



# ATNF Science

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Australia's National Science Agency



*Picture credit: Keith Bannister*

# Outline

- Staff changes
- Recent science highlights
- Mopra productivity
- ATNF User Support
- ATNF Proposal Review
- ATNF Science Strategy
- Vacation students & student program
- Radio Schools and Data Reduction workshops
- Call for Proposals

# Staff changes

ATNF Science has recently farewelled

- (Andrew Cameron)
- George Bekiaris
- Shi Dai

and welcomed

- Nikhel Gupta
- Nithya Thyagarajan
- Chandra Murugesan

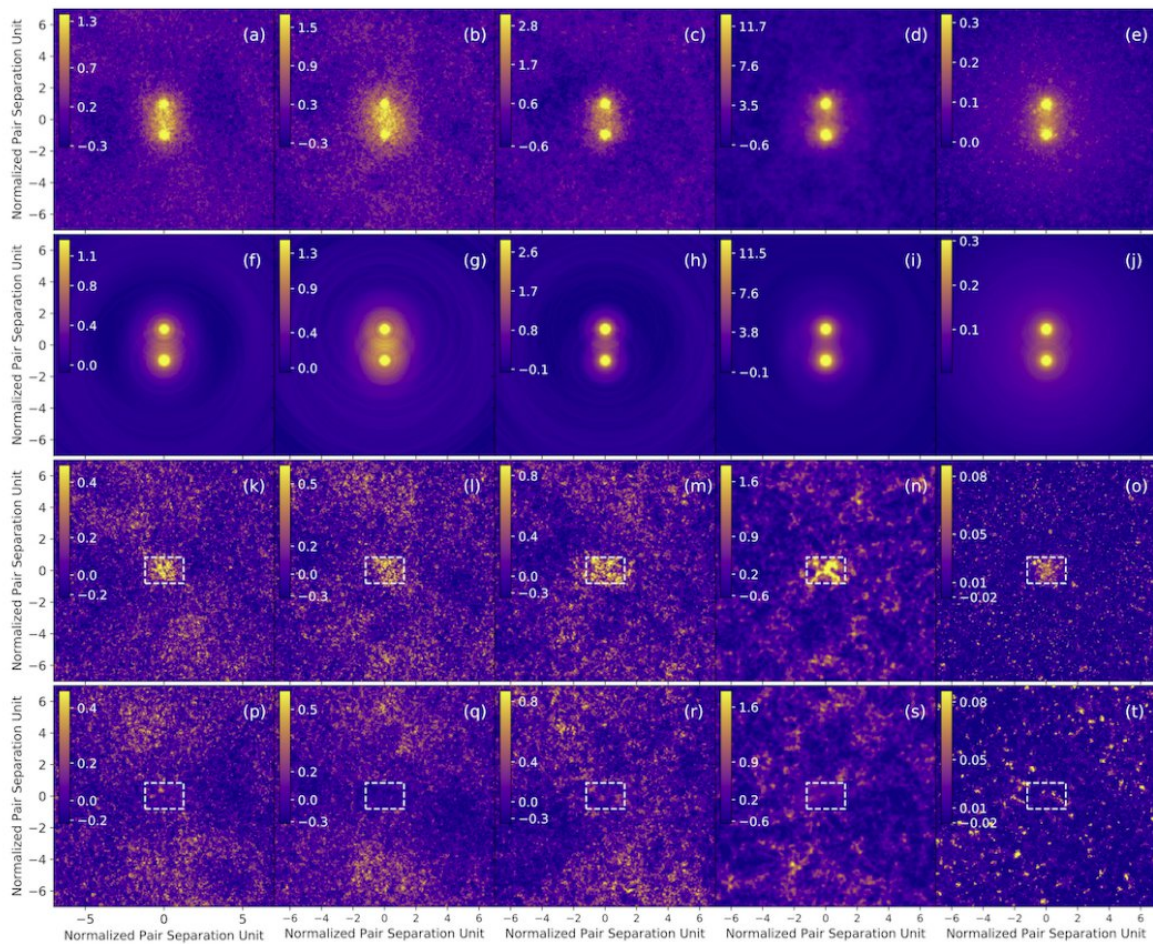
# Computational Infrared Spectroscopy of 958 Phosphorus-Bearing Molecules – Zapata Trujillo et al.

**Computational Infrared Spectroscopy  
of 958 Phosphorus-bearing  
Molecules**

The tentative detection of phosphine ( $\text{PH}_3$ ) on Venus could indicate the presence of other P-containing molecules (P-molecules) in its atmosphere. However, limited accurate spectral data is currently available for these molecules.

<https://newsroom.unsw.edu.au/news/science-tech/scientists-shed-more-light-molecules-linked-life-other-planets>

# Discovery of Magnetic Fields Along Stacked Cosmic Filaments as Revealed by Radio and X-Ray Emission – Vernstrom et al.



# Mopra productivity

- ADS study of 187 single-dish Mopra papers published between 2008 and 2019 corresponding largely to the MOPS era (and excludes Mopra contributions to LBA)
- Mopra's last year as a National Facility single-dish telescope was 2012
- 3353 citing papers, 6375 total citations,
- Average citations = 34.1, median citations = 19, h-index = 44
- 16 papers with  $\geq 100$  citations, includes HOPS, MALT-90, CMZ, MAGMA



# ATNF User Support

- The ATNF User Support model was updated in 2015 following the establishment of the Marsfield Science Operations Centre  
<https://www.atnf.csiro.au/observers/apply/ATNF-support.html>
- This model has been overtaken by COVID restrictions, with no requirement currently for anyone to travel to the SOC
- The ATNF Science team, in consultation with other teams in CASS, is reviewing current support models with a view to updating and improving them and will report back to ATUC at the next meeting

# ATNF proposal review

*CASS to track the number of student-led and ECR-led proposals, as well as provide detailed gender statistics for each proposal round.*

- The anonymization of cover sheet information has made tracking student-led proposals more difficult!
- For 2019APR, 58% of proposals included a student, 28% had a student PI
- The proposal cover sheets do not (currently) ask ECRs to self-identify.
- OPAL provides the option for users to record their gender in their personal details, however the majority of users have not done so.
- The OPAL maintainer/developer has left CASS and so significant changes are currently on hold.



# Proposal review

- *Consult ESO, HST, SRAO/MeerKAT on how blind proposal review is being implemented at other observatories and what their experience has been (lessons learned).*
- MeerKAT proposers submitted (1) an anonymised science case (2) a data management section describing which team members would do what, and, where required (3) a status report on previous MeerKAT projects, and (4) a Human Capital Development section.
- An anonymous review panel reviewed (1), SRAO reviewed (2,3,4)
- Feedback from review committee generally positive on the process, which SRAO is reviewing before their next call.

# ATNF Science Strategy

*The next 5-10 years will see significant changes in the Australian radio astronomy landscape*

By 2026:

- ASKAP's initial 5-year Survey Science projects nearing completion
- At least two years of science programs completed with Parkes CryoPAF and ATCA BIGCAT
- MWA Phase III ramping up (precursor to SKA1-LOW)
- First phase of SKA Regional Centres operational
- SKA construction continuing, and KSP teams being formed

By ~2030:

- Science operations/early science with SKA

We therefore see the need for a well-defined strategy for future ATNF Science research priorities and their alignment with other CASS programs

# ATNF Science Strategy

*[Not yet final, will be discussed by ATSC at their May 2021 meeting]*

*Research priorities as we move into the SKA era include:*

- Deliver world-class science from ASKAP
- Provide high-quality training in radio astronomy for students and postdocs
- Promote engagement by Australian astronomers in SKA science
- Develop and strengthen research collaborations with Australian universities and SKA partners

*Actions for next 1-2 years:*

- Review the current national facility operations/support model
- Set up more structured commissioning teams for new instruments
- Establish a cross-ATNF 'RFI mitigation' working group
- Cutting Edge symposium on 'VLBI in the SKA era'
- Review and possibly restructure our student program

*Developments 2021-30:*

- Build new low-VLBI pathfinder (LAMBDA, G. Heald talk) and explore mid-VLBI options for SKA
- Major upgrade to ASKAP by 2030 (community consultation ~2024-25)



# Vacation students

- 16 students (9 female, 7 male)
- Projects across astronomy (7), engineering (7) and Earth observation (2)
- Based at Marsfield, Kensington, Tidbinbilla and Dutton Park
- ATCA observing trip had been planned for east coast students...





# ATNF Student Program (update from Oct 2019)

- Since 2000, just over 200 students have joined the ATNF student program as co-supervised students
- About 150 have been affiliated with one of 16 different Australian Universities ...
- ... and 13 other countries
  - Canada, Chile, China, France, Germany, India, Italy, Japan, Netherlands, New Zealand, Sweden, UK, USA
- Gender balance in line with figures in Decadal Plan mid-term review
- Thanks to Julie Tesoriero for admin support for the student program

# Radio schools and data reduction workshops

- All other things being equal, we would have had a West Coast radio school in 2020 and an ATCA radio school in 2021
- Several formats for CASS data reduction workshops have been trialled
- ATUC advice on how these might best be held in the almost-post-covid era welcomed
- *Moss et al. 2021NatAs...5..213M*



CASS Radio School 2019

# Call for Proposals

- Call for Proposals for 2021OCT will be released in mid May
- As for recent rounds, the surnames of the proposal team will be placed at the end of the proposal
- Proposers asked not to list their team members in the scientific justification
- PIs will be asked to give permission for the anonymised proposal outcomes to be used in the study
- Thanks to Hayley Bignall for acting as TAC Executive Officer
- Proposal deadline for 2021OCT will be Tuesday Jun 15, 5pm AEST



# Thank you

**CSIRO Astronomy and Space Science**

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