

NASA SHARES PICTURE OF A 'SMILING SUN'

In News:

- Recently, the Twitter handle of NASA shared an image of the sun seemingly 'smiling'.
- Captured by the NASA Solar Dynamics Observatory, the image has dark patches on the sun's surface resembling eyes and a smile.
- NASA explained that the patches are called coronal holes, which can be seen in ultraviolet light but are typically invisible to our eyes.



Coronal holes

- These are regions on the sun's surface from where fast solar wind gushes out into space.
 - Because they contain little solar material, they have lower temperatures and thus appear much darker than their surroundings.
- They can last much longer during solar minimum – a period of time when activity on the Sun is substantially diminished, according to NASA.

Significance

- As per NASA, these coronal holes are important to understanding the space environment around the earth through which our technology and astronauts travel.
- NASA had said this in 2016 when coronal holes covering six-eight per cent of the total solar surface were spotted.
- While it is unclear what causes coronal holes, they correlate to areas on the sun where magnetic fields soar up and away, without looping back down to the surface as they do elsewhere.
- Scientists study these fast solar wind streams because they sometimes interact with earth's magnetic field, creating what's called a **geomagnetic storm**.
- These coronal holes can also cause a solar storm on Earth as they release a complex stream of solar winds.

What happens during a geomagnetic storm?

- According to the **National Oceanic and Atmospheric Administration**, geomagnetic storms relate to earth's magnetosphere – the space around a planet that is influenced by its magnetic field.
- When a high-speed solar stream arrives at the earth, in certain circumstances it can allow energetic solar wind particles to hit the atmosphere over the poles.
- Such geomagnetic storms cause a major disturbance of the **magnetosphere** as there is a very efficient exchange of energy from the solar wind into the space environment surrounding earth.
- In cases of a strong solar wind reaching the earth, the resulting geomagnetic storm can cause **changes in the ionosphere**, part of the earth's upper atmosphere.
 - Radio and GPS signals travel through this layer of the atmosphere, and so communications can get disrupted.

AT SCO MEET, JAISHANKAR TARGETS BRI

In News:

- The 21st Meeting of SCO **Council of Heads of Government (CHG)** was held on 01 November 2022 in the virtual format.
- The SCO CHG meeting held annually focuses on the trade and economic agenda of the Organization and approves its annual budget.

Shanghai Cooperation Organisation (SCO)



- SCO is a permanent intergovernmental international organisation, created in June 2001 in Shanghai (China).
- Founding members included Kazakhstan, China, Kyrgyzstan, Russia, Tajikistan, and Uzbekistan.
- This organization represents approximately 42% of the world's population, 22% of its land area and 20% of its GDP.

- SCO comprised eight member states, namely India, Kazakhstan, China, Kyrgyzstan, Pakistan, Russia, Tajikistan, and Uzbekistan.
- In 2021 summit held in Dushanbe, members decided to include Iran as a full member.

Observers

- Before 2021, SCO had four observer states. This included - Afghanistan, Belarus, Iran and Mongolia.
- In 2021, Iran became a full member and Saudi Arabia, Egypt and Qatar were added as new observer states. Hence, currently, SCO has 6 observer states namely:
 - Afghanistan, Belarus, Mongolia, Saudi Arabia, Egypt and Qatar.

India's stand at the meeting

On connectivity projects in the SCO region

- Connectivity projects in the SCO region should focus on the interests of Central Asian states and respect the sovereignty and territorial integrity of countries.
- India said better connectivity will unlock the economic potential of the SCO region.
- In this context, Iran's Chabahar port and the International North-South Transport Corridor (INSTC) could become enablers.
 - The port has also played a key role in the trans-shipment of goods from Russia to India following the start of the Ukraine war.

India did not support China's Belt and Road Initiative (BRI)

- India was the only SCO member state that did not reaffirm support for China's Belt and Road Initiative (BRI) in a joint communique issued after the meeting.
 - Other countries reaffirmed their support for China's BRI and to work jointly to implement the project.
- India has for long opposed the BRI because a key part of it – the China-Pakistan Economic Corridor (CPEC) - passes through Pakistan-occupied Kashmir.

On trade with SCO members

- Indian EAM said that our total trade with SCO Members is only \$141 billion, which has potential to increase manifold.

- The bulk of India's trade with SCO countries is with China, which crossed \$100 billion this year.
 - Fair market access is to our mutual benefit and only way to move forward.
 - He also reiterated India's commitment to deepen multilateral cooperation in areas such as food and energy security, climate change and trade.
- **On Mission LiFE (Lifestyle For Environment)**
 - EAM also spoke about Mission LiFE launched by PM Modi, which envisions replacing the prevalent 'use and dispose' economy by a circular economy.
 - He highlighted that in 2023, the UN International Year of Millets, India intends to foster greater cooperation with SCO member states on countering the food crisis.
- **On India's ongoing chairship of the SCO**
 - India assumed the chairmanship of the grouping following the summit held in Uzbekistan.
 - The 22nd Meeting of the Council of **Heads of State** of the SCO was held in Uzbekistan in September 2022.
 - India will host the next SCO summit (Meeting of Council of Heads of State) as a chairman of organisation in 2023.

KASHMIR SAFFRON

The Kashmir tourism department had recently invited students and local farmers to join the saffron festival organised in Ladoo area to highlight the whole process of saffron cultivation.



About:

- The unique characteristics of Kashmir saffron are its longer and thicker stigmas, natural deep-red colour, high aroma, bitter flavour, chemical-free processing, and high quantity of crocin (colouring strength), safranal (flavour) and picrocrocin (bitterness).
- It is the **only saffron in the world grown at an altitude of 1,600 m to 1,800 m AMSL** (above mean sea level).

- **Pampore region, in India, commonly known as Saffron bowl of Kashmir, is the main contributor to saffron production, followed by Budgam, Srinagar, and Kishtiwari districts.**
- Kashmir saffron is a very precious and costly product.
- Kashmir saffron is renowned globally as a spice.
- It rejuvenates health and is used in cosmetics and for medicinal purposes. It has been associated with traditional Kashmiri cuisine.
- **In 2020, Union Government has issued a certificate of Geographical Indication (GI) registration for Saffron grown in the Kashmir Valley.**
- **National Mission on Saffron** is focused on several measures to improve its farming.

LAB GROWN DIAMONDS

Union Minister for Commerce and Industry, Consumer Affairs, Food and Public Distribution and Textiles recently appreciated the Gujarat Government for spearheading



several wide-ranging initiatives to promote the Lab Grown Diamonds Sector.

About:

Initiatives:

- The government had brought in is that it has permitted 100 per cent foreign direct investment (FDI) in the sector under the automatic route.
- Gujarat Government is offering 100% exemption on electricity duty for 5 years under the provisions of the electricity act.
- According to Budget 2019-20, the GST rate has been reduced from 18 per cent to 5 per cent.
- Interest subsidy and net SGST reimbursement upto a 100% is also being offered to MSMEs, large and mega players.

Lab-made diamonds:

- Lab-made diamonds are developed from a carbon seed placed in a microwave chamber and superheated into a glowing plasma ball.

- The process creates particles that crystallize into diamonds in weeks.
- The only difference between lab-grown diamond and natural diamond is that instead of digging the earth, it is created in a lab under a machine.
- This tech-based manufacturing directly cuts down the capital and labour-intensive factors of the mined diamond chain and so lab-grown diamonds cost 30-40 per cent cheaper than mined despite being 100 per cent diamond.

Surat: Diamond capital:

- Nine out of 10 diamonds in the world are estimated to be polished in Surat.
- Currently, 25-30 per cent of diamond polishing units in Surat service lab-grown diamonds, with 15 per cent of units dealing only in the lab-created commodity.

EMPLOYEES PROVIDENT FUND ORGANISATION (EPFO)

Union Minister for Labour & Employment, Environment, Forest & Climate Change, Shri Bhupender Yadav recently inaugurated the 70th Foundation Day of EPFO.



About:

- It was established in 1952.
 - It is under the administrative control of the Union Ministry of Labor and Employment.
- Mandate:**
- It is tasked to assist the Central Board of Trustees in implementing the following three schemes for the workforce engaged in the organized sector in India:
 - EPF Scheme 1952;
 - Pension scheme 1995 (EPS); and
 - Insurance scheme (EDLI).
 - It is also the nodal agency for implementing Bilateral Social Security Agreements with other countries on a reciprocal basis.

- In 2014, union government launched Universal Account Number (UAN) for Employees covered by EPFO to enable PF number portability.
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GLYPHOSATE

The Union Ministry of Agriculture and Farmers Welfare recently restricted the use of glyphosate, a widely used herbicide, citing health hazards for humans and animals.



About:

- Glyphosate is a widely used herbicide that can kill certain weeds and grasses.
- Glyphosate works by blocking an enzyme essential for plant growth.

Application:

- In India, glyphosate use was approved only for tea crop and non-crop areas for control of weeds.
 - Assam, West Bengal, Tamil Nadu and Kerala are the major tea plantation states in India.
- But glyphosate consumption is higher in states that do not have tea crops.
- It is being widely and indiscriminately used in paddy fields by farmers.

Consequences:

- The surface casting activity of vertically burrowing earthworms almost ceased after three weeks and reproduction of soil dwellers reduced by 56 per cent within three months after herbicide application.
 - There are long-term negative consequences for honey bee navigation, contamination of water bodies and serious health hazards.
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INDIA WATER WEEK

President Droupadi Murmu recently inaugurated the 7th. edition of India Water Week (01 to 05 November 2022).

About:

- It was conceptualized and organized for the first time in 2012.
 - It is an initiative of Ministry of Jal Shakti, Department of Water Resources, River Development & Ganga Rejuvenation, Government of India
 - **The theme of the 7th India Water Week** is ‘Water Security for Sustainable Development and Equity’.
 - The function is organised by the ministry of water resources, river development and Ganga rejuvenation in an effort to raise awareness and conserve and use water resources in an integrated manner.
- The event will address the issues of sustainability of water resources development and management in line with the sustainable development goals.
- Denmark, Singapore and Finland are the partner countries for IWW 2022.



ANTI-SUPERSTITION LAWS

The recent killings of two women in Kerala have sparked a debate about the prevalence and power of superstitious beliefs in society.



About:

- As per the 2021 report of the National Crime Records Bureau (NCRB), six deaths were linked to human sacrifices, while witchcraft was the motive for 68 killings in the country.
- The maximum number of witchcraft cases were reported from Chhattisgarh (20), followed by Madhya Pradesh (18) and Telangana (11). Kerala saw two cases of human sacrifice.
- In 2020, India saw 88 deaths due to witchcraft and 11 died as part of ‘human sacrifices’, the NCRB report states.
- In India, there is no central law that exclusively deals with crimes related to witchcraft, superstition, or occult-inspired activities.

- In the absence of a nationwide legislation, a few States have enacted laws to counter witchcraft and protect women from deadly ‘witch-hunting’.

State Laws:

- **Bihar:** Bihar was the first State to enact a law to prevent witchcraft, identification of a woman as a witch and “eliminate torture, humiliation and killing of women.” The Prevention of Witch (Daain) Practices Act came into force in October 1999.
 - Anyone who identifies a person as a “witch” and acts to aid this identification can face a jail term of up to three months, or a fine of ₹1,000, or both.
- **Jharkhand:** A similar law was passed in Jharkhand in 2001 — the Prevention of Witch (Daain) Practices Act.
- **Chhattisgarh:** The State enacted the Chhattisgarh Tonahi (witch) Pratadna Nivaran Act in 2005.
- **Odisha:** The Odisha Prevention of Witch-Hunting Bill was passed by the Assembly in 2013. The bill provides penalties for a witch doctor, or a person claiming to be a black magician.
- **Maharashtra:** In Maharashtra, the Maharashtra Prevention and Eradication of Human Sacrifice and other Inhuman, Evil and Aghori Practices and Black Magic Act, 2013 was passed after the murder of anti-superstition activist Dr. Narendra Dabholkar.
- **Rajasthan:** Rajasthan enacted the Rajasthan Prevention of Witch-Hunting Act in 2015 to “provide for effective measures to tackle the menace of witch-hunting and prevent the practice of witchcraft.”
- **Assam:** The Assam Witch Hunting (Prohibition, Prevention and Protection) Act, 2015, which received the President’s assent in 2018, prohibits witch hunting completely.
- **Karnataka:** The latest law was passed in Karnataka where the Karnataka Prevention and Eradication of Inhuman Evil Practices and Black Magic Act, 2017 came into effect in January 2020.
 - The law bans several practices related to black magic and superstition, like forcing a person to walk on fire at religious festivals and the practice of piercing rods from one side of the jaw to the other.

MAHATMA GANDHI NATIONAL RURAL EMPLOYMENT GUARANTEE SCHEME (MGNREGS)

An internal study commissioned by the Ministry of Rural Development has argued for decentralisation of the Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS), allowing for more “flexibility” at the ground level.



About:

Highlights:

- There should be a greater diversification of permissible works instead of listing the types of permissible works, broad categories of works may be listed out and flexibility should be given at ground level to select the type of works as per broad categories,
- The study also flagged the frequent delay in fund disbursement, and to deal with it suggested a “revolving fund that can be utilised whenever there is a delay in the Central funds”.
- The MGNREGS wages were far below the market rate in many States, defeating the purpose of acting as a safety net.
 - At present, the minimum wage of a farm labourer in Gujarat is ₹324.20, but the MGNREGS wage is ₹229.

The Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA)

- The Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) was enacted on August 25, 2005.
- It provides a legal guarantee for one hundred days of employment in every financial year to adult members of any rural household willing to do public work-related unskilled manual work at the statutory minimum wage.
- The **Ministry of Rural Development (MRD)** is monitoring the entire implementation of this scheme in association with state governments.
- This act was introduced with an aim of improving the purchasing power of the rural people, primarily semi or un-skilled work to people living below poverty line in rural India.