

STEREO MOC Status Report
Time Period: 2014:279 - 2014:285

STEREO Ahead (STA) Status:

1. The following Ground System anomalies/events occurred during this reporting period:
 - On day 281, no real-time science telemetry was downlinked as the scheduled 70 meter support with DSS-43 was changed to a 34 meter support with DSS-45 in support of the STEREO Behind communication recovery.
2. The following spacecraft/instrument events occurred during this week. Note that the Ahead observatory is operating on the first side lobe of the HGA to prevent overheating of the HGA feed assembly.
 - The average daily science data return for Ahead, while operating on the first side lobe on the HGA, was 72 Mbits during this week.

STEREO Behind (STB) Status:

1. The following Ground System anomalies/events occurred during this reporting period:
 - None.
2. The following spacecraft/instrument events occurred during this week:
 - Since the hard command loss timer initiated system reset on at the end of the solar conjunction testing on Behind on day 274, no carrier signal has been received on any of the DSN supports. On day 278, during the DSS-63 support, three days after the expected command loss timer should have expired again to reset the observatory to a known configuration, a series of negative acquisition contingency commands were transmitted repeatedly in the blind at different uplink rates to re-establish communications with the observatory. After failing to establish communications following this activity, a spacecraft emergency was declared at 278-2000z to acquire the necessary DSN 70 meter station support to re-establish communications. The

project requested three hour 70 meter supports every 12 hours starting at 1100z on day 281, through day 292, to re-establish communications. The engineering began failure mode and effects discussions after all negative acquisition contingency procedure options were unsuccessful. The DSN RF data from the DSS-14 support on day 274, when the anomaly occurred, was reviewed with the engineering team and the DSN radio science receiver staff and it was concluded that the Behind observatory did reset on day 274 as expected and transmitted for a few minutes before the carrier signal faded. Using the recorded radio science receiver data, the DSN was able to extract a telemetry frame from the carrier signal just after the reset on day 274. From this very limited telemetry, three packets, it was concluded that at the time of the anomaly both C&DH and G&C processors were operating, however, there is an indication that an IMU failure may have occurred. After 1700z on day 283, contingency commanding was discontinued for three days to allow the hard command loss timer to reset the observatory. This will provide the best known state for subsystem focused contingency commanding.