At a time when the Bush administration has submitted a fiscal year 2006 budget that seeks deep spending cuts across the federal government, NASA's proposed funding over the next five years will increase between 2 and 3 percent each year, JPL Director Dr. Charles Elachi told staff Monday.

Noting that this is the toughest budget the administration has ever proposed, including a commitment to cut the deficit by 50 percent over the next four years, based on preliminary numbers, almost all discretion- ary agencies (excluding the Department of Defense and the Department of Homeland Security) are proposed below NASA growth. "We should all be proud and thankful for what I would consider a very good budget in this environment—both for NASA and for JPL," Elachi said.

Under the budget proposal submitted by the administration to Con- gress on Monday, NASA's Science, Aeronautics and Exploration areas will be funded at about $9.7 billion in FY '06, an increase of about $700 million over FY 2005. Projecting to FY 2010, the budget calls for $12.8 billion.

"There is not only growth in absolute numbers, but also a growth in the percentage of science being done at NASA," he said. "So clearly there is a commitment from the administration and from the agency that science is very important and is a significant and critical element of NASA.

Prometheus, the technology demonstration mission associated with the Jupiter Icy Moons Orbiter, faces some funding constraints. Its FY 2006 request for $230 million is $112 million less than this year; but this budget request increases such year thereafter, through the decade. "The Prometheus project is exploring alternative destinations for its first mission that would result in lower costs. This is a very reasonable and pragmatic direction to take in order to demonstrate that the demonstration system technology will revolutionize our abilities to conduct deep space exploration," Elachi said. "One of the advantages of a demonstration mission is that it has the capability not only in technology development, but also in mission management. The Prometheus mission is involved in a more ambitious future mission to Jupiter and its moons. Concepts presently under consideration include a lunar orbiter, asteroid rendezvous and a Mars orbiter mission, all exciting destinations where important science can be conducted."

"To Science Mission representatives, which funds most of JPL's activities, is proposed to receive significant increases over the next five years. Currently, Elachi said, the Science sector represents about 33% of the NASA budget. If the proposed spending is implemented, in five years funding for Science would be at 38% of NASA's overall budget.

In the Earth-Ocean System division of the Science sector, which is a combination of Earth sciences and space physics, there is a small drop in the FY 2006 budget request, to $2.06 billion, down from this year's $2.16 billion. "It will pick up slowly after that," Elachi said. "I don't envision any significant impact on our activities here."

Elachi said considering how important Exploration Systems will be in the near future, the intent over the next year is to transform JPL's Exploration Systems and Technology Office into a directorate, excluding Prometheus. Mike Sander, the manager of that office, is considering applications from JPL's to spend a year in Washington, D.C., working with Craig Seedoff's office, then returning to JPL.

Within Exploration Systems is Constellation Systems, which mainly concerns the crew exploration vehicle, which NASA is committed to demonstrate by about 2008 but not operate until 2012 or 2013. Although this is a mostly human spaceflight-related area, there could be a role for JPL. "There are a number of areas where we could make major contributions—particularly because that vehicle is intended not only to go from here to the International Space Station or to the moon, but a capability may allow it to go deeper—to asteroids, the L1 point and ultimately to Mars," Elachi said.

Another possibility for the Lab under Exploration Systems is Exploration Systems Research and Technologies, an area that has been well funded. "Most of the money in this area will be competed, and JPL has been doing well in competitive work," Elachi said.

Further on the budget, Elachi also noted the request includes a small reduction on the Space Interferometry Mission, which will result in a delay of the launch by about one year to 2011. "There will likely be a relatively small impact on staff here at JPL," Elachi said.

Another issue important to Elachi is for a major future initiative for the development of the Deep Space Network for the next 20 to 30 years. "This will be one of our highest challenges over the next two or three years," he said. "It's basically developing the equivalent of a new start for a major project."

The director attributed the good news about NASA's budget request to Bush's commitment a year ago to the agency's Vision for Exploration. "There is a vision that people can debate and work on," Elachi noted. "The fact that there is now a commitment and vision from the adminis- tration really helps in a major way."

He also credited the Aldridge Commission report for providing a blueprint for the NASA transformation and praised The New Age of Exploration, a document defining NASA's strategic planning efforts and roadmaps.

Elachi also weighed in on institutional issues at the Lab. "We are still going to be a very busy organization for the rest of the decade," he said, noting that JPL is committed to developing and launching an average of one mission every four months through 2010.

The recent selection of the Nuclear Spectroscopic Telescope Array (NuSTAR) was cited by Elachi as an illustration of the value of JPL's close ties to Caltech. NuSTAR is the third mission in the last five years when the principal investigator has hailed from the Caltech campus, following the Galaxy Evolution Explorer and Genesis. "This shows that by working closely with the campus our working relationship has a lot of value to both organizations," Elachi said.

The director encouraged all personnel to participate in the employee survey, which was extended through Wednesday, Feb. 9. As of Friday, Feb. 4, 56% had taken the survey. "By any measure, that is a high percentage," he said. "In our previous surveys, 30% response is pretty good."

The 2003 implementation plan identified 97 initiatives to undertake; so far, 81 of them have been completed. Elachi said now is the time to start to look for new initiatives for the next two years. Dr. Firouz Naderi is heading an effort that is looking at key initiatives to make JPL an even better place to work. Examples under consideration:

- Revisit pay grades
- Increase investment in the Lab's infrastructure
- Increase perceptive technology infusion in flight projects
- Expand system engineering processes and guiding training, particularly in the area of entry, descent and landing; many more future missions will require landings on celestial bodies over the next decade.possibly about every two years
- Improve the database for cost estimating
- Increase business management training
- Fund and build an education center within three years
- Revisit management councils and Executive Council operations: how to become more efficient and effective

"I think we will have significantly more initiatives to consider," Elachi said. "The employee survey could identify still more initiatives to make JPL the superb place we all would like to keep."
**AIRS**

**Special Events Calendar**

**February 22, Tuesday**
Claremont Graduate University School of Theater, Film and Television—Hosted by Professional Development from 9:30 to 11 a.m. in the 108-101 conference room. The speakers will be discussing their current projects, including an upcoming film in which they will focus on both theory and application masters and doctors in information systems, and certificate programs with both a management and technologists. For more information, call (909) 621-8099. For questions on the open house, call Professional Development at ext. 4737 or visit http://ext/ed.

**Wednesday, February 23**
JPL Library orientation—Stop by for 11:30 a.m. at building 111-104 for an overview of the library's products and services. Learn how to access numerous electronic resources from your desktop. For more information, call the reference desk, ext. 4-4200.

**Thursday, February 24**
JPL Aircraft—The band's annual concert will be presented at 7:30 p.m. in Occidental's Chrisman Auditorium. A discussion with Michelle Theiler of Caltech's Infrared Processing and Analysis Center will follow the screening. Free admission. For more information, call (628) 385-3582 or visit www.caltech.edu/calc.

**Friday, February 25**
Imagery Theater—The mask theater will present a 15-minute video program on selective focus in the social order of the Austrian peasants he observed. Discloses that the peasant workers he observed were disruptive of the social order. Free admission and refreshments served. For more information, call (626) 395-4652 or visit http://hr/et.

**Monday, February 1**
JPL Golf Club—Meeting at noon in Building 167-111 (the Wellness Center). For more information, call Dirk Bang, ext. 3-3456, or visit www.jpl.nasa.gov/golf/.

**Tuesday, February 2**
Teresa Bailey at ext. 4-9233.
What's your background? What brought you to JPL?

I had been working as a contract historian at NASA's Langley Research Center since 1999 when the JPL job opened up. I started there by writing a history of supersonic transport research, which will finally be published later this year, and then I pitched NASA on the idea for a history of atmospheric science research NASA-wide. It would include stories from JPL, as well as from Langley and Goddard Space Flight Center. I'm a chapter away from finishing the first draft of the book, which is due to NASA in September. I've been working in aerospace history since 1996, at the National Air and Space Museum and at Langley. I was offered this job back in May 2004, after the Lab had looked at applicants for nearly a year. It was a huge honor and really exciting—for a historian of 20th century science and technology, this is one of the very few perfect places to be. There's all sorts of great staff to write about here, and more is happening every year.

What are you working on? What are your goals here?

I've started to build up an oral history collection. I'm interviewing the directorate heads and other long-serving JPLers, and I'm pursuing topical sets of oral histories, starting with the atmosphere and oceans groups. Another short-term goal is to soon begin oral histories with some of the Prometheus mission leaders, with the help of Michael Hooks, the JPL archivist, and with the Mars Science Laboratory and Mars Telecommunications Orbiter teams. I'll also be expanding the range of the oral history collection over time to capture more of JPL's missions. Longer term, I plan on talking to the various directorates to gauge their interest in funding histories of their flight projects. There's a new history of JPL coming by Peter Westwick that will provide a very top-of-the-view of our history, but I'd like to foster histories of some of the more important projects so that there's more detail, and more personal stories, in the historical record. It takes three or four years to research and write a solid history, so I can't do them all myself.

What is an oral history?

It's generally an audiotaped interview accompanied by a paper transcript. Sometimes these take several sessions to complete. I try to get key players to tell me about their careers and their involvement in projects, in scientific research and in management. The goal is to build up the Lab's history by getting the stories of the people who make up the Lab. Eventually we'll have a set of oral histories on each of JPL's projects.

Everyone I've talked to has been very receptive; in fact, some have been rather enthusiastic and very happy to be asked to share their experiences.

Are you going to concentrate on JPL's current missions or those from the past?

I'd like to strike a balance. It's on my agenda to try to get histories on past missions that have not already been published by the NASA History Office. Each year, they fund a single history project for the agency. Galileo's history is being done now and Voyager is finished. So from JPL's past planetary missions, Magellan is the only major project yet to be done. Of course, there's also the whole Mars program of the last 15 years too, but because it's ongoing I don't quite see it as "past."

But in general my focus will be on current and future missions, even missions that get proposed and are later canceled. For example, I've found that a lot of people on the Mars Exploration Rovers mission had involvement in a proposed Mars sample return mission that was since canceled. I want to capture these shifts in more detail than in the past, because the development, movement and dissemination of expertise is an interesting topic historically.

Additionally, it's interesting to chronicle projects in development because most major projects change significantly from proposal to launch. With Prometheus, for example, I want to capture by oral history the evolution year-by-year for however long it runs. It will be a fascinating study.

I will also try to pursue topical histories. In other words, instead of covering individual projects I might look for a topic—such as infrared astronomy—that ought to be covered by describing a number of missions.

Do you intend to write books about the Lab and its missions?

I'll pick a book project late this year. But I can only work on one book at a time, so until the atmospheric history is done in September I will concentrate on the oral histories and a few journal articles. I'll probably write two articles this year for popular publications such as Astronomy and Air and Space Smithsonian. I will also target one article this year for one of the scholarly or academic history journals. The nice thing about articles is that they're relatively quick to do, and there are a lot of small but important topics here that can be done nicely in an article.

How will your work align with that of the JPL Archives?

My function will be to help Michael Hooks and Kay Schardan, the records manager, archive more visibility. I'll also be providing new oral histories for his collections, of course. Hooks is the custodian of all the Labs old records, including oral histories, and is responsible for making the records available to researchers. I'll also review the archives and records management functions from time to time to make sure they keep doing well.

Also, any work that I do will eventually be publicly releasable and the Archives will make it available.

Will JPL's history also be available on the Internet?

There is already a JPL history website run by the Library [http://beacon.jpl.nasa.gov/Plans/omega/JPLHistory.htm]. At least in the short term, I don't plan to expand it much. It has the basic information that it should have. If I can resolve some legal issues regarding electronic distribution of oral histories, I may also add a selection of them to the site as the Johnson Space Center has started to do. But that's a year or two away.

As far as purely electronic histories go, being a computer hobbyist leftover from the 1970s, I'm afraid electronically based histories may not survive. Look at all the formatting and software changes that have happened. Can you read a Microsoft Word file from 1990? Scientists may wrestle with this, but we historians are poor; we can't cope with the cost of format changes.

Paper and libraries may be old-fashioned, but we know we'll be able to read them in a hundred years. I don't believe that we know yet how to preserve electronic records in perpetuity.

Why is it important for JPL to have a historian and a historic record? Do the other centers have historians?

Actually, it's a legal requirement for NASA and JPL to preserve all of its records. As a matter of fact, the Columbia Accident Investigation Board's findings raised the issue of the inability to find records. But beyond the requirements, JPL should—and does—want its history to be recorded and disseminated. There has been and will continue to be so much important research done here.

As for the other centers, when I began working at Langley, most of the centers did not have their own historian, except for Johnson Space Center and Dryden. To this point, just about all of the human spaceflight program has been recorded, but the history of the robotic element of the agency is lacking.

But I think things are starting to look better, as most of the other centers are now starting to set up history programs. The impetus is not coming from Headquarters, but rather from the centers' own feelings that they need to do it.

Will you ever run out of things to profile at JPL?

I don't think so. I have a list of book projects already that would take a lifetime to complete, and it doesn't include any of the upcoming missions. So there are several lifetimes worth of work to do here.

There is much to chronicle in JPL's storied history and Erik Conway is the person to do it. Conway, who works in the Office of Communications and Education, joined JPL last September as the Lab's historian. He discusses with Universe how he is going about bringing the JPL story to the reading public.
Six JPL staff members last month closed their graduation from train-
ing for JPL’s Urban Search and Rescue Team. The group is made up of 85
volunteers and 24 firefighters who serve the Lab as trained emergency re-
sponders in the event of a major disaster. The group is made up of 85
volunteers and 24 firefighters who serve the Lab as trained emergency re-
sponders in the event of a major disaster.

The graduates, from leftright—Rich Hillquist (Section 2655), Lesa Paa
(3338), Kelly Clarke (13756), Robert Bertini (2575), Merrell Felton (NASA
Mount St. Helens Project) and Ken Hillers (3385)—spent the last six months
in twice-weekly training to learn the basics of technical rescue. Examples
include structure response to terrorist threat, rescue skills, advanced
collapsed structure rescue, victim care and much more.

The six graduates have completed all requirements and will continue
in training to move in more advanced skills.

Rescue team graduates six JPLers