NASA Planetary Science: California's Stake in the Future

Who We Are: Planetary scientists and students conducting research at some of California's top universities and laboratories, whose work depends on NASA funding

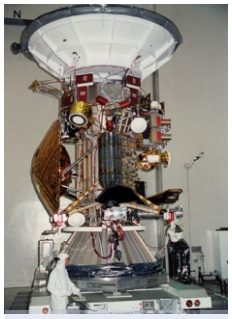
The Situation:

- Cuts of more than 20% to NASA's planetary exploration program in the President's FY'13 Budget Request will severely set back our nation's unmanned space program
- California currently leads the nation, and our nation leads the world, in planetary exploration
- California will lose high tech jobs in science and engineering, and the nation will lose a unique capability to explore and study other worlds, if funding is not restored
- NASA will be unable to carry out the next steps in both Mars and outer Solar System exploration, which seek answers to the big question, "Are We Alone?"

Recommendations:

- **Restore NASA Planetary funding to the FY12 level of $1.5B.** *This will enable NASA to begin implementing the NRC Decadal Survey recommendations, which represent consensus views of the 1,700 scientists who created the survey in 2011*
- **Rebalance NASA's funding portfolio to restore science to its historical level of 30%.** *This will enable the planetary science budget to be restored to the FY12 level without cuts to other high-priority NASA science*

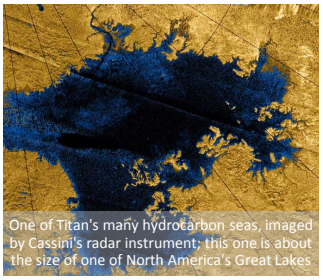
JOBS: California reaps great rewards from NASA's planetary science and exploration program, through high tech jobs, cutting edge research, and higher education. Many of NASA's planetary mission concepts originate from research in our universities and laboratories, and many of the spacecraft and their components are built by NASA contractors in California, as well as the Jet Propulsion Laboratory (JPL) and NASA-Ames Research Center. More than 5,000 people are employed at JPL alone, including some of the top scientists and engineers in the world; the vast majority of JPL's funding comes from NASA. Some of the aerospace contractors in California benefitting from NASA's planetary program include: Northrop Grumman, Lockheed Martin, SpaceX, Orbital Sciences, ATK Space Components, and small businesses including Honeybee Robotics and Ashima Research.



Technicians inspect the Cassini Spacecraft at Pasadena's Jet Propulsion Laboratory, prior to its launch to Saturn

JPL's Spirit rover on the surface of Mars

DISCOVERIES and EDUCATION: Over the last forty years, planetary missions have enabled a revolution in understanding of the solar system and planets. The Galileo mission to Jupiter revealed an entire ocean of liquid water underneath Europa's icy shell. On Saturn's moon Titan, the Cassini spacecraft found lakes and seas of liquid methane, with vast networks of river channels feeding into them. Investigations by Mars rovers and orbiters suggest that, in spite of its cold and arid climate today, the Red Planet was once warm and wet – a potential abode for life. These are just a *small fraction* of the discoveries involving California researchers and students, who depend on funding from NASA's planetary program. NASA's spectacular planetary science results are among the examples most often used to inspire children to pursue science careers.



One of Titan's many hydrocarbon seas, imaged by Cassini's radar instrument; this one is about the size of one of North America's Great Lakes

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