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Nobel Prize Awarded to Two Japanese Researchers --- Physics Prize to Dr. Masatoshi Koshiba and Chemistry Prize to Mr. Koichi Tanaka



Dr. Koshiba (left) and Mr. Tanaka (right) shake hands with Prime Minister Koizumi (center)

The 2002 Nobel Prize in physics was awarded to Dr. Masatoshi Koshiba (age 76), Professor Emeritus of the University of Tokyo, and the Prize in chemistry to Mr. Koichi Tanaka (age 43), a senior engineer at the Life Science Research Laboratory of Shimadzu Corp., respectively. The number of Japanese Nobel Prize laureates has amounted to 12, and this is the first time that two Japanese have won the Nobel Prizes in the same year.

Mr. Tanaka's prize marks the third consecutive year for Japanese winning the prize in chemistry and his young age of 43 follows the age of 42 of Dr. Yukawa, the first Japanese Nobel Prize winner. In addition, he is the first Japanese corporate researcher to win the prestigious prize. The awarding ceremony will be held in Stockholm on December 10.

【Physics Prize】

The reason for the award to Dr. Koshiba is related to astrophysics "especially innovative contribution to the detection of space neutrinos." He has been highly evaluated for his contribution to neutrino elucidation by observation of the neutrinos released from nova stars explosion in February 1987 using the "Kamiokande," observation facilities of Cosmic Rays Research Laboratory of the University of Tokyo.

Dr. Koshiba was born in Toyohashi City, Aichi Prefecture in 1926. Graduated from Physics Course, Faculty of Science, the University of Tokyo. He is a Doctor of Science and worked at the University of Tokyo and Tokai University. He received the Order of Cultural Merits in 1997. As the Nobel Prize winner in physics, he is the fourth person in Japan. Two American scientists shared the prize in physics this year.

【Chemistry Prize】

The reason for the award to Mr. Tanaka is the "Development of technology for the identification and structural analysis of biopolymers." The development of the "Soft laser desorption method," which is a simple method to accurately measure the mass of protein, was highly evaluated.

Mr. Tanaka was born in Toyama City, Toyama Prefecture in 1959. Graduated from Electrical Engineering Course, Faculty of Engineering, Tohoku University. He joined Shimadzu Corp. in 1983, and is presently a chief engineer at Life Science Research Laboratory, Life Science Business Unit of Shimadzu's Analysis and Measurement Headquarters. He is the 4th Japanese winner of Nobel Prize in chemistry. An American and a Swiss shared the prize in chemistry this year.

First Successful Imaging of Movement of High Energy Electrons Generated in a Solar Flare: NAOJ

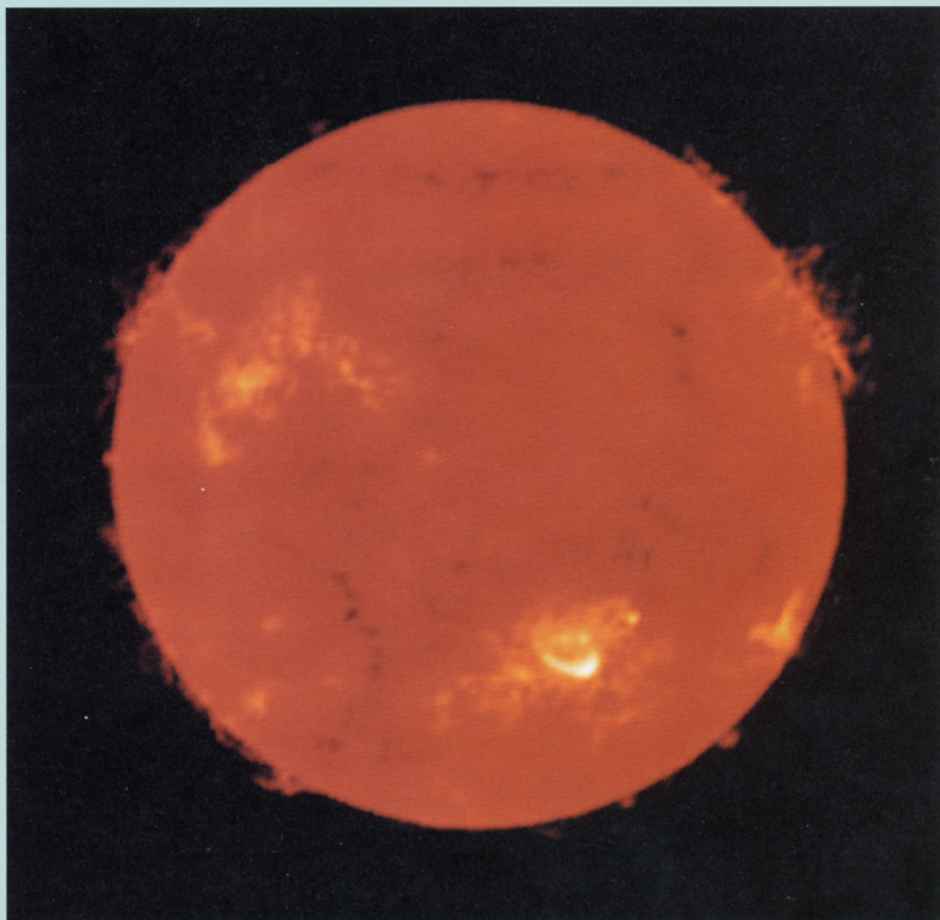
National Astronomical Observatory of Japan (NAOJ) announced on September 26 that it succeeded for the first time in imaging the moving appearance of the high energy electrons generated in a solar flare (explosion phenomenon in the sun's outermost layer atmosphere). By this achievement, the high-energy electrons had been believed to exist have been verified in a visual form.

This image was taken during observation of the flare generated near the center of sun's south hemisphere on August 28, 1999, using a microwave radiotelescope specially used for sun observation named Nobeyama Radioheliograph (consisting of 84 units of parabola antennas with a diameter of 80 cm) of NAOJ located at Minamimaki village, Minamisaku-gun, Nagano Prefecture.

Although this flare was medium-sized in intensity, when it was photographed with a high-speed of 10 shots per second, a propagation of emitting source was observed with very high speed from one end to the other of the banana-shaped structure, that has a size of 4-5 times of the diameter of the earth. This phenomenon was caused by the movement of electrons with very high energy. Since they transited the distance of about 45,000 km (Note: radius of the earth is about 6,400 km) in about 0.5 second, their speed

was about 90,000 km/sec, about one third of the speed of light, according to calculation.

(For further information, please contact Nobeyama Observatory, NAOJ; Phone: 0267-98-4300)



The solar flare for which the movement of high-energy electrons was successfully photographed (flaring part with the shape of banana located a little lower right from the center)

A Brain Region for Controlling Grammatical Processes Identified: JST

The Japan Science and Technology Corporation (JST) announced on September 12 that a brain region for controlling grammatical processes has been successfully identified as Broca's area in the left brain, in which magnetic stimulation techniques are employed to activate a part of the brain. This research is supported by a Core Research for Evolutional Science and Technology (CREST) grant from JST.

The research result was obtained by Dr. Kuniyoshi L. Sakai, an Associate Professor of the Graduate School of Arts and Sciences in the University of Tokyo, Komaba, and his colleagues, who have started their re-

search project on the theme of "The Construction of Language Acquisition Device Based on the Brain Function of Language".

The discovery was based on an experiment with transcranial magnetic stimulation techniques, in which they examined how the speed of linguistic decisions changed when the stimulation was controlled to interfere with electric activities of the brain.

The research project is expected to lead to an improvement of second language education, as well as to elucidate the mechanisms of aphasia.

The research result has been published in the September 12 issue of the US science magazine, "Neuron". (For further information, please contact Public Relations Division, Department of General Affairs, JST; Phone: 048-226-5606)

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