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

GB/T 44318-2024

**Requirements for piggyback payloads on lunar and deep space
probes**

月球与深空探测搭载要求

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Foreword

This document is in accordance with the provisions of GB/T 1.1-2020 "Guidelines for standardization work Part

1. Structure and drafting rules for standardization documents" Drafting is required. Please note that some of the contents of this document may involve patents. The issuing organization of this document does not assume the responsibility for identifying patents. This document was proposed and coordinated by the National Technical Committee for Standardization of Aerospace Technology and Its Applications (SAC/TC 425). This document was drafted by: Beijing Space Vehicle General Design Department, Beijing Satellite Environment Engineering Institute, China Aerospace Standardization Research Institute Research Institute. The main drafters of this document are: Chen Liping, Zhang Yan, Wu Xueying, Deng Xiangjin, Peng Song, Li Fei, Gu Zheng, Chen Xiangdong, Shen Zhenrong, Lei Yingjun, Zhang Youwei, Xu Yingqiao, Zhang Haifeng, Quan Haofang, Li Qing, Jia Xiaoyu, Li Ying, Zhu Shunjie, Sheng Liyan. Requirements for lunar and deep space exploration

1 Scope

China's national requirements for piggyback payloads carried on lunar and deep space probes. A piggyback payload rides on a mission whose purpose is something else - an instrument, a small satellite, a technology demonstration - and gets to deep space for a fraction of what its own launch would cost. The arrangement has produced a great deal of science, and it creates a specific engineering relationship that these requirements govern. The host owes the payload an interface, a mass and volume allocation, power, data and a

release or operation opportunity. The payload owes the host the guarantee that it will not endanger the mission: that it cannot draw more power than allocated, cannot interfere electromagnetically, cannot outgas onto the host's optics, cannot shift the centre of mass unexpectedly, and above all cannot fail in a way that propagates. The last is why the requirements exist as a standard rather than a per-mission negotiation.

This document specifies the general requirements, mission division, Requirements for onboard input documents, onboard workflow, interface safety requirements, and possible pressure vessels, batteries, radioactive sources, and propellers. Safety requirements for hazardous sources such as propellants and pyrotechnic devices. This document applies to the mission matching, interface coordination and safety control of the lunar and deep space probe payloads. It is used for reference in carrying on other space vehicles such as global satellites.

2 Normative references

The contents of the following documents constitute the essential clauses of this document through normative references in this document. For referenced documents without a date, only the version corresponding to that date applies to this document; for referenced documents without a date, the latest version (including all amendments) applies. in this document.

GB 4075-2009 General requirements and classification of sealed radioactive sources

GB/T 15849 Leakage test method for sealed radioactive sources

GB/T 26929 Terminology of Pressure Vessels

GB/T 29083 Safety requirements for flammable, explosive, toxic substances and radioactive sources in spacecraft

GB/T 30114 (all parts) Terminology of space science and its applications

GB/T 36176-2018 Vacuum technology Helium mass spectrometry vacuum leak detection method

GB/T 44196 Requirements for ground tests of lunar and deep space probes

GB/T 44197 Planetary protection requirements for deep space probes

3 Terms and definitions

The terms and definitions defined in GB 4075-2009, GB/T 26929 and GB/T 30114 (all parts) and the following terms and definitions apply to this document.

3.1 piggyback payload of lunar and deep space probe Taking advantage of the weight, space and energy margins of lunar and deep space probes (hereinafter referred to as

"probes"), Devices that are independent of the main task completion.

3.2 mandatory inspection point During the development of the payload product, the inspection points for the product process or indicators are determined by the publisher or the detector developer.

4 General requirements

4.1 Basic conditions for carrying The basic conditions for carrying the payload on the probe are as follows: The onboard payload should be reliable and safe and should not affect the implementation and completion of the probe's main mission; a)