



1  
00:00:07,029 --> 00:00:13,430  
This Week at NASA...

2  
00:00:13,430 --> 00:00:23,710  
NASA's Landsat Data Continuity Mission satellite  
was successfully launched from California's

3  
00:00:23,710 --> 00:00:30,099  
Vandenberg Air Force Base on Monday. LDCM,  
a joint NASA and U.S. Geological Survey mission,

4  
00:00:30,099 --> 00:00:35,920  
is the eighth satellite in the Landsat series,  
which began in 1972. The mission extends the

5  
00:00:35,920 --> 00:00:41,379  
longest continuous data record of Earth's  
surface as viewed from space – data critical

6  
00:00:41,379 --> 00:00:48,019  
in areas such as energy and water management,  
forest monitoring, environmental health, urban

7  
00:00:48,019 --> 00:00:54,230  
planning, disaster recovery and agriculture.

8  
00:00:54,230 --> 00:00:59,410  
Also at Vandenberg Air Force Base for Landsat  
launch activities – NASA followers on Twitter

9  
00:00:59,410 --> 00:01:04,390  
and other social media. The group heard details  
about the mission from the Landsat science

10  
00:01:04,390 --> 00:01:10,409  
and engineering teams and received behind-the-scenes  
tours of Vandenberg Air Force Base facilities.

11  
00:01:10,409 --> 00:01:16,770

A NASA Social is an informal meeting of people who use social networking sites such as Twitter,

12  
00:01:16,770 --> 00:01:22,780  
Facebook and Google+. Participants at these events are provided a unique in-person experience

13  
00:01:22,780 --> 00:01:27,119  
by NASA, which they are encouraged to share with others through their favorite social

14  
00:01:27,119 --> 00:01:34,100  
network

15  
00:01:34,100 --> 00:01:38,630  
An unpiloted Russian resupply ship launched to the International Space Station from the

16  
00:01:38,630 --> 00:01:46,479  
Baikonur Cosmodrome in Kazakhstan at 9:41 a.m. EST on February 11. The Progress cargo

17  
00:01:46,479 --> 00:01:52,299  
craft was loaded with almost three tons of food, fuel, supplies and experiment hardware

18  
00:01:52,299 --> 00:01:58,100  
for the six crew members on the orbiting complex. The new Progress vehicle launched on an accelerated

19  
00:01:58,100 --> 00:02:03,740  
rendezvous to the station, becoming the third consecutive Progress craft to test this fast-track

20  
00:02:03,740 --> 00:02:06,679  
approach of making a trip to the ISS.

21  
00:02:06,679 --> 00:02:16,090  
It won't be long before an asteroid named 2012 DA-14 makes its extreme flyby of our

22  
00:02:16,090 --> 00:02:22,330  
planet. About half the size of a football  
field, DA14 should come within 17, 200 miles

23  
00:02:22,330 --> 00:02:27,780  
of Earth on February 15. Although the space  
rock will pass within the orbit of many of

24  
00:02:27,780 --> 00:02:33,810  
our geosynchronous satellites, scientists  
in NASA's Near-Earth Object Program Office

25  
00:02:33,810 --> 00:02:38,239  
say there's no danger of a collision. Still,  
they're keeping a close eye on DA14.

26  
00:02:38,239 --> 00:02:42,740  
"Even though it's getting very close it  
won't reach naked eye visibility, but if

27  
00:02:42,740 --> 00:02:46,370  
you have a pair of binoculars and you know  
where to look – you happen to be located

28  
00:02:46,370 --> 00:02:54,040  
in eastern Europe, Asia or Australia you can  
observe it going from the South to the North

29  
00:02:54,040 --> 00:02:57,069  
passing closest approach over Indonesia."

30  
00:02:57,069 --> 00:03:04,410  
Closest approach is estimated for 2:24 p.m.  
EST Friday. NASA TV's live coverage from

31  
00:03:04,410 --> 00:03:11,019  
the Jet Propulsion Lab in Pasadena begins  
at 2 p.m. EST. Later that afternoon, NASA

32  
00:03:11,019 --> 00:03:16,490  
TV will carry live views of the asteroid that  
may be available from observatories around

33  
00:03:16,490 --> 00:03:22,549  
the world as DA14 makes its exit from our  
galactic neighborhood.

34  
00:03:22,549 --> 00:03:29,470  
NASA's Deep Impact spacecraft has acquired  
its first images of a comet believed to have

35  
00:03:29,470 --> 00:03:36,810  
quite the bright future. The images of C/2012  
S1, better known as comet ISON, were taken

36  
00:03:36,810 --> 00:03:43,060  
over 36 hours in mid-January by Deep Impact's  
Medium-Resolution Imager from a distance of

37  
00:03:43,060 --> 00:03:49,909  
493 million miles. Many scientists anticipate  
that comet ISON will put on a brilliant show

38  
00:03:49,909 --> 00:03:55,040  
this fall when the space-borne conglomeration  
of dust and ice passes through the inner solar

39  
00:03:55,040 --> 00:03:58,170  
system.

40  
00:03:58,170 --> 00:04:03,189  
The core satellite of the Global Precipitation  
Measurement mission, GPM, has successfully

41  
00:04:03,189 --> 00:04:07,939  
completed rigorous testing at the Goddard  
Space Flight Center. The satellite spent more

42

00:04:07,939 --> 00:04:13,680

than two months in a thermal vacuum chamber exposed to extreme heat and cold to simulate

43

00:04:13,680 --> 00:04:16,440

the harsh conditions of space.

44

00:04:16,440 --> 00:04:21,810

GPM is an international network of satellites that will provide global data about rain and

45

00:04:21,810 --> 00:04:27,810

snowfall every 3 hours. Information collected by GPM, the first satellite designed to measure

46

00:04:27,810 --> 00:04:34,180

snowfall from space, will expand our understanding of Earth's water and energy cycles and improve

47

00:04:34,180 --> 00:04:39,960

the ability of weather forecasting models to predict extreme storms. The GPM Core satellite

48

00:04:39,960 --> 00:04:41,621

is scheduled for launch in early 2014.

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00:04:41,621 --> 00:04:43,650

How to use a pair of telescopes transferred to NASA from another Federal agency was the

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00:04:43,650 --> 00:04:45,581

focus of a two-day national workshop at the Marshall Space Flight Center. More than 30

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00:04:45,581 --> 00:04:46,581

presentations came from industry, academia and government about potential uses for the

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00:04:46,581 --> 00:04:47,581

two, flight-qualified telescopes given NASA

by the National Reconnaissance Office. NASA's

53  
00:04:47,581 --> 00:04:48,581  
Science Mission Directorate sponsored the workshop as part of its Study on Applications

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00:04:48,581 --> 00:04:49,581  
for Large Space Optics, or SALSO. The SALSO team will down-select up to six concepts to

55  
00:04:49,581 --> 00:04:50,581  
be developed into high-level mission concepts by the NASA design centers at the Goddard

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00:04:50,581 --> 00:04:51,581  
Space Flight Center and the Jet Propulsion Laboratory. These mission concepts will be

57  
00:04:51,581 --> 00:04:52,581  
presented to the NASA administrator in May. More than 50 journalists and social media

58  
00:04:52,581 --> 00:04:53,581  
followers visiting the Dryden Flight Research Center and its Palmdale operations facility

59  
00:04:53,581 --> 00:04:58,280  
learned how a small fleet of highly-specialized aircraft supports NASA's Earth science and

60  
00:04:58,280 --> 00:05:00,030  
environmental mission.

61  
00:05:00,030 --> 00:05:05,110  
The Airborne Science Showcase highlighted the specially-modified aircrafts' cutting-edge

62  
00:05:05,110 --> 00:05:10,250  
instrumentation used by numerous NASA missions to monitor and collect crucial data about

63

00:05:10,250 --> 00:05:11,270

our home planet.

64

00:05:11,270 --> 00:05:16,389

“With what we do in the Airborne Science Program – really is enmeshed and critical

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00:05:16,389 --> 00:05:20,710

with what we do with our space missions as well. We’re NASA, we launch rockets. But

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00:05:20,710 --> 00:05:26,100

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

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00:05:26,100 --> 00:05:29,770

main goal is to try to advance our understanding of the science itself.”

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00:05:29,770 --> 00:05:36,509

Among the NASA missions highlighted were DISCOVER-AQ currently measuring air quality over California's

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00:05:36,509 --> 00:05:42,770

San Joaquin Valley; the PODEX mission evaluating instrumentation for a future satellite; and

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00:05:42,770 --> 00:05:48,470

the Airborne Tropical Tropopause Experiment, a multi-year investigation of how the chemistry

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00:05:48,470 --> 00:05:53,660

of the upper regions of Earth’s atmosphere is contributing to climate change.

72

00:05:53,660 --> 00:05:58,410

Dryden’s facilities are joined by the Johnson Space Center, the Wallops Flight Facility,

73  
00:05:58,410 --> 00:06:06,289  
and the Langley Research Center in serving  
as home to these unique and valuable craft.

74  
00:06:06,289 --> 00:06:11,110  
This suborbital rocket successfully launched  
from the Wallops Flight Facility is helping

75  
00:06:11,110 --> 00:06:17,139  
scientists determine how best to create lithium  
vapor trails for studying phenomena in the

76  
00:06:17,139 --> 00:06:18,849  
ionosphere.

77  
00:06:18,849 --> 00:06:24,099  
The two red-colored lithium vapor trails produced  
by the flight posed no threat to the public

78  
00:06:24,099 --> 00:06:29,040  
and were reportedly seen from as far away  
as the Outer Banks, North Carolina, eastern

79  
00:06:29,040 --> 00:06:32,180  
Pennsylvania and New Jersey.

80  
00:06:32,180 --> 00:06:37,270  
Lithium trails will be used in two missions  
this year. The first is scheduled for April

81  
00:06:37,270 --> 00:06:45,380  
from Kwajalein Atoll in the central Pacific  
Ocean; the second is set for June at Wallops.

82  
00:06:45,380 --> 00:06:50,991  
NASA astronaut Ron Garan was a keynote speaker  
at the Susan G. Komen Global Women's Cancer

83  
00:06:50,991 --> 00:06:57,340

Summit in Washington. A veteran of two spaceflights, most recently on Expedition 27/28 aboard the

84

00:06:57,340 --> 00:07:02,759

International Space Station, Garan now works on NASA's Open Government Initiative to

85

00:07:02,759 --> 00:07:07,330

develop innovative collaborations between government, industry and citizens around the

86

00:07:07,330 --> 00:07:09,660

world to benefit all humankind.

87

00:07:09,660 --> 00:07:15,130

"If we can land on the moon and return to Earth safely, if nations can join together

88

00:07:15,130 --> 00:07:20,930

and build an enormous, incredibly capable research facility in orbit, we can by working

89

00:07:20,930 --> 00:07:44,580

together solve the problems that we all face, including the elimination of cancer."

90

00:07:44,580 --> 00:07:48,340

My name is Clayton Turner. I'm Chief Engineer at NASA Langley Research Center.

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00:07:48,340 --> 00:07:53,110

I am responsible for the engineering excellence of all of our projects and activities here

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00:07:53,110 --> 00:07:59,110

at the center and also for promoting the disciplines across the engineering directorate. So diversity

93

00:07:59,110 --> 00:08:05,259

for me is bringing in fresh thought and ideas.

The more fresh thought from different perspectives

94  
00:08:05,259 --> 00:08:09,879  
you can bring to a problem, the more solutions  
you can have to that problem.

95  
00:08:09,879 --> 00:08:14,620  
We have many challenges across the Nation  
and those are best solved with a diverse set

96  
00:08:14,620 --> 00:08:20,190  
of thought. If we get stuck in one mind set  
or one set of backgrounds to solve a problem,

97  
00:08:20,190 --> 00:08:25,440  
we may try to do the same solutions over and  
over, and a new set of ideas may come in for

98  
00:08:25,440 --> 00:08:31,270  
something we've never thought of before.  
Here at NASA we see that a lot because we

99  
00:08:31,270 --> 00:08:35,860  
do some of the really challenging things;  
we take on some of the most challenging problems,

100  
00:08:35,860 --> 00:08:40,170  
and the solutions aren't going to be something  
you can find in a book; they aren't going

101  
00:08:40,170 --> 00:08:43,980  
to be something you can find with two or three  
really smart people getting together and working

102  
00:08:43,980 --> 00:08:46,420  
through it.  
You need a diverse team that are bringing

103  
00:08:46,420 --> 00:08:54,940  
in ideas from engineering, business development,

education, science, from across a background.

104

00:08:54,940 --> 00:09:00,140

In my current job as Chief Engineer, I'm not a supervisor for anyone. All of my work

105

00:09:00,140 --> 00:09:04,250

and everything I get done is through influence, and part of that influence is understanding

106

00:09:04,250 --> 00:09:09,210

what the various parties want to do and trying to find a consensus or trying to find a technical

107

00:09:09,210 --> 00:09:13,310

agreement that still may have a dissent, but something that we can agree - this is the

108

00:09:13,310 --> 00:09:20,020

right technical way to go. NASA's Associate Administrator for Science,

109

00:09:20,020 --> 00:09:24,420

John Grunsfeld, donned his astronaut flight jacket for a luncheon in his honor at the

110

00:09:24,420 --> 00:09:29,330

National Geographic Society in Washington. The five-time shuttle astronaut returned a

111

00:09:29,330 --> 00:09:35,580

National Geographic Society flag he'd brought with him on STS-125, NASA's final mission

112

00:09:35,580 --> 00:09:39,500

to service the Hubble Space Telescope. "As I would go on my expeditions around

113

00:09:39,500 --> 00:09:43,190

the world to climb high mountains I would

take a flag with me (08:07:28) (BUTT) (08:07:35ish)

114

00:09:43,190 --> 00:09:47,220

I thought, 'wouldn't it be appropriate  
– this the last Hubble Servicing Mission

115

00:09:47,220 --> 00:09:51,000

– going to the world's greatest telescope,  
to bring a flag of National Geographic's

116

00:09:51,000 --> 00:09:52,150

that inspired me." (08:07:44)

117

00:09:52,150 --> 00:09:56,610

Grunsfeld, who earned the nickname, "Hubble  
Repairman" for flying three Hubble servicing

118

00:09:56,610 --> 00:10:03,440

missions, is the last human to touch the telescope.  
National Geographic, one of the largest non-profit

119

00:10:03,440 --> 00:10:08,410

scientific and educational institutions in  
the world, presented Grunsfeld with an engraved

120

00:10:08,410 --> 00:10:14,910

copy of "Hubble: Imaging Space and Time,"  
a Society-published book for which he'd

121

00:10:14,910 --> 00:10:23,860

written the forward.  
"3-2-1 ignition and liftoff Discovery now

122

00:10:23,860 --> 00:10:27,540

on its way to service NASA's Hubble Space  
Telescope."

123

00:10:27,540 --> 00:10:34,060

On February 11, 1997, Space Shuttle Discovery  
lit up the pre-dawn sky at the Kennedy Space

124

00:10:34,060 --> 00:10:40,510

Center to begin STS-82, the second planned servicing mission to the Hubble Space Telescope.

125

00:10:40,510 --> 00:10:45,720

During the almost 10-day mission, Discovery's crew upgraded Hubble with new imaging devices

126

00:10:45,720 --> 00:10:51,330

– including the Space Telescope Imaging Spectrograph, or STIS – an instrument designed

127

00:10:51,330 --> 00:10:57,900

to seek out super-massive black holes, and NICMOS and The Near Infrared Camera and Multi-Object

128

00:10:57,900 --> 00:11:06,510

Spectrometer, which astronomers would use to capture near-infrared views of the universe.

129

00:11:06,510 --> 00:11:11,120

Additional Day of Remembrance tributes to those members of the NASA family who've

130

00:11:11,120 --> 00:11:14,970

given their lives for exploration and discovery.

131

00:11:14,970 --> 00:11:20,050

Johnson Space Center Director Ellen Ochoa, astronauts and other NASA employees joined

132

00:11:20,050 --> 00:11:25,300

the Sabine County Columbia Memorial Committee and the Patricia Huffman Smith NASA Museum

133

00:11:25,300 --> 00:11:30,500

in Hemphill, Texas, on February first for a tribute to STS-107.

134

00:11:30,500 --> 00:11:35,230

Ten years ago to the day, the mission's seven astronauts died when space shuttle Columbia

135

00:11:35,230 --> 00:11:40,730

broke apart over East Texas 16 minutes before its scheduled landing at the Kennedy Space

136

00:11:40,730 --> 00:11:45,900

Center. Local citizens and personnel from more than 120 federal, state and regional

137

00:11:45,900 --> 00:11:51,230

agencies and organizations worked together under challenging conditions for three months

138

00:11:51,230 --> 00:11:56,360

to recover Columbia debris and evidence that led to the cause of the accident.

139

00:11:56,360 --> 00:12:02,510

And, following a public ceremony at the Ames Research Center in honor of the Apollo 1,

140

00:12:02,510 --> 00:12:07,850

Challenger and Columbia crews, an exhibit was unveiled in tribute to STS-107 Mission

141

00:12:07,850 --> 00:12:13,620

Specialist Kalpana Chawla. Chawla worked at Ames for six years before joining NASA's

142

00:12:13,620 --> 00:12:19,930

astronaut corps. Donated to NASA by her family, the exhibit contains personal belongings,

143

00:12:19,930 --> 00:12:23,050

awards and other items from her time in Mountain View.

144

00:12:23,050 --> 00:12:29,040

“We have items that she used and she wore,  
including her Congressional Medal of Honor

145

00:12:29,040 --> 00:12:33,950

that was given to her.\h\hAnd now we have  
to remind us, and the future generations,

146

00:12:33,950 --> 00:12:40,190

the sacrifice that she made.\h\hThis is really  
a true treasure for us to have here at Ames

147

00:12:40,190 --> 00:12:42,210

Research Center.”

148

00:12:42,210 --> 00:12:44,590

And that’s This Week @NASA.