

International Cooperation for Space Exploration (1)
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NATIONAL SPACE EXPLORATION PROGRAM OF THAILAND

Abstract

Geo-Informatics and Space Technology Development Agency (GISTDA) had established a program of space experiment and exploration in name of “National Space Exploration Program” or NSEP since 2016. In 2017, NSEP called for space experiment proposals from all Thai scientists and researchers as well as engineers and other interested people. At the end of the same year, GISTDA committees meticulously selected 4 research proposals for doing the experiment in space. All through 2018, the 4 proposals had been analyzed and determined as well as developed a Scientific Payload Box (SPB) for automatically researching experiment with a re-entry capsule but it was postponed indefinitely. But finally, one of the 4 proposals could be pushed to the International Space Station (ISS) successfully.

On Aug 26, 2019, a space experiment of Thailand had already been launched to ISS by SpaceX Falcon 9 CRS-18 rocket and that was the first time of Thailand. A proposal of protein crystallization in space by Dr. Chairat Uthapibull and team from BIOTEC/NSTDA, Thailand, under project name of “Analysis of Protein-Inhibitor and Protein-Protein Interaction for Anti-malarial Drug Development”, had completely been experimented onboard ISS within 30 days by Mr. Andrew Morgan, a NASA astronaut. That was the first successful of international space experiment of Thailand by GISTDA pusher. After that, the protein crystals had been re-entry to earth by the SpaceX Dragon Capsule in Sep 8, 2019. It was irradiated at the Research Institute of Synchrotron Light (Spring8), Hyogo, Japan in Oct 24, 2019.

The diffraction data of the protein crystals is being analyzed and will be used to develop an anti-malarial drug by Dr. Chairat and team in later. In addition, NSEP is developing more SPBs for other space experiments such as Thai food to space, Micro-tuberization planatation in space or A prototype of 3D food printer in space, etc. These space experiments will be sent to ISS in 2020. The NSEP of GISTDA believes that the blending of space technology and scientific research will drive Thailand to progress with space innovation as well as space SME or startups and eventually lead to the country space industry