1
00:00:30,540 --> 00:00:15,830
foreign

2
00:02:24,280 --> 00:00:41,290
[Music]

3
00:02:45,710 --> 00:02:24,290
oh

4
00:03:17,350 --> 00:03:00,330
[Music]

5
00:03:17,360 --> 00:03:25,220
you've seen

6
00:04:26,390 --> 00:03:50,000
[Music]

7
00:04:28,550 --> 00:04:26,400
kirk shireman iss program manager here

8
00:04:31,510 --> 00:04:28,560
at the baikonur cosmodrome kirk

9
00:04:33,830 --> 00:04:31,520
another soyuz ready to go another trio

10
00:04:35,830 --> 00:04:33,840
of in this case very very experienced

11
00:04:37,749 --> 00:04:35,840
crew members headed for the station

12
00:04:39,430 --> 00:04:37,759
how will that experience match the pace

13
00:04:40,950 --> 00:04:39,440

of work that will greet them and their

14
00:04:42,870 --> 00:04:40,960
other crewmates on board

15
00:04:46,390 --> 00:04:42,880
well this will be a great time for the

16
00:04:50,230 --> 00:04:46,400
usos for uh for nasa and and uh and the

17
00:04:51,990 --> 00:04:50,240
usos partners esa csa jaxa because we'll

18
00:04:53,990 --> 00:04:52,000
have four crew members

19
00:04:56,070 --> 00:04:54,000
working on the u.s segment so there's a

20
00:04:57,590 --> 00:04:56,080
tremendous amount of work to be done a

21
00:04:59,590 --> 00:04:57,600
lot of research going on right now we

22
00:05:02,469 --> 00:04:59,600
have a spacex flight coming up here in

23
00:05:04,230 --> 00:05:02,479
less than a month so a tremendous amount

24
00:05:05,670 --> 00:05:04,240
of work coming forward and we'll be glad

25
00:05:07,029 --> 00:05:05,680
to have four u.s crew members for the

26
00:05:08,950 --> 00:05:07,039
first time ever on board the

27
00:05:10,870 --> 00:05:08,960
international space station

28
00:05:12,710 --> 00:05:10,880
and in terms of crew complement what is

29
00:05:14,710 --> 00:05:12,720
the importance overall

30
00:05:16,790 --> 00:05:14,720
of restoring the station to a full

31
00:05:18,950 --> 00:05:16,800
six-person capability

32
00:05:21,350 --> 00:05:18,960
yeah well the station was built for six

33
00:05:22,870 --> 00:05:21,360
actually really seven crew and

34
00:05:24,310 --> 00:05:22,880
our tradition for a number of years has

35
00:05:26,469 --> 00:05:24,320
been to have six people on board so

36
00:05:28,230 --> 00:05:26,479
we're really happy to be up to the

37
00:05:29,430 --> 00:05:28,240
normal compliment and we're looking

38
00:05:31,029 --> 00:05:29,440

forward to commercial crew here in the

39
00:05:33,670 --> 00:05:31,039
not-too-distant future where we'll step

40
00:05:34,469 --> 00:05:33,680
up to a total of seven uh crew members

41
00:05:36,070 --> 00:05:34,479
so

42
00:05:38,469 --> 00:05:36,080
big things in store for us here over the

43
00:05:40,629 --> 00:05:38,479
next couple of years i'm always struck

44
00:05:42,629 --> 00:05:40,639
by the fact that when a multi-national

45
00:05:44,390 --> 00:05:42,639
crew launches it just shows the whole

46
00:05:46,870 --> 00:05:44,400
face of what the station program is all

47
00:05:49,510 --> 00:05:46,880
about how important in terms of the

48
00:05:51,350 --> 00:05:49,520
legacy of the space station is that

49
00:05:52,790 --> 00:05:51,360
uh you know it's one of the great things

50
00:05:54,070 --> 00:05:52,800
about this program is people from all

51
00:05:57,110 --> 00:05:54,080
over the world

52
00:05:58,950 --> 00:05:57,120
are participating in the iss uh this

53
00:06:01,029 --> 00:05:58,960
flight here we'll have a u.s kurumba a

54
00:06:03,830 --> 00:06:01,039
criminal from italy a criminal from

55
00:06:05,830 --> 00:06:03,840
russia and so that crew is a microcosm

56
00:06:07,749 --> 00:06:05,840
of that but not only from all the

57
00:06:09,990 --> 00:06:07,759
partners have we had crew members but

58
00:06:11,670 --> 00:06:10,000
the researchers have touched over 90

59
00:06:13,670 --> 00:06:11,680
countries around the world so it really

60
00:06:15,430 --> 00:06:13,680
is a global endeavor and you kind of see

61
00:06:17,430 --> 00:06:15,440
that in the faces of the people here

62
00:06:18,870 --> 00:06:17,440
ready to support this launch

63
00:06:20,629 --> 00:06:18,880

can't let you get away without a

64
00:06:22,629 --> 00:06:20,639
question about peggy whitson who's in

65
00:06:24,309 --> 00:06:22,639
the home stretch of her longer than

66
00:06:25,590 --> 00:06:24,319
expected mission

67
00:06:27,350 --> 00:06:25,600
talk a little bit about the

68
00:06:29,590 --> 00:06:27,360
accomplishments and what she has brought

69
00:06:31,029 --> 00:06:29,600
to the station during almost 10 months

70
00:06:33,270 --> 00:06:31,039
in orbit sure well peggy is an

71
00:06:35,189 --> 00:06:33,280
exceptional individual so peggy peggy

72
00:06:37,270 --> 00:06:35,199
for her recreation she does more

73
00:06:38,390 --> 00:06:37,280
research so she really has set the bar

74
00:06:40,309 --> 00:06:38,400
in terms of

75
00:06:42,309 --> 00:06:40,319
the utilization that's been conducted on

76
00:06:44,230 --> 00:06:42,319
board the space station even today when

77
00:06:46,150 --> 00:06:44,240
she and jack fisher are the only two u.s

78
00:06:48,390 --> 00:06:46,160
crew members still a tremendous amount

79
00:06:50,870 --> 00:06:48,400
of research going on board the us

80
00:06:52,550 --> 00:06:50,880
segment of the space station so great uh

81
00:06:54,150 --> 00:06:52,560
great accomplishment she's had up there

82
00:06:56,790 --> 00:06:54,160
and of course she's basically written a

83
00:06:59,270 --> 00:06:56,800
book not only for for women

84
00:07:00,870 --> 00:06:59,280
but for for all u.s astronauts it's uh

85
00:07:02,230 --> 00:07:00,880
it's really quite the accomplishment

86
00:07:05,350 --> 00:07:02,240
she's going to be in the record books

87
00:07:07,029 --> 00:07:05,360
for for decades to come

88
00:07:10,070 --> 00:07:07,039

so frank devin you're the head of the

89
00:07:11,990 --> 00:07:10,080
european astronaut center in cologne

90
00:07:13,909 --> 00:07:12,000
how do you feel when you're here

91
00:07:15,990 --> 00:07:13,919
as the boss of the astronaut and also

92
00:07:18,790 --> 00:07:16,000
the former astronaut of course it's

93
00:07:20,870 --> 00:07:18,800
always very exciting to be at baikonur

94
00:07:23,110 --> 00:07:20,880
especially when you see the rocket so

95
00:07:24,870 --> 00:07:23,120
close by because we know that there is

96
00:07:27,430 --> 00:07:24,880
one more european astronaut that's going

97
00:07:29,430 --> 00:07:27,440
to fly to space to bring further science

98
00:07:31,749 --> 00:07:29,440
technology exploration

99
00:07:34,230 --> 00:07:31,759
to our european countries and

100
00:07:36,230 --> 00:07:34,240
of course we had just tomma pesque from

101
00:07:38,469 --> 00:07:36,240
france coming back we have now paolo

102
00:07:40,790 --> 00:07:38,479
nespoli from italy next year we have

103
00:07:43,029 --> 00:07:40,800
alexander gerst preparing so we're

104
00:07:45,189 --> 00:07:43,039
really having this european exploration

105
00:07:47,589 --> 00:07:45,199
program so it's really great to be here

106
00:07:49,670 --> 00:07:47,599
and we get a great experience of this

107
00:07:51,830 --> 00:07:49,680
long duration mission i mean it it's a

108
00:07:54,550 --> 00:07:51,840
this was a big shift i think with your

109
00:07:57,189 --> 00:07:54,560
first flight remember when the uh well

110
00:07:58,869 --> 00:07:57,199
now nine years ago and this has been

111
00:08:01,029 --> 00:07:58,879
rolling and rolling

112
00:08:03,110 --> 00:08:01,039
uh yes indeed with all these long

113
00:08:05,670 --> 00:08:03,120

duration space flights of course we are

114
00:08:07,270 --> 00:08:05,680
getting more and more expertise uh our

115
00:08:09,350 --> 00:08:07,280
astronauts of course but not only our

116
00:08:11,510 --> 00:08:09,360
astronauts also the center the people

117
00:08:13,430 --> 00:08:11,520
that work around the ground controllers

118
00:08:15,510 --> 00:08:13,440
our control center so

119
00:08:17,510 --> 00:08:15,520
we're really building up human space

120
00:08:19,510 --> 00:08:17,520
flight expertise in europe and this is

121
00:08:21,189 --> 00:08:19,520
of course the step that we need to

122
00:08:23,990 --> 00:08:21,199
prepare the future where we're going to

123
00:08:25,749 --> 00:08:24,000
explore further beyond leo maybe go to

124
00:08:27,990 --> 00:08:25,759
the moon back and then of course

125
00:08:30,070 --> 00:08:28,000
eventually the century to mars

126
00:08:32,310 --> 00:08:30,080
it's really incredible that we are still

127
00:08:34,790 --> 00:08:32,320
here on the the same launch pad where

128
00:08:36,949 --> 00:08:34,800
sputnik was launched and afterwards yuri

129
00:08:39,430 --> 00:08:36,959
gagarin was launched from this very

130
00:08:41,190 --> 00:08:39,440
launch pad so we are now 60 years

131
00:08:43,029 --> 00:08:41,200
further we of course are not in

132
00:08:44,550 --> 00:08:43,039
competition anymore we do everything in

133
00:08:47,269 --> 00:08:44,560
international cooperation with our

134
00:08:49,590 --> 00:08:47,279
partners from nasa from roscosmos from

135
00:08:51,990 --> 00:08:49,600
jaxa from canada and this is another

136
00:08:53,829 --> 00:08:52,000
great aspect of human space flight it

137
00:08:55,190 --> 00:08:53,839
means that even though we see that there

138
00:08:57,269 --> 00:08:55,200

are a lot of conflicts in the world

139
00:08:59,350 --> 00:08:57,279
today we still manage to work together

140
00:09:01,190 --> 00:08:59,360
and to fly our astronauts and cosmonauts

141
00:09:02,710 --> 00:09:01,200
together tomorrow or the day after

142
00:09:04,870 --> 00:09:02,720
tomorrow we will see a russian an

143
00:09:06,470 --> 00:09:04,880
american and an italian astronaut fly

144
00:09:08,949 --> 00:09:06,480
together to space what can be more

145
00:09:10,710 --> 00:09:08,959
beautiful in a time like this

146
00:09:13,990 --> 00:09:10,720
bill gerstenmaier nasa's associate

147
00:09:17,190 --> 00:09:14,000
administrator for human exploration bill

148
00:09:19,190 --> 00:09:17,200
this pad saw the birth of the space

149
00:09:21,829 --> 00:09:19,200
program with the launching of sputniks

150
00:09:24,230 --> 00:09:21,839
almost 60 years ago your thoughts on how

151
00:09:25,829 --> 00:09:24,240
far the planet the human race has come

152
00:09:27,829 --> 00:09:25,839
in six decades

153
00:09:29,670 --> 00:09:27,839
it's it's really amazing you see the

154
00:09:32,790 --> 00:09:29,680
patch on the side of the rocket

155
00:09:34,550 --> 00:09:32,800
celebrating the 60th anniversary of

156
00:09:36,790 --> 00:09:34,560
the sputnik launch from this very launch

157
00:09:38,230 --> 00:09:36,800
pad and it's absolutely amazing to think

158
00:09:40,310 --> 00:09:38,240
a simple

159
00:09:42,710 --> 00:09:40,320
easy little satellite was launched from

160
00:09:44,630 --> 00:09:42,720
this pad 60 years ago and here we're

161
00:09:46,710 --> 00:09:44,640
getting ready to go launch three crew to

162
00:09:48,470 --> 00:09:46,720
the most complex engineering marvel ever

163
00:09:50,710 --> 00:09:48,480

built in space the international space

164
00:09:53,829 --> 00:09:50,720
station i mean what a tremendous

165
00:09:55,350 --> 00:09:53,839
transition from that period of time when

166
00:09:58,070 --> 00:09:55,360
we didn't know much about this the

167
00:10:00,310 --> 00:09:58,080
sputnik we we were you know it was a

168
00:10:02,310 --> 00:10:00,320
very different time politically and now

169
00:10:04,470 --> 00:10:02,320
today we're cooperating with you know

170
00:10:06,710 --> 00:10:04,480
with the launch of a russian an italian

171
00:10:08,550 --> 00:10:06,720
an american to an international space

172
00:10:10,790 --> 00:10:08,560
station from that same launch pad that

173
00:10:11,910 --> 00:10:10,800
was kind of closed in secrecy when it

174
00:10:13,990 --> 00:10:11,920
launched

175
00:10:15,990 --> 00:10:14,000
the sputnik 60 years ago just the

176
00:10:18,069 --> 00:10:16,000
transition is phenomenal when you think

177
00:10:20,230 --> 00:10:18,079
about it and to see the dedication and

178
00:10:22,230 --> 00:10:20,240
the spirit of the people here today i'm

179
00:10:24,230 --> 00:10:22,240
sure that same dedication and spirit was

180
00:10:26,069 --> 00:10:24,240
with the people 60 years ago here on

181
00:10:28,230 --> 00:10:26,079
this launch pad

182
00:10:29,990 --> 00:10:28,240
what is the significance of this launch

183
00:10:32,150 --> 00:10:30,000
in terms of not only restoring the

184
00:10:34,230 --> 00:10:32,160
station to its normal complement of six

185
00:10:36,310 --> 00:10:34,240
crew members but to match the pace of

186
00:10:38,230 --> 00:10:36,320
the work that lies ahead yeah i think

187
00:10:40,389 --> 00:10:38,240
it's really exciting we've got a lot of

188
00:10:42,150 --> 00:10:40,399

research going on board station and to

189
00:10:43,829 --> 00:10:42,160
get the additional crew members up there

190
00:10:45,430 --> 00:10:43,839
to get the additional hands and eyes and

191
00:10:46,870 --> 00:10:45,440
brains to actually go do these

192
00:10:49,030 --> 00:10:46,880
experiments is going to be just a

193
00:10:51,030 --> 00:10:49,040
tremendous benefit to us so i'm really

194
00:10:52,949 --> 00:10:51,040
looking forward to these through three

195
00:10:55,190 --> 00:10:52,959
crew getting on board station and

196
00:10:56,949 --> 00:10:55,200
beginning to dive into that research so

197
00:10:58,630 --> 00:10:56,959
we haven't held back too much the crew

198
00:11:00,230 --> 00:10:58,640
has been tremendously effective on orbit

199
00:11:02,230 --> 00:11:00,240
but to see this big bounce that will

200
00:11:03,910 --> 00:11:02,240
come when we get three more will be very

201
00:11:06,310 --> 00:11:03,920
exciting and it's good to see station

202
00:11:09,590 --> 00:11:06,320
back at a full complement of six crew

203
00:11:11,990 --> 00:11:09,600
and when a fourth u.s orbital segment

204
00:11:14,389 --> 00:11:12,000
crew member gets up there in september

205
00:11:17,269 --> 00:11:14,399
so much the better right yeah again

206
00:11:18,710 --> 00:11:17,279
you know it it's not intuitive but you

207
00:11:21,509 --> 00:11:18,720
add an additional crew member and

208
00:11:23,269 --> 00:11:21,519
effectively we get a 50 increase in crew

209
00:11:25,110 --> 00:11:23,279
performance and time on orbit for

210
00:11:26,550 --> 00:11:25,120
research and and that's enabled because

211
00:11:28,069 --> 00:11:26,560
the crew member doesn't really have to

212
00:11:29,509 --> 00:11:28,079
do any maintenance or any other

213
00:11:31,350 --> 00:11:29,519

activities on the station they can be

214
00:11:34,230 --> 00:11:31,360
pretty much dedicated just

215
00:11:35,910 --> 00:11:34,240
to research activities so i think again

216
00:11:37,750 --> 00:11:35,920
what's amazing about station is the

217
00:11:39,750 --> 00:11:37,760
hardware is phenomenal the research

218
00:11:41,430 --> 00:11:39,760
equipment that's on orbit is just state

219
00:11:43,110 --> 00:11:41,440
of the art and now we're going to have

220
00:11:44,790 --> 00:11:43,120
the hands and eyes and ears that can

221
00:11:46,870 --> 00:11:44,800
operate that state-of-the-art research

222
00:11:48,230 --> 00:11:46,880
equipment to see that teaming of that

223
00:11:50,150 --> 00:11:48,240
state-of-the-art equipment with the

224
00:11:51,670 --> 00:11:50,160
state-of-the-art humans it's going to be

225
00:11:52,949 --> 00:11:51,680
unbelievable the amount of research that

226
00:11:55,430 --> 00:11:52,959
comes out of space station for the

227
00:11:57,350 --> 00:11:55,440
remainder of this year and finally we're

228
00:11:59,030 --> 00:11:57,360
in the final weeks of peggy whitson's

229
00:12:00,389 --> 00:11:59,040
long duration mission almost 10 months

230
00:12:03,030 --> 00:12:00,399
on the station

231
00:12:04,949 --> 00:12:03,040
what is her legacy going to be not just

232
00:12:07,030 --> 00:12:04,959
for the time she's been on orbit since

233
00:12:09,190 --> 00:12:07,040
last november but over the past two

234
00:12:11,190 --> 00:12:09,200
decades that she's flown yeah again i

235
00:12:13,190 --> 00:12:11,200
think peggy is a very special person and

236
00:12:15,590 --> 00:12:13,200
the fact that she began her life as a

237
00:12:17,990 --> 00:12:15,600
researcher in the human uh

238
00:12:19,350 --> 00:12:18,000

research activities you know looking at

239
00:12:21,110 --> 00:12:19,360
bone loss

240
00:12:22,949 --> 00:12:21,120
and that kind of research so to start

241
00:12:24,710 --> 00:12:22,959
with that science background and then

242
00:12:26,150 --> 00:12:24,720
get a chance to become an astronaut and

243
00:12:28,470 --> 00:12:26,160
actually go fly

244
00:12:30,389 --> 00:12:28,480
is just phenomenal and peggy is an

245
00:12:32,230 --> 00:12:30,399
inspiration to all of us she really

246
00:12:35,110 --> 00:12:32,240
challenges the ground team she gets work

247
00:12:37,509 --> 00:12:35,120
done much faster she keeps the on orbit

248
00:12:39,509 --> 00:12:37,519
team marching to a good

249
00:12:41,269 --> 00:12:39,519
pace and a good cadence just a

250
00:12:43,829 --> 00:12:41,279
tremendous individual so to see that

251
00:12:45,910 --> 00:12:43,839
same dedication she she exhibited when

252
00:12:47,509 --> 00:12:45,920
she was a basic researcher to now as an

253
00:12:50,069 --> 00:12:47,519
astronaut is just phenomenal so she's

254
00:12:51,590 --> 00:12:50,079
just had an amazing career you know i

255
00:12:53,590 --> 00:12:51,600
look at all our crew members they're all

256
00:12:55,430 --> 00:12:53,600
special in their own way but but peggy

257
00:12:57,030 --> 00:12:55,440
just has that unique aspect of going

258
00:12:59,350 --> 00:12:57,040
from the researcher all the way to an

259
00:13:01,350 --> 00:12:59,360
astronaut today

260
00:13:03,590 --> 00:13:01,360
so sasha arjaba you're the wife of

261
00:13:05,350 --> 00:13:03,600
fellow nespoli i thought it feel to be

262
00:13:07,509 --> 00:13:05,360
here next to the rocket that will take

263
00:13:09,190 --> 00:13:07,519

him into space tomorrow it is definitely

264
00:13:14,790 --> 00:13:09,200
very exciting

265
00:13:17,829 --> 00:13:14,800
bittersweet because we've come through

266
00:13:20,389 --> 00:13:17,839
along training and we really enjoyed it

267
00:13:22,310 --> 00:13:20,399
and we know that this is the last flight

268
00:13:24,470 --> 00:13:22,320
for paolo

269
00:13:26,949 --> 00:13:24,480
but definitely i'm very happy to be

270
00:13:28,550 --> 00:13:26,959
there again i'm also happy to be here

271
00:13:30,310 --> 00:13:28,560
with the kids

272
00:13:31,430 --> 00:13:30,320
because last time

273
00:13:32,870 --> 00:13:31,440
our

274
00:13:35,430 --> 00:13:32,880
elder daughter was

275
00:13:37,990 --> 00:13:35,440
very young and she stayed home

276
00:13:40,710 --> 00:13:38,000
today we came with two kids

277
00:13:42,470 --> 00:13:40,720
three old max and

278
00:13:43,590 --> 00:13:42,480
eddie is also here

279
00:13:46,790 --> 00:13:43,600
and