
PAO

1
00:00:05,110 --> 00:00:02,230
welcome back to the mission control

2
00:00:07,590 --> 00:00:05,120
center uh john steinmeier john is the

3
00:00:11,190 --> 00:00:07,600
senior uh project manager for the launch

4
00:00:13,749 --> 00:00:11,200
systems group at orbital sciences and um

5
00:00:15,990 --> 00:00:13,759
for those that uh tuned in back in april

6
00:00:18,710 --> 00:00:16,000
john was uh very

7
00:00:21,349 --> 00:00:18,720
nice to come and join me for the uh the

8
00:00:23,189 --> 00:00:21,359
launch activities for that test flight

9
00:00:25,109 --> 00:00:23,199
and so welcome back john it's good to

10
00:00:27,670 --> 00:00:25,119
have you thanks kyle it's great to be

11
00:00:29,830 --> 00:00:27,680
back and as you said we're all uh

12
00:00:32,630 --> 00:00:29,840
eagerly anticipating our launch tomorrow

13
00:00:34,709 --> 00:00:32,640

our cots demo launch which will as you

14
00:00:36,790 --> 00:00:34,719
saw in the video clip utilize our new

15
00:00:39,270 --> 00:00:36,800
antares launch vehicle

16
00:00:41,910 --> 00:00:39,280
and also demonstrate our newly developed

17
00:00:44,470 --> 00:00:41,920
cygnus cargo transfer vehicle

18
00:00:46,470 --> 00:00:44,480
let's talk about uh antares for a second

19
00:00:49,510 --> 00:00:46,480
obviously because that's the that's the

20
00:00:51,670 --> 00:00:49,520
booster that gets it there um the the

21
00:00:54,389 --> 00:00:51,680
test flight back in april it had the

22
00:00:56,310 --> 00:00:54,399
mass simulator uh to demonstrate the

23
00:00:58,069 --> 00:00:56,320
cygnus but um

24
00:01:00,150 --> 00:00:58,079
that was obviously part of it but

25
00:01:02,790 --> 00:01:00,160
proving antares on a first flight that

26
00:01:04,710 --> 00:01:02,800
was a big deal yes it was that was a a

27
00:01:07,830 --> 00:01:04,720
very important milestone for us the

28
00:01:10,789 --> 00:01:07,840
first milestone in the uh the cots

29
00:01:13,590 --> 00:01:10,799
commercial orbital transportation system

30
00:01:15,109 --> 00:01:13,600
uh contract

31
00:01:17,030 --> 00:01:15,119
the launch

32
00:01:18,550 --> 00:01:17,040
when we were here doing the play-by-play

33
00:01:21,190 --> 00:01:18,560
looked very good

34
00:01:23,670 --> 00:01:21,200
and on further review

35
00:01:25,590 --> 00:01:23,680
it was as good as it looked

36
00:01:26,390 --> 00:01:25,600
we were able to

37
00:01:29,190 --> 00:01:26,400
verify

38
00:01:30,390 --> 00:01:29,200

all the major objectives for that test

39
00:01:33,910 --> 00:01:30,400
launch

40
00:01:34,789 --> 00:01:33,920
verify all the requirements that

41
00:01:37,510 --> 00:01:34,799
were

42
00:01:39,190 --> 00:01:37,520
elements of that test launch

43
00:01:41,749 --> 00:01:39,200
we've made

44
00:01:44,469 --> 00:01:41,759
only very slight corrections

45
00:01:46,870 --> 00:01:44,479
uh to uh some systems for the following

46
00:01:49,270 --> 00:01:46,880
launch so uh it was a great launch for

47
00:01:51,350 --> 00:01:49,280
an inaugural launch and we're certainly

48
00:01:54,389 --> 00:01:51,360
looking forward to duplicating that

49
00:01:55,670 --> 00:01:54,399
tomorrow and so the antares um obviously

50
00:01:57,350 --> 00:01:55,680
uh

51
00:01:59,270 --> 00:01:57,360
you know you have to go pour over all

52
00:02:01,270 --> 00:01:59,280
that data for quite some time i mean

53
00:02:02,950 --> 00:02:01,280
it's you know how it performed because

54
00:02:05,190 --> 00:02:02,960
it delivered the mass simulator right

55
00:02:07,350 --> 00:02:05,200
where you wanted it uh but you still had

56
00:02:08,469 --> 00:02:07,360
to go over a pretty long period of time

57
00:02:10,949 --> 00:02:08,479
where you had to

58
00:02:12,390 --> 00:02:10,959
had to review all of that just to make

59
00:02:14,710 --> 00:02:12,400
sure that everything worked the way it

60
00:02:16,869 --> 00:02:14,720
needed to yeah it's been a busy five

61
00:02:18,630 --> 00:02:16,879
months uh going over the post flight

62
00:02:22,229 --> 00:02:18,640
data in

63
00:02:24,390 --> 00:02:22,239

in thorough detail um

64
00:02:26,790 --> 00:02:24,400
a series of

65
00:02:29,670 --> 00:02:26,800
post-flight reviews um

66
00:02:31,910 --> 00:02:29,680
including outside experts who reviewed

67
00:02:33,990 --> 00:02:31,920
that data with us and verified that yes

68
00:02:35,589 --> 00:02:34,000
indeed we verified

69
00:02:37,990 --> 00:02:35,599
all the objectives

70
00:02:39,670 --> 00:02:38,000
right in addition and during these past

71
00:02:42,070 --> 00:02:39,680
five months we've had two other very

72
00:02:44,790 --> 00:02:42,080
important launches for nasa and we were

73
00:02:47,030 --> 00:02:44,800
able to uh launch the iris mission on

74
00:02:50,150 --> 00:02:47,040
our pegasus launch vehicle in

75
00:02:52,470 --> 00:02:50,160
in june and then just uh a week ago

76
00:02:55,350 --> 00:02:52,480
friday we launched the the lady mission

77
00:02:56,470 --> 00:02:55,360
for uh nasa on our minotaur five launch

78
00:02:59,670 --> 00:02:56,480
vehicle

79
00:03:02,070 --> 00:02:59,680
and so now it's uh sets the stage for um

80
00:03:03,750 --> 00:03:02,080
um this next flight of course and we've

81
00:03:05,670 --> 00:03:03,760
been showing a little bit this morning

82
00:03:08,309 --> 00:03:05,680
the the view from the launch pad

83
00:03:10,390 --> 00:03:08,319
beautiful day there at least today so

84
00:03:11,670 --> 00:03:10,400
hopefully we'll get that the same view

85
00:03:14,949 --> 00:03:11,680
that we're looking at right there we'll

86
00:03:17,910 --> 00:03:14,959
get that uh hopefully tomorrow um

87
00:03:19,750 --> 00:03:17,920
the latest report i heard was about 75

88
00:03:21,670 --> 00:03:19,760

percent of favorable weather maybe some

89
00:03:23,509 --> 00:03:21,680
clouds

90
00:03:25,750 --> 00:03:23,519
you know that may be in the area but of

91
00:03:27,110 --> 00:03:25,760
course the weather forecast

92
00:03:28,470 --> 00:03:27,120
is something that they'll start looking

93
00:03:30,550 --> 00:03:28,480
at a lot more closely once that

94
00:03:33,030 --> 00:03:30,560
countdown begins which

95
00:03:35,110 --> 00:03:33,040
is roughly about eight hours uh or so

96
00:03:37,990 --> 00:03:35,120
before uh launch

97
00:03:40,070 --> 00:03:38,000
um talk about cygnus now i mean that's

98
00:03:42,550 --> 00:03:40,080
that's the whole um

99
00:03:45,030 --> 00:03:42,560
reason for the antares is to deliver

100
00:03:47,030 --> 00:03:45,040
that and and uh it's been a long time

101
00:03:49,190 --> 00:03:47,040
coming to five or six years in the in

102
00:03:51,030 --> 00:03:49,200
the making for this

103
00:03:52,869 --> 00:03:51,040
you're right it's been about five years

104
00:03:55,190 --> 00:03:52,879
in development uh

105
00:03:56,789 --> 00:03:55,200
both for the launch vehicle and the the

106
00:03:58,789 --> 00:03:56,799
cygnus system

107
00:04:00,470 --> 00:03:58,799
um as you can well imagine it's very

108
00:04:02,869 --> 00:04:00,480
complex system

109
00:04:05,110 --> 00:04:02,879
as you saw in the video clip it consists

110
00:04:07,190 --> 00:04:05,120
of two primary elements

111
00:04:08,789 --> 00:04:07,200
a pressurized cargo element that

112
00:04:11,990 --> 00:04:08,799
contains or

113
00:04:13,190 --> 00:04:12,000

is able to contain about 19 cubic meters

114
00:04:15,910 --> 00:04:13,200
of cargo

115
00:04:18,229 --> 00:04:15,920
and then a service module

116
00:04:20,469 --> 00:04:18,239
which uh propels the cygnus vehicle

117
00:04:22,710 --> 00:04:20,479
maneuvers the cygnus vehicle and that's

118
00:04:25,510 --> 00:04:22,720
largely developed from our own in-house

119
00:04:28,390 --> 00:04:25,520
uh spacecraft propulsion components yeah

120
00:04:30,790 --> 00:04:28,400
so there's you know it's like historical

121
00:04:32,629 --> 00:04:30,800
components that are proven um that you

122
00:04:34,629 --> 00:04:32,639
guys have been working on

123
00:04:36,629 --> 00:04:34,639
and evolving into what we're going to

124
00:04:39,110 --> 00:04:36,639
see with with cygnus and this delivery

125
00:04:41,749 --> 00:04:39,120
to the station and cygnus is going to

126
00:04:45,270 --> 00:04:41,759
rendezvous flying will perform a number

127
00:04:47,110 --> 00:04:45,280
of steps on the way to this station to

128
00:04:49,350 --> 00:04:47,120
to prove it as a

129
00:04:51,350 --> 00:04:49,360
rendezvous vehicle as well yeah that's

130
00:04:54,230 --> 00:04:51,360
correct as you mentioned earlier in the

131
00:04:57,030 --> 00:04:54,240
broadcast it's about a four-day

132
00:04:59,990 --> 00:04:57,040
mission before we are able to birth with

133
00:05:02,710 --> 00:05:00,000
the space station during that time we'll

134
00:05:04,230 --> 00:05:02,720
execute a number of burns to

135
00:05:06,469 --> 00:05:04,240
essentially catch up to the space

136
00:05:08,070 --> 00:05:06,479
station maneuver within range of the

137
00:05:11,029 --> 00:05:08,080
space station

138
00:05:13,830 --> 00:05:11,039

we need to verify some systems on board

139
00:05:15,749 --> 00:05:13,840
the cygnus as part of the cot's

140
00:05:19,510 --> 00:05:15,759
milestone objectives

141
00:05:21,670 --> 00:05:19,520
and verify that the vehicle is safe and

142
00:05:24,390 --> 00:05:21,680
fully operational and

143
00:05:25,749 --> 00:05:24,400
ready to do its job to deliver cargo to

144
00:05:27,430 --> 00:05:25,759
the space station

145
00:05:29,510 --> 00:05:27,440
even though this is a demonstration

146
00:05:31,110 --> 00:05:29,520
mission we've already uh loaded about

147
00:05:34,150 --> 00:05:31,120
1300 pounds

148
00:05:36,070 --> 00:05:34,160
of cargo into cygnus and

149
00:05:37,670 --> 00:05:36,080
are planning to deliver that

150
00:05:38,870 --> 00:05:37,680
on sunday

151
00:05:40,950 --> 00:05:38,880
and we were just looking at the

152
00:05:43,990 --> 00:05:40,960
rendezvous profile but uh

153
00:05:45,350 --> 00:05:44,000
uh it's a fairly standard uh

154
00:05:47,029 --> 00:05:45,360
profile for

155
00:05:48,950 --> 00:05:47,039
uh the automatic phase and then of

156
00:05:51,830 --> 00:05:48,960
course the crew will uh

157
00:05:54,070 --> 00:05:51,840
take over for the actual uh grapple and

158
00:05:56,790 --> 00:05:54,080
birthing to the harmony module node

159
00:05:59,270 --> 00:05:56,800
two's uh nader or earth-facing port so

160
00:06:01,270 --> 00:05:59,280
you can see the the approach and over

161
00:06:03,749 --> 00:06:01,280
the course of time it's about a five-day

162
00:06:04,550 --> 00:06:03,759
from four day from launch to

163
00:06:07,990 --> 00:06:04,560

to

164
00:06:11,990 --> 00:06:09,590
and then a cygnus of course will stay

165
00:06:14,629 --> 00:06:12,000
for about a month or so at the station

166
00:06:15,590 --> 00:06:14,639
before it heads home and obviously it

167
00:06:16,390 --> 00:06:15,600
will

168
00:06:18,309 --> 00:06:16,400
take

169
00:06:20,469 --> 00:06:18,319
trash unneeded items away from the

170
00:06:23,270 --> 00:06:20,479
station that and then it'll burn up in

171
00:06:24,870 --> 00:06:23,280
the atmosphere yeah that's the idea as

172
00:06:27,670 --> 00:06:24,880
you mentioned it'll be birthed for about

173
00:06:30,150 --> 00:06:27,680
a month and allow the crew to transfer

174
00:06:32,550 --> 00:06:30,160
whatever unneeded elements

175
00:06:35,110 --> 00:06:32,560
that they have and

176
00:06:37,189 --> 00:06:35,120
once uh the cygnus is complete or has

177
00:06:39,110 --> 00:06:37,199
done its job it will uh

178
00:06:41,749 --> 00:06:39,120
will uh return her

179
00:06:44,550 --> 00:06:41,759
to through the atmosphere and

180
00:06:46,830 --> 00:06:44,560
and dispose of the trash uh effectively

181
00:06:49,029 --> 00:06:46,840
just like the the progress vehicle the

182
00:06:51,350 --> 00:06:49,039
htv the atv

183
00:06:54,629 --> 00:06:51,360
all of those have the same type of

184
00:06:56,469 --> 00:06:54,639
profile in terms of returning um but uh

185
00:06:59,430 --> 00:06:56,479
their their main mission obvious to

186
00:07:00,870 --> 00:06:59,440
sustain the station uh as a laboratory

187
00:07:02,710 --> 00:07:00,880
and a home

188
00:07:04,870 --> 00:07:02,720

away from home for for these crew

189
00:07:06,870 --> 00:07:04,880
members

190
00:07:08,710 --> 00:07:06,880
again we're talking with john steinmeier

191
00:07:11,430 --> 00:07:08,720
who's a senior project manager for

192
00:07:13,990 --> 00:07:11,440
orbital sciences launch systems group

193
00:07:15,670 --> 00:07:14,000
and we appreciate you dropping by john

194
00:07:17,909 --> 00:07:15,680
will be here with us throughout the

195
00:07:21,510 --> 00:07:17,919
coverage wednesday

196
00:07:23,909 --> 00:07:21,520
beginning at 9 15 central time 10 15

197
00:07:25,670 --> 00:07:23,919
eastern and on console here in the room

198
00:07:27,350 --> 00:07:25,680
overseeing this team will be courtney

199
00:07:29,990 --> 00:07:27,360
mcmillan she'll be the flight director

200
00:07:31,430 --> 00:07:30,000
she's followed this along with a a whole

201
00:07:34,230 --> 00:07:31,440
host of uh

202
00:07:37,350 --> 00:07:34,240
folks from orbital nasa and uh even the

203
00:07:39,909 --> 00:07:37,360
japanese aerospace exploration agency

204
00:07:42,629 --> 00:07:39,919
so it's a it's a great team that's uh

205
00:07:44,869 --> 00:07:42,639
greatly anticipating uh uh this the

206
00:07:47,110 --> 00:07:44,879
launch and arrival of cygnus yeah we're