1
00:00:02,440 --> 00:00:03,440
Welcome.

2
00:00:03,440 --> 00:00:06,920
This is the International Space Station flight control room at the Johnson Space Center in

3
00:00:06,920 --> 00:00:11,970
Houston, with the Expedition 29 update for Thursday, October 27.

4
00:00:11,970 --> 00:00:16,770
Flight director Jerry Jason is leading today's Orbit 2 flight controllers, and serving as

5
00:00:16,770 --> 00:00:21,910
spacecraft communicator, or Capcom is Christie Bertels.

6
00:00:21,910 --> 00:00:26,410
Expedition 29 crew members Commander Mike Fossum and Flight Engineers Satoshi Furukawa

7
00:00:26,410 --> 00:00:31,930
with the Japanese space agency and Russian cosmonaut Sergei Volkov are completing the

8
00:00:31,930 --> 00:00:36,469
testing of the Russian segment's Kurs automated rendezvous system, and will close the hatch

9
00:00:36,469 --> 00:00:41,600
today on the Progress 42 vehicle in preparation for its undocking on Saturday.

10
00:00:41,600 --> 00:00:45,610
That undocking is planned for 4:04 a.m. central time.

11

00:00:45,610 --> 00:00:50,629
The departure of Progress 42 sets the stage
for the arrival of Progress 45, which will

12
00:00:50,629 --> 00:00:54,870
launch at 5:11 a.m. central time Sunday, 4:11
p.m. Baikonur time.

13
00:00:54,870 --> 00:01:01,359
Docking to the Pirs docking compartment is
scheduled on Wednesday, November 2 at 6:40

14
00:01:01,359 --> 00:01:02,600
a.m. central time.

15
00:01:02,600 --> 00:01:09,410
Progress 45 supply ship is filled with food,
supplies and fuel for the station.

16
00:01:09,410 --> 00:01:13,480
On tap for the crew today there are additional
biomedical experiments, and continuing maintenance

17
00:01:13,480 --> 00:01:17,550
work for the water on/off valve in the Columbus
module.

18
00:01:17,550 --> 00:01:22,070
The crew is also holding a conference with
the European Space Agency to debrief the water

19
00:01:22,070 --> 00:01:25,120
on/off valve encapsulation activity.

20
00:01:25,120 --> 00:01:29,830
More valves will be encapsulated in the coming
months and ESA is taking this opportunity

21
00:01:29,830 --> 00:01:33,130
to fine tune those procedures.

22
00:01:33,130 --> 00:01:38,020
Fossum today will perform the final VO2max
and biorhythm runs for this expedition.

23
00:01:38,020 --> 00:01:45,090
VO2max is the evaluation of maximal oxygen
uptake and submaximal estimates of VO2max

24
00:01:45,090 --> 00:01:50,640
before, during and after long duration International
Space Station missions.

25
00:01:50,640 --> 00:01:55,850
This documents the maximum oxygen uptake of
crew members onboard the space station during

26
00:01:55,850 --> 00:01:57,350
these long duration missions.

27
00:01:57,350 --> 00:02:02,570
It’s sometimes referred to as the VO2 peak,
and is a standard measure of aerobic capacity

28
00:02:02,570 --> 00:02:06,270
and is directly related to the working physical
capacity of an individual.

29
00:02:06,270 --> 00:02:12,530
VO2Max is related to the ability of an astronaut
to perform an egress task; that means the

30
00:02:12,530 --> 00:02:17,080
task required to leave the station while wearing
a launch and escape spacesuit.

31
00:02:17,080 --> 00:02:22,390
The study is important because decrease VO2Max
may represent a safety concern in the event

32
00:02:22,390 --> 00:02:26,130
of an emergency during spaceflight.

33
00:02:26,130 --> 00:02:29,780
The principal investigator for this experiment
is doctor Alan Moore at the Johnson Space

34
00:02:29,780 --> 00:02:32,090
Center’s human research program.

35
00:02:32,090 --> 00:02:34,210
And how does this study apply on Earth?

36
00:02:34,210 --> 00:02:39,170
Well the data obtained provides valuable insight
into the aerobic capacity of teams in closed

37
00:02:39,170 --> 00:02:42,900
environments, such as Arctic bases and submarines.

38
00:02:42,900 --> 00:02:50,040
Satoshi Furukawa is also closing out his nutritional
repository experiment with a final 24-hour

39
00:02:50,040 --> 00:02:51,819
urine collection.

40
00:02:51,819 --> 00:02:56,400
The nutritional assessment or nutrition experiment
is designed to understand the changes in human

41
00:02:56,400 --> 00:03:03,849
physiology during long duration spaceflights,
and it measures the bone metabolism, oxidative

42
00:03:03,849 --> 00:03:08,150
damage and chemistry and hormonal changes
as well as the assessment of nutritional status

43
00:03:08,150 --> 00:03:11,150
of the crew members.

44
00:03:11,150 --> 00:03:15,540
The results not only have impact on the nutritional
requirements and developments of food systems

45
00:03:15,540 --> 00:03:21,350
for future exploration missions but also has
influenced osteoporosis studies here on Earth.

46
00:03:21,350 --> 00:03:26,950
Dr. Scott Smith at the Johnson Space Center
human research program is the lead investigator

47
00:03:26,950 --> 00:03:32,660
along with Purdue, Tufts and Indiana University
and the University of Bonn in Germany are

48
00:03:32,660 --> 00:03:36,959
also participating in this study.

49
00:03:36,959 --> 00:03:41,520
Part of that experiment is the repository
portion and those specimens are collected

50
00:03:41,520 --> 00:03:46,810
and then brought back to Earth and kept at
NASA’s biological specimens repository.

51
00:03:46,810 --> 00:03:53,099
That repository collects and stores and distributes
samples to future investigators once they

52
00:03:53,099 --> 00:03:56,050
do continued life science investigations.

53
00:03:56,050 --> 00:04:01,280
In other news here at NASA, the NASA TV will

broadcast a Tweetup at 11 a.m. central time

54
00:04:01,280 --> 00:04:04,810
out of Vandenberg California and the Kennedy Space Center.

55
00:04:04,810 --> 00:04:10,030
This is all in advance of tomorrow's launch of the Delta 2 rocket and the NPP satellite.

56
00:04:10,030 --> 00:04:14,569
The NPP satellite is the National Polar Orbiting Operational Environmental Satellite System

57
00:04:14,569 --> 00:04:18,930
Preparatory Project and is the first mission designed to collect critical data to improve

58
00:04:18,930 --> 00:04:24,330
weather forecasts in the short term and increase understanding of long term climate changes.

59
00:04:24,330 --> 00:04:28,949
NPP continues the observation of Earth from space that NASA has pioneered for more than

60
00:04:28,949 --> 00:04:30,389
40 years.

61
00:04:30,389 --> 00:04:35,270
NASA TV coverage of that NPP launch tomorrow begins at 2 a.m. central time.

62
00:04:35,270 --> 00:04:41,330
Launch is scheduled for 4:48 p.m., excuse me, a.m. central time at the start of a 9-minute

63
00:04:41,330 --> 00:04:42,810
launch window.

64
00:04:42,810 --> 00:04:47,600
For more information on the space station,
on Expedition 29 and 30, be sure to look up

65
00:04:47,600 --> 00:04:52,090
the International Space Station homepage on
the web and find us on Facebook or follow