



Space**to**Ground

1
00:00:03,020 --> 00:00:05,120
"HOUSTON, STATION ON SPACE TO GROUND."

2
00:00:05,120 --> 00:00:07,580
WELCOME TO SPACE TO GROUND, I'M ISIDRO REYNA.

3
00:00:07,580 --> 00:00:10,250
THIS WEEK, SPACEX'S CARGO DRAGON SPACECRAFT

4
00:00:10,250 --> 00:00:12,940
SPLASHED DOWN OFF THE COAST OF FLORIDA.

5
00:00:12,940 --> 00:00:14,580
THE CARGO DRAGON SPACECRAFT,

6
00:00:14,580 --> 00:00:18,406
CARRYING OUT SPACEX'S 21ST COMMERCIAL RESUPPLY
SERVICES MISSION,

7
00:00:18,406 --> 00:00:21,500
UNDOCKED FROM THE INTERNATIONAL SPACE STATION
ON JAN. 12TH

8
00:00:21,500 --> 00:00:24,680
AND SPLASHED DOWN OFF THE COAST OF FLORIDA
12 HOURS LATER.

9
00:00:24,680 --> 00:00:27,530
IT WAS THE FIRST UNDOCKING OF A U.S. COMMERCIAL
CARGO CRAFT

10
00:00:27,530 --> 00:00:28,900
FROM THE COMPLEX.

11
00:00:28,900 --> 00:00:30,570
PREVIOUS CARGO DRAGON SPACECRAFT

12
00:00:30,570 --> 00:00:32,960

WERE ATTACHED AND REMOVED FROM THE STATION
USING

13
00:00:32,960 --> 00:00:34,760
THE STATION'S ROBOTIC CANADARM2.

14
00:00:34,760 --> 00:00:37,140
AND, THIS UPGRADED DRAGON HAS DOUBLE

15
00:00:37,140 --> 00:00:40,225
THE POWERED LOCKER CAPABILITY OF THE PREVIOUS
CARGO DRAGON,

16
00:00:40,225 --> 00:00:42,270
ENABLING THE TRANSPORT OF MORE COLD CARGO

17
00:00:42,270 --> 00:00:44,427
AND POWER FOR ADDITIONAL PAYLOADS.

18
00:00:45,000 --> 00:00:46,720
SPLASHING DOWN OFF THE COAST OF FLORIDA

19
00:00:46,720 --> 00:00:48,739
ENABLES QUICK TRANSPORTATION OF THE SCIENCE

20
00:00:48,739 --> 00:00:51,462
ABOARD THE CAPSULE TO NASA KENNEDY SPACE CENTER'S

21
00:00:51,462 --> 00:00:53,790
SPACE STATION PROCESSING FACILITY.

22
00:00:53,790 --> 00:00:55,760
THIS SHORTER TRANSPORTATION TIMEFRAME,

23
00:00:55,760 --> 00:00:58,492
AS SOON AS FOUR TO NINE HOURS AFTER SPLASHDOWN,

24
00:00:58,492 --> 00:01:00,170

WILL ALLOW RESEARCHERS TO COLLECT DATA

25

00:01:00,170 --> 00:01:02,970

WITH MINIMAL LOSS OF MICROGRAVITY EFFECTS.

26

00:01:02,970 --> 00:01:04,933

EXPERIMENTS ON THIS LATEST MISSION INCLUDED:

27

00:01:04,933 --> 00:01:07,389

CARDINAL HEART, WHICH STUDIES HOW CHANGES
IN GRAVITY

28

00:01:07,389 --> 00:01:09,609

AFFECT CARDIOVASCULAR CELLS AT THE CELLULAR

29

00:01:09,609 --> 00:01:12,149

AND TISSUE LEVEL USING 3D ENGINEERED HEART
TISSUES,

30

00:01:12,149 --> 00:01:14,340

A TYPE OF TISSUE CHIP.

31

00:01:14,340 --> 00:01:15,340

RESULTS COULD PROVIDE

32

00:01:15,340 --> 00:01:17,389

NEW UNDERSTANDING OF HEART PROBLEMS ON EARTH,

33

00:01:17,389 --> 00:01:19,939

HELP IDENTIFY NEW TREATMENTS, AND SUPPORT
DEVELOPMENT

34

00:01:19,939 --> 00:01:21,209

OF SCREENING MEASURES TO PREDICT

35

00:01:21,209 --> 00:01:23,979

CARDIOVASCULAR RISK PRIOR TO SPACEFLIGHT.

36

00:01:23,979 --> 00:01:26,429
THE BACTERIAL ADHESION AND CORROSION EXPERIMENT,

37
00:01:26,429 --> 00:01:28,329
WHICH IDENTIFIES THE BACTERIAL GENES USED

38
00:01:28,329 --> 00:01:29,810
DURING BIOFILM GROWTH,

39
00:01:29,810 --> 00:01:32,420
EXAMINES WHETHER THESE BIOFILMS CAN CORRODE
STAINLESS STEEL,

40
00:01:32,420 --> 00:01:35,950
AND EVALUATES THE EFFECTIVENESS OF A SILVER-BASED
DISINFECTANT.

41
00:01:35,950 --> 00:01:37,709
THIS INVESTIGATION COULD PROVIDE INSIGHT

42
00:01:37,709 --> 00:01:38,999
INTO BETTER WAYS TO CONTROL

43
00:01:38,999 --> 00:01:40,771
AND REMOVE RESISTANT BIOFILMS,

44
00:01:40,771 --> 00:01:42,149
CONTRIBUTING TO THE SUCCESS OF

45
00:01:42,149 --> 00:01:44,322
FUTURE LONG-DURATION SPACEFLIGHTS.

46
00:01:44,322 --> 00:01:45,630
FIBER OPTIC PRODUCTION,

47
00:01:45,630 --> 00:01:48,210
WHICH INCLUDES THE RETURN OF EXPERIMENTAL
OPTICAL FIBERS

48

00:01:48,210 --> 00:01:51,539

CREATED IN MICROGRAVITY USING A BLEND OF ZIRCONIUM,

49

00:01:51,539 --> 00:01:54,099

BARIUM, LANTHANUM, SODIUM, AND ALUMINUM.

50

00:01:54,099 --> 00:01:55,139

THE RETURN OF THE FIBERS,

51

00:01:55,139 --> 00:01:57,979

CALLED ZBLAN IN REFERENCE TO THE CHEMICAL
FORMULA,

52

00:01:57,979 --> 00:02:00,490

WILL HELP VERIFY EXPERIMENTAL STUDIES THAT
SUGGEST

53

00:02:00,490 --> 00:02:02,659

FIBERS CREATED IN SPACE SHOULD EXHIBIT

54

00:02:02,659 --> 00:02:05,960

FAR SUPERIOR QUALITIES TO THOSE PRODUCED ON
EARTH.

55

00:02:05,960 --> 00:02:07,530

AND THAT'S SPACE TO GROUND FOR THIS WEEK.