



**Attachment OPS to the
Memorandum of Understanding LIGO-M050370-00
between the Columbia Experimental Gravity Group (GEC0)
and the
Laser Interferometer Gravitational Wave Observatory (LIGO)
For The Period
August 15, 2007 - August 14, 2008**

This Attachment OPS to the Memorandum of Understanding LIGO-M050370-00 defines the role of the Columbia Experimental Gravity Group (GEC0) as a Member of the LIGO Scientific Collaboration (LSC) in the areas of detector commissioning, detector characterization, and operations support in the initial LIGO interferometers. The period of performance for the activities in this Attachment is from August 15, 2007 - August 14, 2008.

1. Collaboration

Together, the LIGO Laboratory and the LIGO Scientific Collaboration (LSC) are responsible for implementing and exploiting the initial LIGO detector through its science data runs. LSC groups are encouraged to contribute to the commissioning, characterization, and operation of the LIGO detectors, as members of working groups established by the LIGO Laboratory and the LSC.

2. Participation

During the period August 15, 2007 - August 14, 2008, the members of GEC0 will participate in the initial LIGO detector research program in the following areas:

a. Detector Commissioning

GEC0 will contribute to detector stability and sensitivity improvements in areas where the group's expertise overlaps with LIGO's needs.

GEC0 will continue to participate in calibration studies with special focus on the photon calibrator.

GEC0 is responsible for advanced/enhanced LIGO timing and timing diagnostic system development. We will continue to spearhead this effort.

b. Detector Characterization

GEC0 will spearhead the LIGO/enhLIGO timing investigation and diagnostic effort (timing studies, monitoring) in addition to its role in timing software/hardware improvement/maintenance. GEC0 will maintain its existing data monitoring tools in service.

GECO might implement needed new ideas (dependent of available manpower and LIGO lab priorities) for DMT monitors and related hardware.

c. Detector Operations

Participate in scientific shifts during science runs.

d. Other Contributions

GECO will provide user assistance for the users of the LIGO-TriNet stations.

Kalmus will contribute to the work of the LSC Calibration Committee.

GECO will provide people to do service work for various LIGO committees and review groups.

Marka will lead and coordinate the timing and timing diagnostic effort for LIGO, enhLIGO and advLIGO.

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 GECO 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

GECO will perform research within the structures established by the LIGO Laboratory and the LSC where appropriate.

In particular, with reference to activities described above:

2a will be carried out in coordination with the LIGO Laboratory Commissioning Leader.

2b will be carried out within the Detector Characterization Working Group of the LSC.

2c will be carried out in coordination with the LHO or LLO Site Head.

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



Szabolcs Marka
Principal Investigator(s)
GEC



David Reitze
LSC Spokesperson