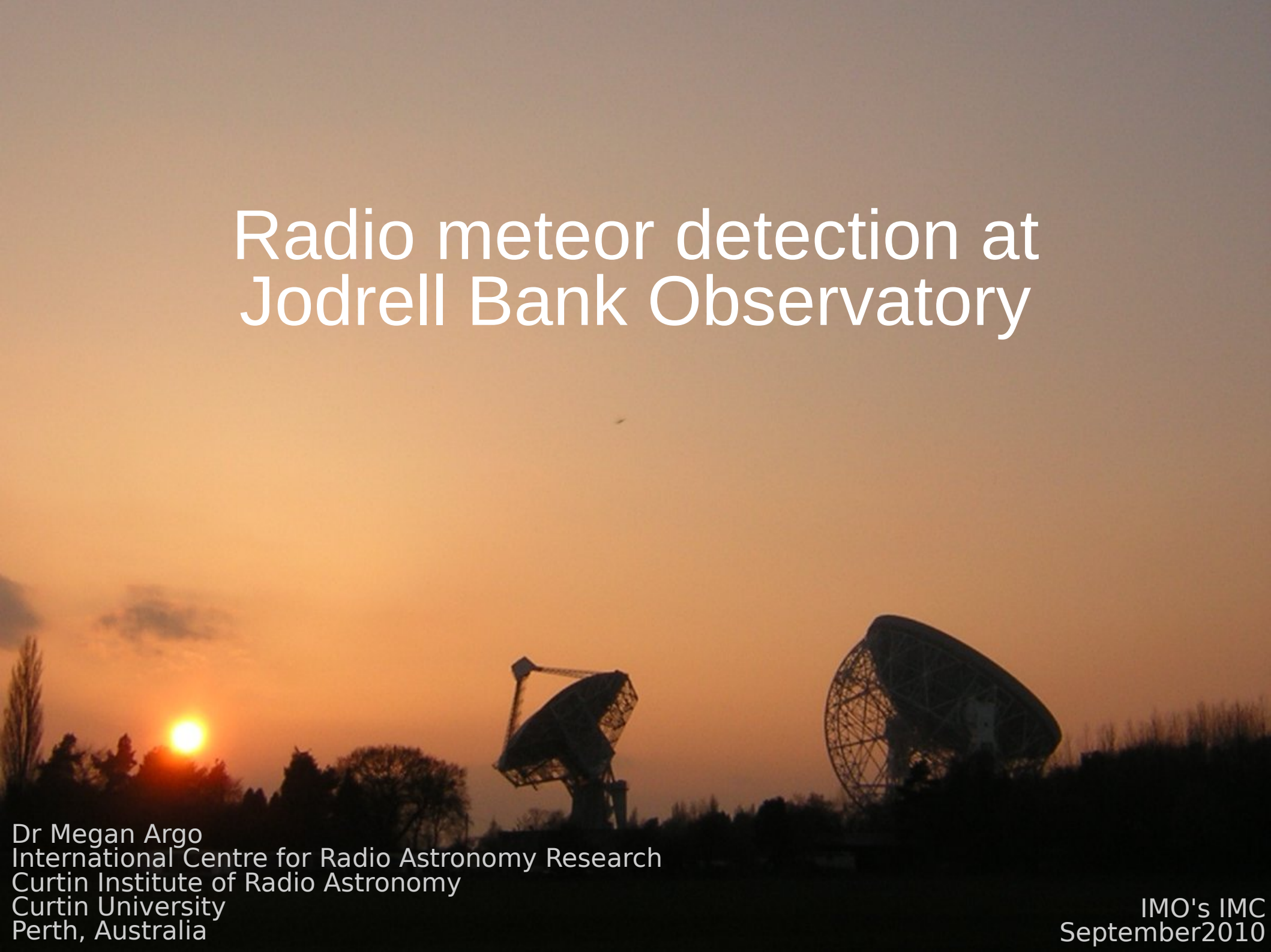


Radio meteor detection at Jodrell Bank Observatory

The image shows two large radio telescope dishes at the Jodrell Bank Observatory. The dishes are silhouetted against a bright orange and yellow sunset sky. The sun is visible on the left side of the frame, partially obscured by the horizon. The dishes are positioned on a hillside, with some trees and vegetation visible in the foreground.

Dr Megan Argo
International Centre for Radio Astronomy Research
Curtin Institute of Radio Astronomy
Curtin University
Perth, Australia

IMO's IMC
September 2010

Jodrell Bank, circa 1950



Giacobinids 1946

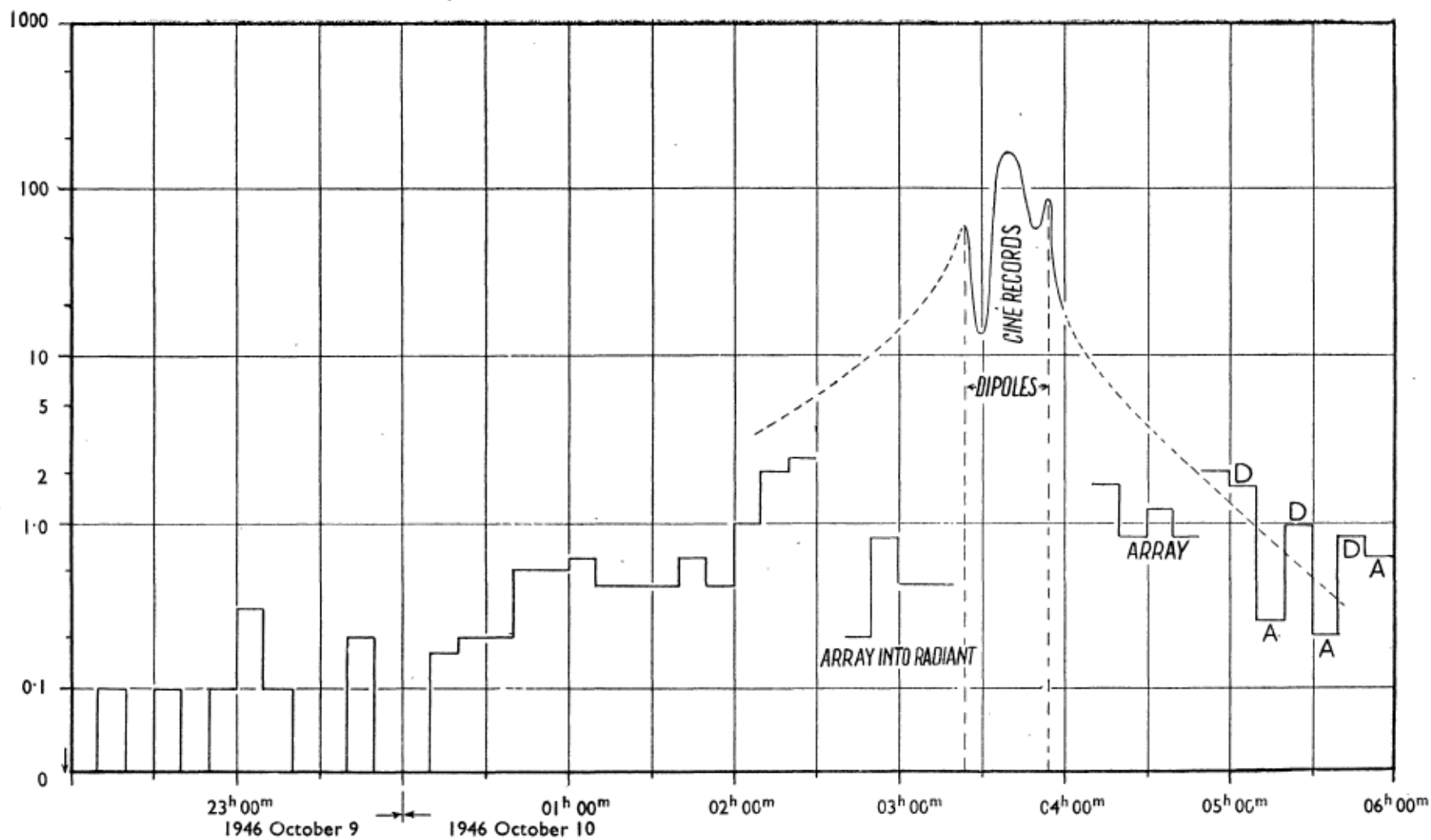
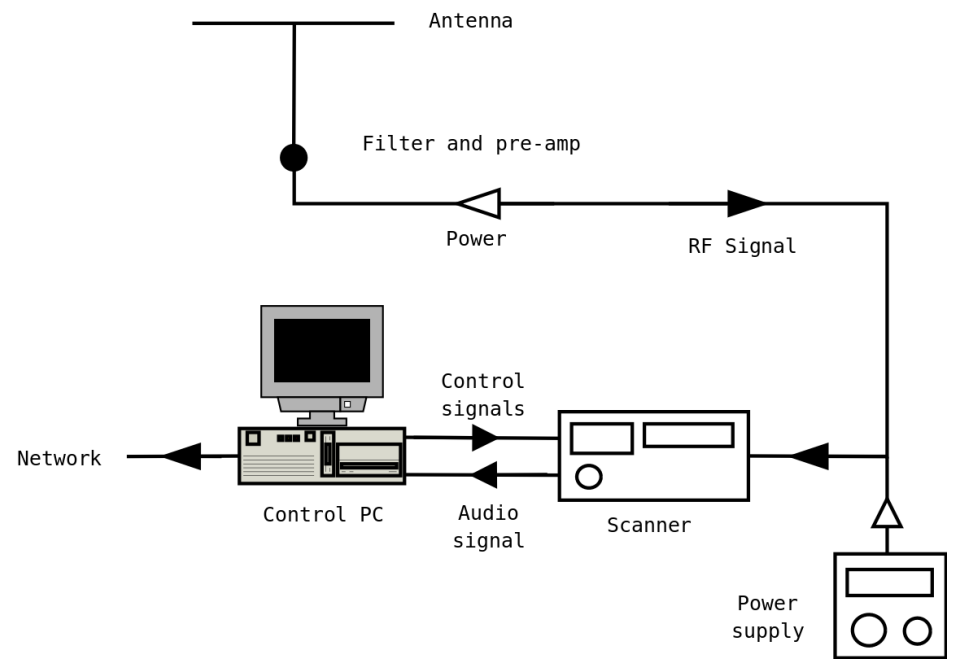
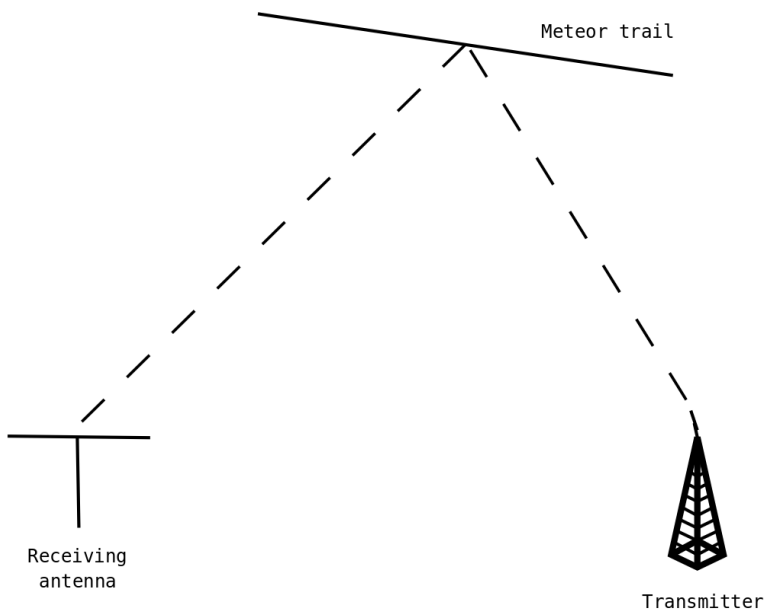


FIG. 1.—Echo rates from Giacobinids 1946 October 9–10. Ordinates: Number of echoes per minute (Log. scale). Abscissae: Hours U.T.

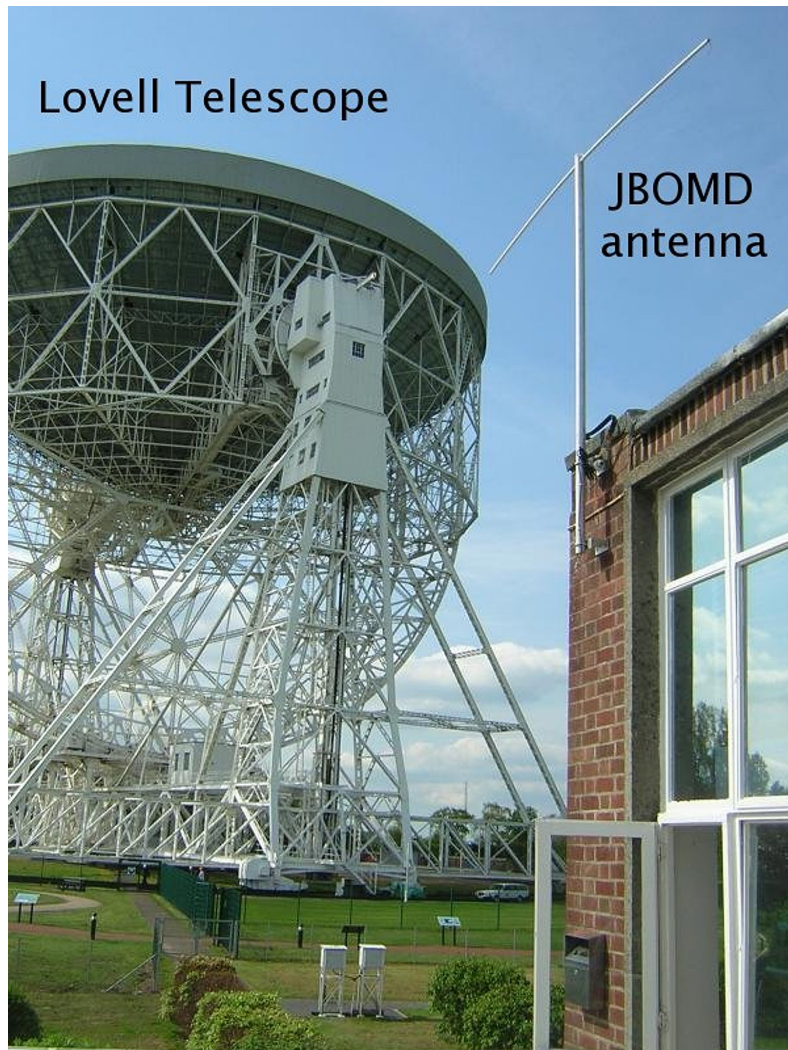
from Lovell, Banwell & Clegg, MNRAS 107 164 1947



Signal flow

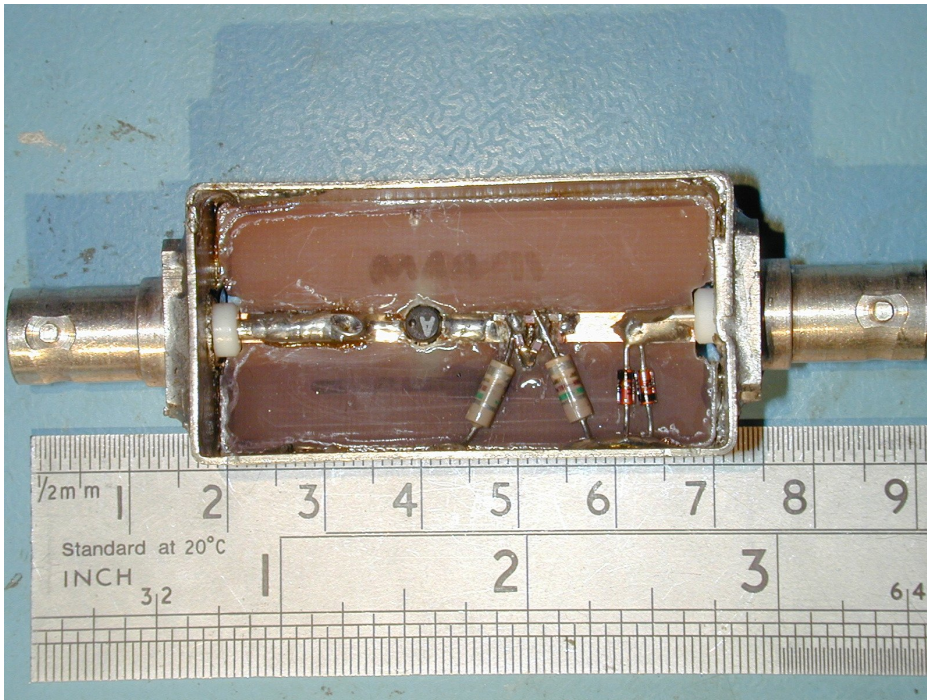


Antenna placement



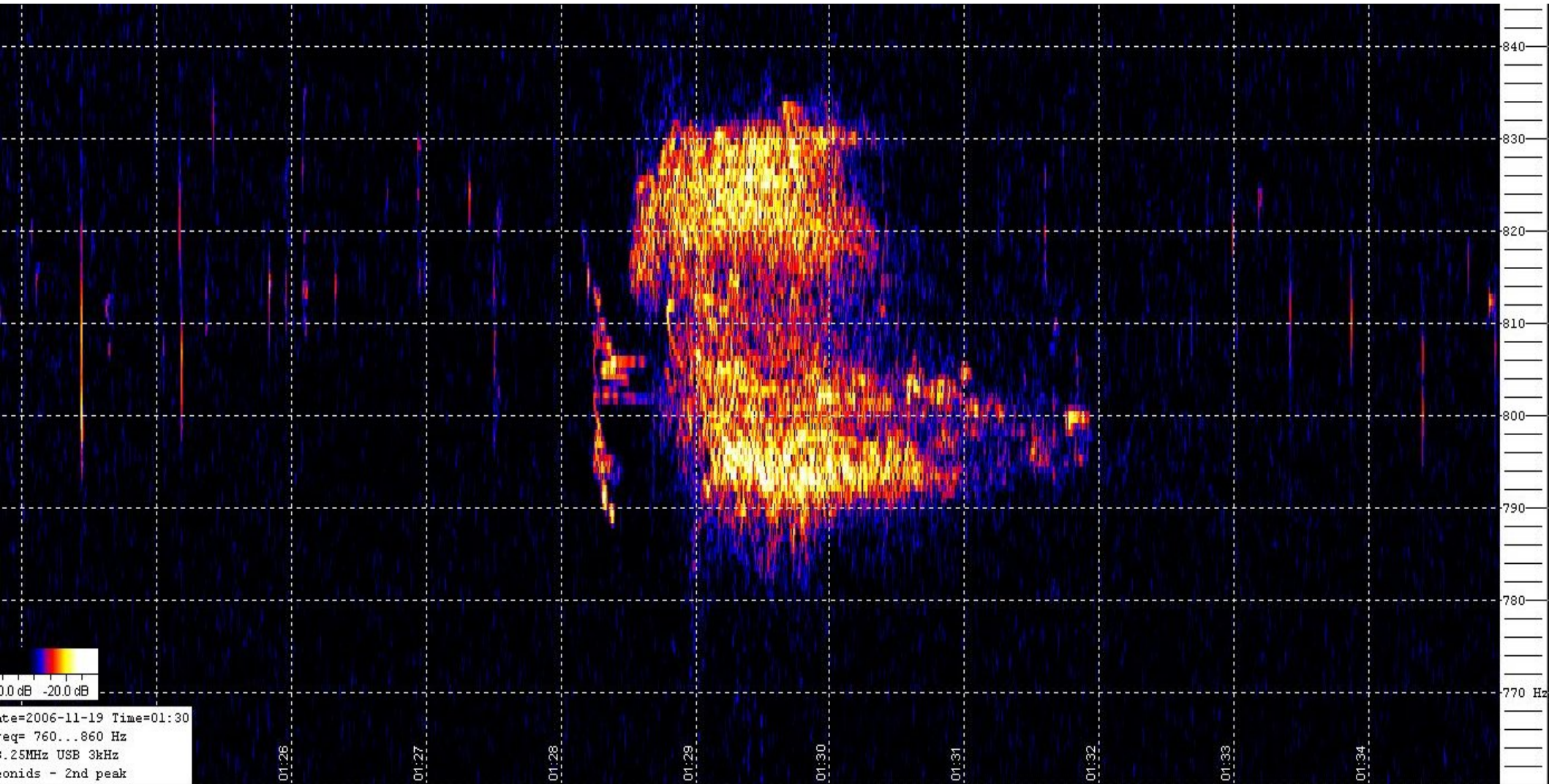
- JBO is a radio quiet zone (honest)
- Several options were considered
- Most were found to be unsuitable due to localised RFI
- Computers are noisy; correlators are worse!
- Final location not bad, but long cable run

The pre-amp



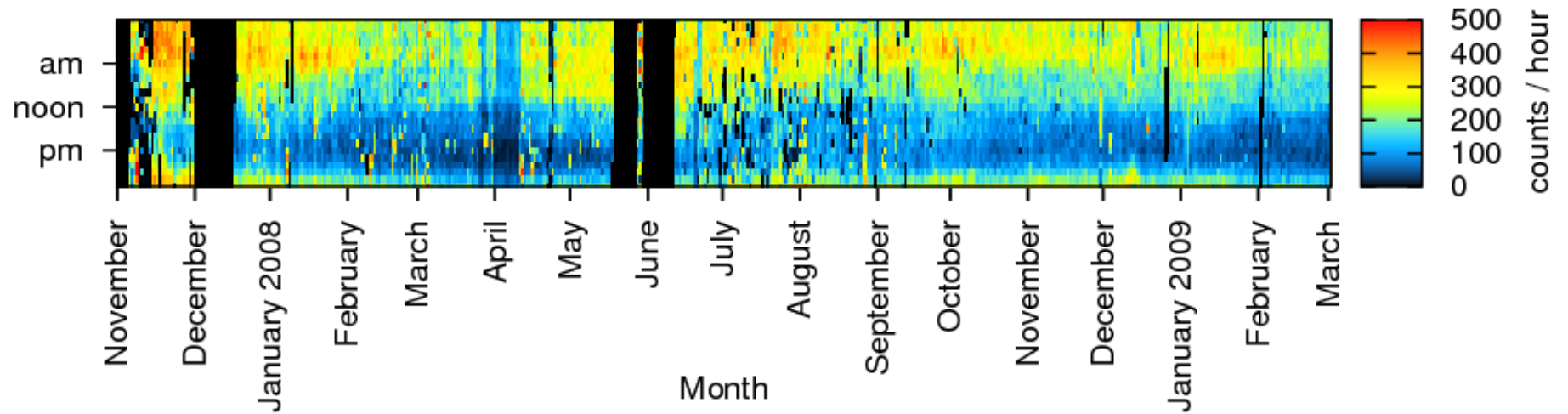
- Uses a low noise MAV-11
- Requires DC 9V supply: supplied via the coax
- Kept failing – was oscillating and exceeding max input power
- Resolved using a filter on the input

First light: Leonids 2006



First year (and a bit)

Year one results for JBOMD, operating at 48.25 MHz



Problems

- Frequent power failures
 - System now on a UPS
- Transmitter wander
 - Modified script to follow signal
- Remote operations
 - Still a problem!
- Digital switch-over
 - Lost our transmitter earlier this year

Current status

- Large archive of images from 2009 onwards
- Transmitter went offline earlier this year
- Currently operating at 55.25 MHz
 - but not optimised
- Plans to retune antenna and adjust filter (next week!)
- Long term plans
 - analogue switch off: other options?
- Australia?

Perth Observatory

The image shows the Perth Observatory, a white domed structure on a hillside. A tall, grey metal mast stands in the foreground, with a long horizontal antenna arm extending from it. The mast is secured with thick, light-colored rope. The background is a clear blue sky with some green foliage visible at the bottom and right edges.

Too much RFI
No suitable
transmitters

Development and
installation by Thomas
Beckerling, summer
student 2009/10

The SKA?

