1
00:01:08,230 --> 00:01:05,990
here i'm working on one of the glove box

2
00:01:10,149 --> 00:01:08,240
experiments called the fsgc fiber

3
00:01:11,990 --> 00:01:10,159
supported droplet combustion

4
00:01:13,590 --> 00:01:12,000
this is one of the numerous glove box

5
00:01:15,190 --> 00:01:13,600
experiments that comes out of the nasa

6
00:01:17,590 --> 00:01:15,200
lewis research center up in beautiful

7
00:01:20,149 --> 00:01:17,600
cleveland ohio and over half of the

8
00:01:22,310 --> 00:01:20,159
experiments and principal investigators

9
00:01:23,830 --> 00:01:22,320
scientists working uh to put this

10
00:01:25,990 --> 00:01:23,840
mission together have come from the nasa

11
00:01:28,550 --> 00:01:26,000
lewis research center and we'd like to

12
00:01:29,749 --> 00:01:28,560
acknowledge their efforts today as we

13
00:01:31,190 --> 00:01:29,759

perform one of their combustion

14
00:01:33,190 --> 00:01:31,200
experiments

15
00:01:35,990 --> 00:01:33,200
in this one we're supporting a

16
00:01:37,749 --> 00:01:36,000
little small drop of fuel about a

17
00:01:41,429 --> 00:01:37,759
millimeter so in size half an inch

18
00:01:43,190 --> 00:01:41,439
across on a small fiber and

19
00:01:46,630 --> 00:01:43,200
igniting it and watching the different

20
00:01:49,510 --> 00:01:47,990
this is yet another combustion

21
00:01:51,749 --> 00:01:49,520
experiment this one is a droplet

22
00:01:53,749 --> 00:01:51,759
combustion experiment the goal here is

23
00:01:54,789 --> 00:01:53,759
to understand the droplet burning

24
00:01:57,270 --> 00:01:54,799
process

25
00:01:59,830 --> 00:01:57,280
and so to do that we ignite single

26
00:02:01,830 --> 00:01:59,840
heptane fuel droplets in an oxidizing

27
00:02:03,510 --> 00:02:01,840
mixture we want to understand combustion

28
00:02:06,230 --> 00:02:03,520
so we can make

29
00:02:08,229 --> 00:02:06,240
more efficient combustion using devices

30
00:02:09,910 --> 00:02:08,239
we had several good burns today we had

31
00:02:11,589 --> 00:02:09,920
problem with one burn because uh the

32
00:02:14,229 --> 00:02:11,599
droplet didn't deploy properly but it's

33
00:02:17,030 --> 00:02:14,239
a very complicated process that requires

34
00:02:18,869 --> 00:02:17,040
a lot of elegance in timing and so it's

35
00:02:25,030 --> 00:02:18,879
not surprising that we only had three

36
00:02:29,270 --> 00:02:26,869
okay we have some internet questions

37
00:02:31,350 --> 00:02:29,280
we'd like to answer the first one is

38
00:02:33,589 --> 00:02:31,360

from young eight-year-old lindsay

39
00:02:36,630 --> 00:02:33,599
o'brien from new hampshire

40
00:02:38,790 --> 00:02:36,640
and lindsay asks have you have you or

41
00:02:41,509 --> 00:02:38,800
any members of your crew ever consider

42
00:02:43,830 --> 00:02:41,519
bringing bats on board she's curious to

43
00:02:45,670 --> 00:02:43,840
find out which way bats would hang when

44
00:02:47,990 --> 00:02:45,680
they are at rest

45
00:02:51,350 --> 00:02:48,000
well lindsay i'm not sure any of us have

46
00:02:53,670 --> 00:02:51,360
considered taking baths with this on boy

47
00:02:55,670 --> 00:02:53,680
but i think that uh it's important to

48
00:02:57,830 --> 00:02:55,680
note that while we're in space there is

49
00:02:59,509 --> 00:02:57,840
no such thing as the ceiling or the

50
00:03:01,830 --> 00:02:59,519
floor or the wall

51
00:03:03,830 --> 00:03:01,840
everything can become whichever one you

52
00:03:06,149 --> 00:03:03,840
want them to for instance if i was to

53
00:03:08,630 --> 00:03:06,159
stand on what you would think of as a

54
00:03:10,949 --> 00:03:08,640
ceiling for a long time pretty soon that

55
00:03:12,550 --> 00:03:10,959
would become the floor to me so bats

56
00:03:16,710 --> 00:03:12,560
could pretty much hang wherever they

57
00:03:20,710 --> 00:03:18,550
have an internet question from an art

58
00:03:23,430 --> 00:03:20,720
little field from melbourne florida not

59
00:03:24,949 --> 00:03:23,440
far from uh pad 39a at the kennedy space

60
00:03:25,830 --> 00:03:24,959
center where we took off just a few days

61
00:03:28,070 --> 00:03:25,840
ago

62
00:03:29,990 --> 00:03:28,080
and art asks the question uh who is

63
00:03:31,750 --> 00:03:30,000

responsible for thinking of and planning

64
00:03:32,789 --> 00:03:31,760
the experiments which we conduct on the

65
00:03:34,470 --> 00:03:32,799
mission

66
00:03:36,710 --> 00:03:34,480
all right as you can imagine it's no one

67
00:03:38,789 --> 00:03:36,720
person this is a team of thousands of

68
00:03:40,309 --> 00:03:38,799
thousands of people not only across the

69
00:03:42,630 --> 00:03:40,319
great country of america but around the

70
00:03:45,110 --> 00:03:42,640
world we have an international payload

71
00:03:46,630 --> 00:03:45,120
here with experiments from japan germany

72
00:03:48,789 --> 00:03:46,640
the rest of europe and all across the

73
00:03:51,589 --> 00:03:48,799
united states and we're represented by

74
00:03:53,509 --> 00:03:51,599
many universities and technical fields

75
00:03:56,229 --> 00:03:53,519
all across america

76
00:03:57,830 --> 00:03:56,239
the the research is conducted by these

77
00:03:59,429 --> 00:03:57,840
different organizations and the planning

78
00:04:01,750 --> 00:03:59,439
goes on at the marshall space flight

79
00:04:03,350 --> 00:04:01,760
center in alabama as you can imagine

80
00:04:06,070 --> 00:04:03,360
planning for a mission this complicated

81
00:04:07,429 --> 00:04:06,080
takes quite a long time and those folks

82
00:04:09,509 --> 00:04:07,439
that were working on this mission long

83
00:04:11,030 --> 00:04:09,519
before we were ever assigned to it

84
00:04:12,390 --> 00:04:11,040
so we'd like to acknowledge their great

85
00:04:14,070 --> 00:04:12,400
efforts they've been working on this

86
00:04:16,310 --> 00:04:14,080
mission many many years getting it

87
00:04:17,830 --> 00:04:16,320
prepared and selecting the experiments

88
00:04:23,189 --> 00:04:17,840

and getting them packed on board for us

89
00:04:26,870 --> 00:04:25,430
next question is from

90
00:04:28,390 --> 00:04:26,880
linda owens

91
00:04:30,230 --> 00:04:28,400
of miami florida

92
00:04:31,990 --> 00:04:30,240
and she asks

93
00:04:34,230 --> 00:04:32,000
how dangerous are your combustion

94
00:04:36,230 --> 00:04:34,240
experiments considering they are taking

95
00:04:39,350 --> 00:04:36,240
place within the shuttle

96
00:04:41,189 --> 00:04:39,360
and the answer to the question is that

97
00:04:42,950 --> 00:04:41,199
fire of course has to be dealt with very

98
00:04:45,590 --> 00:04:42,960
carefully under any circumstance

99
00:04:46,950 --> 00:04:45,600
especially aboard an orbiting spacecraft

100
00:04:48,629 --> 00:04:46,960
because of that

101
00:04:50,469 --> 00:04:48,639
the scientists and the engineers who

102
00:04:51,510 --> 00:04:50,479
designed the experiments were very very

103
00:04:53,830 --> 00:04:51,520
careful

104
00:04:55,510 --> 00:04:53,840
to make sure that the experiments are

105
00:04:57,909 --> 00:04:55,520
very safe and have many levels of

106
00:04:59,590 --> 00:04:57,919
containment so that it would be very

107
00:05:01,749 --> 00:04:59,600
highly improbable that the fire could

108
00:05:03,670 --> 00:05:01,759
get out of the combustion chambers that

109
00:05:05,590 --> 00:05:03,680
they're contained in so it's really a

110
00:05:08,230 --> 00:05:05,600
tribute to the engineers and scientists

111
00:05:42,070 --> 00:05:08,240
at nasa and other organizations that the

112
00:05:46,550 --> 00:05:43,749
thanks ed for letting me do the extra

113
00:06:31,670 --> 00:05:46,560

drops that was fun

114
00:06:34,390 --> 00:06:33,029
yeah go ahead allen i'm just looking at

115
00:06:37,670 --> 00:06:34,400
the decal trying to figure out what the

116
00:06:42,550 --> 00:06:40,070
copy that the next test point is 10 20

117
00:06:43,990 --> 00:06:42,560
20 charlie and because of that since

118
00:06:47,270 --> 00:06:44,000
it's not in sequence you will need to

119
00:06:48,469 --> 00:06:47,280
hit new test point not next test point

120
00:06:53,110 --> 00:06:48,479
this time

121
00:07:05,909 --> 00:06:54,790
great thanks that's what i was trying to

122
00:07:10,150 --> 00:07:08,230
okay that's complete

123
00:07:14,550 --> 00:07:10,160
i want to check that the cell range

124
00:07:19,270 --> 00:07:16,629
i have that

125
00:07:28,150 --> 00:07:19,280
and we'd like you to enter six zero

126
00:07:36,950 --> 00:07:30,870
and that's complete and you can enter

127
00:07:41,110 --> 00:07:39,029
hey we were successful uh again with

128
00:07:44,070 --> 00:07:41,120
mike full uh once again however it's

129
00:07:45,909 --> 00:07:44,080
only about a 30 or 45 second contact i

130
00:07:47,749 --> 00:07:45,919
could hear him for much longer than that

131
00:07:49,589 --> 00:07:47,759
but he could not hear me

132
00:07:51,749 --> 00:07:49,599
i also heard him trying to make contact

133
00:07:54,629 --> 00:07:51,759
with houston i couldn't tell if he was

134
00:07:57,350 --> 00:07:54,639
successful or not in doing that w5r was

135
00:07:58,950 --> 00:07:57,360
who he's trying to call

136
00:08:01,670 --> 00:07:58,960
what was neat about the same time i was

137
00:08:03,830 --> 00:08:01,680
talking uh susan had the binoculars out

138
00:08:05,350 --> 00:08:03,840

the window while watching the

139
00:08:06,869 --> 00:08:05,360
mirror come up above the right wing just

140
00:08:08,790 --> 00:08:06,879
like you said it would it was just

141
00:08:16,950 --> 00:08:08,800
spectacular

142
00:08:19,990 --> 00:08:18,469
it was just a short period of time where

143
00:08:21,830 --> 00:08:20,000
we were actually both talking to each

144
00:08:24,070 --> 00:08:21,840
other the other period of time i was

145
00:08:26,469 --> 00:08:24,080
able to hear him but he couldn't hear me

146
00:08:28,469 --> 00:08:26,479
he transmitted in the blind best wishes

147
00:08:30,710 --> 00:08:28,479
to me and the crew for a successful

148
00:08:33,269 --> 00:08:30,720
flight and uh successful

149
00:08:35,029 --> 00:08:33,279
landing and uh of course i uh i passed

150
00:08:37,110 --> 00:08:35,039
on the same to him but i'm not sure if

151
00:08:38,949 --> 00:08:37,120
he was able to hear me but uh appreciate

152
00:09:57,829 --> 00:08:38,959
y'all setting it up it was it was a lot

153
00:10:01,750 --> 00:10:00,150
mark i think

154
00:10:03,910 --> 00:10:01,760
watching this with the crew aboard a

155
00:10:05,269 --> 00:10:03,920
space shuttle orbiting the earth is a

156
00:10:07,350 --> 00:10:05,279
great

157
00:10:09,350 --> 00:10:07,360
example of how robots and humans can

158
00:10:11,670 --> 00:10:09,360
work together with uh

159
00:10:14,389 --> 00:10:11,680
with the pathfinder

160
00:10:17,030 --> 00:10:14,399
leading the way for humans to uh to come

161
00:10:21,430 --> 00:10:17,040
in its footsteps uh sometime in the

162
00:10:25,350 --> 00:10:23,190
well mike we share those sentiments and

163
00:10:27,590 --> 00:10:25,360

it's certainly an auspicious uh

164
00:10:29,430 --> 00:10:27,600
beginning for the return to mars

165
00:10:32,230 --> 00:10:29,440
so far everything looks like it's going

166
00:10:33,509 --> 00:10:32,240
just uh perfectly and we also have seen

167
00:10:35,670 --> 00:10:33,519
pictures of