

Abstract Submitted
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Multi-sensor Array for High Altitude Balloon Missions to the Stratosphere TIM DAVIS, BRYCE MCCLURG, JOHN SOHL, Weber State University — We have designed and built a microprocessor controlled and expandable multi-sensor array for data collection on near space missions. Weber State University has started a high altitude research balloon program called HARBOR. This array has been designed to data log a base set of measurements for every flight and has room for six guest instruments. The base measurements are absolute pressure, on-board temperature, 3-axis accelerometer for attitude measurement, and 2-axis compensated magnetic compass. The system also contains a real time clock and circuitry for logging data directly to a USB memory stick. In typical operation the measurements will be cycled through in sequence and saved to the memory stick along with the clock's time stamp. The microprocessor can be reprogrammed to adapt to guest experiments with either analog or digital interfacing. This system will fly with every mission and will provide backup data collection for other instrumentation for which the primary task is measuring atmospheric pressure and temperature. The attitude data will be used to determine the orientation of the onboard camera systems to aid in identifying features in the images. This will make these images easier to use for any future GIS (geographic information system) remote sensing missions.

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