



Unified Geologic Map of the Moon

Why in News?

Recently, the **United States Geological Survey (USGS)** in partnership with [National Aeronautics and Space Administration \(NASA\)](#) and the Lunar Planetary Institute has released a new comprehensive map of the Moon, called the '**Unified Geologic Map of the Moon**'.

- The **new map showcases the Moon in a 1:50,00,000-scale size**, and is claimed to come handy to researchers, scientists, students and the general public.
- The map has been **created with the help of the information gathered** from six [Apollo-era regional maps](#).
 - It also uses data from **recently held satellite missions to the Moon**.

What is the Significance of this New Map?

- **Blueprint for Future Human Mission:**
 - This new map will serve as the **“definitive blueprint of the Moon’s surface geology for future human missions.”**
- **Help in understanding the Moon Surface:**
 - It will come handy to **understand the surface of the Moon**.
 - The map will also **help researchers learn the history behind the formations** located on the Moon’s surface.
 - Earlier, a leftover piece of a spacecraft flying (of Chang'e 5-T1 – a lunar mission of China) through space reportedly **hit the surface of the moon** creating a new crater that may be around 65 feet wide ([lunar crater](#)).

What are the key Highlights about the Moon?

- **About:**
 - The Moon is **Earth's only natural satellite** and the fifth largest moon in the solar system.
 - The Moon's presence **helps stabilize our planet's wobble** and moderate our climate.
 - The Moon's distance from Earth is about 240,000 miles.
 - The Moon has a **very thin atmosphere called an [exosphere](#)**.
- **Phases of the Moon:**
 - The Moon displays four main phases: new, first quarter, full, and last quarter.
 - **New Moon:** It occurs when the **Moon is between Earth and the Sun**, and thus the side of the Moon that is in shadow faces Earth.
 - **Full Moon:** It occurs when the **Moon is on the opposite side of Earth from the Sun**, and thus the side of the Moon that is illuminated faces Earth.
 - **First and Last Quarter:** In this phase, half the Moon appears illuminated, occurring when the Moon is at a right angle with respect to the Sun when viewed from Earth. (Earth, as seen from the Moon, shows the same phases in opposite order—e.g., Earth is full when the Moon is new.)
- **Related Missions:**
 - **Chandrayaan-3 Mission (India)**
 - [Artemis I moon mission \(USA\)](#)

◦ [Chang'e-5 Mission \(China\)](#)

UPSC Civil Services Examination, Previous Year Questions (PYQs)

Q. Which of the following pairs is/are correctly matched? (2014)

	Spacecraft	Purpose
1.	Cassini-Huygens	Orbiting the Venus and transmitting data to the Earth
2.	Messenger	Mapping and investigating the Mercury
3.	Voyager 1 and 2	Exploring the outer solar system

Select the correct answer using the code given below:

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

Ans: (b)

Q. In the context of space technology, what is “Bhuvan”, recently in the news? (2010)

- (a) A mini satellite launched by ISRO for promoting the distance education in India
- (b) The name given to the next Moon Impact Probe, for Chandrayaan-II
- (c) A geoportal of ISRO with 3D imaging capabilities of India
- (d) A space telescope developed by India

Ans: (c)

Q. What is the purpose of the US Space Agency’s Themis Mission, which was recently in the news? (2008)

- (a) To study the possibility of life on Mars
- (b) To study the satellites of Saturn
- (c) To study the colourful display of high latitude skies
- (d) To build a space laboratory to study the stellar explosions

Ans: (c)

Source: IE