# 1st September, 23



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- 1. India experiences its driestever August
- 2. Centre cuts LPG cylinder prices by Rs. 200 across the country
- 3. ISRO announces the launch date of the Sun mission -Aditya-L1

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# India experiences its driest-ever August



## **Relevance: Prelims & Mains Paper I; Geography**

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### Why in news?

- India was fortunate in July. Despite an emerging El Nino, the country as a whole received 13% more rainfall than expected.
- In August, however, the adverse impacts of El Nino on the monsoon rainfall became evident. This August was the driest ever.



## **Driest August**

- August is the second rainiest month in India, after July. In a normal year, August sees about 255 mm rainfall over the country, accounting for about 22% of the annual rainfall of 1,160 mm. July, the rainiest month, accounts for a little over 24%.
- But this August has gone down as the driest since 1901, from when rainfall records are available. By 29th of August, the country as a whole had received only 160 mm of rainfall during that month.
- That means a deficit of about 33% for the month. Never has the country received less than 190 mm of rainfall in August.
- States like Gujarat and Kerala had a deficit of nearly 90% in August.
  Karnataka, Telangana and Andhra Pradesh also had more than 50% deficiency. Tamil Nadu, which receives a bulk of its rainfall during the winter months, had a shortfall of about 23%.



# AFTER GOOD RAINFALL IN JULY, EL NINO EFFECT ON MONSOON

Five driest August months so far	Driest states this August				
170 mm of rain likely by month-end		Rainfall in August	Period Normal (1-28 August)	August Deficiency	Seasonal Deficiency
270	GUJARAT	20.9 mm	206.1 mm	89.86%	-16.71%
	KERALA	46.4 mm	421.5 mm	88.99%	47.84%
250 230 230 210 Rainfall (in mm) 190 170 210 210 210 210 210 210 210 21	RAJASTHAN	30.9 mm	148.1 mm	79.14%	-14.18%
	KARNATAKA	52.7 mm	206.8 mm	74.52%	20.70%
	TELANGANA	79 mm	211.9 mm	62.72%	-11.34%
	PUNJAB	55 mm	141.2 mm	61.05%	1.26%
	GOA	280.1 mm	689.4 mm	59,37%	-3.96%
	HARYANA	58.3 mm	140.8 mm	58.59%	-9.14%
2005 2005 1920 2009 1913	MAHARASHTRA	113.7 mm	263.2 mm	56.80%	9.68%
	DELHI	87 mm	180.5 mm	51.80%	-4.37%

## **El Nino impact**

- El Nino refers to the unusual warming of the equatorial Pacific Ocean off the coast of northwest South America, which influences weather events across the world.
- Over India, it has the effect of suppressing the monsoon rainfall. A similar phenomenon in the Indian Ocean, called the Indian Ocean Dipole (IOD), was expected to turn favourable for the monsoon rainfall this year, but did not have much impact.
- The only regions that received good rainfall in August were east and northeast India. Incidentally, these parts had remained significantly dry in June and July, showing a deficit of 15% and 32% in those respective months.
- August rainfall brought welcome relief in this region, but even though the monthly rainfall in most of these states has been more than normal, it has not been sufficient to wipe off the seasonal deficit.
- Beyond El Nino, there are some other systems that can also bring about short spells of rain. Many of these were favourable during July, but unfortunately, none in August.
- As per experts, there are chances of a revival of the monsoon in the first or second week of September.



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- As of now, water levels in the major reservoirs of the country are not bad. The combined storage in 146 major reservoirs of the country, as per data till last week, was about 94% of the normal. This is most likely to see a drop later on.
- But in several states, reservoirs are already running at very low levels. In Kerala and Tamil Nadu, reservoirs are holding only 50% of the water that they normally have during this time of the year, while in Bihar, reservoirs levels are at only 12% of the normal. States like Uttar Pradesh, Jharkhand, Odisha, Andhra Pradesh and Telangana are also not doing very well. A dry September can worsen this situation.
- There are concerns for the winter crops as well.
  Even the standing kharif crops, which benefited from plenty of water during the sowing time in July, are feeling the stress now.

# **Centre cuts LPG cylinder prices by Rs. 200 across the country**



#### **Relevance: Prelims & Mains Paper II; Governance**

### Why in news?

- In a move that will bring respite to households across the nation, the Union Government has announced a substantial reduction in the price of cooking gas.
- Effective from 30<sup>th</sup> Aug, the price of a 14.2 Kg LPG cylinder has been reduced by Rs 200 in all markets across the country. In Delhi for instance, the decision has brought down the cost of a 14.2 Kg cylinder from the previous Rs 1103 per cylinder to Rs. 903 per cylinder.
- This reduction is in addition to the existing targeted subsidy of Rs 200 per cylinder to PMUY households, which will continue. For PMUY households therefore, the effective price in Delhi after this reduction has come down to Rs. 703 per cylinder.
- It may be noted that there are more than 31 Cr domestic LPG consumers in the country including 9.6 Cr PMUY beneficiary families and this reduction will help all LPG consumers in the country.
- To clear pending PMUY applications and to provide deposit free LPG connection to all eligible households, the Government will shortly start distribution of PMUY connections to 75 lacs women from poor households who do not have an LPG connection. This will increase the total number of beneficiaries under PMUY from 9.6 cr to 10.35 cr.

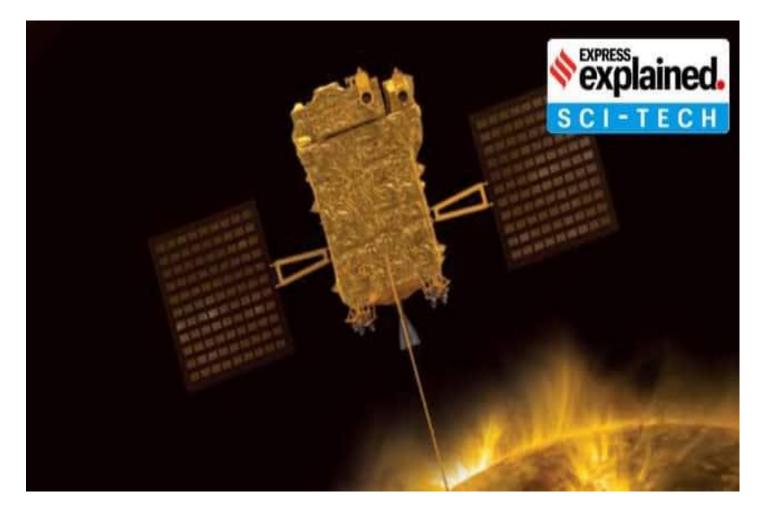
# ISRO announces the launch date of the Sun mission - Aditya-L1



# **Relevance: Prelims & Mains Paper III; Science & Technology**

#### Why in news?

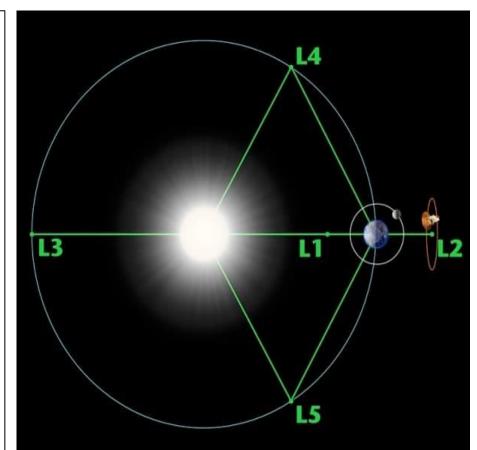
- The Indian Space Research Organisation (ISRO) has announced that the Aditya-L1 mission, the first space-based Indian observatory to study the Sun, will be launched on Sept. 2 from Sriharikota.



#### Destination



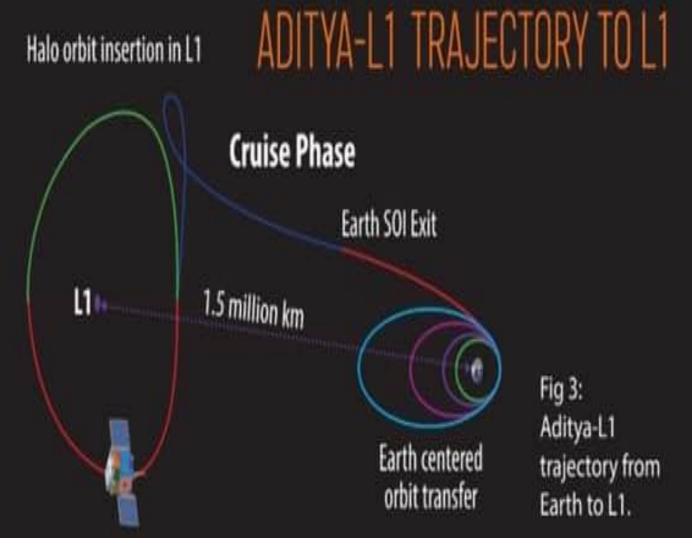
- This spacecraft will be placed in a halo orbit around the Lagrange point 1 (L1) of the Sun-Earth system, which is about 1.5 million km from the Earth.
- A Lagrange point is a position in space where the gravitational pull of two large masses precisely equals the centripetal force required for a small object to move with them. These points in space can be used by spacecraft to reduce fuel consumption needed to remain in position.
- Basically, this means that at that point, the gravitational attraction and repulsion between two heavenly bodies is such that an object placed between them will effectively stay in the same relative position while moving with them.
- A satellite placed in the halo orbit around the L1 point has the major advantage of continuously viewing the Sun without any occultation/eclipses. This will provide a greater advantage of observing the solar activities and its effect on space weather in real-time.
- The Lagrange points are named in honor of Italian-French mathematician Josephy-Louis Lagrange, and there are five of them: L1, L2, L3, L4, and L5.



# What will this mission study?



- This spacecraft carries seven payloads to observe the photosphere [the deepest layer of the sun we can directly observe], chromosphere [the layer about 400 km and 2,100 km above the photosphere], and the outermost layers of the Sun (the corona), using electromagnetic and particle and magnetic field detectors.
- These payloads are expected to provide most crucial informations to understand the problem of coronal heating, coronal mass ejection, preflare and flare activities and their characteristics, dynamics of space weather, propagation of particle and fields etc.



# Importance of studying the Sun

- Every planet, including Earth and the exoplanets beyond the Solar System, evolves — and this evolution is governed by its parent star. The solar weather and environment affect the weather of the entire system.
  - Variations in this weather can change the orbits of satellites or shorten their lives, interfere with or damage onboard electronics, and cause power blackouts and other disturbances on Earth. Knowledge of solar events is key to understanding space weather.
  - To learn about and track Earth-directed storms, and to predict their impact, continuous solar observations are needed. Every storm that emerges from the Sun and heads towards Earth passes through L1.





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