

Ariane rocket puts telecom satellites into orbit

December 21 2008



The Ariane 5 ECA for flight V186 waits on the launch pad on 20 December 2008. The multi-role telecommunications satellites Hot Bird 9 and W2M were carried into geostationary transfer orbits shortly after this picture was taken. Credits: ESA/CNES/Arianespace/Activité Photo Optique Video CSG

(PhysOrg.com) -- Yesterday evening, an Ariane 5 ECA launcher lifted off from Europe's Spaceport at Kourou, in French Guiana, on its mission to place two multi-role telecommunications satellites into geostationary transfer orbits.

Lift-off of flight V186 took place at 23:35 CET/Paris on 20 November (22:35 UTC/GMT; 19:35 UTC-3/Kourou). The satellites were accurately

injected into the correct transfer orbits about 30 minutes later.

The payload comprised Hot Bird 9, which will deliver television signals and interactive services to direct-to-home antennas and cable networks throughout Europe, North Africa and the Middle East, and W2M, which will provide television broadcasting and data network services to the same regions using a fixed antenna, while a steerable beam will be re-oriented in-orbit to deliver services as required. The payload mass was 9220 kg; the satellite masses totalled 8340 kg, with payload adapters and dispensers making up the additional 880 kg.

Arianespace and Europe's Spaceport are planning as many as eight launches during 2009 – which will make it the busiest year ever for Ariane 5. The ability to sustain high launch rates has already been demonstrated – during the period 12-month period from August 2007 to August 2008, there were nine launches (V177 to V185, inclusive).

The Ariane 5's cryogenic, liquid fuelled main engine was ignited first. Seven seconds later, the solid fuel rocket boosters were also fired, and a fraction of a second after that, the launch vehicle lifted off.

The solid boosters were jettisoned 2 min: 20 sec after main engine ignition, and the fairing protecting the payload during the climb through the Earth's atmosphere was discarded at 3 min: 16 sec. The launcher's main engine was shut down at 8 min: 57 sec; six seconds later, the main cryogenic stage separated from the upper stage and its payload.

Four seconds after main stage separation, the engine of the launcher's cryogenic upper stage was ignited to continue the journey. The upper stage engine was shut down at 24 min: 55 sec into the flight, at which point the launch vehicle was travelling at 9308 m/s (just over 33 500 km/h) at an altitude of 708 km and the conditions for geostationary transfer orbit injection had been achieved.

At 26 min: 44 sec after main engine ignition, Hot Bird™ 9 separated from the launcher's upper stage, followed by W2M at 32 min: 10 sec.

Ariane 5 ECA is the latest version of the Ariane 5 launcher. It is designed to place payloads weighing up to 9.6 tonnes into geostationary transfer orbit. With its increased capacity, Ariane 5 ECA can handle dual launches of very large satellites.

Provided by ESA

Citation: Ariane rocket puts telecom satellites into orbit (2008, December 21) retrieved 23 April 2024 from <https://phys.org/news/2008-12-ariane-rocket-telecom-satellites-orbit.html>

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