

1. Water Bears or Tardigrades in Space

Why now?



INTERESTING FACTS

www.weeklyrecess.com



Tardigrades (Water Bears), tiny microscopic creatures, are nearly indestructible. They can survive extreme temperatures, radiation, dehydration, and even the vacuum of space. In 2007, tardigrades were sent into space and survived exposure to outer space for 10 days.

The Axiom Mission 4 will see India, Poland, and Hungary's first government-sponsored human spaceflight in more than 40 years next month. With the addition of an American astronaut, the four-person crew will conduct various studies and activities in Space while docked at the International Space Station (ISS) for two weeks.

Group Captain Shubhanshu Shukla, a distinguished pilot in the Indian Air Force (IAF), has been selected for the Indian Space Research Organisation (ISRO). Among the studies set to be carried out is ISRO's Voyager Tardigrades project, which will investigate the revival, survival, and

reproduction of tardigrades – creatures that have long fascinated scientists.

What Are Water Bears or Tardigrades?

"Water bear" is a bit of a misnomer for these microscopic eight-legged animals, which don't just live in water. Measuring between 0.1 and 0.5 millimetres, they are known for surviving the most dire physical environments, from arid regions to high up in the Himalayas. They can also go without food or water for up to years, although their average lifespan is not more than a decade.

This incredible resilience is why the animals have been on Earth for around 600 million years, and will likely withstand any major changes to the Earth's climate in the near future as well.

How are they able to do this?

Scientists are still trying to understand the complex mechanisms involved, but one part of the equation is a process resembling hibernation. For instance, amid a lack of water, they can theoretically shut down all the life processes happening inside them.

The animals pull their eight little legs and head inside their cuticle, which is an exoskeleton. They essentially curl into tiny ball-like structures known as tuns. When their physical environment improves, they can return to their normal selves.

But why Is ISRO taking Tardigrades to Space?

Tardigrades are the only known animals capable of surviving even in the cold vacuum of Space. In 2007, a crewless Russian capsule on a European Space Agency (ESA) mission exposed some

3,000 tardigrades to the vacuum of space for 10 days, and they were left out there in low-Earth orbit (altitude under 2,000 km). Over two-thirds of the animals survived the mission and even gave birth to offspring upon returning to Earth.

The ISRO project will examine the revival of dormant tardigrades, count the number of eggs laid and hatched during a mission, and compare the gene expression patterns of spaceflown vs. ground control populations. The research seeks to identify molecular mechanisms of resilience, potentially furthering understanding about the limits of life in extreme environments.

This knowledge could inform future space exploration and help develop biotechnology applications on Earth, at a time when governments and private companies are lining up to carry out Space missions.

Relevance: GS Prelims & Mains Paper III; Science & Technology

Source: Indian Express

2. Kailash Mansarovar Yatra to resume soon

Why in News?

The Ministry of External Affairs (MEA) recently announced that the Kailash Mansarovar Yatra, which has not taken place since 2020, will resume this year. This comes as a part of a larger rapprochement between India and China in recent months.

A thaw in ties

While the yatra had initially been suspended due to the Covid-19 pandemic, deteriorating relations between India and China meant that it did not resume even after the virus was no longer a concern.

Since 2024, however, both countries have been looking to improve ties. The resumption of the yatra was formally discussed for the first time at the Special Representatives meet in Beijing between National Security Advisor Ajit Doval and China Foreign Minister Wang Yi in December, 2024.

In January this year, following Foreign Secretary Vikram Misri's visit to Beijing, the two countries agreed in principle to resume the yatra.

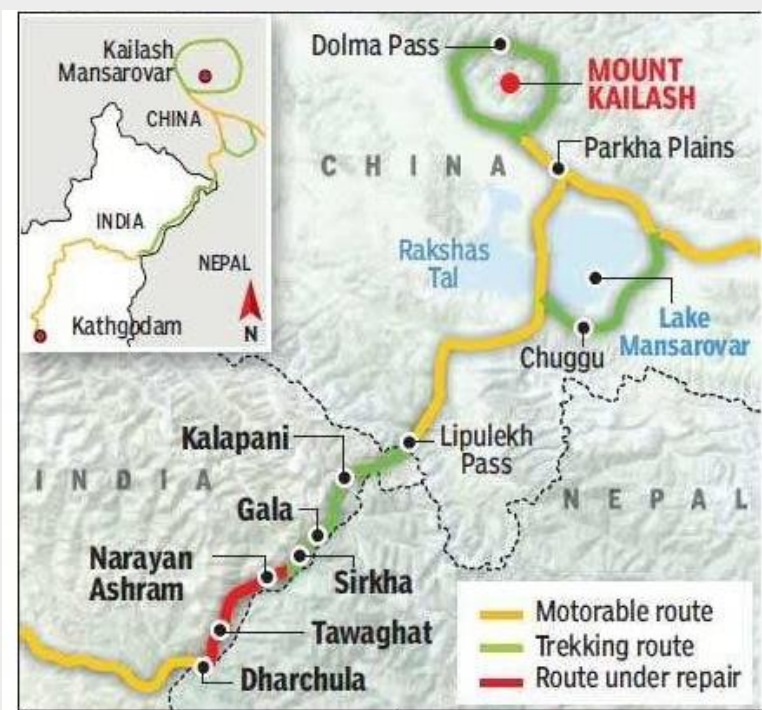
The Mansarovar yatra

Lake Mansarovar, known locally as Mapam Yumtso, is a high altitude freshwater lake near Mount Kailash in the Ngari Prefecture of the Tibet Autonomous Region (TAR).

Both the lake, which is at an elevation of 4,600 metres, and the adjacent 6,638-metre high mountain, which Hindus believe is the home to Lord Shiva, are sacred in Hinduism, Buddhism, Jainism, and the Tibetan Bon religion. Hundreds of pilgrims make the arduous journey to the region each year; they generally trek to Lake Mansarovar, and then circumambulate the nearby Mount Kailash.

The two routes

There are two primary routes to reach Lake Mansarovar from India.



Lipulekh Pass Route: Lipulekh pass lies at an altitude of 5,115 metres, on the border between Uttarakhand and TAR, near the trijunction with Nepal.

The Lipulekh pass route is the most direct way to get to Mansarovar from India. the lake is roughly 50 km from the border. However, the terrain makes the journey very challenging. Currently, this route entails roughly 200 km of hard trekking. Before 2020, it had been operational since 1981.

Nathu La Pass Route: Nathu La pass lies at an altitude of 4,310 metres on the border between Sikkim and TAR.



The route to Mansarovar from Nathu La is much longer in terms of distance — close to 1,500 km. But it is fully motorable, meaning pilgrims can make it all the way to the lake without any trekking. (They would only need to trekk 35-40 km for the circumambulation of Mount Kailash). This route became operational in 2015.

Nepal Route: No private operators function on the two official routes. There is, however, a third route through Nepal in which private companies do operate. In theory, this route has been accessible to Indians since 2023, when China reopened its border with Nepal. But visa and permit requirements, as well as high costs due to China-imposed fees, have meant that few have likely availed this option.

Darshan from distance: In recent years, some airlines have been operating chartered flights out of Nepalgunj, Nepal in which the faithful can get an aerial darshan of Mount Kailash. India too is developing a Mount Kailash viewing spot in Dharchula, near Lipulekh, which will provide a direct line of sight to the sacred peak.

Relevance: GS Prelims & Mains Paper II; International Relations

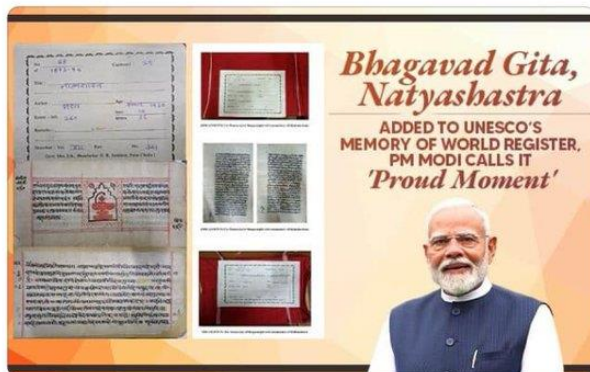
Source: Indian Express

3. Bhagavad Gita and Natyashastra added to UNESCO's Memory of the World Register

Why in News?

Bhagavad Gita, Natyashastra Added To UNESCO's Memory Of World Register, PM Modi Calls It 'Proud Moment'

NEWS18 APRIL 19, 2025



Manuscripts of the Bhagavad Gita and Bharata's Natyashastra are among the 74 new additions to UNESCO's Memory of the World Register this year.

Memory of the World (MoW)

The United Nations Educational, Scientific and Cultural Organization, better known as UNESCO, launched the Memory of the World (MoW) Programme in 1992 with the aim of "guarding against the collective amnesia, calling upon the preservation of the valuable archive holdings and library collections all over the world, and ensuring their wide dissemination".

The central project of the MoW Programme was to create a compendium of documents — manuscripts, oral traditions, audio-visual materials, and library and archive holdings — which are of "world significance and outstanding universal value". This is the MoW Register.

Entries in Register

Beginning in 1997, the Register has been biennially updated — with the exception of a lengthy gap between 2017 and 2023. In any year, at most two submissions from a country are added. With the latest additions, the Register now contains 570 entries. These include:

- Books or collections of works (eg. Mahavamsa, the meticulously kept historical chronicle of Sri Lanka);
- Drawings (eg. Meiji-era collection of Sakubei Yamamoto of Japan);

- Manuscripts (eg. collection of more than 11,000 Shaiva Siddhanta manuscripts);
- Audio recordings (eg. 430 hours of recordings of the Frankfurt Auschwitz trials, 1963-65); and
- Video recordings (eg. Bangabandhu Sheikh Mujibur Rahman's historic March 7, 1971 speech).

Indian submissions: Rig Veda to NAM archives

The Register contains 13 submissions by India, including two joint-submissions. These range from the Rig Veda (added in 2005) and the collective works of the Shaivite philosopher Abhinavagupta (added in 2023), to the archives of the first summit meeting of the Non Aligned Movement in Belgrade in 1961 (added in 2023) and the archives of the Dutch East India Company (added in 2003).

The latter two entries were joint submissions, which India made with other countries.

This year entries

This year's entries champion India's ancient literary heritage.

Natyashastra: Traditionally attributed to the sage Bharata, Natyashastra is an ancient Sanskrit treatise on performing arts. Comprising 36,000 verses, the "Natyashastra embodies a comprehensive set of rules that define natya (drama), abhinaya (performance), rasa (aesthetic experience), bhava (emotion), sangita (music)". It was "codified around the 2nd century BCE".

Bhagavad Gita: Traditionally attributed to the sage Vyasa, Bhagavad Gita is a Sanskrit scripture comprising 700 verses that are organised in 18 chapters, embedded in the sixth book (Bhishma Parva) of the epic poem Mahabharata.

The text is generally dated to the first or second century BCE, although there is considerable debate on the matter.

The Gita is essentially a dialogue between Arjuna and Krishna, which takes place just before the beginning of the great war of Mahabharata. On the brink of war against members of his own family, Arjuna is suddenly overwhelmed with the prospect of what he is about to do. He expresses his misgivings to Krishna, his charioteer and guide, also an avatar of Lord Vishnu. Krishna's responses make the central themes of the Gita, and provide spiritual and ethical basis for leading one's life.

Relevance: GS Prelims & Mains Paper II; International Organisations

Source: Indian Express

'Join PrepMate IAS'

WhatsApp 'Name' and 'State' on 75979-00000 to receive daily current affairs in simple and concise language.