

Memorandum of Understanding
between the
TAMA Project, Japan
and the
Laser Interferometer Gravitational Wave Observatory (LIGO) Project
March 15, 1997

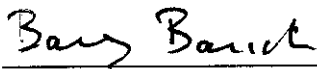
The purpose of this Memorandum of Understanding is to establish and define a collaborative relationship between the TAMA Project, Japan, and the Laser Interferometer Gravitational Wave Observatory (LIGO) Project. Both parties to this agreement share the goals of observing gravitational radiation and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

1. The TAMA Project, Japan is a gravitational wave detection group consisting of the following institutions: National Astronomical Observatory (NAO); The Institute for Cosmic Ray Research (ICRR); The University of Tokyo; Institute for Laser Science (ILS); National Laboratory for High Energy Physics (KEK); and the Yukawa Institute of Theoretical Physics (YITP). The TAMA Project is constructing a 20m prototype interferometer in conjunction with the construction of TAMA 300, a 300 m Fabry-Perot recombined interferometer with a power recycling system. The goal of TAMA 300 is to detect gravitational waves, and to that end, the design sensitivity is $h_{rms} = 3 \times 10^{-21}$ at 300 Hz.
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 multiple interferometer configuration to enable simultaneous use by several gravitational-wave observation systems.

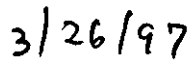
1. Cooperative Agreement No. PHY-9210038 between the National Science Foundation, Washington, D.C. 20550 and the California Institute of Technology, Pasadena, CA 91125, dated May 1992.

3. In entering into this Memorandum of Understanding, the LIGO Project will carry out its responsibilities following the requirements of the Cooperative Agreement¹.
4. The LIGO Project is responsible for obtaining NSF approval of all collaborative Memoranda of Understanding with international partners, or involving NSF 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.

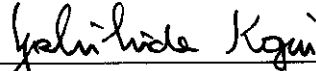
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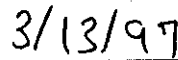
Barry Barish
LIGO Principal Investigator



Date



Yoshihide Kozai
TAMA Principal Investigator



Date