Ashwani Pandey

Center for Theoretical Physics PAS
Al. Lotników 32/46,
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Area of Research

Cloudy simulations, Extragalactic astronomy, high energy (X-rays/gamma-rays) astrophysics: active galactic nuclei (AGN), relativistic jets, blazars

Research Experience

Nov 15, 2022–present	**Postdoctoral Fellow** Center for Theoretical Physics PAS, Warsaw, Poland
Jan 7, 2021–Nov 15, 2022	**Postdoctoral Fellow** Indian Institute of Astrophysics (IIA), Bengaluru, India
Jun 25, 2019–Jan 6, 2021	**Postdoctoral Fellow** Aryabhatta Research Institute of Observational Sciences (ARIES), Nainital, India

Education

2014–2019 (Degree awarded on Nov 1, 2019)	**Ph.D. in Physics (Astronomy)** Deen Dayal Upadhyaya (DDU) Gorakhpur University, Gorakhpur, U.P., India Title: **Multi-wavelength Studies of TeV Blazars** Supervisor: Dr. Alok Chandra Gupta (Scientist-F, ARIES, Nainital, U.K., India) Co-supervisor: Prof. S.N. Tiwari (Department of Physics , DDU Gorakhpur University, U.P., India)
2011–2013	**M. Sc. in Physics** Kumaun University, Nainital, U.K., India
2005–2008	**B. Sc. in Physics, Chemistry & Mathematics** Kumaun University, Nainital, U.K., India

Current Projects

1. *"Understanding the disc-jet scenario in 3C 273 using the `JeTCAF` model"*,
   Ashwani Pandey*, Santanu Mondal, and C. S. Stalin,
   In preparation.

Publications in Peer-reviewed Journals

19. *"Detection of minute-timescale $\gamma-$ray variability in BL Lacertae by Fermi-LAT"*,
    Ashwani Pandey*, and C. S. Stalin,
    Astronomy & Astrophysics, 668, 152, 2022.

18. *"Study of correlation between optical flux and polarization variations in BL Lac objects"*,
    Bhoomika Rajput, **Ashwani Pandey**, C. S. Stalin, and Blesson Mathew
    Monthly Notices of the Royal Astronomical Society, 517, 3236–3256, 2022.

17. *"Characterizing the optical nature of the blazar S5 1803+784 during its 2020 flare"*,
    A. Agarwal, **Ashwani Pandey**, Aykut Özdönmez, Ergün Ege, Avik Kumar Das, Volkan Karakulak
    Astrophysical Journal, 933, 42, 2022.

16. *"Variable mass accretion and failed wind explain changing look phenomena in NGC 1365"*,
    Santanu Mondal, Tek P. Adhikari, Krzysztof Hryniewicz, C. S. Stalin, and **Ashwani Pandey**,
    Astronomy & Astrophysics, 662, A77, 2022.

15. *"Intra-night optical variability monitoring of $\gamma-$ray emitting blazars"*,
    K.Subbu Ulaganatha Pandian*, A.Natarajan, C.S.Stalin, **Ashwani Pandey**, S. Muneer and B. Natarajan,
    Journal of Astrophysics and Astronomy, 43, 48, 2022.

14. *"Correlation between optical flux and polarization variations in Flat Spectrum Radio Quasars on diverse timescales"*,
    Ashwani Pandey*, Bhoomika Rajput, and C. S. Stalin,
    Monthly Notices of the Royal Astronomical Society, 510, 1809–1836, 2022.

13. *"γ-ray flux and spectral variability of blazar Ton 599 during its 2021 flare"*,
    Bhoomika Rajput* and **Ashwani Pandey**,
    Galaxies, 9, 118, 2021.

12. *"Investigation of the correlation patterns and the Compton dominance variability of Mrk 421 in 2017"*,
    MAGIC Collaboration: V. A. Acciari et al., FACT Collaboration: D. Baack et al., Other groups and collaborations: F. D'Ammando et al., (including **Ashwani Pandey**),
    Astronomy & Astrophysics, 655, A89, 2021.

11. *"Breaks in the X-ray spectra of high redshift blazars and the intervening medium"*,
    Haritma Gaur, Prashanth Mohan*, **Ashwani Pandey**,
    Astrophysical Journal, 914, 46 (11pp), 2021.

10. *"NuSTAR View of TeV Blazar Mrk 501"*,
Ashwani Pandey
Galaxies, 8(3), 55, 2020.

9. *"Optical Variability of Three Extreme TeV Blazars"*,
Ashwani Pandey*, Alok C. Gupta, G. Damljanovic, Paul J. Wiita, O. Vince, and M. D. Jovanovic,
Monthly Notices of the Royal Astronomical Society, 496, 1430−1444, 2020.

8. *"Optical Variability of the TeV Blazar 1ES 0806+524 on Diverse Timescales"*,
Ashwani Pandey*, Alok C. Gupta, S. O. Kurtanidze, Paul J. Wiita, G. Damljanovic, R. Bachev, Jin Zhang, O. M. Kurtanidze, A. Darriba, R. A. Chigladze, G. Latev, M. G. Nikolashvili, S. Peneva, E. Semkov, A. Strigachev, S. N. Tiwari, and O. Vince,
Astrophysical Journal, 890, 72 (11pp), 2020.

7. *"Full Orbital Solution for the Binary System in the Northern Galactic Disk Microlensing Event Gaia16aye"*,
Lukasz Wyrzykowski*, P. Mroz, K. A. Rybicki, M. Gromadzki, Z. Kolaczkowski, et al. (including **Ashwani Pandey**),
Astronomy & Astrophysics, 633, A98, 2020.

6. *"Characterizing Optical Variability of OJ 287 in 2016−2017"*,
Alok C. Gupta*, Haritma Gaur, Paul J. Wiita, **Ashwani Pandey**, P. Kushwaha, S. M. Hu, O. M. Kurtanidze, E. Semkov, G. Damljanovic, A. Goyal, M. Uemura, A. Darriba, Xu Chen, O. Vince, M. F. Gu, Z. Zhang, R. Bachev, R. Chanishvili, R. Itoh, M. Kawabata, S. O. Kurtanidze, T. Nakaoka, M. G. Nikolashvili, L. Stawarz, & A. Strigachev,
Astronomical Journal, 157, 95 (12pp), 2019.

5. *"Optical Flux and Spectral Variability of the TeV Blazar PG 1553+113"*,
Ashwani Pandey*, Alok C. Gupta, Paul J. Wiita, & S. N. Tiwari,
Astrophysical Journal, 871, 192 (8pp), 2019.

4. *"X-ray Intraday Variability of the TeV Blazar Mrk 421 with Chandra"*,
Vishi Aggrawal, **Ashwani Pandey**, Alok C. Gupta*, Paul J. Wiita, K. K. Yadav, & S. N. Tiwari,
Monthly Notices of the Royal Astronomical Society, 480, 4873−4883, 2018.

3. *"X-ray Flux and Spectral Variability of Six TeV Blazars with NuSTAR"*,
Ashwani Pandey*, Alok C. Gupta, & Paul J. Wiita,
Astrophysical Journal, 859, 49 (11pp), 2018.

2. *"X-ray Intra-day Variability of Five TeV Blazars with NuSTAR"*,
Ashwani Pandey*, Alok C. Gupta, & Paul J. Wiita,
Astrophysical Journal, 841, 123 (17pp), 2017.

1. *"Multiband Optical Variability of the Blazar OJ 287 During Its Outbursts in 2015-2016"*,
Alok C. Gupta*, Aditi Agarwal, Alka Mishra, H. Gaur, P. J. Wiita, M. F. Gu, O. M. Kurtanidze, G. Damljanovic, M. Uemura, E. Semkov, A. Strigachev, R. Bachev, O. Vince, Z. Zhang, B. Villarroel, P. Kushwaha, **Ashwani Pandey**, T. Abe, R. Chanishvili, R. A. Chigladze, J. H. Fan, J. Hirochi, R. Itoh, Y. Kanda, M. Kawabata, G. N. Kimeridze, S. O. Kurtanidze, G. Latev, R. V. Muñoz Dimitrova,

T. Nakaoka, M. G. Nikolashvili, K. Shiki, L. A. Sigua, & B. Spassov,
Monthly Notices of the Royal Astronomical Society, 465, 4423−4433, 2017.

Paper Reviewed

I served as a referee for three papers: one in the Astrophysical Journal Supplement Series (ApJS), one in the Astrophysical Journal (ApJ), and one in the Astronomical Journal (AJ).

Seminars/Conferences/Schools

- International conference/workshop

  1. Oral presentation on **"X-ray Intraday Flux and Spectral Variability of TeV Blazars with *NuSTAR*"** in the conference titled **"Half a Century of Blazars and Beyond"** at Torino, Italy, during June 11-15, 2018.

- National conference/workshop

  1. Thesis presentation on **"Multi-wavelength Studies of TeV Blazars "** in the 38th Annual Meeting of the Astronomical Society of India (ASI) hosted by Indian Institute of Science Education & Research (IISER) Tirupati, Transit Campus during 13 - 17 February, 2020.
  2. Attended **"Broadband Spectral and Timing Studies with Astrosat, Chandra and XMM-Newton : A COSPAR capacity building workshop"** during March 9-20, 2019 at IISER Mohali, India.
  3. Oral presentation on **"X-ray Intra-day Variability of Five TeV Blazars with *NuSTAR*"** in the conference titled **"REcent Trends in the study of Compact Objects: Theory and Observation (RETCO-III)"** at IIST, Thiruvananthapuram, Kerala, India, during June 05-07, 2017.
  4. Attended a workshop on **"ASTROSAT Data Analysis"** held at Tezpur University, from 3-5 May, 2017.
  5. Oral presentation on **"X-ray Intra-day Variability of Five TeV Blazars with *NuSTAR*"** in the conference titled **"Wide Band Spectral and Timing Studies of Cosmic X-ray Sources"** at TIFR, Mumbai, India, during January 10-13, 2017.

Expertise

- Cloudy code for simulations of astronomical clouds and their spectra
- Programming: Python, IDL, Linux shell programming.
- Applications
  - *Fermi* (γ−ray) data analysis software: **Fermitools, Fermipy**.

  - X-ray data analysis softwares of several X-ray satellites e.g. *NuSTAR, Chandra, XMM-Newton, Swift, NICER*: **HeaSoft, SAS, CIAO, FTOOLS, XSPEC, DS9**.
  - Optical data analysis softwares: **IRAF/DOPHOT**
  - Broadband SED modeling package: **JetSeT**
  - LaTeX, Libra/Microsoft Office
- Observations: Optical photometric, polarimetric, and spectroscopic observations.

Personal Details

Date of Birth : 03 June, 1988
Sex : Male
Marital status : Married
Nationality : Indian

Google Scholar Publication Details (as at January 10, 2023)

Citations : 301
h-index : 10
i10-index : 11
Link: `https://scholar.google.co.in/citations?user=rdFCKx8AAAAJ&hl=en`