

## Bolden describes austere budget

In a separate visit, Schiff vows continued advocacy for Mars program

By Mark Whalen

A series of Labwide meetings by NASA Administrator Charlie Bolden, JPL Director Charles Elachi and Congressman Adam Schiff followed close on the heels of NASA's February rollout of its budget request for fiscal year 2013 with cuts that could have a major impact on JPL.

The Obama Administration's \$17.7 billion budget request would cut funding for planetary missions by about 20 percent, eliminating NASA's next major Mars mission—the 2016–18 ExoMars collaboration with the European Space Agency.

In his visit Feb. 22, Bolden told JPL employees the decision to make the cuts was a difficult one, resulting from a “very constrained” budget environment. “ExoMars had become a flagship mission in an era when NASA could not take on another,” Bolden said. He said that NASA would begin planning immediately for new, more cost-effective Mars missions that would combine objectives in science, human exploration and technology, in which JPL would have “a key role.”

Speaking in a town hall at JPL the following day, Schiff told employees that he was committed to working to restore the cuts. “We are already teaming up to push back, fight back and put the Mars program back on a solid trajectory,” he said. Schiff said the budget request reflects “a greatly diminished view of our capability, of what we can do, of how big we can go and how far we can look into the past—and we cannot settle for that.”

In an all-hands meeting the same week, Elachi said that, if enacted as it stands now, the FY13 budget request could cut JPL's budget by about 7 to 8 percent. But he said he is “cautiously optimistic” that the outlook will be improved by action on the budget in Congress, new work from NASA or work from non-NASA sponsors.

*Continued on page 2*



From left: JPL Director Charles Elachi, NASA Administrator Charles Bolden, NASA Chief Scientist Waleed Abdalati.



Congressman Adam Schiff addresses JPL staff Feb. 23 in the Flight Projects Center.

Richard Hasegawa / JPL Photo Lab

Dutch Slager / JPL Photo Lab

# Selected comments published since NASA's FY 2013 budget request on Feb. 13

***"We're doing all this great science and taking the public along with us. Pulling the rug out from under it is going to be really devastating. If a proposed budget like this comes to pass, that leadership will be at risk. If we stop looking outward and start looking inward, we're not going to be leaders anymore."***

— Jim Bell, Arizona State University scientist and president of the Planetary Society

***"You don't cut spending for critical scientific research endeavors that have immeasurable benefit to the nation and inspire the human spirit of exploration we all have."***

— U.S. Rep. John Culberson (R-Texas)

***"It's a scientific tragedy and a national embarrassment. Low-level workers have substituted their judgment for 1,700 scientists and the National Academy of Sciences."***

— Scott Hubbard, Stanford University scientist and former head of the Mars Exploration Program

***"To me, it's totally irrational and unjustified. We are the only country on this planet that has the demonstrated ability to land on another planet, namely Mars. It is a national prestige issue. Why would you go after it? And it fulfills the president's space policy to encourage more foreign collaboration."***

— Ed Weiler, recently retired NASA associate administrator for science

***"There is no other country or agency that can do what NASA does—fly extraordinary flagship missions in deep space and land spacecraft on Mars. If this budget is allowed to stand, the United States will walk away from decades of greatness in space science and exploration. But it will lose more than that. The U.S. will lose expertise, capability and talent. The nation will lose the ability to compete in one of the few areas in which it is still the undisputed number one."***

— Bill Nye, CEO of the Planetary Society

***"If the NASA budget is passed in its current form, American leadership in planetary sciences will be endangered. We strongly believe that the robotic exploration of the solar system resonates with the American people, that it is something that NASA needs to be doing, and it is something the American people will support even in tight budget times."***

— Daniel Britt, chair of the Division for Planetary Sciences, American Astronomical Society

## **BOLDEN** *Continued from page 1*

During his JPL visit, NASA's Bolden outlined the agency's top priorities for the fiscal year: construct a heavy-lift launch vehicle with a multipurpose crew vehicle for transport beyond Earth orbit; enhance use of the International Space Station and extend its life to at least 2020; and proceed with the James Webb Space Telescope, now retargeted for a 2018 launch. Bolden also shared an ambitious hope to send astronauts to Mars in the 2030s.

Bolden said the FY13 request for NASA overall is "a level budget, [which is] is a good thing. Level is the new up." He noted that the federal budget overall is extremely tight, affecting "not just NASA; it's everybody."

"We have an incredible opportunity to reshape our robotic Mars exploration program, such that it fits what we need to do as a nation," said the NASA administrator. "We can't back down from this. If we don't meet the president's challenge and equip ourselves to put humans in the Martian environment in the 2030s, you and I won't get another chance to do it."

On Feb. 27, NASA announced that former agency program manager Orlando Figueroa will lead a newly established Mars Program Planning Group tasked to

reformulate the agency's Mars Exploration Program. Figueroa's first assignment is to develop a draft framework for review by March 15.

"The assurance I'll give you is that JPL will be heavily involved in whatever we do with Mars going forward, just as you have with almost every planetary mission that we've done since the agency's been around," Bolden told JPL staff. "You should not be wondering whether or not you're part of the NASA family; you are and you always have been. Mars is critical and you will play a key role in that."

NASA Chief Scientist Waleed Abdalati, who joined Bolden onstage, said JPL's technical capabilities are "a part of what makes NASA iconic and part of the national identity" and pledged "commitment to ensure they remain healthy." Rather than dwell on budget limitations, he encouraged employees to "step back and think about forward movement.

"Don't focus on what's not being done; focus on what's available to us," Abdalati added. "We need to be particularly thoughtful about how we move forward, advancing agency objectives within the resources available, and to me that means preserving and growing

the capabilities that exist at JPL and elsewhere. We're looking out for you; it's the least we can do, given all you've done for the agency, the nation and the world."

The day after the administrator's visit, staffers heard a markedly different perspective about the budget from Schiff, whose 29th Congressional district now includes JPL.

"You would think JPL was a horribly mismanaged, incapable lab that just couldn't get anything right," he said. "How else could you explain the fact that such a disproportionate share of cuts is being borne by one institution?"

Schiff, a Democrat, vowed to continue his advocacy for the program in the halls of Congress working with allies such as Texas Rep. John Culberson, a Republican. "We couldn't have a better friend than John in the House," Schiff said.

"I'm not comforted by claims that 'we will try to find some lesser, other Mars missions' or that we will find other work," Schiff added. "You all didn't come to JPL to find work; you came to JPL to do something that can't be done anywhere else. And that's what we want preserved." ■

# Innovation, diversity of work key to Lab's future

## Elachi outlines prospects for year ahead

By Frank O'Donnell

NASA's proposed budget for fiscal year 2013—including a 20-percent cut in planetary exploration that would cancel a major Mars mission and reduce JPL funding—was the topic of a series of all-hands meetings in late February. Here, JPL Director Charles Elachi shares his thinking on the outlook for the Laboratory.

**You've said that JPL's funding is stable for the rest of the year, but the outlook for 2013 will depend on what happens in the months ahead. What in your mind would be a best-case and a worst-case scenario?**

Over the next nine months NASA will be deciding a number of activities that have not yet been assigned, and might get assigned to JPL. Some of them are competitive, such as Discovery and Explorer and Venture-class missions. We are being considered for a number of these things, some of them in the final competition stage.

There is also a lot of activity related to technology, work with the human program, potential telescopes on the space station. Decisions will be made in the next five, six months about implementation of those missions. So I'm cautiously optimistic that there will be some additional activities assigned to JPL in FY13. In part this is because people at Headquarters value JPL a lot. Number two, we have the technology and the capability to do these areas. So I don't think we'll be able to tell for sure what we will be doing in FY13 until probably later in the summer.

And finally, there is what Congress will do. Congress could bring the budget up, or make cuts, so there's uncertainty in there. But I want to point out that a number of key congressmen including Adam Schiff have expressed strong concern about, and opposition to, the cuts in the planetary program due to the unique leadership that NASA and JPL have developed and the inspiration, pride and prestige that planetary exploration has given to our country. So we will have to see what actions Congress takes on the budget.

In the worst case, if none of these things get to JPL, still the impact will be less than, I would say, 7 or 8 percent of the total budget. In the best case, things can be as good as this year or better, depending on what happens.

Every time there is an uncertain or turbulent environment, it can be an opportunity for JPL. You can look, for example, at the current fiscal year, FY12. We started the year thinking JPL's budget would be about \$1.5 billion, and we planned accordingly. We think now we'll be at least at \$1.530. That's 2 percent above what we originally had, and it may become even more. So in general, when things get tight, I think people get very innovative and very proactive, and that's good. That will all help.

**How are things looking with new non-NASA business?**

We expect that the non-NASA activity will grow a fair amount over the next few years. Right now it is about 10 to 12 percent of our budget. We will be at about 15 to 18 percent in the next couple of years. This is all high-tech, very exciting work.

**In the last few days we've heard NASA people such as the Administrator, Charlie Bolden, talk about designing a new 2018 Mars mission that would meet science, human exploration and technology objectives. What is your thinking on what shape that would take?**

A team is being formed that will be looking at the 2018, '20, '22 launch opportunity, because that is a very good time to go to Mars due to celestial mechanics. And JPL is involved in that team, very heavily involved in that team. They will ask what is the right kind of mission—orbiter, lander or some combination of the two—that can address both scientific objectives and provide information needed for human exploration, within budget constraints. NASA has a goal of having a human presence somewhere around Mars in the 2030s decade. So NASA is working back from that decade and asking, what kind of science, what kind of measurements, what kind of technology needs to be developed to meet that goal?

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**“I'm cautiously optimistic ... an uncertain or turbulent environment can be an opportunity for JPL. When things get tight, people get very innovative and very proactive, and that's good.”**

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**So a mission like that, compared with a typical science mission, might look more at factors that would affect astronauts such as radiation levels?**

Examples would include the radiation environment, and also learning more about atmospheric entry, developing optical data communications to allow you to get very high-rate data.

**What is your thinking about JPL's other programmatic areas? Is there any prospect of doing an outer planets mission? What is the outlook for astronomy missions?**

A couple of things. Number one, it's very critical that we have a balanced program between the different scien-

tific disciplines. Number two, within these programs it's very important also to have a broad, balanced program of research. In planetary, right now we don't have an outer planet. I'm personally committed to actively advocating for both the Mars program and an outer-planets program.

**Is it possible to do an outer planets mission as a small mission—say, at the level of missions in the Discovery Program?**

That will be very tough, because of the distances involved, the time it takes to get there and the launch vehicle you would need. So I would say our challenge is how we put together an affordable, comprehensive outer-planet mission. Clearly, in this fiscal environment we cannot do a mission costing several billion dollars. One of the things that we briefed Bolden on is a Europa mission at roughly \$1.5 billion, and the NASA people were very intrigued about it. We briefed him about exoplanet missions that could be done in the Explorer, New Frontier class. So again, the challenge for us in this tight fiscal environment is how we put our best minds to look at missions that can forward the science, but to do it affordably.

**Do the new exoplanet missions build on the technologies from past mission proposals such as the Space Interferometry Mission (SIM) and the Terrestrial Planet Finder, or do they go in a different direction?**

They capitalize on those technologies. They basically require the metrology, the optical telescopes and so on that we have invested in in SIM. It's important to keep our thinking broad, because advances could come from anywhere. We know that exoplanets exist; I think the next natural step is to characterize and look at their spectrums, and then ultimately the objective is to start taking direct images.

**Earth science seems to be in strong shape because of a lot of support from the administration in Washington. Do you have any concerns there?**

I think we are in very good shape. Of course we'd always like to be able to move faster with our missions. The big challenge in Earth science is really the high cost of launch vehicles. That's what has slowed us down or made missions more expensive.

As I said in our all-hands meeting, JPL is now a much more diversified institution in the sciences, with Earth science, astrophysics and planetary. This didn't happen by chance. It was clear to me and to the Executive Council that our best strategy was to broaden the base so we don't swing up and down if we were fatally dependent on one discipline.

*Continued on page 4*

# News Briefs

## Budgeting tool almost ready

A new institutional budgeting tool for JPL will make its debut in March. Sharmon Keasler of the Program Business Management Division is leading the project that will ultimately retire three currently underutilized or inefficient tools to be replaced by a single, simpler and more robust tool. Rollout of the new system is scheduled for March 19.

"The goal of the project was to understand all the needs of the community as it relates to budgeting and incorporate those requirements into a user-friendly tool," said Keasler.

Two currently employed tools — "Friendly Front-End," used mostly for project budgeting; and "Universal Front-End," primarily for research and development — will be retired for the first rollout. A third tool in current use, Oracle-based "Budgeted Direct Effort," used mostly for burden budgeting, will be put out of service at the end of fiscal year 2012, said Keasler.

Stakeholders from JPL's technical, business and administrative areas considered about 160 requirements for the new institutional tool. The result will be a robust user interface as

well as some capabilities that users liked from the current tools. In some cases, new requirements were included; for example, quick and efficient pick lists, offering names and badge numbers and providing corresponding organizations and roles.

Training is being scheduled with Professional Development based on the needs expressed by projects and organizations, Keasler said.

Once operational, the single budgeting tool could provide JPL with savings in several ways. "It's anticipated that having a single tool will enable an earlier rollout to projects for budgetary planning by about one month," said Keasler. Also, Enterprise Business Information Services (EBIS) will no longer need to support three tools. Labor efficiencies for the business community will be realized, in terms of training, deployment and process streamlining. On the technical side, she added, all budgeting will be done in one place: budgets in support of research efforts, instruments, projects, proposals and ultimately burden.

"This will result in a more time-efficient approach," she said. ■



Thom Wynne / JPL Photo Lab

From left: John Barnfather, credit union vice president of information technology; Division 27 Manager Willis Chapman; credit union CEO Rich Harris; JPL Deputy Director Gene Tattini; Steve Proia, JPL chief financial officer and director for business operations; Bob Develle, Facilities Division manager.

## New credit union office opens

The Caltech Employees Federal Credit Union has opened a new office in Building 291, just behind the facility in 218 that has served JPLers for six decades.

The expanded, open space allows for easier customer access to loan officers, and includes a coin machine. An automated teller machine, accessible from the north side of the building, dispenses \$10 bills along with the traditional \$20s.

For information on the credit union's services, visit <https://www.cefcuonline.org>.

**ELACHI** *Continued from page 3*

**Like diversifying your investment portfolio.**

Yes. And although this year planetary was hit with a 20-percent cut, we are not going to be impacted by anywhere near that much, because other areas such as Earth science, technology and non-NASA work are going up. Having a broad base of high-tech activities allows us to weather impacts in individual areas.

**It's always been important to JPL to have in-house projects to keep skill sets sharp here. What can we expect to see in the high bay?**

Most immediately there will be SMAP [Soil Moisture Active Passive mission]. As the Mars program gets articulated, we will be looking at the implementation. I'm committed

to make sure that we always have at least one flight mission in-house at JPL. So we will be working hard on this.

**John Grunsfeld recently became NASA's associate administrator for the Science Mission Directorate. How does that impact JPL?**

John brings a superb combination of talent. He is a scientist, he was an astronaut in the past, he has served as deputy director of the Space Telescope Science Institute and as chief scientist at NASA, so he really brings a great combination of experience. He's a delight to work with. He's very excited about what he's doing, excited about exploration, be it the Mars program or the planetary program or astrophysics. He has a challenging job being in a very tight fiscal environment.

**In the midst of all this budget activity, you spend a lot of time staying in touch with JPLers at many levels, from Labwide to divisions. Is that something that's really important to you?**

I think it's essential, for a couple of reasons. One, it's very important that employees stay aware of the challenges. They read the papers. I think it's important that the employees get the best information that we have about the future of the Lab, the things we are doing. Equally important is for me to hear what's on their mind, the employees. I do make a commitment that anytime I hear about any concern, at least we'll go look into it. In the end, JPL is really about its employees. We have some of the brightest people, and I want to hear their ideas and concerns. JPL will go up and down depending on how imaginative the employees are.

**Both you and Charlie Bolden stress the importance of JPLers keeping their eye on the ball and ensuring the success of our mission in the next few months.**

This week we heard the chief scientist of NASA say he's in awe of JPL. The reason is because of our accomplishments. Our colleagues at NASA think very highly of us, and try to support JPL because of the amazing things we do. In the last 10 years, we've had a superb record of successes that attracted a very positive image of JPL and helps a lot when we're advocating for new programs. A success on Mars Science Laboratory will help tremendously, and that requires people to keep focused. And not only MSL; across the board. Nothing helps me more and nothing helps Charlie Bolden more than when we deliver technically bold and exciting accomplishments within budget. ■



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# Universe

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## Letters

Thank you to my JPL family and friends for your thoughts, prayers and kind words during my mother's short illness. Knowing how many of you had gone through similar experiences helped me realize I could/would get through this. The plant from JPL and the flowers and donation to the American Cancer Society from the Europa staff were truly touching. Mom was 93 when diagnosed with Stage 4 lung cancer and given two months to live;

she lasted six weeks. Not having a large immediate family made my JPL family and friends invaluable. From the bottom of my heart, "Thank you!"

Valerie McKay

I would like to thank my friends and co-workers for your words of comfort and support, and for your generous donations, after the passing of my dad in January. My words can't express how thankful I am to work with such caring people. Thank you also to the ERC for the beautiful plant; it brightens up my house! A special thank you to Bill Adler and Marc Pomerantz for accompany-

ing me on guitar so I could sing at his service. My dad always supported my singing!

Jill (Wetmore) Figueroa

## Retirees

The following JPL employees retired in January: **Donald Sweetnam**, 40 years, Section 4370; **James Zwissler**, 28 years, Section 353E; **Lourdes McKim**, 26 years, Section 3112; **Gary Burke**, 20 years, Section 5140; **Alexandre Tsapin**, 14 years, Section 3225.

The following employees retired in February: **Richard Denning**, 51 years, Section 382G; **Albert Nakata**, 41 years, Section 314C; **John Rakiwicz**, 41 years, Section 318B; **Allison Owens**, 40 years, Section 353B; **Bonnie Kunkle**, 40 years, Section 2720; **William McGrath**, 25 years, Section 389K; **Brenda Holder**, 18 years, Section 252C; **Barbara Larsen**, 16 years, Section 317D; **Wei-Min Wang**, 16 years, Section 173A; **Phillip Zulueta**, 13 years, Section 5120.