NH-P/PSA-LORRI/ALICE/REX-5-ATMOS-V1.0

**LIENS**

* catinfo.cat
  + This file mentions the Multispectral Visible Imaging Camera instrument for now apparent reason in the second paragraph of text. The text should be edited to reflect the actual directory contents.
* dataset.cat
  + This DESCRIPTION reads like a paper prepared for submission. If it has been submitted or published elsewhere, please confirm that this is not a copyright violation and we have permission to publish. If this has not been/will not be otherwise published, the bulk of this description should be turned into a document with the LaTeX markup on equations removed (and preferably in a format where equations would be more easily represented), if possible. [Note from A.Raugh: This will also require chasing down pointers as information moves. If this is an onerous amount of work for the time and resources available, let me know – we’ll figure out something reasonable.]
  + The acronym “MET” should be defined the first time it is used.
  + In the “atmos\_comp” section (and possibly others), the use of “Ns” vs. “N\_s” is inconsistent even in the text immediately surrounding the equation. This should be standardized.
  + In this equation (from the top of “Atmospheric Composition Profiles”):

N\_s=\int\_{-inf}^{+inf}n\_s(x)d

the variable r’ does not appear in the equation, as indicated by the preceding sentence. Glen Cushing noted that “N\_s” should be “N\_s(r’)”.

* + There is a statement that “SPICE kernels [are] supplied by the New Horizons”, but no indication of where a user could lay hands on them. If they are archived with NAIF, please say so. Otherwise, the data set ID of the appropriate version of the SPICE data set should be supplied.
  + The itemized list in lines 490-491 appears to have been mangled. It looks like it should contain 4 items instead of 2. (“This dataset includes several categories of Pluto haze profile data:”)
  + Lines 839, 909, 967: Extraneous space after “P\_” should be removed.
  + Line 907 and following: The description of the PHASE\_DAY\_P\_LORRI\_L1 and PHASE\_DAY\_PELR\_C\_LORRI are confusing and need reworking. Reviewers were not sure what was being subtracted from what, what “the Charon profile” was (did it correspond to some other product here or in another data set, e.g.), and the phrase “pixel number x” was particularly mysterious.
  + Line 1162 contains “TBD” which needs to be replaced with real text.
  + Additional typos at unspecified locations:
    - “photocahode gape” [AR: Note 2 typos here]
    - “abudance”
    - “measureable”
    - Missing closing parenthesis after “see [YOUNGETAL2017]”
    - “wich”
    - “aleady”
    - Missing closing parenthesis after “Fig. 9 of [YOUNGETAL2017]”
    - “line-of- sight”
  + There is a reference to “informally named Sputnik Planitia”. If the feature name is now formal, this should be updated.
* index/ files
  + Two columns have identical DESCRIPTIONs: “This parameter identifies the instrument.” This is true but confusing. The DESCRIPTION should indicate the distinction between the columns.
* aliceocc/ files
  + If at all possible, please prepare a brief intro document for these files that outlines the organization of the FITS files, what’s in each extension, and how a use should map the wavelength and timing arrays to the 2D spectrum.
  + If possible, please redefine the ARRAY structures in the PDS labels and binary TABLE objects. [AR: Binary TABLEs are slightly better supported, and would need a little more description in the label to explain to a user what is going on. If you need some guidance with the label equivalents, let me know. The translation is pretty simple and does not involve touching the data.]
* atmoscomp/ files
  + The error columns in the labels describe themselves as “fractional error”, but also include a UNIT keyword. Fractional errors do not have units. The values appear to be fractional. Please confirm what is actually being presented and adjust all the relevant COLUMN definitions accordingly.
  + The “quality flag” columns are not sufficiently defined. The meanings of the various possible flag values need to be provided in the column DESCRIPTION. The dataset.cat file should contain a description of how the quality flags were determined [Note from A. Raugh: typically in the CONFIDENCE\_LEVEL\_NOTE, but could also be added to relevant text in the DESCRIPTION if that seems more appropriate].
* haze/ files
  + The radial distance seems excessively precise for units of km. If it is possible to reflect the actual precision of the values in the formatted data, please do. If not, please indicate the actual precision in the column DESCRIPTION.
  + There are no uncertainties provided for I/F, scale height, or any quantity in the phase\_day\_pelr\_c\_lorri.tab, tempvar\_\*, and latvar\_\* files. They should be included, or at the very least a description of why they cannot be calculated or documented should be included in the dataset.cat file.
* rexatmos/ files
* thermscan/ files
  + START\_TIME and STOP\_TIME are missing in the PDS label. They are required.
  + The NAME of the table is “EFFECTIVE AREA TABLE”. This seems oddly inappropriate. Please amend.
  + There is a TIME column that only gives time as a number of seconds since an unstated start time. The time reference should be given, and if it is not the START\_TIME of the file additional explanation will also be needed.
  + Uncertainties are not provided. As in other cases, they should be, if possible, and an explanation of their derivation or absence should be provided in the dataset.cat file.