

# Director General's Annual Press Conference



Josef Aschbacher  
ESA Director General  
Paris, 18 January 2022



#SpaceAmbition

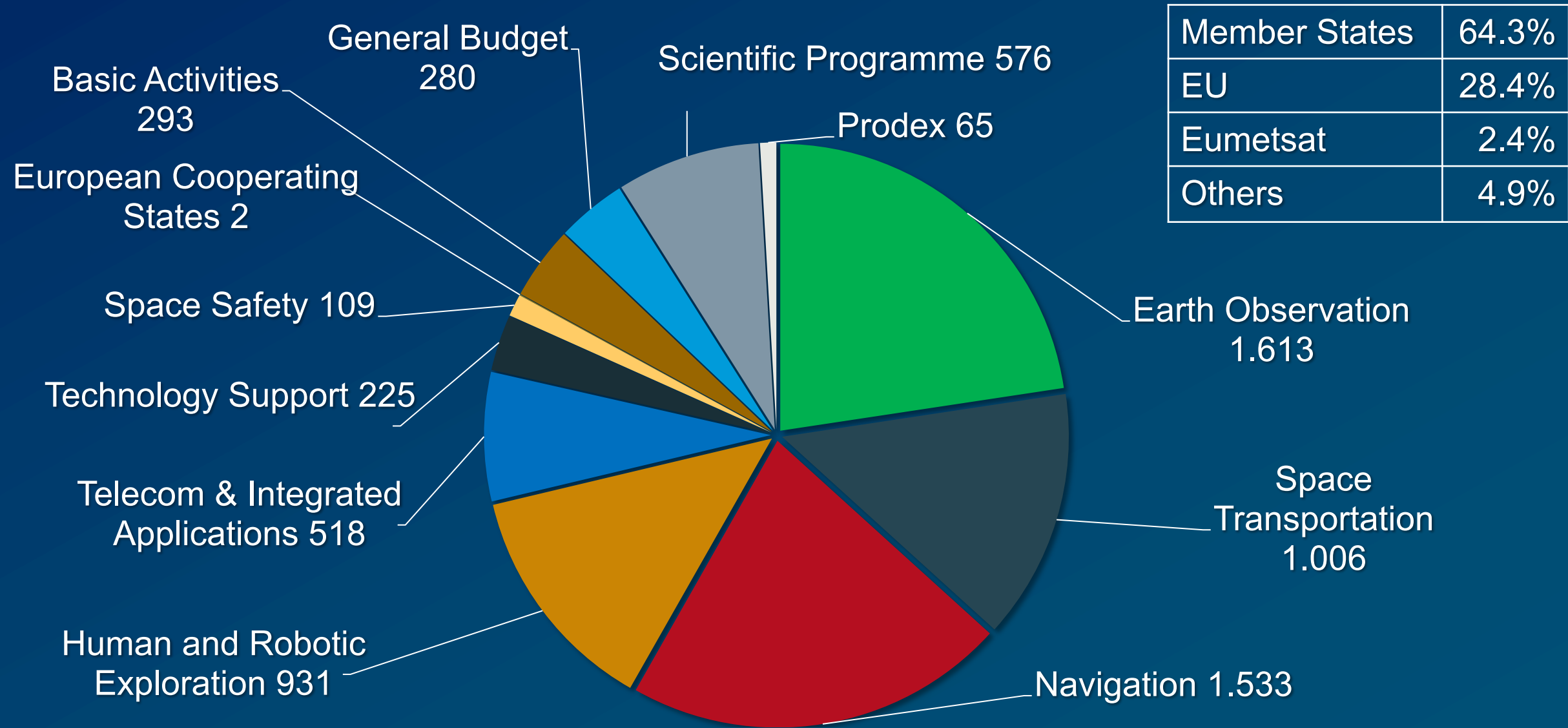
ESA UNCLASSIFIED – For ESA Official Use



→ THE EUROPEAN SPACE AGENCY



# ESA Budget in 2022: Total 7.152 M €





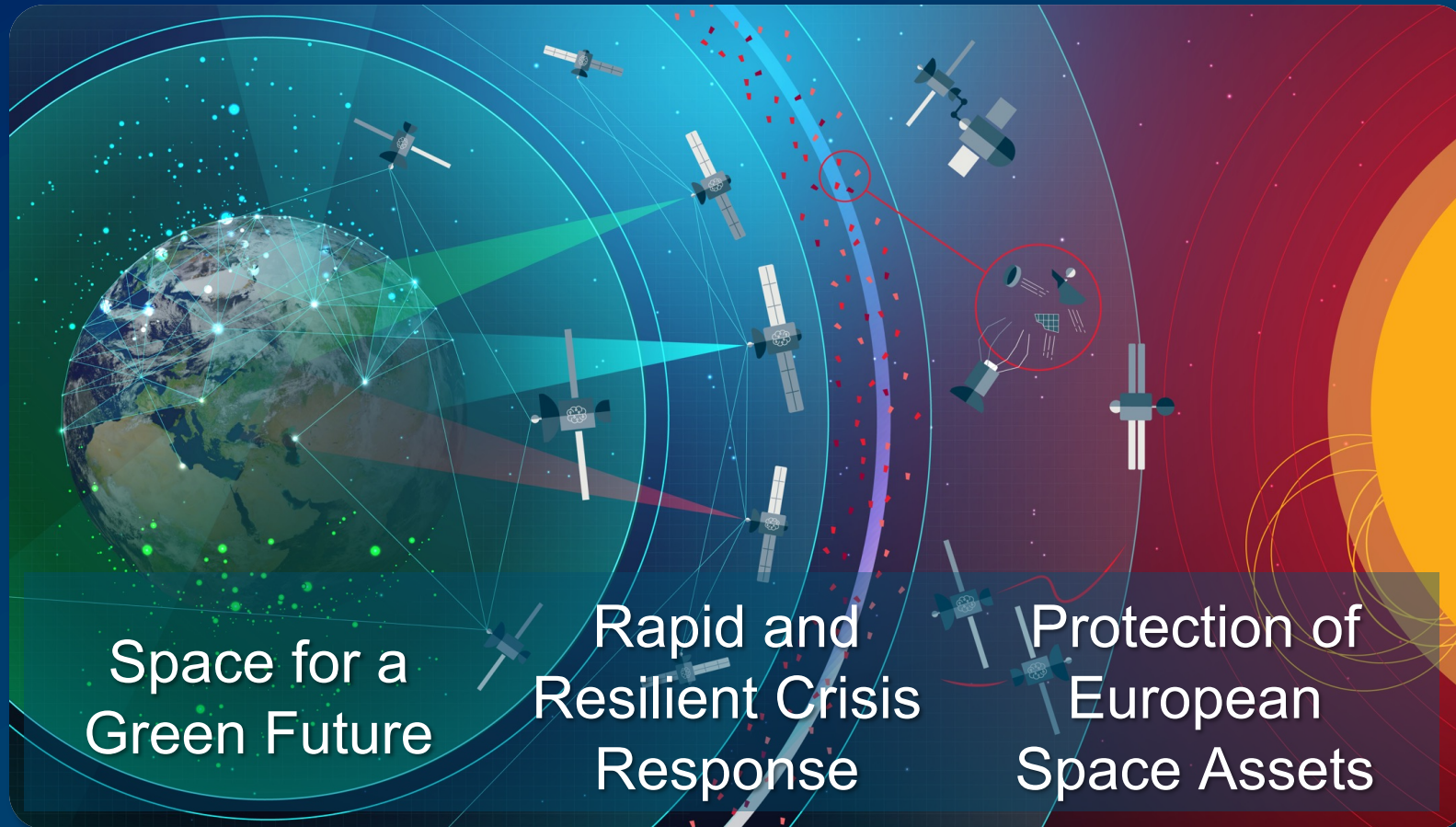
# The acceleration has started

2025  
2024  
2023  
2022



# Accelerating the Use of Space in Europe

## 3 Accelerators



## 2 Inspirators

Icy Moon  
Sample  
Return  
Mission




European  
Human  
Space  
Exploration





# A-1: Space for a Green Future



Quantum  
missions for  
climate

+



Digital Twin  
Earth

+



Green transition  
information  
factories

**+ Accelerating decarbonisation & sustainability**  
**= Supporting the climate neutrality by 2050 objective**







# Sentinel-1B Technical Issue





# Launch of First MTG Satellite



Q4 2022



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# Pioneering world-class science missions for Earth









ESA in dialogue with EC DEFIS and ESA Member States to prepare proposal for CM22

## Principles defined by EC

- ✓ Global
- ✓ Multi-orbital
- ✓ Secure Arch.
- ✓ Innovative
- ✓ Scalable

- ✓ Reliable
- ✓ Cost-effective
- ✓ Ultra-secure connectivity

- ✓ Gvt & Commercial Secure Communications
- ✓ Focus on Europe, Africa, Arctic

Building on EU GOVSATCOM and EuroQCI



# Telecom: Five Innovative Satellite Launches



## First Eurostar Neo

Eutelsat  
Partnership with Airbus DS  
Launch in 2022



## JOEYSAT

Innovative LEO 5G Service  
Partnership with OneWeb  
Launch in 2022

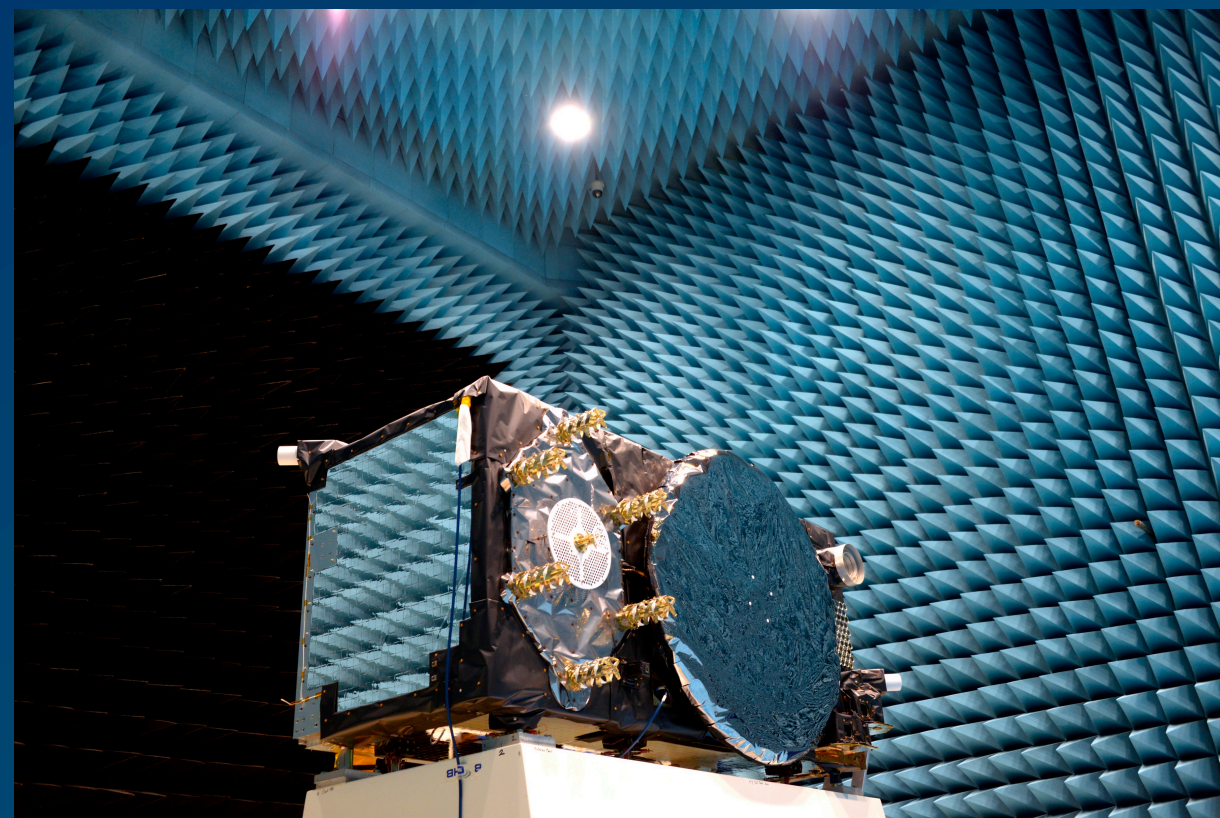
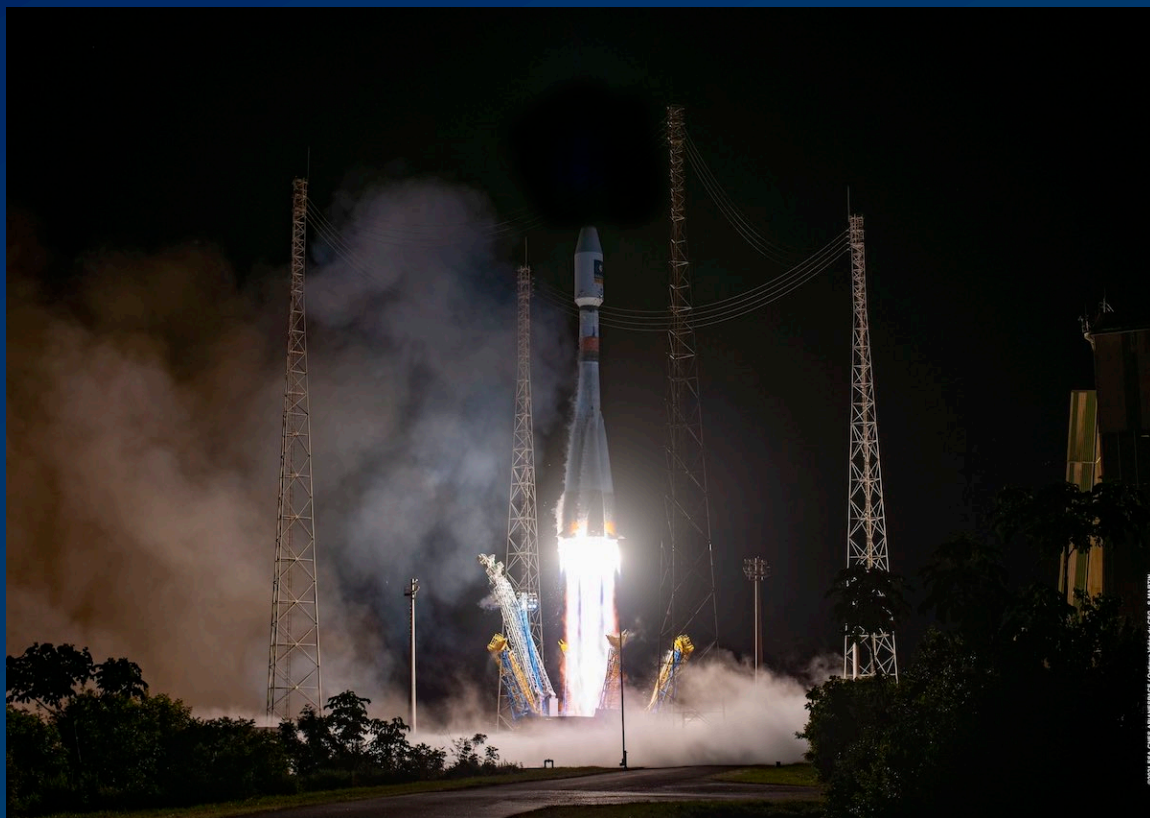


## PIONEER SPIRE

Optical Inter Satellite Link  
3 LEO Cubesat  
2 Launches in 2022



# Navigation: Next Galileo Launches in 2022



**Galileo L12 FM 29-30 March-April**  
**L13 FM 31-32 Sept-Nov**

**Soyuz-Kourou**  
**Soyuz-Kourou**







# Protecting our Space Assets

Watch now at [tv.prime-intra.net](https://tv.prime-intra.net)



## MUSK IN SPACE EUROPEAN SPACE AGENCY CONCERNED

"Colonization, or just doing things in a completely deregulated space, is a concern."

Josef Aschbacher  
Director General, European Space Agency



“Space is essential for daily life. We need to preserve it”

“We need to act now and protect our assets and astronauts”



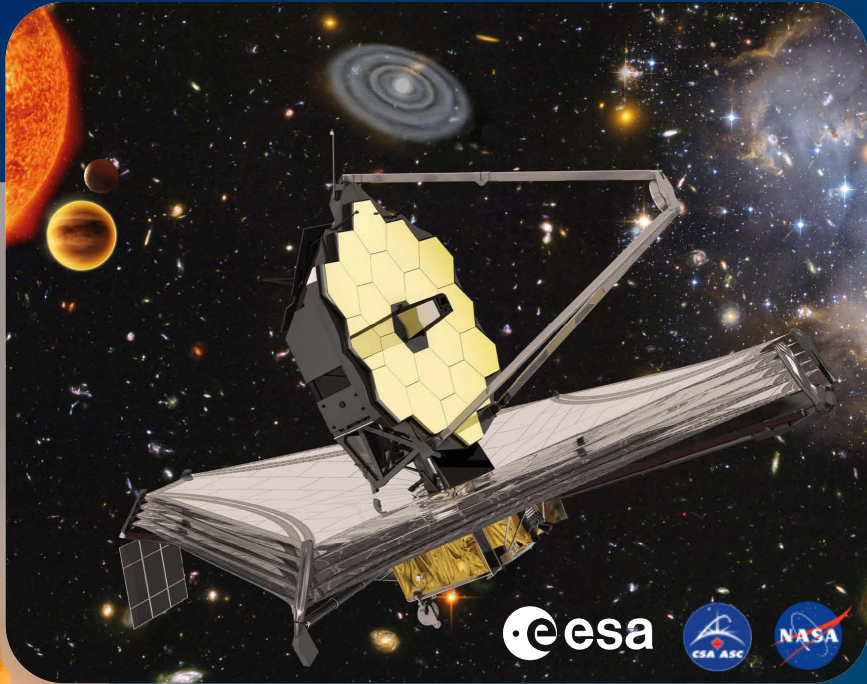
# I-1: Icy Moon Sample Return Mission

Is there life out there?

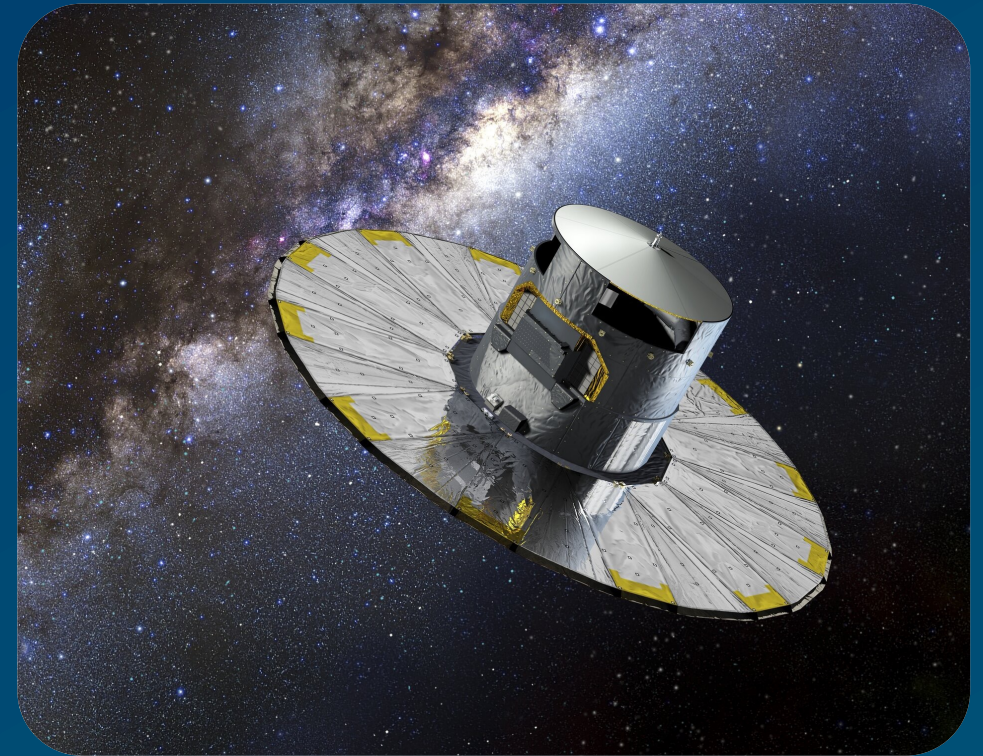




**JWST Early  
Data Release  
Q2 or Q3 2022**



**GAIA  
Data Release 3  
Q2 2022**





# I-2: European Human Space Exploration



→ THE EUROPEAN SPACE AGENCY



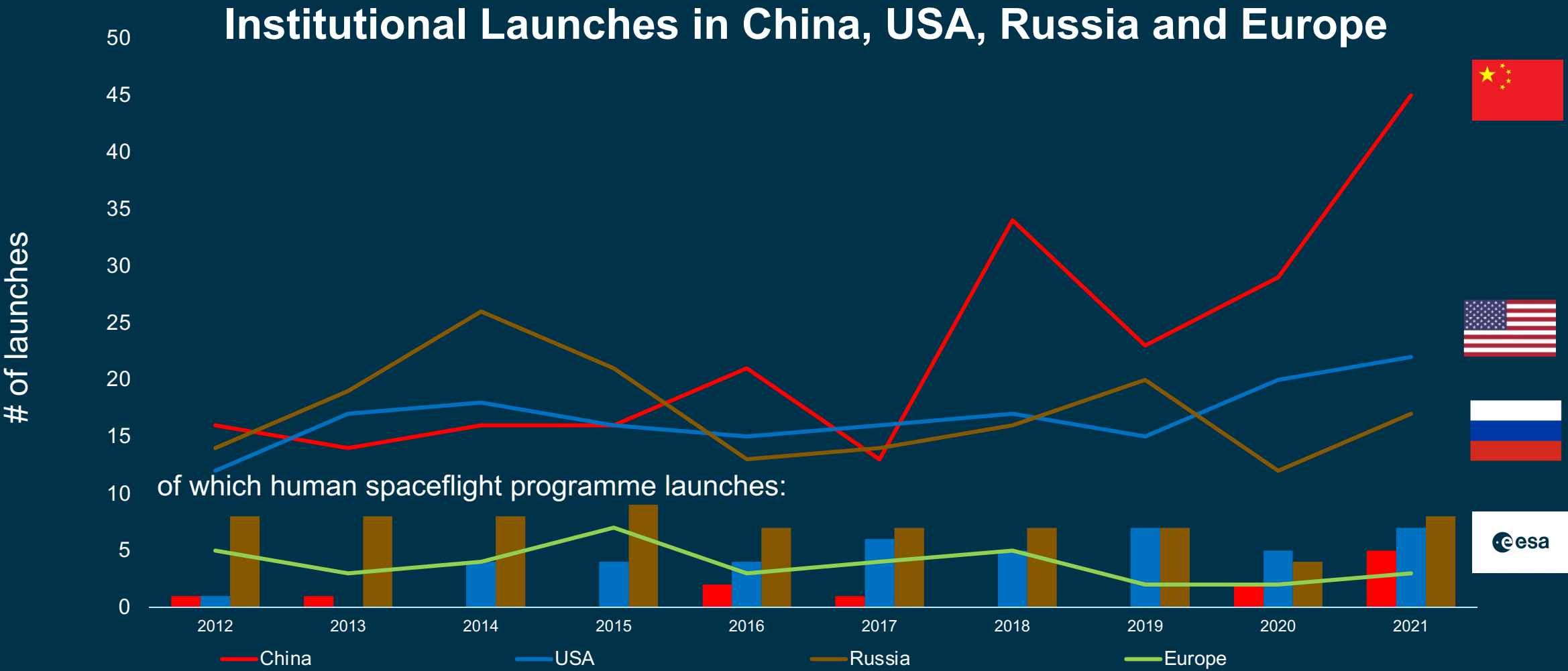
**Ariane 6**  
Towards  
Maiden Flight  
Combined tests  
in Q2



**Vega C**  
Maiden Flight  
May 2022



# Commercial Space Transportation





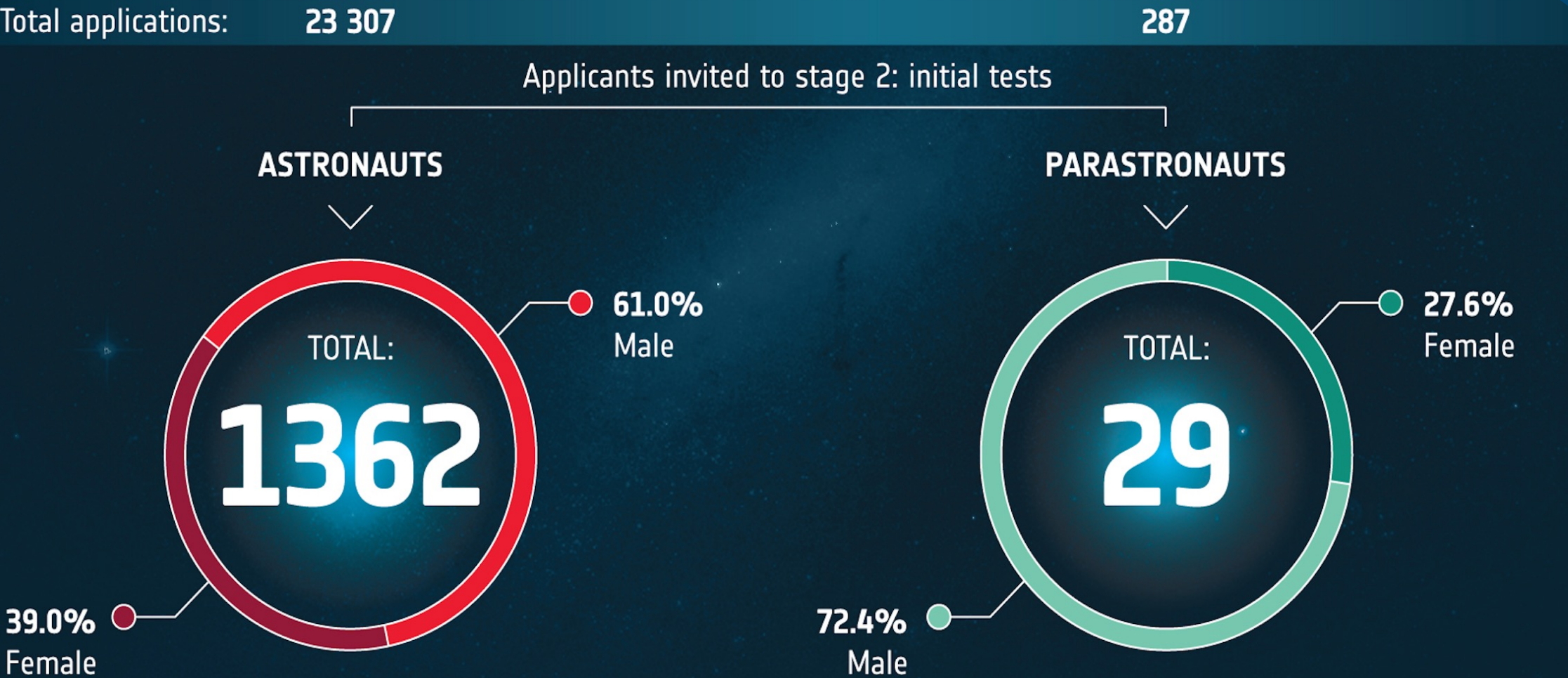
# ESA's Explorers – Today and Tomorrow



**ESA astronauts on the ISS**  
**Q2 2022**











Picture taken by Thomas Pesquet from Crew Dragon capsule during Crew 2 ISS 'fly around' before returning to Earth on 9 Nov 2021

**ESA decision  
to extend ISS  
participation  
until 2030  
expected at  
CM22**



# First ESM on Artemis I is Ready to Go





# Rosalind Franklin Launches to Mars

## September 2022

- ✓ Positive schedule margin
- ✓ 35m main parachute proven
- ✓ Flight software tests on track
- ✓ Operations tests started
- Russian electronics in repair
- Baikonur launch campaign starts in April





# ESA has an Exciting Exploration Plan...



## TERRAE NOVAE 2030+

2020 > 2030

ESA in mutual inter-dependence

2030 > 2040

European-led capabilities



ExoMars  
2016



ExoMars  
2022



Mars Sample Return



Preparing to send humans to Mars



Orion - European  
Service Module



Gateway – permanent  
habitation in deep space



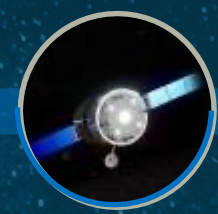
Living and working on the Moon



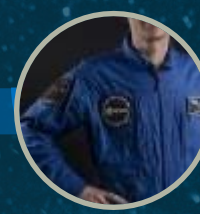
Core ISS Partner



Post-ISS  
Commercial stations



Cargo launch  
and return



Independent  
human transport





# ... but we may still lack some key capabilities ...

## Expected Capabilities by 2030

Expected Capabilities by 2030					
	Crewed space transportation (LEO)	✓	✓	✓	✗
	Crewed super heavy space transportation (beyond LEO)	✓	✓	✓	✗
	LEO cargo vehicle (docking & return)	✓	✓	✓	✗
	LEO crew vehicle (docking & return)	✓	✓	✓	✗
	LEO space station	✓	✓	✓	✓ (ISS)
	Lunar orbit - robotic	✓	✓	✓	✓
	Lunar orbit - human	✓	?	✓	✓ (ESM-Orion)
	Lunar surface - robotic	✓	✓	✓	✓ (EL3)
	Lunar surface - human	✓	✗	?	✗
	Mars orbit - robotic	✓	✓	✓	✓
	Mars surface - robotic	✓	✓	✓	✓
	Mars sample return	✓	✗	✓	✓



# ... notably, transportation for crewed exploration ...

## Around Earth...

### Suborbital



Blue Origin New Shepard

Virgin Galactic SpaceShipTwo



CAS Space

### Orbital crewed



Atlas V/CST-100

Falcon 9/Crew Dragon

Super Heavy/Starship

SLS/Orion

Neutron



Soyuz/Soyuz-MS

Angara A5P/Oryol and Orlyonok

Yenisei/Oryol



LM 2F/Shenzhou

LM 5B/new gen capsule

New gen crewed LV (Moon)



GSLV MkIII/Gaganyaan



## ... and beyond

### USA, Russia, China, India



SLS

Super Heavy

New Glenn



Yenisei

Angara



LM 9 (TBC)

New gen crewed LV



### USA, China





# ... because of low European investment ...

Capability	Activities	2021 FY estimated (M\$)	2021 (M€)
Low Earth Orbit	Operations; crew and cargo transportation; science	3 300	160
Human deep space exploration	Space Launch System	2 600	0
	Orion	1 400	150
	Human Landing System	850	0
	Gateway	700	105
	Support & ground systems	1 000	N/A
Robotic exploration	Moon	300	40
	Mars	800	230
Technology	Robotics, life support, propulsion, life support, habitation etc.	1 100	50
Nuclear energy*	Radioisotope power systems	150	Included above
Total annual budget		12 200 M\$	735 M€



\*does not include nuclear fission programmes for propulsion and Moon surface power systems



# European Human Space Exploration



- Europe lack **independent** means of human space exploration/transportation
- Potential scientific, economic and political benefits are unavailable to Europe
- A political choice → political debate needed





# Accelerating the Use of Space in Europe

2021

Agenda  
2025  
1 March



Advisory  
Group  
July-Aug.



Matosinhos  
18-19 Nov.



2022



Start  
Accelerators and  
Inspirators

ESA  
Ministerial  
Meeting  
2022



Space  
Summit  
16 February





# ESA Council at Ministerial level 2022

Paris, 22-23 Nov.





A composite image showing a realistic Earth from space, with the African continent and surrounding oceans visible. Multiple hands of various skin tones are reaching up from the bottom, cupping the globe. The background is a deep blue space filled with numerous small white stars.

# MAKE SPACE FOR EUROPE

## #SpaceAmbition

[www.esa.int](http://www.esa.int)