



ARTEMIS

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ARTEMIS



1
00:00:02,370 --> 00:00:10,470

[Music]

2
00:00:14,150 --> 00:00:12,230

hi my name is matt beville and i'm the

3
00:00:15,270 --> 00:00:14,160

deputy chief engineer for the space

4
00:00:17,990 --> 00:00:15,280

launch system

5
00:00:19,510 --> 00:00:18,000

also known as sls and i want to thank

6
00:00:21,189 --> 00:00:19,520

you guys for participating in this

7
00:00:23,029 --> 00:00:21,199

year's student launch

8
00:00:25,589 --> 00:00:23,039

and congratulations on completing the

9
00:00:27,189 --> 00:00:25,599

program hey i know what it takes to do

10
00:00:30,070 --> 00:00:27,199

this type of work from

11
00:00:32,150 --> 00:00:30,080

writing proposals attending reviews

12
00:00:34,069 --> 00:00:32,160

building test hardware conducting the

13
00:00:35,510 --> 00:00:34,079

tests going over the data

14

00:00:38,150 --> 00:00:35,520

we've all done that and i really

15

00:00:39,670 --> 00:00:38,160

congratulate you on completing that

16

00:00:41,750 --> 00:00:39,680

and i know it takes a lot to be able to

17

00:00:43,990 --> 00:00:41,760

get a rocket to the launch pad

18

00:00:46,310 --> 00:00:44,000

speaking of launch pads we currently

19

00:00:48,549 --> 00:00:46,320

have all of the sls hardware at the

20

00:00:50,470 --> 00:00:48,559

kennedy space center preparing for

21

00:00:52,549 --> 00:00:50,480

its first launch and this is going to be

22

00:00:53,670 --> 00:00:52,559

a critical step in the future of human

23

00:00:55,590 --> 00:00:53,680

exploration

24

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

and that's where you guys come in we're

25

00:00:59,750 --> 00:00:58,000

going to need your skills and expertise

26

00:01:01,430 --> 00:00:59,760

to carry on this dream for the future

27

00:01:03,830 --> 00:01:01,440

and keep this program viable

28

00:01:04,950 --> 00:01:03,840

so to salute your success and your

29

00:01:07,270 --> 00:01:04,960

launches

30

00:01:09,670 --> 00:01:07,280

sls chief engineer john blevins and i

31

00:01:12,789 --> 00:01:09,680

are going to launch our own sls rocket

32

00:01:15,270 --> 00:01:12,799

john are you ready i sure am matt

33

00:01:16,070 --> 00:01:15,280

again congratulations to all of you for

34

00:01:18,469 --> 00:01:16,080

completing

35

00:01:20,149 --> 00:01:18,479

the student launch this year i'm sorry

36

00:01:20,789 --> 00:01:20,159

that we can't see all of the launches in

37

00:01:22,390 --> 00:01:20,799

person

38

00:01:24,630 --> 00:01:22,400

i sure wish we could and i look forward

39

00:01:27,190 --> 00:01:24,640

to it next year but until then

40

00:01:48,280 --> 00:01:27,200

and until the real sls flies let's light

41

00:02:00,950 --> 00:01:57,749

[Music]

42

00:02:04,550 --> 00:02:00,960

hi everyone i'm bill nelson

43

00:02:07,590 --> 00:02:04,560

the administrator of nasa welcome

44

00:02:10,630 --> 00:02:07,600

to the 2021 nasa student launch

45

00:02:14,390 --> 00:02:10,640

virtual awards ceremony

46

00:02:17,030 --> 00:02:14,400

it's programs like nasa's student launch

47

00:02:18,229 --> 00:02:17,040

these are part of nasa's greater stem

48

00:02:20,630 --> 00:02:18,239

effort

49

00:02:21,430 --> 00:02:20,640

and it prepares a new generation of

50

00:02:26,869 --> 00:02:21,440

scientists

51
00:02:28,869 --> 00:02:26,879
engineers astronauts and explorers

52
00:02:31,190 --> 00:02:28,879
i hope you're as proud of what you've

53
00:02:34,550 --> 00:02:31,200
accomplished and learned

54
00:02:36,710 --> 00:02:34,560
and i encourage each of you to maintain

55
00:02:40,150 --> 00:02:36,720
a curiosity to learn

56
00:02:42,390 --> 00:02:40,160
and to explore this year's challenge

57
00:02:43,509 --> 00:02:42,400
will hopefully serve as an inspiration

58
00:02:46,790 --> 00:02:43,519
for a lifetime

59
00:02:50,070 --> 00:02:46,800
of learning and that is because

60
00:02:53,110 --> 00:02:50,080
someday it may be you

61
00:02:56,470 --> 00:02:53,120
designing a new space flight system

62
00:02:59,750 --> 00:02:56,480
or a spacecraft or even

63
00:03:02,070 --> 00:02:59,760

a vehicle to land on another planet

64

00:03:03,670 --> 00:03:02,080

how about a spacesuit to keep humans

65

00:03:07,350 --> 00:03:03,680

alive on mars or

66

00:03:10,790 --> 00:03:07,360

destinations beyond every year

67

00:03:14,470 --> 00:03:10,800

teams like yours work diligently

68

00:03:18,229 --> 00:03:14,480

and they stand up against all incredible

69

00:03:20,070 --> 00:03:18,239

obstacles to succeed in the nasa student

70

00:03:24,229 --> 00:03:20,080

launch competition

71

00:03:26,390 --> 00:03:24,239

this season wasn't easy it wasn't normal

72

00:03:27,830 --> 00:03:26,400

but you all succeeded despite the

73

00:03:30,149 --> 00:03:27,840

challenges

74

00:03:31,030 --> 00:03:30,159

so congratulations to all of you for

75

00:03:35,430 --> 00:03:31,040

seeing this

76

00:03:41,830 --> 00:03:39,110

good afternoon welcome to the 2021

77

00:03:42,949 --> 00:03:41,840

nasa student launch virtual awards

78

00:03:45,350 --> 00:03:42,959

ceremony

79

00:03:46,070 --> 00:03:45,360

on half of on behalf of the marshall

80

00:03:49,030 --> 00:03:46,080

space flight

81

00:03:50,869 --> 00:03:49,040

center i want to congratulate all of the

82

00:03:54,710 --> 00:03:50,879

teams who participated

83

00:03:55,190 --> 00:03:54,720

in this year's event the 2021 student

84

00:03:58,630 --> 00:03:55,200

launch

85

00:04:03,429 --> 00:03:58,640

season has been an incredible display

86

00:04:06,550 --> 00:04:03,439

of engineering science and tenacity

87

00:04:08,710 --> 00:04:06,560

i want to start off by saying thank you

88

00:04:11,270 --> 00:04:08,720

to all of the sponsors

89

00:04:13,509 --> 00:04:11,280

and the nasa student launch management

90

00:04:16,150 --> 00:04:13,519

team for doing all it takes

91

00:04:17,030 --> 00:04:16,160

to see that this event happened your

92

00:04:34,790 --> 00:04:17,040

contribution

93

00:04:41,030 --> 00:04:37,909

build and test complex rockets

94

00:04:42,710 --> 00:04:41,040

and scientific payloads and for that you

95

00:04:44,870 --> 00:04:42,720

should be proud

96

00:04:46,950 --> 00:04:44,880

at marshall space flight center we work

97

00:04:47,590 --> 00:04:46,960

to design and build the space launch

98

00:04:54,390 --> 00:04:47,600

system

99

00:04:57,510 --> 00:04:54,400

lead the way for nasa's artemis program

100

00:04:57,990 --> 00:04:57,520

but those programs require teamwork from

101
00:05:01,430 --> 00:04:58,000
all

102
00:05:04,150 --> 00:05:01,440
nasa centers across the nation

103
00:05:04,550 --> 00:05:04,160
as one of the artemis student challenges

104
00:05:07,830 --> 00:05:04,560
this

105
00:05:10,790 --> 00:05:07,840
activity is closely aligned with how we

106
00:05:13,430 --> 00:05:10,800
actually approach the artemis program

107
00:05:15,430 --> 00:05:13,440
i know it takes an entire team to design

108
00:05:17,830 --> 00:05:15,440
your student launch rocket

109
00:05:19,749 --> 00:05:17,840
and your scientific payload and you

110
00:05:22,710 --> 00:05:19,759
should all be proud to have such

111
00:05:24,870 --> 00:05:22,720
dedicated friends and classmates to help

112
00:05:27,749 --> 00:05:24,880
you reach your goals

113
00:05:29,830 --> 00:05:27,759

a whole mission can be very complex but

114

00:05:31,909 --> 00:05:29,840

by focusing your efforts

115

00:05:34,070 --> 00:05:31,919

you've learned the power of how to

116

00:05:37,270 --> 00:05:34,080

succeed as a group as a team

117

00:05:38,710 --> 00:05:37,280

a real team at marshall our teams do the

118

00:05:40,710 --> 00:05:38,720

very same thing

119

00:05:42,390 --> 00:05:40,720

working together to make the greater

120

00:05:45,029 --> 00:05:42,400

whole succeed

121

00:05:46,150 --> 00:05:45,039

engineering propulsion testing

122

00:05:50,150 --> 00:05:46,160

fabrication

123

00:05:50,710 --> 00:05:50,160

safety finances and many others work

124

00:05:53,430 --> 00:05:50,720

along

125

00:05:55,510 --> 00:05:53,440

each other to accomplish our goals

126

00:05:58,790 --> 00:05:55,520

someday i hope to see some of you

127

00:06:00,870 --> 00:05:58,800

joining our nasa team this season you

128

00:06:03,189 --> 00:06:00,880

are tasked with developing a lander

129

00:06:06,230 --> 00:06:03,199

system in addition to your rocket

130

00:06:09,189 --> 00:06:06,240

a very unique and difficult challenge

131

00:06:09,990 --> 00:06:09,199

just an example of how this competition

132

00:06:12,629 --> 00:06:10,000

mirrors

133

00:06:15,110 --> 00:06:12,639

our own current nasa missions like

134

00:06:18,550 --> 00:06:15,120

building this human landing system

135

00:06:21,029 --> 00:06:18,560

to safely land astronauts on the moon

136

00:06:23,110 --> 00:06:21,039

the student launch competition and all

137

00:06:26,629 --> 00:06:23,120

of our artemis student challenges

138

00:06:28,950 --> 00:06:26,639

are critical for our own mission

139

00:06:30,309 --> 00:06:28,960

i encourage each of you not to lose the

140

00:06:33,029 --> 00:06:30,319

sense of purpose

141

00:06:34,950 --> 00:06:33,039

that led you to the launch field the

142

00:06:37,590 --> 00:06:34,960

lessons you have learned are a first

143

00:06:39,749 --> 00:06:37,600

step to being part of our nation's space

144

00:06:42,150 --> 00:06:39,759

exploration program you are the

145

00:06:42,950 --> 00:06:42,160

scientists the engineers the technical

146

00:06:45,510 --> 00:06:42,960

writers

147

00:06:52,629 --> 00:06:45,520

and the architects of tomorrow and we

148

00:06:55,990 --> 00:06:55,350

behalf of the nasa marshall space flight

149

00:06:58,390 --> 00:06:56,000

center

150

00:06:59,430 --> 00:06:58,400

i congratulate each one of you on your

151
00:07:02,070 --> 00:06:59,440
hard work

152
00:07:03,029 --> 00:07:02,080
and perseverance through this process

153
00:07:06,230 --> 00:07:03,039
appreciate

154
00:07:07,270 --> 00:07:06,240
every moment when everything worked as

155
00:07:10,230 --> 00:07:07,280
planned

156
00:07:11,350 --> 00:07:10,240
and learn from those times when they did

157
00:07:14,070 --> 00:07:11,360
not

158
00:07:14,950 --> 00:07:14,080
support each and every member of your

159
00:07:17,510 --> 00:07:14,960
team

160
00:07:18,790 --> 00:07:17,520
most importantly never lose a sense of

161
00:07:21,510 --> 00:07:18,800
curiosity

162
00:07:22,629 --> 00:07:21,520
that leads you to ask the what if

163
00:07:25,670 --> 00:07:22,639

question

164

00:07:27,350 --> 00:07:25,680

and finally i want to wish all of you

165

00:07:30,309 --> 00:07:27,360

success in your endeavors

166

00:07:31,749 --> 00:07:30,319

beyond the student launch competition

167

00:07:33,749 --> 00:07:31,759

your educations

168

00:07:36,230 --> 00:07:33,759

your careers and your personal lives

169

00:07:38,550 --> 00:07:36,240

will forever be affected by it

170

00:07:40,230 --> 00:07:38,560

work hard have some fun along the way

171

00:07:43,510 --> 00:07:40,240

and find a profession

172

00:07:43,990 --> 00:07:43,520

that you can truly enjoy congratulations

173

00:07:47,270 --> 00:07:44,000

on your

174

00:07:48,790 --> 00:07:47,280

hard work and success and thank you for

175

00:07:54,230 --> 00:07:48,800

being a part of this

176

00:07:57,909 --> 00:07:55,990

well thank you and good afternoon

177

00:08:00,150 --> 00:07:57,919

everyone all of you involved in the

178

00:08:02,309 --> 00:08:00,160

student launch competition with nasa i'm

179

00:08:04,150 --> 00:08:02,319

really delighted to join you today we at

180

00:08:06,309 --> 00:08:04,160

northrop have been involved in

181

00:08:07,510 --> 00:08:06,319

student launch competitions as a sponsor

182

00:08:09,430 --> 00:08:07,520

for many years

183

00:08:10,869 --> 00:08:09,440

one of my personal most favorite things

184

00:08:12,469 --> 00:08:10,879

to do with the folks at the marshall

185

00:08:13,830 --> 00:08:12,479

space flight center

186

00:08:15,430 --> 00:08:13,840

i want to also start off by

187

00:08:16,469 --> 00:08:15,440

congratulating senator nelson on his

188

00:08:19,189 --> 00:08:16,479

appointment as

189

00:08:19,670 --> 00:08:19,199

nasa administrator and i think it shows

190

00:08:22,710 --> 00:08:19,680

uh

191

00:08:24,710 --> 00:08:22,720

great attention to the importance of

192

00:08:26,230 --> 00:08:24,720

uh of the student launch competition and

193

00:08:28,869 --> 00:08:26,240

the future of our

194

00:08:30,309 --> 00:08:28,879

our graduating college and high school

195

00:08:32,709 --> 00:08:30,319

students that the administrator would

196

00:08:34,070 --> 00:08:32,719

take the time to uh to speak to us so

197

00:08:35,430 --> 00:08:34,080

thank you senator nelson and we

198

00:08:37,430 --> 00:08:35,440

appreciate your support for all we're

199

00:08:40,550 --> 00:08:37,440

doing in space exploration

200

00:08:41,509 --> 00:08:40,560

i uh i've spoken to the group before on

201
00:08:43,589 --> 00:08:41,519
the awards day

202
00:08:45,110 --> 00:08:43,599
and i really look forward to hearing who

203
00:08:47,430 --> 00:08:45,120
the winners are here shortly

204
00:08:49,190 --> 00:08:47,440
um and congratulations on a great effort

205
00:08:50,949 --> 00:08:49,200
i've personally witnessed

206
00:08:52,710 --> 00:08:50,959
a lot of the projects in the past and

207
00:08:54,790 --> 00:08:52,720
have been awe inspired by

208
00:08:56,150 --> 00:08:54,800
the work that you all do at the levels

209
00:09:00,070 --> 00:08:56,160
of

210
00:09:02,550 --> 00:09:00,080
younger it's really great to see the

211
00:09:04,710 --> 00:09:02,560
enthusiasm around rocketry and what

212
00:09:05,590 --> 00:09:04,720
we can do with space exploration so

213
00:09:08,310 --> 00:09:05,600

thank you

214

00:09:09,750 --> 00:09:08,320

uh for your interest and your passion

215

00:09:11,590 --> 00:09:09,760

for what we do

216

00:09:13,190 --> 00:09:11,600

i have a presentation for you i like to

217

00:09:14,870 --> 00:09:13,200

call this a funny thing happened on the

218

00:09:16,310 --> 00:09:14,880

way to the space station

219

00:09:18,389 --> 00:09:16,320

what i'm going to do here is share with

220

00:09:19,269 --> 00:09:18,399

you some of my experiences but i want to

221

00:09:22,630 --> 00:09:19,279

prompt

222

00:09:24,550 --> 00:09:22,640

from mine the things that could happen

223

00:09:26,389 --> 00:09:24,560

to you and your experience going forward

224

00:09:28,230 --> 00:09:26,399

as you join your careers

225

00:09:29,829 --> 00:09:28,240

um and i call it a funny thing that

226

00:09:30,630 --> 00:09:29,839

happened on the way to the space station

227

00:09:32,389 --> 00:09:30,640

because

228

00:09:34,070 --> 00:09:32,399

uh it doesn't end up like you might

229

00:09:34,470 --> 00:09:34,080

think even though i was selected to be

230

00:09:36,230 --> 00:09:34,480

an

231

00:09:37,590 --> 00:09:36,240

astronaut there were a lot of things

232

00:09:39,350 --> 00:09:37,600

that transpired that

233

00:09:40,949 --> 00:09:39,360

i wouldn't have expected and that's

234

00:09:42,470 --> 00:09:40,959

something you should anticipate too in

235

00:09:44,630 --> 00:09:42,480

your careers

236

00:09:45,750 --> 00:09:44,640

you will enjoy a lot of the things that

237

00:09:49,030 --> 00:09:45,760

my generation

238

00:09:50,630 --> 00:09:49,040

prepared for your generation and uh

239

00:09:52,070 --> 00:09:50,640

you know the future of exploration with

240

00:09:53,910 --> 00:09:52,080

the space launch system the orion

241

00:09:54,710 --> 00:09:53,920

capsule going back to the moon onto mars

242

00:09:56,790 --> 00:09:54,720

it's all

243

00:09:58,230 --> 00:09:56,800

available for your generation i'm really

244

00:10:00,550 --> 00:09:58,240

even envious of you

245

00:10:02,150 --> 00:10:00,560

uh to be starting your careers with such

246

00:10:04,870 --> 00:10:02,160

an exciting future

247

00:10:05,269 --> 00:10:04,880

so uh if we go ahead and and kick this

248

00:10:08,550 --> 00:10:05,279

off

249

00:10:10,150 --> 00:10:08,560

uh i have a photograph that i like to

250

00:10:12,470 --> 00:10:10,160

put into context

251
00:10:13,430 --> 00:10:12,480
most of my career i went to the air

252
00:10:15,190 --> 00:10:13,440
force academy

253
00:10:17,990 --> 00:10:15,200
and pursued a degree in aeronautical

254
00:10:20,310 --> 00:10:18,000
engineering and then

255
00:10:22,389 --> 00:10:20,320
went on to fly f-15s and in the top of

256
00:10:24,389 --> 00:10:22,399
the picture there you see an f-15 on the

257
00:10:27,110 --> 00:10:24,399
wing of what was in the day

258
00:10:29,030 --> 00:10:27,120
a russian bear bomber and just in the

259
00:10:30,470 --> 00:10:29,040
inside below that is a photo i took of

260
00:10:32,230 --> 00:10:30,480
the tail gunner

261
00:10:33,670 --> 00:10:32,240
because i had to intercept those uh

262
00:10:35,990 --> 00:10:33,680
bombers over the

263
00:10:36,870 --> 00:10:36,000

the north sea when i was stationed in

264

00:10:39,430 --> 00:10:36,880

germany

265

00:10:41,110 --> 00:10:39,440

uh many times and fly right up on the

266

00:10:43,190 --> 00:10:41,120

tail of that aircraft

267

00:10:44,790 --> 00:10:43,200

and over on the left is a flogger a

268

00:10:47,030 --> 00:10:44,800

mig-23

269

00:10:49,030 --> 00:10:47,040

that was also on the east side of the

270

00:10:50,630 --> 00:10:49,040

german border at the time

271

00:10:53,350 --> 00:10:50,640

back in the days of the soviet union in

272

00:10:55,590 --> 00:10:53,360

the cold war i flew f-15s in germany

273

00:10:56,550 --> 00:10:55,600

to protect the western german border

274

00:10:58,470 --> 00:10:56,560

from the east

275

00:11:00,949 --> 00:10:58,480

and would often see airplanes like that

276

00:11:03,110 --> 00:11:00,959

in the sky below and behold one of the

277

00:11:05,269 --> 00:11:03,120

pilots in that airplane

278

00:11:07,910 --> 00:11:05,279

uh was an individual that became a very

279

00:11:09,910 --> 00:11:07,920

good friend vasily subleave

280

00:11:11,350 --> 00:11:09,920

he became eventually the chief of the

281

00:11:13,110 --> 00:11:11,360

cosmonaut corps

282

00:11:14,790 --> 00:11:13,120

when i was the chief of the astronaut

283

00:11:17,030 --> 00:11:14,800

court nasa in houston

284

00:11:19,430 --> 00:11:17,040

and that picture in the blower center is

285

00:11:20,710 --> 00:11:19,440

a handshake between vasily and i when i

286

00:11:23,430 --> 00:11:20,720

got to dock

287

00:11:24,630 --> 00:11:23,440

the space shuttle atlantis with the

288

00:11:26,630 --> 00:11:24,640

mayor

289

00:11:29,030 --> 00:11:26,640
after they had had a fire and a

290

00:11:32,310 --> 00:11:29,040
collision of a vehicle on board

291

00:11:34,710 --> 00:11:32,320
that was a very very strenuous time for

292

00:11:35,750 --> 00:11:34,720
for the cosmonauts and uh was just a

293

00:11:37,829 --> 00:11:35,760
very

294

00:11:39,670 --> 00:11:37,839
tight partnership that we had with them

295

00:11:40,150 --> 00:11:39,680
and it was just kind of a miracle for me

296

00:11:42,150 --> 00:11:40,160
to

297

00:11:43,509 --> 00:11:42,160
imagine that having grown up in the cold

298

00:11:45,590 --> 00:11:43,519
war

299

00:11:47,509 --> 00:11:45,600
one of the funny things of this story is

300

00:11:49,350 --> 00:11:47,519
that we actually saw the cold war end

301
00:11:52,230 --> 00:11:49,360
and that we were collaborating with

302
00:11:53,829 --> 00:11:52,240
pilots and cosmonauts who were once

303
00:11:55,990 --> 00:11:53,839
considered our enemies

304
00:11:57,509 --> 00:11:56,000
so you just never know where as they say

305
00:11:58,790 --> 00:11:57,519
life's a box of chocolates where the

306
00:11:59,670 --> 00:11:58,800
road's gonna take you but what an

307
00:12:03,350 --> 00:11:59,680
exciting

308
00:12:06,949 --> 00:12:05,590
in this next photograph here this is the

309
00:12:10,150 --> 00:12:06,959
space shuttle as it sat

310
00:12:13,269 --> 00:12:10,160
on the launch pad the vehicle uh

311
00:12:15,829 --> 00:12:13,279
weighs somewhere near seven million

312
00:12:17,670 --> 00:12:15,839
five million pounds but produces nearly

313
00:12:21,110 --> 00:12:17,680

seven million pounds of thrust

314

00:12:23,910 --> 00:12:21,120

by comparison the future sls vehicle

315

00:12:25,829 --> 00:12:23,920

will be seven million pounds producing

316

00:12:27,430 --> 00:12:25,839

nine million pounds of thrust

317

00:12:29,030 --> 00:12:27,440

so it's an immense amount of energy and

318

00:12:31,430 --> 00:12:29,040

a lot of capability

319

00:12:32,470 --> 00:12:31,440

in the next photograph is a one of my

320

00:12:35,509 --> 00:12:32,480

launches the four

321

00:12:38,069 --> 00:12:35,519

that i was privileged to be part of

322

00:12:39,910 --> 00:12:38,079

when i was a commander of sts-84 a very

323

00:12:40,710 --> 00:12:39,920

international crew eileen collins was

324

00:12:43,030 --> 00:12:40,720

the pilot

325

00:12:44,389 --> 00:12:43,040

i was the commander and we have a

326

00:12:47,030 --> 00:12:44,399

russian woman on the crew

327

00:12:48,310 --> 00:12:47,040

an american astronaut of british descent

328

00:12:51,590 --> 00:12:48,320

a french astronaut

329

00:12:52,069 --> 00:12:51,600

and a american astronaut of chinese

330

00:12:53,430 --> 00:12:52,079

descent

331

00:12:55,350 --> 00:12:53,440

and another american astronaut of

332

00:12:56,150 --> 00:12:55,360

peruvian descent so quite an

333

00:12:58,310 --> 00:12:56,160

international

334

00:13:00,389 --> 00:12:58,320

flavor in that crew and this was the

335

00:13:02,310 --> 00:13:00,399

flight that we went to visit vasily his

336

00:13:03,910 --> 00:13:02,320

crew was already on board

337

00:13:06,069 --> 00:13:03,920

and we were going to leave mike foale on

338

00:13:09,269 --> 00:13:06,079

board and bring jerry lenninger

339

00:13:10,949 --> 00:13:09,279

home on that particular flight um

340

00:13:12,710 --> 00:13:10,959

this is our approach to the mir space

341

00:13:13,430 --> 00:13:12,720

station today's international space

342

00:13:16,550 --> 00:13:13,440

station

343

00:13:18,389 --> 00:13:16,560

is immense by comparison but this served

344

00:13:20,550 --> 00:13:18,399

as a test bed for us to build the

345

00:13:24,069 --> 00:13:20,560

international space station

346

00:13:26,069 --> 00:13:24,079

back in the in the 90s and we finished

347

00:13:28,069 --> 00:13:26,079

seven missions to go to the mirror i was

348

00:13:29,990 --> 00:13:28,079

lucky enough to be on three of them

349

00:13:34,470 --> 00:13:30,000

and this is a view of the the mirror as

350

00:13:37,590 --> 00:13:34,480

we approached it for docking

351

00:13:38,870 --> 00:13:37,600

um this is a view that vasily had as i

352

00:13:41,430 --> 00:13:38,880

approached for docking

353

00:13:42,710 --> 00:13:41,440

where you can see just behind the ford

354

00:13:44,710 --> 00:13:42,720

bulkhead of the opened

355

00:13:46,550 --> 00:13:44,720

payload bay is a docking port just

356

00:13:49,189 --> 00:13:46,560

behind the two windows on the roof

357

00:13:49,590 --> 00:13:49,199

of the forward cockpit area that docking

358

00:13:51,829 --> 00:13:49,600

port

359

00:13:53,269 --> 00:13:51,839

i am flying towards the mir space

360

00:13:55,750 --> 00:13:53,279

station to connect

361

00:13:57,189 --> 00:13:55,760

and that whole virtual part of the uh

362

00:13:58,470 --> 00:13:57,199

virtually that whole part of the flight

363

00:14:00,470 --> 00:13:58,480

is done manually

364

00:14:01,990 --> 00:14:00,480

uh with the crew on the flight deck

365

00:14:05,430 --> 00:14:02,000

flying the space shuttle up to the

366

00:14:07,590 --> 00:14:05,440

station once we're

367

00:14:08,949 --> 00:14:07,600

on board we take pictures like this

368

00:14:10,790 --> 00:14:08,959

because we can

369

00:14:12,389 --> 00:14:10,800

this was the very first docking with the

370

00:14:13,990 --> 00:14:12,399

mir there are 10 of us

371

00:14:15,990 --> 00:14:14,000

on board there and what's neat to

372

00:14:17,110 --> 00:14:16,000

observe is how we all hold ourselves in

373

00:14:19,110 --> 00:14:17,120

position

374

00:14:21,430 --> 00:14:19,120

anatoly sylvia in the purple shirt with

375

00:14:23,509 --> 00:14:21,440

his arms crossed has his feet under the

376

00:14:25,110 --> 00:14:23,519

handlebar on the on the right hand side

377

00:14:26,629 --> 00:14:25,120

of the image and everybody has

378

00:14:28,389 --> 00:14:26,639

themselves braced in some way so they

379

00:14:30,870 --> 00:14:28,399

don't drift off

380

00:14:33,030 --> 00:14:30,880

for the photograph a lot of fun to do

381

00:14:34,550 --> 00:14:33,040

that kind of thing in zero gravity

382

00:14:36,550 --> 00:14:34,560

one of the most interesting things about

383

00:14:38,550 --> 00:14:36,560

the mir program was that it was a

384

00:14:42,230 --> 00:14:38,560

political agreement between

385

00:14:44,790 --> 00:14:42,240

the united states and russia and senior

386

00:14:46,310 --> 00:14:44,800

president bush and at the time russian

387

00:14:48,069 --> 00:14:46,320

president yeltsin agreed to put an

388

00:14:49,670 --> 00:14:48,079

astronaut on amir and to fly two

389

00:14:52,150 --> 00:14:49,680

cosmonauts on shuttle

390

00:14:53,670 --> 00:14:52,160

and this was uh the crew of the first

391

00:14:55,269 --> 00:14:53,680

docking mission who gibson is the

392

00:14:56,550 --> 00:14:55,279

commander and i was the pilot we went to

393

00:14:58,870 --> 00:14:56,560

visit

394

00:15:01,110 --> 00:14:58,880

president clinton after the mission and

395

00:15:04,310 --> 00:15:01,120

brought the cosmonauts with us

396

00:15:07,430 --> 00:15:04,320

to celebrate that first mission um

397

00:15:09,110 --> 00:15:07,440

we were funding part of the program so

398

00:15:11,829 --> 00:15:09,120

that we could collaborate to create the

399

00:15:14,230 --> 00:15:11,839

international space station with russia

400

00:15:15,829 --> 00:15:14,240

and it was very important to keep

401
00:15:17,269 --> 00:15:15,839
the russian engineers from sharing

402
00:15:19,590 --> 00:15:17,279
secrets with

403
00:15:20,310 --> 00:15:19,600
the irans and libyas of the world and we

404
00:15:22,310 --> 00:15:20,320
had a

405
00:15:23,670 --> 00:15:22,320
piece in the program that would have us

406
00:15:26,150 --> 00:15:23,680
collaborating instead of

407
00:15:27,670 --> 00:15:26,160
competing in the political world so it

408
00:15:32,470 --> 00:15:27,680
was an important program to the

409
00:15:39,030 --> 00:15:35,910
later as we went into the

410
00:15:39,430 --> 00:15:39,040
program with the mir program there had

411
00:15:42,150 --> 00:15:39,440
been

412
00:15:43,509 --> 00:15:42,160
issues with the stability of the systems

413
00:15:45,269 --> 00:15:43,519

on board the mir

414

00:15:47,030 --> 00:15:45,279

and virtually everything that you would

415

00:15:49,110 --> 00:15:47,040

not want to have happen to you

416

00:15:50,470 --> 00:15:49,120

depressurization a fire broke out on

417

00:15:54,470 --> 00:15:50,480

board a collision with an

418

00:15:56,310 --> 00:15:54,480

oncoming unpiloted uncrewed cargo ship

419

00:15:59,990 --> 00:15:56,320

all happened to the mirror during these

420

00:16:02,790 --> 00:16:00,000

seven flights so in april 97

421

00:16:03,509 --> 00:16:02,800

commander sublime attempted to remotely

422

00:16:07,110 --> 00:16:03,519

dock

423

00:16:08,870 --> 00:16:07,120

the progress but it had too much closure

424

00:16:12,069 --> 00:16:08,880

and he was unable to stop it and it

425

00:16:14,470 --> 00:16:12,079

caused a collision and and so

426
00:16:15,430 --> 00:16:14,480
we were there to help with repairs and

427
00:16:17,430 --> 00:16:15,440
equipment

428
00:16:23,590 --> 00:16:17,440
and to bring mike follow up to replace

429
00:16:26,470 --> 00:16:23,600
terry linninger

430
00:16:27,509 --> 00:16:26,480
this is a view of what that remotely

431
00:16:30,230 --> 00:16:27,519
piloted

432
00:16:31,829 --> 00:16:30,240
uncrewed progress ship would look like

433
00:16:32,790 --> 00:16:31,839
if you were sitting in the space station

434
00:16:36,150 --> 00:16:32,800
that is

435
00:16:39,110 --> 00:16:36,160
like a a robotic

436
00:16:40,790 --> 00:16:39,120
piloted vehicle much like you might fly

437
00:16:42,550 --> 00:16:40,800
a drone today the crew on board the

438
00:16:44,230 --> 00:16:42,560

space station was trying to fly it from

439

00:16:46,629 --> 00:16:44,240

the station to bring it in

440

00:16:48,069 --> 00:16:46,639

it just had too much energy this was a

441

00:16:49,189 --> 00:16:48,079

photograph we took during one of our

442

00:16:52,069 --> 00:16:49,199

shuttle flights where

443

00:16:57,430 --> 00:16:52,079

one was in proximity and so you can see

444

00:17:02,710 --> 00:17:00,389

during the collision event that happened

445

00:17:05,429 --> 00:17:02,720

you can see in this next photograph

446

00:17:06,230 --> 00:17:05,439

you can see how the vehicle actually

447

00:17:09,350 --> 00:17:06,240

came in and

448

00:17:09,909 --> 00:17:09,360

made contact with one of the solar

449

00:17:12,870 --> 00:17:09,919

arrays

450

00:17:13,669 --> 00:17:12,880

and then deflected off of another module

451
00:17:17,270 --> 00:17:13,679
and then

452
00:17:19,590 --> 00:17:17,280
veered off into space and it punctured

453
00:17:20,470 --> 00:17:19,600
the vessel to where they were starting

454
00:17:23,029 --> 00:17:20,480
to lose

455
00:17:25,270 --> 00:17:23,039
atmospheric pressure and the crew almost

456
00:17:26,949 --> 00:17:25,280
had to evacuate the space station

457
00:17:28,549 --> 00:17:26,959
but they managed to seal off that

458
00:17:29,590 --> 00:17:28,559
leaking module from the rest of the

459
00:17:32,070 --> 00:17:29,600
station

460
00:17:33,909 --> 00:17:32,080
and for the rest of the program we

461
00:17:35,669 --> 00:17:33,919
attempted to help them recover from that

462
00:17:37,110 --> 00:17:35,679
failure and to bring that module back to

463
00:17:39,909 --> 00:17:37,120

life unfortunately that

464

00:17:41,190 --> 00:17:39,919

module ended up being sealed uh for the

465

00:17:43,909 --> 00:17:41,200

duration of the program

466

00:17:44,390 --> 00:17:43,919

now the reason i share these with you is

467

00:17:47,350 --> 00:17:44,400

that

468

00:17:48,710 --> 00:17:47,360

the good learning these were you know

469

00:17:50,230 --> 00:17:48,720

events that you would never want to have

470

00:17:51,669 --> 00:17:50,240

happen to you a fire breaking out on

471

00:17:53,110 --> 00:17:51,679

board a collision a loss of

472

00:17:54,789 --> 00:17:53,120

pressurization

473

00:17:57,110 --> 00:17:54,799

but because they happened and we were

474

00:17:59,110 --> 00:17:57,120

able to work around them and

475

00:18:00,870 --> 00:17:59,120

recover from them we made the

476
00:18:01,430 --> 00:18:00,880
international space station design much

477
00:18:04,789 --> 00:18:01,440
more

478
00:18:07,830 --> 00:18:04,799
sustaining

479
00:18:09,430 --> 00:18:07,840
uh injury if you will and so the space

480
00:18:11,590 --> 00:18:09,440
station program has been successful for

481
00:18:13,590 --> 00:18:11,600
many years now based on the lessons we

482
00:18:15,510 --> 00:18:13,600
learned in this program

483
00:18:17,110 --> 00:18:15,520
and uh and part of what i'm telling you

484
00:18:19,110 --> 00:18:17,120
today as you go and become

485
00:18:20,630 --> 00:18:19,120
part of our new program in the future to

486
00:18:22,230 --> 00:18:20,640
go back to the moon and on to mars is

487
00:18:24,390 --> 00:18:22,240
the lessons we've learned

488
00:18:26,070 --> 00:18:24,400

you will inherit and take those lessons

489

00:18:28,310 --> 00:18:26,080

into your designs into your

490

00:18:32,070 --> 00:18:28,320

operations if you will of our

491

00:18:35,270 --> 00:18:34,150

so this was kind of a a really great

492

00:18:37,669 --> 00:18:35,280

moment for me

493

00:18:38,950 --> 00:18:37,679

it was after we got docked my friend

494

00:18:41,990 --> 00:18:38,960

vasily sableev

495

00:18:43,669 --> 00:18:42,000

later after this this flight he and i

496

00:18:45,590 --> 00:18:43,679

would become respectively the chief

497

00:18:46,630 --> 00:18:45,600

astronaut and the chief cosmonaut and we

498

00:18:49,750 --> 00:18:46,640

worked together

499

00:18:53,190 --> 00:18:49,760

selecting crews to become

500

00:18:55,430 --> 00:18:53,200

the crews who would fly the early space

501
00:18:58,310 --> 00:18:55,440
station flights for the iss

502
00:18:58,870 --> 00:18:58,320
and this was uh after we docked uh we

503
00:19:01,110 --> 00:18:58,880
had a

504
00:19:03,270 --> 00:19:01,120
dinner together with the crew shared

505
00:19:07,750 --> 00:19:03,280
some photographs and some gifts and

506
00:19:11,510 --> 00:19:09,750
and of course with the uh with the space

507
00:19:13,750 --> 00:19:11,520
shuttle it flies like a

508
00:19:16,150 --> 00:19:13,760
rocket as it leaves the launch pad it

509
00:19:17,590 --> 00:19:16,160
flies like a spaceship in space

510
00:19:19,430 --> 00:19:17,600
and it doesn't really fly like an

511
00:19:20,310 --> 00:19:19,440
airplane until the last two or three

512
00:19:22,150 --> 00:19:20,320
minutes

513
00:19:24,070 --> 00:19:22,160

when it's in the lower atmosphere and

514

00:19:26,390 --> 00:19:24,080

has a wing to put us down

515

00:19:28,390 --> 00:19:26,400

gently on the runway a picture of my

516

00:19:30,870 --> 00:19:28,400

landing here at kennedy space center

517

00:19:33,909 --> 00:19:30,880

a great machine one that we learned a

518

00:19:36,950 --> 00:19:35,430

so let me take you now into what we're

519

00:19:39,350 --> 00:19:36,960

doing in the future

520

00:19:41,110 --> 00:19:39,360

and we are on the verge of launching the

521

00:19:42,470 --> 00:19:41,120

space launch system

522

00:19:44,470 --> 00:19:42,480

we're privileged here at northrop

523

00:19:45,590 --> 00:19:44,480

grumman to be the provider of both the

524

00:19:48,070 --> 00:19:45,600

boosters

525

00:19:50,549 --> 00:19:48,080

and the launch abort system on the top

526

00:19:51,909 --> 00:19:50,559

of the orion spacecraft

527

00:19:54,070 --> 00:19:51,919

so here's a little update of what we're

528

00:19:55,510 --> 00:19:54,080

doing we are returning to the moon but

529

00:19:58,230 --> 00:19:55,520

we're returning to stay

530

00:19:59,110 --> 00:19:58,240

i think of it as um equivalent to

531

00:20:02,070 --> 00:19:59,120

establishing

532

00:20:02,630 --> 00:20:02,080

a station uh from which we can do

533

00:20:05,830 --> 00:20:02,640

research

534

00:20:07,510 --> 00:20:05,840

much like mcmurdo station in antarctica

535

00:20:10,549 --> 00:20:07,520

and where we can send crews to the

536

00:20:12,549 --> 00:20:10,559

surface on a regular rotating basis

537

00:20:13,990 --> 00:20:12,559

to learn how to live on other worlds

538

00:20:14,470 --> 00:20:14,000

that's a real challenge the human

539

00:20:15,909 --> 00:20:14,480

element

540

00:20:18,310 --> 00:20:15,919

in our exploration is really the

541

00:20:20,310 --> 00:20:18,320

limiting factor so learning to live

542

00:20:21,430 --> 00:20:20,320

autonomously in harsh conditions far

543

00:20:26,630 --> 00:20:21,440

from home

544

00:20:31,190 --> 00:20:29,350

so here's uh some photos that kind of

545

00:20:33,750 --> 00:20:31,200

get into that human element

546

00:20:34,549 --> 00:20:33,760

apollo changed the world artemis will do

547

00:20:36,789 --> 00:20:34,559

the same but

548

00:20:37,590 --> 00:20:36,799

this time the vision is different we're

549

00:20:39,590 --> 00:20:37,600

going to stay

550

00:20:48,149 --> 00:20:39,600

we're going to use the lessons of the

551
00:20:51,270 --> 00:20:48,159
past to enable us to stay

552
00:20:54,310 --> 00:20:51,280
a little bit of a expanded view of the

553
00:20:55,029 --> 00:20:54,320
sls rocket i pointed to the boosters on

554
00:20:57,110 --> 00:20:55,039
the side

555
00:20:58,549 --> 00:20:57,120
those were derived from what we flew on

556
00:21:00,789 --> 00:20:58,559
shuttle but they're 25

557
00:21:03,350 --> 00:21:00,799
bigger they're extended with an extra

558
00:21:04,230 --> 00:21:03,360
fifth segment the core stage is like the

559
00:21:05,909 --> 00:21:04,240
core

560
00:21:08,070 --> 00:21:05,919
external tank of the space shuttle but

561
00:21:10,310 --> 00:21:08,080
it also is stretched

562
00:21:11,750 --> 00:21:10,320
for more capacity and power and instead

563
00:21:13,669 --> 00:21:11,760

of three engines that were in the tail

564

00:21:16,789 --> 00:21:13,679

of the shuttle we now have four

565

00:21:17,909 --> 00:21:16,799

at the base of the of the core um tank

566

00:21:19,510 --> 00:21:17,919

that you see in the middle there and

567

00:21:22,149 --> 00:21:19,520

then of course you have the upper stage

568

00:21:24,230 --> 00:21:22,159

an adapter for the orion the orion and

569

00:21:25,990 --> 00:21:24,240

at the very top the abort system

570

00:21:27,510 --> 00:21:26,000

something we didn't have in shuttle this

571

00:21:30,310 --> 00:21:27,520

is actually capable

572

00:21:31,029 --> 00:21:30,320

of removing the orion from the launch

573

00:21:33,110 --> 00:21:31,039

vehicle if

574

00:21:35,190 --> 00:21:33,120

something were to go wrong and move the

575

00:21:37,750 --> 00:21:35,200

crew away from that launch vehicle

576
00:21:39,430 --> 00:21:37,760
and return them under parachute safely

577
00:21:40,230 --> 00:21:39,440
to earth should there be an issue during

578
00:21:43,510 --> 00:21:40,240
launch

579
00:21:45,190 --> 00:21:43,520
great safety enhancement that really

580
00:21:51,510 --> 00:21:45,200
takes a lot of the lessons of the past

581
00:21:55,110 --> 00:21:53,029
and this kind of shows the various

582
00:21:57,750 --> 00:21:55,120
configurations that we plan to have

583
00:21:58,230 --> 00:21:57,760
through different blocks eventually over

584
00:22:00,310 --> 00:21:58,240
on the

585
00:22:01,909 --> 00:22:00,320
you know we'll fly here hopefully

586
00:22:03,909 --> 00:22:01,919
towards the end of this year

587
00:22:06,470 --> 00:22:03,919
uh our first configuration that will

588
00:22:08,549 --> 00:22:06,480

have an interim smaller upper stage

589

00:22:09,909 --> 00:22:08,559

uh with an orion will fly around the

590

00:22:11,750 --> 00:22:09,919

moon and

591

00:22:13,590 --> 00:22:11,760

without a crew to test out all the

592

00:22:15,029 --> 00:22:13,600

systems and then the second

593

00:22:16,950 --> 00:22:15,039

flight will have crew on it there's a

594

00:22:18,070 --> 00:22:16,960

cargo version of that and then you can

595

00:22:20,070 --> 00:22:18,080

see in the middle

596

00:22:21,510 --> 00:22:20,080

you've got the uh exploration upper

597

00:22:22,230 --> 00:22:21,520

stage a bigger upper stage and then

598

00:22:24,310 --> 00:22:22,240

finally

599

00:22:26,710 --> 00:22:24,320

what they call in a later block down the

600

00:22:29,909 --> 00:22:26,720

road is more performance from

601
00:22:31,669 --> 00:22:29,919
enhanced propulsion systems and so this

602
00:22:33,669 --> 00:22:31,679
vehicle has the capability to evolve to

603
00:22:39,110 --> 00:22:33,679
even bigger capabilities than the saturn

604
00:22:45,029 --> 00:22:43,270
so here's uh some um

605
00:22:46,310 --> 00:22:45,039
valuable lunar science that we can

606
00:22:48,710 --> 00:22:46,320
conduct a lot of people

607
00:22:50,950 --> 00:22:48,720
ask us and i'm sure you get asked that

608
00:22:52,310 --> 00:22:50,960
you're interested in rocketry why do we

609
00:22:55,510 --> 00:22:52,320
do this kind of

610
00:22:57,909 --> 00:22:55,520
activity and why take this initiative so

611
00:23:01,110 --> 00:22:57,919
studying the planetary processes

612
00:23:02,870 --> 00:23:01,120
um records of the ancient sun the fact

613
00:23:05,990 --> 00:23:02,880

that there's no atmosphere a lot of

614

00:23:07,029 --> 00:23:06,000

what is deposited in the topsoil of the

615

00:23:10,390 --> 00:23:07,039

moon in the regolith

616

00:23:11,990 --> 00:23:10,400

gives us history of our own solar system

617

00:23:14,310 --> 00:23:12,000

in particular the sun

618

00:23:17,510 --> 00:23:14,320

uh ability to study and have a better

619

00:23:20,070 --> 00:23:17,520

viewpoint from a telescope standpoint

620

00:23:21,830 --> 00:23:20,080

out of the shade in the shade out of the

621

00:23:23,909 --> 00:23:21,840

view of the sunlight

622

00:23:24,870 --> 00:23:23,919

there's lots of different research that

623

00:23:26,630 --> 00:23:24,880

can be done

624

00:23:31,750 --> 00:23:26,640

in the world of science on the surface

625

00:23:35,029 --> 00:23:34,549

and the other thing is the mission will

626
00:23:36,710 --> 00:23:35,039
drive

627
00:23:39,270 --> 00:23:36,720
our designs and when we were in low

628
00:23:40,310 --> 00:23:39,280
earth we only needed three hours to get

629
00:23:43,190 --> 00:23:40,320
home and

630
00:23:45,110 --> 00:23:43,200
and we would reach speeds of 17 500

631
00:23:46,630 --> 00:23:45,120
miles an hour only 250 miles above the

632
00:23:49,510 --> 00:23:46,640
surface but look what happens when you

633
00:23:51,909 --> 00:23:49,520
go to the moon and then on to mars

634
00:23:54,470 --> 00:23:51,919
you have much more speed you are three

635
00:23:57,430 --> 00:23:54,480
days instead of three hours away

636
00:23:58,870 --> 00:23:57,440
you're a thousand times further away and

637
00:24:00,230 --> 00:23:58,880
then when you go to mars it gets even

638
00:24:02,870 --> 00:24:00,240

more daunting

639

00:24:04,630 --> 00:24:02,880

6200 degrees temperatures on return nine

640

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

months to get out and back

641

00:24:08,070 --> 00:24:07,120

39 million miles away so quite quite the

642

00:24:12,390 --> 00:24:08,080

deal

643

00:24:15,510 --> 00:24:14,950

so it's over to your generation the

644

00:24:17,750 --> 00:24:15,520

booster

645

00:24:19,029 --> 00:24:17,760

stacking for the first mission is

646

00:24:20,390 --> 00:24:19,039

complete

647

00:24:22,070 --> 00:24:20,400

you can see that here with the vehicle

648

00:24:25,990 --> 00:24:22,080

at the assembly building in

649

00:24:33,590 --> 00:24:26,000

florida and the next step is to move the

650

00:24:36,310 --> 00:24:33,600

core stage in between them

651
00:24:38,470 --> 00:24:36,320
we've got some photos here of the

652
00:24:41,269 --> 00:24:38,480
testing that was done on the core stage

653
00:24:42,310 --> 00:24:41,279
and the shipment and arrival to the vab

654
00:24:48,870 --> 00:24:42,320
in april

655
00:24:51,909 --> 00:24:51,269
and you can see these pictures as we

656
00:24:54,149 --> 00:24:51,919
progress

657
00:24:55,990 --> 00:24:54,159
towards artemis ii now a lot of the

658
00:24:59,350 --> 00:24:56,000
hardware

659
00:25:00,390 --> 00:24:59,360
that we need for that second flight has

660
00:25:03,430 --> 00:25:00,400
already been built

661
00:25:05,430 --> 00:25:03,440
and so we expect to go from that flight

662
00:25:06,710 --> 00:25:05,440
with no crew to a flight with crew very

663
00:25:12,149 --> 00:25:06,720

quickly

664

00:25:15,669 --> 00:25:14,070

and so it's over to your generation to

665

00:25:19,269 --> 00:25:15,679

inherit exploration

666

00:25:21,430 --> 00:25:19,279

systems capabilities vehicles rockets

667

00:25:22,470 --> 00:25:21,440

spaceships and take us where we've never

668

00:25:24,149 --> 00:25:22,480

been before

669

00:25:25,830 --> 00:25:24,159

i really want to congratulate you for

670

00:25:27,590 --> 00:25:25,840

the i know how much work you've put into

671

00:25:29,669 --> 00:25:27,600

this i've seen it year after year

672

00:25:30,630 --> 00:25:29,679

i know your your class is no different

673

00:25:32,149 --> 00:25:30,640

this year

674

00:25:33,830 --> 00:25:32,159

i really look forward to hearing who the

675

00:25:35,830 --> 00:25:33,840

winners are and

676
00:25:37,430 --> 00:25:35,840
being inspired once again by the

677
00:25:39,830 --> 00:25:37,440
ingenuity of your projects

678
00:25:41,190 --> 00:25:39,840
so thanks very much for having me and i

679
00:25:51,669 --> 00:25:41,200
look forward to seeing you in your

680
00:25:54,950 --> 00:25:53,909
this year perhaps more than any other

681
00:25:57,029 --> 00:25:54,960
before

682
00:25:59,430 --> 00:25:57,039
social media has been the communication

683
00:26:01,430 --> 00:25:59,440
tool keeping nasa and its partners

684
00:26:04,230 --> 00:26:01,440
connected to the world

685
00:26:06,549 --> 00:26:04,240
the story of the artemis program the

686
00:26:10,149 --> 00:26:06,559
green one hot fire test of the sls

687
00:26:11,029 --> 00:26:10,159
rocket the mars lander perseverance and

688
00:26:13,269 --> 00:26:11,039

spacex

689

00:26:15,510 --> 00:26:13,279

dragon docking with the international

690

00:26:18,070 --> 00:26:15,520

space station of just a few stories

691

00:26:18,870 --> 00:26:18,080

brought directly to nasa audiences

692

00:26:21,909 --> 00:26:18,880

through

693

00:26:23,830 --> 00:26:21,919

the many platforms available this year

694

00:26:24,470 --> 00:26:23,840

social media award winners brought their

695

00:26:27,430 --> 00:26:24,480

audiences

696

00:26:29,430 --> 00:26:27,440

along with them on their journeys

697

00:26:31,110 --> 00:26:29,440

pictures in the labs showed what it

698

00:26:32,230 --> 00:26:31,120

takes to build one of these high-powered

699

00:26:35,510 --> 00:26:32,240

rockets

700

00:26:37,430 --> 00:26:35,520

videos show the multiple test teams must

701
00:26:38,470 --> 00:26:37,440
perform before finally heading to the

702
00:26:41,029 --> 00:26:38,480
launch pad

703
00:26:42,470 --> 00:26:41,039
and flying their hard work thousands of

704
00:26:45,590 --> 00:26:42,480
feet in the air

705
00:26:48,070 --> 00:26:45,600
traditions that transformed people

706
00:26:50,230 --> 00:26:48,080
into a team were shared and the next

707
00:26:51,350 --> 00:26:50,240
generation of rocketeers were educated

708
00:26:54,870 --> 00:26:51,360
and inspired

709
00:26:57,029 --> 00:26:54,880
along the way for the social media award

710
00:26:58,230 --> 00:26:57,039
teams are judged on their posting

711
00:27:01,590 --> 00:26:58,240
consistency

712
00:27:04,149 --> 00:27:01,600
their creativity and their content it is

713
00:27:06,630 --> 00:27:04,159

my honor to announce the top three teams

714

00:27:08,470 --> 00:27:06,640

in each division of the social media

715

00:27:11,110 --> 00:27:08,480

award category

716

00:27:12,789 --> 00:27:11,120

for the middle school and high school or

717

00:27:15,350 --> 00:27:12,799

sli division

718

00:27:16,149 --> 00:27:15,360

finishing in third place is minster stem

719

00:27:21,350 --> 00:27:16,159

club

720

00:27:24,310 --> 00:27:21,360

from minster ohio congratulations

721

00:27:25,909 --> 00:27:24,320

in second place is oakton high school

722

00:27:29,990 --> 00:27:25,919

from vienna virginia

723

00:27:34,549 --> 00:27:33,510

and in first place is sylvania northview

724

00:27:41,750 --> 00:27:34,559

high school

725

00:27:46,789 --> 00:27:44,190

and for the college and university or

726
00:27:48,389 --> 00:27:46,799
usli division

727
00:27:50,070 --> 00:27:48,399
finishing in third place is north

728
00:27:51,800 --> 00:27:50,080
carolina state university

729
00:27:53,029 --> 00:27:51,810
in raleigh north carolina

730
00:27:55,590 --> 00:27:53,039
[Applause]

731
00:27:58,310 --> 00:27:55,600
congratulations to you all

732
00:27:59,430 --> 00:27:58,320
and in second place is the university of

733
00:28:02,470 --> 00:27:59,440
puerto rico

734
00:28:03,630 --> 00:28:02,480
the mayaguez campus from mayaguez puerto

735
00:28:06,710 --> 00:28:03,640
rico

736
00:28:07,750 --> 00:28:06,720
congratulations to you all and in the

737
00:28:11,190 --> 00:28:07,760
number one stop

738
00:28:13,029 --> 00:28:11,200

spot in first place is purdue university

739

00:28:16,630 --> 00:28:13,039

from west lafayette indiana

740

00:28:30,389 --> 00:28:16,640

congratulations purdue

741

00:28:33,029 --> 00:28:30,399

and congratulations to all the teams

742

00:28:35,190 --> 00:28:33,039

the challenge of designing building and

743

00:28:35,750 --> 00:28:35,200

flying a high-powered rocket was a big

744

00:28:38,070 --> 00:28:35,760

hurdle

745

00:28:39,830 --> 00:28:38,080

each of you had to overcome to be here

746

00:28:42,310 --> 00:28:39,840

but a team's success is only part of

747

00:28:45,190 --> 00:28:42,320

what makes a team memorable your fans

748

00:28:46,070 --> 00:28:45,200

parents friends and community sponsors

749

00:28:49,029 --> 00:28:46,080

they're going to remember

750

00:28:49,909 --> 00:28:49,039

a team for their team spirit team spirit

751
00:28:51,990 --> 00:28:49,919
is the bond

752
00:28:53,350 --> 00:28:52,000
formed by team members who have put in

753
00:28:55,590 --> 00:28:53,360
so many hours together

754
00:28:57,190 --> 00:28:55,600
even virtually team spirit's an

755
00:28:59,029 --> 00:28:57,200
important part of this competition and

756
00:28:59,669 --> 00:28:59,039
we want to acknowledge the teams who

757
00:29:01,909 --> 00:28:59,679
work

758
00:29:03,029 --> 00:29:01,919
compete and celebrate with lots of

759
00:29:05,590 --> 00:29:03,039
enthusiasm

760
00:29:07,830 --> 00:29:05,600
the best team spirit award is voted on

761
00:29:10,149 --> 00:29:07,840
and chosen by members of the competing

762
00:29:11,110 --> 00:29:10,159
teams it's given to teams in both the

763
00:29:13,029 --> 00:29:11,120

heist middle

764

00:29:14,710 --> 00:29:13,039

high school division and the college

765

00:29:16,789 --> 00:29:14,720

university division

766

00:29:17,909 --> 00:29:16,799

so this year's winners in the middle

767

00:29:21,510 --> 00:29:17,919

high school division

768

00:29:24,830 --> 00:29:21,520

or sli are in third place

769

00:29:30,630 --> 00:29:24,840

sylvania northview high school sylvania

770

00:29:41,909 --> 00:29:34,549

in second place madison west high school

771

00:29:46,230 --> 00:29:44,630

and finally in first place harrison

772

00:29:54,230 --> 00:29:46,240

central school district

773

00:29:55,830 --> 00:29:54,240

harrison new york

774

00:29:57,269 --> 00:29:55,840

this year's winners in the college

775

00:30:00,470 --> 00:29:57,279

university division or

776

00:30:06,830 --> 00:30:00,480

usli division are in third place

777

00:30:11,029 --> 00:30:09,029

indiana

778

00:30:13,990 --> 00:30:11,039

in second place california state

779

00:30:19,510 --> 00:30:14,000

polytech university in pomona california

780

00:30:22,230 --> 00:30:19,520

[Applause]

781

00:30:27,909 --> 00:30:22,240

and in first place auburn university

782

00:30:27,919 --> 00:30:39,350

congratulations to all the winners

783

00:30:42,630 --> 00:30:41,669

a rocket that flies precisely to its

784

00:30:44,870 --> 00:30:42,640

destination

785

00:30:45,830 --> 00:30:44,880

performs its mission without delays or

786

00:30:47,990 --> 00:30:45,840

setbacks

787

00:30:48,870 --> 00:30:48,000

and can safely return to the ground are

788

00:30:51,269 --> 00:30:48,880

the objectives

789

00:30:52,950 --> 00:30:51,279

set forth by the nasa student launch

790

00:30:54,549 --> 00:30:52,960

review team

791

00:30:56,149 --> 00:30:54,559

but those criteria aren't the only

792

00:30:57,190 --> 00:30:56,159

things that make a team's rocket

793

00:30:59,830 --> 00:30:57,200

memorable

794

00:31:01,509 --> 00:30:59,840

a rocket with flair and a unique look

795

00:31:02,630 --> 00:31:01,519

will make it stand out amongst its

796

00:31:05,669 --> 00:31:02,640

competitors

797

00:31:06,230 --> 00:31:05,679

many teams have put countless hours into

798

00:31:08,549 --> 00:31:06,240

the look

799

00:31:09,750 --> 00:31:08,559

and design of their rockets fueling

800

00:31:11,669 --> 00:31:09,760

their team spirit

801
00:31:13,350 --> 00:31:11,679
and adding interest and excitement at

802
00:31:15,669 --> 00:31:13,360
the launch field

803
00:31:17,350 --> 00:31:15,679
the best looking rocket award is given

804
00:31:19,590 --> 00:31:17,360
to teams in both the middle

805
00:31:20,950 --> 00:31:19,600
high school division and the university

806
00:31:22,870 --> 00:31:20,960
college division

807
00:31:24,070 --> 00:31:22,880
it is voted on by the competitors

808
00:31:25,990 --> 00:31:24,080
themselves

809
00:31:27,509 --> 00:31:26,000
this year's team submitted pictures of

810
00:31:30,070 --> 00:31:27,519
their rockets for their

811
00:31:32,630 --> 00:31:30,080
competitors to view and decide who they

812
00:31:35,029 --> 00:31:32,640
thought produced the best looking rocket

813
00:31:37,190 --> 00:31:35,039

the winners this year in the middle high

814

00:31:40,710 --> 00:31:37,200

school division for best looking rocket

815

00:31:48,310 --> 00:31:40,720

are in third place oakton

816

00:31:58,830 --> 00:31:51,350

and in second place

817

00:32:03,750 --> 00:32:00,549

ohio

818

00:32:07,110 --> 00:32:03,760

and finally in first place

819

00:32:13,430 --> 00:32:07,120

sylvania northview high school sylvania

820

00:32:17,590 --> 00:32:15,990

moving on to the college university

821

00:32:20,789 --> 00:32:17,600

division winners

822

00:32:21,830 --> 00:32:20,799

we have in third place vanderbilt

823

00:32:28,950 --> 00:32:21,840

university

824

00:32:32,630 --> 00:32:28,960

nashville tennessee

825

00:32:35,830 --> 00:32:32,640

in second place for best looking rocket

826

00:32:43,350 --> 00:32:35,840

we have kent state university

827

00:32:45,990 --> 00:32:43,360

kent ohio

828

00:32:47,269 --> 00:32:46,000

and in first place for best looking

829

00:32:49,909 --> 00:32:47,279

rocket

830

00:32:50,630 --> 00:32:49,919

california state university long beach

831

00:32:55,710 --> 00:32:50,640

long beach

832

00:32:58,870 --> 00:32:58,389

congratulations to all six of these

833

00:33:04,630 --> 00:32:58,880

teams

834

00:33:08,310 --> 00:33:06,470

when designing and developing a new

835

00:33:11,110 --> 00:33:08,320

technology or launch system

836

00:33:13,029 --> 00:33:11,120

it is critical that engineers scientists

837

00:33:13,830 --> 00:33:13,039

and technicians possess the ability to

838

00:33:16,470 --> 00:33:13,840

innovate

839

00:33:18,710 --> 00:33:16,480

to endure setbacks and difficulties and

840

00:33:21,509 --> 00:33:18,720

to accurately complete the difficult

841

00:33:23,350 --> 00:33:21,519

work set before them there is however

842

00:33:26,070 --> 00:33:23,360

another key skill required for the

843

00:33:29,430 --> 00:33:26,080

success and duration of a major program

844

00:33:31,350 --> 00:33:29,440

communication the project review award

845

00:33:32,710 --> 00:33:31,360

recognizes the college or university

846

00:33:35,029 --> 00:33:32,720

team that was deemed

847

00:33:37,029 --> 00:33:35,039

to have the best combination of written

848

00:33:39,909 --> 00:33:37,039

reviews and formal presentations

849

00:33:41,269 --> 00:33:39,919

throughout the student launch year so in

850

00:33:44,630 --> 00:33:41,279

the design division

851
00:33:52,710 --> 00:33:44,640
the project review award winner is

852
00:33:55,509 --> 00:33:52,720
new york university in new york new york

853
00:33:56,310 --> 00:33:55,519
in the launch division we'll announce

854
00:33:59,269 --> 00:33:56,320
three places

855
00:34:00,149 --> 00:33:59,279
in third place this year is auburn

856
00:34:06,310 --> 00:34:00,159
university

857
00:34:09,510 --> 00:34:06,320
from auburn alabama

858
00:34:10,820 --> 00:34:09,520
in second place is vanderbilt university

859
00:34:15,349 --> 00:34:10,830
of nashville tennessee

860
00:34:17,669 --> 00:34:15,359
[Applause]

861
00:34:20,869 --> 00:34:17,679
and the winner of the award this year is

862
00:34:26,790 --> 00:34:20,879
california state university long beach

863
00:34:29,909 --> 00:34:28,869

these teams went above and beyond

864

00:34:32,230 --> 00:34:29,919

expectations

865

00:34:33,270 --> 00:34:32,240

when delivering their preliminary design

866

00:34:35,270 --> 00:34:33,280

critical design

867

00:34:37,190 --> 00:34:35,280

and flight readiness review written

868

00:34:39,430 --> 00:34:37,200

reports and presentations

869

00:34:41,270 --> 00:34:39,440

their reports clearly described how the

870

00:34:42,710 --> 00:34:41,280

program was evolving over the course of

871

00:34:44,710 --> 00:34:42,720

the project life cycle

872

00:34:46,149 --> 00:34:44,720

and contained several unique features to

873

00:34:49,990 --> 00:34:46,159

aid in navigating

874

00:34:52,869 --> 00:34:50,000

the extensive documents the teams

875

00:34:54,550 --> 00:34:52,879

that the team answered questions

876
00:34:55,109 --> 00:34:54,560
directly and honestly and humbly

877
00:35:00,829 --> 00:34:55,119
accepted

878
00:35:13,190 --> 00:35:02,150
congratulations

879
00:35:16,950 --> 00:35:15,670
at first glance student launch may

880
00:35:19,750 --> 00:35:16,960
appear to be all about

881
00:35:20,470 --> 00:35:19,760
building and flying rockets but there's

882
00:35:23,910 --> 00:35:20,480
another

883
00:35:24,710 --> 00:35:23,920
equally important aspect designing

884
00:35:28,950 --> 00:35:24,720
building

885
00:35:31,430 --> 00:35:28,960
and executing a scientific experiment

886
00:35:33,109 --> 00:35:31,440
rockets are the means to transport these

887
00:35:35,910 --> 00:35:33,119
scientific payloads to their

888
00:35:37,670 --> 00:35:35,920

destinations in the stars

889

00:35:40,390 --> 00:35:37,680

a payload can be anything from a

890

00:35:42,870 --> 00:35:40,400

telescope to a satellite

891

00:35:45,430 --> 00:35:42,880

to a robotic lander that's destined for

892

00:35:47,349 --> 00:35:45,440

another planet

893

00:35:48,710 --> 00:35:47,359

the payload component of this year's

894

00:35:52,310 --> 00:35:48,720

nasa student launch

895

00:35:53,510 --> 00:35:52,320

competition challenged teams to build a

896

00:35:55,589 --> 00:35:53,520

lander system

897

00:35:57,109 --> 00:35:55,599

that would be deployed from the rocket

898

00:36:00,470 --> 00:35:57,119

during descent

899

00:36:01,750 --> 00:36:00,480

and after touching down it could write

900

00:36:08,710 --> 00:36:01,760

itself

901
00:36:12,470 --> 00:36:08,720
panoramic photo of the landing site

902
00:36:15,670 --> 00:36:12,480
and transmit that photo back to the team

903
00:36:17,430 --> 00:36:15,680
this type of mission and the capability

904
00:36:19,190 --> 00:36:17,440
is prominently in the minds of

905
00:36:22,710 --> 00:36:19,200
scientists and engineers

906
00:36:24,950 --> 00:36:22,720
the world over following the success

907
00:36:29,829 --> 00:36:24,960
of the perseverance rover landing in

908
00:36:35,030 --> 00:36:32,790
the experiment design award is given to

909
00:36:37,190 --> 00:36:35,040
the college or university team

910
00:36:40,069 --> 00:36:37,200
with the most creative and innovative

911
00:36:41,030 --> 00:36:40,079
way of tackling the challenge while

912
00:36:46,710 --> 00:36:41,040
maximizing

913
00:36:54,069 --> 00:36:50,230

for the design division the winner

914

00:36:57,190 --> 00:36:54,079

of the experimental design award is

915

00:36:58,520 --> 00:36:57,200

the ohio state university

916

00:37:04,950 --> 00:36:58,530

in columbus ohio

917

00:37:07,990 --> 00:37:04,960

[Applause]

918

00:37:10,710 --> 00:37:08,000

their design featured innovative locking

919

00:37:12,470 --> 00:37:10,720

mechanisms for both retaining the lander

920

00:37:14,870 --> 00:37:12,480

prior to deployment

921

00:37:17,190 --> 00:37:14,880

and releasing the land or parachute upon

922

00:37:19,430 --> 00:37:17,200

touchdown

923

00:37:21,829 --> 00:37:19,440

perhaps most notable about the ohio

924

00:37:22,870 --> 00:37:21,839

state university's payload documentation

925

00:37:25,589 --> 00:37:22,880

however

926
00:37:27,589 --> 00:37:25,599
was their superbly detailed fabrication

927
00:37:29,670 --> 00:37:27,599
and construction plans

928
00:37:34,829 --> 00:37:29,680
included in their flight readiness

929
00:37:42,310 --> 00:37:36,950
congratulations

930
00:37:52,390 --> 00:37:42,320
for the launch division in third place

931
00:37:57,349 --> 00:37:55,750
our second place winner is vanderbilt

932
00:38:08,950 --> 00:37:57,359
university

933
00:38:16,710 --> 00:38:10,870
of north carolina charlotte north

934
00:38:21,349 --> 00:38:18,790
as we saw earlier this year with the

935
00:38:23,670 --> 00:38:21,359
mars perseverance landing

936
00:38:24,710 --> 00:38:23,680
successful design and performance of

937
00:38:27,990 --> 00:38:24,720
payloads

938
00:38:30,230 --> 00:38:28,000

requires a team effort

939

00:38:31,430 --> 00:38:30,240

university of north carolina charlotte

940

00:38:35,030 --> 00:38:31,440

demonstrated this

941

00:38:37,430 --> 00:38:35,040

in every sense of the word they were one

942

00:38:38,150 --> 00:38:37,440

of the only teams able to successfully

943

00:38:41,910 --> 00:38:38,160

complete

944

00:38:43,990 --> 00:38:41,920

the college payload challenge this year

945

00:38:46,550 --> 00:38:44,000

they designed their payload to account

946

00:38:49,030 --> 00:38:46,560

for any orientation of landing

947

00:38:50,310 --> 00:38:49,040

and their documentation showcased the

948

00:38:53,829 --> 00:38:50,320

landed payload

949

00:38:56,710 --> 00:38:53,839

using legs to self-write itself

950

00:39:01,190 --> 00:38:56,720

autonomously leveling itself and taking

951
00:39:03,670 --> 00:39:01,200
the 360 degree panoramic photo

952
00:39:05,270 --> 00:39:03,680
this achievement wouldn't be possible

953
00:39:11,580 --> 00:39:05,280
without consideration

954
00:39:26,630 --> 00:39:12,829
[Applause]

955
00:39:31,430 --> 00:39:29,829
whether launching model rockets or big

956
00:39:34,630 --> 00:39:31,440
ones like the nasa

957
00:39:35,589 --> 00:39:34,640
space launch system everyone wants to

958
00:39:39,109 --> 00:39:35,599
know

959
00:39:39,990 --> 00:39:39,119
how high does it go the nasa space

960
00:39:43,270 --> 00:39:40,000
launch

961
00:39:45,190 --> 00:39:43,280
challenges teams to decide on a target

962
00:39:48,950 --> 00:39:45,200
altitude for themselves

963
00:39:51,270 --> 00:39:48,960

very early on in the program as part

964

00:39:52,310 --> 00:39:51,280

of the planet preliminary design review

965

00:39:54,950 --> 00:39:52,320

package

966

00:39:56,710 --> 00:39:54,960

and then to design their rocket payload

967

00:39:59,670 --> 00:39:56,720

and propulsion system

968

00:40:00,470 --> 00:39:59,680

to meet stringent weight and thrust

969

00:40:03,430 --> 00:40:00,480

values

970

00:40:03,829 --> 00:40:03,440

in order to achieve that target teams

971

00:40:06,870 --> 00:40:03,839

use

972

00:40:09,750 --> 00:40:06,880

modeling and simulation software

973

00:40:10,390 --> 00:40:09,760

to predict their rockets performance and

974

00:40:13,270 --> 00:40:10,400

perform

975

00:40:14,790 --> 00:40:13,280

test launches to confirm their models

976
00:40:17,109 --> 00:40:14,800
are accurate

977
00:40:19,109 --> 00:40:17,119
the team in each division that comes

978
00:40:22,309 --> 00:40:19,119
closest to their prediction

979
00:40:25,349 --> 00:40:22,319
wins the altitude award

980
00:40:28,710 --> 00:40:25,359
often award is a close competition

981
00:40:30,309 --> 00:40:28,720
sometimes coming down to a single digit

982
00:40:33,270 --> 00:40:30,319
difference between teams

983
00:40:35,829 --> 00:40:33,280
and their targets nan is proud we're

984
00:40:39,109 --> 00:40:35,839
proud to announce the winners

985
00:40:40,470 --> 00:40:39,119
the s l division this year was a close

986
00:40:43,109 --> 00:40:40,480
competition

987
00:40:45,030 --> 00:40:43,119
and the winners are in third place with

988
00:40:48,150 --> 00:40:45,040

an altitude difference

989

00:40:51,190 --> 00:40:48,160
of 147 feet

990

00:40:53,530 --> 00:40:51,200
spring grove area high school

991

00:40:57,430 --> 00:40:53,540
spring grove pennsylvania

992

00:40:59,910 --> 00:40:57,440
[Applause]

993

00:41:00,710 --> 00:40:59,920
in second place with a difference of

994

00:41:04,790 --> 00:41:00,720
only

995

00:41:07,120 --> 00:41:04,800
30 feet nativity catholic parish

996

00:41:09,589 --> 00:41:07,130
burke virginia

997

00:41:12,710 --> 00:41:09,599
[Applause]

998

00:41:15,750 --> 00:41:12,720
in space in space flight

999

00:41:17,190 --> 00:41:15,760
one foot can make a big difference in

1000

00:41:20,790 --> 00:41:17,200
this competition

1001
00:41:25,430 --> 00:41:20,800
the first place team missed their gold

1002
00:41:29,190 --> 00:41:25,440
altitude by only 14 feet

1003
00:41:32,950 --> 00:41:29,200
for this year's sli altitude award

1004
00:41:34,069 --> 00:41:32,960
in first place slovenia northwest high

1005
00:41:41,030 --> 00:41:34,079
school

1006
00:41:48,390 --> 00:41:44,630
you the usli division was also a close

1007
00:41:49,349 --> 00:41:48,400
battle with an altitude difference of 70

1008
00:41:51,910 --> 00:41:49,359
feet

1009
00:41:52,870 --> 00:41:51,920
finishing third is the university of

1010
00:41:59,910 --> 00:41:52,880
texas

1011
00:42:07,109 --> 00:42:03,430
in second place with an amazing 34 feet

1012
00:42:11,270 --> 00:42:07,119
difference is university of notre dame

1013
00:42:16,150 --> 00:42:14,630

and in the first place the team missed

1014

00:42:19,430 --> 00:42:16,160

their target by only

1015

00:42:21,430 --> 00:42:19,440

16 feet a narrow margin from their

1016

00:42:25,750 --> 00:42:21,440

target of 4

1017

00:42:29,030 --> 00:42:25,760

900 feet the winner of the usli

1018

00:42:31,430 --> 00:42:29,040

first place altitude award goes to the

1019

00:42:34,490 --> 00:42:31,440

university of north carolina

1020

00:42:42,829 --> 00:42:34,500

at charlotte north carolina

1021

00:42:48,069 --> 00:42:42,839

[Applause]

1022

00:42:48,079 --> 00:42:53,829

hello my name is early mcknight

1023

00:42:57,109 --> 00:42:55,990

and i'm honored to represent bastian

1024

00:43:00,230 --> 00:42:57,119

technologies

1025

00:43:02,950 --> 00:43:00,240

and nasa student launch for presentation

1026
00:43:05,589 --> 00:43:02,960
of the safety award

1027
00:43:06,950 --> 00:43:05,599
bastion technologies is a proud sponsor

1028
00:43:09,349 --> 00:43:06,960
of this event

1029
00:43:10,390 --> 00:43:09,359
and shows its commitment to continued

1030
00:43:13,430 --> 00:43:10,400
support

1031
00:43:17,910 --> 00:43:13,440
by providing a 500 prize

1032
00:43:21,510 --> 00:43:17,920
to the first place winner of this award

1033
00:43:24,230 --> 00:43:21,520
rocketry can be dangerous working in

1034
00:43:28,309 --> 00:43:24,240
machine shops and laboratories

1035
00:43:31,670 --> 00:43:28,319
launching at the field testing hardware

1036
00:43:33,349 --> 00:43:31,680
even spectating all come with measurable

1037
00:43:36,309 --> 00:43:33,359
risk

1038
00:43:37,190 --> 00:43:36,319

this year all teams took safety as a

1039

00:43:40,950 --> 00:43:37,200

priority

1040

00:43:44,710 --> 00:43:40,960

in their programs researching mitigating

1041

00:43:48,150 --> 00:43:44,720

and planning for hazardous scenarios

1042

00:43:51,510 --> 00:43:48,160

especially important and very

1043

00:43:54,790 --> 00:43:51,520

evidently on the minds of the

1044

00:43:57,670 --> 00:43:54,800

of the student teams was the

1045

00:43:59,349 --> 00:43:57,680

precautions necessary resulting from

1046

00:44:02,630 --> 00:43:59,359

covet 19

1047

00:44:05,510 --> 00:44:02,640

and social distancing it's obvious

1048

00:44:08,069 --> 00:44:05,520

every team did an excellent job

1049

00:44:10,950 --> 00:44:08,079

incorporating safety measures into their

1050

00:44:16,710 --> 00:44:14,069

the safety award is given to the team

1051
00:44:18,950 --> 00:44:16,720
that has met all of student launch's

1052
00:44:23,349 --> 00:44:18,960
safety expectations

1053
00:44:27,750 --> 00:44:23,359
and documented it to the highest quality

1054
00:44:32,710 --> 00:44:31,829
in third place the university of north

1055
00:44:39,370 --> 00:44:32,720
carolina

1056
00:44:39,380 --> 00:44:43,670
[Applause]

1057
00:44:49,829 --> 00:44:47,109
in second place the university

1058
00:44:51,910 --> 00:44:49,839
of north carolina of the university of

1059
00:44:53,480 --> 00:44:51,920
north carolina state university in

1060
00:45:01,750 --> 00:44:53,490
raleigh north carolina

1061
00:45:04,710 --> 00:45:01,760
[Applause]

1062
00:45:06,150 --> 00:45:04,720
and first place goes to the university

1063
00:45:09,430 --> 00:45:06,160

of notre dame

1064

00:45:12,710 --> 00:45:09,440

in indiana notre dame

1065

00:45:16,630 --> 00:45:12,720

identified and categorized their risk

1066

00:45:19,190 --> 00:45:16,640

documenting them in exceptional detail

1067

00:45:22,790 --> 00:45:19,200

they managed and mitigated those risks

1068

00:45:25,670 --> 00:45:22,800

with creative and effective controls

1069

00:45:27,829 --> 00:45:25,680

they developed procedures and checklists

1070

00:45:31,190 --> 00:45:27,839

for tests and launches

1071

00:45:33,990 --> 00:45:31,200

implemented team protocols for meetings

1072

00:45:36,309 --> 00:45:34,000

laboratory work and launches and

1073

00:45:40,670 --> 00:45:36,319

utilized effective methods

1074

00:45:44,829 --> 00:45:40,680

to maintain personal health and safety

1075

00:45:50,940 --> 00:45:44,839

congratulations the university of notre

1076
00:45:55,510 --> 00:45:53,910
[Applause]

1077
00:45:57,190 --> 00:45:55,520
in addition to presenting this year's

1078
00:45:59,750 --> 00:45:57,200
nasa student launch stem

1079
00:46:02,150 --> 00:45:59,760
engagement award i also have the honor

1080
00:46:04,150 --> 00:46:02,160
and privilege of presenting it in honor

1081
00:46:06,630 --> 00:46:04,160
of a treasured rocketry mentor who

1082
00:46:08,870 --> 00:46:06,640
passed away earlier this year

1083
00:46:09,910 --> 00:46:08,880
after a celebrated service in the united

1084
00:46:11,670 --> 00:46:09,920
states navy

1085
00:46:13,670 --> 00:46:11,680
joseph woodford's involvement in

1086
00:46:15,589 --> 00:46:13,680
rocketry spanned decades

1087
00:46:17,270 --> 00:46:15,599
he served as president and senior

1088
00:46:19,109 --> 00:46:17,280

advisor for novar

1089

00:46:20,309 --> 00:46:19,119

and mentored countless students through

1090

00:46:23,109 --> 00:46:20,319

his work in tarc

1091

00:46:23,990 --> 00:46:23,119

and nasa student launch with oakton

1092

00:46:25,829 --> 00:46:24,000

south lakes

1093

00:46:28,069 --> 00:46:25,839

and thomas jefferson high schools in

1094

00:46:30,390 --> 00:46:28,079

northern virginia

1095

00:46:32,309 --> 00:46:30,400

commander woodford was laid to rest with

1096

00:46:34,150 --> 00:46:32,319

full military honors at arlington

1097

00:46:36,309 --> 00:46:34,160

national cemetery

1098

00:46:37,349 --> 00:46:36,319

joe is a good friend and will be greatly

1099

00:46:40,390 --> 00:46:37,359

missed

1100

00:46:42,309 --> 00:46:40,400

it is in his honor that the 2021 nasa

1101

00:46:44,150 --> 00:46:42,319

student launch stem engagement award is

1102

00:46:45,829 --> 00:46:44,160

presented

1103

00:46:47,510 --> 00:46:45,839

designing rockets and overcoming

1104

00:46:49,589 --> 00:46:47,520

scientific challenges are

1105

00:46:51,430 --> 00:46:49,599

in many ways the result of a lifetime of

1106

00:46:53,109 --> 00:46:51,440

learning for the participants of nasa's

1107

00:46:55,270 --> 00:46:53,119

student lodge

1108

00:46:56,150 --> 00:46:55,280

that learning often spurred and nurtured

1109

00:46:58,470 --> 00:46:56,160

by a parent

1110

00:47:00,630 --> 00:46:58,480

teacher guest speaker or mentor is the

1111

00:47:02,790 --> 00:47:00,640

key to success

1112

00:47:04,550 --> 00:47:02,800

that is why we feel is so important for

1113

00:47:05,829 --> 00:47:04,560

our student launch teams to follow in

1114

00:47:07,589 --> 00:47:05,839

kind by reaching out

1115

00:47:10,069 --> 00:47:07,599

teaching and nurturing the next

1116

00:47:12,230 --> 00:47:10,079

generation of stem learners

1117

00:47:13,990 --> 00:47:12,240

for this year's student launch teams the

1118

00:47:16,150 --> 00:47:14,000

challenge was even greater given the

1119

00:47:18,870 --> 00:47:16,160

unique circumstances that restricted

1120

00:47:21,510 --> 00:47:18,880

opportunities for in-person learning

1121

00:47:23,270 --> 00:47:21,520

despite these hurdles teams rose to the

1122

00:47:26,150 --> 00:47:23,280

challenge and adapted many of their

1123

00:47:28,309 --> 00:47:26,160

events to a virtual platform

1124

00:47:29,829 --> 00:47:28,319

as a result the student launch teams

1125

00:47:31,990 --> 00:47:29,839

engaged fellow students

1126
00:47:34,710 --> 00:47:32,000
and the public with more than 19 000

1127
00:47:36,870 --> 00:47:34,720
people at 150 events

1128
00:47:39,109 --> 00:47:36,880
it is my honor to recognize the top

1129
00:47:39,829 --> 00:47:39,119
three stem engagement teams from both

1130
00:47:47,430 --> 00:47:39,839
our

1131
00:47:51,589 --> 00:47:50,870
in the sli division finishing in third

1132
00:47:54,069 --> 00:47:51,599
place

1133
00:47:57,470 --> 00:47:54,079
is sylvania northview high school

1134
00:48:01,589 --> 00:47:59,190
[Applause]

1135
00:48:02,950 --> 00:48:01,599
finishing in second place is harrison

1136
00:48:06,460 --> 00:48:02,960
central school district

1137
00:48:07,670 --> 00:48:06,470
harrison new york

1138
00:48:10,710 --> 00:48:07,680

[Applause]

1139

00:48:11,830 --> 00:48:10,720

and in first place is oakton high school

1140

00:48:14,230 --> 00:48:11,840

vienna virginia

1141

00:48:16,950 --> 00:48:14,240

[Applause]

1142

00:48:17,829 --> 00:48:16,960

oakton high school reached over 223

1143

00:48:20,870 --> 00:48:17,839

participants

1144

00:48:22,710 --> 00:48:20,880

in hands-on direct stem engagement

1145

00:48:24,630 --> 00:48:22,720

the team held events with students in

1146

00:48:26,230 --> 00:48:24,640

grades five to adult through the

1147

00:48:28,790 --> 00:48:26,240

smithsonian

1148

00:48:30,309 --> 00:48:28,800

national air and space museum and local

1149

00:48:32,069 --> 00:48:30,319

schools

1150

00:48:34,069 --> 00:48:32,079

the open team lectured and trained

1151
00:48:36,309 --> 00:48:34,079
fellow students in rocketry mathematics

1152
00:48:38,150 --> 00:48:36,319
and principles they also included the

1153
00:48:40,630 --> 00:48:38,160
use of engineering software such as

1154
00:48:42,230 --> 00:48:40,640
open rocket and cad this approach

1155
00:48:44,309 --> 00:48:42,240
allowed students to design

1156
00:48:45,829 --> 00:48:44,319
calculate and simulate flights of their

1157
00:48:48,309 --> 00:48:45,839
very own rockets

1158
00:48:49,349 --> 00:48:48,319
the oakton team will receive a 1 000

1159
00:48:51,820 --> 00:48:49,359
cash prize

1160
00:48:54,870 --> 00:48:51,830
congratulations

1161
00:48:57,990 --> 00:48:54,880
[Applause]

1162
00:48:58,870 --> 00:48:58,000
and in the usli division finishing in

1163
00:49:01,510 --> 00:48:58,880

third place

1164

00:49:02,460 --> 00:49:01,520

is university of notre dame notre dame

1165

00:49:05,750 --> 00:49:02,470

indiana

1166

00:49:08,549 --> 00:49:05,760

[Applause]

1167

00:49:09,030 --> 00:49:08,559

in second place is washington university

1168

00:49:14,230 --> 00:49:09,040

in st

1169

00:49:18,790 --> 00:49:17,109

and first place in this year's usli

1170

00:49:20,950 --> 00:49:18,800

division goes to

1171

00:49:24,069 --> 00:49:20,960

vanderbilt university nashville

1172

00:49:27,990 --> 00:49:26,150

vanderbilt university conducted stem

1173

00:49:30,390 --> 00:49:28,000

activities with elementary middle and

1174

00:49:32,069 --> 00:49:30,400

high school students and educators

1175

00:49:34,309 --> 00:49:32,079

because students could not meet in

1176

00:49:35,270 --> 00:49:34,319

person the vanderbilt team took a

1177

00:49:37,430 --> 00:49:35,280

hands-on

1178

00:49:39,270 --> 00:49:37,440

engineering design lifecycle lesson in

1179

00:49:42,470 --> 00:49:39,280

basic rocketry

1180

00:49:44,309 --> 00:49:42,480

and adapted it for a virtual classroom

1181

00:49:46,150 --> 00:49:44,319

by using their own fabrication

1182

00:49:48,230 --> 00:49:46,160

facilities they were able to bring their

1183

00:49:48,950 --> 00:49:48,240

students and bottle rocket designs to

1184

00:49:50,790 --> 00:49:48,960

life

1185

00:49:52,549 --> 00:49:50,800

launch them and virtually discuss

1186

00:49:55,510 --> 00:49:52,559

feedback with the students about

1187

00:49:57,270 --> 00:49:55,520

design successes and failures the team

1188

00:49:59,430 --> 00:49:57,280

also conducted several events which

1189

00:50:01,670 --> 00:49:59,440

engage students in designing rockets and

1190

00:50:03,190 --> 00:50:01,680

simulating flight in both open rocket

1191

00:50:05,190 --> 00:50:03,200

and matlab

1192

00:50:06,829 --> 00:50:05,200

the vanderbilt team will receive a one

1193

00:50:16,069 --> 00:50:06,839

thousand dollar cash prize

1194

00:50:20,470 --> 00:50:18,069

good afternoon everyone and thank you

1195

00:50:22,870 --> 00:50:20,480

for allowing me to participate today

1196

00:50:24,470 --> 00:50:22,880

i am so pleased to join you on behalf of

1197

00:50:25,589 --> 00:50:24,480

the american institute of aeronautics

1198

00:50:27,670 --> 00:50:25,599

and astronautics

1199

00:50:28,710 --> 00:50:27,680

to recognize the hard work of students

1200

00:50:31,270 --> 00:50:28,720

participating

1201
00:50:32,150 --> 00:50:31,280
in the nasa student launch project

1202
00:50:35,190 --> 00:50:32,160
personally

1203
00:50:36,230 --> 00:50:35,200
this is great fun for me since i had the

1204
00:50:37,750 --> 00:50:36,240
opportunity

1205
00:50:39,349 --> 00:50:37,760
through the course of my career to help

1206
00:50:42,230 --> 00:50:39,359
with the space launch system

1207
00:50:44,069 --> 00:50:42,240
orion the space shuttle and many others

1208
00:50:46,069 --> 00:50:44,079
during my nasa days

1209
00:50:47,750 --> 00:50:46,079
our institute's mission is shaping the

1210
00:50:49,510 --> 00:50:47,760
future of aerospace

1211
00:50:51,670 --> 00:50:49,520
now i know that can sound like a pretty

1212
00:50:53,349 --> 00:50:51,680
bold statement yet aia

1213
00:50:55,349 --> 00:50:53,359

is the world's largest professional

1214

00:50:57,190 --> 00:50:55,359

aerospace technical society

1215

00:50:58,710 --> 00:50:57,200

so we are doing that with the engagement

1216

00:50:59,750 --> 00:50:58,720

of thirty thousand professional and

1217

00:51:01,910 --> 00:50:59,760

student members

1218

00:51:02,790 --> 00:51:01,920

along with a hundred corporate members

1219

00:51:05,430 --> 00:51:02,800

several of whom

1220

00:51:07,270 --> 00:51:05,440

are participating in the program today

1221

00:51:07,990 --> 00:51:07,280

one of the most important aspects of

1222

00:51:10,230 --> 00:51:08,000

shaping the future

1223

00:51:12,390 --> 00:51:10,240

of aerospace is ensuring there is a

1224

00:51:13,270 --> 00:51:12,400

talented and qualified workforce coming

1225

00:51:15,109 --> 00:51:13,280

along

1226
00:51:16,870 --> 00:51:15,119
we want to see students like all of you

1227
00:51:19,109 --> 00:51:16,880
develop into the future leaders

1228
00:51:20,150 --> 00:51:19,119
of the aerospace profession we want to

1229
00:51:22,630 --> 00:51:20,160
help you succeed

1230
00:51:24,470 --> 00:51:22,640
as you move from classroom to career

1231
00:51:25,349 --> 00:51:24,480
please think about joining us on your

1232
00:51:27,589 --> 00:51:25,359
journey

1233
00:51:29,109 --> 00:51:27,599
if you're not already a member become

1234
00:51:31,190 --> 00:51:29,119
aia student

1235
00:51:32,390 --> 00:51:31,200
member then you have chances to

1236
00:51:35,589 --> 00:51:32,400
participate in

1237
00:51:37,510 --> 00:51:35,599
other hands-on competitions such as this

1238
00:51:38,870 --> 00:51:37,520

along with connections for your diverse

1239

00:51:41,510 --> 00:51:38,880

international membership

1240

00:51:43,750 --> 00:51:41,520

as mentors opportunities to apply for

1241

00:51:46,150 --> 00:51:43,760

scholarships

1242

00:51:47,910 --> 00:51:46,160

and access to the cutting edge technical

1243

00:51:49,190 --> 00:51:47,920

knowledge base of the aeronautics and

1244

00:51:51,990 --> 00:51:49,200

aerospace industry

1245

00:51:54,230 --> 00:51:52,000

which dates back to the early 1900s the

1246

00:51:56,390 --> 00:51:54,240

invitation is there for you to join

1247

00:51:58,549 --> 00:51:56,400

now let's keep this program moving with

1248

00:52:00,309 --> 00:51:58,559

the presentation of two awards

1249

00:52:02,549 --> 00:52:00,319

the vehicle design award and the

1250

00:52:04,630 --> 00:52:02,559

reusable launch vehicle award

1251
00:52:06,069 --> 00:52:04,640
these awards are made possible by the

1252
00:52:09,829 --> 00:52:06,079
aia members

1253
00:52:11,910 --> 00:52:09,839
who make up aia regions 1 2 and 5.

1254
00:52:13,670 --> 00:52:11,920
designing and developing a rocket is a

1255
00:52:14,790 --> 00:52:13,680
difficult task in normal years of

1256
00:52:16,870 --> 00:52:14,800
student launch

1257
00:52:18,150 --> 00:52:16,880
this season added the complexities of

1258
00:52:19,750 --> 00:52:18,160
virtual meetings

1259
00:52:21,190 --> 00:52:19,760
limited access to software and

1260
00:52:22,630 --> 00:52:21,200
simulation systems

1261
00:52:24,390 --> 00:52:22,640
and restrictions on testing and

1262
00:52:26,950 --> 00:52:24,400
construction facilities

1263
00:52:27,589 --> 00:52:26,960

all these additional hurdles did not

1264

00:52:30,470 --> 00:52:27,599

prevent

1265

00:52:31,349 --> 00:52:30,480

the students from competing in the sli

1266

00:52:34,950 --> 00:52:31,359

and

1267

00:52:37,030 --> 00:52:34,960

you guys succeeded the vehicle design

1268

00:52:37,990 --> 00:52:37,040

award is given to the design division

1269

00:52:40,390 --> 00:52:38,000

team with the most

1270

00:52:42,309 --> 00:52:40,400

creative and innovative overall vehicle

1271

00:52:43,510 --> 00:52:42,319

design that maximizes safety and

1272

00:52:45,510 --> 00:52:43,520

efficiency

1273

00:52:48,230 --> 00:52:45,520

and the winner of the vehicle design

1274

00:52:49,589 --> 00:52:48,240

award is the university of california

1275

00:52:55,230 --> 00:52:49,599

los angeles

1276

00:52:59,670 --> 00:52:57,349

[Applause]

1277

00:53:01,589 --> 00:52:59,680

sponsored by aia this award is

1278

00:53:02,710 --> 00:53:01,599

accompanied by a one thousand dollar

1279

00:53:05,190 --> 00:53:02,720

cash prize

1280

00:53:06,950 --> 00:53:05,200

ucla put on put an emphasis on

1281

00:53:09,109 --> 00:53:06,960

structural robustness and stability

1282

00:53:11,349 --> 00:53:09,119

without sacrificing performance

1283

00:53:12,790 --> 00:53:11,359

they meticulously describe the assembly

1284

00:53:15,510 --> 00:53:12,800

from every nut and bolt

1285

00:53:16,230 --> 00:53:15,520

to every layer of epoxy from nose cone

1286

00:53:18,630 --> 00:53:16,240

to fins

1287

00:53:19,510 --> 00:53:18,640

and lift off the landing we congratulate

1288

00:53:23,190 --> 00:53:19,520

ucla

1289

00:53:28,549 --> 00:53:26,950

now the reusable launch vehicle award

1290

00:53:30,470 --> 00:53:28,559

nasa student launch is all about

1291

00:53:32,549 --> 00:53:30,480

rocketry designing building and

1292

00:53:34,630 --> 00:53:32,559

safely flying amateur high-powered

1293

00:53:36,790 --> 00:53:34,640

rockets in much the same way

1294

00:53:38,069 --> 00:53:36,800

nasa and its partners develop reusable

1295

00:53:40,309 --> 00:53:38,079

launch vehicles

1296

00:53:41,589 --> 00:53:40,319

competing teams are challenged to design

1297

00:53:43,510 --> 00:53:41,599

a reusable rocket

1298

00:53:45,910 --> 00:53:43,520

that can repeatedly fly to predictable

1299

00:53:47,270 --> 00:53:45,920

altitudes while performing scientific

1300

00:53:49,349 --> 00:53:47,280

experiments

1301
00:53:51,670 --> 00:53:49,359
throughout the year each team's design

1302
00:53:54,309 --> 00:53:51,680
is evaluated by the nasa review panel

1303
00:53:57,109 --> 00:53:54,319
for safety feasibility and innovation

1304
00:53:58,549 --> 00:53:57,119
this competition builds on nasa's work

1305
00:54:01,990 --> 00:53:58,559
with the space shuttle

1306
00:54:03,510 --> 00:54:02,000
the dcx and xa projects that translated

1307
00:54:05,430 --> 00:54:03,520
into the recent accomplishments of

1308
00:54:08,549 --> 00:54:05,440
spacex and blue origin

1309
00:54:09,990 --> 00:54:08,559
the aia reusable launch vehicle award is

1310
00:54:12,470 --> 00:54:10,000
given to the team with the most

1311
00:54:13,750 --> 00:54:12,480
creative innovative and well-constructed

1312
00:54:15,589 --> 00:54:13,760
overall design

1313
00:54:16,790 --> 00:54:15,599

while still maximizing safety and

1314

00:54:20,069 --> 00:54:16,800

efficiency

1315

00:54:22,829 --> 00:54:20,079

here are our winners in third place

1316

00:54:25,750 --> 00:54:22,839

vanderbilt university nashville

1317

00:54:28,790 --> 00:54:25,760

tennessee

1318

00:54:29,910 --> 00:54:28,800

in second place washington university in

1319

00:54:33,190 --> 00:54:29,920

saint louis

1320

00:54:40,470 --> 00:54:35,990

and in first place north carolina state

1321

00:54:45,190 --> 00:54:43,190

nc state's 9-foot and nearly 50-pound

1322

00:54:47,270 --> 00:54:45,200

launch vehicle performed nominally

1323

00:54:49,270 --> 00:54:47,280

with respect to their recovery subsystem

1324

00:54:51,829 --> 00:54:49,280

in their final competition launch

1325

00:54:53,670 --> 00:54:51,839

their vehicle was standard dual deploy

1326
00:54:55,349 --> 00:54:53,680
with added components for payload

1327
00:54:57,349 --> 00:54:55,359
jettison and recovery

1328
00:54:59,270 --> 00:54:57,359
they implemented an advanced retention

1329
00:55:01,190 --> 00:54:59,280
and release device which separated the

1330
00:55:03,349 --> 00:55:01,200
payload from the main harness

1331
00:55:05,030 --> 00:55:03,359
all nomex sheets and deployment bags

1332
00:55:06,470 --> 00:55:05,040
used to protect parachutes

1333
00:55:08,470 --> 00:55:06,480
from thermal conditions during

1334
00:55:10,150 --> 00:55:08,480
deployment performed well

1335
00:55:12,470 --> 00:55:10,160
allowing the launch vehicle to land

1336
00:55:13,829 --> 00:55:12,480
safely and be reflown with proper

1337
00:55:16,470 --> 00:55:13,839
preparation

1338
00:55:18,630 --> 00:55:16,480

sponsored by aia this award is

1339

00:55:21,940 --> 00:55:18,640

accompanied by a 1 000

1340

00:55:28,069 --> 00:55:21,950

dollar prize congratulations

1341

00:55:32,309 --> 00:55:30,549

good afternoon i want to thank dan

1342

00:55:34,309 --> 00:55:32,319

dunbacher for taking the time to help

1343

00:55:37,750 --> 00:55:34,319

present the student launch awards

1344

00:55:39,430 --> 00:55:37,760

on behalf of aia i must also take a

1345

00:55:40,069 --> 00:55:39,440

moment to personally recognize a few

1346

00:55:41,349 --> 00:55:40,079

people

1347

00:55:43,990 --> 00:55:41,359

that helped make a double-a's

1348

00:55:46,069 --> 00:55:44,000

participation in this event possible

1349

00:55:48,150 --> 00:55:46,079

three a.a regions co-sponsored the

1350

00:55:50,230 --> 00:55:48,160

awards we are presenting today

1351
00:55:51,750 --> 00:55:50,240
region 1 comprised of the northeastern

1352
00:55:53,829 --> 00:55:51,760
united states

1353
00:55:55,430 --> 00:55:53,839
region 5 comprised of the midwest and

1354
00:55:57,190 --> 00:55:55,440
eastern rocky mountains

1355
00:55:59,270 --> 00:55:57,200
and my own region 2 which covers the

1356
00:56:00,630 --> 00:55:59,280
southeastern u.s

1357
00:56:04,309 --> 00:56:00,640
thank you to my fellow regional

1358
00:56:05,910 --> 00:56:04,319
directors for co-sponsoring these awards

1359
00:56:07,670 --> 00:56:05,920
finally i want to thank all the students

1360
00:56:10,390 --> 00:56:07,680
that participated in our nasa student

1361
00:56:11,750 --> 00:56:10,400
launch career expo a few weeks ago

1362
00:56:13,270 --> 00:56:11,760
we hope you are able to connect with

1363
00:56:14,230 --> 00:56:13,280

some enthusiastic aerospace

1364

00:56:15,829 --> 00:56:14,240

professionals

1365

00:56:17,589 --> 00:56:15,839

that were excited to talk to you and

1366

00:56:18,069 --> 00:56:17,599

help develop current students into

1367

00:56:20,630 --> 00:56:18,079

future

1368

00:56:22,069 --> 00:56:20,640

aerospace leaders we look forward to

1369

00:56:24,630 --> 00:56:22,079

holding similar events for student

1370

00:56:26,470 --> 00:56:24,640

launch in the coming years

1371

00:56:28,150 --> 00:56:26,480

and now it is my distinct pleasure to

1372

00:56:30,549 --> 00:56:28,160

present the rookie award

1373

00:56:33,589 --> 00:56:30,559

to the most deserving first year team in

1374

00:56:35,750 --> 00:56:33,599

the student launch competition

1375

00:56:37,670 --> 00:56:35,760

in the nasa student launch competition

1376
00:56:39,349 --> 00:56:37,680
an incredible amount of work is expected

1377
00:56:41,750 --> 00:56:39,359
of competing teams

1378
00:56:42,470 --> 00:56:41,760
they must design a high powered amateur

1379
00:56:43,910 --> 00:56:42,480
rocket

1380
00:56:46,069 --> 00:56:43,920
and figure out the best way to tackle

1381
00:56:48,069 --> 00:56:46,079
the experiment design challenge

1382
00:56:51,190 --> 00:56:48,079
all while documenting their efforts in

1383
00:56:54,069 --> 00:56:51,200
three separate milestone review packages

1384
00:56:55,910 --> 00:56:54,079
on top of that each milestone requires

1385
00:56:57,109 --> 00:56:55,920
teams to present their work to the nasa

1386
00:56:59,030 --> 00:56:57,119
review panel

1387
00:57:01,109 --> 00:56:59,040
to ensure that the work is being done

1388
00:57:03,589 --> 00:57:01,119

safely and to receive approval to

1389

00:57:06,309 --> 00:57:03,599

proceed to the next milestone

1390

00:57:07,349 --> 00:57:06,319

documentation approaching 1 000 pages in

1391

00:57:09,510 --> 00:57:07,359

total length

1392

00:57:11,190 --> 00:57:09,520

and stressful presentations can be a

1393

00:57:12,549 --> 00:57:11,200

challenge even for the most veteran of

1394

00:57:14,390 --> 00:57:12,559

teams that have benefit

1395

00:57:17,030 --> 00:57:14,400

of experience and familiarity with the

1396

00:57:19,750 --> 00:57:17,040

program but this rigor and difficulties

1397

00:57:21,190 --> 00:57:19,760

amplified for our rookie teams

1398

00:57:23,670 --> 00:57:21,200

our rookie teams in the college and

1399

00:57:26,309 --> 00:57:23,680

university division deserve recognition

1400

00:57:27,990 --> 00:57:26,319

for enduring the rigors of the nasa

1401
00:57:29,670 --> 00:57:28,000
student launch program

1402
00:57:32,230 --> 00:57:29,680
and the most exceptional of those are

1403
00:57:34,789 --> 00:57:32,240
presented with the rookie award

1404
00:57:37,670 --> 00:57:34,799
this year's competition had seven rookie

1405
00:57:42,069 --> 00:57:40,789
finishing third is the university of

1406
00:57:47,910 --> 00:57:42,079
north dakota

1407
00:57:51,349 --> 00:57:50,470
our second place rookie team is new york

1408
00:57:56,950 --> 00:57:51,359
university

1409
00:58:02,309 --> 00:58:00,470
and winning the 2021 student launch

1410
00:58:05,190 --> 00:58:02,319
rookie award

1411
00:58:10,710 --> 00:58:05,200
is washington university in st louis st

1412
00:58:14,470 --> 00:58:12,870
sponsored by a double a this year's

1413
00:58:17,349 --> 00:58:14,480

rookie award is accompanied

1414

00:58:18,789 --> 00:58:17,359

by a one thousand dollar cash prize

1415

00:58:21,190 --> 00:58:18,799

washington university in st

1416

00:58:23,270 --> 00:58:21,200

louis produced a detailed rocket design

1417

00:58:24,549 --> 00:58:23,280

with outstanding analysis that included

1418

00:58:27,510 --> 00:58:24,559

detailed cad

1419

00:58:28,950 --> 00:58:27,520

flight simulations and calculations they

1420

00:58:30,630 --> 00:58:28,960

chose an ambitious approach to the

1421

00:58:32,069 --> 00:58:30,640

payload lander challenge

1422

00:58:35,270 --> 00:58:32,079

proving their determination with a

1423

00:58:36,549 --> 00:58:35,280

robust testing and verification plan

1424

00:58:39,589 --> 00:58:36,559

they did all this while producing

1425

00:58:41,589 --> 00:58:39,599

professional reports and presentations

1426
00:58:45,960 --> 00:58:41,599
staying within a reasonable budget and

1427
00:58:52,150 --> 00:58:48,829
[Applause]

1428
00:58:56,150 --> 00:58:54,230
the judge's choice award is given to the

1429
00:58:57,670 --> 00:58:56,160
high school or middle school team that

1430
00:58:59,670 --> 00:58:57,680
has the best combination of

1431
00:59:02,710 --> 00:58:59,680
documentation

1432
00:59:03,270 --> 00:59:02,720
scientific experiment creativity vehicle

1433
00:59:06,230 --> 00:59:03,280
design

1434
00:59:08,390 --> 00:59:06,240
and construction and stem engagement the

1435
00:59:10,069 --> 00:59:08,400
winning team is selected by a panel of

1436
00:59:11,990 --> 00:59:10,079
nasa judges

1437
00:59:13,589 --> 00:59:12,000
this year the continued challenge of

1438
00:59:16,390 --> 00:59:13,599

covet 19

1439

00:59:17,190 --> 00:59:16,400

made teams find new and innovative ways

1440

00:59:19,670 --> 00:59:17,200

to complete

1441

00:59:21,750 --> 00:59:19,680

all of these aspects of the program

1442

00:59:22,710 --> 00:59:21,760

especially engaging fellow students in

1443

00:59:26,549 --> 00:59:22,720

the public

1444

00:59:29,030 --> 00:59:26,559

in stem themed activities and outreach

1445

00:59:31,190 --> 00:59:29,040

despite the added difficulty all of the

1446

00:59:33,270 --> 00:59:31,200

teams this year rose to the challenge

1447

00:59:34,309 --> 00:59:33,280

and the three selected for this award

1448

00:59:37,829 --> 00:59:34,319

showcase

1449

00:59:38,950 --> 00:59:37,839

exemplary efforts finishing in third

1450

00:59:42,069 --> 00:59:38,960

place

1451
00:59:45,830 --> 00:59:42,079
whitney young magnet high school in

1452
00:59:48,309 --> 00:59:45,840
chicago illinois

1453
00:59:51,349 --> 00:59:48,319
[Applause]

1454
00:59:52,230 --> 00:59:51,359
in second place harrison central school

1455
00:59:55,990 --> 00:59:52,240
district

1456
01:00:04,710 --> 00:59:59,109
and in first place is sylvania

1457
01:00:08,549 --> 01:00:06,630
this award comes with a two thousand

1458
01:00:10,549 --> 01:00:08,559
dollar prize from the national space

1459
01:00:13,589 --> 01:00:10,559
club huntsville

1460
01:00:16,470 --> 01:00:13,599
sylvania north view showed excellence in

1461
01:00:19,829 --> 01:00:16,480
all aspects of the competition

1462
01:00:22,150 --> 01:00:19,839
from their achieved delta altitude of 14

1463
01:00:23,270 --> 01:00:22,160

feet to their innovative vehicle and

1464

01:00:25,990 --> 01:00:23,280

payload designs

1465

01:00:27,510 --> 01:00:26,000

and their emphasis on public outreach

1466

01:00:30,630 --> 01:00:27,520

they designed and built

1467

01:00:32,630 --> 01:00:30,640

a college payload while engineering a

1468

01:00:33,349 --> 01:00:32,640

unique recovery system for their launch

1469

01:00:35,109 --> 01:00:33,359

vehicle

1470

01:00:37,030 --> 01:00:35,119

their stem engagement activities

1471

01:00:38,150 --> 01:00:37,040

included a halloween party with stem

1472

01:00:40,950 --> 01:00:38,160

themed candy

1473

01:00:41,670 --> 01:00:40,960

and holding launches for students

1474

01:00:46,630 --> 01:00:41,680

interested

1475

01:00:50,549 --> 01:00:48,710

[Applause]

1476

01:00:52,630 --> 01:00:50,559

congratulations to all of the teams that

1477

01:00:54,870 --> 01:00:52,640

have won awards here today

1478

01:00:57,190 --> 01:00:54,880

your amazing accomplishments have not

1479

01:00:58,950 --> 01:00:57,200

gone unnoticed

1480

01:01:01,109 --> 01:00:58,960

it's my pleasure to continue to

1481

01:01:02,950 --> 01:01:01,119

acknowledge the successes of this year's

1482

01:01:05,349 --> 01:01:02,960

nasa student launch teams

1483

01:01:06,069 --> 01:01:05,359

by announcing the third place finishing

1484

01:01:08,870 --> 01:01:06,079

team

1485

01:01:09,750 --> 01:01:08,880

and presenting the second place winner

1486

01:01:12,950 --> 01:01:09,760

award

1487

01:01:13,829 --> 01:01:12,960

in the usli launch division of this

1488

01:01:17,030 --> 01:01:13,839

year's

1489

01:01:20,069 --> 01:01:17,040

nasa student launch

1490

01:01:23,349 --> 01:01:20,079

for the launch division in third place

1491

01:01:24,810 --> 01:01:23,359

the university of notre dame notre dame

1492

01:01:29,910 --> 01:01:24,820

indiana

1493

01:01:31,589 --> 01:01:29,920

[Applause]

1494

01:01:33,589 --> 01:01:31,599

and our second place winner is

1495

01:01:37,349 --> 01:01:33,599

vanderbilt university

1496

01:01:42,150 --> 01:01:40,030

vanderbilt will receive a prize award of

1497

01:01:44,630 --> 01:01:42,160

2500

1498

01:01:46,710 --> 01:01:44,640

vanderbilt had a fantastic program this

1499

01:01:49,349 --> 01:01:46,720

year with strong documentation

1500

01:01:51,430 --> 01:01:49,359

a quality rocket design successful

1501
01:01:53,349 --> 01:01:51,440
flight and payload operations

1502
01:01:54,990 --> 01:01:53,359
and excellent stem engagement

1503
01:02:09,510 --> 01:01:55,000
opportunities

1504
01:02:12,630 --> 01:02:11,990
as a sponsor of the new usli design

1505
01:02:14,309 --> 01:02:12,640
division

1506
01:02:15,589 --> 01:02:14,319
it is a great honor for northrop grumman

1507
01:02:16,870 --> 01:02:15,599
to acknowledge the efforts and

1508
01:02:18,950 --> 01:02:16,880
accomplishments of teams

1509
01:02:20,950 --> 01:02:18,960
exceptionally affected by the unique

1510
01:02:23,190 --> 01:02:20,960
conditions of this competition season

1511
01:02:25,190 --> 01:02:23,200
we understand the value of strong design

1512
01:02:27,589 --> 01:02:25,200
work backed by solid modeling

1513
01:02:29,670 --> 01:02:27,599

simulation and calculations it's my

1514

01:02:31,109 --> 01:02:29,680

honor to announce the third place winner

1515

01:02:33,990 --> 01:02:31,119

and award the second place winner

1516

01:02:37,029 --> 01:02:34,000

overall in the usli design division

1517

01:02:42,309 --> 01:02:37,039

for the design division and third place

1518

01:02:45,990 --> 01:02:44,230

and our second place winner and

1519

01:02:48,470 --> 01:02:46,000

recipient of a prize award of

1520

01:02:49,510 --> 01:02:48,480

fifteen hundred dollars is university of

1521

01:02:54,549 --> 01:02:49,520

california

1522

01:02:56,630 --> 01:02:54,559

in the first year of the design division

1523

01:02:57,750 --> 01:02:56,640

ucla excelled in all aspects of the

1524

01:02:59,430 --> 01:02:57,760

competition

1525

01:03:01,750 --> 01:02:59,440

from the design construction and

1526
01:03:02,470 --> 01:03:01,760
analysis to even a change in the payload

1527
01:03:04,630 --> 01:03:02,480
mission

1528
01:03:06,549 --> 01:03:04,640
this was evident in their report writing

1529
01:03:07,430 --> 01:03:06,559
presentation skills and attention to

1530
01:03:24,789 --> 01:03:07,440
detail

1531
01:03:29,190 --> 01:03:27,510
for the past nine months all of the nasa

1532
01:03:30,069 --> 01:03:29,200
student launch teams have worked

1533
01:03:32,150 --> 01:03:30,079
tirelessly

1534
01:03:33,510 --> 01:03:32,160
towards the goal of competing at the

1535
01:03:35,670 --> 01:03:33,520
highest level

1536
01:03:37,029 --> 01:03:35,680
collectively thousands of hours were

1537
01:03:39,750 --> 01:03:37,039
spent designing

1538
01:03:41,510 --> 01:03:39,760

simulating building testing and

1539

01:03:43,349 --> 01:03:41,520

launching rockets and payloads

1540

01:03:44,870 --> 01:03:43,359

with the goal of scientific and

1541

01:03:46,870 --> 01:03:44,880

engineering excellence

1542

01:03:48,950 --> 01:03:46,880

we are all aware of how exceptionally

1543

01:03:51,270 --> 01:03:48,960

difficult this season has been

1544

01:03:53,510 --> 01:03:51,280

and yet you all rose to the challenge to

1545

01:03:55,910 --> 01:03:53,520

come to the place you are today

1546

01:03:57,109 --> 01:03:55,920

and now even though we are not able to

1547

01:03:58,789 --> 01:03:57,119

celebrate together

1548

01:04:01,190 --> 01:03:58,799

and complete your final launches in

1549

01:04:02,710 --> 01:04:01,200

huntsville we are proud to recognize

1550

01:04:05,270 --> 01:04:02,720

all of the teams and their many

1551
01:04:07,430 --> 01:04:05,280
achievements it is my honor to announce

1552
01:04:08,630 --> 01:04:07,440
the overall winners of the colleges and

1553
01:04:10,470 --> 01:04:08,640
universities

1554
01:04:12,630 --> 01:04:10,480
and boast the launch and design

1555
01:04:14,710 --> 01:04:12,640
divisions of this year's nasa student

1556
01:04:17,430 --> 01:04:14,720
launch competition

1557
01:04:18,710 --> 01:04:17,440
for the launch division the winner of

1558
01:04:22,549 --> 01:04:18,720
the 2021

1559
01:04:25,270 --> 01:04:22,559
nasa student launch usli launch division

1560
01:04:26,230 --> 01:04:25,280
division competition is the university

1561
01:04:29,430 --> 01:04:26,240
of north carolina

1562
01:04:32,309 --> 01:04:29,440
at charlotte charlotte north carolina

1563
01:04:33,589 --> 01:04:32,319

the 2021 nasa student launch winner for

1564

01:04:35,910 --> 01:04:33,599

the launch division

1565

01:04:37,349 --> 01:04:35,920

will receive a prize award of five

1566

01:04:39,750 --> 01:04:37,359

thousand dollars

1567

01:04:41,270 --> 01:04:39,760

in a year with a lot of uncertainty one

1568

01:04:43,029 --> 01:04:41,280

thing remained constant

1569

01:04:45,270 --> 01:04:43,039

the university of north carolina at

1570

01:04:46,150 --> 01:04:45,280

charlotte they showed the importance of

1571

01:04:48,230 --> 01:04:46,160

teamwork

1572

01:04:49,589 --> 01:04:48,240

excelling in all aspects of the student

1573

01:04:52,309 --> 01:04:49,599

launch competition

1574

01:04:53,270 --> 01:04:52,319

including technical writing presentation

1575

01:04:56,150 --> 01:04:53,280

skills

1576

01:04:58,470 --> 01:04:56,160

public outreach sufficient testing and

1577

01:05:00,789 --> 01:04:58,480

payload and vehicle performance

1578

01:05:02,150 --> 01:05:00,799

from being only 16 feet away on their

1579

01:05:04,309 --> 01:05:02,160

target altitude

1580

01:05:05,670 --> 01:05:04,319

to successfully completing the college

1581

01:05:07,589 --> 01:05:05,680

payload challenge

1582

01:05:09,190 --> 01:05:07,599

this team did it all while connecting

1583

01:05:11,029 --> 01:05:09,200

with students of all ages

1584

01:05:12,270 --> 01:05:11,039

to spread their knowledge of stem and

1585

01:05:14,230 --> 01:05:12,280

aerospace

1586

01:05:16,070 --> 01:05:14,240

congratulations to the university of

1587

01:05:18,069 --> 01:05:16,080

north carolina at charlotte

1588

01:05:21,029 --> 01:05:18,079

[Applause]

1589

01:05:23,589 --> 01:05:21,039

and for the design division the winner

1590

01:05:27,029 --> 01:05:23,599

of the 2021 nasa student launch

1591

01:05:30,710 --> 01:05:27,039

usli design division competition is

1592

01:05:33,750 --> 01:05:30,720

new york university new york new york

1593

01:05:35,190 --> 01:05:33,760

the 2021 nasa student launch winner for

1594

01:05:37,109 --> 01:05:35,200

the design division

1595

01:05:39,109 --> 01:05:37,119

will receive a prize award of two

1596

01:05:41,670 --> 01:05:39,119

thousand five hundred dollars

1597

01:05:44,309 --> 01:05:41,680

new york university's combination of a

1598

01:05:46,549 --> 01:05:44,319

complete and detailed rocket design

1599

01:05:47,750 --> 01:05:46,559

payload design and construction and

1600

01:05:49,829 --> 01:05:47,760

testing plans

1601
01:05:51,190 --> 01:05:49,839
have proven their team's understanding

1602
01:05:53,109 --> 01:05:51,200
rocketry principles

1603
01:05:54,390 --> 01:05:53,119
and their dedication to succeeding in

1604
01:05:57,109 --> 01:05:54,400
this competition

1605
01:05:58,789 --> 01:05:57,119
no matter the situation congratulations

1606
01:06:01,109 --> 01:05:58,799
to new york university

1607
01:06:03,029 --> 01:06:01,119
and congratulations to all of the teams

1608
01:06:04,270 --> 01:06:03,039
for your hard work and perseverance

1609
01:06:12,230 --> 01:06:04,280
a job well done

1610
01:06:15,750 --> 01:06:14,470
it is my honor to close out today's

1611
01:06:17,510 --> 01:06:15,760
ceremony

1612
01:06:19,510 --> 01:06:17,520
several words and phrases have been

1613
01:06:23,750 --> 01:06:19,520

widely used when describing the past

1614

01:06:26,789 --> 01:06:23,760

year such as challenging uncertain times

1615

01:06:29,829 --> 01:06:26,799

and my personal favorite unprecedented

1616

01:06:31,910 --> 01:06:29,839

none of these words are inaccurate but

1617

01:06:34,069 --> 01:06:31,920

as i reflect on this year's nasa student

1618

01:06:34,870 --> 01:06:34,079

launch i keep coming back to a different

1619

01:06:37,190 --> 01:06:34,880

word

1620

01:06:39,190 --> 01:06:37,200

special i will remember this year

1621

01:06:41,430 --> 01:06:39,200

because of what you accomplished

1622

01:06:43,029 --> 01:06:41,440

this year's university payload challenge

1623

01:06:44,069 --> 01:06:43,039

was probably the most difficult

1624

01:06:47,270 --> 01:06:44,079

challenge posed

1625

01:06:48,549 --> 01:06:47,280

in student launch's 21 years this year

1626

01:06:51,270 --> 01:06:48,559

was also the first time

1627

01:06:53,510 --> 01:06:51,280

teams are required to compete the final

1628

01:06:55,349 --> 01:06:53,520

complete the final launch at home

1629

01:06:56,870 --> 01:06:55,359

finding a launch location in the spring

1630

01:06:59,430 --> 01:06:56,880

when fields are being planted

1631

01:07:01,109 --> 01:06:59,440

is not easy many teams are forced to

1632

01:07:03,829 --> 01:07:01,119

travel long distances to complete the

1633

01:07:06,150 --> 01:07:03,839

three required full-scale flights

1634

01:07:08,150 --> 01:07:06,160

finally the brand new design division

1635

01:07:10,309 --> 01:07:08,160

introduced a fresh new milestone

1636

01:07:11,349 --> 01:07:10,319

the payload modification vehicle

1637

01:07:13,029 --> 01:07:11,359

redesign

1638

01:07:15,029 --> 01:07:13,039

the design division teams were given a

1639

01:07:17,349 --> 01:07:15,039

brand new mission and required to adapt

1640

01:07:18,630 --> 01:07:17,359

their already completed vehicle designs

1641

01:07:21,349 --> 01:07:18,640

to accommodate the new mission

1642

01:07:21,910 --> 01:07:21,359

requirements we threw a lot at you this

1643

01:07:23,670 --> 01:07:21,920

year

1644

01:07:25,750 --> 01:07:23,680

and it was in addition to the other

1645

01:07:28,870 --> 01:07:25,760

limitations and restrictions you faced

1646

01:07:30,789 --> 01:07:28,880

due to the unprecedented situation

1647

01:07:31,910 --> 01:07:30,799

it wasn't the situation that made this

1648

01:07:34,950 --> 01:07:31,920

year special

1649

01:07:37,190 --> 01:07:34,960

it was you our 2021 nasa

1650

01:07:39,029 --> 01:07:37,200

student launch teams you tackled the

1651
01:07:41,190 --> 01:07:39,039
demanding tasks and deliverables

1652
01:07:43,109 --> 01:07:41,200
of this year's challenge with tireless

1653
01:07:45,430 --> 01:07:43,119
passion enthusiasm

1654
01:07:46,710 --> 01:07:45,440
and endless grit i hope that student

1655
01:07:47,829 --> 01:07:46,720
launch is just one of many

1656
01:07:49,910 --> 01:07:47,839
accomplishments

1657
01:07:51,029 --> 01:07:49,920
you will have in your lives as you have

1658
01:07:53,829 --> 01:07:51,039
proven this year

1659
01:07:55,990 --> 01:07:53,839
you are capable of amazing things thank

1660
01:07:58,309 --> 01:07:56,000
you to all the sponsors who make student

1661
01:08:00,309 --> 01:07:58,319
launch possible the human exploration

1662
01:08:02,549 --> 01:08:00,319
and operations mission directorate

1663
01:08:03,750 --> 01:08:02,559

nasa's office of stem engagement

1664

01:08:05,990 --> 01:08:03,760

northrop grumman

1665

01:08:07,430 --> 01:08:06,000

the national space club the american

1666

01:08:08,470 --> 01:08:07,440

institute of aeronautics and

1667

01:08:10,870 --> 01:08:08,480

astronautics

1668

01:08:12,390 --> 01:08:10,880

the national association of rocketry

1669

01:08:15,510 --> 01:08:12,400

bastion technologies

1670

01:08:17,910 --> 01:08:15,520

and brag farms thank you

1671

01:08:19,829 --> 01:08:17,920

to the student launch management team

1672

01:08:23,110 --> 01:08:19,839

specifically allison chenard

1673

01:08:25,349 --> 01:08:23,120

john eckert zac and jenny tan

1674

01:08:26,229 --> 01:08:25,359

i appreciate each of you for bringing

1675

01:08:28,950 --> 01:08:26,239

your a game

1676

01:08:30,630 --> 01:08:28,960

each and every day thank you to today's

1677

01:08:31,510 --> 01:08:30,640

speakers and presenters for helping us

1678

01:08:33,510 --> 01:08:31,520

to recognize

1679

01:08:35,349 --> 01:08:33,520

the remarkable accomplishments of our

1680

01:08:37,910 --> 01:08:35,359

teams but finally

1681

01:08:40,149 --> 01:08:37,920

a big thank you to all of the teams for

1682

01:08:42,149 --> 01:08:40,159

your participation in student launch

1683

01:08:43,910 --> 01:08:42,159

to those who are graduating i'd like to

1684

01:08:46,229 --> 01:08:43,920

wish you the best of luck as you move

1685

01:08:47,510 --> 01:08:46,239

into the next phase of your lives to the

1686

01:08:49,110 --> 01:08:47,520

undergraduates

1687

01:08:51,189 --> 01:08:49,120

we hope to see you in the fall

1688

01:08:52,709 --> 01:08:51,199

congratulations everyone on completing