



Milk and music: Indian villages support protesting farmers

## UN cautions battle for Marib threatens millions of Yemenis

Page 6

Page 7



This NASA handout illustration obtained Monday shows a descent illustration to Mars, of the spacecraft containing NASA's Perseverance rover slowing down using the drag generated by its motion in the Martian atmosphere. — AFP

# NASA wants to fly a helicopter on Mars

## Perseverance rover to touch down on Mars tomorrow

WASHINGTON: More than a century after the first powered flight on Earth, NASA intends to prove it's possible to replicate the feat on another world. Transported aboard the Mars 2020 spacecraft that arrives at the Red Planet on Thursday, the small Ingenuity helicopter will have several challenges to overcome—the biggest being the rarefied Martian atmosphere, which is just one percent the density of Earth's.

### Ultralight

It might be called a helicopter, but in appearance it's closer to mini-drones we've grown accustomed to seeing in recent years. Weighing just four pounds (1.8 kilograms), its blades are much larger and spin about five times faster — 2,400 revolutions per minute—than would be required to generate the same amount of lift back on Earth. It does however get some assistance from Mars, where the gravity is only a third of that on our home planet.

Ingenuity has four feet, a box-like body, and four carbon-fiber blades arranged in two rotors spinning in opposite directions. It comes with two cameras, computers, and navigation sensors. It's

also equipped with solar cells to recharge its batteries, much of the energy being used for staying warm or cold Martian nights, where temperatures fall to minus 130 degrees Fahrenheit (minus 90 degrees Celsius).

The helicopter is hitching a ride on the belly of the Perseverance rover, which will drop it to the ground once it has landed then drive away.

### 90 second flights

Up to five flights of gradual difficulty are planned, over a window of one month, within the first few months of the mission. Ingenuity will fly at altitudes of 10-15 feet (3-5 meters) and travel as far as 160 feet (50 meters) from its starting area and back. Each flight will last up to a minute and half—compared to the 12 seconds the Wright brothers achieved with the first powered, controlled flight in Kitty Hawk, North Carolina in 1903.

Like the Perseverance rover, Ingenuity is too far away from Earth to be operated using a joystick, and is therefore designed to fly autonomously. Its onboard computers will work with its sensors and cameras to keep it on a path programmed by its

engineers. But the outcome of these flights will be learned only after they took place.

### What's the goal?

NASA describes Ingenuity's mission as a "technology demonstration": a project that seeks to test a new capability together with the astrobiology mission of Perseverance. If it's successful, however, it "basically opens up a whole new dimension of exploring Mars," said Bob Balaram, Ingenuity's chief engineer. Future models could offer better vantage points not seen by current orbiters or by slow-moving rovers on the ground, allowing the helicopters to scope out terrain for land-based robots or humans. They could even help carry light payloads from one site to another—such as the rock and soil samples Perseverance will be collecting in the next phase of the Mars 2020 mission.

### Rover to touch down

After a seven-month journey, NASA's Perseverance rover prepares to touch down on Mars tomorrow after first negotiating a risky landing procedure that will mark the start of its multi-year

search for signs of ancient microbial life. The Mars 2020 mission, which set off late from Florida in late July, includes the largest ever vehicle to be dispatched to the Red Planet.

Built at NASA's Jet Propulsion Laboratory, it weighs a ton, has a robotic arm that's seven feet (two meters) long, has 19 cameras, and two microphones to record the Martian soundscape. Should it arrive intact, Perseverance will be only the fifth rover to successfully complete the journey since Pathfinder in 1997. All have been American and the last, Curiosity, is still active.

China last week placed its Tianwen-1 spacecraft in orbit around Mars carrying both a lander and a rover, which it is hoped to land in May. At around 3:55pm EST Thursday (2055 GMT), Perseverance will place its six wheels on a landing site described as "spectacular" by Ken Farley, a NASA scientist.

Jezero Crater, a 28-mile-wide (45-kilometer-wide) basin located in the Martian northern hemisphere, had been considered for previous missions, but was considered too difficult to land in until now. Because of the COVID-19 pandemic, the mission control room will have fewer people than normal. —AFP

## Zero COVID in Europe: Possible or pipe-dream?

PARIS, France: Hit the virus quick and hard, undergoing drastic short-term measures in order to allow life to return to normal. Several nations in Asia and Oceania have pursued "Zero COVID" strategies. Can European countries do likewise?

### Three-fold advantage

In Auckland, two million New Zealanders have been confined to their homes since Monday because of three confirmed COVID-19 cases. Across Europe, tens of thousands of cases are confirmed every day, yet very few cities are in lockdown. As vaccine schemes stutter across the continent, more and more experts are pleading for states to follow the example of New Zealand and others and move to stamp out the virus.

"There's a three-fold advantage for countries who have adopted" the Zero COVID approach, said Antoine Flahault, an epidemiologist from the University of Geneva. "On a disease level they are the uncontested world champions in terms of number of deaths per inhabitant. On a social level they have resumed: bars, restaurants, cultural and sporting activities, schools and universities are open as normal."

"Distancing measures are virtually non-existent," he said. "And from an economic point of view, places like Taiwan and China have seen positive GDP growth in 2020." He said this approach was preferable to the "mitigation strategy that most Western nations had adopted", that is "organizing between waves how to live with the virus". For Martin McKee, professor of European Public Health at the London School of Health and Tropical Medicine, "living with the virus" is not an accurate term. "What does that actually mean?" he told AFP.

"We don't think it's acceptable to have a situation (where) you're trying to keep it under control but not succeeding, you're continually having resurgences and more lockdown, because we don't see how anybody can plan ahead for holidays, wedding, investing in a new restaurant, for anything."

What's more, the more the virus is allowed to circulate the greater the chances of a meaningful mutation emerging, such as the British and South African variants that are more transmissible. — AFP



BUENOS AIRES: Handout picture released by the Argentine Senate showing Zulema Menem (second right) and her sons Luca Bertoldi Menem (left) and Malek Pocovi Menem (center), her mother Zulema Yoma (second left) and her half-brother Carlos Nair Menem (right) mourning next to the coffin with the remains of late former Argentine president and senator Carlos Saul Menem, as he lies in state at the funeral chapel set at the Congress in Buenos Aires. — AFP

## Carlos Menem buried with military honors

BUENOS AIRES, Argentina: Former Argentine president Carlos Menem was buried Monday in a ceremony with military honors in a Buenos Aires cemetery next to his late son.

"Although he professed the Catholic religion, he will rest alongside my brother" Carlos Menem, Jr, said the ex-leader's daughter Zulemita Menem. Menem, Jr died in a helicopter crash in 1995 that his mother, Zulema Yoma, claimed was a terrorist attack and that Menem himself later blamed on the Lebanese Shiite group Hezbollah. Born into a Muslim family, Menem later converted to Catholicism in order to pursue a political career, since the Argentine constitution stipulated the president had to follow that faith.

During his first term, he changed the constitution in 1994 to remove this requirement while also shortening the term from six years to four and allowing for a single consecutive re-election.

President Alberto Fernandez has declared three days of mourning over the death of his fellow Peronist, who was 90. Menem had been in poor health in recent months and was hospitalized several times. He was receiving treatment in hospital for a urinary infection, which led to a heart attack.

His body lay in state in the Argentine Congress, where he served as a senator until his death, before he was buried in an Islamic cemetery in the west of Buenos Aires.

Menem was known for his political about-face that saw him implement free market policies, privatizations and a political alliance with the United States. A charismatic hedonist, he deviated from the general nationalist, populist and leftist policies of the Peronist movement.

He was president from 1989 to 1999, during which time he introduced the controversial monetary policy to peg the peso to the US dollar. Even more controversially, though, he pardoned the military leaders who were tried for crimes against humanity during the 1976-83 military dictatorship—a move later reversed by another Peronist, Nestor Kirchner (2003-07). — AFP

## Israel accused of blocking vaccines to Gaza

RAMALLAH: The Palestinian Authority on Monday accused Israel of refusing to allow some 2,000 coronavirus vaccine doses destined for Gaza health workers into the blockaded coastal strip.

The health ministry of the PA, based in the occupied West Bank, had planned to send the Russian Sputnik V doses to Gaza, a separate territory run by the Islamist group Hamas. But on Monday evening, the ministry said Israel had blocked the transfer.

Israel carries "the full responsibility of this arbitrary move" said minister Mai al-Kaila in a statement, saying her ministry was coordinating with international organizations to organize the delivery as soon as possible. COGAT, the Israeli authority that runs civilian affairs in the occupied Palestinian territories, said the PA had requested to transfer 1,000 vaccine doses to Gaza but that "this request is waiting for a political decision".

Israeli sources had told AFP in recent days that the transfer was not a simple administrative measure under the purview of COGAT, but rather a political decision possibly linked to talks between Hamas and Israel. The two sides have fought three wars since 2008, and Israel has demanded the liberation of two Israeli hostages reportedly still in Gaza as well as the remains of two soldiers killed in the last war, in 2014.

Earlier Monday, the PA said it had pushed back the rollout of its vaccination campaign in the West Bank due to a delay in deliveries. It had said it was anticipating a shipment by the middle of this month, enabling it to start vaccinating the general public in the occupied West Bank while sharing stock with Hamas. "There has been a delay in the arrival of the vaccine," Palestinian prime minister Mohammed Shtayyeh said ahead of a weekly cabinet meeting, without providing further details. — AFP