

# New Horizons LORRI Data review

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## 1. Datasets overview

- PDS version: PDS3
- 2 data sets from the high res cam LORRI.

nh-a-lorri-2-kem1-v6.0

nh-a-lorri-3-kem1-v6.0

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

KEM1 v6.0 added new data (data downlink before 05/01/2022)

- Datasets comparison:

Versions	V 2.0	V 3.0	V 4.0	V 5.0	V 6.0
Image number Level 2 raw	2115	4731	8021	8813	9705
Image number Level 3			8021	8745	9641
Time range	2018-08-16 - 2019-01-05	2018-08-16 - 2019-07-13	2018-08-16 - 2020-04-23	2018-08-16 - 2020-12-31	2018-08-16 - 2021-09-30

What's the new data? By comparing the "slimindx.tab"

Oct 8, 2021 at 5:53:08 PM 766,731 bytes Everything Else ▾ Unicode (UTF-8) ▾ PC	Sep 2, 2022 at 11:44:09 AM 844,335 bytes Everything Else ▾ Unicode (UTF-8) ▾ PC
<pre>*ASTEROID 486958 (2014 MU69) ", "DATA/20190101_040862/", "LOR_0408625586_OX630_ENG *ASTEROID 486958 (2014 MU69) ", "DATA/20190101_040862/", "LOR_0408625587_OX630_ENG *ASTEROID 486958 (2014 MU69) ", "DATA/20190101_040862/", "LOR_0408625588_OX630_ENG *ASTEROID 486958 (2014 MU69) ", "DATA/20190101_040862/", "LOR_0408625589_OX630_ENG *ASTEROID 486958 (2014 MU69) ", "DATA/20190101_040862/", "LOR_0408625590_OX630_ENG *ASTEROID 486958 (2014 MU69) ", "DATA/20190101_040862/", "LOR_0408625591_OX630_ENG *ASTEROID 486958 (2014 MU69) ", "DATA/20190101_040862/", "LOR_0408625592_OX630_ENG *ASTEROID 486958 (2014 MU69) ", "DATA/20190101_040862/", "LOR_0408625593_OX630_ENG *ASTEROID 486958 (2014 MU69) ", "DATA/20190101_040862/", "LOR_0408625594_OX630_ENG *ASTEROID 486958 (2014 MU69) ", "DATA/20190101_040862/", "LOR_0408625595_OX630_ENG *ASTEROID 486958 (2014 MU69) ", "DATA/20190101_040862/", "LOR_0408625596_OX630_ENG *ASTEROID 486958 (2014 MU69) ", "DATA/20190101_040862/", "LOR_0408625597_OX630_ENG *ASTEROID 486958 (2014 MU69) ", "DATA/20190101_040862/", "LOR_0408625598_OX630_ENG *ASTEROID 486958 (2014 MU69) ", "DATA/20190101_040862/", "LOR_0408625599_OX630_ENG</pre>	<pre>"ASTEROID 486958 (2014 MU69) ", "DATA/20190101_040862/", "LOR_0408625560_OX630_ENG "ASTEROID 486958 (2014 MU69) ", "DATA/20190101_040862/", "LOR_0408625561_OX630_ENG "ASTEROID 486958 (2014 MU69) ", "DATA/20190101_040862/", "LOR_0408625562_OX630_ENG "ASTEROID 486958 (2014 MU69) ", "DATA/20190101_040862/", "LOR_0408625563_OX630_ENG "ASTEROID 486958 (2014 MU69) ", "DATA/20190101_040862/", "LOR_0408625564_OX630_ENG "ASTEROID 486958 (2014 MU69) ", "DATA/20190101_040862/", "LOR_0408625565_OX630_ENG "ASTEROID 486958 (2014 MU69) ", "DATA/20190101_040862/", "LOR_0408625566_OX630_ENG "ASTEROID 486958 (2014 MU69) ", "DATA/20190101_040862/", "LOR_0408625567_OX630_ENG "ASTEROID 486958 (2014 MU69) ", "DATA/20190101_040862/", "LOR_0408625568_OX630_ENG "ASTEROID 486958 (2014 MU69) ", "DATA/20190101_040862/", "LOR_0408625569_OX630_ENG "ASTEROID 486958 (2014 MU69) ", "DATA/20190101_040862/", "LOR_0408625570_OX630_ENG "ASTEROID 486958 (2014 MU69) ", "DATA/20190101_040862/", "LOR_0408625571_OX630_ENG "ASTEROID 486958 (2014 MU69) ", "DATA/20190101_040862/", "LOR_0408625572_OX630_ENG "ASTEROID 486958 (2014 MU69) ", "DATA/20190101_040862/", "LOR_0408625573_OX630_ENG "ASTEROID 486958 (2014 MU69) ", "DATA/20190101_040862/", "LOR_0408625574_OX630_ENG "ASTEROID 486958 (2014 MU69) ", "DATA/20190101_040862/", "LOR_0408625575_OX630_ENG "ASTEROID 486958 (2014 MU69) ", "DATA/20190101_040862/", "LOR_0408625576_OX630_ENG "ASTEROID 486958 (2014 MU69) ", "DATA/20190101_040862/", "LOR_0408625577_OX630_ENG "ASTEROID 486958 (2014 MU69) ", "DATA/20190101_040862/", "LOR_0408625578_OX630_ENG "ASTEROID 486958 (2014 MU69) ", "DATA/20190101_040862/", "LOR_0408625579_OX630_ENG "ASTEROID 486958 (2014 MU69) ", "DATA/20190101_040862/", "LOR_0408625580_OX630_ENG "ASTEROID 486958 (2014 MU69) ", "DATA/20190101_040862/", "LOR_0408625581_OX630_ENG "ASTEROID 486958 (2014 MU69) ", "DATA/20190101_040862/", "LOR_0408625582_OX630_ENG "ASTEROID 486958 (2014 MU69) ", "DATA/20190101_040862/", "LOR_0408625583_OX630_ENG "ASTEROID 486958 (2014 MU69) ", "DATA/20190101_040862/", "LOR_0408625584_OX630_ENG "ASTEROID 486958 (2014 MU69) ", "DATA/20190101_040862/", "LOR_0408625585_OX630_ENG "ASTEROID 486958 (2014 MU69) ", "DATA/20190101_040862/", "LOR_0408625586_OX630_ENG "ASTEROID 486958 (2014 MU69) ", "DATA/20190101_040862/", "LOR_0408625587_OX630_ENG "ASTEROID 486958 (2014 MU69) ", "DATA/20190101_040862/", "LOR_0408625588_OX630_ENG "ASTEROID 486958 (2014 MU69) ", "DATA/20190101_040862/", "LOR_0408625589_OX630_ENG "ASTEROID 486958 (2014 MU69) ", "DATA/20190101_040862/", "LOR_0408625590_OX630_ENG "ASTEROID 486958 (2014 MU69) ", "DATA/20190101_040862/", "LOR_0408625591_OX630_ENG "ASTEROID 486958 (2014 MU69) ", "DATA/20190101_040862/", "LOR_0408625592_OX630_ENG "ASTEROID 486958 (2014 MU69) ", "DATA/20190101_040862/", "LOR_0408625593_OX630_ENG "ASTEROID 486958 (2014 MU69) ", "DATA/20190101_040862/", "LOR_0408625594_OX630_ENG "ASTEROID 486958 (2014 MU69) ", "DATA/20190101_040862/", "LOR_0408625595_OX630_ENG "ASTEROID 486958 (2014 MU69) ", "DATA/20190101_040862/", "LOR_0408625596_OX630_ENG "ASTEROID 486958 (2014 MU69) ", "DATA/20190101_040862/", "LOR_0408625597_OX630_ENG "ASTEROID 486958 (2014 MU69) ", "DATA/20190101_040862/", "LOR_0408625598_OX630_ENG "ASTEROID 486958 (2014 MU69) ", "DATA/20190101_040862/", "LOR_0408625599_OX630_ENG "ASTEROID 486958 (2014 MU69) ", "DATA/20190101_040862/", "LOR_0408625601_OX630_ENG "ASTEROID 486958 (2014 MU69) ", "DATA/20190101_040862/", "LOR_0408625602_OX630_ENG "ASTEROID 486958 (2014 MU69) ", "DATA/20190101_040862/", "LOR_0408625603_OX630_ENG</pre>

- Summary: Benefit from our previous reviews, this version review went pretty simple and easy. I compared the files with the previous version and only checked the changed or new parts. Generally, both level 2 and 3 datasets are well produced, and well documented. Found very minor issues.

## 2. Review process

- All processing and evaluation are in:



- Double checked a few items from last review of v5.0 data: **(All GOOD, and added the thumbnails .jpg)**
- Compare difference between different level and different version sets with tools:
  - Diff Files 23.1
  - Beyond Compare 4.4.1
- 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

- "Soc\_inst\_icd.pdf"
  - page 59, header and footer need fixing
  - Page 158, a page gap
- Looks like the KBO target "P2156486" has been changed into "2020 KH42" in both dataset.cat and slimindx.tab. But it's still used in the seq\_lorri\_kem1.tab

## 4. Data

- Files can be correctly read by python, IDL and ds9.

## 5. Conclusion: these v6.0 datasets are **certifiable**.