



Young Apprentices

1
00:00:06,080 --> 00:00:08,170
This Week at NASA...

2
00:00:08,170 --> 00:00:15,009
“Touchdown confirmed ... we’re safe on
Mars ... applause.”

3
00:00:15,009 --> 00:00:19,160
Following a daring plunge through the Martian
Atmosphere – billed as 7-minutes of Terror,

4
00:00:19,160 --> 00:00:25,170
The Mars Science Laboratory’s Curiosity
rover made a successful, on-target landing

5
00:00:25,170 --> 00:00:27,730
on the Red Planet in Gale Crater.

6
00:00:27,730 --> 00:00:32,540
Confirmation of the newest resident rover’s
safe touchdown reached the MSL flight team

7
00:00:32,540 --> 00:00:37,800
courtesy of the Mars Odyssey spacecraft which,
from its vantage point orbiting Mars, was

8
00:00:37,800 --> 00:00:40,700
able to directly communicate with Curiosity.

9
00:00:40,700 --> 00:00:46,300
In addition to NASA TV and nasa.gov, coverage
of Curiosity’s landing was available for

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00:00:46,300 --> 00:00:51,470
public viewing at various locations – including
Times Square in New York City.

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00:00:51,470 --> 00:00:57,780
“It’s a huge day for the nation, it’s

a huge day for all of our partners that have

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00:00:57,780 --> 00:01:02,280

something on Curiosity and it's a huge day for the American people.

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00:01:02,280 --> 00:01:06,370

As I told people as we went around earlier tonight, everybody in the morning should be

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00:01:06,370 --> 00:01:10,600

sticking their chests out, saying, 'that's my rover on Mars' because it belongs to

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00:01:10,600 --> 00:01:11,600

all of us."

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00:01:11,600 --> 00:01:16,300

"For us being able to land something in larger and larger measures with this capability

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00:01:16,300 --> 00:01:18,610

will come the ability to land humans."

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00:01:18,610 --> 00:01:24,690

"Many new technologies had to work in perfect succession and perfect synchronization for

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00:01:24,690 --> 00:01:25,690

this to happen.

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00:01:25,690 --> 00:01:32,380

It was an incredible performance by the Jet Propulsion Lab, by NASA, by the teams around

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00:01:32,380 --> 00:01:36,450

the country that had contributed to this and indeed partners from around the world."

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00:01:36,450 --> 00:01:40,870

Curiosity is scheduled to conduct a two-year mission to investigate the most intriguing

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00:01:40,870 --> 00:01:46,580

places on Mars in an effort to determine if microbial life is possible on the planet.

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00:01:46,580 --> 00:01:51,500

We'll have more on Curiosity's landing with public reaction from NASA Centers on

25

00:01:51,500 --> 00:02:00,990

the next edition of This Week At NASA.

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00:02:00,990 --> 00:02:05,870

Engineers at the Johnson Space Center have conducted a successful 70-second test firing

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00:02:05,870 --> 00:02:08,479

of the Project Morpheus Lander.

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00:02:08,479 --> 00:02:14,620

Morpheus is a vertical test bed vehicle demonstrating new green propellant propulsion systems and

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00:02:14,620 --> 00:02:21,420

ALHAT - Autonomous Landing and Hazard Avoidance Technology This final test at JSC had the

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00:02:21,420 --> 00:02:27,190

vehicle tethered to a crane and included a 60-second hover test, with a 4-second ascent

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00:02:27,190 --> 00:02:29,370

and a 6-second descent.

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00:02:29,370 --> 00:02:33,340

The lander was later shipped to the Kennedy Space Center, where it's to undergo its

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00:02:33,340 --> 00:02:37,510

first free-flight testing.

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00:02:37,510 --> 00:02:46,480

An unpiloted Russian resupply ship, loaded with almost three tons of food, fuel and supplies,

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00:02:46,480 --> 00:02:51,459

linked up to the International Space Station just six hours after its launch from the Baikonur

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00:02:51,459 --> 00:02:53,849

Cosmodrome in Kazakhstan.

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00:02:53,849 --> 00:02:58,990

Additional engine firings early in its mission were a test to expedite the Progress' journey

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00:02:58,990 --> 00:03:03,150

to the orbiting laboratory, which normally takes about two days.

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00:03:03,150 --> 00:03:09,060

After analysis by Russian engineers and managers, the technique could be used to similarly shorten

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00:03:09,060 --> 00:03:14,180

a Soyuz vehicle's route to the station, thereby improving crew comfort as well as

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00:03:14,180 --> 00:03:18,940

extending the life of the return vehicle while docked to the ISS.

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00:03:18,940 --> 00:03:23,640

"You are Olympians – you're the best of the best.

43

00:03:23,640 --> 00:03:27,050

You are the ones who help us reach for new heights.”

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00:03:27,050 --> 00:03:32,640

Deputy Administrator Lori Garver led the 2012 NASA Honor Awards recognizing those in the

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00:03:32,640 --> 00:03:40,709

agency whose outstanding efforts in the past year have helped NASA reach new milestones.

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00:03:40,709 --> 00:03:47,840

A new video spotlighting NASA’s Curiosity Rover was featured during a performance of

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00:03:47,840 --> 00:03:53,319

the National Symphony Orchestra at Wolf Trap National Park for the Performing Arts, outside

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00:03:53,319 --> 00:03:54,319

Washington, D.C.

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00:03:54,319 --> 00:03:59,621

The video, from director Duncan Copp, was accompanied by a musical selection from the

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00:03:59,621 --> 00:04:01,600

late French composer Georges Bizet.

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00:04:01,600 --> 00:04:06,690

The NSO was under the direction of conductor Emil de Cou.

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00:04:06,690 --> 00:04:10,250

NASA Administrator Charlie Bolden was on hand for the performance.

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00:04:10,250 --> 00:04:15,310

“This mission will not only help unlock

the mysteries of Mars, it's a precursor

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00:04:15,310 --> 00:04:24,199
to achieving President Obama's goal of sending humans to the Red Planet by the 2030's."

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00:04:24,199 --> 00:04:28,960
The Curiosity visuals were a portion of NASA imagery featured as part of Gustav Holst's

56
00:04:28,960 --> 00:04:33,580
"The Planets", the evening's main program.

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00:04:33,580 --> 00:04:42,659
The 2012 NASA headquarters Take Your Children to Work Day gave younger NASA family members

58
00:04:42,659 --> 00:04:48,440
a peek inside the agency and its diversity of people and professions.

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00:04:48,440 --> 00:04:53,460
Hands-on activities also represented tasks performed in some of the varied and exciting

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00:04:53,460 --> 00:04:58,720
careers at NASA.

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00:04:58,720 --> 00:05:02,690
This summer has also been a learning experience at Headquarters for a group of high school

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00:05:02,690 --> 00:05:03,690
students.

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00:05:03,690 --> 00:05:08,689
Administrator Charlie Bolden spoke to participants of the 2012 NASA Engineering Apprenticeship

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00:05:08,689 --> 00:05:09,689

Program.

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00:05:09,689 --> 00:05:15,750

NEAP targets high school sophomores, juniors and seniors interested in science, technology,

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00:05:15,750 --> 00:05:18,460

engineering and math, the STEM careers.

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00:05:18,460 --> 00:05:23,159

Under the eight-week program, students work on a project under the guidance of a volunteer

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00:05:23,159 --> 00:05:24,319

mentor.

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00:05:24,319 --> 00:05:28,249

NASA has hosted more than 200 students since the program began in 1995.

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00:05:28,249 --> 00:05:35,259

Many NEAP students have gone on to top colleges and positions within NASA and other industry

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00:05:35,259 --> 00:05:37,189

organizations.

72

00:05:37,189 --> 00:05:44,139

Discovery, Endeavour and Atlantis came home from space for the last time in 2011, touching

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00:05:44,139 --> 00:05:47,069

down at the Shuttle Landing Facility at the Kennedy Space Center.

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00:05:47,069 --> 00:05:48,069

"Mission complete, Houston.

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00:05:48,069 --> 00:05:53,389

After serving the world for over 30 years,
the space shuttle's earned its place in history,

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00:05:53,389 --> 00:05:58,129

and it's come to a final stop."

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00:05:58,129 --> 00:06:03,619

After each final landing, Kennedy's Landing
Operations Team used a temporary spray paint

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00:06:03,619 --> 00:06:05,400

to note where the wheels stopped.

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00:06:05,400 --> 00:06:06,749

But NASA wanted a long-lasting way to preserve
this part of shuttle history.

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00:06:06,749 --> 00:06:12,190

Local artist Chad Stout, of C Spray Glass
Blasting, designed, manufactured and installed

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00:06:12,190 --> 00:06:14,110

the markers.

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00:06:14,110 --> 00:06:19,339

Wearing safety gear, he etched the final design
in "Absolute Black" granite, an extremely

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00:06:19,339 --> 00:06:20,639

durable stone.

84

00:06:20,639 --> 00:06:26,089

The pavers are extra thick and weigh at least
100 pounds each, but he installed them by

85

00:06:26,089 --> 00:06:27,249

hand.

86

00:06:27,249 --> 00:06:32,020

All three pavers are aligned with the etchings on the runway centerline... and, like the

87

00:06:32,020 --> 00:06:40,559

shuttles' legacy, will stand the test of time.

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00:06:40,559 --> 00:06:45,029

NASA has donated a piece of space shuttle history to the Coca-Cola Space Science Center

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00:06:45,029 --> 00:06:49,099

at Columbus State University in Georgia.

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00:06:49,099 --> 00:06:55,719

The science center has taken possession of main engine nozzle number 5002 (5-thousand-two)

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00:06:55,719 --> 00:07:00,580

from the Marshall Space Flight Center's Propulsion Research Development Lab.

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00:07:00,580 --> 00:07:05,199

This particular nozzle has flown to space numerous times on four different shuttles

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00:07:05,199 --> 00:07:11,669

– including the STS-60 mission in February 1994.

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00:07:11,669 --> 00:07:16,379

Commanding space shuttle Discovery for that flight – then-astronaut Charlie Bolden – who

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00:07:16,379 --> 00:07:19,439

is now, of course, NASA administrator.

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00:07:19,439 --> 00:07:23,849

The NASA artifact will be displayed at the Coca-Cola Science Center to inspire the next

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00:07:23,849 --> 00:07:29,009

generation of scientists and engineers.

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00:07:29,009 --> 00:07:34,439

Fifteen years ago on August 7, 1997, Space Shuttle Discovery launched from Kennedy Space

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00:07:34,439 --> 00:07:35,960

Center on STS-85.

100

00:07:35,960 --> 00:07:43,569

Her crew, Commander Curtis Brown, Pilot Kent Rominger, Mission Specialists Jan Davis, Bob

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00:07:43,569 --> 00:07:48,039

Curbeam and Steve Robinson, and Payload Specialist Bjarni Tryggvason (Bee-YARN'-knee TRIG'-vuh-son)

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00:07:48,039 --> 00:07:53,219

of the Canadian Space Agency, worked with a complement of payloads focused on "Mission

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00:07:53,219 --> 00:07:58,050

to Planet Earth" objectives as well as the then-upcoming assembly of the International

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00:07:58,050 --> 00:07:59,430

Space Station.

105

00:07:59,430 --> 00:08:04,319

Among them, the Japanese Manipulator Flight Development, MFD, to evaluate the robotic

106

00:08:04,319 --> 00:08:10,729

Small Fine Arm that later became part of the Japanese Kibo Laboratory on the ISS.

107

00:08:10,729 --> 00:08:23,209

Discovery and crew returned to Earth 11 days later– landing safely at KSC on

108

00:08:23,209 --> 00:08:24,789

August 19.

109

00:08:24,789 --> 00:08:32,890

Five years ago on August 8, 2007, Space Shuttle Endeavour launched from KSC on STS-118 – the

110

00:08:32,890 --> 00:08:36,649

twenty-second shuttle flight to the International Space Station.

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00:08:36,649 --> 00:08:42,030

Commander Scott Kelly, Pilot Charlie Hobaugh, and Mission Specialists Rick Mastracchio,

112

00:08:42,030 --> 00:08:47,830

Dave Williams of the Canadian Space Agency, Barbara Morgan, Tracy Caldwell and Al Drew

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00:08:47,830 --> 00:08:53,720

continued construction of the ISS by delivering S-5, the station's third starboard truss

114

00:08:53,720 --> 00:08:54,720

segment.

115

00:08:54,720 --> 00:08:59,550

The crew also replaced a defective gyroscope, and installed an external storage platform.

116

00:08:59,550 --> 00:09:04,140

They closed out the mission 12 days later when Endeavour touched down on the runway

117

00:09:04,140 --> 00:09:07,700

at KSC.

118

00:09:07,700 --> 00:09:15,620

And

August 5th marks the one year anniversary

119

00:09:15,620 --> 00:09:20,760

of the launch of the Juno spacecraft atop
an Atlas V rocket from Cape Canaveral Air

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00:09:20,760 --> 00:09:22,400

Force Station in Florida.

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00:09:22,400 --> 00:09:27,620

The launch marked the start of Juno's five-year
journey to Jupiter to study the planet's

122

00:09:27,620 --> 00:09:31,030

structure and decipher its history.

123

00:09:31,030 --> 00:09:33,140

And that's This Week @NASA.

124

00:09:33,140 --> 00:09:37,680

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