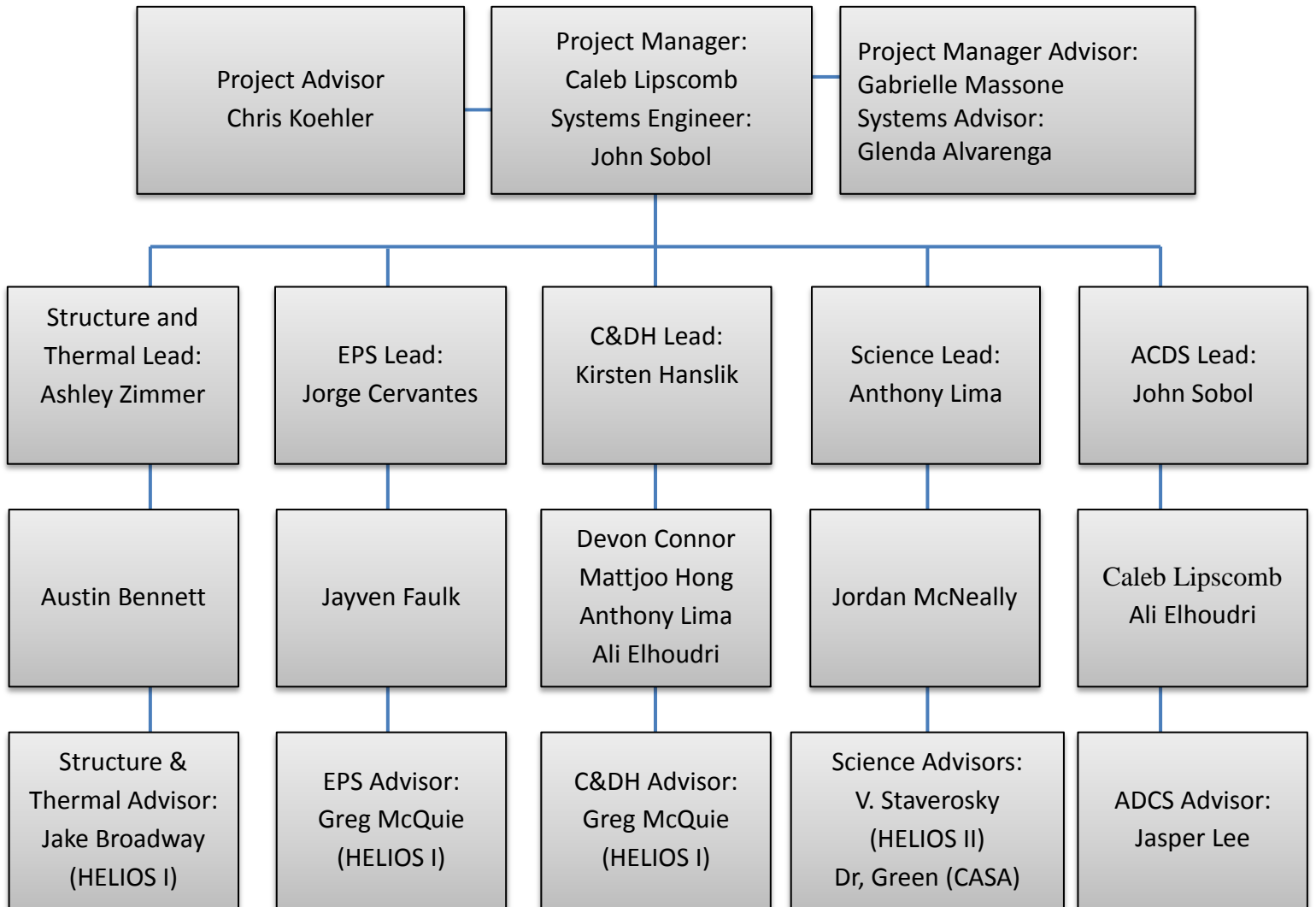


Overview since 5/31/2013

In the last month, HELIOS II has made several design changes and has begun moving forward with construction of the final payload. HELIOS II addressed all of the comments in the pre-PSIP document and has completed a final PSIP document. Additionally the construction of the final HELIOS II payload has begun.

Current Team Members and Leaders:



1 Activities of Team Members

Since the last report the Solar Wavelength Imaging System (SWIS)'s new design caused the HELIOS II structure to rise above the 30cm height limit set by the HASP platform. HELIOS II requested a height extension to 45 cm and it was given. SWIS has also switched to a smaller, higher resolution camera for use as the science camera. The Attitude, Determination and Control System (ADCS) has built and successfully tested tracking the sun using two photodiode arrays and two motors on two different axes. Additionally, ADCS added several redundancies into its design; adding a back-up pair of diodes to each array and including an emergency "pan" mode in which the motors will systematically scan the sky without tracking the sun and the cameras shall capture images every second. The Electronic Power System (EPS) has completed the design of the final power board and is waiting for the printed circuit board to be built. Command and Data Handling (C&DH) is able to command the cameras to automatically take pictures and store the captured images onto the solid state drive. Additionally, the CPU is able to communicate with an Arduino microcontroller using TX/RX communication. The final structure has been designed and is currently being machined by the Structure team.

2 issues encountered

Several issues were encountered in the last month. The major issues include:

- a. The new science camera design caused HELIOS II to rise above the 30 cm limit set by HASP. A height extension was requested and granted in order to resolve this issue.
- b. The stepper motor originally used in ADCS is no longer in production. An alternate stepper motor has been chosen, ordered, and tested for use in ADCS.

3 Milestones Reached

Several major milestones were reached in the last month. First, ADCS met its mission requirements and is able to track the sun on two axes. C&DH is able to control the cameras, store images, and communicate with the Arduino microcontrollers. Finally, EPS has completed the power board design and is waiting for the final board to be printed.

4 Next Objectives

The next major objectives for HELIOS II are to complete the final payload and to complete several days in the life tests. HELIOS II's payload shall be constructed next week and shall be tested for functionality. Mission simulation "Day in the Life" tests shall be performed after the completion of the HELIOS II payload.