1
00:00:10,470 --> 00:00:07,909
[Music]

2
00:00:12,789 --> 00:00:10,480
the exploration of space is the grandest

3
00:00:15,669 --> 00:00:12,799
adventure challenging humanity

4
00:00:17,830 --> 00:00:15,679
the universe can surprise and us

5
00:00:18,950 --> 00:00:17,840
there's so much more to discover and

6
00:00:21,429 --> 00:00:18,960
learn

7
00:00:22,710 --> 00:00:21,439
we explore to understand our place in

8
00:00:25,110 --> 00:00:22,720
the universe

9
00:00:29,189 --> 00:00:25,120
to answer questions about its formation

10
00:00:34,549 --> 00:00:32,470
and what other worlds are like

11
00:00:39,270 --> 00:00:34,559
we explore to understand the fragility

12
00:00:45,430 --> 00:00:41,750
we explore to push human capabilities to

13
00:00:50,069 --> 00:00:48,630

the president's budget proposal for 2011

14
00:00:51,590 --> 00:00:50,079
actually gives us an incredible

15
00:00:53,750 --> 00:00:51,600
opportunity to do many of the things

16
00:00:55,110 --> 00:00:53,760
that nasa was established to do

17
00:00:57,270 --> 00:00:55,120
particularly

18
00:00:59,670 --> 00:00:57,280
exploration beyond low earth orbit with

19
00:01:01,270 --> 00:00:59,680
this budget we actually are able to put

20
00:01:02,709 --> 00:01:01,280
some money into research and development

21
00:01:04,869 --> 00:01:02,719
that's going to give us the capability

22
00:01:07,510 --> 00:01:04,879
to get to places like mars back to the

23
00:01:10,390 --> 00:01:07,520
moon to asteroids what this program does

24
00:01:12,789 --> 00:01:10,400
is it allows us to develop technologies

25
00:01:14,950 --> 00:01:12,799
and utilize those new innovations and

26
00:01:16,789 --> 00:01:14,960
technologies in the program so nasa's

27
00:01:19,030 --> 00:01:16,799
plans for the future are big like all

28
00:01:21,590 --> 00:01:19,040
americans we're dreaming large

29
00:01:23,910 --> 00:01:21,600
and we want to explore a large number of

30
00:01:31,450 --> 00:01:23,920
destinations both robotically

31
00:01:40,390 --> 00:01:37,830
[Music]

32
00:01:45,990 --> 00:01:40,400
nasa has a bold mandate to launch a new

33
00:01:51,190 --> 00:01:49,270
as we seek to explore far beyond earth

34
00:01:55,270 --> 00:01:51,200
we must invest in critical knowledge and

35
00:01:57,510 --> 00:01:55,280
capabilities to enable this journey

36
00:01:59,910 --> 00:01:57,520
a new generation of nasa's best and

37
00:02:03,350 --> 00:01:59,920
brightest is developing innovative new

38
00:02:07,670 --> 00:02:05,830

we plan nothing less than to create the

39
00:02:08,580 --> 00:02:07,680
future of space flight

40
00:02:10,790 --> 00:02:08,590
now

41
00:02:12,869 --> 00:02:10,800
[Music]

42
00:02:13,670 --> 00:02:12,879
three engines up and ready

43
00:02:14,550 --> 00:02:13,680
three

44
00:02:15,750 --> 00:02:14,560
two

45
00:02:18,150 --> 00:02:15,760
one

46
00:02:20,949 --> 00:02:18,160
zero booster ignition

47
00:02:22,550 --> 00:02:20,959
and liftoff of discovery after the safe

48
00:02:24,740 --> 00:02:22,560
and planned retirement of the space

49
00:02:27,670 --> 00:02:24,750
shuttle fleet

50
00:02:30,470 --> 00:02:27,680
[Music]

51
00:02:32,390 --> 00:02:30,480
houston discovery

52
00:02:33,190 --> 00:02:32,400
i think the legacy of the space shuttle

53
00:02:35,110 --> 00:02:33,200
is

54
00:02:38,070 --> 00:02:35,120
it showed us that we could really work

55
00:02:40,470 --> 00:02:38,080
in space you know we the space shuttle

56
00:02:43,190 --> 00:02:40,480
has done an unbelievable variety of

57
00:02:47,670 --> 00:02:45,430
the first foothold beyond earth will be

58
00:02:49,990 --> 00:02:47,680
the international space station an

59
00:02:51,990 --> 00:02:50,000
orbital laboratory that is re-energized

60
00:02:54,070 --> 00:02:52,000
in the agency's new direction

61
00:02:55,670 --> 00:02:54,080
space station is an amazing platform

62
00:02:57,910 --> 00:02:55,680
because you can do experiments there

63
00:03:00,149 --> 00:02:57,920

that can't be done anywhere else at

64
00:03:02,309 --> 00:03:00,159
houston this is patient space to ground

65
00:03:04,550 --> 00:03:02,319
to for fly around there's little doubt

66
00:03:07,110 --> 00:03:04,560
that the space station has probably been

67
00:03:08,790 --> 00:03:07,120
the largest civilian

68
00:03:11,030 --> 00:03:08,800
international cooperative science and

69
00:03:14,149 --> 00:03:11,040
technology venture in history

70
00:03:15,110 --> 00:03:14,159
our partners in canada europe japan and

71
00:03:17,509 --> 00:03:15,120
russia

72
00:03:19,670 --> 00:03:17,519
work more tightly as a team than they

73
00:03:22,790 --> 00:03:19,680
ever did prior to this program u.s space

74
00:03:24,710 --> 00:03:22,800
shuttle discovery departing

75
00:03:25,830 --> 00:03:24,720
in cooperation with our international

76
00:03:28,070 --> 00:03:25,840
partners

77
00:03:30,869 --> 00:03:28,080
this engineering marvel will now host

78
00:03:33,910 --> 00:03:30,879
cutting edge science research to 2020 or

79
00:03:35,830 --> 00:03:33,920
beyond continuing into the lab say hi

80
00:03:38,390 --> 00:03:35,840
frank hello

81
00:03:40,229 --> 00:03:38,400
providing solutions to problems on earth

82
00:03:43,270 --> 00:03:40,239
and critical information for sending

83
00:03:44,949 --> 00:03:43,280
humans further into the solar system i

84
00:03:46,869 --> 00:03:44,959
think in the next decade you're going to

85
00:03:49,350 --> 00:03:46,879
see a broad

86
00:03:50,789 --> 00:03:49,360
use of the space station by non-nasa

87
00:03:52,470 --> 00:03:50,799
organizations

88
00:03:54,149 --> 00:03:52,480

and those uses are going to revolve

89
00:03:55,910 --> 00:03:54,159
around national needs and things like

90
00:03:58,309 --> 00:03:55,920
public health

91
00:04:00,070 --> 00:03:58,319
energy and environmental applications i

92
00:04:02,149 --> 00:04:00,080
think if you if you look at the model

93
00:04:03,589 --> 00:04:02,159
kind of a low earth orbit we're going to

94
00:04:05,190 --> 00:04:03,599
try to make that more commercial let

95
00:04:07,270 --> 00:04:05,200
more commercial companies handle that

96
00:04:09,509 --> 00:04:07,280
business and then nasa will focus more

97
00:04:11,910 --> 00:04:09,519
beyond low earth orbit we will prepare

98
00:04:13,830 --> 00:04:11,920
astronauts for longer trips in space

99
00:04:15,990 --> 00:04:13,840
while working cooperatively with other

100
00:04:19,509 --> 00:04:16,000
space fairy nations

101
00:04:21,590 --> 00:04:19,519
so nasa has an unbelievable team of

102
00:04:24,870 --> 00:04:21,600
industry partners that we

103
00:04:27,510 --> 00:04:24,880
have worked with for our entire history

104
00:04:29,749 --> 00:04:27,520
the space community includes

105
00:04:34,390 --> 00:04:29,759
industry academia as well as the

106
00:04:39,110 --> 00:04:36,469
and that outreach has been extremely

107
00:04:41,430 --> 00:04:39,120
successful both for that community and

108
00:04:42,790 --> 00:04:41,440
for nasa itself new businesses have

109
00:04:45,510 --> 00:04:42,800
emerged

110
00:04:48,310 --> 00:04:45,520
and nasa has developed partnerships

111
00:04:50,629 --> 00:04:48,320
that we continue to utilize as we move

112
00:04:53,030 --> 00:04:50,639
forward in you know in our science and

113
00:04:55,749 --> 00:04:53,040

exploration missions together we will

114
00:04:57,749 --> 00:04:55,759
lay the foundation for a new era of

115
00:04:59,430 --> 00:04:57,759
space exploration

116
00:05:01,749 --> 00:04:59,440
the agency will begin work on

117
00:05:03,990 --> 00:05:01,759
transformative heavy lift technologies

118
00:05:06,790 --> 00:05:04,000
that will lead to a new rocket to carry

119
00:05:09,909 --> 00:05:06,800
astronauts beyond earth orbit liftoff of

120
00:05:12,230 --> 00:05:09,919
ares 1x and development will continue on

121
00:05:14,870 --> 00:05:12,240
the orion crew capsule to provide

122
00:05:17,430 --> 00:05:14,880
standby emergency escape capabilities

123
00:05:18,550 --> 00:05:17,440
for the space station this is turning

124
00:05:20,390 --> 00:05:18,560
over

125
00:05:23,670 --> 00:05:20,400
uh transportation to and from earth

126
00:05:26,310 --> 00:05:23,680
orbit to the commercial sector while we

127
00:05:28,390 --> 00:05:26,320
focus on the the broad range of

128
00:05:30,310 --> 00:05:28,400
technologies that we actually have to

129
00:05:32,790 --> 00:05:30,320
have in place before we can go long

130
00:05:34,629 --> 00:05:32,800
distances like places to mars once the

131
00:05:36,629 --> 00:05:34,639
stuff of science fiction new

132
00:05:39,110 --> 00:05:36,639
technologies being developed by nasa

133
00:05:41,510 --> 00:05:39,120
engineers and their commercial partners

134
00:05:42,469 --> 00:05:41,520
will revolutionize spaceflight

135
00:05:44,790 --> 00:05:42,479
we are

136
00:05:47,189 --> 00:05:44,800
investing at a larger scale so that we

137
00:05:48,230 --> 00:05:47,199
actually can get there quicker and so

138
00:05:50,070 --> 00:05:48,240

they

139
00:05:52,070 --> 00:05:50,080
will become available

140
00:05:53,830 --> 00:05:52,080
and we'll start testing them in space we

141
00:05:55,909 --> 00:05:53,840
have demonstration flights that will be

142
00:05:58,950 --> 00:05:55,919
taking these and demonstrating these

143
00:06:00,870 --> 00:05:58,960
technologies as precursors before we put

144
00:06:03,510 --> 00:06:00,880
them into human vehicles new approaches

145
00:06:06,469 --> 00:06:03,520
to propulsion will free us from earth's

146
00:06:07,580 --> 00:06:06,479
gravity and send us further and faster

147
00:06:08,950 --> 00:06:07,590
into the cosmos

148
00:06:11,110 --> 00:06:08,960
[Music]

149
00:06:12,620 --> 00:06:11,120
spacecraft will refuel at depots in

150
00:06:13,909 --> 00:06:12,630
orbit

151
00:06:15,430 --> 00:06:13,919
[Music]

152
00:06:17,670 --> 00:06:15,440
new techniques for rendezvous and

153
00:06:20,870 --> 00:06:17,680
docking will allow us to construct the

154
00:06:23,110 --> 00:06:20,880
spaceship of the future astronauts will

155
00:06:25,909 --> 00:06:23,120
visit and live in lightweight inflatable

156
00:06:27,189 --> 00:06:25,919
habitats and live off the land at their

157
00:06:29,670 --> 00:06:27,199
destinations

158
00:06:31,749 --> 00:06:29,680
america has been is all about innovation

159
00:06:33,749 --> 00:06:31,759
has been throughout its history and many

160
00:06:34,950 --> 00:06:33,759
of those innovations occur outside the

161
00:06:37,270 --> 00:06:34,960
government we're pursuing that

162
00:06:38,950 --> 00:06:37,280
vigorously the agency will partner in

163
00:06:40,230 --> 00:06:38,960

innovative ways with the commercial

164
00:06:42,710 --> 00:06:40,240
space sector

165
00:06:45,510 --> 00:06:42,720
to develop safe and efficient systems to

166
00:06:48,230 --> 00:06:45,520
transport cargo and astronauts to and

167
00:06:50,390 --> 00:06:48,240
from the international space station by

168
00:06:52,469 --> 00:06:50,400
nurturing this growing american industry

169
00:06:55,350 --> 00:06:52,479
of commercial space access

170
00:06:57,589 --> 00:06:55,360
nasa will create new jobs while freeing

171
00:06:58,550 --> 00:06:57,599
itself to do what it has always done

172
00:07:09,029 --> 00:06:58,560
best

173
00:07:13,909 --> 00:07:11,990
robotic scouts like the mars science lab

174
00:07:15,749 --> 00:07:13,919
and observatories like the new james

175
00:07:18,390 --> 00:07:15,759
webb space telescope will

176
00:07:20,550 --> 00:07:18,400
comprehensively explore our solar system

177
00:07:22,390 --> 00:07:20,560
and galaxies beyond if you like hubble

178
00:07:24,950 --> 00:07:22,400
you'll love james webb because james

179
00:07:26,480 --> 00:07:24,960
webb will be a hundred times more

180
00:07:38,230 --> 00:07:26,490
sensitive

181
00:07:43,189 --> 00:07:40,629
as always nasa spacecraft will

182
00:07:45,830 --> 00:07:43,199
demonstrate new capabilities as they

183
00:07:49,430 --> 00:07:45,840
pioneer these bold efforts to further

184
00:07:51,909 --> 00:07:49,440
unlock the secrets of the universe

185
00:07:54,070 --> 00:07:51,919
closer to home the president's plan will

186
00:07:56,230 --> 00:07:54,080
strengthen nasa's efforts to study and

187
00:07:58,790 --> 00:07:56,240
protect our home planet

188
00:08:00,629 --> 00:07:58,800

an expanded suite of earth observatories

189
00:08:03,270 --> 00:08:00,639
will improve our knowledge of climate

190
00:08:07,749 --> 00:08:05,350
earth's dynamic processes and the

191
00:08:09,270 --> 00:08:07,759
forecasting of major storms and natural

192
00:08:11,990 --> 00:08:09,280
disasters

193
00:08:14,469 --> 00:08:12,000
nasa programs and spacecraft will also

194
00:08:15,830 --> 00:08:14,479
stand vigil against potential threats to

195
00:08:18,230 --> 00:08:15,840
our planet

196
00:08:20,550 --> 00:08:18,240
an agency-led effort is underway to

197
00:08:23,110 --> 00:08:20,560
chart the paths of asteroids and other

198
00:08:25,510 --> 00:08:23,120
near-earth objects and nasa satellites

199
00:08:27,749 --> 00:08:25,520
are gathering data that allow scientists

200
00:08:30,230 --> 00:08:27,759
to better predict space weather through

201
00:08:31,250 --> 00:08:30,240
its satellites communications and power

202
00:08:35,269 --> 00:08:31,260
grids

203
00:08:37,430 --> 00:08:35,279
[Music]

204
00:08:39,190 --> 00:08:37,440
in aeronautics new technology

205
00:08:41,430 --> 00:08:39,200
investments will develop the next

206
00:08:44,470 --> 00:08:41,440
generation aviation system for the

207
00:08:46,550 --> 00:08:44,480
entire nation that increases safety and

208
00:08:49,509 --> 00:08:46,560
is friendly to the environment

209
00:08:52,230 --> 00:08:49,519
by reducing noise emissions and fuel

210
00:08:55,990 --> 00:08:52,240
consumption so in turn

211
00:08:58,550 --> 00:08:56,000
the flying public will enjoy even safer

212
00:09:01,030 --> 00:08:58,560
and more efficient air travel which is

213
00:09:04,070 --> 00:09:01,040

already the safest mode of

214
00:09:06,470 --> 00:09:04,080
public transportation work on the x-48

215
00:09:08,790 --> 00:09:06,480
and other unmanned aerial vehicles will

216
00:09:16,200 --> 00:09:08,800
push the envelope of innovation and

217
00:09:20,070 --> 00:09:17,910
[Music]

218
00:09:26,070 --> 00:09:20,080
he's coming left to set up for the entry

219
00:09:31,110 --> 00:09:28,310
these accomplishments will continue to

220
00:09:33,990 --> 00:09:31,120
inspire a new generation of scientists

221
00:09:35,430 --> 00:09:34,000
engineers and explorers nasa has

222
00:09:36,710 --> 00:09:35,440
exciting missions that really help

223
00:09:38,389 --> 00:09:36,720
students see how they're going to use

224
00:09:40,470 --> 00:09:38,399
the academic knowledge they're using in

225
00:09:42,550 --> 00:09:40,480
the real world what are the jobs the

226
00:09:45,269 --> 00:09:42,560
careers the opportunities to explore and

227
00:09:47,110 --> 00:09:45,279
learn about science and aeronautics

228
00:09:48,829 --> 00:09:47,120
that really excites students

229
00:09:51,350 --> 00:09:48,839
through groundbreaking education

230
00:09:53,190 --> 00:09:51,360
initiatives nasa will work to sustain

231
00:09:55,670 --> 00:09:53,200
america's leadership in space and

232
00:09:58,070 --> 00:09:55,680
aviation and continue the critically

233
00:10:00,630 --> 00:09:58,080
important work of encouraging our youth

234
00:10:03,590 --> 00:10:00,640
into fulfilling careers in science

235
00:10:04,949 --> 00:10:03,600
technology engineering and math we're

236
00:10:07,030 --> 00:10:04,959
trying to equip

237
00:10:09,829 --> 00:10:07,040
middle school teachers with the

238
00:10:13,670 --> 00:10:09,839

confidence to go into the classroom and

239
00:10:17,509 --> 00:10:15,430
and i can tell you that

240
00:10:19,269 --> 00:10:17,519
in my opinion for young people all

241
00:10:21,030 --> 00:10:19,279
around the country the opportunities are

242
00:10:23,670 --> 00:10:21,040
there this country needs a new

243
00:10:25,990 --> 00:10:23,680
generation of scientists engineers and

244
00:10:27,509 --> 00:10:26,000
mathematicians that's good for science

245
00:10:29,430 --> 00:10:27,519
but it's more important for the good of

246
00:10:32,630 --> 00:10:29,440
this country nasa has a unique

247
00:10:34,630 --> 00:10:32,640
opportunity to help students do better

248
00:10:36,870 --> 00:10:34,640
in science and mathematics and be

249
00:10:39,269 --> 00:10:36,880
prepared for careers in engineering and

250
00:10:41,190 --> 00:10:39,279
know how to invent and use technology

251
00:10:43,590 --> 00:10:41,200
we have a way to excite them engage them

252
00:10:44,949 --> 00:10:43,600
in real world activities and it's

253
00:10:46,389 --> 00:10:44,959
important that we have our future

254
00:10:48,550 --> 00:10:46,399
workforce for nasa

255
00:10:50,160 --> 00:10:48,560
our contractors and universities but

256
00:10:54,710 --> 00:10:50,170
also the nation

257
00:10:59,910 --> 00:10:57,190
the agency will sponsor new competitions

258
00:11:02,069 --> 00:10:59,920
that foster ideas and innovation for

259
00:11:07,190 --> 00:11:02,079
leading edge technologies and new

260
00:11:11,350 --> 00:11:09,509
this budget is really a good indication

261
00:11:13,910 --> 00:11:11,360
of the president's support for science

262
00:11:15,829 --> 00:11:13,920
in general in earth science and specific

263
00:11:17,910 --> 00:11:15,839

we can take the intellectual capital at

264
00:11:20,150 --> 00:11:17,920
the nasa field centers and we can turn

265
00:11:22,150 --> 00:11:20,160
it loose on some of society's grandest

266
00:11:26,870 --> 00:11:22,160
challenges we're going to look back at

267
00:11:29,350 --> 00:11:26,880
this time i hope and recognize that

268
00:11:31,190 --> 00:11:29,360
we opened up the solar system

269
00:11:32,870 --> 00:11:31,200
for humanity i'm excited about the

270
00:11:34,389 --> 00:11:32,880
things we're going to be able to do

271
00:11:35,990 --> 00:11:34,399
because we now have money to put into

272
00:11:37,750 --> 00:11:36,000
research and development of the

273
00:11:39,670 --> 00:11:37,760
technologies that we need to accomplish

274
00:11:42,310 --> 00:11:39,680
the goals we set for ourselves

275
00:11:43,990 --> 00:11:42,320
our goal is to go away from the planet

276
00:11:45,670 --> 00:11:44,000
we want to go to asteroids we want to go

277
00:11:47,750 --> 00:11:45,680
to mars we want to go back to the moon

278
00:11:50,389 --> 00:11:47,760
we want to do other things we want to be

279
00:11:52,870 --> 00:11:50,399
able to fly higher and faster nasa's new

280
00:11:55,430 --> 00:11:52,880
path for space exploration puts our

281
00:11:58,310 --> 00:11:55,440
nation on a stronger trajectory for

282
00:12:01,030 --> 00:11:58,320
achieving our boldest ambitions

283
00:12:03,509 --> 00:12:01,040
both flexible and sustainable the nation

284
00:12:06,629 --> 00:12:03,519
can start moving today towards these

285
00:12:09,269 --> 00:12:06,639
challenging and inspiring goals

286
00:12:11,750 --> 00:12:09,279
america's space exploration program will

287
00:12:14,069 --> 00:12:11,760
advance new frontiers and provide

288
00:12:16,389 --> 00:12:14,079

inspiration for the world

289
00:12:19,030 --> 00:12:16,399
we're gonna turn science fiction into

290
00:12:20,870 --> 00:12:19,040
science fact exploring the universe

291
00:12:21,910 --> 00:12:20,880
while better understanding our home

292
00:12:24,710 --> 00:12:21,920
planet

293
00:12:25,970 --> 00:12:24,720
in a new era of innovation