



1
00:00:07,029 --> 00:00:14,440
This Week at NASA...

2
00:00:14,440 --> 00:00:19,750
NASA Administrator Charles Bolden joined other agency officials and dignitaries at the Washington

3
00:00:19,750 --> 00:00:25,330
National Cathedral to honor the life and career of astronaut Neil Armstrong, the first man

4
00:00:25,330 --> 00:00:27,829
to walk on the moon, who died Aug. 25.

5
00:00:27,829 --> 00:00:35,160
The memorial was broadcast live on NASA Television and streamed on nasa.gov and the National

6
00:00:35,160 --> 00:00:36,440
Cathedral's website.

7
00:00:36,440 --> 00:00:42,250
The historic landmark is considered the spiritual home for the nation and brings Americans together

8
00:00:42,250 --> 00:00:47,589
at important moments to pray, commemorate, celebrate, and mourn.

9
00:00:47,589 --> 00:00:51,010
"Neil Armstrong left more than footprints and a flag on the moon.

10
00:00:51,010 --> 00:00:56,059
In fact, as President Obama said in a letter, 'future generations will draw inspiration

11
00:00:56,059 --> 00:00:57,929
from his spirit of discovery, humble composure

and pioneering leadership in setting a bold,

12

00:00:57,929 --> 00:00:58,929

new course for space exploration.

13

00:00:58,929 --> 00:01:03,699

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

14

00:01:03,699 --> 00:01:08,729

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

15

00:01:08,729 --> 00:01:16,390

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

16

00:01:16,390 --> 00:01:24,070

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

17

00:01:24,070 --> 00:01:29,820

It could have been another but it wasn't.

18

00:01:29,820 --> 00:01:32,590

It wasn't for a reason.

19

00:01:32,590 --> 00:01:42,579

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

20

00:01:42,579 --> 00:01:48,390

with more dignity and more grace than Neil Armstrong.”

21

00:01:48,390 --> 00:01:54,799

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

22

00:01:54,799 --> 00:02:01,149

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

23

00:02:01,149 --> 00:02:06,429

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

24

00:02:06,429 --> 00:02:11,050

Neil Armstrong was 82.

25

00:02:11,050 --> 00:02:16,730

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

26

00:02:16,730 --> 00:02:22,290

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

27

00:02:22,290 --> 00:02:29,069

and the world in the cause of exploration.

28

00:02:29,069 --> 00:02:36,520

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

29

00:02:36,520 --> 00:02:41,260

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

30

00:02:41,260 --> 00:02:47,110

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

31

00:02:47,110 --> 00:02:50,069

Neil Armstrong, Buzz Aldrin, and Michael Collins.

32

00:02:50,069 --> 00:02:53,450

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

33

00:02:53,450 --> 00:02:54,450

Boys.”

34

00:02:54,450 --> 00:02:59,060

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

35

00:02:59,060 --> 00:03:04,400

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

36

00:03:04,400 --> 00:03:08,520

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

37

00:03:08,520 --> 00:03:14,239

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

38

00:03:14,239 --> 00:03:19,640

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

39

00:03:19,640 --> 00:03:25,030

between the spiritual enterprise and the exploration
of space.

40

00:03:25,030 --> 00:03:29,800

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

41

00:03:29,800 --> 00:03:33,290

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

42

00:03:33,290 --> 00:03:38,120

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

43
00:03:38,120 --> 00:03:43,620
programs are very closely connected to exploration
and it ties in, in my mind, perfectly and

44
00:03:43,620 --> 00:03:44,829
beautifully in this place.”

45
00:03:44,829 --> 00:03:53,060
I’m David Oh, lead flight director for the
Mars Curiosity rover and this is your Curiosity

46
00:03:53,060 --> 00:03:54,870
rover report.

47
00:03:54,870 --> 00:03:57,980
Over the past seven days, we’ve been doing
checkouts of the arm instruments including

48
00:03:57,980 --> 00:04:01,670
the MAHLI imager, which is a very versatile
instrument that can focus on things that are

49
00:04:01,670 --> 00:04:04,110
close-by and very far away.

50
00:04:04,110 --> 00:04:08,170
The imager has generated some spectacular
shots of the underbelly of the rover and its

51
00:04:08,170 --> 00:04:13,430
wheels, of a 1909 Lincoln penny that we mounted
on the rover for calibration purposes so we

52
00:04:13,430 --> 00:04:15,579
can check that the camera is operating properly.

53
00:04:15,579 --> 00:04:20,100
And its also been used to generate a nice
self-portrait of the Mastcam on the rover,

54
00:04:20,100 --> 00:04:23,600
a portrait that's taken by the arm looking
back, the same way you would take a picture

55
00:04:23,600 --> 00:04:25,750
of yourself using a cell phone.

56
00:04:25,750 --> 00:04:30,720
We've also been testing the APXS instrument,
an instrument for doing contact mineralogy

57
00:04:30,720 --> 00:04:31,720
science.

58
00:04:31,720 --> 00:04:36,630
It generates spectra that allow us to identify
the minerals that are present in a rock.

59
00:04:36,630 --> 00:04:40,150
When the checkout of the arm is complete,
we'll be continuing our drive to the scientific

60
00:04:40,150 --> 00:04:44,210
target, Glenelg, but we'll be stopping along
the way to take some video of the Martian

61
00:04:44,210 --> 00:04:47,030
moons, Phobos and Deimos, passing overhead.

62
00:04:47,030 --> 00:04:50,110
We control the rover from Earth, but we have
to operate it on Mars time.

63
00:04:50,110 --> 00:04:53,280
A Martian day is 39 minutes longer than an
Earth day.

64
00:04:53,280 --> 00:04:57,900

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

65

00:04:57,900 --> 00:04:59,889

send commands to the rover.

66

00:04:59,889 --> 00:05:04,300

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

67

00:05:04,300 --> 00:05:08,139

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

68

00:05:08,139 --> 00:05:13,509

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

69

00:05:13,509 --> 00:05:16,900

and it was a great adventure for the whole family.

70

00:05:16,900 --> 00:05:19,150

This has been your Curiosity rover report.

71

00:05:19,150 --> 00:05:24,280

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

72

00:05:24,280 --> 00:05:29,990

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

73

00:05:29,990 --> 00:05:37,229

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

74

00:05:37,229 --> 00:05:41,669

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

75
00:05:41,669 --> 00:05:47,520
guests on what science Curiosity is expected to provide during its two-year mission.

76
00:05:47,520 --> 00:05:53,910
Additional presentations detailed how Curiosity and its suite of ten science instruments will

77
00:05:53,910 --> 00:05:59,770
conduct in Gale Crater the most difficult planetary exploration mission ever undertaken.

78
00:05:59,770 --> 00:06:04,699
“It is indeed a privilege to be here.”

79
00:06:04,699 --> 00:06:11,181
NASA Deputy Administrator Lori Garver delivered the keynote address at the SPACE 2012 Conference

80
00:06:11,181 --> 00:06:12,181
in Pasadena, California.

81
00:06:12,181 --> 00:06:18,639
The annual American Institute of Aeronautics and Astronautics gathering is considered the

82
00:06:18,639 --> 00:06:23,840
premier event on space technology, policy, programs, management, and education.

83
00:06:23,840 --> 00:06:31,430
“This is truly something that we work with together as industry and government and academia

84
00:06:31,430 --> 00:06:38,410
and we look forward to strengthening our partnerships as our commercial spaceflight industry assumes

85

00:06:38,410 --> 00:06:43,930

even more of a role in this new era of human and space scientific space exploration.”

86

00:06:43,930 --> 00:06:50,460

The theme of this year’s AIAA conference was “Creating a Sustainable Vision for Space”.

87

00:06:50,460 --> 00:06:55,449

“Accepting the award is John Callas, the MER project manager.”

88

00:06:55,449 --> 00:07:01,080

Also at the conference, the mission team at JPL for NASA's long-lived Mars Exploration

89

00:07:01,080 --> 00:07:06,880

Rovers Spirit and Opportunity was presented the Haley Space Flight Award for the advancement

90

00:07:06,880 --> 00:07:11,350

of the art, science or technology of astronautics.

91

00:07:11,350 --> 00:07:17,699

In its eighth year of operation on Mars, Opportunity is surveying a crater rim about 5,200 miles

92

00:07:17,699 --> 00:07:20,849

from Curiosity’s current position.

93

00:07:20,849 --> 00:07:26,410

Spirit explored the Red Planet for more than six years, 24 times longer than its planned

94

00:07:26,410 --> 00:07:28,410

three-month mission.

95

00:07:28,410 --> 00:07:33,289

Past recipients of the Haley Space Flight Award include astronauts Alan Shepard, John

96
00:07:33,289 --> 00:07:41,150
Glenn, Tom Stafford, Bob Crippen, Kathy Sullivan
and the crew of STS-125, the last space shuttle

97
00:07:41,150 --> 00:07:48,199
servicing mission to the Hubble Space Telescope.

98
00:07:48,199 --> 00:07:53,510
After weathering Hurricane Isaac, engineers
at the Stennis Space Center returned to testing

99
00:07:53,510 --> 00:07:55,320
the J-2X engine!

100
00:07:55,320 --> 00:08:01,000
The first post-storm J-2X test firing was
of the engine's upper stage that lasted

101
00:08:01,000 --> 00:08:02,819
250 seconds.

102
00:08:02,819 --> 00:08:08,300
The J-2X will help power NASA's Space Launch
System, the new heavy-lift rocket that will

103
00:08:08,300 --> 00:08:13,199
send astronauts beyond Earth orbit.

104
00:08:13,199 --> 00:08:17,870
NASA Chief Technologist Mason Peck joined
state and local officials at the University

105
00:08:17,870 --> 00:08:23,990
of Texas at El Paso for the official opening
of UTEP's Center for Space Exploration Technology

106
00:08:23,990 --> 00:08:29,919
Research, or cSETR (C-STIR), and the NASA

Science, Engineering, Mathematics and Aerospace

107

00:08:29,919 --> 00:08:34,150

Education Laboratory located in the university's engineering building.

108

00:08:34,150 --> 00:08:40,270

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

109

00:08:40,270 --> 00:08:44,100

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

110

00:08:44,100 --> 00:08:50,420

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

111

00:08:50,420 --> 00:08:53,250

energy and propulsion engineering.

112

00:08:53,250 --> 00:08:58,670

The Aerospace Education Laboratory offers technology and innovation learning opportunities

113

00:08:58,670 --> 00:09:05,400

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

114

00:09:05,400 --> 00:09:10,980

"Three, two, one, release..."

115

00:09:10,980 --> 00:09:17,290

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

116

00:09:17,290 --> 00:09:20,391

Langley Research Center's Hydro Impact Basin.

117

00:09:20,391 --> 00:09:24,630

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

118

00:09:24,630 --> 00:09:30,000

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

119

00:09:30,000 --> 00:09:34,120

vertical drops tests help predict Orion's landing loads.

120

00:09:34,120 --> 00:09:40,930

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

121

00:09:40,930 --> 00:09:47,960

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

122

00:09:47,960 --> 00:09:54,400

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

123

00:09:54,400 --> 00:10:00,490

journey to California made its arrival at Kennedy Space Center.

124

00:10:00,490 --> 00:10:05,470

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

125

00:10:05,470 --> 00:10:07,540

ferry flight spotlight.

126

00:10:07,540 --> 00:10:12,600

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

127

00:10:12,600 --> 00:10:17,600

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

128

00:10:17,600 --> 00:10:24,130

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

129

00:10:24,130 --> 00:10:26,690

and the Ames Research Center.

130

00:10:26,690 --> 00:10:31,800

Endeavour is scheduled to arrive at its new home, the California Science Center, on October

131

00:10:31,800 --> 00:10:36,680

13, and go on display October 30.

132

00:10:36,680 --> 00:10:42,500

Meanwhile, the structure for the new Florida home of space shuttle Atlantis has been “topped

133

00:10:42,500 --> 00:10:44,650

out” with its highest beam.

134

00:10:44,650 --> 00:10:50,210

In a ceremony marking a milestone in the construction of the 90,000-square-foot exhibit hall that

135

00:10:50,210 --> 00:10:56,110

will house the orbiter at the Kennedy Space Center Visitor Complex, the 38-foot-long,

136

00:10:56,110 --> 00:11:01,830

one-ton steel beam was lifted 116 feet off the ground and locked into place.

137

00:11:01,830 --> 00:11:07,390

A small tree and an American flag were fitted onto the beam that bore the signatures of

138

00:11:07,390 --> 00:11:09,410

hundreds of NASA employees.

139

00:11:09,410 --> 00:11:15,680

“Atlantis, the last space shuttle to ever fly in space is going to look like it actually

140

00:11:15,680 --> 00:11:21,120

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

141

00:11:21,120 --> 00:11:22,640

to tell that story.”

142

00:11:22,640 --> 00:11:29,810

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

143

00:11:29,810 --> 00:11:35,390

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

144

00:11:35,390 --> 00:11:43,960

Assembly Building to the Visitor Complex.

145

00:11:43,960 --> 00:11:49,670

Expedition 32 officially ended on the International Space Station when the Soyuz spacecraft carrying

146

00:11:49,670 --> 00:11:54,880

NASA Flight Engineer Joe Acaba and Commander Gennady Padalka and Flight Engineer Sergei

147

00:11:54,880 --> 00:11:59,990

Revin of the Russian Federal Space Agency undocked from the station's Poisk module.

148

00:11:59,990 --> 00:12:06,800

The trio landed safely in Kazakhstan at 10:53

p.m. EDT Sunday September 16.

149

00:12:06,800 --> 00:12:12,670

Acaba, Padalka and Revin spent 123 days onboard the orbiting laboratory.

150

00:12:12,670 --> 00:12:17,700

NASA astronaut Suni Williams has taken over control of the station as Commander of Expedition

151

00:12:17,700 --> 00:12:19,040

33.

152

00:12:19,040 --> 00:12:23,860

She and her crewmates flight Engineers Aki Hoshide of the Japan Aerospace Exploration

153

00:12:23,860 --> 00:12:31,250

Agency and Russian cosmonaut Yuri Malenchenko are scheduled to stay onboard until Nov. 12.

154

00:12:31,250 --> 00:12:36,940

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

155

00:12:36,940 --> 00:12:40,330

during a media briefing at the Johnson Space Center.

156

00:12:40,330 --> 00:12:46,550

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

157

00:12:46,550 --> 00:12:51,930

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

158

00:12:51,930 --> 00:12:53,440

the station Dec. 5.

159

00:12:53,440 --> 00:12:57,250

“We’re always looking at ways to getting even better medical judgment up there and

160

00:12:57,250 --> 00:13:03,150

in a small way my medical judgment is what’s going to add to the medical care onboard.

161

00:13:03,150 --> 00:13:09,770

So I want to be a part of getting that onboard a spacecraft even more.”

162

00:13:09,770 --> 00:13:13,870

“Some really critical operations done in the last couple of weeks overcoming some big

163

00:13:13,870 --> 00:13:19,040

significant hurdles and having the space station –with the combination of the electrical

164

00:13:19,040 --> 00:13:26,410

repair and the EVAs demonstrating the necessity for continued expertise and skill in this

165

00:13:26,410 --> 00:13:27,560

thing that is spaceflight.”

166

00:13:27,560 --> 00:13:32,360

When they arrive at the world’s only research laboratory in microgravity, the trio will

167

00:13:32,360 --> 00:13:39,160

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

168

00:13:39,160 --> 00:13:45,770

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

169

00:13:45,770 --> 00:13:51,100

The National Air and Space Museum celebrated a century of Women in Aerospace recently during

170

00:13:51,100 --> 00:13:53,550

its Family Day in D.C.

171

00:13:53,550 --> 00:13:59,360

For more than 100 years women have contributed to technological advances in aviation and

172

00:13:59,360 --> 00:14:00,360

space.

173

00:14:00,360 --> 00:14:05,160

During a presentation in the Moving Beyond Earth Gallery, NASA Astronaut Serena Aunon

174

00:14:05,160 --> 00:14:09,620

spoke about the future opportunities for younger members of the audience to make an impact

175

00:14:09,620 --> 00:14:10,940

in space exploration.

176

00:14:10,940 --> 00:14:15,810

"The next destination that we're heading off to could be the moon, could be an asteroid,

177

00:14:15,810 --> 00:14:16,810

could be Mars.

178

00:14:16,810 --> 00:14:17,810

Guess, what?

179

00:14:17,810 --> 00:14:19,430

I'm too old to go to Mars.

180

00:14:19,430 --> 00:14:21,230

You're going to Mars.

181

00:14:21,230 --> 00:14:25,620

You're just the right age so we need you guys to get ready."

182

00:14:25,620 --> 00:14:30,800

Activities for young space enthusiasts included designing various elements for a mission to

183

00:14:30,800 --> 00:14:35,210

Mars including a base habitat and a mission patch.

184

00:14:35,210 --> 00:14:40,571

"Given your unique qualifications to ask you to serve as the first science officer

185

00:14:40,571 --> 00:14:42,330

on the International Space Station."

186

00:14:42,330 --> 00:14:46,680

"of course I'd be extremely honored to be the first science officer."

187

00:14:46,680 --> 00:14:53,790

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

188

00:14:53,790 --> 00:14:58,760

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

189

00:14:58,760 --> 00:15:04,500

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

190

00:15:04,500 --> 00:15:09,760

research community to maximize returns of station science experiments.

191

00:15:09,760 --> 00:15:14,920

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

192

00:15:14,920 --> 00:15:37,410

sciences and microgravity sciences as well as commercial payloads.

193

00:15:37,410 --> 00:15:42,370

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

194

00:15:42,370 --> 00:15:44,750

Testbed as a Test Conductor.

195

00:15:44,750 --> 00:15:47,820

I am half Honduran, half Mexican.

196

00:15:47,820 --> 00:15:54,700

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

197

00:15:54,700 --> 00:16:00,690

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

198

00:16:00,690 --> 00:16:06,550

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

199

00:16:06,550 --> 00:16:07,550

know to unimportant.

200

00:16:07,550 --> 00:16:13,620

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

201

00:16:13,620 --> 00:16:19,550

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

202

00:16:19,550 --> 00:16:21,060
robotics in the rover.

203

00:16:21,060 --> 00:16:24,690
I've been on MSL for about five years now.

204

00:16:24,690 --> 00:16:29,700
I started off in ATLO, the assembly, test,
and launch operations team, but I started

205

00:16:29,700 --> 00:16:34,020
there as an intern and then I moved over to
the test bed.

206

00:16:34,020 --> 00:16:38,860
On a day to day basis I usually just go around
helping people with their tests or if they

207

00:16:38,860 --> 00:16:42,300
get into certain configurations that they
don't understand I help them get out of

208

00:16:42,300 --> 00:16:45,560
them...if they trip fault protection that
we have in the rover.

209

00:16:45,560 --> 00:16:47,800
I really enjoyed the challenge that they gave
me.

210

00:16:47,800 --> 00:16:50,640
Wow, like I actually helped built something
that's on the surface of Mars.

211

00:16:50,640 --> 00:16:52,610
It's an amazing feeling.

212

00:16:52,610 --> 00:16:55,820

And that's This Week @NASA.

213

00:16:55,820 --> 00:17:00,540

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