

New Horizons KEM 1 Review

28 May 2020, via Zoom through the University of Maryland, Small Bodies Node

Attendees-

Anne Raugh (SBN)
Ludmilla Kolokolova (SBN)
Gerbsb Bauer (SBN)
Tilden Barnes (SBN)
Rudy Frahm (Reviewer)
Ben Hirsch (SBN)
Elizabeth Warner (SBN)
John Noonan (Reviewer)
Tony Farnham (Reviewer)
Xiaoduan Zou (Reviewer)
Frank Centinello (Reviewer by phone)
Adam McKay (Reviewer)
Addie Dove (Reviewer)
Howard Taylor
Brian Keeney
Brian Enke
Jillian Redfern

[Note that it is expected that instrument team members will join and leave during parts of the discussion. These will not be tracked in the minutes. The above were present when the meeting started. -AR]

Meeting started at 11:00am EST

Began with logistics and welcome. Note that each instrument is presenting both raw and calibrated datasets for the KEM 1 encounter. Notes and liens should be taken as applying to both raw and calibrated data unless otherwise noted. Liens, specifically, will be indicated by bullet lists.

Compiled Notes

Tilden Barnes and Ed Chen (Engineering Node) have supplied summary reports of standards compliance issues that should also be taken as liens where they apply.

[Tilden B.'s report](#)

[Ed C's report](#)

LORRI

[Tony Farnham's presentation](#): “both data sets are in great shape”. Tony notes the SPICE data have not been reviewed.

[Xiaoduan Zou's presentation](#): Agrees with Tony’s overall assessment. She notes some omissions in the FITS headers that are annoying to users using the FITS headers for I/O (but PDS is *not* a FITS authority).

- Tony’s presentation notes some (3, in fact) typos which should be taken as liens.
- Check with Tilden for minor issues.

Xiaoduan notes that it would be helpful for users if the minor issues in the FITS header could be corrected if there is reason to reprocess the data in future. Brian Enke notes that it is about time for a SPICE update (last one c. 2017).

Certification: Certified

MVIC

[Xiaoduan's presentation](#): She notes that the voldesc.cat file has carried the data set version number along with the phase name. Other than that, the data look good.

[Tony's presentation](#): again, “both datasets are in great shape.”

- Please correct the phase reference in voldesc.dat
- Tony’s presentation notes two typos that should be taken as liens.

Certification: Certified.

Chen: typo lien- mis-labeled number of bytes in the MVIC metadata.

LEISA

[Mike DiSanti's presentation](#): Mike DiS. notes that sometimes, due to viewing geometry, the sense of movement of the sky from frame to frame reverses. It’s not clear if this is an inherent issue of pushbroom cameras, or if the typical user should be advised that this reversal exists in the data.

[Adam McKay's presentation](#): Adam notes that he only saw the reversal noted by Mike DiS. in the last two image cubes added since the last review.

- If feasible, please provide a note regarding the apparent motion reversal during encounter at an appropriate place in the data set documentation.
- Please investigate the two issues raised at the end of Adam McKay's presentation. They don't seem to be data issues, but they may require some additional explanation or caution for the user (most likely in the data set catalog file).
- Mike DiS. presentation (final page) also notes a typo that should be corrected.

Certification: Certified.

Alice

[John Noonan's presentation](#): No major or minor issues.

[Lori Feaga's presentation](#): No major or minor issues.

Certification: Accepted for archiving.

SWAP

[Rudy Frahm's presentation](#): A number of document issues, but the data look good. [Notes certification should be held pending documentation correction.]

[Steve Joy's presentation](#): On page 8, Steve notes that there are outdated SPICE kernels referenced by the labels, and it seems like updated kernels would have been needed to produce the geometry in the associated data labels. Steve recommends that, rather than attempting to amend signature documents, it might be useful to add a document specifically to address the objectives for the extended mission and instruments.

- Please investigate why the ending time of the level 3 data set is not the same as the ending time of the level 2 data set. The answer should likely be noted in the dataset catalog file for at least one of those data sets.
- There is a strange "mission phase*" notation in the dataset catalog file that should be replaced with something meaningful.
- There is at least one "TBD" in the mission catalog file
- The spacecraft catalog file has not been updated for the extended mission target. Rudy has suggested additional wording in his presentation.
- Rudy's presentation contains a list of issues with the swap_cal document that need to be addressed. [AR: Many of these look like PDF font issues that might have been either

created or exacerbated by converting to PDF/A. Correcting them may require going back to the original source. SBN can help with this if needed.]

- Rudy noted a typo in the label files (slide 46).
- Archive files should *never* contain references to URLs unless they are attached to a downloaded document. The catinfo.txt file does and is not. Please remove the URL.
- Please confirm or update the SPICE kernels list in the document/traj directory.

Certification: Certification held pending correction of PDF calibration document. This will be handled by email over the next week.

Break until 1:35pm EDT

PEPSSI

[Steve Joy's presentation](#): Steve notes a couple of comments re: catalog files from previous reviews not addressed (slide 7).

[Rudy Frahm's presentation](#): Starting at slide 11, Rudy documents a significant number of systematic label issues in the descriptions for individual columns in the tables. These look like software has provided an explanatory error message rather than a column description.

- Please review the red-marked notes on document and catalog file updates in Steve J.'s slides 7 and 9, and correct as feasible.
- Please confirm or update the SPICE kernels list in the document/traj directory (same issue as for SWAP)
- The error messages in the table column descriptions is a serious issue that needs to be corrected, even though this has managed to pass review unnoticed in the past (these fields are buried deep in the label). Steve searched for this in level 2 data and did not find the problematic descriptions.
 - **N.B.:** There are other NH data sets posted online and archived that have this issue. Since PDS4 migration is relatively imminent, an errata file with the PDS3 data is a reasonable way to proceed until the errata can be applied as part of migration.
- The pep_bi.tab file needs to be checked for missing entries and updated as needed.

Certification: Level 2 - Certified; Level 3 - Certification held pending correction of labels. Reviewers are willing to review revised labels, which will be supplied.

SDC

[Andrew Poppe's presentation](#): Data look good; some document issues.

[Addie Dove's presentation](#): Data look good; some document issues.

- Andrew P.'s presentation, on slide 11, contains three notes that should be taken as liens. These involve documents that appear to need updating for the current KEM dataset coverage.
- Addie D. notes that the coverage dates in the dataset catalog file need updating for version 3.0 (see slide 2 of her presentation).
- Slide 5 of Addie D.'s presentation contains a list of various documents which include end dates that vary from the data set and from each other. Please check the documents in this list for updates. (Andrew P. notes that updated versions of these files are needed to use the data.)

Certification: Certification held pending the essential document updates. These will be reviewed by the reviewers via email when they are available.

REX

[Dustin Buccino's presentation](#): Data look good; one request for additional documentation. Dustin B. noted that he had inspected the *.trf* files.

[Frank Centinello's presentation](#): Data look good.

- If possible, please update the *rex_activities_kem1.pdf* to include the 2019-03-21, 2019-04-19, 2019-05-07, and 2019-07-10 radio path characterization activities. (See Dustin B.'s presentation final slide.)

Certification: Certified.