

## **The *Cassini-Huygens* Mission to Saturn: Operations & Systems Overview**

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**ABSTRACT:** The *Cassini-Huygens* mission is a cooperative international program between the National Aeronautics & Space Administration (NASA), the European Space Agency (ESA), and the Italian Space Agency (ASI). While spaceflight operations for *Cassini-Huygens* is distributed throughout the world, the Jet Propulsion Laboratory (JPL) has the primary role of ensuring the health and safety of spacecraft systems while maximizing the scientific return from the Saturn system. Launched on 15 October 1997, the spacecraft is a combined Saturn orbiter (*Cassini*) and Titan atmospheric probe (*Huygens*). It is three-axis stabilized, equipped with 27 diverse science investigations with 12 orbiter and 6 probe instruments. *Cassini-Huygens* is the fourth interplanetary mission to visit Saturn (*Pioneer 11*, *Voyager 1*, and *Voyager 2* flew by Saturn more than two decades ago). Saturn orbit insertion (SOI) occurs on 1 July 2004, beginning a four-year mission to explore the planet and its environs. This paper provides a broad overview of the Deep Space Network (DSN) while focusing on the Cassini distributed operations and spacecraft systems.

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