

SEVEN DAYS

The news in brief

RESEARCH

Space-time ripples

Physicists have announced the first discovery of gravitational waves made together by observatories in Europe and the United States, and the fourth-such discovery overall. At a 27 September press conference, researchers said that on 14 August, both the Virgo observatory near Pisa, Italy, and the twin laboratories of the US Advanced Laser Interferometer Gravitational-Wave Observatory (LIGO) in Livingston, Louisiana, and Hanford, Washington, had picked up gravitational vibrations emanating from a pair of merging black holes 540 million parsecs (1.8 billion light years) away. Observing the event with three detectors, rather than LIGO's two, enabled scientists to pinpoint the location of and distance to the black holes with much greater accuracy. Virgo rejoined the hunt for the waves only on 1 August, after a five-year upgrade. See go.nature.com/2xggy75 for more.

Monkey research

The US Food and Drug Administration (FDA) has suspended a study on the effects of nicotine on monkeys after activists, including primatologist Jane Goodall, decried the experiments as cruel. On 25 September, FDA commissioner Scott Gottlieb responded to a 7 September letter from Goodall that called the experiments unnecessary, given that the effects of smoking are well known. The study, which began in 2014 at the FDA's lab in Jefferson, Arkansas, allows monkeys to self-administer nicotine. Gottlieb told Goodall that it would be halted while a team of experts assesses the monkeys' health and determines whether more precautions are needed.



BRETT SEYMOUR/EUA/ARGO 2017

Antikythera wreck yields more treasures

Marine archaeologists investigating an ancient shipwreck near the island of Antikythera, Greece, announced on 4 October that they have recovered bronze and marble statue pieces, a sarcophagus lid and a mysterious bronze disc (pictured) decorated with a bull. The cargo ship, which dates to the first century BC and was rediscovered in 1900, is famous for yielding the Antikythera mechanism, a complex bronze

geared device that showed the movements of the Sun, Moon and planets in the sky. A team led by archaeologists Brendan Foley of Lund University, Sweden, and Theotokis Theodoulou of the Greek Ephorate of Underwater Antiquities in Athens found the latest artefacts under boulders in a previously unexplored part of the site. They think that at least seven complete statues are still buried nearby. See go.nature.com/2xxshbw for more.

The team will also decide whether the study should resume.

EVENTS

Volcano threats

More than 100,000 residents on the Indonesian island of Bali have reportedly been evacuated to shelters following increased seismic activity from Mount Agung. The government's Center for Volcanology and Geological Hazard Mitigation said on 29 September that, on the basis of the latest information, an eruption was still a probability. Meanwhile, in Vanuatu, the government ordered the evacuation of all residents of Ambae island — about 11,000 people — on

28 September, after Manaro Voui started ejecting lava, poisonous gas and ash. On 1 October, the Vanuatu Meteorology and Geo-hazards Department said the volcano's activity was settling, and a large eruption was less likely. However, as *Nature* went to press, evacuations continued.

Time capsule

On an Arctic island, scientists have buried a stainless-steel tube stuffed with artefacts that they say sum up science and technology in 2017. The time capsule, placed in an out-of-use borehole near the Polish Polar Station in Hornsund, Svalbard, contains samples that include DNA, silicon-based electronics, an ancient

meteorite fragment and other items to inform a future discoverer of our present understanding of technology, geology and biology. A team with the Polish Academy of Sciences described the capsule — created to celebrate the sixtieth anniversary of Poland's polar station — in a report in *Gondwana Research* on 28 September. See go.nature.com/2x9cmwp for more.

FUNDING

French budget

French research funding is set for a heartening increase in the country's first budget under President Emmanuel Macron, if draft 2018 plans

JULIE THURSTON/GETTY

released on 27 September are voted into law. The research portfolio of France's ministry of higher education, research and innovation would rise by more than 6%, to €8.4 billion (US\$9.9 billion) in 2018. And a giant economic-recovery plan unveiled on 25 September by Prime Minister Edouard Philippe should divert an extra €2.4 billion to research over the next five years. Separately, in a 26 September speech, Macron backed the idea of a European Union funding agency to accelerate the commercial applications of basic science, an idea also suggested by EU research commissioner Carlos Moedas. See go.nature.com/2xm2v11 for more.

FACILITIES

Hawaii telescope

Hawaii's board of land and natural resources granted a new construction permit to the Thirty Meter Telescope (TMT) on 28 September, reviving the chances that it could be built on the Hawaiian mountain of Mauna Kea. Some Native Hawaiians oppose the TMT, saying that its construction would further violate the sacred mountain, which already hosts multiple telescopes (pictured). Hawaii's supreme court invalidated the TMT's first construction permit in



December 2015, ruling that the board had not followed appropriate procedures. The new permit gives the project the right to proceed on Mauna Kea, but telescope opponents have filed motions that would put the permit on hold until the state supreme court can hear an appeal.

PEOPLE

Nobel prizes

Three biologists were awarded this year's Nobel Prize in Physiology or Medicine for their work on circadian clocks. Jeffrey Hall and Michael Rosbash, both at Brandeis University in Waltham, Massachusetts, split the award with Michael Young at Rockefeller University in New York City. The physics prize was awarded to Rainer Weiss, at the Massachusetts Institute of Technology in Cambridge, and Barry Barish and Kip Thorne, both at the California Institute of Technology in Pasadena, for their work on

detecting gravitational waves. See pages 18 and 19 for more. *Nature* went to press before the chemistry prize was awarded, but full details will be available at go.nature.com/chem2017.

Science adviser

On 26 September, Canadian prime minister Justin Trudeau appointed biochemist Mona Nemer as his country's chief government science adviser, fulfilling his campaign promise to establish the position. Nemer was most recently vice-president of research at the University of Ottawa and director of the Molecular Genetics and Cardiac Regeneration Laboratory there. Her scientific work has focused on the genetics of cardiovascular disease and birth defects. In her new role, Nemer will have a budget of Can\$2 million (US\$1.6 million) and report to Trudeau and science minister Kirsty Duncan. The country has been without a science adviser for nearly a decade; the

last time such a post existed was from 2004 to 2008. See go.nature.com/2ypivya for more.

Russian academy

After almost six months without a head, the Russian Academy of Sciences (RAS) has a new president: Alexander Sergeev, a laser physicist and director of the RAS Institute of Applied Physics in Nizhny Novgorod. The academy, which operates a network of hundreds of institutes, is undergoing controversial reforms. In March, its planned presidential elections were unexpectedly cancelled at the last minute, allegedly following a row over voting procedures (see *Nature* 543, 601; 2017). In the latest elections announced on 26 September, Sergeev won a majority of votes from the academy's general assembly. A new state law requires that Russia's president Vladimir Putin must also approve the post, which he did the following day.

Defraud alert

The FBI has charged bioengineer Yiheng Percival Zhang with defrauding the US government and his employer, the university Virginia Tech in Blacksburg. Zhang was arrested on 20 September and will remain in custody pending a trial, according to court documents. In an affidavit in support of a criminal complaint filed on 18 September, the FBI alleged that Zhang and two of his colleagues at the Tianjin Institute of Industrial Biotechnology in China — Zhiguang Zhu and Chun You — conspired to win US National Science Foundation (NSF) grants for studies that had already been completed in China. The affidavit also claims that Zhang withheld a portion of funds owed to his university from NSF and Department of Energy grants.

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TREND WATCH

A database of human-induced earthquakes reveals a rise in tremors linked to wastewater injected into the ground by oil and gas operations. Such projects spiked in the early 2010s, particularly in the central United States. The HiQuake database is described in *Seismological Research Letters*. Of 728 entries, 37% are linked to mining, 23% to water piling up behind a dam and 15% to conventional oil and gas development. Just 4% are linked to hydraulic fracturing, or fracking, for oil and gas.

SHAKING THE EARTH

The HiQuake database of human-induced earthquakes shows rise in fluid-injection projects linked to tremors.

