

DECEMBER 2021

PRESS KIT

VA256

WEBB SPACE TELESCOPE



www.arianespace.com



www.ariane.group/en/

MISSION DESCRIPTION

Arianespace's fourteenth launch of 2021 with the third Ariane 5 of the year will place Webb Space Telescope in a transfer orbit to Lagrange 2 point. The launcher will be carrying a total payload of maximum 6,173 kg.

The launch will be performed in Kourou, French Guiana.



DATE AND TIME

Liftoff is planned on **Saturday, December 25, 2021**, as early as possible within the following launch window:

- Between 07:20 a.m. and 07:52 a.m. Washington, D.C. time,
- Between 09:20 a.m. and 09:52 a.m. Kourou time,
- Between 12:20 p.m. and 12:52 p.m. Universal time (UTC),
- Between 01:20 p.m. and 01:52 p.m. Paris time,
- Between 09:20 p.m. and 09:52 p.m. Tokyo time.



MISSION DURATION

The nominal duration of the mission (from liftoff to separation of the satellite) is:
27 minutes and 11 seconds.



SATELLITE

- Satellite: Webb Space Telescope
- Customers : ESA / NASA / CSA



TARGETED ORBIT

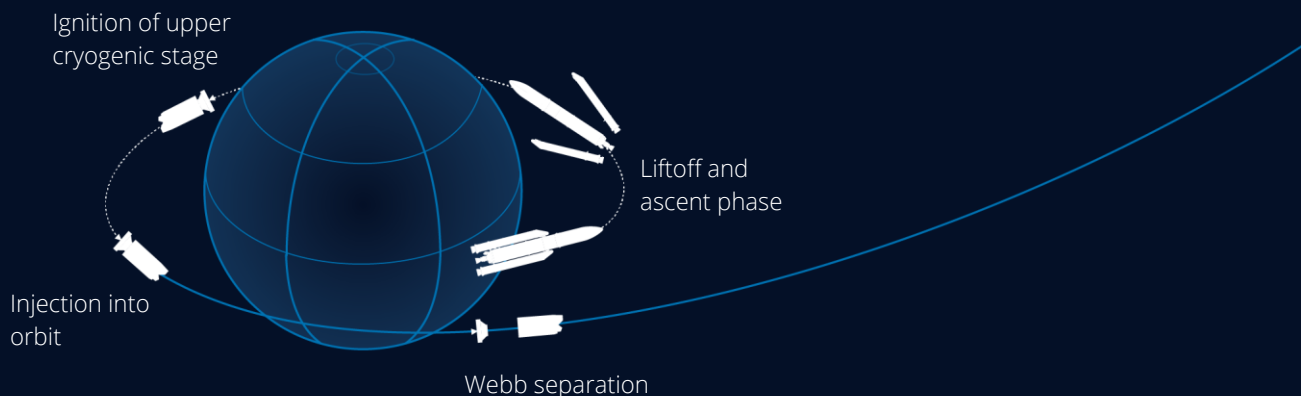
- Transfer orbit to Lagrange 2 point (1.5 million kilometer from the Earth).



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MISSION ORBIT



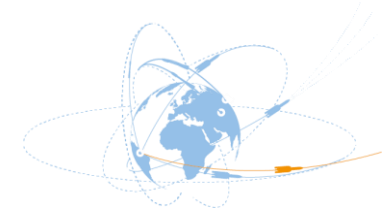
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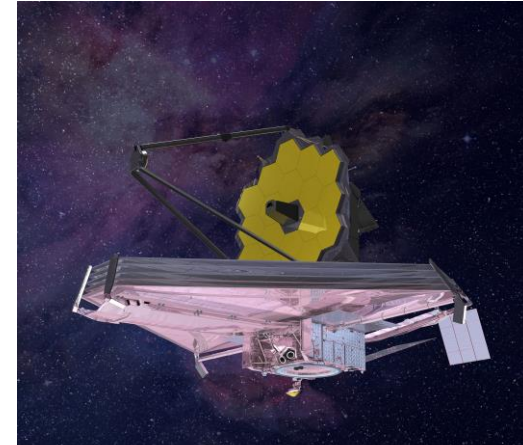
WEBB SPACE TELESCOPE (WEBB)

THE LARGEST AND MOST POWERFUL SPACE SCIENCE TELESCOPE



DID YOU KNOW?

Several new technologies were developed during the building of the Webb telescope, including innovative spinoffs that have already improved life here on Earth, such as advances in eye surgery.



SATELLITE	WEBB SPACE TELESCOPE
CUSTOMERS	ESA / NASA / CSA
MANUFACTURER	Northrop Grumman
MISSION	Scientific mission
MAXIMUM MASS AT LAUNCH	6,173 kg.
PLATFORM	Specific
LIFETIME	5 years (goal of > 10 years)

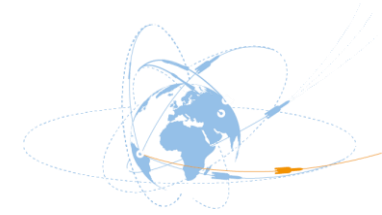
Intended as the successor to the Hubble Space Telescope, the **WEBB SPACE TELESCOPE** was funded by three space agencies: the United States (NASA), Europe (ESA) and Canada (CSA). The telescope will be 100 times more powerful, and will incorporate improved and different technologies to capture 70% more light. Because of these improvements, astronomers will be able to make unprecedented observations that show the first stars and galaxies to be formed after the Big Bang.

After a journey lasting 29 days, the most powerful space telescope ever built will be placed into orbit around the Lagrange 2 point so that it can observe galaxies, planets, stars and even nebulae and help us to unravel the secrets of the Universe.

The journey of the telescope in detail:

- On the third day, the heat shield will begin to deploy. On the eleventh day, the secondary mirror will begin positioning.
- Between the 13th and 14th day, the primary mirror, comprising 18 hexagonal segments and measuring 6.5 meters in diameter, will be assembled.
- The telescope is slated to arrive at its final destination, 1.5 million kilometers from Earth, approximately 29 days after launch.
- Webb will be the 62nd mission (85th satellite) to be launched by Arianespace for ESA,
- Webb will be the 28th scientific mission to be launched by Arianespace (35th satellite).

ARIANE 5 LAUNCHER



Fairing

(RUAG Schweiz AG)
Height: 17 m.
Mass: 2.4 t.

Vehicle equipment bay

Height: 1.13 m.
Mass: 1,100 kg.

HM-7B engine

Thrust: 67 kN. (in vacuum)
995 sec. of propulsion

EPC – Cryogenic main stage

Height: 31 m.
Mass: 190 t.

Vulcain 2 engine

Thrust: 1,410 kN. (in vacuum)
520 sec. of propulsion

Satellite

Webb Space Telescope

PAS – Payload adaptor

(RUAG)
Mass: 99 kg.

ESC-D – Cryotechnic upper stage

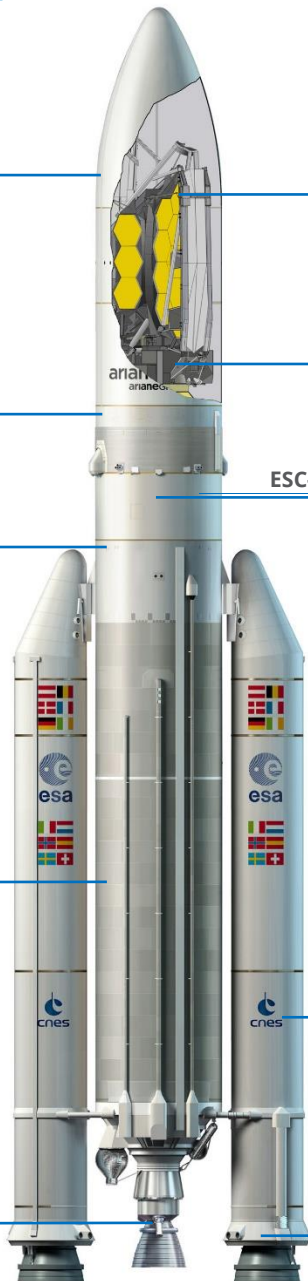
Height: 4.71 m.
Mass: 19 t.

EAP – Solid rocket boosters

Height: 31.6 m.
Mass: 277 t.

MPS – Solid rocket motor

Average thrust: 5,060 kN.
Max thrust: 7,080 kN. (in vacuum)
133 sec. of propulsion



13,000 kN. at liftoff (at T+7.3 sec)

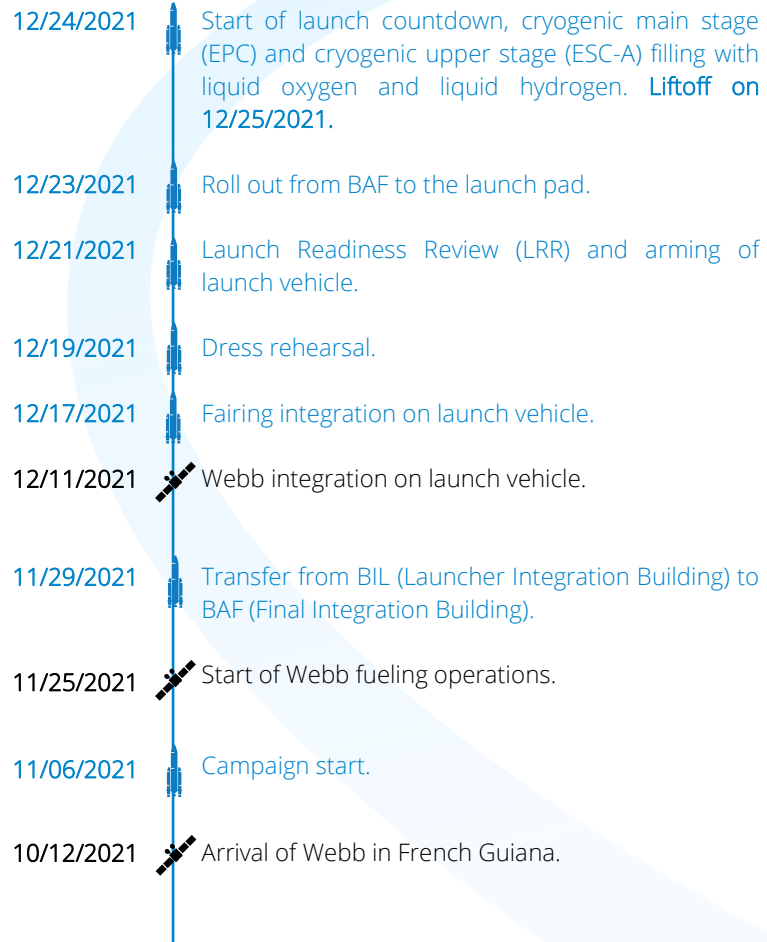
DID YOU KNOW?

ArianeGroup, as prime contractor for Ariane 5, leads a number of European companies in launcher production, including management of upgrades and the flight software for each mission. This team effort underpins the success of Ariane 5.

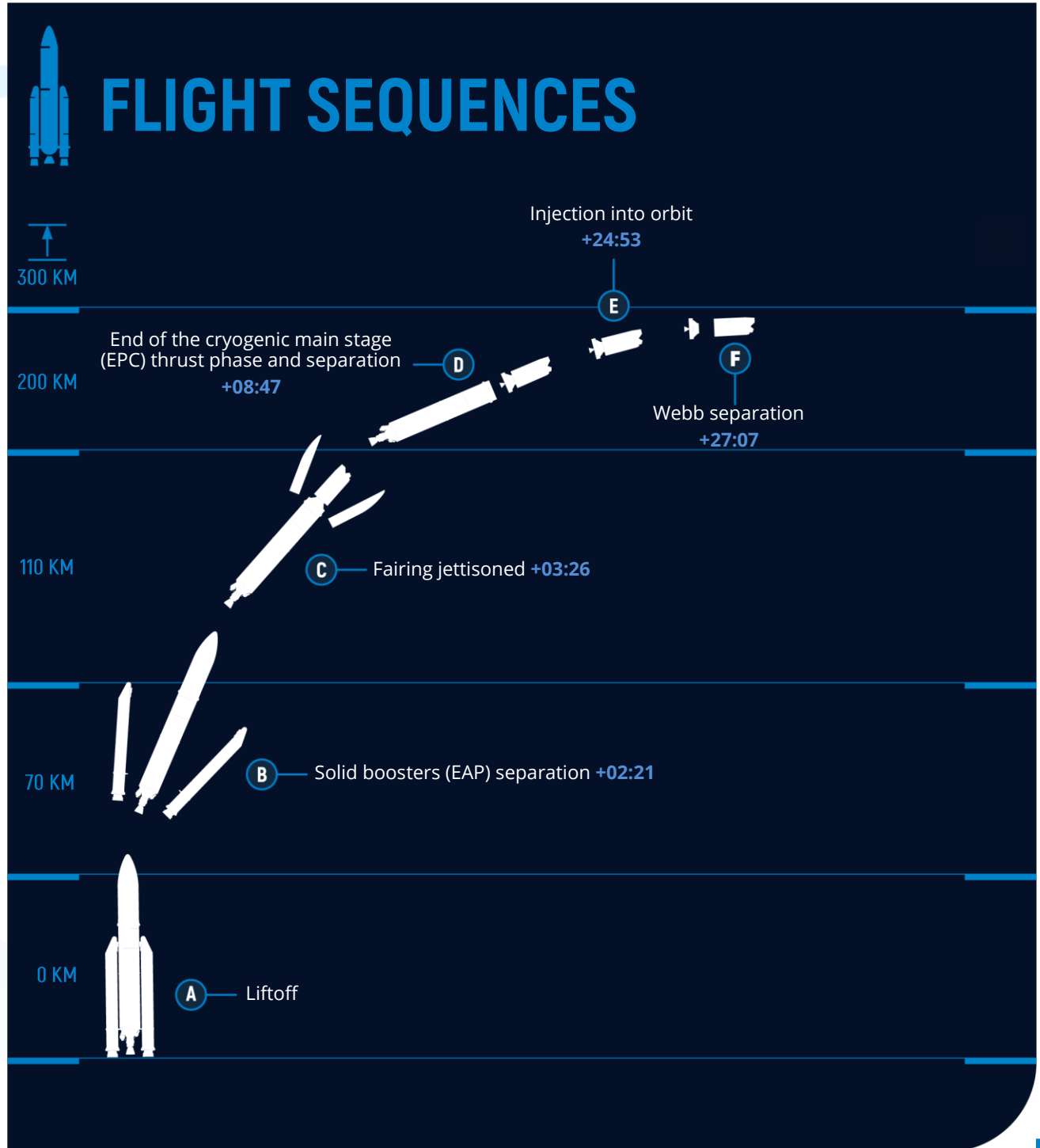
ArianeGroup's responsibilities on Ariane 5 include structures and equipment, propulsion systems, integration of the different stages and integration of the launcher at the Guiana Space Center in French Guiana. It coordinates more than 600 European companies contributing to the launcher, including some 350 small and medium-size enterprises.

We continuously improve the competitiveness of the Ariane 5 system, while also ensuring that it benefits from the production improvements developed on the Ariane 6 program.

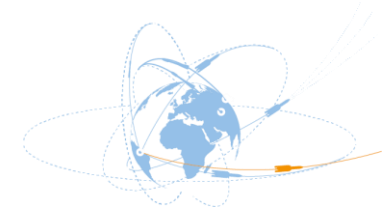
LAUNCH CAMPAIGN



- Launch vehicle operations
- Satellite operations



STAKEHOLDERS OF A LAUNCH



ARIANESPACE

Arianespace uses space to make life better on Earth by providing launch services for all types of satellites into all orbits.

It has orbited over 940 satellites since 1980, using its family of three launchers, Ariane, Soyuz and Vega, from a launch site in French Guiana (South America) and the Russian cosmodromes in Baikonur and Vostochny.

Arianespace is already marketing Europe's new launchers, Ariane 6 and Vega C.

Arianespace is headquartered in Evry, near Paris, and has a technical facility at the Guiana Space Center, Europe's spaceport in French Guiana, plus local offices in Washington, D.C., Tokyo and Singapore. Arianespace is a subsidiary of ArianeGroup, which holds 74% of its share capital, with the balance held by 15 other shareholders from the European launcher industry.

ARIANEGROUP

ArianeGroup is the prime contractor for the development and production of Ariane 5 and Ariane 6 launchers. The company coordinates an industrial network of more than 600 companies (including 350 SMEs).

ArianeGroup oversees the entire industrial supply chain, from performance optimization and the corresponding studies associated with Ariane 5 to production, from the supply of mission-specific data and software to the marketing of the launcher through Arianespace. This chain includes equipment and structures, engine manufacturing, integration of the various stages, and launcher integration in French Guiana.

ArianeGroup delivers a flight-ready launcher on the launch pad to its subsidiary Arianespace, which operates the flight from lift-off, on behalf of its customers.

ESA

The European Space Agency (ESA) is tasked with guiding the development of Europe's space capabilities and making sure that its investments in space benefit the citizens of Europe and worldwide. An international organization with 22 member states, ESA coordinates its members' financial and intellectual resources to conduct programs and activities that largely surpass the scope of action of a single European country. ESA is now coordinating Europe's future launcher programs, Ariane 6 and Vega C. On Ariane 6, ESA supervises the overall launch system procurement and architecture, while European industry builds the launcher, with ArianeGroup as prime contractor and design authority.

ESA also provides the launcher's specifications for institutional missions. Thirteen European countries contribute to funding for the Ariane 6 program, led by France, Germany and Italy, along with Austria, Belgium, Spain, Ireland, Norway, the Netherlands, Romania, Sweden, Switzerland and the Czech Republic.

Press contact: media@esa.int

CNES

French space agency CNES (Centre National d'Etudes Spatiales) defines national space policy and proposes it to public authorities. CNES oversees the application of this policy in five main areas: Ariane, science, observation, telecommunications and defense. ESA chose CNES as prime contractor for the Ariane 6 launch base in French Guiana, including the construction of a new launch pad. CNES also supports ESA, as the contracting authority, and ArianeGroup, as prime contractor for launcher development, and is responsible for applying the French law on space operations. As the owner of the Guiana Space Center (CSG), CNES has a dual mission: maintaining the operational condition of the CSG and modernizing its facilities in anticipation of the arrival of Ariane 6, Vega-C and other future vehicles. At the CSG, CNES manages operations at the launch base, the reception of satellites, launch vehicle monitoring and tracking, range security and environmental protection.

Press contact: cnes-presse@cnes.fr



