



Mars Favorable to Life

1
00:00:07,070 --> 00:00:10,999
this weekend masses

2
00:00:10,999 --> 00:00:15,009
we think about the mars science
laboratory uh... event that we have left

3
00:00:15,009 --> 00:00:17,480
rocketed eleven of curiosity

4
00:00:17,480 --> 00:00:18,960
on the planet mars

5
00:00:18,960 --> 00:00:22,589
often what comes to mind is the seven
minutes of terror

6
00:00:22,589 --> 00:00:25,429
shattered

7
00:00:25,429 --> 00:00:28,710
well since then we've had seven months
of anticipation

8
00:00:28,710 --> 00:00:31,609
uh... for the results that you're going
to hear about

9
00:00:31,609 --> 00:00:35,480
a news briefing to use the at nasa
headquarters focused on analysis of the

10
00:00:35,480 --> 00:00:40,350
first-ever sample of rock powder
collected on mars by the curiosity rover

11
00:00:40,350 --> 00:00:43,710
and the big news resulting from that
analysis

12
00:00:43,710 --> 00:00:47,770
and answer to the fundamental question
on which the road respon mission in

13
00:00:47,770 --> 00:00:48,850
space

14
00:00:48,850 --> 00:00:52,620
was the deal creator erie of the red
planet ever capable of supporting

15
00:00:52,620 --> 00:00:56,930
microbial life i think the answer is yes
i think this is probably the only

16
00:00:56,930 --> 00:00:58,820
definitively

17
00:00:58,820 --> 00:01:02,790
capital environment that we've described
in recorded we've found that have the

18
00:01:02,790 --> 00:01:07,600
board fired that is soooo benign and
supportive of life

19
00:01:07,600 --> 00:01:11,479
that probably if this water was around
and you had been on the planet you would

20
00:01:11,479 --> 00:01:15,530
have been able to break it here now in
this week's curiosity rover report the

21
00:01:15,530 --> 00:01:21,080
details of the work behind this pic
discovered

22

00:01:21,080 --> 00:01:25,540
i am told her was a scientist with
curiosity surface sampling system team

23
00:01:25,540 --> 00:01:28,470
and this is your curiosity roper report

24
00:01:28,470 --> 00:01:32,360
this week that curiosity science team
released its initial findings from

25
00:01:32,360 --> 00:01:34,970
first-ever drilled sample on mars

26
00:01:34,970 --> 00:01:38,610
this sample was collected from the john
client real site which is located about

27
00:01:38,610 --> 00:01:42,560
five hundred meters east of where we
landed about seven months ago

28
00:01:42,560 --> 00:01:47,190
curiosity obtained her first real sample
past that sample want were on board

29
00:01:47,190 --> 00:01:50,720
analytical instruments called chemin

30
00:01:50,720 --> 00:01:54,720
these powerful instrument tell us about
what minerals are present in these rocks

31
00:01:54,720 --> 00:01:59,260
whether they continued redeem necessary
to sustain life as we know it

32
00:01:59,260 --> 00:02:02,780
what the curiosity team has found is
incredibly exciting

33

00:02:02,780 --> 00:02:07,799

we combine what we've learned from our
remote sensing and contact sciences

34

00:02:07,799 --> 00:02:12,680

with the data that's coming in from and
an insane we get a picture ancient

35

00:02:12,680 --> 00:02:17,469

watery environ which would have been
habitable at life and present

36

00:02:17,469 --> 00:02:20,779

as an example of the information that
we're getting from the chemin instrument

37

00:02:20,779 --> 00:02:24,179

tells us that the minerals that are
present in this week that sedimentary

38

00:02:24,179 --> 00:02:25,919

rock it john kline

39

00:02:25,919 --> 00:02:30,439

very different from just about anything
we've ever analyzed before on mars they

40

00:02:30,439 --> 00:02:35,469

tell us that this john by rock was
deposited fresh water and back

41

00:02:35,469 --> 00:02:38,829

this is an important contrast with other
sedimentary environ that we've visited

42

00:02:38,829 --> 00:02:40,199

on mark

43

00:02:40,199 --> 00:02:43,389
what they were idiotic bottom land site
where the mars exploration rover

44
00:02:43,389 --> 00:02:46,749
opportunity has been operating since two
thousand four

45
00:02:46,749 --> 00:02:51,499
that site sedimentary rocks report
evidence environment that was only wet

46
00:02:51,499 --> 00:02:56,019
on a very intermittent cases when it was
the waters that where there were

47
00:02:56,019 --> 00:03:00,760
highly acidic very salty and not
favorable for the survival organic

48
00:03:00,760 --> 00:03:01,799
compaq

49
00:03:01,799 --> 00:03:04,939
this isn't the correct contrast to the
fresh water environment we're seeing

50
00:03:04,939 --> 00:03:07,009
here is a town client-side

51
00:03:07,009 --> 00:03:09,919
the sentence resist telling us that
these rocks contain all the ingredients

52
00:03:09,919 --> 00:03:12,540
necessary for habitable in time

53
00:03:12,540 --> 00:03:17,269
we found carbon sulfur an oxygen all
present a variety of states that life

54

00:03:17,269 --> 00:03:18,999

could have taken advantage of

55

00:03:18,999 --> 00:03:22,259

all in all these few tablespoons of
power from a martian rocks have provided

56

00:03:22,259 --> 00:03:27,439

the curiosity science team with exciting
new dataset tells us that gail crater

57

00:03:27,439 --> 00:03:31,699

perhaps all of mars contained habitable
environments this is an incredible

58

00:03:31,699 --> 00:03:35,319

success for the curiosity mission to
gail in the science team is looking for

59

00:03:35,319 --> 00:03:40,819

to digging deeper into marcia speeches
watery past weeks months and years ahead

60

00:03:40,819 --> 00:03:42,990

this is the new york ariel city rover
report

61

00:03:42,990 --> 00:03:47,039

check back for more updates

62

00:03:47,039 --> 00:03:51,839

nasa has announced the creation of a new
space technology mission director

63

00:03:51,839 --> 00:03:57,409

sdn d will be a catalyst for creating
cost-cutting advanced technologies and

64

00:03:57,409 --> 00:04:02,139
innovations needed for future space
missions in bettering life

65
00:04:02,139 --> 00:04:04,299
to do the things that we want to do

66
00:04:04,299 --> 00:04:08,059
we need to solve some problems with
these technologies helplessly decent we

67
00:04:08,059 --> 00:04:11,449
are a focal point right now of change
for the agency will reach the

68
00:04:11,449 --> 00:04:16,059
telecommunications that exists in the
agency go work on this stuff problems

69
00:04:16,059 --> 00:04:20,259
bizspace technology mission director it
will employ a portfolio approach

70
00:04:20,259 --> 00:04:25,370
spanning a range of discipline areas and
technology reading this levels

71
00:04:25,370 --> 00:04:29,669
research and technology development will
take place within nasa centers in

72
00:04:29,669 --> 00:04:34,509
academia and industry and leverage
collaboration with other government an

73
00:04:34,509 --> 00:04:38,370
international partners we are tapping
into the nation's brightest and best

74
00:04:38,370 --> 00:04:41,890

brought harnessing those folks advantage
for the people that are key

75

00:04:41,890 --> 00:04:46,070

because some of these problems the
formation of sdn di is in keeping with

76

00:04:46,070 --> 00:04:49,730

the yield on the administration's
recognition of a critical role of space

77

00:04:49,730 --> 00:04:55,240

technology and innovation in maintaining
u_s_ leadership in space wild benefiting

78

00:04:55,240 --> 00:04:59,510

our economy here at home

79

00:04:59,510 --> 00:05:03,940

at the johnson space center with massive
next spacecraft alright and after

80

00:05:03,940 --> 00:05:05,169

backdrop

81

00:05:05,169 --> 00:05:09,539

administrator charlie bolden associate
administrator for education leland

82

00:05:09,539 --> 00:05:10,419

melvin

83

00:05:10,419 --> 00:05:13,679

and officials from the spacecraft prime
contractor

84

00:05:13,679 --> 00:05:15,070

lockheed martin

85

00:05:15,070 --> 00:05:20,469
unveiled details about the agency's new
exploration design challenge

86
00:05:20,469 --> 00:05:25,409
the unique stem based program seeks came
from twelve students around the world to

87
00:05:25,409 --> 00:05:28,759
play a role in the future of human
spaceflight

88
00:05:28,759 --> 00:05:33,569
disputing start to think antec like
scientists to overcome one of the major

89
00:05:33,569 --> 00:05:38,630
hurdles of long-duration exploration
this will require new technologies

90
00:05:38,630 --> 00:05:41,449
including new ways to keep our astronaut
safe

91
00:05:41,449 --> 00:05:44,400
from deep space radiation

92
00:05:44,400 --> 00:05:46,840
that is the purpose of this challenge

93
00:05:46,840 --> 00:05:51,499
and we're excited that american students
will be helping us to solve that problem

94
00:05:51,499 --> 00:05:54,889
the things that we're trying to do with
the ryan in the expression design

95
00:05:54,889 --> 00:05:55,919
challenge

96

00:05:55,919 --> 00:06:00,169

will help you find that curiosity will
help you solve problems

97

00:06:00,169 --> 00:06:03,370

to help our astronauts immediately knew
one day

98

00:06:03,370 --> 00:06:07,400

plan arrived to mars nasa also
highlighted the exploration design

99

00:06:07,400 --> 00:06:09,999

challenge withdrew will plus hang out

100

00:06:09,999 --> 00:06:14,869

melvin was joined by fellow astronaut
rex won't mind inside an ally in moscow

101

00:06:14,869 --> 00:06:19,529

to discuss the spacecraft capabilities
and answer questions about the future of

102

00:06:19,529 --> 00:06:23,550

human space exploration

103

00:06:23,550 --> 00:06:28,330

as the world's leading space agency nasa
is and major empire a stamp educated

104

00:06:28,330 --> 00:06:28,999

workers

105

00:06:28,999 --> 00:06:30,339

and we need to be

106

00:06:30,339 --> 00:06:34,319

even more committed to the full

participation of women in something else

107

00:06:34,319 --> 00:06:37,669

yesterday media ministry that we're
going to have provided the opening

108

00:06:37,669 --> 00:06:42,479

remarks for women inspiring innovation
through an estimation of women's history

109

00:06:42,479 --> 00:06:44,979

month program medicaid quarters

110

00:06:44,979 --> 00:06:49,389

main through this year's women's history
month p the presentation celebrated

111

00:06:49,389 --> 00:06:54,300

women in science technology engineering
en masse we have a lot of very amazing

112

00:06:54,300 --> 00:06:56,270

women here that nasa

113

00:06:56,270 --> 00:07:00,520

and uh... they've been helping us to
create a brighter future for from an

114

00:07:00,520 --> 00:07:01,890

earlier today

115

00:07:01,890 --> 00:07:02,859

these women

116

00:07:02,859 --> 00:07:06,059

clearly make contributions to science
technology

117

00:07:06,059 --> 00:07:12,219

engineering in math and also transcends
that particular moment in time

118

00:07:12,219 --> 00:07:16,580

featured were several speakers and a
video tribute to the link three nasa

119

00:07:16,580 --> 00:07:21,680

astronaut in space right near standing
right

120

00:07:21,680 --> 00:07:25,190

and it's a grade a twelve year olds air
in our state

121

00:07:25,190 --> 00:07:29,180

masses in the huge assembly facility in
new orleans the agency's only

122

00:07:29,180 --> 00:07:33,960

large-scale advanced manufacturing
facility will soon be building liquefied

123

00:07:33,960 --> 00:07:38,319

natural gas tanks with commercial
applications on earth

124

00:07:38,319 --> 00:07:42,289

at a ceremony that included louisiana
governor bobby jindal

125

00:07:42,289 --> 00:07:46,819

lockheed-martin corporation announced it
will pass the unique experience and

126

00:07:46,819 --> 00:07:50,740

equipment at issue to manufacture the
l_a_ defects

127

00:07:50,740 --> 00:07:55,879

as prime contractor finances orion space
craft the bill technician lockheed

128

00:07:55,879 --> 00:07:59,030

martin is familiar with the facilities
capabilities

129

00:07:59,030 --> 00:08:00,449

the shooting took place

130

00:08:00,449 --> 00:08:03,009

were so many of the nation's brown

131

00:08:03,009 --> 00:08:05,829

aunty hopkins space

132

00:08:05,829 --> 00:08:07,400

literally came together

133

00:08:07,400 --> 00:08:11,910

this new deal represents another
innovative use of the extent which as of

134

00:08:11,910 --> 00:08:15,960

thirty seven year history of producing
that johnnie external things

135

00:08:15,960 --> 00:08:19,699

used by the space shuttle

136

00:08:19,699 --> 00:08:24,610

passes operation ice bridge is preparing
for another season of arctic research

137

00:08:24,610 --> 00:08:29,050

instrument and aircraft teams at walt
flight facility have been daddy nifty

138

00:08:29,050 --> 00:08:34,099

three-b_ airborne laboratory first march
eighteen through may thirty and paint

139

00:08:34,099 --> 00:08:38,219

during that series of flight researchers
aboard the aircraft will serve the icing

140

00:08:38,219 --> 00:08:42,200

remained in the arctic ocean operation
pays for it has been gathering pleads

141

00:08:42,200 --> 00:08:47,010

guilty and his delegation and quickness
in the arctic antarctic since nasa space

142

00:08:47,010 --> 00:08:51,610

admission stop collecting data from
orkut in two thousand nine face bridge

143

00:08:51,610 --> 00:08:55,390

will take measurements until the case at
two satellite is up and running and

144

00:08:55,390 --> 00:08:59,399

twenty sixteen the six-year high space
mission for yielding unprecedented

145

00:08:59,399 --> 00:09:04,920

three-dimensional view of are digging an
arctic patients ice shelves n_c_i_'s

146

00:09:04,920 --> 00:09:09,920

pace pages management after they got its
base plate senator p three p aircraft is

147

00:09:09,920 --> 00:09:15,100

based at masses while flight facility

148

00:09:15,100 --> 00:09:18,920

engineers working on this is new space

launch system at the marshall space

149

00:09:18,920 --> 00:09:23,080

flight center visited there all the
moderate tennessee tech university in

150

00:09:23,080 --> 00:09:26,110

cookeville during the school's engineers
with

151

00:09:26,110 --> 00:09:30,140

there they discussed with various
students the value of science technology

152

00:09:30,140 --> 00:09:32,100

engineering and math

153

00:09:32,100 --> 00:09:35,870

east tennessee tech alumni took
questions from hundreds of grade school

154

00:09:35,870 --> 00:09:40,350

students over a distance learning
network posted at the university system

155

00:09:40,350 --> 00:09:41,310

center

156

00:09:41,310 --> 00:09:44,780

it has a lot of three so many more
students than we normally would be able

157

00:09:44,780 --> 00:09:47,949

to do that so many restrictions on bus
travel right now

158

00:09:47,949 --> 00:09:52,070

to be able to get you on into the
classroom with the flip of a sweat

159

00:09:52,070 --> 00:09:53,649

is there a carpool

160

00:09:53,649 --> 00:09:58,120

a traveling s_l_ as exhibit was unveiled
that allowed students to check out the

161

00:09:58,120 --> 00:10:00,509

different parts of the next generation
rocket

162

00:10:00,509 --> 00:10:04,589

that will allow cubans to travel farther
into space than ever before the new

163

00:10:04,589 --> 00:10:09,890

exhibit helped triple attendance records
at the stem centers bad friday at that

164

00:10:09,890 --> 00:10:13,100

but as a group also talked with
tennessee tech engineering students

165

00:10:13,100 --> 00:10:16,440

about space related careers during a
panel discussion

166

00:10:16,440 --> 00:10:21,560

or also woodcock bill as a less program
manager todd day's visited nearby flex

167

00:10:21,560 --> 00:10:26,100

your corporation where he gave details
of the overall vehicle to employees who

168

00:10:26,100 --> 00:10:31,010

in turn updated day on the progress of
the day to its engine parts being built

169

00:10:31,010 --> 00:10:35,200
their haven't caught many airport and
are employed portents willing strong

170
00:10:35,200 --> 00:10:39,730
busy as a now looking forward on their
cell as per the space for system

171
00:10:39,730 --> 00:10:41,600
resorts i don't think so

172
00:10:41,600 --> 00:10:44,290
in cars will be astronaut guardian of
the action

173
00:10:44,290 --> 00:10:47,580
visiting with tennessee tech fans during
a basketball game

174
00:10:47,580 --> 00:10:51,780
warehouse reach volunteers answered
questions about nasa for more

175
00:10:51,780 --> 00:10:57,480
information on the space launch system
visit [w_w_w_ dot nasa dot gov](http://www.nasa.gov)

176
00:10:57,480 --> 00:11:00,460
[s_o_s_](http://sos.sos.gov)

177
00:11:00,460 --> 00:11:01,770
me

178
00:11:01,770 --> 00:11:03,590
but

179
00:11:03,590 --> 00:11:08,790
it wasn't a selva dot t_ of and copy
filtering and lands and nasa spawning

180

00:11:08,790 --> 00:11:10,490

thirteen career his

181

00:11:10,490 --> 00:11:16,440

the event with joint cooperation between
nasa lane and principled for six hundred

182

00:11:16,440 --> 00:11:20,560

high schoolers from virginia to trying
to decide

183

00:11:20,560 --> 00:11:22,420

so you know i designing

184

00:11:22,420 --> 00:11:25,140

at capitol hill and i'm mark

185

00:11:25,140 --> 00:11:29,520

just like math and frankly pin august

186

00:11:29,520 --> 00:11:33,890

the second challenge was to build a boat
he had a dot t_ and making fun of modern

187

00:11:33,890 --> 00:11:35,430

all body weight

188

00:11:35,430 --> 00:11:39,400

as they went on and students could only
expressed excitement of what they were

189

00:11:39,400 --> 00:11:40,280

married

190

00:11:40,280 --> 00:11:45,730

you really need hands-on experience i
have to talk to the people

191

00:11:45,730 --> 00:11:48,650
blacks selena had a and most of our

192

00:11:48,650 --> 00:11:51,950
they've learned what it needs to be an
explorer

193

00:11:51,950 --> 00:11:53,630
because we need you

194

00:11:53,630 --> 00:11:58,650
degeneration of world

195

00:11:58,650 --> 00:12:03,580
forty seven years ago on march sixteenth
nineteen sixty six new jiminy tied in

196

00:12:03,580 --> 00:12:06,220
eight launched from cape canaveral
florida

197

00:12:06,220 --> 00:12:09,930
on its way to becoming dancers first
command docking missions

198

00:12:09,930 --> 00:12:14,310
astronauts neil armstrong and dave scott
successfully hooked up with a unmanned

199

00:12:14,310 --> 00:12:16,270
achievement target vehicle

200

00:12:16,270 --> 00:12:20,030
but a thruster malfunction calls the
combine vehicles to go into a violent

201

00:12:20,030 --> 00:12:22,140
y'all and tumble

202

00:12:22,140 --> 00:12:26,280
the crew managed to disengage from the
target vehicle and eventually stabilize

203
00:12:26,280 --> 00:12:27,720
their spacecraft

204
00:12:27,720 --> 00:12:31,750
however that maneuver left in the
shorter fuel requiring an immediate

205
00:12:31,750 --> 00:12:33,000
return to kurt

206
00:12:33,000 --> 00:12:36,500
the first emergency landing of a man to
u_s_ spacecraft

207
00:12:36,500 --> 00:12:40,810
just over ten hours after launch gemini
eight safely splashed down in the

208
00:12:40,810 --> 00:12:45,740
western pacific ocean about five hundred
miles west of okinawa germany served as

209
00:12:45,740 --> 00:12:49,130
a bridge between the mercury and apollo
programs

210
00:12:49,130 --> 00:12:52,720
testing equipment and procedures and
preparing astronauts and ground crews

211
00:12:52,720 --> 00:12:55,580
for future missions to the moon

212
00:12:55,580 --> 00:12:59,780
on that same day forty years earlier
robert goddard successfully launched the

213

00:12:59,780 --> 00:13:04,660

world's first of liquid fuel rocket from
a field in all very massachusetts

214

00:13:04,660 --> 00:13:08,190

goddard continued his rocket development
work throughout the remainder of his

215

00:13:08,190 --> 00:13:09,220

life

216

00:13:09,220 --> 00:13:13,380

t_v_ numerous milestones and helping
pave the way for contemporary

217

00:13:13,380 --> 00:13:15,180

spaceflight

218

00:13:15,180 --> 00:13:19,220

established in nineteen fifty-nine the
goddard space flight center in greenbelt

219

00:13:19,220 --> 00:13:22,190

maryland is named in this matter

220

00:13:22,190 --> 00:13:27,310

and two years ago in a different kind of
launch the women have maso website was

221

00:13:27,310 --> 00:13:31,920

first published the site includes a
collection of videos and essays from

222

00:13:31,920 --> 00:13:36,240

women who contribute to masses mission
in different ways and whose stories

223

00:13:36,240 --> 00:13:38,499

eliminate the vibrant community

224

00:13:38,499 --> 00:13:43,899

of dedicated employees playing abiola
rolled across the agency visit the women

225

00:13:43,899 --> 00:13:46,510

it has a website h_t_t_p_

226

00:13:46,510 --> 00:13:49,550

women dot nasa dot gov

227

00:13:49,550 --> 00:13:51,910

and that's this week at nasa

228

00:13:51,910 --> 00:13:56,530

for more on these and other stories or
to follow us on you to use trees and