



1  
00:00:12,660 --> 00:00:28,390  
foreign

2  
00:00:33,290 --> 00:00:30,589  
good morning this is Mission Control

3  
00:00:34,310 --> 00:00:33,300  
Houston it's launch day and on your

4  
00:00:35,930 --> 00:00:34,320  
screen is a live look at the

5  
00:00:38,389 --> 00:00:35,940  
Mid-Atlantic Regional Spaceport on

6  
00:00:40,190 --> 00:00:38,399  
Wallops Island in Virginia North Rock

7  
00:00:42,470 --> 00:00:40,200  
Commons and Terry's rocket is getting

8  
00:00:44,389 --> 00:00:42,480  
ready for liftoff from launch pad zero a

9  
00:00:46,490 --> 00:00:44,399  
to kick off a cargo resupply Mission

10  
00:00:48,770 --> 00:00:46,500  
carried out by Northrop grumman's cygnus

11  
00:00:50,930 --> 00:00:48,780  
spacecraft

12  
00:00:54,350 --> 00:00:50,940  
launch is expected in less than 30

13  
00:00:58,369 --> 00:00:54,360

minutes from now at 4 27 and 42 seconds

14

00:01:01,310 --> 00:00:58,379

am Central 5 27 and 42 seconds am

15

00:01:03,709 --> 00:01:01,320

Eastern with a 5-minute launch window so

16

00:01:08,090 --> 00:01:03,719

far everything's on track for an on-time

17

00:01:12,350 --> 00:01:09,890

this is the second launch attempt for

18

00:01:14,570 --> 00:01:12,360

this uncrewed Mission yesterday during

19

00:01:16,490 --> 00:01:14,580

the final minutes of the countdown

20

00:01:18,590 --> 00:01:16,500

a fire alarm sounded at the Northrop

21

00:01:20,390 --> 00:01:18,600

Grumman cygnus control center in Dulles

22

00:01:21,950 --> 00:01:20,400

Virginia causing the team to have to

23

00:01:24,410 --> 00:01:21,960

evacuate the building

24

00:01:25,850 --> 00:01:24,420

the team was responsible for monitoring

25

00:01:28,370 --> 00:01:25,860

signals during launch and ultimately

26

00:01:31,130 --> 00:01:28,380

taking control of the spacecraft once

27

00:01:32,990 --> 00:01:31,140

the spacecraft separated from the solid

28

00:01:35,569 --> 00:01:33,000

rocket motor second stage about nine

29

00:01:37,310 --> 00:01:35,579

minutes after liftoff yesterday the team

30

00:01:39,230 --> 00:01:37,320

was not tracking any issues with the

31

00:01:41,390 --> 00:01:39,240

Cigna spacecraft the Antares rocket

32

00:02:01,069 --> 00:01:41,400

ground communication systems weather

33

00:02:01,079 --> 00:02:08,930

Jesus

34

00:02:12,530 --> 00:02:10,570

yeah

35

00:02:14,330 --> 00:02:12,540

speaking of weather for this launch

36

00:02:17,030 --> 00:02:14,340

attempt the weather is forecast to be 80

37

00:02:18,910 --> 00:02:17,040

favorable so there's a very low

38

00:02:21,170 --> 00:02:18,920

probability of violation due to weather

39

00:02:23,089 --> 00:02:21,180

temperatures at NASA's wallet Flight

40

00:02:25,250 --> 00:02:23,099

Facility are in the mid 60s and whether

41

00:02:42,530 --> 00:02:25,260

officers don't expect weather to be any

42

00:02:42,540 --> 00:02:46,270

thank you

43

00:02:50,570 --> 00:02:49,070

while today's Antares launch will put on

44

00:02:52,729 --> 00:02:50,580

a light show for some of the Eastern

45

00:02:54,949 --> 00:02:52,739

Seaboard should be visible in the states

46

00:02:57,050 --> 00:02:54,959

surrounding the Mid-Atlantic region the

47

00:02:58,190 --> 00:02:57,060

cygnus vehicle up top is the spacecraft

48

00:03:01,009 --> 00:02:58,200

making its way to the International

49

00:03:02,509 --> 00:03:01,019

Space Station today you can see it just

50

00:03:04,430 --> 00:03:02,519

inside the fairing there on the other

51  
00:03:06,110 --> 00:03:04,440  
side of that American flag towards the

52  
00:03:08,990 --> 00:03:06,120  
top of the rocket

53  
00:03:11,390 --> 00:03:09,000  
is carrying 8 200 pounds of scientific

54  
00:03:12,710 --> 00:03:11,400  
experiments food hardware and supplies

55  
00:03:14,630 --> 00:03:12,720  
to the people living aboard the

56  
00:03:16,850 --> 00:03:14,640  
International Space Station

57  
00:03:18,530 --> 00:03:16,860  
and Terry's rocket is below and we'll

58  
00:03:20,149 --> 00:03:18,540  
get into some of the launch milestones

59  
00:03:28,009 --> 00:03:20,159  
and Terrys will go through in just a

60  
00:03:31,369 --> 00:03:29,750  
the mission we're talking about today is

61  
00:03:34,250 --> 00:03:31,379  
Northrop grumman's 18th Commercial

62  
00:03:35,990 --> 00:03:34,260  
resupply Services mission for NASA and

63  
00:03:37,430 --> 00:03:36,000

after today's launch cygnus will travel

64

00:03:39,589 --> 00:03:37,440

on a two-day Journey to the

65

00:03:41,270 --> 00:03:39,599

International Space Station it'll be

66

00:03:45,229 --> 00:03:41,280

robotically captured at approximately

67

00:03:47,750 --> 00:03:45,239

405 am Central Time 505 a.m Eastern Time

68

00:03:50,390 --> 00:03:47,760

on Wednesday November 9th at the hands

69

00:03:52,729 --> 00:03:50,400

of NASA astronaut Nicole Mann backed up

70

00:03:54,649 --> 00:03:52,739

by NASA astronaut Josh cassida both

71

00:03:57,589 --> 00:03:54,659

inside the robotic workstation in the

72

00:04:03,110 --> 00:04:01,190

and Ops 1 Step 393 activate arm enable

73

00:04:05,630 --> 00:04:03,120

man we'll use the canadarm robotic arm

74

00:04:07,970 --> 00:04:05,640

to Grapple cygnus and then turn over

75

00:04:09,890 --> 00:04:07,980

operations to robotic Specialists here

76

00:04:11,990 --> 00:04:09,900

on in Mission Control who will bolt it

77

00:04:26,090 --> 00:04:12,000

into place on the earth facing Port of

78

00:04:26,100 --> 00:04:33,610

and didn't work

79

00:04:37,850 --> 00:04:36,230

cygnus began its journey in Dulles

80

00:04:39,830 --> 00:04:37,860

Virginia from there it traveled to

81

00:04:41,749 --> 00:04:39,840

NASA's Wallops Flight Facility to be

82

00:04:43,790 --> 00:04:41,759

mated with the service module that holds

83

00:04:45,890 --> 00:04:43,800

the spacecraft solarities

84

00:04:48,110 --> 00:04:45,900

it then traveled to nearby Wallops

85

00:04:49,730 --> 00:04:48,120

Island for fuel and integration with the

86

00:04:52,010 --> 00:04:49,740

Antares rocket in the horizontal

87

00:04:52,909 --> 00:04:52,020

integration facility also known as the

88

00:04:54,469 --> 00:04:52,919

hiff

89

00:04:56,689 --> 00:04:54,479

the rocket and spacecraft traveled

90

00:04:58,730 --> 00:04:56,699

horizontally to launch pad 0a on

91

00:05:00,890 --> 00:04:58,740

Wednesday November 2nd

92

00:05:27,710 --> 00:05:00,900

some beautiful shots of it on its way to

93

00:05:32,749 --> 00:05:30,770

uh LLC stage one on countdown yeah can

94

00:05:35,029 --> 00:05:32,759

you provide status of cold helium bottle

95

00:05:38,450 --> 00:05:35,039

supply pressure

96

00:05:40,490 --> 00:05:38,460

uh standby we're still evaluating

97

00:05:42,290 --> 00:05:40,500

well the bulk of the cargo was loaded

98

00:05:44,450 --> 00:05:42,300

ahead of time so more time sensitive

99

00:05:45,650 --> 00:05:44,460

late loan cargo was brought in at the

100

00:05:48,469 --> 00:05:45,660

launch pad

101  
00:05:50,629 --> 00:05:48,479  
at pad 0a and Terry's is raised

102  
00:05:52,850 --> 00:05:50,639  
vertically a process that takes about 30

103  
00:05:53,930 --> 00:05:52,860  
minutes or less for a combined System

104  
00:05:55,610 --> 00:05:53,940  
test

105  
00:05:57,830 --> 00:05:55,620  
it was put back into the horizontal

106  
00:05:59,390 --> 00:05:57,840  
position Thursday night to allow for the

107  
00:06:01,610 --> 00:05:59,400  
late load cargo

108  
00:06:03,950 --> 00:06:01,620  
a pop top on the nose cone creates an

109  
00:06:06,170 --> 00:06:03,960  
opening and a mobile payload processing

110  
00:06:08,990 --> 00:06:06,180  
facility is used to put Cargo in 24

111  
00:06:11,689 --> 00:06:09,000  
hours before launch that's the box in

112  
00:06:13,189 --> 00:06:11,699  
the biggest photo on towards the left

113  
00:06:15,350 --> 00:06:13,199

this could include scientific

114

00:06:17,390 --> 00:06:15,360

experiments or even fresh fruits and

115

00:06:38,749 --> 00:06:17,400

veggies from the local community stowed

116

00:06:43,430 --> 00:06:41,150

LC stage one on our countdown go ahead

117

00:06:44,689 --> 00:06:43,440

stage one uh helium topping is not

118

00:06:47,749 --> 00:06:44,699

required

119

00:06:54,950 --> 00:06:47,759

copy that stage one check step 391 392

120

00:06:59,270 --> 00:06:56,990

Northrop Grumman has a history of naming

121

00:07:00,830 --> 00:06:59,280

its cygnus spacecraft after a pioneer of

122

00:07:02,870 --> 00:07:00,840

human space flight

123

00:07:05,870 --> 00:07:02,880

the Cigna spacecraft launching today is

124

00:07:08,570 --> 00:07:05,880

named the SS Sally Ride Dr ride was a

125

00:07:10,490 --> 00:07:08,580

NASA astronaut and physicist she was the

126

00:07:12,290 --> 00:07:10,500

first American woman to fly to space

127

00:07:14,510 --> 00:07:12,300

kicking off her space-faring career

128

00:07:18,050 --> 00:07:14,520

during the sts-7 mission

129

00:07:21,290 --> 00:07:18,060

she was also a crew member of STS 41g in

130

00:07:23,450 --> 00:07:21,300

1984. both spacecrafts occurred on Space

131

00:07:25,610 --> 00:07:23,460

Shuttle Challenger an advocate for

132

00:07:27,830 --> 00:07:25,620

student Outreach she co-led the creation

133

00:07:29,270 --> 00:07:27,840

of the Earth cam where students can

134

00:07:30,710 --> 00:07:29,280

control a camera outside of the

135

00:07:32,270 --> 00:07:30,720

International Space Station to take

136

00:07:34,969 --> 00:07:32,280

photographs of the Earth

137

00:07:36,350 --> 00:07:34,979

the program is still operational today

138

00:07:38,270 --> 00:07:36,360

there's no doubt her pursuit of

139

00:07:40,490 --> 00:07:38,280

exploration made a mark on human history

140

00:08:07,129 --> 00:07:40,500

with her Legacy with her Legacy still

141

00:08:37,190 --> 00:08:09,050

we're now just 20 minutes away from

142

00:08:41,690 --> 00:08:39,290

the majority of the cargo launching

143

00:08:44,089 --> 00:08:41,700

aboard the SS Sally Ride is supplies for

144

00:08:46,310 --> 00:08:44,099

the people living in orbit but cygnus is

145

00:08:48,470 --> 00:08:46,320

also carrying nearly 2 000 pounds of

146

00:08:50,389 --> 00:08:48,480

scientific experiments these will

147

00:08:52,550 --> 00:08:50,399

directly support dozens of the more than

148

00:08:56,150 --> 00:08:52,560

250 science and research investigations

149

00:08:57,829 --> 00:08:56,160

that will occur during Expedition 68.

150

00:08:59,810 --> 00:08:57,839

shortly after launch we'll get some more

151  
00:09:01,850 --> 00:08:59,820  
details on how this Mission will support

152  
00:09:04,190 --> 00:09:01,860  
upcoming spacewalks outside of the space

153  
00:09:05,150 --> 00:09:04,200  
station for future irosa solar array

154  
00:09:08,210 --> 00:09:05,160  
deployment

155  
00:09:09,410 --> 00:09:08,220  
from NASA's Jeff errand until then let's

156  
00:09:11,810 --> 00:09:09,420  
take a look at some of the science

157  
00:09:16,780 --> 00:09:11,820  
experiments on board cygnus launching to

158  
00:10:09,110 --> 00:09:26,570  
[Music]

159  
00:10:09,120 --> 00:10:12,670  
foreign

160  
00:10:44,240 --> 00:10:18,740  
[Music]

161  
00:11:39,050 --> 00:10:44,250  
thank you

162  
00:11:45,230 --> 00:11:42,949  
I'll see probably step 397 actual F1

163  
00:11:47,509 --> 00:11:45,240

levels 11 out of 11 and Proctor is

164

00:11:49,730 --> 00:11:47,519

monitoring 390. flight control teams are

165

00:11:52,370 --> 00:11:49,740

taking a look at the entire antares's

166

00:11:54,110 --> 00:11:52,380

onboard systems and plan to go into a

167

00:11:56,030 --> 00:11:54,120

five minute hold at the L minus 11

168

00:12:00,050 --> 00:11:56,040

minute mark

169

00:12:03,470 --> 00:12:00,060

at 10 at 4 16 43 which would lead us to

170

00:12:05,329 --> 00:12:03,480

a new T minus zero time of 4 32 42

171

00:12:58,370 --> 00:12:05,339

Central Time towards the end of the

172

00:13:07,190 --> 00:13:01,970

LC core one go ahead core one uh step

173

00:13:11,210 --> 00:13:07,200

399 fuel adjustment is not required

174

00:13:19,069 --> 00:13:14,210

and prop 2 Armor CTS for no adjustment

175

00:13:30,949 --> 00:13:22,129

and lcb2

176

00:13:35,150 --> 00:13:33,170

so we're heading into the final stretch

177

00:13:39,230 --> 00:13:35,160

of the launch countdown again with a

178

00:13:40,850 --> 00:13:39,240

planned hold at L minus 11 minutes we do

179

00:13:43,430 --> 00:13:40,860

have a guest from Northrop Grumman with

180

00:13:44,990 --> 00:13:43,440

us here today Christina halona thank you

181

00:13:46,970 --> 00:13:45,000

for joining us not only yesterday but

182

00:13:48,829 --> 00:13:46,980

today as well uh Christina do we have

183

00:13:54,650 --> 00:13:48,839

you

184

00:13:56,090 --> 00:13:54,660

um it feels good to be back again and um

185

00:13:58,129 --> 00:13:56,100

I just want to thank you all who are

186

00:14:00,290 --> 00:13:58,139

joining us live to see a successful on

187

00:14:02,870 --> 00:14:00,300

Terry's launch and sickness mission to

188

00:14:04,550 --> 00:14:02,880

the International Space Station and uh

189

00:14:06,410 --> 00:14:04,560

once again as Navajo woman I'd like to

190

00:14:08,690 --> 00:14:06,420

wish you all a Happy Native American

191

00:14:11,810 --> 00:14:08,700

heritage month as well

192

00:14:14,990 --> 00:14:11,820

Christina that's great uh so launch is

193

00:14:16,610 --> 00:14:15,000

now set for uh 4 32 a.m Central Time

194

00:14:18,290 --> 00:14:16,620

towards the end of the window can you

195

00:14:20,870 --> 00:14:18,300

tell us about some of the milestones we

196

00:14:23,810 --> 00:14:20,880

can expect going up to countdown

197

00:14:26,150 --> 00:14:23,820

sure so there's still some pretty much

198

00:14:28,670 --> 00:14:26,160

Milestones that are left right now we

199

00:14:31,610 --> 00:14:28,680

are currently at the tail end of the

200

00:14:33,889 --> 00:14:31,620

propellant loading operations when that

201  
00:14:36,370 --> 00:14:33,899  
is complete the team will top off the

202  
00:14:40,009 --> 00:14:36,380  
propellant and do some fuel adjustments

203  
00:14:42,410 --> 00:14:40,019  
then you'll hear a final go no-go poll

204  
00:14:44,090 --> 00:14:42,420  
that you'll hear here soon and that will

205  
00:14:47,329 --> 00:14:44,100  
be completed to proceed with The Final

206  
00:14:49,370 --> 00:14:47,339  
Countdown to Launch and then at about

207  
00:14:52,009 --> 00:14:49,380  
three minutes before launch the auto

208  
00:14:54,110 --> 00:14:52,019  
sequencer will be initiated this is

209  
00:14:57,170 --> 00:14:54,120  
where Interiors internal flight computer

210  
00:14:59,990 --> 00:14:57,180  
takes over and commends the vehicle so

211  
00:15:01,730 --> 00:15:00,000  
uh the auto sequencer then goes through

212  
00:15:03,290 --> 00:15:01,740  
the final steps of prepping the vehicle

213  
00:15:07,069 --> 00:15:03,300

for launch and then we will proceed

214

00:15:12,650 --> 00:15:11,090

and uh and Ops 1 and LCP advised I'm

215

00:15:15,170 --> 00:15:12,660

going to go ahead and forward these uh

216

00:15:16,970 --> 00:15:15,180

steps to both you again and Christina

217

00:15:19,490 --> 00:15:16,980

what about post liftoff what Milestone

218

00:15:21,949 --> 00:15:19,500

should we expect for the Antares rocket

219

00:15:25,129 --> 00:15:21,959

uh for interiors the first Milestone

220

00:15:28,250 --> 00:15:25,139

comes after the main engines burn for

221

00:15:30,530 --> 00:15:28,260

approximately 200 seconds and until main

222

00:15:33,710 --> 00:15:30,540

engine cut off which you'll hear on the

223

00:15:35,389 --> 00:15:33,720

Nets as Mikko after Mikko will go into a

224

00:15:38,150 --> 00:15:35,399

short Coast right before we separate

225

00:15:40,150 --> 00:15:38,160

stage one from stage two which we call

226

00:15:42,710 --> 00:15:40,160

the upper spec of the Interiors vehicle

227

00:15:44,449 --> 00:15:42,720

will continue then to Coast for about 30

228

00:15:46,670 --> 00:15:44,459

seconds or so before a fairing

229

00:15:48,590 --> 00:15:46,680

separation and then we will have an

230

00:15:50,810 --> 00:15:48,600

internal separation for the stage two

231

00:15:53,150 --> 00:15:50,820

flies out of the external upper stack

232

00:15:55,069 --> 00:15:53,160

when stage two is clear of the upper

233

00:15:57,769 --> 00:15:55,079

Stacks they each ignites for about two

234

00:15:59,689 --> 00:15:57,779

and a half minute burn or so which puts

235

00:16:01,730 --> 00:15:59,699

signals real close to the orbit and then

236

00:16:04,370 --> 00:16:01,740

it'll Coast ensure everything is stable

237

00:16:07,310 --> 00:16:04,380

then cygnus will be released into the

238

00:16:09,530 --> 00:16:07,320

desired orbit after I've just said this

239

00:16:11,810 --> 00:16:09,540

is released it will go through some more

240

00:16:14,689 --> 00:16:11,820

comms checks then about an hour or hour

241

00:16:16,670 --> 00:16:14,699

and a half well uh we separate students

242

00:16:19,430 --> 00:16:16,680

full releases solar arrays and be on its

243

00:16:22,310 --> 00:16:19,440

way to the ISS so it takes approximately

244

00:16:23,689 --> 00:16:22,320

90 minutes or so to get to orbit

245

00:16:25,430 --> 00:16:23,699

great we're looking forward to it and

246

00:16:26,750 --> 00:16:25,440

Christina real fast

247

00:16:29,389 --> 00:16:26,760

um you had wished us a happy Native

248

00:16:30,889 --> 00:16:29,399

American Heritage Month

249

00:16:32,990 --> 00:16:30,899

um we just covered some of the science

250

00:16:34,610 --> 00:16:33,000

that's on board the SS salary ride but

251  
00:16:36,889 --> 00:16:34,620  
something very special is also on board

252  
00:16:39,230 --> 00:16:36,899  
can you tell us a little bit about it

253  
00:16:40,970 --> 00:16:39,240  
yes and as you mentioned you know the

254  
00:16:43,790 --> 00:16:40,980  
programming names each signif space

255  
00:16:45,710 --> 00:16:43,800  
graph in honor of substantial

256  
00:16:47,210 --> 00:16:45,720  
contributions to an individual with

257  
00:16:48,590 --> 00:16:47,220  
substantial contribution to the United

258  
00:16:50,689 --> 00:16:48,600  
States

259  
00:16:53,749 --> 00:16:50,699  
Space Program in human flight human

260  
00:16:55,990 --> 00:16:53,759  
space flight and the engine 18 mission

261  
00:16:58,670 --> 00:16:56,000  
is proud to commemorate Dr Sally Wright

262  
00:17:00,410 --> 00:16:58,680  
who is the first female astronaut

263  
00:17:02,870 --> 00:17:00,420

astronaut who served on the crew the

264

00:17:04,850 --> 00:17:02,880

second flight of Challenger she was

265

00:17:07,130 --> 00:17:04,860

definitely an advocate for diversity and

266

00:17:09,289 --> 00:17:07,140

equality in science inspiring countless

267

00:17:12,049 --> 00:17:09,299

women and people of color to pursue stem

268

00:17:14,090 --> 00:17:12,059

careers including myself

269

00:17:15,890 --> 00:17:14,100

and as an indigenous woman from the

270

00:17:18,049 --> 00:17:15,900

Navajo Nation Dr Sally Wright was

271

00:17:19,309 --> 00:17:18,059

someone I aspire to be like and she

272

00:17:20,689 --> 00:17:19,319

definitely paved the way for other

273

00:17:23,329 --> 00:17:20,699

women like myself to be part of the

274

00:17:24,710 --> 00:17:23,339

Aerospace industry and to not be afraid

275

00:17:25,789 --> 00:17:24,720

to chase your dreams which is very

276

00:17:27,949 --> 00:17:25,799

important

277

00:17:30,650 --> 00:17:27,959

that is what Dr Sally writer continued

278

00:17:32,210 --> 00:17:30,660

to do until her death to help Inspire

279

00:17:33,409 --> 00:17:32,220

students which brings me to the very

280

00:17:37,430 --> 00:17:33,419

special item

281

00:17:39,710 --> 00:17:37,440

it is an American flag signed by all 402

282

00:17:41,090 --> 00:17:39,720

students and staff from the Sally Wright

283

00:17:43,669 --> 00:17:41,100

Elementary School in Los Angeles

284

00:17:46,430 --> 00:17:43,679

California which was named by the

285

00:17:50,150 --> 00:17:46,440

neighborhood in Dr ride's honor the

286

00:17:52,669 --> 00:17:50,160

school is 95 Hispanic and 5 people of

287

00:17:55,669 --> 00:17:52,679

color and its vision and Mission is the

288

00:17:57,289 --> 00:17:55,679

heart of Dr Sally ride's Legacy it's

289

00:17:59,210 --> 00:17:57,299

wonderful to hear

290

00:18:00,169 --> 00:17:59,220

Christina thank you so much for joining

291

00:18:19,490 --> 00:18:00,179

us

292

00:18:19,500 --> 00:18:44,630

we're now in the five minute hold

293

00:18:47,690 --> 00:18:46,190

as Christina said there's many

294

00:18:49,490 --> 00:18:47,700

Milestones that we'll be looking out for

295

00:18:52,070 --> 00:18:49,500

after launch the first is main engine

296

00:18:54,409 --> 00:18:52,080

cutoff also known as Mikko of the

297

00:19:10,370 --> 00:18:54,419

Antares first stage about 3 minutes and

298

00:19:14,990 --> 00:19:12,710

about six seconds later the first stage

299

00:19:17,029 --> 00:19:15,000

separates so the first stage engine is

300

00:19:20,390 --> 00:19:17,039

turned off it did its job and the stage

301  
00:19:24,289 --> 00:19:22,490  
about 30 seconds later the fairing will

302  
00:19:25,850 --> 00:19:24,299  
separate this is the shell that

303  
00:19:28,669 --> 00:19:25,860  
surrounds the cygnus based craft during

304  
00:19:32,750 --> 00:19:31,250  
Kelsey this is CND stuck 410 sicknesses

305  
00:20:14,650 --> 00:19:32,760  
and launch mode and nominal

306  
00:20:14,660 --> 00:20:19,010  
lctd we're green

307  
00:20:25,010 --> 00:20:22,789  
LC copies else's LD proceed

308  
00:20:27,529 --> 00:20:25,020  
Ops 2 initiate evacuation of fuel

309  
00:20:27,539 --> 00:20:31,810  
and work

310  
00:20:41,570 --> 00:20:36,590  
and opening vvp on my mark three two one

311  
00:20:45,710 --> 00:20:43,490  
you're getting a live view of Northrop

312  
00:20:46,730 --> 00:20:45,720  
grumman's flight control room these

313  
00:20:49,090 --> 00:20:46,740

folks are going to take control of

314

00:20:51,049 --> 00:20:49,100

cygnus after spacecraft separation

315

00:20:52,610 --> 00:20:51,059

they're keeping in constant

316

00:20:54,710 --> 00:20:52,620

communication with Mission Control in

317

00:20:57,409 --> 00:20:54,720

Houston and also the range control

318

00:20:59,090 --> 00:20:57,419

center at NASA's Wallops Flight Facility

319

00:20:59,870 --> 00:20:59,100

this is where you'll hear a lot of the

320

00:21:02,270 --> 00:20:59,880

chatter

321

00:21:03,409 --> 00:21:02,280

as the countdown progresses will be from

322

00:21:06,470 --> 00:21:03,419

this room right here at the range

323

00:21:08,990 --> 00:21:06,480

control center they've got eyes on the

324

00:21:22,250 --> 00:21:09,000

launch pad the range as well as safety

325

00:21:27,230 --> 00:21:24,350

at this time I'd like to proceed with

326

00:21:37,850 --> 00:21:27,240

Final Countdown poll

327

00:21:42,190 --> 00:21:39,169

s go

328

00:21:45,169 --> 00:21:42,200

properly there you just go stage one

329

00:21:50,270 --> 00:21:45,179

stage one is go

330

00:21:53,270 --> 00:21:50,280

mes1 Ms one is go GCE GCS go

331

00:22:03,710 --> 00:21:56,750

Aces go Mars margins go

332

00:22:05,510 --> 00:22:03,720

CMD CMD go LD LD is go NG North upcoming

333

00:22:07,070 --> 00:22:05,520

is proud to honor renowned NASA

334

00:22:09,289 --> 00:22:07,080

astronaut and the first American woman

335

00:22:11,750 --> 00:22:09,299

in space Dr Sally Ride

336

00:22:13,789 --> 00:22:11,760

Shelly was a true space Pioneer and also

337

00:22:15,890 --> 00:22:13,799

a tireless advocate for improving stem

338

00:22:16,789 --> 00:22:15,900

Literacy for children especially young

339

00:22:18,710 --> 00:22:16,799

girls

340

00:22:20,210 --> 00:22:18,720

Sally has inspired millions of students

341

00:22:21,890 --> 00:22:20,220

and her Legacy through Sally Ride

342

00:22:24,590 --> 00:22:21,900

science continues to have enormous

343

00:22:25,549 --> 00:22:24,600

positive impact on stem education Across

344

00:22:27,289 --> 00:22:25,559

the Nation

345

00:22:28,789 --> 00:22:27,299

during their space flight missions Sally

346

00:22:31,370 --> 00:22:28,799

was known to spend their free time

347

00:22:33,830 --> 00:22:31,380

gazing down at Earth hence it is an

348

00:22:36,230 --> 00:22:33,840

honor to return her Legacy to space to

349

00:22:38,870 --> 00:22:36,240

once again enjoy the view as the SS

350

00:22:43,070 --> 00:22:38,880

Sally Ride and Northrop Grumman are go

351  
00:22:49,370 --> 00:22:45,950  
go to proceed with Final Countdown mes1

352  
00:22:53,330 --> 00:22:49,380  
do we have status on step two

353  
00:22:56,390 --> 00:22:53,340  
LC mes1 evacuation verified

354  
00:23:04,850 --> 00:22:56,400  
and Ops 2 terminate engine of evacuation

355  
00:23:09,190 --> 00:23:07,130  
and with 10 minutes planned until the T

356  
00:23:12,770 --> 00:23:09,200  
minus zero Mark of

357  
00:23:16,610 --> 00:23:12,780  
432.42 a.m Central Time the team has

358  
00:23:31,250 --> 00:23:20,810  
opening vzd on my mark and three two one

359  
00:23:38,330 --> 00:23:35,149  
and Ace Elsa young countdown

360  
00:23:55,730 --> 00:23:38,340  
go ahead Elsie yeah steps 405 and 406

361  
00:23:58,669 --> 00:23:57,169  
going back to some of the launch

362  
00:24:01,370 --> 00:23:58,679  
Milestones that we're looking forward to

363  
00:24:03,230 --> 00:24:01,380

today as Christina was talking about we

364

00:24:06,230 --> 00:24:03,240

were first looking for a main engine

365

00:24:10,370 --> 00:24:06,240

cutoff or Mikko followed quickly after

366

00:24:17,029 --> 00:24:14,810

will separate exposing cygnus

367

00:24:20,149 --> 00:24:17,039

although it has not reached orbit yet at

368

00:24:22,250 --> 00:24:20,159

this stage the second stage of Antares a

369

00:24:24,049 --> 00:24:22,260

solid rocket motor ignites for four

370

00:24:26,990 --> 00:24:24,059

minutes and seven seconds into the

371

00:24:29,450 --> 00:24:27,000

flight at this point cygnus will be 73

372

00:24:30,890 --> 00:24:29,460

miles in altitude and it'll burn for

373

00:24:32,870 --> 00:24:30,900

almost three minutes before stage two

374

00:24:36,490 --> 00:24:32,880

burnout putting cygnus into its initial

375

00:24:41,330 --> 00:24:39,710

lcl1 ACS vdm's enabled voltage nominal

376

00:24:42,890 --> 00:24:41,340

or DM commands then we'll look for

377

00:24:44,990 --> 00:24:42,900

payload separation also known as

378

00:24:46,669 --> 00:24:45,000

spacecraft's operation meaning cygnus is

379

00:24:48,590 --> 00:24:46,679

no longer attached to the spent second

380

00:24:50,390 --> 00:24:48,600

stage and is flying free to catch up to

381

00:24:52,789 --> 00:24:50,400

the International Space Station

382

00:24:54,470 --> 00:24:52,799

all in all it'll take nine minutes from

383

00:24:57,830 --> 00:24:54,480

the time of launch for cygnus to reach

384

00:25:04,549 --> 00:25:00,169

copy

385

00:25:09,470 --> 00:25:07,370

our coverage will end shortly after

386

00:25:11,570 --> 00:25:09,480

spacecraft separation but cygnus will

387

00:25:13,070 --> 00:25:11,580

begin to deploy its round solar arrays

388

00:25:17,450 --> 00:25:13,080

about an hour and a half into its

389

00:25:19,010 --> 00:25:17,460

Mission or around six uh 24 a.m Central

390

00:25:20,570 --> 00:25:19,020

Time

391

00:25:23,450 --> 00:25:20,580

around there

392

00:25:26,330 --> 00:25:23,460

um it'll complete its solar array

393

00:25:27,710 --> 00:25:26,340

deployment about 30 minutes later we

394

00:25:29,390 --> 00:25:27,720

won't be in live coverage at this time

395

00:25:31,310 --> 00:25:29,400

but be sure to look out for confirmation

396

00:25:33,049 --> 00:25:31,320

of the completion of solar array

397

00:25:35,630 --> 00:25:33,059

deployment on the blog and on social

398

00:25:39,769 --> 00:25:35,640

media GNC won't provide status of

399

00:25:46,370 --> 00:25:42,049

are you ready for me to deactivate vcd

400

00:25:49,190 --> 00:25:46,380

LC GNC one trajectory file is lcmes1 on

401

00:25:51,950 --> 00:25:49,200

countdown dgd closed

402

00:25:55,730 --> 00:25:51,960

sorry GNC when you got stepped on

403

00:25:59,450 --> 00:25:55,740

LC GNC One Note file change is required

404

00:26:01,909 --> 00:25:59,460

for search file one is good

405

00:26:04,310 --> 00:26:01,919

copy that 408 not required

406

00:26:07,010 --> 00:26:04,320

409 not required

407

00:26:14,049 --> 00:26:07,020

CMD report status of cygnus

408

00:26:14,059 --> 00:26:18,830

lccmb good thing is good

409

00:26:23,450 --> 00:26:21,649

LC Ops 2 steps through Oscar 8 complete

410

00:26:27,350 --> 00:26:23,460

copy that

411

00:26:34,810 --> 00:26:30,169

Ops 2 405 initiate Jewel and let valve

412

00:26:40,070 --> 00:26:37,130

the astronauts aboard the space station

413

00:26:42,049 --> 00:26:40,080

are awake and well into their day and

414

00:26:44,990 --> 00:26:42,059

they do have live views of this launch

415

00:26:46,789 --> 00:26:45,000

available to them NASA astronauts Nicole

416

00:26:48,830 --> 00:26:46,799

Mann and Josh cassada have been pairing

417

00:26:50,690 --> 00:26:48,840

for preparing for cygnus's Arrival all

418

00:26:52,130 --> 00:26:50,700

week they've been reviewing and

419

00:26:54,230 --> 00:26:52,140

practicing their robotic capture

420

00:26:55,610 --> 00:26:54,240

Maneuvers on a computer to simulate what

421

00:26:57,830 --> 00:26:55,620

it'll be like when the real spacecraft

422

00:26:59,870 --> 00:26:57,840

arrives in just two days

423

00:27:01,850 --> 00:26:59,880

cygnus will make an automated approach

424

00:27:02,930 --> 00:27:01,860

until it's about 30 feet from the

425

00:27:04,490 --> 00:27:02,940

station

426  
00:27:06,590 --> 00:27:04,500  
then Nicole Mann will command the

427  
00:27:08,870 --> 00:27:06,600  
robotic arm to capture cygnus from the

428  
00:27:10,909 --> 00:27:08,880  
robotics workstation in the cupola while

429  
00:27:18,529 --> 00:27:10,919  
Josh Casada acts as her second set of

430  
00:27:25,789 --> 00:27:21,890  
go ahead Elsie our 412 and 413 no longer

431  
00:27:25,799 --> 00:27:30,430  
412 not required 413 not required

432  
00:27:34,909 --> 00:27:32,029  
lcmus2

433  
00:27:46,789 --> 00:27:34,919  
fill inlet via fuel inlet valve position

434  
00:27:51,350 --> 00:27:49,010  
copy 406 complete

435  
00:27:54,169 --> 00:27:51,360  
and properly to get your call on 418.

436  
00:27:55,130 --> 00:27:54,179  
Ops 2 initialize ground ordinance power

437  
00:27:56,630 --> 00:27:55,140  
supplies

438  
00:27:58,789 --> 00:27:56,640

ground Ordnance power supply is

439

00:28:04,250 --> 00:27:58,799

initialized

440

00:28:14,810 --> 00:28:08,750

and 422 is not required

441

00:28:18,169 --> 00:28:17,269

Ops 1 transfer avionics to internal

442

00:28:23,690 --> 00:28:18,179

power

443

00:28:28,010 --> 00:28:25,669

this chatter that you're hearing is

444

00:28:30,049 --> 00:28:28,020

coming from the range control center at

445

00:28:32,390 --> 00:28:30,059

NASA's wallets Flight Facility as they

446

00:28:33,710 --> 00:28:32,400

move through their countdown you can

447

00:28:35,029 --> 00:28:33,720

think of it as mission control for the

448

00:28:36,950 --> 00:28:35,039

rocket before it leaves the ground

449

00:28:38,269 --> 00:28:36,960

they're monitoring the procedures

450

00:28:40,490 --> 00:28:38,279

leading up to launch which you're

451  
00:28:42,470 --> 00:28:40,500  
hearing now monitoring weather systems

452  
00:28:44,750 --> 00:28:42,480  
aircraft in the area and are monitoring

453  
00:28:46,430 --> 00:28:44,760  
the safety of the situation in the

454  
00:28:47,990 --> 00:28:46,440  
unlikely event that the rocket beers off

455  
00:28:50,690 --> 00:28:48,000  
course or is acting off nominally

456  
00:28:53,210 --> 00:28:50,700  
another set of eyes

457  
00:28:55,669 --> 00:28:53,220  
they're working really closely with the

458  
00:28:57,649 --> 00:28:55,679  
cygnus flight control center in Dulles

459  
00:28:59,930 --> 00:28:57,659  
Virginia as well as Mission Control here

460  
00:29:02,750 --> 00:28:59,940  
in Houston Under the direction of flight

461  
00:29:06,950 --> 00:29:02,760  
director Adi boulos

462  
00:29:11,330 --> 00:29:06,960  
at LLC elect 1 sna zodium is all armed

463  
00:29:11,340 --> 00:29:14,269

range is green

464

00:29:18,830 --> 00:29:17,269

and mes1 can you confirm engine priming

465

00:29:25,730 --> 00:29:18,840

status is verify

466

00:29:25,740 --> 00:29:30,889

step 431 is not required

467

00:29:46,190 --> 00:29:32,930

phase three Dynamic limits will be

468

00:29:50,630 --> 00:29:48,830

and launch theme despite uh Regulators

469

00:29:52,130 --> 00:29:50,640

alarm clocks and desiccant dryers

470

00:30:00,830 --> 00:29:52,140

running amok we are on the event

471

00:30:00,840 --> 00:30:09,230

Auto sequence startup

472

00:30:13,909 --> 00:30:11,330

just under three minutes until launch

473

00:30:33,649 --> 00:30:13,919

everything is go for launch

474

00:30:40,010 --> 00:30:36,529

Ops 2 switched in a GNC one verify ready

475

00:30:42,470 --> 00:30:40,020

for nav mode LC gnc1 we're not ready for

476  
00:30:46,250 --> 00:30:42,480  
nap Ops 2 switch to now

477  
00:30:49,669 --> 00:30:46,260  
LC Ops 2 switched to nav

478  
00:30:51,830 --> 00:30:49,679  
LC dnc1 orb node Elementary the teams

479  
00:30:53,690 --> 00:30:51,840  
opted to move to the end half of the

480  
00:30:59,149 --> 00:30:53,700  
five-minute launch window with a new

481  
00:31:30,409 --> 00:30:59,159  
T-minus zero time of 4 32 42 a.m Central

482  
00:31:30,419 --> 00:31:37,430  
C minus one minute 30 seconds

483  
00:31:37,440 --> 00:31:57,549  
foreign

484  
00:32:24,110 --> 00:32:00,470  
to the terminal count with T minus 60

485  
00:32:24,120 --> 00:32:30,230  
okay

486  
00:32:49,730 --> 00:32:32,649  
minus 30 seconds

487  
00:32:49,740 --> 00:32:54,710  
T minus 10.

488  
00:32:54,720 --> 00:33:04,210

five four three two one

489

00:33:04,220 --> 00:33:08,350

we have liftoff

490

00:33:13,970 --> 00:33:10,690

we have left off

491

00:33:16,190 --> 00:33:13,980

Commercial resupply Services Mission the

492

00:33:22,789 --> 00:33:16,200

SS Sally Ride has begun its Journey to

493

00:33:31,909 --> 00:33:24,889

the first stage is performing nominally

494

00:33:31,919 --> 00:33:43,310

100.

495

00:34:04,149 --> 00:33:54,470

[Music]

496

00:34:11,210 --> 00:34:06,830

one minute into the flight no issues are

497

00:34:15,649 --> 00:34:13,430

passing through Mexico

498

00:34:17,629 --> 00:34:15,659

vehicle remains nominal Antares is

499

00:34:25,010 --> 00:34:17,639

passing through Max Q the area of

500

00:34:25,020 --> 00:34:33,540

passing through 50 000 feet

501  
00:34:38,990 --> 00:34:35,270

[Music]

502  
00:34:40,609 --> 00:34:39,000  
passing through 5000 feet per second

503  
00:34:44,930 --> 00:34:40,619  
compressorization valves continue to

504  
00:34:57,950 --> 00:34:48,829  
instance remain nominal 100 thrust

505  
00:34:57,960 --> 00:35:03,770  
passing through a hundred thousand feet

506  
00:35:07,310 --> 00:35:05,329  
power remains now with the two minute

507  
00:35:09,109 --> 00:35:07,320  
Mark everything is going as planned

508  
00:35:10,849 --> 00:35:09,119  
you're hearing the Wallops range control

509  
00:35:15,050 --> 00:35:10,859  
center reporting a good flight of the

510  
00:35:15,060 --> 00:35:33,589  
vehicle attitude remains normal

511  
00:35:33,599 --> 00:35:40,089  
attitude

512  
00:35:51,230 --> 00:35:42,530  
core pressurization valves continue to

513  
00:35:55,910 --> 00:35:54,050

we've begun slow Throttle Down Throttle

514

00:35:58,069 --> 00:35:55,920

Down is the precursor to main engine cut

515

00:35:59,870 --> 00:35:58,079

off Migo occurs at the three minute 18

516

00:36:04,370 --> 00:35:59,880

second Mark of the flight followed right

517

00:36:16,970 --> 00:36:05,750

coming up at the three minute Mark just

518

00:36:16,980 --> 00:36:22,730

and Main engine cutoff

519

00:36:27,890 --> 00:36:25,609

stage one separation

520

00:36:29,870 --> 00:36:27,900

first stage separation confirmed from

521

00:36:31,609 --> 00:36:29,880

wallops's range control center just as

522

00:36:33,890 --> 00:36:31,619

planned about six seconds after main

523

00:36:35,750 --> 00:36:33,900

engine cut off less than 20 seconds to

524

00:36:44,329 --> 00:36:35,760

go until fairing separation to unveil

525

00:36:44,339 --> 00:36:52,569

good engine performance on stage one

526  
00:36:56,810 --> 00:36:54,829  
stage to ignition in approximately 10

527  
00:36:58,910 --> 00:36:56,820  
seconds

528  
00:37:01,069 --> 00:36:58,920  
we have bearing separation bearing

529  
00:37:02,690 --> 00:37:01,079  
separation is confirmed cygnus is now

530  
00:37:04,370 --> 00:37:02,700  
outside of its protective shell and is

531  
00:37:08,210 --> 00:37:04,380  
continuing to climb into its preliminary

532  
00:37:12,050 --> 00:37:10,370  
and we have stage two ignition and with

533  
00:37:14,270 --> 00:37:12,060  
stage two ignition the second stage

534  
00:37:21,109 --> 00:37:14,280  
engine will burn for about 2 minutes 46

535  
00:37:32,750 --> 00:37:23,990  
the stage 2 Caster 30xl motor will burn

536  
00:37:32,760 --> 00:37:40,910  
attitude remains nominal

537  
00:37:40,920 --> 00:37:47,210  
stage 2 TBC is nominal

538  
00:37:47,220 --> 00:37:52,810

electrical power remains nominal

539

00:37:52,820 --> 00:38:04,010

attitude is normal

540

00:38:08,750 --> 00:38:06,829

coming up on the five-minute Mark of the

541

00:38:10,970 --> 00:38:08,760

flight with second stage burnout

542

00:38:13,310 --> 00:38:10,980

expected at the six minute 53 second

543

00:38:15,170 --> 00:38:13,320

Mark of the flight at the time of second

544

00:38:17,450 --> 00:38:15,180

stage burnout and orbital insertion

545

00:38:20,349 --> 00:38:17,460

cygnus will be at an orbital altitude of

546

00:38:22,609 --> 00:38:20,359

109.5 miles or

547

00:38:28,550 --> 00:38:22,619

176.2 kilometers

548

00:38:28,560 --> 00:38:35,589

stage 2 TBC is nominal nominal power

549

00:38:35,599 --> 00:38:52,490

attitude remains normal

550

00:38:59,329 --> 00:38:54,290

approximately 60 seconds remaining in

551  
00:38:59,339 --> 00:39:04,670  
attitude remains normal

552  
00:39:08,630 --> 00:39:06,650  
six minutes into the flight of Northrop

553  
00:39:10,730 --> 00:39:08,640  
grumman's Antares rocket under a minute

554  
00:39:16,550 --> 00:39:10,740  
now until stage two burnout and orbital

555  
00:39:22,490 --> 00:39:18,170  
the equal latitude remains nominal

556  
00:39:22,500 --> 00:39:34,490  
stage two TBC is phenomenal

557  
00:39:34,500 --> 00:39:48,650  
coming up on stage two burnout

558  
00:39:48,660 --> 00:39:55,010  
we have stage two burnout

559  
00:39:59,990 --> 00:39:57,410  
beginning reorientation for payload

560  
00:40:03,349 --> 00:40:01,910  
we have good insertion and Terry's is

561  
00:40:04,910 --> 00:40:03,359  
currently in orbit and we'll close for

562  
00:40:07,250 --> 00:40:04,920  
approx approximately 100 seconds prior

563  
00:40:09,170 --> 00:40:07,260

to payload separation cygnus has reached

564

00:40:10,970 --> 00:40:09,180

its preliminary orbit insertion next

565

00:40:12,710 --> 00:40:10,980

we'll be looking for cygnus to separate

566

00:40:15,050 --> 00:40:12,720

from the second stage which will occur

567

00:40:23,810 --> 00:40:15,060

at 8 minutes and 52 seconds after a

568

00:40:31,849 --> 00:40:25,910

Terry's power remains normal during this

569

00:40:35,510 --> 00:40:34,130

we're continuing to hear good call outs

570

00:40:46,450 --> 00:40:35,520

across the board everything is nominal

571

00:40:50,150 --> 00:40:48,589

approximately 60 seconds from payload

572

00:40:57,310 --> 00:40:50,160

separation vehicle attitude remains

573

00:40:57,320 --> 00:41:04,609

vehicle power remains nominal

574

00:41:08,750 --> 00:41:06,650

now eight minutes into the flight

575

00:41:11,030 --> 00:41:08,760

Antares continues to perform nominally

576  
00:41:12,430 --> 00:41:11,040  
to put the SS Sally Ride cygnus on its

577  
00:41:14,870 --> 00:41:12,440  
way to the International Space Station

578  
00:41:19,370 --> 00:41:14,880  
spacecraft separation is expected in

579  
00:41:40,790 --> 00:41:21,109  
approximately 30 seconds from payload

580  
00:41:40,800 --> 00:41:53,690  
and Terry's remains nominal

581  
00:41:58,270 --> 00:41:55,849  
and we have palette separation of the

582  
00:42:00,950 --> 00:41:58,280  
signal spacecraft

583  
00:42:05,690 --> 00:42:00,960  
spacecraft separation is confirmed and

584  
00:42:09,650 --> 00:42:05,700  
Terry's launched at 4 30 to 42 a.m

585  
00:42:11,930 --> 00:42:09,660  
Central Time 5 32 a.m Eastern at the end

586  
00:42:13,370 --> 00:42:11,940  
half of the launch window at the time of

587  
00:42:14,990 --> 00:42:13,380  
launch the International Space Station

588  
00:42:20,089 --> 00:42:15,000

was flying over the Indian Ocean

589

00:42:24,050 --> 00:42:22,970

okay launch Team let's maintain our

590

00:42:26,569 --> 00:42:24,060

discipline

591

00:42:31,190 --> 00:42:26,579

close out the pad

592

00:42:38,329 --> 00:42:34,730

step 448 prop one

593

00:42:40,490 --> 00:42:38,339

could you get a status on pulse purging

594

00:42:46,670 --> 00:42:40,500

I don't see prompt one first healing

595

00:42:50,810 --> 00:42:49,010

you can see some celebration from the

596

00:42:53,030 --> 00:42:50,820

range control center at NASA's Wallops

597

00:42:54,950 --> 00:42:53,040

Flight Facility cygnus has successfully

598

00:42:57,050 --> 00:42:54,960

separated from the second stage of the

599

00:42:58,910 --> 00:42:57,060

Antares rocket and at this time

600

00:43:00,770 --> 00:42:58,920

operations of the vehicle will move to

601  
00:43:02,630 --> 00:43:00,780  
Dulles Virginia under the direction of

602  
00:43:26,270 --> 00:43:02,640  
Norfolk grumman's cygnus flight

603  
00:43:30,770 --> 00:43:29,270  
the SS Sally Ride has successfully moved

604  
00:43:33,050 --> 00:43:30,780  
through its Milestones to get it into

605  
00:43:34,490 --> 00:43:33,060  
its preliminary orbit it will spend the

606  
00:43:36,290 --> 00:43:34,500  
next two days catching up with the space

607  
00:43:38,210 --> 00:43:36,300  
station for a rendezvous end capture

608  
00:43:40,010 --> 00:43:38,220  
followed by the installation of the

609  
00:44:17,990 --> 00:43:40,020  
vehicle to the earth-facing port on the

610  
00:44:22,309 --> 00:44:20,390  
you're looking at a live view of the

611  
00:44:24,109 --> 00:44:22,319  
cygnus flight control room in Dulles

612  
00:44:26,930 --> 00:44:24,119  
Virginia this team is diligently working

613  
00:44:28,609 --> 00:44:26,940

as they now have control of the cygnus

614

00:44:30,290 --> 00:44:28,619

spacecraft now that is in its

615

00:45:39,050 --> 00:44:30,300

preliminary orbit and separated from the

616

00:45:42,890 --> 00:45:41,030

if you're just joining us Northrop

617

00:45:44,450 --> 00:45:42,900

grumman's 18th Commercial resupply

618

00:45:46,250 --> 00:45:44,460

Services Mission just launched from

619

00:45:48,410 --> 00:45:46,260

Launchpad 0a at the Mid-Atlantic

620

00:45:50,630 --> 00:45:48,420

Regional Spaceport part of NASA's

621

00:45:52,910 --> 00:45:50,640

Wallops Flight Facility cygnus is

622

00:45:55,370 --> 00:45:52,920

carrying 8 200 pounds of scientific

623

00:45:56,630 --> 00:45:55,380

experiments food hardware and supplies

624

00:45:58,550 --> 00:45:56,640

to the people living aboard the

625

00:45:59,990 --> 00:45:58,560

International Space Station we

626

00:46:03,829 --> 00:46:00,000

highlighted a couple of the scientific

627

00:46:06,230 --> 00:46:03,839

experiments on board but this cygnus is

628

00:46:08,030 --> 00:46:06,240

also carrying a number of tools as well

629

00:46:10,010 --> 00:46:08,040

as Hardware that

630

00:46:12,050 --> 00:46:10,020

our space Walkers might use in future

631

00:46:41,150 --> 00:46:12,060

spacewalks and get a breakdown of what's

632

00:46:44,750 --> 00:46:43,130

joining me here today to talk a little

633

00:46:48,050 --> 00:46:44,760

bit about the space station and this

634

00:46:49,370 --> 00:46:48,060

resupply mission is Jeff Aaron manager

635

00:46:50,750 --> 00:46:49,380

of the systems engineering and

636

00:46:52,730 --> 00:46:50,760

integration office and the International

637

00:46:54,230 --> 00:46:52,740

Space Station program Jeff do we have

638

00:46:56,210 --> 00:46:54,240

you

639

00:46:59,329 --> 00:46:56,220

loud and clear good morning Kelsey

640

00:47:03,109 --> 00:47:01,609

good morning so Jeff this kicks off an

641

00:47:04,670 --> 00:47:03,119

extremely busy period for the space

642

00:47:06,650 --> 00:47:04,680

station with a series of upcoming

643

00:47:10,970 --> 00:47:06,660

spacewalks how will today's cygnus

644

00:47:15,230 --> 00:47:13,309

it was a spectacular launch and I want

645

00:47:17,210 --> 00:47:15,240

to congratulate the entire team from

646

00:47:20,089 --> 00:47:17,220

Northrop Grumman with their cygnus and

647

00:47:22,550 --> 00:47:20,099

Antares teams to the Spaceport to the

648

00:47:24,650 --> 00:47:22,560

Carter cargo Mission contract team who

649

00:47:26,210 --> 00:47:24,660

packed the cargo and the NASA team

650

00:47:27,589 --> 00:47:26,220

support in this Mission definitely

651  
00:47:29,630 --> 00:47:27,599  
definitely gorgeous launch and we're

652  
00:47:32,329 --> 00:47:29,640  
happy that sickness is on its way to the

653  
00:47:35,030 --> 00:47:32,339  
ISS as you mentioned cygnus is carrying

654  
00:47:36,589 --> 00:47:35,040  
some important spacewalk Hardware one

655  
00:47:38,510 --> 00:47:36,599  
critical set of Hardware is what we call

656  
00:47:40,010 --> 00:47:38,520  
a mod kit which is a collection of

657  
00:47:42,890 --> 00:47:40,020  
brackets that the crew will install

658  
00:47:46,250 --> 00:47:42,900  
outside while on the spacewalk that's

659  
00:47:50,569 --> 00:47:46,260  
currently planned for November 15th the

660  
00:47:52,670 --> 00:47:50,579  
crew will partially assemble it inside

661  
00:47:54,230 --> 00:47:52,680  
um just hold on a second here inside and

662  
00:47:56,150 --> 00:47:54,240  
then they will they will take it through

663  
00:47:58,849 --> 00:47:56,160

the airlock and install it at the base

664

00:48:00,770 --> 00:47:58,859

of a Solar Ray Wing so that it can be a

665

00:48:02,630 --> 00:48:00,780

support structure for a future set of

666

00:48:04,069 --> 00:48:02,640

rollout solar arrays

667

00:48:05,510 --> 00:48:04,079

so there's direct support of the

668

00:48:07,130 --> 00:48:05,520

spacewalk with the hardware they will

669

00:48:09,410 --> 00:48:07,140

use but there's also some indirect

670

00:48:11,150 --> 00:48:09,420

support thickness will be bringing up

671

00:48:12,770 --> 00:48:11,160

some food treats for the crew so

672

00:48:14,690 --> 00:48:12,780

indirectly supporting the operations

673

00:48:17,510 --> 00:48:14,700

with some much deserved

674

00:48:19,130 --> 00:48:17,520

much deserved treats for the crew they

675

00:48:20,870 --> 00:48:19,140

will have their usual menu but they will

676

00:48:24,050 --> 00:48:20,880

also have some special requests like

677

00:48:26,569 --> 00:48:24,060

peanut butter olives several cheeses and

678

00:48:28,309 --> 00:48:26,579

even pumpkin spice cappuccino

679

00:48:31,670 --> 00:48:28,319

and the team has loaded some fresh fruit

680

00:48:33,410 --> 00:48:31,680

as well apples blueberries oranges and

681

00:48:35,030 --> 00:48:33,420

some ice cream in the freezers chocolate

682

00:48:37,250 --> 00:48:35,040

and vanilla and some of the special

683

00:48:41,390 --> 00:48:37,260

flavors that the crew has requested so

684

00:48:45,109 --> 00:48:43,250

Jeff that sounds awesome and you were

685

00:48:47,150 --> 00:48:45,119

just talking to us about the numerous

686

00:48:49,730 --> 00:48:47,160

U.S and Russian spacewalks that are

687

00:48:50,630 --> 00:48:49,740

coming up before the end of the year but

688

00:48:52,190 --> 00:48:50,640

that's not the only thing the flight

689

00:48:53,630 --> 00:48:52,200

controllers have their eye on emission

690

00:48:55,670 --> 00:48:53,640

control can you tell us a little bit

691

00:48:56,750 --> 00:48:55,680

more about what's on the horizon for the

692

00:48:59,030 --> 00:48:56,760

rest of the year

693

00:49:00,650 --> 00:48:59,040

yeah absolutely yes so for the next few

694

00:49:03,470 --> 00:49:00,660

weeks the team will be very busy with

695

00:49:05,510 --> 00:49:03,480

visiting vehicle arrivals at ISS science

696

00:49:07,670 --> 00:49:05,520

being conducted and the Seven upcoming

697

00:49:11,150 --> 00:49:07,680

upcoming spacewalks

698

00:49:12,829 --> 00:49:11,160

uh the Rival of the ng-18 as well as a

699

00:49:14,450 --> 00:49:12,839

SpaceX Mission later this month will

700

00:49:16,730 --> 00:49:14,460

have the flight control team and the

701  
00:49:18,349 --> 00:49:16,740  
crew busy getting the space station and

702  
00:49:20,329 --> 00:49:18,359  
configuration for the birthing and

703  
00:49:22,670 --> 00:49:20,339  
docking and for the thousands of pounds

704  
00:49:25,130 --> 00:49:22,680  
of cargo transfers that the crew will be

705  
00:49:27,829 --> 00:49:25,140  
doing we have a lot of signs that needs

706  
00:49:30,230 --> 00:49:27,839  
activating and tending to uh too quickly

707  
00:49:32,030 --> 00:49:30,240  
after it arrives there are numerous

708  
00:49:34,849 --> 00:49:32,040  
payloads that fall into this category of

709  
00:49:37,130 --> 00:49:34,859  
needing immediate attention U.S payloads

710  
00:49:40,069 --> 00:49:37,140  
as well as International payloads from

711  
00:49:41,809 --> 00:49:40,079  
our European and Japanese colleagues and

712  
00:49:44,390 --> 00:49:41,819  
with the three us and four Russian

713  
00:49:46,790 --> 00:49:44,400

spacewalks in the same time frame the

714

00:49:49,069 --> 00:49:46,800

ground team is very very carefully

715

00:49:50,870 --> 00:49:49,079

managing the cruise time and it's really

716

00:49:53,690 --> 00:49:50,880

not that easy trying to juggle as many

717

00:49:55,790 --> 00:49:53,700

tasks that that we were planning to be

718

00:49:58,370 --> 00:49:55,800

doing so a very busy time on the ground

719

00:50:00,349 --> 00:49:58,380

and on board having said that we're

720

00:50:01,430 --> 00:50:00,359

hoping to be able to give the crew and

721

00:50:03,890 --> 00:50:01,440

much of the team the Thanksgiving

722

00:50:06,589 --> 00:50:03,900

holiday off and back to the food Team

723

00:50:09,410 --> 00:50:06,599

food theme the crew will have holiday

724

00:50:11,630 --> 00:50:09,420

food available to help celebrate and

725

00:50:13,910 --> 00:50:11,640

take a short break also something

726

00:50:15,950 --> 00:50:13,920

something else this month we have is the

727

00:50:18,530 --> 00:50:15,960

Artemis Mission the target of launch

728

00:50:21,290 --> 00:50:18,540

date is November 14th and the teams are

729

00:50:23,450 --> 00:50:21,300

working to make sure ISS SpaceX and

730

00:50:25,670 --> 00:50:23,460

Artemis coordinate shared assets that

731

00:50:29,170 --> 00:50:25,680

can all complete our missions without

732

00:50:33,829 --> 00:50:31,910

so cygnus is expected to arrive at the

733

00:50:35,750 --> 00:50:33,839

space station on Wednesday November 9th

734

00:50:37,970 --> 00:50:35,760

with a rendezvous and capture early in

735

00:50:40,250 --> 00:50:37,980

the morning you're just talking to us

736

00:50:41,450 --> 00:50:40,260

about being crew members on board can

737

00:50:44,750 --> 00:50:41,460

you tell us a little about the

738

00:50:46,970 --> 00:50:44,760

Milestones that we should expect went

739

00:50:50,450 --> 00:50:46,980

for Nicole Mann and Josh cassida

740

00:50:52,609 --> 00:50:50,460

absolutely absolutely so um but before

741

00:50:55,010 --> 00:50:52,619

that even the the Northrop Grumman team

742

00:50:57,109 --> 00:50:55,020

will deploy the cygnus solar rays and

743

00:50:58,910 --> 00:50:57,119

conduct a series of burns using cygnus

744

00:50:59,930 --> 00:50:58,920

thrusters to get the vehicle closer to

745

00:51:04,250 --> 00:50:59,940

station

746

00:51:06,230 --> 00:51:04,260

um will be getting ready as well putting

747

00:51:08,150 --> 00:51:06,240

the ISS solar rays in a good orientation

748

00:51:10,430 --> 00:51:08,160

for the cygnus approach

749

00:51:12,470 --> 00:51:10,440

thickness will will arrive in the

750

00:51:14,930 --> 00:51:12,480

vicinity of ISS and then it will go

751  
00:51:17,270 --> 00:51:14,940  
through a series of holes in what I call

752  
00:51:19,549 --> 00:51:17,280  
resumes to methodically get closer and

753  
00:51:22,490 --> 00:51:19,559  
closer to the station and then it will

754  
00:51:24,290 --> 00:51:22,500  
remain steady for its capture astronaut

755  
00:51:27,170 --> 00:51:24,300  
Nicole Mann will be driving the Canadian

756  
00:51:30,530 --> 00:51:27,180  
arm for for the capture which is planned

757  
00:51:33,049 --> 00:51:30,540  
for at around 405 a.m Central Time on

758  
00:51:35,809 --> 00:51:33,059  
Wednesday so get assistance from Josh

759  
00:51:37,490 --> 00:51:35,819  
Casada with cameras and procedures as

760  
00:51:39,890 --> 00:51:37,500  
she Maneuvers the arm to reach out and

761  
00:51:41,809 --> 00:51:39,900  
grapple with cygnus the crew of course

762  
00:51:43,490 --> 00:51:41,819  
had ground training on monitoring the

763  
00:51:46,130 --> 00:51:43,500

statement says it approaches and with

764

00:51:47,930 --> 00:51:46,140

the Canadian arm operations but the crew

765

00:51:49,910 --> 00:51:47,940

has also been preparing on board the

766

00:51:51,470 --> 00:51:49,920

station with simulations and actual

767

00:51:52,670 --> 00:51:51,480

movements of the arm and practice

768

00:51:55,849 --> 00:51:52,680

session

769

00:51:58,609 --> 00:51:55,859

after capture our Ground Control team

770

00:52:01,190 --> 00:51:58,619

will burst cygnus to the node one Unity

771

00:52:02,690 --> 00:52:01,200

module and then after birth and the crew

772

00:52:04,309 --> 00:52:02,700

will open the hatches which should be

773

00:52:05,329 --> 00:52:04,319

done around noon Houston Time on

774

00:52:08,270 --> 00:52:05,339

Wednesday

775

00:52:10,010 --> 00:52:08,280

uh the team in space as well as on the

776

00:52:14,450 --> 00:52:10,020

ground have practiced all these

777

00:52:21,530 --> 00:52:16,790

Jeff Aarons thank you so much yeah

778

00:52:25,670 --> 00:52:23,690

so that's what this is all about the

779

00:52:27,530 --> 00:52:25,680

continuous research contributions made

780

00:52:30,109 --> 00:52:27,540

in microgravity and assisting our

781

00:52:32,030 --> 00:52:30,119

astronauts who make it happen we heard

782

00:52:34,549 --> 00:52:32,040

about some of the science on board we

783

00:52:37,430 --> 00:52:34,559

heard about the mod kit launching on

784

00:52:39,049 --> 00:52:37,440

cygnus for a November 15th spacewalk and

785

00:52:41,089 --> 00:52:39,059

we even heard about the peanut butter

786

00:52:42,589 --> 00:52:41,099

and pumpkin spice cappuccino heading

787

00:52:44,450 --> 00:52:42,599

their way

788

00:52:45,770 --> 00:52:44,460

to recount today's events and then

789

00:52:47,450 --> 00:52:45,780

Terry's rocket launched from the

790

00:52:50,930 --> 00:52:47,460

Mid-Atlantic Regional Spaceport on

791

00:52:54,349 --> 00:52:50,940

Wallops Island Virginia at 4 32 a.m

792

00:52:55,790 --> 00:52:54,359

Central 5 32 a.m Eastern towards the end

793

00:52:58,190 --> 00:52:55,800

of the launch window while the station

794

00:53:00,710 --> 00:52:58,200

was flying over the Indian Ocean

795

00:53:02,510 --> 00:53:00,720

it brought the SS Sally Ride a cygnus

796

00:53:04,910 --> 00:53:02,520

cargo spacecraft out of Northrop Grumman

797

00:53:06,470 --> 00:53:04,920

into its preliminary orbit and while we

798

00:53:08,569 --> 00:53:06,480

won't cover this event live the next

799

00:53:10,549 --> 00:53:08,579

major milestone for the spacecraft is to

800

00:53:12,950 --> 00:53:10,559

deploy its solar arrays

801  
00:53:14,990 --> 00:53:12,960  
two days from now on Wednesday November

802  
00:53:16,130 --> 00:53:15,000  
9th cygnus will arrive at the orbiting

803  
00:53:18,109 --> 00:53:16,140  
Laboratory

804  
00:53:21,349 --> 00:53:18,119  
our coverage of Rendezvous and capture

805  
00:53:23,089 --> 00:53:21,359  
begins at 2 30 a.m central time cygnus

806  
00:53:25,609 --> 00:53:23,099  
is expected to be robotically captured

807  
00:53:28,370 --> 00:53:25,619  
at the controls of NASA astronaut Nicole

808  
00:53:29,390 --> 00:53:28,380  
Mann and Josh cassida around 405 a.m

809  
00:53:31,370 --> 00:53:29,400  
Central

810  
00:53:33,650 --> 00:53:31,380  
we'll continue on with live coverage of

811  
00:53:35,690 --> 00:53:33,660  
its installation to the space station a

812  
00:53:38,210 --> 00:53:35,700  
job conducted by robotics controllers

813  
00:53:39,890 --> 00:53:38,220

here in Houston these ground controllers

814

00:53:42,470 --> 00:53:39,900

will bolt cygnus into place on the

815

00:53:44,210 --> 00:53:42,480

earth-facing port of the unity module

816

00:53:45,950 --> 00:53:44,220

throughout the week the astronauts on

817

00:53:48,530 --> 00:53:45,960

the space station will work to unload

818

00:53:50,450 --> 00:53:48,540

the cargo and cygnus is expected to stay

819

00:53:53,690 --> 00:53:50,460

bolted to the space station for about

820

00:53:57,109 --> 00:53:53,700

2.5 months and it's until its departure

821

00:54:05,340 --> 00:53:57,119

currently scheduled for January 2023.

822

00:54:05,350 --> 00:54:33,710

[Music]