STS-116 Post-Landing Press Conference

SPEAKERS:
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BILL GERSTENMAIER, Associate Administrator, Space Operations
MIKE LEINBACH, Shuttle Launch Director
SIGMAR WITTIG, Chairman, German Aerospace Centre Executive Board (DLR), and Chairman European Space Agency Council
MICHEL TOGNINI, Head of European Astronaut Center, European Space Agency
PER TEGNER, Director General, Swedish Space Agency

[Moderated by DAVID MOULD, NASA Public Affairs]

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MODERATOR: Good evening from the Kennedy Space Center, and welcome to our post-landing press conference for the successful completion of STS-116, Space Shuttle mission to continue assembly at the International Space Station.

With us this evening is the Administrator of NASA, Michael Griffin; the Associate Administrator for Space Operations, Bill Gerstenmaier; NASA Launch Director, Mike Leinbach; Professor Sigmar Wittig, Head of the European Space Agency Council and head of the DLR; Michel Tognini, head of the European Astronaut Center, representing the head of the European Space Agency; and Per Tegner, head of the Swedish Space Agency.

We will begin with brief opening remarks, and then we will go to your questions. We will begin with the Administrator of NASA, Mike Griffin.

ADMINISTRATOR GRIFFIN: Good evening. Thanks for being here with us. It is a very good day.

If I were an English major and given to a literary turn of phrase, I might say somewhat onomatopoetically that the Shuttle burst out of the clouds
and swished down onto the runway, but being an engineer and
a pilot, I would say that Roman and Billy O. steered it
into a perfect landing. It was a great landing and a great
day.

Of course, the flight teams were working the call
on whether we would go to KSC or whether we would go to
Edwards or White Sands right up until the last moment and,
in fact, until the last moment. The call was made for KSC,
and it turned out to be a great one.

The crew on orbit and the crew on the ground
could not have done better. I think when you look back at
this mission, they just could not have done better.

They did four EVAs instead of three planned EVAs,
accomplishing some additional tasks to get past a stuck
solar array. That teaches us, once again, that we have a
lot to learn about space flight and how our hardware
performs in space flight, but we did learn. In the
learning, we made it better than if we hadn't had the
problems.

So it was a wonderful day. It was a wonderful
end to a great mission, and I am proud to be here.

MR. GERSTENMAIER: Thanks.
Again, it is great to be here. If you would have asked me before the flight what I wanted for Christmas, what I wanted was a safe and successful Shuttle flight, and we really got that.

This has just been a phenomenal mission. The things that we wanted to get done that we talked about before, get the new power system, a new thermal system up on the Space Station, and get it operating, we did that.

We have got lots of other things that don't necessarily make the headlines that are just as important to the Space Station. We got some oxygen transfer to Space Station, about 69 pounds. We got 47 pounds of nitrogen transferred. We carried across 4,800 pounds of hardware, and just as importantly, we returned 4,900 pounds of hardware to the ground to help with the clutter on board Station. We got a new external camera on the outside. We got MMOD shields that will be installed in February on the Russian service module to help give us MMOD protection. We got a new pump-to-pump oxygen to the Space Station. We got a new carbon dioxide removal system, redesigned, operating, functional on board Space Station. We got a new gyro on our treadmill, so the crews can continue to exercise. That
has been replaced. We got a new charcoal bed to scrub the atmosphere and remove contaminants from the Space Station, just a tremendous amount of things.

The other things that we did that were amazing, we have sent 17,900 commands to the Space Station. That is about 5,000 more commands than we have ever sent, and all of those commands worked and were executed perfectly.

As Mike talked about the EVA, it was really a testimony to the teamwork. Typically, the amount of time required to get ready to do that complex of RMS activity would have taken several months of analysis. That was done in essentially one day. We had to prepare to make sure we had the right tools to go out and do that EVA, and again, that was done just as effectively, one day to get prepared for that.

The teams executed flawlessly. They learned a tremendous amount how to operate in space, how to work together, how to use the tools they have, and all of those things will pay huge dividends in the future.

As we stop and take a look at what is coming next year, there are lots of things planned next year. We have a Progress launch in January. We will have three EVAs in
February, and we just have a very exciting year in front of us.

So, again, this is a tremendous way to end this year. I think it is great to be back here in Florida. It is great to see the teams work and operate together as a team. They are phenomenal in what they do. You see the world's best space team operate as a team, both on the Station Shuttle and the ground folks. It was just a great, great day. So, again, thank you.

MR. LEINBACH: Thanks, Gerst.

Well, on behalf of the Kennedy Space Center, Christmas came 3 days early for us. We are in a great mood to have Discovery out on our runway. The team out there was just jubilant that we brought Discovery home here.

As you know, we did deploy some folks out to the White Sands Space Harbor for a potential landing out there because, at certain points late in the mission, it looked like we might have to land out there. So we were fully prepared to do that had that come to pass, and obviously, it didn't.

We sent 50-some folks, 52 folks, out there along with some special equipment, backup equipment that we have
here at the Kennedy Space Center in case we had to land out there, and we always have a backup crew out at Dryden in case we have to go out to California, but all of that didn't have to happen.

We came here today. It was a great call by Norm Knight and the flight team. So it was great to have Discovery home.

Meanwhile, over in the OPF, the Atlantis processing is going great. We are going to take the whole Christmas break off with Atlantis and also Endeavour. Discovery, once we get her back in the OPF about 3 or 4 hours from now, will go through about 2 days of safeing, and we will be able to give the whole team the Christmas break off of Discovery as well.

So it was great timing for us, a great Christmas present, and it feels good to be in this program.

Thanks.

PROFESSOR WITTIG: Well, first of all, let me take the opportunity to congratulate our American colleagues for a perfect job done. I think we are extremely impressed and also quite proud of being part of the missions, and we also feel like an early Christmas. So
it is quite important from a European aspect.

There are primarily three aspects which are, from our point of view, of importance. First, the major step towards the completion of the Station, also from a European point of view, there is the feeling and experience of really close cooperation, which we really appreciate. For us, it also was some training, gaining some experience, and there were two European astronauts on a long-term mission.

Mr. Fuglesang — sorry — "Fuglesang," we say in Germany — was on the Shuttle mission, and both I think did their part. It was quite important for us.

In addition, the third aspect was that there were quite a few scientific experiments, and those showed us and gave us some impressions of what in the future can and will be done.

In summary, I think this is a big step forward, and we are looking forward to the future cooperation in the upcoming years.

Thank you.

MR. TOGNINI: Good evening to all.

We are quite satisfied to see Thomas Reiter and Christer Fuglesang are on the ground. We became doubtful
at one point where we heard the orbiter will land in Edwards. So we came with my delegation of head of agency of Germany, of DLR, and Sweden at the Cape, and we really wanted to see the orbiter at the Cape.

Thomas has done a flight of 6 months, which was the first time that there was a crew of three people on the Space Station after the accident of Columbia. So it was quite an important step made.

We learned a lot not only by the science made by Thomas Reiter, but also by all that we learned about the Space Station and about operation of the Space Station because next year ESA will launch Columbus and ATV, and all the preparations and the walk made by Thomas Reiter and the people on the ground following Thomas is very important for the launch of Columbus and the preparation of operation on ATV.

Christer Fuglesang had three EVAs, and the last one was really important for the safety of the Space Station. So we are proud to be associated for the real operation of the Space Station and also to show that ESA is a real partner of ISS.

We are looking forward next year with Columbus
and ATV to the flight of three or more astronauts from ESA, always associated to important part of the Space Station, and I would like to thank NASA for all the good partnership they had with us.

MR. TEGNER: Good evening. Since this is my first time to see a landing, I must say I am extremely impressed. This is a marvelous experience, and I am very thankful to NASA that we can experience this. I am surely very impressed with all of the NASA activities. Their proficiency, everything is done the right way, and people are working together so much and in such close cooperation. They know exactly what to do.

Since I am coming from the outside, I am very impressed. Thank you very much for this.

Coming from the Swedish side, I must say I am also very impressed by Mr. Fuglesang -- which his name is "bird song" actually -- and he performed extremely well, together with Beamer, and they made a great team, which I think this unrehearsed EVA, which meant that they could do it together with Houston people, and they performed wonderfully. I think that is a great example of the proficiency of the organization.
Thank you.

ADMINISTRATOR GRIFFIN: Let me just close off our opening remarks by saying, first of all, actually, thanks to our internal NASA media for accommodating three additional folks at the last moment for this press conference. I decided that it would be most appropriate if we could have our international partners with us on the dais today.

I would also like to call attention to Professor Wittig's long service as head of DLR and his service to the European Space Agency. Professor Wittig is retiring shortly from his post and presumably will return to the academic life or something.

He is almost an honorary American, having served for many years as a professor at Purdue University and, in fact, a professor for our own Jerry Ross who is, as many of you know, a NASA astronaut, currently occupied with a flight crew at the moment.

So, Professor Wittig, I have had the opportunity to meet some extraordinary people in my 35 years in this business, and I have enjoyed none of them more than the opportunity to make the acquaintance and the friendship
with Professor Wittig and his wife, Elizabeth. So thank you.

PROFESSOR WITTIG: Thank you very much, Mr. Griffin.

ADMINISTRATOR GRIFFIN: It is a pleasure to have you here.

Now questions and answers then, I guess, and we will take questions until you are done. So we don't need to rush.

MODERATOR: Please wait for the microphone to come around. Give your name and affiliation and who you are directing your questions to.

Let's begin with Mr. Cabbage.

QUESTIONER: Mike Cabbage with the Orlando Sentinel for Dr. Griffin.

Looking back at 2006, going into July, we have flown one Shuttle mission I think in the previous 3-1/2 years. Then in the second half of 2006, there were three successful missions, and next year, you have got five more, I believe, scheduled.

ADMINISTRATOR GRIFFIN: I said four or five in the past. It is on the cusp, but, yes, about that.
QUESTIONER: Again, looking back at 2006, do you think NASA has reached a point in the Shuttle program where you have the momentum and operations are back to where they need to be to press ahead through construction of the Space Station? Are you guys back to where you need to finish the Space Station, coming on the heels of what happened previously?

And for Mr. Gerstenmaier, 2007 also, as I understand it, is supposed to be a really big year for the International Space Station. It is going to look a lot different, hopefully, at the end of 2007 or early 2008 than it does now. Can you talk about some of the changes that are planned for the Space Station and highlight some of the big points?

ADMINISTRATOR GRIFFIN: I guess I will start.

Yes, this was a big year, and yes, it was tough to get to July. I have consistently said that if we could take the time necessary to get things going and to get things going properly that we could get back to our operational tempo, and that if we could restore our historic operational tempo of four and a half flights per year on the average, that we would easily finish the
Station by the time it was necessary to retire the Shuttle.

I think we are now demonstrating that. We have tried to demonstrate that with our deeds rather than our words and let people see what we could do.

I think we are, in fact, better than before because I think we have a new understanding in this country and in the space community that each and every time we do this, it is a minor miracle. It is the hardest thing that human beings have yet learned how to do.

It is extraordinarily difficult to do it and to get it right. We have learned, again, in a very sad fashion. We have learned, again, that it is a difficult and dangerous activity and that we have to stay hungry all the time for new data and new lessons.

I think the flight team did an extraordinary time today bringing Discovery home. The flight and ground teams did an extraordinary job for the whole mission, but when we get done, we will be critiquing this mission to see what we can learn from what wasn't perfect, and that is how we have to stay for an enterprise that is right on the cutting edge of what is possible for human beings to do at all.

I really am extraordinarily proud of this team.
MR. GERSTENMAIER: In terms of next year, I think I have a picture, if somebody can put it up on the screen for me.

This is the current configuration of Space Station today that was taken by the crew as they departed, and you will see the solar array out there on the left-hand side of the screen. There will be another solar array added on the next flight. That is the S3/S4 solar array that we talk about. We will get the fun of retracting another 120 feet of solar array back into the canister, just like we did on this flight. So that one array that sticks out there up on the top, we will get a chance to learn firsthand what we did on this flight, perfect it, figure out a way to do it better, and get that array retracted on that P6 that sits up there.

The next flight, next year, will be a flight very much like this, a Spacehab flight with a little truss spacer that sits out there on the starboard side, called "S5." Then the flight after that will be Node 2, and that is kind of the connection module that gets installed on board Space Station. Then that will allow the European module, the Columbus module, to be installed in the fall.
So, if I take a look at those four upcoming flights, that is what takes us from where we are today. We complete the power system, put the node up to get ready to attach to international partner modules, and then begin starting to add the international partner modules.

So it is a pretty exciting series of flights as we look forward to them, with plenty of challenges along the way, lots of configuration changes, lots of software stuff, but, again, the teams have been prepared. We have learned a lot from this flight, and as Mike said, we are going to continue to keep looking, look for new ways to stay ahead of the problems that are coming, learn from what we saw here, and be prepared to execute.

MODERATOR: Let's continue down the wall with Tariq, please.

QUESTIONER: Thank you. Tariq Malik with Space.com and Space News for Mr. Gerstenmaier.

I am just curious. You have had two pretty successful construction flights for the Station in relatively close proximity. How does that push ahead or give you confidence for the pace that you have set through 2010?
MR. GERSTENMAIER: Again, I think we have a pretty reasonable pace.

Again, like I talked about kind of at the press conference before this flight, we are really prepared for almost any eventuality. You know, we have worked many contingency scenarios, many things that have to occur.

One thing that is going to occur in February is we are going to do three EVAs on board Space Station without the Shuttle being here, and we are going to do those in about a week's time frame. What that will do is that will take the cooling that is now provided to the U.S. laboratories provided by the temporary system up on P6, and that will then now get plumbed into the permanent cooling system that is up and running. So that will be done in one of those EVAs.

So, again, those three EVAs kind of prepare us and move forward. There are tremendous challenges in front of us. I think we need to not be disappointed if things don't go exactly the way we planned. We need to be prepared and have contingency things in place and learn from what we have.

So, again, I think we have a good, sound plan.
It may not go exactly the way we have laid out, but we are prepared to continue working through it. Again, we will learn from it, and we will be better for it, and these are skills that the team needs to know and we need to know to do bigger things as far as the Moon and Mars and other activities.

MODERATOR: Let's keep going down the wall, please.

QUESTIONER: Hi. Holly Hickman, Fox News Radio, for Dr. Griffin.

Do you have any anticipation of perhaps equipping White Sands so that a future landing there would not be detrimental to the program?

Also, to the professor, for you, as you are leaving, what are your hopes for the Columbus module as it goes up?

ADMINISTRATOR GRIFFIN: Well, with regard to White Sands, I don't think that we are in a position where a landing there would be detrimental to the program.

We flew some equipment out on a C-17. We were prepared to take care of Discovery if she landed there, just as we have done at Edwards -- and many times and would
be prepared to do again.

Budgets are very tight, and as long as we can get by without building a more permanent installation at White Sands or any other of our 200 contingency runways around the world, I think we will stay the course on where we are.

PROFESSOR WITTIG: As Mr. Gerstenmaier mentioned, we are hopeful that next fall, Columbus will be able to combine and connect with the ISS, and that is actually what we have been waiting for, for quite some time. This will be giving us the opportunity for real European science in a European scale. There are hundreds of experiments, which are waiting, and we are looking forward to really activate Columbus. That is certainly my hope that real science can be done and will be done for the upcoming years.

MODERATOR: Let's come along the front row here to Irene, please.

QUESTIONER: Thanks very much.

This question is for both Dr. Griffin and Mr. Gerstenmaier. I don't know how you can share it, but it kind of relates to both of your perspectives.

Once it was decided that the final heat shield inspection was not going to come off the table for this
flight, can you talk a little bit about how you ranked the
decision to spend a fourth day, a fourth EVA and an extra
day in orbit, with the prospective of a 2- or 3-month
schedule hit -- I'm sorry -- 1- or 2-month schedule hit
down the road if you did have to land at Northrop?

As you meet these calculated program risks -- and
I understand they are not crew, Dr. Griffin -- can you talk
a little bit about any concerns you might have as the
months and years go by that you may come up short if you
have a gamble like what happened today? It did pay off
today, but it may not in the future.

ADMINISTRATOR GRIFFIN: Well, first of all, these
decisions are not decisions that I made myself or that
Gerst makes himself. We thrash these through pretty well
as a team.

We wanted that fourth day, that fourth EVA and
the extra day in orbit, in order to make sure we had gotten
everything done that we needed to do on the solar arrays,
and if we hadn't been able to work it, we knew that we were
in good shape.

We did not have to finish retracting that solar
array in order to be in good shape, but at some point, we
were going to have to learn how to do it, and since
obviously there was something that didn't turn out quite
right, that meant that we had some things that we needed to
learn. And learning it sooner rather than later was very
helpful, and it was worth some amount of risk to do that.

You are right. In this case, it turned out well.

Sometimes it may not. We do have a good bit of
contingency built into our flight rate to allow us to
finish the Station in time, but it is these kinds of -- I
will just have to say "calculated risks." It is these
kinds of calculated risks that give us the best chance to
complete the Space Station to the satisfaction of ourselves
and our partners in the time frame that we want to do it.

MR. GERSTENMAIER: Again, the only thing I would
add is that I think the discussion was really great. We
had ground ops folks discussing it with us. We had the
Shuttle folks and the Station folks all in the same meeting
trying to decide what the right thing to do was, and we all
collectively determined that because we had to retract that
other array, as I showed you in the picture, on the next
flight, we really needed to learn how to get that array
retracted.
So, even if we didn't get it retracted, that wasn't as important as to learn and develop the technique for that next mission because, again, that would be a big show stopper to us potentially in the future or it would slow things down and make us go down a different path. So we weighed all of those things together. We also knew we were going to give up, potentially, one of our chances to land. We talked about that openly. We knew it increased, potentially, the probability of landing at Northrop or White Sands Space Harbor. We all looked at that and we looked at each other, and we said if that's where we end up, that's where we end up, and that was okay.

So, again, it was great because everybody got to talk about it. We got to discuss it. We got to see what the trades were back and forth, and we collectively understood each other’s position, and we kind of all went forward with a good decision. That is exactly the way a high-performance team works, is they are willing to talk openly, discuss things that may not represent their position, and then you come to a good decision overall and everybody understands why you did it.

So, again, this is a great learning experience
for the team.

ADMINISTRATOR GRIFFIN: I want to add back onto that. A few years ago, we were criticized as an agency because we didn't talk enough, because we weren't hearing all points of view, and since the day I walked in the door, the posture I have taken is that we -- you know, anytime we disagree, of course, that excites you folks in the media, and you like to see some disagreements, but we will tolerate that in exchange for the openness and the sharing of views and the engineering and scientific discussions that need to take place in order to get to the right answer, and that is what you saw.

MODERATOR: Okay. Let's stay on the front row with John, please.

QUESTIONER: I am going to ask a parochial question here. I just wondered if you had anything that you would like to say, Dr. Griffin, about Jim Kennedy who is retiring next week and has taken the center through the recovery from the accident into this new era that we are in now.

ADMINISTRATOR GRIFFIN: Yes. Thanks for giving me that opportunity.
I will be here for Jim's retirement dinner, and so I won't preface now the remarks that I might make at that time, but Jim and I have been friends in this business for well over a decade, long preceding Jim's assignment as center director here at KSC and preceding my return to NASA.

Jim was exactly the right person to come in and begin the healing process after Columbia. Jim's skills as a leader and as, what we call colloquially, a "people person" are obvious to everyone who knows him.

We are going to be sorry to lose him from NASA, but we won't lose him from the NASA family. He is taking advantage of the fact that he is here in his hometown. He has a beautiful wife that he enjoys spending time with and a condo on the beach that he enjoys spending that time at, and he is still young enough to enjoy all of that. So he I think just decided that he could retire, that basically his work here really was done, that we had healed.

We will never as an agency and frankly as a space profession -- those of us who are in the space business will never get over having lost Columbia and her crew, but Jim did as well as anybody could possibly have done to get
the Kennedy Space Center past that and moving again, and he will be greatly missed.

MODERATOR: Next on the front row, please.

QUESTIONER: Travis Reed with Associated Press. This is for Mike Leinbach.

You guys really caught a couple of breaks with the weather this time, first on the launch and then coming back down. How fortunate do you feel to get those two? We all know it doesn't ever happen sometimes, but in one mission to get to breaks like that.

MR. LEINBACH: Well, we work the weather very hard for both launch and landing, as you well know, and every now and then, it doesn't hurt to be a little lucky. I think we were a little lucky on launch day. We started tanking very late in the process, and the weather turned out better than we had anticipated that morning.

Today, coming into work, frankly, it didn't look too good for a landing here, but I showed up at the Control Center and Norm Knight and his Flight Control Team worked the weather very hard. We have rules in place to guard against doing unsafe things, and he followed the rules to a tee today, and it worked out extremely well.
So it doesn't hurt to be a little lucky every now and then. It feels good to get lucky, and it is good to have Discovery home.

MODERATOR: Next in the middle here, please.

QUESTIONER: Thomas Nordegren, Swedish Broadcasting.

Dr. Griffin, I noticed that you were talking to Christer Fuglesang after the landing, and I just wanted to know what you were talking about. And then I wonder, it is very interesting to listen to you, but we all, of course, would like to talk with the crew. When will the crew press conference -- because I heard rumors that there will be no crew press conference, and I am not happy that we all are going to play paparazzi during Christmas Eve. So I just wanted to know what your plans are for us.

ADMINISTRATOR GRIFFIN: Well, I don't make plans for the crew press conference, and happiness is not a requirement. The crew will do a press conference when they all feel well enough to do it.

When I saw Christer on the runway, I congratulated him on a superb performance with three EVAs and other work on orbit, and I asked him how he felt. He
said he was feeling great, maybe just a little bit wobbly
getting his land legs back, but that he felt great. I told
him how very proud I was of the performance that he turned
in on behalf of the European Space Agency, the Space
Station Program, and of NASA.

MODERATOR: Right over here, please.

QUESTIONER: Jacqui Goddard for the Times of
London and the Scotsman.

Could somebody just elaborate on the status of
Nick Patrick who didn't appear on the tarmac afterwards? I
wasn't clear if he just stayed behind to keep Thomas Reiter
company or if he has got the wobbles too.

ADMINISTRATOR GRIFFIN: I asked about that, and
Nick was feeling slightly -- just a bit woozy as well. He
is doing just fine. I don't know how you feel after you
get off of a roller-coaster ride, but I myself, when I get
off of a roller-coaster ride, I am not immediately ready to
do a press conference. So Nick will be doing just fine.

MODERATOR: All right. Anyone else?

QUESTIONER: Eric [inaudible], Swedish media.

Mr. Fuglesang is very committed to do another
space mission. How likely is that to happen? I don't know
who to address this question to.

ADMINISTRATOR GRIFFIN: It is a little early for us to be picking crew assignments. Most of our international astronauts have, in fact, flown more than one mission. Most of our astronauts do, but it is too early to be thinking about specifics.

MODERATOR: Okay. Let's go back around to the side here with Tariq once more, please.


I think I just have one small one for Mr. Tognini.

Thomas Reiter said yesterday that he had trained real hard on the Station, hopefully to try to cut down the time recovering from his long space flight. I am kind of curious to know, if you have had a moment to speak with him, how he is feeling, I guess, based on those remarks.

PROFESSOR WITTIG: Unfortunately, I did not have the present time to speak to him, but the same applies to him as it does to Mr. Patrick. In general, he feels fine, and he will be up tomorrow, I guess.

I don't know, Michel, whether you want to
comment.

MR. TOGNINI: Thomas did a flight of 6 months, and after 6 months, you don't have the capability to be really good on your feet after landing. When you look at the way the orbiter is made and the way you have to go down. You have to walk downstairs, and this is not safe for a person that flew 6 months to do right after a flight. So I think the decision made by NASA was really safe.

MODERATOR: Anyone who hasn't asked a question yet?

[No response.]

MODERATOR: All right. Then back to Irene, please.

QUESTIONER: Dr. Griffin, if you don't mind answering a non-Space Shuttle-related question, I have one for you.

Aside from the Human Space Program, of course, one of the topics that has been very hot on NASA's agenda this year and for next year is Mars. I am just wondering if you might be able to talk a little bit about how the recent announcement of the possibility of water in the not too distant past on the surface of Mars might affect any
plans for future missions.

    I realize it is too late to do anything with Phoenix, which is launching next year, but I don't know if anybody has had an opportunity to really kind of look down the road a little bit and see if there is anything that might be tweaked.

    Thanks.

ADMINISTRATOR GRIFFIN: Well, I actually had that same question in another press conference, and it is a good one. I will give the same answer.

    I really think I need to leave it to the science community to determine what the science community priorities are and how missions can be crafted.

    I share with you the incredible excitement at photographic evidence that, I would say, makes it almost completely obvious that we have seen examples of flowing water on Mars because we imaged the same site in -- well, I think it was 2000 or 1999, just a few years ago, and then again just a couple of years ago, and the images were vastly different, and they were vastly different in a way that almost can only be made by running water.

    That is tremendously exciting. It validates a
longstanding scientific hypothesis about Mars that
underneath the surface that might be extensive areas of
permafrost which occasionally, through one mechanism or
another, turn briefly into flowing liquid water, and we
have now seen evidence of that. It is very exciting.

QUESTIONER: I have got a question about the
tank, and I am not really sure who to direct it to. So I
will just throw it out to whoever wants it.

Given the way that it has performed the last
three launches, is there any chance you guys would stay
with the current design, or do you think the final redesign
will still be implemented?

MR. GERSTENMAIER: We are looking at it pretty
close, but I think we are going to make some changes. We
would really like to get some foam off the tank because
then you don't have to worry about it.

Foam is a very difficult material to control. So
the way you apply it and the way you spray it on the tank
is very dependent upon how it gets sprayed, what conditions
it gets sprayed on, et cetera.

So we would really like to get rid of some foam.

So we are looking at making another change to the
ice/frost ramps, which you are aware of, that will really
remove a large amount of the foam. I think about 17 pounds
or so of foam will get removed from that area, and we think
that is significant enough, we want to continue with that
redesign.

Our goal is to have that in place on the external
tank, I believe 128, which is one tank in front of the HST
mission. So we will get a chance to see that design
perform before we go then take that same tank to the HST
mission later.

So, again, I think we still think that is the
right thing to go do. We have kind of refocused our
efforts to get back on track to do that, and we will get
the foam off the tank. We think that is the right overall
design decision.

Again, we will kind of let the data drive us. We
will continue to look, and if something changes, we may
change our minds, but right now that is the path that we
are on.

MODERATOR: Further questions?

[No response.]

MODERATOR: All right. A couple of quick notes.
In a few hours on NASA Television, we will have a B-roll of Thomas Reiter and some other aspects of the landing this evening.

As was mentioned earlier, we will have a crew news conference, but we will not have it tonight, given the lateness of the hour and some of the other factors that we have discussed, but we will put one together as quickly as we can.

For further information on NASA and the mission, please go on the Internet to www.NASA.gov, and thank you very much. Have a good evening.