Rosetta Orbiter RPCMAG -3- Archive Comments

ro-ss-rpcmag-3-prl-calibrated-v6.0
ro-c-rpcmag-3-esc1-calibrated-v6.0
ro-c-rpcmag-3-esc2-calibrated-v6.0
ro-c-rpcmag-3-esc3-calibrated-v6.0
ro-c-rpcmag-3-esc4-calibrated-v6.0
ro-c-rpcmag-3-ext1-calibrated-v6.0
ro-c-rpcmag-3-ext2-calibrated-v6.0
ro-c-rpcmag-3-ext3-calibrated-v6.0

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Overview

- All of the ro-*rpc* review volumes share a large number of common files:

  catalog files, documents, required files (Xxinfo.TXT), etc.

  rather than repeating comments on those files in every presentation my comments are all included here

- Most of the common files have been previously reviewed so there is an expectation that the files would be in pretty good shape.

Root Directory Files (aareadme, errata, voldesc)

- ✓ ro-c-rpcmag-3-prl-calibrated-v6.0 – All files present and acceptable
- ✓ ro-c-rpcmag-3-esc1-calibrated-v6.0 – All files present and acceptable
- ✓ ro-c-rpcmag-3-esc2-calibrated-v6.0 – All files present and acceptable
- ✓ ro-c-rpcmag-3-esc3-calibrated-v6.0 – All files present and acceptable
- ✓ ro-c-rpcmag-3-esc4-calibrated-v6.0 – All files present and acceptable
- ✓ ro-c-rpcmag-3-ext1-calibrated-v6.0 – All files present and acceptable
- ✓ ro-c-rpcmag-3-ext2-calibrated-v6.0 – All files present and acceptable
- ✓ ro-c-rpcmag-3-ext3-calibrated-v6.0 – All files present and acceptable

Catalog Files

- ✓ catinfo.txt
- ✓ rosetta_mission.cat (various typos, content fine)
- ✓ rosetta_insthost.cat (various typos, content fine)
- ✓ rosetta_ref.cat
- ✓ rosetta_target.cat
- ✓ rpcmag_inst.cat (various typos, content fine)
- ✓ rpcmag_software.cat
- ✓ rpcmag_pers.cat
- ✓ dataset.cat: ro-ss-rpcmag-3-prl-calibrated-v6.0
- ✓ dataset.cat: ro-c-rpcmag-3-esc1-calibrated-v6.0
- ✓ ro-c-rpcmag-3-esc2-calibrated-v6.0
- ✓ ro-c-rpcmag-3-esc3-calibrated-v6.0
- ✓ ro-c-rpcmag-3-esc4-calibrated-v6.0
- ✓ ro-c-rpcmag-3-ext1-calibrated-v6.0
- ✓ ro-c-rpcmag-3-ext2-calibrated-v6.0
- ✓ ro-c-rpcmag-3-ext3-calibrated-v6.0

RID: DATASET.CAT files should be modified to mention the strong (+/-2nT) residual signature at 4.2+/-0.5 Hz in the paragraph where the noise sources are discussed. At present, the discussion notes that noise remains but its magnitude and frequency are not discussed.

Document

- ✓ docinfo.txt (all volumes)
- ✓ logbook_20140323_20141121.asc …
  logbook_20160629_20160930.asc – all ok, no changes requested
- ✓ rpcmag_instrument.pdf - ok, no changes requested
- ✓ Archiving Subdirectory
  - ro_igep_tr0009_eaicd.pdf – ok, no changes requested
- ✓ Calibration Subdirectory
  - ro_igep_tr0028_calproc.pdf – ok, no changes requested
  - ro_igm_tr0002_cal_report.pdf – ok, no changes requested
  - ro_igm_tr0003_cal_analysis.pdf – ok, no changes requested
  - ro_iwf_tr0001_ac_analysis.pdf – ok, no changes requested
- ✓ Flight Reports Subdirectory
  - ✓ ro_igep_tr0013_mcrr.pdf – ok, no changes requested
  - ✓ ro_igep_tr0038_data_summary.pdf …
    ro_igep_tr0047_data_summary.pdf – all ok, no changes requested

Calib Directory

- ✓ calinfo.txt (All)

  RID: note that all of the rpcmag_stp00xx_008_calib_ib.asc and rpcmag_stp00xx_008_calib_ob.asc files are identical and explain why multiple copies that differ only in file name are included on the volume. All of the .ASC files have the same creation date (8/28/14) across the 8 volumes but the labels have different creation dates within the time range of the data on the individual volumes, please explain.

  RID: calinfo.txt gives wrong naming convention for "stp00xx_008" files: RPCMAG_yyyy_mm_phase_008_CALIB_IB.ASC (or OB.ASC). Remark says that files were renamed to RPCMAG_phase_008_CALIB_IB.ASC (OB.ASC) but none of these volumes contains the "stp" phase. Please explain what stpXXXX means.

- ✓ rpcmag_boom_align_corr_ef1.asc (.lbl) - no changes requested
- ✓ rpcmag_cvp_008_calib_ib.asc (lbl) - no changes requested
- ✓ rpcmag_cvp_008_calib_ob.asc (lbl) - no changes requested
- ✓ rpcmag_cvp2_008_calib_ib.asc (lbl) – same as rpcmag_cvp_008_calib_ib.asc
- ✓ rpcmag_cvp2_008_calib_ob.asc (lbl) - no changes requested
- ✓ rpcmag_gnd_calib_fsdpu_fmib.asc (.lbl) - no changes requested
- ✓ rpcmag_gnd_calib_fsdpu_fmob.asc (.lbl) - no changes requested
- ✓ rpcmag_sc_align.asc (.lbl) - no changes requested

Index Files

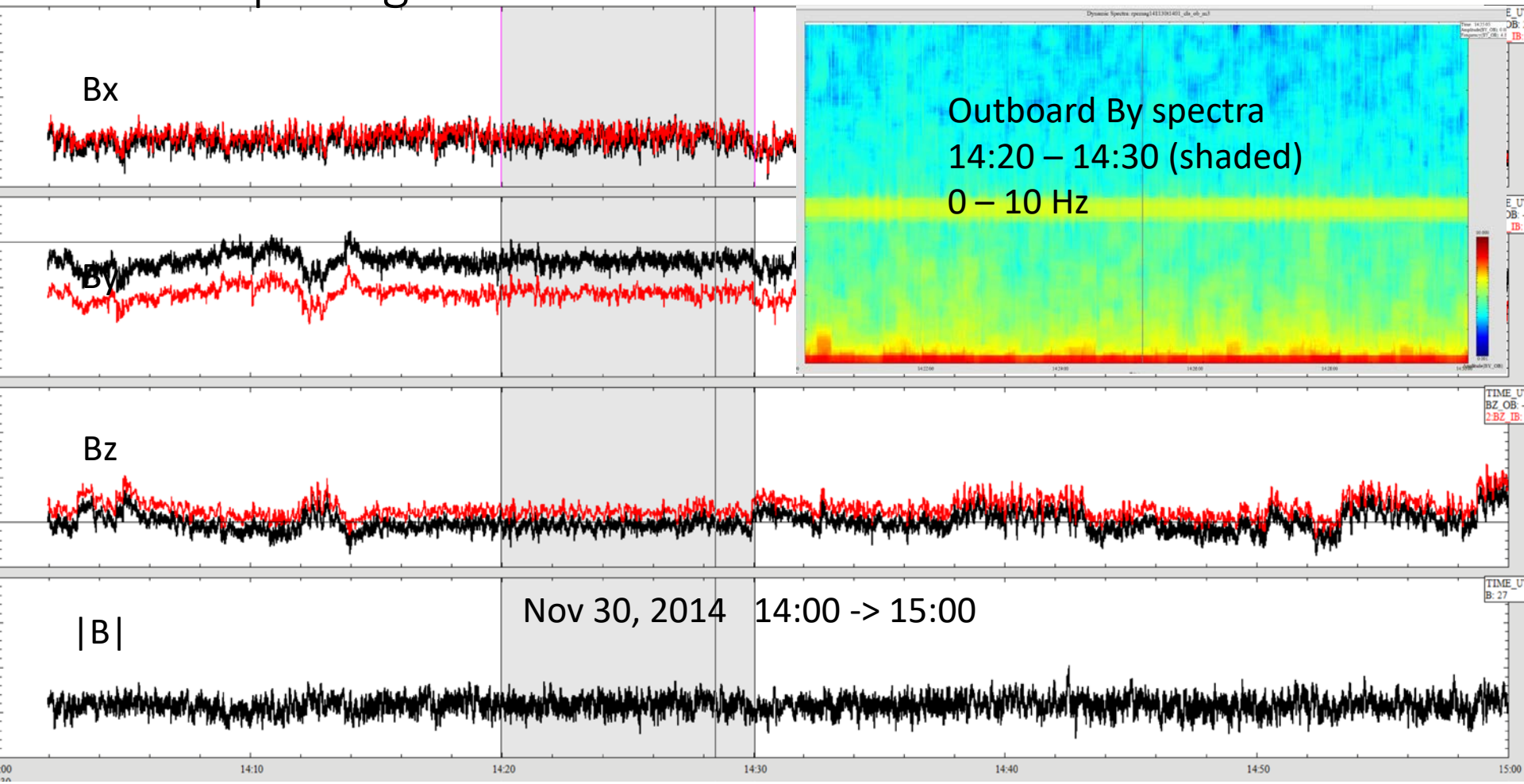
- ✓ indxinfo.txt

  RID: This files does not mention the checksum file or its usage. In addition, this file describes BROWSE_INDEX and GEO_XXXX, neither or which are present on volumes. Please fix both issues so that the file describes the contents of the directory on these volumes.

- ✓ index.tab (.lbl)
- ✓ checksum.tab (.lbl)

Data Directories

ro-c-rpcmag-3-esc1-calibrated-v6.0



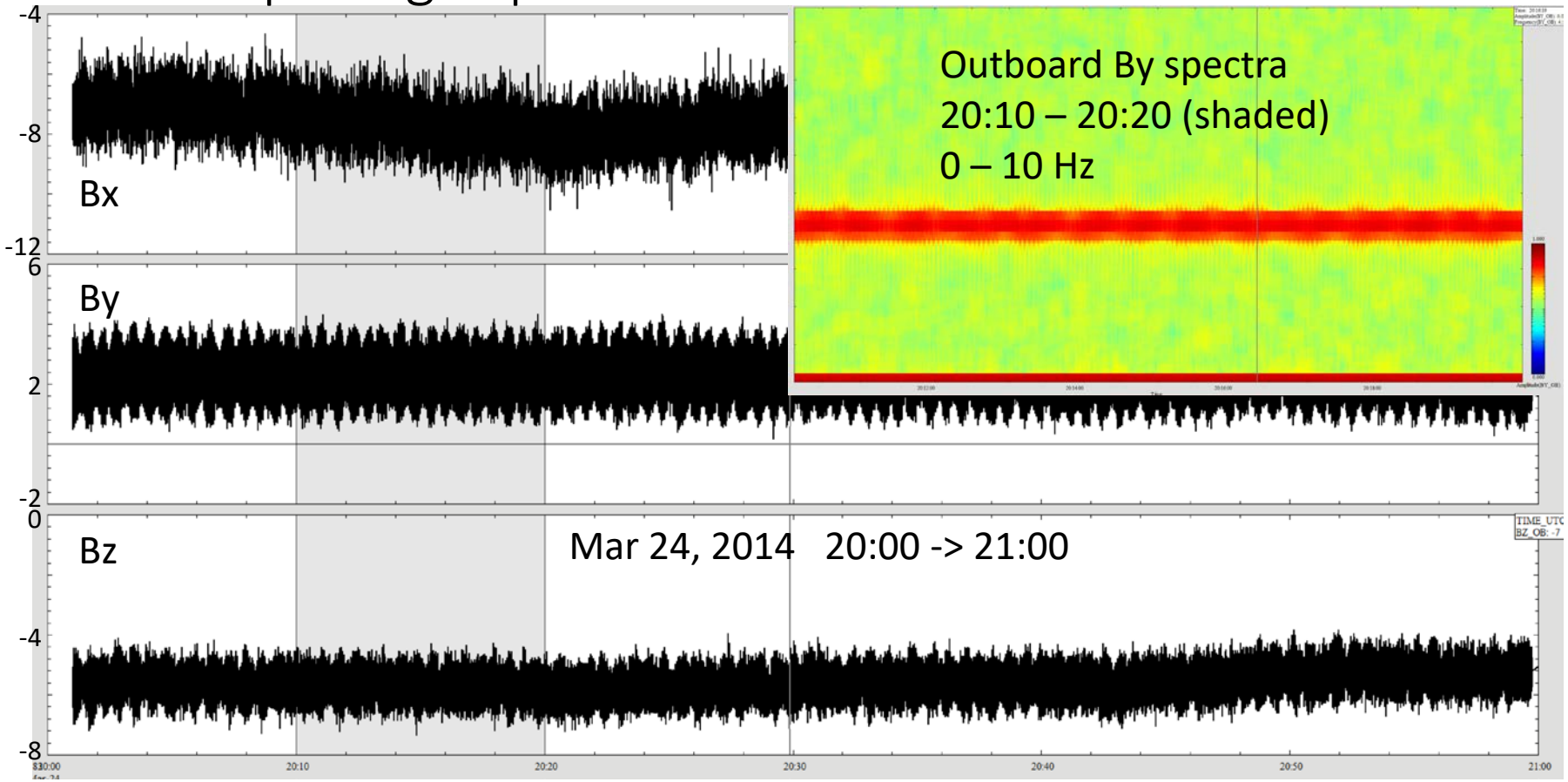
Comparison of rpcmag141130t1401_cla_ob_m3 (black) and rpcmag141130t1401_cla_ib_m3 (red), all 4 panels are set at a 50 nT range.

Both files read into software using PDS labels – labels valid for both!

Data look ok except for the strong peak at ~4.2 Hz that occurs in all -3- data sets

These are comet escort data, 4.2 Hz is near the H^+ ion cyclotron frequency in a 25nT field but the signature looks too regular in frequency and amplitude to be physical.

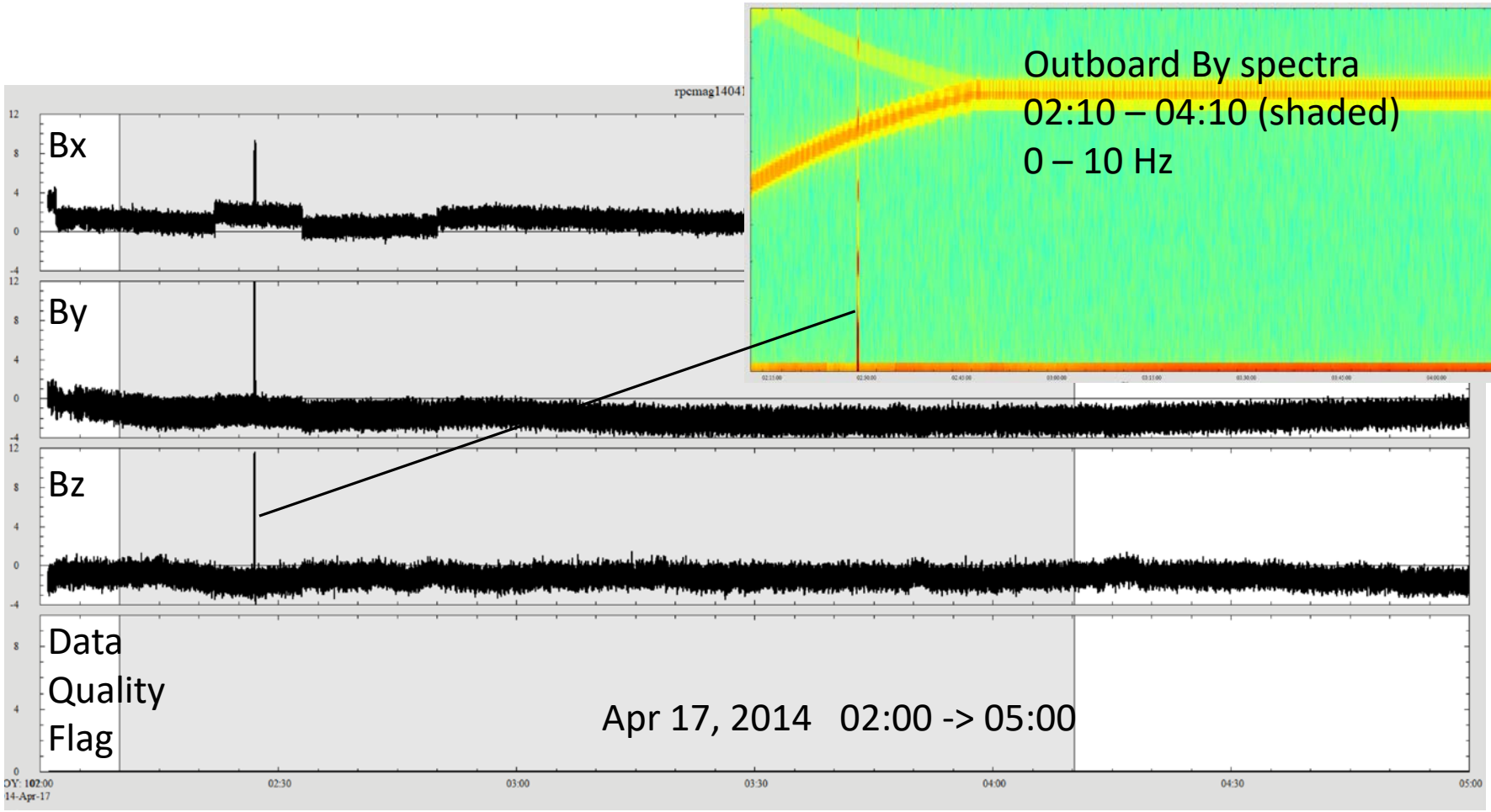
ro-ss-rpcmag-3-prl-calibrated-v6.0



Solar wind magnetic field data from rpcmag140324t2001_cla_ob_m3. Each panel set to 8 nT scale.

Calibrated data show the beating of multiple noise sources with a central frequency near 4.2 Hz. This is clearly not a physical signature.

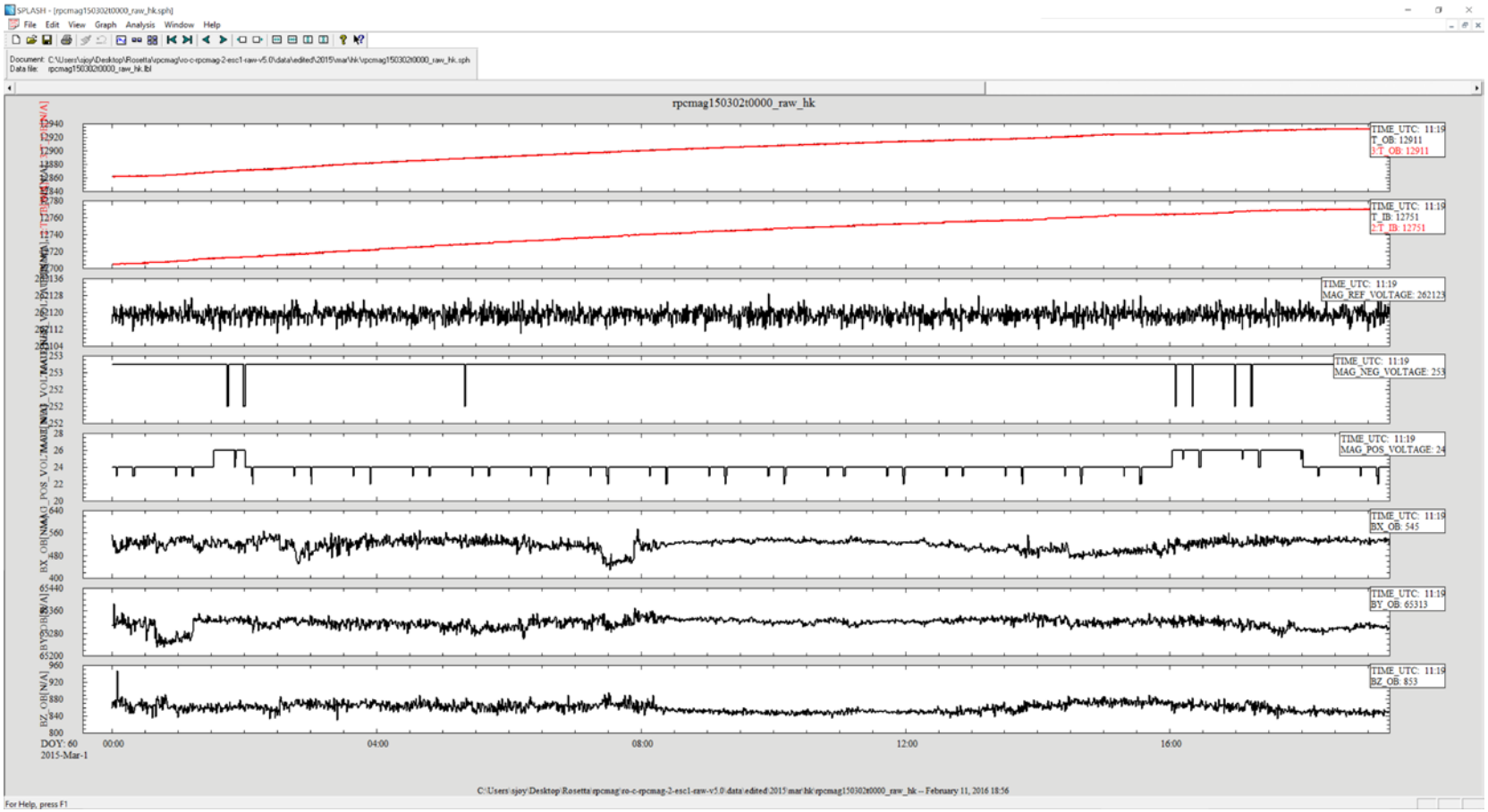
ro-ss-rpcmag-3-prl-calibrated-v6.0



Solar wind magnetic field data from rpcmag140417t0201_clc_ob_m3. Each panel is set to a 16 nT scale (-4 to +12).

Calibrated data show the complex nature of some of the noise sources. Note that the source at ~4.2 Hz is not present. Also note that the data quality flag does not change during the spike at 02:27.

ro-c-rpcmag-3-esc1-calibrated-v6.0



Housekeeping data for day shown on previous slide (rpcmag150302t0000_cla_hk)

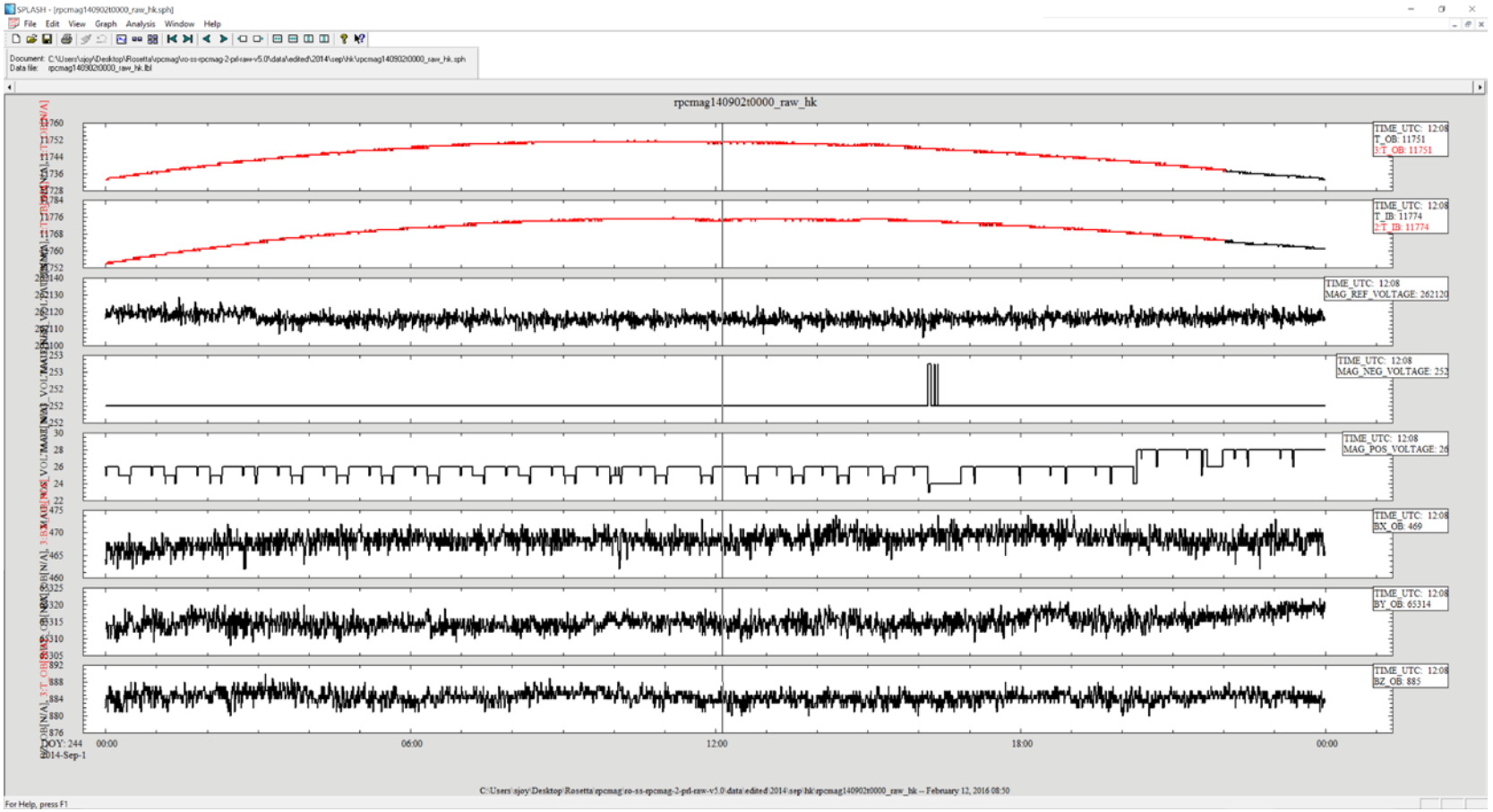
Data read in by software using PDS label, label valid

Red temperature traces from IB and OB data files overlay black traces from HK file

Data and HK files are self-consistent!

HK data look good!

ro-ss-rpcmag-3-prl-calibrated-v6.0



Housekeeping data for day shown on previous slide (rpcmag140902t0000_calibrated_hk)

Data read in by software using PDS label, label valid

Red temperature traces from IB and OB data files overlay black traces from HK file

Data and HK files are self-consistent!

HK data look good!

Summary

- Other than fixing a few minor edits to some of the documentation, things are in pretty good shape.
- RIDs:
  1. calinfo.txt – explain why so many versions of the same file are required with the only change being the file name.
  2. calinfo.txt – explain the correct naming convention for the rpcmag_stp00xx_008_calib_ib (_ob) files .
  3. idxinfo.txt – describe contents of index directories on these volumes.
  4. Add text to the DATASET.CAT files in the paragraph where residual noise sources are discussed describing the typical amplitude and frequency range of the noise.

- All of these data sets can be “certified” with liens.