

February - 19

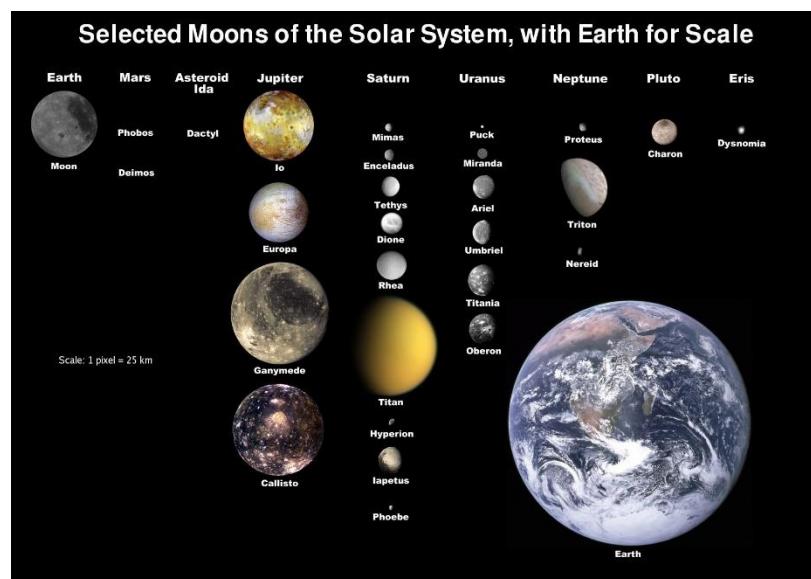
SCIENCE AND TECHNOLOGY

First Super Magnets for testing

- ❖ UK's Tokamak Energy has built the world-first set of new-generation high-temperature superconducting (HTS) magnets.
- ❖ This will be assembled and tested in fusion power plant-relevant scenarios.
- ❖ Tokamak's new Demo4 facility will consist of 44 individual magnetic coils.
- ❖ Demo4 will have a magnetic field strength of over 18 Tesla, nearly a million times stronger than the Earth's magnetic field.



Planet with most moons



- ❖ Jupiter recently became the planet with the most moons, after a dozen new lunar worlds were discovered lurking around it.
- ❖ The planet has surpassed Saturn with its list of 92 moons in all.
- ❖ Saturn, the one-time leader, comes in a close second with 83 confirmed moons.
- ❖ They were discovered using telescopes in Hawaii and Chile in 2021 and 2022, and their orbits were confirmed with follow-up observations.
- ❖ Jupiter and Saturn are loaded with small moons.
- ❖ For the record, Uranus has 27 confirmed moons, Neptune 14, Mars two and Earth one.
- ❖ Venus and Mercury have no moons.

Diyodar Meteorite



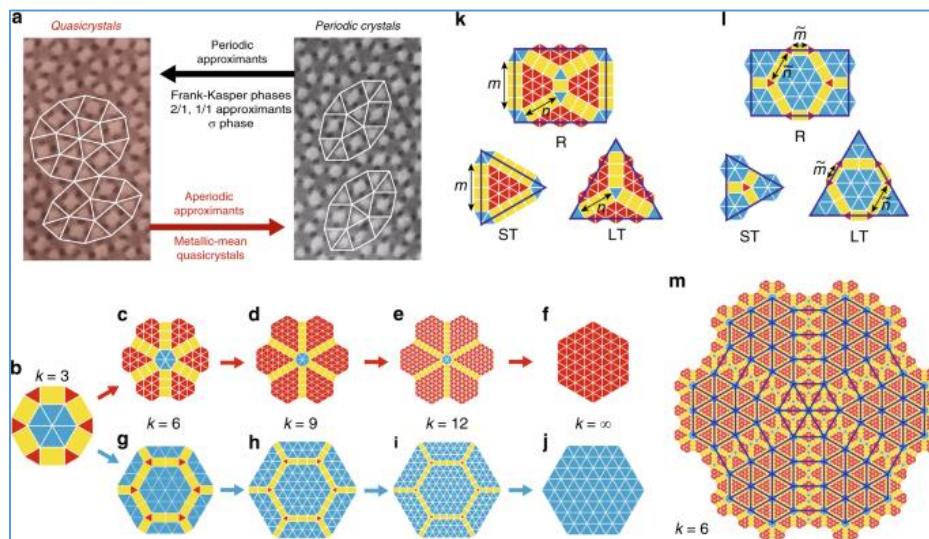
- ❖ Researchers have confirmed that a meteorite that crashed in two villages of Gujarat is a rare aubrite.
- ❖ The pieces that fell in the two villages have been dubbed the Diyodar meteorite.
- ❖ Aubrite meteorite is a coarse-grained igneous rock that formed in oxygen-poor conditions and contains exotic minerals not found on Earth.
- ❖ India has seen hundreds of meteorite crashes, but this is only the second recorded crash of an aubrite.
- ❖ The First one was on December 2, 1852, in Basti, Uttar Pradesh.
- ❖ Worldwide, aubrites have crashed in at least 12 locations since 1836, including three in Africa and six in the U.S.



- ❖ Meteors are pieces of some solid object in space that broke away, descended onto a planet or moon, and managed to reach the surface.
- ❖ Once they reached surface, they are called meteorites.

New quasicrystal

- ❖ Scientists have discovered a new type of quasicrystal, one with 12-fold symmetry, in the Sand Hills of north central Nebraska, USA.
- ❖ This quasicrystal was formed during an accidental electrical discharge, possibly by a lightning strike or a downed power line in a dune.
- ❖ Quasicrystal is essentially a crystal-like substance.
- ❖ In crystal, atoms are arranged in a repeating pattern.
- ❖ a quasicrystal consists of atoms that are arranged in a pattern that doesn't repeat itself regularly.



Marburg virus disease outbreak

- ❖ The World Health Organization (WHO) confirmed the first-ever outbreak of Marburg disease in Equatorial Guinea.
- ❖ Marburg is highly infectious.
- ❖ Both the Marburg virus and Ebola virus belong to the same Filoviridae family but are caused by different viruses.
- ❖ This virus leads to haemorrhagic fever in humans with a high fatality ratio of up to 88%.

- ❖ It was first detected in 1967 after simultaneous outbreaks in Marburg and Frankfurt in Germany.

Outbreaks of Marburg virus disease, 1967-2023

Outbreaks of Marburg virus disease

Equatorial Guinea Cameroon Historical outbreaks



ENVIRONMENT

First bird festival in Sundarbans

FIRST BIRD FEST: 5K WINGED WONDERS, 145 SPECIES



SBR area	No. of species	Birds	No. of species
Core	86	Forest birds	78
Buffer	128	Waders/shore birds	42
Outside protected areas	71	Raptors	12
		Water fowl	6
		Others	7

- ❖ The first-ever festival was organised by the Sundarbans Tiger Reserve (STR) division of the West Bengal Forest Department.
- ❖ The Bird Festival provides baseline data on Sundarbans' bird species diversity.
- ❖ As much as 145 different bird species were sighted during the first Bird Festival.
- ❖ The species recorded during the Bird Festival included 78 forest birds and 42 species of waders, raptors etc.
- ❖ The total number of birds spotted during the exercise was 5,065.
- ❖ The Sundarbans is located on the delta of the Ganga, Brahmaputra and Meghna rivers in the Bay of Bengal.

Sea lions' death in Peru



- ❖ Around 585 sea lions and 55,000 wild birds have died of the H5N1 bird flu virus in recent weeks in Peru.
- ❖ The dead birds included pelicans, various types of gulls, and penguins, the Sernanp.
- ❖ In November, the country declared a 180-day health alert after finding three cases of highly contagious H5N1 in pelicans.

- ❖ It is rare that bird flu jumps over into mammals, and rarer still that humans catch the potentially deadly virus.
- ❖ But the virus has recently been found in foxes and otters in Britain, a cat in France, and grizzly bears in Montana.

REPORTS AND INDICES

TomTom Traffic Index report

CONTINENT / COUNTRY	RANK BY FILTER	WORLD RANK	CITY	DAYS WITH LOW TRAFFIC	CONGESTION MONTH BY MONTH	CONGESTION LEVEL 2020	CHANGE FROM 2019
<input type="checkbox"/> Africa	v						
<input type="checkbox"/> Asia	v	1	1 Moscow region (oblast) Russia	66 days	██████	54%	↓5%
<input type="checkbox"/> Australia & Oceania	v	2	2 Mumbai India	133 days	██████	53%	↓12%
<input type="checkbox"/> Europe	v	3	3 Bogota Colombia	116 days	██████	53%	↓15%
<input type="checkbox"/> North America	v	4	4 Manila Philippines	128 days	██████	53%	↓18%
<input type="checkbox"/> South America	v	5	5 Istanbul Turkey	80 days	██████	51%	↓4%
CITY SIZE (BY POPULATION)		6	6 Bengaluru India	147 days	██████	51%	↓20%
<input type="checkbox"/> Megacity > 8 million		7	7 Kyiv Ukraine	48 days	██████	51%	↓2%
<input type="checkbox"/> Large > 800 thousand		8	8 New Delhi India	64 days	██████	47%	↓9%
<input type="checkbox"/> Small < 800 thousand		9	9 Novosibirsk Russia	15 days	██████	45%	0%
CONGESTION LEVEL		10	10 Bangkok Thailand	44 days	██████	44%	↓9%
<input type="checkbox"/> > 50%		11	11 Odessa Ukraine	47 days	██████	44%	↓3%
<input type="checkbox"/> 25%-50%		12	12 Saint Petersburg Russia	60 days	██████	44%	↓5%
<input type="checkbox"/> 15%-25%							

- ❖ The 12th edition of the report found the traffic trend across 389 cities in 56 countries throughout 2022.
- ❖ Bengaluru is the second slowest place to drive through in the world in 2022.
- ❖ New York city topped in the list.
- ❖ The assessment is not only limited to the loss of time while driving, and also focuses on other factors like money, environmental impact, etc.
- ❖ Bengaluru's rush hour traffic has led to the loss of as much as 129 hours last year.
- ❖ Ireland's Dublin lost as much as 140 hours due to traffic jams.

- ❖ Bengaluru ranked fifth in terms of CO₂ emissions per driven mile during rush hour.
- ❖ London is the major emitter of CO₂ in terms of CO₂ emissions per driven mile.

STATES

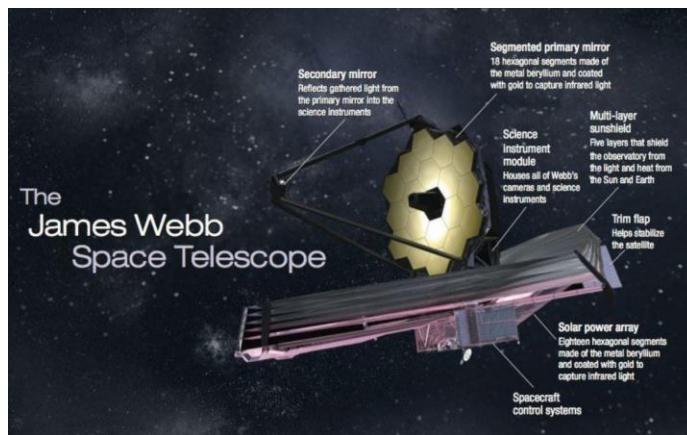
India's first frozen-lake marathon



- ❖ India's first "frozen-lake marathon" held at Ladakh's Pangong Tso lake.
- ❖ The 21-kilometre marathon, with Lukung as its starting point, will end at Maan village.
- ❖ Seventy-five selected athletes from India and abroad are participating in the run.
- ❖ It was giving them an opportunity to make a bid for a Guinness world record for the world's highest "frozen-lake marathon."

PERSONALITIES, AWARDS, AND EVENTS

Prestigious Space Foundation



- ❖ The James Webb Telescope recently received the Space Foundation Award.
- ❖ This is an infrared space telescope orbits the sun.
- ❖ The telescope was jointly developed by European Space Agency, NASA, and Canadian Space Agency.
- ❖ It is the successor of the Hubble telescope.
- ❖ This award is a prestigious award and it recognizes individuals and organizations that make breakthroughs in the space field.
- ❖ The James Webb telescope's first photo was of the SMACS 0723 galaxy cluster.

Shoichiro Toyoda - Japan

- ❖ Toyota's honorary chairman and the company founder's son Shoichiro Toyoda has passed away.
- ❖ He is often revered as the force behind taking Toyota towards global growth.
- ❖ He became president in 1982 and helped direct the company's growth in international markets.
- ❖ He was inducted into the U.S. Automotive Hall of Fame in 2007.

