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**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 33997-2017

**Specification for the format of lunar and planetary data
products**

月球与行星数据产品格式规范

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Foreword

This standard is drafted in accordance with the rules given in GB/T 1.1-2009. This standard is proposed by the Chinese Academy of Sciences. This standard is under the jurisdiction of the National Committee on Standardization of Space Science and Its Application (SAC/TC312). This standard is drafted by the National Astronomical Observatory of the Chinese Academy of Sciences. The main drafters of this standard. Liu Jianjun, Tan Xu, Li Chunlai, Ren Xin, Mu Lingli, Feng Jianqing, Zuo Wei.

The data product of moon and planetary exploration is the prerequisite and basis for scientific research, and the standard system of data product format is established. To achieve the data generation, distribution and application, improve data processing and application efficiency. This standard is for our country's moon and planetary exploration task to develop, according to GB/T 33996-2017 were given the various levels Of the data product format specification. Taking into account the international standards, so that data products for user applications, the standard in the 0-level data product format system In the process of reference, reference is made to the source data format specification developed by the International Space Data System Advisory Committee (CCSDS), at level 1 and level 2 data Product format development process, refer to the "Planetary Data System Standard Guide version 3.6" (PlanetaryDataSystemStandards ReferenceVersion3.6) specifies the data product structure. Moon and Planetary Data Product Format Specification

1 Scope

China's national standard for the format and structure of lunar and planetary exploration data products. It specifies that format and applies to the generation, distribution and use of such data. It is the companion to the naming and hierarchy standard, and between them they define an archive. The problem a planetary data format solves is longevity rather than efficiency. A dataset returned from the Moon or Mars must be readable in fifty years, by software that does not exist yet, on machines nobody has designed, by people who cannot ask the instrument team what a column meant. The international answer, arrived at over decades, is a self-describing archive: the data are written in a simple, documented layout, and every product carries with it a label that states its structure, its units, its coordinate

system, its provenance and its instrument. Nothing essential is left implicit in the code that wrote it. This standard establishes that discipline for China's lunar and planetary programmes.

This standard specifies the format and structure of lunar exploration and planetary data. This standard applies to the generation, distribution and application of lunar exploration and planetary data.

2 Normative reference documents

The following documents are indispensable for the application of this document. For dated references, only the dated edition applies to this article. For undated references, the latest edition (including all modifications) applies to this document. Space science and its application - Terminology - Part 1. Basic general purpose

GB/T 30114.1 Space science and its applied terminology - Part 4. Moon and planetary science GB/T 30114.4

GB/T 33996-2017 Lunar Exploration Data Product Classification and Naming

3 Terms and definitions

GB/T 30114.1 and GB/T 30114.4 and the following terms and definitions apply to this document. For ease of use, the following Some of the terms and definitions in GB/T 30114.1 and GB/T 30114.4 are repeated.

3.1 Lunarexploration The material composition, surface features, physical field, internal structure, origin and evolution history of the moon are carried out by means of a lunar or lunar probe. Observation and sampling research activities. [GB/T 30114.1-2013, Definitions 3.1.1]

3.2 Planetary exploration Detection and sampling of planets, dwarf planets, satellites, asteroids and comets and interplanetary spaces outside the Earth in addition to the Earth activity. [GB/T 30114.4-2014, definition 3.2]

3.3 Data product dataproduct The effective use of data analysis methods, from the massive of the original information to dig out the valuable information to the user to intuitive and effective performance Form, for the user application to provide digital information. [GB/T 30114.1-2013, definition 4.32]

3.4 Data tag datatable The basic elements used in the Moon and Planetary Data products to describe the contents and format of data objects.

3.5 Data object dataobject Lunar and planetary data products in the scientific data and the corresponding auxiliary data collection, divided into image data objects and table data objects.