

## Technical Page

Proposal Type: Short  
 General Category: Astronomy  
 Sub-Category: Spectroscopy  
 Observation Category: Extragalactic  
 Total Time Requested: 3 Hours  
 Minimum Useful Time: 3

**Proposal Title:** A Preliminary Search for HI Absorption between 720 and 820 MHz in a Small Sample of Strong Radio Sources

*ABSTRACT:*

We propose a short observation to search for HI absorptions in quasi-stellar objects at redshifts close to  $z=1$  using the 800MHz receiver. The high continuum luminosity of a strong extragalactic radio source results from the presence within the host galaxy of an Active Galactic Nucleus (AGN). Models suggest that the fueling mechanism for the central supermassive black hole is driven by nuclear gas, either atomic, molecular, ionized, or a combination of all three. Gas infall to the nuclear region can be triggered by interactions/mergers with companion galaxies; additionally gas can be driven away from the central regions through interactions with radio jets. Investigation of the kinematics of the gas present in such systems is thus essential. Since the continuum radio emission of these sources is so bright, HI absorption provides an excellent method for investigating the presence and dynamics of atomic gas within them.

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### Remote Observing Request

- Observer will travel to AO
- Remote Observing
- In Absentia (instructions to operator)

### Instrument Setup

705-825

### Atmospheric Observation Instruments:

**Special Equipment or setup:** none

**RFI Considerations**

**Frequency Ranges Planned**

700-825 MHz