

# Timeline of Hubble's hitches

NASA has placed its Hubble Space Telescope in “safe mode” configuration after the payload computer – which controls its science instruments – suddenly stopped working

■ **Apr 24, 1990:** *Hubble Space Telescope* launched aboard Space shuttle *Discovery*

■ **Dec 1993:** Servicing Mission 1. Crew of space shuttle *Endeavour* installs two optical instruments to correct effects of flawed shape of mirror

■ **Jun 27, 1990:** NASA discovers imperfection in Hubble's primary mirror which makes images blurred

■ **Feb 1997:** Second service mission, conducted by crew of *Discovery*, extends Hubble's wavelength range into near infrared

■ **Nov-Dec 1999:** Hubble halts observation and enters **safe mode** following failure of four of six gyroscopes. Astronauts aboard shuttle *Discovery* install six new gyroscopes and computer



■ **Aug 2005:** Hubble begins “two-gyro” science operations in bid to preserve operating life of third gyro and extend Hubble's science observations

■ **Sep 2008:** Hubble enters safe mode again following failure in science data formatter

■ **May 2009:** Astronauts aboard space shuttle *Atlantis* complete fifth and final servicing mission

■ **Jun 13, 2021:** Hubble suddenly stops working. NASA is preparing and testing procedures to use backup hardware onboard 31-year-old telescope

1990

1995

2000

2005

2010

2015

2020

