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New HST observations of Ceres in the search for exospheric emissions

Lorenz Roth (1), Nickolay Ivchenko (1), Kurt Retherford (2), Nathaniel Cunningham (3), Paul Feldman (4), Joachim Saur (5), John Spencer (6), Darrell Strobel (4,7)

(1) KTH Royal Institute of Technology, School of Electrical Engineering, Stockholm, Sweden (lorenzr@kth.se), (2) Southwest Research Institute, San Antonio, TX, USA., (3) Department of Physics and Astronomy, Nebraska Wesleyan University, Lincoln, NE, USA., (4) Department of Physics and Astronomy, The Johns Hopkins University, Baltimore, MD, USA., (5) Institute of Geophysics and Meteorology, University of Cologne, Germany., (6) Southwest Research Institute, Boulder, CO, USA., (7) Department of Earth and Planetary Science, The Johns Hopkins University, Baltimore, MD, USA.

In August 2015, we obtained far-ultraviolet observations of Ceres to search for atomic emissions from an exosphere using the Cosmic Origins Spectrograph (COS) on the Hubble Space Telescope (HST). We derive brightnesses at the oxygen multiplets at 1304 Å and 1356 Å and relate them to the abundance of atomic oxygen (O). Assuming that O is produced by photodissociation of H_2O, an upper limit for H_2O abundance is derived and compared to previous observations and models. While our results are consistent with a tenuous sublimated H_2O exosphere, they suggest that high H_2O production with a rate of 10^{26} molecules/s as previously inferred was not present during the observation. The results of our observation provide valuable supplementary information on Ceres' gas environment during the high altitude mapping orbit phase of NASA's Dawn mission.