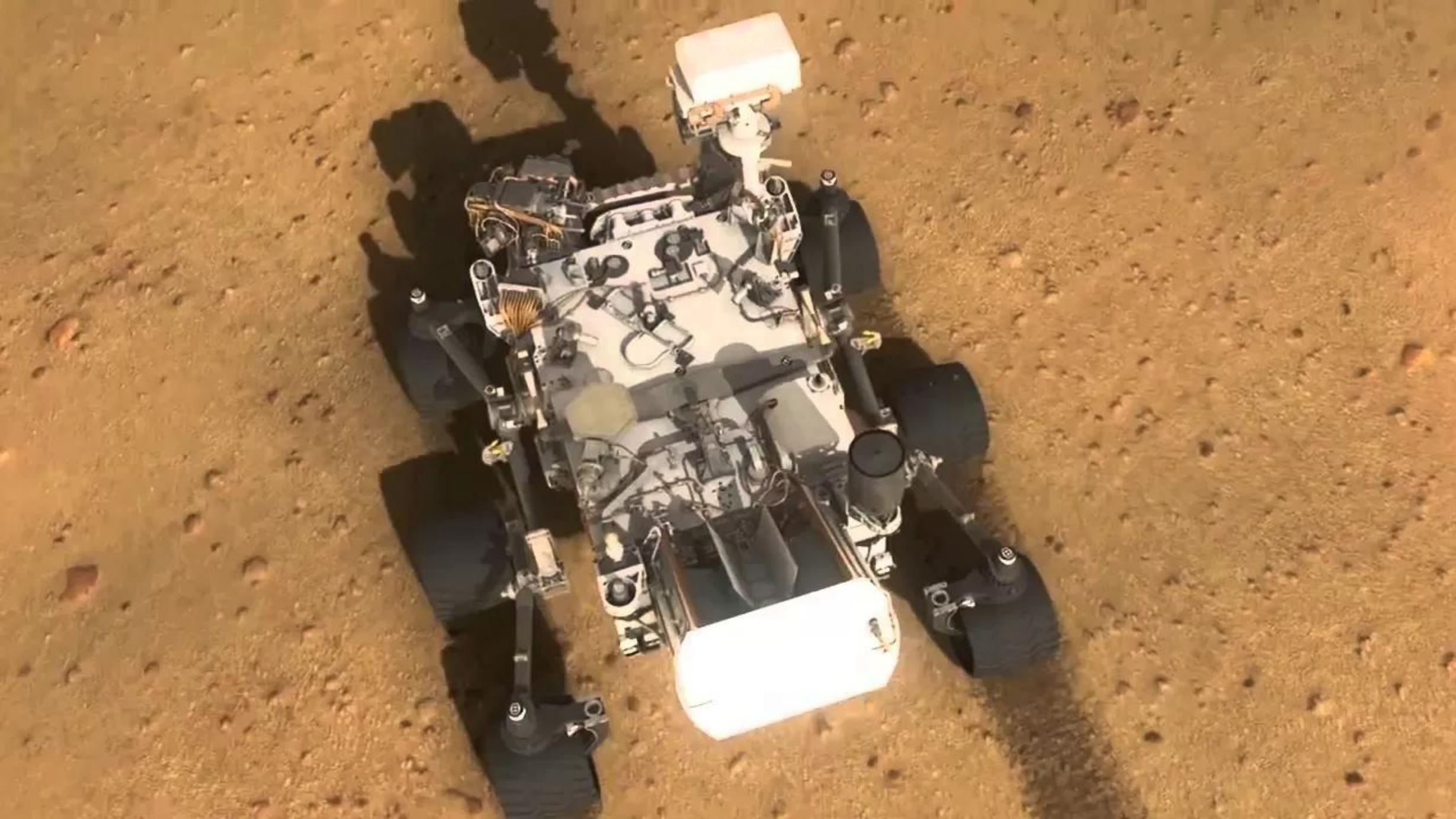

1
00:00:06,230 --> 00:00:15,960
this week at NASA

2
00:00:22,390 --> 00:00:18,880
things are looking good I'm gonna

3
00:00:31,030 --> 00:00:28,660
typical post entry interface without

4
00:00:31,750 --> 00:00:31,040
beginning to feel the atmosphere house

5
00:00:34,630 --> 00:00:31,760
we go in here

6
00:00:53,950 --> 00:00:34,640
I just reporting that we are seeing G's

7
00:01:01,360 --> 00:00:57,580
the parachutes deployed we are

8
00:01:02,680 --> 00:01:01,370
decelerating d joseph has separated

9
00:01:04,299 --> 00:01:02,690
where we found the ground expand so

10
00:01:08,640 --> 00:01:04,309
we're down to 90 meters per second at an

11
00:01:08,650 --> 00:01:15,219
standing by for backshell separation

12
00:01:15,229 --> 00:01:22,460
we are in part white

13
00:01:26,440 --> 00:01:24,050

for an altitude of 1 kilometer

14
00:01:33,999 --> 00:01:26,450
descending

15
00:01:34,009 --> 00:01:43,950
Pikul does he remain strong

16
00:01:43,960 --> 00:02:10,449
captain from Percy

17
00:02:10,459 --> 00:02:30,650
got thumbnail

18
00:02:35,940 --> 00:02:33,630
the interest and reaction generated

19
00:02:37,620 --> 00:02:35,950
worldwide by curiosity's trek to and

20
00:02:39,750 --> 00:02:37,630
landing on the red planet has been

21
00:02:42,210 --> 00:02:39,760
phenomenal people in New York City's

22
00:02:44,220 --> 00:02:42,220
Times Square watched a giant screen and

23
00:02:46,350 --> 00:02:44,230
listened on 3rd rock radio to NASA

24
00:02:49,440 --> 00:02:46,360
televisions coverage of the vehicles

25
00:02:53,490 --> 00:02:49,450
seven-minute 13,000 to 0 miles per hour

26
00:02:56,130 --> 00:02:53,500
plunge to the surface of Mars NASA TV

27
00:02:58,860 --> 00:02:56,140
also had more than 1.2 million people

28
00:03:00,630 --> 00:02:58,870
watching on nasa.gov that's twice the

29
00:03:03,180 --> 00:03:00,640
record set for the recent transit of

30
00:03:05,460 --> 00:03:03,190
Venus the NASA website even made

31
00:03:07,470 --> 00:03:05,470
available a map to which organizations

32
00:03:09,570 --> 00:03:07,480
were able to post locations of viewing

33
00:03:14,039 --> 00:03:09,580
events around the globe of course the

34
00:03:15,420 --> 00:03:14,049
prime hosts were NASA centers it's hard

35
00:03:16,589 --> 00:03:15,430
to send somebody to Mars and hopefully

36
00:03:18,180 --> 00:03:16,599
we can do that one day but you certainly

37
00:03:20,460 --> 00:03:18,190
want to know about Mars before you send

38
00:03:23,130 --> 00:03:20,470

someone there NASA planetary scientist

39
00:03:25,500 --> 00:03:23,140
Kelly fast of NASA headquarters brought

40
00:03:27,600 --> 00:03:25,510
curiosity's landing and mission into

41
00:03:30,420 --> 00:03:27,610
focus for visitors at a community

42
00:03:32,460 --> 00:03:30,430
festival in Palmdale California near

43
00:03:34,440 --> 00:03:32,470
Dryden Flight Research Center

44
00:03:36,509 --> 00:03:34,450
there were also opportunities for the

45
00:03:38,759 --> 00:03:36,519
curious crowd of several hundred people

46
00:03:41,310 --> 00:03:38,769
to learn more about the capabilities of

47
00:03:46,800 --> 00:03:41,320
the red planet's newest Rover through

48
00:03:49,020 --> 00:03:46,810
exhibits set up by Dryden about 7,000

49
00:03:51,210 --> 00:03:49,030
bay area space fans came out to the Ames

50
00:03:53,280 --> 00:03:51,220
Research Center early to grab a good

51
00:03:54,720 --> 00:03:53,290
spot on the lawn to watch NASA

52
00:03:57,090 --> 00:03:54,730
televisions coverage of curiosity's

53
00:03:59,430 --> 00:03:57,100
landing later that night on giant

54
00:04:01,770 --> 00:03:59,440
screens there was plenty to keep them

55
00:04:04,440 --> 00:04:01,780
busy in the meantime in keeping hands-on

56
00:04:07,440 --> 00:04:04,450
activities and displays plenty of food

57
00:04:09,059 --> 00:04:07,450
trucks and more Ames scientists were on

58
00:04:11,250 --> 00:04:09,069
hand to answer questions about the

59
00:04:13,170 --> 00:04:11,260
mission and presentations were given by

60
00:04:15,360 --> 00:04:13,180
center director Pete worden and other

61
00:04:18,870 --> 00:04:15,370
Ames researchers about the role of Ames

62
00:04:20,819 --> 00:04:18,880
and support of the MSL mission at night

63
00:04:25,620 --> 00:04:20,829

when the good news from curiosity

64
00:04:31,110 --> 00:04:25,630
reached earth the crowd at Ames joined

65
00:04:32,760 --> 00:04:31,120
the JPL team in celebration it may have

66
00:04:34,529 --> 00:04:32,770
been early on the East Coast but the

67
00:04:37,430 --> 00:04:34,539
visitor center at Goddard Space Flight

68
00:04:40,649 --> 00:04:37,440
Center was bursting with excitement as

69
00:04:42,899 --> 00:04:40,659
350 people anxiously waited to hear that

70
00:04:45,390 --> 00:04:42,909
the Mars rover Curiosity had landed

71
00:04:47,460 --> 00:04:45,400
safely on the Red Planet the crowd

72
00:04:49,770 --> 00:04:47,470
erupted into cheers when work came down

73
00:04:52,050 --> 00:04:49,780
from Jet Propulsion labs control room

74
00:04:54,719 --> 00:04:52,060
that the rover was up and running on the

75
00:04:56,790 --> 00:04:54,729
Martian soil in addition to watching the

76
00:04:58,500 --> 00:04:56,800
landing live visitors also heard from

77
00:05:00,690 --> 00:04:58,510
scientists about the mission and

78
00:05:03,000 --> 00:05:00,700
specifically about Goddard's role in

79
00:05:05,300 --> 00:05:03,010
building sand for sample analysis at

80
00:05:07,560 --> 00:05:05,310
Mars it's one of the instruments onboard

81
00:05:09,510 --> 00:05:07,570
curiosity that will be testing the soil

82
00:05:09,960 --> 00:05:09,520
and atmosphere for the building blocks

83
00:05:12,450 --> 00:05:09,970
of life

84
00:05:14,040 --> 00:05:12,460
visitors also have the opportunity to

85
00:05:16,080 --> 00:05:14,050
explore the visitor center which

86
00:05:18,149 --> 00:05:16,090
included testing out an interactive

87
00:05:20,700 --> 00:05:18,159
video game that allows players to take

88
00:05:24,690 --> 00:05:20,710

their best shot at landing a rover on

89
00:05:26,969 --> 00:05:24,700
Mars at the Virginia Air and Space

90
00:05:30,029 --> 00:05:26,979
Center the official visitor center at

91
00:05:33,120 --> 00:05:30,039
NASA Langley about 250 people showed up

92
00:05:35,490 --> 00:05:33,130
for Mars Midnight Madness the overnight

93
00:05:37,950 --> 00:05:35,500
event included Mars related exhibits and

94
00:05:40,860 --> 00:05:37,960
information for those curious about the

95
00:05:42,570 --> 00:05:40,870
Mars Science Laboratory at the time for

96
00:05:44,640 --> 00:05:42,580
the scheduled landing of curiosity

97
00:05:46,709 --> 00:05:44,650
approached people filed into the

98
00:05:53,040 --> 00:05:46,719
center's imax theater to catch the

99
00:05:55,110 --> 00:05:53,050
historic event on the big screen the

100
00:05:56,670 --> 00:05:55,120
successful touchdown and especially

101
00:05:59,100 --> 00:05:56,680
proud moment for language whose

102
00:06:01,080 --> 00:05:59,110
contributions to the mission included

103
00:06:04,830 --> 00:06:01,090
the MSL entry descent and landing

104
00:06:07,050 --> 00:06:04,840
instrumentation or medley a group of 14

105
00:06:09,029 --> 00:06:07,060
sensors in the heat shield used to

106
00:06:11,070 --> 00:06:09,039
monitor temperature and pressure during

107
00:06:13,800 --> 00:06:11,080
curiosity's descent through the Martian

108
00:06:18,060 --> 00:06:15,960
the Glenn Research Center held several

109
00:06:21,510 --> 00:06:18,070
MSL curiosity events in the Cleveland

110
00:06:24,120 --> 00:06:21,520
Ohio area on August third a group of the

111
00:06:26,460 --> 00:06:24,130
agency's social media fans were treated

112
00:06:28,770 --> 00:06:26,470
to a tour of several research facilities

113
00:06:30,510 --> 00:06:28,780

in the morning and participated in a

114
00:06:33,690 --> 00:06:30,520
multicenter NASA social

115
00:06:40,320 --> 00:06:33,700
hosted by JPL in the afternoon two days

116
00:06:42,330 --> 00:06:40,330
later the center held a spark your

117
00:06:44,580 --> 00:06:42,340
curiosity event at the Cleveland Museum

118
00:06:46,320 --> 00:06:44,590
of Natural History that featured

119
00:06:49,290 --> 00:06:46,330
discussions with Glenn subject matter

120
00:06:49,890 --> 00:06:49,300
experts and interactive activities later

121
00:06:51,450 --> 00:06:49,900
that evening

122
00:06:53,580 --> 00:06:51,460
summer of innovation students

123
00:06:55,740 --> 00:06:53,590
participated in activities at the Great

124
00:07:00,900 --> 00:06:55,750
Lakes Science Center hands official

125
00:07:03,540 --> 00:07:00,910
visitors say we just succeeded one more

126
00:07:05,700 --> 00:07:03,550
time in raising the bar even higher new

127
00:07:08,190 --> 00:07:05,710
technologies never invented or attempted

128
00:07:10,290 --> 00:07:08,200
before were created for this incredible

129
00:07:11,730 --> 00:07:10,300
journey with the harrowing descent

130
00:07:13,860 --> 00:07:11,740
through the Martian atmosphere in the

131
00:07:16,110 --> 00:07:13,870
past the team of engineers and

132
00:07:17,880 --> 00:07:16,120
scientists working with curiosity has

133
00:07:20,490 --> 00:07:17,890
turned its attention to the mission

134
00:07:22,770 --> 00:07:20,500
ahead exploring the surface of the red

135
00:07:25,560 --> 00:07:22,780
planet for clues about the existence of

136
00:07:27,870 --> 00:07:25,570
life shortly after its landing the Rover

137
00:07:30,300 --> 00:07:27,880
began beaming back images taken by its

138
00:07:32,730 --> 00:07:30,310

hazard avoidance cameras or has cams

139
00:07:35,130 --> 00:07:32,740
higher resolution images will be used

140
00:07:38,010 --> 00:07:35,140
during future operations by the missions

141
00:07:40,380 --> 00:07:38,020
navigators to help plan curiosity's path

142
00:07:42,600 --> 00:07:40,390
of exploration as it sets out on a

143
00:07:44,219 --> 00:07:42,610
nearly two-year prime mission to

144
00:07:46,290 --> 00:07:44,229
investigate whether the region ever

145
00:07:48,570 --> 00:07:46,300
offered conditions favorable for

146
00:07:50,700 --> 00:07:48,580
microbial life it collected data across

147
00:07:52,740 --> 00:07:50,710
the entire Gale Crater in the landing

148
00:07:56,850 --> 00:07:52,750
ellipse and we've got stereo data and

149
00:07:59,670 --> 00:07:56,860
color imagery that are have already been

150
00:08:01,950 --> 00:07:59,680
used to start looking at potential

151
00:08:04,800 --> 00:08:01,960
traverses we'd like to know definitively

152
00:08:06,840 --> 00:08:04,810
what minerals are in that soil and so by

153
00:08:09,690 --> 00:08:06,850
analyzing it we can get a better

154
00:08:11,700 --> 00:08:09,700
understanding of what the composition of

155
00:08:14,719 --> 00:08:11,710
the soil is certainly where we've landed

156
00:08:18,090 --> 00:08:14,729
and by inference maybe also globally and

157
00:08:20,090 --> 00:08:18,100
and and through that get it one of the

158
00:08:22,409 --> 00:08:20,100
most global questions we could address

159
00:08:24,300 --> 00:08:22,419
curiosity undergoes the most difficult

160
00:08:25,830 --> 00:08:24,310
planetary exploration mission ever

161
00:08:27,780 --> 00:08:25,840
conducted

162
00:08:30,570 --> 00:08:27,790
is enabled by a suite of ten science

163
00:08:33,209 --> 00:08:30,580

instruments with a total mass 15 times

164
00:08:36,000 --> 00:08:33,219
as large as the science payloads on the

165
00:08:38,010 --> 00:08:36,010
Mars rovers Spirit and Opportunity some

166
00:08:40,529 --> 00:08:38,020
tools are the first of their kind on

167
00:08:42,630 --> 00:08:40,539
Mars such as a laser to check the

168
00:08:45,300 --> 00:08:42,640
elemental composition of rocks from a

169
00:08:47,280 --> 00:08:45,310
distance curiosity will also use a drill

170
00:08:50,220 --> 00:08:47,290
and scoop at the end of its robotic arm

171
00:08:52,890 --> 00:08:50,230
to gather soil and powdered samples of

172
00:08:54,750 --> 00:08:52,900
rock interiors which can then be sifted

173
00:08:56,880 --> 00:08:54,760
and parceled out to analytical

174
00:08:58,950 --> 00:08:56,890
laboratory instruments inside the rover

175
00:09:00,990 --> 00:08:58,960
with the spacecraft being as healthy as

176
00:09:10,079 --> 00:09:01,000
it is and the capability that it has all

177
00:09:11,910 --> 00:09:10,089
our options are open for science out at

178
00:09:13,560 --> 00:09:11,920
Edwards Air Force Base near the Dryden

179
00:09:17,310 --> 00:09:13,570
Flight Research Center the remotely

180
00:09:19,320 --> 00:09:17,320
piloted x-48c aircraft successfully got

181
00:09:23,400 --> 00:09:19,330
its first flight under its aeronautical

182
00:09:26,130 --> 00:09:23,410
belt the x-48c is an x-48b blended wing

183
00:09:28,710 --> 00:09:26,140
body aircraft that's been modified to

184
00:09:31,380 --> 00:09:28,720
evaluate the low-speed stability and

185
00:09:33,780 --> 00:09:31,390
control of a low noise version of a

186
00:09:36,960 --> 00:09:33,790
possible future hybrid wing body design

187
00:09:39,990 --> 00:09:36,970
the hwv designs stems from NASA's and

188
00:09:42,269 --> 00:09:40,000

plus two future concept studies under

189
00:09:48,240 --> 00:09:42,279
the agency's environmentally responsible

190
00:09:53,580 --> 00:09:51,360
Hey got a minute that's how long the

191
00:09:56,400 --> 00:09:53,590
latest test firing of the j-2x engine

192
00:09:58,740 --> 00:09:56,410
took at Stennis Space Center as NASA

193
00:10:01,200 --> 00:09:58,750
continues development of the Space

194
00:10:03,930 --> 00:10:01,210
Launch System America's Next heavy-lift

195
00:10:05,640 --> 00:10:03,940
rocket that will carry humans deeper

196
00:10:09,000 --> 00:10:05,650
into space than ever before

197
00:10:11,280 --> 00:10:09,010
the 62nd fiery operated the engine at

198
00:10:13,770 --> 00:10:11,290
the primary and secondary levels in an

199
00:10:16,590 --> 00:10:13,780
effort to collect more data about the

200
00:10:18,270 --> 00:10:16,600
developmental engine the j-2x engine is

201
00:10:19,950 --> 00:10:18,280
being built by Pratt & Whitney

202
00:10:24,630 --> 00:10:19,960
Rocketdyne for Marshall Space Flight

203
00:10:27,240 --> 00:10:24,640
Center the Kennedy Space Center has been

204
00:10:30,540 --> 00:10:27,250
googled in celebration of the center's

205
00:10:32,880 --> 00:10:30,550
50th anniversary KSC and Google Maps

206
00:10:35,490 --> 00:10:32,890
with Street View are providing space

207
00:10:37,010 --> 00:10:35,500
enthusiasts with virtual tours of the

208
00:10:40,410 --> 00:10:37,020
cavernous Vehicle Assembly Building

209
00:10:43,080 --> 00:10:40,420
launch pad 39a and other unique

210
00:10:45,180 --> 00:10:43,090
facilities used to help launch humans to

211
00:10:48,390 --> 00:10:45,190
the moon and space shuttles to low-earth

212
00:10:50,670 --> 00:10:48,400
orbit earlier this year a crew of five

213
00:10:52,290 --> 00:10:50,680

Google Streetview personnel spent a week

214
00:10:55,079 --> 00:10:52,300
at the center collecting data and

215
00:10:57,480 --> 00:10:55,089
imagery NASA's three space shuttles were

216
00:10:59,520 --> 00:10:57,490
still at Kennedy so don't be surprised

217
00:11:01,920 --> 00:10:59,530
to see Atlantis and endeavour in the

218
00:11:04,860 --> 00:11:01,930
Vehicle Assembly Building to take the

219
00:11:07,290 --> 00:11:04,870
tour go to Google Maps navigate to

220
00:11:11,070 --> 00:11:07,300
Kennedy Space Center and then switch to

221
00:11:13,890 --> 00:11:11,080
Street View the radiation belts are the

222
00:11:17,190 --> 00:11:13,900
first and perhaps the oldest discovery

223
00:11:19,530 --> 00:11:17,200
of the Space Age yet they remain a

224
00:11:22,380 --> 00:11:19,540
mystery simply because this is a very

225
00:11:24,300 --> 00:11:22,390
harsh environment scientists and project

226
00:11:26,940 --> 00:11:24,310
managers discuss the upcoming mission of

227
00:11:29,670 --> 00:11:26,950
the radiation belt storm probes a NASA

228
00:11:31,890 --> 00:11:29,680
twin spacecraft designed to study the

229
00:11:34,260 --> 00:11:31,900
extremes of space weather by studying

230
00:11:37,579 --> 00:11:34,270
the planets Van Allen radiation belts on

231
00:11:41,490 --> 00:11:37,589
various scales of space and time we have

232
00:11:43,950 --> 00:11:41,500
broadcasting both satellites 24/7 space

233
00:11:45,900 --> 00:11:43,960
weather this is gonna get picked up by

234
00:11:47,970 --> 00:11:45,910
ground stations around the world

235
00:11:49,980 --> 00:11:47,980
scheduled to begin with a pre-dawn

236
00:11:52,740 --> 00:11:49,990
launch August 23rd from the Kennedy

237
00:11:55,200 --> 00:11:52,750
Space Center rbsp is part of NASA's

238
00:11:57,720 --> 00:11:55,210

living with a star program which

239
00:12:00,180 --> 00:11:57,730
investigates the processes of hazardous

240
00:12:03,140 --> 00:12:00,190
space weather and its effect on space

241
00:12:07,290 --> 00:12:05,340
enthusiastic teachers from around the

242
00:12:09,570 --> 00:12:07,300
country recently gathered at NASA's

243
00:12:12,090 --> 00:12:09,580
Dryden aircraft operations facility in

244
00:12:14,220 --> 00:12:12,100
Palmdale California to participate in

245
00:12:17,640 --> 00:12:14,230
NASA's airborne research experiences for

246
00:12:19,860 --> 00:12:17,650
educators and students or Ares for two

247
00:12:21,660 --> 00:12:19,870
weeks the educators focused on NASA's

248
00:12:24,330 --> 00:12:21,670
earth science programs and flight

249
00:12:25,890 --> 00:12:24,340
research missions in the first week a

250
00:12:27,750 --> 00:12:25,900
dozen elementary and high school

251
00:12:30,150 --> 00:12:27,760
teachers discovered how to find NASA

252
00:12:32,310 --> 00:12:30,160
educational resources learned about

253
00:12:34,350 --> 00:12:32,320
aircraft used for earth observation and

254
00:12:36,540 --> 00:12:34,360
data collection and discovered how

255
00:12:38,370 --> 00:12:36,550
engineers integrate specialized science

256
00:12:40,200 --> 00:12:38,380
instruments into aircraft we're

257
00:12:43,680 --> 00:12:40,210
observing and monitoring terrestrial

258
00:12:46,170 --> 00:12:43,690
changes an additional 14 educators from

259
00:12:48,090 --> 00:12:46,180
NASA's Explorer Schools program join the

260
00:12:51,180 --> 00:12:48,100
Ares participants during the second week

261
00:12:53,550 --> 00:12:51,190
to participate in a simulated NASA er to

262
00:12:55,440 --> 00:12:53,560
earth science mission the teachers

263
00:12:57,300 --> 00:12:55,450

compared imagery and data collected by

264
00:12:59,460 --> 00:12:57,310
science instruments from previous

265
00:13:01,500 --> 00:12:59,470
airborne missions the ground data and

266
00:13:03,690 --> 00:13:01,510
imagery obtained during a field site

267
00:13:05,700 --> 00:13:03,700
visit in central California middle

268
00:13:07,440 --> 00:13:05,710
school science teacher Michael octet I

269
00:13:09,750 --> 00:13:07,450
expressed confidence that the training

270
00:13:12,120 --> 00:13:09,760
speakers materials and hands-on

271
00:13:14,160 --> 00:13:12,130
activities will give Ares attendees the

272
00:13:17,490 --> 00:13:14,170
tools to create effective education

273
00:13:19,790 --> 00:13:17,500
action plans we're able to actually look

274
00:13:23,520 --> 00:13:19,800
at abstract ideas and concepts that are

275
00:13:24,870 --> 00:13:23,530
normally on paper and we actually had

276
00:13:27,720 --> 00:13:24,880
the opportunity to travel to different

277
00:13:32,670 --> 00:13:27,730
sites actually conduct some research and

278
00:13:36,270 --> 00:13:32,680
do some hands-on experimentation 35

279
00:13:39,329 --> 00:13:36,280
years ago on August 12th 1977 Enterprise

280
00:13:41,340 --> 00:13:39,339
NASA's first space shuttle experienced

281
00:13:42,870 --> 00:13:41,350
its first free flight at Edwards Air

282
00:13:45,810 --> 00:13:42,880
Force Base near Dryden Flight Research

283
00:13:47,940 --> 00:13:45,820
Center in California this was one of

284
00:13:49,680 --> 00:13:47,950
five flight evaluations conducted at

285
00:13:51,720 --> 00:13:49,690
Edwards as part of the space shuttle

286
00:13:53,880 --> 00:13:51,730
approach and landing test program

287
00:13:56,430 --> 00:13:53,890
jointly managed by the Johnson Space

288
00:13:58,440 --> 00:13:56,440

Center and Dryden Enterprise had

289
00:14:00,090 --> 00:13:58,450
previously completed eight captive carry

290
00:14:02,340 --> 00:14:00,100
flights anchored on the back of a

291
00:14:05,910 --> 00:14:02,350
modified Boeing 747 Shuttle Carrier

292
00:14:08,640 --> 00:14:05,920
aircraft or SCA these captive flights

293
00:14:10,350 --> 00:14:08,650
verified the orbiter systems and cleared

294
00:14:13,050 --> 00:14:10,360
the way for the shuttles first free

295
00:14:14,840 --> 00:14:13,060
flight on board Enterprise where

296
00:14:17,360 --> 00:14:14,850
astronauts Fred Hayes

297
00:14:19,460 --> 00:14:17,370
Gordon Fullerton though Enterprise never

298
00:14:21,019 --> 00:14:19,470
flew in space it proved the Space

299
00:14:23,090 --> 00:14:21,029
Shuttle Orbiter could fly in the

300
00:14:25,999 --> 00:14:23,100
atmosphere and land like an unpowered

301
00:14:28,309 --> 00:14:26,009
glider the famed orbiter recently went

302
00:14:30,639 --> 00:14:28,319
on public display at the Intrepid Sea

303
00:14:35,480 --> 00:14:30,649
Air and Space Museum in New York City

304
00:14:38,809 --> 00:14:35,490
and 50 years ago between august 11th and

305
00:14:42,110 --> 00:14:38,819
15th in 1962 the missions of the Soviet

306
00:14:44,329 --> 00:14:42,120
Vostok 3 and Vostok 4 spacecraft marked

307
00:14:46,550 --> 00:14:44,339
the first time that more than one manned

308
00:14:49,009 --> 00:14:46,560
spacecraft was in orbit at the same time

309
00:14:51,920 --> 00:14:49,019
the cosmonauts aboard the two capsules

310
00:14:54,790 --> 00:14:51,930
on three and Nicole EF in Vostok 3 and

311
00:14:56,840 --> 00:14:54,800
Pavel Popovich in Vostok 4 also

312
00:14:59,569 --> 00:14:56,850
participated in the first ship-to-ship

313
00:15:02,900 --> 00:14:59,579

communications in space by contacting

314
00:15:05,300 --> 00:15:02,910
each other via radio and that's this

315
00:15:07,340 --> 00:15:05,310
week @nasa for more on these and other

316
00:15:10,160 --> 00:15:07,350
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