PV1

1
00:00:00,799 --> 00:00:15,849
bjbj< This Week at NASA The counter is zero,
it has passed closet approach and this asteroid

2
00:00:15,849 --> 00:00:20,789
is going away, it s on its way out!!) It may
have been small, appearing so even in the

3
00:00:20,789 --> 00:00:28,169
best optical telescopes on Earth, but the
flyby of asteroid 2012 DA14 was anything but

4
00:00:28,169 --> 00:00:34,720
a minor event to astronomers. Never feared
as a threat to anyone or anything on or around

5
00:00:34,720 --> 00:00:40,949
our planet, DA14, about the size of half a
football field, did come within 17-thousand

6
00:00:40,949 --> 00:00:46,660
miles of Earth, about 5-thousand miles closer
than many of our satellites in geosynchronous

7
00:00:46,660 --> 00:00:52,539
orbit. And that gave astronomers and scientists
something to see and learn about, relatively

8
00:00:52,539 --> 00:00:57,449
up close. It will be observed by observatories
around the world, and we ll get a lot of good

9
00:00:57,449 --> 00:01:03,140
information on its spectral type, chemical
composition possibly, spectrum of it, and

10
00:01:03,140 --> 00:01:13,050
the radar data will give us essential information
on the shape, size and rotation. During Tuesday

11
00:01:13,050 --> 00:01:18,930
s State of the Union, President Obama reaffirmed
the Administration s commitment to inspire

12
00:01:18,930 --> 00:01:24,400
the next generation of innovators and empower
them with the STEM skills needed to take our

13
00:01:24,400 --> 00:01:29,320
nation into the future. ll reward schools
that develop new partnerships with colleges

14
00:01:29,320 --> 00:01:35,950
and employers, and create classes that focus
on science, technology, engineering and math

15
00:01:35,950 --> 00:01:40,750
-- the skills today s employers are looking
for to fill the jobs that are there right

16
00:01:40,750 --> 00:01:46,000
now and will be there in the future. Watching
the president as a guest of First Lady Michelle

17
00:01:46,000 --> 00:01:52,340
Obama was Curiosity rover team member, Bobak
Ferdowsi better known in social media circles

18
00:01:52,340 --> 00:01:58,880
as Mohawk Guy. Watching him work during coverage
of Curiosity s landing on Mars has increased

19
00:01:58,880 --> 00:02:04,480
STEM cool factor among young Americans. On
the heels of the president s address, NASA

20
00:02:04,480 --> 00:02:09,450
participated in several White House events
aimed at interesting young minds in science,

21
00:02:09,450 --> 00:02:14,640
technology and space. Administrator Charlie
Bolden was joined by Ferdowsi to connect with

22
00:02:14,640 --> 00:02:20,100
students at a Tweet-and-Chat session. And
NASA Deputy Administrator Lori Garver and

23
00:02:20,100 --> 00:02:26,550
Ferdowsi spoke at a STEM Q&A with middle and
high school students. Being able to make discoveries

24
00:02:26,550 --> 00:02:31,560
is what exploration is all about, being able
to learn things that we have not learned before

25
00:02:31,560 --> 00:02:37,170
that benefit humanity and society and advance
our civilization and NASA is a place from

26
00:02:37,170 --> 00:02:41,230
the vantage point of space where we can do
that. We just did a first drill on Mars within

27
00:02:41,230 --> 00:02:45,490
the last week, and that s actually kind of
the real cool part of this mission, we are

28
00:02:45,490 --> 00:02:48,980
actually going to get into the history of
Mars, not just the surface of Mars, this has

29
00:02:48,980 --> 00:02:51,930
been, you know that has radiation and weathering
and everything else. We are actually going

30
00:02:51,930 --> 00:02:55,350
to see that preserved Martian history and
I think that s when the really cool stuff

31
00:02:55,350 --> 00:03:01,300
is going to start showing up. Hi I'm Scott
McCloskey, drill systems engineer on the Mars

32
00:03:01,300 --> 00:03:03,880
Science Laboratory and this is your Curiosity
rover report. Curiosity made history this

33
00:03:03,880 --> 00:03:05,480
week by being the first rover to ever drill
on another planet. We began our first drilling

34
00:03:05,480 --> 00:03:09,840
campaign at the site we named John Klein.
John Klein has an area that has a set of flat

35
00:03:09,840 --> 00:03:13,621
plate rocks that are perfect for the first
use of the drill. We were able to place the

36
00:03:13,621 --> 00:03:18,709
arm safely and drill vertically down into
the rock to collect as much sample as possible.

37
00:03:18,709 --> 00:03:19,709
We were very cautious leading up to o our
first use of the drill. We started by making

38
00:03:19,709 --> 00:03:24,910
a very small divot to test the hammering mechanism
in the drill. This worked perfectly so we

39
00:03:24,910 --> 00:03:28,349
continued on with the making of the mini hole.
The mini hole was 2 centimeters deep and allowed

40
00:03:28,349 --> 00:03:30,381
us to examined the tailings that the drill
created by boring into the rock When we looked

41
00:03:30,381 --> 00:03:33,550
at those we compared the tailings created
by the mini drill to the extensive set of

42
00:03:33,550 --> 00:03:37,780
test rocks that we drilled here on earth here
at JPL and determine that the we see on mars

43
00:03:37,780 --> 00:03:41,650
are safe to ingest in the system. After these
drill tests we were all very excited to move

44
00:03:41,650 --> 00:03:43,860
on to ready to move on to the big event finally
drilling a full hole and collecting sample

45
00:03:43,860 --> 00:03:46,070
We drilled 6 and a half centimeters down into
the rock and collected sample. After drilling

46
00:03:46,070 --> 00:03:49,630
the first hole we used the camera at the end
of the arm to take pictures. Here we see two

47
00:03:49,630 --> 00:03:53,209
holes first on the right is the mini drill
hole (stumble) and in the center of the picture

48
00:03:53,209 --> 00:03:54,740
we have the full hole. Both of these holes
generated grey tailings (stumble) the grey

49
00:03:54,740 --> 00:03:58,410
tailings tells us that there s something different
about the inside of this rock than the surface

50
00:03:58,410 --> 00:04:00,691
of the rock. the drill collected some of this
grey powder and we used it to clean the internal

51
00:04:00,691 --> 00:04:01,830
surfaces of the drill we also then processed
that sample and will use it to deliver to

52
00:04:01,830 --> 00:04:05,170
the other instruments. After using this powder
to clean the drill we move it into the scoop

53
00:04:05,170 --> 00:04:06,870
and take a picture. This allows us to estimate
how much sample the drill actually collected.

54
00:04:06,870 --> 00:04:09,290
In the coming weeks we ll process this sample
and deliver it to the instruments inside of

55
00:04:09,290 --> 00:04:16,560
the rover. That's your Curiosity rover report,
check back for more updates. At their latest

56
00:04:16,560 --> 00:04:23,350
test in Yuma, Arizona, Orion engineers demonstrated
that the spacecraft can land safely if one

57
00:04:23,350 --> 00:04:28,469
of the crew capsule s three main chutes fails
to inflate during deployment. Before dropping

58
00:04:28,469 --> 00:04:33,970
the test article from a plane 25,000 feet
above the desert, engineers rigged the parachutes

59
00:04:33,970 --> 00:04:39,389
so only two would work properly. The results
are significant because Orion s chute system

60
00:04:39,389 --> 00:04:45,050
will perform like no other landing system
has done before: slow a spacecraft carrying

61
00:04:45,050 --> 00:04:50,810
humans from a 20-thousand mile-per-hour reentry
into Earth's atmosphere to a speed gentle

62
00:04:50,810 --> 00:04:56,930
enough for a safe splashdown in the Pacific
Ocean. This was the eighth drop test for Orion

63
00:04:56,930 --> 00:05:04,879
s chute system. The next is scheduled for
May. Data from NASA's twin Gravity Recovery

64
00:05:04,879 --> 00:05:10,460
and Climate Experiment, or GRACE satellites
indicates that freshwater reserves in large

65
00:05:10,460 --> 00:05:15,870
areas of the arid Middle East were rapidly
depleted during the past decade. Scientists

66
00:05:15,870 --> 00:05:22,159
found that between 2003 and 2009, the Tigris
and Euphrates river basins of Turkey, Syria,

67
00:05:22,159 --> 00:05:29,301
Iraq and Iran lost 117 million-acre-feet of
the total freshwater stored there. That s

68
00:05:29,301 --> 00:05:36,289
almost as much H2O as in the Dead Sea. Researchers
say about 60 percent of the loss was groundwater

69
00:05:36,289 --> 00:05:42,270
pumped from underground reservoirs. Political
tensions in the area limit how much ground-based

70
00:05:42,270 --> 00:05:48,379
data can be collected, so satellite data from
GRACE and other Earth-observing spacecraft

71
00:05:48,379 --> 00:05:56,110
are essential to monitoring our home planet
s water systems. NASA Ames recently started

72
00:05:56,110 --> 00:06:00,580
a new partnership with the Bay Area Air Quality
Management District to study air pollution

73
00:06:00,580 --> 00:06:06,229
in the San Francisco Bay region. Using a specially
equipped aircraft called the Alpha Jet Atmospheric

74
00:06:06,229 --> 00:06:12,349
Experiment or AJAX, the project will sample
ozone and greenhouse gas levels at altitudes

75
00:06:12,349 --> 00:06:18,210
as low as 1,000 feet. The study hopes to better
understand how clean air over the Pacific

76
00:06:18,210 --> 00:06:23,290
Ocean moves into northern California and how
pollution emissions develop and move on a

77
00:06:23,290 --> 00:06:29,270
broad scale. The goal is to help Air District
planners and meteorologists better forecast

78
00:06:29,270 --> 00:06:32,360
and simulate air pollution in the San Francisco
Bay Area. Between 2017 and 2019 NASA and other

79
00:06:32,360 --> 00:06:33,610
partners plan to launch satellites that are
designed to study air quality, so projects

80
00:06:33,610 --> 00:06:39,729
like this Bay Area study will help scientists
to make more refined measurements in the future.

81
00:06:39,729 --> 00:06:44,779
The AJAX project is also working with other
partners to gather data in support of other

82
00:06:44,779 --> 00:06:53,129
air quality projects in California and the
nearby Pacific region. The Robotic Refueling

83
00:06:53,129 --> 00:06:59,569
Mission successfully completed a first-of-its-kind
demonstration on the International Space Station.

84
00:06:59,569 --> 00:07:04,180
Engineers at the Goddard Space Flight Center
oversaw the operations as controllers at the

85
00:07:04,180 --> 00:07:09,879
Johnson Space Center remotely commanded the
station's robotic arm called Dextre to transfer

86
00:07:09,879 --> 00:07:15,550
simulated fuel into a specially designed practice
box. It s an important step in proving the

87
00:07:15,550 --> 00:07:21,810
feasibility of using robots to refuel satellites
in space. Robotics can do things that humans

88
00:07:21,810 --> 00:07:28,789
can t do in terms of precision, control holding
a spot for six hours while engineers on the

89
00:07:28,789 --> 00:07:33,490
ground debate out what to do. We can t ask
a human to do that. NASA will continue development

90
00:07:33,490 --> 00:07:40,229
of technology to enable robots to refuel satellites
on orbit even those not designed to be serviced,

91
00:07:40,229 --> 00:07:49,229
with additional tests throughout the year.
NASA Astronaut Serena Aunon, a 1997 graduate

92
00:07:49,229 --> 00:07:53,559
of George Washington University s School of
Engineering and Applied Science, was back

93
00:07:53,559 --> 00:07:59,430
at GW to share her path to the astronaut corps
with those considering following in her footsteps.

94
00:07:59,430 --> 00:08:03,830
You have to make sure that you have good team
dynamics. That you know how to be both a leader

95
00:08:03,830 --> 00:08:09,919
and a follower, that you work well across
multiple cultures. Because on the International

96
00:08:09,919 --> 00:08:15,499
Space Station we have astronauts from Russia,
obviously the United States, Canada, Europe

97
00:08:15,499 --> 00:08:21,789
and Japan. Aunon, who holds an electrical
engineering degree from GW, is also an experienced

98
00:08:21,789 --> 00:08:26,619
NASA Flight Surgeon, and currently serves
as the medical/education branch chief for

99
00:08:26,619 --> 00:08:32,729
the Astronaut Office. Aunon was one of 14
people selected by NASA in 2009 for the agency

100
00:08:32,729 --> 00:08:58,430
s 20th astronaut class. My name is Terry Edmonds.
I m a senior advisor and speechwriter for

101
00:08:58,430 --> 00:09:05,620
Charlie Bolden and Lori Garver and I ve been
here at NASA for about a year-and-a-half.

102
00:09:05,620 --> 00:09:12,850
At an early age I just fell in love with literature
and writing and poetry. We didn t have a lot

103
00:09:12,850 --> 00:09:20,540
of money but one thing that my mother made
sure we had was a series of classic books.

104
00:09:20,540 --> 00:09:25,780
Growing up I never imagined that the trajectory
of my life would take me to the places that

105
00:09:25,780 --> 00:09:32,420
I ve been and becoming the first African-American
to write speeches for an American president

106
00:09:32,420 --> 00:09:37,170
is definitely a source of pride. You have
produced some of our nation s finest leaders.

107
00:09:37,170 --> 00:09:43,880
He was the first President to deliver a commencement
address, I believe at an HBCU, Historically

108
00:09:43,880 --> 00:09:48,519
Black College and University, which happened
to be my Alma Mater, Morgan State University.

109
00:09:48,519 --> 00:09:53,980
Unbeknownst to me I did not write it into
the speech he pointed me out. And on a very

110
00:09:53,980 --> 00:10:01,360
personal note, my fine assistant Terry Edmonds,
Class of 1972 the first African-American ever

111
00:10:01,360 --> 00:10:07,769
to serve as a speechwriter for the President
of the United States. And that was quite a

112
00:10:07,769 --> 00:10:13,550
moment of pride and, yeah, satisfaction. I
would advise anyone who s trying to go into

113
00:10:13,550 --> 00:10:20,610
speechwriting to write for somebody or for
some cause or for some issue that you actually

114
00:10:20,610 --> 00:10:27,101
believe in. I feel like I really, you know
hit the jackpot when I came to NASA. When

115
00:10:27,101 --> 00:10:32,569
the opportunity presented itself, everybody
kept telling me, hey man, that s a cool place.

116
00:10:32,569 --> 00:10:39,690
That s the coolest place to go. s a great
place, great leadership, great camaraderie.

117
00:10:39,690 --> 00:10:46,240
It s very challenging work that we do here.
I believe that we should have workplaces that,

118
00:10:46,240 --> 00:10:52,360
quote/unquote look like America. America is
becoming more diverse and the talents of all

119
00:10:52,360 --> 00:10:57,620
of our people are going to be necessary if
we re going to move forward in the twenty-first

120
00:10:57,620 --> 00:11:05,940
century. February 18, 1977: NASA s first space
shuttle orbiter, Enterprise, conducted its

121
00:11:05,940 --> 00:11:11,339
first flight test at the Dryden Flight Research
Center. Constructed without an engine, the

122
00:11:11,339 --> 00:11:17,800
craft was mounted atop a Boeing 747 Shuttle
Carrier Aircraft to measure structural loads,

123
00:11:17,800 --> 00:11:23,240
ground handling and other capabilities prior
to atmospheric flight. While Enterprise never

124
00:11:23,240 --> 00:11:28,149
flew in space, its series of approach and
landing tests that year proved the orbiter

125
00:11:28,149 --> 00:11:33,560
could fly in the atmosphere and land like
a glider. Enterprise was named for the starship

126
00:11:33,560 --> 00:11:38,759
on the popular television series of that time
Star Trek. Today, you can see Enterprise on

127
00:11:38,759 --> 00:11:51,850
display at New York City s Intrepid Sea, Air
and Space Museum Complex. 3-2-1 And February

128
00:11:51,850 --> 00:11:56,949
20th is the fifty-first anniversary of John
Glenn s historic flight aboard Friendship

129
00:11:56,949 --> 00:12:03,240
7. Glenn became the first American to orbit
the Earth, circling the globe three times.

130
00:12:03,240 --> 00:12:08,350
As he passed over Perth, Western Australia,
residents there turned on house lights and

131
00:12:08,350 --> 00:12:13,720
street lights, earning Perth the nickname,
The City of Light . Despite some tense moments

132
00:12:13,720 --> 00:12:18,501
near the end of the 4 hour- 55 minute Mercury
mission, when flight controllers could not

133
00:12:18,501 --> 00:12:23,700
determine if its heat shield was intact, the
capsule returned to Earth safely. Glenn was

134
00:12:23,700 --> 00:12:30,519
celebrated as a national hero and given a
ticker-tape parade in New York City. And that

135
00:12:30,519 --> 00:12:35,870
s This Week @NASA. For more on these and other
stories, or to follow us on YouTube, UStream

136
00:12:35,870 --> 00:12:38,699
and other social media, log on to HYPERLINK
"http://www.nasa.gov" www.nasa.gov PAGE * MERGEFORMAT

137
00:12:38,699 --> 00:12:39,699
ph333 h5iS ht?, h5iS f^Z^Z^Z [Content_Types].xml
#!MB Lz]__ U~YkG _rels/.rels theme/theme/themeManager.xml

138
00:12:39,699 --> 00:12:40,699
sQ\}# theme/theme/theme1.xml G$$DA :$BR si-@R
r,[L bX*x KfN1 ,tV@ .EML M .c =<R8 (F\

139
00:12:40,699 --> 00:12:41,699
62Hp !Uq7 GvxY @JyBw>6K 0i1; P0!Y ?sE/ ?J&l
p)af theme/theme/_rels/themeManager.xml.rels

140
00:12:41,699 --> 00:12:42,699
6?$Q K(M&$R(.1 [Content_Types].xmlPK _rels/.relsPK
theme/theme/themeManager.xmlPK theme/theme/theme1.xmlPK

141
00:12:42,699 --> 00:12:43,699
theme/theme/_rels/themeManager.xml.relsPK
<?xml version="1.0" encoding="UTF-8" standalone="yes"?>

142
00:12:43,699 --> 00:12:44,699
<a:clrMap xmlns:a="http://schemas.openxmlformats.org/drawingml/2006/main"
bg1="lt1" tx1="dk1" bg2="lt2" tx2="dk2" accent1="accent1"

143
00:12:44,699 --> 00:12:45,699
accent2="accent2" accent3="accent3" accent4="accent4"
accent5="accent5" accent6="accent6" hlink="hlink"

144
00:12:45,699 --> 00:12:46,699
folHlink="folHlink"/> v:\{[vAcq Nv73 eT0h
\}T K X %\ ~7!+# !jRQ? b:["*= % qD D\{/'ac Ot9'

145
00:12:46,699 --> 00:12:47,699
)VB'dBD uUL*0q 9\L* 0*+d, Y$8, cX, c ,b:["
,N/b\{ -D\{/' $(-8\M/ Mp.3 8\M/ =*2g 3F8X@ 3@+b

146
00:12:47,699 --> 00:12:48,699
Nv73 <i|3 HRR5 6sg5 5y3<J H6D1 ~rX7 \b7GM
&^8\{Z h`(: n-;6sg5 !Df< >Gk-N Ca0? N]:?Q,

147
00:12:48,699 --> 00:12:49,699
t7J? jRQ?42u\ F8X@ 1\{;C 1rCbyW StD< ryE1\{;C
:C=F (DHs HuUL* ,]Ij5 ICa0? J`\{N y3<J UvJVR=

148
00:12:49,699 --> 00:12:50,699
ManL Gk-N hLFP LVaP Q b, ['R` ,3R: UManL SB0V
TESW YTESW v:\{[*P\M p\05T 42u\ v^v\ \{]<i|3

149
00:12:50,699 --> 00:12:51,699
P@k` `:C=F :N1el5# ee oGfdK %|Ug eT0h oYh~rX7
GFih z\}kT/os Upl/A- P!mkR _I(m @cmN\ )im\}

150
00:12:51,699 --> 00:12:52,699
nP@k` 3_io ss$p%X p7~7 vAcqi& T/os "\{LVaP
tZ\{Z6 N/b\{ ^a|&Z TW@N DRAFT for 11-16-12 afeinber

151
00:12:52,699 --> 00:12:53,699
Normal.dotm NASA ODIN Microsoft Macintosh
Word 2R:b NASA/ODIN TW@N DRAFT for 11-16-12