May 31, 2013

To: Dr. T. Gregory Guzik - HASP Project Director
From: Patrick Doyle – Current U of MN Team Lead
Seth Frick – Team Lead Trainee
RE: HASP Monthly Status Report

1. Activities

Developed new algorithms for detector event storage while continuing familiarization with flight code.

Began testing data collection and storage rates to combat issues with data packet losses.

Began design of power system and hardware interface printed circuit board.

Continued writing documentation for all subsystem procedures and interfaces.

Began researching lead shielding for detector.

Consulted department lab coordinator on implementing an amplitude detection circuit to relate detector pulse amplitude to photon event energy levels.

Completed external structure model and began modeling internal hardware components.

Began looking at downlink data record to possibly include hardware component temperature monitoring.

2. Issues Encountered

Discovered detector board will need to be reconfigured to detect cosmic ray energies.

Found that implementing two detectors is too large a scope as most team members have minimal coding and hardware integration experience.

3. Milestones Achieved

Decided to implement cosmic ray energy detection on a single detector with sufficient lead shielding.

Finalized 10x10x30 cm exterior structure design.

4. Current Student Team

Name	Gender	Ethnicity	Race	Student Status	Responsibilities
Patrick Doyle	M	Non-hispanic	Caucasian	Graduate 2nd year	Current team lead, new member training
Seth Frick	M	Non-hispanic	Caucasian	Graduate 1st year	Team lead in training, thermal monitoring
Curtis Albrecht	M	Non-hispanic	Caucasian	Graduate 2nd Year (Graduated)	Flight computer and power systems advisor, new member training
Mark Abotossaway	M	Non-hispanic	Native American	Undergraduate Senior (Graduated)	Detector subsystem advisor, new member training
Micael Menendez	M	Hispanic	White-Latino	Undergraduate Junior	Hardware interfacing and power systems
Andrew Mahon	M	Non-hispanic	Caucasian	Undergraduate Sophomore	GPS and IMU operation, structure hardware configuration and fabrication
Haley Rorvick	F	Non-hispanic	Caucasian	Undergraduate Sophomore	Structure design, hardware configuration, and fabrication
Josiah DeLange	M	Non-hispanic	Caucasian	Undergraduate Sophomore	Flight computer and power systems, flight software
Alec Forsman	M	Non-hispanic	Caucasian	Undergraduate Sophomore	Flight computer and power systems, flight software
Michael Joseph	M	Non-hispanic	Caucasian	Undergraduate Sophomore	Detector energy detection, testing, and shielding
Seth Merrifield	M	Non-hispanic	Caucasian	Undergraduate Sophomore	Thermal monitoring and protection.
John Jackson	M	Non-hispanic	Native American	Undergraduate Sophomore	Detector energy detection and testing