Gravity Probe B Space Vehicle

LOCKHEED MARTIN

Reliable data transmission using TDRSS and NASA ground station communications


Solid State Recorder (SEAKR)


Command & Data Handling Unit (Goodrich)


NASA Standard Transponder (Motorola)


2x Antenna (Lockheed Martin)

Robust flight software based on Hubble Space Telescope


Flight Computer (BAE)

Autonomous on-orbit operations
Safemode Protection

Low-shock non-pyrotechnic mechanisms

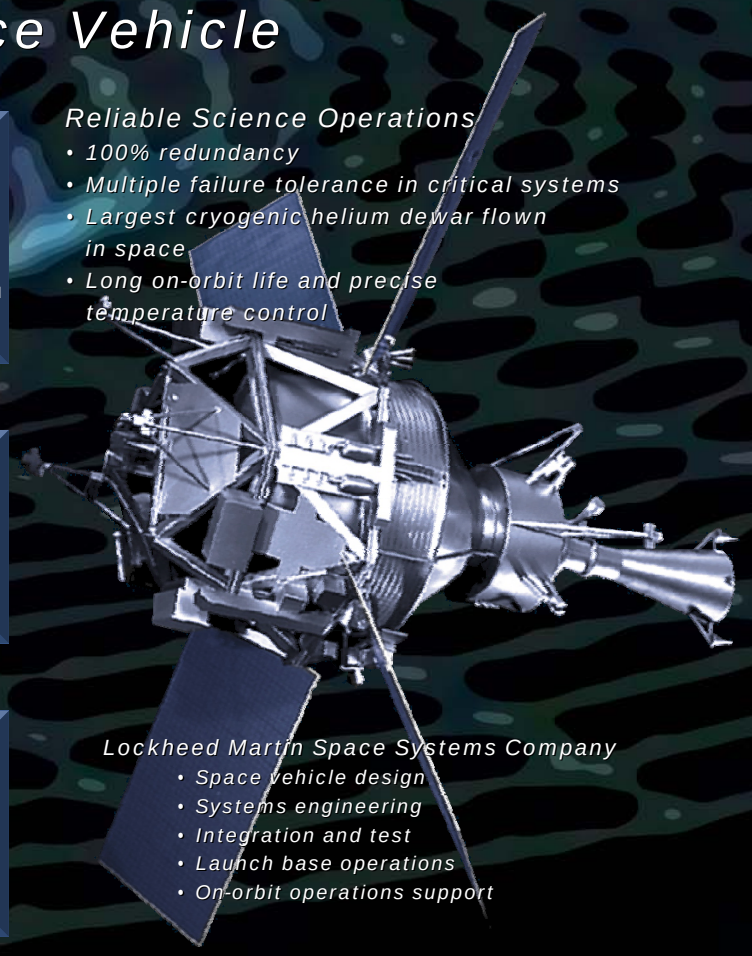

4 Solar Array Release mechanisms (Lockheed Martin)


4 Deployment Mechanisms (Lockheed Martin)


7 Mass Trim Mechanisms (Lockheed Martin and Litton Poly-Scientific)

Reliable Science Operations

- *100% redundancy*
- *Multiple failure tolerance in critical systems*
- *Largest cryogenic helium dewar flown in space*
- *Long on-orbit life and precise temperature control*



Lockheed Martin Space Systems Company

- *Space vehicle design*
- *Systems engineering*
- *Integration and test*
- *Launch base operations*
- *On-orbit operations support*

World's first 6-axis stabilized satellite
3-axis pointing
3 axis translation control (drag-free)


16 Helium Microthrusters (Lockheed Martin)


16 Thruster Isolation Valves (Lockheed Martin)


3 Magnetic Torque Rods (Ithaco)


Attitude Control Electronics (Spectrum Astro)


2 Star Trackers (Goodrich)


2 Control Gyros (Kearfott)


Magnetometers (MEDA)

Flawless electrical power performance
Four double-sided solar arrays
Low-ripple bus voltage


Standard Power Regulation Unit (Engineered Magnetics)


2 Batteries (Eagle Picher)


Power Distribution Unit (Spectrum Astro)