

TATA INSTITUTE OF FUNDAMENTAL RESEARCH
DEPARTMENT OF ASTRONOMY & ASTROPHYSICS

SPECIAL ASTRONOMY SEMINAR

January 5, 2012

Speaker: Prof. A. J. Bird

University of Southampton, UK

Title: Surveying the transient X-ray sky with INTEGRAL

Day, Date & Time: Wednesday, January 11, 2012 at 14.30 hrs

Venue: TAP Seminar Room (A269)

(A. Gopakumar)

Abstract

The INTEGRAL satellite has been operating since October 2002, and one of the key science results has been the creation of a hard X-ray sky survey with unprecedented sensitivity. I will overview the challenges of creating an all-sky survey based on nearly 10 years of data, and present some of the scientific highlights deriving from the survey. I will discuss techniques for optimised searching for persistent and transient sources, and technical aspects of how robust data products can be generated from ten years of data with instrument evolution over time. Some 25% of the sources discovered in the survey were not previously known as X-ray emitters, which has resulted in a comprehensive soft X-ray and optical/NIR follow-up to identify and classify these sources. Of particular interest are the transient objects, which appear on all timescales, and present a greater challenge for follow-up. I will present the 'zoo' of transients of various durations and intensities detected so far, including the SFXT class unveiled by INTEGRAL, and give some early results from the current phase of galactic plane scanning which continues the search for new transient galactic objects.