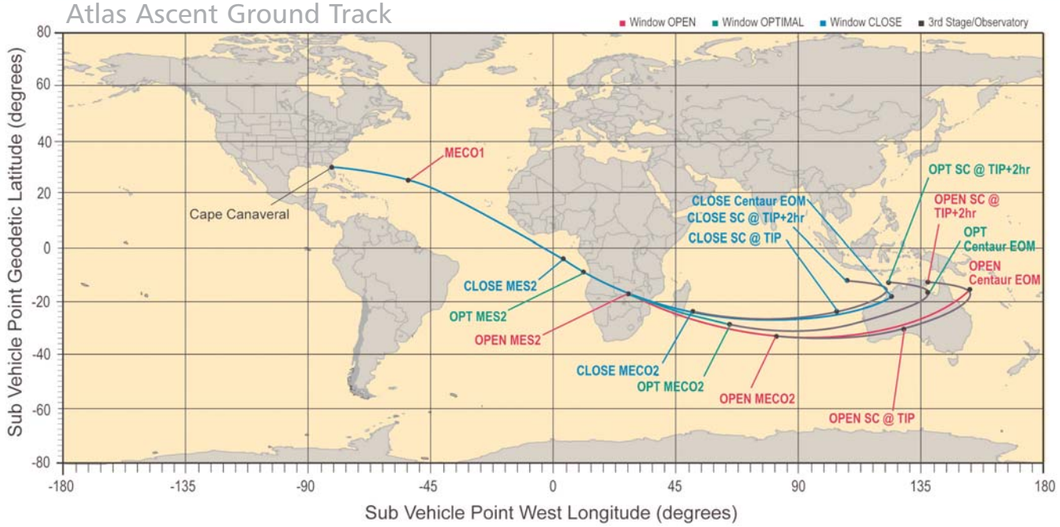
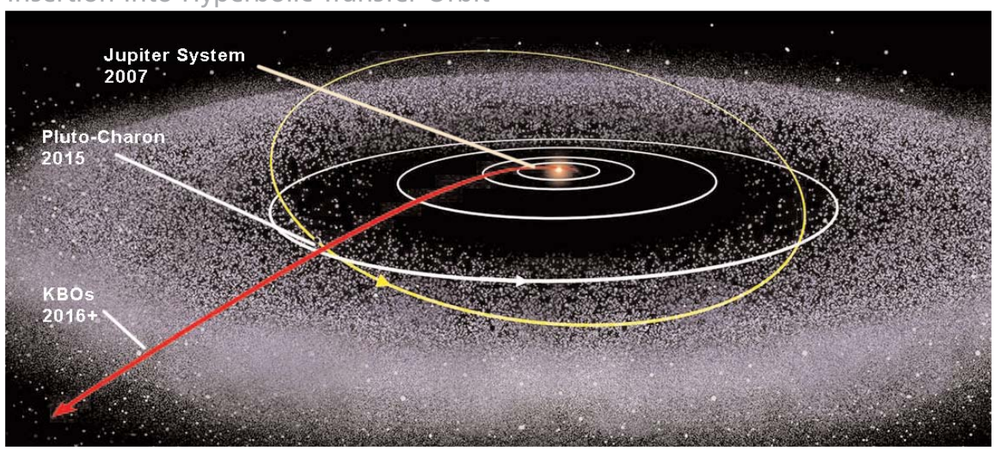
MISSION PROFILE

The Atlas V 551 launch vehicle will insert the New Horizons Observatory into a hyperbolic departure orbit to Pluto. The 35-day window opens January 11, 2006. The Atlas V launch vehicle will lift off from Launch Complex 41 at Cape Canaveral Air Force Station, Florida. The boost from the Atlas V and a STAR-48B kick motor will send the New Horizons Observatory on the fastest trip ever to the outer solar system, reaching Jupiter just 13 months after launch. Depending on the launch day and time, the Atlas V launch vehicle and STAR-48B third stage will provide an insertion energy, C3, of between 157.7 and 163.9 km2/sec2. If launched before the 29th of January, a Jupiter gravity assist will put the Observatory on course for a five-month-long flyby reconnaissance of Pluto-Charon in summer 2015, when the "double planet" will be about 3.1 billion miles from Earth. As part of an extended mission, the Observatory is also planned to head into the Kuiper Belt to examine one or two of the ancient, icy mini-worlds in the vast region at least a billion miles beyond Neptune's orbit. Depending on which day it is launched within the window, the Observatory will arrive at Pluto between 2015 and 2020.

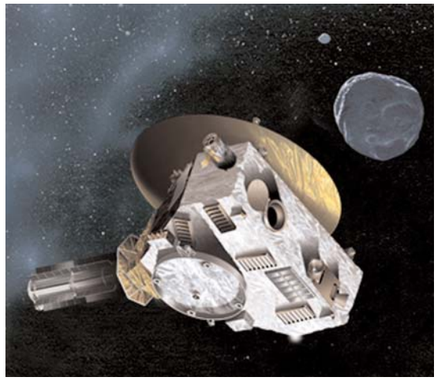
Atlas Ascent Ground Track



Insertion Into Hyperbolic Transfer Orbit



THE SATELLITE



Launch Services Customer:
NASA/Kennedy Space Center
www.nasa.gov/centers/kennedy/launchingrockets/index.html

New Frontiers Program:
New Horizons is the first project within the New Frontiers Program managed at NASA/Marshall Spaceflight Center

New Horizons Observatory Project:
The Johns Hopkins University Applied Physics Laboratory leads mission development and operations. Southwest Research Institute leads the science team and payload.
http://pluto.jhuapl.edu/

Spacecraft Separated Mass:
1054 lbs (478 kg)

Primary Mission:
9.5 - 15 years

Mission:
NASA's New Horizons is the first mission to Pluto and the Kuiper Belt -- an epic journey to help us understand worlds at the edge of our solar system. New Horizons is scheduled to fly by Pluto and its moon Charon as early as 2015, then head deeper into the Kuiper Belt in a potential extended mission to examine one or two of the ancient, icy objects in that vast region more than a billion miles beyond Neptune's orbit.

With a suite of powerful science instruments, New Horizons will examine Pluto's and Charon's global geology and geo-morphology, map their surface compositions and temperatures, and examine Pluto's complex atmosphere. A close-up look at these mysterious bodies by the New Horizons Observatory promises to tell an incredible story about the origin and evolution of the planets.

ILS
International Launch Services

www.ilslaunch.com

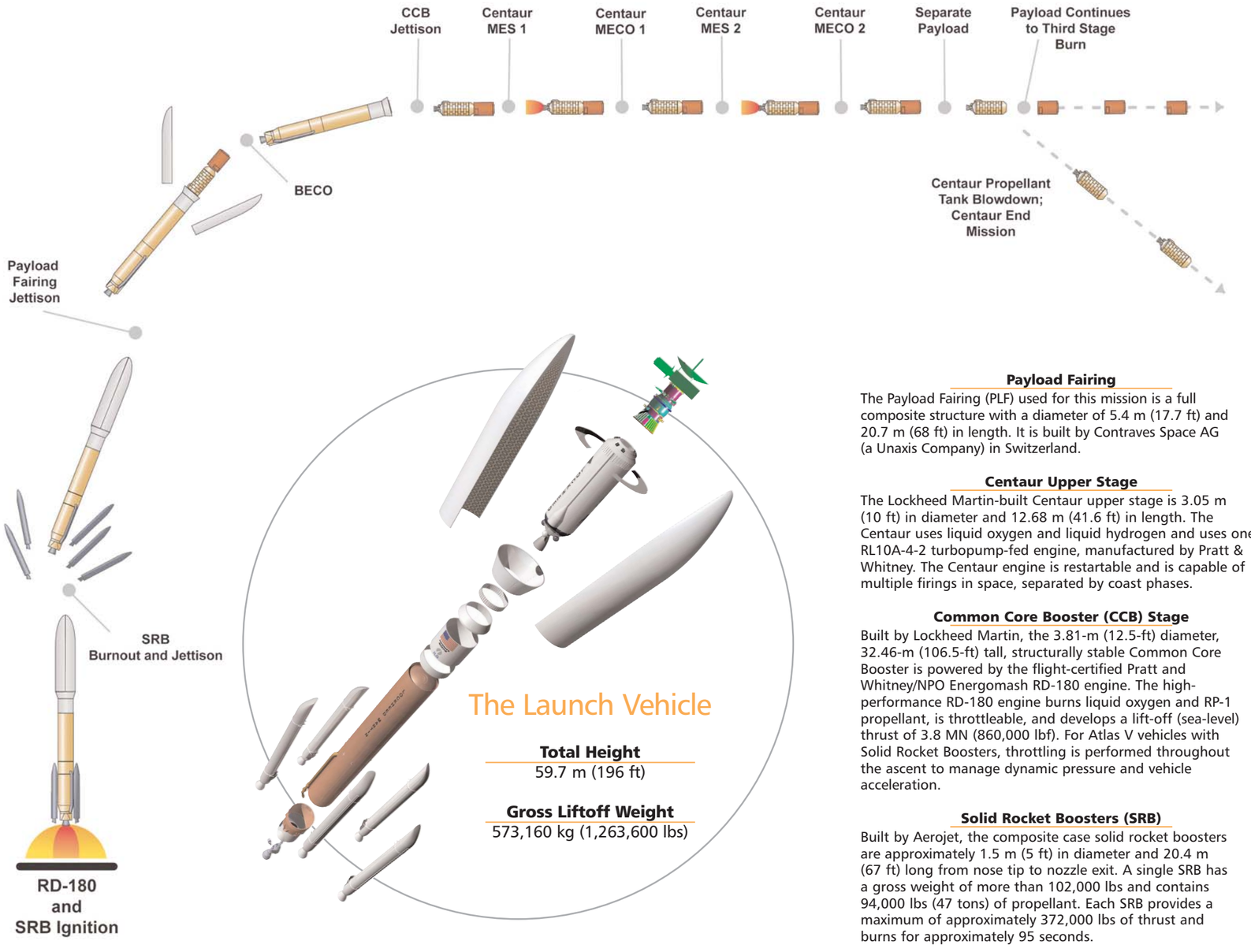
January 2006

NEW HORIZONS

Mission Overview

- 77 consecutive Atlas mission successes
- 7th flight of the Atlas V vehicle
- 135th Atlas launch for NASA
- 2nd launch of the Atlas V for NASA

MISSION ASCENT PROFILE



Payload Fairing

The Payload Fairing (PLF) used for this mission is a full composite structure with a diameter of 5.4 m (17.7 ft) and 20.7 m (68 ft) in length. It is built by Contraves Space AG (a Unaxis Company) in Switzerland.

Centaur Upper Stage

The Lockheed Martin-built Centaur upper stage is 3.05 m (10 ft) in diameter and 12.68 m (41.6 ft) in length. The Centaur uses liquid oxygen and liquid hydrogen and uses one RL10A-4-2 turbopump-fed engine, manufactured by Pratt & Whitney. The Centaur engine is restartable and is capable of multiple firings in space, separated by coast phases.

Common Core Booster (CCB) Stage

Built by Lockheed Martin, the 3.81-m (12.5-ft) diameter, 32.46-m (106.5-ft) tall, structurally stable Common Core Booster is powered by the flight-certified Pratt and Whitney/NPO Energomash RD-180 engine. The high-performance RD-180 engine burns liquid oxygen and RP-1 propellant, is throttleable, and develops a lift-off (sea-level) thrust of 3.8 MN (860,000 lbf). For Atlas V vehicles with Solid Rocket Boosters, throttling is performed throughout the ascent to manage dynamic pressure and vehicle acceleration.

Solid Rocket Boosters (SRB)

Built by Aerojet, the composite case solid rocket boosters are approximately 1.5 m (5 ft) in diameter and 20.4 m (67 ft) long from nose tip to nozzle exit. A single SRB has a gross weight of more than 102,000 lbs and contains 94,000 lbs (47 tons) of propellant. Each SRB provides a maximum of approximately 372,000 lbs of thrust and burns for approximately 95 seconds.

Countdown and Flight Events Summary

Event	HR:MIN:SEC
Guidance Go-Inertial	-0:00:08.0
RD-180 Ignition	-0:00:02.7
T-0 (Engine Ready Point)	-0:00:00.0
Liftoff	0:00:01.1
SRB Jettison (1,2)	0:01:45.0
SRB Jettison (3,4,5)	0:01:47.0
Payload Fairing Jettison (PLF)	0:03:23.0
Booster Engine Cutoff (BECO)	0:04:27.4
Common Core Booster (CCB) Separation	0:04:33.4
Centaur 1st Main Engine Start (MES1)	0:04:43.0
Centaur Main Engine Cutoff (MECO1)	0:10:08.2
Centaur 2nd Main Engine Start (MES2)	0:31:60.0
Centaur Main Engine Cutoff (MECO2)	0:41:47.0
Third Stage Separation	0:41:59.9
Star 48B Engine Start	0:42:37.0
Star 48B Engine Burnout	0:44:05.0
Observatory Separation	0:47:32.0