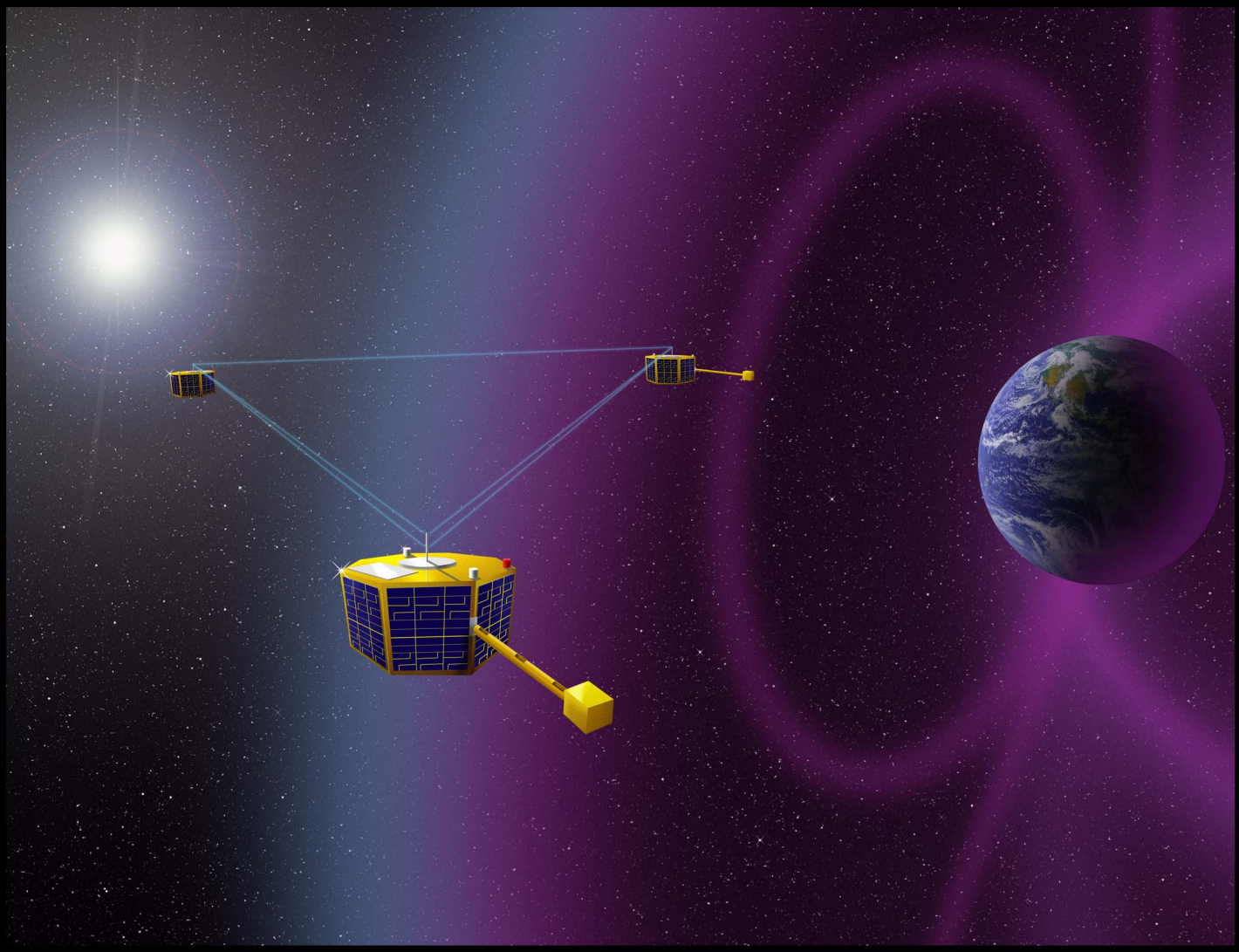


Space Technology 5

Tomorrow's technology today

National Aeronautics and
Space Administration

Space Technology 5: Tomorrow's Technology Today

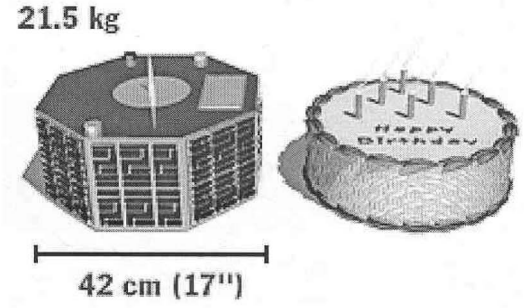
Space Technology 5, or ST5 for short, is the fifth space technology mission in NASA's New Millennium Program. The mission will attempt to fly three miniature spacecraft high above the Earth. Each of the spacecraft is about the size of a birthday cake -- 42 centimeters (17 inches) across and 20 centimeters (8 inches) high, and weighs about 21.5 kilograms (47 pounds). The spacecraft will be used to test methods for operating a constellation of spacecraft as a single system. The mission will also test eight innovative new technologies in the harsh space environment near the boundary of Earth's protective magnetic field known as the magnetosphere. Managed by NASA's Goddard Space Flight Center, the mission is planned for launch in 2003 as a secondary payload on an expendable launch vehicle.

Mission Goal: To reduce the weight, size and cost of space missions, while increasing their technical capabilities.

Mission Objectives:

- Technology Development -- to enable miniature spacecraft to fly in a constellation within the harsh environment of Earth's magnetosphere.
- Technology Validation -- to test the spacecraft and a set of scientific instruments which will ultimately return data about Earth's magnetic field.
- Technology Infusion -- to fly larger constellations (50-100) of nanosatellites in the future, such as the Magnetospheric Constellation Mission (see *http://sec.gsfc.nasa.gov/magcon.htm*)

Education and Outreach:
Learn about the practical uses of technology by visiting the Space Place at *http://spaceplace.jpl.nasa.gov/st5*



The New Millennium Program

The National Aeronautics and Space Administration (NASA) envisions a new way of conducting space exploration in the 21st century. Low-cost and frequently launched missions will use revolutionary technologies to enhance the capabilities of spacecraft, onboard instruments, and mission operations systems. Spacecraft are expected to be smaller and lighter, with highly efficient power systems. New measurement techniques may be possible with microsensors and miniaturized devices. Navigation and mission operations will be carried out by "intelligent" flight systems aboard the spacecraft.

NASA's New Millennium Program will develop and test in spaceflight the critical, revolutionary technologies needed to enable future missions. Each flight acts as a "test track" for its suite of technologies, its mission type, its operations concepts, and its scientific goals. The first flights, with launches that began in 1998, include Earth-observing and deep-space missions.

The New Millennium Program is sponsored by NASA's Offices of Space Science and Earth Science, and is managed for NASA by the Jet Propulsion Laboratory of the California Institute of Technology.

For more information:
http://nmp.jpl.nasa.gov/st5
http://nmp.jpl.nasa.gov
http://spaceplace.jpl.nasa.gov