



**CENTRE FOR LASERS & PHOTONICS**  
**Indian Institute of Technology Kanpur**

**R. R. DASARI DISTINGUISHED LECTURE SERIES - 2014**

**“LIGO: On the Threshold of Gravitational-wave Astronomy”**

**By**

**Dr. Stanley E. Whitcomb**  
**Chief Scientist**  
California Institute of Technology  
LIGO Laboratory  
Pasadena, CA.

**Date/Time: 24<sup>TH</sup> SEPTEMBER @06:00 PM (Tea will be served at 05:45 PM)**

**Venue: L-4 (Lecture Hall Complex)**

**Abstract:** The Laser Interferometer Gravitational-wave Observatory is a project to develop ultra-sensitive optical interferometers for the detection and study of gravitational waves from astrophysical sources. First detections are expected in the next few years, and they will offer new information about some of the most energetic events in our universe. The challenges of using interferometry to detect gravitational waves and how LIGO is meeting those challenges will be described. In conclusion, there will be a short discussion of the importance of international networks for extracting the full potential from gravitational wave observations.

**The Speaker**



Dr. Stanley E. Whitcomb is currently the Chief Scientist of the Laser Interferometer Gravitational-wave Observatory (LIGO) Laboratory. The LIGO Lab is operated by Caltech and MIT through funding from the National Science Foundation.

It comprises observatories in Livingston, Louisiana and Hanford, Washington, in addition to the groups at Caltech and MIT. Over thirty years in development and construction, LIGO is expected to begin taking data at its design sensitivity by year's end, and will be a key part of an international network of gravitational wave detectors, seeking to learn about the universe through a new type of signal. The LIGO Scientific Collaboration currently includes approximately 800 scientists, engineers and students from more than 60 institutions in 12 countries.

Professor Stan received his undergraduate education at Caltech. He had one year of graduate study at Cambridge University before completing his Ph. D at the University of Chicago in far-infrared and submillimeter astronomy. He returned to Caltech in 1980 as the assistant professor of physics, near the beginning of Caltech's entry into the field of gravitational wave detection. Over the years since then, he has been involved in nearly every phase of the effort to build LIGO—concept development, prototype sensitivity demonstration, detector design and installation, commissioning, data analysis, and management. He is a Fellow of the American Physical Society and of the Optical Society of America.

**Dr. R. R. Dasari**



Dr. Ramachandra Rao Dasari was born in India in Krishna District of Andhra Pradesh. He had all his education in India receiving B.Sc. in 1954 from Andhra University, M.Sc. in 1956 from Benares Hindu University and Ph.D. in 1960 from Aligarh Muslim University.

He joined the faculty of the Department of Physics at the Indian Institute of Technology Kanpur in 1962 and became a full professor in 1973. Prof. Dasari's major accomplishment at IIT Kanpur included the establishment of one of the largest Laser laboratories for university research in India. He left IIT Kanpur in 1978. After a couple of other stints, he joined MIT in 1980 as a visiting Professor of Physics. In 1981 he was appointed Principal Research Scientist in Spectroscopy Laboratory. In 1984 he was appointed as Assistant Director of the Spectroscopy Laboratory and later promoted as Associate Director in 1992. He oversees project coordination and facility developments of the National Institute of Health supported MIT Laser Biomedical Research Center and also coordinates research programs associated with the National Science Foundation supported Laser Research facility.

**\* The lecture will be an introductory one for both graduate and undergraduate students.**