5.6.2.1 photon_mon mta

photon_mon

Description: This tool performs basic monitoring functions for a single event list

Open Issues:

1. The existance of the OBI_NUM keyword is under review, use OBS_ID if this one doesn't exist.
2. L0.5 is an unknown quantity I expect to deal with this in the September release.
3. ACIS team does not prefer RAW_PHA(5) to be the only PHA plotted, but they haven't proposed a more worthwhile alternative.
4. ACIS team wants the L1 EV, not PHA.
5. Detect HRC/ACIS hot spots and dead spots (this works with the dose tools) is not in the current spec
6. Part of photon_mon is photon trend. The trending involves discussion with the DB team on how to store the photons, we will probably use the same type of daily dose files we used at XRCF.
7. Certain Level 0 header keywords which are called out by the ascfits document are not in the Level 0 ICDs (stay tuned).

Inputs:

- Level 0, Level0.5 or Level 1 event File. These now take new pathways. (L0.5 follows the L0 pathways.)

Outputs:

- html file with graphics. (see algorithm)

Control Parameters:

- obs_id #, obi_num # (for monitoring applications)

Algorithm:

There are 10 basic forms of input data. HRC L0 events, HRC L1 events ACIS RAW, ACIS HISTOGRAM, ACIS L0 ungraded timed exposure(TE), ACIS L0 graded TE, ACIS L1 ungraded TE, ACIS L1 graded TE, ACIS L0 ungraded Continuous clocking(CC), ACIS L0 graded CC, ACIS L1 ungraded CC, ACIS L1 graded CC. My feeling is that we need 8 pathways. Two pathways are save by collapsing graded and ungraded data together. Grade plots are made if the FLTGRADE column exists. The FLTGRADE column is always included in the MTAFILE although it if stuffed with NaN if there is no FLTGRADE data.

- Identify the detector (HRC/ACIS) and the Level of the data product (0 or 1) and mode to determine the PATHWAY.
- **FOR L0**: extract the following from header: INSTNAM, DATAMODE, OBS_MODE, DATE_OBS DATE_END,NAXIS2, TSTART and TSTOP. IF INSTRNAM=ACIS also extract FEP_ID, CCD_ID, READMODE Note– Some of these KEYWORDS don't exist yet (see open issues).
- **FOR L0.5**:[extract the following from header: DETNAM, OBJECT, OBS_ID, OBI_NUM, DATAMODE, OBS_MODE, DATE_OBS DATE_END, NAXIS2. Note– Some of these KEYWORDS don't exist yet (see open issues).]?
- **FOR L1**: extract the following from header: DETNAM, GRATING, OBJECT, OBS_ID, SIM_X, SIM_Y,SIM_Z, OBI_NUM, DATAMODE, OBS_MODE, RA_NOM, DEC_NOM, ROLL_NOM, DATE_OBS DATE_END, NAXIS2. Note– Some of these KEYWORDS don't exist yet (see open issues).

1. **IF L0 ACIS Timed exposure - PATHWAY 1.**
   Extract from each row: TIME CCDX CCDY RAW_PHAS FLTGRADE(if available), GRADE (if available)
   - extract from header: FEPID, CCDID
   - Create ASC compliant fits files (1/CCDID) containing the extracted header information + extracted data. Name=ACIS_CCD_X_OBS_X_time_L0.fits

- Create a gif_1 (image) as follows:
  - use a 560x560 black array.
  - fill the central 512x512 grey.
  - frame the central 512 x512 in white (indicate 0-1024).
  - place the events in their representative locations using 2x2 binning.
  - Mark # of events as follows 0-10 = black, 11-100 = green, 101-1000 = yellow, > 1001= red.
  - Mark the color code on the side of the GIF.
  - Label the top with "ACIS Level 0",CCD_ID, FEP_ID and OBS_ID.
- Create a gif_2 (PHA histogram, 1 per node) as follows:
  - use a 512(v)x764(h) black array.
  - Plot the histogram of raw_phas(element 5) (range 0-4096) vs. number of occurrences.
  - Label the top with "ACIS Level 0 raw_phas", CCD_ID, FEP_ID, NODE_ID and OBS_ID.
  - node calculation can be done in ACIS_FORMAT_EVENTS, here is the call

```
DETAILED DESIGN

  o  computation of ccd node

     processing:

       IF {chipx position is out of valid range} THEN
          - error
       ELSE IF {chipy position is out of valid range} THEN
          -error
       ELSE IF {chipx is less than or equal to XMAXNODE1} THEN
          - node is 0
       ELSE IF {chipx is less than or equal to XMAXNODE2} THEN
          - node is 1
       ELSE IF {chipx is less than or equal to XMAXNODE3} THEN
```

```
           - node is 2
        ELSE IF {chipx is less than or equal to XMAXNODE4} THEN
           - node is 3
        ENDIF

  - I beleive the following is true:
   XMAXNODE1 = 255
   XMAXNODE2 = 511
   XMAXNODE3 = 767
   XMAXNODE4 = 1023 (from JHK 12/98)
```

- Create a gif_3 (event histogram) OBSOLETE
- If FLTGRADE col. exists, create a gif_4 (Grade histogram) as follows:
  - use a 512(v)x764(h) black array.
  - Plot the histogram of events at a given grade (range 0-255). vs. number of occurrences.
  - Label the top with "ACIS Level 0 flight grades", CCD_ID, FEP_ID and OBS_ID.
  - Label bottom "Flight Grades"

2. **IF L0 ACIS Continuous Clocking - PATHWAY 2** extract from each row: TIME CCDX, TROW, RAW_PHAS or PHA(if graded).
   - extract from header: FEPID, CCDID
   - Create a gif_1a (image) as follows:
     - use a 280x560 black array.
     - fill the central 256x512 grey.
     - frame the central 256 x512 in white (indicate 0-512,0-1024).
     - place the events in their representative locations using 2x2 binning.
     - Mark # of events as follows 0-10 = black, 11-100 = green, 101-1000 = yellow, > 1001= red.
     - Mark the color code on the side of the GIF.
     - Label the top with "ACIS Continuous clocking Level 0",CCD_ID, FEP_ID and OBS_ID.

- Create a gif_2a (PHA histogram) as follows:
  - use a 512(v)x764(h) black array.
  - Plot the histogram of raw_phas(element 5) (range 0-4096) or pha (if graded, range 0-12284) vs. number of occurrences.
  - Label the top with "ACIS Continuous Clocking Level 0 phas", CCD_ID, FEP_ID and OBS_ID.
- Create a gif_3b (event histogram) as follows: OBSOLETE

3. **IF L0 ACIS RAW mode data- PATHWAY 3** This is a simple 16 bit fits image 1Kx1K if TE mode 1Kx512 if CC mode. simply create a 256 grey scale gif 2x2 binned from the fits image file.

4. **IF L0 ACIS Histogram data - PATHWAY 4** this is a simple fits binary table of bin (0-4095) versus counts (in that bin). A GIF should be made of this data exactly like the PHA_hhistogram in GIF_2.

5. For both RAW and HISTOGRAM mode data – above the GIF display the following:

```
              ACIS RAW Monitoring

        INPUTFILENAME:ACIS_L0.fits(absolute link)

                   LEVEL:EVT0

DATAMODE  timed              Date_OBS  99/03/18T00:02:05
READMODE  raw                DATE_END  99/03/18T11:08:45

INSTRNAM   ACIS          OBS_ID 437(possible abs link)
CCD_ID  chip 7
FEP_ID
CHIP LABEL (from LUT)

 GRATING NONE

 gif
```

```
(LUT:
CCD0=I0, CCD1=I1, CCD2=I2, CCD3=I3, CCD4=S0, CCD5=S1
CCD7=S2, CCD8=S3, CCD9=S4, CCD10=S5)
```

6. As listed in the open items some keywords may not exist in any given file. In this case, populate the field with the code "N/A".

7. the "absolute link" refered to by the OBS_ID in the above and all similar tables will point to a static set of OBS_ID pages generated by MTA and available through the MTA web site.

8. **IF L1 ACIS Timed exposure - pathway 5:** extract from each row: TIME, ccd_id, chipx, chipy, detx, dety ,x, y, energy, grade(if available), fltgrade(if available)

   extract from head: All of the above, + Net_counts, Bkg_counts, net_rate, bkg_rate (if available)

   - FOR EACH CCD:
   - Create a gif_4 (image) as follows:
     - use a 560x560 black array.
     - fill the central 512x512 grey.
     - frame the central 512 x512 in white (indicate 0-1024).
     - place the events in their representative locations (chipx,chipy) using 2x2 binning. (Note: based on the ACIS L1 ICD V1.5, chipx chipy are given on a per CCD basis, the CCD_ID is given in the column two previous to "chipx".)
     - Mark # of events as follows 0-10 = black, 11-100 = green, 101-1000 = yellow, > 1001= red.
     - Mark the color code on the side of the GIF.
     - Label the top with "ACIS Level 1",CCD_ID, LABEL and OBS_ID.
   - Create a gif_5 (Energy histogram) as follows:
     - use a 512(v)x764(h) black array.
     - Plot the histogram of EV (range 0-10^6 - SEMI-log) vs. number of occurrences.

- Label the top with "ACIS Level 1 energy", CCD_ID CHIP LABEL and OBS_ID.

- Create a gif_6 (event histogram) as follows: OBSOLETE
- For whole detector:
- Create a gif_7 (det image) as follows:
  - use a 1120x1120 black array.
  - fill the central 1024x1024 grey.
  - frame the central 1024 x1024 in white to imply ACIS shape (indicate 0-8192).
  - place the events in their representative locations (detx,dety) using 8x8 binning.
  - Mark # of events as follows 0-10 = black, 11-100 = green, 101-1000 = yellow, $>$ 1001= red.
  - Mark the color code on the side of the GIF.
  - Label the top with "ACIS Level 1 no aspect" and OBS_ID.
- Create a gif_8 (X,Y image) as follows:
  - use a 1120x1120 black array.
  - fill the central 1024x1024 grey.
  - frame the central 1024 x1024 in white to imply ACIS shape (indicate 0-8192).
  - place the events in their representative locations (x,y) using 8x8 binning.
  - Mark # of events as follows 0-10 = black, 11-100 = green, 101-1000 = yellow, $>$ 1001= red.
  - Mark the color code on the side of the GIF.
  - Label the top with "ACIS Level 1 with aspect correction" and OBS_ID.
- Create a gif_8a(zoomed X,Y image) as follows:
  - divide the 8192x8192 region of X,Y space into 32, 256x256 regions.
  - identify the 4 regions with the most counts.
  - Create a GIF using a 560x560 black array.

- frame the central 512x512 in white.
- divide this region into 4 256x256 regions, indicate the pixel ordinates on the most appropriate axis/
- place the events in their representative locations (x,y) no binning
- Mark # of events as follows 1-10 = black, 11-100 = green, 101-1000 = yellow, > 1001= red.
- Mark the color code on the side of the GIF.
- Label the top with "ACIS Level 1 most active regions- aspect corrected" and OBS_ID.

These images should link to minimal fits events lists of the corresponding regions such that the scientist can "click" on the image and get a fits event list of the 256x256 region which can be displayed with SAOTNG/DS9 or IDL.

- create a gif_9 (PHA histogram) as follows:
  - use a 512(v)x764(h) black array.
  - Plot the histogram of PHA (range 0-4096) vs. number of occurrences.
  - Label the top with "ACIS Level 1 PHA" and OBS_ID.
- The ACIS dose listing. (DELETED)

9. **IF L0 HRC - Pathway 7** extract from each row: TIME CRSU CRSV RAW_PHA vetostat

   - extract from header: INSTRUME
   - Create ASC compliant fits files (1/INSTUME) containing the extracted header information + extracted data. Name=instrum_OBS_X_time_L0.fits
   - Create a gif_10 (Level 0 image) as follows:
     - if INSTRUME = HRC-I:
       - use a 840x280 black array.
       - fill the central 768x256 grey.
       - frame the central 256 x 256 in white (indicate 0-64 along the top and the right).

    * frame the central 768x256 in white (indicate 0-192,0-32 along the bottom).
    * place the events in their representative locations using 4 times magnification.
    * the idea is to crate both focal planes.
  - Mark # of events as follows 0-10 = black, 11-100 = blue, 101-1000 = green, 1001- 5000= yellow, > 5001= red.
  - Mark the color code on the side of the GIF.
  - Label the top with "HRC Level 0",DATE_OBS= (use TSTART if no DATE_OBS)
- Create a gif_11 (PHA histogram) as follows:
  - use a 512(v)x764(h) black array.
  - Plot the histogram of raw_phas (range 0-255) vs. number of occurrences.
  - Label the top with "HRC Level 0 raw_phas", DATE_OBS= (use TSTART if no DATE_OBS)
- Create a gif_12 (event histogram) as follows:
  - use a 512(v)x764(h) black array.
  - Plot the histogram of events at a given x,y pair = x+64*y vs. number of occurrences.
  - Label the top with "HRC Level 0 events", DATE_OBS= (use TSTART if not DATE_OBS)
  - Label bottom "Pixel number (= U+64*V)"

10. **IF L1 HRC - Pathway 8** extract from each row: TIME RAWX, RAWY, CHIPX, CHIPY, X,Y
    - extract from header: INSTRUME
    - Create ASC compliant fits files (1/INSTUME) containing the extracted header information + extracted data. Name=instrum_OBS_X_time_L0.fits
    - Create a gif_13 (RAW image) as follows:
      - if INSTRUME = HRC-I:
        * use a 560x560 black array.

        * fill the central 512x512 grey.
        * frame the central 512 x512 in white (indicate 0-16K).
        * place the events in their representative locations using 32x32 binning of RawX, RawY.
    - if INSTRUME = HRC-S:
        * use a 1120x280 black array.
        * fill the central 1024x256 grey.
        * frame the central 1024x256 in white (indicate 0-16K,0-4K).
        * place the events in their representative locations using 16x16 binning of RawX, RawY.
    - Mark # of events as follows 0-10 = black, 11-100 = blue, 101-1000 = green, 1001- 5000= yellow, > 5001= red.
    - ALERTS: if a single RAWX, RAWY pair exceeds 1000 (settable) counts then a Yellow violation has occurred. If a single RAWX, RAWY pair exceeds 5000 (settable) counts then a Yellow violation has occurred. The following error message should be sent to:
      HRC responsible scientist, Priority 3A, Error Code 337:
      ```
      The dose observed during obsid (OBSID) exceeded
      yellow/red limits of 1000/5000 at RawX RawY
      coordinate (rawx, rawy).  The Level 1 data are
      available at /ap/sdp/cache/hrc....  The MTA data
      may be viewed at http://...
      ```
    - Mark the color code on the side of the GIF.
    - Label the top with "HRC Level 1 No-Degap No-Aspect", INSRTUME and OBS_ID.

- For the for pixels with the most counts in any given L1 RAW image, Create a gif_13a(zoomed rawx,rawy image) as follows:
    - identify the 4 regions with the most counts.
    - Create a full scale image 256 pixels on a side, centered on the pixel.
    - Frame GIFs with rawx, rawy coordinates of the selected regions.

  - Mark # of events as follows 1-10 = black, 11-100 = blue, 101-1000 = green, 1001 - 5000= yellow, > 5001= red.
  - Mark the color code on the side of the GIF.
  - if two of the top four pixels are covered by the same zoom, do not repeat the region, instead show the fifth hottest region. (The way I would do this is to identify the hottest pixel, create the plot, Then eliminate the 256x256 region from the analaysis set and go back and identifiy the hottest remaining pixel etc.)

  These images should link to minimal fits events lists of the corresponding regions such that the scientist can “click” on the image and get a fits event list of the 256x256 region which can be displayed with SAOTNG/DS9 or IDL.

- Create a gif_14 (Chip image) as follows:
  - if INSTRUME = HRC-I:
    * use a 560x560 black array.
    * fill the central 512x512 grey.
    * frame the central 512 x512 in white (indicate 0-16K).
    * place the events in their representative locations using 32x 32 binning of CHIPX, CHIPY.
  - if INSTRUME = HRC-S:
    * use a 1120x280 black array.
    * fill the central 1024x256 grey.
    * frame the central 1024x256 in white (indicate 0-16K,0-4K).
    * place the events in their representative locations using 16x16 binning of CHIPX, CHIPY.
  - Mark # of events as follows 0-10 = black, 11-100 = blue, 101-1000 = green, 1001- 5000= yellow, > 5001= red.
  - Mark the color code on the side of the GIF.
  - Label the top with “HRC Level 1 Degap No-Aspect”, INSRTUME and OBS_ID.
- Create a gif_14a(zoomed chipx, chipy image) as follows:
  - identify the 4 regions with the most counts.

  - Create a full scale image 256 pixels on a side, centered on the pixel.
  - Frame GIFs with rawx, rawy coordinates of the selected regions.
  - Mark # of events as follows 1-10 = black, 11-100 = blue, 101-1000 = green, 1001 - 5000= yellow, > 5001= red.
  - Mark the color code on the side of the GIF.
  - if two of the top four pixels are covered by the same zoom, do not repeat the region, instead show the fifth hottest region (as in the previous).

  These images should link to minimal fits events lists of the corresponding regions such that the scientist can "click" on the image and get a fits event list of the 256x256 region which can be displayed with SAOTNG/DS9 or IDL.

- Create a gif_15 (Sky image) as follows:
  - if INSTRUME = HRC-I:
    - use a 560x560 black array.
    - fill the central 512x512 grey.
    - frame the central 512 x512 in white (indicate 0-32K).
    - place the events in their representative locations using 64x 64 binning of X, Y.
  - if INSTRUME = HRC-S:
    - use a 560x560 black array.
    - fill the central 512x512 grey.
    - frame the central 512 x512 in white (indicate 0-64K).
    - place the events in their representative locations using 128x128 binning of X, Y.
  - Mark # of events as follows 0-10 = black, 11-100 = blue, 101-1000 = green, 1001- 5000= yellow, > 5001= red.
  - Mark the color code on the side of the GIF.
  - Label the top with "HRC Level 1 With Degap Aspect Corrections", INSRTUME and OBS_ID.
- Create a gif_15a(zoomed x, y image) as follows:

- identify the 4 regions with the most counts.
- Create a full scale image 256 pixels on a side, centered on the pixel.
- Frame GIFs with rawx, rawy coordinates of the selected regions.
- Mark # of events as follows 1-10 = black, 11-100 = blue, 101-1000 = green, 1001 - 5000= yellow, > 5001= red.
- Mark the color code on the side of the GIF.
- if two of the top four pixels are covered by the same zoom, do not repeat the region, instead show the fifth hottest region.

These images should link to minimal fits events lists of the corresponding regions such that the scientist can "click" on the image and get a fits event list of the 256x256 region which can be displayed with SAOTNG/DS9 or IDL.

- : Create a gif_16 (PHA histogram) as follows:
  - use a 512(v)x764(h) black array.
  - Plot the histogram of raw_phas (range 0-255) vs. number of occurrences.
  - Label the top with "HRC Level 1 pha", INSTRUME, OBS_ID.

11. Creation of HTML pages

- There should be a master photon monitoring page. Similar to the MTA days page. This would list all OBS_ID which have made it through L0. It would list the date of the creation of the HTML file. Clicking on the OBS_ID would link to the "primary page" for that observation.
- The current layout of the primary page is good. Except that HRC and ACIS will need separate, not shared, primary pages.
- along the left mark another unlinked column "chip code" Label I0-3, S0-5
- the first column should be called dose and link to the dose html pages (see below).

- Det coords and x,y coords are not CCD specific and should only have one link in those columns
- coordinate headings should be: CCD,chip,det,xy.

```
                   M&TA Event Monitoring Reports
(Jim I don't care if this goes vertically or horizontally, I think
vertical makes the most sense now)
ACIS                        HRC              Gratings        ACA
L0         L1          L0          L0.5 L1    L1    L1.5       L1
TSTART8   OBSID 8    TSTART9      OBSID9  OBSID9   OBSID8   OBSID9
TSTART5   OBSID 5    TSTART7      OBSID7  OBSID8   OBSID7   OBSID8
TSTART2   OBSID 2    TSTART4      OBSID4  OBSID7   OBSID6   OBSID7
TSTART1   OBSID 1    TSTART3      OBSID3  OBSID6   OBSID5   OBSID6
...        ...        ....          ....    ....   ....      ....


-----------------------------------------------------------------------
                   M&TA Event Monitoring Reports
                            ACIS Level 0
                        TSTART   8472472949834


             GRATING  none (?)
             OBS_MODE pointing          TSTOP    8472472952321
             DATAMODE  faint            Date_OBS  99/03/18T00:02:05
             READMODE  timed            DATE_END  99/03/18T11:08:45



                            Chip    Level 0
                            code    CCD coords
                           --------------------
                             S0      CCD0
                             S1      CCD1
                             ...     ...
                             I3      CCD9
                           --------------------
```

```
-----------------------------------------------------------------------

                            HRC  Level 0
                          TSTART    8472472949834

             OBS_MODE pointing          TSTOP    8472472952321
             DATAMODE  faint            Date_OBS  99/03/18T00:02:05
                                        DATE_END  99/03/18T11:08:45

                             COARSE DATA (link)

-----------------------------------------------------------------------
                      M&TA Event Monitoring Reports
                               ACIS Level 1
                          for OBS ID XXXX


DETNAM   ACIS-I         OBS_ID 437(possible abs link) OBJECT   PKS0312-770
                     (possible abs link)

GRATING  none           SIM_X   -0.1           RA_NOM   03:12:00(require conversion)
                        SIM_Y    0.0           DEC_NOM  -77:00
OBS_MODE pointing       SIM_Z  216.2           ROLL_NOM  0.0
DATAMODE  faint                                Date_OBS  99/03/18T00:02:05
READMODE  timed                                DATE_END  99/03/18T11:08:45
                  NET_COUNTS 28924(total)
                        NET_RATE   12.23(total)
                        BKG_RATE   23.14(total)


Chip            Level 1         Level 1         Level 1
code          Chip coords     DET Coords      sky coords
-------------------------------------------------------------
S0              CCD0            DETECTOR        X,Y
S1              CCD1
...             ...
I3              CCD9
```

```
---------------------------------------------------------------------

                              HRC
                        for OBS ID XXXX

DETNAM   HRC-I         OBS_ID 437(possible abs link) OBJECT   PKS0312-770
                     (possible abs link)

GRATING  none           SIM_X   -0.1         RA_NOM   03:12:00(require conversion)
                        SIM_Y    0.0         DEC_NOM  -77:00
OBS_MODE pointing       SIM_Z  216.2         ROLL_NOM  0.0

Date_OBS  99/03/18T00:02:05                  DATE_END  99/03/18T11:08:45
                  NET_COUNTS 28924(total)
                        NET_RATE   12.23(total)
                        BKG_RATE   23.14(total)


Level 0.5       Level 1           Level 1       Level 1
UV coords       Raw coords     ``Chip'' Coords  sky coords
COARSE          Amplified       DEGAPPED        ASPECT
-----------------------------------------------------------
HRC - I         HRC - I         HRC - I         HRC - I
HRC - S         HRC - S0        HRC - S         HRC - S
                HRC - S1
                HRC - S2
```

- Layout of the current L1 page "http://hea-www.harvard.edu/asc/XRCF/mta/art/40000/ACIS/events/acis_L1_7_chip.html" is appropriate for level Zero. But the table at the top should be more square 6 across not 2 across e.g.:

```
ACIS Event Monitoring

        INPUTFILENAME:ACIS_L0.fits(absolute link)
        MTAFILENAME:(from above)  (absolute link)

LEVEL:EVT0

DETNAM   ACIS           OBS_ID 437(possible abs link) OBJECT   PKS0312-770
CCD_ID  chip 7 (possible abs link)
FEP_ID  (only in Level 0)
CHIP LABEL (from LUT below)

GRATING  none           SIM_X   -0.1           RA_NOM   03:12:00(require conversion)
                        SIM_Y    0.0           DEC_NOM  -77:00
OBS_MODE pointing       SIM_Z  216.2           ROLL_NOM  0.0
DATAMODE  faint                                Date_OBS  99/03/18T00:02:05
READMODE  timed         NET_COUNTS 33432       DATE_END  99/03/18T11:08:45
                  BKG_COUNTS 28924(L1 only)
                        NET_RATE   12.23(L1 only)
                        BKG_RATE   23.14(L1 only)

                 acis_L0_7_chip_map_2.gif (relative link)
                 acis_L0_7_chip_pha_node0.gif (relative link...)
                 acis_L0_7_chip_pha_node1.gif (by node ...)
                 acis_L0_7_chip_pha_node2.gif (For Level 0 only)
                 acis_L0_7_chip_pha_node3.gif (      ``     )

----------------------------------------------------------------
(LUT:
CCD0=I0, CCD1=I1, CCD2=I2, CCD3=I3, CCD4=S0, CCD5=S1
CCD7=S2, CCD8=S3, CCD9=S4, CCD10=S5)
```

12. The HRC HTML pages:

- For each image determine all locations with dose over 10000 (setable parameter) and print a table of the crsu,crsv and number of occurrences

- Label the top with 'INSTRUME "Level 0 EVENTS" and OBS_ID.
- list CRSU, CRSV, Number of occurrences in tabular format
- individual monitoring HTML pages (level 0 and 1) for HRC shall follow this template:

```
HRC Event Monitoring

        INPUTFILENAME:HRC_L0.fits(absolute link)
        MTAFILENAME:(from above)  (absolute link)

LEVEL:EVT0

DETNAM   HRC-I          OBS_ID 437(possible abs link) OBJECT   PKS0312-770
(possible abs link)
GRATING  none
DATAMODE observing
OBS_MODE pointing
                                                 Date_OBS  99/03/18T00:02:05
                        NET_COUNTS 33432        DATE_END  99/03/18T11:08:45


                 hrc_L0_plate_map_2.gif (relative link)
                 hrc_L0_plate_hist_2.gif(relative link)
                 hrc_L0_plate_pha_2.gif (relative link)

------------------------------------------------------------------

HRC I Level 0 Dose

                #   U       V   Count (Note for L1 this would
                                       be raw X raw Y)
                1   32      23  3231
                2   42      23  2231
```

3	27	23	1231
4	27	43	1131
5	27	22	1031
6	52	23	931
7	12	23	831
8	42	23	531
9	32	13	431
10	32	12	231

- The HRC dose pages.
  - For HRC-I and HRC-S
  - Determine all RAW positions with dose over 1000 and print a table of the rawx,rawy and number of occurrences
  - Label the top with "HRC Level X Dose"
  - list RawX, RawY Number of occurrences in tabular format

Release: 4

Group: SCIOPS

Analysis Domain: Spatial

DS Tool Class: 2

DS Tool Category: Monitoring

Spec Name: photon_mon.tex

Spec Category: New

Code Type: ASCDS

Code Source: New

This Revison: 0.9 - by SJW

Change control: 0.6 to 0.7 Added alert condition to Pathway 8

Change control: 0.7 to 0.8 Modified color scheme and added fits event list requirement to zoomed images.

Change control: 0.8 to 0.9 Massive re-writes to L0 HRC and HTML sections to accomadate ICD changes.

Last Edit: May 14, 1999