1
00:00:00,000 --> 00:02:15,370
I

2
00:02:28,200 --> 00:02:21,650
you

3
00:02:35,850 --> 00:02:28,210
on the payload and what we anticipate to

4
00:02:37,350 --> 00:02:35,860
happen this morning this vehicle those

5
00:02:41,100 --> 00:02:37,360
of you they haven't seen it before it

6
00:02:44,130 --> 00:02:41,110
gets off the rail very fast it's not

7
00:02:47,570 --> 00:02:44,140
quite like watching a liquid one of the

8
00:02:50,820 --> 00:02:47,580
NASA launches that sort of climb out

9
00:02:52,740 --> 00:02:50,830
reasonably slowly this this one gets off

10
00:02:56,430 --> 00:02:52,750
like a missile because that's what the

11
00:03:01,080 --> 00:02:56,440
first stage basically is you'll see the

12
00:03:04,230 --> 00:03:01,090
first stage put out the order of six

13
00:03:08,130 --> 00:03:04,240

seconds then you'll see our coast face

14
00:03:13,910 --> 00:03:08,140
and then you will see the second stage

15
00:03:18,150 --> 00:03:13,920
ignite after we have reached the right

16
00:03:20,400 --> 00:03:18,160
dynamic pressures to do that the

17
00:03:22,979 --> 00:03:20,410
sustainer motor or second stage is a

18
00:03:26,460 --> 00:03:22,989
fairly long long time so you'll see that

19
00:03:29,580 --> 00:03:26,470
climb out as as the plume of the vehicle

20
00:03:31,229 --> 00:03:29,590
claims out through any wind shears don't

21
00:03:33,810 --> 00:03:31,239
don't think there are too many today

22
00:03:35,550 --> 00:03:33,820
you'll see the plume sort of scatter

23
00:03:37,590 --> 00:03:35,560
around a little bit that's not the

24
00:03:39,750 --> 00:03:37,600
vehicle maneuvering like that the

25
00:03:41,820 --> 00:03:39,760
vehicle hopefully is going straight down

26
00:03:45,900 --> 00:03:41,830
range so that's just the plume being

27
00:03:50,970 --> 00:03:45,910
hashed about when you who is doing the

28
00:03:55,620 --> 00:03:50,980
count for us she give us the plus count

29
00:03:58,800 --> 00:03:55,630
and a T plus 12 seconds Asuma announce

30
00:04:02,340 --> 00:03:58,810
second stage ignition that's an analogy

31
00:04:05,490 --> 00:04:02,350
of three point seven five miles and then

32
00:04:09,210 --> 00:04:05,500
I'd be a plus count t plus 18 that will

33
00:04:11,640 --> 00:04:09,220
hear that means the end of the s 19

34
00:04:15,750 --> 00:04:11,650
boosts guidance system that occurs at

35
00:04:18,270 --> 00:04:15,760
about six miles altitude t plus 44 is

36
00:04:21,390 --> 00:04:18,280
the max count that's the end of the

37
00:04:24,150 --> 00:04:21,400
second stage ignition like a second

38
00:04:29,279 --> 00:04:24,160

stage burn and that's about 30 miles

39
00:04:30,550 --> 00:04:29,289
altitude t plus 52 we have the payload d

40
00:04:33,520 --> 00:04:30,560
spend that means the

41
00:04:36,310 --> 00:04:33,530
yeah vehicle that were spinning up due

42
00:04:39,159 --> 00:04:36,320
to the bin ken hangul set in to give us

43
00:04:41,800 --> 00:04:39,169
a spin stabilized vehicle we have of

44
00:04:43,450 --> 00:04:41,810
that we call a yo-yo d spin which is

45
00:04:47,650 --> 00:04:43,460
simply some weights that come out on

46
00:04:50,950 --> 00:04:47,660
long wires much like a a ice skater puts

47
00:04:52,930 --> 00:04:50,960
our arms out to stop the spin when she

48
00:04:55,390 --> 00:04:52,940
spent it on the ice it changes the

49
00:04:57,520 --> 00:04:55,400
moment of inertia in technical terms and

50
00:05:00,460 --> 00:04:57,530
then as she puts our arms down she'll

51
00:05:02,680 --> 00:05:00,470
spend up but we will put this D spend yo

52
00:05:04,480 --> 00:05:02,690
yo D spin system out and that

53
00:05:07,330 --> 00:05:04,490
essentially takes all the spin right out

54
00:05:09,520 --> 00:05:07,340
of the vehicle to make us ready to enter

55
00:05:14,200 --> 00:05:09,530
the microgravity condition for the

56
00:05:17,620 --> 00:05:14,210
experiments we will get a pair of

57
00:05:19,840 --> 00:05:17,630
separation at t + 58 that's a 48

58
00:05:23,050 --> 00:05:19,850
nautical miles or excuse me not nautical

59
00:05:25,330 --> 00:05:23,060
miles miles t plus 7 affair we have the

60
00:05:29,260 --> 00:05:25,340
beginning of the microgravity period and

61
00:05:33,190 --> 00:05:29,270
at t-plus two hundred ninety seconds we

62
00:05:35,830 --> 00:05:33,200
have a pudgy which is actually 198 miles

63
00:05:40,330 --> 00:05:35,840

for this mission but close enough to

64
00:05:44,260 --> 00:05:40,340
turn about 200 miles out you t plus 5 06

65
00:05:50,969 --> 00:05:44,270
seconds the end of microgravity at 68

66
00:05:53,680 --> 00:05:50,979
miles such as we are over t plus 6 2 22

67
00:05:56,230 --> 00:05:53,690
seconds the main chute will deploy will

68
00:05:59,170 --> 00:05:56,240
get an indication of that you're not

69
00:06:01,840 --> 00:05:59,180
going to see that today and that's a

70
00:06:05,469 --> 00:06:01,850
through miles altitude and then t plus

71
00:06:08,350 --> 00:06:05,479
eight seventy eight seconds we will have

72
00:06:14,080 --> 00:06:08,360
a payload landing 50 nautical miles

73
00:06:19,320 --> 00:06:14,090
downrange so it's it's about a 15-minute

74
00:06:23,800 --> 00:06:19,330
flight it's so 878 seconds I'm so high

75
00:06:29,150 --> 00:06:23,810
rocky quietiy an hour were close to to

76
00:06:51,629 --> 00:06:36,470
and nine eight seven six five four three

77
00:07:37,290 --> 00:07:34,860
a consumption for materials Devon and

78
00:07:39,869 --> 00:07:37,300
space at the university of alabama in

79
00:07:43,950 --> 00:07:39,879
huntsville was formed in September of

80
00:07:45,869 --> 00:07:43,960
1985 when the university received a NASA

81
00:07:49,260 --> 00:07:45,879
grant from the office of commercial

82
00:07:52,079 --> 00:07:49,270
programs the intent of the consortium is

83
00:07:54,719 --> 00:07:52,089
to promote commercial activities in

84
00:07:57,420 --> 00:07:54,729
space and to enhance a technological

85
00:08:00,869 --> 00:07:57,430
position of the United States for

86
00:08:02,429 --> 00:08:00,879
foreign trade we are attending to run

87
00:08:04,999 --> 00:08:02,439
experiments and we are performing

88
00:08:07,800 --> 00:08:05,009

experiments in the low gravity of space

89
00:08:10,860 --> 00:08:07,810
so that we can learn things about

90
00:08:12,629 --> 00:08:10,870
materials make new materials learn

91
00:08:14,760 --> 00:08:12,639
things about processes that we can't

92
00:08:18,600 --> 00:08:14,770
learn on earth where they are masked by

93
00:08:20,850 --> 00:08:18,610
Earth's gravitational pull the nice part

94
00:08:23,159 --> 00:08:20,860
about a sounding rocket like this is

95
00:08:26,100 --> 00:08:23,169
that it can be done approximately every

96
00:08:30,269 --> 00:08:26,110
six months or so our first launched in

97
00:08:32,699 --> 00:08:30,279
march of 1989 consulate one was a

98
00:08:36,019 --> 00:08:32,709
successful launch in which all of the

99
00:08:39,569 --> 00:08:36,029
experiments worked and worked very well

100
00:08:42,709 --> 00:08:39,579
that payload was built entirely by UAH

101
00:08:45,120 --> 00:08:42,719
and integrated by McDonnell Douglas

102
00:08:48,230 --> 00:08:45,130
Space Systems Division in hospital

103
00:08:51,540 --> 00:08:48,240
Alabama on consular three then is

104
00:08:53,430 --> 00:08:51,550
experiments not only from the UAH

105
00:08:57,210 --> 00:08:53,440
Consortium for materials development in

106
00:08:59,400 --> 00:08:57,220
space but also for from three other NASA

107
00:09:04,130 --> 00:08:59,410
centers for the commercial development

108
00:09:09,300 --> 00:09:04,140
of space from mattel in columbus ohio

109
00:09:12,720 --> 00:09:09,310
from penn state university and from the

110
00:09:15,030 --> 00:09:12,730
university of colorado we also can

111
00:09:18,780 --> 00:09:15,040
change experiments very close to launch

112
00:09:21,600 --> 00:09:18,790
time as opposed to if you're flying on a

113
00:09:22,620 --> 00:09:21,610

man rated vehicle like the shuttle there

114
00:09:24,600 --> 00:09:22,630
are a considerable amount of

115
00:09:27,269 --> 00:09:24,610
documentation that you have to go

116
00:09:30,329 --> 00:09:27,279
through safety documentation to assure

117
00:09:32,960 --> 00:09:30,339
the launch people and assure the

118
00:09:35,280 --> 00:09:32,970
astronauts that we are not in any way

119
00:09:39,980 --> 00:09:35,290
compromising their health and well-being

120
00:09:43,170 --> 00:09:39,990
the phone formation experiment is

121
00:09:45,809 --> 00:09:43,180
looking at the billion dollar a year a

122
00:09:48,180 --> 00:09:45,819
home insulation market as one

123
00:09:50,220 --> 00:09:48,190
application it's also looking at

124
00:09:53,250 --> 00:09:50,230
building structures on the moon for

125
00:09:58,590 --> 00:09:53,260
going in a lunar Mars moon or mars types

126
00:10:01,110 --> 00:09:58,600
of missions the e for information in

127
00:10:03,180 --> 00:10:01,120
this particular experiment will have

128
00:10:05,939 --> 00:10:03,190
aluminum particles in it so that we can

129
00:10:08,040 --> 00:10:05,949
see what the effect of aluminum is on

130
00:10:11,670 --> 00:10:08,050
some of the acoustical properties of the

131
00:10:14,730 --> 00:10:11,680
material the reason we want to study the

132
00:10:17,130 --> 00:10:14,740
foams are that if we can make a small

133
00:10:20,160 --> 00:10:17,140
amount of improvement in the way that

134
00:10:22,679 --> 00:10:20,170
foams are currently built with there

135
00:10:24,240 --> 00:10:22,689
being such a large market for it any

136
00:10:27,360 --> 00:10:24,250
small improvement can have a large

137
00:10:37,660 --> 00:10:27,370
potential savings in energy and also in

138
00:10:41,410 --> 00:10:39,910

our interest in the project starts from

139
00:10:44,080 --> 00:10:41,420
some general observations that have been

140
00:10:46,180 --> 00:10:44,090
made for every cell tissue human animal

141
00:10:47,860 --> 00:10:46,190
it's gone into space that is that there

142
00:10:50,440 --> 00:10:47,870
are a series of subtle changes in

143
00:10:52,750 --> 00:10:50,450
physiology that have been observed maybe

144
00:10:55,030 --> 00:10:52,760
roughly categorized as changes in cell

145
00:10:57,100 --> 00:10:55,040
secretion or changes in hormone response

146
00:10:58,990 --> 00:10:57,110
while these might be quite unimportant

147
00:11:00,850 --> 00:10:59,000
one really doesn't know the importance

148
00:11:03,430 --> 00:11:00,860
of these over some long-term experience

149
00:11:05,530 --> 00:11:03,440
in the microgravity arena the other

150
00:11:07,210 --> 00:11:05,540
intriguing part is these problems that

151
00:11:09,370 --> 00:11:07,220
are seen in microgravity are also very

152
00:11:11,740 --> 00:11:09,380
clearly related in our minds at least

153
00:11:13,960 --> 00:11:11,750
two general unsolved Aziz states on

154
00:11:15,940 --> 00:11:13,970
earth such as cystic fibrosis diabetes

155
00:11:17,830 --> 00:11:15,950
and so forth so the question for us

156
00:11:19,960 --> 00:11:17,840
became one of can we get double money

157
00:11:21,760 --> 00:11:19,970
out of our experiments here where we can

158
00:11:23,380 --> 00:11:21,770
use micro gravity as a test tube in

159
00:11:25,840 --> 00:11:23,390
order to learn something about these

160
00:11:27,250 --> 00:11:25,850
important diseases in order to do that

161
00:11:29,080 --> 00:11:27,260
we have to sample a microgravity

162
00:11:31,450 --> 00:11:29,090
experience we have to learn something

163
00:11:33,670 --> 00:11:31,460

then about the behavior of cells in this

164
00:11:35,890 --> 00:11:33,680
situation this is why we've constructed

165
00:11:39,790 --> 00:11:35,900
what we call the Penn State bio module

166
00:11:41,620 --> 00:11:39,800
which starts from a molec modular set of

167
00:11:44,080 --> 00:11:41,630
about eight experiments the size of an

168
00:11:46,300 --> 00:11:44,090
eraser and in this we can put solutions

169
00:11:47,980 --> 00:11:46,310
in the various side arms and cells and

170
00:11:50,080 --> 00:11:47,990
tissues of interest in the main chamber

171
00:11:52,390 --> 00:11:50,090
this becomes the fundamental unit that

172
00:11:54,610 --> 00:11:52,400
we work with these then can be assembled

173
00:11:57,220 --> 00:11:54,620
according to the geometry demanded by

174
00:11:58,690 --> 00:11:57,230
the payload onto a baseplate here we see

175
00:12:01,060 --> 00:11:58,700
a base plate with our little computer

176
00:12:03,310 --> 00:12:01,070
auxiliary electronics put underneath and

177
00:12:04,510 --> 00:12:03,320
place for four separate vial modules and

178
00:12:06,580 --> 00:12:04,520
this is what we'll be flying in the

179
00:12:09,210 --> 00:12:06,590
concert pre-flight but we pick the

180
00:12:11,350 --> 00:12:09,220
chameleon skin and tadpole skin problem

181
00:12:13,420 --> 00:12:11,360
basically everyone seemed the color

182
00:12:15,220 --> 00:12:13,430
change it occurs in chameleons they've

183
00:12:18,310 --> 00:12:15,230
may have seen the spot changes that

184
00:12:20,500 --> 00:12:18,320
occur in tadpoles these color changes

185
00:12:23,080 --> 00:12:20,510
although they are very many are very

186
00:12:26,500 --> 00:12:23,090
similar in overall respects to much more

187
00:12:28,090 --> 00:12:26,510
complex processes involved in humans now

188
00:12:30,190 --> 00:12:28,100

the value of these systems are the

189
00:12:31,840 --> 00:12:30,200
tissues are very robust they're easy for

190
00:12:33,130 --> 00:12:31,850
us to prepare and we can do meaningful

191
00:12:35,110 --> 00:12:33,140
experiments in this particular

192
00:12:37,810 --> 00:12:35,120
environment so what we're setting up

193
00:12:39,580 --> 00:12:37,820
here is to test proof of principle the

194
00:12:42,340 --> 00:12:39,590
question we're trying to ask then is

195
00:12:44,650 --> 00:12:42,350
some place over 6.5 billion years of

196
00:12:47,170 --> 00:12:44,660
evolution cells have learned to handle

197
00:12:50,350 --> 00:12:47,180
gravity as a settling force within them

198
00:12:50,940 --> 00:12:50,360
and I've I have made use of that we

199
00:12:52,980 --> 00:12:50,950
believe for

200
00:12:55,200 --> 00:12:52,990
other processes that are involved we're

201
00:12:57,360 --> 00:12:55,210
trying to ask simple questions like when

202
00:12:58,440 --> 00:12:57,370
the chameleon kin goes into space and if

203
00:13:00,900 --> 00:12:58,450
it's challenged with an appropriate

204
00:13:03,150 --> 00:13:00,910
hormone does it change color in a manner

205
00:13:09,120 --> 00:13:03,160
that one would predict this is the

206
00:13:11,780 --> 00:13:09,130
spirit that we're going to follow as the

207
00:13:14,120 --> 00:13:11,790
payload integrators for consort three

208
00:13:17,550 --> 00:13:14,130
mcdonnell douglas has a number of

209
00:13:20,430 --> 00:13:17,560
responsibilities we've worked on this

210
00:13:22,770 --> 00:13:20,440
particular payload for four months most

211
00:13:25,650 --> 00:13:22,780
of that in Huntsville beginning with the

212
00:13:28,110 --> 00:13:25,660
understanding and the implementation of

213
00:13:31,710 --> 00:13:28,120

the experiment package requirements and

214
00:13:34,410 --> 00:13:31,720
the build up and check out in integrated

215
00:13:37,410 --> 00:13:34,420
testing of each of the experiments in

216
00:13:39,300 --> 00:13:37,420
the payload there are 12 experiments in

217
00:13:42,600 --> 00:13:39,310
there and several other pieces of

218
00:13:45,300 --> 00:13:42,610
supporting hardware accelerometers power

219
00:13:49,110 --> 00:13:45,310
supplies power distribution systems

220
00:13:51,780 --> 00:13:49,120
computers accelerometers all these

221
00:13:54,860 --> 00:13:51,790
things have to work together one hundred

222
00:14:02,180 --> 00:13:54,870
percent to to conduct the mission and

223
00:14:02,190 --> 00:14:18,810
seemed duty well

224
00:14:23,410 --> 00:14:21,490
like it beats probably kept you up to

225
00:14:26,560 --> 00:14:23,420
speed on what's happened here I don't

226
00:14:28,420 --> 00:14:26,570
know exactly we had a couple small

227
00:14:29,860 --> 00:14:28,430
problems down Eric courts may have 10

228
00:14:32,740 --> 00:14:29,870
minute old at the end which is a rage

229
00:14:34,509 --> 00:14:32,750
problem the radar went down and we

230
00:14:39,610 --> 00:14:34,519
finally got an alternate radar online

231
00:14:44,920 --> 00:14:39,620
and went ahead we also had a gyro

232
00:14:47,680 --> 00:14:44,930
problem again and we had a noise signal

233
00:14:49,150 --> 00:14:47,690
at her pitch gyro and we scratched her

234
00:14:51,069 --> 00:14:49,160
head pretty hard there for a while to

235
00:14:54,069 --> 00:14:51,079
whether we should scrub or not mark

236
00:14:55,720 --> 00:14:54,079
ended up talking to the factory guys we

237
00:14:58,540 --> 00:14:55,730
consulted with NASA and finally

238
00:15:01,420 --> 00:14:58,550

concluded that we could fly safely we

239
00:15:02,500 --> 00:15:01,430
did so all in all it looks like it's a

240
00:15:04,300 --> 00:15:02,510
good flight we don't know of any

241
00:15:07,000 --> 00:15:04,310
anomalies during flight at this point

242
00:15:09,819 --> 00:15:07,010
the vehicle and it bring the sand up

243
00:15:11,889 --> 00:15:09,829
there should be an excellent shape we

244
00:15:15,430 --> 00:15:11,899
believe that the D eyes got all of the

245
00:15:17,079 --> 00:15:15,440
data that they were looking for I think

246
00:15:19,750 --> 00:15:17,089
there's indications one experiment may

247
00:15:21,220 --> 00:15:19,760
have malfunction a little bit but at

248
00:15:23,860 --> 00:15:21,230
least everything flew exactly the way

249
00:15:27,020 --> 00:15:23,870
it's supposed to fly so at this point

250
00:15:29,330 --> 00:15:27,030
we're very happy

251
00:15:39,740 --> 00:15:29,340
move it Hannah's rocket companies that

252
00:15:41,690 --> 00:15:39,750
one more time they they have to limit

253
00:15:43,160 --> 00:15:41,700
three on the number of their experiments

254
00:15:46,520 --> 00:15:43,170
some of them they don't get the data on

255
00:15:49,430 --> 00:15:46,530
till a land but there are some functions

256
00:15:53,090 --> 00:15:49,440
that show up on a telemetry believe this

257
00:15:56,590 --> 00:15:53,100
was a foam experiment but I'd rather not

258
00:15:59,720 --> 00:15:56,600
speak to that actually Fran wessling ER

259
00:16:01,130 --> 00:15:59,730
dr. Len twister one of the people should

260
00:16:06,430 --> 00:16:01,140
discuss that if we're really not

261
00:16:12,410 --> 00:16:08,800
far as we know everything went just fine

262
00:16:13,970 --> 00:16:12,420
the attitude stayed we only had three

263
00:16:15,950 --> 00:16:13,980

thrusters fire during the whole

264
00:16:20,390 --> 00:16:15,960
zero-gravity period so that should have

265
00:16:26,110 --> 00:16:20,400
got some excellent gravity which is the

266
00:16:26,120 --> 00:16:28,889
bird

267
00:16:37,410 --> 00:16:33,179
what's next well we're working on a

268
00:16:39,059 --> 00:16:37,420
whole variety of launches we have a crew

269
00:16:42,929 --> 00:16:39,069
back in houston now working on a

270
00:16:46,079 --> 00:16:42,939
proposal for NASA which is entities or

271
00:16:48,840 --> 00:16:46,089
orbital flights 10 orbitals there's a

272
00:16:51,590 --> 00:16:48,850
Air Force proposal coming out here and

273
00:16:54,540 --> 00:16:51,600
within the month for another 40 flights

274
00:16:58,319 --> 00:16:54,550
we're working on some these are all

275
00:17:00,629 --> 00:16:58,329
orbital also we're working on a number

276
00:17:03,389 --> 00:17:00,639
of programs that involves suborbital

277
00:17:06,120 --> 00:17:03,399
such as you saw here today so we've got

278
00:17:07,529 --> 00:17:06,130
a lot of stuff out there ahead of us and

279
00:17:08,819 --> 00:17:07,539
we're working God and they're very

280
00:17:13,760 --> 00:17:08,829
confident that we're going to end up

281
00:17:18,050 --> 00:17:16,280
we got we got more proposals and we can

282
00:17:19,850 --> 00:17:18,060
handle her between new and launches but

283
00:17:28,290 --> 00:17:19,860
that's a nice problem to have we don't

284
00:17:32,130 --> 00:17:30,360
well yeah today's right certainly

285
00:17:38,370 --> 00:17:32,140
anytime you have a success it's

286
00:17:39,780 --> 00:17:38,380
obviously helpful it's I guess if you

287
00:17:41,580 --> 00:17:39,790
fail is prone to give you a more

288
00:17:44,520 --> 00:17:41,590

negative than a success is to give you

289
00:17:47,610 --> 00:17:44,530
positive unfortunately but there was

290
00:17:48,930 --> 00:17:47,620
obviously a big help to us we think

291
00:17:51,270 --> 00:17:48,940
everybody in the industry actually to

292
00:17:53,910 --> 00:17:51,280
have a success it doesn't help anybody

293
00:17:56,430 --> 00:17:53,920
missed industry for anybody to fail so

294
00:18:17,440 --> 00:17:56,440
we're happy to see anybody succeed and

295
00:18:25,539 --> 00:18:24,279
well we don't get too tense we've been

296
00:18:28,629 --> 00:18:25,549
involved in a lot of them here with that

297
00:18:30,700 --> 00:18:28,639
guy's line item songs your unmanned the

298
00:18:35,409 --> 00:18:30,710
worst that can happen you know it's not

299
00:18:38,519 --> 00:18:35,419
too bad but now that we were we were not

300
00:18:40,450 --> 00:18:38,529
tense but we had a you know some serious

301
00:18:42,639 --> 00:18:40,460
discussions there about whether we

302
00:18:45,430 --> 00:18:42,649
should or shouldn't until we got more

303
00:18:47,139 --> 00:18:45,440
data but we were a little bit concerned

304
00:18:48,700 --> 00:18:47,149
there we might in fact after scrub and

305
00:18:51,789 --> 00:18:48,710
if we did we were looking at anywhere

306
00:18:53,950 --> 00:18:51,799
from two to six days of slippage so we

307
00:18:55,240 --> 00:18:53,960
were happy we didn't have to do that but

308
00:18:56,470 --> 00:18:55,250
on the other hand we weren't about to do

309
00:18:58,289 --> 00:18:56,480
anything dumb we wanted to be very

310
00:19:00,820 --> 00:18:58,299
confident that it was going to go good

311
00:19:10,000 --> 00:19:00,830
before we went to that final three

312
00:19:13,350 --> 00:19:11,770
been very frustrating and then at this

313
00:19:15,150 --> 00:19:13,360

point really

314
00:19:17,310 --> 00:19:15,160
well you're right but the last one

315
00:19:21,140 --> 00:19:17,320
wasn't was a kind of a weird thing I

316
00:19:25,020 --> 00:19:23,520
apply a lot of skill and cunning is

317
00:19:28,919 --> 00:19:25,030
right choice of words and do the best

318
00:19:31,049 --> 00:19:28,929
you can but Brazil is that one percent

319
00:19:34,320 --> 00:19:31,059
or two out there that's pure luck and

320
00:19:35,880 --> 00:19:34,330
once in a while you have bad luck and it

321
00:19:37,410 --> 00:19:35,890
happens to everybody in the business and

322
00:19:38,880 --> 00:19:37,420
this is just a case where I think

323
00:19:41,340 --> 00:19:38,890
everybody had done everything he could

324
00:19:43,080 --> 00:19:41,350
reasonably expect them to do the same

325
00:19:44,700 --> 00:19:43,090
system and flowing a number of times and

326
00:19:47,700 --> 00:19:44,710
exactly that configuration we just

327
00:19:49,650 --> 00:19:47,710
happened to get bit by so it was an

328
00:19:52,110 --> 00:19:49,660
accident air waiting in somebody we just

329
00:19:53,520 --> 00:19:52,120
run fortunate rather frustrating part of

330
00:19:55,110 --> 00:19:53,530
that one of course is we're only half a

331
00:19:57,450 --> 00:19:55,120
second away from a successful flight

332
00:19:58,740 --> 00:19:57,460
we'd have kept flying one half second

333
00:20:01,260 --> 00:19:58,750
more in the last night we'd had a good

334
00:20:03,240 --> 00:20:01,270
flight just like this one so you'll just

335
00:20:08,980 --> 00:20:03,250
die closer doing successful failure in

336
00:20:16,090 --> 00:20:13,450
yes it is that's yeah the hardware we

337
00:20:18,640 --> 00:20:16,100
use the the guidance package and the

338
00:20:21,880 --> 00:20:18,650

recovery system are reused to refurbish

339
00:20:23,740 --> 00:20:21,890
at the factory in this system we flew

340
00:20:30,770 --> 00:20:23,750
today i believe is our third flight

341
00:20:35,300 --> 00:20:32,930
no I think we're not concerned about

342
00:20:37,580 --> 00:20:35,310
worrying things out if that's a sense to

343
00:20:40,970 --> 00:20:37,590
your question no that's always possible

344
00:20:43,510 --> 00:20:40,980
but now we send it back to the factory

345
00:20:46,790 --> 00:20:43,520
get it refurbished Andhra verified and

346
00:20:48,290 --> 00:20:46,800
this basically comes out as new new

347
00:20:56,630 --> 00:20:48,300
equipment from a functional point of

348
00:21:02,450 --> 00:20:59,200
actually we only missed about two miles

349
00:21:05,390 --> 00:21:02,460
worst mark mark daniel has got the exact

350
00:21:08,840 --> 00:21:05,400
number but i believe we we were targeted

351
00:21:13,040 --> 00:21:08,850
for 52 miles and we we landed it about

352
00:21:16,220 --> 00:21:13,050
54 so this is well within the limits

353
00:21:19,580 --> 00:21:16,230
he'd expected Marc Marquez running

354
00:21:21,530 --> 00:21:19,590
continual wind checks and launching

355
00:21:23,510 --> 00:21:21,540
settings throughout the count and he

356
00:21:26,750 --> 00:21:23,520
gave him the last one mark you want a

357
00:21:28,430 --> 00:21:26,760
quarter a second here's our program

358
00:21:32,330 --> 00:21:28,440
manager mark Daniels he's the guy that

359
00:21:34,040 --> 00:21:32,340
really made this work and they were

360
00:21:37,190 --> 00:21:34,050
wondering how we did on the impact

361
00:21:39,410 --> 00:21:37,200
royalty to predictions well we were

362
00:21:42,320 --> 00:21:39,420
right on the money with our impact

363
00:21:46,190 --> 00:21:42,330

predictions we were predicting about 50

364
00:21:51,440 --> 00:21:46,200
miles north of here and six miles west

365
00:21:53,560 --> 00:21:51,450
and we impacted 54 north and 11 west so

366
00:22:00,240 --> 00:21:53,570
that's about as close as you can get to

367
00:22:08,340 --> 00:22:03,150
that's correct 54 miles north of the

368
00:22:10,110 --> 00:22:08,350
launcher so we were about as happy as I

369
00:22:12,390 --> 00:22:10,120
think you can get with everything that

370
00:22:19,440 --> 00:22:12,400
all the systems and the performance

371
00:22:21,990 --> 00:22:19,450
today it's a signal coming through on

372
00:22:26,550 --> 00:22:22,000
the TM electronic noise the wiper arm

373
00:22:28,500 --> 00:22:26,560
that goes against the gyro itself we

374
00:22:31,410 --> 00:22:28,510
think there was some contamination error

375
00:22:33,810 --> 00:22:31,420
on that and so it was interrupting the

376
00:22:35,910 --> 00:22:33,820
electrical signal and this would have

377
00:22:38,010 --> 00:22:35,920
given you a feedback into the servos

378
00:22:40,230 --> 00:22:38,020
which would be its represent herself as

379
00:22:42,390 --> 00:22:40,240
a chatter in a control system we

380
00:22:44,310 --> 00:22:42,400
concluded that even if it had in fact

381
00:22:46,140 --> 00:22:44,320
happened in flight it probably would not

382
00:22:49,560 --> 00:22:46,150
have reacted into the vehicle we'd had

383
00:22:51,510 --> 00:22:49,570
enough filtering an electronic system

384
00:22:53,580 --> 00:22:51,520
plus dynamic damping in the vehicle

385
00:22:55,920 --> 00:22:53,590
itself that it would have not been a

386
00:22:57,510 --> 00:22:55,930
problem that is you can imagine we're

387
00:22:59,670 --> 00:22:57,520
pretty conservative at this point and we

388
00:23:01,200 --> 00:22:59,680

weren't going to gamble do we convince

389
00:23:13,700 --> 00:23:01,210
ourselves that it was really not a

390
00:23:19,140 --> 00:23:16,650
yeah the question about how this relates

391
00:23:21,570 --> 00:23:19,150
to the orbital flight actually takes the

392
00:23:24,240 --> 00:23:21,580
same kind of a team exactly it we have

393
00:23:25,860 --> 00:23:24,250
different players but the difference

394
00:23:28,350 --> 00:23:25,870
between an orbital flight and this one

395
00:23:30,270 --> 00:23:28,360
from the mission preparation and the

396
00:23:32,400 --> 00:23:30,280
launch is very very similar there's not

397
00:23:34,100 --> 00:23:32,410
a lot of difference really almost no

398
00:23:36,630 --> 00:23:34,110
more people involved as a matter of fact

399
00:23:38,250 --> 00:23:36,640
the only difference is instead of going

400
00:23:40,920 --> 00:23:38,260
up and coming down we go to the same

401
00:23:42,450 --> 00:23:40,930
altitude and keep going in fact most

402
00:23:44,370 --> 00:23:42,460
orbital flights won't even go that high

403
00:23:46,320 --> 00:23:44,380
you know you flatten out and you just

404
00:23:51,570 --> 00:23:46,330
use the interview to accelerate orbital

405
00:24:00,310 --> 00:23:56,830
the NASA contracts are set for a mid 93

406
00:24:02,860 --> 00:24:00,320
first launch the Air Force is fall of 92

407
00:24:08,049 --> 00:24:02,870
and a couple other programs that could

408
00:24:18,460 --> 00:24:08,059
be in the middle e92 time frame probably

409
00:24:23,150 --> 00:24:21,260
well we feel very good about it we've

410
00:24:25,880 --> 00:24:23,160
felt since day one and we have an

411
00:24:27,529 --> 00:24:25,890
excellent orbital launch system we

412
00:24:29,090 --> 00:24:27,539
believe it's the best one the country's

413
00:24:31,580 --> 00:24:29,100

got of course we're a little prejudiced

414
00:24:35,810 --> 00:24:31,590
will admit but it's based on highly

415
00:24:38,330 --> 00:24:35,820
reliable components and we are able to

416
00:24:40,460 --> 00:24:38,340
ensure the insurance companies looked at

417
00:24:42,020 --> 00:24:40,470
it and set our premiums and we've got

418
00:24:44,180 --> 00:24:42,030
about as low premium there's anybody in

419
00:24:47,060 --> 00:24:44,190
the country so we think that's a vote of

420
00:24:48,830 --> 00:24:47,070
confidence in our system so we think we

421
00:24:50,270 --> 00:24:48,840
got an outstanding system there we just

422
00:24:54,919 --> 00:24:50,280
hope to have the opportunity to go use

423
00:24:56,960 --> 00:24:54,929
it I think dr. Lundqvist from the

424
00:24:58,610 --> 00:24:56,970
university of alabama's is here and

425
00:25:00,380 --> 00:24:58,620
there were some earlier questions about

426
00:25:02,840 --> 00:25:00,390
the payload and easy he's the guy to

427
00:25:04,640 --> 00:25:02,850
talk to those so there's anybody have

428
00:25:06,020 --> 00:25:04,650
anything else on a launch vehicle I'll

429
00:25:10,520 --> 00:25:06,030
answer it otherwise we should turn it

430
00:25:11,930 --> 00:25:10,530
over to him okay well thank you we're

431
00:25:19,869 --> 00:25:11,940
happy you're all here to watch it and

432
00:25:25,629 --> 00:25:22,479
I'm Chuck Lundqvist from the university

433
00:25:29,799 --> 00:25:25,639
of alabama in huntsville the consortium

434
00:25:33,219 --> 00:25:29,809
for materials development in space let

435
00:25:36,849 --> 00:25:33,229
me begin by congratulating deep and SSI

436
00:25:41,649 --> 00:25:36,859
on a great flight we got the kind of

437
00:25:44,680 --> 00:25:41,659
ride we wanted and are now awaiting the

438
00:25:46,719 --> 00:25:44,690

recovery of the payload obviously it

439
00:25:49,359 --> 00:25:46,729
came down on parachute and we don't have

440
00:25:52,389 --> 00:25:49,369
a report yet from the helicopter having

441
00:25:54,819 --> 00:25:52,399
reached the site so i can't tell you

442
00:25:57,639 --> 00:25:54,829
exactly what form the payload is in but

443
00:26:00,599 --> 00:25:57,649
came down well on parachutes so there's

444
00:26:04,719 --> 00:26:00,609
every reason to believe that it's a

445
00:26:12,700 --> 00:26:04,729
successful recovery the recovery will be

446
00:26:17,980 --> 00:26:15,630
with regard to any of the specific

447
00:26:22,389 --> 00:26:17,990
experiments it's too early to make any

448
00:26:25,510 --> 00:26:22,399
kind of a diagnosis from the telemetry

449
00:26:27,909 --> 00:26:25,520
we can tell that the timer's that

450
00:26:31,110 --> 00:26:27,919
operated the different instruments

451
00:26:34,690 --> 00:26:31,120
worked and so the 12 experiments were

452
00:26:38,139 --> 00:26:34,700
working one one way or another and until

453
00:26:40,960 --> 00:26:38,149
we looked at the individual equipment

454
00:26:43,240 --> 00:26:40,970
when it gets back and do more detailed

455
00:26:51,470 --> 00:26:43,250
analysis it's just premature to say

456
00:26:58,790 --> 00:26:56,240
the the one message or one bit of

457
00:27:00,470 --> 00:26:58,800
indication was a temperature measurement

458
00:27:04,910 --> 00:27:00,480
but there could be other interpretations

459
00:27:07,610 --> 00:27:04,920
of that do so I I'd say it's premature

460
00:27:09,980 --> 00:27:07,620
to make any kind of a diagnosis on any

461
00:27:12,620 --> 00:27:09,990
of the experiments we we don't really

462
00:27:15,980 --> 00:27:12,630
know anything about any of them

463
00:27:18,110 --> 00:27:15,990

specifically we know that the general

464
00:27:20,930 --> 00:27:18,120
apparatus worked within the payload we

465
00:27:27,270 --> 00:27:20,940
see that on the telemetry but just much

466
00:27:32,070 --> 00:27:29,580
questions

467
00:27:35,130 --> 00:27:32,080
let me again say that we're just very

468
00:27:39,690 --> 00:27:35,140
pleased with the flight that SSI

469
00:27:42,720 --> 00:27:39,700
provided perfect day for it went went

470
00:27:45,360 --> 00:27:42,730
very well and we now have to analyze the

471
00:27:49,380 --> 00:27:45,370
results from the individual experiments

472
00:27:52,230 --> 00:27:49,390
to see what results we got but I'm very