

IAF SYMPOSIUM ON FUTURE SPACE ASTRONOMY AND SOLAR-SYSTEM SCIENCE MISSIONS
(A7)Interactive Presentations - IAF SYMPOSIUM ON FUTURE SPACE ASTRONOMY AND
SOLAR-SYSTEM SCIENCE MISSIONS (IP)

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DUAL FREQUENCY SYNTHETIC APERTURE RADAR SATELLITE

Abstract

Space is, of course, infinitely more hostile to human life than the surface of the sea. It's vast, cold, dangerous, maybe deadly but humans have been trying to explore it anyway. Space exploration through satellites has greatly extended our knowledge of its historic and present conditions. Remote sensing is an important research tool and remote sensing technologies remain the primary means by which scientific knowledge about the surrounding universe is gathered in lieu of human exploration. Radar remote sensing occupies a critical juncture between the hardware ability to detect signals and the digital computing technology to process these signals in real time. This proposal advances possible improvements to radar remote sensing technology by designing a dual frequency synthetic aperture radar satellite. It will help in reducing the size over a large telescope while optimizing observation capabilities which can be further used for high resolution mapping of the solar system, detecting smaller objects and observing nearby planets.