



1
00:00:07,680 --> 00:00:15,059
This Week at NASA...

2
00:00:15,059 --> 00:00:20,360
NASA Administrator Charles Bolden joined other
agency officials and dignitaries at the Washington

3
00:00:20,360 --> 00:00:25,950
National Cathedral to honor the life and career
of astronaut Neil Armstrong, the first man

4
00:00:25,950 --> 00:00:29,470
to walk on the moon, who died Aug. 25.

5
00:00:29,470 --> 00:00:35,780
The memorial was broadcast live on NASA Television
and streamed on nasa.gov and the National

6
00:00:35,780 --> 00:00:37,050
Cathedral's website.

7
00:00:37,050 --> 00:00:42,860
The historic landmark is considered the spiritual
home for the nation and brings Americans together

8
00:00:42,860 --> 00:00:48,120
at important moments to pray, commemorate,
celebrate, and mourn.

9
00:00:48,120 --> 00:00:51,580
"Neil Armstrong left more than footprints
and a flag on the moon.

10
00:00:51,580 --> 00:00:56,680
In fact, as President Obama said in a letter,
'future generations will draw inspiration

11
00:00:56,680 --> 00:00:58,550
from his spirit of discovery, humble composure

and pioneering leadership in setting a bold,

12

00:00:58,550 --> 00:00:59,550

new course for space exploration.

13

00:00:59,550 --> 00:01:04,320

The imprint he left on the surface of the moon and the story of human history is matched

14

00:01:04,320 --> 00:01:09,350

only by the extraordinary mark he left on the hearts of all Americans.”

15

00:01:09,350 --> 00:01:17,010

“Fate looked down kindly on us when she chose Neil to be the first to venture to another

16

00:01:17,010 --> 00:01:24,689

world and to have the opportunity to look back from space at the beauty of our own.

17

00:01:24,689 --> 00:01:30,440

It could have been another but it wasn't.

18

00:01:30,440 --> 00:01:33,210

It wasn't for a reason.

19

00:01:33,210 --> 00:01:43,200

No one, no one, but no one could have accepted the responsibility of his remarkable accomplishment

20

00:01:43,200 --> 00:01:49,009

with more dignity and more grace than Neil Armstrong.”

21

00:01:49,009 --> 00:01:55,420

The memorial was befitting the man whose prowess as an X-15 test pilot, whose “one giant

22

00:01:55,420 --> 00:02:01,770

leap for mankind” ushered in a new era of exploration and whose contributions in academia

23

00:02:01,770 --> 00:02:06,970

and business in the private sector also enabled and inspired others to achieve.

24

00:02:06,970 --> 00:02:11,670

Neil Armstrong was 82.

25

00:02:11,670 --> 00:02:17,359

One feature of the National Cathedral will long remain an iconic reminder of the Apollo

26

00:02:17,359 --> 00:02:22,909

11 mission commanded by Armstrong, his fellow crew members, and their service to the nation

27

00:02:22,909 --> 00:02:29,560

and the world in the cause of exploration.

28

00:02:29,560 --> 00:02:37,140

“The window is one of the centerpieces of this Cathedral.

29

00:02:37,140 --> 00:02:41,879

It’s one of the most popular things people want to see.”

30

00:02:41,879 --> 00:02:47,719

“The center of it is the moon rock that was presented to the Cathedral in 19-74 by

31

00:02:47,719 --> 00:02:50,689

Neil Armstrong, Buzz Aldrin, and Michael Collins.

32

00:02:50,689 --> 00:02:54,000

Michael Collins is a graduate of one of the Cathedral schools, St. Alban’s School for

33

00:02:54,000 --> 00:02:55,000

Boys.”

34

00:02:55,000 --> 00:02:59,680

“A gift...of a former NASA Administrator,
Thomas Paine.

35

00:02:59,680 --> 00:03:04,930

“The window is very, very stark and very
beautiful.”

36

00:03:04,930 --> 00:03:09,139

“One of the larger presentations that we
have in this place.

37

00:03:09,139 --> 00:03:14,849

And, it’s very, very impressive in its whole
look in here, and people do seek it out.”

38

00:03:14,849 --> 00:03:20,249

“One of the things that impresses me about
it is, is that there is a deep connection

39

00:03:20,249 --> 00:03:25,650

between the spiritual enterprise and the exploration
of space.

40

00:03:25,650 --> 00:03:30,409

Both of them are about exploring: exploring
the darkness that surrounds us as a planet,

41

00:03:30,409 --> 00:03:33,879

exploring the darkness from which we come
at birth and to which we return at death.

42

00:03:33,879 --> 00:03:38,739

The journey inward and the spiritual and the
theological, the journey outward of the space

43
00:03:38,739 --> 00:03:44,230
programs are very closely connected to exploration
and it ties in, in my mind, perfectly and

44
00:03:44,230 --> 00:03:45,449
beautifully in this place.”

45
00:03:45,449 --> 00:03:53,680
I’m David Oh, lead flight director for the
Mars Curiosity rover and this is your Curiosity

46
00:03:53,680 --> 00:03:55,480
rover report.

47
00:03:55,480 --> 00:03:58,589
Over the past seven days, we’ve been doing
checkouts of the arm instruments including

48
00:03:58,589 --> 00:04:02,290
the MAHLI imager, which is a very versatile
instrument that can focus on things that are

49
00:04:02,290 --> 00:04:04,730
close-by and very far away.

50
00:04:04,730 --> 00:04:08,790
The imager has generated some spectacular
shots of the underbelly of the rover and its

51
00:04:08,790 --> 00:04:14,150
wheels, of a 1909 Lincoln penny that we mounted
on the rover for calibration purposes so we

52
00:04:14,150 --> 00:04:16,019
can check that the camera is operating properly.

53
00:04:16,019 --> 00:04:20,720
And its also been used to generate a nice
self-portrait of the Mastcam on the rover,

54
00:04:20,720 --> 00:04:24,220
a portrait that's taken by the arm looking
back, the same way you would take a picture

55
00:04:24,220 --> 00:04:26,370
of yourself using a cell phone.

56
00:04:26,370 --> 00:04:31,360
We've also been testing the APXS instrument,
an instrument for doing contact mineralogy

57
00:04:31,360 --> 00:04:32,360
science.

58
00:04:32,360 --> 00:04:37,240
It generates spectra that allow us to identify
the minerals that are present in a rock.

59
00:04:37,240 --> 00:04:40,870
When the checkout of the arm is complete,
we'll be continuing our drive to the scientific

60
00:04:40,870 --> 00:04:44,830
target, Glenelg, but we'll be stopping along
the way to take some video of the Martian

61
00:04:44,830 --> 00:04:47,639
moons, Phobos and Deimos, passing overhead.

62
00:04:47,639 --> 00:04:50,720
We control the rover from Earth, but we have
to operate it on Mars time.

63
00:04:50,720 --> 00:04:53,900
A Martian day is 39 minutes longer than an
Earth day.

64
00:04:53,900 --> 00:04:58,520

So every day, the whole operations team comes in 40 minutes later, every single day, to

65

00:04:58,520 --> 00:05:00,509

send commands to the rover.

66

00:05:00,509 --> 00:05:04,919

In the month after landing, my whole family joined me on Mars time and we got to jump

67

00:05:04,919 --> 00:05:08,879

a time zone a day for 30 days going all the way around the clock.

68

00:05:08,879 --> 00:05:14,120

As we did that, we got to explore Mars here at JPL and to explore Los Angeles at night,

69

00:05:14,120 --> 00:05:17,509

and it was a great adventure for the whole family.

70

00:05:17,509 --> 00:05:19,770

This has been your Curiosity rover report.

71

00:05:19,770 --> 00:05:24,900

Check back for more updates on what's happening on Mars.

72

00:05:24,900 --> 00:05:30,610

Mars Science Laboratory team members at Headquarters were at Washington's Florida House for Mars

73

00:05:30,610 --> 00:05:37,840

Day in DC, a celebration of the Curiosity rover's successful landing on the Red Planet.

74

00:05:37,840 --> 00:05:42,280

NASA Mars Program Director Doug McQuiston briefed members of Congress and other invited

75
00:05:42,280 --> 00:05:48,139
guests on what science Curiosity is expected to provide during its two-year mission.

76
00:05:48,139 --> 00:05:54,520
Additional presentations detailed how Curiosity and its suite of ten science instruments will

77
00:05:54,520 --> 00:06:05,660
conduct in Gale Crater the most difficult planetary exploration mission ever undertaken.

78
00:06:05,660 --> 00:06:11,801
NASA Deputy Administrator Lori Garver delivered the keynote address at the SPACE 2012 Conference

79
00:06:11,801 --> 00:06:14,080
in Pasadena, California.

80
00:06:14,080 --> 00:06:19,259
The annual American Institute of Aeronautics and Astronautics gathering is considered the

81
00:06:19,259 --> 00:06:24,449
premier event on space technology, policy, programs, management, and education.

82
00:06:24,449 --> 00:06:32,050
“This is truly something that we work with together as industry and government and academia

83
00:06:32,050 --> 00:06:39,050
and we look forward to strengthening our partnerships as our commercial spaceflight industry assumes

84
00:06:39,050 --> 00:06:44,560
even more of a role in this new era of human and space scientific space exploration.”

85
00:06:44,560 --> 00:06:52,949
The theme of this year's AIAA conference was "Creating a Sustainable Vision for Space".

86
00:06:52,949 --> 00:07:01,699
Also at the conference, the mission team at JPL for NASA's long-lived Mars Exploration

87
00:07:01,699 --> 00:07:07,490
Rovers Spirit and Opportunity was presented the Haley Space Flight Award for the advancement

88
00:07:07,490 --> 00:07:11,970
of the art, science or technology of astronautics.

89
00:07:11,970 --> 00:07:18,319
In its eighth year of operation on Mars, Opportunity is surveying a crater rim about 5,200 miles

90
00:07:18,319 --> 00:07:21,469
from Curiosity's current position.

91
00:07:21,469 --> 00:07:27,020
Spirit explored the Red Planet for more than six years, 24 times longer than its planned

92
00:07:27,020 --> 00:07:29,020
three-month mission.

93
00:07:29,020 --> 00:07:33,900
Past recipients of the Haley Space Flight Award include astronauts Alan Shepard, John

94
00:07:33,900 --> 00:07:41,779
Glenn, Tom Stafford, Bob Crippen, Kathy Sullivan and the crew of STS-125, the last space shuttle

95
00:07:41,779 --> 00:07:48,819
servicing mission to the Hubble Space Telescope.

96
00:07:48,819 --> 00:07:54,130
After weathering Hurricane Isaac, engineers
at the Stennis Space Center returned to testing

97
00:07:54,130 --> 00:07:55,990
the J-2X engine!

98
00:07:55,990 --> 00:08:01,610
The first post-storm J-2X test firing was
of the engine's upper stage that lasted

99
00:08:01,610 --> 00:08:02,610
250 seconds.

100
00:08:02,610 --> 00:08:08,909
The J-2X will help power NASA's Space Launch
System, the new heavy-lift rocket that will

101
00:08:08,909 --> 00:08:13,809
send astronauts beyond Earth orbit.

102
00:08:13,809 --> 00:08:18,490
NASA Chief Technologist Mason Peck joined
state and local officials at the University

103
00:08:18,490 --> 00:08:24,610
of Texas at El Paso for the official opening
of UTEP's Center for Space Exploration Technology

104
00:08:24,610 --> 00:08:30,550
Research, or cSETR (C-STIR), and the NASA
Science, Engineering, Mathematics and Aerospace

105
00:08:30,550 --> 00:08:34,770
Education Laboratory located in the university's
engineering building.

106
00:08:34,770 --> 00:08:40,899

“It’s the kind of collaborative activity that we, now at NASA recognize as essential

107

00:08:40,899 --> 00:08:44,730

to how we are trying to form the future of space technology at the agency.”

108

00:08:44,730 --> 00:08:51,040

The NASA-funded cSETR conducts analytical, experimental and computational research in

109

00:08:51,040 --> 00:08:53,870

energy and propulsion engineering.

110

00:08:53,870 --> 00:08:59,290

The Aerospace Education Laboratory offers technology and innovation learning opportunities

111

00:08:59,290 --> 00:09:05,850

to students of all ages, from K-12 to post-graduate and life-long learners.

112

00:09:05,850 --> 00:09:11,570

“Three, two, one, release...”

113

00:09:11,570 --> 00:09:17,920

The vertical water drop tests continue for the Orion Multi-purpose Crew Vehicle at the

114

00:09:17,920 --> 00:09:21,010

Langley Research Center’s Hydro Impact Basin.

115

00:09:21,010 --> 00:09:25,250

The latest drop for Orion was from a height of 25 feet.

116

00:09:25,250 --> 00:09:30,620

Unlike last summer’s swing drop tests that certified Orion for water landings, these

117

00:09:30,620 --> 00:09:34,740

vertical drops tests help predict Orion's landing loads.

118

00:09:34,740 --> 00:09:41,550

Orion is scheduled to launch in 2014 on its Exploration Flight Test-1 and travel 15 times

119

00:09:41,550 --> 00:09:48,740

deeper into space than the International Space Station before returning to Earth.

120

00:09:48,740 --> 00:09:55,339

The Shuttle Carrier Aircraft that is Space Shuttle Endeavour's ride for the cross country

121

00:09:55,339 --> 00:10:01,420

journey to California made its arrival at Kennedy Space Center.

122

00:10:01,420 --> 00:10:06,420

Like Discovery and Enterprise before it, Space Shuttle Endeavour is taking its turn in the

123

00:10:06,420 --> 00:10:08,480

ferry flight spotlight.

124

00:10:08,480 --> 00:10:13,540

The first class piggyback ride atop the SCA culminates for NASA's youngest orbiter at

125

00:10:13,540 --> 00:10:18,540

Los Angeles International Airport – with appearances along the way in the skies over

126

00:10:18,540 --> 00:10:25,060

several NASA installations including the Johnson Space Center, Stennis, Michoud, White Sands

127

00:10:25,060 --> 00:10:27,540
and the Ames Research Center.

128

00:10:27,540 --> 00:10:32,740
Endeavour is scheduled to arrive at its new
home, the California Science Center, on October

129

00:10:32,740 --> 00:10:37,620
13, and go on display October 30.

130

00:10:37,620 --> 00:10:43,430
Meanwhile, the structure for the new Florida
home of space shuttle Atlantis has been “topped

131

00:10:43,430 --> 00:10:45,590
out” with its highest beam.

132

00:10:45,590 --> 00:10:51,150
In a ceremony marking a milestone in the construction
of the 90,000-square-foot exhibit hall that

133

00:10:51,150 --> 00:10:57,060
will house the orbiter at the Kennedy Space
Center Visitor Complex, the 38-foot-long,

134

00:10:57,060 --> 00:11:02,779
one-ton steel beam was lifted 116 feet off
the ground and locked into place.

135

00:11:02,779 --> 00:11:08,330
A small tree and an American flag were fitted
onto the beam that bore the signatures of

136

00:11:08,330 --> 00:11:10,590
hundreds of NASA employees.

137

00:11:10,590 --> 00:11:17,160
“Atlantis, the last space shuttle to ever
fly in space is going to look like it actually

138

00:11:17,160 --> 00:11:22,089

is in space here at the Kennedy Space Center
and I can't think of a more fitting place

139

00:11:22,089 --> 00:11:23,579

to tell that story."

140

00:11:23,579 --> 00:11:30,740

On November 2 Atlantis will be the last shuttle
to move out of the operational area at KSC.

141

00:11:30,740 --> 00:11:36,329

The shuttle will be transported by the orbiter
transport vehicle, or OTV from the Vehicle

142

00:11:36,329 --> 00:11:40,010

Assembly Building to the Visitor Complex.

143

00:11:40,010 --> 00:11:45,790

Three future residents of the International
Space Station previewed their upcoming mission

144

00:11:45,790 --> 00:11:49,160

during a media briefing at the Johnson Space
Center.

145

00:11:49,160 --> 00:11:55,380

Expedition 34 and 35 crew members Tom Marshburn
of NASA, Chris Hadfield of the Canadian Space

146

00:11:55,380 --> 00:12:00,779

Agency and Roman Romanenko of the Russian
Federal Space Agency are set to launch to

147

00:12:00,779 --> 00:12:36,600

the station Dec. 5.

148

00:12:36,600 --> 00:12:41,200

When they arrive at the world's only research

laboratory in microgravity, the trio will

149

00:12:41,200 --> 00:12:47,959

join NASA astronaut Kevin Ford and Russian cosmonauts Evgeny Tarelkin and Oleg Novitskiy

150

00:12:47,959 --> 00:12:53,800

who are scheduled to launch to the ISS from Russia on October 15.

151

00:12:53,800 --> 00:13:00,450

Meanwhile, the current crew onboard station got rid of some unneeded items.

152

00:13:00,450 --> 00:13:06,310

After spending almost two months attached to the Harmony module, the Japanese "Kounotori"

153

00:13:06,310 --> 00:13:13,130

Transfer Vehicle, or HTV-3, was unberthed and released by Expedition 32 crew members

154

00:13:13,130 --> 00:13:15,529

Joe Acaba and Aki Hoshide.

155

00:13:15,529 --> 00:13:20,550

An engine firing sent the trash-packed cargo vehicle back into Earth's atmosphere to

156

00:13:20,550 --> 00:13:22,230

burn up over the Pacific Ocean.

157

00:13:22,230 --> 00:13:29,130

The HTV-3 craft launched from the Japan Aerospace Exploration Agency's launch site in Tanegashima,

158

00:13:29,130 --> 00:13:35,730

Japan, July 21 and arrived at the station six days later to deliver several tons of

159

00:13:35,730 --> 00:13:52,100

food, supplies and science experiments for the station residents.

160

00:13:52,100 --> 00:13:59,060

Ten years ago on September 16, 2002, Expedition Five crew member Dr. Peggy Whitson was named

161

00:13:59,060 --> 00:14:04,030

as the first NASA Science Officer of the International Space Station.

162

00:14:04,030 --> 00:14:09,760

Since then, each Expedition crew has had a NASA Science Officer working with the U.S.

163

00:14:09,760 --> 00:14:15,029

research community to maximize returns of station science experiments.

164

00:14:15,029 --> 00:14:20,180

During her tenure as Science Officer, Whitson conducted 21 investigations in human life

165

00:14:20,180 --> 00:14:42,670

sciences and microgravity sciences as well as commercial payloads.

166

00:14:42,670 --> 00:14:47,590

The name is Luis Dominguez and I work for Mars Science Laboratory in the Mission Systems

167

00:14:47,590 --> 00:14:50,230

Testbed as a Test Conductor.

168

00:14:50,230 --> 00:14:52,950

I am half Honduran, half Mexican.

169

00:14:52,950 --> 00:15:01,190

So my mom is from Mexico, Southern Mexico
and my dad's from Central Honduras.

170

00:15:01,190 --> 00:15:05,959

I do come from a very hard working family
so I always have that you know that very like

171

00:15:05,959 --> 00:15:11,830

I'll work till it's done you know attitude
and like you know no job is to menial or you

172

00:15:11,830 --> 00:15:12,930

know to unimportant.

173

00:15:12,930 --> 00:15:18,890

I mean sometimes things are mundane and you
know but they have to get done.

174

00:15:18,890 --> 00:15:24,800

At JPL what I do is a lot of trouble shooting
for the most part with the actual internal

175

00:15:24,800 --> 00:15:26,420

robotics in the rover.

176

00:15:26,420 --> 00:15:29,629

I've been on MSL for about five years now.

177

00:15:29,629 --> 00:15:34,970

I started off in ATLO, the assembly, test,
and launch operations team, but I started

178

00:15:34,970 --> 00:15:39,279

there as an intern and then I moved over to
the test bed.

179

00:15:39,279 --> 00:15:44,089

On a day to day basis I usually just go around
helping people with their tests or if they

180

00:15:44,089 --> 00:15:47,560

get into certain configurations that they don't understand I help them get out of

181

00:15:47,560 --> 00:15:50,910

them...if they trip fault protection that we have in the rover.

182

00:15:50,910 --> 00:15:53,060

I really enjoyed the challenge that they gave me.

183

00:15:53,060 --> 00:15:55,800

Wow, like I actually helped built something that's on the surface of Mars.

184

00:15:55,800 --> 00:15:57,870

It's an amazing feeling.

185

00:15:57,870 --> 00:16:00,630

And that's This Week @NASA.

186

00:16:00,630 --> 00:16:05,810

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