

SNEHALATA SAHU

PERSONAL SUMMARY

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RESEARCH INTERESTS

Searching for signatures of planetary debris in white dwarfs
Properties of Interstellar medium and ultraviolet dust extinction
White dwarf parameters, structure, and spectral evolution
Star clusters in Milky Way (open and globular clusters)

PH.D. RESEARCH HIGHLIGHTS

Ultraviolet properties of stellar populations in Globular Clusters using UVIT, HST, GALEX, GAIA and other archival data.
Blue Stragglers and Horizontal Branch Stars in Globular Clusters.
Multiple stellar populations in Globular Clusters.
UVIT calibration and data reduction.

EDUCATION AND PROFESSIONAL EXPERIENCE

Feb 2022 - present : Research fellow at the University of Warwick, UK.
Oct 2021- Feb 2022 : Postdoc at Tata Institute of Fundamental Research (TIFR), Mumbai, India.
May 2021-July 2021 Visiting Scientist (funded by SERB-Power Fellowship) at Indian Institute of Astrophysics (IIA)- co-leading the *Globular Clusters UVIT Legacy Survey (GlobULeS)*.
Sep 2019-Jan 2021 Post Doctoral Researcher (PDR) at IIA.
2014-2020 Ph.D in astrophysics from IIA affiliated with Pondicherry University, Puducherry.
Thesis title: UV stellar populations in Globular Clusters: Horizontal Branch Morphology and Blue Straggler Stars.
2012-2014 Masters degree in Physics from National Institute of Technology, Rourkela.
2009-2012 Bachelor degree in physics from A.C and Aeronautics College, Sunabeda under Berhampur University, Odisha.
2009 Higher Secondary Examination, Kendriya Vidyalaya Korpaut School, Odisha.
2007 Secondary Examination, Kendriya Vidyalaya N.A.D Sunabeda School, Odisha.

- July 2024** 23rd European Workshop on White Dwarfs in Barcelona, Spain, presented a talk on *Ultraviolet detection of carbon reveals a hot white dwarf merger remnant* and a poster on *3D dust extinction correlation with interstellar gas using HST spectroscopic data of white dwarfs*.
- April 2024** RAS meeting at Edinburgh, UK on Exploring the universe with future UV facilities, presented a talk on *UVEX: NASA's upcoming UV mission*.
- April 2023** INSIST workshop, IIA, India, talk on *White Dwarfs and Planetary Nebulae science with INSIST*.
- February 2023** workshop on PolluxB at Habitable Worlds Observatory, Paris (France), talk on *White Dwarf science with Pollux-B*.
- August 2022** 22nd European Workshop on White Dwarfs, Tübingen, Germany, talk on *HST/COS Ultra-Violet high-resolution spectroscopic survey of DA White Dwarfs*.
- July 2022** COSPAR22, Greece, invited talk on *Studies of Blue Stragglers with AstroSat*.
- October 2021** NUVA e-Meeting "Status and new UV results from HST, AstroSat and LUT", talk on *AstroSat/UVIT legacy survey of Globular Clusters (GlobULeS) I. FUV- optical Color-magnitude Diagrams of eight clusters*.
- June 2021** Online workshop on *Advanced AstroSat Data Analysis* conducted by ASSC, IUCAA, served as a resource person for hands-on session of UVIT.
- February 2021** One day workshop on Ultraviolet space astronomy: UVIT and beyond conducted by IIA, presented a talk on *UVIT study of stellar populations in Globular Clusters*.
- January 2021** International Seminar on 5 years of AstroSat organised by ISRO, invited talk titled *Studies of Star clusters with AstroSat*.
- June 2020** Remote Seminar in IIA, Bengaluru, presented a talk on *Globular clusters in UV*.
- February 2020** Dense Star Clusters in the Era of Large Surveys, MODEST-20 at TIFR, Mumbai, presented two posters on *AstroSat/UVIT Imaging of Globular Clusters and their comparisons with the optical observations* and *UVIT legacy Survey of Galactic Globular Clusters (GlobULeS). I. FUV-optical Color Magnitude Diagrams*.
- May 2019** Star Clusters from the Milky Way to the Early Universe, IAU Symposium 351 and MODEST-19 at Bologna, Italy, presented a poster on *Far and Near-Ultraviolet observations of a low-density Globular Cluster NGC 5466 with Indian UV Space Telescope UVIT*.
- April 2018** Neighborhood Astronomy Meeting (NAM), IIA, Bengaluru, a member of Local Organizing Committee (LOC).
- February 2018** UVIT workshop, Astronomical Society of India at Osmania University, Hyderabad, India, presented a talk on *Revealing the Nature of Blue Straggler Stars in NGC 5466*.
- February 2018** Astronomical Society of India meeting at Osmania University, Hyderabad, India, presented a poster on *UVIT Study of Blue Straggler Stars in Globular Cluster NGC 5466*.

January 2018 Workshop on Optical-UV Astronomy jointly organised by Sacred Hearts College, Chalakudy and IIA, Bengaluru at Chalakudy, Kerala, conducted hands on session on *UVIT data reduction and analysis*.

December 2017 Workshop on Multi-wavelength Observations using AstroSat jointly organised by Christ University, Bengaluru. and Inter-University Centre for Astronomy and Astrophysics, Pune, presented a talk on *Study of globular clusters using UVIT* and conducted hands on session on *UVIT image analysis*.

September 2017 Visiting student at University of Bologna, presented a talk on *UV bright population in Globular Cluster NGC 288: insights from UVIT*

September 2017 Modelling and observing dense stellar systems, being MODEST-17 under Prague's Starry Skies at Charles University, Prague, Czech Republic, presented a talk on *UV bright population in Globular Cluster NGC 288: insights from UVIT*.

July 2017 UVIT Science Meeting at IIA, Bengaluru, India, presented a talk on *UVIT study of Horizontal Branch and Blue Stragglers in Globular Cluster NGC 288*.

March 2017 Astronomical Society of India meeting at B.M. Birla Auditorium, Jaipur, India, presented a talk on *UVIT imaging of Globular Cluster NGC 288*.

May 2016 Astronomical Society of India meeting at Kashmir University, Kashmir, India, presented a poster on *Revealing the UV properties of Galactic Globular Clusters using GALEX and HST observations*.

March 2014 Participated in the Aries Training School in Observational Astronomy (ATSOA) at ARIES, Nainital, presented a talk on *Young open cluster IC1805*.

PRESS
RELEASES

March 2019 A star relives its youth while dancing with its wizened companion in NGC 5466, [Astrosat Picture of the Month \(APOM\) #018](#).

November 2018 Hot Ultraviolet stars in the Globular Cluster NGC 288, [Astrosat Picture of the Month #014](#)

November 2017 NGC 1851: One cluster, two populations, [Astrosat Picture of the Month #003](#).

GRANTS AND
AWARDS

2018 Best Poster Award from the Indian Academy of Sciences for the year 2018 in category Stars, ISM and Galaxy.

2014 secured the second position in Masters of Physics.

2013 selected for Senior Research Fellowship Programme through IAS-INSA-NASI in the University of Delhi.

2012-2014 University Grants Commission (UGC) scholarship for University Rank Holders.

2012 Merit Certificate awarded by Berhampur University for securing First position in B.Sc. (Honours) physics in the university.

2009 : secured first in the higher secondary school examination.

2007 : secured second position in the secondary school examination.

TECHNICAL SKILLS	<p>Operating systems: Linux (Fedora, Ubuntu), Windows Languages: Python, Fortran, Latex Tools: IRAF, TOPCAT Techniques: Photometry, Astrometry, Spectroscopy</p>
RESEARCH EXPERIENCE	<p>UV spectroscopy and photometry obtained from HST, AstroSat/UVIT, GALEX, and IUE. Team member: INSIST, 4MOST spectroscopic missions. SED analysis and identification of binary stars detected in UV. Aperture and crowded-field (PSF) photometry of star clusters.</p>
ACCEPTED TELESCOPE PROPOSALS	<p>Principal Investigator of three accepted AstroSat proposals for studying the UV stellar populations in GCs M3 (2018) and NGC 1904 (2019) and white dwarf.</p> <p>Co-Investigator of A legacy survey for evolved planetary systems within 100pc.</p> <p>Co-Investigator of AstroSat proposal for sub-dwarfs.</p> <p>Co-Investigator of three AstroSat proposals (P.I. Annapurni Subramaniam) for studying the UV stellar populations in 10 GCs under the GlobULeS survey (2018-2019).</p> <p>Co-Investigator of AstroSat proposal (P.I. Francesco Ferraro) for searching the white dwarfs orbiting blue straggler stars (2018).</p> <p>Co-Investigator of AstroSat proposal (P.I. Annapurni Subramaniam) for studying the young stars clusters in LMC and SMC (2019-2020).</p> <p>Co-Investigator of AstroSat proposal (P.I. Samyadyay Choudhury) for studying the young star clusters in magellanic bridge region (2020).</p> <p>Co-Investigator of AstroSat proposal (P.I. N. Sindhu) for identifying WDs hidden in binaries and chromospherically active stars in open cluster M67 (2018).</p> <p>Co-Investigator of Gemini Proposal (P.I. Mirko Simunovic) where we obtained the spectra of 2 BSSs using GMOS-N spectrograph (2018).</p>
OTHER ACTIVITIES	<p>Apart from doing science, I like drawing and painting, playing guitar, and trekking. I was involved in several outreach activities connecting astronomy with art. I was also a part of the judge panel for astronomy art competition conducted by IIA outreach committee on the Science day. I have made the cover poster for Open School Astronomy Teachers Training Programme (50 years of Moon landing) at IIA funded by IAU. I am also certified with a blue belt in Karate.</p>