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Date: Wed, 12 Jul 2006 11:16:12 -0700

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Subject: Large Facilities Projects Monthly Report for June 2006 (LIGO)

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## **LIGO End of June 2006 Highlights**

Reference: **LIGO-M060096-00-P**

### Meetings and Publications

A very successful meeting of the LIGO/Virgo Joint Working Group was held at Orsay, France during June. Several teams had succeeded in carrying out a trial, proof-of-principle analysis using three hours of real data (from LIGO, GEO and Virgo) that had been exchanged just a week before the meeting. The purpose of this project is to ensure that vetoes and data quality information can be properly exchanged, in addition to time-series data itself. The meeting also served as a valuable forum for discussing practical issues for how the two sides will work together after the Virgo/LIGO MOU is signed.

Following up on discussions between Benoit Mours and the LIGO Directorate during the GWIC meeting, also held in June, we have now finished a first draft of the Virgo/LIGO MOU Attachment describing details of how Virgo and the LSC will work together.

### S5 Science Run

We began the first long LIGO Science Run (S5) in November 2005 at sensitivities over most frequencies equal to our target in the science requirements document (SRD). Our goal is to accumulate one full-integrated year of data at the design sensitivity. S5 is expected to last 18 months with minor interruptions for maintenance and improvements.

All three interferometers exhibit excellent sensitivity. The reach of the two four-kilometer interferometers for a binary neutron star inspiral event continues to be approximately 14 Megaparsecs (Mpc). The Hanford two-kilometer interferometer is operating between 6 and 7 Mpc.

Since the inception of S5, the Hanford four-kilometer interferometer has a cumulative operating duty factor of 68.9 percent (80.1 percent in June). The Hanford two-kilometer interferometer is at 76.4 percent (86.7 percent in June).

The cumulative Livingston four-kilometer interferometer operating duty factor is 56.4 percent (75.7 percent in June). Lock statistics showed steady improvement during the month. The duty cycle during the last week in June was 82 percent with the inspiral range typically between 13 and 14 Mpc.

### Advanced LIGO

The Advanced LIGO Baseline review was held May 31 through June 2, 2006 at MIT. This review represented a critical step for Advanced LIGO with the purpose of validating our estimated cost, schedule, scope and technical approach as well as our plan for management of the project.

The review committee consisted of about 20 outside technical and project experts.proceeding with the project.

The results as presented during the closeout briefing were very positive. The committee told us that they were "impressed." They indicated that they felt we are ready for construction and that the committee believes that the project can be completed successfully on schedule within the estimated total project cost.

### Science Education Center at Livingston

The Livingston Science Education Center construction remains slightly ahead of schedule due to good weather. Beneficial Occupancy had been moved up to the end of August. Opening ceremonies are planned for November 13, 2006.

A Request for Quotation (RFQ) has been issued for the manufacture and installation of the kinetic facade. Proposals are due mid July.