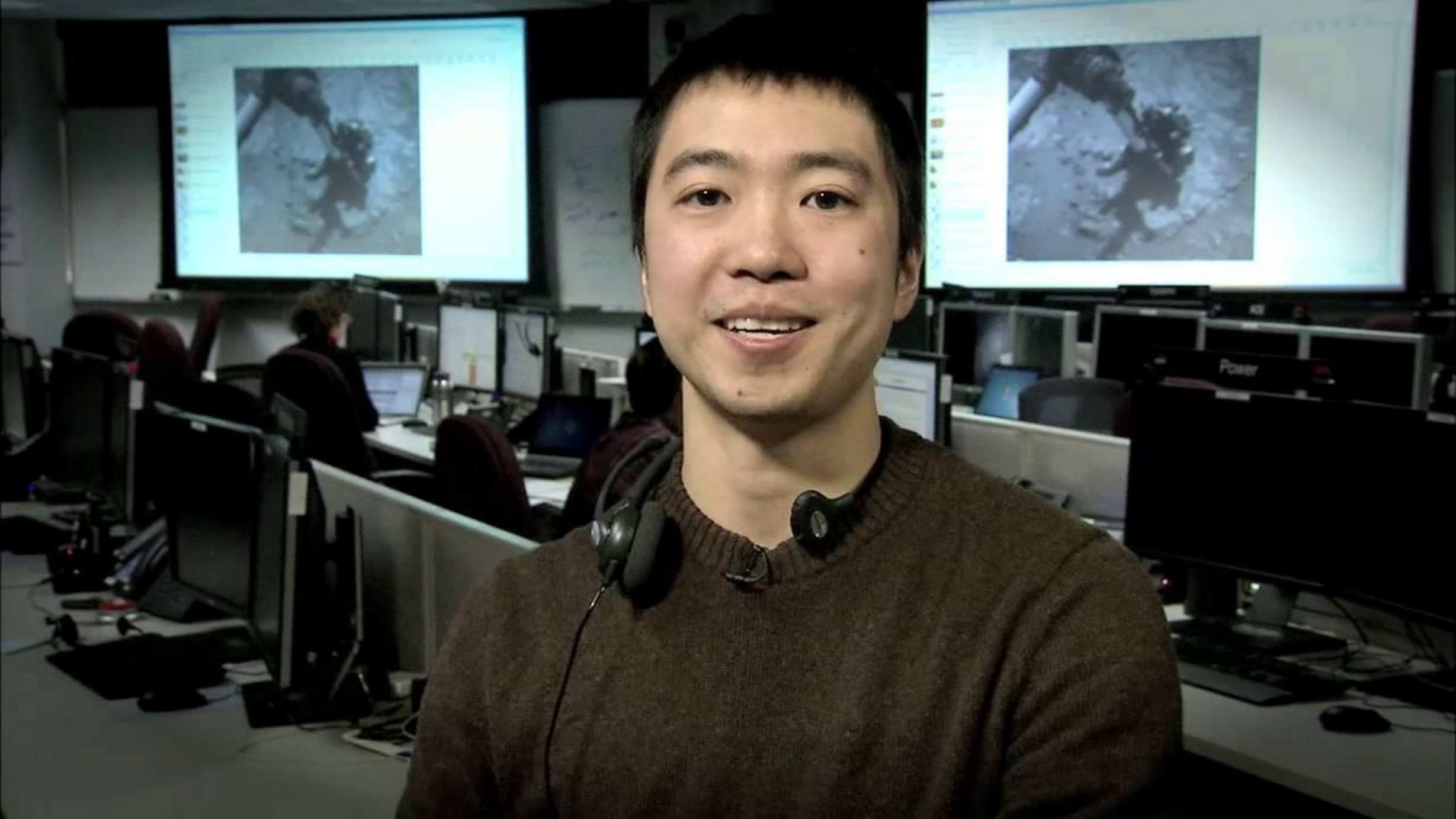
Power

1
00:00:07,040 --> 00:00:08,730
This Week at NASA…

2
00:00:08,730 --> 00:00:17,480
“All of these companies here today are commercially viable as commercial space flight companies.

3
00:00:17,480 --> 00:00:19,490
No doubt in my mind.”

4
00:00:19,490 --> 00:00:24,560
Officials from NASA and the companies participating in the agency’s Commercial Crew Program

5
00:00:24,560 --> 00:00:29,310
discussed the progress of CCP during a press briefing at the Kennedy Space Center.

6
00:00:29,310 --> 00:00:35,360
“The partnership between NASA and each of these companies clearly shows that we have

7
00:00:35,360 --> 00:00:40,610
a very vibrant space industry in the United States and the space industry wants to meet

8
00:00:40,610 --> 00:00:44,270
the goal of getting U.S. capability back into low Earth orbit.”

9
00:00:44,270 --> 00:00:51,340
Through CCP, NASA is working with The Boeing Company, SpaceX, Sierra Nevada and Blue Origin

10
00:00:51,340 --> 00:00:57,820
to develop safe, reliable and cost-effective access to and from low-Earth orbit for potential

11
00:00:57,820 --> 00:01:02,260

government and commercial customers.

12
00:01:02,260 --> 00:01:06,751
February 11th is the scheduled launch date
for the Landsat Data Continuity Mission 11

13
00:01:06,751 --> 00:01:09,880
from California’s Vandenburg Air Force Base.

14
00:01:09,880 --> 00:01:15,960
LDCM will continue the Landsat Program's 40-year
tradition of monitoring Earth's landscapes

15
00:01:15,960 --> 00:01:16,960
from space.

16
00:01:16,960 --> 00:01:21,470
“The new instruments to be flown on this
mission – the Operational Land Imager and

17
00:01:21,470 --> 00:01:28,040
the Thermal Infrared Sensor are an evolutionary
step in the sensor design with improved capabilities

18
00:01:28,040 --> 00:01:30,299
over previous Landsat missions.”

19
00:01:30,299 --> 00:01:35,260
The four decades of data from Landsat constitutes
the longest-running record of the Earth's

20
00:01:35,260 --> 00:01:39,470
continental surfaces as seen from space.

21
00:01:39,470 --> 00:01:45,270
Observations by LDCM, a collaboration between
NASA and the U.S. Geological Survey, will

22
00:01:45,270 --> 00:01:50,610

lead to advances in a wide range of Earth
sciences; the management of agriculture, water

23
00:01:50,610 --> 00:01:59,189
and forestry; and serve as a valuable resource
for education, business and government.

24
00:01:59,189 --> 00:02:06,700
NASA is deploying the Airborne Tropical Tropopause
Experiment , or ATTREX to study key climate

25
00:02:06,700 --> 00:02:12,659
change issues related to the moisture in,
and chemical composition of the upper atmosphere.

26
00:02:12,659 --> 00:02:17,760
NASA's remotely-controlled, long-range Global
Hawk aircraft will take measurements in the

27
00:02:17,760 --> 00:02:24,840
Pacific Ocean's tropical tropopause, a layer
of the atmosphere between 40,000 and 60,000

28
00:02:24,840 --> 00:02:26,579
feet above sea level.

29
00:02:26,579 --> 00:02:34,499
"Our experiment is designed to look at processes
that can, affect global change, specifically

30
00:02:34,499 --> 00:02:41,150
the process of changes in the stratospheric
water vapor, which we know can affect global

31
00:02:41,150 --> 00:02:42,150
change.

32
00:02:42,150 --> 00:02:49,529
Which we know can affect the overall temperature
at the surface."

33
00:02:49,529 --> 00:02:55,579
New findings by NASA missions headlined the
news at the 2013 meeting of the American Astronomical

34
00:02:55,579 --> 00:02:57,920
Society in San Francisco.

35
00:02:57,920 --> 00:03:04,510
Among them, the discovery by the Kepler spacecraft\h
of 461 new planet candidates.

36
00:03:04,510 --> 00:03:08,959
Four of the potential new planets are less
than twice the size of Earth and orbit in

37
00:03:08,959 --> 00:03:10,999
their sun's "habitable zone."

38
00:03:10,999 --> 00:03:16,200
That’s the region where liquid water might
exist on the surface of a system’s orbting

39
00:03:16,200 --> 00:03:17,200
planet.

40
00:03:17,200 --> 00:03:22,319
Since the last Kepler catalog was released
last February, the number of candidates scientists

41
00:03:22,319 --> 00:03:28,609
have discovered in the Kepler data has increased
20 percent and now totals more than 27-hundred

42
00:03:28,609 --> 00:03:32,319
potential planets orbiting more than 2-thousand
stars.

43
00:03:32,319 --> 00:03:38,730

Meanwhile, two new images from the X-ray eyes
of NASA's Nuclear Spectroscopic Telescope

44
00:03:38,730 --> 00:03:40,749
Array, or NuSTAR.

45
00:03:40,749 --> 00:03:46,719
The first reveals the brilliant glow, seen
in magenta, of two black holes lurking inside

46
00:03:46,719 --> 00:03:53,370
“IC342”, a spiral galaxy 7 million light-years
away.

47
00:03:53,370 --> 00:03:58,949
More than 10-times brighter than “stellar
mass” black holes in our own galaxy, the

48
00:03:58,949 --> 00:04:05,479
brilliance of these ultraluminous X-ray sources,
or ULXs, is a mystery\h astronomers believe

49
00:04:05,479 --> 00:04:08,169
NuSTAR can help solve.

50
00:04:08,169 --> 00:04:14,089
Also captured by NuSTAR: the first resolved
image ever of the historical supernova remnant

51
00:04:14,089 --> 00:04:20,989
Cassiopeia A. Light from the stellar explosion
that created Cassiopeia A took 11-thousand

52
00:04:20,989 --> 00:04:22,960
years to reach Earth.

53
00:04:22,960 --> 00:04:28,040
While the star is long dead, its remains are
still bursting with action.

54
00:04:28,040 --> 00:04:32,480
The outer blue ring is where the shock wave
from the supernova blast is slamming into

55
00:04:32,480 --> 00:04:37,980
surrounding material, whipping particles up
to within a fraction of a percent of the speed

56
00:04:37,980 --> 00:04:39,250
of light.

57
00:04:39,250 --> 00:04:44,250
NuSTAR observations should help solve the
riddle of how these particles are accelerated

58
00:04:44,250 --> 00:04:45,820
to such high energies.

59
00:04:45,820 --> 00:04:52,910
Hi, I am Justin Lin, Mobility Downlink for
the Mars Science Laboratory Mission, and this

60
00:04:52,910 --> 00:04:55,890
is your Curiosity rover report.

61
00:04:55,890 --> 00:05:00,270
Over the winter holidays, Curiosity was parked
at a location dubbed “Grandma’s House”

62
00:05:00,270 --> 00:05:01,270
at Yellowknife Bay.

63
00:05:01,270 --> 00:05:06,630
At this location, Curiosity took a series
of the images to create panoramas of the surrounding

64
00:05:06,630 --> 00:05:07,630
area.

65
00:05:07,630 --> 00:05:12,690
In addition, the team downloaded as much data
as possible from Curiosity to free up the

66
00:05:12,690 --> 00:05:17,330
onboard data storage space to give her a fresh
start to the New Year.

67
00:05:17,330 --> 00:05:21,690
Once the New Year approached, Curiosity was
ready to spin her wheels and stretch her arm.

68
00:05:21,690 --> 00:05:26,700
She started off with a small 3-meter drive
to an interesting feature called Snake River.

69
00:05:26,700 --> 00:05:32,790
Over time, dust accumulated on all the rocks
and it hides features, such as fissures, inclusions

70
00:05:32,790 --> 00:05:35,150
or pits that are of interest.

71
00:05:35,150 --> 00:05:39,330
At this location, the team selected a rock
for the first time use of the dust removal

72
00:05:39,330 --> 00:05:40,400
tool.

73
00:05:40,400 --> 00:05:47,800
The tool has a set of spinning metallic brushes
and this allows for the features to be exposed

74
00:05:47,800 --> 00:05:51,030
for unobstructed APXS or ChemCam observations.

75
00:05:51,030 --> 00:05:56,180
While these activities are taking place, the

team is searching for a suitable rock to test

76
00:05:56,180 --> 00:05:58,610
out the rotary-percussive drill.

77
00:05:58,610 --> 00:06:02,950
This is a very exciting activity because it
will be the first time that we will be drilling

78
00:06:02,950 --> 00:06:08,310
into a rock, acquire sample from deep within
the rock, and also sort and transport it to

79
00:06:08,310 --> 00:06:11,280
the science instruments on board Curiosity.

80
00:06:11,280 --> 00:06:13,930
This has been your Curiosity rover report.

81
00:06:13,930 --> 00:06:19,000
Please check back for more updates.

82
00:06:19,000 --> 00:06:22,640
The 2013 season of FIRST Robotics is underway.

83
00:06:22,640 --> 00:06:27,100
This year's international student competition
that combines the excitement of sports with

84
00:06:27,100 --> 00:06:32,990
the rigors of science, technology, engineering
and math, kicked off on NASA-TV from Manchester,

85
00:06:32,990 --> 00:06:34,070
New Hampshire.

86
00:06:34,070 --> 00:06:39,110
The show revealed details of this upcoming
season's challenge, "Ultimate Ascent,"

87
00:06:39,110 --> 00:06:42,460
involving flying Frisbees and pyramids.

88
00:06:42,460 --> 00:06:48,220
All teams competing in FIRST -- For Inspiration
and Recognition of Science and Technology,

89
00:06:48,220 --> 00:06:51,890
get the exact same kit of parts with which
to build their robots.

90
00:06:51,890 --> 00:06:56,870
Here's what happened at regional kick-off
events sponsored by NASA centers.

91
00:06:56,870 --> 00:07:04,340
In Cleveland, "building" anticipation
among more than 150 students from 24 northeast

92
00:07:04,340 --> 00:07:09,080
Ohio high schools as they learned about the
"Ultimate Ascent" at their event sponsored

93
00:07:09,080 --> 00:07:10,900
by the Glenn Research Center.

94
00:07:10,900 --> 00:07:16,110
Opening their official FIRST Kit of Parts,
the students found a technological cornucopia

95
00:07:16,110 --> 00:07:23,050
of motors, batteries, a control system, a
PC and a mix of automation components – but

96
00:07:23,050 --> 00:07:25,250
NO set of instructions.

97
00:07:25,250 --> 00:07:31,710

Then, each student team began formulating
its design plan for a robot that can fly as

98
00:07:31,710 --> 00:07:37,260
many flying discs into their goals as possible
in 2 minutes and 15 seconds.

99
00:07:37,260 --> 00:07:41,410
Matches end with the robots attempting to
climb up those afore-mentioned pyramids.

100
00:07:41,410 --> 00:07:45,639
“I think this is probably the most excited
I’ve been out of my three years.\h

101
00:07:45,639 --> 00:07:49,080
Especially because I’ve never worked with
a robot that has to climb anything.\h

102
00:07:49,080 --> 00:07:53,139
It’s a really interesting aspect that I’ve
never worked with or programmed.

103
00:07:53,139 --> 00:07:58,910
I know that throwing Frisbees is really difficult
and making a robot that does that is going

104
00:07:58,910 --> 00:08:01,410
to be such a challenge.”

105
00:08:01,410 --> 00:08:06,990
And, in Decatur, Alabama, the Marshall Space
Flight Center hosted its FIRST Kick-off event

106
00:08:06,990 --> 00:08:09,800
at Calhoun Community College.

107
00:08:09,800 --> 00:08:15,210
Student teams from Alabama, Tennessee and
Mississippi were focused on NASA TV as this

108
00:08:15,210 --> 00:08:17,120
year’s challenge was explained.

109
00:08:17,120 --> 00:08:22,560
And almost immediately after getting the details
and their robot kits, many teams began thinking

110
00:08:22,560 --> 00:08:25,669
about the best robot design for this season’s
challenge.

111
00:08:25,669 --> 00:08:30,580
“We are really excited with this year’s
challenge, we look forward to seeing the discs

112
00:08:30,580 --> 00:08:32,919
fly and the points add up.\h

113
00:08:32,919 --> 00:08:38,399
We have a freshman team, a rookie team, who
just received their kit of parts and are going

114
00:08:38,399 --> 00:08:43,919
through it and we have teams here that have
many years of experience who have left are

115
00:08:43,919 --> 00:08:46,490
ready to begin Ultimate Ascent.”

116
00:08:46,490 --> 00:08:52,779
The winners of more than thirty regional competitions
will face-off at the FIRST Championships scheduled

117
00:08:52,779 --> 00:09:00,439
for April 24-27 in St. Louis.

118
00:09:00,439 --> 00:09:11,850
“3-2-1 … ignition and liftoff”

119
00:09:11,850 --> 00:09:19,189
Following its launch from Kennedy Space Center
sixteen years ago on January 12, 1997, Atlantis

120
00:09:19,189 --> 00:09:23,910
became the fifth space shuttle to dock with
the Mir space station.

121
00:09:23,910 --> 00:09:29,329
During the five days of STS-81's docked
operations, the shuttle and station crews

122
00:09:29,329 --> 00:09:35,660
transferred nearly 6,000 pounds of water,
U.S. science equipment and Russian logistical

123
00:09:35,660 --> 00:09:38,529
equipment from Atlantis to Mir.

124
00:09:38,529 --> 00:09:43,990
The 10-day mission brought home astronaut
John Blaha after an 118-day stay aboard the

125
00:09:43,990 --> 00:09:45,860
Russian complex.

126
00:09:45,860 --> 00:09:51,720
Among the seven-person Atlantis crew was John
Grunsfeld, now serving as head of NASA's

127
00:09:51,720 --> 00:10:02,589
Science Mission Directorate.

128
00:10:02,589 --> 00:10:09,740
Seven years ago, on January 15, 2006, the
return capsule from NASA's Stardust spacecraft

129
00:10:09,740 --> 00:10:16,649

landed in the Utah Desert, completing its
2.9-billion-mile round-trip journey to collect

130
00:10:16,649 --> 00:10:19,860
dust samples from the tail of comet Wild 2.

131
00:10:19,860 --> 00:10:24,420
Research done on these particles revealed
surprises, including the samples' closer

132
00:10:24,420 --> 00:10:30,040
resemblance to a meteorite from an asteroid
than that of an ancient comet.

133
00:10:30,040 --> 00:10:35,110
Stardust is the first spacecraft to make it
back to Earth with a comet's dust particles

134
00:10:35,110 --> 00:10:37,079
in tow.

135
00:10:37,079 --> 00:10:39,490
And that's This Week @NASA.

136
00:10:39,490 --> 00:10:44,050
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