Observatory Project Release Notes

AS112: SWAG-X 888 MHz continuum dataset

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Overview

We report here on the release of SWAG-X (Survey with ASKAP of GAMA-09 + X-ray) data at 888 MHz centred on the GAMA-09 field. These observations have been carried out with the following intent: to deliver on an international commitment as part of the eROSITA/AAL MoU, a logical extension of the ASKAP Pilot Survey program (maximising science value for the existing ASKAP Survey Science Teams) and an opportunity to test the feasibility of commensal observing. This first continuum-only dataset has now been released on CASDA for public access, and is available online: https://research.csiro.au/casda

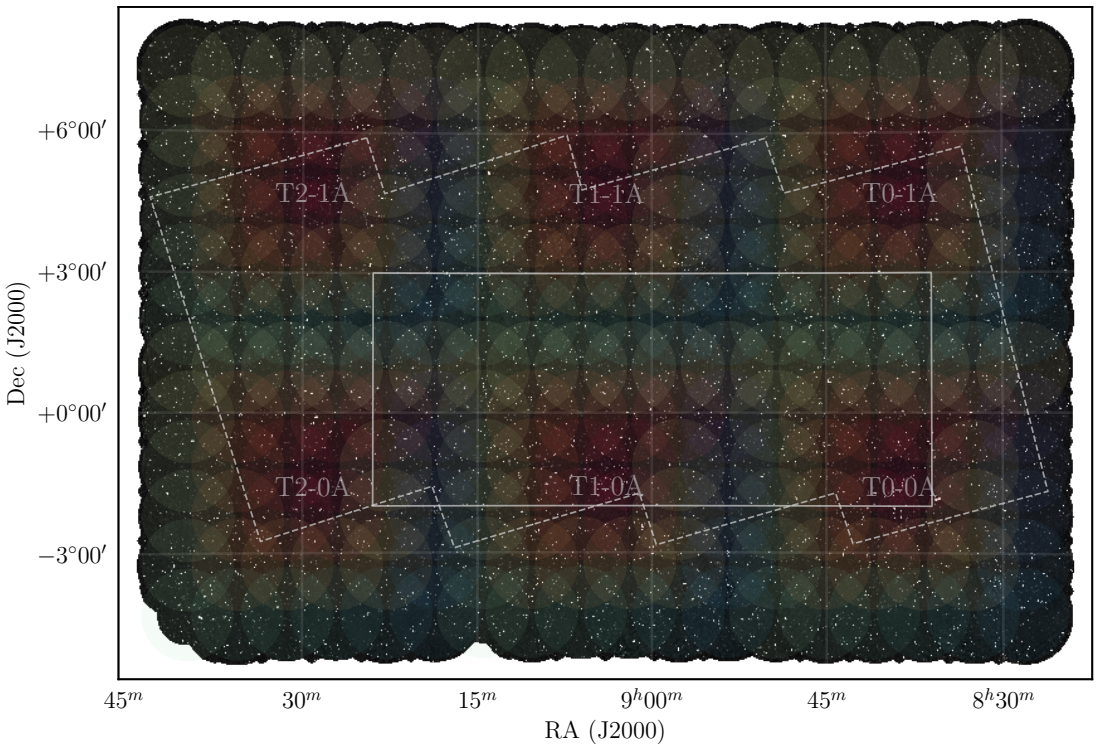

Figure 1: Mosaicked 888 MHz continuum image showing the full field (made up of six individual pointings of ASKAP), smoothed to lower resolution for the purposes of visualisation. The dashed jagged outline indicates eFEDS coverage, which the solid outline shows the original coverage of the GAMA-09 field. The ASKAP beams making up the mosaic are shown colour-coded in rainbow by beam number, with red indicating B000 and purple indicating B035. The name of each tile is given at its central location.

Observations

The observations were carried out between 5th-12th October 2019. We outline the details of the observations in the table below.

Observation dates (UT)	5, 7, 8, 9, 10 ,11, 12 Oct 2019
Target SBIDs	10108, 10123, 10126, 10132, 10135, 10137
Calibrator SBIDs	10109, 10124, 10127, 10133, 10136, 10138
Footprint/pitch/rotation	square_6x6, 1.05, 45.0
Correlator mode	standard continuum
Central frequency	888 MHz
Coverage	6 x 8 hr integrated tiles (36 beams per tile)
Coordinates (J2000)	09:04:00.0, +01:30:00.0
Project contact	Vanessa Moss

Raw data diagnostics are available at: https://www.narrabri.atnf.csiro.au/askap/

Processing

Each observation was processed using ASKAPsoft with standard continuum settings. We give some information about the resulting processed data here.

Each SBID was imaged independently, following bandpass calibration, flagging and self-calibration. The imaging was done with multi-scale, multi-frequency synthesis, using the full 288 MHz bandwidth and six spatial scales up to 2 arcmin in size. Wiener preconditioning was used, with a robustness parameter of 0.0, giving a restoring beam of typically 13"×12".

The most sensitive points in each field are reaching below $30\ \mu$Jy/beam sensitivity, with the median sensitivity typically $50 - 60\ \mu$Jy/beam.

Source-finding was run with Selavy, producing island and component catalogues. There are 25,000-30,000 components detected per field.

FOR FURTHER INFORMATION
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