



Atlas® V
The Future of Space Is Now

LOCKHEED MARTIN
We never forget who we're working for.™



Atlas® V Launch Vehicles

Words To Learn:

Jettison—To discard, to cast off

Liftoff—The instant in which a rocket begins flight

Orbit—Path of a satellite or spacecraft as it revolves around Earth or other planet

Satellite—Object launched to orbit Earth or other planet

Spacecraft—Craft capable of traveling in outer space

Thrust—The forward-directed force developed in a rocket engine

Trajectory—The path followed by an object moving through space

Common Core Booster

Containing rocket fuel and liquid oxygen propellants and powered by the RD-180 engine, the main source of thrust at liftoff. Jettisoned at about 4½ minutes, after propellants are exhausted.

Common Centaur

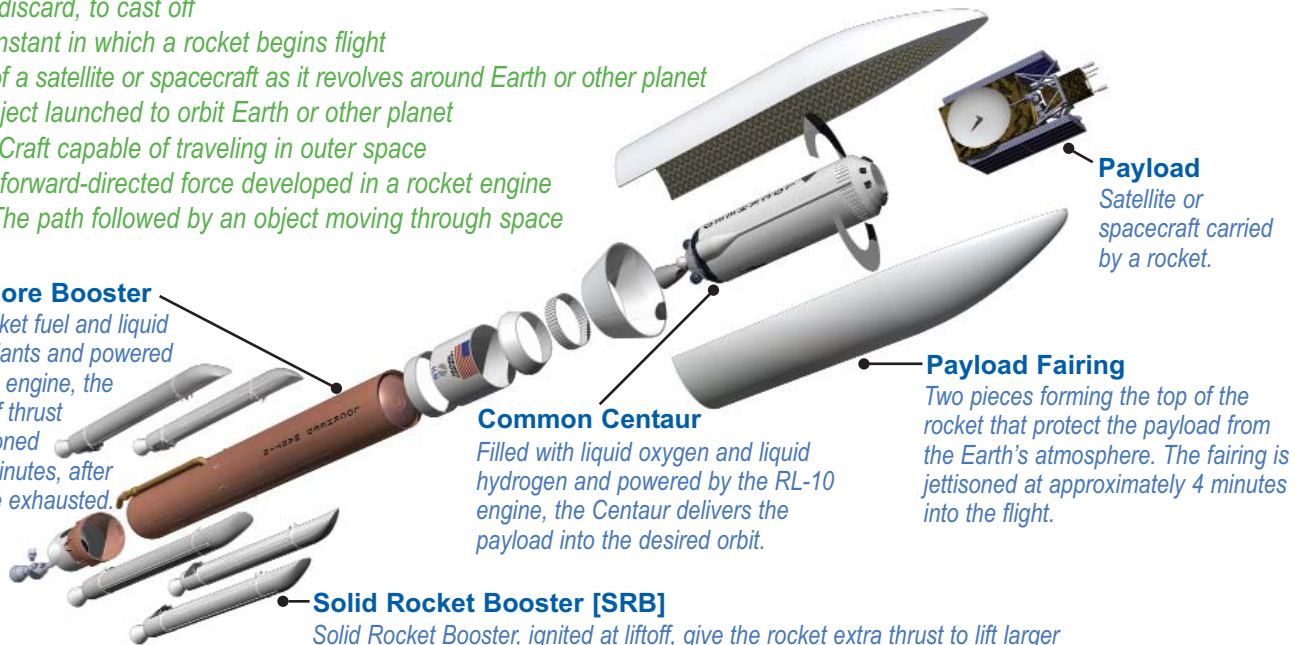
Filled with liquid oxygen and liquid hydrogen and powered by the RL-10 engine, the Centaur delivers the payload into the desired orbit.

Payload Fairing

Two pieces forming the top of the rocket that protect the payload from the Earth's atmosphere. The fairing is jettisoned at approximately 4 minutes into the flight.

Solid Rocket Booster [SRB]

Solid Rocket Booster, ignited at liftoff, give the rocket extra thrust to lift larger payloads. At approximately 1½ minutes into flight, the SRBs are jettisoned.



The powerful RD-180 engine firing during a test.



The Atlas V, standing 205-feet tall, ready for launch from Cape Canaveral Air Force Station, Florida.



“Rocket Cam” image of Solid Rocket Booster jettison as the Atlas rocket flies away from Earth.

Rockets play an important role in our lives every day. Without rockets to launch satellites, we wouldn't be able to use our cell phones, watch a lot of our favorite TV shows, find out the weather forecast, and navigate with GPS—just to name a few things! Rockets are also called launch vehicles because they are the vehicles that launch important payloads, satellites and spacecraft, into space. When we launch spacecraft we are exploring other planets or the Sun. In January 2006, the Atlas rocket launched a spacecraft to Pluto, the last planet to be explored. It will take nearly 10 years for the spacecraft to reach Pluto! (How old will you be in 10 years?)

Here is how it works. Atlas rockets blast off from launch pads in California and Florida—this is so they fly over the ocean away from land and people. At liftoff, the RD-180, a powerful engine, is started and produces thrust that accelerates the Atlas rocket with its payload away into space, at speeds of over 17,000 mph—or 5 miles every second! At this speed you could drive from Denver to Colorado Springs in 12 seconds. The thrust produced by the RD-180 is equal to:



The power generated by 13 Hoover dams



The weight of 130 elephants



The horsepower of 37,000 automobiles

After leaving Earth's atmosphere, the Atlas launch vehicle delivers the payload to the desired orbit or in its desired trajectory. Once in its proper orbit or on its way to outer space, the payload can begin to do the work that makes all of our lives easier and more fun, and helps us to learn more about our planet, our solar system and the universe.