PDS Data Review

Lucy MVIC
Test Data

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MVIC Instrument

- Part of the L'RALPH instrument

- Multi-color imager
  - 5024 pixels per channel
  - 5 color band and one pan-chromatic band
  - Third dimension dependent on scanning

- Raw data format
  - FITS files with no extensions
    - Primary image (DN)
- Calibrated data format
  - FITS files with 3 extensions
    - Primary image (W/cm^2/sr/μm), Background subtraction, Radiance Calibration coefficients

Dataset

- Sample dataset
    - 1 raw image + label
    - 1 calibrated image + label
    - Draft version of the MVIC SIS document
    - No samples of "housekeeping data" described in the SIS

- Calibrated data directory contains a label mvi_acqtime_obsid_2.xml that is not associated with adata product
    - Not clear what it is for. Calibration files?
    - Included in error, or associated files not included?

Document

- Draft SIS
  - Description of data format, calibration process, etc.
  - Sections that are complete look pretty good
  - Many sections are incomplete
  - Not obvious if any sections are missing

  - No obvious problems so far

Data

- XML labels for both raw and calibrated data have an error:

```
<lucy:observation_missing_packets>0</lucy:observation_missing_packets
<lucy:start_sclk unit="s">719212908.1950001</lucy:start_sclk>
<lucy:mid_sclk unit="s">719212913.6214955</lucy:mid_sclk>
<lucy:stop_sclk unit="s">719212919.0479909</lucy:stop_sclk>
<lucy:mid_utc>2022-10-16T17:22:11.088Z</lucy:mid_utc>
<lucy:mid_sclk_string>1/0719212913-40730'</lucy:mid_sclk_string>
<lucy:mid_utc_doy>2022-289T17:22:11.088Z</lucy:mid_utc_doy>
<lucy:mid_utc_jd unit="julian day">JD 2459869.2237394</lucy:mid_utc_j
<lucy:mid_ephemeris_time unit="s">719213000.2699324</lucy:mid_ephemer
<lucy:ccsds_sclk_time unit="s">719548358</lucy:ccsds_sclk_time>
</lucy:Lucy_Observation_Time_Information>
```

- The quote prevents READ_PDS from reading the file
- Need to delete the quote at the end of the entry

Data

- Fixing the error allows READFITS and READ_PDS to access the file

- Images are readable and contain the data as described