

Attachment Number A to the
Memorandum of Understanding (LIGO-M990001-00-M)
between the
University of Texas at Brownsville Relativity Group (UTBRG)
and the
Laser Interferometer Gravitational Wave Observatory (LIGO) Laboratory
August 15, 1999

This Attachment A to the Memorandum of Understanding LIGO-M990001-00-M covers the role of UTBRG as a Charter Member of the LIGO Scientific Collaboration (LSC) and a member of the LIGO I Development Group (LIDG). The period of performance for the activities in this Attachment is from August 15, 1999 to February 15, 2000. This period may be modified by agreement to a revision of this Attachment.

1. LIGO Scientific Collaboration - The LIGO Scientific Collaboration (Collaboration) is organized as a separate organization from the LIGO Laboratory. It includes scientists from the LIGO Laboratory, and those from collaborating institutions, and has its own leadership and governance. The Collaboration will ensure equal scientific opportunity for individual participants and institutions. It will organize the research, publications, and all other scientific activities. The Collaboration will report to the Laboratory Directorate for final approval of its research program, technical work, observational physics publications, and talks announcing new observations and physics results. This will be done through regular semi-annual reports to the Directorate and its PAC.
2. Charter Membership - An initial period for formation of the Charter group of institutions in the LIGO Scientific Collaboration commenced on March 1, 1997 and ended following the first full meeting of the Collaboration at which the Collaboration Council assumed its role.

Following the charter period, proposals will be evaluated and approved, as appropriate, through the Collaboration Council. An MOU with the LIGO Laboratory, including Attachments defining specific work, will be required for any participating institutions.

3. This document is an agreement between the University of Texas at Brownsville Relativity Group (UTBRG) and the LIGO Laboratory concerning the activities of UTBRG as a Collaborating Institution in the LIGO Scientific Collaboration (LSC) and in the LIGO I Development Group (LIDG), and as indicated in the Item No.8. below.
4. LIGO I Development Group - The LIGO I Development Group is the scientific collaboration for implementing and exploiting the initial LIGO detector and physics through the initial science data run. Only groups who establish a specific Attachment approved by the LIGO Labo-

ratory, which defines a sufficient contribution and participation in LIGO I development, implementation or data analysis will be part of this initial LIGO data run and science. Participation in future data runs and science that follow LIGO I will be possible for other groups, with guidelines to be determined by the LIGO Scientific Collaboration. It is anticipated that LIGO I data will only be made available through formal collaboration within the LIGO I Development Group during the first two years following its collection.

The general guideline for institutional membership in the LIGO I Development Group is that the contribution per collaborator of any new group to the design, construction, and implementation of the initial LIGO detector and to the first data run be comparable to that of the LIGO Laboratory scientists.

5. Report of Progress - UTBRG will provide a status report on its activities in support of LIGO every six months. The report will consist of: a) a summary status on research by topic as indicated Item No.8 below 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, b) updated List of Collaborators, and c) a plan of activities for the succeeding six-monthly period. The report will be due one month before the close of the period of performance under the Attachment in question. Report distribution should be to the Collaboration Council and to the LIGO Laboratory Director.
6. Term of Membership - The Membership will be renewed every six months upon evidence of satisfactory performance of agreed upon commitments in Item No.8 below.

The coordinates of UTBRG members are included in the Attachment Z to the Memorandum of Understanding LIGO-M990001-00-M.

7. Intellectual Property Rights - The rights to intellectual property developed under this Attachment will be subject to the National Science Foundation Grant Policy as indicated in Section 730, Intellectual Property.
8. During the period August 15, 1999 to February 15, 2000, the agreed upon work plan and commitments for UTBRG are as follows:
 - a. Joseph Romano and Lee Sam Finn will resolve the issue regarding the performance of the cross-correlation (CC) and maximum-likelihood (ML) statistics. They will complete and submit for publication two papers related to the stochastic gravitational wave detection. This project is part of the DCSA development group plan to define statistical tests for searching for a stochastic background of gravitational radiation.
 - b. J. Romano will continue working with Bruce Allen, Jolien Creighton and Eanna Flanagan on constructing robust data analysis algorithms for stochastic background searches in the presence of non-Gaussian (and/or non-stationary) detector noise. This project is part of the ASIS and DCSA development groups plan for algorithm development.
 - c. Mario Diaz will work with J. Romano on issues related to the detection of a stochastic

background of graviational radiation.

9. During the period August 15, 1999 to February 15, 2000, the LIGO Laboratory will provide access to the 40-meter data from the November 94 data run for simulations, as necessary and as agreed.
10. The research effort pursuant to this Attachment A will be coordinated by J. Romano and Albert Lazzarini on behalf of UTBRG and LIGO Laboratory respectively.
11. 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. 8, as indicated below. These resources will be in addition to the coordination effort and data to be made available per Item No. 9 above.
 - a. Accommodations for investigators in Item No. 8 above while on research assignment on LIGO at Caltech.

Approved:

Barry Barish
Barry Barish
LIGO Laboratory Director

Aug 17, 1999
Date

Mario Diaz
Mario Diaz
UTBRG Principal Investigator

August 24, 1999
Date

Joseph V. Romano
Joseph Romano
UTBRG Principal Investigator

24 August 1999
Date