NOVEMBER 2021

PRESS KIT

VV20

www.arianespace.com

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MISSION DESCRIPTION

Arianespace's **twelfth launch of 2021** with the **third Vega of the year** will place its satellite passengers into Sun-synchronous orbit. The launcher will be carrying a total payload of approximately **1548 kg.**

The launch will be performed in **Kourou, French Guiana.**

DATE AND TIME

Liftoff is planned on **Tuesday, November 16, 2021,** at exactly:

- **04:27** a.m. Washington D.C. time,
- **06:27** a.m. Kourou time,
- **09:27** a.m. Universal time (UTC),
- **10:27** a.m. Paris time,
- **04:27** p.m. Tokyo time.

MISSION DURATION

The nominal duration of the mission (from liftoff to separation of the satellites) is:
56 minutes and 44 seconds.

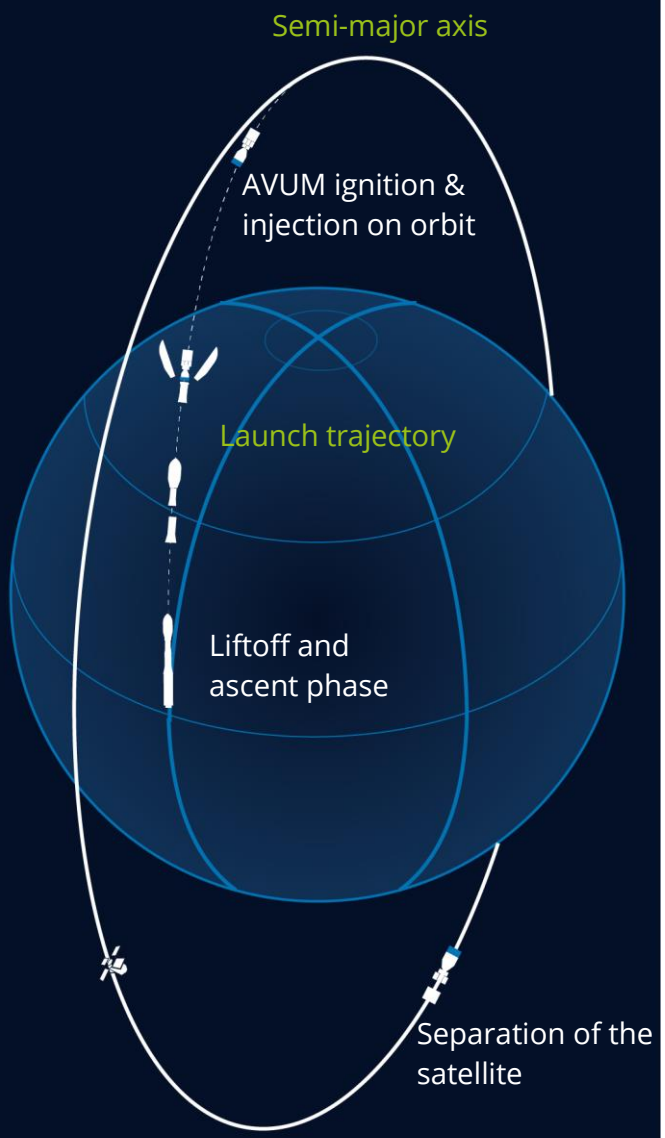
SATELLITES

Satellites: Three **CERES** satellites
Customers: French space agency **CNES** (Centre National d'Etudes Spatiales) on behalf of **French Ministry for the Armed Forces (DGA)**

TARGETED ORBIT

- Semi-major axis : **7048** km.
- Inclination : **75** degrees

MISSION ORBIT



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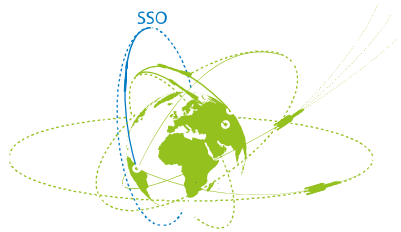
CERES

AT THE FOREFRONT OF ELECTROMAGNETIC INTELLIGENCE



DID YOU KNOW?

France is now the only European country who has joined the closed club of the most advanced nations in intelligence of electromagnetic sources.

SATELLITES	Three CERES satellites
CUSTOMERS	CNES on behalf of French Ministry for the Armed Forces (DGA)
MANUFACTURER	Airbus Defence and Space
MISSION	Earth observation (defense)
MASS AT LAUNCH	446 kg. per satellite
PLATEFORM	Specific

The **CERES** (CapacitÉ de Renseignement Électromagnétique Spatiale) project is conducted by the Directorate General of Armaments (DGA) at the benefit of the armed forces, while the French space agency CNES assists DGA for project management.

The CERES program comprises three satellites flying in formation in low Earth orbit (LEO). Equipped with high-performance sensors, these satellites also offer all-weather, daily revisit frequency and are capable of collecting data enabling the characterization and location of transmitters. Airbus Defence and Space is the prime contractor for the space segment, comprising three satellites, and is co-prime with Thales Defence Mission Systems, in charge of the payload and user ground segment. CNES assists DGA for project management; it supplies and operates the satellite control ground segment. In addition, Thales Alenia Space acts as a subcontractor to Airbus Defence and Space for the supply of the satellite platform.

- CERES will be the 47th to 49th French institutions satellites to be launched by Arianespace. There are currently six satellites in Arianespace's backlog to be launched for French institutions.
- The CERES 1, 2 and 3 will be the 134th to 136th Airbus Defence and Space satellites to be launched by Arianespace. There are currently 16 Airbus Defence and Space satellites in Arianespace's backlog.
- The CERES 1, 2 and 3 will be the 116th to 118th Earth observation satellites launched by Arianespace. Earth observation missions represent 11% of the total number of satellites launched by Arianespace.

PRESS CONTACTS

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VEGA LAUNCHER

Fairing
(RUAG Space)

Payload(s)

Payload adaptator
(Airbus Spain)

AVUM structure & engine
(Airbus Spain & KB Yuzhnoye)

Interstage - 3/AVUM
(Airbus Spain)

ZEFIRO 9 production, integration & testing
(Avio)

Interstage - 2/3
(Rheinmetall)

ZEFIRO 23 production, integration & testing
(Avio)

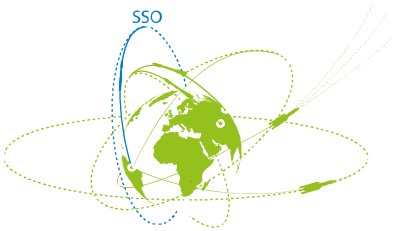
Interstage - 1/2
(Airbus Netherlands)

P80 integration & testing
(Europropulsion)

P80 motor case
(Avio)

Interstage - 0/1
(S.A.B.C.A)

P80 nozzle
(ArianeGroup)



DID YOU KNOW?

Vega is the Arianespace launch vehicle designed to send small satellites into Low Earth Orbit (LEO). It provides great flexibility of mission at an affordable cost. Together with the Ariane launcher family, it represents the European solution for space accessibility.

The rocket consists of four stages, the first three equipped with solid propellant motors and the last one using liquid propulsion. It can carry multiple payloads at a time in any orbit up to 1,500 kg on missions to a 700-km circular orbit.

The Vega's maiden flight took place in February 2012. Following the success of this first launch, the project has grown in importance and the launcher has gained a very good track record of successful flights, putting various types of cargo into orbit, including numerous SmallSats for various private, institutional and government customers.

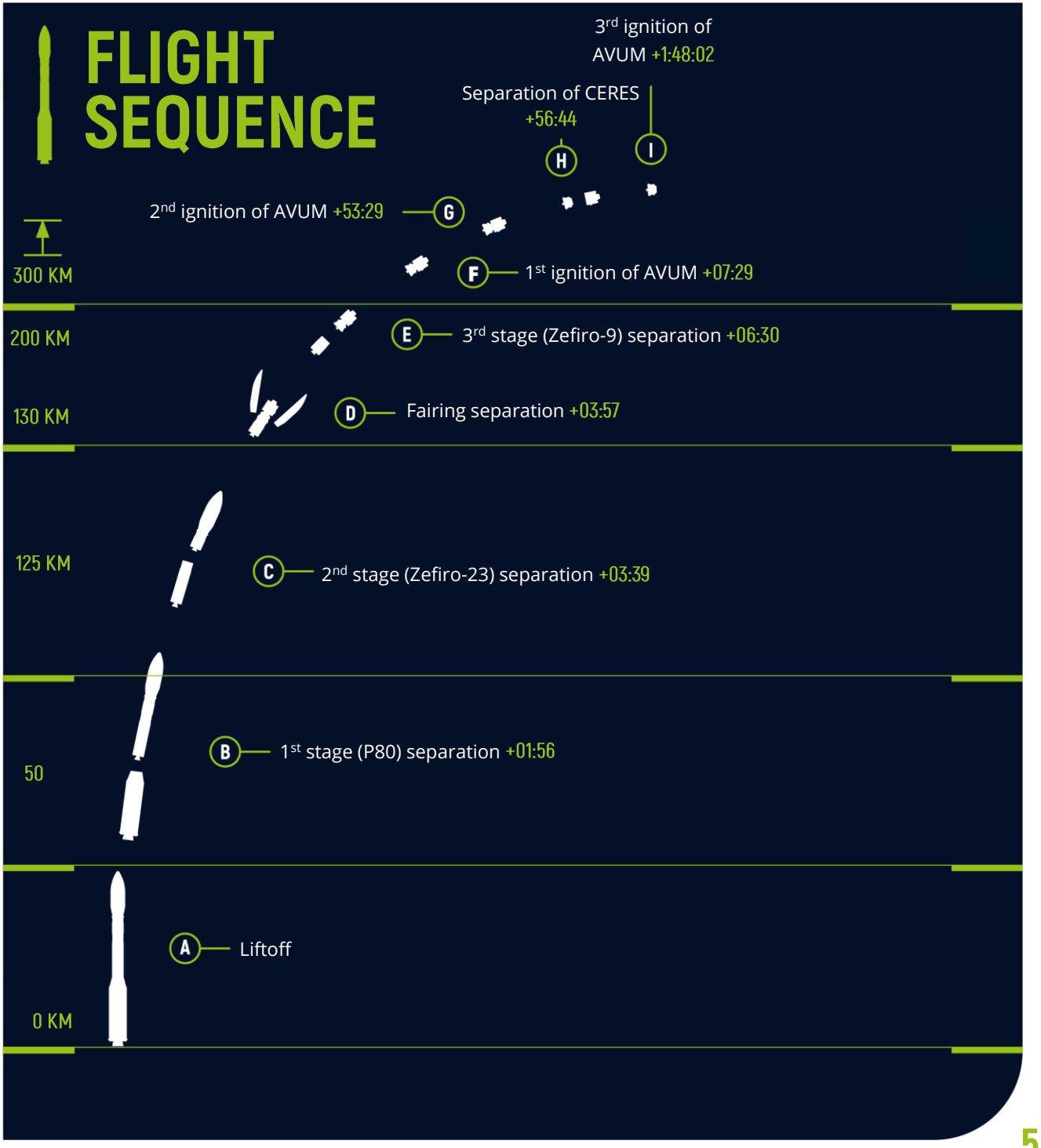
LAUNCH CAMPAIGN

11/16/2021	Final launch countdown. **Liftoff.**
11/13/2021	Arming of fairing Launch Readiness Review (LRR) Final preparation of launcher and final inspection of the fairing
11/09/2021	Integration upper composite on launcher
11/08/2021	Transfer of upper composite to Vega Launch Zone
11/05/2021	Addition of logos on payload fairing
11/04/2021	Encapsulation of CERES in Vega's payload fairing
10/20/2021 TO 10/18/2021	Integration of the payload on the payload adaptor
10/12/2021	Fueling of the three CERES satellites
09/08/2021	Arrival of CERES in French Guiana
09/07/2021	Campaign start review

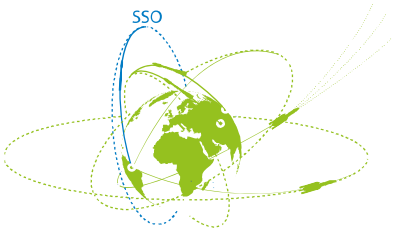
— Launch vehicle operations

— Satellite operations

FLIGHT SEQUENCE



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.

AVIO

Avio is a leading international group engaged in the construction and development of space launchers and solid and liquid propulsion systems for space travel. The experience and knowhow built up over more than 50 years puts Avio at the cutting edge of the space launcher sector, solid, liquid and cryogenic propulsion and tactical propulsion. Avio operates in Italy, France and French Guiana with five facilities, employing approx. 1,000 highly-qualified personnel, of which approx. 30% involved in research and development.

Avio is a prime contractor for the Vega program and a sub-contractor for the Ariane programme, both financed by the European Space Agency ("ESA"), placing Italy among the limited number of countries capable of producing a complete spacecraft. Avio also manufactures the forthcoming Vega C launcher and participates in the development of the Ariane 6 launcher thanks to its new solid propellant engines P120C and the Vinci and Vulcain liquid oxygen turbopumps.

EUROPEAN SPACE AGENCY

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 state.

ESA manages the development of Europe's future space transportation programs, including Ariane 6 and Vega C. On Vega, ESA manages the overall program, while European industry builds the launch system, with AVIO as prime contractor. ESA Member States fund almost two thirds of the total cost of running and maintaining the launch range at Europe's Spaceport. ESA owns the Ariane 5, Vega, and Soyuz launch complexes, which are operated by Arianespace.

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.

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