Project: Laser Interferometer Gravitational-Wave Observatory (LIGO)

Dr. David Reitze, Executive Director, LIGO Laboratory

The Gravitational Wave Astronomical Revolution: India's Emerging Role

Abstract:

- The past four years have witnessed a revolution in astronomy, enabled by the first detections of gravitational waves from colliding black holes and neutron stars through the direct observation of their gravitational wave emissions by the LIGO and Virgo observatories. These discoveries have profound implications for our understanding of the Universe. Gravitational waves provide unique information about nature's most energetic astrophysical events, revealing insights into the nature of gravity, matter, space, and time that are unobtainable by any other means. In this talk, I will briefly discuss how we detect gravitational waves, how gravitational-wave observatories will revolutionize astronomy in the coming years and decades, and how India is poised to play a key role in the future gravitational wave astronomy.

About the Speaker:

- David Reitze holds joint positions as the Executive Director of the LIGO Laboratory at the California Institute of Technology and as a Professor of Physics at the University of Florida. His research focuses on the development of gravitational-wave detectors. He received a B.A. in Physics with Honors from Northwestern Univ. and a Ph. D. in Physics from the University of Texas of Austin. He is a Fellow of the American Association for the Advancement of Science, the American Physical Society, and the Optical Society. and was jointly awarded the 2017 US National Academy of Sciences Award for Scientific Discovery for his leadership role in LIGO. He is a member of the international LIGO Scientific Collaboration that received numerous awards for the first direct detection of gravitational waves in 2015, including the Special Breakthrough Prize in Fundamental Physics, the Gruber Prize for Cosmology, the Princess Asturias Award for Scientific and Technical Achievement, and the American Astronomical Society Bruno Rossi Prize. He served as the Spokesperson of the LIGO Scientific Collaboration from 2007 until 2011.