DI/EPOXI Data Review, 20 March 2014

Attending:

Sislvia Protopapa

Tony Farnham

Mike Kelley (UMD)

Mike Sitko

Lucas Paganini

Jianyang Li

Brian Carcich

Tilden Barnes

Yan Fernandez

Anne Raugh

Ludmilla Kolokolova

Mike A’Hearn

Richard Chen

General Liens

* Richard Chen has submitted comments separately.
* In the dataset.cat file description, please add full citations to the Calibration papers (i.e., as footnotes in the text – in addition to the REFERENCE objects that also exist).
* In the documents, epoxy\_sis.pdf pages 47-9 the figures are misaligned with the text. This needs to be corrected in every copy of the document in all data sets.
* In the document directories, there are summary files with names like “hriv\_3\_4\_epoxi\_garrad.pdf”. In at least some of these labels, the Julian Date field is described as being in the form “YYYYMMDD”. This needs to be fixed.
* The BODY\_POSITIVE\_POLE\_CLOCK\_ANGLE or whatever it’s called, is stated to an unrealistic degree of precisicion for comets Garradd and ISON. It should certainly not be stated in these data to more accuracy than integer degrees. But in the document directory the table that lists geometry gives the same clock angle for this value as for the celestial north clock angle. If the value is not applicable, or otherwise unknown/unknowable, then the appropriate constant needs to be defined and used.
* There needs to be a reference to the source of the pole definition for Garradd and ISON in some appropriate place. [Note that the SPICE kernels likely involved have not been reviewed.]
* There is a known issue with a solar flare that significantly affects data on a particular date. This should be noted in the data set descriptions for all affected data sets.

DIF HRIV Garradd Raw & Calibrated

Kudos on epoxy\_cal\_pipeline\_summ.pdf file.

* There is a mention of “transfer smear”, but no indication of how to deal with it in the raw data. This information is in the Klaasen papers, but if possible there should be a cross-reference to this information where “transfer smear” is mention in this summary document. Alternately, reference those papers for “more details” at the top of the document.
* In places that describe the file naming convention, there needs to be a clear indication of which time (beginning, middle, end) is used for creating the file name.
* In calib/drkmodel/hrivis\_020601\_2\_3.lbl:
  + The “Eg” equation in the code sample has a different exponent than in the equation above. 10^-4 is correct.
  + The descriptive paragraph says the code fragment calculates DN/s, but in fact the unit of the actual result is DN.
  + The pixel size is stated as being in mm, but the code would require microns to produce reasonable results.
* In calib/xtalk/hrivis\_071004\_3\_3.lbl
  + Last line in the NOTE field is missing an adjective (“Note: a ROTATE is always performed [?] a SHIFT.”)
  + Consider removing the derivation in the NOTE field to a separate document and just referencing it, and noting in the label that the cross-talk is not generally relevant/significant (if that is, indeed, the case).
* In the PSF file, the image looks like it is off by one line (possibly to center it?). This should be explained if it’s real, and corrected if not.
* In the reduced data products SNR\_IMAGE extensions, the SNR values appear to be quantized. Is this reasonable?

Result: Certified

DIF MRI Garradd & ISON

Jianyang’s presentations contain several lists of typos and minor errors that should be taken as liens unless otherwise noted below. Many, if not all, of these will be applicable to both HRI and MRI data sets.

* On the “Documents” slide, the final bullet: This table has the identical format in all data sets, so the preferred solution, if possible, is to add a note to the label as to why there are constant or N/A columns, rather than trying to remove them selectively for each data set.
* In the ISON data, file mri\_2\_epoxi\_ison.lbl, the body pole is not known, so the appropriate constants indicating the value is unknown should be used in the label and table columns.

Result: Certified.

DI Tempel 1 ITS Images

* In its\_encounter\_data\_summary.pdf, there doesn’t seem to be a good correspondence between frames flagged in this file as problematic, and what was included or omitted from the data set. This list should be reconciled with what’s in the present data set, and an indication of what was left out here that was included in previous versions should be added if possible.
* In the images right before impact, where the size switches to 64x64, investigate/validate the signal-to-noise values. This is in reponse to Yan F.’s question about SNR value fluctuations in these images verses earlier images.
* Jianyang’s presentation contains lists of minor problems and typos that should be taken as liens unless otherwise noted.
* Tilden has a laundry list of typos that need addressing as well.

Result: Certified.

DI Tempel 1 HRIV Images

* 3 of the 9 PSFs show the same shift seen elsewhere. Explain/fix as needed.
* In the calib/abscalvs labels, the table description needs to take into account dividing by exposure time, and do so in a manner that avoids confusing users reading the table and column descriptions.
* In calib/drkmodel, the same comments made for the HRIV Garradd data apply here as well.
* Some images seem to show the same SNR/Image issues around impact time as the ITS 64x64 data do. Yan will provide a specific problematic image for investigation.
* Need a high-level pointer to the observation log in hriv\_encounter\_data\_summary.pdf, to help new users find data of good quality.
* Tilden has typos and minor compliance errors. Also, the reference.cat included does not appear to be the most recent version of that file.
* There is an east flip problem in the dataset.cat description, as for the MRI data (below).

Result: Certified.

DI Tempel 1 MRI Calibrated V3.0

Jianyang’s presentation contains a list of problems and issues that should be taken as liens unless otherwise indicated below:

* Note the east flip problem is in the dataset.cat description. The HRIV dataset description will require the same correction.
* Note that target catalog files are not required for TARGET\_NAME values already appearing in the PDS3 data dictionary.
* Check that the metric for applying destriping is plainly stated in the calibration documentation.
* Tilden has a list of minor typos and compliance issues that should be taken as liens. There is an issue in this list with one file with an anomalous value for EPOXI:COMPRESSED\_IMAGE\_VALUE. Brian C. and Stephanie McL. will figure out a reasonable solution to this problem.

Result: Certified.

EPOXI HRII Garradd Raw & Calibrated

* If possible, please add some sort of browse facility to help users locate data of interest more efficiently.
* Neil DR’s presentation includes one specific file that shows an odd cut-off strip along one edge that needs investigating and possibly additional explanation.
* Mike Sitko’s presentation notes a description of the scanning process that is confusing. This should be reworded in both data set descriptions to avoid the confusion.
* There are more files in the calibrated data affected by the “missing strip” of data from the raw data set. This needs to be noted or explained in some reasonable way for users who discover it in the data, if it isn’t already.
* Please add an equivalent file to the observing log found in other data sets listing comet centroids, image quality, anomalies, and so on.
* The calib/abscalir directory files with the “000” and “999” filename discriminators are adequately documented in the ‘calinfo.txt’ file – no change needed. (Mentioned in Mike Sitko’s presentation.)

Result: Certified.

EPOXI HRII ISON Raw & Calibrated

* Create an index table, similar to the observing logs mentioned for other data sets, for centroids and any anomalies.

Result: Certified.

DI HRII Tempel 1 (V3.0)

* Calib/sunspec is not listed in the calinfo.txt file, and should be.
* Tilden has a list of typos and compliance issues to be submitted separately.
* Please note in the dataset.cat Confidence Level Note that transient anomalous pixels may be present in the data.

Result: Certified.

EPOXI HRII Hartley 2 Calibrated (V3.0)

* Please note in the dataset.cat Confidence Level Note that transient anomalous pixels may be present in the data.

Result: Certified.