS = 1697760004.004 // TAI time at start of obs
23 DATE_OBS= '2011-10-19T23:59:30.004Z' // UTC at start of obs
24 T_OBS = '2011-10-20T00:00:00.004Z' // UTC at center of obs
25 EXPTIME =         60.000 // seconds exposed, or integration time
26 TIME = 86370.004 // UTC seconds of day at start of obs
27 TELESCOP= 'SDO/EVE'
28 INSTRUME= 'EVE ESP'
29 VERSION =         002 // major code/cal version
30 REVISION=         002 // reprocess number
31 FILENAME= 'esp_L1_2011293_002.fit'
32 CH1_COEF= 269552.5625//Ch1 mean Coeff
33 CH2_COEF= 2170789.5000//Ch2 mean Coeff
34 CH4_COEF= 751293.6875//Ch4 mean Coeff
35 CH5_COEF= 701111.3125//Ch5 mean Coeff
36 CH6_COEF= 726341.8125//Ch6 mean Coeff
37 CH7_COEF= 753361.7500//Ch7 mean Coeff
38 CH8_COEF= 3837458.2500//Ch8 mean Coeff
39 CH9_COEF= 1814159.0000//Ch9 mean Coeff
40 COMMENT
41 COMMENT *** Column names ***
42 COMMENT
43 TTYPE1 = 'Q_0' /
44 TTYPE2 = 'Q_1' /
45 TTYPE3 = 'Q_2' /
46 TTYPE4 = 'Q_3' /
47 TTYPE5 = 'QD' /
48 TTYPE6 = 'CH_18' /
49 TTYPE7 = 'CH_26' /
50 TTYPE8 = 'CH_30' /
51 TTYPE9 = 'CH_36' /
52 TTYPE10 = 'CH_D' /
53 TTYPE11 = 'Q_0_PREC' /
54 TTYPE12 = 'Q_1_PREC' /
55 TTYPE13 = 'Q_2_PREC' /
56 TTYPE14 = 'Q_3_PREC' /
57 TTYPE15 = 'QD_PREC' /
58 TTYPE16 = 'CH_18_PREC' /
59 TTYPE17 = 'CH_26_PREC' /
60 TTYPE18 = 'CH_30_PREC' /
61 TTYPE19 = 'CH_36_PREC' /
62 TTYPE20 = 'CH_D_PREC' /
63 TTYPE21 = 'FILTER' /
64 TTYPE22 = 'CH_TEMP' /
65 TTYPE23 = 'YEAR' /
66 TTYPE24 = 'DOY' /
67 TTYPE25 = 'HOUR' /
68 TTYPE26 = 'MINUTE' /
69 TTYPE27 = 'SEC' /
70 TTYPE28 = 'SOD' /
71 COMMENT
72 COMMENT *** Column formats ***
73 COMMENT
74 TFORM1 = 'E' /
75 TFORM2 = 'E' /
76 TFORM3 = 'E' /
77 TFORM4 = 'E' /
78 TFORM5 = 'E' /
79 TFORM6 = 'E' /
80 TFORM7 = 'E' /
81 TFORM8 = 'E' /

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Hints that it's a FITS file

New Abbreviation, but complete info in comments

Institution

Observation & Processing Time

Instrument

File ID + version number

Groupings of Fields w/ Labels

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82 TFORM9 = 'E' /
83 TFORM10 = 'E' /
84 TFORM11 = 'E' /
85 TFORM12 = 'E' /
86 TFORM13 = 'E' /
87 TFORM14 = 'E' /
88 TFORM15 = 'E' /
89 TFORM16 = 'E' /
90 TFORM17 = 'E' /
91 TFORM18 = 'E' /
92 TFORM19 = 'E' /
93 TFORM20 = 'E' /
94 TFORM21 = 'E' /
95 TFORM22 = 'E' /
96 TFORM23 = 'I' /
97 TFORM24 = 'I' /
98 TFORM25 = 'I' /
99 TFORM26 = 'I' /
100 TFORM27 = 'E' /
101 TFORM28 = 'D' /
102 COMMENT Website reference http://lasp.colorado.edu/eve
103 COMMENT EVE Principal Investigator T. N. Woods
104 COMMENT Laboratory for Atmospheric and Space Physics
105 COMMENT 1234 Innovation Drive, Boulder, CO 80303
106 COMMENT SDO Mission scientific and model results are open to all.
107 COMMENT Users should contact the PI or designated EVE team member early in an
108 COMMENT analysis project to discuss appropriate use of instrument data results.
109 COMMENT Appropriate acknowledgement to institutions, personnel, and funding
110 COMMENT agencies should be given. Version numbers should also be specified.
111 COMMENT Pre-prints of publications and conference abstracts should be widely
112 COMMENT distributed to interested parties within the mission.
113 COMMENT Quad-Diode (QD) data (0.1 - 7.0 nm) are stored in 5 channels:
114 COMMENT the whole solar disk irradiance and ratios of each diode irradiance
115 COMMENT to the whole disk solar irradiance. These ratios are about 0.25.
116 END

```

Documentation Link & Contact Info

Use Policy!

Notes / Caveats

SDO / EVE / ESP Active Archive

Software Platform + Processing Time

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1 SIMPLE = T / Written by IDL: Thu Jul 8 00:15:54 2010
2 BITPIX = -32 / Real*4 (floating point)
3 NAXIS = 2
4 NAXIS1 = 64
5 NAXIS2 = 64
6 INDX_VE= 4113 / gen:
7 TIME = 84576728 / gen: Time (millisec of day) Derived from DP_Tim
8 DAY = 8344 / gen: Day (since 1-Jan-79) Derived from DP_Time
9 DP_MODE = 141 / gen: DP Mode W50 F2
10 DP_RATE = 64 / gen: DP Rate W48 F15
11 FLARE_CO= 5 / gen: Flare flag control (active triggers) W50 F
12 RBM_STAT= 0 / gen: Radiation Belt Montitor Status W50 F61
13 TELEMETR= 17 / gen: Telemetry source information W7 in 16 byte
14 CAL_STAT= 64 / gen: CAL status W51 F55
15 PNTG_ANG= 350133 /
16 PNTG_TRA= 1 / gen: Information on how pointing was derived Fr
17 PNTG_JIT= 0 / gen: Magnitude of pointing change From Mainfram
18 DATA_QUA= 0 / gen: Data quality Ground Info
19 NMISSSAM= 0 / gen: Number of missing bytes (due to telemetry
20 STARTSAM= 0 / gen: Starting sample number of good data Ground
21 DATA_WOR= 4 / gen: Data word type (byte, integer*2, real...)
22 NINDEXST= 0 / gen: Number of "extra" index structures followi
23 NINDEXBY= 352 / gen: Number of bytes in the index records
24 NDATABYT= 16384 / gen: Number of byte in the data section
25 SXT_POW_ = 251 / gen: Power Status (0=off, 1=on) W48 F25
26 BCS_POW_ = 238 / gen: BCS Power status W112 F32n+3
27 HXT_POW_ = 240 / gen: HXT Power status W48 F32+1
28 WBS_POW_ = 162 / gen: Power status W48 F32n+2
29 SXT_CONT= 192 / gen: SXT Control Status W114 F32
30 SINDEXT_V= 12307 / sxt:
31 PFI_FFI = 16 / sxt: Image information
32 PERIPH = 233 / sxt: Aspect/shutter/filter information W114 F08
33 EXPLEVMO= 9 / sxt: Exposure mode/level W114 F09/03
34 IMGPARAM= 1 / sxt: Image parameter information W114 F24/18
35 FLUSH = 251 / sxt: Flush information W114 F40/34
36 EXPLAT = 6227 / sxt: Exposure latency (mailbox value) W114 F10,
37 EXPDUR = 4644 / sxt: Exposure duration (mailbox value) W114 F42
38 SHAPE_C1= 64 / sxt: Commanded image shape (nx by ny) W114 F57,
39 SHAPE_C2= 64 / sxt: Commanded image shape (nx by ny) W114 F57,
40 CORNE_C1= 252 / sxt: Commanded starting corner (x0, y0) W114 F2
41 CORNE_C2= 488 / sxt: Commanded starting corner (x0, y0) W114 F2
42 PIX_SIZE= 1.00000 / his: pixel size from index.his.pixel_size
43 FOV_VER = 0 / sxt: Information on how solution was derived Gr
44 OBSREGIO= 168 / sxt: Observing region Number W114 F50
45 SEQ_NUM = 3 / sxt: Sequence Number (1-13) W114 F59/55
46 SEQ_TAB = 3718 / sxt: Sequence table serial used Ground Info
47 SERIAL_N= 5530064 / sxt: Serial number of image W115 F18,34,50/16,3
48 MLOOP = 2 / sxt: Main loop counter W115 F19,35,51/02,03
49 LOOPS = /
50 POW_STAT= 251 / sxt: Power Status (0=off, 1=on) W48 F25
51 SW_STAT = 176 / sxt: Active Software (1=active) W114 F12
52 SSXT_CON= 192 / sxt: SXT Control Status W114 F32
53 SXTFMT = 4 / sxt: SXT Format info 8:2 or 2:8 W115 F00
54 TEMP_CCD= 95 / sxt: CCD Temperature W113 F52
55 J_REGIST= 162 / sxt: Which buffer is used W114 F33?
56 IMG_MAX = 70 / sxt: Maximum intensity Derived
57 IMG_AVG = 6 / sxt: Average intensity of whole image Derived
58 IMG_DEV = 37 / sxt: Standard deviation of the whole image Deri
59 PERCENTD= 255 / sxt: Percentage of data present Derived
60 PERCENTO= 0 / sxt: Percentage of data over [N] counts Derived
61 AEC_STAT= 74 / sxt: AEC Status W114 F44
62 EXTRA = 0 / sxt: Information used by secondary programs
63 LAT = -21.7603 / Yoh Orb: Spacecraft Lattitude
64 LONG = 86.6648 / Yoh Orb: Spacecraft Longitude
65 HEIGHT = 501.233 / Yoh Orb: Spacecraft Altitude (Km)
66 RADIUS = 6876.49 / Yoh Orb: Radius
67 RIG = 8.09831 / Yoh Orb: Rigidity
68 TIM2FMS = 446 / Seconds Since FMS
69 TIM2NITE= 3412 / Seconds Until LMS
70 IN_SAA = 0 / Yohkoh in SAA?
71 DATE = ' ' / ssw: http://www.lmsal.com/solarsoft/ssw_standar
72 MJD = 52217 / ssw: http://www.lmsal.com/solarsoft/ssw_standar
73 TIME_OBS= ' ' / ssw: http://www.lmsal.com/solarsoft/ssw_standar
74 DATE_OBS= '2001-11-04T23:29:36.728' / ssw: http://www.lmsal.com/solarsoft/ssw_st
75 DATE_OBS= ' ' / ssw: http://www.lmsal.com/solarsoft/ssw_standar
76 FILENAME= 'sxtp_20011104_232936_151.fts' / ssw: http://www.lmsal.com/solarsoft/s
77 ORIGIN = ' ' / ssw: http://www.lmsal.com/solarsoft/ssw_standar
78 TELESCOP= 'Yohkoh' / ssw: http://www.lmsal.com/solarsoft/ssw_standar
79 INSTRUME= 'SXT' / ssw: http://www.lmsal.com/solarsoft/ssw_standar
80 OBJECT = ' ' / ssw: http://www.lmsal.com/solarsoft/ssw_standar
81 SCI_OBJ = ' ' / ssw: http://www.lmsal.com/solarsoft/ssw_standar

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Groupings + Where defined

Fields Labeled

Location (spacecraft)

Filename

Observation Time

Instrument

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82 OBS_PROG= ' ' / ssw: http://www.lmsal.com/solarsoft/ssw_standar
83 EXPTIME = 1.00000 / ssw: http://www.lmsal.com/solarsoft/ssw_standar
84 WAVELNTH= 'All2' / ssw: http://www.lmsal.com/solarsoft/ssw_standar
85 CTYPE1 = ' ' / ssw: http://www.lmsal.com/solarsoft/ssw_standar
86 CTYPE2 = ' ' / ssw: http://www.lmsal.com/solarsoft/ssw_standar
87 CUNIT1 = 'arcsec' / ssw: http://www.lmsal.com/solarsoft/ssw_standar
88 CUNIT2 = 'arcsec' / ssw: http://www.lmsal.com/solarsoft/ssw_standar
89 CRPIX1 = -74.6500 / ssw: http://www.lmsal.com/solarsoft/ssw_standar
90 CRPIX2 = 51.3100 / ssw: http://www.lmsal.com/solarsoft/ssw_standar
91 CRVAL1 = 0.00000 / ssw: http://www.lmsal.com/solarsoft/ssw_standar
92 CRVAL2 = 0.00000 / ssw: http://www.lmsal.com/solarsoft/ssw_standar
93 CDELTA1 = 4.91000 / ssw: http://www.lmsal.com/solarsoft/ssw_standar
94 CDELTA2 = 4.91000 / ssw: http://www.lmsal.com/solarsoft/ssw_standar
95 XCEN = 526.106 / ssw: http://www.lmsal.com/solarsoft/ssw_standar
96 YCEN = -92.3571 / ssw: http://www.lmsal.com/solarsoft/ssw_standar
97 CROTA1 = 0.696056 / ssw: http://www.lmsal.com/solarsoft/ssw_standar
98 CROTA2 = 0.696056 / ssw: http://www.lmsal.com/solarsoft/ssw_standar
99 SOLAR_R = 967.833 / ssw: http://www.lmsal.com/solarsoft/ssw_standar
100 SOLAR_B0= 0.00000 / ssw: http://www.lmsal.com/solarsoft/ssw_standar
101 SOLAR_I0= 0.00000 / ssw: http://www.lmsal.com/solarsoft/ssw_standar
102 SOLAR_P = 0.00000 / ssw: http://www.lmsal.com/solarsoft/ssw_standar
103 DSUN_OBS= 0.00000 / ssw: http://www.lmsal.com/solarsoft/ssw_standar
104 HGLN_OBS= 0.00000 / ssw: http://www.lmsal.com/solarsoft/ssw_standar
105 HGLT_OBS= 0.00000 / ssw: http://www.lmsal.com/solarsoft/ssw_standar
106 HISTORY Dark Subtraction: (dark_sub,Ver: 3.280) Interp 7-NOV-01 06:02:38
107 HISTORY and 7-NOV-01 01:21:32
108 HISTORY DC Orbit Correction: Enabled
109 HISTORY Despiked: (sxt_clean.pro) Level/N_Sigma = 3.0
110 HISTORY Leak Subtraction: (leak_sub.pro Ver:21.784) 10-MAR-00 14:45:05
111 HISTORY Leak Dbase Type: Terminator
112 HISTORY Second Order Leak Correction? NONE
113 HISTORY Image Deconvolution? NONE
114 HISTORY Composite Creation:NONE PERFORMED
115 HISTORY Vignette Correction: NONE PERFORMED
116 HISTORY Registration: NONE
117 HISTORY Exposure Duration (millisec): Original= 238.5 New= 1000
118 HISTORY Pixel Resolution: Original= Half New= Half
119 HISTORY Intensity units: DN/Image-Pixel/Exposure-Duration
120 HISTORY sxt_orhis -- Assembled OR Component 1 of 1 --
121 HISTORY sxt_orhis 2001/11/04 23:29:36.728
122 HISTORY sxt_orhis Dark (Ver: 3.280) Intrap 7-NOV-01 06:02:38/7-NOV-01 01:21:32
123 HISTORY sxt_orhis Leak (Ver:21.784) 10-MAR-00 14:45:05
124 HISTORY sxt_orhis Leak Dbase Type: Terminator
125 HISTORY sxt_orhis PFI FOV_CENTER: 480,-210
126 END

```

Location (Pointing)

Detailed Processing History
Type, Versions, etc.

YOHKOH / SXT Final Archive

Declared to be FITS

```

1 SIMPLE = T Fits standard
2 BITPIX = 16 Bits per pixel
3 NAXIS = 2 Number of axes
4 NAXIS1 = 860 Axis length
5 NAXIS2 = 860 Axis length
6 EXTEND = F FILE may contain extensions
7 BSCALE = 9.504000000E-2 REAL = TAPE*BSCALE + BZERO
8 BZERO = 0.000000000E0
9 GONGKEY1= '----- Gong Keywords Section 1: Solarsoft -----'
10 ORIGIN = 'National Solar Observatory -- GONG' / FITS file originator
11 OBS-SITE = 'NSO/GONG NETWORK' / Instrument Site location
12 TELESCOP = 'NSO-GONG' / NSO/GONG Network
13 OBS-URL = 'http://gong.nso.edu' / The GONG website
14 DATE = '2011-06-21T14:49:21'
15 DATE-OBS = '2011/01/01' / GPS date of observation
16 TIME-OBS = '01:04:16.000021' / GPS time of observation
17 DATATYPE = 'REAL*4' / Type of data
18 WAVELENTH = 676.8 / Wavelength of obs (nm)
19 WCSNAME = 'Heliocentric-cartesian (approximate)'
20 CTYPE1 = 'GONGX' / Coordinate Axis Label
21 CTYPE2 = 'GONGY' / Coordinate Axis Label
22 CRPIX1 = 436.9527 / Current X position for center of solar image
23 CRPIX2 = 431.6606 / Current Y position for center of solar image
24 CRVAL1 = 0.00000 / Reference Pixel value
25 CRVAL2 = 0.00000 / Reference Pixel value
26 EPH_RA = -1.376241624 / Right Ascension (radians)
27 EPH_DEC = -0.402213457 / Declination (radians)
28 IMTYP = 'MAGNETIC'
29 IMG_X0 = 436.9527
30 IMG_Y0 = 431.6606
31 IMG_MN01 = -263.0377 / Image mean
32 IMG_RMS01 = 340.2266 / Image RMS (Standard Deviation)
33 IMG_SKW01 = -0.5257 / Image skewness
34 IMG_MIN01 = -703.9613 / Image Min
35 IMG_MAX01 = 506.0880 / Image Max
36 IMG_ADV01 = 329.4267 / Image Average Deviation
37 IMG_VAR01 = 115754.1094 / Image Variance
38 IMG_KUR01 = -1.7282 / Image Kurtosis
39 GONGKEY2= '----- Gong Keywords Section 2: Raw -----'
40 BUNIT = 'GAUSS'
41 IRAF-TLM = '2011-06-21T14:49:25' / Time of last modification
42 IRAF-MAX = 0.00000000 / DATA MAX
43 IRAF-MIN = 0.00000000 / DATA MIN
44 COMPRESS = 'none_lp_64_003'
45 ITIME = 60.000000000 / time between EOI interrupts for OBS type
46 ACCUM = 600 / Per minute accumulations
47 COUNT = 300 / number accumulations per Magnetogram state
48 TYPE = 0 / Observation type
49 DTYPE = 'RW' / Data type
50 DAS_STAT = 0 / DAS status
51 CLKMODE = 2 / VME-SG mode: 0=gen 1=trans 2=sync-gen
52 GFSSTAT = 60 / GPS receiver time quality error exponent
53 PHASE = -1 / GPS Phase Offset
54 OSC_DAC = 31673 / crystal oscillator DAC value
55 SUNUP = T / Sun is up
56 CONNECT = T / connected to instrument T/F
57 GUIDE = T / Turret is guiding
58 VALID = T / Image is valid
59 CENTER = T / auto image centering enabled/disabled T/F
60 X_CENTER = 501 / current X position for center of solar image
61 Y_CENTER = 525 / current Y position for center of solar image
62 CAL_DONE = T / autocal has been initiated today T/F
63 HDLVL = 1227 / #minutes since last write to tape/reboot
64 HDBANK = 0 / current hard-drive bank 0=Primary,1=Secondary
65 TAPEBANK = 0 / current DLT Tape bank status
66 TAPELVL = 60 / % remaining on tape in current tape bank
67 VELOCITY = 276.522487076 / velocity of the solar disk (meters/sec)
68 DIODE1 = 217103993 / sum of diode values from phase plane 1
69 DIODE2 = 244443129 / sum of diode values from phase plane 2
70 DIODE3 = 240490722 / sum of diode values from phase plane 3
71 AUTOCAL = T / automatic daily calcs enabled/disabled T/F
72 MAGNETO = T / magnetogram mode on/off T/F
73 LAST_PM = '24jun09-08jul09' / date of last Preventative Maintenance
74 VERSION = '4.31 30aug2010' / Software release version
75 AUTOCAL0 = 20 / Site autocal start time (minutes past hour)
76 AUTOCAL1 = 39 / Site autocal stop time (minutes past hour)
77 SN_CAM = '1014' / serial number camera
78 SN_DAS = '22-15, 8' / serial number DAS
79 SN_MOD = '05-179' / serial number modulator
80 SN_ROT = '3' / serial number rotator
81 CAMX_MIN = 60 / image x-axis start column
82 CAMX_MAX = 960 / image x-axis stop column
83 CAMY_MIN = 0 / image y-axis start row
84 CAMY_MAX = 1024 / image y-axis stop row
85 SITENAME = 'Mauna Loa HI USA' / Site name
86 SITE = 'ML' / Site abbreviation
87 TIMEZONE = -600 / Site timezone (minutes)
88 INSTTIME = '201111 1:4:19' / INST COMPUTER TIME
89 LON = -2.715312055 / Site longitude (radians east)
90 LAT = 0.340969968 / Site latitude (radians north)
91 HORIZON = 80 / Site horizon limit (degrees from zenith)
92 EAST = 435 / Site east limb offset (arc-seconds)
93 WEST = -265 / Site west limb offset (arc-seconds)
94 MOTOR0 = 2306017 / Roll encoder offset
95 MOTOR1 = 1317275 / Pitch encoder offset
96 MOTOR2 = 1171003 / Rotator encoder offset
97 MOTOR3 = 2234124 / Wheel 1 encoder offset
98 MOTOR4 = 742715 / Wheel 2 encoder offset
99 LHOFSS = 15424 / Roll low/high offset

```

Institution + Link to Documentation

Observation & Processing Time

Location (Pointing)

Type of Observation

Groupings of Fields w/ Labels

Location of Observatory

Fields Labeled

```

100 LHOFSS1 = 35240 / Pitch low/high offset
101 LHOFSS2 = 50304 / Rotator low/high offset
102 J2000 = 4017.544531590 / Julian 2000 date
103 LST = 5.599062238 / Local apparent sidereal time (radians)
104 ZENITH = 1.003752907 / Zenith distance (radians)
105 RA = -1.376241624 / Right ascension (radians)
106 DEC = -0.402213457 / Declination (radians)
107 PA = 0.038414691 / Solar position angle (radians)
108 HA = 0.692118555 / Hour angle (radians)
109 BETA = 0.271558314 / Parallax angle (radians)
110 DISTANCE = 0.983310308 / Solar distance(AU)
111 RADIUS = 0.004732024 / Apparent solar radius (radians)
112 EROLL = 0.829787109 / Ephemeris roll angle (radians)
113 EPITCH = -0.650592554 / Ephemeris pitch angle (radians)
114 ERROTATOR = 1.171108285 / Ephemeris rotator angle (radians)
115 ROLL = 0.831500152 / Roll position (radians)
116 PITCH = -0.647678119 / Pitch position (radians)
117 ROTATOR = 1.171103794 / Rotator position (radians)
118 WHEEL_1 = 0 / Calibration wheel 1 position
119 WHEEL_2 = 3 / Calibration wheel 2 position
120 CAL_LENS = 0 / Calibration lens position
121 INSTMODE = 0 / Current calibration state of instrument
122 WIND_SPD = 0.759968000 / Wind speed in meters/sec
123 WIND_DIR = 69.480000000 / Wind direction in degrees azimuth
124 TEMP_RAC = 23.900000000 / Rack Temperature in degrees C
125 TEMP_TBL = 22.600000000 / Table Temperature in degrees C
126 TEMP_INS = 20.600000000 / Inside Temperature in degrees C
127 HUM_INS = 1.300000000 / Inside Relative Humidity in percent
128 TEMP_OUT = 13.100000000 / Outside Temperature in degrees C
129 HUM_OUT = 0.000000000 / Outside Relative Humidity in percent
130 RAD_NET = 541.500000000 / Net Radiation in watts/square meter
131 BAROMET = 678.600000000 / Barometric Pressure in millibars
132 GONGKEY3= '----- Gong Keywords Section 3: Processing History -----'
133 GHISTSEQ = 12
134 GHIST000 = 'Task UCOR (10/12/31 15:07:25, VInst)'
135 GHIST001 = 'input=ML110101010416.fits;drk_image=drk60.fits;clc_f2=11,clc_l2='
136 GHIST002 = '50,clc_f1=1,clc_l1=900,clc_fc=1.0000000;no_row_clamp;lc_bn1=196,'
137 GHIST003 = 'lc_bn2=452,lc_bn3=708,clc_fc=0.0000220;cl2_f2=2,cl2_l2=1024,cl2,'
138 GHIST004 = 'f1=1,cl2_l1=900,cl2_fc=0.0000480;cro_f2=91,cro_l2=950,cro_f1=11,'
139 GHIST005 = 'cro_l1=870'
140 GHIST006 = 'Task UCOR (10/12/31 15:07:25, VInst)'
141 GHIST007 = 'cal_image=./wlmnbavg.fits,ipermi=2,cosc=2061.359,pcr=200.,rot='
142 GHIST008 = '67.09824,interp=4;sw_vmbi=yes;cen_opt=1,cen_thres=30000.,cen_sw_'
143 GHIST009 = 'hd=yes;fnd_use_cen=yes,fndlmbxc=433.7856,fndlmbyc=436.7975,fndlm'
144 GHIST010 = 'bmi=380.,fndlmbma=380.,fndlmban=0.,fnd_nsmo=4,fnd_nfit=5,fnd_wid'
145 GHIST011 = 'th=30.,fnd_thres=0.,fnd_pcf1=1.,pixlenx=1.,pixleny=1.,fnd_niter'
146 GHIST012 = '=2,thr_ot=600.1191,rmserr=3.499195E-4,nit=6,nzc=2826 '
147 CENTROXC = 433.7856
148 CENTROYC = 436.7975
149 FNDLMBXC = 436.9527
150 FNDLMBYC = 431.6606
151 FNDLMBMI = 383.8712
152 FNDLMBMA = 384.5627
153 FNDLMBAN = -52.93039
154 PIXLENX = 1.0
155 PIXLENY = 1.0
156 DONUT = T
157 RIN = 0.0
158 ROUT = 1.0
159 SKYVALUE = -2000.0
160 WCSDIM = 3
161 LTV3 = -2.0
162 LTM1_2 = 1.0
163 LTM2_1 = 1.0
164 LTM3_3 = 1.0
165 WAXMAP01 = '1 0 2 0 0 2 '
166 WAT0_001 = 'system=physical'
167 WAT1_001 = 'wtype=linear'
168 WAT2_001 = 'wtype=linear'
169 WAT3_001 = 'wtype=linear'
170 QRREL = '3.0.22 '
171 N_USED = 10
172 USDIMG01 = 'mlbq110101010100.fits'
173 USDIMG02 = 'mlbq110101010101.fits'
174 USDIMG03 = 'mlbq110101010102.fits'
175 USDIMG04 = 'mlbq110101010103.fits'
176 USDIMG05 = 'mlbq110101010104.fits'
177 USDIMG06 = 'mlbq110101010105.fits'
178 USDIMG07 = 'mlbq110101010106.fits'
179 USDIMG08 = 'mlbq110101010107.fits'
180 USDIMG09 = 'mlbq110101010108.fits'
181 USDIMG10 = 'mlbq110101010109.fits'
182 AVGLBXC = 436.9205
183 AVGLBYC = 431.5811
184 AVGLBMI = 383.9323
185 AVGLBMA = 384.6335
186 AVGLBAN = 53.47635
187 CHECKSUM = 'k1ialjz6kjkfakjz5' / HDU checksum updated 2011-01-01T01:15:07
188 DATASUM = '288770934' / data unit checksum updated 2011-01-01T01:15:07
189 COMMENT
190 COMMENT This GONG product is produced from the DMAC QuickReduce data stream.
191 COMMENT
192 COMMENT See http://gong.nso.edu for more information about GONG.
193 COMMENT
194 PLATFORM = 'Linux apollo1 redhat'
195 FITSWASH = '$RC$files: mag_header.kw,v $ $Revision: 1.9 $ $Date: 2011/06/17 00:26'
196 END
197

```

Detailed Processing History; Dates, Input Variables, Aux. Input Files

Input Files

Checksums!

Notes / Link to Docs.

OS / machine processed on

GONG / Mauna Loa Quicklook

```

1 SIMPLE =          T / file does conform to FITS standard
2 BITPIX =          16 / number of bits per data pixel
3 NAXIS =            2 / number of data axes
4 NAXIS1 =         2048 / length of data axis 1
5 NAXIS2 =         2048 / length of data axis 2
6 BZERO =         32768 / offset data range to that of unsigned short
7 BSCALE =            1 / default scaling factor
8 DATE = '2011-11-30T09:19:35' / file creation date (YYYY-MM-DDThh:mm:ss UT)
9 FILENAME= 'imoa_06563_cl_20111130_09192800_b1.fits' / Original filename
10 INSTITUT= 'OMP, OA, Pic-du-Midi' / Name of the institut
11 INSTRUME= 'CLIMSO C1' / Name of the instrument
12 CAMERA = 'U4000 ' / Name of the CCD camera
13 OBSERVER= 'OA-FIDUCIAL' / Name of instrument operator
14 DATE = '2011-11-30T09:19:28.631' / Date start of the observation UT
15 DATE-OBS= '2011-11-30T09:19:28.631' / Date start of the observation UT
16 DATE_OBS= '2011-11-30T09:19:28.631' / Date start of the observation UT
17 DATE_END= '2011-11-30T09:19:28.667' / Date end of the observation UT
18 EXPTIME =            0.03 / [s] Exposure time
19 CAMTEM =          -19.96 / [degC] CCD chip temperature
20 DMETEM =            2.9 / [degC] Temperature inside the dome
21 WAVELNTH=        6562.82 / [Angstrom] Wavelength observation
22 WAVEUNIT=          -10 / [power] Power unit of WAVELNTH in meter
23 LEVEL =            0 / Processing level
24 OBJECT = 'COR ' / Sun corona observation
25 SOLAR_P0= 0.287568864811296 / [rad] P.A. of the Sun's rotation axis
26 LONGCARR= 3.04075037898522 / [rad] He. Longitude central point solar disk
27 SOLAR_B0= 0.0178293640630609 / [rad] He. Latitude central point solar disk
28 PHYSPARA= 'INTENSITY' / [ADU] Analog to Digital Unit
29 PROCTYPE= 'RAW ' / Raw CCD data
30 CONTACT = 'noens@ast.obs-mip.fr' / e-mail's contact
31 CONTACT1= 'David.Romeuf@laposte.net' / e-mail's contact
32 END
33

```

Fields Labeled

Declared to be FITS

Processing Date, Filename,
Institution & Instrument

Observation Time

Location (Pointing)

Contact Info.

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1 SIMPLE =          T / file does conform to FITS standard
2 BITPIX =          -32 / number of bits per data pixel
3 NAXIS =            1 / number of data axes
4 NAXIS1 =         1080 / length of data axis 1
5 EXTEND =          T / FITS dataset may contain extensions
6 COMMENT = 'FITS (Flexible Image Transport System) format is defined in 'Astronomy and Astrophysics', volume 376, page 359; bibcode: 2001A&A...376..359H'
7 COMMENT = 'FITS dataset may contain extensions'
8 DATE = '2010-01-03T05:00:30' / file creation date (YYYY-MM-DDThh:mm:ss UT)
9 TITLE = 'GOLF_1 ' / FICHER TELEMESURE
10 LEVEL =            1 / NIVEAU D ANALYSE
11 TELESCOP= 'SOHO ' / ESA/NASA Solar orbital observatory
12 INSTRUME= 'GOLF ' / Global oscillations at low frequencies
13 CHANNEL = 'FSmain ' / canal en usage
14 COMMENT = '/home/renaud/golfddata/DATABASEql/100101.data date:Sun Jan 3 06'
15 COMMENT = ':0'
16 PROGRAM = 'ecritfits1' / nom du programme qui a cree le fichier
17 VERSION = 'Fri Sep 25 11:46:46 2009' / creation du code executable
18 AUTHOR = 'C.Renaud-G.Grec'
19 ORIGIN = 'Observatoire de Nice'
20 HOTE = 'ray ' / ordinateur utilise pour creer ce fichier
21 USER = 'renaud ' / utilisateur du programme
22 CALIBR = 'Tue Mar 11 13:33:42 1997' / edition des calibrations
23 COMMENT = 'MESURES EN VOL'
24 DAT OBS = '1/ 1/10' / date de la mesure (j/m/a)
25 COMMENT = 'temps de reference pour LOBT : TAI horloge de bord'
26 COMMENT = 'Debut du fichier a LOBT = 0 heure'
27 COMMENT = 'Fin du fichier a LOBT = 24 heures'
28 UT_TAI0 =          -2.90E+01 / valeur de UT a TAI=0h00:00 en sec.
29 DELOBS =            5.00E+00 / retard des observations au sol en sec
30 TIMESTEP= '80 secondes' / cycle de base Golf
31 COMMENT = 'La premiere table contient un test'
32 END
33

```

Fields Labeled

Declared to be FITS

Reference to FITS
Standard
Processing Date

Instrument

Software & Version

Contact & Institution

Aux. File Version

Notes

CLIMSO C1 /
Pic du Midi
Active Archive

SOHO / GOLF
Active Archive