

BISWAS SHARMA

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EDUCATION

University of Tennessee

Knoxville, TN

Doctoral Candidate, Early Stage (Physics – Mathematical and Computational Physics concentration)

Aug 2015 –

Current Courses: Mathematical Methods, Quantum Mechanics, Problems in Theoretical Physics I, Seminar, Colloquium

Morehead State University

Morehead, KY

BS Astrophysics (Magna Cum Laude), BS Mathematics (Magna Cum Laude); Honors

Aug 2011 – July 2015

Awards: Outstanding Astrophysics Student (Morehead State University, 2015)
DAAD-RISE Scholarship (German Academic Exchange Service, 2013)
Academic Honors Scholarship (Morehead State University, 2011-2015)

Upper Level Courses: High Energy Astrophysics, Quantum Mechanics, Data Mining, Partial Differential Equations

Computer Skills: Python, C++, R, Shiny, Weka, LabVIEW, HTML, LaTeX, Minitab, Shell scripting

EXPERIENCE

Space Science Center, Morehead State University (MSU)

Morehead, KY

Student Head of Science Mission, Cosmic X-ray Background Nanosatellite- 2 (CXBN-2)

Dec 2014 – July 2015

- Used radioisotopes and data analysis techniques in R statistical programming language to characterize semiconductor X-ray detectors flown on the CXBN-2 spacecraft (to be launched in 2016)
- Completed Preliminary Design Review with NASA and external reviewers (Jan 23, 2015)
Demonstrated compliance of science mission objectives, requirements and operations with spacecraft systems constraints
- Built interactive web application, using Shiny, to make testing of the detector convenient for new student researchers

Research Assistant

Sep 2011 – July 2015

- Operated MSU 21-meter Space Tracking Antenna to track satellites and study astronomical radio sources
Exchanged telemetry with NASA's ISEE-3 spacecraft during its approach to earth after 36 years
- Used astrophysics data reduction and analysis software packages in Ubuntu-Linux environment to study supernova remnants in the X-ray frequency and characterize discrete X-ray sources in nearby galaxies

Publications:

- "Radio-continuum study of the nearby sculptor group galaxies. Part 3: NGC 7793 at $\lambda=12.2, 6$ and 3 cm," 2014, Astrophysics and Space Science, October 2014, Volume 353, Issue 2, pp 603-611
- "Chandra and Very Large Array Observations of the Nearby Sd Galaxy NGC 45," 2015, The Astronomical Journal, August 2015, Volume 150, Number 3

Dark Energy Group, University of Bonn

Bonn, Germany

Summer Intern

Summer 2013

- Reduced X-ray datasets of 36 galaxy clusters with data reduction tools, BASH scripts and parallel computing
- Analyzed results in astrophysical data visualization software
Studied dynamical disturbance statistics of these largest gravitationally-bound structures in the Universe

Midreel.com

World Wide Web

Co-founder/Recruiter

July 2014 – Current

- Collaborated with 3 co-founders from USA and Germany to launch and manage multi-author blogging platform
- Recruited 6 of 20 unpaid writers who posted articles in the website

ACTIVITIES

- JPL/NASA Solar System Ambassador: Organized public astronomy events in Morehead, KY on behalf of NASA
- Technical Supervisor for MSU Students in Free Enterprise (SIFE/Enactus): Directed MSU paper recycle drive; Conducted food waste audit in university cafeteria; Organized and documented trail work at MSU Eagle Lake
- Member of the Honors Committee: Created and amended policies for MSU Academic Honors Program
- Assisted EF-3 tornado rehabilitation in West Liberty, KY with MSU Cares on March 2, 2012
- Soccer: MSU Intramural Soccer Champion (Independent, Men) – April, 2015