

## Development of the solar-planetary environment studies based on inter-planetary comparisons

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The sphere of influence of the planet, from the planetary surface to the vicinity space, is referred to as a "planetosphere". How this planetosphere has been evolved in response to the evolution of the sun is one of important outstanding problems. Closely related to this question, researches of the solar evolution, planetary atmospheric outflows, and planetary meteorology, are rapidly in progress. In this presentation, we introduce a plan of researches and infrastructure development for them to apply our knowledge about the current geosphere to studies of planetospheres based on inter-planetary comparison. In this study, interdisciplinary studies to apply our knowledge of planets in our solar system to exoplanets are also promoted. In addition, it is planned to promote the study of the evolution of the sun. For this purpose, we utilize new observations by MOA, MAVEN, ALMA, Hisaki, Akatsuki, BepiColombo, and JUICE. A unique approach for the exoplanet search and solar wind estimation at planetary orbits in cooperation with 3D heliosphere project also consist of important parts of this study.

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