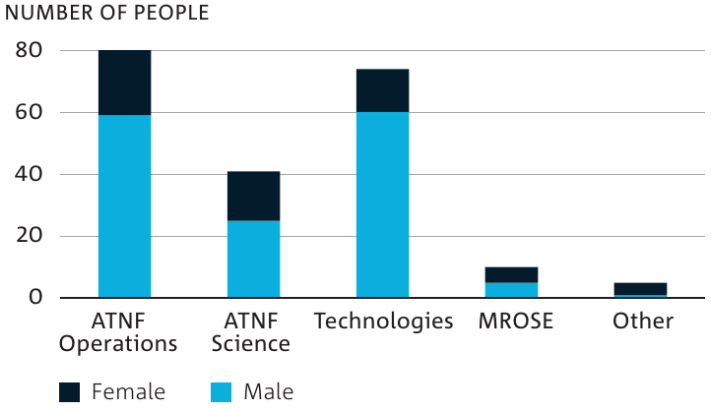
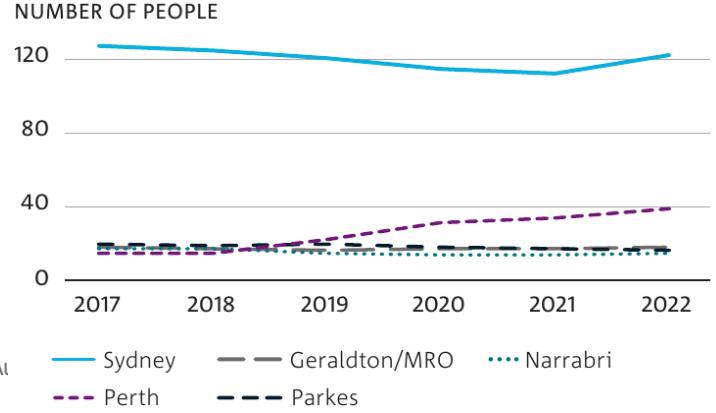
ATNF Science Update

Vivek Gupta & Ivy Wong (ATNF)

ATUC Open session | 09 Nov 2022

ATNF staff updates since April ATUC



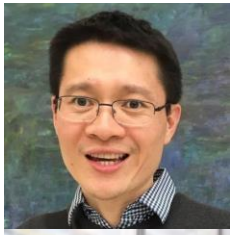


Departed

Elham Bagheri
Jimi Green
Katie Jameson
Dave McConnell
Suk Yee Yong
Rui Luo

New Arrivals

Mark Cheung
Tim Galvin
Eleanor Ingram
Dilpreet Kaur
Anita Petzler
Zhouwei Wang



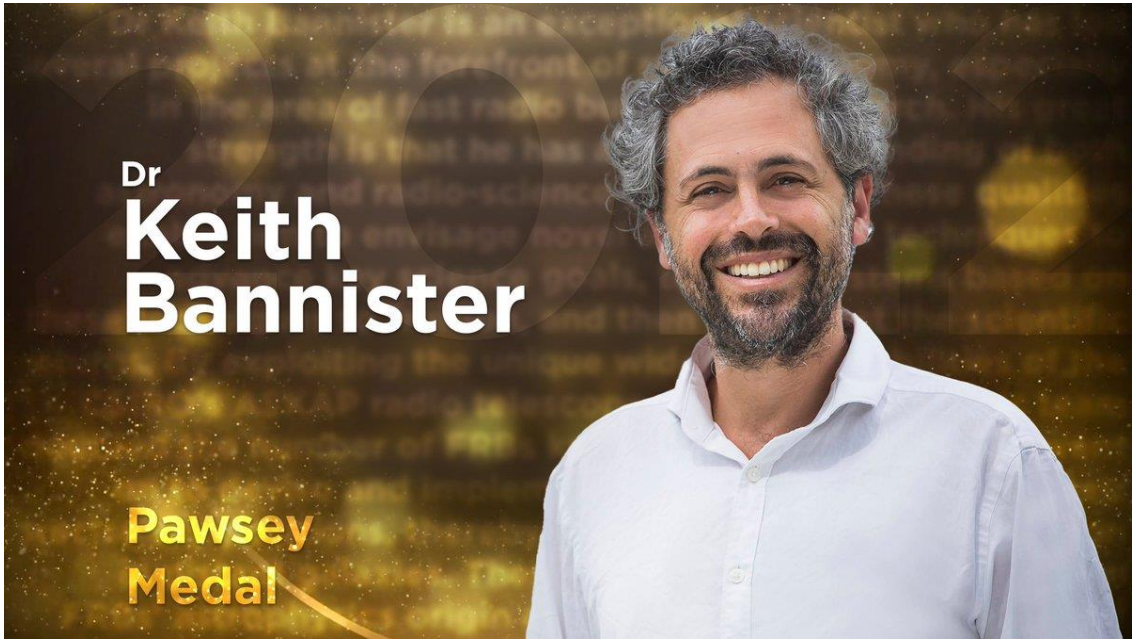
2022 ATNF science retreat (hybrid)

ASA's 2022 Peter McGregor Prize

Awarded to the ASKAP team for innovation in astronomical instrumentation

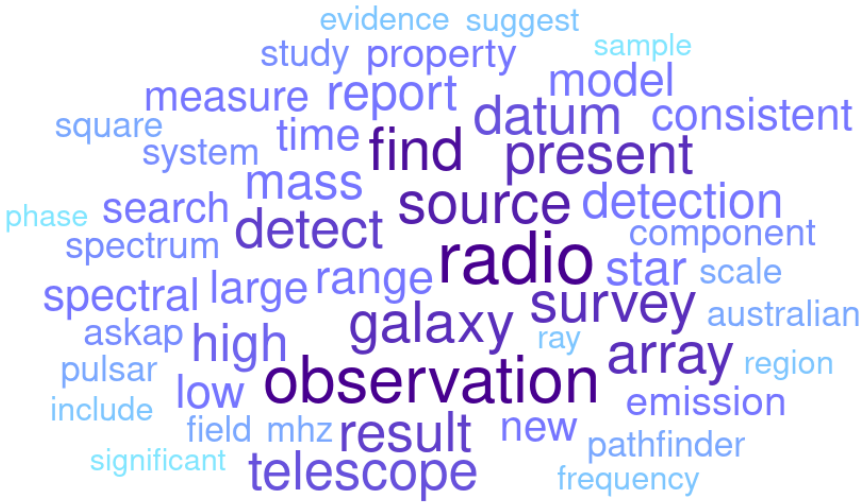
AU Academy of Science's 2022 Pawsey Medal

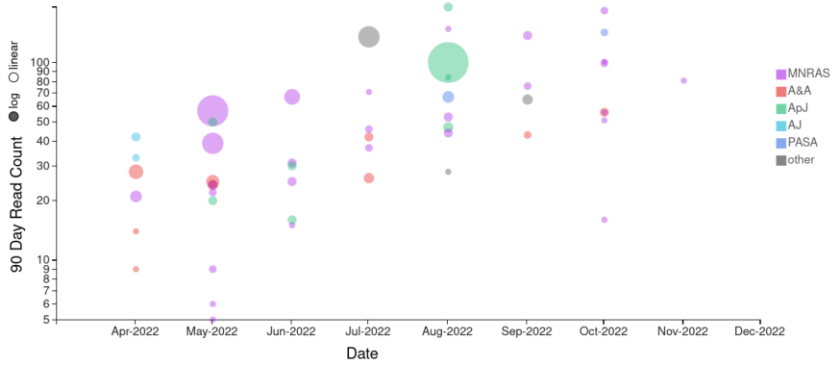
Awarded to the Dr Keith Bannister for outstanding contributions to science in the field of Fast Radio Bursts

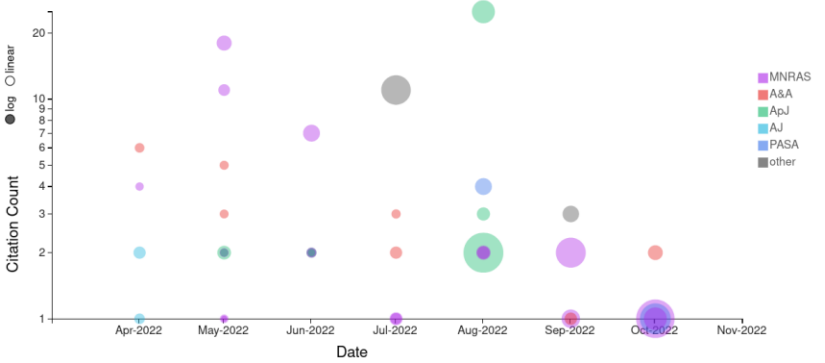


ATNF publications since April 2022

51 refereed publications (141 citations)







Ref: NASA ADS

Highlight #1: New ORC-candidates (Gupta+2022)

Publications of the Astronomical Society of Australia (2020), 1-23
doi:

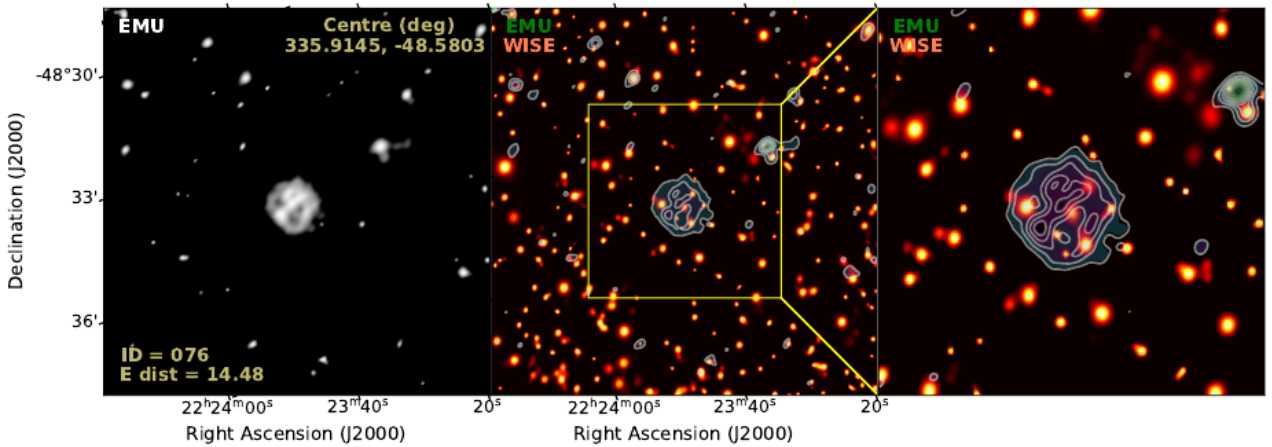
CAMBRIDGE UNIVERSITY PRESS

RESEARCH PAPER

Discovery of Peculiar Radio Morphologies with ASKAP using Unsupervised Machine Learning

Nikhel Gupta[1], Minh Huynh[1,2], Ray P. Norris[3,4], X. Rosalind Wang[3], Andrew M. Hopkins[5,3], Heinz Andernach[6], Bärbel S. Koribalski[4,3], and Tim J. Galvin[7]

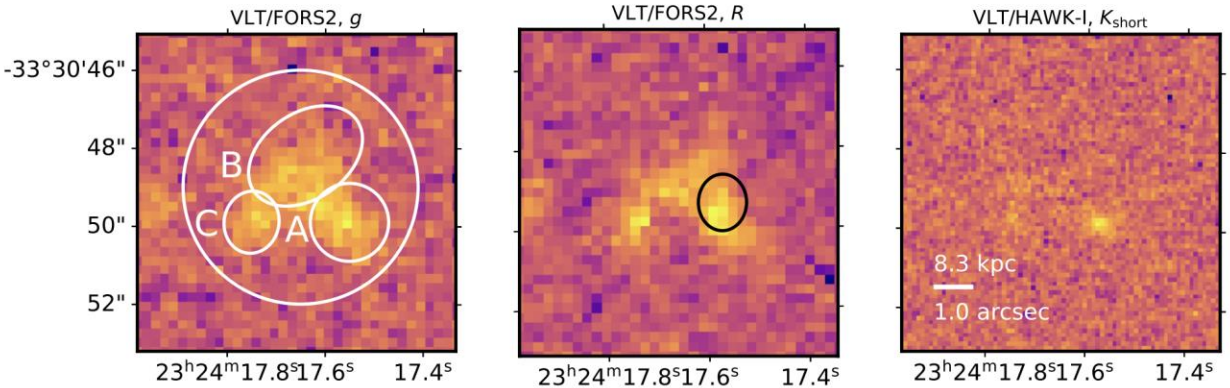
[1] CSIRO Space & Astronomy, PO Box 1130, Bentley WA 6102, Australia



Highlight #2: Redshift 1 FRB host galaxy (Ryder +2022)

Probing the distant universe with a very luminous fast radio burst at redshift 1

Stuart D. Ryder[1,2], Keith W. Bannister[3], S. Bhandari[4,5], A. T. Deller[6], R. D. Ekers[3,7], Marcin Glowacki[7], Alexa C. Gordon[8], Kelly Gourdji[6], C. W. James[7], Charles D. Kilpatrick[8], Wenbin Lu[9], Lachlan Marnoch[1,2,3,10], V. A. Moss[3], J. Xavier Prochaska[11,12,13], Hao Qiu[14], Elaine M. Sadler[15,3], Sunil Simha[11], Mawson W. Sammons[7], Danica R. Scott[7], Nicolas Tejos[16], R. M. Shannon[6,*]



Highlight #3: New discoveries from Murriyang

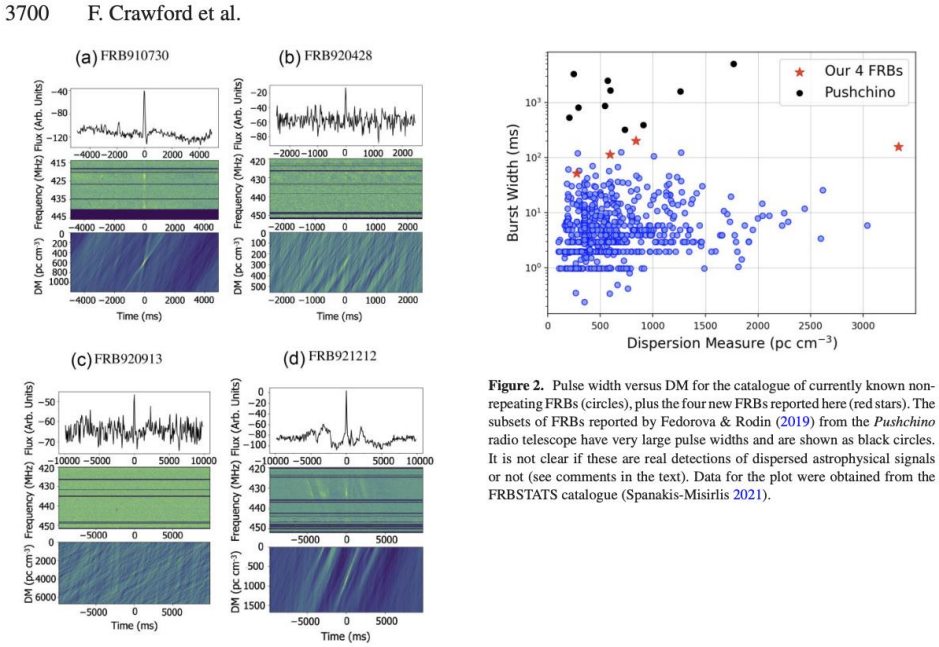


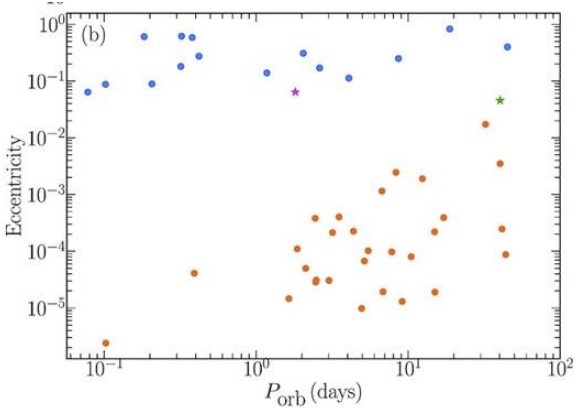
Figure 2. Pulse width versus DM for the catalogue of currently known non-repeating FRBs (circles), plus the four new FRBs reported here (red stars). The subsets of FRBs reported by Fedorova & Rodin (2019) from the *Pushchino* radio telescope have very large pulse widths and are shown as black circles. It is not clear if these are real detections of dispersed astrophysical signals or not (see comments in the text). Data for the plot were obtained from the FRBSTATS catalogue (Spanakis-Misirlis 2021).

JOURNAL ARTICLE

The High Time Resolution Universe Pulsar Survey – XVII. PSR J1325−6253, a low eccentricity double neutron star system from an ultra-stripped supernova

R Sengar ✉, V Balakrishnan, S Stevenson, M Bailes, E D Barr, N D R Bhat, M Burgay, M C i Bernadich, A D Cameron, D J Champion, W Chen, C M L Flynn, A Jameson, S Johnston, M J Keith, M Kramer, V Morello, C Ng, A Possenti, B Stappers, R M Shannon, W van Straten, J Wongphechauxsorn

Monthly Notices of the Royal Astronomical Society, Volume 512, Issue 4, June 2022, Pages 5782–5792, https://doi.org/10.1093/mnras/stac821
Published: 24 March 2022 **Article history** ▾



Highlight #4: Continued radio monitoring using ATCA/LBA

MNRAS **000**, 1–10 (2022) Preprint 1 November 2022 Compiled using MNRAS LATEX style file v3.0

The Bright Supernova 1996cr in the Circinus Galaxy Imaged with VLBI: Shell Structure with Complex Evolution

Michael F. Bietenholz[1,2], Norbert Bartel[1], Franz E. Bauer[3,4,5], Vikram V. Dwarkadas[6], Leon Mtshweni[7], Carlos Orquera-Rojas[3,4], Simon Ellingsen[8], Shinji Horiuchi[9], and Anastasios Tzioumis[10]

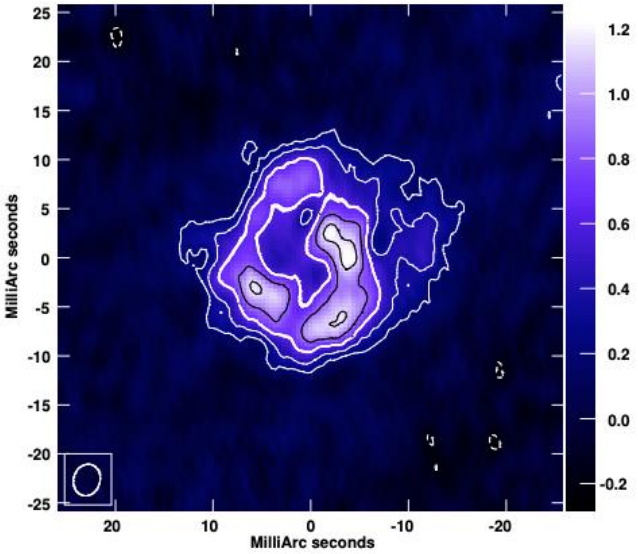


Figure 3. The VLBI image of SN 1996cr at age $t \simeq 8959$ d, made with data from the Australian Long Baseline Array, combining the data at 5 GHz, observed 2020 March 28, and the amplitude-scaled data at 2.3 GHz, observed 2020 Feb. 17, (see text for details). The

Thank you

We acknowledge the traditional owners of the lands in which we live and work across Australia. And we pay our respect to their Elders past & present.

ATNF / CSIRO Space & Astronomy
Vivek Gupta & Ivy Wong

Where to find more information

- 1 slide
- <6 dot points
- 1 image (optional)
- 1 minute

E.g.

- Contacts
- MyCSIRO
- .au