Integrated Flight Computer for a High Altitude Balloon DO-
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State Univerity — Integrating a number of pieces of scientific equipment for in
flight use on a stratospheric balloon requires a common flight computer. This is
especially important if one wants to tie data from sensors such as an accelerometer,
magnetometer, and GPS to a piece of equipment such as a Geiger counter. We
are designing and building an integrated flight computer that combines flight sen-
sors, and can be used to collect data from other systems based around the Arduino
microcontroller. The system logs data for altitude, pressure, and temperature as
well as a 3 axis magnetometer and a 3 axis accelerometer to record forces on the
payload. GPS data is also being recorded to match the data that is acquired to a
specific location. The system is expandable to record data from other devices (such
as a Geiger counters) and to control external hardware (such as a camera or sample
collector). Results from system testing will be presented.

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