

## Curriculum-Vitae

**Dr. PATIL MADHAV KHUSHALRAO**

*Senior Professor,*  
School of Physical Sciences,  
S.R.T.M. University,  
Vishnupuri, Nanded-431 606  
Maharashtra, INDIA  
Cell. 0830298063; 9423350740  
Email: [patil@associates.iucaa.in](mailto:patil@associates.iucaa.in), [mkpatil@srtmun.ac.in](mailto:mkpatil@srtmun.ac.in)



### A. Academic Qualifications:

Degree	Board / University	Year	Marks	Division
S. S. C	Divisional Board, Aurangabad	1983	63.29 %	I <sup>st</sup>
H. S. C.	Divisional Board, Aurangabad	1986	72.6 %	I <sup>st</sup>
B. Sc.	Dr B.A.M.U. Aurangabad	1989	67.34 %	I <sup>st</sup>
M. Sc.	Dr B.A.M.U. Aurangabad	1991	74.6 %	I <sup>st</sup> Rank I
N. E. T.	C.S.I.R., New Delhi	1994	--	Selected for CSIR Fellowship
Ph. D.	S.R.T.M. University, Nanded	2003	--	

- **Ph. D. Physics (Astrophysics), S. R. T. M. University, Nanded, 2003, Ph D thesis: “Multiwavelength study of dust properties in early-type galaxies”. Ph D supervisor: Prof. S. K. Pandey (Pt. R S University, Raipur) and Prof. Ajit Kembhavi (IUCAA, Pune)**

### C. Professional Career:

(Teaching Experience: 34<sup>th</sup> year in progress, Research Experience: 21 years)

Designation	Affiliation	Duration
<i>Senior Professor</i>	School of Physical Sciences, S.R.T.M. University, Nanded	March 25 <sup>th</sup> , 2022 till the date
<i>Professor</i>	School of Physical Sciences, S.R.T.M. University, Nanded	July 1, 2011 to March 25, 2022
<i>Associate Professor</i>	School of Physical Sciences, S.R.T.M. University, Nanded	July 1, 2008 to June 30, 2011
<i>Reader</i>	School of Physical Sciences, S.R.T.M. University, Nanded	July 1, 2004 to June 30, 2007
<i>Assistant Professor (Lecturer)</i>	School of Physical Sciences, S.R.T.M. University, Nanded	July 4, 1996 to June 30, 2004
<i>Assistant Professor (Lecturer)</i>	Shri H.S. College, Udgir, Latur, Maharashtra	July 22, 1993 to July 3, 1996
<i>Lecturer (Junior College Level)</i>	Shri H.S. College, Udgir, Latur, Maharashtra	July 21, 1991 to June 15, 1993

#### **D. Awards / Scholarships / Fellowships / Memberships:**

- Member, **LIGO-EPO, LIGO-India Mega Science Project of Govt. Of India** (LASER Interferometry based Gravitational Wave Observatory, in **collaboration NSF, USA**)
- Member, **International Science Discussion Team (ISDT) of Thirty Meter Telescope (TMT), Hawaii (USA)** (since 2015)
- **S.R.T.M. University Best Teacher Award 2012**
- **Dean, Faculty of Science and Technology**, S.R.T.M. University, Nanded (since 1<sup>st</sup> June 2023)
- **Associate Dean, Faculty of Science and Technology**, S.R.T.M. University, Nanded (since 23<sup>rd</sup> March 2023 – 6<sup>th</sup> November 2023)
- **Director, School of Physical Sciences**, S.R.T.M. University, Nanded (31<sup>st</sup> January 2018 – 31<sup>st</sup> December 2021)
- **Member, Management Council** of S.R.T.M. University, Nanded (2019 - 2020)
- **Chairman, Board of Studies in Physics**, S.R.T.M. University, Nanded (2018 - 2022)
- **Member, Academic Council** of S.R.T.M. University, Nanded (2018 - 2022)
- **Associate Member, COSPAR, Paris, France**, since 2003
- Member, Users' Committee, IUCAA, Pune (2012-2015)
- Selected for Research Award, UGC, New Delhi 2013
- **Associate Fellow of IUCAA**, Pune for the cycles 2004-2007, 2007-2010, 2010-2013, 2013-2016, 2016-2019, 2019-2022 and 2022-2025
- Life Member, Astronomical Society of India
- Life Member IAPT, ISC, IPA
- Involved in various national / international Space Science and Astrophysics related programmes
- **Reviewer of high impact factor international research journals like MNRAS, A&A, RAA, etc.**
- Member, Board of Examinations, Academic Bodies, Research Bodies of various Indian universities like, Bangalore University, Pt. Ravishankar Shukla University, Raipur, Osmania University, Gulbarga University, CUSAT, Kerala, Mahatma Gandhi University, Kottayam, Manipur University, Gwalior University, Amity University
- Qualified NET examination and was selected for CSIR fellowship (December 1994)
- National Open merit scholarship at M.Sc. level
- University Rank at M.Sc. level
- National Merit Scholarship at B.Sc. level
- Qualified IAPT Physics examination at B.Sc. level

#### **E. Research Publications (Refereed Journals):**

**More than 60 in high impact, peer reviewed, international research journals like** *Astrophysical Journal* (USA), *Monthly Notices of Royal Astronomical Society* (MNRAS, London), *Astronomy & Astrophysics* (A&A, Paris), *Astrophysics and Space Science* (ApSS), *Advances in Space Research* (A COSPAR Publication, Paris), *Remote Sensing Letters*, *Research in Astronomy & Astrophysics* (RAA, China), *New Astronomy*, *Serbian*

**E. Publications / Paper presentations in Conference / Seminar / Symposia:**

1. S. K. Kadam, S. S. Sonkamble, N. D. Vagshette, **M. K. Patil**, *Sloshing Cold Fronts in Galaxy Cluster Abell 2566, 2024, New Astronomy, 111(102253) (arXiv:2405.10475v1)* <https://doi.org/10.1016/j.newast.2024.102253>
2. Nilkanth Vagshette, **Madhav Patil**, Satish Sonkamble, Sachindra Naik, *Star-forming clumps in the starburst galaxy M 82, 2024, Advances in Space Research xx (2023) 0273-1177 (in Press)*
3. S. S. SONKAMBLE, S. K. KADAM, SURAJIT PAUL, M. B. PANDGE, P. K. PAWAR and **M. K. PATIL**, *Cool-core, X-ray cavities and cold front revealed in RXCJ0352.9+1941 cluster by Chandra and GMRT observations, 2024, J. Astrophys. Astr. (JOAA-D-23-00105)* <https://doi.org/10.1007/s12036-024-10008>
4. S. S. Sonkamble, S. K. Kadam, M. B. Pandge, Surajit Paul, P. K. Pawar, and **M. K. Patil**, *Cool-core and X-ray cavities revealed in cluster RXCJ0352.9+1941 by Chandra and GMRT observations, Publications of the Astronomical Society of Australia (2024), in press*
5. S.K. Kadam, S. S. Sonkamble, Sameer salunkhe, Surajit Paul, N. D. Vagshette, P. K. Pawar, and **M. K. Patil**, *Sloshing and spiral structures breeding a putative radio mini-halo in the environment of a cool-core cluster Abell 795, 2024, Monthly Notices of royal Astronomical Society, London (MNRAS) (MN-23-1830-MJ)*
6. RN Ghodpage, A Taori, RP Patil, **M. K. Patil**, OB Gurav, S Sripathi, AP Dimri; *Monitoring cloud parameters using a ground-based airglow imager*; 2023; Remote Sensing Letters VOL. 14, NO. 8, 854–866 (DOI: <https://doi.org/10.1080/2150704X.2023.2247520>)
7. RN Ghodpage, A Taori, **M. K. Patil**, OB Gurav, RP Patil, S Sripathi; *Equatorial plasma bubble association with lower atmospheric gravity waves-further evidences*; 2023; Advances in Space Research; (DOI: <https://doi.org/10.1016/j.asr.2023.05.056>)
8. Kiran Wani, Haritma Gaur, and **M. K. Patil**; *X-Ray Studies of Blazar IES 1959+650 Using Swift and XMM-Newton Satellite*; The Astrophysical Journal, 951:94 (14pp), 2023 July 10 (DOI: <https://doi.org/10.3847/1538-4357/acd186>)
9. RN Ghodpage, A Taori, **M. K. Patil**, OB Gurav, RP Patil, S Sripathi; *Uses Of Ground Based All Sky Imager For The Investigation Of Middle And Upper Atmospheric Phenomena*; 2023;
10. R. N. Ghodpage, Alok Taori, O. B. Gurav, and P. T. Patil, M. K. Patil “**Interesting Airglow Observations During COVID-19 Pandemic Over Indian Sector**” in 21<sup>st</sup> National space Science Symposium (NSSS-2022) proceedings of IISER Kolkata on 31<sup>st</sup> January to 4<sup>th</sup> February 2022
11. S. P. Deshmukh, N. D. Vagshette and **M. K. Patil**; *Stellar and dust properties in a sample of blue early type galaxies*; 2022; Serb. Astron. J.; 205 (2022), 23 – 32 (DOI: <https://doi.org/10.2298/SAJ2205023D>)
12. Anil Kyadampure, N. D. Vagshette, and **M. K. Patil**; *X-ray cavities in the G50 Bright Group-Centered Galaxy NGC 5846*; 2021, *Serbian Astronomical Journal, Belgrade*; Vol 202, 17-24 (DOI: <https://doi.org/10.2298/SAJ2102017K>)
13. Nilkanth D. Vagshette, Sachindra Naik, Neeraj Kumari, and **Madhav K Patil**; *Imaging and photometric studies of NGC 1316 (Fornax A) using Astrosat/UVIT*; 2021; *Journal of Astronomy and Astrophysics (Indian Academy of Science and Springer)*; Vol. 42; 34 (DOI: <https://doi.org/10.1007/s12036-021-09708-4S>)

14. B.T.Tate, A.T.Kyadampure, **M. K. Patil**; Interstellar Medium in nearby Early-Type Galaxy NGC 5576; 2020; *Our Heritage*; Vol – 68; Special Issue-12; 673-681 (ISSN:0474-9030)
15. S K Kadam, S S Sonkamble, P K Pawar, **M K Patil**; Merging cold front and AGN feedback in the peculiar galaxy cluster Abell 2626; 2019, *Monthly Notices of Royal Astronomical Society (MNRAS, UK)*, Vol 484, Issue 3, 4113-4126
16. Pandge, M. B.; S. S. Sonkamble, Viral Parekh, Pratik Dabhade, Avni Parmar, **Patil, M.K.**; Raychaudhury, Somak; *AGN Feedback in Galaxy Groups: A Detailed Study of X-ray Features and Diffuse Radio Emission in IC1262*, 2019, *The Astrophysical Journal (ApJ, USA)*, Vol 870, No.2, 62 (12pp)
17. B Maqbool, SP Mudambi, R Misra, J S Yadav, S B Gudennavar, S G Bubbly, A Rao, S Jogadand, **M K Patil**, S Bhattacharyya , K P Singh; *A stochastic propagation model to the energy dependent rapid temporal behaviour of Cygnus X-1 as observed by AstroSat in the hard state* ; 2019, *Monthly Notices of Royal Astronomical Society (MNRAS, UK)*, 486 (2), 2964-2975
18. Nilkanth D. Vagshette, Sachindra Naik, **Madhav K. Patil**; *Cavities, shocks and a cold front around 3C 320*; 2019, *Monthly Notices of Royal Astronomical Society (MNRAS, UK)*, Vol 485, Issue 2, 1981-1989
19. *Tate B.T, Kyadampure A.T., Pandey S.K., Patil M. K., Multiphase ISM in nearby early-type galaxy IC5063, International Journal of Astronomy, 2018, 8 (1), 79-93*
20. P.K.Pawar, G.C. Devangan, I.E. Papadakis, **M. K. Patil**, Main Pal, A.K. Kembhavi; Complex UV/ X-ray variability of 1H 0707 - 495; 2017, *Monthly Notices of Royal Astronomical Society (MNRAS)* Vol. 472, 2823-2832
21. Pandge, M. B.; Bagchi, Joydeep; Sonkamble,S.S.; Parekh,Viral; **Patil, M. K.**; Dabhade,Pratik; Navale,Nilam R; Raychaudhury, Somak; Joe, Jacob; *MACS J0553.4-3342: A young merging galaxy cluster caught through the eyes of Chandra and HST*; 2017, *Monthly Notices of Royal Astronomical Society (MNRAS)*, Vol. 472, Issue 2, p2042-2053
22. Nilkanth D. Vagshette, Sachindra Naik, **Madhav K. Patil**, Satish S. Sonkamble; *Detection of a pair of prominent X-ray cavities in Abell 3847*; 2017, *Monthly Notices of Royal Astronomical Society (MNRAS)*, Vol 466-2, 2054-2066
23. Patil, M. K., *Accretion Powered AGN feedback in the cores of galaxy clusters*, 2017, SAO/NASA ADS arXiv:1704.06047 (DOI:2017arXiv170406047P)
24. Nilkanth D. Vagshette, Satish S. Sonkamble, Sachindra Naik and **Madhav K. Patil**; *AGN-driven perturbations in the intracluster medium of the cool-core cluster ZwCl 2701*, 2016, *Monthly Notices of Royal Astronomical Society (MNRAS)*, Vol 461, 1885-1897
25. K.G. Biju, Joydeep Bagchi, M. Pandey-Pommier, Ishwara Chandra C.H., Joe Jacob, **M. K. Patil**, Sunil Kumar P., Mahadev Pandge, Samir Dhurde, Pratik Dabhade, Madhuri Gaikwad, Sheelu Abraham, M. Vivek, Ashish A. Mahabal, S. G. Djorgovski; *'Zwicky's Nonet: a compact merging ensemble of nine galaxies and 4C35.06, a peculiar radio galaxy with dancing radio jets*, 2017, *Monthly Notices of Royal Astronomical Society (MNRAS)*, Vol. **471**, Issue 1, 617–628
26. Pramod Pawar, Gulab Devangan, **M. K. Patil**, Ranjeev Misra and S. K. Jogadand, *On the reality of broad Iron L lines from the narrow line Seyfert I galaxies 1H 0707 - 495 and IRAS 13224 - 3809*; 2016, *Research in Astronomy & Astrophysics (RAA)*, Vol. 16, No.11, 169
27. S S Sonkamble, N. D. Vagshette, P. K. Pawar, **M K Patil**, “*X-Ray cavities and temperature jumps in the environment of the strong cool core cluster Abell 2390*”, 2015, *Astrophysics and Space Science (ApSS)*, Vol. 359, 61-78 (ASTR-D-14-00458)
28. S.S. Sonkamble, N.D. Vagshette, P. K. Pawar, & **M. K. Patil**, *AGN feedback in X-ray luminous galaxy cluster: PKS 0745-191*, 2015, *Proceedings of 29th International*

- Astronomical Union (IAU), General Assembly Meeting, held at Honolulu, Hawaii (USA)
29. N. D. Vagshette, S.S.Sonkamble, S. K. Pandey, **M. K. Patil**; “*X-ray emission from a prominent dust lane lenticular galaxy NGC 5866*”, 2015, Asian Journal of Physics, Vol. 24 No. 8, 1031-1044, *special issue on ISM in galaxies*
  30. S. S. Sonkamble, N. D. Vagshette, P.K. Pawar, & **M. K. Patil**, *AGN Feedback in strong cool core cluster Abell 2390*, 2015, Proceedings of XXXIII Meeting of Astronomical Society of India, February, 2015
  31. P. K. Pawar, G. C. Dewangan, & **M. K. Patil**, *X-ray and optical/UV variability of NLS1 1H 0707 – 495*, 2015, Proceedings of XXXIII Meeting of Astronomical Society of India, February, 2015
  32. S.K.Jogdand, B. T. Tate, S. P. Deshmukh, **M. K. Patil**, *X-ray Binary Population in an edge-on lenticular galaxy NGC133*, 2015, Proceedings of XXXIII Meeting of Astronomical Society of India, February, 2015
  33. N.D.Vagshette, **M. K. Patil**, S. S. Sonkamble, Anil Kyadampure (S.R.T.M. University Nanded), *Heating and cooling mechanism in cool core cluster Zwcl 2701*, in the XXXIII Meeting of the Astronomical Society of India held at National Center for the Radio Astronomy of TIFR, Pune (MH) during 17 - 20 February, 2015
  34. S S Sonkamble, N. D. Vagshette, **M K Patil**, “*AGN feedback in X-ray luminous galaxy cluster: PKS 0745-191*”, 2015, *IAUGA*, 2257348S
  35. M.B.Pandge, G.C.Dewangan, K.P.Singh, **M.K.Patil**, “*A multi-wavelength study of nuclear activity and environment of a low power radio galaxy CTD 86*”, 2013, *Monthly Notices of Royal Astronomical Society (MNRAS)*, 435, 3385-3394
  36. M.B.Pandge, N.D.Vagshette, S.S.Sonkamble, **M. K. Patil**, “*Investigation of X-ray cavities, in the cooling flow system Abell 1991*”, 2013, *Astrophysics and Space Science*, Vol. **345**, No.1, 183-193 (DOI:10.1007/s10509-013-1366-9)
  37. N. D. Vagshette, M. B. Pandge, **M. K. Patil**, “*Spectral Properties of XRBs in dusty early-type galaxies*”, 2013, *New Astronomy*, Vol. **21**, 1-11
  38. S. P. Deshmukh, B. T. Tate, N.D.Vagshette, **M. K. Patil**, “*A multiwavelength view of the ISM in the merger remnant Fornax A galaxy NGC 1316*”, 2013, *Research in Astronomy & Astrophysics (RAA)*, China, Vol 13, No.8, 885-898
  39. M.B.Pandge, N.D.Vagshette, **M. K. Patil**, “*Systematic study of X-ray cavities in the brightest galaxy in the Draco constellation NGC 6338*”, 2012, *Monthly Notices of Royal Astronomical Society (MNRAS)*, Vol. 421, 808-817
  40. N. D. Vagshette, M. B. Pandge, S. K. Pandey, **M. K. Patil**, *Dust extinction and X-ray emission from the starburst galaxy NGC 1482*, 2012, *New Astronomy*, Vol. **17**, No.5, 524-532.
  41. N. D. Vagshette, S. K. Pandey, **M. K. Patil**, *Environment dependent spatial correspondence between the dust, ionized gas and hot gas in some early-type galaxies*, 2012, *SRTMU’s Research Journal of Science*, **1(2)**, 1-13 (ISSN:2277-8594)
  42. S.P.Deshmukh, B.T.Tate, N.D.Vagshette, S.K.Pandey, **M.K.Patil**, *A multiwavelength view of the ISM in the merger remnant Fornax A galaxy*, 2012, arXiv, 1207.4324 (arXiv:1207.4324v1)
  43. N.D.vagshette, P.K.Pawar, **M.K.Patil**, *Ultraluminous X-ray sources in dusty early-type galaxies*, 2012, *Intellectual Archive Bulletin* (ISSN: 1929-1329), 502
  44. Nilkanth Vagshette, Satish Sonkamble, Mahadev Pandge, **Madhav Patil**, *A deep study of X-ray cavities in the cooling flow cluster A1991*, 2011, *Proceedings of the International Conference on The X-ray Universe* held at Berlin, Germany during 27-30, 2011 (8)
  45. Pandge M. B., **Patil M. K.**, *Detailed Investigation of X-Ray Cavities in a Poor Cluster cD galaxy NGC 6338*, 2011, scgg.conf, 41

46. Pandge, Mahadev Baburao; Deshmukh, S. P.; **Patil, M. K.**; Srianand, R.; Pandey, S. K.; Kembhavi, Ajit, *Investigation of X-ray cavities in the cooling flow cluster galaxies*, 2011, ASInC,3R, 158P
47. Pawar, Pramod Karbhari; Dewangan, G. C.; **Patil, M. K.**, *Origin of the soft excess emission from Narrow Line Seyfert I (NLS1) galaxies*, 2011, ASInC,3Q,158P
48. **Patil, Madhav Khushalrao**, *Teaching Astronomy at SRTM University*, Nanded, 2011, ASInC, 3, 170P
49. Vagshette, Nilkanth Dattatray; Sonkamble, S. S.; **Patil, M. K.**; Pandey, S. K.; Kembhavi, Ajit, *Multiphase ISM in a starburst galaxy NGC 1482*, 2011, ASInC, 3, 149V
50. **M. K. Patil**, *Research and Teaching Astronomy at SRTM University*, 2011, Proceedings of XXIXth Meeting of the Astronomical Society of India, February 2011
51. N D Vagshette, S S Sonkamble, **M K Patil** *Multiphase ISM in the starburst galaxy NGC 1482*, 2011, Proceedings of XXIXth Meeting of the Astronomical Society of India, February 2011
52. P K Pawar, G C Dewangan, R N Misra, **M K Patil** *Origin of soft excess in Narrow line Seyfert-I galaxies*, 2011, Proceedings of XXIXth Meeting of the Astronomical Society of India, February 2011
53. M B Pandge, S P Deshmukh, **M K Patil** *Investigation of X-ray cavities in cooling flow cluster galaxy*, 2011, Proceedings of XXIXth Meeting of the Astronomical Society of India, February 2011
54. M B Pandge, **M K Patil**, Detailed investigation of X-ray cavities in the BCG NGC 6338, 2011, Proceedings of the Black Hole Astrophysics: Tales of Power and Destruction, University of Southampton, Winchester, UK
55. Vagshette, Nilkanth & **Patil, Madhav**, *Morphological and spectral properties of hot gas and LMXBs in 3 early-type galaxies*, 2010, Proceedings of the Int Conf. On Ultra-luminous X-ray sources and middle weight Black Holes, Spain, 12, 12
56. N.D. Vagshette, **M.K.Patil**, S.K.Pandey and Ajit Kembhavi, “*Morphology and spectroscopy of hot gas in early-type galaxies*”, 2009, arXiv:0903.3123v1
57. **M.K.Patil**, S.K.Pandey, Ajit Kembhavi, D.K.Sahu, “*Multiband imaging observations of a prominent dust lane galaxy NGC 4370*”, 2009, arXiv:astro-ph/0901.1747V1
58. **Patil, M. K.**; Pandey, S. K.; Kembhavi, A. K.; Sahu, D. K., *Multiband study of a prominent dust lane galaxy NGC 4370*, 2008, BASIP, 25, 72
59. Ajit Kembhavi, **M.K.Patil**, S.K.Pandey, *The morphology and properties of dust and other phases of ISM in early-type galaxies, 2008, Astronomical Society of the Pacific Conference Series* 414
60. **M.K.Patil**, S.K.Pandey, D.K.Sahu, Ajit Kembhavi, *Properties of Dust in Early-type Galaxies*, 2007, Astronomy & Astrophysics., **461**, 103-113
61. **M.K.Patil**, S.K.Pandey, D.K.Sahu and Ajit Kembhavi, *Properties of dust in early-type galaxies*; 2006, The AGB Newsletter (An electronic publication of the Keele University, UK & University of Manchester, UK) Vol No. 115, 10
62. **M.K.Patil**, D.K.Sahu, S.K.Pandey, Ajit Kembhavi, “*Multi-wavelength Study of Dust Properties in Early-type Galaxies*”, American Society of the Pacific Conference Series Vol. 309, 2004, proceedings of the International Symposium on Astrophysics of Dust (AoD-2003).
63. **Patil, Madhav K.**; Pandey, S. K.; Sahu, D. K.; Kembhavi, A. K., *Multi-wavelength study of Dust Properties in Early-type Galaxies*, 2003, asdu.confE, 16
64. **M.K.Patil**, D.K.Sahu, S.K.Pandey, Ajit Kembhavi et al., *Dust Properties in Early-type Galaxies*, Bull. Astr. Soc. India, 2002, 30, 759.
65. **M. K. Patil**, S.K. Pandey. Ajit Kembhavi et al., *Dust in an extragalactic environment: The case of NGC 2907*, Bull. Astr. Soc. India, 2001, 29, 453.

## **F. Science Popularization, Public, General Talks:**

- Delivered more than 150 talks in various events like science popularization, public meetings, workshops, etc.,
- More than 60 slide show presentations, sky-watch programmes on the occasion of various Astronomical events like Solar / Lunar eclipse, Transit of Venus, etc.

## **G. Research Programmes / Areas:**

- **AGN feedback and X-ray cavities in cooling flow galaxies:**  
In collaboration with senior scientist **Prof. L P David, from Harvard-Smithsonian Center for Astrophysics, Cambridge, USA** and lead scientists from IUCAA, Pune, NCRA-TIFR, Pune, TIFR, Mumbai, PRL, Ahmedabad.
- **Soft X-ray excess emission from type 1 AGNs using the Suzaku observation:**  
In collaboration with **Dr Gulab Chand Dewangan of IUCAA** and **Prof. I. E. Papadakis, University of Crete, PO Box 2208, 710 03 Heraklion, Crete, Greece.**
- **X-ray vs. Optical/UV variability of AGNs:**  
In collaboration with **Dr Gulab Chand Dewangan of IUCAA** and **Prof. I. E. Papadakis, University of Crete, PO Box 2208, 710 03 Heraklion, Crete, Greece.**
- **Observational Extra-galactic Astronomy: Optical, near-IR, X-ray and Radio**
- **Image Processing and Surface Photometry of early-type galaxies**
- **Dust extinction and Multi-phase ISM in galaxies**
- **XRB Population in Star Forming galaxies**
- **X-ray Astronomy:** experience of X-ray data analysis from space missions Chandra (NASA, USA), XMM-Newton (ESA, Europe), Suzaku (Japan), ASTROSAT (ISRO, India), ASCA,
- **Optical Astronomy:** Observing experience using 10m South African Large Telescope (SALT), Capetown, SA, 3.24m class VBT, Kavalur (Indian Institute of Astrophysics, Bangalore), 2m class IUCAA Telescope, HCT, Hanle, 1m Mt Abu - Physical Research Laboratory (PRL), Ahmedabad
- **Radio Astronomy:** data from GMRT, Pune
- Was involved in the group of **Ground calibration of CZTI images onboard ASTROSAT, the first dedicated Astronomical Satellite of ISRO, India**

## **H. Research Experience: 21 years**

### **Involved in National / International Projects:**

1. **Ground Calibration of the X-ray Payload CZTI for the first astronomical satellite ASTROSAT**
2. **Co-PI of the proposed 10m National Observational Facilities funded by DST, New Delhi**
3. **Involved in the establishment of the mega science project LIGO-India in collaboration with IUCAA, Pune; RRCAT, Indore, IPR, Gandhinagar; LIGO Observatories and NSF, USA**
4. **Involved in the establishment of the world's largest telescope Thirty Meter Telescope (TMT) at Hawaii, USA**
5. **PI/Co-PI for more than 18 research projects funded by DST, New Delhi; ISRO, Bengaluru; UGC, New Delhi; IUCAA, PRL, etc. In addition to these major projects, several of the observational projects were funded by IUCAA, Pune; UPSO, Nainital; IIA, Bengaluru; PRL, Ahmedabad**

## **I. Funded Research Projects as PI/Co-PI (Completed/Ongoing) : 14**

**ISRO:03, DST:05, CSIR:02, UGC:04.**

In addition to the funded research project above, I have also received financial assistance for more than **17 observational projects supported by SALT (South African Large Telescope), IGO (IUCAA Girawali Observatory), NCRA, ISRO, UPSO, ARIES, IIA, etc.**

#### **J. Research Guidance:**

**(Ph D. Completed 06 and working 07)**

- **Dr Nilkanth D Vagshette**, topic “*X-ray properties of elliptical galaxies*”, Ph.D awarded in September 2012. Presently working as a Project Scientist on ASTROSAT Project at PRL, Ahemadabad
- **Dr Mahadev B Pandge**, topic “*Multi-band imaging observations of early type galaxies*”, Ph.D awarded in August 2013 (DST-INSPIRE fellowship awardee). Presently working as Assistant Professor under the INSPIRE Faculty of DST, New Delhi
- **Dr Satish S Sonkamble**, topic “*Investigation of X-ray cavities in nearby early-type galaxies*”, Ph.D awarded in August 2017 (recipient of Maulana Azad Scholarship for Minority Students). Presently working as a project scientist at NCRA-TIFR, Pune
- **Dr. Pramod K Pawar**, topic “*Correlation between optical and X-ray variability of AGN*”, co-guide **Dr. Gulab Chand Dewangan**, Ph.D awarded in August 2017 (recipient of Research Fellowship from CSIR, New Delhi). Presently working as ASTROSAT project scientist at IUCAA, Pune
- **Ms. Swati P Deshmukh**, topic “*Star formation and nuclear accretion history of some IRAS detected early-type starburst galaxies*”, March 2019 (SET qualified, working as Assistant Professor, Govt. Institute, Nagpur)
- **Mr. Bhagorao T Tate**, topic “*Multiphase interstellar medium in nearby early-type galaxies*”, Awarded in 2021 (SET qualified, working as Assistant Professor, Balbhim College, Beed).
- **Mr Anil Kyadampure** “AGN feedback in the central dominant galaxies”. SET qualified, working since December 2014. Working as an Assistant Professor at Sanjeevani Mahavidyalaya, Chakur, Dist. Latur
- **Ms. Sonali Kadam** “*Role of AGN feedback in quenching the cooling flow in galaxy clusters*”, working since August 2017 (recipient of Maulana Azad Scholarship for Minority Students).
- **Mr. Pravin Patole**, “”, working since August 2019 (recipient of CSIR-NET Fellowship).
- **Mr. Vishal Kale**, “”, working since August 2021 (recipient of CSIR-NET Fellowship).
- **Mr. Kiran Wani**, “”, working since August 2021 (recipient of CSIR-NET Fellowship).
- **Mr. Rupesh Ghodpage**, “”, working since August 2021 (working as Scientist C in M.F. Radar, Indian Institute of Geomagnetism, Shivaji University Campus, Kolhapur).
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**M. Phil (Awarded 04 scholars)**

- **Mr. Shailesh Biradar**, “*CCD Imaging studies of early-type galaxies*”, awarded 2013
- **Ms. Pallavi M. Dalvi**, “*Association of interstellar dust with warm and X-ray emitting gas in star forming nearby early-type galaxies*”, awarded June 2015
- **Ms. Sonali Kadam**, “*Role of AGN feedback in quenching the cooling flow in galaxy clusters*”, awarded August 2017
- **Ms. Priya Biradar**, “*XRB population in the dusty early-type galaxies*”.

**K. Conferences Attended:** International - more than 30, National – more than 60;

**K. Conferences/Workshops/Seminars organised:** 25



**M. M.Sc. dissertations:** more than 125

**N. Administrative Experience:**

- **Dean, Faculty of Science and Technology**, S.R.T.M. University, Nanded (since 1<sup>st</sup> June 2023)
- **Associate Dean, Faculty of Science and Technology**, S.R.T.M. University, Nanded (since 23<sup>rd</sup> March 2023 – 6<sup>th</sup> November 2023)
- **Director, School of Physical Sciences**, S.R.T.M. University, Nanded (1<sup>st</sup> January 2019 – 31<sup>st</sup> December 2021)
- **Member, Management Council** of S.R.T.M. University, Nanded (2019 - 2020)
- **Chairman, Board of Studies in Physics** of S.R.T.M. University, Nanded (2018 - 2022)
- **Chairman, Research Allocation Committee** of S.R.T.M. University, Nanded (since March 2023)
- **Coordinator, IUCAA Centre for Astronomy Research and Development** at School of Physical Science since 2017
- **Member, Academic Council** of S.R.T.M. University, Nanded (2018 -2022 and from March 2023)
- **Member, Faculty of Science and Technology** of S.R.T.M. University, Nanded (2018 – 2022 and from March 2023)
- **Member, Research, Innovation and Incubation** of S.R.T.M. University, Nanded
- **Member, Research Recognition Committee** of S.R.T.M. University, Nanded (2018 - 2022 and from March 2023)
- **Member Secretary, Board of Information and Technology (BOIT)** of S.R.T.M. University, Nanded
- **Member, Research Allocation Committee** of S.R.T.M. University, Nanded (2018 -2022)
- **Director, *International Students' Centre of Swami Ramanand Teerth Marathwada University, Nanded***, during 2010-2012
- **Coordinator for *Equal Opportunity Cell*** during 2010-2014 of S.R.T.M. University, Nanded
- **Coordinator and / or member of the steering committee for conducting Ph D Eligibility Test (PET)** since 2011
- **Member of M Phil Entrance Test (MPET)** and admission committee of S.R.T.M. University, Nanded since 2010
- **Administrator for the Networking and Internet Facility** of SRTM University during 2008-2012 and established Wi-Fi based internet connectivity on the campus of the SRTM University
- **Coordinator / Co-coordinator for DST, New Delhi sponsored INSPIRE Science Internship Camp** during October 8-12 and March 26-30, 2012.
- **Coordinator for establishing the Astronomical Observatory** as well as High Performance Computing Facility in the School of Physical sciences of this university under DST-FIST Scheme
- **Worked as a Core Group Member for establishing the International Students' Centre** in SRTM University, Nanded during 2010-2013.
- Organized several scientific events
- **Worked as Joint-Custodian for the Centralized Assessment Programme (CAP)** of Post Graduate and Professional course examinations (2005)
- Worked as Chief / Assistant Chief Superintendent (CS/ACS) for conducting theory

examination in the campus during March/April 1997, Oct/Nov 1997, March/April 2008, April/May 1995, Oct/Nov 1995 and April/May 1996

- Worked as Chairman, Admission Committee of the school (from 2001 – 2022)
- Worked as Chairman for School examinations.
- Popular/technical talks on various topics like formation and Death of Stars, etc. on the occasion of Science Day Celebrations.
- Head, Physics & Electronics Department in Shri Havagi Swami College, Udgir, during 1993-1996
- Head, Electronics Department in Shri. Havagi Swami College, Udgir, during 1991-1993

**(Dr M. K. Patil)**