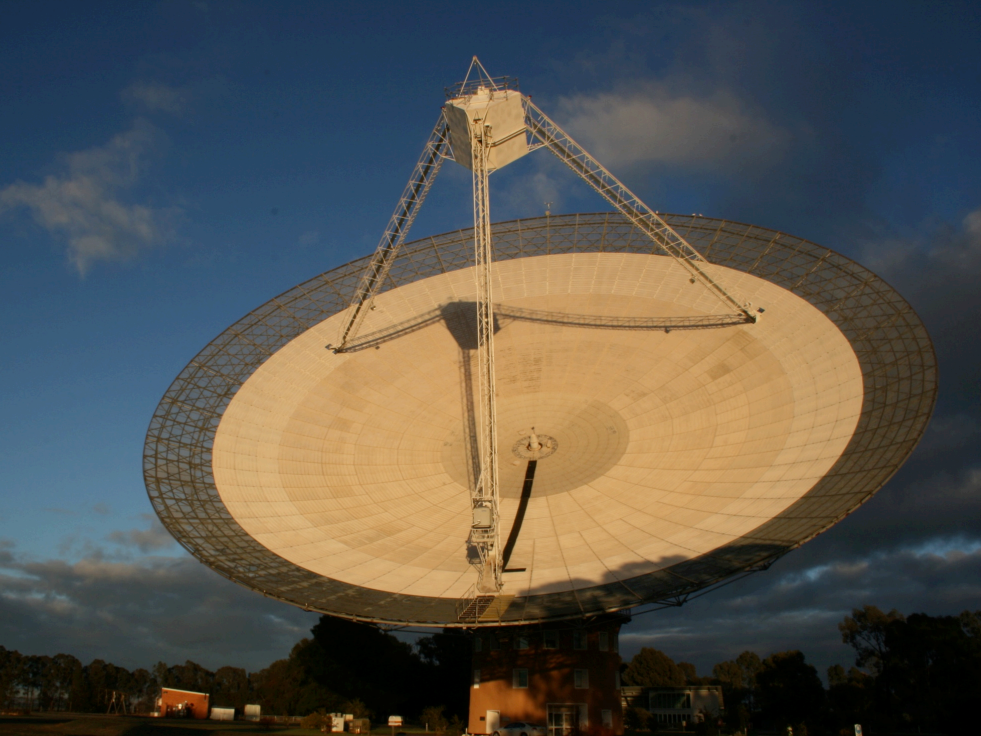




Astro Report to ATUC – June 2014

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Budget

- The National Facility is an organic whole that requires an operations, technology and astrophysics component.
- The upcoming 14/15 budget will have a deep impact on Astro
 - Likely significant decrease in numbers
 - Likely unable to advertise Bolton Fellowship + other positions
 - Staff morale and ability to recruit
- When Astro is cut, all aspects of the National Facility suffer
- ASKAP needs to be commissioned “on-time”
- We need to maintain Parkes and ATCA as world-leading radio telescopes at least in the medium term.
- Proposed cuts have had a impact on the community’s perception of our ability to deliver on ASKAP and the SKA

People Updates since December 2013

Departures: Nick Seymour (soon), Tom Franzen, Ivy Wong, Tim Shimwell

Arrivals: Jing Wang, James Allison, Martin Bell

Jo Dawson: Joint position
with Macquarie Uni



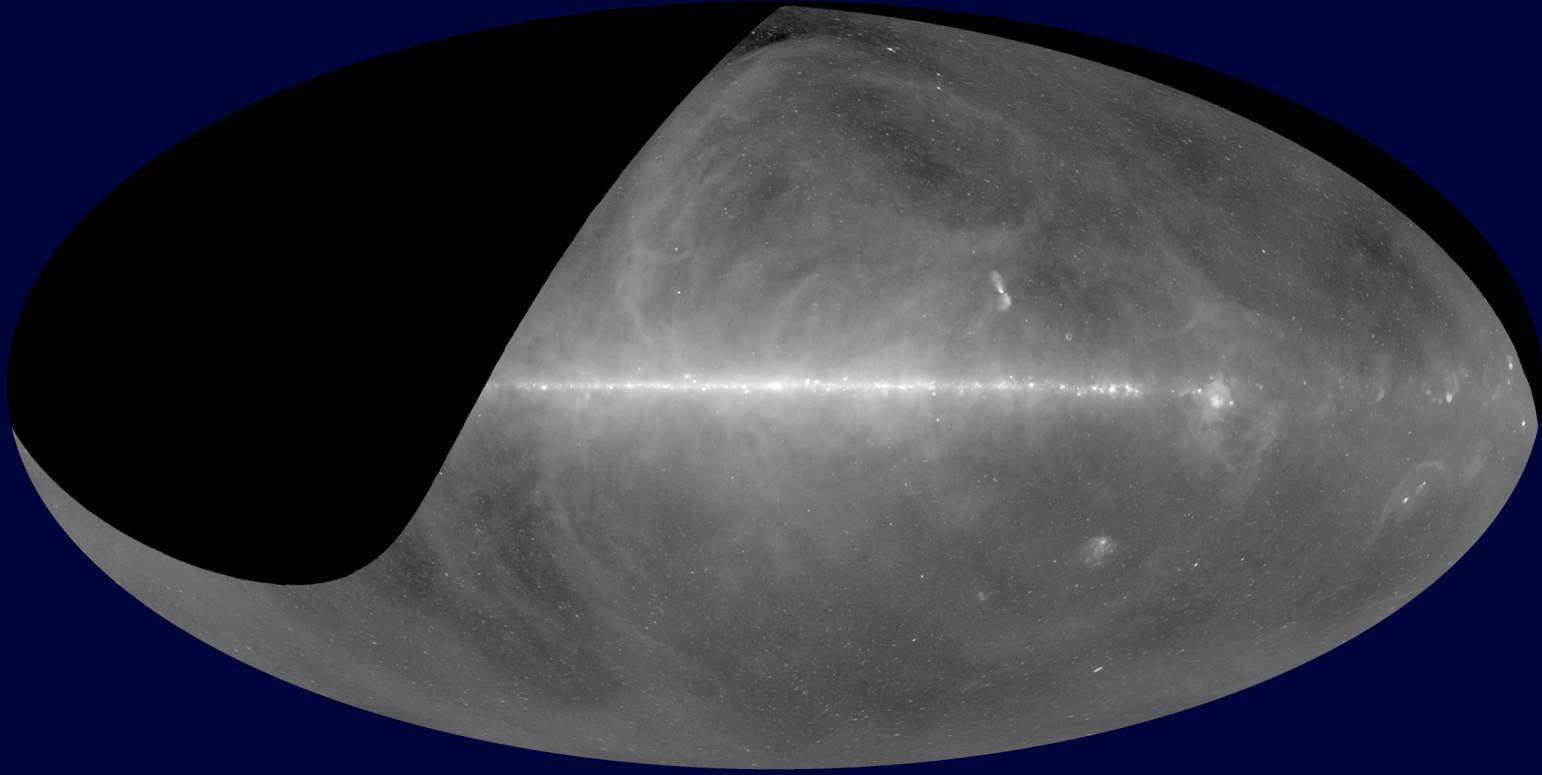
Completed co-supervised student PhDs:
Catarina Ubach, Dan Thornton, Rai Yuen,
Guillaume Drouart



Science Highlights – Part 1

A New 1.4 GHz Radio Continuum Map of the Sky South of Declination $+25^\circ$

Mark R. Calabretta^{1,6}, Lister Staveley-Smith^{2,3} and David G. Barnes^{4,5}



1.4GHz radio continuum map of the sky south of declination $+25^\circ$
Calabretta, Staveley-Smith, & Barnes (2014)

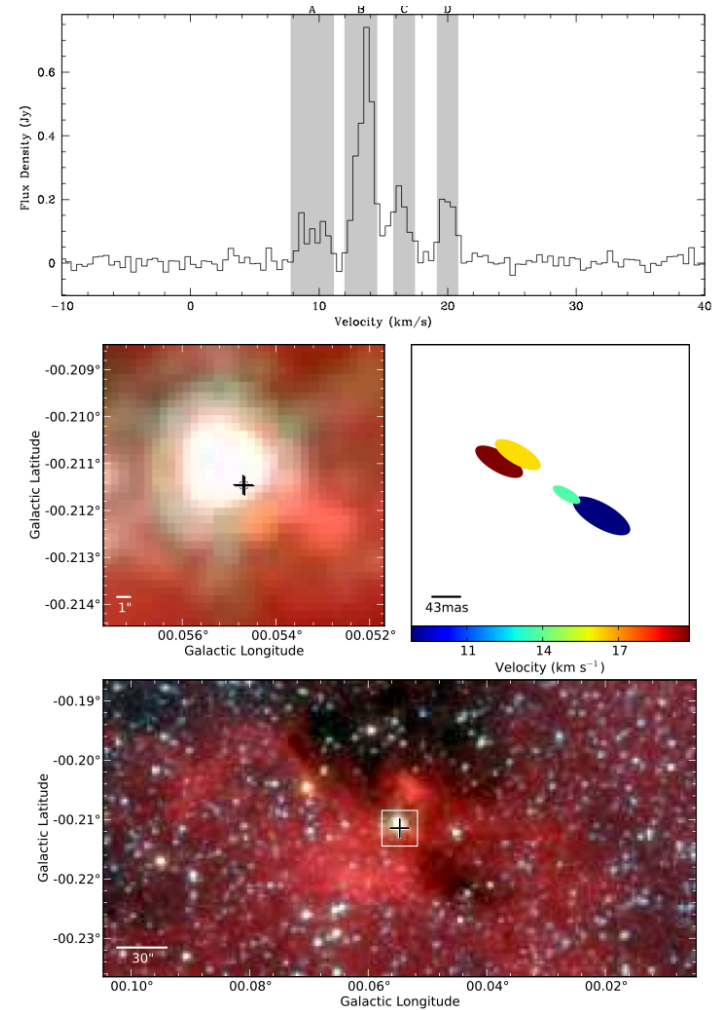
Parkes HIPASS continuum image

Science Highlights – Part 2

Accurate water maser positions from HOPS

Andrew J. Walsh^{1*}, Cormac R. Purcell², Steven N. Longmore³, Shari L. Breen⁴, James A. Green^{4,5}, Lisa Harvey-Smith⁴, Christopher H. Jordan^{4,6} and Christopher Macpherson¹

ATCA observations of water masers from the Mopra HOPS survey

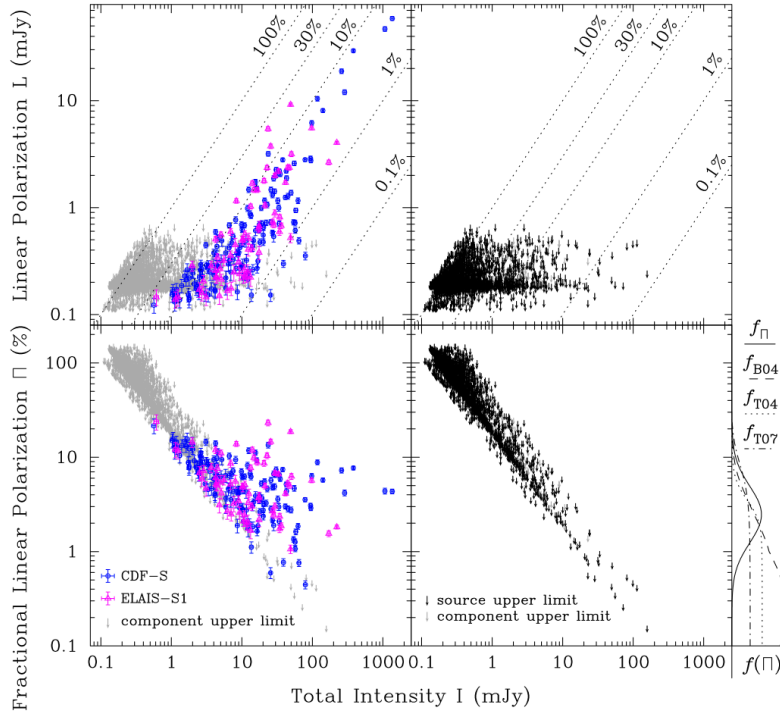


Accepted for publication in MNRAS. The full preprint (718 pages, 21MB) can be downloaded [here](#)

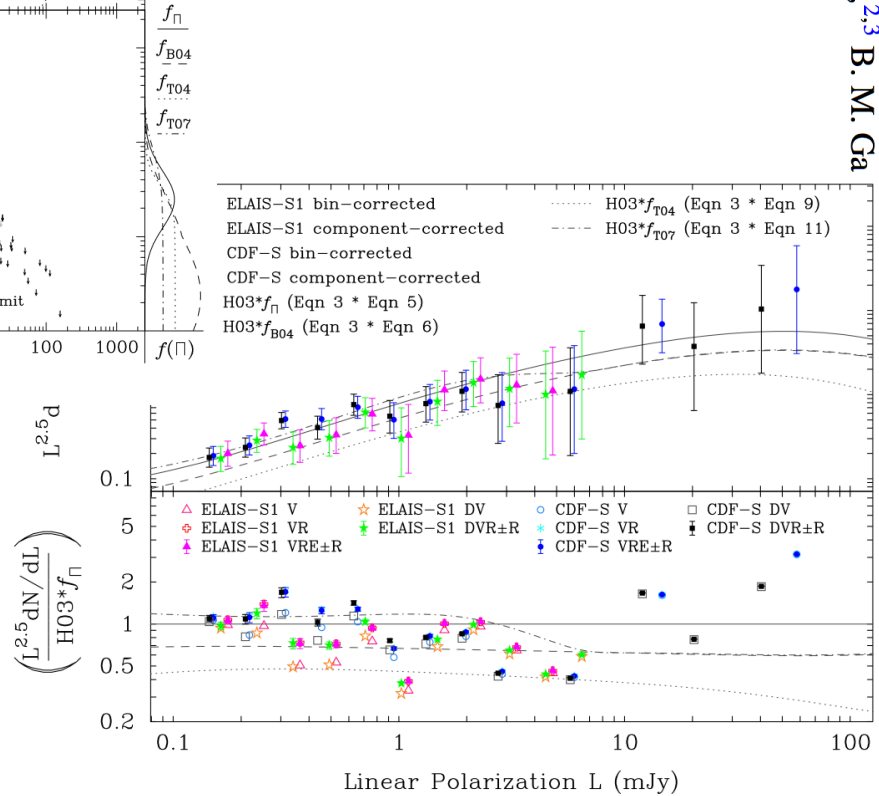
Science Highlights – Part 3

ATLAS 1.4 GHz Data Release 2 – I. Observations of the CDF-S and ELAIS-S1 fields and methods for constructing differential number counts

C. A. Hales,^{1,2*}†† R. P. Norris,^{2,3} B. M. Gaensler,^{1,3} E. Middelberg,⁴ K. E. Chow,²
A. M. Hopkins,^{5,3} M. T. Huynh,⁶ E. Lenc,^{1,3} and M. Y. Mao⁷



ATCA polarization from the deep fields



C. A. Hales,^{1,2*}†† R. P. Norris,^{2,3} B. M. Ga

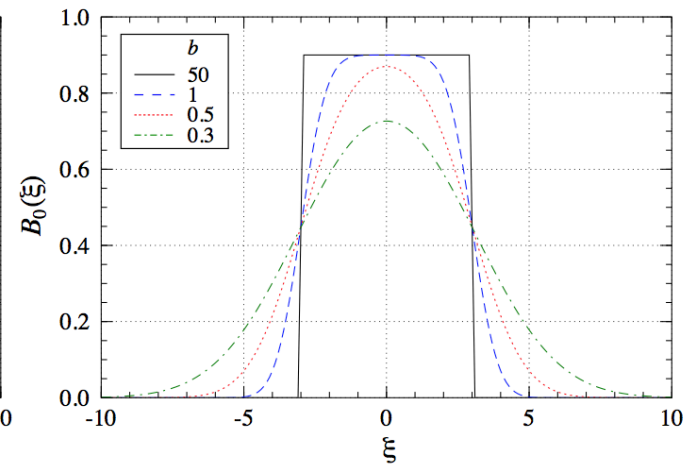
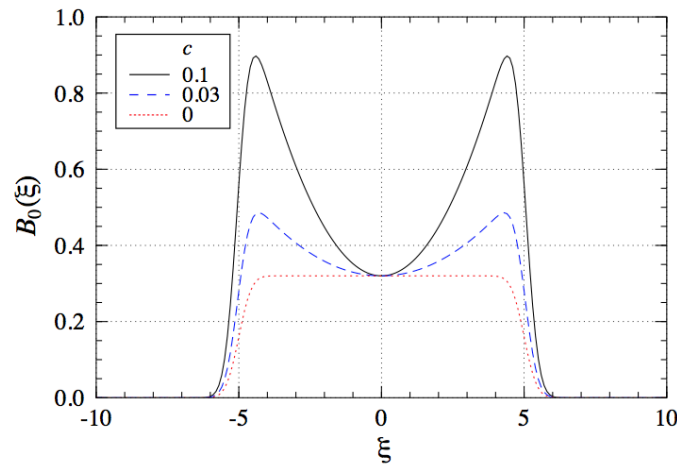
ATLAS 1.4 GHz data release 2 – II. Properties of the faint polarized sky

Science Highlights – Part 4

The busy function: a new analytic function for describing the integrated 21-cm spectral profile of galaxies

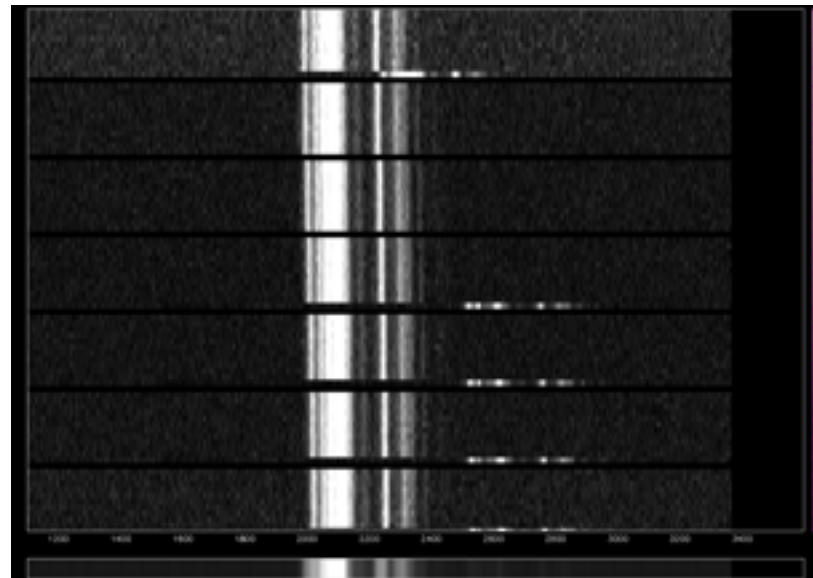
T. Westmeier^{1*}, R. Jurek^{2†}, D. Obreschkow¹, B. S. Koribalski² and L. Staveley-Smith¹

$$B_0(\xi) = \frac{a}{4} \times (\text{erf}[b\{w + \xi\}] + 1) \times (\text{erf}[b\{w - \xi\}] + 1) \times (c\xi^2 + 1), \quad (3)$$



Compact Array Forum

- Led by Peter Kamphuis and Jamie Stevens looking at ATCA issues
 - Calibrator issues
 - Some calibrators are offset from the catalogue position!
 - This introduces positional offsets to your target sources
 - 1 MHz zoom bug
 - Affects the first cycle of each integration
 - Fixed on April 23, 2014 by WEW
 - Can be retrospectively fixed with the task qvack in miriad



Parkes Forum

- Led by Ryan Shannon and Ettore Carretti looking at Parkes issues
- Parkes Users' Guide
 - Cognizant of new remote observing era
 - Re-organisation of existing information
- Instrumentation
 - Commissioning of HIPSR modes
 - Decommissioning pulsar instrumentation
- Pulsar data management
 - Pulsar data transfer / archiving high time resolution data
 - Pulsar data analysis software for external users
- RFI Surveys
 - Wide-band surveys
 - Characterising impulsive RFI in high time resolution surveys
- Mechanical Oscillations of Antenna



Parkes Support Astronomer

- Observations with Parkes are now fully remote
 - Requirement to observe from the SOC once every 12 months
- What's in it for you? We provide:
 - Parkes observing training (Parkes staff)
 - Support in getting started, help with schedules, other questions etc
 - Interaction with the astro group in Marsfield
- What's in it for us? We
 - Ensure that Parkes time is being used to obtain quality data
 - Interact with the community, new science synergies

ASKAP Commissioning Team

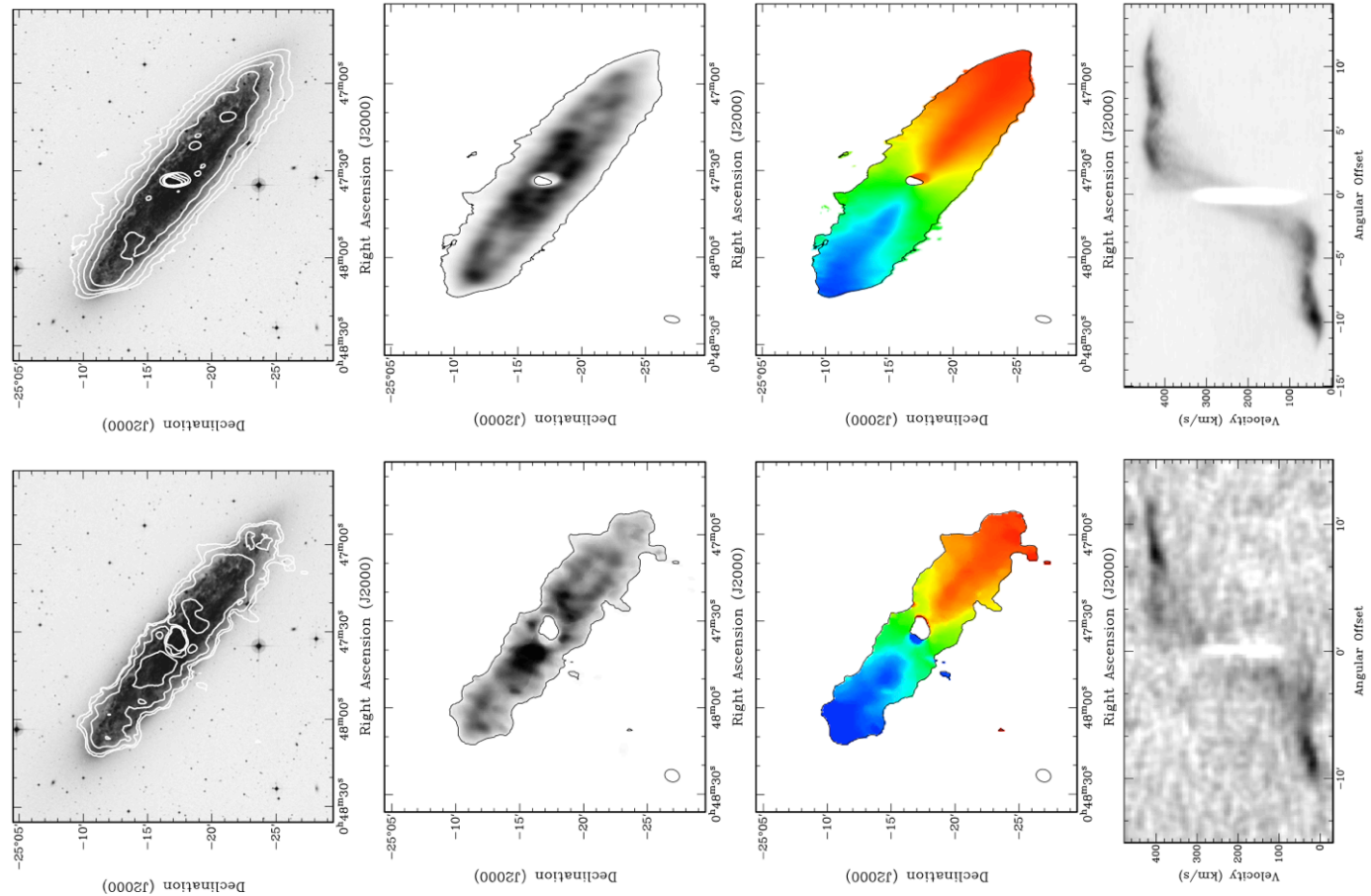
- Led by Dave McConnell, John Reynolds, Lisa Harvey-Smith, Phil Edwards
 - Joint venture between Ops and Astro groups
 - Seconders: Hayley Bignall, Emil Lenc, Bob Sault
 - Ops: Aaron Chippendale, Max Voronkov, Matt Whiting
 - Astro: James Allison, Keith Bannister, Martin Bell, Ian Heywood, Aidan Hotan, Paolo Serra



ASKAP Commissioning Team

NGC 253 as
seen with BETA
and the ATCA.
First EG HI
emission from
BETA!

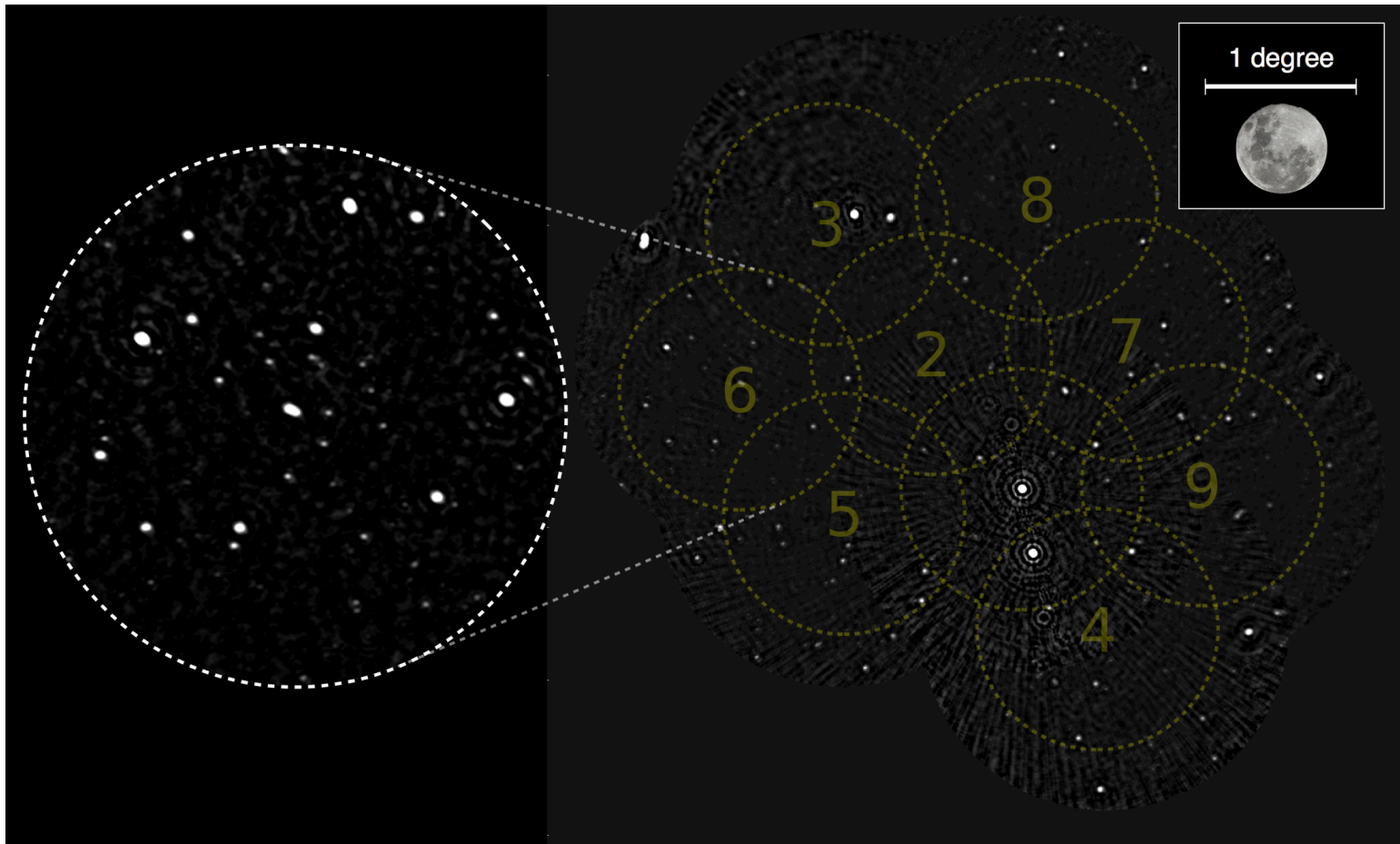
Credit: Paolo
Serra and the
ACES Team.



ASKAP Commissioning Team

BETA test field,
9 beam image,
700-1000MHz
DR 50000

Credit: Ian
Heywood and
the ACES Team



Summary

Summary



Summary

- The National Facility requires a strong astrophysics research group
 - Contributes the bulk of the science metrics (publications, visitors, conference presentations, public talks, conference organisation)
 - Provides substantial user and operational support
 - Commissions instruments and telescopes
 - Mentors postdocs and students
- In the medium (5 yr) timeframe, the world-class status of the National Facility should not be sacrificed for the SKA.
 - Ideas proposed in Douglas's talk
 - Synergies with ASKAP – PKS and ASKAP - ATCA
- We need an Australia-wide approach to SKA and SKA science, not an institution based one.

Thank you

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