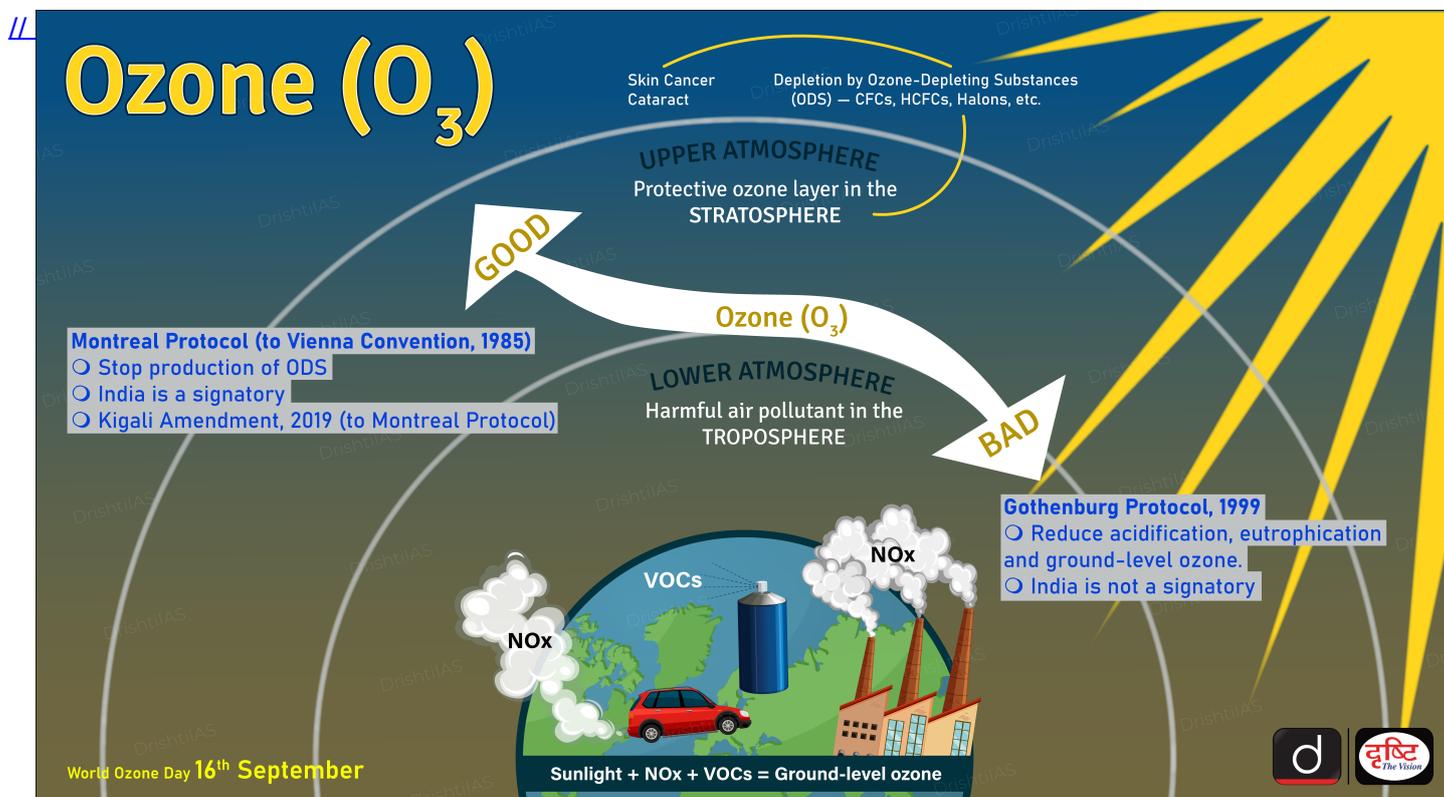




## Ozone



[Read more](#)

## Bhagat Singh's Birth Anniversary

**For Prelims:** Bhagat Singh, Hindustan Republican Association, Naujawan Bharat Sabha.

**For Mains:** Contribution of Freedom Fighters in Indian National Movement.

### Why in News?

Recently, Prime Minister **paid tribute to India's charismatic revolutionary [Bhagat Singh](#) on his birth anniversary**, and **announced that the Chandigarh airport will be renamed after Bhagat Singh** as a tribute to the great freedom fighter.

## Who was Bhagat Singh?

### ▪ Early Life:



- Born as Bhaganwala on the **26<sup>th</sup> September 1907**, Bhagat Singh grew up in a petty-bourgeois family of Sandhu Jats settled in the Jullundur Doab district of Punjab.
  - He belonged to a **generation that was to intervene between two decisive phases** of the Indian national movement - the phase of the '**Extremism**' of **Lal-Bal-Pal** and the **Gandhian phase of nonviolent mass action**.

### ▪ Role in Freedom Struggle:

- In 1923, Bhagat Singh **joined the National College, Lahore** which was founded and managed by **Lala Lajpat Rai and Bhai Parmanand**.
  - The **College was set up as an alternative to the institutions** run by the Government, bringing to the field of education the idea of Swadeshi.
- In 1924 in Kanpur, he became a member of the **Hindustan Republican Association**, started by **Sachindranath Sanyal** a year earlier. The main organiser of the Association was **Chandra Shekhar Azad** and **Bhagat Singh** became very close to him.
  - It was as a **member of the HRA that Bhagat Singh began to take seriously the Philosophy** of the Bomb.
    - **Revolutionary Bhagwati Charan Vohra** wrote the famous article Philosophy of the Bomb. Including the philosophy of the bomb, he authored three important political documents; the other two were the **Manifesto of Naujawan Sabha** and the **Manifesto of HSRA**.
  - **Armed revolution** was understood to be the only weapon with which to fight British imperialism.
- In 1925, **Bhagat Singh returned to Lahore** and within the next year he and his colleagues started a militant youth organisation called the **Naujawan Bharat Sabha**.
- In April 1926, **Bhagat Singh established contact with Sohan Singh Josh** and through him the '**Workers and Peasants Party**' which brought out the monthly magazine **Kirti in Punjabi**.
  - For the next year **Bhagat Singh worked with Josh** and joined the editorial board of Kirti.
- In 1927, **he was first arrested on charges of association with the Kakori Case**, accused for an article written under the pseudonym Vidrohi (Rebel).
- In 1928, Bhagat Singh **changed the name of the Hindustan Republican Association to the Hindustan Socialist Republican Association (HSRA)**.
  - In 1930, when Azad was shot, the HSRA collapsed.

- **Naujawan Bharat Sabha** replaced **HSRA in Punjab**.
  - To take **revenge for the death of Lala Lajpat Rai**, Bhagat Singh and his associates plotted the assassination of James A. Scott, the Superintendent of Police. However, the revolutionaries **mistakenly killed J.P. Saunders**. The incident is famously known as **Lahore Conspiracy case (1929)**.
    - In 1928, Lala Lajpat Rai had led a procession to protest against the arrival of the Simon Commission. The police resorted to a brutal lathi charge, in which Lala Lajpat Rai was severely injured and later succumbed to his injuries.
  - Bhagat Singh and B.K. Dutt **threw a bomb** on 8<sup>th</sup> April, 1929 in the **Central Legislative Assembly**, in protest against the passing of two repressive bills, the Public Safety Bill and the Trade Dispute Bill.
    - The aim, as their leaflet explained, was not to kill but to make the deaf hear, and to remind the foreign government of its callous exploitation.
    - Both Bhagat Singh and B.K. Dutt surrendered thereafter and faced trial so they could further promote their cause. They were awarded life imprisonment for this incident.
  - However, Bhagat Singh was **re-arrested for the murder of J.P. Saunders** and bomb manufacturing in the Lahore Conspiracy case. He was found guilty in this case and was hanged on **23<sup>rd</sup> March, 1931** in Lahore along with Sukhdev and Rajguru.
  - Every year, **23<sup>rd</sup> March is observed as [Martyrs' Day](#)** as a tribute to freedom fighters Bhagat Singh, Sukhdev, and Rajguru.
- **Publications:**
    - Why I Am an Atheist: An Autobiographical Discourse
    - The Jail Notebook and Other Writings.

[Source: HT](#)

## Internal Democracy in Political Parties

**For Prelims:** Election Commission, local body, Representation of the Peoples' Act, 1951

**For Mains:** Internal Democracy of Political Parties and its need

### Why in News?

The [Election Commission](#) is likely to take up the issue of internal democracy within parties.

### What is the Need for Internal Party Democracy?

- **Representation:** The absence of intra-party democracy has contributed to political parties becoming **closed autocratic structures**. This adversely impacts the constitutional rights of all citizens to [equal political opportunity](#) to participate in politics and contest elections.
- **Less Factionalism:** A leader with strong grassroot connections would not be sidelined. This will allow less factionalism and division of parties. E.g., Sharad Pawar formed Nationalist Congress Party (NCP), Mamata Banerjee formed All India Trinamool Congress after leaving Indian National Congress (INC).
- **Transparency:** A transparent party structure with transparent processes will **allow proper ticket distribution and candidate selection**. The selection would not be based on the whims of a few powerful leaders in the party but will represent the choice of the larger party.
- **Accountability:** A democratic party will be **accountable to its party members**, for they will lose elections in the next cycle for their shortcomings.

- **Decentralising Power:** Every **political party has State and local body units**, an election at each level will allow creation of power centres at different levels. This will allow decentralisation of power and the decision making will take place at the ground level.
- **Criminalization of Politics:** As there is **no well-defined process for the distribution of tickets** to candidates before elections, tickets are given to candidates on the vague concept of winnability. This has led to an additional problem of **candidates with criminal backgrounds** contesting elections.

## What are the Reasons for Lack of Intra-Party Democracy?

- **Dynasty Politics:** The lack of intra-party democracy has **also contributed to the growing nepotism in political parties**. With senior party leaders fielding their kins in elections, the succession plans for “family” constituencies are being put in place.
- **Centralised Structure of Political Parties:** The centralised mode of functioning of the political parties and the stringent anti-defection law of 1985 deters party legislators from voting in the national and state legislatures according to their individual preferences.
- **Lack of Law:** Currently, **there is no express provision for internal democratic regulation** of political parties in India and the only governing law is provided by **Section 29A of the Representation of the Peoples’ Act, 1951** which provides for registration of political parties with the ECI. However, ECI does not have any statutory power to enforce internal democracy in parties or to mandate elections.
- **Personality cult:** There is a **tendency of hero worship in people** and many times a leader takes over the party and builds his own coterie, ending all forms of intra-party democracy.
- **Easy to Subvert Internal Elections:** The ability of existing repositories of power to subvert internal institutional processes to consolidate power and maintain the status quo is unquestionable.

## What about the Direction of the Election Commission on Internal Democracy?

- **Representation of the People Act, 1951:**
  - The ECI has **periodically used guidelines issued for registration of parties** under Section 29A of the Representation of the People Act, 1951 to remind parties to conduct elections and to ensure that **their leadership is renewed, changed or re-elected every five years**.
  - The EC’s guidelines for parties applying for registration under the Act state that the **applicant should submit a copy of the party constitution**.
- **Power of De-registration of Political Parties:**
  - The commission has **asked the Law Ministry for the power to deregister political parties in the past**, but the proposal has not been implemented so far.
- **No Permanent President for a Party:**
  - The Election Commission of India (ECI) has **also recently rejected the idea of a ‘permanent president’ for a party**.
    - The ECI says such a step is inherently anti-democratic.

## Way Forward

- There is a **need for a new interpretation and some bold moves** from the ECI re-interpreting the existing laws, like:
  - Political parties should hold organizational elections regularly.
  - The **parties are required to inform the ECI about changes** in their office bearers and addresses.
  - They are **required to submit a document of expenditure** incurred during elections and in the non-election period.
- It shall be the **duty of the political party to take appropriate steps** to ensure the holding of elections at all levels. The political party shall hold elections of national and State levels in the presence of the observers to be nominated by the ECI.
- The **ECI shall be competent to inquire into allegations** of non-compliance with any of the provisions requiring elections. **ECI should have the penal power to deregister a party** until

free and fair elections in the party are conducted.

[Source: TH](#)

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## ICAO Joins International Solar Alliance

### Why in News?

Recently, the [International Civil Aviation Organization \(ICAO\)](#) signed a **Memorandum of Understanding (MoU)** with the [International Solar Alliance \(ISA\)](#) during the 42<sup>nd</sup> session of ICAO Assembly in Montreal, Canada.

- Cochin International Airport in India became the world's first fully Solar powered airport in the world in 2015.

### What is the MoU About?

- The MoU carries forward the legacy of ISA.
- The event marks a new beginning **for solar energy use in the global civil aviation sector.**
- It will enable the **solarization of the aviation sector** across all Member States of ISA
- It aims to check the growth of CO<sub>2</sub> emissions in the [Aviation sector](#), leading to India's [Net Zero Targets](#).
- It will work towards **providing information, providing advocacy, capacity building** and demonstration projects.

### What is the India's Net Zero Target?

- India has pledged for **Net Zero Carbon goal by 2070** in [COP 26](#).
- India has pledged a target of installing 175 GW of renewable energy of which 100 GW will be solar energy by 2022 and reduction in emission intensity by **33-35% by 2030**, to let solar energy reach the most unconnected villages and communities.

### What is the International Solar Alliance (ISA)?

- **About:**
  - Co-founded by India and France during 2015, the **ISA** is an action-oriented, member-driven, collaborative platform for increased deployment of [solar energy](#) technologies.
    - Its basic motive is to facilitate energy access, ensure energy security, and drive energy transition in its member countries.
  - ISA is the nodal agency for implementing [One Sun One World One Grid \(OSOWOG\)](#), which seeks to transfer solar power generated in one region to feed the electricity demands of others.
- **Headquarters:**
  - The Headquarters is in India with its **Interim Secretariat** being set up in Gurugram.
- **Member Nations:**
  - A total of 109 countries have signed the ISA Framework Agreement and 90 have ratified it.
  - All member states of the [United Nations](#) are eligible to join the ISA.
- **Observer Status to International Solar Alliance:**
  - The [United Nations General Assembly \(UNGA\)](#) has granted Observer Status to the International Solar Alliance (ISA).
  - It will help provide for regular and well-defined cooperation between the Alliance and the United Nations that would benefit global energy growth and development.

## What is the International Civil Aviation Organisation?

- ICAO is a **United Nations (UN) specialized agency, established in 1944**, which laid the foundation for the standards and procedures for peaceful global air navigation.
  - The Convention on International Civil Aviation was signed on 7th December 1944 in Chicago commonly known as the **'Chicago Convention'**.
  - It established the core principles permitting international transport by air, and also led to the creation of the ICAO.
- India is among its **193 members**.
- It is headquartered in **Montreal, Canada**.

[Source: HT](#)

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## ASI finds Buddhist Caves in Bandhavgarh Forests

### Why in News?

The [Archaeological Survey of India \(ASI\)](#) discovered Buddhist caves and stupas at Bandhavgarh Tiger Reserve in Madhya Pradesh.

### What are the Findings?

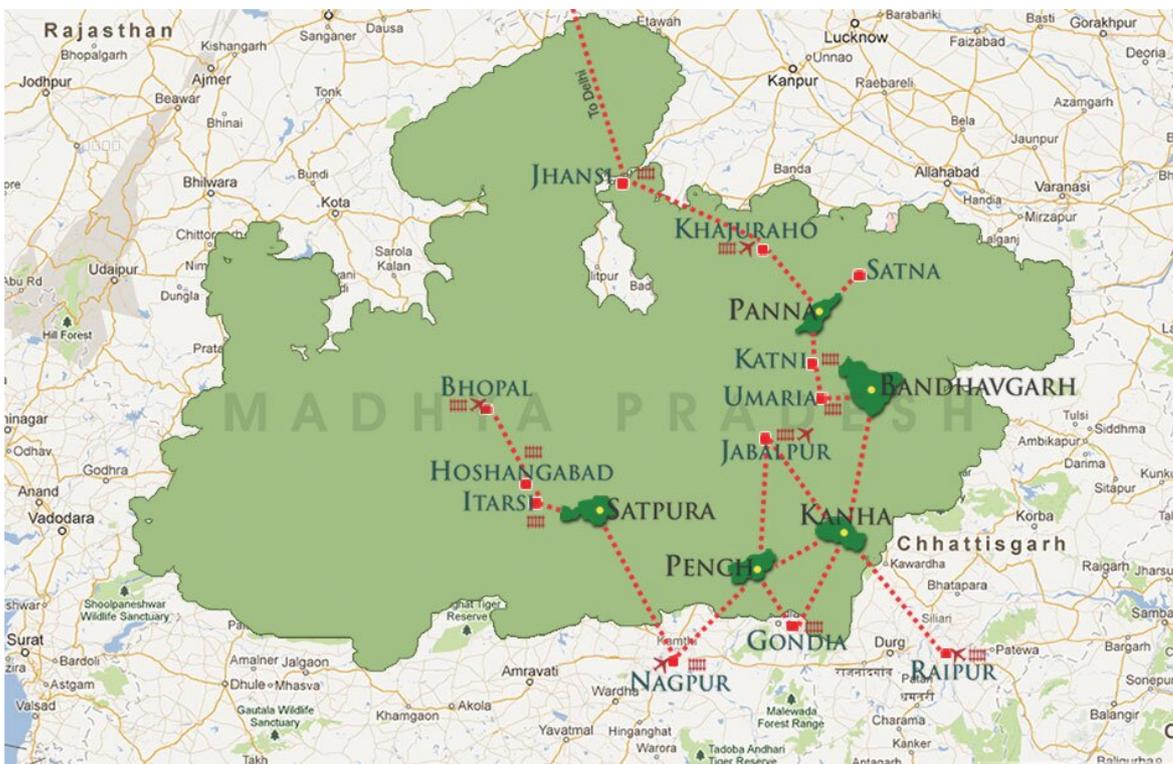
- **Buddhist Caves:**
  - 26 Buddhist Caves were discovered dating back to the 2nd and 5th centuries, pertaining to the [Mahayana sect](#) of Buddhism.
  - The caves and some of their remains had **'Chaitya' (rounded) doors** and stone beds typical of Mahayana Buddhism sites.
- **Inscriptions in Brahmi text:**
  - 24 inscriptions in Brahmi text were, all dating back to the 2<sup>nd</sup>-5<sup>th</sup> centuries.
  - The inscriptions **mention sites such as Mathura and Kaushambi**, and Pavata, Vejabharada and Sapatanaairikaa.
  - The kings they mention include **Bhimsena, Pothasiri and Bhattadeva**.
- **Remains of Temples:**
  - The remains of 26 temples dating to the Kalachuri period between 9<sup>th</sup>-11<sup>th</sup> centuries and the possibly world's largest **Varaha sculpture also dating to the same period were found**.
    - The **Kalachuri dynasty**, which spread over parts of Gujarat, Maharashtra and Madhya Pradesh, is also **associated with the earliest [Ellora and Elephanta cave monuments](#)**.
    - The Varaha sculpture is among the many monolithic sculptures of the 10 incarnations of Lord Vishnu.
  - Two Saiva mutts have also been found.
- **Remains of the Gupta Period:**
  - Some remains of the Gupta period, such as door jambs and carvings in caves, have been found.

### What are the Key Points of Bandhavgarh Tiger Reserve?

- **About:**
  - In 1968, it was notified as a national park and in **1993 was declared a tiger reserve-**

under the [Project Tiger](#) Network at the neighbouring Panpatha Sanctuary.

- **Historical Significance:** Its mention can be found in the ancient books of the 'Narad Pancharatra' and the 'Shiv Purana' that this place is being associated with Ramayana.
  - The Bandhavgarh Fort is a **great masterpiece of "Treta Yuga"** (one of the ages of mankind in Hinduism).
  - It was ruled by major dynasties including Sengars, the Kalchuris, and the Baghels (believed to rule the regions for the longer period).
- **Geographical Aspect:** It resides on the extreme **north eastern border of Madhya Pradesh and the northern edges of the Satpura** mountain ranges.
  - **Climate:** Tropical monsoon climatic zone.
  - **Streams:** The whole park is filled with more than 20 streams out of which some of the most important streams are Johilla, Janadh, Charanganga, Damnar, Banbei, Ambanala and Andhiyari Jhiria. These streams then merge into the Son river (an important southern tributary to the river Ganga).
- **Biodiversity:** There is a large number of tigers in the core zone. There are more than 22 species of mammals and 250 species of birds.
  - **Species Found:** Asiatic Jackal, Bengal Fox, Sloth Bear, Striped Hyena, Leopard and Tiger, Wild Pigs, Nilgai, Chinkara and Gaur (a herbivore and the only coarse feeder).



## What is the Archaeological Survey of India?

- ASI, under the Ministry of Culture, is the **premier organization for the archaeological research and protection of the cultural heritage** of the nation.
- It administers more **than 3650 ancient monuments**, archaeological sites and remains of national importance.
- Its activities include carrying out surveys of antiquarian remains, exploration and excavation of archaeological sites, conservation and maintenance of protected monuments etc.
- **It was founded in 1861 by Alexander Cunningham-** the first Director-General of ASI. Alexander Cunningham is also known as the "Father of Indian Archaeology".

[Source: TH](#)

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# World Heart Day

## Why in News?

**World Heart Day is celebrated on 29<sup>th</sup> September**, every year. Maharashtra's STEMI project helps detect over 2,000 heart attacks in a year.

## What is World Heart Day?

- **About:**
  - It was **first observed in the year 2000** after the **World Heart Federation** collaborated with the [World Health Organization \(WHO\)](#).
  - It is a global campaign through which the federation **unites people in the fight against the Cardiovascular Disease (CVD) burden** as well as inspires and drives international action to encourage heart-healthy living.
- **Theme:**
  - The theme for World Heart Day 2022 is, **"Use Heart For Every Heart"**.

## What are Cardio Vascular Diseases (CVDs)?

- **About:**
  - CVDs are a **group of disorders of the heart and blood vessels** and include coronary heart disease, cerebrovascular disease, rheumatic heart disease and other conditions.
- **Global Scenario:**
  - **CVDs are the leading cause of death** globally, taking an estimated **17.9 million lives in 2019** according to **WHO**.
  - More than **four out of five CVD deaths are due to heart attacks and strokes**, and one third of these deaths occur prematurely in people under 70 years of age.
- **Indian Scenario:**
  - As per WHO, India reported **63% of total deaths in 2016 due to NCDs, of which 27%** were attributed to CVDs.
  - CVDs also account for **45% of deaths in the 40-69-year age group**.
- **Risk Factors:**
  - The most important behavioural risk factors of heart disease and stroke are **unhealthy diet, physical inactivity, tobacco use and alcohol consumption**.
  - The effects of behavioural risk factors may show up in **individuals as intermediate risk factors** such as **raised blood pressure, raised blood glucose, raised blood lipids, and obesity**.
- **Indian Initiative:**
  - **National Programme for Prevention and Control of Cancer, Diabetes, Cardiovascular Diseases and Stroke (NPCDCS)** is being implemented under the [National Health Mission \(NHM\)](#).
  - **Affordable Medicines and Reliable Implants for Treatment (AMRIT)** Deendayal outlets have been opened at 159 Institutions/Hospitals with an objective to make available Cancer and Cardiovascular Diseases drugs and implants at discounted prices to the patients.
  - **Jan Aushadhi** stores are set up by the Department of Pharmaceuticals to provide generic medicines at affordable prices.
  - **ST-Elevation Myocardial Infarction (STEMI) Project:** The **Maharashtra government** launched the STEMI programme recognised by **NHM** in 2021 to **enable rapid diagnosis of heart disease**.
    - ST-Elevation Myocardial Infarction (STEMI) is a condition wherein one of the **heart's major arteries, supplying oxygen-rich blood to the heart** muscle, gets completely blocked.

## Way Forward

- **Cessation of tobacco use, reduction of salt in the diet, eating more fruit and vegetables, regular physical activity and avoiding alcohol consumption** have been shown to reduce the risk of cardiovascular disease.
- **Health policies that create conducive environments for making healthy choices affordable** and available are essential for motivating people to adopt and sustain healthy behaviours.
- **Identifying those at highest risk of CVDs** and ensuring they receive **appropriate treatment** can prevent premature deaths.
- **Access to noncommunicable disease medicines and basic health technologies** in all primary health care facilities is essential to ensure that those in need receive treatment and counselling.

[Source: IE](#)

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## Floods on Mars

### Why in News?

China's Zhurong rover that landed on Mars in 2021 has found evidence of major floods that took place billions of years ago by studying underground layers.

- The rover **studied its landing site - Utopia Planitia** - vast plains in Mars's northern hemisphere.
- These are the **rover's first results** of the radar imager. Radio waves from the radar bounce off **underground materials to reveal** their **grain size and ability to hold an electric charge**. Stronger signals typically indicate larger objects.

### What are the Findings?

- The radar did not find any evidence of liquid water down to 80 metres, but it did detect **two horizontal layers with interesting patterns**.
  - In a layer between 10 and 30 metres deep, the reflection signals strengthened with increasing depth.
  - An older, thicker layer between 30 and 80 metres down showed a similar pattern.
- The **older layers** (30 and 80 metres) are probably the result of rapid flooding that carried sediments to the region more than **three billion years ago**, when there was a lot of water activity on Mars.
- The **upper layer** (between 10 and 30 metres deep) could have been created by another flood **some 1.6 billion years ago**, when there was lots of glacial activity.
- Radar data is not enough to discern if the underground materials were sediments or volcanic remnants.

### What is Zhurong Rover?

- Zhurong named after a Chinese mythical fire god, is **China's first Mars** rover carried by [China's Tianwen-1 spacecraft](#) in 2021.
- During the mission, Zhurong will explore the colossal basin of **Utopia Planitia** on Mars' northern hemisphere, which was probably formed by an impact early in the planet's history.
- Weighing about 240 kilograms, the 'Zhurong' rover is **slightly heavier than NASA's Spirit and Opportunity rovers**, but only one-fourth the weight of [Perseverance and Curiosity \(NASA\)](#).
- It is powered by **retractable solar panels and fitted with seven primary** instruments — cameras, ground-penetrating radar, a magnetic field detector and a weather station.

- The purpose of the radar is **to look for signs of ancient life as well as subsurface water.**

## What are the Key Points Related to Mars?

- **Size and Distance:**
  - It is the **fourth planet from the Sun** and the second-smallest planet in the Solar System.
  - Mars is about half the size of Earth.
- **Similarity to the Earth (Orbit and Rotation):**
  - As Mars orbits the Sun, it completes one rotation every 24.6 hours, which is very similar to one day on Earth (23.9 hours).
  - Mars' axis of **rotation is tilted 25 degrees** with respect to the plane of its orbit around the Sun. This is similar to Earth, which has an axial tilt of 23.4 degrees.
  - Mars has distinct seasons like Earth, but they last longer than seasons on Earth.
    - Martian days are called **sols—short for 'solar day'**.
- **Other Features:**
  - The reason Mars looks reddish is due to oxidation or rusting of iron in the rocks, and dust of Mars. Hence it is also called the Red Planet.
  - It has the largest volcano in the solar system i.e., Olympus Mons.
  - It has two small moons, **Phobos and Deimos.**

## What are the Various Mars Missions?

- [ExoMars rover \(2021\) \(European Space Agency\)](#)
- [Tianwen-1: China's Mars Mission \(2021\)](#)
- [UAE's Hope Mars Mission \(UAE's first-ever interplanetary mission\) \(2021\)](#)
- [India's Mars Orbiter Mission \(MOM\) or Mangalyaan \(2013\)](#)
- **Mars 2 and Mars 3 (1971) (Soviet Union)**

### UPSC Civil Services Examination Previous Year Question (PYQ)

**Q. "The experiment will employ a trio of spacecraft flying in formation in the shape of an equilateral triangle that has sides one million kilometres long, with lasers shining between the craft." The experiment in question refers to (2020)**

- (a) Voyager-2
- (b) New Horizons
- (c) LISA Pathfinder
- (d) Evolved LISA

**Ans: (d)**

- Evolved Laser Interferometer Space Antenna (eLISA) is a spectacular plan of setting into space three spacecrafts, a mother and two daughter spacecrafts, which will fly in a triangular formation, trailing the earth in its orbit around the sun at a distance of over 50 million km. Each arm of the imaginary triangle, from the mother to each daughter spacecraft, will measure about a million km.
- eLISA seeks to measure gravitational waves in the frequency range from 0.1 mHz to about 100 mHz. To achieve this, it is necessary for the interferometers to have an arm length of a million kilometres and that is impossible to achieve with an earth based setup.
- **Therefore, option (d) is the correct answer.**

**Q. Consider the following statements: (2016)**

### The Mangalyaan launched by ISRO

1. is also called the Mars Orbiter Mission

2. made India the second country to have a spacecraft orbit the Mars after USA
3. made India the only country to be successful in making its spacecraft orbit the Mars in its very first attempt

**Which of the statements given above is/are correct?**

- (a) 1 only  
(b) 2 and 3 only  
(c) 1 and 3 only  
(d) 1, 2 and 3

**Ans: (c)**

[Source: DTE](#)

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## Dadasaheb Phalke Award

### Why in News?

Recently, the Ministry of Information and Broadcasting has announced that the [Dadasaheb Phalke Award](#) for the year 2020 **will be accorded to legendary actress Ms Asha Parekh**. The award will be presented at **the 68<sup>th</sup> National Film Award ceremony in New Delhi**.

- Previous recipients of the awards were **Rajnikant (2019) and Amitabh Bachhan (2018)**.

### What do we Know about Dadasaheb Phalke Award?

- **About:**
  - The Dadasaheb Phalke Award is part of the **National Film Awards**, a highly coveted collection of honours in the film industry. The Award is named after Dhundiraj Govind Phalke, the **pioneering filmmaker who gave India its first film- 'Raja Harishchandra', in 1913**.
  - The award is considered the highest honour in the Indian film fraternity. It is awarded for "its outstanding contribution to the growth and development of Indian cinema.
- **Overview:**
  - The award was **instituted by the government in 1969**, and consists of a **'Swarna Kamal', a cash prize of INR 10 lakh, a certificate, a silk roll, and a shawl**.
  - The award is **presented by the President of India** in the presence of the Union Minister of Information and Broadcasting, the Chairpersons of the juries, the representatives of the **Film Federation of India**, and the **Confederation of All India Cine Employees** among senior officials.
  - The first recipient of the award was **Devika Rani Roerich in 1969**.

### Who was Dhundiraj Govind 'Dadasaheb' Phalke?

- He was born in 1870 at Trimbak in Maharashtra. He studied engineering and sculpture and **developed an interest in motion pictures after watching the 1906 silent film The Life of Christ**.
- Before venturing into films, Phalke worked as a photographer, owned a printing press, and even **worked with the famed painter Raja Ravi Varma**.

- In 1913, Dadasaheb Phalke wrote, produced, and directed India's first feature film, the **silent Raja Harishchandra**. As a result of its commercial success, Phalke went on to make 95 more films and 26 short films in the next 19 years.
- He is known as "**Father of Indian Cinema**".

[Source: TH](#)

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