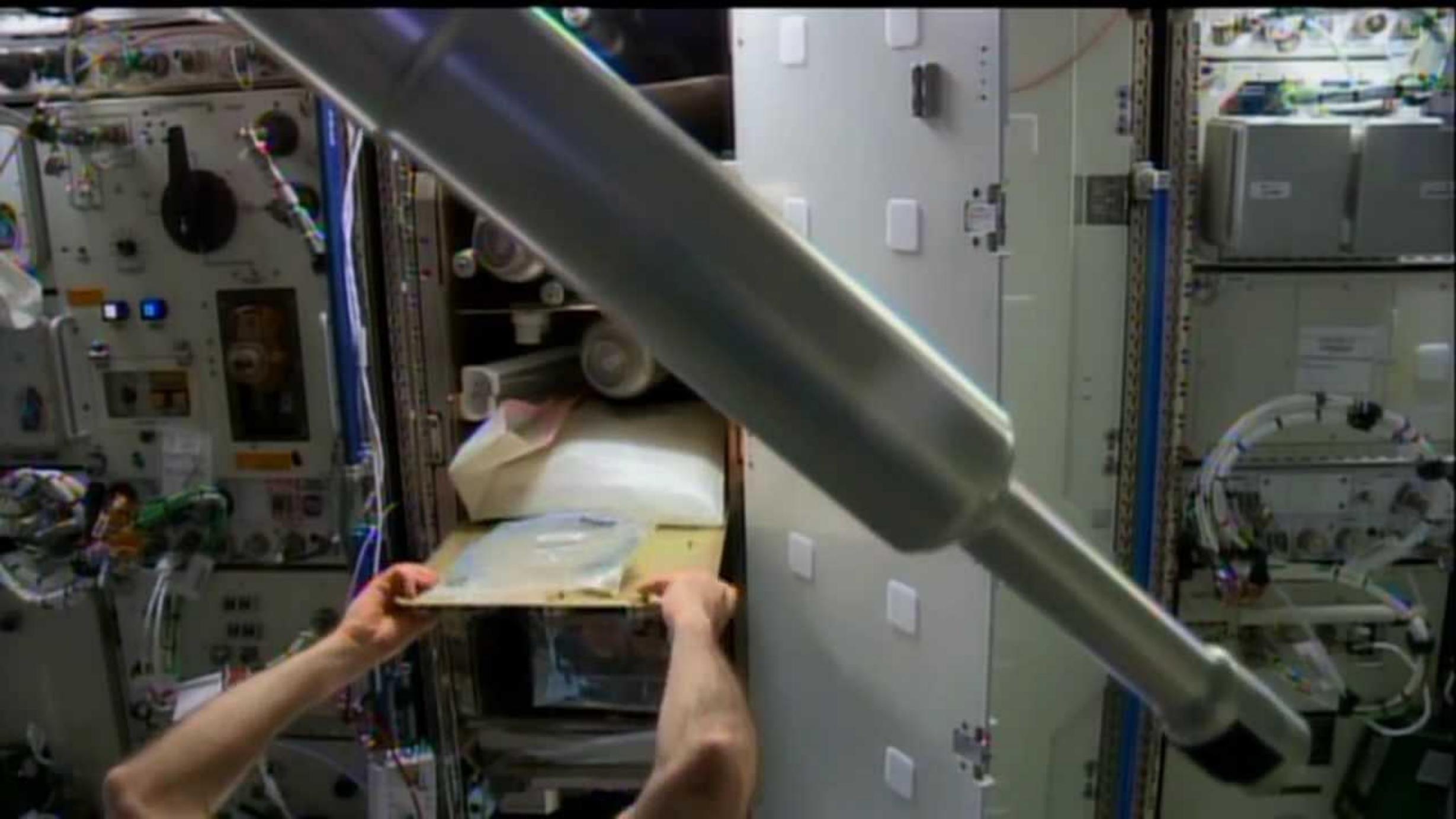

1
00:00:15,910 --> 00:00:13,030
good morning and welcome to mission

2
00:00:17,910 --> 00:00:15,920
control houston and space station live

3
00:00:20,150 --> 00:00:17,920
the three members of the expedition 37

4
00:00:22,390 --> 00:00:20,160
crew currently on orbit are enjoying a

5
00:00:24,870 --> 00:00:22,400
few hours of downtime before the crew

6
00:00:25,830 --> 00:00:24,880
expands later today with the arrival of

7
00:00:27,269 --> 00:00:25,840
three new

8
00:00:29,669 --> 00:00:27,279
crew members still on the ground in

9
00:00:31,109 --> 00:00:29,679
baikonur

10
00:00:33,030 --> 00:00:31,119
watching over the systems from here on

11
00:00:35,270 --> 00:00:33,040
the ground we have a space station

12
00:00:36,790 --> 00:00:35,280
flight control room we have the uh space

13
00:00:38,790 --> 00:00:36,800

station flight control team here in the

14
00:00:41,430 --> 00:00:38,800
space station flight control room

15
00:00:49,830 --> 00:00:41,440
led today by flight director tony soccer

16
00:00:53,910 --> 00:00:52,069
the crew members are already at the

17
00:00:55,189 --> 00:00:53,920
space station or the crew members who

18
00:00:57,590 --> 00:00:55,199
are already at the space station begin

19
00:01:00,069 --> 00:00:57,600
their day a bit later than normal

20
00:01:02,950 --> 00:01:00,079
at 2 30 a.m to give them some extra rest

21
00:01:06,630 --> 00:01:02,960
before an exceptionally long day

22
00:01:08,230 --> 00:01:06,640
currently orbiting 259 miles above the

23
00:01:11,830 --> 00:01:08,240
pacific coast

24
00:01:13,510 --> 00:01:11,840
over washington and oregon

25
00:01:15,670 --> 00:01:13,520
they are russian commander fyodor

26
00:01:17,590 --> 00:01:15,680
yurchikhin u.s flight engineer karen

27
00:01:20,870 --> 00:01:17,600
nyberg and european space agency flight

28
00:01:25,749 --> 00:01:22,789
they arrived at the station on may 28th

29
00:01:27,190 --> 00:01:25,759
and have now spent 119 days in space

30
00:01:28,630 --> 00:01:27,200
they've been alone at the station since

31
00:01:31,109 --> 00:01:28,640
the other half of what was then the

32
00:01:32,789 --> 00:01:31,119
expedition 36 crew left on september

33
00:01:34,550 --> 00:01:32,799
10th but of course that's going to

34
00:01:37,429 --> 00:01:34,560
change later today with the launch of

35
00:01:39,270 --> 00:01:37,439
the soyuz tma-10m

36
00:01:44,710 --> 00:01:39,280
which will deliver flight engineers mike

37
00:01:46,230 --> 00:01:44,720
hopkins oleg kotov and sergey ryazanskiy

38
00:01:48,310 --> 00:01:46,240

that flight scheduled to lift off from

39
00:01:51,190 --> 00:01:48,320
the baikonur cosmodrome in kazakhstan at

40
00:01:56,630 --> 00:01:51,200
3 58 pm central time and arrive at the

41
00:02:00,149 --> 00:01:58,149
the crew invited nora has already begun

42
00:02:01,910 --> 00:02:00,159
their day and have departed their crew

43
00:02:05,030 --> 00:02:01,920
quarters later this hour they'll be

44
00:02:06,709 --> 00:02:05,040
undergoing their final medical checkups

45
00:02:08,469 --> 00:02:06,719
and meanwhile their vehicle is also

46
00:02:10,869 --> 00:02:08,479
being prepared for launch

47
00:02:13,270 --> 00:02:10,879
batteries are going to be installed in

48
00:02:15,990 --> 00:02:13,280
the boosters in the next few minutes

49
00:02:22,070 --> 00:02:16,000
and the fueling of the rocket

50
00:02:26,070 --> 00:02:24,470
while the crew although the crew is in

51
00:02:27,990 --> 00:02:26,080
although the crew in space is currently

52
00:02:29,910 --> 00:02:28,000
resting they've already done half a day

53
00:02:32,150 --> 00:02:29,920
of work chalked full with maintenance

54
00:02:34,390 --> 00:02:32,160
and science experiments

55
00:02:36,550 --> 00:02:34,400
karen nyberg has completed two runs of

56
00:02:38,229 --> 00:02:36,560
the in space iii experiment and we'll

57
00:02:39,750 --> 00:02:38,239
squeeze in one more before docking

58
00:02:41,750 --> 00:02:39,760
tonight

59
00:02:43,910 --> 00:02:41,760
that experiment examines colloidal

60
00:02:46,150 --> 00:02:43,920
fluids classified as smart materials

61
00:02:49,430 --> 00:02:46,160
which transition to a solid-like state

62
00:02:51,030 --> 00:02:49,440
in the presence of a magnetic field

63
00:02:53,430 --> 00:02:51,040

the hope is that new manufacturing

64
00:02:55,430 --> 00:02:53,440
models based on the idea of having these

65
00:02:56,869 --> 00:02:55,440
nanoparticles act as self-assembling

66
00:02:58,470 --> 00:02:56,879
building blocks

67
00:03:00,790 --> 00:02:58,480
could be used to improve or develop

68
00:03:03,430 --> 00:03:00,800
active mechanical systems such as new

69
00:03:07,670 --> 00:03:03,440
brake systems and air airplane landing

70
00:03:12,790 --> 00:03:09,830
nyberg also spent some time on the ice

71
00:03:14,550 --> 00:03:12,800
crystal 2 experiment which looks at the

72
00:03:17,110 --> 00:03:14,560
growth rates and stability of ice

73
00:03:19,030 --> 00:03:17,120
crystals in super cooled water

74
00:03:20,869 --> 00:03:19,040
the results of the experiment could open

75
00:03:23,509 --> 00:03:20,879
up a new research field related to the

76
00:03:26,229 --> 00:03:23,519
fundamentals of ice crystal growth

77
00:03:31,589 --> 00:03:26,239
mechanisms controlled by biological

78
00:03:35,910 --> 00:03:33,670
nyberg and luca parmitano both took a

79
00:03:37,670 --> 00:03:35,920
few minutes when they woke up to take

80
00:03:39,030 --> 00:03:37,680
part in the reaction self-test

81
00:03:41,190 --> 00:03:39,040
experiment

82
00:03:43,430 --> 00:03:41,200
that's aimed at trying out a way for

83
00:03:45,190 --> 00:03:43,440
astronauts to objectively assess whether

84
00:03:47,910 --> 00:03:45,200
fatigue might affect their performance

85
00:03:49,990 --> 00:03:47,920
in space for instance on long days such

86
00:03:53,910 --> 00:03:50,000
as today when they'll be up very late

87
00:03:57,670 --> 00:03:55,589
on his own parmitano worked at the

88
00:03:59,670 --> 00:03:57,680

materials science laboratory today

89
00:04:01,830 --> 00:03:59,680
changing out experiments being run from

90
00:04:04,070 --> 00:04:01,840
the ground

91
00:04:06,789 --> 00:04:04,080
the materials science laboratory can be

92
00:04:09,270 --> 00:04:06,799
used for basic materials research on

93
00:04:11,910 --> 00:04:09,280
metals alloys polymers

94
00:04:14,229 --> 00:04:11,920
semiconductors ceramics crystals and

95
00:04:15,910 --> 00:04:14,239
glasses

96
00:04:18,390 --> 00:04:15,920
it can help scientists discover new

97
00:04:23,749 --> 00:04:18,400
applications for existing materials or

98
00:04:26,950 --> 00:04:25,030
and on the russian side of the station

99
00:04:29,030 --> 00:04:26,960
commander fyodor yurchikhin

100
00:04:31,270 --> 00:04:29,040
was preparing crew quarters for his soon

101
00:04:32,870 --> 00:04:31,280
to arrive crewmates and working with the

102
00:04:34,629 --> 00:04:32,880
cascade experiment

103
00:04:36,230 --> 00:04:34,639
which looks at cell cultivation and

104
00:04:37,629 --> 00:04:36,240
microgravity

105
00:04:40,390 --> 00:04:37,639
and the

106
00:04:42,790 --> 00:04:40,400
obstacle experiment which is a small

107
00:04:46,150 --> 00:04:42,800
satellite control technology development