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Hui Yang

personal website

I am interested in stellar remains, including neutron stars, (Galactic and supermassive) black holes, and accreting binaries, and studying them using multiwavelength data and methods like machine learning classifications.
I recently obtained my PhD from the Physics Department at The George Washington University on August, 2024. Now I am a postdoctoral researcher at Institut de Recherche en Astrophysique & Planétologie (IRAP) in France working on the SVOM/ECLAIRs.

Education

PhD in Physics, *George Washington University (GWU)* 2018.09 – 2024.08
Master in Astrophysics, *University of Chinese Academy of Sciences* 2015.09 – 2018.06
Bachelor in Astronomy, *Nanjing University* 2011.09—2015.06

Research Experience

Postdoctoral Researcher *Institute of Research in Astrophysics & Planetology, Toulouse, France, Sept. 2024- Now*

- Spectral modelling and the on-ground trigger tool of SVOM/ECLAIRs Supervisor: Dr. Olivier Godet

Research Assistant *GWU, Washington, D.C., Sept. 2019- Aug 2024*

- Galactic archaeology: searching for compact objects and extreme particle accelerators with machine learning analysis of multiwavelength catalogs Supervisor: Prof. Oleg Kargaltsev

Research Assistant *NAOC, Beijing, China, Sept. 2016- May 2018*

- X-ray and Gamma-ray Study of Relativistic Jets in a Radio Loud Narrow-Line Seyfert 1 Galaxy Supervisor: Prof. Weimin Yuan

Research Assistant *SHAO, Shanghai, China, Feb. 2015 - June 2015*

- Studying Properties of Outflows From Hot Accretion Flows Using Trajectory Approach Supervisor: Prof. Feng Yuan

Summer Research *NAOC, Beijing, China, Aug. 2014*

- Black Holes and Their Radio Radiation Supervisor: Prof. Jinlin Han

Exchange Project *University of Sydney, Sydney, Australia, June - July 2014*

- Measuring the Rotation Curve of the Galaxy with the Small Radio Telescope Supervisor: Prof. Richard Hunstead

Practical Experiment *NJU, Nanjing, China April - Aug. 2013*

- Building A Dipole Radio Antenna and Observing the Sun Supervisor: Dr. Zhixin Peng

Term Project *NJU, Nanjing, China, Oct. 2012- Oct. 2013*

- Coronal Bright Points: a Precursor of CMEs and Their Automated Detection Supervisor: Prof. Pengfei Chen

Proposals

Bright X-ray Counterparts of Galactic 4FGL Sources (PI) XMM-Newton AO-23 #094258
Exploring the nature of PeVatron Candidate HESS J1702-420A (PI) Chandra Cycle 25 #25500393
Hunting for IMBHs in the Omega Centauri Globular Cluster (Co-I) JWST Cycle 2 #4343
The radio structure of SDSS J2118-0732, a newly identified gamma-ray NLS1 (Co-I) VLBA

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SELECTED PRESENTATIONS

Classifying Serendipitous X-ray Sources from Chandra Source Catalog using Machine Learning, March 2023, HEAD20
Compact Objects/SNRs Science with AXIS, March 2023, HEAD20 (invited)
Hands-on tutorial of machine learning classification with Chandra Source Catalog version 2.1, March 2023, HEAD20 (invited)
Multiwavelength Classification with Machine Learning: using VLASS to improve X-ray source classifications, Sept 2022, Socorro NM
Machine Learning Classification of Variable Galactic X-ray Sources from Chandra Source Catalog, Yang, H., et al., April 2022, HEAD19
Classifying X-ray Sources Using Machine Learning, June 2021, 238th AAS meeting, online
Role of Temporal Features in Machine-Learning Classification of X-ray Sources based on Chandra Source Catalog v2, Oct. 2020, Chandra Frontier in Time-Domain Science Conference, online
On the multiwavelength properties of several γ-ray detected narrow-line Seyfert 1 galaxies, April 2018, Padova, Italy
SDSS J2118-0732: a new γ-ray-emitting narrow-line Seyfert 1 galaxy, Dec. 2017, 7th Fermi Asian Network Workshop, Lijiang, China

Supervising Experience

- 2023 Yichao Lin (GWU, grad) — Machine Learning Classifications with XMM-Newton Source Catalog
  Co-supervised with Prof. Kargaltsev
- 2020–2021 Caden Gobat (GWU, undergrad) — Catalog of X-Ray Detected Be Stars (XDBS)
  Co-supervised with Prof. Kargaltsev
- 2020 Aidan Smith (high-school student) — Testing Various Machine Learning Algorithm with MUWCLASS
  Co-supervised with Prof. Kargaltsev

Teaching/Outreach

- 2020 Spring, Teaching Assistant with Dr. L.A Correa Borbonet — Astronomy 1001
- 2019 Fall, Teaching Assistant with Dr. George Younes — General Physics II
- 2019 Spring, Teaching Assistant with Dr. Jha — University Physics
- 2018 Fall, Teaching Assistant with Prof. O'Donnel — Stars, Planets and Life in the Universe

Training/Development

Data Science Graduate Certificate — Columbian College of Arts & Sciences, GWU
Fermi Summer School — Lewes, Delaware, May, 2023
Statistics for Astronomers Summer School — Center for Astrostatistics, PSU, June, 2021
Radio Analysis Workshop — UMBC, Maryland, June, 2019
Gravitational Wave and LIGO Detector Mini School — Beijing, China, Sep., 2016
Pulsars searching & timing and SKA Science Summer School — Kunming, China, Aug., 2015
Pulsar Astrophysics Summer School — NAOC, Beijing, China, Aug, 2013

TECHNICAL Skills

General skills	Data visualization, Machine Learning, Statistical Modeling
Progamming Languages	Python, IDL, Java, Shell, ADQL
Data Analysis	Chandra, XMM-Newton, Fermi-LAT
Languages	English (working efficiency), Chinese (native)

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Publications

ORCID:0000-0002-8832-6077

Link to ADS library of my publications

First-author refereed publications

*** 1. Yang, H.**, et al., 2024, "A Multi-wavelength Machine-learning Approach to Classifying X-ray Sources in the Fields of Unidentified 4FGL-DR4 sources", ApJ, 971, 180.

*** 2. Yang, H.**, Hare J., Kargaltsev O., Volkov I., Chen S., Rangelov B., 2022, "Classifying Unidentified X-Ray Sources in the Chandra Source Catalog Using a Multiwavelength Machine-learning Approach", ApJ, 941, 104.

*** 3. Yang, H.**, Yuan W., Yao S., Li Y., Zhang J., Zhou H., Komossa S., et al., 2018, "SDSS J211852.96–073227.5: a new γ-ray flaring narrow-line Seyfert 1 galaxy", MNRAS, 477, 5127.

Second-author publications

*** 1.** Rangelov B., **Yang, H.**, Williams B., Kargaltsev O., Hare J., Martinic K., 2023, "Chandra X-ray Observatory Observations of 13 Fermi LAT Sources", ApJ, 961, 26R.

2. Klingler N., **Yang, H.**, Hare J., Kargaltsev O., Pavlov G. G., Posselt B., 2020, "Chandra Monitoring of the J1809-1917 Pulsar Wind Nebula and Its Field", ApJ, 901, 157.

Other co-authored refereed publications

1. O'Connor, B., Kouveliotou, C., ... **Yang, H.**, et al. 2023, "The Swift Deep Galactic Plane Survey (DGPS) Phase-I Catalog", ApJS,269,49O

2. Chen S., Kargaltsev O., **Yang, H.**, Hare J., Volkov I., Rangelov B., Tomsick J., 2023, "Population of X-Ray Sources in the Intermediate-age Cluster NGC 3532: a Test Bed for Machine-learning Classification", ApJ, 948, 59.

3. Shao X., Gu M., Chen Y., **Yang, H.**, Yao S., Yuan W., Shen Z., 2023, "The Radio Structure of the γ-Ray Narrow-line Seyfert 1 Galaxy SDSS J211852.96-073227.5", ApJ, 943, 136.

4. Gagnon, S., Kargaltsev, O., ... **Yang, H.**, et al., 2023, "Chandra X-ray Observations of PSR J1849-0001, its Pulsar Wind Nebula, and the TeV Source HESS J1849-000", 2023arXiv231113677G

Non-refereed papers

1. **Yang, H.**, Hare J., Volkov I., Kargaltsev O., 2021, "Visualizing Multiwavelength Properties of Classified X-Ray Sources from Chandra Source Catalog", RNAAS, 5, 102.

2. **Yang, H.**, et al., 2022, "Multiwavelength Classification Pipeline (MUWCLASS)", contribution to Solicited white paper from CF07, Advancing the Landscape of Multimessenger Science in the Next Decade, arXiv:2203.10074

3. **Yang, H.**, Yuan W., Yao S., Pan H. W., Komossa S., 2018, "On the multiwavelength properties of several γ-ray detected narrow-line Seyfert 1 galaxies", rnls.conf, 16.

4. Lin, Y., **Yang, H.**, Hare, J., et al. 2024, "Multiwavelength Catalog of 10,000 4XMM-DR13 Sources with Known Classifications", arXiv:2402.15684

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5. Chen S., Kargaltsev O., **Yang, H.**, Hare J., 2023, “Dataset of Classified Chandra Sources in Globular Clusters”, RNAAS, 7, 215.

6. Gobat C., **Yang, H.**, Kargaltsev O., Hare J., Volkov I., 2022, “Catalog of X-Ray Detected Be Stars (XDBS)”, RNAAS, 6, 163.

7. Kargaltsev O., **Yang, H.**, 2020, “A Pair of Tidally Disrupted Galaxies from The Hubble Legacy Archive”, RNAAS, 4, 85.