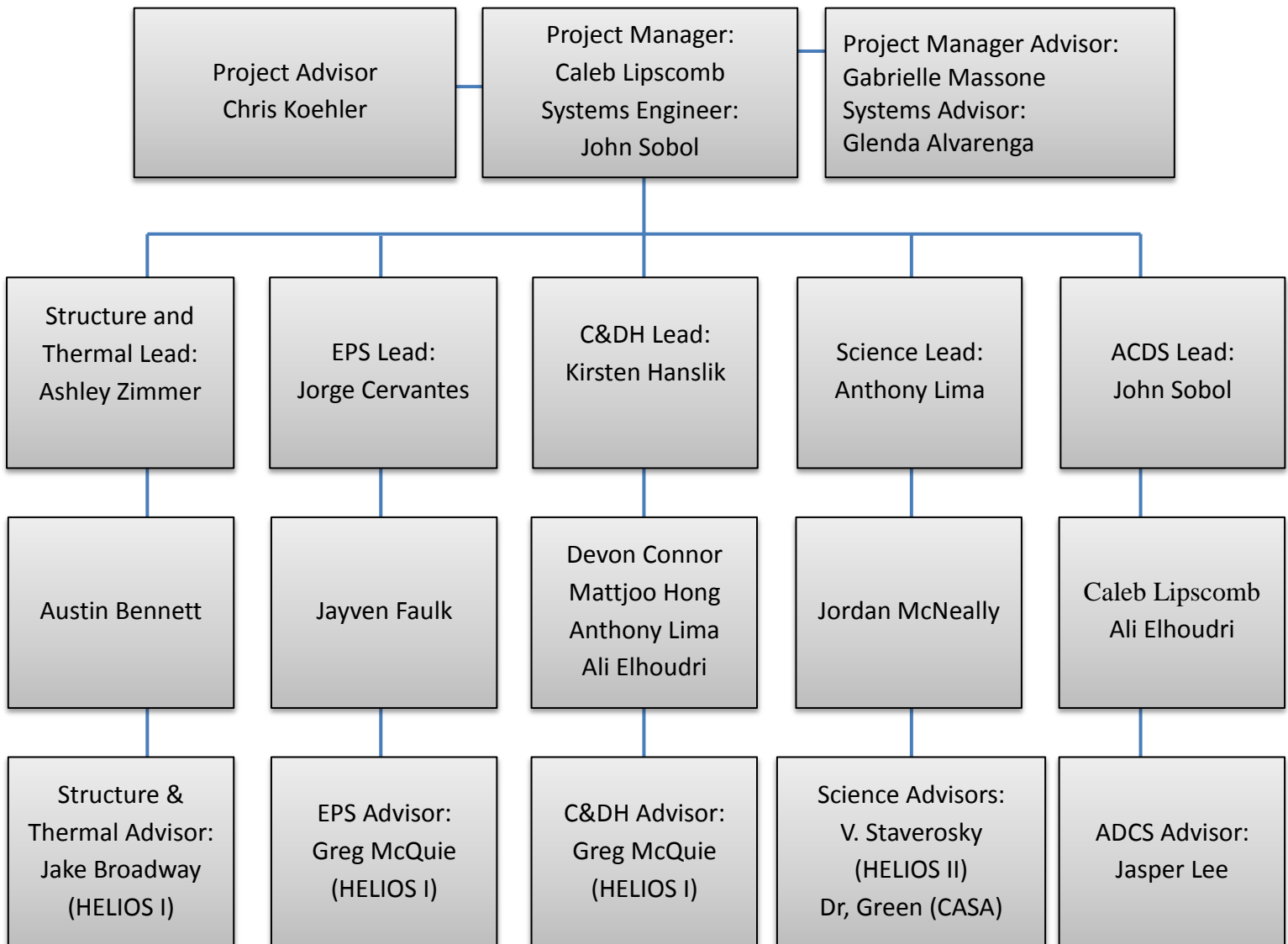


University of Colorado Boulder Monthly Status Report 8/23/2013

Overview Since 7/26/2013

In the last month, HELIOS II has been working on fixing the issues that occurred during integration with the HASP platform in Palestine TX. Additionally, team HELIOS II has been making travel preparations for launch in Fort Sumner, NM.

Current Team Members and Leaders



Activities of Team Members

Since the last report, HELIOS II underwent integration with the HASP platform in Palestine, TX. Several issues were encountered during the Thermal vacuum test, including a loss of communication with the HELIOS II payload during the cold and heat extremes, as well as a data format that was difficult to read and analyze. The main activities of the team members of HELIOS II over the last month were to resolve these issues. HELIOS II stopped communicating with the HASP platform during the end of the cold test, at temperatures around -35 to -40 degrees C. These temperatures are not expected to be experienced during the mission operations of HELIOS II, which shall only operate in the day. Daytime temperatures, based on the environmental data provided by the HASP platform of past missions, are expected to range from 25 degrees C to -10 degrees C. To resolve the overheating of the Pandaboard, the Pandaboard was heat sinked to the structure of HELIOS II using copper wire. This heat sink method was enough to prevent the motors, motor drivers, and linear regulators on the power board from overheating. During daytime tests with HELIOS II, the Pandaboard has never exceeded operational temperatures after the heat sinks have been applied. Finally, the format of all data collected and downlinked during the mission has been edited into a format that is much easier to read and analyze.

Issues Encountered

A few issues were encountered during the past month. The issues included:

- a. Issues with ADCS photodiode calibration, calibration changes at different times of the day. In order to best simulate environmental conditions at float, ADCS photodiodes shall be calibrated at noon.
- b. The clock on the Pandaboard reset every time the Pandaboard power was cycled. To fix this, a real time mission clock was added to the EPS Arduino, and it continues keeping time after being reset.

Milestones Reached

The biggest milestone reached was the successful resolution of all issues encountered during integration and the completion of a flight ready payload.

Next Objectives

The next objective for HELIOS II is to prepare for HASP launch, mission operations, and payload recovery. Members of HELIOS II flight operations will arrive in Fort Sumner, NM in the afternoon around 3 pm on August 25th. Additionally, HELIOS II shall be re-integrated with the HASP platform upon arrival.