1
00:00:04,000 --> 00:00:14,890
bjbj< This Week at NASA Astronomers using
data from NASA's Spitzer Space Telescope have,

2
00:00:14,890 --> 00:00:20,590
for the first time, discovered buckyballs
in a solid form in space: around a pair of

3
00:00:20,590 --> 00:00:27,130
stars 65-hundred light-years from Earth. Until
now, the microscopic carbon spheres had been

4
00:00:27,130 --> 00:00:33,600
found only in gas form. Named for their resemblance
to the geodesic domes drawn by late architect

5
00:00:33,600 --> 00:00:39,540
Buckminster Fuller, buckyballs are made up
of 60 carbon molecules arranged into a hollow

6
00:00:39,540 --> 00:00:44,620
sphere, like a soccer ball. Their unusual
structure makes them ideal candidates for

7
00:00:44,620 --> 00:00:51,079
electrical and chemical applications on Earth,
including superconducting materials, medicines,

8
00:00:51,079 --> 00:00:58,969
water purification and armor. NASA Administrator
Charles Bolden joined his counterparts from

9
00:00:58,969 --> 00:01:04,970
Europe, Japan, Russia, and host Canada for
the annual International Space Station Heads

10
00:01:04,970 --> 00:01:10,930
of Agencies meeting held this year in Quebec
City. Among topics discussed were the scientific,

11
00:01:10,930 --> 00:01:16,170
technological, and social benefits of their
collaboration, the promise of continued scientific

12
00:01:16,170 --> 00:01:24,799
research aboard the ISS, and the further advancement
of human exploration of space. NASA s top

13
00:01:24,799 --> 00:01:29,700
leaders continued with their field center
visits after rollout of the president s proposed

14
00:01:29,700 --> 00:01:35,610
2013 budget. Bolden met with employees at
the Glenn Research Center in Cleveland, the

15
00:01:35,610 --> 00:01:41,020
Ames Research Center in northern California,
and the Dryden Flight Research Center in southern

16
00:01:41,020 --> 00:01:46,880
California, at each stop touting how NASA
s budget request supports an ambitious program

17
00:01:46,880 --> 00:01:53,060
to reach farther into the solar system than
ever before. At the Michoud Assembly Facility

18
00:01:53,060 --> 00:01:57,829
in New Orleans, Deputy Administrator Lori
Garver spoke about that site s important work

19
00:01:57,829 --> 00:02:04,689
on NASA projects, such as the Orion Multi-Purpose
Crew Vehicle, and the new Space Launch System.

20
00:02:04,689 --> 00:02:10,300
This is a very successful multi-use facility
where we are working to get the taxpayer s

21
00:02:10,300 --> 00:02:15,800
cost down and be able to fully utilize the
unique workforce and infrastructure that is

22
00:02:15,800 --> 00:02:25,370
available here. The 50th anniversary celebration
of John Glenn s historic Friendship 7 flight

23
00:02:25,370 --> 00:02:30,330
continued in Cleveland. The Glenn Research
Center co-hosted several events at Cleveland

24
00:02:30,330 --> 00:02:35,270
State University to commemorate the first
orbital spaceflight by an American half a

25
00:02:35,270 --> 00:02:42,629
century ago. Every bit of progress ever made
by human beings has been because somebody

26
00:02:42,629 --> 00:02:47,590
was curious about what was up there. Not just
me, but in every field, not just up there

27
00:02:47,590 --> 00:02:54,390
but in medicine, in fabric, in steel and in
just a hundred different areas. Somebody has

28
00:02:54,390 --> 00:02:59,310
to be curious about how you can do things
differently or new and better. NASA fits that

29
00:02:59,310 --> 00:03:07,080
role exactly. Once known as the Lewis Research
Center, its name was changed in 1999 to honor

30
00:03:07,080 --> 00:03:12,810
the Mercury 7 astronaut who later spent four
terms in the U.S. Senate representing his

31
00:03:12,810 --> 00:03:21,140
home state of Ohio. Advanced development of
the Space Launch System was the focus of an

32
00:03:21,140 --> 00:03:26,349
Industry and Academia Day hosted by the Marshall
Space Flight Center. Representatives from

33
00:03:26,349 --> 00:03:31,659
more than forty companies and universities
learned about NASA s need for innovative proposals

34
00:03:31,659 --> 00:03:38,640
in concept development, propulsion, structures,
materials, manufacturing and avionics, and

35
00:03:38,640 --> 00:03:43,680
software. The Marshall Space Flight Center
is leading the agency s design and development

36
00:03:43,680 --> 00:03:51,629
of the SLS. An astronaut and a geologist recently
spent three days camping out on an asteroid

37
00:03:51,629 --> 00:03:55,459
or at least camping out as though they were
on an asteroid. In reality, they were inside

38
00:03:55,459 --> 00:04:00,519
the newest generation of NASA s Space Exploration
Vehicle prototypes parked at the Space Vehicle

39
00:04:00,519 --> 00:04:05,549
Mockup Facility at NASA s Johnson Space Center.
The view out the window was out of this world.

40
00:04:05,549 --> 00:04:10,129
We really can t be in deep space. We ve never
been there before. In order to set up an environment

41
00:04:10,129 --> 00:04:14,099
which we can get information about the next
missions which we re going to go for, we need

42
00:04:14,099 --> 00:04:20,009
to set that up in a digital environment. In
an asteroid s microgravity, wheels aren t

43
00:04:20,009 --> 00:04:24,259
needed. Instead, the SEV could be used on
a propulsive platform that would allow astronauts

44
00:04:24,259 --> 00:04:30,220
to fly around an asteroid, and by flying it
virtually or on an air bearing floor, NASA

45
00:04:30,220 --> 00:04:34,100
gathers information on how it might perform
in space. re measuring handling qualities

46
00:04:34,100 --> 00:04:38,540
of the vehicle; we re looking at prop usage;
we re looking at the viewing out the windows,

47
00:04:38,540 --> 00:04:42,480
the kinds of rendezvous tools we need. Of
course, there s more to exploring than just

48
00:04:42,480 --> 00:04:46,820
driving around, so various methods of simulating
spacewalks on an asteroid were also added

49
00:04:46,820 --> 00:04:52,050
to the agenda. When you go to an asteroid
or any type of near earth object, the main

50
00:04:52,050 --> 00:04:56,190
driver is going to be science, of course,
so most geologist will take a rock chip sample

51
00:04:56,190 --> 00:05:02,090
to be able to get a piece of a full story
as to what the local geology is telling them.

52
00:05:02,090 --> 00:05:06,650
A similar round of tests, though on a larger
scale, will be conducted at Johnson Space

53
00:05:06,650 --> 00:05:10,910
Center in the summer as part of the annual
RATS, or Research and Technology Studies,

54
00:05:10,910 --> 00:05:17,560
tests. I would just like to thank you for
inspiring these kids to be the next generation

55
00:05:17,560 --> 00:05:22,870
of explorers. NASA Education chief and former
astronaut Leland Melvin presented Washington,

56
00:05:22,870 --> 00:05:28,990
DC s Bruce Monroe Elementary School at Parkview
with a tile from a space shuttle s Thermal

57
00:05:28,990 --> 00:05:35,479
Protection System. The TPS tiles helped protect
the shuttle upon reentry to Earth s atmosphere.

58
00:05:35,479 --> 00:05:40,260
Melvin talked about his experiences in space
and the opportunities available to students

59
00:05:40,260 --> 00:05:45,789
who pursue the STEM disciplines of science,
technology, engineering and math. The space

60
00:05:45,789 --> 00:05:53,650
shuttle tile program is a NASA education mission
to inspire student audiences. Preparations

61
00:05:53,650 --> 00:05:59,520
are underway for the transport of space shuttle
Enterprise to New York City from Virginia.

62
00:05:59,520 --> 00:06:05,180
Working at the Smithsonian National Air & Space
Museum s Udvar-Hazy Center outside Washington,

63
00:06:05,180 --> 00:06:10,960
NASA and United Space Alliance technicians
installed a tail cone on the retired spacecraft.

64
00:06:10,960 --> 00:06:16,289
The tail cone will reduce aerodynamic drag
and turbulence when Enterprise is ferried

65
00:06:16,289 --> 00:06:22,271
to New York s Kennedy Airport this spring
by NASA 905, the agency s remaining Shuttle

66
00:06:22,271 --> 00:06:29,050
Carrier Aircraft. Enterprise will eventually
reside at the city s Intrepid Sea, Air and

67
00:06:29,050 --> 00:06:42,970
Space Museum. NASA 911, the other modified
Boeing 747 capable of piggybacking a space

68
00:06:42,970 --> 00:06:48,970
shuttle, has flown its final flight. The converted
jumbo jet's last mission was a short, 20-minute

69
00:06:48,970 --> 00:06:54,259
hop from the Dryden Flight Research Center
at Edwards Air Force Base, to the Dryden Aircraft

70
00:06:54,259 --> 00:07:01,601
Operations Facility at Air Force Plant 42
in Palmdale, California. Built in 1973, the

71
00:07:01,601 --> 00:07:07,069
big jetliner was flown in commercial airline
service by Japan Air Lines before NASA obtained

72
00:07:07,069 --> 00:07:14,020
it in 1989. After modifications, NASA 911
flew as a shuttle carrier aircraft for the

73
00:07:14,020 --> 00:07:20,360
next 21 years, carrying space shuttles 66
times on ferry flights. There was a lot of

74
00:07:20,360 --> 00:07:25,889
work that went into the initial design of
how to modify the airplane, how to attach

75
00:07:25,889 --> 00:07:33,150
it. Just goes to show what American ingenuity
can do. Job shadow day is really about the

76
00:07:33,150 --> 00:07:38,410
student. It s allowing them an open experience
in STEM Careers first hand. We have mentors

77
00:07:38,410 --> 00:07:45,840
who ve volunteered from resources, GIS, Test
Flight Directors, Engineers. National Groundhog

78
00:07:45,840 --> 00:07:51,289
Day was also Job Shadow Day at the Wallops
Flight Facility. Eight area high school students

79
00:07:51,289 --> 00:07:56,729
got a close up look at occupations that these
students are interest in. The students are

80
00:07:56,729 --> 00:08:02,830
able to go in and see exactly what they do
on a day to day basis as well as get an inside

81
00:08:02,830 --> 00:08:08,490
look at NASA and Wallops Flight Facility.
m one of the people whose, I like to take

82
00:08:08,490 --> 00:08:15,349
the design and then put it into real life
and that s pretty much what people do here.

83
00:08:15,349 --> 00:08:20,150
The Wallops Education Office plans to make
Job Shadow Day an annual event coinciding

84
00:08:20,150 --> 00:08:29,229
with Groundhog Day. Actress and spaceflight
activist Nichelle Nichols, who portrayed Lt.

85
00:08:29,229 --> 00:08:35,170
Uhura in the original Star Trek TV series,
inspired an audience of her fans during a

86
00:08:35,170 --> 00:08:39,959
recent visit to the Goddard Space Flight Center.
Nichols delivered the keynote address at a

87
00:08:39,959 --> 00:08:48,230
center celebration of African American History
Month. Following her role in Star Trek, Nichols

88
00:08:48,230 --> 00:08:54,570
helped NASA recruit women and minority astronaut
candidates. Today, she remains an advocate

89
00:08:54,570 --> 00:09:02,540
for the agency and human exploration. My posterity,
all our posterity will benefit from the growth

90
00:09:02,540 --> 00:09:10,700
of NASA. So now more than ever we must support
NASA and understand just how important it

91
00:09:10,700 --> 00:09:19,250
is to our future. In honor of Women s History Month 20-12 a celebration of Empowerment and

92
00:09:19,250 --> 00:09:25,100
Education, NASA recognizes the contributions of women to the cause of space exploration.

93
00:09:25,100 --> 00:09:30,640
My name is Jessica Harris and I work at Space Telescope Science Institute in Baltimore,

94
00:09:30,640 --> 00:09:35,680
MD. I work with Hubble Space Telescope and the James Webb Space Telescope. I do a lot

95
00:09:35,680 --> 00:09:41,130
of outreach to high schools and middle schools. I bring them a lot of hands-on activities;

96
00:09:41,130 --> 00:09:46,810
things that they can do that will grasp their attention outside of just the regular, every

97
00:09:46,810 --> 00:09:52,490
day, classroom setting. When I went off to school, I decided that, hey I wanted to do

98
00:09:52,490 --> 00:09:56,450
physics. Going through undergrad and going through grad school, I realized that I have

99
00:09:56,450 --> 00:10:01,230
more of a passion to share this with other people. I want someone to tell me what that

100
00:10:01,230 --> 00:10:06,740
is. I really want to impact students through my lifestyle, and being able to be an example

101
00:10:06,740 --> 00:10:11,029
towards them and one of the things I try to
encourage them to do is follow their passion,

102
00:10:11,029 --> 00:10:17,200
most importantly, and one of my passions is
miming. Miming is a non-verbal dance. It allows

103
00:10:17,200 --> 00:10:23,230
me to be more comfortable and just expressive
of myself, a more complete whole person. I'm

104
00:10:23,230 --> 00:10:27,950
so glad that I can work at Space Telescope
Science Institute. I really enjoy the job

105
00:10:27,950 --> 00:10:35,830
that I have here and the impact that we have
on students. Forty years ago, on March 2,

106
00:10:35,830 --> 00:10:43,240
1972, Pioneer 10 launched on what would prove
to be a mission lasting more than three decades!

107
00:10:43,240 --> 00:10:48,940
Pioneer 10 was the first spacecraft to travel
through the Asteroid belt, and the first spacecraft

108
00:10:48,940 --> 00:10:54,850
to make direct observations and obtain close-up
images of Jupiter and its moons. This historic

109
00:10:54,850 --> 00:10:59,800
event marked humans' first approach to the
gas giant and opened the way for exploration

110
00:10:59,800 --> 00:11:06,890
of the outer solar system by future spacecraft
like Voyager, Ulysses, Galileo and Cassini.

111
00:11:06,890 --> 00:11:12,790
After more than 8 billion miles traveled in
more than 30 years, Pioneer 10 sent its last

112
00:11:12,790 --> 00:11:21,339
signal to Earth on January 23, 2003. And that
s This Week @ NASA! For more on these and

113
00:11:21,339 --> 00:11:27,380
other stories, or to follow us on Facebook,
Twitter and other social media, log on to

114
00:11:27,380 --> 00:11:28,380
HYPERLINK "http://www.nasa.gov" www.nasa.gov
PAGE * MERGEFORMAT jbjZjZjZjZjZj [Content_Types].xml

115
00:11:28,380 --> 00:11:29,380
#!MB Lz]__ U~YkG _rels/.rels theme/theme/themeManager.xml
sQ\}# theme/theme/theme1.xml G$$DA :$BR si-@R

116
00:11:29,380 --> 00:11:30,380
r,[L bX*x KfN1 ,tV@ .EML M .c =<R8 (F\

117
00:11:30,380 --> 00:11:31,380
p)af theme/theme/_rels/themeManager.xml.rels
6?$Q K(M&$R(.1 [Content_Types].xmlPK _rels/.relsPK

118
00:11:31,380 --> 00:11:32,380
theme/theme/themeManager.xmlPK theme/theme/theme1.xmlPK
theme/theme/_rels/themeManager.xml.relsPK

119
00:11:32,380 --> 00:11:33,380
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120
00:11:33,380 --> 00:11:34,380
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accent2="accent2" accent3="accent3" accent4="accent4"

121

00:11:34,380 --> 00:11:35,380
accent5="accent5" accent6="accent6" hlink="hlink"
folHlink="folHlink"/> afeinber Normal.dotm