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From carrying parts of the first rocket on a Bicycle to carrying 104 Satellites on a single Rocket.

The Story of - ISRO.

A Thread ■■

1/ India's journey into the space research began with the radio waves and ionosphere research conducted by S K Mitra in the 1920s.

2/ From 1920s to 1940s, S K Mitra and his group conducted tons of experiments and investigations about the ionosphere that seeded the interest in the ionosphere, cosmic rays, and space research in India.

3/ The late 1940s is when researchers in India started coordinating space research. In 1945, Dr. Homi Bhabha established the Tata Institute of Fundamental Research (TIFR) with financial support from the Sir Dorabji Tata Trust.

4/ Around the same time, in 1947, Dr. Vikram Sarabhai had returned to India and established Physical Research Laboratory (PRL) in Ahmedabad to further research on cosmic rays after his doctorate from Cambridge.

5/ By the 1950s, TIFR had gained prestige in elementary particle physics and cosmic ray physics. And in 1954, the Department of Atomic Energy was established and was responsible for funding atomic and space research in India.

6/ When Russia launched the world's first-ever satellite, Sputnik, in 1957, everyone realized the potential and importance of satellites and space research.

7/ Jawaharlal Nehru, India's then and first Prime Minister, gave the responsibilities of space research to the Department of Atomic Energy (DOA).

8/ In 1962, Dr. Vikram Sarabhai established the Indian National Committee for Space Research (INCOSPAR) as a part of TIFR with the support of Dr. Homi Bhabha and took over the space research responsibilities from DOA.

9/ Dr. APJ Abdul Kalam was one of the early members of the INCOSPAR committee that was set up by Dr. Vikram Sarabhai. The main goal of INCOSPAR was to formulate space research in India.

10/ By the end of next year, INCOSPAR launched India's first-ever rocket from Thumba, Kerala.

11/ The interesting thing about India's first rocket launch is the location. Thumba was the ideal location to conduct upper atmospheric studies; a rural area otherwise.

12/ Undoubtedly, Thumba did not have the launchpad and research facilities at the time to make the launch possible.

13/ With the request from Dr. Vikram Sarabhai and his team, St. Mary Magdalene Church in Thumba was converted into a workshop for the rocket launch and the Bishop's house was converted into an office for the scientists of INCOSPAR.

14/ Since Thumba and INCOSPAR’s new base did not have canteen facilities, scientists had to cycle to the Thiruvananthapuram Railway Station for their breakfast and dinner every day.

15/ Back then, to make India's first rocket launch possible, some rocket parts had to be transported to the launchpad on bicycles.

16/ On 21st November 1963, India successfully launched its first-ever rocket - just one year after INCOSPAR was established.

17/ 6 years later, on India's 22nd Independence Day - 15th August 1969, ISRO was formed out of INCOSPAR.

18/ In 1972, the Department of Space (DoS) was formed and ISRO became a part of it.

19/ On 19th April 1975, Aryabhata - India's first satellite was launched from Russia. The project cost was just a little over Rs. 3 Crore at the time.

20/ In 1980, ISRO successfully launched and deployed Rohini RS-1. It was also the first successful launch by Satellite Launch Vehicle (SLV-3). Dr. APJ Abdul Kalam was the project director of SLV-3.

21/ A year later, ISRO wanted to launch an experimental communication satellite - Ariane Passenger PayLoad Experiment (APPLE).

22/ But before the launch, the satellite antenna had to be tested, and was only possible to test it under a thermal blanket - the kind of facility that ISRO did not have at the time.

23/ APPLE was then put on a bullock cart to provide a non-magnetic atmosphere and test the antennas in a field.

24/ All the tests conducted by ISRO helped launch APPLE successfully on June 19, 1981, from Kourou, French Guiana.

25/ In 1994, ISRO successfully launched its first Polar Satellite Launch Vehicle (PSLV) mission. Later on, PSLV became the choice of launch vehicles for Chandrayaan-1 and Mangalyaan missions.

26/ At one point of time in 2004, ISRO’s team had met India’s then-President Dr. ABJ Abdul Kalam to discuss India’s first lunar mission aimed at orbiting the moon from a distance. During the meeting, Dr. Kalam suggested, "Why not land on the Moon instead of just orbiting it?"

27/ 4 years later, Chandrayaan-1 - India's first lunar mission was launched to land on the Moon and explore it.

28/ In November 2008, Chandrayaan-1 discovered water on the Moon in the form of ice giving a huge boost to ISRO and India's position in space research. India also became the 4th country to place its flag insignia on the Moon. ■■ A historic year for India and ISRO!

29/ 5 years later, in 2013, ISRO successfully launched the Mangalyaan Mission - also known as Mars Orbiter Mission.

30/ On 24 September 2014, when Mangalyaan entered the orbit of Mars, India became the first country in the world to do so in the very first attempt.

31/ An impressive feat about the Mangalyaan Mission is that ISRO successfully carried out the whole mission with an estimated cost of $74M only. For comparison, the budget for the movie ‘Gravity’ was $100M.

32/ 2017 was a record-breaking year for ISRO - it launched 104 satellites on a single rocket. Russia previously held the record for launching 37 satellites in 2014. Current record holder: SpaceX as of January 2021; 143 satellites.

33/ In early 2020, ISRO announced that it is aiming at India's 3rd Lunar Mission - Chandrayaan-3 by sometime in 2021.

34/ ISRO's future plans include a manned mission 'Gaganyaan' by 2022, a follow-up of the Mangalyaan by 2024, and build a space station in the coming years as a follow-up of the Gaganyaan programme.

END/ However, one of ISRO’s biggest achievements is inspiring generations to dream bigger & aim higher.

Shoutout to @VishwakantB for helping me with the research. Refs/further reads: https://t.co/TDzSWYVkfq
PS: Reposted with updates.

Stay tuned & follow for another thread soon.