Global Times

Wed, 08 Jun 2022

Global Times

[Wed, 08 Jun 2022]

- Sci-Tech

Sci-Tech

- Moon soil to head for Chairman Mao's hometown
- The 3rd World Laureates Forum opens in Shanghai, emphasizes global cooperation in fight against COVID-19
- Beijing-Zhangjiakou line unveils smart railway system era
- Chinese scientific researchers gain more global recognition
- Successful satellite tests to allow 'Hongyun speed' by 2020
- Chinese AI company Pensees opens Singapore Institute
- NASA's TESS mission discovers three new worlds
- Tesla faces scrutiny
- Exhibition of Chinese arts students in Serbia shows changes in urban, rural China
- Moon soil to head for Chairman Mao's hometown
- China to promote development of global IPR governance
- Arid environments buzz with more bees, says study
- China develops electric-hub driverless tractor

- China launches 1st lunar sample return mission, aims for multiple breakthroughs in aerospace history
- China launches Chang'e-5 mission via Long March-5 rocket to retrieve Moon rocks
- How two companies sprinted ahead in search for a cure
- Digital banks race to capture the next generation
- China's Mars probe travels over 300 million km
- Anti-depression drug fluvoxamine can prevent deterioration of mild COVID-19 infections, research shows
- Country's best energy option
- Canada seeks $630 million from streaming firms to fund domestic content
- The 3rd World Laureates Forum opens in Shanghai, emphasizes global cooperation in fight against COVID-19

Moon soil to head for Chairman Mao's hometown

By Fan Anqi Source: Global Times Published: 2020/12/17 20:02:58

Late leader's passion for space exploration honored

Yuanwang-3, the only maritime space tracking ship in China's Chang'e-5 mission, successfully completes its escort task on early Thursday morning. It has undertaken nearly 100 maritime tracking and monitoring tasks of spacecraft, including the Shenzhou spaceships, Chang'e lunar probes, and BeiDou satellites. Photo: Courtesy of Our Space

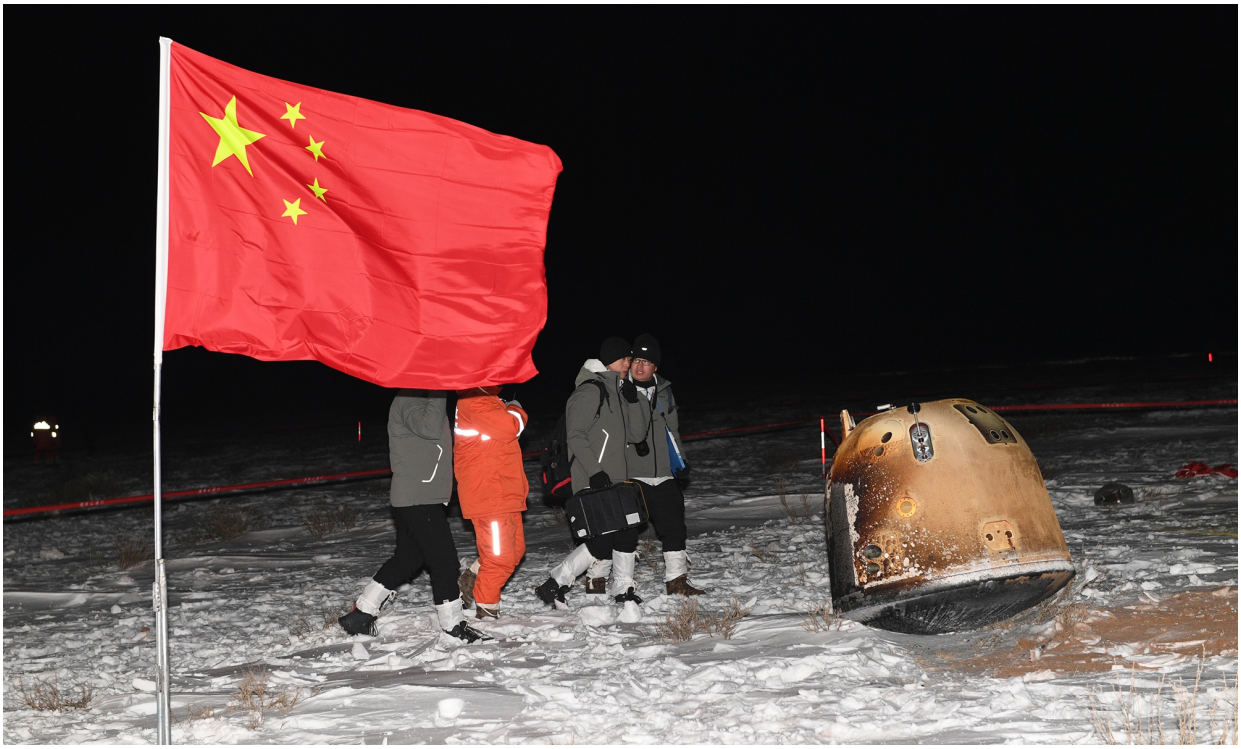
With Chang'e-5 probe making a perfect conclusion to its 23-day journey to the moon, bringing back soil from Earth's celestial neighbor, Central China's Hunan Province, the hometown of the late Chinese leader Mao Zedong, will be one of the sites where the moon samples are stored, to commemorate the leader and his passion for space exploration, China National Space Administration (CNSA) said on Thursday.

The CNSA said at a special media conference on Thursday that part of the lunar soil sample collected by Chang'e-5 will be preserved in Shaoshan, Hunan as a tribute to Mao, who once expressed his admiration and wonder for space when he said, "We can clasp the moon in the Ninth Heaven and seize turtles deep down in the Five Seas."

Beyond the intention to honor the late leader, Deputy Director of the Lunar Exploration and Space Program Center of the CNSA Pei Zhaoyu explained that Hunan was also chosen for its favorable geological conditions for disaster recovery and backup.

The Chang'e-5 probe's landing was live-streamed on China's twitter-like Sina Weibo in the early hours of Thursday Beijing time. While the city lights were dimmed in the silent night, millions of Chinese were staring into their phone screens, with hearts pounding heavily.

The videos attracted nearly 2 million views as of 3 am Beijing time, which showed the excitement of the Chinese people toward the probe's return.



China's Chang'e-5 successfully landed at its designated landing area in Siwangzi Banner, N China's Inner Mongolia Autonomous Region around 2 am Thursday, carrying around 2 kgs of lunar samples. Photos show workers checking craft's status. (Photo: Our Space/ Wang Jiangbo)

Interestingly, a mysterious little creature was spotted mixing with the search and rescue team who got the very first glimpse of the Chang'e-5's return capsule in a snow-covered area in Siziwang Banner, North China's Inner Mongolia Autonomous Region.

On Thursday, the case was finally closed. While many netizens suspected it was a smart fox or a fierce wolf, the CNSA revealed to the public that it turned out to be a furry little rabbit - just as the ancient Chinese tale has described, the moon goddess Chang'e, after whom the probe was named, always brings her pet rabbit.

Another detail disclosed from one of the pictures sent from the landing area triggered a wave of laughter - the dusty capsule of Chang'e-5 was covered with dozens of heating pads to keep it warm against the -30C cold. "This is so adorable. It seems like those

mothers who are always concerned about their kids in winter, showing their care to the greatest extent by covering their kids in heating pads all over their bodies," one netizen wrote.

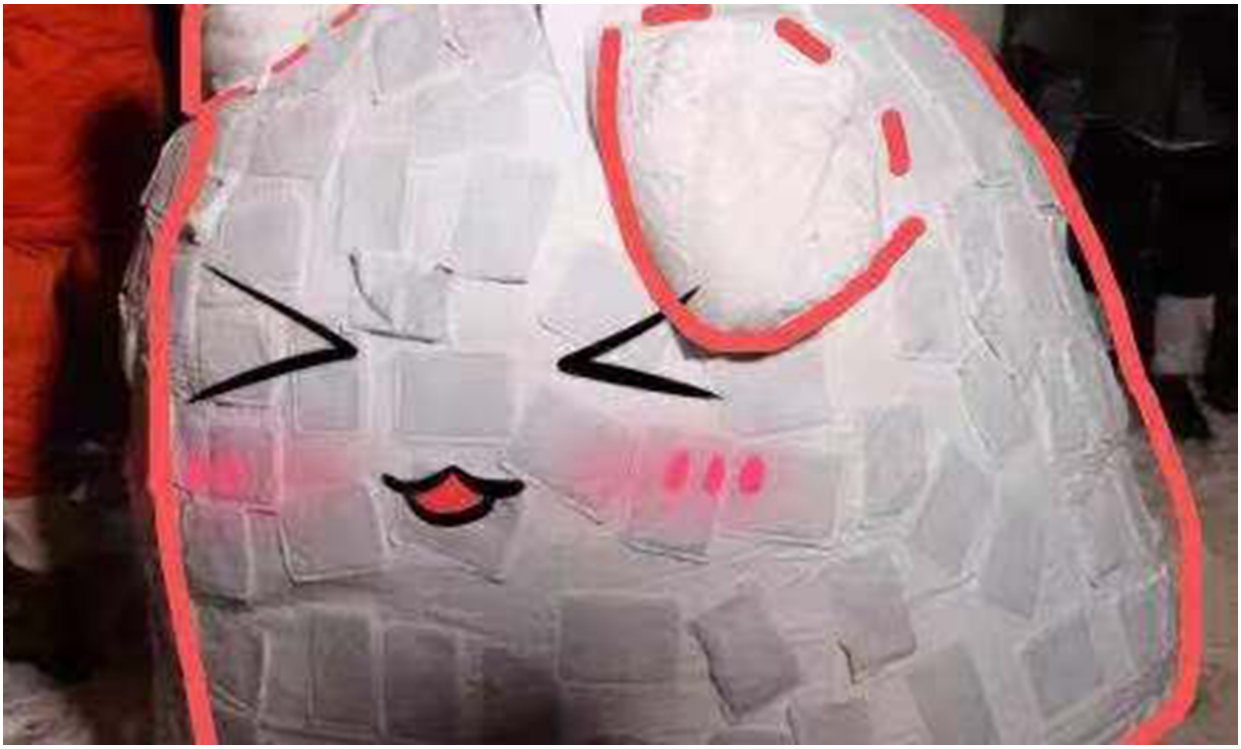


Photo: Capsule is covered with heating pads as it touched ground

Shortly after Chang'e-5's launch, curious netizens dug up an article published in 2005 by the People's Daily, which laid out plans for the entire Chang'e series — orbiting, landing, and sample retrieval, while specifying that the missions were expected to be completed in 2020.

Fifteen years later, the timetable in the newspaper was finally met. "It's hard to believe that our distant and unrealistic fantasies - once seemingly the realm of science fiction - have actually come true," a netizen on Weibo said in awe.

China's persistence in meeting its goal startled foreign researchers. "China is developing space projects of all types according to its own timetable, and it is not rushing about, but taking its time to do things

right," Bleddyn Bowen, an outer space analyst at the University of Leicester in the UK, told CCTV News.

The lunar samples will be divided into three parts for different purposes, CNSA deputy head Wu Yanhua noted. The first group will be sent to scientific labs to use in research, while the other two will be displayed in national museums for the public's education and shared with the international community in accordance with lunar data management regulations. They could even be given as special gifts to countries that work closely with China on aerospace matters.

RELATED ARTICLES:

- Chairman Mao's hometown to receive Chang'e-5 moon sample in honor of late leader: CNSA
- Chang'e-5 mission a milestone achievement, lays foundation for future lunar, asteroid missions: CNSA deputy head
- Chang'e-5, welcome back home!

The 3rd World Laureates Forum opens in Shanghai, emphasizes global cooperation in fight against COVID-19

By Du Qiongfang and Huang Lanlan in Shanghai Source: Global Times Published: 2020/10/30 13:47:34

The 3rd World Laureates Forum (photo: CCTV)

The importance of science development and cooperation between all people seems unprecedentedly apparent this year, as the world witnesses how global scientists work together amid the COVID-19 pandemic, in curing patients and developing vaccines, top scientists worldwide pointed out on Friday.

The 3rd World Laureates Forum, one of the world's largest science and technology forums, being held in Shanghai from Friday to

Sunday, gathers more than 300 global scientists, including 61 Nobel Prize winners, to participate in this scientific feast online or offline, and discuss current topics of concern, such as the global spread of the coronavirus.

Chinese President Xi Jinping delivered a video message at the forum's opening ceremony, saying that scientists from around the world have made great contributions to the fight against the COVID-19.

China will implement a more open, inclusive and mutually beneficial strategy of international scientific and technological cooperation, Xi noted. China is willing to work with top scientists and organizations in promoting scientific development, said Xi.

2006 Nobel Prize winner in chemistry Roger Kornberg said at the forum that the response to the COVID-19 pandemic is an inspiring example of global cooperation. Scientists and researchers from [worldwide] universities, research institutes and industries have been working on exploring treatments to the virus to prevent the spread of the pandemic, Swedish said, who is also the chairman of the World Laureates Association (WLA) that initiates the forum.

The world has never experienced such large scales of disaster and international cooperation, Kornberg said at the forum's opening speech, noting that the COVID-19 problem will surely be solved in the next year or so through joint efforts.

The first and most important thing to control the pandemic is to promote preventive measures, Kornberg said. "The non-pharmaceutical measures are the only available approach until we have a vaccine and a drug or multiple vaccines and drugs," he told the Global Times at the forum on Friday, saying that non-pharmaceutical measures include mask wearing, social distancing and good hygiene.

Kornberg praised the efforts that Chinese government has made in promoting non-pharmaceutical measures aimed at the pandemic. "It is done both by mandating behavior nationwide, and also by controlling the disease wherever it arises through immediate sequestration - that is, locking down a neighborhood or a city where a case arises and testing all of the inhabitants - and thereby preventing the spread of the disease," he said.

At the forum, medical scientists discussed strengths and weaknesses of some current COVID-19 treatments in the clinic use. Xiaoliang Sunney Xie, a 2015 Albany Prize winner in medicine, mentioned in his speech the neutralizing antibody therapy that US President Trump had received.

The 8g Regeneron's antibody cocktail REGN-COV2 that US President Trump had been given during his treatment was a very high dose, too expensive to the general public, Xie said in his speech.

More powerful neutralizing antibody medicines [with lower does] need to be developed, Xie said.

"Neutralizing antibodies are expected to be the sovereign remedy for the treatment of COVID-19," Xie told the Global Times on Friday, saying that clinical trials of some [new] neutralizing antibody-based medicines have started in China and Australia in September.

The ongoing forum announced the creation of a foundation for the development of top global scientists in Shanghai. The foundation will focus on projects regarding worldwide scientific communication and education, innovative talent growth, and the development of scientific communities.

A WLA Science Community at Shanghai Lingang Free Trade Zone, for instance, was announced to open for the first time on Friday since it started construction in 2018.

Home to headquarters of several top global scientific organizations, this 2.5-square-kilometer community in Pudong New Area will focus on the research, development and industrialization of frontline scientific areas such as biomedicine, artificial intelligence AI, integrated circuits, new energy and quantum science, the forum said.

More than 130 speeches of top scientists and over 70 discussions in the fields of basic sciences and applied technologies will be organized online and offline during the three-day forum being held by the Shanghai government.

RELATED ARTICLES:

- Trump dismisses the science

Beijing-Zhangjiakou line unveils smart railway system era

By Wang Sheng in Zhangjiakou and Chen Qingqing in Beijing
Source:Global Times Published: 2019/12/30 23:38:40 Last Updated: 2019/12/31 0:16:05

A stewardess places paper cutting on the window of the high-speed train G2505, which stops at Zhangjiakou Highspeed Railway Station in Zhangjiakou, North China's Hebei province on Monday. The high-speed railway line went into service on Monday. Photo: China News Service

China's first self-driving high speed railway linking the two host cities of the 2022 Winter Olympic Games went into operation on Monday, featuring cutting-edge homegrown technologies deemed as major breakthroughs regarding China's rail development. The new line also demonstrated the country's railway evolution.

The 174-kilometer rail line is the first of its kind in the country that is covered by China's self-developed BeiDou Navigation Satellite System (BDS), and is also the world's fastest driverless train with a maximum speed of 350 kilometers per hour, according to China Railway Corp.

Connecting Beijing and Zhangjiakou, the co-host city of Beijing 2022 Winter Olympics located in North China's Hebei Province, the railway reduces travel time between Beijing and Zhangjiakou from more than 3 hours to 47 minutes, which will be a great boost to the coordinated development of the Beijing-Tianjin-Hebei region.

Xi Jinping, general secretary of the Communist Party of China (CPC) Central Committee, stressed the significance of the high-speed railway line connecting Beijing and Zhangjiakou.

Xi, also Chinese president and chairman of the Central Military Commission, said the opening marked new progress in the preparations for Winter Olympics and called for high-standard and high-quality advancing of related work.

The Chongli railway, the 53-kilometer-long branch line of the Beijing-Zhangjiakou high speed railway line also came into service on the same day, according to the operator. The Chongli district is where the 2022 Winter Olympic village is located.

Photo taken on Dec. 30, 2019 shows the G8811 high-speed train bound for Taizicheng Railway Station at Beijing North Railway Station in Beijing, capital of China, Dec. 30, 2019. The high-speed railway line connecting Beijing and Zhangjiakou in north China's Hebei Province went into service on Monday. Chongli railway, a branch line of the Beijing-Zhangjiakou high-speed railway, also came into service. (Xinhua/Xing Guangli)

Cutting-edge technology

Besides the coverage of BDS, the rail line also features a wide range of advanced technologies such as autopilot and auto-dispatching systems. The self-driving system enables the train to automatically start and run between stations, adjusting its timing in accordance to the schedule while accurately stopping at stations.

"The Beijing-Zhangjiakou rail line is China's high-speed rail 2.0 version, integrating smart rail technologies," Lv Gang, chief engineer of the railway's tunnel project, told the Global Times on Monday, indicating that the launch of the service also represented the future of high-speed rail development.

The line is also the first in China to adopt a full-lifecycle Building Information Modeling (BIM) approach for all disciplines involved in

the project, marking a milestone in China's railway construction and unveiling the practice of smart railway construction, according to analysts.

Meanwhile, its alarm system, earthquake warning system, natural disaster monitoring system constituted the intelligent dispatching command system for the train. Designed for connecting different Olympic venues, the railway, with the support of dual model 4G and 5G equipment, could facilitate the switch of signals, supporting the upgrade to 5G networks in the future and assist with live streaming of the Olympic games.

"This will also be an opportunity to showcase China's technological development to the world," Zhao Jian, a professor at Beijing Jiaotong University, told the Global Times on Monday.

Over the past decade, China has built the world's most modern and developed high-speed railway network, with operating length surpassing 35,000 kilometers as of the end of 2019, ranking first in the world, according to media reports.

"The rail line showcases smart rail technologies such as autonomous driving, 5G-enabled services, on-board Wi-Fi and e-ticket services, setting an example for the future development of China's railway and it could be key features for the nation's high-speed rail diplomacy," Luo Duhao, chief engineer of the Beijing-Zhangjiakou High-Speed Railway Line, told the Global Times on Monday.

A bullet train tests operations along the high-speed railway line connecting Beijing and Zhangjiakou in North China's Hebei Province in November. Photo: VCG

Rail evolution

The construction of the Beijing-Zhangjiakou rail line is a part of China's national medium and long-term railway construction plan, also known as the "eight vertical and eight horizontal" high-speed railway network. It also links up to Hohhot, capital city of North China's Inner Mongolia Autonomous Region, cutting the travel time between Hohhot and Beijing from nine hours fifteen minutes to two hours nine minutes.

The construction of the railway and high-speed rail line has significant implications on China's economic growth, as the country aims to reach 150,000-kilometer of railway network by 2020, within the aforementioned figure, high-speed rail distances will reach 30,000-kilometers, covering 80 percent of major first-tier cities.

Beijing-Zhangjiakou railway is of particular significance in the development of China's railway system. The line, first built from 1905

to 1909, was China's first railway that was designed and built solely by Chinese.

"110 years ago, the rail line was first built, bringing opportunities for the city. 110 years later, the Beijing-Zhangjiakou high-speed rail went into service, becoming a vital symbol for Beijing-Tianjin-Hebei integration, which is also fortunate for us," Wang Ping, a local resident of Zhangjiakou, told the Global Times on Monday.

RELATED ARTICLES:

- Beijing-Zhangjiakou high-speed railway opens

Chinese scientific researchers gain more global recognition

By Leng Shumei Source:Global Times Published: 2019/11/20 20:23:40

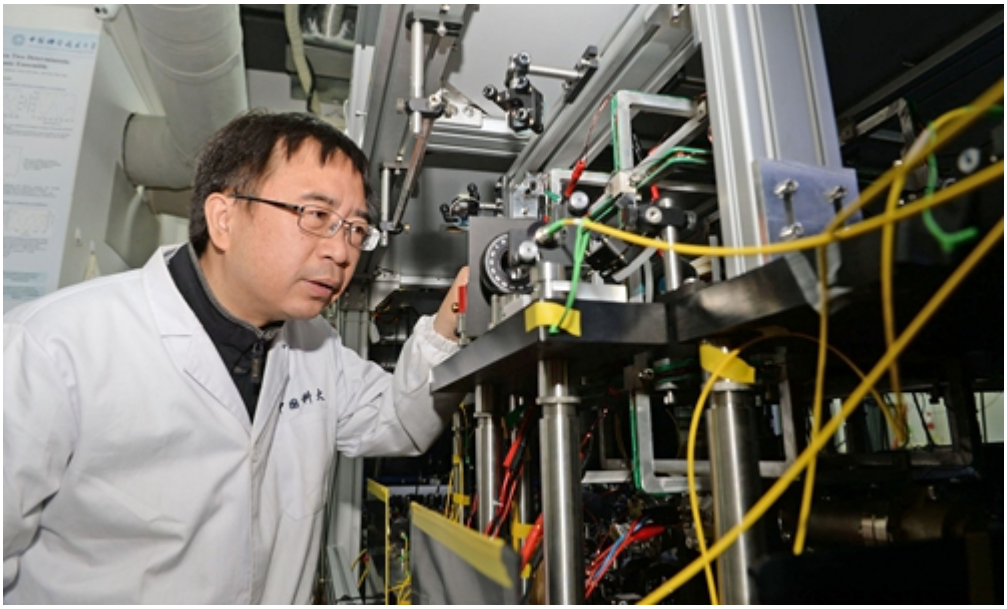


Photo: VCG

Chinese scientists and social scientists exceeded those from the UK in terms of citations, coming second in the list of 2019 Highly Cited Researchers following the US, which Chinese researchers said is a result of the country's decades of heavy investment in scientific research.

A total of 636 researchers from the Chinese mainland are named in the 2019 list, a sharp increase compared to 482 in 2018, according to the list released by the Web of Science Group, a company under the US-based Clarivate Analytics, on Tuesday.

The number of researchers from the mainland in the main 21 Essential Science Indicators categories has also witnessed a three-fold increase in the number of citations since 2014, according to the list.

Another 99 Chinese researchers from the regions of Hong Kong, Macao and Taiwan are also named in the list.

"The number shows that China's achievements in scientific research are increasingly recognized by the world and the country are making more valuable contributions," Wang Peiji, an expert at the Harbin Institute of Technology's School of Aeronautics, told the Global Times on Wednesday.

Researchers reached by the Global Times noted that the increase benefited from Chinese governments' decades of strong support for scientific research, both in policy and finance, which leads to a good environment for researchers.

The list identifies scientists and social scientists whose papers rank in the top 1 percent by citations for their field and year of publication, demonstrating significant research influence among their peers, according to Clarivate Analytics.

The US topped the list among 60 nations and regions with 2,737 authors, accounting for 44 percent of the total researchers on the list.

Compared to the US, China mainly lags in the field of natural science, or basic science, according to Wang. Basic science includes fields such as physics, chemistry, biology and astronomy.

"It was an outcome of China's national conditions. We had to prioritize practical and applied science when we were poor," Wang said.

Big tech firms like Alibaba and Huawei are expected to push research in the natural sciences in future, Wang said. The two companies were reported to have invested in areas related to quantum mechanics.

China's investment in basic scientific research reached 109 billion yuan ($16.25 billion) in 2018, exceeding 100 billion for the first time, the Xinhua News Agency reported.

Of the total, 3.35 billion yuan was invested by companies, and was an increase of 15.7 percent compared to amount businesses invested in 2017.

RELATED ARTICLES:

- China's spending on R&D rises to historic high

Successful satellite tests to allow ‘Hongyun speed’ by 2020

By Deng Xiaoci Source:Global Times Published: 2019/11/19 19:43:40

Liu Shiquan, deputy general manager of space giant China Aerospace Science and Industry Corporation addresses at the 5th China International Commercial Aerospace Forum in Wuhan, Central China's Hubei Province. Photo: Deng Xiaoci/GT

The demonstration system for China's Hongyun Project, a low-orbit broadband communication satellite system, will become operational at the beginning of 2020, making substantial progress toward the eventual goal of providing internet connectivity to users around the world, developers told the Global Times on Tuesday.

Liu Shiquan, deputy general manager of space giant China Aerospace Science and Industry Corporation (CASIC) announced Tuesday that testing of the first Hongyun Project satellite has been successfully completed. Li was addressing the ongoing 5th China International Commercial Aerospace Forum in Wuhan, Central China's Hubei Province.

The project, also known as the H-cloud, was developed by CASIC. The first tech-experimental satellite for the project was launched on December 22, 2018 from the Jiuquan Satellite Launch Center in Northwest China's Gansu Province.

CASIC said in a statement it sent to the Global Times on Tuesday that all satellite performance and function tests have been completed. The testing included under different weather conditions, and for different business scenarios such as website browsing, video chats and high-resolution streaming services.

During the tests, there was no frame loss or buffering, and all functions and indicators met the design requirements, it said.

By the beginning of 2020, users across China will be able access the demonstration system of the Hongyun Project, and they will be able to take advantage of what it described as "Hongyun speed," CASIC said.

The Hongyun Project, which was announced in 2017, is expected to launch four more satellites to gain preliminary experience by 2020. CASIC expects to have a total of 156 satellites in operation by the middle of the 14th Five-Year Plan (2021-25).

The project can offer communication and internet services for China and less-developed countries with reduced latency. Meanwhile, the project can also benefit emergency communication, sensor data collection and remote control of unmanned equipment, CASIC said in 2017.

International maritime satellites currently are widely used for communications in mountainous areas and for airplanes, but these satellites, which will orbit 36,000 kilometers above the Earth, have time and signal delays as well as high costs for providing services, Yang Yuguang, a research fellow with CASIC, said when the company announced the plan in 2017.

RELATED ARTICLES:

- China sends two global multimedia satellites into planned orbit

---

Chinese AI company Pensees opens Singapore Institute

Source:Xinhua Published: 2019/8/1 13:50:07

Ma Yuan (R), the founder and chief executive officer of Beijing-based Artificial Intelligence (AI) company Pensees Technology Co Ltd (Pensees), speaks to a guest during the unveiling ceremony of the Pensees Singapore Institute in Singapore, July 31, 2019. Beijing-based Artificial Intelligence (AI) company Pensees Technology Co Ltd (Pensees) opened here its Singapore Institute Wednesday to oversee the development of its applied industrial R&D and delivery capabilities in Singapore and the region. (Xinhua/Then Chih Wey)

Ma Yuan (R), the founder and chief executive officer of Beijing-based Artificial Intelligence (AI) company Pensees Technology Co Ltd (Pensees), speaks to a guest during the unveiling ceremony of the Pensees Singapore Institute in Singapore, July 31, 2019. Beijing-based Artificial Intelligence (AI) company Pensees Technology Co Ltd (Pensees) opened here its Singapore Institute Wednesday to oversee the development of its applied industrial R&D and delivery capabilities in Singapore and the region. (Xinhua/Then Chih Wey)

Beijing-based Artificial Intelligence (AI) company Pensees Technology Co Ltd (Pensees) opened here its Singapore Institute Wednesday to oversee the development of its applied industrial R&D and delivery capabilities in Singapore and the region.

The Pensees Singapore Institute is headed by renowned AI expert Jane Shen, who is also the company's Chief Scientist, and will house up to 70 staff, comprising AI algorithm researchers, system researchers, hardware experts and engineers.

Ma Yuan, the founder and chief executive officer of Pensees, and Wang Rongfang, counsellor of Science and Technology at the Chinese embassy in Singapore, officiated at the opening ceremony.

Ma said in his speech, "Singapore plays an important role in the next wave of AI innovation, and we are thrilled at the idea of establishing our footing here as we seek opportunities to enhance our offerings and work with AI talent from both academia and industry."

Pensees also announced Wednesday its plans to collaborate with local experts and universities. Pensees Singapore Institute has reached a Research Collaboration Agreement with the National University of Singapore(NUS) for the joint development of the AI Based Camera System. This collaboration has been selected as one of the AI 100E projects under the AI Innovation Program managed by AI Singapore, an organization under the Singapore National Research Foundation to promote AI innovation. Pensees also reached a Memorandum of Understanding with Nanyang Polytechnic, where both parties agreed to collaborate in the area of autonomous system technologies, autonomous robots as well as AI application development and testing.

The Chinse AI company also announced the formation of its Technical Advisory Board Wednesday, with four professors from the NUS and the Nanyang Technological University becoming the first batch of scientists joining the advisory board.

Since its inception in 2017, Pensees has developed and deployed a full range of AI products and solutions in domains such as Enterprise Security, Public Security, Smart Community and Smart Factory.

RELATED ARTICLES:

- Chinese hybrid chip bridges neuroscience, machine learning, shows nation’s expertise in AI

| Section menu | Main menu |

NASA's TESS mission discovers three new worlds

Source:Xinhua Published: 2019/7/31 16:59:20

NASA's newest planet hunter, the Transiting Exoplanet Survey Satellite (TESS), has discovered three new worlds -- one slightly larger than Earth and two of a type not found in our solar system -- orbiting a nearby star, according to the US space agency.

The planets straddle an observed gap in the sizes of known planets and promise to be among the most curious targets for future studies.

TESS Object of Interest (TOI) 270 is a faint, cool star more commonly identified by its catalog name: UCAC4 191-004642. The M-type dwarf star is about 40 percent smaller than the Sun in both size and mass, and it has a surface temperature about one-third cooler than the Sun's, NASA said in a release Monday.

The planetary system lies about 73 light-years away in the southern constellation of Pictor, said NASA.

"This system is exactly what TESS was designed to find -- small, temperate planets that pass, or transit, in front of an inactive host star, one lacking excessive stellar activity, such as flares," said lead researcher Maximilian Gunther, a postdoctoral fellow at the Massachusetts Institute of Technology's Kavli Institute for Astrophysics and Space Research in Cambridge.

"This star is quiet and very close to us, and therefore much brighter than the host stars of comparable systems. With extended follow-up observations, we'll soon be able to determine the make-up of these

worlds, establish if atmospheres are present and what gases they contain, and more," he said.

A paper describing the system was published in the journal Nature Astronomy and is available online.

RELATED ARTICLES:

- NASA shakeup in new race to the moon
- NASA scientists develop new technique to spot failing infrastructure from space

---

Tesla faces scrutiny

Source:Reuters Published: 2019/9/6 0:13:39

US safety agency cites driverless design as factor in California fire truck collision

Tesla vehicles sit parked outside of a showroom in Brooklyn in New York. File photo: VCG

The National Transportation Safety Board (NTSB) on Wednesday cited driver errors and Tesla Inc's Autopilot design as the probable causes of a Model S crash in January 2018. The car, which was operating in Autopilot mode, crashed into a parked fire truck on a highway in California early last year.

The safety board, which previously criticized Tesla's driver-assistance system Autopilot after a 2016 fatal crash in Florida, said that the system's design "permitted the driver to disengage from the driving task" in the Culver City, California, crash. The NTSB said on Tuesday that Autopilot allowed the driver to keep his hands off the wheel for the vast majority of the nearly 14 minutes of the trip.

The fire truck was unoccupied and the driver was not injured in the incident. The NTSB cited the driver's "inattention and overreliance" on the advanced driver assistance system.

Tesla's Autopilot was engaged during at least three fatal US crashes, including one involving a 2018 Model 3 in Delray Beach, Florida, and a crash in Mountain View, California, of a Model X. Both incidents, which occurred in March 2018, remain under investigation by the NTSB and the National Highway Traffic Safety Administration (NHTSA). The NTSB is responsible for making safety recommendations, while the NHTSA can order a recall if it deems a defect poses an unreasonable risk to safety.

The Center for Auto Safety, a consumer-watchdog group, said on Wednesday that the NTSB report should prompt NHTSA to "do its job and recall these vehicles ... A vehicle that enables a driver to not pay attention, or fall asleep, while accelerating into a parked fire truck is defective and dangerous."

Tesla said in an emailed statement that since the 2018 crash, "We have made updates to our system including adjusting the time intervals between hands-on warnings and the conditions under which they're activated."

The company added that Tesla owners have driven billions of miles with Autopilot engaged, and that its data "indicates that drivers using Autopilot remain safer than those operating without assistance."

The crashes raised questions about the driver-assistance system's ability to detect hazards, and sparked safety concerns about

systems that can perform driving tasks for extended stretches of time with little or no human intervention, but which cannot completely replace human drivers.

After the fatal 2016 Florida crash, NTSB asked six automakers with advanced driver assistance systems - Tesla, Volkswagen AG, BMW AG, Nissan Motor Co, Daimler AG and Volvo Car - to "develop applications to more effectively sense the driver's level of engagement and alert the driver when engagement is lacking while automated vehicle control systems are in use."

"All manufacturers except Tesla have responded to the NTSB, explaining their current systems and their efforts to reduce misuse and keep drivers engaged," the NTSB said.

While Tesla drivers say they are able to avoid holding the steering wheel for extended periods while using Autopilot, Tesla advises drivers to keep their hands on the wheel and pay attention while using the system.

The NTSB said that had the driver in the case been paying close attention, "he could have taken evasive action to avoid or mitigate the collision."

RELATED ARTICLES:

- Tesla involved in tax refund row, risks losing trust
- Tesla CEO Elon Musk shows love for local Chinese food
- Elon Musk says progress at Tesla Shanghai factory is "mind-blowing"

Exhibition of Chinese arts students in Serbia shows changes in urban, rural China

Source: Published: 2019/7/22 17:43:23

Visitors view photos during the photo exhibition "Reflection in Water" in Novi Sad, Serbia, July 21, 2019. The changes in urban and rural China were presented to Serbian art audience on Sunday in Novi Sad through eyes of Chinese art students at a photo exhibition "Reflection in Water". The 70 works of students of the Communication University of China (CUC) were displayed here to visitors of the gallery "Svilara" located in a reconstructed silk-dyeing factory in cooperation with the Academy of Arts of the University of Novi Sad. (Photo: Xinhua)

A visitor views photos during the photo exhibition "Reflection in Water" in Novi Sad, Serbia, July 21, 2019. The changes in urban and rural China were presented to Serbian art audience on Sunday in Novi Sad through eyes of Chinese art students at a photo exhibition "Reflection in Water". The 70 works of students of the Communication University of China (CUC) were displayed here to visitors of the gallery "Svilara" located in a reconstructed silk-dyeing factory in cooperation with the Academy of Arts of the University of Novi Sad. (Photo: Xinhua)

A visitor views photos during the photo exhibition "Reflection in Water" in Novi Sad, Serbia, July 21, 2019. The changes in urban and rural China were presented to Serbian art audience on Sunday in Novi Sad through eyes of Chinese art students at a photo exhibition "Reflection in Water". The 70 works of students of the Communication University of China (CUC) were displayed here to visitors of the gallery "Svilara" located in a reconstructed silk-dyeing factory in cooperation with the Academy of Arts of the University of Novi Sad. (Photo: Xinhua)

A visitor views photos during the photo exhibition "Reflection in Water" in Novi Sad, Serbia, July 21, 2019. The changes in urban and rural China were presented to Serbian art audience on Sunday in Novi Sad through eyes of Chinese art students at a photo exhibition "Reflection in Water". The 70 works of students of the Communication University of China (CUC) were displayed here to visitors of the gallery "Svilara" located in a reconstructed silk-dyeing factory in cooperation with the Academy of Arts of the University of Novi Sad. (Photo: Xinhua)

A visitor views photos during the photo exhibition "Reflection in Water" in Novi Sad, Serbia, July 21, 2019. The changes in urban and rural China were presented to Serbian art audience on Sunday in Novi Sad through eyes of Chinese art students at a photo exhibition "Reflection in Water". The 70 works of students of the Communication University of China (CUC) were displayed here to visitors of the gallery "Svilara" located in a reconstructed silk-dyeing factory in cooperation with the Academy of Arts of the University of Novi Sad. (Photo: Xinhua)

RELATED ARTICLES:

- Cuba: Exhibition highlights bilateral friendship

Moon soil to head for Chairman Mao's hometown

By Fan Anqi Source: Global Times Published: 2020/12/17 20:02:58

Late leader's passion for space exploration honored

Yuanwang-3, the only maritime space tracking ship in China's Chang'e-5 mission, successfully completes its escort task on early Thursday morning. It has undertaken nearly 100 maritime tracking and monitoring tasks of spacecraft, including the Shenzhou spaceships, Chang'e lunar probes, and BeiDou satellites. Photo: Courtesy of Our Space

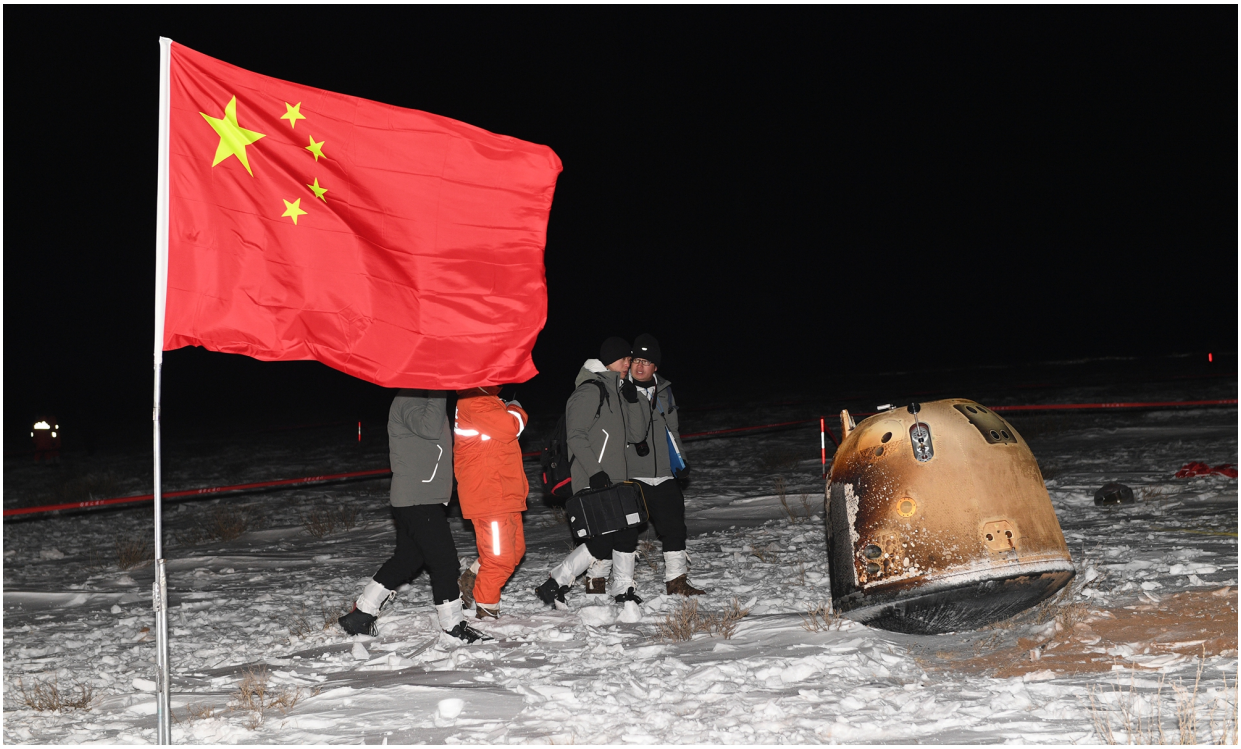
With Chang'e-5 probe making a perfect conclusion to its 23-day journey to the moon, bringing back soil from Earth's celestial neighbor, Central China's Hunan Province, the hometown of the late Chinese leader Mao Zedong, will be one of the sites where the moon samples are stored, to commemorate the leader and his passion for space exploration, China National Space Administration (CNSA) said on Thursday.

The CNSA said at a special media conference on Thursday that part of the lunar soil sample collected by Chang'e-5 will be preserved in Shaoshan, Hunan as a tribute to Mao, who once expressed his admiration and wonder for space when he said, "We can clasp the moon in the Ninth Heaven and seize turtles deep down in the Five Seas."

Beyond the intention to honor the late leader, Deputy Director of the Lunar Exploration and Space Program Center of the CNSA Pei Zhaoyu explained that Hunan was also chosen for its favorable geological conditions for disaster recovery and backup.

The Chang'e-5 probe's landing was live-streamed on China's twitter-like Sina Weibo in the early hours of Thursday Beijing time. While the city lights were dimmed in the silent night, millions of Chinese were staring into their phone screens, with hearts pounding heavily.

The videos attracted nearly 2 million views as of 3 am Beijing time, which showed the excitement of the Chinese people toward the probe's return.



China's Chang'e-5 successfully landed at its designated landing area in Siwangzi Banner, N China's Inner Mongolia Autonomous Region around 2 am Thursday, carrying around 2 kgs of lunar samples. Photos show workers checking craft's status. (Photo: Our Space/ Wang Jiangbo)

Interestingly, a mysterious little creature was spotted mixing with the search and rescue team who got the very first glimpse of the Chang'e-5's return capsule in a snow-covered area in Siziwang Banner, North China's Inner Mongolia Autonomous Region.

On Thursday, the case was finally closed. While many netizens suspected it was a smart fox or a fierce wolf, the CNSA revealed to the public that it turned out to be a furry little rabbit - just as the ancient Chinese tale has described, the moon goddess Chang'e, after whom the probe was named, always brings her pet rabbit.

Another detail disclosed from one of the pictures sent from the landing area triggered a wave of laughter - the dusty capsule of Chang'e-5 was covered with dozens of heating pads to keep it warm against the -30C cold. "This is so adorable. It seems like those

mothers who are always concerned about their kids in winter, showing their care to the greatest extent by covering their kids in heating pads all over their bodies," one netizen wrote.

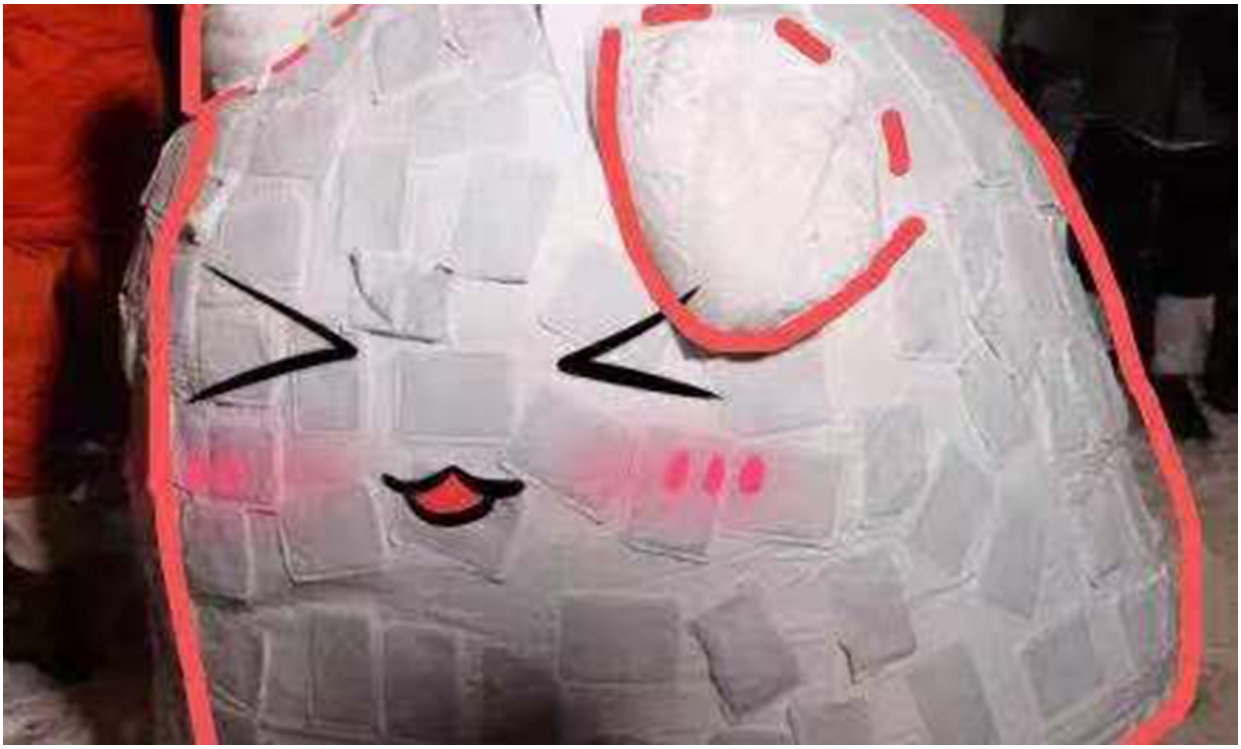


Photo: Capsule is covered with heating pads as it touched ground

Shortly after Chang'e-5's launch, curious netizens dug up an article published in 2005 by the People's Daily, which laid out plans for the entire Chang'e series — orbiting, landing, and sample retrieval, while specifying that the missions were expected to be completed in 2020.

Fifteen years later, the timetable in the newspaper was finally met. "It's hard to believe that our distant and unrealistic fantasies - once seemingly the realm of science fiction - have actually come true," a netizen on Weibo said in awe.

China's persistence in meeting its goal startled foreign researchers. "China is developing space projects of all types according to its own timetable, and it is not rushing about, but taking its time to do things

right," Bleddyn Bowen, an outer space analyst at the University of Leicester in the UK, told CCTV News.

The lunar samples will be divided into three parts for different purposes, CNSA deputy head Wu Yanhua noted. The first group will be sent to scientific labs to use in research, while the other two will be displayed in national museums for the public's education and shared with the international community in accordance with lunar data management regulations. They could even be given as special gifts to countries that work closely with China on aerospace matters.

RELATED ARTICLES:

- Chairman Mao's hometown to receive Chang'e-5 moon sample in honor of late leader: CNSA
- Chang'e-5 mission a milestone achievement, lays foundation for future lunar, asteroid missions: CNSA deputy head
- Chang'e-5, welcome back home!

China to promote development of global IPR governance

Source: Global Times Published: 2020/12/4 4:13:39

Foreign Ministry spokeswoman Hua Chunying Photo: fmprc.gov.cn

China seeks to strengthen its cooperation with the World Intellectual Property Organization and other countries to achieve deeper participation in global intellectual property governance, Chinese Foreign Ministry spokesperson Hua Chunying said on Thursday.

China hopes to jointly promote the development of the global intellectual property governance system to develop in a more just and reasonable direction, Hua told a press briefing in Beijing.

Hua noted that China's intellectual property protection work has made historic achievements after years of hard work.

In the first 10 months of this year, China’s patent applications amounted to 1.232 million, an increase of 11.2 percent year-on-year.

The number of international patent applications received under the Patent Cooperation Treaty (PCT) increased by 23.5 percent year-on-year to 55,000, even amid the impact of the epidemic.

In the past five years, China has risen to 14th place among 131 economies in the world in terms of innovation capability.

Technological innovation is becoming the first driving force leading China's development as it is treated with increasing importance in China's development strategy.

Arid environments buzz with more bees, says study

Source: Xinhua Published: 2020/11/30 14:32:45

File photo shows a bee on a flower in Nanhu park in Hohhot, capital of north China's Inner Mongolia Autonomous Region. (Xinhua/Ding Genhou)

Researchers have mapped the distribution of bee species to study the size and diversity of their global population.

There are more than 20,000 species of bees which until now lacked accurate global distribution data. The researchers combined a comprehensive checklist of bee species distributions and about six million public records of the insects to depict and map global patterns of diversity.

Researchers found that the northern hemisphere has a more diverse bee population than the southern hemisphere while arid and temperate environments have more bees than the tropics.

The global analysis also revealed that forests host fewer bee species than arid and desert environments since trees are a limited source of nutrients for the species and do not provide as many habitats for resting or foraging.

According to a recent research article published in the journal Current Biology, arid areas, solar radiation and non-forest plant productivity are among the most important global drivers of bee biodiversity.

The article's "corresponding author" Alice Hughes, also a researcher at the Xishuangbanna Tropical Botanical Garden of the Chinese Academy of Sciences, said publicly-accessible records of bee species were few. The research provides background data and analysis for bee diversity studies.

China develops electric-hub driverless tractor

Source: Xinhua Published: 2020/11/27 13:58:46

An electric-hub driverless tractor works at an industrial park in Luoyang, central China's Henan Province on Nov. 6, 2020. (Photo by Miao Lin/Xinhua)

An agricultural machinery innovation center in China has developed a prototype of an electric-hub driverless tractor.

Compared with the average turning radius of 5 meters in diesel-fueled 100-horsepower tractors, the "ET1004-W" tractor set a record of 3.5 meters, the shortest turning radius by a 100-horsepower tractor in China.

The prototype was developed by the National Institute of Agro-machinery Innovation and Creation, which pools engineers and talent

from Tsinghua University and the Chinese Academy of Sciences, as well as leading machinery manufacturers YTO Group Corporation and Zoomlion Heavy Industry Science & Technology Co. Ltd.

Powered by 5G cellular technology, the agricultural tractor with self-driving mode can also be remotely controlled to carry out multiple intelligent functions.

China launches 1st lunar sample return mission, aims for multiple breakthroughs in aerospace history

By Deng Xiaoci and Fan Anqi Source: Global Times Published: 2020/11/24 5:07:19

Video: Fan Wei/GT

China launches Chang'e-5 mission via Long March-5 rocket to retrieve Moon rocks at Wenchang Space Launch Center from South China's Hainan Province early Tuesday morning. Photo: Li Dike

The Long March-5 Y5, China's state-of-the-art carrier rocket and strongest member of the Long March launch vehicle family, blasted off early Tuesday morning from the Wenchang Space Launch Center

located in South China's Hainan Province, successfully sending the Chang'e-5 lunar probe into planned orbit.

About 2,200 seconds after lift-off, the Chang'e-5 lunar probe separated from the rocket and entered the Earth-Moon transfer orbit with the perigee at 200 km and the apogee at about 410,000 km.

Despite the difficulties brought by the COVID-19 epidemic, China's aerospace sector has been able to launch not only the country's first-ever Tianwen-1 Mars probe, but also the latest lunar sample return mission, showcasing the country's resilience and increasingly mature capabilities in the space sphere, according to observers.

Dubbed one of the most complicated and challenging space exploration projects ever attempted, Chang'e-5 will carry out the third stage of China's current lunar programs, which involves three phases —orbiting, landing and return. The first two phases have been completed successfully.

Wang Yanan, chief editor of Aerospace Knowledge magazine, told the Global Times that the highly complex, forward-looking technology applied in this project could be regarded as "an unmanned task that lays the foundation for future manned lunar missions."

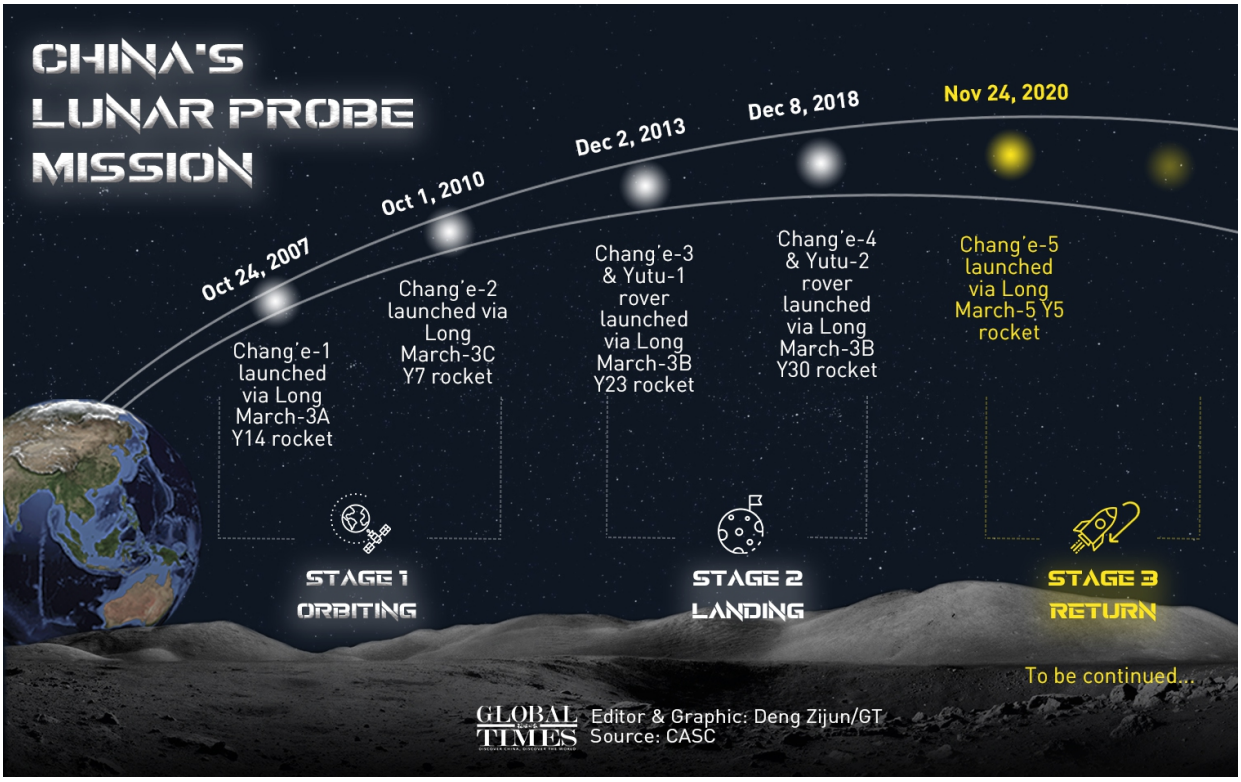
"Analysis of the lunar samples shows that contents within the soil and rocks could be turned into water and oxygen, which will be useful in supporting the operation of the Moon base and serve as supplementary fuel for lunar landing vehicles," Pang Zhihao, a Beijing-based space expert, told the Global Times.

More importantly, scientists have found in the lunar samples the ideal material for nuclear fusion, and enough of it to meet human's energy needs for about 10,000 years, Pang added.

China's future Chang'e-6 mission will also automatically collect lunar samples for comprehensive analysis and research, and hopefully carry international payloads on board.

Chang'e-7 will comprehensively explore the moon, while Chang'e-8 will explore the possibility of building an international lunar research base, Global Times previously learned from CNSA. Chang'e-8 will also test 3D printer technology in the hopes of assisting future lunar residents.

"To build a research base on the Moon, we first need to figure out what it is made of, by analyzing the soil composition and geological structure, and then making use of the raw materials at hand on the Moon for our own exploration purposes," Song Zhongping, an aerospace observer and TV commentator, told the Global Times.



Infographic: GT

Perfect success rate

China launched its first lunar probe mission, Chang'e-1, in October 24, 2007 via a Long March 3A Y14 carrier rocket. In the 13 years since then, China has launched a total of five missions, all named

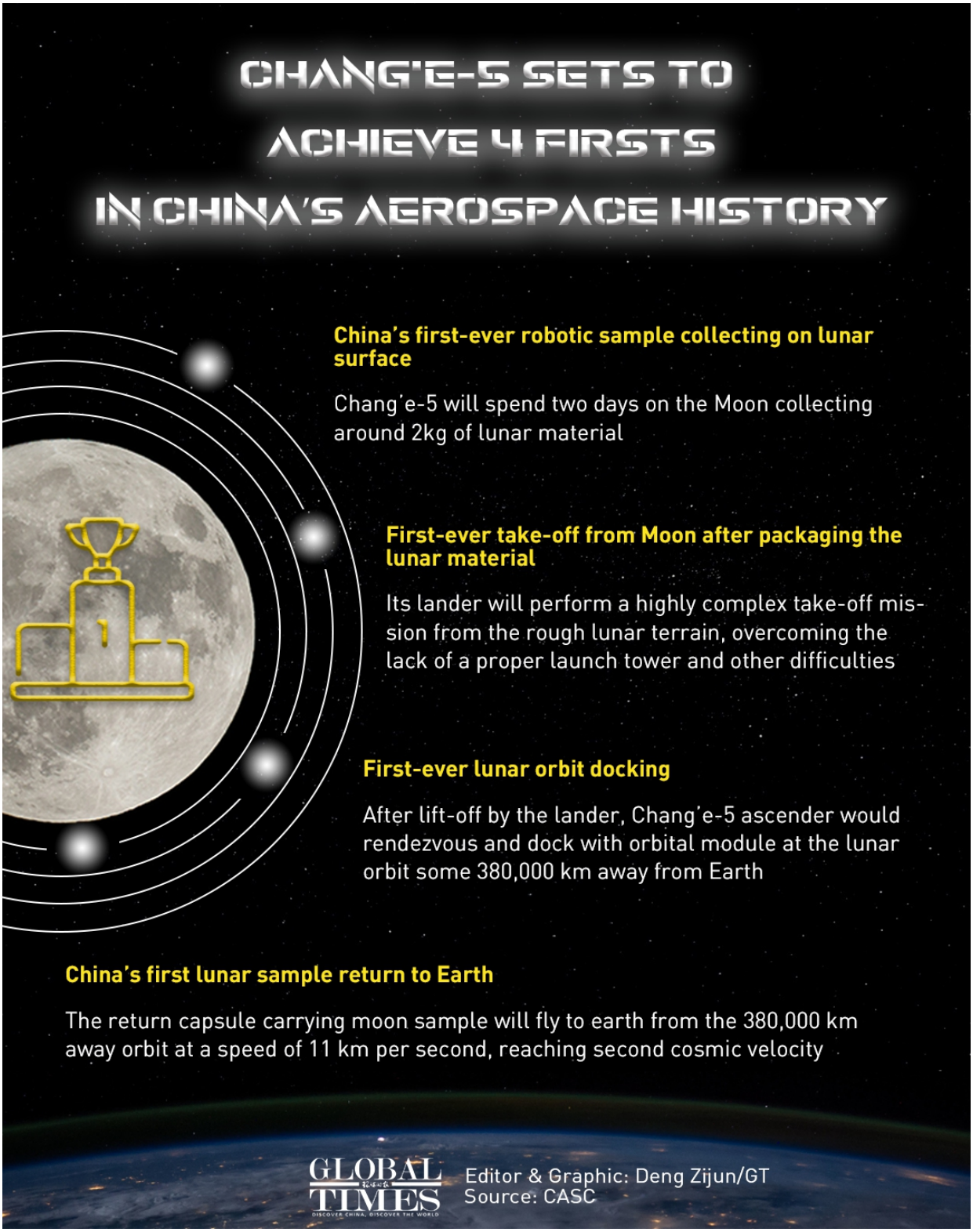
after the lunar goddess Chang'e, with domestically developed Long March rockets, scoring a perfect success rate.

The 57-meter-long Long March-5, with a take-off weight of about 870 tons and a thrust of over 1,000 tons, is capable of launching a payload of up to 14 tons into the geosynchronous transfer orbit (GTO), making it the go-to rocket model for the mission, as the Chang'e-5 lunar probe weighs 8.2 tons, one of the heaviest probes that has ever been launched by China.

According to China Launch Vehicle Technology (CALT), during the 14th Five-Year Plan (2021-25), the Long March-5 rocket series will be deployed to launch core and experimental cabinets for the country's first-ever space station, and will be tasked with completing the construction of the space station in two to three years.

"Long March-5 is the only member of the Long March family that is capable of launching such a heavy payload into the lunar transfer orbit. And the mission in return examines the rocket's capabilities and showcases the strength of China's space sector," Li Minghua, the first commander-in-chief of the Long March-5 and Party chief of CALT, under the state-owned aerospace giant China Aerospace Science and Technology Corporation (CASC), the rocket's developer, told the Global Times.

Breakthroughs to make



Infographic: GT

The Chang'e-5 probe is expected to carry out lunar sample collection, takeoff from the moon, rendezvous and docking on lunar orbit and high-speed reentry into the Earth's atmosphere, marking breakthroughs in China's aerospace history.

Sources close to the lunar probe mission told the Global Times that the Chang'e-5 probe is set to achieve four firsts in China's aerospace history.

It will conduct the first-ever robotic sample collecting on the lunar surface, spending two days on the Moon collecting around 2kg of lunar material.

After packaging the lunar material, the probe's lander will perform a highly complex take-off mission from the rough lunar terrain, overcoming the lack of a proper launch tower and other difficulties, which will also be a first.

A greater challenge lies in wait after the lander's lift-off, as the Chang'e-5 ascender will have to rendezvous and dock with the orbital module at the lunar orbit some 380,000 kilometers away from Earth, which has never been done before.

Finally, the return capsule carrying moon samples will then fly to Earth from 380,000 kilometers away at a speed of 11 kilometers per second, reaching second cosmic velocity.

Interestingly, based on what the sources revealed to the Global Times, designers with the China Academy of Space Technology under CASC have come up with a semi-ballistic reentry to help the high-speed spacecraft return to Earth safely.

Similar to the way a stone can skip over water, the return capsule will sprint into the atmosphere and then ascend again out of it, in order to reduce its flying speed to first cosmic velocity, which is around 8

kilometers per second, before landing safely at the designated site on Earth.

Wang Yanan explained that this measure will greatly reduce the risk of damaging the return capsule and will ensure the sample's safety.

When asked why it was decided that the Chang'e-5 probe would take off early in the morning rather than in the daytime, CALT insiders told the Global Times that early morning would make it easier to enter the trajectory designed for the complex mission.

Also, taking off in the early morning will help reduce interference from the Sun, as solar radiation will disrupt the transmission of electric signals, affecting the tracking and controlling of the spacecraft from ground personnel, they said.

There are also less clouds and stabler weather conditions in the early morning, which will also help signal transmission and scientists' observations, they revealed.

The Chang'e-5 is scheduled to touch down in an area that has never been visited either by probe or human, in a massive lava plain known as Oceanus Procellarum, or "Ocean of Storms" - a region in the Moon's northwest corner which is visible to the naked eye from Earth.

Scientists believe that the rocks and soil in the region are only 3.7 billion years old. Compared with the previous lunar samples brought back to Earth, it will help scientists to understand better the volcanic activities of the Moon. Some engineering factors were also taken into consideration in choosing this site.

The lunar material collected by the Chang'e-5 probe was formed from the space weathering of lunar rocks after meteorite impact, solar wind and cosmic ray radiation. It consists of a considerable amount of rock fragments, minerals and meteorites, which provide valuable information for studying the geological evolution of the moon, as well

as solar activities, Xiao Long, a professor at the Wuhan-based China University of Geosciences, told the Global Times.

In the 1970s, the Soviet Union successfully carried out three robotic sample return missions that retrieved a total of 330 grams of lunar soil. The Chang'e-5 plans to bring back 2 kilograms in one single mission.

The gap in weight reflects how much the ability to retrieve lunar samples has advanced over the past decades, Pang Zhihao said.

He explained that back in the 1970s, the Soviet Union missions adopted a direct ascending and return plan from the lunar surface, which required the ascender to use large amounts of fuel to carry the huge load on the return capsule, resulting in the sample weight being greatly compressed.

The Chang'e-5, however, is expected to carry out rendezvous and docking with the orbital module in the lunar orbit, greatly reducing the amount of fuel needed for the ascender and allowing room for more samples.

RELATED ARTICLES:

- China launches Chang’e-5 mission via Long March-5 rocket to retrieve Moon rocks
- Ready for launch

China launches Chang’e-5 mission via Long March-5 rocket to retrieve Moon rocks

Source: Global Times Published: 2020/11/24 4:30:32

China launches Chang’e-5 mission via Long March-5 rocket to retrieve Moon rocks.

How two companies sprinted ahead in search for a cure

Source: Reuters-Global Times Published: 2020/11/19 18:33:40

A pedestrian walks past a Pfizer outlet in New York. File photo: cnsphoto

Just as the novel coronavirus was gaining a foothold in the US in mid-March, Pfizer Inc Chief Executive Albert Bourla called on his top vaccine scientists and laid out a clear mission:

"He basically said, 'Your mandate is to get this vaccine made. And if you need resources, you come and you ask for them, and you're going to get them'," chief viral vaccine scientist Philip Dormitzer told Reuters.

The assignment was both inspiring and daunting. It provided researchers with the backing to tackle something that had never been

done before: design a vaccine to stop a pandemic in its tracks in less than a year.

"He did not want us to focus on the potential barriers we might face, but instead said that it is much better to try to do something that seemed impossible, and even if you don't succeed, you still (will) have done something great, " said Dormitzer, noting that new vaccine development can cost on the order of $1 billion.

What followed was a full-bore effort carried out under strict coronavirus lockdown conditions, borrowing elements from ongoing flu and cancer research, according to Reuters interviews with half a dozen scientists critical to the vaccine program run by Pfizer and its German partner BioNTech. On November 9, the companies reported the first promising results from large-scale, scientifically rigorous clinical trials around the world - although potential roadblocks remain and widespread distribution is not expected until at least April.

On Monday, Moderna Inc, a scrappy biotech firm with nearly $1 billion in research and development backing from the US government, announced what appeared to be its own successful vaccine, using the same new technology that brought Pfizer such rapid results.

Both companies have reported preliminary findings of more than 90% effectiveness - an unexpectedly high rate - raising hope for an end to the pandemic that has killed more than 1.3 million people globally, upended economies and disrupted daily life for billions of people.

Their work validates that of several tiny biotechnology firms, which for years have been laboring to prove a once-unorthodox idea: The human body can act as its own vaccine factory. Both the Pfizer and Moderna inoculations work by injecting people with customized genetic code that instructs human cells to make key virus proteins to induce an immune response.

In Pfizer's and BioNTech's case, decision-making that normally would take months was reduced to days, including the crucial call on which

vaccine version to use in a human clinical trial that has enrolled about 44,000 people worldwide so far.

In many ways, however, the work has just begun. Pfizer-BioNTech and Moderna still must finalize their data on efficacy and safety, and share that information with the scientific community and regulators - including the US Food and Drug Administration, which will make the call on whether to authorize the vaccines for emergency use. The companies will have to increase production to as much as 2 billion doses or more by the end of 2021 - and face a massive task in distributing them.

Borrowing from flu research

Pfizer's Dormitzer is more prepared than many to meet the challenges, having led research efforts at Novartis AG in the 2009 H1N1 swine flu pandemic. That project produced three licensed vaccines in the most rapid pandemic vaccine response until now.

At Novartis AG, Dormitzer began testing novel ways to make vaccines using messenger ribonucleic acid, or mRNA, which contains instructions for human cells. In this case, scientists introduce mRNA instructions for cells to make a portion of a virus, which the immune system recognizes as a threat and counters with a protective response. No actual virus is involved in the process.

By contrast, to create a typical vaccine, scientists use bits of dead or weakened virus, which are then injected to produce the immune response.

The appeal of mRNA vaccines - and a key secret to their speed - is they are plug-and-play: The mRNA vehicle does not need to change, only the specific genetic instructions it carries. If the virus changes or mutates, the details of the instructions can be altered accordingly.

At Pfizer, one of Dormitzer's colleagues, Julia Li, had been scouting for potential partners with mRNA technology for a few years. Li

settled on a little-known German biotech firm called BioNTech that was using mRNA technology to make cancer treatments. The company was co-founded by Chief Executive Ugur Sahin and his wife, Chief Medical Officer Oezlem Tuereci.

Already concerned about a possible coronavirus pandemic, Sahin decided in January that BioNTech should begin developing a vaccine, said Katalin Karikó, the company's senior vice president and one of the pioneers behind the mRNA technology. The CEO designed several of the vaccine candidates himself, she said.

Again, the companies proved to have complementary skills. "BioNTech is a smaller company, more flexible," said Karikó. "A big pharma, like Pfizer, has the infrastructure, knows how to scale up, how to run things."

In early March, the pair decided to expand their partnership, embarking on a coronavirus vaccine deal worth up to $750 million.

In the spring, the drugmakers' first human trials began, starting with the phase 1 safety trials in Germany in April, followed by those in the US in May. They tested four versions in all. The aim was "to figure out in a quick, quick clip, what really was working best in people," Dormitzer said.

Work proceeded so fast that some researchers went weeks without seeing their families. Dormitzer hasn't seen his wife and kids since March, apart from Zoom calls.

On November 9, based on results from a total of 94 infections, Pfizer made its bombshell announcement. Dormitzer says he only learned the apparent efficacy of the vaccine hours before the public did.

"I don't think any of us expected to see greater than 90% efficacy," Dormitzer said, adding that the FDA had specified a goal of at least 50 percent.

Newspaper headline: The race for vaccine

RELATED ARTICLES:

- EU says to purchase up to 300 mln doses of BioNTech/Pfizer vaccine
- Pfizer, Sinopharm vaccines show promise, virologists call for end to politicization of COVID-19 vaccine
- Pfizer exits China generic drugs JV

Digital banks race to capture the next generation

By Reuters - Global Times Source: Reuters-Global Times Published: 2020/11/19 18:28:42

Parents take their kids for a ride near a lake in Aquitaine, France. File photo: AFP

When John Hibbs' daughter Xanthe received her first bank card in the mail, the six-year-old spent the next week Googling how to buy a horse.

Hibbs and his wife Kate had got Xanthe a newly launched children's debit card from UK digital bank Starling, one of a number of new offerings from fintechs aimed at children and teenagers.

"The earlier we can start the learning process of using a card, the earlier she can learn that you can't just go out and buy a horse," said Hibbs, who runs a charity.

While traditional banks have long offered basic savings accounts to children, fintechs say they have spotted an opportunity to offer better, slicker apps to tech-savvy kids and teenagers, who they say have been under-served.

Starling's Kite card allows parents to transfer money to their children's account, set spending limits and receive notifications of their purchases. It rivals similar products from Gohenry and Monzo in Britain while in the US fintechs Greenlight, Step and Copper are trying to capture the youth market.

JPMorgan Chase & Co also recently entered the space, introducing a children's account in partnership with Greenlight.

The companies say they aim to give children a taste of financial freedom and education, while letting parents track and block spending. They hope to capitalize on the digital payment and ecommerce boom, and hold on to new customers into adulthood.

"It's a play on profitability to get lifelong customers," said Kavita Kamdar, who heads JPMorgan's children's venture Chase First Banking.

JPMorgan's partner Greenlight has grown from 500,000 to 2 million parent and children customers in a year.

"I think the startups are in a position to take junior accounts away from the high street banks," said Sarah Kocianski, head of research at fintech consultancy 11:FS. "But they have to strike a balance between being appealing to kids and appealing to parents and goodness knows how you do that."

Companies must also be careful in keeping data secure and ensure children and parents understand what they are giving consent to, Kocianski said.

Popularity to profitability

Atlanta-based Greenlight, which costs $4.99 a month including debit cards for up to five kids, allows parents to create in-app chore lists for children and tie the work to perks. It also lets parents set and pay interest on their children's savings.

"A couple of big macro trends drove the adoption of Greenlight," Timothy Sheehan, the company's chief executive said. "The decline in use in cash and the adoption of the smartphone, not only among adults but among children."

US digital payment apps such as PayPal Holdings Inc's Venmo and Square Inc's Cash App, which have become a common way for consumers to send money to each other, do not allow users under the age of 18. This boosts the appeal of new apps targeted at those too young for popular apps but old enough to spend money.

"This is a demographic that doesn't have a bank account, they still have money underneath their bed and we are providing them access to the digital economy," said Eddie Behringer, chief executive of Seattle-based teen banking app Copper.

Analysts and investors question whether the youth market is getting overcrowded, given youngsters are not cash-rich.

"A lot of money is going to these firms, but do they make money?" said Ian Kar, the founder and chief executive of consultancy Fintech Today. "Teen banking is not very profitable yet."

UK-based GoHenry, which was founded 8 years ago, offers accounts for children charging parents 2.99 pounds per month.

Alex Zivoder, GoHenry's chief executive, said the company is on track to make a profit within a few years, despite its pretax loss jumping by three quarters to 5.8 million pounds last year as it invested in expansion including in the US.

Zivoder said the company made an underlying profit in the second and third quarters of 2020.

"If you think of how many parents there are in the US and UK, will they be happy with one solution, one product?"

For neobanks like Starling, where children and teen accounts are an added product line, analysts see the service as a way to generate additional revenue. Apps solely focused on the younger demographic may find it tougher.

Starling's Kite account, which costs 2 pounds a month, has been "flying off the shelves", said Helen Bierton, the startup's chief banking officer. She declined to disclose figures, noting products like Kite are part of its strategy to reach profitability by the end of 2020.

Spending power

Teenagers and children may not have much disposable income, but startups are banking on their growing spending power.

Gen Z, the generation currently between the ages of 8 and 23, represents around $150 billion in spending power in the US, according to McKinsey.

San Francisco-based Step, which hopes to build a bank for the next generation, plans to initially make money through card interchange and then offer more financial products as customers grow older.

"Every brand wants to reach this new generation," said Step founder and chief executive CJ MacDonald. "They are not rich, but they still spend billions of dollars a year."

Ben Galbraith, a Palo Alto-based father of eight, has used Step with his five older kids for the past 10 months. He used to keep track of allowances, spending and frequently lost cards with a spreadsheet.

"Moving it into an easy-to-use app gets rid of all that stuff," Galbraith said.

Newspaper headline: Cash card for kids

RELATED ARTICLES:

- Ant’s Shanghai-HK IPO on hold, fintech rules tighten
- Fintech innovations becoming mainstream in HK: official
- Fintech listing brings diversification and inclusion to China’s A shares

---

China's Mars probe travels over 300 million km

Source: Xinhua Published: 2020/11/17 14:03:50

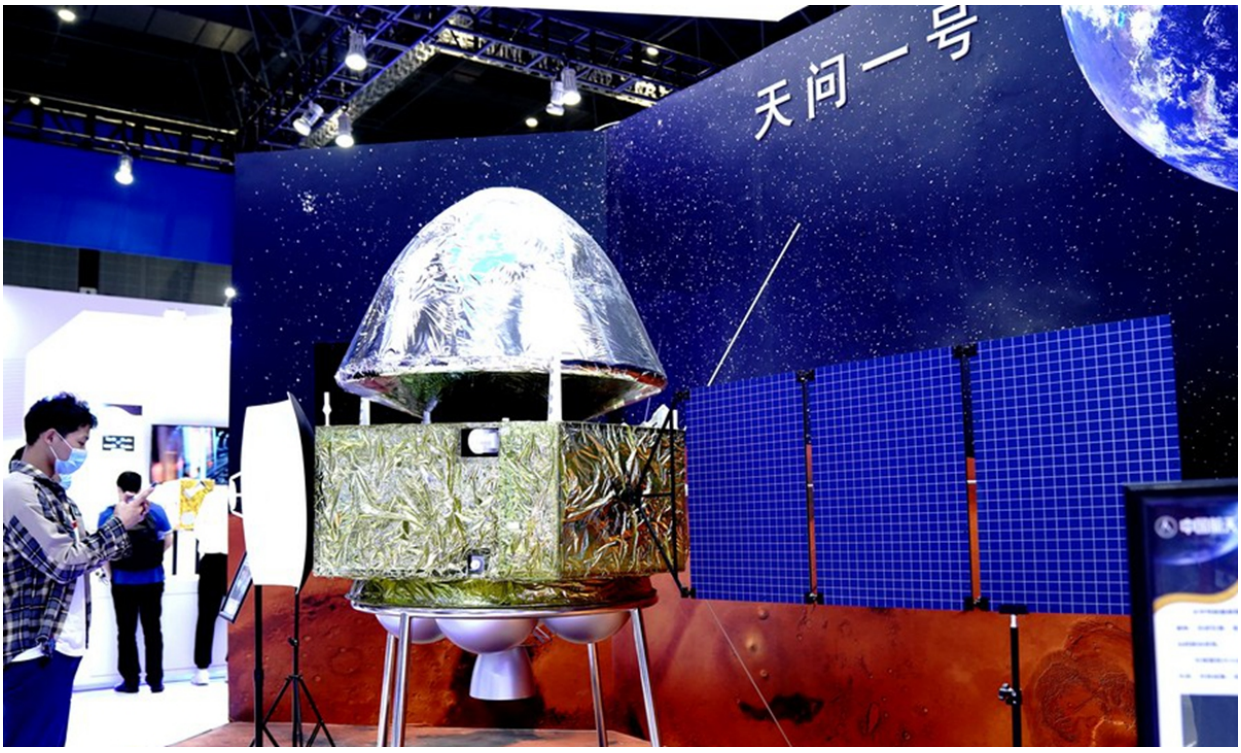


Photo taken on Sept. 15, 2020 shows the model of the Mars probe Tianwen-1 at the 22nd China International Industry Fair (CIIF) in east China's Shanghai. (Xinhua/Zhang Jiansong)

China's Mars probe Tianwen-1 had traveled more than 300 million km by early Tuesday morning (Beijing Time), according to the China National Space Administration (CNSA).

The probe, launched on July 23, has flown in space for 116 days and is currently around 63.8 million km from the Earth. All its systems are in good condition, CNSA said.

The probe has carried out three orbital corrections and a deep-space maneuver.

In early November, several subsystems of the probe completed the first in-orbit self-check and found no anomaly.

The spacecraft is expected to reach the red planet around February 2021 and enter a low orbit around Mars in May 2021. The lander and rover will then separate from the orbiter and land softly on Mars. The rover will leave the landing platform to explore the planet.

Anti-depression drug fluvoxamine can prevent deterioration of mild COVID-19 infections, research shows

Source: Global Times Published: 2020/11/17 12:58:41

Photo: IC

A clinical trial conducted by researchers at Washington University in St. Louis of the US shows that fluvoxamine — an anti-depression drug — can prevent the deterioration of mild COVID-19 infections. However, more randomized and controlled studies on larger sample size are needed to verify the drug's clinical efficacy.

The research was published online by JAMA on November 12. It was a double-blind, randomized, completely remote clinical trial. The

participants were 152 adults living in the community who were not hospitalized with COVID-19 infections.

None of the 80 infected subjects who received fluvoxamine treatment for 15 days experienced deterioration in their health, while six persons in the placebo group all suffered deterioration, according to the research.

However, due to the small sample size and short follow-up time, the conclusions of the study have certain limitations, the research noted. Therefore, a randomized, placebo-controlled trial with larger sample size is needed to verify fluvoxamine's clinical efficacy.

The infectious disease department of Huashan hospital in Shanghai, led by China's leading infectious disease specialist Zhang Wenhong, forwarded the research on its WeChat account on Tuesday and noted that other clinical trials involving the COVID-19 treatment efficacy of drugs such as Remdesivir and hydroxychloroquine have failed.

RELATED ARTICLES:

- US touted COVID-19 cure, Remdesivir, fails WHO trials as US confirmed cases surge past 8m

Country's best energy option

Source: thefinancialexpress Published: 2020/11/9 18:02:23

The Western civilisation since Industrial Revolution two and a half centuries ago has been thriving on fossil fuel-powered machines. And commercial production of electricity with coal-fired generators began around one and a half centuries ago.

Like spoiled children of Mother Nature, since that time humans have been digging up the fossil fuel reserve tucked away deep in her bowels and burning it with abandon. But it did not take long to find out that the practice is dangerous for life and the environment. But humans need energy to run the machine of growth and development. And burning readily available fossil fuel is the cheapest and easiest way to get energy though it damages the natural environment irreversibly.

Meanwhile major technological breakthroughs have taken place. It is now possible to generate power without burning fossil fuel. The technology to convert sunlight directly into electricity is getting more and more efficient every passing day. The photovoltaic cells are the example of such an efficient technology. Solar panels do exactly that.

Climate change caused by human action, especially fossil fuel burning, has by now reached the tipping point. In response, most advanced nations have been reducing their dependence on fossil fuel-based power production. The oil-guzzling automobiles are also switching to battery-run engines. In short, the technology has come of age to help human society to wean away from fossil energy-based technology. But the pace of changing the energy base of technology from fossil fuel to renewable sources like solar energy is rather slow.

The entrenched commercial interests are coming in the way of effecting a faster transition from the fossil to the renewable energy base. Politics serving the interests of the big fossil fuel companies are even trying to downplay the seriousness of the problem of global warming and the climate change that it has triggered.

Oddly enough, they have their followers even in the scientific community. These people try to produce counter arguments against the obvious just to serve certain vested quarters who cannot see beyond their narrow business interests even if those pose a grave threat to the very existence of life on earth, let alone that of humans.

In this context, Bangladesh is in a precariously balanced state. Its vulnerabilities to climate change have increased due to a number of factors. Those include, among others, its close proximity to the sea, its dwindling forest cover, expansion of agricultural lands and human settlements at the expense of forest lands. Roads, industries and growing urban centres are eating up all vacant and fallow lands. With some 1,265 people now living in a square kilometre area, it makes urgent for us to strike a balance between development and an environmentally safe living condition for the people. Our endeavours towards economic growth and development must not bring us into conflict with our efforts to address our vulnerabilities to the rising sea level and receding forestlands. Our energy needs must not be met through further pollution of the environment.

Power is a big issue for its continued development. But until now it is depending mainly on burning fossil fuels like imported coal and Liquefied Natural Gas (LNG) as well as locally produced gas to generate its power. The present power generation capacity of the installed production units, as told by the state minister for power and energy in June at a Centre for Policy Dialogue (CPD)-organised event, is 23,500 MW. By 2041, Bangladesh has a target of generating 60,000 MW of electricity. The question is, do we need that amount of power at the moment? And the second question obviously is: how are we going to reach the even bigger target of

power generation by the next couple of decades? Obviously, it is again by burning fossil fuels including coal, LNG and oil. Unless new fossil energy sources are found whether onshore or offshore by this time, we will continue to depend on imported fossil fuels to run the power generation units.

Apart from polluting the environment, such fuel imports are going to make a deep dent in our foreign exchange coffer.

Now what are other options before us to meet the increasing demands for power in the future?

Bangladesh can and must tap into its inexhaustible source of energy from the sun. And the sun is so generous here all the year round! According to an estimate, on an average, in the coastal regions there is bright sunshine for over 3 (three) to 11 hours a day. That makes a strong case for us to look for solar power as the answer to our increasing demand for energy.

The government had in its power system master plan of 2016 that 10 per cent of the nation's electricity would come from renewable sources. But so far only 3.0 per cent of that renewable energy could be obtained mainly from solar power using photovoltaic cells. And such solar power systems are being allowed to operate only in off-grid areas. But, the off-grid areas are gradually shrinking due to the expansion of grid-based power in those areas. According to a report from the Sustainable and Renewable Energy Development Authority (SREDA) in January this year, installation of solar energy systems dropped by 19 per cent year-on-year to 43.25 MW in 2019 from its peak at 57.75 MW in 2017.According to a recent report in this paper, due to severe fund shortage, the government-owned Infrastructure Development Company (IDCOL) did not approve any new application for setting up solar irrigation pumps this year. So, the IDCOL's target of setting up 50,000 solar irrigation pumps by 2025 now hangs in the balance due to fund crunch.

It is time the government struck a balance between a polluting, wasteful energy-base and a clean and sustainable one.

The government should recognise the country's immense potential as a source of clean, renewable solar energy. The technology is there. The need is to set its priorities right.

Canada seeks $630 million from streaming firms to fund domestic content

Source: Reuters Published: 2020/11/5 20:28:40

A man fishes salmons during their migration to the spawning grounds in Humber River in Toronto, Ontario, Canada, Oct. 18, 2020. (Photo by Zou Zheng/Xinhua)

Canada introduced a bill that would strengthen the broadcast regulator and allow it to collect up to C$830 million ($630 million) by 2023 from online streaming companies such as Netflix and Amazon to fund Canadian content.

The Liberal government said the changes were needed because tech firms, which provide wildly popular online services, are exempt from rules obliging domestic broadcasters to spend a proportion of

programming budgets and allocate a set portion of air time to Canadian artists.

"Our government believes that everyone who benefits from the system should contribute to it fairly," Heritage Minister Stephen Guilbeault told reporters.

The idea of strengthening the Canadian Radio-television and Telecommunications Commission (CRTC), which regulates the broadcast and telecoms sectors, was recommended by a government-mandated panel probing how to update broadcasting laws to reflect the massive growth of online services.

The bill would make the major US tech companies pay for domestically produced content but did not tell how.

Michael Geist, Canada Research Chair in Internet and E-commerce Law at the University of Ottawa, noted the CRTC would gain major new powers to regulate online streaming services and also fine firms it deemed to be in non-compliance. "The bill creates considerable marketplace uncertainty that could lead to reduced spending on Canadian film and television production and delayed entry into Canada of new services," he wrote in a blog post.

The panel also recommended obliging the tech firms to collect local taxes. Officials made clear this was an option.

Reuters

RELATED ARTICLES:

- 3rd annual Pumpkin Parade celebrated at Nelson Park in Canada

The 3rd World Laureates Forum opens in Shanghai, emphasizes global cooperation in fight against COVID-19

By Du Qiongfang and Huang Lanlan in Shanghai Source: Global Times Published: 2020/10/30 13:47:34

The 3rd World Laureates Forum (photo: CCTV)

The importance of science development and cooperation between all people seems unprecedentedly apparent this year, as the world witnesses how global scientists work together amid the COVID-19 pandemic, in curing patients and developing vaccines, top scientists worldwide pointed out on Friday.

The 3rd World Laureates Forum, one of the world's largest science and technology forums, being held in Shanghai from Friday to

Sunday, gathers more than 300 global scientists, including 61 Nobel Prize winners, to participate in this scientific feast online or offline, and discuss current topics of concern, such as the global spread of the coronavirus.

Chinese President Xi Jinping delivered a video message at the forum's opening ceremony, saying that scientists from around the world have made great contributions to the fight against the COVID-19.

China will implement a more open, inclusive and mutually beneficial strategy of international scientific and technological cooperation, Xi noted. China is willing to work with top scientists and organizations in promoting scientific development, said Xi.

2006 Nobel Prize winner in chemistry Roger Kornberg said at the forum that the response to the COVID-19 pandemic is an inspiring example of global cooperation. Scientists and researchers from [worldwide] universities, research institutes and industries have been working on exploring treatments to the virus to prevent the spread of the pandemic, Swedish said, who is also the chairman of the World Laureates Association (WLA) that initiates the forum.

The world has never experienced such large scales of disaster and international cooperation, Kornberg said at the forum's opening speech, noting that the COVID-19 problem will surely be solved in the next year or so through joint efforts.

The first and most important thing to control the pandemic is to promote preventive measures, Kornberg said. "The non-pharmaceutical measures are the only available approach until we have a vaccine and a drug or multiple vaccines and drugs," he told the Global Times at the forum on Friday, saying that non-pharmaceutical measures include mask wearing, social distancing and good hygiene.

Kornberg praised the efforts that Chinese government has made in promoting non-pharmaceutical measures aimed at the pandemic. "It is done both by mandating behavior nationwide, and also by controlling the disease wherever it arises through immediate sequestration - that is, locking down a neighborhood or a city where a case arises and testing all of the inhabitants - and thereby preventing the spread of the disease," he said.

At the forum, medical scientists discussed strengths and weaknesses of some current COVID-19 treatments in the clinic use. Xiaoliang Sunney Xie, a 2015 Albany Prize winner in medicine, mentioned in his speech the neutralizing antibody therapy that US President Trump had received.

The 8g Regeneron's antibody cocktail REGN-COV2 that US President Trump had been given during his treatment was a very high dose, too expensive to the general public, Xie said in his speech.

More powerful neutralizing antibody medicines [with lower does] need to be developed, Xie said.

"Neutralizing antibodies are expected to be the sovereign remedy for the treatment of COVID-19," Xie told the Global Times on Friday, saying that clinical trials of some [new] neutralizing antibody-based medicines have started in China and Australia in September.

The ongoing forum announced the creation of a foundation for the development of top global scientists in Shanghai. The foundation will focus on projects regarding worldwide scientific communication and education, innovative talent growth, and the development of scientific communities.

A WLA Science Community at Shanghai Lingang Free Trade Zone, for instance, was announced to open for the first time on Friday since it started construction in 2018.

Home to headquarters of several top global scientific organizations, this 2.5-square-kilometer community in Pudong New Area will focus on the research, development and industrialization of frontline scientific areas such as biomedicine, artificial intelligence AI, integrated circuits, new energy and quantum science, the forum said.

More than 130 speeches of top scientists and over 70 discussions in the fields of basic sciences and applied technologies will be organized online and offline during the three-day forum being held by the Shanghai government.

RELATED ARTICLES:

- Trump dismisses the science
