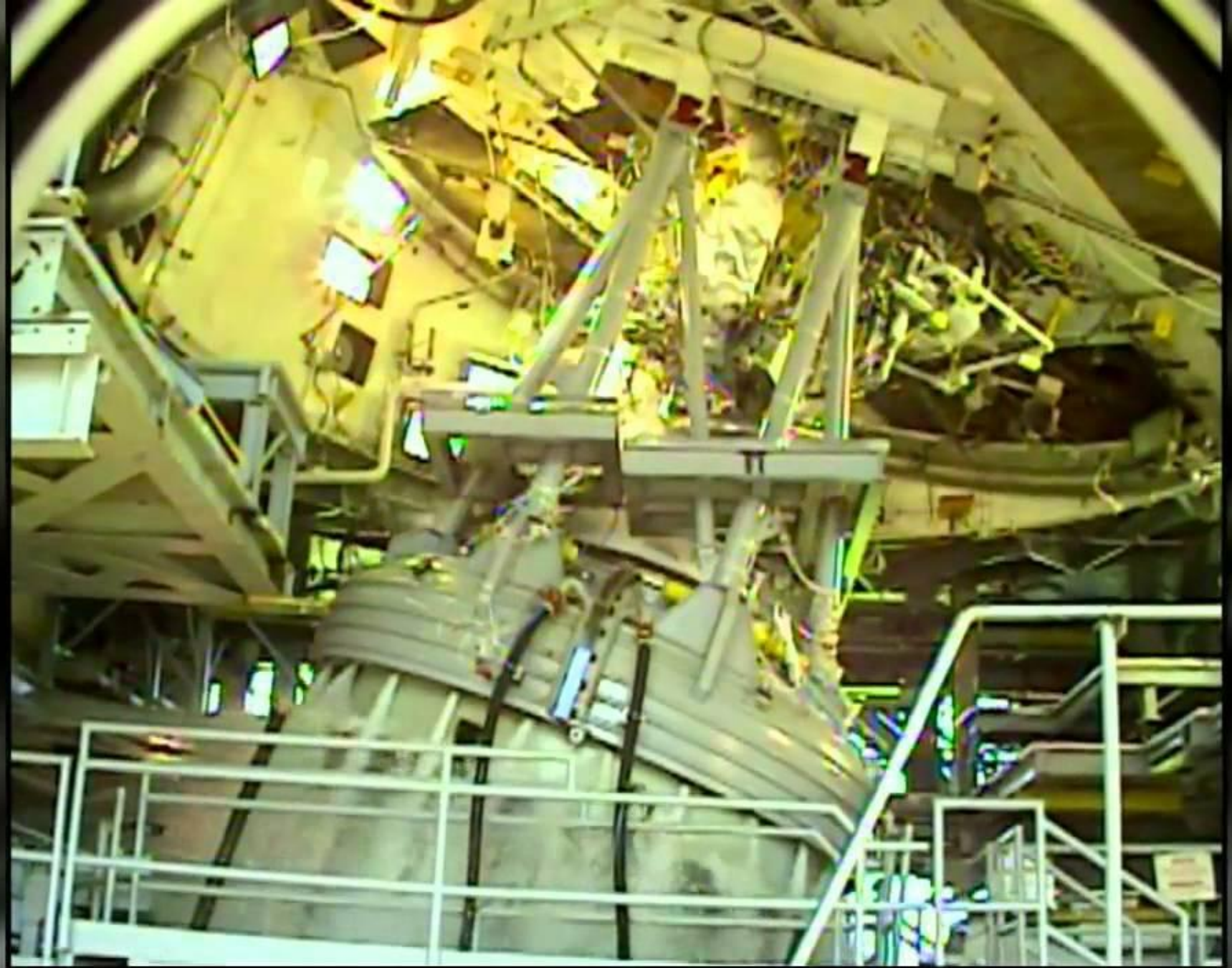

1
00:00:07,040 --> 00:00:14,410
This Week at NASA…

2
00:00:14,410 --> 00:00:19,730
NASA Administrator Charles Bolden joined other
agency officials and dignitaries at the Washington

3
00:00:19,730 --> 00:00:25,310
National Cathedral to honor the life and career
of astronaut Neil Armstrong, the first man

4
00:00:25,310 --> 00:00:28,820
to walk on the moon, who died Aug. 25.

5
00:00:28,820 --> 00:00:35,120
The memorial was broadcast live on NASA Television
and streamed on nasa.gov and the National

6
00:00:35,120 --> 00:00:36,410
Cathedral's website.

7
00:00:36,410 --> 00:00:42,210
The historic landmark is considered the spiritual
home for the nation and brings Americans together

8
00:00:42,210 --> 00:00:47,570
at important moments to pray, commemorate,
celebrate, and mourn.

9
00:00:47,570 --> 00:00:51,000
“Neil Armstrong left more than footprints
and a flag on the moon.

10
00:00:51,000 --> 00:00:56,030
In fact, as President Obama said in a letter,
‘future generations will draw inspiration

11
00:00:56,030 --> 00:00:57,910
from his spirit of discovery, humble composure

and pioneering leadership in setting a bold,

12
00:00:57,910 --> 00:00:58,910
new course for space exploration.

13
00:00:58,910 --> 00:01:03,670
The imprint he left on the surface of the
moon and the story of human history is matched

14
00:01:03,670 --> 00:01:08,689
only by the extraordinary mark he left on
the hearts of all Americans."

15
00:01:08,689 --> 00:01:16,360
"Fate looked down kindly on us when she
chose Neil to be the first to venture to another

16
00:01:16,360 --> 00:01:24,040
world and to have the opportunity to look
back from space at the beauty of our own.

17
00:01:24,040 --> 00:01:29,800
It could have been another but it wasn't.

18
00:01:29,800 --> 00:01:32,810
It wasn't for a reason.

19
00:01:32,810 --> 00:01:42,560
No one, no one, but no one could have accepted
the responsibility of his remarkable accomplishment

20
00:01:42,560 --> 00:01:48,369
with more dignity and more grace than Neil
Armstrong."

21
00:01:48,369 --> 00:01:54,780
The memorial was befitting the man whose prowess
as an X-15 test pilot, whose "one giant

22

00:01:54,780 --> 00:02:01,130
leap for mankind” ushered in a new era of
exploration and whose contributions in academia

23
00:02:01,130 --> 00:02:06,409
and business in the private sector also enabled
and inspired others to achieve.

24
00:02:06,409 --> 00:02:08,830
Neil Armstrong was 82.

25
00:02:08,830 --> 00:02:16,709
One feature of the National Cathedral will
long remain an iconic reminder of the Apollo

26
00:02:16,709 --> 00:02:22,269
11 mission commanded by Armstrong, his fellow
crew members, and their service to the nation

27
00:02:22,269 --> 00:02:29,050
and the world in the cause of exploration.

28
00:02:29,050 --> 00:02:36,500
“The window is one of the centerpieces of
this Cathedral.

29
00:02:36,500 --> 00:02:40,709
It’s one of the most popular things people
want to see.”

30
00:02:40,709 --> 00:02:47,090
“The center of it is the moon rock that
was presented to the Cathedral in 19-74 by

31
00:02:47,090 --> 00:02:50,040
Neil Armstrong, Buzz Aldrin, and Michael Collins.

32
00:02:50,040 --> 00:02:53,359
Michael Collins is a graduate of one of the
Cathedral schools, St. Alban’s School for

33
00:02:53,359 --> 00:02:54,359
Boys.”

34
00:02:54,359 --> 00:02:59,040
“A gift…of a former NASA Administrator,
Thomas Paine.

35
00:02:59,040 --> 00:03:04,459
“The window is very, very stark and very
beautiful.”

36
00:03:04,459 --> 00:03:08,499
“One of the larger presentations that we
have in this place.

37
00:03:08,499 --> 00:03:14,209
And, it’s very, very impressive in its whole
look in here, and people do seek it out.”

38
00:03:14,209 --> 00:03:19,609
“One of the things that impresses me about
it is, is that there is a deep connection

39
00:03:19,609 --> 00:03:24,999
between the spiritual enterprise and the exploration
of space.

40
00:03:24,999 --> 00:03:29,769
Both of them are about exploring: exploring
the darkness that surrounds us as a planet,

41
00:03:29,769 --> 00:03:33,269
exploring the darkness from which we come
at birth and to which we return at death.

42
00:03:33,269 --> 00:03:38,099
The journey inward and the spiritual and the
theological, the journey outward of the space

43
00:03:38,099 --> 00:03:43,590
programs are very closely connected to exploration
and it ties in, in my mind, perfectly and

44
00:03:43,590 --> 00:03:46,999
beautifully in this place."

45
00:03:46,999 --> 00:03:53,040
I'm David Oh, lead flight director for the
Mars Curiosity rover and this is your Curiosity

46
00:03:53,040 --> 00:03:54,840
rover report.

47
00:03:54,840 --> 00:03:57,949
Over the past seven days, we've been doing
checkouts of the arm instruments including

48
00:03:57,949 --> 00:04:01,650
the MAHLI imager, which is a very versatile
instrument that can focus on things that are

49
00:04:01,650 --> 00:04:04,090
close-by and very far away.

50
00:04:04,090 --> 00:04:08,150
The imager has generated some spectacular
shots of the underbelly of the rover and its

51
00:04:08,150 --> 00:04:13,409
wheels, of a 1909 Lincoln penny that we mounted
on the rover for calibration purposes so we

52
00:04:13,409 --> 00:04:15,549
can check that the camera is operating properly.

53
00:04:15,549 --> 00:04:19,950
And its also been used to generate a nice
self-portrait of the Mastcam on the rover,

54
00:04:19,950 --> 00:04:23,570
a portrait that’s taken by the arm looking
back, the same way you would take a picture

55
00:04:23,570 --> 00:04:25,560
of yourself using a cell phone.

56
00:04:25,560 --> 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 --> 00:04:36,600
It generates spectra that allow us to identify
the minerals that are present in a rock.

59
00:04:36,600 --> 00:04:40,130
When the checkout of the arm is complete,
we’ll be continuing our drive to the scientific

60
00:04:40,130 --> 00:04:44,190
target, Glenelg, but we’ll be stopping along
the way to take some video of the Martian

61
00:04:44,190 --> 00:04:47,000
moons, Phobos and Deimos, passing overhead.

62
00:04:47,000 --> 00:04:50,080
We control the rover from Earth, but we have
to operate it on Mars time.

63
00:04:50,080 --> 00:04:53,250
A Martian day is 39 minutes longer than an
Earth day.

64
00:04:53,250 --> 00:04:57,880

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

65
00:04:57,880 --> 00:04:59,870
send commands to the rover.

66
00:04:59,870 --> 00:05:04,280
In the month after landing, my whole family
joined me on Mars time and we got to jump

67
00:05:04,280 --> 00:05:08,110
a time zone a day for 30 days going all the
way around the clock.

68
00:05:08,110 --> 00:05:13,480
As we did that, we got to explore Mars here
at JPL and to explore Los Angeles at night,

69
00:05:13,480 --> 00:05:16,870
and it was a great adventure for the whole
family.

70
00:05:16,870 --> 00:05:19,130
This has been your Curiosity rover report.

71
00:05:19,130 --> 00:05:24,010
Check back for more updates on what's happening
on Mars.

72
00:05:24,010 --> 00:05:29,820
Mars Science Laboratory team members at Headquarters
were at Washington's Florida House for Mars

73
00:05:29,820 --> 00:05:37,200
Day in DC, a celebration of the Curiosity
rover's successful landing on the Red Planet.

74
00:05:37,200 --> 00:05:41,640
NASA Mars Program Director Doug McQuistion
briefed members of Congress and other invited

75
00:05:41,640 --> 00:05:47,500
guests on what science Curiosity is expected
to provide during its two-year mission.

76
00:05:47,500 --> 00:05:53,880
Additional presentations detailed how Curiosity
and its suite of ten science instruments will

77
00:05:53,880 --> 00:05:59,740
conduct in Gale Crater the most difficult
planetary exploration mission ever undertaken.

78
00:05:59,740 --> 00:06:05,020
“It is indeed a privilege to be here.”

79
00:06:05,020 --> 00:06:11,151
NASA Deputy Administrator Lori Garver delivered
the keynote address at the SPACE 2012 Conference

80
00:06:11,151 --> 00:06:13,440
in Pasadena, California.

81
00:06:13,440 --> 00:06:18,620
The annual American Institute of Aeronautics
and Astronautics gathering is considered the

82
00:06:18,620 --> 00:06:23,810
premier event on space technology, policy,
programs, management, and education.

83
00:06:23,810 --> 00:06:31,400
“This is truly something that we work with
together as industry and government and academia

84
00:06:31,400 --> 00:06:38,400
and we look forward to strengthening our partnerships
as our commercial spaceflight industry assumes

85

00:06:38,400 --> 00:06:43,890
even more of a role in this new era of human
and space scientific space exploration.”

86
00:06:43,890 --> 00:06:50,430
The theme of this year’s AIAA conference
was “Creating a Sustainable Vision for Space”.

87
00:06:50,430 --> 00:06:55,430
“Accepting the award is John Callas, the
MER project manager.”

88
00:06:55,430 --> 00:07:01,050
Also at the conference, the mission team at
JPL for NASA's long-lived Mars Exploration

89
00:07:01,050 --> 00:07:06,840
Rovers Spirit and Opportunity was presented
the Haley Space Flight Award for the advancement

90
00:07:06,840 --> 00:07:11,330
of the art, science or technology of astronautics.

91
00:07:11,330 --> 00:07:17,680
In its eighth year of operation on Mars, Opportunity
is surveying a crater rim about 5,200 miles

92
00:07:17,680 --> 00:07:20,830
from Curiosity’s current position.

93
00:07:20,830 --> 00:07:26,389
Spirit explored the Red Planet for more than
six years, 24 times longer than its planned

94
00:07:26,389 --> 00:07:28,370
three-month mission.

95
00:07:28,370 --> 00:07:33,260
Past recipients of the Haley Space Flight
Award include astronauts Alan Shepard, John

96
00:07:33,260 --> 00:07:41,120
Glenn, Tom Stafford, Bob Crippen, Kathy Sullivan
and the crew of STS-125, the last space shuttle

97
00:07:41,120 --> 00:07:48,180
servicing mission to the Hubble Space Telescope.

98
00:07:48,180 --> 00:07:53,480
After weathering Hurricane Isaac, engineers
at the Stennis Space Center returned to testing

99
00:07:53,480 --> 00:07:55,340
the J-2X engine!

100
00:07:55,340 --> 00:08:00,960
The first post-storm J-2X test firing was
of the engine's upper stage that lasted

101
00:08:00,960 --> 00:08:01,960
250 seconds.

102
00:08:01,960 --> 00:08:08,270
The J-2X will help power NASA's Space Launch
System, the new heavy-lift rocket that will

103
00:08:08,270 --> 00:08:13,170
send astronauts beyond Earth orbit.

104
00:08:13,170 --> 00:08:17,840
NASA Chief Technologist Mason Peck joined
state and local officials at the University

105
00:08:17,840 --> 00:08:23,960
of Texas at El Paso for the official opening
of UTEP's Center for Space Exploration Technology

106
00:08:23,960 --> 00:08:29,900
Research, or cSETR (C-STIR), and the NASA

Science, Engineering, Mathematics and Aerospace

107
00:08:29,900 --> 00:08:34,120
Education Laboratory located in the university's
engineering building.

108
00:08:34,120 --> 00:08:40,259
“It’s the kind of collaborative activity
that we, now at NASA recognize as essential

109
00:08:40,259 --> 00:08:44,089
to how we are trying to form the future of
space technology at the agency.”

110
00:08:44,089 --> 00:08:50,389
The NASA-funded cSETR conducts analytical,
experimental and computational research in

111
00:08:50,389 --> 00:08:53,230
energy and propulsion engineering.

112
00:08:53,230 --> 00:08:58,649
The Aerospace Education Laboratory offers
technology and innovation learning opportunities

113
00:08:58,649 --> 00:09:05,209
to students of all ages, from K-12 to post-graduate
and life-long learners.

114
00:09:05,209 --> 00:09:10,920
“Three, two, one, release…”

115
00:09:10,920 --> 00:09:17,290
The vertical water drop tests continue for
the Orion Multi-purpose Crew Vehicle at the

116
00:09:17,290 --> 00:09:20,370
Langley Research Center’s Hydro Impact Basin.

117

00:09:20,370 --> 00:09:24,600
The latest drop for Orion was from a height
of 25 feet.

118
00:09:24,600 --> 00:09:29,980
Unlike last summer’s swing drop tests that
certified Orion for water landings, these

119
00:09:29,980 --> 00:09:34,100
vertical drops tests help predict Orion’s
landing loads.

120
00:09:34,100 --> 00:09:40,910
Orion is scheduled to launch in 2014 on its
Exploration Flight Test-1 and travel 15 times

121
00:09:40,910 --> 00:09:48,079
deeper into space than the International Space
Station before returning to Earth.

122
00:09:48,079 --> 00:09:54,699
The Shuttle Carrier Aircraft that is Space
Shuttle Endeavour’s ride for the cross country

123
00:09:54,699 --> 00:10:00,790
journey to California made its arrival at
Kennedy Space Center.

124
00:10:00,790 --> 00:10:05,769
Like Discovery and Enterprise before it, Space
Shuttle Endeavour is taking its turn in the

125
00:10:05,769 --> 00:10:07,839
ferry flight spotlight.

126
00:10:07,839 --> 00:10:12,899
The first class piggyback ride atop the SCA
culminates for NASA’s youngest orbiter at

127
00:10:12,899 --> 00:10:17,899

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

128
00:10:17,899 --> 00:10:24,430
several NASA installations including the Johnson
Space Center, Stennis, Michoud, White Sands

129
00:10:24,430 --> 00:10:26,999
and the Ames Research Center.

130
00:10:26,999 --> 00:10:32,110
Endeavour is scheduled to arrive at its new
home, the California Science Center, on October

131
00:10:32,110 --> 00:10:36,910
13, and go on display October 30.

132
00:10:36,910 --> 00:10:42,790
Meanwhile, the structure for the new Florida
home of space shuttle Atlantis has been “topped

133
00:10:42,790 --> 00:10:44,950
out” with its highest beam.

134
00:10:44,950 --> 00:10:50,510
In a ceremony marking a milestone in the construction
of the 90,000-square-foot exhibit hall that

135
00:10:50,510 --> 00:10:56,420
will house the orbiter at the Kennedy Space
Center Visitor Complex, the 38-foot-long,

136
00:10:56,420 --> 00:11:02,139
one-ton steel beam was lifted 116 feet off
the ground and locked into place.

137
00:11:02,139 --> 00:11:07,690
A small tree and an American flag were fitted
onto the beam that bore the signatures of

138
00:11:07,690 --> 00:11:09,950
hundreds of NASA employees.

139
00:11:09,950 --> 00:11:15,970
“Atlantis, the last space shuttle to ever
fly in space is going to look like it actually

140
00:11:15,970 --> 00:11:21,449
is in space here at the Kennedy Space Center
and I can’t think of a more fitting place

141
00:11:21,449 --> 00:11:22,939
to tell that story.”

142
00:11:22,939 --> 00:11:30,100
On November 2 Atlantis will be the last shuttle
to move out of the operational area at KSC.

143
00:11:30,100 --> 00:11:35,680
The shuttle will be transported by the orbiter
transport vehicle, or OTV from the Vehicle

144
00:11:35,680 --> 00:11:44,259
Assembly Building to the Visitor Complex.

145
00:11:44,259 --> 00:11:49,959
Expedition 32 officially ended on the International
Space Station when the Soyuz spacecraft carrying

146
00:11:49,959 --> 00:11:55,170
NASA Flight Engineer Joe Acaba and Commander
Gennady Padalka and Flight Engineer Sergei

147
00:11:55,170 --> 00:12:00,170
Revin of the Russian Federal Space Agency
undocked from the station’s Poisk module.

148
00:12:00,170 --> 00:12:07,089
The trio landed safely in Kazakhstan at 10:53

p.m. EDT Sunday September 16.

149
00:12:07,089 --> 00:12:12,970
Acaba, Padalka and Revin spent 123 days onboard
the orbiting laboratory.

150
00:12:12,970 --> 00:12:18,000
NASA astronaut Suni Williams has taken over
control of the station as Commander of Expedition

151
00:12:18,000 --> 00:12:19,329
33.

152
00:12:19,329 --> 00:12:24,149
She and her crewmates flight Engineers Aki
Hoshide of the Japan Aerospace Exploration

153
00:12:24,149 --> 00:12:33,010
Agency and Russian cosmonaut Yuri Malenchenko
are scheduled to stay onboard until Nov. 12.

154
00:12:33,010 --> 00:12:37,249
Three future residents of the International
Space Station previewed their upcoming mission

155
00:12:37,249 --> 00:12:40,630
during a media briefing at the Johnson Space
Center.

156
00:12:40,630 --> 00:12:46,839
Expedition 34 and 35 crew members Tom Marshburn
of NASA, Chris Hadfield of the Canadian Space

157
00:12:46,839 --> 00:12:52,230
Agency and Roman Romanenko of the Russian
Federal Space Agency are set to launch to

158
00:12:52,230 --> 00:12:53,740
the station Dec. 5.

159
00:12:53,740 --> 00:12:57,540
“We’re always looking at ways to getting
even better medical judgment up there and

160
00:12:57,540 --> 00:13:03,439
in a small way my medical judgment is what’s
going to add to the medical care onboard.

161
00:13:03,439 --> 00:13:10,069
So I want to be a part of getting that onboard
a spacecraft even more.”

162
00:13:10,069 --> 00:13:14,170
“Some really critical operations done in
the last couple of weeks overcoming some big

163
00:13:14,170 --> 00:13:19,329
significant hurdles and having the space station
–with the combination of the electrical

164
00:13:19,329 --> 00:13:26,709
repair and the EVAs demonstrating the necessity
for continued expertise and skill in this

165
00:13:26,709 --> 00:13:27,869
thing that is spaceflight.”

166
00:13:27,869 --> 00:13:32,670
When they arrive at the world’s only research
laboratory in microgravity, the trio will

167
00:13:32,670 --> 00:13:39,670
join NASA astronaut Kevin Ford and Russian
cosmonauts Evgeny Tarelkin and Oleg Novitskiy

168
00:13:39,670 --> 00:13:46,069
who are scheduled to launch to the ISS from
Russia on October 15.

169

00:13:46,069 --> 00:13:51,389
The National Air and Space Museum celebrated
a century of Women in Aerospace recently during

170
00:13:51,389 --> 00:13:53,839
its Family Day in D.C.

171
00:13:53,839 --> 00:13:59,290
For more than 100 years women have contributed
to technological advances in aviation and

172
00:13:59,290 --> 00:14:00,350
space.

173
00:14:00,350 --> 00:14:05,459
During a presentation in the Moving Beyond
Earth Gallery, NASA Astronaut Serena Aunon

174
00:14:05,459 --> 00:14:09,939
spoke about the future opportunities for younger
members of the audience to make an impact

175
00:14:09,939 --> 00:14:11,240
in space exploration.

176
00:14:11,240 --> 00:14:15,230
“The next destination that we’re heading
off to could be the moon, could be an asteroid,

177
00:14:15,230 --> 00:14:16,230
could be Mars.

178
00:14:16,230 --> 00:14:17,230
Guess, what?

179
00:14:17,230 --> 00:14:19,730
I’m too old to go to Mars.

180
00:14:19,730 --> 00:14:21,519

You’re going to Mars.

181
00:14:21,519 --> 00:14:25,920
You’re just the right age so we need you
guys to get ready.”

182
00:14:25,920 --> 00:14:31,100
Activities for young space enthusiasts included
designing various elements for a mission to

183
00:14:31,100 --> 00:14:35,510
Mars including a base habitat and a mission
patch.

184
00:14:35,510 --> 00:14:40,871
“Given your unique qualifications to ask
you to serve as the first science officer

185
00:14:40,871 --> 00:14:42,260
on the International Space Station.”

186
00:14:42,260 --> 00:14:47,139
“of course I’d be extremely honored to
be the first science officer.”

187
00:14:47,139 --> 00:14:54,079
Ten years ago on September 16, 2002, Expedition
Five crew member Dr. Peggy Whitson was named

188
00:14:54,079 --> 00:14:59,050
as the first NASA Science Officer of the International
Space Station.

189
00:14:59,050 --> 00:15:04,790
Since then, each Expedition crew has had a
NASA Science Officer working with the U.S.

190
00:15:04,790 --> 00:15:10,059
research community to maximize returns of
station science experiments.

191
00:15:10,059 --> 00:15:15,209
During her tenure as Science Officer, Whitson
conducted 21 investigations in human life

192
00:15:15,209 --> 00:15:28,790
sciences and microgravity sciences as well
as commercial payloads.

193
00:15:28,790 --> 00:15:42,629
The name is Luis Dominguez and I work for
Mars Science Laboratory in the Mission Systems

194
00:15:42,629 --> 00:15:45,730
Testbed as a Test Conductor.

195
00:15:45,730 --> 00:15:48,110
I am half Honduran, half Mexican.

196
00:15:48,110 --> 00:15:54,989
So my mom is from Mexico, Southern Mexico
and my dad's from Central Honduras.

197
00:15:54,989 --> 00:16:00,989
I do come from a very hard working family
so I always have that you know that very like

198
00:16:00,989 --> 00:16:06,850
I'll work till it's done you know attitude
and like you know no job is to menial or you

199
00:16:06,850 --> 00:16:07,850
know to unimportant.

200
00:16:07,850 --> 00:16:13,920
I mean sometimes things are mundane and you
know but they have to get done.

201
00:16:13,920 --> 00:16:19,839

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

202
00:16:19,839 --> 00:16:21,350
robotics in the rover.

203
00:16:21,350 --> 00:16:25,009
I've been on MSL for about five years now.

204
00:16:25,009 --> 00:16:30,000
I started off in ATLO, the assembly, test,
and launch operations team, but I started

205
00:16:30,000 --> 00:16:34,310
there as an intern and then I moved over to
the test bed.

206
00:16:34,310 --> 00:16:39,149
On a day to day basis I usually just go around
helping people with their tests or if they

207
00:16:39,149 --> 00:16:42,589
get into certain configurations that they
don't understand I help them get out of

208
00:16:42,589 --> 00:16:45,850
them…if they trip fault protection that
we have in the rover.

209
00:16:45,850 --> 00:16:48,089
I really enjoyed the challenge that they gave
me.

210
00:16:48,089 --> 00:16:50,939
Wow, like I actually helped built something
that's on the surface of Mars.

211
00:16:50,939 --> 00:16:52,910
It's an amazing feeling.

212
00:16:52,910 --> 00:16:56,110
And that’s This Week @NASA.

213
00:16:56,110 --> 00:17:00,839
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