



10 November, 2023

## Project Cheetah

**Context:** One year post-launch, Project Cheetah, India's ambitious initiative to reintroduce African cats into the wild, declares short-term success.

- World's first intercontinental large wild carnivore translocation project.
- Aims to reintroduce Cheetahs in India, extinct since the 1950s.
- **Historical Timeline:**

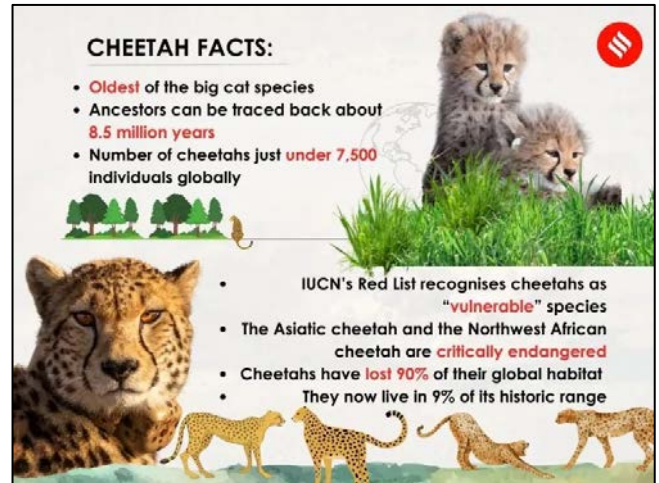
- **Earliest References:**
  - Classical Greek records mention Cheetahs in India around 200 BCE.
  - Mughal Period saw extensive use of cheetahs for hunting by Emperor Akbar.
- **Cheetahs in Central India:**
  - Cheetahs were present in Central India, particularly the Gwalior region.
  - Used for hunting by various states, including Gwalior and Jaipur.
- **Extinction:**
  - Last spotted cheetah in India died in 1948 in Chhattisgarh's Koriya district.
  - Declared extinct in the country in 1952.
  - Maharaja Ramanuj Pratap Singh shot the last three surviving cheetahs.

- **Reintroduction Attempts:**

- **First Plan (1970s):**
  - Initial steps taken during negotiations with Iran.
  - Proposed exchange of Asiatic lions for Asiatic cheetahs.
- **2009 Attempt:**
  - Unsuccessful attempt to source Iranian cheetahs.
  - Iran did not permit cloning of its cheetahs.
- **Supreme Court Intervention (2012):**
  - Supreme Court ordered a stay on the reintroduction project.
- **Site Exploration (2020):**
  - South African experts visited potential sites: Kuno-Palpur, Nauradehi Wildlife Sanctuary, Gandhi Sagar Wildlife Sanctuary, and Madhav National Park.
- **Official Launch (2022):**
  - Project Cheetah officially launched by the Prime Minister.

- **Project Status:**

- **First Batch (Namibia, September 17, 2022):**
  - Arrival of 8 cheetahs at Kuno Palpur National Park.
  - 6 cheetahs have died; 14 adults and 1 cub remaining in captivity.
  - Discussions about radio-collaring them again and potential release in winter.
  - Preparation of additional release sites like Gandhi Sagar Wildlife Sanctuary and Nauradehi Wildlife Sanctuary in Madhya Pradesh.
- **Second Batch (South Africa, February 18, 2023):**
  - Arrival of 12 cheetahs at Kuno Palpur National Park.
  - In late March 2023, one female gave birth to four cubs conceived in India.
  - 3 out of 4 cubs have died; 1 cub being hand-reared due to maternal rejection.



## Non-Melanoma Skin Cancer

**Context:** Sun exposure is responsible for about one-third of non-melanoma skin cancer deaths, as estimated by the WHO and ILO.

- **Global Burden of Cancer Deaths:**
  - Occupational exposure to solar ultraviolet radiation ranks as the third-highest work-related risk factor for cancer deaths worldwide.
- **Extent of Exposure (2019):**
  - Approximately 1.6 billion working-age individuals (15 years and older) were exposed to solar ultraviolet radiation while working outdoors.
  - This accounted for 28% of the global working-age population.
- **Fatalities Due to Sun Exposure (2019):**
  - Nearly 19,000 people across 183 countries died from non-melanoma skin cancer due to outdoor sun exposure during work.

## Face to Face Centres



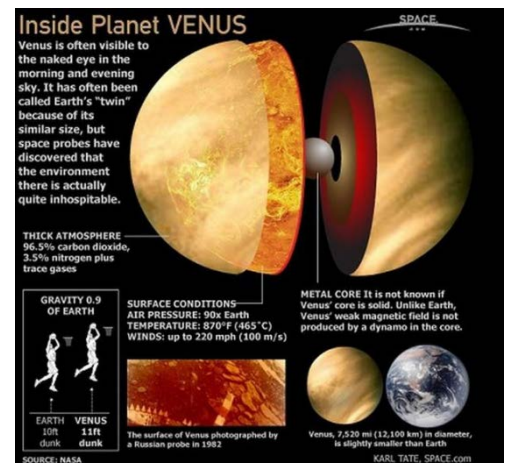


- Majority of the fatalities (65%) were men.
- **Ultraviolet Index Guidelines:**
  - Protective measures should be implemented when the ultraviolet index is three or higher.
  - The recently launched SunSmart Global UV Application by WHO, ILO, World Meteorological Organization, and the United Nations Environment Programme can help outdoor workers estimate their exposure to solar ultraviolet radiation.
- **Non-Melanoma Skin Cancer:**
  - Non-melanoma skin cancer starts in the top skin layer.
  - Main types are Basal Cell Carcinoma (BCC) and Squamous Cell Carcinoma (SCC).
  - Caused by UV light from the sun and sunbeds.
  - Risk factors include age, pale skin, and previous skin cancer.
  - Main symptom is an unusual skin growth or patch.
  - Common in sun-exposed areas like head, face, ears, neck, shoulders, back, hands, lower legs.
  - Growths or patches vary in color, size, and texture.
  - UV light is the primary cause.
  - More common in older individuals but can affect younger people.
  - Higher risk with pale skin, red/fair hair, blue/green eyes, many freckles/moles.
  - Increased risk with significant sun exposure, sunburn history, frequent sunbed use.
  - Family history of skin cancer raises the risk.
  - Brown or black skin lowers the chance but doesn't eliminate the risk.

## Discovery of Oxygen on Venus

**Context:** Astronomers have discovered atomic oxygen in Venus's atmosphere.

- Venus, Earth's twin, known for its inhospitable conditions, surprises scientists with the detection of oxygen in its atmosphere.
- **Detection Method:** Atomic oxygen in Venus's atmosphere was detected using an instrument aboard the SOFIA airborne observatory, a modified Boeing 747SP aircraft carrying an infrared telescope.
- **Collaborative Project:** The discovery is a result of a joint project between NASA and the German Aerospace Center, utilizing the SOFIA airborne observatory.
- **Atmospheric Composition of Venus:** Unlike Earth, where oxygen constitutes about 21% of the Venus atmosphere, Venus has a thick and noxious atmosphere dominated by carbon dioxide (96.5%).
- **Significance of Discovery:** Detection of atomic oxygen, consisting of a single oxygen atom, is significant as molecular oxygen, essential for breathing, is nearly absent on Venus.
- **Detection on Both Sides:** Researchers detected oxygen on both the sun-facing side of Venus, where it is produced, and the side facing away from the sun.
- **Production Mechanism:** Oxygen is produced on Venus's day side by solar UV radiation breaking down atmospheric carbon dioxide and carbon monoxide into oxygen atoms.
- **Transport by Winds:** Some of the produced oxygen is transported by winds to the Venusian night side, demonstrating the role of photochemistry and atmospheric winds.
- **Atmospheric Layers:** The detected oxygen is concentrated between two layers of the Venusian atmosphere, approximately 60 miles (100 km) above the surface.
- **Temperature Variations:** The temperature of the detected oxygen varies from about minus 184 degrees Fahrenheit (minus 120 degrees Celsius) on the day side to minus 256 degrees Fahrenheit (minus 160 degrees Celsius) on the night side.
- **Scientific Implications:** The discovery provides direct proof of photochemistry's action and the transport of its products by Venus's atmospheric winds.
- **Understanding Venus's Evolution:** Scientists express that this finding is a significant step in understanding the evolution of Venus and its stark differences from Earth.
- **Venus:**
  - Venus is the second planet from the Sun, similar in size and structure to Earth.
  - Its thick atmosphere causes a runaway greenhouse effect, making it the hottest planet in our solar system.
  - Named after the Roman goddess of love, most features on Venus are named after women.
  - The upper atmosphere, about 30 miles up, has temperatures and pressures that could support Earthly life.
  - Mysterious dark streaks in Venus' clouds have led to speculation about the possibility of microbial life.
  - Venus is nearly as large as Earth, with no moons or rings.



## Face to Face Centres





- Its slow rotation results in a day longer than its year, and it lacks distinct seasons due to a minimal tilt.
- The phases of Venus, observed by Galileo, provided evidence for the heliocentric solar system.
- The Soviet Venera probes revealed a rocky and volcanic surface with features named after women.
- Venus lacks extensive impact craters, and its atmosphere is mostly carbon dioxide with sulfuric acid clouds.
- Despite its inhospitable surface, Venus remains a target for future exploration to unravel its mysteries.

➤ **Missions to Venus:**

Country/Region	Mission
USA	Mariner series (1962-1974) Pioneer Venus 1 and Pioneer Venus 2 (1978) Magellan (1989)
Russia	Venera series of space crafts (1967-1983) Vegas 1 and 2 (1985)
Japan	Akatsuki (2015)
Europe	Venus Express (2005)

➤ **Future Missions to Venus**

- **Shukrayaan-** ISRO Venus Orbiter Mission (2024 tentative)
- **DAVINCI** - NASA Venus Flyby and Probe (2029)
- **VERITAS** - NASA Venus Orbiter (2031)
- **EnVision** - ESA Venus Orbiter (2031)

## NEWS IN BETWEEN THE LINES

### Ogiek Community



Recently, human rights lawyers claim Kenya is forcibly displacing Ogiek hunter-gatherers from Mau Forest.

**About the Ogiek Community:**

- The Ogiek community is primarily composed of hunter-gatherers, with some members living deep in the forest relying solely on hunting and gathering, while others engage in agriculture and livestock keeping.
- Historically, the Ogiek have practiced traditional hunting of animals such as antelope and wild pigs; however, these practices are now generally illegal.
- They have a deep historical connection to the Mau Forest in Kenya's Rift Valley and the forested areas around Mt Elgon.
- The Ogiek community has been subjected to arbitrary forced evictions from their ancestral lands by the Kenyan government, without consultation or compensation, since the country gained independence in 1963.

### Loto Island



Recently, the undersea volcano off the southern coast of Japan, near Loto Island (Iwo Jima), captured global attention as it erupted, giving rise to the formation of a new island.

**About Loto Island:**

- Loto Island, also known as Iwo Jima, is situated approximately 1 kilometer off the southern coast of Japan.
- The newly formed island has dimensions of about 100 meters in diameter and rises as high as 20 meters above the sea level.
- The island's formation is attributed to volcanic activity, and experts note its "crumbly" composition, making it susceptible to erosion from waves.
- Iwo Jima holds historical significance as a site of intense fighting during World War II. The recent volcanic activity adds a geological dimension to its importance.
- Japan, including Iwo Jima, is situated on the "Pacific Ring of Fire," a region known for high seismic and volcanic activity, hosting about 1,500 active volcanoes.

### Hermes 900 Starliner



Recently, India is set to bolster its surveillance capabilities along its northern borders with the acquisition of additional Hermes 900 Starliner drones from Israel.

**What is Hermes 900 Starliner?**

- The Hermes 900 Starliner is an Israeli-made medium-altitude, long-endurance unmanned aerial vehicle (UAV).
- It is the larger variant of the Hermes 900 UAV.

**Features:**

- It has a wingspan of 17 meters and a maximum take-off weight of 1,600 kilograms.
- It exhibits notable flight characteristics with a service ceiling of 30,000 feet and an impressive flight endurance capability of up to 36 hours.
- Characteristics:
- The Hermes 900 Starliner exhibits notable flight characteristics, with a service ceiling reaching 30,000 feet and an impressive flight endurance of up to 36 hours.

**Payload Capacity:** It can carry multi-sensor payloads weighing up to 450 kilograms for various applications.

**Application:** The Hermes 900 Starliner enhances the surveillance capabilities of the Indian Army along its northern borders.

## Face to Face Centres







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## Psoriasis



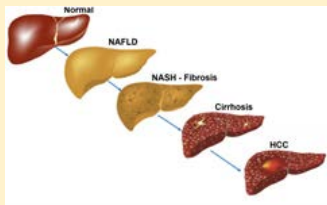
### About Psoriasis:

- Psoriasis is a chronic autoimmune condition characterized by rapid skin cell buildup.
- This buildup causes scaling on the skin's surface, resulting in a rash with itchy, scaly patches.
- It commonly affects the knees, elbows, trunk and scalp.
- It manifests as itchy, scaly patches on the skin, impacting daily life.
- It is a long-term condition with no cure.
- The condition goes through cycles, flaring for periods, then subsiding.
- It is not contagious and cannot be transmitted from person to person.
- It is caused by an over-reactive immune system leading to skin inflammation.

### Signs and Symptoms:

- Raised, inflamed patches that appear red on light skin and brown or purple on dark skin.
- Whitish-silver scales on red patches or grey scales on purple and brown patches.
- Dry skin, soreness, itching, burning sensations, thick, pitted nails, and painful, swollen joints.

## Non-Alcoholic Fatty Liver Disease



### About Non-Alcoholic Fatty Liver Disease:

- Non-Alcoholic Fatty Liver Disease (NAFLD) refers to a range of conditions caused by the accumulation of fat in the liver.
- Unlike alcohol-associated liver disease, NAFLD is not caused by heavy alcohol use.
- It typically does not progress to cause liver damage or complications.

### Non-Alcoholic Steatohepatitis:

- Non-Alcoholic Steatohepatitis (NASH) is a severe form of Non-Alcoholic Fatty Liver Disease (NAFLD), characterized by inflammation and liver cell damage.
- It typically develops from the accumulation of excess fat in the liver (Fatty Liver).
- Fatty liver can lead to NASH, and NASH can contribute to the progression of liver disease.

### Symptoms and Pain:

- **NAFL Symptoms:** Often asymptomatic, but may cause pain due to liver enlargement.
- **NASH Symptoms:** Inflammation and damage may lead to more noticeable symptoms.

### Risk Factors:

- **Association with Diseases:** More common in individuals with diseases like obesity, type 2 diabetes, and conditions related to obesity.

## Place in News

## Tanzania

Recently, IIT Madras made a groundbreaking move by setting up its first international campus in Zanzibar, Tanzania.

### Tanzania (Capital: Dodoma)

**Location:** Tanzania is an East African country located just south of the Equator.

### Political Boundaries:

Tanzania shares its northern borders with Uganda and Kenya, its southern and southwestern boundaries with Mozambique and Zambia, and to the west, it shares borders with Burundi and Rwanda.

### Geographical Features:

- Mount Kilimanjaro stands as the highest peak in Tanzania.
- Tanzania is traversed by significant rivers such as the River Congo, River Rufiji, and River Ruvuma.
- Important lakes in Tanzania include Lake Tanganyika to the west, Lake Victoria to the north, and Lake Malawi (also known as Lake Nyasa).
- Parts of the East African Rift pass through Tanzania, creating dramatic escarpments and volcanic features.



## POINTS TO PONDER

- ❖ Under which act are Non-Banking Financial Companies(NBFCs) registered in India? - **Companies Act 1956**
- ❖ Which act governs the political parties to which Electoral Trusts (ETs) must donate their contributions? - **Representation of the People Act, 1951**
- ❖ Which ministry oversees the Innovations for Defence Excellence (iDEX) in India? - **Ministry of Defence**
- ❖ What recently occurred at the Hanle and Merak observatories in Ladakh? - **Intense Red Aurora**
- ❖ Which organization offers unrivaled data, expertise and solutions for the global higher education sector? - **Quacquarelli Symonds (QS)**

## Face to Face Centres

