



1
00:00:28,630 --> 00:00:26,230
live from nasa's jet propulsion

2
00:00:30,710 --> 00:00:28,640
laboratory in pasadena california and on

3
00:00:33,750 --> 00:00:30,720
mars i want to present to you the team

4
00:00:45,510 --> 00:00:33,760
that has brought us back to mars tonight

5
00:00:46,830 --> 00:00:45,520
[Applause]

6
00:01:09,270 --> 00:00:46,840
come on

7
00:01:22,469 --> 00:01:11,530
there they are

8
00:01:24,320 --> 00:01:22,479
[Applause]

9
00:01:38,149 --> 00:01:24,330
over here john

10
00:01:40,950 --> 00:01:39,429
all right let's give them one more round

11
00:01:42,470 --> 00:01:40,960
of applause now that we've got them all

12
00:01:49,429 --> 00:01:42,480
up here thank you very much

13
00:01:52,630 --> 00:01:51,270

well good evening everybody and welcome

14

00:01:55,910 --> 00:01:52,640

to mars i mean

15

00:02:00,149 --> 00:01:57,670

about an hour and a half ago i went

16

00:02:01,910 --> 00:02:00,159

outside and looked toward the west

17

00:02:04,550 --> 00:02:01,920

and i saw mars

18

00:02:06,469 --> 00:02:04,560

there and i said in an hour and a half

19

00:02:08,469 --> 00:02:06,479

you are going to have a visitor

20

00:02:10,150 --> 00:02:08,479

and the planet smiled and i knew that we

21

00:02:11,990 --> 00:02:10,160

were going to have good luck

22

00:02:15,010 --> 00:02:12,000

so with this i want to introduce you our

23

00:02:18,470 --> 00:02:15,020

fearless leader charlie borden

24

00:02:22,630 --> 00:02:21,190

boy i'll tell you

25

00:02:24,710 --> 00:02:22,640

charles thanks very much first of all

26

00:02:27,830 --> 00:02:24,720

just let me let me say thanks very much

27

00:02:30,869 --> 00:02:27,840

to the entire team and all the teams not

28

00:02:34,309 --> 00:02:30,879

here uh some of the teams in places like

29

00:02:36,869 --> 00:02:34,319

canberra australia and up in goldstone

30

00:02:38,710 --> 00:02:36,879

because the deep space network was what

31

00:02:40,630 --> 00:02:38,720

made it possible for us to be getting

32

00:02:43,030 --> 00:02:40,640

all the data and everything so

33

00:02:44,869 --> 00:02:43,040

you know but today right now the wheels

34

00:02:47,670 --> 00:02:44,879

of curiosity have begun to blaze the

35

00:02:49,750 --> 00:02:47,680

trail for human footprints on mars

36

00:02:51,910 --> 00:02:49,760

uh curiosity the most sophisticated

37

00:02:53,350 --> 00:02:51,920

rover ever built is now on the surface

38

00:02:55,030 --> 00:02:53,360

of the red planet

39

00:02:56,630 --> 00:02:55,040

where it will seek to answer age-old

40

00:02:59,190 --> 00:02:56,640

questions about whether life ever

41

00:03:01,350 --> 00:02:59,200

existed there on mars or if the planet

42

00:03:03,430 --> 00:03:01,360

can sustain life in the future

43

00:03:05,350 --> 00:03:03,440

this is an amazing achievement

44

00:03:07,830 --> 00:03:05,360

made possible by a team of scientists

45

00:03:09,509 --> 00:03:07,840

and engineers from around the world and

46

00:03:12,390 --> 00:03:09,519

led by the extraordinary men and women

47

00:03:14,390 --> 00:03:12,400

of nasa in our jet propulsion laboratory

48

00:03:16,869 --> 00:03:14,400

nothing in robotic planetary exploration

49

00:03:19,270 --> 00:03:16,879

is harder more technically challenging

50

00:03:21,270 --> 00:03:19,280

or as risky as landing on the surface of

51
00:03:22,550 --> 00:03:21,280
mars and i know most of you are saying

52
00:03:24,710 --> 00:03:22,560
how can he be saying that it just looks

53
00:03:26,070 --> 00:03:24,720
so easy

54
00:03:28,309 --> 00:03:26,080
trust me

55
00:03:31,110 --> 00:03:28,319
historically counting all the missions

56
00:03:32,710 --> 00:03:31,120
by all countries the odds of success are

57
00:03:35,190 --> 00:03:32,720
about 40 percent

58
00:03:37,030 --> 00:03:35,200
the recent u.s record is better with now

59
00:03:40,630 --> 00:03:37,040
six successful missions

60
00:03:42,229 --> 00:03:40,640
including now four landings and um i'm

61
00:03:44,390 --> 00:03:42,239
going to stray from my script here for a

62
00:03:46,789 --> 00:03:44,400
moment which is always dangerous but

63
00:03:48,149 --> 00:03:46,799

tonight uh and i'm not gonna i'm not

64

00:03:49,910 --> 00:03:48,159

probably not gonna include all the

65

00:03:52,390 --> 00:03:49,920

countries but tonight

66

00:03:54,470 --> 00:03:52,400

there are at least four countries and i

67

00:03:56,470 --> 00:03:54,480

won't name them uh

68

00:03:58,710 --> 00:03:56,480

who are on mars

69

00:04:01,509 --> 00:03:58,720

and they're on mars because they went

70

00:04:03,670 --> 00:04:01,519

with the united states so

71

00:04:05,830 --> 00:04:03,680

i know this may sound a little strange

72

00:04:08,470 --> 00:04:05,840

in this international environment but i

73

00:04:11,429 --> 00:04:08,480

want everyone to understand what i say

74

00:04:13,509 --> 00:04:11,439

and what i mean when i say you know our

75

00:04:14,789 --> 00:04:13,519

leadership is going to make this world

76

00:04:15,590 --> 00:04:14,799

better

77

00:04:23,510 --> 00:04:15,600

tonight

78

00:04:26,710 --> 00:04:25,670

as in as incredible as our feet was

79

00:04:28,390 --> 00:04:26,720

tonight

80

00:04:30,390 --> 00:04:28,400

we just succeeded one more time in

81

00:04:32,230 --> 00:04:30,400

raising the bar even higher

82

00:04:34,790 --> 00:04:32,240

new technologies never invented or

83

00:04:36,310 --> 00:04:34,800

attempted before were created for this

84

00:04:39,510 --> 00:04:36,320

incredible journey

85

00:04:42,070 --> 00:04:39,520

curiosity's final descent was dubbed

86

00:04:44,230 --> 00:04:42,080

seven minutes of terror because in its

87

00:04:46,550 --> 00:04:44,240

seven minute trip to the surface it had

88

00:04:47,909 --> 00:04:46,560

to slow down from 13 000 miles an hour

89

00:04:49,350 --> 00:04:47,919

to zero

90

00:04:51,590 --> 00:04:49,360

and i think you've heard this before

91

00:04:53,749 --> 00:04:51,600

that's like driving 65 miles an hour on

92

00:04:56,629 --> 00:04:53,759

a freeway and coming to a complete stop

93

00:04:58,950 --> 00:04:56,639

in about 2.1 seconds hundreds of other

94

00:05:01,189 --> 00:04:58,960

things had to go just right including a

95

00:05:03,110 --> 00:05:01,199

parachute slow down at supersonic speed

96

00:05:05,990 --> 00:05:03,120

eight rocket engines to power our final

97

00:05:08,070 --> 00:05:06,000

descent and final soft landing by a new

98

00:05:10,790 --> 00:05:08,080

sky crane landing system

99

00:05:12,710 --> 00:05:10,800

curiosity will spend the next two years

100

00:05:14,950 --> 00:05:12,720

seeking answers to one of humanity's

101

00:05:16,550 --> 00:05:14,960

oldest questions it is as it

102

00:05:18,950 --> 00:05:16,560

investigates whether conditions have

103

00:05:20,230 --> 00:05:18,960

favorable development of microbial life on

104

00:05:22,150 --> 00:05:20,240

the red planet

105

00:05:24,550 --> 00:05:22,160

president obama has laid out a bold

106

00:05:27,350 --> 00:05:24,560

vision for sending humans to mars and

107

00:05:30,070 --> 00:05:27,360

today's landing marks a significant step

108

00:05:32,390 --> 00:05:30,080

toward achieving this goal and now it's

109

00:05:34,469 --> 00:05:32,400

my pleasure to introduce to you

110

00:05:36,390 --> 00:05:34,479

a very dear friend of mine he is the

111

00:05:37,830 --> 00:05:36,400

president science advisor the the

112

00:05:40,070 --> 00:05:37,840

director of the office of science and

113

00:05:42,390 --> 00:05:40,080

technology policy and a guy who was

114

00:05:43,830 --> 00:05:42,400

sweating through this and uh as he told

115

00:05:47,189 --> 00:05:43,840

me a little while ago he thought he was

116

00:05:49,430 --> 00:05:47,199

going to throw up at one point

117

00:05:53,480 --> 00:05:49,440

and he's probably mad because i told you

118

00:06:00,790 --> 00:05:53,490

that but my friend dr john holdren

119

00:06:06,710 --> 00:06:02,550

i wanted to start by saying thank you

120

00:06:11,590 --> 00:06:09,430

well today on mars history was made on

121

00:06:14,629 --> 00:06:11,600

earth the successful landing of

122

00:06:16,950 --> 00:06:14,639

curiosity which is as charlie has said

123

00:06:19,510 --> 00:06:16,960

the most sophisticated roving laboratory

124

00:06:22,150 --> 00:06:19,520

ever sent to another planet marks what

125

00:06:24,469 --> 00:06:22,160

is really an unprecedented technological

126

00:06:27,189 --> 00:06:24,479

tour de force it will stand as an

127

00:06:30,070 --> 00:06:27,199

american point of pride far into the

128

00:06:31,749 --> 00:06:30,080

future it's also just the latest example

129

00:06:33,110 --> 00:06:31,759

of a long-standing truth about the

130

00:06:35,590 --> 00:06:33,120

united states

131

00:06:38,230 --> 00:06:35,600

that even the longest of odds are no

132

00:06:42,230 --> 00:06:38,240

match for america's unique blend of

133

00:06:46,790 --> 00:06:42,240

technical acumen and gutsy determination

134

00:06:49,830 --> 00:06:48,309

[Applause]

135

00:06:53,029 --> 00:06:49,840

and that's certainly for all of the

136

00:06:54,870 --> 00:06:53,039

folks at jpl at caltech at nasa and our

137

00:06:57,110 --> 00:06:54,880

partners whose instruments as charlie

138

00:07:00,390 --> 00:06:57,120

has pointed out we're on this uh this

139

00:07:02,950 --> 00:07:00,400

lander uh thanks big thanks are due

140

00:07:03,830 --> 00:07:02,960

uh to all of them

141

00:07:05,990 --> 00:07:03,840

our

142

00:07:07,350 --> 00:07:06,000

continued preeminence and progress in

143

00:07:09,749 --> 00:07:07,360

space

144

00:07:12,070 --> 00:07:09,759

and here on earth in other domains such

145

00:07:13,749 --> 00:07:12,080

as biomedicine and health care

146

00:07:16,550 --> 00:07:13,759

clean energy

147

00:07:19,110 --> 00:07:16,560

national security advanced manufacturing

148

00:07:21,990 --> 00:07:19,120

all of this depends on our continuing

149

00:07:25,270 --> 00:07:22,000

commitment to science technology and

150

00:07:28,070 --> 00:07:25,280

innovation and the passion for adventure

151
00:07:30,309 --> 00:07:28,080
that has driven us to explore new worlds

152
00:07:33,270 --> 00:07:30,319
by sustaining our investments in basic

153
00:07:35,670 --> 00:07:33,280
research and exploration we ensure that

154
00:07:38,230 --> 00:07:35,680
america will remain at the forefront of

155
00:07:40,550 --> 00:07:38,240
the scientific frontier so i really want

156
00:07:43,270 --> 00:07:40,560
to personally congratulate on behalf of

157
00:07:44,869 --> 00:07:43,280
myself but also on behalf of my boss

158
00:07:47,350 --> 00:07:44,879
president obama

159
00:07:49,430 --> 00:07:47,360
the team here at jpl at nasa and around

160
00:07:51,909 --> 00:07:49,440
the country that contributed to this

161
00:07:54,230 --> 00:07:51,919
spectacular achievement i can only

162
00:07:56,550 --> 00:07:54,240
imagine what incredible data and new

163
00:07:59,189 --> 00:07:56,560

understandings are going to be uncovered

164

00:08:01,110 --> 00:07:59,199

in the coming days months and years

165

00:08:02,950 --> 00:08:01,120

because of this success

166

00:08:04,950 --> 00:08:02,960

landing the mars science laboratory

167

00:08:08,070 --> 00:08:04,960

rover curiosity on the surface of the

168

00:08:10,070 --> 00:08:08,080

red planet was by any measure the most

169

00:08:12,390 --> 00:08:10,080

challenging mission ever attempted in

170

00:08:13,749 --> 00:08:12,400

the history of robotic planetary

171

00:08:16,390 --> 00:08:13,759

exploration

172

00:08:18,869 --> 00:08:16,400

and if anybody has been harboring doubts

173

00:08:19,909 --> 00:08:18,879

about the status of u.s leadership in

174

00:08:22,390 --> 00:08:19,919

space

175

00:08:26,230 --> 00:08:22,400

well there's a one-ton automobile-sized

176

00:08:28,000 --> 00:08:26,240

piece of american ingenuity

177

00:08:33,269 --> 00:08:28,010

that is

178

00:08:37,670 --> 00:08:35,350

and it's sitting on the surface of mars

179

00:08:41,110 --> 00:08:37,680

right now and it should certainly put

180

00:08:43,670 --> 00:08:41,120

any such doubts to rest president obama

181

00:08:46,630 --> 00:08:43,680

has challenged america as administrator

182

00:08:49,509 --> 00:08:46,640

bolden just said to send humans to mars

183

00:08:52,230 --> 00:08:49,519

in the 2030s and curiosity is going to

184

00:08:54,310 --> 00:08:52,240

provide critical information about the

185

00:08:56,710 --> 00:08:54,320

red planet and what our astronauts will

186

00:08:59,430 --> 00:08:56,720

find once they arrive

187

00:09:02,230 --> 00:08:59,440

the administration is committed to a

188

00:09:04,870 --> 00:09:02,240

vibrant and coordinated strategy of mars

189

00:09:08,070 --> 00:09:04,880

exploration and planetary exploration

190

00:09:10,230 --> 00:09:08,080

more generally and continuing america's

191

00:09:12,870 --> 00:09:10,240

leadership here on earth and throughout

192

00:09:16,550 --> 00:09:12,880

the solar system so congratulations

193

00:09:18,750 --> 00:09:16,560

again and long live american curiosity

194

00:09:30,389 --> 00:09:18,760

thank you

195

00:09:33,670 --> 00:09:31,990

let me thank all of you one more time

196

00:09:35,750 --> 00:09:33,680

john holden and i unfortunately have got

197

00:09:37,430 --> 00:09:35,760

to go boogie to go somewhere else we're

198

00:09:39,670 --> 00:09:37,440

going to leave you in the in the in the

199

00:09:41,590 --> 00:09:39,680

very erstwhile hands of charles alachi

200

00:09:43,110 --> 00:09:41,600

and the technical team and and they've

201
00:09:44,310 --> 00:09:43,120
got a little bit more detail stuff to

202
00:09:45,990 --> 00:09:44,320
tell you so

203
00:09:47,960 --> 00:09:46,000
have a great night and congratulations

204
00:09:53,350 --> 00:09:47,970
to all of you again

205
00:09:55,430 --> 00:09:53,360
[Applause]

206
00:09:57,190 --> 00:09:55,440
okay guys before we start we have a new

207
00:10:02,880 --> 00:09:57,200
picture of mars

208
00:10:06,949 --> 00:10:04,150
[Applause]

209
00:10:08,550 --> 00:10:06,959
here comes the rest of the edl team

210
00:10:10,710 --> 00:10:08,560
mars curiosity

211
00:10:13,000 --> 00:10:10,720
team entering right now

212
00:10:19,070 --> 00:10:13,010
they are quite happy

213
00:11:52,069 --> 00:10:36,920

[Applause]

214

00:11:52,079 --> 00:11:56,550

thanks

215

00:12:06,400 --> 00:11:59,900

so what is your order

216

00:12:52,320 --> 00:12:06,410

[Applause]

217

00:13:09,430 --> 00:12:52,330

it

218

00:13:14,310 --> 00:13:11,230

[Music]

219

00:13:40,949 --> 00:13:14,320

[Applause]

220

00:13:40,959 --> 00:14:05,750

foreign

221

00:14:05,760 --> 00:14:21,430

thank you

222

00:14:21,440 --> 00:14:31,030

yes

223

00:14:31,040 --> 00:14:42,070

uh

224

00:14:42,080 --> 00:15:05,670

[Applause]

225

00:15:05,680 --> 00:15:14,450

okay i think we need to get

226

00:15:14,460 --> 00:15:23,110

[Music]

227

00:15:23,120 --> 00:15:49,269

all right

228

00:15:49,279 --> 00:16:00,470

okay can we get everybody seated

229

00:16:00,480 --> 00:16:09,910

foreign

230

00:16:18,550 --> 00:16:12,150

okay can we get everybody i need to take

231

00:16:18,560 --> 00:16:30,310

okay can we get

232

00:16:39,749 --> 00:16:32,230

okay can we stop please can we get

233

00:16:50,389 --> 00:16:41,749

okay needless to say there is a lot of

234

00:16:50,399 --> 00:17:04,870

okay good night good evening everybody

235

00:17:17,110 --> 00:17:06,949

okay can we get everybody please can we

236

00:17:17,120 --> 00:17:23,350

please everybody can we get quiet

237

00:17:28,069 --> 00:17:24,949

i'm sure all of you want to hear about

238

00:17:33,270 --> 00:17:30,310

well tonight was was a great drama that

239

00:17:34,870 --> 00:17:33,280

was played i felt like an adventure

240

00:17:37,110 --> 00:17:34,880

movie but in reality i kept telling

241

00:17:38,470 --> 00:17:37,120

myself this is real this is real what's

242

00:17:39,990 --> 00:17:38,480

happening and what a fantastic

243

00:17:42,710 --> 00:17:40,000

demonstration

244

00:17:44,310 --> 00:17:42,720

of what our nation and our agency you

245

00:17:46,230 --> 00:17:44,320

know can do

246

00:17:48,549 --> 00:17:46,240

i could only think of the words of teddy

247

00:17:50,630 --> 00:17:48,559

roosevelt as i was sitting there

248

00:17:52,950 --> 00:17:50,640

it is far better to their mighty things

249

00:17:54,950 --> 00:17:52,960

even though we might fail

250

00:17:57,590 --> 00:17:54,960

than to stay in the twilight that knows

251
00:18:00,390 --> 00:17:57,600
neither victory nor defeat and the team

252
00:18:02,870 --> 00:18:00,400
brought us victory you know today i can

253
00:18:05,190 --> 00:18:02,880
also only think about the olympians here

254
00:18:06,310 --> 00:18:05,200
we had our team which went to the

255
00:18:08,549 --> 00:18:06,320
olympics

256
00:18:11,029 --> 00:18:08,559
we were not sure we were going to win

257
00:18:17,560 --> 00:18:11,039
but this team came back with the gold

258
00:18:17,570 --> 00:18:21,190
[Applause]

259
00:18:26,070 --> 00:18:23,510
and and just think what an inspiration

260
00:18:28,630 --> 00:18:26,080
to the young people in the world

261
00:18:30,230 --> 00:18:28,640
by watching what these young people and

262
00:18:33,190 --> 00:18:30,240
old people like me

263
00:18:35,110 --> 00:18:33,200

have accomplished it's really inspiring

264

00:18:37,270 --> 00:18:35,120

i just was talking to my daughter and

265

00:18:40,789 --> 00:18:37,280

she was crying you know about it how

266

00:18:42,549 --> 00:18:40,799

exciting this is how inspirational so we

267

00:18:44,070 --> 00:18:42,559

hope that the tens of millions of people

268

00:18:45,909 --> 00:18:44,080

who have been sharing this adventure

269

00:18:47,669 --> 00:18:45,919

with us will be the people who will be

270

00:18:49,750 --> 00:18:47,679

carrying the torch you know and

271

00:18:50,789 --> 00:18:49,760

continuing our exploration of the solar

272

00:18:52,710 --> 00:18:50,799

system

273

00:18:54,070 --> 00:18:52,720

and what a bargain that we got this

274

00:18:56,230 --> 00:18:54,080

mission for

275

00:18:59,190 --> 00:18:56,240

this movie costed you less than seven

276
00:19:01,430 --> 00:18:59,200
bucks per american citizen and look at

277
00:19:07,630 --> 00:19:01,440
the excitement that we have brought and

278
00:19:13,430 --> 00:19:10,630
[Applause]

279
00:19:15,430 --> 00:19:13,440
and tonight we just did the landing

280
00:19:16,310 --> 00:19:15,440
tomorrow we're going to start exploring

281
00:19:18,870 --> 00:19:16,320
mars

282
00:19:20,870 --> 00:19:18,880
and next week and next month and next

283
00:19:23,590 --> 00:19:20,880
year we'll be bringing new new discovery

284
00:19:25,110 --> 00:19:23,600
every day every week to all of you and

285
00:19:27,190 --> 00:19:25,120
we are going to continue not only

286
00:19:29,590 --> 00:19:27,200
exploring mars but exploring the solar

287
00:19:32,150 --> 00:19:29,600
system and exploring the universe

288
00:19:33,990 --> 00:19:32,160

because our curiosity has no limit thank

289

00:19:35,669 --> 00:19:34,000

you all and i'm going to introduce john

290

00:19:38,590 --> 00:19:35,679

grunsfeld who's the head of space

291

00:19:51,990 --> 00:19:38,600

science at nasa

292

00:19:55,990 --> 00:19:53,350

do we have sound

293

00:19:59,909 --> 00:19:57,350

you know we said

294

00:20:01,669 --> 00:19:59,919

before uh landing this afternoon charles

295

00:20:04,230 --> 00:20:01,679

and i hear

296

00:20:06,789 --> 00:20:04,240

that that mars is hard and success is

297

00:20:08,230 --> 00:20:06,799

not guaranteed

298

00:20:10,950 --> 00:20:08,240

there are many out in the community who

299

00:20:12,549 --> 00:20:10,960

say that nasa has lost its way that we

300

00:20:14,950 --> 00:20:12,559

don't know how to explore that we've

301
00:20:17,029 --> 00:20:14,960
lost our moxie i want you to look around

302
00:20:17,990 --> 00:20:17,039
tonight all those folks with the blue

303
00:20:20,390 --> 00:20:18,000
shirts

304
00:20:22,149 --> 00:20:20,400
think about what we've achieved

305
00:20:25,029 --> 00:20:22,159
i think it's fair to say that nasa knows

306
00:20:27,730 --> 00:20:25,039
how to explore we've been exploring

307
00:20:32,020 --> 00:20:27,740
and we're on mars

308
00:20:46,310 --> 00:20:32,030
[Applause]

309
00:20:47,990 --> 00:20:46,320
and while

310
00:20:50,230 --> 00:20:48,000
it certainly is an international

311
00:20:51,750 --> 00:20:50,240
collaboration and we welcome the

312
00:20:52,950 --> 00:20:51,760
participation

313
00:20:54,710 --> 00:20:52,960

uh

314

00:20:56,470 --> 00:20:54,720

this feat this feat that you've seen

315

00:20:58,789 --> 00:20:56,480

tonight is something that only the

316

00:21:09,510 --> 00:20:58,799

united states of america can do

317

00:21:12,789 --> 00:21:11,350

and just to stay in character we've been

318

00:21:14,149 --> 00:21:12,799

on the surface

319

00:21:17,820 --> 00:21:14,159

for one hour

320

00:21:23,510 --> 00:21:17,830

eight minutes and 16 seconds

321

00:21:25,750 --> 00:21:23,520

[Applause]

322

00:21:27,830 --> 00:21:25,760

the last eight months

323

00:21:28,710 --> 00:21:27,840

and certainly for the seven minutes of

324

00:21:30,470 --> 00:21:28,720

terror

325

00:21:32,870 --> 00:21:30,480

has started to weave you know an

326

00:21:34,950 --> 00:21:32,880

unbelievable story

327

00:21:36,070 --> 00:21:34,960

as we get ready to transition to surface

328

00:21:37,750 --> 00:21:36,080

ops

329

00:21:39,270 --> 00:21:37,760

i think what we really need to pay

330

00:21:41,190 --> 00:21:39,280

attention to now

331

00:21:43,430 --> 00:21:41,200

is that the curiosity story is just

332

00:21:46,149 --> 00:21:43,440

beginning and with that

333

00:21:53,720 --> 00:21:46,159

i'll turn it over to the team

334

00:22:04,950 --> 00:22:03,190

[Applause]

335

00:22:09,750 --> 00:22:04,960

i think you can tell that the team is

336

00:22:13,830 --> 00:22:11,830

this hasn't been an incredible feeling

337

00:22:14,789 --> 00:22:13,840

for uh for me personally

338

00:22:16,549 --> 00:22:14,799

um

339

00:22:18,789 --> 00:22:16,559

not only to be associated with such a

340

00:22:19,830 --> 00:22:18,799

tremendous event but to um have the

341

00:22:21,590 --> 00:22:19,840

privilege

342

00:22:23,590 --> 00:22:21,600

uh to be able to

343

00:22:25,110 --> 00:22:23,600

to be asked to lead such an incredible

344

00:22:26,710 --> 00:22:25,120

team of people

345

00:22:29,350 --> 00:22:26,720

i mean

346

00:22:30,950 --> 00:22:29,360

as easy as it looked tonight

347

00:22:32,470 --> 00:22:30,960

and it wasn't but as easy as it looked

348

00:22:34,549 --> 00:22:32,480

tonight is because of the people in the

349

00:22:36,310 --> 00:22:34,559

blue shirts are standing around you

350

00:22:38,789 --> 00:22:36,320

and because of thousands of others

351
00:22:41,990 --> 00:22:38,799
around this country around the world who

352
00:22:43,909 --> 00:22:42,000
worked on this for for seven eight years

353
00:22:46,230 --> 00:22:43,919
to cause us to come to being

354
00:22:47,029 --> 00:22:46,240
i mean they've done an incredible job it

355
00:22:49,110 --> 00:22:47,039
is

356
00:22:51,190 --> 00:22:49,120
there's words cannot state the kind of

357
00:22:52,310 --> 00:22:51,200
job that they've done

358
00:22:54,470 --> 00:22:52,320
um

359
00:22:56,470 --> 00:22:54,480
eight years ago i sat on this stage

360
00:22:59,190 --> 00:22:56,480
and talked to some of you

361
00:23:00,710 --> 00:22:59,200
uh after the landing of spirit and then

362
00:23:01,909 --> 00:23:00,720
three weeks later after the landing of

363
00:23:04,070 --> 00:23:01,919

opportunity

364

00:23:04,870 --> 00:23:04,080

and i never thought i would ever say

365

00:23:19,830 --> 00:23:04,880

this

366

00:23:21,590 --> 00:23:19,840

[Applause]

367

00:23:25,029 --> 00:23:21,600

i want to thank everyone who worked so

368

00:23:26,789 --> 00:23:25,039

hard on this this project directly

369

00:23:28,549 --> 00:23:26,799

some of the people who who've left the

370

00:23:30,630 --> 00:23:28,559

project because their work has been done

371

00:23:32,470 --> 00:23:30,640

and and but they're with us in spirit

372

00:23:34,390 --> 00:23:32,480

tonight and and have shared in the

373

00:23:37,029 --> 00:23:34,400

success

374

00:23:38,710 --> 00:23:37,039

i want to thank and i want them to thank

375

00:23:40,950 --> 00:23:38,720

all the support

376

00:23:42,549 --> 00:23:40,960

of them their their significant others

377

00:23:44,549 --> 00:23:42,559

and their families and their friends

378

00:23:46,470 --> 00:23:44,559

this work is very hard it's very

379

00:23:49,269 --> 00:23:46,480

demanding and without the support at the

380

00:23:50,710 --> 00:23:49,279

home front it can't be done successfully

381

00:23:53,269 --> 00:23:50,720

and i know

382

00:23:55,510 --> 00:23:53,279

i know that my wife is without whom i

383

00:23:57,590 --> 00:23:55,520

could not do this job is is is a

384

00:23:58,870 --> 00:23:57,600

wonderful person i'm sure that the team

385

00:24:01,029 --> 00:23:58,880

shares that attribute with their

386

00:24:02,630 --> 00:24:01,039

families as well

387

00:24:03,990 --> 00:24:02,640

but i especially want to thank and i

388

00:24:05,750 --> 00:24:04,000

especially want to recognize the

389

00:24:07,750 --> 00:24:05,760

gentleman who's sitting to my left and

390

00:24:10,149 --> 00:24:07,760

that's richard cook

391

00:24:11,269 --> 00:24:10,159

he has put blood sweat and tears into

392

00:24:15,350 --> 00:24:11,279

this project

393

00:24:20,470 --> 00:24:16,070

but

394

00:24:22,390 --> 00:24:20,480

successful without him tonight and and

395

00:24:24,149 --> 00:24:22,400

and when you look at his record

396

00:24:27,669 --> 00:24:24,159

uh pathfinder

397

00:24:29,110 --> 00:24:27,679

two mers and this one unparalleled in in

398

00:24:45,110 --> 00:24:29,120

the country today i mean just

399

00:24:49,590 --> 00:24:46,950

so i'll now let him humbly accept your

400

00:24:55,720 --> 00:24:52,149

so that rocked seriously is that that

401
00:24:55,730 --> 00:25:02,230

[Applause]

402
00:25:06,390 --> 00:25:03,750

i have been lucky enough to have done

403
00:25:08,470 --> 00:25:06,400

this now four times and it never gets

404
00:25:10,470 --> 00:25:08,480

old seriously it's just a great

405
00:25:12,230 --> 00:25:10,480

experience and there are some people out

406
00:25:13,510 --> 00:25:12,240

there rob manning and dara sabai and

407
00:25:15,669 --> 00:25:13,520

some of the other folks who have done

408
00:25:17,190 --> 00:25:15,679

this as many times and i know they all

409
00:25:18,870 --> 00:25:17,200

just had the exact same experience as i

410
00:25:20,870 --> 00:25:18,880

did tonight which just gets better every

411
00:25:21,750 --> 00:25:20,880

time just as amazing pathfinder was

412
00:25:24,870 --> 00:25:21,760

great

413
00:25:27,269 --> 00:25:24,880

but we were young and stupid frankly and

414

00:25:29,350 --> 00:25:27,279

uh and now to have an appreciation for

415

00:25:32,310 --> 00:25:29,360

how hard it is and how much effort it

416

00:25:33,990 --> 00:25:32,320

takes from a as pete said a team of

417

00:25:36,470 --> 00:25:34,000

hundreds of and thousands of people

418

00:25:39,669 --> 00:25:36,480

around the world is uh it's it's just

419

00:25:41,350 --> 00:25:39,679

it's inspiring and it's a little bit uh

420

00:25:43,510 --> 00:25:41,360

overwhelming at times how much effort

421

00:25:45,830 --> 00:25:43,520

has been required and how much everybody

422

00:25:48,149 --> 00:25:45,840

deserves this great success we've had i

423

00:25:49,909 --> 00:25:48,159

can't let pete compliment me without

424

00:25:51,269 --> 00:25:49,919

returning it and you know there is the

425

00:25:53,510 --> 00:25:51,279

guy who's been in charge of three of

426

00:25:55,110 --> 00:25:53,520

these things um there's pretty much

427

00:25:56,870 --> 00:25:55,120

nothing nobody else in the world has

428

00:25:59,350 --> 00:25:56,880

that record to be a project manager for

429

00:26:01,510 --> 00:25:59,360

three mars landings um and so i think

430

00:26:03,269 --> 00:26:01,520

that he's gonna have that

431

00:26:05,029 --> 00:26:03,279

no matter what he does from now on he's

432

00:26:06,950 --> 00:26:05,039

gonna know that he's the only guy in the

433

00:26:20,789 --> 00:26:06,960

world that's ever done that so

434

00:26:23,909 --> 00:26:22,470

okay well then i want to also compliment

435

00:26:25,430 --> 00:26:23,919

the two guys to my left here let me

436

00:26:28,230 --> 00:26:25,440

start with the one furthest on the left

437

00:26:30,230 --> 00:26:28,240

there who's who is he's now got the keys

438

00:26:32,870 --> 00:26:30,240

he's the guy that uh that's gonna make

439

00:26:34,390 --> 00:26:32,880

this thing us just go down in the record

440

00:26:36,310 --> 00:26:34,400

books as far as what we were able to

441

00:26:37,669 --> 00:26:36,320

learn on the surface and i know he's

442

00:26:39,510 --> 00:26:37,679

already looking at the pictures saying

443

00:26:41,669 --> 00:26:39,520

is that mount sharp what can i see there

444

00:26:43,990 --> 00:26:41,679

and all kinds of stuff and so he's

445

00:26:45,669 --> 00:26:44,000

definitely he's got the keys pretty soon

446

00:26:46,870 --> 00:26:45,679

not quite yet but pretty soon he'll have

447

00:26:49,350 --> 00:26:46,880

the keys

448

00:26:51,750 --> 00:26:49,360

yeah and uh and and he'll make some

449

00:26:53,350 --> 00:26:51,760

great uh some some great uh history out

450

00:26:54,789 --> 00:26:53,360

of what uh what we've been able to do

451
00:26:57,590 --> 00:26:54,799
with this thing on the surface and and i

452
00:27:00,070 --> 00:26:57,600
know curiosity um will will as i said

453
00:27:01,510 --> 00:27:00,080
really be a set the record go down in

454
00:27:03,909 --> 00:27:01,520
the record books is an amazing

455
00:27:06,070 --> 00:27:03,919
scientific mission uh but i can't let

456
00:27:09,909 --> 00:27:06,080
the guy in between me go my friend here

457
00:27:12,310 --> 00:27:09,919
uh dr stelzner is is been the the father

458
00:27:14,710 --> 00:27:12,320
and the mother and everything in between

459
00:27:17,029 --> 00:27:14,720
of of the landing system we've we've

460
00:27:19,669 --> 00:27:17,039
built and uh and certainly has been its

461
00:27:22,230 --> 00:27:19,679
biggest proponent i remember the going

462
00:27:23,590 --> 00:27:22,240
to reviews and and him saying hey i

463
00:27:25,590 --> 00:27:23,600

think this thing can work and you guys

464

00:27:28,389 --> 00:27:25,600

just have to give the team a chance

465

00:27:30,710 --> 00:27:28,399

seven eight years ago and uh and then

466

00:27:33,590 --> 00:27:30,720

just stuck with it through every uh

467

00:27:35,510 --> 00:27:33,600

failed test through every uh review that

468

00:27:38,870 --> 00:27:35,520

didn't quite work out the way we wanted

469

00:27:41,830 --> 00:27:38,880

it uh and so he is uh really deserves a

470

00:27:43,669 --> 00:27:41,840

humong huge amount of credit for what uh

471

00:27:46,149 --> 00:27:43,679

for what's happened tonight and uh

472

00:27:49,470 --> 00:27:46,159

hopefully everybody appreciates his his

473

00:28:03,930 --> 00:27:49,480

contributions i know i certainly do so

474

00:28:08,549 --> 00:28:03,940

[Applause]

475

00:28:08,559 --> 00:28:12,630

say something profound

476
00:28:12,640 --> 00:28:17,750
i am terribly humbled by this experience

477
00:28:21,990 --> 00:28:19,350
i

478
00:28:24,630 --> 00:28:22,000
forever secretly

479
00:28:27,430 --> 00:28:24,640
have felt that i do not deserve to be in

480
00:28:29,510 --> 00:28:27,440
the position of leading the team that i

481
00:28:32,070 --> 00:28:29,520
lead

482
00:28:34,070 --> 00:28:32,080
because they are

483
00:28:35,830 --> 00:28:34,080
certainly in some

484
00:28:38,870 --> 00:28:35,840
and

485
00:28:40,070 --> 00:28:38,880
largely by count of individual more

486
00:28:45,029 --> 00:28:40,080
capable

487
00:28:48,950 --> 00:28:47,590
that great things

488
00:28:51,110 --> 00:28:48,960

take

489

00:28:53,350 --> 00:28:51,120

many people working together to make

490

00:28:55,909 --> 00:28:53,360

them happen is one of the fantastic

491

00:28:56,789 --> 00:28:55,919

things of human existence

492

00:29:00,549 --> 00:28:56,799

and

493

00:29:03,510 --> 00:29:00,559

in my life i am

494

00:29:05,350 --> 00:29:03,520

and will be forever satisfied if this is

495

00:29:09,269 --> 00:29:05,360

the greatest thing that i have ever

496

00:29:13,750 --> 00:29:11,510

there is a new picture

497

00:29:16,149 --> 00:29:13,760

of a new place on mars

498

00:29:17,669 --> 00:29:16,159

and for me at least

499

00:29:20,149 --> 00:29:17,679

that's the big

500

00:29:21,990 --> 00:29:20,159

payoff

501
00:29:24,149 --> 00:29:22,000
and to work

502
00:29:27,590 --> 00:29:24,159
as part of such a talented group of

503
00:29:29,190 --> 00:29:27,600
people shepherded by pete and richard

504
00:29:31,430 --> 00:29:29,200
and i'm not just talking about the edl

505
00:29:32,870 --> 00:29:31,440
team i'm talking about the entire team

506
00:29:35,590 --> 00:29:32,880
soup to nuts

507
00:29:37,430 --> 00:29:35,600
the caliber of people here at jpl the

508
00:29:39,990 --> 00:29:37,440
other centers who contribute

509
00:29:43,430 --> 00:29:40,000
it's a tremendous honor and it is a

510
00:29:45,029 --> 00:29:43,440
humbling experience to work with them

511
00:29:48,389 --> 00:29:45,039
and i

512
00:29:55,190 --> 00:29:52,070
is a truly great representation of a of

513
00:29:56,149 --> 00:29:55,200

a corner or a piece of humanity

514

00:29:59,350 --> 00:29:56,159

that

515

00:30:02,630 --> 00:29:59,360

reaches out and explores and conquers

516

00:30:05,190 --> 00:30:02,640

and engineers we are

517

00:30:07,190 --> 00:30:05,200

kind of tool makers

518

00:30:08,789 --> 00:30:07,200

agriculturalists

519

00:30:09,669 --> 00:30:08,799

pioneers

520

00:30:16,950 --> 00:30:09,679

and

521

00:30:18,070 --> 00:30:16,960

results of tonight

522

00:30:19,990 --> 00:30:18,080

so

523

00:30:22,550 --> 00:30:20,000

i want to say thank you

524

00:30:45,110 --> 00:30:22,560

to the blue shirts

525

00:30:47,750 --> 00:30:45,120

[Applause]

526

00:30:49,750 --> 00:30:47,760

adam and his wife are expecting a baby

527

00:30:58,389 --> 00:30:49,760

in three weeks so we wish them the great

528

00:31:04,470 --> 00:31:00,870

child number two yes my second daughter

529

00:31:07,909 --> 00:31:04,480

comes in in just a few weeks here

530

00:31:09,669 --> 00:31:07,919

we've my wife has been calm at home or

531

00:31:11,590 --> 00:31:09,679

actually she's in beckman auditorium but

532

00:31:12,950 --> 00:31:11,600

she was debating because the last thing

533

00:31:16,789 --> 00:31:12,960

we didn't want to have is two babies

534

00:31:21,029 --> 00:31:19,269

a couple of other

535

00:31:23,669 --> 00:31:21,039

groups of folks that i'd like to thank

536

00:31:24,870 --> 00:31:23,679

that i think we all are thankful for uh

537

00:31:27,909 --> 00:31:24,880

certainly

538

00:31:30,630 --> 00:31:27,919

this beautiful theater of tonight the

539

00:31:33,669 --> 00:31:30,640

drama of us all being able to experience

540

00:31:35,430 --> 00:31:33,679

it together comes through the efforts of

541

00:31:39,590 --> 00:31:35,440

the odyssey

542

00:31:44,070 --> 00:31:39,600

that team being able to get that bent

543

00:31:47,669 --> 00:31:45,269

unrivaled

544

00:31:51,029 --> 00:31:47,679

in the experience for all of us and

545

00:31:53,190 --> 00:31:51,039

naturally the dsn and the uh and the

546

00:31:55,110 --> 00:31:53,200

x-band telemetry that really allowed us

547

00:32:12,230 --> 00:31:55,120

to back that up

548

00:32:19,070 --> 00:32:13,909

and with that really i have nothing more

549

00:32:27,990 --> 00:32:25,909

[Applause]

550

00:32:29,909 --> 00:32:28,000

thank you adam for getting us on the on

551
00:32:33,909 --> 00:32:29,919
the surface i think that is the best

552
00:32:39,430 --> 00:32:35,909
and

553
00:32:41,509 --> 00:32:39,440
i can guarantee you in the days

554
00:32:42,710 --> 00:32:41,519
uh hours and months and years from now

555
00:32:44,230 --> 00:32:42,720
you're going to be hearing about an

556
00:32:45,830 --> 00:32:44,240
incredible science story and i'm not

557
00:32:47,029 --> 00:32:45,840
going to bore you with that tonight

558
00:32:50,310 --> 00:32:47,039
you're going to have to wait for that

559
00:32:52,149 --> 00:32:50,320
one because on behalf of everybody on

560
00:32:54,950 --> 00:32:52,159
the science team

561
00:32:57,750 --> 00:32:54,960
406 team members

562
00:33:00,149 --> 00:32:57,760
we thank everybody that was involved in

563
00:33:01,110 --> 00:33:00,159

this enterprise charles pete richard

564

00:33:03,350 --> 00:33:01,120

adam

565

00:33:07,509 --> 00:33:03,360

everybody that pulled this together

566

00:33:09,070 --> 00:33:07,519

there were over 3 500 jpl employees i

567

00:33:10,950 --> 00:33:09,080

won't count contractors in

568

00:33:13,029 --> 00:33:10,960

subcontractors but i'm sure there were

569

00:33:15,909 --> 00:33:13,039

thousands more

570

00:33:17,990 --> 00:33:15,919

nine science instruments

571

00:33:19,590 --> 00:33:18,000

10 science instruments nine principal

572

00:33:21,509 --> 00:33:19,600

investigators

573

00:33:23,909 --> 00:33:21,519

seven countries

574

00:33:25,590 --> 00:33:23,919

germany france spain russia denmark

575

00:33:28,149 --> 00:33:25,600

britain canada

576

00:33:29,509 --> 00:33:28,159

all of us are the beneficiaries of your

577

00:33:31,350 --> 00:33:29,519

hard work

578

00:33:34,070 --> 00:33:31,360

we've hardly even scratched the surface

579

00:33:35,029 --> 00:33:34,080

and you're seeing it right there

580

00:33:36,389 --> 00:33:35,039

and

581

00:33:38,310 --> 00:33:36,399

i just want to leave you with one

582

00:33:40,310 --> 00:33:38,320

thought about what this success brings

583

00:33:42,470 --> 00:33:40,320

to everybody that is involved in this

584

00:33:44,310 --> 00:33:42,480

enterprise

585

00:33:47,029 --> 00:33:44,320

there is no greater inspiration for

586

00:33:49,350 --> 00:33:47,039

middle school children that are going to

587

00:33:51,029 --> 00:33:49,360

math science and engineering

588

00:33:53,029 --> 00:33:51,039

than a mission to mars

589

00:33:54,470 --> 00:33:53,039

the number of hits on the website is

590

00:33:56,789 --> 00:33:54,480

unparalleled

591

00:33:59,909 --> 00:33:56,799

the emphasis on the excitement that this

592

00:34:03,669 --> 00:33:59,919

generates is what we bestow upon our

593

00:34:07,909 --> 00:34:06,310

the money two and a half billion dollars

594

00:34:10,950 --> 00:34:07,919

we don't put it in the rover and send it

595

00:34:13,430 --> 00:34:10,960

to mars we spend it here on earth

596

00:34:15,510 --> 00:34:13,440

and charles mentioned at the beginning

597

00:34:17,190 --> 00:34:15,520

that this whole enterprise if you divide

598

00:34:19,190 --> 00:34:17,200

it by every woman child man in this

599

00:34:21,829 --> 00:34:19,200

country comes out to be the cost of the

600

00:34:23,430 --> 00:34:21,839

movie i know i speak on behalf of all my

601
00:34:24,710 --> 00:34:23,440
colleagues in science that's a movie i

602
00:34:36,100 --> 00:34:24,720
want to see

603
00:34:54,550 --> 00:34:50,680
[Applause]

604
00:34:58,870 --> 00:34:55,829
okay we're going to open it up to

605
00:35:00,470 --> 00:34:58,880
questions now from the news media and um

606
00:35:02,630 --> 00:35:00,480
let me wait for a microphone to come

607
00:35:03,829 --> 00:35:02,640
over to you and go ahead and give us

608
00:35:08,230 --> 00:35:03,839
your name and affiliation right there in

609
00:35:13,270 --> 00:35:10,230
help with

610
00:35:14,390 --> 00:35:13,280
america's space

611
00:35:20,470 --> 00:35:14,400
adam

612
00:35:26,390 --> 00:35:23,190
all right greg um

613
00:35:27,270 --> 00:35:26,400

i can't tell you too much about it

614

00:35:30,230 --> 00:35:27,280

i mean

615

00:35:30,240 --> 00:35:34,230

i'm being a little flip

616

00:35:40,310 --> 00:35:38,710

in short it looked extremely clean

617

00:35:41,510 --> 00:35:40,320

we had

618

00:35:43,589 --> 00:35:41,520

yeah

619

00:35:49,750 --> 00:35:43,599

we had

620

00:35:52,790 --> 00:35:49,760

that were um on the more benign side of

621

00:35:55,349 --> 00:35:52,800

our nominal expectation

622

00:35:57,270 --> 00:35:55,359

our um

623

00:36:00,150 --> 00:35:57,280

by the way i want to preface everything

624

00:36:02,069 --> 00:36:00,160

this is preliminary data scooped with

625

00:36:04,630 --> 00:36:02,079

the sieve in the

626

00:36:07,190 --> 00:36:04,640

cacophony of the

627

00:36:09,190 --> 00:36:07,200

control room during the celebration

628

00:36:10,950 --> 00:36:09,200

right and largely by my

629

00:36:13,270 --> 00:36:10,960

good friend miguel san martin who's

630

00:36:15,030 --> 00:36:13,280

somewhere out there

631

00:36:17,750 --> 00:36:15,040

i hope

632

00:36:22,950 --> 00:36:20,230

very nominal

633

00:36:27,510 --> 00:36:22,960

remarkably good

634

00:36:30,150 --> 00:36:27,520

our navigation error was uh was

635

00:36:32,150 --> 00:36:30,160

on the low side of our expectation

636

00:36:34,069 --> 00:36:32,160

which meant that we probably had a good

637

00:36:37,270 --> 00:36:34,079

alignment between the celestial center

638

00:36:38,829 --> 00:36:37,280

sensors and the inertial uh inertial

639

00:36:41,270 --> 00:36:38,839

sensors the

640

00:36:43,589 --> 00:36:41,280

imu um

641

00:36:46,230 --> 00:36:43,599

our powered flight appears to have been

642

00:36:49,349 --> 00:36:46,240

excellent if my good friend ben toma is

643

00:36:51,510 --> 00:36:49,359

in the house is ben in the house

644

00:36:54,710 --> 00:36:51,520

we landed with um

645

00:36:57,270 --> 00:36:54,720

140 kilograms of

646

00:36:59,270 --> 00:36:57,280

fuel reserves out of a total of 400

647

00:37:00,150 --> 00:36:59,280

kilos that we carried in

648

00:37:01,510 --> 00:37:00,160

and

649

00:37:04,230 --> 00:37:01,520

we're gonna

650

00:37:06,310 --> 00:37:04,240

ben worked quite diligently and

651
00:37:07,670 --> 00:37:06,320
stretching the tanks at my insistence

652
00:37:09,589 --> 00:37:07,680
because i was worried we wouldn't have

653
00:37:13,349 --> 00:37:09,599
enough fuel and so i think i owe ben a

654
00:37:17,910 --> 00:37:14,950
so uh

655
00:37:20,230 --> 00:37:17,920
it looked good in short good and clean

656
00:37:21,190 --> 00:37:20,240
and and it looks at least by my eyeball

657
00:37:25,990 --> 00:37:21,200
that we

658
00:37:30,230 --> 00:37:27,270
beautiful

659
00:37:34,230 --> 00:37:32,230
shinny jardin from boingbong.net and i'm

660
00:37:36,470 --> 00:37:34,240
a stand in for miles o'brien with pbs

661
00:37:39,670 --> 00:37:36,480
newshour tonight what do you find more

662
00:37:44,630 --> 00:37:41,910
i won't tell him that adam okay i think

663
00:37:47,190 --> 00:37:44,640

he heard it what

664

00:37:48,790 --> 00:37:47,200

i have to ask you what kind of file type

665

00:37:50,470 --> 00:37:48,800

can you tell us about the image file

666

00:37:52,470 --> 00:37:50,480

type and compression that was used to

667

00:37:54,310 --> 00:37:52,480

send this very important couple of

668

00:37:57,829 --> 00:37:54,320

thumbnails back from mars yes

669

00:38:00,230 --> 00:37:57,839

unfortunately i absolutely cannot

670

00:38:01,349 --> 00:38:00,240

if justin mackey is in the room or

671

00:38:02,630 --> 00:38:01,359

there's a couple other people on the

672

00:38:04,710 --> 00:38:02,640

team who'd be able to whip that out

673

00:38:06,790 --> 00:38:04,720

quickly but i i don't

674

00:38:08,870 --> 00:38:06,800

couldn't tell you i'm sorry

675

00:38:10,150 --> 00:38:08,880

okay we're going across the aisle over

676
00:38:11,349 --> 00:38:10,160
here and they just wait for the mic

677
00:38:13,510 --> 00:38:11,359
runner

678
00:38:16,630 --> 00:38:13,520
right there thank you

679
00:38:18,630 --> 00:38:16,640
hi sally rail with planetary society and

680
00:38:21,270 --> 00:38:18,640
um this is for adam

681
00:38:22,870 --> 00:38:21,280
uh two very quick questions

682
00:38:28,069 --> 00:38:22,880
well first one's quick are you gonna

683
00:38:33,030 --> 00:38:31,109
it is true that i think the curiosity

684
00:38:35,349 --> 00:38:33,040
is

685
00:38:36,950 --> 00:38:35,359
perhaps the central defining human

686
00:38:39,030 --> 00:38:36,960
attribute

687
00:38:40,870 --> 00:38:39,040
i really do

688
00:38:42,230 --> 00:38:40,880

and i was richard and i were both part

689

00:38:44,150 --> 00:38:42,240

of a group of people who were select

690

00:38:46,710 --> 00:38:44,160

were in the process of helping winnow

691

00:38:48,790 --> 00:38:46,720

down the names of the the school kids

692

00:38:50,550 --> 00:38:48,800

had taken and there was i don't know a

693

00:38:52,550 --> 00:38:50,560

couple hundred that we looked at

694

00:38:55,030 --> 00:38:52,560

and curiosity was one of them

695

00:38:57,510 --> 00:38:55,040

and i was smitten from the moment i saw

696

00:39:00,470 --> 00:38:57,520

that and i'm so happy that the rover is

697

00:39:03,030 --> 00:39:00,480

curiosity okay the next question is a

698

00:39:04,390 --> 00:39:03,040

little bit about 48 hours ago

699

00:39:05,510 --> 00:39:04,400

paul is right there

700

00:39:19,030 --> 00:39:05,520

come on

701
00:39:24,950 --> 00:39:22,710
my daughter's name will not be curiosity

702
00:39:27,430 --> 00:39:24,960
okay a serious question a little more

703
00:39:30,069 --> 00:39:27,440
than 48 hours ago you told me you would

704
00:39:32,790 --> 00:39:30,079
tell me a secret

705
00:39:35,990 --> 00:39:32,800
once curiosity landed

706
00:39:40,150 --> 00:39:36,000
can i have my secret yeah what was this

707
00:39:45,510 --> 00:39:42,069
and to be very truthful i do not recall

708
00:39:50,150 --> 00:39:46,790
i'm going to hold you to this that's

709
00:39:55,910 --> 00:39:52,390
okay i'm looking for the next question

710
00:39:56,870 --> 00:39:55,920
up here a little forward there thank you

711
00:39:59,109 --> 00:39:56,880
thank you

712
00:40:00,069 --> 00:39:59,119
olivier sandy and joyspace.com from

713
00:40:03,510 --> 00:40:00,079

france

714

00:40:05,750 --> 00:40:03,520

so thank you for chem cam and sam gt

715

00:40:10,309 --> 00:40:05,760

which is a french participation

716

00:40:15,990 --> 00:40:13,589

we did a webcast in france uh in french

717

00:40:17,430 --> 00:40:16,000

for people following and i uh i made a

718

00:40:21,670 --> 00:40:17,440

contract with you stream saying oh there

719

00:40:25,510 --> 00:40:22,470

well

720

00:40:27,750 --> 00:40:25,520

40 000. as i said four thousand okay

721

00:40:29,670 --> 00:40:27,760

sorry for that anyway uh there is

722

00:40:31,109 --> 00:40:29,680

international cooperation and curiosity

723

00:40:33,030 --> 00:40:31,119

of course it's an american success for

724

00:40:34,870 --> 00:40:33,040

the landing i would like to know how

725

00:40:36,790 --> 00:40:34,880

this cooperation

726

00:40:38,710 --> 00:40:36,800

goes with the other countries i think

727

00:40:41,030 --> 00:40:38,720

you learn something i mean engineers are

728

00:40:43,510 --> 00:40:41,040

ingenious data is that numbers are

729

00:40:45,270 --> 00:40:43,520

numbers in every country but you do have

730

00:40:47,270 --> 00:40:45,280

your own habits

731

00:40:49,349 --> 00:40:47,280

how did you manage with that was that

732

00:40:52,309 --> 00:40:49,359

fine was your tensions

733

00:40:54,630 --> 00:40:52,319

and registered cultural perhaps the

734

00:40:56,950 --> 00:40:54,640

question is with the other countries yes

735

00:40:58,309 --> 00:40:56,960

yes what did you learn with the others

736

00:41:00,550 --> 00:40:58,319

right i'll let richard answer them i

737

00:41:02,230 --> 00:41:00,560

think that it uh you know in each case

738

00:41:04,390 --> 00:41:02,240

because we were working part of this

739

00:41:06,150 --> 00:41:04,400

with the science teams

740

00:41:07,829 --> 00:41:06,160

we had very good relations with the

741

00:41:10,230 --> 00:41:07,839

other countries that were working on it

742

00:41:12,069 --> 00:41:10,240

in particular the spanish and you know

743

00:41:13,990 --> 00:41:12,079

who built the high gain antenna for us

744

00:41:15,910 --> 00:41:14,000

as well as one of the instruments you

745

00:41:17,430 --> 00:41:15,920

know we had people who engineers on our

746

00:41:18,950 --> 00:41:17,440

side who would who would work closely

747

00:41:21,270 --> 00:41:18,960

with their teams

748

00:41:22,950 --> 00:41:21,280

very very capable people you know

749

00:41:24,790 --> 00:41:22,960

companies and organizations and

750

00:41:25,670 --> 00:41:24,800

personnel working on those efforts over

751
00:41:27,510 --> 00:41:25,680
there

752
00:41:29,510 --> 00:41:27,520
so we certainly had our problems we had

753
00:41:30,950 --> 00:41:29,520
our problems even on the u.s parts of

754
00:41:33,190 --> 00:41:30,960
this i mean this is a challenging

755
00:41:35,030 --> 00:41:33,200
development um and there were there were

756
00:41:36,950 --> 00:41:35,040
challenges on on almost every piece of

757
00:41:38,710 --> 00:41:36,960
the vehicle um so i would you know i

758
00:41:41,430 --> 00:41:38,720
think that my experience with working

759
00:41:43,990 --> 00:41:41,440
with the overseas elements uh was very

760
00:41:45,670 --> 00:41:44,000
good that they're quite capable and i

761
00:41:47,510 --> 00:41:45,680
think that you know hopefully they'll

762
00:41:48,790 --> 00:41:47,520
gain what the expertise they gain on

763
00:41:50,470 --> 00:41:48,800

this project they'll be able to take

764

00:41:53,910 --> 00:41:50,480

that and to use it on their own

765

00:41:58,790 --> 00:41:56,150

okay we're going next over here uh leo

766

00:42:02,309 --> 00:41:58,800

enright from irish television uh the

767

00:42:04,630 --> 00:42:02,319

unmanned space flight uh website has

768

00:42:07,270 --> 00:42:04,640

coordinates for the landing that go down

769

00:42:09,589 --> 00:42:07,280

to something like five decimal points

770

00:42:12,069 --> 00:42:09,599

um i just wanted to confirm with you

771

00:42:14,390 --> 00:42:12,079

that that those those that you do have

772

00:42:16,150 --> 00:42:14,400

them have those sort of coordinates and

773

00:42:18,630 --> 00:42:16,160

am i reading those coordinates correctly

774

00:42:23,190 --> 00:42:18,640

when i see that it looks as though you

775

00:42:25,190 --> 00:42:23,200

landed within 500 meters of the

776

00:42:26,309 --> 00:42:25,200

skirt around the mountain that i mean

777

00:42:28,390 --> 00:42:26,319

you're really

778

00:42:31,349 --> 00:42:28,400

very close to the mountain at the closer

779

00:42:33,109 --> 00:42:31,359

end in the landing ellipse and possibly

780

00:42:36,069 --> 00:42:33,119

within striking distance of the

781

00:42:39,430 --> 00:42:36,079

phyllosilicate trench

782

00:42:41,910 --> 00:42:39,440

i can i can't confirm that

783

00:42:44,790 --> 00:42:42,829

my

784

00:42:47,829 --> 00:42:44,800

estimate

785

00:42:48,870 --> 00:42:47,839

i'm looking for somebody yes

786

00:42:51,670 --> 00:42:48,880

there's somebody in the audience here

787

00:42:54,150 --> 00:42:51,680

who has that in the tip of their noggin

788

00:42:55,829 --> 00:42:54,160

we should have soon that estimate

789

00:42:58,069 --> 00:42:55,839

but i don't have it to five decimal

790

00:42:59,829 --> 00:42:58,079

places we wouldn't report it to that

791

00:43:01,670 --> 00:42:59,839

because we don't we're certain that we

792

00:43:02,950 --> 00:43:01,680

don't know it to that um and i don't

793

00:43:04,630 --> 00:43:02,960

know what the space

794

00:43:06,790 --> 00:43:04,640

unmanned spaceflight.com

795

00:43:08,630 --> 00:43:06,800

uh estimate is yeah there's a team of

796

00:43:10,630 --> 00:43:08,640

people that are working on localization

797

00:43:13,990 --> 00:43:10,640

including what information we got

798

00:43:16,230 --> 00:43:14,000

on the way down you know nav nav filter

799

00:43:18,390 --> 00:43:16,240

probably taking a picture

800

00:43:19,670 --> 00:43:18,400

looking at the picture uh and trying to

801
00:43:21,589 --> 00:43:19,680
figure out from there where we are i

802
00:43:22,950 --> 00:43:21,599
would imagine by tomorrow

803
00:43:25,109 --> 00:43:22,960
tomorrow's press conferences they should

804
00:43:27,270 --> 00:43:25,119
have a better idea where it came down

805
00:43:29,750 --> 00:43:27,280
within a few hundred meters at least

806
00:43:34,150 --> 00:43:31,109
okay the next question is over on this

807
00:43:36,470 --> 00:43:34,160
side um i'm chief evan from tvps taiwan

808
00:43:39,109 --> 00:43:36,480
we also have a live event in taiwan this

809
00:43:41,589 --> 00:43:39,119
is actually a question from our audience

810
00:43:44,390 --> 00:43:41,599
which is uh i think she's like around 10

811
00:43:46,390 --> 00:43:44,400
years old girl and she wants to know if

812
00:43:47,829 --> 00:43:46,400
it is possible if there is any

813
00:43:50,710 --> 00:43:47,839

opportunity

814

00:43:53,910 --> 00:43:50,720

that jpl would consider to open up the

815

00:43:55,990 --> 00:43:53,920

opportunity for students to operate

816

00:43:57,349 --> 00:43:56,000

curiosity

817

00:43:58,309 --> 00:43:57,359

in mars

818

00:44:00,870 --> 00:43:58,319

and then

819

00:44:02,150 --> 00:44:00,880

especially students from overseas i want

820

00:44:12,950 --> 00:44:02,160

you to know

821

00:44:15,750 --> 00:44:13,910

you know i got to tell you in all

822

00:44:21,990 --> 00:44:15,760

honesty first we have to let them wait

823

00:44:26,630 --> 00:44:24,870

okay we have a question um henry you're

824

00:44:28,710 --> 00:44:26,640

next

825

00:44:30,550 --> 00:44:28,720

henry bartman with astrobiology magazine

826

00:44:33,670 --> 00:44:30,560

can you tell us

827

00:44:35,750 --> 00:44:33,680

uh at what time curiosity

828

00:44:39,190 --> 00:44:35,760

touchdown earth received time and at

829

00:44:41,510 --> 00:44:39,200

what time the first image came back

830

00:44:44,069 --> 00:44:41,520

i can tell you the first of those is 10

831

00:44:57,829 --> 00:44:44,079

39 pm

832

00:45:02,790 --> 00:45:00,150

go here in the center of the road

833

00:45:04,790 --> 00:45:02,800

um director from scholastic um

834

00:45:07,430 --> 00:45:04,800

[Music]

835

00:45:09,430 --> 00:45:07,440

um both charles and uh john said that

836

00:45:10,870 --> 00:45:09,440

this is very much of an inspiration to

837

00:45:12,870 --> 00:45:10,880

young people can you tell me what

838

00:45:15,349 --> 00:45:12,880

inspired you when you're growing up what

839

00:45:16,230 --> 00:45:15,359

did what made you decide to join nasa

840

00:45:18,950 --> 00:45:16,240

and do

841

00:45:20,230 --> 00:45:18,960

all of this amazing work

842

00:45:22,710 --> 00:45:20,240

let me start

843

00:45:25,430 --> 00:45:22,720

i was inspired by the first astronauts

844

00:45:27,829 --> 00:45:25,440

the gemini program the apollo program

845

00:45:29,349 --> 00:45:27,839

and specifically here we are still in

846

00:45:30,870 --> 00:45:29,359

the heart of summer

847

00:45:33,349 --> 00:45:30,880

and i remember being brought into the

848

00:45:35,750 --> 00:45:33,359

mess hall at summer camp

849

00:45:37,349 --> 00:45:35,760

to look at a small black and white tv

850

00:45:39,990 --> 00:45:37,359

along with a couple hundred other boys

851
00:45:42,309 --> 00:45:40,000
it was a boys camp in central wisconsin

852
00:45:44,829 --> 00:45:42,319
to see neil armstrong and buzz aldrin

853
00:45:47,910 --> 00:45:44,839
land on the moon july 21st

854
00:45:49,190 --> 00:45:47,920
1969. and that stuck with me and

855
00:45:51,109 --> 00:45:49,200
inspired me

856
00:45:52,870 --> 00:45:51,119
to go on to become a physicist a

857
00:45:54,230 --> 00:45:52,880
scientist to study math and science

858
00:45:56,309 --> 00:45:54,240
throughout school

859
00:45:58,950 --> 00:45:56,319
eventually to apply to the astronaut

860
00:46:01,190 --> 00:45:58,960
corps to go to space

861
00:46:03,349 --> 00:46:01,200
and i hope

862
00:46:05,589 --> 00:46:03,359
uh and it was a dream of mine for this

863
00:46:07,990 --> 00:46:05,599

evening and i think we've achieved that

864

00:46:09,990 --> 00:46:08,000

uh that for kids today

865

00:46:11,750 --> 00:46:10,000

actually for everyone today that this

866

00:46:13,910 --> 00:46:11,760

landing of curiosity on the surface of

867

00:46:15,510 --> 00:46:13,920

mars will be an inspiration that will

868

00:46:17,750 --> 00:46:15,520

lead people to think about the great

869

00:46:22,309 --> 00:46:17,760

science that's ahead of us

870

00:46:22,319 --> 00:46:26,470

someone else

871

00:46:31,349 --> 00:46:29,510

oh sorry i was rob is making gestures at

872

00:46:33,349 --> 00:46:31,359

me out there in the audience so i'm not

873

00:46:35,990 --> 00:46:33,359

sure what i'm trying to interpret

874

00:46:38,630 --> 00:46:36,000

i mean i think to think as so the the

875

00:46:41,270 --> 00:46:38,640

kinds of i didn't have a specific

876

00:46:43,109 --> 00:46:41,280

activity or thing

877

00:46:45,670 --> 00:46:43,119

like john said that inspired me but so

878

00:46:47,910 --> 00:46:45,680

much as being able to do problem solving

879

00:46:50,790 --> 00:46:47,920

right and and the the thing that we do

880

00:46:52,470 --> 00:46:50,800

here and nasa does and jpl does is we

881

00:46:55,109 --> 00:46:52,480

solve problems and we solve problems

882

00:46:57,349 --> 00:46:55,119

that involved uh you know obviously very

883

00:46:59,589 --> 00:46:57,359

state-of-the-art activities but also

884

00:47:01,670 --> 00:46:59,599

things that require large teams of

885

00:47:04,309 --> 00:47:01,680

people working together in a really

886

00:47:05,750 --> 00:47:04,319

intimate way that is really different i

887

00:47:07,910 --> 00:47:05,760

think than almost any other human

888

00:47:09,510 --> 00:47:07,920

endeavor it's amazing to solve a problem

889

00:47:11,589 --> 00:47:09,520

as complicated as landing on the surface

890

00:47:14,069 --> 00:47:11,599

of mars where you're utterly dependent

891

00:47:16,230 --> 00:47:14,079

on you know a team of 100 or 200 or a

892

00:47:18,069 --> 00:47:16,240

thousand other people to do their parts

893

00:47:19,589 --> 00:47:18,079

and to do it to solve their problems and

894

00:47:21,589 --> 00:47:19,599

have all those problems work together

895

00:47:24,870 --> 00:47:21,599

and it's just the scale of that endeavor

896

00:47:26,630 --> 00:47:24,880

that problem solving that is what got me

897

00:47:29,349 --> 00:47:26,640

attracted to working for for nasa and

898

00:47:32,069 --> 00:47:29,359

for jpl and and uh i think that's if i

899

00:47:34,150 --> 00:47:32,079

were to talk to my kids or to kids you

900

00:47:35,589 --> 00:47:34,160

know that to go in this this field

901
00:47:38,870 --> 00:47:35,599
that's the kind of thing that nasa and

902
00:47:39,990 --> 00:47:38,880
jpl does um and and it's really if

903
00:47:42,470 --> 00:47:40,000
you're interested in that sort of

904
00:47:46,150 --> 00:47:42,480
problem or in that sort of uh activity

905
00:47:53,990 --> 00:47:49,270
okay go ahead um raphael jaffe with

906
00:47:59,990 --> 00:47:56,309
what am i really seeing

907
00:48:02,069 --> 00:48:00,000
in that photo that is behind you

908
00:48:05,589 --> 00:48:02,079
and i heard some

909
00:48:08,470 --> 00:48:05,599
something about a second photo

910
00:48:09,829 --> 00:48:08,480
shadow of the curiosity

911
00:48:12,950 --> 00:48:09,839
being seen

912
00:48:16,309 --> 00:48:12,960
and wheels uh or a wheel of the

913
00:48:18,710 --> 00:48:16,319

curiosity so could you lead me through

914

00:48:24,710 --> 00:48:18,720

that photo

915

00:48:27,990 --> 00:48:26,470

um well i can just tell you i mean yes

916

00:48:30,150 --> 00:48:28,000

what you're seeing in the first picture

917

00:48:32,470 --> 00:48:30,160

that you said that was the shadow of of

918

00:48:34,309 --> 00:48:32,480

curiosity um there in the in the view

919

00:48:36,150 --> 00:48:34,319

these are the rear has cam views so

920

00:48:37,990 --> 00:48:36,160

we're looking out the back of the rover

921

00:48:39,990 --> 00:48:38,000

uh i don't think we got any of the front

922

00:48:41,190 --> 00:48:40,000

has cams that's front oh is it front

923

00:48:43,030 --> 00:48:41,200

okay

924

00:48:44,790 --> 00:48:43,040

thank you it's front there we go the

925

00:48:46,470 --> 00:48:44,800

other one is is the rear and that is the

926
00:48:48,710 --> 00:48:46,480
wheel you see in the lower corner there

927
00:48:51,430 --> 00:48:48,720
we do expect to get more pictures back

928
00:48:53,750 --> 00:48:51,440
in this uh upcoming odyssey pass which

929
00:48:55,829 --> 00:48:53,760
hopefully will be in about 25 minutes

930
00:48:57,190 --> 00:48:55,839
here so we'll get yet more pictures uh

931
00:48:59,190 --> 00:48:57,200
and these images were actually through

932
00:49:00,549 --> 00:48:59,200
the cover and actually if you go back to

933
00:49:02,950 --> 00:49:00,559
the other one

934
00:49:04,549 --> 00:49:02,960
uh for a second

935
00:49:06,630 --> 00:49:04,559
can you switch to the other picture you

936
00:49:08,870 --> 00:49:06,640
can see those little speckles around the

937
00:49:11,270 --> 00:49:08,880
the the black little dots or speckles

938
00:49:13,030 --> 00:49:11,280

around the outside uh which is probably

939

00:49:15,190 --> 00:49:13,040

dust kicked up you know during the

940

00:49:17,430 --> 00:49:15,200

landing event that stuck onto the covers

941

00:49:18,390 --> 00:49:17,440

and so it's good that we have

942

00:49:22,069 --> 00:49:18,400

covers

943

00:49:24,069 --> 00:49:22,079

and those those uh

944

00:49:25,670 --> 00:49:24,079

hopefully those uh those specs of dust

945

00:49:33,670 --> 00:49:25,680

will will not be visible in the next set

946

00:49:36,950 --> 00:49:35,270

the new yorker um

947

00:49:39,030 --> 00:49:36,960

i may be imagining this but the one time

948

00:49:40,790 --> 00:49:39,040

during the landing then the temperature

949

00:49:44,150 --> 00:49:40,800

seemed to drop in the room

950

00:49:46,390 --> 00:49:44,160

was when adam asked for od 278 and they

951
00:49:47,510 --> 00:49:46,400
said no we only have 277. what's

952
00:49:50,069 --> 00:49:47,520
happening or was it anything of

953
00:49:53,109 --> 00:49:50,079
significance

954
00:49:56,230 --> 00:49:54,630
we are

955
00:49:58,470 --> 00:49:56,240
as we're coming in

956
00:50:00,870 --> 00:49:58,480
the navigators are continuing to make

957
00:50:03,270 --> 00:50:00,880
od's orbital determination where the

958
00:50:05,510 --> 00:50:03,280
spacecraft is and updating and they all

959
00:50:08,710 --> 00:50:05,520
have numbers an estimate an estimate an

960
00:50:11,190 --> 00:50:08,720
estimate and and they get better as as

961
00:50:13,990 --> 00:50:11,200
mars grabs us and the and the pull of

962
00:50:21,109 --> 00:50:15,510
reduce some of the

963
00:50:24,390 --> 00:50:23,270

while that's going on while edl is

964

00:50:26,150 --> 00:50:24,400

happening

965

00:50:27,030 --> 00:50:26,160

in the edl war room in a different

966

00:50:28,150 --> 00:50:27,040

building

967

00:50:29,910 --> 00:50:28,160

you were seeing it on some of the

968

00:50:31,910 --> 00:50:29,920

cameras

969

00:50:35,670 --> 00:50:31,920

the flight dynamics team

970

00:50:37,990 --> 00:50:35,680

is running simulations to the ground

971

00:50:41,430 --> 00:50:38,000

with our simulation tool

972

00:50:42,390 --> 00:50:41,440

based on those updated ods

973

00:50:45,030 --> 00:50:42,400

and so

974

00:50:47,589 --> 00:50:45,040

i had seen that oda 228

975

00:50:49,190 --> 00:50:47,599

come up and i was asking if they had

976

00:50:50,549 --> 00:50:49,200

that because i had had it and they

977

00:50:51,910 --> 00:50:50,559

hadn't they didn't have it over there

978

00:50:56,710 --> 00:50:51,920

yet and they hadn't started that was

979

00:50:56,720 --> 00:51:02,390

let me get a new question over here

980

00:51:06,630 --> 00:51:04,390

uh ian thompson from the register um

981

00:51:08,710 --> 00:51:06,640

question for john grotzinger you now get

982

00:51:10,069 --> 00:51:08,720

the keys to this and you can um sort of

983

00:51:11,750 --> 00:51:10,079

get it moving along

984

00:51:13,750 --> 00:51:11,760

what's the first stages that you'll go

985

00:51:15,589 --> 00:51:13,760

through in terms of in terms of getting

986

00:51:18,069 --> 00:51:15,599

curiosity out there and potentially how

987

00:51:20,950 --> 00:51:18,079

long could it survive on mars beyond the

988

00:51:23,589 --> 00:51:20,960

two-year span

989

00:51:25,589 --> 00:51:23,599

um i'll take a swipe at the first one

990

00:51:28,630 --> 00:51:25,599

uh you know we just want to get going

991

00:51:29,829 --> 00:51:28,640

first and and check out all of the

992

00:51:32,790 --> 00:51:29,839

engineering

993

00:51:35,030 --> 00:51:32,800

systems and the science instruments

994

00:51:36,870 --> 00:51:35,040

and this is a very very very complex

995

00:51:39,750 --> 00:51:36,880

spacecraft compared to what we've done

996

00:51:42,470 --> 00:51:39,760

before and and so because of that we'll

997

00:51:45,030 --> 00:51:42,480

go through this long checkout period

998

00:51:46,230 --> 00:51:45,040

called the commissioning activity period

999

00:51:49,349 --> 00:51:46,240

and

1000

00:51:51,030 --> 00:51:49,359

this very carefully

1001
00:51:53,349 --> 00:51:51,040
and we're going to make sure that we're

1002
00:51:56,150 --> 00:51:53,359
firing on all cylinders before we blaze

1003
00:52:00,069 --> 00:51:56,160
out across the the planes there

1004
00:52:01,589 --> 00:52:00,079
but nested within those uh initial

1005
00:52:05,030 --> 00:52:01,599
tests are going to be science

1006
00:52:07,750 --> 00:52:05,040
observations and and so we have a plan

1007
00:52:09,829 --> 00:52:07,760
uh to begin working through those as we

1008
00:52:11,190 --> 00:52:09,839
test out the instruments and in the next

1009
00:52:13,349 --> 00:52:11,200
few days

1010
00:52:14,790 --> 00:52:13,359
you guys will be able to see

1011
00:52:16,870 --> 00:52:14,800
some of the images you'll see the

1012
00:52:19,349 --> 00:52:16,880
results of the instrument health and

1013
00:52:20,870 --> 00:52:19,359

aliveness checks and how we do

1014

00:52:24,230 --> 00:52:20,880

but the best way to think about this

1015

00:52:27,030 --> 00:52:24,240

mission is on the order of days weeks

1016

00:52:29,829 --> 00:52:27,040

months and and years and and we can

1017

00:52:32,390 --> 00:52:29,839

loosely bound things i think we expect

1018

00:52:34,549 --> 00:52:32,400

to spend a couple of weeks checking

1019

00:52:36,630 --> 00:52:34,559

things out and then maybe taking the

1020

00:52:38,470 --> 00:52:36,640

first drive a short distance to some

1021

00:52:40,390 --> 00:52:38,480

place where we'll go through the second

1022

00:52:42,950 --> 00:52:40,400

phase of commissioning

1023

00:52:45,030 --> 00:52:42,960

and then in a matter of months we we

1024

00:52:46,950 --> 00:52:45,040

hope to have used all of the instruments

1025

00:52:48,549 --> 00:52:46,960

and including the sam and the chemin

1026
00:52:49,990 --> 00:52:48,559
instruments and done some scooping and

1027
00:52:52,470 --> 00:52:50,000
drilling

1028
00:52:54,549 --> 00:52:52,480
and you know possibly within a year or

1029
00:52:56,150 --> 00:52:54,559
so we we could be at the base of mount

1030
00:52:57,589 --> 00:52:56,160
sharp because the place we landed on

1031
00:52:58,950 --> 00:52:57,599
looks pretty darn interesting and we

1032
00:53:01,430 --> 00:52:58,960
just don't want to rush out of there

1033
00:53:04,390 --> 00:53:01,440
without having studied it real well

1034
00:53:05,910 --> 00:53:04,400
so uh it's the missions about patience

1035
00:53:08,150 --> 00:53:05,920
and and uh

1036
00:53:10,309 --> 00:53:08,160
and uh and and checking things out

1037
00:53:11,910 --> 00:53:10,319
carefully

1038
00:53:13,670 --> 00:53:11,920

john and i have a bet as to whether or

1039

00:53:15,109 --> 00:53:13,680

not how long it will take us to get to

1040

00:53:16,790 --> 00:53:15,119

mount sharp because

1041

00:53:17,990 --> 00:53:16,800

my version of the surface mission is

1042

00:53:19,990 --> 00:53:18,000

that it's like going on a family

1043

00:53:22,150 --> 00:53:20,000

vacation and driving from here to

1044

00:53:24,069 --> 00:53:22,160

chicago and except for your family he's

1045

00:53:27,030 --> 00:53:24,079

got 400 scientists who want to stop and

1046

00:53:32,710 --> 00:53:29,990

every fossilized whatever they can find

1047

00:53:34,470 --> 00:53:32,720

and uh and so so he says it's not going

1048

00:53:35,750 --> 00:53:34,480

to take that long and i i don't believe

1049

00:53:37,910 --> 00:53:35,760

him

1050

00:53:39,109 --> 00:53:37,920

richard's going to win yeah

1051
00:53:43,589 --> 00:53:39,119
john's going to search for the biggest

1052
00:53:46,390 --> 00:53:44,870
in terms of the second part of your

1053
00:53:48,470 --> 00:53:46,400
question there is no inherent

1054
00:53:50,150 --> 00:53:48,480
consumables on the spacecraft

1055
00:53:52,470 --> 00:53:50,160
we don't have gas or something we run

1056
00:53:54,549 --> 00:53:52,480
out of inherently

1057
00:53:55,589 --> 00:53:54,559
we test the the life-limiting

1058
00:53:57,349 --> 00:53:55,599
characteristics tend to be the

1059
00:53:58,950 --> 00:53:57,359
mechanisms the motors and those things

1060
00:54:03,030 --> 00:53:58,960
they tend to be outside in the cold so

1061
00:54:06,710 --> 00:54:05,190
highs and lows and we test those for

1062
00:54:09,829 --> 00:54:06,720
three times life

1063
00:54:11,190 --> 00:54:09,839

and and we don't test them to failure so

1064

00:54:12,230 --> 00:54:11,200

the nominal mission for this is two

1065

00:54:14,549 --> 00:54:12,240

years

1066

00:54:16,950 --> 00:54:14,559

but i think if it lasts twice that i

1067

00:54:18,470 --> 00:54:16,960

don't think anyone would be shocked

1068

00:54:19,910 --> 00:54:18,480

and that's the first time anyone's ever

1069

00:54:22,309 --> 00:54:19,920

gotten me to say anything more than two

1070

00:54:26,549 --> 00:54:25,190

so i think it i think you know uh john's

1071

00:54:29,430 --> 00:54:26,559

right we've got

1072

00:54:31,430 --> 00:54:29,440

um uh we've got a long mission ahead of

1073

00:54:33,030 --> 00:54:31,440

us and and because of that and the

1074

00:54:34,790 --> 00:54:33,040

capabilities are over we have this

1075

00:54:36,309 --> 00:54:34,800

possibility for just monumental science

1076
00:54:38,789 --> 00:54:36,319
accomplishments and the target we've

1077
00:54:40,789 --> 00:54:38,799
gone to i mean this mount sharp is just

1078
00:54:43,270 --> 00:54:40,799
you know this whole this whole story of

1079
00:54:45,270 --> 00:54:43,280
mars and and and we just can't explore

1080
00:54:47,190 --> 00:54:45,280
and explore explore across that

1081
00:54:49,349 --> 00:54:47,200
the other side of that is as i've said

1082
00:54:51,990 --> 00:54:49,359
to the team and and i'll repeat it to

1083
00:54:53,030 --> 00:54:52,000
the press here is that we're in no hurry

1084
00:54:54,870 --> 00:54:53,040
okay

1085
00:54:56,470 --> 00:54:54,880
we have now have as i said to the team

1086
00:54:59,270 --> 00:54:56,480
on 1032

1087
00:55:01,510 --> 00:54:59,280
tonight we would have a priceless asset

1088
00:55:02,390 --> 00:55:01,520

a priceless national asset

1089

00:55:03,910 --> 00:55:02,400

okay

1090

00:55:07,589 --> 00:55:03,920

and we are not going to pardon the

1091

00:55:09,750 --> 00:55:07,599

french screw it up okay and therefore we

1092

00:55:10,870 --> 00:55:09,760

will take our time to understand its

1093

00:55:12,390 --> 00:55:10,880

condition

1094

00:55:14,069 --> 00:55:12,400

and understand if there's anything that

1095

00:55:16,069 --> 00:55:14,079

happened during landing that we haven't

1096

00:55:17,510 --> 00:55:16,079

uncovered yet we will take our time to

1097

00:55:19,030 --> 00:55:17,520

make sure that we understand how to

1098

00:55:22,150 --> 00:55:19,040

operate in this new and challenging

1099

00:55:24,309 --> 00:55:22,160

environment and then we will with slow

1100

00:55:25,829 --> 00:55:24,319

deliberate methodical pace

1101
00:55:27,750 --> 00:55:25,839
we'll begin the science explorations

1102
00:55:30,230 --> 00:55:27,760
that the science team wants to take

1103
00:55:31,750 --> 00:55:30,240
so um so be patient with us please

1104
00:55:33,670 --> 00:55:31,760
because we will be patient with the with

1105
00:55:35,510 --> 00:55:33,680
curiosity

1106
00:55:36,950 --> 00:55:35,520
just realize that this is the second

1107
00:55:39,589 --> 00:55:36,960
rover we have operating on the surface

1108
00:55:41,190 --> 00:55:39,599
of mars at the same time that's pretty

1109
00:55:42,549 --> 00:55:41,200
spectacular to have to have

1110
00:55:45,270 --> 00:55:42,559
opportunities still there eight years

1111
00:55:47,190 --> 00:55:45,280
later and curiosity both doing its thing

1112
00:55:49,030 --> 00:55:47,200
continuing some roving continuous roving

1113
00:55:52,340 --> 00:55:49,040

presence on the surface of mars for in

1114

00:56:01,990 --> 00:55:52,350

excess of eight years now

1115

00:56:03,190 --> 00:56:02,000

[Applause]

1116

00:56:05,190 --> 00:56:03,200

right with that we're going to end

1117

00:56:07,670 --> 00:56:05,200

tonight's news conference we know that

1118

00:56:10,069 --> 00:56:07,680

there is a um next odyssey pass coming

1119

00:56:11,510 --> 00:56:10,079

up at about 12 40 and um we're going to

1120

00:56:13,190 --> 00:56:11,520

let you all take your time get back up

1121

00:56:15,190 --> 00:56:13,200

there and get back to work and i want to

1122

00:56:16,710 --> 00:56:15,200

thank everyone for joining us

1123

00:56:18,789 --> 00:56:16,720

stay tuned for our next commentary

1124

00:56:20,870 --> 00:56:18,799

session that we will begin at around 12

1125

00:56:23,750 --> 00:56:20,880

30 for that overpass of the odyssey

1126

00:56:28,150 --> 00:56:23,760

spacecraft and then follow the mission

1127

00:56:33,829 --> 00:56:30,950

msl for more updates join us tomorrow