

Hayabusa2 lands on asteroid



Researchers and employees pose for a picture in a control room of the Hayabusa2 mission in Sagami-hara, after the touchdown of the probe on an asteroid

Tokyo, Japan

A Japanese probe sent to collect samples from an asteroid 300 million kilometres away for clues about the origin of life and the solar system landed successfully yesterday, scientists said.

Hayabusa2 touched down briefly on the Ryugu asteroid, fired a bullet into the surface to puff up dust for collection and blasted back to its holding position, said officials from the Japan Aerospace Exploration Agency (JAXA).

A live webcast of the control room showed dozens of JAXA staff members nervously monitoring data ahead of the touchdown before exploding into applause after receiving a signal from Hayabusa2 that it had landed.

"We made a successful touchdown, including firing a bullet" into the Ryugu asteroid, Yuichi Tsuda, Hayabusa2 project manager, told reporters.

"We made the ideal touchdown in the best conditions," he said.

The complicated procedure took less time than expected and appeared to go without a hitch, said Hayabusa2 mission manager Makoto Yoshikawa.

"I'm really relieved now. It felt very long until the moment the touchdown happened," he said.

He said the firing of the bullet -- the first of three planned in this mission -- "will lead to a leap, or new discoveries, in planetary science."

The asteroid is thought to contain relatively large amounts of organic matter and water from some 4.6 billion years ago when the solar system was born.

During a later mission, Hayabusa2 will eventually fire an "impactor" to blast out material from underneath Ryugu's surface, allowing the collection of "fresh" materials unexposed to millennia of wind and radiation.

Syria evacuates women, children from IS holdout

Omar oil field, Syria

US-backed fighters trucked out civilians from the last speck of the Islamic State group's dying "caliphate" in Syria yesterday, eager to press on with the dragging battle to crush the jihadists.

More than four years after IS overran large parts of Syria and neighbouring Iraq, and declared a "caliphate", they have lost all of it but a tiny patch in the village of Baghouz near the Iraqi border.

Almost 30 trucks carrying men, women and children left the enclave on Friday, AFP correspondents at a position of the US-backed Syrian Democratic Forces outside the village reported.

Most were women and children, their clothes caked in dust, but the passengers also

included men with their faces wrapped in chequered scarves.

Women clung to the railings of the trucks, while the hair of younger girls flew in the wind, as they left enclave in the second such large-scale evacuation in three days.

Earlier on Friday, SDF spokesman Mustafa Bali said he hoped civilian evacuations could be completed by Saturday.

Fellow SDF spokesman Adnan Afrin said once the evacuations had ended, his forces would expel the last jihadists from the less than half a square kilometre (a fifth of a square mile) they still hold.

"When the civilians leave, we will see how many civilians and IS fighters remain inside and what they want to do," he said.

"They will be faced with a choice:

war or surrender."

The SDF evacuated 3,000 people from the IS pocket on Wednesday -- mostly women and children -- but trucks left near empty on Thursday.

Bali said that screening had determined that most of those evacuated on Wednesday were foreigners.

"The majority are Iraqi and from countries of the former Soviet Union, but there are also Europeans among them," he said.

David Eubank, the leader of the Free Burma Rangers volunteer aid group, said the women and children trucked out were "very hungry and dirty".

They included "many French women", as well as others from Australia, Austria, Germany and Russia, and one woman from Britain,

he told AFP.

Human Rights Watch urged the SDF and the US-led coalition supporting it to make protecting civilians a priority.

"Civilians leaving Baghouz is a relief but it should not obscure the fact that this battle appears to have been waged without sufficient consideration to their wellbeing," the New York-based watchdog's counterterrorism director, Nadim Houry said.

"Just because they may be families of ISIS members or sympathised with them does not take away their protected status," he said, using an alternative acronym for IS.

Beyond Baghouz, IS retains a presence in the vast, virtually unpopulated Syrian Desert and sleeper cells elsewhere, and continues to claim deadly attacks inside SDF-held territory.



11-year-old Syrian girl Rawan poses on a destroyed tank with her stuffed bear near the village of Yazi Bagh, about six kilometres from the Bab al-Salamah border crossing between Syria and Turkey in the north of Aleppo province,

Giant tortoise thought extinct is found on Galapagos



A specimen of the giant Galapagos tortoise *Chelonoidis phantasticus*, thought to have gone extinct about a century ago, is seen at the Galapagos National Park on Santa Cruz Island in the Galapagos Archipelago, in the Pacific Ocean 1000 km off the coast of Ecuador

Quito, Ecuador

Conservationists in the Galapagos Islands have found a giant tortoise from a species thought to have become extinct more than a century ago.

The adult female tortoise was found on the island of Fernandina in the west of the Pacific archipelago, and is believed to be a Fernandina Giant Tortoise, also known as *Chelonoidis phantasticus*, a species last sighted in 1906.

The tortoise is believed to be about 100 years old. It was taken by boat to the main Galapagos conservation center on Santa Cruz island.

The animal "exceeds 100 years" in age and is "a very old tortoise," said Washington Tapia of Galapagos Conservancy, a US non-profit dedicated to conserving the Galapagos.

The islands are best known for their unique flora and fauna, which inspired naturalist Charles Darwin to write his landmark 1859 study on evolution, *The Origin of Species*.

Ecuador's Environment Minister Marcelo Mata announced on Twitter the discovery of a specimen "of the tortoise species *Chelonoidis phantasticus*, which was believed to have gone extinct more than 100 years ago."

A ministry statement said conservationists were hopeful other members of the species were on the island, judging by tracks and spores they found.

Genetic tests will be carried out to confirm the tortoise was indeed a member of the long-lost species, it said.

The *Chelonoidis phantasticus*



One of 15 known species of giant tortoises in the Galapagos, at least two of which have already vanished

species is native to Fernandina, which is uninhabited, topped by an active volcano, and one of the youngest islands in the chain.

It is one of 15 known species of giant tortoises in the Galapagos, at least two of which have already vanished.

Any remaining Fernandina tortoises may be separated from each other by recent lava flows, researchers said.

In 2015, the Galapagos authorities announced the discovery

of a new species of tortoise that they called *Chelonoidis donfaustoi*, named after Fausto Llerena, the park ranger who for 40 years looked after Lonesome George, the iconic last tortoise of his Pin-ta species, who died in 2012.

George became an icon of the islands, 1,000 kilometers (600 miles) off the coast of South America.

Scientists tried to save George's species by breeding him with females from a related species, but their eggs failed to hatch. After his death, his body was stuffed and is currently displayed at the Charles Darwin Research Center in the Galapagos.

Giant tortoises are believed to have arrived on the remote volcanic island chain about three to four million years ago, borne by ocean currents. With no natural predators, they spread across the islands and split into different species.

Their numbers were decimated in the eighteenth and nineteenth centuries by sailors who took advantage of their ability to endure long periods without food or water to use them as easily stored fresh meat on Pacific voyages.

Their numbers were also hit by invasive species such as rats, pigs and dogs, which eat their eggs, while other introduced domestic animals like goats destroyed their habitat.

In captivity, the giant tortoises can easily live to more than 100 years. Scientists have discovered that the tortoises have genetic variants linked to DNA repair, with healing power that enables their longevity.