

Tanmoy Chattopadhyay,

Research Scientist, KIPAC, Stanford University (October, 2021 - present)

Postdoctoral Scholar, KIPAC, Stanford University (July, 2019 - August, 2021)

Postdoctoral Scholar, Dept. of Astronomy & Astrophysics, Pennsylvania State University (November, 2016 - June, 2019)

Tanmoy Chattopadhyay received his Ph.D. from Physical Research Laboratory (PRL), India in 2016. His thesis involved development of X-ray polarimetry instruments for hard X-rays. He spent 5 years at PRL working on the design and performance study of a focal plane Compton polarimeter using Geant4 simulations, testing and integration of the hardware components and experimental characterization of the instrument [1,2]. He was involved in the development and calibration of CZT Imager (CZTI) onboard AstroSat. He developed tools to utilize CZTI as a hard X-ray Compton polarimeter [3,4]. He continues to collaborate with the CZTI team and leads the Cygnus X-1 and Gamma Ray Burst polarization team. Chattopadhyay later joined Pennsylvania State University where he played a major role in characterizing a soft X-ray spectrometer based on an H2RG detector (a Hybrid CMOS detector / HCD) in NASA's Water Recovery X-ray Rocket (WRX-R). He was involved in multiple projects focusing development and characterization of X-ray HCDs [5]. Since joining Stanford University, Tanmoy has been working on the development and testing of readout electronics for the new generation X-ray Charge-Coupled Devices (CCDs) and the novel SiSeRO (Single electron Sensitive Read Out) devices [6,7]. He takes care of the testing facilities and characterization of the X-ray detectors in the laboratory.

Selected Publications

1. Chattopadhyay, T., Vadawale, S., Shanmugam, M. et al. 2014, "Measurement of low energy detection efficiency of a plastic scintillator: implications on the lower energy limit and sensitivity of a hard X-ray focal plane Compton polarimeter", *ApJS*, 212, 12
2. Chattopadhyay, T., Vadawale, S., Goyal, S. et al. 2016, "Development of a hard X-ray focal plane Compton polarimeter: a compact polarimetric configuration with scintillators and Si photomultipliers", *EXPA*, 41, 197
3. Chattopadhyay, T., Vadawale, S., Rao, A. R. et al. 2014, "Prospects of Hard X-ray polarimetry with Astrosat-CZTI", *ExpA*, 37, pages555–577
4. Vadawale, S., Chattopadhyay, T., Mithun, N.P.S. et al. 2018, "Phase-resolved X-ray polarimetry of the Crab pulsar with the AstroSat CZT Imager", *Nature Astronomy*, 2, 50
5. Chattopadhyay, T., Falcone, A., Burrows, D. N. et al. 2018, "X-ray Hybrid CMOS detectors: recent development and characterization progress", *SPIE*, 10699
6. Chattopadhyay, T., Herrmann, S., Allen, S. et al. 2020, "Tiny-box: a tool for the versatile development and characterization of low noise fast x-ray imaging detectors", *Proc. SPIE 11454, X-Ray, Optical, and Infrared Detectors for Astronomy IX*, 1145423
7. Chattopadhyay, T., Herrmann, S., Burke, B. et al. 2021, "First results on SiSeRO (Single electron Sensitive Read Out) devices – a new X-ray detector for scientific instrumentation", e-Print: 2112.05033