



**Attachment OPT to the
Memorandum of Understanding LIGO-M050315-00
between the Hobart & William Smith Colleges LIGO Group (HWSLG)
and the
Laser Interferometer Gravitational Wave Observatory (LIGO)
For The Period
August 15, 2008 - August 14, 2009**

This Attachment OPT to the Memorandum of Understanding LIGO-M050315-00 defines the role of the Hobart & William Smith Colleges LIGO Group (HWSLG) as a Member of the LIGO Scientific Collaboration (LSC), and a member of the Optics Development Group (LDG). The period of performance for the activities in this Attachment is from August 15, 2008 - August 14, 2009.

1. Collaboration

The Optics Development Group (ODG) is the scientific collaboration for defining and developing instruments in optics for use in advanced subsystems for the initial LIGO interferometers, or in entirely new advanced interferometers.

MOU Attachment OPT defines the roles and responsibilities of groups in this development group.

2. Participation

During the period August 15, 2008 - August 14, 2009, the members of HWSLG will participate in ODG in the following areas:

a. Optics Characterization

Fused Silica Mechanical Loss in the Low Frequency, Large V/S Regime

The repaired large cantilever sample is expected to be received from Heraeus by October. The PI will measure the loss in this sample and will prepare a paper on the results. This experiment provides a direct measurement of the anticipated mechanical loss for the Advanced LIGO test mass substrates. It also is a significant test of our model for the loss in fused silica.

The PI will measure the mechanical loss in 6 mm diameter fibers of Corning 7980. This measurement provides a direct comparison with the very high Q samples measured in Heraeus Suprasil. This experiment should indicate if the choice of Corning 7980 for the end test masses is acceptable.

Optimized Annealing for Advanced LIGO Test Masses

We will make repairs on the vacuum annealing oven, which is required for the larger samples in this experiment. We will begin measurements of these annealing samples when the machining of the suspension system has been completed. Given the academic timetable, those measurements should begin in late August.

b. Other Contributions

Not Applicable

3. Resource Sharing

The LIGO Laboratory will contribute resources including allocation of appropriate scientific and engineering personnel, research facilities, and funding in support of the effort in Item No. 2, as indicated below.

a. Research accommodations for HWSLG group members while on LIGO research assignment at any LIGO Laboratory site.

Not Applicable

b. Access to LIGO data through established LSC channels in support of this work.

Not Applicable

4. Coordination and Reporting

HWSLG will perform research within the structures established by the LIGO Laboratory and the LSC where appropriate. In particular, activities described in Item 2 will be carried out within the Optics Development Working Group of the LSC.

This includes keeping the Group leaders informed of activities and plans, reporting to the group at meetings and telecons, and through technical documents submitted to the LIGO Document Control Center.

In addition, an annual report will be submitted with the update to this Attachment, giving a summary status on research by topic as indicated in Item No. 2, including progress against the milestones if any, significant accomplishments such as new insights/discoveries or publications, issues of concern if any, and an indication of invested time.

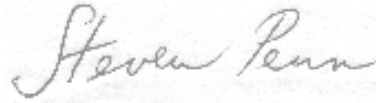
This Attachment will be updated at least annually with a plan of activities for the succeeding one-year period. These documents will be due one month before the close of the period of performance under this Attachment.

5. Computer Code

All computer code delivered to the LSC under this Attachment must be developed in consultation with the LSC Data Analysis Software Working Group (DASWG) and archived, documented and reviewed as determined by that group.



Jay Marx
LIGO Laboratory Director



Steven Penn
Principal Investigator(s)
HWSLG



David Reitze
LSC Spokesperson