
351001

1
00:00:00,799 --> 00:00:13,790
“This Year @NASA…”
In 2012, NASA continued to implement America's

2
00:00:13,790 --> 00:00:19,909
ambitious space exploration program, carrying
out the first-ever commercial mission to the

3
00:00:19,909 --> 00:00:25,189
International Space Station, advancing the
systems needed to send humans deeper into

4
00:00:25,189 --> 00:00:30,369
space, and landing the most sophisticated
rover on the surface of Mars.

5
00:00:30,369 --> 00:00:32,750
“Touchdown confirmed … we’re safe on
Mars … applause.”

6
00:00:32,750 --> 00:00:42,629
Following a daring plunge through the Martian
Atmosphere – billed as 7-minutes of Terror,

7
00:00:42,629 --> 00:00:47,661
The Mars Science Laboratory’s Curiosity
rover made a successful, on-target landing

8
00:00:47,661 --> 00:00:49,399
on the Red Planet in Gale Crater.

9
00:00:49,399 --> 00:00:54,590
“It’s a huge day for the nation, it’s
a huge day for all of our partners that have

10
00:00:54,590 --> 00:00:58,760
something on Curiosity and it’s a huge day
for the American people.

11

00:00:58,760 --> 00:01:04,050
“For us being able to land something in
larger and larger measures with this capability

12
00:01:04,050 --> 00:01:06,480
will come the ability to land humans.”

13
00:01:06,480 --> 00:01:12,330
“Many new technologies had to work in perfect
succession and perfect synchronization for

14
00:01:12,330 --> 00:01:15,218
this to happen. It was an incredible performance
by the Jet Propulsion Lab, by NASA, by the

15
00:01:15,218 --> 00:01:16,218
teams around the country that had contributed
to this and indeed partners from around the

16
00:01:16,218 --> 00:01:17,218
world.”

17
00:01:17,218 --> 00:01:18,218
"Hi I'm Bobak Ferdowsi of the MSL team in
Mission Control at the Jet Propulsion Lab,

18
00:01:18,218 --> 00:01:22,080
where we continue to track the rover Curiosity
and analyze important data it's sending from

19
00:01:22,080 --> 00:01:25,200
the surface of Mars.\hYou're watching This
Year @ NASA."

20
00:01:25,200 --> 00:01:30,910
Curiosity, has checked out the 10 science
instruments, it will use on its two-year prime

21
00:01:30,910 --> 00:01:37,840
mission to search for signs of microbial life

on Mars. And announcements in 2012 indicate

22
00:01:37,840 --> 00:01:44,020
more exploration of Mars is in NASA’s future.

23
00:01:44,020 --> 00:01:49,350
NASA has selected a new mission, set to launch
in 2016, that will take the first look into

24
00:01:49,350 --> 00:01:55,070
the deep interior of Mars to see why the Red
Planet evolved so differently from Earth as

25
00:01:55,070 --> 00:02:00,490
one of our solar system's rocky planets. The
InSight mission will place instruments on

26
00:02:00,490 --> 00:02:06,450
the Martian surface to investigate whether
the core of Mars is solid or liquid like Earth's.

27
00:02:06,450 --> 00:02:11,590
“Understanding the interior structure, the
interior processes and history of Mars is

28
00:02:11,590 --> 00:02:18,100
really fundamental to understanding the history
and formation of the solar system and of our

29
00:02:18,100 --> 00:02:22,270
own planet as well.”

30
00:02:22,270 --> 00:02:27,290
Science news from the American Geophysical
Union’s 2012 Fall Meeting in San Francisco

31
00:02:27,290 --> 00:02:32,470
was headlined by NASA’s announcement of
a new, robust multi-year Mars program that

32
00:02:32,470 --> 00:02:36,260
will feature a new, Red Planet rover set to
launch in 2020.

33
00:02:36,260 --> 00:02:41,240
“While 2020 may seem a long way off, it’s
really not. Curiosity was about a decade in

34
00:02:41,240 --> 00:02:47,390
the works. We have a tremendous amount of
systems engineering and even spare parts left

35
00:02:47,390 --> 00:02:52,810
from the MSL chassis and those are really
the enabling things that allow us to do this.”

36
00:02:52,810 --> 00:02:58,430
The 2020 mission will gather new science data
about Mars and serve as the next step towards

37
00:02:58,430 --> 00:03:08,310
meeting President Obama’s goal of sending
humans to Mars in the 2030s.

38
00:03:08,310 --> 00:03:15,770
NASA helped make historic advances in Commercial
Spaceflight in 2012. Space Exploration Technologies,

39
00:03:15,770 --> 00:03:20,980
one of two American companies participating
in the agency’s Commercial Orbital Transportation

40
00:03:20,980 --> 00:03:26,810
Services program to supply the International
Space Station, first completed a demonstration

41
00:03:26,810 --> 00:03:28,730
test flight to the ISS in May …

42

00:03:28,730 --> 00:03:34,560
“Houston, station looks we’ve got us a
dragon by the tail.”

43
00:03:34,560 --> 00:03:36,319
“Second stage capture is complete.”

44
00:03:36,319 --> 00:03:41,730
“I just want to take a moment to congratulate
all of you on a superb effort today. I think

45
00:03:41,730 --> 00:03:45,771
you know it but you made history today and
it firmly locked the future direction of the

46
00:03:45,771 --> 00:03:47,140
American Space Program in place.”

47
00:03:47,140 --> 00:03:53,720
Then in October, SpaceX and NASA teamed up
for a spaceflight first.

48
00:03:53,720 --> 00:03:58,739
In a historic moment for the nation, SpaceX
successfully launched its Falcon 9 rocket

49
00:03:58,739 --> 00:04:03,640
and Dragon cargo craft from Florida’s Cape
Canaveral Air Force Station on the first ever

50
00:04:03,640 --> 00:04:10,201
contracted cargo resupply flight to the International
Space Station. The CRS-1 mission, the first

51
00:04:10,201 --> 00:04:15,959
of twelve such flights under NASA’s Commercial
Resupply Services Contract also marks the

52
00:04:15,959 --> 00:04:21,810
return of America’s capability to independently

resupply the orbiting laboratory.

53
00:04:21,810 --> 00:04:26,129
“Capture complete … looks like we’ve
tamed the Dragon. We’re happy she’s on

54
00:04:26,129 --> 00:04:27,210
board with us.”

55
00:04:27,210 --> 00:04:36,600
“SpaceX starts a whole generation of commercial
spacecraft coming up here for resupply and

56
00:04:36,600 --> 00:04:40,159
one of the most interesting and unique aspects
of this vehicle and its follow on will be

57
00:04:40,159 --> 00:04:46,319
that it can bring stuff back to Earth and
that’s really important for the advancement

58
00:04:46,319 --> 00:04:50,270
of spaceflight.”
The Freedom Star – once used to recover

59
00:04:50,270 --> 00:04:56,849
shuttle rocket boosters – is now outfitted
as a floating high-tech radar and camera platform.

60
00:04:56,849 --> 00:05:02,930
Inside a huge metal clamshell is a mobile
optical system on a gyroscope-like tracking

61
00:05:02,930 --> 00:05:09,070
mount. During launch the system will be focused
skyward to take images of the Space X Falcon

62
00:05:09,070 --> 00:05:14,250
rocket and its Dragon capsule as far as two
hundred miles away.

63
00:05:14,250 --> 00:05:18,870
“It's like standing and looking through
a soda straw and trying to capture and see

64
00:05:18,870 --> 00:05:23,729
a bird flying through that soda straw.”
Then imagine that soda straw bobbing on a

65
00:05:23,729 --> 00:05:29,999
boat off the northeastern coast of the U.
S. in seas that could swell up to twenty feet.

66
00:05:29,999 --> 00:05:35,870
Another company, Orbital, progressed towards
its demo flight to the ISS targeted for the

67
00:05:35,870 --> 00:05:40,999
upcoming year.

68
00:05:40,999 --> 00:05:45,819
Another important milestone in NASA’s partnership
with industry to deliver cargo to the International

69
00:05:45,819 --> 00:05:50,999
Space Station has been reached at the Wallops
Flight Facility. A test version of Orbital

70
00:05:50,999 --> 00:05:56,840
Sciences Corporation's Antares rocket rolled
out to the Mid-Atlantic Regional Spaceport’s

71
00:05:56,840 --> 00:06:03,069
launch Pad 0A. Antares will carry Orbital's
Cygnus cargo module to the ISS.

72
00:06:03,069 --> 00:06:11,060
“Hi, I’m Nils Larson, Chief Pilot at NASA’s
Dryden Flight Research Center, and today we’re

73
00:06:11,060 --> 00:06:16,919
chasing SOFIA’s return to Flight. And you’re
watching This Year @ NASA.”

74
00:06:16,919 --> 00:06:22,960
NASA also took the next steps in the effort
to launch Americans from U.S. soil again,

75
00:06:22,960 --> 00:06:28,729
announcing new Space Act Agreements in August
with three American companies to design and

76
00:06:28,729 --> 00:06:35,930
develop the next generation of U.S. human
spaceflight capabilities to low Earth orbit.

77
00:06:35,930 --> 00:06:44,639
“These companies are Sierra Nevada Corporation,
SpaceX Technologies and The Boeing Company.”

78
00:06:44,639 --> 00:06:49,491
“It is the capability that includes the
spacecraft, the launch vehicle, the ground

79
00:06:49,491 --> 00:06:54,439
operations as well as the flight operations.
It’s an entire mission cycle and doing the

80
00:06:54,439 --> 00:07:02,020
design work for that entire mission cycle.
So we call it CCiCap for short.

81
00:07:02,020 --> 00:07:07,889
Operations software for the Crew Space Transportation,
or CST-100 spacecraft under development by

82
00:07:07,889 --> 00:07:14,899
Boeing, has undergone its Preliminary Design
Review. The CST-100, a capsule-shaped reusable

83
00:07:14,899 --> 00:07:19,939
spacecraft, will carry up to seven people
or a combination of people and cargo to the

84
00:07:19,939 --> 00:07:25,659
International Space Station and elsewhere
in low Earth orbit.

85
00:07:25,659 --> 00:07:30,449
United Launch Alliance has reached the final
milestone in its development of a commercial

86
00:07:30,449 --> 00:07:36,869
spacecraft for transporting astronauts to
low-Earth orbit. Technical experts from ULA

87
00:07:36,869 --> 00:07:42,580
and NASA completed their assessment of whether
ULA's Atlas V rocket launch hardware would

88
00:07:42,580 --> 00:07:47,339
keep the crew safe during launch and ascent.
Two of three newly-funded NASA commercial

89
00:07:47,339 --> 00:07:53,719
crew partners, Boeing and Sierra Nevada, will
use the Atlas V as their launch vehicle.

90
00:07:53,719 --> 00:08:00,479
And, the Sierra Nevada Corporation’s Dream
Chaser spacecraft has passed a new milestone

91
00:08:00,479 --> 00:08:06,259
of its own. A test called a “captive carry”
was performed successfully at Rocky Mountain

92
00:08:06,259 --> 00:08:12,409
Metropolitan Airport in Colorado. The test,
used to validate ground and flight operations,

93
00:08:12,409 --> 00:08:17,509
and flight characteristics of the Dream Chaser,
employed an engineering test article and a

94
00:08:17,509 --> 00:08:19,189
Sky Crane helicopter.

95
00:08:19,189 --> 00:08:24,969
“Hi, I’m NASA Astronaut Kevin Ford, Commander
of the Expedition 34 Crew aboard the International

96
00:08:24,969 --> 00:08:29,710
Space Station. We’ve celebrated more than
a dozen years of permanent human presence

97
00:08:29,710 --> 00:08:34,289
on this amazing, “out of this world” laboratory
and are wrapping up an incredible year of

98
00:08:34,289 --> 00:08:39,399
achievement here on orbit. I would like to
say to all of our viewers, “You’re watching

99
00:08:39,399 --> 00:08:44,540
This Year at NASA.”

100
00:08:44,540 --> 00:08:51,329
In 2012NASA and its international partners
celebrated 12 years of permanent human habitation

101
00:08:51,329 --> 00:08:57,660
on the International Space Station. No fewer
than a dozen new inhabitants spent up to six-plus

102
00:08:57,660 --> 00:09:03,529
months aboard the world’s only laboratory
in microgravity conducting research to benefit

103
00:09:03,529 --> 00:09:09,620

all on Earth and help prepare future generations
of explorers to safely travel farther into

104
00:09:09,620 --> 00:09:12,680
space than any human has before.

105
00:09:12,680 --> 00:09:18,089
“The bolt is out … “

106
00:09:18,089 --> 00:09:23,180
Expedition 32 Flight Engineers Suni Williams
of NASA and Aki Hoshide of the Japan Aerospace

107
00:09:23,180 --> 00:09:29,209
Exploration Agency completed the installation
of a spare Main Bus Switching Unit, or MBSU

108
00:09:29,209 --> 00:09:34,730
to the truss of the International Space Station
during a 6-hour, 28 minute spacewalk. Problems

109
00:09:34,730 --> 00:09:39,490
installing the spare unit during an initial
spacewalk on August 30 necessitated the crew

110
00:09:39,490 --> 00:09:46,779
fabricate tools with which they could complete
their tasks on this latest EVA

111
00:09:46,779 --> 00:09:52,759
The Glenn Research Center recently hosted
media representatives at its Space Power Facility.

112
00:09:52,759 --> 00:09:58,221
There, inside the clean room High Bay facility,
a new communications test bed that’ll fly

113
00:09:58,221 --> 00:10:04,089
on the International Space Station was going
through its checkout. The Space Communications

114
00:10:04,089 --> 00:10:11,579
and Navigation, or SCaN test bed will be the
first space hardware for exploring the promise

115
00:10:11,579 --> 00:10:14,129
of software-defined radio technology.

116
00:10:14,129 --> 00:10:19,050
“The interesting part of this SCAN test
bed are its three software defined radios.

117
00:10:19,050 --> 00:10:25,670
These are radios that can be completely reconfigured
on orbit by software. That means new operating

118
00:10:25,670 --> 00:10:30,030
environments, new applications that will change
the characteristics of how it communicates.”

119
00:10:30,030 --> 00:10:38,569
An unpiloted Russian resupply ship, loaded
with almost three tons of food, fuel and supplies,

120
00:10:38,569 --> 00:10:43,520
linked up to the International Space Station
just six hours after its launch from the Baikonur

121
00:10:43,520 --> 00:10:49,029
Cosmodrome in Kazakhstan. The technique could
be used to similarly shorten a Soyuz vehicle’s

122
00:10:49,029 --> 00:10:54,529
route to the station, thereby improving crew
comfort as well as extending the life of the

123
00:10:54,529 --> 00:11:00,190
return vehicle while docked to the ISS.

124

00:11:00,190 --> 00:11:04,980
Astronaut Scott Kelly has been selected by
NASA to begin a one-year mission aboard the

125
00:11:04,980 --> 00:11:11,399
International Space Station in 2015. Joining
Kelly on the ISS will be Russian cosmonaut,

126
00:11:11,399 --> 00:11:17,320
Mikhail Kornienko. The pair will launch aboard
a Russian Soyuz spacecraft from the Baikonur

127
00:11:17,320 --> 00:11:24,079
Cosmodrome in Kazakhstan in spring 2015. Their
12-month stay aboard the world's only laboratory

128
00:11:24,079 --> 00:11:30,269
in microgravity will provide new data about
how the human body reacts and adapts to the

129
00:11:30,269 --> 00:11:32,070
harsh environment of space.

130
00:11:32,070 --> 00:11:37,430
"Hi. I'm T.J. Creamer, one of the NASA
astronauts privileged to serve aboard your

131
00:11:37,430 --> 00:11:42,720
International Space Station during Expeditions
22 and 23. I am also a Payload Operations

132
00:11:42,720 --> 00:11:46,920
Director serving here at the Payload Operations
Integration Center, Marshall Space Flight

133
00:11:46,920 --> 00:11:52,790
Center, managing science on board space station
24 by 7 and you are watching This Year At

134
00:11:52,790 --> 00:11:57,689

NASA.”
This year at NASA saw steady progress made

135
00:11:57,689 --> 00:12:04,199
in the development of Orion, the agency’s
new spacecraft and the Space Launch System,

136
00:12:04,199 --> 00:12:11,259
NASA’s next generation heavy lift rocket.
“Today, NASA and Kennedy Space Center are

137
00:12:11,259 --> 00:12:16,449
again lifting our sights and lifting our spirits
to new heights.”

138
00:12:16,449 --> 00:12:21,490
The first Orion spacecraft destined for orbit
arrived at NASA's Kennedy Space Center in

139
00:12:21,490 --> 00:12:28,740
Florida to begin processing for a flight test
in 2014. The flight test, called Exploration

140
00:12:28,740 --> 00:12:36,350
Flight Test-1 or EFT-1, will not carry any
people into space during the mission. Instead,

141
00:12:36,350 --> 00:12:41,770
it will be loaded with a wide variety of instruments
to evaluate how it behaves during launch,

142
00:12:41,770 --> 00:12:45,759
in the vacuum of space and the through the
searing heat of reentry.

143
00:12:45,759 --> 00:12:53,689
“Ladies and Gentlemen, we’re going to
Mars! We know that the Orion capsule is a

144
00:12:53,689 --> 00:13:03,350

critical part of the system that is going
to take us there. And so, we're working

145
00:13:03,350 --> 00:13:05,439
on it."

146
00:13:05,439 --> 00:13:11,379
NASA engineers surpassed the previously set
J-2X powerpack record during the latest test

147
00:13:11,379 --> 00:13:17,400
at Stennis Space Center. The 13-hundred-50-second
test on the A-1 Test Stand broke the previous

148
00:13:17,400 --> 00:13:26,360
record of 11-hundred-50 seconds – set earlier
this summer on June 8.

149
00:13:26,360 --> 00:13:34,380
The team of engineers working on development
of the Orion Multi-purpose Crew Vehicle and

150
00:13:34,380 --> 00:13:39,279
its components conducted the first vertical
drop test of the 18-thousand pound capsule

151
00:13:39,279 --> 00:13:47,240
at Langley Research Center's Hydro Impact
Basin. Swing drop testing, during which Orion

152
00:13:47,240 --> 00:13:52,970
entered the water at an angle, was conducted
last summer to certify it for water landings.

153
00:13:52,970 --> 00:13:58,639
Changing the angle of the drop tests to vertical
will help NASA more accurately predict Orion's

154
00:13:58,639 --> 00:14:01,350
landing loads.

155
00:14:01,350 --> 00:14:06,050
The landmark Vehicle Assembly Building at
NASA's Kennedy Space Center in Florida is

156
00:14:06,050 --> 00:14:12,170
getting a renovation so it can remain a fixture
of America's space program. The VAB needs

157
00:14:12,170 --> 00:14:17,540
improvement on a grand scale to service new
launchers expected to debut in the next few

158
00:14:17,540 --> 00:14:23,819
years. The new designs include the Space Launch
System, a massive rocket intended to return

159
00:14:23,819 --> 00:14:29,199
astronauts to deep space. The building also
will be set up to host commercial rockets

160
00:14:29,199 --> 00:14:32,470
that are much smaller.

161
00:14:32,470 --> 00:14:37,050
The massive, aluminum adapter rings being
built by engineers at Marshall Space Flight

162
00:14:37,050 --> 00:14:43,689
Center will be used to connect Orion to the
Delta IV rocket used to power the EFT-1 flight.

163
00:14:43,689 --> 00:14:49,699
But the same design will also be used on Space
Launch System flights. The adapter rings are

164
00:14:49,699 --> 00:14:54,460
being designed once for both applications,
as part of NASA’s aggressive pursuit of

165
00:14:54,460 --> 00:14:59,920
affordable solutions for the human exploration
of space.

166
00:14:59,920 --> 00:15:04,709
The Michoud Assembly Facility played host
to SLS Industry Day to help suppliers and

167
00:15:04,709 --> 00:15:10,579
other businesses better acquaint themselves
with NASA's acquisition strategies. More than

168
00:15:10,579 --> 00:15:16,019
90 companies and 40 government entities explored
partnership opportunities with the Space Launch

169
00:15:16,019 --> 00:15:17,649
System Program.

170
00:15:17,649 --> 00:15:27,290
“I'm Roy Malone, Director of the Michoud
Assembly Facility in New Orleans – please

171
00:15:27,290 --> 00:15:32,660
pardon our dust as we continue preparing our
facility to manufacture large components of

172
00:15:32,660 --> 00:15:37,800
the SLS rocket. You're watching "This Year
@ NASA!"

173
00:15:37,800 --> 00:15:45,540
2012 was a remarkable year for NASA science.
Observations of other celestial bodies as

174
00:15:45,540 --> 00:15:51,519
well as Earth yielded new and valuable insight
to help us better understand the origins of

175

00:15:51,519 --> 00:15:56,110
the universe – and our home planet.

176
00:15:56,110 --> 00:16:02,660
Using NASA's Hubble Space Telescope, astronomers
have seen further back in time than ever before.

177
00:16:02,660 --> 00:16:10,040
An ambitious Hubble survey of a patch of sky
known as the Ultra Deep Field, or UDF, uncovered

178
00:16:10,040 --> 00:16:16,819
a previously unseen population of seven primitive
galaxies that formed more than 13 billion

179
00:16:16,819 --> 00:16:23,170
years ago, when the universe was less than
3 percent of its present age. The deepest

180
00:16:23,170 --> 00:16:28,829
images to date from Hubble yield the first
statistically robust sample of galaxies that

181
00:16:28,829 --> 00:16:37,240
tells how abundant they were close to the
era when galaxies first formed.

182
00:16:37,240 --> 00:16:41,980
Scientists with NASA’s MESSENGER mission
say new observations made by the spacecraft

183
00:16:41,980 --> 00:16:47,410
confirm a long-held theory: that the polar
regions of Mercury harbor an abundance of

184
00:16:47,410 --> 00:16:54,329
water ice and other frozen volatiles. MESSENGER,
which stands for MErcury Surface, Space ENvironment,

185
00:16:54,329 --> 00:17:03,240

GEochemistry and Ranging, is the first spacecraft
to orbit the solar system’s innermost planet.

186
00:17:03,240 --> 00:17:07,630
Astronomers have found an extraordinary galaxy
cluster, one of the largest objects in the

187
00:17:07,630 --> 00:17:12,970
universe, that is breaking several important
cosmic records. Observations of the Phoenix

188
00:17:12,970 --> 00:17:19,810
cluster, located about 5.7 billion light years
from Earth, with NASA's Chandra X-ray Observatory,

189
00:17:19,810 --> 00:17:25,740
the National Science Foundation's South Pole
Telescope, and eight other world-class observatories

190
00:17:25,740 --> 00:17:30,760
may force astronomers to rethink how these
colossal structures and the galaxies that

191
00:17:30,760 --> 00:17:34,410
inhabit them evolve.

192
00:17:34,410 --> 00:17:40,050
NASA's Kepler mission has “wowed” again.
The spacecraft that “stares at” and detects

193
00:17:40,050 --> 00:17:46,350
changes in the light from a select group of
stars has discovered 11 new planetary systems

194
00:17:46,350 --> 00:17:53,340
hosting a total of 26 confirmed planets. These
discoveries nearly double the number of verified

195
00:17:53,340 --> 00:17:59,320
planets and triple the number of stars known

to have more than one planet that transits,

196
00:17:59,320 --> 00:18:04,970
or passes in front of, the star. Such systems
will help astronomers better understand how

197
00:18:04,970 --> 00:18:09,250
planets form.

198
00:18:09,250 --> 00:18:14,060
It wasn't something you see every day – the
HU-25C Guardian, which had been at a Coast

199
00:18:14,060 --> 00:18:19,310
Guard base in Cape Cod, Massachusetts was
about to join NASA Langley's fleet in Hampton,

200
00:18:19,310 --> 00:18:23,530
Virginia for its first NASA airborne mission
doing atmospheric research.

201
00:18:23,530 --> 00:18:30,510
“This is a big step forward in capability
– in power, range, altitude, speed and weight

202
00:18:30,510 --> 00:18:33,460
that we can carry that we could not carry
before.”

203
00:18:33,460 --> 00:18:39,420
The Guardian's first NASA mission is scheduled
for Greenland.

204
00:18:39,420 --> 00:18:44,910
Scientists say the extent of the sea ice covering
the Arctic Ocean has shrunk. Researchers from

205
00:18:44,910 --> 00:18:50,390
NASA and the NASA-supported National Snow
and Ice Data Center in Boulder, Colo., say

206
00:18:50,390 --> 00:18:56,580
the amount of Arctic ice is the smallest observed
in the three decades since consistent satellite

207
00:18:56,580 --> 00:19:02,150
observations of the polar cap began.
The thickness of the sea ice cover also continues

208
00:19:02,150 --> 00:19:08,000
to decline.
New findings by NASA's Interstellar Boundary

209
00:19:08,000 --> 00:19:13,560
Explorer, or IBEX spacecraft, are helping
scientists fill holes in our knowledge about

210
00:19:13,560 --> 00:19:19,170
the matter found between the stars in our
Milky Way galaxy. IBEX, whose primary focus

211
00:19:19,170 --> 00:19:24,640
has been the interaction between our solar
system and what lies beyond, has directly

212
00:19:24,640 --> 00:19:30,050
sampled multiple heavy elements within this
interstellar medium, the same materials of

213
00:19:30,050 --> 00:19:35,360
which stars, planets – even people, are
made.

214
00:19:35,360 --> 00:19:41,030
NASA's Radiation Belt Space Probes mission,
RBSP, has been renamed …

215
00:19:41,030 --> 00:19:47,090
"The National Aeronautics and Space Adminstration
is pleased to announce the decision to rename

216
00:19:47,090 --> 00:19:53,630
the Radiation Belts Storm Probes Mission – the
Van Allen Probes."

217
00:19:53,630 --> 00:19:57,940
The new name, announced during an event at
the John Hopkins Applied Physics Laboratory,

218
00:19:57,940 --> 00:20:02,690
is for James Van Allen, the scientist who
discovered the radiation belts surrounding

219
00:20:02,690 --> 00:20:12,310
the Earth.Launched on August 30 and managed
by APL, the newly-renamed twin probes continue

220
00:20:12,310 --> 00:20:17,610
to follow each other in the same orbit around
the planet. The data they return about how

221
00:20:17,610 --> 00:20:23,420
the Van Allen Belts behave during solar storms
will help scientists and engineers design

222
00:20:23,420 --> 00:20:29,560
more robust satellites and safer spacecraft,
as well as stronger safeguards for communications

223
00:20:29,560 --> 00:20:35,170
systems and other critical technologies here
on Earth.

224
00:20:35,170 --> 00:20:40,560
The mission of NASA's moon-orbiting GRAIL
probes comes to an end on December 17 with

225
00:20:40,560 --> 00:20:46,730
the twin spacecraft deorbiting to the lunar
surface. The probes, Ebb and Flow, have generated

226
00:20:46,730 --> 00:20:52,070
a map of the moon’s gravity field said to
be the highest resolution of any celestial

227
00:20:52,070 --> 00:20:58,140
body. The map and other GRAIL data are enlightening
scientists about the moon's internal structure

228
00:20:58,140 --> 00:21:06,440
and composition, and how Earth and other rocky
planets in the solar system formed and evolved.

229
00:21:06,440 --> 00:21:11,540
The Goddard Space Flight Center recently took
delivery of the first two of 18 beryllium

230
00:21:11,540 --> 00:21:17,540
primary mirror segments for NASA’s James
Webb Space Telescope. Ball Aerospace in Boulder,

231
00:21:17,540 --> 00:21:22,760
Colorado shipped the two mirrors in custom
containers. The remaining 16 mirrors will

232
00:21:22,760 --> 00:21:27,240
likewise make their way from Boulder to Goddard
over the next 12 months and will be integrated

233
00:21:27,240 --> 00:21:33,940
into the telescope in 2015. The Webb, NASA’s
next Great Observatory, is on track for launch

234
00:21:33,940 --> 00:21:37,740
in October 2018.

235
00:21:37,740 --> 00:21:43,140
The Newseum in Washington, DC served as the
site of a joint news conference by NASA and

236
00:21:43,140 --> 00:21:49,580
the U.S. Geological Survey to highlight 40
years-worth of accomplishments by Landsat,

237
00:21:49,580 --> 00:21:53,050
the world's longest-running, Earth-observing
satellite program.

238
00:21:53,050 --> 00:21:57,880
“No other satellite program in our country
or in any other nation in the world comes

239
00:21:57,880 --> 00:22:04,990
close to having the historical length and
breadth and the continuity in the coverage

240
00:22:04,990 --> 00:22:06,240
of the Landsat archive.”

241
00:22:06,240 --> 00:22:12,690
"I'm Tania Anderson at the Space Telescope
Science Institute in Baltimore, MD where we

242
00:22:12,690 --> 00:22:18,630
bring the stars down to earth. Every day,
NASA's Hubble Space Telescope photographs

243
00:22:18,630 --> 00:22:24,590
the wonders of the universe. These wonders
inspire the next generation of explorers.

244
00:22:24,590 --> 00:22:28,980
You're watching This Year at NASA."

245
00:22:28,980 --> 00:22:35,450
With a new set of Space Technology Roadmaps
as a guide, NASA's Office of the Chief Technologist

246
00:22:35,450 --> 00:22:40,440

and the Space Technology Program continued
to make great strides in creating the new

247
00:22:40,440 --> 00:22:47,710
knowledge and capabilities needed for NASA's
current and future missions in 2012.

248
00:22:47,710 --> 00:22:53,370
A large inflatable heat shield developed by
NASA's Space Technology Program at Langley

249
00:22:53,370 --> 00:22:59,120
Research Center has successfully survived
a trip through Earth's atmosphere while travelling

250
00:22:59,120 --> 00:23:03,670
at hypersonic speeds up to 76-hundred miles
per hour.

251
00:23:03,670 --> 00:23:09,950
IRVE-3, The Inflatable Reentry Vehicle Experiment,
was launched by sounding rocket from NASA's

252
00:23:09,950 --> 00:23:17,130
Wallops Flight Facility, inflated as expected
to a mushroom shape almost 10 feet in diameter,

253
00:23:17,130 --> 00:23:21,860
returned safely through Earth's atmosphere
at hypersonic speeds and fell into the Atlantic

254
00:23:21,860 --> 00:23:27,600
Ocean off the coast of North Carolina. The
test demonstrated that a space capsule can

255
00:23:27,600 --> 00:23:33,860
use an inflatable outer shell to slow and
protect itself during planetary entry and

256
00:23:33,860 --> 00:23:36,630

descent.

257
00:23:36,630 --> 00:23:41,570
Deputy Administrator Lori Garver joined Glenn
Research Center Director Ray Lugo, Congressional

258
00:23:41,570 --> 00:23:47,220
leaders and White House representatives at
Ohio’s Cuyahoga Community College near Cleveland

259
00:23:47,220 --> 00:23:52,110
for a workshop on building the National Network
for Manufacturing Innovation.

260
00:23:52,110 --> 00:23:57,160
“Advanced manufacturing capabilities are
essential to turning research discoveries,

261
00:23:57,160 --> 00:24:03,640
inventions and new ideas into better or novel
products. Our nation’s ability to innovate

262
00:24:03,640 --> 00:24:06,980
is unmatched.”

263
00:24:06,980 --> 00:24:11,650
NASA Chief Technologist Mason Peck joined
state and local officials at the University

264
00:24:11,650 --> 00:24:17,760
of Texas at El Paso for the official opening
of UTEP’s Center for Space Exploration Technology

265
00:24:17,760 --> 00:24:23,690
Research, or cSETR (C-STIR), and the NASA
Science, Engineering, Mathematics and Aerospace

266
00:24:23,690 --> 00:24:27,780
Education Laboratory located in the university's
engineering building.

267
00:24:27,780 --> 00:24:34,050
“It’s the kind of collaborative activity
that we, now at NASA recognize as essential

268
00:24:34,050 --> 00:24:42,090
to how we are trying to form the future of
space technology at the agency.”

269
00:24:42,090 --> 00:24:46,360
NASA and the Florida Institute for Human and
Machine Cognition (IHMC) of Pensacola have

270
00:24:46,360 --> 00:24:53,160
jointly developed a robotic exoskeleton, called
X1. The 57-pound device is a robot that a

271
00:24:53,160 --> 00:24:59,400
human can put on to assist or inhibit movement
in leg joints. In space, it could be set to

272
00:24:59,400 --> 00:25:09,170
supply resistance for exercising; on the ground,
it could help someone walk for the first time.

273
00:25:09,170 --> 00:25:14,940
Deputy Administrator Lori Garver opened NASA’s
Sample Return Robot Centennial Challenge at

274
00:25:14,940 --> 00:25:17,960
the Worcester Polytechnic Institute in Worcester,
Mass.

275
00:25:17,960 --> 00:25:22,550
“These technologies don’t build themselves;
these rockets don’t build themselves it’s

276
00:25:22,550 --> 00:25:29,810
all about people. It is the people throughout
the agency and our contractor community and

277
00:25:29,810 --> 00:25:36,420
our academic partners who help us create the future.”

278
00:25:36,420 --> 00:25:42,930
More than 600 people attended NASA Technology Days at Cleveland's Public Auditorium in Ohio.

279
00:25:42,930 --> 00:25:47,920
Associate Administrator Robert Lightfoot joined other NASA officials and the city’s mayor

280
00:25:47,920 --> 00:25:54,330
at the three-day event. Technology demonstrations, informative speeches and poster sessions celebrated

281
00:25:54,330 --> 00:26:01,900
cutting-edge research and technology development available to industry and universities.

282
00:26:01,900 --> 00:26:06,870
NASA Deputy Administrator, Lori Garver visited the NASA Shared Services Center at Stennis

283
00:26:06,870 --> 00:26:13,720
Space Center. The NSSC provides support to NASA in the areas of Human Resources, Financial

284
00:26:13,720 --> 00:26:19,500
Management, Procurement, Information Technology, and Business Support Services. Garver was

285
00:26:19,500 --> 00:26:25,960
briefed by Senior Leadership on the latest NSSC initiatives, including the now fully-operational

286
00:26:25,960 --> 00:26:32,390
Enterprise Service Desk that supports employees Agency-wide.

287
00:26:32,390 --> 00:26:37,750
Small regional companies and government agencies
near the Michoud Assembly Facility that may

288
00:26:37,750 --> 00:26:45,170
want to help develop and support the SLS were
hosted at Contact 2012. Seventy-three companies

289
00:26:45,170 --> 00:26:50,710
exhibited their services at the networking
event co- sponsored by NASA, the Louisiana

290
00:26:50,710 --> 00:26:56,620
Small Business Administration and Jacobs Technology.

291
00:26:56,620 --> 00:27:01,050
NASA Administrator Charles Bolden and Small
Business Programs Associate Administrator

292
00:27:01,050 --> 00:27:06,900
Glenn Delgado seen here on the far right presented
the annual Small Business Administrator's

293
00:27:06,900 --> 00:27:13,080
Cup award to Stennis Space Center in recognition
of its stellar small business program. The

294
00:27:13,080 --> 00:27:19,030
award recognizes successful and innovative
practices promoting small business participation

295
00:27:19,030 --> 00:27:21,580
in NASA initiatives.

296
00:27:21,580 --> 00:27:36,650
HI! I'm Gary Benton, and we're at the
A-1 Test Stand at NASA Stennis Space Center,

297

00:27:36,650 --> 00:27:38,410
where we're testing J-2X engine components
for NASA'S Space Launch System rocket, which

298
00:27:38,410 --> 00:27:43,070
will provide human exploration beyond Earth's
orbit. You're Watching This Year @NASA!"

299
00:27:43,070 --> 00:27:49,510
In 2012, NASA and educators continued stressing
to students how science, technology, engineering

300
00:27:49,510 --> 00:27:56,210
and math can not only lead to successful careers
in America's space program, but also can

301
00:27:56,210 --> 00:28:01,530
be fun!
"Take each string and hold it like this."

302
00:28:01,530 --> 00:28:07,010
NASA teamed up with Vanderbilt University's
Dyer Observatory in Brentwood, Tenn., to host

303
00:28:07,010 --> 00:28:12,500
a Summer of Innovation event for rising fifth
and sixth graders from the Nashville area.

304
00:28:12,500 --> 00:28:17,670
The students enjoyed hands-on, Mars-related
activities, and got to speak with NASA Associate

305
00:28:17,670 --> 00:28:24,720
Administrator for Education and former astronaut,
Leland Melvin.

306
00:28:24,720 --> 00:28:30,640
Summer of Innovation aims to inspire and engage
middle school students in science, technology,

307

00:28:30,640 --> 00:28:36,210
engineering and math, the STEM fields. This
is the second year Dyer Observatory has partnered

308
00:28:36,210 --> 00:28:40,480
with NASA for Summer of Innovation.

309
00:28:40,480 --> 00:28:46,870
The MoonKAM camera aboard “Ebb”, one of
NASA's twin Gravity Recovery and Interior

310
00:28:46,870 --> 00:28:52,520
Laboratory, or GRAIL spacecraft, has returned
its first unique view of the far side of the

311
00:28:52,520 --> 00:28:58,770
lunar surface. MoonKAM, for Moon Knowledge
Acquired by Middle school students, will be

312
00:28:58,770 --> 00:29:04,930
used by students nationwide to study lunar
images.

313
00:29:04,930 --> 00:29:09,950
America's space agency has crowned its vehicular
engineering victors for the 19th annual NASA

314
00:29:09,950 --> 00:29:14,980
Great Moonbuggy Race at the U.S. Space & Rocket
Center in Huntsville, Alabama. The winning

315
00:29:14,980 --> 00:29:21,190
teams outraced more than 80 teams from 20
states, Puerto Rico, Canada, Germany, India,

316
00:29:21,190 --> 00:29:25,880
Italy, Russia and the United Arab Emirates.
Organized by NASA's Marshall Space Flight

317
00:29:25,880 --> 00:29:31,070

Center, the race challenges students to design, build and race lightweight, human-powered

318
00:29:31,070 --> 00:29:34,400
buggies.

319
00:29:34,400 --> 00:29:42,380
Thanks to the enterprising efforts of a Bay Area high-school student, she and 50 of her

320
00:29:42,380 --> 00:29:47,720
fellow students at their all girls school heard from experts about STEM-field careers

321
00:29:47,720 --> 00:29:53,840
women can pursue at NASA. Deepika Bodapati, a high school senior at Presentation High

322
00:29:53,840 --> 00:29:58,410
School in San Jose, had written the White House about the disparity of opportunities

323
00:29:58,410 --> 00:30:03,800
for girls interested in pursuing careers in science, technology, engineering and math.

324
00:30:03,800 --> 00:30:10,510
After her note made its way to the Ames Research Center, seven scientists, administrators and

325
00:30:10,510 --> 00:30:14,800
managers, all of them women, volunteered to meet with students at the all-girls school

326
00:30:14,800 --> 00:30:21,490
and share stories about their careers, education and keys to success.

327
00:30:21,490 --> 00:30:28,070
About 150 students from 18 schools in Mississippi

and Louisiana got an inside look at the Stennis

328
00:30:28,070 --> 00:30:33,520
Space Center during a Women's History Month
event. The outing was part of the G.E.M.S.

329
00:30:33,520 --> 00:30:39,150
program, for Girls Excited about Math and
Science. The students were treated to activities

330
00:30:39,150 --> 00:30:44,370
and workshops – including a fashion show
that featured business attire, an introduction

331
00:30:44,370 --> 00:30:53,900
to Information Technology, a cryogenics demonstration
and details about college and career planning.

332
00:30:53,900 --> 00:30:57,870
Educators from across the nation visited the
Johnson Space Center to fly experiments in

333
00:30:57,870 --> 00:31:03,410
microgravity. During the flights, a modified
aircraft flew parabolic arcs that simulate

334
00:31:03,410 --> 00:31:09,020
weightlessness. The opportunity was provided
by three NASA education initiatives designed

335
00:31:09,020 --> 00:31:15,050
to spark interest in science, technology,
engineering and math, or STEM.

336
00:31:15,050 --> 00:31:20,240
"Hello, from the base of the world's longest
microgravity drop tower.\h I'm Nancy Rabel

337
00:31:20,240 --> 00:31:26,060
Hall, a research scientist at the Glenn Research

Center here in the Zero Gravity Research Facility

338
00:31:26,060 --> 00:31:30,690
where we continue to unlock the mysteries
of microgravity.\h You’re watching This

339
00:31:30,690 --> 00:31:33,490
Year @ NASA!”

340
00:31:33,490 --> 00:31:41,110
In 2012, NASA Aero continued its world leadership
in the pursuit of the fastest, safest, most

341
00:31:41,110 --> 00:31:48,600
quiet and fuel-efficient aircraft possible.

342
00:31:48,600 --> 00:31:53,950
Researchers from Cal-Poly State University
in San Luis Obispo, California recently tested

343
00:31:53,950 --> 00:32:00,370
a future aircraft concept model called AMELIA
– the Advanced Model for Extreme Lift and

344
00:32:00,370 --> 00:32:08,140
Improved Aeroacoustics. The 1/11th scale model
with a 10-foot wingspan was tested in the

345
00:32:08,140 --> 00:32:14,740
National Full-Scale Aerodynamic Complex at
the Ames Research Center. AMELIA is designed

346
00:32:14,740 --> 00:32:22,890
as an efficient, 150-passenger airliner capable
of short takeoffs and landings.

347
00:32:22,890 --> 00:32:27,150
The Waveforms and Sonic boom Perception and
Response project, WSPR, gathered the reactions

348
00:32:27,150 --> 00:32:33,330
of more than 100 volunteer Edwards residents
to low-noise booms created by NASA F/A-18

349
00:32:33,330 --> 00:32:36,530
test aircraft.
“With Whisper (WSPR) we’re trying to get

350
00:32:36,530 --> 00:32:41,570
a read back from people on the ground to some
kind of annoyance level. How annoying was

351
00:32:41,570 --> 00:32:46,960
this low boom, how annoying was this moderate
boom?”

352
00:32:46,960 --> 00:32:52,940
NASA’s Supersonics Project is embarking
on a new effort to characterize that fainter

353
00:32:52,940 --> 00:32:59,000
side of sonic booms in the Farfield Investigation
of No Boom Threshold project, or FaINT

354
00:32:59,000 --> 00:33:05,450
“They tend to be a lot quieter, probably
about five to 10 times quieter than that your

355
00:33:05,450 --> 00:33:10,600
normal N-wave sonic boom. NASA’s always
trying to push research, push boundaries,

356
00:33:10,600 --> 00:33:14,720
and one of the things we’re trying to do
is to bring commercial supersonic travel to

357
00:33:14,720 --> 00:33:21,940
the world.”

358

00:33:21,940 --> 00:33:26,430
Out at Edwards Air Force Base near the Dryden
Flight Research Center, the remotely-piloted

359
00:33:26,430 --> 00:33:33,180
X-48C aircraft successfully got its first
flight under its aeronautical belt. The X-48C

360
00:33:33,180 --> 00:33:40,410
is an X-48B Blended Wing Body aircraft that's
been modified to evaluate the low-speed stability

361
00:33:40,410 --> 00:33:46,580
and control of a "low-noise" version of
a possible future Hybrid Wing Body design.

362
00:33:46,580 --> 00:33:53,571
The HWB design stems from NASA's N+2 future
concepts studies under the Agency's Environmentally

363
00:33:53,571 --> 00:33:58,370
Responsible Aviation project.

364
00:33:58,370 --> 00:34:03,430
Aero Day on the Hill provided an opportunity
for representatives of NASA's Aeronautics

365
00:34:03,430 --> 00:34:07,980
Research Mission Directorate to visit Capitol
Hill and brief members of Congress on the

366
00:34:07,980 --> 00:34:13,810
research the agency is conducting to make
air transportation more efficient, safe, and

367
00:34:13,810 --> 00:34:14,810
environmentally friendly.

368
00:34:14,810 --> 00:34:21,210
"We are setting the vision for the country.

We are leading the aeronautics community,

369
00:34:21,210 --> 00:34:28,990
so it’s all about direct tangible compelling
benefits that you can enjoy today and for

370
00:34:28,990 --> 00:34:30,110
years to come.”

371
00:34:30,110 --> 00:34:36,429
Hi, I’m Scott Colleredo, Chief Architect)for
Ground Systems Development and Operation at

372
00:34:36,429 --> 00:34:41,379
NASA’s Kennedy Space Center. I’m at launch
complex 39B where we are building a launch

373
00:34:41,379 --> 00:34:45,310
pad for the future and you are watching This
Year at NASA.

374
00:34:45,310 --> 00:34:51,620
With the final flight of the Space Shuttle
Program in 2011, the shuttles themselves were

375
00:34:51,620 --> 00:34:58,390
delivered in 2012 to their new homes to begin
a new chapter in their careers: inspiring

376
00:34:58,390 --> 00:35:04,870
museum-goers of all ages…

377
00:35:04,870 --> 00:35:11,290
Escorted by a NASA T-38 jet, Space Shuttle
Discovery – atop the NASA 905 Shuttle Carrier

378
00:35:11,290 --> 00:35:16,290
Aircraft, made its much anticipated arrival
in the Washington, D.C. metro area.

379
00:35:16,290 --> 00:35:21,930
“I got goose bumps. I was watching it through
my telephoto lens as it went over the Lincoln

380
00:35:21,930 --> 00:35:26,050
monument down here and it really impressed
me emotionally.”

381
00:35:26,050 --> 00:35:34,800
“Today we turn Discovery over to the Smithsonian
with great expectation that as we have always

382
00:35:34,800 --> 00:35:41,380
done, NASA will continue to inspire the young
people of today and tomorrow to dream of space,

383
00:35:41,380 --> 00:35:47,280
to dream of uncovering the secrets of the
universe and take steps to pursue the careers

384
00:35:47,280 --> 00:35:56,500
that will make them the exploration leaders
of tomorrow.”

385
00:35:56,500 --> 00:36:02,430
Space Shuttle Enterprise concluded its voyage
when NASA’s first space shuttle made its

386
00:36:02,430 --> 00:36:08,280
much anticipated arrival, by way of barge
on the Hudson River to its new home -- The

387
00:36:08,280 --> 00:36:12,210
Intrepid Sea, Air and Space Museum.

388
00:36:12,210 --> 00:36:18,820
“It is a great day for NASA – for America
and for the people who live here in Southern

389

00:36:18,820 --> 00:36:24,330
California. The fact that the Space Shuttles
were developed here, built here just down

390
00:36:24,330 --> 00:36:30,370
the road and Endeavour's coming back on
her last ferry flight on the 747 is a wonderful

391
00:36:30,370 --> 00:36:31,370
thing."

392
00:36:31,370 --> 00:36:36,250
Space Shuttle Endeavour began the final leg
of its journey – a 2-day, 12-mile parade

393
00:36:36,250 --> 00:36:39,050
through the streets of L.A. to the California
Science Center …

394
00:36:39,050 --> 00:36:42,420
Endeavour's route took it past several well-known
landmarks …

395
00:36:42,420 --> 00:36:46,109
... was captured from above by the Goodyear
Blimp...

396
00:36:46,109 --> 00:36:53,050
… and was witnessed by thousands upon thousands
of Angelinos who came out for a peek at NASA's

397
00:36:53,050 --> 00:36:54,090
youngest space shuttle

398
00:36:54,090 --> 00:37:03,460
Meanwhile, Atlantis, the last NASA space shuttle
to fly in space, also became the last to be

399
00:37:03,460 --> 00:37:08,860
officially retired. Beginning at the Kennedy

Space Center’s Vehicle Assembly Building,

400
00:37:08,860 --> 00:37:14,420
Atlantis rolled the ten miles to the KSC Visitor Complex where it will go on permanent public

401
00:37:14,420 --> 00:37:15,420
display.

402
00:37:15,420 --> 00:37:23,590
“It is my sincere hope that one day some young boy or girl is going to look at Atlantis

403
00:37:23,590 --> 00:37:28,480
and it’s going spark that dream of exploration in space.”

404
00:37:28,480 --> 00:37:33,590
“Hi this Becky Dubuisson, Deputy Director of the NASA Shared Services Center, where

405
00:37:33,590 --> 00:37:39,560
we strive each and every day to provide timely, accurate, and customer-focused support to

406
00:37:39,560 --> 00:37:43,670
NASA.\hYou’re watching This YEAR @NASA!”

407
00:37:43,670 --> 00:37:49,290
This year @NASA saw America’s space agency broaden its connection to the American people

408
00:37:49,290 --> 00:37:55,530
through its award-winning Web-based and social media programs.

409
00:37:55,530 --> 00:38:03,020
NASA’s first multi-player online game to test players' knowledge of the space program

410
00:38:03,020 --> 00:38:08,980
has been launched into orbit on Facebook.
Space Race Blastoff questions players' about

411
00:38:08,980 --> 00:38:12,420
NASA history, technology, science and pop
culture.

412
00:38:12,420 --> 00:38:17,580
"We really hope this will reach a different
audience. An audience that may not be that

413
00:38:17,580 --> 00:38:21,760
interested in say coming to the website and
reading a long feature story, but wants to

414
00:38:21,760 --> 00:38:27,200
sort of test itself out against how much they
already know."

415
00:38:27,200 --> 00:38:32,940
Astronaut Joe Acaba shared recollections – and
a video -- about his stay aboard the ISS with150

416
00:38:32,940 --> 00:38:36,580
social media followers at NASA Headquarters
in Washington.

417
00:38:36,580 --> 00:38:42,570
"It's a cool experience and you don't
come back the same. It's like any life experience

418
00:38:42,570 --> 00:38:48,870
it can't help but to change you and change
your perspective on the world."

419
00:38:48,870 --> 00:38:55,550
NASA Television helped observe the last transit
of Venus we'll see here on Earth until 2117

420
00:38:55,550 --> 00:39:00,800
by showcasing live-streaming Websites the
world over, including observations made by

421
00:39:00,800 --> 00:39:02,670
scientists in central Australia…

422
00:39:02,670 --> 00:39:08,460
“There’s a few clouds in the sky and we
are set up for an absolutely gorgeous first

423
00:39:08,460 --> 00:39:09,700
and second contact.”

424
00:39:09,700 --> 00:39:15,600
…and by the NASA Edge team, stationed atop
the Mauna Kea Observatory in Hawaii.

425
00:39:15,600 --> 00:39:20,710
“I’m not going to look until I put my
blinders down … and now, of course I can’t

426
00:39:20,710 --> 00:39:21,740
see anything.”

427
00:39:21,740 --> 00:39:26,560
Scientists at NASA Headquarters also provided
information and insight about this rare yet

428
00:39:26,560 --> 00:39:34,120
predictable celestial phenomenon that has
captivated humankind for millennia.

429
00:39:34,120 --> 00:39:39,100
The interest and reaction generated worldwide
by Curiosity’s trek to and landing on the

430
00:39:39,100 --> 00:39:43,750
Red Planet has been phenomenal. People in

New York City’s Times Square watched a giant

431
00:39:43,750 --> 00:39:49,440
screen and listened on Third Rock Radio to
NASA Television’s coverage of the vehicle’s

432
00:39:49,440 --> 00:39:55,440
7-minute, 13-thousand-to-zero-miles-per- hour
plunge to the surface of Mars.

433
00:39:55,440 --> 00:40:02,260
NASA TV also had more than 1-point-2 million
people watching on nasa.gov.

434
00:40:02,260 --> 00:40:07,980
Among those instrumental in Curiosity’s
success are American small businesses. One

435
00:40:07,980 --> 00:40:14,270
company, ATA Engineering, hosted a Google-Plus
“Hangout” with NASA Administrator Charlie

436
00:40:14,270 --> 00:40:18,600
Bolden and Small Business Administration Administrator
Karen Mills.

437
00:40:18,600 --> 00:40:24,860
A Google-Plus "Hangout" is a group video chat.
The Herndon, Virginia, firm partnered with

438
00:40:24,860 --> 00:40:33,630
NASA's Jet Propulsion Laboratory to test and
analyze Curiosity’s entry, descent and landing.

439
00:40:33,630 --> 00:40:39,770
The Kennedy Space Center has been Googled!
In celebration of the center’s 50th anniversary,

440
00:40:39,770 --> 00:40:46,010
KSC and Google Maps with Street View are providing

space enthusiasts with virtual tours of the

441
00:40:46,010 --> 00:40:52,320
cavernous Vehicle Assembly Building, Launch
Pad 39A, and other unique facilities used

442
00:40:52,320 --> 00:40:58,619
to help launch humans to the moon and Space
Shuttles to low-Earth orbit.

443
00:40:58,619 --> 00:41:06,140
You can now use the Internet and a smart-phone
for an inside look at the groundbreaking science

444
00:41:06,140 --> 00:41:11,580
and technology research being done onboard
the International Space Station! Log on to

445
00:41:11,580 --> 00:41:17,400
the agency's Space Station Live! Web page,
or download the companion ISSLive! mobile

446
00:41:17,400 --> 00:41:22,820
app to get up-to-the-minute information on
experiments NASA astronauts are conducting

447
00:41:22,820 --> 00:41:29,740
240 miles in space for the benefit of all
on Earth!

448
00:41:29,740 --> 00:41:35,890
The highly-anticipated Angry Birds Space is
out. Produced by Rovio in cooperation with

449
00:41:35,890 --> 00:41:42,260
NASA, the game is not only charming and challenging,
but also informing players worldwide about

450
00:41:42,260 --> 00:41:47,760
the physics of microgravity. In the course

of play, gamers are treated to a glimpse of

451
00:41:47,760 --> 00:41:51,710
the NASA “meatball” atop the International Space Station!

452
00:41:51,710 --> 00:41:56,110
“I'm standing at the Landing and Impact Dynamics Research facility here at NASA's

453
00:41:56,110 --> 00:42:00,350
Langley Research Center in Hampton, Va. Hi, I'm Susan Gorton, the Rotary Wing Project

454
00:42:00,350 --> 00:42:05,360
Manager. The testing and analysis that we do in our projects makes helicopters faster,

455
00:42:05,360 --> 00:42:10,800
quieter, safer, and more efficient. And you're watching This Year At NASA."

456
00:42:10,800 --> 00:42:19,460
2012 was also a year of change for NASA. Marked by the retirement of two spaceflight stalwarts:

457
00:42:19,460 --> 00:42:22,380
astronauts Jerry Ross and Shannon Lucid.

458
00:42:22,380 --> 00:42:29,550
And, sadly, 2012 also saw the passing of others near and dear to NASA ...

459
00:42:29,550 --> 00:42:34,530
Ralph McQuarrie, whose sci-fi artwork was featured in major motion pictures and hit

460
00:42:34,530 --> 00:42:41,340
TV series, has died. He was 82. McQuarrie’s creations included Star Wars characters Darth

461
00:42:41,340 --> 00:42:48,300
Vader, Chewbacca, R2D2 and C-3PO, and the
Mother Ship of Close Encounters of the Third

462
00:42:48,300 --> 00:42:54,810
Kind. Near and dear to NASA is the animation
McQuarrie produced for CBS News of Apollo

463
00:42:54,810 --> 00:42:57,430
11's landing on the moon in 1969.

464
00:42:57,430 --> 00:43:04,700
"The future of mankind depends upon space
travel. And we'll get away from war. If

465
00:43:04,700 --> 00:43:10,140
we stay on Earth, we'll go on having wars.
But, if we got to the moon and Mars, we'll

466
00:43:10,140 --> 00:43:21,490
bind ourselves together into one, single race,
one color, and go into space and live forever."

467
00:43:21,490 --> 00:43:27,650
The NASA family is mourning the loss of retired
astronaut Alan Poindexter. Poindexter, a captain

468
00:43:27,650 --> 00:43:35,720
in the U.S. Navy flew on two missions. He
was the pilot of Atlantis on STS-122 in 2008

469
00:43:35,720 --> 00:43:40,040
and in 2010 served as Commander onboard Discovery
during STS-131.

470
00:43:40,040 --> 00:43:45,420
"It meant a lot to me to have the opportunity
to go into space and it meant a lot to me

471
00:43:45,420 --> 00:43:48,290
to be the first woman that was chosen.”

472
00:43:48,290 --> 00:43:54,640
When Sally Ride passed away recently at age
61, she left a legacy of accomplishment and

473
00:43:54,640 --> 00:44:00,730
inspiration. As the first American woman in
space, Ride proved there was nothing to which

474
00:44:00,730 --> 00:44:07,160
a young girl could not aspire. And, as a former
astronaut, she continued to reassure young

475
00:44:07,160 --> 00:44:13,100
women – and young men, too, that careers
in science and exploration can be exciting,

476
00:44:13,100 --> 00:44:23,080
fun, and rewarding.

477
00:44:23,080 --> 00:44:28,390
NASA Administrator Charles Bolden joined other
agency officials and dignitaries at the Washington

478
00:44:28,390 --> 00:44:33,980
National Cathedral to honor the life and career
of astronaut Neil Armstrong, the first man

479
00:44:33,980 --> 00:44:37,380
to walk on the moon, who died Aug. 25.

480
00:44:37,380 --> 00:44:42,060
“Neil Armstrong left more than footprints
and a flag on the moon. In fact, as President

481
00:44:42,060 --> 00:44:48,400
Obama said in a letter, ‘Future generations

will draw inspiration from his spirit of discovery.

482
00:44:48,400 --> 00:44:53,730
The imprint he left on the surface of the
moon and the story of human history is matched

483
00:44:53,730 --> 00:44:59,040
only by the extraordinary mark he left on
the hearts of all Americans.'"

484
00:44:59,040 --> 00:45:06,410
"Fate looked down kindly on us when she
chose Neil to be the first to venture to another

485
00:45:06,410 --> 00:45:14,140
world and to have the opportunity to look
back from space at the beauty of our own.

486
00:45:14,140 --> 00:45:24,140
No one, no one, but no one could have accepted
the responsibility of his remarkable accomplishment

487
00:45:24,140 --> 00:45:31,110
with more dignity and more grace than Neil
Armstrong."

488
00:45:31,110 --> 00:45:38,220
Farewell, "Yes" … but never forgotten.
The inspiration of those spaceflight pioneers

489
00:45:38,220 --> 00:45:46,130
lives on in each remarkable achievement, special
spaceflight moment and instance of NASA "awesomeness,"

490
00:45:46,130 --> 00:45:47,750
like these of 2012.

491
00:45:47,750 --> 00:45:55,290
"It's one small step for a man …"

492
00:45:55,290 --> 00:46:00,220
NASA has created a companion image to its
new “Blue Marble” picture of Earth in

493
00:46:00,220 --> 00:46:07,380
stunning High Definition. “Blue Marble 20-12”
is a composite image captured during six separate

494
00:46:07,380 --> 00:46:14,600
orbits by the Suomi National Polar-orbiting
Partnership satellite, or Suomi NPP. The original

495
00:46:14,600 --> 00:46:18,880
“Blue Marble” was photographed by the
crew of Apollo 17 as they traveled to the

496
00:46:18,880 --> 00:46:22,240
moon in 19-72.

497
00:46:22,240 --> 00:46:27,830
“So man meets machine aboard the International
Space Station.”

498
00:46:27,830 --> 00:46:33,960
Another first inside the Space Station. Expedition
30 Commander Dan Burbank and Robonaut completed

499
00:46:33,960 --> 00:46:39,920
the first handshake between a humanoid robot
and an astronaut in space. Robonaut is designed

500
00:46:39,920 --> 00:46:46,730
with the dexterity to complete work in space
typically performed by humans.

501
00:46:46,730 --> 00:46:52,030
The Kennedy Space Center hosted several events
to celebrate 50 years of Americans in orbit.

502

00:46:52,030 --> 00:46:55,020
“Roger the clock is operating we’re on
the way.”

503
00:46:55,020 --> 00:47:02,040
John Glenn, the first to achieve the goal,
made his three-orbit flight in Friendship

504
00:47:02,040 --> 00:47:03,880
7 on February 20, 1962.

505
00:47:03,880 --> 00:47:09,250
“It’s been 50 years, it’s hard for me
to believe that. It seems like just a couple

506
00:47:09,250 --> 00:47:10,250
of week s ago to me.”

507
00:47:10,250 --> 00:47:15,350
Three months later, fellow Mercury astronaut
Scott Carpenter followed Glenn with his flight

508
00:47:15,350 --> 00:47:20,930
aboard Aurora 7 on May 24, 1962.

509
00:47:20,930 --> 00:47:25,000
The discovery of an ancient dinosaur track
on the campus of Goddard Space Flight Center

510
00:47:25,000 --> 00:47:28,270
has scientists abuzz about the area’s ancient
past.

511
00:47:28,270 --> 00:47:35,080
“…I love the paradox - here space scientists
walk along here and they’re walking exactly

512
00:47:35,080 --> 00:47:43,790
where this big bundling, heavy dinosaur walked
maybe 110, 112 million years ago. “

513
00:47:43,790 --> 00:47:49,360
Weems says there's a much smaller, similar
looking footprint inside the larger one made,

514
00:47:49,360 --> 00:47:53,770
perhaps by a young nodosaur who was traveling
with an adult.

515
00:47:53,770 --> 00:47:59,270
"This probably was a breeding area for many
of them based on some of these small ones

516
00:47:59,270 --> 00:48:00,270
being found."

517
00:48:00,270 --> 00:48:05,070
But it's the adult nodosaur tracks that
are so rare on the East Coast and make this

518
00:48:05,070 --> 00:48:07,460
such a unique find.

519
00:48:07,460 --> 00:48:13,540
He's been to Infinity and Beyond – but
now Buzz Lightyear is at the Smithsonian's

520
00:48:13,540 --> 00:48:18,860
National Air and Space Museum's Moving Beyond
Earth gallery. The action figure, which flew

521
00:48:18,860 --> 00:48:24,280
on Space Shuttle Discovery to the International
Space Station in 2008, was donated to the

522
00:48:24,280 --> 00:48:27,230
museum.

523
00:48:27,230 --> 00:48:32,950

Video taken from the International Space Station
documents the May 20 annular solar eclipse.

524
00:48:32,950 --> 00:48:38,600
While flying at about 240 statute miles above
Earth, NASA astronaut Don Pettit captured

525
00:48:38,600 --> 00:48:43,869
the moon’s shadow being cast on the planet
below as the moon lined up between sun and

526
00:48:43,869 --> 00:48:50,869
Earth.

527
00:48:50,869 --> 00:48:57,369
Last year, Irish-American astronaut Cady Coleman
celebrated her St. Patrick’s Day playing

528
00:48:57,369 --> 00:49:02,360
two Irish instruments while she orbited the
Earth aboard the International Space Station.

529
00:49:02,360 --> 00:49:07,670
This year, Coleman was on center stage at
the Kennedy Center in Washington to return

530
00:49:07,670 --> 00:49:13,140
the antique wooden flute and shiny tin whistle
to its owners: internationally-acclaimed recording

531
00:49:13,140 --> 00:49:15,619
artists, Paddy Moloney and the Chieftains.

532
00:49:15,619 --> 00:49:19,740
“And here she was talking and she was showing
the flute and everything was floating and

533
00:49:19,740 --> 00:49:24,990
her hair was sticking up -- it was magic.
I mean I couldn’t believe it.”

534
00:49:24,990 --> 00:49:33,270
“Hi, I’m Stephen Colbert, and you’re
watching This Year @NASA on NASA Television!

535
00:49:33,270 --> 00:49:48,609
(drinks)
And that’s This Year @NASA!