

# Rupture blamed for Mars Observer loss

Scientists believe a fuel line ruptured by an explosive chemical mixture caused the loss of the \$980 million Mars Observer last August

High gain antenna possibly broken off

Rocket thrusters

Solar panel array

## August 21 1993 –

Commands from Earth begin to pressurise propulsion system. Valves are opened using explosive devices. Nitrogen tetroxide mixes with monomethyl hydrazine propellant and ignites. Temperatures reach  $1,000^{\circ}\text{C}$  – fuel lines rupture, antenna is damaged and contact is lost with ground control

September 1992 – Launch from Cape Canaveral aboard Titan III booster

3: Craft shuts down in 'safe mode' for 715 million km journey to Mars

1: Orbus 21 motor fires, accelerating craft to 44,250kmh

2: Observer separates from booster

4: August 1993 – Fuel tanks pressurised prior to first orbit of planet

5: Fuel pipes rupture – gas spews out. Spacecraft starts to tumble following the orbit of Mars around the sun