Bio

ACADEMIC APPOINTMENTS

- Phys Sci Res Assoc, Kavli Institute for Particle Astrophysics and Cosmology

Research & Scholarship

CURRENT RESEARCH AND SCHOLARLY INTERESTS

1. X-ray astronomical instrumentation - Scintillators, Si-Photomultipliers, CZTs, X-ray CCDs, X-ray Hybrid CMOS detectors
2. Hard X-ray polarimetry and associated instrumentation
3. AstroSat CZT Imager - polarimetry of pulsars, black hole XRBs, Gamma Ray Bursts
4. X-ray lobster optic - Schmidt type

Publications

PUBLICATIONS

- **Sub-MeV spectroscopy with AstroSat-CZT imager for gamma ray bursts** *JOURNAL OF ASTROPHYSICS AND ASTRONOMY*
  2021; 42 (2)

- **The AstroSat mass model: Imaging and flux studies of off-axis sources with CZTI** *JOURNAL OF ASTROPHYSICS AND ASTRONOMY*
  2021; 42 (2)

- **Hard X-ray polarimetry-an overview of the method, science drivers, and recent findings** *JOURNAL OF ASTROPHYSICS AND ASTRONOMY*
  Chattopadhyay, T.
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- **Exploring sub-MeV sensitivity of AstroSat-CZTI for ON-axis bright sources** *JOURNAL OF ASTROPHYSICS AND ASTRONOMY*
  Kumar, A., Chattopadhyay, T., Vadawale, S. V., Rao, A. R., Gupta, S., Mithun, N. S., Bhalerao, V., Bhattacharya, D.
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- **Spectropolarimetric analysis of prompt emission of GRB 160325A: jet with evolving environment of internal shocks** *MONTHLY NOTICES OF THE ROYAL ASTRONOMICAL SOCIETY*
  Sharma, V., Iyyani, S., Bhattacharya, D., Chattopadhyay, T., Vadawale, S. V., Bhalerao, V. B.
  2020; 493 (4): 5218–32

- **Tiny-box: A tool for the versatile development and characterization of low noise fast X-ray imaging detectors**
  Chattopadhyay, T., Herrmann, S., Allen, S., Hirschman, J., Morris, G., Bautz, M., Malonis, A., Foster, R., Prigozhin, G., Craig, D., Burke, B.
• Time-varying Polarized Gamma-Rays from GRB 160821A: Evidence for Ordered Magnetic Fields ASTROPHYSICAL JOURNAL LETTERS

• AstroSat-CZTI Detection of Variable Prompt Emission Polarization in GRB 171010A ASTROPHYSICAL JOURNAL

• Prompt emission polarimetry of Gamma ray bursts with ASTROSAT CZT-imager The Astrophysical Journal
Chattopadhyay, T., et al 2019; 884 (2)

• Flight Camera Package Design, Calibration, and Performance for the Water Recovery X-ray Rocket Mission
SPIE-INT SOC OPTICAL ENGINEERING.2019

• US Contributions to the Athena Wide Field Imager
SPIE-INT SOC OPTICAL ENGINEERING.2019

• Development of position sensitive detector module using scintillator and Si photomultiplier for hard x-ray imaging and spectroscopy JOURNAL OF ASTRONOMICAL TELESCOPES INSTRUMENTS AND SYSTEMS
SPIE-INT SOC OPTICAL ENGINEERING.2019

• Violation of Synchrotron Line of Death by the Highly Polarized GRB 160802A ASTROPHYSICAL JOURNAL

• Characterizing subpixel spatial resolution of a hybrid CMOS detector JOURNAL OF ASTRONOMICAL TELESCOPES INSTRUMENTS AND SYSTEMS
Bray, E., Falcone, A., Wages, M., Chattopadhyay, T., Burrows, D. N. 2018; 4 (3)

• BlackCAT CubeSat: A Soft X-ray Sky Monitor, Transient Finder, and Burst Detector for High-energy and Multimessenger Astrophysics
SPIE-INT SOC OPTICAL ENGINEERING.2018

• X-ray Hybrid CMOS Detectors: Recent Development and Characterization Progress
SPIE-INT SOC OPTICAL ENGINEERING.2018

• Phase-resolved X-ray polarimetry of the Crab pulsar with the AstroSat CZT Imager NATURE ASTRONOMY
2018; 2 (1): 50–55

• Surprise in simplicity: an unusual spectral evolution of a single pulse GRB 151006A MONTHLY NOTICES OF THE ROYAL ASTRONOMICAL SOCIETY

• Recent X-ray hybrid CMOS detector developments and measurements
Hull, S. V., Falcone, A. D., Burrows, D. N., Wages, M., Chattopadhyay, T., McQuaide, M., Bray, E., Kern, M., Siegmund, O. H.
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• Development of a hard x-ray focal plane compton polarimeter: a compact polarimetric configuration with scintillators and Si photomultipliers EXPERIMENTAL ASTRONOMY
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• In-orbit performance of AstroSat CZTI
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• Line profile modelling for multi-pixel CZT detectors
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• Hard X-ray polarimetry with Astrosat-CZTI ASTRONOMY & ASTROPHYSICS
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• Prospects of hard X-ray polarimetry with Astrosat-CZTI EXPERIMENTAL ASTRONOMY
Chattopadhyay, T., Vadawale, S. V., Rao, A. R., Sreekumar, S., Bhalacharya, D.
2014; 37 (3): 555–77

• 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 ASTROPHYSICAL JOURNAL SUPPLEMENT SERIES
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• Compton polarimeter as a focal plane detector for hard X-ray telescope: sensitivity estimation with Geant4 simulations EXPERIMENTAL ASTRONOMY
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• Prospects of Hard X-ray Polarimetry with Astrosat-CZTI
Vadawale, S. V., Chattopadhyay, T., Rao, A. R., IEEE
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• A conceptual design of hard x-ray focal plane detector for simultaneous x-ray polarimetric, spectroscopic and timing measurements
SPIE-INT SOC OPTICAL ENGINEERING.2012