

SKA SWG Update 20 September 2022

SWG Chairs: Jason Hessels, Abhirup Datta, Anna Nelles, Valentina Vacca, Tessa Vernstrom, Adriano Ingallinera, Natasha Hurley-Walker, Divya Oberoi, Aris Karastergiou, John Ilee, Patrick Woudt, Jan Forbrich

Other Guests: Fernando Camilo, Phil Edwards

SKAO Science Team: Anna Bonaldi, Wendy Williams (notes), Robert Braun, Philippa Hartley, Tyler Bourke, Simon Purser

Apologies: Stefano Camera, Françoise Combes, Sebastien Muller, Betsey Adams, Andrei Mesinger, Cheery Ng, Mark Sargent, Barbara Catinella

Low Station and Antenna Layouts

This should be decided soon as contracts will go out on time scales of ~1 month.

Jason: Was there a requirement on how large any resonances could be?

Robert: No - the original spec was less than ideal - only defined at discrete frequencies. The resonances were a late stage discovery, first seen in observations in the field and then confirmed in simulations with fine frequency sampling.

Natasha: Can you comment on polarisation performance, not only Stokes I?

Robert: We do have them - the beam of the dipoles is very elliptical in x and y, mixing the orientation helps circularise the overall response. Process started with Ravi S. questioning if using full Jones matrix beam formation anyway, then why do we enforce fixed x and y orientation?

Natasha: Notes that mixing orientation has not been done before.

Robert: Analogue beamforming needs fixed orientation, but digital not!

Fernando: Is a test 'station' planned?

Robert: Yes, the final layouts and orientations are planned for AA0.5 (6 stations in 2024). The hope is that AAVS3 (to be deployed in 2023) already has the final layouts, but this is less certain.

Data Challenges

Use of real precursor data?

Fernando: Will have something from MeerKAT in about a week

Jason: What does this mean in practice? Putting precursor data in proto-'SRC' to challenge access, handle, reduced etc?

Robert: Not sure yet. This is to find out what is out there and what could potentially be done with it, having received comments that there is data out there not being utilised. Are we overlooking opportunities?

Patrick: Notes there will be a ThunderKAT data release later this year

Phil: Asked who is our contact at ASKAP?

Robert: George Heald

Tessa: Have we considered using the same fields observed by different arrays?

Robert: Not specifically. In the first instance considering whether there might be datasets that have great science potential but might be underutilised.

SDC3

Philippa: SDC2 paper - thanks for comments from co-authors. Should give insights on reproducibility, etc, not only HI-detection methods.

Meetings

Dates now available for both the ESO/SKAO workshop and SKA/ngVLA science meeting.

SWG updates:

Valentina: Magnetism WG meeting at beginning of new year. Also plenary meeting in planning.

Abhi: EoR meeting in Pisa in person next week. Active in SDC3 planning. IAU splinter meeting proposal submitted.

Patrick: Nothing new from Transients this month.

Natasha / Tessa: Nothing else from Continuum. SPARCS Nov 21-25, in South Africa

Phil: Communicating science with public meeting was last week. ASKAP forum happened / ASKAP update is publicly available, aim for full ASKAP surveys underway towards end of year.

Fernando: MeerKAT had 3rd open time call- 50% or proposals granted some time. 72 proposals in all. New SARA0 director.

Adriano: Doing SKA Regional Centre committee feedback

Jan: Getting Galaxy SWG work restarted after summer.

Divya: See latest Contact issue for article on Solar article.

Eduard: Have had an interesting Solar science meeting.

Anna: High Energy Cosmic Particles is now a Science Working Group rather than a Focus Group

Aris: Timing and imaging of Point Sources - meeting now planned for May/June 2023, announcement should be out this month.

John: In terms of the Cradle of Life status, we are returning from our summer hiatus and will be organising a kick off meeting in the next weeks.