

CURRICULUM VITAE

Nand Kumar Chakradhari,
Assistant Professor,
SoS in Physics & Astrophysics,
Pt. Ravishankar Shukla University,
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CAREER OBJECTIVE

To carry out research in the interesting field of Astronomy & Astrophysics and to pursue a career in an esteemed institute which will motivate me in achieving highest individual and professional growth in a manner to prove myself as an asset to the scientific community. I am aiming to be a key player in this challenging & creative environment.

CAREER PROFILE

May, 2008-till date : Working as an Assistant Professor at School of Studies (SoS) in Physics & Astrophysics, Pt. Ravishankar Shukla University, Raipur, C. G., India.

Aug, 2006-May, 08 : Worked as a Junior Research Fellow at Space Astronomy and Instrumentation Division (SAID), ISRO Satellite Centre (ISAC), Bangalore, India.

Feb, 2005-July, 06 : Worked as a Research Trainee at Center for Research and Education in Science and Technology (CREST), Indian Institute of Astrophysics, Bangalore, India.

ACADEMIC PROFILE

- ◆ MSc Physics (2004) from Pt. Ravishankar Shukla University Raipur, C.G., India with 75.08%.
- ◆ BSc (2002) from Seth P.C. College Nawapara-Rajim (Pt. R.S. Univ. Raipur, C.G.) with 75.6%.
- ◆ Higher Sec. School (1999) from Govt. H.S.S. Nawapara-Rajim (M.P. Board, Bhopal) with 84.6%.
- ◆ High School (1997) from Govt. H.S. Nawapara-Rajim (M.P. Board, Bhopal) with 79%.

ACHIEVEMENTS & AWARDS

- ◆ Awarded with **Chhattisgarh Young Scientist of Physics** 2013.
- ◆ Qualified for Lectureship in UGC-CSIR **National Eligibility Test (NET)**.
- ◆ Qualified for **Joint Entrance Screening Test (JEST)** 2006.
- ◆ University first rank in MSc Physics. Awarded with **Gold Medal**.
- ◆ University second rank in BSc (first rank in College, awarded with **Gold Medal**).
- ◆ School first rank in Higher Secondary. Awarded with **Silver Medal**.

- ◆ Awarded with **Gold Medal** on Gandhi Jayanti Convocation organized by an NGO for educational performance in rural area.

RESEARCH EXPERIENCE

- ◆ Worked as Junior Research Fellow (JRF) at ISRO Satellite Centre, Bangalore, India, (2006-08) on Research Project entitled “**Survey and study of rapidly oscillating Ap (roAp) stars in the northern hemisphere**”.
- ◆ Having one and half year experience in **remote handling** and **Optical-NIR** observations using 2m **Himalayan Chandra Telescope** of Indian Astronomical Observatory (IAO), Hanle-Leh, installed at an altitude of 4500 meter above mean sea level, which is remotely operated by Indian Institute of Astrophysics (IIA), Bangalore, India via a dedicated satellite link (2005-06).
- ◆ Versatile in **CCD photometric and spectroscopic** single-aperture, multi-aperture (echelle) data reduction and analysis using **IRAF** (Image Reduction and Analysis Facility) software package.
- ◆ Developed IRAF based very efficient and time saving **cl-script** for automated photometric and spectroscopic data reduction in bulk.
- ◆ Familiar with the **Ultraviolet-Optical** data reduction of **Swift satellite** using **HEASOFT**.
- ◆ Familiar with data acquisition and reduction using **Quilt9** and **Qed** software packages for two channel and three channel fast photometers.
- ◆ Familiar with data reduction using **Source Extractor** package.
- ◆ Has done the photometry and analysis of **Supernovae SN 2004A, SN 2005cf, SN 2005el, SN 2005ke, SN 2010kg, SN 2010ju, PTF10bjs, SN 2011dh and SN 2012dn**.
- ◆ Well acquainted in using **SSP3, SSP5A, Two channel, Three channel fast Photometers** and various **imaging- spectroscopic equipments** used to study celestial objects.
- ◆ Observational experience of more than 9 years in the field of astronomy & astrophysics. Worked with various class of telescopes installed all over the country i.e. 6 inch, 8 inch & 14 inch Telescopes at Pt R.S. Univ. Raipur, 1 meter Sampurnanand Telescope at ARIES, Nainital, 2 meter Himalayan Chandra Telescope at IAO, Hanle-Leh, 1 meter & 2 meter telescope at Vainu Bappu Observatory, Kavalur, 2 meter IGO telescope at IUCAA, Pune.
- ◆ Presently, along with teaching, very actively involved in the research in the field of Astronomy & Astrophysics and associated with a group of people working on “Supernovae”, “Galaxies” and “Chemically Peculiar Stars”.

FELLOWSHIP

- ◆ **Chhattisgarh Young Scientist Fellowship** awarded by the Chhattisgarh Council of Science and Technology, Raipur, C.G. during 6th May - 5th July, 2013.
- ◆ **INSA Visiting Scientist Fellowship** awarded by the Indian National Science Academy, Dept. Of Science and Technology, New Delhi during 02nd Sep- 6th Dec, 2013.

COMPUTATIONAL SKILL

- ◆ Operating System- Linux, Windows
- ◆ Programming- FORTRAN, HTML
- ◆ Packages- IRAF, Quilt9, Qed, Source Extractor, HEASOFT for Swift UV data.
- ◆ Plotting Software- SM, Origin, Gnuplot, Excel
- ◆ Computer Administration at Astrophysics Lab and Computer Lab, SoS in Physics & Astrophysics, Pt. Ravishankar Shukla University, Raipur, C.G.

PROJECT IN M.Sc.

Carried out a project entitled “**Differential photometry of delta scuti star V474 Mon**“ at Pt Ravishankar Shukla University, Raipur, C.G. using 6 inch Optical Telescope and SSP3 photometer under the supervision of Prof. S.K. Pandey (Presently Vice-Chancellor, Pt R.S. Univ. Raipur).

RESEARCH COURSES ATTENDED

- ◆ One-month (Oct-Nov 2004) long extensive study of **CZT Imager** onboard **ASTROSAT** in Tata Institute of Fundamental Research (TIFR), Mumbai under the supervision of Prof. A. R. Rao.
- ◆ Post Graduate Pre-PhD Research Courses at Indian Institute Science (IISc) Bangalore, Joint Astronomy Program (**JAP**), 2007-08.

PUBLICATIONS & CIRCULARS

Papers : (International/ National Refereed Journal)

Note :- B. P. Schmidt, Co-author of paper no. 8, is **NOBEL PRIZE WINNER IN PHYSICS 2011**.

1. **Supernova SN 2012dn: A Spectroscopic clone of SN 2006gz**, Chakradhari N. K., Sahu D. K., Srivastav S., Anupama G. C., 2014, MNRAS, 443, 1663.
2. **Study of dust and ionized gas in early type galaxies**, Kulkarni Samridhi, Sahu D. K., Chaware L. K., Chakradhari N. K., Pandey S. K., 2014, New Astronomy, 30, 51.
3. **One year of monitoring of the Type IIb supernova SN 2011dh**, Sahu D. K., Anupama G. C., Chakradhari N. K., 2013, MNRAS, 433, 2.
4. **A spectroscopic analysis of the chemically peculiar star HD 207561**, Joshi S., Semenko E., Martinez P., Sachkov M., Joshi Y. C., Seetha S., Chakradhari N. K., Mary D. L., Girish V., Ashoka B. N., 2012, MNRAS, 424, 2002.
5. **Time-resolved photometric and spectroscopic analysis of the luminous Ap star HD103498**, Joshi S., Ryabchikova T., Kochukhov O., Sachkov M., Tiwari S. K., Chakradhari N. K., Piskunov N., 2010, MNRAS, 401, 1299.
6. **The Nainital-Cape Survey. III. A search for pulsational variability in chemically peculiar stars**, Joshi S., Mary D. L., Chakradhari N. K., Tiwari S. K., Billaud C., 2009, A&A, 507, 1763.
7. **Photometric and spectroscopic evolution of type II-P supernova SN 2004A**, Gurugubelli Uday K., Sahu D. K., Anupama G. C., Chakradhari N. K., 2008, BASI, 36, 79.

- 8. ESC observation of SN 2005cf I. Photometric Evolution of a Normal Type Ia Supernova**, Pastorello A., Taubenberger S., Elias-Rosa N., Mazzali P. A., Pignata G., Cappellaro E., Garavini G., Nobili S., Anupama G. C., Bayliss D. D. R., Benetti S., Bufano F., Chakradhari N. K., Kotak R., Goobar A., Navasardyan H., Patat F., Sahu D. K., Salvo M., **Schmidt B. P.**, Stanishev V., Turatto M., Hillebrandt W., 2007, MNRAS, 376, 1301-1316.

Papers : (International Conference Proceedings)

- 1. Search for P-mode Pulsations in Late Type Chemically Peculiar Stars**, Joshi S., Chakradhari N. K., International Conference AOGS 2010, held at Hyderabad during July 5-9, 2010, Published in Advances in Geosciences, 2011, World Sc. Company, 27, 219.
- 2. Time-Resolved Photoelectric, Photometric and High-Resolution Spectroscopic Data Analysis of a Luminous Ap Star HD 103498**, Joshi S., Joshi Y. C., Ezhkova O. V., Sachkov M., Ryabchikova T., Kochukhov O., Chakradhari N. K., Tiwari, S. K., International Conf. held at SAO, Russian AS during 27 August–01 September, 2011, Published in Magnetic Stars Conf. Proc., 2011, pp 330-341.

Circulars:

- 1. GRB050121 Optical Observations**, D. K. Sahu, G. Pandey, P. Bama, N. K. Chakradhari, 2005, GCN 4294 .
- 2. GRB060124 Optical Observations**, B. C. Bhatt, D. K. Sahu, Srividya S., N. K. Chakradhari, 2006, GCN45971.
- 3. Spectroscopic classification of PSN J11430127 + 2357016 in UGC 6681 and PSN J16412717 + 5747050 in NGC 6211**, S. Srivastav, N. K. Chakradhari, D. K. Sahu, G. C. Anupama, 2013, ATEL # 5105.

Posters: (International/ National Conferences)

- 1. Multiwavelength study of radio loud early type galaxies from B2 Samplae**, Sheetal Kumar Sahu, L. K. Chaware, S. K. Pandey, M. B. Pandge, Samridhi Kulkarni, N. K. Chakradhari, Presented at IAU symposium S304 : Multiwavelength AGN Surveys and Studies held at Yerevan, Armenia during October 7-11, 2013.
- 2. Spectral studies of some E/SO galaxies using the SDSS DR7 data**, Amit Kumar Tamrakar, L. K. Chaware, S. K. Pandey, N. K. Chakradhari, Sheetal Sahu, presented at 30th Scientific Meeting of Astronomical Society of India (ASI-2013) held at IISER-IIST-IRC, Kerala during February 20-22, 2013.
- 3. Optical studies of type IIb Supernova SN2001dh**, D. K. Sahu, G. C. Anupama, N. K. Chakradhari, International Astronomical Union Symposium 296 on Supernova Environmental Impacts held at Raichak-on-Ganges, near Kolkata, India during January 7-11, 2013.
- 4. Multiwavelength investigation of some dusty E/SO galaxies**, Samridhi Kulkarni, L. K. Chaware, N. K. Chakradhari, D. K. Sahu, S. K. Pandey, 29th Scientific Meeting of Astronomical Society of India (ASI-2011) held at SoS in Physics & Astrophysics, Pt. RS University, Raipur during February 23-25, 2011. **(Awarded with 1st prize).**
- 5. Study of Dust properties in Early type Galaxies**, Samridhi Kulkarni, D. K. Sahu, Laxmikant

Chaware, N. K. Chakradhari, S. K. Pandey, International Conference : Wittfest : Origins and evolution of Dust, University of Toledo, Ohio, USA during October 10-12, 2010.

6. Multiband Photometric Study of Dusty Early Type Galaxies, Samridhi Kulkarni, L. K. Chaware, N. K. Chakradhari, D. K. Sahu, S. K. Pandey, 16th National Space Science Symposium 2010 held at Saurashtra University, Rajkot during 24-27, February, 2010. **(Awarded with 3rd prize).**

7. Study of dust and ionized gas in Early type galaxies, Samridhi Kulkarni, D.K. Sahu, Laxmikant Chaware, N. K. Chakradhari, S. K. Pandey, 29th Scientific Meeting of Astronomical Society of India (ASI-2009) held at Bangalore during February 18-20, 2009.

INVITED LECTURES/ TV DISCUSSIONS

1. Delivered an invited lecture on “The longest total solar eclipse of the 21st century: 22 July 2009” at the State Council of Education, Research & Training (SCERT), Raipur, C.G.
2. Invited as an expert for a discussion on “Solar Eclipse of 22 July 2009” in a TV programme broadcasted by *Zee-Chhattisgarh 24hour* TV channel.
3. Invited as an expert for a discussion on “The End of the World on 21 Dec. 2012: a misconception among the common people” in a TV programme broadcasted by *Zee-Chhattisgarh 24hour* TV channel in November 2010.
4. Invited as an expert for a discussion on “Solar Eclipse of 15 January 2010” in a TV programme broadcasted by *Zee-Chhattisgarh 24hour* TV channel.
5. Delivered an invited lecture on “Telescopes & Multiwavelength Universe” in Teachers Training Programme at SCERT, Raipur, C.G. on 22 April, 2010.
6. Delivered an invited lecture on the “How to Prepare for UGC-CSIR-NET” examination on 06 February, 2012 at Digvijay College Rajnandgaon.
7. Delivered an invited lecture on “Career in Physics & Astrophysics”, at Govt. J.R. Dani Girls School, Raipur on 30th March 2013.
8. Delivered an Invited lecture on Opportunities and Challenges in Physics & Astrophysics at Bhilai Mahila Mahavidyalaya, Sector-9, Bhilai on 16th Jan 2014.
9. Delivered an invited lecture on Astronomy & Astrophysics: Opportunities and Challenges at Govt. College Balod on 15th Jan 2015.
10. Delivered an invited lecture on Study of stars using telescopes as a part of celebration of “Astronomy Day” at Chhattisgarh Science Center, Raipur on 25th April 2015.

SKY WATCHING PROGRAMME

Regularly organize Planetarium Show, sky watching programme, telescope demonstration and astronomical lectures at various places for school/ college students, teachers and public.

IMPORTANT CONTRIBUTION TO DEPT.

Involved in preparation and presentation of DST-FIST proposal which was awarded Rs. 1,00,00,000.00 (Sanction no. SR/FST/PSI-189/November 2013)

WORKSHOPS AND CONFERENCES

- Science with Himalayan Chandra Telescope (IIA, Bangalore, 2006).
- UV studies with ASTROSAT (IIA, Bangalore, 2006).
- Study of diffuse hot gas with ASTROSAT (RRI+Christ College Bangalore, 2007).
- Young Astronomer Meet(YAM) 2007 (IIA, Bangalore).
- ASTROSAT, CHANDRAYAAN-1 Science Meeting (ISRO Satellite Centre, Bangalore, 2007).
- National Symposium on Gamma Ray Astronomy (Nov 2007, IIA Bangalore).
- X-ray Astronomy School (Feb 2009, IUCAA Pune).
- Telescope Making Workshop for School Students of the Chhattisgarh State, as a part of celebration of International Year of Astronomy (worked as a member, Organizing Committee, 4-6 Jan 2010, SCERT, Raipur).
- Three Days State Level Camp for the College Students of the Chhattisgarh State as a part of celebration of International Year of Astronomy (worked as a member Organizing Committee, 11-13 Jan 2010, Pt. R.S. Univ., Raipur).
- INSPIRE Internship Summer Camp for school students of the Chhattisgarh State from 04-08 June 2010 and 10-14 June 2010 at Pt. R.S. University. (worked as a Core Member, Organizing Committee).
- “Quality of Higher Education in Chhattisgarh State” organized by Pt. R.S. University, Raipur on 14th, July 2010.
- Presented a paper entitled “Search for P-mode Pulsations in Late Type Chemically Peculiar Stars” at an International Conference, AOGS 2010, held at Hyderabad during 5-9 July, 2010.
- INSPIRE Internship Winter Camp for school students of the Chhattisgarh State from 02-06 December, 2010 and 15-19 December, 2010 at Pt. R.S. University. (worked as a Core Member, Organizing Committee).
- National Conference on Luminescence and It's Applications (NCLA), at SoS in Physics & Astrophysics, Pt. R.S. University, Raipur (February 2011).
- “29th Scientific Meeting of Astronomical Society of India (ASI-2011)” held during February 23-25, 2011 at SoS in Physics & Astrophysics, Pt. R.S. University, Raipur (worked as a Secretary, Local Organizing Committee).
- INSPIRE Internship Summer Camp during 06-10th June, 2011 at Pt. RS University. (worked as a Core Member, Organizing Committee).
- Microsoft's “SAKSHAM-IT Champion Training Program” Organized by the National Mission on Education Through ICT (NME-ICT) held during 10-22 December, 2011 at UGC Academic Staff College, Pt. R.S. University, Raipur.
- UGC sponsored workshop on “How to write Research Project” held during January 12-19, 2012 at UGC Academic Staff College, Pt. RS University, Raipur.
- “International Workshop on Advanced Materials and Astrophysics (IWAMA-2012)”, held during Feb 19-21, 2012 at SoS in Physics and Astrophysics, Pt. RS University, Raipur, worked as a joint secretary.
- INSPIRE Internship Winter Camp during 25th -29th Dec., 2012 at Pt. RS University. (worked as a Member, Organizing Committee).
- Presented a paper entitled “Mapping the Universe with Type Ia Supernova SN 2012dn”, at XI Chhattisgarh Young Scientist Congress 2013, held at Govt. Science College, Raipur during 28th February – 01st March, 2013.
- INSPIRE Internship Summer Camp during 15th - 20th July, 2013 at Pt. RS University. (Worked as a Member, Organizing Committee).
- INSPIRE Internship Winter Camp during 26th - 30th December, 2013 at Pt. RS University. (Worked as a Member, Organizing Committee).
- Golden Jubilee National Science Day Celebration held on 8th March, 2014 at SoS in Physics & Astrophysics, Pt. RS University, Raipur, C.G. (Worked as a Member, Organizing

- Committee).
- INSPIRE Internship Summer Camp during 05th - 09th August, 2014 at Pt. RS University. (Worked as a Member, Organizing Committee).
 - INSPIRE Internship Winter Camp during 26th - 30th December, 2014 at Pt. RS University. (Worked as a Member, Organizing Committee).
 - One day workshop on “H-index” organized by IQARC, Pt. RS University, Raipur, C.G. on on 22nd April 2014
 - One day workshop on “Nuances in publishing process in academic journals” held on 13th April 2015 at IQARC, Pt. RS University, Raipur, C.G.

PERSONAL PROFILE

- ◆ Father’s name : Ram Lal Chakradhari
- ◆ Age & Date of Birth : 33 years, September 13, 1981
- ◆ Sex : Male
- ◆ Marital Status : Married
- ◆ Nationality : Indian
- ◆ Languages Known : English, Hindi
- ◆ Permanent Address : Nand Kumar Chakradhari
Village - Koliyari (Rajim)
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