



1
00:00:25,130 --> 00:00:22,970
December 6 1972 eugene cernan

2
00:00:28,250 --> 00:00:25,140
veteran astronaut and commander of

3
00:00:30,320 --> 00:00:28,260
Apollo 17 it would be the last Apollo

4
00:00:34,600 --> 00:00:30,330
astronaut to stand on the surface of the

5
00:00:40,009 --> 00:00:37,310
dr. Harrison Schmitt better known as

6
00:00:50,840 --> 00:00:40,019
Jack he would be the first geologist to

7
00:00:53,990 --> 00:00:50,850
set foot on an alien world Ronald Evans

8
00:00:56,090 --> 00:00:54,000
command module pilot he would remain in

9
00:00:58,100 --> 00:00:56,100
lunar orbit operating a battery of

10
00:01:04,310 --> 00:00:58,110
experiments that would take this last

11
00:01:06,710 --> 00:01:04,320
close look at the moon in the year 1675

12
00:01:08,960 --> 00:01:06,720
Sir Isaac Newton was asked by his fellow

13
00:01:11,630 --> 00:01:08,970

scientist Robert Hooke how he had

14

00:01:14,779 --> 00:01:11,640

accomplished so much if I have seen

15

00:01:38,050 --> 00:01:14,789

further Newton wrote it is by standing

16

00:01:45,340 --> 00:01:40,420

the engines will build up to a truck of

17

00:01:49,660 --> 00:01:45,350

7.6 million pounds we have a cut-off at

18

00:01:53,040 --> 00:01:49,670

minus 30 second his cutoff was automatic

19

00:01:55,390 --> 00:01:53,050

done by the sequencer one command

20

00:01:58,750 --> 00:01:55,400

pressurized yes for B stage was not

21

00:02:01,150 --> 00:01:58,760

given and despite the fact that it was

22

00:02:02,950 --> 00:02:01,160

going to be done manually the sequencer

23

00:02:04,990 --> 00:02:02,960

and the fact that said I didn't tell you

24

00:02:07,450 --> 00:02:05,000

to do it therefore you can't be doing it

25

00:02:11,290 --> 00:02:07,460

for 30 seconds that very properly

26
00:02:13,420 --> 00:02:11,300
stopped the operation most of the work

27
00:02:15,990 --> 00:02:13,430
was being done right off the firing room

28
00:02:18,670 --> 00:02:16,000
in the launch control center at Kennedy

29
00:02:20,020 --> 00:02:18,680
however there was a great deal of

30
00:02:22,840 --> 00:02:20,030
support from the Marshall Space Flight

31
00:02:25,330 --> 00:02:22,850
Center who had a comparable operational

32
00:02:28,420 --> 00:02:25,340
group working there with their

33
00:02:31,090 --> 00:02:28,430
contractors so we concluded that we were

34
00:03:06,790 --> 00:02:31,100
safe and we gave the word to jump route

35
00:03:20,890 --> 00:03:09,610
17 you said you are go for orbit go for

36
00:03:25,570 --> 00:03:23,199
after checking out the spacecraft in

37
00:03:30,430 --> 00:03:25,580
Earth orbit they burned out of orbit and

38
00:03:30,440 --> 00:03:35,850

we're in the middle of a snowstorm

39

00:03:41,020 --> 00:03:38,440

Ron Eben's at the controls of the

40

00:03:45,730 --> 00:03:41,030

command module America moved into dock

41

00:03:47,710 --> 00:03:45,740

with the lunar module Challenger they

42

00:03:50,350 --> 00:03:47,720

pulled challenger free of the Boosters

43

00:03:57,970 --> 00:03:50,360

third stage and continued the three-day

44

00:03:59,800 --> 00:03:57,980

Coast of the moon even as Cernan II

45

00:04:02,950 --> 00:03:59,810

Evans and Schmidt headed toward the moon

46

00:04:05,620 --> 00:04:02,960

directly below the Apollo 17 control

47

00:04:07,780 --> 00:04:05,630

room flight director Don puttin around

48

00:04:11,020 --> 00:04:07,790

his crew through a launch simulation for

49

00:04:13,270 --> 00:04:11,030

the first Skylab as you're probably well

50

00:04:14,140 --> 00:04:13,280

aware we are still working on other

51

00:04:16,479 --> 00:04:14,150

programs

52

00:04:19,690 --> 00:04:16,489

Skylab being the prime effort starting

53

00:04:22,030 --> 00:04:19,700

in the spring of next year we're also

54

00:04:22,750 --> 00:04:22,040

working on the cooperative mission with

55

00:04:25,990 --> 00:04:22,760

the Russians

56

00:04:28,420 --> 00:04:26,000

which will take place in 1975 and of

57

00:04:29,980 --> 00:04:28,430

course we've got quite a few of the

58

00:04:32,230 --> 00:04:29,990

flight control team as well as other

59

00:04:35,050 --> 00:04:32,240

center elements involved in the work on

60

00:04:35,530 --> 00:04:35,060

the shuttle so it's it's the start of a

61

00:04:39,280 --> 00:04:35,540

new era

62

00:04:41,710 --> 00:04:39,290

I hope Skylab of course will fly in the

63

00:04:44,050 --> 00:04:41,720

spring of next year with three men going

64

00:04:46,180 --> 00:04:44,060

up and spending 28 days and then two

65

00:04:48,610 --> 00:04:46,190

months later after they land we'll put

66

00:04:50,560 --> 00:04:48,620

three men up to 56 days they'll come

67

00:04:55,360 --> 00:04:50,570

down and thirty days later another three

68

00:04:57,730 --> 00:04:55,370

will go 56 days so a year of 73 calendar

69

00:05:01,350 --> 00:04:57,740

year will certainly be a busy one from a

70

00:05:07,390 --> 00:05:05,350

December 10th 1970 to America and

71

00:05:12,110 --> 00:05:07,400

Challenger went into orbit around the

72

00:05:20,970 --> 00:05:18,210

for the challenge ahead the next day

73

00:05:28,269 --> 00:05:20,980

December 11 Cernan and Schmitt entered

74

00:05:57,930 --> 00:05:31,399

she looks pretty an earth why did you do

75

00:05:57,940 --> 00:06:06,800

you're not clear

76
00:06:11,640 --> 00:06:09,360
with the command module in the distance

77
00:06:13,740 --> 00:06:11,650
they passed over their landing place a

78
00:06:16,770 --> 00:06:13,750
valley in an area of the moon called

79
00:06:18,960 --> 00:06:16,780
taurus littrow here they hope to find

80
00:06:40,159 --> 00:06:18,970
the youngest material yet sampled and

81
00:06:40,169 --> 00:08:12,610
okay

82
00:08:20,860 --> 00:08:14,470
that's super

83
00:08:43,280 --> 00:08:25,340
11 sunan Lane Smith the lunar module to

84
00:08:45,530 --> 00:08:43,290
begin their first EDA their first job

85
00:08:47,870 --> 00:08:45,540
was to unload equipment including their

86
00:09:01,460 --> 00:08:47,880
rover the electric car in which they

87
00:09:04,040 --> 00:09:01,470
would drive to the exploration sites as

88
00:09:06,020 --> 00:09:04,050

Cernan drove the equipment Laden rover

89

00:09:17,390 --> 00:09:06,030

Schmidt carried the scientific

90

00:09:19,730 --> 00:09:17,400

experiments package called Elsa in

91

00:09:22,130 --> 00:09:19,740

Houston scientists in the science

92

00:09:30,620 --> 00:09:22,140

support room watched correlating and

93

00:09:33,200 --> 00:09:30,630

directing their movements Schmidt set up

94

00:09:34,280 --> 00:09:33,210

the various experiments Cernan drilled a

95

00:09:36,889 --> 00:09:34,290

series of holes

96

00:10:23,919 --> 00:09:36,899

both to collect core samples and to

97

00:10:28,069 --> 00:10:26,449

yeah it's 29 minutes from now but

98

00:10:41,929 --> 00:10:28,079

remember they left this side a little

99

00:10:44,629 --> 00:10:41,939

bit late on the moon and on the earth

100

00:10:47,119 --> 00:10:44,639

they were fighting time now there are

101
00:10:50,090 --> 00:10:47,129
just so many hours of oxygen and water

102
00:11:00,919 --> 00:10:50,100
in the backpacks so many hours of life

103
00:11:02,809 --> 00:11:00,929
in the vacuum of the moon they're

104
00:11:06,279 --> 00:11:02,819
awfully they'll break the whole world

105
00:11:09,349 --> 00:11:06,289
before they'll break the cable this time

106
00:11:12,819 --> 00:11:09,359
with the alsep functioning they left the

107
00:11:15,169 --> 00:11:12,829
site for a shortened sampling traverse

108
00:11:17,359 --> 00:11:15,179
well many parts of the else upper

109
00:11:19,729 --> 00:11:17,369
functioning very well the heat flow

110
00:11:22,069 --> 00:11:19,739
experiment is working excellently it's

111
00:11:24,679 --> 00:11:22,079
transmitting back temperature data the

112
00:11:27,259 --> 00:11:24,689
cooling down is still cooling down from

113
00:11:29,449 --> 00:11:27,269

the drilling process and in a few hours

114

00:11:41,300 --> 00:11:29,459

they should be starting to get true heat

115

00:11:46,260 --> 00:11:43,710

it was time to head back to the

116

00:12:07,220 --> 00:11:46,270

Challenger activate experiments and get

117

00:12:09,690 --> 00:12:07,230

back inside as the astronauts rested

118

00:12:11,310 --> 00:12:09,700

Engineers in two nations were working

119

00:12:13,920 --> 00:12:11,320

out technical problems of the

120

00:12:20,630 --> 00:12:13,930

apollo-soyuz test program the first

121

00:12:27,630 --> 00:12:24,630

joint mission is to provide a compatible

122

00:12:29,190 --> 00:12:27,640

docking system and demonstrate do we

123

00:12:30,930 --> 00:12:29,200

have compatible operational procedures

124

00:12:33,960 --> 00:12:30,940

that were left to different countries

125

00:12:36,300 --> 00:12:33,970

dock in space I think more than added as

126

00:12:38,970 --> 00:12:36,310

a certainly a symbolic meaning of these

127

00:12:40,620 --> 00:12:38,980

two large powers learning to work

128

00:12:43,020 --> 00:12:40,630

together in space which I believe are

129

00:12:46,230 --> 00:12:43,030

the new seas of mankind a new frontiers

130

00:12:49,050 --> 00:12:46,240

and work out solutions the problems were

131

00:12:51,030 --> 00:12:49,060

in although we're very competitive we

132

00:12:52,500 --> 00:12:51,040

could still be cooperative and assist

133

00:13:06,650 --> 00:12:52,510

each other and I think that this Paolo

134

00:13:11,850 --> 00:13:09,090

they would have won tests before they

135

00:13:13,920 --> 00:13:11,860

got to work exploring the previous day

136

00:13:16,260 --> 00:13:13,930

they had broken a rear fender of the

137

00:13:19,950 --> 00:13:16,270

rover the dust thrown up was causing

138

00:13:22,050 --> 00:13:19,960

trouble Apollo 16 commander John Young

139

00:13:26,670 --> 00:13:22,060

had worked that night in a pressure suit

140

00:13:29,490 --> 00:13:26,680

on a way to fix the fender on the moon

141

00:13:31,560 --> 00:13:29,500

the astronauts put it together the

142

00:13:34,170 --> 00:13:31,570

fenders section formed from a lunar map

143

00:13:36,330 --> 00:13:34,180

molded with tape then held in place with

144

00:13:38,700 --> 00:13:36,340

clamps from the lunar module telescope

145

00:13:43,170 --> 00:13:38,710

it was a repair that would last the

146

00:13:48,130 --> 00:13:45,700

then Schmidt moved out to place one of

147

00:13:50,040 --> 00:13:48,140

several explosive packages which would

148

00:13:53,050 --> 00:13:50,050

be detonated after they left the moon

149

00:13:57,600 --> 00:13:53,060

mapping the lunar subsurface much as

150

00:14:02,050 --> 00:13:59,860

Cernan would pick him up in the rover

151

00:14:52,290 --> 00:14:02,060

for the drive to the first sight on this

152

00:14:59,020 --> 00:14:54,850

bottom of the core is not food is very

153

00:15:03,220 --> 00:14:59,030

jagged and fragmental like geez finished

154

00:15:11,300 --> 00:15:03,230

with the core - then we should be able

155

00:15:11,310 --> 00:15:25,150

Oh Jack Schmidt having a few problems

156

00:15:30,380 --> 00:15:27,920

they would sample several locations on

157

00:15:32,360 --> 00:15:30,390

this evap the men would cause more

158

00:16:16,790 --> 00:15:32,370

excitement than the find at the crater

159

00:16:19,730 --> 00:16:16,800

called I think it's the most exciting we

160

00:16:22,640 --> 00:16:19,740

will come across since the beginning of

161

00:16:24,350 --> 00:16:22,650

the photo program I believe that it's

162

00:16:41,240 --> 00:16:24,360

going to be the most rewarding of all

163

00:16:54,470 --> 00:16:41,250

the fine to do it no matter which what

164

00:16:58,600 --> 00:16:54,480

you want to do they gotta leave it a

165

00:17:04,970 --> 00:17:01,400

they had to leave shorty crater and it's

166

00:17:07,069 --> 00:17:04,980

orange soil and push on time the enemy

167

00:17:18,039 --> 00:17:07,079

of the lunar investigator on the moon

168

00:17:22,970 --> 00:17:20,259

the precious minutes had run out

169

00:17:39,380 --> 00:17:22,980

returned to the rover drive back to the

170

00:17:41,629 --> 00:17:39,390

Challenger closeout EBA to the last

171

00:17:43,310 --> 00:17:41,639

Apollo crew worked on the moon the

172

00:17:47,210 --> 00:17:43,320

engineers on earth prepared for

173

00:17:51,250 --> 00:17:47,220

tomorrow's day in space I have a model

174

00:17:55,509 --> 00:17:51,260

here of the space shuttle as you see it

175

00:17:58,610 --> 00:17:55,519

resembles a delta wing airplane on top of

176

00:18:02,060 --> 00:17:58,620

propulsion system system is going to be

177

00:18:04,820 --> 00:18:02,070

designed so all the costly parts are

178

00:18:06,830 --> 00:18:04,830

reusable now that we're beginning to

179

00:18:09,259 --> 00:18:06,840

understand space we're beginning to

180

00:18:12,799 --> 00:18:09,269

understand the potential economic

181

00:18:15,139 --> 00:18:12,809

potential the need is to bring a larger

182

00:18:17,600 --> 00:18:15,149

array of instrumentation up in the space

183

00:18:35,419 --> 00:18:17,610

need to provide man with a real

184

00:18:38,269 --> 00:18:35,429

capability to work up in space December

185

00:18:40,610 --> 00:18:38,279

13th yesterday they had explored the

186

00:18:44,649 --> 00:18:40,620

south end of the valley today they would

187

00:18:48,820 --> 00:18:46,839

is the last time you don't really go to

188

00:19:10,259 --> 00:18:48,830

bat for us something we know you'll do

189

00:19:16,690 --> 00:19:13,450

Apollo science will continue and I'm

190

00:19:19,499 --> 00:19:16,700

sure my to the mysteries will continue

191

00:19:23,639 --> 00:19:19,509

to come out for many years to come

192

00:19:27,820 --> 00:19:23,649

but of this I'm sure man has learned

193

00:19:30,759 --> 00:19:27,830

that space is his to explore and man

194

00:19:38,589 --> 00:19:30,769

will return to space to explore to the

195

00:19:40,359 --> 00:19:38,599

moon and beyond I'm firmly convinced

196

00:19:43,269 --> 00:19:40,369

that it's changed the whole basis of

197

00:19:46,509 --> 00:19:43,279

philosophy including religion I don't

198

00:19:49,269 --> 00:19:46,519

think that we've begun to see what the

199

00:19:51,999 --> 00:19:49,279

era of spaceflight really is that we've

200

00:19:53,919 --> 00:19:52,009

got a long way to go and I hope I'm

201
00:19:55,930 --> 00:19:53,929
living when we leave this solar system

202
00:20:16,380 --> 00:19:55,940
on a venture to find another planet

203
00:20:22,090 --> 00:20:20,020
once more it was time gene cernan and

204
00:20:28,180 --> 00:20:22,100
Jack Schmidt returned to the rover to

205
00:20:29,980 --> 00:20:28,190
drive back to Challenger but before they

206
00:21:11,890 --> 00:20:29,990
left the surface of the Moon there would

207
00:21:32,450 --> 00:21:11,900
be a brief and a final word from the

208
00:21:36,900 --> 00:21:35,100
while Cernan and Schmitt closed out the

209
00:21:39,720 --> 00:21:36,910
last moon walk and prepared for

210
00:21:43,620 --> 00:21:39,730
tomorrow's liftoff Ron Evans worked on

211
00:21:45,960 --> 00:21:43,630
in orbit photograph observe describe

212
00:21:48,090 --> 00:21:45,970
keep operating the cameras and

213
00:21:51,150 --> 00:21:48,100

experiments in the science experiments

214

00:21:58,500 --> 00:21:51,160

Bay in orbit as on the surface the

215

00:22:00,270 --> 00:21:58,510

seconds are precious how is the

216

00:22:03,000 --> 00:22:00,280

experiment working now working extremely

217

00:22:04,910 --> 00:22:03,010

well we're looking for subsurface

218

00:22:14,910 --> 00:22:04,920

geologic structure in the broad sense

219

00:22:16,650 --> 00:22:14,920

layering for example radiometer measures

220

00:22:19,730 --> 00:22:16,660

the temperature of the moon and makes a

221

00:22:23,010 --> 00:22:19,740

an accurate map of the temperature

222

00:22:34,970 --> 00:22:23,020

beneath the spacecraft it is working

223

00:22:41,700 --> 00:22:38,730

the experiment itself games the hardware

224

00:22:43,350 --> 00:22:41,710

is working perfectly precisely the way

225

00:22:46,350 --> 00:22:43,360

it was supposed to work everything is

226

00:22:48,810 --> 00:22:46,360

functioned properly an important part of

227

00:23:23,049 --> 00:22:48,820

the experiment is it requires the man to

228

00:23:28,730 --> 00:23:25,850

on the descent stage of Challenger

229

00:23:31,899 --> 00:23:28,740

forever on the moon they left a plank

230

00:23:35,870 --> 00:23:31,909

reading here man completed his first

231

00:23:39,799 --> 00:23:35,880

explorations of the moon December 1972

232

00:23:42,710 --> 00:23:39,809

ad may the spirit of peace in which we

233

00:23:50,029 --> 00:23:42,720

came be reflected in the lives of all

234

00:23:51,590 --> 00:23:50,039

mankind one revolution later Cernan and

235

00:24:09,620 --> 00:23:51,600

Schmitt caught up with Evans and

236

00:24:32,579 --> 00:24:09,630

prepared for docking December 16 burn

237

00:24:55,529 --> 00:24:36,399

December 17 170 thousand miles from

238

00:25:00,639 --> 00:24:58,419

Evans was retrieving film canisters from

239

00:25:03,519 --> 00:25:00,649

the two cameras and the lunar sounding

240

00:25:11,319 --> 00:25:03,529

radar data vital to the scientists on

241

00:25:13,059 --> 00:25:11,329

earth before he got back inside Evans

242

00:25:19,709 --> 00:25:13,069

took a last look at the crescent earth

243

00:25:24,609 --> 00:25:21,430

December 19

244

00:25:27,279 --> 00:25:24,619

they rode inside a 5,000 degree fireball

245

00:25:30,579 --> 00:25:27,289

through the atmosphere of Earth stowed

246

00:26:53,590 --> 00:25:30,589

in a spacecraft almost 250 pounds of the

247

00:27:00,500 --> 00:26:57,050

this closes a golden chapter in the age

248

00:27:02,630 --> 00:27:00,510

of space exploration in a way it brings

249

00:27:06,470 --> 00:27:02,640

the close to what has been a very

250

00:27:09,350 --> 00:27:06,480

romantic error in space exploration but

251

00:27:20,450 --> 00:27:09,360

I want to make this very strong the book

252

00:27:25,070 --> 00:27:20,460

is still being written the moon a lonely

253

00:27:28,490 --> 00:27:25,080

world in the absence of man but here we

254

00:27:33,080 --> 00:27:28,500

have left our mark a signature attesting

255

00:27:36,110 --> 00:27:33,090

a legacy to future generations we stood

256

00:27:44,280 --> 00:27:36,120

on the shoulders of giants and touched