

Kristen Dage

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RESEARCH INTERESTS

machine learning, surveys, globular clusters, X-ray binaries, accretion physics & high energy phenomena

APPOINTMENTS

- 2020 - present **Postdoctoral Fellow**
McGill University/McGill Space Institute
Montréal, Québec, Canada
- 2020 **Postdoctoral Research Associate**
Michigan State University
East Lansing, Michigan, USA

EDUCATION

- 2015 - 2020 **Michigan State University**, East Lansing, Michigan, USA
Ph.D. Astronomy & Astrophysics
- 2015 - 2017 **Michigan State University**, East Lansing, Michigan, USA
M.Sc. Astronomy & Astrophysics
- 2012 - 2014 **University of Michigan-Dearborn**, Dearborn Michigan, USA
B.Sc. Physics

ACCEPTED TELESCOPE PROPOSALS

- 2021 **NuSTAR Cycle 7**: Investigating pulsation transience in SMC X-1 during superorbital period excursion, PI: M. Brumback
- 2021 **JWST Cycle 1**: Do Massive Black Holes Come in Small Packages? A census of black holes in compact stellar systems in the Virgo cluster, 41.2 Primary Spacecraft Hours, PI: M. Taylor
- 2021 **NICER Cycle 3**: Monitoring SMC X-1's reprocessed emission during an epoch of superorbital period excursion, 120ks, **PI: K. Dage**
- 2020 **Gemini South 2021A**: Searching for evidence of outflows in globular cluster X-ray binary M87-GCULX1, 7.2 hours, **PI: K. Dage**
- 2020 **Chandra Cycle 22**: The LMXB population of NGC 3998: Testing for an extreme IMF, PI: S. Zepf
- 2020 **HST Cycle 28**: Far-ultraviolet insights into multiple populations in extragalactic globular clusters, PI: S. Zepf
- 2020 **NuSTAR Cycle 6**: Complete spectral characterisation of a newly discovered ULX, 40ks and \$20,000 USD, **PI: K. Dage**
- 2019 **Swift Target of Opportunity**, 4ks, **PI: K. Dage**
- 2019 **Chandra Cycle 21**: A high spatial resolution X-ray survey of the halo of M87, PI: M. Peacock
- 2019 **Swift Target of Opportunity**, 10ks, **PI: K. Dage**
- 2018 **Chandra Cycle 20**: The nature of the two globular cluster ULXs in the galaxy NGC 4472, PI: S. Zepf

AWARDS

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| 2020 | Sherwood K. Haynes Graduate Physics Award for Outstanding Graduate Student , Dept. Physics & Astronomy, Michigan State University |
| 2020 | MSI Postdoctoral Fellowship Prize |
| 2019 | MSU College of Natural Science Dissertation Completion Fellowship , \$7500 USD |
| 2019 | AAS International Travel Grant , \$2000 USD |
| 2014 | Outstanding Physics Student , Dept. Natural Sciences, University of Michigan-Dearborn |

TEACHING EXPERIENCE

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| 2021 | Guest Lecturer Graduate High Energy Astrophysics McGill University, Québec, Canada |
| 2018 | Certificate in Inclusive Inquiry STEM Education Institute for Scientist & Engineer Educators Professional Development University of Santa Cruz, California, USA |
| 2018 | Astronomy Instructor Gifted and Talented Education program Michigan State University, Michigan, USA |
| 2015 - 2018 | Teaching Assistant Visions of the Universe Laboratory Michigan State University, Michigan, USA |
| 2011 - 2014 | German, Math, Physical Sciences Tutor Academic Support Center Oakland Community College, Michigan, USA |
| 2011 | Teaching Assistant Physical Science Oakland Community College, Michigan, USA |

STUDENT RESEARCH SUPERVISION

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| 2021 - present | Jeff Huang, B.Sc., McGill University, Canada |
| 2020 - present | Emma Barbisan, B.Sc., McGill University, Canada |
| 2020 - present | Wasundara Athukoralalage, B.Sc., Michigan State University, USA |
| 2021 | Yifan Sun, B.Sc., McGill University, Canada |
| 2020 - 2021 | Sneha Nair, B.Sc., McGill University, Canada |
| 2020 - 2021 | Jade Ducharme, B.Sc., McGill University, Canada |
| 2019 | Noah Vowell, B.Sc., University of Michigan-Dearborn, USA |
| 2018 | Omid Noroozi, B.Sc., Michigan State University, USA |

ANALYSIS AND SOFTWARE

- X-ray spectroscopy, imaging and timing analysis (*Chandra*, *MAXI*, *NuSTAR*, *RXTE*, *Swift*, *XMM-Newton*)
- Optical spectroscopy (*SOAR/GHTS*, *Gemini/GMOS*, *VLT/FORS2*)
- Ultraviolet imaging and photometry (*Swift/UVOT*, *GALEX*)
- Infrared imaging (*Spitzer/IRAC*)
- Gamma-ray binned likelihood analysis (*Fermi/LAT*)
- Conducting optical observations at *SOAR* observatory, with over 300 hours experience
- Programming: Python (astropy, numpy, scipy, scikit-learn, matplotlib, Keras), Mathematica
- Major astronomical packages: AstroPy, CIAO, HEASoft (XSpec, FTools), IRAF, Fermitools

ACADEMIC SERVICE

- Time Allocation Committee: Chandra X-ray Observatory, NICER
- McGill Space Institute Undergrad Awards Committee
- External Reviewer: CanTAC, Astrosat

MENTORING

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| 2021 | Physics & MSI Summer Student Program, McGill University, Québec, Canada |
| 2021 | Mentoring for Women in Physics, Supernova Foundation |
| 2020 - 2021 | Postdoc Liaison, McGill Physics Equity, Diversity, and Inclusion, Québec, Canada |
| 2020 | Undergraduate Professional Development Seminars, Michigan State University and University of Michigan-Dearborn, Michigan, USA |
| 2019-2020 | Co-founder, Stellar Mentoring Program, Michigan State University, Michigan, USA |
| 2017-2018 | Women and Minorities in Physical Sciences, Michigan, USA |

INVITED TALKS

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| 2021 May | University of California Santa Cruz, California, USA |
| 2021 Mar | American Museum of Natural History, New York, USA |
| 2021 Feb | Texas Tech University, Texas, USA |
| 2021 Jan | Institute of Astrophysics-FORTH, Heraklion, Crete |
| 2020 Dec | Science Briefing, NASA Universe of Learning, Maryland, USA |
| 2020 Feb | McGill Space Institute, Québec, Canada |

CONFERENCE AND SEMINAR TALKS

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| 2021 Apr | LISA Canada Workshop, British Columbia, Canada |
| 2020 Nov | Center for Astrophysics High Energy Phenomena Seminar, Massachusetts, USA |
| 2020 Oct | Chandra Frontiers in Time-Domain Science, Massachusetts, USA |
| 2020 Oct | McGill Space Institute, Québec, Canada |
| 2020 Jun | High Energy Astrophysics Division Virtual Seminar, Massachusetts, USA |
| 2020 Jun | Compact Objects in Michigan 8, Michigan, USA |
| 2020 Jan | 235th American Astronomical Society Meeting, Hawaii, USA |
| 2019 Nov | Center for Astrophysics High Energy Phenomena Seminar, Massachusetts, USA |
| 2019 Mar | 17th High Energy Astrophysics Division Meeting, California, USA |
| 2019 Mar | Compact Objects in Michigan 7, Michigan, USA |
| 2018 Aug | International Centre for Radio Astronomy Research, Western Aus., Australia |
| 2018 Apr | Compact Objects in Michigan 6, Michigan, USA |
| 2017 Mar | Compact Objects in Michigan 5, Michigan, USA |
| 2017 Feb | Gemini South Observatory, Coquimbo, Chile |
| 2014 Apr | Compact Objects in Michigan 2, Michigan, USA |

PUBLIC TALKS

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| 2021 | STEM Week, Vanier College, Québec, Canada |
| 2021 | Abrams Planetarium Night Sky Chat, Michigan, USA |
| 2020 | MSU Science Festival Saturday Morning Science Talk, Michigan, USA |
| 2020 | Science Night at Bennett Woods Elementary School, Michigan, USA |
| 2020 | Quiet Adventures Symposium, Michigan, USA |

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| 2019 | Astronomy on Tap, "Searching for Gamma Ray Counterparts to Low Mass X-Ray Binaries", Michigan, USA |
| 2018 | Astronomy on Tap, "History of Astronomy", Michigan, USA |
| 2017 | Capitol Area Astronomy Association, Michigan, USA |
| 2017 | Astronomy on Tap, "Observing in Chile", Michigan, USA |

OUTREACH AND VOLUNTEER ACTIVITIES

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| 2020-2021 | Co-organizer, McGill Space Institute Astronomy Trivia Night, Québec, Canada |
| 2020 | Presenter, 2020 STEM Pathways for Girls conference, New Mexico, USA |
| 2020 | Presenter, MSU Science Festival, Michigan, USA |
| 2020 | Volunteer, Spartan Young Astronomer's Club, Michigan, USA |
| 2019 | Event Supervisor, Science Olympiad State Level Astronomy division, Michigan, USA |
| 2019 | Event Supervisor, Science Olympiad State Level Solar System division, Michigan, USA |
| 2019 | Primary Astronomy Organizer, MSU Science Festival Expo Days, Michigan, USA |
| 2019 | Organizer, IAU Women and Girls in Astronomy Month, Abrams Planetarium, Michigan, USA |
| 2019 | Volunteer, Conference for Undergraduate Women in Physics, Michigan, USA |
| 2018 | Volunteer, MSU Observatory Nature Night, Michigan, USA |
| 2018 | Primary Astronomy Organizer, MSU Science Festival Expo Days, Michigan, USA |
| 2016 | Volunteer, MSU Science Festival Expo Days, Michigan, USA |
| 2015 | Volunteer, Science Exploration Days, Michigan, USA |
| 2014 | Volunteer, Science Olympiad Regional Solar System division, Michigan, USA |

INTERNATIONAL COLLABORATIONS AND PROFESSIONAL SOCIETIES

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| 2021 - present | International Astrostatistics Association |
| 2021 - present | Astrostatistics Interest Group of the American Statistical Association |
| 2021 - present | Canadian Astronomical Society |
| 2020 - present | LISA Consortium, ESA L3 Approved Mission |
| 2016 - present | American Astronomical Society |

PUBLICATIONS

Refereed

15. C. Kilpatrick et al (including **K. Dage**), "The Gravity Collective: A Search for the Electromagnetic Counterpart to the Neutron Star-Black Hole Merger GW190814", 2021, The Astrophysical Journal (submitted)
14. **K. C. Dage**, N. Vowell, E. Thygesen, A. Bahramian, D. Haggard, K. Kovlakas, A. Kundu, T. J. Maccarone, J. Strader, R. Urquhart, S. E. Zepf, "Ultraluminous X-ray Sources in Seven Edge-On Spiral Galaxies", 2021, Monthly Notices of the Royal Astronomical Society (submitted)
13. T. Jayasinghe et al (including **K. Dage**), "The Loudest Stellar Heartbeat: Characterizing the Most Extreme Amplitude Heartbeat Star System", 2021, Monthly Notices of the Royal Astronomical Society (submitted)
12. **K.C. Dage**, A. Kundu, E. Thygesen, A. Bahramian, J.A. Irwin, D. Haggard, T.J. Maccarone, S. Nair, M.B. Peacock, J. Strader, S.E. Zepf, "Three Ultraluminous X-ray Sources in NGC 1316", 2021, Monthly Notices of the Royal Astronomical Society
11. S. Swihart et al (including **K. Dage**), "Discovery of a New Redback Millisecond Pulsar Candidate: 4FGL J0940.3-7610", 2021, The Astrophysical Journal

10. J. M. Miller (including **K. Dage**), "A New Candidate Transitional Millisecond Pulsar in the Sub-luminous Disk State: 4FGL J0407.7–5702", 2020, The Astrophysical Journal
9. S. Swihart et al (including **K. Dage**), "A New Likely Redback Millisecond Pulsar Binary with a Massive Neutron Star: 4FGL J2333.1-5527", 2020, The Astrophysical Journal
8. **K.C. Dage**, S.E. Zepf, E. Thygesen, A. Bahramian, A. Kundu, M.B. Peacock, T. J. Maccarone, J. Strader, "X-Ray Spectroscopy of Newly Identified ULXs Associated With M87's Globular Cluster Population", 2020, Monthly Notices of the Royal Astronomical Society
7. **K.C. Dage**, S.E. Zepf, A. Bahramian, J. Strader, Thomas J. Maccarone, M.B. Peacock, A. Kundu, M. Steele, C. Britt, "Slow Decline and Rise of the Broad [OIII] Emission Line in Globular Cluster Black Hole Candidate RZ2109", 2019, Monthly Notices of the Royal Astronomical Society
6. E. Aydi, et al (including **K. Dage**), "Flaring, Dust Formation, And Shocks In The Very Slow Nova ASASSN-17pf (LMCN 2017-11a)", 2019, The Astrophysical Journal
5. **K.C. Dage**, S.E. Zepf, M.B. Peacock, A. Bahramian, O. Noroozi, A. Kundu, T.J. Maccarone, "X-Ray Spectral Variability of Ultraluminous X-Ray Sources in Extragalactic Globular Clusters", 2019, Monthly Notices of the Royal Astronomical Society.
4. Strader, J., et al (including **K. Dage**), "Optical spectroscopy and demographics of redback millisecond pulsar binaries", 2018, The Astrophysical Journal
3. M. A. Tucker, et al (including **K. Dage**), "ASASSN-18ey: The Rise of a New Black-Hole X-ray Binary" 2018, The Astrophysical Journal
2. **K.C. Dage**, W.I. Clarkson, P.A. Charles, S. Laycock, I-C. Shih "A Search for Spin-Superorbital Period Correlation in SMC X-1", 2018, Monthly Notices of the Royal Astronomical Society.
1. **K. C. Dage**, S. E. Zepf, A. Bahramian, A. Kundu, T. J. Maccarone, M. B. Peacock, "X-Ray Variability from the Ultraluminous Black Hole Candidate X-ray Binary in the Globular Cluster RZ 2109", 2018, The Astrophysical Journal

Unrefereed

8. J. Huang, Y. Sun, **K. Dage**, D. Haggard, "Probing M87 Globular Clusters for Flaring Ultraluminous X-Ray Sources", 2021, RNAAS, 5, 136
7. D. Tucker et al (including **K. Dage**), "LIGO/Virgo S190814bv: SOAR spectroscopy of DECAM candidates AT2019npw and AT2019num", 2019, GCN 25484
6. E. Aydi et al (including **K. Dage**), "SOAR classification of ASASSN-19qv as a classical nova in the SMC", The Astronomer's Telegram, No. 12907
5. J. Strader, L. Chomiuk, **K. Dage**, J.L. Prieto, K. Z. Stanek, "Spectroscopic classification of ASASSN-19kz as a young Type II supernova in NGC 2207", The Astronomer's Telegram, No. 12706
4. K.V. Sokolovsky et al (including **K. Dage**), "ASAS-SN Discovery of a Bright Candidate Microlensing Event ASASSN-19cq", 2019, The Astronomer's Telegram, No. 12495
3. S.K. Sarbadhicary, et al (including **K. Dage**), "SOAR optical spectroscopy of the Wolf-Rayet star WR96 during the dimming event", The Astronomer's Telegram, No. 12511
2. **K. Dage**, et al, "Spectroscopic Classification of SN 2018agk with SOAR/Goodman", 2018, The Astronomer's Telegram, No. 11433
1. A. Bahramian, J. Strader, **K. Dage**, "SOAR/Goodman optical spectroscopy of MAXI J1820+070", 2018, The Astronomer's Telegram, No. 11424