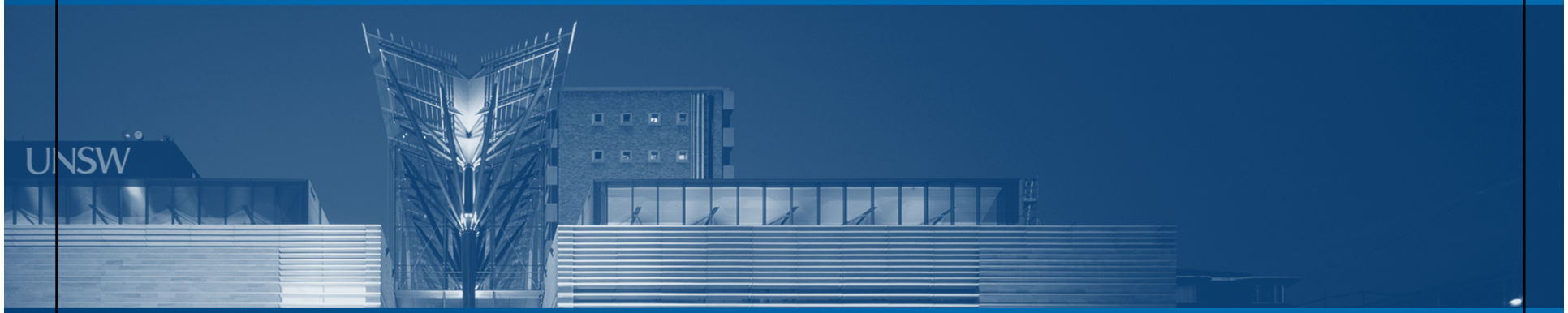


GBT Spectra of Red Quasars
The Strongest 21 cm Absorber to date.

Anant Tanna

PhD Candidate

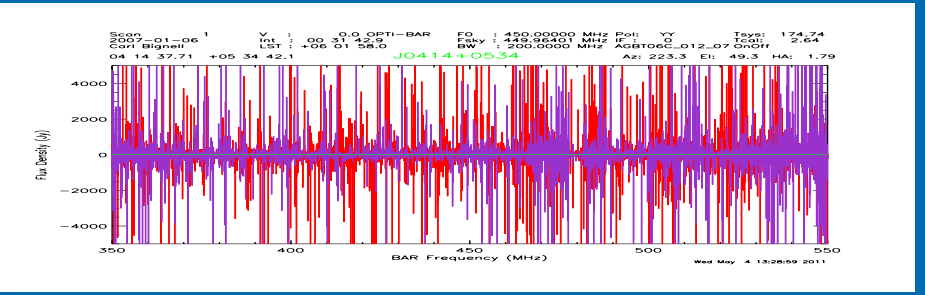
Dept. of Astrophysics

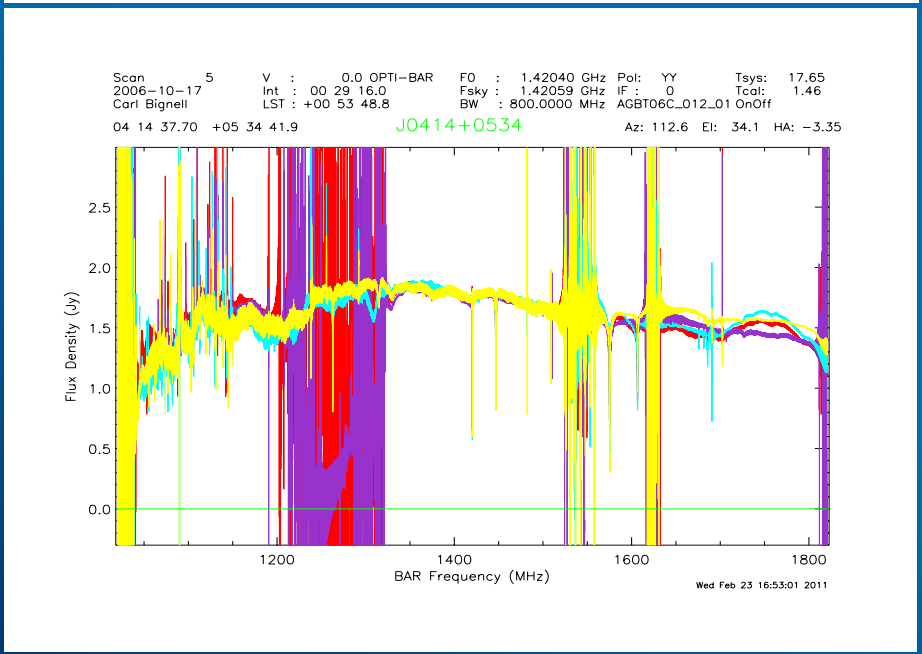
School of Physics

The University of New South Wales

Green Bank Telescope scans toward the z=2.64 quasar MG J0414+0534

- Selected from the Parkes half-Jansky flat-spectrum survey
- V – K colour = 10.62
- GBT scans from 350-1800 MHz
- Higher z scans destroyed by RFI
- Still much usable data





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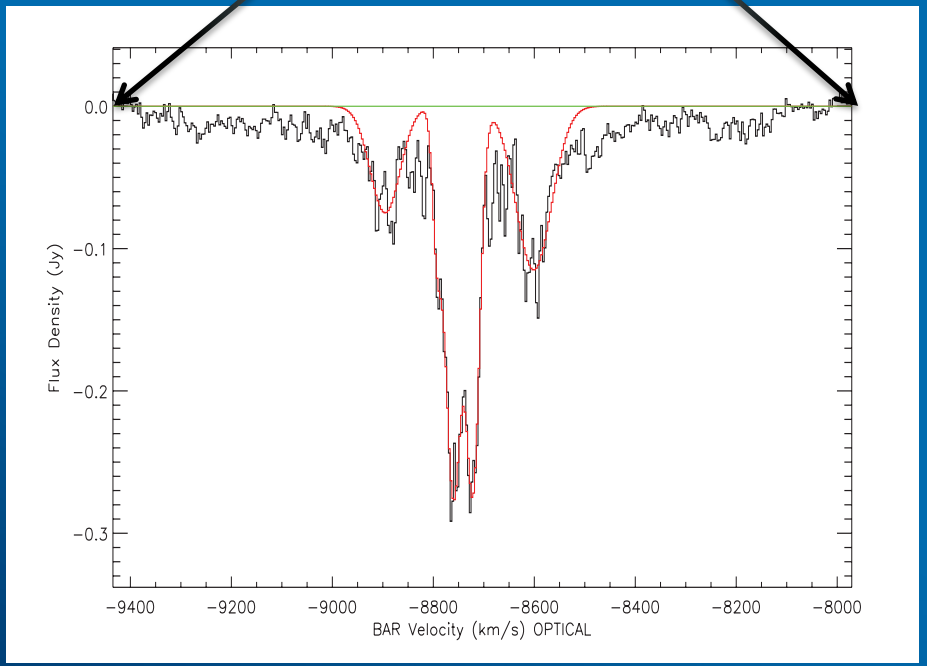
3rd absorber along sight-line

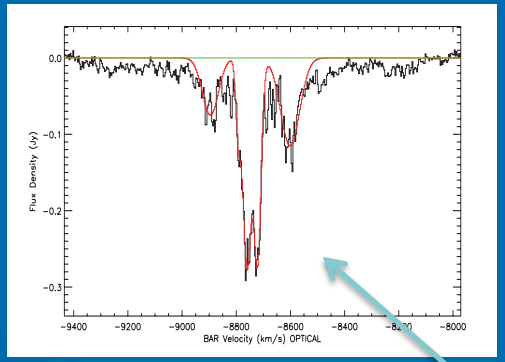
- First two in host and lens (z=0.96)
- 3rd detected at z=0.38
- Strongest HI 21 cm absorber ever found
- No OH detected to $N_{OH} \leq 3.3 \times 10^{13} (T_x/f)$
- Implies this is not the source of reddening material

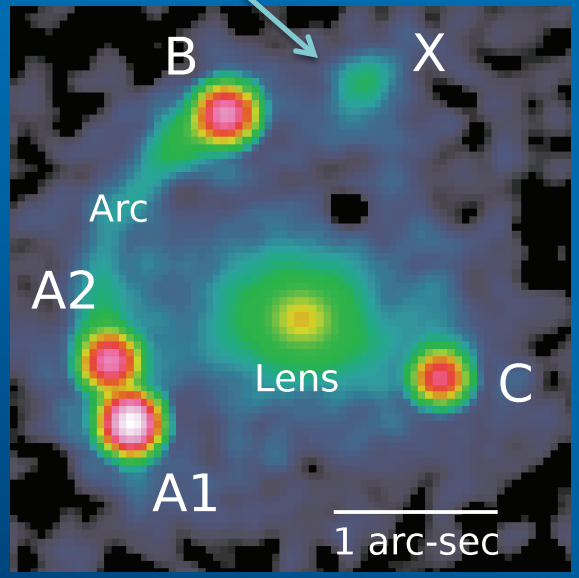


Star forming galaxy with outflows

A redshift for "Object X"

- Detected in 22 GHz data
- Was thought to be a lensed image
- Optical OIII lines detected in Object X at same redshift as new 21 cm absorbing galaxy





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