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# MOONS AS A REDSHIFT AND SPECTRA MACHINE FOR MEERKAT SURVEYS

# MEERKAT

Credit: SKA South Africa

- SKA precursor (South Africa)
- 2016: 16 antennas
- 2017: 32 antennas
- 2018: 64 antennas
- 2020s: Merge into SKA1 Mid



# MEERKAT

Credit: SKA South Africa

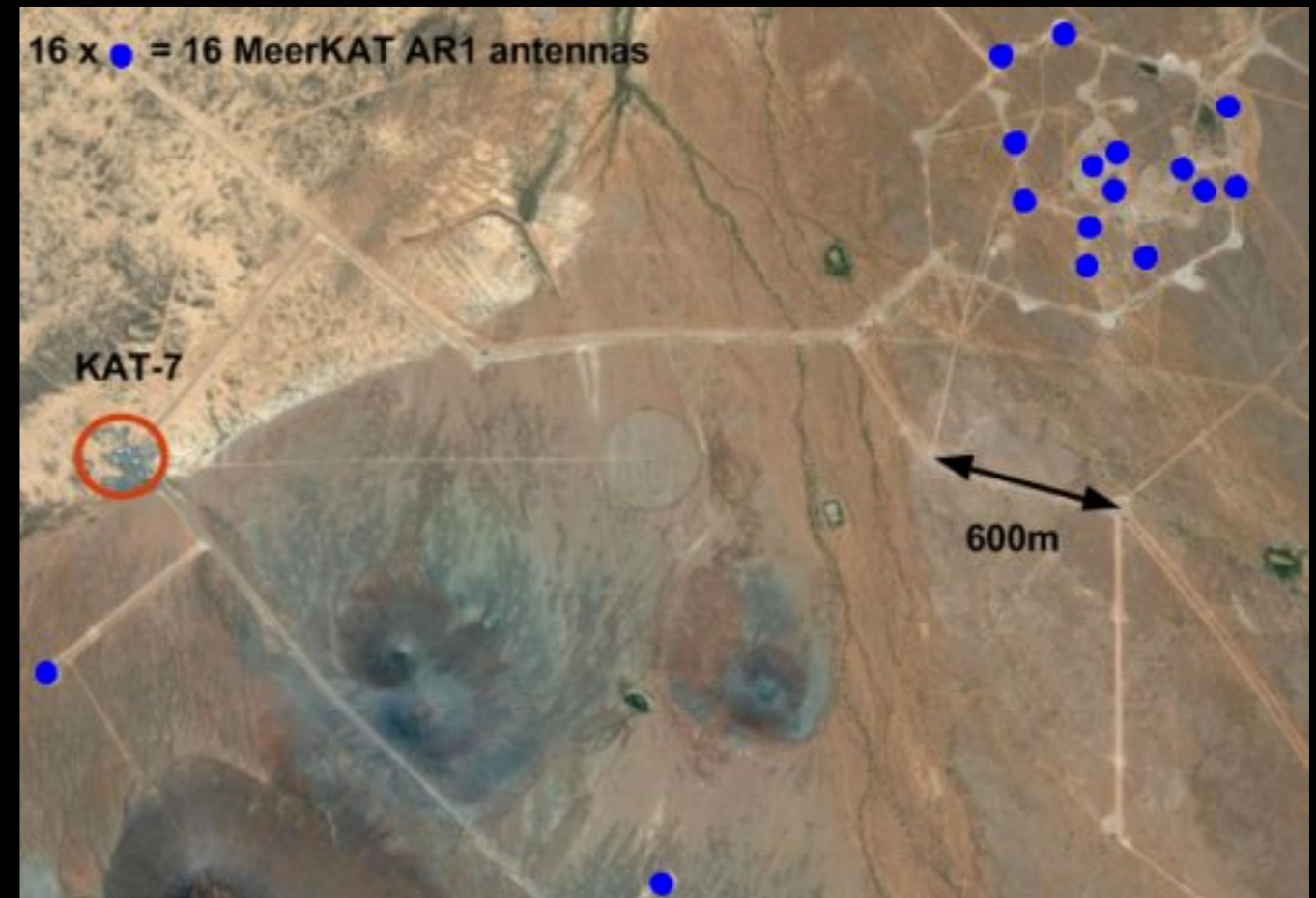
- L-band 900 MHz - 1670 MHz (consolidated)
- S-band 1750 MHz - 3500 MHz (will be)
- X-band 8 GHz - 14.5 GHz ?????



# MEERKAT

2016

Credit: SKA South Africa



2018

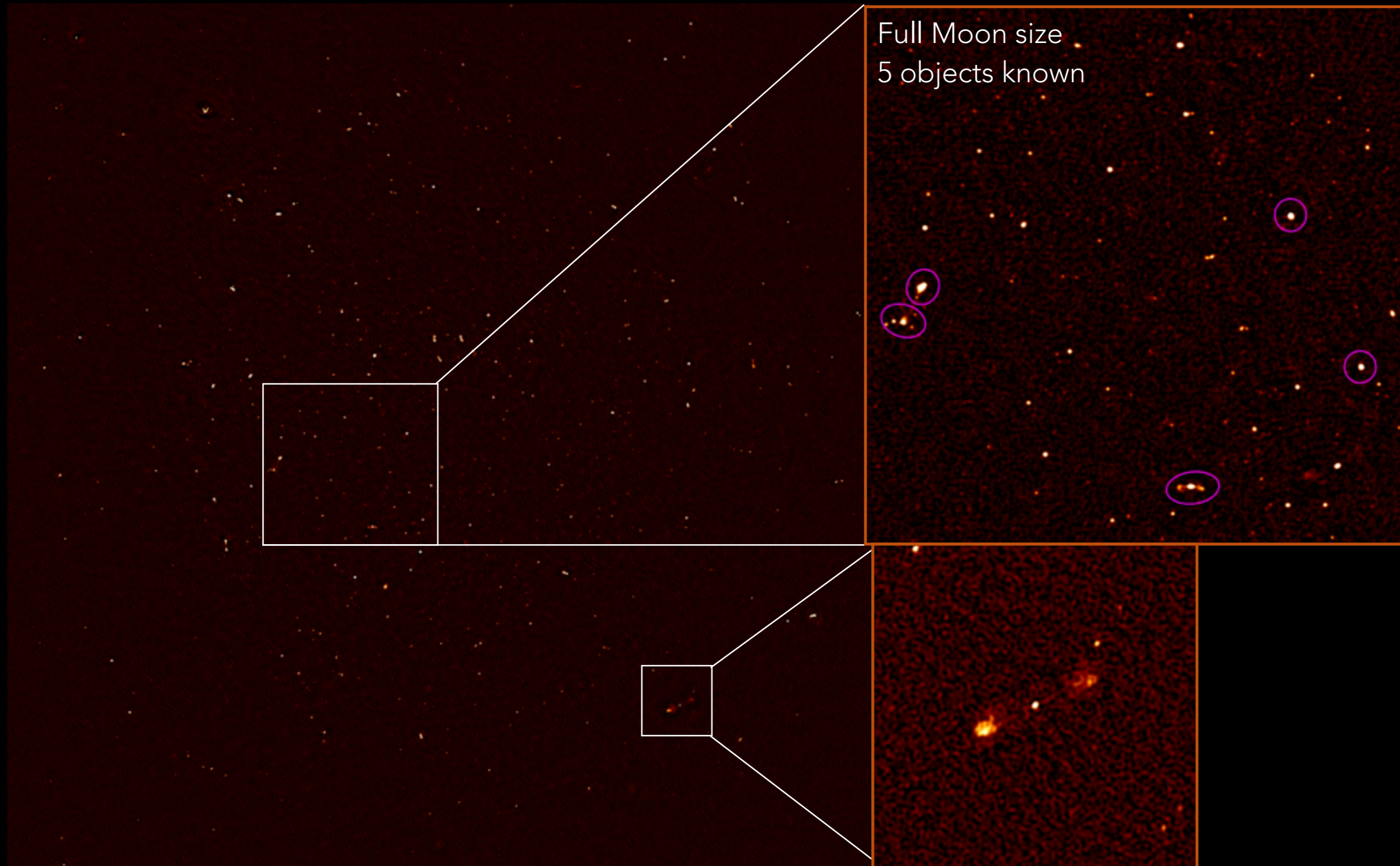
- 70% < 1km
- 30% < 8 km

# MEERKAT FIRST IMAGE

- ~1300 objects
- ~70 known!



# MEERKAT FIRST IMAGE



# MEERKAT SCIENCE PLAN

- 70% to Large Survey Projects
- Starting already during the building/commissioning phase

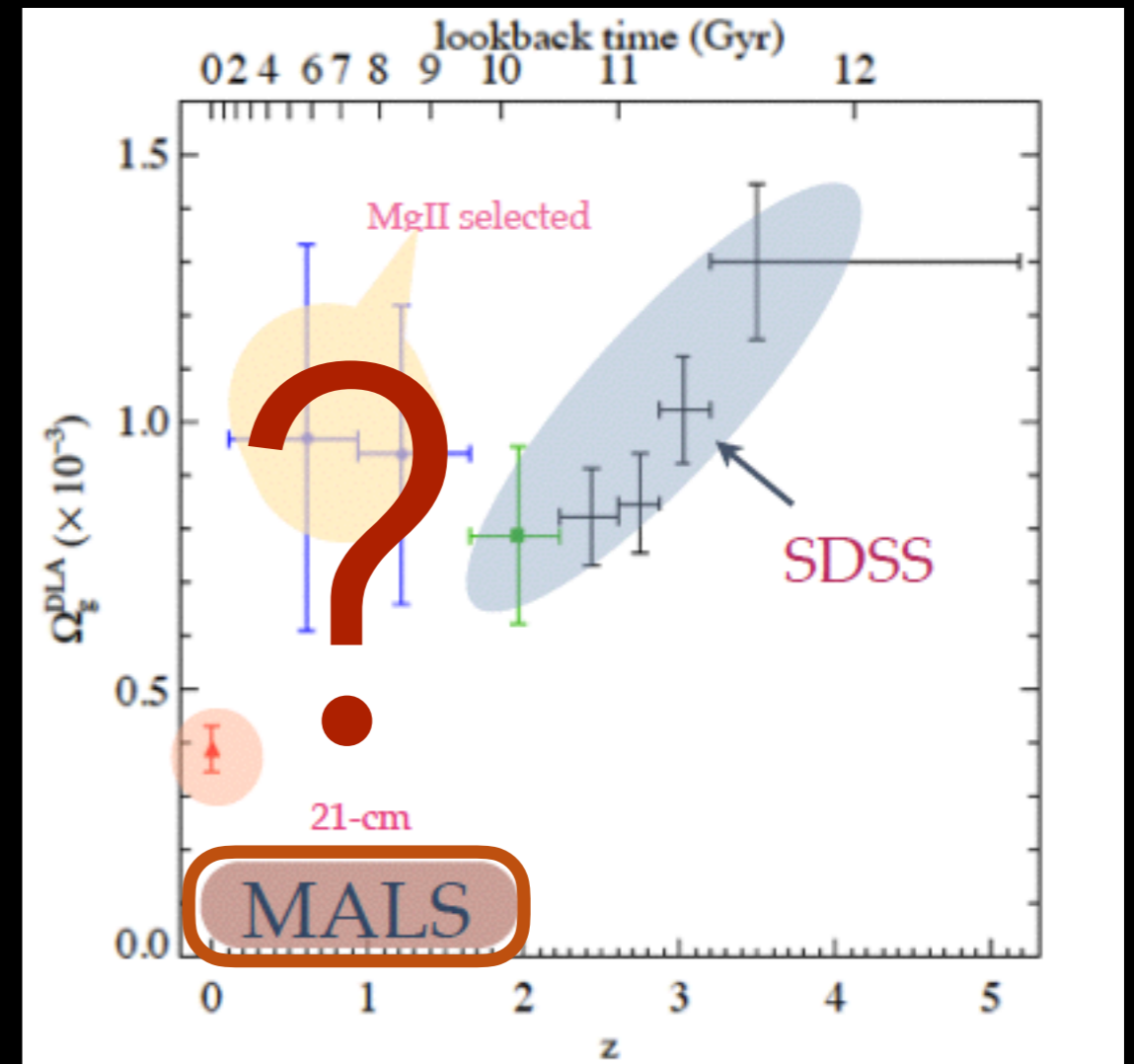
# MEERKAT ABSORPTION LINE SURVEY (MALS)

- PIs: N. Gupta and R. Srianand (IUCAA)
- Likely starting in 2017/2018
- 4000 hrs to search for 21cm and OH absorbers at  $z < 1.8$
- 1000 QSO in total  $> 200\text{mJy}$



# MEERKAT ABSORPTION LINE SURVEY (MALS)

- evolution of cold gas
- blind search
- dust unbiased
- SFR density evolution range



# MOONS SYNERGY

- > 600 QSO @  $z < 1.8$  (~50 to date)
- they need redshifts!
- much wider impact with characterisation of all the sources detected!

# MOONS SYNERGY

- some of the candidate fields can be covered by the MOONS shallow survey
- redshift determination of the QSO
- spectra of the objects in the field
- hundreds of objects expected to be detected in the radio for each field
- goal 10 fields: several thousands of objects

# MOONS SYNERGY

- amazing scientific return
- need of coordination
- deep survey can also be useful



MERCI