# New Horizons MVIC Data review

Reviewer: Xiao-Duan Zou (Planetary Science Institute)

Dec 04 2020

1. Datasets overview
- PDS version: PDS3
- 2 data sets from the Multispectral Camera of RALPH instrument

   nh-a-mvic-2-kem1-v4.0

   nh-a-mvic-3-kem1-v4.0

- Level: 2 raw and 3 calibrated
- Mission phases:

   KEM1 v4.0 added new data (data downlink before 05/01/2020)

- Datasets comparison:

| | Version 2.0 | Version 3.0 | ***Version 4.0*** |
|---|---|---|---|
| Image number | 77 | 254 | **321** |
| Time range | 2018-08-31 - 2019-01-01 | 2018-08-31 - 2019-03-20 | **2018-08-31 - 2019-09-02** |

- No new SPICE data provided for this review. No shape model provided too.
- Summary: Both level 2 and 3 datasets are well produced, and well documented. Find very minor issues.

2. Review process
- All processing and evaluation:



- Compare difference between different level and different version sets with tools:
  - FileMerge 2.9.3
  - Beyond Compare 4.3.3
- Read all .fit and label files (all can be read correctly).
- Check the headers and labels
- Compare catalog files in all datasets, and analyze the difference
- Compare documents in document/ directory

- Collect aspect data from all image headers, check consistency between levels

3. Catalog/Document/Index

Labels:
- Some .tab and .fits in calib or doc folder is exactly the same as the previous version. But some "PRODUCT_CREATION_TIME" in their attached .lbl changed, while some didn't. Please be consistent.
- I couldn't find any new calibration explanation/changes related to the newly added "Radiometric calibration" and "solar star calibration" data sequences. Not sure if the calibration should be updated with these observations, just worth mentioning.
- Noticed a few target SPK were removed from V4.0 data labels such as Makemake. Why?
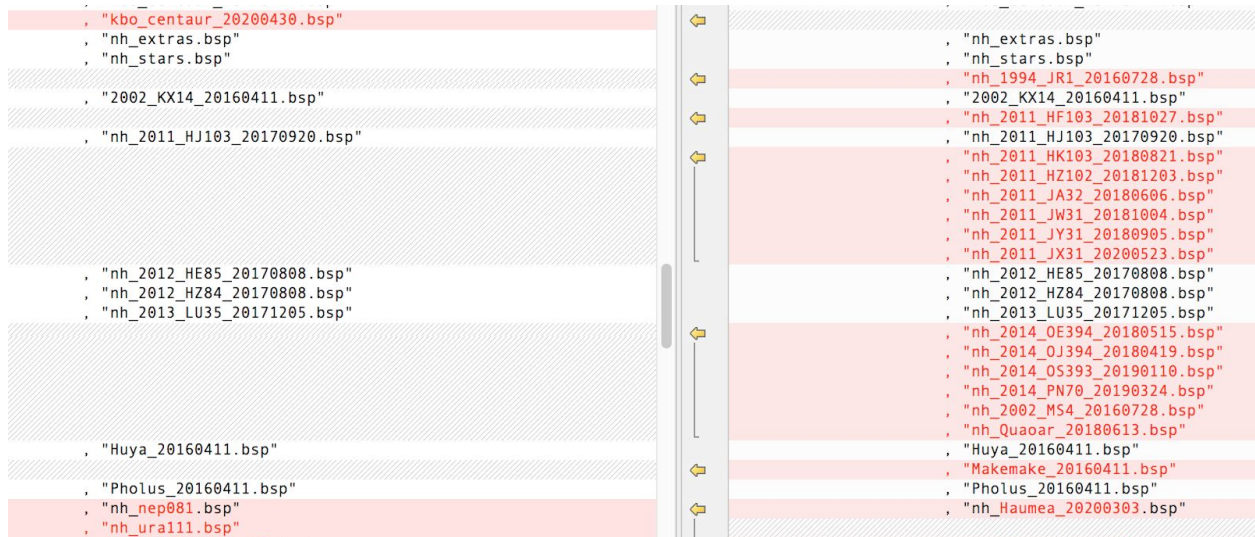


4. Data
   Files can be correctly read by python, IDL and ds9.
   No checking on geometry this time.
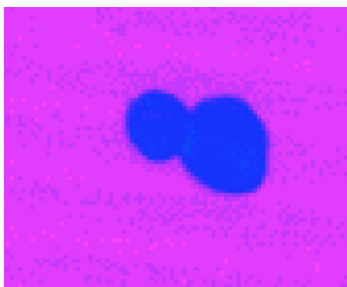


5. Conclusion: these v4.0 datasets are **certifiable**.