
Radio stars with heaps of bandwidth
Vikram Ravi
University of California, Berkeley

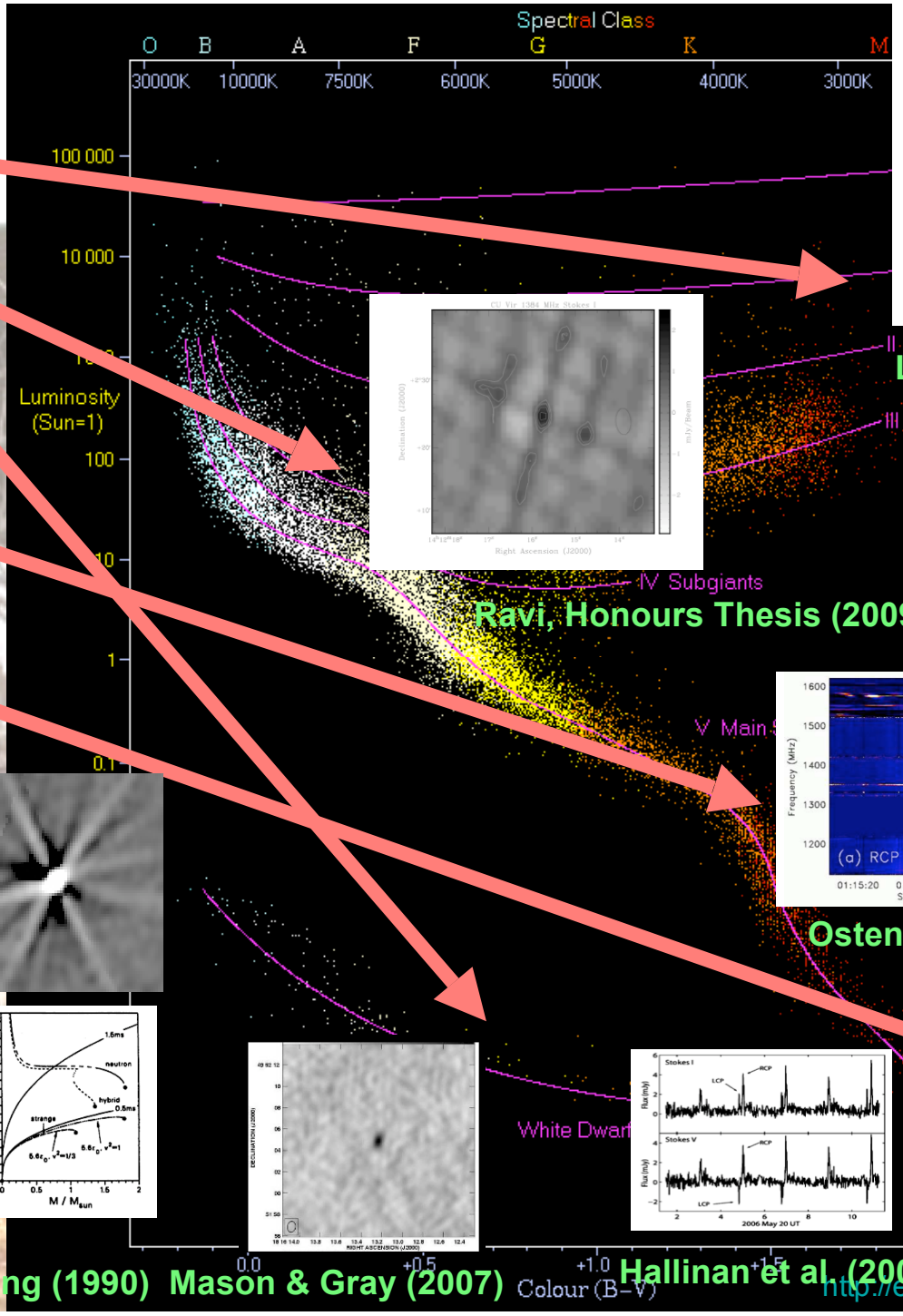
# People, institutions and objects

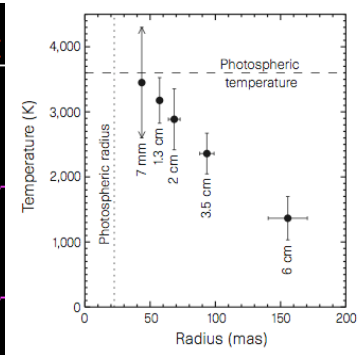
Kitty Lo, George Hobbs, Dayal Wickramasinghe, David Champion, Mike Keith, Gregg Hallinan, Dick Manchester, Ray Norris, Chuck Norris, Don Melrose, Lilia Ferrario, Justin Bray, Andrew Cameron

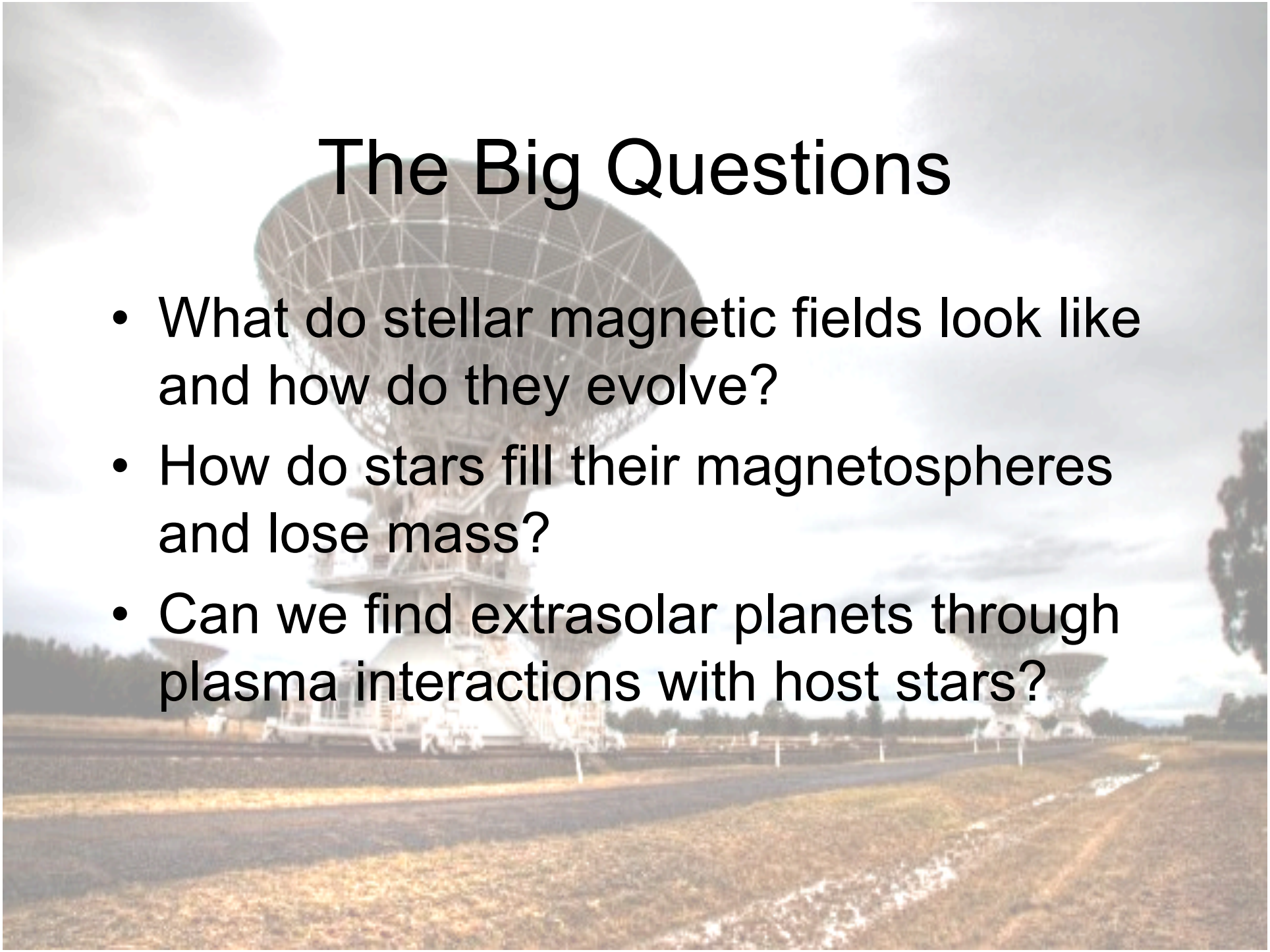
CSIRO Australia Telescope National Facility, The Australian National University, The University of Sydney, UC Berkeley, MPIfR, The University of Adelaide

Australia Telescope Compact Array, Parkes Radio Telescope, EVLA?

- Giants
- Ap/Bp stars
- White dwarfs
- Flare stars
- Ultracool dwarfs
- Neutron stars
- *Quark stars?*
- *Extrasolar planets?*

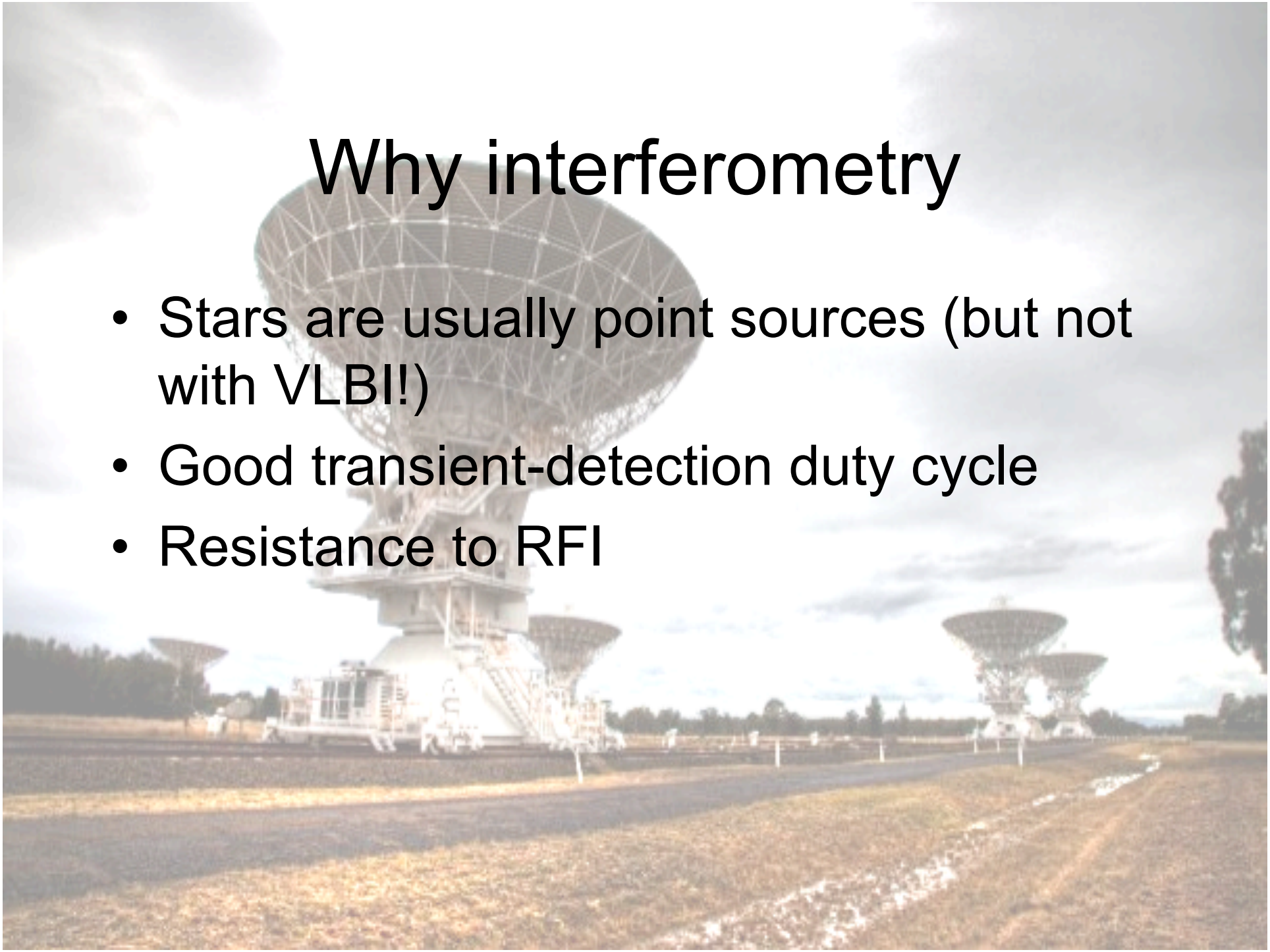




# The Big Questions

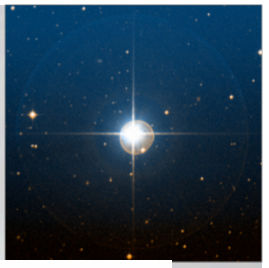
- What do stellar magnetic fields look like and how do they evolve?
- How do stars fill their magnetospheres and lose mass?
- Can we find extrasolar planets through plasma interactions with host stars?

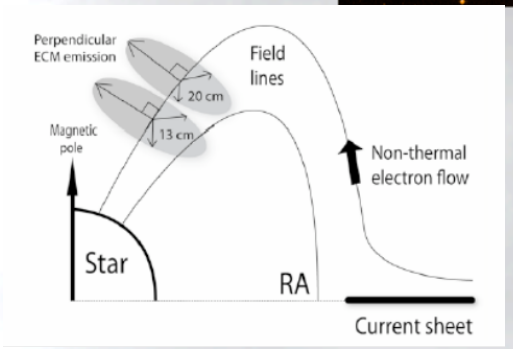


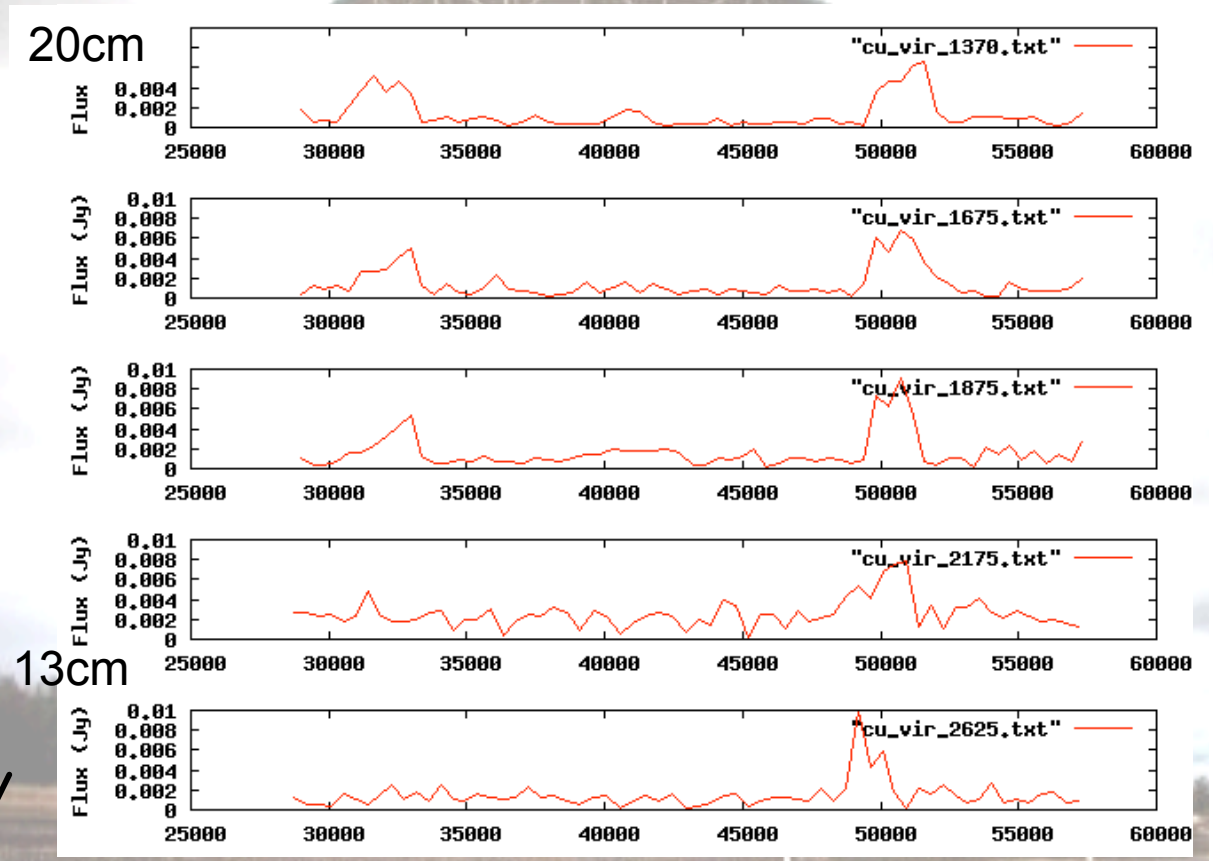
# Why interferometry

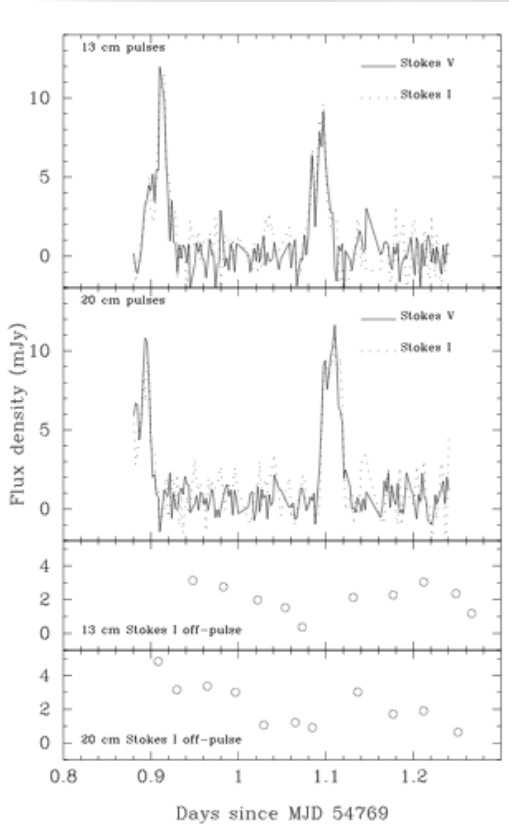
- Stars are usually point sources (but not with VLBI!)
- Good transient-detection duty cycle
- Resistance to RFI

# CU Vir - an Ap star with a 12.5hr period



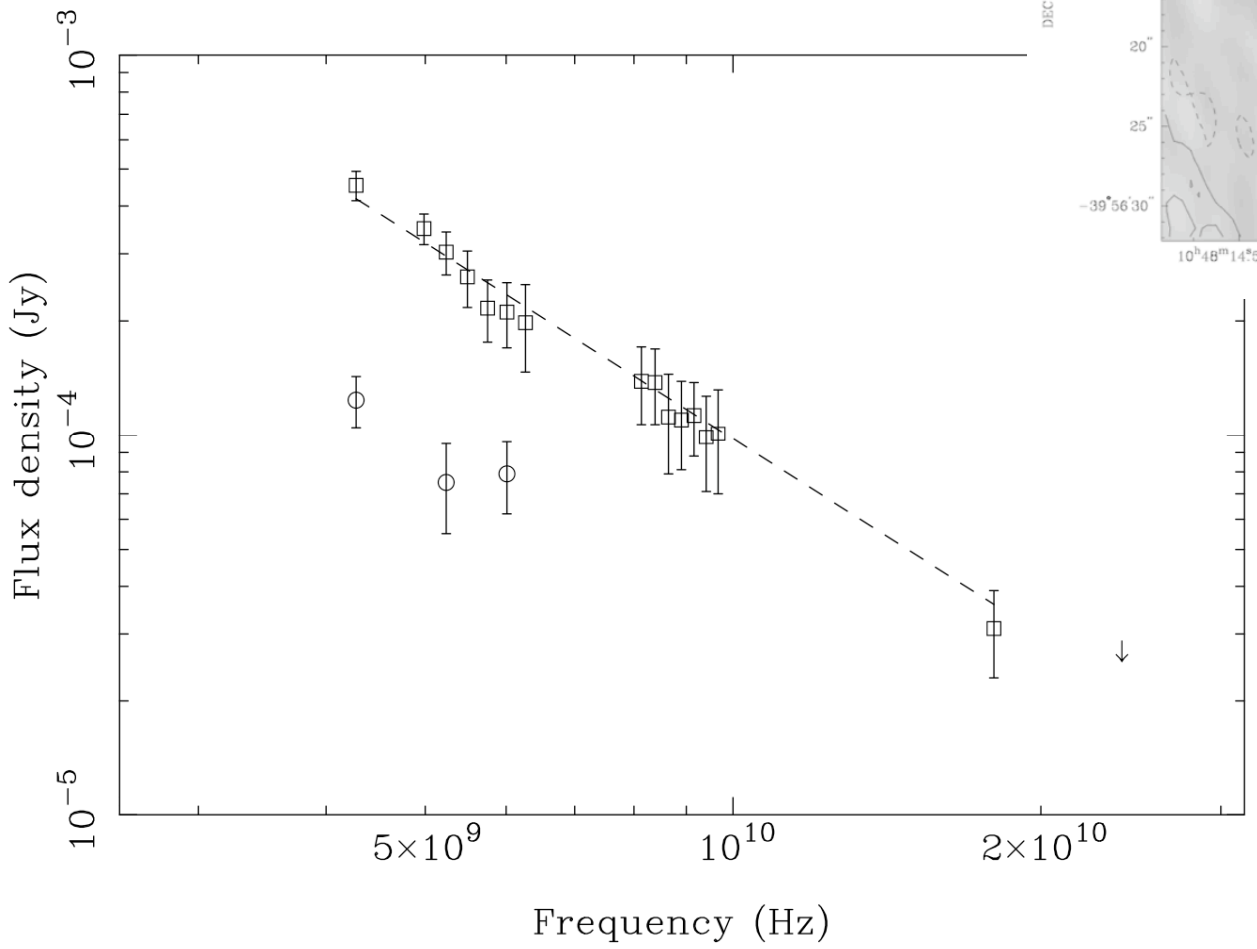


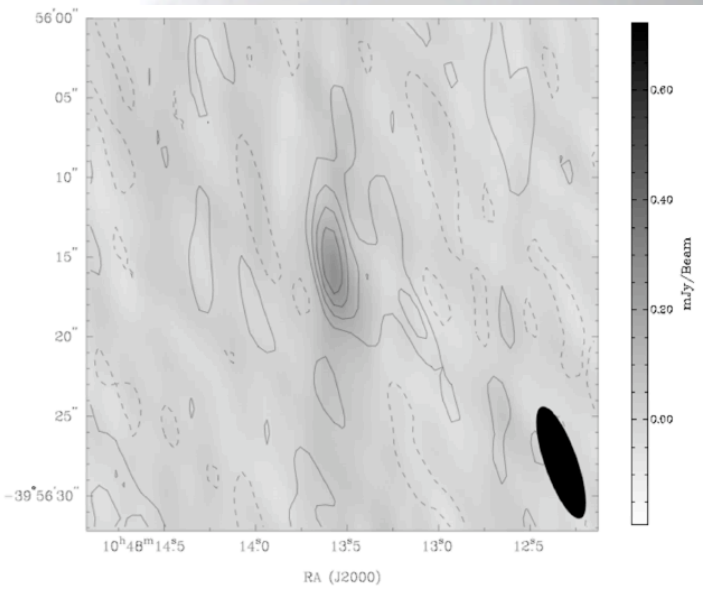




Trigilio et al. 2000, Ravi et al. 2010, Lo et al. in prep.

# DENIS 1048-3956 - an ultracool dwarf

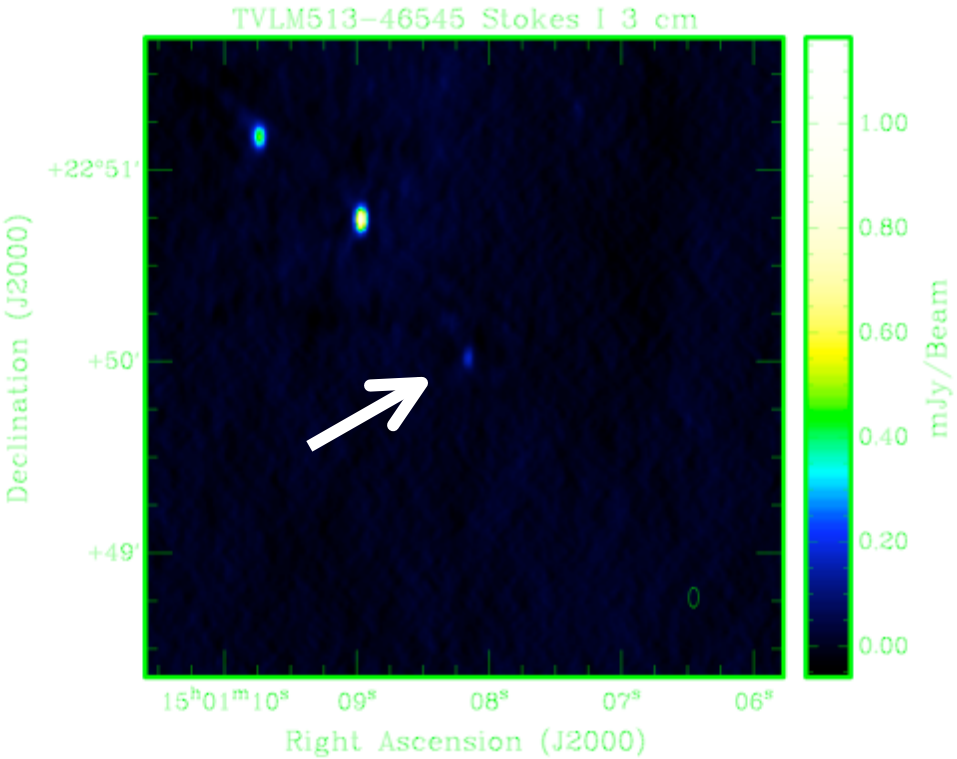


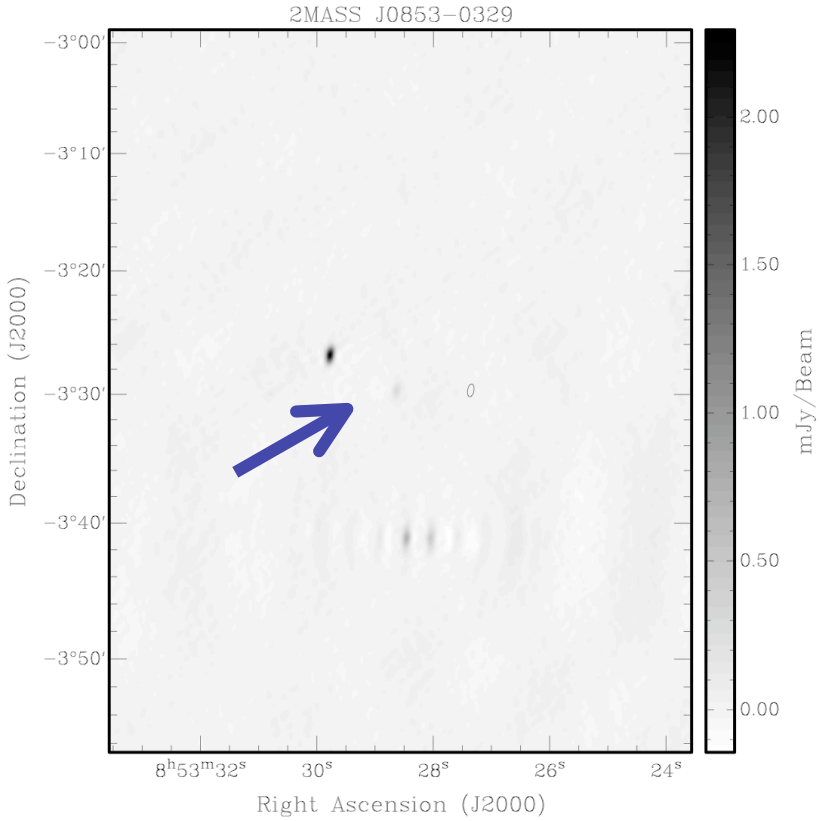



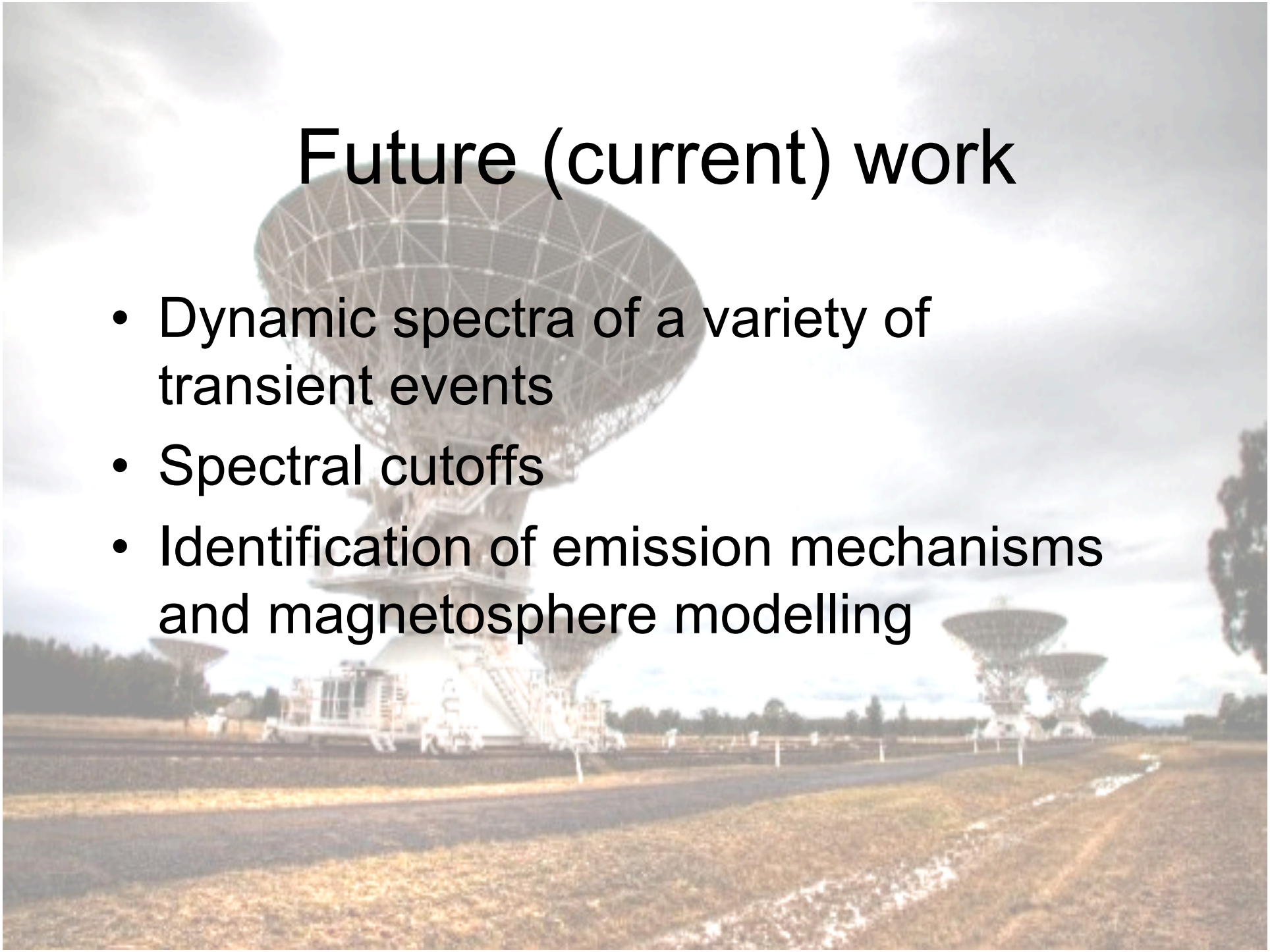

Ravi et al. 2010, submitted to ApJ Letters

# The ATCA-CABB volume-limited survey of Southern ultracool dwarfs

3/6cm, 4GHz BW, 15 sources within 10pc, 12hrs per source…<10uJy rms





# Future (current) work

- Dynamic spectra of a variety of transient events
- Spectral cutoffs
- Identification of emission mechanisms and magnetosphere modelling