
NASA
SPACESTATION
LIVE

1
00:00:08,790 --> 00:00:06,470
the fairly veteran crew getting ready to

2
00:00:10,629 --> 00:00:08,800
lift off tomorrow among them nasa

3
00:00:13,270 --> 00:00:10,639
astronaut tim kopra who's going to be

4
00:00:14,870 --> 00:00:13,280
making his second trip into space i

5
00:00:17,230 --> 00:00:14,880
previously flew to the international

6
00:00:20,870 --> 00:00:17,240
space station on shuttle mission

7
00:00:22,870 --> 00:00:20,880
sts-127 back in july of 2009 and spent

8
00:00:24,470 --> 00:00:22,880
two months on board as a crew member of

9
00:00:25,990 --> 00:00:24,480
expedition 20.

10
00:00:28,150 --> 00:00:26,000
just before he left the gagarin

11
00:00:29,109 --> 00:00:28,160
cosmonaut training center in star city

12
00:00:31,349 --> 00:00:29,119
russia

13
00:00:33,510 --> 00:00:31,359

late last month uh headed down to

14
00:00:35,990 --> 00:00:33,520
baikonur in order to prepare for his

15
00:00:37,590 --> 00:00:36,000
first launch on a soyuz spacecraft he

16
00:00:40,229 --> 00:00:37,600
talked about the upcoming mission with

17
00:00:41,910 --> 00:00:40,239
my colleague pat ryan saying he was very

18
00:00:43,750 --> 00:00:41,920
confident and the crew is ready for its

19
00:00:45,910 --> 00:00:43,760
six-month mission

20
00:00:47,510 --> 00:00:45,920
we are a hundred percent ready we've

21
00:00:49,910 --> 00:00:47,520
spent a lot of time getting ready for

22
00:00:51,430 --> 00:00:49,920
this mission and uh and frankly there's

23
00:00:53,590 --> 00:00:51,440
the two two and a half years of training

24
00:00:55,189 --> 00:00:53,600
for this mission but uh there's lots of

25
00:00:57,590 --> 00:00:55,199
training that we do even before this in

26
00:00:58,950 --> 00:00:57,600
terms of space station systems learning

27
00:01:00,389 --> 00:00:58,960
how to do space walks and do the

28
00:01:02,869 --> 00:01:00,399
robotics operations so it's a

29
00:01:04,630 --> 00:01:02,879
culmination of a lot of hard work

30
00:01:08,149 --> 00:01:04,640
was it much different from the training

31
00:01:13,350 --> 00:01:10,469
it's quite a bit different you know

32
00:01:16,070 --> 00:01:13,360
in lots of respects one is that uh over

33
00:01:18,870 --> 00:01:16,080
time we've gotten much much better in uh

34
00:01:21,109 --> 00:01:18,880
training crew members for space station

35
00:01:23,190 --> 00:01:21,119
in every respect in terms of the systems

36
00:01:25,749 --> 00:01:23,200
on board and finding the right level of

37
00:01:27,590 --> 00:01:25,759
training that we need but also in terms

38
00:01:29,190 --> 00:01:27,600

of how efficient and how effective we

39
00:01:30,710 --> 00:01:29,200
are in training for the emergencies that

40
00:01:32,710 --> 00:01:30,720
could happen on board we've done a great

41
00:01:34,630 --> 00:01:32,720
job of that that's a big difference the

42
00:01:36,710 --> 00:01:34,640
second big difference is the fact that

43
00:01:39,190 --> 00:01:36,720
uh we're going up and down on soyuz now

44
00:01:40,630 --> 00:01:39,200
and last time i was a space station crew

45
00:01:43,510 --> 00:01:40,640
member while i was on board and was

46
00:01:45,590 --> 00:01:43,520
trained for uh emergency descent whereas

47
00:01:47,510 --> 00:01:45,600
this time we go up and down i have a

48
00:01:49,350 --> 00:01:47,520
very active role as a left-seeder in the

49
00:01:51,510 --> 00:01:49,360
soyuz and so i've spent probably half of

50
00:01:53,830 --> 00:01:51,520
my time here over the last couple years

51
00:01:56,069 --> 00:01:53,840
uh being able to to work closely with

52
00:01:58,389 --> 00:01:56,079
yuri malenchenko and tim peake as uh the

53
00:01:59,910 --> 00:01:58,399
left cedar and uh it's much different

54
00:02:02,630 --> 00:01:59,920
it's a much higher bar in terms of the

55
00:02:04,069 --> 00:02:02,640
expectations but uh but we're ready

56
00:02:06,709 --> 00:02:04,079
i was going to ask whether or not you're

57
00:02:09,029 --> 00:02:06,719
excited about having a different ride to

58
00:02:11,589 --> 00:02:09,039
the station this time

59
00:02:14,470 --> 00:02:11,599
i am really excited you know i i truly

60
00:02:16,229 --> 00:02:14,480
respect the soyuz space vehicle it's is

61
00:02:17,990 --> 00:02:16,239
a very safe vehicle it protects us

62
00:02:19,350 --> 00:02:18,000
through the entire flight envelope and

63
00:02:21,190 --> 00:02:19,360

it hasn't always been that way it's not

64
00:02:23,750 --> 00:02:21,200
the way the shuttle was you know we know

65
00:02:26,470 --> 00:02:23,760
that uh even if we have anomalies going

66
00:02:29,350 --> 00:02:26,480
uphill to space station that we'll be in

67
00:02:31,190 --> 00:02:29,360
a safe place and so uh yeah it's a

68
00:02:33,190 --> 00:02:31,200
pretty exciting thing

69
00:02:35,589 --> 00:02:33,200
talk me through what happens then on on

70
00:02:39,350 --> 00:02:35,599
soyuz launch day what is it like for you

71
00:02:44,070 --> 00:02:42,470
it's a very methodical approach and um

72
00:02:46,390 --> 00:02:44,080
the russian space agency has been doing

73
00:02:48,710 --> 00:02:46,400
this for a very long time and uh we

74
00:02:50,470 --> 00:02:48,720
experienced this as the backup crew

75
00:02:52,229 --> 00:02:50,480
watching the prime crew go through the

76
00:02:54,229 --> 00:02:52,239
flow all the way up and to get into the

77
00:02:55,670 --> 00:02:54,239
vehicle and then launching and so

78
00:02:57,270 --> 00:02:55,680
having watched that essentially it's

79
00:02:59,430 --> 00:02:57,280
like being a dress rehearsal for us

80
00:03:01,110 --> 00:02:59,440
having gone through the backup flow and

81
00:03:03,030 --> 00:03:01,120
what that entails is on the day of

82
00:03:05,830 --> 00:03:03,040
launch they wake us up you have a

83
00:03:07,430 --> 00:03:05,840
breakfast you go to a suit up room you

84
00:03:09,430 --> 00:03:07,440
make sure that your suit is pressure

85
00:03:11,670 --> 00:03:09,440
tight you get into the vehicle you do

86
00:03:14,390 --> 00:03:11,680
your preparational checks they close the

87
00:03:16,630 --> 00:03:14,400
hatch and then you launch and so

88
00:03:18,869 --> 00:03:16,640

it's nice having gone through that and

89
00:03:20,470 --> 00:03:18,879
it's very methodical and well thought

90
00:03:22,630 --> 00:03:20,480
out plenty of time

91
00:03:24,869 --> 00:03:22,640
and uh we'll be looking forward to that

92
00:03:27,350 --> 00:03:24,879
that uh ignition

93
00:03:29,030 --> 00:03:27,360
as you look ahead to to your time on

94
00:03:31,270 --> 00:03:29,040
orbit uh is there anything special

95
00:03:35,670 --> 00:03:31,280
you're looking forward to a space walks

96
00:03:40,550 --> 00:03:37,670
you know uh we may do some spacewalks on

97
00:03:43,270 --> 00:03:40,560
board you never 100 know until you get

98
00:03:45,350 --> 00:03:43,280
there because there's lots of dynamics

99
00:03:48,070 --> 00:03:45,360
with human spaceflight there's different

100
00:03:50,070 --> 00:03:48,080
cargo vehicles come up and uh equipment

101
00:03:51,990 --> 00:03:50,080
on board that's outside tends to break

102
00:03:53,589 --> 00:03:52,000
on occasion that needs to get repaired

103
00:03:55,910 --> 00:03:53,599
if we have the opportunity to do a

104
00:03:57,110 --> 00:03:55,920
spacewalk i think it's icing on the cake

105
00:03:58,949 --> 00:03:57,120
for a mission

106
00:04:00,229 --> 00:03:58,959
but you know our primary job in addition

107
00:04:02,229 --> 00:04:00,239
to that maintenance is to be the

108
00:04:04,229 --> 00:04:02,239
scientist on board we're a scientist

109
00:04:07,429 --> 00:04:04,239
we're a lab technician and sometimes

110
00:04:08,789 --> 00:04:07,439
we're the the experiment and uh i think

111
00:04:10,789 --> 00:04:08,799
all of us feel very honored to be able

112
00:04:12,710 --> 00:04:10,799
to participate in that

113
00:04:15,190 --> 00:04:12,720

are you planning to

114
00:04:16,789 --> 00:04:15,200
to to share the mission on social media

115
00:04:18,949 --> 00:04:16,799
channels that that some crewmates have

116
00:04:20,629 --> 00:04:18,959
been using

117
00:04:23,350 --> 00:04:20,639
absolutely i look forward to be able to

118
00:04:25,430 --> 00:04:23,360
send my best pictures down on twitter

119
00:04:27,189 --> 00:04:25,440
and uh i hope that i get better and

120
00:04:29,590 --> 00:04:27,199
better with my photography and so i can

121
00:04:32,230 --> 00:04:29,600
really send some great photos it's a

122
00:04:34,310 --> 00:04:32,240
it's not just a

123
00:04:36,469 --> 00:04:34,320
an honor but maybe even a responsibility

124
00:04:39,350 --> 00:04:36,479
i think to share our experience on board

125
00:04:41,270 --> 00:04:39,360
and i noticed last time

126
00:04:43,110 --> 00:04:41,280
i liked taking pictures before i like

127
00:04:45,510 --> 00:04:43,120
photography but i became quite the

128
00:04:47,749 --> 00:04:45,520
enthusiast because the subject matter is

129
00:04:49,270 --> 00:04:47,759
just tremendous both the internal

130
00:04:50,710 --> 00:04:49,280
portion of space station but also our

131
00:04:52,230 --> 00:04:50,720
beautiful planet so i look forward to

132
00:04:53,189 --> 00:04:52,240
taking those pictures and sending them

133
00:04:55,830 --> 00:04:53,199
down

134
00:04:58,070 --> 00:04:55,840
you're going to be seven months or more

135
00:05:00,629 --> 00:04:58,080
before you get back home here to houston

136
00:05:02,790 --> 00:05:00,639
by the time you finish this mission

137
00:05:05,029 --> 00:05:02,800
tell me why what we're doing on this

138
00:05:07,909 --> 00:05:05,039

space station is worth making that kind

139
00:05:11,670 --> 00:05:09,670
you know frankly i wouldn't consider our

140
00:05:13,830 --> 00:05:11,680
time on board a sacrifice i really

141
00:05:15,590 --> 00:05:13,840
consider it a privilege because all of

142
00:05:17,909 --> 00:05:15,600
us are very very passionate about human

143
00:05:20,310 --> 00:05:17,919
space flight and uh to be able to

144
00:05:22,390 --> 00:05:20,320
participate and actually be actively

145
00:05:24,310 --> 00:05:22,400
involved in it in this capacity is just

146
00:05:26,790 --> 00:05:24,320
a tremendous honor in terms of what

147
00:05:28,469 --> 00:05:26,800
we're benefiting from the space station

148
00:05:30,950 --> 00:05:28,479
the space station now is an orbiting

149
00:05:32,390 --> 00:05:30,960
laboratory and it is fully engaged and

150
00:05:33,990 --> 00:05:32,400
there are several different areas in

151
00:05:35,350 --> 00:05:34,000
which we're learning

152
00:05:36,629 --> 00:05:35,360
very very important things the one

153
00:05:38,710 --> 00:05:36,639
that's closest

154
00:05:41,350 --> 00:05:38,720
to my heart is learning what it takes

155
00:05:43,510 --> 00:05:41,360
for us to expand our ability to to be in

156
00:05:45,510 --> 00:05:43,520
space and so we're learning about what

157
00:05:47,830 --> 00:05:45,520
zero gravity does to the human body and

158
00:05:50,390 --> 00:05:47,840
it's very very important science also

159
00:05:51,510 --> 00:05:50,400
space station itself in my opinion is an

160
00:05:53,270 --> 00:05:51,520
experiment

161
00:05:55,029 --> 00:05:53,280
onto itself because we're learning about

162
00:05:57,590 --> 00:05:55,039
the systems that are on board

163
00:05:59,909 --> 00:05:57,600

that are required to both work and live

164
00:06:02,150 --> 00:05:59,919
in space and that's very very important

165
00:06:04,390 --> 00:06:02,160
and then lastly there's

166
00:06:06,629 --> 00:06:04,400
a tremendous level of

167
00:06:08,629 --> 00:06:06,639
benefit from the basic research that

168
00:06:11,029 --> 00:06:08,639
we're doing on board

169
00:06:13,510 --> 00:06:11,039
there's are certain areas especially in

170
00:06:15,909 --> 00:06:13,520
the area of biology that

171
00:06:17,909 --> 00:06:15,919
is different in zero gravity and we can

172
00:06:19,189 --> 00:06:17,919
learn a tremendous amount from this

173
00:06:21,430 --> 00:06:19,199
laboratory

174
00:06:23,990 --> 00:06:21,440
also there's combustion science and

175
00:06:25,350 --> 00:06:24,000
fluid flow these are basic science areas

176
00:06:27,749 --> 00:06:25,360
in which we're going to improve our

177
00:06:30,710 --> 00:06:27,759
knowledge base and they'll have benefits

178
00:06:32,469 --> 00:06:30,720
to us here on planet earth someday

179
00:06:34,550 --> 00:06:32,479
tim thanks for the talk

180
00:06:35,830 --> 00:06:34,560
have a safe trip and have a good time on