
COUNTDOWN
TO
T-ZERO
PARKER SOLAR PROBE
A MISSION
TO TOUCH
THE SUN

1
00:00:04,470 --> 00:00:02,160
status check to proceed with terminal

2
00:00:07,579 --> 00:00:04,480
there is a moment at the start of every

3
00:00:10,410 --> 00:00:07,589
mission and everything comes together a

4
00:00:14,070 --> 00:00:10,420
moment when years of preparation and

5
00:00:17,670 --> 00:00:14,080
planning are put to the test there are

6
00:00:20,490 --> 00:00:17,680
no second chances you have success or

7
00:00:23,700 --> 00:00:20,500
failure is just a heartbeat away from

8
00:00:26,700 --> 00:00:23,710
already that at the brain a spacecraft

9
00:00:29,009 --> 00:00:26,710
and its rocket on the pad fully fueled

10
00:00:31,980 --> 00:00:29,019
and ready to launch at it

11
00:00:34,529 --> 00:00:31,990
dodonpa in that only a controlled

12
00:00:38,040 --> 00:00:34,539
explosion is released with such intense

13
00:00:41,340 --> 00:00:38,050

power a capella spacecraft off the earth

14
00:00:43,950 --> 00:00:41,350
and into space the benefit of all mighty

15
00:00:46,469 --> 00:00:43,960
delt we call this Ramat with NASA's here

16
00:00:48,149 --> 00:00:46,479
are four solo for this I'm daring story

17
00:00:55,680 --> 00:00:48,159
shed light on the mysteries of our

18
00:01:03,000 --> 00:00:59,380
the Sun the heart of our solar system

19
00:01:05,590 --> 00:01:03,010
it's as familiar as anything we know

20
00:01:08,530 --> 00:01:05,600
although the Sun has been studied for

21
00:01:11,350 --> 00:01:08,540
millennia it still holds unsolved

22
00:01:15,160 --> 00:01:11,360
mysteries about its effects on our daily

23
00:01:17,200 --> 00:01:15,170
lives to better understand the Sun NASA

24
00:01:21,220 --> 00:01:17,210
is preparing to launch a spacecraft

25
00:01:23,020 --> 00:01:21,230
called the Parker Solar Probe it will

26
00:01:25,780 --> 00:01:23,030
lift off from Cape Canaveral Air Force

27
00:01:29,320 --> 00:01:25,790
Station near the agency's Kennedy Space

28
00:01:32,020 --> 00:01:29,330
Center located in Florida it's a mission

29
00:01:34,210 --> 00:01:32,030
of unprecedented opportunities that

30
00:01:36,880 --> 00:01:34,220
could revolutionize our understanding of

31
00:01:40,600 --> 00:01:36,890
our star and the sun's atmosphere the

32
00:01:44,380 --> 00:01:40,610
corona a long time destination goal for

33
00:01:46,570 --> 00:01:44,390
scientists such as dr. Nikki Fox going

34
00:01:48,640 --> 00:01:46,580
into the Sun's corona for the first time

35
00:01:50,920 --> 00:01:48,650
going up close and personal with our

36
00:01:53,440 --> 00:01:50,930
star to be able to answer some of the

37
00:01:56,350 --> 00:01:53,450
mysteries that live in this coronal

38
00:01:58,330 --> 00:01:56,360

region why is the Sun's corona hotter

39
00:02:00,520 --> 00:01:58,340
than the surface of the Sun why is there

40
00:02:03,370 --> 00:02:00,530
a solar wind why does this atmosphere

41
00:02:06,340 --> 00:02:03,380
this corona become so energized that it

42
00:02:08,529 --> 00:02:06,350
can move away from the Sun at supersonic

43
00:02:10,990 --> 00:02:08,539
speeds and bathe all of the planets and

44
00:02:13,840 --> 00:02:11,000
now that Parker has finally arrived on

45
00:02:16,510 --> 00:02:13,850
the Space Coast we're one step closer to

46
00:02:20,020 --> 00:02:16,520
solving those mysteries delivered on an

47
00:02:22,600 --> 00:02:20,030
Air Force c-17 it's not every day this

48
00:02:23,650 --> 00:02:22,610
crew hauls a payload destined for the

49
00:02:25,480 --> 00:02:23,660
history books

50
00:02:27,580 --> 00:02:25,490
overall the mission itself is relatively

51
00:02:29,770 --> 00:02:27,590
simple I'd say that these challenge is

52
00:02:31,000 --> 00:02:29,780
probably the load portion full extra to

53
00:02:33,640 --> 00:02:31,010
it to certainly we're just hauling

54
00:02:36,130 --> 00:02:33,650
generic things but not up 1.5 billion

55
00:02:39,280 --> 00:02:36,140
our soil probe and there's only one

56
00:02:41,800 --> 00:02:39,290
world class program that specializes in

57
00:02:44,770 --> 00:02:41,810
missions of this caliber NASA's launch

58
00:02:47,199 --> 00:02:44,780
services program a team that matches the

59
00:02:49,510 --> 00:02:47,209
industry's top performing rockets with

60
00:02:52,360 --> 00:02:49,520
the cutting-edge spacecraft NASA is

61
00:02:55,140 --> 00:02:52,370
committed to launching LSP is NASA's

62
00:02:58,600 --> 00:02:55,150
bridge to space basically what we do is

63
00:03:00,250 --> 00:02:58,610

we link a spacecraft customer such as a

64
00:03:01,899 --> 00:03:00,260
parker Solar Probe up with a launch

65
00:03:04,809 --> 00:03:01,909
vehicle provider such as a knighted

66
00:03:08,140 --> 00:03:04,819
Launch Alliance and we provide them with

67
00:03:10,660 --> 00:03:08,150
a custom-built ride to space on a

68
00:03:13,420 --> 00:03:10,670
carefully selected launch vehicle

69
00:03:16,030 --> 00:03:13,430
engineers and scientists with Astro tech

70
00:03:18,610 --> 00:03:16,040
and the Applied Physics lab teams will

71
00:03:21,039 --> 00:03:18,620
spend its last few months checking and

72
00:03:23,830 --> 00:03:21,049
testing every element and completing

73
00:03:26,679 --> 00:03:23,840
final assembly to be sure it is ready to

74
00:03:30,460 --> 00:03:26,689
leave Earth for its epic trip to the Sun

75
00:03:32,589 --> 00:03:30,470
Parker must be perfect before t0 arrives

76
00:03:34,899 --> 00:03:32,599
before we start integration with the

77
00:03:36,339 --> 00:03:34,909
launch vehicle we have to do final

78
00:03:39,039 --> 00:03:36,349
integration of the spacecraft that

79
00:03:41,080 --> 00:03:39,049
includes attaching the magnetometer boom

80
00:03:44,110 --> 00:03:41,090
and magnetometers will then also

81
00:03:46,300 --> 00:03:44,120
integrate the solar arrays and then

82
00:03:47,770 --> 00:03:46,310
finally right before integration with

83
00:03:49,750 --> 00:03:47,780
the launch vehicle we'll add

84
00:03:52,270 --> 00:03:49,760
the protection system or thermal shield

85
00:03:55,420 --> 00:03:52,280
the Parker Solar Probe will be the first

86
00:03:57,220 --> 00:03:55,430
mission to kiss the Sun flying to the

87
00:04:00,280 --> 00:03:57,230
searing heat of the Sun's corona

88
00:04:03,100 --> 00:04:00,290

traveling closer to the surface than any

89
00:04:05,800 --> 00:04:03,110
other spacecraft before and to do that

90
00:04:09,580 --> 00:04:05,810
it will need to go faster than any other

91
00:04:11,710 --> 00:04:09,590
spacecraft in history that's why for the

92
00:04:14,590 --> 00:04:11,720
first time ever NASA's launch services

93
00:04:17,849 --> 00:04:14,600
program selected the United Launch

94
00:04:20,530 --> 00:04:17,859
Alliance Delta for heavy rocket

95
00:04:23,440 --> 00:04:20,540
paka Solar Probe will be the fastest

96
00:04:25,510 --> 00:04:23,450
human-made object ever we are traveling

97
00:04:27,909 --> 00:04:25,520
at an unbelievable four hundred and

98
00:04:30,550 --> 00:04:27,919
thirty thousand miles per hour

99
00:04:32,440 --> 00:04:30,560
NASA selected delta 4 heavy for the

100
00:04:35,140 --> 00:04:32,450
parker Solar Probe mission because of

101
00:04:37,060 --> 00:04:35,150
the combined energy of the booster Delta

102
00:04:39,130 --> 00:04:37,070
cryogenic second stage and the third

103
00:04:41,500 --> 00:04:39,140
stage which means that we have enough

104
00:04:43,300 --> 00:04:41,510
energy to go to the Sun immediately if

105
00:04:48,580 --> 00:04:43,310
you look at the vehicle is huge it's

106
00:04:52,180 --> 00:04:48,590
approximately 50 feet wide 170,000

107
00:04:55,000 --> 00:04:52,190
pounds going out and seeing the Delta

108
00:04:57,340 --> 00:04:55,010
full heavy on the pad is a truly more

109
00:05:00,490 --> 00:04:57,350
inspiring experience just seeing that

110
00:05:03,150 --> 00:05:00,500
amount of raw power right in front of

111
00:05:06,070 --> 00:05:03,160
you is just incredible three boosters

112
00:05:07,960 --> 00:05:06,080
our second stage and then we have a

113
00:05:09,490 --> 00:05:07,970

third stage we're a tiny little

114
00:05:11,570 --> 00:05:09,500
spacecraft we look like a little hood

115
00:05:14,510 --> 00:05:11,580
ornament on the top of the Dalton

116
00:05:16,999 --> 00:05:14,520
throughout its seven-year mission NASA's

117
00:05:19,420 --> 00:05:17,009
Parker Solar Probe will swoop through

118
00:05:22,070 --> 00:05:19,430
the sun's atmosphere carrying more than

119
00:05:23,869 --> 00:05:22,080
scientific instruments on this historic

120
00:05:26,170 --> 00:05:23,879
journey to the center of our solar

121
00:05:30,409 --> 00:05:26,180
system it will also hold a piece of

122
00:05:32,420 --> 00:05:30,419
humanity itself back in March 2018 the

123
00:05:35,749 --> 00:05:32,430
public was invited to submit their names

124
00:05:38,540 --> 00:05:35,759
over a million were loaded into a memory

125
00:05:41,570 --> 00:05:38,550
card and mounted on a plaque bearing a

126
00:05:44,059 --> 00:05:41,580
dedication to the missions namesake dr.

127
00:05:46,640 --> 00:05:44,069
Eugene Parker was a Helio physicist

128
00:05:49,939 --> 00:05:46,650
ahead of his time he proposed this

129
00:05:52,369 --> 00:05:49,949
mission back in 1958 after discovering

130
00:05:55,909 --> 00:05:52,379
the existence of the dangerous and

131
00:05:58,610 --> 00:05:55,919
unpredictable solar wind the reason it

132
00:06:00,499 --> 00:05:58,620
has taken us 60 years to be able to fly

133
00:06:03,230 --> 00:06:00,509
this mission is not because we weren't

134
00:06:06,559 --> 00:06:03,240
interested it really is because it has

135
00:06:08,510 --> 00:06:06,569
taken that long for technology to be

136
00:06:12,080 --> 00:06:08,520
developed to allow us to do this

137
00:06:14,689 --> 00:06:12,090
incredible mission during the partner

138
00:06:17,089 --> 00:06:14,699

solar probes perilous dive into the

139
00:06:19,309 --> 00:06:17,099
Sun's corona of the atmosphere it will

140
00:06:22,309 --> 00:06:19,319
navigate dangers never before

141
00:06:26,209 --> 00:06:22,319
experienced by a NASA deep-space mission

142
00:06:29,149 --> 00:06:26,219
3 million degree plasma sporadic solar

143
00:06:32,029 --> 00:06:29,159
flares and delayed communication with

144
00:06:34,309 --> 00:06:32,039
earth traveling this close is only

145
00:06:35,629 --> 00:06:34,319
possible because of the spacecraft

146
00:06:38,420 --> 00:06:35,639
detected

147
00:06:41,570 --> 00:06:38,430
the single largest piece of hardware and

148
00:06:43,939 --> 00:06:41,580
the most critical to mission success one

149
00:06:46,520 --> 00:06:43,949
slight error in its performance could

150
00:06:47,600 --> 00:06:46,530
cause the probe to melt and the mission

151
00:06:49,550 --> 00:06:47,610
would be lost

152
00:06:51,709 --> 00:06:49,560
Parker Solar Probe is actually going and

153
00:06:54,409 --> 00:06:51,719
touching the Sun when we actually get to

154
00:06:56,170 --> 00:06:54,419
our closest approach a heat shield on

155
00:06:58,219 --> 00:06:56,180
Parker Solar Probe will be at about

156
00:07:00,529 --> 00:06:58,229
2,500 degrees Fahrenheit on the front

157
00:07:02,869 --> 00:07:00,539
surface the back surface is going to be

158
00:07:03,980 --> 00:07:02,879
at about 600 bees Fahrenheit but then

159
00:07:05,749 --> 00:07:03,990
the spacecraft bus will just be

160
00:07:08,689 --> 00:07:05,759
operating a normal room temperature

161
00:07:10,730 --> 00:07:08,699
almost it's a little bit higher about 85

162
00:07:12,619 --> 00:07:10,740
degrees the previous missions have been

163
00:07:14,749 --> 00:07:12,629

really important for solar science as we

164
00:07:16,969 --> 00:07:14,759
study from afar and we can learn a lot

165
00:07:18,559 --> 00:07:16,979
from studying from afar but Parker Solar

166
00:07:20,600 --> 00:07:18,569
Probe is actually going and touching

167
00:07:23,029 --> 00:07:20,610
almost kissing the Sun so we can learn

168
00:07:25,519 --> 00:07:23,039
so much more the spacecraft is now ready

169
00:07:28,159 --> 00:07:25,529
for flight but it can't get millions of

170
00:07:30,980 --> 00:07:28,169
miles to the Sun unless it gets a boost

171
00:07:32,929 --> 00:07:30,990
from a specially made third stage by

172
00:07:36,619 --> 00:07:32,939
Northrop Grumman the Northrop Grumman

173
00:07:39,140 --> 00:07:36,629
third stage team specifically designed

174
00:07:41,390 --> 00:07:39,150
and built this third stage for the

175
00:07:43,309 --> 00:07:41,400
Parker Solar Probe mission the Parker

176
00:07:45,110 --> 00:07:43,319
Solar Probe needs a third stage because

177
00:07:47,570 --> 00:07:45,120
even though the delta 4 heavy is an

178
00:07:50,240 --> 00:07:47,580
incredibly powerful rocket the third

179
00:07:53,029 --> 00:07:50,250
stage is what gets it the extra boost to

180
00:07:56,510 --> 00:07:53,039
get into its final orbit around Venus

181
00:07:58,189 --> 00:07:56,520
and to the Sun parker Solar Probe is the

182
00:08:00,619 --> 00:07:58,199
hardest trajectory that I've ever worked

183
00:08:03,140 --> 00:08:00,629
on for a couple of different reasons one

184
00:08:05,089 --> 00:08:03,150
we're flying on the delta 4 heavy which

185
00:08:07,369 --> 00:08:05,099
is the largest and most complex rocket

186
00:08:09,350 --> 00:08:07,379
that launched services program has ever

187
00:08:11,990 --> 00:08:09,360
been involved with and in addition to

188
00:08:13,760 --> 00:08:12,000

that we're flying a third stage that has

189
00:08:14,689 --> 00:08:13,770
its own guidance navigation and control

190
00:08:18,709 --> 00:08:14,699
system onboard

191
00:08:20,119 --> 00:08:18,719
so from trajectory GNC standpoint it's

192
00:08:21,939 --> 00:08:20,129
like flying to missions at once

193
00:08:23,809 --> 00:08:21,949
Parker Solar Probe is it's called the

194
00:08:26,659 --> 00:08:23,819
heliocentric orbit which means it's

195
00:08:29,149 --> 00:08:26,669
orbiting around the Sun and using a

196
00:08:31,100 --> 00:08:29,159
gravity assist usually we use that to

197
00:08:33,019 --> 00:08:31,110
add energy to the spacecraft's orbit

198
00:08:34,880 --> 00:08:33,029
when we go out to places like Jupiter or

199
00:08:36,259 --> 00:08:34,890
Saturn or Pluto in this case we're going

200
00:08:39,170 --> 00:08:36,269
in the opposite direction we're heading

201
00:08:41,779 --> 00:08:39,180
inside the orbit of mercury the folks at

202
00:08:42,800 --> 00:08:41,789
Applied Physics lab have come up with a

203
00:08:45,160 --> 00:08:42,810
very unique trajectory

204
00:08:48,590 --> 00:08:45,170
where the spacecraft is going to use the

205
00:08:50,750 --> 00:08:48,600
mass of Venus to slow themselves down

206
00:08:52,130 --> 00:08:50,760
and not only are they doing at one time

207
00:08:54,920 --> 00:08:52,140
they're actually going to do that seven

208
00:08:56,210 --> 00:08:54,930
times in a row over a space of six years

209
00:08:58,010 --> 00:08:56,220
in order to get the spacecraft

210
00:09:02,720 --> 00:08:58,020
perihelion because we're orbiting the

211
00:09:04,190 --> 00:09:02,730
Sun down below ten solar radii so when

212
00:09:06,740 --> 00:09:04,200
we're in orbit around an object whether

213
00:09:08,269 --> 00:09:06,750

it's the Earth or the Sun we go fastest

214
00:09:10,190 --> 00:09:08,279
when we're closest to that object and

215
00:09:12,769 --> 00:09:10,200
slowest when we get to the top of this

216
00:09:14,150 --> 00:09:12,779
orbit and therefore when we pass very

217
00:09:16,430 --> 00:09:14,160
close to the Sun which is the most

218
00:09:18,620 --> 00:09:16,440
massive object in our solar system we

219
00:09:20,690 --> 00:09:18,630
are going approximately four hundred and

220
00:09:23,110 --> 00:09:20,700
thirty thousand miles per hour relative

221
00:09:25,910 --> 00:09:23,120
to the Sun this really is rocket science

222
00:09:28,460 --> 00:09:25,920
during the early stages of launch the

223
00:09:31,190 --> 00:09:28,470
Parker Solar Probe will be encapsulated

224
00:09:34,220 --> 00:09:31,200
in a large payload fairing the delta 4

225
00:09:36,950 --> 00:09:34,230
heavy is a massive rocket designed to

226
00:09:39,410 --> 00:09:36,960
launch a school bus sized spacecraft the

227
00:09:43,640 --> 00:09:39,420
last step at Astro Tech is safely

228
00:09:46,100 --> 00:09:43,650
securing the 1500 10 pound spacecraft in

229
00:09:48,290 --> 00:09:46,110
a fairing that by comparison makes the

230
00:09:49,850 --> 00:09:48,300
probe look small to get to the Sun we

231
00:09:51,050 --> 00:09:49,860
actually need a lot of energy because of

232
00:09:52,610 --> 00:09:51,060
that we need a very large Fiat launch

233
00:09:54,890 --> 00:09:52,620
vehicle and in fact we have the biggest

234
00:09:56,570 --> 00:09:54,900
launch vehicle we can get and because of

235
00:09:58,130 --> 00:09:56,580
that the sparing that that is associated

236
00:09:59,030 --> 00:09:58,140
with this launch vehicle is very large

237
00:10:00,500 --> 00:09:59,040
but because there were a small

238
00:10:02,300 --> 00:10:00,510

spacecraft we take up a very small

239
00:10:03,530 --> 00:10:02,310
amount of space and that's made in that

240
00:10:05,060 --> 00:10:03,540
fairing and that's the reason why it

241
00:10:06,770 --> 00:10:05,070
looks like very very small spacecraft I

242
00:10:08,750 --> 00:10:06,780
have very large vehicle but once that

243
00:10:10,810 --> 00:10:08,760
the spacecraft is encapsulated that's it

244
00:10:13,330 --> 00:10:10,820
we no longer get to touch it

245
00:10:16,330 --> 00:10:13,340
[Music]

246
00:10:19,660 --> 00:10:16,340
the encapsulated probe is now ready for

247
00:10:22,570 --> 00:10:19,670
a slow steady ride to the launch pad at

248
00:10:25,750 --> 00:10:22,580
Cape Canaveral it will be transported at

249
00:10:28,530 --> 00:10:25,760
topic Kmag made for transporting special

250
00:10:33,190 --> 00:10:28,540
payloads it can hold thousands of pounds

251
00:10:38,769 --> 00:10:33,200
spend 360 degrees and keep its payload

252
00:10:40,090 --> 00:10:38,779
level when traveling up inclines one of

253
00:10:42,310 --> 00:10:40,100
the nice parts about the came out that

254
00:10:44,050 --> 00:10:42,320
we have is does very precise steering

255
00:10:45,820 --> 00:10:44,060
capabilities and it also has a lot of

256
00:10:47,290 --> 00:10:45,830
different steering capabilities so it

257
00:10:49,780 --> 00:10:47,300
gives us a lot of capability to get into

258
00:10:52,180 --> 00:10:49,790
a precise location both for hoisting

259
00:10:53,769 --> 00:10:52,190
operations down in the hoist way as well

260
00:10:56,170 --> 00:10:53,779
as different mating operations in our

261
00:10:58,780 --> 00:10:56,180
horizontal integration facility now the

262
00:11:01,660 --> 00:10:58,790
ula team will carefully lift the Parker

263
00:11:04,420 --> 00:11:01,670

Solar Probe safely nestled inside its

264
00:11:07,120 --> 00:11:04,430
payload fairing to mate it atop the

265
00:11:09,460 --> 00:11:07,130
massive Delta 4 rocket to keep the

266
00:11:11,560 --> 00:11:09,470
payload safe during the entire lifting

267
00:11:14,380 --> 00:11:11,570
operation there's a special channel

268
00:11:17,260 --> 00:11:14,390
constructed in the tower itself known as

269
00:11:19,600 --> 00:11:17,270
the hoist way that allows the payload to

270
00:11:21,880 --> 00:11:19,610
be lifted without any influence from

271
00:11:24,579 --> 00:11:21,890
adverse weather or environmental

272
00:11:27,070 --> 00:11:24,589
conditions the exciting part about today

273
00:11:29,829 --> 00:11:27,080
is it's when we finally get the customer

274
00:11:30,970 --> 00:11:29,839
out here we get the spacecraft voiced in

275
00:11:33,070 --> 00:11:30,980
it's kind of that's what it's all been

276
00:11:34,780 --> 00:11:33,080
about a heavy mission by itself is

277
00:11:37,000 --> 00:11:34,790
always exciting but then you add in the

278
00:11:39,280 --> 00:11:37,010
factor of having a NASA exploration

279
00:11:41,200 --> 00:11:39,290
mission the mission to touch the Sun

280
00:11:42,550 --> 00:11:41,210
that come feed with the heavy it's just

281
00:11:44,860 --> 00:11:42,560
an exciting launch for the public to

282
00:11:46,060 --> 00:11:44,870
create exciting launch for ula it'll be

283
00:11:48,230 --> 00:11:46,070
a lot of fun to see and will be a lot of

284
00:11:51,100 --> 00:11:48,240
fun to track over the next several years

285
00:11:54,079 --> 00:11:51,110
gets into its final orbit around the Sun

286
00:11:56,210 --> 00:11:54,089
NASA's launch services program has now

287
00:11:58,819 --> 00:11:56,220
brought together the payload and it's

288
00:12:00,379 --> 00:11:58,829

ride to space after taking different

289
00:12:02,989 --> 00:12:00,389
roads to the launch pad

290
00:12:06,169 --> 00:12:02,999
finally the spacecraft and the vehicle

291
00:12:09,499 --> 00:12:06,179
are together Goddard runs all of the

292
00:12:11,449 --> 00:12:09,509
living with estar missions and this is

293
00:12:13,009 --> 00:12:11,459
what's called a flagship mission it's

294
00:12:16,609 --> 00:12:13,019
one of the most important things that

295
00:12:19,069 --> 00:12:16,619
our science does so the anticipation of

296
00:12:21,350 --> 00:12:19,079
launch is just tremendous I've been

297
00:12:24,019 --> 00:12:21,360
working in this project for 10 years and

298
00:12:26,780 --> 00:12:24,029
now to see it actually ready to go is

299
00:12:27,799 --> 00:12:26,790
just a tremendous feeling it's really

300
00:12:32,749 --> 00:12:27,809
hard to describe

301
00:12:36,379 --> 00:12:32,759
now as t0 is just days away it's up to

302
00:12:38,929 --> 00:12:36,389
you LA and LSP to make sure that

303
00:12:42,169 --> 00:12:38,939
operating is won in the hours before

304
00:12:44,929 --> 00:12:42,179
liftoff the mobile service tower gantry

305
00:12:47,569 --> 00:12:44,939
rolls back leaving the mighty Delta

306
00:12:47,960 --> 00:12:47,579
Force standing on its own ready for

307
00:12:52,100 --> 00:12:47,970
launch

308
00:12:54,980 --> 00:12:52,110
the final countdown to t0 is underway as

309
00:12:57,980 --> 00:12:54,990
the vasa launch director ultimately what

310
00:12:59,689 --> 00:12:57,990
I do is give to go or the know go that's

311
00:13:01,280 --> 00:12:59,699
a very simple statement but there's a

312
00:13:03,980 --> 00:13:01,290
lot that goes behind that but it's a

313
00:13:06,530 --> 00:13:03,990

culmination of a bunch of professionals

314
00:13:09,109 --> 00:13:06,540
that know their jobs they know it well

315
00:13:12,319 --> 00:13:09,119
and all I have to do is make sure all

316
00:13:14,530 --> 00:13:12,329
those pieces are in place then it's easy

317
00:13:16,939 --> 00:13:14,540
for me to make the decision to launch

318
00:13:19,340 --> 00:13:16,949
thousands of rockets have launched from

319
00:13:22,609 --> 00:13:19,350
Florida's Space Coast but this is the

320
00:13:25,730 --> 00:13:22,619
first designed to fly to the sun-baked

321
00:13:26,700 --> 00:13:25,740
delta 4 heavy rocket is ready to roar to

322
00:13:29,370 --> 00:13:26,710
life with

323
00:13:31,500 --> 00:13:29,380
more than 2 million pounds of thrust to

324
00:13:34,470 --> 00:13:31,510
power the Parker Solar Probe on a

325
00:13:36,840 --> 00:13:34,480
trajectory of millions of miles to its

326
00:13:39,000 --> 00:13:36,850
destination receive a terminal count

327
00:13:43,590 --> 00:13:39,010
first aid systems propulsion no

328
00:13:47,340 --> 00:13:43,600
hydraulic go box go box director you

329
00:13:55,400 --> 00:13:47,350
have permission to launch status check

330
00:13:58,110 --> 00:13:55,410
go Delta go PS be three two one zero

331
00:14:00,930 --> 00:13:58,120
liftoff of the mighty delta 4 heavy

332
00:14:03,360 --> 00:14:00,940
rocket with NASA's Parker's Solar Probe

333
00:14:07,730 --> 00:14:03,370
a daring mission to shed light on the

334
00:14:07,740 --> 00:14:14,020
[Music]

335
00:14:25,540 --> 00:14:16,810
eh look good in the rest mode this

336
00:14:30,830 --> 00:14:27,430
equal trajectory looking good right down