Abstract Details

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Title: Future Observations of Planets with HERSCHEL and ALMA

Abstract:

Millimeter/submillimeter spectroscopy is a powerful tool for probing t atmospheres of terrestrial and giant planets. Previous ground-based observations have led, in particular, to the study of CO and H2O on M Venus, to the discovery of a stable atmosphere around Io, to the mor of stratospheric species in Jupiter after the SL9 collision, and to the d of CO and HCN in Neptune's stratosphere. ESA's satellite HERSCHEL launched in 2007, is well suited to the study of solar-system objects, to the complementarity of its three instruments. A few years later, th millimeter/submillimeter array ALMA (64 antennae of 12m diameter e expected to be in operation. Several general science themes will be addressed by these two facilities: (1) the origin of giant planets, from measurements of deuterium and helium ; (2) the water cycle on Mars water abundance on Venus, the source of water in outer planets and measurements of isotopic ratios in water; (3) the search for minor sp planetary atmospheres ; (4) the size distribution in the Kuiper Belt. W review some of the most important open issues in these fields and de the relevant observations to be performed by HERSCHEL and ALMA.

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