

NASA OFFICE OF PUBLIC AFFAIRS  
303 E STREET, S.W., #P  
WASHINGTON, D.C. 20546  
(202) 358-1600

**Hearing: "Status of NASA's Programs"**

before the

**Committee on Science**  
**United States House of Representatives**  
Hon. Sherwood L. Boehlert [R-New York],  
Chairman of the Committee, presiding

Witness:

**HON. MICHAEL D. GRIFFIN**, Administrator  
National Aeronautics and Space Administration

10:00 a.m. through 12:00 a.m.  
Thursday, November 3, 2005

Room 2318  
Rayburn House Office Building  
Washington, D.C.

[TRANSCRIPT PREPARED FROM A WEBCAST RECORDING.]

## 1 P R O C E E D I N G S

2 CHAIRMAN BOEHLERT: The hearing will come to  
3 order.

4 I want to welcome Administrator Griffin back to  
5 the Committee. After about 6 months on the job, I want to  
6 assure you, you are still our hero. You have retained your  
7 candor, and you have been remarkably successful at  
8 fulfilling the commitments you have made.

9 Dr. Griffin has put in place a topnotch  
10 management team, has put meat on the skeleton of the Vision  
11 for Space Exploration, has taken seriously the criticisms  
12 of NASA's culture, handled the Shuttle's return to flight  
13 responsibly, has proposed tough but needed cuts in several  
14 programs, and has demonstrated his commitment to ensuring  
15 that NASA has robust programs in aeronautics, space  
16 science, and earth science. This is precisely what NASA  
17 has needed and just what we had hoped for from Dr. Griffin.

18 We are I think seeing the dawning renaissance of  
19 NASA, inspired by the leadership of Dr. Griffin and his  
20 team, but a renaissance costs money, and I don't see any  
21 Medicis waiting in the wings to underwrite NASA.

22 So, while NASA may have relatively smooth sailing

1 right now, we ignore the clouds on the horizon at our own  
2 peril. Here is what I mean, and I will be blunt. There is  
3 simply not enough money in NASA's budget to carry out all  
4 the tasks it is undertaking on the current schedule.

5 That's a fact.

6           The estimated shortfall between now and fiscal  
7 2010 is probably between 4- and \$6 billion, and that is  
8 assuming that the current cost estimates for NASA's  
9 missions are on the money, which is unlikely even with the  
10 most careful cost estimating.

11           NASA has gotten in trouble repeatedly in the past  
12 by making promises that are beyond its financial means to  
13 fulfill. The Columbia Accident Investigation Board, among  
14 others, have described that folly in excruciating detail.  
15 I don't want to see us go down that path again.

16           Before NASA promises that it can accelerate  
17 development of the Crew Exploration Vehicle and complete  
18 construction of the Space Station and have worthwhile  
19 aeronautics and science programs, it ought to be able to  
20 demonstrate where the money will come from, and right now  
21 it can't.

22           And let me reiterate as a supporter of the

1 Vision, NASA cannot use aeronautics and science as a piggy  
2 bank to fund human space flight, and I know Dr. Griffin  
3 shares that view.

4           The closest I have heard to an answer about these  
5 financial facts is, in effect, that we will address this  
6 financial shortfall in fiscal 2008, not all that far away,  
7 and as far as I can see, the only thing that 2008 has to  
8 recommend itself is that it hasn't happened yet.

9           I don't know why anyone would assume that we are  
10 going to be flush with cash in 2008. This  
11 wait-til-next-year mantra may be soothing for baseball  
12 fans, particularly so to me as a Yankee diehard, but it's a  
13 poor motto for budgeting. Yet, we are starting to hear it  
14 more and more.

15           We are hearing it, for example, from officials at  
16 the National Oceanic and Atmospheric Administration when we  
17 asked how they are going to get their key satellite program  
18 back on track, but that's another subject for another  
19 hearing.

20           I want to see NASA succeed. I want to see Dr.  
21 Griffin succeed, but we can't premise that success on money  
22 that doesn't exist and isn't all that likely to exist, and

1 the time to discuss those hard facts is now.

2           Congressional debate on NASA is dominated by two  
3 factions, neither of whom trouble themselves with this  
4 budget problem. The first and larger faction are those who  
5 don't care much about NASA and are particularly unimpressed  
6 with the Vision.

7           A smaller but more effective faction thinks NASA  
8 as a high enough priority that it should get additional  
9 money, no matter how tight the budget is.

10           I'm in neither camp. I support the Vision, but I  
11 think that it can't be allowed to break the bank or into  
12 NASA's other programs, and I hope we can get some guidance  
13 today about how folks like me, folks in the middle, the  
14 swing votes who can determine the outcome of debates, how  
15 we can and how we ought to proceed in this budget climate.

16           It's a good time to have that discussion. As we  
17 are beginning negotiations on our NASA authorization bill  
18 with our colleagues on the other side of the Capitol and as  
19 Congress nears agreement on fiscal 2006 appropriations,  
20 these are tough questions, but we've got the right man for  
21 the job at the helm at NASA to help us answer them, and  
22 that's why I think this hearing is particularly important.

1 Mr. Gordon.

2 REPRESENTATIVE GORDON: Thank you, Mr. Chairman.

3 As I listen to your remarks, I am reminded that  
4 in the turn of the century, there were brothers that ran  
5 for governor of Tennessee, Alf and Bob Taylor, and they  
6 called it the "War of the Roses." It really wasn't a war,  
7 but one of them wore a red rose and the other wore a yellow  
8 rose sort of as their symbol, and during the campaign, they  
9 debated across the State, normally staying together at  
10 guest inns or hotels wherever, and even to the point at  
11 sometimes changing their speeches.

12 So they would give the speech that the other one  
13 gave the night before, and I could have just as well taken  
14 your statements today. And I want the audience and our  
15 Committee to know that we are very much in sync both in  
16 terms of our appreciation for Dr. Griffin's ability as well  
17 as for our concerns about the direction of NASA.

18 So there are divisions, legitimate maybe and not  
19 legitimate, in Congress on a variety of issues, but in this  
20 Committee, at least from these two folks, there are no  
21 divisions on the statement that our chairman has just made.

22 So let that word go out.

1           Now let me welcome Administrator Griffin to our  
2 hearing today, and again, with all the good things we all  
3 said about you, I want to point out something that is not  
4 so good. I don't think that it is so much your fault, but  
5 you ultimately are responsible, and that is that the  
6 testimony, your testimony today, was not delivered until  
7 4:53 yesterday afternoon for a 10:00 a.m. hearing.

8           I know that OMB has to, I guess, clear these  
9 things. I want you to know that if this happens again, I  
10 will recommend to our chairman that we follow Jim  
11 Sensenbrenner's role with NSF sometime back and cancel the  
12 hearing. We simply can't do our job if we don't get that  
13 information sooner.

14           It has now been 4 months since Administrator  
15 Griffin first appeared before this Committee as the NASA  
16 Administrator. Since that time, there has been a lot of  
17 changes, both to the NASA programs and to the NASA  
18 institution. We need to hear about these changes.

19           In addition, there were a number of important  
20 questions left unanswered at the hearing, and NASA's  
21 attempt to answer them have raised additional questions,  
22 some of which I hope will be addressed at today's hearing.

1           When this Committee held a hearing earlier this  
2 year on NASA's FY2006 budget request and the President's  
3 Exploration Initiative, I said I for one support the  
4 President's proposal if it is paid for and is sustainable.

5       I stand by that statement.

6           However, I am very concerned that this  
7 administration may not be willing to pay for the Vision  
8 that it presented to the Nation 18 months ago, and I fear  
9 that the approach being taken to move the Vision forward  
10 over the near term may make it very difficult to sustain  
11 the initiative beyond 2008.

12           The result is that I believe we are no closer to  
13 a national consensus on the President's Vision for Space  
14 Exploration than we were 18 months ago, and that is  
15 unfortunate, but I believe that it is a reality, and why do  
16 I say that?

17           About a month ago, NASA released its plan for  
18 carrying out the Exploration Initiative. From a program  
19 management standpoint, it seemed to me to be very sensible,  
20 It maximized the use of existing technology. It narrowed  
21 the focus of the exploration program to achieving the  
22 President's goal of putting American astronaut boots back

1 on the moon by 2020, and it appeared to fit within the  
2 administration's proposed exploration budget.

3           Given the constraints laid down by the  
4 administration, it appeared to be the most efficient ways  
5 of meeting the President's goal, and I think that  
6 Administrator Griffin and his team are to be commended for  
7 their efforts. Yet, it leads to the basic question of are  
8 we doing the right thing or just doing the thing right;  
9 that is, should simply getting to the moon under the  
10 administration's timetable be the Nation's goal, or should  
11 the goal be to craft a long-term human robotic exploration  
12 program that spawns new technologies, engages the best and  
13 brightest in our universities, and nurtures the R&D  
14 capacities that will be needed to meet the long-term  
15 exploration goals as well as carry out NASA's other  
16 important missions?

17           Those are not all the questions, given that NASA  
18 is proposing to spend more than \$100 billion over the next  
19 15 years to get those astronauts' boots back to the moon  
20 and given that the leader of the NASA's exploration  
21 system's architecture study recently acknowledged that \$100  
22 billion doesn't fund more than a couple of brief visits to

1 the moon.

2 He also confirmed that the assumption of limiting  
3 NASA's exploration budget beyond 2010 to inflationary  
4 growth, something the administration cited when he  
5 announced the Exploration Vision to demonstrate its  
6 supportability, won't get anyone to Mars.

7 To quote him, "When you try to fit within a wedge  
8 like that, you are not going to have a human Mars program  
9 if you extend that out. If that is the case, then it puts  
10 a premium on NASA having compelling answers to the  
11 questions, why do we need to go back to the moon on NASA's  
12 proposed schedule and what are we going to do when we get  
13 there.

14 I hope the Administrator Griffin can provide  
15 those answers today, but I would caution him that it is  
16 likely to face a skeptical audience in the Congress as a  
17 whole. That skepticism is likely to increase when the  
18 benefits of following NASA's plans are weighed against its  
19 cost to NASA's other programs.

20 For example, why it is certainly commendable the  
21 Administrator wants to carry out the Exploration Vision  
22 within the budgetary profile that he has been given by OMB,

1 that profile puts NASA's aeronautics programs on a path of  
2 continued significant decline through at least the  
3 remainder of the decade, and while this -- why his intent  
4 is to not take money from NASA's science programs to  
5 support the Exploration Vision, the reality is that NASA's  
6 life sciences programs are being gutted as we speak, and  
7 non-exploration-related research is being eliminated from  
8 the International Space Station program.

9           In an attempt to reduce the size of the gap  
10 between the forced retirement of the Shuttle and the  
11 eventual deployment of the Crew Exploration Vehicle, the  
12 agency is slashing its commitment to a variety of research  
13 and technological programs.

14           Finally, just weeks after NASA announced its goal  
15 of essentially completing the International Space Station,  
16 it appears that OMB guidelines to NASA is putting the goal  
17 in serious jeopardy.

18           My intent in citing these examples is not to  
19 criticize Administrator Griffin. Rather, it is to make  
20 clear that only 21 months into the Vision, NASA has already  
21 had to make major cuts to the programs and contemplate  
22 additional restructuring simply to have the hope of meeting

1 the President's timetable for returning U.S. astronauts to  
2 the moon. That does not bode well for the sustainability  
3 of the Vision, and it raises the fundamental question, is  
4 the Vision for Space Exploration an administration priority  
5 or simply a NASA priority.

6 As you know, just one year after the President  
7 announced his Vision for NASA, the White House cut NASA's  
8 out-year funding plan by over \$2.5 billion. That simply  
9 worsened an already-existing mismatch between NASA's  
10 programs and its budget.

11 When the administration put forward its SANCHART  
12 [ph] 21 months ago to demonstrate the affordability of the  
13 Exploration Vision, it assumed deep reductions in funding  
14 required to the Shuttle program in the years prior to the  
15 retirement.

16 The realism of achieving those Shuttle cost  
17 reductions are questionable, but OMB and NASA kept them in  
18 their budget plan, and what's the result? NASA now has  
19 more than a \$3-billion budget shortfall in the Shuttle  
20 account to deal with over the next several years as a  
21 result of OMB's and NASA's desires to construct a budgetary  
22 plan that would support the Vision.

1           In the shortfall, it could have a major impact on  
2 NASA's ability to meet its commitments to the International  
3 Space Station program, among other things. Is the White  
4 House going to find resources to correct for earlier low-  
5 balling the Shuttle budgetary requirement? Is the White  
6 House going to ensure that the ISS is a facility that truly  
7 is an integrated part of the Vision and meets our  
8 commitments to our international partners? If not, it will  
9 be a telling sign that this administration is distancing  
10 itself from its commitment to Exploration Vision and  
11 leaving it to NASA to pick up the pieces.

12           We'll hope that Administrator Griffin will be  
13 able to shed some light on these issues today, and again, I  
14 welcome him to this hearing.

15           CHAIRMAN BOEHLERT: Thank you very much.

16           The chair recognizes the chairman of the  
17 Subcommittee on Space and Aeronautics, and before doing so,  
18 I would like to observe that Chairman Calvert has been  
19 tireless and has visited the NASA centers. He just never  
20 stops, and that is what we expect of the chairman because  
21 he succeeded his fellow Californian, Chairman Rohrabacher,  
22 who was just as indefatigable and just as energetic.

1           I say that so that everyone will know this is a  
2 team up here, and now it's Chairman Calvert at the helm at  
3 the subcommittee that is working day in and day out to  
4 ensure that we have the success that we all expect from  
5 NASA.

6           Chairman Calvert.

7           REPRESENTATIVE CALVERT: Well, thank you for that  
8 kind introduction, Mr. Chairman, and I hate to do this to  
9 you, but I want to remind you that I am an Angels fan, and  
10 I am sure you were reminded of that last month. But also I  
11 am from the City of Angels originally, and of course, the  
12 Angels play in Anaheim, but they call themselves the "Los  
13 Angeles Angels," but by that, I am an optimist, and it is  
14 great to chair the Space and Aeronautics Committee. So I  
15 come at this with a spirit of optimism, and I certainly do  
16 that this morning as I welcome Administrator Griffin as I  
17 know that he went into this job with a spirit of optimism  
18 that this country can and will succeed, and welcome you  
19 back to update the Committee on the latest developments at  
20 NASA since you appeared before us last June.

21           You have had a lot on your plate. A lot of  
22 things have happened. As you know, last week we were out

1 there at Johnson Space Center and met with you after you  
2 had an all-hands meeting, and we are certainly, as you are  
3 going to mention I suspect in your testimony, anxious to  
4 see the Shuttle return to flight, which hopefully will be  
5 in May of '06.

6 We certainly want the Shuttle to fly when it is  
7 safe, and we certainly understand that the hurricane season  
8 has undermined the planning to return to flight, but as you  
9 know, each month in delay of the Shuttle flight certainly  
10 affects NASA's credibility.

11 I also understand that an old friend of ours,  
12 Shana Dale, who has been nominated to be your deputy, has  
13 sailed through her first step of the confirmation process.

14 She will be completing her confirmation hearing I  
15 understand next week, and even though I know you are a  
16 high-energy person, we know that you will be happy to have  
17 her on board and part of the team. She is a great  
18 addition, and we certainly look forward to working with her  
19 certainly since most of us know her and have worked with  
20 her in the past.

21 The Committee is anxious to have you update us on  
22 a number of areas that you have changed over the last few

1 months, and I think properly so. Since we met last week,  
2 three of the NASA centers suffered through the Hurricanes  
3 Katrina, Rita, and Wilma. The agency has come out with its  
4 exploration system, architectural studies. NASA just  
5 recently sent up a new operations plan as well as a new  
6 budget amendment.

7           Your deputy administrator named by the White  
8 House, you have appointed new associate administrators for  
9 all your mission directorates under NASA, aeronautics  
10 research, exploration systems, space operations, and  
11 science. In addition, some of your centers are being  
12 reorganized to fit with the new Vision. We are anxious to  
13 learn how you will be moving forward on this over the next  
14 year or so.

15           In my capacity as chairman of the Space  
16 Aeronautics Committee, I have enjoyed working with you and  
17 to move NASA towards what I describe as the "second space  
18 age." As you know, the first space age was born of the  
19 cold war and was maintained only so long as we were  
20 competitive with the Soviet Union.

21           After the fall of the Soviet Union, the U.S.  
22 space program limped along for three decades lacking vision

1 and leadership. I believe the second space age, we must  
2 feature the exploration of the universe, while achieving  
3 synergy among our civil, commercial, and national security  
4 space programs. With your leadership, we now have the  
5 vision and leadership to provide this impetus for the  
6 second space age.

7           Recently, a panel of experts led by retired  
8 chairman and CEO of Lockheed Martin, Norman Augustine,  
9 issued a report stating what we already know. There has  
10 been an erosion of the United States' competitive edge in  
11 science, engineering, and mathematics. Increasingly, we  
12 are seeing strides in Asia and Europe rival or exceed  
13 America's competitive edge in those critical areas of  
14 science and innovation.

15           Last year, according to Fortune magazine, more  
16 than 600,000 engineers graduated from institutions of  
17 higher learning in China, 350,000 in India, compared to  
18 just 70,000 in the United States.

19           As you know, Mr. Administrator, the best way to  
20 get our students interested in studying these hard subjects  
21 is to have exciting things for them to work on.

22           NASA provides the impetus for future scientists

1 and engineers by giving them exciting projects with which  
2 to work and about which to dream. So I look forward to  
3 your success because it's not only your success, it's  
4 America's success, and quite frankly, I'm an optimist, as I  
5 mentioned in the beginning. You know, we will find the  
6 resources because this country must succeed, and we must  
7 continue I think to do the hard things.

8 And for that, I look forward to your testimony.

9 CHAIRMAN BOEHLERT: Thank you very much, Chairman  
10 Calvert.

11 The distinguished Ranking Member, Mr. Udall.

12 REPRESENTATIVE UDALL: Mr. Chairman, thank you.

13 Since we're discussing baseball analogies this  
14 morning, we were talking about what a great team we are, I  
15 do know our goal is, with all due respect to the New York  
16 Mets, not to be where one of our colleagues suggested the  
17 New York Mets are at this point in time, which is they are  
18 in the sixth year of their 4-year plan.

19 [Laughter.]

20 REPRESENTATIVE UDALL: It's important to hear  
21 from Dr. Griffin today. So I don't want to belabor many of  
22 the points that have been made, but I did want to make it

1 clear that I remain a strong supporter of NASA's  
2 exploration program.

3 I want to echo the concerns, but also the  
4 optimism of the three previous Members and their comments,  
5 Dr. Griffin, but I think I do share the concerns we all  
6 have about the cuts that NASA appears to be making to other  
7 vital NASA missions, and I want to just cover a couple of  
8 examples that I think are important to discuss this  
9 morning.

10 The first is the situation facing NASA's life  
11 science program, and in particular, the Space Station  
12 research in general. NASA has decided to eliminate the  
13 life sciences centrifuge that it had until now considered a  
14 centerpiece of the ISS research program as well as the U.S.  
15 commitment to the international partnership, and it appears  
16 that NASA is also making deep and perhaps irreversible cuts  
17 to NASA's life science program, and NASA has decided that  
18 it will no longer support fundamental and other  
19 non-exploration-related micro gravity research on the ISS,  
20 even though NASA has long justified the Nation's investment  
21 in the ISS in part on the basis of the terrestrial benefits  
22 to be derived from such research.

1           Second, despite your best intentions, Dr.  
2 Griffin, I am worried that NASA is going to have great  
3 difficulty in keeping a vital and robust set of space and  
4 earth science missions on track in a tightly constrained  
5 NASA budgetary environment. I hope I'm wrong because these  
6 science programs as well as the university research  
7 activities that they support are in many ways NASA's crown  
8 jewels in the eyes of the general public, but I do remain  
9 worried.

10           And then finally, I want to express my concern  
11 over the state of NASA's aeronautics program. You've once  
12 again changed the management of the program, and I want to  
13 wish the new associate administrator well, but it is clear  
14 under the administration's current budgetary plan that her  
15 task will be to manage a budget that will continue to  
16 decline for the rest of the decade, and I know NASA  
17 recognizes the importance of rebuilding its fundamental  
18 research and technology program in aeronautics. These  
19 budgetary constraints that are imposed on the program  
20 appear to make that rebuilding come at the cost of  
21 significantly shrinking NASA's R&D that I believe is more  
22 directly relevant to the needs of the aviation industry.

1           It doesn't make much sense to me, and I hope that  
2 NASA can embrace a more balanced portfolio. In that light,  
3 in that spirit, there is a lot more to discuss. Again,  
4 welcome, Dr. Griffin. I look forward to the spirit of  
5 exchange I'm sure that we will have today and to your  
6 remarks.

7           CHAIRMAN BOEHLERT: Thank you very much, Mr.  
8 Udall. Thank all of you for your participation, and I  
9 would just point in the record that other Members are  
10 invited to submit any statement they wish to make, which  
11 will be included and the statement in its entirety.

12           So that you don't think this is a complete love-  
13 in, there are some issues where there is disagreement up  
14 here.

15           I have heard Mr. Gordon's statement and Mr.  
16 Udall's statement, and there is one area where there is a  
17 difference of opinion. I fully support, Mr. Administrator,  
18 your proposed cuts in Space Station research and technology  
19 development programs. Those aren't the science programs  
20 that I am most worried about. So I think you are right on  
21 line with the way in which you are proceeding, and so I  
22 want to make sure that is clarified for all.

1           Let me start by saying -- you know what, I was  
2 going to skip you.

3           [Laughter.]

4           ADMINISTRATOR GRIFFIN:  Actually, that would be  
5 just fine.

6           [Laughter.]

7           CHAIRMAN BOEHLERT:  No, it wouldn't be.

8           [Laughter.]

9           CHAIRMAN BOEHLERT:  With that, let me welcome the  
10 Administrator of NASA, Dr. Griffin.

11           ADMINISTRATOR GRIFFIN:  Thank you, Chairman  
12 Boehlert, Ranking Member Gordon, Subcommittee Chair  
13 Calvert, Ranking Subcommittee Member Udall for inviting me  
14 to appear before you to provide an update on NASA's plans  
15 and programs since I appeared last June.

16           I do respectfully request that all sports  
17 analogies from here on out, however, be golf analogies, so  
18 that I can understand the metaphor being used.

19           CHAIRMAN BOEHLERT:  Without objection, so  
20 ordered.

21           [Laughter.]

22           ADMINISTRATOR GRIFFIN:  Thank you.

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A lot has happened since last June, and I believe that NASA, with your help, has made some steady progress. It has not been easy. The NASA family has suffered setbacks, especially in the aftermath of Katrina. A lot of work needs to be done, and we need this Committee's help in maintaining our progress.

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That includes the difficult progress -- difficult yet steady progress we are making in NASA's financial management system, the subject of Chairman Calvert's hearing last week.

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Chairman Boehlert, in your letter of invitation, you asked me to provide the Committee with an update on a number of issues. We are working in a dynamic environment.

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I hope the Committee will understand that we are still in the throws of numerous issues arising from the Shuttle program following our first test flight in the Return to Flight sequence, the effects of Hurricane Katrina on the Shuttle program, and the formulation of the '07 budget.

20

21

That said, I will try to answer your questions to the best of my ability.

22

But first, on behalf of NASA, I do wish to thank

1 the many Members of this committee and Congress as a whole  
2 for helping us resolve certain legislation restrictions  
3 that were placed on cooperation with Russia that would have  
4 prevented crew rescue support for the Station and  
5 necessitated U.S. astronauts de-crewing the Space Station.

6 The administration maintains our Nation's non-  
7 proliferation objectives, but does recognize the value of  
8 effective cooperation with our Space Station partners. We  
9 just recently celebrated our fifth consecutive year of  
10 continuous human presence on board the ISS. With your  
11 help, we hope to celebrate a sixth.

12 We are now working with the Senate on this  
13 legislation, so that our astronauts can continue to train  
14 on the Russian Soyuz vehicle. So, again, thanks to you and  
15 to your staff for helping with this problem.

16 Now to your questions. Since last June when we  
17 met, NASA conducted the first of our Return to Flight  
18 missions with the Space Shuttle Discovery commanded by  
19 Eileen Collins. The flight was safe, but not without  
20 surprises. Cameras on board the external tank showed that  
21 we still had not completely solved the foam-shedding  
22 problem.

1           We chartered a new and independent Tiger Team to  
2 look into this problem. We think we understand what went  
3 wrong with our workmanship on the external tank foam and  
4 that we will be able to fly our second flight with the  
5 Space Shuttle Discovery commanded by Steve Lindsey next  
6 May.

7           Since the last Shuttle flight, NASA's Michoud  
8 Assembly Facility near New Orleans and Stennis Space Center  
9 in Mississippi, both facilities critical to the Space  
10 Shuttle program, suffered the devastating effects of  
11 Hurricane Katrina.

12           NASA is, in fact, forever in debt to the 37  
13 volunteers who stayed behind to ride out the storm at the  
14 Michoud facility. The ride-out crew positioned sandbags,  
15 reinforced doors, and most importantly operated four diesel  
16 generators when municipal power failed in order to protect  
17 the facility and the space flight hardware from the storm.

18           Most importantly, these diesel engines pumped  
19 more than a billion gallons of rain water away from the  
20 levee to prevent flooding of the 830-acre facility. The 14  
21 inches of rain and 150-mile-per-hour winds, every building  
22 on the Michoud facility suffered structural damage, while

1 the surrounding area was completely devastated.

2           Today, there are almost no businesses or  
3 habitable homes within a 10-mile radius of Michoud. Almost  
4 three-quarters of our personnel, 1,500 out of 2000 who work  
5 there, have returned even though some of them have slept in  
6 offices and hallways because they have no homes to which to  
7 go.

8           In addition to Michoud, Stennis Space Center in  
9 Gulfport, Mississippi, was the FEMA command center in the  
10 region after Hurricane Katrina and provided medical care  
11 and food to over 3,000 evacuees. Men and women at Stennis  
12 were instrumental to the search-and-rescue as well as  
13 recovery operations in the devastated region.

14           All NASA centers have contributed resources and  
15 people to this effort. These efforts are nothing short of  
16 heroic. Both facilities are critical to Space Shuttle  
17 operations as Michoud manufactures the external tank and  
18 Stennis test-fires the engines.

19           Because of their dedication to human space  
20 flight, we are still able to conduct the modifications  
21 needed on the external tanks for the next Shuttle mission,  
22 and last week, Stennis test-fired a Shuttle main engine in

1 preparation for that flight.

2           Last week, the administration submitted to  
3 Congress a supplemental appropriation for NASA of  
4 approximately \$325 million to deal with the damage to  
5 Michoud and Stennis, and the administration may seek future  
6 supplemental appropriations as we continue to deal with the  
7 aftermath of Katrina.

8           But NASA has many other uncertainties remaining  
9 with the cost of operating the Shuttle, and we are dealing  
10 with these issues on a daily basis. We, therefore, ask  
11 Congress for some measure of transfer authority between  
12 budget accounts in order to deal with unforeseen Shuttle  
13 costs and day-to-day problems in returning the Shuttle to  
14 flight.

15           We need this Committee's help in granting that  
16 transfer authority, and I promise you that NASA will keep  
17 the Congress fully informed if it is granted.

18           Mr. Chairman, in your letter, you asked me to  
19 address the impact of the hurricanes on Return to Flight.  
20 While I am confident of our technical ability to return the  
21 Shuttle to flight next year, I am concerned about  
22 longer-term consequences of the hurricanes over the next

1 several years.

2           There remains uncertainty about whether or not we  
3 will have an adequate work force to return to Michoud.  
4 NASA's external tank production capability depends on that  
5 work force, and we still need to manufacture several more  
6 Shuttle tanks to achieve NASA's desired 19 flights, which  
7 consist of 18 for Space Station assembly and one for the  
8 Hubble Space Telescope between now and the end of September  
9 2010.

10           For this reason, our plan flight sequences  
11 ordered such that less critical logistics flights are at  
12 the end of the sequence, and we are not focusing solely on  
13 the exact number of Shuttle flights to achieve the goal of  
14 assembling the Station and providing adequate logistics  
15 before commercial ISS crew cargo capabilities or the CEV  
16 come online.

17           Moving to some of the other questions you have  
18 had, last September NASA provided to the Congress our Space  
19 Exploration Architecture plans with the Crew Exploration  
20 Vehicle and the launch systems supporting missions to the  
21 International Space Station, moon, and Mars.

22           We have briefed many of you and your staff on the

1 details of this architecture. As the President articulated  
2 in his budget amendment for NASA last July, NASA is  
3 redirecting funds to accelerate development of the CEV. I  
4 wish to emphasize this is not new money. It is not a  
5 plus-up for NASA.

6 We are redirecting resources within NASA to make  
7 the CEV available as soon after Shuttle retirement as  
8 possible. We realize that there are many pressures on the  
9 Federal budget, and we have adopted a  
10 go-as-you-can-afford-to-pay approach towards space  
11 exploration, but it is important to recognize that the  
12 Vision for Space Exploration is not about new money for  
13 NASA. It is about redirecting the money that we have.

14 Now, this philosophy also means that NASA must  
15 set priorities among the goals of the exploration  
16 architecture itself. As I have said to this Committee and  
17 as you, Chairman Boehlert, said moments ago, NASA simply  
18 cannot afford to do everything on its plate today. We must  
19 focus our efforts on those technologies which support the  
20 urgent requirements of the exploration architecture. Thus,  
21 we are descoping, discontinuing, or deferring several  
22 research and technology projects, including some I believe

1 we will eventually need, like surface nuclear power  
2 systems, but these projects do not support the CEV and its  
3 associated launch systems and so must be deferred.

4 We are also deferring a number of research  
5 activities on the Space Station until after the CEV comes  
6 online, we hope by 2012, because we cannot afford to do  
7 that research today.

8 Over the long run, our research efforts, as well  
9 as the research of other Government agencies likes the  
10 National Institute of Health, commercial industry, and our  
11 international partners, will benefit from the expedited  
12 development of the CEV and accompanying ISS commercial crew  
13 and cargo capability.

14 So let me be clear. The primary objective of the  
15 exploration architecture for the next several years is not  
16 an immediate return to the moon, but is to develop a new  
17 capability to carry humans to low-earth orbit and beyond  
18 following the orderly retirement of the Space Shuttle.  
19 This is absolutely essential if we wish to maintain our  
20 leadership role in space exploration. Painful choices must  
21 be made, and we must suborn other priorities to that  
22 primary objective.

1           Mr. Chairman, you also asked me to address NASA's  
2 proposed plans to revamp aeronautics research. We are  
3 working closely with the White House Office of Science and  
4 Technology Policy to coordinate this national aeronautics  
5 research policy with other agencies, like Department of  
6 Defense and FAA.

7           Our primary goal is to reestablish our dedication  
8 to the mastery and intellectual stewardship of the core  
9 competencies in subsonic, supersonic, and hypersonic  
10 flight, and we will work closely with universities and  
11 industries where appropriate to do that.

12           We plan to invest in our in-house expertise to  
13 ensure that NASA remains a world-class resource with  
14 personnel with knowledge and experience, ready to be drawn  
15 upon by the civilian community, other Government agencies,  
16 and industry.

17           NASA's new Associate Administrator for  
18 Aeronautics, Dr. Lisa Porter, has briefed several Members  
19 of Congress and your staff, and she will continue to keep  
20 you informed as NASA further develops our aeronautics  
21 research plans and budgets, including our stewardship of  
22 NASA wind tunnels that span the range of flight regimes.

1 Our Nation needs to remain on the cutting edge of  
2 aeronautic research. We will need your help as well as  
3 that of our partners in turning that goal into a reality.

4           NASA's science program has accomplished a great  
5 deal since I last reported to you. On the 4th of July, we  
6 created our own fireworks display when the Deep Impact  
7 Mission slammed into a comet at 23,000 miles per hour. We  
8 launched the Mars Reconnaissance Orbiter last summer, and  
9 we hope to soon launch Calypso and Cloud SAT Earth Science  
10 Missions.

11           After the next Shuttle mission, NASA will  
12 determine and will convey to you whether we believe we can  
13 conduct another servicing mission to the Hubble Space  
14 Telescope with the Space Shuttle. The Hubble continues to  
15 unlock the mysteries of the universe, such as earlier this  
16 week. NASA's scientists discovered two moons orbiting  
17 Pluto using the Hubble Telescope.

18           NASA also plans to launch new horizons to Pluto  
19 early next year. As I reported to this Committee earlier,  
20 we are conducting an in-depth review of the technical  
21 challenges and cost projections of the James Webb Space  
22 Telescope. I will report back to you early next year about

1 our plans with that mission.

2 A lot has happened since I appeared before your  
3 Committee in June. We have been busy at work, and we are  
4 making steady progress. I would like to leave you with  
5 this thought. To me, space is the frontier for societies  
6 of the 21st century and beyond. Americans have pioneered  
7 frontiers of land, sea, and air in the past. We must  
8 accept the challenge of this new frontier as well. Where  
9 others go, America must be prepared to lead.

10 There is a lot more to discuss with you and the  
11 Members of this Committee. So I will stop here and answer  
12 your questions more directly.

13 Thank you.

14 CHAIRMAN BOEHLERT: Thank you very much, Mr.  
15 Administrator.

16 Well, the challenges ahead, you know, I'm  
17 reminded of the Academy Award-winning actor who uttered the  
18 famous lines, "Show me the money." I think if all of us  
19 who expect you to pull the rabbit of the hat were able to  
20 give you path for the money you wanted, I'm confident you  
21 could use it wisely and accomplish everything we want, but  
22 I don't know where the hat is, let alone the rabbit, and I

1 do know the money is a challenge.

2           So I ask you this. What are the consequences if  
3 we start down a path to accelerate CEV and then find out  
4 that we don't have the money in FY08 to remain on that  
5 path, are we worse off than if we just set 2014 as the date  
6 today? And parenthetically, just let me say I think CEV  
7 acceleration would be great, but only if it doesn't eat  
8 into other vital programs that I also think are very great.

9           ADMINISTRATOR GRIFFIN: Clearly, the best thing  
10 to do for any program is to pick a date that is achievable  
11 and to provide the funding as it is required in the  
12 different phases of the program consistent with the overall  
13 ceiling that is provided.

14           We believe we budgeted adequately for the CEV.  
15 We believe that if the President's budget is approved that  
16 it can be delivered in 2012. We believe that if it is  
17 delayed further, we risk losing critical competencies  
18 between the end of Shuttle retirement and the onset of  
19 operations of the CEV. We also risk taking America out of  
20 manned space flight for 4 critical years following the  
21 completion of Station assembly at a period of times when  
22 the programs of other nations are in their assemblancy.

1           I believe this to be strategically the wrong  
2 thing to do, and so I have stated that replacing the  
3 Shuttle with an equivalent capability through the use of  
4 the CEV as soon as possible after Shuttle retirement is our  
5 real highest priority, and if other adjustments need to be  
6 made to respect that priority, I would respectfully  
7 recommend that those adjustments be made.

8           CHAIRMAN BOEHLERT: You don't now have the money  
9 in the projections ahead to pay for Shuttle -- CEV  
10 acceleration. So what happens if we get started on CEV and  
11 have to slow it down? What are the consequences of that?

12           ADMINISTRATOR GRIFFIN: If we start on CEV at a  
13 certain pace and then have to slow it down, we will become  
14 less efficient in that program and absolutely will cause it  
15 to overrun.

16           CHAIRMAN BOEHLERT: So I get back to the basic  
17 question. Are we being too ambitious right now in setting  
18 the 2012 date, given the circumstances that exist that I  
19 think we all agree are there?

20           ADMINISTRATOR GRIFFIN: Sir, I think -- I think  
21 that our plan is sound. I think that our plan for CEV  
22 development includes adequate cost reserves against

1 unknowns. We are working to understand and contain Shuttle  
2 costs, and we propose maintaining a robust program of space  
3 science while we complete the CEV.

4 All plans have uncertainty.

5 CHAIRMAN BOEHLERT: No, I understand that.

6 ADMINISTRATOR GRIFFIN: But we have advanced to  
7 you the best plan that we have been able to craft.

8 CHAIRMAN BOEHLERT: The Stafford-Covey report --  
9 and I have had some discussion with you outside of the  
10 Committee hearing room on this -- the Stafford-Covey report  
11 included several minority reports, and one minority report  
12 stated that NASA has not yet learned the lessons of the  
13 past.

14 I know you examined that minority report very  
15 carefully and have been addressing that in your public  
16 statements. Do you agree with the conclusions of that  
17 minority report specifically, and are there observations in  
18 the minority report that you don't agree with? And the  
19 changes you have made in the personnel, do you think that  
20 would satisfy those who identify with the minority report  
21 that you get it and you are now moving in a direction on a  
22 course that they think is prudent for you to follow?

1 ADMINISTRATOR GRIFFIN: There are many questions  
2 there. I will try to answer them. Remind me if I fail.

3 I read, I believe, the particular minority report  
4 you are talking about -- is the 19-page report by authors  
5 Dan Crippen and Chuck Daniel --

6 CHAIRMAN BOEHLERT: That's exactly right.

7 ADMINISTRATOR GRIFFIN: -- and several others.  
8 These are people whom, by an large, I know and respect. I  
9 read their report very carefully with yellow highlighters  
10 and underline marks and also conveyed the report to others  
11 whom I deeply respect and asked for their comments.

12 When I had done all those things, I found that I  
13 could not agree with each and every specific remark in the  
14 report. Broadly speaking, I did believe that it was  
15 correct. "It rang true" is the words that I would say, and  
16 others agreed with me. It rang true.

17 Accordingly, I discussed it in detail with our  
18 new AA for Space Operations, Bill Gerstenmaier. Bill also  
19 felt that, broadly speaking, the report rang true, and we  
20 have shredded that report out into -- there is much prose,  
21 and then there are many actionable specifics. We have  
22 shredded out the actionable specifics, and we have put

1 together -- we are putting together, I should say, a plan  
2 to deal with those, and when we have that -- when we have  
3 that ongoing, we will be happy to review that with you or  
4 with your staff.

5           Separately, I have chartered a team, a separate  
6 independent team, much like the Exploration Systems  
7 Architecture team that you discussed earlier today, to look  
8 at NASA safety and mission assurance from the broadest  
9 possible perspective and across the entire agency. This  
10 special team is being run out of our Program Analysis and  
11 Evaluation Directorate. They will report directly to me,  
12 and they will take a look, again, in the broadest possible  
13 sense about what it means to have safety and mission  
14 assurance at NASA. So that is the two-pronged attack I  
15 have on the issues raised by the minority report.

16           I would also say that in some cases, where  
17 particular friends of mine who authored that report have  
18 been contacted, that they have been very positive. I don't  
19 want to put words in other people's mouth because I have  
20 had that done to me and don't appreciate it, but broadly  
21 speaking, I would say the people I have talked to on the  
22 Minority Committee strongly approve of the people that we

1 have put in place in running the mission directorates at  
2 NASA. I hope that that will continue.

3 Culture change takes a long time. Clearly, when  
4 we lost Challenger, there were management culture issues in  
5 play. When we lost Columbia, 17 years later, there were  
6 management culture issues in play, and in some cases, they  
7 were the same issues.

8 I have, in fact, reorganized the engineering and  
9 programmatic structure of how we do business in NASA in  
10 order to obtain the kind of independent technical  
11 authoritative excellence that we want. I have made  
12 technical excellence proven in the field a nonnegotiable  
13 criteria for having a high-level management position in  
14 NASA from this day forward.

15 I believe that these changes, although they need  
16 time to take effect, when and as they take effect will  
17 bring us the kind of National Aeronautics and Space  
18 Administration that you and I and all of us want to see.

19 CHAIRMAN BOEHLERT: To honor your request, Mr.  
20 Administrator, I will no longer use baseball analogies.  
21 You just birdied that one.

22 ADMINISTRATOR GRIFFIN: Thank you, sir.

1 [Laughter.]

2 CHAIRMAN BOEHLERT: Mr. Gordon?

3 REPRESENTATIVE GORDON: Thank you, Mr. Chairman.

4 Dr. Griffin, in listening to your testimony, I  
5 have a couple of quick -- one thought and one question.

6 The comment that the CEV, that you were prepared  
7 to do whatever it takes to get it up and going, I think is  
8 a dire warning to the rest of NASA. I am concerned about  
9 that, but I let that warning, I guess, go out to everyone.

10 The question also in your testimony -- well, I  
11 thought the servicing of the Hubble was pretty much a done  
12 deal, but you said that was still in play. Is that still  
13 in play, whether you are going to do it or not, because of  
14 budgetary reasons or because there are still some questions  
15 as to the mechanics of the ability to do the job?

16 ADMINISTRATOR GRIFFIN: Let me answer the second  
17 question first.

18 The Hubble decision, I have not changed my  
19 thoughts or my wording on that since the day of my  
20 confirmation hearing. If NASA can technically perform a  
21 Shuttle servicing mission to Hubble, it will be done.

22 REPRESENTATIVE GORDON: Okay. So it's a high

1 priority.

2 ADMINISTRATOR GRIFFIN: Right. It is the --  
3 frankly, it is my highest priority for the Shuttle program.

4 REPRESENTATIVE GORDON: Good. I just  
5 misunderstood that. And when do you think you will make a  
6 decision on the technical aspect of that?

7 ADMINISTRATOR GRIFFIN: I have always said we  
8 needed the second -- we needed the two Return to Flight  
9 missions because, following the loss of Columbia and the  
10 Return to Flight sequence, we have new entire constraints  
11 on usage of EDA time because some of it may need to be  
12 preserved for tile inspections and repairs like we did on  
13 the last mission.

14 We need to understand that full operating profile  
15 to know if we have time in the mission sequence to perform  
16 and effective --

17 REPRESENTATIVE GORDON: Thank you. I want to  
18 move on.

19 ADMINISTRATOR GRIFFIN: I'm sorry. I wanted to  
20 answer your question.

21 REPRESENTATIVE GORDON: I'm glad we got that  
22 clear. So we're still in sync. Thanks.

1 ADMINISTRATOR GRIFFIN: We are.

2 REPRESENTATIVE GORDON: Dr. Griffin, I'd also  
3 like to follow up with some more questions regarding your  
4 current budgetary situation. The FY2006 budget request  
5 that NASA submitted to Congress included a 5-year budgetary  
6 run-out through FY2010. As of now, how much are you short  
7 relative to what you will need through FY2010?

8 ADMINISTRATOR GRIFFIN: I'm not trying to evade  
9 your question. I'm not sure I understand -- I'm not sure I  
10 fully understand it.

11 The '06 budget request had a run-out through '10,  
12 through fiscal '10.

13 REPRESENTATIVE GORDON: Yes. And it's my  
14 understanding that to do what you are proposing to do, you  
15 are going to be, as I think -- well, our chairman earlier  
16 said he thought it was in the \$6-billion range. A  
17 conservative estimate is 3- to 5 billion.

18 ADMINISTRATOR GRIFFIN: I understand. I  
19 understand your question.

20 REPRESENTATIVE GORDON: So what is your opinion  
21 as to that shortfall?

22 ADMINISTRATOR GRIFFIN: Relative to the '06

1 budget request, we are, I would say, several billion  
2 dollars short in the Shuttle operations line.

3 I would remind the Committee that the out-years  
4 projections for Shuttle operations costs when they were  
5 made at the time, a couple of years ago now, were labeled  
6 as placeholders, that we did not fully understand on the  
7 administration side, we did not fully understand what it  
8 was going to take in the discipline and orderly and  
9 effective way in 2010.

10 We have now looked at that over the summer as  
11 part of the Shuttle Station operations exercise. We  
12 believe we understand that, and it is several billion  
13 dollars more --

14 REPRESENTATIVE GORDON: Would it be fair to say  
15 in the 3-to-6 range?

16 ADMINISTRATOR GRIFFIN: I would say the 3-to-5  
17 range.

18 REPRESENTATIVE GORDON: Three-to-5 range. Okay.

19 ADMINISTRATOR GRIFFIN: And now let me also add,  
20 we are -- that is an estimate. We are not just taking that  
21 as a "for granted." We are not taking it as a given. We  
22 are scrubbing the program hard. We are doing that today.

1 We were doing it yesterday. We will be doing it next week.

2 We are looking for savings in the Shuttle program  
3 because, as we retire the Shuttle, of course, we will want  
4 to put as much money as necessary to operate it safely, but  
5 no more. But where we are today -- where we are today in  
6 comparison to our run-out as projected in the '06 budget  
7 that you mentioned, we are a few billion dollars down.

8 REPRESENTATIVE GORDON: And if I could follow up  
9 with some questions on that.

10 Are the components -- or could you tell us what  
11 are the components of the shortfall? Does it assume an  
12 accelerated CEV delivery by 2012, and is it assumed that  
13 NASA will essentially complete the assemblage of the Space  
14 Station by the means of another 18 Shuttle flights, and how  
15 much of the budget shortfall can be allocated to the  
16 Shuttle program? And finally, with respect to the Shuttle,  
17 is it accurate to say that the FY2006 budget request  
18 prepared by OMB and NASA assumed reductions in the Shuttle  
19 FY08 to FY10 funding requirement that did not have an  
20 analytical justification?

21 ADMINISTRATOR GRIFFIN: Again, sir, the '08, '9,  
22 and '10 run-out for the Shuttle -- we are okay in '06 and

1 '7, as best we understand it. The '8, '9, and '10 numbers  
2 were at that time labeled as placeholders. We now have an  
3 analytical basis for that, that we did not have at that  
4 time.

5 REPRESENTATIVE GORDON: Can you provide that to  
6 us for the record? Because we don't have that. You don't  
7 have to do it right now, but will you provide -- or have  
8 your staff provide that to us?

9 ADMINISTRATOR GRIFFIN: Those projections  
10 currently are part of our fiscal '07 budget formulation and  
11 as such are presently embargoed. So we will provide you  
12 what we can as soon as we possibly can, but --

13 REPRESENTATIVE GORDON: Well, again, I'm not  
14 asking for '07, and I understand the embargo, but rather  
15 that analysis for the '08 to '10.

16 ADMINISTRATOR GRIFFIN: Let me take your question  
17 for the record, and we will get back to you as soon as we  
18 possibly can.

19 REPRESENTATIVE GORDON: Good. Okay. That's  
20 fine.

21 ADMINISTRATOR GRIFFIN: And I forgot your other  
22 questions.

1           REPRESENTATIVE GORDON: What are the components  
2 of the shortfall?

3           ADMINISTRATOR GRIFFIN: The components of the --

4           REPRESENTATIVE GORDON: You say you assume an  
5 accelerated CEV delivery by 2012.

6           ADMINISTRATOR GRIFFIN: The shortfall is entirely  
7 within the Shuttle operations line. The Exploration line  
8 in which the CEV is being developed closes. The  
9 Exploration architecture was developed subject to the  
10 constraint that the budget must close within that line.  
11 The science budget line closes, and aeronautics closes. So  
12 the shortfall of which you speak is entirely in the Shuttle  
13 line.

14           REPRESENTATIVE GORDON: We have a lot of folks  
15 interested today. So I will conclude my -- at least my  
16 initial round now.

17           CHAIRMAN BOEHLERT: I thank the gentleman.

18           Mr. Griffin, as you know, the House just recently  
19 passed the Iranian Non-Proliferation Act, as you mentioned  
20 in your testimony. Hopefully, it will pass in the Senate,  
21 and hopefully, this participation by the Russians will  
22 continue until 2016.

1           Saying that -- and obviously we didn't want to be  
2 there, but the Russians are in the critical path at this  
3 point. We need them in order to continue our mission of  
4 the International Space Station, but how soon do you think  
5 we can get or move away from reliance on Russia and grow a  
6 United States industry in crew transportation and cargo  
7 resupply for the International Space Station? Do you think  
8 it is reasonable to expect something in the future? You  
9 probably understand the technology on that better than  
10 anybody.

11           ADMINISTRATOR GRIFFIN: Yes, sir, I do think it's  
12 feasible, and to that end, NASA has two initiatives, one  
13 much larger than the other, in space flight over the coming  
14 years. The first we discussed, maybe more than some of you  
15 want to, is the CEV and trying to bring that online by  
16 2012, and that system does have the capability. It is  
17 primarily designed to go to the moon, but as with the  
18 Apollo and Skylab capability, it has a leave-behind or a  
19 residual capability to service the Station.

20           Our preferred outcome, however, for servicing the  
21 Station is to obtain crew -- well, initially cargo supply  
22 and later crew rotation services through more arm's-length

1 commercial transactions. To that end, we will be  
2 subsidizing, over the 5 years of the budget run-out,  
3 approximately a half-billion-dollar commercial cargo crew  
4 resupply capability.

5 I do believe that that kind of a financial  
6 incentive for purely commercial industry, not developed on  
7 a Government prime contractor relationship, will be  
8 sufficient to allow substantial providers to emerge.

9 CHAIRMAN BOEHLERT: Do you have any guess as far  
10 as how soon that can be done? Two year? Five years?

11 ADMINISTRATOR GRIFFIN: All entrepreneurs will  
12 tell you that if we just give them the money, they can have  
13 it the day after tomorrow. My honest technical estimate  
14 would be that their time frame will not be substantially  
15 quicker than the Government CEV time frame, but that if  
16 they are successful, it will be at greatly reduced cost.  
17 So I would anticipate 4 or 5 years. I hope that industry,  
18 if put to the test, can do better, but I do not expect it.

19 CHAIRMAN BOEHLERT: You mentioned also we had a  
20 hearing last week, a joint hearing with Government Reform,  
21 relating to the financial management at NASA, and your CFO  
22 Gwen Sykes was present, and I asked her a question, "If

1 NASA were held to the same rigorous accounting requirement  
2 that U.S. corporations face under Sarbanes-Oxley, would you  
3 as NASA CFO sign off on the annual fiscal report?," and her  
4 response was no.

5           So I guess with that, when do you think that NASA  
6 will have its fiscal house in order to meet the same  
7 standards that we in Congress are requiring of corporate  
8 America?

9           ADMINISTRATOR GRIFFIN: Well, first of all, let  
10 me say I strongly endorse the requirement that NASA be able  
11 to account for its funds at least as well as its  
12 contractors be required to do, and I am appalled, as with  
13 all of you, that we find ourselves in this situation.

14           I have made it a priority since coming on board,  
15 and we have made progress. We have made progress as  
16 measured by independent advisory teams, to include one  
17 which was led by the Comptroller of the OMB. We have made  
18 progress. We are not there.

19           We will -- I have already been advised before  
20 they even did the audit that our auditing firm -- we will  
21 still be red this year. So they haven't yet done the  
22 audit, and they know that we're red. So it will not be

1 this year. I hope that by '08, we will be in good shape.  
2 That is my plan.

3           We are --I will record a certain amount of  
4 progress which as been made. I believe I have passed out  
5 to your staff this particular sheet which shows that in  
6 June in one of, I think, nine categories, counting here  
7 eight categories of financial management, we were red in  
8 two and yellow in four and green in only three. In July,  
9 we were red in one, yellow in four, and green in four, and  
10 today -- well, as of August, we had no reds, three yellows,  
11 and the rest green.

12           We are making progress. We really are. We are  
13 taking it seriously. We have added resources that I would  
14 rather spend on spacecraft, but, first, we have to get our  
15 financial house in order.

16           We have responded to 45 recommendations from the  
17 GAO. We have closed only three, but 19 are significantly  
18 on their way to closure, and we are responding to the  
19 balance. The remaining 23, we will respond to.

20           Outside advisors have said that our strategy is  
21 correct, the planning is correct, we just need to stay on  
22 course, and that is what we are going to do.

1 CHAIRMAN BOEHLERT: I appreciate that.

2 Next, I will recognize the gentleman who is  
3 rarely in the rough, the Ranking Member, Mr. Udall.

4 [Laughter.]

5 REPRESENTATIVE UDALL: Thank you, Mr. Chairman.

6 It depends on the day of the week, frankly,  
7 whether I'm in the rough or not.

8 Administrator Griffin, again, great to have you  
9 here. I want to thank you before I direct a couple of  
10 questions at you in regards to the Exploration Architecture  
11 and some of the impacts on small businesses and  
12 universities -- commend your focus on Hubble. We have had  
13 conversations along these lines, and it is such a  
14 tremendous asset for NASA, for the country, and as we have  
15 discussed, the man on the street, the woman on the street  
16 know about Hubble. There is such potential here across the  
17 board. So thank you for your attention to it and  
18 commitment to it.

19 We were talking about the Exploration  
20 Architecture, and several contractors, small businesses,  
21 universities this week received notice that their systems  
22 research and technology contracts had been terminated

1 effective immediately, and specifically, I am aware of  
2 three contracts in my district that total nearly \$12  
3 million that have been placed in that status just in the  
4 last week.

5 I am sure that my district is not the only one  
6 that has been hit hard by these cuts, and so in that spirit  
7 of looking across the board, I want to direct a couple of  
8 questions to you.

9 You have stated you want to strengthen your  
10 partnerships with the universities, but the claim NASA is  
11 making is that determination of these projects is necessary  
12 to allow for new technology development in NASA centers,  
13 not in the universities themselves, and of course, you put  
14 forth the point of view that the Moon-Mars initiative will  
15 not come at the expense of important science projects.  
16 Yet, I believe I can identify at least one terminated  
17 project in my district that is performing fundamental life  
18 science research under human research and technology that  
19 happens to be useful for exploration as well.

20 How do you explain the contrasting priorities,  
21 and what are NASA's plans under the Exploration  
22 Architecture to strengthen its work with universities and

1 ensure that this initiative doesn't come at the expense of  
2 science programs? A question you've heard before, but  
3 nonetheless, a very, very important question.

4 ADMINISTRATOR GRIFFIN: Let me try to do my best.

5 We had earlier on before for some reason --  
6 before we had developed an Exploration Architecture, we at  
7 NASA had put out a very broad cast -- casting it very  
8 wisely on a research and technology program, unfortunately  
9 leaving many firms and many researchers to believe that we  
10 could sustain all of those.

11 In fact, the technology development and the  
12 research that we should be conducting should be oriented  
13 toward in an appropriately time-phased way those projects  
14 which we are actually doing.

15 So, when we finished developing the architecture  
16 which the chairman has very kindly praised for its  
17 efficiency, part of that efficiency means that we should  
18 limit our research and technology efforts to those things  
19 which support the requirements of that architecture, and  
20 that required canceling a number of things which we either  
21 did not need or did not need right now, given our overall  
22 funding priority as a Nation.

1           Now, I have run for the Defense Department a very  
2 large multi-billion-dollar -- multi-billion-dollar  
3 technology program in the past. It's fun. I would love  
4 nothing more than to have within NASA the kind of money to  
5 run a broadly based technology program, but given the many  
6 priorities we have in this Nation and the priorities that  
7 the administration has for domestic discretionary funding,  
8 we simply in NASA are not at this time able to run that  
9 kind of a broadly based technology program and say we have  
10 winnowed the field to those things we believe we can  
11 afford.

12           With regard to science, when I speak of science,  
13 I am speaking of the science being done in the Science  
14 Mission Directorate, broadly speaking, space, earth, and  
15 planetary sciences, and astronomy.

16           The human life science research of which you  
17 spoke is there to support human exploration. It seemed to  
18 me that it was getting the cart before the horse to be  
19 worrying about money for human or other life sciences when  
20 we could not assure ourselves the continued capability to  
21 be able to place people in orbit in the first place. So my  
22 priority became assuring that the United States would have

1 as close to continuous capability to put people in space  
2 first and then conducting the research on them after that.

3 REPRESENTATIVE UDALL: As I mention this, I think  
4 this is a fairness question, and it cuts across the  
5 country. And I don't think that my district is alone in  
6 suffering some of these proposed cuts.

7 What can we do to help these universities and  
8 businesses now that have been stranded, and do you have  
9 plans in the future to -- in regard to the situation we  
10 face right now if those situations arise in the future?

11 ADMINISTRATOR GRIFFIN: For the next several  
12 years, I have tried to be -- I have tried to be very honest  
13 with the university department chairs and presidents who  
14 have contacted me and, in fact, including one in your  
15 district.

16 REPRESENTATIVE UDALL: I'm sure.

17 ADMINISTRATOR GRIFFIN: I have tried to be honest  
18 with them.

19 For the next several years, our resources that we  
20 can devote to Space Station will be utilized to assemble  
21 Space Station, and the focus on utilization of it for the  
22 next several years for research or technology or any other

1 purposes will have to be minimized in favor of the priority  
2 of first getting it assembled.

3           The priority after that, in keeping with the  
4 President's Vision, is to provide a reliable, robust,  
5 sustainable successor to the Space Shuttle, and when we  
6 have those two components in place, a completed Space  
7 Station and a successor to the Shuttle, then we can begin  
8 to focus more heavily on utilizing the Space Station, but  
9 that will be several years in the future.

10           CHAIRMAN BOEHLERT: The gentleman's time has  
11 expired.

12           Mr. Rohrabacher?

13           REPRESENTATIVE ROHRBACHER: Thank you very much,  
14 Mr. Chairman.

15           I want to go to my old friend, Mike, and --

16           ADMINISTRATOR GRIFFIN: Good day, sir.

17           REPRESENTATIVE ROHRBACHER: All right.

18           I would like to, first and foremost, introduce to  
19 you, Mike, and to other Members of our Committee, Mr.  
20 Kaslovski [ph] who is a Member of Parliament from Russia  
21 and joining us today. He was engaged in a meeting  
22 downstairs with the International Relations Committee, and

1 I asked him to join us because some of the questions I had  
2 asked today will deal directly with Russian-American space  
3 cooperation.

4 And to that end, I would like to ask you, Mike,  
5 about whether or not the legislation that we just passed  
6 through Congress will, indeed, permit us to have the type  
7 of cooperation we need with Russia, the amendments that we  
8 made to the Non-Proliferation Act that will enable us to  
9 maximize our benefit of the Space Station or is there  
10 something that is more that is going to be needed and why  
11 that is important.

12 ADMINISTRATOR GRIFFIN: I believe the legislation  
13 that you have passed will allow us to do what we need to do  
14 with Russia to continue our cooperation with them in the  
15 Station program. I think we are fine.

16 REPRESENTATIVE ROHRBACHER: Okay. So mission  
17 accomplished as far as our end of it.

18 ADMINISTRATOR GRIFFIN: Yes. Yes, sir.

19 REPRESENTATIVE ROHRBACHER: Okay. That's short  
20 term. Short term was making sure that we could handle our  
21 obligations to the International Space Station Coalition in  
22 cooperation with the Russians and that we didn't find

1 ourselves in a situation where Americans weren't going to  
2 be on the Space Station that we paid for. That was the  
3 short term.

4 In the long term, I note that China and Russia  
5 are now entering into an agreement on space cooperation,  
6 perhaps an agreement that will result in moon missions by  
7 the Chinese in cooperation with the Russians to the moon.

8 Doesn't this indicate and doesn't the fact that  
9 Russia went to Iran to do business indicate that since the  
10 downfall of Communism in Russia that we have not been  
11 engaged with Russia at a high enough level and an intense  
12 enough level to prevent them from going into directions  
13 that are contrary to our national interest?

14 ADMINISTRATOR GRIFFIN: Well, that may be so. I  
15 don't believe it is up to me to define our national  
16 interest, but I will observe that other space-faring  
17 nations of the world, while not having the discretionary  
18 resources that we have to bring to bear on the subject, are  
19 very interested in the development, exploration, and  
20 exploitation of space, and if we choose to lead, the Space  
21 Station programs provides ample evidence that we can lead  
22 and that we can form coalitions of nations to do great

1 things in space. We can form partnerships and alliances,  
2 and heaven knows, the United States would rather have  
3 partners and alliances than enemies and adversaries.

4           If we step away from a leadership role, if we are  
5 not willing to pledge the commitment, the resources, and  
6 the cooperation to assume a leading role in space, then  
7 others will fill that vacuum, and I think that is what you  
8 are observing. And I think it is incumbent upon us, as I  
9 said in my opening statement -- Americans are a frontier  
10 society, and where there is a frontier, Americans must  
11 lead.

12           REPRESENTATIVE ROHRBACHER: But to achieve that  
13 goal, this is a very costly goal we are talking about.  
14 Anything we do in space is very costly, especially dealing  
15 with space transportation which you are trying to make up  
16 for right now with your plan.

17           Won't Russia -- isn't a cooperative effort with  
18 Russia vitally important for us to meet our own potential  
19 because it brings down the cost?

20           ADMINISTRATOR GRIFFIN: Well, surely, and Russia  
21 has been an excellent partner. They have stepped up to the  
22 plate, referring to the baseball analogy. They have

1 stepped up to the plate on the Space Station in providing  
2 critical crew and cargo transportation services in the time  
3 that the Space Shuttle has been down.

4 All of that said, even as significant a  
5 space-faring nation as Russia does not as present, nor in  
6 the nearly foreseeable future, have the capability to  
7 provide the kind of heavy lift crew and cargo supply that  
8 the United States had been doing, can do, expects to do in  
9 the future, and must do if it is to be done at all.

10 REPRESENTATIVE ROHRBACHER: Mr. Chairman, I  
11 would suggest that we keep an eye on plans of what we are  
12 -- you know, our long-term plans in space, and that if we  
13 are duplicating, if we are trying to build technology that  
14 duplicates what Russia can already do, that that is a waste  
15 of resources and actually a deterrent to the type of  
16 cooperation that will serve both of our countries, and that  
17 we should utilize those things that Russia can provide to  
18 save money for us and use that money to develop new  
19 technologies that neither country has.

20 ADMINISTRATOR GRIFFIN: We are not re-duplicating  
21 capability, and certainly not a parallel capability and  
22 offers a redundancy -- when one is a committed space-faring

1 nation, we need a certain amount of redundancy because, as  
2 you have seen, we can have accidents. They have had  
3 accidents in the past. If we are single-string on our  
4 access to space, we are going to be in trouble.

5 REPRESENTATIVE ROHRBACHER: Thank you very much.  
6 Thank you, Mr. Chairman.

7 CHAIRMAN BOEHLERT: The gentleman's time has  
8 expired.

9 I would point out to the gentleman that we are  
10 constantly working with the Administrator towards the  
11 objectives that you have outlined. We want to continue to  
12 promote international cooperation, but we want to minimize  
13 dependence on others for our core missions and  
14 capabilities.

15 With that, the gentleman from California, Mr.  
16 Honda, you are recognized.

17 REPRESENTATIVE HONDA: Thank you, Mr. Chairman,  
18 and I welcome the Administrator Griffin for being here.

19 Let me just cut real quickly to the chaise. It  
20 feels like we are interrogating the Administrator for a  
21 situation that he had nothing to do with, but he's come in  
22 at a point where we needed him to sort of fix things and

1 realign our projects based upon science rather than based  
2 upon the bottom line. I think that was the reason why I  
3 was elated to have him as Administrator.

4 Mr. Administrator, I think that we have to accept  
5 the idea that it is not your budget. You didn't create the  
6 budget. You didn't create the allocations or the  
7 appropriations. We did, and this administration did.

8 So, you know, to my colleagues, if we are going  
9 to be pointing fingers, we have to look at the  
10 administration and how we appropriate the money to this  
11 program over the years. That is number one.

12 I think President Kennedy didn't take this kind  
13 of an approach when he challenged our Nation to put a man  
14 on the moon. In fact, he noted -- and I quote -- "The  
15 facts of the matter are that we have never made a national  
16 decision or marshal the national resources required for  
17 such leadership. We have never specified long-range goals  
18 on an urgent time schedule and managed our resources in our  
19 time so as to ensure their fulfillment."

20 Kennedy understood that to get to the moon, we  
21 needed to specify long-range goals and commit the resources  
22 that would be needed to achieve them, and he recognized

1 that, and I quote, "If we are to go only halfway or reduce  
2 our sights in the face of difficulty, in my judgment it  
3 would be better not to go at all."

4 I think this is worthwhile going forward, and I  
5 think that we ought to put the resources out there. If we  
6 are saying "show me the money," then we haven't shown him  
7 the money so he can do the work that he needs to do.

8 And our plan, as our colleagues said on the other  
9 side, to meet our own potential and to ask -- to raise the  
10 question about relationship with other countries, how do we  
11 expect to get international partners to work with us on  
12 going to the moon and Mars when we have broken our own  
13 agreements with them on the ISS?

14 From what I hear, the Europeans and Japanese  
15 researchers are quite upset and do not intend to do any  
16 more collaboration with us, due to the fact that we are  
17 throwing away billions of dollars they invested in 20 years  
18 of work by scientists and engineers. Why should they ever  
19 want to work with us again?

20 I think we ought to keep our word and our  
21 agreements and our treaties and also create more  
22 relationships with countries like Russia and China, so that

1 we can get there as global communities and make sure that  
2 we do this.

3           Having said that, Mr. Administrator, I have to,  
4 you know, really ask the question about the comments about  
5 the design of our Space Shuttle -- the design of our  
6 vehicle in absence of the biological and life sciences. I  
7 don't know how you send up astronauts to the moon or to  
8 Mars without that kind of research? And the centrifuge  
9 issue is of great importance.

10           And I'd like to know, you know, how you, you  
11 know, align the kind of decision you are making. In a  
12 press conference about a month ago, you said, "In our  
13 forward plan, we do not take one dime out of the science  
14 program in order to execute this Exploration Architecture."  
15 However, the reality is that there have been major cuts to  
16 NASA's life science program as well as elimination of  
17 almost all non-exploration-related scientific research on  
18 the International Space Station. How do you square that  
19 statement at the press conference with the actions taken by  
20 NASA to cut those activities?

21           The other question is many life science research  
22 communities have expressed alarm over NASA's decision to

1 terminate the ISS centrifuge program, despite finding by  
2 the National Academy of Sciences that the absence of a  
3 centrifuge would hinder NASA's ability to gain the  
4 fundamental knowledge essential to maintenance of the  
5 astronaut health on long-duration space missions.

6 Why did you decide to terminate the program, and  
7 how do you intend to answer the research questions that the  
8 centrifuge was designed to address?

9 And in response to one of Chairman Boehlert's  
10 questions from the record of last year's February 12th  
11 hearing on Vision for Space Exploration, NASA stated,  
12 quote, "The Centrifuge Accommodation Module (CAM) still  
13 provides unique capabilities. The ability to simulate a  
14 full Mars mission, including one long-duration micro  
15 gravity followed by a period of time at three-eighths  
16 gravity to followed by a more longer-duration micro gravity  
17 in which we can test bone loss, immunology, and other  
18 reactions to gravity changes, in situ dissections and  
19 detailed anatomy, physiology, after exposure to fraction  
20 gravity, this information is needed to determine the  
21 mechanisms of the observed changes and guide the  
22 development of new econo-measures," and I think -- I

1 suspect the design of vehicles, so that the folks who are  
2 wanting it are going to be taken care of or, you know, be  
3 healthy as they go along their trip.

4 I would like to submit more detailed questions  
5 for the record and get some responses to those questions,  
6 and if you don't mind trying to, with my three or four  
7 questions, though, formulate a response.

8 ADMINISTRATOR GRIFFIN: We certainly will take,  
9 of course, your questions for the record and answer them in  
10 full detail.

11 More broadly, let me say, first of all, that I  
12 certainly understand the rumors that are flying, but at  
13 this -- the United States has not broken its agreements  
14 with the international partners and hopes not to do so. We  
15 have not done that.

16 The Centrifuge Accommodation Module is built for  
17 the United States as part of a barter agreement with Japan,  
18 and the flying or not flying of the centrifuge is not an  
19 international partner agreement. It is a matter at our  
20 discretion.

21 We have chosen not to fly it because we do not  
22 have -- in looking ahead in the sequence, we do not have a

1 Shuttle flight available in the sequence that can put that  
2 module up -- it is not a small module -- and because the  
3 life science research that would be done on it is of a more  
4 fundamental nature, again, associated with fundamental  
5 organism behavior in fractional gravity.

6 Now, that is a very interesting subject. It is a  
7 key part of long-term life science research, but it is not  
8 immediately and directly associated with the health of  
9 astronauts in orbit or on the moon in the near future.

10 REPRESENTATIVE HONDA: To the chair, how do you  
11 project physical impacting -- physiological impact,  
12 anatomical impact on humans without that study?

13 CHAIRMAN BOEHLERT: The gentleman's time has  
14 expired, but I will give the courtesy to the Administrator  
15 to answer the question.

16 ADMINISTRATOR GRIFFIN: Well, quite frankly, the  
17 best fractional gravity laboratory that we are going to  
18 have in the near future is the moon. That will be a very  
19 -- putting astronauts on the moon and leaving them for a  
20 lengthy of period of time will tell us much of what we need  
21 to do about going to Mars.

22 CHAIRMAN BOEHLERT: Thank you.

1           The distinguished vice chairman of the Full  
2 Committee, the gentleman from Minnesota, Mr. Gutknecht.

3           REPRESENTATIVE GUTKNECHT: Thank you very much,  
4 Mr. Chairman, and, Mr. Griffin, welcome to the Committee.  
5 I hope that you will make many appearances and brief us  
6 from time to time.

7           Sticking with the analogies, I am not here to tee  
8 off on you today, but I think there are some issues that  
9 need to be addressed.

10           First of all, my own feeling right now is that  
11 especially after -- in the aftermath of Katrina, I think  
12 Americans are somewhat skeptical of the Federal  
13 Government's ability to do the things that we claim that  
14 they can do.

15           I also believe that they have become convinced  
16 that just simply throwing more money at problems does not  
17 guarantee acceptable results.

18           I think taxpayers are rightly demanding more  
19 accountability. I applaud you for this matrix, but I have  
20 to say, not only your department, but most Federal  
21 departments, to have this many red squares is just  
22 unacceptable.

1           We certainly wouldn't accept that from corporate  
2 America, and American taxpayers should not accept it from  
3 any Federal agency as well.

4           One of the things that -- one of the first things  
5 you said was with the last launch of the Shuttle, we saw  
6 chunks of the -- chunks of the foam coming off, and you  
7 said we haven't completely solved the problem. I think we  
8 really deserve more candor. I mean, the truth of the  
9 matter is we haven't solved the problem. I mean, that's my  
10 perspective, and I think that's what we have to tell the  
11 American people.

12           Finally -- and I guess this really does get at my  
13 question -- we have met with private entrepreneurs who  
14 believe that they can launch vehicles and put payloads and  
15 even human beings into space at a fraction of the cost that  
16 it cost NASA to do the same thing.

17           I am wondering as we go forward, can we look -- I  
18 mean, the key words that Americans are looking for is they  
19 are looking for "reform," they are looking for  
20 "restructuring," they are looking for "accountability." I  
21 mean, those are words that I think -- they're not just  
22 words. I think they are things that the American people

1 now expect and demand more of from those of us in Congress,  
2 but more importantly from Federal agencies in general.

3           So I wonder if you could comment on your vision  
4 of how we look at ways that we can achieve the same results  
5 at significantly less cost, as at least some in the private  
6 sector believe that we can.

7           ADMINISTRATOR GRIFFIN: Yes, sir. I do  
8 understand that the public is skeptical of Government  
9 programs.

10           I would say that NASA's programs historically  
11 have an overwhelmingly high success rate and an  
12 overwhelmingly high, positive impact.

13           A very recent Gallop poll conducted showed that  
14 when asked if at a budget level of less than 1 percent of  
15 the budget, did the public approve of or support the Vision  
16 for Space Exploration, which included finishing the  
17 assembly of the Station, replacing the Shuttle, and  
18 continuing on to the moon and Mars, that over three-fourths  
19 of Americans in a highly bipartisan way supported those  
20 goals, and as you well know, NASA gets about seven-tenths  
21 of a percent, not even a full percent of the budget. So I  
22 think public support of NASA by recent measurements is,

1 frankly, at an all-time high.

2           With regard to improving accountability, again, I  
3 can only say I can't agree with you more. I could not  
4 agree with you more that our financial accountability must  
5 reflect that which we expect of our contractors, and I am  
6 working to restore it. My team is working to restore it.

7           With regard to foam, unfortunately NASA flew 113  
8 Space Shuttle missions before seriously attempting to  
9 reduce the rate of foam loss from its tanks to an  
10 acceptable level. It simply was not understood. It's  
11 unfortunate. It was not understood that a piece of foam  
12 could punch a hole in a wing.

13           We then spent 2-1/2 years trying to reduce that  
14 foam loss to nearly zero. We came close. We didn't quite  
15 get it. We believe, again, that we do understand it, and  
16 we believe that the fixes we have put in place for this  
17 next flight will solve the problem to the level that we  
18 need it solved.

19           Foam loss will never be zero, but we believe we  
20 have fixes in place that will contain it to a level that is  
21 not harmful. That is on us to prove, and I understand  
22 that. I am out on a limb here. I understand we have that

1 to prove to you.

2 With regard to entrepreneurs, I have been an  
3 entrepreneur, a couple of times. It's fun. It's a very  
4 heady thing to do.

5 I am putting money at stake over the next several  
6 years to encourage those entrepreneurs to step forward and  
7 show what they can do. At the same time, NASA has mission  
8 requirements, Government mission requirements laid on us,  
9 that we cannot afford not to complete. So, while I am  
10 enlisting the entrepreneurial community to step forward and  
11 help meet those requirements, we cannot stop work on the,  
12 admittedly, less efficient Government systems in order that  
13 entrepreneurs either do or don't show up. That just  
14 doesn't work.

15 So we have to have a core Government capability  
16 to execute our mission. We will do that with the CEV  
17 following the Shuttle, and we will do everything in our  
18 power to encourage these entrepreneurial firms to step  
19 forward.

20 I must say, when you have never actually done  
21 anything, talking about doing it is a very easy thing.

22 CHAIRMAN BOEHLERT: The gentleman's time has

1 expired.

2           Let me give you an assessment of the situation as  
3 we now understand it. The bells are ringing. We have  
4 about 10 minutes to go, which will afford us the  
5 opportunity for Mr. Miller to get his questioning in. We  
6 are trying to determine from the cloak room just what's  
7 going on. Apparently, the comity is dwindling, and the  
8 comedy is on the asset. So we will find out, but we will  
9 go to Mr. Miller.

10           Our desire, Mr. Administrator, is to give you a  
11 pause to get a drink or something. We will re-dash over  
12 and then come back and then continue.

13           Mr. Miller.

14           ADMINISTRATOR GRIFFIN: I am at the Committee's  
15 service.

16           REPRESENTATIVE JACKSON LEE: Will the gentleman  
17 yield?

18           REPRESENTATIVE MILLER: Yes.

19           REPRESENTATIVE JACKSON LEE: Mr. Chairman and  
20 Ranking Member, thank you very much for this hearing. I  
21 apologize for being late. I had another engagement, and I  
22 can't come back after the vote. I have an amendment on the

1 floor.

2 But I did want to ask this question. I am sorry  
3 I missed a lot of your testimony, but I appreciate your  
4 leadership, and I really appreciate the research that NASA  
5 has participated in and the outcomes.

6 I am concerned about the building of the  
7 infrastructure for the future, and in that end, I would  
8 like to know what programs you still have going that would  
9 invest in some of the institutions and students to have  
10 exposure, so that we can continue to build the work force  
11 and the bright minds for NASA.

12 ADMINISTRATOR GRIFFIN: NASA's educational  
13 activities are an integral part of what we do in the  
14 agency.

15 This year, we are spending, if I recall the  
16 figure correctly, \$367 million on education, and if I don't  
17 have it exactly right, I beg your indulgence, but it was a  
18 number very close to that. That is enough to buy a whole  
19 scientific spacecraft easily every year that we're spending  
20 --

21 REPRESENTATIVE JACKSON LEE: Could you send me a  
22 copy of your breakdown of where that goes?

1 ADMINISTRATOR GRIFFIN: Yes, we certainly can do  
2 that.

3 REPRESENTATIVE JACKSON LEE: I'll appreciate  
4 that.

5 ADMINISTRATOR GRIFFIN: We are in the process of  
6 -- our education program has been criticized by many  
7 outside stakeholders in recent years. I have taken that  
8 into account, and we have put a new person, Ms. Angela  
9 Phillips, in charge of that.

10 We are crafting a new strategic plan for  
11 education. We are emphasizing commitments to university  
12 students, graduate research, exactly the kind of thing you  
13 are talking about. We are taking it quite seriously.

14 REPRESENTATIVE JACKSON LEE: Thank you very much.  
15 I look forward to getting that soon.

16 ADMINISTRATOR GRIFFIN: We will be happy to  
17 provide it.

18 CHAIRMAN BOEHLERT: Thank you very much.

19 With that, we will take a temporary recess to go  
20 answer the call of the House and see what we can do to  
21 contribute to restoring comity, and then we will be back.

22 [Recess taken.]

1           CHAIRMAN BOEHLERT:  Let's resume, and we will  
2 resume with -- Mr. Miller, you're up.

3           REPRESENTATIVE MILLER:  Thank you, Mr. Chairman.  
4       I recognize that you are assuming the other Members of the  
5 Committee would not feel cheated to have missed my  
6 questioning.

7           [Laughter.]

8           REPRESENTATIVE MILLER:  Mr. Griffin, my own  
9 preference for sports analogies is for basketball  
10 analogies, but I'm afraid that George Tenet has ruined  
11 basketball analogies for politics for the next generation.

12           I want to follow up on questions that Mr. Gordon  
13 asked and Mr. Udall asked and Mr. Honda asked and that I  
14 asked back in June about science programs that have been  
15 eliminated, at least for the time being, and my concern  
16 about the vision about returning first to the moon is not  
17 that it is too ambitious, but perhaps it is not ambitious  
18 enough.  It seems all the justifications that we have  
19 discussed have to do with updating our engineering, the  
20 engineering that put us on the moon a generation ago and  
21 simply updating that to show we can do it again, but I have  
22 not gotten a strong sense of what the science is, if any,

1 that we plan to accomplish on the moon.

2           You mentioned that the moon is probably the best  
3 limited gravity environment available to us, but what is  
4 the science that we plan to accomplish on the moon by going  
5 there? Are we simply updating our engineering from the  
6 Apollo era, or are there scientific missions that we are  
7 going to perform on the moon that we think would be  
8 valuable?

9           ADMINISTRATOR GRIFFIN: Sir, I think those are  
10 great questions, and they are at least two-pronged, and let  
11 me take a whack at both prongs.

12           With regard to the engineering, no, we are not  
13 simply updating our engineering from the Apollo era,  
14 although some of that does need to be done. It has been  
15 not one, but almost two generations since we, the United  
16 States, owned the kind of space technology that will allow  
17 us to go to the moon.

18           So, on an engineering level, it is not about the  
19 Space Station for the moment. It is about the creation of  
20 a basic space-faring capability beyond earth orbit, and  
21 then when you have that, you can go to the moon, you can go  
22 to Mars, you can go to the near-earth asteroids, and that

1 is what we are about.

2           With regard to why go to the moon along the way,  
3 I appreciate your point that it may not be ambitious enough  
4 and that we have been there before, but there is hardly  
5 anyone now still working in the space program who was part  
6 of those voyages. We have not invested in that avenue for  
7 almost two generations. So, to set off immediately to Mars  
8 without the experience of learning to live and work on the  
9 lunar surface a few days away seems to me to be foolish.

10           With regard to the science, the moon is an  
11 excellent laboratory for life science research in the  
12 effects of fractional gravity and deep space radiation  
13 environment on humans. At least in some respects, the  
14 radiation environment at Mars will necessarily be different  
15 from the radiation environment on the moon, and that again  
16 will be different from the radiation environment on the  
17 Space Station.

18           The moon itself is a record of the sun's behavior  
19 for the last 4 billion years. It may well be the only  
20 place in the solar system where we can capture that record  
21 which is embedded in the lunar regolith. The lunar poles  
22 form a micro environment on the lunar surface that may

1 serve as cold traps for billions of years of cometary  
2 impact, so that we can understand the constituents of the  
3 primordial materials that formed from which the earth and  
4 the other planets were formed. The moon is an excellent  
5 from which to conduct radio telescoping and optical  
6 astronomy.

7           The moon is a very -- an extraordinarily  
8 interesting place in and of itself. We will want to  
9 explore it. The extent to which we want to trade money  
10 spent on the moon from money spent going to Mars is a  
11 matter for future Administrators, future congresses, future  
12 Presidents.

13           What we are trying to do today is to put into  
14 place the capability to have those decisions in front of us.

15           Today, we have no decision that is possible. We do not  
16 have the systems that would allow us to explore either Mars  
17 or the moon or anywhere else.

18           REPRESENTATIVE MILLER: At some point in the  
19 next 5 to 10 years, this Congress is going to have to  
20 decide whether to invest in the research that would be  
21 necessary to take advantage of the opportunities that  
22 putting humans on the moon again will present to us.

1           ADMINISTRATOR GRIFFIN: I believe that is right.  
2           In about 6 years, we will have delivered the CEV. We will  
3           have the Station assembled. We will at that point be able  
4           to construct the heavy lift vehicle, again a  
5           Shuttle-derived vehicle, which will take us to the moon and  
6           which will take us to Mars, and then it will be up to the  
7           congresses, the administrations, and the Administrators of  
8           that time to decide in detail what to do with that  
9           capability.

10           We have put an architecture on the table by which  
11           any or all of those things can be accomplished, depending  
12           on the funding when one wishes to assign and the priority  
13           one wishes to assign to the task.

14           REPRESENTATIVE MILLER: A somewhat related  
15           question, I appreciate the savings that come from using, to  
16           the extent possible, existing technology, off-the-shelf  
17           technology, or updating the technology of a previous  
18           generation. I still like to think of it as just the last  
19           generation since I was in the ninth grade when we landed on  
20           the moon, and I'd like to think that two generations have  
21           not expired since I was in the ninth grade, but the cost of  
22           that -- and one of the great advantages of the first effort

1 to put human beings on the moon was the other uses of the  
2 technology that we developed and what we did to stimulate  
3 research generally, particularly at our research  
4 universities.

5           Are we not cheating those other reasons, those  
6 other advantages from space exploration by our complete  
7 focus on the economies of using existing technology? Do  
8 you consider whether there is a balance to be struck by  
9 trying to develop push technologies, develop new  
10 technologies that may have the collateral benefits of  
11 research that can be used in other ways or stimulation of  
12 research universities? Is that part of your thinking at  
13 all?

14           ADMINISTRATOR GRIFFIN: I would like for that to  
15 be part of our thinking, but the realities are -- the  
16 fiscal realities are, first of all, that the creation of  
17 the transportation architecture to take people beyond  
18 low-earth orbit or even to replace the Shuttle's  
19 capabilities are a high barrier to entry. Most nations of  
20 the world cannot afford to get over those barriers to  
21 entry. The United States can, but barely so.

22           We are not as a nation able to allocate the

1 priorities for space exploration that we did in the  
2 generation of which you speak.

3           To put numbers on it and to get away from pure  
4 dollar estimates which change with time, it is commonly  
5 acknowledged today that at least 400,000 people were  
6 engaged in civil space exploration during the Apollo years.

7       Today, all of NASA's budget, not just the Space  
8 Exploration budget, purchases the services of only 75,000  
9 people. So we are spending less than a fifth for all of  
10 civil space exploration, less than a fifth of what we spent  
11 during the Apollo years in terms of the number of people's  
12 engagement that we can have.

13           That said, if we wish to make other choices, that  
14 is always possible at the congressional and administration  
15 level, but with the budgets we can bring to bear today, we  
16 must concentrate on very narrowly defined, very carefully  
17 defined, very specific goals that produce for the United  
18 States the enabling capability we need to get beyond  
19 low-earth orbit because that, again, is a very large  
20 barrier to entry.

21           CHAIRMAN BOEHLERT: The gentleman's time has  
22 expired.

1           I just want you to know that sometimes we deliver  
2 what we promise. I said before we were so rudely  
3 interrupted by the need to go to the floor to vote on a  
4 couple of -- a dispute over a procedural matter that we'd  
5 try to bring some order over there, and we have. We are in  
6 recess now. So now we're back here.

7           [Laughter.]

8           CHAIRMAN BOEHLERT: Let me try to bring some  
9 clarity to an earlier question because I am still sort of  
10 fuzzy about the specifics of your response.

11           If the Vision is go-as-you-pay, are we going  
12 ahead with the CEV acceleration when the NASA budget as a  
13 whole does not yet have the funds to carry out that  
14 acceleration?

15           ADMINISTRATOR GRIFFIN: We believe that there are  
16 substantial synergies to be extracted between the  
17 Exploration program as we have defined it that fits within  
18 its funding line and the Shuttle program as we have  
19 inherited it, which as you have observed does not quite fit  
20 within its funding line, but as far as the Exploration  
21 architecture necessarily is served, as Mr. Miller was just  
22 observing, from many of the Shuttle building blocks that we

1 have available today, tanks and engines and things like  
2 that, we believe that there are substantial synergies to be  
3 extracted between the two programs.

4 Now, we need with the existing Shuttle and  
5 Station program and try to obtain all the efficiencies from  
6 those two things viewed as a combined program. We believe  
7 that we can do that. We believe that we can deliver the  
8 CEV to you with the Presidential budget request. We  
9 believe that we can deliver the CEV in 2012. If we can't,  
10 then as we have said, it is a go-as-you-can-afford-to-pay,  
11 and we will slip things in time, and yes, that will mean  
12 that we have sacrificed some efficiency.

13 CHAIRMAN BOEHLERT: But synergies, \$5 billion?

14 ADMINISTRATOR GRIFFIN: As I said earlier, I  
15 don't believe that the total gap at this point is as much  
16 as \$5 billion. I really believe it is somewhat lower on  
17 the order of a few billion.

18 CHAIRMAN BOEHLERT: But that is very significant,  
19 a few billion.

20 ADMINISTRATOR GRIFFIN: It is very significant.  
21 If I try to be more precise than that right now, I would be  
22 making it up, and I don't want to do that. I need --

1           CHAIRMAN BOEHLERT: We don't want it make-up-as-  
2 you-go.

3           ADMINISTRATOR GRIFFIN: Right. I know, and we  
4 need the next 6 months to be able to figure out to blend  
5 the new Exploration Architecture with the Shuttle Program  
6 that is being phased out to see how we can get our budget  
7 under control.

8           CHAIRMAN BOEHLERT: Well, experience at least  
9 from the chair's vantage point has been that when you have  
10 said you need X amount of time -- in this case, you say 6  
11 months -- to bring some clarity to it, you usually fulfill  
12 your promise to bring some clarity to it. So we will take  
13 that.

14          ADMINISTRATOR GRIFFIN: I thank you.

15           I did -- when I came in, I said in September, I  
16 will have an Exploration Architecture for you, and I have.

17          People have criticized the architecture for being boring  
18 because it uses so many old and preexisting components, but  
19 no one has said it is inefficient. We tried to do that.

20           We said that we would define a Shuttle and  
21 Station architecture for you that fits within the number of  
22 flights we can expect the Shuttle fleet to have before it

1 is retired. We have done that.

2 CHAIRMAN BOEHLERT: Is it your sense -- let's  
3 switch over a little bit. Is it your sense that the Webb,  
4 now that the schedule has been pushed back, can stay on  
5 budget, and what gives you that confidence?

6 ADMINISTRATOR GRIFFIN: Well, it's my sense,  
7 first of all, that the Webb telescope project is not  
8 overrun. It was underbid.

9 I have tried very hard. The reason why I keep  
10 emphasizing that we have applied appropriate cost reserves  
11 to the Exploration Architecture costing is because our  
12 industry and our agency has a history of underbidding, and  
13 I am widely known not to support that, nor want to do it.

14 We have had two independent assessments done of  
15 the Webb -- of the James Webb Space Telescope, and both  
16 have concluded that the program itself is actually doing  
17 rather well, but the funding allocated to it initially was  
18 underscoped by about a billion-and-a-half dollars.

19 We are remedying that in the out-years' budgets.

20 We are slipping the telescope slightly to allow the  
21 required the technology developments to take place. We  
22 think we will get it on target.

1 I have got two completely independent cost  
2 estimates on the matter. They agree with each other, and  
3 they agree as to the symptoms that led to the problem. So  
4 we are going to fix those.

5 CHAIRMAN BOEHLERT: Let me ask you this. The  
6 White House has asked for \$325 million for NASA to help pay  
7 for the Katrina-related costs at Stennis and Michoud.  
8 That's not nearly enough. That is about half of what you  
9 really need. Where is the additional money going to come  
10 from?

11 ADMINISTRATOR GRIFFIN: As you know, in our last  
12 operating plan, we had requested \$760 million, which was  
13 our best assessment of the damage that we had.

14 CHAIRMAN BOEHLERT: And that was pared down  
15 considerably from the initial --

16 ADMINISTRATOR GRIFFIN: Well, the initial  
17 estimate was -- we were still -- I think we were still  
18 cleaning up --

19 CHAIRMAN BOEHLERT: Okay.

20 ADMINISTRATOR GRIFFIN: -- some of the stuff, and  
21 it was --

22 CHAIRMAN BOEHLERT: So the 760 is a realistic

1 estimate.

2 ADMINISTRATOR GRIFFIN: The directions I gave to  
3 my folks we do not exaggerate the estimate. Every single  
4 thing that we put in the supplemental request must be  
5 accounted for. When we got done with that, that added up  
6 to \$760 million, as we had indicated to the Committee.

7 CHAIRMAN BOEHLERT: And the supplemental contains  
8 the request for 325.

9 ADMINISTRATOR GRIFFIN: And that had a reserve on  
10 it of 20 percent for just us not knowing about what we were  
11 doing at the time of that supplemental.

12 So the supplemental that you saw had that  
13 20-percent reserve removed. It also had removed  
14 consequential damages, as we would say them in the MBA  
15 world, consequential damages associated with delays to the  
16 Shuttle program and things like that. So, when those  
17 things were removed, you end up with the request that you  
18 got.

19 Now, bear in mind, the administration does -- is  
20 reserving the right to come in with another supplemental at  
21 a later time when things are more fully understood. So I  
22 don't believe that this is a dead issue.

1           We think for the moment, you know, we're fine  
2 with the three hundred and --

3           CHAIRMAN BOEHLERT: So you fully anticipate a  
4 second supplemental, so you won't have the need to raid  
5 other programs?

6           ADMINISTRATOR GRIFFIN: Yes, sir. Exactly.

7           CHAIRMAN BOEHLERT: You will have the ability to  
8 pay the Russians, for example, for Soyuz? And there are a  
9 lot of other things you have to pay for.

10          ADMINISTRATOR GRIFFIN: We have more Katrina  
11 damage, and again, the administration may very well bring  
12 another supplemental to the table.

13          CHAIRMAN BOEHLERT: I am sure you would encourage  
14 the administration to do so, at least with respect to  
15 NASA's needs.

16          ADMINISTRATOR GRIFFIN: I will have my best  
17 begging face on. Yes.

18                 [Laughter.]

19          CHAIRMAN BOEHLERT: Thank you.

20                 Mr. Green.

21          REPRESENTATIVE GREEN: Thank you, Mr. Chairman,  
22 and I thank the Ranking Member, and I thank Dr. Griffin.

1           Doctor, it was great to be with you just  
2 recently.

3           Mr. Chairman, I had the great opportunity to go  
4 to the Johnson Space Center and to receive a tour and to  
5 have the benefit of Dr. Griffin's insight while I was  
6 there.

7           I also had the opportunity to actually go within  
8 the full-scale model of the Shuttle and to understand that  
9 it really is a no-frills operation, no creature comforts,  
10 and apparently a little space for the number of people who  
11 have to use the instrumentality.

12           I am interested in the \$500 million that we will  
13 be spending for commercial space travel over the next 4 or  
14 5 years, and my first question has to do with the many  
15 persons who are currently working with this endeavor.

16           As we make the transition to bring on board  
17 private enterprise, how will that impact the persons who  
18 are currently working in various positions?

19           ADMINISTRATOR GRIFFIN: The folks who are  
20 currently working on the Shuttle, of course, will be, in  
21 some cases, moved over to the CEV, and in other cases, we  
22 will not be able to use their skills on the new systems,

1 and in yet other cases, they will go on to do other things,  
2 but the overall NASA budget in constant dollars through the  
3 years in question remains about the same. So the total  
4 NASA and contractor employment remains about the same. I  
5 mean, there will be winners and losers, but at a national  
6 level, the total picture remains about the same.

7           For that portion of our budget, which is being  
8 used frankly in an effort to stimulate the entrepreneurial  
9 community, we are hoping that that will have leverage far  
10 beyond its amount, and it will actually increase the  
11 employment in aerospace by being able to attract the  
12 investors and the backers of these private entrepreneurial  
13 commercial enterprises to be able to participate with us in  
14 developing capability to ferry cargo and then later crew  
15 into space.

16           If that occurs, then there will be a net savings  
17 for us because we will be able, we hope, to purchase  
18 services now being provided by the Government at a lower  
19 price by commercial industry. We will then be able to take  
20 those resources and utilize them for the frontier role of  
21 exploration, which we think is really NASA's proper role.

22           REPRESENTATIVE GREEN: Well, my concern emanates

1 from the notion that we have downsized, and I don't like  
2 really using the term, but from 400,000 to about 75,000, as  
3 you indicated, and I'm concerned that this downsizing will  
4 continue and trust that it won't have an adverse impact on  
5 the scientists, the engineers, and the janitors, the  
6 persons who are working currently in these programs.

7           But moving right along to my next concern, the  
8 process by which we will make this transition, this  
9 election of companies, can you speak to this, please, in  
10 terms of how you propose that we do this, such that we can  
11 get the entrepreneurs in place on time?

12           ADMINISTRATOR GRIFFIN: Well, sir, we are going  
13 to -- shortly within the next couple of months, we are  
14 going to be putting a solicitation on the street, as we  
15 say. We will invite competitions. We will conduct a  
16 relative standard source selection, evaluating the promised  
17 offerings, and we will pick from among the best.

18           I don't have any special wisdom or knowledge to  
19 bring to that task. It is something we do fairly  
20 frequently.

21           REPRESENTATIVE GREEN: We do it frequently, but  
22 have we done it for an endeavor of this magnitude before?

1 Because literally, we are transferring something that we  
2 have held within our hands to private enterprise.

3 ADMINISTRATOR GRIFFIN: This is a bit new for us,  
4 and so we are not putting all our eggs in one basket. We  
5 are actually developing a new basket, and I will be paying  
6 close personal attention to this one.

7 REPRESENTATIVE GREEN: Well, I thank you for,  
8 again, the service that you render. It was an honor to  
9 have the opportunity to visit with you, and I am sure that  
10 we will talk more about these things as we progress.

11 ADMINISTRATOR GRIFFIN: My only concern was when  
12 you were in the Space Shuttle simulator flying with Mr.  
13 Calvert, you know.

14 REPRESENTATIVE GREEN: He was outstanding.

15 ADMINISTRATOR GRIFFIN: Who knew how that was  
16 going to come out?

17 [Laughter.]

18 REPRESENTATIVE GREEN: We had a safe landing.  
19 Thank you, Mr. Chairman. I yield back.

20 CHAIRMAN BOEHLERT: Thank you very much.  
21 Mr. Costa.

22 REPRESENTATIVE COSTA: Thank you very much, Mr.

1 Chairman. I, too, want to commend you and the Ranking  
2 Member for holding this hearing today. I think it is  
3 extremely important and fitting and appropriate that we  
4 together determine how the future of America's efforts for  
5 space exploration will be able to be continued over the  
6 next several decades. So the debate, the discussion, and  
7 the priorities that we establish are critical to that  
8 future.

9 Mr. Griffin, I, too, want to give you high marks,  
10 as everyone has indicated. You seemed to have taken to  
11 this new position like a duck to water of sorts, and  
12 everyone believes that you have returned a level of  
13 credibility and capability that is essential to NASA's  
14 long-term success.

15 I have two questions that I want to ask you, and  
16 since we are in the parlance here today of golf, the first  
17 one is somewhat of a "gimme." The second one may be a  
18 little more of a difficult approach shot that might require  
19 good chipping skills.

20 The first question really is based upon -- and I  
21 am trying to combine things that have been discussed here  
22 this morning as it relates to NASA's future, which is the

1 science and the finances in terms of how we pursue the  
2 science.

3           The justification for -- with the CEV project to  
4 go back to the moon, obviously we have been there. We have  
5 accomplished that goal, but what sort of credibility are we  
6 all going to be able to talk about that is going to  
7 maintain the support through what undoubtedly will have to  
8 be successive administrations that may vary in terms of  
9 political partisanship in nature? I mean, this is a  
10 long-term project, as you have described it today, and  
11 therefore, I think the credibility on why we should go back  
12 is going to have to be essential, and we are going to have  
13 to be able to substantiate it in order to maintain the  
14 successive funding necessary to reach the goal.

15           ADMINISTRATOR GRIFFIN: That is correct, sir, and  
16 I would be happy to provide for the record a brief point  
17 paper on what we think some of the scientific returns are  
18 from returning to the -- for returning to the moon, but  
19 beyond that, the point that I have tried to make in many  
20 venues, and I will try again in this one, is that we are  
21 already today spending a significant amount of money on  
22 human space flight, human space exploration.

1           It has for the past 30 years been limited to --  
2 more than 30 years been limited to work in low-earth orbit.

3       Many of us believe, I believe, the folks who put together  
4 the Columbia Accident Investigation Board report believed,  
5 and this administration believes that restricting the  
6 United States to operations in low-earth orbit at this time  
7 and for our future is inadvisable.

8           So, while obviously more resources to do that job  
9 are always better than fewer, we are not at this time  
10 talking about the addition of large new resources to the  
11 space program. Rather, we are talking about redirecting  
12 the money which today is being spent on human space flight  
13 into what we believe is a higher, better, more important,  
14 more strategically significant long-term goal for the  
15 United States. We have been, we will be spending money on  
16 human space flight. We want to spend it on different  
17 things that we believe are more strategically relevant.  
18 That is fundamentally what we are talking about with the  
19 Vision for Space Exploration.

20           It does require, in the short term, the next few  
21 years -- it requires some hard choices, some prioritization  
22 of goals. It requires things I don't like to do, like

1 canceling advanced technology and not doing some science  
2 that we would like to do because we are trying to phase out  
3 an older program and phase in a new one in such a way that  
4 we don't have jarring disconnects. It is a tough problem,  
5 but that is the goal.

6 REPRESENTATIVE COSTA: And I think you've  
7 explained that quite clearly.

8 As it relates to the finances -- and Congressman  
9 Rohrabacher inferred and talked a little bit about it as he  
10 related to our partnership with the Russians, and we have  
11 discussed it today as it relates to our partnerships with  
12 others in the International Space Station -- if, in fact,  
13 going to the moon provides a sort of important science to  
14 all of mankind that will have far-reaching benefits and if,  
15 in fact -- which is I think true -- and if, in fact, other  
16 countries are currently looking at trying to reach that  
17 goal, should we not be thinking about how we can combine  
18 resources with China, with Russia, to share the costs,  
19 notwithstanding the problems that have manifested  
20 themselves in our partnerships with the International Space  
21 Station, I would think that we could learn from those in  
22 terms of how we view the long term and combining finances

1 and thinking out of the box to make those finances as  
2 effectively spent as possible?

3 ADMINISTRATOR GRIFFIN: I couldn't agree more,  
4 and on Tuesday, I gave a major speech on exactly that  
5 topic. I believe we provided record copies for some of  
6 your staff, and I would be happy to do that.

7 I have on many occasions said that I believe that  
8 the very best thing for our long-term future in space, to  
9 come out of the Space Station partnership is the  
10 partnership. It has had strains, and the amazing thing is  
11 it has endured those strains and remains solid today. That  
12 should be continued and should extend to the future.

13 REPRESENTATIVE COSTA: Mr. Chairman, I know I am  
14 out of time, but I beg the chairman.

15 I think this is an area that we need to continue  
16 to pursue and explore, given the nature of the challenges  
17 we face, and I would be very interested in reading your  
18 paper as it looks to prospective opportunities vis-a-vis  
19 thinking out of the box in terms of how we can share  
20 financial responsibilities as we go to the moon.

21 CHAIRMAN BOEHLERT: Thank you very much, Ms.  
22 Costa, and you are a major player. So any speech you give

1 is major, I would think, in terms of significance, but --

2 REPRESENTATIVE COSTA: You should talk to my wife  
3 about that. She doesn't share your view.

4 [Laughter.]

5 CHAIRMAN BOEHLERT: I would welcome the  
6 submission if staff could provide a copy of that speech  
7 because --

8 ADMINISTRATOR GRIFFIN: We can.

9 CHAIRMAN BOEHLERT: And incidentally, when you  
10 give some of these major speeches, the staff might be well  
11 advised to share some of your pearls of wisdom with us  
12 because we always learn.

13 REPRESENTATIVE GORDON: They do.

14 CHAIRMAN BOEHLERT: Oh, they do.

15 [Laughter.]

16 CHAIRMAN BOEHLERT: Then my staff would be well  
17 advised to share some of your pearls of wisdom that you  
18 share with them with me.

19 ADMINISTRATOR GRIFFIN: We did provide the speech  
20 to staff. We really did. Thank you very much.

21 CHAIRMAN BOEHLERT: Now that we are mentioning  
22 pearls of wisdom, the chair recognizes the gentle lady from

1 Texas, Ms. Jackson Lee.

2 REPRESENTATIVE JACKSON LEE: What an inviting  
3 presentation, Mr. Chairman, both in terms of the very  
4 erudite questions that the Administrator has been willing  
5 to take from our colleagues, and thank you for yielding to  
6 me.

7 Let me try to focus narrowly on points that have  
8 concerned me, and might I thank you for such an instructive  
9 visit to the Johnson Space Center just a week or so ago.  
10 And I invite my colleagues to visit all of the centers, but  
11 certainly come on down to the Johnson Space Center where so  
12 much activity is occurring.

13 I might also commend the NASA staff and cite what  
14 a breath of fresh air the recent crew continues to provide,  
15 and particularly Commander Collins who I know has a certain  
16 congressperson as her Member of Congress.

17 But I would like to focus on some of the  
18 testimony we heard last week by the CFO and the number of  
19 presenters, including the Inspector General and those  
20 individuals.

21 I am concerned that it is represented that 80  
22 percent of NASA is contracted, and I say that with the

1 great appreciation for the public-private collaboration  
2 that generates from many of our aviation research  
3 companies, and we know their names. So, when I begin this  
4 interest, I can imagine the frowning looks with respect to  
5 why change what is perceived not to be broken, but I am  
6 concerned it makes it a very difficult maze of accounting,  
7 which may be one of the issues that you will be  
8 confronting. But also there is something to value to have  
9 systems engineers, to have the next, if you will, group of  
10 scientists, engineers, and others be looking to the  
11 Government as a source to put their knowledge, at least the  
12 initial level of their knowledge.

13 I am told that China is graduating 600,000  
14 engineers, and we are graduating 70,000. You may make that  
15 as a point, but that is the very reason why we need to be  
16 the recipient or the encourager of that kind of talent.

17 I understand that you may be over the next couple  
18 of months terminating 1,800 to 2,000 permanent employees.  
19 Why, if that is the case? And I will speak before hearing,  
20 and that is obviously always wrong to do, but I will do so  
21 and say that I oppose that. I don't understand it, and I  
22 think we are going in the wrong direction.

1           The other question would be on the issue of  
2 minority contractors. I still don't believe there is  
3 enough. There is always a question of ethical tampering or  
4 unethical tampering, and then that always leaves us without  
5 anything to say. The percentages are not high enough. I  
6 would like them to be high enough. I would like it to be a  
7 minority-only-based conference to show minority companies  
8 around the country. How do you effectively interact with  
9 the new contractual structure that NASA has when we have  
10 not had it? We have not had it, and when I say minority,  
11 minority and women. I think that is imperative.

12           And my last two points is your thought about a  
13 small grant to outreach to women and minorities as it  
14 relates to the sciences that generated the likes of a Mae  
15 Jemison and Colonel Bolden and others, and with that, I'd  
16 ask you share in your answers to me.

17           ADMINISTRATOR GRIFFIN: With regard to work  
18 force, when I arrived in April, we had -- the term that we  
19 were using was "uncovered capacity," civil servants who did  
20 not have specific jobs to which they could be assigned by  
21 virtue of the funding available for programs at their  
22 locations.

1           We had an uncovered capacity of over 2,000 civil  
2 servants. This is a problem that had been inherited from  
3 many years, frankly not actively managing the match of our  
4 work force skills to the job requirements.

5           We are, as I said earlier, paying close attention  
6 to that in aeronautics. We are returning our aeronautics  
7 program to a program of fundamental aeronautical sciences  
8 research which will help the issue.

9           On the new work that we are doing, the CEV, the  
10 crew launch vehicle, we are assigning, as much as possible,  
11 work from centers that have surpluses of work to centers  
12 which have less work.

13           Through those strategies, we have reduced the  
14 uncovered capacity in the last 4 months, since we have been  
15 working the problem, down to about 950.

16           We announced one final buy-out to be conducted,  
17 ending in January of '06. We believe that will remove  
18 several hundred people from civil service roles. We are  
19 doing everything we can within the constraints of the type  
20 of work that we are doing today to match that with the  
21 types of skills we have and minimize any untoward actions.

22           By next June, any uncovered civil servants that

1 we still have in place will have to be RIF'd. That will be  
2 our very last alternative.

3 I also, Ms. Jackson Lee, deplore such an action.

4 I have encountered that twice in my own career in various  
5 circumstances. It's not fun. We will do what we need to  
6 do in order to be fiscally sound by next June.

7 REPRESENTATIVE JACKSON LEE: That will leave you  
8 with how many civil servants working for NASA?

9 ADMINISTRATOR GRIFFIN: Well, it depends, again,  
10 on how closely we are able -- we think we can get any RIF  
11 down to a few hundred people, but at the end of the day, if  
12 none of our other actions works, that might be left, and  
13 that would leave us with approximately 18,000 civil  
14 servants at NASA.

15 REPRESENTATIVE JACKSON LEE: And about 2,000  
16 would be in the group that either was placed somewhere or  
17 --

18 ADMINISTRATOR GRIFFIN: Most of the 2,000 will  
19 have been appropriately placed.

20 REPRESENTATIVE JACKSON LEE: And then a couple of  
21 hundred possibly if we are still remaining with uncovered  
22 job descriptions or no jobs available would be RIF'd around

1 June of '06.

2 ADMINISTRATOR GRIFFIN: That's correct.

3 CHAIRMAN BOEHLERT: I just want to make sure we  
4 clarify this for the record, but the RIF might be announced  
5 in June. But it wouldn't be effective until the next  
6 fiscal year, beginning in October.

7 ADMINISTRATOR GRIFFIN: In October. That's  
8 correct.

9 CHAIRMAN BOEHLERT: All right. Fine.

10 REPRESENTATIVE JACKSON LEE: But there will be a  
11 couple of months of transition.

12 Could you speak to the issue -- because I think  
13 this is something I want to pursue with you in office, and  
14 I won't because of the time. Would you just answer the  
15 minority contractors issue and the focused effort in the  
16 present configuration?

17 Now, I know you are getting ready to say "we do  
18 this all the time," but hear me out. There are too many  
19 people that I interact with that suggest you don't do it  
20 all the time, there is just a confused maze on how to  
21 interact under this structure.

22 CHAIRMAN BOEHLERT: Well, let's hear a word from

1 the Administrator what they do, do.

2 The gentle lady's time has expired, but this is a  
3 good question, and, Mr. Administrator, anxious to hear from  
4 you.

5 ADMINISTRATOR GRIFFIN: I am going to have to  
6 respond for the record because I am not sure exactly what  
7 you are asking.

8 I attended just within the last few weeks a  
9 minority business conference where we were making awards to  
10 our important minority contractors. The impression I have  
11 come away with is that we are doing fairly well in meeting  
12 our minority- and women-owned contractor goals.

13 If you say we are not, I will take that under  
14 advisement. I will look at it, and I will get back to you  
15 for the record on how we are doing with our statistics. I  
16 had thought we were doing rather well.

17 CHAIRMAN BOEHLERT: That would be helpful to all  
18 of us.

19 ADMINISTRATOR GRIFFIN: Yes.

20 CHAIRMAN BOEHLERT: Thank you very much.

21 REPRESENTATIVE JACKSON LEE: Mr. Chairman, if I  
22 could just finish one sentence, which is thank you very

1 much. I do disagree, and I was talking more about outreach  
2 because there is a pool of wide breadth that don't have the  
3 inside information how to plug in, and I would like to work  
4 with you on that, and I yield back.

5 I yield back.

6 CHAIRMAN BOEHLERT: Thank you so much. There is  
7 no time to yield back. We were very generous in extending  
8 the time.

9 REPRESENTATIVE JACKSON LEE: Thank you, Mr.  
10 Chairman.

11 CHAIRMAN BOEHLERT: But we appreciate your input.  
12 The gentleman from Tennessee, Mr. Gordon.

13 REPRESENTATIVE GORDON: Well, let me just  
14 conclude by saying thank you, Dr. Griffin, for being here.

15 Your predecessor and others in the past have taken  
16 Mohammed Ali's rope-a-dope to another level. You have not  
17 done that. You tried to be concise, and it makes our job  
18 better, and I thank you for that.

19 ADMINISTRATOR GRIFFIN: Thank you, sir.

20 CHAIRMAN BOEHLERT: Well, one final question, and  
21 this involves, and this involves aeronautics. We are  
22 pleased you are working to revive that area. That is very

1 important, as I think, to all of us up here.

2           What are you going to do to make sure that the  
3 fundamental research NASA is planning to conduct addresses  
4 a legitimate unmet need that is marketable in the outside  
5 world?

6           ADMINISTRATOR GRIFFIN: Our new Associate  
7 Administrator has already conducted a couple of very  
8 significant workshops with regard to exactly that question,  
9 and we are working as well with OSTP and with the FAA and  
10 DOD in the opening stages of crafting a, for a very long  
11 time since we have had one, strategic plans for  
12 aeronautics. We at NASA do not see ourselves being the  
13 only stakeholders in aeronautics in this country and seek  
14 very definitely to find a partnership of people who can  
15 help us say what it is that needs to be done and what is no  
16 longer required. So we will not be acting unilaterally in  
17 that regard.

18           That said, okay, we believe, I believe that  
19 aeronautical science in this country, that the fundamental  
20 types of research that NASA and NACA before NASA used to be  
21 known for has been missing for a while. I think we saw a  
22 recent example of that on the STS-114 flight with Discovery

1 where we had -- you will recall we had the gap fillers that  
2 didn't come out from between the tiles.

3           There was some great concern about whether those  
4 might interfere the flow of air on the undersurface coming  
5 in. We were not able to answer definitively whether that  
6 would occur or not because the particular flight regime,  
7 very high mach number, very high altitude, verified flow,  
8 very high temperature gas dynamics involving as it does the  
9 transition from laminar to turbulent flow is an area of  
10 state-of-the-art research in the aeronautics community, and  
11 we, NASA, have not been funding that. We should fund it.  
12 Those are the kinds of fundamental sciences that we should  
13 be doing, and I am convinced they will always be relevant.

14           And if I could before I end make one final point  
15 on your Katrina supplement question, you know, you asked  
16 about the money, but with the money also went a request on  
17 our part to have the kind of transfer authority we need in  
18 order to be able to move money from where it is to where it  
19 needs to be to deal with the issues of recovering from  
20 Katrina. I would be --

21           CHAIRMAN BOEHLERT: We have given that authority.

22           ADMINISTRATOR GRIFFIN: We are asking for it. I

1 don't believe we have it from -- have it yet.

2 CHAIRMAN BOEHLERT: In closing, just let me make  
3 a couple of observations. First of all, I hear words of  
4 praise for the new team you are assembling. The caliber of  
5 the people you have been able to attract was very important  
6 to the agency for all of the important missions you have,  
7 and also with some degree of pride, Mr. Gordon and I read  
8 the recent survey that sort of estimated what all the  
9 employees of all the agencies of the Federal Government  
10 think about their role, their job satisfaction, the purpose  
11 of their mission, et cetera, et cetera. NASA was number  
12 one in the Big Government complex.

13 I point out with some degree of pride that number  
14 two was the National Science Foundation. I point out that  
15 that is under the jurisdiction of this Committee, also.

16 So you have a most challenging assignment during  
17 a most challenging time, and we want to work with you, and  
18 we appreciate your approach to the job. We appreciate your  
19 availability, your candor, your willingness to consult, and  
20 your all-around general performance.

21 Thank you very much, Mr. Administrator.

22 ADMINISTRATOR GRIFFIN: Thank you, Mr. Chairman,

1 Mr. Gordon. I very much appreciate the opportunity to talk  
2 to you today.

3 CHAIRMAN BOEHLERT: Hearing adjourned.

4 [Whereupon, the hearing of the House Committee on  
5 Science concluded.]

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