1
00:00:16,710 --> 00:00:14,150
robert collier commissioned a trophy in

2
00:00:18,950 --> 00:00:16,720
1910 to encourage the american aviation

3
00:00:22,070 --> 00:00:18,960
community to strive for excellence in

4
00:00:24,230 --> 00:00:22,080
aeronautic development

5
00:00:26,230 --> 00:00:24,240
since that time the robert j collier

6
00:00:28,230 --> 00:00:26,240
trophy has been presented in honor of

7
00:00:32,549 --> 00:00:28,240
the greatest achievements in aeronautics

8
00:00:36,549 --> 00:00:34,310
the list of award winners has come to

9
00:00:39,110 --> 00:00:36,559
represent a veritable timeline of

10
00:01:46,469 --> 00:00:39,120
aviation as many of the awardees mark

11
00:01:50,389 --> 00:01:48,310
building a spacecraft takes just about

12
00:01:52,550 --> 00:01:50,399
everything technical in the encyclopedia

13
00:01:54,310 --> 00:01:52,560

you have to build a little microcosm out

14
00:01:56,389 --> 00:01:54,320
there and everything that it takes to be

15
00:01:58,789 --> 00:01:56,399
a functioning human being on the ground

16
00:02:00,389 --> 00:01:58,799
you have to replicate out there

17
00:02:02,069 --> 00:02:00,399
when you decide to do it internationally

18
00:02:03,910 --> 00:02:02,079
then it truly does become a

19
00:02:05,749 --> 00:02:03,920
representation of the earth from which

20
00:02:07,749 --> 00:02:05,759
we come and so we bring all of our

21
00:02:09,910 --> 00:02:07,759
problems requiring all the solutions

22
00:02:12,710 --> 00:02:09,920
with us whether it's environmental or

23
00:02:15,510 --> 00:02:12,720
food or more political or financial

24
00:02:17,030 --> 00:02:15,520
we all have to face it so this becomes a

25
00:02:19,990 --> 00:02:17,040
little laboratory a testing ground where

26
00:02:25,110 --> 00:02:22,390
it involves so many different cultures

27
00:02:27,430 --> 00:02:25,120
not just people culture but space

28
00:02:28,949 --> 00:02:27,440
cultures and they're all very different

29
00:02:31,110 --> 00:02:28,959
and so that

30
00:02:33,509 --> 00:02:31,120
the biggest challenge is is getting

31
00:02:37,190 --> 00:02:33,519
everybody to appreciate and understand

32
00:02:38,949 --> 00:02:37,200
how these all work together technically

33
00:02:40,309 --> 00:02:38,959
we're all very smart people you know

34
00:02:43,030 --> 00:02:40,319
physics is physics and we're going to

35
00:02:44,790 --> 00:02:43,040
solve problems but getting everybody to

36
00:02:46,949 --> 00:02:44,800
or to overcome the boundaries of the

37
00:02:51,750 --> 00:02:46,959
cultures both people and and space

38
00:02:55,430 --> 00:02:53,030

as you look through history there are

39
00:02:57,750 --> 00:02:55,440
many great achievements

40
00:02:58,869 --> 00:02:57,760
that you could point to in

41
00:03:01,589 --> 00:02:58,879
terms of

42
00:03:03,030 --> 00:03:01,599
stretching technology of of the time and

43
00:03:04,869 --> 00:03:03,040
of the moment

44
00:03:06,390 --> 00:03:04,879
got all the wonders of the world that we

45
00:03:08,390 --> 00:03:06,400
know of in history

46
00:03:10,070 --> 00:03:08,400
both in ancient history and modern

47
00:03:13,350 --> 00:03:10,080
history

48
00:03:16,149 --> 00:03:13,360
i think the iss is the greatest

49
00:03:18,470 --> 00:03:16,159
human endeavor ever in the history of

50
00:03:19,270 --> 00:03:18,480
the world in terms of complexity

51
00:03:21,110 --> 00:03:19,280
uh

52
00:03:22,630 --> 00:03:21,120
and the challenges that are brought with

53
00:03:24,630 --> 00:03:22,640
that complexity

54
00:03:26,470 --> 00:03:24,640
but today we find history is important

55
00:03:28,070 --> 00:03:26,480
to telling us where we've been and where

56
00:03:29,110 --> 00:03:28,080
we're going

57
00:03:32,710 --> 00:03:29,120
we don't

58
00:03:34,949 --> 00:03:32,720
very basic exploration things we did

59
00:03:36,550 --> 00:03:34,959
to get to the west coast of this country

60
00:03:39,030 --> 00:03:36,560
are similar things you have to prepare

61
00:03:40,789 --> 00:03:39,040
for in order to travel to mars i mean

62
00:03:42,470 --> 00:03:40,799
it's all about logistics and having a

63
00:03:44,550 --> 00:03:42,480

vehicle that will get you there safely

64
00:03:47,190 --> 00:03:44,560
and and understanding the risk

65
00:03:49,190 --> 00:03:47,200
associated with it that's that's in our

66
00:03:53,990 --> 00:03:49,200
history and that's something that kids

67
00:03:58,550 --> 00:03:56,390
the biggest shock i would say the

68
00:04:01,429 --> 00:03:58,560
biggest impact that i had

69
00:04:04,149 --> 00:04:01,439
during my flight is the first time i

70
00:04:05,910 --> 00:04:04,159
looked out the window of the orbiter and

71
00:04:09,030 --> 00:04:05,920
saw the space station

72
00:04:11,750 --> 00:04:09,040
it was huge it was huge and shiny and

73
00:04:13,030 --> 00:04:11,760
beautiful looking at it and knowing that

74
00:04:19,030 --> 00:04:13,040
a man-made

75
00:04:23,030 --> 00:04:21,270
the iss comes in sort of two flavors

76
00:04:25,110 --> 00:04:23,040
there's the technological achievement of

77
00:04:27,430 --> 00:04:25,120
building it at all and then there's the

78
00:04:29,510 --> 00:04:27,440
scientific achievements that will start

79
00:04:30,950 --> 00:04:29,520
flowing faster as the laboratories are

80
00:04:32,950 --> 00:04:30,960
activated and so the engineering

81
00:04:34,150 --> 00:04:32,960
challenge of bootstrapping up from parts

82
00:04:36,870 --> 00:04:34,160
that are

83
00:04:39,110 --> 00:04:36,880
not capable of surviving on their own

84
00:04:41,270 --> 00:04:39,120
having to care for them on the launch

85
00:04:43,670 --> 00:04:41,280
having to integrate them in to activate

86
00:04:45,830 --> 00:04:43,680
them and keep the viable space station

87
00:04:47,270 --> 00:04:45,840
running in all stages of development

88
00:04:50,790 --> 00:04:47,280

it's one of the hardest technical things

89
00:04:55,590 --> 00:04:53,189
to look out the window from the space

90
00:04:58,070 --> 00:04:55,600
station space shuttle or any spacecraft

91
00:05:00,550 --> 00:04:58,080
and view the earth is just a

92
00:05:01,830 --> 00:05:00,560
magnificent experience to see all of the

93
00:05:04,390 --> 00:05:01,840
details

94
00:05:07,270 --> 00:05:04,400
of the planet's surface the the planet

95
00:05:08,469 --> 00:05:07,280
uh is vibrant when you look at it i mean

96
00:05:10,950 --> 00:05:08,479
that we

97
00:05:13,110 --> 00:05:10,960
are endeavoring in search for life

98
00:05:16,390 --> 00:05:13,120
elsewhere it's very obvious that there's

99
00:05:17,749 --> 00:05:16,400
life on earth it speaks of a vibrancy of

100
00:05:20,230 --> 00:05:17,759
life

101
00:05:21,909 --> 00:05:20,240
when i talk to folks all over i

102
00:05:23,749 --> 00:05:21,919
mentioned that none of these parts have

103
00:05:26,150 --> 00:05:23,759
been put together on earth and i think

104
00:05:27,590 --> 00:05:26,160
they all stop and go wow that's pretty

105
00:05:30,070 --> 00:05:27,600
incredible because when they get up to

106
00:05:32,070 --> 00:05:30,080
space they all magically fit together

107
00:05:34,230 --> 00:05:32,080
which means the cooperation on the

108
00:05:37,270 --> 00:05:34,240
engineering and technical side is really

109
00:05:43,590 --> 00:05:41,909
the iss role now is uh learning about

110
00:05:45,430 --> 00:05:43,600
all those things that we thought we were

111
00:05:47,510 --> 00:05:45,440
smart enough to design around but turns

112
00:05:48,870 --> 00:05:47,520
out maybe there was still a thing or two

113
00:05:51,189 --> 00:05:48,880

we needed to learn

114
00:05:53,110 --> 00:05:51,199
i think the biggest lessons learned from

115
00:05:55,590 --> 00:05:53,120
us are the ones where

116
00:05:57,510 --> 00:05:55,600
we find out why things didn't work

117
00:06:04,230 --> 00:05:57,520
exactly the way we planned on them

118
00:06:09,110 --> 00:06:07,110
i think we are at the verge of an era

119
00:06:10,790 --> 00:06:09,120
where not only cosmonauts will have

120
00:06:24,950 --> 00:06:10,800
access to space

121
00:06:29,029 --> 00:06:26,950
during the first part of space station

122
00:06:31,350 --> 00:06:29,039
construction we were able to have a

123
00:06:33,510 --> 00:06:31,360
strong science program now that we're

124
00:06:35,350 --> 00:06:33,520
finished building the space station

125
00:06:37,110 --> 00:06:35,360
we are going to be able to accomplish

126
00:06:39,830 --> 00:06:37,120
the dreams the initial dreams that we

127
00:06:42,150 --> 00:06:39,840
had for everything that we can do

128
00:06:45,270 --> 00:06:42,160
by having zero gravity by having a

129
00:06:45,990 --> 00:06:45,280
vibration free environment by by looking

130
00:06:50,870 --> 00:06:46,000
at

131
00:06:53,110 --> 00:06:50,880
protein crystals all these things will

132
00:06:55,670 --> 00:06:53,120
grow in space and we will get so much

133
00:06:59,830 --> 00:06:55,680
more science bang for the buck now that

134
00:07:04,390 --> 00:07:01,589
the children all over the planet can see

135
00:07:07,110 --> 00:07:04,400
it grow can read about its progress

136
00:07:09,990 --> 00:07:07,120
and they will come to realize that this

137
00:07:12,469 --> 00:07:10,000
is the time when the human species left

138
00:07:14,390 --> 00:07:12,479

the planet for good when we became a

139
00:07:16,469 --> 00:07:14,400
space faring species

140
00:07:18,150 --> 00:07:16,479
looking out into space

141
00:07:21,350 --> 00:07:18,160
you feel like you're

142
00:07:24,309 --> 00:07:21,360
our planet is just one of the very very

143
00:07:26,070 --> 00:07:24,319
many small little pieces that are part

144
00:07:27,589 --> 00:07:26,080
of the whole universe and so you sort of

145
00:07:30,150 --> 00:07:27,599
feel like

146
00:07:32,710 --> 00:07:30,160
even just part of earth is just a little

147
00:07:34,710 --> 00:07:32,720
citizen of our universe the iss broke

148
00:07:36,710 --> 00:07:34,720
the frontier on how to live and work in

149
00:07:38,550 --> 00:07:36,720
space over a long period of time and to

150
00:07:40,950 --> 00:07:38,560
sustain that operation from the ground

151
00:07:44,230 --> 00:07:40,960
over a long period of time

152
00:07:46,070 --> 00:07:44,240
and i firmly believe that the iss is in

153
00:07:47,990 --> 00:07:46,080
part anyway setting

154
00:07:49,990 --> 00:07:48,000
the the framework and the foundation to

155
00:07:52,309 --> 00:07:50,000
be able to do that for future

156
00:07:54,390 --> 00:07:52,319
exploration

157
00:07:57,189 --> 00:07:54,400
this is really the key to the future to

158
00:07:58,629 --> 00:07:57,199
learn how to operate internationally to

159
00:08:00,390 --> 00:07:58,639
make those trades to make those

160
00:08:02,629 --> 00:08:00,400
decisions to do the best thing not just

161
00:08:03,749 --> 00:08:02,639
for one country but for the overall good

162
00:08:06,309 --> 00:08:03,759
of all the partners that are

163
00:08:07,830 --> 00:08:06,319

participating

164
00:08:10,150 --> 00:08:07,840
that will be the real challenge as we

165
00:08:11,589 --> 00:08:10,160
move forward to more dynamic and more

166
00:08:13,510 --> 00:08:11,599
challenging environments even beyond

167
00:08:15,110 --> 00:08:13,520
space station i think that when people

168
00:08:18,150 --> 00:08:15,120
look back at

169
00:08:20,390 --> 00:08:18,160
this era of space exploration they'll

170
00:08:22,469 --> 00:08:20,400
realize that's the time that people look

171
00:08:24,309 --> 00:08:22,479
back at the planet and said

172
00:08:25,589 --> 00:08:24,319
i'm from that planet and not from that

173
00:08:28,070 --> 00:08:25,599
country

174
00:08:30,309 --> 00:08:28,080
as carl sagan said when we get to mars

175
00:08:32,070 --> 00:08:30,319
earth will be a pale blue dot and you

176
00:08:33,269 --> 00:08:32,080
won't really care which side of it you

177
00:08:34,469 --> 00:08:33,279
came from

178
00:08:36,790 --> 00:08:34,479
i think people will remember this