



1
00:00:07,040 --> 00:00:14,480
This Week at NASA...

2
00:00:14,480 --> 00:00:20,110
NASA commercial partner Orbital Sciences successfully conducted an engine test of its Antares rocket

3
00:00:20,110 --> 00:00:24,880
at the Wallops Flight Facility.
The rocket's dual AJ26 engines were fired

4
00:00:24,880 --> 00:00:30,150
for 29 seconds while the rocket was bolted down on the Mid-Atlantic Regional Spaceport

5
00:00:30,150 --> 00:00:36,710
(MARS) Pad-0A. The test demonstrated the readiness of the rocket's first stage and launch pad

6
00:00:36,710 --> 00:00:42,320
fueling systems to support upcoming test flights.
Orbital is building and testing Antares and

7
00:00:42,320 --> 00:00:48,500
its Cygnus cargo spacecraft under NASA's Commercial Orbital Transportation Services, or COTS,

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00:00:48,500 --> 00:00:52,850
program. Antares and Cygnus are scheduled for a test flight to the International Space

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00:00:52,850 --> 00:00:57,180
Station later this year.

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00:00:57,180 --> 00:01:01,980
This Friday, March first, is the targeted launch date for the next cargo resupply flight

11
00:01:01,980 --> 00:01:07,371

to the International Space Station. Liftoff of the SpaceX Dragon spacecraft's second

12
00:01:07,371 --> 00:01:12,790
resupply mission to the ISS is scheduled for 10:10 a.m. Eastern from Cape Canaveral Air

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00:01:12,790 --> 00:01:16,850
Force Station in Florida.
Dragon will be loaded with about six tons

14
00:01:16,850 --> 00:01:22,420
of crew supplies and materials for science research. Upon the unpiloted craft's arrival

15
00:01:22,420 --> 00:01:27,460
at the orbiting laboratory, Expedition 34
Commander Kevin Ford and Flight Engineer Tom

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00:01:27,460 --> 00:01:33,260
Marshburn of NASA will use the station's robotic arm to grapple Dragon and attach it

17
00:01:33,260 --> 00:01:36,780
to the Earth-facing port of the station's Harmony module.

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00:01:36,780 --> 00:01:41,810
When it splashes down in the Pacific Ocean off Baja California later next month, Dragon

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00:01:41,810 --> 00:01:49,040
will be carrying more than 2,300 pounds of experiment samples and equipment.

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00:01:49,040 --> 00:01:53,460
Final assembly and inspection of the Seedling Growth-1 Experiment took place at NASA Ames

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00:01:53,460 --> 00:01:58,610

Research Center in preparation for transport
aboard SpaceX-2 Dragon to the International

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00:01:58,610 --> 00:02:00,689

Space Station.

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00:02:00,689 --> 00:02:05,170

Payload Integration and Engineering Managers
working with the European Space Agency or

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00:02:05,170 --> 00:02:10,390

ESA came to Ames to perform the final steps
of the process before the experiment containers

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00:02:10,390 --> 00:02:12,790

are sent for launch.

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00:02:12,790 --> 00:02:17,840

Designed and built at NASA Ames, the enclosures
are completely self-contained, providing air,

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00:02:17,840 --> 00:02:21,750

water, temperature control and light for the
seeds.

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00:02:21,750 --> 00:02:26,010

Once on the Space Station, the enclosures
are mounted in a centrifuge to test the effects

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00:02:26,010 --> 00:02:30,739

of micro- and low-gravity environments on
the growth of the seeds.

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00:02:30,739 --> 00:02:36,120

Seedling Growth-1 is one of several experiments
being conducted by NASA and ESA to determine

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00:02:36,120 --> 00:02:40,659

if specific plants can grow well enough in
microgravity to provide astronauts with a

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00:02:40,659 --> 00:02:45,519

complete and sustainable solution for long duration space missions.

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00:02:45,519 --> 00:02:52,900

Hi, I'm Louise Jandura, Sample System chief engineer and I'm here with your Curiosity

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00:02:52,900 --> 00:02:54,579

rover report.

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00:02:54,579 --> 00:02:58,400

This was a great week for Curiosity. We got to see something we've been waiting for

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00:02:58,400 --> 00:03:03,550

quite some time: sample in the scoop confirming that our first drill on Mars collected as

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00:03:03,550 --> 00:03:04,959

we had expected.

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00:03:04,959 --> 00:03:08,359

This was an important event as this is the first time the drill has been used on Mars

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00:03:08,359 --> 00:03:11,890

to collect sample for analysis by instruments on the rover.

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00:03:11,890 --> 00:03:17,069

We use these computer-generated images in different volumes to help us visually identify

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00:03:17,069 --> 00:03:22,480

how much we've collected. We were able to estimate that we collected about 14 cubic

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00:03:22,480 --> 00:03:27,370

centimeters of sample, or about a tablespoon, and this matched our expectation of what we

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00:03:27,370 --> 00:03:30,079

would see in the scoop when we got to this point.

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00:03:30,079 --> 00:03:34,709

Our drilling capability gives us the ability to get inside this rock. The first thing you

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00:03:34,709 --> 00:03:38,779

notice about the material is that it's a different color. Gray not the reddish orange

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00:03:38,779 --> 00:03:44,449

color all around us. That reddish orange color is a sign of an iron oxidation. A kind of

47

00:03:44,449 --> 00:03:47,890

rusting process that's occurred all around Mars.

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00:03:47,890 --> 00:03:52,430

Since we've been at Yellowknife Bay, Curiosity has done more than a 100 MAHLI images and

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00:03:52,430 --> 00:03:57,339

more than 12,000 laser shots. You can see the telltale laser grid patterns from the

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00:03:57,339 --> 00:04:02,189

Chem-Cam in this image. Additionally, you can see a fine grain structure of this rock

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00:04:02,189 --> 00:04:05,279

indicating either a mudstone or a siltstone.

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00:04:05,279 --> 00:04:09,540

The next steps for the team are to finish processing the sample with Chimera and then

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00:04:09,540 --> 00:04:15,079
put small portions into the SAM and Chemin instruments for analysis of chemistry and

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00:04:15,079 --> 00:04:16,079
mineralogy.

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00:04:16,079 --> 00:04:20,600
This has been your Curiosity rover report check back soon for more updates.

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00:04:20,600 --> 00:04:27,340
"Hi, my name is Ray. This is really cool. (laughter)."

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00:04:27,340 --> 00:04:32,730
Ray Richman from southern Maine was one of about 150 guests of NASA, most of them users

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00:04:32,730 --> 00:04:37,690
of Twitter, Facebook, Google-Plus and other social media, who gathered at Headquarters

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00:04:37,690 --> 00:04:42,370
for a Social about the ground-breaking research taking place daily on the International Space

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00:04:42,370 --> 00:04:47,190
Station. Hundreds of experiments are being conducted in the station's unique microgravity

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00:04:47,190 --> 00:04:52,570
environment that can benefit humanity while increasing our understanding of how humans

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00:04:52,570 --> 00:04:55,900
can safely work and live in space for long

periods.

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00:04:55,900 --> 00:05:01,310

Bill Gerstenmaier, associate administrator for human exploration and operations, was

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00:05:01,310 --> 00:05:03,200

one of several featured NASA speakers ...

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00:05:03,200 --> 00:05:07,120

"We're in the process of starting to think about how much we can extend station, the

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00:05:07,120 --> 00:05:12,010

physical hardware is probably good till 2028 or so. So we're trying to figure out when

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00:05:12,010 --> 00:05:15,280

the right time to start talking about that is and start moving forward."

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00:05:15,280 --> 00:05:21,530

Marshall Porterfield is director of space life and physical sciences research and applications;

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00:05:21,530 --> 00:05:23,580

Tara Ruttley is an ISS scientist.

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00:05:23,580 --> 00:05:28,230

"There is nothing like it even on Earth. There's no where that you would find any

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00:05:28,230 --> 00:05:33,040

kind of laboratory that would share material sciences facilities with life science facilities

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00:05:33,040 --> 00:05:35,140

with plants and humans."

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00:05:35,140 --> 00:05:41,370

"I tell students that in order to do what I do for a living you need to know math, you

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00:05:41,370 --> 00:05:46,240

need to know science, you need to know engineering, because you have to take care of the machines

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00:05:46,240 --> 00:05:50,440

that allows you to live in the environment that you're in and this frontier happens

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00:05:50,440 --> 00:05:51,550

to be space."

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00:05:51,550 --> 00:05:57,190

Also addressing the attentive group was physicist and former ISS resident Don Pettit, who was

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00:05:57,190 --> 00:06:02,920

outdone only by three CURRENT space station crew members. From left, Flight Engineer Tom

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00:06:02,920 --> 00:06:08,830

Marshburn and Expedition 34 Commander Kevin Ford of NASA, and Canada's Chris Hadfield.

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00:06:08,830 --> 00:06:14,310

"The whole purpose of this is figuring out how to safely get to space and back again.

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00:06:14,310 --> 00:06:18,380

We haven't invented everything we need to invent yet. But hopefully soon, everyone will

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00:06:18,380 --> 00:06:25,450

be able to get this incredible experience that we're lucky enough to be part of."

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00:06:25,450 --> 00:06:31,260

Back aboard the station, Ford, Marshburn and Hadfield hosted their own social media event:

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00:06:31,260 --> 00:06:33,650

the first live Hangout in space!

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00:06:33,650 --> 00:06:35,970

“And what is that on Chris Hadfield’s forehead?”

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00:06:35,970 --> 00:06:39,540

“Well, what he has on his forehead is actually a temperature probe.”

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00:06:39,540 --> 00:06:45,070

The three astronauts took questions from the online community via Google+, Facebook, and

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00:06:45,070 --> 00:06:51,060

Twitter. Viewers worldwide could also upload their video questions – and watch the space-breaking

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00:06:51,060 --> 00:06:59,230

event live on NASA Television’s YouTube channel.

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00:06:59,230 --> 00:07:04,420

Engineers at the Stennis Space Center have begun a new round of tests on NASA’s next-generation

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00:07:04,420 --> 00:07:09,560

J-2X rocket engine. This next test series will continue to provide performance data

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00:07:09,560 --> 00:07:15,360

critical to the engine’s development. The J-2X will provide upper-stage power for NASA’s

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00:07:15,360 --> 00:07:23,530

new Space Launch System that’ll send humans

farther into space than ever before.

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00:07:23,530 --> 00:07:28,660

NASA Administrator Charles Bolden has received the Candle in Military Service and Aeronautical

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00:07:28,660 --> 00:07:34,980

Science Award from Morehouse College in Atlanta. The award recognizes exceptional achievement

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00:07:34,980 --> 00:07:40,840

in a field by an African-American man. The Candle award is part of Founder's Day celebrations

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00:07:40,840 --> 00:07:47,920

held each year at the alma mater of the Rev. Dr. Martin Luther King Jr.

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00:07:47,920 --> 00:07:52,740

The Marshal Space Flight Center co-hosted an exhibition at the Davidson Center in Huntsville,

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00:07:52,740 --> 00:07:56,590

Alabama called "Robots to Rocket City".

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00:07:56,590 --> 00:08:00,070

The event gave area student teams from the area who will compete in the upcoming FIRST

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00:08:00,070 --> 00:08:05,770

Robotics Ultimate Ascent Challenge, a chance to test their tenacious technologies before

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00:08:05,770 --> 00:08:09,450

regional competition begins in late February.

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00:08:09,450 --> 00:08:16,260

The students have built robots designed to score points by tossing discs through targets

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00:08:16,260 --> 00:08:17,810

and by climbing pyramids.

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00:08:17,810 --> 00:08:23,290

“When we received our kit of parts six weeks ago we were very excited to start making our

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00:08:23,290 --> 00:08:29,260

robot.\h We had been anticipating this and before we started our build we made a robot

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00:08:29,260 --> 00:08:33,209

beforehand – a preseason build – and we learned a lot about robotics that way.”

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00:08:33,209 --> 00:08:38,070

“NASA is especially interested in this type of activity because we are always looking

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00:08:38,070 --> 00:08:43,419

for the best and the brightest and these teams provide us that opportunity to seek students

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00:08:43,419 --> 00:08:48,509

who are interested in science, technology, engineering and mathematics.”

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00:08:48,509 --> 00:08:54,640

FIRST -- For Inspiration and Recognition of Science and Technology inspires young people

112

00:08:54,640 --> 00:09:00,259

to be science and technology leaders by engaging them in exciting mentor-based programs that

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00:09:00,259 --> 00:09:07,899

build science, engineering and technology skills.

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00:09:07,899 --> 00:09:12,610

Associate Administrator for Education, Leland Melvin recently visited the AERO Institute

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00:09:12,610 --> 00:09:17,370

in Palmdale, Calif., where he was updated on education outreach efforts at the Dryden

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00:09:17,370 --> 00:09:22,389

Flight Research Center. The Dryden education team earned Melvin's praise, as did the

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00:09:22,389 --> 00:09:27,860

Institute for its recent founding of the Palmdale Aerospace Academy, a school devoted to excellence

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00:09:27,860 --> 00:09:33,990

in science, technology, engineering and math. Both the AERO Institute and its academy are

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00:09:33,990 --> 00:09:38,899

operated by a consortium that includes NASA, the city of Palmdale, and its local school

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00:09:38,899 --> 00:09:39,899

district.

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00:09:39,899 --> 00:09:45,759

"The school, the aero academy that we just talked about is a perfect example of a partnership

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00:09:45,759 --> 00:09:51,110

that is helping get these kids motivated and inspired. We have to make sure that the things

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00:09:51,110 --> 00:09:55,861

that we're doing, the interventions that we're building, have relevance to the goals, or

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00:09:55,861 --> 00:09:56,990

why are we doing it?"

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00:09:56,990 --> 00:10:02,279

Melvin was also briefed on Dryden's on-line, classroom outreach program, the Digital Learning

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00:10:02,279 --> 00:10:03,279

Network.

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00:10:03,279 --> 00:10:08,259

"We provide very unique learning opportunities for students across the board, whether it's

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00:10:08,259 --> 00:10:13,860

connecting subject matter experts, astronauts or even education specialists."

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00:10:13,860 --> 00:10:19,360

Melvin also toured the nearby Dryden Aircraft Operations Facility, home to the center's

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00:10:19,360 --> 00:10:24,850

science-gathering aircraft aboard which students can fly.

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00:10:24,850 --> 00:10:29,670

Lesa Roe, Langley Research Center Director, and Bill Wrobel, Director of Wallops Flight

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00:10:29,670 --> 00:10:35,559

Facility, were in Richmond to speak with policy makers at Virginia's General Assembly about

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00:10:35,559 --> 00:10:40,980

NASA's contributions to the commonwealth's aerospace industry. The eighth annual Aerospace

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00:10:40,980 --> 00:10:47,170

Day provided Roe, Wrobel and more than 20 NASA and industry teams the opportunity to

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00:10:47,170 --> 00:10:53,660

outline for legislators the agency's economic impact on Virginia's aerospace industry.

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00:10:53,660 --> 00:10:59,050

Also in Richmond, Roe and U.S. Senator Tim Kaine visited the Math Science Innovation

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00:10:59,050 --> 00:11:04,509

Center, where they spoke to 70 teachers from across central Virginia at a NASA Aerospace

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00:11:04,509 --> 00:11:05,850

Educator Workshop.

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00:11:05,850 --> 00:11:12,089

"You are the folks that actually reach these students and make these students believe that

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00:11:12,089 --> 00:11:34,309

they can make the impossible possible and that's what we do at NASA."

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00:11:34,309 --> 00:11:39,910

My name is Todd Arnold. I'm the deputy director of Public Affairs at John F. Kennedy Space

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00:11:39,910 --> 00:11:40,910

Center.

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00:11:40,910 --> 00:11:47,689

I hired into NASA in 1989 as part of an accelerated training program for recent college graduates.

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00:11:47,689 --> 00:11:52,649

As a member of the Kennedy senior management team, I'm responsible to ensure we have a

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00:11:52,649 --> 00:11:58,570

highly skilled contractor and civil service
workplace on board to effectively communicate

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00:11:58,570 --> 00:12:04,829

the NASA story -- our past, our present and
our exciting future. I also assist in the

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00:12:04,829 --> 00:12:11,810

effort to oversee operations, on a daily basis,
for an active Press Site news room. In addition,

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00:12:11,810 --> 00:12:16,839

I provide strategic leadership and vision
to a team of individuals who are responsible

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00:12:16,839 --> 00:12:24,110

for an array of public relations tools and
techniques, including NASA Television broadcasting,

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00:12:24,110 --> 00:12:32,149

also news and photojournalism, web and social
media presence, display management initiatives,

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00:12:32,149 --> 00:12:38,009

as well as internal communications to the
KSC workforce to help them remain informed

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00:12:38,009 --> 00:12:42,519

so that they can be wonderful ambassadors
for NASA.

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00:12:42,519 --> 00:12:49,790

Here at NASA, I believe diversity is more
than just a word. In fact it is part of our

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00:12:49,790 --> 00:12:56,790

core value system. Which, to me, means it's
not just a few people who are concerned about

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00:12:56,790 --> 00:13:03,629

diversity, but every individual makes a difference and actively seeks out an opportunity to value

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00:13:03,629 --> 00:13:04,839

the input of others.

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00:13:04,839 --> 00:13:10,430

At an individual level, whenever I join a team for the first time, I first seek to learn

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00:13:10,430 --> 00:13:15,980

a little bit about the backgrounds and experiences and education of the individuals I will be

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00:13:15,980 --> 00:13:24,779

working with. As a leader, I make it a priority to initiate efforts that will encourage individuals

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00:13:24,779 --> 00:13:30,019

to partner and work together and leverage the strengths and background of others that

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00:13:30,019 --> 00:13:34,649

are perhaps different from them. I really believe that at the bottom line, in order

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00:13:34,649 --> 00:13:41,690

to get the best product, we must have every idea on the table.

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00:13:41,690 --> 00:13:46,629

More than 5 thousand visited the Johnson Space Center NASA exhibit in Downtown Houston during

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00:13:46,629 --> 00:13:57,739

the public events and activities held prior to the NBA All-Star game.

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00:13:57,739 --> 00:14:03,800

It was wall-to wall fun at the four-day event fans had the opportunity to shoot, slam dunk,

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00:14:03,800 --> 00:14:08,629

dribble and learn about NASA's mission and how the work being done by the agency benefits

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00:14:08,629 --> 00:14:14,450

life on earth. The NASA exhibit included information on the International Space Station, Commercial

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00:14:14,450 --> 00:14:20,509

Space Transportation, and the next generation vehicle being designed for human space exploration:

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00:14:20,509 --> 00:14:33,931

the Orion spacecraft.

In the late afternoon of Feb. 24, 2011, space

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00:14:33,931 --> 00:14:40,670

shuttle Discovery took off on its final mission into space. STS-133, the 35th shuttle mission

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00:14:40,670 --> 00:14:45,500

to the International Space Station, delivered the Permanent Multipurpose Module, the Express

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00:14:45,500 --> 00:14:52,619

Logistics Carrier 4, and Robonaut 2, the first dexterous humanoid robot in space, and now

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00:14:52,619 --> 00:14:54,819

a permanent station resident.

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00:14:54,819 --> 00:15:00,089

Discovery was the first orbiter in the shuttle fleet to be retired. Among the 180 people

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00:15:00,089 --> 00:15:04,790

who flew aboard Discovery, the first female

shuttle pilot and the first female shuttle

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00:15:04,790 --> 00:15:10,600

commander, Eileen Collins; the first African-American spacewalker ,Bernard Harris; and the first

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00:15:10,600 --> 00:15:21,170

sitting member of Congress to fly in space, then-Senator Jake Garn of Utah.

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00:15:21,170 --> 00:15:25,999

NASA astronaut and amateur flutist Cady Coleman joined the Irish musical group "The Chieftains"

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00:15:25,999 --> 00:15:31,540

on stage with the Houston Symphony during the band's 50th anniversary concert tour.

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00:15:31,540 --> 00:15:36,850

Also "sitting in" from 240 miles above the Earth was Canadian astronaut Chris Hadfield

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00:15:36,850 --> 00:15:42,750

onboard the International Space Station. A long-time fan of the Chieftains, Coleman carried

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00:15:42,750 --> 00:15:48,499

the band's penny whistle and Irish flute with her during her 2010 station expedition.

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00:15:48,499 --> 00:15:53,119

Joining Coleman for the stage performance were fellow astronaut Dan Burbank and other

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00:15:53,119 --> 00:15:58,910

members of an informal group of players known as Bandella that Coleman and Hadfield perform

185

00:15:58,910 --> 00:16:01,489

with on Earth.

186

00:16:01,489 --> 00:16:03,629

And that's This Week @NASA.