University of Colorado at Boulder HELIOS V Team May Status Report

In the first month of summer, the HELIOS team has been able dedicate more time to the project, therefore increasing the production speed of the payload. This month the team moved into the construction and testing phase of their mission. The machining process has nearly been completed and the individual sub teams have been completing and testing their components. This is all in preparation for payload integration and systems testing that will begin in June.

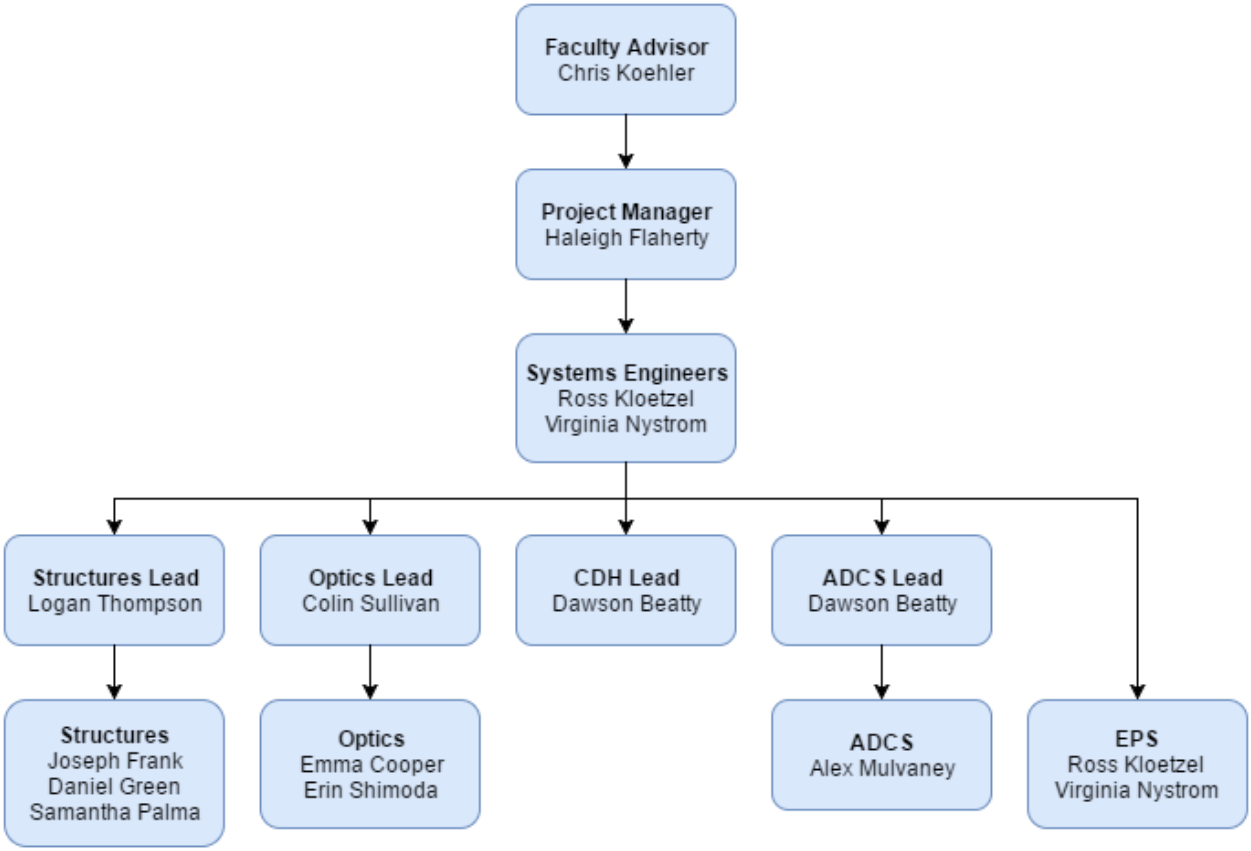
One major change to the HELIOS V payload that happened this month is that HELIOS will no longer be hosting a star tracker onboard. The PolarCube team that was going to fly the star tracker has withdrawn their desire to fly due to finical reasons on their project.

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 6th 2016	Undergrad
Ryan Cutter	Caucasian	Male	Senior	Aerospace Engineering	January 2016	May 6th 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 6th 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	Caucasian/	Female	Sophomore	Mechanical	February	Current	Undergrad

Palma	Asian			Engineering	2016		
Ross Kloetzel	Caucasian	Male	Sophomore	Aerospace Engineering	February 2016	Current	Undergrad
Michael Catchen	Caucasian	Male	Sophomore	Aerospace Engineering	February 2016	May 6th 2016	Undergrad
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 May

Structures: Machining the payload has been the focus of the structures team this month. Nearly all components for the new upper housing have been complete and are in their final construction phases now. The team also had the photodiode housings reprinted due to damage to the ones that flew on HELIOS IV that was included in the April report. As well as construction, the structures team has written the procedures for counterweight and motor testing that will be completed once the structure is assembled.

Optics: The optics team has made several decisions to improve the quality of the optics systems that will be flown on HELIOS V. The main decision was to upgrade the camera from an 8 bit to a 12 bit resolution camera. The optics and CDH teams have gotten the new camera to successfully capture images with the Pi 2. The optics team has mainly completed the construction of their system so their focus shifted to testing for the second half of May. This includes preparation for

thermal and imaging testing. They have begun completing these tests, and will finish them in the first week of June.

CDH: The CDH team changed the most out of any of the other teams this month. This meant that much of the CDH team's time was used to prepare another team member, Dawson Beatty, to take over the team. Along with this, Dawson and the previous CDH lead, Rebekah Haysley, have been completing the flight code so that when Rebekah leaves the team in June, the code is ready for systems testing.

ADCS: The ADCS team prepared for testing this month but due to the lack of a complete payload, have been unable to test their system yet. This meant that the ADCS members lent a hand to CDH team this month for much of their time on the project.

EPS: The EPS team has been testing the sensors that flew on HELIOS IV to check that they are all functional. Ones that are not working properly have been replaced so that the electronics are ready for HELIOS V.

Plans for June

The HELIOS V team will be moving into full systems tests in June. The date for system integration is no later than June 6th, and June 13th for the first systems test. This gives the first week of June for the sub teams to finalize their components and testing. This includes structures, EPS, and Optics working together to mount the electronics and optics systems. These components will also need thermal protection from the structures team, in the form of heat sinks or MLI depending on the component. Once the payload has been integrated, the team will begin the systems tests that have been written and prepared by the systems engineers.