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Science Goals and Drivers for Future Exoplanet, Space Astronomy, Physics, and Outer Solar System Science Missions (2)

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TESTING TECHNOLOGICAL AND ASTRONOMICAL SDSA/SRT CAPABILITIES FOR SOLAR AND NEAR-SUN OBSERVATIONS.

Abstract

Solar radio science and radio observation of the Sun or near-Sun objects could provide interesting clues about the current conditions of our star. They are of fundamental importance to understand the emission mechanisms and acquire the ability to predict and mitigate those Space Weather phenomena that can affect the space and terrestrial infrastructures. In particular, the tracking of interplanetary spacecraft near the Sun offers an excellent opportunity to perform ad hoc experiments and obtain heliopsheric information as well as gravitational information (e.g. BepiColombo experiments). In this work we present the results of the tests performed at the Sardinian Antenna (SDSA/SRT) dedicated to Sun and near-Sun pointings in the context of the ASI/INAF activities. These tests are executed with the goal to obtain a map of thermal/e.m. parameters, to define constraints for solar pointings and to perform a first science demonstration of the above activities.