1
00:00:00,780 --> 00:00:07,290
TW@N for January 21, 2011

2
00:00:07,290 --> 00:00:11,250
This Week at NASA…

3
00:00:11,250 --> 00:00:16,360
Astronaut Steve Bowen will replace Tim Kopra
on the next space shuttle mission. Kopra,

4
00:00:16,360 --> 00:00:20,430
a
mission specialist on STS-133, was injured

5
00:00:20,430 --> 00:00:23,880
in a bicycle accident. Bowen began training
this week

6
00:00:23,880 --> 00:00:29,310
with the STS-133 crew, which includes Commander
Steve Lindsey, Pilot Eric Boe, and Mission

7
00:00:29,310 --> 00:00:33,579
Specialists Alvin Drew, Michael Barratt and
Nicole Stott.

8
00:00:33,579 --> 00:00:39,640
Bowen also will train to perform the mission's
two planned spacewalks. A veteran flyer, Bowen

9
00:00:39,640 --> 00:00:44,920
has walked in space five-times. His two new
excursions will take place when he partners

10
00:00:44,920 --> 00:00:48,620
with
Drew to move a failed ammonia pump and perform

11
00:00:48,620 --> 00:00:53,870

other external configurations to the
International Space Station. STS-133 will

12
00:00:53,870 --> 00:00:57,120
deliver the Permanent Multipurpose Module,
an

13
00:00:57,120 --> 00:01:02,489
external platform that holds large equipment
and critical spare components for the station.

14
00:01:02,489 --> 00:01:06,130
It
will also deliver Robonaut 2, or R2, the first

15
00:01:06,130 --> 00:01:09,280
human-like robot in space. The mission's
target

16
00:01:09,280 --> 00:01:14,060
launch date is February 24.

17
00:01:14,060 --> 00:01:18,540
On Valentine's Day the Stardust spacecraft,
which finished one history-making mission

18
00:01:18,540 --> 00:01:22,100
five
years ago, will now complete another, getting

19
00:01:22,100 --> 00:01:25,619
up close and personal with the Comet Tempel
1.

20
00:01:25,619 --> 00:01:31,990
You may recall that Comet Tempel 1, was deliberately
smashed into in 2005 as part of the

21
00:01:31,990 --> 00:01:37,570
Deep Impact mission to study the comet's

interior. Now Tempel 1 will be revisited by

22
00:01:37,570 --> 00:01:40,130
the
Stardust spacecraft for what is called the

23
00:01:40,130 --> 00:01:43,810
Stardust-Next mission. At a news briefing
held at

24
00:01:43,810 --> 00:01:48,789
NASA Headquarters, Stardust scientists discussed
the important landmark voyage.

25
00:01:48,789 --> 00:01:53,800
“The last targeting maneuver, as we approach
the comet, is two days out; that is the last

26
00:01:53,800 --> 00:01:58,460
maneuver that will be fully designed to target
to our 200 kilometer flyby distance and that

27
00:01:58,460 --> 00:02:00,219
will
be executed two days before we arrive at the

28
00:02:00,219 --> 00:02:02,399
comet. Right after that maneuver, we will
be

29
00:02:02,399 --> 00:02:06,711
taking our last optical navigation images,
and those are the images that we’ll use

30
00:02:06,711 --> 00:02:11,760
to build our
best prediction of our actual flyby point

31
00:02:11,760 --> 00:02:15,340
and the path of the trajectory of the comet

relative to

32
00:02:15,340 --> 00:02:16,340
the spacecraft.”

33
00:02:16,340 --> 00:02:21,590
This is the first-ever follow-up visit to
a comet, and it will allow scientists to look

34
00:02:21,590 --> 00:02:25,750
for changes on
a comet's surface caused by a close flyby.

35
00:02:25,750 --> 00:02:29,980
“All out major uncertainties and challenges,
we’ve addressed all of them. So, I’m frankly,

36
00:02:29,980 --> 00:02:34,459
very
confident that we’re going to get a good

37
00:02:34,459 --> 00:02:36,260
flyby and good images of the comet.”

38
00:02:36,260 --> 00:02:42,849
On January 15, 2006, the Stardust spacecraft
returned from a rendezvous with Comet Wild

39
00:02:42,849 --> 00:02:46,030
2,
and jettisoned its capsule containing particles

40
00:02:46,030 --> 00:02:48,870
collected directly from the comet, as well
as

41
00:02:48,870 --> 00:02:50,580
interstellar dust.

42

00:02:50,580 --> 00:02:56,250
Also at headquarters the agency's next Earth-observing satellite mission, Glory, was detailed at

43
00:02:56,250 --> 00:03:01,849
another briefing held in the James Webb auditorium. Glory, scheduled to launch February 23,

44
00:03:01,849 --> 00:03:07,340
will study the impact of the sun and airborne particles on Earth’s climate.

45
00:03:07,340 --> 00:03:13,049
“This will serve as a resource for making scientifically-based economic, health, and

46
00:03:13,049 --> 00:03:16,400
policy
decisions related environmental change.”

47
00:03:16,400 --> 00:03:23,989
Both programs were broadcast live on NASA Television and on the agency's website.

48
00:03:23,989 --> 00:03:29,470
The American Institute for Aeronautics and Astronautics presented NASA’s Chief Technologist,

49
00:03:29,470 --> 00:03:35,430
Bobby Braun, with the Von Karman Lectureship in Astronautics award. Braun was recognized

50
00:03:35,430 --> 00:03:40,799
for significantly advancing the understanding of the challenge of Mars entry, descent, and

51
00:03:40,799 --> 00:03:47,140
landing, and for developing systems concepts and technologies enabling Martian exploration

52

00:03:47,140 --> 00:03:48,510
programs.

53
00:03:48,510 --> 00:03:54,060
The von Karman award, named for astronautics
pioneer Theodore von Karman, is given

54
00:03:54,060 --> 00:03:59,540
annually by the AIAA to an individual who
has distinguished themselves technically in

55
00:03:59,540 --> 00:04:02,840
the field
of astronautics. The presentation was made

56
00:04:02,840 --> 00:04:07,069
at the AIAA's 49th Aerospace Sciences Meeting
in

57
00:04:07,069 --> 00:04:10,260
Orlando.

58
00:04:10,260 --> 00:04:14,439
“Martin Luther King was the most famous.
He was the best known of all the modern movement

59
00:04:14,439 --> 00:04:18,579
personalities. We should remember this was
a people’s movement."

60
00:04:18,579 --> 00:04:23,941
NASA helped commemorate the life and legacy
of Dr. Martin Luther King, Jr. with a special

61
00:04:23,941 --> 00:04:29,400
celebration at the Goddard Space Flight Center.
Guest speaker was Dr. Julian Bond, former

62
00:04:29,400 --> 00:04:34,620
chairman of the NAACP, and well-known civil

rights leader and social activist.

63
00:04:34,620 --> 00:04:39,420
“We can’t forget that Dr. King stood before
and with thousands -- the people that made

64
00:04:39,420 --> 00:04:42,000
that
mighty movement what it was. From Jamestown

65
00:04:42,000 --> 00:04:48,220
slave pens, to Montgomery’s boycotted buses,
these ordinary women and men labored in obscurity

66
00:04:48,220 --> 00:04:52,240
and from Montgomery forward they
provided the foot soldier of the freedom army.”

67
00:04:52,240 --> 00:04:56,750
Students from the Duke Ellington School of
the Arts in the District of Columbia rounded

68
00:04:56,750 --> 00:04:59,871
out the
event with songs and dances selected for the

69
00:04:59,871 --> 00:05:00,871
occasion.

70
00:05:00,871 --> 00:05:09,030
“I think if Dr. King were here today, he’d
be amazed that we’ve sent 20 black astronauts

71
00:05:09,030 --> 00:05:12,300
into
space and he’d be amazed that I had met

72
00:05:12,300 --> 00:05:16,750
one of them just two days ago, Dr. Satcher,
in

73
00:05:16,750 --> 00:05:22,900
Nashville, by coincidence we happened to be
together, and I think he'd just be overcome

74
00:05:22,900 --> 00:05:26,020
at the
notion that black Americans are doing things

75
00:05:26,020 --> 00:05:38,240
that many Americans never thought anybody
would every do and that is to go into space."

76
00:05:38,240 --> 00:05:41,320
Landing an ER-2, NASA's civilian version
of the high-altitude U-2S plane used by the

77
00:05:41,320 --> 00:05:47,970
Air Force, can
prove tricky. Its wings have glider-like qualities

78
00:05:47,970 --> 00:05:53,150
that make the aircraft sensitive to crosswinds;
ascent

79
00:05:53,150 --> 00:05:58,140
and descent rates are fast and steep. Also,
the ER pilot who may be confined by a pressure

80
00:05:58,140 --> 00:06:01,509
suit for
prolonged periods of time can find even normal

81
00:06:01,509 --> 00:06:04,210
operations inside the ER-2 anything but.

82
00:06:04,210 --> 00:06:08,919
"It's hard for him to judge altitude with
this particular aircraft and he has to actually

83
00:06:08,919 --> 00:06:11,690
stall the aircraft
on every landing so the plane has to be in

84
00:06:11,690 --> 00:06:16,960
a full stall. Basically, I’m his co-pilot
in a car.”

85
00:06:16,960 --> 00:06:29,169
That's where NASA’s new Dodge Charger safety
chase car comes in. The specially-designed

86
00:06:29,169 --> 00:06:32,930
vehicle
“charges” down the runway at high speeds

87
00:06:32,930 --> 00:06:37,009
as the driver calls out data to the ER-2 pilot.
Things like

88
00:06:37,009 --> 00:06:42,400
distance in feet to the runway, taxing details
and any other critical information to help

89
00:06:42,400 --> 00:06:44,650
facilitate a
smooth and safe landing.

90
00:06:44,650 --> 00:06:56,960
“4-3-2-1 -- little right rudder, inches.”

91
00:06:56,960 --> 00:07:02,479
The Air Force has a history of relying on
chase vehicles for landing safety . Following

92
00:07:02,479 --> 00:07:05,920
their lead,
Dryden's Airborne Science program has leased

93

00:07:05,920 --> 00:07:08,740
the government-owned Charger for five years
and

94
00:07:08,740 --> 00:07:18,020
managers say the car has added an extra value
of safety to ER-2 flight operations.

95
00:07:18,020 --> 00:07:23,460
Lifting off aboard its Titan-Centaur rocket
from Cape Canaveral, Florida on August 20,

96
00:07:23,460 --> 00:07:29,320
1977, Voyager 2
was one of a pair of NASA spacecraft bound

97
00:07:29,320 --> 00:07:32,669
to explore the planets and interplanetary
environment of

98
00:07:32,669 --> 00:07:39,080
the outer solar system. Its companion, Voyager
1, followed a month later. Eight-and-a-half

99
00:07:39,080 --> 00:07:44,300
years after
launch, on January 24, 1986, Voyager 2 made

100
00:07:44,300 --> 00:07:48,580
a successful flyby of Uranus, returning about
8,000

101
00:07:48,580 --> 00:07:53,949
images of the planet and its moons. Between
them, Voyager 1 and 2 have explored all the

102
00:07:53,949 --> 00:07:57,580
giant
planets of our outer solar system, Jupiter,

103

00:07:57,580 --> 00:08:01,301
Saturn, Uranus and Neptune; 48 of their moons;
and the

104
00:08:01,301 --> 00:08:06,970
unique system of rings and magnetic fields
surrounding those planets. Decades, and many

105
00:08:06,970 --> 00:08:10,379
billions of
miles later, both Voyagers are continuing

106
00:08:10,379 --> 00:08:15,169
their journeys to the boundaries of the solar
system.

107
00:08:15,169 --> 00:08:17,419
And that’s This Week@NASA.