Fossils point to life on Earth 4 billion years ago

Tiny fossils that scientists say are the oldest ever found offer evidence of life on Earth 3.8 to 4.3 billion years ago, when our planet was still in its infancy, researchers reported on Wednesday.

Even at the more primitive end of the spectrum, “the microfossils we discovered are about 300 million years older” than any runners-up, said Dominic Papineau, a professor at University College London, who made the discovery.

Dating puts the fossils “within a few hundred million years” of the formation of the solar system, he said.

The results were published in the peer-reviewed journal Nature.

The emergence of life not long after Earth formed would suggest it also could emerge on watery worlds outside our solar system at comparable stages of formation, the scientists said.

“If life happened so quickly on Earth, then could we expect it to be a simple process that could start on other planets?” asked the lead author, Matthew Dodd, a graduate student at the London Centre for Nanotechnology.

Earth and Mars are believed to have had liquid water on their surfaces at the same time, he noted.

“We could expect to find evidence for past life on Mars 4 billion years ago,” Dodd said.

But it may be that Earth was “just a special case”, he added.

The tiny fossils – half the width of a human hair and up to half a millimeter in length – take the form of blood-red tubes and filaments formed by ocean-dwelling bacteria that fed on iron.

Locked inside white, flowerlike quartz structures known to harbor fossils, they were found along what were once warm-water vents on the ocean floor, most often in deep waters.

Such iron-rich, hydrothermal systems still exist and are home to bacteria that may be similar to those unearthed by Dodd and his colleagues.

The site of the discovery, the Nuvvuagittuq Supracrustal Belt in Canada, contains some of the oldest sedimentary rocks known on Earth.

Scientists say they formed between 3.77 and 4.29 billion years ago, and may have been the habitat for the planet’s first life-forms.

It is still not known when, or where, life on Earth began, but these deep-sea vents are seen as a good candidate.

Earth is thought to be about 4.57 billion years old, scientists said.

China launches experiment satellite 'TK-1'

China on Friday launched an experiment satellite, "TK-1", from northwestern Jiuquan Satellite Launch Center.

The satellite, carried by the rocket "KT-2", blasted off from the launch center at 7:53 a.m. Friday, and it later entered its intended orbit.

"TK-1" is the first satellite independently developed by China Aerospace Science & Industry Corp. (CASIC) and will be used for remote sensing, telecommunications and experiments in minisatellite-based technologies.

The "KT-2" rocket is one of the five carrier systems in the CASIC commercial space plan. It features high carrying efficiency and adaptability, according to the CASIC.

China's procuratorates secure return of 43 fugitive suspects

China's procuratorates secured the return of 43 fugitive suspects from abroad in the first 11 months of 2016, the Supreme People's Procuratorate (SPP) revealed on Thursday.

The suspects, who returned from 19 countries and regions, include 15 on a list of China's top 100 fugitives in an Interpol "red notice," said Song Hansong, an anti-corruption official with the SPP.

A total of 548 million yuan (80 million U.S. dollars) of funds are involved in the cases.

Among them was China's most-wanted graft fugitive Yang Xiuzhu, who had been on the run for 13 years. She finally returned to China on Nov. 16, 2016 and turned herself in to authorities.

The return of these fugitives is a great deterrent to other fugitives, Song said.

Belt and Road Initiative makes steady progress: spokesman

The Belt and Road Initiative is advancing steadily, bringing investment and jobs to participating countries, a spokesman for the annual session of China's top political advisory body said Thursday.

More than 100 countries and international organizations have joined the initiative and over 40 of them have cooperation agreements with China, said Wang Guoqing, spokesman for the fifth session of the 12th National Committee of the Chinese People's Political Consultative Conference (CPPCC).

Chinese businesses have helped build 56 economic and trade cooperation zones in 20 countries along the Belt and Road, with total investment exceeding 18 billion U.S. dollars, helping generate over 1 billion U.S. dollars in tax revenue and more than 160,000 jobs, Wang told a press conference on Thursday.

He said the CPPCC National Committee will do more work in 2017 to promote cultural and people-to-people exchanges with countries along the Belt and Road.

The Belt and Road Initiative was proposed by China in 2013 and aims to become a trade and infrastructure network connecting Asia with Europe and Africa along ancient trade routes.

In the spirit of regional connectivity, China is working in aviation, power, rail, road and telecommunications projects with participating countries.

China to launch space station core module in 2018

China will launch a space station core module in 2018 as the first step in completing the country's first space outpost, according to a senior engineer with China Aerospace Science and Technology Corp. (CASC) on Thursday.

The core module of the space station, named "Tianhe-1" according to previous reports, will be launched on board a new-generation Long March-5 heavyweight

carrier rocket, said Bao Weimin, director with CASC and a member of the National Committee of the Chinese People's Political Consultative Conference (CPPCC).

It will be followed by a series of launches for other components of the space station, including two space labs, which will dock with the core module while in space, in the next four years or so, he said, adding that the space station will be completed around 2022.

Assembly of the core module has already been completed and tests are currently under way, said Bao, who is in Beijing for the annual session of China's top political advisory body.

Earlier reports said the new Chinese space station will initially be much smaller than the current International Space Station (ISS), which weighs 420 tonnes, but could be expanded for future scientific research and international cooperation.

With the ISS set to retire in 2024, the Chinese space station will offer a promising alternative, and China will be the only country with a permanent space station.

Bao said the Chinese outpost will function in orbit for "dozens of years," and that it had been specially designed to be able to handle space debris.

"For the big pieces (of space debris), we could conduct evasive maneuvers, and for those measuring less than 10 cm in size, we just take the hit," Bao said, adding that all key parts of the space station will be serviceable and replaceable.

He went on to say that the next five years will see some exciting advances in China's space program.

In particular, the Long March-5 launch missions have been scheduled this year, including one that will take the Chang'e-5 lunar probe to the Moon in November and return with lunar samples.

Long March-5 is a large, two-stage rocket with a payload capacity of 25 tonnes to low-Earth orbit and 14 tonnes to geostationary transfer orbit, the largest of China's carrier rockets. Its carrying capacity is about 2.5 times that of the current main model Long March carrier rockets.

The rocket will also be used in China's planned Mars probes, and possibly future missions to Jupiter and other planets within the solar system, Bao said. Endi