
SpacetoGround

1
00:00:07,030 --> 00:00:02,790
foreign

2
00:00:09,470 --> 00:00:07,040
[Music]

3
00:00:11,030 --> 00:00:09,480
this week we have a Duo venturing

4
00:00:13,789 --> 00:00:11,040
outside the International Space Station

5
00:00:15,829 --> 00:00:13,799
for a spacewalk while on board the crew

6
00:00:17,990 --> 00:00:15,839
caught some colorful views and we'll

7
00:00:20,929 --> 00:00:18,000
play a little chess

8
00:00:23,029 --> 00:00:20,939
on Friday NASA astronaut Steve Bowen and

9
00:00:25,189 --> 00:00:23,039
United Arab Emirates astronaut Sultan

10
00:00:28,070 --> 00:00:25,199
anayadi ventured outside of the orbiting

11
00:00:29,870 --> 00:00:28,080
lab for U.S spacewalk 86. the duo

12
00:00:32,089 --> 00:00:29,880
completed some maintenance work to help

13
00:00:34,310 --> 00:00:32,099

prepare for upcoming irosa installations

14
00:00:36,470 --> 00:00:34,320
to the International Space Station

15
00:00:38,209 --> 00:00:36,480
just like here on Earth the crew aboard

16
00:00:40,250 --> 00:00:38,219
the International Space Station enjoy a

17
00:00:42,530 --> 00:00:40,260
little work-life balance so in their

18
00:00:44,990 --> 00:00:42,540
downtime they get a little creative

19
00:00:46,729 --> 00:00:45,000
check out what they do for fun

20
00:00:48,830 --> 00:00:46,739
with the help of the flight team on the

21
00:00:50,569 --> 00:00:48,840
ground Expedition 69 had their first

22
00:00:52,970 --> 00:00:50,579
ever space to ground chess tournament

23
00:00:55,670 --> 00:00:52,980
flight Engineers Frank Rubio Woody

24
00:00:57,770 --> 00:00:55,680
hoberg Sultan aniyadi and Steven Bowen

25
00:00:59,270 --> 00:00:57,780
give a thumbs up after winning the first

26
00:01:01,069 --> 00:00:59,280
round of the tournament with Mission

27
00:01:03,590 --> 00:01:01,079
controllers at NASA's Johnson Space

28
00:01:05,329 --> 00:01:03,600
Center in Houston Texas hoberg is a

29
00:01:07,429 --> 00:01:05,339
chess fan and set up the orbiting

30
00:01:09,109 --> 00:01:07,439
tournament with Mish controllers with

31
00:01:11,510 --> 00:01:09,119
each side having their own chessboard

32
00:01:12,890 --> 00:01:11,520
and typically making one or two moves a

33
00:01:15,350 --> 00:01:12,900
day

34
00:01:17,450 --> 00:01:15,360
our son has been active as of late with

35
00:01:19,789 --> 00:01:17,460
several geomagnetic storms taking place

36
00:01:22,070 --> 00:01:19,799
and while these space weather events can

37
00:01:24,770 --> 00:01:22,080
provide spectacular light shows in the

38
00:01:27,050 --> 00:01:24,780

form of auroras here on Earth thus the

39
00:01:28,850 --> 00:01:27,060
solar activity pose a risk to humans on

40
00:01:31,070 --> 00:01:28,860
the space station

41
00:01:33,230 --> 00:01:31,080
radiation protection is essential for

42
00:01:35,690 --> 00:01:33,240
humans to live and work safely in space

43
00:01:38,210 --> 00:01:35,700
and several parameters affect astronaut

44
00:01:40,609 --> 00:01:38,220
exposure to radiation the space station

45
00:01:42,890 --> 00:01:40,619
operates in orbit around our planet and

46
00:01:44,990 --> 00:01:42,900
the Earth's geomagnetic field extends

47
00:01:47,390 --> 00:01:45,000
from Earth's interior out into space

48
00:01:50,030 --> 00:01:47,400
where it acts as a barrier to the space

49
00:01:52,370 --> 00:01:50,040
radiation environment however at the

50
00:01:54,770 --> 00:01:52,380
poles the geomagnetic protection from

51
00:01:56,810 --> 00:01:54,780
the Earth's magnetic field is minimal

52
00:01:59,149 --> 00:01:56,820
when the space station passes through

53
00:02:01,789 --> 00:01:59,159
these high latitude areas near the poles

54
00:02:03,950 --> 00:02:01,799
the spacecraft is exposed to the space

55
00:02:06,469 --> 00:02:03,960
radiation environment for approximately

56
00:02:08,930 --> 00:02:06,479
8 to 10 minutes during a large

57
00:02:11,029 --> 00:02:08,940
geomagnetic storm like the ones observed

58
00:02:13,610 --> 00:02:11,039
recently the interaction with Earth's

59
00:02:16,010 --> 00:02:13,620
magnetic field expands these areas where

60
00:02:18,050 --> 00:02:16,020
the space station can be exposed to the

61
00:02:19,550 --> 00:02:18,060
space radiation environment the physical

62
00:02:21,830 --> 00:02:19,560
environment of the International Space

63
00:02:24,650 --> 00:02:21,840

Station provides some mitigation of the

64
00:02:26,990 --> 00:02:24,660
radiation exposure to the crew several

65
00:02:28,910 --> 00:02:27,000
radiation detection devices are deployed

66
00:02:31,250 --> 00:02:28,920
throughout the orbiting complex to

67
00:02:32,990 --> 00:02:31,260
measure the amount of radiation and

68
00:02:35,270 --> 00:02:33,000
support teams including the flight

69
00:02:37,790 --> 00:02:35,280
surgeon closely monitor the crew and

70
00:02:40,150 --> 00:02:37,800
space weather conditions having litter

71
00:02:42,770 --> 00:02:40,160
solar particles release these recent

72
00:02:45,350 --> 00:02:42,780
geomagnetic storms did not significantly

73
00:02:48,110 --> 00:02:45,360
increase the cruise radiation exposure

74
00:02:51,470 --> 00:02:48,120
and as far as the auroras the view from

75
00:02:53,509 --> 00:02:51,480
orbit is truly out of this world

76
00:02:55,250 --> 00:02:53,519
best space to ground for now thank you

77
00:02:57,530 --> 00:02:55,260
for watching do you have a question

78
00:02:59,570 --> 00:02:57,540
about the space station we would love to

79
00:03:03,470 --> 00:02:59,580
hear from you you can send your question

80
00:03:07,190 --> 00:03:03,480
by using ask NASA on social media we'll