
NASA
Robert Dillman
IRVE-3 Chief Engineer

1
00:00:13,190 --> 00:00:10,870
this week at nasa

2
00:00:16,230 --> 00:00:13,200
ladies and gentlemen you are in for a

3
00:00:18,710 --> 00:00:16,240
treat nasa television helped observe the

4
00:00:20,950 --> 00:00:18,720
last transit of venus we'll see here on

5
00:00:23,590 --> 00:00:20,960
earth until 2117

6
00:00:25,910 --> 00:00:23,600
by showcasing live streaming websites

7
00:00:28,630 --> 00:00:25,920
the world over including observations

8
00:00:30,710 --> 00:00:28,640
made by scientists in central australia

9
00:00:32,630 --> 00:00:30,720
there are just a few clouds in the sky

10
00:00:35,830 --> 00:00:32,640
and we are set up for absolutely

11
00:00:38,630 --> 00:00:35,840
gorgeous first and second contact and by

12
00:00:42,150 --> 00:00:38,640
the nasa edge team stationed atop the

13
00:00:44,709 --> 00:00:42,160

mauna kea observatory in hawaii

14
00:00:46,549 --> 00:00:44,719
until i put my blinders down yes and now

15
00:00:48,790 --> 00:00:46,559
well of course now i can't see anything

16
00:00:51,029 --> 00:00:48,800
scientists at nasa headquarters also

17
00:00:53,510 --> 00:00:51,039
provided information and insight about

18
00:00:56,790 --> 00:00:53,520
this rare yet predictable celestial

19
00:00:58,950 --> 00:00:56,800
phenomenon that has captivated humankind

20
00:01:00,709 --> 00:00:58,960
for millennia from a perspective of

21
00:01:03,110 --> 00:01:00,719
wanting to know more about our solar

22
00:01:05,670 --> 00:01:03,120
system here's an occurrence like an

23
00:01:08,550 --> 00:01:05,680
eclipse that's very rare and of course

24
00:01:10,070 --> 00:01:08,560
it attracts our natural interest in

25
00:01:11,910 --> 00:01:10,080
looking at these

26
00:01:14,149 --> 00:01:11,920
wondering objects and where they go and

27
00:01:16,310 --> 00:01:14,159
in this case venus is going to cross in

28
00:01:17,510 --> 00:01:16,320
front of the sun if i could actually

29
00:01:21,270 --> 00:01:17,520
dream

30
00:01:22,310 --> 00:01:21,280
105 years 117 years from now i wouldn't

31
00:01:29,030 --> 00:01:22,320
think about

32
00:01:31,109 --> 00:01:29,040
transit of earth as seen from mars

33
00:01:33,990 --> 00:01:31,119
and nasa helped provide some unique

34
00:01:36,469 --> 00:01:34,000
images this is how the transit appeared

35
00:01:38,469 --> 00:01:36,479
to astronaut don pettit from his vantage

36
00:01:41,749 --> 00:01:38,479
point on board the international space

37
00:01:44,469 --> 00:01:41,759
station and nasa's solar dynamics

38
00:01:48,149 --> 00:01:44,479

observatory captured the entire transit

39
00:01:50,230 --> 00:01:48,159
in stunning greater than hd resolution

40
00:01:52,789 --> 00:01:50,240
several nasa centers hosted public

41
00:01:55,910 --> 00:01:52,799
transit viewing parties at the ames

42
00:01:59,749 --> 00:01:55,920
research center close to 6 000 people

43
00:02:01,910 --> 00:01:59,759
came to watch the sky and broadcast plus

44
00:02:03,910 --> 00:02:01,920
ask questions of kepler mission and

45
00:02:06,230 --> 00:02:03,920
planetary scientists

46
00:02:08,790 --> 00:02:06,240
no matter where they were those who

47
00:02:12,550 --> 00:02:08,800
witnessed the transit were treated to a

48
00:02:14,869 --> 00:02:12,560
last in our lifetime event

49
00:02:17,430 --> 00:02:14,879
hi i'm gay ye hill at nasa's jet

50
00:02:20,070 --> 00:02:17,440
propulsion laboratory in pasadena

51
00:02:22,790 --> 00:02:20,080
california about a half dozen of our

52
00:02:25,589 --> 00:02:22,800
jplers have brought in their own

53
00:02:27,589 --> 00:02:25,599
personal telescopes equipped with solar

54
00:02:29,990 --> 00:02:27,599
filters so they can

55
00:02:32,070 --> 00:02:30,000
share this once in a lifetime event with

56
00:02:33,990 --> 00:02:32,080
some of their co-workers and also people

57
00:02:37,509 --> 00:02:34,000
who live in the neighborhood i saw the

58
00:02:38,550 --> 00:02:37,519
sun but i saw this tiny black dot

59
00:02:40,790 --> 00:02:38,560
but

60
00:02:43,350 --> 00:02:40,800
i couldn't i couldn't say it at first

61
00:02:45,750 --> 00:02:43,360
but then i looked closer and then i saw

62
00:02:47,750 --> 00:02:45,760
the tiny black dog and i knew that was

63
00:02:50,150 --> 00:02:47,760

venus what surprised me about it most

64
00:02:51,990 --> 00:02:50,160
was the fact that i guess that i was

65
00:02:53,509 --> 00:02:52,000
able to see in my lifetime what are you

66
00:02:55,750 --> 00:02:53,519
going to do tell your grandkids about

67
00:02:57,830 --> 00:02:55,760
this assuming i have any it's really

68
00:02:59,910 --> 00:02:57,840
cool you can see it through and and this

69
00:03:02,229 --> 00:02:59,920
if and if you can look closely there's

70
00:03:05,110 --> 00:03:02,239
like a really really extremely tiny

71
00:03:06,949 --> 00:03:05,120
black dot which is venus if you missed

72
00:03:09,430 --> 00:03:06,959
this one that's okay there's another one

73
00:03:11,750 --> 00:03:09,440
coming unfortunately it's a hundred and

74
00:03:14,229 --> 00:03:11,760
five years away so you can understand

75
00:03:16,149 --> 00:03:14,239
why these kids are stoked that they just

76
00:03:19,990 --> 00:03:16,159
witnessed something that happens just

77
00:03:23,430 --> 00:03:22,070
as nasa joined the world to witness the

78
00:03:25,030 --> 00:03:23,440
venus transit

79
00:03:27,030 --> 00:03:25,040
officials at the glenn research center

80
00:03:29,110 --> 00:03:27,040
hosted media representatives to learn

81
00:03:31,110 --> 00:03:29,120
about and see some of the capabilities

82
00:03:33,430 --> 00:03:31,120
developed to pave the way for future

83
00:03:36,149 --> 00:03:33,440
robotic missions to venus the event

84
00:03:38,229 --> 00:03:36,159
began in a lab where engineers rapidly

85
00:03:41,270 --> 00:03:38,239
create various space exploration

86
00:03:43,030 --> 00:03:41,280
concepts some of which involve flying in

87
00:03:45,110 --> 00:03:43,040
the venus sky

88
00:03:47,670 --> 00:03:45,120

glenn researchers summarized glenn's

89
00:03:49,589 --> 00:03:47,680
capabilities for future venus missions

90
00:03:51,750 --> 00:03:49,599
and gave a briefing on what a venus

91
00:03:53,429 --> 00:03:51,760
rover could look like they also talked

92
00:03:55,270 --> 00:03:53,439
about their excitement in observing the

93
00:03:57,190 --> 00:03:55,280
venus transit and working with

94
00:03:59,270 --> 00:03:57,200
scientists around the world to better

95
00:04:01,429 --> 00:03:59,280
understand what happens on venus and

96
00:04:03,990 --> 00:04:01,439
what that may mean for us here on earth

97
00:04:06,550 --> 00:04:04,000
the climate models that we currently use

98
00:04:09,030 --> 00:04:06,560
on earth only have earth as a set of

99
00:04:10,949 --> 00:04:09,040
data to validate venus will provide a

100
00:04:11,990 --> 00:04:10,959
new set of validation that allow us to

101
00:04:14,309 --> 00:04:12,000
improve our weather prediction

102
00:04:17,030 --> 00:04:14,319
capabilities reporters also toured

103
00:04:19,110 --> 00:04:17,040
glenn's new extreme environment rig

104
00:04:21,430 --> 00:04:19,120
that will simulate harsh environments of

105
00:04:23,270 --> 00:04:21,440
planets like venus this rig is the

106
00:04:25,510 --> 00:04:23,280
largest of its kind in the world this

107
00:04:27,510 --> 00:04:25,520
extreme environments rig truly is an

108
00:04:29,830 --> 00:04:27,520
extreme environments rig it can handle

109
00:04:31,510 --> 00:04:29,840
harsh high pressure high temperature but

110
00:04:33,990 --> 00:04:31,520
also the conditions such as on titan

111
00:04:35,270 --> 00:04:34,000
where it's cold and yet pressurized

112
00:04:37,189 --> 00:04:35,280
and some of the new planets that are

113
00:04:39,270 --> 00:04:37,199

being discovered such as exoplanets that

114
00:04:41,510 --> 00:04:39,280
are a little larger than earth but have

115
00:04:43,830 --> 00:04:41,520
very similar conditions to venus one of

116
00:04:47,510 --> 00:04:43,840
the areas that we're working

117
00:04:50,710 --> 00:04:47,520
is a seismometer that can measure the

118
00:04:53,030 --> 00:04:50,720
vibrations on the venous surface

119
00:04:54,230 --> 00:04:53,040
this seismometer is meant to be able to

120
00:04:56,950 --> 00:04:54,240
withstand

121
00:05:00,230 --> 00:04:56,960
harsh environments of venus and actually

122
00:05:02,070 --> 00:05:00,240
operate on the venus surface

123
00:05:05,110 --> 00:05:02,080
a little more than a month after

124
00:05:12,310 --> 00:05:05,120
arriving at new york's jfk airport atop

125
00:05:18,070 --> 00:05:14,870
space shuttle enterprise concluded its

126
00:05:20,950 --> 00:05:18,080
voyage when nasa's first space shuttle

127
00:05:23,430 --> 00:05:20,960
made its much anticipated arrival that

128
00:05:26,790 --> 00:05:23,440
way of barge on the hudson river to its

129
00:05:27,830 --> 00:05:26,800
new home the intrepid sea air and space

130
00:05:29,749 --> 00:05:27,840
museum

131
00:05:32,950 --> 00:05:29,759
enterprise will be on exhibit to the

132
00:05:35,029 --> 00:05:32,960
public beginning july 19 in a temporary

133
00:05:37,749 --> 00:05:35,039
climate-controlled pavilion

134
00:05:40,550 --> 00:05:37,759
intrepid continues work on a permanent

135
00:05:43,189 --> 00:05:40,560
exhibit facility to showcase enterprise

136
00:05:47,510 --> 00:05:43,199
and enhance the museum's space-related

137
00:05:49,510 --> 00:05:47,520
exhibits and education curriculum

138
00:05:52,790 --> 00:05:49,520

to celebrate 100 years of the girl

139
00:05:55,590 --> 00:05:52,800
scouts nasa helped the organization rock

140
00:05:57,990 --> 00:05:55,600
the national mall by hosting an event at

141
00:05:59,909 --> 00:05:58,000
nasa headquarters in washington

142
00:06:01,510 --> 00:05:59,919
scouts were treated to an engaging

143
00:06:03,749 --> 00:06:01,520
program that included hands-on

144
00:06:05,510 --> 00:06:03,759
activities to learn about aeronautics

145
00:06:07,749 --> 00:06:05,520
science and exploration

146
00:06:10,309 --> 00:06:07,759
they also learned about nasa's missions

147
00:06:12,710 --> 00:06:10,319
and careers from special guests that

148
00:06:15,830 --> 00:06:12,720
included former nasa astronauts heidi

149
00:06:18,629 --> 00:06:15,840
maurice definition piper and pam melroy

150
00:06:21,189 --> 00:06:18,639
and nasa deputy administrator lori

151
00:06:24,309 --> 00:06:21,199
garver the organization the girl scouts

152
00:06:27,110 --> 00:06:24,319
strives to teach girls self-reliance and

153
00:06:29,110 --> 00:06:27,120
resourcefulness it also encourages girls

154
00:06:31,590 --> 00:06:29,120
to seek fulfillment in the professional

155
00:06:34,309 --> 00:06:31,600
world and to become active citizens in

156
00:06:36,309 --> 00:06:34,319
their communities in my experience there

157
00:06:39,029 --> 00:06:36,319
are no better skills than those to

158
00:06:40,870 --> 00:06:39,039
prepare you for

159
00:06:42,390 --> 00:06:40,880
the future it was great talking to a

160
00:06:44,070 --> 00:06:42,400
group of girl scouts telling them all

161
00:06:45,830 --> 00:06:44,080
about the things the neat stuff he can

162
00:06:46,950 --> 00:06:45,840
do with math and science

163
00:06:50,150 --> 00:06:46,960

whether it's

164
00:06:54,150 --> 00:06:50,160
in the navy fixing ships or flying in

165
00:06:59,350 --> 00:06:56,550
this long tube shape may not look like a

166
00:07:01,270 --> 00:06:59,360
spacecraft to most people but something

167
00:07:04,309 --> 00:07:01,280
like it may someday take instruments to

168
00:07:06,550 --> 00:07:04,319
mars or return cargo to earth

169
00:07:07,830 --> 00:07:06,560
packed into its restraining bag is

170
00:07:09,749 --> 00:07:07,840
irve-3

171
00:07:11,749 --> 00:07:09,759
the inflatable re-entry vehicle

172
00:07:14,150 --> 00:07:11,759
experiment developed at nasa's langley

173
00:07:15,830 --> 00:07:14,160
research center in hampton virginia

174
00:07:18,870 --> 00:07:15,840
it's designed to demonstrate that

175
00:07:20,150 --> 00:07:18,880
inflatable spacecraft are feasible it's

176
00:07:21,830 --> 00:07:20,160
very challenging to develop an

177
00:07:24,070 --> 00:07:21,840
inflatable spacecraft because you have

178
00:07:26,950 --> 00:07:24,080
to use materials

179
00:07:29,270 --> 00:07:26,960
that do not mind being packed down into

180
00:07:30,550 --> 00:07:29,280
a small volume for launch and then

181
00:07:33,510 --> 00:07:30,560
unfolded

182
00:07:35,990 --> 00:07:33,520
up to their full size so we use fabrics

183
00:07:38,230 --> 00:07:36,000
whereas a traditional rigid heat shield

184
00:07:40,629 --> 00:07:38,240
would be more of a solid material that

185
00:07:42,309 --> 00:07:40,639
doesn't fold irve-3 is scheduled to

186
00:07:44,390 --> 00:07:42,319
launch from a sounding rocket at wallops

187
00:07:49,909 --> 00:07:44,400
flight facility also in virginia much

188
00:07:53,670 --> 00:07:51,589

but first the hardware and software has

189
00:07:55,990 --> 00:07:53,680
had to go through a series of tests one

190
00:07:58,309 --> 00:07:56,000
of the last destinations before flight

191
00:07:59,830 --> 00:07:58,319
nasa langley's transonic dynamics tunnel

192
00:08:01,830 --> 00:07:59,840
or tdt

193
00:08:04,469 --> 00:08:01,840
to check out the whole system

194
00:08:06,790 --> 00:08:04,479
inflation and all we were using the tdt

195
00:08:08,950 --> 00:08:06,800
for a vacuum chamber and what we do is

196
00:08:10,869 --> 00:08:08,960
actually bring it down to low pressure

197
00:08:12,309 --> 00:08:10,879
just like it will see during reentry to

198
00:08:13,909 --> 00:08:12,319
make sure that this thing's going to

199
00:08:15,990 --> 00:08:13,919
inflate properly

200
00:08:18,230 --> 00:08:16,000
during the test we had the

201
00:08:19,909 --> 00:08:18,240
pyro initiators which are little cutters

202
00:08:21,589 --> 00:08:19,919
that they don't explode or anything they

203
00:08:24,230 --> 00:08:21,599
just cut the strings

204
00:08:26,070 --> 00:08:24,240
they initiated the bag started to unzip

205
00:08:27,990 --> 00:08:26,080
it actually paused so we all got excited

206
00:08:29,909 --> 00:08:28,000
for a minute and then it just paused a

207
00:08:32,790 --> 00:08:29,919
second and let go and the rest of the

208
00:08:34,230 --> 00:08:32,800
bag opened up the inflatable came out

209
00:08:36,070 --> 00:08:34,240
that was much to the relief of the

210
00:08:38,230 --> 00:08:36,080
engineers who thoroughly checked the

211
00:08:40,389 --> 00:08:38,240
irve-3 afterwards

212
00:08:42,550 --> 00:08:40,399
also performing well during the test the

213
00:08:44,389 --> 00:08:42,560

thermal blanket which will protect the

214
00:08:46,310 --> 00:08:44,399
inflatable from the forces and heat of

215
00:08:47,750 --> 00:08:46,320
atmospheric entry

216
00:08:50,230 --> 00:08:47,760
now the team can only hope everything

217
00:08:54,070 --> 00:08:50,240
works just as flawlessly later this year

218
00:08:57,910 --> 00:08:56,150
and continue to study your math and

219
00:08:59,990 --> 00:08:57,920
science because one day we're going to

220
00:09:02,230 --> 00:09:00,000
need your help the marshall space flight

221
00:09:04,949 --> 00:09:02,240
center and boeing teamed up with the

222
00:09:07,590 --> 00:09:04,959
city of huntsville to share a bit of the

223
00:09:09,110 --> 00:09:07,600
international space station with some 5

224
00:09:11,190 --> 00:09:09,120
000 students

225
00:09:13,430 --> 00:09:11,200
huntsville mayor tommy battle's book

226
00:09:16,790 --> 00:09:13,440
club provided the students with a copy

227
00:09:18,389 --> 00:09:16,800
of station inspired living in space

228
00:09:20,389 --> 00:09:18,399
the club provides children from

229
00:09:21,670 --> 00:09:20,399
low-income neighborhoods with books they

230
00:09:23,750 --> 00:09:21,680
can keep

231
00:09:27,030 --> 00:09:23,760
marshall's space launch systems manager

232
00:09:29,269 --> 00:09:27,040
tony lavoy and astronauts mike fink and

233
00:09:31,670 --> 00:09:29,279
jack fisher talked with students about

234
00:09:34,550 --> 00:09:31,680
the work being done together by nasa and

235
00:09:36,710 --> 00:09:34,560
boeing on the new sls and the

236
00:09:39,750 --> 00:09:36,720
groundbreaking science and technology

237
00:09:43,110 --> 00:09:39,760
conducted aboard the iss that continues

238
00:09:47,829 --> 00:09:45,430

when i was 12 years old

239
00:09:50,310 --> 00:09:47,839
i decided i was going to be a writer

240
00:09:53,350 --> 00:09:50,320
the nasa family mourns the passing of

241
00:09:55,829 --> 00:09:53,360
ray bradbury one of our era's greatest

242
00:09:57,030 --> 00:09:55,839
and most noted science fiction fantasy

243
00:09:59,590 --> 00:09:57,040
writers

244
00:10:01,990 --> 00:09:59,600
as the author of such classic works as

245
00:10:05,190 --> 00:10:02,000
the martian chronicles the illustrated

246
00:10:07,509 --> 00:10:05,200
man and fahrenheit 451

247
00:10:09,990 --> 00:10:07,519
bradbury influenced a generation of

248
00:10:12,710 --> 00:10:10,000
young men and women who dared to dream

249
00:10:15,509 --> 00:10:12,720
of making science fiction science fact

250
00:10:17,030 --> 00:10:15,519
the future mankind depends upon space

251
00:10:19,350 --> 00:10:17,040
travel

252
00:10:21,269 --> 00:10:19,360
and they will get away from war

253
00:10:22,150 --> 00:10:21,279
if we stay on earth we'll go on heavy

254
00:10:24,949 --> 00:10:22,160
wars

255
00:10:27,829 --> 00:10:24,959
but if we go to the moon and mars we'll

256
00:10:31,269 --> 00:10:27,839
bind ourselves together into one single

257
00:10:32,470 --> 00:10:31,279
race one color and go into space and

258
00:10:39,269 --> 00:10:32,480
live forever

259
00:10:45,910 --> 00:10:42,870
one year ago on june 10 2011

260
00:10:47,829 --> 00:10:45,920
nasa's age of aquarius donned with the

261
00:10:50,150 --> 00:10:47,839
launch of an international satellite

262
00:10:53,190 --> 00:10:50,160
carrying the aquarius observatory from

263
00:10:55,590 --> 00:10:53,200

california's vandenberg air force base

264
00:10:57,670 --> 00:10:55,600
aquarius was designed to take nasa's

265
00:11:01,110 --> 00:10:57,680
first space-based measurements of the

266
00:11:03,190 --> 00:11:01,120
salinity or saltiness of earth's oceans

267
00:11:06,230 --> 00:11:03,200
to further our understanding of the

268
00:11:07,590 --> 00:11:06,240
global water cycle and improve climate

269
00:11:09,910 --> 00:11:07,600
forecasts

270
00:11:14,870 --> 00:11:09,920
aquarius was built by the jet propulsion

271
00:11:18,750 --> 00:11:14,880
lab and the goddard space flight center

272
00:11:22,470 --> 00:11:18,760
and 45 years ago on june 14

273
00:11:25,030 --> 00:11:22,480
1967 the mariner 5 spacecraft was

274
00:11:27,430 --> 00:11:25,040
launched by an atlas agena d rocket from

275
00:11:29,430 --> 00:11:27,440
cape canaveral air force station towards

276
00:11:32,150 --> 00:11:29,440
the planet venus

277
00:11:34,389 --> 00:11:32,160
making its flyby on october 19th of that

278
00:11:36,870 --> 00:11:34,399
year with instruments more sensitive

279
00:11:39,750 --> 00:11:36,880
than its predecessor mariner 2

280
00:11:42,710 --> 00:11:39,760
mariner 5 shed new light on the hot

281
00:11:44,870 --> 00:11:42,720
cloud-covered planet and on conditions

282
00:11:46,949 --> 00:11:44,880
in interplanetary space

283
00:11:48,550 --> 00:11:46,959
its operations ended in november of

284
00:11:51,750 --> 00:11:48,560
1967.

285
00:11:53,110 --> 00:11:51,760
mariner 5 remains in orbit around the

286
00:11:55,509 --> 00:11:53,120
sun

287
00:11:57,670 --> 00:11:55,519
and that's this week at nasa

288
00:12:00,150 --> 00:11:57,680

for more on these and other stories or

289
00:12:02,870 --> 00:12:00,160
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