TY@N

This Year @NASA

2019

1
00:00:04,390 --> 00:00:02,070
setting a bold goal in human space

2
00:00:07,430 --> 00:00:04,400
exploration with the artemis program to

3
00:00:10,549 --> 00:00:07,440
return american astronauts to the moon

4
00:00:12,789 --> 00:00:10,559
within the next five years

5
00:00:14,870 --> 00:00:12,799
while celebrating apollo's historic

6
00:00:17,189 --> 00:00:14,880
first steps onto the moon

7
00:00:19,910 --> 00:00:17,199
and kicking off the 20th year of humans

8
00:00:21,830 --> 00:00:19,920
continuously living and working in space

9
00:00:23,670 --> 00:00:21,840
here's a look back at those things and

10
00:00:25,910 --> 00:00:23,680
plenty more awesomeness that happened

11
00:00:28,150 --> 00:00:25,920
this year at nasa

12
00:00:30,470 --> 00:00:28,160
our plan to return humans to the moon

13
00:00:33,510 --> 00:00:30,480

with the artemis program was adjusted

14
00:00:35,670 --> 00:00:33,520
with 2024 now being the new target for

15
00:00:37,830 --> 00:00:35,680
landing the first woman and next man on

16
00:00:40,549 --> 00:00:37,840
the lunar surface this is a critical

17
00:00:43,430 --> 00:00:40,559
capability for not just a sustainable

18
00:00:45,590 --> 00:00:43,440
lunar return but also an eventual

19
00:00:48,069 --> 00:00:45,600
journey to mars our commercial lunar

20
00:00:50,069 --> 00:00:48,079
payload services or clips initiative

21
00:00:51,750 --> 00:00:50,079
selected commercial moon landers to

22
00:00:54,630 --> 00:00:51,760
deliver science and technology

23
00:00:56,549 --> 00:00:54,640
demonstrations to the surface in 2021

24
00:00:59,270 --> 00:00:56,559
that could pave the way for the arrival

25
00:01:01,830 --> 00:00:59,280
of astronauts one tech demonstration

26
00:01:04,229 --> 00:01:01,840
known as viper is a lunar mobile robot

27
00:01:06,310 --> 00:01:04,239
that will collect data on water ice to

28
00:01:08,550 --> 00:01:06,320
inform the first global water resource

29
00:01:10,390 --> 00:01:08,560
maps of the moon we also talked to

30
00:01:12,630 --> 00:01:10,400
american companies about developing

31
00:01:15,270 --> 00:01:12,640
reusable lunar landers and systems for

32
00:01:17,270 --> 00:01:15,280
future human missions to the moon and we

33
00:01:19,990 --> 00:01:17,280
selected a company to provide power and

34
00:01:21,590 --> 00:01:20,000
propulsion for our gateway an outpost to

35
00:01:23,670 --> 00:01:21,600
orbit around the moon from which

36
00:01:26,630 --> 00:01:23,680
astronauts will shuttle to and from the

37
00:01:29,270 --> 00:01:26,640
lunar surface and when we do go our

38
00:01:32,390 --> 00:01:29,280

orion spacecraft its european space

39
00:01:34,310 --> 00:01:32,400
agency built service module and our rs25

40
00:01:35,749 --> 00:01:34,320
engines and space launch system rocket

41
00:01:38,390 --> 00:01:35,759
will get us there

42
00:01:40,789 --> 00:01:38,400
we made significant progress in 2019

43
00:01:43,190 --> 00:01:40,799
building and testing these systems for

44
00:01:44,230 --> 00:01:43,200
our upcoming artemis 1 uncrewed flight

45
00:01:45,910 --> 00:01:44,240
test

46
00:01:48,389 --> 00:01:45,920
and what's a next generation mission

47
00:01:50,870 --> 00:01:48,399
without next generation spacesuits took

48
00:01:53,109 --> 00:01:50,880
care of that too in 2019 with new

49
00:01:55,350 --> 00:01:53,119
spacesuits that fit better and provide

50
00:01:57,270 --> 00:01:55,360
better mobility for astronauts exploring

51
00:02:01,510 --> 00:01:57,280
the lunar surface

52
00:02:03,670 --> 00:02:01,520
and from our mars robotic explorers

53
00:02:06,149 --> 00:02:03,680
for the first time ever our inside

54
00:02:07,350 --> 00:02:06,159
lander measured and recorded a likely

55
00:02:09,589 --> 00:02:07,360
mars coic

56
00:02:11,270 --> 00:02:09,599
our mars helicopter technology was put

57
00:02:13,270 --> 00:02:11,280
through some rigorous testing in

58
00:02:15,350 --> 00:02:13,280
preparation for its launch on the mars

59
00:02:17,510 --> 00:02:15,360
2020 rover mission

60
00:02:19,910 --> 00:02:17,520
also taking that ride will be more than

61
00:02:22,470 --> 00:02:19,920
10 million names of earthlings etched on

62
00:02:23,750 --> 00:02:22,480
dime-sized microchips installed on the

63
00:02:26,070 --> 00:02:23,760

rover

64
00:02:29,110 --> 00:02:26,080
it was a milestone year for humans in

65
00:02:30,869 --> 00:02:29,120
space we began our 20th consecutive year

66
00:02:33,190 --> 00:02:30,879
with humans aboard the international

67
00:02:35,589 --> 00:02:33,200
space station and conducted several

68
00:02:37,270 --> 00:02:35,599
important spacewalks including the first

69
00:02:39,750 --> 00:02:37,280
ever by an all-woman team of

70
00:02:41,670 --> 00:02:39,760
spacewalkers a series of complex

71
00:02:44,390 --> 00:02:41,680
spacewalks to repair a cosmic ray

72
00:02:46,229 --> 00:02:44,400
detector and an outing to help install a

73
00:02:49,030 --> 00:02:46,239
new docking adapter to accommodate

74
00:02:50,869 --> 00:02:49,040
future arrivals of various spacecraft

75
00:02:55,270 --> 00:02:50,879
including commercial crew spacecraft

76
00:02:58,710 --> 00:02:57,430
the spacex crew dragon spacecraft made

77
00:03:00,869 --> 00:02:58,720
the first ever docking to the

78
00:03:02,550 --> 00:03:00,879
international space station during its

79
00:03:04,949 --> 00:03:02,560
uncrewed flight test for nasa's

80
00:03:07,589 --> 00:03:04,959
commercial crew program

81
00:03:09,830 --> 00:03:07,599
meanwhile nasa and boeing are learning

82
00:03:12,630 --> 00:03:09,840
lessons from the uncrewed test flight of

83
00:03:15,190 --> 00:03:12,640
boeing's cst-100 starliner which

84
00:03:17,430 --> 00:03:15,200
launched on december 20th but was unable

85
00:03:19,430 --> 00:03:17,440
to dock with the space station

86
00:03:20,949 --> 00:03:19,440
five successful commercial cargo

87
00:03:23,750 --> 00:03:20,959
missions with northrop grumman and

88
00:03:25,750 --> 00:03:23,760

spacex delivered more than 32 thousand

89
00:03:28,309 --> 00:03:25,760
pounds of science investigations

90
00:03:30,390 --> 00:03:28,319
spacewalking tools and critical supplies

91
00:03:32,470 --> 00:03:30,400
to the station a new policy was

92
00:03:33,990 --> 00:03:32,480
announced in 2019 making the space

93
00:03:36,309 --> 00:03:34,000
station available for commercial

94
00:03:38,309 --> 00:03:36,319
business ventures and results from our

95
00:03:39,910 --> 00:03:38,319
landmark twins study of astronaut

96
00:03:42,149 --> 00:03:39,920
brothers mark and scott kelly were

97
00:03:44,390 --> 00:03:42,159
published data from the study could help

98
00:03:46,869 --> 00:03:44,400
maintain crew health during exploration

99
00:03:48,869 --> 00:03:46,879
missions to the moon and mars

100
00:03:51,830 --> 00:03:48,879
lots of happenings in our solar system

101
00:03:52,949 --> 00:03:51,840
and beyond our new horizons spacecraft

102
00:03:55,110 --> 00:03:52,959
rang in the new year with a

103
00:03:58,149 --> 00:03:55,120
record-breaking flyby of a kuiper belt

104
00:04:00,390 --> 00:03:58,159
object 4 billion miles from our sun

105
00:04:02,710 --> 00:04:00,400
we announced a new mission to saturn's

106
00:04:05,030 --> 00:04:02,720
icy moon titan to search for the

107
00:04:07,190 --> 00:04:05,040
building blocks of life our sofia

108
00:04:09,589 --> 00:04:07,200
airborne observatory detected helium

109
00:04:12,070 --> 00:04:09,599
hydride the first type of molecule to

110
00:04:15,350 --> 00:04:12,080
ever form in the universe in a planetary

111
00:04:17,430 --> 00:04:15,360
nebula some 3 light years away from us

112
00:04:20,069 --> 00:04:17,440
we helped capture the first ever image

113
00:04:21,990 --> 00:04:20,079

of a black hole in its shadow data from

114
00:04:24,070 --> 00:04:22,000
our hubble space telescope showed water

115
00:04:26,550 --> 00:04:24,080
vapor for the first time in the

116
00:04:28,550 --> 00:04:26,560
atmosphere of a planet outside our solar

117
00:04:29,749 --> 00:04:28,560
system that resides in the habitable

118
00:04:31,590 --> 00:04:29,759
zone

119
00:04:33,350 --> 00:04:31,600
researchers hope to further study three

120
00:04:36,230 --> 00:04:33,360
new worlds discovered by our test

121
00:04:38,150 --> 00:04:36,240
spacecraft 73 light years from earth a

122
00:04:40,390 --> 00:04:38,160
nearly earth-sized one next to two

123
00:04:42,790 --> 00:04:40,400
others known as many neptunes

124
00:04:45,030 --> 00:04:42,800
the first data shared from super close

125
00:04:47,830 --> 00:04:45,040
record-breaking flybys of our sun by

126
00:04:49,909 --> 00:04:47,840
nasa's parker solar probe revealed new

127
00:04:51,990 --> 00:04:49,919
insights into solar dynamics that can

128
00:04:54,870 --> 00:04:52,000
affect astronauts and technology in

129
00:04:56,870 --> 00:04:54,880
space take us us away

130
00:04:59,030 --> 00:04:56,880
and we air launched a mission to help us

131
00:05:01,350 --> 00:04:59,040
better understand the physical processes

132
00:05:03,350 --> 00:05:01,360
at play in the ionosphere that are

133
00:05:05,189 --> 00:05:03,360
potentially detrimental to radial

134
00:05:08,150 --> 00:05:05,199
communications satellites and the

135
00:05:09,830 --> 00:05:08,160
physical health of astronauts

136
00:05:12,070 --> 00:05:09,840
highlights from the world of space

137
00:05:14,790 --> 00:05:12,080
technology include the launch of several

138
00:05:17,270 --> 00:05:14,800

nasa technology demonstrations aboard a

139
00:05:19,510 --> 00:05:17,280
spacex falcon heavy rocket the

140
00:05:22,390 --> 00:05:19,520
demonstrations are designed to test less

141
00:05:24,950 --> 00:05:22,400
toxic fuel for spacecraft new ways to

142
00:05:27,270 --> 00:05:24,960
navigate in space processes affecting

143
00:05:29,430 --> 00:05:27,280
space communications and to look at the

144
00:05:31,029 --> 00:05:29,440
space environment around earth and how

145
00:05:33,110 --> 00:05:31,039
it affects us

146
00:05:34,790 --> 00:05:33,120
three free-flying robots sent to the

147
00:05:37,270 --> 00:05:34,800
space station on northrop grumman's

148
00:05:39,510 --> 00:05:37,280
cygnus spacecraft will help develop and

149
00:05:42,150 --> 00:05:39,520
test technologies for use in zero

150
00:05:45,270 --> 00:05:42,160
gravity and do routine chores so

151
00:05:47,510 --> 00:05:45,280
astronauts can do other important tasks

152
00:05:49,909 --> 00:05:47,520
our 3d printed habitat challenge

153
00:05:52,550 --> 00:05:49,919
featured teams combining creativity and

154
00:05:54,469 --> 00:05:52,560
cutting edge technology to manufacture

155
00:05:56,870 --> 00:05:54,479
sustainable shelters for use on

156
00:05:59,110 --> 00:05:56,880
exploration missions including to the

157
00:06:01,110 --> 00:05:59,120
moon and mars

158
00:06:03,350 --> 00:06:01,120
we had another amazing year observing

159
00:06:04,950 --> 00:06:03,360
earth from space cameras outside the

160
00:06:07,029 --> 00:06:04,960
international space station captured

161
00:06:09,590 --> 00:06:07,039
views of hurricane dorian which reached

162
00:06:11,590 --> 00:06:09,600
category 5 status and devastated the

163
00:06:14,150 --> 00:06:11,600

northern bahama islands

164
00:06:16,710 --> 00:06:14,160
we used data from a japanese satellite

165
00:06:18,309 --> 00:06:16,720
to produce a map for use by officials to

166
00:06:19,909 --> 00:06:18,319
assess damage from two strong

167
00:06:21,110 --> 00:06:19,919
earthquakes that rattled southern

168
00:06:23,270 --> 00:06:21,120
california

169
00:06:25,110 --> 00:06:23,280
our earth observing terror satellite

170
00:06:27,270 --> 00:06:25,120
captured images of california's

171
00:06:29,990 --> 00:06:27,280
devastating kincaid fire

172
00:06:33,670 --> 00:06:30,000
the blaze was fueled by nearly 100 mile

173
00:06:35,990 --> 00:06:33,680
per hour winds known as diablo winds

174
00:06:37,909 --> 00:06:36,000
and a next generation high resolution

175
00:06:40,550 --> 00:06:37,919
imaging suites into the space station to

176
00:06:43,189 --> 00:06:40,560
identify materials on earth's surface

177
00:06:45,590 --> 00:06:43,199
whether they be natural or human-made

178
00:06:47,510 --> 00:06:45,600
could be used for resource exploration

179
00:06:49,830 --> 00:06:47,520
agriculture forestry and other

180
00:06:52,150 --> 00:06:49,840
environmental areas

181
00:06:54,469 --> 00:06:52,160
in flight we continued groundbreaking

182
00:06:57,510 --> 00:06:54,479
research to help develop a new improved

183
00:07:00,629 --> 00:06:57,520
global aviation system this included our

184
00:07:02,469 --> 00:07:00,639
x-57 maxwell aircraft which uses an

185
00:07:04,390 --> 00:07:02,479
electric propulsion technology that

186
00:07:07,510 --> 00:07:04,400
could increase efficiency while

187
00:07:10,390 --> 00:07:07,520
decreasing emissions and noise meanwhile

188
00:07:12,950 --> 00:07:10,400

our x-59 quiet supersonic technology

189
00:07:14,950 --> 00:07:12,960
project successfully completed in-flight

190
00:07:17,830 --> 00:07:14,960
testing of software and imaging

191
00:07:19,510 --> 00:07:17,840
technology that enables pilots to safely

192
00:07:21,990 --> 00:07:19,520
maneuver the skies without a

193
00:07:24,150 --> 00:07:22,000
forward-facing window and we conducted

194
00:07:26,710 --> 00:07:24,160
the final and most complex season of

195
00:07:28,870 --> 00:07:26,720
flight tests for our unmanned aircraft

196
00:07:31,909 --> 00:07:28,880
systems traffic management project or

197
00:07:34,390 --> 00:07:31,919
utm which seeks to integrate drones

198
00:07:36,629 --> 00:07:34,400
safely and efficiently into air traffic

199
00:07:38,390 --> 00:07:36,639
that is already flying in low altitude

200
00:07:41,309 --> 00:07:38,400
airspace

201
00:07:44,309 --> 00:07:41,319
and there they are the men of apollo 11

202
00:07:47,510 --> 00:07:44,319
immortalized in bronze our historic

203
00:07:49,749 --> 00:07:47,520
accomplishments were a big focus in 2019

204
00:07:52,070 --> 00:07:49,759
our celebration of the 50th anniversary

205
00:07:54,950 --> 00:07:52,080
of the apollo 11 moon mission included a

206
00:07:57,270 --> 00:07:54,960
nasa tv special and a series of other

207
00:07:59,350 --> 00:07:57,280
events around the country the historic

208
00:08:01,749 --> 00:07:59,360
apollo mission operations control room

209
00:08:03,990 --> 00:08:01,759
was restored so that visitors can see

210
00:08:06,629 --> 00:08:04,000
the room exactly as it appeared during

211
00:08:08,710 --> 00:08:06,639
the apollo moon missions and we held a

212
00:08:11,510 --> 00:08:08,720
ceremony to rename the street in front

213
00:08:14,150 --> 00:08:11,520

of our headquarters in washington dc to

214
00:08:16,469 --> 00:08:14,160
hidden figures way in honor of the women

215
00:08:18,309 --> 00:08:16,479
who performed vital math calculations in

216
00:08:20,550 --> 00:08:18,319
the early days of america's space

217
00:08:23,589 --> 00:08:20,560
program those are some of the highlights

218
00:08:28,150 --> 00:08:23,599
from 2019 the year at nasa

219
00:08:31,029 --> 00:08:28,160
for more details visit nasa.gov 2019

220
00:08:32,709 --> 00:08:31,039
happy holidays thanks for watching and

221
00:08:34,870 --> 00:08:32,719
we look forward to sharing more