



SPACE TO GROUND

1
00:00:00,660 --> 00:00:02,540
"HOUSTON, STATION
ON SPACE TO GROUND."

2
00:00:03,020 --> 00:00:04,980
WELCOME TO SPACE TO
GROUND, I'M GARY JORDAN.

3
00:00:05,376 --> 00:00:07,586
RIGHT NOW, WE HAVE A FEW
MORE CREWMEMBERS ON THEIR WAY

4
00:00:07,586 --> 00:00:09,156
TO THE INTERNATIONAL
SPACE STATION.

5
00:00:10,086 --> 00:00:13,426
DREW FEUSTEL AND RICKY ARNOLD
OF NASA AS WELL AS OLEG ARTEMYEV

6
00:00:13,426 --> 00:00:16,886
OF ROSCOSMOS LIFTED OFF FROM THE
BAIKONUR COSMODROME ON MARCH 21.

7
00:00:17,456 --> 00:00:19,546
THEY'RE NOW ON A 2-DAY
JOURNEY TO THE SPACE STATION

8
00:00:19,546 --> 00:00:21,966
TO JOIN THEIR FELLOW
CREWMEMBERS: SCOTT TINGLE

9
00:00:21,966 --> 00:00:25,696
OF NASA, ANTON SHKAPLEROV OF
ROSCOSMOS, AND NORISHIGE KANAI

10
00:00:25,696 --> 00:00:28,536
OF THE JAPAN AEROSPACE
EXPLORATION AGENCY, JAXA.

11

00:00:29,126 --> 00:00:31,166

THEY'RE SET TO DOCK

FRIDAY, MARCH 23RD,

12

00:00:31,376 --> 00:00:34,426

SO TUNE IN TO NASA TV OR OUR

WEBSITE TO SEE THE SCHEDULE

13

00:00:34,426 --> 00:00:35,736

AND WATCH THEIR ARRIVAL LIVE.

14

00:00:36,066 --> 00:00:38,396

THE 2 NEW NASA RESIDENTS

WILL HAVE TO GET USED

15

00:00:38,396 --> 00:00:39,956

TO THEIR SPACE LEGS

PRETTY QUICKLY,

16

00:00:40,246 --> 00:00:42,376

BECAUSE NEXT WEEK THEY'RE ARE

HEADING RIGHT BACK OUT THE DOOR

17

00:00:42,376 --> 00:00:43,466

TO GO FOR A SPACEWALK.

18

00:00:44,346 --> 00:00:46,176

AFTER LESS THAN A WEEK

ON BOARD THE STATION,

19

00:00:46,176 --> 00:00:49,026

VETERAN ASTRONAUTS DREW

FEUSTEL AND RICKY ARNOLD ARE SET

20

00:00:49,026 --> 00:00:51,416

TO DON THEIR SPACESUITS

FOR SIX AND A HALF HOURS

21

00:00:51,416 --> 00:00:53,856

OF INSTALLING NEW
EQUIPMENT AND CAMERAS OUTSIDE

22

00:00:53,856 --> 00:00:55,276
ON THURSDAY, MARCH 29TH.

23

00:00:55,926 --> 00:00:58,496
ONE OF THE PRIMARY TASKS IS
INSTALLING ADDITIONAL WIRELESS

24

00:00:58,496 --> 00:01:01,406
COMMUNICATIONS EQUIPMENT FOR
AN EXPERIMENT CALLED ECOSTRESS

25

00:01:01,536 --> 00:01:03,986
THAT WILL MEASURE THE
TEMPERATURE OF PLANTS ON EARTH

26

00:01:04,296 --> 00:01:06,166
TO BETTER UNDERSTAND
HOW MUCH WATER THEY NEED

27

00:01:06,396 --> 00:01:07,736
AND HOW THEY RESPOND TO STRESS.

28

00:01:08,156 --> 00:01:10,446
WE'LL COVER THE WHOLE EXCURSION
LIVE, SO ONE AGAIN HEAD

29

00:01:10,446 --> 00:01:13,056
TO NASA.GOV/NTV FOR THE LATEST

30

00:01:13,056 --> 00:01:15,496
ON HOW YOU CAN WATCH THE
SPACEWALK WHILE IT'S HAPPENING.

31

00:01:16,156 --> 00:01:18,756
SUDHA ON TWITTER WANTS TO
KNOW IF ASTRONAUT'S MOVEMENT

32

00:01:18,756 --> 00:01:20,706

ON THE SPACE STATION
AFFECTS THE STATION'S ORBIT.

33

00:01:21,216 --> 00:01:23,186

WELL NOT THE ORBIT PER
SE; IT'S PRETTY STABLE

34

00:01:23,186 --> 00:01:24,706

AT 250 MILES ABOVE THE EARTH.

35

00:01:25,106 --> 00:01:28,006

BUT THINK OF NEWTON'S THIRD LAW
-- EVERY ACTION HAS AN EQUAL

36

00:01:28,006 --> 00:01:29,256

AND OPPOSITE REACTION.

37

00:01:29,346 --> 00:01:33,406

EVERY TIME AN ASTRONAUT
PUSHES OFF A HANDRAIL OR WALL

38

00:01:33,406 --> 00:01:36,686

OF A MODULE, THAT ASTRONAUT IS
APPLYING A FORCE TO THE STATION.

39

00:01:36,976 --> 00:01:39,446

THE STATION IS HUGE SO
THE FORCE DOES VERY LITTLE

40

00:01:39,446 --> 00:01:40,216

TO THE WHOLE STRUCTURE.

41

00:01:40,796 --> 00:01:43,246

WHAT LITTLE EFFECT IT DOES
HAVE IS AUTOMATICALLY CORRECTED

42

00:01:43,296 --> 00:01:45,056

FOR BY THE ATTITUDE

CONTROL SYSTEM

43

00:01:45,106 --> 00:01:46,446
ON THE INTERNATIONAL
SPACE STATION.

44

00:01:47,356 --> 00:01:49,296
MARK VANDE HEI DID A
DEMONSTRATION WHILE HE WAS

45

00:01:49,296 --> 00:01:52,366
ON BOARD THE STATION RECENTLY TO
DEMONSTRATE NEWTON'S THIRD LAW,

46

00:01:52,586 --> 00:01:55,316
USING A BASKETBALL AND HIS
FELLOW CREWMATE JOE ACABA

47

00:01:55,316 --> 00:01:57,706
TO SHOW THE DIFFERENCE BETWEEN
APPLYING FORCE TO AN OBJECT

48

00:01:57,756 --> 00:02:00,006
OF MUCH SMALLER MASS,
AND AN OBJECT

49

00:02:00,006 --> 00:02:01,296
OF EQUAL MASS, RESPECTIVELY.