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WEEKLY EDITION

International Cooperation

BRICS Joint Committee on Space Cooperation Established

By Staff Reporters

BRICS countries launched the Joint Committee on Space Cooperation via video link on May 25, officially starting the sharing and exchanges of data from the BRICS Remote Sensing Satellite Constellation.

Zhang Kejian, administrator of the China National Space Administration (CNSA) and president-elect of the committee, said that the committee will guide the constellation to better serve the economic and social development of BRICS countries, promote cooperation of higher quality between BRICS space agencies in the fields of environmental protection, disaster prevention and control and response to climate change, and realize the highly efficient sharing and effective use of data.

As early as 2015, CNSA proposed a cooperation initiative on the constellation. BRICS space agencies signed an agreement on such cooperation in August 2021. According to the agreement, a solution consisting of existing satellites and the five stations of BRICS countries was sealed.

The satellites are Gaofen-6 and Zi-yuan III 02, both developed by China, CBERS-4, jointly developed by Brazil and China, Kanopus-V type, developed by Russia, and Resourcesat-2 and 2A, both

developed by India. Five ground stations, located in Sanya in China, Cuiabá in Brazil, Moscow in Russia, Hyderabad in India and Hartebeesthoek in South Africa, can obtain data from the constellation.

The observation conducted by these coordinated and networked satellites and ground stations can reduce the cost of satellites and ground station construction, and greatly enhance the imaging capability of a single satellite, which will uplift the observation efficiency of BRICS satellites to a large degree.

On April 24 this year, CNSA established the Satellite Data and Applications International Cooperation Center and the BRICS Remote Sensing Satellite Constellation Data and Application Center in Wenchang, south China's Hainan province. The latter is responsible for promoting the coordination of constellation construction, data reception, processing, distribution, application and promotion, contributing to the comprehensive construction of the constellation.

At the video conference, the five space agencies from BRICS countries also updated their execution of the aforementioned agreement, and adopted documents on the committee's terms of reference, the technical specifications for data exchange, and the implementation procedures for joint observation.



China on June 5 launched the crewed spaceship Shenzhou-14 from Jiuquan Satellite Launch Center in northwest China, sending three astronauts Chen Dong, Liu Yang and Cai Xuzhe to Tiangong space station combination for a six-month mission. The crew will cooperate with the ground team to complete the assembly and construction of the Tiangong space station, witnessing the two lab modules, Tianzhou-5 cargo craft and Shenzhou-15 crewed spaceship dock with the core module Tianhe during their stay in orbit. (PHOTO: VCG; Livestream screenshot; XINHUA)



Shenzhou-14 Launches

Editor's Pick

Three Decades' Quest: To Hear China's Manned Spaceship Roar

By Staff Reporters

China launched its Shenzhou-14 spaceship on June 5, sending a crew of three taikonauts to the Tiangong space station, for a six-month mission.

During the Shenzhou-14 crew's stay in orbit, the Wentian and Mengtian lab modules will be launched to dock with the Tianhe core module, completing the three-module combination of China's space station. The launch reinforces Chinese people's desire and imagination for space since time immemorial, as reflected in the famous Tang Dynasty poet Li Bai's verse, "By dint of wind, a roc soars up high into the boundless sky."

After decades of continuous effort from generations of participants, the nation finally has a home in outer space.

Thirty years, three steps
On April 24, 1970, China launched its first satellite Dong Fang Hong 1 into Earth's orbit. In the same year, Qian

Xuesen, the father of China's space program, introduced his human spaceflight project, which was unfortunately cancelled due to lack of funds.

After a hiatus of 17 years, the restarted China Manned Space Program (CMS) was formally approved in 1992, with a three-step blueprint—launching and returning crewed spaceships, launching a space lab with capabilities of extravehicular activities (EVAs), and building a long-term crewed space station.

A milestone was reached when China launched astronaut Yang Liwei into orbit atop its own Long March-2F rocket in 2003, making it the third country to independently conduct crewed spaceflight.

Five years later during the Shenzhou-7's flight, two astronauts, Zhai Zhigang and Liu Boming completed the nation's first EVAs on October 27, 2008, wearing Feitian extravehicular space suits developed by China.

Since the first spaceship Shenzhou-

1 was launched in 1999, CMS has successfully launched nine crewed spaceships, sending 14 taikonauts into space without any fatalities.

By launching Tiangong space station in April 2021, China has accomplished the first two steps and advanced closer to a space station era.

"The country's call is the goal I'll work for"

Across generations, a large number of scientists and researchers have devoted themselves into the aerospace sector.

Among them, Wang Yongzhi, being appointed as first chief designer of China's manned space program in his sixties, played a crucial role.

During his 14 years as chief designer (1992-2006), he presided over the engineering design of four unmanned flight tests, as well as Shenzhou-5 and Shenzhou-6 manned spaceflights. "The country's call is the goal I'll work for," said Wang. *See page 4*

Solar-tidal Hybrid Power Plant Switched on

By WANG Xiaoxia

China's first hybrid power plant that uses solar and tidal power as its source of electricity, has been connected to the grid and began full operation on May 30 in Wenling, Zhejiang province, an innovative model for the coordinated development of green energy.

This power plant integrated tidal and photovoltaic power generation in a complementary manner, to ensure a stable power supply.

At night, the moon's gravity causes tides in the oceans. Seawater will be

stored in the reservoir during rising tides and released at falling tides, to drive the electricity generator. With 185,000 photovoltaic modules installed on the reservoir, solar energy supply is available when the sun rises.

Apart from generating electricity, the hybrid power plant is also a huge "power bank," equipped with 5-MWh energy storage function, which can ensure the stability and safety of electricity supply to the power grid.

It also uses unmanned aerial vehicle (UAV) inspection technology and an AI diagnosis system to remotely monitor

the photovoltaic installation covering an area of more than 130 hectares, which will save maintenance costs.

With an installed capacity of 100 megawatts, the power plant has an annual output of over 100 million kWh to meet the annual electricity demand of about 30,000 urban households.

Compared with thermal power plant of the same capacity, the hybrid energy power station will save around 28,716 tons of standard coal and reduce carbon dioxide emissions by 76,638 tons every year, according to the China Energy Group.

China Tops World in Important Agriculture Heritage

By WANG Xiaoxia

A total of 18 sites recognized as Globally Important Agricultural Heritage Systems (GIAHS) by the UN Food and Agriculture Organization (FAO), has seen China top the world in terms of agricultural heritage, according to the Ministry of Agriculture and Rural Affairs.

There are three newly recognized sites among them, which are an ancient tea-producing area in Anxi county, Fujian province, a nomadic livestock-rearing region in Chifeng city, Inner Mongolia Autonomous Region, and a rain-fed stone terrace farming system in Shexian county, Hebei province.

Through an online assessment, the three sites were recognized for their unique use of traditional practices and knowledge while preserving biodiversity and the ecosystem, the FAO said.

GIAHS, which will celebrate its 20th anniversary in October, is a FAO flagship program.

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WEEKLY REVIEW

Renewable Energy Boosts China's Green Development

By the end of 2021, the cumulative installed power generation capacity of renewable energy had reached 1,060 gigawatts, accounting for 44.8 percent of China's total installed power capacity, according to a statement issued by China's National Energy Administration on June 1.

Newly-launched Meteorological Satellites to Serve Global Users

Two meteorological satellites, along with their ground application systems, began trial operation on June 6, said the China Meteorological Administration. The two satellites, Fengyun-3E and Fengyun-4B, will provide observation data and application services to global users.

Wearable Device for Tumor Treatment Unveiled

Researchers from Lanzhou University have developed a transparent wearable hyperthermia patch (HTP) for subcutaneous tumor treatment, allowing real-time inspection of the subcutaneous tumor treatment and skin response.

A New COVID-19 Vaccine Proved Safe & Effective

Jointly developed by Xiamen University, the University of Hong Kong and Beijing Wantai Biological Pharmacy Enterprise, a China-developed intranasal vaccine against COVID-19 has shown to be safe and effective in early-stage human trials, according to a new study published in the journal *The Lancet Respiratory Medicine*.

WECHAT ACCOUNT

E-PAPER



June 5 is World Environment Day, and the theme of 2022 is "Only One Earth." Volunteers are clearing floating garbage on a reservoir in Changning, central China's Hunan province. (PHOTO: XINHUA)