

# Cassini Mission Overview

## Cassini Orbiter

Total spacecraft mass at Launch = 5574 kg / 12,288 lbs  
Propellant mass at Launch = 3132 kg / 6890 lbs  
Spacecraft Height = 6.87 meters / 22.3 feet  
High Gain Antenna Diameter = 4 meters / 13.1 feet  
Magnetometer Boom Extension = 11 meters / 36 feet  
Data storage capacity = 4 Gbits  
Power at Launch = 875 watts  
Main Engine thrust capability = 445 Newtons / 100 pounds of force  
Number of onboard science instruments = 12

## Huygens Probe

Mass of probe = 350 kg / 770 lbs  
Probe power = 250 watts  
Diameter of Probe's heat shield = 2.7 meters / 8.9 feet  
Probe mission day = 14 January 2005  
Probe velocity at Titan atmospheric entry = 6.1 km/sec or 13,725 mph  
Number of onboard science instruments = 6

## Titan IVB/Centaur Launch Vehicle

Height = 55.76 meters / 183 feet  
Total launch mass = 1 million kg / 2.2 million pounds  
Propellant = 0.9 million kg / 2 million pounds

## Trajectory Milestones

Trajectory type = "VVEJGA" or Venus-Venus-Earth-Jupiter Gravity Assist

Launch = 15 October 1997

**NOTE:** Speeds listed in the flyby information below (noted as speed before, speed after, and gravity assist) are heliocentric (or Sun) relative speeds.

Venus 1 Flyby = 26 April 1998  
Flyby Altitude = 337 km / 210 miles  
Speed Before Flyby = 37.2 kilometers/second  
Speed After Flyby = 40.9 kilometers/second  
Gravity Assist = 3.7 kilometers/second

Venus 2 Flyby = 24 June 1999  
Flyby Altitude = 598 km / 374 miles  
Speed Before Flyby = 39.2 kilometers/second  
Speed After Flyby = 42.3 kilometers/second  
Gravity Assist = 3.1 kilometers/second

Earth Swingby = 18 August 1999  
Flyby Altitude = 1166 km / 725 miles  
Speed Before Flyby = 35.0 kilometers/second  
Speed After Flyby = 39.1 kilometers/second

Gravity Assist = 4.1 kilometers/second

Jupiter Flyby = 30 December 2000

Flyby Altitude = 9,721,846 km / 6,076,154 miles

Speed Before Flyby = 11.6 kilometers/second

Speed After Flyby = 13.7 kilometers/second

Gravity Assist = 2.1 kilometers/second

Saturn Orbit Insertion = 1 July 2004