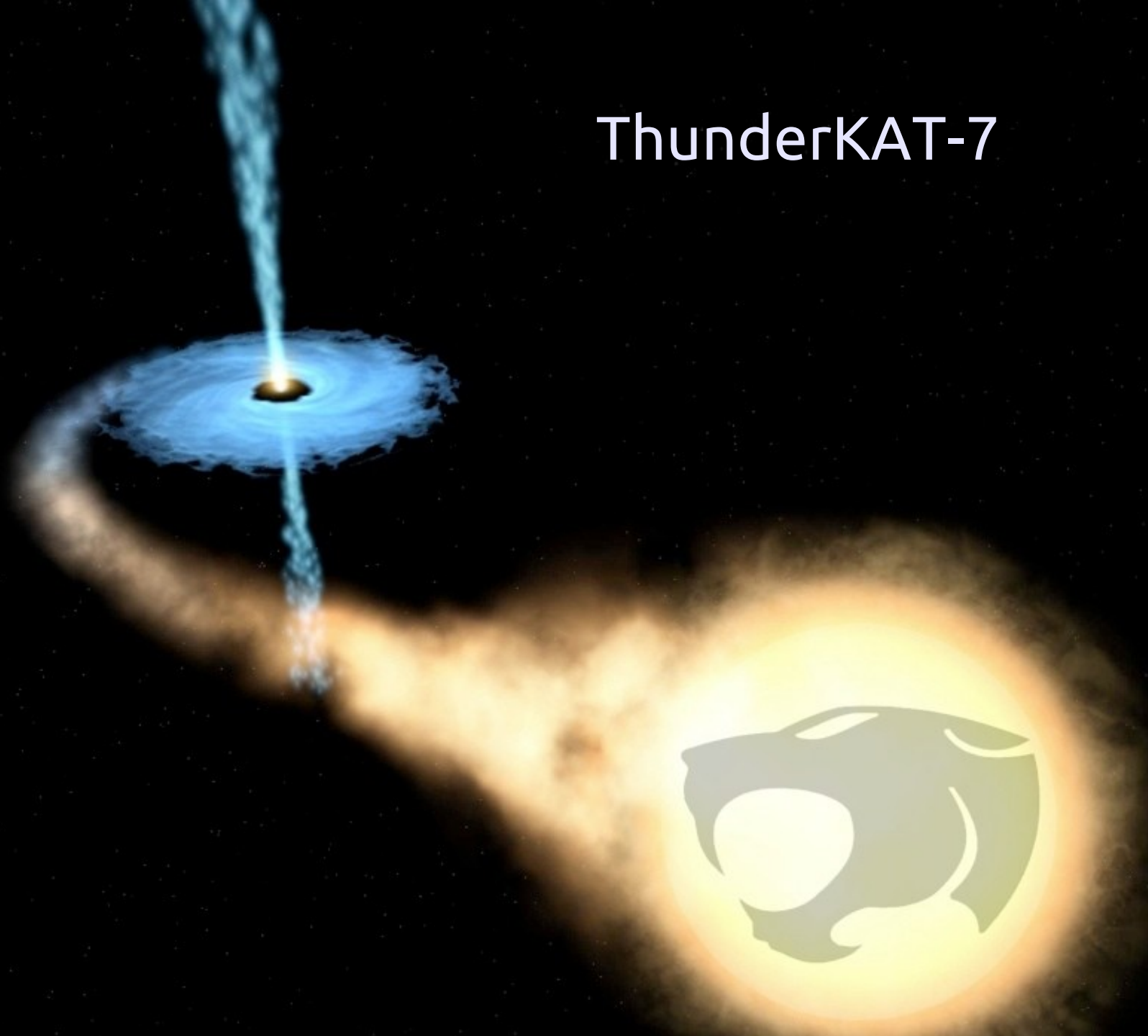


# ThunderKAT-7



# KAT-7: mJy sensitivity and pretty good snapshot *uv* coverage



Array comparable to sparser  
version of VLA in C/D  
configuration in L-band

Handover to ops end 2011

There will be a KAT-7 call for  
(commissioning) proposals in 2011

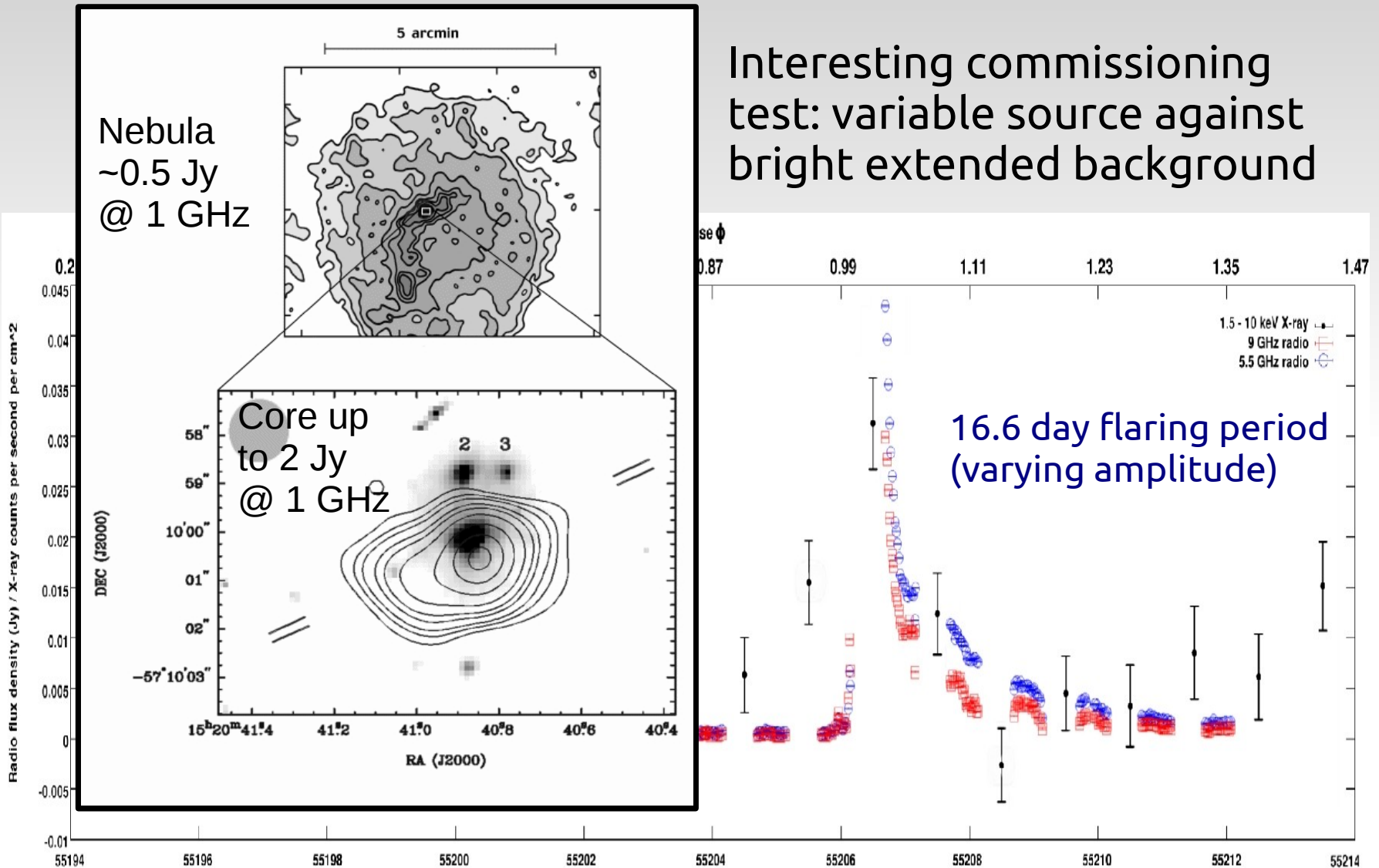
**Frequency:** L-band (256 → 400 MHz b/w)

**Field of view:**  $\sim 1 \text{ deg}^2$

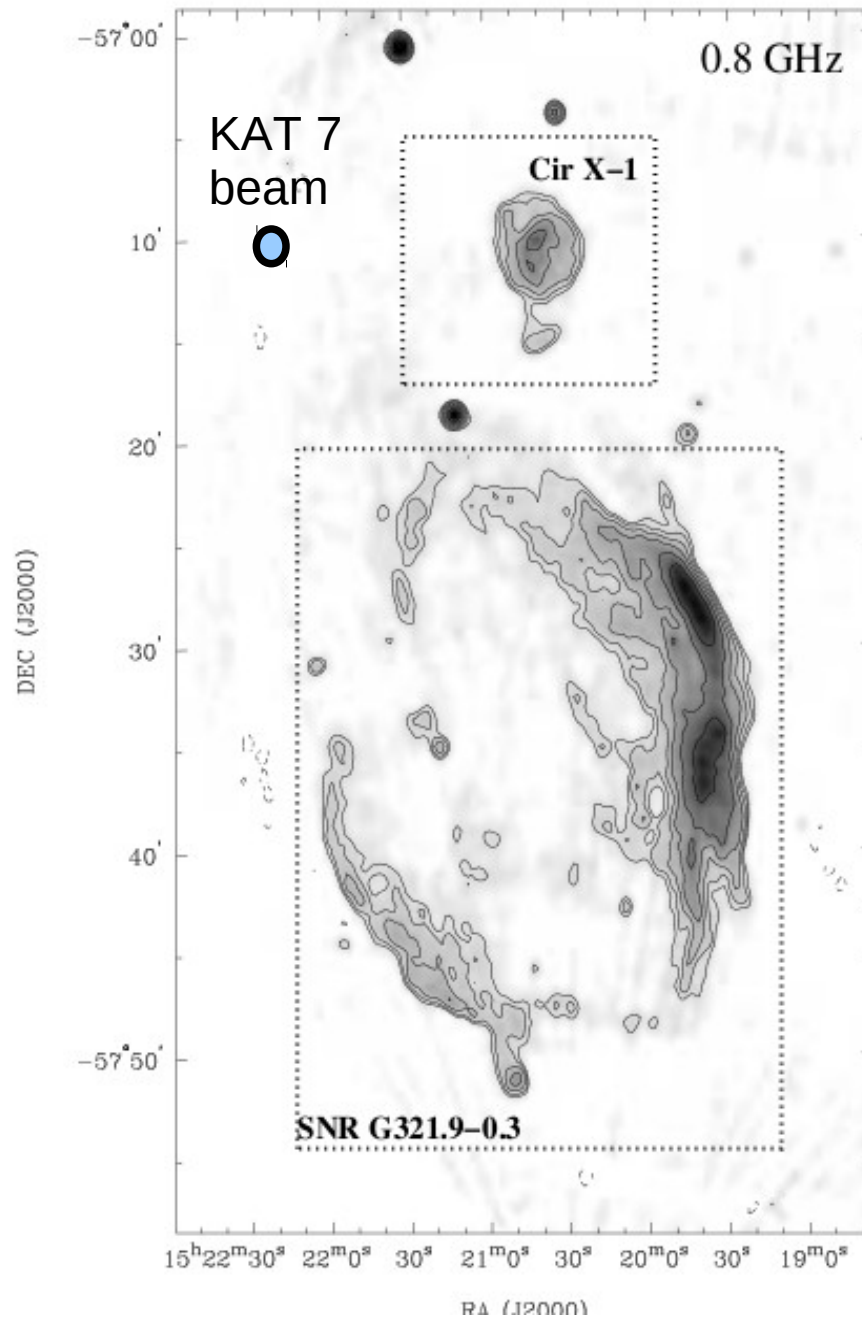
**Resolution:**  $\sim 300\text{m}$  baseline →  $\sim 2$  arcmin  
(but don't forget localisation is  $\sim \text{beam} / [\text{S/N}]$ )

**Sensitivity:**  $\sim 1$  mJy in 30 min

# Suggested program I. Circinus X-1



Calvelo et al. (2011), Moin et al. (2011), Miller-Jones et al. (2011)



1 degree

A large vertical double-headed arrow is positioned to the right of the map, indicating a scale of 1 degree. The arrow is oriented vertically, with its top and bottom points pointing towards the top and bottom of the image, respectively.



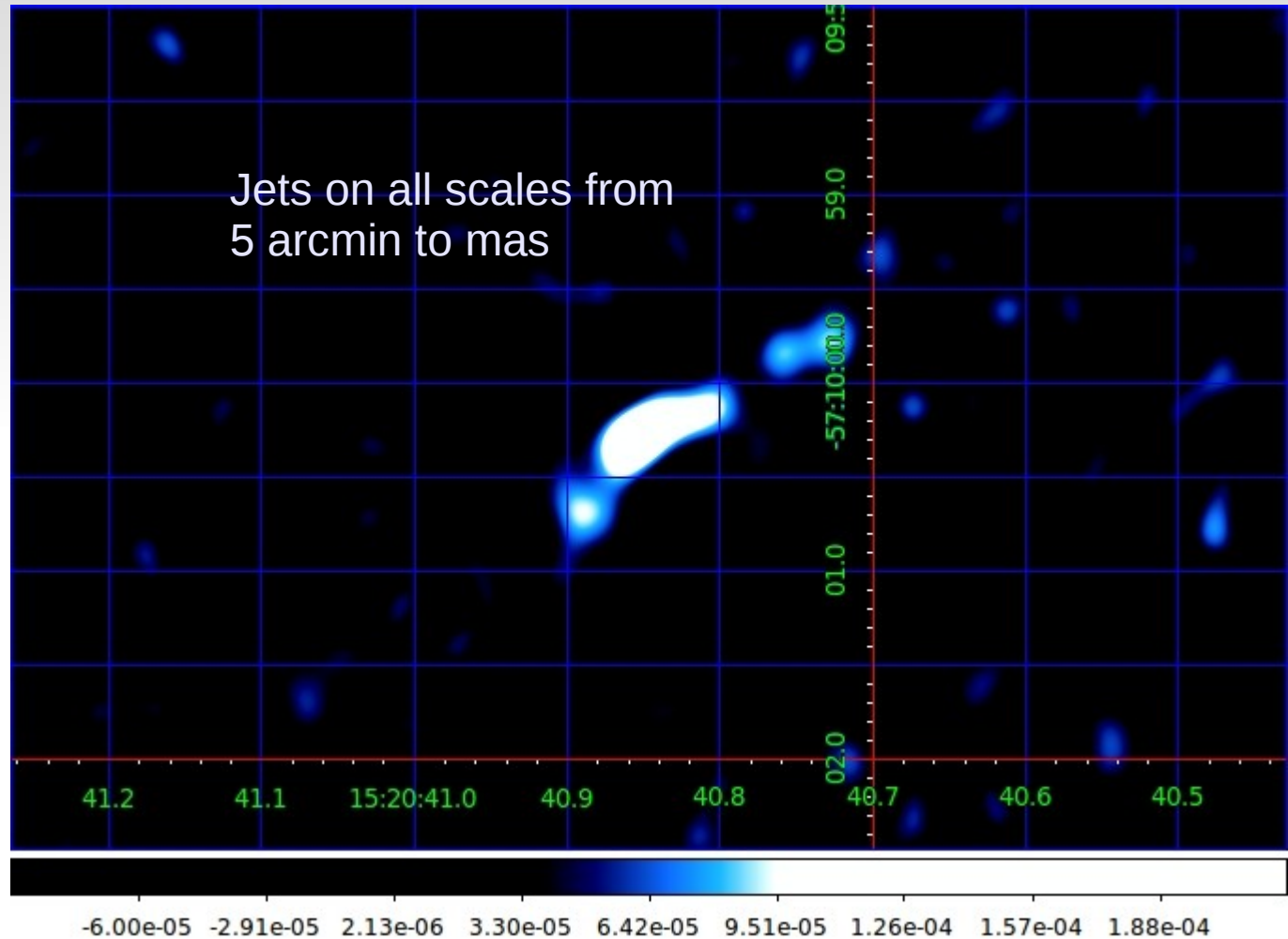
# Circinus X-1 may be the most relativistic jet source in our galaxy – 'southern SS433' – high science return

Currently monitored by HartRAO (some ATCA filler time)

**Reactivating NOW** – Hart reports highest fluxes for 30 yr!

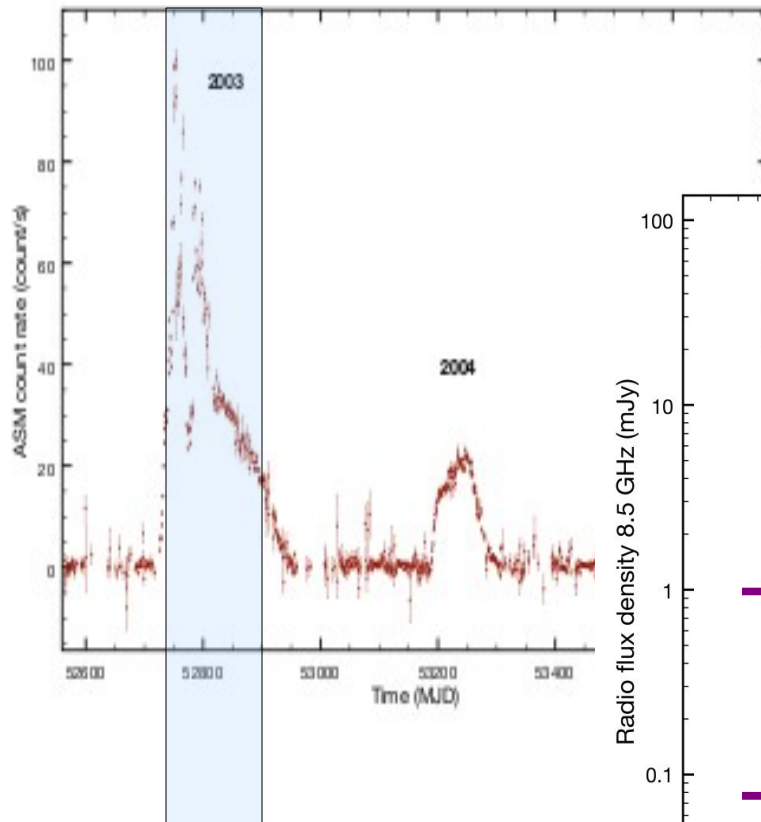
Use KAT-7 monitoring to trigger e.g. ATCA / LBA observations

Also trigger multi $\lambda$  e.g. Opt / IR / X-ray: **IRSF !**

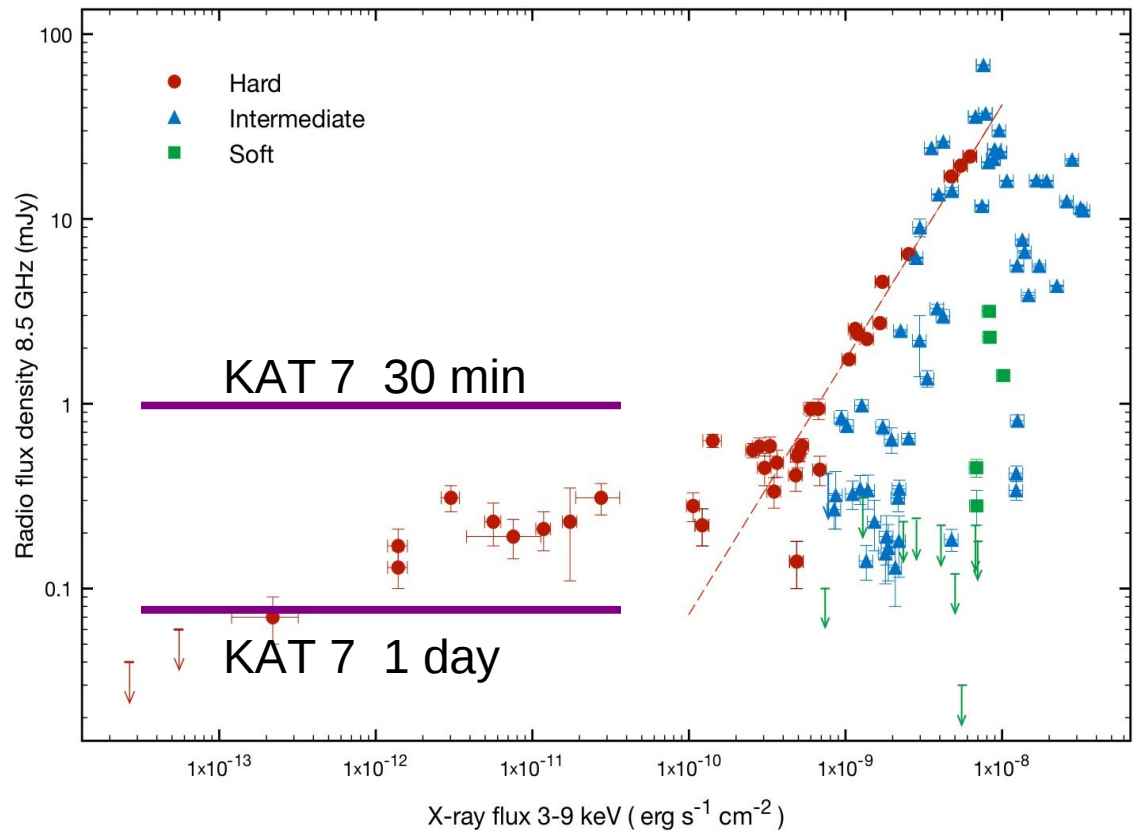


Recent 7mm ATCA image – variable sub-arcsec structure (Calvelo et al. *in prep*). Good for **ALMA** too.

# Suggested program II. Currently active sources



KAT-7  
here?



Black hole transient H1743-322: Coriat et al. (2011)

# Suggested program III. Search fields ?

Perhaps better to focus initially on clear science results like Cir X-1, BH transients etc.

Galactic centre – too tough with only short baselines ?

Norma spiral arm – lots of active binaries

SALT-accessible fields ?

→ puts some pressure on LOFAR → KAT 7 port of LOFAR  
Transients Pipeline<sup>TM</sup>



# Public outreach

Get your children to hawk SKA SA!



# Provisional conclusions

## Possible targets:

I. Circinus X-1

II. BH / other active transient

III. Search fields ?

IV. Implement / port Transients Pipeline<sup>TM</sup> to KAT-7

Question: what is VAST going to do with BETA ?