

James Jackman

School of Earth and Space Exploration, Arizona State University, Tempe, AZ, 85287, USA

Email: jamesjackman@asu.edu, British Citizen, 26th August 1994

Current Position **Arizona State University** – Postdoctoral Research Scholar. Working with Professor Evgenya Shkolnik on the optical and UV characteristics of stellar flares.
2020- Present

Education

2016-2020 **The University of Warwick** - PhD in Astrophysics supervised by Professor Peter Wheatley. PhD Title: “Detection of Stellar Flares and a Transiting Brown Dwarf with the Next Generation Transit Survey (NGTS)”

Research Interests

- Stellar flaring activity, in particular of ultracool dwarfs and as a function of age using open cluster data
- Transiting brown dwarfs discovered in wide-field exoplanet surveys

Publications

First Author

- Combining GALEX and TESS observations to constrain the UV emission of white-light flares, Jackman et al., in prep.
- Stellar flares in the Next Generation Transit Survey, Jackman, et al. submitted to MNRAS
- Stellar flares from blended and neighbouring stars in Kepler short cadence observations, Jackman et al., submitted to MNRAS
- NGTS Clusters Survey II - White-light flares from the youngest stars in Orion, Jackman et al, 2020, MNRAS, 497, 809
- NGTS-7Ab: An ultra-short period brown dwarf transiting a tidally locked and active M star, Jackman et al 2019, MNRAS, 489, 5146
- Detection of a giant white-light flare on an L2.5 dwarf with the Next Generation Transit Survey, Jackman et al, 2019, MNRAS Letters, 485, L136
- Detection of a giant flare displaying quasi-periodic pulsations from a pre-main sequence M star with NGTS, Jackman et al, 2019, MNRAS, 482, 5553
- Ground-based detection of G star superflares with NGTS, Jackman et al, 2018, MNRAS, 477, 4655

Departmental Talks

- CfA Exoplanet Lunch (**Invited**), Harvard CfA, USA, 10th December 2019
- CfA Stars & Planets Seminar (**Invited**), Harvard CfA, USA, 9th December 2019
- ESO Offices (**Invited**), Santiago, Chile, 11th October 2019
- Department Seminar, Arizona State University, Phoenix, USA 26th July 2019
- Department Seminar, University of Nevada, Las Vegas, USA 23rd July 2019
- Department Seminar, Boston University, USA 12th July 2019
- Exoplanet Lunch Talk, MIT, USA, 11th July 2019
- Group Seminar, Harvard CfA, USA, 10th July 2019
- Extrasolar Planets Seminar, NASA Goddard, USA, 27th June 2019
- Astronomy Group Seminar, University of Delaware, USA, 25th June 2019

Conference Talks

- "Constraining The Effects Of Stellar Flares with NGTS" (8th Astrobiology Society of Britain Conference, Newcastle, April 2019)
- "Constraining The Effects Of Stellar Flares on Exoplanet Habitability with NGTS" (ERES IV, Penn State, USA, June 2018)
- "High Cadence Detections of Stellar Flares with NGTS" (EWASS, Liverpool, April 2018)

Conference Posters

- "Stellar Superflares In NGTS" (51st ESLAB Symposium "Extreme Habitable Worlds", ESA/ESTEC, Noordwijk, Netherlands, December 2017)
- "The Largest Flares From the Smallest Stars" (Sagan Summer Workshop, Caltech, Pasadena, USA, July 2019)
- "The Largest Flares From the Coolest Stars" (RAS Specialist Meeting, London, April 2019)
- "Stellar Flares and Exoplanet Habitability with NGTS" (UK Exoplanet Community Meeting, Oxford, March 2018)

Press Releases

- [Explosion on Jupiter-sized star ten times more powerful than ever seen on our Sun](#) - on our detection of the first white-light flare seen from an L2.5 dwarf, a star around the size of Jupiter.
- [A baby star's fiery tantrum](#) - on our detection of a giant stellar flare exhibiting QPPs from a pre-main sequence star.

Experience

- Expert in the detection and characterisation of stellar flares using high cadence photometry from wide-field surveys, having led this work for the NGTS consortium and transferred this work to GALEX UV observations. Highly experienced in using survey results to determine how the parameters of stellar flares vary across different spectral types, along with investigating single flares of interest.
- Skilled in the use of spectroscopic data to study flares and measure their temperatures and emission features.
- Led the discovery of NGTS-7Ab, a 16.2 hour period brown dwarf transiting a tidally locked and active M star. Developed custom code packages for the analysis of this blended triple system. These include multi-star SED fitting, transit fitting across different instruments with differing dilution factors, custom fitting of HARPS CCFs.
- Developing code packages for data reduction pipelines, in particular a cross-matching pipeline to obtain broadband photometry for all sources from catalogues such as Gaia, 2MASS and APASS.
- Attending conferences and internal meetings and presenting results to both expert and general audiences.

Skills

Computing/Programming

- Experienced Python user, having developed many pipelines and analysis packages for use in my work
- Intermediate knowledge of the STILTS programming language
- Day to day knowledge of the Linux operating system
- Skilled in Microsoft Office

Teaching

Second Year Lab Demonstration (2016-2019)

- Sole demonstrator for two experiments, teaching up to 8 pairs of students at any one time
- Responsible for explaining the context for each experiment and answering student queries
- Responsible for maintaining equipment for each experiment

Other

- 23 nights observing experience by the end of 2020
- Full current clean driving license. Valid for both full car and motorcycle use.
- Basic knowledge of German (B at GCSE).