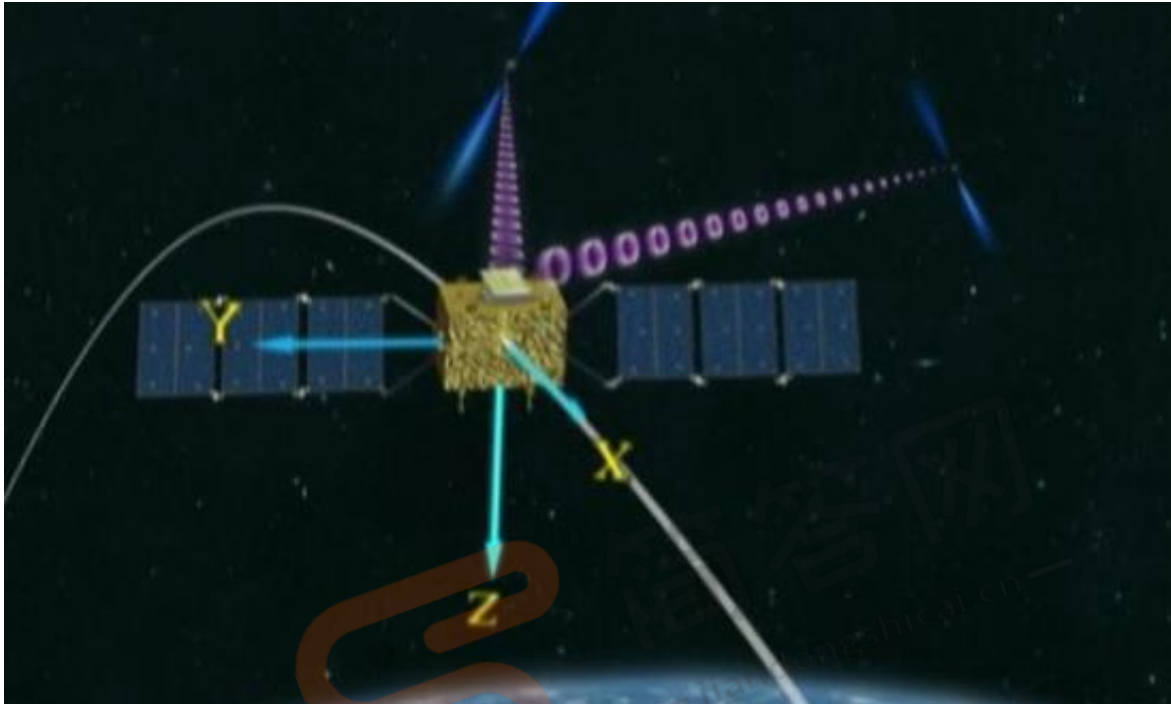


《中国将发射世界首颗脉冲星导航卫星 不再跟随美欧脚步》

导读:中国将发射世界首颗脉冲星导航卫星，成为全球第一个“吃螃蟹的人”。



The China Academy of Space Technology has announced plans to launch the world's first X-ray pulsar navigation satellite (XPNAV-1) in November, Xinhua reported.

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The move brings autonomous spacecraft navigation and a more precise deep-space GPS one step closer to reality.

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X-ray pulsar navigation is an innovative navigation technique wherein periodic X-ray signals emitted from pulsars are used to determine the location of a spacecraft in deep space.

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Current ground-based navigation methods are limited by the time delay between spacecraft and the Earth. However, for certain type of pulsars, called "millisecond pulsars," pulses of radiation occur with the regularity and

precision of an atomic clock. As a result, in some scenarios, the pulsar X-ray can take less time to estimate a location. This leads to more precise measurements of a spacecraft's location.

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However, since X-rays from pulsars are absorbed by the atmosphere, scientists must launch satellites to continue research of the new technology.

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According to Shuai Ping, chief scientist behind the research of XPNNAV-1 satellite, the key aim of this satellite is to detect the details of X-ray signals of 26 nearby pulsars, and to create a "pulsar navigation database." This target could be achieved within five to 10 years, Shuai estimates.

?XPNAV-1??26?????X?????????????"?????"????????????5?10?????
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X-ray pulsar navigation techniques are an improvement over the current navigation methods of the ground-based Deep Space Network (DSN) and the European Space Tracking (ESTRACK) network. The time delay affecting DSN and ESTRACK can be up to several hours for a mission taking place near the outer planets, and even longer for a mission outside the solar system.

X????????????????????DSN????????ESTRACK????????????????????DSN?ESTRACK????????????????????
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