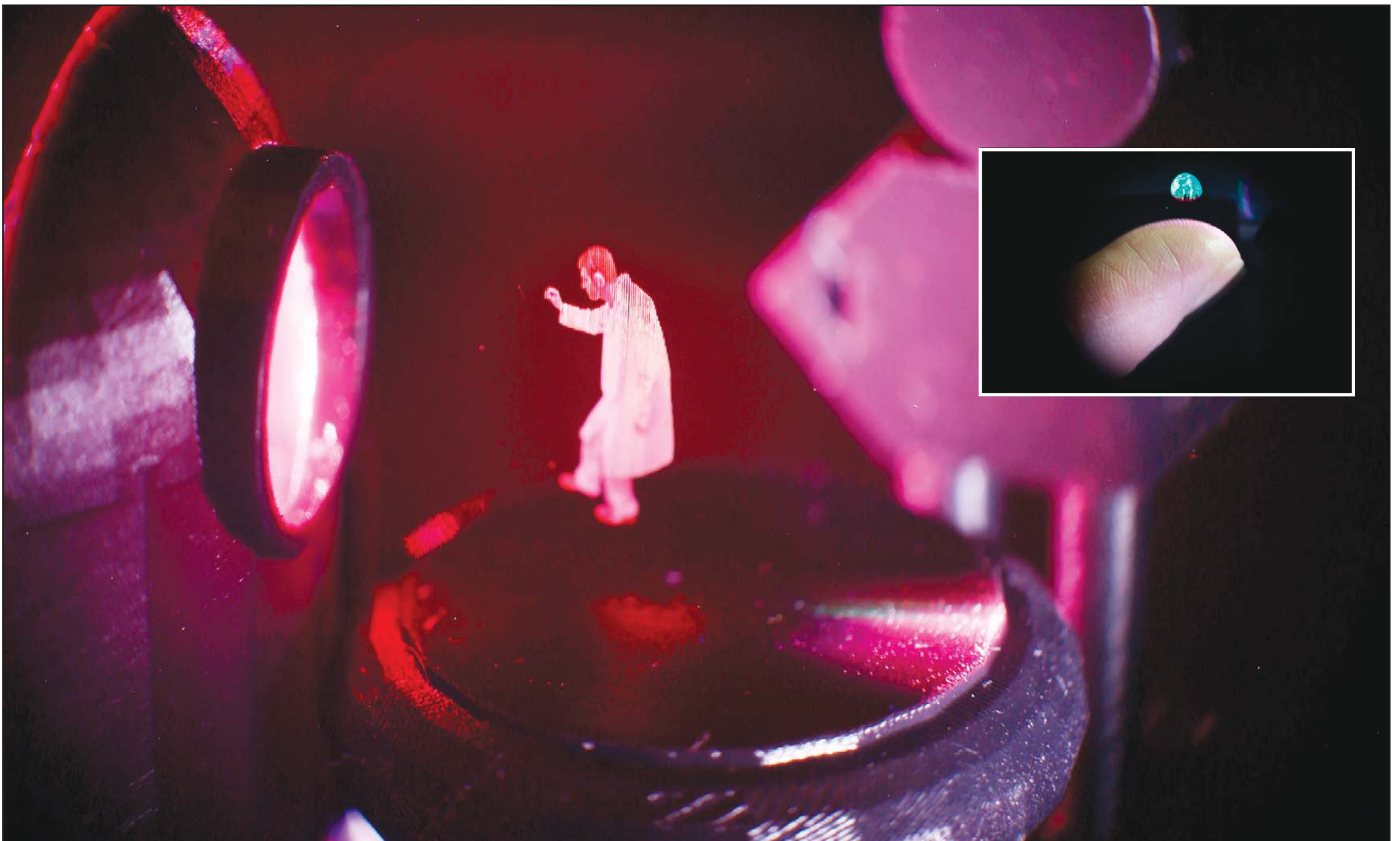


World News Roundup



This photo provided by the Dan Smalley Lab at Brigham Young University in January 2018 shows a projected image of researcher Erich Nygaard in Provo, Utah. Scientists have figured out how to manipulate tiny nearly unseen specks in the air and use them to produce images more realistic than most holograms, according to a study published on Jan 23, in the journal Nature. (Inset): This photo shows a projected image of the earth above a finger tip in Provo, Utah. (AP)

Better than holograms: A new 3-D projection into thin air

One of the enduring sci-fi moments of the big screen — R2-D2 beaming a 3-D image of Princess Leia into thin air in “Star Wars” — is closer to reality thanks to the smallest of screens: dust-like particles. Scientists have figured out how to manipulate nearly unseen specks in the air and use them to create 3-D images that

are more realistic and clearer than holograms, according to a study in Wednesday’s journal Nature. The study’s lead author, Daniel Smalley, said the new technology is “printing something in space, just erasing it very quickly.” In this case, scientists created a small butterfly appearing to dance above a fin-

ger and an image of a graduate student imitating Leia in the Star Wars scene.

Even with all sorts of holograms already in use, this new technique is the closest to replicating that Star Wars scene. “The way they do it is really cool,” said Curtis Broadbent, of the University of Rochester, who wasn’t part of the study

but works on a competing technology. “You can have a circle of people stand around it and each person would be able to see it from their own perspective. And that’s not possible with a hologram.”

The tiny specks are controlled with laser light, like the fictional tractor beam from “Star Trek,” said Smalley, an elec-

trical engineering professor at Brigham Young University. Yet it was a different science fiction movie that gave him the idea: The scene in the movie “Iron Man” when the Tony Stark character dons a holographic glove. That couldn’t happen in real life because Stark’s arm would disrupt the image. (AP)

Space

Glinting sphere into orbit

SpaceX ‘test-fires’ its Falcon Heavy rocket

MIAMI, Jan 25. (Agencies): SpaceX on Wednesday test-fired its Falcon Heavy rocket for the first time in a launch pad experiment aimed at giving its main engines a trial workout before blasting off in the coming days.

Touted as the “world’s most powerful rocket,” the Falcon Heavy is designed to one day carry crew and supplies to deep space destinations such as the Moon and Mars.

“Falcon Heavy hold-down firing this morning was good. Generated quite a thunderhead of steam,” SpaceX chief executive officer **EI** Musk wrote on Twitter.

“Launching in a week or so.” The Falcon Heavy is essentially three of the California-based company’s Falcon 9 rockets put together, with 27 Merlin engines instead of nine.

Wednesday marked the first time SpaceX fired all 27 engines at once.

“First static fire test of Falcon Heavy complete — one step closer to first test flight!” SpaceX wrote on Twitter.

A date for the launch has not yet been revealed.

On its maiden voyage, the Falcon Heavy will be loaded with Musk’s own cherry red Tesla roadster as it aims for an orbit around the sun.

The orbit should be about the same distance from the sun as Mars, but would not take the rocket very close to the Red Planet.

That is, if the rocket makes it that far. “Will be in deep space for a billion years or so if it doesn’t blow up on ascent,” Musk, the famed space enthusiast and Internet tycoon, said on Twitter last month.

In an interview with astronomer and blogger Phil Plait, Musk went even further.

“Just bear in mind that there is a good chance this monster rocket blows up, so I wouldn’t put anything of irreplaceable sentimental value on it,” he was quoted as saying.

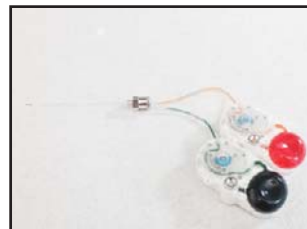
Also:

WELLINGTON: Look into the night sky at the right time and you might see what seems like a disco ball shimmering and glinting back.

The founder of the company that launched the first rocket into orbit from **New Zealand** this week said on Wednesday he deployed a secret satellite he believes will be the brightest object in the night sky and which he hopes will remind people of their precarious place in a vast universe.

Peter Beck, the New Zealander who founded California-based Rocket Lab, says he used most of the space aboard his test Electron rocket to house an object he has named the “Humanity Star.” The rocket successfully reached orbit on Sunday.

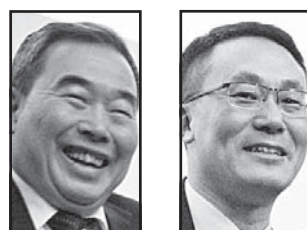
The satellite, not much bigger than a large beach ball, is a geodesic sphere made from carbon-fiber with 65 reflective panels. It is designed to spin rapidly and reflect the sun’s light to Earth. It’s expected to orbit the Earth every 90 minutes in an elliptical pattern, travelling at 27 times the speed of sound.



This undated image provided by researcher Canan Dagdeviren in January 2018 shows an implant that can precisely drip medications deep into the brain by remote control. (AP)



In this undated photo provided by the Chinese Academy of Sciences, cloned monkeys Zhong Zhong and Hua Hua sit together with a fabric toy. (AP)



Poo Sun

Discovery

Chinese clone monkeys:

Scientists in China have created the first monkeys cloned by the same process that produced Dolly the sheep more than 20 years ago, a breakthrough that could boost medical research into human diseases.

The two long-tailed macaques (*Macaca fascicularis*) named Hua Hua and Zhong Zhong were born at the Chinese Academy of Sciences (CAS) Institute of Neuroscience in Shanghai, and are the fruits of years of research into a cloning technique called somatic cell nuclear transfer.

“The barrier has been broken by this work,” co-author **Muming Poo**, director of the Institute of Neuroscience of CAS Center for Excellence in Brain Science and Intelligence Technology, told AFP.

Until now, the technique has been used to clone more than 20 different animal species, including dogs, pigs and cats, but primates have proven particularly difficult.

The birth of the now six and eight-week old macaque babies also raises ethical questions about how close scientists have come to one day cloning humans.

Humans could be cloned by this technique, in principle, said Poo, though this team’s focus was

Science

MiNDS new approach to treating brain diseases

Implant delivers drugs deep into brain

Less elongated, more globular

Human brain shape evolved over time

WASHINGTON, Jan 25. (AP): Scientists have created a hair-thin implant that can drip medications deep into the brain by remote control and with pinpoint precision.

Tested only in animals so far, if the device pans out it could mark a new approach to treating brain diseases — potentially reducing side effects by targeting only the hard-to-reach circuits that need care.

“You could deliver things right to where you want, no matter the disease,” said Robert Langer, a professor at the Massachusetts Institute of Technology whose biomedical engineering team reported the research Wednesday.

Stronger and safer treatments are needed for brain disorders ranging from depression to Parkinson’s. Simply getting medications inside the brain, past what’s called the blood-brain barrier, is a hurdle. It’s even harder to reach its deepest structures.

Pills and IV drugs that make it inside trigger side effects as they wash over entire regions of the brain. So doctors have tried inserting tubes into the brain to pump drugs closer to their targets, but that risks infection and still isn’t accurate enough. The most targeted success to date is a cancer treatment, a wafer placed on the site of a surgically removed brain tumor that oozes out chemotherapy.

The MIT team’s next-generation approach: a customizable deep-brain implant that can deliver varying doses of more than one drug on demand.

The researchers constructed two ultra-thin medication tubes and slid them into a stainless steel needle that’s about the diameter of a human hair. That needle, built as long as

needed to reach the right spot, gets inserted through a hole in the skull into the desired brain circuitry.

An electrode on the tip provides feedback, monitoring how the electrical activity of targeted neurons change as the medication is delivered.

The needle is hooked to two small, programmable pumps that hold the medi-

cation, sensorimotor transformations underlying planning and visuospatial integration,” said Neubauer, who led the study published in the journal *Science Advances*.

“The cerebellum is involved in motor-related functions like the coordination of movements and balance, but also in functions like working memory, language, social cognition and affective (emotional) processing,” Neubauer added.

Neubauer said brain globularity emerges developmentally in today’s humans during a few months around the time of birth.

“Our new data, therefore, suggest evolutionary changes to early brain development in a critical and vulnerable period for neural wiring and cognitive development,” Neubauer added.

The time period for when the brain’s current shape emerged is in harmony with archaeological evidence that humans achieved what he called “the full suite of behavioral modernity” around 40,000 to 50,000 years ago, Neubauer said.

The plan: Thread the pumps somewhere under the skin for a fully implantable system, dubbed MiNDS for miniaturized neural drug delivery system. The pumps can be refilled with an injection, and if more than two drugs are needed, additional reservoirs could be added like in a printer ink cartridge, Langer said.

Lab rats gave MiNDS its first test.

on cloning for medical research. One day, the approach might be used to create large populations of genetically identical monkeys that could be used for medical research — and avoid taking monkeys from the wild.

The process involves removing the nucleus from a healthy egg, and replacing it with another nucleus from another type of body cell. T

he clone becomes the same as the creature that donated the

replacement nucleus.

“We tried several different methods, but only one worked,” said senior author **Qiang Sun**, Director of the Nonhuman Primate Research Facility at the Chinese Academy of Sciences Institute of

Neurosciences. (AFP)

New home for Ramses: Egypt’s Antiquities Ministry says it has placed the ancient colossus of famed pharaoh Ramses II at the entrance of a museum under construction near the country’s famed pyramids outside the capital Cairo. Thursday’s placement of the colossus, which weighs over 80 tons and is some 12 meters (13 yards) high, occurred amid a great deal of fanfare and in the presence of Western and Egyptian officials. (AP)

Simmons Aussie of yr: A groundbreaking quantum physics professor was named “Australian of the Year” on Thursday for her work heralded as ushering in a new era for computer science. British-born Michelle Yvonne Simmons, 50, and her team at the University of New South Wales created the world’s first transistor made from a single atom, the award announcement stated. (AFP)



The 3,200-year-old colossal statue of King Ramses II is seen during its transfer to the main entrance of the Grand Egyptian Museum in Cairo’s twin city Giza on Jan 25. (AFP)

‘Mummy’ ID’d as Johnson ancestor

LONDON, Jan 25. (AP): Researchers have identified a mummified body found in a Basel churchyard as a wealthy 18th-century Swiss woman who is an ancestor of British Foreign Secretary Boris Johnson.

The body of an apparently wealthy woman was found decades ago during renovations on the Barfusser Church in the Swiss city. There was no grave-stone, and her identity was a mystery.