

April Status report
Maple Leaf Particle Detector

ANDREAS BUTTENSCHÖN
CORY HODGSON, LAURA MAZZINO, WYATT JOHNSON
AND QUINN FARR



UNIVERSITY OF ALBERTA
DEPARTMENT OF PHYSICS
EDMONTON AB T6G 2G7
CANADA

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REVISION: 1.0

1 Activities

The team devoted a lot of time to the project during the first two weeks of April. The last two weeks of April the team focused on their finals, while the Department of Physics moved to a new building. Now that classes are finished the team expects to devote full time to the project.

The team finished the metal cutting phase of the mechanical component of manufacturing. Machining started around the 20th of the month, and two team members are now trained to continue and finish. Completion is expected by first week of May.

Of the four PCB's prototypes one has been fully populated, tested and is fully operational. A second PCB prototype is near completion. The second prototype will be devoted to weather balloon flight testing, while the first is the bench prototype, that will be taken to the David Florida Laboratories (DFL) for testing.

A conformal silicon coating to encapsulate the high voltage components of the electronics was selected. The coating will be further tested this week to determine the performance in low pressure environment.

The firmware for the PCB has been started, and it is expected to be completed before testing at DFL.

Members of the team have been in contact with the DFL personnel for the past two months. Requirements for a successful Thermo-Vac test sent by Michael to the team was forwarded to DFL in order to determine a testing procedure. The procedure has been finalized, and testing has been scheduled for May 15-16. All four undergraduates, group leader and group adviser are attending this test.

The gear for the weather balloons has arrived and the logistics to start testing out electronics on weather balloon missions will start before the end of May.

The team is taking a course on project management, mid may. This course will help to coordinate our efforts and makes us more effective in planning and decision making.

2 Design/Development Issues

Design/Development proceeds as planned. Flight of the medipix is still uncertain. Fallback position is flying the Geigers, but design doesn't change.

3 Milestones

Scheduling testing at DFL (David Florida Labs)	(May 15-16)
Anticipated completion of manufacturing	(second week May)
Start of weather ballon launches (testing of components)	(Mid May-June)
Final PSIP document	(Jun 1)

Table 1: Upcoming (May) Milestones

4 Personnel

Nothing to report.

5 HASP questions

Counts given the geometry of Geiger tube? Due to final exams, the team did not have the time to properly investigate this concern. This will be addressed during the next week and an answer will be submitted during the teleconference.

Efficiency to DC-DC conversion efficiency? The DC-DC conversion efficiency is $\approx 85\%$.

High voltage on DC-DC conversions: encapsulations? We will be using MG silicone conformal coating in order to prevent a discharge.