
EXPEDITION 35
CHRIS HADFIELD
Commander

1
00:00:07,019 --> 00:00:04,170
good day and happy friday welcome to

2
00:00:09,030 --> 00:00:07,029
Mission Control Houston here in the

3
00:00:10,640 --> 00:00:09,040
flight control room Jerry Jason is the

4
00:00:13,650 --> 00:00:10,650
flight director in charge of the team

5
00:00:16,500 --> 00:00:13,660
with Hal get suleman the spacecraft

6
00:00:18,630 --> 00:00:16,510
communicator talking with the crew as it

7
00:00:20,189 --> 00:00:18,640
maneuvers its way through an emergency

8
00:00:22,140 --> 00:00:20,199
drill one of the routine drills we use

9
00:00:23,720 --> 00:00:22,150
to keep the crew on its toes and ready

10
00:00:25,769 --> 00:00:23,730
for anything on board the space station

11
00:00:28,079 --> 00:00:25,779
this has been a very busy and productive

12
00:00:30,300 --> 00:00:28,089
work week for the crew onboard the

13
00:00:31,319 --> 00:00:30,310

International Space Station the crew

14
00:00:33,029 --> 00:00:31,329
worked with a variety of different

15
00:00:35,220 --> 00:00:33,039
experiments and prepared for the

16
00:00:37,229 --> 00:00:35,230
departure of a commercial cargo craft as

17
00:00:39,779 --> 00:00:37,239
well as the arrival of three more crew

18
00:00:41,939 --> 00:00:39,789
members next week NASA's Tom Marshburn

19
00:00:44,279 --> 00:00:41,949
spent part of several days setting up

20
00:00:47,610 --> 00:00:44,289
the Marangoni inside experiment in the

21
00:00:49,830 --> 00:00:47,620
Destiny laboratory marangoni is a

22
00:00:51,930 --> 00:00:49,840
convection experiment that looks at flow

23
00:00:53,910 --> 00:00:51,940
is driven by the president's of surface

24
00:00:56,549 --> 00:00:53,920
tension gradients that can be produced

25
00:00:59,610 --> 00:00:56,559
by temperature differences in the liquid

26
00:01:01,290 --> 00:00:59,620
gas interface the convection in the

27
00:01:03,209 --> 00:01:01,300
liquid bridge of a silicone oil is

28
00:01:05,219 --> 00:01:03,219
generated by heating one disc higher

29
00:01:07,980 --> 00:01:05,229
than the other and then the scientists

30
00:01:09,810 --> 00:01:07,990
observed flow patterns of the fluids the

31
00:01:11,760 --> 00:01:09,820
positions and temperatures could be

32
00:01:13,289 --> 00:01:11,770
independently controlled and eventually

33
00:01:16,249 --> 00:01:13,299
this could help us sell learn more about

34
00:01:18,389 --> 00:01:16,259
how he is transferred in microgravity

35
00:01:20,249 --> 00:01:18,399
Marshburn also worked in the Columbus

36
00:01:22,109 --> 00:01:20,259
laboratory to prepare for the first run

37
00:01:23,639 --> 00:01:22,119
of the seedling growth experiment that

38
00:01:25,800 --> 00:01:23,649

experiment looks at how plants grow in

39
00:01:28,139 --> 00:01:25,810
space and images of the plants are going

40
00:01:29,580 --> 00:01:28,149
to be captured and downlink to earth and

41
00:01:31,469 --> 00:01:29,590
samples of the plants will later be

42
00:01:33,569 --> 00:01:31,479
harvested and brought back to earth for

43
00:01:35,609 --> 00:01:33,579
scientific analysis could help

44
00:01:38,249 --> 00:01:35,619
researchers with food production studies

45
00:01:40,800 --> 00:01:38,259
for long-duration space music missions

46
00:01:43,170 --> 00:01:40,810
of the future as well as to help crop

47
00:01:45,300 --> 00:01:43,180
production on earth he also worked with

48
00:01:47,789 --> 00:01:45,310
the advanced colloids experiment which

49
00:01:50,069 --> 00:01:47,799
looks at removing gravitational jamming

50
00:01:53,069 --> 00:01:50,079
and sedimentation so it's possible to

51
00:01:55,830 --> 00:01:53,079
observe how order arises out of chaos in

52
00:01:58,529 --> 00:01:55,840
these liquid solid mixtures that are

53
00:01:59,700 --> 00:01:58,539
like milk or paint Canadian commander

54
00:02:01,349 --> 00:01:59,710
Chris Hadfield this week's been a

55
00:02:03,230 --> 00:02:01,359
portion of several days working on the

56
00:02:06,349 --> 00:02:03,240
corseting in solid liquid mixtures

57
00:02:09,509 --> 00:02:06,359
experiment experiment looks at how

58
00:02:11,430 --> 00:02:09,519
dendrites form in alloyed metal

59
00:02:13,949 --> 00:02:11,440
materials and is looking at making

60
00:02:14,340 --> 00:02:13,959
stronger better lighter materials for

61
00:02:16,530 --> 00:02:14,350
use

62
00:02:20,160 --> 00:02:16,540
in space and on the ground and things

63
00:02:22,560 --> 00:02:20,170

like engines and structures he also

64
00:02:24,270 --> 00:02:22,570
worked with changing out samples in the

65
00:02:26,280 --> 00:02:24,280
commercial generic processing apparatus

66
00:02:29,130 --> 00:02:26,290
that looks at protein crystal growth and

67
00:02:30,720 --> 00:02:29,140
Hadfield also reinstalled the amine

68
00:02:32,370 --> 00:02:30,730
swingbed that's a technology

69
00:02:34,920 --> 00:02:32,380
demonstrator that examines whether a

70
00:02:36,870 --> 00:02:34,930
vacuum generated aiming system can

71
00:02:38,670 --> 00:02:36,880
effectively remove carbon dioxide from

72
00:02:40,530 --> 00:02:38,680
the space station's atmosphere using

73
00:02:44,430 --> 00:02:40,540
smaller more efficient regeneration

74
00:02:46,860 --> 00:02:44,440
techniques roman romanenko worked on two

75
00:02:48,900 --> 00:02:46,870
russian experiments for matreshka and

76
00:02:50,160 --> 00:02:48,910
rocks i CAIA petrushka looks at

77
00:02:52,950 --> 00:02:50,170
radiation levels throughout the space

78
00:02:55,350 --> 00:02:52,960
station complex he also worked to

79
00:02:59,940 --> 00:02:55,360
transfer items into a couple of

80
00:03:01,830 --> 00:02:59,950
different spacecraft and did maintenance

81
00:03:03,870 --> 00:03:01,840
work inside the Russian modules of the

82
00:03:05,640 --> 00:03:03,880
station today the entire crew is

83
00:03:08,640 --> 00:03:05,650
conducting an onboard emergency training

84
00:03:10,140 --> 00:03:08,650
drill using tablet computers and will

85
00:03:12,210 --> 00:03:10,150
conduct a debrief with a ground team

86
00:03:14,550 --> 00:03:12,220
afterward throughout the week the crew

87
00:03:16,260 --> 00:03:14,560
has worked on and finished all of the

88
00:03:18,510 --> 00:03:16,270

early packing for the upcoming departure

89
00:03:20,130 --> 00:03:18,520
of the Dragon spacecraft which will be

90
00:03:23,010 --> 00:03:20,140
carrying important scientific samples

91
00:03:24,870 --> 00:03:23,020
back to earth for analysis the final

92
00:03:26,520 --> 00:03:24,880
research samples will be loaded into

93
00:03:29,160 --> 00:03:26,530
dragon just before the hatches are

94
00:03:30,930 --> 00:03:29,170
closed the current plan is to unbirth

95
00:03:33,870 --> 00:03:30,940
the Harmony the spacecraft from the

96
00:03:35,790 --> 00:03:33,880
harmony module on Monday and they'll be

97
00:03:39,060 --> 00:03:35,800
closing the hatch is on Sunday according

98
00:03:42,210 --> 00:03:39,070
to that plan preparations are headed for

99
00:03:44,880 --> 00:03:42,220
a 320 a.m. central time monday with a

100
00:03:46,920 --> 00:03:44,890
nun birthing beginning at 405 a.m.

101
00:03:50,310 --> 00:03:46,930
central time and then a release plan for

102
00:03:52,080 --> 00:03:50,320
649 a.m. central time splashdown is

103
00:03:55,500 --> 00:03:52,090
scheduled to be off the Baja coast in

104
00:03:57,750 --> 00:03:55,510
California about 20 minutes after noon

105
00:03:59,850 --> 00:03:57,760
on Monday but mission managers and

106
00:04:03,510 --> 00:03:59,860
SpaceX experts are watching the weather

107
00:04:05,190 --> 00:04:03,520
in the recovery area carefully NASA TV

108
00:04:07,230 --> 00:04:05,200
live coverage of the dragon departure

109
00:04:09,840 --> 00:04:07,240
would begin at four a.m. central time on

110
00:04:12,090 --> 00:04:09,850
monday wednesday night Mission Control

111
00:04:14,340 --> 00:04:12,100
Moscow directed a slight increase in the

112
00:04:15,900 --> 00:04:14,350
space station's orbital altitude to just

113
00:04:17,940 --> 00:04:15,910

facing for the arrival of three more

114
00:04:20,280 --> 00:04:17,950
crew members Pavel Vinogradov Alexander

115
00:04:21,599 --> 00:04:20,290
misurkin and NASA's Chris Cassidy are

116
00:04:24,630 --> 00:04:21,609
scheduled to launch from the Baikonur

117
00:04:27,060 --> 00:04:24,640
cosmodrome in kazakhstan at 343 p.m.

118
00:04:27,780 --> 00:04:27,070
central time next Thursday and then dock

119
00:04:29,490 --> 00:04:27,790
with the space day

120
00:04:31,110 --> 00:04:29,500
about six hours later this will be the

121
00:04:33,030 --> 00:04:31,120
first single orbit rendezvous for a

122
00:04:35,700 --> 00:04:33,040
human crew although we've tested that

123
00:04:38,370 --> 00:04:35,710
technique in progress unmanned vehicles

124
00:04:40,710 --> 00:04:38,380
the crew in Baikonur is making its final

125
00:04:43,260 --> 00:04:40,720
review of preparation for that launch

126
00:04:46,190 --> 00:04:43,270
and looking forward to a Thursday

127
00:04:48,270 --> 00:04:46,200
liftoff from the baikonur cosmodrome

128
00:04:49,980 --> 00:04:48,280
over the weekend the crew is going to

129
00:04:52,350 --> 00:04:49,990
have some time off on Saturday and then

130
00:04:54,030 --> 00:04:52,360
be busy with dragon preparations but

131
00:04:56,130 --> 00:04:54,040
again it has been a very productive week