1
00:00:06,890 --> 00:00:13,670
This Week at NASA…

2
00:00:13,670 --> 00:00:21,880
“3-2-1-Zero and launch of the SpaceX Falcon
9 rocket as NASA turns to the private sector

3
00:00:21,880 --> 00:00:25,369
to resupply the International Space Station.”

4
00:00:25,369 --> 00:00:30,539
SpaceX successfully launched its Falcon 9
rocket and unmanned Dragon spacecraft from

5
00:00:30,539 --> 00:00:34,990
Florida’s Cape Canaveral Air Force Station
early Tuesday morning on a demonstration flight

6
00:00:34,990 --> 00:00:37,430
to the International Space Station.

7
00:00:37,430 --> 00:00:42,440
This demonstration flight calls for an extensive
set of tests requiring the Dragon spacecraft

8
00:00:42,440 --> 00:00:47,809
to show that it can move precisely in orbit
and approach the space station carefully.

9
00:00:47,809 --> 00:00:52,460
If the tests are successful, plans call for
Dragon to move close enough to be grappled

10
00:00:52,460 --> 00:00:56,380
by the station's robotic arm and berthed to
the orbiting laboratory.

11
00:00:56,380 --> 00:00:59,320
“We’re now back at the brink of a new

future.

12
00:00:59,320 --> 00:01:05,110
A future that stands on the shoulders of Mercury
and Gemini, Apollo and Shuttle.

13
00:01:05,110 --> 00:01:10,610
A future that embraces the innovation the
private sector brings to the table and a future

14
00:01:10,610 --> 00:01:13,640
that opens up the skies to endless possibilities.”

15
00:01:13,640 --> 00:01:18,500
“We obviously still have to go through a
number of steps to effectively berth with

16
00:01:18,500 --> 00:01:22,310
the space station but everything is looking
really good and I think – I would really

17
00:01:22,310 --> 00:01:29,261
count today as a success no matter what happens
the rest of the mission.”

18
00:01:29,261 --> 00:01:36,450
The flight is the first commercial venture
to the ISS.

19
00:01:36,450 --> 00:01:41,130
The three newest residents of the International
Space Station were greeted by their Expedition

20
00:01:41,130 --> 00:01:46,990
31 crewmates after their Soyuz capsule docked
safely with the orbiting laboratory following

21
00:01:46,990 --> 00:01:50,190
its two day-plus journey from Kazakhstan.

22
00:01:50,190 --> 00:01:55,200
Soyuz commander Gennady Padalka, NASA flight
engineer Joe Acaba, and Russian flight engineer

23
00:01:55,200 --> 00:01:59,840
Sergei Revin are slated to spend the next
five months on the station.

24
00:01:59,840 --> 00:02:06,950
Expedition 31 will conclude, and 32 will begin,
when Oleg Kononenko, Andre Kuipers, and Don

25
00:02:06,950 --> 00:02:12,910
Pettit return to Earth on July first after
spending more than six months aboard the ISS.

26
00:02:12,910 --> 00:02:17,420
When the Space Exploration Technologies or
SpaceX Dragon spacecraft returns to Earth

27
00:02:17,420 --> 00:02:22,319
after its mission to the International Space
Station, it will depend on a heat shield material

28
00:02:22,319 --> 00:02:26,120
called PICA-X to protect it during re-entry.

29
00:02:26,120 --> 00:02:28,230
\h
The heat shield material, called Phenolic

30
00:02:28,230 --> 00:02:32,840
Impregnated Carbon Ablator, was developed
in partnership with NASA Ames Research Center.

31
00:02:32,840 --> 00:02:38,300
“So we were looking for an advanced material
that was lighter weight, could withstand more

32

00:02:38,300 --> 00:02:45,590
extreme environments and would be, essentially,
safer and more rugged for planetary missions.”

33
00:02:45,590 --> 00:02:47,980
\h
PICA-X samples were tested at NASA Ames using

34
00:02:47,980 --> 00:02:54,580
special facilities to simulate planetary re-entry
temperatures and high speed atmospheric flows.

35
00:02:54,580 --> 00:02:59,580
During these tests, the surface temperature
of the heat shield material reached approximately

36
00:02:59,580 --> 00:03:05,950
3,450 degrees Fahrenheit – almost twice
as hot as molten lava.

37
00:03:05,950 --> 00:03:08,801
\h
PICA-X has proved its effectiveness on the

38
00:03:08,801 --> 00:03:14,430
heat shield that protected the Stardust capsule
during its return to Earth in January of 2006.

39
00:03:14,430 --> 00:03:21,240
It’ll be used by the Mars Science Laboratory
to land its rover, Curiosity, on the Red Planet.

40
00:03:21,240 --> 00:03:26,610
And, of course, when the first commercial
cargo resupply mission to the ISS returns

41
00:03:26,610 --> 00:03:38,459
a payload safely back to Earth, PICA-X will
have played a major role in Dragon’s success.

42

00:03:38,459 --> 00:03:44,560
Evaluation of a key component of the J-2X
engine continues at the Stennis Space Center.

43
00:03:44,560 --> 00:03:50,519
NASA recently conducted a long duration test
of the J-2X powerpack, a system of components

44
00:03:50,519 --> 00:03:56,700
on the top portion of the J-2X engine that
helps the engine produce thrust.

45
00:03:56,700 --> 00:04:02,280
The 340-second test was designed to operate
the powerpack turbo-pumps over a range of

46
00:04:02,280 --> 00:04:06,879
speeds by varying the gas generator valve
positions.

47
00:04:06,879 --> 00:04:11,970
Continued testing of the J-2X, which will
help propel NASA’s new Space Launch System,

48
00:04:11,970 --> 00:04:13,959
are scheduled through the summer.

49
00:04:13,959 --> 00:04:19,250
The SLS is the new heavy-lift launch vehicle
that will expand human presence beyond low-Earth

50
00:04:19,250 --> 00:04:25,190
orbit and, with the Orion crew capsule, enable
new missions of exploration across the solar

51
00:04:25,190 --> 00:04:27,720
system.

52
00:04:27,720 --> 00:04:32,920
“… all of whom have achieved distinction

beyond measure.”

53
00:04:32,920 --> 00:04:39,540
The state of Alabama celebrated its space exploration heritage, designating May 3rd

54
00:04:39,540 --> 00:04:41,640
as NASA Day in Alabama.

55
00:04:41,640 --> 00:04:45,660
The State Legislature commended the Marshall Space Flight Center for its role in space

56
00:04:45,660 --> 00:04:51,220
exploration, as an engine of economic development and the anchor of the aerospace industry in

57
00:04:51,220 --> 00:04:52,220
North Alabama.

58
00:04:52,220 --> 00:04:55,360
“I salute Marshall and NASA.

59
00:04:55,360 --> 00:05:01,530
When we look at the economic impact that they have on our state, it is unprecedented, and

60
00:05:01,530 --> 00:05:05,030
they are right up there with us as Alabamians.”

61
00:05:05,030 --> 00:05:09,980
Marshall has an estimated 2.9 billion dollar economic impact on the region.

62
00:05:09,980 --> 00:05:15,790
Its nearly 6000 government and contractor personnel, 90-percent of whom are college-educated,

63
00:05:15,790 --> 00:05:18,600

make NASA the third largest employer in Huntsville.

64
00:05:18,600 --> 00:05:24,040
“For more than half a century, we have embodied
the values of determination, achievement and

65
00:05:24,040 --> 00:05:27,050
thirst for knowledge that made this nation
great.

66
00:05:27,050 --> 00:05:30,380
We are still a symbol of this nation’s greatness
and promise.”

67
00:05:30,380 --> 00:05:36,090
Marshall, the center that developed the Saturn
V moon rocket in the 1960s, is now working

68
00:05:36,090 --> 00:05:41,900
on the Space Launch System, a long-range rocket
designed to take us beyond Earth orbit.

69
00:05:41,900 --> 00:05:43,290
NASA astronaut T.J.

70
00:05:43,290 --> 00:05:48,440
Creamer, who lived and worked on the International
Space Station, spoke to groups of local students

71
00:05:48,440 --> 00:05:49,950
visiting the state capital.

72
00:05:49,950 --> 00:05:54,461
“We want to be able to extend the humanity,
go farther and learn more about earth, learn

73
00:05:54,461 --> 00:05:58,710
more about the sciences to be able to make
tomorrow better.”

74
00:05:58,710 --> 00:06:01,190
“NASA is a national treasure.

75
00:06:01,190 --> 00:06:02,610
It truly is a national treasure.

76
00:06:02,610 --> 00:06:07,300
We’re just so proud to share in that and
what we’re able to develop in North Alabama

77
00:06:07,300 --> 00:06:10,110
with the great state of Alabama.”

78
00:06:10,110 --> 00:06:18,590
Thrill seekers had a blast learning about
space during Education Day at King’s Dominion.

79
00:06:18,590 --> 00:06:22,960
Students and teachers applied the math and
science they’ve used this school year to

80
00:06:22,960 --> 00:06:25,850
fun, problem-solving activities at the theme
park.

81
00:06:25,850 --> 00:06:30,370
The Langley Research Center had interactive
exhibits where park-goers could learn how

82
00:06:30,370 --> 00:06:36,490
astronauts live and work in space, win prizes
by answering NASA technology-related questions

83
00:06:36,490 --> 00:06:40,280
and playing the NASA “Spin the Wheel”
game.

84
00:06:40,280 --> 00:06:46,650
They also explored how riding a roller coaster

produces G forces just as a spacecraft does

85
00:06:46,650 --> 00:06:48,710
when it launches into space.

86
00:06:48,710 --> 00:06:53,190
There were also exhibits highlighting NASA
Aeronautics missions and displays from the

87
00:06:53,190 --> 00:06:54,650
Science Museum of Virginia.

88
00:06:54,650 --> 00:06:57,700
“Solar array let’s see some energy in
there, sounder let’s make some noise.

89
00:06:57,700 --> 00:06:59,730
What are we feeling?

90
00:06:59,730 --> 00:07:04,840
We gotta get something going now.”

91
00:07:04,840 --> 00:07:09,150
NEARLY 100 STUDENTS CONVERGED ON WALLOPS FLIGHT
FACILITY RECENTLY FOR THE ANNUAL INSPIRE THE

92
00:07:09,150 --> 00:07:10,420
NEXT GENERATION DAY.

93
00:07:10,420 --> 00:07:15,220
“What we’re doing here today is actually
inspire the next generation where we have

94
00:07:15,220 --> 00:07:20,130
parents that work here at Wallops bringing
their students in to try out a few things

95
00:07:20,130 --> 00:07:21,490
that we actually do here.”

96
00:07:21,490 --> 00:07:30,540
“We’re a polar orbit, sun syncronous with
the sun so that our solar array is always

97
00:07:30,540 --> 00:07:32,740
pointing towards the sun”

98
00:07:32,740 --> 00:07:34,320
”Once we finish designing our rockets, we’re
going to prep them for flight”

99
00:07:34,320 --> 00:07:35,320
\h
(SOT: ALONTE UPTEGROW – INSPIRED PARTICIPANT)

100
00:07:35,320 --> 00:07:41,530
“It’s fun, I get to go with my mom and
build kites and build solar powered cars.”

101
00:07:41,530 --> 00:07:43,400
(SOT: MOLLY TURLINGTON – INSPIRED PARTICIPANT)
“It’s really really fun, I’ve had a

102
00:07:43,400 --> 00:07:44,400
good time.

103
00:07:44,400 --> 00:07:49,400
I’m hoping to be a civil engineer when I
get older so it’s really fun.”

104
00:07:49,400 --> 00:07:51,640
\h
THE YOUNG EXPLORERS LEARNED ABOUT SCIENCE,

105
00:07:51,640 --> 00:07:56,120
TECHNOLOGY, ENGINEERING AND MATH, OR “STEM”
CAREERS THEY COULD PURSUE WITH NASA, THE NAVY,

106

00:07:56,120 --> 00:08:06,810
THE COAST GUARD, NOAA, FISH AND WILDLIFE AND
THE MARINE SCIENCE CONSORTIUM.

107
00:08:06,810 --> 00:08:15,150
“I'M JANEJIT GENSLER.

108
00:08:15,150 --> 00:08:19,020
I WORK IN THE INTERNATIONAL SPACE STATION
PROGRAM OFFICE OF EXTERNAL INTEGRATION AT

109
00:08:19,020 --> 00:08:21,830
THE NASA JOHNSON SPACE CENTER.

110
00:08:21,830 --> 00:08:28,920
I WAS BORN IN BANGKOK, THAILAND AND I IMMIGRATED
TO THE US WHEN I WAS ABOUT 2 OR 3 YEARS OLD,

111
00:08:28,920 --> 00:08:37,010
MOVED TO DALLAS, TEXAS, AND I BASICALLY GREW
UP THERE AND WENT TO SCHOOL AT THE UNIVERSITY

112
00:08:37,010 --> 00:08:38,070
OF TEXAS, AUSTIN.

113
00:08:38,070 --> 00:08:42,000
I GOT MY CHEMICAL ENGINEERING BACHELOR'S DEGREE
FROM UT.

114
00:08:42,000 --> 00:08:44,960
THE INTERNATIONAL SPACE STATION IS A WONDERFUL
PROGRAM.

115
00:08:44,960 --> 00:08:50,290
A LOT OF PEOPLE IN THE GENERAL PUBLIC DON'T
KNOW THAT WE EVEN HAVE AN INTERNATIONAL SPACE

116
00:08:50,290 --> 00:08:55,600
STATION, SO FROM THAT STANDPOINT, OUR OFFICE
DOES A LOT OF EXTERNAL COMMUNICATIONS AND

117
00:08:55,600 --> 00:08:56,600
WE GET OUT THERE.

118
00:08:56,600 --> 00:09:00,850
WE DO A LOT OF PUBLIC OUTREACH MAKING SURE
THAT THE PUBLIC IS AWARE OF ALL THE BENEFITS

119
00:09:00,850 --> 00:09:05,450
THAT ISS, YOU KNOW, HAS PROVIDED AND IS ABLE
TO OFFER.

120
00:09:05,450 --> 00:09:09,380
WE WANT TO MAKE SURE THAT EVERYBODY KNOWS
THAT IT'S A MANNED STATION.

121
00:09:09,380 --> 00:09:11,450
WE'VE BEEN MANNED FOR OVER 10 YEARS.

122
00:09:11,450 --> 00:09:16,680
WE'RE UP THERE SEVEN DAYS A WEEK, 24 HOURS
A DAY, 365 DAYS A YEAR AND WE'VE PROVIDED

123
00:09:16,680 --> 00:09:22,580
GREAT BENEFITS TO HUMANKIND AND WE'RE STILL
DOING THAT WITH ALL THE UTILIZATION THAT WE'RE

124
00:09:22,580 --> 00:09:24,140
CURRENTLY RAMPING UP.

125
00:09:24,140 --> 00:09:29,360
WE'VE COMPLETED ASSEMBLY AND WE'RE WORKING
ON ALL THE RESEARCH THAT'S GOING TO HELP US

126
00:09:29,360 --> 00:09:31,720
GO AND EXPLORE BEYOND LOWER EARTH ORBIT.

127
00:09:31,720 --> 00:09:36,010
ONE OF THE MOST FUN THINGS I'VE DONE OUT HERE

AT NASA IS I WAS ABLE TO GO AND WATCH A SOYUZ

128
00:09:36,010 --> 00:09:37,520
LAUNCH OUT IN KAZAKHSTAN.

129
00:09:37,520 --> 00:09:39,080
I LOVE TO TRAVEL.

130
00:09:39,080 --> 00:09:43,930
ESPECIALLY AS A FAMILY LOVE TO TRAVEL OUTSIDE
THE COUNTRY, BUT THIS WAS THE FIRST TIME I'VE

131
00:09:43,930 --> 00:09:49,700
TRAVELED THAT FAR AWAY I GUESS TO AN EXOTIC
LOCATION OTHER THAN THAILAND WHERE I'M FROM.

132
00:09:49,700 --> 00:09:54,440
JUST BEING THERE AND BEING A PART OF HUMAN
SPACE FLIGHT WAS AMAZING.

133
00:09:54,440 --> 00:09:57,010
“And liftoff of a Soyuz rocket.”

134
00:09:57,010 --> 00:10:02,320
NASA ANNIVERSARY: LAUNCH OF AURORA 7 MAY 24,
1962

135
00:10:02,320 --> 00:10:03,890
“I feel the liftoff, the clock has started.”

136
00:10:03,890 --> 00:10:09,680
Fifty years ago, on May 24, 1962, Mercury
astronaut Scott Carpenter launched from Cape

137
00:10:09,680 --> 00:10:13,270
Canaveral aboard the Aurora 7 spacecraft.

138
00:10:13,270 --> 00:10:17,890
The flight was the second manned orbital mission

of the Mercury program, following John Glenn’s

139
00:10:17,890 --> 00:10:20,230
Friendship 7 flight three months earlier.

140
00:10:20,230 --> 00:10:23,750
Like Glenn, Carpenter circled the Earth three times.

141
00:10:23,750 --> 00:10:29,090
The focus of the five-hour mission was on science and included the first study of liquids

142
00:10:29,090 --> 00:10:31,640
in weightlessness and Earth photography.

143
00:10:31,640 --> 00:10:37,680
A targeting mishap during reentry took the spacecraft about 250-miles off course.

144
00:10:37,680 --> 00:10:43,430
However, Carpenter and Aurora 7 were safely recovered after splashdown in the Atlantic

145
00:10:43,430 --> 00:10:44,930
Ocean.

146
00:10:44,930 --> 00:10:47,060
And that’s This Week @ NASA!

147
00:10:47,060 --> 00:10:52,280
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