

**LIVE**



**Launch  
Day  
LIVE!**



**8:30 a.m. CDT, April 23**



- 1  
00:03:50,730 --> 00:00:38,820  
[Music]
- 2  
00:03:53,150 --> 00:03:52,400  
[Applause]
- 3  
00:04:02,270 --> 00:03:53,160  
[Music]
- 4  
00:04:09,890 --> 00:04:02,280  
[Applause]
- 5  
00:04:56,030 --> 00:04:09,900  
[Music]
- 6  
00:04:58,890 --> 00:04:56,040  
[Applause]
- 7  
00:04:59,540 --> 00:04:58,900  
[Music]
- 8  
00:05:12,330 --> 00:04:59,550  
[Applause]
- 9  
00:05:14,910 --> 00:05:12,340  
[Music]
- 10  
00:05:30,510 --> 00:05:14,920  
[Applause]
- 11  
00:05:30,520 --> 00:05:34,410  
[Music]
- 12  
00:05:34,420 --> 00:05:38,190  
[Applause]
- 13  
00:06:13,749 --> 00:05:42,070

[Music]

14

00:06:13,759 --> 00:06:22,820

so

15

00:06:22,830 --> 00:06:27,350

[Music]

16

00:06:27,360 --> 00:06:39,710

so

17

00:06:51,190 --> 00:06:42,590

[Music]

18

00:07:02,520 --> 00:06:54,990

[Applause]

19

00:08:35,029 --> 00:07:18,030

[Music]

20

00:08:46,020 --> 00:08:37,140

to

21

00:13:40,230 --> 00:09:08,650

[Music]

22

00:13:44,470 --> 00:13:42,310

good morning everyone it is a beautiful

23

00:13:46,389 --> 00:13:44,480

day here at brag farms in tony alabama

24

00:13:47,990 --> 00:13:46,399

we are just a few miles away from nasa's

25

00:13:49,910 --> 00:13:48,000

marshall space flight center in just a

26

00:13:53,030 --> 00:13:49,920

few minutes away from the start of the

27

00:13:55,269 --> 00:13:53,040

finale of nasa's 2022 student launch

28

00:13:57,189 --> 00:13:55,279

finale my name is will bryan with nasa's

29

00:13:58,949 --> 00:13:57,199

office of communication and alongside me

30

00:14:00,949 --> 00:13:58,959

is kay anderson with northrop grillman

31

00:14:02,550 --> 00:14:00,959

now kate it's been three years since we

32

00:14:04,470 --> 00:14:02,560

stood in this field watching student

33

00:14:06,069 --> 00:14:04,480

rockets take off what's going through

34

00:14:07,829 --> 00:14:06,079

your mind as we're getting ready for

35

00:14:09,430 --> 00:14:07,839

today's events well you know it's just

36

00:14:11,030 --> 00:14:09,440

so great to be here in person and the

37

00:14:12,150 --> 00:14:11,040

students are so excited too we walked

38

00:14:13,990 --> 00:14:12,160

around and talked to a bunch of them

39  
00:14:15,430 --> 00:14:14,000  
yesterday and they've worked nine months

40  
00:14:16,710 --> 00:14:15,440  
on this project and they're happy to be

41  
00:14:19,750 --> 00:14:16,720  
here face-to-face launching their

42  
00:14:21,269 --> 00:14:19,760  
rockets absolutely this is a long hard

43  
00:14:22,629 --> 00:14:21,279  
process that these teams go through

44  
00:14:24,790 --> 00:14:22,639  
we're going to get into all of that

45  
00:14:26,629 --> 00:14:24,800  
including how high these rockets fly

46  
00:14:28,629 --> 00:14:26,639  
throughout today's broadcast and if you

47  
00:14:30,230 --> 00:14:28,639  
have any questions for us make sure to

48  
00:14:31,990 --> 00:14:30,240  
tweet us and use the hashtag

49  
00:14:34,230 --> 00:14:32,000  
studentlaunch we'll try to get to them

50  
00:14:35,750 --> 00:14:34,240  
on social media and on today's broadcast

51  
00:14:37,269 --> 00:14:35,760  
but before we get to the rest of today's

52  
00:14:39,430 --> 00:14:37,279  
coverage we're going to show you a short

53  
00:14:45,110 --> 00:14:39,440  
video about student launch and head over

54  
00:14:55,830 --> 00:14:46,780  
one

55  
00:14:55,840 --> 00:14:59,350  
[Music]

56  
00:15:03,430 --> 00:15:01,110  
welcome to nasa's student launch

57  
00:15:06,230 --> 00:15:03,440  
competition one of nasa's artemis

58  
00:15:08,550 --> 00:15:06,240  
student challenges for our student teams

59  
00:15:10,389 --> 00:15:08,560  
it actually is rocket science

60  
00:15:12,389 --> 00:15:10,399  
nasa student launch is an annual

61  
00:15:14,629 --> 00:15:12,399  
engineering competition designed to

62  
00:15:16,470 --> 00:15:14,639  
introduce students to the exciting world

63  
00:15:18,230 --> 00:15:16,480

of high-powered rocketry

64

00:15:20,629 --> 00:15:18,240

student launch engages students from

65

00:15:23,189 --> 00:15:20,639

middle schools to universities in a

66

00:15:25,350 --> 00:15:23,199

nine-month engineering design life cycle

67

00:15:27,189 --> 00:15:25,360

program mirroring the activities of a

68

00:15:30,310 --> 00:15:27,199

space flight program

69

00:15:32,150 --> 00:15:30,320

teams design build test and launch

70

00:15:33,269 --> 00:15:32,160

high-powered rockets and scientific

71

00:15:35,110 --> 00:15:33,279

payloads

72

00:15:38,870 --> 00:15:35,120

teams are divided into two primary

73

00:15:41,749 --> 00:15:38,880

divisions college university or usli

74

00:15:44,310 --> 00:15:41,759

and middle school high school or sli

75

00:15:46,310 --> 00:15:44,320

each year usli teams are tasked with

76  
00:15:47,350 --> 00:15:46,320  
completing a unique payload or mission

77  
00:15:49,350 --> 00:15:47,360  
objective

78  
00:15:51,189 --> 00:15:49,360  
sli teams are permitted to develop a

79  
00:15:52,389 --> 00:15:51,199  
science experiment or engineering

80  
00:15:54,949 --> 00:15:52,399  
payload appropriate to their

81  
00:15:57,110 --> 00:15:54,959  
capabilities and curriculum

82  
00:15:58,870 --> 00:15:57,120  
how high do rockets go for our

83  
00:16:02,230 --> 00:15:58,880  
competition they'll reach altitudes

84  
00:16:04,230 --> 00:16:02,240  
between 3 500 and 6 000 feet instead of

85  
00:16:06,470 --> 00:16:04,240  
trying to fly the highest teams try to

86  
00:16:08,150 --> 00:16:06,480  
fly the closest to their target altitude

87  
00:16:10,710 --> 00:16:08,160  
which they submit during the preliminary

88  
00:16:12,949 --> 00:16:10,720

design review a full six months before

89

00:16:15,030 --> 00:16:12,959

their competition launch a rigorous and

90

00:16:17,269 --> 00:16:15,040

competitive proposal selection process

91

00:16:19,110 --> 00:16:17,279

kicks off this artemis student challenge

92

00:16:21,509 --> 00:16:19,120

once selected competing teams must

93

00:16:23,269 --> 00:16:21,519

complete a series of milestone reviews

94

00:16:24,389 --> 00:16:23,279

mirroring the nasa engineering design

95

00:16:26,069 --> 00:16:24,399

lifecycle

96

00:16:27,990 --> 00:16:26,079

each review involves preparing a

97

00:16:30,150 --> 00:16:28,000

technical report detailing launch

98

00:16:32,790 --> 00:16:30,160

vehicle and payload design technical

99

00:16:35,829 --> 00:16:32,800

drawings simulation data safety and

100

00:16:38,710 --> 00:16:35,839

hazards analysis test data timeline and

101  
00:16:40,949 --> 00:16:38,720  
budget estimations and stem engagement

102  
00:16:43,030 --> 00:16:40,959  
teams present each milestone via video

103  
00:16:46,310 --> 00:16:43,040  
teleconference to a review panel

104  
00:16:48,389 --> 00:16:46,320  
comprised of nasa subject matter experts

105  
00:16:50,230 --> 00:16:48,399  
to finish out the season in april teams

106  
00:16:52,949 --> 00:16:50,240  
compete in a final competition launch

107  
00:16:55,350 --> 00:16:52,959  
event hosted in rocket city huntsville

108  
00:16:59,189 --> 00:16:55,360  
alabama home of nasa's marshall space

109  
00:17:01,670 --> 00:16:59,199  
flight center for the 2021 and 2022

110  
00:17:03,590 --> 00:17:01,680  
competition seasons teams unable to

111  
00:17:04,949 --> 00:17:03,600  
gather or travel effectively are

112  
00:17:05,990 --> 00:17:04,959  
permitted to join the new design

113  
00:17:10,069 --> 00:17:06,000

division

114

00:17:11,990 --> 00:17:10,079

and technical excellence of the artemis

115

00:17:13,829 --> 00:17:12,000

student challenge programs without

116

00:17:14,710 --> 00:17:13,839

requiring a rocket to be constructed or

117

00:17:16,150 --> 00:17:14,720

flown

118

00:17:18,309 --> 00:17:16,160

if you would like to learn more about

119

00:17:20,789 --> 00:17:18,319

nasa student launch or other nasa

120

00:17:24,949 --> 00:17:20,799

artemis student challenges visit us at

121

00:17:27,909 --> 00:17:26,270

visit

122

00:17:30,070 --> 00:17:27,919

stem.nasa.gov

123

00:17:31,750 --> 00:17:30,080

artemis and see how you can join one of

124

00:17:34,400 --> 00:17:31,760

nasa's mission related student

125

00:17:34,410 --> 00:17:40,070

[Music]

126

00:17:44,549 --> 00:17:42,870

good morning

127

00:17:50,310 --> 00:17:44,559

welcome to nasa's student launch

128

00:17:53,750 --> 00:17:52,150

my name is christopher blair with nasa's

129

00:17:55,590 --> 00:17:53,760

marshall space flight center and it's my

130

00:17:57,909 --> 00:17:55,600

pleasure to join you this morning to

131

00:18:00,630 --> 00:17:57,919

officially begin our opening ceremony

132

00:18:02,150 --> 00:18:00,640

please rise remove your hats

133

00:18:04,549 --> 00:18:02,160

direct your attention to the american

134

00:18:06,950 --> 00:18:04,559

flag on the silo

135

00:18:09,990 --> 00:18:06,960

for the singing of our national anthem

136

00:18:12,070 --> 00:18:10,000

by mason lee a senior at providence

137

00:18:22,230 --> 00:18:12,080

classical school right here in

138

00:18:24,150 --> 00:18:23,190

oh

139

00:18:27,590 --> 00:18:24,160

say

140

00:18:32,230 --> 00:18:27,600

can you see

141

00:18:33,390 --> 00:18:32,240

by the dawn's earthly light

142

00:18:35,190 --> 00:18:33,400

what so

143

00:18:36,710 --> 00:18:35,200

proudly we

144

00:18:38,870 --> 00:18:36,720

hailed

145

00:18:41,590 --> 00:18:38,880

at the twilight's

146

00:18:45,909 --> 00:18:41,600

last gleaming

147

00:18:47,710 --> 00:18:45,919

whose broad stripes and bright stars

148

00:18:50,150 --> 00:18:47,720

through the

149

00:18:51,230 --> 00:18:50,160

perilous fly

150

00:18:55,789 --> 00:18:51,240

or the

151  
00:18:59,350 --> 00:18:55,799  
ramparts we watched were so

152  
00:19:03,750 --> 00:18:59,360  
gallantly screaming

153  
00:19:05,070 --> 00:19:03,760  
and the rockets red glare

154  
00:19:10,470 --> 00:19:05,080  
the bombs

155  
00:19:13,110 --> 00:19:10,480  
bursting in air gave proof

156  
00:19:17,430 --> 00:19:13,120  
through the night

157  
00:19:24,710 --> 00:19:17,440  
that our flag was still there

158  
00:19:24,720 --> 00:19:29,510  
yet wave

159  
00:19:37,190 --> 00:19:31,310  
or the

160  
00:19:40,150 --> 00:19:38,590  
and the

161  
00:19:42,710 --> 00:19:40,160  
home

162  
00:19:53,669 --> 00:19:42,720  
of the

163  
00:19:59,029 --> 00:19:57,190

thank you mr mason lee

164

00:20:01,190 --> 00:19:59,039

our first distinguished speaker is a

165

00:20:03,750 --> 00:20:01,200

true education advocate he is the

166

00:20:05,990 --> 00:20:03,760

associate administrator of nasa's office

167

00:20:12,789 --> 00:20:06,000

of stem engagement please welcome with a

168

00:20:17,110 --> 00:20:14,310

thanks chris

169

00:20:18,870 --> 00:20:17,120

it is so great to be here

170

00:20:20,870 --> 00:20:18,880

you know at nasa one of our missions is

171

00:20:23,110 --> 00:20:20,880

to involve students and what is it that

172

00:20:25,029 --> 00:20:23,120

we're doing and you're here

173

00:20:26,950 --> 00:20:25,039

just pause for a second

174

00:20:29,909 --> 00:20:26,960

and just realize

175

00:20:31,590 --> 00:20:29,919

you're you're finally here

176  
00:20:33,110 --> 00:20:31,600  
think about how much work it took to get

177  
00:20:35,510 --> 00:20:33,120  
to this place

178  
00:20:37,430 --> 00:20:35,520  
the proposals you wrote the time you

179  
00:20:39,190 --> 00:20:37,440  
spent in a lab the things you were

180  
00:20:41,669 --> 00:20:39,200  
working through

181  
00:20:43,750 --> 00:20:41,679  
it got you to this place

182  
00:20:45,669 --> 00:20:43,760  
and if you're like me sometimes i have a

183  
00:20:47,110 --> 00:20:45,679  
hard time just pausing

184  
00:20:48,630 --> 00:20:47,120  
and soaking in

185  
00:20:50,230 --> 00:20:48,640  
the accomplishment and where i am in the

186  
00:20:51,430 --> 00:20:50,240  
moment

187  
00:20:53,190 --> 00:20:51,440  
perhaps you're like me where you're

188  
00:20:55,350 --> 00:20:53,200

thinking about well what's the next

189

00:20:57,669 --> 00:20:55,360

thing i got to do is my rocket ready is

190

00:20:59,270 --> 00:20:57,679

it going to work

191

00:21:00,710 --> 00:20:59,280

all those things go but i would just ask

192

00:21:03,430 --> 00:21:00,720

you just to pause for a second and say

193

00:21:05,110 --> 00:21:03,440

you know what this is where i'm at

194

00:21:06,710 --> 00:21:05,120

you're you might think

195

00:21:08,390 --> 00:21:06,720

that you're sitting here on a farm and

196

00:21:10,470 --> 00:21:08,400

thank you to the grag farm for hosting

197

00:21:12,230 --> 00:21:10,480

us but you're really not

198

00:21:14,390 --> 00:21:12,240

you're really part of nasa you're at a

199

00:21:15,590 --> 00:21:14,400

nasa event

200

00:21:17,510 --> 00:21:15,600

your friends and family that are

201  
00:21:19,750 --> 00:21:17,520  
watching us back home they're watching

202  
00:21:21,750 --> 00:21:19,760  
you at a nasa event

203  
00:21:23,909 --> 00:21:21,760  
and i hope you realize just how cool

204  
00:21:26,549 --> 00:21:23,919  
that is how most of the country would

205  
00:21:27,669 --> 00:21:26,559  
love to be here and be with you today

206  
00:21:29,430 --> 00:21:27,679  
so i'm going to ask you i'm going to

207  
00:21:31,110 --> 00:21:29,440  
give you three ways

208  
00:21:33,029 --> 00:21:31,120  
that you can pay it forward for this

209  
00:21:34,950 --> 00:21:33,039  
experience you've had

210  
00:21:37,029 --> 00:21:34,960  
first one it's going to get harder

211  
00:21:39,029 --> 00:21:37,039  
the first one is pretty easy most of you

212  
00:21:41,190 --> 00:21:39,039  
are probably doing it already

213  
00:21:43,029 --> 00:21:41,200

and that's find your favorite social

214

00:21:45,590 --> 00:21:43,039

media app

215

00:21:46,789 --> 00:21:45,600

take some pictures of your rockets

216

00:21:48,549 --> 00:21:46,799

and pay it forward to the next

217

00:21:50,070 --> 00:21:48,559

generation

218

00:21:52,549 --> 00:21:50,080

because you know when people hear from

219

00:21:55,669 --> 00:21:52,559

you about what you're doing it means so

220

00:21:57,190 --> 00:21:55,679

much more than if they heard it from us

221

00:21:59,510 --> 00:21:57,200

so i hope you'll be part of that that's

222

00:22:00,710 --> 00:21:59,520

easy the second one's a little harder if

223

00:22:02,870 --> 00:22:00,720

you're if you're here with one of the

224

00:22:04,149 --> 00:22:02,880

university teams i'm going to count down

225

00:22:05,430 --> 00:22:04,159

and i want to hear you as loud as

226

00:22:12,070 --> 00:22:05,440

possible if you're one of our university

227

00:22:15,750 --> 00:22:14,149

pretty impressive all right now we also

228

00:22:17,430 --> 00:22:15,760

have high school and middle school teams

229

00:22:19,029 --> 00:22:17,440

i'm going to do the same thing i want to

230

00:22:20,950 --> 00:22:19,039

hear really loudly from all those high

231

00:22:22,710 --> 00:22:20,960

school middle school all the parents

232

00:22:25,430 --> 00:22:22,720

sponsors that are with you count down i

233

00:22:28,789 --> 00:22:25,440

want to hear from you as well three two

234

00:22:33,669 --> 00:22:30,950

i gotta say there's fewer of you but you

235

00:22:34,870 --> 00:22:33,679

showed up loudly there

236

00:22:36,789 --> 00:22:34,880

here's what i'm gonna ask you if you're

237

00:22:38,470 --> 00:22:36,799

on a university team it's easy to come

238

00:22:40,149 --> 00:22:38,480

in and you're focused

239

00:22:41,830 --> 00:22:40,159

you've got this rocket you were worried

240

00:22:42,950 --> 00:22:41,840

about it you drove from wherever it is

241

00:22:45,190 --> 00:22:42,960

to get here

242

00:22:47,590 --> 00:22:45,200

i want you to pay it forward i want you

243

00:22:48,950 --> 00:22:47,600

to walk around the the areas and find a

244

00:22:51,029 --> 00:22:48,960

high school or middle school team and go

245

00:22:52,630 --> 00:22:51,039

up and and talk to them

246

00:22:53,669 --> 00:22:52,640

i'll tell you my 13 year old daughter is

247

00:22:54,870 --> 00:22:53,679

here with me

248

00:22:57,270 --> 00:22:54,880

i asked her last night we're talking to

249

00:22:59,510 --> 00:22:57,280

my wife kevin mike thank you so much for

250

00:23:01,830 --> 00:22:59,520

having us thank you so much for hosting

251  
00:23:03,990 --> 00:23:01,840  
this event this is such a cool

252  
00:23:05,350 --> 00:23:04,000  
activity that we get to participate in

253  
00:23:08,390 --> 00:23:05,360  
each year

254  
00:23:09,750 --> 00:23:08,400  
the national space club is a non-profit

255  
00:23:11,510 --> 00:23:09,760  
organization

256  
00:23:13,430 --> 00:23:11,520  
that seeks to advance

257  
00:23:15,110 --> 00:23:13,440  
excellence in space

258  
00:23:17,590 --> 00:23:15,120  
we're very much involved with stem

259  
00:23:20,149 --> 00:23:17,600  
engagement and recognition of excellence

260  
00:23:22,870 --> 00:23:20,159  
in our community the national space club

261  
00:23:25,750 --> 00:23:22,880  
in the last 15 years has given over a

262  
00:23:29,430 --> 00:23:25,760  
million dollars to stem engagement which

263  
00:23:31,110 --> 00:23:29,440

has impacted over 68 000 students you

264

00:23:34,390 --> 00:23:31,120

are part of those students and we're

265

00:23:36,630 --> 00:23:34,400

certainly happy to be a part

266

00:23:38,549 --> 00:23:36,640

you guys have been on quite a journey we

267

00:23:41,110 --> 00:23:38,559

got to hear from some of the students

268

00:23:43,830 --> 00:23:41,120

earlier this week in a presentation and

269

00:23:46,470 --> 00:23:43,840

of course they um like yourselves had

270

00:23:49,029 --> 00:23:46,480

been through a preliminary design review

271

00:23:52,630 --> 00:23:49,039

critical design review flight readiness

272

00:23:55,590 --> 00:23:52,640

review months of work collaboration

273

00:23:57,990 --> 00:23:55,600

teamwork the kinds of things that are so

274

00:24:00,950 --> 00:23:58,000

good for you to be exposed to

275

00:24:02,149 --> 00:24:00,960

and yet here you are on culminating all

276

00:24:03,510 --> 00:24:02,159

those events

277

00:24:06,149 --> 00:24:03,520

now the students that we talked to

278

00:24:07,590 --> 00:24:06,159

showed us a picture of a rocket hanging

279

00:24:09,190 --> 00:24:07,600

from a tree

280

00:24:11,110 --> 00:24:09,200

now i know that hasn't happened to

281

00:24:13,990 --> 00:24:11,120

anyone else here but

282

00:24:15,669 --> 00:24:14,000

it's funny things happen that we do not

283

00:24:18,149 --> 00:24:15,679

anticipate

284

00:24:21,110 --> 00:24:18,159

as larry said we often have that

285

00:24:23,590 --> 00:24:21,120

sometimes in our workplace as well and

286

00:24:26,710 --> 00:24:23,600

yet some would call that a failure

287

00:24:28,950 --> 00:24:26,720

we call that a learning experience

288

00:24:31,990 --> 00:24:28,960

and we just appreciate your willingness

289

00:24:35,110 --> 00:24:32,000

to participate and to be involved

290

00:24:37,510 --> 00:24:35,120

this week is really an exciting week in

291

00:24:40,470 --> 00:24:37,520

north alabama and in huntsville

292

00:24:42,630 --> 00:24:40,480

the process of exploration is sort of

293

00:24:45,110 --> 00:24:42,640

like a relay race that's why i've

294

00:24:47,830 --> 00:24:45,120

brought two grandsons with me today

295

00:24:50,710 --> 00:24:47,840

because earlier this week we had the

296

00:24:53,430 --> 00:24:50,720

proud opportunity to get to speak with

297

00:24:54,950 --> 00:24:53,440

mr charlie duke as he was here in our

298

00:24:58,470 --> 00:24:54,960

community

299

00:25:00,630 --> 00:24:58,480

celebrating 50 years since the apollo 16

300

00:25:03,510 --> 00:25:00,640

went to the moon and he was able to

301  
00:25:05,510 --> 00:25:03,520  
pilot a rover on the surface of the moon

302  
00:25:08,310 --> 00:25:05,520  
the youngest man to ever

303  
00:25:11,110 --> 00:25:08,320  
set foot on the moon and yet the artemis

304  
00:25:12,950 --> 00:25:11,120  
program is soon to change that we're the

305  
00:25:16,470 --> 00:25:12,960  
first person of color

306  
00:25:18,950 --> 00:25:16,480  
um the the first female to set foot on

307  
00:25:22,070 --> 00:25:18,960  
the moon here later in the decade we're

308  
00:25:25,110 --> 00:25:22,080  
just anxious to to to join and partner

309  
00:25:28,630 --> 00:25:25,120  
and partner with nasa as we begin a

310  
00:25:31,430 --> 00:25:28,640  
sustained presence beyond low earth

311  
00:25:34,070 --> 00:25:31,440  
orbit and you will make that happen

312  
00:25:36,789 --> 00:25:34,080  
i talk about generations it's charlie's

313  
00:25:39,430 --> 00:25:36,799

generation that came before us i watched

314

00:25:42,310 --> 00:25:39,440

charlie in middle school and was just

315

00:25:44,390 --> 00:25:42,320

amazed at the notion of going to space

316

00:25:46,710 --> 00:25:44,400

studied mechanical engineering and have

317

00:25:48,390 --> 00:25:46,720

had a really cool career

318

00:25:51,269 --> 00:25:48,400

it's been wonderful to be a part of the

319

00:25:53,830 --> 00:25:51,279

team that helped develop the shuttle the

320

00:25:56,390 --> 00:25:53,840

international space station

321

00:25:58,789 --> 00:25:56,400

the sls rocket and of course for us at

322

00:26:01,990 --> 00:25:58,799

lockheed martin the orion crew module

323

00:26:04,950 --> 00:26:02,000

that sits on top of that sls this very

324

00:26:06,390 --> 00:26:04,960

day preparing for a mission here later

325

00:26:09,510 --> 00:26:06,400

in the summer

326

00:26:11,830 --> 00:26:09,520

you represent the generation behind us

327

00:26:14,149 --> 00:26:11,840

that third generation that's learning

328

00:26:16,549 --> 00:26:14,159

quite a bit from us and of course from

329

00:26:19,190 --> 00:26:16,559

each other and of course i look to my

330

00:26:20,870 --> 00:26:19,200

left i look to my right and i hope you

331

00:26:23,909 --> 00:26:20,880

will look around today because you'll

332

00:26:26,470 --> 00:26:23,919

see lots of children young people that

333

00:26:28,630 --> 00:26:26,480

are saying man it is so cool what you're

334

00:26:30,870 --> 00:26:28,640

doing and can you tell me a little bit

335

00:26:32,230 --> 00:26:30,880

about your rocket my encouragement for

336

00:26:33,750 --> 00:26:32,240

you today

337

00:26:36,950 --> 00:26:33,760

take it all in

338

00:26:39,029 --> 00:26:36,960

look around enjoy the time it goes

339

00:26:40,870 --> 00:26:39,039

faster than you might think

340

00:26:43,750 --> 00:26:40,880

speak to some of these youngsters that

341

00:26:45,029 --> 00:26:43,760

are here just absolutely amazed at what

342

00:26:47,430 --> 00:26:45,039

you have done

343

00:26:49,510 --> 00:26:47,440

congratulations on that we pray

344

00:26:52,390 --> 00:26:49,520

blessings for a super day

345

00:27:01,350 --> 00:26:52,400

and ladies and gentlemen prepare to

346

00:27:05,350 --> 00:27:03,750

thank you mr abel your club's work

347

00:27:07,190 --> 00:27:05,360

lifts us all up

348

00:27:09,750 --> 00:27:07,200

let me please take a moment to thank all

349

00:27:11,430 --> 00:27:09,760

our sponsors nasa's space operation

350

00:27:13,190 --> 00:27:11,440

mission directorate the american

351  
00:27:14,710 --> 00:27:13,200  
institute of aeronautics and

352  
00:27:17,350 --> 00:27:14,720  
astronautics

353  
00:27:19,350 --> 00:27:17,360  
the national association of rocketry

354  
00:27:21,269 --> 00:27:19,360  
relativity space

355  
00:27:23,669 --> 00:27:21,279  
bastion technology inc

356  
00:27:25,029 --> 00:27:23,679  
and siemens digital industry software

357  
00:27:31,190 --> 00:27:25,039  
please give a round of applause for all

358  
00:27:35,830 --> 00:27:33,750  
our final speaker has supported student

359  
00:27:38,470 --> 00:27:35,840  
launch for more than a decade and is

360  
00:27:40,789 --> 00:27:38,480  
here to provide our necessary and

361  
00:27:42,870 --> 00:27:40,799  
ultimately important critical safety

362  
00:27:45,350 --> 00:27:42,880  
briefing please give your undivided

363  
00:27:46,549 --> 00:27:45,360

undivided attention to our good friend

364

00:27:55,510 --> 00:27:46,559

with the national association of

365

00:28:00,789 --> 00:27:57,830

so as i sat with you through your many

366

00:28:02,549 --> 00:28:00,799

reviews i think you'd be you know

367

00:28:03,750 --> 00:28:02,559

shocked if i didn't come with my own

368

00:28:05,590 --> 00:28:03,760

checklist

369

00:28:06,950 --> 00:28:05,600

i mean i to make sure that i hit all the

370

00:28:08,950 --> 00:28:06,960

high points

371

00:28:11,669 --> 00:28:08,960

i think you all know about the hazards

372

00:28:12,710 --> 00:28:11,679

but i want to point them out again

373

00:28:14,630 --> 00:28:12,720

the up

374

00:28:17,990 --> 00:28:14,640

the launch the boost phase the coast

375

00:28:20,549 --> 00:28:18,000

phase up to apogee is generally you know

376

00:28:23,430 --> 00:28:20,559

pretty reliable it's the it's the lowest

377

00:28:24,950 --> 00:28:23,440

failure mode of the flight

378

00:28:27,029 --> 00:28:24,960

once the recovery system starts to

379

00:28:30,070 --> 00:28:27,039

deploy

380

00:28:32,310 --> 00:28:30,080

we're at the at the mercy of the winds

381

00:28:33,669 --> 00:28:32,320

so in order to go and mitigate those

382

00:28:36,070 --> 00:28:33,679

hazards we have taken certain

383

00:28:37,350 --> 00:28:36,080

precautions there will be people out in

384

00:28:42,470 --> 00:28:37,360

the

385

00:28:45,269 --> 00:28:42,480

spectator area

386

00:28:46,549 --> 00:28:45,279

with air horns if you hear two short

387

00:28:48,950 --> 00:28:46,559

blasts

388

00:28:51,350 --> 00:28:48,960

that means that there is a hazard uh

389

00:28:52,950 --> 00:28:51,360

detected it's not saying it's imminent

390

00:28:54,789 --> 00:28:52,960

it's just saying that something isn't

391

00:28:57,510 --> 00:28:54,799

quite going right or

392

00:29:00,389 --> 00:28:57,520

it's not going as we would like

393

00:29:04,789 --> 00:29:00,399

so when you hear the two short blasts

394

00:29:06,950 --> 00:29:04,799

you know look around listen to the lco

395

00:29:09,269 --> 00:29:06,960

audio they will give you some

396

00:29:12,870 --> 00:29:09,279

instructions as to where to look have

397

00:29:15,430 --> 00:29:12,880

someone in your group go and locate that

398

00:29:16,549 --> 00:29:15,440

and point at it so others can see where

399

00:29:19,350 --> 00:29:16,559

it is

400

00:29:22,630 --> 00:29:19,360

if things degrade further

401

00:29:24,870 --> 00:29:22,640

you will hear a long loud blast

402

00:29:27,190 --> 00:29:24,880

and that is where you get to all the

403

00:29:29,590 --> 00:29:27,200

people around you make sure that they

404

00:29:32,549 --> 00:29:29,600

identify what the hazard is and take the

405

00:29:35,350 --> 00:29:32,559

necessary precautions because we've had

406

00:29:37,510 --> 00:29:35,360

60 years of safe rocketry in this

407

00:29:39,430 --> 00:29:37,520

country we don't want it to end anytime

408

00:29:42,470 --> 00:29:39,440

soon or anytime in the future

409

00:29:48,149 --> 00:29:45,430

attention to safety is really really

410

00:29:50,710 --> 00:29:48,159

important at today's launch

411

00:29:59,110 --> 00:29:51,669

with that

412

00:30:02,549 --> 00:30:00,470

thank you john

413

00:30:04,950 --> 00:30:02,559

what a wonderful time to be involved in

414

00:30:06,870 --> 00:30:04,960

stem education on behalf of nasa and

415

00:30:08,389 --> 00:30:06,880

everyone here today we wish the best of

416

00:30:10,549 --> 00:30:08,399

luck to all teams

417

00:30:12,870 --> 00:30:10,559

this concludes our opening ceremony we

418

00:30:15,830 --> 00:30:12,880

will now move to the next event on the

419

00:30:18,789 --> 00:30:15,840

days agenda our first rocket launch of

420

00:30:21,110 --> 00:30:18,799

the day occurring in just a few moments

421

00:30:26,870 --> 00:30:21,120

grab your binoculars a good viewing spot

422

00:30:30,470 --> 00:30:28,710

thanks chris we certainly appreciate all

423

00:30:32,310 --> 00:30:30,480

the kind and inspiring words from our

424

00:30:34,310 --> 00:30:32,320

nasa leadership and our industry

425

00:30:36,070 --> 00:30:34,320

partners okay without them we couldn't

426  
00:30:37,909 --> 00:30:36,080  
have this competition and be out here

427  
00:30:39,190 --> 00:30:37,919  
today no you're right and we really

428  
00:30:40,870 --> 00:30:39,200  
appreciate being a sponsor it's our

429  
00:30:42,470 --> 00:30:40,880  
favorite event every year and that's why

430  
00:30:44,230 --> 00:30:42,480  
it's so great to be back here in person

431  
00:30:45,990 --> 00:30:44,240  
this time yeah absolutely now we're

432  
00:30:48,389 --> 00:30:46,000  
about to really wrap up our opening

433  
00:30:50,389 --> 00:30:48,399  
ceremonies with a cool event madison

434  
00:30:52,710 --> 00:30:50,399  
west high school one of our high school

435  
00:30:53,669 --> 00:30:52,720  
division teams is going to launch their

436  
00:30:56,070 --> 00:30:53,679  
rocket

437  
00:30:57,830 --> 00:30:56,080  
to wrap up our opening ceremonies now

438  
00:30:59,509 --> 00:30:57,840

they've got a really cool payload on

439

00:31:02,310 --> 00:30:59,519

board high school teams can pick a

440

00:31:05,430 --> 00:31:02,320

payload of any of their curiosity

441

00:31:07,350 --> 00:31:05,440

this particular team picked yeast and

442

00:31:10,549 --> 00:31:07,360

sourdough to understand how the yeast

443

00:31:12,310 --> 00:31:10,559

and bacteria behave after they go

444

00:31:13,750 --> 00:31:12,320

through these high acceleration events

445

00:31:15,990 --> 00:31:13,760

and these low acceleration events that

446

00:31:17,509 --> 00:31:16,000

they'll hit at hit at apogee

447

00:31:18,789 --> 00:31:17,519

so without further ado we're going to

448

00:31:20,950 --> 00:31:18,799

send it over to our launch control

449

00:31:27,430 --> 00:31:20,960

commentator with the call from madison

450

00:31:27,440 --> 00:31:59,430

that's going to take off yeah

451  
00:32:04,470 --> 00:32:01,909  
okay okay good morning everybody so we

452  
00:32:06,950 --> 00:32:04,480  
are going to do our inaugural launch for

453  
00:32:09,830 --> 00:32:06,960  
this year's sli competition

454  
00:32:12,230 --> 00:32:09,840  
so the first rocket to go is madison

455  
00:32:14,389 --> 00:32:12,240  
west the school is

456  
00:32:17,350 --> 00:32:14,399  
the school is madison west high school

457  
00:32:19,350 --> 00:32:17,360  
out of madison wisconsin

458  
00:32:21,269 --> 00:32:19,360  
the rocket name is persephone you can

459  
00:32:23,110 --> 00:32:21,279  
see it's got a beautiful paint job it's

460  
00:32:25,110 --> 00:32:23,120  
got a blue on there and it's got a lot

461  
00:32:27,029 --> 00:32:25,120  
of 3d printed stuff on there 3d printed

462  
00:32:29,830 --> 00:32:27,039  
nose cone transition and some internal

463  
00:32:32,789 --> 00:32:29,840

parts this rocket weighs 33 pounds five

464

00:32:34,470 --> 00:32:32,799

and a half inch diameter eight feet tall

465

00:32:35,669 --> 00:32:34,480

i'm sorry sorry

466

00:32:37,669 --> 00:32:35,679

you know eight feet tall and does have a

467

00:32:40,950 --> 00:32:37,679

four inch diameter as well this does

468

00:32:43,269 --> 00:32:40,960

have 3d capsules for petri dishes filled

469

00:32:45,750 --> 00:32:43,279

with sourdough and yogurt samples to

470

00:32:48,149 --> 00:32:45,760

study the effects of rocket flight

471

00:32:50,070 --> 00:32:48,159

on the fermentation process so this one

472

00:32:52,070 --> 00:32:50,080

is a food flight

473

00:32:55,110 --> 00:32:52,080

i also do know this rocket is projected

474

00:32:57,710 --> 00:32:55,120

to go about 4 000 feet so this motor is

475

00:33:01,110 --> 00:32:57,720

flying on an aerotech

476  
00:33:04,230 --> 00:33:01,120  
k-1999 does have electronics on board

477  
00:33:06,070 --> 00:33:04,240  
main is set for 700 feet for those that

478  
00:33:08,149 --> 00:33:06,080  
don't know the motor this is a k close

479  
00:33:09,830 --> 00:33:08,159  
to a k2000 when you do the conversion

480  
00:33:12,789 --> 00:33:09,840  
it's about

481  
00:33:14,389 --> 00:33:12,799  
pounds of thrust for a 33 pound rocket

482  
00:33:16,950 --> 00:33:14,399  
so this will be a nice good morning

483  
00:33:19,590 --> 00:33:16,960  
flight for for many of us here today

484  
00:33:21,350 --> 00:33:19,600  
so right now we have a clear sky

485  
00:33:24,230 --> 00:33:21,360  
we have a clear range

486  
00:33:26,149 --> 00:33:24,240  
we have jill esco of uh with northrop

487  
00:33:28,149 --> 00:33:26,159  
grumman doing the commemorative button

488  
00:33:29,909 --> 00:33:28,159

push so thank you for joining us jill

489

00:33:32,389 --> 00:33:29,919

and thank you northrup we are going to

490

00:33:34,149 --> 00:33:32,399

launch this rocket in five

491

00:33:34,950 --> 00:33:34,159

four three

492

00:33:38,789 --> 00:33:34,960

two

493

00:33:38,799 --> 00:33:47,830

i said good morning

494

00:33:47,840 --> 00:34:01,110

should have an event

495

00:34:01,120 --> 00:34:17,510

see that little smoker

496

00:34:17,520 --> 00:34:27,190

so if it's nearby this is

497

00:34:27,200 --> 00:34:32,129

folks

498

00:34:32,139 --> 00:35:01,589

[Applause]

499

00:35:05,270 --> 00:35:03,270

they had a great parachute deployment

500

00:35:07,829 --> 00:35:05,280

yeah they got close to the crowd so it's

501  
00:35:09,670 --> 00:35:07,839  
always important for us to to stay aware

502  
00:35:11,430 --> 00:35:09,680  
and be aware of what's going on when

503  
00:35:13,430 --> 00:35:11,440  
these rockets fly right i like how

504  
00:35:14,710 --> 00:35:13,440  
everybody like points to it and so if

505  
00:35:16,310 --> 00:35:14,720  
somebody doesn't see it they at least

506  
00:35:17,510 --> 00:35:16,320  
know the direction it's coming down and

507  
00:35:18,790 --> 00:35:17,520  
that's one of the really important

508  
00:35:20,310 --> 00:35:18,800  
things that they discussed in the

509  
00:35:22,069 --> 00:35:20,320  
opening ceremonies are all the safety

510  
00:35:25,190 --> 00:35:22,079  
precautions that you have to do when you

511  
00:35:27,190 --> 00:35:25,200  
come out here many of us have launched

512  
00:35:28,870 --> 00:35:27,200  
as the wind starts picking up here many

513  
00:35:30,790 --> 00:35:28,880

of us have launched the sds rockets that

514

00:35:32,630 --> 00:35:30,800

fly maybe a thousand feet up in there

515

00:35:34,790 --> 00:35:32,640

and they're a lot of fun to do

516

00:35:37,190 --> 00:35:34,800

these are a different realm of different

517

00:35:39,510 --> 00:35:37,200

class of rockets so how high do they

518

00:35:41,270 --> 00:35:39,520

go in altitude yeah so these rockets are

519

00:35:43,510 --> 00:35:41,280

targeted to fly between four thousand

520

00:35:45,270 --> 00:35:43,520

and six thousand feet now it's due as

521

00:35:47,270 --> 00:35:45,280

you probably heard in the video

522

00:35:48,790 --> 00:35:47,280

these rockets these teams are scored on

523

00:35:50,230 --> 00:35:48,800

a number of different criteria and

524

00:35:52,390 --> 00:35:50,240

they're given a lot of different awards

525

00:35:53,270 --> 00:35:52,400

and categories including the altitude

526  
00:35:56,630 --> 00:35:53,280  
award

527  
00:35:59,349 --> 00:35:56,640  
team that comes closest to their

528  
00:36:00,550 --> 00:35:59,359  
predicted altitude but k

529  
00:36:02,630 --> 00:36:00,560  
they don't they don't predict this

530  
00:36:03,990 --> 00:36:02,640  
altitude this morning do they no they do

531  
00:36:05,349 --> 00:36:04,000  
it about nine months ago before they

532  
00:36:06,790 --> 00:36:05,359  
even start building their rocket they

533  
00:36:08,550 --> 00:36:06,800  
get it all down on paper first and they

534  
00:36:11,349 --> 00:36:08,560  
predict within eight feet sometimes how

535  
00:36:13,829 --> 00:36:11,359  
high they're gonna go absolutely so tons

536  
00:36:15,910 --> 00:36:13,839  
of simulation goes into this these teams

537  
00:36:18,390 --> 00:36:15,920  
know their mathematics and they know the

538  
00:36:20,710 --> 00:36:18,400

physics of what makes these rockets fly

539

00:36:22,950 --> 00:36:20,720

better than better certainly better than

540

00:36:24,230 --> 00:36:22,960

i know it well and so i'm really excited

541

00:36:25,990 --> 00:36:24,240

to talk to the teams about how they came

542

00:36:27,510 --> 00:36:26,000

about figuring out their altitude yeah

543

00:36:29,670 --> 00:36:27,520

absolutely i'm excited to hear that too

544

00:36:31,589 --> 00:36:29,680

the other cool thing we'll we'll get to

545

00:36:33,990 --> 00:36:31,599

today is how they actually figure out

546

00:36:35,430 --> 00:36:34,000

what the altitude award is these uh or

547

00:36:37,190 --> 00:36:35,440

what the altitude is these teams fly

548

00:36:38,470 --> 00:36:37,200

altimeters on the rockets i don't know

549

00:36:39,829 --> 00:36:38,480

what that means

550

00:36:41,829 --> 00:36:39,839

so they have they have important

551  
00:36:43,510 --> 00:36:41,839  
measuring devices and that our trained

552  
00:36:45,670 --> 00:36:43,520  
professionals will listen to different

553  
00:36:48,630 --> 00:36:45,680  
beeps and um they'll be able to

554  
00:36:50,630 --> 00:36:48,640  
determine how high their rocket flew

555  
00:36:52,310 --> 00:36:50,640  
but rockets whether it's out here at

556  
00:36:54,069 --> 00:36:52,320  
student launch or with nasa in the space

557  
00:36:55,670 --> 00:36:54,079  
program in the space industry not just

558  
00:36:57,829 --> 00:36:55,680  
about going high

559  
00:36:59,750 --> 00:36:57,839  
they have to carry payloads

560  
00:37:02,230 --> 00:36:59,760  
we discussed it before this rocket flu

561  
00:37:04,950 --> 00:37:02,240  
that the high school division gets to

562  
00:37:06,390 --> 00:37:04,960  
create a payload of their own creation

563  
00:37:08,710 --> 00:37:06,400

our college division teams which you'll

564

00:37:10,870 --> 00:37:08,720

see throughout today they are issued a

565

00:37:11,750 --> 00:37:10,880

challenge from nasa specifically this

566

00:37:13,829 --> 00:37:11,760

year

567

00:37:15,829 --> 00:37:13,839

they're trying to mimic how do we find

568

00:37:18,710 --> 00:37:15,839

out where a spacecraft on other planets

569

00:37:20,069 --> 00:37:18,720

land when there's no gps

570

00:37:21,750 --> 00:37:20,079

yeah that's just crazy and a couple of

571

00:37:23,109 --> 00:37:21,760

them had some really great different

572

00:37:24,230 --> 00:37:23,119

ideas yesterday i can't remember them

573

00:37:25,750 --> 00:37:24,240

now but we'll talk to the students

574

00:37:26,950 --> 00:37:25,760

throughout the day absolutely you're

575

00:37:29,510 --> 00:37:26,960

going to hear about how these teams

576  
00:37:32,630 --> 00:37:29,520  
tackled it how do you figure out where a

577  
00:37:34,230 --> 00:37:32,640  
rocket lands when you don't have gps

578  
00:37:36,470 --> 00:37:34,240  
with you

579  
00:37:37,750 --> 00:37:36,480  
now madison west is out there about to

580  
00:37:38,950 --> 00:37:37,760  
recover their rocket we've got some

581  
00:37:40,630 --> 00:37:38,960  
other teams

582  
00:37:43,829 --> 00:37:40,640  
going up on the rails

583  
00:37:46,230 --> 00:37:43,839  
one of nasa's goals is to engage and

584  
00:37:48,230 --> 00:37:46,240  
inspire the next generation and that's

585  
00:37:49,030 --> 00:37:48,240  
truly what we do here with nasa student

586  
00:37:50,550 --> 00:37:49,040  
launch

587  
00:37:52,550 --> 00:37:50,560  
part of one of the many ways that we do

588  
00:37:54,230 --> 00:37:52,560

that is also with our social media we

589

00:37:56,150 --> 00:37:54,240

are bringing this stream to you live on

590

00:37:58,470 --> 00:37:56,160

the nasa student launch facebook and the

591

00:38:00,390 --> 00:37:58,480

marshall space flight center youtube

592

00:38:02,870 --> 00:38:00,400

if you have any questions for us use the

593

00:38:04,390 --> 00:38:02,880

hashtag studentlaunch you can tweet at

594

00:38:05,589 --> 00:38:04,400

us put it in the chat we'll try to

595

00:38:07,670 --> 00:38:05,599

answer them while we're live there on

596

00:38:14,069 --> 00:38:07,680

social media and maybe even answer your

597

00:38:18,310 --> 00:38:16,230

so as our teams are

598

00:38:19,670 --> 00:38:18,320

going to be coming up and down one of

599

00:38:21,750 --> 00:38:19,680

the other things that i want to talk

600

00:38:23,270 --> 00:38:21,760

about is just the amount of work that

601  
00:38:25,430 --> 00:38:23,280  
goes into it for these teams we've

602  
00:38:26,390 --> 00:38:25,440  
mentioned a couple of times the many

603  
00:38:28,150 --> 00:38:26,400  
months

604  
00:38:29,589 --> 00:38:28,160  
of work right and one of the speakers

605  
00:38:31,030 --> 00:38:29,599  
this morning talked about that it's just

606  
00:38:32,310 --> 00:38:31,040  
like a real rocket launch and nasa's

607  
00:38:34,230 --> 00:38:32,320  
getting ready to run to launch the

608  
00:38:35,430 --> 00:38:34,240  
artemis rocket in just a few months and

609  
00:38:37,270 --> 00:38:35,440  
the teams go through the same process

610  
00:38:39,030 --> 00:38:37,280  
that nasa does with their pre-flight

611  
00:38:41,190 --> 00:38:39,040  
reviews and the launch readiness reviews

612  
00:38:43,109 --> 00:38:41,200  
and all the acronyms that make those

613  
00:38:44,950 --> 00:38:43,119

reviews up for nine months just like a

614

00:38:47,270 --> 00:38:44,960

real rocket yeah absolutely it all

615

00:38:49,670 --> 00:38:47,280

starts with a proposal way back in

616

00:38:51,829 --> 00:38:49,680

august nasa student launch releases the

617

00:38:54,470 --> 00:38:51,839

handbook teams look at the handbook look

618

00:38:56,230 --> 00:38:54,480

at their requirements build a proposal

619

00:38:58,310 --> 00:38:56,240

submit that and they have to be accepted

620

00:39:00,150 --> 00:38:58,320

it's not a let's send in our homework

621

00:39:02,630 --> 00:39:00,160

and we get accepted type thing they

622

00:39:05,190 --> 00:39:02,640

submit it and then what follows are

623

00:39:07,270 --> 00:39:05,200

months of designing and building and

624

00:39:09,910 --> 00:39:07,280

testing a subscale version of the

625

00:39:12,790 --> 00:39:09,920

rockets you'll see out here today

626  
00:39:14,630 --> 00:39:12,800  
then they build test and fly and in some

627  
00:39:17,109 --> 00:39:14,640  
cases as you'll hear today

628  
00:39:18,470 --> 00:39:17,119  
repair their flight rocket

629  
00:39:20,630 --> 00:39:18,480  
and all on the way okay they're they're

630  
00:39:22,790 --> 00:39:20,640  
writing hundreds of pages of reports

631  
00:39:25,589 --> 00:39:22,800  
they're doing it all right reviews and

632  
00:39:27,109 --> 00:39:25,599  
presentations with nasa rocketry experts

633  
00:39:28,790 --> 00:39:27,119  
right so what we see today is the fun

634  
00:39:30,550 --> 00:39:28,800  
part right but they've had eight or nine

635  
00:39:33,030 --> 00:39:30,560  
months of the not fun part but really

636  
00:39:35,190 --> 00:39:33,040  
super interesting and learning for their

637  
00:39:36,870 --> 00:39:35,200  
future right absolutely and i'm in my

638  
00:39:38,710 --> 00:39:36,880

like i admire the high school students

639

00:39:40,390 --> 00:39:38,720

because there's no way in high school i

640

00:39:42,390 --> 00:39:40,400

was going to be

641

00:39:44,870 --> 00:39:42,400

forget understanding what's going on out

642

00:39:46,470 --> 00:39:44,880

here the reports in the presentations is

643

00:39:48,870 --> 00:39:46,480

a daunting project especially when

644

00:39:50,470 --> 00:39:48,880

that's what you do after school right

645

00:39:52,470 --> 00:39:50,480

it's this is for fun

646

00:39:54,870 --> 00:39:52,480

this hard work and so we certainly

647

00:39:57,030 --> 00:39:54,880

appreciate it now we're seeing about 27

648

00:39:58,870 --> 00:39:57,040

teams out here with us today but we

649

00:40:00,870 --> 00:39:58,880

would be remiss if we didn't acknowledge

650

00:40:03,190 --> 00:40:00,880

our other teams many of the teams for

651  
00:40:05,589 --> 00:40:03,200  
whatever reason were not able to join us

652  
00:40:06,550 --> 00:40:05,599  
out here at nasa student launch

653  
00:40:08,390 --> 00:40:06,560  
they're going to be flying from their

654  
00:40:11,670 --> 00:40:08,400  
home fields making their competition

655  
00:40:13,750 --> 00:40:11,680  
flights with other nar sponsored events

656  
00:40:16,309 --> 00:40:13,760  
so to all of you teams watching at home

657  
00:40:18,390 --> 00:40:16,319  
we say hello we wish you were here and

658  
00:40:20,230 --> 00:40:18,400  
we wish you the best of luck and for all

659  
00:40:21,750 --> 00:40:20,240  
the audiences back home

660  
00:40:23,910 --> 00:40:21,760  
make sure you follow all these teams on

661  
00:40:27,270 --> 00:40:23,920  
social media and see what it's like to

662  
00:40:29,990 --> 00:40:27,280  
build a rocket through their perspective

663  
00:40:31,589 --> 00:40:30,000

now as we're getting our next teams

664

00:40:33,430 --> 00:40:31,599

out on the launch rail and madison west

665

00:40:35,829 --> 00:40:33,440

is recovering their rocket we're going

666

00:40:36,950 --> 00:40:35,839

to send it up to the wide view shot take

667

00:40:38,550 --> 00:40:36,960

a quick break and we're going to be back

668

00:40:40,069 --> 00:40:38,560

with you with all the actions including

669

00:40:42,069 --> 00:40:40,079

interviews with our nasa leadership and

670

00:40:43,990 --> 00:40:42,079

with these teams just shortly thanks for

671

00:41:00,520 --> 00:40:44,000

joining us for the 2022 nasa student

672

00:42:25,330 --> 00:41:46,430

[Music]

673

00:43:01,910 --> 00:42:25,340

so

674

00:43:47,270 --> 00:43:37,400

[Music]

675

00:44:23,690 --> 00:43:48,290

so

676  
00:44:23,700 --> 00:44:45,270  
[Music]

677  
00:45:18,520 --> 00:44:56,390  
so

678  
00:45:36,230 --> 00:45:25,930  
[Music]

679  
00:45:36,240 --> 00:45:43,620  
my

680  
00:45:43,630 --> 00:46:07,270  
[Music]

681  
00:46:07,280 --> 00:46:22,210  
so

682  
00:46:54,470 --> 00:46:44,720  
[Music]

683  
00:47:03,030 --> 00:46:55,940  
hmm

684  
00:47:06,309 --> 00:47:04,470  
good morning everyone we are back with

685  
00:47:08,870 --> 00:47:06,319  
you here at brack farms for the nasa

686  
00:47:11,829 --> 00:47:08,880  
2022 student launch finale we are joined

687  
00:47:13,430 --> 00:47:11,839  
now by the team from purdue university

688  
00:47:15,190 --> 00:47:13,440

purdue you guys are getting ready to fly

689

00:47:16,550 --> 00:47:15,200

how's everything going

690

00:47:18,150 --> 00:47:16,560

it's going pretty well so far we've

691

00:47:19,910 --> 00:47:18,160

we've had a couple of snags that we've

692

00:47:21,750 --> 00:47:19,920

worked out once we got to huntsville um

693

00:47:22,870 --> 00:47:21,760

but we're really happy with uh where

694

00:47:24,870 --> 00:47:22,880

we've where we brought the rocket and

695

00:47:26,950 --> 00:47:24,880

we're ready to launch

696

00:47:28,870 --> 00:47:26,960

excellent now you guys are a team that's

697

00:47:32,230 --> 00:47:28,880

here year after year we love seeing you

698

00:47:34,390 --> 00:47:32,240

out here winners of the 2020 2020 i

699

00:47:36,390 --> 00:47:34,400

believe social media award what's it

700

00:47:37,589 --> 00:47:36,400

like being um having that underneath

701  
00:47:39,670 --> 00:47:37,599

your belt

702  
00:47:41,349 --> 00:47:39,680

it feels really great um i always love

703  
00:47:43,270 --> 00:47:41,359

looking back on all of our past photos

704  
00:47:44,790 --> 00:47:43,280

for me it's really inspiring

705  
00:47:46,390 --> 00:47:44,800

for this year to keep going especially

706  
00:47:47,829 --> 00:47:46,400

when we hit snags

707  
00:47:49,349 --> 00:47:47,839

it's super fun to be back in person

708  
00:47:51,270 --> 00:47:49,359

finally

709  
00:47:52,549 --> 00:47:51,280

we love having you back now for teams or

710  
00:47:54,950 --> 00:47:52,559

for anyone at home wanting to follow you

711  
00:47:57,190 --> 00:47:54,960

on social media how can they find you

712  
00:47:59,510 --> 00:47:57,200

we are psp student launch purdue space

713  
00:48:00,630 --> 00:47:59,520

program uh we're on instagram facebook

714

00:48:02,630 --> 00:48:00,640

and twitter

715

00:48:05,270 --> 00:48:02,640

excellent yeah i have one one last thing

716

00:48:06,950 --> 00:48:05,280

they have 130 team members i believe is

717

00:48:08,150 --> 00:48:06,960

that right so we do have anything to say

718

00:48:09,030 --> 00:48:08,160

to the team members that aren't able to

719

00:48:10,470 --> 00:48:09,040

be here

720

00:48:12,790 --> 00:48:10,480

we miss you guys we wish you could be

721

00:48:14,150 --> 00:48:12,800

here thanks for your work

722

00:48:15,670 --> 00:48:14,160

thank you before you go out to fly any

723

00:48:17,430 --> 00:48:15,680

sponsors any professors anybody back

724

00:48:19,030 --> 00:48:17,440

home you want to thank for i know your

725

00:48:21,030 --> 00:48:19,040

other team members of course anybody

726

00:48:23,190 --> 00:48:21,040

else you want to thank from back home

727

00:48:24,470 --> 00:48:23,200

yeah of course we want to thank the the

728

00:48:26,150 --> 00:48:24,480

aero department the mechanical

729

00:48:27,430 --> 00:48:26,160

engineering department and the uh

730

00:48:28,710 --> 00:48:27,440

electrical and computer engineering

731

00:48:30,309 --> 00:48:28,720

department they've been a lot of help

732

00:48:31,990 --> 00:48:30,319

with resources and money and all that

733

00:48:33,990 --> 00:48:32,000

and we're really appreciative to all of

734

00:48:35,349 --> 00:48:34,000

them back at purdue so to all the

735

00:48:37,910 --> 00:48:35,359

departments back home we certainly

736

00:48:39,430 --> 00:48:37,920

appreciate purdue a long history a great

737

00:48:41,190 --> 00:48:39,440

history in engineering

738

00:48:43,829 --> 00:48:41,200

names like neil armstrong and gus

739

00:48:46,069 --> 00:48:43,839

grissom call purdue home and these uh

740

00:48:47,430 --> 00:48:46,079

fine young people do as well we wish you

741

00:48:48,790 --> 00:48:47,440

guys the best of luck as you go out

742

00:48:50,710 --> 00:48:48,800

there have a safe flight have an awesome

743

00:48:52,150 --> 00:48:50,720

flight and we'll see you guys afterwards

744

00:49:01,990 --> 00:48:52,160

thank you good luck good luck with your

745

00:51:07,670 --> 00:49:21,850

[Music]

746

00:51:10,950 --> 00:51:09,190

hey everyone we are back hey we've got

747

00:51:12,950 --> 00:51:10,960

granada hills high school from granada

748

00:51:14,790 --> 00:51:12,960

california i'm joined here with enzo

749

00:51:16,230 --> 00:51:14,800

enzo you guys are getting ready to fly

750

00:51:17,349 --> 00:51:16,240

what what's going through your mind how

751

00:51:19,430 --> 00:51:17,359

are you feeling well we're feeling

752

00:51:20,470 --> 00:51:19,440

pretty nervous um obviously it's been a

753

00:51:21,829 --> 00:51:20,480

whole eight nine months i've been

754

00:51:23,349 --> 00:51:21,839

working on this project so a lot kind of

755

00:51:24,630 --> 00:51:23,359

culminating today but we feel confident

756

00:51:25,829 --> 00:51:24,640

we've gone through our checklist we

757

00:51:27,670 --> 00:51:25,839

inspected the whole rock we've flown to

758

00:51:29,109 --> 00:51:27,680

a couple of times now so we're confident

759

00:51:30,390 --> 00:51:29,119

how well it can perform just hoping that

760

00:51:32,150 --> 00:51:30,400

everything goes well today and we see a

761

00:51:34,069 --> 00:51:32,160

nice flight so what's your payload on

762

00:51:35,829 --> 00:51:34,079

board so our payload on board is a

763

00:51:37,750 --> 00:51:35,839

scientific payload that will measure

764

00:51:39,109 --> 00:51:37,760

atmospheric conditions and we'll use

765

00:51:40,630 --> 00:51:39,119

that to determine the possibility of

766

00:51:42,790 --> 00:51:40,640

environmental sustainability for various

767

00:51:44,390 --> 00:51:42,800

forms of life such as potato life

768

00:51:46,549 --> 00:51:44,400

oh that's awesome

769

00:51:48,630 --> 00:51:46,559

you got to have potato life right hey i

770

00:51:50,230 --> 00:51:48,640

like my mashed potatoes down here okay

771

00:51:51,670 --> 00:51:50,240

so is this your first time your team's

772

00:51:52,870 --> 00:51:51,680

first time participating in student

773

00:51:54,150 --> 00:51:52,880

launch yeah this is our first time

774

00:51:55,270 --> 00:51:54,160

participating in the student launch uh

775

00:51:56,790 --> 00:51:55,280

definitely been a venture definitely

776

00:51:58,790 --> 00:51:56,800

been a learning experience going through

777

00:51:59,990 --> 00:51:58,800

the whole design lifecycle process for

778

00:52:01,750 --> 00:52:00,000

the first time going through the

779

00:52:03,349 --> 00:52:01,760

proposal all the reports and now kind of

780

00:52:04,710 --> 00:52:03,359

seeing how it all culminates is really

781

00:52:06,150 --> 00:52:04,720

really exciting but yeah it's our first

782

00:52:07,270 --> 00:52:06,160

time and i think all the members of team

783

00:52:09,030 --> 00:52:07,280

can definitely agree it's been a very

784

00:52:11,109 --> 00:52:09,040

fun learning experience for all of us so

785

00:52:12,630 --> 00:52:11,119

y'all are up for it again oh definitely

786

00:52:13,750 --> 00:52:12,640

i'm definitely up for it again i'm

787

00:52:14,710 --> 00:52:13,760

graduating but i know a lot of them are

788

00:52:16,549 --> 00:52:14,720

going to stick around and hopefully

789

00:52:17,510 --> 00:52:16,559

continue this program in the community

790

00:52:18,950 --> 00:52:17,520

superb

791

00:52:20,950 --> 00:52:18,960

that's great now how high are you guys

792

00:52:23,990 --> 00:52:20,960

starting to fly your rocket today so our

793

00:52:27,829 --> 00:52:24,000

official target altitude is 4 700 feet

794

00:52:29,349 --> 00:52:27,839

that's impressive almost a mile up yeah

795

00:52:30,630 --> 00:52:29,359

that's incredible well so is there

796

00:52:31,910 --> 00:52:30,640

anybody back home you want to thank any

797

00:52:33,109 --> 00:52:31,920

teachers any sponsors that helps you

798

00:52:35,030 --> 00:52:33,119

guys get here i know it's a long way

799

00:52:36,790 --> 00:52:35,040

from california to north alabama yeah

800

00:52:39,190 --> 00:52:36,800

it's uh definitely been an adventure

801  
00:52:41,190 --> 00:52:39,200  
we'll always like to thank um our mentor

802  
00:52:42,230 --> 00:52:41,200  
mr swanson from lucky martin def like to

803  
00:52:43,750 --> 00:52:42,240  
thank him for everything he's done

804  
00:52:45,910 --> 00:52:43,760  
everything he's taught us our team

805  
00:52:47,430 --> 00:52:45,920  
educator celia sales for being very on

806  
00:52:49,190 --> 00:52:47,440  
top of things keeping us organized very

807  
00:52:50,790 --> 00:52:49,200  
amazing and to our sponsoring

808  
00:52:53,430 --> 00:52:50,800  
organization uh the one who made this

809  
00:52:55,109 --> 00:52:53,440  
whole team possible ay so region 174 we

810  
00:52:56,710 --> 00:52:55,119  
couldn't find anyone to sponsor our team

811  
00:52:58,069 --> 00:52:56,720  
luckily they stepped in it's been we're

812  
00:53:00,069 --> 00:52:58,079  
very grateful for them then all of the

813  
00:53:01,349 --> 00:53:00,079

families and friends of the team members

814

00:53:02,950 --> 00:53:01,359

who helped us get to this point from all

815

00:53:04,069 --> 00:53:02,960

the launches to all the workshop days we

816

00:53:05,829 --> 00:53:04,079

want to thank everyone out there who

817

00:53:07,190 --> 00:53:05,839

helped us get here today awesome now

818

00:53:09,109 --> 00:53:07,200

let's roll your rocket and we'll get

819

00:53:10,870 --> 00:53:09,119

these uh i see these sponsors and these

820

00:53:12,549 --> 00:53:10,880

stickers up and down here so to

821

00:53:14,549 --> 00:53:12,559

everybody back home

822

00:53:16,390 --> 00:53:14,559

thank you uh for your support of these

823

00:53:17,750 --> 00:53:16,400

young people and the incredible work a

824

00:53:19,430 --> 00:53:17,760

first year team all the way from

825

00:53:20,549 --> 00:53:19,440

california joining guys we wish you the

826

00:53:22,230 --> 00:53:20,559

best of luck and we hope to see you

827

00:53:24,309 --> 00:53:22,240

again next year and congratulations on

828

00:53:26,390 --> 00:53:24,319

graduation on graduating i appreciate it

829

00:53:29,270 --> 00:53:26,400

thank you very much thank you that's

830

00:53:30,950 --> 00:53:29,280

grenach thank you that's granada hills

831

00:53:32,950 --> 00:53:30,960

high school from granada hills

832

00:53:34,790 --> 00:53:32,960

california they are going to be on their

833

00:53:36,470 --> 00:53:34,800

way to their rocket uh on their on the

834

00:53:37,829 --> 00:53:36,480

way to the launch rail

835

00:53:39,990 --> 00:53:37,839

to launch their rocket that's going to

836

00:53:41,030 --> 00:53:40,000

study the atmosphere now okay i think

837

00:53:42,390 --> 00:53:41,040

it's one of the really cool things about

838

00:53:44,870 --> 00:53:42,400

this competition

839

00:53:46,069 --> 00:53:44,880

is we talk about the altitude and i

840

00:53:47,589 --> 00:53:46,079

always like to think of babe ruth

841

00:53:49,750 --> 00:53:47,599

calling their shot you guys called they

842

00:53:51,190 --> 00:53:49,760

called you shots a few months ago but in

843

00:53:53,349 --> 00:53:51,200

certain conditions we're actually

844

00:53:54,950 --> 00:53:53,359

targeting specific altitudes just like

845

00:53:56,549 --> 00:53:54,960

we do in the space flight industry got

846

00:53:58,069 --> 00:53:56,559

to get the payload to the right orbit to

847

00:53:59,829 --> 00:53:58,079

get the right science

848

00:54:01,109 --> 00:53:59,839

right so what else went into you guys

849

00:54:02,390 --> 00:54:01,119

being able to determine how high you're

850

00:54:03,589 --> 00:54:02,400

going to go and how do you predict

851  
00:54:05,829 --> 00:54:03,599  
you're going to get exactly to the

852  
00:54:07,670 --> 00:54:05,839  
altitude you you've selected well we've

853  
00:54:08,870 --> 00:54:07,680  
flown this motor on this rug before on

854  
00:54:10,150 --> 00:54:08,880  
the motor we're going to fly it today

855  
00:54:12,549 --> 00:54:10,160  
we've gotten pretty close we've flown to

856  
00:54:13,829 --> 00:54:12,559  
about 4 600 feet our predictions is that

857  
00:54:15,349 --> 00:54:13,839  
we might go a little bit lower because

858  
00:54:17,109 --> 00:54:15,359  
we know we're a little lower altitude so

859  
00:54:18,630 --> 00:54:17,119  
the air density down here might bring

860  
00:54:20,390 --> 00:54:18,640  
our rockets altitude down a bit but

861  
00:54:22,630 --> 00:54:20,400  
hoping to get at least a good 100 200

862  
00:54:24,230 --> 00:54:22,640  
feet within the range super mm-hmm

863  
00:54:25,270 --> 00:54:24,240

and so so why we're talking about that

864

00:54:26,790 --> 00:54:25,280

what are the things that go into

865

00:54:28,390 --> 00:54:26,800

factoring how you figure out how high

866

00:54:29,349 --> 00:54:28,400

your rocket's gonna fly

867

00:54:30,309 --> 00:54:29,359

well we're definitely gonna we

868

00:54:31,349 --> 00:54:30,319

definitely had to keep the weight down

869

00:54:33,510 --> 00:54:31,359

that was definitely one thing that we

870

00:54:35,109 --> 00:54:33,520

had to keep in mind we also had to run

871

00:54:36,549 --> 00:54:35,119

various simulations we want to determine

872

00:54:38,390 --> 00:54:36,559

the drag coefficient that was a very big

873

00:54:39,670 --> 00:54:38,400

issue for our team uh you know on the

874

00:54:41,030 --> 00:54:39,680

ascendant is obviously a big issue but

875

00:54:42,710 --> 00:54:41,040

even more so on the descent we're trying

876

00:54:44,230 --> 00:54:42,720

to get that descent time down i'd say

877

00:54:45,430 --> 00:54:44,240

those are the two primary factors we

878

00:54:47,349 --> 00:54:45,440

have to keep in mind when we're trying

879

00:54:49,109 --> 00:54:47,359

to dial in on this design and get it to

880

00:54:50,150 --> 00:54:49,119

the right altitude excellent well guys

881

00:54:51,670 --> 00:54:50,160

we're gonna let you head out to the

882

00:54:53,270 --> 00:54:51,680

launch rail thank you for joining us

883

00:54:55,030 --> 00:54:53,280

today we can't wait to see your rocket

884

00:54:56,630 --> 00:54:55,040

fly here in just a few minutes thank you

885

00:54:58,470 --> 00:54:56,640

very much thank you thank you good luck

886

00:55:00,390 --> 00:54:58,480

that is granada hills high school from

887

00:55:01,589 --> 00:55:00,400

california now you guys are seeing

888

00:55:02,630 --> 00:55:01,599

student launch

889

00:55:04,230 --> 00:55:02,640

and

890

00:55:05,829 --> 00:55:04,240

we're going to uh

891

00:55:08,069 --> 00:55:05,839

student launch is one of the many ways

892

00:55:10,549 --> 00:55:08,079

that we use to inspire and engage in the

893

00:55:13,430 --> 00:55:10,559

next generation i want to bring in our

894

00:55:15,430 --> 00:55:13,440

next guest a dear friend and a long time

895

00:55:16,950 --> 00:55:15,440

colleague of mine to talk about one of

896

00:55:19,190 --> 00:55:16,960

the more unique

897

00:55:21,430 --> 00:55:19,200

uh products thank you

898

00:55:24,069 --> 00:55:21,440

thank you will so joining us now is

899

00:55:25,750 --> 00:55:24,079

amanda's as amanda adams as i mess up

900

00:55:27,750 --> 00:55:25,760

your name sorry about that

901  
00:55:30,630 --> 00:55:27,760  
uh amanda adams is here gonna is here to

902  
00:55:32,390 --> 00:55:30,640  
talk to us about first woman an

903  
00:55:34,309 --> 00:55:32,400  
interactive novel now first amanda tell

904  
00:55:35,829 --> 00:55:34,319  
us what you do with nasa and then also

905  
00:55:38,150 --> 00:55:35,839  
what is first woman

906  
00:55:39,829 --> 00:55:38,160  
sure so i am the stem engagement

907  
00:55:41,990 --> 00:55:39,839  
coordinator for nasa's space technology

908  
00:55:44,150 --> 00:55:42,000  
mission directorate and we have just put

909  
00:55:46,789 --> 00:55:44,160  
out pretty recently first woman which is

910  
00:55:49,190 --> 00:55:46,799  
nasa's first interactive graphic novel

911  
00:55:51,109 --> 00:55:49,200  
this novel is loaded with interactive

912  
00:55:53,190 --> 00:55:51,119  
content where you can learn about real

913  
00:55:55,430 --> 00:55:53,200

nasa technologies that are helping us

914

00:55:57,990 --> 00:55:55,440

learn to live and work on the moon and

915

00:56:00,230 --> 00:55:58,000

it follows our fictional astronaut cali

916

00:56:01,430 --> 00:56:00,240

who is the first woman to walk on the

917

00:56:03,589 --> 00:56:01,440

moon

918

00:56:04,950 --> 00:56:03,599

now amanda why is it important for nasa

919

00:56:06,789 --> 00:56:04,960

and our space technology mission

920

00:56:08,870 --> 00:56:06,799

directorate to do products like first

921

00:56:10,630 --> 00:56:08,880

woman sure so we are very interested in

922

00:56:12,870 --> 00:56:10,640

engaging the next generation of space

923

00:56:14,870 --> 00:56:12,880

explorers our artemis generation as we

924

00:56:16,309 --> 00:56:14,880

prepare to return to the moon with the

925

00:56:19,670 --> 00:56:16,319

first woman and the first person of

926

00:56:22,069 --> 00:56:19,680

color so this uh this tool will engage

927

00:56:24,470 --> 00:56:22,079

students and be able to scan through qr

928

00:56:26,870 --> 00:56:24,480

codes to access inter interactive

929

00:56:29,430 --> 00:56:26,880

material in both english and spanish so

930

00:56:31,349 --> 00:56:29,440

we're really excited to use this tool to

931

00:56:34,470 --> 00:56:31,359

get it into the hands of our next

932

00:56:36,710 --> 00:56:34,480

generation of astronauts and uh people

933

00:56:39,190 --> 00:56:36,720

like us well so amanda i know i'm gonna

934

00:56:40,710 --> 00:56:39,200

get my copy and nerd out over it

935

00:56:42,309 --> 00:56:40,720

for anybody wanting to get a copy of and

936

00:56:44,870 --> 00:56:42,319

get their hands on first woman where can

937

00:56:46,630 --> 00:56:44,880

they find it absolutely you can find uh

938

00:56:50,069 --> 00:56:46,640

you can download a copy of the novel at

939

00:56:52,630 --> 00:56:50,079

nasa.gov slash cali first or you can

940

00:56:54,789 --> 00:56:52,640

download the app that has full of

941

00:56:56,789 --> 00:56:54,799

interactive features like you can walk

942

00:56:59,349 --> 00:56:56,799

through a life-size life-size scenes

943

00:57:01,589 --> 00:56:59,359

from the story as well as

944

00:57:03,910 --> 00:57:01,599

access virtual realities inside the

945

00:57:05,990 --> 00:57:03,920

space station you can download that app

946

00:57:08,309 --> 00:57:06,000

the first woman app from the google play

947

00:57:10,870 --> 00:57:08,319

store or the apple app store that's

948

00:57:13,670 --> 00:57:10,880

awesome now amanda um we're getting

949

00:57:14,870 --> 00:57:13,680

ready to to send the first people uh

950

00:57:17,109 --> 00:57:14,880

back to the moon for the first time

951  
00:57:19,510 --> 00:57:17,119  
since the apollo 17 mission a first

952  
00:57:20,789 --> 00:57:19,520  
woman is surely to is going to inspire

953  
00:57:22,789 --> 00:57:20,799  
that artemis generation who's going to

954  
00:57:24,549 --> 00:57:22,799  
take us there and then on to mars thanks

955  
00:57:35,490 --> 00:57:24,559  
so much for coming out and hanging out

956  
00:57:35,500 --> 00:58:14,069  
[Applause]

957  
00:58:14,079 --> 00:58:43,910  
so

958  
00:58:43,920 --> 00:59:52,789  
do

959  
00:59:52,799 --> 00:59:59,430  
so

960  
00:59:59,440 --> 01:00:45,109  
[Music]

961  
01:00:57,640 --> 01:00:46,790  
so

962  
01:01:36,870 --> 01:01:03,109  
[Music]

963  
01:01:41,109 --> 01:01:38,630

hey everyone thanks for joining us we

964

01:01:42,309 --> 01:01:41,119

are joined by with another team and okay

965

01:01:44,630 --> 01:01:42,319

one of my favorite things about student

966

01:01:46,630 --> 01:01:44,640

launch is the paint jobs and the names

967

01:01:48,390 --> 01:01:46,640

of the rocket we've got yeah university

968

01:01:50,789 --> 01:01:48,400

of tennessee chattanooga tommy's here

969

01:01:52,789 --> 01:01:50,799

joining us tommy first tell us what the

970

01:01:55,670 --> 01:01:52,799

name of your rocket is we have wow e

971

01:01:58,150 --> 01:01:55,680

wackett senior here the third

972

01:01:59,910 --> 01:01:58,160

okay so if there's the third there's

973

01:02:01,589 --> 01:01:59,920

probably a story about why there's

974

01:02:03,349 --> 01:02:01,599

number three this is just the third

975

01:02:04,549 --> 01:02:03,359

launch third successful launch today is

976  
01:02:07,029 --> 01:02:04,559  
gonna happen

977  
01:02:08,950 --> 01:02:07,039  
and we're really excited about that

978  
01:02:10,470 --> 01:02:08,960  
that's awesome so what's the experience

979  
01:02:12,390 --> 01:02:10,480  
of nasa student launch been for it been

980  
01:02:14,150 --> 01:02:12,400  
like for you and your team uh it's a lot

981  
01:02:15,910 --> 01:02:14,160  
of stress it's a lot of

982  
01:02:17,910 --> 01:02:15,920  
character building

983  
01:02:20,150 --> 01:02:17,920  
it's a lot of opportunity to grow and

984  
01:02:22,710 --> 01:02:20,160  
improve and enter industry as

985  
01:02:23,910 --> 01:02:22,720  
experienced engineers that we need to be

986  
01:02:25,510 --> 01:02:23,920  
but what about all the fun that you're

987  
01:02:29,029 --> 01:02:25,520  
having

988  
01:02:33,670 --> 01:02:31,910

so you mentioned um all the engineering

989

01:02:37,270 --> 01:02:33,680

what are any classes that have really

990

01:02:40,470 --> 01:02:37,280

helped you um get with this competition

991

01:02:42,630 --> 01:02:40,480

yeah for sure so so advanced fluids or

992

01:02:44,789 --> 01:02:42,640

gas dynamics is definitely a very useful

993

01:02:46,950 --> 01:02:44,799

class you learn about air and how it

994

01:02:49,270 --> 01:02:46,960

interacts with aerodynamics

995

01:02:51,589 --> 01:02:49,280

mechanics and materials statics dynamics

996

01:02:55,430 --> 01:02:51,599

they're all playing key key roles in our

997

01:02:58,069 --> 01:02:55,440

design and our creativity and also

998

01:03:01,190 --> 01:02:58,079

excellent classes in design and

999

01:03:03,750 --> 01:03:01,200

creativity led by dr elliot

1000

01:03:05,430 --> 01:03:03,760

who helped foster our creativity and

1001  
01:03:07,670 --> 01:03:05,440  
help channel that engineering into

1002  
01:03:08,549 --> 01:03:07,680  
actual real world solutions

1003  
01:03:10,230 --> 01:03:08,559  
you know i think that's really

1004  
01:03:12,390 --> 01:03:10,240  
interesting you mentioned the creativity

1005  
01:03:14,390 --> 01:03:12,400  
a lot of people think engineering is is

1006  
01:03:16,390 --> 01:03:14,400  
math and it's physics and you know it's

1007  
01:03:18,549 --> 01:03:16,400  
kind of a rigid discipline but the

1008  
01:03:20,230 --> 01:03:18,559  
reality is quite different isn't it yeah

1009  
01:03:21,750 --> 01:03:20,240  
engineering is is mostly about

1010  
01:03:24,069 --> 01:03:21,760  
creativity and then taking that

1011  
01:03:26,150 --> 01:03:24,079  
creativity and bounding in so starting

1012  
01:03:28,390 --> 01:03:26,160  
big and coming in small to a real world

1013  
01:03:29,910 --> 01:03:28,400

application now talking about creativity

1014

01:03:32,069 --> 01:03:29,920

i know the payload challenge this year

1015

01:03:33,510 --> 01:03:32,079

is quite a challenging one how have you

1016

01:03:34,549 --> 01:03:33,520

guys tackled that and what is your

1017

01:03:36,870 --> 01:03:34,559

payload

1018

01:03:38,390 --> 01:03:36,880

system like to for that challenge

1019

01:03:41,029 --> 01:03:38,400

so we're going to be using feature

1020

01:03:43,190 --> 01:03:41,039

matching using sift algorithms it's a

1021

01:03:44,630 --> 01:03:43,200

big linear algebra puzzle

1022

01:03:46,789 --> 01:03:44,640

and we're also going to be running with

1023

01:03:49,349 --> 01:03:46,799

a rf trilateration approach as

1024

01:03:51,029 --> 01:03:49,359

verification for our main payload and so

1025

01:03:53,270 --> 01:03:51,039

we're really going to have two separate

1026

01:03:55,990 --> 01:03:53,280

systems verifying each other just like

1027

01:03:57,430 --> 01:03:56,000

in the real world you'd have two systems

1028

01:03:59,190 --> 01:03:57,440

well that's awesome guys your rocket

1029

01:04:01,430 --> 01:03:59,200

looks great i can see your entire team

1030

01:04:03,029 --> 01:04:01,440

looks great um before we let you go

1031

01:04:05,109 --> 01:04:03,039

anybody back home you want to thank any

1032

01:04:06,789 --> 01:04:05,119

sponsors any professors

1033

01:04:09,270 --> 01:04:06,799

yeah first of all dr elliot our main

1034

01:04:13,829 --> 01:04:09,280

faculty advisor here as well as dr gary

1035

01:04:15,270 --> 01:04:13,839

h mcdonald uh dr margraves the baja team

1036

01:04:18,470 --> 01:04:15,280

especially for lending tools and

1037

01:04:19,829 --> 01:04:18,480

supplies to us but for sure

1038

01:04:21,430 --> 01:04:19,839

that's awesome well y'all we're going to

1039

01:04:22,870 --> 01:04:21,440

be seeing their rocket launch later

1040

01:04:23,589 --> 01:04:22,880

today um

1041

01:04:26,710 --> 01:04:23,599

hi

1042

01:04:29,109 --> 01:04:26,720

can see it but there's another rocket

1043

01:04:30,950 --> 01:04:29,119

down here by the actual engine

1044

01:04:33,029 --> 01:04:30,960

um so we're gonna be able to see some

1045

01:04:35,510 --> 01:04:33,039

cartoon some creativity and some

1046

01:04:37,029 --> 01:04:35,520

engineering all uh come together today

1047

01:04:38,390 --> 01:04:37,039

at the nasa student launch guys we wish

1048

01:04:40,630 --> 01:04:38,400

you the best of luck thanks so much for

1049

01:04:42,390 --> 01:04:40,640

coming out here and joining us thank you

1050

01:05:10,320 --> 01:04:42,400

all right that is the university of

1051  
01:05:49,730 --> 01:05:17,890  
[Music]

1052  
01:06:10,720 --> 01:05:49,740  
um

1053  
01:06:51,280 --> 01:06:27,740  
[Music]

1054  
01:07:12,650 --> 01:06:51,290  
um

1055  
01:08:13,990 --> 01:07:39,570  
[Music]

1056  
01:08:14,000 --> 01:08:17,099  
so

1057  
01:09:41,749 --> 01:08:38,639  
[Music]

1058  
01:09:41,759 --> 01:09:53,120  
so

1059  
01:10:25,350 --> 01:10:07,280  
[Music]

1060  
01:10:28,550 --> 01:10:26,709  
hey everyone we are here with central

1061  
01:10:29,910 --> 01:10:28,560  
washington one of our rookie teams this

1062  
01:10:31,830 --> 01:10:29,920  
year you guys came all the way from the

1063  
01:10:34,630 --> 01:10:31,840

pacific northwest to join us here in

1064

01:10:35,990 --> 01:10:34,640

alabama uh henry we met yesterday

1065

01:10:37,189 --> 01:10:36,000

you guys your rockets out there on the

1066

01:10:39,270 --> 01:10:37,199

rail what's kind of going through your

1067

01:10:40,709 --> 01:10:39,280

mind as you're getting ready for this uh

1068

01:10:42,870 --> 01:10:40,719

just feeling really stoked about it

1069

01:10:44,790 --> 01:10:42,880

feeling really confident we've done

1070

01:10:46,630 --> 01:10:44,800

everything we can we feel really good

1071

01:10:47,750 --> 01:10:46,640

testing's gone well everything feels

1072

01:10:49,030 --> 01:10:47,760

good

1073

01:10:50,310 --> 01:10:49,040

the nerves are always here though you

1074

01:10:52,790 --> 01:10:50,320

know the button it always makes you

1075

01:10:54,870 --> 01:10:52,800

nervous but feeling really good nervous

1076

01:10:56,470 --> 01:10:54,880

excited really happy to be here

1077

01:10:58,470 --> 01:10:56,480

absolutely so this is your first year

1078

01:11:00,229 --> 01:10:58,480

participating yes this is our first year

1079

01:11:01,590 --> 01:11:00,239

participating in any capacity in the

1080

01:11:02,950 --> 01:11:01,600

student loan so tell us about the

1081

01:11:05,270 --> 01:11:02,960

challenges of being a first-time team

1082

01:11:08,149 --> 01:11:05,280

and not having a base oh

1083

01:11:10,550 --> 01:11:08,159

it's been a ride

1084

01:11:13,030 --> 01:11:10,560

a lot of the things we went into it and

1085

01:11:15,110 --> 01:11:13,040

found very quickly that oh this is a lot

1086

01:11:17,189 --> 01:11:15,120

bigger than we thought um i think when

1087

01:11:18,310 --> 01:11:17,199

we first started this project uh it was

1088

01:11:20,470 --> 01:11:18,320

a little email that came from our

1089

01:11:21,669 --> 01:11:20,480

advisor dr darcy snowden uh she sent an

1090

01:11:22,870 --> 01:11:21,679

email and said hey if you guys want to

1091

01:11:25,030 --> 01:11:22,880

do this

1092

01:11:27,750 --> 01:11:25,040

go ahead if you don't don't want to yeah

1093

01:11:29,830 --> 01:11:27,760

and uh then it turned into a whole beast

1094

01:11:32,149 --> 01:11:29,840

but uh it's been an adventure we've

1095

01:11:33,590 --> 01:11:32,159

learned a lot um the scope of things is

1096

01:11:35,590 --> 01:11:33,600

beyond anything i think any of us

1097

01:11:37,669 --> 01:11:35,600

imagined but very pleased yeah that's

1098

01:11:39,350 --> 01:11:37,679

how we suck you in yeah

1099

01:11:40,630 --> 01:11:39,360

so so speaking of the scope of things

1100

01:11:41,910 --> 01:11:40,640

how have you guys tackled this year's

1101

01:11:43,990 --> 01:11:41,920

payload challenge

1102

01:11:46,070 --> 01:11:44,000

yeah so we went with a visual tracking

1103

01:11:47,430 --> 01:11:46,080

method al if you want to talk about it

1104

01:11:49,189 --> 01:11:47,440

yeah so we decided to go with a visual

1105

01:11:53,430 --> 01:11:49,199

tracking method we went with a uh

1106

01:11:56,630 --> 01:11:53,440

pxe2cam um it was intended for like very

1107

01:11:58,070 --> 01:11:56,640

close practice so we had to get creative

1108

01:11:59,590 --> 01:11:58,080

with how we used the information that we

1109

01:12:01,189 --> 01:11:59,600

got from it we decided to go with

1110

01:12:02,790 --> 01:12:01,199

extremely obnoxious colors if you can

1111

01:12:05,030 --> 01:12:02,800

see over there on our tent

1112

01:12:07,189 --> 01:12:05,040

to get about a street uh about as steep

1113

01:12:08,390 --> 01:12:07,199

a color gradient as we could possibly

1114

01:12:09,910 --> 01:12:08,400

manage

1115

01:12:12,470 --> 01:12:09,920

to increase the probability of the

1116

01:12:14,709 --> 01:12:12,480

camera actually seeing our target um and

1117

01:12:16,950 --> 01:12:14,719

then through just a

1118

01:12:18,470 --> 01:12:16,960

couple linear transformations and uh

1119

01:12:20,149 --> 01:12:18,480

trigonometry we're going to be able to

1120

01:12:23,110 --> 01:12:20,159

detect a distance

1121

01:12:24,470 --> 01:12:23,120

at location on the grid and just uh

1122

01:12:27,030 --> 01:12:24,480

hopefully get as much information as we

1123

01:12:29,510 --> 01:12:27,040

can so your rocket tent your your pits

1124

01:12:31,110 --> 01:12:29,520

pit box essentially is part of uh your

1125

01:12:33,350 --> 01:12:31,120

rocket's success and your payload

1126

01:12:36,149 --> 01:12:33,360

exactly yeah absolutely

1127

01:12:37,990 --> 01:12:36,159

that's awesome um so do you guys what

1128

01:12:39,350 --> 01:12:38,000

did you name your rocket

1129

01:12:41,270 --> 01:12:39,360

uh we've actually named our rocket

1130

01:12:42,630 --> 01:12:41,280

newbie we're a first-year team and we

1131

01:12:44,870 --> 01:12:42,640

thought it'd be a cute little thing to

1132

01:12:46,470 --> 01:12:44,880

name it newbie uh we have a little bee

1133

01:12:49,030 --> 01:12:46,480

drawn on like the top of the rocket you

1134

01:12:50,709 --> 01:12:49,040

know holding on

1135

01:12:51,990 --> 01:12:50,719

nice fun little addition but we've named

1136

01:12:54,550 --> 01:12:52,000

it newbie and we've named our tracking

1137

01:12:57,669 --> 01:12:54,560

method avatar uh which is short for a

1138

01:12:59,910 --> 01:12:57,679

visual analysis tracking of a rocket um

1139

01:13:01,189 --> 01:12:59,920

awesome aptly named okay they you can

1140

01:13:03,189 --> 01:13:01,199

tell they're true engineers you guys are

1141

01:13:04,950 --> 01:13:03,199

ready to join the space flight industry

1142

01:13:06,950 --> 01:13:04,960

you're already working the acronyms in

1143

01:13:08,790 --> 01:13:06,960

that way um

1144

01:13:10,390 --> 01:13:08,800

that's quite impressive so how many of

1145

01:13:12,870 --> 01:13:10,400

y'all are fixing to graduate and how

1146

01:13:15,669 --> 01:13:12,880

many are coming back next year uh i

1147

01:13:17,590 --> 01:13:15,679

believe five or six of us are graduating

1148

01:13:19,270 --> 01:13:17,600

um haven't really talked about next year

1149

01:13:21,430 --> 01:13:19,280

we're getting through this year first

1150

01:13:23,830 --> 01:13:21,440

like having a baby yeah

1151

01:13:26,790 --> 01:13:23,840

get through this one first yeah

1152

01:13:31,030 --> 01:13:26,800

i haven't had a baby yet but

1153

01:13:34,630 --> 01:13:32,709

well so guys we sure appreciate you

1154

01:13:36,149 --> 01:13:34,640

coming what's been

1155

01:13:38,070 --> 01:13:36,159

the highlight for you guys coming down

1156

01:13:40,149 --> 01:13:38,080

from from washington north i know it's a

1157

01:13:41,750 --> 01:13:40,159

little bit different world down here a

1158

01:13:42,790 --> 01:13:41,760

little bit different terrain

1159

01:13:45,830 --> 01:13:42,800

i'd say

1160

01:13:48,709 --> 01:13:45,840

meeting the other teams everyone has

1161

01:13:50,070 --> 01:13:48,719

been so incredibly kind and helpful for

1162

01:13:52,870 --> 01:13:50,080

things that we weren't able to bring

1163

01:13:54,310 --> 01:13:52,880

just through flying like extra duct tape

1164

01:13:56,709 --> 01:13:54,320

we've ran into some really wonderful

1165

01:13:58,630 --> 01:13:56,719

teams and just wonderful people to talk

1166

01:14:00,790 --> 01:13:58,640

to they've all been super sweet and

1167

01:14:02,310 --> 01:14:00,800

helpful along the way that is really

1168

01:14:04,229 --> 01:14:02,320

nice you can't make a rocket without

1169

01:14:08,310 --> 01:14:04,239

duct tape

1170

01:14:10,070 --> 01:14:08,320

[Laughter]

1171

01:14:12,390 --> 01:14:10,080

they're truly getting the engineering uh

1172

01:14:13,590 --> 01:14:12,400

perspective and the right practices in

1173

01:14:15,590 --> 01:14:13,600

place early

1174

01:14:17,669 --> 01:14:15,600

guys thank you so much for coming out

1175

01:14:19,430 --> 01:14:17,679

here we're so thrilled to have we love

1176

01:14:20,790 --> 01:14:19,440

all of our teams the rookie teams have a

1177

01:14:22,790 --> 01:14:20,800

special place in my heart because i know

1178

01:14:23,990 --> 01:14:22,800

how big of a task this is for you best

1179

01:14:25,830 --> 01:14:24,000

of luck in today's launch and we can't

1180

01:14:28,070 --> 01:14:25,840

wait to see your rocket fly thank you so

1181

01:14:28,950 --> 01:14:28,080

much thank you guys thank you appreciate

1182

01:14:30,470 --> 01:14:28,960

it all right

1183

01:14:31,750 --> 01:14:30,480

that is the university of central

1184

01:14:32,790 --> 01:14:31,760

washington one of our rookie teams

1185

01:14:34,310 --> 01:14:32,800

they're gonna be flying here their

1186

01:14:37,330 --> 01:14:34,320

rockets out on the rails right now

1187

01:15:01,860 --> 01:14:37,340

they're gonna be launching here shortly

1188

01:16:23,030 --> 01:15:04,709

[Music]

1189

01:16:26,870 --> 01:16:25,350

hi welcome back to nasa student launch

1190

01:16:28,229 --> 01:16:26,880

we're going to talk to madison west high

1191

01:16:30,870 --> 01:16:28,239

school they were our first launch of the

1192

01:16:32,149 --> 01:16:30,880

day with their rocket named persephone

1193

01:16:33,990 --> 01:16:32,159

high school they were our first launch

1194

01:16:35,910 --> 01:16:34,000

of the day with their rocket named

1195

01:16:37,430 --> 01:16:35,920

persephone tell us a little bit about

1196

01:16:39,590 --> 01:16:37,440

how the launch went

1197

01:16:41,270 --> 01:16:39,600

um it went great um

1198

01:16:42,870 --> 01:16:41,280

it was a super huge honor to be the

1199

01:16:44,550 --> 01:16:42,880

first launch today

1200

01:16:46,390 --> 01:16:44,560

and it was really gratifying to see

1201

01:16:47,750 --> 01:16:46,400

everything work as planned

1202

01:16:49,510 --> 01:16:47,760

so i didn't have you introduce

1203

01:16:51,350 --> 01:16:49,520

yourselves tell us who you are um i'm

1204

01:16:53,270 --> 01:16:51,360

julia lee we're from madison west high

1205

01:16:54,470 --> 01:16:53,280

school in madison wisconsin

1206

01:16:55,750 --> 01:16:54,480

okay we'd like to hear a little bit more

1207

01:16:57,110 --> 01:16:55,760

about your payload you had a more

1208

01:16:58,550 --> 01:16:57,120

interesting payload this year and you

1209

01:17:00,390 --> 01:16:58,560

had to go take care of business after

1210

01:17:03,189 --> 01:17:00,400

the launch to see how it worked

1211

01:17:05,750 --> 01:17:03,199

yes um our payload has sourdough

1212

01:17:07,590 --> 01:17:05,760

starters and yogurt inside which both

1213

01:17:09,510 --> 01:17:07,600

have bacteria and symbiotic

1214

01:17:10,870 --> 01:17:09,520

relationships which means that right

1215

01:17:12,870 --> 01:17:10,880

after the launch we had to put it right

1216

01:17:14,790 --> 01:17:12,880

back in their cooler

1217

01:17:17,510 --> 01:17:14,800

that is terrific so what what results

1218

01:17:19,110 --> 01:17:17,520

did you see immediately um our project

1219

01:17:22,229 --> 01:17:19,120

actually studies the more long-term

1220

01:17:25,110 --> 01:17:22,239

results um to really see the effects of

1221

01:17:26,310 --> 01:17:25,120

the flight but okay gotcha so tell me

1222

01:17:27,669 --> 01:17:26,320

how long has your team been coming to

1223

01:17:30,950 --> 01:17:27,679

student launch

1224

01:17:32,149 --> 01:17:30,960

17 years since about 2005 i think

1225

01:17:34,070 --> 01:17:32,159

longer than me

1226

01:17:36,870 --> 01:17:34,080

yeah absolutely in fact this

1227

01:17:38,709 --> 01:17:36,880

competition's a little over 20 years so

1228

01:17:40,390 --> 01:17:38,719

madison west has been coming

1229

01:17:42,390 --> 01:17:40,400

pretty much all those years

1230

01:17:43,910 --> 01:17:42,400

and uh we love to see it

1231

01:17:45,910 --> 01:17:43,920

one of the fascinating things is you

1232

01:17:47,189 --> 01:17:45,920

talked about your long-term payloads

1233

01:17:49,189 --> 01:17:47,199

it's one of the things that we do with

1234

01:17:51,189 --> 01:17:49,199

nasa is we have payloads and we don't

1235

01:17:53,350 --> 01:17:51,199

always get the data right away a lot of

1236

01:17:55,590 --> 01:17:53,360

time it's a little bit down the road now

1237

01:17:58,149 --> 01:17:55,600

i see your rocket has a bit of a unique

1238

01:18:00,870 --> 01:17:58,159

shape you've got um

1239

01:18:03,510 --> 01:18:00,880

taper up there in the mid part oh what's

1240

01:18:05,669 --> 01:18:03,520

the reasoning behind that taper and

1241

01:18:07,350 --> 01:18:05,679

what went into making that decision

1242

01:18:09,270 --> 01:18:07,360

we have a transition in our rocket

1243

01:18:11,270 --> 01:18:09,280

because we needed the space for the

1244

01:18:13,430 --> 01:18:11,280

payload and our bottom booster section

1245

01:18:15,350 --> 01:18:13,440

of the rocket but wanted to be able to

1246

01:18:17,110 --> 01:18:15,360

deploy our parachutes easily with a

1247

01:18:18,870 --> 01:18:17,120

smaller diameter

1248

01:18:19,750 --> 01:18:18,880

so now talk to us about the paint scheme

1249

01:18:21,350 --> 01:18:19,760

because

1250

01:18:23,189 --> 01:18:21,360

it's glittery here in the sunlight it's

1251

01:18:24,709 --> 01:18:23,199

a beautiful rocket

1252

01:18:26,390 --> 01:18:24,719

who painted it and how did you guys come

1253

01:18:28,550 --> 01:18:26,400

to this design um

1254

01:18:30,229 --> 01:18:28,560

i painted it or the team kind of came up

1255

01:18:32,070 --> 01:18:30,239

with the idea we wanted to mimic our

1256

01:18:34,709 --> 01:18:32,080

mission patch and kind of emulate our

1257

01:18:37,510 --> 01:18:34,719

project name which is persephone because

1258

01:18:39,669 --> 01:18:37,520

of the cycles and fermentation and we

1259

01:18:41,030 --> 01:18:39,679

kind of went for night and day

1260

01:18:43,350 --> 01:18:41,040

transitioning from the night and the

1261

01:18:45,030 --> 01:18:43,360

stars and the glitter to clouds and

1262

01:18:47,189 --> 01:18:45,040

flowers on top

1263

01:18:48,790 --> 01:18:47,199

yo it's a beautiful rocket

1264

01:18:50,550 --> 01:18:48,800

i love it so it's not all science and

1265

01:18:51,510 --> 01:18:50,560

business it's a little bit of creativity

1266

01:18:52,870 --> 01:18:51,520

and art

1267

01:18:54,709 --> 01:18:52,880

right

1268

01:18:56,229 --> 01:18:54,719

well guys that is madison west thank you

1269

01:18:57,510 --> 01:18:56,239

so much for coming out thanks for

1270

01:18:59,590 --> 01:18:57,520

getting your rocket ready so we could

1271

01:19:01,189 --> 01:18:59,600

have a really awesome start to the day

1272

01:19:03,430 --> 01:19:01,199

it was a beautiful launch we love seeing

1273

01:19:04,790 --> 01:19:03,440

it fly and come down thanks again for

1274

01:19:05,990 --> 01:19:04,800

joining us here and thanks for always

1275

01:19:09,750 --> 01:19:06,000

coming back and we can't wait to see you

1276

01:19:11,350 --> 01:19:09,760

next year yeah thanks you guys

1277

01:19:13,910 --> 01:19:11,360

that is madison west high school from

1278

01:19:15,510 --> 01:19:13,920

madison uh wisconsin one of our

1279

01:19:22,180 --> 01:19:15,520

perennial

1280

01:20:12,070 --> 01:19:54,170

[Music]

1281

01:20:12,080 --> 01:20:17,770

so

1282

01:21:31,910 --> 01:21:19,230

[Music]

1283

01:21:35,030 --> 01:21:33,350

hey everyone we are here with james

1284

01:21:37,910 --> 01:21:35,040

madison university okay one of our

1285

01:21:39,430 --> 01:21:37,920

rookie teams the first year coming out

1286

01:21:40,870 --> 01:21:39,440

yeah we just had another rookie team i'm

1287

01:21:42,229 --> 01:21:40,880

interested in hearing if they had a

1288

01:21:43,750 --> 01:21:42,239

similar experience what was it like

1289

01:21:45,030 --> 01:21:43,760

being the first year team

1290

01:21:46,310 --> 01:21:45,040

it was great we've been working on this

1291

01:21:48,470 --> 01:21:46,320

as our capstone project through our

1292

01:21:49,750 --> 01:21:48,480

engineering department so uh we've been

1293

01:21:51,350 --> 01:21:49,760

working on that for the past year and a

1294

01:21:53,189 --> 01:21:51,360

half or so and yeah it's been a great

1295

01:21:55,590 --> 01:21:53,199

experience we're so glad to be here and

1296

01:21:56,470 --> 01:21:55,600

uh meeting everyone has been awesome

1297

01:21:58,709 --> 01:21:56,480

so

1298

01:22:00,149 --> 01:21:58,719

now that you're at the end of your first

1299

01:22:01,750 --> 01:22:00,159

year anything that you would do

1300

01:22:03,030 --> 01:22:01,760

differently uh maybe for next year or

1301

01:22:05,110 --> 01:22:03,040

advice you would pass on to the next

1302

01:22:06,709 --> 01:22:05,120

generation or the next year's team sure

1303

01:22:08,470 --> 01:22:06,719

yeah we have a junior team coming up

1304

01:22:10,070 --> 01:22:08,480

next year so they'll be here again

1305

01:22:11,990 --> 01:22:10,080

and i would say just stay with it keep

1306

01:22:14,149 --> 01:22:12,000

working it's a lot of work but it's

1307

01:22:15,189 --> 01:22:14,159

definitely worth it so stick to stick to

1308

01:22:16,870 --> 01:22:15,199

it yeah

1309

01:22:18,950 --> 01:22:16,880

so is this team all seniors you're ready

1310

01:22:20,870 --> 01:22:18,960

to graduate yes ma'am oh so you're gonna

1311

01:22:22,629 --> 01:22:20,880

toss it off to the next next year that's

1312

01:22:25,110 --> 01:22:22,639

great so how did you guys tackle this

1313

01:22:27,510 --> 01:22:25,120

year's payload challenge so we're using

1314

01:22:30,070 --> 01:22:27,520

two imu sensors that take acceleration

1315

01:22:31,990 --> 01:22:30,080

and gyroscope data and we integrate that

1316

01:22:33,990 --> 01:22:32,000

down to a position and that'll tell us

1317

01:22:35,590 --> 01:22:34,000

what grid location we're in

1318

01:22:38,790 --> 01:22:35,600

for anybody back home

1319

01:22:40,629 --> 01:22:38,800

or a certain host what is an imu so imu

1320

01:22:42,310 --> 01:22:40,639

is basically a sensor um and it just

1321

01:22:45,590 --> 01:22:42,320

takes acceleration readings and

1322

01:22:48,050 --> 01:22:46,790

yeah right yeah

1323

01:22:49,990 --> 01:22:48,060

it's not rocket science

1324

01:22:53,189 --> 01:22:50,000

[Laughter]

1325

01:22:55,030 --> 01:22:53,199

um so guys what's the i know we kind of

1326

01:22:57,030 --> 01:22:55,040

touched on it what's been a highlight of

1327

01:22:58,070 --> 01:22:57,040

this experience for you uh as a first

1328

01:22:59,910 --> 01:22:58,080

year team

1329

01:23:01,110 --> 01:22:59,920

yeah definitely everyone we've met um

1330

01:23:02,709 --> 01:23:01,120

all the support we've gotten from

1331

01:23:04,149 --> 01:23:02,719

everyone back home and just seeing

1332

01:23:05,590 --> 01:23:04,159

everyone kind of

1333

01:23:06,790 --> 01:23:05,600

buy into our project as a first year

1334

01:23:08,229 --> 01:23:06,800

team has been really awesome really

1335

01:23:09,510 --> 01:23:08,239

rewarding now you mentioned all the

1336

01:23:11,590 --> 01:23:09,520

people back home anybody you want to

1337

01:23:14,070 --> 01:23:11,600

thank any sponsors any professors any uh

1338

01:23:16,149 --> 01:23:14,080

family members absolutely dr holland is

1339

01:23:18,229 --> 01:23:16,159

the best he was our capstone advisor um

1340

01:23:20,629 --> 01:23:18,239

we're very grateful for him dr naugle

1341

01:23:21,910 --> 01:23:20,639

our teacher chuck who's out here with us

1342

01:23:23,030 --> 01:23:21,920

our mentor

1343

01:23:24,629 --> 01:23:23,040

and then just the whole engineering

1344

01:23:26,790 --> 01:23:24,639

department they're actually having a

1345

01:23:28,310 --> 01:23:26,800

symposium right now so we'll say hi to

1346

01:23:29,910 --> 01:23:28,320

everyone back home

1347

01:23:31,590 --> 01:23:29,920

yeah so to everyone at the james madison

1348

01:23:33,189 --> 01:23:31,600

university engineering department hello

1349

01:23:35,590 --> 01:23:33,199

from nasa and student launch and your

1350

01:23:37,590 --> 01:23:35,600

awesome rocketry team um

1351

01:23:39,990 --> 01:23:37,600

guys so you guys are all seniors about

1352

01:23:41,350 --> 01:23:40,000

to graduate what's next

1353

01:23:43,270 --> 01:23:41,360

um we have a couple of folks going to

1354

01:23:45,189 --> 01:23:43,280

grad school a couple working at big

1355

01:23:46,550 --> 01:23:45,199

aerospace companies so definitely bright

1356

01:23:48,629 --> 01:23:46,560

futures and student launch has opened a

1357

01:23:50,390 --> 01:23:48,639

lot of opportunity in the aerospace

1358

01:23:53,590 --> 01:23:50,400

field for us so well northrop grumman's

1359

01:23:56,470 --> 01:23:55,189

well guys thanks so much for coming out

1360

01:23:58,229 --> 01:23:56,480

here and joining us and talking with us

1361

01:24:00,070 --> 01:23:58,239

for talking with us for a few minutes no

1362

01:24:01,910 --> 01:24:00,080

your rocket's out there in the pad we

1363

01:24:03,430 --> 01:24:01,920

can't wait to see it fly thanks for

1364

01:24:05,750 --> 01:24:03,440

coming out we can't wait to uh to see

1365

01:24:07,750 --> 01:24:05,760

you joining us out here one day uh from

1366

01:24:10,149 --> 01:24:07,760

the nasa side absolutely

1367

01:24:11,669 --> 01:24:10,159

that is james madison university or one

1368

01:24:18,670 --> 01:24:11,679

of our teams that's going to be flying

1369

01:24:18,680 --> 01:24:24,950

[Music]

1370

01:24:36,830 --> 01:24:26,590

so

1371

01:25:57,830 --> 01:24:46,920

[Music]

1372

01:26:01,830 --> 01:25:59,910

hey everyone we are joined by uah the

1373

01:26:03,990 --> 01:26:01,840

university of alabama huntsville a

1374

01:26:05,350 --> 01:26:04,000

hometown team which we always like to

1375

01:26:06,950 --> 01:26:05,360

see out here

1376

01:26:08,790 --> 01:26:06,960

but a team that's been coming for many

1377

01:26:11,030 --> 01:26:08,800

years but you guys it's all of y'all's

1378

01:26:12,950 --> 01:26:11,040

first year here at student launch what

1379

01:26:15,030 --> 01:26:12,960

has your experience been like

1380

01:26:17,350 --> 01:26:15,040

it's been amazing we've been able to

1381

01:26:19,910 --> 01:26:17,360

build a rocket from scratch and we're

1382

01:26:21,110 --> 01:26:19,920

all excited to be here

1383

01:26:22,790 --> 01:26:21,120

so alice we didn't really let you

1384

01:26:25,189 --> 01:26:22,800

introduce yourself tell us tell us your

1385

01:26:27,030 --> 01:26:25,199

name and where you're from

1386

01:26:29,350 --> 01:26:27,040

i'm allison lintz and i'm the safety

1387

01:26:31,110 --> 01:26:29,360

officer here i'm from louisville

1388

01:26:34,629 --> 01:26:31,120

kentucky and i came all the way down to

1389

01:26:36,229 --> 01:26:34,639

uah to participate in our rocket program

1390

01:26:37,590 --> 01:26:36,239

so how long have you personally been

1391

01:26:39,270 --> 01:26:37,600

interested in rocketry i'm kind of

1392

01:26:40,229 --> 01:26:39,280

interested in how you all came to do

1393

01:26:41,910 --> 01:26:40,239

this

1394

01:26:44,070 --> 01:26:41,920

i mean i've been interested in it since

1395

01:26:47,270 --> 01:26:44,080

i was a kid space was always my favorite

1396

01:26:49,189 --> 01:26:47,280

thing as a child and then i saw those um

1397

01:26:50,950 --> 01:26:49,199

those big rockets at kennedy and i knew

1398

01:26:52,629 --> 01:26:50,960

that i wanted to do that

1399

01:26:53,990 --> 01:26:52,639

that was super those big rockets at

1400

01:26:55,910 --> 01:26:54,000

kennedy are always impressive and

1401  
01:26:57,669 --> 01:26:55,920  
they're amazing to watch launch now as a

1402  
01:26:58,550 --> 01:26:57,679  
safety officer what is your role on the

1403  
01:27:01,110 --> 01:26:58,560  
team

1404  
01:27:03,430 --> 01:27:01,120  
i look over the safety of the design

1405  
01:27:04,950 --> 01:27:03,440  
testing and launching of this rocket and

1406  
01:27:06,629 --> 01:27:04,960  
it's been awesome my whole team has

1407  
01:27:08,629 --> 01:27:06,639  
really helped me develop all of our

1408  
01:27:10,470 --> 01:27:08,639  
safety paperwork and stuff

1409  
01:27:13,590 --> 01:27:10,480  
what's a checklist i would assume yes i

1410  
01:27:15,270 --> 01:27:13,600  
got my checklist right here

1411  
01:27:17,590 --> 01:27:15,280  
now so your payload challenge i know

1412  
01:27:19,990 --> 01:27:17,600  
this is a difficult payload year how did

1413  
01:27:24,149 --> 01:27:20,000

you guys approach that

1414

01:27:27,189 --> 01:27:25,430

all right come on in and introduce

1415

01:27:28,550 --> 01:27:27,199

yourselves as well

1416

01:27:30,550 --> 01:27:28,560

uh my name is adam garrett and i'm on

1417

01:27:32,310 --> 01:27:30,560

the payload team yeah i'm declan brick

1418

01:27:33,910 --> 01:27:32,320

i'm also a pillow team member all right

1419

01:27:35,270 --> 01:27:33,920

so now your safety officer brought you

1420

01:27:37,669 --> 01:27:35,280

guys up here to talk about the payload

1421

01:27:39,430 --> 01:27:37,679

what's on board that rocket

1422

01:27:41,430 --> 01:27:39,440

uh yeah we have an uh inertial

1423

01:27:42,870 --> 01:27:41,440

navigation system um so basically just

1424

01:27:45,030 --> 01:27:42,880

consists of some accelerometers and

1425

01:27:46,870 --> 01:27:45,040

gyroscopes um and that just tracks

1426

01:27:50,070 --> 01:27:46,880

rocket during flight and then uh lots of

1427

01:27:51,510 --> 01:27:50,080

math later we uh get our position

1428

01:27:55,910 --> 01:27:51,520

excellent now what uh what target

1429

01:27:59,830 --> 01:27:58,470

so over 4 000 feet in the air i can't

1430

01:28:02,950 --> 01:27:59,840

even

1431

01:28:04,629 --> 01:28:02,960

imagine that um so you selected 4 300

1432

01:28:05,830 --> 01:28:04,639

feet what um how close do you think

1433

01:28:07,189 --> 01:28:05,840

you're going to come today based on your

1434

01:28:09,430 --> 01:28:07,199

test flights

1435

01:28:10,709 --> 01:28:09,440

we'll get up there we'll get up

1436

01:28:12,470 --> 01:28:10,719

we'll get up there don't you worry

1437

01:28:15,590 --> 01:28:12,480

you're not going to give us a range uh

1438

01:28:16,709 --> 01:28:15,600

probably over 43 at least like 43 is

1439

01:28:17,910 --> 01:28:16,719

probably minimum we don't want to go

1440

01:28:21,110 --> 01:28:17,920

under

1441

01:28:22,629 --> 01:28:21,120

a lot of sponsors a lot of support that

1442

01:28:25,830 --> 01:28:22,639

helped you get here and build this

1443

01:28:27,590 --> 01:28:25,840

rocket anybody you want to thank

1444

01:28:30,629 --> 01:28:27,600

uh yeah i'd like to thank our sponsors

1445

01:28:35,110 --> 01:28:30,639

that's jacobs the national space club

1446

01:28:37,270 --> 01:28:35,120

the alabama space consortium and

1447

01:28:38,790 --> 01:28:37,280

i is4

1448

01:28:40,070 --> 01:28:38,800

and i also want to thank all of our

1449

01:28:43,270 --> 01:28:40,080

advisors that have helped us through

1450

01:28:44,870 --> 01:28:43,280

this dr lineberry dr patel and mr

1451

01:28:46,470 --> 01:28:44,880

whittingham

1452

01:28:48,229 --> 01:28:46,480

that's super it takes a lot of team

1453

01:28:51,270 --> 01:28:48,239

members that have diverse backgrounds

1454

01:28:52,629 --> 01:28:51,280

but it takes a lot of support too

1455

01:28:55,270 --> 01:28:52,639

well guys we wish you the best of luck

1456

01:28:58,070 --> 01:28:55,280

we can't wait to see that 4300 and

1457

01:28:59,830 --> 01:28:58,080

counting uh flight coming up here soon

1458

01:29:01,189 --> 01:28:59,840

uh you know uah thank you so much for

1459

01:29:03,030 --> 01:29:01,199

joining us out here at nasa student

1460

01:29:04,709 --> 01:29:03,040

launch uh we can't can't wait to see

1461

01:29:06,149 --> 01:29:04,719

that your rocket fly

1462

01:29:07,510 --> 01:29:06,159

thank you

1463

01:29:09,350 --> 01:29:07,520

that is the university of alabama

1464

01:29:15,920 --> 01:29:09,360

huntsville their rocket is out there on

1465

01:31:44,290 --> 01:29:37,950

[Music]

1466

01:31:46,690 --> 01:31:46,680

[Applause]

1467

01:32:53,120 --> 01:31:46,700

[Music]

1468

01:32:56,300 --> 01:32:53,130

[Applause]

1469

01:33:07,270 --> 01:32:56,310

[Music]

1470

01:33:12,470 --> 01:33:09,189

hey everyone i am joined now by stephen

1471

01:33:15,350 --> 01:33:12,480

ellert uh with the chandra

1472

01:33:18,390 --> 01:33:15,360

space telescope now now uh tell us what

1473

01:33:21,110 --> 01:33:18,400

chandra is so chandra is a really cool

1474

01:33:23,110 --> 01:33:21,120

telescope it's an x-ray telescope and

1475

01:33:24,950 --> 01:33:23,120

x-ray telescopes help us really

1476

01:33:26,870 --> 01:33:24,960

understand different parts of the sky

1477

01:33:27,990 --> 01:33:26,880

than what you would see with a telescope

1478

01:33:29,750 --> 01:33:28,000

you probably have at your house your

1479

01:33:31,350 --> 01:33:29,760

backyard or your school

1480

01:33:34,070 --> 01:33:31,360

or some some other place where you've

1481

01:33:37,110 --> 01:33:34,080

seen a telescope so the sky looks really

1482

01:33:38,629 --> 01:33:37,120

different in x-rays than it does in

1483

01:33:41,030 --> 01:33:38,639

sort of the light that we're normally

1484

01:33:43,030 --> 01:33:41,040

used to seeing and by looking at all

1485

01:33:44,950 --> 01:33:43,040

these different kinds of light we're

1486

01:33:47,430 --> 01:33:44,960

able to really understand

1487

01:33:49,110 --> 01:33:47,440

better what's going on out in space now

1488

01:33:51,189 --> 01:33:49,120

when most people think space telescopes

1489

01:33:53,350 --> 01:33:51,199

they probably envision hubble and its

1490

01:33:55,430 --> 01:33:53,360

giant mirrors but the setup for shander

1491

01:33:57,510 --> 01:33:55,440

is a little different than that isn't it

1492

01:34:00,070 --> 01:33:57,520

a little bit so the mirrors look

1493

01:34:03,350 --> 01:34:00,080

different they don't uh they're not sort

1494

01:34:04,870 --> 01:34:03,360

of shells of a shells of a circle or

1495

01:34:06,629 --> 01:34:04,880

they're not something you can look into

1496

01:34:09,030 --> 01:34:06,639

very easily and see your own face in

1497

01:34:11,350 --> 01:34:09,040

them they're kind of these long barrels

1498

01:34:13,510 --> 01:34:11,360

and because of the way x-rays are best

1499

01:34:15,350 --> 01:34:13,520

reflected you get these long barrels and

1500

01:34:17,430 --> 01:34:15,360

everything comes in practically straight

1501  
01:34:19,990 --> 01:34:17,440  
on and skips off the surfaces of those

1502  
01:34:21,590 --> 01:34:20,000  
mirrors like rocks on the water

1503  
01:34:23,910 --> 01:34:21,600  
now tell us talk to us about what your

1504  
01:34:26,149 --> 01:34:23,920  
role well what the space telescope is so

1505  
01:34:28,950 --> 01:34:26,159  
i work in the project science office

1506  
01:34:31,350 --> 01:34:28,960  
which basically means that i help

1507  
01:34:33,189 --> 01:34:31,360  
sort of oversee what's going on with all

1508  
01:34:33,990 --> 01:34:33,199  
the operations and some of the end some

1509  
01:34:35,750 --> 01:34:34,000  
of the engineering at least the

1510  
01:34:38,390 --> 01:34:35,760  
engineering they have to do now but

1511  
01:34:40,629 --> 01:34:38,400  
really help understand how the project

1512  
01:34:42,470 --> 01:34:40,639  
and how all the operations sort of

1513  
01:34:44,390 --> 01:34:42,480

best serve the science community

1514

01:34:46,470 --> 01:34:44,400

chandra's been up there for a number of

1515

01:34:48,950 --> 01:34:46,480

years now have there been any surprise

1516

01:34:51,109 --> 01:34:48,960

discoveries well there have been a lot

1517

01:34:53,750 --> 01:34:51,119

um it's been up for 23 years and it's

1518

01:34:54,550 --> 01:34:53,760

been doing really awesome science every

1519

01:34:56,149 --> 01:34:54,560

year

1520

01:34:58,229 --> 01:34:56,159

um so what i'll say is there have been

1521

01:35:00,310 --> 01:34:58,239

lots of surprises about sort of the

1522

01:35:02,310 --> 01:35:00,320

population of black holes going all the

1523

01:35:04,950 --> 01:35:02,320

way back to the earliest stages of the

1524

01:35:07,189 --> 01:35:04,960

universe and lots of surprises with

1525

01:35:08,790 --> 01:35:07,199

supernova remnants and my personal

1526

01:35:10,830 --> 01:35:08,800

favorite which are galaxy clusters which

1527

01:35:13,910 --> 01:35:10,840

are these giant

1528

01:35:15,910 --> 01:35:13,920

amalgamations of hot gas and galaxies

1529

01:35:17,830 --> 01:35:15,920

thousands of galaxies all orbiting

1530

01:35:20,149 --> 01:35:17,840

around a single point that it's

1531

01:35:20,950 --> 01:35:20,159

weighs as much as a million billion suns

1532

01:35:22,870 --> 01:35:20,960

so

1533

01:35:24,629 --> 01:35:22,880

now when we see those images and i know

1534

01:35:25,510 --> 01:35:24,639

chandra is part of

1535

01:35:26,790 --> 01:35:25,520

one of

1536

01:35:28,550 --> 01:35:26,800

the many projects of marshall space

1537

01:35:31,270 --> 01:35:28,560

flight center's portfolios and those

1538

01:35:32,709 --> 01:35:31,280

pictures are absolutely stunning wink uh

1539

01:35:35,109 --> 01:35:32,719

when we get them

1540

01:35:36,310 --> 01:35:35,119

they are they they're really cool you

1541

01:35:38,390 --> 01:35:36,320

with the x-rays what you're really

1542

01:35:40,790 --> 01:35:38,400

seeing are like the fireworks you know

1543

01:35:43,189 --> 01:35:40,800

the really big explosions and the really

1544

01:35:45,030 --> 01:35:43,199

hot gas it's kind of uh it's really

1545

01:35:47,350 --> 01:35:45,040

where a lot of the really exciting

1546

01:35:48,629 --> 01:35:47,360

action can be

1547

01:35:50,470 --> 01:35:48,639

now just as you're seeing with these

1548

01:35:51,830 --> 01:35:50,480

rockets fly we're seeing the hot gas and

1549

01:35:53,109 --> 01:35:51,840

we're seeing the flames come out of the

1550

01:35:55,030 --> 01:35:53,119

back end

1551  
01:35:56,390 --> 01:35:55,040  
we're also studying them in the stars in

1552  
01:35:57,510 --> 01:35:56,400  
the galaxies and

1553  
01:36:00,470 --> 01:35:57,520  
things that

1554  
01:36:02,790 --> 01:36:00,480  
by far go beyond my comprehension but i

1555  
01:36:04,070 --> 01:36:02,800  
love to look at those pictures um now

1556  
01:36:05,910 --> 01:36:04,080  
talk to us so i'm going to pull in some

1557  
01:36:08,629 --> 01:36:05,920  
rocketry talk to us about the importance

1558  
01:36:11,590 --> 01:36:08,639  
of a launch vehicle uh for the telescope

1559  
01:36:13,189 --> 01:36:11,600  
well it the launch is a really important

1560  
01:36:14,709 --> 01:36:13,199  
part of course without the launch you

1561  
01:36:16,550 --> 01:36:14,719  
never make it up into space to begin

1562  
01:36:18,149 --> 01:36:16,560  
with um but what's really important

1563  
01:36:19,910 --> 01:36:18,159

about the launch is you know every

1564

01:36:22,149 --> 01:36:19,920

spacecraft including chandra every

1565

01:36:23,990 --> 01:36:22,159

telescope has an orbit and that's part

1566

01:36:25,830 --> 01:36:24,000

of how they plan the mission how they

1567

01:36:27,750 --> 01:36:25,840

plan the science of the mission

1568

01:36:29,109 --> 01:36:27,760

what can you do from this spot out in

1569

01:36:32,149 --> 01:36:29,119

the space or what can you do from

1570

01:36:34,390 --> 01:36:32,159

another spot out in space so chandra has

1571

01:36:37,669 --> 01:36:34,400

a very specific orbit it's very very

1572

01:36:39,590 --> 01:36:37,679

elliptical it goes way above the earth

1573

01:36:41,510 --> 01:36:39,600

and it comes down it's a

1574

01:36:42,790 --> 01:36:41,520

sort of its closest it's still higher

1575

01:36:44,709 --> 01:36:42,800

than like the international space

1576

01:36:47,030 --> 01:36:44,719

station or something like that but it's

1577

01:36:49,590 --> 01:36:47,040

a lot closer but it's designed that way

1578

01:36:51,910 --> 01:36:49,600

in order to optimize certain science

1579

01:36:53,270 --> 01:36:51,920

goals and of course you need a vehicle

1580

01:36:54,629 --> 01:36:53,280

that can actually get it there and get

1581

01:36:56,950 --> 01:36:54,639

it to those speeds and get it to those

1582

01:36:57,990 --> 01:36:56,960

altitudes so those launch vehicles are

1583

01:36:59,669 --> 01:36:58,000

crucial

1584

01:37:02,470 --> 01:36:59,679

that's excellent now we sure appreciate

1585

01:37:03,590 --> 01:37:02,480

you joining us here today uh why why was

1586

01:37:05,510 --> 01:37:03,600

it important for you to come out here

1587

01:37:06,870 --> 01:37:05,520

and hang out with us at student launch

1588

01:37:09,030 --> 01:37:06,880

well

1589

01:37:10,550 --> 01:37:09,040

this is the next generation of

1590

01:37:12,950 --> 01:37:10,560

scientists and engineers who are going

1591

01:37:13,750 --> 01:37:12,960

to make the next generation of missions

1592

01:37:15,430 --> 01:37:13,760

and

1593

01:37:16,550 --> 01:37:15,440

there's always going to be new science

1594

01:37:17,830 --> 01:37:16,560

to learn and there's always going to be

1595

01:37:19,750 --> 01:37:17,840

really cool science to learn and it's

1596

01:37:21,350 --> 01:37:19,760

going to be it's going to require a lot

1597

01:37:22,709 --> 01:37:21,360

of hard thinking and you need people who

1598

01:37:24,149 --> 01:37:22,719

are ready to start doing that thinking

1599

01:37:25,750 --> 01:37:24,159

now so

1600

01:37:27,270 --> 01:37:25,760

that's all we need to encourage them we

1601

01:37:29,669 --> 01:37:27,280

sure appreciate you coming out here and

1602

01:37:30,870 --> 01:37:29,679

spending a few minutes with us i know uh

1603

01:37:31,910 --> 01:37:30,880

the next rock so i'm looking out there

1604

01:37:33,910 --> 01:37:31,920

we've got a bunch of rockets on the

1605

01:37:35,750 --> 01:37:33,920

rails we're not far from these launches

1606

01:37:37,430 --> 01:37:35,760

stephen thank you so much for coming out

1607

01:37:39,189 --> 01:37:37,440

and joining us out here now pleasure to

1608

01:37:40,950 --> 01:37:39,199

be here

1609

01:37:43,030 --> 01:37:40,960

y'all we do so much more at marshall

1610

01:37:44,629 --> 01:37:43,040

space flight center than just propulsion

1611

01:37:45,990 --> 01:37:44,639

i like the rocket

1612

01:37:47,910 --> 01:37:46,000

but we also do a lot of incredible

1613

01:37:49,669 --> 01:37:47,920

science and this is just one of the many

1614

01:37:51,750 --> 01:37:49,679

examples of what we do and how it

1615

01:38:19,780 --> 01:37:51,760

relates to what we're doing out here at

1616

01:39:29,990 --> 01:38:44,420

[Music]

1617

01:39:36,430 --> 01:39:32,149

space is for everyone we're all working

1618

01:39:40,950 --> 01:39:38,390

[Music]

1619

01:39:44,950 --> 01:39:40,960

just seeing people learn and grow and

1620

01:39:46,709 --> 01:39:44,960

the community benefiting as a whole

1621

01:39:49,750 --> 01:39:46,719

we have vendors from all around this

1622

01:39:51,990 --> 01:39:49,760

country and all of that's bringing in a

1623

01:39:54,550 --> 01:39:52,000

lot of jobs and getting to work in our

1624

01:39:57,910 --> 01:39:54,560

community i give back by seeing

1625

01:40:01,350 --> 01:39:57,920

companies grow my work means something

1626

01:40:07,990 --> 01:40:01,360

it provides people with ability to feed

1627

01:40:12,070 --> 01:40:09,510

not everyone who works on the space

1628

01:40:14,310 --> 01:40:12,080

program is is an engineer or scientist

1629

01:40:16,470 --> 01:40:14,320

in a white lab coat and there's vital

1630

01:40:18,950 --> 01:40:16,480

roles

1631

01:40:21,109 --> 01:40:18,960

everybody at nasa is very teamwork

1632

01:40:23,750 --> 01:40:21,119

driven nothing that we do here is done

1633

01:40:26,870 --> 01:40:23,760

by itself all successful missions come

1634

01:40:29,189 --> 01:40:26,880

from a team that works together that is

1635

01:40:31,270 --> 01:40:29,199

diverse and we each bring a different

1636

01:40:32,950 --> 01:40:31,280

perspective to the team to help us

1637

01:40:35,590 --> 01:40:32,960

achieve our goals

1638

01:40:37,590 --> 01:40:35,600

there's literally an expert kind of

1639

01:40:40,390 --> 01:40:37,600

within arm's reach that you can ask any

1640

01:40:43,530 --> 01:40:40,400

question to and you'll probably get one

1641

01:40:50,870 --> 01:40:43,540

of the best answers in the world

1642

01:40:55,270 --> 01:40:53,270

we take a lot of ownership and what we

1643

01:40:57,510 --> 01:40:55,280

do you get to see a lot of that passion

1644

01:41:00,070 --> 01:40:57,520

you get to see a lot of that drive

1645

01:41:02,550 --> 01:41:00,080

people want to do their best people want

1646

01:41:04,070 --> 01:41:02,560

to pull together to be a part of this

1647

01:41:06,550 --> 01:41:04,080

program that's bigger than what any of

1648

01:41:09,030 --> 01:41:06,560

us can accomplish on our own

1649

01:41:10,629 --> 01:41:09,040

[Applause]

1650

01:41:11,990 --> 01:41:10,639

nasa does the trailblazing with

1651  
01:41:14,790 --> 01:41:12,000  
technology

1652  
01:41:16,550 --> 01:41:14,800  
the kind of work we do you can't rest on

1653  
01:41:18,390 --> 01:41:16,560  
your laurels and say okay we're there

1654  
01:41:20,950 --> 01:41:18,400  
there's no end to what we can achieve so

1655  
01:41:22,790 --> 01:41:20,960  
we have to keep pushing ourselves in any

1656  
01:41:24,950 --> 01:41:22,800  
airplane that i get on it's exciting to

1657  
01:41:26,870 --> 01:41:24,960  
think about oh this airplane probably at

1658  
01:41:29,510 --> 01:41:26,880  
some point passed through many of our

1659  
01:41:31,669 --> 01:41:29,520  
centers we are with you when you fly we

1660  
01:41:33,830 --> 01:41:31,679  
are coming up with safer newer

1661  
01:41:37,030 --> 01:41:33,840  
technologies that are more silent more

1662  
01:41:42,070 --> 01:41:39,990  
just to be able to work here and

1663  
01:41:44,470 --> 01:41:42,080

be able to design and touch something

1664

01:41:48,709 --> 01:41:44,480

that will one day travel to a new planet

1665

01:41:51,830 --> 01:41:48,719

is amazing i mean it's indescribable

1666

01:41:54,070 --> 01:41:51,840

nasa brings hope and inspiration by

1667

01:41:57,560 --> 01:41:54,080

leading the world to space for the

1668

01:42:21,320 --> 01:41:57,570

progression of all people

1669

01:42:21,330 --> 01:42:30,820

[Music]

1670

01:42:30,830 --> 01:42:38,020

[Applause]

1671

01:42:38,030 --> 01:43:07,109

[Music]

1672

01:43:12,470 --> 01:43:09,270

hi we are here with cedarville

1673

01:43:14,950 --> 01:43:12,480

university of cedarville ohio can you

1674

01:43:16,629 --> 01:43:14,960

give me your name major and you're in

1675

01:43:19,109 --> 01:43:16,639

school

1676

01:43:21,510 --> 01:43:19,119

hi my name is chad sanderson and i'm a

1677

01:43:23,590 --> 01:43:21,520

senior mechanical engineering student at

1678

01:43:25,910 --> 01:43:23,600

cedarville university great well thanks

1679

01:43:28,310 --> 01:43:25,920

for being here with us today

1680

01:43:30,550 --> 01:43:28,320

chad we hear it's your first time here

1681

01:43:32,950 --> 01:43:30,560

with us what has the process been like

1682

01:43:34,709 --> 01:43:32,960

preparing for today

1683

01:43:37,430 --> 01:43:34,719

it's been a lot of work we're a small

1684

01:43:39,510 --> 01:43:37,440

team so we've had to work a lot together

1685

01:43:40,550 --> 01:43:39,520

learn a lot of team building skills as

1686

01:43:42,149 --> 01:43:40,560

well as

1687

01:43:44,550 --> 01:43:42,159

just learning how to do a lot of the

1688

01:43:46,229 --> 01:43:44,560

documentation and some of the

1689

01:43:47,669 --> 01:43:46,239

just the new requirements that nasa

1690

01:43:49,030 --> 01:43:47,679

specifies

1691

01:43:51,109 --> 01:43:49,040

we've had a lot of challenges along the

1692

01:43:52,629 --> 01:43:51,119

way but we're just very thankful

1693

01:43:55,109 --> 01:43:52,639

to have made it to this point and we're

1694

01:43:56,950 --> 01:43:55,119

just thankful for the lord for that

1695

01:43:58,390 --> 01:43:56,960

well as a first year team you know you

1696

01:43:59,990 --> 01:43:58,400

mentioned you had some challenges there

1697

01:44:01,910 --> 01:44:00,000

are a lot of bumps that come with a

1698

01:44:03,990 --> 01:44:01,920

brand new experience so can you tell us

1699

01:44:05,750 --> 01:44:04,000

kind of what you've overcome to get to

1700

01:44:08,229 --> 01:44:05,760

this point today

1701

01:44:10,550 --> 01:44:08,239

so our second full-scale rocket launch

1702

01:44:13,350 --> 01:44:10,560

ended uh catastrophically which ended uh

1703

01:44:15,350 --> 01:44:13,360

catastrophically so we lost about 90 of

1704

01:44:17,590 --> 01:44:15,360

our vehicle and so

1705

01:44:21,189 --> 01:44:17,600

we had to rebuild our rocket in under

1706

01:44:22,709 --> 01:44:21,199

two weeks and fly uh to make it here and

1707

01:44:24,550 --> 01:44:22,719

honestly that was one of the hardest

1708

01:44:25,669 --> 01:44:24,560

challenges we ever faced

1709

01:44:28,870 --> 01:44:25,679

had to

1710

01:44:32,149 --> 01:44:28,880

do a lot of late nights and just work

1711

01:44:33,830 --> 01:44:32,159

really hard as a team and just the

1712

01:44:36,550 --> 01:44:33,840

the perseverance that went into getting

1713

01:44:37,270 --> 01:44:36,560

here and even the way that we found um

1714

01:44:38,709 --> 01:44:37,280

the

1715

01:44:39,590 --> 01:44:38,719

issue with our recovery system that we

1716

01:44:41,350 --> 01:44:39,600

fixed

1717

01:44:43,270 --> 01:44:41,360

uh i really believe like god really

1718

01:44:46,070 --> 01:44:43,280

wanted us here as a team and that's just

1719

01:44:48,390 --> 01:44:46,080

been like a really cool thing for us

1720

01:44:50,790 --> 01:44:48,400

way to push through congratulations for

1721

01:44:53,910 --> 01:44:50,800

making it here today and what advice

1722

01:44:56,070 --> 01:44:53,920

would you give to an up-and-coming team

1723

01:44:57,669 --> 01:44:56,080

so i would say for for new teams

1724

01:44:59,669 --> 01:44:57,679

definitely just

1725

01:45:02,709 --> 01:44:59,679

stick through it when the report writing

1726

01:45:05,350 --> 01:45:02,719

and the other sections are hard

1727

01:45:07,669 --> 01:45:05,360

stay together as a team and don't

1728

01:45:08,790 --> 01:45:07,679

don't use your energy against each other

1729

01:45:10,870 --> 01:45:08,800

use it to

1730

01:45:13,030 --> 01:45:10,880

to continue to build each other up

1731

01:45:14,629 --> 01:45:13,040

to sharpen one another and to encourage

1732

01:45:17,189 --> 01:45:14,639

each other as you're going

1733

01:45:19,109 --> 01:45:17,199

especially just as the timelines are

1734

01:45:21,590 --> 01:45:19,119

very tight and so just make sure you're

1735

01:45:22,550 --> 01:45:21,600

planning and that um just that you're

1736

01:45:25,350 --> 01:45:22,560

keeping

1737

01:45:27,510 --> 01:45:25,360

good interaction between the team

1738

01:45:29,669 --> 01:45:27,520

well you guys have overcome a lot to get

1739

01:45:31,750 --> 01:45:29,679

here today what do you think you are

1740

01:45:33,510 --> 01:45:31,760

most proud of working through all of

1741

01:45:36,790 --> 01:45:33,520

those challenges what's your most proud

1742

01:45:38,070 --> 01:45:36,800

moment of this experience so far

1743

01:45:39,590 --> 01:45:38,080

i think

1744

01:45:42,390 --> 01:45:39,600

the most proud moment was one of our

1745

01:45:43,910 --> 01:45:42,400

team members jacob titus made an air

1746

01:45:46,070 --> 01:45:43,920

brake system

1747

01:45:48,149 --> 01:45:46,080

as a single individual and he puts so

1748

01:45:50,149 --> 01:45:48,159

much work into it um after our

1749

01:45:52,390 --> 01:45:50,159

catastrophic failure it sadly got

1750

01:45:54,149 --> 01:45:52,400

destroyed and we couldn't rebuild it but

1751

01:45:56,390 --> 01:45:54,159

that was one of the coolest things we

1752

01:45:58,870 --> 01:45:56,400

did this year as a team just working on

1753

01:46:00,790 --> 01:45:58,880

the rocket and we're hoping that maybe

1754

01:46:02,149 --> 01:46:00,800

that experience can be used for our

1755

01:46:04,550 --> 01:46:02,159

future teams as well and we already have

1756

01:46:06,470 --> 01:46:04,560

a team for next year planning to come

1757

01:46:08,390 --> 01:46:06,480

we know it takes a whole team to get

1758

01:46:10,709 --> 01:46:08,400

here who else would you like to thank

1759

01:46:13,109 --> 01:46:10,719

maybe a professor or teacher for helping

1760

01:46:15,830 --> 01:46:13,119

you get here today um i'd definitely

1761

01:46:17,669 --> 01:46:15,840

like to thank our advisors dr ward dr

1762

01:46:19,270 --> 01:46:17,679

tunstra who spent a lot of time helping

1763

01:46:21,030 --> 01:46:19,280

us through this project

1764

01:46:22,390 --> 01:46:21,040

our parents our family members our

1765

01:46:24,310 --> 01:46:22,400

friends that have supported us through

1766

01:46:25,669 --> 01:46:24,320

the project that have made it possible

1767

01:46:26,870 --> 01:46:25,679

that have encouraged us and helped us to

1768

01:46:29,750 --> 01:46:26,880

be here

1769

01:46:32,149 --> 01:46:29,760

my team members because i'm just a face

1770

01:46:33,510 --> 01:46:32,159

for the team but i'm not the team

1771

01:46:35,990 --> 01:46:33,520

just they're the ones who are putting in

1772

01:46:38,149 --> 01:46:36,000

a lot of work as well and just very

1773

01:46:40,709 --> 01:46:38,159

thankful for the work they contributed

1774

01:46:43,350 --> 01:46:40,719

and lastly um i'm just very thankful for

1775

01:46:45,350 --> 01:46:43,360

how god made this possible uh we're from

1776

01:46:46,310 --> 01:46:45,360

cedarville university which is a private

1777

01:46:49,030 --> 01:46:46,320

christian

1778

01:46:51,189 --> 01:46:49,040

university and um even on the back of

1779

01:46:52,550 --> 01:46:51,199

our shirts it says for the word of uh

1780

01:46:56,149 --> 01:46:52,560

for the word of god and the testimony of

1781

01:46:58,149 --> 01:46:56,159

jesus christ and we really just want to

1782

01:46:59,990 --> 01:46:58,159

share what we care about as a team and

1783

01:47:02,470 --> 01:47:00,000

the fact that you know jesus came and

1784

01:47:04,310 --> 01:47:02,480

saved us from our sins and that that is

1785

01:47:07,189 --> 01:47:04,320

extended to anyone who chooses to

1786

01:47:09,270 --> 01:47:07,199

believe and accept him and we're just

1787

01:47:11,510 --> 01:47:09,280

hoping that that could be extended to

1788

01:47:13,030 --> 01:47:11,520

everyone and as well as just that the

1789

01:47:16,390 --> 01:47:13,040

hope and the life that gives to all

1790

01:47:18,629 --> 01:47:16,400

believers and even to us as a team

1791

01:47:20,709 --> 01:47:18,639

this is cedar university joining us

1792

01:47:23,109 --> 01:47:20,719

today thank you guys so much for coming

1793

01:47:36,710 --> 01:47:23,119

and best of luck today congratulations

1794

01:50:03,510 --> 01:47:42,640

[Music]

1795

01:50:08,550 --> 01:50:05,430

so we're back here at uh student launch

1796

01:50:09,990 --> 01:50:08,560

uh 2022 on a windy windy day uh we're

1797

01:50:12,149 --> 01:50:10,000

here with gerald mukes and uh you're the

1798

01:50:13,589 --> 01:50:12,159

guy that pushes the buttons are you not

1799

01:50:15,350 --> 01:50:13,599

i'm a part of the team that does push

1800

01:50:17,030 --> 01:50:15,360

the buttons yes so the part that i get

1801  
01:50:18,550 --> 01:50:17,040  
to do and really enjoy is to be able to

1802  
01:50:20,310 --> 01:50:18,560  
to talk about the projects that's going

1803  
01:50:22,229 --> 01:50:20,320  
up what we call a launch control officer

1804  
01:50:24,550 --> 01:50:22,239  
from from a hobby perspective and what

1805  
01:50:26,310 --> 01:50:24,560  
that role of the launch control officer

1806  
01:50:27,830 --> 01:50:26,320  
is to make sure that we're connecting

1807  
01:50:29,669 --> 01:50:27,840  
the rocket with the team with the crowd

1808  
01:50:31,270 --> 01:50:29,679  
so everybody knows what's going on so

1809  
01:50:32,790 --> 01:50:31,280  
everyone's engaged we always make sure

1810  
01:50:35,430 --> 01:50:32,800  
safety is the utmost importance to

1811  
01:50:36,709 --> 01:50:35,440  
what's happening with the event um but

1812  
01:50:38,070 --> 01:50:36,719  
then one of those functions does include

1813  
01:50:39,589 --> 01:50:38,080

pushing the button but i'm able to

1814

01:50:41,350 --> 01:50:39,599

actually pass that off to have someone

1815

01:50:42,870 --> 01:50:41,360

else be able to push the button so i can

1816

01:50:44,870 --> 01:50:42,880

really focus in on talking about the

1817

01:50:46,629 --> 01:50:44,880

projects cause these are some really

1818

01:50:49,430 --> 01:50:46,639

incredible projects that are out there

1819

01:50:51,030 --> 01:50:49,440

and some of the types of payloads and

1820

01:50:53,030 --> 01:50:51,040

experiments they're testing out which is

1821

01:50:54,950 --> 01:50:53,040

really great and rewarding for for me to

1822

01:50:56,709 --> 01:50:54,960

see as a as a high power rocketry

1823

01:50:57,669 --> 01:50:56,719

enthusiast now i've been listening to

1824

01:50:58,709 --> 01:50:57,679

some of the conversations you've been

1825

01:50:59,669 --> 01:50:58,719

having with some of the teams as they've

1826  
01:51:01,750 --> 01:50:59,679  
been coming forward you've been asking a

1827  
01:51:02,870 --> 01:51:01,760  
lot of questions about you know you know

1828  
01:51:04,149 --> 01:51:02,880  
tell me something special about what

1829  
01:51:05,350 --> 01:51:04,159  
what you know what your team has got

1830  
01:51:06,709 --> 01:51:05,360  
going on or tell me something you know

1831  
01:51:07,990 --> 01:51:06,719  
what was the superstition that you guys

1832  
01:51:09,109 --> 01:51:08,000  
have or you know what's something

1833  
01:51:10,470 --> 01:51:09,119  
special about your rocket something

1834  
01:51:12,149 --> 01:51:10,480  
about the paint job or you're asking all

1835  
01:51:14,390 --> 01:51:12,159  
kinds of questions it's not just about

1836  
01:51:15,510 --> 01:51:14,400  
the science of of uh of the launch

1837  
01:51:17,589 --> 01:51:15,520  
itself but you're asking all kinds of

1838  
01:51:19,430 --> 01:51:17,599

like you know so sort of like what what

1839

01:51:20,709 --> 01:51:19,440

makes it personal to to each team and i

1840

01:51:21,669 --> 01:51:20,719

think that's i think that's really great

1841

01:51:23,589 --> 01:51:21,679

what are some of the cool things that

1842

01:51:25,030 --> 01:51:23,599

you've heard uh you've heard thus far

1843

01:51:27,270 --> 01:51:25,040

i i think what's really fun about

1844

01:51:28,870 --> 01:51:27,280

hearing some of the stories is just what

1845

01:51:30,229 --> 01:51:28,880

perseverance these teams have had to go

1846

01:51:32,709 --> 01:51:30,239

through to get where they're at here

1847

01:51:34,149 --> 01:51:32,719

today just hearing okay the rocket

1848

01:51:35,910 --> 01:51:34,159

didn't work as well so we've had to

1849

01:51:37,990 --> 01:51:35,920

rebuild it a couple different times but

1850

01:51:40,070 --> 01:51:38,000

it we feel confident to where we're at

1851  
01:51:42,229 --> 01:51:40,080  
we're testing out some new things the

1852  
01:51:44,310 --> 01:51:42,239  
paint's drying in root here using some

1853  
01:51:46,790 --> 01:51:44,320  
really large quick links stuff that i've

1854  
01:51:48,390 --> 01:51:46,800  
never see i saw a thimble being used as

1855  
01:51:50,390 --> 01:51:48,400  
part of the ejection

1856  
01:51:51,910 --> 01:51:50,400  
ejection charge so that part's really

1857  
01:51:53,510 --> 01:51:51,920  
neat because that gives me some of those

1858  
01:51:55,589 --> 01:51:53,520  
ideas because sometimes we like get set

1859  
01:51:57,669 --> 01:51:55,599  
in the ways of how we think a high power

1860  
01:51:59,510 --> 01:51:57,679  
hobby rocket should go and it's like no

1861  
01:52:01,030 --> 01:51:59,520  
this is what's great about this event is

1862  
01:52:02,709 --> 01:52:01,040  
it definitely helps out nasa and our in

1863  
01:52:05,270 --> 01:52:02,719

our rocketry community but also helps us

1864

01:52:07,589 --> 01:52:05,280

out on a on a hobby front as well nice

1865

01:52:09,430 --> 01:52:07,599

and uh what uh do you have any any uh

1866

01:52:10,709 --> 01:52:09,440

any words of wisdom about what we're how

1867

01:52:12,149 --> 01:52:10,719

we're dealing with the wind today out

1868

01:52:13,830 --> 01:52:12,159

here yeah so that's that's a good thing

1869

01:52:15,109 --> 01:52:13,840

so one of the things i'm doing is lco is

1870

01:52:16,709 --> 01:52:15,119

making sure i'm kind of checking his

1871

01:52:18,950 --> 01:52:16,719

lcos making sure i'm kind of checking

1872

01:52:20,550 --> 01:52:18,960

for the sky checking for the range and

1873

01:52:22,149 --> 01:52:20,560

then we'll do the audible countdown to

1874

01:52:23,270 --> 01:52:22,159

launch well part of that is checking sky

1875

01:52:25,350 --> 01:52:23,280

looking at the weather and looking at

1876  
01:52:26,709 --> 01:52:25,360  
the wind conditions so when the wind's

1877  
01:52:28,229 --> 01:52:26,719  
kind of coming from the south kind of

1878  
01:52:29,830 --> 01:52:28,239  
blowing towards the crowd we actually

1879  
01:52:31,510 --> 01:52:29,840  
angle the pads to try to have the

1880  
01:52:33,270 --> 01:52:31,520  
rockets kind of divert around it now

1881  
01:52:35,589 --> 01:52:33,280  
with the wind being a headwind to us the

1882  
01:52:37,350 --> 01:52:35,599  
rockets actually want to turn turn like

1883  
01:52:38,629 --> 01:52:37,360  
into the wind and that's when the rocket

1884  
01:52:39,990 --> 01:52:38,639  
comes out under parachutes when it's

1885  
01:52:41,830 --> 01:52:40,000  
drifting down so one of the things that

1886  
01:52:43,910 --> 01:52:41,840  
i'm doing as a launch control officer is

1887  
01:52:45,830 --> 01:52:43,920  
telling the crowd look up point at the

1888  
01:52:47,430 --> 01:52:45,840

rocket let your neighbor know so we're

1889

01:52:49,990 --> 01:52:47,440

making sure we're keeping safety of the

1890

01:52:51,510 --> 01:52:50,000

utmost importance yeah absolutely well

1891

01:52:52,870 --> 01:52:51,520

so uh since you're the guy that's doing

1892

01:52:54,070 --> 01:52:52,880

the countdowns and calling the shots

1893

01:52:56,070 --> 01:52:54,080

today we probably will let you get back

1894

01:52:57,510 --> 01:52:56,080

to it yeah it's time to go punch back in

1895

01:53:00,070 --> 01:52:57,520

and get back to work how many rockets do

1896

01:53:02,070 --> 01:53:00,080

we have coming up i think we're at like

1897

01:53:03,350 --> 01:53:02,080

seven or eight i think for this group so

1898

01:53:05,830 --> 01:53:03,360

there's there's a good amount of group

1899

01:53:07,109 --> 01:53:05,840

going so it'll be fun to resume some

1900

01:53:08,390 --> 01:53:07,119

rocket flying i think that's why we're

1901  
01:53:09,669 --> 01:53:08,400  
all here and hear some of the stories

1902  
01:53:11,270 --> 01:53:09,679  
now put the two pieces together and

1903  
01:53:28,760 --> 01:53:11,280  
let's go awesome well thanks for joining

1904  
01:57:29,160 --> 01:54:18,220  
[Music]

1905  
01:58:20,970 --> 01:57:53,670  
[Applause]

1906  
01:58:20,980 --> 01:58:31,070  
[Music]

1907  
01:58:31,080 --> 01:58:36,550  
[Applause]

1908  
01:58:36,560 --> 01:58:58,950  
[Music]

1909  
01:58:58,960 --> 01:59:16,950  
[Applause]

1910  
01:59:37,360 --> 01:59:24,610  
[Music]

1911  
01:59:50,950 --> 01:59:39,980  
[Applause]

1912  
01:59:50,960 --> 02:00:22,550  
so

1913  
02:00:22,560 --> 02:00:28,229

there's an event

1914

02:00:32,709 --> 02:00:30,709

and this does house the jolly logic and

1915

02:00:35,189 --> 02:00:32,719

it should release

1916

02:00:39,030 --> 02:00:35,199

at 700 feet

1917

02:00:48,070 --> 02:00:41,350

see a little bit of the reflection from

1918

02:00:55,750 --> 02:00:51,430

and the main is set for 700 feet

1919

02:00:57,350 --> 02:00:55,760

still probably over a thousand feet

1920

02:00:58,950 --> 02:00:57,360

i'm not as good as art so i'm not gonna

1921

02:01:00,950 --> 02:00:58,960

be able to guess that 700 foot on the

1922

02:01:04,550 --> 02:01:00,960

mark we're getting closer though so we

1923

02:01:07,189 --> 02:01:04,560

should be at 700 feet right there

1924

02:01:11,430 --> 02:01:07,199

yes that is a awesome flight nice job

1925

02:01:20,070 --> 02:01:13,270

i feel like saluting that rocket that's

1926

02:01:24,229 --> 02:01:22,390

okay we're going to the next rocket

1927

02:01:26,310 --> 02:01:24,239

so just to the right of that one that

1928

02:01:29,030 --> 02:01:26,320

just uh and that rocket touched down so

1929

02:01:30,470 --> 02:01:29,040

they're all satisfied pad number 33 so

1930

02:01:32,790 --> 02:01:30,480

one that to the right of the one that

1931

02:01:36,149 --> 02:01:32,800

just took off this is granada hills

1932

02:01:39,030 --> 02:01:36,159

rocketry group they are called a a-y-s-o

1933

02:01:41,990 --> 02:01:39,040

region 174 in granada hills southern

1934

02:01:45,189 --> 02:01:42,000

california the name of this rock is c

1935

02:01:46,470 --> 02:01:45,199

cygnus it weighs 9.8 pounds 3-inch in

1936

02:01:48,790 --> 02:01:46,480

diameter

1937

02:01:50,790 --> 02:01:48,800

7.3 feet tall

1938

02:01:54,310 --> 02:01:50,800

the payloads purpose is to determine the

1939

02:01:57,830 --> 02:01:54,320

stability of potato life by mat by

1940

02:01:59,990 --> 02:01:57,840

measuring the lux co2 concentration

1941

02:02:01,830 --> 02:02:00,000

temperature and humidity at different

1942

02:02:04,709 --> 02:02:01,840

altitudes and ranking them by their

1943

02:02:07,430 --> 02:02:04,719

proximity to the potato optimal

1944

02:02:09,270 --> 02:02:07,440

conditions as a proof of concept i like

1945

02:02:11,270 --> 02:02:09,280

all these food forward projects combined

1946

02:02:13,510 --> 02:02:11,280

with rocketry so we're kind of going in

1947

02:02:16,470 --> 02:02:13,520

the right direction this motor is flying

1948

02:02:18,629 --> 02:02:16,480

on a cesseroni j380 the projected

1949

02:02:20,870 --> 02:02:18,639

altitude is 4 700 feet so you can see

1950

02:02:23,030 --> 02:02:20,880

that's the yellow rocket it's uh painted

1951  
02:02:25,270 --> 02:02:23,040  
to follow the their theme colors for

1952  
02:02:27,350 --> 02:02:25,280  
their their club name and this i like to

1953  
02:02:30,070 --> 02:02:27,360  
call it the biology project this rocket

1954  
02:02:32,149 --> 02:02:30,080  
should be going about 4 700 feet we

1955  
02:02:34,870 --> 02:02:32,159  
still have a clear sky we have a clear

1956  
02:02:35,750 --> 02:02:34,880  
range we're gonna launch this rocket in

1957  
02:02:43,109 --> 02:02:35,760  
five

1958  
02:02:47,830 --> 02:02:44,830  
hope they're not mashed

1959  
02:02:55,430 --> 02:02:47,840  
potatoes starting to arc over

1960  
02:02:55,440 --> 02:03:03,030  
okay we should have an event there it is

1961  
02:03:08,229 --> 02:03:05,430  
yeah not sure of the status of this

1962  
02:03:10,470 --> 02:03:08,239  
potato hopefully it's okay

1963  
02:03:11,750 --> 02:03:10,480

i know it's testing and measuring all

1964

02:03:14,149 --> 02:03:11,760

the different

1965

02:03:16,709 --> 02:03:14,159

aspects of it the co2 concentration

1966

02:03:17,669 --> 02:03:16,719

temperature humidity and is doing it at

1967

02:03:19,589 --> 02:03:17,679

different

1968

02:03:21,750 --> 02:03:19,599

iterations at the altitude so it hits a

1969

02:03:23,189 --> 02:03:21,760

milestone it's it's looking for

1970

02:03:25,189 --> 02:03:23,199

information so pretty cool that the

1971

02:03:27,510 --> 02:03:25,199

school's trying this out

1972

02:03:31,990 --> 02:03:27,520

and this is one of our sli competing

1973

02:03:36,870 --> 02:03:34,709

so it still looks like it's

1974

02:03:41,750 --> 02:03:36,880

probably two over two thousand feet up

1975

02:03:46,790 --> 02:03:44,870

still coming in at a good descent race

1976

02:03:54,069 --> 02:03:46,800

yeah it's out it's out passed by the

1977

02:03:57,109 --> 02:03:55,750

so you see well if you look at it point

1978

02:03:59,109 --> 02:03:57,119

out and let your neighbors know but it's

1979

02:04:00,870 --> 02:03:59,119

over way out in the grass so we're good

1980

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

we should have a main here pretty soon

1981

02:04:04,069 --> 02:04:02,560

there it is

1982

02:04:05,830 --> 02:04:04,079

all right

1983

02:04:13,030 --> 02:04:05,840

that potato's looking good maybe it's

1984

02:04:45,830 --> 02:04:14,790

i was told we should not joke about the

1985

02:04:49,910 --> 02:04:48,550

okay we're going to pad number 34 we

1986

02:04:52,310 --> 02:04:49,920

have

1987

02:04:54,709 --> 02:04:52,320

lipscomb rocketry this is lincoln

1988

02:04:57,030 --> 02:04:54,719

university from nashville tennessee on

1989

02:04:59,430 --> 02:04:57,040

pad number 34 so it's the blue and white

1990

02:05:01,750 --> 02:04:59,440

or blue rocket with the white nose cone

1991

02:05:04,229 --> 02:05:01,760

the name of this rocket is new gwen

1992

02:05:05,510 --> 02:05:04,239

weighs 21.5 pounds

1993

02:05:06,550 --> 02:05:05,520

looks like that says four inch in

1994

02:05:08,229 --> 02:05:06,560

diameter

1995

02:05:10,310 --> 02:05:08,239

seven feet tall

1996

02:05:12,709 --> 02:05:10,320

this does have a dead reckoning system

1997

02:05:15,990 --> 02:05:12,719

and takes acceleration and gyroscopic

1998

02:05:18,390 --> 02:05:16,000

data to calculate position of rocketry

1999

02:05:20,709 --> 02:05:18,400

upon landing the motor on this is an

2000

02:05:21,910 --> 02:05:20,719

aerotech k1275

2001

02:05:26,310 --> 02:05:21,920

red line so it's going to have a red

2002

02:05:29,030 --> 02:05:26,320

flame on it main is set for 600 feet

2003

02:05:31,350 --> 02:05:29,040

so this rocket does also have a 3d

2004

02:05:32,390 --> 02:05:31,360

printed nose cone and i one thing i did

2005

02:05:35,270 --> 02:05:32,400

find out

2006

02:05:37,750 --> 02:05:35,280

this nose cone shape is inspired by air

2007

02:05:40,629 --> 02:05:37,760

lines so it's not a normal

2008

02:05:42,310 --> 02:05:40,639

nose cone shape to it so pretty cool on

2009

02:05:44,629 --> 02:05:42,320

that one

2010

02:05:46,229 --> 02:05:44,639

and oh another fun fact about lipscomb

2011

02:05:52,470 --> 02:05:46,239

university

2012

02:05:55,750 --> 02:05:52,480

old so pretty cool on that as well

2013

02:05:58,550 --> 02:05:55,760

okay we're gonna fly this on pad 34. we

2014

02:06:02,390 --> 02:05:58,560

have a clear sky have a clear range

2015

02:06:03,189 --> 02:06:02,400

we're gonna launch in five four three

2016

02:06:08,550 --> 02:06:03,199

two

2017

02:06:12,390 --> 02:06:11,030

igniter who needs a new igniter on that

2018

02:06:13,990 --> 02:06:12,400

one

2019

02:06:16,790 --> 02:06:14,000

burnt the igniter

2020

02:06:18,790 --> 02:06:16,800

so we'll have to wait on that one

2021

02:06:31,910 --> 02:06:18,800

so now we're gonna go to the far back

2022

02:06:31,920 --> 02:06:52,550

is off

2023

02:07:00,870 --> 02:06:54,550

okay we just have to do a quick test to

2024

02:07:00,880 --> 02:07:39,830

as well

2025

02:07:39,840 --> 02:08:18,709

you

2026

02:08:23,270 --> 02:08:20,709

it was just a couple of technical

2027

02:08:25,830 --> 02:08:23,280

difficulties usually to get these things

2028

02:08:28,310 --> 02:08:25,840

to work you got to plug them in so

2029

02:08:33,510 --> 02:08:28,320

i i own that one forgot to

2030

02:08:38,149 --> 02:08:36,069

no we're going back to the 40s yeah

2031

02:08:40,950 --> 02:08:38,159

we're going to 40. yeah we're going to

2032

02:08:42,390 --> 02:08:40,960

be going back to the far back pads

2033

02:08:43,830 --> 02:08:42,400

we're going to go to

2034

02:08:45,910 --> 02:08:43,840

pad 40.

2035

02:08:49,030 --> 02:08:45,920

as you can see

2036

02:08:51,589 --> 02:08:49,040

yeah we're going to pad number 40.

2037

02:08:52,950 --> 02:08:51,599

the name of this group is a umass rocket

2038

02:08:55,189 --> 02:08:52,960

team this is the university of

2039

02:08:57,030 --> 02:08:55,199

massachusetts and amherst

2040

02:08:59,750 --> 02:08:57,040

the name of this rocket is argo we'll

2041

02:09:01,270 --> 02:08:59,760

come back to that name argo 24 pounds

2042

02:09:02,790 --> 02:09:01,280

four inch in diameter eight and a half

2043

02:09:05,510 --> 02:09:02,800

feet tall

2044

02:09:07,589 --> 02:09:05,520

this does have some sort of proprietary

2045

02:09:09,350 --> 02:09:07,599

thing called the athena it's an inertial

2046

02:09:12,550 --> 02:09:09,360

navigation system

2047

02:09:14,709 --> 02:09:12,560

utilizing two b o accelerometer

2048

02:09:17,750 --> 02:09:14,719

gyroscope packages

2049

02:09:20,149 --> 02:09:17,760

computers displacement management custom

2050

02:09:23,109 --> 02:09:20,159

pcb design with an exclamation point

2051  
02:09:25,430 --> 02:09:23,119  
they are proud for that that is awesome

2052  
02:09:27,030 --> 02:09:25,440  
one thing i found out about this group

2053  
02:09:28,870 --> 02:09:27,040  
the group painted that rocket right

2054  
02:09:31,669 --> 02:09:28,880  
before they headed here to alabama so it

2055  
02:09:34,390 --> 02:09:31,679  
was drying in transit trying to get here

2056  
02:09:37,430 --> 02:09:34,400  
that name this rocket is called argo it

2057  
02:09:39,669 --> 02:09:37,440  
is a take on jason and the argonauts but

2058  
02:09:41,109 --> 02:09:39,679  
this rocket has been built several times

2059  
02:09:42,709 --> 02:09:41,119  
so they really think the name of the

2060  
02:09:43,910 --> 02:09:42,719  
rocket should be called

2061  
02:09:45,350 --> 02:09:43,920  
ship of

2062  
02:09:47,510 --> 02:09:45,360  
the cnis

2063  
02:09:49,030 --> 02:09:47,520

theseus i'm not quite sure that's a

2064

02:09:52,229 --> 02:09:49,040

reference to something i'm not quite

2065

02:09:53,510 --> 02:09:52,239

familiar with also there they have their

2066

02:09:55,990 --> 02:09:53,520

inspiration

2067

02:09:58,709 --> 02:09:56,000

on this project is making sure that they

2068

02:10:01,030 --> 02:09:58,719

have visor glasses and something around

2069

02:10:03,189 --> 02:10:01,040

team cyclone again not sure what these

2070

02:10:05,910 --> 02:10:03,199

references are this rocket should go

2071

02:10:09,109 --> 02:10:05,920

about 5 600 feet so we are going to go

2072

02:10:10,550 --> 02:10:09,119

to pad 40 so we have a clear sky we have

2073

02:10:12,470 --> 02:10:10,560

a clear range we're going to launch

2074

02:10:13,669 --> 02:10:12,480

umass rocket team

2075

02:10:15,270 --> 02:10:13,679

in 5

2076

02:10:16,069 --> 02:10:15,280

four three

2077

02:10:19,380 --> 02:10:16,079

two

2078

02:10:19,390 --> 02:10:23,669

[Applause]

2079

02:10:29,510 --> 02:10:26,550

so that was definitely a red line

2080

02:10:31,830 --> 02:10:29,520

possibly a k-1275 but it could be a

2081

02:10:33,990 --> 02:10:31,840

cesseroni it's a mystery motor at least

2082

02:10:38,229 --> 02:10:34,000

on my briefing sheet

2083

02:10:41,750 --> 02:10:38,239

the main is set for 600 feet

2084

02:10:41,760 --> 02:10:51,030

the paint's now probably dry

2085

02:10:55,510 --> 02:10:53,910

and that's pretty far out southbound so

2086

02:10:56,870 --> 02:10:55,520

again when that rocket took off because

2087

02:10:59,030 --> 02:10:56,880

of the headwind

2088

02:11:01,669 --> 02:10:59,040

and the rocket being overstable the

2089

02:11:03,910 --> 02:11:01,679

rocket actually turned into the wind and

2090

02:11:05,830 --> 02:11:03,920

then when it's coming in under parachute

2091

02:11:07,270 --> 02:11:05,840

the wind's kind of bringing it back

2092

02:11:09,910 --> 02:11:07,280

that's why these rockets have dual

2093

02:11:11,830 --> 02:11:09,920

deployment on it that small parachute

2094

02:11:14,149 --> 02:11:11,840

has it come down pretty quick and then

2095

02:11:16,149 --> 02:11:14,159

at a specified altitude based on how

2096

02:11:18,310 --> 02:11:16,159

they've programmed their flight computer

2097

02:11:19,750 --> 02:11:18,320

a bigger parachute comes out to make

2098

02:11:22,629 --> 02:11:19,760

sure it's a nice

2099

02:11:25,270 --> 02:11:22,639

soft safe landing for their payload

2100

02:11:27,430 --> 02:11:25,280

package

2101  
02:11:33,189 --> 02:11:27,440  
we're getting pretty close to that 600

2102  
02:11:36,790 --> 02:11:35,830  
probably just under a thousand feet

2103  
02:11:38,950 --> 02:11:36,800  
right here

2104  
02:11:40,709 --> 02:11:38,960  
okay we should be approaching

2105  
02:11:43,109 --> 02:11:40,719  
600 feet now

2106  
02:11:45,669 --> 02:11:43,119  
there it is

2107  
02:11:47,270 --> 02:11:45,679  
all right

2108  
02:11:49,669 --> 02:11:47,280  
i guess we can go back to calling it the

2109  
02:12:08,069 --> 02:11:49,679  
argo rocket that's looking pretty nice

2110  
02:12:08,079 --> 02:12:11,189  
okay

2111  
02:12:16,149 --> 02:12:13,189  
i like the nice golf clap pretty cool

2112  
02:12:17,910 --> 02:12:16,159  
okay we're going to pad 41 cat rocketry

2113  
02:12:21,430 --> 02:12:17,920

the school is central washington

2114

02:12:24,310 --> 02:12:21,440

university out of ellensburg washington

2115

02:12:25,990 --> 02:12:24,320

the name of this rocket is called newbie

2116

02:12:28,149 --> 02:12:26,000

so i found out the name on newbie this

2117

02:12:30,390 --> 02:12:28,159

is their first time here competing so

2118

02:12:32,229 --> 02:12:30,400

welcome team and glad you're here and

2119

02:12:34,629 --> 02:12:32,239

trying out this competition

2120

02:12:36,950 --> 02:12:34,639

this rocket does weigh 24 and three

2121

02:12:39,109 --> 02:12:36,960

quarters pounds just over five inch in

2122

02:12:42,270 --> 02:12:39,119

diameter and the length is eight and

2123

02:12:44,709 --> 02:12:42,280

three quarters feet it is flying on a

2124

02:12:45,750 --> 02:12:44,719

k1050 so it's a pretty healthy motor on

2125

02:12:47,750 --> 02:12:45,760

that

2126  
02:12:49,589 --> 02:12:47,760  
the experimentation this is again one of

2127  
02:12:51,830 --> 02:12:49,599  
those another proprietary systems this

2128  
02:12:54,149 --> 02:12:51,840  
one's called avatar they're saying we

2129  
02:12:57,270 --> 02:12:54,159  
are using a visual tracking

2130  
02:12:59,910 --> 02:12:57,280  
using color on top of our tent oh okay

2131  
02:13:02,390 --> 02:12:59,920  
this is cool in order to identify and

2132  
02:13:03,510 --> 02:13:02,400  
report the landing location

2133  
02:13:05,750 --> 02:13:03,520  
and with

2134  
02:13:07,830 --> 02:13:05,760  
central washington university it's

2135  
02:13:09,030 --> 02:13:07,840  
literally in the center of the state of

2136  
02:13:11,830 --> 02:13:09,040  
washington

2137  
02:13:14,310 --> 02:13:11,840  
they are known for a rodeo in this uh

2138  
02:13:16,310 --> 02:13:14,320

central in ellensburg washington

2139

02:13:17,910 --> 02:13:16,320

another thing with this group they

2140

02:13:19,990 --> 02:13:17,920

literally built this rocket out of a

2141

02:13:21,189 --> 02:13:20,000

closet so pretty cool that they're just

2142

02:13:23,830 --> 02:13:21,199

trying to be efficient with their

2143

02:13:25,589 --> 02:13:23,840

resources and it is a pretty mighty team

2144

02:13:27,430 --> 02:13:25,599

of nine members so pretty cool they

2145

02:13:29,270 --> 02:13:27,440

built this cool yellow rocket with the

2146

02:13:31,310 --> 02:13:29,280

black stripes on it and this projected

2147

02:13:33,510 --> 02:13:31,320

altitude is

2148

02:13:35,750 --> 02:13:33,520

4158 feet so let's see if our eyes are

2149

02:13:38,709 --> 02:13:35,760

good enough to see if it's got 4158 for

2150

02:13:41,350 --> 02:13:38,719

altitude on pad 41 we have the clear

2151  
02:13:42,390 --> 02:13:41,360  
skies we have a clear range we're gonna

2152  
02:13:45,109 --> 02:13:42,400  
launch

2153  
02:13:46,790 --> 02:13:45,119  
newbie in five four

2154  
02:13:49,189 --> 02:13:46,800  
three two

2155  
02:13:53,589 --> 02:13:49,199  
one ignition

2156  
02:14:00,790 --> 02:13:55,669  
man that's straight up okay do we think

2157  
02:14:07,750 --> 02:14:04,229  
my assist tells me 41.52

2158  
02:14:10,709 --> 02:14:07,760  
starting arc over there's an event

2159  
02:14:13,750 --> 02:14:10,719  
i see the smoke blowing over

2160  
02:14:15,510 --> 02:14:13,760  
there's a parachute

2161  
02:14:18,550 --> 02:14:15,520  
that bright yellow or bright orange

2162  
02:14:20,709 --> 02:14:18,560  
shoot so we can see it

2163  
02:14:23,030 --> 02:14:20,719

it's got a really long shot cord on that

2164

02:14:26,950 --> 02:14:23,040

from what i can see which is good that's

2165

02:14:31,910 --> 02:14:29,270

that's either a really big drogue or the

2166

02:14:35,030 --> 02:14:31,920

main could be out a little on the early

2167

02:14:35,040 --> 02:14:39,430

just a big drogue

2168

02:14:45,030 --> 02:14:41,990

36-inch drogue and this main parachute

2169

02:14:46,870 --> 02:14:45,040

is set for 550 feet

2170

02:14:49,510 --> 02:14:46,880

that's the only way this avatar system

2171

02:14:51,030 --> 02:14:49,520

can work the most efficiently

2172

02:14:53,189 --> 02:14:51,040

i don't know if that's true or not but

2173

02:14:55,430 --> 02:14:53,199

it sounds good

2174

02:14:57,430 --> 02:14:55,440

okay heads up on the

2175

02:14:58,790 --> 02:14:57,440

right side of the range so it looks like

2176

02:15:00,470 --> 02:14:58,800

it's going to be out in the

2177

02:15:04,870 --> 02:15:00,480

out in the grass or out in the wheat

2178

02:15:10,229 --> 02:15:08,229

oh the parachutes

2179

02:15:12,310 --> 02:15:10,239

about it

2180

02:15:13,830 --> 02:15:12,320

uh that's gonna be out in the wheat it's

2181

02:15:15,830 --> 02:15:13,840

not

2182

02:15:18,390 --> 02:15:15,840

oh it's trying it's

2183

02:15:22,069 --> 02:15:18,400

very suspenseful like a hollywood film

2184

02:15:48,629 --> 02:15:24,790

but wildcat rocketry is okay with that

2185

02:15:52,550 --> 02:15:50,390

so we're still on the back row we still

2186

02:15:55,189 --> 02:15:52,560

got rockets to fly

2187

02:15:57,589 --> 02:15:55,199

so we're on pad number 42

2188

02:15:59,750 --> 02:15:57,599

this is cedarville student launch

2189

02:16:02,310 --> 02:15:59,760

they're at cedar oh they're already

2190

02:16:04,390 --> 02:16:02,320

pumped they haven't taken off yet

2191

02:16:06,149 --> 02:16:04,400

all right let's go okay

2192

02:16:08,950 --> 02:16:06,159

this is cedarville university out of

2193

02:16:12,310 --> 02:16:08,960

cedarville ohio the name of this rocket

2194

02:16:13,910 --> 02:16:12,320

is 4runner weighs 42.3 pounds five and a

2195

02:16:15,750 --> 02:16:13,920

half inch diameter

2196

02:16:17,910 --> 02:16:15,760

it's nine feet long

2197

02:16:18,950 --> 02:16:17,920

does have a single bay on it and is dual

2198

02:16:22,149 --> 02:16:18,960

deploy

2199

02:16:25,430 --> 02:16:22,159

this m this rocket's flying on an l

2200

02:16:27,990 --> 02:16:25,440

motor this is flying on an l 1390 green

2201

02:16:30,229 --> 02:16:28,000

motors will have a green flame on it

2202

02:16:32,389 --> 02:16:30,239

the main is set for 800 feet for the

2203

02:16:34,549 --> 02:16:32,399

experiments of this project

2204

02:16:37,750 --> 02:16:34,559

does have another proprietary system

2205

02:16:40,870 --> 02:16:37,760

called the gamma filtering system gfs it

2206

02:16:43,110 --> 02:16:40,880

observes the rocket position using imus

2207

02:16:44,709 --> 02:16:43,120

and integrates to find position

2208

02:16:47,830 --> 02:16:44,719

using

2209

02:16:49,589 --> 02:16:47,840

some sort of coordination system

2210

02:16:51,429 --> 02:16:49,599

so cedarville did want to thank their

2211

02:16:53,750 --> 02:16:51,439

family and friends for helping them on

2212

02:16:56,870 --> 02:16:53,760

this project and this is a team that was

2213

02:16:59,270 --> 02:16:56,880

of 11 and 12 team members and again this

2214

02:17:02,469 --> 02:16:59,280

is their first time out so welcome

2215

02:17:04,790 --> 02:17:02,479

cedarville university glad you're here

2216

02:17:06,709 --> 02:17:04,800

and this is their second full-scale

2217

02:17:09,110 --> 02:17:06,719

rocket don't ask about what happened to

2218

02:17:10,790 --> 02:17:09,120

their first one maybe later

2219

02:17:12,469 --> 02:17:10,800

this altitude should be going about

2220

02:17:14,870 --> 02:17:12,479

forty four thousand seven hundred and

2221

02:17:17,830 --> 02:17:14,880

fifty feet so we are ready to go on pad

2222

02:17:20,309 --> 02:17:17,840

42. we have a clear sky we have a clear

2223

02:17:21,990 --> 02:17:20,319

range we're gonna launch in five

2224

02:17:22,870 --> 02:17:22,000

four three

2225

02:17:29,270 --> 02:17:22,880

two

2226

02:17:29,280 --> 02:17:38,070

so that was an I motor I green motor

2227

02:17:42,629 --> 02:17:40,629

starting to arc over so maybe that's

2228

02:17:44,870 --> 02:17:42,639

probably all of forty seven hundred feet

2229

02:17:52,549 --> 02:17:44,880

might be higher there's an event be

2230

02:17:57,270 --> 02:17:55,110

there's the drogue out still see so some

2231

02:17:59,270 --> 02:17:57,280

of that smoke you're seeing that's the

2232

02:18:01,349 --> 02:17:59,280

tracking smoke from the motor so there's

2233

02:18:02,870 --> 02:18:01,359

a tracking element put inside the motor

2234

02:18:05,190 --> 02:18:02,880

so it's easy to

2235

02:18:09,030 --> 02:18:05,200

visually spot coming in

2236

02:18:12,870 --> 02:18:09,040

which aids in the recovery part of it

2237

02:18:14,230 --> 02:18:12,880

so the main is set for 800 feet

2238

02:18:15,270 --> 02:18:14,240

i think the team's kind of biting their

2239

02:18:16,870 --> 02:18:15,280

nails a little bit there should be a

2240

02:18:20,070 --> 02:18:16,880

little bit more confidence over there i

2241

02:18:25,990 --> 02:18:22,309

so we're probably passing around 2000

2242

02:18:29,990 --> 02:18:28,070

still out in the wheat

2243

02:18:32,950 --> 02:18:30,000

we should be about a thousand feet right

2244

02:18:34,549 --> 02:18:32,960

now so we should be approaching 800 feet

2245

02:18:37,429 --> 02:18:34,559

oh i saw the event i didn't see a

2246

02:18:40,629 --> 02:18:37,439

parachute come out back up supposed to

2247

02:18:44,309 --> 02:18:40,639

oh this one's gonna come in

2248

02:18:46,469 --> 02:18:44,319

i hope the wheat can brace it oh

2249

02:18:49,990 --> 02:18:46,479

we saw the event but didn't see the nose

2250

02:18:51,990 --> 02:18:50,000

cone separate from the payload tube

2251  
02:18:53,830 --> 02:18:52,000  
a little bit of more of a somber clap on

2252  
02:19:02,150 --> 02:18:53,840  
that one we'll have to do an analysis

2253  
02:19:05,349 --> 02:19:04,150  
all right we're continuing on so we're

2254  
02:19:07,669 --> 02:19:05,359  
going to

2255  
02:19:10,549 --> 02:19:07,679  
pad number 43

2256  
02:19:16,070 --> 02:19:13,990  
jmu rocketry james madison university oh

2257  
02:19:18,709 --> 02:19:16,080  
they're pretty excited out of harris

2258  
02:19:21,830 --> 02:19:18,719  
harrisonburg virginia the name of this

2259  
02:19:24,070 --> 02:19:21,840  
rocket is zeus one

2260  
02:19:26,469 --> 02:19:24,080  
this is a this is a hefty rocket this

2261  
02:19:28,469 --> 02:19:26,479  
one weighs 53 pounds

2262  
02:19:30,629 --> 02:19:28,479  
six inch in diameter

2263  
02:19:32,709 --> 02:19:30,639

it was originally nine feet 11 inches

2264

02:19:35,589 --> 02:19:32,719

tall and somehow has grown now to 10

2265

02:19:37,429 --> 02:19:35,599

feet tall don't know what happened there

2266

02:19:41,110 --> 02:19:37,439

oh it's a teenager i've been told okay

2267

02:19:43,589 --> 02:19:41,120

this is flying on an aerotech I1420 red

2268

02:19:46,709 --> 02:19:43,599

line so another I motor

2269

02:19:48,790 --> 02:19:46,719

does have the main set for 700 feet with

2270

02:19:51,830 --> 02:19:48,800

this project it does have a dead

2271

02:19:54,630 --> 02:19:51,840

reckoning system on it and two imus with

2272

02:19:57,270 --> 02:19:54,640

an arduino to go with

2273

02:19:58,710 --> 02:19:57,280

this altitude should be going about 4

2274

02:20:00,790 --> 02:19:58,720

000 feet

2275

02:20:03,270 --> 02:20:00,800

and it does have a camera on board so

2276

02:20:05,270 --> 02:20:03,280

make sure you show that nice smiling

2277

02:20:07,510 --> 02:20:05,280

face for everyone in the crowd so we're

2278

02:20:09,750 --> 02:20:07,520

going to go to pad 43

2279

02:20:13,349 --> 02:20:09,760

we have a clear sky we have a clear

2280

02:20:14,150 --> 02:20:13,359

range we're going to launch zeus 1 in 5

2281

02:20:14,950 --> 02:20:14,160

4

2282

02:20:26,950 --> 02:20:14,960

3

2283

02:20:33,670 --> 02:20:28,790

we pushed pretty hard

2284

02:20:45,190 --> 02:20:35,270

so i have to put a new igniter in that

2285

02:20:53,349 --> 02:20:47,590

okay on pad number 44

2286

02:20:55,270 --> 02:20:53,359

we have purdue university psp dash II

2287

02:20:56,830 --> 02:20:55,280

this school's purdue university out of

2288

02:21:00,469 --> 02:20:56,840

west lafayette

2289

02:21:01,590 --> 02:21:00,479

indiana is the saying boiler down boiler

2290

02:21:03,990 --> 02:21:01,600

broiler

2291

02:21:06,870 --> 02:21:04,000

oh okay i'm just

2292

02:21:07,910 --> 02:21:06,880

i'm getting some scour looks right now i

2293

02:21:10,830 --> 02:21:07,920

know it's

2294

02:21:13,830 --> 02:21:10,840

boiler up so the name of this rocket is

2295

02:21:16,710 --> 02:21:13,840

green grass all

2296

02:21:19,230 --> 02:21:16,720

green gas all breaks

2297

02:21:22,950 --> 02:21:19,240

need some better penmanship so this is

2298

02:21:25,429 --> 02:21:22,960

53.4 pounds this is six inch in diameter

2299

02:21:28,190 --> 02:21:25,439

106 inches tall so another 50 pound

2300

02:21:30,630 --> 02:21:28,200

rocket this one's flying on a

2301

02:21:32,230 --> 02:21:30,640

I2200 which i believe is an aerotech

2302

02:21:34,070 --> 02:21:32,240

green so this is going to be a pretty

2303

02:21:35,830 --> 02:21:34,080

punchy takeoff

2304

02:21:38,950 --> 02:21:35,840

the experimentation on board with this

2305

02:21:41,510 --> 02:21:38,960

one it does say separating oriented

2306

02:21:43,349 --> 02:21:41,520

orienting and extending

2307

02:21:46,150 --> 02:21:43,359

a try

2308

02:21:48,070 --> 02:21:46,160

lateration radio range finding

2309

02:21:49,270 --> 02:21:48,080

experiment that is a mouthful but

2310

02:21:51,510 --> 02:21:49,280

there's a lot going on that's pretty

2311

02:21:54,469 --> 02:21:51,520

cool to have that project

2312

02:21:57,030 --> 02:21:54,479

the main is set for 800 feet so a couple

2313

02:22:00,309 --> 02:21:57,040

things about purdue university's team

2314

02:22:02,550 --> 02:22:00,319

the overall psp team has over 400

2315

02:22:04,550 --> 02:22:02,560

members a part of this group

2316

02:22:06,230 --> 02:22:04,560

and there's seven different teams within

2317

02:22:07,510 --> 02:22:06,240

this group as a part of the club on

2318

02:22:10,070 --> 02:22:07,520

campus

2319

02:22:11,830 --> 02:22:10,080

i also noticed they have a really large

2320

02:22:13,429 --> 02:22:11,840

ground control station i think it's

2321

02:22:15,030 --> 02:22:13,439

bigger than some panel boxes at some

2322

02:22:17,429 --> 02:22:15,040

houses that i've seen

2323

02:22:19,510 --> 02:22:17,439

on this team alone they have 60 to 80

2324

02:22:21,590 --> 02:22:19,520

members on this team

2325

02:22:22,630 --> 02:22:21,600

they did say on this rocket the lower

2326

02:22:24,950 --> 02:22:22,640

airframe

2327

02:22:26,630 --> 02:22:24,960

did have to be rebuilt and reflowed on

2328

02:22:28,230 --> 02:22:26,640

one of the last flights

2329

02:22:30,150 --> 02:22:28,240

the motor did some extra burning in

2330

02:22:32,469 --> 02:22:30,160

places they didn't like so they had to

2331

02:22:34,630 --> 02:22:32,479

rebuild the bottom half of it

2332

02:22:37,670 --> 02:22:34,640

the projected altitude

2333

02:22:39,830 --> 02:22:37,680

is somewhere between 4 600 and 5 400

2334

02:22:42,150 --> 02:22:39,840

feet so the air braking system will find

2335

02:22:45,910 --> 02:22:42,160

out if it's going to work so we'll see 4

2336

02:22:50,230 --> 02:22:47,990

okay i've been notified of a plane

2337

02:22:53,270 --> 02:22:50,240

inbound and yes thank you for that so

2338

02:22:55,030 --> 02:22:53,280

right now we hold all launch operations

2339

02:22:57,429 --> 02:22:55,040

we don't want to spook our pilots so we

2340

02:22:59,190 --> 02:22:57,439

want them of earth flying just

2341

02:23:01,510 --> 02:22:59,200

fly where they have to fly

2342

02:23:03,349 --> 02:23:01,520

and then we can resume flying even

2343

02:23:05,270 --> 02:23:03,359

though they're flying probably outside

2344

02:23:07,750 --> 02:23:05,280

of where our operations are if we can

2345

02:23:09,910 --> 02:23:07,760

visually see them they could probably

2346

02:23:12,230 --> 02:23:09,920

see us we don't want them to see our

2347

02:23:13,590 --> 02:23:12,240

rocket so we're going to make sure

2348

02:23:16,710 --> 02:23:13,600

it is clear

2349

02:23:18,870 --> 02:23:16,720

it's outbound it's safe so no thank you

2350

02:23:20,469 --> 02:23:18,880

so if anyone sees a plane i see some

2351

02:23:23,349 --> 02:23:20,479

waving it off i don't know if they can

2352

02:23:25,190 --> 02:23:23,359

see that but uh i like the effort we're

2353

02:23:41,510 --> 02:23:25,200

trying to guide that plane out of our

2354

02:23:45,030 --> 02:23:43,910

okay plane is outbound so we're gonna go

2355

02:23:49,110 --> 02:23:45,040

and fly

2356

02:23:51,270 --> 02:23:49,120

the psp-sl rocket on pad 44.

2357

02:23:53,190 --> 02:23:51,280

we have a clear sky that plane's out

2358

02:23:56,710 --> 02:23:53,200

clear range no one's nearby we're gonna

2359

02:24:00,550 --> 02:23:56,720

launch this one in five four three

2360

02:24:01,670 --> 02:24:00,560

two one ignition

2361

02:24:03,830 --> 02:24:01,680

come on

2362

02:24:07,349 --> 02:24:03,840

birthday igniter hello

2363

02:24:11,750 --> 02:24:09,670

burnt the igniter on that one

2364

02:24:39,190 --> 02:24:11,760

those green ones can be a little tricky

2365

02:24:42,389 --> 02:24:41,670

it's really low in altitude

2366

02:24:50,389 --> 02:24:42,399

it's

2367

02:24:54,070 --> 02:24:52,309

i'll start reading the card but i don't

2368

02:24:56,630 --> 02:24:54,080

see it

2369

02:24:59,030 --> 02:24:56,640

okay we're gonna continue on on pad

2370

02:25:01,190 --> 02:24:59,040

number 45 so it's the black rocket with

2371

02:25:02,790 --> 02:25:01,200

the blue nose cones the one in the

2372

02:25:04,790 --> 02:25:02,800

center of the

2373

02:25:06,870 --> 02:25:04,800

well i guess left of center

2374

02:25:08,389 --> 02:25:06,880

the name of this rocket is called our

2375

02:25:12,870 --> 02:25:08,399

team name is called

2376

02:25:16,550 --> 02:25:12,880

charger rocket works this is the

2377

02:25:18,469 --> 02:25:16,560

all right i love the excitement this is

2378

02:25:20,070 --> 02:25:18,479

alabama huntsville out of huntsville

2379

02:25:22,710 --> 02:25:20,080

alabama they probably travel really far

2380

02:25:24,550 --> 02:25:22,720

to get here the name of this rocket is

2381

02:25:27,910 --> 02:25:24,560

cloud killer

2382

02:25:30,230 --> 02:25:27,920

27 pound rocket weighs or 27 pounds it's

2383

02:25:33,030 --> 02:25:30,240

four and a half inch diameter

2384

02:25:35,190 --> 02:25:33,040

just over seven and a quarter feet long

2385

02:25:37,349 --> 02:25:35,200

the apogee is set for them it's supposed

2386

02:25:40,950 --> 02:25:37,359

to go 4 600 feet

2387

02:25:44,790 --> 02:25:40,960

this does have an ins with an imu and

2388

02:25:50,230 --> 02:25:48,309

i'm not sure it's a static system

2389

02:25:52,389 --> 02:25:50,240

we'll figure that one out it does have a

2390

02:25:54,550 --> 02:25:52,399

strata logger on board and i found out

2391

02:25:56,389 --> 02:25:54,560

with this rocket in particular it's got

2392

02:25:57,910 --> 02:25:56,399

a really cool i'll say rocker themed

2393

02:25:59,830 --> 02:25:57,920

paint job to it

2394

02:26:01,670 --> 02:25:59,840

and i think the rockets just excessively

2395

02:26:03,110 --> 02:26:01,680

driven around across the country because

2396

02:26:04,870 --> 02:26:03,120

when they wanted to fly it they had they

2397

02:26:06,710 --> 02:26:04,880

were missing some parts so it's got a

2398

02:26:09,670 --> 02:26:06,720

lot of road miles on it needs a little

2399

02:26:11,270 --> 02:26:09,680

bit more air miles got it backwards okay

2400

02:26:12,950 --> 02:26:11,280

so we're going to try to fly this rocket

2401  
02:26:16,550 --> 02:26:12,960  
i don't see that airplane so we have a

2402  
02:26:17,990 --> 02:26:16,560  
clear sky on pad 45 clear range we're

2403  
02:26:21,830 --> 02:26:18,000  
gonna launch the cloud killer there's no

2404  
02:26:22,630 --> 02:26:21,840  
clouds in the sky in five four three

2405  
02:26:26,790 --> 02:26:22,640  
two

2406  
02:26:26,800 --> 02:26:30,950  
on the aerotech k-1000

2407  
02:26:38,469 --> 02:26:32,870  
we burned another igniter well no we

2408  
02:26:42,469 --> 02:26:40,630  
we were having continuity

2409  
02:26:48,950 --> 02:26:42,479  
and we pushed the button and we lose

2410  
02:26:53,190 --> 02:26:51,030  
so the first few work so i just think we

2411  
02:26:57,070 --> 02:26:53,200  
need a little bit more another igniter

2412  
02:26:57,080 --> 02:27:14,070  
to go

2413  
02:27:14,080 --> 02:27:19,590

we're going to the

2414

02:27:24,870 --> 02:27:21,510

okay continuing on we're going to hope

2415

02:27:29,270 --> 02:27:24,880

this igniter is good so this is pad 60

2416

02:27:31,750 --> 02:27:29,280

this is uncc 49er rocketry team

2417

02:27:33,830 --> 02:27:31,760

and this is the school unc charlotte out

2418

02:27:36,230 --> 02:27:33,840

of charlotte north carolina

2419

02:27:39,510 --> 02:27:36,240

the name of this rocket is draco

2420

02:27:41,190 --> 02:27:39,520

42 pounds five inch in diameter just

2421

02:27:42,870 --> 02:27:41,200

over eight feet tall

2422

02:27:45,670 --> 02:27:42,880

the fun fact in this one its thrust to

2423

02:27:47,349 --> 02:27:45,680

weight ratio is 7.4 so that's going to

2424

02:27:50,030 --> 02:27:47,359

have a pretty good takeoff

2425

02:27:52,070 --> 02:27:50,040

this one is also flying on an l

2426

02:27:54,630 --> 02:27:52,080

1390 green

2427

02:27:56,950 --> 02:27:54,640

main is set for 600 feet

2428

02:27:59,110 --> 02:27:56,960

this one has the anvil system i don't

2429

02:28:01,990 --> 02:27:59,120

know what that is but the anvil is a

2430

02:28:03,910 --> 02:28:02,000

gimbaled camera that is used to capture

2431

02:28:06,550 --> 02:28:03,920

images throughout descent

2432

02:28:09,030 --> 02:28:06,560

and image processing is used to find

2433

02:28:11,510 --> 02:28:09,040

landing location

2434

02:28:13,830 --> 02:28:11,520

i do know what the name of this rocket

2435

02:28:16,070 --> 02:28:13,840

they called it draco it's based on the

2436

02:28:18,150 --> 02:28:16,080

dragon constellation

2437

02:28:20,710 --> 02:28:18,160

i think it's pretty pretty neat and it

2438

02:28:22,389 --> 02:28:20,720

does have a you see a spiral up up the

2439

02:28:24,870 --> 02:28:22,399

paint job that's actually a dragon

2440

02:28:27,429 --> 02:28:24,880

painted on the side of it

2441

02:28:30,230 --> 02:28:27,439

it does use a camera-based approach and

2442

02:28:33,030 --> 02:28:30,240

computer vision system where the camera

2443

02:28:35,030 --> 02:28:33,040

does retract in and out of the airframe

2444

02:28:37,030 --> 02:28:35,040

tube under recovery

2445

02:28:40,790 --> 02:28:37,040

it has a lot of 3d printed parts 3d

2446

02:28:44,389 --> 02:28:40,800

printed nose cone boat tail in 3d

2447

02:28:47,190 --> 02:28:44,399

printed internal fins that are removable

2448

02:28:49,510 --> 02:28:47,200

i also thought was really cool with uncc

2449

02:28:52,630 --> 02:28:49,520

their mentor actually competed in this

2450

02:28:54,950 --> 02:28:52,640

usli competition back in 2013 so welcome

2451

02:28:58,070 --> 02:28:54,960

back thanks for helping this team out

2452

02:29:00,150 --> 02:28:58,080

this rocket oh there yeah thank you

2453

02:29:01,670 --> 02:29:00,160

and this rocket should go about 5 000

2454

02:29:04,230 --> 02:29:01,680

feet so we're hoping this igniter is

2455

02:29:06,469 --> 02:29:04,240

good on pad 60 on the I motor we're

2456

02:29:08,070 --> 02:29:06,479

going to fly it we have a clear sky we

2457

02:29:11,830 --> 02:29:08,080

have a clear range we are going to

2458

02:29:19,590 --> 02:29:11,840

launch draco in five four three

2459

02:29:26,230 --> 02:29:22,309

so the this is also now showing it's it

2460

02:29:32,070 --> 02:29:27,990

it's another green motor those can be

2461

02:29:35,670 --> 02:29:34,150

we only have one more rocket to try so

2462

02:29:48,630 --> 02:29:35,680

let's see if this one gives us some good

2463

02:29:52,790 --> 02:29:51,030

okay we're going to try out pad 62.

2464

02:29:53,830 --> 02:29:52,800

farthest to the right on the far back

2465

02:29:55,990 --> 02:29:53,840

pads

2466

02:29:58,150 --> 02:29:56,000

this team name is swamp launch or

2467

02:29:59,670 --> 02:29:58,160

university of florida in gainesville

2468

02:30:02,429 --> 02:29:59,680

florida

2469

02:30:05,750 --> 02:30:02,439

the rocket name is alberta weighs

2470

02:30:07,910 --> 02:30:05,760

24.24 pounds four inches in diameter

2471

02:30:10,790 --> 02:30:07,920

nine and a quarter feet long

2472

02:30:13,190 --> 02:30:10,800

it's a fiberglass airframe all the test

2473

02:30:15,349 --> 02:30:13,200

flights were successful on its first

2474

02:30:18,389 --> 02:30:15,359

attempts

2475

02:30:20,550 --> 02:30:18,399

this is flying on an aerotech I 1090

2476  
02:30:22,710 --> 02:30:20,560  
white does have electronics on board the

2477  
02:30:24,550 --> 02:30:22,720  
main set for 600 feet with a backup at

2478  
02:30:26,630 --> 02:30:24,560  
550.

2479  
02:30:27,510 --> 02:30:26,640  
the title this science experiment is

2480  
02:30:31,590 --> 02:30:27,520  
called

2481  
02:30:34,550 --> 02:30:31,600  
landmark watney it has two cameras aft

2482  
02:30:37,030 --> 02:30:34,560  
taking photos on ascent to determine its

2483  
02:30:38,950 --> 02:30:37,040  
initial point on map and then the imu

2484  
02:30:42,389 --> 02:30:38,960  
data is used to track

2485  
02:30:44,550 --> 02:30:42,399  
displacement of final landing location

2486  
02:30:47,990 --> 02:30:44,560  
that is really cool

2487  
02:30:50,309 --> 02:30:48,000  
i also know with this group i was

2488  
02:30:52,150 --> 02:30:50,319

calling it the gator locator but they

2489

02:30:54,230 --> 02:30:52,160

said don't have any reference to the

2490

02:30:56,230 --> 02:30:54,240

seminoles i don't know what that means

2491

02:30:59,349 --> 02:30:56,240

but they said focus on the gators i said

2492

02:31:01,270 --> 02:30:59,359

i can do that so on pad 62

2493

02:31:03,830 --> 02:31:01,280

we are gonna launch alberta we have a

2494

02:31:06,469 --> 02:31:03,840

clear sky clear range hope this igniter

2495

02:31:08,150 --> 02:31:06,479

is good we're gonna launch in five

2496

02:31:08,950 --> 02:31:08,160

four three

2497

02:31:15,830 --> 02:31:08,960

two

2498

02:31:15,840 --> 02:31:28,870

a bunch of bad igniters out there

2499

02:31:31,670 --> 02:31:29,670

yep

2500

02:31:33,590 --> 02:31:31,680

starting to arc over i'd say that's 5000

2501  
02:31:44,710 --> 02:31:33,600  
feet there's an event see that orange

2502  
02:31:44,720 --> 02:32:02,550  
so that rocket does have the drogue out

2503  
02:32:02,560 --> 02:32:10,790  
so we're still

2504  
02:32:14,950 --> 02:32:12,550  
we're still a couple thousand feet up

2505  
02:32:19,349 --> 02:32:14,960  
right now under its drogue

2506  
02:32:23,990 --> 02:32:22,070  
so hopefully the camera is looking down

2507  
02:32:25,990 --> 02:32:24,000  
helped it for its initial launch

2508  
02:32:28,309 --> 02:32:26,000  
location and then the imus are supposed

2509  
02:32:30,870 --> 02:32:28,319  
to go to work to determine its final

2510  
02:32:32,790 --> 02:32:30,880  
landing location we're below a thousand

2511  
02:32:35,429 --> 02:32:32,800  
feet should be the mains coming out at

2512  
02:32:37,910 --> 02:32:35,439  
600 feet which should be

2513  
02:32:38,950 --> 02:32:37,920

pretty close probably about now would be

2514

02:32:40,469 --> 02:32:38,960

good

2515

02:32:44,070 --> 02:32:40,479

there's an event

2516

02:32:50,710 --> 02:32:48,150

alberta team is happy that's good

2517

02:32:53,590 --> 02:32:50,720

now the cameras are pointing back down

2518

02:32:56,710 --> 02:32:53,600

and the imus are doing its job hopefully

2519

02:32:59,110 --> 02:32:56,720

and it's going to tell us where it's at

2520

02:33:03,270 --> 02:32:59,120

way out in the wheat

2521

02:33:29,750 --> 02:33:05,030

i see them even cheering they even

2522

02:33:33,990 --> 02:33:31,990

okay so the range is open for putting

2523

02:33:44,710 --> 02:33:34,000

new igniters for these rockets that are

2524

02:33:49,750 --> 02:33:47,030

team lead for alabama huntsville to the

2525

02:33:51,510 --> 02:33:49,760

lco desk or table or tent

2526

02:33:56,070 --> 02:33:51,520

team lead for

2527

02:33:56,080 --> 02:35:58,790

to the lco desk

2528

02:36:03,670 --> 02:36:02,309

so announcement for the student launch

2529

02:36:07,110 --> 02:36:03,680

mentors

2530

02:36:08,389 --> 02:36:07,120

if you're looking for a stipend check

2531

02:36:10,150 --> 02:36:08,399

you're going to want to go to the

2532

02:36:11,750 --> 02:36:10,160

student launch

2533

02:36:13,190 --> 02:36:11,760

tent

2534

02:36:14,790 --> 02:36:13,200

so as you're trying to walk up to the

2535

02:36:16,710 --> 02:36:14,800

lco you're going to catch the student

2536

02:36:19,670 --> 02:36:16,720

launch tent and that's where you will go

2537

02:36:21,510 --> 02:36:19,680

to pick up your stipend checks so just a

2538

02:36:23,590 --> 02:36:21,520

quick announcement on that

2539

02:36:26,389 --> 02:36:23,600

also maybe a pro tip as you've seen some

2540

02:36:28,790 --> 02:36:26,399

of these rockets didn't go

2541

02:36:30,469 --> 02:36:28,800

dual igniters could be your friend

2542

02:36:31,670 --> 02:36:30,479

just be careful don't put too big of

2543

02:36:32,790 --> 02:36:31,680

igniters but you want to make sure

2544

02:36:34,870 --> 02:36:32,800

you've got an igniter in there that's

2545

02:36:36,710 --> 02:36:34,880

going to launch the rocket

2546

02:37:01,670 --> 02:36:36,720

and we'll be resuming some flying here

2547

02:37:01,680 --> 02:37:39,510

2021 and 2020

2548

02:37:39,520 --> 02:37:43,380

so

2549

02:38:34,950 --> 02:37:49,980

[Music]

2550

02:38:49,000 --> 02:38:37,550

so

2551  
02:40:55,110 --> 02:38:57,780  
[Music]

2552  
02:40:55,120 --> 02:41:03,450  
do

2553  
02:43:50,309 --> 02:41:40,550  
[Music]

2554  
02:43:50,319 --> 02:43:57,670  
this is lipscomb university

2555  
02:44:00,550 --> 02:43:59,110  
okay yep and this group is out of

2556  
02:44:03,349 --> 02:44:00,560  
nashville tennessee the name of this

2557  
02:44:05,110 --> 02:44:03,359  
rocket is new gwin

2558  
02:44:06,790 --> 02:44:05,120  
21 and a half pounds four inch in

2559  
02:44:08,870 --> 02:44:06,800  
diameter seven feet tall this has the

2560  
02:44:10,710 --> 02:44:08,880  
dead reckoning system that takes

2561  
02:44:13,269 --> 02:44:10,720  
acceleration and gyroscopic data to

2562  
02:44:16,550 --> 02:44:13,279  
calculate positioning of rocket upon

2563  
02:44:19,990 --> 02:44:16,560

landing this has the aerotech k1275 the

2564

02:44:21,590 --> 02:44:20,000

main is set for 600 feet

2565

02:44:26,870 --> 02:44:21,600

the one last thing i just wanted to

2566

02:44:31,349 --> 02:44:29,110

so we're not sure how high exactly this

2567

02:44:33,590 --> 02:44:31,359

one will go but does have the 3d printed

2568

02:44:35,910 --> 02:44:33,600

nose cone that's got to take on

2569

02:44:38,710 --> 02:44:35,920

on a commercial airliner shape

2570

02:44:40,790 --> 02:44:38,720

pad 34. we have a clear sky we have a

2571

02:44:42,469 --> 02:44:40,800

clear range we're going to launch new

2572

02:44:43,990 --> 02:44:42,479

gwen in 5

2573

02:44:44,870 --> 02:44:44,000

4 3

2574

02:44:51,830 --> 02:44:44,880

2

2575

02:44:56,550 --> 02:44:53,670

well if you're starting to doze off i

2576

02:44:59,110 --> 02:44:56,560

think that motor might have woke you up

2577

02:45:04,630 --> 02:44:59,120

starting to arc over probably

2578

02:45:11,030 --> 02:45:07,510

we want a parachute probably pretty soon

2579

02:45:16,710 --> 02:45:14,389

okay there is something out

2580

02:45:22,710 --> 02:45:16,720

must be a very small drogue

2581

02:45:28,309 --> 02:45:26,840

that's a really small drogue

2582

02:45:30,070 --> 02:45:28,319

[Music]

2583

02:45:42,790 --> 02:45:30,080

i had it and then i think the refl i

2584

02:45:47,429 --> 02:45:45,670

oh i see it yep so i do see it it's got

2585

02:45:49,269 --> 02:45:47,439

a small drogue on it

2586

02:45:55,190 --> 02:45:49,279

it's pretty much straight out in front

2587

02:45:58,870 --> 02:45:56,950

so normally the rockets were more

2588

02:46:01,990 --> 02:45:58,880

towards the west side this one is more

2589

02:46:04,710 --> 02:46:02,000

just straight south of us

2590

02:46:08,790 --> 02:46:04,720

maine is set for 600 feet

2591

02:46:14,469 --> 02:46:08,800

we're below a thousand feet right now

2592

02:46:19,750 --> 02:46:17,429

there's it's uh so group on this one you

2593

02:46:23,030 --> 02:46:19,760

can see the wind is blowing this right

2594

02:46:24,070 --> 02:46:23,040

back to us at the lco desk

2595

02:46:26,150 --> 02:46:24,080

so we're just going to make sure this

2596

02:46:28,150 --> 02:46:26,160

one is nice down and safe

2597

02:46:29,830 --> 02:46:28,160

unless it's trying to be closest to the

2598

02:46:33,830 --> 02:46:29,840

pad maybe that's what it looks like it's

2599

02:46:39,590 --> 02:46:36,309

maybe when it says where did it land

2600

02:46:46,870 --> 02:46:39,600

maybe where it took off

2601  
02:46:49,910 --> 02:46:48,870  
it's a very nice slow descent on this

2602  
02:46:52,950 --> 02:46:49,920  
one

2603  
02:46:57,269 --> 02:46:52,960  
you can see that winds now has blown it

2604  
02:46:57,279 --> 02:47:00,790  
just over into the wheat

2605  
02:47:06,770 --> 02:47:03,030  
looks like a good textbook flight nice

2606  
02:47:11,190 --> 02:47:09,110  
[Applause]

2607  
02:47:12,150 --> 02:47:11,200  
okay we're going to the far back pads

2608  
02:47:15,349 --> 02:47:12,160  
now

2609  
02:47:17,110 --> 02:47:15,359  
we're going to pad 43 we have jmu james

2610  
02:47:19,590 --> 02:47:17,120  
madison university out of harrisonburg

2611  
02:47:21,990 --> 02:47:19,600  
virginia this is zeus one this is the

2612  
02:47:23,429 --> 02:47:22,000  
heavy one 53 pound rocket six inch in

2613  
02:47:25,349 --> 02:47:23,439

diameter this is the one that was

2614

02:47:28,309 --> 02:47:25,359

originally nine feet 11 inches grew to

2615

02:47:32,070 --> 02:47:28,319

10 feet does have an aerotech I motor I

2616

02:47:33,910 --> 02:47:32,080

1420 red line main is set for 700 feet

2617

02:47:37,670 --> 02:47:33,920

has the dead reckoning system with two

2618

02:47:39,190 --> 02:47:37,680

imus and an arduino should go 4 900 feet

2619

02:47:42,230 --> 02:47:39,200

has the camera on board so make sure

2620

02:47:45,030 --> 02:47:42,240

everyone is smiling pad 43 we have the

2621

02:47:48,630 --> 02:47:45,040

clear sky we have the clear range we're

2622

02:48:01,990 --> 02:47:48,640

gonna launch this one in five four three

2623

02:48:06,550 --> 02:48:03,830

let's start an arc over i'd say maybe

2624

02:48:10,070 --> 02:48:06,560

2500 3 000 feet

2625

02:48:11,750 --> 02:48:10,080

we won an event here pretty soon

2626

02:48:16,070 --> 02:48:11,760

there's the there it is there's it's

2627

02:48:19,429 --> 02:48:18,150

they are very excited a little bit of a

2628

02:48:21,429 --> 02:48:19,439

delay there

2629

02:48:24,550 --> 02:48:21,439

but they're excited so what happened on

2630

02:48:26,710 --> 02:48:24,560

that one probably very overstable and it

2631

02:48:30,389 --> 02:48:26,720

turned into the wind which probably

2632

02:48:32,550 --> 02:48:30,399

hindered its 4900 feet altitude

2633

02:48:34,710 --> 02:48:32,560

but as long as they know where it's

2634

02:48:35,750 --> 02:48:34,720

located i think the more important part

2635

02:48:38,950 --> 02:48:35,760

to it

2636

02:48:41,910 --> 02:48:38,960

they do have their main set for 700 feet

2637

02:48:43,030 --> 02:48:41,920

we're probably coming in about 1500 feet

2638

02:48:44,550 --> 02:48:43,040

right now

2639

02:48:46,469 --> 02:48:44,560

this one's over a little on the east

2640

02:48:47,910 --> 02:48:46,479

side of us we're at the lco desk we

2641

02:48:48,710 --> 02:48:47,920

should be approaching below a thousand

2642

02:48:53,750 --> 02:48:48,720

feet

2643

02:48:55,990 --> 02:48:53,760

now is where we should see that

2644

02:49:00,970 --> 02:48:56,000

okay i was a little off sorry

2645

02:49:06,070 --> 02:49:04,309

[Applause]

2646

02:49:07,429 --> 02:49:06,080

for the zees from the pad that's for

2647

02:49:09,590 --> 02:49:07,439

sure

2648

02:49:11,030 --> 02:49:09,600

but looks like a really good flight

2649

02:49:20,469 --> 02:49:11,040

there

2650

02:49:25,990 --> 02:49:23,190

and it looks like it landed right on the

2651  
02:49:27,830 --> 02:49:26,000  
pivot

2652  
02:49:36,230 --> 02:49:27,840  
so it's now turned into an agricultural

2653  
02:49:42,070 --> 02:49:40,389  
okay we're going to pad number 44.

2654  
02:49:44,790 --> 02:49:42,080  
this is purdue

2655  
02:49:47,429 --> 02:49:44,800  
university ppsl out of

2656  
02:49:50,550 --> 02:49:47,439  
west lafayette indiana this is the

2657  
02:49:53,110 --> 02:49:50,560  
green gas all brakes i got it right this

2658  
02:49:55,429 --> 02:49:53,120  
time another very lightweight rocket

2659  
02:49:58,630 --> 02:49:55,439  
coming in at 53 pounds six inch in

2660  
02:50:01,590 --> 02:49:58,640  
diameter 106 inches tall

2661  
02:50:02,950 --> 02:50:01,600  
this does have the aerotech I 2200 green

2662  
02:50:04,710 --> 02:50:02,960  
motor so it's going to take off with a

2663  
02:50:07,510 --> 02:50:04,720

little bit of umph

2664

02:50:10,230 --> 02:50:07,520

does have the main set for 800 feet

2665

02:50:12,269 --> 02:50:10,240

this has the separating oriented

2666

02:50:14,710 --> 02:50:12,279

orienting and extending

2667

02:50:17,269 --> 02:50:14,720

trilateration radio range finding

2668

02:50:19,269 --> 02:50:17,279

experiment the mouthful of the project

2669

02:50:21,429 --> 02:50:19,279

here i know this is the new bottom half

2670

02:50:23,750 --> 02:50:21,439

on this rocket and this is the the team

2671

02:50:24,790 --> 02:50:23,760

that seems to run pretty deep i think

2672

02:50:27,750 --> 02:50:24,800

okay

2673

02:50:30,870 --> 02:50:27,760

pad 44 we're gonna launch this rocket we

2674

02:50:34,790 --> 02:50:30,880

have a clear sky we have a clear range

2675

02:50:35,590 --> 02:50:34,800

we're gonna launch in five four three

2676

02:50:41,690 --> 02:50:35,600

two

2677

02:50:45,670 --> 02:50:43,670

[Music]

2678

02:50:46,790 --> 02:50:45,680

like hearing that nice echo off that

2679

02:50:48,630 --> 02:50:46,800

motor

2680

02:50:50,950 --> 02:50:48,640

they heard someone say super loud i

2681

02:50:52,710 --> 02:50:50,960

would agree super loud indeed starting

2682

02:50:58,389 --> 02:50:52,720

to arc over

2683

02:50:58,399 --> 02:51:03,429

there's an event

2684

02:51:06,630 --> 02:51:04,790

looks like a project that was trying to

2685

02:51:08,150 --> 02:51:06,640

head towards the sun i don't know if

2686

02:51:13,110 --> 02:51:08,160

it's going to quite make it there but i

2687

02:51:13,120 --> 02:51:17,030

this main is set for

2688

02:51:21,590 --> 02:51:19,110

800 feet

2689

02:51:28,070 --> 02:51:21,600

we're still probably 3 000 feet right

2690

02:51:31,590 --> 02:51:30,230

and because of the requirements of this

2691

02:51:33,670 --> 02:51:31,600

competition

2692

02:51:35,429 --> 02:51:33,680

should be a pretty good sized main

2693

02:51:37,670 --> 02:51:35,439

parachute because of the weight that

2694

02:51:38,990 --> 02:51:37,680

this rocket carries we're below a

2695

02:51:40,309 --> 02:51:39,000

thousand feet right now

2696

02:51:42,150 --> 02:51:40,319

[Music]

2697

02:51:43,429 --> 02:51:42,160

we should see that main pair should come

2698

02:51:45,269 --> 02:51:43,439

right now

2699

02:51:51,670 --> 02:51:45,279

there it is now it's open there's its

2700

02:51:55,429 --> 02:51:53,349

it looks like they even have the colors

2701  
02:51:57,030 --> 02:51:55,439  
corresponding to their university nice

2702  
02:51:59,190 --> 02:51:57,040  
touch

2703  
02:52:02,230 --> 02:51:59,200  
give their head of marketing kudos so

2704  
02:52:04,309 --> 02:52:02,240  
now as you can see this rocket

2705  
02:52:05,910 --> 02:52:04,319  
this rocket is coming back to us at the

2706  
02:52:09,670 --> 02:52:05,920  
lco desk

2707  
02:52:15,349 --> 02:52:12,230  
look at this rocket point at it let your

2708  
02:52:17,750 --> 02:52:15,359  
neighbors know don't touch it don't

2709  
02:52:20,870 --> 02:52:17,760  
catch it

2710  
02:52:23,349 --> 02:52:20,880  
heads up folks right here by the lco

2711  
02:52:25,110 --> 02:52:23,359  
heads up everyone point at it look at it

2712  
02:52:29,590 --> 02:52:25,120  
let your neighbors know it should be out

2713  
02:52:33,670 --> 02:52:31,510

why does purdue always have to have it

2714

02:52:37,990 --> 02:52:33,680

so exciting we don't need that kind of

2715

02:52:41,190 --> 02:52:39,910

they wanted to be near the social media

2716

02:52:43,269 --> 02:52:41,200

tent

2717

02:52:48,870 --> 02:52:43,279

they got their moment on facebook okay

2718

02:52:53,750 --> 02:52:51,429

okay we're going to continue on

2719

02:52:56,070 --> 02:52:53,760

pad number 45.

2720

02:52:58,710 --> 02:52:56,080

this is charger rocket works this is

2721

02:53:01,190 --> 02:52:58,720

alabama huntsville at huntsville alabama

2722

02:53:02,790 --> 02:53:01,200

that a travel far forget is cloud killer

2723

02:53:04,309 --> 02:53:02,800

27 pounds

2724

02:53:06,150 --> 02:53:04,319

four and a half inch in diameter just

2725

02:53:08,630 --> 02:53:06,160

over seven feet tall

2726

02:53:11,510 --> 02:53:08,640

this one should be going 4 600 feet on

2727

02:53:14,469 --> 02:53:11,520

aerotech aerotech k1000 main is set for

2728

02:53:15,910 --> 02:53:14,479

600 feet this does have an ins with an

2729

02:53:18,309 --> 02:53:15,920

imu

2730

02:53:20,070 --> 02:53:18,319

internal navigation system an internal

2731

02:53:21,990 --> 02:53:20,080

measuring unit

2732

02:53:23,750 --> 02:53:22,000

has a correcting

2733

02:53:25,110 --> 02:53:23,760

static system it does have a strata

2734

02:53:27,510 --> 02:53:25,120

lager and this is the one that's been

2735

02:53:29,670 --> 02:53:27,520

driven around a bunch around the country

2736

02:53:32,469 --> 02:53:29,680

and it's got the i'll say rocker themed

2737

02:53:34,469 --> 02:53:32,479

paint job which was pretty neat to see

2738

02:53:37,190 --> 02:53:34,479

pad 45 we have the thumbs up so we have

2739

02:53:38,710 --> 02:53:37,200

the clear sky we have a clear range

2740

02:53:51,030 --> 02:53:38,720

where we're gonna launch the cloud

2741

02:53:54,230 --> 02:53:52,710

this one is the ignition hunter not the

2742

02:53:55,190 --> 02:53:54,240

cloud killer you might need to change

2743

02:53:57,190 --> 02:53:55,200

the name

2744

02:54:01,670 --> 02:53:57,200

let me talk to your marketing department

2745

02:54:03,910 --> 02:54:01,680

so it should be at 4 600 feet maybe

2746

02:54:04,830 --> 02:54:03,920

there's an event there's the backup to

2747

02:54:07,590 --> 02:54:04,840

that

2748

02:54:09,110 --> 02:54:07,600

one i don't see it yet

2749

02:54:10,790 --> 02:54:09,120

sounds like one person on the team is

2750

02:54:15,910 --> 02:54:10,800

excited

2751

02:54:21,830 --> 02:54:18,550

yep there it is i see it under a pretty

2752

02:54:23,750 --> 02:54:21,840

small drogue

2753

02:54:26,230 --> 02:54:23,760

it's over to the

2754

02:54:28,790 --> 02:54:26,240

east side

2755

02:54:29,670 --> 02:54:28,800

or the left side of the lco desk or kind

2756

02:54:33,590 --> 02:54:29,680

of

2757

02:54:41,110 --> 02:54:35,269

i think i got my directions right the

2758

02:54:45,750 --> 02:54:43,190

so we're below a thousand feet we should

2759

02:54:48,230 --> 02:54:45,760

see the main here pretty soon at 600

2760

02:54:51,030 --> 02:54:48,240

we're below 700. we should see the main

2761

02:54:53,429 --> 02:54:51,040

right now there it is

2762

02:54:54,710 --> 02:54:53,439

all right

2763

02:54:56,950 --> 02:54:54,720

they're trying to land near their i

2764

02:54:58,630 --> 02:54:56,960

think agricultural grass i think their

2765

02:55:00,550 --> 02:54:58,640

their land is just right over there but

2766

02:55:03,030 --> 02:55:00,560

now the wind's taking it back over this

2767

02:55:05,110 --> 02:55:03,040

way

2768

02:55:06,790 --> 02:55:05,120

and that looks like it's going to be on

2769

02:55:09,510 --> 02:55:06,800

track for a nice good landing hopefully

2770

02:55:16,870 --> 02:55:09,520

know its location of where it landed

2771

02:55:22,550 --> 02:55:19,510

okay we're going to the last last rocket

2772

02:55:24,150 --> 02:55:22,560

on this bank on pad number 60. we have

2773

02:55:27,670 --> 02:55:24,160

uncc

2774

02:55:30,230 --> 02:55:27,680

49er rocketry team unc charlotte out of

2775

02:55:33,190 --> 02:55:30,240

charlotte north carolina

2776

02:55:35,670 --> 02:55:33,200

this rock is called draco 42 pounds five

2777

02:55:37,990 --> 02:55:35,680

inch in diameter just over eight feet

2778

02:55:39,910 --> 02:55:38,000

tall this thrust to weight is 7.4 so

2779

02:55:43,349 --> 02:55:39,920

you'll get to see what that looks like

2780

02:55:45,990 --> 02:55:43,359

flying on an I 1390 green so green flame

2781

02:55:48,150 --> 02:55:46,000

on this one main set for 600 feet

2782

02:55:50,150 --> 02:55:48,160

this has the anvil system which is a

2783

02:55:51,670 --> 02:55:50,160

gimbal camera that is used to capture

2784

02:55:54,070 --> 02:55:51,680

images throughout

2785

02:55:56,070 --> 02:55:54,080

descent and image processing that is

2786

02:55:58,710 --> 02:55:56,080

used to find landing location this is

2787

02:56:01,590 --> 02:55:58,720

the one at apogee it'll actually drop

2788

02:56:03,590 --> 02:56:01,600

down a camera and start as image imaging

2789

02:56:06,389 --> 02:56:03,600

scanning process and then go back up and

2790

02:56:08,230 --> 02:56:06,399

retract into the rocket so there's a lot

2791

02:56:10,070 --> 02:56:08,240

going on with this one and you see the

2792

02:56:13,190 --> 02:56:10,080

twisted paint job that's actually with

2793

02:56:15,190 --> 02:56:13,200

the dragon or the draco look to it so

2794

02:56:16,309 --> 02:56:15,200

the in the dragon constellation is the

2795

02:56:18,950 --> 02:56:16,319

name of it

2796

02:56:22,150 --> 02:56:18,960

on pad 60 clear sky got the thumbs up

2797

02:56:23,750 --> 02:56:22,160

clear range we will launch in five

2798

02:56:33,269 --> 02:56:23,760

four three

2799

02:56:38,230 --> 02:56:34,950

nice little echo on that one that one

2800

02:56:41,030 --> 02:56:38,240

went pretty straight up on there

2801

02:56:43,190 --> 02:56:41,040

i wasn't sure what the projected

2802

02:56:46,550 --> 02:56:43,200

altitude or predicted altitude is but it

2803

02:56:49,670 --> 02:56:46,560

looks to be over 4 000. we need an event

2804

02:56:53,349 --> 02:56:49,680

there's an event there is it's back up

2805

02:56:55,269 --> 02:56:53,359

maybe a third one on there possibly

2806

02:56:56,469 --> 02:56:55,279

and i don't know if these are in two and

2807

02:57:00,230 --> 02:56:56,479

i don't know if these are in two

2808

02:57:02,469 --> 02:57:00,240

different pieces or one piece

2809

02:57:04,469 --> 02:57:02,479

two pieces okay so

2810

02:57:06,150 --> 02:57:04,479

they need extra team members to track

2811

02:57:07,190 --> 02:57:06,160

all these pieces coming in but this is

2812

02:57:09,269 --> 02:57:07,200

where

2813

02:57:12,389 --> 02:57:09,279

the part of the project starts

2814

02:57:14,389 --> 02:57:12,399

retracting down a camera

2815

02:57:15,349 --> 02:57:14,399

and then there's a parachute that came

2816

02:57:19,110 --> 02:57:15,359

out i don't know if it's supposed to

2817

02:57:20,870 --> 02:57:19,120

come out that early but it did

2818

02:57:22,630 --> 02:57:20,880

and then there is a

2819

02:57:24,710 --> 02:57:22,640

and then second piece does have its own

2820

02:57:26,389 --> 02:57:24,720

recovery system

2821

02:57:28,389 --> 02:57:26,399

so the first piece looks like it's had

2822

02:57:29,830 --> 02:57:28,399

its main out

2823

02:57:32,469 --> 02:57:29,840

i don't know if the main was supposed to

2824

02:57:37,190 --> 02:57:32,479

come out that high but it is so there it

2825

02:57:41,429 --> 02:57:39,190

and then the other part oh it should be

2826

02:57:44,630 --> 02:57:41,439

there's it there's this event

2827

02:57:47,349 --> 02:57:44,640

okay there's the all this all the stuff

2828

02:57:52,309 --> 02:57:49,110

one of the parachutes looks to be out

2829

02:57:56,150 --> 02:57:54,309

that's going to be doing uh we'll be up

2830

02:57:58,309 --> 02:57:56,160

there for quite a while

2831

02:58:00,309 --> 02:57:58,319

with the way with the wind

2832

02:58:01,990 --> 02:58:00,319

that will be out in the wheat

2833

02:58:03,030 --> 02:58:02,000

well behind the crowd but what you can

2834

02:58:05,110 --> 02:58:03,040

see here

2835

02:58:07,269 --> 02:58:05,120

the rocket's not moving a whole lot up

2836

02:58:09,590 --> 02:58:07,279

in the air so the surface winds are a

2837

02:58:11,190 --> 02:58:09,600

little bit higher than the winds aloft

2838

02:58:12,630 --> 02:58:11,200

as it starts to come lower and lower

2839

02:58:14,790 --> 02:58:12,640

we'll see the rockets start to move a

2840

02:58:18,630 --> 02:58:14,800

little bit quicker

2841

02:58:20,630 --> 02:58:18,640

under that big big main parachute

2842

02:58:22,230 --> 02:58:20,640

and you can see the lower part as it's

2843

02:58:27,030 --> 02:58:22,240

starting to cruise down on the end of

2844

02:58:33,190 --> 02:58:30,389

and that's down

2845

02:58:35,830 --> 02:58:33,200

and then the other part

2846

02:58:40,710 --> 02:58:35,840

of the draco rocket is still kind of

2847

02:58:40,720 --> 02:58:48,630

okay right now a range is open

2848

02:58:53,590 --> 02:58:50,469

so the part we're looking at now this is

2849

02:58:55,830 --> 02:58:53,600

the part i think that is doing their

2850

02:58:57,910 --> 02:58:55,840

gimbal camera that's capturing images

2851  
02:59:00,870 --> 02:58:57,920  
throughout the descent is doing the

2852  
02:59:03,670 --> 02:59:00,880  
image processing so the camera comes in

2853  
02:59:05,349 --> 02:59:03,680  
and out so it's scanning the field right

2854  
02:59:07,510 --> 02:59:05,359  
now

2855  
02:59:11,190 --> 02:59:07,520  
taking pictures and then before landing

2856  
02:59:11,200 --> 02:59:18,710  
so that is all the brains to the project

2857  
02:59:22,790 --> 02:59:20,950  
just wanted i guess see more of take

2858  
02:59:26,870 --> 02:59:22,800  
more pictures maybe that's why the main

2859  
02:59:30,469 --> 02:59:28,550  
taking a scenic route is what i've been

2860  
02:59:33,510 --> 02:59:30,479  
told taking us a little more of a scenic

2861  
02:59:35,670 --> 02:59:33,520  
route but it's looking good and it's

2862  
03:00:14,740 --> 02:59:35,680  
well north of all of us so we are okay

2863  
03:00:14,750 --> 03:01:10,389

[Music]

2864

03:01:13,590 --> 03:01:12,309

hello everyone we are back with you as

2865

03:01:15,750 --> 03:01:13,600

you just saw the first volley of

2866

03:01:17,429 --> 03:01:15,760

launches all took to the sky teams are

2867

03:01:20,389 --> 03:01:17,439

out recovering their rockets checking

2868

03:01:22,230 --> 03:01:20,399

out how their payloads went right now

2869

03:01:24,630 --> 03:01:22,240

we are now joined by someone who knows

2870

03:01:26,309 --> 03:01:24,640

just a little bit about rockets uh mr

2871

03:01:27,590 --> 03:01:26,319

dave reynolds with nasa's space launch

2872

03:01:29,750 --> 03:01:27,600

system program

2873

03:01:31,830 --> 03:01:29,760

dave tell us what your role is with sls

2874

03:01:33,750 --> 03:01:31,840

and what that space launch system rocket

2875

03:01:36,070 --> 03:01:33,760

is yeah thanks will yeah it's real

2876

03:01:38,070 --> 03:01:36,080

exciting to be out here today and and uh

2877

03:01:40,070 --> 03:01:38,080

like you said this is really

2878

03:01:42,950 --> 03:01:40,080

fairly similar in many ways to the to

2879

03:01:45,830 --> 03:01:42,960

what i do as a living um like like you

2880

03:01:47,269 --> 03:01:45,840

said i work in the sls booster project

2881

03:01:48,870 --> 03:01:47,279

office and

2882

03:01:51,349 --> 03:01:48,880

as most people probably know the

2883

03:01:53,110 --> 03:01:51,359

boosters are those two large white

2884

03:01:54,230 --> 03:01:53,120

rockets that sit on either side of the

2885

03:01:56,150 --> 03:01:54,240

sls

2886

03:01:57,910 --> 03:01:56,160

those are known as solid rockets as

2887

03:01:58,950 --> 03:01:57,920

opposed to liquid rockets well every one

2888

03:02:01,110 --> 03:01:58,960

of these rockets that you're seeing

2889

03:02:03,269 --> 03:02:01,120

today are all solid rockets and so

2890

03:02:05,190 --> 03:02:03,279

they're kind of cousins kind of nephews

2891

03:02:07,670 --> 03:02:05,200

to to what we're planning on launching

2892

03:02:09,429 --> 03:02:07,680

with the sls program and so that is the

2893

03:02:11,190 --> 03:02:09,439

primary thing that we're working on

2894

03:02:13,910 --> 03:02:11,200

trying to get the uh

2895

03:02:14,710 --> 03:02:13,920

the sls up to up to space

2896

03:02:17,269 --> 03:02:14,720

um

2897

03:02:19,670 --> 03:02:17,279

and just as a brief status on where

2898

03:02:22,070 --> 03:02:19,680

we're going um

2899

03:02:24,710 --> 03:02:22,080

we've we recently rolled out to the pad

2900

03:02:27,429 --> 03:02:24,720

we're in a series of tests with uh with

2901  
03:02:29,670 --> 03:02:27,439  
the sls rocket we've had three what we

2902  
03:02:31,110 --> 03:02:29,680  
call wet dress rehearsal attempts

2903  
03:02:32,630 --> 03:02:31,120  
each one of those we're trying to learn

2904  
03:02:34,790 --> 03:02:32,640  
different things about how to

2905  
03:02:36,870 --> 03:02:34,800  
fill up the rocket with propellants

2906  
03:02:38,950 --> 03:02:36,880  
do the countdown run the software and

2907  
03:02:40,150 --> 03:02:38,960  
learn all sorts of things so as you saw

2908  
03:02:43,110 --> 03:02:40,160  
a little bit earlier with some of these

2909  
03:02:44,550 --> 03:02:43,120  
rockets you know they had a couple of

2910  
03:02:47,030 --> 03:02:44,560  
problems trying to get some of them off

2911  
03:02:48,870 --> 03:02:47,040  
the off the pad we have the exact same

2912  
03:02:50,230 --> 03:02:48,880  
type of problems just on a bigger scale

2913  
03:02:52,309 --> 03:02:50,240

and so that's exactly what we're trying

2914

03:02:53,990 --> 03:02:52,319

to do down at cape canaveral right now

2915

03:02:55,030 --> 03:02:54,000

trying to learn more about our rocket

2916

03:02:56,469 --> 03:02:55,040

trying to figure out how we're going to

2917

03:02:57,510 --> 03:02:56,479

get it off the ground trying to figure

2918

03:02:59,590 --> 03:02:57,520

out how we're going to get it up into

2919

03:03:01,349 --> 03:02:59,600

space so dave when we do launch that

2920

03:03:03,670 --> 03:03:01,359

what uh what is the destination what is

2921

03:03:05,990 --> 03:03:03,680

the goal of sls in the artemis program

2922

03:03:08,309 --> 03:03:06,000

yes ultimately sls is what we call a

2923

03:03:12,630 --> 03:03:08,319

heavy lift vehicle which means that it

2924

03:03:15,030 --> 03:03:12,640

has a broad versatility that it can do

2925

03:03:17,670 --> 03:03:15,040

the short term what artemis is trying to

2926  
03:03:20,230 --> 03:03:17,680  
accomplish is to land the first uh woman

2927  
03:03:22,710 --> 03:03:20,240  
and first person of color and and other

2928  
03:03:24,550 --> 03:03:22,720  
astronauts on the moon again to not just

2929  
03:03:26,550 --> 03:03:24,560  
visit like we did back in the 60s and

2930  
03:03:27,429 --> 03:03:26,560  
70s but also

2931  
03:03:29,830 --> 03:03:27,439  
to

2932  
03:03:31,590 --> 03:03:29,840  
create a permanent presence and so sls

2933  
03:03:33,910 --> 03:03:31,600  
enables that by having a heavy lift

2934  
03:03:36,389 --> 03:03:33,920  
capability because as you know it's all

2935  
03:03:37,830 --> 03:03:36,399  
about rockets are all about getting mass

2936  
03:03:40,150 --> 03:03:37,840  
from the ground

2937  
03:03:42,150 --> 03:03:40,160  
up into the sky right and so sls needs

2938  
03:03:43,910 --> 03:03:42,160

to be able to carry a heavy payload to

2939

03:03:46,710 --> 03:03:43,920

be able to get it from here on the earth

2940

03:03:48,550 --> 03:03:46,720

where it's built up into lunar orbit and

2941

03:03:50,230 --> 03:03:48,560

then down to lunar orbit down onto the

2942

03:03:51,349 --> 03:03:50,240

surface of the of the moon so that

2943

03:03:53,990 --> 03:03:51,359

people can

2944

03:03:56,070 --> 03:03:54,000

can ultimately learn to live and explore

2945

03:03:58,550 --> 03:03:56,080

on the surface of the moon and then down

2946

03:04:00,870 --> 03:03:58,560

the road we're going to try to enable

2947

03:04:02,870 --> 03:04:00,880

deeper space missions the next major

2948

03:04:05,190 --> 03:04:02,880

step obviously for for

2949

03:04:06,950 --> 03:04:05,200

humankind is landing on the surface of

2950

03:04:09,030 --> 03:04:06,960

mars and starting to learn about other

2951  
03:04:11,030 --> 03:04:09,040  
planets as opposed to just our next next

2952  
03:04:13,110 --> 03:04:11,040  
door neighbor so now we're looking at

2953  
03:04:15,190 --> 03:04:13,120  
the artemis generations what we have out

2954  
03:04:16,630 --> 03:04:15,200  
here today how do

2955  
03:04:19,269 --> 03:04:16,640  
the lessons that they've gone through

2956  
03:04:21,110 --> 03:04:19,279  
and they've gone through the

2957  
03:04:22,550 --> 03:04:21,120  
proposal process they've gone through

2958  
03:04:24,710 --> 03:04:22,560  
preliminary design review critical

2959  
03:04:26,389 --> 03:04:24,720  
design review flight readiness reviews

2960  
03:04:28,309 --> 03:04:26,399  
how does what they're doing out here

2961  
03:04:30,550 --> 03:04:28,319  
today and what they're learning relate

2962  
03:04:31,750 --> 03:04:30,560  
to what we're doing and what lessons are

2963  
03:04:33,750 --> 03:04:31,760

they learning out here that will help

2964

03:04:35,590 --> 03:04:33,760

them for a career in the spaceflight

2965

03:04:38,309 --> 03:04:35,600

industry yeah actually the process that

2966

03:04:40,150 --> 03:04:38,319

you just described is a standard systems

2967

03:04:42,230 --> 03:04:40,160

engineering process that we use right

2968

03:04:44,230 --> 03:04:42,240

here at nasa you start out with a with a

2969

03:04:45,510 --> 03:04:44,240

conceptual design and you go through the

2970

03:04:47,510 --> 03:04:45,520

requirements what are we trying to do

2971

03:04:50,070 --> 03:04:47,520

we're trying to loft in this case a

2972

03:04:51,269 --> 03:04:50,080

payload up to approximately one mile

2973

03:04:54,070 --> 03:04:51,279

it's got a

2974

03:04:55,590 --> 03:04:54,080

papa a shoot at about 700 a thousand

2975

03:04:57,110 --> 03:04:55,600

feet and so you start to write these

2976

03:04:59,590 --> 03:04:57,120

requirements down and then you come up

2977

03:05:01,510 --> 03:04:59,600

with a preliminary design and then that

2978

03:05:03,510 --> 03:05:01,520

basically gives you the architecture for

2979

03:05:06,070 --> 03:05:03,520

your rocket and then you come up with it

2980

03:05:07,910 --> 03:05:06,080

with a a certificate certification

2981

03:05:09,269 --> 03:05:07,920

design where you build and you test your

2982

03:05:10,710 --> 03:05:09,279

rocket on the ground and you make sure

2983

03:05:13,590 --> 03:05:10,720

that it's ready to go

2984

03:05:14,630 --> 03:05:13,600

and so if these students eventually come

2985

03:05:16,469 --> 03:05:14,640

to work for

2986

03:05:18,230 --> 03:05:16,479

nasa or any of the major aerospace

2987

03:05:20,070 --> 03:05:18,240

rocket companies they will go through

2988

03:05:21,590 --> 03:05:20,080

that exam exact same type process

2989

03:05:24,230 --> 03:05:21,600

they'll just be doing it on a bigger

2990

03:05:25,750 --> 03:05:24,240

scale so they are learning uh they're

2991

03:05:28,230 --> 03:05:25,760

learning skills that are going to take

2992

03:05:29,349 --> 03:05:28,240

them right into these aerospace careers

2993

03:05:31,670 --> 03:05:29,359

and they'll be able to come into these

2994

03:05:34,070 --> 03:05:31,680

meetings and say yeah we did that on our

2995

03:05:35,910 --> 03:05:34,080

rocket we solved problems like this and

2996

03:05:37,269 --> 03:05:35,920

uh i mean that's really what what

2997

03:05:39,269 --> 03:05:37,279

engineering and stem is all about is

2998

03:05:40,469 --> 03:05:39,279

solving the problems and so it's just a

2999

03:05:42,230 --> 03:05:40,479

standardized process and they're going

3000

03:05:43,910 --> 03:05:42,240

to be very familiar with that process

3001

03:05:45,030 --> 03:05:43,920

once they get into their careers yeah

3002

03:05:46,309 --> 03:05:45,040

excellent i know we've talked to a lot

3003

03:05:47,830 --> 03:05:46,319

of teams and we've got we'll hear from

3004

03:05:49,190 --> 03:05:47,840

more teams today about about how their

3005

03:05:50,710 --> 03:05:49,200

rockets went and some of the problems

3006

03:05:52,950 --> 03:05:50,720

that they've encountered throughout this

3007

03:05:54,710 --> 03:05:52,960

long process um so you've seen the

3008

03:05:56,630 --> 03:05:54,720

rockets fly what was it like standing

3009

03:05:58,469 --> 03:05:56,640

here real close to the flight line

3010

03:06:00,150 --> 03:05:58,479

watching those rockets take off for you

3011

03:06:02,070 --> 03:06:00,160

it's a lot of it's a lot of fun to watch

3012

03:06:04,389 --> 03:06:02,080

these things because i mean i remember

3013

03:06:06,230 --> 03:06:04,399

as a kid um

3014

03:06:07,990 --> 03:06:06,240

launching these small estes rockets you

3015

03:06:10,070 --> 03:06:08,000

can go to the store and purchase these

3016

03:06:11,750 --> 03:06:10,080

little rocket motors and put them in

3017

03:06:13,429 --> 03:06:11,760

these little rockets and launch them and

3018

03:06:14,870 --> 03:06:13,439

then you can get them bigger and bigger

3019

03:06:16,389 --> 03:06:14,880

and eventually you got to get a

3020

03:06:18,070 --> 03:06:16,399

certification to be able to buy some of

3021

03:06:19,110 --> 03:06:18,080

the motors well the rockets so these

3022

03:06:20,309 --> 03:06:19,120

guys are flying you got to have a

3023

03:06:22,870 --> 03:06:20,319

certification you got to have a

3024

03:06:24,150 --> 03:06:22,880

membership of the club and and have uh

3025

03:06:25,510 --> 03:06:24,160

training and such to be able to launch

3026

03:06:27,269 --> 03:06:25,520

these things so it's really exciting i

3027

03:06:29,510 --> 03:06:27,279

never made it that far right i kind of

3028

03:06:31,510 --> 03:06:29,520

went from the sds motors all the way

3029

03:06:33,429 --> 03:06:31,520

into the space launch system right and

3030

03:06:35,190 --> 03:06:33,439

so i think it would have if i had gone

3031

03:06:36,630 --> 03:06:35,200

back to college and i had a team like

3032

03:06:38,070 --> 03:06:36,640

this i would have joined it for sure

3033

03:06:39,670 --> 03:06:38,080

because it would have been a tremendous

3034

03:06:41,110 --> 03:06:39,680

experience to be able to launch these

3035

03:06:43,590 --> 03:06:41,120

things learn all about the engineering

3036

03:06:45,110 --> 03:06:43,600

skills that that that take place in

3037

03:06:46,790 --> 03:06:45,120

building this thing and solving all the

3038

03:06:48,309 --> 03:06:46,800

problems that get there so it's it's a

3039

03:06:49,830 --> 03:06:48,319

lot of fun to be out here

3040

03:06:51,510 --> 03:06:49,840

so one of the things i want to ask you

3041

03:06:53,590 --> 03:06:51,520

um talking about going to the big

3042

03:06:55,510 --> 03:06:53,600

rockets you've been up close with the

3043

03:06:57,670 --> 03:06:55,520

art in this one launch vehicle we're

3044

03:06:59,349 --> 03:06:57,680

targeting launch to fly later this year

3045

03:07:01,110 --> 03:06:59,359

what is it like i was there at roll out

3046

03:07:02,550 --> 03:07:01,120

so i was a few hundred yards away and i

3047

03:07:03,990 --> 03:07:02,560

felt like i could reach out and touch

3048

03:07:06,070 --> 03:07:04,000

what is it like working with that

3049

03:07:08,230 --> 03:07:06,080

hardware and being up close with a

3050

03:07:10,870 --> 03:07:08,240

rocket of that magnitude yeah i'll tell

3051

03:07:13,269 --> 03:07:10,880

you it is it is bigger than you could

3052

03:07:14,710 --> 03:07:13,279

possibly imagine i mean you see it you

3053

03:07:17,269 --> 03:07:14,720

see it next to things and it's going to

3054

03:07:18,950 --> 03:07:17,279

give you some perspective of size but

3055

03:07:20,230 --> 03:07:18,960

and i used to work on space shuttle and

3056

03:07:21,670 --> 03:07:20,240

the space shuttle was bigger than you

3057

03:07:23,269 --> 03:07:21,680

could have possibly imagined you stand

3058

03:07:24,870 --> 03:07:23,279

at the foot of that thing and you're

3059

03:07:27,030 --> 03:07:24,880

looking up at it and you're saying wow i

3060

03:07:28,630 --> 03:07:27,040

cannot believe that all of this goes up

3061

03:07:31,349 --> 03:07:28,640

into space but when i'm standing next to

3062

03:07:33,429 --> 03:07:31,359

the sls rocket and it's almost twice the

3063

03:07:35,750 --> 03:07:33,439

size of the space shuttle

3064

03:07:37,830 --> 03:07:35,760

it's unbelievable and then knowing that

3065

03:07:40,550 --> 03:07:37,840

when we finally launch that thing it is

3066

03:07:42,710 --> 03:07:40,560

going to put so much power that it's

3067

03:07:43,910 --> 03:07:42,720

going to rattle windows down in central

3068

03:07:45,590 --> 03:07:43,920

florida

3069

03:07:46,550 --> 03:07:45,600

it's going to wake up everybody if

3070

03:07:47,750 --> 03:07:46,560

you're trying to sleep through it

3071

03:07:49,830 --> 03:07:47,760

there's no way you're sleeping through

3072

03:07:51,750 --> 03:07:49,840

that launch and so it is going to be the

3073

03:07:53,110 --> 03:07:51,760

world's most powerful rocket taking off

3074

03:07:55,670 --> 03:07:53,120

from central florida and that's going to

3075

03:07:57,750 --> 03:07:55,680

be one exciting show for sure dave just

3076

03:07:59,830 --> 03:07:57,760

like these young rocketeers out here

3077

03:08:02,230 --> 03:07:59,840

this is not the last step for them we've

3078

03:08:04,790 --> 03:08:02,240

got hardware in work for more missions

3079

03:08:06,070 --> 03:08:04,800

than just artemis one okay tell us a

3080

03:08:07,269 --> 03:08:06,080

little bit about some of the other

3081

03:08:09,269 --> 03:08:07,279

things that are going for our next

3082

03:08:11,190 --> 03:08:09,279

artemis missions and for sls yeah i mean

3083

03:08:13,349 --> 03:08:11,200

i can primarily speak from the position

3084

03:08:14,870 --> 03:08:13,359

of the boosters um when we first started

3085

03:08:16,950 --> 03:08:14,880

the program we knew that we were going

3086

03:08:18,469 --> 03:08:16,960

to be flying out some of the old shuttle

3087

03:08:20,070 --> 03:08:18,479

hardware some of the stuff that we had

3088

03:08:21,349 --> 03:08:20,080

saved and so that's a lot of the

3089

03:08:22,710 --> 03:08:21,359

architecture and the lessons learned

3090

03:08:24,790 --> 03:08:22,720

that we had learned from shuttle we've

3091

03:08:26,150 --> 03:08:24,800

now built into the sls program and so

3092

03:08:28,309 --> 03:08:26,160

we're using some of that same

3093

03:08:30,389 --> 03:08:28,319

architecture and same hardware for the

3094

03:08:32,309 --> 03:08:30,399

boosters we saved eight flights worth of

3095

03:08:34,790 --> 03:08:32,319

hardware and we actually in booster land

3096

03:08:36,870 --> 03:08:34,800

we have uh we're building we've built

3097

03:08:38,550 --> 03:08:36,880

three sets of those boosters we're

3098

03:08:39,750 --> 03:08:38,560

building the fourth one so for the

3099

03:08:42,150 --> 03:08:39,760

fourth flight

3100

03:08:44,150 --> 03:08:42,160

um and then uh we are also within

3101  
03:08:45,750 --> 03:08:44,160  
booster uh knowing that we're gonna run

3102  
03:08:46,950 --> 03:08:45,760  
out of this shuttle hardware that we've

3103  
03:08:49,190 --> 03:08:46,960  
saved at some point we're starting on

3104  
03:08:51,670 --> 03:08:49,200  
the next generation well if once we

3105  
03:08:53,910 --> 03:08:51,680  
decided we're gonna have to build a new

3106  
03:08:55,830 --> 03:08:53,920  
booster design anyway we decided what's

3107  
03:08:57,670 --> 03:08:55,840  
the point of just turning the crank

3108  
03:08:59,830 --> 03:08:57,680  
again let's see what else we can get out

3109  
03:09:01,030 --> 03:08:59,840  
of the vehicle and so we have upgraded

3110  
03:09:03,670 --> 03:09:01,040  
this booster and that is what we're

3111  
03:09:06,230 --> 03:09:03,680  
currently working on so in this upgraded

3112  
03:09:08,389 --> 03:09:06,240  
booster design we are switching to a

3113  
03:09:10,550 --> 03:09:08,399

state-of-the-art composite case instead

3114

03:09:12,150 --> 03:09:10,560

of metal cases like uh that was used on

3115

03:09:13,910 --> 03:09:12,160

the shuttle program

3116

03:09:15,670 --> 03:09:13,920

when we're switching to a

3117

03:09:17,830 --> 03:09:15,680

state-of-the-art propellant

3118

03:09:19,429 --> 03:09:17,840

we're changing the avionics system we

3119

03:09:21,429 --> 03:09:19,439

are changing the way that the boosters

3120

03:09:23,190 --> 03:09:21,439

will separate because it was optimized

3121

03:09:24,389 --> 03:09:23,200

originally for separating from the space

3122

03:09:25,750 --> 03:09:24,399

shuttle and it's different when you

3123

03:09:27,670 --> 03:09:25,760

separate from the sls so we're

3124

03:09:29,590 --> 03:09:27,680

optimizing that and of course because

3125

03:09:31,510 --> 03:09:29,600

we're going to produce more power out of

3126  
03:09:33,590 --> 03:09:31,520  
these boosters you need a new nozzle and

3127  
03:09:35,269 --> 03:09:33,600  
so we're redesigning that so that's what

3128  
03:09:36,790 --> 03:09:35,279  
we're going to call the block 2 booster

3129  
03:09:38,950 --> 03:09:36,800  
it's basically the next

3130  
03:09:40,309 --> 03:09:38,960  
major step for the vehicle we have three

3131  
03:09:42,550 --> 03:09:40,319  
iterations that we're working through

3132  
03:09:44,710 --> 03:09:42,560  
and that's the third iteration so the

3133  
03:09:46,790 --> 03:09:44,720  
rest of the vehicle for sls is currently

3134  
03:09:49,030 --> 03:09:46,800  
working on you've got artemis one out on

3135  
03:09:51,269 --> 03:09:49,040  
the pad you've got artemis ii in in

3136  
03:09:52,469 --> 03:09:51,279  
finishing things up in the factory it's

3137  
03:09:54,229 --> 03:09:52,479  
going to be shipped to the cape here in

3138  
03:09:56,389 --> 03:09:54,239

the next year or so to be able to start

3139

03:09:58,550 --> 03:09:56,399

fabricating it the boosters are ready to

3140

03:10:00,870 --> 03:09:58,560

ship to the cape at some point art must

3141

03:10:02,469 --> 03:10:00,880

three same thing and artemis iv like i

3142

03:10:04,630 --> 03:10:02,479

said most of the elements of the

3143

03:10:06,630 --> 03:10:04,640

different uh pieces of the sls are

3144

03:10:08,309 --> 03:10:06,640

starting to build that hardware because

3145

03:10:09,910 --> 03:10:08,319

like i said we're not just going one

3146

03:10:11,910 --> 03:10:09,920

launch at a time we have a long-term

3147

03:10:13,590 --> 03:10:11,920

mission that we're trying to accomplish

3148

03:10:15,429 --> 03:10:13,600

in trying to get people on the moon and

3149

03:10:17,269 --> 03:10:15,439

get them to mars that's so awesome i

3150

03:10:19,510 --> 03:10:17,279

know i'm excited i joined the sls team

3151  
03:10:22,070 --> 03:10:19,520  
about a year ago and it's been nothing

3152  
03:10:23,990 --> 03:10:22,080  
but a blast pun intended

3153  
03:10:25,349 --> 03:10:24,000  
to be around the program and to see not

3154  
03:10:27,910 --> 03:10:25,359  
just the art of this one booster coming

3155  
03:10:30,389 --> 03:10:27,920  
together there are artemis one launch

3156  
03:10:32,870 --> 03:10:30,399  
vehicle come together but for many more

3157  
03:10:33,830 --> 03:10:32,880  
missions um

3158  
03:10:35,990 --> 03:10:33,840  
so

3159  
03:10:37,990 --> 03:10:36,000  
i guess any advice for these young

3160  
03:10:39,429 --> 03:10:38,000  
people out here

3161  
03:10:42,150 --> 03:10:39,439  
as they're looking to get their career

3162  
03:10:44,150 --> 03:10:42,160  
started in in rocketry yeah i mean i'd

3163  
03:10:45,990 --> 03:10:44,160

say that they're learning it right now

3164

03:10:48,389 --> 03:10:46,000

and that is don't be discouraged by

3165

03:10:50,550 --> 03:10:48,399

setbacks you're gonna have setbacks

3166

03:10:54,950 --> 03:10:50,560

rocketry is hard trying to get stuff

3167

03:10:57,190 --> 03:10:54,960

from zero miles an hour to 18 000 miles

3168

03:10:57,830 --> 03:10:57,200

an hour that's hard stuff and work on

3169

03:10:59,830 --> 03:10:57,840

the

3170

03:11:01,190 --> 03:10:59,840

rocketry is currently on it's always on

3171

03:11:02,550 --> 03:11:01,200

the cutting edge because you're always

3172

03:11:04,309 --> 03:11:02,560

trying to push your hardware further and

3173

03:11:05,429 --> 03:11:04,319

further and harder and harder and harder

3174

03:11:07,510 --> 03:11:05,439

and so obviously you're going to have

3175

03:11:09,670 --> 03:11:07,520

setbacks um and so

3176

03:11:11,670 --> 03:11:09,680

as you have setbacks either in in this

3177

03:11:13,830 --> 03:11:11,680

work or you have it in school or you

3178

03:11:15,269 --> 03:11:13,840

have it just in life work through it

3179

03:11:18,389 --> 03:11:15,279

that's what you do that's how we have

3180

03:11:20,469 --> 03:11:18,399

gotten from from uh banging two rocks

3181

03:11:23,190 --> 03:11:20,479

together to try to put people back on

3182

03:11:25,110 --> 03:11:23,200

the moon it's it's open it's people

3183

03:11:26,870 --> 03:11:25,120

overcoming these setbacks one step at a

3184

03:11:28,389 --> 03:11:26,880

time and learning from these mistakes i

3185

03:11:30,710 --> 03:11:28,399

think that's probably the biggest lesson

3186

03:11:32,710 --> 03:11:30,720

that that anybody can get out of an

3187

03:11:35,830 --> 03:11:32,720

activity like this or any other activity

3188

03:11:37,510 --> 03:11:35,840

that that is uh related to stem well i

3189

03:11:38,790 --> 03:11:37,520

think that's great advice dave thank you

3190

03:11:41,590 --> 03:11:38,800

so much for coming out spending some

3191

03:11:43,590 --> 03:11:41,600

time with us and talking to us about sls

3192

03:11:45,750 --> 03:11:43,600

the space launch system program is

3193

03:11:48,070 --> 03:11:45,760

america's rocket we're going to be doing

3194

03:11:50,710 --> 03:11:48,080

things that we have dreamed of for

3195

03:11:52,389 --> 03:11:50,720

decades we're going to send people back

3196

03:11:53,750 --> 03:11:52,399

to the moon to a region we've never

3197

03:11:55,349 --> 03:11:53,760

explored before we're going to do

3198

03:11:56,790 --> 03:11:55,359

cutting-edge science we're going to

3199

03:11:59,349 --> 03:11:56,800

develop technologies that are going to

3200

03:12:00,950 --> 03:11:59,359

be critical for us going to mars it's

3201

03:12:02,229 --> 03:12:00,960

going to be the generation that is

3202

03:12:03,990 --> 03:12:02,239

working from the space flight industry

3203

03:12:05,349 --> 03:12:04,000

now and these young people that you are

3204

03:12:06,950 --> 03:12:05,359

seeing out here today they're going to

3205

03:12:09,269 --> 03:12:06,960

be the ones that make it happen and we

3206

03:12:11,670 --> 03:12:09,279

cannot wait and cannot be more excited

3207

03:12:12,469 --> 03:12:11,680

for you all to be a part of this artemis

3208

03:12:13,590 --> 03:12:12,479

team

3209

03:12:15,670 --> 03:12:13,600

we're going to bring more coverage to

3210

03:12:17,830 --> 03:12:15,680

you back as our teams are out recovering

3211

03:12:19,670 --> 03:12:17,840

their rockets more team interviews

3212

03:12:21,269 --> 03:12:19,680

throughout the day hang out with us here

3213

03:12:23,110 --> 03:12:21,279

and if you have any questions remember

3214

03:12:24,870 --> 03:12:23,120

hashtag studentlaunch we're going to

3215

03:12:26,469 --> 03:12:24,880

bring we'll be right back to you thanks

3216

03:12:45,180 --> 03:12:26,479

for joining us for the 2022 student

3217

03:13:37,590 --> 03:12:54,110

[Music]

3218

03:13:37,600 --> 03:13:41,280

so

3219

03:13:41,290 --> 03:13:55,190

[Music]

3220

03:13:59,890 --> 03:13:57,349

space is for everyone we're all working

3221

03:14:03,670 --> 03:13:59,900

towards a common goal

3222

03:14:06,150 --> 03:14:03,680

[Music]

3223

03:14:08,830 --> 03:14:06,160

just seeing people learn and grow and

3224

03:14:11,750 --> 03:14:08,840

the community benefiting as a

3225

03:14:13,750 --> 03:14:11,760

whole we have vendors from all around

3226

03:14:14,550 --> 03:14:13,760

this country and all of that's bringing

3227

03:14:26,630 --> 03:14:14,560

in

3228

03:14:27,730 --> 03:14:26,640

it provides people with ability to feed

3229

03:14:33,269 --> 03:14:27,740

their families

3230

03:14:37,349 --> 03:14:34,710

not everyone who works on the space

3231

03:14:39,510 --> 03:14:37,359

program is is an engineer or scientist

3232

03:14:41,750 --> 03:14:39,520

in a white lab coat and there's vital

3233

03:14:44,229 --> 03:14:41,760

roles

3234

03:14:46,389 --> 03:14:44,239

everybody at nasa is very team work

3235

03:14:49,030 --> 03:14:46,399

driven nothing that we do here is done

3236

03:14:52,150 --> 03:14:49,040

by itself all successful missions come

3237

03:14:54,469 --> 03:14:52,160

from a team that works together that is

3238

03:14:56,550 --> 03:14:54,479

diverse and we each bring a different

3239

03:14:58,229 --> 03:14:56,560

perspective to the team to help us

3240

03:15:00,790 --> 03:14:58,239

achieve our goals

3241

03:15:02,790 --> 03:15:00,800

there's literally an expert kind of

3242

03:15:05,590 --> 03:15:02,800

within arm's reach that you can ask any

3243

03:15:08,790 --> 03:15:05,600

question to and you'll probably get one

3244

03:15:16,070 --> 03:15:08,800

of the best answers in the world

3245

03:15:18,550 --> 03:15:16,080

[Music]

3246

03:15:20,550 --> 03:15:18,560

we take a lot of ownership and what we

3247

03:15:22,710 --> 03:15:20,560

do you get to see a lot of that passion

3248

03:15:25,349 --> 03:15:22,720

you get to see a lot of that drive

3249

03:15:27,750 --> 03:15:25,359

people want to do their best people want

3250

03:15:29,349 --> 03:15:27,760

to pull together to be a part of this

3251  
03:15:31,840 --> 03:15:29,359  
program that's bigger than what any of

3252  
03:15:34,309 --> 03:15:31,850  
us can accomplish on our own

3253  
03:15:35,910 --> 03:15:34,319  
[Applause]

3254  
03:15:37,269 --> 03:15:35,920  
nasa does the trailblazing with

3255  
03:15:40,070 --> 03:15:37,279  
technology

3256  
03:15:41,830 --> 03:15:40,080  
the kind of work we do you can't rest on

3257  
03:15:43,670 --> 03:15:41,840  
your laurels and say okay we're there

3258  
03:15:45,750 --> 03:15:43,680  
there's no end to what we can achieve so

3259  
03:15:47,910 --> 03:15:45,760  
we have to keep pushing ourselves and

3260  
03:15:50,070 --> 03:15:47,920  
any airplane that i get on it's exciting

3261  
03:15:52,070 --> 03:15:50,080  
to think about oh this airplane probably

3262  
03:15:54,550 --> 03:15:52,080  
at some point passed through many of our

3263  
03:15:56,870 --> 03:15:54,560

centers we are with you when you fly we

3264

03:15:59,110 --> 03:15:56,880

we are coming up with safer newer

3265

03:16:02,229 --> 03:15:59,120

technologies that are more silent more

3266

03:16:05,190 --> 03:16:02,239

energy efficient

3267

03:16:07,349 --> 03:16:05,200

just to be able to work here and

3268

03:16:09,750 --> 03:16:07,359

be able to design and touch something

3269

03:16:13,910 --> 03:16:09,760

that will one day travel to a new planet

3270

03:16:16,389 --> 03:16:13,920

is amazing i mean it's indescribable

3271

03:16:19,349 --> 03:16:16,399

nasa brings hope and inspiration

3272

03:16:22,810 --> 03:16:19,359

by leading the world to space for the

3273

03:16:39,269 --> 03:16:22,820

progression of all people

3274

03:16:39,279 --> 03:16:47,910

i've got my strategy

3275

03:16:51,110 --> 03:16:49,670

hey everyone it is a buzz of activity

3276

03:16:53,269 --> 03:16:51,120

down here around the fly line teams are

3277

03:16:54,950 --> 03:16:53,279

bringing their rockets in i see uah

3278

03:16:55,990 --> 03:16:54,960

coming in but most importantly we have

3279

03:16:58,229 --> 03:16:56,000

nc

3280

03:16:59,910 --> 03:16:58,239

a t right here with us one of our first

3281

03:17:01,590 --> 03:16:59,920

teams introduce yourself and tell us

3282

03:17:03,429 --> 03:17:01,600

what year you are in school okay so my

3283

03:17:05,190 --> 03:17:03,439

name is eugene levert i am a senior at

3284

03:17:08,150 --> 03:17:05,200

north carolina a t

3285

03:17:10,469 --> 03:17:08,160

um this is my team if you guys want to

3286

03:17:11,990 --> 03:17:10,479

introduce yourselves real quick hi i'm

3287

03:17:13,190 --> 03:17:12,000

kennedy boyd i'm a senior at north

3288

03:17:15,590 --> 03:17:13,200

carolina ant

3289

03:17:17,429 --> 03:17:15,600

my name is loch tran i'm a senior uh at

3290

03:17:19,910 --> 03:17:17,439

north carolina ant my name is unique

3291

03:17:22,229 --> 03:17:19,920

johnson i'm a senior at ant my name is

3292

03:17:23,910 --> 03:17:22,239

grant little i'm a junior at ncaant my

3293

03:17:26,469 --> 03:17:23,920

name is tycho coleman i'm a senior at

3294

03:17:28,150 --> 03:17:26,479

ant my name is nevo i'm a senior at

3295

03:17:30,389 --> 03:17:28,160

north carolina nt

3296

03:17:32,710 --> 03:17:30,399

hey i'm antonio smith a senior at ant

3297

03:17:35,910 --> 03:17:32,720

and let's not forget our member mark

3298

03:17:39,110 --> 03:17:35,920

oliver who is also a senior at ant

3299

03:17:40,870 --> 03:17:39,120

so guys it's it's your first year doing

3300

03:17:43,349 --> 03:17:40,880

student launch tell us what that

3301

03:17:45,349 --> 03:17:43,359

experience has been like uh at first you

3302

03:17:47,429 --> 03:17:45,359

don't really realize how exciting this

3303

03:17:50,389 --> 03:17:47,439

whole event is and how things are gonna

3304

03:17:52,309 --> 03:17:50,399

go since it is our first year so uh i

3305

03:17:53,990 --> 03:17:52,319

think it's more like in the last within

3306

03:17:56,229 --> 03:17:54,000

the last few weeks or months it's really

3307

03:17:58,070 --> 03:17:56,239

been setting in to where oh my god you

3308

03:18:00,150 --> 03:17:58,080

know we're doing a nasa event so that's

3309

03:18:02,070 --> 03:18:00,160

that's like really cool and we've put in

3310

03:18:05,349 --> 03:18:02,080

just so much hard work on this rocket

3311

03:18:07,030 --> 03:18:05,359

and so much of our time and uh

3312

03:18:09,190 --> 03:18:07,040

it's just been a really awesome and

3313

03:18:11,990 --> 03:18:09,200

crazy experience i

3314

03:18:13,190 --> 03:18:12,000

had tons of fun doing it i mean i'm so

3315

03:18:15,429 --> 03:18:13,200

happy i was

3316

03:18:17,429 --> 03:18:15,439

part of the team and to be able to come

3317

03:18:19,830 --> 03:18:17,439

out here and this is the first year a t

3318

03:18:21,750 --> 03:18:19,840

gets to kind of show its face out here

3319

03:18:24,309 --> 03:18:21,760

and hopefully we do a great fantastic

3320

03:18:26,150 --> 03:18:24,319

job and uh we get invited back uh more

3321

03:18:27,750 --> 03:18:26,160

years after that so you mentioned having

3322

03:18:29,429 --> 03:18:27,760

a lot of fun and a great experience has

3323

03:18:31,269 --> 03:18:29,439

there been anything that has stuck out

3324

03:18:34,630 --> 03:18:31,279

whether it's from the past few months or

3325

03:18:36,070 --> 03:18:34,640

or out here today well i think it's uh

3326

03:18:38,150 --> 03:18:36,080

easy to say that we're all pretty much

3327

03:18:40,550 --> 03:18:38,160

amateur rocket builders so it's all our

3328

03:18:42,790 --> 03:18:40,560

first time really building a rocket so

3329

03:18:45,670 --> 03:18:42,800

there has been so many hurdles and so

3330

03:18:48,070 --> 03:18:45,680

much to learn and experience and trial

3331

03:18:51,030 --> 03:18:48,080

and error trial and error over and over

3332

03:18:52,469 --> 03:18:51,040

again you know but uh honestly i would

3333

03:18:54,790 --> 03:18:52,479

say the hardest part of this whole

3334

03:18:57,349 --> 03:18:54,800

project was really getting those fins 90

3335

03:18:59,590 --> 03:18:57,359

degrees and straight like perfect from

3336

03:19:01,429 --> 03:18:59,600

each other to avoid that spin

3337

03:19:03,750 --> 03:19:01,439

but overall

3338

03:19:06,870 --> 03:19:03,760

we've all had a great time tons of fun

3339

03:19:08,150 --> 03:19:06,880

we're we are so excited to be here

3340

03:19:10,309 --> 03:19:08,160

that's great so tell us about your

3341

03:19:11,990 --> 03:19:10,319

rocket how high you're hoping to fly and

3342

03:19:14,550 --> 03:19:12,000

what your payload is to tackle this

3343

03:19:16,950 --> 03:19:14,560

challenge okay so uh our rocket's about

3344

03:19:19,910 --> 03:19:16,960

nine and a half feet long and we have an

3345

03:19:22,469 --> 03:19:19,920

uh target apogee of 5000 feet

3346

03:19:24,389 --> 03:19:22,479

and uh we're really hoping to hit that

3347

03:19:26,309 --> 03:19:24,399

mark so we could break some nasa records

3348

03:19:29,030 --> 03:19:26,319

today and we've worked so hard to try to

3349

03:19:32,870 --> 03:19:29,040

hit it um as far as the payload

3350

03:19:35,429 --> 03:19:32,880

situation goes uh log unique was our

3351

03:19:37,670 --> 03:19:35,439

avionics payload lead grant little

3352

03:19:39,750 --> 03:19:37,680

little a volunteer he's a

3353

03:19:42,309 --> 03:19:39,760

junior at our school and he's been so

3354

03:19:44,070 --> 03:19:42,319

much so much helpful during this whole

3355

03:19:46,229 --> 03:19:44,080

procedure and uh

3356

03:19:49,030 --> 03:19:46,239

they kind of know about how that works

3357

03:19:50,790 --> 03:19:49,040

so i'm going to give it up to them

3358

03:19:52,790 --> 03:19:50,800

so for the payload we'll be using a

3359

03:19:54,550 --> 03:19:52,800

range finder and then we'll be using a

3360

03:19:56,469 --> 03:19:54,560

yagi antenna for directional finance so

3361

03:19:58,070 --> 03:19:56,479

we'll combine those two to locate our

3362

03:19:59,349 --> 03:19:58,080

rocket

3363

03:20:01,590 --> 03:19:59,359

excellent

3364

03:20:04,469 --> 03:20:01,600

now beautiful rocket awesome paint job

3365

03:20:06,950 --> 03:20:04,479

well what went into to painting it

3366

03:20:08,790 --> 03:20:06,960

honestly man we had a subscale we're

3367

03:20:11,110 --> 03:20:08,800

gonna go launch and it was pretty much

3368

03:20:12,710 --> 03:20:11,120

made of cardboard and fiberglass so

3369

03:20:14,469 --> 03:20:12,720

we're like i'm like man i can't go out

3370

03:20:16,389 --> 03:20:14,479

in the field with a rocket looking like

3371

03:20:18,630 --> 03:20:16,399

this so i was like i got some blue some

3372

03:20:21,110 --> 03:20:18,640

yellow paint that's our school colors

3373

03:20:23,269 --> 03:20:21,120

so i just and my dad is shout out to my

3374

03:20:25,510 --> 03:20:23,279

dad he's a body man too so he does tons

3375

03:20:27,830 --> 03:20:25,520

of paint jobs on cars so i figured a

3376

03:20:29,670 --> 03:20:27,840

nice little fade would be nice on the

3377

03:20:32,229 --> 03:20:29,680

fins and the nose cone and try to keep

3378

03:20:33,349 --> 03:20:32,239

it as clean and simple as possible

3379

03:20:35,030 --> 03:20:33,359

well it looks great i might actually

3380

03:20:37,110 --> 03:20:35,040

have to steal that paint job for uh for

3381

03:20:39,990 --> 03:20:37,120

my pickup truck

3382

03:20:42,389 --> 03:20:40,000

i'm a big fan of it um

3383

03:20:44,550 --> 03:20:42,399

so so yellow mechanical engineering

3384

03:20:45,990 --> 03:20:44,560

majors right and so is it a departmental

3385

03:20:48,950 --> 03:20:46,000

effort for the rocket is that how you

3386

03:20:50,550 --> 03:20:48,960

all became involved uh yes it's so it's

3387

03:20:52,790 --> 03:20:50,560

pretty much the all the seniors from our

3388

03:20:55,269 --> 03:20:52,800

school mechanical engineering department

3389

03:20:57,349 --> 03:20:55,279

are uh split up into groups depending on

3390

03:21:00,150 --> 03:20:57,359

their skill sets and kind of what

3391

03:21:02,150 --> 03:21:00,160

they're interested in and so we have so

3392

03:21:03,990 --> 03:21:02,160

many different projects and groups going

3393

03:21:06,150 --> 03:21:04,000

on and we were lucky enough to get

3394

03:21:07,990 --> 03:21:06,160

picked for this one so aside from all

3395

03:21:09,750 --> 03:21:08,000

the student team members who else has

3396

03:21:11,429 --> 03:21:09,760

really put an effort to help you out

3397

03:21:13,510 --> 03:21:11,439

with this project uh shout out to mark

3398

03:21:15,830 --> 03:21:13,520

oliver if you're watching this uh

3399

03:21:18,229 --> 03:21:15,840

unfortunately he couldn't be here and uh

3400

03:21:19,349 --> 03:21:18,239

we have caleb as well he was one of our

3401  
03:21:22,550 --> 03:21:19,359  
interns

3402  
03:21:24,950 --> 03:21:22,560  
and uh professor esso can't forget

3403  
03:21:28,870 --> 03:21:24,960  
so and this this is the man right here

3404  
03:21:33,750 --> 03:21:31,030  
so from a mentor perspective what's it

3405  
03:21:35,750 --> 03:21:33,760  
like uh to work with such fine students

3406  
03:21:37,190 --> 03:21:35,760  
and and to guide them through a very

3407  
03:21:39,750 --> 03:21:37,200  
challenging project

3408  
03:21:41,750 --> 03:21:39,760  
it's to get a great team of

3409  
03:21:44,630 --> 03:21:41,760  
students who are committed to the

3410  
03:21:46,630 --> 03:21:44,640  
project and committed to timelines and

3411  
03:21:48,950 --> 03:21:46,640  
making sure they get the milestones all

3412  
03:21:51,670 --> 03:21:48,960  
correct i thank all of them for being on

3413  
03:21:54,469 --> 03:21:51,680

the mark and on the target because i

3414

03:21:55,670 --> 03:21:54,479

told them we need to be number one

3415

03:21:57,670 --> 03:21:55,680

we couldn't do it and i know these

3416

03:22:00,070 --> 03:21:57,680

students couldn't do it without you so

3417

03:22:01,670 --> 03:22:00,080

a special shout out to all the mentors

3418

03:22:04,150 --> 03:22:01,680

all the professors all the parents all

3419

03:22:05,670 --> 03:22:04,160

the family at home oh north carolina a t

3420

03:22:06,790 --> 03:22:05,680

thank you so much for coming out here

3421

03:22:08,630 --> 03:22:06,800

we're so glad to hear you guys have had

3422

03:22:10,070 --> 03:22:08,640

a good experience and best of luck on on

3423

03:22:12,550 --> 03:22:10,080

your launch later today we can't wait to

3424

03:22:14,229 --> 03:22:12,560

see it yeah thank you very much and uh

3425

03:22:16,070 --> 03:22:14,239

thank you very much for uh northup

3426

03:22:18,070 --> 03:22:16,080

gruman for uh sponsoring our whole

3427

03:22:19,830 --> 03:22:18,080

project and this whole event and making

3428

03:22:21,910 --> 03:22:19,840

this happen thank you so that's been

3429

03:22:24,070 --> 03:22:21,920

really really appreciative super

3430

03:22:27,750 --> 03:22:24,080

appreciate that thank you prize

3431

03:22:30,790 --> 03:22:29,110

well there you have it the team from

3432

03:22:32,870 --> 03:22:30,800

north carolina a t they're going to be

3433

03:22:34,790 --> 03:22:32,880

flying out here later today the first

3434

03:23:00,850 --> 03:22:34,800

team out there i'm sure they're excited

3435

03:24:02,070 --> 03:23:47,290

[Music]

3436

03:24:05,429 --> 03:24:03,830

so hi we're here with uh david pauls

3437

03:24:06,710 --> 03:24:05,439

he's with uh lipscomb university and

3438

03:24:09,429 --> 03:24:06,720

this is the team you guys just flew

3439

03:24:10,469 --> 03:24:09,439

right that's right we had a great flight

3440

03:24:12,150 --> 03:24:10,479

we

3441

03:24:14,950 --> 03:24:12,160

had some uh

3442

03:24:17,110 --> 03:24:14,960

some tense moments when our our uh we

3443

03:24:19,190 --> 03:24:17,120

snuffed the first time but we got a new

3444

03:24:22,070 --> 03:24:19,200

igniter in there and we had a beautiful

3445

03:24:23,429 --> 03:24:22,080

flight went nominally now

3446

03:24:25,429 --> 03:24:23,439

i've been told uh i've been told that we

3447

03:24:26,550 --> 03:24:25,439

have to talk about the altimeter um so

3448

03:24:29,030 --> 03:24:26,560

you guys you guys have recovered the

3449

03:24:30,630 --> 03:24:29,040

altimeter so do you guys have a a

3450

03:24:32,389 --> 03:24:30,640

a a measure of how high your rocket went

3451

03:24:36,389 --> 03:24:32,399

did you know that yet yeah we had a max

3452

03:24:40,630 --> 03:24:36,399

altitude of 56 77 feet and so that was

3453

03:24:42,070 --> 03:24:40,640

uh 397 feet higher than uh than our

3454

03:24:43,349 --> 03:24:42,080

target goal so we're feeling really good

3455

03:24:44,950 --> 03:24:43,359

about that

3456

03:24:46,389 --> 03:24:44,960

that's not bad at all so you all drove

3457

03:24:48,389 --> 03:24:46,399

down from nashville to do the rocket

3458

03:24:49,990 --> 03:24:48,399

launch yes so but how much before the

3459

03:24:50,870 --> 03:24:50,000

drive down the day before launch how

3460

03:24:52,469 --> 03:24:50,880

long have you been working on this

3461

03:24:55,030 --> 03:24:52,479

rocket

3462

03:24:57,269 --> 03:24:55,040

we started back in august with our

3463

03:24:59,349 --> 03:24:57,279

proposal um brought the team together

3464

03:25:02,710 --> 03:24:59,359

determined our roles and uh

3465

03:25:05,269 --> 03:25:02,720

we've put in 3 500 hours on this project

3466

03:25:07,030 --> 03:25:05,279

as a team uh up to this point

3467

03:25:08,950 --> 03:25:07,040

yeah so that's all your hours as a team

3468

03:25:11,830 --> 03:25:08,960

what about mentors or other people that

3469

03:25:13,830 --> 03:25:11,840

supported y'all yes so

3470

03:25:16,070 --> 03:25:13,840

dr elrod the dean of the college of

3471

03:25:18,150 --> 03:25:16,080

engineering was our advisor uh faculty

3472

03:25:20,389 --> 03:25:18,160

advisor up at lipscomb university mr

3473

03:25:22,710 --> 03:25:20,399

vince hugely we're very grateful to both

3474

03:25:24,710 --> 03:25:22,720

of them mr vince hugely was actually

3475

03:25:28,550 --> 03:25:24,720

involved in this competition in its

3476

03:25:30,150 --> 03:25:28,560

inception um about 20 years ago so we

3477

03:25:30,950 --> 03:25:30,160

got him and we

3478

03:25:32,950 --> 03:25:30,960

were

3479

03:25:34,309 --> 03:25:32,960

so blessed to have him because all that

3480

03:25:36,630 --> 03:25:34,319

experience

3481

03:25:39,349 --> 03:25:36,640

really came in with us we're a very new

3482

03:25:41,030 --> 03:25:39,359

team um most of us have no experience

3483

03:25:44,150 --> 03:25:41,040

with rocketry but we came in we learned

3484

03:25:46,550 --> 03:25:44,160

a lot from them and uh yeah it's so

3485

03:25:50,389 --> 03:25:46,560

great to to come to this point and be

3486

03:25:52,150 --> 03:25:50,399

successful and um get to go home proud

3487

03:25:53,750 --> 03:25:52,160

for for our team and proud for the

3488

03:25:54,870 --> 03:25:53,760

university and do you guys have any

3489

03:25:57,910 --> 03:25:54,880

sponsors that you need to thank or

3490

03:26:00,229 --> 03:25:57,920

anything so uh we had jacobs technology

3491

03:26:02,710 --> 03:26:00,239

downtown oklahoma tennessee um

3492

03:26:04,550 --> 03:26:02,720

sponsored us and the tennessee

3493

03:26:05,429 --> 03:26:04,560

architectural engineering

3494

03:26:07,670 --> 03:26:05,439

um

3495

03:26:09,990 --> 03:26:07,680

grant in the tennessee space

3496

03:26:12,070 --> 03:26:10,000

was it tennessee

3497

03:26:14,469 --> 03:26:12,080

space grant consortium as well as

3498

03:26:16,710 --> 03:26:14,479

lipscomb's sga so we couldn't have done

3499

03:26:19,110 --> 03:26:16,720

this without them so we appreciate that

3500

03:26:20,710 --> 03:26:19,120

yeah well congratulations guys

3501  
03:26:25,540 --> 03:26:20,720  
have a great rest of the day

3502  
03:26:58,220 --> 03:26:31,310  
[Music]

3503  
03:27:39,490 --> 03:27:22,710  
[Applause]

3504  
03:27:58,330 --> 03:27:48,230  
[Music]

3505  
03:27:58,340 --> 03:28:03,810  
[Applause]

3506  
03:28:03,820 --> 03:28:20,150  
[Music]

3507  
03:28:23,429 --> 03:28:21,510  
so we're here these uh this is these

3508  
03:28:26,070 --> 03:28:23,439  
guys are from somewhere in florida i'm

3509  
03:28:27,670 --> 03:28:26,080  
not sure exactly where they're from

3510  
03:28:29,349 --> 03:28:27,680  
just kidding for university of florida

3511  
03:28:31,830 --> 03:28:29,359  
i'll let you introduce yourself

3512  
03:28:34,790 --> 03:28:31,840  
my name is megan winneck i'm a third

3513  
03:28:36,070 --> 03:28:34,800

year aerospace engineering student

3514

03:28:37,269 --> 03:28:36,080

introduce everybody else no i'm just

3515

03:28:38,550 --> 03:28:37,279

kidding

3516

03:28:40,150 --> 03:28:38,560

these guys have already flown what's the

3517

03:28:42,150 --> 03:28:40,160

nickname of your rocket rocket's name is

3518

03:28:43,429 --> 03:28:42,160

alberta which is the mascot of the

3519

03:28:46,550 --> 03:28:43,439

gators we have albert alberta are the

3520

03:28:47,990 --> 03:28:46,560

two gators so it's alberta

3521

03:28:49,269 --> 03:28:48,000

okay well i was just thinking in my head

3522

03:28:50,229 --> 03:28:49,279

so i'm not ready for a question but i

3523

03:28:52,229 --> 03:28:50,239

called her

3524

03:28:54,309 --> 03:28:52,239

alberta yesterday instead of the rockets

3525

03:28:57,269 --> 03:28:54,319

rocket is alberta she is megan i just

3526

03:28:59,429 --> 03:28:57,279

want to make that clear

3527

03:29:01,269 --> 03:28:59,439

so yeah so your paint job is was was

3528

03:29:03,190 --> 03:29:01,279

fairly uh was fairly basic was did you

3529

03:29:04,550 --> 03:29:03,200

guys have just is this uh is this a

3530

03:29:06,469 --> 03:29:04,560

specific kind of paint or this looks

3531

03:29:08,950 --> 03:29:06,479

like it's textured somehow right yes so

3532

03:29:10,870 --> 03:29:08,960

actually a kind of interesting feature

3533

03:29:13,429 --> 03:29:10,880

so our original paint job was very very

3534

03:29:15,349 --> 03:29:13,439

shiny and sleek and then our altitude

3535

03:29:16,950 --> 03:29:15,359

was too high and we had to come up with

3536

03:29:18,630 --> 03:29:16,960

a way to bring down our altitude without

3537

03:29:19,910 --> 03:29:18,640

really modifying our rocket because we

3538

03:29:22,150 --> 03:29:19,920

were too late in the competition to do

3539

03:29:24,229 --> 03:29:22,160

that so we actually emailed the nasa

3540

03:29:26,389 --> 03:29:24,239

board and said does paint count can we

3541

03:29:28,309 --> 03:29:26,399

just add paint to increase the weight

3542

03:29:30,870 --> 03:29:28,319

and the coefficient of drag and they

3543

03:29:33,670 --> 03:29:30,880

said yes so we've got some more like

3544

03:29:34,710 --> 03:29:33,680

textured there's like eight coats of

3545

03:29:36,870 --> 03:29:34,720

paint

3546

03:29:39,510 --> 03:29:36,880

on this and that was able to bring the

3547

03:29:40,950 --> 03:29:39,520

altitude down almost 300 feet

3548

03:29:43,110 --> 03:29:40,960

nice so how many inches of paint did you

3549

03:29:44,229 --> 03:29:43,120

have did you put on it to bring down i

3550

03:29:45,750 --> 03:29:44,239

don't know about inches i just know

3551  
03:29:47,110 --> 03:29:45,760  
about coats

3552  
03:29:48,389 --> 03:29:47,120  
nice and what was your do you know your

3553  
03:29:50,070 --> 03:29:48,399  
altitude have you guys have you guys got

3554  
03:29:52,630 --> 03:29:50,080  
the measurement yet

3555  
03:29:54,150 --> 03:29:52,640  
four six uh four seven six eight yeah

3556  
03:29:55,590 --> 03:29:54,160  
yes thousand seven hundred sixty eight

3557  
03:29:56,990 --> 03:29:55,600  
okay good awesome what was your what was

3558  
03:29:59,830 --> 03:29:57,000  
your target what did you call we were

3559  
03:30:01,269 --> 03:29:59,840  
190 degrees off so

3560  
03:30:03,269 --> 03:30:01,279  
uh feet

3561  
03:30:05,590 --> 03:30:03,279  
degrees feet yeah so

3562  
03:30:08,870 --> 03:30:05,600  
four thousand five hundred and

3563  
03:30:10,389 --> 03:30:08,880

seventy eight was the um target yeah

3564

03:30:14,790 --> 03:30:10,399

so how many members of your team are

3565

03:30:17,110 --> 03:30:14,800

here to live we've got 19 19 here

3566

03:30:18,870 --> 03:30:17,120

our team has about 70 but we have 19

3567

03:30:20,550 --> 03:30:18,880

here okay and do you have any sponsors

3568

03:30:22,870 --> 03:30:20,560

that you want to thank uh yes aérojet

3569

03:30:23,990 --> 03:30:22,880

rocketdyne is a sponsor of ours so them

3570

03:30:25,190 --> 03:30:24,000

and then of course the university of

3571

03:30:27,349 --> 03:30:25,200

florida mechanical and aerospace

3572

03:30:29,110 --> 03:30:27,359

engineering department yeah

3573

03:30:44,110 --> 03:30:29,120

well congratulations guys

3574

03:32:33,750 --> 03:31:14,330

[Music]

3575

03:32:37,269 --> 03:32:35,110

so here we're at we're here with notre

3576

03:32:38,630 --> 03:32:37,279

dame university and you guys uh you're

3577

03:32:40,469 --> 03:32:38,640

celebrating a milestone here right this

3578

03:32:43,030 --> 03:32:40,479

is your 10th year here correct yeah we

3579

03:32:44,950 --> 03:32:43,040

started in 2013 uh we're now 10 years in

3580

03:32:47,030 --> 03:32:44,960

we started with a group of uh six

3581

03:32:49,110 --> 03:32:47,040

members just doing it for fun um out of

3582

03:32:51,830 --> 03:32:49,120

their dorm room or a closet and now

3583

03:32:54,710 --> 03:32:51,840

we're at 40 almost working out of a full

3584

03:32:56,070 --> 03:32:54,720

lab 28 of us here today nice nice and

3585

03:32:57,990 --> 03:32:56,080

introduce yourself if you don't mind uh

3586

03:32:59,429 --> 03:32:58,000

my name is jake shapiro i'm our project

3587

03:33:00,710 --> 03:32:59,439

manager this year i'm a senior

3588

03:33:02,389 --> 03:33:00,720

mechanical engineer at the university of

3589

03:33:04,469 --> 03:33:02,399

notre dame now you guys have not flown

3590

03:33:06,389 --> 03:33:04,479

yet right we haven't flown yet today but

3591

03:33:08,389 --> 03:33:06,399

this rocket itself has flown three times

3592

03:33:09,990 --> 03:33:08,399

okay right okay so good um so what are

3593

03:33:12,309 --> 03:33:10,000

what's your target altitude for today uh

3594

03:33:13,990 --> 03:33:12,319

we're targeting 4 800. um our we have an

3595

03:33:17,190 --> 03:33:14,000

apogee control system that should be

3596

03:33:19,349 --> 03:33:17,200

able to reduce our apogee by 400 to 600

3597

03:33:21,349 --> 03:33:19,359

feet we hope um so we've been testing

3598

03:33:22,710 --> 03:33:21,359

that all year but we'll overshoot that

3599

03:33:24,229 --> 03:33:22,720

and try to bring it down with some flu

3600

03:33:25,990 --> 03:33:24,239

actuated flaps

3601  
03:33:27,110 --> 03:33:26,000  
and have you guys tested anything

3602  
03:33:28,870 --> 03:33:27,120  
anything close to these winds that

3603  
03:33:30,469 --> 03:33:28,880  
you're experiencing today at all um yeah

3604  
03:33:31,990 --> 03:33:30,479  
so we're at the university of notre dame

3605  
03:33:33,990 --> 03:33:32,000  
northern indiana so we've been battling

3606  
03:33:35,750 --> 03:33:34,000  
weather all year we pretty much have

3607  
03:33:37,910 --> 03:33:35,760  
high winds and cold temperatures every

3608  
03:33:39,269 --> 03:33:37,920  
time we're here so high winds are normal

3609  
03:33:40,550 --> 03:33:39,279  
for us but we love the warm weather

3610  
03:33:43,030 --> 03:33:40,560  
today

3611  
03:33:45,990 --> 03:33:43,040  
so i hear you guys want to send out a

3612  
03:33:49,670 --> 03:33:46,000  
special thanks to someone or some

3613  
03:33:51,190 --> 03:33:49,680

organizations who wants to do that

3614

03:33:52,710 --> 03:33:51,200

um yeah we'd love to you know thank all

3615

03:33:54,309 --> 03:33:52,720

of our supporters family friends and

3616

03:33:55,830 --> 03:33:54,319

alumni especially

3617

03:33:58,790 --> 03:33:55,840

one person we'd love to thank is our

3618

03:34:02,389 --> 03:34:01,110

who does um more than we ever ask him to

3619

03:34:03,990 --> 03:34:02,399

um and we wouldn't be able to do this

3620

03:34:06,469 --> 03:34:04,000

without him um we'd also like to thank

3621

03:34:08,630 --> 03:34:06,479

boeing uh celestron and the university

3622

03:34:10,550 --> 03:34:08,640

of notre dame college of engineering um

3623

03:34:12,710 --> 03:34:10,560

for supporting us all the time

3624

03:34:15,110 --> 03:34:12,720

throughout the year every year

3625

03:34:16,389 --> 03:34:15,120

your paint job is absolutely beautiful

3626  
03:34:18,389 --> 03:34:16,399  
is someone on the team responsible for

3627  
03:34:20,630 --> 03:34:18,399  
that or is that that you guys do a team

3628  
03:34:22,229 --> 03:34:20,640  
job uh so tyler and catherine um

3629  
03:34:23,429 --> 03:34:22,239  
orchestrated the paint job found a

3630  
03:34:26,790 --> 03:34:23,439  
professional

3631  
03:34:28,550 --> 03:34:26,800  
paint shop near us and got it done um we

3632  
03:34:30,150 --> 03:34:28,560  
really love the carbon fiber clear coat

3633  
03:34:31,510 --> 03:34:30,160  
so we decided to stick with that this

3634  
03:34:32,710 --> 03:34:31,520  
year along with our normal school colors

3635  
03:34:34,550 --> 03:34:32,720  
of blue and gold

3636  
03:34:35,510 --> 03:34:34,560  
it's absolutely beautiful well good luck

3637  
03:34:37,030 --> 03:34:35,520  
to you all

3638  
03:34:41,980 --> 03:34:37,040

thank you so much really appreciate it

3639

03:34:41,990 --> 03:36:13,670

[Music]

3640

03:36:16,630 --> 03:36:15,990

this is near and dear to my heart um

3641

03:36:17,750 --> 03:36:16,640

and

3642

03:36:19,030 --> 03:36:17,760

did you guys have any problems with the

3643

03:36:21,190 --> 03:36:19,040

notre dame team as they came through at

3644

03:36:23,190 --> 03:36:21,200

all or did no no scraps or anything like

3645

03:36:24,710 --> 03:36:23,200

that that's good okay good um because

3646

03:36:26,710 --> 03:36:24,720

there could have been

3647

03:36:28,550 --> 03:36:26,720

i'm just kidding uh introduce yourselves

3648

03:36:29,670 --> 03:36:28,560

i'm cindy belkey i'm the project manager

3649

03:36:31,269 --> 03:36:29,680

of team prometheus here at the

3650

03:36:32,550 --> 03:36:31,279

university of alabama i'm a sophomore

3651

03:36:34,469 --> 03:36:32,560

pursuing aerospace engineering and

3652

03:36:36,790 --> 03:36:34,479

mechanics awesome my name is daniel

3653

03:36:38,550 --> 03:36:36,800

perrato i'm a sophomore pursuing a major

3654

03:36:40,070 --> 03:36:38,560

in mechanical engineering and i'm the

3655

03:36:41,429 --> 03:36:40,080

chief engineer a safety officer for the

3656

03:36:42,950 --> 03:36:41,439

team prometheus at the university of

3657

03:36:43,910 --> 03:36:42,960

alabama well tell us a little bit about

3658

03:36:46,710 --> 03:36:43,920

your rocket

3659

03:36:49,990 --> 03:36:46,720

well our rocket is um

3660

03:36:52,150 --> 03:36:50,000

a little over 10 feet it is um

3661

03:36:53,510 --> 03:36:52,160

we have worked on it since august um and

3662

03:36:55,830 --> 03:36:53,520

technically we had a subscale and now

3663

03:36:57,670 --> 03:36:55,840

it's a full scale um

3664

03:36:58,790 --> 03:36:57,680

i'll let him talk about the like

3665

03:37:00,950 --> 03:36:58,800

technical aspects of it and then i'll

3666

03:37:02,710 --> 03:37:00,960

talk about our journey awesome so the

3667

03:37:05,269 --> 03:37:02,720

rocket basically has about ten and a

3668

03:37:07,269 --> 03:37:05,279

half feet of height it's about six

3669

03:37:09,750 --> 03:37:07,279

inches of diameter and we're flying with

3670

03:37:11,750 --> 03:37:09,760

a 11940 motor

3671

03:37:14,070 --> 03:37:11,760

our main goal is to determine our

3672

03:37:16,469 --> 03:37:14,080

location utilizing grid squares through

3673

03:37:18,229 --> 03:37:16,479

a camera located in this payload door

3674

03:37:19,429 --> 03:37:18,239

and basically based on pictures that are

3675

03:37:21,670 --> 03:37:19,439

taken after the main parachute

3676

03:37:22,870 --> 03:37:21,680

deployment we should be able to compare

3677

03:37:24,309 --> 03:37:22,880

these pictures with

3678

03:37:25,750 --> 03:37:24,319

the images that are stored on board and

3679

03:37:28,389 --> 03:37:25,760

utilize machine learning to be able to

3680

03:37:30,550 --> 03:37:28,399

compare them and finally identify

3681

03:37:33,750 --> 03:37:30,560

our location we're actually able to have

3682

03:37:35,429 --> 03:37:33,760

a pretty precise uh result on our last

3683

03:37:36,710 --> 03:37:35,439

pillow demonstration flight so we're

3684

03:37:39,830 --> 03:37:36,720

really confident that we will have a

3685

03:37:41,990 --> 03:37:39,840

great success on this launch

3686

03:37:43,349 --> 03:37:42,000

so we started off in august with a team

3687

03:37:44,710 --> 03:37:43,359

that was consisted of major league

3688

03:37:47,349 --> 03:37:44,720

people who were very fresh at rocketry

3689

03:37:49,030 --> 03:37:47,359

including myself and um over the course

3690

03:37:50,630 --> 03:37:49,040

of two semesters we've had four lot this

3691

03:37:52,309 --> 03:37:50,640

is our fourth launch we have launched

3692

03:37:54,550 --> 03:37:52,319

once in huntsville and twice in samson

3693

03:37:56,710 --> 03:37:54,560

alabama and progressively i think the

3694

03:37:58,710 --> 03:37:56,720

team has made you know

3695

03:38:00,389 --> 03:37:58,720

we've made some phenomenal progress um

3696

03:38:02,950 --> 03:38:00,399

and i'm very proud of my team we're

3697

03:38:04,389 --> 03:38:02,960

about 30 members um and we're so excited

3698

03:38:05,510 --> 03:38:04,399

to have our final launch here so we're

3699

03:38:07,990 --> 03:38:05,520

all tied

3700

03:38:09,510 --> 03:38:08,000

all right exactly great so um what i

3701  
03:38:11,990 --> 03:38:09,520  
really want to know you guys have been

3702  
03:38:14,550 --> 03:38:12,000  
here before right so this is nothing new

3703  
03:38:16,710 --> 03:38:14,560  
to you but tell me about some of the

3704  
03:38:18,469 --> 03:38:16,720  
best experiences you've had so far with

3705  
03:38:19,990 --> 03:38:18,479  
student launch this year

3706  
03:38:21,990 --> 03:38:20,000  
well the first time we competed in

3707  
03:38:23,990 --> 03:38:22,000  
student launch was an um was not this

3708  
03:38:25,750 --> 03:38:24,000  
team it was a previous team back in 2016

3709  
03:38:27,349 --> 03:38:25,760  
called rocket girls okay um so we

3710  
03:38:29,429 --> 03:38:27,359  
derived information from them but as i

3711  
03:38:32,150 --> 03:38:29,439  
mentioned uh we're all like first time

3712  
03:38:33,750 --> 03:38:32,160  
like rocketry amateurs in rocketry but

3713  
03:38:35,590 --> 03:38:33,760

uh we've had a

3714

03:38:38,070 --> 03:38:35,600

fun learning experience i would say it's

3715

03:38:39,830 --> 03:38:38,080

nothing short of incredible um and we've

3716

03:38:42,389 --> 03:38:39,840

had some trials and tribulations of

3717

03:38:45,189 --> 03:38:42,399

course but we emerged from them stronger

3718

03:38:47,910 --> 03:38:45,199

than ever awesome what kind of awards

3719

03:38:50,150 --> 03:38:47,920

are you guys trying to achieve this year

3720

03:38:51,750 --> 03:38:50,160

with student launch

3721

03:38:53,510 --> 03:38:51,760

um there's a bunch that we were

3722

03:38:56,630 --> 03:38:53,520

targeting but for the most part we love

3723

03:38:57,750 --> 03:38:56,640

the 3d printing award that

3724

03:39:00,469 --> 03:38:57,760

relatively

3725

03:39:02,790 --> 03:39:00,479

relativity space has um and yeah we've

3726

03:39:04,150 --> 03:39:02,800

had some pretty cool three printed parts

3727

03:39:05,590 --> 03:39:04,160

um in the

3728

03:39:07,429 --> 03:39:05,600

um

3729

03:39:09,830 --> 03:39:07,439

in the inside of the rocket including

3730

03:39:11,030 --> 03:39:09,840

our payload so yeah okay very good can

3731

03:39:12,790 --> 03:39:11,040

you tell us a little bit about what's 3d

3732

03:39:15,670 --> 03:39:12,800

printed yeah um i would like my chief

3733

03:39:17,189 --> 03:39:15,680

engineer take over sure so um mostly on

3734

03:39:18,790 --> 03:39:17,199

the port server 3d printed in our rocket

3735

03:39:21,510 --> 03:39:18,800

are the avionics bay

3736

03:39:24,309 --> 03:39:21,520

and the payload retention retention

3737

03:39:26,550 --> 03:39:24,319

system and the payload bay itself

3738

03:39:28,229 --> 03:39:26,560

we really love this kind of sort of

3739

03:39:29,910 --> 03:39:28,239

designing method because it allows us

3740

03:39:31,990 --> 03:39:29,920

for rapid prototyping

3741

03:39:34,550 --> 03:39:32,000

so as we would be able to identify

3742

03:39:36,550 --> 03:39:34,560

failure points on our on design we were

3743

03:39:38,550 --> 03:39:36,560

able to wrap it rapidly

3744

03:39:40,950 --> 03:39:38,560

create a new part and also have that

3745

03:39:43,510 --> 03:39:40,960

part done by the next day as it is

3746

03:39:45,429 --> 03:39:43,520

printing overnight in our laboratory

3747

03:39:47,429 --> 03:39:45,439

we've had a lot of members in our club

3748

03:39:49,110 --> 03:39:47,439

that are very experienced with 3d

3749

03:39:50,950 --> 03:39:49,120

printing and we're more than happy to

3750

03:39:52,150 --> 03:39:50,960

have them supporting our team

3751

03:39:54,870 --> 03:39:52,160

excellent do you guys have anybody you

3752

03:39:56,550 --> 03:39:54,880

need to thank uh any any crew or any uh

3753

03:39:58,469 --> 03:39:56,560

team members or any uh any sponsors or

3754

03:40:00,309 --> 03:39:58,479

anything oh first of all we'd love to

3755

03:40:01,830 --> 03:40:00,319

thank the university of alabama and

3756

03:40:03,510 --> 03:40:01,840

alabama orchard association which is our

3757

03:40:05,349 --> 03:40:03,520

parent organization

3758

03:40:07,750 --> 03:40:05,359

we have had some great mentors and

3759

03:40:09,110 --> 03:40:07,760

support all throughout our journey

3760

03:40:10,469 --> 03:40:09,120

but for the most part i would also like

3761

03:40:12,710 --> 03:40:10,479

to just thank every single one of my

3762

03:40:14,550 --> 03:40:12,720

team members out here we have worked

3763

03:40:15,990 --> 03:40:14,560

several you know long nights pulled a

3764

03:40:17,590 --> 03:40:16,000

lot of all-nighters

3765

03:40:19,510 --> 03:40:17,600

and they've had some amazing launches so

3766

03:40:21,990 --> 03:40:19,520

far and i really look forward to this

3767

03:40:23,510 --> 03:40:22,000

final launch so once again bow tied

3768

03:40:24,950 --> 03:40:23,520

that's awesome well same thing i would

3769

03:40:26,389 --> 03:40:24,960

like to thank the university of alabama

3770

03:40:27,750 --> 03:40:26,399

for allowing us with the opportunity to

3771

03:40:30,309 --> 03:40:27,760

come here to nasa student launch this

3772

03:40:31,189 --> 03:40:30,319

year but mostly i would like to

3773

03:40:33,030 --> 03:40:31,199

thank

3774

03:40:35,429 --> 03:40:33,040

all these guys and all everyone that's

3775

03:40:37,429 --> 03:40:35,439

supporting us back at the ground station

3776

03:40:39,189 --> 03:40:37,439

i can only say that all these people are

3777

03:40:40,550 --> 03:40:39,199

brothers and sisters to me at this point

3778

03:40:41,670 --> 03:40:40,560

and i'm more than happy to be working

3779

03:40:42,790 --> 03:40:41,680

with them

3780

03:40:44,070 --> 03:40:42,800

all right before we go off camera we

3781

03:40:47,040 --> 03:40:44,080

have to get one really big roll tide

3782

03:40:48,660 --> 03:40:47,050

before we go ready oh boy

3783

03:40:49,910 --> 03:40:48,670

[Music]

3784

03:40:51,110 --> 03:40:49,920

[Applause]

3785

03:40:52,870 --> 03:40:51,120

great job

3786

03:40:59,090 --> 03:40:52,880

keep up the good work and good luck this

3787

03:40:59,100 --> 03:41:39,990

[Music]

3788

03:41:42,630 --> 03:41:41,349

and we're back again here with yet

3789

03:41:44,790 --> 03:41:42,640

another student group from uh the

3790

03:41:46,389 --> 03:41:44,800

student launch 2022 here we're at bragg

3791

03:41:48,469 --> 03:41:46,399

farms again uh introduce yourself you

3792

03:41:49,670 --> 03:41:48,479

guys are from um virginia tech right yes

3793

03:41:53,830 --> 03:41:49,680

we're from virginia tech my name is

3794

03:41:55,269 --> 03:41:53,840

sarah taylor i'm the team manager and

3795

03:41:57,590 --> 03:41:55,279

and i'm blake wilhelm i'm the chief

3796

03:41:59,910 --> 03:41:57,600

engineer and we're here with a couple of

3797

03:42:02,710 --> 03:41:59,920

our leads this is cody jones rose

3798

03:42:04,710 --> 03:42:02,720

stanfill helen salko kareem muhammad to

3799

03:42:05,510 --> 03:42:04,720

member dude

3800

03:42:06,870 --> 03:42:05,520

hey

3801

03:42:09,750 --> 03:42:06,880

uh

3802

03:42:12,790 --> 03:42:09,760

i'm so sorry taj kings and our mentor

3803

03:42:13,670 --> 03:42:12,800

bob and avni sing over there awesome and

3804

03:42:14,630 --> 03:42:13,680

so tell us a little bit about your

3805

03:42:16,229 --> 03:42:14,640

rocket it looks like you guys have

3806

03:42:18,630 --> 03:42:16,239

signed a little bit of it too are they

3807

03:42:20,550 --> 03:42:18,640

yeah so um we've done two launches so

3808

03:42:22,870 --> 03:42:20,560

far we signed them

3809

03:42:25,110 --> 03:42:22,880

all on our first launch our sponsors are

3810

03:42:26,950 --> 03:42:25,120

down here it's our aerospace department

3811

03:42:30,150 --> 03:42:26,960

the student engineers council at our

3812

03:42:32,710 --> 03:42:30,160

school collins airspace and um our whole

3813

03:42:35,110 --> 03:42:32,720

team back home there's about 50 of us

3814

03:42:37,349 --> 03:42:35,120

has also signed our whole rocket

3815

03:42:39,030 --> 03:42:37,359

and uh what what does you guys have not

3816

03:42:41,590 --> 03:42:39,040

flown yet right you're on your way so uh

3817

03:42:43,110 --> 03:42:41,600

what is your target altitude 50 250

3818

03:42:44,950 --> 03:42:43,120

right yep

3819

03:42:46,790 --> 03:42:44,960

you guys in your previous slideshow

3820

03:42:48,389 --> 03:42:46,800

coming close to that yes um our first

3821

03:42:50,469 --> 03:42:48,399

flight we were actually only nine feet

3822

03:42:52,870 --> 03:42:50,479

off the target apogees and we were super

3823

03:42:54,950 --> 03:42:52,880

excited about that

3824

03:42:56,950 --> 03:42:54,960

yep in our second flight we were 83 feet

3825

03:42:58,950 --> 03:42:56,960

off apogee so we have a good range that

3826

03:43:01,349 --> 03:42:58,960

we think we can narrow down with this

3827

03:43:03,670 --> 03:43:01,359

flight we did a bunch of pre-flight

3828

03:43:05,349 --> 03:43:03,680

analysis yesterday and this morning

3829

03:43:06,469 --> 03:43:05,359

based on wind conditions to try and get

3830

03:43:08,309 --> 03:43:06,479

the optimal

3831

03:43:09,670 --> 03:43:08,319

launch angle and just make sure that all

3832

03:43:10,870 --> 03:43:09,680

our mass estimates and everything was

3833

03:43:12,150 --> 03:43:10,880

accurate

3834

03:43:13,349 --> 03:43:12,160

and uh talk about your payload a little

3835

03:43:14,950 --> 03:43:13,359

bit what's your payload

3836

03:43:17,429 --> 03:43:14,960

like i'll tell you yeah

3837

03:43:19,110 --> 03:43:17,439

so our payload uses an imu

3838

03:43:20,469 --> 03:43:19,120

on an arduino and basically it takes the

3839

03:43:22,309 --> 03:43:20,479

inertial measurements

3840

03:43:23,670 --> 03:43:22,319

from the rocket as it goes up and it

3841

03:43:25,590 --> 03:43:23,680

uses a bunch of integration and

3842

03:43:27,750 --> 03:43:25,600

numerical methods to kind of

3843

03:43:29,750 --> 03:43:27,760

in real time integrate over time the

3844

03:43:31,110 --> 03:43:29,760

position or integrate the acceleration

3845

03:43:33,189 --> 03:43:31,120

to obtain

3846

03:43:35,349 --> 03:43:33,199

position and then on that we get a real

3847

03:43:37,110 --> 03:43:35,359

flight map of the ground track and we're

3848

03:43:39,110 --> 03:43:37,120

going to fuse that over the gridded map

3849

03:43:41,990 --> 03:43:39,120

of the launch site

3850

03:43:44,469 --> 03:43:42,000

so talk to me about what has been most

3851

03:43:46,870 --> 03:43:44,479

challenging this year for you all as

3852

03:43:49,429 --> 03:43:46,880

you've built your rocket and as you've

3853

03:43:51,269 --> 03:43:49,439

been here and launched already yes so

3854

03:43:53,670 --> 03:43:51,279

one of the biggest things that was hard

3855

03:43:55,990 --> 03:43:53,680

starting out is uh the past few years

3856

03:43:57,830 --> 03:43:56,000

with covid has really hurt the team so

3857

03:43:59,429 --> 03:43:57,840

this year sarah and i have really and

3858

03:44:01,590 --> 03:43:59,439

mim have really put in a lot of effort

3859

03:44:03,830 --> 03:44:01,600

to rebuild the team and kind of

3860

03:44:06,070 --> 03:44:03,840

reorient it and reorganize it so we can

3861

03:44:07,910 --> 03:44:06,080

be more efficient and we've seen that in

3862

03:44:09,830 --> 03:44:07,920

our and how we've done on all of our

3863

03:44:11,910 --> 03:44:09,840

progress reports we've been improving

3864

03:44:13,510 --> 03:44:11,920

every time so i think we've been doing

3865

03:44:15,269 --> 03:44:13,520

very well with that and as for the

3866

03:44:17,269 --> 03:44:15,279

rocket the biggest issues that we've

3867

03:44:19,510 --> 03:44:17,279

come across is just manufacturers and

3868

03:44:21,429 --> 03:44:19,520

shipping time i know for our sub skill

3869

03:44:22,950 --> 03:44:21,439

rocket we ordered over a month in

3870

03:44:25,590 --> 03:44:22,960

advance and we weren't getting parts

3871

03:44:27,429 --> 03:44:25,600

until the week before we had to launch

3872

03:44:29,110 --> 03:44:27,439

which was right before winter break and

3873

03:44:30,630 --> 03:44:29,120

right and then the only launch window

3874

03:44:33,670 --> 03:44:30,640

after that was

3875

03:44:35,830 --> 03:44:33,680

christmas eve and new year's eve so we

3876

03:44:38,150 --> 03:44:35,840

didn't want to do that so it was a real

3877

03:44:39,750 --> 03:44:38,160

big time crunch for us but besides that

3878

03:44:41,990 --> 03:44:39,760

i mean we also had issues with

3879

03:44:43,189 --> 03:44:42,000

manufacturers and shipping times for

3880

03:44:44,790 --> 03:44:43,199

this rocket

3881

03:44:46,469 --> 03:44:44,800

i know that the nose cone was ordered

3882

03:44:48,150 --> 03:44:46,479

over a month in advance and came very

3883

03:44:49,990 --> 03:44:48,160

late so we actually ordered two of them

3884

03:44:52,469 --> 03:44:50,000

and they came in on the same day

3885

03:44:53,910 --> 03:44:52,479

so wow

3886

03:44:56,150 --> 03:44:53,920

yeah so that's probably been our biggest

3887

03:44:57,910 --> 03:44:56,160

struggles this year

3888

03:44:59,429 --> 03:44:57,920

do you guys need to have any sponsors

3889

03:45:02,150 --> 03:44:59,439

you need to thank or anything

3890

03:45:03,670 --> 03:45:02,160

yep so um actually handles our handles

3891

03:45:05,429 --> 03:45:03,680

our sponsors hey guys so we'd like to

3892

03:45:07,189 --> 03:45:05,439

thank of course the department uh our

3893

03:45:09,349 --> 03:45:07,199

one of our professors pat ardis is here

3894

03:45:11,030 --> 03:45:09,359

he's a great help to us along with bob

3895

03:45:11,990 --> 03:45:11,040

also our second biggest sponsor is then

3896

03:45:13,269 --> 03:45:12,000

going to be the student engineers

3897

03:45:14,309 --> 03:45:13,279

council which i was a part of they gave

3898

03:45:15,990 --> 03:45:14,319

a lot of money and they actually helped

3899

03:45:17,429 --> 03:45:16,000

us travel all the way down here and in

3900

03:45:18,630 --> 03:45:17,439

collins aerospace we want to shout out

3901

03:45:20,389 --> 03:45:18,640

to brianna simpson who's probably

3902

03:45:22,309 --> 03:45:20,399

watching right now she's helped us out a

3903

03:45:23,670 --> 03:45:22,319

lot this year and she really made sure

3904

03:45:25,269 --> 03:45:23,680

that she worked with us and did a lot of

3905

03:45:26,710 --> 03:45:25,279

events even for outreach to make sure

3906

03:45:29,349 --> 03:45:26,720

that this rocket was fully built and we

3907

03:45:31,269 --> 03:45:29,359

were ready for huntsville

3908

03:45:32,870 --> 03:45:31,279

well i can tell that you guys are really

3909

03:45:35,670 --> 03:45:32,880

hard working despite any of the

3910

03:45:37,349 --> 03:45:35,680

challenges that you face uh good luck to

3911

03:45:39,189 --> 03:45:37,359

you guys and thanks so much for being

3912

03:45:41,429 --> 03:45:39,199

here

3913

03:45:42,460 --> 03:45:41,439

all right have a good weekend yeah let's

3914

03:45:56,000 --> 03:45:42,470

go

3915

03:47:44,950 --> 03:46:14,420

[Music]

3916

03:47:47,910 --> 03:47:46,309

all right so we're back again at uh

3917

03:47:49,189 --> 03:47:47,920

student launch and this is a team this

3918

03:47:50,550 --> 03:47:49,199

is from umass they've already flown

3919

03:47:51,830 --> 03:47:50,560

today uh i don't know if you can tell

3920

03:47:53,189 --> 03:47:51,840

that but that's because they're you know

3921

03:47:54,309 --> 03:47:53,199

because their rocket is in pieces that's

3922

03:47:55,910 --> 03:47:54,319

not you know that's because they have

3923

03:47:58,309 --> 03:47:55,920

flown um i'll let you guys introduce

3924

03:47:59,590 --> 03:47:58,319

yourself sure my name is max flair

3925

03:48:01,189 --> 03:47:59,600

i'm ian

3926

03:48:02,309 --> 03:48:01,199

i'm calista

3927

03:48:04,389 --> 03:48:02,319

phillip

3928

03:48:05,830 --> 03:48:04,399

i'm liam right there but you know that's

3929

03:48:07,110 --> 03:48:05,840

okay

3930

03:48:09,269 --> 03:48:07,120

so tell us about your flight how did it

3931

03:48:10,870 --> 03:48:09,279

go uh we think it went really well um it

3932

03:48:13,269 --> 03:48:10,880

was a good flight all the recovery

3933

03:48:15,269 --> 03:48:13,279

events deployed correctly um and that's

3934

03:48:17,990 --> 03:48:15,279

really the name of the game so is that

3935

03:48:20,070 --> 03:48:18,000

your altimeter it is how'd you do

3936

03:48:21,830 --> 03:48:20,080

uh pretty good uh we reached an altitude

3937

03:48:23,750 --> 03:48:21,840

of about seven or four thousand nine

3938

03:48:24,870 --> 03:48:23,760

hundred feet um a little bit off of our

3939

03:48:26,469 --> 03:48:24,880

target but we're really happy with the

3940

03:48:28,870 --> 03:48:26,479

flight profile and uh it was a beautiful

3941

03:48:30,550 --> 03:48:28,880

flight and our payload our payload was

3942

03:48:32,229 --> 03:48:30,560

able to give us a coordinate on our grid

3943

03:48:34,469 --> 03:48:32,239

system so we're quite happy about that

3944

03:48:36,630 --> 03:48:34,479

good good deal now i'm supposed to ask

3945

03:48:38,389 --> 03:48:36,640

about uh some of the some of the trials

3946

03:48:39,830 --> 03:48:38,399

and tribulations you guys had getting to

3947

03:48:42,150 --> 03:48:39,840

this launch today apparently you guys

3948

03:48:43,189 --> 03:48:42,160

had some some fun challenges with one of

3949

03:48:44,870 --> 03:48:43,199

your other launches can you want to tell

3950

03:48:46,870 --> 03:48:44,880

us about that oh yeah we have actually

3951

03:48:48,710 --> 03:48:46,880

two launches uh

3952

03:48:51,429 --> 03:48:48,720

that led to the point uh the first

3953

03:48:52,950 --> 03:48:51,439

launch was up in saint albans vermont um

3954

03:48:54,309 --> 03:48:52,960

back in february so the ground was

3955

03:48:56,389 --> 03:48:54,319

completely frozen

3956

03:48:58,150 --> 03:48:56,399

we launched just under the threshold of

3957

03:48:59,750 --> 03:48:58,160

the uh the wind cap where we'd have to

3958

03:49:02,070 --> 03:48:59,760

scrub um

3959

03:49:05,510 --> 03:49:02,080

and rocket was flight was beautiful

3960

03:49:08,150 --> 03:49:05,520

deployed correctly uh landed and uh the

3961

03:49:09,590 --> 03:49:08,160

main parachute was picked up by the wind

3962

03:49:10,950 --> 03:49:09,600

and dragged the whole rocket about a

3963

03:49:13,269 --> 03:49:10,960

quarter mile through this frozen

3964

03:49:16,469 --> 03:49:13,279

cornfield uh totally shredding the

3965

03:49:18,550 --> 03:49:16,479

rocket uh body there in the whole body

3966

03:49:20,389 --> 03:49:18,560

the whole body was gone and like we had

3967

03:49:22,550 --> 03:49:20,399

to rebuild from that we called it the

3968

03:49:24,309 --> 03:49:22,560

nantucket sleigh ride based off an old

3969

03:49:26,229 --> 03:49:24,319

whaling term because that's when the

3970

03:49:28,229 --> 03:49:26,239

boat got dragged by the whale and it got

3971

03:49:30,630 --> 03:49:28,239

all damaged so we had to rebuild the

3972

03:49:32,309 --> 03:49:30,640

rocket again with phenolic tubing that

3973

03:49:33,269 --> 03:49:32,319

didn't go too well because in the next

3974

03:49:35,269 --> 03:49:33,279

launch

3975

03:49:37,670 --> 03:49:35,279

it landed and snapped right in half just

3976

03:49:39,030 --> 03:49:37,680

because yeah just bad material right

3977

03:49:40,309 --> 03:49:39,040

there and i was about to ask if this was

3978

03:49:42,630 --> 03:49:40,319

mark two but this is mark three then

3979

03:49:44,630 --> 03:49:42,640

mark three yeah and we we joke it's

3980

03:49:46,389 --> 03:49:44,640

named argo off after jason and the

3981

03:49:47,830 --> 03:49:46,399

argonauts but we say it's more like ship

3982

03:49:50,389 --> 03:49:47,840

of theseus because we keep changing

3983

03:49:51,590 --> 03:49:50,399

parts on it so is it the same rocket i

3984

03:49:52,469 --> 03:49:51,600

don't know it's good

3985

03:49:53,910 --> 03:49:52,479

nice

3986

03:49:55,590 --> 03:49:53,920

well at least you know your your

3987

03:49:58,150 --> 03:49:55,600

mythology i guess that's true there you

3988

03:49:59,189 --> 03:49:58,160

go so um good deal uh i'm supposed to

3989

03:50:00,950 --> 03:49:59,199

ask you about the clementines though

3990

03:50:02,469 --> 03:50:00,960

what's to tell us your clementine story

3991

03:50:04,389 --> 03:50:02,479

uh liam probably the best one to ask

3992

03:50:06,870 --> 03:50:04,399

about that so uh one of the big staples

3993

03:50:08,630 --> 03:50:06,880

of our team and tradition is that uh

3994

03:50:10,550 --> 03:50:08,640

every year we try to eat citrus before

3995

03:50:12,710 --> 03:50:10,560

launch and that's because uh one year

3996

03:50:14,309 --> 03:50:12,720

when we went up to saint albans vermont

3997

03:50:16,070 --> 03:50:14,319

a group of our

3998

03:50:17,269 --> 03:50:16,080

members had the rocket motors and black

3999

03:50:18,950 --> 03:50:17,279

powder in their car and they

4000

03:50:21,830 --> 03:50:18,960

accidentally went over to the border to

4001  
03:50:23,590 --> 03:50:21,840  
canada and they got stopped and the only

4002  
03:50:25,189 --> 03:50:23,600  
thing that they removed from that car

4003  
03:50:26,550 --> 03:50:25,199  
was their clementines not any of the

4004  
03:50:28,150 --> 03:50:26,560  
explosives

4005  
03:50:30,070 --> 03:50:28,160  
so you know ever since then it's just

4006  
03:50:32,070 --> 03:50:30,080  
been part of our tradition to eat one

4007  
03:50:34,870 --> 03:50:32,080  
that's awesome did you bring clementines

4008  
03:50:39,750 --> 03:50:37,590  
oh man okay so with all the challenges

4009  
03:50:41,349 --> 03:50:39,760  
that you guys have had uh talk to us

4010  
03:50:42,950 --> 03:50:41,359  
about some of the awards that you're

4011  
03:50:45,670 --> 03:50:42,960  
targeting this year

4012  
03:50:48,070 --> 03:50:45,680  
uh obviously we tried our hardest at the

4013  
03:50:49,590 --> 03:50:48,080

altitude of payload but one award that

4014

03:50:51,670 --> 03:50:49,600

we really think we have a shot at is the

4015

03:50:53,830 --> 03:50:51,680

3d printing award which is new this year

4016

03:50:56,229 --> 03:50:53,840

because we have a fully 3d printed

4017

03:50:58,710 --> 03:50:56,239

avionics bay as you can see there we

4018

03:51:01,510 --> 03:50:58,720

also have a 3d printed camera mount for

4019

03:51:03,750 --> 03:51:01,520

our secondary payload and we also have

4020

03:51:06,309 --> 03:51:03,760

our full payload is has a 3d printed

4021

03:51:07,830 --> 03:51:06,319

housing and electronic system so

4022

03:51:10,550 --> 03:51:07,840

we think we have a good shot on that

4023

03:51:11,510 --> 03:51:10,560

yeah nicely done nice of that um well

4024

03:51:12,710 --> 03:51:11,520

thank you guys for coming really

4025

03:51:14,469 --> 03:51:12,720

appreciate it yeah thank you we really

4026  
03:51:15,750 --> 03:51:14,479  
appreciate it too yeah thank you guys

4027  
03:51:17,830 --> 03:51:15,760  
good job it's good to have you guys and

4028  
03:51:26,040 --> 03:51:17,840  
good luck this weekend thank you

4029  
03:52:30,389 --> 03:51:35,480  
[Music]

4030  
03:53:04,330 --> 03:52:33,170  
so

4031  
03:53:04,340 --> 03:53:12,229  
[Music]

4032  
03:53:12,239 --> 03:53:16,120  
so

4033  
03:53:55,429 --> 03:53:23,870  
[Music]

4034  
03:53:55,439 --> 03:54:04,990  
do

4035  
03:55:32,710 --> 03:54:09,830  
[Music]

4036  
03:55:35,429 --> 03:55:34,150  
so we're here with central washington

4037  
03:55:37,030 --> 03:55:35,439  
university and you guys are from the

4038  
03:55:39,590 --> 03:55:37,040

center of washington i understand yes

4039

03:55:41,030 --> 03:55:39,600

sir ellensburg washington yes

4040

03:55:42,070 --> 03:55:41,040

i think i think i overheard you saying

4041

03:55:43,110 --> 03:55:42,080

that that was a place where people

4042

03:55:44,389 --> 03:55:43,120

stopped to get gas when they come

4043

03:55:45,990 --> 03:55:44,399

through washington does that right or if

4044

03:55:48,389 --> 03:55:46,000

you're there for the rodeo the rodeo is

4045

03:55:50,070 --> 03:55:48,399

a big deal oh the rodeo

4046

03:55:52,469 --> 03:55:50,080

yeah it's rodeos and rockets now right

4047

03:55:53,670 --> 03:55:52,479

yeah yes sir and this is first year this

4048

03:55:56,070 --> 03:55:53,680

is our first year competing in the

4049

03:55:57,750 --> 03:55:56,080

competition in any capacity yeah you

4050

03:56:00,070 --> 03:55:57,760

guys were in the first the the first

4051

03:56:01,349 --> 03:56:00,080

flight right or the yes how did it go it

4052

03:56:03,750 --> 03:56:01,359

went really well we're very pleased with

4053

03:56:05,429 --> 03:56:03,760

the flight super stable our parachute

4054

03:56:07,429 --> 03:56:05,439

one of our shock cords got twisted

4055

03:56:08,389 --> 03:56:07,439

around one of the shroud lines so it had

4056

03:56:10,870 --> 03:56:08,399

this weird

4057

03:56:12,469 --> 03:56:10,880

half inflated half deflated look to it

4058

03:56:14,229 --> 03:56:12,479

but it was big enough and had a high

4059

03:56:16,150 --> 03:56:14,239

enough drag to get us a comfortable soft

4060

03:56:17,670 --> 03:56:16,160

landing uh our communications

4061

03:56:19,830 --> 03:56:17,680

unfortunately died for our scientific

4062

03:56:21,349 --> 03:56:19,840

payload uh battery

4063

03:56:22,550 --> 03:56:21,359

just didn't work for us it worked when

4064

03:56:24,389 --> 03:56:22,560

we checked it and then it didn't work

4065

03:56:26,150 --> 03:56:24,399

when it flew so we didn't get anything

4066

03:56:27,189 --> 03:56:26,160

from that unfortunately but we get to

4067

03:56:28,790 --> 03:56:27,199

take the rocket home and we got to be

4068

03:56:30,630 --> 03:56:28,800

very proud of it that's exactly right

4069

03:56:33,349 --> 03:56:30,640

that's exciting

4070

03:56:35,110 --> 03:56:33,359

and who do you have here with you

4071

03:56:36,469 --> 03:56:35,120

so this is our stem engagement lead

4072

03:56:38,710 --> 03:56:36,479

kendra she was the only member who

4073

03:56:40,150 --> 03:56:38,720

wasn't able to make it today so the

4074

03:56:41,349 --> 03:56:40,160

night before we left we made this little

4075

03:56:43,030 --> 03:56:41,359

cut out of her and we've brought her

4076  
03:56:44,389 --> 03:56:43,040  
along the journey with us so we wanted

4077  
03:56:46,229 --> 03:56:44,399  
to make sure she got her acknowledgement

4078  
03:56:48,710 --> 03:56:46,239  
for the amazing work she did for stem

4079  
03:56:49,990 --> 03:56:48,720  
engagement for us um and we really wish

4080  
03:56:51,269 --> 03:56:50,000  
you could have made it here with us we

4081  
03:56:53,590 --> 03:56:51,279  
love you

4082  
03:56:55,429 --> 03:56:53,600  
that's so sweet she's fantastic oh she's

4083  
03:56:58,389 --> 03:56:55,439  
an absolute dream yeah she's well she

4084  
03:57:02,550 --> 03:56:58,399  
looks like an absolute dream even

4085  
03:57:06,790 --> 03:57:04,630  
that's the uh she's very quiet she's

4086  
03:57:08,710 --> 03:57:06,800  
very quiet awesome well congratulations

4087  
03:57:10,630 --> 03:57:08,720  
guys on your first flight yeah yes

4088  
03:57:12,790 --> 03:57:10,640

we would like to thank if you can go for

4089

03:57:14,229 --> 03:57:12,800

it uh we're a very small university

4090

03:57:16,630 --> 03:57:14,239

we're a first year team and we've had an

4091

03:57:18,710 --> 03:57:16,640

amazing amount of support from our staff

4092

03:57:20,870 --> 03:57:18,720

and faculty back at central washington

4093

03:57:22,790 --> 03:57:20,880

um dr dicey snowden she's our advisor

4094

03:57:24,469 --> 03:57:22,800

she got us all hooked in on this uh

4095

03:57:26,309 --> 03:57:24,479

tammy and trish king

4096

03:57:28,630 --> 03:57:26,319

they have guided us through thick and

4097

03:57:31,910 --> 03:57:28,640

thin they've been fantastic um peter

4098

03:57:34,469 --> 03:57:31,920

zenkak he's a wizard handyman who's

4099

03:57:36,469 --> 03:57:34,479

fixed every problem we've thrown at him

4100

03:57:38,550 --> 03:57:36,479

deanna marshall another

4101  
03:57:40,870 --> 03:57:38,560  
physics or not physics anymore but cwu

4102  
03:57:42,870 --> 03:57:40,880  
faculty who's helped us through so much

4103  
03:57:44,070 --> 03:57:42,880  
dr erin craig got us connected with stem

4104  
03:57:47,670 --> 03:57:44,080  
engagement

4105  
03:57:50,150 --> 03:57:47,680  
um dr brownstein dr white doctor kawada

4106  
03:57:52,150 --> 03:57:50,160  
all everyone everyone they've been so

4107  
03:57:53,590 --> 03:57:52,160  
incredibly supportive of us

4108  
03:57:56,229 --> 03:57:53,600  
it does sound like you guys have a

4109  
03:57:59,830 --> 03:57:56,239  
strong support system tell us what

4110  
03:58:01,670 --> 03:57:59,840  
advice would you give another first time

4111  
03:58:03,429 --> 03:58:01,680  
student launch team

4112  
03:58:05,349 --> 03:58:03,439  
yeah i would uh i think the big one

4113  
03:58:07,189 --> 03:58:05,359

would say it's it's going to be kind of

4114

03:58:09,750 --> 03:58:07,199

rough but people are here to support you

4115

03:58:11,349 --> 03:58:09,760

you will find a support team reach out

4116

03:58:13,110 --> 03:58:11,359

you're not in it alone

4117

03:58:14,630 --> 03:58:13,120

the way we the way i kind of got

4118

03:58:16,950 --> 03:58:14,640

everyone in on this is i wouldn't harass

4119

03:58:18,309 --> 03:58:16,960

them and said hey you want to do this

4120

03:58:20,630 --> 03:58:18,319

rocket thing

4121

03:58:22,870 --> 03:58:20,640

which nasa does not recommend harassment

4122

03:58:25,750 --> 03:58:22,880

it was it was friendly harassment okay

4123

03:58:32,389 --> 03:58:28,870

yeah yes you are persistent there we go

4124

03:58:34,870 --> 03:58:32,399

thank you much better p.r

4125

03:58:37,510 --> 03:58:34,880

again we're here to help you

4126  
03:58:39,269 --> 03:58:37,520  
even bigger support system

4127  
03:58:41,269 --> 03:58:39,279  
we've had fantastic donors who have made

4128  
03:58:42,950 --> 03:58:41,279  
it possible for us to fly down

4129  
03:58:44,469 --> 03:58:42,960  
from ellensburg

4130  
03:58:47,429 --> 03:58:44,479  
we've just had a fantastic support

4131  
03:58:49,750 --> 03:58:47,439  
system other people ask questions ask

4132  
03:58:51,670 --> 03:58:49,760  
questions there's so much going on there

4133  
03:58:52,950 --> 03:58:51,680  
are so many different requirements that

4134  
03:58:54,389 --> 03:58:52,960  
if you're unsure about something just

4135  
03:58:56,550 --> 03:58:54,399  
ask questions someone will know the

4136  
03:58:59,269 --> 03:58:56,560  
answer and it makes your life 10 times

4137  
03:59:01,110 --> 03:58:59,279  
easier when you ask questions the uh

4138  
03:59:02,710 --> 03:59:01,120

i'd like to throw a shout out to davis

4139

03:59:04,309 --> 03:59:02,720

high school and ridgeline high school

4140

03:59:06,229 --> 03:59:04,319

for letting us come down and launch

4141

03:59:08,710 --> 03:59:06,239

rockets with you guys teach you guys it

4142

03:59:10,229 --> 03:59:08,720

was a lot of fun and we hope you all

4143

03:59:13,030 --> 03:59:10,239

compete in this in the future we hope we

4144

03:59:14,309 --> 03:59:13,040

got you into rockets

4145

03:59:15,830 --> 03:59:14,319

and you just have fun with it i mean

4146

03:59:16,870 --> 03:59:15,840

it's kind of if you don't get along as a

4147

03:59:18,229 --> 03:59:16,880

group and you don't get all in this team

4148

03:59:19,349 --> 03:59:18,239

you're not going to make a good rocket

4149

03:59:20,950 --> 03:59:19,359

you kind of have to learn we had a lot

4150

03:59:22,229 --> 03:59:20,960

of team bonding and a lot of experiences

4151  
03:59:23,750 --> 03:59:22,239  
we learned a lot of new things and a lot

4152  
03:59:25,349 --> 03:59:23,760  
of different things about each other and

4153  
03:59:26,710 --> 03:59:25,359  
it kind of helped us figure out where we

4154  
03:59:28,070 --> 03:59:26,720  
all fit in and what we all could do

4155  
03:59:29,510 --> 03:59:28,080  
together

4156  
03:59:31,269 --> 03:59:29,520  
awesome and are

4157  
03:59:32,150 --> 03:59:31,279  
all of you guys seniors what what what

4158  
03:59:33,269 --> 03:59:32,160  
year

4159  
03:59:35,269 --> 03:59:33,279  
no

4160  
03:59:38,150 --> 03:59:35,279  
six of us are seniors five or six of us

4161  
03:59:39,990 --> 03:59:38,160  
are graduating uh the rest of us are

4162  
03:59:41,590 --> 03:59:40,000  
still students and those of us that are

4163  
03:59:43,189 --> 03:59:41,600

graduating are going to graduate school

4164

03:59:44,950 --> 03:59:43,199

going into business going all over the

4165

03:59:47,030 --> 03:59:44,960

place so are we coming back next year

4166

03:59:48,870 --> 03:59:47,040

what i'll keep you posted

4167

03:59:51,429 --> 03:59:48,880

i'll keep you posted you better

4168

03:59:53,990 --> 03:59:51,439

persistently keep us posted

4169

03:59:56,309 --> 03:59:54,000

for you tracy

4170

03:59:58,150 --> 03:59:56,319

i made a friend today

4171

04:00:00,790 --> 03:59:58,160

nasa is all about friendships it really

4172

04:00:03,030 --> 04:00:00,800

is guys listen you guys have done uh

4173

04:00:05,189 --> 04:00:03,040

such an amazing job making it here your

4174

04:00:06,790 --> 04:00:05,199

first year team it sounds like you've

4175

04:00:07,910 --> 04:00:06,800

had good experiences you can share

4176  
04:00:09,349 --> 04:00:07,920  
advice

4177  
04:00:11,510 --> 04:00:09,359  
we're just so happy to have you guys

4178  
04:00:12,710 --> 04:00:11,520  
here and good luck to you this weekend

4179  
04:00:14,710 --> 04:00:12,720  
and we do hope to see you back we do

4180  
04:00:23,750 --> 04:00:14,720  
hope to see you back congratulations yes

4181  
04:01:33,110 --> 04:00:59,410  
[Music]

4182  
04:01:35,990 --> 04:01:34,150  
all right we're here with auburn

4183  
04:01:37,990 --> 04:01:36,000  
university and unless you introduce

4184  
04:01:40,309 --> 04:01:38,000  
yourself sure i'm dustin harris i'm the

4185  
04:01:42,150 --> 04:01:40,319  
project lead at auburn i'm a senior in

4186  
04:01:43,830 --> 04:01:42,160  
aerospace engineering okay now see this

4187  
04:01:45,030 --> 04:01:43,840  
is my first year here i had to i have to

4188  
04:01:47,269 --> 04:01:45,040

i have to fess up for a second this is

4189

04:01:49,110 --> 04:01:47,279

my first year uh at the student lounge

4190

04:01:50,950 --> 04:01:49,120

tell me about the shirts because

4191

04:01:52,389 --> 04:01:50,960

they're a little conspicuous of course

4192

04:01:54,710 --> 04:01:52,399

this is this is actually a long-running

4193

04:01:56,710 --> 04:01:54,720

tradition about five years back the team

4194

04:01:58,950 --> 04:01:56,720

decided to do hawaiian shirts and then

4195

04:02:01,990 --> 04:01:58,960

the next year we got uh custom shirts

4196

04:02:03,670 --> 04:02:02,000

with like little insignias patched on uh

4197

04:02:05,670 --> 04:02:03,680

and it's just uh everyone always

4198

04:02:07,510 --> 04:02:05,680

comments on the shirts so we keep can

4199

04:02:10,150 --> 04:02:07,520

keep doing it i feel either under or

4200

04:02:11,910 --> 04:02:10,160

overdressed i'm not sure which d we just

4201  
04:02:13,110 --> 04:02:11,920  
got to request a shirt i guess i guess

4202  
04:02:15,429 --> 04:02:13,120  
that's it i guess that's it so tell us

4203  
04:02:17,269 --> 04:02:15,439  
about your rocket oh sure well it's it's

4204  
04:02:21,189 --> 04:02:17,279  
a very heavy rocket it's a

4205  
04:02:25,349 --> 04:02:21,199  
55-ish 58 pounds uh it has a

4206  
04:02:28,469 --> 04:02:26,710  
it has the air brake system if you can

4207  
04:02:30,790 --> 04:02:28,479  
see we have two cameras on board to

4208  
04:02:32,309 --> 04:02:30,800  
catch your in-flight video uh we have a

4209  
04:02:33,510 --> 04:02:32,319  
payload system in the top part of the

4210  
04:02:35,510 --> 04:02:33,520  
rocket

4211  
04:02:37,670 --> 04:02:35,520  
which will do the payload mission

4212  
04:02:40,389 --> 04:02:37,680  
uh and yeah that's pretty much it what's

4213  
04:02:42,389 --> 04:02:40,399

your payload uh it is a basically a

4214

04:02:44,469 --> 04:02:42,399

sundial to find the direction of the

4215

04:02:47,030 --> 04:02:44,479

rocket and then we have a

4216

04:02:50,469 --> 04:02:47,040

sort of like an echo location system uh

4217

04:02:52,229 --> 04:02:50,479

to determine how far away we are

4218

04:02:53,910 --> 04:02:52,239

so what type of rewards are you guys

4219

04:02:56,630 --> 04:02:53,920

targeting this year

4220

04:02:59,429 --> 04:02:56,640

uh well we always try and go for uh team

4221

04:03:01,990 --> 04:02:59,439

spirit award of course

4222

04:03:03,510 --> 04:03:02,000

it's only right only right uh of course

4223

04:03:05,590 --> 04:03:03,520

social media is very important to us as

4224

04:03:08,229 --> 04:03:05,600

well so we would love to be chosen for

4225

04:03:10,150 --> 04:03:08,239

that award um but honestly the other

4226  
04:03:12,790 --> 04:03:10,160  
awards are very important altitude and

4227  
04:03:14,790 --> 04:03:12,800  
payload are very very important to us

4228  
04:03:16,550 --> 04:03:14,800  
uh but yeah i mean with the air brake

4229  
04:03:18,870 --> 04:03:16,560  
system we're trying to get as close as

4230  
04:03:21,910 --> 04:03:18,880  
we can to the target altitude so what's

4231  
04:03:23,349 --> 04:03:21,920  
your target target's 4 200 feet

4232  
04:03:25,030 --> 04:03:23,359  
all right

4233  
04:03:29,030 --> 04:03:25,040  
and uh how many times have you flown it

4234  
04:03:30,550 --> 04:03:29,040  
thus far we've flown twice so far so

4235  
04:03:33,189 --> 04:03:30,560  
it's well tested and how close have you

4236  
04:03:34,710 --> 04:03:33,199  
gotten to that to that target so far uh

4237  
04:03:36,870 --> 04:03:34,720  
first time we were under a couple

4238  
04:03:38,150 --> 04:03:36,880

hundred feet um and the second one we

4239

04:03:39,910 --> 04:03:38,160

had to launch on a separate motor

4240

04:03:42,309 --> 04:03:39,920

because we were out uh supply chain

4241

04:03:44,229 --> 04:03:42,319

issues uh but yeah that one we actually

4242

04:03:46,710 --> 04:03:44,239

got four feet from the new target that

4243

04:03:47,910 --> 04:03:46,720

we set for that motor so

4244

04:03:49,349 --> 04:03:47,920

all right is there any sponsors anybody

4245

04:03:51,110 --> 04:03:49,359

you need you guys do you think of course

4246

04:03:52,630 --> 04:03:51,120

yes uh we'd like to thank the alabama

4247

04:03:55,349 --> 04:03:52,640

space grant association

4248

04:03:57,110 --> 04:03:55,359

uh and also dinetics and boeing

4249

04:03:59,110 --> 04:03:57,120

we'd also like to thank our advisors

4250

04:04:03,670 --> 04:03:59,120

elden triggs and rob kulick

4251  
04:04:08,309 --> 04:04:06,469  
and so i know you guys have dustin you

4252  
04:04:09,110 --> 04:04:08,319  
said you're a senior right

4253  
04:04:10,630 --> 04:04:09,120  
um

4254  
04:04:12,870 --> 04:04:10,640  
obviously you guys have been here before

4255  
04:04:15,110 --> 04:04:12,880  
because of the hawaiian shirt tradition

4256  
04:04:17,349 --> 04:04:15,120  
uh how much of the team is new how many

4257  
04:04:20,070 --> 04:04:17,359  
of you guys are seniors oh we probably

4258  
04:04:21,670 --> 04:04:20,080  
have a good 30 new people okay and

4259  
04:04:23,110 --> 04:04:21,680  
probably around the same amount of

4260  
04:04:25,110 --> 04:04:23,120  
seniors honestly

4261  
04:04:27,510 --> 04:04:25,120  
we have a lapse in recruitment because

4262  
04:04:29,189 --> 04:04:27,520  
of the covid but um

4263  
04:04:30,630 --> 04:04:29,199

but yeah i think we definitely rebounded

4264

04:04:32,870 --> 04:04:30,640

this year and recruited a whole bunch of

4265

04:04:35,269 --> 04:04:32,880

new members and we're definitely primed

4266

04:04:37,830 --> 04:04:35,279

to come back year after year

4267

04:04:39,990 --> 04:04:37,840

you're on out yeah so tell me what have

4268

04:04:42,389 --> 04:04:40,000

you guys learned i know you said we're

4269

04:04:44,309 --> 04:04:42,399

coming back year after year new hawaiian

4270

04:04:46,309 --> 04:04:44,319

shirts t and i are going to have one

4271

04:04:48,790 --> 04:04:46,319

next time absolutely we thank you in

4272

04:04:50,309 --> 04:04:48,800

advance uh but talk to us about some of

4273

04:04:52,150 --> 04:04:50,319

the things that you guys have learned as

4274

04:04:54,070 --> 04:04:52,160

a team over the years and how you've

4275

04:04:56,630 --> 04:04:54,080

implemented that for the launch this

4276

04:04:58,070 --> 04:04:56,640

year of course well we realized that

4277

04:05:00,630 --> 04:04:58,080

engagement is one of the most important

4278

04:05:02,469 --> 04:05:00,640

things in a club especially a university

4279

04:05:04,870 --> 04:05:02,479

club when people have other things going

4280

04:05:07,269 --> 04:05:04,880

on like tests and that sort of thing

4281

04:05:09,590 --> 04:05:07,279

so we we decided to hold like weekly

4282

04:05:11,990 --> 04:05:09,600

meetings so people know when and where

4283

04:05:14,469 --> 04:05:12,000

to show up consistently

4284

04:05:17,030 --> 04:05:14,479

uh we also have way better communication

4285

04:05:19,269 --> 04:05:17,040

with our group me messaging

4286

04:05:20,950 --> 04:05:19,279

for the the sub teams

4287

04:05:22,950 --> 04:05:20,960

and also we've been holding more social

4288

04:05:24,710 --> 04:05:22,960

events this year we had a movie night a

4289

04:05:28,229 --> 04:05:24,720

while back and

4290

04:05:30,710 --> 04:05:28,239

yeah and a trivia night recently

4291

04:05:32,229 --> 04:05:30,720

that was a lot of fun all right you got

4292

04:05:33,830 --> 04:05:32,239

anything else you guys need to or want

4293

04:05:36,469 --> 04:05:33,840

to say or anything uh iggy you want to

4294

04:05:38,630 --> 04:05:36,479

say anything i'm good all right

4295

04:05:42,070 --> 04:05:38,640

can i get a can i get a war eagle force

4296

04:05:47,269 --> 04:05:42,080

you guys yeah war eagle on three one two

4297

04:05:47,279 --> 04:05:54,510

i just can't

4298

04:12:09,750 --> 04:06:12,370

[Music]

4299

04:12:32,840 --> 04:12:09,760

[Applause]

4300

04:12:32,850 --> 04:12:42,450

[Music]

4301  
04:13:27,110 --> 04:12:51,570  
[Applause]

4302  
04:13:31,910 --> 04:13:29,110  
good afternoon my name is tracy

4303  
04:13:33,910 --> 04:13:31,920  
washington and we are here live

4304  
04:13:38,870 --> 04:13:33,920  
just north of huntsville alabama at

4305  
04:13:41,590 --> 04:13:38,880  
bragg farm for the 2022 student launch

4306  
04:13:45,429 --> 04:13:41,600  
competition i have my colleague here

4307  
04:13:47,030 --> 04:13:45,439  
with me ryan and i i'm so impressed by

4308  
04:13:48,389 --> 04:13:47,040  
your jacket right i really just wanted

4309  
04:13:51,030 --> 04:13:48,399  
to take a minute

4310  
04:13:53,030 --> 04:13:51,040  
and and ask you to explain

4311  
04:13:54,950 --> 04:13:53,040  
how this came to fruition because it's

4312  
04:13:57,269 --> 04:13:54,960  
awesome i appreciate that tracy yeah you

4313  
04:13:59,189 --> 04:13:57,279

know um this jacket like many things i

4314

04:14:01,269 --> 04:13:59,199

think we all have in our lives kind of

4315

04:14:03,189 --> 04:14:01,279

took on a life of its own a jacket that

4316

04:14:06,149 --> 04:14:03,199

was destined just to have a nasa patch

4317

04:14:07,590 --> 04:14:06,159

on there soon became a jacket where i

4318

04:14:09,429 --> 04:14:07,600

had to have some patches that were close

4319

04:14:12,950 --> 04:14:09,439

to me and personal my dad had an

4320

04:14:15,110 --> 04:14:12,960

experiment fly on sts-87 and sts-95 and

4321

04:14:16,469 --> 04:14:15,120

so of course those had to join and then

4322

04:14:18,389 --> 04:14:16,479

different launches i've been fortunate

4323

04:14:19,590 --> 04:14:18,399

to fortunate to see a number of launches

4324

04:14:21,349 --> 04:14:19,600

in person

4325

04:14:23,429 --> 04:14:21,359

you know those of course have to go on

4326

04:14:25,670 --> 04:14:23,439

and um growing up here in rocket city

4327

04:14:27,349 --> 04:14:25,680

with a dad who who not only works for

4328

04:14:29,990 --> 04:14:27,359

for nasa and marshall

4329

04:14:32,790 --> 04:14:30,000

but has a deep deep deep passion for it

4330

04:14:34,550 --> 04:14:32,800

it became i tell people i got bit by the

4331

04:14:36,870 --> 04:14:34,560

nasa bug and no matter what i do i can't

4332

04:14:40,229 --> 04:14:36,880

get rid of it yeah and i don't want to

4333

04:14:42,790 --> 04:14:40,239

yeah so um i i like to try to honor the

4334

04:14:44,389 --> 04:14:42,800

crews we've uh we've lost crews on

4335

04:14:46,070 --> 04:14:44,399

aboard space shuttle challenger space

4336

04:14:48,790 --> 04:14:46,080

shuttle columbia and the apollo 1 crew

4337

04:14:50,550 --> 04:14:48,800

so try to honor them um and to celebrate

4338

04:14:52,550 --> 04:14:50,560

our history the very first flights with

4339

04:14:54,149 --> 04:14:52,560

mercury and gemini and apollo and

4340

04:14:55,750 --> 04:14:54,159

actually one of the cool things and i've

4341

04:14:58,389 --> 04:14:55,760

got the patch on my back yeah turn

4342

04:15:00,790 --> 04:14:58,399

around let us see the back

4343

04:15:03,990 --> 04:15:00,800

this is awesome

4344

04:15:06,070 --> 04:15:04,000

so cool

4345

04:15:09,590 --> 04:15:06,080

on the back kind of lower center is the

4346

04:15:11,030 --> 04:15:09,600

apollo 16 mission in apollo 16 50 years

4347

04:15:12,630 --> 04:15:11,040

ago right now

4348

04:15:14,630 --> 04:15:12,640

charlie duke and john young were

4349

04:15:15,990 --> 04:15:14,640

exploring the lunar highlands they were

4350

04:15:18,710 --> 04:15:16,000

going a portion of the moon that we

4351

04:15:21,030 --> 04:15:18,720

hadn't been to before but to think about

4352

04:15:22,710 --> 04:15:21,040

50 years ago right now

4353

04:15:25,110 --> 04:15:22,720

we had two astronauts walking on the

4354

04:15:27,269 --> 04:15:25,120

moon and ken mattingly and casper

4355

04:15:28,950 --> 04:15:27,279

orbiting now for any of you guys for any

4356

04:15:31,110 --> 04:15:28,960

of you space buffs or anybody here in

4357

04:15:33,349 --> 04:15:31,120

rochester out here in the field the

4358

04:15:35,110 --> 04:15:33,359

apollo 16 capsule is at the u.s space

4359

04:15:36,870 --> 04:15:35,120

and rocket center just a few miles away

4360

04:15:38,710 --> 04:15:36,880

from where we're standing so make sure

4361

04:15:40,149 --> 04:15:38,720

you go check out casper charlie duke was

4362

04:15:42,469 --> 04:15:40,159

here a few nights ago

4363

04:15:45,269 --> 04:15:42,479

and um standing in front of the capsule

4364

04:15:47,110 --> 04:15:45,279

that kept him safe at home so

4365

04:15:49,510 --> 04:15:47,120

it's just it's a pleasure to honor the

4366

04:15:51,110 --> 04:15:49,520

history and then down here at the bottom

4367

04:15:52,870 --> 04:15:51,120

i've got two of my favorite patches the

4368

04:15:54,950 --> 04:15:52,880

artemis program patch and the artemis

4369

04:15:57,510 --> 04:15:54,960

one patch we're getting ready to fly the

4370

04:15:59,510 --> 04:15:57,520

first art in this mission we are going

4371

04:16:01,670 --> 04:15:59,520

we are going and it's going to be

4372

04:16:03,030 --> 04:16:01,680

absolutely incredible i can't wait we

4373

04:16:04,070 --> 04:16:03,040

talked with dave reynolds earlier he

4374

04:16:06,389 --> 04:16:04,080

talked about

4375

04:16:07,990 --> 04:16:06,399

just the sensation of what that feeling

4376

04:16:09,830 --> 04:16:08,000

that blast is going to be like hearing

4377

04:16:10,870 --> 04:16:09,840

how loud it's going to be

4378

04:16:12,870 --> 04:16:10,880

that's one of the things that i just

4379

04:16:15,110 --> 04:16:12,880

keep thinking about and can't wait for

4380

04:16:17,110 --> 04:16:15,120

yes one last question for you ryan i

4381

04:16:19,349 --> 04:16:17,120

know you were telling me earlier that

4382

04:16:22,229 --> 04:16:19,359

you've used this jacket to actually

4383

04:16:23,830 --> 04:16:22,239

educate students about nasa talk to me

4384

04:16:25,590 --> 04:16:23,840

about that a little bit yeah absolutely

4385

04:16:26,950 --> 04:16:25,600

so i was fortunate enough to do my

4386

04:16:30,469 --> 04:16:26,960

master's degree at the university of

4387

04:16:33,030 --> 04:16:30,479

arkansas they have had the center for

4388

04:16:35,429 --> 04:16:33,040

center for space and planetary sciences

4389

04:16:37,910 --> 04:16:35,439

and i studied mars geology and as part

4390

04:16:40,309 --> 04:16:37,920

of what i did i love to go out and talk

4391

04:16:41,510 --> 04:16:40,319

to kids and so between this

4392

04:16:42,870 --> 04:16:41,520

with this jacket and i've got some

4393

04:16:44,630 --> 04:16:42,880

meteorites in my pocket that i've been

4394

04:16:46,149 --> 04:16:44,640

able to acquire over the years

4395

04:16:48,309 --> 04:16:46,159

i've been able to teach the space

4396

04:16:50,630 --> 04:16:48,319

program essentially off my jacket out in

4397

04:16:52,389 --> 04:16:50,640

the middle of fields or in libraries

4398

04:16:54,550 --> 04:16:52,399

out in northwest arkansas

4399

04:16:57,349 --> 04:16:54,560

that's awesome well it is so good to

4400

04:16:59,189 --> 04:16:57,359

have someone so knowledgeable uh that

4401

04:17:01,510 --> 04:16:59,199

has been able to reach out to our

4402

04:17:04,149 --> 04:17:01,520

students and then you're here today so

4403

04:17:06,309 --> 04:17:04,159

thank you so much for sharing ryan and i

4404

04:17:07,910 --> 04:17:06,319

don't know about you launches oh yeah no

4405

04:17:10,149 --> 04:17:07,920

they let they let us come out and play

4406

04:17:11,510 --> 04:17:10,159

this is a blast it's so impressive to

4407

04:17:13,110 --> 04:17:11,520

see what these teams are doing you get

4408

04:17:14,550 --> 04:17:13,120

to see a lot of friendly faces a lot of

4409

04:17:16,870 --> 04:17:14,560

schools that over the years you've

4410

04:17:18,149 --> 04:17:16,880

gotten accustomed to and and um i'm

4411

04:17:19,670 --> 04:17:18,159

looking out here behind you at all the

4412

04:17:20,469 --> 04:17:19,680

beautiful rockets on the launch rails

4413

04:17:22,710 --> 04:17:20,479

and

4414

04:17:25,510 --> 04:17:22,720

we'll be seeing some more rockets flying

4415

04:17:28,790 --> 04:17:25,520

awesome it's a beautiful day here in

4416

04:17:31,110 --> 04:17:28,800

tony alabama at bragg farms we are going

4417

04:17:33,269 --> 04:17:31,120

to be launching some more rockets here

4418

04:17:36,110 --> 04:17:33,279

very soon we're going to take a quick

4419

04:17:44,580 --> 04:17:36,120

break and we'll be back with more of the

4420

04:23:26,229 --> 04:18:05,160

[Music]

4421

04:23:46,550 --> 04:23:28,570

hmm

4422

04:23:46,560 --> 04:23:50,390

so

4423

04:26:35,590 --> 04:24:04,990

[Music]

4424

04:26:35,600 --> 04:26:40,450

so

4425

04:29:29,189 --> 04:27:07,790

[Music]

4426

04:29:32,149 --> 04:29:30,630

hey everyone we're back with dillard

4427

04:29:34,550 --> 04:29:32,159

university

4428

04:29:36,389 --> 04:29:34,560

great colors on the shirts

4429

04:29:38,309 --> 04:29:36,399

first tell us your name and what year

4430

04:29:39,670 --> 04:29:38,319

you are in school hi my name is zachary

4431

04:29:41,269 --> 04:29:39,680

bass and i'm currently a junior at

4432

04:29:42,309 --> 04:29:41,279

dealer university and i'm a physics

4433

04:29:44,630 --> 04:29:42,319

major

4434

04:29:47,110 --> 04:29:44,640

hi my name is alana bell i am currently

4435

04:29:48,870 --> 04:29:47,120

a freshman at dillard university i am a

4436

04:29:52,309 --> 04:29:48,880

physics major with a math minor in a

4437

04:29:54,550 --> 04:29:52,319

concentration in pre-engineering

4438

04:29:56,149 --> 04:29:54,560

hey guys my name is demarco smith i am a

4439

04:29:59,269 --> 04:29:56,159

junior in chemistry and chemical

4440

04:30:01,030 --> 04:29:59,279

engineering and that's me

4441

04:30:02,550 --> 04:30:01,040

so now we understand you're a small team

4442

04:30:05,110 --> 04:30:02,560

is this your first year here at student

4443

04:30:07,590 --> 04:30:05,120

launch yeah it is this is our first year

4444

04:30:08,870 --> 04:30:07,600

and as of right now we're just a design

4445

04:30:10,229 --> 04:30:08,880

team you know what that means pretty

4446

04:30:11,990 --> 04:30:10,239

much just making sure that all the

4447

04:30:13,590 --> 04:30:12,000

dimensions and everything's correct but

4448

04:30:16,309 --> 04:30:13,600

we kind of wanted to come out here and

4449

04:30:18,710 --> 04:30:16,319

just kind of enjoy everything and just

4450

04:30:19,910 --> 04:30:18,720

kind of take it all in and everything

4451

04:30:21,750 --> 04:30:19,920

yeah i'm sure there's a lot that you're

4452

04:30:23,830 --> 04:30:21,760

able to pick up from the teams that that

4453

04:30:25,910 --> 04:30:23,840

are out here uh what's your experience

4454

04:30:27,590 --> 04:30:25,920

been like as a design team in first year

4455

04:30:30,870 --> 04:30:27,600

in student launch

4456

04:30:33,269 --> 04:30:30,880

the experience has been very of

4457

04:30:35,110 --> 04:30:33,279

learning how to actually be a

4458

04:30:37,910 --> 04:30:35,120

professional in the professional realm

4459

04:30:39,510 --> 04:30:37,920

but also just in the academic realm of

4460

04:30:42,630 --> 04:30:39,520

this actual project learning how to

4461

04:30:43,990 --> 04:30:42,640

present to high to to higher ups as well

4462

04:30:45,830 --> 04:30:44,000

how to

4463

04:30:47,750 --> 04:30:45,840

networking and everything of that nature

4464

04:30:49,590 --> 04:30:47,760

so it's been very

4465

04:30:51,349 --> 04:30:49,600

cool and everything yeah

4466

04:30:53,670 --> 04:30:51,359

now we understand your rocket has a

4467

04:30:55,910 --> 04:30:53,680

number of payloads uh almost the same

4468

04:30:58,630 --> 04:30:55,920

number of payloads as team members right

4469

04:31:00,550 --> 04:30:58,640

yeah yes actually it's very ironic that

4470

04:31:03,590 --> 04:31:00,560

we actually have three payloads so we

4471

04:31:05,510 --> 04:31:03,600

have p1 which serves as our main payload

4472

04:31:07,269 --> 04:31:05,520

then we have two p2 to kind of serve as

4473

04:31:09,349 --> 04:31:07,279

our sub payloads and everything and the

4474

04:31:11,750 --> 04:31:09,359

p2s you know that that consists of the

4475

04:31:14,309 --> 04:31:11,760

micro beacon the camera and then the p1

4476  
04:31:16,149 --> 04:31:14,319  
also conserves as a ammo 2 pro which

4477  
04:31:17,189 --> 04:31:16,159  
when it launches they're able to read

4478  
04:31:18,870 --> 04:31:17,199  
weather

4479  
04:31:21,030 --> 04:31:18,880  
trajectories and everything like that

4480  
04:31:23,030 --> 04:31:21,040  
yeah yeah so there's been a lot of teams

4481  
04:31:25,750 --> 04:31:23,040  
that have launched so far what's a team

4482  
04:31:29,990 --> 04:31:25,760  
that has stuck out to y'all

4483  
04:31:31,269 --> 04:31:30,000  
i like purdue i like to produce purdue

4484  
04:31:36,389 --> 04:31:31,279  
but

4485  
04:31:42,229 --> 04:31:36,399  
favorites so far

4486  
04:31:45,990 --> 04:31:44,950  
purdue as well yeah purdue

4487  
04:31:49,990 --> 04:31:46,000  
so

4488  
04:31:51,990 --> 04:31:50,000

probably say nc state is probably my

4489

04:31:54,309 --> 04:31:52,000

favorite just because of the way how

4490

04:31:56,229 --> 04:31:54,319

they kind of carry themselves in terms

4491

04:31:57,830 --> 04:31:56,239

of the professionalism once again and

4492

04:32:00,389 --> 04:31:57,840

the way how their their rocket actually

4493

04:32:02,149 --> 04:32:00,399

looked i i really like it yeah

4494

04:32:03,910 --> 04:32:02,159

nc state is a team that is here year

4495

04:32:06,229 --> 04:32:03,920

after year we love seeing seeing the

4496

04:32:08,070 --> 04:32:06,239

wolf pack come out have you guys learned

4497

04:32:10,389 --> 04:32:08,080

some things from some of these other

4498

04:32:12,309 --> 04:32:10,399

rockets that you'll take into next year

4499

04:32:13,990 --> 04:32:12,319

absolutely yeah we were actually

4500

04:32:16,389 --> 04:32:14,000

discussing it a couple minutes ago one

4501  
04:32:17,830 --> 04:32:16,399  
of the major things was the track on

4502  
04:32:19,670 --> 04:32:17,840  
that on the actual motor and actually

4503  
04:32:21,269 --> 04:32:19,680  
being able to see it

4504  
04:32:22,630 --> 04:32:21,279  
come down and everything i thought that

4505  
04:32:24,710 --> 04:32:22,640  
that was very

4506  
04:32:26,870 --> 04:32:24,720  
innovative that that we can probably

4507  
04:32:28,149 --> 04:32:26,880  
involve into our own rocket maybe put

4508  
04:32:30,070 --> 04:32:28,159  
some of those additives in there so you

4509  
04:32:32,070 --> 04:32:30,080  
get that nice black plume as you're

4510  
04:32:34,070 --> 04:32:32,080  
launching

4511  
04:32:36,710 --> 04:32:34,080  
i spoke to some of the members

4512  
04:32:38,389 --> 04:32:36,720  
from the purdue team and

4513  
04:32:40,149 --> 04:32:38,399

they kind i talked to them about their

4514

04:32:41,990 --> 04:32:40,159

parachute because that's also very

4515

04:32:43,670 --> 04:32:42,000

important when you're thinking about the

4516

04:32:45,429 --> 04:32:43,680

weight of your overall rocket and

4517

04:32:46,469 --> 04:32:45,439

recovering

4518

04:32:47,830 --> 04:32:46,479

awesome well do you guys have any

4519

04:32:50,070 --> 04:32:47,840

sponsors anybody back home you want to

4520

04:32:52,389 --> 04:32:50,080

thank yeah i would like to thank my

4521

04:32:59,770 --> 04:32:52,399

family just for being supportive of me

4522

04:34:54,880 --> 04:33:08,820

[Music]

4523

04:35:06,670 --> 04:34:54,890

foreign

4524

04:35:06,680 --> 04:35:28,070

[Music]

4525

04:35:28,080 --> 04:35:36,690

so

4526  
04:35:41,540 --> 04:35:39,990  
[Music]

4527  
04:36:02,260 --> 04:35:41,550  
so

4528  
04:39:43,430 --> 04:36:14,010  
[Music]

4529  
04:39:43,440 --> 04:39:46,600  
john

4530  
04:39:49,450 --> 04:39:48,310  
[Music]

4531  
04:40:02,628 --> 04:39:49,460  
oh

4532  
04:40:27,680 --> 04:40:05,440  
uh

4533  
04:40:31,790 --> 04:40:29,110  
[Music]

4534  
04:40:45,750 --> 04:40:31,800  
uh

4535  
04:40:48,570 --> 04:40:45,760  
[Music]

4536  
04:41:12,230 --> 04:40:48,580  
me

4537  
04:41:12,240 --> 04:41:18,190  
uh

4538  
04:41:29,370 --> 04:41:23,830

[Music]

4539

04:41:40,720 --> 04:41:29,380

um

4540

04:43:57,830 --> 04:42:24,250

[Music]

4541

04:43:57,840 --> 04:44:01,420

my

4542

04:45:32,370 --> 04:44:15,350

[Music]

4543

04:45:44,550 --> 04:45:32,380

so

4544

04:45:51,270 --> 04:45:47,030

the sun

4545

04:45:57,990 --> 04:45:54,150

all right looks looking good so the

4546

04:46:01,030 --> 04:45:59,590

and again there's a lot of heavily

4547

04:46:05,990 --> 04:46:01,040

modified

4548

04:46:09,830 --> 04:46:07,830

and see that little smoke you can see

4549

04:46:12,150 --> 04:46:09,840

that's the tracking smoke

4550

04:46:15,190 --> 04:46:12,160

from the motor again the motor has a

4551  
04:46:17,510 --> 04:46:15,200  
tracking smoke built into it helps it

4552  
04:46:19,270 --> 04:46:17,520  
easier to find to spot when it's coming

4553  
04:46:22,470 --> 04:46:19,280  
in under recovery

4554  
04:46:24,708 --> 04:46:22,480  
maine is set for 550 feet coming down

4555  
04:46:26,708 --> 04:46:24,718  
pretty good at a pretty good rate which

4556  
04:46:28,708 --> 04:46:26,718  
is okay we're about we're below a

4557  
04:46:31,510 --> 04:46:28,718  
thousand feet right now

4558  
04:46:33,350 --> 04:46:31,520  
approaching 7.50 we should be at 500

4559  
04:46:35,110 --> 04:46:33,360  
here pretty soon

4560  
04:46:43,270 --> 04:46:35,120  
there it is

4561  
04:46:47,110 --> 04:46:45,750  
looking good nice job team it's also

4562  
04:46:49,430 --> 04:46:47,120  
really cool to see the other teams

4563  
04:46:51,910 --> 04:46:49,440

applaud and celebrate each other on that

4564

04:46:58,470 --> 04:46:51,920

so really cool teamwork out here

4565

04:47:02,708 --> 04:47:00,230

and it is

4566

04:47:19,350 --> 04:47:02,718

halfway down

4567

04:47:23,190 --> 04:47:21,030

okay so we're going to actually stay in

4568

04:47:26,708 --> 04:47:23,200

the far away back pads we're going to

4569

04:47:28,868 --> 04:47:26,718

pad number 64. so that's going to be

4570

04:47:32,310 --> 04:47:28,878

one to the right of the one that just

4571

04:47:35,270 --> 04:47:32,320

took off this is washington university

4572

04:47:40,550 --> 04:47:35,280

in st louis

4573

04:47:42,150 --> 04:47:40,560

pad 64. the name of this rocket is

4574

04:47:45,190 --> 04:47:42,160

osiris

4575

04:47:47,030 --> 04:47:45,200

it's 34 pound rocket just over five and

4576  
04:47:48,470 --> 04:47:47,040  
a half inch diameter seven and a half

4577  
04:47:51,030 --> 04:47:48,480  
feet tall

4578  
04:47:52,788 --> 04:47:51,040  
this does say after oh yeah this after

4579  
04:47:55,190 --> 04:47:52,798  
landing in a tree

4580  
04:47:58,230 --> 04:47:55,200  
they successfully recovered it with an

4581  
04:48:00,150 --> 04:47:58,240  
apple picker and are flying it today so

4582  
04:48:01,110 --> 04:48:00,160  
they were nice able to get that rocket

4583  
04:48:03,430 --> 04:48:01,120  
back

4584  
04:48:05,750 --> 04:48:03,440  
this does have a pyra grid type of

4585  
04:48:07,590 --> 04:48:05,760  
experiment so it has an imu

4586  
04:48:10,310 --> 04:48:07,600  
based inertial navigation system that's

4587  
04:48:13,110 --> 04:48:10,320  
running on a raspberry pi with python

4588  
04:48:16,788 --> 04:48:13,120

this rocket is flying on an I 1150

4589

04:48:19,670 --> 04:48:16,798

redline aerotech main set for 600 feet

4590

04:48:21,350 --> 04:48:19,680

should go 5000 feet in altitude

4591

04:48:23,110 --> 04:48:21,360

i do remember looking at this rocket

4592

04:48:24,628 --> 04:48:23,120

everyone on this rocket they signed

4593

04:48:27,110 --> 04:48:24,638

their name which is about half the body

4594

04:48:28,948 --> 04:48:27,120

length of the rocket this one also does

4595

04:48:31,270 --> 04:48:28,958

a dual deployment but not in a normal

4596

04:48:32,788 --> 04:48:31,280

sense so the drogue is in the top side

4597

04:48:34,628 --> 04:48:32,798

the main is in the is actually in the

4598

04:48:36,550 --> 04:48:34,638

bottom side of the rocket

4599

04:48:39,430 --> 04:48:36,560

this is their second time competing in

4600

04:48:40,550 --> 04:48:39,440

sli but is their first time here in

4601  
04:48:42,150 --> 04:48:40,560  
alabama

4602  
04:48:43,830 --> 04:48:42,160  
also they actually saw the u.s space

4603  
04:48:46,628 --> 04:48:43,840  
rocket center yesterday so they're even

4604  
04:48:48,310 --> 04:48:46,638  
more inspired after touring the uf space

4605  
04:48:50,788 --> 04:48:48,320  
and rocket center here in huntsville so

4606  
04:48:54,150 --> 04:48:50,798  
they are really looking forward to doing

4607  
04:48:56,390 --> 04:48:54,160  
more with rocketry pad 64 we have a

4608  
04:48:58,550 --> 04:48:56,400  
clear sky i got the thumbs up

4609  
04:49:03,350 --> 04:48:58,560  
clear range we are going to launch

4610  
04:49:07,020 --> 04:49:03,360  
osiris in five four three two one

4611  
04:49:14,708 --> 04:49:09,990  
[Applause]

4612  
04:49:19,750 --> 04:49:16,470  
a little left of the sun

4613  
04:49:21,590 --> 04:49:19,760

starting to go over just a little bit

4614

04:49:23,430 --> 04:49:21,600

that's probably all 5 thousand feet

4615

04:49:28,070 --> 04:49:23,440

there

4616

04:49:28,080 --> 04:49:32,310

okay parachutes out

4617

04:49:38,310 --> 04:49:34,150

not as excited on this one it sounds

4618

04:49:38,320 --> 04:49:53,190

main is set for 600 feet for this one

4619

04:49:57,510 --> 04:49:55,350

so it's starting to come back towards

4620

04:50:01,190 --> 04:49:57,520

the still under drogue parachute

4621

04:50:03,830 --> 04:50:01,200

still probably 2500 feet up

4622

04:50:07,510 --> 04:50:03,840

again main is set for 600 feet

4623

04:50:11,910 --> 04:50:07,520

approaching 2000 feet right now

4624

04:50:16,788 --> 04:50:14,708

there's there is 600 feet

4625

04:50:21,030 --> 04:50:16,798

oh now the crowd's really excited about

4626

04:50:28,150 --> 04:50:22,628

so

4627

04:50:30,070 --> 04:50:28,160

point at it heads up point at it

4628

04:50:33,430 --> 04:50:30,080

point at it folks let your neighbors

4629

04:50:36,230 --> 04:50:33,440

know heads up point at it stand up point

4630

04:50:40,550 --> 04:50:36,240

at it don't touch it heads up point at

4631

04:50:42,230 --> 04:50:40,560

the rocket point at the rocket

4632

04:50:44,390 --> 04:50:42,240

you don't need to run from it you just

4633

04:50:52,628 --> 04:50:44,400

got to step out of the way of it

4634

04:51:05,350 --> 04:50:54,948

okay

4635

04:51:06,390 --> 04:51:05,360

it let the team that's involved with it

4636

04:51:08,948 --> 04:51:06,400

touch it might want to get that

4637

04:51:21,030 --> 04:51:08,958

parachute collapsed relatively quickly

4638

04:51:21,040 --> 04:51:34,470

okay

4639

04:51:39,430 --> 04:51:36,868

hear a lot of chatter from the crowd so

4640

04:51:40,868 --> 04:51:39,440

yes when that rocket's coming in

4641

04:51:42,390 --> 04:51:40,878

you just want to point at it and let

4642

04:51:44,150 --> 04:51:42,400

your neighbors know

4643

04:51:45,910 --> 04:51:44,160

we will resume rocketry we still have

4644

04:51:47,270 --> 04:51:45,920

some rockets on the launch pad so we'll

4645

04:51:49,270 --> 04:51:47,280

want to turn the face towards the

4646

04:51:51,030 --> 04:51:49,280

rockets

4647

04:51:53,750 --> 04:51:51,040

so now we're going to the close pads

4648

04:51:55,990 --> 04:51:53,760

we're going to pad number 34.

4649

04:51:58,708 --> 04:51:56,000

this is portland rocketry out of

4650

04:52:03,590 --> 04:51:58,718

portland oregon the name of this rocket

4651  
04:52:05,510 --> 04:52:03,600  
is asgard it's 11.3 pounds fairly light

4652  
04:52:07,670 --> 04:52:05,520  
four inches in diameter

4653  
04:52:09,750 --> 04:52:07,680  
six feet eight inches tall

4654  
04:52:11,350 --> 04:52:09,760  
so this rocket does have an advanced

4655  
04:52:13,670 --> 04:52:11,360  
self-guided

4656  
04:52:15,590 --> 04:52:13,680  
autonomous recovery device

4657  
04:52:17,750 --> 04:52:15,600  
it's also

4658  
04:52:20,708 --> 04:52:17,760  
using a gps that's why it's called

4659  
04:52:23,110 --> 04:52:20,718  
asgard to track its location which will

4660  
04:52:25,430 --> 04:52:23,120  
help analyzing weather patterns as we

4661  
04:52:27,590 --> 04:52:25,440  
are providing data

4662  
04:52:31,670 --> 04:52:27,600  
for

4663  
04:52:33,670 --> 04:52:31,680

is one of the sli comp competition

4664

04:52:35,830 --> 04:52:33,680

rockets

4665

04:52:46,868 --> 04:52:35,840

this should be going or this is planning

4666

04:52:50,948 --> 04:52:48,948

portland

4667

04:52:52,788 --> 04:52:50,958

not sure on the motor so i guess it'll

4668

04:52:55,190 --> 04:52:52,798

just be a mystery motor when it takes

4669

04:52:57,350 --> 04:52:55,200

off this is their first time here and

4670

04:53:00,230 --> 04:52:57,360

there are six people on the team i also

4671

04:53:02,628 --> 04:53:00,240

did find out asgard does tie into

4672

04:53:04,470 --> 04:53:02,638

thor's house i did not know that and

4673

04:53:07,350 --> 04:53:04,480

they also have a new avionics bay on

4674

04:53:09,110 --> 04:53:07,360

here so it's the blue and gold rocket

4675

04:53:11,590 --> 04:53:09,120

and it's a conglomerate of students all

4676  
04:53:13,830 --> 04:53:11,600  
across the portland area pad 34. we have

4677  
04:53:15,430 --> 04:53:13,840  
a clear sky i have the thumbs up

4678  
04:53:16,708 --> 04:53:15,440  
we have a clear range i see a lot of

4679  
04:53:20,150 --> 04:53:16,718  
cameras pointing at it so we're gonna

4680  
04:53:20,948 --> 04:53:20,160  
launch this rocket in five four three

4681  
04:53:28,230 --> 04:53:20,958  
two

4682  
04:53:36,230 --> 04:53:30,788  
so it was a form of a red line motor

4683  
04:53:52,948 --> 04:53:38,868  
that high cloud haze is a little tricky

4684  
04:53:52,958 --> 04:54:02,550  
did anyone see an event on that one

4685  
04:54:09,590 --> 04:54:04,230  
well we know it's not in orbit i don't

4686  
04:54:09,600 --> 04:54:24,390  
but my eyes are not kind to me right now

4687  
04:54:31,910 --> 04:54:26,868  
is it under parachute

4688  
04:54:37,110 --> 04:54:34,390

oh yep i see it so just to the right

4689

04:54:39,030 --> 04:54:37,120

side below the sun right of the lco desk

4690

04:54:41,670 --> 04:54:39,040

coming down under drogue

4691

04:54:44,868 --> 04:54:41,680

main is set for 500 feet we're about a

4692

04:54:46,948 --> 04:54:44,878

thousand feet right now off to the right

4693

04:54:49,510 --> 04:54:46,958

side of the lco desk

4694

04:54:51,910 --> 04:54:49,520

we're about 750 and we're at 500 right

4695

04:54:59,510 --> 04:54:51,920

there there's the main event

4696

04:55:02,788 --> 04:55:01,350

just a little bit more energy on the

4697

04:55:07,110 --> 04:55:02,798

landing than normal or what they're

4698

04:55:13,190 --> 04:55:09,350

we got a little nice couple sympathy

4699

04:55:15,910 --> 04:55:13,200

claps so thank you everyone

4700

04:55:19,670 --> 04:55:15,920

so we're going now to

4701  
04:55:23,750 --> 04:55:21,430  
so this is again just to the right of

4702  
04:55:24,868 --> 04:55:23,760  
the front bank pads here at the lco desk

4703  
04:55:31,430 --> 04:55:24,878  
this is

4704  
04:55:35,510 --> 04:55:31,440  
they are from cota de caza orange county

4705  
04:55:39,190 --> 04:55:35,520  
in california the name of this rocket is

4706  
04:55:42,150 --> 04:55:39,200  
typhon it is 24.5 pounds four inches in

4707  
04:55:44,070 --> 04:55:42,160  
diameter seven feet seven inches tall

4708  
04:55:46,788 --> 04:55:44,080  
typhon is the father of the greek

4709  
04:55:48,708 --> 04:55:46,798  
mythological creature hydra we will beat

4710  
04:55:50,788 --> 04:55:48,718  
the university teams at their own

4711  
04:55:51,910 --> 04:55:50,798  
challenge they wrote this i did not say

4712  
04:55:53,190 --> 04:55:51,920  
this

4713  
04:55:55,670 --> 04:55:53,200

all they said just kidding with the

4714

04:55:57,670 --> 04:55:55,680

smiley face but they did place fourth

4715

04:55:59,910 --> 04:55:57,680

and tark in one

4716

04:56:02,708 --> 04:55:59,920

some substantial dollars and this was

4717

04:56:04,868 --> 04:56:02,718

for the 8th to 12th graders on the team

4718

04:56:08,150 --> 04:56:04,878

so they are as a sli team they are doing

4719

04:56:11,670 --> 04:56:08,160

the full usli competition this does have

4720

04:56:14,550 --> 04:56:11,680

computer vision plus imu fused approach

4721

04:56:17,350 --> 04:56:14,560

using a scale invariant feature

4722

04:56:18,628 --> 04:56:17,360

transform sift to identify landing

4723

04:56:21,030 --> 04:56:18,638

location

4724

04:56:23,030 --> 04:56:21,040

along with an imu to account for drift

4725

04:56:25,910 --> 04:56:23,040

since the last

4726  
04:56:27,670 --> 04:56:25,920  
analyzable photo is taken i sound so

4727  
04:56:30,868 --> 04:56:27,680  
smart saying all that but i have zero

4728  
04:56:32,948 --> 04:56:30,878  
idea what i'm talking about

4729  
04:56:35,670 --> 04:56:32,958  
so the other thing the other thing with

4730  
04:56:36,390 --> 04:56:35,680  
this project is planning to go 4 900

4731  
04:56:38,628 --> 04:56:36,400  
feet

4732  
04:56:42,868 --> 04:56:38,638  
and it is flying on a cesarote ken i'm

4733  
04:56:44,948 --> 04:56:42,878  
sorry cesaroni k 1085 white thunder so

4734  
04:56:46,470 --> 04:56:44,958  
this is going to take off with a pretty

4735  
04:56:50,150 --> 04:56:46,480  
good movement on it and the main is set

4736  
04:56:51,030 --> 04:56:50,160  
for 500 550 feet pad 35 on the right

4737  
04:56:53,190 --> 04:56:51,040  
side

4738  
04:56:54,310 --> 04:56:53,200

we have a clear sky we have a clear

4739

04:56:57,510 --> 04:56:54,320

range

4740

04:57:09,430 --> 04:56:57,520

we are going to launch typhon in five

4741

04:57:13,190 --> 04:57:11,270

little wiggly but good on the up you

4742

04:57:15,670 --> 04:57:13,200

heard that whistle because it has split

4743

04:57:17,270 --> 04:57:15,680

fins on that when what the air goes over

4744

04:57:18,788 --> 04:57:17,280

those fin to get that extra whistle at

4745

04:57:24,390 --> 04:57:18,798

burnout

4746

04:57:30,550 --> 04:57:25,590

looks

4747

04:57:35,430 --> 04:57:30,560

parachute

4748

04:57:35,440 --> 04:57:42,868

or their drogue is very very large

4749

04:57:47,350 --> 04:57:45,110

straight up just towards the sun don't

4750

04:57:49,190 --> 04:57:47,360

look at the sun do not look at the sun

4751  
04:57:51,030 --> 04:57:49,200  
look left of the sun

4752  
04:57:53,590 --> 04:57:51,040  
you will see

4753  
04:57:55,430 --> 04:57:53,600  
the team hydra rocket and it's

4754  
04:57:57,590 --> 04:57:55,440  
and you can see what the rockets doing

4755  
04:57:59,830 --> 04:57:57,600  
it's not moving much the upper level

4756  
04:58:04,550 --> 04:57:59,840  
winds are much less than they are at

4757  
04:58:10,868 --> 04:58:06,788  
and i i'm pretty sure that's the main

4758  
04:58:14,788 --> 04:58:13,350  
it's still way up there well over four

4759  
04:58:18,070 --> 04:58:14,798  
thousand feet

4760  
04:58:26,550 --> 04:58:20,070  
yep point those antennas straight up

4761  
04:58:30,948 --> 04:58:28,868  
so one of the things we do in gnar is we

4762  
04:58:32,628 --> 04:58:30,958  
do parachute duration rockets but for

4763  
04:58:34,310 --> 04:58:32,638

this event we were not going for a

4764

04:58:36,150 --> 04:58:34,320

parachute duration

4765

04:58:43,430 --> 04:58:36,160

but this one's got some good hang time

4766

04:58:43,440 --> 04:58:47,750

it's still way up there

4767

04:59:00,628 --> 04:58:50,550

so this is a k parachute duration they

4768

04:59:05,270 --> 04:59:01,910

so still

4769

04:59:07,910 --> 04:59:05,280

above 3000 feet

4770

04:59:09,590 --> 04:59:07,920

thankfully the winds are not very active

4771

04:59:11,110 --> 04:59:09,600

up there so the rock has just kind of

4772

04:59:13,430 --> 04:59:11,120

taken its time

4773

04:59:15,350 --> 04:59:13,440

not a lot of horizontal drift on it for

4774

04:59:18,628 --> 04:59:15,360

the moment but even the winds kind of

4775

04:59:20,390 --> 04:59:18,638

died down a little bit as well

4776  
04:59:24,310 --> 04:59:20,400  
does anyone locally here know what the

4777  
04:59:26,150 --> 04:59:24,320  
next county over is

4778  
04:59:41,990 --> 04:59:26,160  
might be where it is someone said it

4779  
04:59:48,708 --> 04:59:43,830  
no it's not going to georgia tennessee

4780  
04:59:59,110 --> 04:59:55,910  
okay

4781  
05:00:01,430 --> 04:59:59,120  
we wait for that rocket to land we might

4782  
05:00:06,628 --> 05:00:01,440  
be flying on sunday so we want to keep

4783  
05:00:10,470 --> 05:00:08,708  
okay for those that aren't involved with

4784  
05:00:13,350 --> 05:00:10,480  
team hydra you can flip back around

4785  
05:00:16,390 --> 05:00:13,360  
we're going to go back to flying rockets

4786  
05:00:18,390 --> 05:00:16,400  
so we're going to pad number 44.

4787  
05:00:19,670 --> 05:00:18,400  
this is aggie rocketry this is north

4788  
05:00:22,788 --> 05:00:19,680

carolina

4789

05:00:24,788 --> 05:00:22,798

a t state university from greensboro

4790

05:00:25,910 --> 05:00:24,798

north carolina the name of this rocket

4791

05:00:29,470 --> 05:00:25,920

is

4792

05:00:32,550 --> 05:00:29,480

aggie comet it's 35 and a half pounds

4793

05:00:35,430 --> 05:00:32,560

5.16 inch diameter

4794

05:00:37,150 --> 05:00:35,440

nine and three quarters feet long this

4795

05:00:40,150 --> 05:00:37,160

is flying on an aerotech

4796

05:00:55,270 --> 05:00:40,160

l1520 blue thunder

4797

05:01:00,470 --> 05:00:57,430

sorry um so this this rocket does have a

4798

05:01:02,390 --> 05:01:00,480

yagi antenna and a range finder

4799

05:01:04,788 --> 05:01:02,400

the launch vehicle will be tracked using

4800

05:01:07,110 --> 05:01:04,798

a yagi antenna and rangefinder the yagi

4801  
05:01:08,788 --> 05:01:07,120  
calculates angle of arrival and the

4802  
05:01:12,230 --> 05:01:08,798  
rangefinder uses radio waves to

4803  
05:01:17,270 --> 05:01:14,830  
also with this r with this group they

4804  
05:01:19,990 --> 05:01:17,280  
have they have the ability to add and

4805  
05:01:21,510 --> 05:01:20,000  
subtract weight in the payload section

4806  
05:01:24,310 --> 05:01:21,520  
and they actually do have a really

4807  
05:01:27,430 --> 05:01:24,320  
sizable radio ground station

4808  
05:01:28,830 --> 05:01:27,440  
and for the payload it says no ejection

4809  
05:01:31,270 --> 05:01:28,840  
for the

4810  
05:01:34,150 --> 05:01:31,280  
payload part of it

4811  
05:01:36,310 --> 05:01:34,160  
this one is supposed to go 5 000 feet oh

4812  
05:01:38,708 --> 05:01:36,320  
and the fun thing with this rocket this

4813  
05:01:40,708 --> 05:01:38,718

rocket did land in a tree but it was a

4814

05:01:43,590 --> 05:01:40,718

good thing because below that tree was a

4815

05:01:46,230 --> 05:01:43,600

bunch of pig manure so this one is free

4816

05:01:48,948 --> 05:01:46,240

and clear of any manure on this rocket

4817

05:01:51,670 --> 05:01:48,958

so we're going to go to pad 44. i have

4818

05:01:56,150 --> 05:01:51,680

the thumbs up for the clear sky

4819

05:02:00,390 --> 05:01:56,160

the range is clear pad 44 aggie comet is

4820

05:02:03,020 --> 05:02:00,400

going to fly in five four three two

4821

05:02:09,990 --> 05:02:03,030

one ignition

4822

05:02:16,550 --> 05:02:11,670

nice straight up boost that's definitely

4823

05:02:16,560 --> 05:02:21,430

starting to arc over

4824

05:02:21,440 --> 05:02:28,070

there's an event

4825

05:02:31,270 --> 05:02:30,470

okay we do have a parachute out on that

4826  
05:02:33,110 --> 05:02:31,280  
one

4827  
05:02:34,948 --> 05:02:33,120  
maine is set for

4828  
05:02:42,550 --> 05:02:34,958  
564

4829  
05:02:45,990 --> 05:02:44,150  
and that one is coming down a lot

4830  
05:02:59,750 --> 05:02:46,000  
quicker because it is on a drogue

4831  
05:03:04,470 --> 05:03:02,708  
so just to the left of the sun

4832  
05:03:10,788 --> 05:03:04,480  
don't look into the sun use a way to

4833  
05:03:10,798 --> 05:03:14,788  
okay just below the sun

4834  
05:03:20,788 --> 05:03:17,190  
okay again we're go it's about 2 000

4835  
05:03:24,070 --> 05:03:20,798  
feet now probably close to a thousand

4836  
05:03:27,030 --> 05:03:24,080  
we're probably at that 560

4837  
05:03:35,110 --> 05:03:27,040  
feet 464.

4838  
05:03:40,230 --> 05:03:36,948

so iowa state we don't have your flight

4839

05:03:43,830 --> 05:03:41,350

can't fly your rocket because we don't

4840

05:03:45,430 --> 05:03:43,840

have your flight card

4841

05:03:48,708 --> 05:03:45,440

okay while we wait for your card we're

4842

05:03:50,868 --> 05:03:48,718

gonna we will go to the next rocket

4843

05:03:56,470 --> 05:03:50,878

don't need to run you can just walk

4844

05:03:56,480 --> 05:03:59,670

case

4845

05:04:04,628 --> 05:04:02,150

okay we're going to pad number 45 this

4846

05:04:06,550 --> 05:04:04,638

is auburn university rocketry

4847

05:04:08,470 --> 05:04:06,560

association

4848

05:04:09,910 --> 05:04:08,480

this is auburn university out of auburn

4849

05:04:12,670 --> 05:04:09,920

alabama

4850

05:04:15,110 --> 05:04:12,680

name of this rocket is ferdinand

4851

05:04:16,470 --> 05:04:15,120

57.5 pounds so it's a heavy rocket

4852

05:04:19,110 --> 05:04:16,480

probably the heaviest one i've seen so

4853

05:04:22,070 --> 05:04:19,120

far six inches in diameter

4854

05:04:23,590 --> 05:04:22,080

just shy of 11 feet tall this is flying

4855

05:04:26,948 --> 05:04:23,600

on an aerotech

4856

05:04:29,030 --> 05:04:26,958

l 2200 mojave green

4857

05:04:32,628 --> 05:04:29,040

the social or the oh sorry this does

4858

05:04:36,070 --> 05:04:32,638

have the air brake system on board

4859

05:04:38,788 --> 05:04:36,080

it says it's simming to 40 between 4 200

4860

05:04:41,910 --> 05:04:38,798

and 4 300 feet

4861

05:04:44,230 --> 05:04:41,920

the project name is magellan

4862

05:04:47,190 --> 05:04:44,240

it does have a marco polo system on it

4863

05:04:49,750 --> 05:04:47,200

it has a new take

4864

05:04:52,948 --> 05:04:49,760

a new take on an age-old sundial

4865

05:04:54,070 --> 05:04:52,958

technology to log bearing their payload

4866

05:04:57,110 --> 05:04:54,080

using

4867

05:05:00,868 --> 05:04:57,120

eco locating to find the distance there

4868

05:05:03,430 --> 05:05:00,878

is a lot going on there

4869

05:05:06,150 --> 05:05:03,440

oh and this does also have the grid fins

4870

05:05:08,230 --> 05:05:06,160

to find the target altitude

4871

05:05:09,510 --> 05:05:08,240

one thing about auburn you'll always

4872

05:05:11,270 --> 05:05:09,520

know when they're here because they love

4873

05:05:12,948 --> 05:05:11,280

the hawaiian themed shirts i don't know

4874

05:05:14,550 --> 05:05:12,958

the story behind that

4875

05:05:17,190 --> 05:05:14,560

but yesterday they're very proud of

4876

05:05:19,430 --> 05:05:17,200

their of their um attire so i do like to

4877

05:05:21,510 --> 05:05:19,440

see that and also my best friend here

4878

05:05:24,708 --> 05:05:21,520

his name is solder solder is in the

4879

05:05:26,470 --> 05:05:24,718

house he really likes to solder stuff

4880

05:05:28,550 --> 05:05:26,480

and this is the project with all the

4881

05:05:31,350 --> 05:05:28,560

systems in it when i talk to them they

4882

05:05:33,030 --> 05:05:31,360

have a three concentric lazy susan

4883

05:05:34,390 --> 05:05:33,040

system so they took their mom's

4884

05:05:36,230 --> 05:05:34,400

kitchenware i don't know what's going on

4885

05:05:39,030 --> 05:05:36,240

there they have a leg system a

4886

05:05:41,110 --> 05:05:39,040

scissorless scissor lift system and a

4887

05:05:42,390 --> 05:05:41,120

microphone system there's a lot of

4888

05:05:44,390 --> 05:05:42,400

systems going on

4889

05:05:46,628 --> 05:05:44,400

they also put on here as a comet war

4890

05:05:48,708 --> 05:05:46,638

eagle i don't know what that means

4891

05:05:51,670 --> 05:05:48,718

war eagle we'll figure that one out

4892

05:05:54,150 --> 05:05:51,680

later pad number 45

4893

05:05:56,390 --> 05:05:54,160

we are going to launch this one in five

4894

05:06:05,830 --> 05:05:56,400

four three two

4895

05:06:10,150 --> 05:06:07,830

oh their fins deployed so it's starting

4896

05:06:19,750 --> 05:06:10,160

to

4897

05:06:22,310 --> 05:06:19,760

there is an event

4898

05:06:31,670 --> 05:06:22,320

supposed to go 4 200 feet

4899

05:06:50,470 --> 05:06:34,550

and the main on this one is set for 650

4900

05:06:54,788 --> 05:06:52,628

all right so we're about a thousand feet

4901  
05:06:55,750 --> 05:06:54,798  
so 650 we should see something else

4902  
05:06:57,670 --> 05:06:55,760  
happen

4903  
05:07:02,550 --> 05:06:57,680  
very small drop so it's coming in pretty

4904  
05:07:07,830 --> 05:07:03,990  
oh

4905  
05:07:10,470 --> 05:07:07,840  
we need a little more air or something

4906  
05:07:11,910 --> 05:07:10,480  
oh no that's

4907  
05:07:13,830 --> 05:07:11,920  
that's got a little energy on the

4908  
05:07:15,030 --> 05:07:13,840  
landing

4909  
05:07:19,030 --> 05:07:15,040  
it is down

4910  
05:07:24,868 --> 05:07:20,628  
um their payload is off they have to do

4911  
05:07:32,550 --> 05:07:26,948  
i don't know what pad notre dame 61 yeah

4912  
05:07:42,868 --> 05:07:38,868  
okay

4913  
05:07:45,430 --> 05:07:42,878

far back pads the

4914

05:07:48,070 --> 05:07:45,440

rocket furthest left

4915

05:07:50,230 --> 05:07:48,080

this is the name team name is psych

4916

05:07:54,470 --> 05:07:50,240

launch

4917

05:07:56,230 --> 05:07:54,480

iowa state university out of ames iowa

4918

05:07:57,430 --> 05:07:56,240

they didn't put the name of their rocket

4919

05:07:58,868 --> 05:07:57,440

so they must have filled this card out

4920

05:08:00,948 --> 05:07:58,878

in a hurry

4921

05:08:02,868 --> 05:08:00,958

but the name of it says oh no the name

4922

05:08:04,708 --> 05:08:02,878

of the rocket is craig i don't know what

4923

05:08:06,430 --> 05:08:04,718

the story is behind craig but that's the

4924

05:08:10,628 --> 05:08:06,440

name of it

4925

05:08:11,510 --> 05:08:10,638

43.8 pounds it is 6.2 inches in diameter

4926

05:08:14,070 --> 05:08:11,520

and it

4927

05:08:16,550 --> 05:08:14,080

says 145 feet tall i think they meant

4928

05:08:18,948 --> 05:08:16,560

145 inches tall because i don't think

4929

05:08:22,550 --> 05:08:18,958

it's 145 feet tall

4930

05:08:24,550 --> 05:08:22,560

is flying on aerotech I 2500 super

4931

05:08:26,070 --> 05:08:24,560

thunder so it's going to have some umph

4932

05:08:28,788 --> 05:08:26,080

to it and it does have an inertial

4933

05:08:31,110 --> 05:08:28,798

navigation system

4934

05:08:33,110 --> 05:08:31,120

so with iowa state here this is

4935

05:08:35,430 --> 05:08:33,120

projected to go

4936

05:08:37,670 --> 05:08:35,440

5 000 feet

4937

05:08:39,510 --> 05:08:37,680

the the this team did also say they

4938

05:08:41,430 --> 05:08:39,520

wanted their rocket to be just a little

4939

05:08:43,670 --> 05:08:41,440

bit bigger than the previous year team

4940

05:08:45,990 --> 05:08:43,680

so that's how they settled on 145 feet

4941

05:08:47,910 --> 05:08:46,000

tall which i think it's inches and they

4942

05:08:48,948 --> 05:08:47,920

also have a unique way to use old tennis

4943

05:08:51,270 --> 05:08:48,958

balls they use that as their

4944

05:08:53,670 --> 05:08:51,280

anti-zippering device so another way for

4945

05:08:58,150 --> 05:08:53,680

some cool ways of doing ingenuity

4946

05:09:00,550 --> 05:08:58,160

on pad number 43 we will launch in five

4947

05:09:05,750 --> 05:09:00,560

four three two

4948

05:09:08,788 --> 05:09:07,590

that's a super thunder motor for you

4949

05:09:11,430 --> 05:09:08,798

folks

4950

05:09:14,070 --> 05:09:11,440

a little squiggly on the way up on its

4951  
05:09:17,110 --> 05:09:14,080  
way to 5000 feet which probably will do

4952  
05:09:20,708 --> 05:09:18,788  
now it's almost straight up just a

4953  
05:09:24,230 --> 05:09:20,718  
little left of the sun

4954  
05:09:28,310 --> 05:09:25,750  
there's the smoke from the motor

4955  
05:09:30,230 --> 05:09:28,320  
ignition okay we have a drogue parachute

4956  
05:09:32,440 --> 05:09:30,240  
out

4957  
05:09:34,470 --> 05:09:32,450  
and the team doesn't seem to care

4958  
05:09:36,390 --> 05:09:34,480  
[Laughter]

4959  
05:09:40,150 --> 05:09:36,400  
they're like we expected that so we're

4960  
05:09:44,788 --> 05:09:42,628  
so is this this isn't the hawkeye no not

4961  
05:09:47,750 --> 05:09:44,798  
hawkeyes this is

4962  
05:09:52,788 --> 05:09:49,948  
so then the main on this one is set for

4963  
05:09:55,030 --> 05:09:52,798

550 feet

4964

05:09:59,350 --> 05:09:55,040

this one is pretty close to straight up

4965

05:10:04,070 --> 05:10:02,470

so we're about 2 000 feet so folks uh

4966

05:10:06,390 --> 05:10:04,080

we're going to give this one a heads up

4967

05:10:07,990 --> 05:10:06,400

point at it look at it

4968

05:10:09,910 --> 05:10:08,000

let your neighbors know because it is

4969

05:10:11,830 --> 05:10:09,920

not how the main parachute yet it's not

4970

05:10:15,110 --> 05:10:11,840

550 feet

4971

05:10:16,948 --> 05:10:15,120

we're about a thousand feet right now

4972

05:10:18,948 --> 05:10:16,958

heads up

4973

05:10:20,230 --> 05:10:18,958

point at the rocket let your neighbor

4974

05:10:23,110 --> 05:10:20,240

know

4975

05:10:25,750 --> 05:10:23,120

there's your main again still point at

4976  
05:10:27,270 --> 05:10:25,760  
this rocket because of where it's going

4977  
05:10:29,510 --> 05:10:27,280  
still close

4978  
05:10:31,750 --> 05:10:29,520  
point at it let your neighbors know

4979  
05:10:33,750 --> 05:10:31,760  
heads up on this rocket coming in under

4980  
05:10:35,270 --> 05:10:33,760  
parachute

4981  
05:10:36,788 --> 05:10:35,280  
looks like it might be swinging out to

4982  
05:10:41,990 --> 05:10:36,798  
the wheat

4983  
05:10:47,430 --> 05:10:45,030  
okay it is down

4984  
05:10:50,550 --> 05:10:47,440  
iowa always likes to keep it interesting

4985  
05:10:57,910 --> 05:10:50,560  
iowa state not iowa iowa state

4986  
05:11:03,350 --> 05:11:01,270  
pad 60 this is prometheus alabama

4987  
05:11:05,190 --> 05:11:03,360  
rocketry association

4988  
05:11:07,670 --> 05:11:05,200

this is from the university of alabama

4989

05:11:10,230 --> 05:11:07,680

out of tuscaloosa alabama

4990

05:11:11,110 --> 05:11:10,240

the name of this rocket is prometheus it

4991

05:11:13,990 --> 05:11:11,120

is

4992

05:11:16,470 --> 05:11:14,000

48.5 pounds

4993

05:11:18,708 --> 05:11:16,480

just over six inches in diameter 10 and

4994

05:11:23,670 --> 05:11:18,718

a half feet tall it is flying on an

4995

05:11:32,070 --> 05:11:23,680

aerotech elf 1940 propellant x

4996

05:11:36,310 --> 05:11:33,910

okay right now we're gonna hold so we

4997

05:11:38,150 --> 05:11:36,320

had that rocket kind of come in close

4998

05:11:40,470 --> 05:11:38,160

we're gonna adjust the pad so right now

4999

05:11:42,310 --> 05:11:40,480

we're in a temporary hold we don't need

5000

05:11:44,150 --> 05:11:42,320

rockets coming into the crowd even

5001  
05:11:46,070 --> 05:11:44,160  
though it's under parachute still don't

5002  
05:11:47,990 --> 05:11:46,080  
need it so we're going to adjust the

5003  
05:11:49,510 --> 05:11:48,000  
rocket pads just a little bit further

5004  
05:12:39,710 --> 05:11:49,520  
out so we're on a temporary hold right

5005  
05:13:59,260 --> 05:13:17,460  
[Music]

5006  
05:14:39,120 --> 05:13:59,270  
bye

5007  
05:15:09,270 --> 05:14:44,800  
[Music]

5008  
05:15:09,280 --> 05:15:16,810  
so

5009  
05:16:20,000 --> 05:15:25,110  
[Music]

5010  
05:16:26,520 --> 05:16:20,010  
so

5011  
05:16:26,530 --> 05:16:52,868  
[Music]

5012  
05:16:56,628 --> 05:16:54,550  
nasa's artemis mission will land the

5013  
05:16:57,670 --> 05:16:56,638

first woman in the first person of color

5014

05:16:59,990 --> 05:16:57,680

on the moon

5015

05:17:01,270 --> 05:17:00,000

and today's students are the ultimate

5016

05:17:04,310 --> 05:17:01,280

generation

5017

05:17:06,070 --> 05:17:04,320

if you're a student you can design and

5018

05:17:08,708 --> 05:17:06,080

build technologies that support the

5019

05:17:10,550 --> 05:17:08,718

artemis mission with nasa's artemis

5020

05:17:13,590 --> 05:17:10,560

student challenges

5021

05:17:15,190 --> 05:17:13,600

no matter your background or experience

5022

05:17:17,670 --> 05:17:15,200

you're invited to choose a challenge

5023

05:17:21,590 --> 05:17:17,680

that interests you whether it's

5024

05:17:21,600 --> 05:17:24,628

robots

5025

05:17:24,638 --> 05:17:28,070

tools

5026  
05:17:31,990 --> 05:17:29,630  
software

5027  
05:17:35,110 --> 05:17:32,000  
[Music]

5028  
05:17:40,708 --> 05:17:36,868  
or other technologies there's an

5029  
05:17:43,670 --> 05:17:42,708  
so find a mentor and build a team of

5030  
05:17:46,070 --> 05:17:43,680  
students

5031  
05:17:48,470 --> 05:17:46,080  
review the rules and requirements and

5032  
05:17:51,430 --> 05:17:48,480  
bring your ideas to life with nasa's

5033  
05:17:54,390 --> 05:17:52,750  
visit

5034  
05:17:56,550 --> 05:17:54,400  
stem.nasa.gov

5035  
05:17:58,230 --> 05:17:56,560  
artemis and see how you can join one of

5036  
05:18:01,470 --> 05:17:58,240  
nasa's mission related student

5037  
05:18:01,480 --> 05:18:12,868  
[Music]

5038  
05:18:17,910 --> 05:18:15,350

welcome to nasa's marshall space flight

5039

05:18:20,150 --> 05:18:17,920

center in huntsville alabama developing

5040

05:18:22,310 --> 05:18:20,160

new technologies and maturing proven

5041

05:18:23,910 --> 05:18:22,320

systems are at the core of how marshall

5042

05:18:26,550 --> 05:18:23,920

is powering the future of space

5043

05:18:28,708 --> 05:18:26,560

exploration marshall's test area is

5044

05:18:31,110 --> 05:18:28,718

critical for ensuring engines engine

5045

05:18:33,510 --> 05:18:31,120

components thrusters and custom-designed

5046

05:18:36,150 --> 05:18:33,520

test fixtures can withstand the extreme

5047

05:18:38,310 --> 05:18:36,160

forces of launch ascent on flights and

5048

05:18:40,628 --> 05:18:38,320

travel in space our test area

5049

05:18:42,230 --> 05:18:40,638

capabilities are also used by nasa

5050

05:18:44,310 --> 05:18:42,240

partners to mature innovative

5051  
05:18:46,868 --> 05:18:44,320  
technologies developed by american

5052  
05:18:48,788 --> 05:18:46,878  
industry to support space exploration

5053  
05:18:50,628 --> 05:18:48,798  
these test areas were invaluable when

5054  
05:18:53,190 --> 05:18:50,638  
analyzing hardware for the space launch

5055  
05:18:55,350 --> 05:18:53,200  
system rockets managed by marshall

5056  
05:18:57,510 --> 05:18:55,360  
we built new state-of-the-art stands to

5057  
05:19:00,470 --> 05:18:57,520  
test the liquid hydrogen tank and liquid

5058  
05:19:02,550 --> 05:19:00,480  
oxygen tank for the artemis missions

5059  
05:19:04,310 --> 05:19:02,560  
our in-house work to assemble and apply

5060  
05:19:05,910 --> 05:19:04,320  
thermal protection to the space

5061  
05:19:08,070 --> 05:19:05,920  
launch system launch vehicle stage

5062  
05:19:10,310 --> 05:19:08,080  
adapter is just one example of how our

5063  
05:19:12,628 --> 05:19:10,320

facilities and engineering skills can

5064

05:19:14,470 --> 05:19:12,638

support current and future nasa needs

5065

05:19:16,788 --> 05:19:14,480

marshall facilities and the people that

5066

05:19:19,110 --> 05:19:16,798

work in them are supporting technologies

5067

05:19:21,270 --> 05:19:19,120

such as in-space storage and transfer of

5068

05:19:23,670 --> 05:19:21,280

cryogenic propellants used for deep

5069

05:19:26,150 --> 05:19:23,680

space travel transit systems for getting

5070

05:19:28,150 --> 05:19:26,160

to and off mars and lunar systems for

5071

05:19:30,150 --> 05:19:28,160

traveling working and staying on the

5072

05:19:31,990 --> 05:19:30,160

moon we are using the knowledge we've

5073

05:19:34,070 --> 05:19:32,000

gained from our lunar lander test bed

5074

05:19:36,788 --> 05:19:34,080

programs as we work with multiple

5075

05:19:39,430 --> 05:19:36,798

industry partners to design develop test

5076  
05:19:41,590 --> 05:19:39,440  
and deliver human rated lunar landers

5077  
05:19:42,390 --> 05:19:41,600  
marshall leads the human landing system

5078  
05:19:44,708 --> 05:19:42,400  
program

5079  
05:19:47,270 --> 05:19:44,718  
which will return american astronauts to

5080  
05:19:49,350 --> 05:19:47,280  
the moon under artemis not only is

5081  
05:19:51,350 --> 05:19:49,360  
marshall integral in landing humans back

5082  
05:19:53,350 --> 05:19:51,360  
on the moon we are also maturing

5083  
05:19:56,390 --> 05:19:53,360  
approaches for artemis base camp surface

5084  
05:19:58,470 --> 05:19:56,400  
habitats and a mars transit habitat to

5085  
05:20:00,948 --> 05:19:58,480  
support surface operations on the moon

5086  
05:20:03,190 --> 05:20:00,958  
as a stepping stone to mars years of

5087  
05:20:04,708 --> 05:20:03,200  
work developing environmental control

5088  
05:20:06,788 --> 05:20:04,718

and life support systems for the

5089

05:20:08,628 --> 05:20:06,798

international space station has prepared

5090

05:20:11,270 --> 05:20:08,638

us for building the systems needed for

5091

05:20:13,670 --> 05:20:11,280

our next great leap living and working

5092

05:20:15,830 --> 05:20:13,680

on the moon and eventually mars living

5093

05:20:17,830 --> 05:20:15,840

and working on the moon and one day mars

5094

05:20:19,350 --> 05:20:17,840

will require us to use the lessons we've

5095

05:20:21,350 --> 05:20:19,360

learned from the international space

5096

05:20:23,430 --> 05:20:21,360

station at the payload operations

5097

05:20:26,948 --> 05:20:23,440

integration center marshall supports the

5098

05:20:28,948 --> 05:20:26,958

space station 24 hours a day 365 days a

5099

05:20:31,190 --> 05:20:28,958

year coordinating all scientific

5100

05:20:33,510 --> 05:20:31,200

experiments on the orbiting laboratory

5101  
05:20:36,470 --> 05:20:33,520  
hardware designed built and managed by

5102  
05:20:37,990 --> 05:20:36,480  
marshall such as the 4 bed co2 scrubber

5103  
05:20:39,430 --> 05:20:38,000  
provide valuable data and

5104  
05:20:41,670 --> 05:20:39,440  
state-of-the-art support system

5105  
05:20:43,590 --> 05:20:41,680  
capabilities to help future explorers

5106  
05:20:46,070 --> 05:20:43,600  
breathe easier on the moon and future

5107  
05:20:48,390 --> 05:20:46,080  
long-duration missions going back to the

5108  
05:20:50,788 --> 05:20:48,400  
moon and on to mars requires innovative

5109  
05:20:52,548 --> 05:20:50,798  
solutions to many challenges how do we

5110  
05:20:55,030 --> 05:20:52,558  
repair tools that have been broken on

5111  
05:20:57,590 --> 05:20:55,040  
mars is there a way we can manufacture

5112  
05:20:59,590 --> 05:20:57,600  
large structures in space engineers and

5113  
05:21:01,510 --> 05:20:59,600

scientists at marshall's advanced and

5114

05:21:03,830 --> 05:21:01,520

additive manufacturing facility are

5115

05:21:05,110 --> 05:21:03,840

doing work to answer those questions and

5116

05:21:07,270 --> 05:21:05,120

many more

5117

05:21:09,750 --> 05:21:07,280

figuring out solutions to challenges is

5118

05:21:11,350 --> 05:21:09,760

what we do best at marshall nowhere is

5119

05:21:13,510 --> 05:21:11,360

that better demonstrated than with our

5120

05:21:16,310 --> 05:21:13,520

unique expertise in space nuclear

5121

05:21:18,470 --> 05:21:16,320

technologies this work comes to life in

5122

05:21:20,390 --> 05:21:18,480

our nuclear thermal lab with testing of

5123

05:21:22,390 --> 05:21:20,400

concept designs fuel material

5124

05:21:24,070 --> 05:21:22,400

development and manufacturing techniques

5125

05:21:26,230 --> 05:21:24,080

that are critical for deep space

5126  
05:21:28,868 --> 05:21:26,240  
exploration and sending the first humans

5127  
05:21:31,670 --> 05:21:28,878  
to mars deep space exploration also

5128  
05:21:33,990 --> 05:21:31,680  
requires powerful spacecraft satellites

5129  
05:21:35,910 --> 05:21:34,000  
and in-space observatories marshall's

5130  
05:21:37,590 --> 05:21:35,920  
work with developing x-ray mirrors in

5131  
05:21:39,270 --> 05:21:37,600  
our optics lab has resulted in

5132  
05:21:40,390 --> 05:21:39,280  
developing mirrors for the james webb

5133  
05:22:14,868 --> 05:21:40,400  
telescope

5134  
05:22:14,878 --> 05:22:23,510  
but

5135  
05:22:27,270 --> 05:22:24,948  
okay we're

5136  
05:22:29,510 --> 05:22:27,280  
we've re-angled the paths a little

5137  
05:22:30,390 --> 05:22:29,520  
further away so when it comes in for

5138  
05:22:32,628 --> 05:22:30,400

landing

5139

05:22:34,070 --> 05:22:32,638

better chance to avoid all of us here in

5140

05:22:36,390 --> 05:22:34,080

the crowd

5141

05:22:39,030 --> 05:22:36,400

this is notre dame rocketry team this is

5142

05:22:41,990 --> 05:22:39,040

university of notre dame in south

5143

05:22:43,270 --> 05:22:42,000

south bend indiana name of this rocket

5144

05:22:45,708 --> 05:22:43,280

is

5145

05:22:49,390 --> 05:22:45,718

camulus x

5146

05:22:51,670 --> 05:22:49,400

51.43 pounds six inch in diameter

5147

05:22:54,628 --> 05:22:51,680

11.17 feet tall

5148

05:22:56,310 --> 05:22:54,638

is flying on an aerotech I 2200 mojave

5149

05:22:58,628 --> 05:22:56,320

green

5150

05:23:01,030 --> 05:22:58,638

um this one does say it has a launch

5151  
05:23:03,190 --> 05:23:01,040  
vehicle identification system

5152  
05:23:05,670 --> 05:23:03,200  
does have a strap down

5153  
05:23:08,628 --> 05:23:05,680  
inertial navigation system

5154  
05:23:12,390 --> 05:23:08,638  
so i remember looking at this rocket

5155  
05:23:15,430 --> 05:23:12,400  
had a lot of carbon fiber in it this one

5156  
05:23:17,830 --> 05:23:15,440  
is actually supposed to go to 5600 feet

5157  
05:23:20,708 --> 05:23:17,840  
but it does have an air brake system to

5158  
05:23:23,030 --> 05:23:20,718  
that makes it go to 4 800 feet it's what

5159  
05:23:24,470 --> 05:23:23,040  
they call the penguin system so for

5160  
05:23:25,670 --> 05:23:24,480  
anyone that's in the crowd put your

5161  
05:23:29,750 --> 05:23:25,680  
hands out

5162  
05:23:32,310 --> 05:23:29,760  
side that's their penguin system out

5163  
05:23:34,150 --> 05:23:32,320

down out down penguin system

5164

05:23:35,750 --> 05:23:34,160

the other thing with this group

5165

05:23:37,910 --> 05:23:35,760

they've used some of the biggest quick

5166

05:23:39,430 --> 05:23:37,920

links in a project i've ever seen in my

5167

05:23:42,390 --> 05:23:39,440

life i think it's the quick links that

5168

05:23:44,150 --> 05:23:42,400

could tow a boat trailer or tow boat

5169

05:23:46,390 --> 05:23:44,160

and they used a lot of carbon fiber in

5170

05:23:48,470 --> 05:23:46,400

it the other thing with this group

5171

05:23:49,990 --> 05:23:48,480

this is their 10th anniversary competing

5172

05:23:51,990 --> 05:23:50,000

in the sli

5173

05:23:55,270 --> 05:23:52,000

and this is a fairly large team they

5174

05:23:56,708 --> 05:23:55,280

have 45 members in their team 28 of them

5175

05:23:59,670 --> 05:23:56,718

are here today

5176  
05:24:02,150 --> 05:23:59,680  
and with their 45-member team 28 are

5177  
05:24:04,628 --> 05:24:02,160  
from from 28 different states four

5178  
05:24:06,708 --> 05:24:04,638  
different countries three different u.s

5179  
05:24:08,948 --> 05:24:06,718  
territories when i think of notre dame i

5180  
05:24:11,270 --> 05:24:08,958  
think of the movie rudy i did find out

5181  
05:24:13,510 --> 05:24:11,280  
and confirm they do play the movie rudy

5182  
05:24:16,230 --> 05:24:13,520  
every year at their stadium so pretty

5183  
05:24:19,510 --> 05:24:16,240  
cool they do that every year

5184  
05:24:21,750 --> 05:24:19,520  
okay pad number 61

5185  
05:24:24,150 --> 05:24:21,760  
camulus x we have a clear sky of the

5186  
05:24:25,590 --> 05:24:24,160  
thumbs up we have a clear range rocket's

5187  
05:24:34,830 --> 05:24:25,600  
pointed downrange we're going to launch

5188  
05:24:39,270 --> 05:24:37,270

ignition so the penguin system is

5189

05:24:41,270 --> 05:24:39,280

supposed to

5190

05:24:43,670 --> 05:24:41,280

just past the sun the penguin system is

5191

05:24:47,110 --> 05:24:43,680

supposed to prevent it to go to 5600

5192

05:24:49,270 --> 05:24:47,120

feet have it go to 4 800 feet

5193

05:24:51,030 --> 05:24:49,280

starting to arc over

5194

05:24:57,590 --> 05:24:51,040

right towards the sun

5195

05:25:01,910 --> 05:24:59,190

okay

5196

05:25:08,788 --> 05:25:01,920

there is a drogue parachute out looking

5197

05:25:17,430 --> 05:25:12,470

so we're still probably about

5198

05:25:22,390 --> 05:25:20,548

so this team their head of marketing at

5199

05:25:24,390 --> 05:25:22,400

notre dame they did tell me and inform

5200

05:25:25,910 --> 05:25:24,400

me to notify the group

5201

05:25:28,150 --> 05:25:25,920

they said

5202

05:25:29,110 --> 05:25:28,160

go irish they just wanted to point that

5203

05:25:32,390 --> 05:25:29,120

out

5204

05:25:35,190 --> 05:25:32,400

as their head of marketing

5205

05:25:40,470 --> 05:25:35,200

so we're about 2000 feet the main is set

5206

05:25:44,830 --> 05:25:41,948

we are about

5207

05:25:48,310 --> 05:25:44,840

590 feet coming up to

5208

05:25:50,470 --> 05:25:48,320

576. there it is there was an event but

5209

05:25:53,030 --> 05:25:50,480

there's no parachute the backup saved it

5210

05:25:55,190 --> 05:25:53,040

that's why you use a backup folks

5211

05:25:57,270 --> 05:25:55,200

and the crowd i see some jumping up and

5212

05:26:01,190 --> 05:25:57,280

down so they are very excited and

5213

05:26:06,628 --> 05:26:01,200

satisfied for sure

5214

05:26:11,430 --> 05:26:08,230

sounds like someone's saying let's go

5215

05:26:11,440 --> 05:26:17,270

so now we're going back to pad 60.

5216

05:26:21,590 --> 05:26:18,470

okay

5217

05:26:23,270 --> 05:26:21,600

this pad 60 is prometheus alabama

5218

05:26:25,910 --> 05:26:23,280

rocketry association university of

5219

05:26:29,470 --> 05:26:25,920

alabama at tuscaloosa name of this rock

5220

05:26:32,150 --> 05:26:29,480

is prometheus 48 and a half pounds

5221

05:26:33,190 --> 05:26:32,160

6.17 inch diameter 10 and a half feet

5222

05:26:36,548 --> 05:26:33,200

tall

5223

05:26:39,350 --> 05:26:36,558

is flying on aerotech I 1940x main

5224

05:26:42,470 --> 05:26:39,360

except for 800 feet

5225

05:26:43,910 --> 05:26:42,480

um this does have prometheus integrated

5226

05:26:46,628 --> 05:26:43,920

camera system

5227

05:26:48,548 --> 05:26:46,638

i like the acronym it says pics

5228

05:26:50,470 --> 05:26:48,558

it's taking pictures of the launch field

5229

05:26:52,708 --> 05:26:50,480

and using

5230

05:26:55,350 --> 05:26:52,718

a machine learning to

5231

05:26:57,670 --> 05:26:55,360

process and compare pictures

5232

05:26:59,510 --> 05:26:57,680

to grid view of launch field and

5233

05:27:01,990 --> 05:26:59,520

transmit coordinates to ground station

5234

05:27:04,708 --> 05:27:02,000

that is really cool it's a very complex

5235

05:27:06,470 --> 05:27:04,718

project i think i got the gist of it

5236

05:27:07,910 --> 05:27:06,480

definitely above my pay grade but it's

5237

05:27:09,750 --> 05:27:07,920

really cool to see

5238

05:27:11,270 --> 05:27:09,760

the thing with this rocket and i noticed

5239

05:27:12,868 --> 05:27:11,280

when they were building or noticed when

5240

05:27:14,948 --> 05:27:12,878

it came through the table

5241

05:27:17,510 --> 05:27:14,958

this has some very heavy duty carbon

5242

05:27:19,590 --> 05:27:17,520

fiber fins look like some ten ounce or

5243

05:27:21,670 --> 05:27:19,600

grater the only comment they said about

5244

05:27:23,590 --> 05:27:21,680

their fins is they said the rock broke

5245

05:27:24,948 --> 05:27:23,600

their fins are that strong it broke a

5246

05:27:26,868 --> 05:27:24,958

rock

5247

05:27:29,110 --> 05:27:26,878

this does have a new payload they said

5248

05:27:31,110 --> 05:27:29,120

the last one was bye-bye it's supposed

5249

05:27:32,230 --> 05:27:31,120

to go 4 300 feet

5250

05:27:33,830 --> 05:27:32,240

and what happened unfortunately with

5251

05:27:36,470 --> 05:27:33,840

that first payload is it landed in a

5252

05:27:38,390 --> 05:27:36,480

creek so to be safe and smart they did a

5253

05:27:40,548 --> 05:27:38,400

whole new payload and all did all the

5254

05:27:42,470 --> 05:27:40,558

right testing it's all good to go

5255

05:27:45,430 --> 05:27:42,480

so pad number 60 we're going to launch

5256

05:27:47,350 --> 05:27:45,440

prometheus thumbs up for a clear sky we

5257

05:27:54,628 --> 05:27:47,360

have a clear range we will launch in

5258

05:27:54,638 --> 05:27:59,750

there it goes

5259

05:28:04,830 --> 05:28:02,310

this is supposed to go 4 300 feet it

5260

05:28:08,548 --> 05:28:04,840

might do that starting to go

5261

05:28:11,910 --> 05:28:08,558

over yeah we are in alabama starting arc

5262

05:28:16,150 --> 05:28:13,910

there is an event

5263

05:28:18,150 --> 05:28:16,160

right above the sun yeah i can hear the

5264

05:28:21,670 --> 05:28:18,160

crowd someone said are we in alabama

5265

05:28:23,430 --> 05:28:21,680

last time i checked we are

5266

05:28:26,150 --> 05:28:23,440

just right in the sun right now oh just

5267

05:28:28,708 --> 05:28:26,160

below the sun

5268

05:28:31,270 --> 05:28:28,718

main is set for 800 feet on this rocket

5269

05:28:33,190 --> 05:28:31,280

coming in pretty good relatively small

5270

05:28:35,750 --> 05:28:33,200

drogue and that small drogue is to help

5271

05:28:37,510 --> 05:28:35,760

it minimize this distance of where it's

5272

05:28:39,910 --> 05:28:37,520

landing keeps it close to where it took

5273

05:28:45,910 --> 05:28:39,920

off we're about a thousand feet right

5274

05:28:45,920 --> 05:28:52,310

they are very excited over there

5275

05:28:57,030 --> 05:28:54,948

nice good parachute on that one and the

5276

05:28:59,350 --> 05:28:57,040

way they have as much carbon fiber on

5277

05:29:11,190 --> 05:28:59,360

those fins they are indestructible so

5278

05:29:11,200 --> 05:29:27,990

okay

5279

05:29:33,110 --> 05:29:31,270

did it blow away or did it

5280

05:29:39,190 --> 05:29:33,120

it does not appear that you handed it to

5281

05:29:39,200 --> 05:29:50,628

i do not see it gerald

5282

05:29:50,638 --> 05:30:02,548

did anyone see a piece of paper

5283

05:30:05,910 --> 05:30:03,750

okay

5284

05:30:10,948 --> 05:30:05,920

pad number 63

5285

05:30:12,948 --> 05:30:10,958

we have nasa sli at virginia tech

5286

05:30:14,708 --> 05:30:12,958

okay this is a virginia tech out of

5287

05:30:18,628 --> 05:30:14,718

blacksburg virginia

5288

05:30:21,910 --> 05:30:18,638

the name of this rocket is called mk16

5289

05:30:23,910 --> 05:30:21,920

so i said what does mk16 stand for

5290

05:30:26,548 --> 05:30:23,920

for some of those that probably know is

5291

05:30:29,270 --> 05:30:26,558

the name of the iron man suit so that is

5292

05:30:30,110 --> 05:30:29,280

the reason why it's mk16

5293

05:30:33,430 --> 05:30:30,120

it is

5294

05:30:35,830 --> 05:30:33,440

35.44 pounds five inches in diameter

5295

05:30:38,868 --> 05:30:35,840

this one's 125 feet tall but i think

5296

05:30:41,590 --> 05:30:38,878

they meant inches 125 inches tall

5297

05:30:43,670 --> 05:30:41,600

does have drug deployment

5298

05:30:47,190 --> 05:30:43,680

uh after apogee

5299

05:30:50,150 --> 05:30:47,200

backup is 25 after main deployment 700

5300

05:30:53,430 --> 05:30:50,160

feet back up at 600 feet this is flying

5301  
05:30:57,510 --> 05:30:53,440  
on a cesseroni I 1720 white thunder i've

5302  
05:31:01,030 --> 05:30:59,670  
and for the science experiment this is

5303  
05:31:02,548 --> 05:31:01,040  
called the

5304  
05:31:04,548 --> 05:31:02,558  
akina

5305  
05:31:07,270 --> 05:31:04,558  
project which stands for the greek

5306  
05:31:09,190 --> 05:31:07,280  
goddess so the payload uses sensors in

5307  
05:31:10,708 --> 05:31:09,200  
order to determine its propulsion

5308  
05:31:13,270 --> 05:31:10,718  
autonomously

5309  
05:31:15,830 --> 05:31:13,280  
it is mounted in a removable sled that

5310  
05:31:18,390 --> 05:31:15,840  
is bolted to a fiberglass structure and

5311  
05:31:19,990 --> 05:31:18,400  
i believe that's 3d printed

5312  
05:31:23,150 --> 05:31:20,000  
also a couple other things with this is

5313  
05:31:26,070 --> 05:31:23,160

supposed to go

5314

05:31:28,390 --> 05:31:26,080

5250 feet on their practice flight it

5315

05:31:29,750 --> 05:31:28,400

was within nine feet of that altitude so

5316

05:31:31,990 --> 05:31:29,760

they feel very confident they're going

5317

05:31:34,230 --> 05:31:32,000

to be able to hit that

5318

05:31:35,590 --> 05:31:34,240

oh and their university so virginia tech

5319

05:31:40,788 --> 05:31:35,600

is in its

5320

05:31:42,788 --> 05:31:40,798

sea sequential 150 year anniversary

5321

05:31:47,350 --> 05:31:42,798

oh the one thing i was supposed to say

5322

05:31:52,868 --> 05:31:48,830

let's

5323

05:31:59,830 --> 05:31:54,470

okay i got it

5324

05:32:01,830 --> 05:31:59,840

all right so on pad 63 we'll fly mk 16.

5325

05:32:03,830 --> 05:32:01,840

we have a thumbs up for clear sky we

5326

05:32:07,350 --> 05:32:03,840

have a clear range we are going to

5327

05:32:12,708 --> 05:32:07,360

launch this rocket in five four three

5328

05:32:17,990 --> 05:32:14,670

wow okay so it's headed to

5329

05:32:26,150 --> 05:32:18,000

5250 feet

5330

05:32:30,150 --> 05:32:27,590

need an event

5331

05:32:34,230 --> 05:32:30,160

there's an event there's it's backup

5332

05:32:37,750 --> 05:32:36,310

okay the other thing i noticed with this

5333

05:32:40,628 --> 05:32:37,760

project

5334

05:32:44,548 --> 05:32:40,638

there is a team member named helen

5335

05:32:49,590 --> 05:32:44,558

so today this day is helen's 21st

5336

05:32:55,270 --> 05:32:51,750

i didn't say that she's gonna have some

5337

05:33:04,150 --> 05:32:55,280

refreshments this evening i believe

5338

05:33:09,030 --> 05:33:06,390

okay we're still about

5339

05:33:12,788 --> 05:33:09,040

3 000 feet up

5340

05:33:15,030 --> 05:33:12,798

about probably closer to 2 000 feet

5341

05:33:16,590 --> 05:33:15,040

main is set for 700 feet so we're coming

5342

05:33:18,708 --> 05:33:16,600

up on a thousand feet right now

5343

05:33:20,470 --> 05:33:18,718

[Music]

5344

05:33:22,470 --> 05:33:20,480

900

5345

05:33:24,948 --> 05:33:22,480

800

5346

05:33:29,910 --> 05:33:24,958

this would be 700 right here so we need

5347

05:33:35,110 --> 05:33:32,470

all right congratulations and happy

5348

05:33:36,948 --> 05:33:35,120

birthday helen

5349

05:33:38,390 --> 05:33:36,958

i can't sing happy birthday so someone

5350

05:33:49,830 --> 05:33:38,400

will have to leave that off a little bit

5351

05:33:54,470 --> 05:33:53,350

pad 65 we have yc student launch

5352

05:33:57,030 --> 05:33:54,480

this is

5353

05:33:57,910 --> 05:33:57,040

yam hill carton high school carlton high

5354

05:34:00,310 --> 05:33:57,920

school

5355

05:34:04,788 --> 05:34:00,320

in yam hill oregon the name of this

5356

05:34:06,788 --> 05:34:04,798

rocket is mind blown it is 28.8 pounds

5357

05:34:09,110 --> 05:34:06,798

five and a half inches in diameter

5358

05:34:12,070 --> 05:34:09,120

nine feet two inches tall thrust to

5359

05:34:13,110 --> 05:34:12,080

weight is 6.5 it's supposed to go 3 700

5360

05:34:16,310 --> 05:34:13,120

feet

5361

05:34:17,830 --> 05:34:16,320

to apogee although they also say 2500

5362

05:34:19,510 --> 05:34:17,840

feet so we've got two different sets of

5363

05:34:20,548 --> 05:34:19,520

notes on here we'll find out how high it

5364

05:34:24,230 --> 05:34:20,558

goes

5365

05:34:26,708 --> 05:34:24,240

it's flying on an air um aerotech k480

5366

05:34:30,230 --> 05:34:26,718

so this one's not going to take off as

5367

05:34:33,190 --> 05:34:30,240

fast if i'm reading that right k480

5368

05:34:35,830 --> 05:34:33,200

this does have a simulated gelatin brain

5369

05:34:38,390 --> 05:34:35,840

that uses multiple three axis

5370

05:34:40,788 --> 05:34:38,400

accelerometers to record

5371

05:34:43,670 --> 05:34:40,798

impact in compressions

5372

05:34:46,350 --> 05:34:43,680

to assess brain injuries in space flight

5373

05:34:48,150 --> 05:34:46,360

passengers so this is one of the sli

5374

05:34:49,430 --> 05:34:48,160

competitions

5375

05:34:50,548 --> 05:34:49,440

the other thing i noticed with this

5376

05:34:53,270 --> 05:34:50,558

rocket

5377

05:34:55,510 --> 05:34:53,280

has an incredible paint job on it and i

5378

05:34:57,910 --> 05:34:55,520

actually saw some etching in the fins of

5379

05:35:00,230 --> 05:34:57,920

a pattern so it's got a really cool hot

5380

05:35:02,150 --> 05:35:00,240

rod paint job theme to it's even got

5381

05:35:04,230 --> 05:35:02,160

flames on there saw some metallic paint

5382

05:35:05,590 --> 05:35:04,240

into it i don't know who on that team is

5383

05:35:07,670 --> 05:35:05,600

a master painter but they've definitely

5384

05:35:09,910 --> 05:35:07,680

got the style points figured out

5385

05:35:13,350 --> 05:35:09,920

okay we will go to pad 65 we're going to

5386

05:35:15,430 --> 05:35:13,360

launch mind blown aerotech k480

5387

05:35:17,190 --> 05:35:15,440

thumbs up for the clear sky

5388

05:35:30,470 --> 05:35:17,200

clear range we're going to launch in

5389

05:35:34,868 --> 05:35:32,868

nice little bit longer burn on that

5390

05:35:36,628 --> 05:35:34,878

again this is supposed to simulate

5391

05:35:39,190 --> 05:35:36,638

the brain so i didn't need to take off

5392

05:35:40,628 --> 05:35:39,200

as fast or as punchy that's why they

5393

05:35:42,548 --> 05:35:40,638

chose that motor

5394

05:35:44,948 --> 05:35:42,558

we have an event

5395

05:35:46,788 --> 05:35:44,958

hopefully the brain is still okay not a

5396

05:35:50,150 --> 05:35:46,798

real brain it's just a simulated gel

5397

05:35:51,350 --> 05:35:50,160

brain main is set for 700 feet on this

5398

05:35:52,948 --> 05:35:51,360

rocket

5399

05:35:54,788 --> 05:35:52,958

you can see that nice reflection it's

5400

05:35:58,948 --> 05:35:54,798

got a really good paint job nice clear

5401

05:36:04,548 --> 05:36:01,110

and this does have the three axis

5402

05:36:06,070 --> 05:36:04,558

accelerometers to record and measure the

5403

05:36:09,030 --> 05:36:06,080

impacts and compressions on the

5404

05:36:10,868 --> 05:36:09,040

simulated gel brain

5405

05:36:13,270 --> 05:36:10,878

and this one is kind of coming towards

5406

05:36:18,628 --> 05:36:13,280

us at the lco desk

5407

05:36:24,548 --> 05:36:21,510

we're about a thousand feet up right now

5408

05:36:27,190 --> 05:36:24,558

coming up on 750 right there

5409

05:36:29,350 --> 05:36:27,200

and then there's their backup

5410

05:36:30,708 --> 05:36:29,360

so we have the wind going off to the

5411

05:36:32,708 --> 05:36:30,718

west a little bit so hopefully that

5412

05:36:34,948 --> 05:36:32,718

helps us a little bit keeps it over in

5413

05:36:36,948 --> 05:36:34,958

the wheat

5414

05:36:38,310 --> 05:36:36,958

gotta watch this one a little bit make

5415

05:36:40,150 --> 05:36:38,320

sure it's

5416

05:36:42,070 --> 05:36:40,160

so you can see when it shifts directions

5417

05:36:43,190 --> 05:36:42,080

pretty quickly that's the surface level

5418

05:36:48,310 --> 05:36:43,200

winds

5419

05:36:54,310 --> 05:36:50,390

but that's a definite good looking

5420

05:37:03,750 --> 05:36:54,320

textbook flight nice job team

5421

05:37:10,070 --> 05:37:07,350

okay on pad number 80 we have

5422

05:37:12,390 --> 05:37:10,080

university of north dakota and this says

5423

05:37:14,470 --> 05:37:12,400

university of north dakota at a grand

5424

05:37:16,548 --> 05:37:14,480

forks north dakota

5425

05:37:18,470 --> 05:37:16,558

the name of this rocket

5426

05:37:21,190 --> 05:37:18,480

i think it says just mike i think the

5427

05:37:24,548 --> 05:37:21,200

name of the rocket is mike

5428

05:37:27,430 --> 05:37:24,558

37 pounds six inch in diameter

5429

05:37:29,430 --> 05:37:27,440

almost ten and a half feet tall

5430

05:37:31,590 --> 05:37:29,440

and this says we have a payload that

5431

05:37:35,510 --> 05:37:31,600

ejects specifically

5432

05:37:37,190 --> 05:37:35,520

from the rocket the projected altitude

5433

05:37:40,070 --> 05:37:37,200

is six thousand feet but they're

5434

05:37:42,470 --> 05:37:40,080

thinking it's going to do 5925

5435

05:37:44,470 --> 05:37:42,480

feet with the current wind and how it's

5436

05:37:46,470 --> 05:37:44,480

pointed down range

5437

05:37:48,548 --> 05:37:46,480

does have a hawk telemetry system that

5438

05:37:50,708 --> 05:37:48,558

utilizes a three radio system to

5439

05:37:52,788 --> 05:37:50,718

triangulate rocket location

5440

05:37:55,110 --> 05:37:52,798

one radio and rocket one radio

5441

05:37:55,990 --> 05:37:55,120

separating payload and one at the base

5442

05:37:58,070 --> 05:37:56,000

station

5443

05:38:00,548 --> 05:37:58,080

uses shielded antennas

5444

05:38:03,190 --> 05:38:00,558

to find angles

5445

05:38:04,628 --> 05:38:03,200

and they actually did uh paint on the

5446

05:38:06,150 --> 05:38:04,638

side of the rocket they did paint their

5447

05:38:07,270 --> 05:38:06,160

instagram handle so they wanted to make

5448

05:38:08,390 --> 05:38:07,280

sure everyone was following their

5449

05:38:10,948 --> 05:38:08,400

instagram

5450

05:38:12,470 --> 05:38:10,958

the rocket was also originally red but

5451  
05:38:15,030 --> 05:38:12,480  
for being north dakota they wanted to

5452  
05:38:17,910 --> 05:38:15,040  
change the colors and paint it green

5453  
05:38:21,190 --> 05:38:17,920  
okay on pad number 80. oh this is flying

5454  
05:38:24,628 --> 05:38:21,200  
on an I 1420 red line

5455  
05:38:26,948 --> 05:38:24,638  
main set for 600 feet pad 80 we are

5456  
05:38:30,310 --> 05:38:26,958  
going to launch mike clear sky

5457  
05:38:34,708 --> 05:38:30,320  
clear range we will launch in five four

5458  
05:38:40,230 --> 05:38:34,718  
three two one ignition

5459  
05:38:47,670 --> 05:38:44,310  
i don't think that's gonna go 5900 feet

5460  
05:38:53,030 --> 05:38:47,680  
that's probably more of a 3 500 4 000

5461  
05:39:16,708 --> 05:38:56,070  
there's an event there's it's back up

5462  
05:39:21,510 --> 05:39:19,590  
and so the main on this one

5463  
05:39:24,230 --> 05:39:21,520

again is

5464

05:39:26,310 --> 05:39:24,240

600 feet and there is a piece that

5465

05:39:31,190 --> 05:39:26,320

does separate from it and it is supposed

5466

05:39:36,470 --> 05:39:34,788

oh okay it's about 2000 feet right now

5467

05:39:39,510 --> 05:39:36,480

it's coming in at a thousand feet

5468

05:39:42,230 --> 05:39:39,520

probably 750.

5469

05:39:45,190 --> 05:39:42,240

we should be 600 here about now so we

5470

05:39:47,190 --> 05:39:45,200

should see an event

5471

05:39:49,030 --> 05:39:47,200

they are 600 feet

5472

05:39:50,628 --> 05:39:49,040

so again there's a part that separates

5473

05:39:54,150 --> 05:39:50,638

from it that's what it's supposed to do

5474

05:39:59,030 --> 05:39:54,160

but it's kind of coming in pretty quick

5475

05:40:03,030 --> 05:40:00,070

i don't know if there's anything under

5476

05:40:05,590 --> 05:40:03,040

that parachute but uh that

5477

05:40:10,948 --> 05:40:05,600

a little bit of a healthier landing

5478

05:40:17,750 --> 05:40:14,548

is this the last rocket for this event

5479

05:40:22,948 --> 05:40:20,070

okay this is one of the last rockets for

5480

05:40:24,948 --> 05:40:22,958

this round of flying

5481

05:40:28,070 --> 05:40:24,958

the name of this rocket is called rocket

5482

05:40:29,510 --> 05:40:28,080

royals 2.0 this is victory christian

5483

05:40:32,390 --> 05:40:29,520

center school out of charlotte north

5484

05:40:34,150 --> 05:40:32,400

carolina oh this team is pumped they're

5485

05:40:36,548 --> 05:40:34,160

already excited it hasn't even taken off

5486

05:40:39,510 --> 05:40:36,558

yet i love it love the energy

5487

05:40:42,070 --> 05:40:39,520

the name of this rocket is faith 2.0

5488

05:40:44,150 --> 05:40:42,080

weighs 24 pounds four inches in diameter

5489

05:40:45,990 --> 05:40:44,160

is nine feet tall

5490

05:40:49,110 --> 05:40:46,000

this rocket does have a

5491

05:40:50,948 --> 05:40:49,120

comparative analysis of seeds

5492

05:40:53,910 --> 05:40:50,958

that

5493

05:40:57,350 --> 05:40:53,920

run in hydroponic conditions after

5494

05:40:58,948 --> 05:40:57,360

exposure to higher altitude and pressure

5495

05:41:00,708 --> 05:40:58,958

they will grow they will measure the

5496

05:41:03,430 --> 05:41:00,718

growth rates

5497

05:41:05,590 --> 05:41:03,440

in the change based on the culture

5498

05:41:06,948 --> 05:41:05,600

and the ones that were exposed to the

5499

05:41:18,310 --> 05:41:06,958

altitude

5500

05:41:28,628 --> 05:41:21,270

and this rocket is flying on a cicerone

5501

05:41:33,830 --> 05:41:30,390

the other thing with other thing with

5502

05:41:36,708 --> 05:41:33,840

this rocket they did call it faith 2.0

5503

05:41:39,350 --> 05:41:36,718

faith 1.0 didn't do as well so they just

5504

05:41:42,230 --> 05:41:39,360

did a new one called it faith 2.0

5505

05:41:44,310 --> 05:41:42,240

i also did see with this rocket it has

5506

05:41:45,430 --> 05:41:44,320

thimbles as its charge wells i've never

5507

05:41:47,430 --> 05:41:45,440

seen that i've seen a lot of unique

5508

05:41:49,350 --> 05:41:47,440

things for charge wells never seen

5509

05:41:51,430 --> 05:41:49,360

thimbles used they did kind of look like

5510

05:41:53,110 --> 05:41:51,440

engine nozzles that were in there

5511

05:41:55,510 --> 05:41:53,120

i know this team put a lot of hours in

5512

05:41:57,990 --> 05:41:55,520

this project and it is made up of middle

5513

05:42:00,470 --> 05:41:58,000

schoolers and high school students that

5514

05:42:03,510 --> 05:42:00,480

were advisors to it i also thought was

5515

05:42:05,670 --> 05:42:03,520

really cool this project the mentor of

5516

05:42:07,590 --> 05:42:05,680

the group wanted to be an astronaut well

5517

05:42:09,350 --> 05:42:07,600

this is pretty darn close to being an

5518

05:42:11,750 --> 05:42:09,360

astronaut being out here today and

5519

05:42:13,750 --> 05:42:11,760

mentoring this team did a lot of driving

5520

05:42:15,190 --> 05:42:13,760

back and forth to make this initial

5521

05:42:16,708 --> 05:42:15,200

flight and they had a lot of help and

5522

05:42:18,470 --> 05:42:16,718

assistance on painting and finishing

5523

05:42:19,910 --> 05:42:18,480

whether it was their parents students

5524

05:42:21,590 --> 05:42:19,920

and even the maintenance person for the

5525

05:42:24,150 --> 05:42:21,600

school helped and assisted in getting

5526  
05:42:26,948 --> 05:42:24,160  
guidance on paint so we are ready to fly

5527  
05:42:29,350 --> 05:42:26,958  
faith 2.0 on pad 81.

5528  
05:42:32,708 --> 05:42:29,360  
clear sky have a thumbs up clear range

5529  
05:42:40,310 --> 05:42:32,718  
we will launch this rocket in five four

5530  
05:42:45,910 --> 05:42:42,150  
that one really wanted to take off i

5531  
05:42:48,470 --> 05:42:45,920  
don't even think i got to ignition yet

5532  
05:42:49,590 --> 05:42:48,480  
supposed to go 5800 feet it might be

5533  
05:43:11,510 --> 05:42:49,600  
doing that

5534  
05:43:11,520 --> 05:43:28,150  
that one i did not see an event on it

5535  
05:43:28,160 --> 05:43:45,270  
here

5536  
05:43:45,280 --> 05:43:58,390  
does anyone have an eye on that one

5537  
05:44:07,350 --> 05:44:00,390  
is this does anyone still see that one

5538  
05:44:11,750 --> 05:44:09,430

this one might have had a very high rate

5539

05:44:24,150 --> 05:44:11,760

of descent and i believe it might be

5540

05:44:29,670 --> 05:44:27,270

range is open

5541

05:44:31,350 --> 05:44:29,680

again just a reminder in recovery don't

5542

05:44:33,670 --> 05:44:31,360

need to send out the whole team to get

5543

05:44:35,990 --> 05:44:33,680

the rocket just get the team members

5544

05:44:38,310 --> 05:44:36,000

that you need for recovery just get the

5545

05:44:39,830 --> 05:44:38,320

ones you only need and then also once

5546

05:44:41,590 --> 05:44:39,840

you're recovering make sure you turn off

5547

05:44:43,910 --> 05:44:41,600

your transmitters

5548

05:44:46,310 --> 05:44:43,920

for the recovery so if you're on 915 you

5549

05:44:49,110 --> 05:44:46,320

want to make sure you get your

5550

05:46:03,010 --> 05:44:49,120

transmitter turned off upon recovery

5551  
05:47:30,240 --> 05:46:50,110  
[Music]

5552  
05:47:45,030 --> 05:47:30,250  
hmm

5553  
05:50:34,390 --> 05:47:45,040  
[Music]

5554  
05:51:08,800 --> 05:50:37,220  
so

5555  
05:52:28,628 --> 05:51:14,000  
[Music]

5556  
05:53:10,948 --> 05:52:42,390  
so

5557  
05:53:17,270 --> 05:53:13,590  
good afternoon i am tracy washington and

5558  
05:53:21,750 --> 05:53:17,280  
we are here live at bragg farms for the

5559  
05:53:23,510 --> 05:53:21,760  
2022 student launch i have with me mike

5560  
05:53:26,230 --> 05:53:23,520  
kinkade who is the

5561  
05:53:29,990 --> 05:53:26,240  
administrator for education

5562  
05:53:32,788 --> 05:53:30,000  
here at nasa mike tell us about

5563  
05:53:34,548 --> 05:53:32,798

you and your experience here so far hey

5564

05:53:36,070 --> 05:53:34,558

thanks tracy i'm so glad to be here this

5565

05:53:38,310 --> 05:53:36,080

has been so exciting my first time to

5566

05:53:39,910 --> 05:53:38,320

come to see student launch initiative

5567

05:53:41,590 --> 05:53:39,920

so fun to see the students from whether

5568

05:53:43,590 --> 05:53:41,600

it's middle school students or college

5569

05:53:46,470 --> 05:53:43,600

students so fun to see their work in

5570

05:53:48,310 --> 05:53:46,480

action yes absolutely so again it's so

5571

05:53:50,628 --> 05:53:48,320

good to have you i know you're at

5572

05:53:53,750 --> 05:53:50,638

headquarters so you traveled all the way

5573

05:53:55,110 --> 05:53:53,760

down here to alabama to be with us uh

5574

05:53:58,708 --> 05:53:55,120

mike talk to

5575

05:54:01,510 --> 05:53:58,718

um our folks here today about artemis

5576

05:54:03,670 --> 05:54:01,520

generation and how that connects to the

5577

05:54:05,030 --> 05:54:03,680

student launch initiative right so it's

5578

05:54:06,708 --> 05:54:05,040

so cool to be able to see what's going

5579

05:54:07,990 --> 05:54:06,718

on here because this is just one of many

5580

05:54:09,510 --> 05:54:08,000

different ways that students can get

5581

05:54:10,788 --> 05:54:09,520

involved as you know tracy there are

5582

05:54:12,628 --> 05:54:10,798

students all across the country what i

5583

05:54:13,910 --> 05:54:12,638

love about sli is that we have students

5584

05:54:15,830 --> 05:54:13,920

it's not just something in huntsville or

5585

05:54:17,590 --> 05:54:15,840

just something in houston or florida

5586

05:54:19,030 --> 05:54:17,600

anybody can get involved and the fact

5587

05:54:20,230 --> 05:54:19,040

that we have students that have come

5588

05:54:21,350 --> 05:54:20,240

from different backgrounds different

5589

05:54:23,230 --> 05:54:21,360

experiences

5590

05:54:25,270 --> 05:54:23,240

and and if people go to

5591

05:54:26,470 --> 05:54:25,280

stem.nasa.gov you can learn more about

5592

05:54:28,230 --> 05:54:26,480

other ways that students can get

5593

05:54:29,830 --> 05:54:28,240

involved i'm excited your questions

5594

05:54:31,910 --> 05:54:29,840

about artemis you know this summer we'll

5595

05:54:34,628 --> 05:54:31,920

be launching the first vehicle in 50

5596

05:54:36,070 --> 05:54:34,638

years yes this is so exciting it sure is

5597

05:54:37,830 --> 05:54:36,080

and and the the idea that we'll have the

5598

05:54:39,910 --> 05:54:37,840

first woman the first person of color

5599

05:54:41,190 --> 05:54:39,920

yes eventually land on the moon

5600

05:54:42,390 --> 05:54:41,200

to do that we have to have students from

5601  
05:54:43,590 --> 05:54:42,400  
all different kinds of backgrounds

5602  
05:54:44,948 --> 05:54:43,600  
participating

5603  
05:54:46,230 --> 05:54:44,958  
so we'd love to have you join us there's

5604  
05:54:48,070 --> 05:54:46,240  
something called the artemis learning

5605  
05:54:49,990 --> 05:54:48,080  
pathways comes out every tuesday for

5606  
05:54:51,990 --> 05:54:50,000  
educators to find out what's going on

5607  
05:54:54,788 --> 05:54:52,000  
and it's a great way for them to to

5608  
05:54:56,948 --> 05:54:54,798  
follow us at home okay that sounds good

5609  
05:55:00,548 --> 05:54:56,958  
um mike talk to me just from the

5610  
05:55:03,110 --> 05:55:00,558  
standpoint of being an observer here

5611  
05:55:04,708 --> 05:55:03,120  
how i mean i know it's amazing right

5612  
05:55:06,470 --> 05:55:04,718  
it's so cool and it's such a beautiful

5613  
05:55:07,990 --> 05:55:06,480

day today

5614

05:55:09,190 --> 05:55:08,000

talk to me about some of the things that

5615

05:55:11,430 --> 05:55:09,200

you've seen

5616

05:55:13,110 --> 05:55:11,440

what have you learned um what's been

5617

05:55:14,470 --> 05:55:13,120

your best what's been the best part of

5618

05:55:15,430 --> 05:55:14,480

student launch for you so far you know

5619

05:55:16,948 --> 05:55:15,440

i'm so glad you asked that question

5620

05:55:18,628 --> 05:55:16,958

tracy so i brought my 13 year old

5621

05:55:19,910 --> 05:55:18,638

daughter with me and we came here

5622

05:55:21,430 --> 05:55:19,920

yesterday and we were visiting with the

5623

05:55:22,948 --> 05:55:21,440

teams as they were frankly a little

5624

05:55:24,628 --> 05:55:22,958

nervous about getting their rockets

5625

05:55:25,510 --> 05:55:24,638

ready right yes some of them are like we

5626

05:55:27,350 --> 05:55:25,520

don't really want to talk to you right

5627

05:55:29,350 --> 05:55:27,360

now they're very polite but they're like

5628

05:55:30,788 --> 05:55:29,360

we're focused and then some of them had

5629

05:55:32,948 --> 05:55:30,798

a chance to visit with my daughter to

5630

05:55:34,788 --> 05:55:32,958

talk about their perspectives and so to

5631

05:55:37,350 --> 05:55:34,798

to come experience only not only as

5632

05:55:38,708 --> 05:55:37,360

myself but to see how she sees it what a

5633

05:55:40,390 --> 05:55:38,718

fun thing to be able to see i wish

5634

05:55:41,750 --> 05:55:40,400

everyone who's watching us at home had a

5635

05:55:43,270 --> 05:55:41,760

chance to come out here and see the

5636

05:55:44,788 --> 05:55:43,280

passion and the energy that these

5637

05:55:46,628 --> 05:55:44,798

students bring

5638

05:55:48,390 --> 05:55:46,638

and like i said before it doesn't always

5639

05:55:50,150 --> 05:55:48,400

work the way we want to yes yes some of

5640

05:55:52,868 --> 05:55:50,160

these rockets didn't land where we

5641

05:55:54,390 --> 05:55:52,878

expected but we learn more from the

5642

05:55:57,350 --> 05:55:54,400

challenges i think sometimes than the

5643

05:55:59,430 --> 05:55:57,360

easy ones absolutely these are words of

5644

05:56:02,230 --> 05:55:59,440

inspiration we learn more from the

5645

05:56:05,350 --> 05:56:02,240

challenges amen okay don't forget that

5646

05:56:08,390 --> 05:56:05,360

so last question for you mike i just

5647

05:56:11,430 --> 05:56:08,400

know that there are people at home that

5648

05:56:13,990 --> 05:56:11,440

are watching uh there are young students

5649

05:56:15,750 --> 05:56:14,000

there are maybe older people who are

5650

05:56:19,030 --> 05:56:15,760

wondering how do i get involved with

5651

05:56:20,470 --> 05:56:19,040

nasa how can i get involved with

5652

05:56:22,390 --> 05:56:20,480

things like this

5653

05:56:24,230 --> 05:56:22,400

uh what advice can you give to them

5654

05:56:25,788 --> 05:56:24,240

thanks tracy's great question again i

5655

05:56:27,590 --> 05:56:25,798

always like talk about

5656

05:56:29,430 --> 05:56:27,600

stem.nasa.gov because you can find all

5657

05:56:31,350 --> 05:56:29,440

kinds of information and i'll also

5658

05:56:33,910 --> 05:56:31,360

mention something called nasa express it

5659

05:56:35,510 --> 05:56:33,920

comes out every thursday 56 000 people

5660

05:56:37,190 --> 05:56:35,520

get it gets all the different ways that

5661

05:56:38,868 --> 05:56:37,200

you can get involved in stem engagement

5662

05:56:40,788 --> 05:56:38,878

at nasa you know student launch

5663

05:56:42,948 --> 05:56:40,798

initiative is one that you know we're we

5664

05:56:44,628 --> 05:56:42,958

pretty we love yes but there's so many

5665

05:56:45,990 --> 05:56:44,638

other ways that people can get involved

5666

05:56:47,590 --> 05:56:46,000

and uh

5667

05:56:50,230 --> 05:56:47,600

we'd love to have you join us and be

5668

05:56:52,868 --> 05:56:50,240

part of the nasa community absolutely

5669

05:56:54,390 --> 05:56:52,878

hey guys thank you so much mike for for

5670

05:56:57,030 --> 05:56:54,400

being here with us

5671

05:56:59,110 --> 05:56:57,040

and uh for talking with us today again

5672

05:57:01,590 --> 05:56:59,120

we are live for the student launch

5673

05:57:04,310 --> 05:57:01,600

initiative here at bragg farms

5674

05:57:07,110 --> 05:57:04,320

just north of huntsville alabama

5675

05:57:09,830 --> 05:57:07,120

for the 2022 launch this is amazing

5676  
05:57:11,430 --> 05:57:09,840  
because we've been here so many years

5677  
05:57:13,190 --> 05:57:11,440  
doing this we've seen

5678  
05:57:15,430 --> 05:57:13,200  
new teams we've seen teams that have

5679  
05:57:17,750 --> 05:57:15,440  
been back time and time again

5680  
05:57:19,830 --> 05:57:17,760  
continue to join us as we do some

5681  
05:57:23,030 --> 05:57:19,840  
student interviews here in just a little

5682  
05:57:25,030 --> 05:57:23,040  
bit and i'll kick it over to you guys

5683  
05:57:30,700 --> 05:57:25,040  
before we go to break

5684  
05:58:48,628 --> 05:58:04,250  
[Music]

5685  
05:58:48,638 --> 05:58:58,000  
do

5686  
05:59:14,440 --> 05:59:10,380  
[Music]

5687  
05:59:39,920 --> 05:59:14,450  
[Applause]

5688  
06:02:07,830 --> 05:59:47,380

[Music]

5689

06:02:14,868 --> 06:02:10,310

so

5690

06:03:17,110 --> 06:02:14,878

[Music]

5691

06:03:20,868 --> 06:03:19,270

hi welcome back to student launch 2022

5692

06:03:22,470 --> 06:03:20,878

i'm kay anderson with northrop grumman

5693

06:03:23,910 --> 06:03:22,480

and i'm here with jill eskew also

5694

06:03:25,910 --> 06:03:23,920

northrop grumman and we were just

5695

06:03:27,190 --> 06:03:25,920

comparing notes to try to remember how

5696

06:03:29,350 --> 06:03:27,200

many years we've been coming out to this

5697

06:03:31,350 --> 06:03:29,360

event jill what year did you pin down i

5698

06:03:35,270 --> 06:03:31,360

think i started coming around out around

5699

06:03:36,628 --> 06:03:35,280

2012 2013 so it's been a few years just

5700

06:03:38,788 --> 06:03:36,638

a few and what what are some of your

5701  
06:03:41,110 --> 06:03:38,798  
more vivid memories over the years wow

5702  
06:03:43,510 --> 06:03:41,120  
we have had so much variable weather

5703  
06:03:46,150 --> 06:03:43,520  
we're in north alabama and so april and

5704  
06:03:48,628 --> 06:03:46,160  
north alabama can be freezing or it can

5705  
06:03:50,230 --> 06:03:48,638  
be sweltering and so we have been out

5706  
06:03:53,110 --> 06:03:50,240  
here i think the last time we were out

5707  
06:03:55,190 --> 06:03:53,120  
here it was just barely above freezing

5708  
06:03:57,430 --> 06:03:55,200  
so we were really cold we've been out

5709  
06:03:59,990 --> 06:03:57,440  
here when it was just a torrential

5710  
06:04:03,190 --> 06:04:00,000  
downpour beforehand and we had

5711  
06:04:05,670 --> 06:04:03,200  
inches of mud caked on our feet

5712  
06:04:08,230 --> 06:04:05,680  
today it has been incredibly windy so

5713  
06:04:10,310 --> 06:04:08,240

we're all very wind blown and we had an

5714

06:04:12,470 --> 06:04:10,320

event today as a result of the wind one

5715

06:04:15,030 --> 06:04:12,480

of the rockets came down and actually

5716

06:04:16,708 --> 06:04:15,040

smashed through a team van window so

5717

06:04:18,628 --> 06:04:16,718

that will be a memory for that team for

5718

06:04:20,150 --> 06:04:18,638

sure yes so

5719

06:04:21,670 --> 06:04:20,160

um you do a lot of stem outreach and i

5720

06:04:23,670 --> 06:04:21,680

know we really appreciate that your

5721

06:04:25,510 --> 06:04:23,680

efforts with students tell us about

5722

06:04:27,910 --> 06:04:25,520

northrop grumman's role and sponsorship

5723

06:04:30,230 --> 06:04:27,920

though with this event right so northrop

5724

06:04:33,510 --> 06:04:30,240

grumman has been sponsoring this event

5725

06:04:37,110 --> 06:04:33,520

since 2007. we became the premier

5726

06:04:40,230 --> 06:04:37,120

sponsor in 2008 but at that time we were

5727

06:04:41,990 --> 06:04:40,240

atk and then we became orbital atk and

5728

06:04:43,990 --> 06:04:42,000

then we became northrop grumman so it's

5729

06:04:45,590 --> 06:04:44,000

the same company but our name has

5730

06:04:47,990 --> 06:04:45,600

changed but we've been loving that

5731

06:04:49,990 --> 06:04:48,000

sponsorship and plan to keep doing it we

5732

06:04:51,430 --> 06:04:50,000

do it's our favorite event every year

5733

06:04:52,708 --> 06:04:51,440

and just glad to be in person this year

5734

06:04:55,510 --> 06:04:52,718

i think i've said that every time i've

5735

06:04:57,270 --> 06:04:55,520

talked um tell me a little bit about

5736

06:04:59,910 --> 06:04:57,280

why this kind of event is so important

5737

06:05:02,310 --> 06:04:59,920

for students i think this event is so

5738

06:05:05,030 --> 06:05:02,320

incredible because it mimics so much of

5739

06:05:08,390 --> 06:05:05,040

real life whenever you have a complex

5740

06:05:10,708 --> 06:05:08,400

program everything is hinged off

5741

06:05:12,470 --> 06:05:10,718

technical competence and this gives the

5742

06:05:14,948 --> 06:05:12,480

students a real

5743

06:05:16,470 --> 06:05:14,958

opportunity to use what they've learned

5744

06:05:18,230 --> 06:05:16,480

but the other thing you have to have is

5745

06:05:19,830 --> 06:05:18,240

good communication

5746

06:05:21,750 --> 06:05:19,840

if you're the smartest engineer in the

5747

06:05:22,788 --> 06:05:21,760

entire world and you can't share what

5748

06:05:27,190 --> 06:05:22,798

you know

5749

06:05:29,750 --> 06:05:27,200

then here they have to go through the

5750

06:05:32,390 --> 06:05:29,760

same reviews that we go through with our

5751  
06:05:34,548 --> 06:05:32,400  
big sls rocket so they go through a

5752  
06:05:37,430 --> 06:05:34,558  
preliminary design review a critical

5753  
06:05:39,830 --> 06:05:37,440  
design review a flight readiness review

5754  
06:05:42,230 --> 06:05:39,840  
and what that tells them and how that

5755  
06:05:44,230 --> 06:05:42,240  
mimics what we do is we have to tell our

5756  
06:05:45,990 --> 06:05:44,240  
customer that what we're giving them

5757  
06:05:47,830 --> 06:05:46,000  
meets the technical requirements for

5758  
06:05:49,590 --> 06:05:47,840  
what they're asking for and meets the

5759  
06:05:52,070 --> 06:05:49,600  
safety requirements so that

5760  
06:05:55,590 --> 06:05:52,080  
communication is really important i

5761  
06:05:57,990 --> 06:05:55,600  
think the third thing is teamwork

5762  
06:06:01,110 --> 06:05:58,000  
teamwork has to be

5763  
06:06:03,590 --> 06:06:01,120

excellent to do anything complex

5764

06:06:05,270 --> 06:06:03,600

we have component teams we have

5765

06:06:08,230 --> 06:06:05,280

component teams that have to integrate

5766

06:06:09,750 --> 06:06:08,240

together to make the sls rocket and then

5767

06:06:11,670 --> 06:06:09,760

you have to have

5768

06:06:14,310 --> 06:06:11,680

even various companies integrate

5769

06:06:16,628 --> 06:06:14,320

together to make that whole sls vehicle

5770

06:06:18,708 --> 06:06:16,638

and these students get to

5771

06:06:21,190 --> 06:06:18,718

experience the same thing because on

5772

06:06:23,510 --> 06:06:21,200

launch day you either all fail together

5773

06:06:25,510 --> 06:06:23,520

or you all launch successfully together

5774

06:06:27,670 --> 06:06:25,520

and so that's what teamwork's about it's

5775

06:06:28,868 --> 06:06:27,680

really helping each other out

5776

06:06:30,868 --> 06:06:28,878

that's awesome thank you for that

5777

06:06:32,310 --> 06:06:30,878

perspective you mentioned just a little

5778

06:06:33,990 --> 06:06:32,320

bit ago that northrop grumman makes a

5779

06:06:35,670 --> 06:06:34,000

rocket motor that's really similar to

5780

06:06:37,270 --> 06:06:35,680

the rockets we're seeing today right so

5781

06:06:39,830 --> 06:06:37,280

northrop grumman makes a lot of solid

5782

06:06:41,350 --> 06:06:39,840

rocket motors in various sizes but

5783

06:06:43,590 --> 06:06:41,360

somebody had mentioned well do you make

5784

06:06:45,750 --> 06:06:43,600

any this size and we do have several

5785

06:06:47,590 --> 06:06:45,760

motors in the tactical area that may be

5786

06:06:49,830 --> 06:06:47,600

around this size but one of the more

5787

06:06:52,708 --> 06:06:49,840

interesting motors we're working on is

5788

06:06:55,430 --> 06:06:52,718

the mars ascent vehicle and that vehicle

5789

06:06:57,030 --> 06:06:55,440

will be what um return samples from mars

5790

06:06:59,510 --> 06:06:57,040

and it will be the first rocket to

5791

06:07:01,350 --> 06:06:59,520

launch off of another planet so that's

5792

06:07:03,110 --> 06:07:01,360

kind of exciting that's crazy and that's

5793

06:07:04,390 --> 06:07:03,120

really super interesting yeah and so

5794

06:07:06,230 --> 06:07:04,400

thank you jill for sharing your

5795

06:07:07,830 --> 06:07:06,240

perspective thank you

5796

06:07:13,320 --> 06:07:07,840

we'll talk to you later all right thank

5797

06:08:19,590 --> 06:07:40,520

[Music]

5798

06:08:19,600 --> 06:08:26,540

so

5799

06:08:26,550 --> 06:09:09,590

[Music]

5800

06:09:12,788 --> 06:09:10,708

so we're here with izzy you guys are

5801  
06:09:14,390 --> 06:09:12,798  
from yam hill high and that's in oregon

5802  
06:09:15,910 --> 06:09:14,400  
right yes yamaha carlton high school

5803  
06:09:18,070 --> 06:09:15,920  
cool and this is i'm going to call it

5804  
06:09:20,390 --> 06:09:18,080  
the young frankenstein rocket because

5805  
06:09:22,150 --> 06:09:20,400  
it's it had a brain inside it uh not a

5806  
06:09:24,708 --> 06:09:22,160  
real brain though right is that right no

5807  
06:09:26,788 --> 06:09:24,718  
it is a kind of like ballistics gel it's

5808  
06:09:28,150 --> 06:09:26,798  
gelatin and agarose so what were you

5809  
06:09:30,788 --> 06:09:28,160  
doing with that other than launching it

5810  
06:09:34,310 --> 06:09:30,798  
into the air so we're concussion testing

5811  
06:09:36,470 --> 06:09:34,320  
in rocket flight because as passengers

5812  
06:09:39,270 --> 06:09:36,480  
are starting to be in rockets more often

5813  
06:09:40,948 --> 06:09:39,280

doing these tests can help be helpful so

5814

06:09:42,948 --> 06:09:40,958

we decided that we were going to put

5815

06:09:44,628 --> 06:09:42,958

three axis accelerometers inside of

5816

06:09:47,270 --> 06:09:44,638

ballistics a ballistics gel like

5817

06:09:49,830 --> 06:09:47,280

material and test to see what the

5818

06:09:51,590 --> 06:09:49,840

likelihood for traumatic brain injury

5819

06:09:52,948 --> 06:09:51,600

and

5820

06:09:55,990 --> 06:09:52,958

di de

5821

06:09:57,750 --> 06:09:56,000

actional injury i forget how to say it

5822

06:10:00,470 --> 06:09:57,760

but um two different types of energies

5823

06:10:02,708 --> 06:10:00,480

so one's more of compression that's the

5824

06:10:05,030 --> 06:10:02,718

one inside the brain so we're going to

5825

06:10:07,110 --> 06:10:05,040

put in vectors and ton of mathematical

5826  
06:10:09,270 --> 06:10:07,120  
stuff to figure out how much that brain

5827  
06:10:11,190 --> 06:10:09,280  
compressed and if it's in with within a

5828  
06:10:12,310 --> 06:10:11,200  
certain amount then that causes a

5829  
06:10:15,190 --> 06:10:12,320  
concussion

5830  
06:10:16,708 --> 06:10:15,200  
and we're also putting a sensor on our

5831  
06:10:18,628 --> 06:10:16,718  
um

5832  
06:10:20,708 --> 06:10:18,638  
3d printed canister that is holding the

5833  
06:10:22,868 --> 06:10:20,718  
brain and that's testing for a traumatic

5834  
06:10:24,708 --> 06:10:22,878  
brain injury so that one's just flat

5835  
06:10:27,110 --> 06:10:24,718  
numbers and we're using similar

5836  
06:10:29,670 --> 06:10:27,120  
mathematics that they use when they're

5837  
06:10:31,830 --> 06:10:29,680  
testing concussion risk in cars oh cool

5838  
06:10:33,830 --> 06:10:31,840

okay awesome and so did that affect the

5839

06:10:35,190 --> 06:10:33,840

way that you i mean did that affect like

5840

06:10:36,948 --> 06:10:35,200

your launch velocities any of that kind

5841

06:10:38,150 --> 06:10:36,958

of stuff did you i mean there's several

5842

06:10:39,910 --> 06:10:38,160

other rockets that we talked that we saw

5843

06:10:41,670 --> 06:10:39,920

that were like launched that really they

5844

06:10:43,350 --> 06:10:41,680

really took off did you guys slide down

5845

06:10:45,910 --> 06:10:43,360

any or were you did you take that

5846

06:10:48,788 --> 06:10:45,920

into consideration yeah so we used the

5847

06:10:51,510 --> 06:10:48,798

k480 motor and that has a very low

5848

06:10:53,430 --> 06:10:51,520

thrust to try to simulate as close to

5849

06:10:56,390 --> 06:10:53,440

actual rocket flight as possible uh

5850

06:10:57,510 --> 06:10:56,400

human marketplace yeah yeah all right so

5851

06:10:59,430 --> 06:10:57,520

do you guys have any any sponsors

5852

06:11:02,628 --> 06:10:59,440

anybody you guys want to thank um so

5853

06:11:07,510 --> 06:11:04,948

big thank you to them

5854

06:11:09,190 --> 06:11:07,520

breaking bad science a podcast a big

5855

06:11:15,430 --> 06:11:09,200

thank you to them we actually have an

5856

06:11:21,590 --> 06:11:19,750

so painting is kylie's dad he helped us

5857

06:11:23,910 --> 06:11:21,600

out major

5858

06:11:26,708 --> 06:11:23,920

yeah yeah so kylie also helped out with

5859

06:11:27,350 --> 06:11:26,718

that and everybody on the team really

5860

06:11:28,390 --> 06:11:27,360

if

5861

06:11:30,310 --> 06:11:28,400

you can't see that from home it's a

5862

06:11:32,230 --> 06:11:30,320

really gorgeous paint job it really is

5863

06:11:35,670 --> 06:11:32,240

yeah um all right everybody wave with

5864

06:11:37,830 --> 06:11:35,680

camera wave back home say hi mom

5865

06:11:39,430 --> 06:11:37,840

cool awesome thank you guys

5866

06:11:40,868 --> 06:11:39,440

is this your guys first time here you've

5867

06:11:42,150 --> 06:11:40,878

been here before so it's your first time

5868

06:11:43,910 --> 06:11:42,160

glad to see you here hopefully hopefully

5869

06:11:52,500 --> 06:11:43,920

we'll see you again here next year

5870

06:11:52,510 --> 06:12:00,150

[Music]

5871

06:12:12,070 --> 06:12:02,550

hmm

5872

06:13:23,620 --> 06:12:12,080

[Music]

5873

06:13:29,820 --> 06:13:23,630

uh

5874

06:13:29,830 --> 06:13:46,628

[Music]

5875

06:13:50,548 --> 06:13:49,670

hey guys it's tracy again here i have

5876

06:13:53,030 --> 06:13:50,558

two

5877

06:13:55,590 --> 06:13:53,040

amazing young ladies that are working

5878

06:13:58,470 --> 06:13:55,600

here at nasa i have a student who is

5879

06:14:00,788 --> 06:13:58,480

currently an intern and someone who has

5880

06:14:03,110 --> 06:14:00,798

interned with nasa previously so ladies

5881

06:14:05,190 --> 06:14:03,120

introduce yourselves and tell us about

5882

06:14:07,430 --> 06:14:05,200

your internship experiences

5883

06:14:09,190 --> 06:14:07,440

hi i'm melissa lee i work at nasa's

5884

06:14:12,390 --> 06:14:09,200

marshall space flight center now i am

5885

06:14:15,110 --> 06:14:12,400

the sls social media lead and i have

5886

06:14:16,788 --> 06:14:15,120

been interning since 2017 and just now

5887

06:14:19,750 --> 06:14:16,798

got a full-time position this year at

5888

06:14:21,990 --> 06:14:19,760

2022 so congratulations thank you it's

5889

06:14:23,670 --> 06:14:22,000

been an amazing experience i think my

5890

06:14:26,150 --> 06:14:23,680

internships truly did lead to my

5891

06:14:27,430 --> 06:14:26,160

full-time job here so it's been a great

5892

06:14:30,230 --> 06:14:27,440

great

5893

06:14:33,110 --> 06:14:30,240

experience overall awesome yeah i'm bree

5894

06:14:34,868 --> 06:14:33,120

sims i'm a communications intern here at

5895

06:14:37,110 --> 06:14:34,878

marshall this spring

5896

06:14:38,868 --> 06:14:37,120

and it's been a lot of fun but this has

5897

06:14:40,788 --> 06:14:38,878

definitely been the highlight of my

5898

06:14:42,390 --> 06:14:40,798

internship getting to come and see

5899

06:14:44,548 --> 06:14:42,400

everyone in person

5900

06:14:48,390 --> 06:14:44,558

and see everything happening has been a

5901  
06:14:50,708 --> 06:14:48,400  
lot of fun that's awesome so ladies you

5902  
06:14:52,310 --> 06:14:50,718  
know this is this is very good i'm glad

5903  
06:14:54,948 --> 06:14:52,320  
that we're talking

5904  
06:14:57,270 --> 06:14:54,958  
nasa is a technical organization right

5905  
06:14:59,990 --> 06:14:57,280  
we're here at this student launch

5906  
06:15:02,390 --> 06:15:00,000  
a lot of people think that if you want

5907  
06:15:05,670 --> 06:15:02,400  
to work for nasa you have to be a

5908  
06:15:08,310 --> 06:15:05,680  
scientist or an engineer tell me about

5909  
06:15:10,868 --> 06:15:08,320  
your educational backgrounds and what

5910  
06:15:13,270 --> 06:15:10,878  
exactly you did in your internships in

5911  
06:15:15,270 --> 06:15:13,280  
that area absolutely well i have a

5912  
06:15:16,548 --> 06:15:15,280  
bachelor's in public relations and i

5913  
06:15:17,990 --> 06:15:16,558

have a master's in strategic

5914

06:15:21,270 --> 06:15:18,000

communication so i'm in the

5915

06:15:22,868 --> 06:15:21,280

communications realm at nasa and

5916

06:15:24,548 --> 06:15:22,878

communications is so important here at

5917

06:15:26,310 --> 06:15:24,558

nasa we have various science and

5918

06:15:28,628 --> 06:15:26,320

technical things that we have to relay

5919

06:15:30,150 --> 06:15:28,638

to the public so being able to have a

5920

06:15:30,868 --> 06:15:30,160

communication background and being able

5921

06:15:33,990 --> 06:15:30,878

to

5922

06:15:36,070 --> 06:15:34,000

relay that science information out in an

5923

06:15:39,510 --> 06:15:36,080

understandable way it's it's so

5924

06:15:42,230 --> 06:15:39,520

important you know and so in my area

5925

06:15:43,830 --> 06:15:42,240

we've done everything from graphics to

5926

06:15:46,230 --> 06:15:43,840

photo to

5927

06:15:47,350 --> 06:15:46,240

just social media tweeting out stuff so

5928

06:15:50,070 --> 06:15:47,360

it's very important to have

5929

06:15:52,230 --> 06:15:50,080

communications and and arts and so many

5930

06:15:54,868 --> 06:15:52,240

other fields other than just stem fields

5931

06:15:58,150 --> 06:15:54,878

yes yeah so i just finished my junior

5932

06:15:59,750 --> 06:15:58,160

year at uah and marketing

5933

06:16:01,670 --> 06:15:59,760

and i've been working with

5934

06:16:04,230 --> 06:16:01,680

student launch and herc with their

5935

06:16:05,750 --> 06:16:04,240

different social media channels and i

5936

06:16:07,750 --> 06:16:05,760

just think it's super important that

5937

06:16:09,990 --> 06:16:07,760

people know that

5938

06:16:12,548 --> 06:16:10,000

you know stem or nasa is not all just

5939

06:16:15,510 --> 06:16:12,558

about stem people in communications and

5940

06:16:18,150 --> 06:16:15,520

marketing they have a place here at nasa

5941

06:16:20,310 --> 06:16:18,160

and if you want an internship and an

5942

06:16:22,948 --> 06:16:20,320

opportunity like apply there's there's

5943

06:16:25,030 --> 06:16:22,958

places for you here at nasa and i think

5944

06:16:27,110 --> 06:16:25,040

we're proof of that

5945

06:16:30,150 --> 06:16:27,120

you guys are you ladies are absolutely

5946

06:16:31,590 --> 06:16:30,160

proof of that last question for you all

5947

06:16:34,868 --> 06:16:31,600

uh if you

5948

06:16:36,868 --> 06:16:34,878

had to give one piece of advice

5949

06:16:38,708 --> 06:16:36,878

to people listening

5950

06:16:41,670 --> 06:16:38,718

that say you know what

5951

06:16:45,110 --> 06:16:41,680

i think i might want to be an intern at

5952

06:16:46,868 --> 06:16:45,120

nasa what advice would you give them

5953

06:16:49,350 --> 06:16:46,878

i would say just don't give up on that

5954

06:16:50,868 --> 06:16:49,360

dream i mean the whole reason that i

5955

06:16:52,070 --> 06:16:50,878

even thought about an internship at nasa

5956

06:16:55,030 --> 06:16:52,080

was because i watched the movie hidden

5957

06:16:56,948 --> 06:16:55,040

figures and that movie inspired me to

5958

06:16:59,350 --> 06:16:56,958

apply and i never thought in a million

5959

06:17:01,670 --> 06:16:59,360

years that i would get accepted and i

5960

06:17:03,510 --> 06:17:01,680

sure did i got a call and got accepted

5961

06:17:05,430 --> 06:17:03,520

came here and it was a dream come true

5962

06:17:06,788 --> 06:17:05,440

so i think it's just don't give up you

5963

06:17:08,548 --> 06:17:06,798

may think there's no way they would

5964

06:17:10,788 --> 06:17:08,558

accept me well you're wrong there's so

5965

06:17:12,470 --> 06:17:10,798

many people here at nasa from so many

5966

06:17:13,670 --> 06:17:12,480

different backgrounds and fields so just

5967

06:17:15,750 --> 06:17:13,680

keep trying

5968

06:17:16,948 --> 06:17:15,760

yeah i would say like i said

5969

06:17:19,510 --> 06:17:16,958

just apply

5970

06:17:22,230 --> 06:17:19,520

you know network yourself and meet

5971

06:17:23,350 --> 06:17:22,240

people in the community and apply

5972

06:17:24,948 --> 06:17:23,360

because you never know what's going to

5973

06:17:26,868 --> 06:17:24,958

happen

5974

06:17:29,070 --> 06:17:26,878

absolutely ladies thank you so much for

5975

06:17:31,510 --> 06:17:29,080

your time i really do appreciate it

5976

06:17:34,948 --> 06:17:31,520

congratulations on being offered an

5977

06:17:37,430 --> 06:17:34,958

internship for nasa and congratulations

5978

06:17:40,390 --> 06:17:37,440

again on the great work that you've done

5979

06:17:42,548 --> 06:17:40,400

so to all my young people out there

5980

06:17:44,548 --> 06:17:42,558

who are aspiring to

5981

06:17:48,070 --> 06:17:44,558

work for nasa

5982

06:17:50,310 --> 06:17:48,080

visit [intern.nasa.gov](http://intern.nasa.gov)

5983

06:17:53,110 --> 06:17:50,320

if you are interested in applying for

5984

06:17:55,670 --> 06:17:53,120

internship opportunities there are

5985

06:17:57,910 --> 06:17:55,680

multiple sessions for internship

5986

06:18:00,310 --> 06:17:57,920

opportunities there are sessions in the

5987

06:18:03,110 --> 06:18:00,320

spring summer and fall

5988

06:18:07,270 --> 06:18:03,120

and so if you're interested once again

5989

06:18:12,788 --> 06:18:09,750

to apply for opportunities across the

5990

06:18:15,510 --> 06:18:12,798

united states we have multiple nasa

5991

06:18:16,390 --> 06:18:15,520

centers and i think that you told me

5992

06:18:18,948 --> 06:18:16,400

earlier

5993

06:18:21,670 --> 06:18:18,958

you actually have experience at marshall

5994

06:18:23,590 --> 06:18:21,680

now and previously at armstrong right

5995

06:18:25,510 --> 06:18:23,600

yes i do and i've actually visited seven

5996

06:18:27,990 --> 06:18:25,520

different centers so that's awesome they

5997

06:18:29,910 --> 06:18:28,000

all have such a wide area like to cover

5998

06:18:31,830 --> 06:18:29,920

so each center has their own specialty

5999

06:18:34,230 --> 06:18:31,840

it's really great that's great

6000

06:18:36,708 --> 06:18:34,240

so again if you're interested in working

6001  
06:18:38,470 --> 06:18:36,718  
for nasa you can absolutely visit

6002  
06:18:40,468 --> 06:18:38,480  
intern.nasa.gov

6003  
06:18:42,788 --> 06:18:40,478  
to have similar experiences to the

6004  
06:18:45,750 --> 06:18:42,798  
ladies that i've talked to here we also

6005  
06:18:48,788 --> 06:18:45,760  
have the pathways internships program

6006  
06:18:51,350 --> 06:18:48,798  
you would visit usajobs.gov

6007  
06:18:54,230 --> 06:18:51,360  
to apply for those opportunities

6008  
06:18:56,310 --> 06:18:54,240  
thank you ladies again so much i'm so

6009  
06:18:58,948 --> 06:18:56,320  
happy to have you all here and

6010  
06:19:00,390 --> 06:18:58,958  
participating in the internships program

6011  
06:19:03,590 --> 06:19:00,400  
and developing your skills and

6012  
06:19:16,930 --> 06:19:03,600  
experiences for the future of nasa

6013  
06:21:25,350 --> 06:19:25,940

[Music]

6014

06:21:59,350 --> 06:21:26,430

so

6015

06:29:07,040 --> 06:22:47,980

[Music]

6016

06:29:09,430 --> 06:29:08,230

[Applause]

6017

06:29:15,670 --> 06:29:09,440

so

6018

06:29:30,780 --> 06:29:15,680

[Applause]

6019

06:30:15,870 --> 06:29:33,900

[Music]

6020

06:30:28,660 --> 06:30:15,880

[Applause]

6021

06:30:31,480 --> 06:30:28,670

[Music]

6022

06:30:46,840 --> 06:30:31,490

[Applause]

6023

06:30:46,850 --> 06:30:50,730

[Music]

6024

06:30:50,740 --> 06:30:56,690

[Applause]

6025

06:31:58,860 --> 06:30:58,400

[Music]

6026  
06:32:19,000 --> 06:32:07,530  
[Applause]

6027  
06:39:53,190 --> 06:32:34,350  
[Music]

6028  
06:40:01,910 --> 06:39:55,540  
hmm

6029  
06:40:03,400 --> 06:40:01,920  
[Music]

6030  
06:40:17,370 --> 06:40:03,410  
um

6031  
06:41:27,630 --> 06:40:44,280  
[Music]

6032  
06:41:43,360 --> 06:41:27,640  
so

6033  
06:42:16,390 --> 06:41:51,290  
[Music]

6034  
06:42:20,788 --> 06:42:18,390  
all right so we're back again here at uh

6035  
06:42:22,310 --> 06:42:20,798  
at uh student launch to uh 2022 and

6036  
06:42:23,510 --> 06:42:22,320  
we're with portland rocketry and i want

6037  
06:42:25,350 --> 06:42:23,520  
to let you guys introduce yourselves

6038  
06:42:27,510 --> 06:42:25,360

just right here hi my name is david

6039

06:42:29,030 --> 06:42:27,520

singh and i'm a co-captain on this team

6040

06:42:30,548 --> 06:42:29,040

and uh i'm matthew and i'm also the

6041

06:42:31,670 --> 06:42:30,558

co-captain of this team and so you guys

6042

06:42:34,070 --> 06:42:31,680

already launched right you launched in

6043

06:42:36,390 --> 06:42:34,080

the last volley yep how'd it go it went

6044

06:42:37,910 --> 06:42:36,400

really well we um there's a few things

6045

06:42:40,150 --> 06:42:37,920

that we can learn from our parachute

6046

06:42:41,670 --> 06:42:40,160

didn't deploy all the way which uh we

6047

06:42:44,230 --> 06:42:41,680

analyzed why that happened and that's a

6048

06:42:45,830 --> 06:42:44,240

great learning experience for us but um

6049

06:42:48,070 --> 06:42:45,840

other than that it was a great flight

6050

06:42:50,230 --> 06:42:48,080

and went straight up and it was just as

6051  
06:42:51,270 --> 06:42:50,240  
we expected good awesome and what was

6052  
06:42:53,590 --> 06:42:51,280  
your payload

6053  
06:42:56,708 --> 06:42:53,600  
uh our payload was just uh tracking the

6054  
06:42:58,868 --> 06:42:56,718  
location of the rocket using a gps uh so

6055  
06:43:00,070 --> 06:42:58,878  
yeah and uh what was your what was the

6056  
06:43:02,390 --> 06:43:00,080  
was the altitude you guys were shooting

6057  
06:43:05,830 --> 06:43:02,400  
for uh we were shooting for 5000 feet

6058  
06:43:07,910 --> 06:43:05,840  
and it only went 4 500 feet which um we

6059  
06:43:10,070 --> 06:43:07,920  
think that we could figure out why that

6060  
06:43:11,510 --> 06:43:10,080  
happened later at home using simulations

6061  
06:43:13,030 --> 06:43:11,520  
and using other data that we gathered

6062  
06:43:15,190 --> 06:43:13,040  
today so you guys would gather a lot of

6063  
06:43:16,070 --> 06:43:15,200

data then awesome yeah good deal is

6064

06:43:17,590 --> 06:43:16,080

there anybody you guys want to thank

6065

06:43:19,590 --> 06:43:17,600

from back home or any sponsors or

6066

06:43:21,510 --> 06:43:19,600

anything uh we want to thank our parents

6067

06:43:23,030 --> 06:43:21,520

for making the trip out here sponsoring

6068

06:43:25,910 --> 06:43:23,040

us and helping us out with everything

6069

06:43:28,628 --> 06:43:25,920

i'm gonna thank our coach john um i'm

6070

06:43:30,150 --> 06:43:28,638

not sure exactly where he is um but he

6071

06:43:32,708 --> 06:43:30,160

helped us a lot this year this was our

6072

06:43:34,708 --> 06:43:32,718

first shooting um student launch so he

6073

06:43:36,468 --> 06:43:34,718

helped us a lot with the building and

6074

06:43:38,390 --> 06:43:36,478

with the buying and basically with

6075

06:43:40,468 --> 06:43:38,400

almost every part of our rocket and then

6076  
06:43:42,548 --> 06:43:40,478  
we also want to thank our mentor george

6077  
06:43:44,070 --> 06:43:42,558  
for spending a lot of times uh he drove

6078  
06:43:47,270 --> 06:43:44,080  
out two or three hours to go to launch

6079  
06:43:49,030 --> 06:43:47,280  
fields with us and he um helped us out a

6080  
06:43:50,708 --> 06:43:49,040  
lot throughout the journey excellent

6081  
06:43:52,468 --> 06:43:50,718  
well you guys be back next year

6082  
06:43:54,230 --> 06:43:52,478  
uh that's our hope

6083  
06:44:04,500 --> 06:43:54,240  
yeah that's our goal

6084  
06:44:04,510 --> 06:44:11,270  
[Music]

6085  
06:44:23,270 --> 06:44:13,670  
oh we got the we got the fans here too

6086  
06:44:27,910 --> 06:44:25,750  
okay the booster part is just about to

6087  
06:44:29,030 --> 06:44:27,920  
touch down

6088  
06:45:10,910 --> 06:44:29,040

and

6089

06:45:28,390 --> 06:45:12,788

[Music]

6090

06:45:28,400 --> 06:46:03,080

do

6091

06:46:08,710 --> 06:46:06,230

[Music]

6092

06:46:28,070 --> 06:46:08,720

so

6093

06:46:30,580 --> 06:46:28,080

have folded it in two small pieces in my

6094

06:46:33,590 --> 06:46:30,590

pocket so with north carolina

6095

06:46:35,830 --> 06:46:33,600

[Music]

6096

06:46:38,468 --> 06:46:35,840

yes so that was

6097

06:46:40,390 --> 06:46:38,478

yes they had the water ground station

6098

06:46:43,270 --> 06:46:40,400

oh the thing that i found interesting

6099

06:46:45,430 --> 06:46:43,280

about tacos lycos that does translate to

6100

06:46:47,270 --> 06:46:45,440

speedy wolf

6101  
06:46:49,830 --> 06:46:47,280  
and you should ask the team about the

6102  
06:46:51,030 --> 06:46:49,840  
screwdriver in their body tube so that's

6103  
06:46:52,948 --> 06:46:51,040  
uh

6104  
06:46:54,230 --> 06:46:52,958  
that was interesting

6105  
06:46:56,230 --> 06:46:54,240  
make sure they gotta check for their

6106  
06:46:58,070 --> 06:46:56,240  
tools

6107  
06:46:59,510 --> 06:46:58,080  
and i've seen a lot in my lifetime but

6108  
06:47:01,350 --> 06:46:59,520  
i've never seen the size of a

6109  
06:47:02,788 --> 06:47:01,360  
screwdriver one of the team members is

6110  
06:47:04,548 --> 06:47:02,798  
carrying it's like a three foot long

6111  
06:47:05,990 --> 06:47:04,558  
screwdriver

6112  
06:47:07,350 --> 06:47:06,000  
the other

6113  
06:47:08,708 --> 06:47:07,360

note about the

6114

06:47:10,468 --> 06:47:08,718

about the group

6115

06:47:11,990 --> 06:47:10,478

they have something called joseph's

6116

06:47:13,270 --> 06:47:12,000

mallet so i guess when something just

6117

06:47:15,510 --> 06:47:13,280

doesn't go their way in terms of

6118

06:47:19,110 --> 06:47:15,520

building the rocket

6119

06:47:21,990 --> 06:47:19,120

just grab joseph's mallet

6120

06:47:25,590 --> 06:47:22,000

there we go folks

6121

06:47:27,350 --> 06:47:25,600

just one more rocket so it looks like

6122

06:47:29,190 --> 06:47:27,360

the university of

6123

06:47:31,110 --> 06:47:29,200

tennessee chattanooga has already got

6124

06:47:32,948 --> 06:47:31,120

the rocket on the pad it's got it

6125

06:47:35,030 --> 06:47:32,958

pointed up right now

6126  
06:47:37,110 --> 06:47:35,040  
going through all of their

6127  
06:47:38,708 --> 06:47:37,120  
payload safety checks and making sure

6128  
06:47:53,480 --> 06:47:38,718  
that's all good but it looks like it's

6129  
06:48:12,788 --> 06:48:02,340  
[Music]

6130  
06:48:12,798 --> 06:48:17,990  
so

6131  
06:48:33,780 --> 06:48:31,510  
[Music]

6132  
06:48:59,980 --> 06:48:33,790  
do

6133  
06:49:30,150 --> 06:49:10,690  
[Music]

6134  
06:49:30,160 --> 06:49:40,260  
oh

6135  
06:50:28,468 --> 06:49:50,370  
[Music]

6136  
06:50:28,478 --> 06:50:31,660  
time

6137  
06:51:26,400 --> 06:51:00,690  
[Music]

6138  
06:51:35,290 --> 06:51:26,410

hey

6139

06:51:35,300 --> 06:51:42,868

[Music]

6140

06:52:03,230 --> 06:51:45,340

hmm

6141

06:52:33,270 --> 06:52:04,548

[Music]

6142

06:52:33,280 --> 06:52:43,000

uh

6143

06:53:06,410 --> 06:52:59,210

[Music]

6144

06:53:12,630 --> 06:53:06,420

two

6145

06:54:42,390 --> 06:53:55,850

[Music]

6146

06:54:48,070 --> 06:54:45,910

of the 2022 sli new sli

6147

06:54:49,910 --> 06:54:48,080

rocket competition

6148

06:54:52,788 --> 06:54:49,920

this is like exciting time so this is

6149

06:54:55,510 --> 06:54:52,798

our last rocket the team name is rocket

6150

06:54:57,750 --> 06:54:55,520

mox from the university of tennessee

6151  
06:55:00,070 --> 06:54:57,760  
chattanooga tennessee

6152  
06:55:01,468 --> 06:55:00,080  
the name of this rocket is wiley e

6153  
06:55:05,628 --> 06:55:01,478  
rocket it's a

6154  
06:55:08,628 --> 06:55:05,638  
48.9 pound rocket not quite 49

6155  
06:55:11,190 --> 06:55:08,638  
7.68 inch diameter ten and three

6156  
06:55:12,390 --> 06:55:11,200  
quarters feet tall this is flying onto

6157  
06:55:14,868 --> 06:55:12,400  
cicerone

6158  
06:55:17,590 --> 06:55:14,878  
l eleven fifteen

6159  
06:55:19,270 --> 06:55:17,600  
this rocket does have a feather really

6160  
06:55:22,788 --> 06:55:19,280  
oh

6161  
06:55:25,510 --> 06:55:22,798  
feature matching using sift algorithm

6162  
06:55:31,190 --> 06:55:28,468  
burke force calculations

6163  
06:55:32,868 --> 06:55:31,200

whatever that means so this rocket has

6164

06:55:35,030 --> 06:55:32,878

had and with the team they've been

6165

06:55:36,708 --> 06:55:35,040

working all night the past three nights

6166

06:55:38,310 --> 06:55:36,718

on getting this rocket

6167

06:55:40,230 --> 06:55:38,320

prepared to fly

6168

06:55:42,548 --> 06:55:40,240

and i did like the name the wily e

6169

06:55:44,150 --> 06:55:42,558

rocket hence the dynamite stickers on

6170

06:55:46,628 --> 06:55:44,160

there that's uh

6171

06:55:48,948 --> 06:55:46,638

the roadrunner and the coyote if uh if

6172

06:55:51,430 --> 06:55:48,958

anyone knows what that's referring to

6173

06:55:53,350 --> 06:55:51,440

blue rocket with the yellow section in

6174

06:55:55,430 --> 06:55:53,360

black nose cone and

6175

06:55:57,830 --> 06:55:55,440

tommy tommy's actually going to push the

6176  
06:55:59,510 --> 06:55:57,840  
button he does have the hard hat on for

6177  
06:56:02,230 --> 06:55:59,520  
extra insurance i think that's a smart

6178  
06:56:04,548 --> 06:56:02,240  
move tommy we have thumbs up for clear

6179  
06:56:05,830 --> 06:56:04,558  
skies we have a clear range and looks

6180  
06:56:08,230 --> 06:56:05,840  
like everyone's standing they're all

6181  
06:56:10,948 --> 06:56:08,240  
excited to watch this rocket go

6182  
06:56:12,708 --> 06:56:10,958  
we are gonna launch this rocket in five

6183  
06:56:13,510 --> 06:56:12,718  
four three

6184  
06:56:17,430 --> 06:56:13,520  
two

6185  
06:56:17,440 --> 06:56:31,910  
there it ignition

6186  
06:56:36,310 --> 06:56:34,468  
supposed to go 4 800 feet starting to

6187  
06:56:40,390 --> 06:56:36,320  
arc over

6188  
06:56:45,510 --> 06:56:43,430

we have two different sections is that

6189

06:56:47,270 --> 06:56:45,520

supposed to be

6190

06:56:49,030 --> 06:56:47,280

oh they are connected

6191

06:56:52,070 --> 06:56:49,040

we have a drug parachute out that's

6192

06:56:56,070 --> 06:56:52,080

looking good all right

6193

06:56:56,080 --> 06:57:00,070

okay there we go

6194

06:57:06,468 --> 06:57:03,270

the main on this one is set for 800 feet

6195

06:57:10,070 --> 06:57:06,478

does have a tele gps and

6196

06:57:12,830 --> 06:57:10,080

an adafruit rf max

6197

06:57:15,510 --> 06:57:12,840

so we're probably about that 1500 foot

6198

06:57:17,910 --> 06:57:15,520

mark coming up on a thousand feet so

6199

06:57:19,670 --> 06:57:17,920

here pretty soon we should be at 800

6200

06:57:21,270 --> 06:57:19,680

feet right

6201  
06:57:22,230 --> 06:57:21,280  
about

6202  
06:57:23,910 --> 06:57:22,240  
now

6203  
06:57:25,190 --> 06:57:23,920  
there it is

6204  
06:57:28,628 --> 06:57:25,200  
all right

6205  
06:57:31,750 --> 06:57:28,638  
that is a nice way to finish the 2022

6206  
06:57:34,468 --> 06:57:31,760  
sli and usli competition

6207  
06:57:36,948 --> 06:57:34,478  
here at the bragg farm so nice work team

6208  
06:57:38,868 --> 06:57:36,958  
nice work competitors it was fun and

6209  
06:57:41,350 --> 06:57:38,878  
exciting to see all the cool projects

6210  
06:57:43,110 --> 06:57:41,360  
that you had and able to turn those

6211  
06:57:45,110 --> 06:57:43,120  
scores in

6212  
06:57:47,590 --> 06:57:45,120  
really exciting stuff to see so

6213  
06:57:50,310 --> 06:57:47,600

hopefully you are further inspired

6214

06:57:52,310 --> 06:57:50,320

to do more with rocketry

6215

06:57:54,070 --> 06:57:52,320

and with the rocket as it touches down

6216

06:58:00,468 --> 06:57:54,080

it looks like we conclude the event so

6217

06:58:04,788 --> 06:58:02,390

and that is a wrap for

6218

06:58:06,868 --> 06:58:04,798

a student launch here in north alabama

6219

06:58:08,548 --> 06:58:06,878

2022

6220

06:58:09,590 --> 06:58:08,558

that just leaves us to thank pretty much

6221

06:58:11,350 --> 06:58:09,600

everybody who's involved we want to

6222

06:58:13,350 --> 06:58:11,360

thank all the volunteers who are here to

6223

06:58:14,628 --> 06:58:13,360

uh to help us with all of this

6224

06:58:15,830 --> 06:58:14,638

we certainly want to thank all the

6225

06:58:17,030 --> 06:58:15,840

sponsors and i'm gonna that's why i have

6226  
06:58:18,468 --> 06:58:17,040  
this ipad with me right here i'm gonna

6227  
06:58:20,150 --> 06:58:18,478  
read those off right now

6228  
06:58:22,310 --> 06:58:20,160  
we want to thank the nasa office of stem

6229  
06:58:24,230 --> 06:58:22,320  
engagement next-gen stem we want to

6230  
06:58:26,548 --> 06:58:24,240  
thank nasa's space operations mission

6231  
06:58:27,990 --> 06:58:26,558  
directorate uh northrop grumman uh the

6232  
06:58:30,390 --> 06:58:28,000  
national uh national space club at

6233  
06:58:32,628 --> 06:58:30,400  
huntsville um the american institute of

6234  
06:58:35,350 --> 06:58:32,638  
aeronautics and astronautics national

6235  
06:58:37,110 --> 06:58:35,360  
association rocketry relativity space

6236  
06:58:40,070 --> 06:58:37,120  
bastion technology incorporated and

6237  
06:58:42,230 --> 06:58:40,080  
siemens digital industry software um

6238  
06:58:44,310 --> 06:58:42,240

just uh just another little word that

6239

06:58:46,468 --> 06:58:44,320

the there will be an award ceremony um

6240

06:58:48,548 --> 06:58:46,478

it will be in june uh and we look for

6241

06:58:49,830 --> 06:58:48,558

that online uh other than that that's a