Hot Fire Post-Test Briefing

1
00:00:03,750 --> 00:00:02,149
chanel we've got engine starting for the

2
00:00:05,749 --> 00:00:03,760
plus account one personality contains

3
00:00:08,490 --> 00:00:05,759
the modular system and graphics in

4
00:00:18,050 --> 00:00:08,500
control

5
00:00:18,060 --> 00:00:25,830
[Music]

6
00:00:29,509 --> 00:00:27,670
welcome to the post-test precinct for

7
00:00:31,990 --> 00:00:29,519
now the hot fire test of the core stage

8
00:00:34,069 --> 00:00:32,000
for nasa's space launch system rocket

9
00:00:36,229 --> 00:00:34,079
the hot fire is the eighth and final

10
00:00:37,910 --> 00:00:36,239
test of the green run test series a

11
00:00:39,670 --> 00:00:37,920
comprehensive assessment of the rocket's

12
00:00:41,590 --> 00:00:39,680
core stage prior to launching artemis

13
00:00:43,510 --> 00:00:41,600

missions to the moon during the test

14
00:00:45,750 --> 00:00:43,520
that took place today here at nasa's

15
00:00:47,830 --> 00:00:45,760
stennis space center near bay st louis

16
00:00:50,310 --> 00:00:47,840
and mississippi engineers loaded more

17
00:00:52,549 --> 00:00:50,320
than 700 000 gallons of cryogenic or

18
00:00:54,790 --> 00:00:52,559
super cold repellent into the tanks and

19
00:00:56,229 --> 00:00:54,800
fired all four engines at the same time

20
00:00:58,630 --> 00:00:56,239
for a little over eight minutes to

21
00:01:01,189 --> 00:00:58,640
simulate launch here to talk with us

22
00:01:04,789 --> 00:01:01,199
about the hot fire test are nasa acting

23
00:01:08,710 --> 00:01:06,789
tom whitmire deputy associate

24
00:01:12,630 --> 00:01:08,720
administrator for exploration systems

25
00:01:15,109 --> 00:01:12,640
development at nasa headquarters

26
00:01:19,190 --> 00:01:15,119
john honeycutt sls program manager from

27
00:01:25,109 --> 00:01:21,910
and julie basler from sls stages manager

28
00:01:29,510 --> 00:01:27,109
also joining us on the phone for the q a

29
00:01:31,510 --> 00:01:29,520
session we'll have maury vander chief of

30
00:01:34,469 --> 00:01:31,520
test operations at stennis

31
00:01:35,830 --> 00:01:34,479
johnny heflin sls liquid engines manager

32
00:01:38,390 --> 00:01:35,840
from marshall

33
00:01:40,390 --> 00:01:38,400
john shannon vice president and sls

34
00:01:43,109 --> 00:01:40,400
program manager of boeing and doug

35
00:01:45,109 --> 00:01:43,119
bradley deputy rs25 program manager at

36
00:01:46,630 --> 00:01:45,119
aerojet rocketdyne

37
00:01:47,990 --> 00:01:46,640
our speakers will each give a few

38
00:01:49,590 --> 00:01:48,000

opening remarks from the speakers here

39
00:01:51,429 --> 00:01:49,600
on the stage and then we'll take

40
00:01:52,789 --> 00:01:51,439
questions from reporters on the phone

41
00:01:54,870 --> 00:01:52,799
for the reporters on the line you can

42
00:01:56,149 --> 00:01:54,880
enter star one anytime to be joined into

43
00:01:57,510 --> 00:01:56,159
the queue

44
00:01:59,670 --> 00:01:57,520
your phones are on you now and the

45
00:02:00,870 --> 00:01:59,680
operator will open your mic for to ask

46
00:02:02,630 --> 00:02:00,880
your question and close your mic when

47
00:02:04,230 --> 00:02:02,640
you're done

48
00:02:08,229 --> 00:02:04,240
first we'll hear from nasa acting

49
00:02:13,350 --> 00:02:10,869
hey good evening everybody um so first

50
00:02:15,110 --> 00:02:13,360
what a great day and a great test and

51
00:02:17,750 --> 00:02:15,120
right up front i just want to say how

52
00:02:20,390 --> 00:02:17,760
proud i am of this team

53
00:02:23,350 --> 00:02:20,400
um many of the team members have been on

54
00:02:26,229 --> 00:02:23,360
the program for a lot of years

55
00:02:27,990 --> 00:02:26,239
and uh and work really hard to get to

56
00:02:30,470 --> 00:02:28,000
this point

57
00:02:32,390 --> 00:02:30,480
including the past year

58
00:02:34,070 --> 00:02:32,400
during all the challenges we've had with

59
00:02:35,990 --> 00:02:34,080
a global pandemic

60
00:02:38,710 --> 00:02:36,000
and i just could not be more proud of

61
00:02:40,949 --> 00:02:38,720
the team of their talent dedication

62
00:02:44,150 --> 00:02:40,959
getting to this point and pulling off a

63
00:02:46,869 --> 00:02:44,160

just very successful test um it's been a

64
00:02:48,710 --> 00:02:46,879
really actually great year for nasa

65
00:02:51,509 --> 00:02:48,720
during a very challenging year for the

66
00:02:53,509 --> 00:02:51,519
nation in the world um we had the first

67
00:02:56,229 --> 00:02:53,519
launch of astronauts from

68
00:02:58,149 --> 00:02:56,239
american soil in almost 10 years with

69
00:03:00,309 --> 00:02:58,159
the demo 2 launch

70
00:03:02,470 --> 00:03:00,319
we followed that up with the

71
00:03:04,630 --> 00:03:02,480
earth science mission the mike fry 706

72
00:03:06,309 --> 00:03:04,640
mike frylett launch then the crew one

73
00:03:08,229 --> 00:03:06,319
launch our second crew launch to the

74
00:03:10,390 --> 00:03:08,239
international space station and then in

75
00:03:13,670 --> 00:03:10,400
february the perseverance landing and

76
00:03:16,390 --> 00:03:13,680
now uh the green run test and so i am i

77
00:03:18,710 --> 00:03:16,400
am so grateful and proud for the nasa

78
00:03:20,869 --> 00:03:18,720
team our industry partners our academic

79
00:03:23,509 --> 00:03:20,879
partners and our international partners

80
00:03:26,390 --> 00:03:23,519
that work together and to pull off these

81
00:03:29,190 --> 00:03:26,400
amazing accomplishments and i just again

82
00:03:32,550 --> 00:03:29,200
i'm i am proud and humbled to be

83
00:03:34,550 --> 00:03:32,560
um a leader of this organization um so

84
00:03:36,789 --> 00:03:34,560
what does this mean for our plans well

85
00:03:39,350 --> 00:03:36,799
this is a major milestone advancing our

86
00:03:40,630 --> 00:03:39,360
goals and objectives for artemis

87
00:03:43,190 --> 00:03:40,640
to land

88
00:03:45,270 --> 00:03:43,200

the first woman and the next

89
00:03:47,990 --> 00:03:45,280
man on the surface of the moon and to

90
00:03:50,550 --> 00:03:48,000
return to the moon this time to stay to

91
00:03:52,470 --> 00:03:50,560
explore the moon sustainably demonstrate

92
00:03:55,110 --> 00:03:52,480
the capabilities and technologies that

93
00:03:57,350 --> 00:03:55,120
we need to eventually achieve a human

94
00:03:58,949 --> 00:03:57,360
mission to mars so not only critical for

95
00:04:00,869 --> 00:03:58,959
our artemis plans but critical for our

96
00:04:02,070 --> 00:04:00,879
overall moon to mars plan achieving that

97
00:04:04,470 --> 00:04:02,080
ultimate goal

98
00:04:06,710 --> 00:04:04,480
and um and this test

99
00:04:09,030 --> 00:04:06,720
will allow us to continue

100
00:04:12,070 --> 00:04:09,040
the integration of this space launch

101
00:04:13,830 --> 00:04:12,080
system the largest most powerful rocket

102
00:04:16,150 --> 00:04:13,840
ever developed which we're going to

103
00:04:18,710 --> 00:04:16,160
integrate with the orion spacecraft and

104
00:04:20,550 --> 00:04:18,720
do an uncrewed test flight

105
00:04:22,629 --> 00:04:20,560
leading to a crew test flight and then

106
00:04:23,670 --> 00:04:22,639
that first landing mission on the moon

107
00:04:31,830 --> 00:04:23,680
and

108
00:04:33,030 --> 00:04:31,840
development since apollo are the

109
00:04:35,749 --> 00:04:33,040
backbone

110
00:04:37,990 --> 00:04:35,759
of the systems and the architecture that

111
00:04:40,550 --> 00:04:38,000
we're going to need to accomplish these

112
00:04:42,629 --> 00:04:40,560
goals and objectives of a permanent and

113
00:04:44,150 --> 00:04:42,639

sustained presence around and on the

114
00:04:47,270 --> 00:04:44,160
moon

115
00:04:50,790 --> 00:04:47,280
so this is a major step in in advancing

116
00:04:52,469 --> 00:04:50,800
our our goals and again um couldn't be

117
00:04:57,110 --> 00:04:52,479
more proud of the team

118
00:04:59,430 --> 00:04:57,120
and i'll uh i'll i i just um

119
00:05:02,629 --> 00:04:59,440
almost speechless about how well things

120
00:05:04,629 --> 00:05:02,639
went today so uh thank you very much

121
00:05:06,390 --> 00:05:04,639
all right we'll go to tom next okay i

122
00:05:08,390 --> 00:05:06,400
agree with steve's comments this has

123
00:05:11,749 --> 00:05:08,400
just been a tremendous day

124
00:05:13,830 --> 00:05:11,759
uh congratulations john and julie

125
00:05:15,749 --> 00:05:13,840
your teams the other teams represented

126
00:05:17,670 --> 00:05:15,759
here today and everybody that worked all

127
00:05:20,070 --> 00:05:17,680
those years before the day to actually

128
00:05:21,590 --> 00:05:20,080
have a design a manufacturing facility

129
00:05:22,790 --> 00:05:21,600
everything that goes behind a rocket

130
00:05:24,550 --> 00:05:22,800
it's very uh

131
00:05:26,230 --> 00:05:24,560
amazing accomplishments this is the last

132
00:05:28,070 --> 00:05:26,240
really big development test we needed to

133
00:05:29,909 --> 00:05:28,080
complete get behind us

134
00:05:31,749 --> 00:05:29,919
and in our program we take it a step at

135
00:05:34,070 --> 00:05:31,759
a time this was a really important step

136
00:05:35,749 --> 00:05:34,080
for us uh john and julia will talk about

137
00:05:37,189 --> 00:05:35,759
the next steps in terms of reviewing the

138
00:05:39,270 --> 00:05:37,199

data and seeing what we got out of the

139
00:05:40,950 --> 00:05:39,280
test generally speaking it's going to

140
00:05:42,230 --> 00:05:40,960
take about a month to complete

141
00:05:44,550 --> 00:05:42,240
refurbishment

142
00:05:46,469 --> 00:05:44,560
then we will ship it down to the cape uh

143
00:05:48,710 --> 00:05:46,479
it goes down the pearl river

144
00:05:51,110 --> 00:05:48,720
through the gulf down the tip of florida

145
00:05:53,110 --> 00:05:51,120
and into cocoa beach and we bending it

146
00:05:54,710 --> 00:05:53,120
to the turn basin and for those folks

147
00:05:57,029 --> 00:05:54,720
that are familiar with the vab we

148
00:05:58,629 --> 00:05:57,039
actually go into the bab

149
00:06:00,070 --> 00:05:58,639
and we go to the right at the very end

150
00:06:01,189 --> 00:06:00,080
that's hive a3 and we're going to put it

151
00:06:03,510 --> 00:06:01,199
right in the stack we've got the

152
00:06:05,990 --> 00:06:03,520
boosters ready to go on the ml we've got

153
00:06:07,510 --> 00:06:06,000
processing going on orion and i just

154
00:06:09,110 --> 00:06:07,520
can't agree with steve moore a lot of us

155
00:06:10,790 --> 00:06:09,120
are going to look back at this day later

156
00:06:12,950 --> 00:06:10,800
in our careers in our lives talk to our

157
00:06:14,870 --> 00:06:12,960
families and friends and significant

158
00:06:16,150 --> 00:06:14,880
others and say we were here for a very

159
00:06:18,150 --> 00:06:16,160
important test

160
00:06:19,430 --> 00:06:18,160
for the most powerful rocket ever built

161
00:06:20,710 --> 00:06:19,440
and i think that's just an incredible

162
00:06:22,870 --> 00:06:20,720
accomplishment

163
00:06:24,550 --> 00:06:22,880

uh for terms of what happens after this

164
00:06:25,990 --> 00:06:24,560
once we get to the cape we'll take it a

165
00:06:27,510 --> 00:06:26,000
step at a time

166
00:06:29,430 --> 00:06:27,520
we have a lot of very specific

167
00:06:31,189 --> 00:06:29,440
activities that will occur next a lot of

168
00:06:32,390 --> 00:06:31,199
stacking operations integration

169
00:06:34,469 --> 00:06:32,400
operations

170
00:06:36,710 --> 00:06:34,479
test and out and when we accomplish

171
00:06:38,950 --> 00:06:36,720
those operations we'll be ready to fly

172
00:06:40,550 --> 00:06:38,960
and just as we've done today we'd like

173
00:06:41,590 --> 00:06:40,560
to take that a step at a time we'll see

174
00:06:43,510 --> 00:06:41,600
how we do

175
00:06:45,110 --> 00:06:43,520
later on in the year we have uh we're

176
00:06:46,469 --> 00:06:45,120
very excited about that and it's going

177
00:06:48,629 --> 00:06:46,479
to be very visible we're going to bring

178
00:06:49,909 --> 00:06:48,639
everybody along to kind of follow us as

179
00:06:51,430 --> 00:06:49,919
we go through the year and we're very

180
00:06:52,629 --> 00:06:51,440
excited about that

181
00:06:54,950 --> 00:06:52,639
so i'm going to turn it over to john

182
00:06:56,629 --> 00:06:54,960
congratulations john

183
00:07:00,309 --> 00:06:56,639
thank you tom

184
00:07:03,990 --> 00:07:00,319
uh i have to tell you that

185
00:07:05,830 --> 00:07:04,000
it was very exciting to see

186
00:07:07,909 --> 00:07:05,840
the test today you know this was a

187
00:07:10,469 --> 00:07:07,919
culmination of

188
00:07:13,029 --> 00:07:10,479

a series of tests

189
00:07:14,629 --> 00:07:13,039
and i just couldn't be more excited and

190
00:07:17,270 --> 00:07:14,639
proud of the team

191
00:07:20,550 --> 00:07:17,280
you know it's it's been

192
00:07:22,150 --> 00:07:20,560
uh several years since i uh experienced

193
00:07:25,029 --> 00:07:22,160
the uh

194
00:07:27,189 --> 00:07:25,039
the vibration and the sense of the power

195
00:07:29,430 --> 00:07:27,199
and the feeling of of

196
00:07:32,070 --> 00:07:29,440
of a rocket like this

197
00:07:34,230 --> 00:07:32,080
and it uh it literally just gives me

198
00:07:35,589 --> 00:07:34,240
cold chills whenever i get to experience

199
00:07:38,710 --> 00:07:35,599
that and

200
00:07:42,070 --> 00:07:38,720
i think it's i think what it does for

201
00:07:44,790 --> 00:07:42,080
for the team it's it's really uh

202
00:07:45,990 --> 00:07:44,800
it's the fruits of their hard work and

203
00:07:48,230 --> 00:07:46,000
um

204
00:07:50,629 --> 00:07:48,240
that's that's extremely important and

205
00:07:52,550 --> 00:07:50,639
that's what keeps driving this team

206
00:07:54,309 --> 00:07:52,560
uh we we've had some challenges with

207
00:07:56,869 --> 00:07:54,319
this green run

208
00:07:58,309 --> 00:07:56,879
and i'm just so proud of the team with

209
00:08:00,309 --> 00:07:58,319
the way they've methodically worked

210
00:08:01,830 --> 00:08:00,319
through these challenges

211
00:08:02,950 --> 00:08:01,840
and

212
00:08:05,350 --> 00:08:02,960
just the

213
00:08:07,189 --> 00:08:05,360

work the work that they've done got us

214
00:08:10,230 --> 00:08:07,199
to where we are today and got us to a

215
00:08:13,110 --> 00:08:10,240
really good test

216
00:08:15,029 --> 00:08:13,120
all the data that we

217
00:08:16,710 --> 00:08:15,039
have looked at so far and we've got a

218
00:08:19,110 --> 00:08:16,720
lot more to look at but

219
00:08:21,110 --> 00:08:19,120
everything that we've seen

220
00:08:22,309 --> 00:08:21,120
in the test today looked

221
00:08:24,710 --> 00:08:22,319
nominal

222
00:08:26,790 --> 00:08:24,720
uh so i would i would say

223
00:08:31,270 --> 00:08:26,800
the core stage

224
00:08:32,070 --> 00:08:31,280
uh julie got got an a plus today

225
00:08:33,670 --> 00:08:32,080
um

226
00:08:37,029 --> 00:08:33,680
and so

227
00:08:40,469 --> 00:08:37,039
i can't i can't go without thanking

228
00:08:44,550 --> 00:08:40,479
julie and the stage's team

229
00:08:47,990 --> 00:08:44,560
all the folks in the sls program

230
00:08:50,790 --> 00:08:48,000
our prime contractors

231
00:08:53,269 --> 00:08:50,800
boeing and rocketdyne

232
00:08:54,790 --> 00:08:53,279
and especially our friends at stennis

233
00:08:57,190 --> 00:08:54,800
that

234
00:09:00,550 --> 00:08:57,200
provided a great test facility and a

235
00:09:03,829 --> 00:09:00,560
great test operations team

236
00:09:06,070 --> 00:09:03,839
i got to see this team work through

237
00:09:08,470 --> 00:09:06,080
these series of tests and the more they

238
00:09:10,949 --> 00:09:08,480

tested the better they got and that was

239
00:09:13,590 --> 00:09:10,959
really evidence today

240
00:09:16,470 --> 00:09:13,600
with a good a good smooth uh

241
00:09:18,310 --> 00:09:16,480
countdown to get us into the test

242
00:09:20,790 --> 00:09:18,320
uh

243
00:09:23,670 --> 00:09:20,800
i would also just like to take a just

244
00:09:25,750 --> 00:09:23,680
one second of time to

245
00:09:27,509 --> 00:09:25,760
mention the fact that we did we did lose

246
00:09:30,389 --> 00:09:27,519
one of our teammates this

247
00:09:33,509 --> 00:09:30,399
this week and it was mike rudolfi

248
00:09:36,470 --> 00:09:33,519
uh he's one of our forefathers

249
00:09:39,829 --> 00:09:36,480
that worked in the program with us

250
00:09:42,310 --> 00:09:39,839
and uh he will be dearly missed and

251
00:09:44,230 --> 00:09:42,320
uh we owe him a debt of gratitude for

252
00:09:46,150 --> 00:09:44,240
his contributions to get us to where we

253
00:09:47,030 --> 00:09:46,160
got to today

254
00:09:51,829 --> 00:09:47,040
uh

255
00:09:54,150 --> 00:09:51,839
getting on the test stand and

256
00:09:56,070 --> 00:09:54,160
uh assessing the core stage

257
00:09:58,389 --> 00:09:56,080
over the next few days

258
00:10:00,949 --> 00:09:58,399
uh and taking a look at what kind of

259
00:10:02,870 --> 00:10:00,959
work we need to do on the stage

260
00:10:04,790 --> 00:10:02,880
to get it ready to ship

261
00:10:06,470 --> 00:10:04,800
and then

262
00:10:08,550 --> 00:10:06,480
at that point in time

263
00:10:10,069 --> 00:10:08,560

we'll remove it from the stand get it on

264
00:10:12,069 --> 00:10:10,079
the barge

265
00:10:14,230 --> 00:10:12,079
and ship it to ksc and we're really

266
00:10:17,430 --> 00:10:14,240
looking forward to that so

267
00:10:19,030 --> 00:10:17,440
in sls we've got all our hardware

268
00:10:20,870 --> 00:10:19,040
at ksc

269
00:10:23,430 --> 00:10:20,880
and we've got both boosters stacked and

270
00:10:25,430 --> 00:10:23,440
we're really excited to

271
00:10:27,269 --> 00:10:25,440
be able to get the core stage to ksc and

272
00:10:28,310 --> 00:10:27,279
get it stacked in between those two

273
00:10:30,630 --> 00:10:28,320
boosters

274
00:10:33,030 --> 00:10:30,640
so julie i'll turn it over to you now

275
00:10:36,630 --> 00:10:33,040
okay thank you mr honeycutt uh so yes

276
00:10:39,110 --> 00:10:36,640
it's been a an extraordinary day um so a

277
00:10:40,870 --> 00:10:39,120
lot of hard work has gone into getting

278
00:10:43,670 --> 00:10:40,880
us to this point today

279
00:10:45,910 --> 00:10:43,680
the team is amazing every time we test

280
00:10:47,829 --> 00:10:45,920
we learn something new and they are so

281
00:10:49,430 --> 00:10:47,839
resilient and and

282
00:10:51,190 --> 00:10:49,440
the team that pulled together today the

283
00:10:53,829 --> 00:10:51,200
boeing and rocketdyne and the stennis

284
00:10:56,870 --> 00:10:53,839
and the sls team

285
00:10:58,949 --> 00:10:56,880
we have met several challenges this year

286
00:11:01,110 --> 00:10:58,959
not to mention the covid but also with

287
00:11:02,710 --> 00:11:01,120
all the weather challenges we had we

288
00:11:05,350 --> 00:11:02,720

actually had a weather challenge last

289
00:11:07,590 --> 00:11:05,360
night actually um so it uh we were

290
00:11:08,630 --> 00:11:07,600
watching the the the bad storms come

291
00:11:10,389 --> 00:11:08,640
through

292
00:11:13,269 --> 00:11:10,399
but we had a stannis team that was on

293
00:11:15,190 --> 00:11:13,279
the ready and they came out around 2 a.m

294
00:11:16,870 --> 00:11:15,200
and got on the facility and finished up

295
00:11:19,430 --> 00:11:16,880
all of our pre-test work that we needed

296
00:11:22,389 --> 00:11:19,440
to do out on the stand so at 5 30 when

297
00:11:24,150 --> 00:11:22,399
the test team came in they we had a all

298
00:11:27,110 --> 00:11:24,160
clear sign and we were ready to go into

299
00:11:30,069 --> 00:11:27,120
test at 6 am this morning we did our

300
00:11:32,870 --> 00:11:30,079
tanking go no-go and uh and we had no

301
00:11:34,550 --> 00:11:32,880
anomalies no issues were being worked

302
00:11:36,550 --> 00:11:34,560
so and that was pretty much the way the

303
00:11:39,430 --> 00:11:36,560
whole day went we went through the whole

304
00:11:41,670 --> 00:11:39,440
day we had no significant on anomalies

305
00:11:42,710 --> 00:11:41,680
it was the smoothest test i think that

306
00:11:44,550 --> 00:11:42,720
uh

307
00:11:46,389 --> 00:11:44,560
for sure we've ever ran and several

308
00:11:48,230 --> 00:11:46,399
other people on the team said any test

309
00:11:50,790 --> 00:11:48,240
they've been part of i mean we had no

310
00:11:53,430 --> 00:11:50,800
major issues and we went all the way up

311
00:11:55,430 --> 00:11:53,440
to the team t minus 10 minutes and we

312
00:11:58,069 --> 00:11:55,440
did our hold and checked everything and

313
00:12:00,550 --> 00:11:58,079

i did the final uh go no go from the

314
00:12:02,790 --> 00:12:00,560
test team and uh went right into the hot

315
00:12:04,389 --> 00:12:02,800
fire so i think you can see from the

316
00:12:06,470 --> 00:12:04,399
video and

317
00:12:08,470 --> 00:12:06,480
and and everything that uh all the data

318
00:12:10,150 --> 00:12:08,480
we're seeing now as mr hunnicutt said

319
00:12:11,990 --> 00:12:10,160
everything looks like we were right down

320
00:12:13,190 --> 00:12:12,000
the middle of our modeling and our

321
00:12:15,509 --> 00:12:13,200
analysis

322
00:12:17,269 --> 00:12:15,519
um we have met all of our objectives now

323
00:12:19,190 --> 00:12:17,279
so you know we talked about we needed at

324
00:12:21,750 --> 00:12:19,200
least four minutes well we did twice as

325
00:12:23,670 --> 00:12:21,760
good as we needed so uh so a big thanks

326
00:12:26,389 --> 00:12:23,680
to the team and uh what couldn't be more

327
00:12:28,949 --> 00:12:26,399
proud and more humbled be to be part of

328
00:12:30,790 --> 00:12:28,959
such a fantastic team

329
00:12:33,269 --> 00:12:30,800
there was never a point where somebody

330
00:12:35,110 --> 00:12:33,279
said that's not my job it was all about

331
00:12:37,750 --> 00:12:35,120
what we got to do to get this hot fire

332
00:12:41,030 --> 00:12:37,760
off today so a great effort and i wanted

333
00:12:45,269 --> 00:12:42,629
thank you we'll now take questions from

334
00:12:47,350 --> 00:12:45,279
reporters on the line uh please press

335
00:12:48,550 --> 00:12:47,360
star one to be entered into the queue we

336
00:12:50,150 --> 00:12:48,560
ask that you please stick to one

337
00:12:52,150 --> 00:12:50,160
question and identify to whom your

338
00:12:53,750 --> 00:12:52,160

question is directed if we have time

339
00:12:54,710 --> 00:12:53,760
we'll allow reporters to ask a second

340
00:12:56,389 --> 00:12:54,720
question

341
00:12:57,829 --> 00:12:56,399
again you can enter star one on your

342
00:12:59,990 --> 00:12:57,839
phone to be joined into the queue at any

343
00:13:02,629 --> 00:13:00,000
time and you can enter star two to

344
00:13:04,310 --> 00:13:02,639
remove be removed from the queue

345
00:13:06,310 --> 00:13:04,320
all right so for our first question

346
00:13:10,150 --> 00:13:06,320
we'll take marcia dunn from associated

347
00:13:13,990 --> 00:13:12,310
i'm a question for mr jerzik i'm i'm

348
00:13:16,310 --> 00:13:14,000
wondering um

349
00:13:18,150 --> 00:13:16,320
what kind of schedule you think

350
00:13:19,829 --> 00:13:18,160
you have for this year do you think you

351
00:13:22,350 --> 00:13:19,839
can launch the first flight by

352
00:13:24,150 --> 00:13:22,360
eurozander do you think it'll bump into

353
00:13:27,509 --> 00:13:24,160
2022

354
00:13:28,949 --> 00:13:27,519
and what about the first moon landing

355
00:13:31,269 --> 00:13:28,959
when do you think that might actually

356
00:13:33,110 --> 00:13:31,279
take place thank you okay i'm going to

357
00:13:34,470 --> 00:13:33,120
take the moon landing part and i'm going

358
00:13:35,430 --> 00:13:34,480
to kick the

359
00:13:37,509 --> 00:13:35,440
the

360
00:13:40,550 --> 00:13:37,519
launch part to tom wittmeyer

361
00:13:41,750 --> 00:13:40,560
okay yes on the on the moon landing part

362
00:13:42,629 --> 00:13:41,760
we um

363
00:13:46,069 --> 00:13:42,639

so

364
00:13:47,670 --> 00:13:46,079
we are have a internal study that we're

365
00:13:49,430 --> 00:13:47,680
conducting right now

366
00:13:52,150 --> 00:13:49,440
to look at

367
00:13:54,389 --> 00:13:52,160
the missions beyond artemis ii

368
00:13:57,110 --> 00:13:54,399
um and particularly given the

369
00:13:57,990 --> 00:13:57,120
appropriations that we got in fy21

370
00:14:00,470 --> 00:13:58,000
actually it was really good

371
00:14:01,509 --> 00:14:00,480
appropriations in 21 including a

372
00:14:04,230 --> 00:14:01,519
good bit of funding for the human

373
00:14:05,509 --> 00:14:04,240
landing system but not what we requested

374
00:14:07,189 --> 00:14:05,519
and uh so

375
00:14:10,150 --> 00:14:07,199
probably take a few months to get

376
00:14:12,790 --> 00:14:10,160
through that study we'll take a look at

377
00:14:14,710 --> 00:14:12,800
what we can optimally do given the fi 21

378
00:14:15,590 --> 00:14:14,720
budgets and expected budgets in out

379
00:14:17,670 --> 00:14:15,600
years

380
00:14:20,069 --> 00:14:17,680
and uh and lay out the mission

381
00:14:21,430 --> 00:14:20,079
manifesting cadence beyond the artemis

382
00:14:22,949 --> 00:14:21,440
ii mission

383
00:14:24,310 --> 00:14:22,959
so we have some work to do there but

384
00:14:26,069 --> 00:14:24,320
we're in the middle of that work right

385
00:14:27,509 --> 00:14:26,079
now

386
00:14:29,269 --> 00:14:27,519
okay let me talk about the launch

387
00:14:31,590 --> 00:14:29,279
situation and it's kind of what i've

388
00:14:34,310 --> 00:14:31,600

described uh in the start of the process

389
00:14:36,470 --> 00:14:34,320
you know we take this a step at a time

390
00:14:37,670 --> 00:14:36,480
we saw that here today i mean our goal

391
00:14:40,069 --> 00:14:37,680
is to get through

392
00:14:41,430 --> 00:14:40,079
certain tests and certain activities and

393
00:14:43,110 --> 00:14:41,440
when we're done with that we have an

394
00:14:44,790 --> 00:14:43,120
opportunity to fly

395
00:14:46,629 --> 00:14:44,800
and so i'm always very careful i used to

396
00:14:48,870 --> 00:14:46,639
do shuttle program and we're always very

397
00:14:50,710 --> 00:14:48,880
careful to say we need to get through

398
00:14:52,870 --> 00:14:50,720
every one of these tasks every one of

399
00:14:54,069 --> 00:14:52,880
these activities they're highly visible

400
00:14:56,150 --> 00:14:54,079
events you'll be able to follow the

401
00:14:58,150 --> 00:14:56,160
hardware as it comes from here

402
00:15:00,389 --> 00:14:58,160
travels down to the cape is integrated

403
00:15:03,110 --> 00:15:00,399
in the cape uh we're already processing

404
00:15:05,110 --> 00:15:03,120
ryan we're loading orion with fuel we're

405
00:15:06,790 --> 00:15:05,120
already have the booster stack ready to

406
00:15:08,790 --> 00:15:06,800
go and so the real answer to your

407
00:15:10,790 --> 00:15:08,800
question is when we complete those tasks

408
00:15:12,629 --> 00:15:10,800
then we'll be in a position to fly now

409
00:15:14,310 --> 00:15:12,639
like we saw here at stennis these tests

410
00:15:16,230 --> 00:15:14,320
were really important we did learn some

411
00:15:18,069 --> 00:15:16,240
new things as we went through that i

412
00:15:19,990 --> 00:15:18,079
think it was a tremendous accomplishment

413
00:15:22,150 --> 00:15:20,000

as you know as if for the first time

414
00:15:24,230 --> 00:15:22,160
flight of the world's most pop you know

415
00:15:26,230 --> 00:15:24,240
powerful vehicle we really learned some

416
00:15:27,590 --> 00:15:26,240
important things and so i expect we'll

417
00:15:29,189 --> 00:15:27,600
learn some important things when we get

418
00:15:31,910 --> 00:15:29,199
down to florida it'll be the first time

419
00:15:33,910 --> 00:15:31,920
we've used the facilities in florida

420
00:15:35,189 --> 00:15:33,920
we may come across a few things that we

421
00:15:37,030 --> 00:15:35,199
need to address

422
00:15:38,069 --> 00:15:37,040
so i think the real answer your question

423
00:15:40,230 --> 00:15:38,079
is that you know we're looking for

424
00:15:42,069 --> 00:15:40,240
opportunities this year but the real

425
00:15:43,829 --> 00:15:42,079
answer is we will absolutely keep you

426
00:15:45,430 --> 00:15:43,839
apprised of how we're doing throughout

427
00:15:47,509 --> 00:15:45,440
the process we'll let you know what the

428
00:15:49,030 --> 00:15:47,519
progress looks like they're all highly

429
00:15:50,629 --> 00:15:49,040
visible events they're individual

430
00:15:53,110 --> 00:15:50,639
integration tasks that are easy to

431
00:15:54,710 --> 00:15:53,120
follow and as we get the vehicle to the

432
00:15:56,710 --> 00:15:54,720
cape we'll be able to provide additional

433
00:15:58,069 --> 00:15:56,720
information of what the process flow

434
00:15:59,829 --> 00:15:58,079
looks like at the cape and that's the

435
00:16:00,949 --> 00:15:59,839
real answer the question and then that's

436
00:16:03,030 --> 00:16:00,959
where we're at

437
00:16:08,389 --> 00:16:03,040
thank you our next question is from

438
00:16:12,069 --> 00:16:09,590

um

439
00:16:14,069 --> 00:16:12,079
my question is for steve could you

440
00:16:16,470 --> 00:16:14,079
describe um

441
00:16:19,030 --> 00:16:16,480
what sort of interactions you've had

442
00:16:21,030 --> 00:16:19,040
with the biden administration

443
00:16:21,670 --> 00:16:21,040
and if you've

444
00:16:24,389 --> 00:16:21,680
any gotten

445
00:16:26,629 --> 00:16:24,399
indications of

446
00:16:30,470 --> 00:16:26,639
how things might be different in the

447
00:16:33,430 --> 00:16:30,480
nasa programs artemis in particular but

448
00:16:36,629 --> 00:16:33,440
anything else in uh in general that you

449
00:16:40,310 --> 00:16:36,639
could see shifting thank you

450
00:16:41,829 --> 00:16:40,320
yes so in in general we've gotten really

451
00:16:43,590 --> 00:16:41,839
good support from the buying

452
00:16:45,910 --> 00:16:43,600
administration

453
00:16:47,269 --> 00:16:45,920
pretty much across the board

454
00:16:50,550 --> 00:16:47,279
so

455
00:16:52,949 --> 00:16:50,560
i have to say i am i am optimistic about

456
00:16:54,230 --> 00:16:52,959
the trajectory that we're on and and

457
00:16:57,030 --> 00:16:54,240
sort of and pretty much staying on that

458
00:17:00,389 --> 00:16:57,040
trajectory now with respect to artemis

459
00:17:03,269 --> 00:17:00,399
uh i was really really excited and and

460
00:17:06,150 --> 00:17:03,279
glad to see early on the administration

461
00:17:07,590 --> 00:17:06,160
um you know communicated their support

462
00:17:09,990 --> 00:17:07,600
for the goals and objectives of the

463
00:17:11,429 --> 00:17:10,000

artemis program and our overall moon

464
00:17:14,230 --> 00:17:11,439
tomorrow strategy

465
00:17:15,590 --> 00:17:14,240
and obviously human exploration is the

466
00:17:17,829 --> 00:17:15,600
human missions

467
00:17:20,949 --> 00:17:17,839
human spaceflight missions are the most

468
00:17:22,789 --> 00:17:20,959
uh complex and visible aspect of artemis

469
00:17:25,990 --> 00:17:22,799
but we also are conducting robotic

470
00:17:28,789 --> 00:17:26,000
missions um to the moon and to mars uh

471
00:17:30,710 --> 00:17:28,799
the robot mars missions are also part of

472
00:17:32,710 --> 00:17:30,720
planning and advancing our goals and

473
00:17:34,710 --> 00:17:32,720
objectives from moon to mars as well as

474
00:17:36,470 --> 00:17:34,720
technology and demonstrating the

475
00:17:37,510 --> 00:17:36,480
technologies that are going to allow us

476
00:17:40,230 --> 00:17:37,520
to

477
00:17:41,430 --> 00:17:40,240
stay on the moon sustainably and and for

478
00:17:42,390 --> 00:17:41,440
the long term

479
00:17:45,270 --> 00:17:42,400
and

480
00:17:47,110 --> 00:17:45,280
enable human missions to mars so i think

481
00:17:50,070 --> 00:17:47,120
the administration has really embraced

482
00:17:52,470 --> 00:17:50,080
our overall artemis strategy and goals

483
00:17:54,870 --> 00:17:52,480
and objectives and so far supported that

484
00:17:57,669 --> 00:17:54,880
as well as highlighted other

485
00:17:59,110 --> 00:17:57,679
ways in which we contribute to important

486
00:18:01,590 --> 00:17:59,120
policy objectives for the new

487
00:18:03,110 --> 00:18:01,600
administration including climate change

488
00:18:05,430 --> 00:18:03,120

that includes the research that we do

489
00:18:07,590 --> 00:18:05,440
with our satellite satellites and

490
00:18:09,669 --> 00:18:07,600
instruments

491
00:18:11,590 --> 00:18:09,679
reducing the environmental impact of

492
00:18:14,070 --> 00:18:11,600
aviation

493
00:18:15,190 --> 00:18:14,080
stem engagement that's really important

494
00:18:18,070 --> 00:18:15,200
one of the important things we do is

495
00:18:19,830 --> 00:18:18,080
inspire the next generation and inspire

496
00:18:21,510 --> 00:18:19,840
our youth to go into science technology

497
00:18:23,350 --> 00:18:21,520
engineering and math

498
00:18:25,350 --> 00:18:23,360
and uh and use

499
00:18:26,549 --> 00:18:25,360
and using the power of diversity and

500
00:18:29,750 --> 00:18:26,559
inclusion

501
00:18:31,669 --> 00:18:29,760
um to advance our goals and solve really

502
00:18:32,950 --> 00:18:31,679
the really tough problems that we have

503
00:18:37,430 --> 00:18:32,960
so

504
00:18:39,029 --> 00:18:37,440
support we've gotten from the biden

505
00:18:40,310 --> 00:18:39,039
administration

506
00:18:41,990 --> 00:18:40,320
thank you

507
00:18:46,710 --> 00:18:42,000
our next question is from phillips loss

508
00:18:51,510 --> 00:18:49,029
yeah i think this is for uh uh julie

509
00:18:54,070 --> 00:18:51,520
bassler or john shannon um

510
00:18:56,230 --> 00:18:54,080
uh it sounded like on the audio that you

511
00:18:57,830 --> 00:18:56,240
got the low level cutoff test the the

512
00:19:00,630 --> 00:18:57,840
locks depletion test but i just wanted

513
00:19:01,830 --> 00:19:00,640

to check and see that confirm that you

514
00:19:03,669 --> 00:19:01,840
did

515
00:19:06,470 --> 00:19:03,679
and anything you can talk about in terms

516
00:19:12,549 --> 00:19:06,480
of the process from here to putting the

517
00:19:15,830 --> 00:19:14,390
yeah so this i'll tell you i'll take a

518
00:19:19,270 --> 00:19:15,840
part of that um

519
00:19:22,070 --> 00:19:19,280
i am not familiar uh phillip with any uh

520
00:19:24,470 --> 00:19:22,080
low-level cut-off uh

521
00:19:26,870 --> 00:19:24,480
so he's

522
00:19:29,110 --> 00:19:26,880
we had to plan to do the low-level locks

523
00:19:30,710 --> 00:19:29,120
cut at the end of the test today

524
00:19:33,350 --> 00:19:30,720
and that went according to plan okay

525
00:19:35,270 --> 00:19:33,360
okay yes okay so for you to confirm that

526
00:19:37,190 --> 00:19:35,280
okay yes yes we we did meet that

527
00:19:40,710 --> 00:19:37,200
objective okay now i'm with you phillip

528
00:19:42,470 --> 00:19:40,720
so um and as far as uh finishing up uh

529
00:19:44,710 --> 00:19:42,480
what we have left to do so we'll be re

530
00:19:46,470 --> 00:19:44,720
doing our refurbishments um we'll be

531
00:19:49,510 --> 00:19:46,480
reviewing data and then we'll do our

532
00:19:51,590 --> 00:19:49,520
break of configuration and then we have

533
00:19:54,470 --> 00:19:51,600
about mid april is what we're targeting

534
00:19:57,830 --> 00:19:54,480
right now to do uh shipping our core

535
00:19:59,110 --> 00:19:57,840
state over on the barge to ksc and so by

536
00:20:01,909 --> 00:19:59,120
the end of april we're looking at

537
00:20:03,430 --> 00:20:01,919
arriving at ksc and uh john shannon i'll

538
00:20:05,990 --> 00:20:03,440

throw it over to you if you want to add

539
00:20:08,710 --> 00:20:06,000
anything to that

540
00:20:11,270 --> 00:20:08,720
julie that was a great explanation um

541
00:20:13,510 --> 00:20:11,280
philip from our initial look at all the

542
00:20:15,750 --> 00:20:13,520
data we achieved all of the objectives

543
00:20:18,470 --> 00:20:15,760
even our secondary objectives we did see

544
00:20:20,549 --> 00:20:18,480
a locks low level cut off

545
00:20:21,750 --> 00:20:20,559
in the system behaved exactly as it

546
00:20:23,110 --> 00:20:21,760
should

547
00:20:25,510 --> 00:20:23,120
and um

548
00:20:27,590 --> 00:20:25,520
so we're very excited about the uh the

549
00:20:30,230 --> 00:20:27,600
data that we've gotten it's terabytes

550
00:20:33,110 --> 00:20:30,240
and we'll we'll be working through that

551
00:20:34,630 --> 00:20:33,120
over the next couple of weeks as we do

552
00:20:36,950 --> 00:20:34,640
very detailed

553
00:20:39,590 --> 00:20:36,960
inspections of the hardware

554
00:20:41,750 --> 00:20:39,600
but the initial look is that everything

555
00:20:44,310 --> 00:20:41,760
worked perfectly and

556
00:20:45,909 --> 00:20:44,320
we also can't forget to say that

557
00:20:48,470 --> 00:20:45,919
it wasn't just the vehicle that worked

558
00:20:50,230 --> 00:20:48,480
perfectly today it was the b2 test stand

559
00:20:52,950 --> 00:20:50,240
and the work that the stennis space

560
00:20:55,430 --> 00:20:52,960
center did to pull off an amazing test

561
00:20:57,190 --> 00:20:55,440
like this was unbelievable and all of

562
00:20:59,669 --> 00:20:57,200
their systems just worked exactly like

563
00:21:03,029 --> 00:21:00,950

thank you

564
00:21:05,350 --> 00:21:03,039
our next question is from eric berger of

565
00:21:07,110 --> 00:21:05,360
rs technica

566
00:21:10,230 --> 00:21:07,120
uh congratulations everyone i looked

567
00:21:12,630 --> 00:21:10,240
great today um the the engine fire the

568
00:21:14,230 --> 00:21:12,640
cork insulation fire it seemed like that

569
00:21:16,390 --> 00:21:14,240
was expected

570
00:21:18,310 --> 00:21:16,400
um because of the hot exhaust on in the

571
00:21:19,510 --> 00:21:18,320
test stand and i think some of that was

572
00:21:22,149 --> 00:21:19,520
planned for

573
00:21:23,990 --> 00:21:22,159
can someone maybe john honeycutt or or

574
00:21:26,310 --> 00:21:24,000
john shannon talk about

575
00:21:28,470 --> 00:21:26,320
kind of what we saw there on the screen

576
00:21:30,149 --> 00:21:28,480
and and why that probably wouldn't be an

577
00:21:33,350 --> 00:21:30,159
issue in flight when you're in a

578
00:21:36,070 --> 00:21:33,360
different environment thank you

579
00:21:38,310 --> 00:21:36,080
yeah eric i'll i'll tell you what i know

580
00:21:42,390 --> 00:21:38,320
a little bit about it i'm not a

581
00:21:47,909 --> 00:21:45,029
you know after the first test uh we we

582
00:21:50,149 --> 00:21:47,919
saw some base heating data that that

583
00:21:51,990 --> 00:21:50,159
made us uh

584
00:21:56,070 --> 00:21:52,000
look at the amount of cork insulation

585
00:21:58,390 --> 00:21:56,080
that we had uh on in the boat tail area

586
00:21:59,590 --> 00:21:58,400
of the engine section uh the team went

587
00:22:02,070 --> 00:21:59,600
off and

588
00:22:04,870 --> 00:22:02,080

made a decision number one to go ahead

589
00:22:09,190 --> 00:22:04,880
and remove those uh

590
00:22:11,750 --> 00:22:09,200
those uh rain covers that were on the

591
00:22:13,350 --> 00:22:11,760
the engine blankets and

592
00:22:17,430 --> 00:22:13,360
we saw those

593
00:22:19,909 --> 00:22:17,440
uh burn off in the in the previous test

594
00:22:22,149 --> 00:22:19,919
number two was to add some cork

595
00:22:23,990 --> 00:22:22,159
insulation and some

596
00:22:25,909 --> 00:22:24,000
of the reflective tape

597
00:22:26,870 --> 00:22:25,919
and

598
00:22:29,990 --> 00:22:26,880
we

599
00:22:33,270 --> 00:22:30,000
i would guess

600
00:22:34,630 --> 00:22:33,280
had something on the order of uh

601
00:22:37,190 --> 00:22:34,640
probably

602
00:22:40,230 --> 00:22:37,200
four or five inches of cork in layers

603
00:22:43,190 --> 00:22:40,240
applied with adhesive so what you saw

604
00:22:44,950 --> 00:22:43,200
there was some of the tape burning off

605
00:22:47,270 --> 00:22:44,960
as well as uh

606
00:22:49,750 --> 00:22:47,280
once one of the layers of cork

607
00:22:52,149 --> 00:22:49,760
got ablated then you'd see the we'd see

608
00:22:56,149 --> 00:22:52,159
the adhesive burn

609
00:22:57,110 --> 00:22:56,159
uh we don't expect to see that during

610
00:22:58,230 --> 00:22:57,120
flight

611
00:22:59,590 --> 00:22:58,240
um

612
00:23:01,350 --> 00:22:59,600
just due to the environments are

613
00:23:02,310 --> 00:23:01,360

different and you know you know they

614
00:23:05,590 --> 00:23:02,320
won't

615
00:23:06,830 --> 00:23:05,600
experience

616
00:23:11,830 --> 00:23:06,840
uh that

617
00:23:14,070 --> 00:23:11,840
same rate of radiative heat load

618
00:23:16,390 --> 00:23:14,080
mr shannon or julie if i missed anything

619
00:23:18,230 --> 00:23:16,400
there you guys can chime in

620
00:23:20,230 --> 00:23:18,240
yeah i think you covered it exactly

621
00:23:22,870 --> 00:23:20,240
correctly mr hunnicutt john channon do

622
00:23:25,510 --> 00:23:22,880
you have anything to add i would just

623
00:23:26,870 --> 00:23:25,520
add one thing while it looked uh kind of

624
00:23:28,710 --> 00:23:26,880
interesting

625
00:23:30,789 --> 00:23:28,720
two points one is we have temperature

626
00:23:33,029 --> 00:23:30,799
sensors underneath that cork

627
00:23:34,950 --> 00:23:33,039
and none of those sensors got above 100

628
00:23:36,870 --> 00:23:34,960
degrees so we were in great shape the

629
00:23:39,190 --> 00:23:36,880
cork did its job

630
00:23:40,630 --> 00:23:39,200
and as john said after two minutes of

631
00:23:42,070 --> 00:23:40,640
flight were out of the sensible

632
00:23:44,149 --> 00:23:42,080
atmosphere and you wouldn't have any

633
00:23:46,789 --> 00:23:44,159
burning like that so you guys got it

634
00:23:48,630 --> 00:23:46,799
exactly right

635
00:23:57,269 --> 00:23:48,640
all right thank you our next question is

636
00:24:01,990 --> 00:24:00,230
hi can you hear me yes we can hear you

637
00:24:04,630 --> 00:24:02,000
hi this is stephen clark from space

638
00:24:07,110 --> 00:24:04,640

flight now just wanted to ask uh about

639
00:24:08,390 --> 00:24:07,120
the uh the gimbal profile i know or the

640
00:24:09,750 --> 00:24:08,400
gimbal profile towards the end of the

641
00:24:10,710 --> 00:24:09,760
burn you did

642
00:24:12,470 --> 00:24:10,720
uh

643
00:24:14,710 --> 00:24:12,480
you know sort of

644
00:24:16,630 --> 00:24:14,720
stress the system um

645
00:24:18,230 --> 00:24:16,640
with i think low pressure in the

646
00:24:20,310 --> 00:24:18,240
hydraulic system as the fuel tanks or

647
00:24:22,710 --> 00:24:20,320
propellant tanks were were getting lower

648
00:24:23,990 --> 00:24:22,720
uh how did that perform compared to

649
00:24:25,750 --> 00:24:24,000
expectations

650
00:24:28,070 --> 00:24:25,760
and also have you noticed any damage to

651
00:24:29,350 --> 00:24:28,080
any of the the foam insulation

652
00:24:31,110 --> 00:24:29,360
uh have you had a chance to look at that

653
00:24:34,870 --> 00:24:31,120
to see what might be might have to be

654
00:24:37,510 --> 00:24:34,880
touched up uh after shipment thanks

655
00:24:39,750 --> 00:24:37,520
so yes um the gambling that we did and

656
00:24:42,549 --> 00:24:39,760
all the actually ramp up and down on the

657
00:24:44,870 --> 00:24:42,559
engine engine throttling all matched

658
00:24:46,630 --> 00:24:44,880
exactly what we predicted um so right

659
00:24:48,789 --> 00:24:46,640
now you know that the team will go

660
00:24:51,190 --> 00:24:48,799
through and look at all that data but we

661
00:24:52,789 --> 00:24:51,200
saw nothing anomalous there so it

662
00:24:54,149 --> 00:24:52,799
looked really smooth

663
00:24:55,830 --> 00:24:54,159

um and

664
00:24:57,830 --> 00:24:55,840
from the

665
00:24:59,350 --> 00:24:57,840
the the data that we do have you know

666
00:25:00,789 --> 00:24:59,360
we're going to have to go through that

667
00:25:04,230 --> 00:25:00,799
more thoroughly

668
00:25:07,350 --> 00:25:04,240
but it is looking like we have a very

669
00:25:08,870 --> 00:25:07,360
strong tvc system and and we hit all the

670
00:25:10,390 --> 00:25:08,880
ends of the boundaries you know we were

671
00:25:12,230 --> 00:25:10,400
testing the limits there to make sure

672
00:25:13,990 --> 00:25:12,240
that we could fly through any kind of

673
00:25:15,990 --> 00:25:14,000
environment and since this is a

674
00:25:17,830 --> 00:25:16,000
generational vehicle

675
00:25:20,470 --> 00:25:17,840
it's something we wanted to test for all

676
00:25:23,350 --> 00:25:20,480
future uh core stages and then artemis

677
00:25:26,630 --> 00:25:23,360
missions also and could you repeat the

678
00:25:31,110 --> 00:25:29,669
actually stephen uh he um he's we've

679
00:25:32,710 --> 00:25:31,120
closed his mic so stephen if you have

680
00:25:36,230 --> 00:25:32,720
your second question you can rejoin the

681
00:25:43,750 --> 00:25:38,070
all right our next question is from will

682
00:25:46,149 --> 00:25:43,760
robinson smith from w-a-a-y tv

683
00:25:50,149 --> 00:25:46,159
hey everyone congratulations on the test

684
00:25:51,909 --> 00:25:50,159
today i was curious since the the goal

685
00:25:54,310 --> 00:25:51,919
of course was initially to reach the

686
00:25:56,470 --> 00:25:54,320
four-minute mark with the ideal being

687
00:25:58,070 --> 00:25:56,480
the eight-minute can you talk about

688
00:25:59,590 --> 00:25:58,080

what some of the important data that was

689
00:26:01,669 --> 00:25:59,600
gathered during that four minute

690
00:26:04,630 --> 00:26:01,679
interval beyond the four-minute

691
00:26:06,310 --> 00:26:04,640
threshold thank you

692
00:26:08,390 --> 00:26:06,320
so i'll address that and then i'll turn

693
00:26:10,310 --> 00:26:08,400
it over to john chana too really what we

694
00:26:11,830 --> 00:26:10,320
were looking for to get uh past the four

695
00:26:13,750 --> 00:26:11,840
minute mark was

696
00:26:16,789 --> 00:26:13,760
some of our secondary objectives and

697
00:26:18,549 --> 00:26:16,799
that was the frequency re response test

698
00:26:20,310 --> 00:26:18,559
that was the gambling test that we did

699
00:26:22,149 --> 00:26:20,320
and also looking at when we throttled

700
00:26:23,830 --> 00:26:22,159
the engines

701
00:26:25,430 --> 00:26:23,840
up and down that we could withstand

702
00:26:26,950 --> 00:26:25,440
those different loads

703
00:26:29,110 --> 00:26:26,960
john shannon do you want to add anything

704
00:26:31,990 --> 00:26:29,120
to that one

705
00:26:33,029 --> 00:26:32,000
i'd just say that we collected a lot of

706
00:26:34,789 --> 00:26:33,039
data

707
00:26:36,950 --> 00:26:34,799
today

708
00:26:39,830 --> 00:26:36,960
being able to see the

709
00:26:41,830 --> 00:26:39,840
hydraulic system work with very little

710
00:26:44,070 --> 00:26:41,840
propellant in the

711
00:26:46,470 --> 00:26:44,080
in the tanks with some aggressive

712
00:26:47,590 --> 00:26:46,480
gimbaling was a real stress test for the

713
00:26:49,750 --> 00:26:47,600

vehicle

714
00:26:50,630 --> 00:26:49,760
and it just gives us great confidence

715
00:26:53,830 --> 00:26:50,640
that

716
00:26:56,070 --> 00:26:53,840
the vehicle has designed can handle

717
00:26:57,590 --> 00:26:56,080
exactly what it was designed for the

718
00:26:59,909 --> 00:26:57,600
vehicle really performed like a champ

719
00:27:03,029 --> 00:27:01,029
thank you

720
00:27:04,470 --> 00:27:03,039
our next question is from jake robbins

721
00:27:06,870 --> 00:27:04,480
of we martians and then we'll go to

722
00:27:08,950 --> 00:27:06,880
stephen clark

723
00:27:11,110 --> 00:27:08,960
hey there uh congratulations on your

724
00:27:12,710 --> 00:27:11,120
test today it's really great to see um i

725
00:27:14,870 --> 00:27:12,720
know you're not going to be green

726
00:27:16,789 --> 00:27:14,880
running another sls core stage but i

727
00:27:18,549 --> 00:27:16,799
think you will be doing one for the

728
00:27:20,549 --> 00:27:18,559
exploration upper stage and my question

729
00:27:22,870 --> 00:27:20,559
is are there any lessons that you

730
00:27:26,549 --> 00:27:22,880
learned from this test that you want to

731
00:27:29,590 --> 00:27:27,830
yeah

732
00:27:31,909 --> 00:27:29,600
there's definitely lessons learned there

733
00:27:33,830 --> 00:27:31,919
i think

734
00:27:35,830 --> 00:27:33,840
we've learned how to work together as a

735
00:27:37,909 --> 00:27:35,840
team and and

736
00:27:40,789 --> 00:27:37,919
integrate

737
00:27:43,350 --> 00:27:40,799
the flight hardware into the test stand

738
00:27:45,029 --> 00:27:43,360

the team's much better in much better

739
00:27:48,470 --> 00:27:45,039
shape just to

740
00:27:51,029 --> 00:27:48,480
understanding how the stand operates

741
00:27:52,310 --> 00:27:51,039
we've got some we've got some lessons

742
00:27:54,230 --> 00:27:52,320
that we learned

743
00:27:55,669 --> 00:27:54,240
relative to

744
00:28:00,149 --> 00:27:55,679
the things that we

745
00:28:03,510 --> 00:28:01,110
how we

746
00:28:06,470 --> 00:28:03,520
integrate the eus

747
00:28:08,070 --> 00:28:06,480
into the b1 stand so uh

748
00:28:09,750 --> 00:28:08,080
i think we got an opportunity to take

749
00:28:11,990 --> 00:28:09,760
our lessons learned

750
00:28:14,070 --> 00:28:12,000
and uh

751
00:28:15,909 --> 00:28:14,080
really take advantage of

752
00:28:20,950 --> 00:28:15,919
the next green run test that we do on

753
00:28:24,549 --> 00:28:22,789
all right thank you

754
00:28:29,190 --> 00:28:24,559
and we'll go back to stephen clark of

755
00:28:33,430 --> 00:28:31,510
thanks stephen clark space flight now

756
00:28:35,830 --> 00:28:33,440
just wanted to see if if you've had any

757
00:28:38,389 --> 00:28:35,840
chance to do any sort of inspections of

758
00:28:39,990 --> 00:28:38,399
the uh the foam or any of the insulation

759
00:28:41,269 --> 00:28:40,000
on the outside of the core stage since

760
00:28:42,389 --> 00:28:41,279
the green since the hot fire was

761
00:28:43,750 --> 00:28:42,399
completed

762
00:28:45,190 --> 00:28:43,760
um any

763
00:28:46,630 --> 00:28:45,200

significant

764
00:28:48,870 --> 00:28:46,640
notes there on what may need to be

765
00:28:50,549 --> 00:28:48,880
touched up or repaired before

766
00:28:53,029 --> 00:28:50,559
thanks

767
00:28:56,470 --> 00:28:53,039
yeah so we we did we did notice a couple

768
00:28:58,389 --> 00:28:56,480
of places in the in the inner tank area

769
00:29:00,870 --> 00:28:58,399
which is the structural piece in between

770
00:29:02,389 --> 00:29:00,880
the liquid oxygen tank and the liquid

771
00:29:04,870 --> 00:29:02,399
hydrogen tank

772
00:29:06,310 --> 00:29:04,880
after uh

773
00:29:10,470 --> 00:29:06,320
the

774
00:29:12,070 --> 00:29:10,480
fire that we did

775
00:29:13,990 --> 00:29:12,080
we went and did some we went and did

776
00:29:18,389 --> 00:29:14,000
some uh

777
00:29:20,149 --> 00:29:18,399
some poor type repairs to that tps and

778
00:29:22,789 --> 00:29:20,159
we'll have to we'll have to do some more

779
00:29:26,630 --> 00:29:22,799
work to dress those up uh

780
00:29:30,310 --> 00:29:26,640
either prior to shipping to ksc

781
00:29:32,470 --> 00:29:30,320
or once it gets to ksc there uh i will

782
00:29:35,750 --> 00:29:32,480
say this just overall

783
00:29:38,470 --> 00:29:35,760
i'm super excited how well the the

784
00:29:40,710 --> 00:29:38,480
tps team performed

785
00:29:41,909 --> 00:29:40,720
over the last several years they we went

786
00:29:43,830 --> 00:29:41,919
through a new

787
00:29:46,470 --> 00:29:43,840
a development process

788
00:29:48,870 --> 00:29:46,480

um with new materials

789
00:29:51,350 --> 00:29:48,880
and they just did an outstanding job and

790
00:29:55,110 --> 00:29:51,360
and the performance of the

791
00:29:57,029 --> 00:29:55,120
the tps has just been outstanding but

792
00:29:58,549 --> 00:29:57,039
none of us expected that we would be in

793
00:30:02,230 --> 00:29:58,559
this good shape

794
00:30:05,269 --> 00:30:03,909
i'm really happy

795
00:30:06,630 --> 00:30:05,279
all right thank you

796
00:30:08,549 --> 00:30:06,640
those are actually all the questions

797
00:30:09,590 --> 00:30:08,559
that we have so we'll conclude the q a

798
00:30:11,510 --> 00:30:09,600
portion

799
00:30:13,269 --> 00:30:11,520
space launch system is the only rocket

800
00:30:15,190 --> 00:30:13,279
that can send the orion spacecraft

801
00:30:17,110 --> 00:30:15,200
astronauts and supplies safely beyond

802
00:30:18,789 --> 00:30:17,120
the moon in one launch the next time

803
00:30:20,950 --> 00:30:18,799
these engines fire up we'll be on the

804
00:30:23,350 --> 00:30:20,960
launch pad to send an uncrewed orion

805
00:30:25,350 --> 00:30:23,360
spacecraft around the moon on a flight

806
00:30:27,430 --> 00:30:25,360
test for the artemis one mission to

807
00:30:29,750 --> 00:30:27,440
learn more about nasa's artemis program

808
00:31:15,800 --> 00:30:29,760
follow our progress at nasa.gov