

PDS-SBN Data Review

Deep Impact HRIV data

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HRIV Cruise:

- Indications are there should be an “earth.cat” file in the catalog/ directory... but there is not
- dataset.html file points to “stim_lamp.cat” but file is actually “stimlamp.cat” (no underscore)
- Images
 - Max/min values don't agree with those in the headers. Example:
 - hv0166005125_2000005_001.fit

DATAMIN = 361.000000000 / [DN] Minimum pixel in image array

DATAMAX = 1259.000000000 / [DN] Maximum pixel value in in image array

MEDPVAL = 373.000 / [DN] Median pixel value in image array

Actually(according to both IDL and ds9)

DATAMIN = 0

DATAMAX = 16383

- index.tab file:
 - The min/max pixel values match those in the header but not those that I recorded with ds9 and IDL.
 - The values in the “median pixel value” column are identical to those in the “maximum pixel value” column.

HRIV Encounter – Raw:

- dataset.html links to a “47 TUC” file, which does not exist.
- Typo in dataset.cat:
 - “A 2-dimensional CCD images in this data set are...” >> “All...” ?
- Typo(s) in index/index.lbl
 - In “INDEX_TABLE” description, “This index table contain parameters...”
 - In “PRISMS_TEMP” description “...parameter provides provides the temperature...”
- Images
 - Max/min values don't agree with those in the headers. Example:
 - hv0171548425_6600002_001.fit
 - header says max/min = 6985/342

- idl/ds9 say max/min = 16128/0
- index.tab file:
 - The min/max pixel values match those in the header but not those that I recorded with ds9 and IDL.
 - The values in the “median pixel value” column are identical to those in the “maximum pixel value” column.

HRIV Encounter – Reduced:

- Images
 - Images are difficult to read. Pixels at/near the edge of the images have extreme values (-3e9, in one example) which mean that it is not possible to apply a suitable scale to the entire image. I had to read the images into IDL and chop off the first/last/top/bottom ~8 pixels. Then the image was fine.
 - Also, image headers do not accurately reflect the max/min pixel values in the image array.
 - Examples:
 - hv0172545232_6002030_001_rr.fit
Header states:
DATAMIN = -3.69349E-05 / Minimum pixel in image array
DATAMAX = 0.00144768 / Maximum pixel in image array
MEDPVAL = 1.35316E-05 / Median pixel in image array
whereas actually (via both ds9 and IDL):
DATAMAX = 406.000
MEDPVAL = 1.38296e-05 (due to increase datamax value)
 - hv0173728377_9001005_001_rr.fit
Header states:
DATAMIN = 0.146601 / Minimum pixel in image array
DATAMAX = 4.26632 / Maximum pixel in image array
MEDPVAL = 1.35751 / Median pixel in image array

Actually:
DATAMIN = ~-1.1e10
DATAMAX = 714.735
- index.tab file:
 - The min/max pixel values match those in the header but not those that I recorded with ds9 and IDL.
 - The values in the “median pixel value” column are identical to those in the “maximum pixel value” column.

- Is this accounted for in the “despike” pixel processing??

Additional Notes:

- I encountered problems when trying to read Deep Impact label (.lbl) files with the “pdsread” IDL software. A variety of errors were encountered. A list of these can be obtained upon request.