I. Deep Impact HRI-IR data review

Deep Impact 9P/Tempel 1 Cruise – Raw HRII Spectral calibration data

Data by date
2005-015 – Instrument checkout
9 fits files and label files (dark frames)
range as indicated by dataset.cat (1010100 – 1010107)

2005-016 – Moon/Earth Science Cal
185 fits files and label files

There is horizontal striping throughout the 1024 x 512 dark images e.g.
hi0159176274_1100003_002.fit.

There is horizontal striping throughout the 512 x 64 dark images starting at about
hi0159176535_1100014_001.fit.

There is horizontal striping throughout the 512 x 256 dark images (These become
prominent as integration times are increased)

Moon/Earth files look OK

range as indicated by dataset.cat (1100000 – 1100049)

2005-030 – Lunar Science Cal
942 fits files and label files

range as indicated by dataset.cat (1500000 - 1500019)

2005-035 – Lunar Science Cal
790 fits files and label files
range as indicated by dataset.cat (1500000 - 1500019)

2005-083 – Encounter Validation Test
2 fits files and label files
range as indicated by dataset.cat (9000056 - 9000064)

2005-095 – April Science Cal

400 fits files and label files

range as indicated by dataset.cat (2000000 - 2010001)

2005-096 – April Science Cal

310 fits files and label files

range as indicated by dataset.cat (2020000 - 2030001)

2005-097 – April Science Cal

200 fits files and label files

range as indicated by dataset.cat (2040000 - 2040003)

2005-098 – April Science Cal

200 fits files and label files

range as indicated by dataset.cat (2060000 - 2070001)

2005-117 – IR Stray Light Test

733 fits files and label files

range as indicated by dataset.cat (1800000 - 1800005)

Deep Impact 9P/Tempel 1 Cruise – Raw HRII Spectral calibration data

2005-121 – Daily Comet Imaging (off target)

32 fits files and label files

range as indicated by dataset.cat (5000100 - 5000100)

2005-127 – Daily Comet Imaging (off target)

64 fits files and label files

range as indicated by dataset.cat (5000700 - 5000701)

2005-128 – Daily Comet Imaging (off target)

96 fits files and label files

range as indicated by dataset.cat (5000800 - 5000803)

2005-130 – May Science Cal

149 fits files and label files

range as indicated by dataset.cat (5100000 - 5300000)

2005-131 – May Science Cal

300 fits files and label files

range as indicated by dataset.cat (5400000 - 5600000)

2005-132 – ? – *This is not listed in dataset.cat*

260 fits files and label files

range (5700000 - 5800059)

horizontal stripes more prominent on the left side of the array (e.g. hi0169204568_5800056_002.jpg)

2005-135 – ? – *This is not listed in dataset.cat*

160 fits files and label files

range (5001500 - 5001504)

2005-136 – Daily Comet Imaging (off target)

189 fits files and label files

range different from dataset.cat actual = (5001600 - 5001605); dataset.cat = (5001500 - 5001504).

2 potentially corrupted files:

hi0169477629_5001600_018.jpg

hi0169506461_5001602_029.jpg

2005-137 – Daily Comet Imaging (off target)

192 fits files and label files

range different from dataset.cat actual = (5001700 - 5001705); dataset.cat = (5001600 - 5001605).

2005-138 – Daily Comet Imaging (off target)

96 fits files and label files

range different from dataset.cat actual = (5001800 - 5001805); dataset.cat = (5001700 - 5001705).

2005-139 – Daily Comet Imaging (off target)

192 fits files and label files

range different from dataset.cat actual = (5001900 - 5001905); dataset.cat =

(5001800 - 5001805).

LISTED IN dataset.cat, but not included in the dataset: 2005-140 and 2005-144.

2005-145 – Daily Comet Imaging (off target)
192 fits files and label files
range different from dataset.cat actual = (5002500 - 5002505); dataset.cat = (5002600 - 5002604).

2005-146 – Daily Comet Imaging (off target)
160 fits files and label files
range different from dataset.cat actual = (5002600 - 5002604); dataset.cat = (5002700 - 5002704).

2005-147 – Daily Comet Imaging (off target)
160 fits files and label files
range different from dataset.cat actual = (5002700 - 5002704); dataset.cat = (5002800 - 5002805).

2005-148 – IR LUT Upload Test
261 fits files and label files
range different from dataset.cat actual = (5002800 - 5002805); dataset.cat = (5910000 - 5910036).

Corrupted?? hi0170557713_5002803_026.jpg

2005-149 – Daily Comet Imaging (off target)
160 fits files and label files
range as indicated by dataset.cat (5002800 - 5002805).

2005-150 – Daily Comet Imaging (off target)
192 fits files and label files
range as indicated by dataset.cat (5003000 - 5003005).

2005-151 – Daily Comet Imaging (off target)
64 fits files and label files

range as indicated by dataset.cat (5003100 - 5003101).

2005-154 – Daily Comet Imaging (off target)

192 fits files and label files

range as indicated by dataset.cat (6000300 - 6000305).

2005-155 – Daily Comet Imaging (off target)

192 fits files and label files

range as indicated by dataset.cat (6000400 - 6000405).

Corrupted?? hi0171191190_6000405_002.jpg

2005-156 – Daily Comet Imaging (off target)

64 fits files and label files

range as indicated by dataset.cat (6000500 - 6000501).

2005-158 – June Science Cal

150 fits files and label files

range as indicated by dataset.cat (6100000 - 6300000).

2005-159 – June Science Cal

250 fits files and label files

range as indicated by dataset.cat (6400000 - 6500000).

2005-161 – June Science Cal

342 fits files and label files

range as indicated by dataset.cat (6700000 - 6001002).

2005-162 – Daily Comet Imaging (off target)

128 fits files and label files

range as indicated by dataset.cat (6001100 - 6001103).

2005-163 – Daily Comet Imaging (off target)

64 fits files and label files

range as indicated by dataset.cat (6001200 - 6001201).

2005-164 – Daily Comet Imaging (off target)

160 fits files and label files

range as indicated by dataset.cat (6001300 - 6001304).

2005-165 – Daily Comet Imaging (off target) & Pre-Impact Science Mini-Cal Test

268 fits files and label files

range as indicated by dataset.cat (6001400 - 6001403) & (8700000-8800000).

2005-166 – Daily Comet Imaging (off target)

192 fits files and label files

range as indicated by dataset.cat (6001500 - 6001505).

2005-167 – Daily Comet Imaging (off target) & IR LUT upload test

203 fits files and label files

range as indicated by dataset.cat (6001600 - 6001602) & (5910000-5910036).

2005-168 – Daily Comet Imaging (off target)

160 fits files and label files

range as indicated by dataset.cat (6001700 - 6001704).

2005-169 – Daily Comet Imaging (off target)

128 fits files and label files

range different from dataset.cat actual = (6001800 - 6001803); dataset.cat = (6001800 - 6001805).

2005-170 – Daily Comet Imaging (off target)

192 fits files and label files

range as indicated by dataset.cat (6001900 - 6001905).

2005-171 – Daily Comet Imaging

192 fits files and label files

range as indicated by dataset.cat (6002000 - 6002005).

2005-172 – Daily Comet Imaging

192 fits files and label files

range as indicated by dataset.cat (6002100 - 6002105)

2005-173 – Daily Comet Imaging

192 fits files and label files

range as indicated by dataset.cat (6002200 - 6002205)

2005-174 – Daily Comet Imaging

192 fits files and label files

range as indicated by dataset.cat (6002300 - 6002305)

2005-175 – Daily Comet Imaging

192 fits files and label files

range as indicated by dataset.cat (6002400 - 6002405)

2005-176 – Daily Comet Imaging

160 fits files and label files

range as indicated by dataset.cat (6002500 - 6002504)

2005-177 – Daily Comet Imaging

128 fits files and label files

range as indicated by dataset.cat (6002600 - 6002603)

2005-178 – Continuous Comet Imaging

160 fits files and label files

range different from dataset.cat actual = (8000000 - 8000004); dataset.cat = (8000000 - 8000005).

2005-179 – Continuous Comet Imaging

192 fits files and label files

range as indicated by dataset.cat (8000005 - 8100004)

2005-180 – Continuous Comet Imaging

192 fits files and label files

range as indicated by dataset.cat (8100005 - 8300000)

2005-181 – Continuous Comet Imaging

192 fits files and label files

range as indicated by dataset.cat (8400000 - 8400005)

2005-182 – Continuous Comet Imaging

342 fits files and label files

range as indicated by dataset.cat (8400006 - 8500009)

2005-183 – Continuous Comet Imaging & Pre-Impact Science Mini-Cal & Continuous Comet Imaging

515 fits files and label files

range as indicated by dataset.cat (8500009 - 8600003) & (8700000-8700005) & (8800000-8800003)

2005-184 – Continuous Comet Imaging & Pre-Impact Dark Cal & Continuous Comet Imaging

617 fits files and label files

range as indicated by dataset.cat (9000000 - 9000007) & (9000008-9000017) & (9000018-9000021)

Problems (striping) with multiple images

2005-185 – Continuous Comet Imaging & Impact Imaging & Lookback Imaging

1104 fits files and label files

range as indicated by dataset.cat (9000022 - 9000039) & (9000040-9000068) & (9010000-9070002)

2005-186 – Lookback Imaging

48 fits files and label files

range as indicated by dataset.cat (9080000 - 9110002)

2005-187 – Lookback Imaging

48 fits files and label files

range as indicated by dataset.cat (9120000 – 9150002)

2005-188 – Lookback Imaging

100 fits files and label files

range as indicated by dataset.cat (7200000 – 7200001)

2005-189 – Lookback Imaging

211 fits files and label files

range as indicated by dataset.cat (7200002 – 7200048)

2005-190 – Lookback Imaging

290 fits files and label files

range as indicated by dataset.cat (7300000 – 7400005)

Deep Impact 9P/Tempel 1 Cruise – Processed HRII Spectral calibration data

2005-171 – Daily Comet Imaging

32 fits files and label files (less than the raw images)

range indicated by dataset.cat (6002000 - 6002005) is not the same as actual (6002005).

2005-172 – Daily Comet Imaging

192 fits files and label files

range as indicated by dataset.cat (6002100 - 6002105)

2005-173 – Daily Comet Imaging

192 fits files and label files

range as indicated by dataset.cat (6002200 - 6002205)

2005-174 – Daily Comet Imaging

192 fits files and label files

range as indicated by dataset.cat (6002300 - 6002305)

2005-175 – Daily Comet Imaging

192 fits files and label files

range as indicated by dataset.cat (6002400 - 6002405)

2005-176 – Daily Comet Imaging

160 fits files and label files

range as indicated by dataset.cat (6002500 - 6002504)

2005-177 – Daily Comet Imaging

128 fits files and label files

range as indicated by dataset.cat (6002600 - 6002603)

2005-178 – Continuous Comet Imaging

160 fits files and label files

range different from dataset.cat actual = (8000000 - 8000004); dataset.cat = (8000000 - 8000005).

2005-179 – Continuous Comet Imaging

192 fits files and label files

range as indicated by dataset.cat (8000005 - 8100004)

2005-180 – Continuous Comet Imaging

192 fits files and label files

range as indicated by dataset.cat (8100005 - 8300000)

2005-181 – Continuous Comet Imaging

192 fits files and label files

range as indicated by dataset.cat (8400000 - 8400005)

2005-182 – Continuous Comet Imaging

342 fits files and label files

range as indicated by dataset.cat (8400006 - 8500009)

2005-183 – Continuous Comet Imaging

424 fits files and label files (same as raw except for cal files)

range as indicated by dataset.cat (8500009 - 8600003) & (8800000-8800003)

2005-184 – Continuous Comet Imaging

581 fits files and label files (same as raw except for cal files)

range as indicated by dataset.cat (9000000 - 9000007) & (9000018-9000021)

Problems (striping) with multiple images

2005-185 – Continuous Comet Imaging & Impact Imaging & Lookback Imaging

1104 fits files and label files

range as indicated by dataset.cat (9000022 - 9000039) & (9000040-9000068) & (9010000-9070002)

2005-186 – Lookback Imaging

48 fits files and label files

range as indicated by dataset.cat (9080000 - 9110002)

2005-187 – Lookback Imaging

48 fits files and label files

range as indicated by dataset.cat (9120000 – 9150002)

Was not able to directly access data from 2005-184, and 2005-185 (permission denied). OK this was fixed, I see that dates were broken up into parts to make data volume smaller.

Support frames:

Bitmaps all zeros

Gain maps all 1's

Flats all 1's.

Darks:1) Would be helpful if dark integration times were in the headers. 2) Counts in some dark frames much higher than in associated data frames.

Completeness

Raw HRII Spectral calibration data:

2005_132, and 2002_135 are included in the data folders but not in dataset.cat file.

Also 2 dates are listed in dataset.cat that are not in the raw dataset: 2005_140 and 2005_144.

In several cases the range of files in folders does not agree with dataset.cat all raw data unless noted:

2005_136, 137, 138, 139, 145, 146, 147, 148, 169, and 178 (raw and processed).

Intelligibility

General for all DI data

Data index table (index.tab) is difficult to follow since there is a lot of information in it

(112 data columns and 264 pages of text). It is not an easy file to work with or print. If all this information is necessary, then some intelligibility should be sacrificed for completeness.

Was hard to find associated pointing information (where was the comet in the slit) especially for files where the spectrum is not obvious (most days except for impact day).

Spectrum shifted in rows between short and long wavelength region of the array. Why?

Associated pointing information is needed (where is the comet relative to the slit in these spectra?)

Interpretability

Flats appear to be synthetic only (all 1's) and not "real" flats. The reason for this should be documented somewhere.

Also bias maps are all zeros and gain maps are all 1's.

Dark frames are all labeled and can be easily matched to corresponding data, however dark integration times should be given in the headers. Also in some cases counts in dark frames are several times higher than in associated data frames. Dark frames not well matched to the data.

Several frames appear to be corrupted (noted above). Files that are clearly compromised should be noted.

Archival Quality