Proposal Type: Urgent  
General Category: Planetary Radar  
Observation Category: Solar System  
Total Time Requested: 24 Hours  
Minimum Useful Time: 1.5 hours

Proposal Title: Urgent proposal for OH spectroscopy and radar of C/2009 R1 McNaught in May and July 2010

ABSTRACT:
Radio OH observations are an effective way to trace water production, which is difficult to measure from the ground. Radio OH observations are done at L-band, where the atmosphere is transparent and relatively unaffected by weather or daylight. OH observations constrain the collisional environment in the coma, and give a direct measure of the outflow velocity of the coma gas. Previously, estimates of the OH line strength of Comet McNaught (2009 R1) were at or below detection levels, but now it appears that the line strength will be much higher. The geocentric distance in July is within the range that the icy grain coma of some other comets have been detected at CW, and in some cases, the nucleus as well. We propose 2 days in May to confirm that the OH lines are at the predicted strength. We also propose 5 days in July, 3 for radar detection and 2 additional days for OH measurements. If the radar observations are not initially successful, the time can be re-allocated for other projects.

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Remote Observing Request

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

Instrument Setup

S-Band radar   L-wide   S-band receiver

Atmospheric Observation Instruments:

Special Equipment or setup: none
RFI Considerations

Frequency Ranges Planned