

Capturing a trap where matter, space and time come to an end

Astronomers offer an image of the unseeable — a black hole — with the help of eight radio observatories on six mountains and four continents

DENNIS OVERBYE

Astronomers announced on Wednesday that at last they had seen the unseeable: a black hole, a cosmic abyss so deep and dense that not even light can escape it.

"We've exposed a part of our universe we've never seen before," said Shep Doeleman, an astronomer at the Harvard-Smithsonian Center for Astrophysics, and director of the effort to capture the image, during a Wednesday news conference in Washington.

The image, of a lopsided ring of light surrounding a dark circle deep in the heart of the galaxy known as Mes-

sier 87, some 55 million light-years away from here, resembled the Eye of Sauron, a reminder yet again of the power and malevolence of nature.

It is a smoke ring framing a one-way portal to eternity.

More powerful than sun
To capture the image, astronomers reached across intergalactic space to a giant galaxy known as Messier 87, in the constellation Virgo. There, a black hole about seven billion times more massive than the sun is unleashing a violent jet of energy some 5,000 light years into space.

The image offered a final,

ringing affirmation of an idea so disturbing that even Einstein, from whose equations black holes emerged, was loath to accept it. If too much matter is crammed into one place, the cumulative force of gravity becomes overwhelming, and the place becomes an eternal trap, a black hole. Here, according to Einstein's theory, matter, space and time come to an end and vanish like a dream.

On Wednesday morning, that dark vision became a visceral reality. When the image was put up on the screen in Washington, cheers and gasps, followed by applause, broke out.



An eternal trap: Event Horizon Telescope director Shep Doeleman revealing the first photograph of a black hole in Washington on Wednesday. •AFP

The image emerged from two years of computer analysis of observations from a network of radio antennas

called the Event Horizon Telescope. In all, eight radio observatories on six mountains and four continents

observed the galaxy in Virgo on and off for 10 days in April 2017.

The telescope array also monitored a dim source of radio noise called Sagittarius A* (pronounced Sagittarius A-star), at the heart of our Milky Way galaxy.

There, 26,000 light-years from Earth, and buried in the depths of interstellar dust and gas, another black hole, with a mass of 4.1 million suns, almost certainly lurks.

Point of no return

The network is named after the edge of a black hole, the point of no return; beyond the event horizon, not even

light can escape the black hole's gravitational pull.

For some years now, the scientific literature, news media and films such as *Interstellar* and the newly released *High Life* have featured remarkably sophisticated and highly academic computer simulations of black holes. But the real thing looked different. For starters, the black holes in movies typically are not surrounded by fiery accretion disks of swirling, doomed matter, as are the black holes in Virgo and Sagittarius.

Perhaps even more important, the images provide astrophysicists with the first

look at the innards of a black hole. The energy within is thought to be powerful enough to power quasars and other violent phenomena from the nuclei of galaxies, including the jets of intense radiation that spew 5,000 light years from the galaxy M87.

As hot, dense gas swirls around the black hole, like water headed down a drain, the intense pressures and magnetic fields cause energy to squirt from either side. As a paradoxical result, supermassive black holes, which lurk in the centres of galaxies, can be the most luminous objects in the universe. NY TIMES

Netanyahu set for record fifth term

He is poised to form a right-wing coalition after his Likud party tied for the top spot with main rival

AGENCE FRANCE-PRESSE
JERUSALEM

Prime Minister Benjamin Netanyahu was on track for victory in Israel's election on Wednesday after nearly complete results put him in position to form a right-wing coalition and further extend his long tenure in office.

The results from Tuesday's vote came despite corruption allegations against the 69-year-old Premier and kept him on course to win a fifth term, and become Israel's longest-serving Prime Minister later this year.

Boost for U.S. peace plan
His close ally President Donald Trump said the incumbent's victory for a fifth mandate gives the White House's long-awaited peace plan a "better chance".

Mr. Netanyahu's right-

wing Likud party looked set to finish with a similar number of seats in Parliament to his main rival, ex-military chief Benny Gantz's centrist Blue and White alliance.

But the results showed that Likud, together with other right-wing parties allied to the Prime Minister, would hold around 65 seats in the 120-seat Parliament.

The results would seem to leave President Reuven Rivlin, who must ask one of the candidates to form a government, with little choice but to pick Mr. Netanyahu.

Intensive coalition negotiations will follow and could drag on for days or even weeks. The close race between the two main parties had led to uncertainty after polls closed on Tuesday night and exit surveys were released.



Mission accomplished: Israeli Prime Minister Benjamin Netanyahu in Tel Aviv on Tuesday. •AFP

Both Mr. Netanyahu and Mr. Gantz claimed victory after the initial exit polls, but on Wednesday evening the Blue and White leader conceded defeat. "We respect the decision of the people,"

Mr. Gantz told journalists, acknowledging he had failed to unseat the Prime Minister.

Mr. Netanyahu spoke in the early hours of Wednesday at the Likud's post-election party in Tel Aviv and

called it a "magnificent victory."

"It will be a right-wing government, but I will be Prime Minister for all," he said.

The vote had been expected to be close, even with Mr. Netanyahu facing potential corruption charges.

Modi congratulates PM
Besides Mr. Trump, other Netanyahu allies including Prime Minister Narendra Modi, Italy's Deputy Prime Minister Matteo Salvini and Austrian Chancellor Sebastian Kurz offered congratulations.

Mr. Gantz, a newcomer to politics, mounted a strong challenge by brandishing his security credentials while pledging to undo damage he says Mr. Netanyahu has inflicted on the country with divisive politics.

Labour calls for 'full apology'

80 MPs write a letter to Foreign Secretary Jeremy Hunt

VIDYA RAM
LONDON

The Labour Party on Wednesday called for a "full, clear and unequivocal apology", from the British government for the Jallianwala Bagh massacre, after Prime Minister Theresa May described the events as a "shameful scar on British Indian history", but failed to make the formal apology that many hoped for.

On Wednesday, 80 MPs wrote to Foreign Secretary Jeremy Hunt calling for an apology, pointing to the "lasting pain both in India and among U.K. citizens with family roots in India."

'India will never forget'
MPs had suggested that an apology was owed to the victims and their families as part of efforts to strengthen relations with India. "India

We cannot turn back or erase the past, but we can take steps to recognise what happened

will never forget," Conservative MP Bob Blackman, who introduced the debate on Tuesday, told MPs.

Others argued that there was a need for the U.K. to raise awareness of the atrocity and the darker aspects of Britain's colonial legacy in schools, which would help children understand where they came from and where the country was today.

"By othering or writing people out of history, can we really be surprised that hate crime continues to exist or racism continues to fester?" asked Preet Kaur Gill, the Labour MP for Birmingham

Edgbaston. Over 80 MPs from across political parties signed a letter, initiated by Labour MP Pat McFadden, on Wednesday, calling for an "official apology."

Perils of 'doing nothing'
"Some might ask, why just this atrocity? Yet it is never a good argument to say that because you cannot do everything, you should do nothing," they wrote.

"Relations between the U.K. and India today are friendly and constructive. Yet, that does not mean that an apology would not do good... we cannot turn back or erase the past, but we can take steps to recognise what happened and to respond in a way that befits a modern relationship between two countries which today enjoy normal and positive diplomatic relations."

ELSEWHERE



Jailed Myanmar scribes win press freedom prize

PARIS
The UN's cultural agency said on Wednesday that it had awarded its annual press freedom prize to two Reuters reporters jailed in Myanmar over their reporting on the killings of Rohingya Muslims in the country. Wa Lone, in picture, and Kyaw Soe Oo have been behind bars since December 2017. AFP

Assange being spied on, says WikiLeaks

LONDON
WikiLeaks founder Julian Assange has been the subject of a sophisticated spying operation in the Ecuadorian embassy where he has been holed up since 2012, the group said on Wednesday. WikiLeaks said video, photos, copies of legal documents turned up in Spain, where a group threatened to start publishing unless it was paid €3 million. REUTERS

Trump video removed over copyright issues

WASHINGTON
A video that President Donald Trump re-tweeted that included the soundtrack of a Batman movie was pulled from his account due to copyright violations. The video showed images of his presidency, including his meeting with North Korean leader Kim Jong-un and the confirmation of Supreme Court Justice Brett Kavanaugh. REUTERS

Khashoggi family denies settlement rumours

DUBAI
The family of murdered journalist Jamal Khashoggi on Wednesday denied being in talks to reach a settlement out of court with Saudi authorities, following reports that his sons had taken payouts. "[N]o settlement discussion had been or is discussed," read a statement posted to Salah Khashoggi's Twitter account. REUTERS

EU's emergency meet debates Brexit delay

Germany seeks a longer extension

AGENCE FRANCE-PRESSE
BRUSSELS

Europe mounted an emergency summit on Wednesday to decide how long a Brexit delay to grant British Prime Minister Theresa May — and under what conditions.

Without a postponement, Britain is due to crash out of the European Union (EU) at midnight on Friday under a "no-deal" Brexit that could trigger economic chaos.

May's June 30 demand
Ms. May wants to postpone Brexit from April 12 to June 30 to arrange an orderly departure — but the European leaders gathered in Brussels for a summit were expected to offer her a longer delay, of up to a year.

German Chancellor Angela Merkel told the Parliament in Berlin before setting out for Brussels that the

leaders might back a delay "longer than the British Prime Minister has requested." "I am of the opinion, the German government is of the opinion, that we should give both parties a reasonable amount of time," she said. EU Council president Donald Tusk, hosting the summit, said the evidence of recent months gave EU leaders "little reason to believe" that British lawmakers will ratify the Brexit withdrawal treaty before Ms. May's preferred June 30 date.

According to a draft copy of the summit conclusions that EU leaders were to negotiate later in the day, they were to agree to an extension to allow Ms. May time to ratify the withdrawal agreement. In Paris, an aide to President Emmanuel Macron said France was open to solutions.

Prized possessions



Food for thought: Children displaced by Cyclone Idai in Beira, Mozambique, carrying books at a camp in Dombe. The disaster, according to latest figures, has killed 344 people in Zimbabwe and 602 in Mozambique, taking the combined toll to 946. •AP

Zambian villagers get court's nod to sue Vedanta

U.K. judges reject attempts by the company to bring jurisdictional challenge over pollution of river

VIDYA RAM
LONDON

A group of over 1,800 Zambian citizens can take Vedanta Resources and its Zambian subsidiary, Konkola Copper Mines (KCM), to court in the U.K. over allegations relating to the pollution of a river there, after Britain's Supreme Court rejected an attempt by the company to challenge the jurisdiction of British courts.

They will now be able to bring their claims for torts of negligence and breach of duty to the courts in the U.K., first initiated in 2015.

Wider significance
The Supreme Court judgment is seen as having wider significance for parent companies and their ability to be held liable for alleged activity abroad.

Vedanta Resources can-



The site of the Konkola Copper Mines plant in Zambia.

not appeal the jurisdiction judgment any further as its attempt to suggest recourse to the European Court of Justice during the Supreme Court proceedings was also rejected. The judgment was read in court by Lord Briggs, with the four other justices considering the case, concurring with him.

"For the claimants, its hugely significant. They can

proceed with the substantive claim, which was their initial intention, and hopefully obtain some sort of justice for the allegations they have made," Oliver Holland, from the law firm Leigh Day, who is representing the claimants, told *The Hindu*. "We did not envisage that it would take so long to get to this point." He added that the judgment had wider sig-

nificance too. "What Lord Briggs clarified was the extent to which a parent company is responsible for the actions of a subsidiary. He says importantly that where a parent company corporate entity in London is saying [it] takes responsibility for the actions of the subsidiary on environmental, health and other issues, whether or not [it] actually do[es] so, they can be held liable."

Earlier verdict
Vedanta Resources and KCM had won the right to appeal to Britain's top court after lower courts had upheld the jurisdiction of U.K. courts. A total of 1,826 men and women from poor farming communities in Zambia had sought to bring proceedings against the company, alleging toxic emissions from the Nchanga Copper Mine

(owned by KCM) into waterways on which they are heavily reliant for drinking and irrigation.

While KCM was the operator of the mine, the claimants argued that Vedanta Resources — because of its high level of control and direction over the mining operations — should also face the allegations and commenced proceedings in 2015. Attempts by Vedanta and KCM to challenge the jurisdiction were thrown out by the High Court and Court of Appeal in 2016 and 2017.

In their judgment, the Supreme Court justices also said that appellants needed to use "proportionality," and "economy" in pursuing cases around jurisdiction, in an implicit criticism of the determination with which the jurisdictional issue was pursued.

New Zealand MPs approve sweeping gun reforms

New rules ban semi-automatic firearms

AGENCE FRANCE-PRESSE
SYDNEY

New Zealand lawmakers have almost unanimously passed sweeping gun reforms, paving the way for a ban on military-style semi-automatic weapons to enter into force as soon as Friday.

Lawmakers passed the legislation on final reading, less than a month after a gunman entered two mosques in Christchurch killing 50 people. During the debate on Wednesday, Prime Minister Jacinda Ardern said she could not face the public or "the victims that had been left behind from this terror attack and tell them hand-on-heart that our system and our laws allow these guns to be available and that was okay. Because it was not."



New Zealand Prime Minister Jacinda Ardern. •AP

The new rules are aimed at removing semi-automatic firearms from circulation through a buy-back scheme, prohibition and harsh prison sentences. A hand-in-annuity will be in place until 30 September 2019, and perpetrators will face between two and ten years in jail for breaking the laws.