



SPACE TO GROUND

1
00:00:00,606 --> 00:00:03,646
"HOUSTON, STATION
ON SPACE TO GROUND."

2
00:00:03,746 --> 00:00:07,626
SCIENCE TIME ON THE
INTERNATIONAL SPACE STATION.

3
00:00:08,306 --> 00:00:10,586
WELCOME TO SPACE TO
GROUND, I'M DAN HUOT.

4
00:00:10,746 --> 00:00:13,626
A TON OF SCIENCE JUST
ARRIVED ON STATION,

5
00:00:13,626 --> 00:00:16,856
AND THE EXPEDITON 50 CREW
IS ALREADY GETTING IT DONE.

6
00:00:17,656 --> 00:00:20,976
ONE EXPERIMENT FIRED UP THIS
WEEK WAS THE MICROGRAVITY

7
00:00:20,976 --> 00:00:23,786
EXPANDED STEM CELLS
STUDY, TAKING PLACE

8
00:00:23,846 --> 00:00:25,726
IN THE MICROGRAVITY
SCIENCE GLOVEBOX.

9
00:00:26,076 --> 00:00:29,346
NASA'S PEGGY WHITSON
ACTIVATED THE INVESTIGATION

10
00:00:29,556 --> 00:00:32,596
WHICH IS LOOKING TO UTILIZE
THE MICROGRAVITY ENVIRONMENT

11
00:00:32,596 --> 00:00:36,446
ON STATION TO ACCELERATE THE
EXPANSION OF HUMAN STEM CELLS,

12
00:00:36,926 --> 00:00:39,056
SOMETHING THAT COULD
BE USEFUL IN A LOT

13
00:00:39,056 --> 00:00:40,426
OF MEDICAL TREATMENTS ON EARTH.

14
00:00:41,046 --> 00:00:44,836
THE CELLS CULTIVATED ON STATION
WILL BE USED IN CLINICAL TRIALS

15
00:00:44,886 --> 00:00:47,456
TO MEASURE THEIR EFFECTIVENESS
IN TREATING DISEASE,

16
00:00:47,456 --> 00:00:50,016
AND COULD IMPROVE THERAPIES
FOR STROKE PATIENTS,

17
00:00:50,246 --> 00:00:53,216
OR EVEN PROVIDE INSIGHT
ON HOW TO HELP PREVENT

18
00:00:53,216 --> 00:00:54,956
AND TREAT A NUMBER OF CANCERS.

19
00:00:55,796 --> 00:00:58,956
ONE OF THE STATION'S MOST
IMPORTANT LIFE SUPPORT SYSTEMS

20
00:00:58,956 --> 00:01:00,256
IS GETTING AN UPGRADE.

21
00:01:00,316 --> 00:01:04,956
THERE ARE TWO CARBON DIOXIDE

REMOVAL ASSEMBLIES, OR CDRAS,

22

00:01:05,036 --> 00:01:07,096

ABOARD THE STATION
THAT ARE RESPONSIBLE

23

00:01:07,336 --> 00:01:10,376

FOR SCRUBBING THE CO2
EXHALED BY ASTRONAUTS

24

00:01:10,446 --> 00:01:11,946

FROM THE STATION'S ATMOSPHERE.

25

00:01:12,456 --> 00:01:15,576

THE ABSORBENT MATERIAL THAT
ENABLES THIS PROCESS BREAKS

26

00:01:15,646 --> 00:01:18,486

DOWN OVER TIME WHICH MEANS
IT NEEDS TO BE REPLACED.

27

00:01:18,816 --> 00:01:22,076

THIS WEEK, THE CREW DID A
COMPLETE BREAKDOWN OF ONE

28

00:01:22,076 --> 00:01:25,216

OF THE UNITS AND SWAPPED IN
NEWER GENERATION COMPONENTS

29

00:01:25,476 --> 00:01:28,386

TO MAKE FUTURE REPLACEMENT
OF THIS MATERIAL EASIER.

30

00:01:28,956 --> 00:01:31,986

CDRA IS AN EXAMPLE OF
TECHNOLOGY THAT IS IMPORTANT

31

00:01:31,986 --> 00:01:34,206

FOR ANY LONG DURATION
SPACEFLIGHT MISSION,

32
00:01:34,476 --> 00:01:36,996
INCLUDING WHEN WE SEND
HUMANS ON TO MARS.

33
00:01:38,036 --> 00:01:40,456
OUR TWITTER QUESTION THIS
WEEK COMES FROM MARCUS

34
00:01:40,556 --> 00:01:44,586
IN MRS. ESTEVES' 6TH GRADE
CLASS AT SECAUCUS MIDDLE SCHOOL.

35
00:01:45,056 --> 00:01:48,366
MARCUS WANTED TO KNOW HOW OFTEN
WE SEND SUPPLIES TO THE ISS.

36
00:01:48,366 --> 00:01:52,216
LET'S TAKE A LOOK
AT 2016 TO FIND OUT.

37
00:01:53,226 --> 00:01:55,946
SEVEN CARGO SHIPS MADE
THE JOURNEY TO THE STATION

38
00:01:55,946 --> 00:01:58,866
TO DELIVER TONS OF SUPPLIES
TO THE CREWS ONBOARD.

39
00:01:58,866 --> 00:02:02,726
THEY INCLUDED U.S. COMMERCIAL
CRAFT LIKE SPACEX'S DRAGON

40
00:02:02,726 --> 00:02:05,536
AND ORBITAL ATK'S
CYGNUS, AND SPACESHIPS

41
00:02:05,576 --> 00:02:09,576
FROM OUR INTERNATIONAL PARTNERS,
INCLUDING THE JAPANESE HTV

42

00:02:09,576 --> 00:02:10,616

AND THE RUSSIAN PROGRESS.

43

00:02:11,106 --> 00:02:13,576

WE TYPICALLY RESUPPLY
OFTEN ENOUGH TO HAVE

44

00:02:13,576 --> 00:02:17,556

ABOUT SIX MONTHS WORTH OF FOOD,
WATER AND OTHER CONSUMABLE ITEMS

45

00:02:17,556 --> 00:02:21,106

ON THE STATION, NOT TO MENTION
FLYING NEW SCIENCE EXPERIMENTS

46

00:02:21,106 --> 00:02:24,166

AS FREQUENTLY AS POSSIBLE
TO GET THE MOST USE OUR

47

00:02:24,166 --> 00:02:25,596

OF OUR ORBITING LABORATORY.

48

00:02:26,256 --> 00:02:28,776

KEEP SENDING YOUR
QUESTIONS USING THE HASHTAG