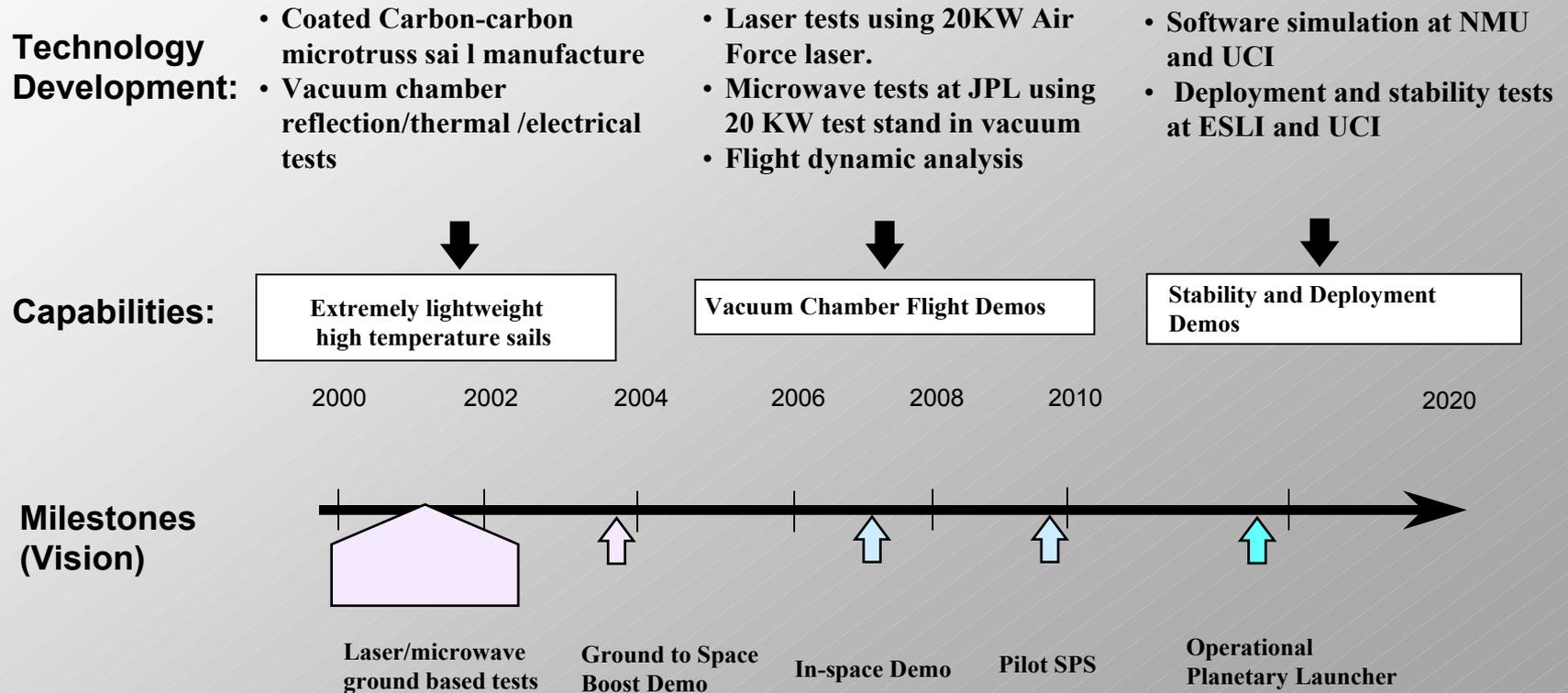


Science

Goal: Provide scientific and technical basis for an SPS system that will enable cheap access to the entire Solar System and, for the first time, make interstellar probes feasible.

Value to NASA: Planned capability has the potential to answer fundamental questions about the universe and our place in it by providing rapid access to heretofore difficult or currently inaccessible regions of space.



Science

- **Objectives** : To develop new technology that will (1) demonstrate the key components of an SPS system and (2) simultaneously provide the basis of beamed driven sail technology that will provide cheap access to the Solar System and beyond
- **Innovation:** Provide the scientific and technical basis for deployment, control and acceleration of new lightweight microtruss high temperature sails
- **Program Status:**
 - All planned flight experiments, simulations, deployment demonstrations and stability and control experiments have been performed. Final reports have been written and reviewed in all areas.
 - SPS satellite for sail launch currently under study.
 - VHS Tape has been produced summarizing the results and explaining scientific benefits.

Major accomplishments

Science

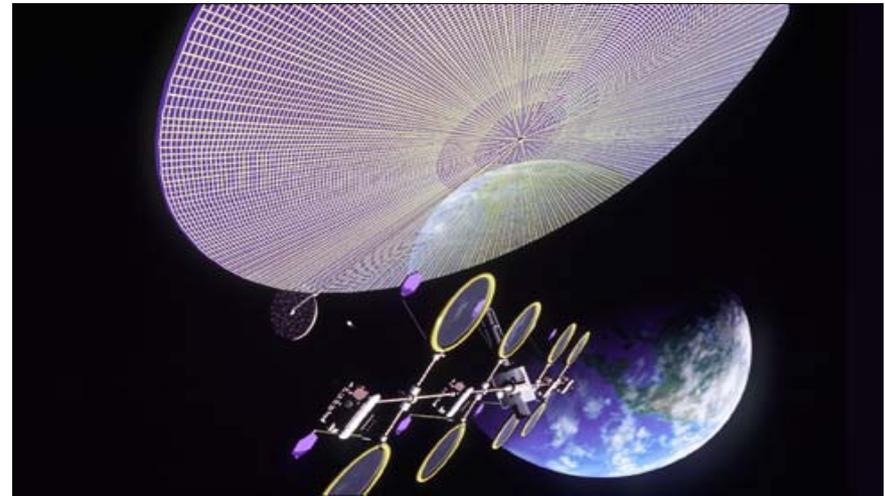
- Final report on funded Laser Sail vacuum chamber experiments (L. Myrabo) was reviewed for incorporation of results into possible future implementation of flight hardware for science missions
- Final report on funded Microwave Sail vacuum chamber testing (J. Benford) was reviewed for the purpose of providing recommendations for future science missions.
- Report on funded stability simulation work (UCI) was reviewed to assess impact on sail mission planning.
- Report on Microwave stability tests (G. Benford) was accomplished and reviewed to assess impact on sail mission planning.
- A VHS/Betamax Video describing scientific rationale and documenting important milestones of the program was developed and produced. This video documents the major technology tests that were performed, contains interviews with Principle Investigators and reports the science returns expected from the implementation of this technology. It also examines the reasons why long-term funding of this concept would benefit humankind.

Created technology that enables an entirely new class of fast, inexpensive NASA missions to the entire Solar System and beyond.

Science

Objective: The major objectives include capitalization upon advances in promising enabling technology and concepts to enhance present missions and enable new missions, never enabled before. This task area fosters innovative and aggressive approaches to the technology investment and higher return on that investment

Approach: Identify, enhance and promote both the development of technologies that support power in space and advances those efforts that benefit from the availability of such power in science missions and other NASA's commercialization development of space activities.



Task Schedule:

	FY'02			FY'03
	Q2	Q3	Q4	Q1
• Microw./Laser ultra-fast S/C	[Bar spanning Q2, Q3, Q4, Q1]			
• Thermal Molecular Levitation	[Bar spanning Q2, Q3, Q4, Q1]			
• Plan SSP Prototype	[Bar spanning Q2, Q3]			
• Beam riding/stability exper	[Bar spanning Q2, Q3, Q4, Q1]			

Task FY'02 Milestones/Products:

- Develop plan and technical requirements for SSP prototype concept for sail-launching Earth-orbiting station.
- Complete activity on beam riding, beam/sail stability and sail sublimation.
- Develop SSP NRA experiments/sims in the areas of beam stability, beam riding and thermal molecular levitation.

Resources:

Actuals				Planned		
FY'01	FY'02	FY'03	FY'04	FY'05	FY'06	

SSP Funding:

\$75K	\$100K	\$100K	\$	\$	\$
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Other-than-SSP Funding:

\$	\$	\$	\$	\$	\$
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FTE's (civil servants and JPL): [Full Time Equivalents]

0.6	0.6	0.6			
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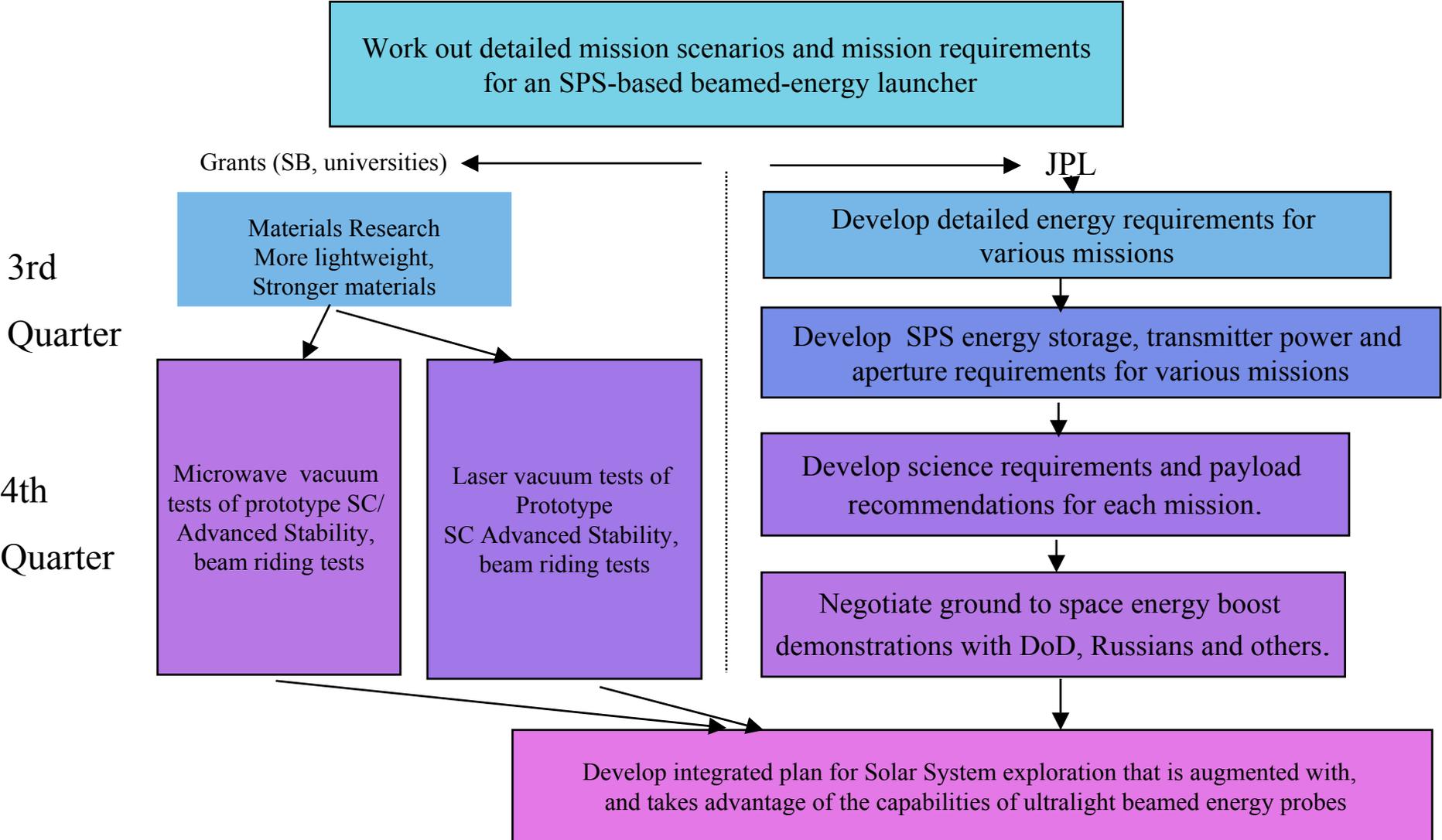
EP's (contractors): [Equivalent Persons]

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Participants:

Planned Accomplishments

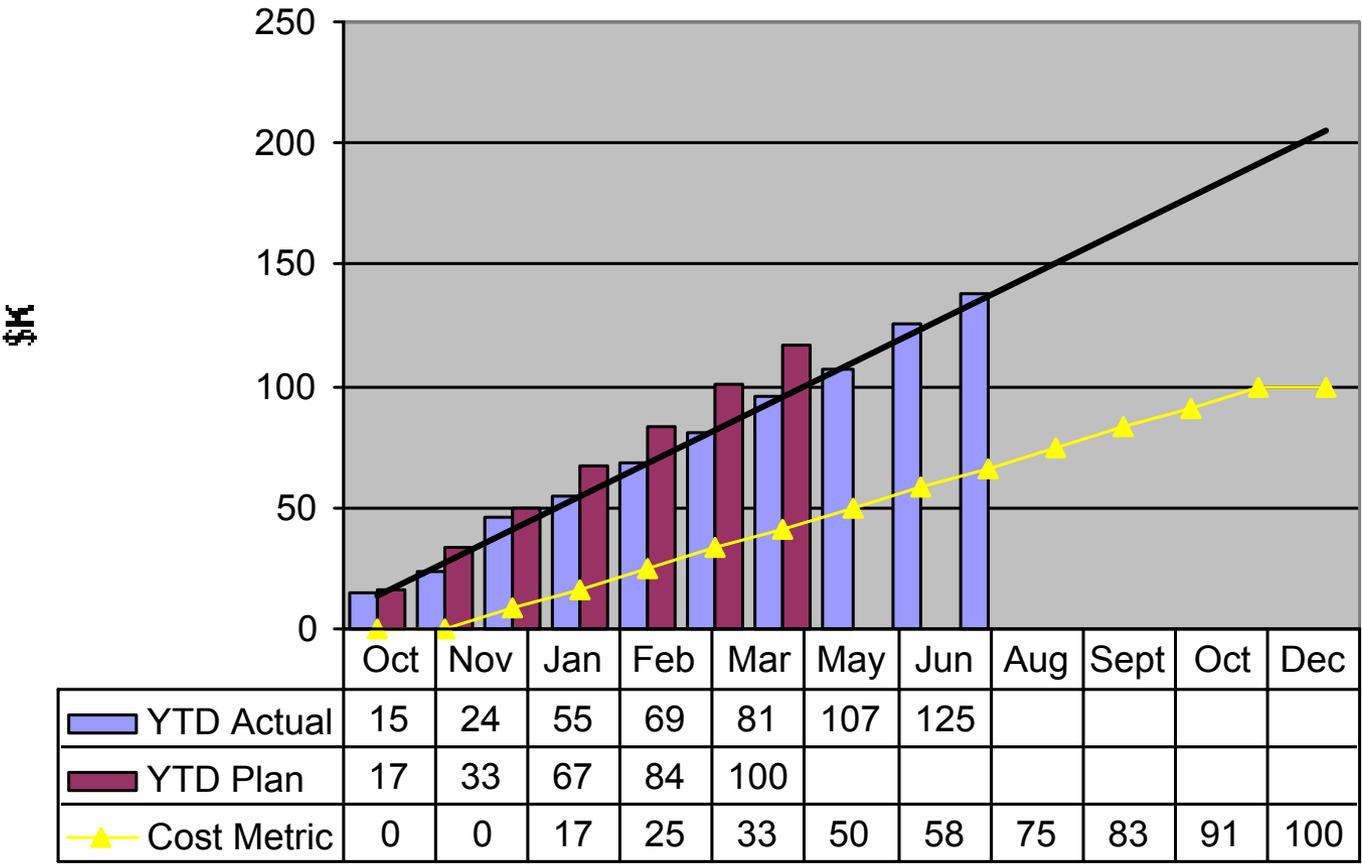
Science



Budget Status



Science



	Yes/N
YTD Variance < 5%?	No
Cost trendline crosses 83% mark	No
Budget by Sept = guideline?	-6K



Science

- Targeted Customer Base
 - Space Science Enterprise
 - Advanced ultralight, high temperature, self-rigid materials
 - Earth Science Enterprise
 - Polar Observer, Mesospheric Probe
 - Human Exploration and Development of Space Enterprise
 - Beamed energy driven sail missions
 - Luna, Mars, Outer Planets, Pluto, Kuiper Belt, Heliopause missions

- Co-funding Arrangements
 - Planned Commitments
 - NSF
 - Air Force, DARPA, or Army - (High Energy Lasers, microwave transmitters)
 - U.S, Russia ground microwave boast