

Chinese President XI Jinping Visits CAS

On July 17, 2013, Chinese President XI Jinping paid a visit to the CAS campuses on Yuquan Road in western Beijing.

At the Institute of High Energy Physics, President XI inspected the Beijing Electron Positron Collider, China's first large-scale scientific facility, including the Beijing Spectrometer and the Beijing Synchrotron Radiation Facility. Then he participated in a meeting at the University of CAS, listened to a work report from CAS President BAI Chunli and delivered an important speech on scientific innovation to CAS officials and scientist representatives.

"The central government has always placed high hopes on the country's scientific community," President XI emphasized.

CAS shall keep in mind its duties to take the lead in achieving leapfrog S&T advancement in China, building a national base for best innovative talents, developing a high-caliber think-tank in science and technology for the nation and fostering world-class research institutions, he pointed out.

President XI urged CAS to take a lead in deepening reforms and eliminate institutional obstacles to facilitate scientific innovation and technological transfer. He also encouraged scientists to be bold enough to challenge



Chinese President XI Jinping (front row, third from left) talks with scientists of Beijing Synchrotron Radiation Facility.

existing theories and put forward new ideas.

Before leaving, the President chatted with some students from the University of CAS and inspired them to study hard and "hold a great dream in a great era".

President XI's visit was accompanied by Director of the Policy Research Office of the CPC Central Committee WANG Huning, Vice Premier LIU Yandong and Chief of the CPC General Office LI Zhanshu.

State Leaders Meet Shenzhou-10 Astronauts and Scientists

Chinese President XI Jinping and other State leaders met with representatives of astronauts and scientists who participated in the Shenzhou-10 mission at the Great Hall of the People in Beijing on July 26, 2013, celebrating the success of the mission.



President XI Jinping (front row, center) and other State leaders pose for a group photo with astronauts and scientists representatives participating in the Shenzhou-10 mission.

Shenzhou-10 started its journey on June 11 carrying a three-person crew and returned on 26 after successfully docking twice with the trial space lab Tiangong-1 and conducting on-orbit medical, technological experiments. During the flight, WANG Yaping, the second female astronaut of China, gave a space lecture on physics principles in micro-gravity to students of about 80,000 participating schools aground.

CAS took charge of building the application system and some tasks under other supporting systems for the manned space program, playing a key role in the safe and successful flight.

XI said the success of the mission marked a perfect ending of the first phase of the second step of China's manned space program. He also hoped that the program would continue to succeed in the future with support from involved institutions and the public.

CAS Launches Exhibition on S&T Innovation

Under the sponsorship of CAS, a travelling exhibition themed “Innovation Driving Development and S&T Leading the Future — the 2013 Chinese Academy of Sciences Exhibition on Science and Technology Innovation” was inaugurated at the China S&T Museum on July 23.

Aiming at promote scientific outreach across China, the exhibition is a demonstration of the Academy’s latest and most remarkable achievements in fundamental research, national scientific missions and technology transfer. It includes the discovery of a third neutrino oscillation mode at Daya Bay, the observation of the quantum anomalous Hall effect, the breakthroughs in stem cell research, CAS’s contribution to China’s recent space and deep sea missions, as well as the research and development of new drugs for depression, tumors and HBV treatment.

Besides pictures, exhibits, animations and videos, the exhibition also makes use of popular smartphone applications like *weibo* (microblogging) and *weixin* (“Wechat”) to interact with the visitors. In the meantime, several special reports will be organized for audiences who are interested in specific scientific topics.

CAS President BAI Chunli addressed the opening ceremony. He said that scientific outreach is an important task of the Academy. He hoped the exhibition will not only inform of the public about the latest advances in science and technology, but also inspire their curiosity and scientific spirit. He also hoped that scientists, science communicators



CAS President BAI Chunli (second right) presents at the opening of the exhibition.

and popularizers will work hand in hand to facilitate the spread of scientific notions and help elevate scientific literacy in China.

Also present at the inauguration were Vice Chairman of the China Association for Science and Technology CHENG Donghong, Member of the CAS Presidium FANG Xin and CAS Vice Secretary-General WU Jianguo.

The exhibition was organized by the CAS Bureau for Science Communication, the National Science Library of CAS and CAS’s Computer Network Information Center. After winding up in Beijing by the end of August, the exhibition will go on a three-month tour at CAS branches across the country.

CAS Report Forecasts Future Research Breakthroughs

A report entitled “Vision 2020: The Emerging Trends in Science and Technology and Strategic Options in China” published by CAS in June anticipated a total of 22 major scientific events to happen in the world and 19 in China in the next five to ten years.

By analyzing ten fields most likely to see milestone achievements in the near future, the report predicted that quantum information technology will soon lead the revolution to next-generation information technologies; grapheme will emerge as a promising candidate material in the post silicon era; and stem cell technologies will help people find new ways to reproduce and multiply. The discovery of artificial and extraterrestrial life was also expected within the next decade. The 19 breakthroughs predicted for China included those in quantum communication, stem cell research and

clean coal technologies.

The report pointed out that China should optimize and enhance disciplinary deployment to support new research priorities. It also proposed a blueprint for China’s scientific development in the decade to come.

The report is a joint effort of more than 200 outstanding researchers and experts, with CAS President BAI Chunli as head of its editorial group.

As the top scientific think tank for the Chinese government, CAS has been regularly releasing strategic reports on science development scenarios in China and the world, including the report “Science & Technology in China: A Roadmap to 2050” published in 2009 as a result of two-year-long study of over 300 scientists led by then CAS President LU Yongxiang.

China Signs on to Top Astronomical Project

Prof. YAN Jun, Director General of the National Astronomical Observatories, Chinese Academy of Sciences (NAOC), signed a master agreement on the Thirty Meter Telescope (TMT) project on July 25, 2013, marking China's official participation in building the world's most advanced ground-based optical telescope in Hawaii in the decade to come.

As one of the largest telescopes under development, the TMT will have a primary segmented mirror made up of 492 smaller mirrors and measure thirty meters across — three times the diameter and nine times the collecting area of the giant Keck Telescope. With detection capacity ten to hundred times stronger than today's telescopes, it will enable astronomers to see much further and clearer into the Universe, to better understand the nature of dark matter, dark energy and black holes, and explore extraterrestrial planets.

As a global scientific effort, the TMT will be jointly developed by researchers from US universities and Canada, India, Japan, as well as a consortium of Chinese institutions led by NAOC.

“China is excited to be an active partner of such a world-leading facility, which represents a quantum leap for our community. With yet another major step taken, we look forward to many decades of solving the mysteries of the cosmos from Mauna Kea,” Prof. YAN was quoted as saying.



Prof. YAN Jun (right) signs a master agreement on the Thirty Meter Telescope (TMT) project on July 25, 2013.

Since 2009, scientists from NAOC and the Nanjing Institute of Astronomical Optics & Technology (NIAOT), the Changchun Institute of Optics, Fine Mechanics and Physics (CIOMP), the Institute of Optics and Electronics (IOE) and the Technical Institute of Physics and Chemistry (IPC) have been actively engaged in a number of cutting-edge research and development projects under TMT and established concrete partnership with the project.

As planned, the construction of the telescope will begin in April 2014 on Mauna Kea, Hawaii, and is scheduled to begin scientific operations in 2022.

An artist's rendering of the telescope at sunset. (Courtesy TMT Observatory Corporation)





XSSC Celebrates its 20th Anniversary

On July 16, a symposium was convened in Beijing to mark the 20th anniversary of the Xiangshan Science Conferences (XSSC).

Under the title of Directions of a New Round of S&T Revolution, the meeting held discussions on S&T development trends in the world and China against the background of globalization. CAS President BAI Chunli, Vice S&T Minister CAO Jianlin and Vice CAS President ZHAN Wenlong were present at the celebration, and experts were invited to explore future S&T advancement in different fields, ranging from medicine, energy, agriculture, to information, life science and deep space.

CAS President BAI Chunli said that over the past 20 years, XSSC has assembled scientists from different fields to have in-depth exchanges and discussions on frontiers of

basic science and major issues fronting China's engineering and technology. By creating a relaxing academic environment and giving importance to academic democracy, the meeting series has made important contributions to promoting interdisciplinary synergy, innovation thinking and S&T development in China.

With the support of the Ministry of Science and Technology and CAS, XSSC was officially launched in April 1993 in the Fragrant Hills (Xiangshan), Beijing. It aims to create and promote the environment for free academic discussions, the boundary-crossing and integration of different scientific disciplines, advancing cross-disciplinary research and the creation of new knowledge. So far more than 480 symposia have been held.

Distinguished Chinese Botanist Dies at 97

Prof. WU Zhengyi, one of the world's most outstanding botanists and father of Chinese botany, died of illnesses in Kunming on June 20, 2013.

Known as "a living encyclopedia of Chinese flora", Prof. WU had devoted his life to the study of Chinese and East Asian flora for more than 60 years. He participated in the identification and naming of 1,766 flora species and genera in China, and gave a systematic description of the composition, characteristics and evolution of seed plants in the country. He developed a set of research ideology and methodology of plant geography, which was a ground-breaking contribution to botanical study worldwide.

Born in 1916 in Jiangxi Province, WU was fascinated by the flowers and grasses in his backyard as a little boy. In 1937, he graduated from the Department of Biology, Tsinghua University and started working as a botanist in Kunming. In 1958, he was appointed director general of the Kunming Institute of Botany (KIB).

From 1958 to 2004, WU took a lead in the compilation of *Flora Reipublicae Popularis Sinicae*, a masterpiece that catalogues the distribution, characteristics and economic uses of more than 31,000 different plants native to China, consisting of 80 volumes and over 50 million characters. He also strongly promoted the compendium's English version, *Flora of China*, which will be completed this year.



WU Zhengyi (1916–2013).

Prof. WU also pioneered in China's plant conservation, by proposing to establish nature reserves in Yunnan in 1958 which eventually led to the establishment of China's first national park, as well as suggesting to set up a seed bank in 1999 which was realized five years as the Germplasm Bank of Wild Species, China's largest, at KIB.

He received the State Supreme S&T Award for 2007 from the Chinese government, which is the highest honor for scientists and engineers in China.

Female Chemist Honored by IUPAC



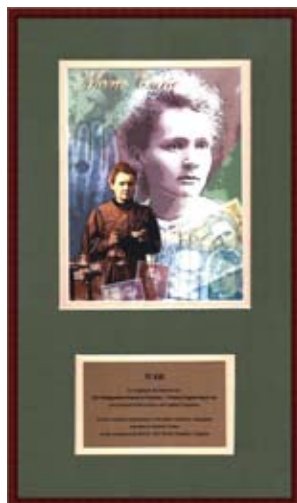
Prof. XIE Yi from the Hefei National Laboratory for Physical Sciences at Microscale, University of Science and Technology of China (USTC) was conferred on the Distinguished Women in Chemistry/Chemical Engineering Award by the International Union of Pure and Applied Chemistry (IUPAC) on August 15, 2013 in Istanbul during the 44th IUPAC World Chemistry Congress.

XIE obtained her BS from Xiamen University in 1988 and Ph. D from USTC in 1996. After receiving the National Natural Science Fund for Distinguished Young Scholars in 1998, she started her independent research at USTC and was appointed Cheung Kong Scholar Professor of inorganic chemistry in 2000.

Her research has scored remarkable progresses in the fundamental understanding of solid state chemistry at the nanoscale, with a strong track record in the development of new materials, physical methods and theories. She has published more than 280 peer-reviewed articles as a corresponding author, many of which are in top journals. Given the high impact on the research fields, her research work has been cited more than 8,000 times in total with an H-index of 52. Now she serves as associate editor of *Inorganic Chemistry Frontiers*, and editorial/advisory board member of six international and domestic journals. In addition, she is one of the five members of the Kavli Prize Committee in Nanoscience in the period 2013-2016. The prestigious awards that she has received thus far include the Chinese National Nature Science Award (2001 and 2012), China Young Scientist Award (2002), China Young Female Scientist Award (2006) and many others.

IUPAC Distinguished Women in Chemistry/Chemical Engineering Award was initiated by IUPAC at its 43th World Chemistry Congress in Puerto Rico in 2011. It is designed to acknowledge and promote the work of women chemists and chemical engineers worldwide. Awardees will be selected based on excellence in basic or applied research, distinguished accomplishments in teaching or education, or demonstrated leadership or managerial excellence in chemical sciences. The award is selected biannually and only accepts nominations from three world renowned scholars and their independently submitted recommendation letters.

Prof. XIE is the first Chinese to win this award. She shared the 2013 award with ten other outstanding female scientists from across the world.



CAS Mathematician to Receive 2013 Ramanujan Prize

Prof. TIAN Ye from the Academy of Mathematics and Systems Science, CAS has been announced as the laureate of the 2013 Ramanujan Prize for Young Mathematicians from Developing Countries.

The prize is in recognition of TIAN's "outstanding contributions to Number Theory", which include the completion of the proof of a multiplicity one conjecture for local theta correspondences and important work related to Heegner points and to the Birch and Swinnerton-Dyer conjecture: the non-existence of points on twisted Fermat curves, and recently remarkable progress on the congruent number problem, showing the existence of infinitely many congruent numbers with arbitrarily many prime factors, according to an official announcement.

TIAN earned his PhD from Columbia University in 2003. Before joining CAS in 2006, he worked at the Institute for Advanced Study in Princeton and conducted post-doctoral research at McGill University in Canada. His research has focused on Number Theory and Arithmetic Algebraic Geometry.

The Ramanujan Prize for Young Mathematicians from Developing Countries is co-funded by the Abdus Salam International Centre for Theoretical Physics (ICTP) and the International Mathematical Union (IMU). Since 2005, it is awarded annually to a researcher from a developing country less than 45 years of age who has conducted outstanding research in a developing country.

Prof. TIAN will receive the prize and deliver a speech at ICTP in September.

Awardees for First CAS-TWAS President's Fellowship Announced

On July 11, the University of the Chinese Academy of Sciences (UCAS) released the official name list of the 140 awardees for the 2013 CAS-TWAS President's Fellowship, the first ever since the launch of the Fellowship ensuing an agreement signed in February this year between CAS and TWAS.

According to this agreement, up to 140 young scientists per year from the developing world will be supported for their PhD study and research at the UCAS. The two

academies will pay for their travel, visa and educational expenses, with CAS providing the tuition fee, a monthly allowance for their housing and living expenses, and part of the travel expenses.

As a continued effort to help building S&T capacity in the developing world, the CAS-TWAS President's Fellowship Program aims to serve the needs of developing countries in bringing up their own scientific capabilities.

International Space Science Institute Sets up First Branch in Beijing

The inauguration ceremony of the International Space Science Institute–Beijing (ISSI-BJ) was held at the National Space Science Center (NSSC) in Beijing on July 16, 2013. Prof. Rafael Rodrigo, ISSI Executive Director and Prof. WU Ji, Chairman of the ISSI-BJ Board of Trustees and NSSC Director General, jointly unveiled the nameplate of the new institute.

As the only branch of ISSI, ISSI-BJ is established to promote the internationalization of space science research and provide a window on Chinese space science to the international scientific community.

ISSI-BJ will be an advanced research organization dedicated to cutting-edge and multidisciplinary studies of space science. It aims at better understanding the results from space missions, ground-based observations and laboratory experiments, and adding values of those results through interdisciplinary research. Its programs cover a wide spectrum of disciplines in space science, from solar and space physics to astronomy and astrophysics, planetary science, astrobiology and microwave gravity science, as well as earth sciences from space.

In 2013, with support from the Bureau of International Cooperation and the Strategic Priority Research Program of CAS, ISSI-BJ will fund one international team and organize four forums to discuss the scientific goals of four projects



NSSC director general WU Ji presents a lecture on China's space science programs at ISSI Beijing inauguration. (NSSC website)

under the Strategic Priority Research Program, including X-ray timing and polarization, space-based millimeter wave very long baseline interferometry, solar polar orbit observation and magnetosphere-ionosphere-thermosphere coupling.

The Bern-based ISSI was established in 1995 and funded by the European Space Agency, the Swiss federal government and the Russian Academy of Sciences. Every year, ISSI organizes and supports the research of more than 800 scientists, over 30 international teams and dozens of meetings.