



Exploració espacial

Joan Alcaide Núñez – 20 d'Octubre de 2023

En què penseu
quan escolteu
la paraula
ESPAI?





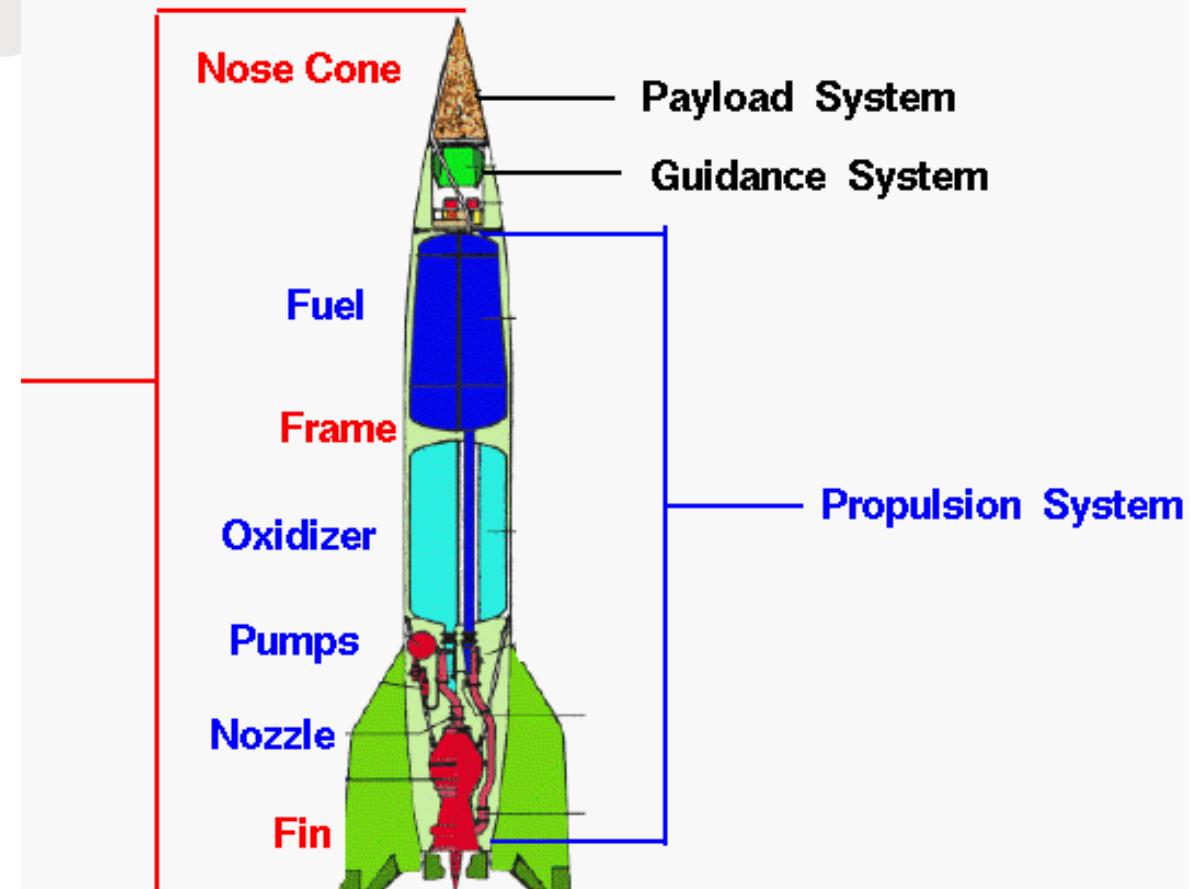
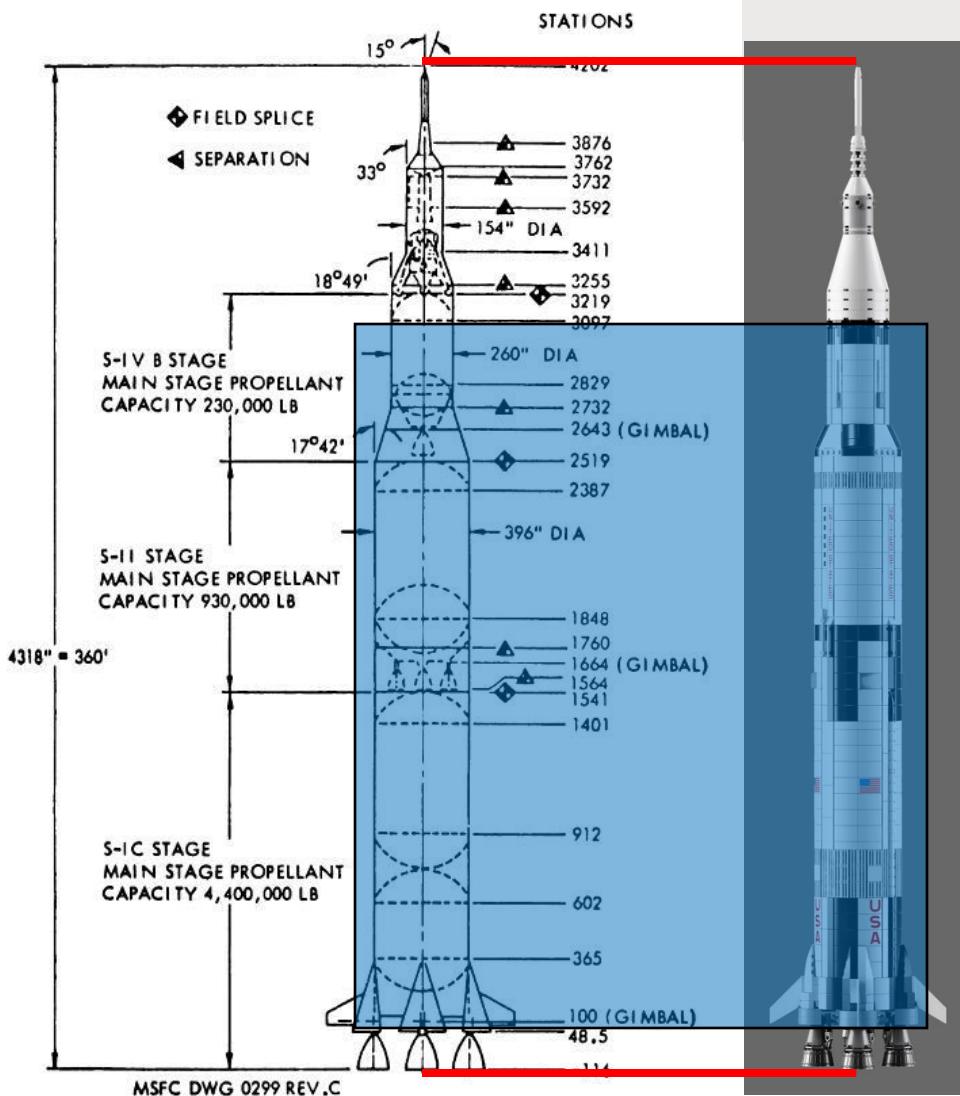
Exploració de l'espai: la
carrera espacial

Missions Apollo | Objectiu: arribar a la lluna



Com funciona un coet?

Rocket Parts

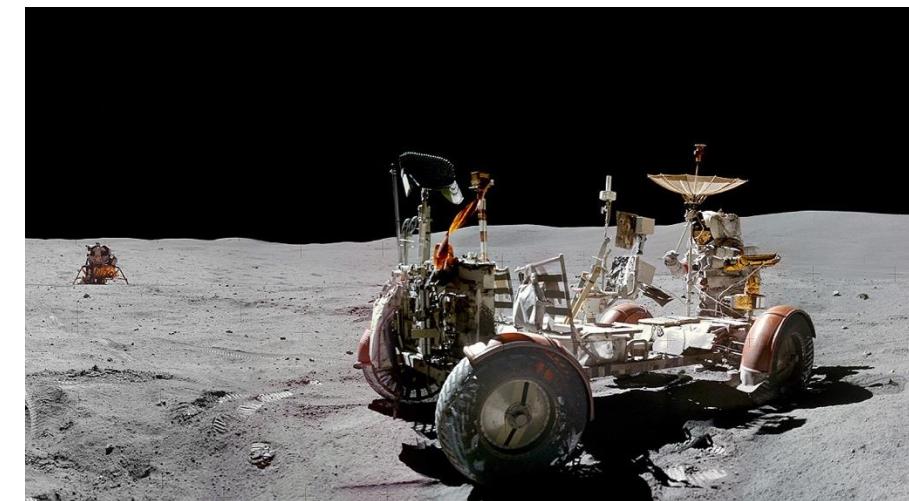


“Un petit pas per a l’home, un gran salt per la humanitat”



Resultats de les missions APOLLO

Humans a la lluna	12 astronautes
Duració de les caminades lunars	80 h i 25 min
Roques recollides	2 200 roques (11 000 mostres), 382 kg



Exploració de l'òrbita de la terra

Transbordador espacial



Llançament



Total: 135 missions

COLUMBIA



CHALLENGER



DISCOVERY



ATLANTIS

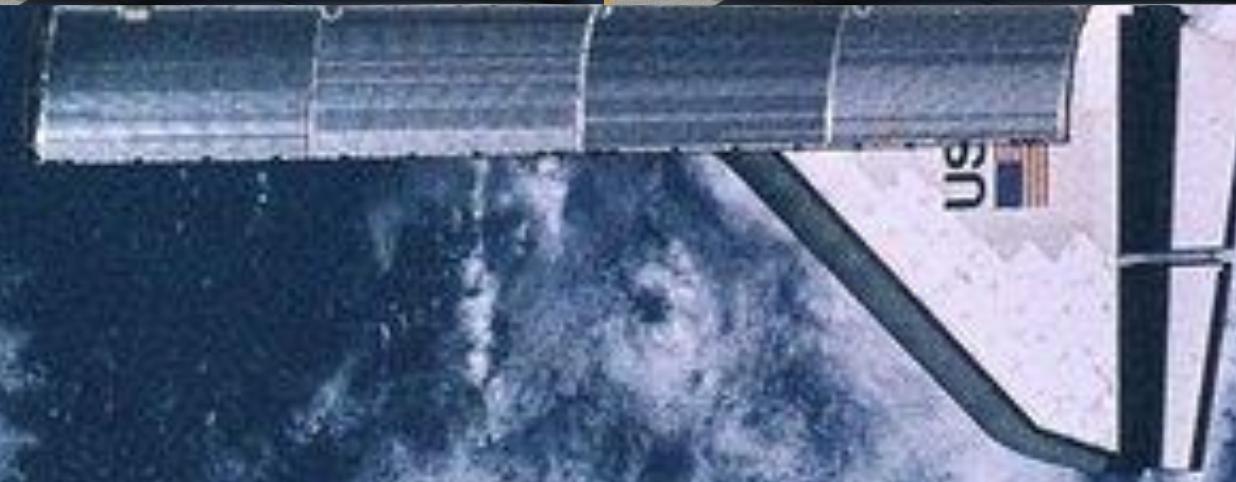


ENDEAVOUR

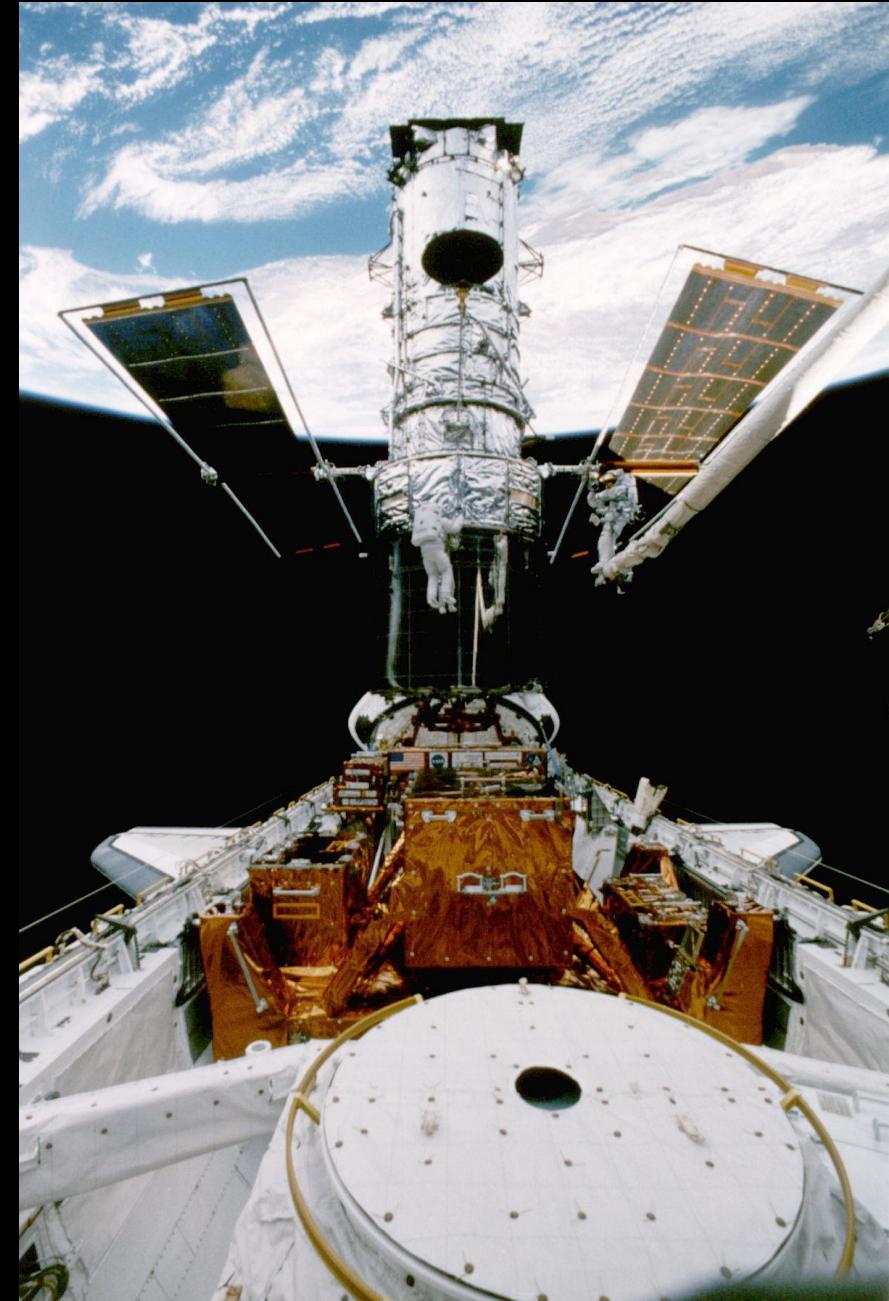
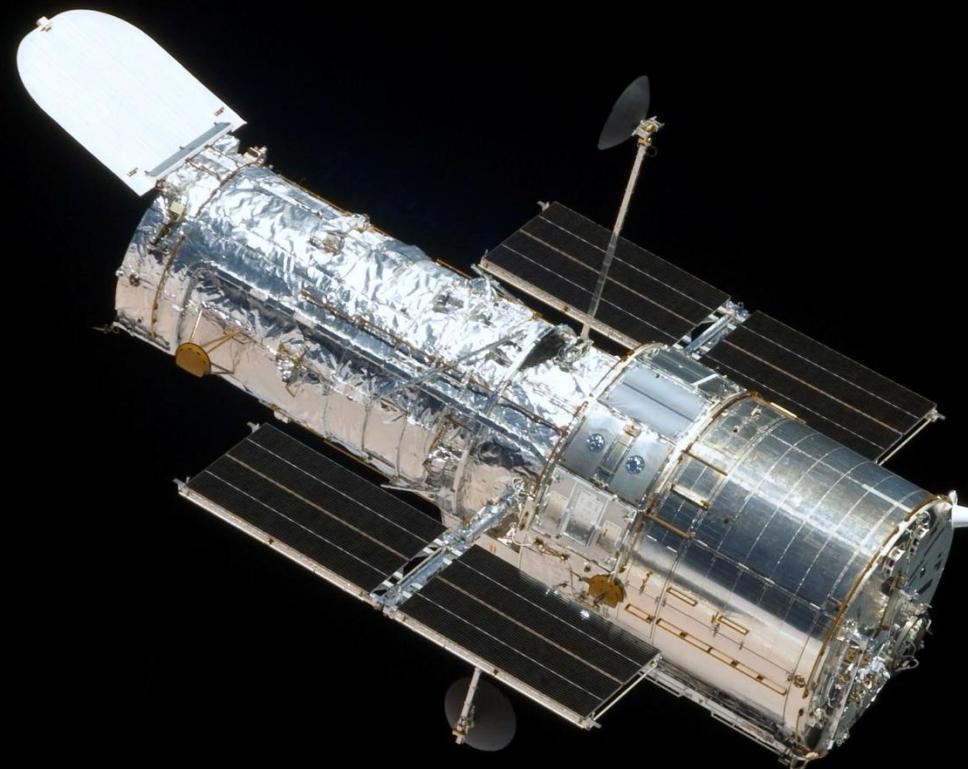




Enterprise



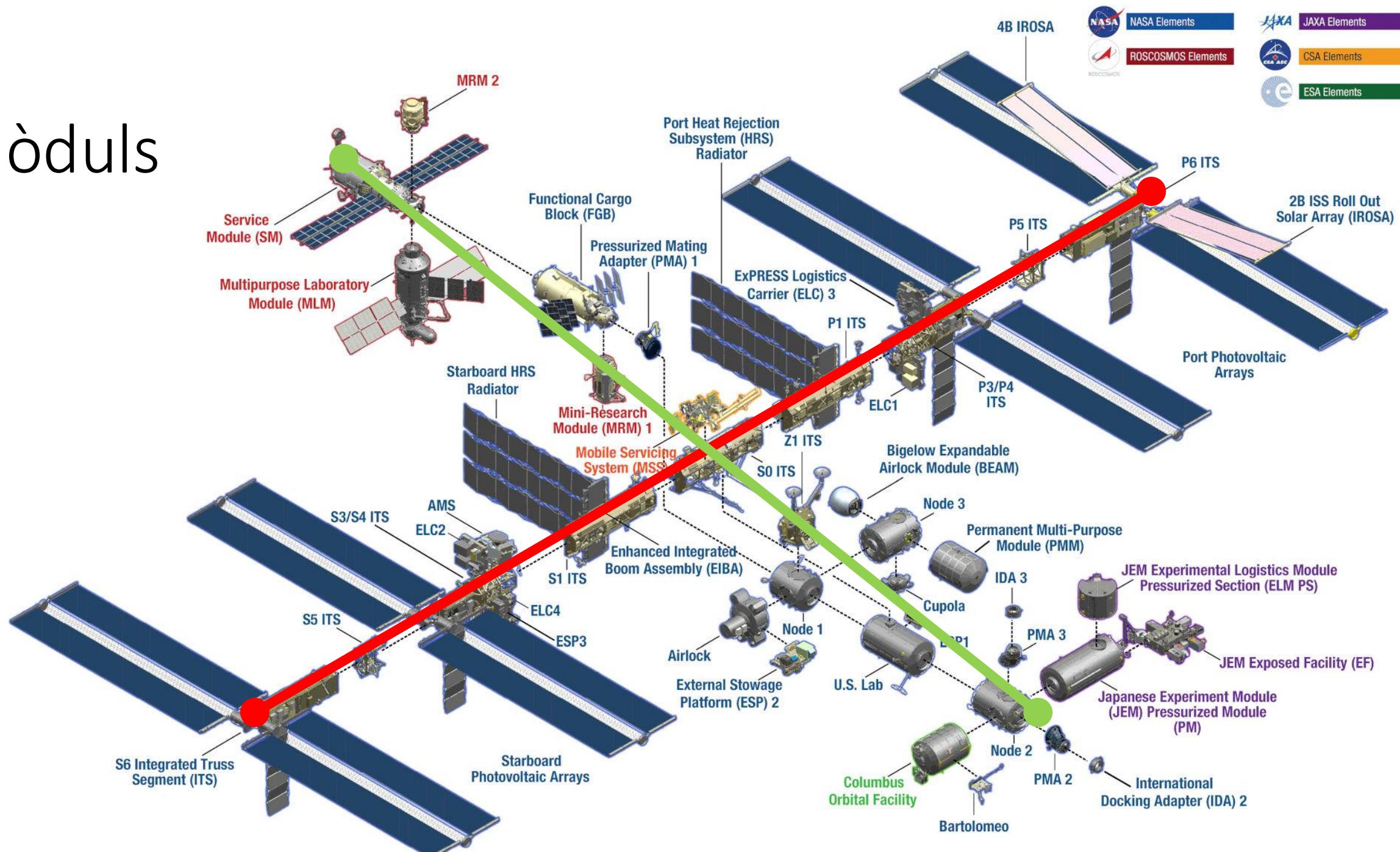
Llançament del HST





Construcció de l'ISS

Mòduls



Mòduls

4B IROSA



NASA Elements



ROSCOSMOS Elements



JAXA Elements



CSA Elements

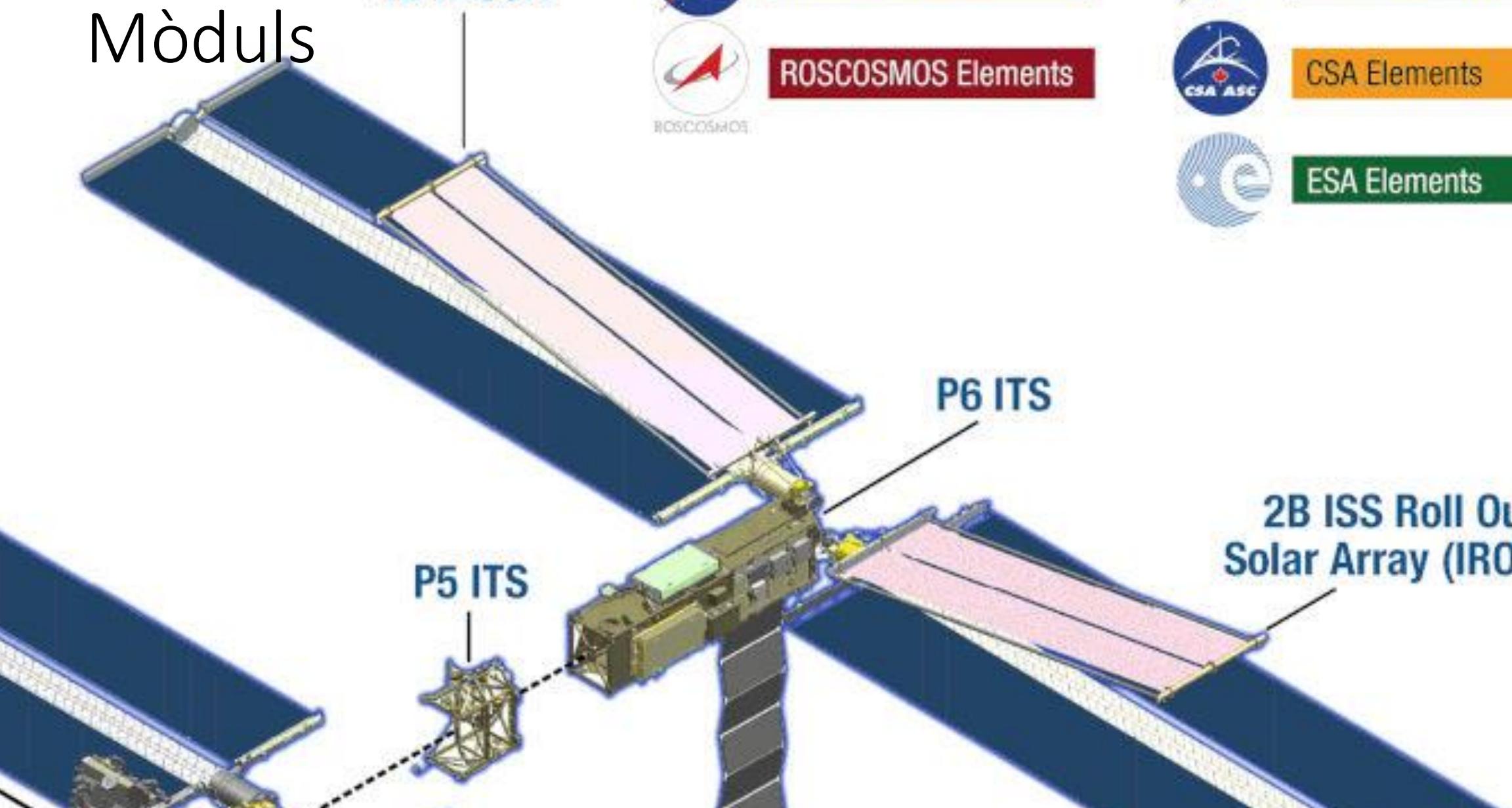


ESA Elements

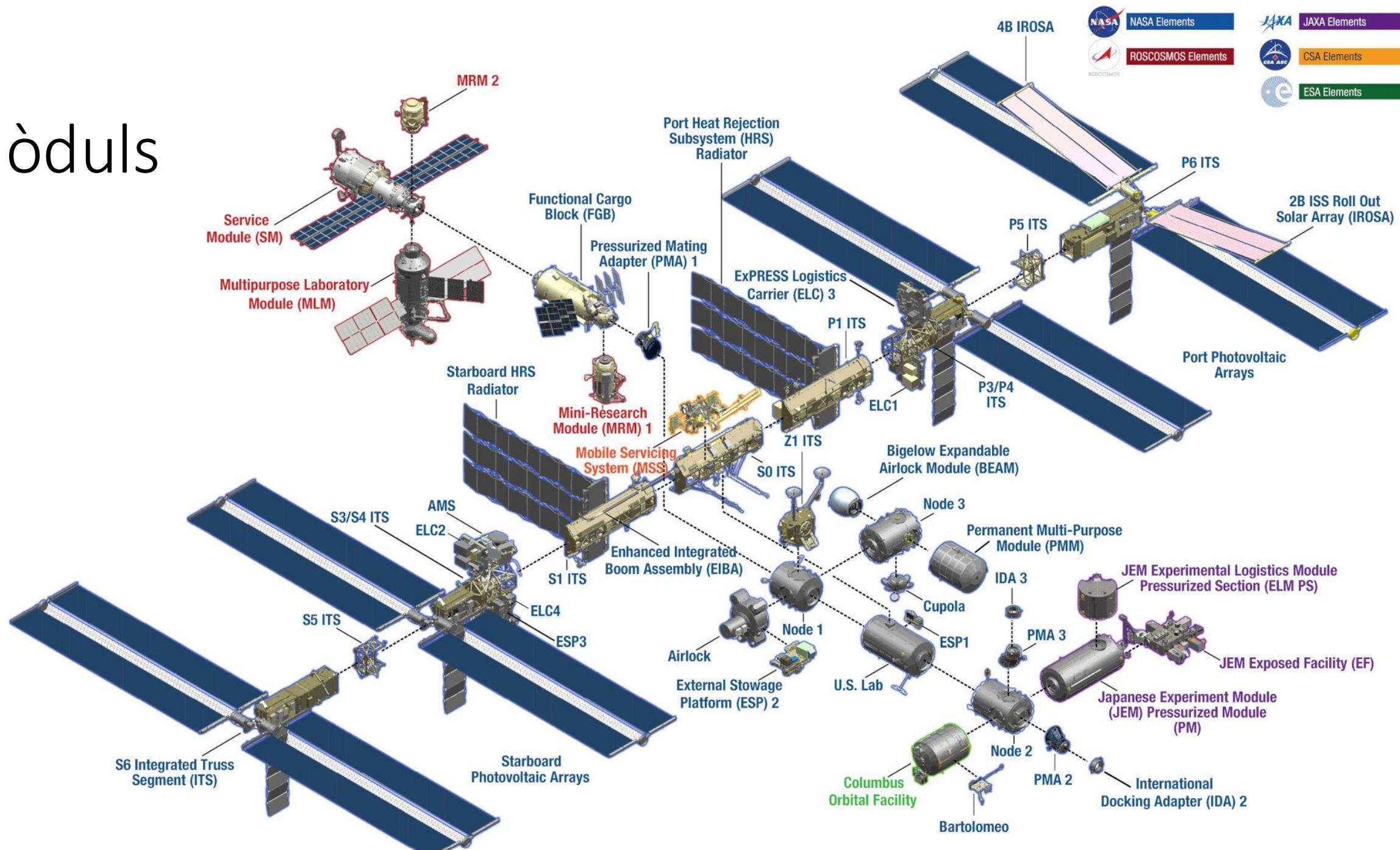
P6 ITS

P5 ITS

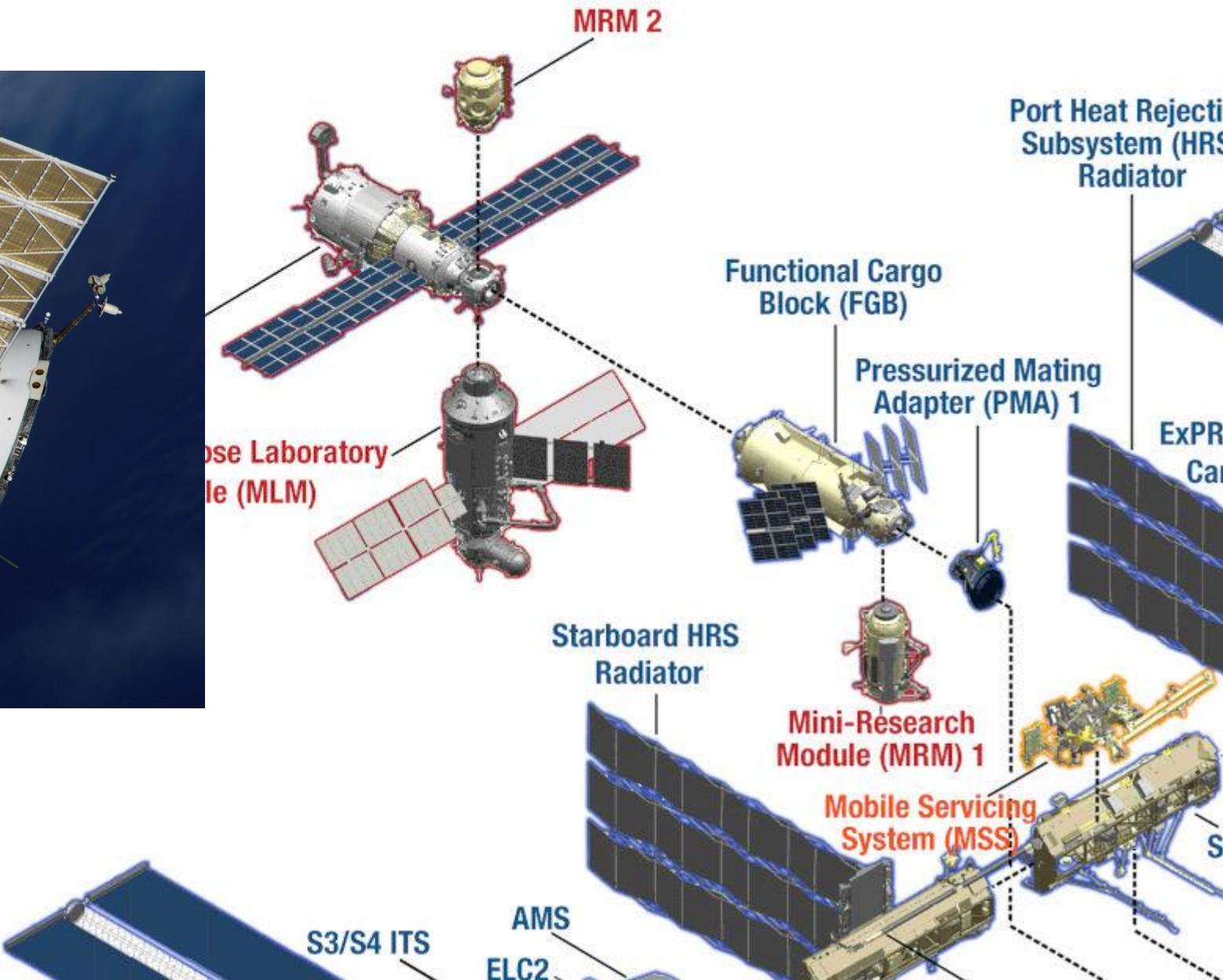
2B ISS Roll Out
Solar Array (IROSA)



Mòduls



Mòduls

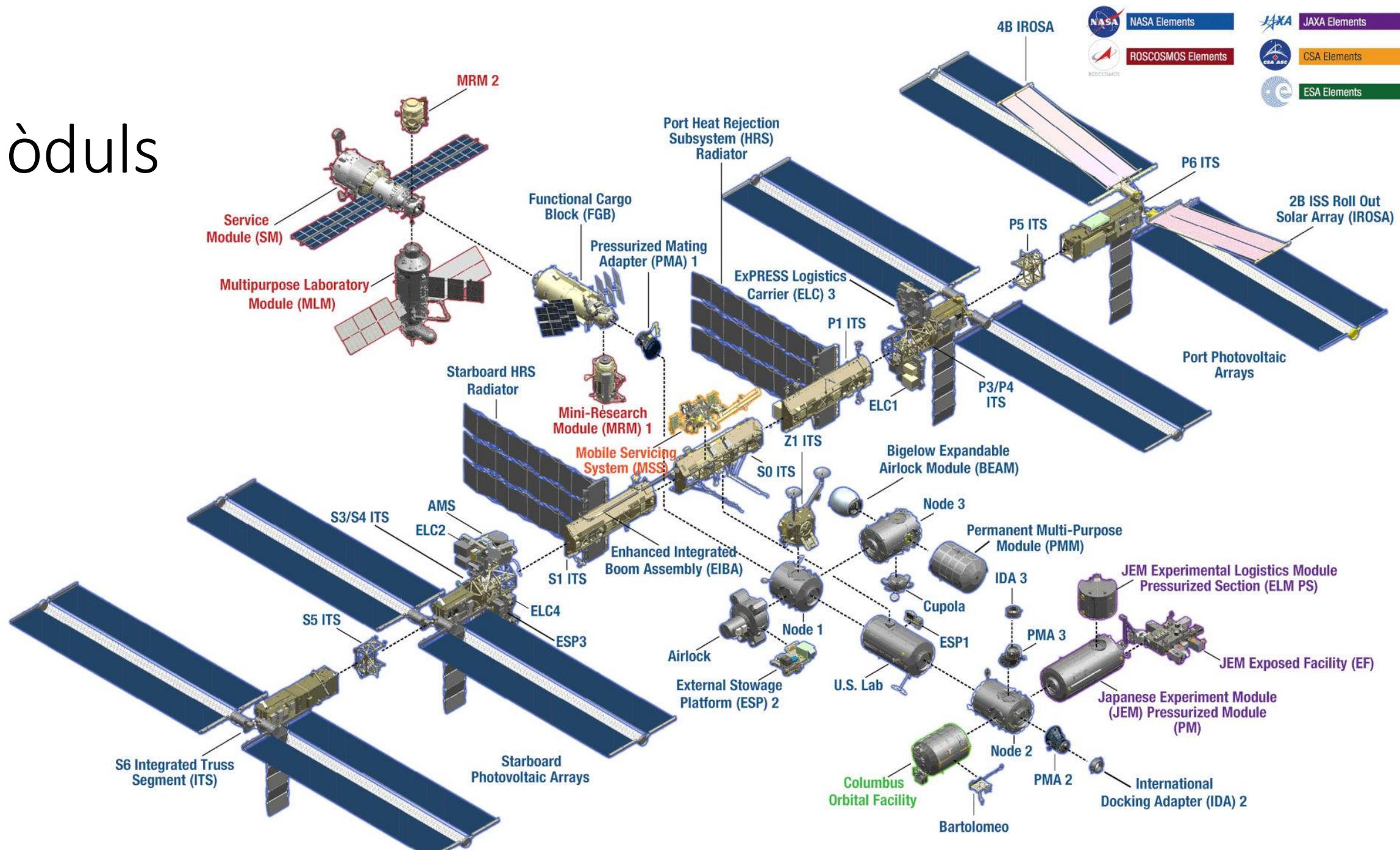




Mòduls



Mòduls













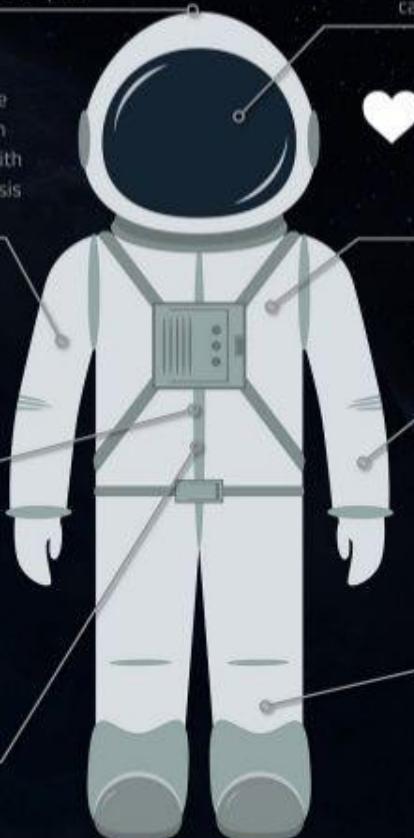
THE EFFECTS OF SPACE TRAVEL ON ASTRONAUTS

Humans are actually **TALLER** in space. Lack of gravity causes vertebrae to expand, which lengthens the spine.

Astronaut loses the same amount of **bone mass** in one month that a woman with menopausal osteoporosis loses in one year.

Due to high stress and cardiac rhythm disruption in low gravity, astronauts only **sleep 4 hours** per night.

In space, astronauts are exposed to high levels of **radiation**, which can lead to radiation sickness, cancer, central nervous system effects, and degenerative diseases.



Space travel gradually flattens the back of the eyeball. **49%** of astronauts report vision problems that can persist for years after returning.

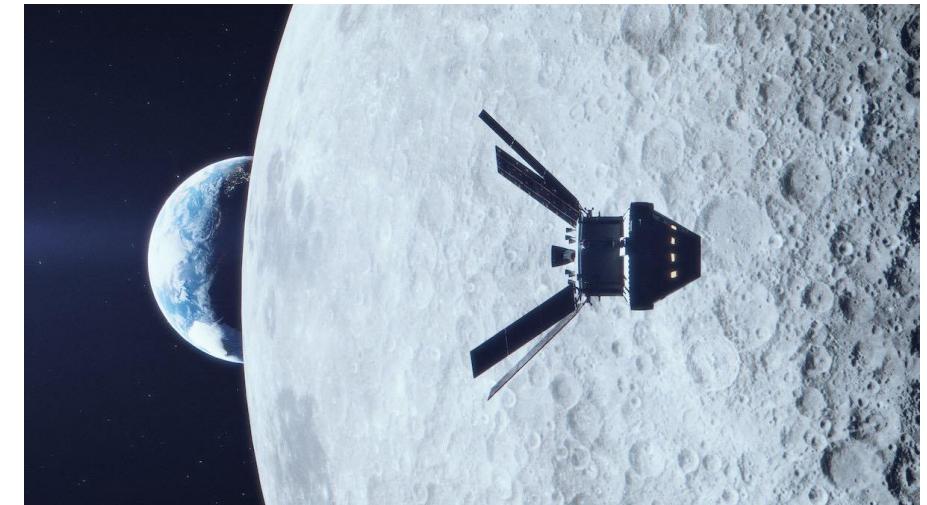
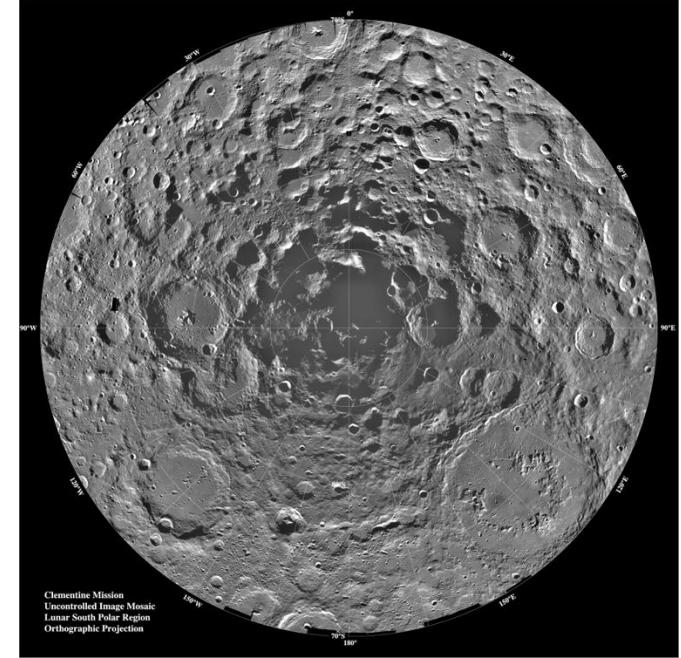
Loss of cardiac muscle leads to **reshaping of the heart**, which can become more spherical. Irregular heartbeats and heart muscle hardening have also been observed.

Exposure to reduced gravity causes muscle mass to **shrink** almost immediately.

Astronauts have been shown to lose **20% aerobic capacity** in just two weeks.



Missions
ARTEMIS:
retorn a la
lluna





HUMANITY'S RETURN TO THE MOON



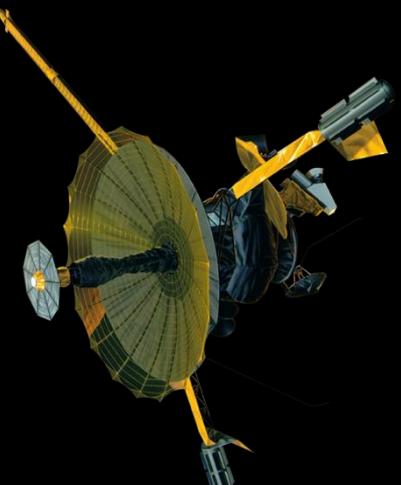
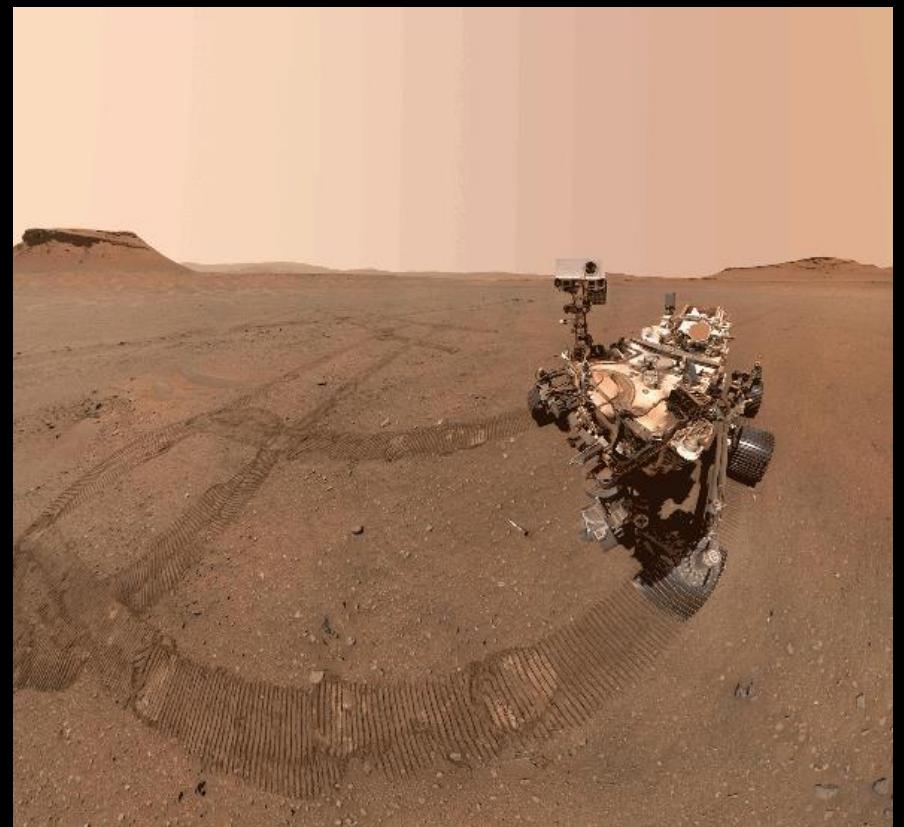
Moon to mars

Size to Scale
(distance not to scale)



Exploració del sistema solar

Exploració robòtica





Moltes gràcies per la vostra atenció!