

LSC Six-Month Progress Report

Organization Louisiana Tech University Center for Applied Physics Studies (CAPS)
Report Date 08/15/1999

Attachment A - LIGO I

Item - Task 8 -

Submitted by Zeno D. Greenwood (ZDG)

During this period, ZDG made ten (10) trips to the LLO to confer with Mark Coles and to direct ongoing seismic measurements at that site. ZDG attended the LSC meeting at Gainesville in March.

Kathleen Johnston (KJ) visited the Materials Lab at MIT in June to discuss the use of a SIMS machine for surface studies at the LLO. Natalia Zotov will attend both the Amaldi Conference at Caltech and the LSC meeting at Seattle. KJ and Neven Semicevic will also attend the LSC meeting.

Work on MOU attachments:

1. Seismic measurements

ZDG and Clay Westbrook have made several measurements with a Guralp CMG-40T 3-D seismometer. The data were taken with a Reftek Data Acquisition System and two Reftek SCSI data recorders. Most of these measurements were taken at the West-end station during noisy and quiet times.

Clay Westbrook is working this summer at the LLO. He is continuing the seismic measurements he started earlier. The Guralp system has been moved to the South end station. His work is being done in parallel with normal mode measurements being conducted by Faidi Saibi, a student visiting from France. Clay has been a resident at the LLO during June and has helped where needed on other projects as well. Clay will continue working at the LLO in August.

IRIS and PASSCAL: As mentioned in the previous 6-mo. Report, we have been talking with Jim Fowler, the Director of the PASSCAL division of the Incorporated Research Institutions for Seismology (IRIS) Consortium. PASSCAL lends seismology instrumentation to institutions involved in NSF sponsored research. Dr. Fowler has been very helpful in finding four (4) Guralp CMG-3ESP broadband seismometers for our use at the LLO this summer. We will also have the use of Reftek Data Acquisition Systems, recorders, and GPS-synchronized timers. This equipment has arrived at the LLO and will be initially installed in the South end station along with a dedicated UNIX box. The CMG-3ESP sensors are more sensitive than the

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CMG-40T models we have been using and therefore can be used for both the gravity gradient and microseism studies. CAPS is arranging for Mr. Marcos Alvarez of the PASSCAL division of IRIS to travel to the LLO in order to present a two-day tutorial on the use of the Guralps, Refteks, and their interface to UNIX and other computer equipment. This will occur on June 24-25.

2. Surface studies of beam tube materials and the upcoming bakeout at the LLO

As mentioned in our last 6-mo. Report, Rai Weiss proposed that KJ contact E. Shaw, Director of the Material Lab at MIT about the possible use by CAPS of a SIMS machine that is presently not be used in Dr. Shaw's lab. After that contact was made, KJ made a trip to the MIT lab on June 2-3, visited with Dr. Shaw, and inspected and operated the SIMS machine. Afterwards an agreement was made for the SIMS machine to be shipped to a lab in our Institute for Micro-manufacturing (IfM) on the LaTech campus. Assisting KJ in the shipment of this machine and its setup at the IfM will be a new collaborator, Dr. Mike Vasilie who is a well-known Material Scientist at the IfM.

ZDG, in addition to the seismic measurements, has agreed to help where needed on the bakeout at the LLO in August.