

Surface Detector Temperature Profiles in Summer

M. A. DuVernois
School of Physics and Astronomy
University of Minnesota
116 Church St. SE
Minneapolis, MN 55455

In lieu of temperature sensors connected through the main EA detectors, we instrumented Flavia with HOBO data loggers and temperature sensors. The following temperatures were monitored over the course of 4 days and 3 nights in March 2001: inside the electronics enclosure (in contact with the electronics RF shield), inside the battery box (in contact with one of the batteries), the front side of the solar panel, the back side of the solar panel, the ambient air, and the side of the tank. This is likely to be the only chance to measure the temperatures of tank components in the field during this summer season.

Note that the maximum temperature at the front of the solar panel is nearly 50C, the batteries get up to 40C (late in the day, must be sunlight around the tank limb), the electronics enclosure interior gets to 32C, and the tank skin temperature reflects the thermal mass of the water (stays warm during the night). Solar panel temperatures vary quite rapidly (almost a degree per minute at 40C when a cloud obscures the Sun).

NB: Color is required to make sense of the temperature plot—works better on the screen where you can zoom than on paper.

Flavia Summer Temps

