



**Estd :1988**

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**Resources: The Hindu / PIB**

**Topic: For Prelims and Mains**

### **RISAT-2B :**

**Why in news?** RISAT-2B to be launched on **May 22 from Sriharikota**. **RISAT-2B**, the satellite due to be **launched before dawn on May 22 from Sriharikota**, will mark the resumption of a vital ring of **Indian all-seeing radar imaging satellites after seven years.**

#### **About the RISAT-2:**

- RISAT-2, or Radar Imaging Satellite 2 is an Indian radar reconnaissance satellite that is part of **India's RISAT programme**. It was built by Indian Space Research Organisation and successfully launched aboard a **PSLV-CA rocket at 01:15 GMT on April 20, 2009** from the **Second Launch Pad at the Satish Dhawan Space Centre.**
- RISAT-2's main sensor is an **X-band** synthetic aperture radar from **Israel Aerospace Industries (IAI).**
- It is designed to monitor India's borders and as part of **anti-infiltration and anti-terrorist operations.**
- The satellite has a **mass of 300 kilograms (660 lb).**

# All-season satellite

RISAT-2B is a radar imaging earth observation satellite developed by ISRO

## Key features

Lift-off weight | **615 kg**

Altitude | **557 km**

Payload | **X-Band radar**

Inclination | **37 degrees**

Mission life | **5 years**

## Applications



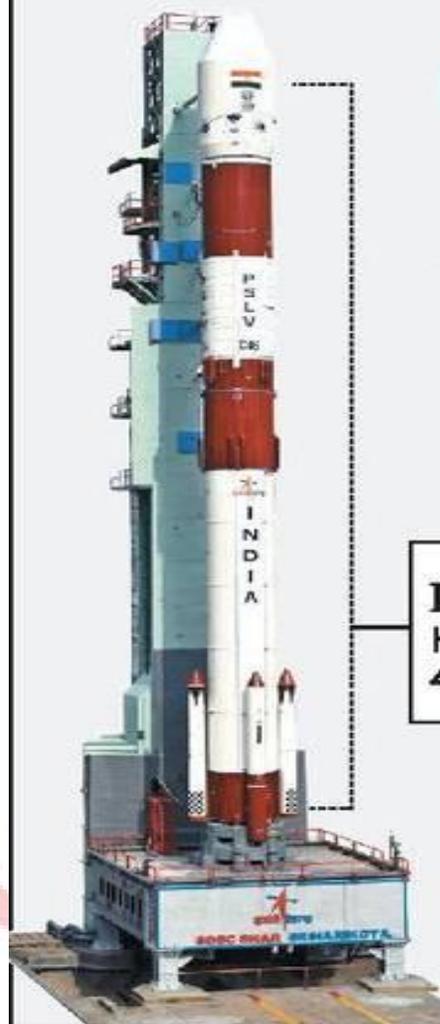
Disaster management support



Forestry



Agriculture



**RISAT-2B**

Third stage (HPS3)

**PSLV-C46**

Height: 44.4 m

First stage (PS1)

Payload fairing

Fourth stage (PS4)

Second stage (PS2)

Source: ISRO

## Features:

- The satellite has a mass of 615 kg and feature an X-band SAR (**Synthetic Aperture Radar**).
- It is built for a **5 year** operational lifetime.

- RISAT 2B will be launched into a **37° inclined orbit at 555 km** orbital height.
- **RISAT 2B, RISAT 2BR1 and RISAT 2BR2 will** be launched in 2019 on Indian PSLV launch vehicles.

**Significance:**

Regular remote-sensing or optical imaging satellites work like a light-dependent camera that cannot perceive hidden or surreptitious objects in cloudy or dark conditions.

- Satellites that are equipped with an active sensor, the **synthetic aperture radar (SAR)**, can sense or **‘observe’** Earth in a special way from space day and night, rain or cloud.
- A radar imaging satellite is complex to assemble. **Interpreting its images is equally complex.**

**Applications:**

- In India radar imaging are used for crop estimation because our main **crop growing season of kharif** is in **May-September** when it rains and gets cloudy.
- The data can be extensively used for forestry, **soil, land use, geology and during floods and cyclone.**
- Due to an all-weather seeing feature, the satellite becomes special for security forces and disaster relief agencies.

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**Topic: For Prelims and Mains**

**CCMB scientists sequence Asiatic lion genome:**

**Why in news?** For the first time, the entire genome of **Asiatic lion** has been sequenced by scientists from **CSIR-Centre for Cellular and Molecular Biology, Hyderabad.**

**Objective:**

- The objective is to understand the species **at DNA level** and study if there are any specific problems with regard to adaptability to environment or **behaviour vis-à-vis other big cats**.

### **Need and significance:**

- This firsthand information would help researchers to better understand the evolution of **Asiatic lions and also make possible comparative analysis with other big cats**.
- The genome sequencing would enable scientists to develop specific markers to study population genetics (**the differences at the gene level within a population**) and get newer insights into its population status and subsequent management.
- The study will enable better disease and population management of the endangered **big cat by identifying characteristics which are specific to Asiatic lions**.

### **About Asiatic Lion:**

- IUCN Red List Status: Endangered
- Listed in Schedule I of Wildlife (**Protection**) Act 1972, in **Appendix I of Convention on International Trade in Endangered Species (CITES)**.
- At present the only home of Asiatic lion is **Gir National Park and Wildlife Sanctuary in Gujarat**.
- The population of the endangered Asiatic lion is very low — only **523 animals are present in the Gir forests**.

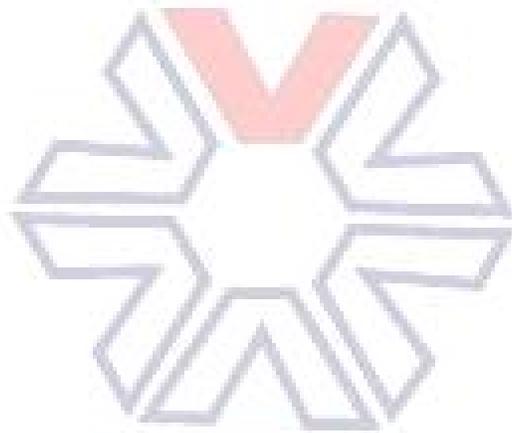
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### **Facts for Prelims:**

- ❖ **Taiwan legalizes same-sex marriage:**
  - Taiwan has just become the **first Asian country to legalise same-sex marriage**.
  - With a **thumping 66:27 vote**, **Taiwan's Parliament** on recently passed a law granting its **homosexual citizens** the right to **marry and even adopt children**.

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LUCKNOW

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