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GOES-15 was launched on March 4, 2010 at 2357 GMT (6:57 PM EST). On March 20, 2010, the 8.5-meter magnetometer boom was deployed and the magnetometers were turned on. SWPC began using magnetometer 1 in operations on February 28, 2011 about 18 UT. At this time, we recommend using magnetometer 1, the outboard of the two magnetometers for both operations and science.

There are a number of issues with the magnetometers on GOES-15 that are still under evaluation, but for most purposes, as with previous GOES, the data are extremely useful for both science and operations.

GOES-15, as with other GOES in the NOP (-13, -14 and -15) series, have been observed to go into saturation. By running the magnetometers at higher temperatures, this rarely occurs, and if it does occur, there is a procedure in place at the NOAA Satellite Operations Control Center (SOCC) in Suitland, Md. to reset the magnetometers. These outages are infrequent and should only last a matter of minutes.

Magnetometer offset determination has been difficult on GOES since GOES-8, when NOAA went to a 3-axis stabilized bus. Therefore, while we strive for a 1-nT accuracy, the absolute accuracy of the instrument has to be treated with caution. There is only one opportunity, on two closely spaced days, for a spin maneuver at the beginning of the mission to determine on-orbit offsets and alignment. After that, the methods for keeping track of offsets include comparisons of data to model fields during quiet times, or to nearby conjunctions with other spacecraft, including other GOES. During post-launch testing, the GOES field was within a few nT of geomagnetic model values, but additional work is needed to keep track of instrument performance.

Another issue with the GOES-15 magnetometer is that there are small, typically less than 0.3 nT steps in the data resulting from the magnetometer heaters turning off and on. Methods for removing these steps have been considered. And finally, there is some small interference between the magnetometers that shows up in some components as noise at about the 0.1 nT level.

This readme file will be updated periodically, and additional details on the magnetometer performance will be provided in the near future. Questions can be addressed to the NGDC or to Howard J. Singer at the NOAA Space Weather Prediction Center.