

## University of Colorado at Boulder HELIOS V Team June Status Report

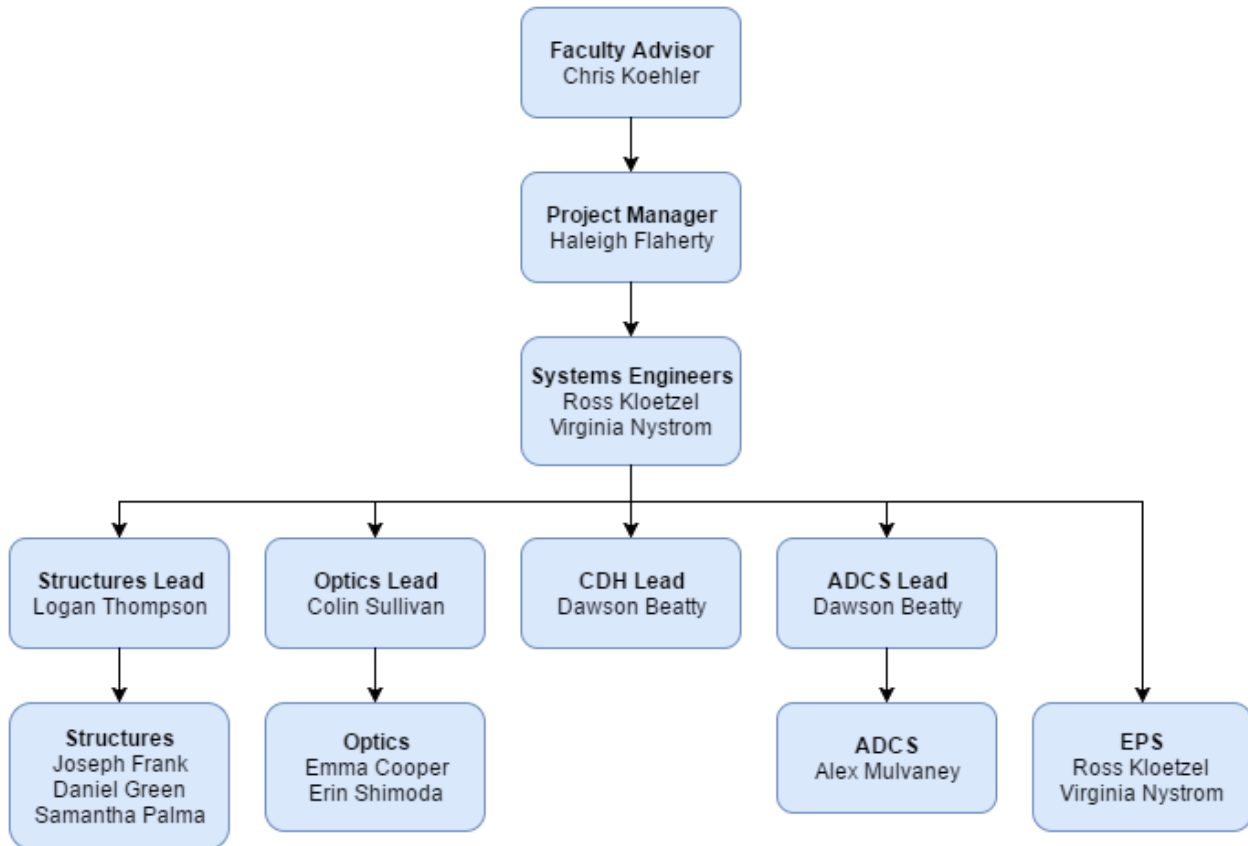
The construction of the HELIOS payload was completed in the first week of June and the first payload integration occurred on June 13<sup>th</sup>. Once the payload was integrated, the team began the systems tests including hardware testing, command verification tests, and alignment tests. So far several of these tests have been completed, with many more on the way.

### Team Demographics

Student	Ethnicity	Gender	Year	Major	Start Time	End Time	Grad/ Undergrad
Haleigh Flaherty	Caucasian	Female	Junior	Aerospace Engineering	January 2016	Current	Undergrad
Paige Arthur	Caucasian	Female	Senior	Aerospace Engineering	January 2016	May 6 <sup>th</sup> 2016	Undergrad
Ryan Cutter	Caucasian	Male	Senior	Aerospace Engineering	January 2016	May 6 <sup>th</sup> 2016	Undergrad
Erin Shimoda	Caucasian/ Asian	Female	Sophomore	Aerospace Engineering	February 2016	Current	Undergrad
Virginia Nystrom	Caucasian	Female	Sophomore	Aerospace/ Applied Math	February 2016	Current	Undergrad
Joseph Frank	Caucasian	Male	Sophomore	Engineering Physics	February 2016	Current	Undergrad
Severyn Polakiewicz	Caucasian	Male	Junior	Aerospace Engineering	February 2016	May 6 <sup>th</sup> 2016	Undergrad
Rebekah Haysley	Caucasian	Female	Sophomore	Mechanical Engineering	February 2016	June 1st 2016	Undergrad
Colin Sullivan	Caucasian	Male	Sophomore	Aerospace Engineering	February 2016	Current	Undergrad
Samantha Palma	Caucasian/ Asian	Female	Sophomore	Mechanical Engineering	February 2016	Current	Undergrad
Ross Kloetzel	Caucasian	Male	Sophomore	Aerospace Engineering	February 2016	Current	Undergrad
Michael	Caucasian	Male	Sophomore	Aerospace	February	May 6 <sup>th</sup>	Undergrad

Catchen				Engineering	2016	2016	
Alex Mulvaney	Caucasian	Male	Sophomore	Aerospace Engineering	February 2016	Current	Undergrad
Logan Thompson	Caucasian	Male	Sophomore	Aerospace Engineering	February 2016	Current	Undergrad
Dawson Beatty	Caucasian	Male	Sophomore	Aerospace Engineering	February 2016	Current	Undergrad
Gage Froelich	Caucasian	Male	Junior	Mechanical Engineering	February 2016	March 2015	Undergrad
Daniel Green	Caucasian	Male	Junior	Mechanical Engineering	February 2016	Current	Undergrad
Emma Cooper	Caucasian	Female	Sophomore	Aerospace Engineering	March 2016	Current	Undergrad

## Team Organization



## Accomplishments of June

**Structures:** Machining of the payload was completed in the first week of June, with structures assembly completed the following week. Once the payload was integrated with the other components, such as optics and electronic systems, the structures team was able to properly balance the upper housing of the payload using counterweights. Since then, the structures team has been working to support the team during systems testing.

**Optics:** The optics team spent much of June focusing on a problem with their image quality. While the new camera did help, the images taken during optics testing still looked very blurred of poor quality. After working with several of their team mentors, the team found that the source of the problem was the neutral density filter they had placed at the front of the telescope. The team now plans to use a Mylar filter instead to produce better images.

**CDH:** The CDH team worked on testing the flight code with the integrated payload this month. One of their key tests was the command verification test where they checked that the payload was receiving commands and responding properly.

**ADCS:** Once the payload was integrated, the ADCS team was able to begin testing their system.

They have been working on testing the photodiodes, which now contain a new ADC, and the ADCS camera code.

**EPS:** The EPS sub-team fixed issues with the photodiode PCBs. Certain ADCs did not work so the team re-soldered, rewired, and tested the boards to get them working. The EPS team also built the LED wiring harness as well as made minor improvements to the overall layouts of the wires in the payload.

**Systems:** The systems sub team attempted the first full systems test, however, ran into many integration issues. The team spent time working to properly integrate the software and hardware in preparation of future tests. Also, the systems team is preparing a procedure for the day in the life tests which will take place after a few successful systems tests are completed.

### **Plans for July**

The HELIOS V payload will continue to go through several systems test in July. The goal is to have the first Day in the Life test by July 5<sup>th</sup>. In July the team will also have a Flight Readiness Review on July 22<sup>nd</sup> and prepare for shipping HELIOS to Texas the following Monday.