Assessment of Planetary Protection Requirements for Spacecraft Missions to

ICY SOLAR SYSTEM BODIES

Committee on Planetury Protection Standards for lay Bodies in the Outer Solar System Space Studies Board

Division on Engineering and Physical Sciences

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Author: Committee on Planetary Protection Standards for Icy Bodies in the Outer Solar System Space Studies Board Division on Engineering and Physical Sciences National Research Council / **Category**: Science / **Total Pages**: 83 pages

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Summary: Free assessment of planetary protection requirements for spacecraft missions to icy solar system bodies pdf download - nasa s exploration of planets and satellites during the past 50 years has led to the discovery of traces of water ice throughout the solar system and prospects for large liquid water reservoirs beneath the frozen ice shells of multiple satellites of the giant planets of the outer solar system during the coming decades nasa and other space agencies will send flybys orbiters subsurface probes and possibly landers to these distant worlds in order to explore their geologic and chemical context because of their potential to harbor alien life nasa will select missions that target the most habitable outer solar system objects this strategy poses formidable challenges for mission planners who must balance the opportunity for exploration with the risk of contamination by earth s microbes which could confuse the interpretation of data obtained from these objects the 2000 nrc report preventing the forward contamination of europa provided a criterion that was adopted with prior recommendations from the committee on space research of the international council for science this current nrc report revisits and extends the findings and recommendations of the 2000 europa report in light of recent advances in planetary and life sciences and among other tasks assesses the risk of contamination of icy bodies in the solar system

Pusblisher: National Academies Press on 2012-07-10 / **ISBN:** 9780309256780

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