1
00:00:05,230 --> 00:00:11,110
This Week at NASA…

2
00:00:11,110 --> 00:00:16,670
NASA Administrator Charles Bolden visited
the facilities of Space Exploration Technologies

3
00:00:16,670 --> 00:00:21,380
following the successful round-trip of the
company's Dragon spacecraft to the International

4
00:00:21,380 --> 00:00:22,980
Space Station.

5
00:00:22,980 --> 00:00:29,029
Dragon demonstrated its ability to maneuver
and berth to the ISS, then make its safe return

6
00:00:29,029 --> 00:00:30,330
to Earth.

7
00:00:30,330 --> 00:00:35,260
At the SpaceX Rocket Development Facility
in McGregor, Texas , Bolden and SpaceX CEO

8
00:00:35,260 --> 00:00:42,120
Elon Musk signed documents officially transferring
to NASA the cargo returned by Dragon from

9
00:00:42,120 --> 00:00:43,630
the orbiting laboratory.

10
00:00:43,630 --> 00:00:46,260
"How are you doing?

11
00:00:46,260 --> 00:00:48,890
Where are you from?

12

00:00:48,890 --> 00:00:50,210
Fort Hood?

13
00:00:50,210 --> 00:00:51,210
Wow!”

14
00:00:51,210 --> 00:00:56,719
Bolden, Musk and others were at SpaceX headquarters
in Hawthorne, California the next day for

15
00:00:56,719 --> 00:00:59,000
a "Concept Baseline Review”.

16
00:00:59,000 --> 00:01:05,710
The CBR, essentially a final draft of specific
system designs, is a required milestone of

17
00:01:05,710 --> 00:01:08,270
NASA’s Commercial Crew Development program.

18
00:01:08,270 --> 00:01:14,070
“You have now allowed NASA to take time
to start developing vehicles that are going

19
00:01:14,070 --> 00:01:17,700
to get us beyond low Earth orbit because we
don’t have to worry about getting people

20
00:01:17,700 --> 00:01:21,690
to low Earth orbit anymore, we don’t have
to worry about getting cargo and people to

21
00:01:21,690 --> 00:01:28,040
the International Space Station because companies
like SpaceX have taken on that challenge.”

22
00:01:28,040 --> 00:01:33,720
Deputy Administrator Lori Garver opened NASA’s
Sample Return Robot Centennial Challenge at

23
00:01:33,720 --> 00:01:37,350
the Worcester Polytechnic Institute in Worcester,
Mass.\h

24
00:01:37,350 --> 00:01:43,320
Five teams of engineers from across the country
are competing at WPI for an agency-funded

25
00:01:43,320 --> 00:01:44,510
prize of $1.5 million.

26
00:01:44,510 --> 00:01:50,900
These technologies don’t build themselves;
these rockets don’t build themselves it’s

27
00:01:50,900 --> 00:01:51,900
all about people.

28
00:01:51,900 --> 00:01:58,930
It is the people throughout the agency and
our contractor community and our academic

29
00:01:58,930 --> 00:02:02,490
partners who help us create the future.

30
00:02:02,490 --> 00:02:07,150
When we invest in these technologies we take
on these hard problems we inspire people to

31
00:02:07,150 --> 00:02:09,990
make advances in every area of technology.

32
00:02:09,990 --> 00:02:15,099
The direct investment we make in specific
technologies can make small businesses’

33
00:02:15,099 --> 00:02:18,849
successful products for the future but can
also lead to things we don’t even know now.

34
00:02:18,849 --> 00:02:24,430
Part of NASA's Centennial Challenges prize
competitions, the Sample Return Robot challenge,

35
00:02:24,430 --> 00:02:30,019
is to design and develop the next generation
of autonomous robots to explore the landscapes

36
00:02:30,019 --> 00:02:36,409
of other worlds by locating, collecting and
returning simulated "planetary samples" on

37
00:02:36,409 --> 00:02:37,409
their own.

38
00:02:37,409 --> 00:02:42,319
The competitors can pursue whatever design
approach they like, and are awarded the cash

39
00:02:42,319 --> 00:02:46,349
prizes by NASA only if they’re successful.

40
00:02:46,349 --> 00:02:51,980
Centennial Challenges, part of NASA’s Space
Technology Program, stimulate private sector

41
00:02:51,980 --> 00:02:57,209
investment many times greater than the cash
value of the prize by addressing a particular

42
00:02:57,209 --> 00:03:02,709
problem or technological need of national
or international significance.

43
00:03:02,709 --> 00:03:11,250
For more information, visit:

44
00:03:11,250 --> 00:03:15,340

www.nasa.gov/challenges

45
00:03:15,340 --> 00:03:20,639
Langley Research Center recently played host
to Mark Sirangelo, head of Sierra Nevada Space

46
00:03:20,639 --> 00:03:21,870
Systems.

47
00:03:21,870 --> 00:03:27,030
NASA and Sierra Nevada are marking the fifth
year of a partnership to design and develop

48
00:03:27,030 --> 00:03:33,430
the Dream Chaser Space System, an orbital
crew vehicle based upon Langley's HL-20 lifting

49
00:03:33,430 --> 00:03:35,230
body spacecraft.

50
00:03:35,230 --> 00:03:40,629
Sirangelo joined Center Director Lesa Roe
on a tour of Langley’s Transonic Dynamics

51
00:03:40,629 --> 00:03:41,629
Tunnel.

52
00:03:41,629 --> 00:03:46,849
Here, Dream Chaser is being tested to evaluate
fluctuations the launch vehicle stack may

53
00:03:46,849 --> 00:03:53,489
experience during its ascent to low-Earth
orbit.

54
00:03:53,489 --> 00:04:03,440
A 1,150-second test of the J-2X powerpack,
a subset of the engine, became the longest

55

00:04:03,440 --> 00:04:09,129
duration firing ever conducted in the Stennis Space Center’s A Test Complex.

56
00:04:09,129 --> 00:04:13,810
Surpassing the previous record by more than a full minute, the June 8th test marked a

57
00:04:13,810 --> 00:04:19,489
milestone in the development of a next-generation rocket engine designed to carry humans deeper

58
00:04:19,489 --> 00:04:21,280
into space than ever before.

59
00:04:21,280 --> 00:04:26,790
“The significance of this test is to look specifically at the pumps and what they’re

60
00:04:26,790 --> 00:04:30,440
producing to see how they react in different environments.

61
00:04:30,440 --> 00:04:35,160
And we’re making sure that everything we’ve put on paper and that we’ve developed on

62
00:04:35,160 --> 00:04:37,910
computer models is working in real life.”

63
00:04:37,910 --> 00:04:43,780
The J-2X is the first human-rated liquid oxygen and liquid hydrogen rocket engine developed

64
00:04:43,780 --> 00:04:50,800
in 40 years and will provide upper-stage power for NASA’s Space Launch System, or SLS,

65
00:04:50,800 --> 00:04:58,700
the heavy-lift vehicle that’ll send the

new Orion capsule beyond low-Earth orbit.

66
00:04:58,700 --> 00:05:03,910
Small regional companies and government agencies
near the Michoud Assembly Facility that may

67
00:05:03,910 --> 00:05:10,280
want to help develop and support the SLS were
hosted at Contact 2012.

68
00:05:10,280 --> 00:05:16,350
Seventy-three companies exhibited their services
at the networking event co- sponsored by NASA,

69
00:05:16,350 --> 00:05:23,050
the Louisiana Small Business Administration
and Jacobs Technology.

70
00:05:23,050 --> 00:05:28,730
NASA has narrowed the landing target for its
most advanced Mars rover, Curiosity.

71
00:05:28,730 --> 00:05:34,110
When it sets down on the Red Planet in August,
the car-sized rover will now be closer to

72
00:05:34,110 --> 00:05:38,470
Gale Crater’s Mount Sharp, where it’ll
conduct its science.

73
00:05:38,470 --> 00:05:43,110
Fear of any additional risk that comes with
putting down nearer the mountain’s hazardous

74
00:05:43,110 --> 00:05:49,270
slope was overcome by confidence in Curiosity’s
precision landing technology.

75
00:05:49,270 --> 00:05:54,240
Rock layers located in the mountain are the

prime location for rover research.

76
00:05:54,240 --> 00:06:03,430
Launched in November 2011, Curiosity is scheduled
to land at approximately 1:31 a.m. EDT, Aug.

77
00:06:03,430 --> 00:06:04,430
6.

78
00:06:04,430 --> 00:06:09,450
Following checkout operations, Curiosity will
begin a two-year study of whether the landing

79
00:06:09,450 --> 00:06:17,000
vicinity ever offered an environment favorable
for microbial life.

80
00:06:17,000 --> 00:06:22,310
In the night skies above Kwajalein Atoll in
the central Pacific Ocean, NASA's Nuclear

81
00:06:22,310 --> 00:06:29,270
Spectroscopic Telescope Array, or NuSTAR,
was released from the belly of an L-1011 Stargazer

82
00:06:29,270 --> 00:06:41,020
aircraft, then sent into space by its
Pegasus XL rocket.

83
00:06:41,020 --> 00:06:46,650
In low-Earth orbit near the equator, NuSTAR
will team with other telescopes already in

84
00:06:46,650 --> 00:06:53,020
space, including NASA's Chandra X-ray Observatory,
to hunt for, and provide a more complete picture

85
00:06:53,020 --> 00:06:59,660
of the most powerful and exotic objects in
space, such as black holes, dead stars and

86
00:06:59,660 --> 00:07:03,140
jets of energy traveling near the speed of
light.

87
00:07:03,140 --> 00:07:08,940
NuSTAR has more than 10 times the resolution,
and more than 100 times the sensitivity of

88
00:07:08,940 --> 00:07:16,320
its predecessors operating in a similar range
of X-rays.

89
00:07:16,320 --> 00:07:22,100
NASA is asking the help of accredited American
universities in finding innovative, early-stage

90
00:07:22,100 --> 00:07:28,520
space technologies that can insure the success
of future science and human exploration missions.

91
00:07:28,520 --> 00:07:33,840
Among these technologies: improved shielding
from space radiation, a known danger to the

92
00:07:33,840 --> 00:07:39,390
health of astronauts; better methods for storing
cryogenic propellants in fuel tanks and filling

93
00:07:39,390 --> 00:07:45,720
stations in space over long periods of time
and distance; and advanced optical systems

94
00:07:45,720 --> 00:07:50,050
for the next generation of lightweight mirrors
and telescopes.

95
00:07:50,050 --> 00:07:56,710
Ten awards, each as much as 250-thousand dollars,
are expected to be made this fall by NASA’s

96
00:07:56,710 --> 00:08:01,470
Space Technology Program, managed by the Office
of the Chief Technologist.

97
00:08:01,470 --> 00:08:12,240
For information on submitting proposals, visit:
www.nasa.gov/oct.

98
00:08:12,240 --> 00:08:17,650
Johnson Space Center, Houston and surrounding
communities welcomed a full-scale replica

99
00:08:17,650 --> 00:08:23,170
of the space shuttle recently with a weekend
of activities to commemorate its arrival.

100
00:08:23,170 --> 00:08:28,520
The replica, which arrived by barge from the
Kennedy Space Center in Florida on June 1,

101
00:08:28,520 --> 00:08:32,919
was welcomed to its new home by thousands
who gathered to watch its arrival and kick

102
00:08:32,919 --> 00:08:35,550
off the Shuttlebration Weekend.

103
00:08:35,550 --> 00:08:39,800
The crowd cheered as the space shuttle arrived
at the same dock that saw the arrival of the

104
00:08:39,800 --> 00:08:42,379
Saturn V rocket in 1977.

105
00:08:42,379 --> 00:08:48,749
The shuttle, escorted by a flotilla of boats
and a Coast Guard helicopter, was welcomed

106

00:08:48,749 --> 00:08:52,940
by a fire boat spray and red, white, blue
confetti salute.

107
00:08:52,940 --> 00:08:58,050
“The arrival today of the incredible full
scale replica of the Space Shuttle is a credit

108
00:08:58,050 --> 00:09:01,319
to the hard work of this community and to
Space Center Houston.

109
00:09:01,319 --> 00:09:08,033
It’s to help secure our legacy for our community
and reminds us that we are the explorers;

110
00:09:08,033 --> 00:09:10,050
we make the dreams a reality.

111
00:09:10,050 --> 00:09:13,350
We’re ready for the next great mission.”

112
00:09:13,350 --> 00:09:18,180
Early on June 3, crowds lined the street of
Nassau Bay as the replica made its nearly

113
00:09:18,180 --> 00:09:23,680
four-hour trek down NASA Parkway to its permanent
home at Space Center Houston, the official

114
00:09:23,680 --> 00:09:26,850
visitor’s center of the Johnson Space Center.

115
00:09:26,850 --> 00:09:31,069
The new attraction will provide visitors a
close-up view of a shuttle, including what

116
00:09:31,069 --> 00:09:35,770
it’s like to be inside the cockpit – an
experience that will only be available at

117
00:09:35,770 --> 00:09:39,209
Space Center Houston.

118
00:09:39,209 --> 00:09:47,779
Sixty years ago, on June 18, 1952, H. Julian
Allen, a scientist working at the Ames Research

119
00:09:47,779 --> 00:09:53,779
Center for the National Advisory Committee
for Aeronautics, NASA’s predecessor organization,

120
00:09:53,779 --> 00:10:00,240
conceived of the design upon which every early
U.S. astronaut would rely for his safe return

121
00:10:00,240 --> 00:10:01,240
to Earth.

122
00:10:01,240 --> 00:10:06,389
Harvey Allen, as he was widely known, later
became center director at Ames, but would

123
00:10:06,389 --> 00:10:11,060
be best remembered for his "Blunt Body Theory"
of re-entry aerodynamics.

124
00:10:11,060 --> 00:10:17,660
Allen’s technique was used in NASA’s Mercury,
Gemini, and Apollo capsules – and will be

125
00:10:17,660 --> 00:10:22,910
used on the new Orion vehicle as well.

126
00:10:22,910 --> 00:10:25,370
And that’s This Week @ NASA!

127
00:10:25,370 --> 00:10:30,490
For more on these and other stories, or to

follow us on Facebook, Twitter and other social