
WHITE HOUSE SCIENCE FAIR
OCTOBER 18, 2010

1
00:00:13,959 --> 00:00:12,290
this week at NASA NASA managers gave a

2
00:00:16,310 --> 00:00:13,969
thumbs-up for Space Shuttle Discovery's

3
00:00:18,650 --> 00:00:16,320
upcoming launch to the International

4
00:00:20,929 --> 00:00:18,660
Space Station we set the launch date for

5
00:00:22,849 --> 00:00:20,939
November first and we see pretty much

6
00:00:24,890 --> 00:00:22,859
normal flow between now and November

7
00:00:26,720 --> 00:00:24,900
first so again a very thorough review

8
00:00:28,310 --> 00:00:26,730
the teams are very focused on what they

9
00:00:30,169 --> 00:00:28,320
need to do this official launch date

10
00:00:32,720 --> 00:00:30,179
announcement followed a Flight Readiness

11
00:00:35,000 --> 00:00:32,730
review held at the Kennedy Space Center

12
00:00:37,310 --> 00:00:35,010
in Florida at which shuttle managers

13
00:00:39,500 --> 00:00:37,320

assess preparations for Discovery's

14
00:00:41,060 --> 00:00:39,510
final flights quite a remarkable history

15
00:00:44,060 --> 00:00:41,070
for discovery it's had a whole bunch of

16
00:00:45,830 --> 00:00:44,070
firsts it carried Hubble into orbit it

17
00:00:48,220 --> 00:00:45,840
it was our return to flight vehicle

18
00:00:51,229 --> 00:00:48,230
following both Challenger and Columbia

19
00:00:54,110 --> 00:00:51,239
and so it kind of was the Pathfinder as

20
00:00:57,080 --> 00:00:54,120
we put new new systems in place new

21
00:00:59,420 --> 00:00:57,090
safety features at the end of at the end

22
00:01:02,330 --> 00:00:59,430
of its its life here it'll have traveled

23
00:01:03,709 --> 00:01:02,340
over about 150 million miles and the

24
00:01:06,230 --> 00:01:03,719
more impressive staff that I saw today

25
00:01:08,780 --> 00:01:06,240
was number of days it'll be in space

26
00:01:11,359 --> 00:01:08,790
they'll be at just about a year sts-133

27
00:01:13,789 --> 00:01:11,369
the 35th shuttle mission to the orbiting

28
00:01:16,690 --> 00:01:13,799
complex includes crew members commander

29
00:01:20,179 --> 00:01:16,700
steve lindsey pilot eric boe and mission

30
00:01:23,179 --> 00:01:20,189
specialists alvin drew mike barratt tim

31
00:01:25,010 --> 00:01:23,189
kopra and nicole stott discovery will

32
00:01:27,200 --> 00:01:25,020
deliver and install the permanent

33
00:01:29,780 --> 00:01:27,210
multi-purpose module the Express

34
00:01:32,660 --> 00:01:29,790
logistics carrier for provide critical

35
00:01:35,300 --> 00:01:32,670
spare station components and bring into

36
00:01:38,179 --> 00:01:35,310
space the first humanoid robot Robonaut

37
00:01:41,170 --> 00:01:38,189
2 which will take up permanent residency

38
00:01:44,380 --> 00:01:41,180

on the ISS

39
00:01:46,480 --> 00:01:44,390
you actually pull out the soil NASA

40
00:01:49,180 --> 00:01:46,490
joined with more than 500 organizations

41
00:01:51,040 --> 00:01:49,190
in Washington to inspire the next

42
00:01:53,380 --> 00:01:51,050
generation of scientists and engineers

43
00:01:56,740 --> 00:01:53,390
at the USA science and engineering

44
00:01:59,200 --> 00:01:56,750
festival NASA's 28 booths featured

45
00:02:01,990 --> 00:01:59,210
hands-on activities demonstrations and

46
00:02:06,430 --> 00:02:02,000
exhibits many illustrating the agency's

47
00:02:08,199 --> 00:02:06,440
scientific missions the two day Expo on

48
00:02:11,140 --> 00:02:08,209
the National Mall and surrounding

49
00:02:12,479 --> 00:02:11,150
locations also culminated NASA's new

50
00:02:15,400 --> 00:02:12,489
summer of innovation education

51
00:02:17,290 --> 00:02:15,410
initiative aimed at engaging middle

52
00:02:19,690 --> 00:02:17,300
school students in science technology

53
00:02:21,550 --> 00:02:19,700
engineering and math activities during

54
00:02:24,550 --> 00:02:21,560
summer break summer of innovation

55
00:02:29,890 --> 00:02:24,560
reached more than 75,000 middle

56
00:02:32,410 --> 00:02:29,900
schoolers during its inaugural year soil

57
00:02:36,160 --> 00:02:32,420
inside shadowy craters on the moon is

58
00:02:38,800 --> 00:02:36,170
rich in useful materials that's one of

59
00:02:41,229 --> 00:02:38,810
the findings by NASA scientists after

60
00:02:43,210 --> 00:02:41,239
analyzing the impact plume created by

61
00:02:46,750 --> 00:02:43,220
the lunar crater observation and sensing

62
00:02:48,789 --> 00:02:46,760
satellite l cross mission last year the

63
00:02:51,970 --> 00:02:48,799

lunar soil also show that the moon is

64
00:02:54,460 --> 00:02:51,980
chemically active and has a water cycle

65
00:02:57,520 --> 00:02:54,470
there are a variety of sources either

66
00:02:59,920 --> 00:02:57,530
comets or the solar wind and these

67
00:03:02,289 --> 00:02:59,930
sources are coming to the moon and then

68
00:03:04,390 --> 00:03:02,299
once at the moon this water is migrating

69
00:03:06,370 --> 00:03:04,400
moving around the moon and finding its

70
00:03:08,800 --> 00:03:06,380
way to various places like the cold

71
00:03:10,420 --> 00:03:08,810
craters but it doesn't stop there once

72
00:03:12,280 --> 00:03:10,430
in the cold craters there's chemistry

73
00:03:14,080 --> 00:03:12,290
going on that's further changing these

74
00:03:16,660 --> 00:03:14,090
compounds having them interact with each

75
00:03:19,150 --> 00:03:16,670
other and resulting in this mix of water

76
00:03:21,460 --> 00:03:19,160
and other things l cross collected

77
00:03:23,320 --> 00:03:21,470
invaluable data as it flew through the

78
00:03:26,140 --> 00:03:23,330
debris kicked up by the crash of its

79
00:03:28,240 --> 00:03:26,150
center Rockets spent upper-stage into a

80
00:03:31,810 --> 00:03:28,250
permanently shadowed region of a lunar

81
00:03:34,000 --> 00:03:31,820
crater on october nine 2009 the other

82
00:03:36,190 --> 00:03:34,010
thing we found that was really startling

83
00:03:38,650 --> 00:03:36,200
a real surprise was just the total

84
00:03:41,050 --> 00:03:38,660
amount of material other than dirt in

85
00:03:44,140 --> 00:03:41,060
this crater we found between ten and

86
00:03:47,500 --> 00:03:44,150
twenty percent other material by other

87
00:03:48,600 --> 00:03:47,510
material I mean water hydrocarbons like

88
00:03:51,210 --> 00:03:48,610

methane and ammo

89
00:03:53,750 --> 00:03:51,220
we found things like carbon dioxide

90
00:03:56,730 --> 00:03:53,760
sulfur dioxide we even found mercury

91
00:03:59,400 --> 00:03:56,740
frozen out in this dark crater that was

92
00:04:01,200 --> 00:03:59,410
a huge surprise scientists believe the

93
00:04:03,090 --> 00:04:01,210
materials found in the permanently

94
00:04:05,940 --> 00:04:03,100
shadowed region of the crater named

95
00:04:10,890 --> 00:04:05,950
cabayos might not have seen sunlight for

96
00:04:13,040 --> 00:04:10,900
billions of years I am having so much

97
00:04:15,600 --> 00:04:13,050
fun at the White House Science Fair

98
00:04:18,060 --> 00:04:15,610
President Obama viewed exhibits of

99
00:04:20,430 --> 00:04:18,070
winning student projects ranging from

100
00:04:22,950 --> 00:04:20,440
breakthrough basic research to new

101
00:04:25,470 --> 00:04:22,960
invention among the exhibits was one

102
00:04:28,170 --> 00:04:25,480
from a Los Angeles California team that

103
00:04:30,960 --> 00:04:28,180
captured the inspire award the most

104
00:04:33,840 --> 00:04:30,970
prestigious honor at the 2010 FIRST Tech

105
00:04:35,940 --> 00:04:33,850
Challenge the NASA robotics Alliance

106
00:04:38,340 --> 00:04:35,950
project supports participation in the

107
00:04:41,010 --> 00:04:38,350
FIRST Robotics Competition by providing

108
00:04:45,320 --> 00:04:41,020
grants to high school teams as well as

109
00:04:48,330 --> 00:04:45,330
sponsoring first regional competitions

110
00:04:50,340 --> 00:04:48,340
NASA is bringing the public one step

111
00:04:53,820 --> 00:04:50,350
closer to the universe through a

112
00:04:56,159 --> 00:04:53,830
partnership with gowalla the mobile web

113
00:04:59,880 --> 00:04:56,169

application lets users check in via

114
00:05:02,700 --> 00:04:59,890
smartphone as they visit a location when

115
00:05:04,980 --> 00:05:02,710
users visit a NASA related venue such as

116
00:05:06,540 --> 00:05:04,990
the Kennedy Space Center or here at the

117
00:05:09,330 --> 00:05:06,550
Smithsonian National Air and Space

118
00:05:12,180 --> 00:05:09,340
Museum there will be awarded a virtual

119
00:05:14,909 --> 00:05:12,190
NASA item such as moon rocks or a space

120
00:05:17,219 --> 00:05:14,919
shuttle gowalla users collecting enough

121
00:05:19,080 --> 00:05:17,229
of these items will qualify for the

122
00:05:23,070 --> 00:05:19,090
chance to win a special limited edition

123
00:05:26,190 --> 00:05:23,080
NASA gowalla map the virtual items will

124
00:05:29,810 --> 00:05:26,200
be available at NASA visitor centers and

125
00:05:32,730 --> 00:05:29,820
at more than 400 museums science centers

126
00:05:35,130 --> 00:05:32,740
observatories and other NASA Museum

127
00:05:37,620 --> 00:05:35,140
alliance members to view the NASA

128
00:05:40,050 --> 00:05:37,630
gowalla map and connect with NASA and

129
00:05:45,120 --> 00:05:40,060
Astro Mike on gowalla and other social

130
00:05:47,860 --> 00:05:45,130
media applications visit w WN ase gov /

131
00:05:50,450 --> 00:05:47,870
connect

132
00:05:53,390 --> 00:05:50,460
the sunshield for the James Webb Space

133
00:05:55,030 --> 00:05:53,400
Telescope has successfully passed the

134
00:05:58,010 --> 00:05:55,040
first in a series of launch

135
00:06:01,790 --> 00:05:58,020
depressurization tests to verify its

136
00:06:04,700 --> 00:06:01,800
flight design jwst a next-generation

137
00:06:07,250 --> 00:06:04,710
space observatory and successor to the

138
00:06:08,950 --> 00:06:07,260

Hubble Space Telescope will observe the

139
00:06:11,510 --> 00:06:08,960
most distant objects in the universe

140
00:06:14,660 --> 00:06:11,520
provide images of the very first

141
00:06:17,600 --> 00:06:14,670
galaxies and see unexplored planets

142
00:06:20,270 --> 00:06:17,610
around distant stars to capture these

143
00:06:22,610 --> 00:06:20,280
faint infrared images the telescope's

144
00:06:24,560 --> 00:06:22,620
instruments must stay below minus three

145
00:06:27,290 --> 00:06:24,570
hundred sixty nine point seven degrees

146
00:06:29,000 --> 00:06:27,300
Fahrenheit the Sun shield is designed to

147
00:06:31,100 --> 00:06:29,010
protect these critical observation

148
00:06:34,190 --> 00:06:31,110
instruments from the heat of the Sun and

149
00:06:37,520 --> 00:06:34,200
Earth the 90-second depressurization

150
00:06:39,470 --> 00:06:37,530
tests prove that the stowed folded sun

151
00:06:41,960 --> 00:06:39,480
shield will retain its shape during

152
00:06:44,510 --> 00:06:41,970
launch and ventilate properly both

153
00:06:48,170 --> 00:06:44,520
functions are critical to its successful

154
00:06:50,600 --> 00:06:48,180
deployment and performance scheduled to

155
00:06:52,670 --> 00:06:50,610
launch in 2014 the James Webb Space

156
00:06:55,850 --> 00:06:52,680
Telescope will be the most powerful

157
00:06:57,680 --> 00:06:55,860
space telescope ever built if you like

158
00:06:59,780 --> 00:06:57,690
trouble you'll love James Webb because

159
00:07:02,570 --> 00:06:59,790
James Webb will be a hundred times more

160
00:07:03,950 --> 00:07:02,580
sensitive than the Hubble so it'll not

161
00:07:08,450 --> 00:07:03,960
only continue the great science of

162
00:07:12,780 --> 00:07:08,460
bubble but expanded greatly and now

163
00:07:18,130 --> 00:07:15,460

imagine a future where some airplanes

164
00:07:20,130 --> 00:07:18,140
can be controlled from cell phones or

165
00:07:23,070 --> 00:07:20,140
cars get a hundred miles to the gallon

166
00:07:25,870 --> 00:07:23,080
that future is already here as

167
00:07:28,540 --> 00:07:25,880
demonstrated at aviation unleashed a

168
00:07:30,490 --> 00:07:28,550
conference in hampton virginia sponsored

169
00:07:32,860 --> 00:07:30,500
by NASA's Langley Research Center and

170
00:07:35,140 --> 00:07:32,870
the National Institute of aerospace the

171
00:07:37,270 --> 00:07:35,150
event work to bring visionaries and

172
00:07:39,120 --> 00:07:37,280
entrepreneurs together to paint a

173
00:07:42,910 --> 00:07:39,130
picture of what kinds of surprises

174
00:07:46,500 --> 00:07:42,920
aviation might have for us by 2050 what

175
00:07:49,030 --> 00:07:46,510
would they be surprised to learn that

176
00:07:52,000 --> 00:07:49,040
they will be surprised to learn new

177
00:07:55,270 --> 00:07:52,010
technology such as unmanned air space

178
00:07:57,310 --> 00:07:55,280
systems it's going to be exciting I mean

179
00:07:59,260 --> 00:07:57,320
wouldn't you love to have that in a

180
00:08:01,540 --> 00:07:59,270
larger size that you're inside and can

181
00:08:04,060 --> 00:08:01,550
fly around in that could be our future

182
00:08:06,940 --> 00:08:04,070
that could be sitting in your garage for

183
00:08:09,910 --> 00:08:06,950
now that quadricopter is primarily a toy

184
00:08:12,760 --> 00:08:09,920
the parrot AR drone equipped with four

185
00:08:15,970 --> 00:08:12,770
rotors a camera and Wi-Fi that can be

186
00:08:18,250 --> 00:08:15,980
flown from an iphone or ipad but some

187
00:08:19,480 --> 00:08:18,260
NASA engineers and students are using

188
00:08:22,810 --> 00:08:19,490

the aircraft as part of their

189
00:08:24,400 --> 00:08:22,820
Aeronautics research one popular vehicle

190
00:08:26,950 --> 00:08:24,410
at the conference wasn't an aircraft at

191
00:08:30,010 --> 00:08:26,960
all it was the automotive X Prize

192
00:08:32,620 --> 00:08:30,020
winning Edison to very light car that

193
00:08:35,410 --> 00:08:32,630
can travel a hundred miles on one gallon

194
00:08:38,590 --> 00:08:35,420
of gas the automobile has some things in

195
00:08:41,680 --> 00:08:38,600
common with an aircraft it's designed to

196
00:08:42,940 --> 00:08:41,690
be very light and very aerodynamic in

197
00:08:45,270 --> 00:08:42,950
fact we have some really good arrow

198
00:08:48,070 --> 00:08:45,280
people

199
00:08:49,870 --> 00:08:48,080
some future aerodynamicists also give

200
00:08:52,180 --> 00:08:49,880
conference participants a look at their

201
00:08:54,670 --> 00:08:52,190
vision students from the University of

202
00:09:08,600 --> 00:08:54,680
Maryland's Morpheus lab showcased flying

203
00:09:17,090 --> 00:09:14,900
a six-member crew from Discovery

204
00:09:19,490 --> 00:09:17,100
Channel's MythBusters visited the Glenn

205
00:09:22,670 --> 00:09:19,500
Research Center to film a segment for

206
00:09:25,310 --> 00:09:22,680
the popular show lovelyz in its eighth

207
00:09:28,550 --> 00:09:25,320
season Mythbusters test the validity of

208
00:09:31,310 --> 00:09:28,560
common myths and rumors using scientific

209
00:09:33,350 --> 00:09:31,320
methodology and ingenuity while they

210
00:09:35,780 --> 00:09:33,360
were not at liberty to discuss what myth

211
00:09:38,139 --> 00:09:35,790
they were busting the show's crew did

212
00:09:41,600 --> 00:09:38,149
utilize Glenn's icing research tunnel

213
00:09:44,540 --> 00:09:41,610

the IRT is used by researchers to

214
00:09:46,130 --> 00:09:44,550
develop test and certify methods to

215
00:09:48,560 --> 00:09:46,140
prevent ice buildup on gas

216
00:09:51,050 --> 00:09:48,570
turbine-powered aircraft as well as

217
00:09:53,750 --> 00:09:51,060
investigate the icing and enticing

218
00:09:58,460 --> 00:09:53,760
fluids for both military and commercial

219
00:10:00,290 --> 00:09:58,470
aircraft and that's this week @nasa for