you

hi I'm Trent Prado public affairs officer with NASA's human exploration and operations mission directorate like to welcome you to the agency's Wallops Flight Facility in Virginia for today's news conference to discuss progress to date and some next steps in a number of spaceflight areas as we look forward to tomorrow's test launch the orbital science corporations Antares rocket for those joining us online you can find out more information about the test launch at WWDC gov / orbital and find all the
ways to connect with us on social media

go to www.NASA.gov/connect as for the

order of events today we have four

speakers joining us each will provide

brief remarks and then we'll open the

floor the excuse me the floor and phone

lines for questions and answers like to

take a brief moment just to welcome and

introduce the speakers first we have

Phil McAllister NASA's director of

commercial spaceflight development next

Dale Nash executive director of the

Virginia commercial spaceflight

authority next Frank Culbertson
executive vice president and general manager of orbitals advanced programs

group and bill rebel director of NASA's Wallops Flight Facility and with that I'll hand off the discussion to fill

thanks Trent I'm very very gratified to be here today remember when we first started this program over six years ago there was no launch pad no rocket and then to see the launch launch pad and the rocket today in the sunshine getting ready for its debut was very very gratifying and I want to congratulate Frank and the orbital team for doing a
great job and and the other the other

44
00:01:38,849 --> 00:01:42,928
partners as part of this organization it

45
00:01:41,129 --> 00:01:45,750
was it was really a team effort really a

46
00:01:42,929 --> 00:01:48,210
good partnership on the part of orbital

47
00:01:45,750 --> 00:01:50,009
leading the leading the way as well as

48
00:01:48,209 --> 00:01:51,978
the mid-atlantic regional spaceport at

49
00:01:50,009 --> 00:01:55,920
the state of Virginia the authority

50
00:01:51,978 --> 00:01:58,200
Wallops and NASA all coming together to

51
00:01:55,920 --> 00:02:00,509
get another American space capability

52
00:01:58,200 --> 00:02:02,280
and that's what's truly gratifying a lot

53
00:02:00,509 --> 00:02:04,530
of people say that the American space

54
00:02:02,280 --> 00:02:06,569
program is in decline well you only have

55
00:02:04,530 --> 00:02:09,259
to go just a couple a couple miles down

56
00:02:06,569 --> 00:02:11,819
the road to see it on the rise literally

57
00:02:09,258 --> 00:02:13,859
on the pad and I am very much looking
forward to the day where we have regular cargo resupply runs to the International Space Station hopefully we'll see that very soon so the space station can be fully outfitted and and productive as a National Lab and just to conclude I'd like to say that our accomplishments in space should not be limited by hardware it should only be limited by our aspirations in our will and this capability gives us the hardware it allows us to take the next step in our space exploration program so that's another reason why I'm
very excited for tomorrow regardless of whether it is a good day or bad day or something in between tomorrow again a real accomplishment a lot of challenges that got work through but the commitment of the partners to work through that's it deal okay thanks Phillip first of all it's a we are very pleased at the state of Virginia in the Virginia commercial spaceflight Authority the owner and builder of the Mars pads here in particular Mars pad 0a we were
pleased to be on the the NASA orbital team and very fortunate to have been selected we've gone through a long challenging process I had about five or six slides but somehow we hope it's the only snafu we have they didn't didn't make it onto it but a good a good snap shot of the pad had groundbreaking in June of 2009 we really started to do construction in the spring of 2010 hundreds of pylons put in built the the pad up it was taking pretty good shape by the fall of 2010 the most of the infrastructure was in 2011 we we had a
pad we were in the process from 2011 on

101
00:04:14,989 --> 00:04:22,370
through the end of 2011 through day

102
00:04:17,418 --> 00:04:24,560
through October of 2012 of putting all

103
00:04:22,370 --> 00:04:27,030
the subsystems in place a liquid fuel

104
00:04:24,560 --> 00:04:29,649
farm all the

105
00:04:27,029 --> 00:04:33,009
regulators all the things that go with

106
00:04:29,649 --> 00:04:35,319
it getting it tested out hooked it up on

107
00:04:33,009 --> 00:04:37,329
october or turned it over to orbital on

108
00:04:35,319 --> 00:04:39,969
october first shortly thereafter hooked

109
00:04:37,329 --> 00:04:41,949
up the test vehicle we went through a

110
00:04:39,970 --> 00:04:43,840
lot of systems tests and check out

111
00:04:41,949 --> 00:04:45,969
didn't always get them right the first

112
00:04:43,839 --> 00:04:47,829
time but each time we went through it we

113
00:04:45,970 --> 00:04:50,440
learn more we got better and better at

114
00:04:47,829 --> 00:04:53,500
it we wrote out hurricane sandy and we
had a very successful hot fire on the

22nd the pad came through looking

remarkably well far better than I had

expected we were able to turn that

around quick we've got the the very

beautiful Antares rocket out there and

we are ready to go and very pleased very

pleased at the partnership with with

NASA and orbital Wallops in particular

it's it's an excellent partnership that

I think has reached this major milestone

and we only expect to see it grow well

beyond that thank you Frank thank you

very much dealing good afternoon to
everybody on behalf of mr. David Thompson and the entire orbital team I'd like to thank you for welcoming us here for this big event today also i'm happy to see so many people out to watch this this is a big event for the eastern shore for Wallops and and for everybody in the surrounding area but I think also for the country as I'll explain in a moment we've been working on this rocket for over six years and it was originally conceived to be a medium lift rocket to replace others that were being retired and then when the cots program came
along it was a perfect fit and we were eventually selected to provide cots
demonstration mission and then shortly thereafter selected as one of the awardees on the cargo resupply service which we will be executing following the first two tests and demonstration flights that's a real honor for us as a company and we understand how important that is to the country the rocket itself as as you will see is about 130 feet long it's sitting on the pad out there now ready to go it will be fueled tomorrow during the countdown
and will lift off with approximately 750

thousand pounds of thrust weighing about

600,000 pounds so it'll not race

off the pad but it will accelerate very

quickly once it gets going and it's

going to be the biggest and loudest and

brightest thing that's ever launched

from Wallops I believe so it'll be

visible up and down the coast but that

will be the first of many we intend to

continue launching out of here with the

help of our partners on a regular basis

this test flight of course is a test

flight and I want to remind everybody

that first word is test so if things
don't go exactly as planned we will learn what we need to learn it will press on and continue to improve as we go forward the second flight will be a demonstration flight all the way to the International Space Station with a load of cargo in carried by the Cygnus spacecraft which as we speak is in the fueling facility here at Wallops Island getting ready to go and we'll be ready to be launched later this summer following the test flight once we have demonstrated with those two missions that our system works will be authorized
to proceed with the cargo resupply service beginning this fall and we will launch every three to six months carrying approximately two tons of cargo each time to the International Space Station and that's a pretty exciting challenge for us but a demonstration of what the commercial industry can do to help maintain human spaceflight and maintain the International Space Station and NASA is working with their industry partners very very hard to make sure that we can move in that direction we can do what we do best so that they can
go do what they do best I especially
want to thank our partners in this a lot
of people some of whom are in the room
here started us out several years ago
and kept us going we've had we're on our
third program manager now the others
have moved on to other things Mike
Pinkston and his team have been working
very hard to get ready Dale and his team
and Billy and your work have gotten us
ready and we really want to thank Mars
for all the hard work that you've put
into this and the state of Virginia
support in making sure that we have a
launch pad here now of course we

wouldn't have this launch pad if we

didn't have a place to put it in Wallops

center space flight center has has

provided us with that place and we are

tenants and customers here

but it's a great partnership because

they provide the range they provide the

integration facility and and the Wallops

folks have worked very hard to make sure

that not only are we safe but we're also

ready to go and provided their own

expertise in launching and thousands of

rockets have been lost here from Wallops

and so this is just a bigger better
229 00:09:08,370 --> 00:09:11,730  
version of what they've been doing in

230 00:09:09,629 --> 00:09:13,460  
the past but it's the same people paying

231 00:09:11,730 --> 00:09:16,230  
attention to the safety into the range

232 00:09:13,460 --> 00:09:18,210  
we want to thank the International Space

233 00:09:16,230 --> 00:09:21,539  
Station program and NASA at large for

234 00:09:18,210 --> 00:09:22,920  
the support it's been a great

235 00:09:21,539 --> 00:09:25,709  
partnership working through various

236 00:09:22,919 --> 00:09:28,110  
problems everything from funding to

237 00:09:25,710 --> 00:09:30,629  
schedule to finding parts to help us get

238 00:09:28,110 --> 00:09:32,399  
the pad ready from various NASA centers

239 00:09:30,629 --> 00:09:34,200  
including bringing people in from all

240 00:09:32,399 --> 00:09:36,000  
over the agency to help us out when we

241 00:09:34,200 --> 00:09:39,000  
needed it so it's been a true team

242 00:09:36,000 --> 00:09:41,279  
effort to try to achieve this
commercialization of cargo carrier into the International Space Station but also to broaden the capability of the United States as a spacefaring nation and now we will have a new liquid rocket spaceport on the east coast to carry not only cargo but other spacecraft into orbit and that's a great expansion of our capabilities now one of the things that we wanted to achieve by by setting up shop here at Wallops and launching from here I've got a short video that when they're ready to show it we can start rolling it I'll narrate it and
tell you a little bit about what you're seeing if I can see it on here I hope

and it'll give you a good illustration

of what you're going to see tomorrow

this is computer generated however so it bears a little bit of resemblance to reality and I'm sure it's on its way while it's coming I'll keep talking I've had to do this before too though my tap shoes are worn out it's rolling okay

oh it is how do I know what to say that

okay well we will launch off the pad and

and the

the engines will fire for approximately
four minutes and then we'll switch over
to the second stage a single solid booster that will carry us into orbit
the entire launch will take
approximately 10 minutes and we'll deliver the Cygnus simulator into
orbit on the demonstration flight will
actually carry the Cygnus spacecraft and it will carry as I said on the first flight a little less than a ton of cargo
and on subsequent place about two tons
over the course of the next three to five days the spacecraft will go through
the rendezvous operations necessary to approach the International Space
Station on the demo flight we go through several exercises to prove that we are safe and we can't abort if necessary and that we can safely approach the station at low speed and under control once we arrive at a point about 10 meters away from the station the crew will grab us with the robotic arm and then attaches to the nadir port of the note2 at that point once everything is sealed in the and the leak checks have been completed they'll open the hatch and unload the cargo and any other surprises we might throw in there for him and and spend a
couple days doing that then they'll load it with disposal cargo some people call that trash but we prefer to call it disposal cargo and then we will unbirth from the station be released from the robotic arm and then go through a guided reentry and burn up on re-entry over the Pacific so that everything is basically destroyed before it reaches the surface of the earth is it still rolling okay that in itself I think will be a welcome addition to the station programs repertoire of taking clothing tools experiments etc to the crew this
in itself will be the beginnings of the capability of expanding the crew size on the International Space Station and continuing to grow the research program that it was designed to support and our cargo spacecraft as well as the others that are in service now will provide them NASA with that capability to keep moving we can re-enter now yes okay well I hope you enjoyed the video I just want to say in closing that we are extremely excited to be here as a part of this this is a very
important event in the history of

orbital sciences everybody in the

company has been paying attention to

this and a heck of a lot of us have been

working on it for several years so we've

got our hearts and souls in this but we

are also keenly aware that this is not

just for our company it's for the

country and in order for the United

States to maintain a presence in space

and to continue the human spaceflight

program going so that we can go beyond

low-earth orbit beyond the International

Space Station and out into the solar

system and beyond we need this
capability in order to keep the crew safe and to keep them well-fed and to keep the research going so this is important to the future of the country and to our future generations if they're going to continue to be explorers we are real honored to be a part of that so thank you all very much thanks Bill all right very good well good afternoon and thanks everyone for coming you couldn't have picked a better day I think to come to Wallops I've been this site director here for about three years now and while this upcoming event is certainly
monumental to me it's also a huge deal

to all the men and women here at Wallops

that have worked on it for the last five

years or so and so with that you know

I'd like to say congratulations to our

orbital sciences to Dale mashing the

Mars team and to everyone else that has

had a hand in basically getting us to

this to this point this will be the

largest rocket ever to launch from

Wallops Island so it's a it's a big

occasion you know thinking back on the

history that has has made Wallops what

it is I had launched last week with the
the retirees group they come in kind of on a every couple of months and we talked about you know what is going on or what isn't in this case you know I thank them for the legacy that kind of that they have built here Wolf's has been here 68 years launched some 16,000 rockets this one is no doubt by are going to be the largest thing to ever come off the island and so we're certainly looking forward to that and along with what they have done I also need to thank the community here locally for the support that they have given us
certainly all the area leaders delegates

00:15:38,559 --> 00:15:44,929
legislators the support that you have

00:15:41,720 --> 00:15:47,570
given us makes all this possible and so

00:15:44,929 --> 00:15:49,549
with a focus on antares this also kind

00:15:47,570 --> 00:15:53,660
of reintroduces Wallops I think to the

00:15:49,549 --> 00:16:01,639
world we've got a crew on a p3 aircraft

00:15:53,659 --> 00:16:01,639
up in the in the North doing an ice

00:15:58,220 --> 00:16:03,560
bridge which is collecting data on ice

00:16:01,639 --> 00:16:06,230
sheets up there in the north they'll be

00:16:03,559 --> 00:16:08,209
doing a similar event in the South this

00:16:06,230 --> 00:16:12,080
later this year we've got another crew

00:16:08,210 --> 00:16:14,420
flying a mission called carve up in

00:16:12,080 --> 00:16:16,670
Alaska which is the carbon Arctic

00:16:14,419 --> 00:16:19,519
reservoirs vulnerability experiment and

00:16:16,669 --> 00:16:21,439
then the quadrant lay it all we've got a
sounding rocket team out there prepping

a couple of vehicles for flight out

there they'll help us understand better

how solar weather affects navigation and

communication signals the scientific

balloon team is just completed its third

super pressure balloon they're getting

that ready for a flight coming out of

Sweden a little bit later this year the

NASA global Hawks will be coming back

here again this summer again to study

hurricane formation obviously very

important to us here on the Eastern

Shore and also I think to point out in
the September late August timeframe

Virginia is going to support the launch of the ladee mission would be the first planetary mission for Wallops so we're going to the moon this year by way of Virginia and then the you know I can continue on and on but i think the right the big deal here is Antares and for those of you that have been out to the island have seen the site there have you can kind of come up on it especially as your as your cresting the causeway bridge and it it stands out in the evening with the lights on it it really
it really shows but I just like to

you know wish these guys all the best
tomorrow and that I'll pass things back

over to you to renovate oh okay let's go

ahead and go to questions and answers

for those in the audience if you just
say your name and media affiliation

that'd be a help let's start with Dan

Leone here in the front and we'll get a
microphone to you it's a good day
everybody dan Leone with space news

thanks for having us all out here Frank

I want to pick up on something that you
said but embedded in here is also a
question fulfill you mentioned this was

00:18:02,799 --> 00:18:07,178
going to be a step in having a larger

00:18:04,630 --> 00:18:09,130
space station crew so Phil I'm curious

00:18:07,179 --> 00:18:13,030
we've heard bill Gerstenmaier say time

00:18:09,130 --> 00:18:14,410
and time again maybe literally to one

00:18:13,029 --> 00:18:16,629
time in another time that there could be

00:18:14,410 --> 00:18:18,340
a seven-member crew provided that all

00:18:16,630 --> 00:18:20,920
the commercial cargo and crew objectives

00:18:18,339 --> 00:18:23,439
go according to plan I'm curious whether

00:18:20,920 --> 00:18:25,450
the seven crew is an official goal for

00:18:23,440 --> 00:18:27,039
NASA yet and then Frank I'm curious what

00:18:25,450 --> 00:18:31,210
part orbital would play with Cygnus and

00:18:27,039 --> 00:18:32,889
antares to support I'm not sure I'd call

00:18:31,210 --> 00:18:34,750
it an official goal it's definitely

00:18:32,890 --> 00:18:37,030
something that we are aspired we aspire
to it's going to be dependent on the technical progress of the crew program as well as future budgets but the space station was designed for a seven-person crew we'd like to make it fully productive that's what it's up there to do is research in microgravity innovative activities may be potentially commercial applications and to really do that effectively you definitely need crew time so we would like to get it up to seven if possible that is definitely aspiring to I don't know if you can call
it an official goal but it's it's
definitely something that we're working
towards this antar Cygnus capability is
is a key component of that we want
assured cargo access to the ISS and then
we're going to have to get crew
capability up there as well so there's a
number of gates to get there but yes
that's that's sort of the path that we
would like to pursue yeah and Fran as
far as over battles role I mean what
Phil said is correct and I already knew
the crew as the station was designed for
seven crew but I also know that without
our participation and all of the people

that are

in cargo and eventually crew

transportation you can't get there so we

are a part of the solution to getting to

seven crew it's NASA's job to determine

when where and how with the help of

Congress to expand the capabilities of

the station will will be ready to

support if they can achieve that okay

that's not three hands fire up fast so

we'll go Ken and Tareq and then we'll go

here to the side if that's okay I thank

you and thanks for doing this event a


fantastic rocket you have for Frank

00:20:11,619 --> 00:20:15,788
Culbertson can you talked a little bit

00:20:13,659 --> 00:20:17,169
about the question I have at the end but

00:20:15,788 --> 00:20:19,210
can you put this in a little bit more

00:20:17,169 --> 00:20:21,700
personal terms since you have been an

00:20:19,210 --> 00:20:23,440
astronaut you've been to the ISS you

00:20:21,700 --> 00:20:26,350
know they need these science experiments

00:20:23,440 --> 00:20:28,419
so put your your mission your sickness

00:20:26,349 --> 00:20:30,819
mission in that perspective of just how

00:20:28,419 --> 00:20:35,590
important this is things well I think

00:20:30,819 --> 00:20:41,730
the element of this that is driving the

00:20:35,589 --> 00:20:45,099
importance of our delivery SpaceX HTV

00:20:41,730 --> 00:20:46,538
the Russians ISA is the fact that we

00:20:45,099 --> 00:20:47,829
don't have the shuttle anymore in the

00:20:46,538 --> 00:20:51,038
shuttle with all of its cargo capability
and lift capability was able to keep the station very well surprised supplied with things of any size from the largest battery requirement to the smallest instrument but without the shuttle we need the other means of doing that and that's going to be a multi-faceted solution one of which one of the facets of which is Antares and sickness and we intend to be ready to do that by later this year and do it on a regular basis for as long as the station continues to operate and we're hoping that NASA will be happy with what we do in this first
phase of the contract and if they extend it that will be a part of that too but but having the ability to predict how much and when you're going to be able to deliver cargo is very important to the station program in order to plan the crew training the crew arrivals the crew departures it's a very complicated traffic problem and they need predictable launch capability from the providers in order to keep it working otherwise you'll end up with situations where you either don't have enough supplies and part of the crew has to
come home or you may not be able to just sustain the research that you have planned.

thank you a target with space com I think I have a question for Phil and for Dale the goal you know from kotzen and the commercial use of cargo delivery you know was to foster what we're seeing now the new vehicles the new spacecraft but you're getting another spaceport out of it as well and I'm wondering with the value of a new liquid-fueled capable spaceport is both for NASA for Virginia and then also for orbital Frank if you
can kind of comment on just having that

00:22:27,470 --> 00:22:35,808
can kind of comment on just having that

00:22:27,470 --> 00:22:35,808
new capability you know a mid-atlantic

00:22:31,419 --> 00:22:38,509
launching site thanks so I don't want to

00:22:31,419 --> 00:22:38,509
delve into hyperbole but it is a key

00:22:35,808 --> 00:22:41,509
delve into hyperbole but it is a key

00:22:38,509 --> 00:22:43,368
critical capability for not only for

00:22:38,509 --> 00:22:43,368
critical capability for not only for

00:22:41,509 --> 00:22:46,990
NASA in the ISS program but I think for

00:22:41,509 --> 00:22:46,990
NASA in the ISS program but I think for

00:22:43,368 --> 00:22:50,028
the entire nation it's going to help

00:22:43,368 --> 00:22:50,028
the entire nation it's going to help

00:22:46,990 --> 00:22:52,368
economically for commercial customers

00:22:46,990 --> 00:22:52,368
economically for commercial customers

00:22:50,028 --> 00:22:54,230
that the Antares is going to fly it will

00:22:50,028 --> 00:22:54,230
that the Antares is going to fly it will

00:22:52,368 --> 00:22:56,480
potentially help national security if

00:22:52,368 --> 00:22:56,480
potentially help national security if

00:22:54,230 --> 00:22:58,069
Antares flies any DoD or national

00:22:54,230 --> 00:22:58,069
Antares flies any DoD or national

00:22:56,480 --> 00:23:00,499
security missions it's definitely going

00:22:56,480 --> 00:23:00,499
security missions it's definitely going

00:22:58,069 --> 00:23:03,668
to help NASA as we've said many times

00:22:58,069 --> 00:23:03,668
to help NASA as we've said many times

00:23:00,499 --> 00:23:07,159
this is a key capability to keep Riss

00:23:00,499 --> 00:23:07,159
this is a key capability to keep Riss

00:23:03,669 --> 00:23:09,440
resupplied and productive I mean that's

00:23:03,669 --> 00:23:09,440
resupplied and productive I mean that's
the whole point of why we put ISS up there is so that we could do these microgravity experiments you need the car go up there and the regular pace of new experiments up and down to really fully utilize that national lab if you think about it and lab on earth you come in and you do tests all the time so you're going to need a lot of equipment going up and down so it is a definitely a key resource and I think to harken back to one of the previous questions regarding shuttle I think we saw after Columbia how tenuous are our lifeline is
our toehold to low-earth orbit in the international space station is that one tragic accident really made it really challenging for NASA to maintain that ISS during that very difficult period of time we are in such a better situation today and about to be even better with the debut of this new capability a completely independent hardware completely independent launch pad provides what we call assured access a significantly higher confidence level and our ability to deliver to deliver cargo to low Earth orbit in the
International Space Station so again I don't want to one to use any hyperbole but I don't know if it could be understated are overstated how important this this program is to us and we are very pleased to see how far it is we are not there yet as Frank mentioned this is a test test flight and what I like to hear not only from Frank but also from the NASA side is our commitment we since this is so important we are going to see this through we've gone through a lot of challenges already we've knocked down those challenges with the hard work of
the orbital sciences team and the rest

614
00:24:48,470 --> 00:24:51,650
of their partners and we're going to

615
00:24:49,819 --> 00:24:53,029
continue to do that spaceflight it's

616
00:24:51,650 --> 00:24:54,679
always going to be hard there's going to

617
00:24:53,029 --> 00:24:57,500
always be difficulties and challenges

618
00:24:54,679 --> 00:24:59,679
ahead but the fact that all the partners

619
00:24:57,500 --> 00:25:01,910
are committed to this additional us

620
00:24:59,679 --> 00:25:05,390
capability is what gives me confidence

621
00:25:01,910 --> 00:25:06,558
that will eventually get there stick one

622
00:25:05,390 --> 00:25:09,200
more here in the audience and they'll go

623
00:25:06,558 --> 00:25:10,700
to the phone line microphones here gene

624
00:25:09,200 --> 00:25:11,779
michalka with talking space for self

625
00:25:10,700 --> 00:25:13,759
gentleman thanks for taking our

626
00:25:11,779 --> 00:25:16,700
questions here today congratulations and

627
00:25:13,759 --> 00:25:18,410
wishing you guys well tomorrow Antares
is going to be launched within eyesight of everybody here in the Northeast but it's also going to be launched within eyesight of our hired help over in capitol hill if you yeah if you go ahead and you know what do you hope that folks will might be going ahead taking a look outside their office windows and seeing this thing going up around five o'clock tomorrow what do you think their thoughts are going to be and what do you hope they are Thanks well I hope they're watching first of all because they can go out on the the eastern portico and
watch our they can go to the top of the
tall buildings and they'll be able to
see us if they look in the right
direction which is approximately 140
degrees in 85 miles
but and we will have folks hosting an
event down there to try to encourage
them to come and watch on TV and live
but i think the the message that comes
out of that is that we are growing in
our space port capability in this
country right down the road from
Washington to the west we build
satellites and other components for
space flight to the east now in Wallops

we're actually launching them and we will be launching them regularly and that's a new experience people think you have to go to Florida to do a space launch Florida has tremendous capability and we may launched from there again also too but right now we're launching from Virginia and within sight of the nation's capital and I think it's important that people see that so they know that the space program is alive and well the space program is still supporting human space flight and the
commercial industry is involved in that

and we're trying to move out in many
different directions to ensure that the
American industry the American public
the American taxpayer has access to
space and someday hopefully in person
but certainly by sending other people
sending experiments sending payloads and
sending other missions to or to either low
Earth orbit or beyond and Wallops is a
big piece of that one of the reasons
we're here is because we we actually ran
a competition between Florida and
Virginia and one of the many factors we
considered was the fact that we are of a
ginger company and we're not too far from here and so that played a role but also the fact that the prediction was we would have less traffic conflicts here now ironically it's like driving the back roads here on the Eastern Shore if there's two cars that are going to meet up at a stop sign I mean only two cars on the road they're going to meet up at a stop sign well the only other conflict we could have possibly run into is getting ready to go out to the pad this summer so we've run into a little bit of a conflict with that but we'll get
around that and the fact that we can manage those kind of things should allow us to go to the space station when they need us to come and with the support of the Congressional legislations and the leadership in both Virginia and Maryland we've been able to keep this going and I certainly want to thank the government Virginia for his support and the Secretary and Senator Mikulski who the though she I think she may think this is part of Maryland but but it's pretty good clothes don't do anything through
that's her other that's right but she
has a lot of Marylanders who work here
and a great deal of interest in this
because the link between Goddard and
Wallops and she's been tremendously
supportive and I know that she'll be
watching either from here or from
Washington and encouraging her her other
hired help to go outside and watch also
so we think it's very important they go
out and see this and then spread the
word yeah we are launching from the
Eastern Shore and when we're going east
don't be afraid we certainly want
Richmond to go out and look as well

because as Frank mentioned certainly

Governor McDonnell and secretary Sean

Connaughton have been absolutely

supportive but you go back for four governors in probably more but for governors 22 of which are now senators

as well you've had a long commitment of support that has begun to really accelerate and take off under governor

McDonald's so they ought to be proud of it and should go out and take a good look at it it's good let's go to the phone line before we come back here at the auditorium so let's go to Nick to
boric of Bloomberg go ahead Nick

all right go ahead we here okay I'd say

what let's uh let's go ahead and take

another question here in the auditorium

as we start to cue that up right right

here in the second row right side hi

Doug moaning TMC satellite spotlight

your first door-to-door demo to ISS you

said that'll be a 3 to 5-day mission

between launched and and rendezvous

correctly in the future you can adopt

like a six-hour door-to-door like we

have with them progress and dragon for

between by the time you launch to like a
six hour ish rendezvous faster

rendezvous window that that's a great

objective we're going to walk first

though and make sure that we can do this

right once we've done that a few times

in Frank tomorrow and Carl waltz and

their guys proved to me they can do this

safely then we'll start looking at

faster opportunity so that we can get

there right away ok let's go ahead and

try Irene Klotz from Reuters on the

phone if you can hear us go ahead Irene

I can you can hear me all right we can't

excellent go ahead right thanks very
much I I have a few different little

housekeeping questions I think the first

for Frank and I scare your voice I

wanted to know how long a sickness can

stay in orbit this dummy the dummy crap

that's flying I've seen a couple of a

week to a couple of months and then also

for the operational Cygnus spacecraft

what what what capability does that have

to serve for hosted payloads and other

other possible commercial missions after

separation from ISS thanks for the

question area nice to hear your voice

too brings back old memories shuttle Mir
but the Cygnus simulator actually can stay in orbit as long as it wants to we won't have control of it once we separate it'll probably be up there about two weeks we leave and then should burn up pretty thoroughly on reentry is designed to completely disintegrate so it should be a safe situation once it has decayed in orbit and its main purpose is to prove that we can launch a payload size object into space it's got instrumentation on it too to characterize the environment such as acoustics vibration accelerations and it'll give us a good
feel for how the separation mechanics work and the separation of the fairing because it also has cameras onboard the Cygnus spacecraft itself has a lot of capability it's based on orbitals legacy of geo and Leo satellites that geo satellites are designed for up to 15 years of life and we have a lot of those components as a part of the Cygnus spacecraft a typical mission will be about 30 days counting the rendezvous the time onboard the station the time to do your but we could extend that to 60 or 90 at nasa's
request however once we separate from the space station the spacecraft itself depending on its fuel load could probably fly easily for another year in terms of what the components are certified for so we think it's a great potential candidate for hosted payloads and we actually are negotiating for a couple of possibilities over the next few years that might take advantage of that capability to stay on orbit into to transfer data even after it has separated from the station so it should be a multi-purpose spacecraft it'll also
be useful we think going beyond low-earth orbit once the exploration plans take shape and it's determined where humans are going to go next we certainly would be more than happy to compete for providing the cargo for that base wherever it happens to be too and as well as for control capability so it's it's got a lot of capability ok I want to go back here to the audience and then we'll ask James Dean on the phone to just stand by we'll come to you next so let's go Steven Clark in front I Steven Clark with a spaceflight now a
couple of questions first for Frank

842
00:33:55,410 --> 00:34:00,759
beyond tomorrow's launch if it goes well

843
00:33:58,500 --> 00:34:02,450
what is the long pole for the first

844
00:34:00,759 --> 00:34:05,000
cigna Scott's demo

845
00:34:02,450 --> 00:34:07,009
ISS is it sounds like the hardware is

846
00:34:05,000 --> 00:34:09,590
close to getting ready is it is it

847
00:34:07,009 --> 00:34:12,320
software finding a slot in the ISS

848
00:34:09,590 --> 00:34:14,539
manifest and for Phil or Frank take us

849
00:34:12,320 --> 00:34:16,309
back a couple of years when the decision

850
00:34:14,539 --> 00:34:17,650
was made to do this test launch it

851
00:34:16,309 --> 00:34:20,599
wasn't part of the original agreement

852
00:34:17,650 --> 00:34:23,360
the how and why of adding this to the

853
00:34:20,599 --> 00:34:27,880
agreement thanks of the first vote yes

854
00:34:23,360 --> 00:34:30,620
sir as far as the schedule going forward

855
00:34:27,880 --> 00:34:32,990
right now we have virtually all the
hardware here that we need for the cots

demo mission there are a couple of

components we've held off just because

we didn't need to have them here and we

don't need to overcrowd the hip but once

this flight launches will be we'll have

the ability to move some pieces around

in the horizontal integration facility

and start a really complete stacking of

all of that the Cygnus spacecraft has

been integrated as I say this in the

process of being fueled it'll move over

to the hiff later this week and then we

can work towards integrating it we
typically plan on around two to three
months in between missions as a minimum
partly because there are certain pieces
of test equipment we need to move from
one vehicle to the other in between we
need time to have the pad refurbished
and make sure that there's been no
damage during a flight we need time to
analyze the data that comes down from a
particular flight to ensure there's no
modifications we need to make to the
software or the are the hardware and
that works out to around just under
three months and so we're looking at
late June early July for the demo mission and we think that's certainly doable and in terms of the history of this flight being added to the program as both providers were working through the development of their hardware and the development of their ops concepts and getting ready to go to the station NASA made a determination that they would like to invest in some risk mitigation activities and asked us what we could do and we said well the most logical thing is to add a test flight so that we can
demonstrate the entire stack before we actually try to carry cargo to the space station and so some money was added we also added some investment on our side to make sure that it worked and and started working towards the test flight as the as the first mission we were not initially planning to do a test flight because when we were awarded the cots demonstration Space Act agreement we were a hundred million dollars less than the than the other awardee and that's we really couldn't afford it at that time so adding it we think does add some some risk mitigation
as well as and lessons learned for removing moving forward towards the demo itself and Phil I don't if you want to I'll just elaborate a little bit Frank everything Frank said was accurate just to give you a little more insight and NASA's thinking you know our our situation with ISS resupply has evolved over time it's never one constant thing as we go year to year we get more experience with the hardware we get more experience with how long things take to either break or live and when we started the cots program the end of ISS wasn't
exactly clear we knew we had another provider so schedule was important to us and so we felt like we could accomplish the test test objectives with just the one flight initially and then as we got further into the program we started to realize how critical cargo resupply was going to be the shuttle lifetime was clearly going to be ending very soon and I think the importance of the cargo carriers kind of got elevated somewhat within NASA if you look in the Augustine report they did a very big scrub of the human spaceflight program there's a
statement in the final report that said

maybe NASA should consider additional investment to reduce the risk associated with those flights there was money put in to the president's budget request of FY 11 and then Congress appropriated funds to do just that was to reduce our risk so that we had a higher confidence level so what we did was we added content to the Space Act agreements for that purpose risk mitigation it's obviously better to have to test flights instead of one we negotiated with orbital and concurred with their
assessment that the best thing the best

956 00:38:15,940 --> 00:38:19,750 use of that money was to add an

957 00:38:17,920 --> 00:38:23,019 additional test flight which we will

958 00:38:19,750 --> 00:38:24,880 hopefully see tomorrow and that reduces

959 00:38:23,019 --> 00:38:26,710 risk on the foot on subsequent flights

960 00:38:24,880 --> 00:38:27,309 and makes the overall confidence level

961 00:38:26,710 --> 00:38:28,750 of the program

962 00:38:27,309 --> 00:38:30,610 a little bit higher so i think it was

963 00:38:28,750 --> 00:38:35,139 money well spent orbital also

964 00:38:30,610 --> 00:38:36,519 contributed to though to to those two

965 00:38:35,139 --> 00:38:38,980 that additional mission in almost all

966 00:38:36,519 --> 00:38:40,449 the milestones that we added were

967 00:38:38,980 --> 00:38:41,800 associated with this additional test

968 00:38:40,449 --> 00:38:43,299 fight whether it be ground testing or

969 00:38:41,800 --> 00:38:46,690 something else so we thought it was a
very prudent expenditure and we also added a couple shuttle flights towards the end a couple we weren't sure we were going to get and that last one took up a lot of cargo gave us a little bit more flexibility in terms of schedule so adding this flight didn't turn out to be too hard okay thanks let's let's go back to the phone line with James Dean Florida today go ahead James thanks very much Mr. Culbertson SpaceX of course preceded you engine cuts and it became pretty well known over the past years they made at the
station and we're also involved in commercial crews though you're such different companies for people who made outside aerospace circles you may not know you as well could you try to contrast the kind of company that you are and also the different way in which you went about designing antares compared to SpaceX's approach well not sure if I want to go into too much detail on that but but basically it's ironic orbital has been in existence for over 30 years and we've got about a thousand years worth of on-orbit
experience with our satellites and approximately a thousand spacecraft

we have successfully deployed so we've been doing this for quite a while we are a publicly traded company we do this on a commercial basis and the company was founded on the principles of providing access to space on a commercial basis and Dave Thompson and the other leaders in the company succeeded in that when they first launched the Pegasus spacecraft to carry a commercial payload over 20 years ago and so we have been in
this business a while but we do take a little bit different approach we are publicly traded and we have to pay attention to our shareholders and their investments by the same token we want to keep building our business in multiple directions orbital has approximately thirty six hundred employees we have three basic business units and we addressed the market both in all three areas from launch vehicles that are managed out of Ron gravies group in in chandler and who are responsible for the the great work that's gone on getting ready for the
Antares launch we have the advanced programs group which I manage which handles our national security space as well as our human spaceflight efforts including the Cygnus spacecraft and then we have our space systems group that is responsible for both our commercial Gio sets as well as our science satellites that and other civil satellites that we launched for the government so we have a diverse portfolio and we intend to to continue in business for a long time moving in multiple directions this is a big part
of it for us and terraces are our
largest investment as a company and the
Cygnus spacecraft is our and its
associated cargo resupply service
contract is the largest contract we've
ever achieved so they are extremely
important to the future of the company
company and we do intend to branch out
in multiple areas we did kind of come
late to this particular activity we were
selected for the COS program about a
year and a half after the first two
selectees and so we've been playing
catch-up but we're about caught up we'll
find that out tomorrow I believe and by

the end of next year we should have an

additional four or five cargo missions

under our belt so we're going to be

moving fast once we get this off the pad

okay i want to say just one or two more

questions here in the auditorium before

I do let me just check that Nick isn't

still furiously hitting a mute button

somewhere on Nikki there Bloomberg hey

yeah yeah I am go ahead can you hear me

yeah yes we can give it's like just real

quickly there are pretty simple things I

for it to make sure that the terms of
the supply contract are still the same

00:42:40,909 --> 00:42:42,989
as

00:42:41,250 --> 00:42:45,900
they were announced this is a 1.9 billion dollar agreement to do a supply

00:42:48,449 --> 00:42:54,029
trip does that still accurate that's correct will do more if they want

00:42:50,880 --> 00:42:59,160
us to but that's the current contract 20 tons okay let's go back to last two

00:43:01,610 --> 00:43:11,910
questions here in the in the auditorium

00:43:05,099 --> 00:43:15,299
Tarek and then we'll do one more get a microphone down yep one of them to the

00:43:09,909 --> 00:43:17,190
space com and I think I just have two

00:43:15,300 --> 00:43:18,930
tiny little points just Frank you

00:43:17,190 --> 00:43:20,490
mentioned it is the biggest investment

00:43:18,929 --> 00:43:22,980
for the company and I just wanted you
could kind of put a number on that or

whatever you can share and then for bill

you says you did mention it's the

biggest rocket to launch from Wallops

I'm just running what size crowd you're

expecting it the visitor center and

along the beaches here thanks i don't i

don't know that we fully know what what

the size of the crowd will be in fact

this is kind of a trial run i think for

us this one probably didn't get as much

notification as maybe some of the future

flights will so we're playing this one

by ear but we're tied and pretty good
with the community and the other folks around so I you know we're hoping that we have enough spots lined up for everybody get to get a good look several hundred million and I want to echo something bill said previously and that's been the support of the community and the local both law enforcement and government officials so they had to make a number of modifications to accommodate us just moving our spacecraft from the main base down to the island required a lot of modifications to the to the route moving wires and asking people to move
their satellite dishes back a little bit

and things like that parked their cars

on there but on the middle of the road

in the middle of the night but it all

went very well the other night and

and the local community I think sees

this as a positive it's brought a lot of

jobs a lot of excitement and as we are

here the team working and those of us

that are visiting go to the local

establishments we get a lot of positive

feedback in a lot of sense of yet we're

going we're doing something new and

different here and we'll try not to
disturb the crabs and oysters too much

00:44:55,500 --> 00:45:00,900
but but I think it's a good thing for

00:44:57,239 --> 00:45:03,179
the community okay take last question

00:45:00,900 --> 00:45:08,160
here in the the front microphone right

00:45:03,179 --> 00:45:11,099
here Jason para with wired magazine

00:45:08,159 --> 00:45:12,809
first for Frank than for bill to build

00:45:11,099 --> 00:45:15,089
on the comparison to SpaceX could you

00:45:12,809 --> 00:45:17,340
talk a little bit about the the fairly

00:45:15,090 --> 00:45:19,980
distinct difference between the rockets

00:45:17,340 --> 00:45:22,769
and the spacecraft themselves SpaceX's

00:45:19,980 --> 00:45:26,550
obviously going all-in house mostly in

00:45:22,769 --> 00:45:29,250
house and you have chosen to go sort of

00:45:26,550 --> 00:45:31,500
bridging the old space dynasties from

00:45:29,250 --> 00:45:33,300
the former Soviet Union and the United

00:45:31,500 --> 00:45:38,099
States and bringing a bunch of pieces
together if this continues to be successful do you see orbital doing more in house building following like what SpaceX are you going to continue to sort of bring in past suppliers and contractors around the world well yes SpaceX does talk about being vertically integrated I don't know the exact percentage that they are and and they try very hard to do as much as they can in house I know that you mean the difference in business cases more than the technical aspects of the rocket I assume right I mean they got nine inches
we got to write more from a perspective of yeah I understand and orbital has always been a company that's brought in the best of what's available in the industry for all of its projects and one of the things that we have to maintain as a skill in the company is managing multiple teammates managing our subcontractors managing our vendors but also building teams where we can all work together we've got a really good team on this one with Aerojet use neue ATK tala selecia on the spacecraft
and a number of others who bring their best and brightest to this problem. Yes, much of it is legacy hardware proven in various ways not proven in this specific application. That's why we're doing the test tomorrow to prove that it really does work but sometimes it's more cost effective to bring in those kind of proven technologies at the beginning to get to the initial phase and then as you go forward you determine what do I need to do for the long term to either enhance that particular...
technology or to bring in something else

to make it even better or more capable

and we will evaluate that as we go go

downstream but for now we think we've

got the teams working very well together

and working very hard to for the same

goal which is to safely launch this

rocket tomorrow and demonstrate that we

can launch liquids here from olives and

get to the station sort of the same

comparison obviously Kennedy is a much

more famous and well-known space launch

site do you see this is sort of Wallops

you know coming out party 60 70 years

after it came out onto the scene and
it's definitely been a reintroduction I think as a result of what has taken place here with Antares and the spaceport history page she kind of shed new light on Wallops and what it has done in the past and you know to this point it's mainly been a research location but point of fact I guess was pointed out to me some time ago is that you know when the commercial marketplace started we actually had some of the early versions coming out here with Conestoga and some of the in the early 90s and so we've always been I guess
interested in that but it's not it's not
been something that had really taken
hold up until now you know and just to
elaborate I think what this shows you is
there
no one way to do spaceflight development
there's no one way to do the hardware
obviously the two rockets are very
different they're both liquid four
stages but other than that there’s not a
lot of similarity between them there's
knows one business case there's no one
business approach multiple approaches
multiple strategies philosophies can
work and I think one of the beauties of the cots program and also in the Commercial Crew program is that we have this competitive environment where we can evaluate the diversity of these companies and they're free to innovate in the ways that they can which we've seen to be very very effective both from a cost standpoint and from a safety standpoint and from a performance standpoint so that competition really provides an almost intangible benefit to the taxpayer to NASA and to the country so that's
something that's really on display here

00:49:46.789 --> 00:49:51.319
in this program when you see the

00:49:49.278 --> 00:49:53.869
differences between our two partners

00:49:51.318 --> 00:49:56.268
orbital and SpaceX we think we chose

00:49:53.869 --> 00:49:58.249
pretty well because primarily what we

00:49:56.268 --> 00:49:59.718
look for is a committed partner and we

00:49:58.248 --> 00:50:01.038
definitely got that with both of those

00:49:59.719 --> 00:50:02.960
that were willing to work through the

00:50:01.039 --> 00:50:05.719
challenges and yet they all had their

00:50:02.960 --> 00:50:07.039
own ways of getting up there to orbit

00:50:05.719 --> 00:50:09.170
and I think that's a strength of the

00:50:07.039 --> 00:50:14.180
program a strength of the approach that

00:50:09.170 --> 00:50:15.588
we are pursuing for this okay on that

00:50:14.179 --> 00:50:17.028
note we're gonna have to end this this

00:50:15.588 --> 00:50:19.400
briefing just reminder we have another
briefing coming up at 3pm a few minutes from now we'll hear again from NASA and
orbital representatives as well as a weather briefing so stay tuned for that
on NASA TV you can find out more information about the test launch at
nasa.gov slash orbital and all the ways to follow along with it on social media
at nasa.gov slash connect but for now we'll close this and thank you very much for joining us
you