

CAS Physicist Honored with Medal for International Cooperation in Space Science

By SONG Jianlan (Staff Reporter)

On July 18 in Athens, at the 44th Scientific Assembly of COSPAR (the Committee on Space Research of the International Science Council), Chinese physicist Prof. WU Ji, researcher with the National Space Science Center (NSSC), CAS, received the COSPAR International Cooperation Medal, a honor set by COSPAR in 1984 to recognize scientists who have made distinguished contributions to space science and whose work has contributed significantly to the promotion of international scientific cooperation.

WU was also honored in an eternal way: he and awardees of other COSPAR honors were each attributed a minor planet. On July 5, minor planet No. 10118, discovered in October 1992 and previously known as “1992 UK₁”, was approved by the WG Small Bodies Nomenclature on behalf of the International



Prof. WU Ji

Astronomical Union (IAU) to be named as “Jiwu”, in recognition of his contributions to space science development. Since 2018, IAU has named a minor planet for each COSPAR award recipient.



The awarding



As the first Chinese scientist awardee for this medal, Prof. WU Ji is recognized for his instrumental role in developing the Geospace Double Star Exploration Program (DSP, better known as “Double Star” program in the West), the first Chinese space-science mission, and his excellent coordination between this program and the Cluster mission of European Space Agency (ESA).

A prestigious scientist in space science and exploration technology, WU has earned a lot of top academic titles, including Fellow of the Russian Academy of Sciences, the International Academy of Astronautics (IAA), and the Institute of Electrical and Electronic Engineers. Currently, he works as President of the Chinese Society of Space Research, and sits on the Board of Trustees of the International Space Science Institute in Bern, Switzerland, as well as the Board of Advisors of the Luxembourg Space Agency.

WU also formerly worked as Vice President of COSPAR.

Established by then the International Council of Scientific Unions, predecessor of the International Science Council (ISC) in 1958, COSPAR is an interdisciplinary entity that ignores political considerations and views all issues solely from the scientific standpoint. Aimed at *Furthering research, exploration, and the peaceful use of outer space through international cooperation*, its objective is to promote at an international level scientific research in space, with emphasis on the exchange of results, information and opinions, and to provide a forum, open to all scientists, for the discussion of problems that may affect scientific space research.

WU used to study at ESA in the 1980s, and returned to China in 1994 after obtaining his Doctor’s degree. In the succeeding 30 years, he advocated and promoted the launching of a series of grand programs. Aside from the above-mentioned “Double Star” program, the *Yinghuo-1*, namely the Martian Space Environmental Exploration Orbiter, is also a brainchild of his. A more recent program advocated by him is the Strategic Priority Program on Space Science (SPPSS). All these programs, hosted and supported by CAS, have deeply involved international cooperation with counterparts across the world.

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New Names of Minor Planets

The following new names of minor planets have been approved by the WGSBN. Discovery details, for information only, are given in the following order: date of discovery; discoverer(s) name(s); discovery site; discovery site observatory code. The discoverer(s) name(s) is/are followed by an asterisk if this is a change from what was published when the object was numbered.

(10110) Jameshead = 1992 LJ

Discovery: 1992-06-03 / G. J. Leonard / Palomar / 675

James W. Head (b. 1941) is an American geologist who has been involved in geological and surface exploration of solar-system bodies since the Apollo era. He participated in the selection of Apollo landing sites, trained astronaut crews in geology and surface exploration, planned experiments deployed on the Moon, and analyzed returned lunar samples.

(10113) Alantitle = 1992 PX₁

Discovery: 1992-08-06 / H. E. Holt / Palomar / 675

Alan M. Title (b. 1938) is an American physicist who participated in the Apollo Telescope Mount investigation on Skylab 2 in 1973. He developed solar telescopes and has served the COSPAR solar-physics and Earth-science communities, contributing to the Space Weather and the Small Satelite COSPAR roadmaps.

(10118) Jiwu = 1992 UK₁

Discovery: 1992-10-19 / S. Ueda, H. Kaneda / Kushiro / 399

Ji Wu (b. 1958) is a Chinese physicist who has promoted collaboration between China, Europe, Russia and the United States. He was a key player in developing Double Star, the first Chinese space-science mission, and he coordinates collaboration between the Double Star program and the ESA Cluster mission.

(10133) Gerdahorneck = 1993 GC₁

Discovery: 1993-04-15 / H. E. Holt / Palomar / 675

Gerda Horneck (b. 1939) is a German astrobiologist who has pioneered space-biology experiments since the beginning of the space age. She has investigated the effects of space-environment exposure on a broad range of samples of living biota. Horneck was PI for astrobology experiments from Spacelab 1 to the ISS.

(10134) Jovcpenner = 1993 HL₁

The minor planet No. 10118 is named after Prof. WU Ji in recognition of his contributions. (Image extracted from page 8 of *WGSBN Bulletin 2, #9*)

Double Star Program

As the general designer for the application system of the Double Star program, WU played an important role in its launching, implementation, operation and international cooperation.

The Double Star Exploration Program is not only China’s first space science satellite program, but also the country’s first international cooperative space science project. It employed two satellites, orbiting in equatorial orbit and polar orbit respectively, to investigate the mechanism of the magnetospheric storms and explore physical processes of disastrous geospace weathers during solar activities and interplanetary disturbance, aiming to establish models to describe and predict the spatial and temporal variations of the near-earth space environment. In coordination with ESA’s Cluster program, it successfully conducted the first six-point space exploration of geospace in human history. This work won the first prize for Scientific Progress from the 2010 National S&T Awards of China; and its team was honored the Laurels for Team Achievement Award by the International Academy of Astronautics (IAA) in 2010, marking the first time a

science team of China to receive an international scientific award in the field of space science.

***Yinghuo-1* Program**

The *Yinghuo-1* represents WU's another brainchild. Around 2005, he proposed a cooperative program with Russia to explore the space environment around Mars, and this led to the Martian Space Environmental Exploration Orbiter later known as *Yinghuo-1*. WU played a key role in the definition of scientific objectives, as well as payload selection and development of the mission.

On November 8, 2011, the orbiter was launched by the Russian spacecraft Phobos-Grunt, but the latter failed to enter the interplanetary orbit. This was a great loss for both Russian and China, delaying our better understanding of Martian space environment for a considerable time. Nevertheless, this attempt gained valuable experiences for the later implementation of *Tianwen-1*, the Mars probe of China.

Strategic Priority Program on Space Science

As a result from WU's recent efforts, CAS and ESA have developed a new mode of cooperation. Under the umbrella of the SPPSS and hosted by NSSC, a mission named the "Solar wind Magnetosphere Ionosphere Link Explorer" (SMILE) has been adopted as a joint mission of ESA. After the Double Star mission in the 1990s, for the first time ESA and CAS worked closely together to jointly plan, design, implement and operate a collaborative science mission, widely cooperating in the recruitment and selection of design solutions, the engineering development, data analysis, and application.

During his term as the Director of NSSC, WU has promoted the cooperation between CAS and a lot of international scientific organizations, and established routine cooperative mechanisms with many counterpart organizations across the world, including ESA, ISSI, and the Space Studies Board of the National Academies of Sciences, Engineering and Medicine of USA.