Astro Report to ATUC – Nov 2015

Simon Johnston

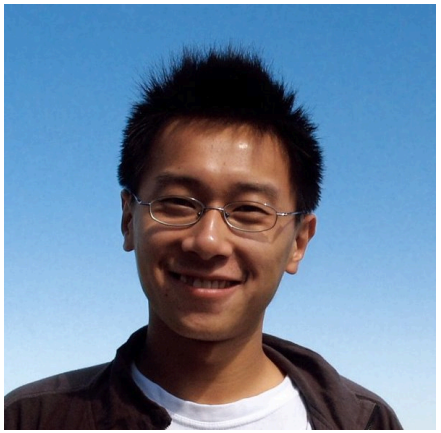
Head of Astrophysics
CASS

Staff Updates since June 2015

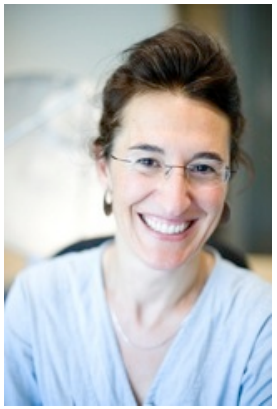
Departures: Antonia Rowlinson (to Amsterdam), Keith Bannister (to Technologies)

Arrivals: Karen Lee-Waddell, Juan Martin, Shi Dai, Li Shao (all OCE postdocs)

Bolton Fellowship for 2016 in progress



Staff Updates since June 2015



6 Joint Positions

Jo, Helga, Ryan + Maria Rioja (UWA/CASS), Xinping Deng (CASS/MPIfR), Charlotte Sobey (Curtin/CASS)

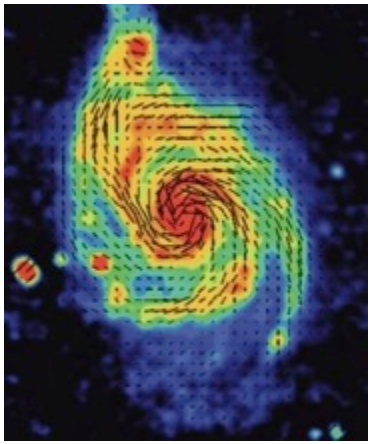
Co-supervised students:

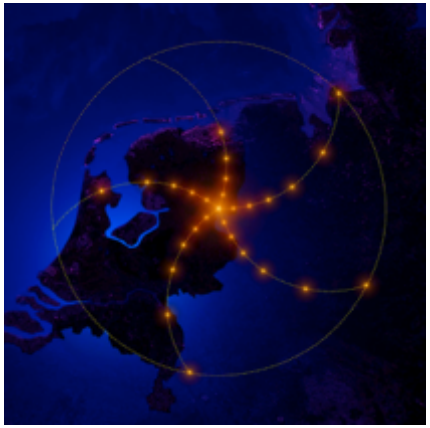
Emily Petroff, Paul Brook, Chris Jordan, Xingjiang Zhu (completed), Ross Turner, Jesse Swan (starters)

Welcome to this year's Vacation Students!

Science Leader Appointment

George Heald (ASTRON) will start in Feb 2016. He will be based out of the ARRC offices in Perth. His position comes with postdocs and students (currently advertised).





L’Oreal Award to Shari Breen

Dr Shari Breen, astronomer, CSIRO, Sydney

We are made of star stuff. The nitrogen in our DNA, the calcium in our teeth and the iron in our blood were all made in high mass stars that burnt briefly and brightly before exploding.

Dr Shari Breen is using ‘The Dish’ at Parkes and a network of international telescopes to understand the life cycle and evolution of these stars. For her the 1,000 tonne Parkes radio telescope is an old friend that creaks and grumbles as she guides it across the sky, hunting for high mass stars.

She will use her L’Oréal-UNESCO For Women in Science Fellowship to develop her use of masers (laser-like beams of intense radio waves) to investigate these stars.

Shari is an astronomer with CSIRO Astronomy and Space Science in Sydney.

Shari was drawn to radio astronomy during her degree at the University of Tasmania. Using maths and physics to discover the secrets of the Universe appealed to her. Soon she was making her first visit to ‘The Dish’ for her

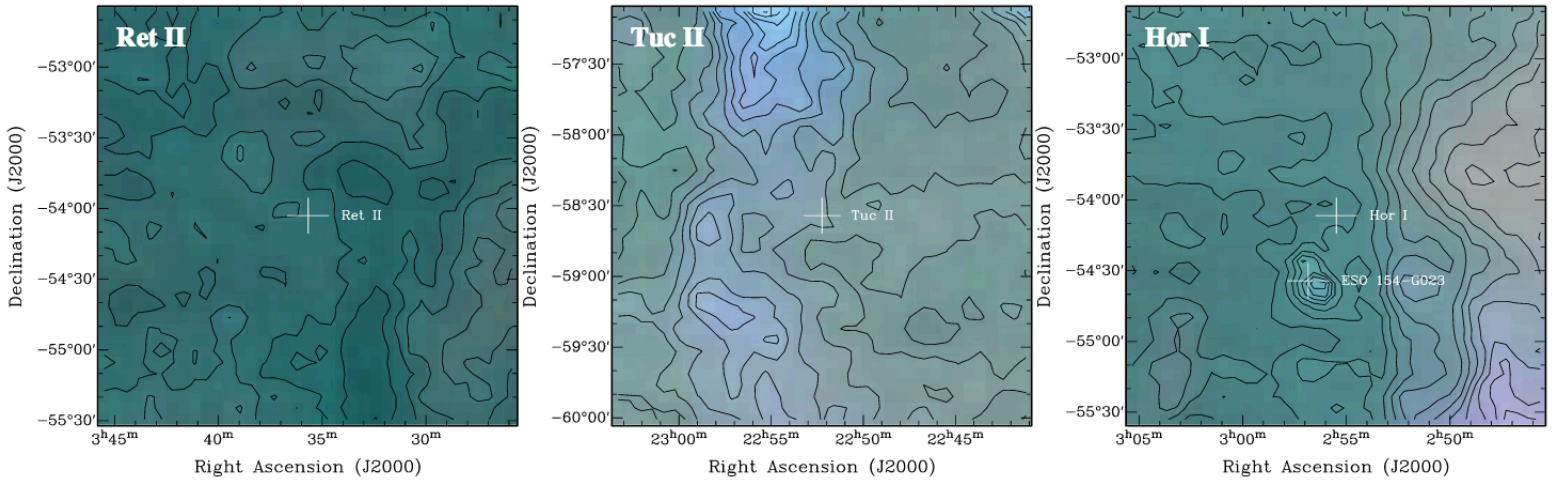
Science Highlights – Parkes

On the neutral gas content of nine new Milky Way satellite galaxy candidates

T. Westmeier,[1★] L. Staveley-Smith,[1,2] M. Calabretta,[3] R. Jurek,[3] B. S. Koribalski,[3] M. Meyer,[1,2] A. Popping[1,2] and O. I. Wong[1]

[1]*ICRAR, M468, The University of Western Australia, 35 Stirling Highway, Crawley, WA 6009, Australia*
[2]*Australian Research Council, Centre of Excellence for All-sky Astrophysics (CAASTRO)*
[3]*CSIRO, Astronomy and Space Science, PO Box 76, Epping, NSW 1710, Australia*

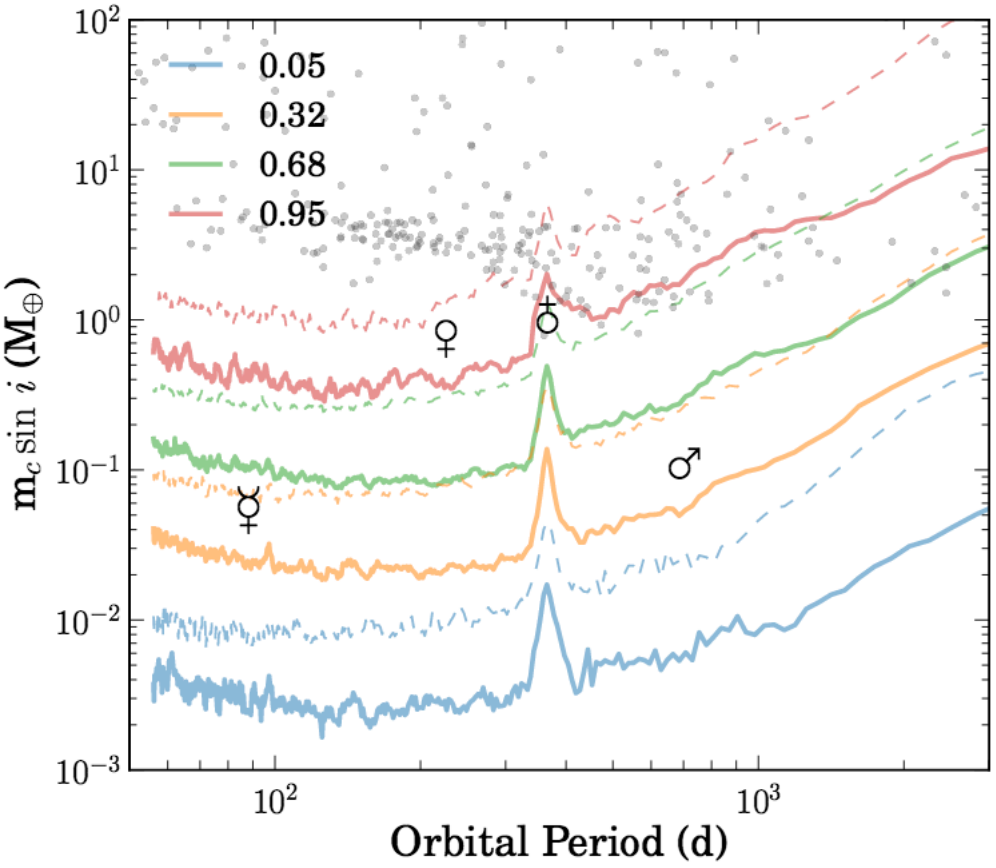
Nine satellite galaxies to the Milky Way. None have HI as seen in HIPASS & GASS. Likely stripped by the MW.



Science Highlights – Parkes

LIMITS ON PLANET FORMATION AROUND YOUNG PULSARS AND IMPLICATIONS FOR SUPERNOVA FALLBACK DISKS

M. KERR[1,2], S. JOHNSTON[1], G. HOBBS[1], AND R. M. SHANNON[1]



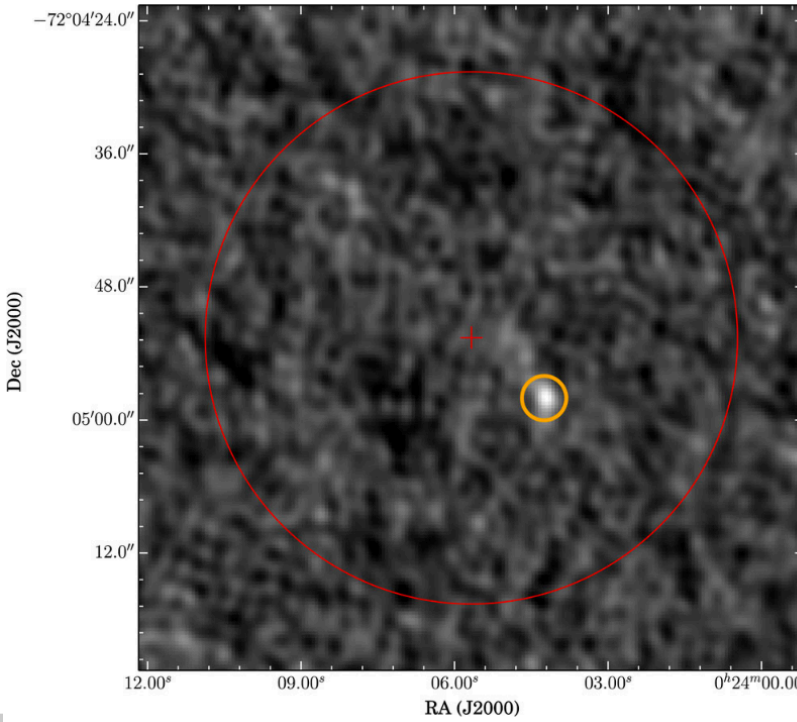
Large sample of pulsars, no sign of any planets with good sensitivity to earth masses and lower and periods between 100 days and 4 years. No fall-back disks from supernovae?

Science Highlights – ATCA

Deep radio imaging of 47 Tuc identifies the peculiar X-ray source X9 as a new black hole candidate

J. C. A. Miller-Jones,[1★] J. Strader,[2] C. O. Heinke,[3,4] T. J. Maccarone,[5] M. van den Berg,[6,7] C. Knigge,[8] L. Chomiuk,[2] E. Noyola,[9] T. D. Russell,[1] A. C. Seth[10] and G. R. Sivakoff[3]

ATCA 5.5 GHz, 4 uJy rms! Likely to be a stellar mass black hole, perhaps with an stellar companion in a 25 min orbit!



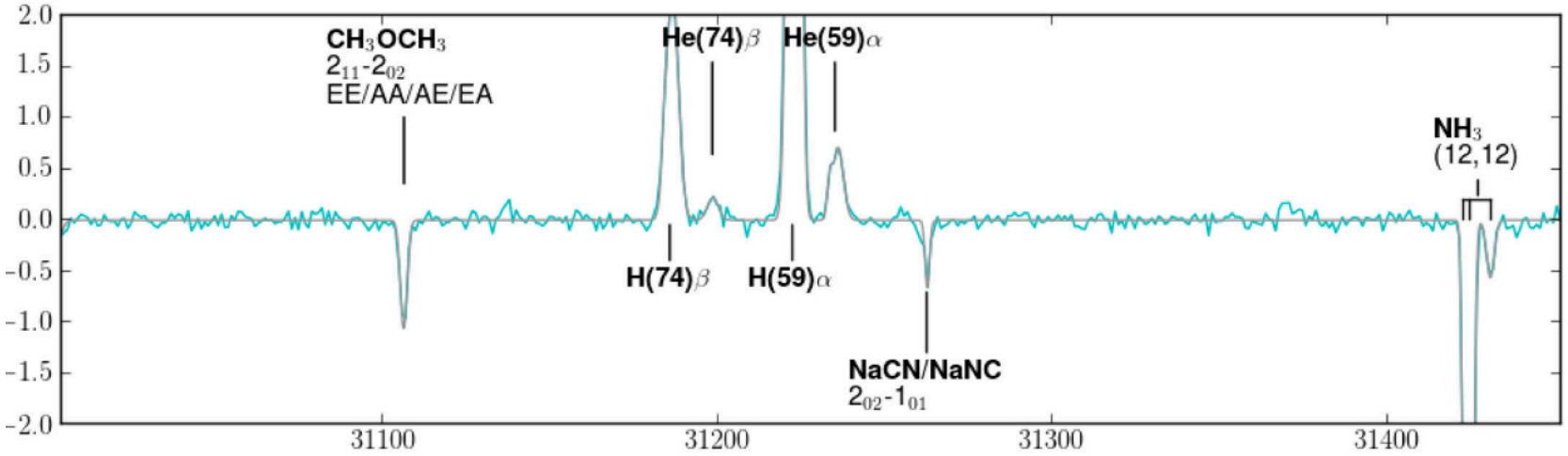
Science Highlights – ATCA

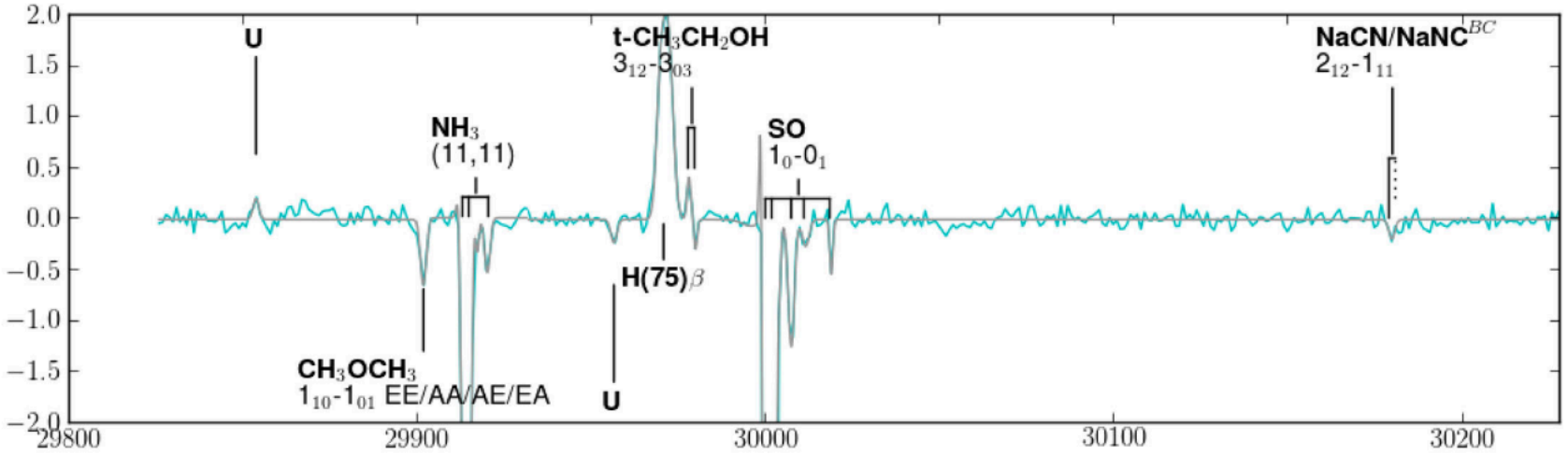
An ATCA survey of Sagittarius B2 at 7 mm: chemical complexity meets broad-band interferometry

Joanna F. Corby,[1★] Paul A. Jones,[2★] Maria R. Cunningham,[2★] Karl M. Menten,[3] Arnaud Belloche,[3] Frederic R. Schwab,[4] Andrew J. Walsh,[5] Egon Balnozan,[2] Leonardo Bronfman,[6] Nadia Lo[6] and Anthony J. Remijan[4]

Survey with ATCA from 30-50 GHz at high resolution. 500 spectral lines detected – 450 recom lines plus 53 molecular species.

Science Highlights – ATCA





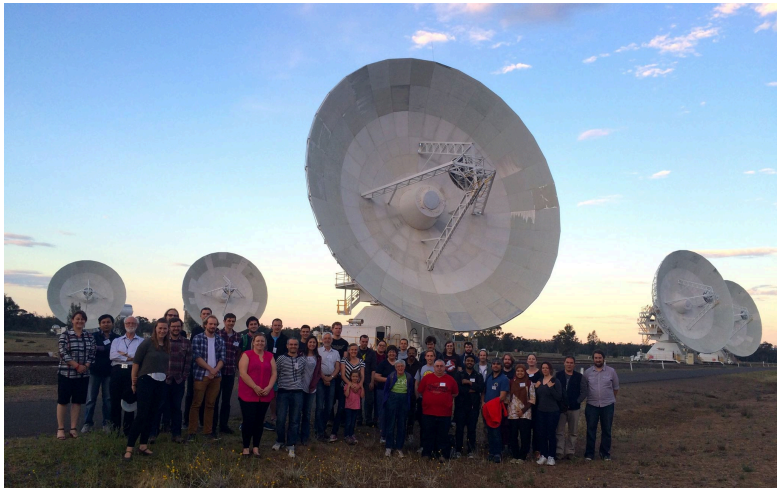
ASKAP Commissioning Team (ACES)

- Led by Dave McConnell
- Joint venture between Ops and Astro groups with secondments from the Universities

Outreach and Education

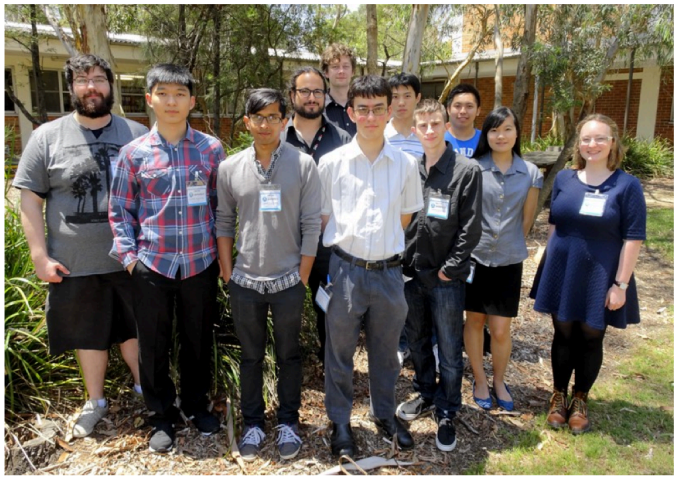
Murchison Astrofest

Radio School 2015



ATNF Daily Astronomy Picture

24th of November 2015



Pia School visit

On the web, or subscribe to @higalaxies or @csiro_atnf on twitter

Legacy Projects on ATCA

- Should be largely self-resourced (cf ASKAP SSTs)
- Collaboration and input into the science program

PAF on Parkes

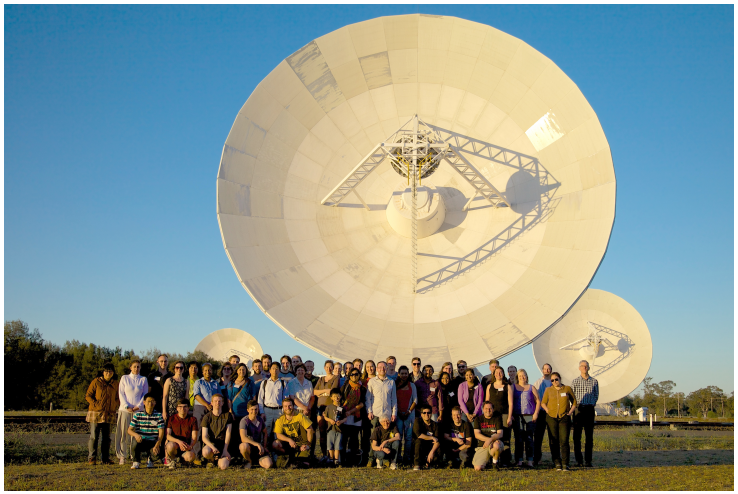
- Astro group will assist with the commissioning
- Can provide assistance for those contemplating a science project but external groups will need to provide resources
- Talk to Xinping or George

Radio and Data Reduction Schools

- Data Reduction Workshop held in June!!
  - 17 people, Peter Kamphuis organiser

- Radio School held week of Sept 28th
  - ~25 people - at Narrabri, Ian Heywood, Shari Breen et al. organisers
  - Aimed predominantly at Australian-based PhD students
  - Interferometric focus.

We plan to hold another Data Reduction Workshop in the first half of 2016. No plans for a Radio School next year.



Thank you

ASTRONOMY & SPACE SCIENCE
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