

HASP LSU Directional Cherenkov Detector

March 2012 Status Report

Activities

The process of simulating the detector's performance using Epics and Cosmos is nearing completion. The necessary materials were added to the software library. The subroutines responsible for simulating the light signals from the two radiator materials and outputting the corresponding data to files required modifications. These modifications are tested using inputted particle fluxes with a limited range of energies, incident angles, and compositions. The software testing process involves comparing the analysis of outputted data to analytical predictions of the detector performance under ideal conditions. Once these modifications and testing are completed, more realistic particle fluxes can be added to the detector simulation software input. The analysis of the data from these simulated events can help in characterizing the detector performance and data analysis.

Aside from the computer simulation activities, last month's tasks included fabricating the payload. The process of testing and troubleshooting problems in the PMTs from the previous payload has been completed. Replacements for the malfunctioning PMTs have been tested. Next month's activities include replacing the malfunctioning PMTs and testing and calibrating the PMT system. Electrical potting and vacuum testing will commence shortly after successful testing. Upon completion of the PMT system, the detector optical components require optical bonds. The optical bonding compound requires multiple days of dead time for curing. During this dead time, the planned activities include the further fabrication of parts needed for the mechanical structure and further testing of the flight software and electronics.

Team Management Structure

Team Electron Volt is comprised of Sean McNeil. Contact information and individual roles are shown in [Table 1](#).

Table 1 – Team Management Structure

Name	Sean McNeil	Dr. Gregory T. Guzik
Roles	<ul style="list-style-type: none">• Software• Testing• Calibrations• Data Analysis• Project	<ul style="list-style-type: none">• Faculty Advisor

	Management <ul style="list-style-type: none">• Electrical• Mechanical	
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