

1 List of publications

Ongoing Works

1. **Chandra, S.**, and SXT Collaboration, "Python based module '`sxtARFModule`', a command line tool for extracting ARFs for *AstroSat*-SXT", under preparation for arxiv.
2. **Chandra, S.**, Boettcher, M., Singh, K. P., et al. (2021). "Statistical investigation of Temporal and Spectral properties of HBL 1ES 1959+650". [under internal review]
3. Goswami, P., **Chandra, S.**, Zacharias, M., (2021) "Studying Long-term SEDs of Extreme HBLs using *AstroSat*". [under preparation]
4. Singh, K. P., **Chandra, S.**, et al. (2021), "Status of SXT calibration [Background]" [under preparation]
5. **Chandra, S.**, Singh, K. P., et al. (2021), "Status of SXT calibration [Contamination]" [under preparation]

peer-reviewed published Papers

From our internal group

1. **Chandra, S.**, Boettcher, M., Goswami, P., et al. 2021, "X-ray Observations of 1ES 1959+650 in its high activity state in 2016-2017 with *AstroSat* and *Swift*", arXiv:2105.08119
2. Singh, K. P., Stewart, G., **Chandra, S.**, et al. 2021, "Observations of bright stars with *AstroSat* soft X-ray telescope", *Journal of Astrophysics and Astronomy*, 42, 77. doi:10.1007/s12036-020-09677-0
3. Bhattacharyya, S., Singh, K. P., Stewart, G., **Chandra, S.**, et al. 2021, "Science with the *AstroSat* Soft X-ray telescope: An overview", *Journal of Astrophysics and Astronomy*, 42, 17. doi:10.1007/s12036-020-09678-z
4. Komossa, S., Grupe, D., Parker, M. L., et al. including **S. Chandra** 2021, "X-ray spectral components of the blazar and binary black hole candidate OJ 287 (2005–2020)", *MNRAS*, 504, 5575. doi:10.1093/mnras/stab1223
5. Komossa, S., Ciprini, S., Dey, L., et al. including **S. Chandra** 2021, "Supermassive Binary Black Holes and the Case of OJ 287", *Publications de l'Observatoire Astronomique de Beograd*, 100, 29
6. Ganesh, S., Rai, A., Aravind, K., et al. including **S. Chandra** 2020, "EMPOL: an EMCCD based optical imaging polarimeter", *SPIE Conf. Ser.*, 11447, 114479E. doi:10.1117/12.2560949
7. Singh, K. P., Stewart, G., **Chandra, S.**, and 4 others, 2020. "Observations of bright stars with *AstroSat* Soft X-ray Telescope" arXiv:2012.01800
8. Chitnis, V. and 6 colleagues including **S. Chandra** 2020. X-ray and Gamma-ray Variability of NGC 1275. *Galaxies* 8, 63. doi:10.3390/galaxies8030063
9. Goswami, P. and 9 colleagues including **S. Chandra** 2020. Unravelling the unusually curved X-ray spectrum of RGB J0710 + 591 using *AstroSat* observations. *Monthly Notices of the Royal Astronomical Society* 492, 796–803.
10. Sridhar, N., Bhattacharyya, **S.**, **Chandra, S.**, Antia, H. M. 2019. "Broad-band reflection spectroscopy of MAXI J1535-571 using *AstroSat*: estimation of black hole mass and spin" *Monthly Notices of the Royal Astronomical Society* 487, 4221.
11. Bharali, P.; **S.**, **Chandra**; Chauhan, Jaiverdhan; García, Javier A.; Roy, Jayashree; Boettcher, Markus; Boruah, Kalyanee, 2019. "Re-awakening of GRS 1716-249 after 23 yr, observed by *Swift*/XRT and *NuSTAR*" *Monthly Notices of the Royal Astronomical Society* 487, 3150.
12. Dey, L., and 103 colleagues including **S.**, **Chandra** 2018. "Authenticating the Presence of a Relativistic Massive Black Hole Binary in OJ 287 Using Its General Relativity Centenary Flare: Improved Orbital Parameters" *The Astrophysical Journal* 866, 11.
13. Chaudhury, K., and 10 colleagues including **S.**, **Chandra** 2018. "Long-term X-ray variability characteristics of the narrow-line Seyfert 1 galaxy RE J1034+396" *Monthly Notices of the Royal Astronomical Society* 478, 4830.
14. Chatterjee, R., Roychowdhury, A., **Chandra, S.**, Sinha, A. 2018. "Possible Accretion Disk Origin of the Emission Variability of a Blazar Jet" *ArXiv e-prints* arXiv:1805.06222.

15. Kaur, N., Baliyan, K. S., **Chandra, S.**, Sameer, Ganesh, S. 2018. "Optical variability in IBL S5 0716+714 during the 2013-2015 outburst" ArXiv e-prints arXiv:1805.04693.
16. Pahari, M., and 11 colleagues (2018). "Extensive broadband X-ray monitoring during the formation of a giant radio jet base in Cyg X-3 with AstroSat" *ArXiv e-prints* arXiv:1801.03724.
17. Bhargava, Yash, Rao, A. R., Singh, K. P., et al. (2017) "A Precise Measurement of the Orbital Period Parameters of Cygnus X-3." *ApJ*, 849, 141.
18. Kaur, N., **Chandra S.**, Baliyan K. S., et al. (2017) "A Multiwavelength Study of Flaring Activity in the High-energy Peaked BL Lac Object 1ES 1959+650 During 2015-2016" *ApJ* 848, 141.
19. Baliyan, K. S., Kaur N., **Chandra, S.**, et al. (2016). "Multi-wavelength Study of Blazars Using Variability as a Tool". *Journal of Astronomy and Space Science* 33, 177.
20. Singh K. P., G.C. Stewart, N.J. Westergaard, S. Bhattacharayya1, **S. Chandra** et al. 2017, "The Soft X-ray focusing Telescope aboard Astrosat: Design, Characteristics and Performance", *JApA*, 38, 29
21. Singh, K. P., Stewart G. C., **Chandra, S.**, et al. (2016). "In-orbit performance of SXT aboard AstroSat" *SPIE Conference Series* 9905, 9905E.
22. Kushwaha, P., **Chandra, S.**, Misra R. et al (2016). "Evidence for Two Lognormal States in Multi-wavelength Flux Variation of FSRQ PKS 1510-089" *ApJ* 822, L13.
23. **Chandra, S.**, Zhang H., Kushwaha P., et al. (2015). "Multi-wavelength Study of Flaring Activity in BL Lac Object S5 0716+714 during the 2015 Outburst." *ApJ* 809, 130.
24. **Chandra, S.**, Baliyan K. S., Ganesh S., et al. (2014). "Understanding the Nature of the Blazar CGRaBS J0211+1051." *ApJ* 791, 85.
25. Pihajoki, P. + 21 co-authors (2013). "Precursor Flares in OJ 287." *ApJ* 764, 5.
26. **Chandra, S.**, Baliyan K. S., Ganesh S., et al. (2012). "Optical Polarimetry of the Blazar CGRaBS J0211+1051 from Mount Abu Infrared Observatory." *ApJ* 746, 92.
27. **Chandra, S.**, Baliyan K. S., Ganesh S., et al. (2011). "Rapid Optical Variability in Blazar S5 0716+71 During 2010 March" *ApJ* 731, 118.

Published in large collaborations

1. Abdalla, H., Aharonian, F., Ait Benkhali, F., et al. including **S. Chandra** 2021, "TeV Emission of Galactic Plane Sources with HAWC and H.E.S.S", *ApJ*, 917, 6. doi:10.3847/1538-4357/abf64b
2. Abdalla, H., Aharonian, F., Ait Benkhali, F., et al. including **S. Chandra** 2021, "Evidence of 100 TeV -ray emission from HESS J1702-420: A new PeVatron candidate", *Astronomy & Astrophysics*, <https://doi.org/10.1051/0004-6361/202140962> [arXiv:2106.06405]
3. H. E. S. S. Collaboration, Abdalla, H., Aharonian, F., et al. including **S. Chandra** 2021, "Revealing x-ray and gamma ray temporal and spectral similarities in the GRB 190829A afterglow", *Science*, 372, 1081. doi:10.1126/science.abe8560
4. Abdallah, H., Adam, R., Aharonian, F., et al. including **S. Chandra** 2021, "Search for dark matter annihilation in the Wolf-Lundmark-Melotte dwarf irregular galaxy with H.E.S.S.", *Physical Review D*, 103, 102002. doi:10.1103/PhysRevD.103.102002
5. EHT MWL Science Working Group, Algaba, J. C., Anczarski, J., et al. including **S. Chandra** 2021, Broadband Multi-wavelength Properties of M87 during the 2017 Event Horizon Telescope Campaign, *Astrophysical Journal Letters*, 911, L11. doi:10.3847/2041-8213/abef71
6. H. E. S. S. Collaboration, Abdalla, H., Adam, R., et al. including **S. Chandra** 2021, "H.E.S.S. and MAGIC observations of a sudden cessation of a very-high-energy -ray flare in PKS 1510089 in May 2016", *Astronomy& Astrophysics*, 648, A23. doi:10.1051/0004-6361/202038949
7. H. E. S. S. Collaboration, Abdalla, H., Adam, R., et al. including **S. Chandra** 2020, "An extreme particle accelerator in the Galactic plane: HESS J1826130", *Astronomy& Astrophysics*, 644, A112. doi:10.1051/0004-6361/202038851
8. H. E. S. S. Collaboration and 239 colleagues including **S. Chandra** 2020. An extreme particle accelerator in the Galactic plane: HESS J1826–130. arXiv e-prints.

9. Abdallah, H. and 229 colleagues including **S. Chandra** 2020. Search for dark matter signals towards a selection of recently detected DES dwarf galaxy satellites of the Milky Way with H.E.S.S.. *Physical Review D* 102. doi:10.1103/PhysRevD.102.0
10. The H. E. S. S. Collaboration and 226 colleagues including **S. Chandra** 2020. Resolving acceleration to very high energies along the Jet of Centaurus A. arXiv e-prints.
11. Abdalla, H. and 240 colleagues including **S. Chandra** 2020. Simultaneous observations of the blazar PKS 2155-304 from ultra-violet to TeV energies. *Astronomy and Astrophysics* 639.
12. H. E. S. S. Collaboration and 225 colleagues including **S. Chandra** 2020. Resolving acceleration to very high energies along the jet of Centaurus A. *Nature* 582, 356–359.
13. Abdalla, H. and 227 colleagues including **S. Chandra** 2020. Very high energy γ -ray emission from two blazars of unknown redshift and upper limits on their distance. *Monthly Notices of the Royal Astronomical Society* 494, 5590–5602.
14. H. E. S. S. Collaboration and 234 colleagues including **S. Chandra** 2020. Detection of very-high-energy γ -ray emission from the colliding wind binary η Car with H.E.S.S.. *Astronomy and Astrophysics* 635.
15. H. E. S. S. Collaboration and 226 colleagues including **S. Chandra** 2020. H.E.S.S. detection of very high-energy γ -ray emission from the quasar PKS 0736+017. *Astronomy and Astrophysics* 633.
16. H. E. S. S. Collaboration and 225 colleagues including **S. Chandra** 2020. H.E.S.S. and Fermi-LAT observations of PSR B1259-63/LS 2883 during its 2014 and 2017 periastron passages. *Astronomy and Astrophysics* 633.
17. Abdalla, H. and 227 colleagues including **S. Chandra** 2019. A very-high-energy component deep in the γ -ray burst afterglow. *Nature* 575, 464–467.
18. H. E. S. S. Collaboration, and 225 colleagues including **S. Chandra** 2019. "H.E.S.S. observations of the flaring gravitationally lensed galaxy PKS 1830-211." *Monthly Notices of the Royal Astronomical Society* 486, 3886.
19. H. E. S. S. Collaboration, and 226 colleagues including **S. Chandra** 2019. "Constraints on the emission region of 3C 279 during strong flares in 2014 and 2015 through VHE γ -ray observations with H.E.S.S." *Astronomy and Astrophysics* 627, A159.
20. H. E. S. S. Collaboration, and 224 colleagues including **S. Chandra** 2019. "H.E.S.S. and Suzaku observations of the Vela X pulsar wind nebula." *Astronomy and Astrophysics* 627, A100.
21. H. E. S. S. Collaboration, and 224 colleagues including **S. Chandra** 2019. "VizieR Online Data Catalog: HESS and Suzaku observations of Vela X (HESS Coll+, 2019)." *VizieR Online Data Catalog J/A+A/627/A100*.
22. H. E. S. S. Collaboration, and 227 colleagues including **S. Chandra** 2019. "Upper limits on very-high-energy gamma-ray emission from core-collapse supernovae observed with H.E.S.S." *Astronomy and Astrophysics* 626, A57.
23. H. E. S. S. Collaboration, and 233 colleagues including **S. Chandra** 2019. "VHE γ -ray discovery and multiwavelength study of the blazar 1ES 2322-409." *Monthly Notices of the Royal Astronomical Society* 482, 3011.
24. Abdalla, H., and 228 colleagues including **S. Chandra** 2019. "The 2014 TeV γ -Ray Flare of Mrk 501 Seen with H.E.S.S.: Temporal and Spectral Constraints on Lorentz Invariance Violation." *The Astrophysical Journal* 870, 93.
25. H. E. S. S. Collaboration, and 227 colleagues including **S. Chandra** 2019. "Particle transport within the pulsar wind nebula HESS J1825-137." *Astronomy and Astrophysics* 621, A116.
26. H. E. S. S. Collaboration, and 232 colleagues including **S. Chandra** 2018. "First ground-based measurement of sub-20 GeV to 100 GeV γ -Rays from the Vela pulsar with H.E.S.S. II." *Astronomy and Astrophysics* 620, A66.
27. H. E. S. S. Collaboration, and 227 colleagues including **S. Chandra** 2018. "VizieR Online Data Catalog: HESS J1825-137 particle transport (H.E.S.S. Collaboration, 2019)." *VizieR Online Data Catalog J/A+A/621/A116*.
28. Abdalla, H., and 234 colleagues including **S. Chandra** 2018. "Searches for gamma-ray lines and 'pure WIMP' spectra from Dark Matter annihilations in dwarf galaxies with H.E.S.S." *Journal of Cosmology and Astro-Particle Physics* 2018, 037.
29. H. E. S. S. Collaboration, and 233 colleagues including **S. Chandra** 2018. "The starburst galaxy NGC 253 revisited by H.E.S.S. and Fermi-LAT." *Astronomy and Astrophysics* 617, A73.
30. IceCube Collaboration, and 1010 colleagues including **S. Chandra** 2018. "Multimessenger observations of a flaring blazar coincident with high-energy neutrino IceCube-170922A." *Science* 361, eaat1378.

Conference Proceeding Papers

1. **Chandra, S.** 2021, 43rd COSPAR Scientific Assembly. Held 28 January - 4 February, 2021, 43, 1577
2. **Chandra, S.**, et. al. , 2019, "Disk-reflection spectroscopy using Swift, Astrosat and NuSTAR", 28 - 30 August 2019, 40, HEASA-2019
3. du Plessis, L., Wadiasingh, Z., Venter, C., Harding, A. K., **Chandra, S.**, Meintjes, P. J. 2019. "Modelling the polarisation signatures detected from the first white dwarf pulsar AR Sco." arXiv e-prints arXiv:1907.01311.
4. Wadiasingh, Z., and 15 colleagues including **S. Chandra** 2019. "Magnetars as Astrophysical Laboratories of Extreme Quantum Electrodynamics: The Case for a Compton Telescope." Bulletin of the American Astronomical Society 51, 292.
5. Wadiasingh, Z., **Chandra, S.**, Younes, G., Harding, A., Venter, C. 2019. "Constraints on Emission and System Geometry from Non-thermal X-ray Orbital Modulation in Redback-type Millisecond Pulsar Binaries." AAS/High Energy Astrophysics Division 112.82.
6. Harding, A., Wadiasingh, Z., Venter, C., **Chandra, S.**, Boettcher, M. 2018. "Radiation From Shocks in Millisecond Pulsar Binaries." 42nd COSPAR Scientific Assembly E1.3-7-18.
7. Du Plessis, L., Wadiasingh, Z., Venter, C., Harding, A. K., **Chandra, S.**, Meintjes, P. J. 2018. "Modelling the polarisation signatures detected from the first white dwarf pulsar AR Sco." High Energy Astrophysics in Southern Africa (HEASA2018 27.
8. Singh K.P., Dewangan G. C., **Chandra. S.**, et al. 2017, "Soft X-ray Focusing Telescope aboard AstroSat: Early Results"; Current Science Magazine, 2017)
9. **Chandra, S.**, Singh, K. P., and Baliyan K. S., (2017). "Multi-wavelength flares and magnetic field in blazars: a case study of IBL S5 0716+714" *New Frontiers in Black Hole Astrophysics, IAU conf. Series*, Accepted
10. Singh, K. P., Stewart G. C., **Chandra, S.**, et al. (2016). "In-orbit performance of SXT aboard AstroSat" *SPIE Conference Series* 9905, 9905E.
11. **Chandra, S.** (2015). "The recent flaring of blazar S5 0716+714 and the observed PA swing." *3rd Annual Conference on High Energy Astrophysics in Southern Africa (HEASA2015)* 22

Astronomers' Telegram

1. Mandal, A. K., Singh, A., Stalin, C. S., **Chandra, S.**, & Gandhi, P. 2018, The Astronomer's Telegram, 11462,
2. Mandal, A. K., Singh, A., Stalin, C. S., **Chandra, S.**, & Gandhi, P. 2018, The Astronomer's Telegram, 11458,
3. Baliyan et al., Kaur N., **Chandra, S.**, et al. (2016). Optical/NIR Observations of HBL 1ES 1959+650 from Mt Abu IR Observatory(MIRO), India. *ATel # 9070*
4. **Chandra, S.**, Kushwaha P., Kaur N., et al., (2015). Unprecedented brightening of blazar S5 716+714 and a brighter CGRaBS J0510+1800. *ATel # 6962*
5. **Chandra, S.**, Baliyan K. S., Matta S., et al., (2014). Variable optical emission from FSRQ 3C454.3: MIRO observations *ATel # 6232*
6. Baliyan K. S., **Chandra, S.**, Baliyan K. S., Deepthi S., et al., (2014). FSRQ PKS 1222+216: Optical follow-up from MIRO. *ATel # 6207*
7. Ganesh S., Mishra A., **Chandra, S.**, et al. (2014). Polarization measurement of Blazar OJ287. *ATel # 6054*
8. **Chandra, S.**, Ganesh S., Baliyan K. S., et al., (2013). Optical follow-up of ongoing flaring of BL Lacertae. *ATel # 5601*
9. **Chandra, S.**, Ganesh S., Baliyan K. S., et al., (2012). CCD Monitoring of Blazar OJ287 from MIRO. *ATel # 4021*
10. **Chandra, S.**, Baliyan K. S., Mathew B., et al., (2011). NIR observations of S5 0716+71 from MIRO. *ATel # 3704*
11. **Chandra, S.**, Ganesh S., Baliyan K. S., et al., (2011). High optical polarization detected in blazar CGRaBS J0211+1051 from MIRO. *ATel # 3136*

12. Baliyan K. S., **Chandra, S.**, Ganesh S., et al., (2010). Intra- and inter-night optical photopolarimetric variations in ON 231(W Com). *ATel # 2581*
13. Baliyan K. S., Ganesh S., **Chandra, S.**, et al., (2009). Detection of high and variable Optical Polarization in Blazar S5 0716+71 from MIRO. *ATel # 2347*