1
00:00:07,029 --> 00:00:11,469
This Week at NASA…

2
00:00:11,469 --> 00:00:17,040
The Atlas V rocket carrying NASA's Landsat
Data Continuity Mission satellite is set to

3
00:00:17,040 --> 00:00:22,990
launch on Monday from Vandenberg Air Force
Base in California. LDCM, a joint NASA and

4
00:00:22,990 --> 00:00:29,070
U.S. Geological Survey mission, is the eighth
satellite in the Landsat series begun in 1972.

5
00:00:29,070 --> 00:00:33,810
“With its evolutionary new instruments,
the Operational Land Imager and the Thermal

6
00:00:33,810 --> 00:00:41,850
Infrared Sensor, LDCM will be the best Landsat
spacecraft yet in tems of improved capabilities

7
00:00:41,850 --> 00:00:46,289
and the amount of data returned, compared
with previous Landsat missions.”

8
00:00:46,289 --> 00:00:51,749
The mission will extend the longest continuous
data record of Earth's surface as viewed from

9
00:00:51,749 --> 00:00:58,629
space – data critical in areas such as energy
and water management, forest monitoring, environmental

10
00:00:58,629 --> 00:01:03,289
health, urban planning, disaster recovery
and agriculture.

11

00:01:03,289 --> 00:01:12,070
It won’t be long before an asteroid named
2012 DA-14 makes its extreme flyby of our

12
00:01:12,070 --> 00:01:18,630
planet. About half the size of a football
field, DA14 should come within 17, 200 miles

13
00:01:18,630 --> 00:01:23,720
of Earth on February 15. Although the space
rock will pass within the orbit of many of

14
00:01:23,720 --> 00:01:29,850
our geosynchronous satellites, scientists
in NASA’s Near-Earth Object Program Office

15
00:01:29,850 --> 00:01:34,340
say there's no danger of a collision. Still,
they’re keeping a close eye on DA14.

16
00:01:34,340 --> 00:01:38,590
“Even though it’s getting very close it
won’t reach naked eye visibility, but if

17
00:01:38,590 --> 00:01:42,200
you have a pair of binoculars and you know
where to look – you happen to be located

18
00:01:42,200 --> 00:01:49,880
in eastern Europe, Asia or Australia you can
observe it going from the South to the North

19
00:01:49,880 --> 00:01:55,469
passing closest approach over Indonesia.”

20
00:01:55,469 --> 00:02:00,920
NASA's Deep Impact spacecraft has acquired
its first images of a comet believed to have

21
00:02:00,920 --> 00:02:08,250

quite the bright future. The images of C/2012 S1, better known as comet ISON, were taken

22
00:02:08,250 --> 00:02:14,500
over 36 hours in mid-January by Deep Impact's Medium-Resolution Imager from a distance of

23
00:02:14,500 --> 00:02:21,180
493 million miles. Many scientists anticipate that comet ISON will put on a brilliant show

24
00:02:21,180 --> 00:02:26,480
this fall when the space-borne conglomeration of dust and ice passes through the inner solar

25
00:02:26,480 --> 00:02:29,610
system.

26
00:02:29,610 --> 00:02:34,629
The core satellite of the Global Precipitation Measurement mission, GPM, has successfully

27
00:02:34,629 --> 00:02:39,379
completed rigorous testing at the Goddard Space Flight Center. The satellite spent more

28
00:02:39,379 --> 00:02:45,129
than two months in a thermal vacuum chamber exposed to extreme heat and cold to simulate

29
00:02:45,129 --> 00:02:47,890
the harsh conditions of space.

30
00:02:47,890 --> 00:02:53,250
GPM is an international network of satellites that will provide global data about rain and

31
00:02:53,250 --> 00:02:59,260
snowfall every 3 hours. Information collected by GPM, the first satellite designed to measure

32
00:02:59,260 --> 00:03:05,640
snowfall from space, will expand our understanding
of Earth’s water and energy cycles and improve

33
00:03:05,640 --> 00:03:11,459
the ability of weather forecasting models
to predict extreme storms. The GPM Core satellite

34
00:03:11,459 --> 00:03:13,260
is scheduled for launch in early 2014.

35
00:03:13,260 --> 00:03:15,220
How to use a pair of telescopes transferred
to NASA from another Federal agency was the

36
00:03:15,220 --> 00:03:17,020
focus of a two-day national workshop at the
Marshall Space Flight Center. More than 30

37
00:03:17,020 --> 00:03:18,020
presentations came from industry, academia
and government about potential uses for the

38
00:03:18,020 --> 00:03:19,020
two, flight-qualified telescopes given NASA
by the National Reconnaissance Office. NASA’s

39
00:03:19,020 --> 00:03:20,020
Science Mission Directorate sponsored the
workshop as part of its Study on Applications

40
00:03:20,020 --> 00:03:21,020
for Large Space Optics, or SALSO. The SALSO
team will down-select up to six concepts to

41
00:03:21,020 --> 00:03:22,020
be developed into high-level mission concepts
by the NASA design centers at the Goddard

42
00:03:22,020 --> 00:03:23,020
Space Flight Center and the Jet Propulsion Laboratory. These mission concepts will be

43
00:03:23,020 --> 00:03:24,020
presented to the NASA administrator in May. More than 50 journalists and social media

44
00:03:24,020 --> 00:03:25,020
followers visiting the Dryden Flight Research Center and its Palmdale operations facility

45
00:03:25,020 --> 00:03:29,659
learned how a small fleet of highly-specialized aircraft supports NASA's Earth science and

46
00:03:29,659 --> 00:03:31,489
environmental mission.

47
00:03:31,489 --> 00:03:36,569
The Airborne Science Showcase highlighted the specially-modified aircrafts' cutting-edge

48
00:03:36,569 --> 00:03:41,690
instrumentation used by numerous NASA missions to monitor and collect crucial data about

49
00:03:41,690 --> 00:03:42,690
our home planet.

50
00:03:42,690 --> 00:03:47,860
"With what we do in the Airborne Science Program – really is enmeshed and critical

51
00:03:47,860 --> 00:03:52,180
with what we do with our space missions as well. We're NASA, we launch rockets. But

52
00:03:52,180 --> 00:03:57,341

primarily from the Science Directorate at
NASA and Earth Science in particular, our

53
00:03:57,341 --> 00:04:01,219
main goal is to try to advance our understanding
of the science itself.”

54
00:04:01,219 --> 00:04:07,980
Among the NASA missions highlighted were DISCOVER-AQ
currently measuring air quality over California's

55
00:04:07,980 --> 00:04:14,350
San Joaquin Valley; the PODEX mission evaluating
instrumentation for a future satellite; and

56
00:04:14,350 --> 00:04:19,910
the Airborne Tropical Tropopause Experiment,
a multi-year investigation of how the chemistry

57
00:04:19,910 --> 00:04:25,060
of the upper regions of Earth’s atmosphere
is contributing to climate change.

58
00:04:25,060 --> 00:04:29,870
Dryden’s facilities are joined by the Johnson
Space Center, the Wallops Flight Facility,

59
00:04:29,870 --> 00:04:37,759
and the Langley Research Center in serving
as home to these unique and valuable craft.

60
00:04:37,759 --> 00:04:42,570
This suborbital rocket successfully launched
from the Wallops Flight Facility is helping

61
00:04:42,570 --> 00:04:48,860
scientists determine how best to create lithium
vapor trails for studying phenomena in the

62
00:04:48,860 --> 00:04:49,860

ionosphere.

63
00:04:49,860 --> 00:04:55,530
The two red-colored lithium vapor trails produced
by the flight posed no threat to the public

64
00:04:55,530 --> 00:05:00,490
and were reportedly seen from as far away
as the Outer Banks, North Carolina, eastern

65
00:05:00,490 --> 00:05:03,620
Pennsylvania and New Jersey.

66
00:05:03,620 --> 00:05:08,680
Lithium trails will be used in two missions
this year. The first is scheduled for April

67
00:05:08,680 --> 00:05:16,810
from Kwajalein Atoll in the central Pacific
Ocean; the second is set for June at Wallops.

68
00:05:16,810 --> 00:05:22,441
NASA astronaut Ron Garan was a keynote speaker
at the Susan G. Komen Global Women's Cancer

69
00:05:22,441 --> 00:05:28,780
Summit in Washington. A veteran of two spaceflights,
most recently on Expedition 27/28 aboard the

70
00:05:28,780 --> 00:05:34,210
International Space Station, Garan now works
on NASA's Open Government Initiative to

71
00:05:34,210 --> 00:05:38,770
develop innovative collaborations between
government, industry and citizens around the

72
00:05:38,770 --> 00:05:41,110
world to benefit all humankind.

73
00:05:41,110 --> 00:05:46,570
“If we can land on the moon and return to
Earth safely, if nations can join together

74
00:05:46,570 --> 00:05:52,370
and build an enormous, incredibly capable
research facility in orbit, we can by working

75
00:05:52,370 --> 00:06:16,020
together solve the problems that we all face,
including the elimination of cancer.”

76
00:06:16,020 --> 00:06:19,790
My name is Clayton Turner. I’m Chief Engineer
at NASA Langley Research Center.

77
00:06:19,790 --> 00:06:24,560
I am responsible for the engineering excellence
of all of our projects and activities here

78
00:06:24,560 --> 00:06:30,550
at the center and also for promoting the disciplines
across the engineering directorate. So diversity

79
00:06:30,550 --> 00:06:36,710
for me is bringing in fresh thought and ideas.
The more fresh thought from different perspectives

80
00:06:36,710 --> 00:06:41,320
you can bring to a problem, the more solutions
you can have to that problem.

81
00:06:41,320 --> 00:06:46,070
We have many challenges across the Nation
and those are best solved with a diverse set

82
00:06:46,070 --> 00:06:51,639
of thought. If we get stuck in one mind set
or one set of backgrounds to solve a problem,

83
00:06:51,639 --> 00:06:56,890
we may try to do the same solutions over and
over, and a new set of ideas may come in for

84
00:06:56,890 --> 00:07:02,720
something we've never thought of before.
Here at NASA we see that a lot because we

85
00:07:02,720 --> 00:07:07,300
do some of the really challenging things;
we take on some of the most challenging problems,

86
00:07:07,300 --> 00:07:11,660
and the solutions aren't going to be something
you can find in a book; they aren't going

87
00:07:11,660 --> 00:07:15,430
to be something you can find with two or three
really smart people getting together and working

88
00:07:15,430 --> 00:07:17,879
through it.
You need a diverse team that are bringing

89
00:07:17,879 --> 00:07:26,389
in ideas from engineering, business development,
education, science, from across a background.

90
00:07:26,389 --> 00:07:31,600
In my current job as Chief Engineer, I'm
not a supervisor for anyone. All of my work

91
00:07:31,600 --> 00:07:35,690
and everything I get done is through influence,
and part of that influence is understanding

92
00:07:35,690 --> 00:07:40,669
what the various parties want to do and trying
to find a consensus or trying to find a technical

93
00:07:40,669 --> 00:07:44,759
agreement that still may have a dissent, but
something that we can agree - this is the

94
00:07:44,759 --> 00:07:51,460
right technical way to go.
NASA's Associate Administrator for Science,

95
00:07:51,460 --> 00:07:55,780
John Grunsfeld, donned his astronaut flight
jacket for a luncheon in his honor at the

96
00:07:55,780 --> 00:08:00,770
National Geographic Society in Washington.
The five-time shuttle astronaut returned a

97
00:08:00,770 --> 00:08:07,020
National Geographic Society flag he'd brought
with him on STS-125, NASA's final mission

98
00:08:07,020 --> 00:08:10,919
to service the Hubble Space Telescope.
"As I would go on my expeditions around

99
00:08:10,919 --> 00:08:15,050
the world to climb high mountains I would
take a flag with me I thought, 'wouldn't

100
00:08:15,050 --> 00:08:19,940
it be appropriate – this the last Hubble
Servicing Mission – going to the world's

101
00:08:19,940 --> 00:08:23,550
greatest telescope, to bring a flag of National
Geographic's that inspired me."

102
00:08:23,550 --> 00:08:28,479
Grunsfeld, who earned the nickname, "Hubble
Repairman" for flying three Hubble servicing

103
00:08:28,479 --> 00:08:34,890
missions, is the last human to touch the telescope.
National Geographic, one of the largest non-profit

104
00:08:34,890 --> 00:08:39,840
scientific and educational institutions in
the world, presented Grunsfeld with an engraved

105
00:08:39,840 --> 00:08:46,350
copy of “Hubble: Imaging Space and Time,”
a Society-published book for which he’d

106
00:08:46,350 --> 00:08:55,300
written the forward.
“3-2-1 ignition and liftoff Discovery now

107
00:08:55,300 --> 00:08:58,820
on its way to service NASA’s Hubble Space
Telescope.”

108
00:08:58,820 --> 00:09:05,440
On February 11, 1997, Space Shuttle Discovery
lit up the pre-dawn sky at the Kennedy Space

109
00:09:05,440 --> 00:09:11,960
Center to begin STS-82, the second planned
servicing mission to the Hubble Space Telescope.

110
00:09:11,960 --> 00:09:17,170
During the almost 10-day mission, Discovery’s
crew upgraded Hubble with new imaging devices

111
00:09:17,170 --> 00:09:22,770
– including the Space Telescope Imaging
Spectrograph, or STIS – an instrument designed

112
00:09:22,770 --> 00:09:29,340
to seek out super-massive black holes, and
NICMOS and The Near Infrared Camera and Multi-Object

113
00:09:29,340 --> 00:09:37,850
Spectrometer, which astronomers would use
to capture near-infrared views of the universe.

114
00:09:37,850 --> 00:09:42,560
Additional Day of Remembrance tributes to
those members of the NASA family who've

115
00:09:42,560 --> 00:09:46,420
given their lives for exploration and discovery.

116
00:09:46,420 --> 00:09:51,500
Johnson Space Center Director Ellen Ochoa,
astronauts and other NASA employees joined

117
00:09:51,500 --> 00:09:56,760
the Sabine County Columbia Memorial Committee
and the Patricia Huffman Smith NASA Museum

118
00:09:56,760 --> 00:10:01,060
in Hemphill, Texas, on February first for
a tribute to STS-107.

119
00:10:01,060 --> 00:10:06,690
Ten years ago to the day, the mission's
seven astronauts died when space shuttle Columbia

120
00:10:06,690 --> 00:10:12,190
broke apart over East Texas 16 minutes before
its scheduled landing at the Kennedy Space

121
00:10:12,190 --> 00:10:17,340
Center. Local citizens and personnel from
more than 120 federal, state and regional

122
00:10:17,340 --> 00:10:22,670
agencies and organizations worked together
under challenging conditions for three months

123

00:10:22,670 --> 00:10:27,810
to recover Columbia debris and evidence that
led to the cause of the accident.

124
00:10:27,810 --> 00:10:33,970
And, following a public ceremony at the Ames
Research Center in honor of the Apollo 1,

125
00:10:33,970 --> 00:10:39,290
Challenger and Columbia crews, an exhibit
was unveiled in tribute to STS-107 Mission

126
00:10:39,290 --> 00:10:45,140
Specialist Kalpana Chawla. Chawla worked at
Ames for six years before joining NASA's

127
00:10:45,140 --> 00:10:51,390
astronaut corps. Donated to NASA by her family,
the exhibit contains personal belongings,

128
00:10:51,390 --> 00:10:54,490
awards and other items from her time in Mountain
View.

129
00:10:54,490 --> 00:11:00,570
"We have items that she used and she wore,
including her Congressional Medal of Honor

130
00:11:00,570 --> 00:11:05,400
that was given to her.\h\hAnd now we have
to remind us, and the future generations,

131
00:11:05,400 --> 00:11:11,640
the sacrifice that she made.\h\hThis is really
a true treasure for us to have here at Ames

132
00:11:11,640 --> 00:11:16,040
Research Center."
And that's This Week @NASA.

133

00:11:16,040 --> 00:11:21,400
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