

# Fujitsu and Tokai National Higher Education and Research System leverage explainable AI to enhance space weather prediction in collaboration with JAXA

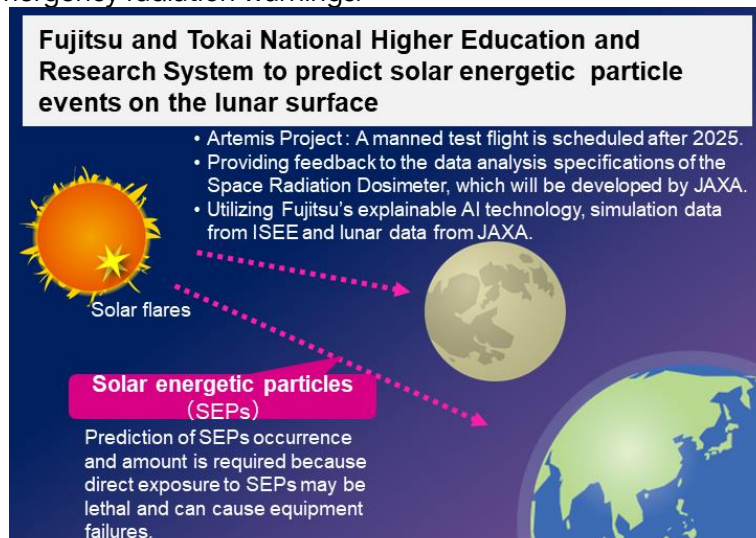
**Kawasaki and Nagoya, Japan, February 3** - Fujitsu Limited and Tokai National Higher Education and Research System, which operates Gifu University and Nagoya University, today announced the commencement of joint research with the Japan Aerospace Exploration Agency (JAXA) on the "Development of explainable AI-based prediction model for solar energetic particle events for Moon and Martian exploration." The joint research began on February 1, 2025, and will run until March 31, 2026.

Under a comprehensive agreement signed on February 24, 2023, Fujitsu and the Institute for Space-Earth Environmental Research (ISEE), Nagoya University have been collaborating on advancing space weather forecasting. This research has been selected for the Moon to Mars Innovation <sup>(1)</sup> program, an initiative of JAXA's Space Exploration Innovation Hub.

This research utilizes Fujitsu's explainable AI technology, Fujitsu Kozuchi XAI, simulation data from ISEE and lunar data from JAXA to predict solar energetic particle events on the lunar surface. Solar energetic particles (SEPs) are a type of cosmic radiation that forms around solar flares and similar events, and propagates through space. Direct exposure to SEPs on the lunar surface or in outer space around the Earth may be lethal, so it is necessary to be able to predict when they may occur.

In anticipation of the Artemis Project <sup>(2)</sup>, an international lunar exploration program, the research partners aim to accelerate observation and prediction research on the lunar surface by refining data analysis specifications for the Space Radiation Dosimeter <sup>(3)</sup>, which JAXA is developing.

Fujitsu and Tokai National Higher Education and Research System are committed to developing predictive technology for solar energetic particle events to ensure the safety of all space activities, including lunar exploration. This research will be further developed and implemented in collaboration with JAXA and relevant stakeholders, with anticipated applications in areas such as health management, space transportation and resource planning, and emergency radiation warnings.



## Notes

### [1] Moon to Mars Innovation:

A joint research system focusing on technical issues that directly respond to the needs of international space exploration. It is focused on the application of innovative terrestrial technologies and aims for the gradual realization of technological and infrastructural advancements that will revolutionize the architecture of international space exploration, paving the way for sustained lunar and Martian exploration.

### [2] Artemis Project :

Plan for the moon exploration led by NASA and the subsequent manned landing on Mars. A manned test flight and the first manned moon landing since the Apollo program are scheduled after 2025.

### [3] Space Radiation Dosimeter :

Device, which is scheduled to be installed on the Gateway, a manned lunar orbiting base that JAXA is participating in the development of.

## Related Links

- Fujitsu Kozuchi  
<https://www.fujitsu.com/global/services/kozuchi/>
- JAXA has selected 7 projects for TansaX's 12th Request for Proposals  
[https://www.ihub-tansa.jaxa.jp/english/RFP\\_announcement12\\_en.html](https://www.ihub-tansa.jaxa.jp/english/RFP_announcement12_en.html)
- Fujitsu and Tokai National Higher Education and Research System collaborate on AI-based space weather research (March 14, 2024 Fujitsu Press Release)  
<https://www.fujitsu.com/global/about/resources/news/press-releases/2024/0314-01.html>

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