
SpacetoGround

1
00:00:02,706 --> 00:00:04,656
"HOUSTON, STATION
ON SPACE TO GROUND."

2
00:00:05,316 --> 00:00:07,466
WELCOME TO SPACE TO
GROUND, I'M GARY JORDAN.

3
00:00:07,956 --> 00:00:10,686
SPACE JUNK IS A GROWING RISK
WHEN IT COMES TO SPACEFLIGHT,

4
00:00:11,126 --> 00:00:14,556
WHICH IS WHY A NEW EXPERIMENT IS
LOOKING AT HOW TO CLEAN IT UP.

5
00:00:14,686 --> 00:00:17,286
THE NANORACKS REMOVE DEBRIS
SATELLITE WAS DEPLOYED

6
00:00:17,326 --> 00:00:19,286
FROM THE SPACE STATION'S
ROBOTIC ARM THIS WEEK.

7
00:00:19,906 --> 00:00:21,936
REMOVE DEBRIS WILL LOOK
TO MANAGE SPACE JUNK

8
00:00:21,936 --> 00:00:24,176
BY LITERALLY PULLING
IT DOWN OUT OF ORBIT

9
00:00:24,336 --> 00:00:25,546
TO BURN UP IN THE ATMOSPHERE.

10
00:00:26,166 --> 00:00:29,216
RESEARCH HAS SHOWN THAT REMOVING
THE LARGEST DEBRIS SIGNIFICANTLY

11

00:00:29,216 --> 00:00:30,876
REDUCES THE CHANCE
OF COLLISIONS,

12
00:00:31,346 --> 00:00:34,836
SO REMOVE DEBRIS WILL USE A
3D CAMERA TO MAP THE LOCATION

13
00:00:34,836 --> 00:00:37,296
AND SPEED OF DEBRIS,
THEN CAPTURE

14
00:00:37,296 --> 00:00:40,996
AND DE-ORBIT SIMULATED
DEBRIS, CUBESATS IN THIS TEST,

15
00:00:40,996 --> 00:00:42,396
UP TO ONE METER IN SIZE.

16
00:00:42,656 --> 00:00:46,136
THE EXPERIMENT WILL TEST NET
CAPTURE, HARPOON CAPTURE,

17
00:00:46,506 --> 00:00:50,016
VISION-BASED NAVIGATION, AND
DRAGSAIL DE-ORBIT TECHNIQUES

18
00:00:50,016 --> 00:00:51,006
FOR REMOVING SPACE JUNK.

19
00:00:51,536 --> 00:00:54,196
EXPERTS HERE ON EARTH CAN
ANALYZE VIDEO FROM THESE RUNS

20
00:00:54,456 --> 00:00:56,606
TO SEE WHAT WORKED AND
FIND THE BEST WAYS TO CLEAN

21
00:00:56,606 --> 00:00:57,636
UP THE SPACE AROUND US.

22
00:00:58,566 --> 00:01:01,766
MEANWHILE, INSIDE THE STATION,
THE SCIENCE WAS POSITIVELY LIT.

23
00:01:02,836 --> 00:01:05,206
THIS WEEK, THE CREW SPENT
SOME TIME CLEANING SOOT

24
00:01:05,466 --> 00:01:06,956
FROM A PREVIOUS FLAME TEST

25
00:01:07,076 --> 00:01:09,896
FOR THE ADVANCED COMBUSTION
VIA MICROGRAVITY EXPERIMENTS,

26
00:01:10,226 --> 00:01:11,006
OR ACME.

27
00:01:11,386 --> 00:01:14,296
ACME AIMS TO IMPROVE FUEL
EFFICIENCY AND REDUCE POLLUTION

28
00:01:14,296 --> 00:01:16,936
ON EARTH, AND UNDERSTAND
MATERIAL FLAMMABILITY

29
00:01:16,936 --> 00:01:18,836
TO FURTHER PREVENT
SPACECRAFT FIRES.

30
00:01:19,366 --> 00:01:21,216
WITH THE BURNER CLEANED,
SCIENCE OPERATIONS

31
00:01:21,216 --> 00:01:23,676
FOR ACME ARE ONCE AGAIN
REIGNITED ON STATION.

32

00:01:23,876 --> 00:01:27,896
THIS WEEK'S QUESTION COMES AVA
AT RJO INTERMEDIATE SCHOOL.

33
00:01:28,616 --> 00:01:30,376
SHE'S ASKS HOW DO
YOU SEND MATERIALS

34
00:01:30,376 --> 00:01:32,016
FROM EARTH TO THE SPACE STATION?

35
00:01:32,306 --> 00:01:34,506
GREAT QUESTION, AND
THE ANSWER IS SIMPLE -

36
00:01:34,656 --> 00:01:36,626
A ROCKET THAT CARRIES
A SPACESHIP FULL

37
00:01:36,746 --> 00:01:38,056
OF STUFF INTO ORBIT.

38
00:01:38,456 --> 00:01:41,406
THE INTERNATIONAL SPACE
STATION ORBITS 250 MILES

39
00:01:41,406 --> 00:01:43,226
ABOVE THE EARTH, AND
CAN'T REALLY COME

40
00:01:43,226 --> 00:01:45,756
DOWN TO GET MORE
SUPPLIES - FOOD, FUEL,

41
00:01:45,756 --> 00:01:47,196
EXPERIMENTS, AND EQUIPMENT.

42
00:01:47,596 --> 00:01:49,526
THEREFORE, THESE SUPPLIES
HAVE TO BE DELIVERED

43
00:01:49,526 --> 00:01:51,836
TO THE SPACE STATION
ON SEPARATE VEHICLES.

44
00:01:51,836 --> 00:01:53,286
THINK OF THEM AS
DELIVERY TRUCKS,

45
00:01:53,436 --> 00:01:55,216
BUT THEY TRAVEL FASTER
AND HIGHER.

46
00:01:55,756 --> 00:01:57,946
IT TAKES A FEW DAYS TO
ARRIVE AT THE SPACE STATION,

47
00:01:58,056 --> 00:02:00,736
AND ONCE IT DOES, IT HAS TO
BE CAPTURED BY THE ROBOTIC ARM

48
00:02:00,736 --> 00:02:03,046
TO BE MOVED IN A POSITION
WHERE IT CAN BE ATTACHED

49
00:02:03,406 --> 00:02:05,436
SO ASTRONAUTS CAN GET TO
THE GOOD STUFF INSIDE.

50
00:02:06,296 --> 00:02:09,106
YOU CAN WATCH THE LAUNCH OF A
CARGO VEHICLE NEXT WEEK LIVE,

51
00:02:09,306 --> 00:02:12,386
WHERE SPACEX WILL BE SENDING
ITS DRAGON CARGO VEHICLE PACKED

52
00:02:12,496 --> 00:02:14,206
WITH THOUSANDS OF
POUNDS OF CARGO

53
00:02:14,476 --> 00:02:15,736
TO THE INTERNATIONAL
SPACE STATION.

54
00:02:17,046 --> 00:02:19,666
KEEP SENDING IN YOUR QUESTIONS
USING THE HASHTAG SPACETOGROUND,

55
00:02:20,146 --> 00:02:21,366
AND FOR THOSE TEACHERS
OUT THERE,

56
00:02:21,616 --> 00:02:23,856
CHECK OUT THE LATEST
EPISODE OF STEMONSTRATIONS

57
00:02:24,456 --> 00:02:26,636
WHERE ASTRONAUT SCOTT TINGLE
DEMONSTRATES THE MOVEMENT

58
00:02:26,636 --> 00:02:27,776
OF OBJECTS AROUND EARTH.

59
00:02:28,660 --> 00:02:29,440
WE'LL SEE YOU NEXT WEEK.