



**Attachment DAT to the  
Memorandum of Understanding LIGO-M050242-00  
between the India Inter-University Centre for Astronomy and  
Astrophysics (IUCAA)  
and the  
Laser Interferometer Gravitational Wave Observatory (LIGO)  
For The Period  
August 15, 2007 - August 14, 2008**

This Attachment DAT to the Memorandum of Understanding LIGO-M050242-00 defines the role of the India Inter-University Centre for Astronomy and Astrophysics (IUCAA) as a Member of the LIGO Scientific Collaboration (LSC). In particular, it addresses data analysis activities in support of 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. The LSC has organized the data analysis effort into search groups which coordinate analysis, review, and publication on behalf of the collaboration. LSC groups are encouraged to participate in one or more of these groups.

MOU Attachment DAT defines the contributions of each participating group to the data analysis development groups.

## **2. Participation**

During the period August 15, 2007 - August 14, 2008, the members of IUCAA will participate in the analysis of initial LIGO data in the following areas:

- a. Binary Inspirals

*Not Applicable*

- b. Bursts

*Not Applicable*

- c. Stochastic

*Not Applicable*

d. Continuous

In our previous investigations, we have displayed a method which successfully deconvolves the GW power spectrum from the raw skymap which has been obtained by GW radiometry.

During the period August 15, 2007 to August 15, 2008, the IUCAA Gravitational Wave Data Analysis Group plans to apply the radiometric search to other types of sources, namely, pulsars and then compare this method with the existing ones. We propose to first work on the analysis of how this type of search works for continuous wave signals and compare it with other type of searches. Since this search is different in nature from the existing one, we expect certain new features which could be of advantage. This work will be done in collaboration with AEI, Germany.

e. 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 IUCAA 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

IUCAA 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 within the LSC Inspiral Search Group.

**2b** will be carried out within the LSC Burst Search Group.

**2c** will be carried out within the LSC Stochastic Search Group.

**2d** will be carried out within the LSC Continuous Waves search Group.

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**



Sanjeev Dhurandhar  
**Principal Investigator(s)**  
**IUCAA**



David Reitze  
**LSC Spokesperson**