SPARTAN-V Colorado Space Grant Consortium Monthly Status Report

29 July 2011

Dr. Guzik,

July has been an exciting month for the Colorado HASP team. After discovering the problem with interfacing our old motherboard with our CCD, we ordered a new motherboard. We then transferred the old software we had over (with a few tweaks because of having a slightly different operating system) and successfully connected with our CCD which allowed us to configure the camera settings.

We were seeing problems in our pitch motor functioning properly with the new motherboard, but corrected this issue as well by controlling the motor from our AVR as opposed to our motherboard. Through this same process we are also controlling our locking mechanism for the telescope (a linear actuator) and this has been tested and shown to work as well.

As a baseline flight configuration for our system we set up the payload to unstow and rotate the telescope to a proper viewing angle, take images for a predetermined time, then rotate and stow the telescope all autonomously on power up.

We are still working through testing all of our uplink commands to ensure full functionality of the system through serial uplink. Downlink has been tested and shown to work.

Currently, we are conducting system, or “Day In The Life,” testing. This composed of running the system through a timeline that mirrors flight. This test will be done inside for initial system functionality checkout, then repeated in different settings. One of these settings will be during a night observation which will give us another set of science data before integration. Once the payload is proven to work in a room temperature environment we are going to repeat the test in a thermal chamber to test our electronics in an environment closer to flight. Last month I discussed concerns of our motherboard running cold, however, through some vacuum testing done here in Colorado we have found that our motherboard heats up very quickly. Now, we are more concerned about the motherboard running hot. We have set up a heat-sink path for the motherboard’s processor to mitigate this concern as much as possible. We are trying our best to iron out these issues before integration in Texas.

The SPARTAN-V team plans on traveling to Palestine on Monday, August 1st, and departing on Saturday the 6th. Our plan for flight is to drive down to Ft. Sumner on Wednesday, August 24th, and drive back the day after launch (depending on when launch is). With no delays, this will be Tuesday, August 30th.

Below is a list of students who have worked on the payload.

None of the listed students used the project for thesis-related activities.

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| **Name** | **Standing** | **Major** |
| Akash Agrawal | Grad | ECE |
| Alex Harvey | Undergrad | ASEN |
| Bear Sawicki | Undergrad | ECE |
| Brian Ibeling | Undergrad | ECE |
| Bryan Barnhart | Undergrad | MATH |
| Chris Nie | Undergrad | ASEN |
| Eddy Scott | Undergrad | ASEN |
| Irene Chen | Grad | ECE |
| Jackie Myrose | Undergrad | CSCI |
| Josh Tiras | Undergrad | ASEN |
| Josh Yeaton | Undergrad | ASEN |
| Kevin Wong | Undergrad | ASEN |
| Maulik Kapuria | Grad | ECE |
| Nate Lapinski | Undergrad | CSCI |
| Sreyas Krishnan | Undergrad | MCEN |
| Sushia Rahimizadeh | Undergrad | ECE |
| Tyson Sparks | Undergrad | ASEN |
| Venkat Janakiraman | Grad | ECE |
| Vignesh Muralidharan | Undergrad | EE |
| Jeff Bryne | Undergrad | MCEN |
| Carly Smith | Undergrad | APPM |
| Anthony Cangelosi | Undergrad | ASTR |

APPM – Applied Math

ASEN – Aerospace Engineering

ASTR - Astronomy

CSCI – Computer Science

ECE – Electrical and Computer Engineering

EE – Electrical Engineering

MATH – Mathematics

MCEN – Mechanical Engineering

See you in Texas soon,

Christopher Nie

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