



Science and Technology Daily

VOL.2-NO.33

THURSDAY, FEBRUARY 24, 2022

WEEKLY EDITION

Green Light for Mega Project to Ramp Up Computing Capacity

By WANG Xiaoxia

China approved a mega project for the construction of eight national computing hubs and plans to build 10 national-data center clusters on February 17, to channel more computing resources from east China to its less developed, yet resource-rich, western regions.

The project, approved by the National Development and Reform Commission (NDRC) and three other departments, marks the completion of the overall layout for the national integrated big-data center system.

The eight national computing hubs will be built in the Beijing-Tianjin-Hebei region, the Yangtze River Delta, the Guangdong- Hong Kong- Macao Greater Bay Area, the Chengdu- Chongqing economic circle, north China's Inner Mon-

golia Autonomous Region, southwest China's Guizhou Province, northwest China's Gansu Province and Ningxia Hui Autonomous Region.

The eight hubs will develop data-center clusters, carry out collaborative construction within data centers, cloud computing and big data, and bridge the gap between eastern and western regions in computing resources, to better empower digital development.

Like the South-to-North Water Diversion Project and the west-east power transmission program, this project, which optimizes the nationwide resource allocation and improve resource utilization efficiency, will raise the country's overall computing capacity, promote green development, expand effective investment and coordinate development among regions, NDRC official Sun Wei said.

What to Expect from China's Aerospace Missions in 2022

By TANG Zhexiong

China plans to carry out more than 50 space launches and six manned flights to complete the building of the China Space Station in 2022, according to the *Blue Book of Aerospace Science and Technology*.

The blue book, which reviews the nation's space activities in 2021 and introduces missions for 2022, said China's aerospace has entered a new development phase.

Last year saw many highlights on space exploration. China has completed five space station missions, successfully launched the first journey to explore Mars, developed space commerce, and basically formed a space industry chain.

A total of 55 launches were carried out, the most in the world throughout the past year. The aggregate weight of spacecraft sent into orbit hit a new record high of 191.19 tons, with an increase of 85.5 percent year-on-year.

China's space industry has also committed to strengthening international exchanges and cooperation, and implemented various projects in 2021, including cooperative research and development, facility and data sharing, and application service.

In 2022, China plans to carry out more than 50 space launches, sending over 140 spacecrafts, according to the China Aerospace Science and Technolo-

gy Corporation (CASC).

Among the tasks, six manned space flights will be dedicated to fully completing the building of China's space station, with the Tianhe core module as the command center and the Wentian and Mengtian lab modules as experimental platforms before the end of this year.

The country's new generation of medium-sized launch vehicles, the Long March 8, is currently undergoing pre-launch testing and scheduled to be launched at the Wenchang launch site from the end of February to the beginning of March, said CASC.

As the latest model of China's Long March series of launch vehicles, the Long March 8 can undertake more than 80 percent of the launch missions in low and medium orbits.

Ma Tao, deputy director of the aerospace department of CASC, said many other scientific research satellites for national civil space infrastructure and business satellites will be launched in 2022, making aerospace technology, "Better serve the society and the people's livelihood, and also serve the development and construction of the national economy."

All of these achievements and plans are China's new journey into space in cooperation with other countries, and also efforts of all countries to work together to build a global community with a shared future in outer space.



The Olympic flame is extinguished during the closing ceremony of the Olympic Winter Games Beijing 2022 at the National Stadium in Beijing. (PHOTO: XINHUA)

Editor's Pick

By LU Zijian

In the Main Media Center of Beijing 2022, there is an exhibition area for Traditional Chinese Medicine (TCM). After trying their hand at Tai Chi, with instruction via an AI screen, visitors receive a mystery box (*mang he*), containing bookmarks and fridge magnets featuring TCM pictures.

It is the first time that TCM culture has been extensively displayed at a global sports event.

Serving Winter Olympics

TCM was not only on exhibition at Beijing 2022, but also offered as an alter-

native treatment for athletes.

Orthopedics treatment is quite common among skiers, and there are doctors specialized in bone fracture treatment using TCM who accompanied team China during Beijing 2022.

Zhang Qiang, doctor - in - charge from Sichuan Province Orthopedic Hospital, was responsible for the health care of Su Yiming, who won a historic gold medal in the men's snowboard big air for China. Adopting a unique approach, Zhang offered Su a good TCM treatment before the competition so that he could perform at his best.

As for doctors assigned to alpine

skiers, they need to know how to ski as injuries can take place on the slopes far from hospital.

Some foreign athletes also came to TCM doctors for help. Nathan Crumpton, who became immensely popular after carrying the flag for American Samoa at the opening ceremony of Beijing 2022, received acupuncture treatment at the Olympic Village in Yanqing district, Beijing.

He spoke highly of TCM and the doctor who offered the treatment, as the pain in his back and waist vanished right after the treatment.

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AfCFTA Offers Opportunities for China-Africa Cooperation

By WANG Xiaoxia

As the world's largest free trade area in terms of the number of participating member states, the African Continental Free Trade Area (AfCFTA) is committed to removing trade barriers and promoting economic integration in Africa, as well as providing unprecedented opportunity for China-Africa collaboration.

Since its official launch in January 2021, AfCFTA has been witnessing stable progress amid challenges such as the global COVID-19 pandemic.

Secretary-General of AfCFTA Secretariat, Wamkele Mene, said last month that a total of 39 countries had already ratified the free trade zone agreement, and the negotiations on the rules of origin had been completed and more than 80 percent of the rules are agreed.

On January 13, the Pan-African Payments and Settlement System (PAPSS) was launched to facilitate cross - border trade and other economic activities

among African countries, which is expected to save the continent 5 billion USD of payment costs per year.

Mene said that AfCFTA will further boost trade and investment in Africa and accelerate the industrialization process.

The construction of AfCFTA will not only promote Africa's own development and revitalization, but also bring important opportunities for China-Africa economic and trade cooperation, said Qian Keming, Vice Minister of Commerce of China, while signing a MoU with Mene on establishing an Expert Group on Economic Cooperation in October 2021.

Statistics from the General Administration of Customs of China show that China-Africa trade volume exceeded 250 billion USD in 2021, the highest since 2014. AfCFTA could create a huge market for the free flow of goods and services, which will attract more Chinese investors, said John Gatsi, Dean of University of Cape Coast Business School in

Ghana. With the use of the PAPSS, Chinese investors will find it more convenient to trade their goods within the continent, said Gatsi.

Yao Guimei, researcher from Chinese Academy of Social Sciences said that AfCFTA is expected to unleash its potential of growth in multiple sectors and industries. Apart from prioritizing infrastructure construction, many African countries are also expanding new areas such as mobile communications, the digital economy, clean energy, and smart cities. This will bring new opportunities for China-Africa cooperation, said Yao.

Amid the pandemic, Chinese enterprises have shared experience with Africa in terms of pandemic control and economic recovery, with the support of digital technology and digital platforms. Online promotion events and live-streaming have boosted the export of African products to China, and the digital economy is expected to be a new highlight of China-Africa cooperation, said Yao.

100kW Class HET Developed

By Staff Reporters

Using xenon as the propellant, HET-450, the single - channel Hall effect thruster (HET) at Lanzhou Institute of Physics, achieved 4.6 newtons of force at a power of 105kW maximum in a recent experiment, a major breakthrough for China's 100kW class HET in the field of high-power electric propulsion.

From a technical perspective, HET-450 stands shoulder-to-shoulder with the X3 multi-channel HET developed by the University of Michigan with a maximum force of 5.4 newtons and power of 102 kW.

Based on the discovery of the Hall effect by American physicist Edwin Hall, an HET functions as follows: It limits the electrons in a magnetic field, then uses them to ionize the propellant (xenon and krypton are the most common), accelerates the ions to produce thrust, and neutralizes the ions in the plume.

As an advanced electric propulsion device, HETs are widely adopted in position holding and attitude control of satellites. They are also regarded as preferred propulsion devices for spacecraft in the future due to simple structure, high specific impulse (at 10-second level) and high efficiency (could reach more than 60 percent). *See page 2*

WEEKLY REVIEW

Chinese Sci-tech Journals' International Rankings Improved

96 scientific and technological journals are ranked in the top 25 percent globally, with 25 journals listed in the top 5 percent and seven journals placed in the top 1 percent, said the China Association for Science and Technology on Feb.17.

Nuclear Unit with Hualong-1 Reactor Starts Operation

The No. 6 unit using domestically designed third-generation nuclear reactor Hualong- 1, has reached 100% full power operation for the first time with normal parameters on Feb.19, according to the China National Nuclear Corporation.

Lunar Glass Globules Captured by Yutu-2

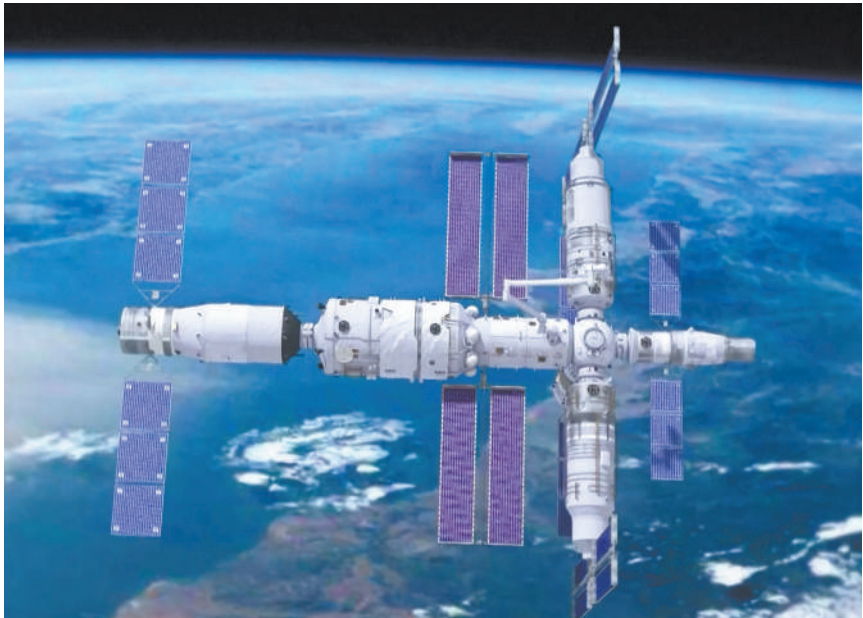
The Yutu - 2 lunar rover of China's Chang'e - 4 mission has discovered two macroscopic translucent glass globules during its exploration of the far side of the moon, which could potentially help reveal the moon's early impact history.

New Quantum Computing Software Released

A research team from the Chinese Academy of Sciences has released a new quantum computing programming software named "isQ-Core" and deployed it to the country's superconducting quantum hardware platform, to provide support for scientists to conduct quantum computing theory and application research.

WECHAT ACCOUNT

E-PAPER



Animation shows the completed Chinese space station. (PHOTO: VCG)