1
00:00:07,040 --> 00:00:11,280
This Week at NASA...

2
00:00:11,280 --> 00:00:15,780
During a recent visit to the Gulf Coast region,
Deputy Administrator Lori Garver toured two

3
00:00:15,780 --> 00:00:20,860
NASA facilities that are key to development
of the new Space Launch System and the agency's

4
00:00:20,860 --> 00:00:24,340
commercial crew partnerships with private
industry.

5
00:00:24,340 --> 00:00:29,000
At the Michoud Assembly Facility in New Orleans,
Garver was briefed on progress being made

6
00:00:29,000 --> 00:00:32,509
in support of the SLS and the Orion spacecraft
programs.

7
00:00:32,509 --> 00:00:38,980
"Michoud is a crown jewel at NASA, helping
to really expand our reach into the solar

8
00:00:38,980 --> 00:00:39,980
system.

9
00:00:39,980 --> 00:00:45,340
NASA's all about doing things that we've never
done before and we truly know that the people

10
00:00:45,340 --> 00:00:47,070
here know how to do that.

11
00:00:47,070 --> 00:00:52,850
Your history with NASA from Apollo through

the shuttle program to SLS and Orion is something

12
00:00:52,850 --> 00:00:53,980
that we treasure."

13
00:00:53,980 --> 00:00:59,230
Garver later traveled to Stennis Space Center
in Bay St. Louis, Mississippi for a tour of

14
00:00:59,230 --> 00:01:03,560
testing facilities there, including the B-2
test stand.

15
00:01:03,560 --> 00:01:08,310
Once used to test Apollo era engines, the
structure is being restored to prepare it

16
00:01:08,310 --> 00:01:13,000
for testing of the SLS core stage.

17
00:01:13,000 --> 00:01:19,890
The Expedition 36/37 crew -- Soyuz Commander
Fyodor Yurchikhin, NASA Flight Engineer Karen

18
00:01:19,890 --> 00:01:25,890
Nyberg and Flight Engineer Luca Parmitano
of the European Space Agency is training at

19
00:01:25,890 --> 00:01:30,890
the Gagarin Cosmonaut Training Center in Star
City, Russia, in preparation for its upcoming

20
00:01:30,890 --> 00:01:33,560
trip to the International Space Station.

21
00:01:33,560 --> 00:01:38,030
Training activities include familiarizing
themselves with systems of a Soyuz spacecraft

22

00:01:38,030 --> 00:01:40,140
like the one that'll take them to the station.

23
00:01:40,140 --> 00:01:44,920
The trio is scheduled to travel from Star
City to the launch site at the Baikonur Cosmodrome

24
00:01:44,920 --> 00:01:48,780
in Kazakhstan on May 16 to complete training.

25
00:01:48,780 --> 00:01:53,850
Launch is scheduled for May 29 local time.

26
00:01:53,850 --> 00:01:59,100
The Mars Exploration rover Opportunity has
executed a sequence of commands from the ground

27
00:01:59,100 --> 00:02:05,229
and has resumed normal operations -- confirming
it is back under control of the rover team.

28
00:02:05,229 --> 00:02:10,479
During a recent moratorium on commanding while
Mars passed nearly behind the sun - a phase

29
00:02:10,479 --> 00:02:16,180
called solar conjunction -- Opportunity entered
a type of standby mode, presumably because

30
00:02:16,180 --> 00:02:18,639
it was awaiting instructions from the ground.

31
00:02:18,639 --> 00:02:23,690
Meanwhile, Curiosity the most recent rover
on the Red Planet, has also reported coming

32
00:02:23,690 --> 00:02:28,269
through the conjunction in full health.

33

00:02:28,269 --> 00:02:33,739
NASA's newest scientific rover will roam the
icy landscape in Greenland to help scientists

34
00:02:33,739 --> 00:02:38,840
better understand changes in the massive ice
sheet and the impact those changes have on

35
00:02:38,840 --> 00:02:40,579
sea level rise.

36
00:02:40,579 --> 00:02:46,519
The autonomous, solar-powered robot named
GROVER, which stands for both Greenland Rover

37
00:02:46,519 --> 00:02:52,120
and Goddard Remotely Operated Vehicle for
Exploration and Research uses a ground-penetrating

38
00:02:52,120 --> 00:02:57,090
radar to collect data on snow accumulation
and ice sheet build up.

39
00:02:57,090 --> 00:03:01,989
This data is typically gathered by people
on snowmobiles and airplanes, but GROVER's

40
00:03:01,989 --> 00:03:07,500
ability to work longer hours than humans promises
to increase the amount of information available

41
00:03:07,500 --> 00:03:08,599
to researchers.

42
00:03:08,599 --> 00:03:12,090
The rover trials are scheduled to run through
June 8.

43
00:03:12,090 --> 00:03:16,889
"And we're going to do that by getting a sample

from this asteroid and bringing it back to

44
00:03:16,889 --> 00:03:18,579
Earth for detailed analysis."

45
00:03:18,579 --> 00:03:24,100
A public presentation at NASA Headquarters
provided an overview of OSIRIS-Rex, a NASA

46
00:03:24,100 --> 00:03:29,430
mission that will send a robotic probe to
an asteroid in September 2016 to collect and

47
00:03:29,430 --> 00:03:32,459
return a sample of that asteroid to Earth.

48
00:03:32,459 --> 00:03:37,230
In the presentation, "Asteroids -- Coming
to Earth", Principal Investigator Dr. Dante

49
00:03:37,230 --> 00:03:39,200
Lauretta discussed the mission.

50
00:03:39,200 --> 00:03:41,379
"Asteroids represent a great opportunity.

51
00:03:41,379 --> 00:03:45,949
These are resources in near-Earth space; we're
talking about water, organic material, precious

52
00:03:45,949 --> 00:03:49,879
metals that we're going to need if we're serious
about expanding the human presence beyond

53
00:03:49,879 --> 00:03:51,010
the Earth-moon system."

54
00:03:51,010 --> 00:03:58,110
Previously known as 1999RQ36, the target asteroid's

new name, submitted by a North Carolina third

55
00:03:58,110 --> 00:04:04,430
grader to an international naming contest,
is Bennu, a mythological Egyptian bird.

56
00:04:04,430 --> 00:04:09,559
Also at the presentation, samples of meteorites
-- including a piece from the recent event

57
00:04:09,559 --> 00:04:10,689
in Russia.

58
00:04:10,689 --> 00:04:15,430
OSIRIS REx is managed by Goddard Space Flight
Center in collaboration with the University

59
00:04:15,430 --> 00:04:19,000
of Arizona and Lockheed Martin.

60
00:04:19,000 --> 00:04:25,340
NASA's Cassini spacecraft has provided the
first close-up, visible-light views of a behemoth

61
00:04:25,340 --> 00:04:29,010
hurricane swirling around Saturn's north pole.

62
00:04:29,010 --> 00:04:34,131
High resolution images made possible by Cassini's
current campaign of tilted orbits, reveal

63
00:04:34,131 --> 00:04:40,700
that the hurricane's eye, is about 1,250 miles
wide -- 20 times larger than the average hurricane

64
00:04:40,700 --> 00:04:41,830
eye on Earth.

65
00:04:41,830 --> 00:04:47,700

Thin, bright clouds at the outer edge of the
storm are traveling at 330 mph.

66
00:04:47,700 --> 00:04:56,290
The hurricane swirls inside a large, mysterious,
six-sided weather pattern known as the hexagon.

67
00:04:56,290 --> 00:05:01,541
The Herschel space observatory, a European
Space Agency telescope for which NASA's Jet

68
00:05:01,541 --> 00:05:07,250
Propulsion Laboratory helped build instruments
and process data, has stopped making observations

69
00:05:07,250 --> 00:05:11,000
after running out of liquid coolant as expected.

70
00:05:11,000 --> 00:05:16,320
Launched almost four years ago, Herschel revealed
the universe's "coolest" secrets by observing

71
00:05:16,320 --> 00:05:20,120
the frigid side of planet, star and galaxy
formation.

72
00:05:20,120 --> 00:05:26,750
"Herschel was able to collect data to help
us understand objects in the universe that

73
00:05:26,750 --> 00:05:28,980
no other mission has allowed us to do.

74
00:05:28,980 --> 00:05:31,930
Here we are, made of carbon and nitrogen and
oxygen.

75
00:05:31,930 --> 00:05:34,600
Where did those elements come from?

76
00:05:34,600 --> 00:05:38,610
Herschel helped us connect the dots in that
story."

77
00:05:38,610 --> 00:05:43,660
Although observations by Herschel have ceased,
astronomers will continue to examine data

78
00:05:43,660 --> 00:05:50,430
collected by the telescope for more clues
about the secrets of the cosmos.

79
00:05:50,430 --> 00:05:57,140
A new video made from images taken by NASA's
Solar Dynamics Observatory provides an unprecedented

80
00:05:57,140 --> 00:06:02,770
time-lapse look at the last three years of
the sun -- in just thirty seconds.

81
00:06:02,770 --> 00:06:08,100
The sequence shows the sun in extreme ultraviolet
light at a pace of one image every twelve

82
00:06:08,100 --> 00:06:09,460
hours.

83
00:06:09,460 --> 00:06:16,120
Since its launch in 2010, SDO has captured
a virtually unbroken record of the sun's activity.

84
00:06:16,120 --> 00:06:21,220
Operated by Goddard Space Flight Center, SDO
is improving our understanding of the sun

85
00:06:21,220 --> 00:06:27,340
and its effect on conditions in space and
here on Earth.

86

00:06:27,340 --> 00:06:32,310
Researchers at NASA Ames are using the Center's
9 by 7 foot wind tunnel to test concept models

87
00:06:32,310 --> 00:06:37,560
of commercial jets that might someday fly
at supersonic speeds across country.

88
00:06:37,560 --> 00:06:42,830
The current work involves modifying the engine
intakes and wings of potential aircraft designs

89
00:06:42,830 --> 00:06:47,450
to minimize the impact of sonic booms heard
on the ground when planes fly faster than

90
00:06:47,450 --> 00:06:49,450
the speed of sound.

91
00:06:49,450 --> 00:06:54,860
Ames researchers and industry partners will
use the data from these tests to improve computational

92
00:06:54,860 --> 00:06:58,400
models so that quieter aircraft designs can
be developed.

93
00:06:58,400 --> 00:07:05,680
The State of Alabama recognized Marshall Space
Flight Center's achievements in space exploration

94
00:07:05,680 --> 00:07:10,940
and the Center's important role in the state's
economy and history during "NASA Day in Alabama"

95
00:07:10,940 --> 00:07:13,860
at the State Capitol in Montgomery.

96
00:07:13,860 --> 00:07:18,090
Marshall Center Director Patrick Scheuermann

and astronauts Kate Rubins and Jack Fischer

97
00:07:18,090 --> 00:07:21,120
were on hand to meet Governor Robert Bentley.

98
00:07:21,120 --> 00:07:25,580
The event also included displays and information
about Marshall's lead role in development

99
00:07:25,580 --> 00:07:30,710
of NASA'S Space Launch System as well as the
center's contributions to expanding research

100
00:07:30,710 --> 00:07:34,720
aboard the International Space Station.

101
00:07:34,720 --> 00:07:41,500
On May 5, 1961, Mercury astronaut Alan Shepard
launched aboard his Freedom 7 spacecraft from

102
00:07:41,500 --> 00:07:45,240
Cape Canaveral, making him the first American
in space.

103
00:07:45,240 --> 00:07:50,270
Shepard's historic flight came three weeks
after Russian cosmonaut Yuri Gagarin became

104
00:07:50,270 --> 00:07:52,870
the first human in space.

105
00:07:52,870 --> 00:07:59,810
Shepard's suborbital flight reached an altitude
of 116-miles and lasted about 15 minutes.

106
00:07:59,810 --> 00:08:05,090
After traveling just over 300-miles, Shepard
and Freedom 7 splashed down safely in the

107

00:08:05,090 --> 00:08:07,180
Atlantic Ocean.

108
00:08:07,180 --> 00:08:08,980
And that's This Week @NASA.