



# Space to Ground

1  
00:00:00,490 --> 00:00:05,190

[Music]

2  
00:00:09,350 --> 00:00:07,190

welcome to space to ground i'm sandra

3  
00:00:11,830 --> 00:00:09,360

jones this week crystal growth

4  
00:00:14,549 --> 00:00:11,840

investigations continue onboard space

5  
00:00:16,870 --> 00:00:14,559

station a spacewalk is on the books and

6  
00:00:19,109 --> 00:00:16,880

astronauts participate in final training

7  
00:00:22,470 --> 00:00:19,119

ahead of an upcoming launch

8  
00:00:24,710 --> 00:00:22,480

on friday expedition 67 commander oleg

9  
00:00:27,349 --> 00:00:24,720

artemyev and flight engineer denise

10  
00:00:29,830 --> 00:00:27,359

matviev both of roscosmos will venture

11  
00:00:32,549 --> 00:00:29,840

outside the station's space-facing hoist

12  
00:00:34,709 --> 00:00:32,559

hatch to participate in a space walk the

13  
00:00:37,270 --> 00:00:34,719

primary objectives of the spacewalk are

14

00:00:39,350 --> 00:00:37,280

to relocate an external control panel

15

00:00:41,670 --> 00:00:39,360

for the european robotic arm from one

16

00:00:43,590 --> 00:00:41,680

operating area to another and test a

17

00:00:45,590 --> 00:00:43,600

rigidizing mechanism on the arm that

18

00:00:46,950 --> 00:00:45,600

will be used to facilitate the grasping

19

00:00:49,350 --> 00:00:46,960

of payloads

20

00:00:51,430 --> 00:00:49,360

back on the ground a trio is gearing up

21

00:00:52,950 --> 00:00:51,440

for a launch on a soyuz rocket later

22

00:00:55,350 --> 00:00:52,960

this month

23

00:00:57,830 --> 00:00:55,360

soyuz commander sergey prakopiev and

24

00:01:00,389 --> 00:00:57,840

flight engineer dimitri patelen of rose

25

00:01:02,709 --> 00:01:00,399

cosmos and nasa flight engineer frank

26

00:01:04,469 --> 00:01:02,719

rubio conducted final qualification

27

00:01:06,390 --> 00:01:04,479

training tuesday and wednesday at the

28

00:01:08,710 --> 00:01:06,400

gagarin cosmonaut training center in

29

00:01:10,630 --> 00:01:08,720

star city russia the training is taking

30

00:01:12,310 --> 00:01:10,640

place ahead of their upcoming launch to

31

00:01:14,310 --> 00:01:12,320

the international space station

32

00:01:16,630 --> 00:01:14,320

scheduled to launch wednesday september

33

00:01:19,109 --> 00:01:16,640

21st from the baikonur cosmodrome in

34

00:01:20,870 --> 00:01:19,119

kazakhstan the crew is scheduled for a

35

00:01:22,630 --> 00:01:20,880

six-month stay at the orbiting

36

00:01:24,870 --> 00:01:22,640

laboratory

37

00:01:26,870 --> 00:01:24,880

studying protein crystals can contribute

38

00:01:28,950 --> 00:01:26,880

to the development of disease fighting

39

00:01:30,950 --> 00:01:28,960

drugs and new materials

40

00:01:32,870 --> 00:01:30,960

scientists have long found that protein

41

00:01:35,109 --> 00:01:32,880

crystal growth in the microgravity

42

00:01:37,030 --> 00:01:35,119

environment of space are of higher

43

00:01:37,830 --> 00:01:37,040

quality than protein crystals grown on

44

00:01:40,149 --> 00:01:37,840

earth

45

00:01:42,149 --> 00:01:40,159

this week nasa astronaut chell lingard

46

00:01:44,310 --> 00:01:42,159

worked on the advanced nanostep

47

00:01:46,469 --> 00:01:44,320

experiment which aims to improve the

48

00:01:48,550 --> 00:01:46,479

quality of space grown crystals while

49

00:01:50,630 --> 00:01:48,560

utilizing shorter sample preparation

50

00:01:52,710 --> 00:01:50,640

periods and learn more about what kinds

51  
00:01:54,870 --> 00:01:52,720  
of impurities deteriorate protein

52  
00:01:57,429 --> 00:01:54,880  
crystal quality grown in space

53  
00:01:59,270 --> 00:01:57,439  
advanced nanostep uses special equipment

54  
00:02:01,350 --> 00:01:59,280  
to measure crystal growth rates

55  
00:02:03,670 --> 00:02:01,360  
nucleation rates and study of the

56  
00:02:06,069 --> 00:02:03,680  
surface structure of the crystals this

57  
00:02:08,389 --> 00:02:06,079  
information may advance capabilities for

58  
00:02:10,790 --> 00:02:08,399  
the research and production of materials

59  
00:02:12,550 --> 00:02:10,800  
and drugs in space and contributes to a

60  
00:02:14,630 --> 00:02:12,560  
working body of knowledge concerning the

61  
00:02:16,550 --> 00:02:14,640  
biochemistry of organisms in

62  
00:02:18,630 --> 00:02:16,560  
microgravity

63  
00:02:20,790 --> 00:02:18,640

and that's space to ground for this week

64

00:02:23,350 --> 00:02:20,800

thanks so much for watching we invite

65

00:02:25,589 --> 00:02:23,360

you to visit [blogs.nasa.gov](https://blogs.nasa.gov)

66

00:02:28,070 --> 00:02:25,599

artemis to get the latest update on the

67

00:02:29,910 --> 00:02:28,080

artemis 1 mission to the moon and as

68

00:02:31,589 --> 00:02:29,920

always you can keep up to date on the

69

00:02:34,309 --> 00:02:31,599

latest news about the international

70

00:02:36,309 --> 00:02:34,319

space station on twitter at space

71

00:02:38,210 --> 00:02:36,319

underscore station we'll see you next