

## Technical Page

Proposal Type:           Urgent  
 General Category:       Astronomy  
 Sub-Category:           Spectroscopy  
 Observation Category:   Solar System  
 Total Time Requested:   approx. 25 Hours

**Proposal Title:** Radio OH Observations of Comet C/1994 S4 LINEAR

**ABSTRACT:**

In comets, a strong observed 18-cm OH line can be produced as the comet amplifies or absorbs background radiation. In highly productive comets, OH spectral lines in the inner coma appear weaker than expected because gas collisions thermalize and "quench" this maser emission. The role of such collisional quenching was recently shown to play a large role in Comet Hale-Bopp, one of the most productive comets ever observed. The goal of this study is to achieve high-resolution observations of a less-productive, more "typical" long-period comet, in order to investigate the degree of quenching. The close apparition of the newly discovered comet C/1999 S4 LINEAR affords an opportunity to resolve the gas coma and observe how the OH lines vary with distance from the nucleus, constraining the degree of line quenching at work in the coma.

Name	Institution	E-mail	Phone	Student
Amy J Lovell	FCRAO/Amherst College	ajlovell@amherst.edu	(413) 542-8479	no

- None     No
- All of the observing run.     Maybe
- Part of the observing run.     Yes
- Queue Observing

**Instrument Setup**

L-wide

**Atmospheric Observation Instruments:**

**Special Equipment or setup:** none

**RFI Considerations**

**Frequency Ranges Planned**

1612  
 1665-1667  
 1720