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Fiscal Year 2010 Budget Rollout
"Science Mission Directorate Budget Briefing"

Speaker:

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Space Operations Mission Directorate

Moderated by **MIKE CURIE**,
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P R O C E E D I N G S

MODERATOR: Thank you all very much for being here. We are here for the Space Operations Mission Directorate section of the budget telecons that you have been participating in, and with us today is our Associate Administrator for Space Operations, Mr. Bill Gerstenmaier, who would like to start off with a couple of comments, and then we will get right to questions.

Mr. Gerstenmaier?

MR. GERSTENMAIER: Thanks, Mike.

Again, as I think you heard in your earlier briefings, this is a pretty busy year for us in Space Operations. We have had a lot of activity so far this year. We have a lot planned very much in the future here.

Today, there was a Progress launch to the Space Station that will dock in several days. We have got the Hubble mission coming up on Monday with its launch, and then some follow-on Shuttle missions in June and throughout the rest of the year. So it is a very busy time for us, a very exciting time to move forward, as we are moving forward.

As you see in the FY10 budget, we are pretty

stable overall throughout the directorate, and I don't think there is anything unique I would call out specially to your attention, and I look forward to your questions.

MODERATOR: Okay. With that, I think we will go ahead and open it up to questions. Before we do that, a reminder that a replay of this telecon will be available by phone about an hour after its conclusion. Let me give you the phone number, so you can write it down, in case you need it. It is toll free, 888-566-0435, and if you need to dial a toll number, it is 402-998-0605.

Why don't we begin. We will begin with Seth Borenstein. Seth?

TELECONFERENCE OPERATOR: Seth, your line is open.

MEDIA QUESTIONER: Can you hear me? Thanks for doing this.

One of the questions in the overall review is looking at the idea of extending capability of International Space Station. Can you tell us what you gain and at what cost extending past 2016 would be?

MR. GERSTENMAIER: The things you would gain is you would gain the potential to use the Space Station in a

research mode. We will be, essentially, complete with Space Station at the end of 2010 from an assembly standpoint. This year, as we step up to a six-person crew, we have a lot of research capability, lots of investigations we can go do. We would get a continued use of Space Station during that period of time. We would also be able to do some more engineering, evaluations in support of the lunar activity. We can do some more human research that also supports the future exploration activities.

There is a significant amount of work yet to be done on Station, a lot of facilities that will not have been utilized at all to their full extent that could be used a lot more, some of the combustion racks that will be going up, some of the earth observation racks that will be on board, the external pallet locations can be used. So I think there is a whole variety of research that we could go put in place and do that.

The reason we are looking for kind of an early indication of whether we are going to do that or not is so we can do more detailed planning for that research. So we really need to begin that detailed research planning now in this period of time.

The cost would be roughly around, I think, a billion and a half per year for operations. That excludes the transportation cost for crew and cargo, and those would be in addition to that billion and a half. Those details, we will work as we continue to do other budget processes and we work with the review team.

MODERATOR: I should have told you this, but I think we have plenty of time. It looks like we have plenty of time based on the number of participants today. So, Seth, please, if you have a follow-up, go ahead.

MEDIA QUESTIONER: This is so unlike the others, where you are waiting and you have to come back.

So, when you are talking about wanting to know what type of -- you know, getting some kind of indication, what would you be doing? I mean, are you talking about contracts for new work or actually new -- would you be having to do actually something physically different? That is what I am trying to understand, what you would need to do.

MR. GERSTENMAIER: I think the things we would be doing is, you know, right now we have some Space Act time with some National Lab partners, and what we would do is we

would -- if they knew the Space Station was going to be an extended period of time, that may change the kind of investigations they would like to do and what facilities they would want to use on Space Station. So it is not necessarily contracts or money, but it is more of a planning process with folks that might utilize Space Station, both people internal to NASA, as well as folks on the outside that are part of the National Lab.

We may even attract some other users to Space Station, some commercial companies that would be interested, that if the time frame is only between now and 2015, that is a very different outlook to them if they have a research facility that they could use all the way from now until, say, 2020. That might influence dramatically what kind of research they want to go do and how they want to use Space Station.

So I think it is important for us to be able to tell them what we think the future is for Space Station and how much they can utilize it and use it in the future.

MEDIA QUESTIONER: And when you talk about commercial -- and forgive me for thinking this way, but all I could think of is sort of the space tourist. If you have

this extra time, would NASA want to get into the space tourism business like the Russians and maybe contract out, so you could charge \$25 million for people to fly through NASA?

MR. GERSTENMAIER: When I think of commercial, I think of things maybe in the pharmaceutical area, maybe even in the antenna development area, maybe in some rocket engine test stuff, some optical sensor stuff. I think of those kind of things when I think of commercial.

What the Station offers that doesn't exist today is there is not a research facility where you can do pull-up space qualification of a component. Before you take a component and you put it on a commercial satellite or you use it in a commercial endeavor, Space Station would be available as a test facility to go bring out some of those problems.

We have seen, we have done some of that with our materials and space demonstrations today, where we have looked at various materials on the outside of Station. If there was a broader market there, there may be some other commercial users that would be interested to do other things.

So, when I think commercial, I think more of aerospace companies and their ability to test equipment and hardware in space.

MODERATOR: Seth, we can come back around.

MEDIA QUESTIONER: Sure.

MODERATOR: Let's go to Bill Harwood from CBS News.

TELECONFERENCE OPERATOR: Bill, your line is open.

MEDIA QUESTIONER: Thank you. Bill Harwood, CBS.

I have a very quick question on AMS. I am still fuzzy about when that flight actually gets funded. Is that in this budget, or is that the next one? I'm sorry I am confused on that one.

Also, can you say anything at all about where AMS fits into the launch sequence? I know the Station guys want the last flight to be them, and I am wondering if there is a way to move AMS up before those. Thanks.

MR. GERSTENMAIER: The funding for the AMS Shuttle flight is in this budget. It is in the 2010 budget. You see a little bit of an upper in the Station number that accommodates that flight. It actually is a

little bigger than the number you see in the delta. We had some subtractions going on in the Shuttle program, but the total number is there for the AMS flight in this budget in the 2010.

In terms of where it fits in the sequence, it currently shows on our manifest as last. We will evaluate through this next couple months where the right place to put it is, and we will make sure that we work that with the right folks to optimize the overall goals that AMS wants to meet, as well as make sure we leave Station in the best posture when the Shuttle retires.

It shows it as last in the mission sequence, and we will evaluate over the next couple of months where the right place to put it is.

MEDIA QUESTIONER: Thanks.

And the only other question I had, Bill, was just a simple one. I am assuming that barring surprises, you guys, there is no more -- your funding is pretty well set for retirement, to fly the nine flights and then to be done with it. I mean, you don't anticipate having to come back later with any other hardware requirements. You are pretty much there.

MR. GERSTENMAIER: We have purchased all the hardware, or we are in the process of purchasing all the hardware to support the nine remaining flights, but we have got plans in place, and this budget fully supports the hardware needed for those nine flights.

MEDIA QUESTIONER: Okay, thanks.

That is all I have got, Mike.

MODERATOR: Okay, Bill. Thank you.

Mark Mathews from the Orlando Sentinel.

MEDIA QUESTIONER: Thanks for doing this.

I had a quick question about, again, the Shuttle flights. This budget proposal eliminates that 2010 hard deadline that was in the summary that was released in February, but from what I am seeing and some of our Florida lawmakers are making noise about is that it only allocates about \$382 million for the Space Shuttle in 2011.

If NASA is unable to finish those six Shuttle flights in fiscal year 2010, where is the funding going to come from for the flights, if they do get pushed back a few months? Thanks.

MR. GERSTENMAIER: Again, that would be worked when we start seeing those flights move somewhere else.

Right now, the budget and the manifest supports us completing the flights by September of 2010, and we will see how the flights come this year and how they occur throughout the remainder of this year, and then we will see where we end up in the future.

TELECONFERENCE OPERATOR: Okay. Our next question comes from Todd Halvorson.

MODERATOR: That is Todd Halvorson.

MEDIA QUESTIONER: Yeah. Todd Halvorson of Florida Today. I have got a couple.

First of all, just back to the AMS mission, you mentioned that there was a number, a funding number associated with that mission in this budget. What is that number? What is it going to cost to fly AMS?

MR. GERSTENMAIER: Approximately \$300 million.

MEDIA QUESTIONER: Okay, thanks.

Looking at the out years in 2011 and 2012, there is an increase from the '09 proposed budget, and I am wondering if you can talk a little bit about what is causing that increase. I would assume it is a cost of retaining personnel through the end of the program and disposing, if you will, of the orbiters.

MR. GERSTENMAIER: It is one thing to transition in retirement. So it is the costs we see associated with essentially finalizing and closing down the program.

MEDIA QUESTIONER: And can you tell us at what point a decision will be made on where the three remaining orbiters are going to end up after the retirement of the program

MR. GERSTENMAIER: We have the RFI. We have gotten responses back to the RFI. We are evaluating those. It will probably be through the summer before we actually get some kind of idea of where we are heading with the orbiter disposition.

We have committed one of the orbiters to go to the National Air and Space Museum. I believe it is Discovery. And then the other two, we are still -- we are looking at the RFIs. We are evaluating those, and we will have some discussions probably towards the end of the summer.

MEDIA QUESTIONER: Okay. Do you know how many RFIs you received?

MR. GERSTENMAIER: I don't have the -- what?

MODERATOR: We understood there were about 20,

Todd.

MEDIA QUESTIONER: Okay. And one last one from me, and that is, with this budget coming out, I was wondering if you have a revision associated with the drawdown of the workforce here at Kennedy Space Center.

I think when you last reported that, Congress, the estimated number of job losses here was about 3,500, and I am wondering if this new budget has caused any revision up or down in that number, and when the impact is going to hit.

MR. GERSTENMAIER: Again, we are still evaluating all of that. We have another update due to Congress here fairly soon. I think we will probably wait until some of this study activity gets done in the summer before we actually update those numbers.

I mean, it is still on that order, I think. I don't think there is a dramatic change, but we will continue to evaluate.

Most of the processing jobs in Florida stay until the very end of the Shuttle. So we use all the workforce to continue processing the Shuttle until the very last point.

MODERATOR: Todd, we will come back around again. Why don't we go to Rob Coppinger from Flight International Magazine.

MEDIA QUESTIONER: Hello. The NASA Authorization Act required two reports, once it produced. One was on ISS exploitation to 2020 -- or certainly beyond 2015 -- and the other one was -- and that was to be delivered in July, and the other one to be delivered in October of this year is a Cargo Contingency Report looking at how cargo can be supplied if CRS doesn't deliver. Are you still going to do those reports with this review that is being launched, or will it be rolling to the review?

MR. GERSTENMAIER: We still do those reports.

MEDIA QUESTIONER: Okay. And my second question is with the -- I understand there's been problems with the urine processing assembly on Station, and I understand from your documentation, your budget documentation, that recycling capability is quite important for six crew. When will you need to have the UPI up and running properly in order to be able to say that you can definitely start with six crew shortly?

MR. GERSTENMAIER: We have evaluated that, and we

are okay to go ahead and start the six crew. We will do a formal review of that Flight Readiness Review for the Soyuz launch here in a couple of weeks, but we are okay with that, even without the urine processor being fully functional.

There is a check valve in there that is not operating correctly. We have a fairly simple fix to change out the check valve. It requires a tool to be launched to Space Station. It is a very small thing. It is about a three-eighths-inch bolt that we will actually use to screw into the check valve to remove the check valve assembly itself on the check valve, and we don't need it in the system. The system will be up and operating once we go do that.

So we will make that repair probably sometime after the 2JA flight getting back the full urine processor functionality, and we will be fine. And even if we go through almost all the summer without it working, we are okay with the six-person crew.

So it is not a big impact to us. We know the problem. We have seen it on the ground. We can easily repair it on orbit. We just need a tool to go do it, and

we will do it and get it done and be ready to move forward.

MEDIA QUESTIONER: Thanks.

MODERATOR: How about Becky Iannotta from Space News?

MEDIA QUESTIONER: Hi, Bill. Thank you for doing this.

I had a question kind of to follow up on what you would have to do to extent the Space Station beyond 2015, and my question is more regarding Boeing, as your contractor right now for Station. Would you just need to simply extend that contract, or is that something you would look at and could possibly go out for a new bid on it? How would that work?

MR. GERSTENMAIER: Again, we would go look at that and investigate what the right thing to do is with our contracts, and it is really more than just the Boeing contractor. It is several contractors with that.

MEDIA QUESTIONER: Okay.

MR. GERSTENMAIER: We would look at each one. We would go through a contracting process to see if we could have justification for other than full and open competition for the contracts. We would figure out what the right

thing to do is.

We would also have to procure additional commercial transportation services. If you see our commercial resupply services contract, it runs through 2015. We would have to extend that beyond the period. So we would have to do some kind of competition for commercial resupply services.

We also have the sparing of components and hardware. Those kind of items, we bought enough spares to go through 2015. We would have to buy some additional spares beyond that, so there would be some procurement activity associated with that.

We have some long lead item kind of things. The batteries on Station are nickel-hydrogen batteries. We will probably change that to a different technology. So we would like to start some investigation into the new technology batteries fairly soon, if we got the word that we were going to extend.

So, for the kind of things are we ever extending, support contracts would have to be reworked. We would have some of our logistics contracts that need to be reworked. We have some transportation contracts that need to be

reworked, as well as we need to do some of the planning for the payloads and the research that would be done on Station, and we also have to get agreements from our international partners on some support for Station as we go forward. So there is a substantial amount of work for us to get all this done, and that is kind of what drives the discussion and in our minds why need to decide fairly soon this year what the plan is for Space Station. So those are all the pieces that go into Space Station.

MEDIA QUESTIONER: What indication are you getting so far from the international partners? Are they in it of beyond 2015?

MR. GERSTENMAIER: Again, I would rather not speak for them. We took a statement at the Heads of Agency last year, and in the statement, we said during this time frame, we would all go to our governments and talk about whether we wanted to extend Station.

I think, in general, from a technical standpoint, we all see significant benefit of Station continuing, as we discussed earlier. I talked about all the research we can do, the investigations that are out there. The potential is fairly large for Station. So I think we see a strong

potential. The question is do our governments, and do we need to work that with them and see where they are, but I don't want to talk for them.

I think the general flavor is there is a lot of potential here for station.

MEDIA QUESTIONER: Okay. Just one more question. How far out do you need to get the contracts to support logistics and all those? Do you need a couple of years to get those?

MR. GERSTENMAIER: Do you mean how long will it take us to actually do the procurement?

MEDIA QUESTIONER: Yes.

MR. GERSTENMAIER: They are phased in a little bit. I don't know when we would actually start them. We could probably do a procurement in about 18 to 24 months.

MEDIA QUESTIONER: Okay.

MR. GERSTENMAIER: So that is kind of the time frame. I would want to do planning before that. So, if you back all that up, it is probably three to four years out, we want to actually go do the process.

MEDIA QUESTIONER: Okay, thank you.

MODERATOR: Okay. Thanks, Becky.

How about we go to Irene Klotz from Reuters?

MEDIA QUESTIONER: Thanks.

Bill, is there any sense that if Station is extended, that this \$1.5 billion-plus launch cost is going to come from another program, or are you all thinking that this is going to be a budget add at some point in the future?

MR. GERSTENMAIER: I have no idea.

MODERATOR: Anything else, Irene?

MEDIA QUESTIONER: No. Thanks.

MODERATOR: Okay. Thank you.

Let's go back around to Seth Borenstein from the Associated Press.

MEDIA QUESTIONER: Thanks. I appreciate it.

This may be sort of an old question now, but as of May 1, the restrictions on large-scale, you know, efforts that would go toward retirement of the Shuttle, you know, prohibit further flying are off. What are you doing, now that those prohibitions are off, and given the whole review and, you know, that gap is one of the issues, are you not going to do certain things because of the review, or are you going to just continue with those retirement

efforts?

MR. GERSTENMAIER: Basically, we don't have funding to do anything much different than what we were before. So we are going to continue with those retirement efforts, kind of on the measured basis that's described several times to you. We don't really have any funding availability to do anything different in '09 and '10. So we are going to just continue on that planned phase-out of the Shuttle systems.

MEDIA QUESTIONER: So I guess the question is if the Augustine Commission comes out, out of left field, and says in August, "You know, we need to fly the Shuttle more often and more," will you have done anything between now and August will make that impossible?

MR. GERSTENMAIER: Again, as we have talked about, the phase-out doesn't go from possible to impossible in a day. It is a gradual phase-out and becomes more difficult as you go through the period.

I talked to you before that there's things happening, but there is nothing that is a major broke that you couldn't fix somewhere in the future. So we have got time through the summer time frame. There is not a

make-or-break kind of decision coming up. There is no major event that's occurring, and I don't anticipate any really major event. It just occurs slowly over time.

MEDIA QUESTIONER: Yeah. Thank you.

MODERATOR: James Dean from Florida Today.

MEDIA QUESTIONER: Hi. First question is if flights do slip into 2010, you know, we have heard about the proposal for a possible additional \$2.5 billion to be added that year, but I am just wondering what the range is that say only one mission fell into that year. Is there like a bottom end of the range in terms of cost, if you had to get more funding for that fiscal year, and then it increases each flight up to \$2.5 billion?

MR. GERSTENMAIER: I think it really kind of comes down to how it occurs and when it occurs. So I can't really give you a budget number, per se.

MEDIA QUESTIONER: Okay, thanks.

And just regarding AMS again, it has always had this qualifier of if it can be completed safely and affordably in calendar year 2010. So, obviously, that is your goal, but I just wanted to be sure I understood it, if that 2010 qualifier has really been eliminated, it is going

to be flown, whenever, assuming funding is there, or has anything changed there?

MR. GERSTENMAIER: Again, I think that the qualifier is that we are going to fly the flight.

Again, I would say that all our flights have the safety, the hinge on them that we need to make sure we can accommodate them safely and there is not an issue with this. If we see or detect something in the Shuttle system that changes our ability to fly it safely, we will do what we need to go do. We take each flight one at a time and figure out where they are.

The budget constraints and considerations, those will get factored in once we see what happens, where things slide and things move with the manifest as we go forward, and it is kind of a function of when we know what happens, whether we have some kind of interruption this summer, or if it is later in the sequence. All of those are variables, and we will work all those cases, once we see what life brings us and in a way comes forward, but I think it is clear that the nine remaining flights are to be flown. If we can go get them flown, then we are going to do our best to fly them on a schedule that makes sense.

MEDIA QUESTIONER: Okay, thanks.

And just one more question, if I may. I was wondering if this budget reflects any significant new measures that will be taken in the coming year to retain the Shuttle workforce through the end.

MR. GERSTENMAIER: There is nothing specific in here beyond the plans that we have had in place for a period of years. So it still has some severance and retention provisions and some other things in there, but they are things we have worked out previously.

MODERATOR: Okay, James. Thank you.

Rob Coppinger is up next. He is the only person in the queue. So, if you have any other questions, please go ahead and get into the queue right now. Robert?

MEDIA QUESTIONER: Okay. Hello again.

The \$150 million from the Investment Act -- Reinvestment Act that is being put towards the commercial side of things, it's been talked about being used, a part of that money as being used to accelerate the cargo flights, the Station. I assume they are talking about the work on the UCRS contracts to accelerate those cargo flights to help better understand what is needed for man

rating. Is that the case? Can we expect the cargo flights from Orbital and SpaceX to -- are you planning to help those arrive at Station earlier, and how much earlier?

MR. GERSTENMAIER: We have been looking at some of the out-year flights and potentially moving some of those up a little bit, and the idea is to gain some more flight experience with those new rockets.

We also have some tasks to go look at, some reliability kind of tasks to go look at the systems reliability things that are on those contracts, and that will give us some more insight into the rockets that are being developed.

We have some stuff for maybe some additional testing lines and some more analysis in those areas. So we are going to figure out a way, along with the contractors, to do things that will help them be better prepared to use the cargo aspects of their rockets that show how they are ready to go do their crew aspects. So we are going to work with them and get the specifics.

One of the options, as you described, is to take some of the later flights, potentially move them up, but then there are other options under there to look at some

other things that we think would be beneficial to the commercial sector, and we will work with the commercial sector to figure out that specific thing.

MEDIA QUESTIONER: Okay. And going back to this slipping to fiscal year 2011, fiscal year 2011 budget, obviously that would be published in February 2010. So, are you getting any indication of by February 2010 of slippage into 2011?

MR. GERSTENMAIER: Your question, Rob, again? How is that?

MEDIA QUESTIONER: Sorry I didn't explain that. So Shuttle missions, if you can't do all the Shuttle missions by the end of fiscal year 2010 and it is going and you need to do a couple of Shuttle missions in fiscal year 2011, the fiscal year 2011 budget, of course, is published in February 2010. So is it plausible that you can -- would you think you would be in a position -- based on slippage in the past, do you think you would be in a position, so that you could be in a position to know if you will require extra monies in the FY2011 budget in order to ask for those monies to be put into the FY2011 budget in order to fly out the remaining Shuttle missions?

MR. GERSTENMAIER: We will clearly have more insight by the time we get to February 2010 on how we are doing, and we will do the appropriate things in the next budget, submit the right thing to go do. So I think we will see how this manifest plays out in the near term, and then we will do the right thing as we go forward.

MEDIA QUESTIONER: Okay. Am I still the only person in the queue?

MODERATOR: No. Todd Halvorson has joined in the queue.

Do you have any more questions, Rob?

MEDIA QUESTIONER: Yeah, actually one last question.

Permanent MPLM. Is that still being considered as a possibility? You might leave an MPLM up at Station?

MR. GERSTENMAIER: We are thinking about it again.

MEDIA QUESTIONER: Okay, thanks.

MODERATOR: Thanks, Rob.

Todd, go ahead.

MEDIA QUESTIONER: Todd Halvorson of Florida Today.

Bill, with only nine Shuttle missions remaining and crews assigned for, I believe, the majority of those at this point, is there any plan for a drawdown in the Astronaut Office, and if so, could you kind of describe what that plan is?

MR. GERSTENMAIER: We are still pretty busy supporting Space Station after that time period. In fact, the additional crews that we have on board Station will keep us with some astronauts flying in that time frame.

We also use the Astronaut Office to do a lot of work in our development of new vehicles. So they will be pretty actively supporting the CEV development activity and the things that are going forward. In fact, they are today.

There will be some test flights and some test demonstrations and some training exercises that will start showing up in those time frames that the Crew Office will be supporting.

So I think there is a new astronaut class that is getting ready to be selected here, and we are doing that kind of with an eye towards the Space Station flights. In fact, we need some more astronauts in the Space Station

classes to go support those.

So we have kind of looked at all that. I think there will be a little bit of a drawdown, but it may not be as much as you would anticipate when you look at all the activities and tests and things that need to be supported by the Astronaut Office.

MEDIA QUESTIONER: If I could follow that real quickly, do you anticipate that that drawdown would be taken care of through normal attrition, or do you imagine that there would actually be layoffs in that office?

MR. GERSTENMAIER: I think we will see it through natural attrition.

MEDIA QUESTIONER: Thanks.

MODERATOR: Okay. That's it for questions today.

Thank you very much for participating, and one more time, a reminder that if you missed any of this and/or you want a replay, you can dial toll free, 888-566-0435, or 402-998-0605, about an hour after this call ends, and that audio should be available for about the next 30 days.

Once again, thank you, and take care.

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