



1  
00:00:01,910 --> 00:00:03,670  
This is Mission Control Houston.

2  
00:00:03,670 --> 00:00:08,420  
The International Space  
Station's Expedition 32 crew is

3  
00:00:08,420 --> 00:00:11,500  
wrapping up a week dominated  
by the comings and goings

4  
00:00:11,500 --> 00:00:15,060  
of cargo ships while they've  
been keeping up a strong pace

5  
00:00:15,060 --> 00:00:19,260  
of science operations as the  
6 crew members finished their

6  
00:00:19,260 --> 00:00:22,060  
first three weeks  
as a group on orbit.

7  
00:00:22,060 --> 00:00:26,580  
Saturday, July 28 the  
crew opened the hatch

8  
00:00:26,580 --> 00:00:31,310  
on the H-II Transfer Vehicle HTV  
number three, which had arrived

9  
00:00:31,310 --> 00:00:33,370  
at the space station  
the previous day

10  
00:00:33,370 --> 00:00:36,640  
and started unloading  
ton of supplies.

11

00:00:36,640 --> 00:00:40,640

They in fact worked so much  
on that they got days ahead

12

00:00:40,640 --> 00:00:42,580

of the schedule timeline.

13

00:00:42,580 --> 00:00:45,100

That evening they  
monitored the re-docking

14

00:00:45,100 --> 00:00:47,860

of a Progress cargo  
ship which was testing

15

00:00:47,860 --> 00:00:51,460

out an enhanced version of  
the automated rendezvous

16

00:00:51,460 --> 00:00:54,090

and docking system  
which worked just fine

17

00:00:54,090 --> 00:00:57,320

after Russian specialists  
raised the temperature inside

18

00:00:57,320 --> 00:00:59,000

that module.

19

00:00:59,000 --> 00:01:02,970

Over the weekend  
and even on Monday,

20

00:01:02,970 --> 00:01:05,860

Flight Engineers Joe  
Acaba, Suni Williams

21

00:01:05,860 --> 00:01:07,950

and Aki Hoshide spent a lot

22

00:01:07,950 --> 00:01:13,220  
of time unloading the material  
inside that Japanese cargo ship.

23

00:01:13,220 --> 00:01:15,550  
In the meantime,  
Commander Gennady Padalka,

24

00:01:15,550 --> 00:01:17,210  
Flight Engineers Sergei Revin,

25

00:01:17,210 --> 00:01:20,910  
and Flight Engineer Yuri  
Malenchenko monitored the final

26

00:01:20,910 --> 00:01:24,250  
departure of 47P.

27

00:01:24,250 --> 00:01:28,390  
In between times Aki  
Hoshide installed,

28

00:01:28,390 --> 00:01:31,990  
prepared the solution  
crystallization observation

29

00:01:31,990 --> 00:01:36,070  
facility for a JAXA  
biotechnology investigation

30

00:01:36,070 --> 00:01:39,830  
which is aimed at refining our  
understanding of the mechanisms

31

00:01:39,830 --> 00:01:42,810  
that drive the growth of  
crystals in microgravity.

32

00:01:42,810 --> 00:01:46,700  
Acaba and Williams joined him  
for body mass measurements

33  
00:01:46,700 --> 00:01:49,250  
and ultrasound examinations.

34  
00:01:49,250 --> 00:01:52,050  
Williams also fed the  
spiders that are part

35  
00:01:52,050 --> 00:01:54,590  
of the YouTube Spacelab  
experiment

36  
00:01:54,590 --> 00:01:56,150  
that was delivered on HTV.

37  
00:01:56,150 --> 00:02:00,150  
That is a suite of two  
experiments that were developed

38  
00:02:00,150 --> 00:02:04,830  
by high school students and  
were selected by proposals

39  
00:02:04,830 --> 00:02:07,300  
that were delivered via YouTube.

40  
00:02:07,300 --> 00:02:09,530  
On Tuesday the crew  
took readings

41  
00:02:09,530 --> 00:02:13,440  
from several life sciences  
investigations and started work

42  
00:02:13,440 --> 00:02:16,060  
with the Advanced  
Colloids Experiment

43

00:02:16,060 --> 00:02:17,750  
which will examine materials

44

00:02:17,750 --> 00:02:21,300  
that contain small colloidal  
particles to learn more

45

00:02:21,300 --> 00:02:25,020  
about how those particles  
behave in microgravity.

46

00:02:25,020 --> 00:02:28,320  
Williams also took time  
to talk to a radio station

47

00:02:28,320 --> 00:02:31,710  
to Woods Hole, Massachusetts,  
her home state,

48

00:02:31,710 --> 00:02:35,990  
and to Dr. Sanjay Gupta  
on CNN about the progress

49

00:02:35,990 --> 00:02:40,980  
of her mission so far and plans  
for the future, and finished

50

00:02:40,980 --> 00:02:44,060  
up the day with more  
body mass measurements.

51

00:02:44,060 --> 00:02:47,210  
Padalka and Malenchenko  
had a refresher course

52

00:02:47,210 --> 00:02:49,540  
in the operation of the TORU;

53

00:02:49,540 --> 00:02:52,430

that is the manual  
backup docking system

54

00:02:52,430 --> 00:02:55,370

in the Russian segment of  
the station that is used

55

00:02:55,370 --> 00:02:58,960

in case the automated  
docking system fails.

56

00:02:58,960 --> 00:03:02,290

But they were testing  
out Toru in advance

57

00:03:02,290 --> 00:03:04,490

of another imminent arrival.

58

00:03:04,490 --> 00:03:08,800

Wednesday saw for the first  
time ever the launch and docking

59

00:03:08,800 --> 00:03:11,730

of a Russian cargo  
ship on the same day.

60

00:03:11,730 --> 00:03:15,750

48 Progress made the trip  
from the Baikonur Cosmodrome

61

00:03:15,750 --> 00:03:19,410

to the space station docking  
port in just four orbits

62

00:03:19,410 --> 00:03:23,650

of the Earth instead  
of the usual 34 orbits.

63

00:03:23,650 --> 00:03:26,720

This was a test of  
the new flight profile

64

00:03:26,720 --> 00:03:29,250

that could save future  
human crews a lot

65

00:03:29,250 --> 00:03:32,730

of hours spent inside  
the cramped Soyuz vehicle

66

00:03:32,730 --> 00:03:37,430

on the normal 2-day transit  
to the space station.

67

00:03:37,430 --> 00:03:42,450

Earlier in that day Joe Acaba  
set up and performed operations

68

00:03:42,450 --> 00:03:45,090

with the Capillary  
Flow Experiment,

69

00:03:45,090 --> 00:03:47,560

which is a fluid  
physics investigation

70

00:03:47,560 --> 00:03:50,750

to learn how fluids  
behave in microgravity.

71

00:03:50,750 --> 00:03:53,270

Hoshide set up the  
ultrasound equipment

72

00:03:53,270 --> 00:03:56,350

for the Integrated  
Cardiovascular experiment

73

00:03:56,350 --> 00:03:59,280

and then assisted  
Acaba in gathering data

74

00:03:59,280 --> 00:04:03,540  
for the integrated experiment  
to quantify any atrophy

75

00:04:03,540 --> 00:04:07,400  
of the heart muscle due  
to the absence of gravity.

76

00:04:07,400 --> 00:04:10,080  
On Thursday afternoon the  
Russian crew opened the hatches

77

00:04:10,080 --> 00:04:13,270  
to 48P and started unloading it.

78

00:04:13,270 --> 00:04:16,700  
All crew members took part in  
routine station maintenance.

79

00:04:16,700 --> 00:04:21,510  
Acaba worked with what is known  
as the Vascular experiment.

80

00:04:21,510 --> 00:04:24,150  
That's the Canadian  
investigation looking

81

00:04:24,150 --> 00:04:27,030  
into the mechanisms that  
are responsible for changes

82

00:04:27,030 --> 00:04:29,910  
in blood pressure and  
particularly those

83

00:04:29,910 --> 00:04:35,250  
that parallel changes that occur

in people on Earth as they age.

84

00:04:35,250 --> 00:04:37,420

The crew members have been working in split shifts due

85

00:04:37,420 --> 00:04:39,170

to the Progress operations,

86

00:04:39,170 --> 00:04:41,750

but the whole Expedition crew got their schedules synced

87

00:04:41,750 --> 00:04:46,890

up for Friday, which featured Progress unloading, Joe Acaba

88

00:04:46,890 --> 00:04:50,470

and Aki Hoshide training for robotic arm operations

89

00:04:50,470 --> 00:04:52,270

that are coming up next Monday

90

00:04:52,270 --> 00:04:55,520

when they will fly the Japan robotic arm

91

00:04:55,520 --> 00:04:58,690

to receive a handoff from Canadarm2.

92

00:04:58,690 --> 00:05:03,280

The handoff item will be an unpressurized cargo pallet

93

00:05:03,280 --> 00:05:06,000

that ground controllers will extract from the HTV.

94

00:05:06,000 --> 00:05:08,750

The station crew members  
will move that pallet

95

00:05:08,750 --> 00:05:13,260

over to the Kibo exposed  
facility on Monday

96

00:05:13,260 --> 00:05:16,390

and to kick off even more  
groundbreaking science