

TIFR Alumni Association



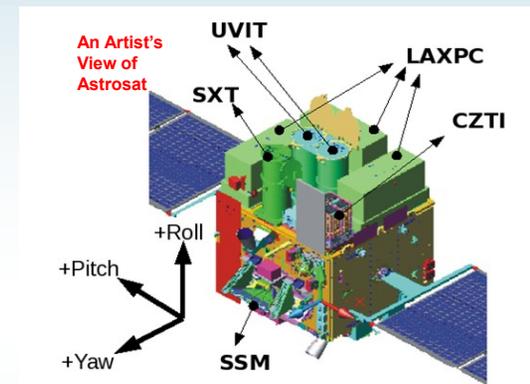
TAA-JRD Tata Public Lecture

Probing the Invisible Universe with ASTROSAT – Indian Multiwavelength Observatory

Professor P.C. Agrawal

UM-DAE Center for Excellence in Basic Sciences, Kalina, Mumbai

Abstract : Radiation from cosmic sources in the ultraviolet (UV) and X-ray spectral regions is invisible from the ground due to absorption in the overlying atmosphere. Satellite based experiments are most suitable for probing the high energy universe where stars and galaxies radiate much of their energy as UV and X-ray photons. India, and TIFR in particular, has a rich heritage of research contributions in this area mainly with balloon and rocket experiments and to some extent by satellites. ASTROSAT satellite mission was conceived to investigate the temporal and spectral properties of UV and X-ray emitting objects by multi-wavelength observations over a five decade wide spectral band. This unique feature of ASTROSAT is achieved by simultaneously observing an object in visible, near- UV, far- UV, soft X-ray and hard X-ray regions by a cluster of 3 X-ray Telescopes and a co-aligned UV Imaging Telescope (UVIT). The characteristics and sensitivities of the ASTROSAT instruments will be presented in addition to scientific advances expected from such observations, especially those related to understanding the nature of compact objects in X-ray binaries and Active Galactic Nuclei.



About the Speaker: P.C. Agrawal joined TIFR's cosmic ray group, conducting balloon-borne experiments, as a Research Associate in 1962. After his PhD from Mumbai University in 1972, he joined the California Institute of Technology, as a Research Fellow. He was involved in several balloon and rocket experiments in X-ray astronomy. He led the Indian X-ray Astronomy Experiment (IXAE) in 1996 which produced new insights on neutron star and black hole binaries. Focusing on the characteristics of various types of cosmic x-ray sources, he has made notable contributions in the area of Experimental High Energy Astrophysics. His research used a variety of instruments flown in balloons, rockets and satellites both in India as well as in the USA covering a wide spectral band from 0.1 keV to 100 keV.

He was NAS-NRC Research Associate at Jet Propulsion Laboratory, Pasadena in 1978-79 and at NASA Marshall Space Flight Centre in 1987-88. He was Visiting Professor at Institute of Space and Astronautical Sciences, Japan in 1984. He received the Vikram Sarabhai award for Space Sciences in 1985 and M.P. Birla award for Astronomy in 2003. He retired from TIFR in 2006 as a Senior Professor. He was ISRO Chair Professor from 2006-2009 and Satish Dhawan ISRO Professor from 2009-11. As Principal Investigator of ASTROSAT, the Indian satellite mission for astronomical studies, from its inception in 2001 till 2011, he was largely responsible for the design and development of the Large Area X-ray Proportional Counter (LAXPC) instrument.

30th July, 2015 at 4 p.m.

Venue

Lecture Theatre (AG-66), TIFR, Mumbai

Entry Free

All Are Welcome

Non TIFR members are requested to carry valid photo I.D. card

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