

Memorandum of Understanding
between the
GALILEO Program at Stanford University
and the
Laser Interferometer Gravitational Wave Observatory (LIGO) Project
November 1, 1995

The purpose of this Memorandum of Understanding is to establish and define a collaborative relationship between the GALILEO Program at Stanford University and the Laser Interferometer Gravitational Wave Observatory (LIGO) Project. Both parties to this agreement share the goals of observing gravitational radiation and subsequently using gravitational radiation as an astrophysical probe. This agreement is intended to further these joint goals.

1. The goal of the GALILEO Program at Stanford University is to become a LIGO Users Group which, in cooperation with LIGO, will make a scientific contribution to the detection of gravitational waves. The GALILEO Program will conduct research on an advanced interferometer, with the goal of installing an interferometer in LIGO to facilitate gravitational wave measurements.
2. The Laser Interferometer Gravitational-Wave Observatory (LIGO) Project is aimed at opening the field of gravitational-wave astrophysics through the direct detection of gravitational waves. LIGO detectors will use laser interferometry to measure the distortions of the space between free masses induced by passing gravitational waves. The design, construction, and operation of LIGO is being carried out by scientists, engineers, and staff at the California Institute of Technology (Caltech) and the Massachusetts Institute of Technology (MIT). Caltech has prime responsibility for the project under the terms of a Cooperative Agreement¹ with the National Science Foundation (NSF). LIGO will become a national facility for gravitational-wave research, providing opportunities for the broader scientific community to participate in detector development, observations and data analysis. LIGO welcomes the participation of outside scientists at any of these levels. LIGO is being constructed in a phased approach beginning with one three-interferometer detector system and evolving to a nine-interferometer configuration to enable simultaneous use by several gravitational-wave observation systems.
3. In entering into this Memorandum of Understanding, the LIGO Project will carry out its responsibilities following the requirements of the Cooperative Agreement¹.

1. Cooperative Agreement No. PHY-9210038 between the National Science Foundation, Washington, D.C. 20550 and the California Institute of Technology, Pasadena, CA 91125, dated May 1992.

4. The LIGO Project is responsible for obtaining NSF approval of all collaborative Memoranda of Understanding funded by LIGO with international partners, or involving NSF-LIGO costs exceeding \$100,000. All Memoranda of Understanding will be provided to NSF for their information.
5. Each party to this agreement continues to be responsible for all support of its staff including travel costs associated with the activities under this agreement. Exceptional support of travel by the other institution may be allowed for travel requested by that institution.
6. This Memorandum of Understanding will remain in force until the parties mutually agree to terminate it. An annual Attachment will define specific activities to be carried out during the following year.
7. The GALILEO Program will assist LIGO in specific areas of research identified by LIGO, such as phase measurements or suspension systems. In this case, LIGO will request submission of a proposal from the appropriate faculty member associated with GALILEO, and, if appropriate, fund the specific research program through a LIGO subcontract. For this mode of operation each faculty member of the Stanford team will negotiate his own commitments with LIGO subject to coordination with the Stanford GALILEO Program. The Stanford faculty members of GALILEO include Robert L. Byer, Daniel B. DeBra, Martin M. Feher, James S. Harris, Peter F. Michelson, Yoshihisa Yamamoto and Richard E. Taylor.
8. GALILEO will develop formal methods of communication with LIGO by identifying a single individual to be the point of contact with LIGO.
9. Reports and papers will be exchanged between GALILEO and LIGO on a regular basis; electronic communications will be developed, and visitor exchanges will be encouraged.
10. GALILEO and LIGO will offer the opportunity for personnel exchanges and will negotiate the exchanges.
11. GALILEO and LIGO will cooperate in developing standards for the LIGO Users Group interaction that will facilitate the installation of an Advanced Interferometer into the LIGO facilities in the future. These include: computer standards and data recording and analysis; isolation and control standards; vacuum standards; optical component and laser source standards.
12. GALILEO and LIGO will invite each others representatives to attend their meetings where appropriate.

Approved:

Barry Barish
Barry Barish
LIGO Principal Investigator

Robert L. Byer
Robert L. Byer
GALILEO Principal Investigator

Nov 14, 1995
Date

Jan 2, 1996
Date