**RISAT-1**

Radar Imaging Satellite 1 or RISAT-1 was a satellite that India made and used for studying the Earth. It was built and operated by the Indian Space Research Organisation (ISRO). It was the second satellite in the RISAT series. This satellite had a special kind of radar called C-band synthetic-aperture radar (SAR) that operated at a frequency of 5.35

The satellite RISAT-1 was launched a few years after RISAT-2. The RISAT-2 had a radar that was built by Israel and worked at a higher frequency. After the Mumbai attacks in 2008, the Indian government decided to prioritize RISAT-2 over RISAT-1. As a result, the launch of RISAT-1 was delayed by a few years.

When RISAT-1 was launched, it weighed about 1,858 kg, which is a lot. This made it the heaviest satellite made by India for studying the Earth, and it was also the heaviest satellite launched by a Polar Satellite Launch Vehicle. The satellite had some special features that allowed it to take pictures of the Earth both during the day and night, even when it was cloudy outside.

This mission cost around ₹4.90 billion (US$61 million) to complete. Out of this amount, ₹3.79 billion (US$47 million) was spent to make the satellite itself, and the remaining ₹1.11 billion (US$14 million) was spent on launching it into space. The satellite was designed to work for about five years.

**Launch:**

RISAT-1 was launched on 26th April 2012 at 00:17 UTC (05:47 IST). A Polar Satellite Launch Vehicle, flight number C19 was used to launch the satellite, which was flying in the XL configuration with extended length solid strap-on boosters. The launch took place from the First Launch Pad of the Satish Dhawan Space Centre in Sriharikota, Andhra Pradesh. This launch was the twenty-first flight of the PSLV and the third flight of the PSLV-XL configuration. It was also the nineteenth successful launch.

After RISAT-1 was launched, it was put into an orbit that was 470 km high and had an inclination of about 97 degrees. Over the next two days, RISAT-1 increased its height using its own engine to reach its final operational orbit. This orbit is at an altitude of 536 km and is designed to synchronize with the sun, crossing the Equator at 06:00 local time. The satellite then started its regular operations which happen every 25 days.

**End of mission**

In response to a question asked in Parliament, the Department of Space announced a list of operational satellites on July 26, 2017, but RISAT-1 was not included in the list. In the Department of Space's Annual Report for 2017-18, RISAT-1 was later confirmed to be non-operational.