

User Advisory: Orbit 23902_A SMAP Radiometer Start-up TB anomalies

On July 23, 2019 at approximately 2:25 pm PST (21:25 UTC), the SMAP radiometer instrument was restarted after about 5 weeks of Standby mode. The start-up occurred on the ascending half-orbit 23902_A. Users should be aware that the data from the first 25 seconds (~5 scans) of the radiometer data remained to be calibrated due to inaccuracies in ancillary subsystem thermistor readings and should not be used for any analyses at this point.; recalibration will be applied in future release. The remainder of the data in the orbit are of good quality.

During the first 25 seconds or so of the start-up of the instrument, various subsystem temperatures that are reported to the science data stream are out of range and inconsistent with normal operations. Figure 1 shows the behavior of these temperatures as reported in the data.

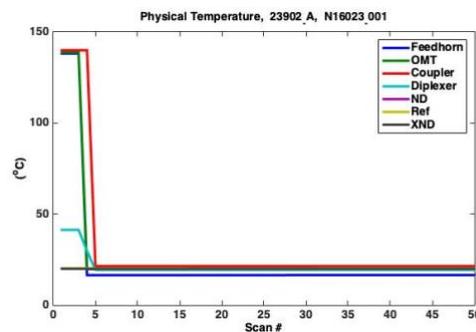
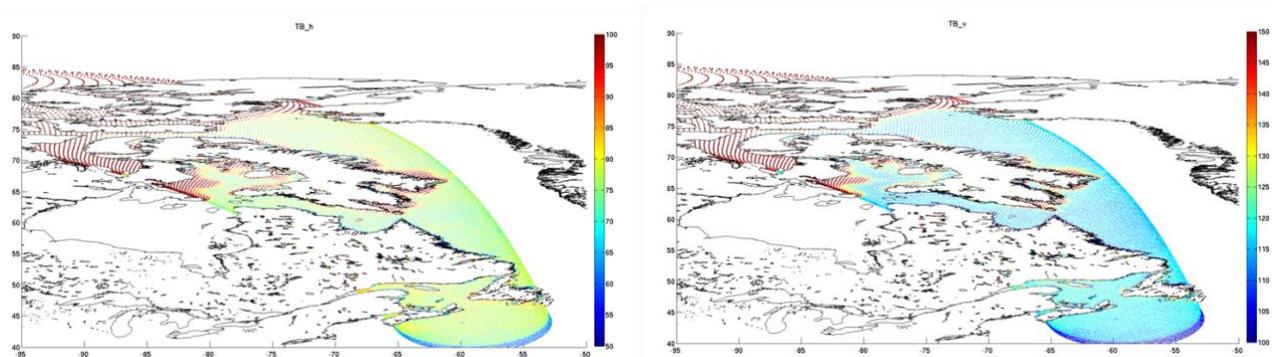


Figure 1. SMAP Radiometer subsystem temperatures after instrument startup.

On orbit 23902_A, the manifestation of this startup behavior in the brightness temperature data is shown in Figures 2a and 2b. Because the startup was over the ocean, the primary concern is for SMAP users for ocean applications.



Figures 2a-b. Brightness temperature effects during radiometer startup on orbit 23902_A.

The band of lower than normal TB covers approximately 5 scans at the beginning of the L1B_TB data granule.

We consider the impact of the startup effects on higher-level (Level 2-Level 4) soil moisture products to be negligible for the land coverage on this orbit.