

Technical Page

Proposal Type: Regular
 General Category: Astronomy
 Sub-Category: Spectroscopy
 Observation Category: Solar System
 Total Time Requested: 15 Hours
 Minimum Useful Time: 2 hours

Proposal Title: Radio OH observatons of long-period Comet Boattini (2007 W1)

ABSTRACT:

Radio observations of the 18-cm OH lines provide unique insight into the water production of comets and the outflow velocity of the gas. Other measurements of trace gases depend on the measured water production to obtain the total mass. Water can be difficult to observe from the ground, and these OH lines are one of the few direct ways to measure this. We have observed sixteen comets in the last 8 years, and find a wide variety of outflow behaviors: every comet is different. When the lines are bright enough, we can measure both a nucleus centered line, and positions 4 arcmin into the coma. This allows us to measure the degree of collisional quenching that is present, and this too has been variable. Some comets follow predictions, some are well above, others well below. Without a larger sample of comets we cannot determine whether these differences are intrinsic to the comet, or depend on their being short-period or long-period. Comet Boattini is also close enough for some radar observations, and we intend to cooperate with that observing team to make best use of the time allocated.

Name	Institution	E-mail	Phone	Student
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Remote Observing Request

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

Instrument Setup

L-wide

Atmospheric Observation Instruments:

Special Equipment or setup: Ephemeris tracking using the new CIMA would be helpful.

RFI Considerations

Frequency Ranges Planned