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EMPLOYMENT & EDUCATION

Research Assistant	**School of Earth and Space Exploration** Arizona State University	2013 – present
PhD	**Astrophysics** University of Exeter **Thesis** – *Far-infrared & Sub-millimeter Studies of Circumstellar Disks* Supervisor: Dr. Jennifer Patience	2009 – present
MPhys	**Physics w/ Astrophysics** - 1st Class degree University of Exeter **Thesis** – *Companions and the Unexpected X-Ray Detection of A-type Stars* Supervisor: Dr. Jennifer Patience	2005 – 2009

OBSERVATORY EXPERIENCE

ESO Associate

- **ALMA Observatory (Early science operations stage)**
  - Observations, data analysis and technical assessment conducted within the Commissioning and Science Verification Group (Jul 2012 – Sep 2012).

Visiting Observer (with no Telescope Operator)

- **The Caltech Submillimeter Observatory (CSO) (10.6m)**
  - SHARC-II – 350 μm observations (2009, 2011, February, June & Oct 2012).
- **72″ Perkins Telescope, Lowell Observatory**
  - Mimir – near-IR imaging (2012).

Visiting Observer

- **MMT**
  - ARIES – high resolution, near-IR imaging with AO (2012, 2013).

Support Operator

- **The Combined Array for Research in Millimeter-wave Astronomy (CARMA) (23 Heterogeneous array)**
  - Array of 6m, 10m and 3.5m antennas with receivers operating at 1mm, 3mm and 1cm (2010).

TECHNICAL EXPERIENCE

Selected Accepted Proposals

2012

- **ALMA Cycle 1** – *Detection and characterization of protoplanetary disks across the stellar/substellar transition*. van der Plas, G., Menard, F., Patience, J., Harvey, P., **Bulger, J.**, Casassus, S., Pinte, C.
- **e-Merlin** – *A multi-wavelength study of a Class I protobinary in Taurus from IR - cm wavelengths*. **Bulger, J.**, Patience, J., Fuller, G.
- **CSO SHARC-II** – *A complete census of disks around Taurus low mass stars and brown dwarfs*. **Bulger, J.,** Patience, J., Monin, J.-L., Pinte, C., Bouy, H., Dowell, C. D.

2011

- **The *Herschel* Space Observatory** – *A complete survey of disks across the stellar/substellar boundary in Taurus*. Patience, J., Monin, J.-L., Pinte, C., Bouy, H., **Bulger, J.**, King, R., Allan, A.

- **The VLT X-shooter** – *UV-near-IR hydrogen recombination lines in pre-main sequence star-disk systems: Accretion diagnostics or the smoking gun for a disk wind?* **Bulger, J.**, Ercolano, B., Owen, J., Patience, J.
- **CARMA** – *Early protostellar evolution in the Serpens South filament.* **Bulger, J.**, Bressert, E., Patience, J., Arce, H.

2010

- **JCMT SCUBA2** – *Resolving the debris disk around HR 8799.* Patience, J., Wyatt, M., **Bulger, J.**, King, R., Churcher, L.
- **JCMT HARP** – *A complete study of T-Tauri stars in Aquila.* **Bulger, J.**, Patience, J., Mottram, J.
- **CARMA** – *Resolving the debris disk around HR 8799*. Patience, J., **Bulger, J.**, Carpenter, J.

PROFESSIONAL SKILLS

Summer Schools & Workshops

- ALMA Band2 and ALMA Data Reduction, Manchester, UK (2011 Dec 14-16)
- Twelfth Synthesis Imaging Workshop, Socorro, NM, USA (2010 Jun 8-15)
- Sub-millimeter Observing Techniques in the *Herschel* Era, Saclay, France (2010 May 19-21)
- CARMA Summer School, Owens Valley, CA, USA (2009 Jul 12-18)

Computational Skills

- Data Analysis –
    - AIPS, CASA, CRUSH, HIPE, IRAF, IDL, Microsoft Excel, MIRIAD, MCFOST, STARLINK
- Scripting –
    - Bash, C-shell, Python

Teaching Experience

- Demonstrator, Astrophysics Computer Lab (2009 – 2012)
    - Students are introduced to the IRAF software package. Lab sessions are designed to develop a basic understanding of astrophysical conventions and analysis of data.

RESEARCH AREAS

PhD student researcher

- **The TBOSS (Taurus Boundary of Stellar/Substellar) Survey of Disk Properties.** A *Herschel* and CSO survey providing a far-IR and sub-millimeter observations of disks around low mass stars and brown dwarfs in Taurus. Acquired skills using the data processing package HIPE, and the radiative transfer code MCFOST.
- **Class I binary stars in Taurus.** A multi-wavelength study with observations from CARMA, OVRO, VLA and e-Merlin. Wide range use of data reduction with multiple software packages has been required.
- **Submillimeter and millimeter imaging of the HR 8799 debris disk.** Proposals submitted and accepted at several observatories at Mauna Kea and the USA, employing single dish and interferometric observing techniques.
- **The OVRO Ophiuchus pre-stellar (OOPS) survey.** A 3mm continuum study investigating the disk properties of young stellar objects. Developed international collaborations and a follow up project was awarded time on X-shooter with the VLT.

Masters Student researcher

- **Adaptive Optics imaging survey of low mass companions to A-type stars.** Incorporated the reduction and analysis of a large data set. The results of which have been published in MNRAS.

PUBLICATIONS

- **Bulger, J.**, Patience, J., Ward-Duong, K., Pinte, C., Bouy, H., et al., 2013, *The Taurus boundary of stellar/substellar (T-BOSS) objects I: far-IR disk emission measured with Herschel*, submitted to A&A.

- **Bulger, J.**, Hufford, T., Schneider, A., Patience, J., Song, I., et al., 2013- *Submillimeter observations of IRAS and WISE debris disk candidates,* A&A, 556, 119.
- Patience, J., **Bulger, J.**, Bouy, H., Monin, J.-L., Pinte, C., et al., 2013, *The TBOSS (Taurus Boundary of Stellar/Substellar) Survey of Disk Properties*, Conference proceedings IAU Symposium #221, 324.
- Patience, J., **Bulger, J.**, King, R., Ayliffe, B., Bate, M., *et al.,* 2011- *Spatially resolved submm imaging of the HR 8799 debris disk*, A&A, 531, L17.
- De Rosa, R., **Bulger, J.**, Patience, J., Leland, B., Macintosh, B., *et al*., 2011 – *The VAST Survey. I – Companions and the unexplained X-ray detection of B6-A7 stars*, MNRAS*, 734, 6872*.

CONFERENCE PRESENTATIONS

- NASA Goddard – Signposts of Planets (2011 Oct). **Presented poster** entitled *"Resolving disks and binaries in A-star debris disks"*.
- ESO Garching – Formation and Early Evolution of Very Low Mass Stars and Brown Dwarfs (2011 Oct). **Presented poster** entitled "The TBOSS (Taurus Boundary of Stellar/Substellar) Survey of Disk Properties".
- CONSTELLATION – The Origin of Stellar Masses (2010 Oct). **Presented poster** entitled *"The OOPS Survey: An investigation of disks and the initial conditions of planet formation"*.
- Exoclimes (2010 Sep). Aided with organisation and running of the conference.

OUTREACH EXPERIENCE

National Science and Engineering Week, University of Exeter (2010 – present)
- This national scheme occurs every March in the UK. School pupils are invited to the University of Exeter and encouraged to get involved with science and see were further education could lead them.

Physics In the Field, Institute of Physics (2007 – 2012)
- This outreach scheme is carried out every year at county festivals throughout the UK. The intent is to demystify physics by engaging members of the public to carry out experiments made only out of household objects.

AWARDS

- STFC Long Term Attachment (Internship) Funding (2012)
- Royal Astronomical Society travel grant (2011)
- International Astronomical Union travel award (2010)
- The University of Exeter School of Physics Summer Internship (2008)
- Dean's Commendation, The University of Exeter (2007)

PROFESSIONAL MEMBERSHIPS

- Fellow of the Royal Astronomical Society (RAS)
- Associate of the Institute of Physics (IOP)
- Ambassador of the Science, Technology, Engineering and Mathematics Network (STEM)

OTHER DETAILS

- Certified High Altitude Medical Examination
- Clean, valid UK drivers license with 4WD experience on Mauna Kea.

Languages
- English – native speaker
- German – GSCE, basic spoken communication