

## Current status and future prospects of research on the planetary atmospheres

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The planetary atmospheres, which extend from the lower atmospheres up to the ionospheres, are controlled by a number of physical and chemical processes. Understanding the planetary atmospheres is a key to understanding the origin of the solar system, the evolution of the atmosphere, and relationship between atmospheric environment and life. The planetary exploration starting from 1960's have provided us with a lot of information on the atmospheres of the planets. However, we have not yet reached a quantitative understanding of the planetary atmospheres. Current status and future prospects of the research on the planetary atmosphere are presented and discussed.