



January 18, 2020

Prof. Takaaki Kajita  
Director, Institute for Cosmic Ray Research,  
The University of Tokyo

Dear Prof. Kajita,

On behalf of the Gravitational Wave International Committee (GWIC)\*, I am writing to express our strong support for the “International Joint Usage / Research Center” of the Institute for Cosmic Ray Research. This Center will continue to facilitate the ability of the broader international gravitational-wave (GW) community to work with scientists at ICRR and elsewhere in Japan associated with the KAGRA GW detector. As a key part of the international network of GW observatories, KAGRA will greatly enhance the capabilities of GW-based multi-messenger astronomy through its unique ability to vastly improve the precision of locating GW events for observational follow up by other astronomical modalities.

The detection of gravitational waves from the collisions of pairs of black holes and neutron stars by the LIGO and Virgo detectors have made worldwide headlines both in scientific circles and in the popular press. In the past five years, gravitational-wave observations have produced several revolutionary insights into the nature of the universe.

Nonetheless, there continues to be a compelling scientific need for another detector of comparable sensitivity to extend the capabilities of the international network. Although LIGO alone was able to first definitively confirm that a burst of gravitational waves could be detected on earth, without international detectors the amount of information about the source of the waves was limited. The addition of the Virgo detector to the international network in 2017 was key in harvesting a richer set of information from gravitational-wave detections, and in particular was key to identifying the galaxy that hosted the first detection of a binary neutron star collision. This in turn led to a number of spectacular scientific results in gravitational-wave science and in time domain astronomy.

Nevertheless, even with Virgo many parts of the sky are poorly covered. A fuller exploitation of gravitational-wave science requires a fourth detector operating in coincidence with LIGO and Virgo. The Japanese KAGRA detector formally joined the LIGO-Virgo collaboration in October 2019 and carried out its first observing run in early 2020. It is currently undergoing a period of commissioning to improve its sensitivity. In the next few years, KAGRA is the *only detector* that will have the ability to substantially improve the localization of GW sources and further improve the ability to test the limits of general relativity. KAGRA thus will have critical role in the growing international network of gravitational-wave observatories. The international GW community is very keen to work with ICRR and other Japanese scientists associated with KAGRA. On behalf of GWIC I am therefore delighted to express strong support for ICRR’s “International Joint Usage / Research Center”.

Sincerely,

David Reitze  
GWIC Chair

\* GWIC was formed in 1997 to facilitate international collaboration and cooperation in the construction, operation and use of the major gravitational-wave detection facilities worldwide. It is affiliated with the International Union of Pure and Applied Physics as Working Group 11.



The Gravitational Wave International Committee (GWIC: <https://gwic.ligo.org>) is composed of the leaders from the large gravitational wave detectors and collaborations worldwide. Current member projects and representatives on GWIC include:

### **Cosmic Explorer**

- Matthew Evans, MIT

### **DECIGO**

- Seiji Kawamura, Nagoya University

### **Einstein Telescope**

- Michele Punturo, INFN-Perugia

### **European Pulsar Timing Array (EPTA)**

- Michael Kramer, Max-Planck-Institut für Radioastronomie and Jodrell Bank Centre for Astrophysics (University of Manchester)

### **GEO 600**

- Karsten Danzmann, Albert-Einstein-Institut für Gravitationsphysik and University of Hannover
- Sheila Rowan, University of Glasgow

### **IndIGO**

- Bala Iyer, International Centre for Theoretical Sciences
- Somak Raychaudhury, Inter-University Centre for Astronomy and Astrophysics

### **KAGRA**

- Takaaki Kajita, Institute for Cosmic Ray Research, University of Tokyo
- Hisaaki Shinkai, Osaka Institute of Technology

### **LIGO**

- David Reitze, California Institute of Technology and University of Florida (GWIC Chair)
- David Shoemaker, Massachusetts Institute of Technology (GWIC Executive Secretary)

### **LISA Community**

- Kelly Holley-Bockelmann
- Bernard Schutz, Albert-Einstein-Institut für Gravitationsphysik and Cardiff University
- Ira Thorpe, Goddard Space Flight Center
- Stefano Vitale, University of Trento

### **NANOGrav**

- Scott Ransom, US National Radio Astronomical Observatory

### **Ozgrav**

- Matthew Bailes, Swinburne University
- David McClelland, Australian National University

### **Spherical Acoustic Detectors**

- Odylio D. Aguiar, Instituto Nacional de Pesquisas Espaciais

### **Virgo**

- Giovanni Losurdo, Italian Institute for Nuclear Physics
- Jo van den Brand, Dutch National Institute for Subatomic Physics (Nikhef) and VU University in Amsterdam

### **Theory Community**

- Luis Lehner, Perimeter Institute

### **IUPAP Affiliate Commission AC2 (International Society on General Relativity and Gravitation)**

- Beverly Berger, ISGRG Secretary

### **IAU D1 Commission (Gravitational Wave Astrophysics)**

- Marica Branchesi, Gran Sasso Science Institute



# GWIC

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