
TY@N
2013

1
00:00:00,380 --> 00:00:04,000
\h
In 2013, NASA helped transform access to low

2
00:00:04,000 --> 00:00:08,580
Earth orbit … even as one of our venerable
spacecraft reached the boundaries of the solar

3
00:00:08,580 --> 00:00:13,730
system … and we moved ahead on technologies
– that will help us carry out an ambitious

4
00:00:13,730 --> 00:00:17,860
asteroid mission we announced … and, eventually,
move on to Mars.

5
00:00:17,860 --> 00:00:18,860
\h
\h

6
00:00:18,860 --> 00:00:20,720
Here’s a quick trip back through 2013 for

7
00:00:20,720 --> 00:00:26,399
those and some of the other big things that
happened This Year at NASA.

8
00:00:26,399 --> 00:00:27,399
\h
\h

9
00:00:27,399 --> 00:00:31,470
With the successful completion, in 2013 of
its Commercial Orbital Transportation Services

10
00:00:31,470 --> 00:00:36,750
program, NASA now has two commercial partners
capable of resupplying the International Space

11

00:00:36,750 --> 00:00:37,800
Station …
\h

12
00:00:37,800 --> 00:00:43,900
In March, COTS saw SpaceX launch from U.S.
soil and complete a successful resupply mission

13
00:00:43,900 --> 00:00:45,910
to the ISS ...
\h

14
00:00:45,910 --> 00:00:47,800
And Orbital Sciences Corporation followed

15
00:00:47,800 --> 00:00:53,090
suit with a demonstration flight to the station
of its Cygnus cargo craft in late September.

16
00:00:53,090 --> 00:00:54,090
\h
\h

17
00:00:54,090 --> 00:00:58,500
These missions also provided student experiments
access to the space station’s unique capabilities

18
00:00:58,500 --> 00:01:04,949
as a microgravity platform for research. As
the Nation's only national laboratory in space,

19
00:01:04,949 --> 00:01:11,030
the host of science experiments conducted
on the station not only advances STEM education,

20
00:01:11,030 --> 00:01:16,129
but also fosters relationships with other
Federal entities and the private sector.

21
00:01:16,129 --> 00:01:18,140

\h
There was also progress in NASA’s Commercial

22
00:01:18,140 --> 00:01:22,789
Crew Program to develop American spacecraft
to transport humans to low Earth orbit

23
00:01:22,789 --> 00:01:26,899
\h
In addition to SpaceX, Boeing continued development

24
00:01:26,899 --> 00:01:29,810
of its CST-100 capsule …
\h

25
00:01:29,810 --> 00:01:31,950
Sierra Nevada Corporation conducted the first

26
00:01:31,950 --> 00:01:35,560
approach-and-landing free-flight test of its
Dream Chaser spacecraft …

27
00:01:35,560 --> 00:01:38,909
\h
And Blue Origin test fired a new hydrogen

28
00:01:38,909 --> 00:01:45,159
and oxygen-fueled rocket engine, at the company's
West Texas facility.

29
00:01:45,159 --> 00:01:46,159
\h
\h

30
00:01:46,159 --> 00:01:50,590
NASA ramped up work, in 2013 on the spacecraft
that will take humans to Mars and other deep

31
00:01:50,590 --> 00:01:52,490
space destinations.

\h

32
00:01:52,490 --> 00:01:57,999
In September, NASA astronauts conducted the
first simulated launch aboard the Orion spacecraft

33
00:01:57,999 --> 00:02:01,779
to evaluate its cockpit design and emergency
procedures.

34
00:02:01,779 --> 00:02:04,679
\h
Orion’s avionics system was powered on for

35
00:02:04,679 --> 00:02:09,810
the first time in October, a major milestone
ahead of its 2014 flight test.

36
00:02:09,810 --> 00:02:12,470
\h
And, the Space Launch System heavy-lift rocket

37
00:02:12,470 --> 00:02:18,030
that will send Orion to space, passed its
preliminary design review in August -- a key

38
00:02:18,030 --> 00:02:21,330
milestone in development of the SLS.
\h

39
00:02:21,330 --> 00:02:28,570
The first scheduled human mission for Orion
and SLS is Exploration Mission-2 in 2021.

40
00:02:28,570 --> 00:02:31,800
\h
NASA’s asteroid initiative – was outlined

41
00:02:31,800 --> 00:02:35,890
in the President’s fiscal year 2014 budget

request.

42
00:02:35,890 --> 00:02:38,320
\h
An element of it – shown in concept animation

43
00:02:38,320 --> 00:02:44,640
released in 2013 – is a mission to identify,
capture and then send astronauts to study

44
00:02:44,640 --> 00:02:50,460
an asteroid … The technologies and procedures
used might also be used to send astronauts

45
00:02:50,460 --> 00:02:51,760
to Mars.
\h

46
00:02:51,760 --> 00:02:58,670
The initiative also includes a Grand Challenge
to industry, universities, international organizations,

47
00:02:58,670 --> 00:03:02,569
and the public … to help protect the planet
from Near Earth Objects.

48
00:03:02,569 --> 00:03:05,540
\h
The need for that capability was punctuated

49
00:03:05,540 --> 00:03:12,820
in February – with the flyby of Asteroid
2012 DA14 – a mere 17-thousand miles from

50
00:03:12,820 --> 00:03:13,970
Earth.
\h

51
00:03:13,970 --> 00:03:20,150
And the same day – the explosion of a meteor

in the skies over Chelyabinsk, Russia. NASA

52
00:03:20,150 --> 00:03:23,720
scientists helped collect valuable data from
that event.

53
00:03:23,720 --> 00:03:26,400
\h
While NASA began evaluating the most promising

54
00:03:26,400 --> 00:03:31,980
96 of the more than 400 ideas submitted about
how to protect the planet …

55
00:03:31,980 --> 00:03:36,480
\h
Plans moved ahead for the 2016 launch of OSIRIS-REx

56
00:03:36,480 --> 00:03:39,930
– the agency’s first asteroid sample return
mission.

57
00:03:39,930 --> 00:03:40,930
\h
\h

58
00:03:40,930 --> 00:03:45,490
\hThe stream of humans living and working
in space continued\haboard the International

59
00:03:45,490 --> 00:03:46,680
Space Station …
\h

60
00:03:46,680 --> 00:03:53,500
Four crews launched to the ISS – which turned
15 in 2013. New station arrivals included

61
00:03:53,500 --> 00:03:59,810
Expedition 35/36 in March -- the first-ever

crew to make an expedited six-hour spaceflight

62
00:03:59,810 --> 00:04:00,810
to the station.
\h

63
00:04:00,810 --> 00:04:03,160
A July spacewalk by Chris Cassidy and Luca

64
00:04:03,160 --> 00:04:08,670
Parmitano was cut short by a water leak in
Parmitano’s helmet … but Luca was unharmed

65
00:04:08,670 --> 00:04:09,670
…
\h

66
00:04:09,670 --> 00:04:14,630
And the Olympic torch was taken on a spacewalk
in November\h -- as part of the Olympic torch

67
00:04:14,630 --> 00:04:19,600
relay for the 2014 Winter games in Sochi,
Russia.

68
00:04:19,600 --> 00:04:21,100
\h
Technologies for future space exploration

69
00:04:21,100 --> 00:04:27,450
also made news. A Surface Telerobotics demo
– proved an orbiting astronaut aboard the

70
00:04:27,450 --> 00:04:30,010
ISS could remotely control a robot on Earth
…

71
00:04:30,010 --> 00:04:34,550
\h
NASA's next-generation TDRS-K, communications

72
00:04:34,550 --> 00:04:36,990
satellite was launched, to support space exploration
…

73
00:04:36,990 --> 00:04:40,440
\h
And on Earth, 3-D printing for space exploration

74
00:04:40,440 --> 00:04:46,060
started to take shape. It may one day give
astronauts on long duration space missions

75
00:04:46,060 --> 00:04:49,120
the ability to make spare parts.
\h

76
00:04:49,120 --> 00:04:53,890
Space exploration experienced celebration
– with the 40 year anniversary of Skylab

77
00:04:53,890 --> 00:04:54,890
…
\h

78
00:04:54,890 --> 00:04:57,310
Sorrow, at the loss of some other notable

79
00:04:57,310 --> 00:04:58,400
NASA explorers …
\h

80
00:05:00,400 --> 00:04:59,400
\h

81
00:05:00,400 --> 00:05:04,520
And, excitement of things to come – with
the selection of eight new astronaut trainees

82

00:05:04,520 --> 00:05:10,320
… who may one day be among the first humans
to launch from U.S. soil since the retirement

83
00:05:10,320 --> 00:05:13,030
of the space shuttle.
\h

84
00:05:13,030 --> 00:05:18,639
Some of the biggest NASA news came from Mars
– courtesy of a rover named Curiosity.

85
00:05:18,639 --> 00:05:19,639
\h
\h

86
00:05:19,639 --> 00:05:25,000
In March Curiosity found evidence that past
life was possible on the Red Planet -- completing

87
00:05:25,000 --> 00:05:28,430
its science goal just eight months into a
2-year mission.

88
00:05:28,430 --> 00:05:30,730
\h
There’s was plenty of time to explore after

89
00:05:30,730 --> 00:05:37,340
that … This shot in July from the Mars Reconnaissance
Orbiter high above -- showed the trail Curiosity

90
00:05:37,340 --> 00:05:39,610
had blazed to that point.
\h

91
00:05:39,610 --> 00:05:45,100
In August Curiosity shared unprecedented shots
of a Martian eclipse -- with the planet’s

92

00:05:45,100 --> 00:05:50,050
larger moon Phobos, passing directly in front
its other moon Deimos.

93
00:05:50,050 --> 00:05:52,580
\h
Back on Earth, Curiosity's success has put

94
00:05:52,580 --> 00:05:57,110
Mars exploration front and center – as a
National priority.

95
00:05:57,110 --> 00:05:58,110
\h
\h

96
00:05:58,110 --> 00:06:01,350
And with the MAVEN spacecraft – launched
in November to study the Martian atmosphere

97
00:06:01,350 --> 00:06:02,880
…
\h

98
00:06:02,880 --> 00:06:07,580
The 2016 Insight mission to probe the subsurface
of the planet's Elysium Planitia region

99
00:06:07,580 --> 00:06:08,580
…
\h

100
00:06:08,580 --> 00:06:13,700
And with the Mars 2020 rover mission announced
in July – the push to put humans on Mars

101
00:06:13,700 --> 00:06:20,860
by the 2030s has a good start.
\h\h

102

00:06:20,860 --> 00:06:27,100
Turns out there is sound in space -- Interstellar
space to be more precise – and in 2013,

103
00:06:27,100 --> 00:06:31,979
Voyager 1 sent a recording from beyond our
solar system to prove it.

104
00:06:31,979 --> 00:06:32,979
\h
\h

105
00:06:32,979 --> 00:06:36,370
In October, the Lunar Laser Communication
Demonstration aboard the “moon-dust-investigating”

106
00:06:36,370 --> 00:06:43,700
LADEE spacecraft, transmitted data between
the moon and Earth at a record-breaking 622

107
00:06:43,700 --> 00:06:45,700
megabits per second.
\h

108
00:06:45,700 --> 00:06:50,870
Cameras on the Cassini spacecraft produced
an astounding panorama of Saturn, its moons

109
00:06:50,870 --> 00:06:55,430
and rings, as well as Earth, Venus and Mars
in November.

110
00:06:55,430 --> 00:06:56,430
\h
\h

111
00:06:56,430 --> 00:07:00,350
Solar observatories like the IRIS telescope
– launched in June … gave researchers

112

00:07:00,350 --> 00:07:03,169
unprecedented views of the sun.
\h

113
00:07:03,169 --> 00:07:04,169
\h

114
00:07:04,169 --> 00:07:08,010
Several of NASA’s eyes in the heavens got
glimpses of Comet ISON before its ill-fated

115
00:07:08,010 --> 00:07:10,150
November encounter with our sun …
\h

116
00:07:10,150 --> 00:07:13,139
Including the Deep Impact spacecraft in February
…

117
00:07:13,139 --> 00:07:14,139
\h
\h

118
00:07:14,139 --> 00:07:15,830
And the Hubble Space Telescope – a couple

119
00:07:15,830 --> 00:07:18,240
of months later – in April.
\h

120
00:07:18,240 --> 00:07:20,979
In August, Spitzer, the first telescope to

121
00:07:20,979 --> 00:07:25,930
see light from a planet beyond our solar system,
celebrated ten years in space …

122
00:07:25,930 --> 00:07:29,220
\h
Development of the James Webb Space Telescope

123
00:07:29,220 --> 00:07:32,320
continued in advance of its launch in 2018
…

124
00:07:32,320 --> 00:07:35,690
\h
The Kepler mission awed scientists and the

125
00:07:35,690 --> 00:07:41,670
public with new exoplanet findings, including
discovery of numerous planets in the habitable

126
00:07:41,670 --> 00:07:46,370
zone. NASA will be evaluating Kepler data
for years to come …

127
00:07:46,370 --> 00:07:49,380
\h
And in February, NASA’s Van Allen Probes

128
00:07:49,380 --> 00:07:54,840
discovered a third Van Allen Radiation Belt
around the Earth.

129
00:07:54,840 --> 00:07:55,840
\h
\h

130
00:07:55,840 --> 00:08:00,430
NASA also continued the mission to improve
life on our home planet in 2013 …

131
00:08:00,430 --> 00:08:03,550
\h
In February the next generation Landsat Data

132
00:08:03,550 --> 00:08:08,610
Continuity Mission launched – extending
the program’s 40 years of monitoring Earth

133
00:08:08,610 --> 00:08:10,169
from space.
\h

134
00:08:10,169 --> 00:08:16,690
Catastrophic weather seen from space included
a view from the ISS of Super Typhoon Haiyan,

135
00:08:16,690 --> 00:08:19,270
which hit the Philippines in November …
\h

136
00:08:19,270 --> 00:08:25,680
The NASA and NOAA GOES project saw the late
May and early June system that produced EF-5

137
00:08:25,680 --> 00:08:27,320
tornadoes near Oklahoma City …
\h

138
00:08:27,320 --> 00:08:30,690
And the Global Precipitation Measurement satellite

139
00:08:30,690 --> 00:08:35,580
– which will set a new standard for measuring
snow and rainfall – was shipped to Japan

140
00:08:35,580 --> 00:08:39,690
in November -- for its launch in early 2014.
\h

141
00:08:39,690 --> 00:08:45,260
NASA investigations to study pollution, climate
and weather took flight -- such as the SEAC4RS

142
00:08:45,260 --> 00:08:46,959
mission in August …
\h

143
00:08:56,600 --> 00:08:47,959
\h

144
00:08:56,600 --> 00:09:02,060
NASA and Homeland Security demonstrated radar
technology in September called FINDER that

145
00:09:02,060 --> 00:09:07,069
can detect life signs in piles of rubble after
a disaster.

146
00:09:07,069 --> 00:09:08,069
\h
\h

147
00:09:08,069 --> 00:09:12,870
And NASA announced a new strategic vision
in August for its Aeronautics Research programs

148
00:09:12,870 --> 00:09:18,450
to address challenges in global air transportation
… making air travel more comfortable and

149
00:09:18,450 --> 00:09:22,200
safer for those on the ground and in the air.
\h

150
00:09:22,200 --> 00:09:23,200
\h

151
00:09:23,200 --> 00:09:27,460
Of course, year in and year out – what NASA
accomplishes is only possible because of the

152
00:09:27,460 --> 00:09:33,620
efforts of thousands at NASA centers and affiliate
facilities around the country – the agency’s

153
00:09:33,620 --> 00:09:37,500

gratitude for an outstanding 2013.
\h

154
00:09:37,500 --> 00:09:43,950
Thanks for watching This Year at NASA … have
a safe and happy holiday season – see you