

Review Comments on Rosetta OSIRIS Shape Models of 67P

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Second Review (+NAVCAM)

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What I did

- Read all documentation specific to this archive carefully
- Skimmed documentation files generic to the mission and instruments
- Visualized all VRML files with *Instant Player 2.4.0* under OS X 10.9.5
- Ran the NAIF Alpha DSK Toolkit utility *dskbrief* on all DSK files
- Compared old and new text files, old and new reference images

What I Didn't Do

- Visualize the DSK files
 - There is an application *dsk2isis* in ISIS 3.4.9 that will read a DSK and create a raster DTM in map projection. Because I am doing this review as a private citizen I do not have easy access to this software, but I want to point it out to the team and the SBN.
- Check the checksums
- Run any PDS verification tools (apart from *dskbrief*)
- Read every word of the Rosetta and OSIRIS catalog files

Conclusions

- This will be a very interesting and useful archive
- Cartographic conventions are followed well
- The archive is well designed and complete
- *There are a few areas where more information would be helpful if it can be added—**very few of these suggestions have been addressed***
- **INDEX.CAT** has been dumbed down
- The added NAVCAM model does not follow the (very helpful) naming convention

root

- aareadme.txt
 - Says two models were produced by “stereophotoclinometry” but this term is very strongly identified with Gaskell’s methodology so I suggest just “photoclinometry” or “shape from shading” instead
 - Same comment applies to spc_model_info.asc
- This suggestion has not been addressed

[CATALOG]

- Looks good (mostly)
- Why osinac_inst.cat and osiwac_inst.cat? They are identical except for file names and the instrument name given in the file—Because PDS
- navcam_inst.cat added
- dataset.cat is provisional, pending lien resolution
- References specific to the shape models have not yet been added to reference.cat—Still not

[DATA]

- All VRML files open and look good in *Instant Player*
- All DSK files produce reasonable output in *dskbrief*
- New NAVCAM model provided at only one resolution, but multiple triplate formats
- New model does not follow the naming convention of the others

[DOCUMENT]

- Reference frame document has been reviewed
- plate_shape_definition.asc
 - Why .asc not .txt as for other files?—Because PDS
 - Refers to “planetocentric” coordinates which is not a term used by the IAU for small bodies. Since the correct definition is given immediately after, this is harmless.—Has been fixed
 - Description of plate model format is generic and refers to optional columns after the first 3. It should be stated somewhere whether the data set includes any such optional columns—Not addressed

[DOCUMENT]

- Inclusion of .png thumbnails in this directory seems odd to me but I don't object. They would also be OK as EXTRAS.
 - Moved to a subdirectory, which is helpful
 - Comparison of new and old versions indicates a small rotation, suggesting the models have been brought into the Cheops system
- resolution_images.lbl
 - Maybe provide some info about the direction of view, e.g., from above what lat, lon?—Addressed by renaming orientation images
- ~~spe~~shap2_model_info.asc—No change to contents, only to name
 - Again, why not .txt—Because PDS
 - Again, suggest “photoclinometry” generically—Not addressed
 - “witht” -> “with” on line 5—Not fixed

[DOCUMENT]

- ~~spe~~shap2_model_info.asc—Unchanged
 - There is one subhead (“SHAP2 version of the model”). Adding “Coordinates”, “Data formats”, “Resolutions”, and “File naming convention” would be helpful and reasonable.
 - I am confused about terminology. Paragraph 8 says the models are in PDS plate format and are also converted to DSK files. But DSK is the PDS (NAIF) format. The directories of VRML files are called “plate”. Does this mean the “PDS plate format” is actually just VRML?

[DOCUMENT]

- ~~spe~~shap2_model_info.asc—Unchanged
 - References by Gaskell et al. 2008, Capanna et al. 2013, Sierks et al. 2014 are not in reference.cat—Still not added, though other references have been
 - There are substantial visible differences between the models, even allowing for resolution
 - References to any extant attempts to validate the methods individually or against one another would be welcome. I can help (a little) with references on SPC compared to stereophotogrammetry.
 - If the team is working on assessments and comparisons of the models, this might be mentioned. The reference could be added later if there are new releases of this data product.
 - It is worth commenting or giving a reference on how the models were reduced in resolution, since results could differ quite a lot depending on whether (e.g.) “redundant” facets were merged or neighbors were just joined into groups of roughly uniform size.
 - If the team has tools for this, why not make and archive reduced versions of the NAVCAM model?

[INDEX]

- Checksums not checked!
- index.lbl
 - I recommend adding fields for the end time of data, methodology, number of plates, and version to make searching easier, even though this info is in the file names.—But it's not in the new ones!
 - Instrument host doesn't seem very useful, as this index is not likely to get mixed in with indices from other missions.
 - *Instrument host has been removed along with start time, target name, and instrument names. This is a big step backwards. Removing the instrument name is especially perverse when data from a new instrument has been added.*
- index.tab
 - Does cheops_ref_frame_v1.lbl really belong in the index? It's a document, not a product.—Because PDS, but it has been eliminated from the new index
- I assume you will have a cumindex if there are other volumes in this series released. Have there been any Steins or Lutetia models released so far? If so, you may need a cumindex already.