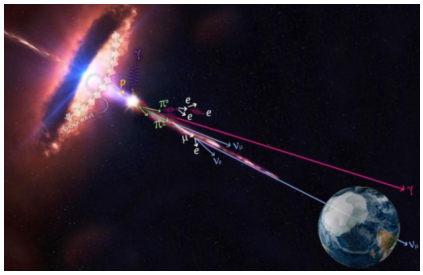

Contribution ID: **15** Type: **not specified**

Spectral and Temporal Analysis of BHXB GX 339-4 using the AstroSat data during its 2021 outburst

Using AstroSat observations, we present spectral and temporal studies of the outburst of the black hole X-ray binary (BHXB) GX 339-4 that occurred during January-April 2021. We have also used X-ray data from Maxi and Swift. We have studied the rising phase of this outburst and its evolution in detail. In the power density spectrum (PDS). We found that quasi-periodic oscillation (QPO) increases from 0.1 Hz in the hard state to 6 Hz in the soft intermediate state (SIMS) as the outburst evolves.
Additionally, harmonic and sub-harmonic features are noted in a few observations, primarily in SIMS. Using disk, comptonization, and relativistic reflection models, we fit the combined SXT and LAXPC energy spectra in the energy range 0.7–25.0 keV. We will present how the evolution of an outburst affects spectral parameters like gamma, absorption column density (nH), inner radius of the accretion disk (Rin), and Mdot.

Primary authors: SHARMA, Vaibhav (Indian Institute of Technology Kanpur, Kanpur, Uttar Pradesh-208016, India); Prof. YADAV, J S (Indian Institute of Technology Kanpur, Kanpur, Uttar Pradesh-208016, India); Prof. MISRA, Ranjeev (IUCAA, Pune); Prof. JAIN, Pankaj (Indian Institute of Technology Kanpur, Kanpur, Uttar Pradesh-208016, India)

Presenter: SHARMA, Vaibhav (Indian Institute of Technology Kanpur, Kanpur, Uttar Pradesh-208016, India)