

**2011 HASP January Status Report
UA Maple Leaf Cosmic Ray Detector**

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1 Activities

Classes resumed on January 10, 2011. The Cosmic Canucks held their first meeting of the year on Thursday January 20, 2011. The team discussed the milestones for the months of January and February.

Send HASP the missing items from the provisional acceptance letter	(Jan 28)
Anticipated completion of online Electronics course	(Feb 28)
Anticipated completion of revised detector design	(Feb 28)

Table 1: January and February Milestones

In the provisional acceptance email received from The HASP selection committee, there were three critical items missing from our proposal, in addition to the package of comments regarding the application not yet received by the UA-HAB team. These issues include the provision of:

1. a weight budget,
2. a dimensioned mechanical drawing and
3. dimensioned drawing showing details of the mechanical attachment to the HASP mounting plate

The team has been working on finalizing the three items missing from the proposal and will send them to the HASP committee on Monday January 31, 2011.

During this meeting, the Cosmic Canucks discussed the distribution of tasks and coordination among members of the team to work on these three items. The team also discussed the contents of the online electronic course, and the possibility of extending the design of the payload to a more sophisticated scintillation-type detector that would maximize the scientific return and educational experience of the proposal. In this revised design, the ability to gain information on the temporal and spatial variation of cosmic ray detection in addition to the enhanced . After the meeting, the team visited the Particle Physics electronic workshop to discuss the different types of scintillator materials available at the University of Alberta Department of Physics, as well as the different type of designs for a cosmic ray detector.

The team met with the advisers, Ian Mann and Jonathan Rae on Monday Jan 24, 2011. The discussion centred on the potential to design, test and fly a more sophisticated cosmic ray detector. The primary reason to change the original design is to provide a more challenging experience for the UA-HAB team and maximize the educational experience for the team. The team was advised to start working on the design of the new detector design until HASP approves the changes of going from a static detector to a time-resolution detector. It was decided that the team would meet weekly during the design period (due to the significant proposed changes in the instrument design) and on biweekly meetings at later dates to keep the advisers informed of the progress and challenges in the project.

Subsequently, on January 27, 2011, the UA-HAB team received notice that they would be able to submit a revised payload design document from HASP, based upon a more advanced design based upon scintillation and pulse counts. The team will therefore work on the redesign and send to HASP on a proposed deadline of February 28, 2011. Three different types of pulse count detector design were discussed with the Particle Physics group, and the UA-HAB team were made aware of the advantages and limitations of each, within the telemetry, mass and power budget available

to the payload, as well as the timeline for acquisition of parts. The UA-HAB team will explore the trade space between these three designs in preparing the revised detector design.

The team has not yet received the comments regarding the application, which will be addressed in further monthly reports when the package has been received.

2 Design/Development Issues

None to report

3 Personnel

No change in the project leadership has occurred.