

NASA turns to sun to forecast space weather

NASA is sending a probe on a five-year mission to study the sun in unprecedented detail. The *Solar Dynamics Observatory* will capture high-resolution images of our home star, helping scientists to understand and possibly predict solar storms that can disrupt technology on Earth

■ SPACECRAFT INSTRUMENTS

Atmospheric Imaging Assembly (AIA): Bank of multi-wavelength cameras and telescopes studies surface and atmosphere of sun, recording one image every 10 seconds at resolution similar to IMAX movie

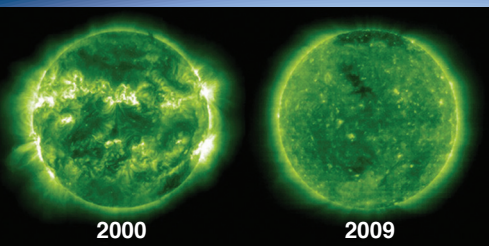
Spacecraft length
4.5m

High-gain antennas:
Send back data at rate of 150 million bits per second – equal to 500,000 iTunes songs a day

Solar arrays

Helioseismic and Magnetic Imager (HMI): Studies solar magnetic field and activity inside sun

Extreme Ultraviolet Variability Experiment (EVE): Measures fluctuations in sun's ultraviolet light output



■ SUN'S ACTIVITY

Changes follow cycle of highs and lows lasting approximately 11 years (extreme ultraviolet images of sun taken by *Solar and Heliospheric Observatory* spacecraft, launched 1995)