Expected Launch:
October 2002

GP-B

http://einstein.stanford.edu/

Gravity Probe B

Kit Item
Informational Brochure

Mission
Gravity Probe B is a relativity gyroscope experiment being developed to measure the local spacetime curvature caused by the Earth's mass and the local spacetime "frame-dragging" caused by the rotation of the Earth. Four spinning gyroscopes will be placed in Earth orbit for one to two years. As they travel around the Earth, the orientation of each spin axis should be slightly changed by the curvature and "twist" of local spacetime. These two effects are extremely small- a predicted 6.6 arcseconds of spacetime curvature, and a predicted 42 milliarcseconds of twist, or "frame-dragging" (there are 3600 arcseconds in one degree). Several cutting-edge technologies have been developed by GP-B to distinguish these miniscule angles and "see" our invisible intangible spacetime.

Education and Public Outreach Program
At the heart of Gravity Probe B are questions about spacetime and gravity - questions that both experienced physicists and young students ponder. The goal of the GP-B EPO program is to make these questions understandable and meaningful to high school physics students and anyone else who wants to learn about these phenomena. The program concentrates on communicating the scientific and technical concepts that make up the GP-B mission, as well as introducing students to the ideas of spacetime and connecting those ideas to previously-formed notions of gravity. To this end, we are producing a teacher's guide, wallsheet, and lithograph set, and assisting with the production of a CD-ROM and video, as well as visiting local classrooms and national conferences to present the material.
EPO site: *http://einstein.stanford.edu/*

Seeing and Exploring the Universe
In 1916, Einstein published the General Theory of Relativity, which gave us a new understanding of the structure of the Universe itself. Gravity Probe B will be making the most precise examination of Einstein's theory ever conducted, and should provide us with a clearer view of the physics underlying our Universe. With the results of this mission, scientists can further understand all sorts of physical phenomena and ideas, from seeing where inertia comes from, to understanding the powerful bursts emerging from black holes, to understanding the nature of motion in the Universe.

GPB measures a unique gravitational effect and does not measure the EM spectrum.