PDS Review Rosetta RPC-IES

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Overview

- L3 data: ion and electron differential energy flux
- L5 data: ion and electron moments
- Data sets
 - Rosetta-Orbiter RPCIES Extension 3 67P calibrated Data: I3
 - Rosetta-Orbiter RPCIES Extension 1, 3 67P derived: I5

Read the data

- Tools:
 - PDS3 IDL software:
 - can't read some I3 calibration data files, e.g.:
 - ro-c-rpcies-3-ext3v1.0/calib/2016/07/02/rpcies2016184_l3elc_l2bg_v1.lbl'
 - ro-c-rpcies-3-ext3v1.0/calib/2016/07/02/rpcies2016184_l3ion_l2bg_v1.lbl'
- My operating system and software:
 - MacOS Seirra Version 10.12.6
 - IDL 8.3.0

As instructed, the review was focused on:

- L3 data:
 - New files that describe the geometric factors of the instrument in the CALIB directory Not found in I3 data but found in I5 data
 - New version of the EAICD document (also found in the L5 dataset)
 - Several calibration files are different from those provided at the former review. Are this changes correct?
 Look OK
 - There was a problem with the flux calibration, which caused the missing constant of -1.0000 to sometimes be given as -4.0000 (or a similar incorrect negative integer). Was this fixed correctly?

There are still -4 and -8 values. e.g.: ro-c-rpcies-3-ext3-v1.0/data/2016/07/01/rpcies2016183_l3elc_flux_v1.lbl' All -4 values in column 18 and 19 (Az 11, 12)

- Several columns of data bytes have changed for every data product according to the PDS review. e.g. in DATA/2016/09/30/RPCIES2016274_L3ION_FLUX_V1.TAB column 22 "AZIMUTH 15 FLUX" changed from -1 (missing constant) to 0. Is this correct? Yes
- Values of -8 in the data, which probably should be -1 (missing constant), were seen in an intermediate draft dataset. Has this been solved in the new version sent to the review?

Still exist. e.g.:

ro-c-rpcies-3-ext3-v1.0/data/2016/07/02/rpcies2016184_l3elc_flux_v1.lbl

- L5 data:
 - RID science-196: Suitability of Electron Moment Calculation
 - RID science-197: Spacecraft potential and photoelectrons
 - RID science-199 : Negative ion moments
 - RID science-218 : More explanation needed for the photo-electrons
- Most Descriptions and explanations can be found in moments_calculation.pdf and other documents

L5 data

electron



Summary

- Submitted RIDs:
 - Major: Not able to read some I3 calibration files these files PDS IDL software 'readpds.pro'.
 - Minor: incomplete RPC user guide
 - Minor: In I3 flux data, sometimes the missing values are -4 or -8 not -1.