1
00:00:06,890 --> 00:00:11,340
This Week at NASA…

2
00:00:11,340 --> 00:00:16,139
This Friday, March first, is the targeted
launch date for the next cargo resupply flight

3
00:00:16,139 --> 00:00:18,490
to the International Space Station.

4
00:00:18,490 --> 00:00:24,130
Liftoff of the SpaceX Dragon spacecraft's
second resupply mission to the ISS is scheduled

5
00:00:24,130 --> 00:00:25,509
for 10:10 a.m.

6
00:00:25,509 --> 00:00:29,169
Eastern from Cape Canaveral Air Force Station
in Florida.

7
00:00:29,169 --> 00:00:33,960
Dragon will be loaded with about six tons
of crew supplies and materials for science

8
00:00:33,960 --> 00:00:34,960
research.

9
00:00:34,960 --> 00:00:39,710
Upon the unpiloted craft's arrival at the
orbiting laboratory, Expedition 34 Commander

10
00:00:39,710 --> 00:00:45,219
Kevin Ford and Flight Engineer Tom Marshburn
of NASA will use the station's robotic arm

11
00:00:45,219 --> 00:00:50,950
to grapple Dragon and attach it to the Earth-facing
port of the station's Harmony module.

12
00:00:50,950 --> 00:00:55,980
When it splashes down in the Pacific Ocean
off Baja California later next month, Dragon

13
00:00:55,980 --> 00:01:03,199
will be carrying more than 2,300 pounds of
experiment samples and equipment.

14
00:01:03,199 --> 00:01:07,630
Final assembly and inspection of the Seedling
Growth-1 Experiment took place at NASA Ames

15
00:01:07,630 --> 00:01:12,780
Research Center in preparation for transport
aboard SpaceX-2 Dragon to the International

16
00:01:12,780 --> 00:01:14,860
Space Station.

17
00:01:14,860 --> 00:01:19,230
Payload Integration and Engineering Managers
working with the European Space Agency or

18
00:01:19,230 --> 00:01:24,570
ESA came to Ames to perform the final steps
of the process before the experiment containers

19
00:01:24,570 --> 00:01:26,979
are sent for launch.

20
00:01:26,979 --> 00:01:31,950
Designed and built at NASA Ames, the enclosures
are completely self-contained, providing air,

21
00:01:31,950 --> 00:01:35,920
water, temperature control and light for the
seeds.

22

00:01:35,920 --> 00:01:40,170
Once on the Space Station, the enclosures
are mounted in a centrifuge to test the effects

23
00:01:40,170 --> 00:01:44,910
of micro- and low-gravity environments on
the growth of the seeds.

24
00:01:44,910 --> 00:01:50,289
Seedling Growth-1 is one of several experiments
being conducted by NASA and ESA to determine

25
00:01:50,289 --> 00:01:54,830
if specific plants can grow well enough in
microgravity to provide astronauts with a

26
00:01:54,830 --> 00:01:59,690
complete and sustainable solution for long
duration space missions.

27
00:01:59,690 --> 00:02:07,070
Hi, I'm Louise Jandura, Sample System chief
engineer and I'm here with your Curiosity

28
00:02:07,070 --> 00:02:08,729
rover report.

29
00:02:08,729 --> 00:02:10,340
This was a great week for Curiosity.

30
00:02:10,340 --> 00:02:15,430
We got to see something we've all been waiting
for quite some time: sample in the scoop confirming

31
00:02:15,430 --> 00:02:19,120
that our first drill on Mars collected as
we had expected.

32
00:02:19,120 --> 00:02:22,530
This was an important event as this is the

first time the drill has been used on Mars

33
00:02:22,530 --> 00:02:26,280
to collect sample for analysis by instruments
on the rover.

34
00:02:26,280 --> 00:02:31,630
We use these computer-generated images to
help us visually identify how much we've

35
00:02:31,630 --> 00:02:32,630
collected.

36
00:02:32,630 --> 00:02:38,629
We were able to estimate that we collected
about 14 cubic centimeters of sample, or about

37
00:02:38,629 --> 00:02:42,870
a tablespoon, and this matched our expectations
of what we would see in the scoop when we

38
00:02:42,870 --> 00:02:44,239
got to this point.

39
00:02:44,239 --> 00:02:48,349
Our drilling capability gives us the ability
to get inside this rock.

40
00:02:48,349 --> 00:02:51,800
The first thing you notice about the material
is that it's a different color.

41
00:02:51,800 --> 00:02:55,080
Gray not the reddish orange color all around
us.

42
00:02:55,080 --> 00:02:57,650
That reddish orange color is a sign of an
iron oxidation.

43
00:02:57,650 --> 00:03:02,060
A kind of rusting process that's occurred
all around on Mars.

44
00:03:02,060 --> 00:03:06,599
Since we've been at Yellowknife Bay, Curiosity
has done more than a 100 MAHLI images and

45
00:03:06,599 --> 00:03:08,490
more than 12,000 laser shots.

46
00:03:08,490 --> 00:03:13,190
You can see the telltale laser grid patterns
from the Chem-Cam in this image.

47
00:03:13,190 --> 00:03:17,769
Additionally, you can see a fine grain structure
of this rock indicating either a mudstone

48
00:03:17,769 --> 00:03:19,190
or a siltstone.

49
00:03:19,190 --> 00:03:23,710
The next steps for the team are to finish
processing the sample with Chimera and then

50
00:03:23,710 --> 00:03:29,200
put small portions into the SAM and Chemin
instruments for analysis of chemistry and

51
00:03:29,200 --> 00:03:30,200
mineralogy.

52
00:03:30,200 --> 00:03:34,769
This has been your Curiosity rover report
check back soon for more updates.

53
00:03:34,769 --> 00:03:38,830
"Hi, my name is Ray.

54
00:03:38,830 --> 00:03:40,400
This is really cool.

55
00:03:40,400 --> 00:03:41,519
(laughter).”

56
00:03:41,519 --> 00:03:46,830
Ray Richman from southern Maine was one of
about 150 guests of NASA, most of them users

57
00:03:46,830 --> 00:03:51,870
of Twitter, Facebook, Google-Plus and other
social media, who gathered at Headquarters

58
00:03:51,870 --> 00:03:56,520
for a Social about the ground-breaking research
taking place daily on the International Space

59
00:03:56,520 --> 00:03:57,629
Station.

60
00:03:57,629 --> 00:04:02,409
Hundreds of experiments are being conducted
in the station’s unique microgravity environment

61
00:04:02,409 --> 00:04:07,400
that can benefit humanity while increasing
our understanding of how humans can safely

62
00:04:07,400 --> 00:04:10,079
work and live in space for long periods.

63
00:04:10,079 --> 00:04:15,470
Bill Gerstenmaier, associate adminstrator
for human exploration and operations, was

64
00:04:15,470 --> 00:04:17,390
one of several featured NASA speakers …

65
00:04:17,390 --> 00:04:21,280
“We’re in the process of starting to think
about how much we can extend station, the

66
00:04:21,280 --> 00:04:24,310
physical hardware is probably good till 2028
or so.

67
00:04:24,310 --> 00:04:28,550
So we’re trying to figure out when the right
time to start talking about that is and start

68
00:04:28,550 --> 00:04:29,550
moving forward.”

69
00:04:29,550 --> 00:04:35,720
Marshall Porterfield is director of space
life and physical sciences research and applications;

70
00:04:35,720 --> 00:04:37,750
Tara Ruttley is an ISS scientist.

71
00:04:37,750 --> 00:04:40,130
“There is nothing like it even on Earth.

72
00:04:40,130 --> 00:04:45,120
There’s no where you would find any kind
of laboratory that would share material sciences

73
00:04:45,120 --> 00:04:49,230
facilities with life science facilities with
plants and humans.”

74
00:04:49,230 --> 00:04:55,530
“I tell students that in order to do what
I do for a living you need to know math, you

75
00:04:55,530 --> 00:05:00,400

need to know science, you need to know engineering,
because you have to take care of the machines

76
00:05:00,400 --> 00:05:04,540
that allows you to live in the environment
that you're in and this frontier happens

77
00:05:04,540 --> 00:05:05,710
to be space."

78
00:05:05,710 --> 00:05:11,350
Also addressing the attentive group was physicist
and former ISS resident Don Pettit, who was

79
00:05:11,350 --> 00:05:15,300
outdone only by three CURRENT space station
crew members.

80
00:05:15,300 --> 00:05:21,600
From left, Flight Engineer Tom Marshburn and
Expedition 34 Commander Kevin Ford of NASA,

81
00:05:21,600 --> 00:05:22,990
and Canada's Chris Hadfield.

82
00:05:22,990 --> 00:05:28,480
"The whole purpose of this if figuring out
how to safely get to space and back again.

83
00:05:28,480 --> 00:05:30,820
We haven't invented everything we need to
invent yet.

84
00:05:30,820 --> 00:05:34,970
But hopefully soon, everyone will be able
to get this incredible experience that we're

85
00:05:34,970 --> 00:05:39,620
lucky enough to be part of."

86
00:05:39,620 --> 00:05:45,430
Back aboard the station, Ford, Marshburn and
Hadfield hosted their own social media event:

87
00:05:45,430 --> 00:05:47,820
the first live Hangout in space!

88
00:05:47,820 --> 00:05:50,140
“And what is that on Chris Hadfield’s
forehead?”

89
00:05:50,140 --> 00:05:53,710
“Well, what he has on his forehead is a
temperature probe.”

90
00:05:53,710 --> 00:05:59,240
The three astronauts took questions from the
online community via Google+, Facebook, and

91
00:05:59,240 --> 00:06:00,240
Twitter.

92
00:06:00,240 --> 00:06:05,220
Viewers worldwide could also upload their
video questions – and watch the space-breaking

93
00:06:05,220 --> 00:06:13,400
event live on NASA Television’s YouTube
channel.

94
00:06:13,400 --> 00:06:18,590
Engineers at the Stennis Space Center have
begun a new round of tests on NASA’s next-generation

95
00:06:18,590 --> 00:06:20,720
J-2X rocket engine.

96
00:06:20,720 --> 00:06:24,850
This next test series will continue to provide

performance data critical to the engine’s

97
00:06:24,850 --> 00:06:25,850
development.

98
00:06:25,850 --> 00:06:31,650
The J-2X will provide upper-stage power for
NASA’s new Space Launch System that’ll

99
00:06:31,650 --> 00:06:37,710
send humans farther into space than ever.

100
00:06:37,710 --> 00:06:42,830
NASA Administrator Charles Bolden has received
the Candle in Military Service and Aeronautical

101
00:06:42,830 --> 00:06:46,530
Science Award from Morehouse College in Atlanta.

102
00:06:46,530 --> 00:06:52,090
The award recognizes exceptional achievement
in a field by an African-American man.

103
00:06:52,090 --> 00:06:56,750
The Candle award is part of Founder's Day
celebrations held each year at the alma mater

104
00:06:56,750 --> 00:07:02,090
of the Rev. Dr. Martin Luther King Jr.

105
00:07:02,090 --> 00:07:07,810
The Marshal Space Flight Center co-hosted
an exhibition at the Davidson Center in Huntsville

106
00:07:07,810 --> 00:07:09,590
called "Robots to Rocket City”.

107
00:07:09,590 --> 00:07:15,790
The event gave area student teams competing

in the upcoming FIRST Robotics Ultimate Ascent

108
00:07:15,790 --> 00:07:21,550
Challenge, a chance to test their tenacious
technologies before regional competition begins

109
00:07:21,550 --> 00:07:23,600
in the weeks ahead.

110
00:07:23,600 --> 00:07:29,210
The students have built robots that can score
points by climbing pyramids or tossing discs

111
00:07:29,210 --> 00:07:30,400
through targets.

112
00:07:30,400 --> 00:07:37,660
“When we received our kit of parts six weeks
ago we were very excited to start making our

113
00:07:37,660 --> 00:07:38,660
robot.\h

114
00:07:38,660 --> 00:07:43,990
We had been anticipating this and before we
started our build we made a robot beforehand

115
00:07:43,990 --> 00:07:47,380
– a preseason build – and we learned a
lot about robotics that way.”

116
00:07:47,380 --> 00:07:52,250
“NASA is especially interested in this type
of activity because we are always looking

117
00:07:52,250 --> 00:07:54,250
for the best and the brightest.\h

118
00:07:54,250 --> 00:08:00,240

These teams provide us that opportunity to
seek students who are interested in science,

119
00:08:00,240 --> 00:08:02,710
technology, engineering and mathematics."

120
00:08:02,710 --> 00:08:08,810
FIRST -- For Inspiration and Recognition of
Science and Technology inspires young people

121
00:08:08,810 --> 00:08:14,430
to be science and technology leaders by engaging
them in exciting mentor-based programs that

122
00:08:14,430 --> 00:08:22,070
build science, engineering and technology
skills.

123
00:08:22,070 --> 00:08:27,400
Associate Administrator for Education, Leland
Melvin, visited the AERO Institute in Palmdale,

124
00:08:27,400 --> 00:08:32,240
Calif., where he was updated on education
outreach efforts at the Dryden Flight Research

125
00:08:32,240 --> 00:08:33,390
Center.

126
00:08:33,390 --> 00:08:37,849
The Dryden education team earned Melvin's
praise, as did the Institute for its recent

127
00:08:37,849 --> 00:08:43,229
founding of the Palmdale Aerospace Academy,
a school devoted to excellence in science,

128
00:08:43,229 --> 00:08:45,560
technology, engineering and math.

129
00:08:45,560 --> 00:08:50,750
Both the AERO Institute and its academy are
operated by a consortium that includes NASA,

130
00:08:50,750 --> 00:08:53,700
the city of Palmdale, and its local school
district.

131
00:08:53,700 --> 00:08:59,660
"The school, the aero academy that we just
talked about is a perfect example of a partnership

132
00:08:59,660 --> 00:09:02,650
that is helping get these kids motivated and
inspired.

133
00:09:02,650 --> 00:09:07,250
We have to make sure that the things that
we're doing, the interventions that we're

134
00:09:07,250 --> 00:09:11,160
building, have relevance to the goals, or
why are we doing it?"

135
00:09:11,160 --> 00:09:16,440
Melvin was also briefed on Dryden's on-line,
classroom outreach program, the Digital Learning

136
00:09:16,440 --> 00:09:17,440
Network.

137
00:09:17,440 --> 00:09:22,420
“We provide very unique learning opportunities
for students across the board, whether it's

138
00:09:22,420 --> 00:09:28,020
connecting subject matter experts, astronauts
or even education specialists.”

139

00:09:28,020 --> 00:09:33,529
Melvin also toured the nearby Dryden Aircraft
Operations Facility, home to the center's

140
00:09:33,529 --> 00:09:39,010
science-gathering aircraft.

141
00:09:39,010 --> 00:09:43,830
Lesa Roe, Langley Research Center Director,
and Bill Wrobel, Director of Wallops Flight

142
00:09:43,830 --> 00:09:49,370
Facility, were in Richmond to speak with policy
makers at Virginia's General Assembly about

143
00:09:49,370 --> 00:09:53,780
NASA's contributions to the commonwealth's
aerospace industry.

144
00:09:53,780 --> 00:09:59,380
The eighth annual Aerospace Day provided Roe,
Wrobel and more than 20 NASA and industry

145
00:09:59,380 --> 00:10:06,190
teams the opportunity to outline for legislators
the agency's economic impact on Virginia's

146
00:10:06,190 --> 00:10:07,820
aerospace industry.

147
00:10:07,820 --> 00:10:13,200
Also in Richmond, Roe and U.S. Senator Tim
Kaine visited the Math Science Innovation

148
00:10:13,200 --> 00:10:18,670
Center, where they spoke to 70 teachers from
across central Virginia at a NASA Aerospace

149
00:10:18,670 --> 00:10:19,860
Educator Workshop.

150
00:10:19,860 --> 00:10:26,250
“You are the folks that actually reach these
students and make these students believe that

151
00:10:26,250 --> 00:10:48,470
they can make the impossible possible and
that’s what we do at NASA.”

152
00:10:48,470 --> 00:10:49,710
My name is Todd Arnold.

153
00:10:49,710 --> 00:11:01,850
I'm the deputy director of Public Affairs
at John F. Kennedy Space Center.

154
00:11:01,850 --> 00:11:06,810
As a member of the Kennedy senior management
team, I'm responsible to ensure we have a

155
00:11:06,810 --> 00:11:12,730
highly skilled contractor and civil service
workplace on board to effectively communicate

156
00:11:12,730 --> 00:11:17,190
the NASA story -- our past, our present and
our exciting future.

157
00:11:17,190 --> 00:11:24,190
I also assist in the effort to oversee operations,
on a daily basis, for an active Press Site

158
00:11:24,190 --> 00:11:25,190
news room.

159
00:11:25,190 --> 00:11:30,340
In addition, I provide strategic leadership
and vision to a team of individuals who are

160

00:11:30,340 --> 00:11:36,570
responsible for an array of public relations
tools and techniques, including NASA Television

161
00:11:36,570 --> 00:11:44,840
broadcasting, also news and photojournalism,
Web and social media presence, display management

162
00:11:44,840 --> 00:11:52,170
initiatives, as well as internal communications
to the KSC workforce to help them remain informed

163
00:11:52,170 --> 00:11:55,441
so that they can be wonderful ambassadors
for NASA.

164
00:11:55,441 --> 00:11:56,690
I hired into NASA in 1989 as part of an accelerated
training program for recent college graduates.

165
00:11:56,690 --> 00:12:02,300
Here at NASA, I believe diversity is more
than just a word.

166
00:12:02,300 --> 00:12:05,540
In fact it is part of our core value system.

167
00:12:05,540 --> 00:12:11,960
Which, to me, means it's not just a few people
who are concerned about diversity, but every

168
00:12:11,960 --> 00:12:18,440
individual makes a difference and actively
seeks out an opportunity to value the input

169
00:12:18,440 --> 00:12:19,440
of others.

170
00:12:19,440 --> 00:12:24,550
At an individual level, whenever I join a

team for the first time, I first try to learn

171
00:12:24,550 --> 00:12:30,150
a little about the background and experiences
and education of the individuals I will be

172
00:12:30,150 --> 00:12:31,150
working with.

173
00:12:31,150 --> 00:12:39,130
As a leader, I make it a priority to initiate
efforts that will encourage individuals to

174
00:12:39,130 --> 00:12:44,250
partner and work together and leverage the
strengths and background of others that are

175
00:12:44,250 --> 00:12:45,870
perhaps different from them.

176
00:12:45,870 --> 00:12:50,779
I really believe that the bottom line, in
order to get the best product, that we must

177
00:12:50,779 --> 00:12:55,860
have every idea on the table.

178
00:12:55,860 --> 00:13:01,260
More than 5 thousand visited the Johnson Space
Center NASA exhibit last week during the public

179
00:13:01,260 --> 00:13:08,400
events and activities held prior to the NBA
All-Star game in Houston.

180
00:13:08,400 --> 00:13:14,160
(nat sound)
It was wall-to wall fun at the four-day NBA

181

00:13:14,160 --> 00:13:20,460
All-Star jam session where fans could shoot,
slam, dribble and learn more about NASA and

182
00:13:20,460 --> 00:13:24,490
how it benefits life on earth.

183
00:13:24,490 --> 00:13:28,960
The NASA exhibit included information on the
International Space Station, Commercial Space

184
00:13:28,960 --> 00:13:35,550
Transportation, and the vehicle being designed
for human space exploration, Orion.

185
00:13:35,550 --> 00:13:44,430
Astronauts signed autographs and JSC's mascot
Cosmo was also on hand.

186
00:13:44,430 --> 00:13:50,570
In the late afternoon of Feb. 24, 2011, space
shuttle Discovery took off on its final mission

187
00:13:50,570 --> 00:13:51,610
into space.

188
00:13:51,610 --> 00:13:58,850
STS-133, the 35th shuttle mission to the International
Space Station, delivered the Permanent Multipurpose

189
00:13:58,850 --> 00:14:05,290
Module, the Express Logistics Carrier 4, and
Robonaut 2, the first dexterous humanoid robot

190
00:14:05,290 --> 00:14:08,990
in space, and now a permanent station resident.

191
00:14:08,990 --> 00:14:12,870
Discovery was the first orbiter in the shuttle
fleet to be retired.

192
00:14:12,870 --> 00:14:18,260
Among the 180 people who flew aboard Discovery,
the first female shuttle pilot and the first

193
00:14:18,260 --> 00:14:23,550
female shuttle commander, Eileen Collins;
the first African-American spacewalker ,Bernard

194
00:14:23,550 --> 00:14:29,560
Harris; and the first sitting member of Congress
to fly in space, then-Senator Jake Garn of

195
00:14:29,560 --> 00:14:35,340
Utah.

196
00:14:35,340 --> 00:14:40,170
NASA astronaut and amateur flutist Cady Coleman
joined the Irish musical group "The Chieftains"

197
00:14:40,170 --> 00:14:45,710
on stage with the Houston Symphony during
the band's 50th anniversary concert tour.

198
00:14:45,710 --> 00:14:51,020
Also “sitting in” from 240 miles above
the Earth was Canadian astronaut Chris Hadfield

199
00:14:51,020 --> 00:14:53,230
onboard the International Space Station.

200
00:14:53,230 --> 00:14:58,640
A long-time fan of the Chieftains, Coleman
carried the band’s penny whistle and Irish

201
00:14:58,640 --> 00:15:02,670
flute with her during her 2010 station expedition.

202
00:15:02,670 --> 00:15:07,290

Joining Coleman for the stage performance
were fellow astronaut Dan Burbank and other

203
00:15:07,290 --> 00:15:13,080
members of an informal group of players known
as Bandella that Coleman and Hadfield perform

204
00:15:13,080 --> 00:15:15,660
with on Earth.

205
00:15:15,660 --> 00:15:17,800
And that’s This Week @NASA.