

SWG Chairs Telecon 15-September-2020

Notes: Tyler Bourke

Participants: SWGs: Abhirup Datta, Adriano Ingallinera, Andrei Mesinger, Divya Oberoi, George Heald, Jason Hessels, Joseph Girart, Laura Wolz, Laurent Lamy, Mark Sargent, Paulo Serra, Sarah Blyth, Sebastien Mueller, Valentina Vacca, Willem van Straten

Apologies: Françoise Combes, Stefano Camera

SKAO: Robert Braun, Anna Bonaldi, Tyler Bourke, Philippa Hartley, Evan Keane

See the slides for more details on the various topics summarised below.

1. SKA Science Meeting 2021

Anna Bonaldi provided an update. The dates are now set for March 15 – 19, 2020, a completely virtual meeting. Details on sessions etc are being discussed. SOC will learn from other virtual meetings and the current CSIRO The Future of Meetings meeting.

JH: Will parallel sessions run over different time zones?

AB: Yes, but cannot run 24/7 due to the need for support (probably provided by SKAO IT). Will also depend on the platform(s) being used for the meeting.

2. Science Data Challenge 2 (SDC2)

sdc2.astronomers.skatelescope.org

Phillipa Hartley reported. The next SDC is focussed on HI detection & characterisation. The release will happen toward the end of this year, but the supporting website is live now, where teams can register their interest, investigate test data, etc. The challenge covers $z = 0.24 - 0.5$ with $7''/30\text{kHz}$ resolutions over 20 deg^2 with a 2000 h integration.

The science team thank the HI SWG for their detailed feedback on initial data product.

The scoring code for the challenge is written in python available via github/gitlabs with the intention to develop it into a webapp. Compute power for the challenge is provided by some SKA member countries as tests of proto-SRCs.

LW: Is the data set a cube or a light-cone, and in what format.

PH: fits files, light-cone.

AB: The input comes from a large-scale simulation with appropriate red-shift distribution, details on the web site.

PH: HPC access is being provided by UK, Shanghai and Portugal with discussions ongoing with France, Italy and Spain.

SB: Were current pathfinder computing centres approached, to see how they are managing large SKA-like data sets wrt containerisation vs command line interaction?

PH: No, none were approached directly, just a broad call to the SRC WGs and via the SRC steering committee. This is a good suggestion.

AM: SKA-Low is not yet featuring in the SDCs. Pathfinders have home-grown challenges of relevance (ie Lofar) so now would be a good time to collaborate on a future challenge.

RB: Very welcome suggestion and please follow up with us to make this happen. We had hoped to add HI absorption at the high-frequency end of the SKA-Low range in SDC2 but it is not ready yet and may be released as SDC2.1.

AD: What type of facilities are required to contribute to the challenge (bare minimum)?

PH/AB: Some of this information is available on the SKA Confluence space and will be placed on the challenge website, e.g. RAM, cores, OS.

PH: The SDC will provide lots of use cases for the Ops/SRC groups for testing.

JH: I suggest teams be encouraged to use data centres outside of their host country to test this aspect of data access/processing.

PS: Feedback from HI was provided to this SDC (RB: massive thanks for this!). The feedback on an earlier version included the following:

- cube was “too nice” compared to real data from the pathfinders
- mosaicking issues/errors not incorporated (field is larger than a single pointing)
- type of galaxy included was too limited

RB: a total power spectrum of the SCP from MeerKAT has now been used to model variations in RFI vs frequency and baseline and incorporate these into the cube (noise variations/dirty beam as a function of channel). The continuum subtraction has been made about 10x worse with a variation in spatial scale as well as frequency (~1 deg/10 MHz). The galaxy diversity issue is being addressed by looking at different ways to sample the atlas catalogue.

PH: Scoring will be similar to SDC1 with feedback from the HI group welcome. HIMF will not be part of the main challenge, but could be added as a ‘bonus’ category for those interested.

MS: Can the split data (cont/line) be provided, and can we play with the splitting process to test options?

RB: Cont. is provided with about 50 MHz channels so not suitable for investigating continuum subtraction as resolution is much coarser than HI cube.

TB: perhaps this can be provided after the challenge, as an addendum? To be discussed.

AB: Extra components are produced but are not included in the focussed challenge, but could be provided later for follow-up investigations.

AOB:

JMG (CoL): As part of the ongoing renewal of CoL positions (new chairs in place), we are refreshing the core group, asking current members if they wish to remain (some do not) and approaching new candidates. Also note a new paper published on disk grain growth using SKA. <https://ui.adsabs.harvard.edu/abs/2020MNRAS.tmp.2555I/abstract>

RB:

1.SKA Board this week, and CPTF (Council Preparatory Task Force, aka proto-Council) next week. Many thanks to the SWGs for input into the science sections of the Construction

Proposal (CP). A final touch up will be possible following the Board/CPTF meetings and their feedback. This forms part of 3 documents: Prospectus (glossy high-level document), CP, and the OEDP (Observatory Establishment and Delivery Plan). RB will circulate the science component of the CP to the Chairs.

2. The UK Commons and Lords ratified the SKA Convention this week, next it goes to the Privy Council. The Scottish parliament are in the process of ratification. Australia is expected to complete ratification this week (17th).