1
00:02:16,620 --> 00:02:20,510
foreign

2
00:02:25,010 --> 00:02:22,369
good morning and welcome to Space Center

3
00:02:27,229 --> 00:02:25,020
Houston I'm William Harris president and

4
00:02:30,010 --> 00:02:27,239
CEO and I'm so delighted to welcome you

5
00:02:32,270 --> 00:02:30,020
here for this extraordinary presentation

6
00:02:33,830 --> 00:02:32,280
you're here during a very special week

7
00:02:35,750 --> 00:02:33,840
at Space Center Houston it is our moon

8
00:02:36,830 --> 00:02:35,760
to Mars Festival presented by Welby

9
00:02:38,869 --> 00:02:36,840
Financial

10
00:02:40,729 --> 00:02:38,879
the festival runs through Sunday so we

11
00:02:43,130 --> 00:02:40,739
hope you'll enjoy it uh while you're

12
00:02:44,869 --> 00:02:43,140
here today and we invite you to be part

13
00:02:47,570 --> 00:02:44,879

of this very very and special

14
00:02:49,070 --> 00:02:47,580
celebration recognizing our preparation

15
00:02:51,949 --> 00:02:49,080
to return to the moon and eventually

16
00:02:53,570 --> 00:02:51,959
send humans onto Mars and we're very

17
00:02:56,270 --> 00:02:53,580
excited that you're here for this

18
00:02:58,729 --> 00:02:56,280
special presentation of NASA presents

19
00:03:00,890 --> 00:02:58,739
the Artemis 3 lunar space suit

20
00:03:03,350 --> 00:03:00,900
this is the first public event revealing

21
00:03:05,390 --> 00:03:03,360
the Artemis 3 lunar spacesuit thank you

22
00:03:07,610 --> 00:03:05,400
to our NASA and Axiom space colleagues

23
00:03:09,470 --> 00:03:07,620
for selecting us as your host

24
00:03:12,050 --> 00:03:09,480
today's program is being streamed live

25
00:03:13,250 --> 00:03:12,060
on NASA TV and so I want to extend a

26
00:03:14,690 --> 00:03:13,260
warm welcome to all of our online

27
00:03:16,790 --> 00:03:14,700
viewers

28
00:03:18,470 --> 00:03:16,800
and we have some very special students

29
00:03:20,809 --> 00:03:18,480
from Space Center Houston's Explorer

30
00:03:27,790 --> 00:03:20,819
camps who are joining us today would you

31
00:03:32,089 --> 00:03:30,350
and please stay standing and then I also

32
00:03:33,589 --> 00:03:32,099
want to recognize our participants in

33
00:03:41,930 --> 00:03:33,599
our girls STEM Academy would you all

34
00:03:46,309 --> 00:03:43,850
you are all the next generation of

35
00:03:47,990 --> 00:03:46,319
explorers you'll have many opportunities

36
00:03:50,750 --> 00:03:48,000
in your career and your life choices

37
00:03:53,509 --> 00:03:50,760
from an astronaut to an artist or a

38
00:03:55,610 --> 00:03:53,519

scientist or an engineer you can do it

39
00:03:57,350 --> 00:03:55,620
and everyone plays a vital role in

40
00:04:04,970 --> 00:03:57,360
advancing space exploration so again

41
00:04:08,149 --> 00:04:06,530
you all can be seated thank you for

42
00:04:10,250 --> 00:04:08,159
joining us this morning you're part of

43
00:04:11,990 --> 00:04:10,260
living history

44
00:04:14,390 --> 00:04:12,000
now I'd like to introduce our speakers

45
00:04:20,689 --> 00:04:14,400
we're honored to be joined by Bob Cabana

46
00:04:25,189 --> 00:04:23,270
Lara Kearney Eva and human surforce

47
00:04:26,689 --> 00:04:25,199
Mobility Program manager at NASA Johnson

48
00:04:27,830 --> 00:04:26,699
Space Center and a member of our board

49
00:04:30,469 --> 00:04:27,840
of directors

50
00:04:32,749 --> 00:04:30,479
[Applause]

51
00:04:37,909 --> 00:04:32,759
Vanessa weish center director for NASA

52
00:04:41,580 --> 00:04:40,249
Michael sufordini president and CEO of

53
00:04:45,469 --> 00:04:41,590
Axiom space

54
00:04:48,110 --> 00:04:45,479
[Applause]

55
00:04:48,470 --> 00:04:48,120
Mark Greely Eva program manager of Axiom

56
00:04:52,490 --> 00:04:48,480
space

57
00:04:54,890 --> 00:04:52,500
[Applause]

58
00:04:59,689 --> 00:04:54,900
and Russell Ralston Eva program Deputy

59
00:05:12,350 --> 00:05:01,310
it now gives me great pleasure to turn

60
00:05:16,249 --> 00:05:14,689
thank you William and thank you to Space

61
00:05:18,950 --> 00:05:16,259
Center Houston for hosting this event

62
00:05:20,990 --> 00:05:18,960
today it's really great to be here with

63
00:05:23,689 --> 00:05:21,000

Axiom for this event Mike

64
00:05:25,850 --> 00:05:23,699
you know when I look back on the Apollo

65
00:05:29,150 --> 00:05:25,860
program when all of us look back we look

66
00:05:31,310 --> 00:05:29,160
at those iconic images of the technology

67
00:05:33,710 --> 00:05:31,320
that enabled the astronauts to make

68
00:05:34,909 --> 00:05:33,720
those first steps on the moon their

69
00:05:38,390 --> 00:05:34,919
space suit

70
00:05:40,790 --> 00:05:38,400
and now we're developing a spacesuit for

71
00:05:42,890 --> 00:05:40,800
a new generation the Artemis Generation

72
00:05:45,950 --> 00:05:42,900
The Generation that's going to take us

73
00:05:48,590 --> 00:05:45,960
back to the moon and on to Mars and it

74
00:05:51,830 --> 00:05:48,600
is going to be so exciting

75
00:05:54,529 --> 00:05:51,840
when that first woman steps down on the

76
00:05:58,370 --> 00:05:54,539
surface of the Moon on Artemis 3 she's

77
00:06:04,430 --> 00:05:58,380
going to be wearing an axiom spacesuit

78
00:06:09,230 --> 00:06:07,610
and and I can't wait to see that happen

79
00:06:11,510 --> 00:06:09,240
you know we're going back to the moon

80
00:06:13,730 --> 00:06:11,520
but we're going to the South Pole of the

81
00:06:16,610 --> 00:06:13,740
moon this time and why are we going

82
00:06:18,590 --> 00:06:16,620
there it's challenging right we're going

83
00:06:21,529 --> 00:06:18,600
to learn more there's water ice there

84
00:06:23,689 --> 00:06:21,539
water is hydrogen for fuel and oxygen to

85
00:06:25,670 --> 00:06:23,699
breathe we are going to learn how to

86
00:06:28,010 --> 00:06:25,680
operate on the moon for extended periods

87
00:06:30,050 --> 00:06:28,020
of time and learn how to operate away

88
00:06:32,390 --> 00:06:30,060

from planet Earth and utilize the

89
00:06:35,330 --> 00:06:32,400
resources on the moon and all of this is

90
00:06:38,390 --> 00:06:35,340
in preparation for eventually going on

91
00:06:41,090 --> 00:06:38,400
to Mars and we're making those first

92
00:06:43,490 --> 00:06:41,100
steps now we've got to have an Eva

93
00:06:45,830 --> 00:06:43,500
Mobility suit in order to make that

94
00:06:46,969 --> 00:06:45,840
happen and this is the suit that's going

95
00:06:49,249 --> 00:06:46,979
to do it

96
00:06:51,050 --> 00:06:49,259
you know I'm very pleased to be here uh

97
00:06:54,170 --> 00:06:51,060
at the Johnson Space Center this was

98
00:06:56,029 --> 00:06:54,180
home to me for a very long time and one

99
00:06:58,189 --> 00:06:56,039
of the Prides of the Johnson Space

100
00:07:01,610 --> 00:06:58,199
Center is the Eva surface Mobility

101
00:07:04,730 --> 00:07:01,620
Program that's here and it's my pleasure

102
00:07:06,890 --> 00:07:04,740
Now to turn this over to the director of

103
00:07:08,620 --> 00:07:06,900
the Johnson Space Center Vanessa Weiss

104
00:07:18,529 --> 00:07:08,630
Vanessa

105
00:07:18,539 --> 00:07:21,969
thank you Bob

106
00:07:28,129 --> 00:07:25,189
so at NASA's Johnson Space Center we're

107
00:07:31,790 --> 00:07:28,139
just so super proud to be able to

108
00:07:35,409 --> 00:07:31,800
continue the legacy of doing space walks

109
00:07:48,290 --> 00:07:35,419
as Bob mentioned from Apollo Heritage

110
00:07:50,830 --> 00:07:49,969
assembly of the International Space

111
00:07:53,450 --> 00:07:50,840
Station

112
00:07:56,089 --> 00:07:53,460
and operations and maintenance that's

113
00:07:59,930 --> 00:07:56,099

ongoing and now we're looking forward

114
00:08:03,710 --> 00:07:59,940
for our return to the moon and using our

115
00:08:06,350 --> 00:08:03,720
suits for doing science operations on

116
00:08:07,969 --> 00:08:06,360
the lunar surface at Johnson Space

117
00:08:11,330 --> 00:08:07,979
Center we have been working doing

118
00:08:14,390 --> 00:08:11,340
technology development in-house with our

119
00:08:18,230 --> 00:08:14,400
engineers and our operators on design

120
00:08:20,510 --> 00:08:18,240
for an exploration suit we have provided

121
00:08:22,309 --> 00:08:20,520
all of that technology all of the

122
00:08:25,909 --> 00:08:22,319
drawings all of the data all of the test

123
00:08:28,249 --> 00:08:25,919
results for the community and Axiom

124
00:08:30,110 --> 00:08:28,259
space will be one of the companies that

125
00:08:33,589 --> 00:08:30,120
is going to take that and make us new

126
00:08:35,630 --> 00:08:33,599
suits we have not had a new suit since

127
00:08:38,149 --> 00:08:35,640
the suits that we designed for the space

128
00:08:41,029 --> 00:08:38,159
shuttle and those suits are currently in

129
00:08:43,850 --> 00:08:41,039
use on the space station so 40 years

130
00:08:47,990 --> 00:08:43,860
we've been using the same suit based on

131
00:08:49,850 --> 00:08:48,000
that technology and now today Axiom is

132
00:08:52,850 --> 00:08:49,860
going to to innovate they're going to

133
00:08:55,370 --> 00:08:52,860
take what NASA has provided in from the

134
00:08:58,550 --> 00:08:55,380
testing that we've done and they will

135
00:09:01,370 --> 00:08:58,560
now take and come up with more

136
00:09:03,949 --> 00:09:01,380
functionality more performance more

137
00:09:07,070 --> 00:09:03,959
capability and we're very excited about

138
00:09:08,630 --> 00:09:07,080

what's going to be happening at NASA's

139
00:09:10,910 --> 00:09:08,640
Johnson Space Center we are proud to

140
00:09:12,889 --> 00:09:10,920
partner we will be working together

141
00:09:15,290 --> 00:09:12,899
we'll provide our expertise we're going

142
00:09:17,030 --> 00:09:15,300
to provide all of our facilities and we

143
00:09:20,090 --> 00:09:17,040
will be working together to make sure

144
00:09:22,490 --> 00:09:20,100
that we have a safe suit that performs

145
00:09:25,790 --> 00:09:22,500
and does everything that our astronauts

146
00:09:27,889 --> 00:09:25,800
need for doing surface operations so

147
00:09:30,230 --> 00:09:27,899
we're looking forward to the things that

148
00:09:32,530 --> 00:09:30,240
Axiom is doing and I want to thank the

149
00:09:35,030 --> 00:09:32,540
Axiom team I want to thank the NASA and

150
00:09:43,009 --> 00:09:35,040
all of our teams that work together to

151
00:09:46,190 --> 00:09:44,630
and now I'm going to turn it over to

152
00:09:49,130 --> 00:09:46,200
Laura

153
00:09:51,889 --> 00:09:49,140
hi good morning uh glad to be here and

154
00:09:54,650 --> 00:09:51,899
to see you guys today I am truly honored

155
00:09:56,389 --> 00:09:54,660
to be uh the manager of what Vanessa

156
00:09:58,190 --> 00:09:56,399
mentioned is the Eva and Human Service

157
00:10:00,949 --> 00:09:58,200
Mobility Program here at Johnson Space

158
00:10:02,509 --> 00:10:00,959
Center that for short means spacesuits

159
00:10:04,370 --> 00:10:02,519
and Rovers

160
00:10:06,410 --> 00:10:04,380
um the spacesuits are the first part of

161
00:10:08,329 --> 00:10:06,420
our program that is becoming real we've

162
00:10:12,050 --> 00:10:08,339
been working really hard for a few years

163
00:10:13,850 --> 00:10:12,060

to get everything on contract but once

164
00:10:16,130 --> 00:10:13,860
that is in place and we actually have

165
00:10:18,290 --> 00:10:16,140
contractors selected it's really excited

166
00:10:20,329 --> 00:10:18,300
to see their work coming to fruition and

167
00:10:22,310 --> 00:10:20,339
seeing real Hardware

168
00:10:25,009 --> 00:10:22,320
um so this contract is a little bit

169
00:10:26,750 --> 00:10:25,019
different it's similar to what we have

170
00:10:28,970 --> 00:10:26,760
used for commercial cargo and Commercial

171
00:10:32,150 --> 00:10:28,980
crew where we call it a service contract

172
00:10:35,150 --> 00:10:32,160
so historically NASA has actually owned

173
00:10:38,269 --> 00:10:35,160
the spacesuits think of it like owning

174
00:10:40,070 --> 00:10:38,279
your car the way we have contracted on

175
00:10:42,650 --> 00:10:40,080
what we call the extra vehicular

176
00:10:45,290 --> 00:10:42,660
activity Services contract is we

177
00:10:47,870 --> 00:10:45,300
actually buy services from the vendor so

178
00:10:50,329 --> 00:10:47,880
think of it more like a rental car so

179
00:10:52,670 --> 00:10:50,339
Axiom will be providing the hardware for

180
00:10:55,069 --> 00:10:52,680
both training and for flight they will

181
00:10:57,650 --> 00:10:55,079
bring that Hardware in and we NASA will

182
00:11:01,190 --> 00:10:57,660
utilize it and operate it on the surface

183
00:11:03,769 --> 00:11:01,200
of the Moon for our moonwalking so NASA

184
00:11:07,730 --> 00:11:03,779
will actually be in the role still of

185
00:11:09,829 --> 00:11:07,740
Mission Control and making the mission

186
00:11:11,750 --> 00:11:09,839
Authority Mission execution decisions

187
00:11:15,350 --> 00:11:11,760
but axiom's going to be right there with

188
00:11:17,210 --> 00:11:15,360

us making sure that suit is as safe as

189
00:11:18,949 --> 00:11:17,220
we have our astronauts walking on the

190
00:11:21,170 --> 00:11:18,959
surface of the Moon

191
00:11:23,569 --> 00:11:21,180
so the suit we have a lot of tough

192
00:11:26,269 --> 00:11:23,579
requirements on it so these guys have

193
00:11:28,069 --> 00:11:26,279
their work cut out for them the Moon is

194
00:11:29,870 --> 00:11:28,079
definitely a hostile place and the South

195
00:11:34,670 --> 00:11:29,880
Pole is going to really be a challenge

196
00:11:38,090 --> 00:11:34,680
so a lot of thermal requirements we are

197
00:11:39,829 --> 00:11:38,100
really looking for improved Mobility so

198
00:11:41,509 --> 00:11:39,839
that our astronauts can operate more

199
00:11:44,170 --> 00:11:41,519
efficiently and effectively than they

200
00:11:46,310 --> 00:11:44,180
were able to do many years ago in Apollo

201
00:11:48,710 --> 00:11:46,320
and then of course we have really

202
00:11:51,710 --> 00:11:48,720
stringent safety requirements as Vanessa

203
00:11:53,210 --> 00:11:51,720
mentioned on the suits as well so they

204
00:11:55,069 --> 00:11:53,220
certainly have their cut work cut out

205
00:11:57,590 --> 00:11:55,079
for them but we are absolutely confident

206
00:12:01,370 --> 00:11:57,600
that they are going to be successful

207
00:12:03,170 --> 00:12:01,380
uh so our role as NASA is as Vanessa

208
00:12:05,090 --> 00:12:03,180
said to make sure that all of our

209
00:12:06,769 --> 00:12:05,100
expertise and our data and our

210
00:12:09,530 --> 00:12:06,779
facilities are made available to them

211
00:12:11,389 --> 00:12:09,540
and um then we will be in there

212
00:12:13,610 --> 00:12:11,399
um hand in hand with them helping make

213
00:12:16,310 --> 00:12:13,620

sure that they are successful bringing

214
00:12:19,069 --> 00:12:16,320
all of our knowledge to the table all of

215
00:12:21,470 --> 00:12:19,079
our experience along with our our

216
00:12:23,449 --> 00:12:21,480
friends from the crew office just

217
00:12:26,030 --> 00:12:23,459
providing them our expertise and advice

218
00:12:28,250 --> 00:12:26,040
and guidance as they go forward so super

219
00:12:31,850 --> 00:12:28,260
excited to have Mark and Russell and

220
00:12:34,490 --> 00:12:31,860
their team and really looking forward to

221
00:12:42,530 --> 00:12:34,500
a few years from now when we see that

222
00:12:46,250 --> 00:12:44,329
all right we keep forgetting to

223
00:12:49,009 --> 00:12:46,260
introduce so I think I'm going to pass

224
00:12:52,730 --> 00:12:49,019
it on to Mr Mike zefardini

225
00:12:57,170 --> 00:12:55,610
thank you uh Laura and Bob and Vanessa

226
00:12:58,610 --> 00:12:57,180
too for being here this is a big deal

227
00:13:01,850 --> 00:12:58,620
for us

228
00:13:04,850 --> 00:13:01,860
let me start by saying uh Mark when I

229
00:13:06,170 --> 00:13:04,860
look at here this sea of new astronauts

230
00:13:09,590 --> 00:13:06,180
I think we're going to need some more

231
00:13:13,790 --> 00:13:11,930
but first let me let me tell you how

232
00:13:16,430 --> 00:13:13,800
pleased we are as a company it's a it's

233
00:13:19,790 --> 00:13:16,440
a huge deal to be selected to provide

234
00:13:22,430 --> 00:13:19,800
the the lunar surface suit for NASA's

235
00:13:23,930 --> 00:13:22,440
Artemis program it's a it's an

236
00:13:26,030 --> 00:13:23,940
international program we're not just

237
00:13:28,850 --> 00:13:26,040
taking the nation to the moon and Beyond

238
00:13:31,670 --> 00:13:28,860

we're taking the the we're taking

239
00:13:33,230 --> 00:13:31,680
civilization to the moon and Beyond and

240
00:13:35,269 --> 00:13:33,240
so we're pleased that Humanity's next

241
00:13:37,069 --> 00:13:35,279
steps on the moon are going to be in an

242
00:13:39,290 --> 00:13:37,079
axiom space suit and we're very excited

243
00:13:41,350 --> 00:13:39,300
to be a part of this uh the exploration

244
00:13:44,389 --> 00:13:41,360
Mission as it goes forward

245
00:13:45,710 --> 00:13:44,399
the other thing I need to say is uh and

246
00:13:47,690 --> 00:13:45,720
they've they've touched on a little bit

247
00:13:49,730 --> 00:13:47,700
here this morning but this is not

248
00:13:52,009 --> 00:13:49,740
something that you do by yourself this

249
00:13:55,490 --> 00:13:52,019
is a partnership it's a partnership with

250
00:13:57,829 --> 00:13:55,500
NASA the design that we chose and

251
00:14:00,050 --> 00:13:57,839
brought forward is a evolvable design

252
00:14:02,810 --> 00:14:00,060
from the orbit Zoo to the lunar surface

253
00:14:04,850 --> 00:14:02,820
suit it's based on about 10 years worth

254
00:14:06,590 --> 00:14:04,860
of work that that's been going on at

255
00:14:08,449 --> 00:14:06,600
NASA Johnson Space Center by suit

256
00:14:11,150 --> 00:14:08,459
experts

257
00:14:14,269 --> 00:14:11,160
um and we're we're happy to have all of

258
00:14:15,769 --> 00:14:14,279
that expertise uh and that work done I

259
00:14:17,870 --> 00:14:15,779
think I think when it's all said and

260
00:14:20,690 --> 00:14:17,880
done about 50 of the suit will be based

261
00:14:22,370 --> 00:14:20,700
on the original design done by NASA and

262
00:14:24,590 --> 00:14:22,380
probably the other 50 will be the work

263
00:14:27,170 --> 00:14:24,600

uh that this team sitting in the

264
00:14:29,090 --> 00:14:27,180
auditorium will do so that's first and

265
00:14:31,490 --> 00:14:29,100
very very important and as Laura said

266
00:14:34,069 --> 00:14:31,500
this is a critical system it's like uh

267
00:14:36,769 --> 00:14:34,079
you know we all get nervous along lunch

268
00:14:39,110 --> 00:14:36,779
day well when you do an Eva it's it's uh

269
00:14:40,930 --> 00:14:39,120
it's a significant Challenge and so it's

270
00:14:43,610 --> 00:14:40,940
very important that you have very strict

271
00:14:46,189 --> 00:14:43,620
safety guidelines and a suit that will

272
00:14:47,689 --> 00:14:46,199
uh provide the redundancy and the

273
00:14:50,449 --> 00:14:47,699
reliability you need to make sure every

274
00:14:51,829 --> 00:14:50,459
time a human steps foot on the moon uh

275
00:14:53,990 --> 00:14:51,839
that they'll be able to do if they need

276
00:14:56,210 --> 00:14:54,000
to safely and get back and be ready for

277
00:14:58,850 --> 00:14:56,220
the next uh the next mission

278
00:15:00,590 --> 00:14:58,860
so for a second though I want to I want

279
00:15:02,870 --> 00:15:00,600
to take a moment to acknowledge the

280
00:15:04,550 --> 00:15:02,880
Axiom team which is as far as I can tell

281
00:15:06,949 --> 00:15:04,560
nobody's working on suit today because

282
00:15:08,629 --> 00:15:06,959
they're all here but could you guys

283
00:15:15,230 --> 00:15:08,639
stand up and be recognized this is the

284
00:15:15,240 --> 00:15:18,230
you guys are awesome

285
00:15:23,990 --> 00:15:20,509
um and and when I say Axiom team it's

286
00:15:28,310 --> 00:15:24,000
not just Axiom space KBR Paragon David

287
00:15:31,069 --> 00:15:28,320
Clark uh let's see apt research sophic

288
00:15:33,470 --> 00:15:31,079

and aerosciences and technology did I

289
00:15:40,269 --> 00:15:33,480
get them all and airlock oh goodness

290
00:15:44,509 --> 00:15:42,410
all right

291
00:15:46,490 --> 00:15:44,519
sorry about that Paragon intuitive

292
00:15:49,009 --> 00:15:46,500
machines and airlock

293
00:15:50,930 --> 00:15:49,019
um anyway my point is we're a big team

294
00:15:53,210 --> 00:15:50,940
we're we've brought a lot of expertise

295
00:15:55,310 --> 00:15:53,220
from around the country to work together

296
00:15:56,870 --> 00:15:55,320
to build this suit

297
00:16:00,590 --> 00:15:56,880
um and it's a critical part of

298
00:16:03,410 --> 00:16:00,600
exploration uh and we're we're extremely

299
00:16:05,870 --> 00:16:03,420
excited and proud to been selected to uh

300
00:16:08,569 --> 00:16:05,880
to go on this journey with uh with

301
00:16:10,189 --> 00:16:08,579
NASA's it takes uh civilization belong

302
00:16:12,710 --> 00:16:10,199
Beyond low earth orbit

303
00:16:14,689 --> 00:16:12,720
so with that I think my job is to hand

304
00:16:16,069 --> 00:16:14,699
it off to Mark and we've been sitting

305
00:16:17,810 --> 00:16:16,079
here talking about all this stuff but we

306
00:16:19,970 --> 00:16:17,820
have an exciting thing to show you so a

307
00:16:22,009 --> 00:16:19,980
marker gets started down the road go

308
00:16:24,170 --> 00:16:22,019
ahead thank you Mike

309
00:16:25,970 --> 00:16:24,180
um yeah so a lot of hard work has has

310
00:16:28,129 --> 00:16:25,980
been completed for the team to be here

311
00:16:29,750 --> 00:16:28,139
today with the space suit

312
00:16:32,150 --> 00:16:29,760
um for the last couple of years our team

313
00:16:35,090 --> 00:16:32,160

has been off really focused on on three

314
00:16:36,889 --> 00:16:35,100
things people processes uh and

315
00:16:39,829 --> 00:16:36,899
facilities and Equipment

316
00:16:42,590 --> 00:16:39,839
um our our team is comprised of many

317
00:16:45,069 --> 00:16:42,600
many people from the NASA xcmu program

318
00:16:47,870 --> 00:16:45,079
so they bring a lot of expertise forward

319
00:16:50,870 --> 00:16:47,880
a lot of our team has worked multiple

320
00:16:53,290 --> 00:16:50,880
Eva programs and then we leveraged

321
00:16:57,050 --> 00:16:53,300
industry automotive

322
00:16:59,110 --> 00:16:57,060
oil and gas the Theater Arts and and

323
00:17:01,030 --> 00:16:59,120
even

324
00:17:09,530 --> 00:17:01,040
design

325
00:17:13,630 --> 00:17:11,750
um no our

326
00:17:17,289 --> 00:17:13,640
sorry

327
00:17:22,010 --> 00:17:17,299
professional clothing design thank you

328
00:17:24,909 --> 00:17:22,020
so our we have a vast base of a really

329
00:17:28,429 --> 00:17:24,919
talented and experienced people

330
00:17:31,310 --> 00:17:28,439
our processes you combine all that with

331
00:17:34,490 --> 00:17:31,320
axioms Agile development process and the

332
00:17:36,430 --> 00:17:34,500
team's able to move extremely fast but

333
00:17:40,190 --> 00:17:36,440
but in a very very

334
00:17:42,710 --> 00:17:40,200
in a very uh

335
00:17:44,750 --> 00:17:42,720
in a very controlled environment which

336
00:17:46,390 --> 00:17:44,760
is critical to to building and designing

337
00:17:49,970 --> 00:17:46,400
space flight Hardware

338
00:17:52,549 --> 00:17:49,980

you couple that with using NASA's xcmu

339
00:17:54,650 --> 00:17:52,559
Technologies and and it just makes the

340
00:17:56,169 --> 00:17:54,660
team's performance even greater for for

341
00:17:59,630 --> 00:17:56,179
success

342
00:18:02,450 --> 00:17:59,640
Axiom has a number of facilities the the

343
00:18:05,270 --> 00:18:02,460
most recent facility we're about we have

344
00:18:07,909 --> 00:18:05,280
just populated or moved into is the Eva

345
00:18:09,590 --> 00:18:07,919
program facility so team is very excited

346
00:18:12,350 --> 00:18:09,600
about that we vertically integrate

347
00:18:14,330 --> 00:18:12,360
integrated all the team members and

348
00:18:16,730 --> 00:18:14,340
Axiom Under One Roof

349
00:18:18,350 --> 00:18:16,740
and we're about to open our

350
00:18:20,930 --> 00:18:18,360
state-of-the-art Labs we've been working

351
00:18:23,810 --> 00:18:20,940
in temporary space which which has been

352
00:18:26,090 --> 00:18:23,820
very accommodating but we'll have

353
00:18:28,669 --> 00:18:26,100
everything we need to design manufacture

354
00:18:32,029 --> 00:18:28,679
spacesuits for the lunar surface and for

355
00:18:33,950 --> 00:18:32,039
axiom's space station and with that I

356
00:18:35,810 --> 00:18:33,960
just want to thank the Eva team on

357
00:18:38,690 --> 00:18:35,820
behalf of Russell and I thank you so

358
00:18:40,490 --> 00:18:38,700
much for for all of your hard work we

359
00:18:44,330 --> 00:18:40,500
thank your families for standing

360
00:18:46,789 --> 00:18:44,340
standing by as as as the teams work long

361
00:18:50,750 --> 00:18:46,799
hours sometimes and we'd also like to

362
00:18:53,690 --> 00:18:50,760
thank Laura Chris Jesse Ben we

363
00:18:56,150 --> 00:18:53,700

appreciate all the collaboration with

364
00:18:58,010 --> 00:18:56,160
you and your team the insight and

365
00:19:00,289 --> 00:18:58,020
collaboration has been has gone

366
00:19:02,630 --> 00:19:00,299
exceptionally well and and you guys are

367
00:19:03,529 --> 00:19:02,640
a big part of our success as well thank

368
00:19:10,130 --> 00:19:03,539
you

369
00:19:10,140 --> 00:19:30,590
I think we're going to a video now

370
00:19:30,600 --> 00:19:35,390
that we're going to be a part

371
00:19:35,400 --> 00:19:39,970
itioners

372
00:19:43,610 --> 00:19:42,049
and they're using their actual space

373
00:19:45,950 --> 00:19:43,620
station today but if we want to go back

374
00:19:47,510 --> 00:19:45,960
to the Moon then we need a new space too

375
00:19:50,630 --> 00:19:47,520
space new design has been really

376
00:19:53,090 --> 00:19:50,640
evolutionary for a decade and we're kind

377
00:19:55,190 --> 00:19:53,100
of taking a larger leap we are changing

378
00:19:57,350 --> 00:19:55,200
it so it's dust tolerant so that it can

379
00:19:59,150 --> 00:19:57,360
walk far distances that you can help

380
00:20:01,010 --> 00:19:59,160
with your fellow crew member is

381
00:20:03,529 --> 00:20:01,020
incapacity and the ability to bring them

382
00:20:05,690 --> 00:20:03,539
back with you so all these updates for

383
00:20:07,730 --> 00:20:05,700
more of a revolution than an evolution

384
00:20:09,950 --> 00:20:07,740
of the different design but I'm excited

385
00:20:12,590 --> 00:20:09,960
by some of the really new developments

386
00:20:14,930 --> 00:20:12,600
in technology that have been added in

387
00:20:15,830 --> 00:20:14,940
and I think it's going to be a great

388
00:20:19,789 --> 00:20:15,840

suit

389
00:20:23,990 --> 00:20:19,799
it is an unbelievable amount of effort

390
00:20:27,770 --> 00:20:24,000
from seamstresses to requirement

391
00:20:30,230 --> 00:20:27,780
Specialists to Engineers managers we

392
00:20:32,450 --> 00:20:30,240
have a range of skill sets and everyone

393
00:20:34,789 --> 00:20:32,460
is so proud to be doing what they're

394
00:20:37,310 --> 00:20:34,799
doing it's like a little bit of each of

395
00:20:39,590 --> 00:20:37,320
us is going up there with the astronauts

396
00:20:42,650 --> 00:20:39,600
and a little bit of our mentors a little

397
00:20:44,270 --> 00:20:42,660
bit of our family like it's it's more

398
00:20:46,669 --> 00:20:44,280
than

399
00:20:49,370 --> 00:20:46,679
just ourselves right it's everyone

400
00:20:51,830 --> 00:20:49,380
before us and everyone after us so

401
00:20:53,570 --> 00:20:51,840
that's um you can definitely feel it

402
00:20:57,049 --> 00:20:53,580
that gives you Goosebumps right like

403
00:20:58,610 --> 00:20:57,059
that is it hasn't sunk in yet and I

404
00:21:00,169 --> 00:20:58,620
don't know if it will ever sink in even

405
00:21:01,730 --> 00:21:00,179
when it's happening and you're looking

406
00:21:04,010 --> 00:21:01,740
at the moon and you're like there's

407
00:21:05,870 --> 00:21:04,020
someone on the moon in an axiom suit

408
00:21:08,350 --> 00:21:05,880
like

409
00:21:21,789 --> 00:21:08,360
that is the dream

410
00:21:21,799 --> 00:21:26,990
thank you

411
00:21:27,000 --> 00:21:34,870
foreign

412
00:21:40,730 --> 00:21:38,090
space is changing so fast right now and

413
00:21:43,909 --> 00:21:40,740

it's going to be such a great time to

414
00:21:46,430 --> 00:21:43,919
want to get into any aspect of the Space

415
00:21:49,490 --> 00:21:46,440
Program whether you know as an engineer

416
00:21:54,130 --> 00:21:49,500
a designer an astronaut somebody you

417
00:21:57,870 --> 00:21:56,450
and now the moment you've all been

418
00:22:04,200 --> 00:21:57,880
waiting for

419
00:22:05,290 --> 00:22:04,210
[Applause]

420
00:22:09,049 --> 00:22:05,300
[Music]

421
00:22:13,130 --> 00:22:11,750
all right good morning my name is

422
00:22:15,409 --> 00:22:13,140
Russell Wilson I'm the deputy program

423
00:22:17,930 --> 00:22:15,419
manager of Eva at action space in the

424
00:22:18,649 --> 00:22:17,940
suit here this morning is Jim Stein Jim

425
00:22:20,450 --> 00:22:18,659
is

426
00:22:23,090 --> 00:22:20,460
an extraordinary engineer who's a chief

427
00:22:26,450 --> 00:22:23,100
engineer on our team so we gave him the

428
00:22:30,649 --> 00:22:29,330
we gave Jim the honors of demonstrating

429
00:22:34,190 --> 00:22:30,659
the suit this morning I'm going to give

430
00:22:35,510 --> 00:22:34,200
him this uh walking staff here we are in

431
00:22:36,649 --> 00:22:35,520
Earth gravity we're not on the moon if

432
00:22:38,390 --> 00:22:36,659
anybody doesn't know

433
00:22:39,890 --> 00:22:38,400
um on the moon the gravity's not 1 6 of

434
00:22:41,570 --> 00:22:39,900
what it is here so just in case Jim

435
00:22:43,190 --> 00:22:41,580
loses his balance safety reasons want

436
00:22:45,830 --> 00:22:43,200
him to have that but so I'm going to

437
00:22:48,350 --> 00:22:45,840
talk through the suit design uh just

438
00:22:49,730 --> 00:22:48,360

very briefly and as I do that uh Jim's

439
00:22:51,890 --> 00:22:49,740
going to perform some different

440
00:22:53,930 --> 00:22:51,900
um actions Mobility to demonstrate the

441
00:22:55,130 --> 00:22:53,940
mobility of the suit uh before you

442
00:22:56,510 --> 00:22:55,140
before we get into that though I want to

443
00:22:58,490 --> 00:22:56,520
talk about this cover layer so the cover

444
00:23:00,649 --> 00:22:58,500
layer that you see the black the orange

445
00:23:03,110 --> 00:23:00,659
the blue personally I think this looks

446
00:23:06,710 --> 00:23:03,120
amazing I want to thank Esther Marquis

447
00:23:08,390 --> 00:23:06,720
for helping us design this Esther is a

448
00:23:10,070 --> 00:23:08,400
designer a spacesuit designer on the

449
00:23:12,890 --> 00:23:10,080
show For All Mankind if anyone has seen

450
00:23:15,529 --> 00:23:12,900
that on Apple TV plus so so this suit

451
00:23:17,630 --> 00:23:15,539
has a lot of that works into this one of

452
00:23:19,190 --> 00:23:17,640
the differences between this suit and

453
00:23:20,510 --> 00:23:19,200
the suit that will be on the moon is

454
00:23:22,250 --> 00:23:20,520
that it will the moon suit will mostly

455
00:23:23,990 --> 00:23:22,260
be white so we'll replace all the black

456
00:23:25,850 --> 00:23:24,000
with white and that's really for thermal

457
00:23:27,049 --> 00:23:25,860
reasons so didn't want anybody to to get

458
00:23:28,070 --> 00:23:27,059
that mixed up

459
00:23:30,049 --> 00:23:28,080
um but other than that I think this is

460
00:23:32,810 --> 00:23:30,059
just a fantastic fantastic looking suit

461
00:23:34,669 --> 00:23:32,820
so let me let me go top to bottom here

462
00:23:35,930 --> 00:23:34,679
um and just describe the suit overall so

463
00:23:37,490 --> 00:23:35,940

we'll start with the light band I think

464
00:23:40,789 --> 00:23:37,500
you guys saw the lights as Jim walked

465
00:23:42,710 --> 00:23:40,799
out on stage uh on the light bound is

466
00:23:44,630 --> 00:23:42,720
mounted to the visor assembly into the

467
00:23:46,789 --> 00:23:44,640
helmet bubble uh and this this

468
00:23:48,409 --> 00:23:46,799
essentially gives the astronauts lights

469
00:23:49,610 --> 00:23:48,419
to see where they're in shaded portions

470
00:23:51,529 --> 00:23:49,620
of the moon or if they're in low earth

471
00:23:53,149 --> 00:23:51,539
orbit in a night pass they can turn on

472
00:23:55,070 --> 00:23:53,159
these lights to see

473
00:23:56,450 --> 00:23:55,080
um using tools or translating on the

474
00:23:58,909 --> 00:23:56,460
space station or anything like that we

475
00:24:00,830 --> 00:23:58,919
also have on the side here we have a HD

476
00:24:03,590 --> 00:24:00,840
video camera so those of us back on

477
00:24:04,490 --> 00:24:03,600
spaceship earth watching the Eva will be

478
00:24:06,470 --> 00:24:04,500
able to watch it in high definition

479
00:24:09,470 --> 00:24:06,480
which would be a fantastic upgrade I

480
00:24:11,450 --> 00:24:09,480
think from from current day technology

481
00:24:14,090 --> 00:24:11,460
all of this is mounted on the helmet

482
00:24:15,649 --> 00:24:14,100
bubble which is amounted to what we call

483
00:24:17,870 --> 00:24:15,659
in this configuration of our suit the

484
00:24:19,669 --> 00:24:17,880
hard upper torso so the hard upper torso

485
00:24:21,890 --> 00:24:19,679
goes roughly from Jim's waist up to the

486
00:24:23,330 --> 00:24:21,900
top and this is kind of the core

487
00:24:25,370 --> 00:24:23,340
structure of the suit it's what we

488
00:24:26,570 --> 00:24:25,380

attach everything to

489
00:24:27,830 --> 00:24:26,580
um so the arms let's talk about the

490
00:24:28,789 --> 00:24:27,840
backpack in a minute so yeah if Jim

491
00:24:30,350 --> 00:24:28,799
wants to demonstrate some of the arm

492
00:24:31,490 --> 00:24:30,360
ability here

493
00:24:34,010 --> 00:24:31,500
um this really just provides us again

494
00:24:35,990 --> 00:24:34,020
some structured amount things too

495
00:24:37,789 --> 00:24:36,000
each of the arms have a variety of

496
00:24:40,669 --> 00:24:37,799
Mobility joints and elements that we've

497
00:24:43,070 --> 00:24:40,679
designed at Axiom including the gloves

498
00:24:45,350 --> 00:24:43,080
the gloves are a critical part of the

499
00:24:46,909 --> 00:24:45,360
suit design especially for microgravity

500
00:24:49,310 --> 00:24:46,919
Evas where you're using them for hours

501
00:24:51,649 --> 00:24:49,320
at a time to translate to operate tools

502
00:24:53,810 --> 00:24:51,659
to you know fix things to the suit and

503
00:24:55,130 --> 00:24:53,820
so on so we put a ton of effort into

504
00:24:56,930 --> 00:24:55,140
those gloves pretty pretty proud of

505
00:24:59,330 --> 00:24:56,940
where they're at and are confident those

506
00:25:01,330 --> 00:24:59,340
are going to perform very well if Jim

507
00:25:03,350 --> 00:25:01,340
turns to the side here

508
00:25:05,630 --> 00:25:03,360
some people may be wondering hey how do

509
00:25:07,250 --> 00:25:05,640
you even get in this suit there's a

510
00:25:09,230 --> 00:25:07,260
hatch on the back actually you can see

511
00:25:11,210 --> 00:25:09,240
two hinges here so this suit's a little

512
00:25:12,590 --> 00:25:11,220
bit different than the suits of kind of

513
00:25:14,690 --> 00:25:12,600

today that's used in the space station

514
00:25:16,850 --> 00:25:14,700
this is called a rear entry design or a

515
00:25:19,010 --> 00:25:16,860
back entry Design This hatch would open

516
00:25:20,930 --> 00:25:19,020
up you would put your feet in put your

517
00:25:24,230 --> 00:25:20,940
arms in and kind of shimmy down into the

518
00:25:25,970 --> 00:25:24,240
suit and then we would close the hatch

519
00:25:28,610 --> 00:25:25,980
um mounted to the hatch is this box

520
00:25:30,230 --> 00:25:28,620
affectionately known as the backpack we

521
00:25:32,690 --> 00:25:30,240
call it the the portable life support

522
00:25:34,850 --> 00:25:32,700
system so inside of this box are all the

523
00:25:36,649 --> 00:25:34,860
parts and the components to keep to kind

524
00:25:38,810 --> 00:25:36,659
of keep you alive while you're doing Eva

525
00:25:40,669 --> 00:25:38,820
you can think of it as like a very fancy

526
00:25:43,970 --> 00:25:40,679
scuba tank and air conditioner kind of

527
00:25:45,649 --> 00:25:43,980
combined into one so on the lower torso

528
00:25:47,750 --> 00:25:45,659
so let's start kind of from the waist

529
00:25:50,210 --> 00:25:47,760
going down to the to the boots I'll let

530
00:25:52,730 --> 00:25:50,220
Jim do some squats and lunges and and

531
00:25:54,950 --> 00:25:52,740
just show off some of the uh some of the

532
00:25:56,029 --> 00:25:54,960
mobility uh that the suit has and

533
00:25:57,590 --> 00:25:56,039
demonstrate some different movements

534
00:25:59,690 --> 00:25:57,600
there's a variety of joints that we've

535
00:26:00,890 --> 00:25:59,700
put as well into the lower torso

536
00:26:03,110 --> 00:26:00,900
assembly and this is going to be a huge

537
00:26:04,549 --> 00:26:03,120
improvement over the Apollo suits the

538
00:26:06,350 --> 00:26:04,559

Apollo suits didn't have many of these

539
00:26:07,850 --> 00:26:06,360
types of joints that we've put in this

540
00:26:09,470 --> 00:26:07,860
suit so the astronauts will be more

541
00:26:12,230 --> 00:26:09,480
comfortable have an easier time walking

542
00:26:13,789 --> 00:26:12,240
performing tasks getting down to like to

543
00:26:16,250 --> 00:26:13,799
pick up a rock or something like that or

544
00:26:18,769 --> 00:26:16,260
use a geology tool

545
00:26:20,149 --> 00:26:18,779
um and then the other thing that uh yeah

546
00:26:21,769 --> 00:26:20,159
that's a great great demonstration there

547
00:26:23,630 --> 00:26:21,779
by Jim

548
00:26:26,390 --> 00:26:23,640
um the other thing I wanted to touch on

549
00:26:28,130 --> 00:26:26,400
is the boots the boots are critical uh

550
00:26:30,350 --> 00:26:28,140
critical part of the suit especially for

551
00:26:32,990 --> 00:26:30,360
the the Artemis 3 mission and missions

552
00:26:34,549 --> 00:26:33,000
to the the South Pole of the Moon

553
00:26:36,110 --> 00:26:34,559
um we'll be entering regions called

554
00:26:37,190 --> 00:26:36,120
permanently shadowed regions these are

555
00:26:39,409 --> 00:26:37,200
regions of the Moon that never see

556
00:26:41,510 --> 00:26:39,419
sunlight and they're very very cold and

557
00:26:43,370 --> 00:26:41,520
so it's very important that we insulate

558
00:26:45,310 --> 00:26:43,380
the boots appropriately to keep the

559
00:26:47,990 --> 00:26:45,320
astronauts feet

560
00:26:49,909 --> 00:26:48,000
comfortable during the Eva that's a

561
00:26:51,350 --> 00:26:49,919
portion of the design there's there's as

562
00:26:52,730 --> 00:26:51,360
Mr Suffern you mentioned there's many

563
00:26:55,130 --> 00:26:52,740

portions of this design that we've that

564
00:26:56,570 --> 00:26:55,140
we've kind of adopted from xcmu and are

565
00:26:58,430 --> 00:26:56,580
continuing to refine that's that's an

566
00:26:59,870 --> 00:26:58,440
excellent portion the xcmu team did a

567
00:27:01,310 --> 00:26:59,880
tremendous job and a lot of our

568
00:27:02,570 --> 00:27:01,320
teammates did a tremendous job designing

569
00:27:04,070 --> 00:27:02,580
those boots so we're taking those

570
00:27:07,490 --> 00:27:04,080
forward and refining them to flight

571
00:27:08,870 --> 00:27:07,500
those are really a key aspect of the

572
00:27:09,590 --> 00:27:08,880
suit

573
00:27:11,630 --> 00:27:09,600
um

574
00:27:13,190 --> 00:27:11,640
I think I've covered everything pretty

575
00:27:15,470 --> 00:27:13,200
quickly here at a high level I don't

576
00:27:16,789 --> 00:27:15,480
think I've missed anything here

577
00:27:18,470 --> 00:27:16,799
um so I know we've got some questions

578
00:27:19,909 --> 00:27:18,480
and answers that we want to go to but

579
00:27:22,250 --> 00:27:19,919
before we do that I'd love to introduce

580
00:27:24,409 --> 00:27:22,260
our director of human space flight and

581
00:27:26,029 --> 00:27:24,419
the upcoming commander of ax2 mission to

582
00:27:27,950 --> 00:27:26,039
the International Space Station Peggy

583
00:27:29,930 --> 00:27:27,960
Whitson Peggy has spent a lot of time in

584
00:27:33,470 --> 00:27:29,940
spacesuits

585
00:27:38,810 --> 00:27:35,990
I'm so excited to be here today this is

586
00:27:41,090 --> 00:27:38,820
this is a great uh example of what

587
00:27:43,669 --> 00:27:41,100
Innovation can do it's this is going to

588
00:27:45,230 --> 00:27:43,679

be such a much more flexible suit and

589
00:27:47,930 --> 00:27:45,240
the range of motion is really going to

590
00:27:49,310 --> 00:27:47,940
improve the astronauts ability to do all

591
00:27:51,649 --> 00:27:49,320
those tasks that they're going to do

592
00:27:54,529 --> 00:27:51,659
while they're out exploring on the lunar

593
00:27:56,810 --> 00:27:54,539
surface and eventually on Mars that

594
00:27:59,630 --> 00:27:56,820
would be so special and we are here

595
00:28:02,630 --> 00:27:59,640
today actually because of this young

596
00:28:05,750 --> 00:28:02,640
group of people here that are here for

597
00:28:07,970 --> 00:28:05,760
the Moon to Mars Festival we think that

598
00:28:09,890 --> 00:28:07,980
it's really important that we get you

599
00:28:13,130 --> 00:28:09,900
guys started on your space flight

600
00:28:14,630 --> 00:28:13,140
training and it's it's really important

601
00:28:16,850 --> 00:28:14,640
because we know that you're going to be

602
00:28:19,250 --> 00:28:16,860
our future and you're going to be able

603
00:28:21,769 --> 00:28:19,260
to wear this suit someday so we're very

604
00:28:23,510 --> 00:28:21,779
much looking forward to that and we

605
00:28:24,890 --> 00:28:23,520
actually have some really little special

606
00:28:26,930 --> 00:28:24,900
guests that are going to ask some

607
00:28:28,310 --> 00:28:26,940
questions and I have somebody I'd like

608
00:28:31,070 --> 00:28:28,320
to introduce who's going to help us out

609
00:28:36,830 --> 00:28:31,080
with that this is my pilot John shoffner

610
00:28:41,090 --> 00:28:39,409
we're flying on the Axiom 2 mission

611
00:28:43,909 --> 00:28:41,100
that's going to the International Space

612
00:28:46,850 --> 00:28:43,919
Station in a few months and

613
00:28:49,310 --> 00:28:46,860

um John is here to help me out and get

614
00:28:51,169 --> 00:28:49,320
some young people up here to to chat

615
00:28:53,269 --> 00:28:51,179
with you and ask a few questions about

616
00:28:55,789 --> 00:28:53,279
this suit

617
00:28:59,149 --> 00:28:55,799
here we go well I have the extreme

618
00:29:01,490 --> 00:28:59,159
pleasure of talking to myself in the

619
00:29:04,070 --> 00:29:01,500
past I was I had an astronaut in me

620
00:29:06,470 --> 00:29:04,080
since I was 10. it took me a while but

621
00:29:09,110 --> 00:29:06,480
because of today the worst been the

622
00:29:10,730 --> 00:29:09,120
weight has been worth it to talk to some

623
00:29:12,529 --> 00:29:10,740
people today first I'd like to thank

624
00:29:13,909 --> 00:29:12,539
NASA and Axiom for making all of this

625
00:29:17,149 --> 00:29:13,919
possible in the private and commercial

626
00:29:18,830 --> 00:29:17,159
space flight Endeavor I think it's a

627
00:29:20,750 --> 00:29:18,840
great step and we're going to introduce

628
00:29:23,750 --> 00:29:20,760
some kids to you that I think will be

629
00:29:26,990 --> 00:29:23,760
your future both for Axiom Artemis and

630
00:29:28,730 --> 00:29:27,000
NASA so

631
00:29:30,710 --> 00:29:28,740
like to bring these young

632
00:29:33,049 --> 00:29:30,720
Young on here that have brought us some

633
00:29:34,669 --> 00:29:33,059
really fabulous questions

634
00:29:36,889 --> 00:29:34,679
by the way thank you Peggy I look

635
00:29:44,110 --> 00:29:36,899
forward to our flight I do too

636
00:29:44,120 --> 00:29:49,610
looking good

637
00:29:49,620 --> 00:29:55,850
come on over here

638
00:30:00,950 --> 00:29:57,649

you know this is great for me this is

639
00:30:04,669 --> 00:30:00,960
actually my demographic so I I feel

640
00:30:09,110 --> 00:30:07,250
awesome so what do you think that's

641
00:30:11,870 --> 00:30:09,120
quite a suit right

642
00:30:14,389 --> 00:30:11,880
pretty neat huh

643
00:30:15,649 --> 00:30:14,399
good now I understand you guys have some

644
00:30:18,470 --> 00:30:15,659
questions

645
00:30:20,990 --> 00:30:18,480
uh Remington you're eight years old

646
00:30:24,350 --> 00:30:21,000
you've been thinking about space for how

647
00:30:24,360 --> 00:30:30,830
okay so what is your question today

648
00:30:36,889 --> 00:30:34,669
do you wear your space suit in space

649
00:30:38,450 --> 00:30:36,899
oh that you're you're is that question

650
00:30:41,570 --> 00:30:38,460
for me

651
00:30:43,190 --> 00:30:41,580
I'll take it uh well I won't actually

652
00:30:44,750 --> 00:30:43,200
wear this suit I might sneak back

653
00:30:46,970 --> 00:30:44,760
tonight and slip it on we'll see what

654
00:30:49,310 --> 00:30:46,980
happens but uh I think this suit will

655
00:30:51,950 --> 00:30:49,320
look great on you so I'm looking forward

656
00:30:55,970 --> 00:30:51,960
to one day seeing you in space in this

657
00:30:55,980 --> 00:30:58,789
cool

658
00:31:04,130 --> 00:31:01,610
good morning you're Ian right

659
00:31:05,870 --> 00:31:04,140
okay how old are you

660
00:31:07,850 --> 00:31:05,880
um I'm five

661
00:31:10,070 --> 00:31:07,860
that's awesome so you have a question

662
00:31:11,570 --> 00:31:10,080
for Russell and Russell's right back

663
00:31:14,450 --> 00:31:11,580

here behind us

664
00:31:16,669 --> 00:31:14,460
what is your question for Russell

665
00:31:19,610 --> 00:31:16,679
um what's your favorite part about your

666
00:31:21,169 --> 00:31:19,620
spacesuit oh that's a that's a great

667
00:31:22,610 --> 00:31:21,179
question

668
00:31:24,110 --> 00:31:22,620
um you know if you're if you're gonna

669
00:31:25,610 --> 00:31:24,120
walk on the moon I think you have to do

670
00:31:26,870 --> 00:31:25,620
it in some pretty cool shoes so probably

671
00:31:29,269 --> 00:31:26,880
the boots I think the boots are probably

672
00:31:31,970 --> 00:31:29,279
my favorite part he likes the boots I

673
00:31:33,950 --> 00:31:31,980
like your shoes by the way today

674
00:31:38,029 --> 00:31:33,960
thank you for your question Ian

675
00:31:42,470 --> 00:31:39,769
hi Charlotte

676
00:31:50,330 --> 00:31:42,480
I met you a minute ago up there

677
00:31:56,930 --> 00:31:52,010
so you have a question I think it's for

678
00:32:01,370 --> 00:31:58,909
you want me to help you you know I know

679
00:32:04,250 --> 00:32:01,380
she she makes me nervous too

680
00:32:07,010 --> 00:32:04,260
she's she's my commander and she's very

681
00:32:10,310 --> 00:32:07,020
famous astronaut and it's okay she has

682
00:32:11,870 --> 00:32:10,320
answers for everything I've tried so I

683
00:32:16,130 --> 00:32:11,880
think your question is

684
00:32:19,130 --> 00:32:16,140
how far away is the Earth from Mars is

685
00:32:23,930 --> 00:32:20,950
um I don't know

686
00:32:27,010 --> 00:32:23,940
you don't know okay that's okay I don't

687
00:32:30,350 --> 00:32:27,020
either but Peggy knows I think it's a

688
00:32:32,810 --> 00:32:30,360

120.22 Million Miles Away

689
00:32:36,110 --> 00:32:32,820
that takes a long time to get there

690
00:32:38,630 --> 00:32:36,120
maybe like almost nine months but I'd

691
00:32:41,810 --> 00:32:38,640
sign up so

692
00:32:46,970 --> 00:32:41,820
how far does your grandmother live away

693
00:32:49,789 --> 00:32:48,230
this

694
00:32:51,230 --> 00:32:49,799
good morning sir

695
00:32:52,730 --> 00:32:51,240
10 years old

696
00:32:56,570 --> 00:32:52,740
you're almost going to be 11 though

697
00:32:58,730 --> 00:32:56,580
right all right okay for Mark

698
00:33:00,830 --> 00:32:58,740
okay Mark is right back here the

699
00:33:04,280 --> 00:33:00,840
gentleman that introduced the suit to

700
00:33:09,110 --> 00:33:04,290
you okay what is your question

701
00:33:14,330 --> 00:33:11,870
what what characteristics about the suit

702
00:33:17,990 --> 00:33:14,340
will help us survive in space

703
00:33:20,630 --> 00:33:18,000
that's a great question Liz so as you

704
00:33:22,990 --> 00:33:20,640
probably already know deep space can be

705
00:33:26,930 --> 00:33:23,000
a very harsh environment

706
00:33:30,169 --> 00:33:26,940
so and there's no Oxygen there's no

707
00:33:32,029 --> 00:33:30,179
atmosphere so when we design our suit we

708
00:33:35,210 --> 00:33:32,039
have to make sure it can keep you warm

709
00:33:38,570 --> 00:33:35,220
it can cool you there's oxygen for you

710
00:33:40,730 --> 00:33:38,580
to breathe and even food and water

711
00:33:43,070 --> 00:33:40,740
so those are all very important aspects

712
00:33:46,430 --> 00:33:43,080
of of our new spacesuit

713
00:33:51,049 --> 00:33:46,440

all right you've got it from the top

714
00:33:57,350 --> 00:33:52,610
you had another question this one I

715
00:34:02,570 --> 00:34:00,470
I'll take it okay uh

716
00:34:05,630 --> 00:34:02,580
okay we're working on it we're almost

717
00:34:11,389 --> 00:34:09,169
how long can you live in space how long

718
00:34:12,649 --> 00:34:11,399
can you live in space that's a that's a

719
00:34:15,050 --> 00:34:12,659
great question

720
00:34:16,190 --> 00:34:15,060
um so we've had people or NASA's had

721
00:34:17,750 --> 00:34:16,200
people as an agency on this

722
00:34:20,149 --> 00:34:17,760
International Space Station for over 20

723
00:34:22,010 --> 00:34:20,159
years some of those individuals have

724
00:34:23,690 --> 00:34:22,020
have stayed on the space station for

725
00:34:25,609 --> 00:34:23,700
over a year at a time but we don't

726
00:34:28,010 --> 00:34:25,619
actually know how long so we need to

727
00:34:29,329 --> 00:34:28,020
keep exploring need to keep building the

728
00:34:30,950 --> 00:34:29,339
space stations and going back to space

729
00:34:33,230 --> 00:34:30,960
to figure out answers to questions just

730
00:34:35,470 --> 00:34:33,240
like that

731
00:34:40,490 --> 00:34:35,480
okay

732
00:34:46,609 --> 00:34:44,750
great job thank you uh Jane over to you

733
00:34:49,310 --> 00:34:46,619
in the pink

734
00:34:50,869 --> 00:34:49,320
okay you have a question for Peggy

735
00:34:52,849 --> 00:34:50,879
I have questions for her too but how

736
00:34:55,129 --> 00:34:52,859
about you first

737
00:34:58,790 --> 00:34:55,139
what is your question

738
00:35:01,070 --> 00:34:58,800

friends can you go on a space mission as

739
00:35:03,710 --> 00:35:01,080
an astronaut

740
00:35:05,750 --> 00:35:03,720
I've been on three different space

741
00:35:07,550 --> 00:35:05,760
flights previously they were long

742
00:35:08,870 --> 00:35:07,560
duration missions and John and I are

743
00:35:11,870 --> 00:35:08,880
going to go on another mission together

744
00:35:13,849 --> 00:35:11,880
here shortly in a few months and so

745
00:35:15,730 --> 00:35:13,859
that'll be four uh but I'm looking

746
00:35:17,630 --> 00:35:15,740
forward to any others I can get

747
00:35:19,370 --> 00:35:17,640
[Laughter]

748
00:35:21,890 --> 00:35:19,380
how many times would you like to go to

749
00:35:21,900 --> 00:35:24,550
three

750
00:35:29,390 --> 00:35:27,650
okay we've got you down for that got you

751
00:35:35,270 --> 00:35:29,400
down for three okay

752
00:35:42,109 --> 00:35:39,589
yes okay this is for Bob right behind

753
00:35:44,329 --> 00:35:42,119
you Bob Cabana and Mike sufardini but

754
00:35:46,970 --> 00:35:44,339
these two gentlemen here what is your

755
00:35:50,329 --> 00:35:49,010
when will we see the spacesuit on the

756
00:35:53,030 --> 00:35:50,339
moon

757
00:35:56,390 --> 00:35:53,040
that is a great question Vince and NASA

758
00:35:59,569 --> 00:35:56,400
is working very very hard to ensure that

759
00:36:02,690 --> 00:35:59,579
we keep Artemis 3 on track and our goal

760
00:36:04,849 --> 00:36:02,700
is to have the first woman and next man

761
00:36:07,910 --> 00:36:04,859
back on the surface of the Moon on

762
00:36:10,550 --> 00:36:07,920
Artemis 3 in 2025.

763
00:36:11,420 --> 00:36:10,560

and they'll be wearing an axiom lunar

764
00:36:19,730 --> 00:36:11,430
surface suit

765
00:36:23,690 --> 00:36:19,740
[Applause]

766
00:36:26,329 --> 00:36:23,700
in 2025 when the suit is on the moon uh

767
00:36:31,370 --> 00:36:26,339
when well yes

768
00:36:38,510 --> 00:36:36,710
11 13. okay 13. awesome uh the Artemis

769
00:36:41,000 --> 00:36:38,520
generation thank you very much and we'll

770
00:36:48,950 --> 00:36:41,010
see you guys in class

771
00:37:06,310 --> 00:36:48,960
[Applause]

772
00:37:06,320 --> 00:37:16,270
all right

773
00:37:20,930 --> 00:37:19,730
wow wow that is super cool isn't it

774
00:37:22,250 --> 00:37:20,940
exciting let's do another round of

775
00:37:25,849 --> 00:37:22,260
applause for everyone this is so

776
00:37:25,859 --> 00:37:30,470
thank you

777
00:37:33,890 --> 00:37:32,329
well again I want to express hurtful

778
00:37:36,050 --> 00:37:33,900
thanks to all of our panelists here

779
00:37:37,910 --> 00:37:36,060
congratulations to NASA and Axiom for

780
00:37:40,490 --> 00:37:37,920
this amazing Milestone and achievement

781
00:37:43,010 --> 00:37:40,500
as we prepare to return humans to the

782
00:37:44,990 --> 00:37:43,020
Moon in a entirely new architecture and

783
00:37:46,490 --> 00:37:45,000
program and we can't wait for that day

784
00:37:48,170 --> 00:37:46,500
when we have the first woman and person

785
00:37:50,089 --> 00:37:48,180
of color and other astronauts step on

786
00:37:52,069 --> 00:37:50,099
the surface of the Moon and really begin

787
00:37:54,650 --> 00:37:52,079
a whole new phase of Adventure and

788
00:37:56,510 --> 00:37:54,660

Science and exploration so with that

789
00:37:58,250 --> 00:37:56,520
that concludes today's program thank you

790
00:37:59,630 --> 00:37:58,260
for joining us and I would like to

791
00:38:02,810 --> 00:37:59,640
invite members of the media to come to

792
00:38:04,370 --> 00:38:02,820
the front for a closer conversation and

793
00:38:05,870 --> 00:38:04,380
we look forward to having all of you

794
00:38:07,370 --> 00:38:05,880
join us at the Moon to Mars Festival

795
00:38:09,050 --> 00:38:07,380
here at Space Center Houston again it

796
00:38:10,609 --> 00:38:09,060
runs through Sunday of this week with

797
00:38:12,050 --> 00:38:10,619
live entertainment on Thursday Friday

798
00:38:14,100 --> 00:38:12,060
and Saturday night and Sunday afternoon

799
00:38:22,550 --> 00:38:14,110
again thank you for joining us

800
00:38:29,030 --> 00:38:22,560
[Applause]

801
00:38:57,770 --> 00:38:45,069
[Music]

802
00:39:05,750 --> 00:39:00,710
and here we go and hydrogen burnoff

803
00:39:07,430 --> 00:39:05,760
igniters initiate seven six five four

804
00:39:11,690 --> 00:39:07,440
stage engine start

805
00:39:14,630 --> 00:39:11,700
three two one booster's indignation