
SPARCS IX

The pathfinders get to work

6-10 May 2019, Lisbon

Professor Carole Jackson
General & Scientific Director, ASTRON



SPARCS IX: The pathfinders get to work

The SKA Pathfinder Continuum Survey Group

Probing the Radio Continuum Universe with SKA Pathfinders from 21 Feb 2011 through 25 Feb 2011

- [Description and aim](#) of the workshop
- [Registration](#) form
- [Participants](#)
- [Program](#)
- [Event report](#)
- [Presentations](#)
- [Scientific Organizing Committee](#)
- Scientific organizers:
Norris (Epping, Australia) ✉
Rottgering (Leiden, The Netherlands) ✉
- Workshop Coordinator: [Pauline Vincenten](#), Tel: +31-71-5276146
[Organizational Log-in](#) (restricted)



SPARCS IX: The pathfinders get to work

The SKA Pathfinders Continuum Survey Group

Originated: March 2010 (Manchester)

First meeting, Leiden February 2011

...

Ninth meeting: here & now!

HI-science dedicated “PHISCC” (12 meetings, Perth February 2019)



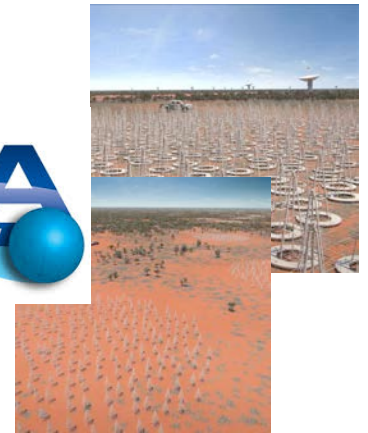
The SKA Pathfinder Continuum Survey Group



Goals:

- To coordinate developments of techniques, to avoid duplication of effort and ensure that each project has access to best practice.
- To hold cross-project discussions of the specific science goals, to ensure cross-fertilisation of ideas and optimum survey strategies.
- To coordinate the surveys in their choice of area, depth, location on the sky, and other survey parameters, to maximise the science return from the surveys.
- To distil the SKA pathfinder experiences into the SKA

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No formal link to SKA Continuum WG

The SKA Pathfinders Continuum Survey Group

Membership: open to all astronomers interested in the goals of SPARCS

Annual SPARCS meetings: Great stimulating discussions and informal linkages

**A review paper on SKA Pathfinder Continuum Science (54 pages, ~50 authors)
(<http://lanl.arxiv.org/abs/1210.7521>)**

The establishment of 3 reference fields (at dec -30, 0, 30) to be observed by all major radio telescopes (EVLA, Westerbork, ATCA, ASKAP, Meerkat, LOFAR, etc) to check on calibration accuracy and systematics between surveys

The adoption of the EMU RadioZoo WG as a SPARCS WG (Conference in Sydney 22-26 Sept 2013) <http://www.atnf.csiro.au/research/conferences/2013/gzo/program.html>

And more – time to update!?

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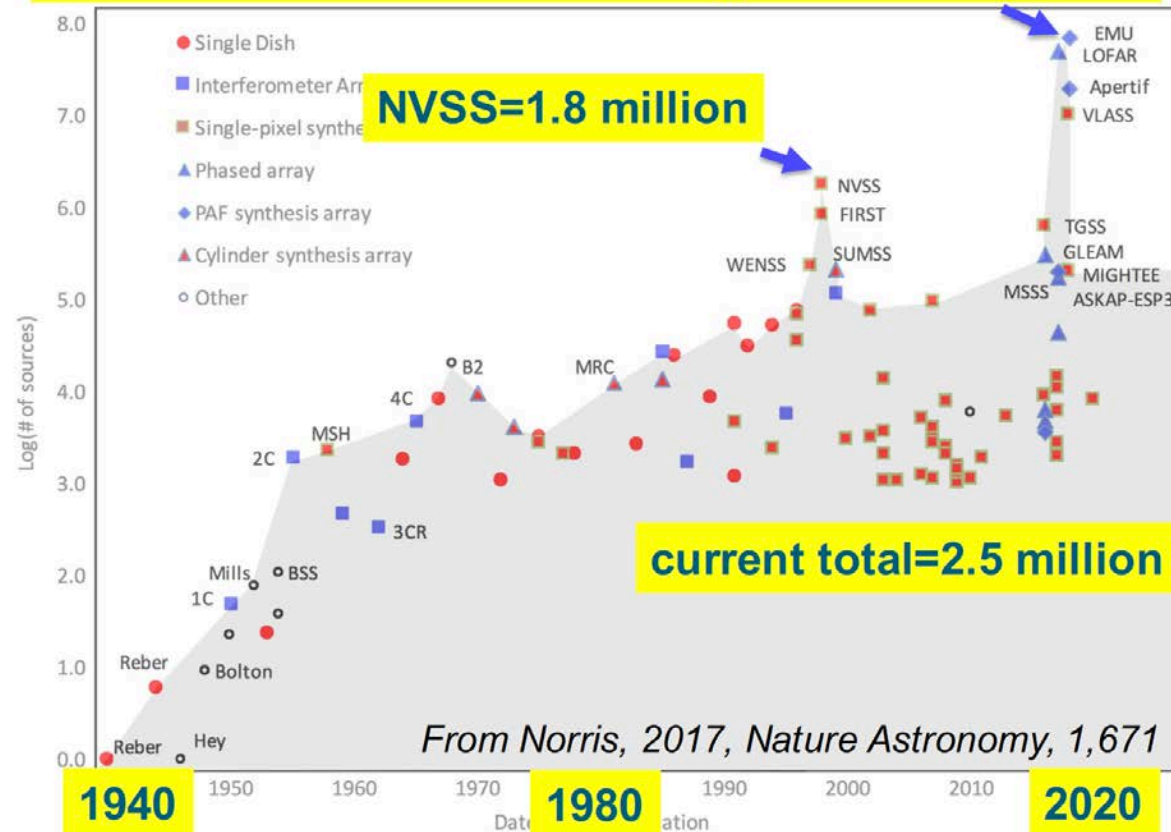
SOC: WG Chairs – Betsey Adams, Bjorn Adebahr, Nick Seymour, Mario Santos, David Rafferty, Jordan Collier, Tom Muxlow, Roland Kothes, Joeren Stil, Ken Duncan, Brad Frank
+ Jose Afonso, Carole Jackson, Ray Norris, Russ Taylor

LOC: José Afonso
Sandra Homem
Israel Matute
Ciro Pappalardo
Stergios Amarantidis



Size of radio continuum surveys over time

ASKAP Radio Continuum survey: EMU = 70 million



Deep source counts, populations, cosmic evolution

1.4 GHz

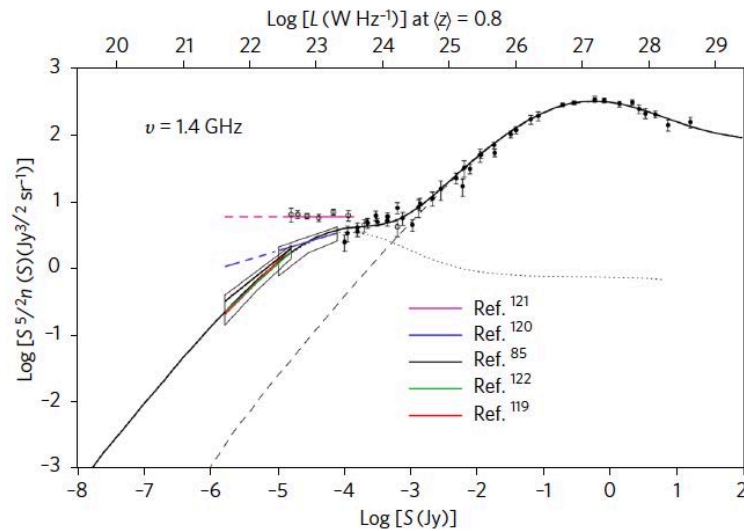
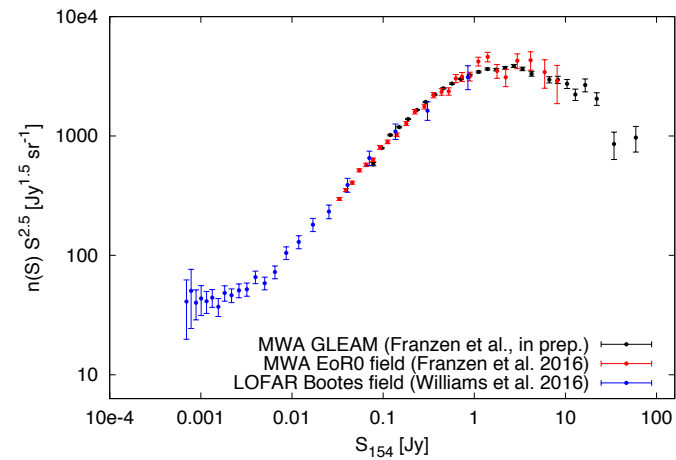


Fig. 4 | The number of radio sources as a function of flux density, plotted as a Euclidean-normalized differential source count plot at 1.4 GHz. The filled points at $\log[S(\text{Jy})] > -3$ are from refs ^{119,120}. The open data points indicate the source count¹²¹. The dashed black line is the contribution from radio-loud AGN, and the dotted black line is the contribution from star-forming galaxies and low-luminosity AGN. Polygons shows error boxes for the data from refs ^{85,120}. Coloured lines show possible extrapolations. Figure reproduced from ref. ⁸⁵, IOP.

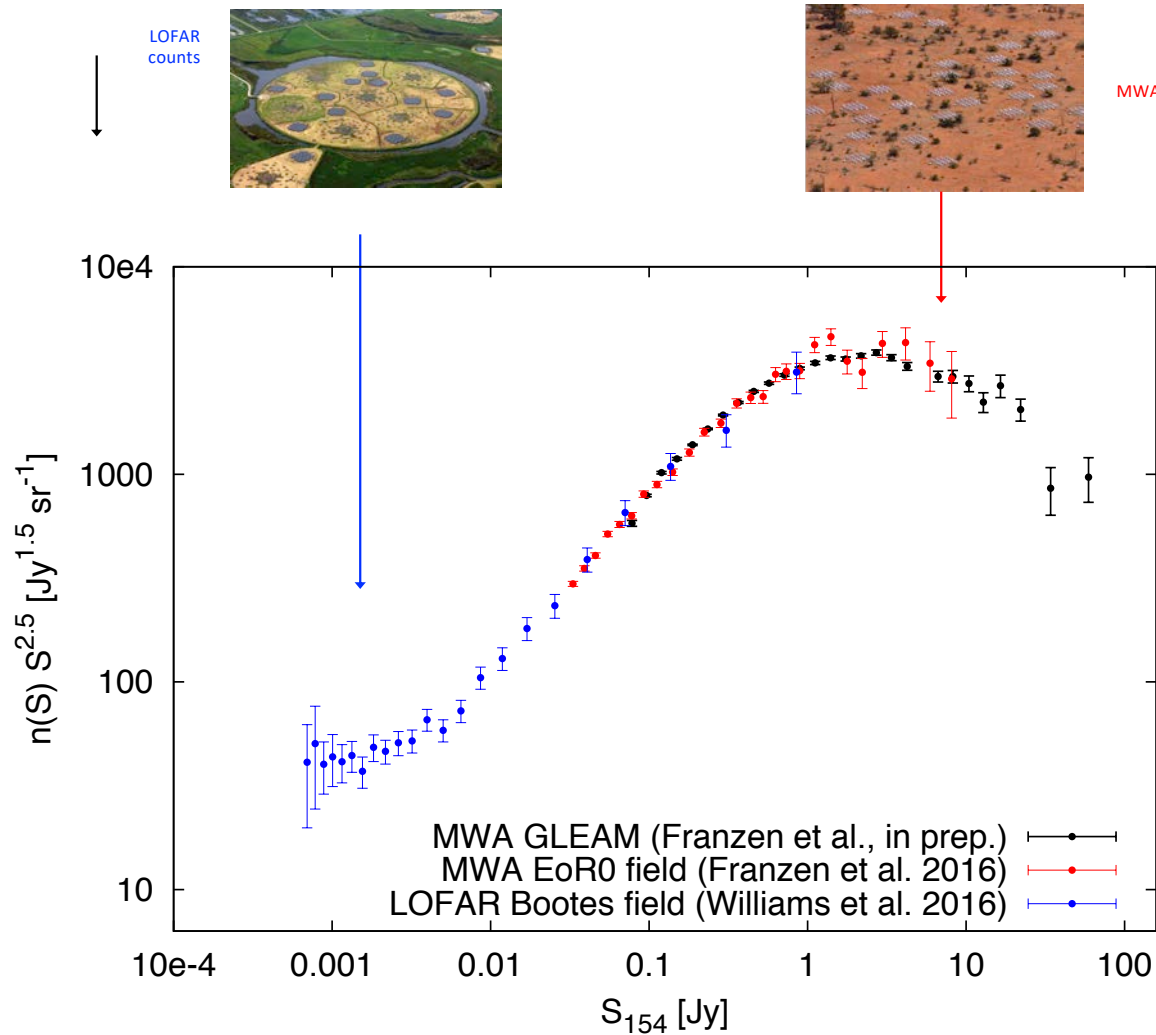
154 MHz



MWA & LOFAR survey data
(Franzen, et al 2016)

Norris, Nature Astr, 2017

The deep 154 MHz radio source sky



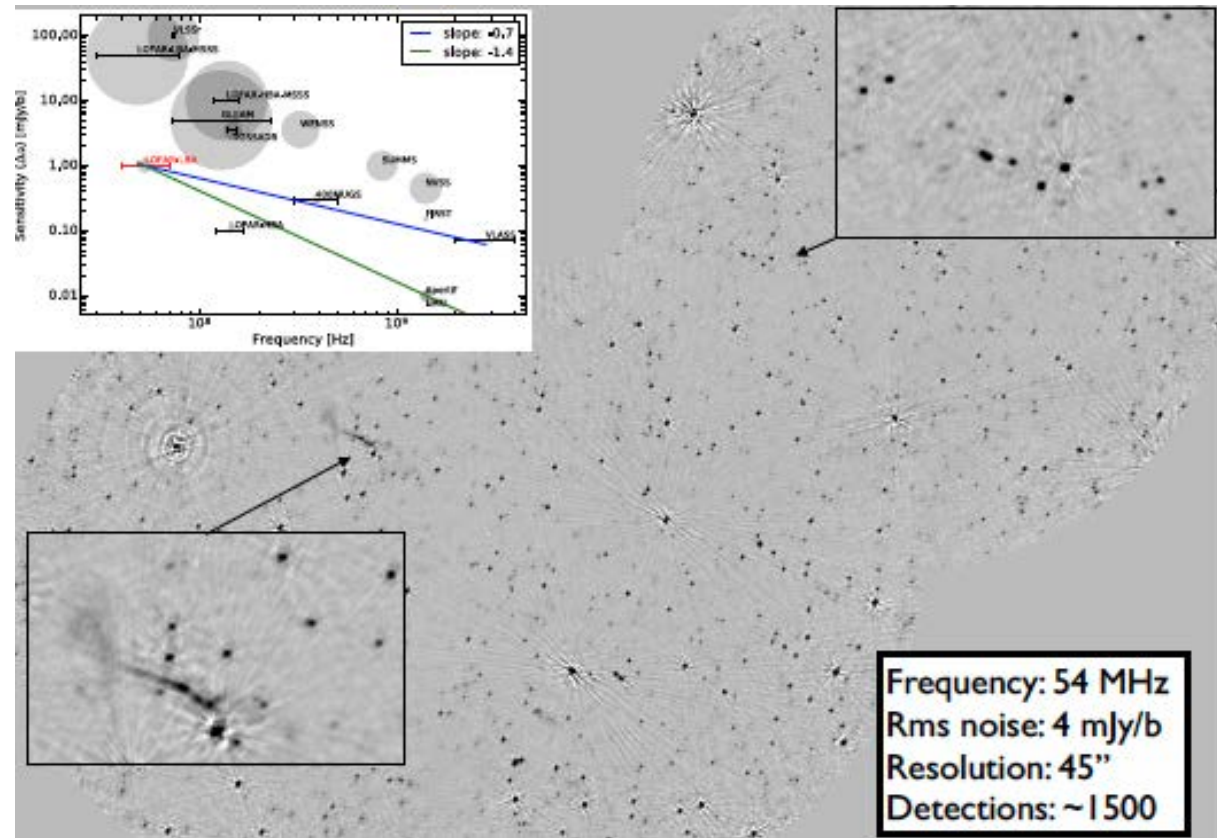
and far deeper to
come...
LOFAR EOR fields
(1000 hr+, 120-168 MHz
10 $\mu\text{Jy}/\text{beam}$
)

A deep, hi-res low frequency future

LOFAR LBA upgrade

LBA pilot survey

Mosaic 54 MHz



de Gasperin et al

SPARCS IX: The pathfinders get to work

Great program: Pathfinder updates, WG sessions with discussions, & science talks

For Friday....

Overlap between WGs – particular as pathfinder surveys are on sky

What other initiatives would it be useful for SPARCS?

- **SPARCS working groups evolution merger, splitting...?**
- **Group/joint papers?**