Finding Chandrayaan-1

Why in news?

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NASA scientists have found Chandrayaan-1 spacecraft, which was considered lost, by using a new ground-based radar technique.

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What is Chandrayaan-1?

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- Chandrayaan-1 is the India’s first lunar probe.
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- It was it was launched in October, 2008.
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- Indian Space Research Organisation (ISRO) lost communication with Chandrayaan-1 in August 2009.
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- The spacecraft is very small cube about 1.5 meters on each side i.e about half the size of a smart car.
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- The interplanetary radar has been used to observe small asteroids several million miles from Earth.
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- But researchers were not certain that an object of this smaller size as far away as the Moon could be detected even with the world’s most powerful radars.
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What NASA did?

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- Scientists at NASA’s **Jet Propulsion Laboratory (JPL)** have successfully located ISRO’s Chandrayaan-1.

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- It was found circling some 200 km above the lunar surface.
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- They used ground-based radar technology, i.e., sending microwave beams and listening to echoes, to track the lost device orbiting the moon.
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- The team used NASA’s 70-metre antenna at NASA’s Goldstone Deep Space Communications Complex in California to send out a powerful beam of microwaves directed towards the Moon.
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- Then the radar echoes that bounced back from lunar orbit were received by the 100-meter Green Bank Telescope in West Virginia.
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- Not only could they find the spacecraft, they could also determine its speed and orbit.
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- Nasa has already been using this technology to communicate with **Voyager-I spacecraft**, which has reached the edge of the solar system.
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What is the way ahead?

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- With companies and countries sending more space missions and satellites into orbits, **the technique can help in providing interplanetary radar investigations** to ensure that objects don’t collide in space.
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- Though limited to moon so far, it can perhaps be used in the case of other planets too.
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- Using ground radars with the ability to track lunar orbits, space travel can become a lot safer.
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Source: The Financial Express.

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