



HOME

NEWS

MISSIONS

MULTIMEDIA

CONNECT

ABOUT NASA

Log In To MyNASA | Sign Up

Search

For Public | For Educators | For Students | For Media | For Policymakers | For Employees | MyNASA

Send | Share

NASA Events: NASA Television To Cover Station Crew Exchange, Starting Monday, May 23



Galileo Data Reveal Magma Ocean Under Jupiter Moon
New data analysis from NASA's Galileo spacecraft reveals a subsurface ocean of molten or partially molten magma beneath the surface of Jupiter's volcanic moon Io.
[Learn More](#)

01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 | 11

SHUTTLE & STATION	MOON AND MARS
SOLAR SYSTEM	UNIVERSE
AERONAUTICS	EARTH
TECHNOLOGY	NASA IN YOUR LIFE
NASA PEOPLE	NASA HISTORY

NASA Images

Image of the Day [nasaimages.org](#)

NASA Multimedia

Videos
What's Up for May 2011: Planetary Alignment

@NASA Twitter Updates

Use this weekend to create your video for NASA's #Earthday YouTube contest. Entries due May 21, 2011.



Two More Webbys



Interactive Features

IS UP next @gramourdoloom
about 1 hour ago
There's a magma ocean on one of

1
00:00:07,040 --> 00:00:16,470
this week at nasa

2
00:00:21,670 --> 00:00:19,109
and liftoff for the final launch of

3
00:00:24,710 --> 00:00:21,680
endeavor expanding our knowledge

4
00:00:26,390 --> 00:00:24,720
expanding our lives in space

5
00:00:28,310 --> 00:00:26,400
space shuttle endeavour lifted off

6
00:00:31,069 --> 00:00:28,320
monday from the kennedy space center for

7
00:00:34,229 --> 00:00:31,079
the international space station and

8
00:00:36,310 --> 00:00:34,239
sts-134 commander mark kelly and his

9
00:00:38,790 --> 00:00:36,320
five crewmates began their mission with

10
00:00:39,670 --> 00:00:38,800
a picture-perfect launch at 8 56 a.m

11
00:00:42,549 --> 00:00:39,680
eastern

12
00:00:44,869 --> 00:00:42,559
the crew of kelly pilot greg johnson and

13
00:00:47,190 --> 00:00:44,879

mission specialists mike fink drew

14

00:00:49,750 --> 00:00:47,200

feuster greg shamatoff and european

15

00:00:52,470 --> 00:00:49,760

space agency astronaut roberto vittori

16

00:00:53,910 --> 00:00:52,480

are scheduled to spend 16 days in space

17

00:00:56,470 --> 00:00:53,920

bringing with them a payload that

18

00:00:58,709 --> 00:00:56,480

includes the alpha magnetic spectrometer

19

00:01:00,630 --> 00:00:58,719

a particle physics detector designed to

20

00:01:02,590 --> 00:01:00,640

search for various types of unusual

21

00:01:05,350 --> 00:01:02,600

cosmic matter

22

00:01:07,670 --> 00:01:05,360

sts-134 is the next to last mission for

23

00:01:11,750 --> 00:01:07,680

the space shuttle program and the final

24

00:01:17,350 --> 00:01:14,230

nasa's dawn spacecraft captured its

25

00:01:20,390 --> 00:01:17,360

first image of vesta the giant asteroid

26
00:01:22,390 --> 00:01:20,400
it'll start orbiting in july almost 200

27
00:01:24,230 --> 00:01:22,400
million miles from earth

28
00:01:26,630 --> 00:01:24,240
taken at about three quarters of a

29
00:01:28,870 --> 00:01:26,640
million miles from vesta the image

30
00:01:31,429 --> 00:01:28,880
provides never seen before details of

31
00:01:33,030 --> 00:01:31,439
the asteroid surface the asteroids are

32
00:01:35,910 --> 00:01:33,040
fragments of

33
00:01:37,590 --> 00:01:35,920
rock that date back to the origin of the

34
00:01:39,830 --> 00:01:37,600
solar system

35
00:01:41,830 --> 00:01:39,840
due to mutual collisions in the asteroid

36
00:01:43,830 --> 00:01:41,840
belt some of these asteroids get

37
00:01:46,149 --> 00:01:43,840
disturbed into orbits that cross the

38
00:01:48,550 --> 00:01:46,159

path of the earth and get swept up as

39

00:01:50,870 --> 00:01:48,560

meteorites there's always a danger of

40

00:01:53,350 --> 00:01:50,880

course that a large fragment may impact

41

00:01:55,910 --> 00:01:53,360

the earth so it's in our best interest

42

00:01:58,310 --> 00:01:55,920

to understand what asteroids are made of

43

00:02:00,550 --> 00:01:58,320

and how they get into these earth

44

00:02:03,270 --> 00:02:00,560

crossing orbits the dawn mission will

45

00:02:05,190 --> 00:02:03,280

help us understand the formation and

46

00:02:08,389 --> 00:02:05,200

evolution of asteroids

47

00:02:10,309 --> 00:02:08,399

vesta is 330 miles in diameter and the

48

00:02:13,350 --> 00:02:10,319

second most massive object in the

49

00:02:16,309 --> 00:02:13,360

asteroid belt its gravity is expected to

50

00:02:18,390 --> 00:02:16,319

capture dawn in orbit on july 16th where

51
00:02:19,350 --> 00:02:18,400
it will remain and collect data for one

52
00:02:21,110 --> 00:02:19,360
year

53
00:02:23,830 --> 00:02:21,120
after another long journey the

54
00:02:26,869 --> 00:02:23,840
spacecraft will arrive in 2015 at its

55
00:02:29,990 --> 00:02:26,879
second destination ceres and even more

56
00:02:31,190 --> 00:02:30,000
massive body in the asteroid belt four

57
00:02:33,589 --> 00:02:31,200
three

58
00:02:36,949 --> 00:02:33,599
two main engine start one

59
00:02:40,309 --> 00:02:36,959
zero and liftoff of the delta ii rocket

60
00:02:42,630 --> 00:02:40,319
with dawn launched in september 2007 the

61
00:02:45,110 --> 00:02:42,640
dawn spacecraft will journey a total of

62
00:02:50,390 --> 00:02:45,120
three billion miles to complete its

63
00:02:54,790 --> 00:02:52,710

several craft at nasa's fleet of earth

64

00:02:56,790 --> 00:02:54,800

observing satellites have captured these

65

00:02:58,710 --> 00:02:56,800

images of severe flooding along the

66

00:03:01,190 --> 00:02:58,720

mississippi river basin

67

00:03:03,990 --> 00:03:01,200

so far nearly 3 million acres in

68

00:03:06,869 --> 00:03:04,000

arkansas tennessee and mississippi have

69

00:03:09,030 --> 00:03:06,879

been affected by severe springtime rains

70

00:03:11,509 --> 00:03:09,040

the mississippi river basin is third

71

00:03:13,589 --> 00:03:11,519

largest in the world and managing floods

72

00:03:15,270 --> 00:03:13,599

in this area has been a challenge for

73

00:03:17,350 --> 00:03:15,280

more than a century

74

00:03:19,350 --> 00:03:17,360

satellite images like these help

75

00:03:21,670 --> 00:03:19,360

scientists and engineers monitor and

76
00:03:23,990 --> 00:03:21,680
evaluate critical and dynamic conditions

77
00:03:26,630 --> 00:03:24,000
about weather and other phenomena like

78
00:03:35,270 --> 00:03:26,640
wetlands preservation thermal pollution

79
00:03:41,270 --> 00:03:38,309
members of the sts-133 crew commander

80
00:03:44,309 --> 00:03:41,280
steve lindsey pilot eric boe and mission

81
00:03:46,949 --> 00:03:44,319
specialists al drew steve bowen mike

82
00:03:49,190 --> 00:03:46,959
baron and nicole stott showed a music

83
00:03:51,589 --> 00:03:49,200
video highlighting their 13-day mission

84
00:03:53,589 --> 00:03:51,599
to the international space station then

85
00:03:55,429 --> 00:03:53,599
took questions from an eager nasa

86
00:03:57,910 --> 00:03:55,439
headquarters audience your challenge

87
00:03:59,750 --> 00:03:57,920
this morning will be to ask us a

88
00:04:01,750 --> 00:03:59,760

question that we haven't heard before

89
00:04:03,750 --> 00:04:01,760
have you ever had that moment where when

90
00:04:05,350 --> 00:04:03,760
you're about to lift off and

91
00:04:06,630 --> 00:04:05,360
you think that you like you feel like

92
00:04:10,190 --> 00:04:06,640
you don't want to go anymore like you

93
00:04:15,190 --> 00:04:12,869
sts-133 delivered to the iss the

94
00:04:17,909 --> 00:04:15,200
permanent multi-purpose module the

95
00:04:21,030 --> 00:04:17,919
fourth express logistics carrier and

96
00:04:22,749 --> 00:04:21,040
robonaut 2 the first human-like robot in

97
00:04:26,150 --> 00:04:22,759
space

98
00:04:30,150 --> 00:04:26,160
sts-133 was the 39th and final mission

99
00:04:34,870 --> 00:04:33,030
once again nasa has been recognized for

100
00:04:37,830 --> 00:04:34,880
several of the world's best internet

101

00:04:40,629 --> 00:04:37,840

sites by winning two webby awards

102

00:04:42,950 --> 00:04:40,639

nasa.gov received its third consecutive

103

00:04:44,070 --> 00:04:42,960

people's voice award for best government

104

00:04:46,710 --> 00:04:44,080

website

105

00:04:48,870 --> 00:04:46,720

and nasa's global climate change site

106

00:04:51,590 --> 00:04:48,880

last year's people's voice award winner

107

00:04:54,830 --> 00:04:51,600

for science captured this year's judges

108

00:04:57,990 --> 00:04:54,840

award for best science site created in

109

00:05:01,430 --> 00:04:58,000

1996 the webby award honors excellence

110

00:05:03,350 --> 00:05:01,440

in online technology and creativity

111

00:05:07,029 --> 00:05:03,360

while nasa has had a web presence since

112

00:05:10,310 --> 00:05:07,039

the early 90s a popular redesign in 2003

113

00:05:11,990 --> 00:05:10,320

has since brought nasa.gov more than 1.5

114

00:05:13,909 --> 00:05:12,000

billion site visits

115

00:05:15,590 --> 00:05:13,919

its customer satisfaction ratings are

116

00:05:17,350 --> 00:05:15,600

among the highest in government

117

00:05:21,110 --> 00:05:17,360

comparable to those of popular

118

00:05:24,310 --> 00:05:22,790

ladies and gentlemen i am proud to

119

00:05:27,909 --> 00:05:24,320

present to you the united states

120

00:05:31,270 --> 00:05:27,919

astronaut hall of fame class of 2011

121

00:05:32,950 --> 00:05:31,280

carol bobco and susan helms

122

00:05:36,469 --> 00:05:32,960

one of the space shuttle program's

123

00:05:38,550 --> 00:05:36,479

earliest commanders carol bo bobcon

124

00:05:41,590 --> 00:05:38,560

and the first woman to live on the

125

00:05:43,749 --> 00:05:41,600

international space station susan helms

126

00:05:45,990 --> 00:05:43,759

were inducted into the u.s astronaut

127

00:05:48,310 --> 00:05:46,000

hall of fame in a ceremony at the

128

00:05:49,749 --> 00:05:48,320

kennedy space center visitors complex in

129

00:05:53,110 --> 00:05:49,759

florida

130

00:05:55,510 --> 00:05:53,120

bobco flew as the pilot on sts-6 the

131

00:05:57,749 --> 00:05:55,520

first flight of space shuttle challenger

132

00:06:00,309 --> 00:05:57,759

in april 1983.

133

00:06:02,309 --> 00:06:00,319

two years later he commanded discovery

134

00:06:04,790 --> 00:06:02,319

on sts-51d

135

00:06:07,990 --> 00:06:04,800

and landed the shuttle safely despite a

136

00:06:10,230 --> 00:06:08,000

blown main gear tire six months later

137

00:06:11,550 --> 00:06:10,240

bobco commanded atlantis on its maiden

138

00:06:13,990 --> 00:06:11,560

flight

139

00:06:16,790 --> 00:06:14,000

sts-51j many of the people in this

140

00:06:18,629 --> 00:06:16,800

audience helped me along the way

141

00:06:20,390 --> 00:06:18,639

your help and encouragement

142

00:06:23,029 --> 00:06:20,400

have been instrumental in my standing

143

00:06:25,670 --> 00:06:23,039

here today to receive the honor of being

144

00:06:28,550 --> 00:06:25,680

inducted into the astronaut hall of fame

145

00:06:30,870 --> 00:06:28,560

helms an air force veteran like bobco

146

00:06:35,029 --> 00:06:30,880

flew five times on the shuttle beginning

147

00:06:37,110 --> 00:06:35,039

with sts-54 in january 1993.

148

00:06:40,710 --> 00:06:37,120

her space flight career included flights

149

00:06:43,189 --> 00:06:40,720

on endeavour discovery columbia atlantis

150

00:06:46,390 --> 00:06:43,199

and the international space station she

151
00:06:49,749 --> 00:06:46,400
spent more than 5 000 hours in space

152
00:06:52,070 --> 00:06:49,759
with 163 days of that on the station

153
00:06:54,230 --> 00:06:52,080
thanks very much to the committee and

154
00:06:58,070 --> 00:06:54,240
the foundation for honoring me uh it

155
00:07:00,150 --> 00:06:58,080
truly is a humbling moment for me and um

156
00:07:02,390 --> 00:07:00,160
and i nothing in the bottom of my heart

157
00:07:04,070 --> 00:07:02,400
nothing will surely be able to be

158
00:07:08,710 --> 00:07:04,080
said that that tells you how much this

159
00:07:12,950 --> 00:07:11,110
bobco and helms join a group of space

160
00:07:15,589 --> 00:07:12,960
heroes that includes the legends of

161
00:07:17,430 --> 00:07:15,599
mercury gemini and apollo

162
00:07:19,990 --> 00:07:17,440
along with the astronauts who flew the

163
00:07:27,110 --> 00:07:20,000

space shuttle on some of its most noted

164

00:07:31,270 --> 00:07:28,870

busloads of middle and high school

165

00:07:33,510 --> 00:07:31,280

students learned about nasa careers

166

00:07:35,270 --> 00:07:33,520

while visiting king's dominion one of

167

00:07:36,309 --> 00:07:35,280

the mid-atlantic's premier amusement

168

00:07:39,110 --> 00:07:36,319

parks

169

00:07:42,150 --> 00:07:39,120

through games q a sessions with langley

170

00:07:44,950 --> 00:07:42,160

research center staff exhibits and other

171

00:07:47,189 --> 00:07:44,960

activities career day attendees learned

172

00:07:49,350 --> 00:07:47,199

what it's like to live and work in space

173

00:07:51,189 --> 00:07:49,360

and how studying science technology

174

00:07:52,550 --> 00:07:51,199

engineering and math can help make that

175

00:07:54,950 --> 00:07:52,560

happen so if you didn't have a grip on

176

00:07:57,029 --> 00:07:54,960

this if it wasn't tethered to your kid

177

00:08:00,150 --> 00:07:57,039

a hair-raising ride on the intimidator

178

00:08:02,629 --> 00:08:00,160

305 a roller coaster tribute to the late

179

00:08:05,029 --> 00:08:02,639

nascar driver dale earnhardt helps

180

00:08:07,589 --> 00:08:05,039

students learn about earth's gravity

181

00:08:10,869 --> 00:08:07,599

its 305 foot initial lift

182

00:08:13,510 --> 00:08:10,879

80 degree plunge and 90 mile per hour

183

00:08:16,309 --> 00:08:13,520

speed taught riders what it felt like to

184

00:08:18,550 --> 00:08:16,319

pull four genes or four times the

185

00:08:20,710 --> 00:08:18,560

gravitational force at our planet's

186

00:08:22,950 --> 00:08:20,720

surface

187

00:08:25,029 --> 00:08:22,960

and that's this week at nasa