NH PDS REX KEM1 Review, v2.0
Frank Centinello
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All science and engineering FIT files were interrogated without error using the HEASARC FTOOLS software of NASA GSFC (Ref. 1). ENG*FIT files were compared to their respective SCI*FIT files via the documented calibration in Sec. 12.3.1.2 of the ICD (Ref. 2). The mean of the differences between LCP SCI*FIT and calibrated ENG*FIT radiometer data was -3.6×10^{-8} dBm, with a standard deviation of 1.13×10^{-6} dBm. For the RCP measurements, these metrics are a mean of 5.0×10^{-8} dBm and a standard deviation of 1.2×10^{-6} dBm. Figures 1 through 6 show the differences computed from this comparison. Time spans were chosen so structure in the differences can be more easily observed.

In-Phase and Quadrature data were also compared through the calibration in Sec. 12.3.1.1 of Ref (2). The mean difference between engineering and science records for I and Q values was calculated to be less than -7.0×10^{-10} mV. Supporting documentation was sufficient for the interrogation of *FIT files.

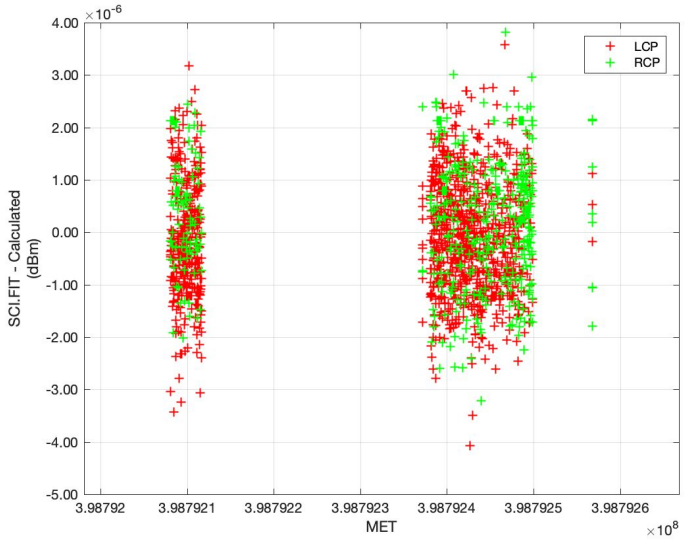

*Figure 1: Differences between SCI*FIT files' radiometer data and the calibrated data from ENG*FIT files. (MET 398792081 through 398792568).*

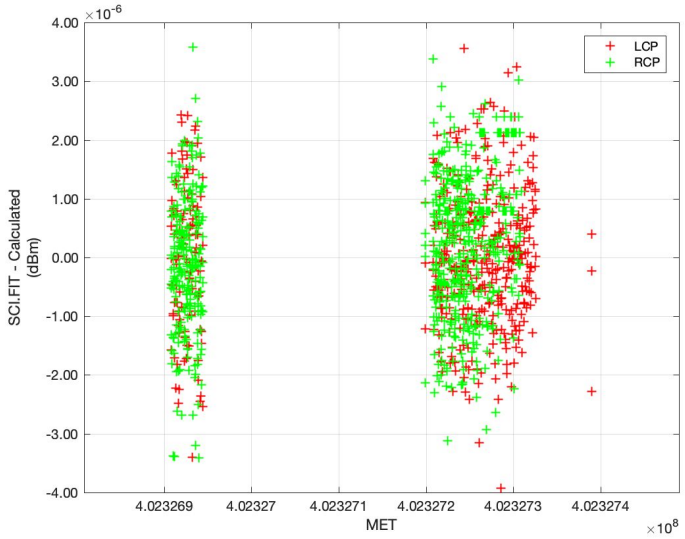

*Figure 2: Differences between SCI*FIT files' radiometer data and the calibrated data from ENG*FIT files. (MET 402326908 through 402327390).*

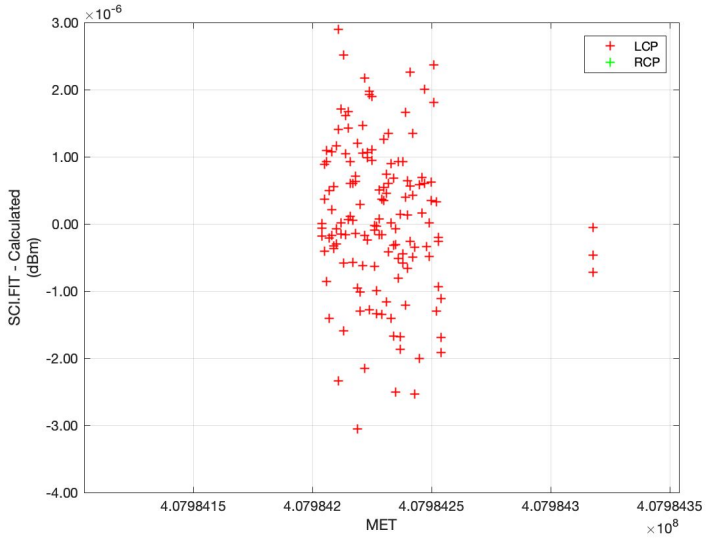

*Figure 3: Differences between SCI*FIT files' radiometer data and the calibrated data from ENG*FIT files. (MET 407984204 through 407984254).*

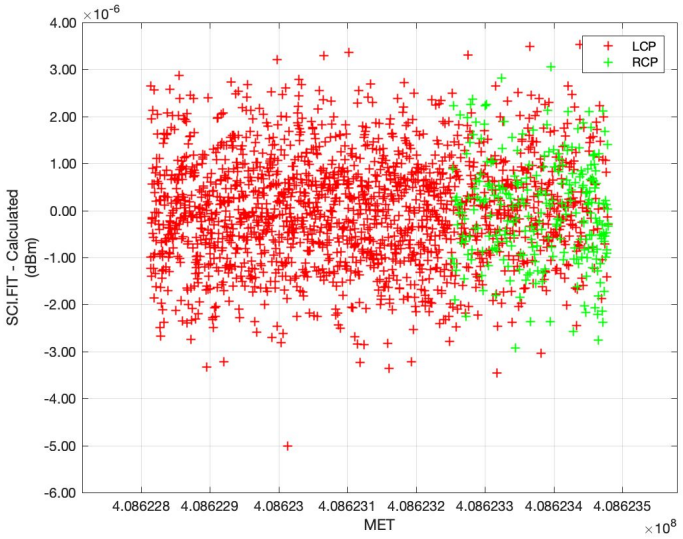

*Figure 4: Differences between SCI*FIT files' radiometer data and the calibrated data from ENG*FIT files. (MET 408622814 through 408623479).*

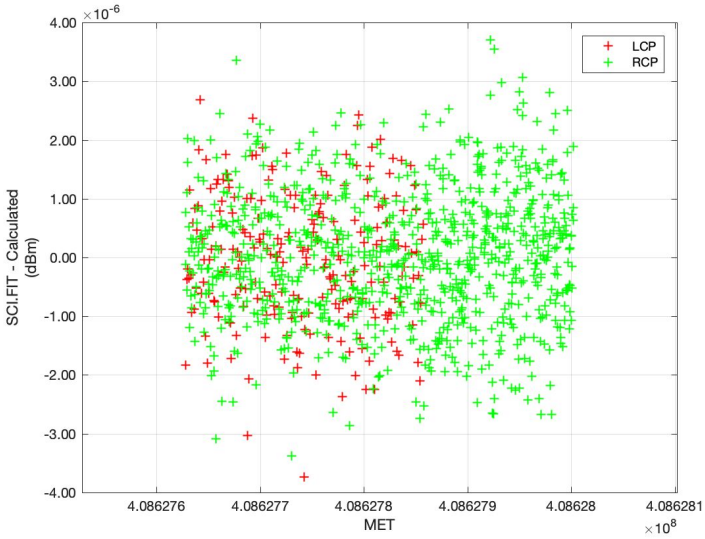

*Figure 5: Differences between SCI*FIT files' radiometer data and the calibrated data from ENG*FIT files. (MET 408705052 through 408709800).*

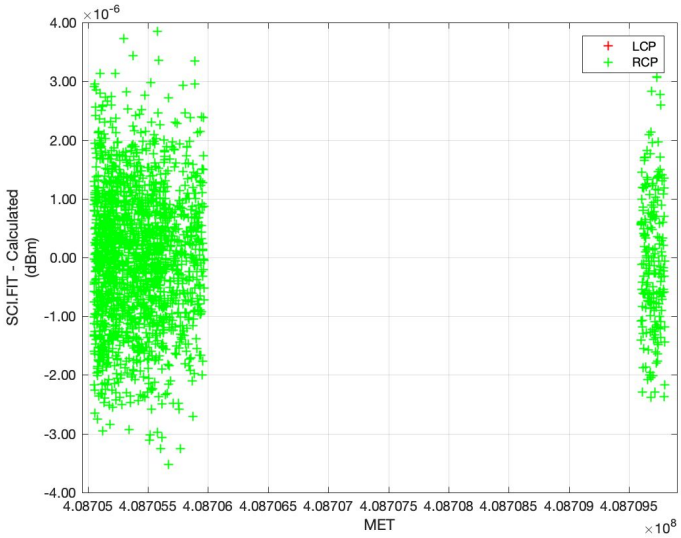

*Figure 6: Differences between SCI*FIT files' radiometer data and the calibrated data from ENG*FIT files. (MET 408627628 through 408628002).*

References:

1. NASA HEASARC FTOOLS Softward, NASA GSFC, https://heasarc.gsfc.nasa.gov/docs/software/lheasoft/
2. Joe Peterson, et al., New Horizons SOC to instrument pipeline ICD, 2020, "soc_inst_icd.pdf"