IMAGINE update

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Imaging Galaxies Intergalactic and Nearby Environment

PI: Attila Popping
Exec team: George Heald (CASS), Martin Meyer (ICRAR-UWA), DJ Pisano (WVU)

Goal: Understand the interaction between galaxies and the surrounding material in the so called Inter-galactic Medium.
Method: Making images of the extended region around 28 spiral galaxies in Neutral Hydrogen (HI) down to extremely low surface brightness levels, using compact configurations of ATCA

- Observations completed in 2021

- Most IMAGINE observations reduced

- IMAGINE pipeline re-reduces ATCA archival data using similar settings for uniformity

- Main challenge/delay in incorporating archival data (e.g. different file names, calibrator not always known, unknown issues)

- Cubes with H168 and 750m configuration for all galaxies

- Internal data release consists of:
  - imagine pipeline
  - reduced visibilities (IMAGINE)
  - reduced visibilities (archival ATCA)
  - reduced data cubes and data products (cubelets, moment maps etc.)

- Discussing on how/when to to public release (e.g. dedicated website or using anti facilities)

Preliminary Data Release

reduced data currently being stored on ATNF drive

at the moment 7 galaxies:
- eso214-017
- ngc24
- ngc2997
- ngc3109
- ngc3175
- ngc45
- ngc626

Preliminary Data Release

per observed configuration (either for IMAGINE or archival)
- flagged and calibrated visibilities
- calibration tables
- continuum subtracted visibilities (uvcon)
- dirty cube
- beam
- cleaned cube
- moment maps

Combined data:
- combined dirty cube
- combined beam
- cleaned cube
- cubes are cleaned using "SoFiA masks"