

Simon J. Murphy

Curriculum Vitae

Current Position

2007–now **Postgraduate Student**, *Australian National University*.

- Thesis submitted 8th November, 2011
- Electronic copy available on request

Education

2007–now **Ph.D.**, *Australian National University*, Canberra, Australia.

thesis title *Revealing the Chamaeleon: Young, low-mass stars surrounding η and ϵ Chamaeleontis*

supervisors Michael Bessell (ANU), Warrick Lawson (ADFA)

2006 **B.Sc. (1st Class Honours)**, *Australian National University*, Canberra, Australia.

thesis title *A large-scale survey for RR Lyrae stars in the Galactic halo*

supervisor Dr. Stefan Keller (ANU)

2003–2005 **B.Sc. (Astronomy)**, *University of Canterbury*, Christchurch, New Zealand.

Research Interests

- Star formation and early stellar evolution
 - Low-mass star formation
 - Post T Tauri stars, age diagnostics
 - Accretion, circumstellar disk properties
- Star clusters, moving groups and associations
 - Membership, new techniques
 - Kinematics, dynamical evolution of clusters
- Survey science, wide-field photometric/astrometric surveys
- e-Science, the Virtual Observatory, databases

Research Experience

2007–2011 **Postgraduate Student**, *Australian National University*.

Worked with Michael Bessell (ANU) and Warrick Lawson (ADFA) on characterising the various populations of low-mass, intermediate-age (5–10 Myr) pre-main sequence stars around Chamaeleon. Collaborated on the discovery and characterisation of AP Col, the closest currently known pre-main sequence star to the Sun ($d = 8$ pc, age ~ 40 Myr).

- 8–12/2009 **Research Assistant**, *Australian National University*.
Designed, developed and tested a grid-fitting code for estimation of stellar parameters from low-resolution spectra and synthetic models (Supervisor: Michael Bessell).
- 1–3/2007 **Gemini Summer Scholar**, *Gemini South Observatory*, La Serena, Chile.
Experience constructing wide-field, multi-colour mosaics for an ultra-deep Blind Cluster Sunyaev-Zel'dovich Effect survey (Supervisor: Percy Gomez).
- 2007 **Honours Student**, *Australian National University*.
Used archival two-colour, multi-epoch photometry to survey the Galactic halo for RR Lyrae variables as probes of halo density and substructure (Supervisor: Stefan Keller).
- 2004/05 **Undergraduate Summer Research Scholar**, *Australian National University*.
Tested photometric methods for selecting H α -emitting stars from the SuperCosmos H α Survey for 6dF follow-up spectroscopy (Supervisor: Stefan Keller).

Awards

- 2011 Vice Chancellor's Award for Community Outreach, ANU (team) **(AUD\$4,000)**
- 2011 **Winner**, Student Oral Presentation (runner-up 2009)
Annual Scientific Meeting of the Astronomical Society of Australia (Adelaide)
- 2011 Alex Rodgers Travelling Scholarship, ANU **(AUD\$3,000)**
- 2010 **Runner-up**, Poster Presentation
16th Cambridge Workshop on Cool Stars, Stellar Systems and the Sun (Seattle)
- 2007–2011 Joan Duffield Research Scholarship, ANU **(AUD\$5,000 pa)**
- 2007–2011 College of Science Distinguished Research Scholarship, ANU **(AUD\$5,000 pa)**
- 2007–2011 Australian Postgraduate Award **(AUD\$23,000 pa)**
- 2007 Vice Chancellor's Special Award for Outreach, ANU (team) **(AUD\$4,000)**
- 2006 Bart J. Bok Honours Year Scholarship, ANU **(AUD\$5,000)**

Recent Conferences and Workshops

- 5/2011 *GREAT Summer School on Astrostatistics and Data Mining*, La Palma
- 5/2011 *Stellar Clusters & Associations: A RIA Workshop on Gaia*, Granada
Talk: "Revealing the Chamaeleon: The ϵ and η Cha Associations"
- 2/2011 **Guest lecturer**, *Australian Astroinformatics School*, University of Western Australia
- 12/2010 *International Virtual Observatory Alliance Interoperability Meeting*, Nara, Japan
- 8/2010 *16th Cambridge Workshop on Cool Stars, Stellar Systems and the Sun*, Seattle
Poster: "Revealing the Chamaeleon: A low-mass halo around η Cha"
- 6/2010 *Astroinformatics 2010*, Caltech
- 5/2009 *Overcoming Great Barriers in Galactic Archaeology*, Palm Cove, Australia
- 4/2009 **Guest lecturer**, *Australian Astroinformatics School*, University of Sydney
- 5/2008 *8th Pacific Rim Conference on Stellar Astrophysics*, Phuket
Talk: "Towards a complete census of young stars near the Sun with SkyMapper"

Computing

languages **Python (expert)**, Perl, C (beginner) databases SQL92, MySQL, PostgreSQL
packages IRAF, PyRAF, Figaro, MATLAB web HTML, XML, RESTful webservice
VO TOPCAT, Aladin, CAS Jobs

Observing Experience

- ANU 2.3-m/*Wide Field Spectrograph*: Medium-resolution optical spectroscopy
- ANU 2.3-m/*Double Beam Spectrograph*: Low-resolution optical spectroscopy
- ANU 2.3-m/*Echelle*: High-resolution optical spectroscopy
- ANU 40-in/*Wide Field Imager*: Optical imaging

Community Engagement

2007–now Member of the Mount Stromlo Student Outreach Group
Presentations and observing nights with school children and community groups, university events etc. 2–3 times/month. Winner of ANU Outreach Awards 2007, 2011.

11/2010 Mentor to a High School work experience student

media Various radio interviews, newspaper coverage

Press release: ‘*A new(ish) star is born*’, <http://news.anu.edu.au/?p=11191>

Press release: ‘*Milky Way seen to be Galactic cannibal*’, <http://news.anu.edu.au/?p=308>

Professional Service

2006–now Member, Astronomical Society of Australia

2010 Member, ANU 2.3-m Telescope Time Allocation Committee

Miscellaneous

2009–now Member, RSAA Data Archive Advisory Committee

2004–now Member, Golden Key International Honour Society

2010 Member, RSAA Computing Committee

languages English (native), Japanese (intermediate, written/conversation)

References

Professor Michael Bessell

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Professor Warrick Lawson

School of Physical, Environmental and Mathematical Sciences

University of New South Wales/Australian Defence Force Academy

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Professor Brian Schmidt

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List of Publications

Summary

I currently have **five** published articles, including **two** first-author and **two** second-author publications. A further three articles have been submitted or are currently in press, including two as first author.

N.B. ADS entries for each reference can be found by following the link .

Refereed Publications (most recent first)

5. *The Solar Neighborhood. XXVI. AP Col: The Closest (8.4 pc) Pre-main-sequence Star*, 
Riedel, A. R., **Murphy, S. J.**, Henry, T. J., Melis, C., Jao, W.-C., & Subasavage, J. P., 2011, *AJ*, 142, 104.
4. *Episodic disc accretion in the halo of the 'old' pre-main-sequence cluster η Chamaeleontis*, 
Murphy, S. J., Lawson, W. A., Bessell, M. S., & Bayliss, D. D. R., 2011, *MNRAS*, 411, L51.
3. *First detection of a low-mass stellar halo around the young open cluster η Chamaeleontis*, 
Murphy, S. J., Lawson, W. A., & Bessell, M. S., 2010, *MNRAS*, 406, L50.
2. *Extending the Virgo Stellar Stream with SEKBO Survey RR Lyrae Stars*, 
Prior, S. L., Da Costa, G. S., Keller, S. C., & **Murphy, S. J.**, 2009, *ApJ*, 691, 306.
1. *Revealing Substructure in the Galactic Halo: The SEKBO RR Lyrae Survey*, 
Keller, S. C., **Murphy, S.**, Prior, S., DaCosta, G., & Schmidt, B., 2008, *ApJ*, 678, 851.

Publications In Press

1. *Spectrophotometric Libraries, Revised Photonic Passbands and Zeropoints for UBVRI, Hipparcos and Tycho Photometry*
Bessell, M. S. & **Murphy, S. J.**, 2011, *Accepted for publication in PASP.*

Submitted Publications

2. *An improved membership of the ϵ Chamaeleontis Association*
Murphy, S. J., Bessell, M. S., & Lawson, W. A., 2011, *Submitted to MNRAS.*
1. *RX J0942–7727AB: a wide, young binary in Chamaeleon*
Murphy, S. J., Bessell, M. S., & Lawson, W. A., 2011, *Submitted to MNRAS.*