

**UNIVERSITY OF MUMBAI
DEPARTMENT OF PHYSICS (AUTONOMOUS)
LOKMANYA TILAK BHAVAN
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DR FREDRICK RAAB IS THE HEAD OF LIGO HANFORD OBSERVATORY, WITHIN THE LIGO LABORATORY, WHICH IS OPERATED FOR THE U.S. NATIONAL SCIENCE FOUNDATION BY CALTECH AND MIT. HE EARNED HIS PH.D. IN PHYSICS IN 1980 AT THE STATE UNIVERSITY OF NEW YORK AT STONY BROOK. HE WORKED AS A RESEARCH SCIENTIST AT THE UNIVERSITY OF WASHINGTON UNTIL 1998. HE MOVED TO CALIFORNIA INSTITUTE OF TECHNOLOGY AS ASSISTANT PROFESSOR OF PHYSICS, WHERE HE COAUTHORED THE LIGO CONSTRUCTION PROPOSAL. HE WAS APPOINTED HEAD OF LIGO HANFORD OBSERVATORY IN 1995 AND MOVED WITH HIS FAMILY TO RICHLAND WASHINGTON TO HIRE STAFF OUTFIT THE NEW OBSERVATORY AND BEGIN OPERATION. HE IS A FELLOW OF THE AMERICAN PHYSICAL SOCIETY REGULARLY SERVES AS AN EXPERT PANELIST REVIEWING LARGE NATIONAL PROGRAMS IN THE PHYSICAL AND ENVIRONMENTAL SCIENCES, ENGINEERING AND SCIENCE EDUCATION.

SPECIAL LECTURE

By

Dr. Fredrick Raab,
Head - LIGO Hanford Observatory

Finding the Voice of the Universe

ABSTRACT

The search for gravitational waves is a story of high-risk, high-reward, basic research and the persistence and evolution of the scientific community that achieved this result. A century ago, Einstein showed that his new General Theory of Relativity exhibited gravitational waves, analogous to the light waves of Maxwell's Theory of Electromagnetism. Doubts persisted about the reality of gravitational waves until the mid- 20th century, just as the first experimental efforts to detect these waves were beginning. In the last quarter of the 20th century, the influence of gravitational-wave emission on astronomical objects was first observed. Finally, on 14-Sep-2015, LIGO detectors made the first direct detection of gravitational waves, opening a radical new way of observing our universe. This talk will describe the challenges that were overcome to achieve this historic event and possible future directions for this new field of astronomy.

Special Lecture

Date: January 14, 2017

Time: 2.00 PM

Venue:

**Physics Department Seminar Room
(PDSR)**

**Department of Physics,
University of Mumbai**

All are invited

