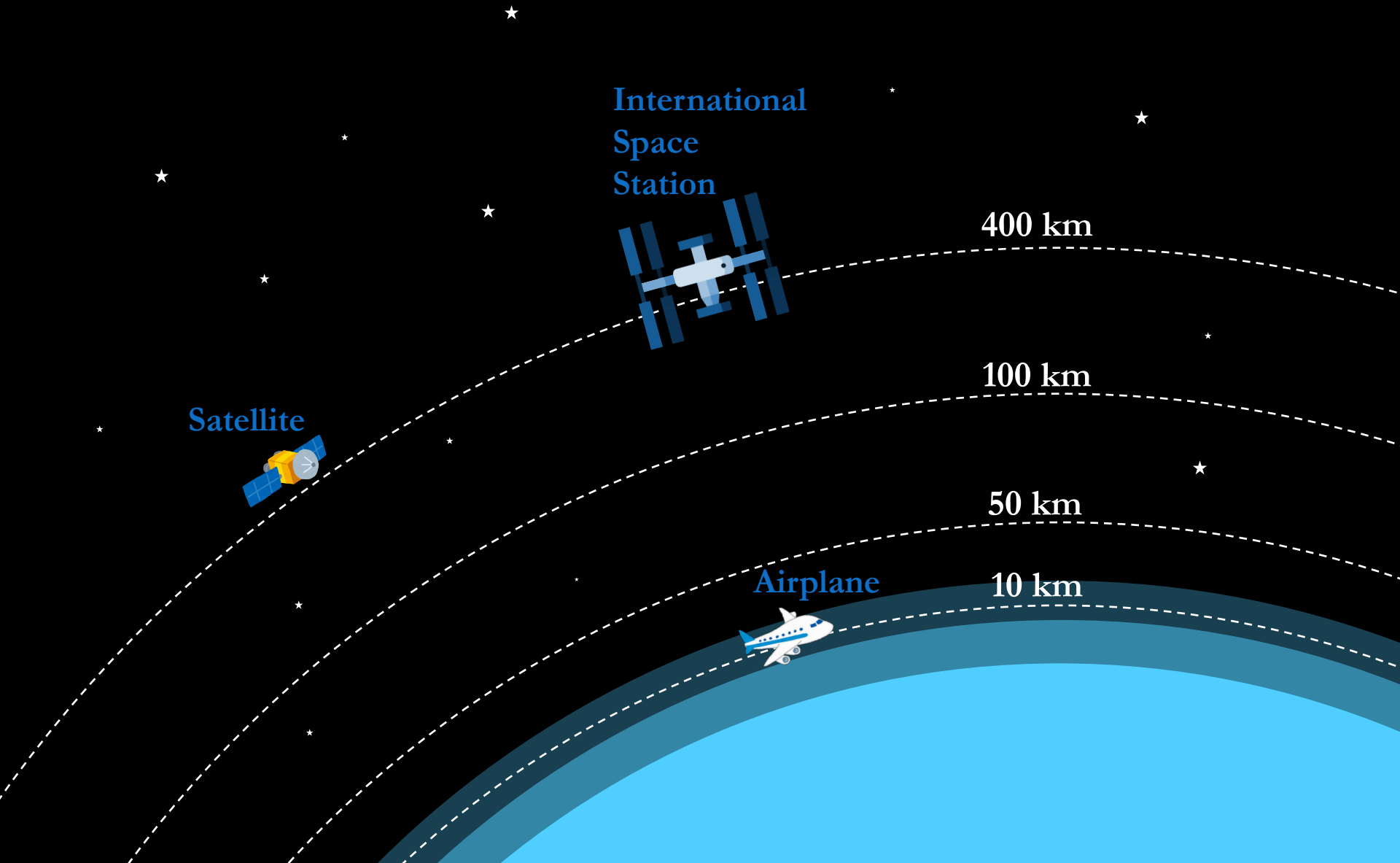


Introduction Into Space

Space Environment





Getting Into Space

Currently, **using rocket** is the only available method for human to access space

Falcon Heavy Specification

Total Mass	1,420,788 kg
Payload to LEO	63,800 kg
Payload Mass Fraction	0.045 (4.5 %)

Rocket is the **most amazing** vehicle,
but it also the **most inefficient** vehicle in
the world

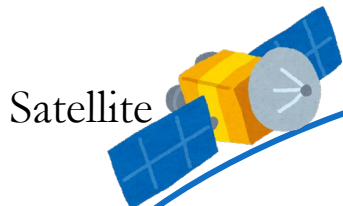


Falcon Heavy Launch



Launch Services

International Space Station

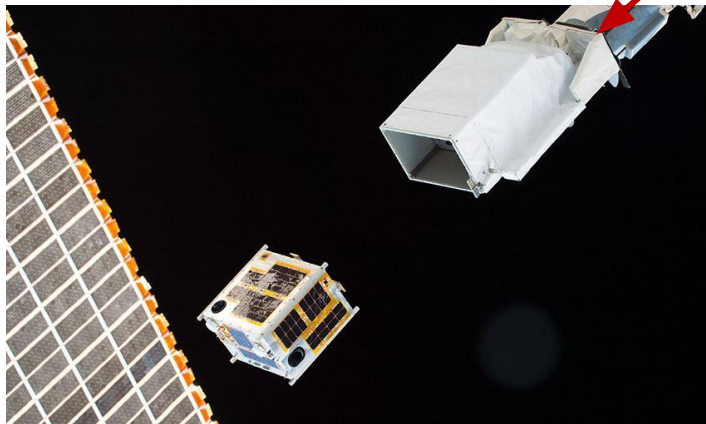


Satellite

Deploy into orbit

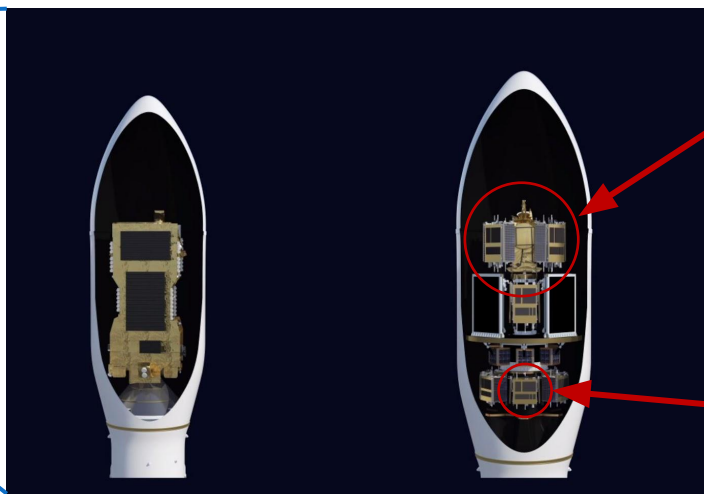
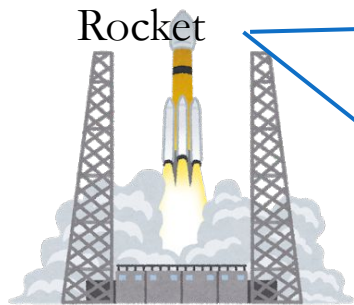


② Deploy from International Space Station



① Use Rocket Ride-sharing Program

Rocket



Main satellite

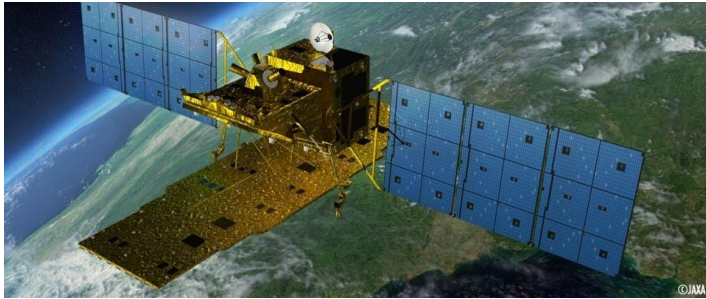
Small satellite





What Can We Do in Space?

Near earth application



Improve our daily life using satellite

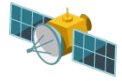
- Weather forecasting
- Navigation (Google map...)
- Communication (TV broadcast, telephone service...)
- Remote sensing application (Agriculture application...)

Deep space exploration

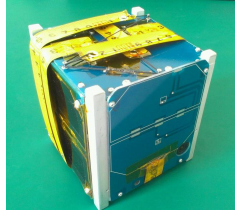


Answering the fundamental questions

- Are we alone in this universe?

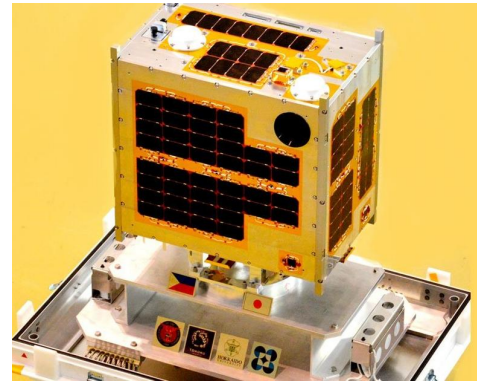


Space Development in ASEAN



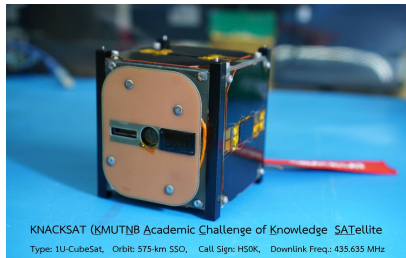
Vietnam

- Satellite Project: PicoDragon (2013), MicroDragon (2019)
- Establishment of **Vietnam National Space Agency** (2018)



Phillipines

- Satellite Project: DIWATA-I, II (2016, 2018)
- Establishment of **Philippines Space Agency** (2019)



Thailand

- Satellite Project : KNACKSAT (2018)
- In-house development



Myanmar

- Satellite Project: Microsatellite Project (2021)

NUMBER OF SATELLITES ON ORBIT SOUTHEAST ASIAN COUNTRIES



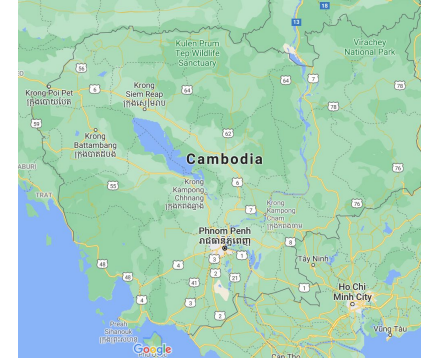
source: N2YO.com



Space Development in Cambodia

1) Cambodia is new to space development:

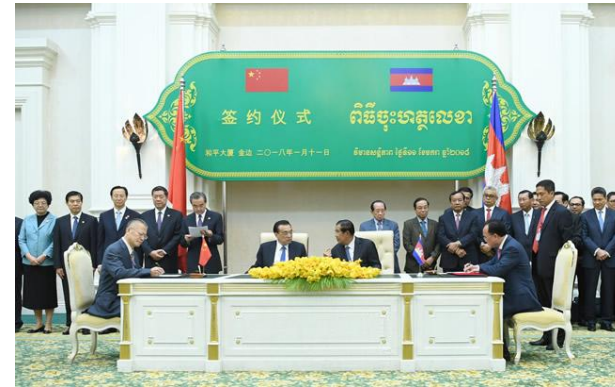
> no satellites, no courses, no institutions.



2) Government interest in space utilisation.

> Satellite project proposed by **Royal Blue Sky** (2011)

> Government signed a joint agreement with **China Great Wall Industry Corporation** to develop the “Techo-1” satellite (2018)



- Too expensive
- Not focus on developing **local human resources**

This is not a self-sustainable solution in long term