LAUNCH VEHICLE

Payload Fairing (PLF)
The spacecraft is encapsulated in a 5-m (17-ft) diameter short payload fairing. The 5-m PLF is a sandwich composite structure made with a vented aluminum-honeycomb core and graphite-epoxy face sheets. The bisector (two-piece shell) PLF encapsulates both the Centaur and the satellite. The vehicle’s height with the 5-m short PLF is approximately 197 ft.

Centaur
The Centaur second stage is 10 ft in diameter and 41.5 ft in length. Its propellant tanks are constructed of pressure-stabilized, corrosion-resistant stainless steel. Centaur is a cryogenic vehicle, fueled with liquid hydrogen and liquid oxygen, powered by an RL10C-1 engine producing 22,900 lb of thrust. The cryogenic tanks are insulated with a combination of helium-purged blankets, radiation shields and spray-on foam insulation (SOFI). The Centaur forward adapter (CFA) provides structural mountings for the fault-tolerant avionics system and structural and electrical interfaces with the spacecraft.

Booster
The booster is 12.5 ft in diameter and 106.5 ft in length. The booster’s tanks are structurally rigid and constructed of isogrid aluminum barrels, spun-formed aluminum domes and intertank skirts. Booster propulsion is provided by the RD-180 engine system (a single engine with two thrust chambers). The RD-180 burns RP-1 (Rocket Propellant-1 or highly purified kerosene) and liquid oxygen and delivers 860,200 lb of thrust at sea level. Five solid rocket boosters (SRBs) generate the additional power required at liftoff, with each SRB providing 348,500 lb of thrust. The Centaur avionics system, provides guidance, flight control and vehicle sequencing functions during the booster and Centaur phases of flight.

AEHF-5 will be a protected communications relay to provide the highest levels of information protection to the nation’s most critical users. The Advance Extremely High Frequency (AEHF) system, developed by Lockheed Martin, provides vastly improved global, survivable, protected communications capabilities for strategic command and tactical warfighters. This jam-resistant system also serves international partners including Canada, the Netherlands and the United Kingdom.

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Atlas V rockets successfully launched the first four AEHF satellites in 2010, 2012, 2013 and 2018 as the new constellation was formed in geosynchronous orbit 22,300 miles above Earth to augment and eventually replace the legacy MILSTAR communications satellite fleet. One AEHF satellite has greater capacity than the entire five-satellite MILSTAR constellation.

With more than a century of combined heritage, ULA is the world’s most experienced and reliable launch service provider. ULA has successfully delivered more than 130 missions to orbit that provide Earth observation capabilities, enable global communications, unlock the mysteries of our solar system and support life-saving technology.