

WAAS Technical Report
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1/2/14

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DR #116: Fewer Reference Stations Than Expected Tracked PRN 1 Following Satellite Maintenance

GPS Week/Day: Week 1768 Day 2 (November 26, 2013)

Discussion:

On 11/26/13, a NANU on PRN 1 (NANU 2013070) concluded at 01:42 GMT. Following the NANU, PRN 1 was tracked by fewer reference stations than expected. This Discrepancy Report will document the tracking of PRN 1 by WAAS and NSTB reference stations following the NANU.

Detailed Description:

Immediately following the PRN 1 NANU, only a small subset of reference stations tracked PRN 1. PRN 1 was not tracked by any NSTB receivers immediately following the NANU. Table 1 lists the reference stations that tracked PRN 1 just after the NANU ended.

Reference Station	Thread
Cold Bay	C
Fairbanks	C
Puerto Vallarta	C
Winnipeg	C
Goose Bay	C
Denver	C
Honolulu	C
Jacksonville	C
Los Angeles	C
Seattle	C

Table 1: Reference Stations which properly tracked PRN 1 following the NANU

Figure 1 shows the satellite position of PRN 1 just after the NANU.

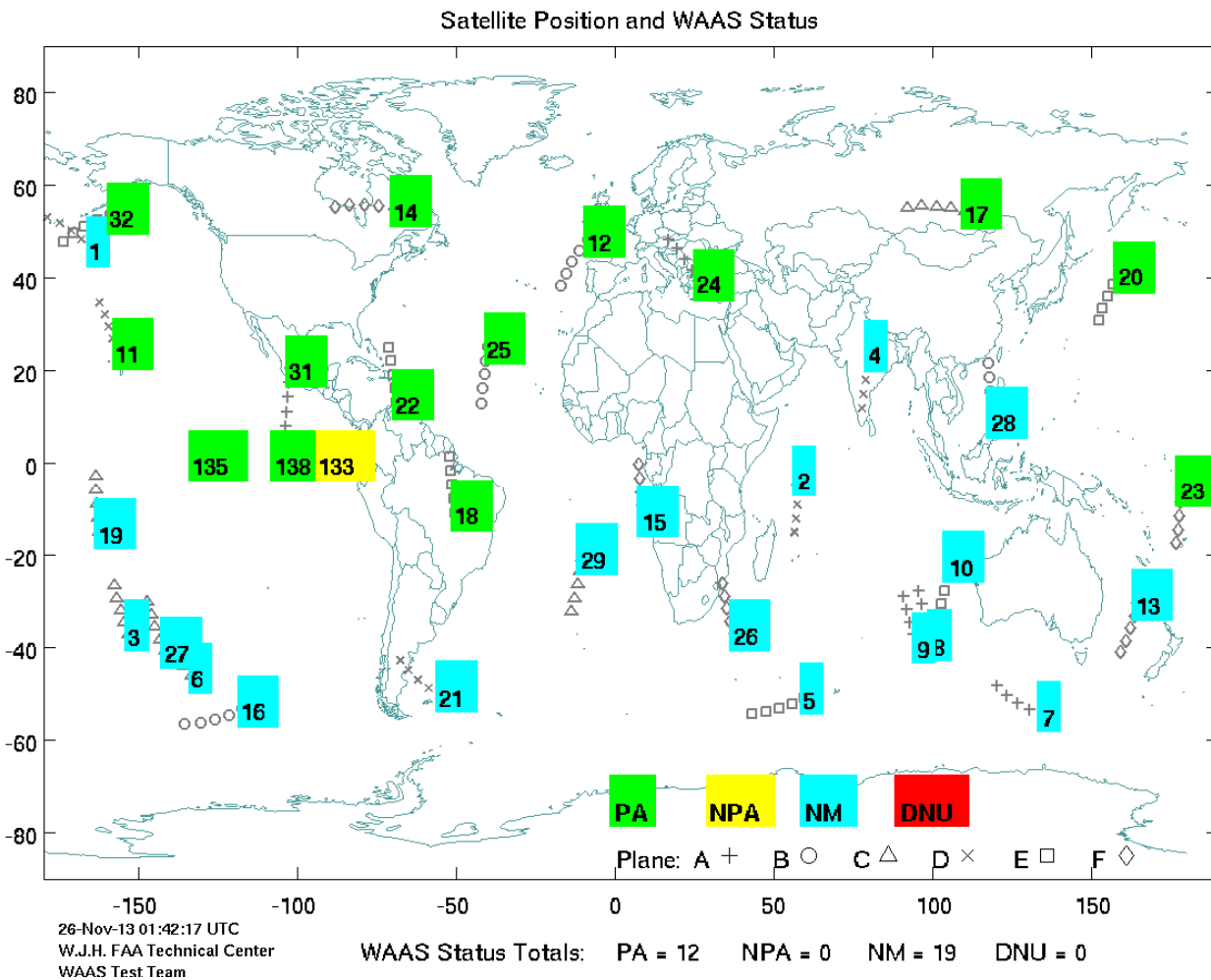
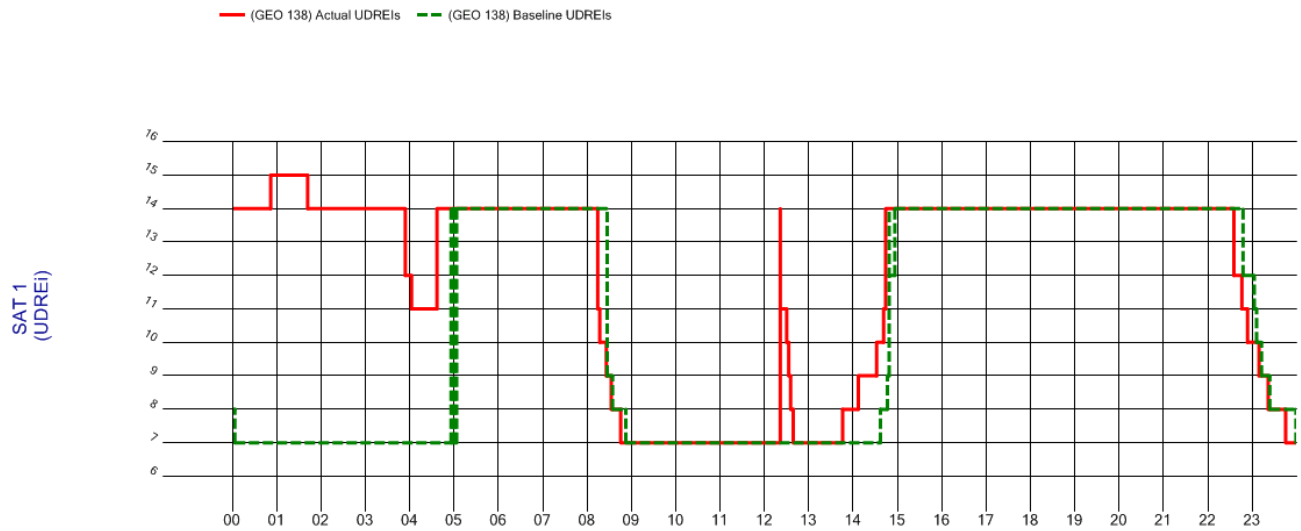


Figure 1: PRN 1 position just after the NANU completed

Figure 2 shows the UDREi's (as broadcast from GEO 138) of PRN 1 following the NANU. Please note that the UDREi plot does not show UDREi values if they are less than 7. The green line shows the baseline UDREi profile for PRN 1, while the red trace shows the actual UDREi profile for PRN 1 on 11/26/13. PRN 1 is typically tracked by many reference stations between the beginning of the day and about 0500 GMT. It was expected that PRN 1 would be set to WAAS "Not Monitored" until the NANU had been completed since the satellite was placed in maintenance mode while the satellite was out of view of the WAAS system. Once the NANU ended, PRN 1 was expected to return to a low UDREi due to the fact that it should have been tracked by many reference stations. Instead, PRN 1 remained in a "Not Monitored" state until about 0400 GMT.



Conclusion:

PRN 1 was tracked by fewer reference stations than expected on 11/26/13. UDREi values were elevated compared to baseline values. LPV200 coverage was affected for a short period of time in Miami and California due to the NANU.