



1
00:00:04,230 --> 00:00:03,110
okay everything's nice and straight in

2
00:00:05,749 --> 00:00:04,240
here

3
00:00:06,630 --> 00:00:05,759
okay can you pull the door open a little

4
00:00:12,470 --> 00:00:06,640
more

5
00:00:24,070 --> 00:00:14,549
if you get the mate down i'm gonna pull

6
00:00:24,080 --> 00:00:28,150
it's an amazing came down all right

7
00:00:49,430 --> 00:00:30,230
roger we copy and we're standing by for

8
00:00:54,310 --> 00:00:51,750
loud and clear break break buzz this is

9
00:01:09,030 --> 00:00:54,320
houston radio check and verify tv

10
00:01:09,040 --> 00:01:16,710
and we're getting a picture on the tv

11
00:01:19,510 --> 00:01:18,550
there's a great deal of contrast in it

12
00:01:20,950 --> 00:01:19,520
and

13
00:01:22,870 --> 00:01:20,960

currently it's upside down on our

14

00:01:33,270 --> 00:01:22,880

monitor but we can make out a fair

15

00:01:38,830 --> 00:01:35,990

okay we can verify the position uh

16

00:01:54,069 --> 00:01:38,840

the opening i ought to have on the

17

00:02:03,990 --> 00:01:55,590

neil we can see you coming down the

18

00:02:10,869 --> 00:02:06,550

okay i just checked

19

00:02:15,589 --> 00:02:13,270

that hasn't collapsed too far but uh

20

00:02:30,630 --> 00:02:15,599

it's adequate to get back up

21

00:02:33,670 --> 00:02:32,390

buzz this is houston

22

00:02:36,630 --> 00:02:33,680

f2

23

00:02:40,949 --> 00:02:36,640

one 160 a second for shadow photography

24

00:02:43,589 --> 00:02:42,790

okay

25

00:02:45,350 --> 00:02:43,599

um

26

00:02:48,830 --> 00:02:45,360

at the foot of the ladder

27

00:02:52,869 --> 00:02:48,840

the lamb footbeds are only

28

00:02:54,550 --> 00:02:52,879

uh depressed in the surface about uh

29

00:02:57,430 --> 00:02:54,560

one or two inches

30

00:02:58,949 --> 00:02:57,440

although the surface appears to be

31

00:03:01,750 --> 00:02:58,959

uh

32

00:03:04,710 --> 00:03:01,760

very very fine grained as you get close

33

00:03:06,070 --> 00:03:04,720

to it it's almost like a powder

34

00:03:18,949 --> 00:03:06,080

ground mask

35

00:03:18,959 --> 00:03:30,149

i'm going to step off the land now

36

00:03:30,159 --> 00:03:35,270

that's one small step for man

37

00:03:53,350 --> 00:03:36,229

one

38

00:03:53,360 --> 00:03:56,550

as the

39

00:04:00,550 --> 00:03:59,670
surface is fine and powdery i can

40

00:04:03,670 --> 00:04:00,560
i can

41

00:04:04,789 --> 00:04:03,680
pick it up loosely with my toe

42

00:04:08,149 --> 00:04:04,799
it does

43

00:04:11,750 --> 00:04:08,159
adhere in fine layers uh

44

00:04:17,110 --> 00:04:11,760
like body charcoal to the

45

00:04:21,670 --> 00:04:19,909
i only go in a

46

00:04:23,830 --> 00:04:21,680
small fraction of an inch maybe an

47

00:04:25,270 --> 00:04:23,840
eighth of an inch but i can see

48

00:04:26,550 --> 00:04:25,280
the footprints

49

00:04:28,310 --> 00:04:26,560
of my

50

00:04:29,590 --> 00:04:28,320
boots and the tricks

51

00:04:31,110 --> 00:04:29,600

and the

52

00:04:35,670 --> 00:04:31,120

fine

53

00:04:35,680 --> 00:04:50,230

this is houston we're copying

54

00:04:54,070 --> 00:04:52,230

um

55

00:04:58,629 --> 00:04:54,080

there seems to be no difficulty in

56

00:04:59,749 --> 00:04:58,639

moving around as we suspected

57

00:05:01,909 --> 00:04:59,759

it's even

58

00:05:03,830 --> 00:05:01,919

perhaps easier than the simulations of

59

00:05:05,270 --> 00:05:03,840

160 that

60

00:05:06,870 --> 00:05:05,280

we performed

61

00:05:22,550 --> 00:05:06,880

in various

62

00:05:27,749 --> 00:05:25,270

maybe uh

63

00:05:30,150 --> 00:05:27,759

decent engine did not leave a crater of

64

00:05:32,070 --> 00:05:30,160

any size it

65

00:05:34,390 --> 00:05:32,080

has about one foot clearance on the

66

00:05:36,830 --> 00:05:34,400

ground we're essentially on a very level

67

00:05:43,749 --> 00:05:41,430

here i can see uh some evidence of uh

68

00:05:46,310 --> 00:05:43,759

of rays emanating from the defense

69

00:05:46,320 --> 00:05:59,270

very insignificant amount

70

00:05:59,280 --> 00:06:03,189

okay ready to uh

71

00:06:03,199 --> 00:06:18,629

bring down the camera i'm already i

72

00:06:22,550 --> 00:06:20,710

okay it's uh

73

00:06:24,230 --> 00:06:22,560

quite dark here in the shadow a little

74

00:06:25,350 --> 00:06:24,240

hard for me to see that i have good

75

00:06:28,309 --> 00:06:25,360

footing

76

00:06:30,070 --> 00:06:28,319

i'll work my way over into the

77

00:06:33,749 --> 00:06:30,080

sunlight here without

78

00:06:33,759 --> 00:06:44,469

okay it's hot now

79

00:07:01,990 --> 00:06:47,189

unofficial time on the first step 109

80

00:07:06,790 --> 00:07:03,830

i'm ready to pull it down now it was

81

00:07:08,710 --> 00:07:06,800

still a little bit uh left in the okay

82

00:07:22,790 --> 00:07:08,720

don't hold it quite so tight

83

00:07:25,430 --> 00:07:23,589

uh

84

00:07:27,430 --> 00:07:25,440

looking up at the limb

85

00:07:33,029 --> 00:07:27,440

i'm standing directly in the shadow now

86

00:07:36,950 --> 00:07:35,189

and i can see everything quite clearly

87

00:07:38,710 --> 00:07:36,960

the light is

88

00:07:40,710 --> 00:07:38,720

sufficiently

89

00:07:42,550 --> 00:07:40,720

bright backlighted into the front of the

90

00:08:00,950 --> 00:07:42,560

limb that everything is very clearly

91

00:08:33,589 --> 00:08:03,990

okay i'm gonna be changing it up

92

00:08:33,599 --> 00:09:28,470

so

93

00:09:34,710 --> 00:09:30,470

the surgeon says the camera installed on

94

00:09:39,269 --> 00:09:37,030

surgeon says the crew is doing well data

95

00:09:40,790 --> 00:09:39,279

is good crew is doing well

96

00:09:58,550 --> 00:09:40,800

and i'm still in the lec on the

97

00:10:11,509 --> 00:10:00,389

i'll step out and take some of my first

98

00:10:15,030 --> 00:10:13,509

all right roger neal we're reading you

99

00:10:16,069 --> 00:10:15,040

loud and clear

100

00:10:34,949 --> 00:10:16,079

we're going to see you getting some

101
00:11:06,310 --> 00:10:37,590
35 and a half minutes of plss time

102
00:11:06,320 --> 00:11:27,350
so

103
00:11:27,360 --> 00:11:31,990
about the contingency sample over

104
00:11:34,790 --> 00:11:33,110
all right you're going to get to that

105
00:11:35,590 --> 00:11:34,800
just as soon as i finish

106
00:12:35,750 --> 00:11:35,600
this

107
00:12:35,760 --> 00:13:04,790
okay that's good

108
00:13:09,110 --> 00:13:07,670
okay the contingency sample is uh down

109
00:13:15,030 --> 00:13:09,120
and it's

110
00:13:18,829 --> 00:13:17,030
like it's a little difficult to dig

111
00:13:21,829 --> 00:13:18,839
through the

112
00:13:23,670 --> 00:13:21,839
uh interesting it's a very soft surface

113
00:13:24,949 --> 00:13:23,680

but uh here and there where i plug with

114

00:13:29,430 --> 00:13:24,959

the

115

00:13:30,310 --> 00:13:29,440

contingency sample collector i run into

116

00:14:05,670 --> 00:13:30,320

a

117

00:14:07,750 --> 00:14:05,680

uh like

118

00:14:09,509 --> 00:14:07,760

much of the high desert of

119

00:14:14,509 --> 00:14:09,519

the united states it's

120

00:14:14,519 --> 00:14:19,189

here advised that

121

00:14:22,230 --> 00:14:20,389

a lot of the

122

00:14:23,670 --> 00:14:22,240

rock samples out here the hard rock

123

00:14:25,350 --> 00:14:23,680

samples have

124

00:14:29,030 --> 00:14:25,360

what appear to be vesicles in the

125

00:14:32,470 --> 00:14:31,189

also i'm looking at one now that appears

126
00:14:36,870 --> 00:14:32,480
to have some

127
00:14:36,880 --> 00:15:07,910
peterson roger out

128
00:15:17,350 --> 00:15:09,590
hard for me to pin down further than

129
00:15:17,360 --> 00:15:38,710
up here

130
00:15:38,720 --> 00:15:49,350
my

131
00:15:49,360 --> 00:15:57,350
okay that's good

132
00:16:03,590 --> 00:16:01,430
that in the pocket uh yeah push down

133
00:16:17,590 --> 00:16:03,600
got it

134
00:16:21,829 --> 00:16:19,509
my

135
00:16:23,269 --> 00:16:21,839
oxygen is 81

136
00:16:27,670 --> 00:16:23,279
i have no

137
00:16:27,680 --> 00:16:46,629
this is houston roger Neal

138
00:16:59,269 --> 00:16:48,629

okay i got the camera going at one frame

139

00:17:09,110 --> 00:17:01,670

and i've got the eight zero percent no

140

00:17:28,470 --> 00:17:12,069

are you getting a tv picture now justin

141

00:17:31,909 --> 00:17:30,470

neil uh this is houston that we're

142

00:17:33,669 --> 00:17:31,919

getting a picture you're not in at the

143

00:17:35,750 --> 00:17:33,679

present time we can see the bag on the

144

00:17:45,110 --> 00:17:35,760

led being moved by buzz though here you

145

00:17:48,630 --> 00:17:47,029

edge view you

146

00:17:50,230 --> 00:17:48,640

okay you're ready for me to come out

147

00:18:11,830 --> 00:17:50,240

yeah just stand by a second i'll move

148

00:18:11,840 --> 00:18:15,909

okay all right that's got it

149

00:18:23,909 --> 00:18:18,150

are you ready

150

00:18:29,350 --> 00:18:26,470

okay you saw what difficulties i was

151
00:18:50,710 --> 00:18:29,360
having i'll try to watch your place from

152
00:18:50,720 --> 00:19:09,830
all right the backup camera is uh

153
00:19:14,230 --> 00:19:11,830
okay now drop your bliss down there you

154
00:19:15,270 --> 00:19:14,240
go you're clear

155
00:19:17,750 --> 00:19:15,280
and

156
00:19:19,430 --> 00:19:17,760
laterally you're good

157
00:19:23,510 --> 00:19:19,440
got an inch clearance on top of your

158
00:19:31,110 --> 00:19:26,230
okay you need a little bit of um arching

159
00:19:34,390 --> 00:19:32,710
how far are my feet from here okay

160
00:19:35,590 --> 00:19:34,400
you're right at the edge of the porch

161
00:19:41,590 --> 00:19:35,600
okay

162
00:19:47,110 --> 00:19:44,789
small little foot movement

163
00:19:50,070 --> 00:19:47,120

torch

164

00:19:50,080 --> 00:20:04,070

that comes up and clear

165

00:20:04,080 --> 00:20:14,630

45 minutes plss time expended

166

00:20:18,470 --> 00:20:16,549

neil this is houston based on your

167

00:20:30,149 --> 00:20:18,480

camera transfer with the lec do you

168

00:20:35,990 --> 00:20:32,230

that's the sample return containers the

169

00:20:54,149 --> 00:20:36,000

rock boxes that capcom i want to

170

00:20:54,159 --> 00:20:59,510

making sure not to lock it on my way out

171

00:21:04,070 --> 00:21:02,549

thankfully good thought

172

00:21:09,350 --> 00:21:04,080

that's our home for the next couple

173

00:21:13,990 --> 00:21:11,190

okay i'm on the top step and i can look

174

00:21:18,789 --> 00:21:14,000

down over the rcu and

175

00:21:23,270 --> 00:21:20,870

that's a very simple matter to hop down

176

00:21:24,230 --> 00:21:23,280

from one step to the next

177

00:21:26,870 --> 00:21:24,240

yeah

178

00:21:33,190 --> 00:21:26,880

be very comfortable and

179

00:21:48,630 --> 00:21:35,430

that you're on you've got three more

180

00:21:52,230 --> 00:21:50,470

okay i can leave that one foot up there

181

00:21:56,630 --> 00:21:52,240

and

182

00:22:06,710 --> 00:21:59,590

there you go

183

00:22:11,510 --> 00:22:08,070

a little more

184

00:22:15,270 --> 00:22:12,950

hey you got it

185

00:22:23,190 --> 00:22:15,280

that's a good step yep

186

00:22:30,070 --> 00:22:26,630

beautiful view isn't that something

187

00:22:30,080 --> 00:22:45,990

magnificent desolation

188

00:22:46,000 --> 00:22:54,230

both plss is nominal on consumables

189

00:22:58,390 --> 00:22:55,510

looks like the

190

00:23:00,070 --> 00:22:58,400

secondary strut

191

00:23:01,430 --> 00:23:00,080

have little thermal effects on it right

192

00:23:03,669 --> 00:23:01,440

here neil yeah

193

00:23:04,470 --> 00:23:03,679

i noticed that that's the seems to be

194

00:23:20,149 --> 00:23:04,480

the

195

00:23:20,159 --> 00:23:35,270

fine powder

196

00:23:35,280 --> 00:24:01,269

and then

197

00:24:06,549 --> 00:24:03,190

reaching down

198

00:24:06,559 --> 00:24:18,390

get my suit dirty at this stage

199

00:24:36,470 --> 00:24:21,029

the mass of the backpack

200

00:24:42,230 --> 00:24:38,950

there's a slight tendency

201
00:24:42,240 --> 00:24:44,950
backwards

202
00:24:44,960 --> 00:24:50,549
due to the soft uh very soft

203
00:25:11,990 --> 00:24:52,710
texture

204
00:25:12,000 --> 00:25:27,750
no it didn't

205
00:25:27,760 --> 00:25:30,710
i like that

206
00:25:35,029 --> 00:25:32,789
uh yeah that's i think that's a good

207
00:25:36,390 --> 00:25:35,039
representation of our side velocity of

208
00:25:50,390 --> 00:25:36,400
touchdown that

209
00:25:50,400 --> 00:26:34,310
stand over

210
00:26:47,190 --> 00:26:37,830
and uh incidentally these rocks

211
00:26:50,830 --> 00:26:49,430
say again please buzz you're cutting out

212
00:26:53,590 --> 00:26:50,840
and

213
00:26:56,950 --> 00:26:53,600

uh i say that the rocks are rather

214

00:27:00,470 --> 00:26:58,310

so i just have

215

00:27:03,190 --> 00:27:00,480

a powdery

216

00:27:09,669 --> 00:27:03,200

purpose uh when it's on there

217

00:27:09,679 --> 00:27:22,870

will tend to slide over it rather easily

218

00:27:27,750 --> 00:27:25,510

neil armstrong getting ready to move the

219

00:27:31,669 --> 00:27:27,760

tv camera now out to its panorama

220

00:27:31,679 --> 00:27:46,310

traction seems quite

221

00:27:50,389 --> 00:27:48,310

start to lose my balance in one

222

00:28:00,310 --> 00:27:50,399

direction and recovery is

223

00:28:03,990 --> 00:28:02,549

and moving your arms around jack doesn't

224

00:28:06,310 --> 00:28:04,000

uh

225

00:28:11,909 --> 00:28:06,320

drop the surface

226

00:28:19,590 --> 00:28:14,310

and i have the insulation off the mesa

227

00:28:22,630 --> 00:28:20,870

you have to be careful that you're

228

00:28:25,029 --> 00:28:22,640

leaning in the direction you want to go

229

00:28:25,990 --> 00:28:25,039

otherwise you uh

230

00:28:28,830 --> 00:28:26,000

that's

231

00:28:30,710 --> 00:28:28,840

slightly it's

232

00:28:32,310 --> 00:28:30,720

80.

233

00:28:34,389 --> 00:28:32,320

otherwise you have to cross your foot

234

00:28:56,310 --> 00:28:34,399

over to stay underneath where your

235

00:28:56,320 --> 00:29:01,350

very small sparkly

236

00:29:06,070 --> 00:29:03,350

fragments are

237

00:29:24,870 --> 00:29:06,080

the box they're

238

00:29:24,880 --> 00:29:36,070

further analysis

239

00:29:36,080 --> 00:29:45,750

underneath

240

00:30:03,430 --> 00:29:47,029

more than

241

00:30:03,440 --> 00:30:07,350

biotite is a brown mica

242

00:30:12,230 --> 00:30:08,470

houston substance going to change

243

00:30:12,240 --> 00:30:24,950

roger neal

244

00:30:37,430 --> 00:30:26,950

life support consumables still looking

245

00:30:42,230 --> 00:30:40,389

okay houston tell me just

246

00:30:43,909 --> 00:30:42,240

get a new picture

247

00:30:45,510 --> 00:30:43,919

nail this is houston that's affirmative

248

00:30:47,909 --> 00:30:45,520

we're getting a new picture you can tell

249

00:30:49,669 --> 00:30:47,919

it's a longer focal length lens

250

00:30:54,630 --> 00:30:49,679

and for your information all them

251
00:30:54,640 --> 00:31:26,549
they appreciate that thank you

252
00:31:26,559 --> 00:31:33,669
hill is now unveiling the flag

253
00:31:48,149 --> 00:31:35,509
all right roger we've got you four-sided

254
00:31:52,710 --> 00:31:50,950
for those who haven't read the plaque uh

255
00:31:55,509 --> 00:31:52,720
we'll read the plaque that's on the

256
00:31:56,710 --> 00:31:55,519
front landing gear of this lamb

257
00:32:00,870 --> 00:31:56,720
there's

258
00:32:04,870 --> 00:32:00,880
two hemispheres one showing

259
00:32:09,909 --> 00:32:07,029
underneath it says

260
00:32:11,830 --> 00:32:09,919
here men from the planet earth first set

261
00:32:12,830 --> 00:32:11,840
foot upon the moon

262
00:32:14,549 --> 00:32:12,840
july

263
00:32:16,070 --> 00:32:14,559

1969

264

00:32:19,750 --> 00:32:16,080

50.

265

00:32:21,590 --> 00:32:19,760

it came in peace for all mankind

266

00:32:23,830 --> 00:32:21,600

it has the

267

00:32:25,509 --> 00:32:23,840

crew members signatures and the

268

00:32:42,870 --> 00:32:25,519

signature of the

269

00:32:42,880 --> 00:32:46,149

ready for the camera

270

00:32:46,159 --> 00:33:00,310

i get it no you're taking the tv

271

00:33:04,630 --> 00:33:02,230

i'm afraid these um

272

00:33:36,310 --> 00:33:04,640

materials are gonna

273

00:33:43,509 --> 00:33:40,230

very much like a very finely powdered

274

00:33:46,549 --> 00:33:44,310

but

275

00:34:06,710 --> 00:33:46,559

pretty pretty looking

276

00:34:11,990 --> 00:34:09,589

are you able to get things in focus

277

00:34:12,869 --> 00:34:12,000

this is houston we can see buzz's right

278

00:34:15,510 --> 00:34:12,879

hand

279

00:34:18,389 --> 00:34:15,520

uh it's somewhat out of focus

280

00:34:19,909 --> 00:34:18,399

uh i'd say we were focusing down to

281

00:34:21,589 --> 00:34:19,919

probably about

282

00:34:23,030 --> 00:34:21,599

eight inches to a foot behind the

283

00:34:28,629 --> 00:34:23,040

position of his hand when he's pulling

284

00:34:34,790 --> 00:34:31,990

okay how's the temperature left on there

285

00:34:39,349 --> 00:34:34,800

temperature of the camera is showing

286

00:34:39,359 --> 00:34:59,670

i'm a little cool any color okay

287

00:34:59,680 --> 00:35:10,390

roger out

288

00:35:10,400 --> 00:35:27,109

camera

289

00:35:27,119 --> 00:35:43,589

the direction of travel there

290

00:35:55,109 --> 00:35:46,069

i got plenty of cable you got plenty

291

00:36:00,310 --> 00:35:58,710

okay i think i got the end of it

292

00:36:04,550 --> 00:36:00,320

something interesting in the bottom of

293

00:36:09,589 --> 00:36:07,190

maybe uh

294

00:36:10,870 --> 00:36:09,599

i keep going we got we got a lot more

295

00:36:31,510 --> 00:36:10,880

okay

296

00:36:36,150 --> 00:36:33,270

if you stand on the ladder facing

297

00:36:53,430 --> 00:36:36,160

forward the minus y strut is the landing

298

00:36:53,440 --> 00:36:57,829

okay

299

00:37:01,430 --> 00:36:59,829

turn around to your right

300

00:37:02,470 --> 00:37:01,440

i don't want to go into the sun if i can

301
00:37:04,950 --> 00:37:02,480
afford it

302
00:37:07,109 --> 00:37:04,960
that's right

303
00:37:13,589 --> 00:37:07,119
i just leave it

304
00:37:16,550 --> 00:37:15,510
i've just denied that field of view uh

305
00:37:22,470 --> 00:37:16,560
gonna be

306
00:37:22,480 --> 00:37:27,990
right

307
00:37:32,150 --> 00:37:30,630
now this is houston the field of view is

308
00:37:37,109 --> 00:37:32,160
okay we'd like you to aim it a little

309
00:37:46,390 --> 00:37:39,990
okay

310
00:37:49,670 --> 00:37:48,069
i'll start working on the shoulder a

311
00:37:52,069 --> 00:37:49,680
little bit too much to the right can you

312
00:37:58,550 --> 00:37:52,079
bring it back left about four or five

313
00:37:58,560 --> 00:38:15,349

okay that looks good neil

314

00:38:15,359 --> 00:38:20,790

i'll get a couple panoramas with it too

315

00:38:24,630 --> 00:38:22,550

uh roger you look okay as far as

316

00:38:28,950 --> 00:38:24,640

distance goes neil and we'll line you up

317

00:38:35,589 --> 00:38:30,630

you're going too fast on the panorama

318

00:38:38,390 --> 00:38:37,430

i haven't stopped i haven't set it on

319

00:38:40,550 --> 00:38:38,400

yet

320

00:38:58,829 --> 00:38:40,560

that's the first picture in the panorama

321

00:39:06,150 --> 00:39:01,670

northeast me if you got a picture here

322

00:39:06,160 --> 00:39:17,670

okay i'm gonna move it

323

00:39:17,680 --> 00:39:31,349

okay there's another good one

324

00:39:31,359 --> 00:39:37,430

okay we got that one

325

00:39:40,790 --> 00:39:39,430

okay now this one's right

326

00:39:42,870 --> 00:39:40,800

down from

327

00:39:44,950 --> 00:39:42,880

straight west

328

00:39:47,030 --> 00:39:44,960

and i want to know if you can see an

329

00:39:48,390 --> 00:39:47,040

angular rock

330

00:39:51,109 --> 00:39:48,400

in the foreground

331

00:39:53,190 --> 00:39:51,119

right here we have a large angular rock

332

00:39:55,109 --> 00:39:53,200

in the foreground and it looks like a

333

00:39:59,510 --> 00:39:55,119

much smaller rock a couple inches to the

334

00:40:03,589 --> 00:40:01,829

all right man on beyond it about 10 feet

335

00:40:08,230 --> 00:40:03,599

is an even larger rock that's very

336

00:40:13,589 --> 00:40:11,109

that rock is about the closest one to

337

00:40:15,349 --> 00:40:13,599

you is about sticking out of the

338

00:40:17,589 --> 00:40:15,359

uh sand about

339

00:40:19,670 --> 00:40:17,599

one foot it's about a foot and a half

340

00:40:20,950 --> 00:40:19,680

long and it's about six inches

341

00:40:34,230 --> 00:40:20,960

uh

342

00:40:51,109 --> 00:40:36,069

okay now i've got the

343

00:40:55,910 --> 00:40:53,349

out

344

00:40:58,550 --> 00:40:55,920

roger and we see the shadow of the limb

345

00:41:03,030 --> 00:41:00,230

the little hill just beyond the shadow

346

00:41:06,309 --> 00:41:03,040

of the limb uh is a

347

00:41:07,349 --> 00:41:06,319

pair of elongated craters

348

00:41:09,430 --> 00:41:07,359

about

349

00:41:12,470 --> 00:41:09,440

probably the pair together is 40 feet

350

00:41:14,550 --> 00:41:12,480

long and 20 feet across and there are

351
00:41:33,109 --> 00:41:14,560
probably 60 people probably get some

352
00:41:45,589 --> 00:41:35,109
uh for a final orientation we'd like it

353
00:41:45,599 --> 00:41:50,150
back to the right about half as much

354
00:41:50,160 --> 00:42:02,230
okay

355
00:42:02,240 --> 00:42:08,630
that looks good there now

356
00:42:08,640 --> 00:42:15,030
okay

357
00:42:15,040 --> 00:42:27,510
one hour seven minutes time expended

358
00:42:27,520 --> 00:42:44,309
okay you can make a mark for me

359
00:42:51,430 --> 00:42:46,870
and incidentally you can use the shadow

360
00:42:51,440 --> 00:42:58,390
getting a perpendicular

361
00:43:13,510 --> 00:43:00,150
buzz is erecting the solar wind

362
00:43:20,230 --> 00:43:17,030
some of these uh small depressions uh

363
00:43:21,190 --> 00:43:20,240

big spots and you're ten

364

00:43:25,030 --> 00:43:21,200

maybe

365

00:43:29,430 --> 00:43:26,950

i can suggest

366

00:43:31,990 --> 00:43:29,440

exactly what the

367

00:43:34,550 --> 00:43:32,000

layer pictures showed when they uh

368

00:43:36,230 --> 00:43:34,560

pushed away a little bit you can

369

00:43:38,150 --> 00:43:36,240

force

370

00:43:40,069 --> 00:43:38,160

transmitted

371

00:43:42,470 --> 00:43:40,079

through the upper surface of the soil

372

00:43:45,190 --> 00:43:42,480

and about five or six inches of bay

373

00:43:47,510 --> 00:43:45,200

it breaks loose and uh

374

00:43:51,349 --> 00:43:47,520

moves as if it uh we're taped on the

375

00:43:53,589 --> 00:43:51,359

surface when in fact it really isn't

376

00:43:56,470 --> 00:43:53,599

i noticed in the soft spots where we

377

00:43:59,190 --> 00:43:56,480

have footprints uh nearly an inch deep

378

00:44:02,630 --> 00:43:59,200

that the soil is very cohesive and it

379

00:45:09,270 --> 00:44:05,910

will retain a uh slope of probably 70

380

00:45:09,280 --> 00:45:37,349

all limb systems still looking good

381

00:45:37,359 --> 00:45:47,030

okay

382

00:45:47,040 --> 00:46:27,109

then come on

383

00:46:27,119 --> 00:46:56,150

the rocker

384

00:46:56,160 --> 00:47:13,109

that one

385

00:47:33,349 --> 00:47:15,589

columbia columbia this is houston als

386

00:48:20,870 --> 00:47:34,870

neil armstrong has been on the lunar

387

00:48:25,510 --> 00:48:23,670

roger the eva is progressing beautifully

388

00:48:29,510 --> 00:48:25,520

i believe they're setting up the flag

389

00:48:29,520 --> 00:48:34,309

great

390

00:48:37,430 --> 00:48:35,750

i guess you're about the only person

391

00:48:41,589 --> 00:48:37,440

around it doesn't have tv coverage of

392

00:48:41,599 --> 00:48:48,230

that's right

393

00:48:55,270 --> 00:48:50,309

how is the quality of the tv

394

00:49:00,150 --> 00:48:58,230

oh geez that's great

395

00:49:47,829 --> 00:49:00,160

yes indeed they've got the flag up now

396

00:49:47,839 --> 00:49:54,630

it won't go up

397

00:49:54,640 --> 00:51:37,829

okay

398

00:51:37,839 --> 00:51:42,549

neil this is houston radio check over

399

00:51:47,030 --> 00:51:44,150

all right here here's some loud and

400

00:52:30,870 --> 00:51:47,040

clear

401
00:52:33,910 --> 00:52:31,670
i i'd

402
00:52:37,270 --> 00:52:33,920
like to evaluate the uh

403
00:52:39,750 --> 00:52:37,280
various paces that a person can

404
00:52:41,190 --> 00:52:39,760
traveling on the surface

405
00:52:44,309 --> 00:52:41,200
just leave them out of your field of

406
00:52:53,349 --> 00:52:44,319
view is that right houston

407
00:52:58,309 --> 00:52:55,670
you're in our field of view now

408
00:53:01,670 --> 00:52:58,319
you have to be with you all right you do

409
00:53:05,030 --> 00:53:01,680
have to be uh rather careful uh to keep

410
00:53:06,950 --> 00:53:05,040
track of where your center of mass is

411
00:53:09,270 --> 00:53:06,960
sometimes it takes about two or three

412
00:53:11,589 --> 00:53:09,280
spaces to

413
00:53:26,309 --> 00:53:11,599

make sure that uh you cut your feet

414

00:53:34,549 --> 00:53:28,470

fairly smooth

415

00:53:40,150 --> 00:53:37,030

direction

416

00:53:55,030 --> 00:53:40,160

like a football player you just have to

417

00:54:00,309 --> 00:53:57,270

so-called kangaroo hop

418

00:54:03,190 --> 00:54:00,319

doesn't work but it seems your forward

419

00:54:05,430 --> 00:54:03,200

ability is not quite as good

420

00:54:07,670 --> 00:54:05,440

as it is in the conventional or

421

00:54:22,230 --> 00:54:07,680

conventional

422

00:54:27,589 --> 00:54:24,309

all right saying what the

423

00:54:27,599 --> 00:54:32,950

one that i'm using now

424

00:54:41,190 --> 00:54:35,910

would get rather tiring after

425

00:54:49,270 --> 00:54:44,470

but this may be a function of this boot

426

00:54:49,280 --> 00:55:03,349

lack of gravity force

427

00:55:06,710 --> 00:55:05,270

tranquility base this is houston can we

428

00:55:15,750 --> 00:55:06,720

get both of you on the camera for a

429

00:55:18,230 --> 00:55:16,950

okay again

430

00:55:27,430 --> 00:55:18,240

i thought you would like to get both of

431

00:55:31,589 --> 00:55:29,750

the president of the united states is in

432

00:55:39,109 --> 00:55:31,599

his office now and would like to say a

433

00:55:42,950 --> 00:55:41,190

that would be an honor

434

00:55:45,190 --> 00:55:42,960

go ahead mr president this is houston

435

00:55:50,150 --> 00:55:47,750

hello neil and buzz i'm talking to you

436

00:55:52,470 --> 00:55:50,160

by telephone from the oval room at the

437

00:55:57,270 --> 00:55:52,480

white house and this certainly has to be

438

00:56:01,829 --> 00:55:59,670

i just can't tell you how proud we all

439

00:56:03,589 --> 00:56:01,839

are

440

00:56:05,510 --> 00:56:03,599

every american this has to be the

441

00:56:07,990 --> 00:56:05,520

proudest day of our lives

442

00:56:12,390 --> 00:56:08,000

and for people all over the world

443

00:56:18,950 --> 00:56:14,950

in recognizing what an immense feat this

444

00:56:20,150 --> 00:56:18,960

is because of what you have done

445

00:56:23,670 --> 00:56:20,160

the heavens

446

00:56:26,309 --> 00:56:23,680

have become a part of man's world

447

00:56:28,470 --> 00:56:26,319

and as you talk to us from the sea of

448

00:56:30,870 --> 00:56:28,480

tranquility

449

00:56:32,630 --> 00:56:30,880

it inspires us to redouble our efforts

450

00:56:36,150 --> 00:56:32,640

to bring peace

451
00:56:38,950 --> 00:56:36,160
and tranquility to earth

452
00:56:41,349 --> 00:56:38,960
for one priceless moment

453
00:56:43,910 --> 00:56:41,359
in the whole history of man

454
00:56:45,349 --> 00:56:43,920
all the people on this earth are truly

455
00:57:00,150 --> 00:56:45,359
one

456
00:57:04,230 --> 00:57:01,829
thank you mr president

457
00:57:05,910 --> 00:57:04,240
it's a great honor and privilege for us

458
00:57:07,670 --> 00:57:05,920
to be here

459
00:57:10,950 --> 00:57:07,680
representing

460
00:57:12,710 --> 00:57:10,960
not only the united states but

461
00:57:14,950 --> 00:57:12,720
and of

462
00:57:18,309 --> 00:57:14,960
peace of all nations

463
00:57:19,349 --> 00:57:18,319

and with interest and curiosity and

464

00:57:21,270 --> 00:57:19,359

and

465

00:57:22,870 --> 00:57:21,280

with the vision for the future

466

00:57:25,030 --> 00:57:22,880

uh

467

00:57:27,829 --> 00:57:25,040

honor for us to be able to participate

468

00:57:29,589 --> 00:57:27,839

here today

469

00:57:31,349 --> 00:57:29,599

and thank you very much and i look

470

00:57:36,710 --> 00:57:31,359

forward all of us look forward to seeing

471

00:57:36,720 --> 00:57:47,270

look forward to that very much sir

472

00:57:47,280 --> 00:57:55,030

columbia columbia this is houston over

473

00:58:12,549 --> 00:57:58,390

right here i've got a p22 auto update

474

00:58:17,990 --> 00:58:16,470

roger p 22 landmark id lam

475

00:58:19,990 --> 00:58:18,000

t1

476
00:58:21,430 --> 00:58:20,000
110

477
00:58:23,030 --> 00:58:21,440
2 6

478
00:58:23,910 --> 00:58:23,040
five six

479
00:58:25,589 --> 00:58:23,920
six

480
00:58:29,109 --> 00:58:25,599
t2

481
00:58:31,109 --> 00:58:29,119
one one zero two three two

482
00:58:33,670 --> 00:58:31,119
zero six

483
00:58:36,230 --> 00:58:33,680
three miles south

484
00:58:38,230 --> 00:58:36,240
time of closest approach

485
00:58:39,910 --> 00:58:38,240
one one zero

486
00:58:42,230 --> 00:58:39,920
three three

487
00:58:44,069 --> 00:58:42,240
four zero

488
00:58:46,230 --> 00:58:44,079

shaft

489

00:58:49,670 --> 00:58:46,240

three five three

490

00:58:51,750 --> 00:58:49,680

decimal eight five

491

00:58:53,910 --> 00:58:51,760

trillion

492

00:58:57,190 --> 00:58:53,920

four six

493

00:58:59,190 --> 00:58:57,200

decimal four niner five

494

00:59:02,150 --> 00:58:59,200

roll zero

495

00:59:09,190 --> 00:59:02,160

pitch two five zero

496

00:59:09,200 --> 00:59:21,750

all right you think you're not required

497

00:59:26,549 --> 00:59:23,589

uh you said it's very interesting to

498

00:59:30,309 --> 00:59:26,559

note that when i kick my foot

499

00:59:30,319 --> 00:59:39,750

no atmosphere

500

01:00:25,670 --> 00:59:41,109

about the same

501
01:00:29,910 --> 01:00:27,750
and break break columbia this is houston

502
01:00:32,230 --> 01:00:29,920
when you track out of high gain antenna

503
01:00:36,549 --> 01:00:32,240
limits request omni delta omni delta

504
01:00:36,559 --> 01:00:41,109
oh man

505
01:00:45,589 --> 01:00:43,430
i've noticed several times in going from

506
01:00:49,589 --> 01:00:45,599
the

507
01:00:52,069 --> 01:00:49,599
i go in

508
01:00:55,430 --> 01:00:52,079
i catch an additional our reflection off

509
01:00:59,270 --> 01:00:57,270
along with the reflection off my face

510
01:01:01,510 --> 01:00:59,280
onto the visor makes

511
01:01:05,030 --> 01:01:01,520
this ability very poor

512
01:01:07,030 --> 01:01:05,040
just that the transition

513
01:01:08,069 --> 01:01:07,040

sunlight into the shadow

514

01:01:14,549 --> 01:01:08,079

i

515

01:01:17,109 --> 01:01:15,910

shadow

516

01:01:33,190 --> 01:01:17,119

the

517

01:01:38,870 --> 01:01:35,829

visibility as we said before is

518

01:01:41,430 --> 01:01:38,880

not too great but

519

01:01:43,589 --> 01:01:41,440

those visors up

520

01:01:45,990 --> 01:01:43,599

now

521

01:01:48,630 --> 01:01:46,000

what sort of footprints we have and the

522

01:01:50,390 --> 01:01:48,640

minimal mission of the soil

523

01:02:16,470 --> 01:01:50,400

and after being out in the sunlight

524

01:02:48,470 --> 01:02:19,270

neil armstrong has the scoop for the

525

01:02:52,549 --> 01:02:49,990

the uh

526

01:02:55,029 --> 01:02:52,559

blue color of my boots

527

01:02:56,710 --> 01:02:55,039

have uh completely disappeared now into

528

01:02:59,829 --> 01:02:56,720

this

529

01:03:04,230 --> 01:03:01,910

i don't know exactly what color to

530

01:03:05,349 --> 01:03:04,240

describe this other than

531

01:03:08,230 --> 01:03:05,359

bayish

532

01:03:09,670 --> 01:03:08,240

cocoa color

533

01:03:11,430 --> 01:03:09,680

seems to be

534

01:03:12,870 --> 01:03:11,440

covering uh

535

01:03:21,589 --> 01:03:12,880

most of the

536

01:03:21,599 --> 01:03:28,390

very fine particles

537

01:03:33,109 --> 01:03:30,069

buzz this is houston you're cutting out

538

01:03:34,390 --> 01:03:33,119

on the end of your transmission can you

539

01:03:39,829 --> 01:03:34,400

speaking a little more

540

01:03:39,839 --> 01:03:46,069

roger i'll try that beautiful

541

01:03:51,270 --> 01:03:48,230

now i had that one inside my mouth that

542

01:03:51,280 --> 01:03:54,230

sounded a little wet

543

01:03:54,240 --> 01:04:06,069

cold

544

01:04:06,079 --> 01:04:14,789

neil's been on the surface an hour now

545

01:04:14,799 --> 01:04:25,190

buzz not quite 20 minutes less than that

546

01:04:30,470 --> 01:04:27,270

in general uh

547

01:04:32,710 --> 01:04:30,480

time spent uh in the shadow doesn't seem

548

01:04:35,029 --> 01:04:32,720

uh have any

549

01:04:35,910 --> 01:04:35,039

uh thermal effects

550

01:04:38,390 --> 01:04:35,920

uh

551
01:04:40,789 --> 01:04:38,400
maybe we still inside the suit

552
01:04:42,069 --> 01:04:40,799
uh there is a difference uh of course in

553
01:04:43,750 --> 01:04:42,079
the uh

554
01:04:45,990 --> 01:04:43,760
coming radiation and

555
01:04:48,549 --> 01:04:46,000
helmet so i think there's a tendency to

556
01:04:49,829 --> 01:04:48,559
feel a little cooler in deeper shadow

557
01:04:57,829 --> 01:04:49,839
than we

558
01:05:15,109 --> 01:05:00,029
all right this is houston

559
01:05:21,349 --> 01:05:18,710
one hour and a half expended on the plss

560
01:06:21,349 --> 01:06:12,470
columbia this is houston over

561
01:06:26,950 --> 01:06:24,710
roger you should have vhf aos with the

562
01:06:28,789 --> 01:06:26,960
limb right about now

563
01:06:31,029 --> 01:06:28,799

vhf los

564

01:07:14,549 --> 01:06:31,039

will be at the four zero minutes one

565

01:07:22,390 --> 01:07:17,670

heart rates on both crewmen averaging

566

01:07:27,109 --> 01:07:24,870

flight surgeon reports they're right on

567

01:07:29,670 --> 01:07:27,119

the predicted number of the

568

01:07:35,349 --> 01:07:29,680

btu

569

01:07:35,359 --> 01:07:39,190

and he thinks they're in great shape

570

01:07:45,589 --> 01:07:41,349

i look around the area the

571

01:07:49,750 --> 01:07:47,349

comes about

572

01:07:52,069 --> 01:07:49,760

completely by virtue of the

573

01:07:59,430 --> 01:07:52,079

shadows

574

01:08:05,750 --> 01:08:02,069

very light colored gray

575

01:08:07,349 --> 01:08:05,760

light gray colored like a halo

576

01:08:08,390 --> 01:08:07,359

uh

577

01:08:13,190 --> 01:08:08,400

around

578

01:08:19,430 --> 01:08:16,709

uh then as i look uh off crosstalk

579

01:08:22,950 --> 01:08:19,440

the contrast becomes uh

580

01:08:26,950 --> 01:08:25,269

surrounding uh color is still fairly

581

01:08:30,070 --> 01:08:26,960

light as you put

582

01:08:31,430 --> 01:08:30,080

down into the sun

583

01:08:33,189 --> 01:08:31,440

but

584

01:08:36,070 --> 01:08:33,199

a larger amount

585

01:08:41,669 --> 01:08:38,870

that old area is looking toward us

586

01:08:44,070 --> 01:08:41,679

uh the general color

587

01:08:45,990 --> 01:08:44,080

of the economic

588

01:08:47,430 --> 01:08:46,000

darker than

589

01:08:52,149 --> 01:08:47,440

thoughts on

590

01:08:57,829 --> 01:08:53,910

surveying the uh

591

01:08:59,990 --> 01:08:57,839

all the messy area that we've picked up

592

01:09:02,390 --> 01:09:00,000

uh

593

01:09:04,309 --> 01:09:02,400

considerably darker in

594

01:09:19,189 --> 01:09:04,319

next year now

595

01:09:26,390 --> 01:09:21,669

i surveyed crosstalk

596

01:09:29,510 --> 01:09:27,669

general

597

01:09:30,470 --> 01:09:29,520

is to the fact that there are footprints

598

01:09:32,829 --> 01:09:30,480

there

599

01:09:37,349 --> 01:09:32,839

general terrain where i've been

600

01:09:41,990 --> 01:09:37,359

up out of this surface tail

601
01:10:07,110 --> 01:09:42,000
is generally of a darker contrast

602
01:10:07,120 --> 01:10:44,149
so

603
01:10:47,430 --> 01:10:46,550
you can see neil armstrong bringing

604
01:10:51,669 --> 01:10:47,440
scoop

605
01:10:56,149 --> 01:10:51,679
i'll be taking about 30 to 40 feet uh

606
01:10:56,159 --> 01:11:10,870
again

607
01:11:15,189 --> 01:11:11,910
the

608
01:11:17,030 --> 01:11:15,199
11 o'clock position from spacecraft

609
01:11:21,350 --> 01:11:17,040
about

610
01:11:24,229 --> 01:11:21,360
30 to 35 feet of boss

611
01:11:29,030 --> 01:11:25,910
boxes of boulders

612
01:11:45,430 --> 01:11:29,040
six eight inches across

613
01:11:49,830 --> 01:11:47,510

neil is filling the bulk sample bag

614

01:11:54,310 --> 01:11:49,840

attached to a scale

615

01:12:11,510 --> 01:11:57,110

buzz is behind the limit the

616

01:13:04,790 --> 01:12:13,750

that's the landing gear directly

617

01:13:30,310 --> 01:13:06,470

neil's been on the surface about an hour

618

01:13:38,630 --> 01:13:32,390

i'm now in the area of the

619

01:14:12,790 --> 01:13:40,950

take it from

620

01:14:19,590 --> 01:14:16,149

buzz is making his way around the lamb

621

01:14:33,669 --> 01:14:19,600

photographing it from various angles

622

01:14:49,350 --> 01:14:36,870

needle still occupied with the

623

01:14:49,360 --> 01:14:56,790

so

624

01:15:13,590 --> 01:14:59,390

one hour 40 minutes time expanded on the

625

01:15:29,669 --> 01:15:15,910

so example is

626

01:15:29,679 --> 01:16:18,390

so

627

01:16:18,400 --> 01:16:25,910

columbia this is houston go ahead over

628

01:16:29,669 --> 01:16:26,950

how'd you know

629

01:16:32,470 --> 01:16:29,679

i left that time

630

01:16:42,390 --> 01:16:32,480

i did see a suspiciously small white

631

01:16:57,510 --> 01:16:43,830

go ahead with the coordinates on the

632

01:17:09,350 --> 01:16:59,189

i think they would know it if they were

633

01:17:09,360 --> 01:17:14,830

wall of a

634

01:17:44,550 --> 01:17:18,950

smaller roger copy echo decimal three

635

01:17:48,390 --> 01:17:46,790

and columbia mrs houston while i'm

636

01:17:49,669 --> 01:17:48,400

talking to you

637

01:17:51,430 --> 01:17:49,679

los

638

01:17:53,830 --> 01:17:51,440

will be at

639

01:17:55,430 --> 01:17:53,840

one eleven

640

01:17:57,189 --> 01:17:55,440

one niner

641

01:17:59,030 --> 01:17:57,199

three one

642

01:18:01,189 --> 01:17:59,040

als

643

01:18:02,870 --> 01:18:01,199

one one two

644

01:18:21,510 --> 01:18:02,880

zero five

645

01:18:36,630 --> 01:18:23,910

colombia this is houston did you copy

646

01:18:36,640 --> 01:19:02,070

roger out

647

01:19:02,080 --> 01:19:13,750

so

648

01:19:18,630 --> 01:19:15,910

the uh

649

01:19:20,870 --> 01:19:18,640

soft deflector that's mounted on quad

650

01:19:29,510 --> 01:19:20,880

one seems

651

01:19:35,270 --> 01:19:31,870

uh you're breaking up again

652

01:19:38,470 --> 01:19:35,280

buddy up again

653

01:19:41,189 --> 01:19:38,480

i say the uh jet deflector that mounted

654

01:19:43,110 --> 01:19:41,199

on squad four seems to be

655

01:19:44,550 --> 01:19:43,120

the surface of it seems to be more

656

01:19:48,070 --> 01:19:44,560

wrinkled

657

01:19:52,070 --> 01:19:48,080

and so one that's on quad one

658

01:19:54,470 --> 01:19:52,080

generally uh uh underneath part of the

659

01:19:57,830 --> 01:19:54,480

lamp seems to have stood up quite well

660

01:19:57,840 --> 01:20:03,110

figures uh and the half part of the limb

661

01:20:07,189 --> 01:20:04,870

uh illuminate

662

01:20:11,350 --> 01:20:07,199

the thermal effects much better than we

663

01:20:11,360 --> 01:20:15,270

roger

664

01:20:19,750 --> 01:20:17,750

want to get some particular photographs

665

01:20:24,709 --> 01:20:19,760

of the

666

01:20:24,719 --> 01:20:45,350

okay

667

01:20:45,360 --> 01:20:48,550

3.78

668

01:20:48,560 --> 01:20:52,310

fi

669

01:20:56,550 --> 01:20:54,470

uh

670

01:21:00,149 --> 01:20:56,560

3

671

01:21:18,870 --> 01:21:02,629

uh adequate

672

01:21:18,880 --> 01:21:22,990

badger and neil has uh

673

01:21:27,110 --> 01:21:24,950

66

674

01:21:29,110 --> 01:21:27,120

o2 no flags

675

01:21:31,590 --> 01:21:29,120

minimum cooling and the suit pressure

676
01:21:49,030 --> 01:21:31,600
382

677
01:21:53,669 --> 01:21:50,870
neil has

678
01:21:54,830 --> 01:21:53,679
finished collecting and packing the

679
01:21:58,390 --> 01:21:54,840
bulk

680
01:22:00,310 --> 01:21:58,400
sample uh buzz this is houston have you

681
01:22:08,470 --> 01:22:00,320
removed the close-up camera from the

682
01:22:08,480 --> 01:22:37,669
negative thank you

683
01:22:37,679 --> 01:23:12,870
okay

684
01:23:16,229 --> 01:23:15,270
roger it looks like you're about a half

685
01:23:18,149 --> 01:23:16,239
hour

686
01:23:21,510 --> 01:23:18,159
slow on it we're working on consumables

687
01:23:21,520 --> 01:24:02,790
all right

688
01:24:06,870 --> 01:24:05,189

uh neil and buzz this is houston uh to

689

01:24:10,149 --> 01:24:06,880

clarify my lab

690

01:24:11,350 --> 01:24:10,159

uh your consumables are uh in good shape

691

01:24:14,149 --> 01:24:11,360

at this time

692

01:24:20,390 --> 01:24:14,159

the 30-minute reference was with respect

693

01:24:20,400 --> 01:25:04,229

roger i understand that

694

01:25:04,239 --> 01:25:34,790

so

695

01:25:34,800 --> 01:25:42,790

foreign

696

01:25:54,709 --> 01:25:44,709

neil has been on the surface now

697

01:25:59,669 --> 01:25:56,149

hey i

698

01:26:02,310 --> 01:25:59,679

don't know i've noted any abnormalities

699

01:26:05,189 --> 01:26:02,320

in the limb

700

01:26:10,870 --> 01:26:07,910

but seem to be in good shape the primary

701
01:26:12,950 --> 01:26:10,880
and secondary studs are in good shape

702
01:26:14,310 --> 01:26:12,960
uh antennas

703
01:26:16,950 --> 01:26:14,320
are all

704
01:26:20,229 --> 01:26:17,910
but

705
01:26:23,189 --> 01:26:20,239
there's no evidence of a problem

706
01:26:24,629 --> 01:26:23,199
underneath the lamb due to the engine

707
01:26:35,510 --> 01:26:24,639
exhaust or

708
01:26:40,950 --> 01:26:38,470
it's very surprising the uh

709
01:26:43,669 --> 01:26:40,960
very surprising lack of penetration of

710
01:26:46,149 --> 01:26:43,679
all four of the footpads

711
01:26:48,950 --> 01:26:46,159
i'd say if we were to uh try and

712
01:26:52,149 --> 01:26:48,960
determine how far below the surface uh

713
01:26:56,310 --> 01:26:52,159

they would have penetrated you measure

714

01:26:59,910 --> 01:26:57,990

that

715

01:27:12,550 --> 01:26:59,920

price right there is probably even less

716

01:27:12,560 --> 01:27:21,990

all right great job

717

01:27:28,629 --> 01:27:25,350

i get a picture of the uh

718

01:27:30,390 --> 01:27:28,639

buffy strut taken from

719

01:27:32,870 --> 01:27:30,400

here's the defense station i think we'll

720

01:27:34,149 --> 01:27:32,880

be able to see a little bit better what

721

01:27:39,510 --> 01:27:34,159

the

722

01:27:39,520 --> 01:28:06,870

seem to be quite minimal

723

01:28:06,880 --> 01:28:12,470

there's one picture taken uh

724

01:28:17,350 --> 01:28:14,709

right rear of the spacecraft looking at

725

01:28:18,390 --> 01:28:17,360

the uh skirt of a defense stage

726

01:28:22,070 --> 01:28:18,400

so

727

01:28:25,669 --> 01:28:22,080

a slight darkening of the surface color

728

01:28:26,870 --> 01:28:25,679

uh a rather minimal amount of uh

729

01:28:36,149 --> 01:28:26,880

radiating

730

01:28:36,159 --> 01:28:45,590

very fine dust particles moving out

731

01:28:50,229 --> 01:28:48,229

it was reported beforehand that we would

732

01:28:51,750 --> 01:28:50,239

probably see an outgassing from the

733

01:28:53,669 --> 01:28:51,760

surface

734

01:28:55,750 --> 01:28:53,679

after uh

735

01:28:57,510 --> 01:28:55,760

actual engine shutdown but

736

01:28:59,590 --> 01:28:57,520

very cool

737

01:29:45,030 --> 01:28:59,600

i was unable to

738

01:29:45,040 --> 01:29:52,629

just to take an angle

739

01:30:18,149 --> 01:29:54,390

yep

740

01:30:18,159 --> 01:30:56,709

uh

741

01:31:23,189 --> 01:30:57,830

very little

742

01:31:34,470 --> 01:31:24,950

right

743

01:31:34,480 --> 01:31:38,030

go ahead bud

744

01:31:38,040 --> 01:31:53,030

hey get some clothes

745

01:31:56,550 --> 01:31:54,550

sideways

746

01:31:58,870 --> 01:31:56,560

despite a tendency to start doing it

747

01:32:11,750 --> 01:31:58,880

with uh just gradual

748

01:32:11,760 --> 01:32:15,590

if them see us underneath the uh

749

01:32:20,790 --> 01:32:18,870

lamp over at the sdq bay you yes indeed

750

01:32:22,629 --> 01:32:20,800

buzz we can see your feet sticking out

751
01:32:30,870 --> 01:32:22,639
uh underneath the structure of the lamb

752
01:32:53,430 --> 01:32:32,070
and now we can see you through the

753
01:32:57,189 --> 01:32:54,790
the laser

754
01:32:58,629 --> 01:32:57,199
reflector they're open and it looks like

755
01:33:04,070 --> 01:32:58,639
they're going to stay up without any

756
01:33:08,470 --> 01:33:06,229
columbia columbia this is houston we're

757
01:33:10,149 --> 01:33:08,480
about to lose you on the omnis request

758
01:33:13,350 --> 01:33:10,159
high gain antenna

759
01:33:17,270 --> 01:33:13,360
react mode six two zero

760
01:33:21,510 --> 01:33:17,280
yaw one three five over

761
01:33:27,270 --> 01:33:23,189
i'm gonna firefly an area

762
01:33:33,750 --> 01:33:27,280
make that y'all 175 columbia y'all 175

763
01:33:33,760 --> 01:33:48,470

game

764

01:33:48,480 --> 01:33:59,430

in a second

765

01:34:02,229 --> 01:34:01,270

says everything looks fine

766

01:34:04,149 --> 01:34:02,239

go ahead

767

01:34:06,229 --> 01:34:04,159

once again i'm mixing we always worked

768

01:34:08,390 --> 01:34:06,239

uh very normal

769

01:34:11,350 --> 01:34:08,400

roger you might tell columbia that

770

01:34:11,360 --> 01:34:30,070

okay

771

01:34:33,350 --> 01:34:31,990

columbia is watching it on board you can

772

01:34:35,350 --> 01:34:33,360

see it

773

01:35:01,990 --> 01:34:35,360

tell him about it anyway or no i just

774

01:35:24,550 --> 01:35:04,390

this in the passive seismometer has been

775

01:35:47,990 --> 01:35:26,070

they've been on the portable life

776

01:35:55,030 --> 01:35:51,669

and the manual uh deployment of the

777

01:35:59,270 --> 01:35:56,790

little spring that's at the end of the

778

01:36:00,310 --> 01:35:59,280

string pulled off of the uh

779

01:36:02,550 --> 01:36:00,320

hit pin

780

01:36:05,430 --> 01:36:02,560

however i was able to reach up and get

781

01:36:09,750 --> 01:36:05,440

hold of the picture and pull it loose

782

01:36:23,669 --> 01:36:09,760

so uh it'll be quite manually also

783

01:36:23,679 --> 01:36:30,149

and the panorama is complete and uh

784

01:36:34,709 --> 01:36:32,070

about the limb

785

01:36:53,750 --> 01:36:34,719

seven and seven thirty position at

786

01:36:57,669 --> 01:36:55,830

that's neil armstrong to the left of the

787

01:37:14,149 --> 01:36:57,679

screen

788

01:37:29,189 --> 01:37:15,990

right out on that rise right there is

789

01:37:29,199 --> 01:37:45,669

uh

790

01:37:45,679 --> 01:37:54,390

large boulders

791

01:38:02,470 --> 01:37:56,070

buzz aldrin coming into view on the

792

01:38:07,510 --> 01:38:04,709

about 40 feet out i'd say after the end

793

01:38:13,750 --> 01:38:08,950

well it's going to be a little difficult

794

01:38:21,590 --> 01:38:15,109

that next little race there isn't that

795

01:38:29,350 --> 01:38:23,669

hey how about i put the

796

01:38:36,870 --> 01:38:30,870

i'm gonna right to get on the other side

797

01:38:41,830 --> 01:38:39,750

i would go right around

798

01:38:44,310 --> 01:38:41,840

the left there there's a looking at a

799

01:38:58,790 --> 01:38:44,320

level spot there

800

01:39:02,870 --> 01:39:00,390

and they will be out of the camera's

801
01:39:19,189 --> 01:39:02,880
field of view while setting up these

802
01:39:26,070 --> 01:39:23,270
full boulders uh look like basalt and uh

803
01:39:27,669 --> 01:39:26,080
they have probably uh two percent white

804
01:39:30,550 --> 01:39:27,679
minerals in them

805
01:39:33,030 --> 01:39:30,560
uh white uh crystals

806
01:39:35,430 --> 01:39:33,040
and uh the thing that i reported is

807
01:39:37,189 --> 01:39:35,440
vesicular before i i'm not

808
01:39:38,310 --> 01:39:37,199
i don't believe i believe that anymore i

809
01:39:39,350 --> 01:39:38,320
think it's

810
01:39:46,070 --> 01:39:39,360
a

811
01:39:51,109 --> 01:39:46,080
uh

812
01:40:03,109 --> 01:39:51,119
bippy shot has hit the

813
01:40:03,119 --> 01:40:06,790

hey i'm your friend

814

01:40:10,149 --> 01:40:08,550

please how you doing

815

01:40:14,310 --> 01:40:10,159

okay it looks like we cut a little bit

816

01:40:20,229 --> 01:40:14,320

we've got about uh 15 minutes and

817

01:40:23,350 --> 01:40:21,669

consumer-wise

818

01:40:28,070 --> 01:40:23,360

how are you counting the 240 where'd you

819

01:40:31,030 --> 01:40:29,910

the clock are you on the clock up front

820

01:40:32,550 --> 01:40:31,040

roger

821

01:40:34,390 --> 01:40:32,560

that's the one that was started when he

822

01:40:38,550 --> 01:40:34,400

uh

823

01:40:40,149 --> 01:40:38,560

watch you pressurize the cabin roger

824

01:40:42,790 --> 01:40:40,159

we just keep slipping the activities

825

01:40:44,790 --> 01:40:42,800

back and protecting our profiles

826

01:40:46,870 --> 01:40:44,800

and the current rate right now is around

827

01:40:48,310 --> 01:40:46,880

15 minutes beyond 240.

828

01:41:14,790 --> 01:40:48,320

and you're going with that clock up

829

01:41:14,800 --> 01:41:29,189

i feel my god and smoker that

830

01:41:29,199 --> 01:41:35,750

experiment

831

01:41:41,109 --> 01:41:37,510

i'm having a little bit of difficulty

832

01:41:43,350 --> 01:41:41,119

getting the beef go in the center

833

01:41:52,709 --> 01:41:43,360

wants to move around and around on the

834

01:41:52,719 --> 01:42:07,510

you're cutting out again but

835

01:42:11,270 --> 01:42:09,270

how did i say i'm not having too much

836

01:42:14,550 --> 01:42:11,280

success in uh

837

01:42:16,470 --> 01:42:14,560

leveling the pse experiment

838

01:42:18,470 --> 01:42:16,480

flight experiments

839

01:42:21,109 --> 01:42:18,480

the main thing is get the ball off the

840

01:42:22,310 --> 01:42:21,119

edge get one get the ball off the edge

841

01:42:23,910 --> 01:42:22,320

it does not necessarily have to be

842

01:42:25,669 --> 01:42:23,920

centered if you can't stand get the ball

843

01:42:27,350 --> 01:42:25,679

off the edge yeah you said he was having

844

01:42:29,910 --> 01:42:27,360

trouble getting it off the outside at

845

01:42:31,830 --> 01:42:29,920

all i thought he said okay

846

01:43:22,709 --> 01:42:31,840

i missed it so it seems to be going

847

01:43:22,719 --> 01:43:35,910

is that

848

01:43:35,920 --> 01:43:40,709

roger out

849

01:43:49,189 --> 01:43:42,550

hey you want to take a look at this bbc

850

01:43:49,199 --> 01:44:02,790

i found it pretty hard to get

851

01:44:18,790 --> 01:44:04,550

i think i drowned him out i think he

852

01:44:23,430 --> 01:44:20,550

leveling device to come up with an

853

01:44:30,149 --> 01:44:26,790

it looks to me as though the uh

854

01:44:42,229 --> 01:44:30,159

the cup here that the bb is in is uh now

855

01:44:42,239 --> 01:44:46,790

level by eyeball go ahead

856

01:44:46,800 --> 01:45:04,550

okay

857

01:45:04,560 --> 01:45:10,950

size monitor

858

01:45:10,960 --> 01:45:23,270

our rates are still down

859

01:45:27,910 --> 01:45:25,750

okay uh capcom fao

860

01:45:31,270 --> 01:45:27,920

flight

861

01:45:33,030 --> 01:45:31,280

surgeon and emu on the loop

862

01:45:36,550 --> 01:45:33,040

okay it looks like we can stand about

863

01:45:39,270 --> 01:45:36,560

another 15 minutes based on water

864

01:45:41,189 --> 01:45:39,280

surgeon says they're doing okay

865

01:45:52,470 --> 01:45:41,199

seems to me we ought to

866

01:45:54,590 --> 01:45:53,830

the number looks a little better than i

867

01:46:11,109 --> 01:45:54,600

hear

868

01:46:11,119 --> 01:46:18,950

hey 208 plus 15 223 and uh

869

01:46:21,590 --> 01:46:20,070

i'm gonna take a little more off that

870

01:46:23,430 --> 01:46:21,600

because we'll have two rounds this is

871

01:46:39,109 --> 01:46:23,440

houston understand you did successfully

872

01:46:43,910 --> 01:46:42,390

15 minutes and still give a minus 10

873

01:46:45,189 --> 01:46:43,920

minute mark for buzz to start

874

01:46:46,870 --> 01:46:45,199

termination

875

01:46:49,910 --> 01:46:46,880

if he concurs

876

01:46:52,070 --> 01:46:49,920

okay is uh neil uh a header behind buzz

877

01:46:55,750 --> 01:46:52,080

on consumables i think neil's ahead is

878

01:46:55,760 --> 01:46:59,189

nigga's using less right

879

01:47:04,629 --> 01:47:01,910

the one that's down okay go ahead capcom

880

01:47:09,189 --> 01:47:04,639

okay for my inflation would buzz then be

881

01:47:13,189 --> 01:47:11,109

i don't follow you

882

01:47:15,990 --> 01:47:13,199

we're going to give the total 15 minutes

883

01:47:18,709 --> 01:47:16,000

and we'll still give buzz a 10 minute

884

01:47:27,830 --> 01:47:18,719

minus 10 mark to start in based on that

885

01:47:27,840 --> 01:47:31,510

meal this is houston over

886

01:47:34,470 --> 01:47:33,270

the number

887

01:47:35,910 --> 01:47:34,480

hey jason

888

01:47:38,470 --> 01:47:35,920

all right we've been looking at your

889

01:47:39,669 --> 01:47:38,480

concealables and you're in you're in

890

01:47:42,709 --> 01:47:39,679

good shape

891

01:47:46,070 --> 01:47:42,719

uh subject to your concurrence we'd like

892

01:47:48,790 --> 01:47:46,080

to extend the duration of the eva

893

01:47:50,390 --> 01:47:48,800

one five minutes from nominal we will

894

01:47:52,709 --> 01:47:50,400

still give bugs

895

01:47:56,070 --> 01:47:52,719

a hack at 10 minutes

896

01:48:01,270 --> 01:47:56,080

prior for uh heading in your current

897

01:48:01,280 --> 01:48:09,990

that means buzz would have to start back

898

01:48:15,510 --> 01:48:13,109

get a picture of the bubble

899

01:48:17,109 --> 01:48:15,520

because he's still there

900

01:48:19,430 --> 01:48:17,119

roger you're still on vicinity i was him

901
01:48:22,070 --> 01:48:19,440
come back from the side of the tv yet

902
01:48:25,030 --> 01:48:22,080
you can try to be an elected

903
01:48:27,669 --> 01:48:25,040
camera 12 is the time expended on the

904
01:48:29,910 --> 01:48:27,679
plss this is houston if you're still in

905
01:48:35,750 --> 01:48:29,920
the vicinity of the pse could you get a

906
01:48:41,030 --> 01:48:37,510
i'll do that but

907
01:48:45,590 --> 01:48:43,270
houston uh what time would you estimate

908
01:48:47,350 --> 01:48:45,600
that we could allow for the documented

909
01:48:51,510 --> 01:48:47,360
sample over

910
01:49:09,030 --> 01:48:53,830
plus for 10 minutes pardon

911
01:49:12,790 --> 01:49:10,310
wonderful

912
01:49:15,669 --> 01:49:12,800
take a picture for a move

913
01:49:19,830 --> 01:49:17,270

we estimate for the document we're

914

01:49:22,310 --> 01:49:19,840

estimating about 10 minutes

915

01:49:23,430 --> 01:49:22,320

uh now this is houston we're estimating

916

01:49:25,350 --> 01:49:23,440

about

917

01:49:28,870 --> 01:49:25,360

10 minutes for the document sampling

918

01:49:31,350 --> 01:49:29,750

uh

919

01:49:33,669 --> 01:49:31,360

e-town flight did you get your message

920

01:49:34,950 --> 01:49:33,679

to capcom yes right yeah

921

01:49:37,430 --> 01:49:34,960

okay

922

01:49:39,990 --> 01:49:37,440

so yeah you got a message for columbia

923

01:49:45,270 --> 01:49:40,000

uh battery charge

924

01:49:45,280 --> 01:49:53,109

columbia columbia this is houston

925

01:49:59,430 --> 01:49:55,270

columbia roger would like to terminate

926

01:50:05,830 --> 01:49:59,440

charging battery bravo at 111 plus 15

927

01:50:35,589 --> 01:50:08,149

come out right now

928

01:50:39,669 --> 01:50:36,830

uh by the

929

01:50:41,109 --> 01:50:39,679

diffusion you've got about 10 minutes

930

01:50:43,830 --> 01:50:41,119

left now

931

01:50:49,709 --> 01:50:43,840

prior to commencing your eva termination

932

01:50:49,719 --> 01:51:33,510

over i understand

933

01:51:36,310 --> 01:51:35,350

flight experiments

934

01:51:39,270 --> 01:51:36,320

go ahead

935

01:51:42,070 --> 01:51:39,280

we've uncaged working well say a lot of

936

01:51:44,870 --> 01:51:42,080

short period seismic activity short

937

01:51:49,910 --> 01:51:47,830

do you want to pass it up

938

01:51:52,470 --> 01:51:49,920

you can tell we're seeing some

939

01:51:55,109 --> 01:51:52,480

info on that

940

01:51:57,669 --> 01:51:55,119

tranquility base this is houston the

941

01:52:01,910 --> 01:51:57,679

practice cycling experience has been

942

01:52:42,390 --> 01:52:01,920

engaged and we're observing short period

943

01:52:45,189 --> 01:52:43,669

okay we're supposed to give him 10

944

01:52:49,430 --> 01:52:45,199

minutes prior to the bottom of the

945

01:52:54,550 --> 01:52:52,870

here we gave him a 10 minute okay

946

01:53:34,310 --> 01:52:54,560

yeah but he can utilize that 10 minutes

947

01:53:34,320 --> 01:54:21,430

so

948

01:54:25,669 --> 01:54:23,189

we're looking good in the fourth round

949

01:54:32,790 --> 01:54:25,679

buzz aldrin is collecting a core tube

950

01:54:37,270 --> 01:54:35,189

i hope you're watching uh how hard i

951
01:54:41,430 --> 01:54:37,280
have to hit this into the ground uh to

952
01:54:41,440 --> 01:54:51,030
roger

953
01:54:51,040 --> 01:54:55,109
experiments flying

954
01:55:06,070 --> 01:54:57,189
that almost like tubes in the solar

955
01:55:06,080 --> 01:55:10,070
got it sampled

956
01:55:15,669 --> 01:55:12,790
experiments give me an answer

957
01:55:31,030 --> 01:55:15,679
two chord tubes in the solar wind roger

958
01:55:34,870 --> 01:55:33,109
not quite

959
01:55:35,830 --> 01:55:34,880
nail this is houston we'd like you all

960
01:55:38,390 --> 01:55:35,840
to get

961
01:55:40,629 --> 01:55:38,400
two core tubes and the solar wind

962
01:55:45,189 --> 01:55:40,639
experiment two core tubes and the solar

963
01:55:45,199 --> 01:56:09,270

thank you

964

01:56:09,280 --> 01:56:15,350

the core tubes provide materials

965

01:56:19,270 --> 01:56:17,270

we have seen the core samples as he was

966

01:56:21,350 --> 01:56:19,280

taking those on the seismic data if

967

01:56:23,350 --> 01:56:21,360

possible sometime the next couple

968

01:56:25,270 --> 01:56:23,360

minutes before he comes in if he'd get a

969

01:56:27,109 --> 01:56:25,280

little jump she was planning on doing it

970

01:56:28,709 --> 01:56:27,119

one time as he left the psc we'd like to

971

01:56:29,910 --> 01:56:28,719

have it

972

01:56:31,270 --> 01:56:29,920

a jump

973

01:56:32,550 --> 01:56:31,280

roger

974

01:57:24,229 --> 01:56:32,560

let's let him get through what he's

975

01:57:27,830 --> 01:57:25,910

buzz this is houston you have

976
01:57:29,910 --> 01:57:27,840
approximately three minutes until you

977
01:57:41,910 --> 01:57:29,920
must commence your eva termination

978
01:57:47,030 --> 01:57:44,310
columbia this is houston approximately

979
01:57:51,350 --> 01:57:47,040
one minute to los over

980
01:57:51,360 --> 01:57:56,470
i love you minute

981
01:58:00,790 --> 01:57:58,390
and do you plan on uh commencing your

982
01:58:02,709 --> 01:58:00,800
sleep on the back side this fast if so

983
01:58:14,229 --> 01:58:02,719
we'll disable uplink to you while we're

984
01:58:17,589 --> 01:58:15,430
if we can get

985
01:58:18,830 --> 01:58:17,599
anything else into that box

986
01:58:21,510 --> 01:58:18,840
within the

987
01:58:24,950 --> 01:58:21,520
time we were able to uh record

988
01:58:28,950 --> 01:58:24,960

in a documentary way where the two

989

01:58:28,960 --> 01:58:31,990

do we experiment

990

01:58:32,000 --> 01:58:45,510

negative

991

01:58:49,109 --> 01:58:46,709

you said anything else i can get in the

992

01:58:51,669 --> 01:58:49,119

box that's right

993

01:58:54,470 --> 01:58:51,679

now this is houston after you've got the

994

01:58:56,229 --> 01:58:54,480

core tubes and the solar wind uh

995

01:58:58,550 --> 01:58:56,239

anything else that you can

996

01:59:03,510 --> 01:58:58,560

throw into the box would be acceptable

997

01:59:03,520 --> 01:59:25,350

i know

998

01:59:28,550 --> 01:59:26,950

okay

999

01:59:46,870 --> 01:59:28,560

and you want to pick up some stuff and

1000

01:59:46,880 --> 02:00:25,030

retrieving the solar wind experiment

1001
02:00:28,470 --> 02:00:27,030
buzz this is houston it's about time for

1002
02:00:33,669 --> 02:00:28,480
you to start your

1003
02:00:37,669 --> 02:00:36,550
who gets the film

1004
02:00:38,950 --> 02:00:37,679
roger

1005
02:00:41,430 --> 02:00:38,960
buzzing

1006
02:00:42,629 --> 02:00:41,440
on the close-up camera

1007
02:00:44,229 --> 02:00:42,639
they've been on their live support

1008
02:00:48,390 --> 02:00:44,239
system

1009
02:00:48,400 --> 02:01:10,310
how about film magazine

1010
02:01:13,990 --> 02:01:12,229
and neil gets that too

1011
02:01:16,229 --> 02:01:14,000
so he gets the stereo cassette in the

1012
02:01:19,589 --> 02:01:16,239
film magazine

1013
02:01:35,510 --> 02:01:19,599

roger i like the zba uh

1014

02:01:39,990 --> 02:01:39,189

i remind him of the close-up camera mike

1015

02:01:41,910 --> 02:01:40,000

yeah

1016

02:01:43,669 --> 02:01:41,920

neil and buzz this is houston like to

1017

02:01:49,990 --> 02:01:43,679

remind you of the close-up camera

1018

02:01:50,000 --> 02:01:52,390

okay

1019

02:01:56,390 --> 02:01:54,709

got that over with you neil now that

1020

02:02:00,790 --> 02:01:56,400

close up cameras underneath the maze

1021

02:02:13,510 --> 02:02:02,790

and i'm picking up several pieces of

1022

02:02:30,950 --> 02:02:14,709

you didn't get anything in those

1023

02:02:34,709 --> 02:02:32,870

clock up camera magazine and closing out

1024

02:02:50,790 --> 02:02:34,719

of the sample return container he was

1025

02:03:24,470 --> 02:02:52,790

we want to keep a good margin in those

1026

02:03:24,480 --> 02:03:42,149

okay can you quickly stick this in my

1027

02:04:08,870 --> 02:03:43,990

my flight plan shows

1028

02:04:08,880 --> 02:04:22,870

my

1029

02:04:51,830 --> 02:04:24,550

the

1030

02:04:57,990 --> 02:04:53,830

that white dot

1031

02:05:00,870 --> 02:04:58,000

right above the horizon on the right

1032

02:05:03,030 --> 02:05:00,880

is a phosphorous spot from the tv

1033

02:05:18,550 --> 02:05:03,040

converter in the park station in

1034

02:05:18,560 --> 02:05:42,310

okay

1035

02:05:55,750 --> 02:05:45,430

did you get the solar wind right here

1036

02:05:55,760 --> 02:06:07,030

foreign

1037

02:06:07,040 --> 02:06:11,270

i think you can reach the uh

1038

02:06:14,629 --> 02:06:12,870

reach this hope that they're hanging

1039

02:06:25,030 --> 02:06:14,639

over here you might entertain the idea

1040

02:06:42,870 --> 02:06:28,390

just get the film off of that

1041

02:06:51,430 --> 02:06:45,910

okay i'm heading on in uh okay and uh

1042

02:06:55,589 --> 02:06:54,149

telecom control flight

1043

02:07:09,990 --> 02:06:55,599

go flight watch your switches and

1044

02:07:19,189 --> 02:07:11,430

neil has been on the surface a few

1045

02:07:23,109 --> 02:07:21,990

buzz approximately 20 minutes less than

1046

02:07:25,830 --> 02:07:23,119

that

1047

02:07:27,990 --> 02:07:25,840

neil this is houston did the hasselblad

1048

02:07:32,629 --> 02:07:28,000

magazine go up on that sample return

1049

02:07:53,430 --> 02:07:35,350

i've got uh one i have a magazine hooked

1050

02:08:10,069 --> 02:07:55,030

we're right on the timeline we'll hit

1051

02:08:14,870 --> 02:08:12,709

all right ecom gmc flight

1052

02:08:16,550 --> 02:08:14,880

flight okay well uh

1053

02:08:19,270 --> 02:08:16,560

mike's on the back side now let's get

1054

02:08:26,790 --> 02:08:19,280

everything in order

1055

02:08:26,800 --> 02:09:21,270

roger

1056

02:09:21,280 --> 02:10:05,510

hey

1057

02:10:05,520 --> 02:10:21,030

okay that's got it clear

1058

02:10:29,030 --> 02:10:22,950

transferring the sample containers into

1059

02:10:50,470 --> 02:10:31,589

camera came off me and that still came

1060

02:10:54,629 --> 02:10:52,790

okay just ease it down now don't pull so

1061

02:11:02,950 --> 02:10:54,639

hard on them

1062

02:11:07,109 --> 02:11:04,950

right surgeon go surgery

1063

02:11:08,390 --> 02:11:07,119

okay we feel like it's a cdr you're

1064

02:11:10,950 --> 02:11:08,400

getting that

1065

02:11:12,709 --> 02:11:10,960

family rate here for a sufficient period

1066

02:11:14,310 --> 02:11:12,719

of time we ought to ask him to slow down

1067

02:11:16,470 --> 02:11:14,320

wrestling

1068

02:11:19,830 --> 02:11:16,480

do you want an emu check okay

1069

02:11:19,840 --> 02:11:22,790

commander

1070

02:11:29,350 --> 02:11:25,430

mail this is houston uh request an emu

1071

02:11:29,360 --> 02:11:37,990

all right

1072

02:11:43,430 --> 02:11:39,589

and i got uh

1073

02:11:46,870 --> 02:11:43,440

54 on the o2 and no flags

1074

02:11:49,189 --> 02:11:46,880

and my flow is in uh in

1075

02:12:07,990 --> 02:11:49,199

flight experiments go lick observatory

1076

02:12:08,000 --> 02:12:46,709

you want to patch that one up flat

1077

02:12:50,390 --> 02:12:49,030

the lick observatory in california

1078

02:12:51,350 --> 02:12:50,400

reports

1079

02:12:54,149 --> 02:12:51,360

on the

1080

02:12:59,990 --> 02:12:56,470

no response necessary but uh we're in

1081

02:13:06,149 --> 02:13:00,000

good shape on consumables on cdr

1082

02:13:17,430 --> 02:13:07,990

hey lan bugs for your information your

1083

02:13:41,990 --> 02:13:19,910

okay i've got one side hooked up for the

1084

02:13:42,000 --> 02:13:57,589

by that uh

1085

02:13:57,599 --> 02:14:03,990

it looks like down here

1086

02:14:24,950 --> 02:14:06,790

i think my watch stopped now

1087

02:14:28,470 --> 02:14:26,550

spacecraft i don't know whether it's

1088

02:14:30,790 --> 02:14:28,480

worth mentioning or not but it might be

1089

02:14:32,470 --> 02:14:30,800

if he needs to put a new uh mag on and

1090

02:14:33,589 --> 02:14:32,480

get some pictures of the lac person i

1091

02:14:35,189 --> 02:14:33,599

don't know if he isn't all right if you

1092

02:14:42,229 --> 02:14:35,199

can just kind of hold it but i think i

1093

02:14:42,239 --> 02:15:01,030

stand by a minute let me move back

1094

02:15:01,040 --> 02:15:04,709

okay

1095

02:15:04,719 --> 02:15:20,470

all right easy on the hatch now

1096

02:15:37,350 --> 02:15:22,709

still continue to take it easy

1097

02:15:37,360 --> 02:15:53,109

2 hours 40 minutes on the plss

1098

02:15:53,119 --> 02:16:14,709

others okay turn out

1099

02:16:23,189 --> 02:16:15,830

oh

1100

02:16:23,199 --> 02:16:32,950

all right now

1101

02:16:32,960 --> 02:16:45,589

okay okay

1102

02:16:48,950 --> 02:16:47,349

flight epa if they drop that mag they

1103

02:16:50,469 --> 02:16:48,960

ought to get it did they get that mag

1104

02:16:51,910 --> 02:16:50,479

capcom

1105

02:16:55,830 --> 02:16:51,920

nail this is houston did you get the

1106

02:16:59,509 --> 02:16:57,190

yes i did

1107

02:17:02,469 --> 02:16:59,519

and we got about uh

1108

02:17:04,549 --> 02:17:02,479

i'd say 20 pounds of uh

1109

02:17:06,629 --> 02:17:04,559

carefully selected if not documented

1110

02:17:26,549 --> 02:17:06,639

samples

1111

02:17:31,429 --> 02:17:29,589

unofficial time off the surface at 111

1112

02:17:33,910 --> 02:17:31,439

37 32.

1113

02:17:35,830 --> 02:17:33,920

start arching your back that's good

1114

02:17:37,110 --> 02:17:35,840

on your room

1115

02:17:39,589 --> 02:17:37,120

all right arch your back a little your

1116

02:17:53,589 --> 02:17:39,599

heads up

1117

02:17:58,469 --> 02:17:55,110

now you're clear you're rubbing up

1118

02:18:01,589 --> 02:17:58,479

against me a little bit okay

1119

02:18:03,589 --> 02:18:01,599

turn all right that's right

1120

02:18:09,270 --> 02:18:03,599

tell calm slate

1121

02:18:09,280 --> 02:18:19,270

the please

1122

02:18:19,280 --> 02:18:34,309

okay

1123

02:18:34,319 --> 02:18:47,190

our canada's closed and latched

1124

02:18:47,200 --> 02:19:17,190

okay

1125

02:19:17,200 --> 02:19:46,629

we press open flight kevin coming up

1126
02:19:46,639 --> 02:20:00,710
all right

1127
02:20:00,720 --> 02:20:15,190
yes

1128
02:20:18,550 --> 02:20:16,950
no i'm not yet captain

1129
02:20:19,910 --> 02:20:18,560
fail flight

1130
02:20:21,750 --> 02:20:19,920
you're fine

1131
02:20:23,670 --> 02:20:21,760
check your flight plan for columbia from

1132
02:20:25,510 --> 02:20:23,680
this point on will you show the cabin of

1133
02:20:27,429 --> 02:20:25,520
course

1134
02:20:29,349 --> 02:20:27,439
at this point i'm going to sleep the

1135
02:20:31,670 --> 02:20:29,359
same time the limb guys too that's what

1136
02:20:34,469 --> 02:20:31,680
i thought that's right

1137
02:20:36,550 --> 02:20:34,479
flight token pressure is up roger we're

1138
02:20:39,030 --> 02:20:36,560

running about an hour later than this

1139

02:20:40,710 --> 02:20:39,040

patch okay fido flight get all your data

1140

02:20:42,070 --> 02:20:40,720

together we'll try it one more time

1141

02:20:43,429 --> 02:20:42,080

roger thank you

1142

02:20:44,389 --> 02:20:43,439

fao will you get the information

1143

02:20:47,030 --> 02:20:44,399

together

1144

02:20:49,590 --> 02:20:47,040

roger fine gnc flight

1145

02:21:30,309 --> 02:20:49,600

flight g and say okay on consumables or

1146

02:21:30,319 --> 02:21:57,830

foreign

1147

02:21:57,840 --> 02:22:34,830

okay

1148

02:22:34,840 --> 02:23:14,710

stop thank you

1149

02:23:19,990 --> 02:23:17,510

lamb's systems look good

1150

02:23:21,590 --> 02:23:20,000

crewman should now be transferring back

1151
02:23:24,950 --> 02:23:21,600
to

1152
02:23:27,670 --> 02:23:24,960
tranquility bases

1153
02:23:30,950 --> 02:23:27,680
environmental control system

1154
02:23:33,190 --> 02:23:30,960
and later we'll switch to

1155
02:23:35,590 --> 02:23:33,200
to the vehicle's communication system we

1156
02:23:38,150 --> 02:23:35,600
estimate it'll be another

1157
02:24:41,830 --> 02:23:38,160
10 to 15 minutes before they're on the

1158
02:24:41,840 --> 02:25:02,630
you

1159
02:28:36,070 --> 02:27:08,950
so

1160
02:28:40,469 --> 02:28:38,389
and a replica of the

1161
02:28:42,389 --> 02:28:40,479
american flag on the lunar surface is

1162
02:28:51,990 --> 02:28:42,399
now being erected here in the control

1163
02:28:57,349 --> 02:28:55,030

and a replica of the plaque on

1164

02:29:11,110 --> 02:28:57,359

tranquility base has been hung on the

1165

02:29:11,120 --> 02:29:25,750

so

1166

02:29:40,230 --> 02:29:28,070

neil this is houston neil this is

1167

02:30:12,870 --> 02:29:43,270

buzz buzz this is houston radio check

1168

02:30:59,510 --> 02:30:18,790

is

1169

02:32:49,349 --> 02:30:59,520

suggest you install one plus antenna so

1170

02:32:49,359 --> 02:33:00,389

thanks

1171

02:33:00,399 --> 02:33:05,030

a receive

1172

02:33:08,630 --> 02:33:07,270

be off

1173

02:33:13,910 --> 02:33:08,640

neil this is houston we seem to be

1174

02:33:13,920 --> 02:33:27,429

ics

1175

02:33:31,349 --> 02:33:28,950

train quality how do you read

1176
02:33:34,950 --> 02:33:31,359
tranquility basis houston loud and clear

1177
02:33:38,710 --> 02:33:36,630
flat and clear we're in the process of

1178
02:36:16,389 --> 02:33:38,720
switching over to lam comm here

1179
02:36:16,399 --> 02:36:23,190
so

1180
02:36:28,389 --> 02:36:25,270
tranquility based this is houston we'd

1181
02:36:30,230 --> 02:36:28,399
like to verify your steerable antenna in

1182
02:36:32,230 --> 02:36:30,240
track mode slew we're going to do a

1183
02:36:37,670 --> 02:36:32,240
communications handover here on earth

1184
02:36:42,070 --> 02:36:39,830
roger that's affirmative we're in attack

1185
02:40:35,750 --> 02:36:42,080
mode slope

1186
02:40:35,760 --> 02:42:48,710
so

1187
02:42:48,720 --> 02:42:55,429
colombia colombia this is houston over

1188
02:43:00,230 --> 02:42:58,550

roger 201 charlie how do you read

1189

02:43:02,870 --> 02:43:00,240

roger columbia this is houston reading

1190

02:43:05,750 --> 02:43:02,880

here loud and clear on omni charlie the

1191

02:43:06,950 --> 02:43:05,760

crew of tranquility base is back inside

1192

02:43:08,950 --> 02:43:06,960

their base

1193

02:43:11,830 --> 02:43:08,960

uh repressurized

1194

02:43:13,830 --> 02:43:11,840

they're in the process of doffing the

1195

02:43:18,630 --> 02:43:13,840

floaters everything went beautifully

1196

02:43:23,190 --> 02:43:20,550

hallelujah

1197

02:43:25,510 --> 02:43:23,200

and uh we'd like to get

1198

02:43:28,790 --> 02:43:25,520

poo and except from you we have a

1199

02:43:31,269 --> 02:43:28,800

state vector uplink and after that uh

1200

02:43:33,510 --> 02:43:31,279

we'd like you to realign your platform

1201
02:43:42,389 --> 02:43:33,520
to the new reps mat that we sent up uh

1202
02:44:04,150 --> 02:43:44,389
all right i understand you want a

1203
02:44:09,990 --> 02:44:07,429
this is apollo control dr charles barry

1204
02:44:12,790 --> 02:44:10,000
reports the heart rates

1205
02:44:16,429 --> 02:44:12,800
during this eva period

1206
02:44:23,910 --> 02:44:20,389
a low of 90 for both crewmen

1207
02:44:24,950 --> 02:44:23,920
to a high of about 125

1208
02:44:27,510 --> 02:44:24,960
for

1209
02:44:29,190 --> 02:44:27,520
buzz aldrin at peak periods and a high

1210
02:44:32,389 --> 02:44:29,200
of 160

1211
02:44:35,990 --> 02:44:32,399
for neil armstrong at peak periods that

1212
02:44:38,469 --> 02:44:36,000
top reading coming during the time

1213
02:44:49,510 --> 02:44:38,479

he was transferring the rock boxes into

1214

02:44:54,950 --> 02:44:52,230

dr barry says the data they got

1215

02:45:35,910 --> 02:44:54,960

indicates neil was working very hard at

1216

02:45:40,469 --> 02:45:38,309

columbia this is houston we're going to

1217

02:45:42,070 --> 02:45:40,479

uplink you in a new state picture

1218

02:45:43,190 --> 02:45:42,080

and then we'll send the rest of that up

1219

02:45:45,190 --> 02:45:43,200

again

1220

02:45:47,030 --> 02:45:45,200

because sending the state vector up will

1221

02:45:49,910 --> 02:45:47,040

wipe out the one that you have on board

1222

02:46:56,870 --> 02:45:49,920

and then you can do a p-52 option one

1223

02:48:28,950 --> 02:47:10,309

so

1224

02:48:28,960 --> 02:48:47,670

ah

1225

02:51:11,030 --> 02:49:00,469

so

1226

02:51:11,040 --> 02:51:27,429

foreign

1227

02:51:39,510 --> 02:51:29,510

columbia this is houston do you read

1228

02:51:44,230 --> 02:51:42,550

okay columbia we've completed the uplink

1229

02:51:46,309 --> 02:51:44,240

the computer is yours you can go to

1230

02:51:47,590 --> 02:51:46,319

block however

1231

02:51:51,269 --> 02:51:47,600

we'd like you to

1232

02:51:54,550 --> 02:51:51,279

hold off on the p52 option one align

1233

02:51:56,230 --> 02:51:54,560

until after you pass landing site two

1234

02:51:59,349 --> 02:51:56,240

and we're requesting that you perform

1235

02:52:01,030 --> 02:51:59,359

another p22 and attempt to find the limb

1236

02:52:17,590 --> 02:52:01,040

this fast i've got the numbers for you

1237

02:52:17,600 --> 02:52:34,550

so

1238

02:52:40,469 --> 02:52:36,870

roger columbia p22

1239

02:52:43,349 --> 02:52:40,479

landmark id is lunar module

1240

02:52:44,710 --> 02:52:43,359

make that tranquility base

1241

02:52:46,550 --> 02:52:44,720

t1

1242

02:52:47,830 --> 02:52:46,560

one one two

1243

02:52:49,670 --> 02:52:47,840

two five

1244

02:52:51,190 --> 02:52:49,680

zero eight

1245

02:52:52,950 --> 02:52:51,200

t2

1246

02:52:54,389 --> 02:52:52,960

one one two

1247

02:52:59,830 --> 02:52:54,399

three zero

1248

02:53:02,230 --> 02:52:59,840

one seven four nautical miles south

1249

02:53:03,910 --> 02:53:02,240

time of closest approach

1250

02:53:05,269 --> 02:53:03,920

one one two

1251
02:53:07,110 --> 02:53:05,279
three one

1252
02:53:08,469 --> 02:53:07,120
five two

1253
02:53:10,710 --> 02:53:08,479
shaft

1254
02:53:13,910 --> 02:53:10,720
three five seven

1255
02:53:15,429 --> 02:53:13,920
decimal zero five one

1256
02:53:20,309 --> 02:53:15,439
trunnion

1257
02:53:22,070 --> 02:53:20,319
zero four seven decimal four three two

1258
02:53:24,469 --> 02:53:22,080
roll zero

1259
02:53:49,990 --> 02:53:24,479
pitch two five zero

1260
02:54:10,790 --> 02:53:53,349
columbia this is houston did you copy my

1261
02:54:10,800 --> 02:54:28,950
so

1262
02:54:53,030 --> 02:54:31,190
columbia this is houston

1263
02:54:58,150 --> 02:54:54,790

all right negative bruce just give me

1264

02:55:01,030 --> 02:54:58,160

the latitude longitude over two altitude

1265

02:55:04,469 --> 02:55:01,040

and the uh red squares never mind the

1266

02:55:04,479 --> 02:55:13,429

stand by

1267

02:55:17,349 --> 02:55:15,269

but that is if you have new information

1268

02:55:18,710 --> 02:55:17,359

otherwise i'll just use the old numbers

1269

02:55:23,190 --> 02:55:18,720

no wait a minute we've got new

1270

02:55:23,200 --> 02:55:34,710

okay

1271

02:56:07,670 --> 02:55:49,429

so

1272

02:56:12,630 --> 02:56:10,630

this is apollo control at 112 hours 19

1273

02:56:16,550 --> 02:56:12,640

minutes

1274

02:56:21,990 --> 02:56:16,560

the inhabitants of tranquility base are

1275

02:56:27,269 --> 02:56:24,309

still have not fully configured the

1276

02:56:29,510 --> 02:56:27,279

voice communications

1277

02:56:32,469 --> 02:56:29,520

however we are getting telemetry good

1278

02:56:34,230 --> 02:56:32,479

telemetry from tranquility base showing

1279

02:56:35,750 --> 02:56:34,240

a cabin pressure of

1280

02:56:37,750 --> 02:56:35,760

5

1281

02:56:41,030 --> 02:56:37,760

pounds per square inch

1282

02:56:43,269 --> 02:56:41,040

temperature of 60 degrees

1283

02:56:45,349 --> 02:56:43,279

we expect to

1284

02:56:52,309 --> 02:56:45,359

establish communications

1285

02:56:52,319 --> 02:56:57,590

during this period the crew is

1286

02:57:00,550 --> 02:56:59,110

removing

1287

02:57:03,990 --> 02:57:00,560

the

1288

02:57:06,870 --> 02:57:04,000

portable life support systems

1289

02:57:10,630 --> 02:57:06,880

checking over their their

1290

02:57:14,150 --> 02:57:12,469

getting ready for

1291

02:57:15,750 --> 02:57:14,160

jettison

1292

02:57:18,670 --> 02:57:15,760

equipment

1293

02:57:20,469 --> 02:57:18,680

from tranquility base the cabin will be

1294

02:57:22,550 --> 02:57:20,479

depressurized

1295

02:57:25,990 --> 02:57:22,560

before too long and equipment will be

1296

02:57:28,630 --> 02:57:26,000

jettisoned onto the lunar surface

1297

02:57:30,550 --> 02:57:28,640

tranquility base this is houston can you

1298

02:57:32,150 --> 02:57:30,560

give us uh some idea of how you're

1299

02:57:34,790 --> 02:57:32,160

progressing on the

1300

02:57:40,469 --> 02:57:34,800

uh flip stopping and preparation for

1301
02:57:44,710 --> 02:57:43,110
roger houston tranquility base we're in

1302
02:57:46,950 --> 02:57:44,720
the process of uh

1303
02:57:49,349 --> 02:57:46,960
using up what uh

1304
02:57:50,630 --> 02:57:49,359
film we have and i'm just getting ready

1305
02:57:58,070 --> 02:57:50,640
to change the

1306
02:58:03,349 --> 02:58:00,630
roger's tranquility we'd like to

1307
02:58:06,230 --> 02:58:03,359
haul off as long as possible on the

1308
02:58:07,910 --> 02:58:06,240
lithium hydroxide canister make that one

1309
02:58:14,550 --> 02:58:07,920
of the last things you do in getting

1310
02:58:18,469 --> 02:58:16,150
all right you were

1311
02:58:20,870 --> 02:58:18,479
planning on doing that uh i'm just

1312
02:58:25,110 --> 02:58:20,880
wondering how much longer uh we want to

1313
02:58:28,950 --> 02:58:26,630

we've probably got another half an

1314

02:58:30,710 --> 02:58:28,960

hour's worth of uh picture taken and i

1315

02:58:32,550 --> 02:58:30,720

guess we could uh

1316

02:58:34,550 --> 02:58:32,560

run through an eight uh

1317

02:58:37,510 --> 02:58:34,560

cycle and uh

1318

02:58:39,830 --> 02:58:37,520

uh then change the

1319

02:58:46,389 --> 02:58:39,840

canister and empty press over

1320

02:58:49,510 --> 02:58:47,990

well it'll be a little crowded in here

1321

02:59:05,429 --> 02:58:49,520

for a while

1322

02:59:05,439 --> 02:59:20,550

there went something

1323

02:59:46,469 --> 02:59:22,230

looked like a portable life support

1324

02:59:46,479 --> 03:00:12,309

there comes the other place

1325

03:00:17,910 --> 03:00:14,550

the experiments console

1326

03:00:20,070 --> 03:00:17,920

reports the seismometer recorded