

## INVESTIGATION OF THE 2-6GHz REGION OF THE MICROWAVE SPECTRUM FOR THE O<sub>2</sub>-H<sub>2</sub>O VAN DER WAALS COMPLEX

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Based on a preliminary investigation into the rotational transitions of the van der Waals complex O<sub>2</sub>-H<sub>2</sub>O using a chirp pulse FTMW spectrometer, the 2-6GHz region of the electromagnetic spectrum was explored for rotational transitions using a cavity FTMW instrument. Focus of the study was around the 5 GHz region as the preliminary chirp pulse FTMW spectra, theoretical calculations, and previous work<sup>a</sup> imply transitions are present in this region but have yet been reported. The collected spectra will be presented and discussed along with new working fits taking these rotational transition assignments into account.

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<sup>a</sup>Kasai, Y., Dupuy, E., Saito, R., Hashimoto, K., Sabu, A., Kondo, S., Sumiyoshi, Y., & Endo, Y. (2011). The H<sub>2</sub>O-O<sub>2</sub> water vapour complex in the Earth's atmosphere. *Atmospheric Chemistry and Physics*, 11(16), 8607-8612. <https://doi.org/10.5194/acp-11-8607-2011>