Dr. Aarran Shaw

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EDUCATION AND PROFESSIONAL EXPERIENCE

October 2019 - present: Postdoctoral Research Fellow
University of Nevada, Reno, USA
Postdoctoral Supervisor: Prof. Richard M. Plotkin

November 2016 - October 2019: Postdoctoral Research Fellow
University of Alberta, Edmonton, Canada
Postdoctoral Supervisor: Prof. Craig O. Heinke

September 2012 - October 2016: PhD in Astrophysics
University of Southampton, Southampton, UK
Thesis title: Multi-wavelength Observations of Galactic Black Hole X-ray Transients (defended September 2016)
Supervisor: Prof. Philip A. Charles

September 2007 - July 2012: MPhys (with BSc) in Physics with Astrophysics (with Research Placement)
University of Leeds, Leeds, UK
Graduated with First Class Honours (equivalent to 4.0 GPA)

RESEARCH INTERESTS

Accretion physics; Black holes; Neutron stars; White dwarfs; X-ray binaries; Cataclysmic Variables; Timing and variability; Multi-wavelength observational astronomy

TEACHING EXPERIENCE

September 2012 - October 2016: Mayflower Scholar (Teaching Assistant and demonstrator)
University of Southampton, Southampton, UK
- 1st year course: Energy and Matter (also delivered revision lectures)
- 1st year course: Motion and Relativity
- 1st year course: Physics Skills (Experimental Labs)
- 2nd year course: Quantum Physics of Matter
- 2nd year course: Classical Mechanics
- 2nd year course: Physics from Evidence (Python labs)
- 3rd/4th year course: Computer Techniques in Physics (Advanced Python labs)

October 2019 - present: Postdoctoral Research Fellow
University of Nevada, Reno, Reno, NV, USA
- AST410: Astrophysics - guest lecture on white dwarfs
- PHYS 497: Senior Thesis - co-instructor

STUDENTS

Ava Covington (Summer 2020 - December 2021) - Ava is a UNR undergraduate who worked with me on investigating the low-flux states of intermediate polars. For the spring semester 2021 Ava won a Nevada Undergraduate Research Award to help fund the project. In March 2021, Ava was also selected to be an American Association of Variable Star Observers (AAVSO) ambassador. Under my supervision, Ava has also led an AAVSO observing campaign of intermediate polars to monitor for low-flux states. In October 2021, Ava was awarded the Great Basin Observatory scholarship as a result of her work on studying CVs with the Great Basin Observatory. In early 2022, as a sophomore, Ava published her first, first-author paper on her CV research under my supervision.

Alexis Tudor (Fall 2019 - Spring 2021; co-advisory role) - Alexis majored in Computer Science but worked in a cross-disciplinary fashion with Prof. Plotkin (her main advisor) and I through her senior year and Master's year to develop Photometry+, a photometric pipeline designed for use with the 0.7m Great Basin Observatory. During her Master's year, Alexis focused on the Human Computer Interaction (HCI) aspect of the software. She published her results in the proceedings of HCI International 2021 and presented Photometry+ at the 237th meeting of the American Astronomical Society and also submitted a refereed journal paper in January 2022. As a result of her work on Photometry+, Alexis was awarded the 2020 Great Basin Observatory Scholarship Award and the 2021 UNR Graduate Student Association Outstanding Graduate Researcher Award. In May 2021, Alexis received her Master's degree and commenced a position as a software developer at L3Harris in Rockwall, TX.

Ben Pearson (Spring 2022 semester; co-instructor for senior thesis) - In spring semester 2022 I was a co-instructor for Ben's senior thesis. Ben expanded upon Alexis' work on Photometry+, developing an automated light curve generator component to the software which reduces and extract photometric data from new GBO images from our intermediate polar monitoring campaign on a daily basis. Ben successfully defended his Senior Thesis in May 2022.

PUBLIC ENGAGEMENT

UNR; October 2019 - present:

- 11 Aug 2022, public talk on black holes (title TBD), Clear Creek Tahoe, South Lake Tahoe, CA - part of a meteor shower viewing event.
- 17 July 2022, public talk: "The James Webb Space Telescope," Tahoe Star Tours, Northstar California Resort, CA
- 13-15 August 2021, Great Basin Observatory (GBO) 5th anniversary event. The UNR group presented their research to the public at an event celebrating the GBO's 5th anniversary.
- 11 August 2021, public talk: "Black holes don't suck," Clear Creek Tahoe, South Lake Tahoe, CA - part of a meteor shower viewing event.
- 11 March 2021, virtual school visit to the Grade 2 class of John C. Fremont Elementary School, Carson City NV - ask an astronomer Q&A session.
- "Virtual coffee break" discussion for the GBO. I talk about how I use the Great Basin National Park's 0.7m telescope for my research, in an informal and accessible setting. This series was set up by the GBO as a way to engage with the public during COVID-19: https://youtu.be/aw5B7h0rZGg.

U of A; November 2016 - October 2019:

- 10 September 2018, public talk: "Black holes don't suck," Royal Astronomical Society of Canada regular meeting.
- 16 May 2018, public talk: "Radio Astronomy through the ages," Northern Alberta Radio Club monthly meeting.
- 16 March 2017, public talk: "Life after death: The violent nature of black holes," University of Alberta public observing evening.
- Interview for "Astro 101: Black Holes" online course, short videos discussing black holes and neutron stars available on YouTube.

University of Southampton; September 2012 - October 2016:

- Team member, 'Southampton Astrodome' - Inflatable planetarium shows at primary and secondary schools, University open days, BBC stargazing live open evenings. Other duties included leading astronomy demonstrations at National Science Week at Winchester Science Centre.

AWARDS

July 2009 - August 2011: Summer Research Placement, Universities of Leeds and Leicester
Awarded stipend from University of Leeds Physics department to conduct a Research Placement for three years every summer. I gained valuable experience with observational astronomy in a research environment before commencing my PhD. In 2011 I studied Pulsar Wind Nebulae with the Fermi Gamma-ray Space Telescope at the University of Leicester.

Spring semester 2021: Nevada Undergraduate Research Award (NURA) mentor stipend
Awarded a stipend from the University of Nevada, Reno to mentor and advise Physics undergraduate Ava Covington during the 2021 spring semester. Ava won the NURA with a project to study and analyze the light curves of intermediate polars in low flux states.

PROFESSIONAL MEMBERSHIP

Member of the American Astronomical Society (AAS)

OTHER RELEVANT EXPERIENCE

Committee Member of the NuSTAR User's Committee (2020-present)
Referee for Monthly Notices of the Royal Astronomical Society
Referee for the Astrophysical Journal
Guest Reviewer for the Canadian Time Allocation Committee
Reviewer for the NOIRLab Time Allocation Committee
Reviewer for the Swift Time Allocation Committee
Reviewer for the Chandra Time Allocation Committee
Reviewer (and Deputy Chair) for the NuSTAR Time Allocation Committee
LOC for CASCA 2017, 29 May-1 June 2017, Edmonton, AB, Canada

COMPUTING SKILLS

Data reduction packages: XSELECT, IRAF/pyRAF, Chandra CIAO, XMM-Newton SAS, ESOREX/REFLEX
Astronomy analysis software: HEASOFT/FTOOLS (including XSPEC and XRONOS), Starlink, DS9, T. R. Marsh's software (Molly, Doppler), AstrOmatic software (SExtractor, SCAMP, SWarp), pgplot, GNUplot
Programming: Python, bash, TCL, HTML
Operating Systems: Linux, macOS

CONFERENCE PRESENTATIONS AND INVITED TALKS

Invited talk: *TBA:* Dept. of Physics Colloquium, 29 August 2022, Idaho State University, Pocatello, ID, USA
Invited talk: *TBA:* Vasto Accretion Meeting, TBA (postponed due to COVID-19), Vasto, Italy
Invited talk: *Highlights from the NuSTAR Galactic Binaries Working Group:* Ten Years of High-Energy Universe in Focus: NuSTAR 2022, 20-22 Jun 2022, Cagliari, Italy
Invited talk: *New results on magnetic cataclysmic variables:* HEAP seminar series, 9 Sept 2021, University of Utah, Salt Lake City, UT, USA
Invited talk: *New results on magnetic cataclysmic variables:* Michigan State University astro seminar, 7 April 2021 (virtual due to COVID-19)
Invited talk: *Radio and X-ray observations of stellar mass black holes:* COSPAR 2021, 28 January-4 February 2021, Sydney, Australia (virtual due to COVID-19)
Invited talk: *Measuring the masses of white dwarfs with X-rays: A NuSTAR Legacy Survey:* AAVSO 109th annual meeting, 13-15 November 2020, virtual due to COVID-19)

Invited talk: *The Swift Bulge Survey - in search of the faintest X-ray transients:* SRL Seminar, 26 September 2017, Caltech, Pasadena, CA, USA

Contributed talk: *Measuring the masses of magnetic white dwarfs: A NuSTAR Legacy Survey*:19th HEAD Divisional Meeting, 13–17 March 2022, Pittsburgh, PA, USA
Contributed talk: *Investigating the low-flux states of Intermediate Polars:* 239th meeting of the American Astronomical Society, 9–13 January 2022, Salt Lake City, UT, USA (Cancelled due to COVID-19)
Contributed talk: *Measuring the masses of Intermediate Polars with NuSTAR: A Legacy Survey:* COSPAR 2021, 28 January-4 February 2021, Sydney, Australia (virtual due to COVID-19)
Contributed Talk: *Studying Magnetic Cataclysmic Variables with GBO:* STARFEST III, 24 October 2020 (virtual due to COVID-19)
Contributed Talk: *Observations of the disk/jet coupling of X-ray binaries during their descent to quiescence: The case for rapid follow-up:* Chandra Frontiers in Time-Domain Science, 7-30 October, (virtual due to COVID-19)
Contributed Talk: *Measuring the masses of Intermediate Polars with NuSTAR: A Legacy Survey:* 235th Meeting of the American Astronomical Society, 4-8 January 2020, Honolulu, HI, USA
Contributed Talk: *Probing the physics of compact objects with the TMT:* TMT Science Forum, 10-12 December 2018, Pasadena, CA, USA
Contributed talk: *Swift J1753.5-0127 - the black hole that just wouldn't stay quiet:* Time for Accretion, 6-10 August 2018, Sigtuna, Sweden
Contributed talk: *Measuring the masses of Intermediate Polars with NuSTAR:* COSPAR 2018, 14-22 July 2018, Pasadena, CA, USA
Contributed talk: *The radius of the quiescent neutron star in M13:* COSPAR 2018, 14-22 July 2018, Pasadena, CA, USA
Contributed talk: *The Swift Bulge Survey - in search of the faintest X-ray transients:* 16th HEAD Divisional Meeting, 20-24 August 2017, Sun Valley, ID, USA
Contributed talk: *The Swift Bulge Survey - in search of the faintest X-ray transients:* CASCA 2017, 29 May-1 June 2017, University of Alberta, Edmonton, AB, Canada
Contributed talk: *On the orbital period of MAXI J1305-704:* 7 years of MAXI: Monitoring X-ray Transients, 5-7 December 2016, RIKEN, Tokyo, Japan
Contributed talk: No evidence for a low mass black hole *in Swift J1753.5–0127:* New Results in X-ray Astronomy, 28 September 2016, MSSL, Dorking, UK
Contributed talk: *An unusual soft state in Swift J1753.5–0127:* New Results in X-ray Astronomy, 28 October 2015, University of Leicester, Leicester, UK
Contributed talk: *The curious new state of Swift J1753.5–0127:* The Extremes of Black Hole Accretion, 8-10 June 2015, ESAC, Madrid, Spain
Contributed talk: *A 420-day X-ray/optical modulation and extended X-ray dips in the short-period transient Swift J1753.5–0127:* New Results in X-ray Astronomy, 16 September 2013, University of Southampton, Southampton, UK

OBSERVING PROPOSALS

Observing proposal summary:
Accepted observing proposals as PI: 51
Accepted observing proposals as co-I: 71
Funding secured from observing proposals: $235,706

Selection of accepted observing programmes as PI:
The nature of accretion and outflow in the Intermediate Mass X-ray binary V4641 Sagittarii;
2019-2020; 75ks, Chandra/HETGS
75ks Chandra grating observation of V4641 Sgr, the first grating observation of this system. Triggered Feb. 2020. Paper in preparation.

Measuring White Dwarf masses with NuSTAR: A Legacy Survey
2017-2020; 985ks; NuSTAR
Legacy survey designed to measure the hard X-ray spectrum of magnetic CVs in order to derive their masses.

Validating JWST's In-orbit Clock Accuracy
2022; 22.9hrs; JWST/NIRCam (Co-PI)
Proposal designed to observe a known timing calibrator in order to calibrate JWST's clock and open up the sub-second time domain to future observers.

Black Hole Jet Launching Physics with MIRI
2022; 6.6hrs, JWST/MIRI (Co-PI)
Proposal to observe two outbursting black hole X-ray binaries with JWST MIRI in low-resolution spectroscopy mode and study the jet spectrum on fast (as low as <1s) timescales.

PUBLICATIONS

Publication record summary:
Refereed publications as first author: 11
Refereed publications as co-author: 31
Non-refereed publications as first author: 12
Non-refereed publications as co-author: 32

Refereed publications as first author:

A. W. Shaw, J. M. Miller, V. Grinberg, D. J. K. Buisson, C. O. Heinke, R. M. Plotkin, J. A. Tomsick, A. Bahramian, P. Gandhi, G. R. Sivakoff: *High resolution X-ray spectroscopy of V4641 Sgr during its 2020 outburst*, 2022, accepted for publication in MNRAS, **arXiv:2208.01732**

A. W. Shaw, R. M. Plotkin, J. C. A. Miller-Jones, J. Homan, E. Gallo, D. M. Russell, J. A. Tomsick, P. Kaaret, S. Corbel, M. Espinasse, J. Bright: *Observations of the Disk/Jet Coupling of MAXI J1820+070 During its Descent to Quiescence*, 2021, ApJ, 907, 34

A. W. Shaw, C. O. Heinke, K. Mukai, J. A. Tomsick, V. Doroshenko, V. F. Suleimanov, D. J. K. Buisson, P. Gandhi, B. W. Grefenstette, J. Hare, J. Jiang, R. M. Ludlam, V. Rana, G. R. Sivakoff: *Measuring the masses of magnetic white dwarfs: A NuSTAR Legacy Survey*, 2020, MNRAS, 498, 3457

A. W. Shaw, C. O. Heinke, T. J. Maccarone, G. R. Sivakoff, J. Strader, A. Bahramian, N. Degenaar, J. A. Kennea, E. Kuulkers, A. Rau, R. Wijnands, and J. J. M. in 't Zand, L. E. Rivera Sandoval, L. Shishkovsky, S. J. Swihart, A. J. Tetarenko, R. Wijnands, and J. J. M. in 't Zand: *The Swift Bulge Survey: Optical & near-IR follow-up featuring a likely symbiotic X-ray binary & a focused wind CV*, 2020, MNRAS, 492, 4344 (Erratum in MNRAS, 494, 5081)

A. W. Shaw, B. E. Tetarenko, G. Dubus, T. Dinçer, J. A. Tomsick, P. Gandhi, R. M. Plotkin, D. M. Russell: *The Curious Case of Swift J1753.5-0127: A Black Hole Low-mass X-ray Binary Analogue to Z Cam Type Dwarf Novae*, 2019, MNRAS, 482, 1840

A. W. Shaw, C. O. Heinke, A. W. Steiner, S. Campana, H. N. Cohn, W. C. G. Ho, P. M. Lugger, M. Servillat: *The radius of the quiescent neutron star in the globular cluster M13*, 2018, MNRAS, 476, 4713

A. W. Shaw, C. O. Heinke, K. Mukai, G. R. Sivakoff, J. A. Tomsick, V. Rana: *Measuring the masses of Intermediate Polars with NuSTAR: V709 Cas, NY Lup and V1223 Sgr*, 2018, MNRAS, 476, 554

A. W. Shaw, C. O. Heinke, N. Degenaar, R. Wijnands, R. Kaur, L. M. Forestell: *Near-infrared counterparts of three transient very faint neutron star X-ray binaries*, 2017, MNRAS, 471, 2508

A. W. Shaw, P. A. Charles, J. Casares, J. V. Hernández Santisteban: *No evidence for a low-mass black hole in Swift J1753.5–0127*, 2016, MNRAS, 463, 1314

A. W. Shaw, P. Gandhi, D. Altamirano, P. Uttley, J. A. Tomsick, P. A. Charles, F. Fürst, F. Rahoui, D. J. Walton: *A low-luminosity soft state in the short period black hole X-ray binary Swift J1753.5–0127*, 2016, MNRAS, 458, 1636

A. W. Shaw, P. A. Charles, A. J. Bird, R. Cornelisse, J. Casares, F. Lewis, T. Muñoz-Darias, D. M. Russell, C. Zurita: *A 420-day X-ray/optical modulation and extended X-ray dips in the short-period transient Swift J1753.5–0127*, 2013, MNRAS, 433, 74

Refereed publications as co-author:

*** refers to papers led by students that I have supervised**

A. R. Tudor, R. M. Plotkin, **A. W. Shaw**, M. Neill: Photometry+: Development of a Photometric Pipeline for the Great Basin Observatory Robotic Telescope, 2022, accepted for publication in Astronomy and Computing

J-. M. Hameury, J-. P. Lasota, **A. W. Shaw**: *Magnetically–gated accretion model: application to short bursts in the intermediate polar V1223 Sgr*, 2022, accepted for publication in A&A, arXiv:2205.11227

K. L. Hill, C. Littlefield, P. Garnavich, S. Scaringi, P. Szkody, P. A. Mason, M. R. Kennedy, **A. W. Shaw**, and A. E. Covington: *A 28 h Cessation of Accretion in the Intermediate Polar YY Dra (DO Dra)*, 2022, AJ, 163, 246

*A. E. Covington, **A. W. Shaw**, K. Mukai, C. Littlefield, C. O. Heinke, R.M. Plotkin, D. Barrett, J. Boardman, D. Boyd, S. M. Brincat, R. Carstens, D. F. Collins, L. M. Cook, W. R. Cooney, D. Cejudo Fernández, S. Dufoer, S. Dvorak, C. Galdies, W. Goff, F.-J. Hambsch, S. Johnston, J. Jones, K. Menzies, L. A. G. Monard, E. Morelle, P. Nelson, Y. Öğmen, J. W. Rock, R. Sabo, J. Seargeant, G. Stone, J. Ulowetz, T. Vanmunster: *Investigating the low-flux states in six Intermediate Polars*, 2022, ApJ, 928, 164

B. M. Coughenour, J. A. Tomsick, **A. W. Shaw,** K. Mukai, M. Clavel, J. Hare, R. Krivonos, F. M. Fornasini: *Classifying IGR J18007–4146 as an intermediate polar using XMM and NuSTAR*, 2022, accepted for publication in MNRAS, arXiv:2201.11170

H. Lazar, J. A. Tomsick, S. N. Pike, M. Bachetti, D. J. K. Buisson, R. M. T. Connors, A. C. Fabian, F. Fuerst, J. A. García, J. Hare, J. Jiang, **A. W. Shaw**, D. J. Walton: *Spectral and Timing Analysis of NuSTAR and Swift/XRT Observations of the X-Ray Transient MAXI J0637-430*, 2021, ApJ, 921, 155

J. van den Eijnden, N. Degenaar, T. D. Russell R. Wijnands, A. Bahramian, J. C. A. Miller-Jones, J. V. Hernández Santisteban, E. Gallo, P. Atri, R. M. Plotkin, T. J. Maccarone, G. Sivakoff, J. M. Miller, M. Reynolds,
D. M. Russell, D. Maitra, C. O. Heinke, M. Armas Padilla, **A. W. Shaw**: *A new radio census of neutron star X-ray binaries*, 2021, MNRAS, 507, 3899

M. Stoop, J. van den Eijnden, N. Degenaar, A. Bahramian, S. J. Swihart, J. Strader, F. Jiménez-Ibarra, T. Muñoz-Darias, M. Armas Padilla, **A. W. Shaw**, T. J. Maccarone, R. Wijnands, T. D. Russell, J. V. Hernández Santisteban,
J. C. A. Miller-Jones, D. M. Russell, D. Maitra, C. O. Heinke, G. R. Sivakoff, F. Lewis, D. M. Bramich: *Multiwavelength observations reveal a faint candidate black hole X-ray binary in IGR J17285−2922*, 2021, MNRAS, 507, 330

A. Paduano, A. Bahramian, J. C. A. Miller-Jones, A. Kawka, J. Strader, L. Chomiuk, C. O. Heinke, T. J. Maccarone, C. T. Britt, R. M. Plotkin, **A. W. Shaw**, L. Shishkovsky, E. Tremou, V. Tudor, G. R. Sivakoff: *The MAVERIC Survey: Simultaneous Chandra and VLA observations of the transitional millisecond pulsar candidate NGC 6652B*, 2021, MNRAS, 506, 4107

E. Masington, T. J. Maccarone, L. Rivera Sandoval, C. O. Heinke, A. Bahramian, **A. W. Shaw**: *An Analysis of X-Ray Hardness Ratios Between Asynchronous and Non-Asynchronous Polars*, 2021, JAAVSO, 49, 2

J. A. Tomsick, B. M. Coughenour, J. Hare, R. Krivonos, A. Bodaghee, S. Chaty, M. Clavel, F. M. Forasini, J. Rodriguez, **A. W. Shaw**: *Using Chandra Localizations and Gaia Distances and Proper Motions to Classify Hard X-ray Sources Discovered by INTEGRAL*, 2021, ApJ, 914, 48

R. M. Plotkin, A. Bahramian, J. C. A. Miller-Jones, M. T. Reynolds, P. Atri, T. J. Maccarone, **A. W. Shaw**, P. Gandhi: *Toward a Larger Sample of Radio Jets from Quiescent Black Hole X-ray Binaries*, 2021, MNRAS, 503, 3784

R. M. Ludlam, A. D. Jaodand, J. A. García, N. Degenaar, J. A. Tomsick, E. M. Cackett, A. C. Fabian, P. Gandhi, D. J. K. Buisson, **A. W. Shaw**, D. Chakrabarty: *Simultaneous NICER and NuSTAR Observations of the Ultra-compact X-ray Binary 4U 1543-624*, 2021, ApJ, 911, 123

B. E. Tetarenko, **A. W. Shaw**, E. R. Manrow, P. A. Charles, T. D. Russell, A. J. Tetarenko: *Using Optical Spectroscopy to Map the Geometry and Structure of the Irradiated Accretion Discs in Low-mass X-ray Binaries: The Pilot-Study of MAXI J0637-430*, 2021, MNRAS, 501, 3406

A. Bahramian, C. O. Heinke, J. A. Kennea, T. J. Maccarone, P. A. Evans, R. Wijnands, N. Degenaar, J. J. M. in 't Zand, **A. W. Shaw**, L. E. Rivera Sandoval, S. McClure, A. J. Tetarenko, J. Strader, E. Kuulkers, G. R. Sivakoff: *The Swift Bulge Survey: Motivation, strategy, and first X-ray results*, 2021, MNRAS, 501, 2790

D. J. K. Buisson, A. C. Fabian, P. Gandhi, E. Kara, M. L. Parker, **A. W. Shaw**, J. A. Tomsick, D. J. Walton, J. Wang: *MAXI J1820+070 with NuSTAR II. Flaring during the hard to soft state transition with a long soft lag,* 2020, MNRAS, 500, 3976

J. van den Eijnden, N. Degenaar, T. D. Russell, D. J. K. Buisson, D. Altamirano, M. Armas Padilla, A. Bahramian, N. Castro Segura, F. A. Fogantini, C. O Heinke, T. Maccarone , D. Maitra , J. C. A. Miller-Jones , T. Muñoz-Darias, M. Özbey Arabaci, D. M. Russell, **A. W. Shaw**, G. Sivakoff, A. J. Tetarenko, F. Vincentelli, R. Wijnands: *The variable radio counterpart of Swift J1858.6-0814*, 2020, MNRAS, 496, 4127

C. O. Heinke, M. G. Ivanov, L. Chomiuk, H. N. Cohn, S. Crothers, T. de Boer, N. Ivanova, E. W. Koch, A. K. H. Kong, N. Leigh, P. M. Lugger, L. Nelson, C. J. Parr, E. W. Rosolowsky, A. J. Ruiter, C. L. Sarazin, **A. W. Shaw**, G. R. Sivakoff, M. van den Berg: *The X-ray Emissivity of Low-Density Stellar Populations*, 2020, MNRAS, 492, 5684

D. J. K. Buisson, A. C. Fabian, D. Barret, F. Fürst, P. Gandhi, J. A. García, E. Kara, K. K. Madsen, J. M. Miller, M. L. Parker, **A. W. Shaw**, J. A. Tomsick, D. J. Walton: *MAXI J1820+070 with NuSTAR I. An increase in variability frequency but a stable reflection spectrum: coronal properties and implications for the inner disc in black hole binaries*, 2019, MNRAS, 490, 1350

Y. Zhao, C. O. Heinke, S. S. Tsygankov, **A. W. Shaw**: *Soft excess in the quiescent Be/X-ray pulsar RX J0812.4-3114*, 2019, MNRAS, 488, 4427

P. R. Hebbar, C. O. Heinke, G. R. Sivakoff, **A. W. Shaw**: *X-ray spectroscopy of the candidate AGN in Henize 2-10 and NGC 4178: Likely supernova remnants*, 2019, MNRAS, 485, 5604

G.-B Zhang, F. Bernardini, D. M. Russell, J. D. Gelfand, J.-P. Lasota, A. Al Qasim, A. AlMannaei, K. I. I. Koljonen, **A. W. Shaw**, F. Lewis, J. A. Tomsick, R. M. Plotkin, J. C. A. Miller-Jones, D. Maitra, J. Homan, P. A. Charles, P. Kobel, D. Perez, R. Doran: *Bright mini-outburst ends the 12-year long activity of the black hole candidate Swift J1753.5-0127*, 2019, ApJ, 876, 5

D. Mata Sánchez, T. Muñoz-Darias, J. Casares, P. A. Charles, M. Armas Padilla, J. A. Fernández-Ontiveros, F. Jiménez-Ibarra, P. G. Jonker, M. Linares, M. A. P. Torres, **A. W. Shaw,** P. Rodríguez-Gil, T. Van Grunsven, P. Blay, M. D. Caballero-García, A Castro-Tirado, P. Chinchilla, C. Farina, A. Ferragamo, F. Lopez-Martinez, J. A Rubiño-Martin, L. Suárez-Andrés: *The 1989 and 2015 outbursts of V404 Cygni: a global study of wind-related optical features*, 2018, MNRAS, 481, 2646

A. J. Tetarenko, A. Bahramian, R. Wijnands, C. O. Heinke, T. J. Maccarone, J. C. A. Miller-Jones, J. Strader, L. Chomiuk, N. Degenaar, G. R. Sivakoff, D. Altamirano, A. T. Deller, J. A. Kennea, K. L. Li, R. M. Plotkin, T. D. Russell, **A. W. Shaw**: *A radio frequency study of the accreting millisecond X-ray pulsar, IGR J16597- 3704, in the globular cluster NGC 6256*, 2018, ApJ, 854, 125

P. Gandhi, M. Bachetti, V. S. Dhillon, R. P. Fender, L. K. Hardy, F. A. Harrison, S. P. Littlefair, J. Malzac, S. Markoff, T. R. Marsh, K. Mooley, D. Stern, J. A. Tomsick, D. J. Walton, P. Casella, F. Vincentelli, D. Altamirano, J. Casares, C. Ceccobello, P. A. Charles, C. Ferrigno, R. I. Hynes, C. Knigge, E. Kuulkers, M. Pahari, F. Rahoui, D. M. Russell, **A. W. Shaw**: *An elevation of 0.1 light-seconds for the optical jet base in an accreting Galactic black hole system*, 2017, Nature Astronomy, 1, 859

R. M. Plotkin, J. Bright, J. C. A. Miller-Jones, **A. W. Shaw**, J. A. Tomsick, T. D. Russell, G. -B. Zhang, D. M. Russell, R. P. Fender, J. Homan, P. Atri, F. Bernardini, J. D. Gelfand, F. Lewis, T. M. Cantwell, S. H. Carey, K. J. B. Grainge, J. Hickish, Y. C. Perrott, N. Razavi-Ghods, A. M. M. Scaife, P. F. Scott, D. J. Titterington: *Up and down the black hole radio/X-ray correlation: The 2017 mini-outbursts from Swift J1753.5–0127*, 2017, ApJ, 848, 92

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