



**Space**to**Ground**

1

00:00:03,160 --> 00:00:08,080

Welcome to Space to Ground, I'm Kathryn Clayton. A few crew members said goodbye

2

00:00:08,080 --> 00:00:12,880

preparations for serious spacewalk and plenty of science make for another busy

3

00:00:12,880 --> 00:00:14,980

week on the International Space Station.

4

00:00:16,120 --> 00:00:17,800

Three station crew members closed the

5

00:00:17,810 --> 00:00:21,800

hatch on their Soyuz spacecraft, undock from station and made the trip back to Earth.

6

00:00:21,800 --> 00:00:27,920

NASA astronaut Nick Hague, Expedition 60 and Roscosmos cosmonaut Alexey Ovchinin,

7

00:00:27,920 --> 00:00:32,660

and the United Arab Emirates astronaut Hazzaa Ali Almansoori ended

8

00:00:32,660 --> 00:00:38,360

their time on station Thursday. Hague and Ovchinin completed a 203 day mission that

9

00:00:38,360 --> 00:00:42,350

spanned three thousand, two hundred and forty eight orbits of Earth or eighty

10

00:00:42,350 --> 00:00:46,490

point eight million miles.

This was Hague second spaceflight and

11

00:00:46,490 --> 00:00:50,840

the third for Ovchinin. Almansoori wrapped up an eight day stay on the station.

12

00:00:52,000 --> 00:00:55,900

Their undocking marked the beginning of Expedition 61. European

13

00:00:55,910 --> 00:01:00,079

Space Agency astronaut Luca Parmitano will command the Expedition 61 crew

14

00:01:00,079 --> 00:01:02,840

comprised of NASA astronauts Christina Koch,

15

00:01:02,840 --> 00:01:08,380

Jessica Meir and Andrew Morgan, and Russian cosmonauts Alexander Skvortsov and Oleg Skripochka.

16

00:01:09,320 --> 00:01:12,100

And things kick into high gear for the crew this Sunday with

17

00:01:12,100 --> 00:01:15,380

the first of five complex spacewalk scheduled in October.

18

00:01:16,800 --> 00:01:21,580

The spacewalkers will continue the ongoing work to upgrade the large external batteries on

19

00:01:21,590 --> 00:01:25,790

the station, swapping older nickel hydrogen batteries with new lithium-ion

20

00:01:25,790 --> 00:01:30,830

batteries recently delivered on the Japanese HTV-8. The upcoming battery

21

00:01:30,830 --> 00:01:34,970

swaps will be unique from previous spacewalks which use extensive robotics to do

22

00:01:34,970 --> 00:01:38,869

the heavy lifting. The batteries set to be replaced starting on Sunday are

23

00:01:38,869 --> 00:01:43,549

located on the far end of the station's backbone, also called the truss, and are

24

00:01:43,549 --> 00:01:48,049

out of range for the Canadarm2. This means the astronauts will have to carry

25

00:01:48,049 --> 00:01:51,939

the four hundred plus pound battery packs back and forth by hand.

26

00:01:52,480 --> 00:01:56,780

Sunday's spacewalk is expected to last over six hours with coverage on NASA TV

27

00:01:56,780 --> 00:01:59,160

starting at 6:30 a.m. Eastern.

28

00:01:59,940 --> 00:02:02,220

Amidst the departures in the spacewalk preparations,

29

00:02:02,220 --> 00:02:05,120

astronaut Christina Koch still had time for science.

30

00:02:06,700 --> 00:02:11,240

She kept the Biomolecule Extraction and Sequencing Technology or BEST

31

00:02:11,250 --> 00:02:15,750

investigation on task with sample transfers and Culture Media exchanges.

32

00:02:15,750 --> 00:02:20,730

DNA sequencing allows researchers to explore the molecular world. The best

33

00:02:20,730 --> 00:02:25,010

investigation seeks to advance sequencing in space in three ways:

34

00:02:25,010 --> 00:02:29,000

Identifying microbes that cannot be detected using traditional methods;

35

00:02:29,000 --> 00:02:33,390

assessing microbial mutations in the genome because a spaceflight; and

36

00:02:33,390 --> 00:02:38,220

performing direct RNA sequencing. Sequencing in space allows for real-time

37

00:02:38,220 --> 00:02:42,300

snapshot of gene expression, which will help protect humans during future space

38

00:02:42,300 --> 00:02:46,340

exploration missions and help monitor the presence of microbes in remote

39

00:02:46,340 --> 00:02:47,580

locations on Earth.

40

00:02:48,520 --> 00:02:51,600

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