

A close-up photograph of astronaut Mark Vande Hei inside his space helmet. He is wearing glasses and has a slight smile. The helmet's visor reflects the Earth and the interior of the helmet. In the background, the Earth's blue and white clouds are visible against the blackness of space. To the left, a large solar panel with a grid of gold-colored cells is partially visible. The overall scene is brightly lit, likely by sunlight.

MARK VANDE HEI

**LIVING AND WORKING
IN SPACE**

1
00:00:07,349 --> 00:00:06,550

[Music]

2
00:00:09,830 --> 00:00:07,359

so

3
00:00:11,749 --> 00:00:09,840

arriving at the space station

4
00:00:13,350 --> 00:00:11,759

something i'll never forget is looking

5
00:00:16,230 --> 00:00:13,360

over my left shoulder out the window in

6
00:00:18,790 --> 00:00:16,240

the soyuz where it was either a view of

7
00:00:20,470 --> 00:00:18,800

the earth or blackness of space

8
00:00:22,310 --> 00:00:20,480

and then all of a sudden i could see a

9
00:00:23,670 --> 00:00:22,320

solar array getting chills even thinking

10
00:00:24,790 --> 00:00:23,680

about it right now it was this beautiful

11
00:00:27,589 --> 00:00:24,800

gold

12
00:00:30,150 --> 00:00:27,599

massive i mean you don't ever train and

13
00:00:31,910 --> 00:00:30,160

see a solar array at full scale here and

14

00:00:33,670 --> 00:00:31,920

so there it was and the russian

15

00:00:35,350 --> 00:00:33,680

commander sitting to my right

16

00:00:37,190 --> 00:00:35,360

i had to really pay close attention and

17

00:00:38,549 --> 00:00:37,200

i was supposed to be too but as soon as

18

00:00:41,270 --> 00:00:38,559

i saw those solar eyes i broke the

19

00:00:42,150 --> 00:00:41,280

silence and said wow and he was like

20

00:00:45,900 --> 00:00:42,160

so

21

00:00:52,549 --> 00:00:45,910

i was excited

22

00:00:56,150 --> 00:00:53,990

the freedom of motion inside of the

23

00:00:57,990 --> 00:00:56,160

space station is huge

24

00:01:00,470 --> 00:00:58,000

and then working was busy it was

25

00:01:01,830 --> 00:01:00,480

definitely very busy i got up there when

26

00:01:04,070 --> 00:01:01,840

a spacex

27

00:01:05,910 --> 00:01:04,080

dragon spacecraft was docked

28

00:01:07,670 --> 00:01:05,920

just because there's a lot of science

29

00:01:09,750 --> 00:01:07,680

that requires return and things have to

30

00:01:12,789 --> 00:01:09,760

be done in a very specific timeline it

31

00:01:14,710 --> 00:01:12,799

was very fast-paced immediately

32

00:01:15,749 --> 00:01:14,720

and the space station is very unique

33

00:01:18,149 --> 00:01:15,759

because

34

00:01:20,070 --> 00:01:18,159

on the space station orbit is really a

35

00:01:21,270 --> 00:01:20,080

continuous freefall

36

00:01:23,270 --> 00:01:21,280

and because of that you can have some

37

00:01:25,510 --> 00:01:23,280

very unstable structures that might not

38

00:01:27,350 --> 00:01:25,520

be able to stay together if you're on

39

00:01:29,429 --> 00:01:27,360

the ground they can stay together on the

40

00:01:31,270 --> 00:01:29,439

space station flames behave differently

41

00:01:33,910 --> 00:01:31,280

because combustion on the ground

42

00:01:35,749 --> 00:01:33,920

requires drawing in all these rich gases

43

00:01:37,590 --> 00:01:35,759

into the flame because the hot

44

00:01:38,950 --> 00:01:37,600

combustion gases go up and away but

45

00:01:40,550 --> 00:01:38,960

there's no up and away on the space

46

00:01:42,230 --> 00:01:40,560

station all directions are equal as far

47

00:01:43,990 --> 00:01:42,240

as that's concerned so that behaves

48

00:01:45,749 --> 00:01:44,000

differently there's all kinds of

49

00:01:46,870 --> 00:01:45,759

different phenomena that we can

50

00:01:48,950 --> 00:01:46,880

experiment with that's why it's a

51
00:01:50,310 --> 00:01:48,960
wonderful laboratory many many different

52
00:01:52,870 --> 00:01:50,320
experiments some of those experiments

53
00:01:54,149 --> 00:01:52,880
actually have to do with us as the test

54
00:01:55,749 --> 00:01:54,159
subjects because we're trying to

55
00:01:57,510 --> 00:01:55,759
understand how to have people safely

56
00:01:59,109 --> 00:01:57,520
travel for longer and longer distances

57
00:02:00,709 --> 00:01:59,119
too that's just a sub part of all the

58
00:02:02,149 --> 00:02:00,719
science we're doing on the space station

59
00:02:04,789 --> 00:02:02,159
some people have talked about at some

60
00:02:06,389 --> 00:02:04,799
point in the expedition feeling like

61
00:02:08,469 --> 00:02:06,399
it's time to go home but for me there

62
00:02:10,150 --> 00:02:08,479
was always another spacewalk or another

63
00:02:12,150 --> 00:02:10,160

vehicle capture that was coming up so it

64

00:02:14,380 --> 00:02:12,160

always felt like suddenly i was going

65

00:02:16,550 --> 00:02:14,390

home and it surprised me

66

00:02:18,949 --> 00:02:16,560

[Music]

67

00:02:20,380 --> 00:02:18,959

i'm mark vandehei and i'm a nasa