

February 24, 2012

To: Dr. T. Gregory Guzik - HASP Project Director
From: Patrick Doyle – University of Minnesota (UMN)
High Altitude X-Ray Detector Testbed (HAXDT) Team Lead
RE: HASP Monthly Status Report

1. Activities

One undergraduate student with experience designing and modeling balloon payload structures has been recruited and placed in charge of structure design and construction. Additional undergraduates have been recruited to assist in construction and thermal protection system design.

Procedures to begin integrating the flight code with the avionics package have been developed, and construction of required connectors/harnesses has begun.

Research into x-ray detectors has yielded a contingency plan outlined in the Issues Encountered section below.

We have reviewed temperature data obtained from past HASP flights by IUPR in order to solidify a thermal protection plan. We have also used IUPR's attitude data to review rotational rates of the HASP gondola in order to examine mounting location requirements for the x-ray detector.

The response to weaknesses found in the original HASP proposal has been written and submitted along with this status report.

2. Issues Encountered

X-ray detectors such as the one described in the proposal (Amptek X-123SDD) are too expensive for the project's budget. We have approached Lockheed Martin Corporation through our collaboration with ASTER Labs, Inc. and are waiting to hear if they have a detector available. We have adapted a parallel approach of designing and building our own detector based on a NASA/GSFC design while we wait for commitments from the Lockheed Martin group. We have set March 23 as the drop-dead date for deciding which design will be flown on the HASP project. That is, until March 23 we are continuing forward as though each detector is going to fly on the mission.

3. Milestones Achieved

The flight computer and IMU have been purchased and received. All devices and sensors other than the x-ray detector are thus in-hand and ready for systems integration.

4. Current Student Team

Name	Academic Level	Responsibilities
Patrick Doyle	Graduate Student – 1 st year	Team Lead and systems engineer. X-Ray detector and GPS integration
Curtis Albrecht	Graduate Student – 1 st year	Power management design and flight computer operations.
Steven Haviland	Undergraduate – Senior	Attitude determination sensor integration.
Sean Grogan	Undergraduate – Fresh.	Structure design and mechanical drawings.
Zach Fadness	Undergraduate – Fresh.	Structure design and construction.
Ryan Carlson	Undergraduate – Soph.	Thermal protection and monitoring.
Brian Erickson	Undergraduate – Soph.	Thermal protection and monitoring.