

Curriculum Vitae

- **Name** : Dr. Ananta Charan Pradhan

Present Position : Assistant Professor

Present Address : Department of Physics and Astronomy, National Institute of Technology, Rourkela, Odisha - 769008

Permanent Address : House No.: 64, Plot No.: 1663/3229/3528, Nirmalyanagar, Kalarahanga, Po: Infocity, Patia, Bhubaneswar - 751024

- **Phone** : Landline (office): +91 661 2462735, Mobile: +91 7894252258

Emails : pradhana@nitrkl.ac.in & acp.phy@gmail.com

- **Date of Birth** : 22nd April, 1982

- **Education**

	Degree	Year	Subject	University/Institution	Division
1	10th	1997	–	BSE, Odisha	1st
2	ISc.	1999	PCMB	CHSE, Odisha	1st
3	BSc.	2003	Physics	OUAT, Bhubaneswar	1st
4	MSc.	2005	Physics	Utkal University, Bhubaneswar	1st
5	PhD	2012	Astronomy	Indian Institute of Astrophysics, Banga- lore	

- **Work Experience**

- PhD from **Indian Institute of Astrophysics** Bangalore - 560034 (August 2005 - November 2011)

Title of the thesis : “Gas and Dust in the Magellanic Clouds”, under the supervision of Professor Jayant Murthy.

- Post Doctoral Fellow from TIFR Mumbai during December 2011 - November 2012

- Post Doctoral Visiting Scientist in TIFR Mumbai during December 2012 - June 2014
- Assistant professor in NIT Rourkela since June 2014...continuing

- **Research Interest**

Ultraviolet (UV) bright stars in globular clusters. Study of stars, galaxies, planetary nebulae and diffuse background emission in UV. Interstellar medium. UV star counts. Study of IGM/CGM using high resolution spectra of quasars. Blazars. Plasma opacity.

- **Research Grants Received**

- “Study of Distribution and Properties of Interstellar Dust in the Magellanic Clouds”, DST Fast Track, completed.
- “Study of Structure of Our Galaxy Using Ultraviolet Star Counts of GALEX and UVIT-ASTROSAT Surveys”, ISRO Respond, Completed.
- A comprehensive catalog and multiwavelength analysis of UVIT sources: Statistical properties and science applications: UV bright stars, Galactic globular clusters and galaxies, ISRO.

- **Books/Reports/Chapters/General articles etc.**

“Far-ultraviolet characteristics of the interstellar medium of the Magellanic Clouds” by Amit Pathak, Ananta C. Pradhan, and Jayant murthy, Chapter in the book Interstellar Medium: New Research, EDs: B. M. Cancellier & G. Mamedov, Nova Science Publishers, New York, 2012, pp.57-76 (ISBN:978-1-61470-807-0)

- **Academic Honours/Awards**

- Qualified JEST with all India rank 22 in 2005
- Qualified GATE in 2005
- Qualified TIFR written examination in 2005
- Member of International Astronomical Union (IAU)

- Life time member of Physical Society of Odisha (OPS)
- Life time membership of Astronomical society of India (ASI)
- Visiting Associate of Inter University Center for Astronomy and Astrophysics (IUCAA), Pune
- Article on “Far Ultraviolet observations of diffuse emission from the Large Magellanic Cloud” is featured in ‘Research Highlights’ of Nature India doi:10.1038/nindia.2010.96; Published online 21st July, 2010.
- Best Poster Presentation Award for the work, “Far Ultraviolet observations of diffuse emission from the Large Magellanic Cloud” in National Space Science Symposium 2010, Saurashtra University, Rajkot, India.

• PhD Students

1. **Abhisek Mohapatra (INSPIRE Fellowship):** Worked on “Probing the circumgalactic medium with quasar absorption lines”. Completed PhD in 2021.
2. **Divya Pandey (Institute Fellowship):** Working on “Probing the star-formation activities of galaxies residing in void and filaments using AstroSat observations”. Submitting thesis in Dec, 2022.
3. **Jyotishree Hota (Institute Fellowship):** Working on “blazars using Astrosat Xray observations”.
4. **Ranjan Kumar (CSIR Fellow):** Working on “UV bright stars in globular clusters using UVIT observations”.
5. **Sonika Piridi (ISRO Project):** Working on “structure and evolution of our galaxy using ultraviolet star counts of GALEX and UVIT data”.
6. **Bibhu Prasad Mishra (Institute Fellowship):** Working on “ISRO UVIT observations”.

- **Masters Research Project Students:** Now most of them are pursuing PhD. in reputed foreign universities and a few of them are in reputed institutes in India.

1. Swayamtrupta Panda (411PH5028), “GALEX observations of planetary nebulae”.
2. Jayashree Behera (411PH5022), “Study of diffuse UV emission in the Magellanic Clouds”.
3. Depanshu Vashney (415PH2114), “Distribution of UV radiation field in Magellanic Clouds”.
4. Geeth Chandra Ongole (412PH5067), “Kinematics of white dwarf stars”.
5. Prashant Kushwaha (415PH2103), “Study of superbubbles”.
6. Raveena Khan (416PH2107), “Study of OVI absorption in superbubbles of Large Magellanic Clouds”.
7. Sumanta Kumar Sahoo (413PH5028), “Star formation in the Milkyway and in extreme extragalactic conditions”.
8. Vatsana Tiwari (416PH2120), “Study of intergalactic medium metals using Quasar absorption lines”.
9. Aditya Narendra (414PH5103), “Modelling of background UV emission in Magellanic Clouds”.
10. Ayush Moharana (414PH5026), “Ultraviolet studies of Galactic Globular Clusters using Observations from Ultraviolet Imaging Telescope (UVIT/AstroSat)”.
11. Prathamesh Dash (414PH5023), “A study of supernova light-curves with MESA and SNEC”.
12. Javed Akhtar (415PH5068), “Study of Globular Cluster NGC 4590 using UVIT/AstroSat and GAIA observations”.
13. Ramlal U (415PH5037), “Multi-wavelength analysis of planetary nebulae”.
14. Nitish Kumar Rajbhar (420PH2162), ”Ultraviolet Observation of Planetary Nebulae using Ultra-Violet Imaging Telescope” -

• Teaching Experience

1. Numerical Methods and Error Analysis (PhD. course work)

2. Classical Mechanics (MSc.)
3. Introduction to Astrophysics (MSc.)
4. Electricity & Magnetism (Int. MSc.)
5. Astronomy laboratory (MSc.)
6. Computational Physics (MSc.)
7. Modern Physics (Btech.)
8. General Physics Laboratory (MSc.)
9. Classical Electrodynamics (MSc.)

- **Workshop organized**

- Convener of IUCAA Sponsored workshop on “**Astronomy and Astrophysics**” in the department of Physics and Astronomy, NIT Rourkela.

- **Publication**

1. “Globular Cluster UVIT Legacy Survey (GlobULeS) II. Evolutionary status of hot stars in M3 and M13”, Ranjan Kumar, **Ananta C. Pradhan**, Snehalata Sahu, Annapurni Subramaniam, Sonika Piridi, Santi Cassisi, Devendra K. Ojha, 2022, Monthly Notices of the Royal Astronomical Society (in press) (**IF 5.287**)
2. “Central star formation in an early-type galaxy I Zw 81 in the Bootes void”, Divya Pandey, Kanak Saha, **Ananta C. Pradhan**, and Sugata Kaviraj, 2022, Astrophysica Journal, 941, 128 (**IF 5.521**)
3. “Study of UV bright sources in globular cluster NGC 4590 using Ultraviolet Imaging Telescope (UVIT) observations”, Ranjan Kumar, **Ananta C. Pradhan**, M. Parthasarathy, Sonika Piridi, Santi Cassisi, D. K. Ojha, Abhisek Mohapatra, and J. Murthy, 2022, Monthly Notices of the Royal Astronomical Society, 511, 5070 (**IF 5.287**).
4. “Correlations between X-ray spectral parameters of Mkn 421 using long-term SwiftXRT data”, Rukaiya Khatoun, Jyotishree Hota, Zahir Shah, Ran-

- jeev Misra, **Ananta C. Pradhan**, 2022, Monthly Notices of the Royal Astronomical Society, 515, 3749 (**IF 5.287**).
5. “Understanding the X-ray spectral curvature of Mkn 421 using broadband AstroSat observations”, Jyotishree Hota, Zahir Shah, Rukaiya Khatoon, Ranjeev Misra, **Ananta C. Pradhan** and Rupjyoti Gogoi, 2021, Monthly Notices of the Royal Astronomical Society, 508, 5921 (**IF 5.287**).
 6. “The Ultraviolet Deep Imaging Survey of Galaxies in the Bootes Void I: catalog, color-magnitude relations and star-formation”, Divya Pandey, Kanak Saha, and **Ananta C. Pradhan**, 2021, Astrophysica Journal, 919, 101 (**IF 5.521**).
 7. “Ultraviolet Imaging Telescope (UVIT) observation of Galactic Globular Cluster NGC 7492”, Ranjan Kumar, **Ananta C. Pradhan**, Abhisek Mohapatra, A. Moharana, M. Parthasarathy, D. K. Ojha, and J. Murthy, 2021, Monthly Notices of the Royal Astronomical Society, 502, 313 (**IF 5.287**).
 8. “Study of Galactic Structure Using UVIT/AstroSat Star Counts”, Ranjan Kumar, **Ananta C. Pradhan**, D. K. Ojha, Sonika Piridi, Tapas Baug, S. K. Ghosh, 2021, Journal of Astrophysics and Astronomy, 42, 42 (**IF 1.27**).
 9. “UVIT study of UV bright stars in the globular cluster NGC 4147”, Ranjan Kumar, **Ananta C. Pradhan**, M. Parthasarathy, D. K. Ojha, Abhisek Mohapatra, J. Murthy, and S. Cassisi, 2021, Journal of Astrophysics and Astronomy, 42, 36 (**IF 1.27**).
 10. “The Sharpest Ultraviolet view of the star formation in an extreme environment of the nearest Jellyfish Galaxy IC 3418”, Ananda Hota, D. Ashish, **Ananta C. Pradhan**, et al., 2021, Journal of Astrophysics and Astronomy, 42, 86 (**IF 1.27**).
 11. “Physical conditions and redshift evolution of optically thin C III absorbers: low-z sample”, A. Mohapatra, R. Srianand, and **Ananta C. Pradhan**, 2020, Monthly Notices of the Royal Astronomical Society, 501, 5424 (**IF 5.287**).

12. “Ultraviolet Imaging Telescope (UVIT) observation of Galactic Globular Cluster NGC 7492”, Ranjan Kumar, **Ananta C. Pradhan**, Abhisek Mohapatra, A. Moharana, M. Parthasarathy, D. K. Ojha, and J. Murthy, 2021, MNRAS, 502, 313 (**IF 5.287**).
13. “Physical conditions and redshift evolution of optically thin C III absorbers: low-z sample”, A. Mohapatra, R. Srianand, and **Ananta C. Pradhan**, 2020, MNRAS, issue 4, volume 501, pages 5424-5442 (**IF 5.287**).
14. “*A catalogue of 108 extended planetary nebulae observed by GALEX*”, **Ananta C. Pradhan**, Swayamtrupta Panda, M. Parthasarathy, Jayant Murthy & D. K. Ojha, 2019, ApSS, volume 364, iss 181 (**IF 1.909**).
15. “Physical conditions in high-z optically thin C III absorbers: origin of cloud sizes and associated correlations”, A. Mohapatra, R. Srianand, V. Khaire, and Ananta C. Pradhan, 2019, MNRAS, 484, 5028 (**IF 5.287**).
16. “Study of atomic spectroscopy and hyperfine structure of francium (Fr) isotopes using relativistic fockspace multireference coupled cluster method”, M. Das and Ananta C. Pradhan, Journal of Physics B: Atomic, Molecular and Optical Physics, 2019, vol.52, 15.
17. “*Spectroscopy of Na I and K I atoms embedded in weakly coupled plasma environment*”, M. Das, & **Ananta C. Pradhan**, 2017, **Physics of Plasma**, 24, 112706 (**IF 2.357**).
18. “*A Stellar Population Synthesis Model for the Study of Ultraviolet Star Counts of the Galaxy*”, **Ananta C. Pradhan**, D. K. Ojha, A. C. Robin, S. K. Ghosh, and John J. Vickers, 2014 **A&A**, 565, 33 (**IF 6.24**).
19. “*O VI Absorption in the Milky Way along Large Magellanic Cloud Lines of Sight*”, Rathin Sarma, Amit Pathak, **Ananta C. Pradhan**, Jayant Murthy, and Jayant K. Sarma, 2014 **Advances in Space Research**, 53, 96 (**IF 2.611**).
20. “*Far Ultraviolet Diffuse Emission from the Small Magellanic Cloud*”, **Ananta C. Pradhan**, Jayant Murthy and Amit Pathak, 2011, **ApJ**, 743, 80 (**IF 5.521**).

21. “*Survey of O VI Absorption in the Large Magellanic Cloud*”, Amit Pathak, **Ananta C. Pradhan**, Sujatha N.V. and Jayant Murthy, 2011, **MNRAS**, 412, 1105 (**IF 5.287**).
22. “*Far Ultraviolet Diffuse Emission from the Large Magellanic Cloud*”, **Ananta C. Pradhan**, Amit Pathak and Jayant Murthy, 2010, **ApJ Letters**, vol.718, 141 (**IF 8.811**).
23. “Recovering the origin of star formation in the central region of I Zw 81”, Divya Pandey, Kanak Saha, Ananta C. Pradhan, S373: Resolving the Rise and Fall of Star Formation in Galaxies XXXIst IAU General Assembly, August 2022, Accepted
24. “Role of bar in the secular evolution of I Zw 81”, Divya Pandey, Kanak Saha, Ananta C. Pradhan, 44th COSPAR Scientific Assembly. Held 16-24 July, 2022. Online at <https://www.cosparathens2022.org/>. Abstract E1.5-0045-22.
25. “CGM and their connection with the galaxies”, Abhisek Mohapatra, R. Srikanand, and Ananta C. Pradhan, ESO-GALSPEC2021, Conference Proceedings, published online, 2021, DOI:10.5281/zenodo.4721534,
26. “Cool CGM gas traced by C III absorbers”, Abhisek Mohapatra, R. Srikanand, and Ananta C. Pradhan, COSPAR, Conference Proceedings, 43rd COSPAR Scientific Assembly. Held 28 January - 4 February, 2021. Abstract E1.3-0029-21 (poster), id.1542, volume 43, page 1542, 2021
27. “UVIT observations of UV-bright stars in four galactic globular clusters”, R. Kumar, **Ananta C. Pradhan**, M. Parthasarathy, D. Ojha, A. Mohapatra, and J. Murthy, **Proceedings IAU Symposium:**, Star Clusters: From the Milky Way to the Early Universe, vol.14, pp.464-467, Cambridge University Press, symposium 351, 2020
28. “*Observations of O VI Absorption from the Superbubbles of the Large Magellanic Cloud*”, **Ananta C. Pradhan**, Amit Pathak, Jayant Murthy, and D. K. Ojha, **IAU Symposium:** Supernova environmental impacts, vol. 296, 388p, 2014, edited by Alak Ray & Dick McCray.

29. “*Gas and Dust in the Magellanic Clouds*”, **Ananta C. Pradhan**, Proceedings of the 30th Meeting of the Astronomical Society of India, vol.9, 23p, 2013. **ASI Conference Series**, Edited by Puspa Khare.
30. “*Observations of Far Ultraviolet Diffuse Emission from the Small Magellanic Cloud*”, **Ananta C. Pradhan**, Amit Pathak, Jayant Murthy, Proceedings of the 29th Meeting of the Astronomical Society of India, Vol. 3, p. 144, 2011 **ASI Conference Series**, Edited by Puspa Khare & C.H. Ishwara-Chandra.

● **Talks Presented in Workshops/Conferences/Symposiums**

1. Invited talk on ”Central star formation in an early-type galaxy I Zw 81 in the Bootes Void”, in the conference ‘Celebrating seven years of Astrosat’, during 28-29 September, 2022, held at ISRO head quarters.
2. Invited talk on ”A massive star-forming LSB galaxy in the Bootes Void” in ‘40th ASI meeting of the Astronomical society of India’, held during 25-29 March,2022, hoisted jointly by IIT Roorkee and ARIES Nainital
3. Talk on “UVIT observation of UV bright stars in GGCs NGC 7492 and NGC 4147”, in GC-II Science Meeting to celebrate Prof. Jayant Murthys 60th birthday, in IIA Bengaluru, held on 26th August, 2021
4. Invited talk on “Stellar Evolution: Birth, Life, and Death of Stars” in Webinar on Astrophysics Organized by Department of Physics, College of Basic Science and Humanities, Odisha University of Agriculture and Technology, Bhubaneswar on 30th July, 2021
5. Talk on “Study of Galactic Structure Using UVIT/AstroSat Star Counts”, in the conference ‘UVIT: 5 years of operation’, Indian Institute of Astrophysics, Bangalore, held during 1-3 December, 2020
6. Talk on “A catalogue of 108 extended planetary nebulae observed by GALEX”, in 38th meeting of Astronomical Society of India (ASI), held in IISER Tirupathi, during 13-17 Feb, 2020

7. Talk on “Stellar Evolution: Birth, Life and Death of stars”, Workshop on Astronomy and Astrophysics, NIT Rourkela, held during 9-10 March, 2018
8. Talk on “GALEX Observations of Planetary Nebulae”, in 35th ASI Meeting, Jaipur, held during 6-10 March, 2017
9. Poster presentation on “GALEX Observations of Planetary Nebulae”, in 33rd ASI Meeting, held at NCRA Pune, during 17-20 February, 2015
10. “Identification of point sources using IR color cut method”, workshop on Current trends in Near Infrared Astronomy in India, TIFR Balloon Facility, Hyderabad, held during November 25-27, 2014
11. “Observations of O VI Absorption from the Superbubbles of the Large Magellanic Cloud”, IAU Symposium: Supernova environmental impacts, Raichur, Kolkata, 2013
12. “Gas and Dust in the Magellanic Clouds”, ASI meeting, Trivandrum, India, 2013
13. “A Stellar Population Synthesis Model for the Study of Ultraviolet Star Counts of the Galaxy”, TIFR, 2012
14. “Study of dust and gas in the Magellanic Clouds”, Physical Research Laboratory, Ahmedabad
15. “Far Ultraviolet Diffuse Emission from the Magellanic Cloud”, International Conference on Interstellar Dust, Molecules and Chemistry, IUCAA, Pune, India, 2011
16. “Far Ultraviolet Diffuse Emission from the Small Magellanic Cloud”, ASI meeting, Raipur, India, 2011
17. “Far Ultraviolet Diffuse Emission from the Large Magellanic Cloud”, Wttfest: Origins & Evolution of Dust, University of Toledo, Toledo, Ohio, USA, October 2010
18. “Far Ultraviolet Diffuse Emission from the Large Magellanic Cloud”, NSSS, Saurashtra University, Rajkot, Gujarat, India, 2010

19. “Extinction Mapping through Broad Band Photometry”, Dust Workshop, Vainu Bappu Observatory, IIA, India, 2009
20. “Study of OVI Absorption Using FUSE Data”, 9th Cospar Capacity Building Workshop, Kualalumpur, Malaysia, 2008
21. “Formation of Interstellar Dust”, Astrosat meeting, Christ University, Bangalore, India, 2007

• **Institute Responsibilities**

1. Warden GD Birla Hall of Residence, July 2016 - June 2018
2. Member of Institute Anti ragging committee, November 2016 -June 2019
3. Past Member of Institute on campus business committee
4. Professor-In-Charge, Extra Academic Activity (EAA) (July 2020 - June 2022)
5. Coordinating Warden Maintenance [July 2022 ... Continuing]
6. Convener, Institute anti-ragging committee... Continuing
7. Chairman, Hall disciplinary Committee... Continuing
8. Part of many other departmental committee

• **Extra Academic Activities**

1. Decent cricket and badminton player
2. A movie and cricket buff
3. Having good leadership quality and organizational skill. I was elected as president of student union in College of Basic Science and Humanities, OUAT, Bhubaneswar while pursuing my graduation in 2003.