



1  
00:00:00,260 --> 00:00:09,830  
liftoff

2  
00:00:17,910 --> 00:00:15,420  
we were in Cold War that was darn close

3  
00:00:20,400 --> 00:00:17,920  
to hot war with the Russians they had

4  
00:00:22,080 --> 00:00:20,410  
been launching some rockets and ours too

5  
00:00:24,750 --> 00:00:22,090  
often had been blowing up on the lunch

6  
00:00:28,470 --> 00:00:24,760  
bag and that was sort of the background

7  
00:00:30,599 --> 00:00:28,480  
of what happened in in 57 when they sent

8  
00:00:33,630 --> 00:00:30,609  
up spudnick right there i think we all

9  
00:00:36,780 --> 00:00:33,640  
inwardly resolved that one go left it

10  
00:00:38,460 --> 00:00:36,790  
will do something about it that's

11  
00:00:41,040 --> 00:00:38,470  
something would be the National

12  
00:00:43,020 --> 00:00:41,050  
Aeronautics and Space Administration in

13  
00:00:45,060 --> 00:00:43,030

a little more than a decade the people

14

00:00:47,399 --> 00:00:45,070

of NASA would devise the methods and

15

00:00:50,539 --> 00:00:47,409

build the machines to send satellites to

16

00:00:53,100 --> 00:00:50,549

faraway worlds and land man on the moon

17

00:00:56,579 --> 00:00:53,110

explore one had science instruments on

18

00:01:02,160 --> 00:00:56,589

and so is really marks the first use of

19

00:01:04,020 --> 00:01:02,170

space for scientific exploration we have

20

00:01:07,190 --> 00:01:04,030

one of the most challenging assignments

21

00:01:09,719 --> 00:01:07,200

that has ever been given to modern man

22

00:01:15,820 --> 00:01:09,729

we will be preparing for the day when

23

00:01:21,920 --> 00:01:19,310

alan shepard's flight was a fantastic

24

00:01:24,530 --> 00:01:21,930

moment in the history of the NASA I

25

00:01:27,290 --> 00:01:24,540

think back on that and I watch him come

26  
00:01:30,830 --> 00:01:27,300  
out of that van on the redstone pad and

27  
00:01:34,040 --> 00:01:30,840  
look up at that rocket in that silver

28  
00:01:41,450 --> 00:01:34,050  
suit he had on wondering himself what

29  
00:01:43,880 --> 00:01:41,460  
the hell he was doing there this nation

30  
00:01:46,520 --> 00:01:43,890  
should commit itself to achieving the

31  
00:01:49,280 --> 00:01:46,530  
goal before this decade is out of

32  
00:01:51,530 --> 00:01:49,290  
landing a man on the moon and returning

33  
00:01:53,870 --> 00:01:51,540  
him safely to the earth that was all

34  
00:01:56,330 --> 00:01:53,880  
heady stuff and we were all you know go

35  
00:01:58,280 --> 00:01:56,340  
go man go some of the doctors were

36  
00:02:00,230 --> 00:01:58,290  
concerned for instance that when you're

37  
00:02:02,420 --> 00:02:00,240  
in zero-g for a while for several hours

38  
00:02:13,070 --> 00:02:02,430

you're afraid your eyes might change

39

00:02:17,240 --> 00:02:13,080

shape it truly was the age of aquarius

40

00:02:20,840 --> 00:02:17,250

in that 60s the mood around us was

41

00:02:23,600 --> 00:02:20,850

always electric the press revered the

42

00:02:26,509 --> 00:02:23,610

astronauts and it revered those of us in

43

00:02:28,460 --> 00:02:26,519

the front of the program communications

44

00:02:32,210 --> 00:02:28,470

are lots of course cable to beer and a

45

00:02:34,340 --> 00:02:32,220

lot of other neat things have happened

46

00:02:37,250 --> 00:02:34,350

as a result of that technology push

47

00:02:40,009 --> 00:02:37,260

there's the drop before it returns to

48

00:02:42,500 --> 00:02:40,019

earth again the x-15 may fly some 60

49

00:02:44,360 --> 00:02:42,510

miles straight up at nearly 4,000 miles

50

00:02:46,430 --> 00:02:44,370

per hour the country was trying to build

51  
00:02:48,110 --> 00:02:46,440  
a supersonic transport at least to do

52  
00:02:51,229 --> 00:02:48,120  
some research and build some prototypes

53  
00:02:53,120 --> 00:02:51,239  
so by trying to study the flow fields

54  
00:02:54,920 --> 00:02:53,130  
about these vehicles trying to compute

55  
00:02:57,170 --> 00:02:54,930  
the sonic booms and their propagation to

56  
00:03:00,200 --> 00:02:57,180  
the ground was a very interesting and

57  
00:03:11,270 --> 00:03:07,820  
one liftoff Gemini was the program

58  
00:03:14,240 --> 00:03:11,280  
between mercury the single seater in

59  
00:03:16,760 --> 00:03:14,250  
Earth orbit and Apollo the three seater

60  
00:03:21,490 --> 00:03:16,770  
all the way to the moon Kevin e12

61  
00:03:25,220 --> 00:03:21,500  
Houston Capcom alleviate beautiful job

62  
00:03:29,570 --> 00:03:25,230  
the fire on the pad was a traumatic

63  
00:03:32,180 --> 00:03:29,580

event they ripped us apart be perfectly

64

00:03:34,730 --> 00:03:32,190

honest with you it was a terrible day

65

00:03:36,290 --> 00:03:34,740

five weeks later as the backup crew we

66

00:03:39,050 --> 00:03:36,300

inherited the first manned apollo

67

00:03:40,340 --> 00:03:39,060

mission which turned out the Apollo 7 so

68

00:03:42,440 --> 00:03:40,350

we were quite proud of the fact that

69

00:03:45,050 --> 00:03:42,450

we've had a triumph out of a disaster

70

00:03:48,470 --> 00:03:45,060

the first time we flew a crew on the big

71

00:03:50,090 --> 00:03:48,480

Saturn 5 we sent him to the moon pen

72

00:03:55,850 --> 00:03:50,100

orbit not just just laying around the

73

00:03:57,590 --> 00:03:55,860

back very bold decision hello car I just

74

00:04:00,500 --> 00:03:57,600

thought there were so many unknowns that

75

00:04:03,530 --> 00:04:00,510

I would have given us about a 50-50

76

00:04:07,010 --> 00:04:03,540

chance of being the first flight to land

77

00:04:11,000 --> 00:04:07,020

and return someone safely okay engine

78

00:04:14,690 --> 00:04:11,010

stop we copy you down eagle and gaudy

79

00:04:18,050 --> 00:04:14,700

days here eagle has landed I think it

80

00:04:19,700 --> 00:04:18,060

was the biggest event from an aviation

81

00:04:21,560 --> 00:04:19,710

point of view and probably from a

82

00:04:24,500 --> 00:04:21,570

scientific point of view that happened

83

00:04:34,839 --> 00:04:24,510

in 20th century at one small step for

84

00:04:40,989 --> 00:04:38,199

ok yeah that Apollo here supposed to be

85

00:04:43,869 --> 00:04:40,999

looking out the act so we are vetting

86

00:04:46,689 --> 00:04:43,879

shopping that series of events started

87

00:04:48,939 --> 00:04:46,699

the saga of Apollo 13 the trust that

88

00:04:51,820 --> 00:04:48,949

existed between crew and ground was

89

00:04:54,879 --> 00:04:51,830

absolute because it takes trust to make

90

00:04:57,639 --> 00:04:54,889

split-second decisions the whole family

91

00:05:06,579 --> 00:04:57,649

bought out almost from the base to the

92

00:05:08,859 --> 00:05:06,589

agent and welcome on the successful

93

00:05:10,719 --> 00:05:08,869

return to Earth aboard Apollo 13 was the

94

00:05:14,169 --> 00:05:10,729

culmination of the efforts by a host of

95

00:05:16,029 --> 00:05:14,179

people who simply refused to give up it

96

00:05:19,239 --> 00:05:16,039

was an accomplishment of human ingenuity

97

00:05:21,399 --> 00:05:19,249

and tenacity the people of NASA would

98

00:05:24,699 --> 00:05:21,409

harness the spirit in pursuit of space

99

00:05:26,859 --> 00:05:24,709

exploration beyond our wildest dreams we

100

00:05:29,409 --> 00:05:26,869

learn about other worlds and other solar

101  
00:05:33,999 --> 00:05:29,419  
systems and power missions could explore

102  
00:05:41,499 --> 00:05:38,200  
ah ah Charlie's best for home come on

103  
00:05:43,059 --> 00:05:41,509  
out here give me a phone we not only did

104  
00:05:46,119 --> 00:05:43,069  
a lot of work on the room we had a good

105  
00:05:48,909 --> 00:05:46,129  
time pretty happy city hopped over here

106  
00:05:51,219 --> 00:05:48,919  
and do you know you're only gonna come

107  
00:05:53,019 --> 00:05:51,229  
that way once in your life it's gotta be

108  
00:06:05,039 --> 00:05:53,029  
one of most proud moments of my life I

109  
00:06:12,310 --> 00:06:09,939  
give us three summers makes you think

110  
00:06:12,320 --> 00:06:16,060  
sunny

111  
00:06:22,700 --> 00:06:19,580  
we saw the fragments around Skylab go

112  
00:06:25,070 --> 00:06:22,710  
over us and I thought oh brother there's

113  
00:06:29,210 --> 00:06:25,080

been an accident in the Skylab launch

114

00:06:31,670 --> 00:06:29,220

and Jack Liao's m'a was the best EV a

115

00:06:34,070 --> 00:06:31,680

guy that I've ever met lo and behold he

116

00:06:35,510 --> 00:06:34,080

goes out there and rules around with it

117

00:06:38,050 --> 00:06:35,520

a while puts it all together and it

118

00:06:40,820 --> 00:06:38,060

worked great and he went on to a brim

119

00:06:43,370 --> 00:06:40,830

scientific discovery and gave us some

120

00:06:51,379 --> 00:06:43,380

forward momentum in the science that

121

00:06:54,820 --> 00:06:51,389

continues right now till today let me

122

00:06:58,010 --> 00:06:54,830

call to express my very great admiration

123

00:07:02,320 --> 00:06:58,020

for your hard work your total dedication

124

00:07:05,810 --> 00:07:02,330

in preparing for this first joint flight

125

00:07:08,840 --> 00:07:05,820

Mars showed seasonal variations that

126  
00:07:10,340 --> 00:07:08,850  
suggested something was alive and I

127  
00:07:13,460 --> 00:07:10,350  
think that was the basis for creating

128  
00:07:17,300 --> 00:07:13,470  
Viking when we got down and found out

129  
00:07:19,250 --> 00:07:17,310  
how dry and arid and barren the place

130  
00:07:21,740 --> 00:07:19,260  
really was Taemin's a bit of a surprise

131  
00:07:23,390 --> 00:07:21,750  
when we flew by Neptune people were

132  
00:07:25,969 --> 00:07:23,400  
standing in line at night at

133  
00:07:27,770 --> 00:07:25,979  
planetariums in order to be able to see

134  
00:07:40,370 --> 00:07:27,780  
the images when Voyager was flying by

135  
00:07:44,129 --> 00:07:40,380  
these worlds or we've gone for main

136  
00:07:44,139 --> 00:08:12,809  
the shuttle has cleared the tower

137  
00:08:16,390 --> 00:08:14,740  
the fact that I was going to be the

138  
00:08:20,529 --> 00:08:16,400

first American woman to go into space

139

00:08:24,730 --> 00:08:20,539

carried huge expectations along with it

140

00:08:26,529 --> 00:08:24,740

it wasn't from me desire to be the first

141

00:08:28,270 --> 00:08:26,539

African American in space because I

142

00:08:32,680 --> 00:08:28,280

figured being the number two that would

143

00:08:38,659 --> 00:08:34,930

risk is something we have to just really

144

00:08:40,880 --> 00:08:38,669

consider as part of our life especially

145

00:08:42,380 --> 00:08:40,890

in exploration you know the ones that

146

00:08:44,720 --> 00:08:42,390

we've lost were probably the first ones

147

00:08:49,830 --> 00:08:44,730

to tell you keep pressing on don't stop

148

00:08:49,840 --> 00:08:56,460

two phases discovery clears the tower

149

00:09:01,930 --> 00:08:59,770

discovery go for Hubble release Hubble

150

00:09:04,840 --> 00:09:01,940

is one of the most phenomenal things

151

00:09:07,210 --> 00:09:04,850

we've ever done in space it really has

152

00:09:09,370 --> 00:09:07,220

changed and the data that we get from

153

00:09:11,710 --> 00:09:09,380

Hubble will continue to change the way

154

00:09:13,960 --> 00:09:11,720

we think about ourselves about the

155

00:09:15,940 --> 00:09:13,970

universe and our place in it NASA

156

00:09:17,290 --> 00:09:15,950

especially Goddard was the place where I

157

00:09:20,560 --> 00:09:17,300

could carry out the dreams that I had

158

00:09:21,910 --> 00:09:20,570

which were to push forward an experiment

159

00:09:23,680 --> 00:09:21,920

that would measure the Big Bang

160

00:09:26,320 --> 00:09:23,690

radiation better than anyone had ever

161

00:09:28,450 --> 00:09:26,330

tried before nowadays we're discovering

162

00:09:30,640 --> 00:09:28,460

what is the universe really like and

163

00:09:32,940 --> 00:09:30,650

it's totally magnificent one can only be

164

00:09:35,740 --> 00:09:32,950

inspired an awestruck by what we find

165

00:09:37,750 --> 00:09:35,750

instead alas we have capture I was

166

00:09:39,820 --> 00:09:37,760

extremely fortunate that I was able to

167

00:09:41,230 --> 00:09:39,830

be part of the shuttle-mir program it's

168

00:09:42,880 --> 00:09:41,240

a challenge for the Russians it was a

169

00:09:44,680 --> 00:09:42,890

challenge for the Americans but

170

00:09:50,329 --> 00:09:44,690

everybody wanted to work together to

171

00:09:55,519 --> 00:09:53,210

we have initial contact initial contact

172

00:09:56,840 --> 00:09:55,529

of the Soyuz capsule with the expedition

173

00:10:00,670 --> 00:09:56,850

one crew to the International Space

174

00:10:03,199 --> 00:10:00,680

Station we are on a true spaceship now

175

00:10:06,949 --> 00:10:03,209

making her way above or any earthly

176

00:10:10,340 --> 00:10:06,959

boundary spaceflight is one of the areas

177

00:10:13,040 --> 00:10:10,350

where we face risk on a daily basis and

178

00:10:15,619 --> 00:10:13,050

in the process of doing this we develop

179

00:10:18,470 --> 00:10:15,629

the new technologies new techniques the

180

00:10:21,530 --> 00:10:18,480

new inventions we make discovery liftoff

181

00:10:24,350 --> 00:10:21,540

of the Delta rocket with opportunity a

182

00:10:26,420 --> 00:10:24,360

chance to explore and unlock the secrets

183

00:10:28,249 --> 00:10:26,430

of our neighboring planet when we look

184

00:10:30,350 --> 00:10:28,259

at other worlds and we look through the

185

00:10:32,239 --> 00:10:30,360

eyes of a robot at a frozen desert we

186

00:10:36,069 --> 00:10:32,249

appreciate our own world so much more

187

00:10:41,210 --> 00:10:39,350

when you arrived on the International

188

00:10:43,699 --> 00:10:41,220

Space Station there's a little bit of a

189

00:10:46,220 --> 00:10:43,709

shock fat room it was like wow we're

190

00:10:48,829 --> 00:10:46,230

really here man this is gonna be a long

191

00:10:50,480 --> 00:10:48,839

visit we are overcoming these cultural

192

00:10:53,509 --> 00:10:50,490

obstacles and bringing these people

193

00:10:55,699 --> 00:10:53,519

together with this common goal I think

194

00:10:58,040 --> 00:10:55,709

is one of the most significant aspects

195

00:11:01,639 --> 00:10:58,050

of the International Space Station I

196

00:11:05,119 --> 00:11:01,649

believe that human beings should expand

197

00:11:09,379 --> 00:11:05,129

into space by doing that we can learn

198

00:11:11,900 --> 00:11:09,389

about ourselves and make the society and

199

00:11:15,949 --> 00:11:11,910

the world to better you will give NASA

200

00:11:19,040 --> 00:11:15,959

new focus envision for future

201  
00:11:22,819 --> 00:11:19,050  
exploration to gain a new foothold on

202  
00:11:25,819 --> 00:11:22,829  
the moon and prepare for new journeys to

203  
00:11:27,799 --> 00:11:25,829  
the worlds beyond our own I'd like to

204  
00:11:30,470 --> 00:11:27,809  
see the mission to Mars they

205  
00:11:32,360 --> 00:11:30,480  
accomplished something I did some work

206  
00:11:34,639 --> 00:11:32,370  
on and making the proposed that we made

207  
00:11:37,579 --> 00:11:34,649  
I think there's a consensus that going

208  
00:11:39,739 --> 00:11:37,589  
to Mars is it worthy objective and I'd

209  
00:11:42,259 --> 00:11:39,749  
like to see that accomplished perhaps at

210  
00:11:44,299 --> 00:11:42,269  
one time in the distant past the at

211  
00:11:45,799 --> 00:11:44,309  
least some basic life-forms existed on

212  
00:11:47,960 --> 00:11:45,809  
Mars and perhaps could again in the

213  
00:11:49,400 --> 00:11:47,970

future these things mean a lot to me I

214

00:11:50,989 --> 00:11:49,410

think space is important and I think

215

00:11:53,210 --> 00:11:50,999

America should continue to be in the

216

00:11:56,329 --> 00:11:53,220

forefront of space exploration we as a

217

00:11:58,939 --> 00:11:56,339

civilization must explore that's who we

218

00:12:01,220 --> 00:11:58,949

are intrinsically a to the human race is

219

00:12:02,280 --> 00:12:01,230

we're explorers no matter where you go

220

00:12:05,850 --> 00:12:02,290

in the world

221

00:12:09,360 --> 00:12:05,860

old people know what the letters in a sa

222

00:12:12,150 --> 00:12:09,370

stand for they say NASA and they say it

223

00:12:14,730 --> 00:12:12,160

with recognition that you know itself

224

00:12:16,590 --> 00:12:14,740

tells you that NASA stands for something

225

00:12:19,470 --> 00:12:16,600

in the world not just in America but

226

00:12:20,999 --> 00:12:19,480

across the world this 50th anniversary

227

00:12:23,579 --> 00:12:21,009

is the time to look back on an

228

00:12:25,050 --> 00:12:23,589

astounding record of achievement as

229

00:12:27,449 --> 00:12:25,060

submissions have expanding our

230

00:12:31,319 --> 00:12:27,459

understanding of the universe our solar

231

00:12:35,400 --> 00:12:31,329

system indeed our own planet in ways we

232

00:12:37,290 --> 00:12:35,410

couldn't even imagine in 1958 but more

233

00:12:39,990 --> 00:12:37,300

importantly this is a time to look

234

00:12:42,749 --> 00:12:40,000

forward every question we have answered

235

00:12:46,050 --> 00:12:42,759

begs a new question every mystery

236

00:12:49,439 --> 00:12:46,060

explained reveals another as human

237

00:12:53,670 --> 00:12:49,449

beings we must explore we must learn we

238

00:12:55,829 --> 00:12:53,680

must ask why and how today as nasa moves

239

00:12:57,590 --> 00:12:55,839

forward with new missions the goal

240

00:13:00,960 --> 00:12:57,600

remains the same as it was a

241

00:13:03,660 --> 00:13:00,970

half-century ago to pioneer the frontier