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## Prelim Bits 04-08-2023 | UPSC Daily Current Affairs

### Voyager Mission

*More than a week after the NASA lost communication with Earth's longest-running space probe, Voyager 2, the space agency detected a heartbeat signal from the spacecraft.*

- A faulty command sent to the probe caused its antenna to point 2 degrees away from Earth making it unable to transmit data back to Earth.

### Voyager Mission

- The twin spacecraft Voyager I and Voyager II were launched by **NASA** in separate months in 1977.
- Each of them is equipped with instruments to carry out 10 different experiments.
- **Instruments** - Television cameras, infrared and ultraviolet sensors, magnetometers, plasma detectors, and cosmic-ray and charged-particle sensors.
- Each Voyager spacecraft is adorned with a golden phonograph record, a 12-inch disc, intended to be a sort of time capsule from Earth to any extraterrestrial life that might intercept the probes.

### Voyager - 1

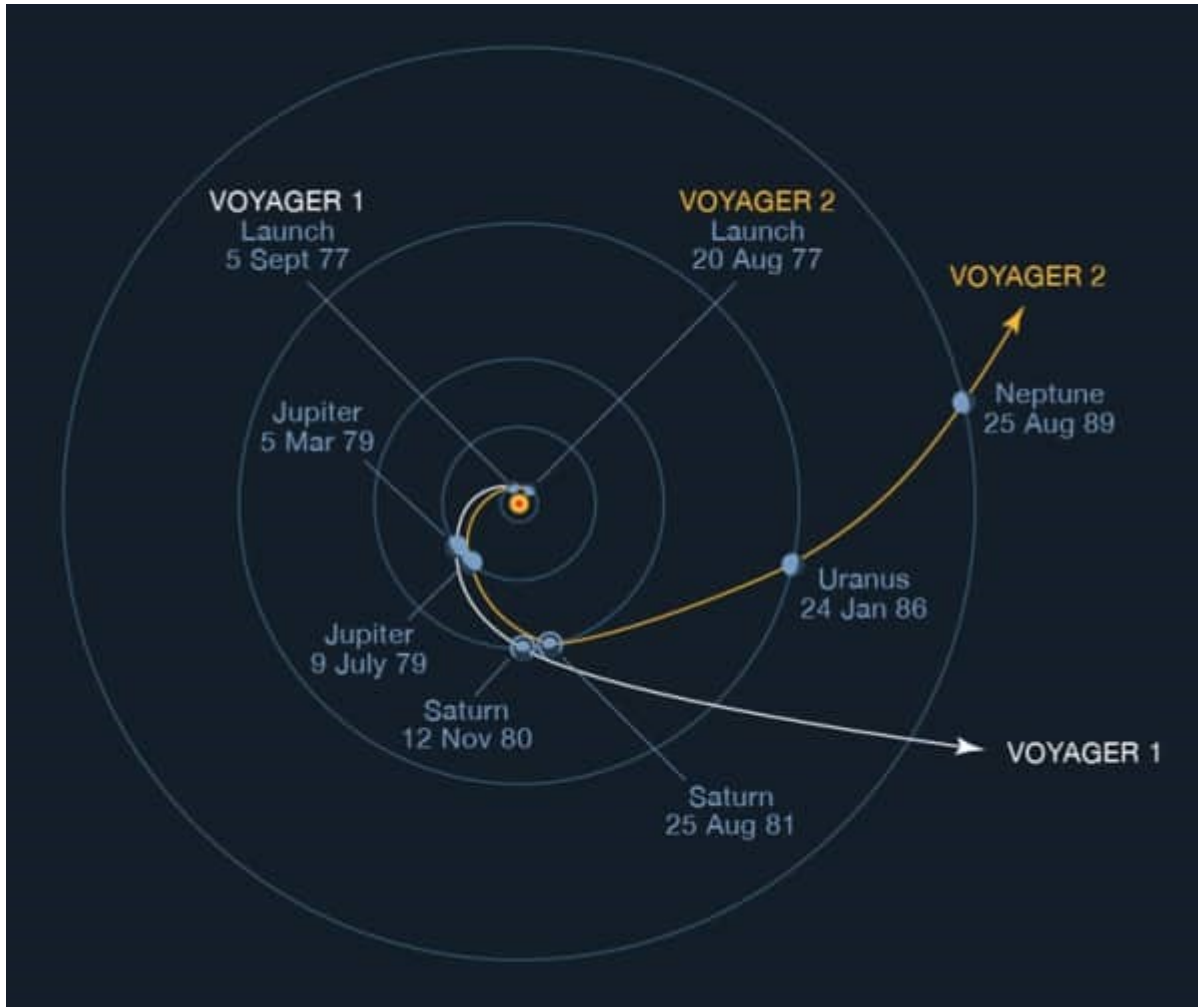
- Launched in 1977, sent to space about two weeks after Voyager 2.
- Voyager 1 was set on a path to reach Jupiter and Saturn, ahead of Voyager 2.
- Voyager 1 reached its first target planet, Jupiter, on 1979.
- Voyager 1 found that Io, one of Jupiter's moons, was geologically active.

### Voyager 2

- Launched in 1977, sent to space two weeks before Voyager 1.
- The spacecraft arrived at Uranus in 1986, becoming the first human-made object to fly past the aquamarine planet.
- **Great Dark Spot** - The spacecraft observed the Great Dark Spot.

*Great Dark Spot is a huge spinning storm in the southern atmosphere of Neptune about the size of the entire Earth.*

- Voyager 2 is about 19.9 billion kilometres away from Earth, is still operating.



*Interstellar is the region that lies outside the impact of our Sun's constant flow of material and magnetic field and begins just over 18 billion kilometres from the sun.*

## References

1. [The Indian Express | The legacy of the Voyager mission](#)
2. [NASA | Voyager](#)
3. [BBC | The weird space that lies outside our Solar System](#)

## Gyps himalayensis

*Researchers have recorded the first instance of captive breeding of the Himalayan vulture (Gyps himalayensis) in India at the Assam State Zoo, Guwahati.*

- **About** - The Himalayan vulture is also known as Himalayan griffon vulture and belongs to the Accipitrade family.
- **Geographical Range** - Indigenous to the uplands of central Asia, ranging from Kazakhstan and Afghanistan in the west to western China and Mongolia in the east.
- **Habitat** - It is native to the Himalayas and the adjoining Tibetan Plateau.

- It is one of the two largest *Old World vultures* and true raptors.
- It is similar and sympatric species of ***Eurasian griffon vulture*** (*Gyps fulvus*).



- **Food** - The carcasses of livestock, large wild herbivores, and humans.
- **Conservation Status**
  - **IUCN Red List** - Near Threatened.
  - **CITES** - Appendix II
- **Threats** - In parts of Asia and Africa, the use of veterinary ***diclofenac*** has had a devastating impact on ***Gyps vultures*** especially in the lowland regions of the Indian subcontinent.
- ***Diclofenac***, a nonsteroidal anti-inflammatory drug, causes visceral gout in vultures that have consumed contaminated carcasses ultimately resulting in renal failure.

- **Conservation breeding of other vultures** - The White-rumped vulture (*Gyps bengalensis*), Slender-billed vulture (*Gyps tenuirostris*), and the Indian vulture (*Gyps indicus*).
- The unprecedented scale and speed of declines in vulture populations has left the entire three resident *Gyps* vulture species categorised '***Critically endangered***'.

## References

1. [The Hindu | Himalayan vulture bred in captivity](#)
2. [Great Himalayan National Park | Gyps himalayensis](#)

## Communication Interoperability and Security Memorandum of Agreement (CIS-MOA)

*Pakistan Cabinet approves signing of security pact with U.S.*

- **Aim** - It is a foundational agreement that the U.S. signs with its allies and countries with which it wants to maintain close military and defence ties.
- **Legal Cover** - It also provides legal cover to the U.S. Department of Defence for ensuring the sale of military equipment and hardware to other countries.
- **Institutional mechanism** - The signing of the CIS-MOA means that the two countries are keen to maintain the institutional mechanism.
- The agreement, first signed between the Pakistan and the U.S. in October 2005 for 15 years, expired in 2020.

- The two sides have now renewed that arrangement which covers joint exercises, operations, training, basing and equipment.
- The signing of the CIS-MOA indicates that the U.S. might sell some military hardware to Pakistan in coming years.

*A cypher is a secret document that ambassadors in another country send to their country.*

## References

[1. The Hindu | Pakistan Cabinet approves signing of security pact with U.S.](#)

[2. ANI news | Pakistan gives nod to security pact with US: Report](#)

[3. The Week | Pak Cabinet approves signing of security pact with US](#)

## Study in India (SII) Portal

*The Education and Skill Development & Entrepreneurship and the External Affairs Minister jointly launched Study in India Portal.*

## Study in India Programme

- **Ministry** - It is a flagship project introduced by the Ministry of Education (MoE).
- **Aim** - It seeks to endorse India as a prime education hub for international students by inviting them to pursue their higher education in the country.
- **Partnership** - The Study in India programme involves partnership with educational institutes.
- **Criteria** - The institutes should be fulfilling one of the following criteria:
  1. National Institutional Ranking Framework (NIRF) ranking ( $\leq 100$ ).
  2. National Assessment and Accreditation Council (NAAC) accreditation score ( $\geq 3.01$ ).
  3. Institutes of National Importance (INI).
  4. This ensures premier institutions being the partner to enrolling international students coming to study in India.

## Study in India portal

- **HEIs** - It is a dedicated website that will provide comprehensive information about the Indian Higher Education Institutions (HEIs).
- The website-portal will present information about the academic facilities, research support, and related information.
- The website will illustrate academic programs covering undergraduate (UG), postgraduate (PG), Doctoral level programs, Yoga, Ayurveda, classical arts etc.
- The new website will now have the provision for students to apply in more than one institute/course of their choice.
- The new portal will provide an integrated **one-stop solution** for student registration and visa application process.

## References

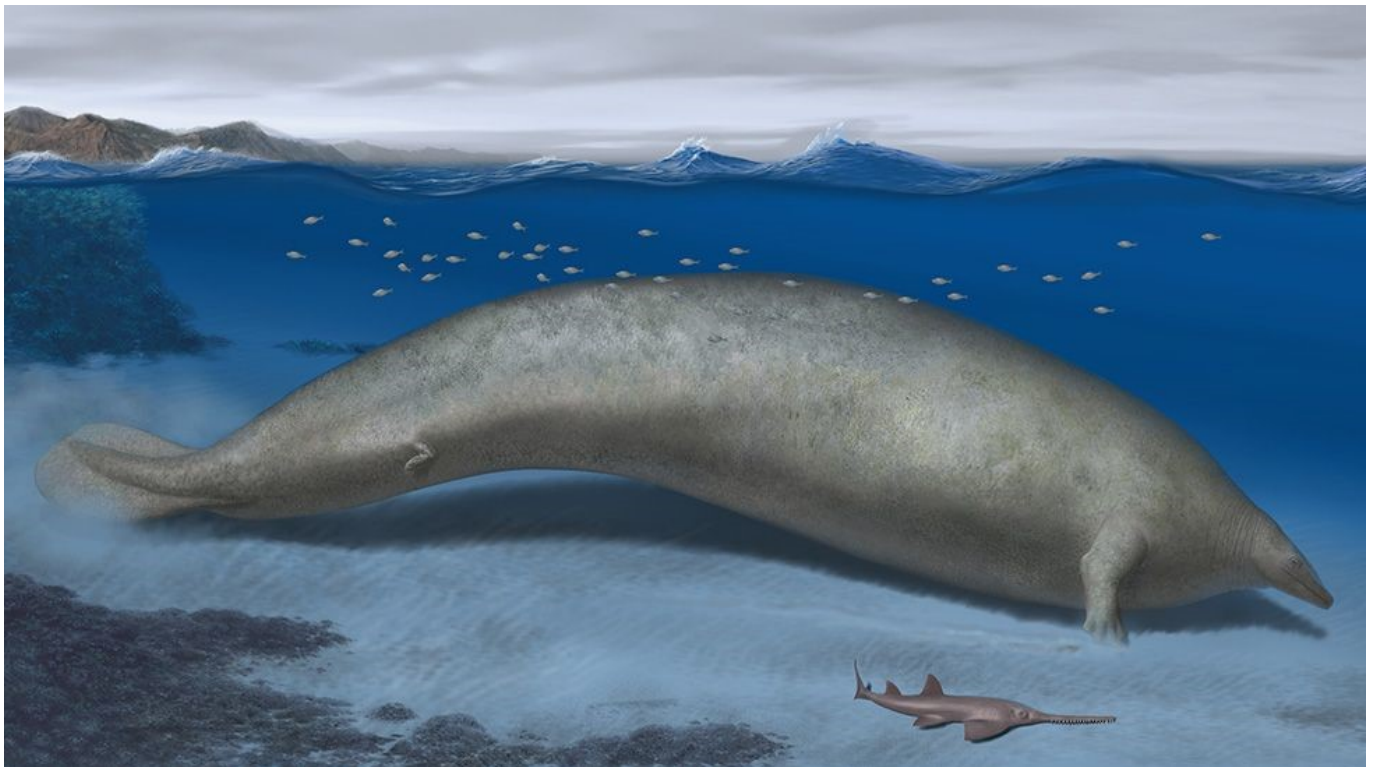
[1. PIB | Launch of Study in India \(SII\) Portal](#)

[2. Study in India | SII](#)

## Perucetus Colossus

*The fossils of Perucetus colossus were discovered in Peru, may be the heaviest discovered animal ever, even heavier than the blue whale.*

- **Origin** - It is a colossal whale situated at **Peru** which is now extinct in nature.
- **Habitat** - Lived in shallow coastal areas.
- **Organs** - It has 13 vertebrae, 4 ribs and a bit of a pelvis.
- **Weight** - Weighed between 85 and 340 tonnes.
- The skeletal mass of P. colossus would have been between 5 and 8 tons, which is twice that of the blue whale.
- There is no record of the existence of an animal as large as this Perucetus colossus.



- **Pachyosteosclerosis** - The animal's bones had an unusually large volume and were also extremely dense, this combination of thickening and densification of bones is called ***pachyosteosclerosis***.
- The characteristic is absent in living whales, dolphins and porpoise.
- However, it is present in sirenians, a marine mammal group that includes sea cows.

## References

[1. The Indian Express | Newly-discovered extinct whale](#)

[2. NDTV | Animal That Lived Nearly 40 Million Years Ago](#)

[3. BBC | Peruvian fossil challenges blue whales](#)



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