1
00:00:08,150 --> 00:00:05,030
good afternoon and welcome to nasa's

2
00:00:10,629 --> 00:00:08,160
wide-field infrared survey explorer also

3
00:00:13,350 --> 00:00:10,639
known as wise pre-launch news conference

4
00:00:15,270 --> 00:00:13,360
from vandenberg air force base

5
00:00:17,189 --> 00:00:15,280
joining us today are

6
00:00:21,750 --> 00:00:17,199
john morse director of nasa's

7
00:00:27,910 --> 00:00:23,429
chuck de val

8
00:00:34,870 --> 00:00:30,550
vernon thorpe united launch alliance

9
00:00:34,880 --> 00:00:39,910
bill iris wise project manager

10
00:00:46,310 --> 00:00:42,470
and captain andrew fry launch weather

11
00:00:48,229 --> 00:00:46,320
officer 30th space wing

12
00:00:50,229 --> 00:00:48,239
we'll begin with some opening statements

13
00:00:51,750 --> 00:00:50,239

and then take your questions

14
00:00:53,670 --> 00:00:51,760
john

15
00:00:56,069 --> 00:00:53,680
thanks tracy

16
00:00:57,910 --> 00:00:56,079
what i'd like to do is

17
00:00:58,869 --> 00:00:57,920
run over the broader context of the wise

18
00:01:01,830 --> 00:00:58,879
mission

19
00:01:04,149 --> 00:01:01,840
and uh also talk about at a top level

20
00:01:06,070 --> 00:01:04,159
its science objectives and to remind you

21
00:01:06,789 --> 00:01:06,080
that there is a science briefing coming

22
00:01:08,789 --> 00:01:06,799
up

23
00:01:10,710 --> 00:01:08,799
after this briefing

24
00:01:13,030 --> 00:01:10,720
uh let's get right to it and go to the

25
00:01:15,749 --> 00:01:13,040
first graphic and show the at nasa's

26
00:01:17,749 --> 00:01:15,759
astrophysics mission portfolio as it

27
00:01:19,910 --> 00:01:17,759
stands right now

28
00:01:21,030 --> 00:01:19,920
we have hubble chandra and spitzer along

29
00:01:23,590 --> 00:01:21,040
the bottom there those are great

30
00:01:24,870 --> 00:01:23,600
observatories we also have kepler in the

31
00:01:27,830 --> 00:01:24,880
lower left

32
00:01:29,910 --> 00:01:27,840
which launched in march of this year and

33
00:01:32,149 --> 00:01:29,920
fermi in the upper right

34
00:01:34,469 --> 00:01:32,159
which launched last year

35
00:01:36,630 --> 00:01:34,479
both returning their science results

36
00:01:39,590 --> 00:01:36,640
there are five internationally led

37
00:01:42,389 --> 00:01:39,600
missions on which nasa is a partner

38
00:01:46,789 --> 00:01:42,399

and we also have four explorer missions

39
00:01:50,950 --> 00:01:49,830
and the explorer program is

40
00:01:52,630 --> 00:01:50,960
one of our

41
00:01:54,389 --> 00:01:52,640
most important aspects of our flight

42
00:01:56,709 --> 00:01:54,399
program and it does

43
00:01:59,190 --> 00:01:56,719
entail the smaller missions

44
00:02:02,069 --> 00:01:59,200
along with the larger missions

45
00:02:04,230 --> 00:02:02,079
like hubble spitzer and chandra now

46
00:02:06,789 --> 00:02:04,240
these missions cover the entire

47
00:02:08,790 --> 00:02:06,799
electromagnetic spectrum

48
00:02:10,949 --> 00:02:08,800
now if we go to the next

49
00:02:13,270 --> 00:02:10,959
graphic

50
00:02:15,190 --> 00:02:13,280
we see that we're adding y's and why is

51
00:02:17,270 --> 00:02:15,200
it shown here not because it's very

52
00:02:18,949 --> 00:02:17,280
large but in order to emphasize its

53
00:02:20,949 --> 00:02:18,959
newness

54
00:02:23,110 --> 00:02:20,959
wise joins the largest fleet of

55
00:02:24,390 --> 00:02:23,120
astrophysics missions that has ever been

56
00:02:25,990 --> 00:02:24,400
flown

57
00:02:28,550 --> 00:02:26,000
and that astronomers will use to make

58
00:02:31,110 --> 00:02:28,560
new discoveries now wise is a 40

59
00:02:34,550 --> 00:02:31,120
centimeter telescope it's cryogenically

60
00:02:36,790 --> 00:02:34,560
cooled to minus 430 degrees fahrenheit

61
00:02:37,910 --> 00:02:36,800
it has four state-of-the-art infrared

62
00:02:40,309 --> 00:02:37,920
detectors

63
00:02:43,670 --> 00:02:40,319

it'll take over a million images during

64
00:02:45,670 --> 00:02:43,680
the course of its 10-month mission

65
00:02:47,190 --> 00:02:45,680
and so now why don't we contrast a

66
00:02:49,830 --> 00:02:47,200
little bit between the visible in the

67
00:02:52,229 --> 00:02:49,840
infrared and and begin to delve into why

68
00:02:53,509 --> 00:02:52,239
we're doing wise on the next graphic

69
00:02:56,550 --> 00:02:53,519
what we see

70
00:02:58,390 --> 00:02:56,560
is how the milky way and the the sky

71
00:03:01,030 --> 00:02:58,400
which is centered on the milky way

72
00:03:02,470 --> 00:03:01,040
appears to the visible eye the milky way

73
00:03:04,149 --> 00:03:02,480
is the band across the middle it's

74
00:03:06,550 --> 00:03:04,159
diffuse you could see the galactic

75
00:03:09,270 --> 00:03:06,560
center in the middle and there's other

76
00:03:12,390 --> 00:03:09,280
galaxies like the magellanic clouds

77
00:03:15,430 --> 00:03:12,400
those smudges on the lower part this map

78
00:03:17,990 --> 00:03:15,440
is dominated essentially by starlight

79
00:03:20,070 --> 00:03:18,000
and you see how patchy the milky way

80
00:03:23,110 --> 00:03:20,080
appears due to the

81
00:03:24,630 --> 00:03:23,120
obscuring dust that

82
00:03:26,229 --> 00:03:24,640
permeates the

83
00:03:28,390 --> 00:03:26,239
the galaxy

84
00:03:29,910 --> 00:03:28,400
however in the infrared on the next

85
00:03:32,869 --> 00:03:29,920
graphic

86
00:03:34,710 --> 00:03:32,879
we see how much different the sky

87
00:03:37,190 --> 00:03:34,720
appears in the infrared and this is a

88
00:03:38,550 --> 00:03:37,200

new tool for astronomers to use in order

89
00:03:40,390 --> 00:03:38,560
to

90
00:03:42,869 --> 00:03:40,400
examine the cosmos

91
00:03:45,430 --> 00:03:42,879
now this infrared map shows how the

92
00:03:47,910 --> 00:03:45,440
milky way is a very flat disc where

93
00:03:49,990 --> 00:03:47,920
material concentrates

94
00:03:52,710 --> 00:03:50,000
and then you can see the tenuous clouds

95
00:03:54,869 --> 00:03:52,720
some nearby some far away

96
00:03:56,390 --> 00:03:54,879
which are the sites where new stars are

97
00:03:58,229 --> 00:03:56,400
forming

98
00:04:01,110 --> 00:03:58,239
so in summary

99
00:04:03,910 --> 00:04:01,120
this new sky map that wise will generate

100
00:04:06,630 --> 00:04:03,920
is hundreds of times more sensitive than

101
00:04:08,390 --> 00:04:06,640
the previous maps it will represent the

102
00:04:10,550 --> 00:04:08,400
infrared mother lode

103
00:04:12,309 --> 00:04:10,560
that astronomers will mine

104
00:04:13,670 --> 00:04:12,319
for the years to come

105
00:04:15,830 --> 00:04:13,680
and then they'll be able to go through

106
00:04:17,670 --> 00:04:15,840
this map identify interesting targets

107
00:04:20,069 --> 00:04:17,680
for follow-up observations with

108
00:04:21,030 --> 00:04:20,079
observatories such as spitzer

109
00:04:23,830 --> 00:04:21,040
hubble

110
00:04:25,990 --> 00:04:23,840
herschel and eventually sophia which is

111
00:04:28,629 --> 00:04:26,000
in the air right now i might point out

112
00:04:30,550 --> 00:04:28,639
and also the james webb space telescope

113
00:04:32,710 --> 00:04:30,560

which will be launched in the middle of

114
00:04:33,909 --> 00:04:32,720
the next decade and so with that let me

115
00:04:37,110 --> 00:04:33,919
turn it over

116
00:04:39,830 --> 00:04:38,469
thanks john

117
00:04:42,310 --> 00:04:39,840
good afternoon

118
00:04:44,230 --> 00:04:42,320
i'm i'm proud and privileged to be here

119
00:04:46,070 --> 00:04:44,240
today representing the men and women of

120
00:04:47,909 --> 00:04:46,080
the launch services program

121
00:04:50,070 --> 00:04:47,919
i can tell you that the the launch team

122
00:04:52,710 --> 00:04:50,080
is ready we have been through all of the

123
00:04:53,749 --> 00:04:52,720
of nasa's reviews we do have one review

124
00:04:54,710 --> 00:04:53,759
remaining

125
00:04:56,710 --> 00:04:54,720
tomorrow morning we're going to meet

126
00:04:58,550 --> 00:04:56,720
with the air force and get a

127
00:05:01,430 --> 00:04:58,560
go hopefully

128
00:05:04,390 --> 00:05:01,440
from the wing commander

129
00:05:06,629 --> 00:05:04,400
but we have a busy next 40 hours and

130
00:05:09,029 --> 00:05:06,639
i'll touch on that a little bit but what

131
00:05:10,629 --> 00:05:09,039
i wanted to describe today

132
00:05:12,550 --> 00:05:10,639
is how we got to this point i have a

133
00:05:14,629 --> 00:05:12,560
video depicting some of the processing

134
00:05:17,590 --> 00:05:14,639
milestones that we've

135
00:05:19,430 --> 00:05:17,600
achieved so far if we can roll into that

136
00:05:20,469 --> 00:05:19,440
this shows the booster being hoisted

137
00:05:22,070 --> 00:05:20,479
into the

138
00:05:22,830 --> 00:05:22,080

mobile service tower there's a shot of

139
00:05:25,110 --> 00:05:22,840
the

140
00:05:26,629 --> 00:05:25,120
rs-27 main engine

141
00:05:29,510 --> 00:05:26,639
that provides about two hundred thousand

142
00:05:31,350 --> 00:05:29,520
pounds of thrust at liftoff

143
00:05:34,390 --> 00:05:31,360
this is a shot of the inner stage which

144
00:05:36,790 --> 00:05:34,400
rests atop the booster

145
00:05:39,029 --> 00:05:36,800
it helps

146
00:05:41,990 --> 00:05:39,039
span the first and second stage the

147
00:05:44,230 --> 00:05:42,000
second stage will be hoisted and uh set

148
00:05:46,790 --> 00:05:44,240
in between that where you the engine

149
00:05:49,510 --> 00:05:46,800
belt will reside in that inner stage

150
00:05:52,070 --> 00:05:49,520
here's one of three solid rocket motors

151
00:05:54,870 --> 00:05:52,080
being hoisted up this this uh

152
00:05:57,350 --> 00:05:54,880
configuration is a 7300 where we have

153
00:05:59,670 --> 00:05:57,360
three groundlet solid motors built by

154
00:06:01,430 --> 00:05:59,680
alliant tech systems

155
00:06:03,909 --> 00:06:01,440
that's the second stage coming in this

156
00:06:07,830 --> 00:06:03,919
was on october 23rd

157
00:06:09,510 --> 00:06:07,840
it's got an aerojet engine

158
00:06:11,990 --> 00:06:09,520
for this mission that engine will burn

159
00:06:13,270 --> 00:06:12,000
twice in order to get wise and into its

160
00:06:15,029 --> 00:06:13,280
proper orbit

161
00:06:16,469 --> 00:06:15,039
there it is setting down

162
00:06:18,070 --> 00:06:16,479
into that inner stage if you can

163
00:06:20,390 --> 00:06:18,080

visualize that

164
00:06:23,749 --> 00:06:20,400
here's the spacecraft canned up

165
00:06:25,830 --> 00:06:23,759
rolling out on november 20th

166
00:06:28,469 --> 00:06:25,840
spacecraft weighs about four fourteen

167
00:06:31,670 --> 00:06:28,479
hundred and sixty pounds

168
00:06:33,430 --> 00:06:31,680
that's a direct-made adapter that allows

169
00:06:39,110 --> 00:06:33,440
the team to

170
00:06:43,270 --> 00:06:40,950
torque it down

171
00:06:45,670 --> 00:06:43,280
some of the

172
00:06:47,350 --> 00:06:45,680
the platforms allowed to move to bring

173
00:06:49,670 --> 00:06:47,360
the fairing the two halves of the

174
00:06:51,670 --> 00:06:49,680
fairing inn

175
00:06:53,510 --> 00:06:51,680
this was just before thanksgiving

176
00:06:55,510 --> 00:06:53,520
there's a shot of the spacecraft on top

177
00:06:58,550 --> 00:06:55,520
of the second stage with one half of the

178
00:07:02,390 --> 00:07:00,790
obviously in a clean room environment

179
00:07:05,270 --> 00:07:02,400
with wise's telescope

180
00:07:06,870 --> 00:07:05,280
and instrument it's uh it's vital to

181
00:07:08,390 --> 00:07:06,880
keep that area

182
00:07:12,550 --> 00:07:08,400
in a clean room

183
00:07:15,189 --> 00:07:12,560
environment and there's the launch decal

184
00:07:17,909 --> 00:07:15,199
so going into the next 40 hours

185
00:07:20,070 --> 00:07:17,919
starting tomorrow morning we do have the

186
00:07:21,110 --> 00:07:20,080
range review as i mentioned following

187
00:07:22,790 --> 00:07:21,120
that

188
00:07:24,550 --> 00:07:22,800

because we are going to hear we've got

189
00:07:26,469 --> 00:07:24,560
some challenging weather ahead of us

190
00:07:28,830 --> 00:07:26,479
we're going to have one last tag up and

191
00:07:31,749 --> 00:07:28,840
see what the forecast for friday would

192
00:07:33,110 --> 00:07:31,759
bring this will allow the wise

193
00:07:35,430 --> 00:07:33,120
spacecraft to

194
00:07:37,990 --> 00:07:35,440
disconnect their cryogenic operations

195
00:07:40,309 --> 00:07:38,000
and and commit to launch so if we are

196
00:07:42,469 --> 00:07:40,319
successful with that we do have another

197
00:07:44,469 --> 00:07:42,479
weather weather brief at 3 30 tomorrow

198
00:07:48,390 --> 00:07:44,479
afternoon which will allow the

199
00:07:51,110 --> 00:07:48,400
mobile service tower to retract back

200
00:07:52,790 --> 00:07:51,120
we plan to do an early fuel load into

201
00:07:54,869 --> 00:07:52,800
the first stage

202
00:07:57,110 --> 00:07:54,879
that plan is for 7 pm

203
00:08:00,469 --> 00:07:57,120
tomorrow evening versus doing it during

204
00:08:02,550 --> 00:08:00,479
the countdown on friday that aids in

205
00:08:04,790 --> 00:08:02,560
winds if we if we were to have high

206
00:08:06,150 --> 00:08:04,800
winds having that stability in the

207
00:08:06,950 --> 00:08:06,160
booster helps

208
00:08:10,150 --> 00:08:06,960
us

209
00:08:12,309 --> 00:08:10,160
handle a higher wind condition

210
00:08:15,110 --> 00:08:12,319
given all that the tower would be rolled

211
00:08:16,390 --> 00:08:15,120
back at 8 30 between 8 30 and 10 30

212
00:08:19,029 --> 00:08:16,400
tomorrow evening

213
00:08:21,029 --> 00:08:19,039

so if we get past those we start on

214
00:08:24,070 --> 00:08:21,039
console friday morning the management

215
00:08:26,230 --> 00:08:24,080
will come on at two in the morning

216
00:08:27,350 --> 00:08:26,240
we are in a 60-minute built-in hold at

217
00:08:29,270 --> 00:08:27,360
that point

218
00:08:32,870 --> 00:08:29,280
we then transition into our terminal

219
00:08:35,430 --> 00:08:32,880
count for the final three hours

220
00:08:36,630 --> 00:08:35,440
we have one more weather brief that says

221
00:08:38,709 --> 00:08:36,640
we are

222
00:08:40,550 --> 00:08:38,719
able and willing to load liquid oxygen

223
00:08:41,990 --> 00:08:40,560
into the first stage that's at t minus

224
00:08:43,670 --> 00:08:42,000
75 minutes

225
00:08:45,910 --> 00:08:43,680
if we get past that

226
00:08:48,150 --> 00:08:45,920
we do an engine slew check with 30

227
00:08:50,630 --> 00:08:48,160
minutes to go we have planned built-in

228
00:08:53,030 --> 00:08:50,640
holds if we get behind in the count we

229
00:08:58,070 --> 00:08:53,040
can use those to make sure we hit the

230
00:09:01,910 --> 00:08:58,080
zero t zero is 609 33 pacific time we've

231
00:09:04,470 --> 00:09:01,920
got a 14 minute 18 second window

232
00:09:06,310 --> 00:09:04,480
we have on the range the 11th and the

233
00:09:08,310 --> 00:09:06,320
12th if we need it

234
00:09:10,470 --> 00:09:08,320
and you'll probably hear from bill iris

235
00:09:11,509 --> 00:09:10,480
how complex this mission is

236
00:09:14,070 --> 00:09:11,519
so

237
00:09:16,949 --> 00:09:14,080
we have a two days on two is it two days

238
00:09:18,630 --> 00:09:16,959

off kind of of posture so if we were to

239
00:09:20,470 --> 00:09:18,640
count down and not make the 11th and

240
00:09:22,389 --> 00:09:20,480
12th we'd we would have to stand down

241
00:09:25,750 --> 00:09:22,399
for the 13th and 14th

242
00:09:28,870 --> 00:09:25,760
let them go do some cryogenic operations

243
00:09:29,990 --> 00:09:28,880
and we'd be back after that so uh it's

244
00:09:38,070 --> 00:09:30,000
uh

245
00:09:39,350 --> 00:09:38,080
through our next 40 hours and looking

246
00:09:41,190 --> 00:09:39,360
very much forward to it i'll turn it

247
00:09:46,470 --> 00:09:41,200
back over to tracy

248
00:09:50,630 --> 00:09:47,829
afternoon

249
00:09:52,710 --> 00:09:50,640
united launch alliance is proud to be a

250
00:09:54,550 --> 00:09:52,720
supporting mission for supporting nasa

251
00:09:56,710 --> 00:09:54,560
for the launch of the wise mission this

252
00:09:58,870 --> 00:09:56,720
will be our seventh nasa launch of the

253
00:10:00,949 --> 00:09:58,880
year coming on the heels of some other

254
00:10:03,990 --> 00:10:00,959
well-known missions like noaa n-prime

255
00:10:05,750 --> 00:10:04,000
kepler lro l cross and we've also

256
00:10:07,910 --> 00:10:05,760
supported nasa on some missile defense

257
00:10:09,990 --> 00:10:07,920
agency missions this year as well

258
00:10:12,630 --> 00:10:10,000
and this is a great time to be part of

259
00:10:15,030 --> 00:10:12,640
ula just last week we launched a delta

260
00:10:16,790 --> 00:10:15,040
iv from the cape we launched the wgs3

261
00:10:19,509 --> 00:10:16,800
mission for the air force and that

262
00:10:21,509 --> 00:10:19,519
marked our 36th launch in 36 months

263
00:10:22,389 --> 00:10:21,519

since ula was formed

264
00:10:26,389 --> 00:10:22,399
uh

265
00:10:29,269 --> 00:10:26,399
in the next few days will actually be

266
00:10:31,269 --> 00:10:29,279
the 37th mission in 36 months we have

267
00:10:33,829 --> 00:10:31,279
until december 14th to achieve that

268
00:10:35,910 --> 00:10:33,839
milestone because december 14th of 2006

269
00:10:37,509 --> 00:10:35,920
was our first launch as united launch

270
00:10:39,430 --> 00:10:37,519
alliance

271
00:10:42,150 --> 00:10:39,440
the credit for all that goes to all of

272
00:10:44,069 --> 00:10:42,160
the incredible people at ula as well as

273
00:10:45,509 --> 00:10:44,079
our government partners like nasa who

274
00:10:47,190 --> 00:10:45,519
support us on all these challenging

275
00:10:49,030 --> 00:10:47,200
missions

276
00:10:50,630 --> 00:10:49,040
we've been using our entire launch

277
00:10:52,630 --> 00:10:50,640
vehicle family all three of our families

278
00:10:54,710 --> 00:10:52,640
over the last uh three years we've been

279
00:10:56,550 --> 00:10:54,720
launching delta fours and delta twos and

280
00:10:57,670 --> 00:10:56,560
atlas fives

281
00:11:01,110 --> 00:10:57,680
and that we've been launching off of

282
00:11:02,870 --> 00:11:01,120
both coasts as you know and i'm happy to

283
00:11:04,710 --> 00:11:02,880
say that more than a third of those

284
00:11:07,430 --> 00:11:04,720
missions have been performed on behalf

285
00:11:09,910 --> 00:11:07,440
of nasa counting wise

286
00:11:12,949 --> 00:11:09,920
14 out of 37 missions more than a third

287
00:11:15,590 --> 00:11:12,959
of them have been done on behalf of nasa

288
00:11:17,590 --> 00:11:15,600

in just 2009 alone we've launched eight

289
00:11:19,590 --> 00:11:17,600
delta twos four from the cape and four

290
00:11:21,990 --> 00:11:19,600
from vandenberg

291
00:11:24,069 --> 00:11:22,000
and uh i would now like to tell you

292
00:11:25,750 --> 00:11:24,079
briefly what tomorrow's flight profile

293
00:11:26,949 --> 00:11:25,760
or what friday's flight profile is going

294
00:11:29,590 --> 00:11:26,959
to look like

295
00:11:31,590 --> 00:11:29,600
we're using a delta ii 7320

296
00:11:33,990 --> 00:11:31,600
configuration that's a delta ii core

297
00:11:36,069 --> 00:11:34,000
with three srbs on the back end we have

298
00:11:37,350 --> 00:11:36,079
a 10 meter or a 10 foot composite

299
00:11:38,870 --> 00:11:37,360
payload fairing protecting the

300
00:11:41,350 --> 00:11:38,880
spacecraft

301
00:11:43,430 --> 00:11:41,360
and after liftoff the three solid motors

302
00:11:46,550 --> 00:11:43,440
will burn for about 99 seconds then

303
00:11:47,910 --> 00:11:46,560
we'll jettison those the central uh

304
00:11:49,590 --> 00:11:47,920
engine the core engine on the first

305
00:11:51,750 --> 00:11:49,600
stage will continue to burn until about

306
00:11:53,910 --> 00:11:51,760
four minutes into flight after we run on

307
00:11:55,990 --> 00:11:53,920
a propellant on that stage we'll

308
00:11:57,910 --> 00:11:56,000
separate from the second stage and will

309
00:12:00,710 --> 00:11:57,920
ignite the upper stage engine for the

310
00:12:02,629 --> 00:12:00,720
first of two burns

311
00:12:04,949 --> 00:12:02,639
about five minutes into flight during

312
00:12:06,470 --> 00:12:04,959
that first stage burn will jettison the

313
00:12:08,310 --> 00:12:06,480

payload fairing because we'll be clear

314
00:12:10,310 --> 00:12:08,320
of the atmosphere about five minutes

315
00:12:13,110 --> 00:12:10,320
later ten minutes in the flight we will

316
00:12:14,550 --> 00:12:13,120
complete our first stage burn or our

317
00:12:16,710 --> 00:12:14,560
first of the

318
00:12:19,269 --> 00:12:16,720
upper stage burns rather excuse me and

319
00:12:21,350 --> 00:12:19,279
then we have a 40 minute coast period

320
00:12:23,030 --> 00:12:21,360
following the end of the 40-minute coast

321
00:12:24,629 --> 00:12:23,040
we light the upper stage engines one

322
00:12:26,310 --> 00:12:24,639
more time very short burn only about

323
00:12:28,230 --> 00:12:26,320
eight and a half seconds

324
00:12:29,829 --> 00:12:28,240
and then we will

325
00:12:31,430 --> 00:12:29,839
use that burn to inject the wide

326
00:12:32,470 --> 00:12:31,440
spacecraft into the orbit it needs to

327
00:12:34,949 --> 00:12:32,480
get to

328
00:12:36,389 --> 00:12:34,959
and we'll separate the spacecraft from

329
00:12:37,990 --> 00:12:36,399
the launch vehicle

330
00:12:39,350 --> 00:12:38,000
just a little bit less than an hour into

331
00:12:42,470 --> 00:12:39,360
flight

332
00:12:46,230 --> 00:12:42,480
and that's all i have back to you tracy

333
00:12:48,389 --> 00:12:46,240
thank you now bill iris

334
00:12:50,790 --> 00:12:48,399
thank you tracy and vernon um it's

335
00:12:52,790 --> 00:12:50,800
pleasure for me to represent the wise

336
00:12:54,949 --> 00:12:52,800
project team

337
00:12:56,230 --> 00:12:54,959
jet propulsion laboratory ball aerospace

338
00:12:59,910 --> 00:12:56,240

corporation

339
00:13:00,949 --> 00:12:59,920
and the space dynamics lab have

340
00:13:02,550 --> 00:13:00,959
have

341
00:13:03,590 --> 00:13:02,560
gotten together to produce this

342
00:13:05,110 --> 00:13:03,600
beautiful

343
00:13:10,069 --> 00:13:05,120
instrument

344
00:13:12,629 --> 00:13:10,079
satellite is is ready to go that the

345
00:13:14,870 --> 00:13:12,639
flight team is ready to go and and that

346
00:13:17,430 --> 00:13:14,880
the uh operations team is ready to

347
00:13:19,829 --> 00:13:17,440
launch uh and operate wise

348
00:13:21,430 --> 00:13:19,839
uh it's gonna be a very busy time

349
00:13:23,590 --> 00:13:21,440
when that

350
00:13:25,670 --> 00:13:23,600
55-minute point after launch occurs for

351
00:13:28,230 --> 00:13:25,680
wise

352
00:13:30,389 --> 00:13:28,240
we will turn the satellite on at about

353
00:13:32,790 --> 00:13:30,399
six o'clock tomorrow morning

354
00:13:34,629 --> 00:13:32,800
do some software loads and some

355
00:13:36,470 --> 00:13:34,639
checkouts but we'll be sitting quietly

356
00:13:37,590 --> 00:13:36,480
waiting for the separation signal from

357
00:13:44,949 --> 00:13:37,600
the

358
00:13:47,590 --> 00:13:44,959
first thing we'll do is phone home

359
00:13:49,670 --> 00:13:47,600
we'll be in our uh our circular orbit

360
00:13:52,949 --> 00:13:49,680
and the y satellite has a low gain

361
00:13:55,829 --> 00:13:52,959
antenna that's uh shown up on top here

362
00:13:57,189 --> 00:13:55,839
that low gate antenna will communicate

363
00:14:00,470 --> 00:13:57,199

with the

364
00:14:02,550 --> 00:14:00,480
relay satellites above us and and

365
00:14:05,189 --> 00:14:02,560
they should acquire a signal fairly

366
00:14:07,670 --> 00:14:05,199
rapidly we expect anywhere from a couple

367
00:14:10,150 --> 00:14:07,680
of minutes to maybe five or ten minutes

368
00:14:11,990 --> 00:14:10,160
depending on how the y spacecraft is

369
00:14:15,110 --> 00:14:12,000
tumbling when it separates from the

370
00:14:18,069 --> 00:14:15,120
launch vehicle we expect it will tumble

371
00:14:19,509 --> 00:14:18,079
the satellite is going to be in a in a

372
00:14:22,069 --> 00:14:19,519
tumbling mode

373
00:14:24,389 --> 00:14:22,079
due to the fact that the separation

374
00:14:25,910 --> 00:14:24,399
system is not perfectly symmetrical we

375
00:14:28,550 --> 00:14:25,920
expect that and the software in the

376
00:14:31,110 --> 00:14:28,560
satellite is designed to cope with that

377
00:14:33,590 --> 00:14:31,120
its objective is eventually to take the

378
00:14:36,069 --> 00:14:33,600
solar panel and point it at the sun

379
00:14:38,230 --> 00:14:36,079
directly so that the batteries that have

380
00:14:40,310 --> 00:14:38,240
been discharged during the flight can be

381
00:14:42,629 --> 00:14:40,320
recharged

382
00:14:45,430 --> 00:14:42,639
about 20 minutes after launch

383
00:14:47,430 --> 00:14:45,440
another very important event occurs

384
00:14:49,910 --> 00:14:47,440
as as chuck indicated this is

385
00:14:51,990 --> 00:14:49,920
complicated it's not complicated for us

386
00:14:54,230 --> 00:14:52,000
because we're used to it but we have two

387
00:14:55,189 --> 00:14:54,240
solid hydrogen cryostats that contain

388
00:14:57,189 --> 00:14:55,199

about

389
00:15:00,389 --> 00:14:57,199
40 pounds of solid hydrogen they've been

390
00:15:02,949 --> 00:15:00,399
warming up for about a day and and we

391
00:15:06,150 --> 00:15:02,959
need to vent those tanks so that the

392
00:15:07,430 --> 00:15:06,160
telescope and the detectors that

393
00:15:09,750 --> 00:15:07,440
wise will use

394
00:15:12,310 --> 00:15:09,760
cool to their operational temperatures

395
00:15:14,470 --> 00:15:12,320
that will occur automatically at about

396
00:15:17,350 --> 00:15:14,480
20 minutes after launch

397
00:15:20,069 --> 00:15:17,360
and then we have one last important task

398
00:15:22,470 --> 00:15:20,079
to perform which is to get our bearings

399
00:15:23,350 --> 00:15:22,480
with respect to the the

400
00:15:26,069 --> 00:15:23,360
the

401
00:15:27,509 --> 00:15:26,079
visible sky in this case we have two

402
00:15:30,150 --> 00:15:27,519
star trackers

403
00:15:32,150 --> 00:15:30,160
on the back side of wise

404
00:15:34,470 --> 00:15:32,160
shown here

405
00:15:36,550 --> 00:15:34,480
see here over here one there and one

406
00:15:39,269 --> 00:15:36,560
there those star trackers will image the

407
00:15:42,310 --> 00:15:39,279
visible sky and they will determine

408
00:15:43,990 --> 00:15:42,320
where wise is pointed inertially and

409
00:15:46,069 --> 00:15:44,000
with our knowledge inside the computer

410
00:15:47,509 --> 00:15:46,079
we're going to be able to to to orient

411
00:15:49,350 --> 00:15:47,519
wise so that it

412
00:15:51,430 --> 00:15:49,360
faces directly out from the center of

413
00:15:53,910 --> 00:15:51,440

the earth and is in its final

414
00:15:55,670 --> 00:15:53,920
survey orientation in its orbit and i

415
00:15:57,670 --> 00:15:55,680
have an animation

416
00:15:59,910 --> 00:15:57,680
coming here which

417
00:16:02,470 --> 00:15:59,920
which illustrates that orbit

418
00:16:03,910 --> 00:16:02,480
uh there it is it also illustrates our

419
00:16:05,189 --> 00:16:03,920
model so you can see the various

420
00:16:07,430 --> 00:16:05,199
features of wise you see a lot of

421
00:16:09,590 --> 00:16:07,440
plumbing on the upper part of the of the

422
00:16:11,590 --> 00:16:09,600
instrument on top there that is part of

423
00:16:13,509 --> 00:16:11,600
our complication

424
00:16:15,990 --> 00:16:13,519
so here we are wise in orbit pointing

425
00:16:19,590 --> 00:16:16,000
outward scanning the sky in great

426
00:16:21,590 --> 00:16:19,600
circles repeatedly about 5700 pictures a

427
00:16:24,550 --> 00:16:21,600
day and this orbit was chosen and

428
00:16:26,550 --> 00:16:24,560
optimized specifically to do an all-sky

429
00:16:28,949 --> 00:16:26,560
survey in six months so that as you see

430
00:16:30,470 --> 00:16:28,959
as as the earth rotates around the sun

431
00:16:33,670 --> 00:16:30,480
the orbit plane

432
00:16:35,509 --> 00:16:33,680
rotates with it and and so that after

433
00:16:38,389 --> 00:16:35,519
six months the entire

434
00:16:40,470 --> 00:16:38,399
sky can be seen in this orbit and we

435
00:16:42,069 --> 00:16:40,480
will have completed an all-sky survey at

436
00:16:44,710 --> 00:16:42,079
that point in time

437
00:16:47,509 --> 00:16:44,720
so here we are we're oriented in orbit

438
00:16:49,430 --> 00:16:47,519

we've uh got our initial bearings but we

439
00:16:51,590 --> 00:16:49,440
still have lots to do this occurs after

440
00:16:53,030 --> 00:16:51,600
about a day

441
00:16:54,870 --> 00:16:53,040
there's another month of work to do

442
00:16:56,389 --> 00:16:54,880
before we can start our all-sky survey

443
00:16:57,749 --> 00:16:56,399
we'll start with a cover on the

444
00:16:59,430 --> 00:16:57,759
telescope

445
00:17:02,069 --> 00:16:59,440
to protect it from

446
00:17:04,230 --> 00:17:02,079
any possible deviations from the normal

447
00:17:06,710 --> 00:17:04,240
plan that we have we'll calibrate our

448
00:17:08,710 --> 00:17:06,720
attitude control system and we'll get

449
00:17:11,350 --> 00:17:08,720
comfortable with the sequences that we

450
00:17:15,029 --> 00:17:11,360
will use to eventually survey the sky

451
00:17:17,669 --> 00:17:15,039
after 16 days we'll remove the cover and

452
00:17:20,309 --> 00:17:17,679
uh and and expose

453
00:17:22,870 --> 00:17:20,319
the telescope of wise to the infrared

454
00:17:24,470 --> 00:17:22,880
sky that will require

455
00:17:26,630 --> 00:17:24,480
further calibrations this will be the

456
00:17:28,710 --> 00:17:26,640
first time the wise's eyes the eyes of

457
00:17:30,870 --> 00:17:28,720
wise will see the infrared sky and it

458
00:17:32,870 --> 00:17:30,880
will take about two weeks to get those

459
00:17:35,750 --> 00:17:32,880
calibrations completed

460
00:17:39,430 --> 00:17:35,760
after which time we will begin the

461
00:17:42,230 --> 00:17:39,440
the uh survey that wise will perform

462
00:17:43,430 --> 00:17:42,240
so i'm uh looking forward to this and we

463
00:17:46,710 --> 00:17:43,440

have a

464
00:17:48,870 --> 00:17:46,720
video couple videos to step back to the

465
00:17:51,750 --> 00:17:48,880
kind of our life here at vandenberg air

466
00:17:53,110 --> 00:17:51,760
force base for the last few months

467
00:17:55,190 --> 00:17:53,120
this video

468
00:17:57,029 --> 00:17:55,200
that you see now shows the flight

469
00:17:58,870 --> 00:17:57,039
payload adapter fitting

470
00:18:00,789 --> 00:17:58,880
being installed this is the actual

471
00:18:03,110 --> 00:18:00,799
hardware the little red hammers you see

472
00:18:04,950 --> 00:18:03,120
here is the separation plane between the

473
00:18:06,789 --> 00:18:04,960
spacecraft and the uh

474
00:18:09,029 --> 00:18:06,799
in the launch vehicle here you see wise

475
00:18:11,590 --> 00:18:09,039
when it arrived being lowered onto the

476
00:18:13,110 --> 00:18:11,600
separation springs that i referred to

477
00:18:15,990 --> 00:18:13,120
these are what's one of the three

478
00:18:18,789 --> 00:18:16,000
springs that separates the satellite

479
00:18:20,630 --> 00:18:18,799
from the launch vehicle and so there we

480
00:18:23,590 --> 00:18:20,640
have the flight

481
00:18:27,110 --> 00:18:23,600
spacecraft and its solar panels being

482
00:18:30,390 --> 00:18:27,120
mounted on the spacecraft the

483
00:18:33,029 --> 00:18:30,400
the our last step here at vandenberg air

484
00:18:34,549 --> 00:18:33,039
force base was to package wise into its

485
00:18:37,029 --> 00:18:34,559
uh flight

486
00:18:40,390 --> 00:18:37,039
transportation container and move it out

487
00:18:43,510 --> 00:18:40,400
to the launch pad and that was a pretty

488
00:18:46,630 --> 00:18:43,520

exciting event that i think is shown

489
00:18:48,710 --> 00:18:46,640
here in this video

490
00:18:52,070 --> 00:18:48,720
you see the container being lowered on

491
00:18:54,150 --> 00:18:52,080
top of of the double bagged spacecraft

492
00:18:56,230 --> 00:18:54,160
very carefully there's not a lot of room

493
00:18:58,390 --> 00:18:56,240
on the edge there so we've got lots of

494
00:18:59,430 --> 00:18:58,400
care being taken there

495
00:19:01,990 --> 00:18:59,440
um

496
00:19:04,470 --> 00:19:02,000
and uh there we are rolling out of the

497
00:19:06,950 --> 00:19:04,480
uh high bay here at vandenberg

498
00:19:09,029 --> 00:19:06,960
on our way to the launch pad so we're

499
00:19:10,470 --> 00:19:09,039
really excited about this it's uh you

500
00:19:13,190 --> 00:19:10,480
know it's a matter of

501
00:19:14,630 --> 00:19:13,200
just the weather now and uh captain fry

502
00:19:18,470 --> 00:19:14,640
is going to tell us how good the weather

503
00:19:22,230 --> 00:19:20,710
thank you

504
00:19:23,909 --> 00:19:22,240
i am the launch weather officer for

505
00:19:25,669 --> 00:19:23,919
delta ii wise the launch weather

506
00:19:27,669 --> 00:19:25,679
officer's job

507
00:19:29,909 --> 00:19:27,679
commonly called the elbow is to lead the

508
00:19:31,750 --> 00:19:29,919
lawn to other team to make the final

509
00:19:33,750 --> 00:19:31,760
make the go no-go call for weather we

510
00:19:35,669 --> 00:19:33,760
have constraints on both sides with the

511
00:19:38,230 --> 00:19:35,679
air force and the range side as well as

512
00:19:39,590 --> 00:19:38,240
a ula or customer side both are designed

513
00:19:41,430 --> 00:19:39,600

to protect the satellite and get it into

514
00:19:44,230 --> 00:19:41,440
orbit and to protect the public in

515
00:19:45,990 --> 00:19:44,240
general that the rocket is successful so

516
00:19:47,270 --> 00:19:46,000
we go to the satellite loop that we have

517
00:19:49,110 --> 00:19:47,280
currently

518
00:19:50,630 --> 00:19:49,120
right now you can see the weather on

519
00:19:52,070 --> 00:19:50,640
satellite rolling towards the central

520
00:19:53,669 --> 00:19:52,080
coast you can see a lot of the energy

521
00:19:55,669 --> 00:19:53,679
going up towards it towards the north

522
00:19:57,430 --> 00:19:55,679
but the entire band extends down well to

523
00:20:00,070 --> 00:19:57,440
the south and west and that's slowly

524
00:20:01,990 --> 00:20:00,080
making this approach towards vandenberg

525
00:20:04,070 --> 00:20:02,000
over the next next day or so it will

526
00:20:05,909 --> 00:20:04,080
continue its march and rain should start

527
00:20:08,390 --> 00:20:05,919
falling here at vandenberg tomorrow

528
00:20:10,149 --> 00:20:08,400
around noon or thereabouts and then

529
00:20:11,350 --> 00:20:10,159
we'll continue with light rain all

530
00:20:12,310 --> 00:20:11,360
through the count

531
00:20:14,149 --> 00:20:12,320
towards

532
00:20:16,870 --> 00:20:14,159
t0

533
00:20:19,270 --> 00:20:16,880
the launch forecast for tomorrow

534
00:20:21,590 --> 00:20:19,280
calls for thick clouds in the area and

535
00:20:23,110 --> 00:20:21,600
thick clouds is one of our constraints

536
00:20:24,630 --> 00:20:23,120
we're not allowed to launch a rocket

537
00:20:26,549 --> 00:20:24,640
that's uh through a cloud layer that's

538
00:20:29,510 --> 00:20:26,559

greater than or equal to 4 500 feet

539
00:20:31,750 --> 00:20:29,520
thick with temperatures between zero and

540
00:20:34,630 --> 00:20:31,760
minus 20 degrees celsius

541
00:20:36,549 --> 00:20:34,640
you can kill the loop now with those

542
00:20:38,549 --> 00:20:36,559
clouds moving our way even if the rain

543
00:20:40,630 --> 00:20:38,559
showers decrease or diminish those thick

544
00:20:42,149 --> 00:20:40,640
clouds will remain and that's our main

545
00:20:44,870 --> 00:20:42,159
area of concern we issue what's called a

546
00:20:47,669 --> 00:20:44,880
probability of violation or pov and a

547
00:20:49,350 --> 00:20:47,679
pov that tells us how likely we are to

548
00:20:51,029 --> 00:20:49,360
break our constraints how likely the

549
00:20:53,190 --> 00:20:51,039
weather is to

550
00:20:55,510 --> 00:20:53,200
negatively impact the mission

551
00:20:57,669 --> 00:20:55,520
our pov right now is 80 percent for

552
00:20:59,510 --> 00:20:57,679
those thick clouds some other associated

553
00:21:03,830 --> 00:20:59,520
constraints that we're worried about is

554
00:21:06,390 --> 00:21:03,840
called uh are are called

555
00:21:08,870 --> 00:21:06,400
disturbed weather which has to do with

556
00:21:10,230 --> 00:21:08,880
any kind of instability in the area

557
00:21:11,510 --> 00:21:10,240
we are worried about that with some

558
00:21:13,430 --> 00:21:11,520
moderate rain showers moderate rain

559
00:21:15,029 --> 00:21:13,440
showers are also a constraint any rain

560
00:21:16,710 --> 00:21:15,039
that will be above the 10 000 foot level

561
00:21:18,950 --> 00:21:16,720
is also a constraint

562
00:21:20,710 --> 00:21:18,960
luckily though delta ii in december are

563
00:21:22,789 --> 00:21:20,720

traditionally hampered by

564
00:21:24,070 --> 00:21:22,799
winds out here on the central coast at

565
00:21:26,310 --> 00:21:24,080
this time though the winds are looking

566
00:21:28,549 --> 00:21:26,320
to stay below the 20 knot level which is

567
00:21:30,950 --> 00:21:28,559
well below our constraint of 26 to 30

568
00:21:32,950 --> 00:21:30,960
knots for t0 so we're not looking for

569
00:21:34,630 --> 00:21:32,960
that problem however with this system

570
00:21:36,310 --> 00:21:34,640
it'll move through once it gets here

571
00:21:38,230 --> 00:21:36,320
it'll move through during the day on

572
00:21:40,310 --> 00:21:38,240
friday another system is quickly

573
00:21:42,149 --> 00:21:40,320
approaching behind that and that will

574
00:21:43,990 --> 00:21:42,159
cause problems for a possible 24 hour

575
00:21:46,310 --> 00:21:44,000
scrub if that were to occur

576
00:21:48,310 --> 00:21:46,320
if that 24-hour scrub occurs the same

577
00:21:49,510 --> 00:21:48,320
type of weather happens however you get

578
00:21:51,430 --> 00:21:49,520
the cold front type of weather that

579
00:21:54,149 --> 00:21:51,440
comes along with it a few cumulus clouds

580
00:21:55,350 --> 00:21:54,159
heavier rain showers and wind so you tie

581
00:21:58,230 --> 00:21:55,360
all those together and you have another

582
00:21:59,990 --> 00:21:58,240
80 probability of violation for saturday

583
00:22:01,270 --> 00:22:00,000
much of the same continues on sunday the

584
00:22:03,669 --> 00:22:01,280
weather finally starts to clear and

585
00:22:05,270 --> 00:22:03,679
break up for monday as ridging and high

586
00:22:07,350 --> 00:22:05,280
pressure move back into the central

587
00:22:09,029 --> 00:22:07,360
coast giving us fair skies and a light

588
00:22:11,350 --> 00:22:09,039

offshore breeze

589
00:22:12,549 --> 00:22:11,360
for monday and into tuesday but that's

590
00:22:14,390 --> 00:22:12,559
what we're worried about right now for

591
00:22:16,230 --> 00:22:14,400
delta ii wise the lunch weather team

592
00:22:17,750 --> 00:22:16,240
will be on console throughout the

593
00:22:19,909 --> 00:22:17,760
throughout the count evaluating all the

594
00:22:21,750 --> 00:22:19,919
weather data that's coming in and giving

595
00:22:23,990 --> 00:22:21,760
either the final go or the final no-go

596
00:22:25,430 --> 00:22:24,000
call for weather

597
00:22:27,190 --> 00:22:25,440
back to you tracy

598
00:22:29,510 --> 00:22:27,200
thank you we will now take questions

599
00:22:35,190 --> 00:22:29,520
please state your name and affiliation

600
00:22:39,430 --> 00:22:37,350
janine scully uh santa maria times alum

601
00:22:42,710 --> 00:22:39,440
poke record can you further explain when

602
00:22:44,630 --> 00:22:42,720
the clock starts on the 48 hours um with

603
00:22:49,430 --> 00:22:44,640
the wise constraint and

604
00:22:53,510 --> 00:22:51,830
uh yeah i'll take that uh

605
00:22:55,909 --> 00:22:53,520
you're you're talking about the

606
00:22:57,990 --> 00:22:55,919
cryogenic servicing constraint it's it

607
00:22:59,669 --> 00:22:58,000
starts when we disconnect the cryostat

608
00:23:01,190 --> 00:22:59,679
at about launch minus

609
00:23:02,549 --> 00:23:01,200
19 hours

610
00:23:04,390 --> 00:23:02,559
at that point

611
00:23:06,630 --> 00:23:04,400
we disconnect cooling

612
00:23:09,510 --> 00:23:06,640
helium cooling from from the cryostat

613
00:23:12,070 --> 00:23:09,520

and and the hydrogen and starts to warm

614
00:23:12,950 --> 00:23:12,080
and and we can allow it to warm for two

615
00:23:15,750 --> 00:23:12,960
days

616
00:23:17,909 --> 00:23:15,760
before we have to reconnect and cool it

617
00:23:20,950 --> 00:23:17,919
that cooling takes about two days so we

618
00:23:24,230 --> 00:23:20,960
have a two day on two day off two day on

619
00:23:26,789 --> 00:23:24,240
cycle which is not uh common for for a

620
00:23:29,029 --> 00:23:26,799
launch like this and so we're working

621
00:23:30,470 --> 00:23:29,039
with the nasa people to and ula people

622
00:23:32,230 --> 00:23:30,480
to get those

623
00:23:37,830 --> 00:23:32,240
cooling days on rainy days and the

624
00:23:42,390 --> 00:23:40,390
nora wallace santa barbara news press mr

625
00:23:44,390 --> 00:23:42,400
morse the the wow factor of the science

626
00:23:45,990 --> 00:23:44,400
and this seems pretty obvious when you

627
00:23:48,230 --> 00:23:46,000
start reading about it but can you

628
00:23:49,269 --> 00:23:48,240
explain in perhaps more layman's terms

629
00:23:50,870 --> 00:23:49,279
why

630
00:23:53,909 --> 00:23:50,880
this mission is so

631
00:23:55,269 --> 00:23:53,919
important for people on the ground

632
00:23:57,909 --> 00:23:55,279
not sure

633
00:23:59,029 --> 00:23:57,919
we'll we'll start with the importance of

634
00:24:01,750 --> 00:23:59,039
the

635
00:24:03,669 --> 00:24:01,760
infrared band to to begin with and in

636
00:24:05,590 --> 00:24:03,679
fact i would encourage you to make sure

637
00:24:08,230 --> 00:24:05,600
if you're around to ask the scientists

638
00:24:10,310 --> 00:24:08,240

later they love to tell you about wow

639
00:24:12,870 --> 00:24:10,320
and uh

640
00:24:14,789 --> 00:24:12,880
the the infrared is important to us

641
00:24:17,350 --> 00:24:14,799
in astronomy because it it shows us

642
00:24:19,269 --> 00:24:17,360
where a lot of the cool things are in

643
00:24:21,510 --> 00:24:19,279
the universe things much cooler than

644
00:24:24,070 --> 00:24:21,520
than stars like the sun

645
00:24:26,070 --> 00:24:24,080
and as you saw in the sky maps the the

646
00:24:27,430 --> 00:24:26,080
universe looks much different

647
00:24:30,149 --> 00:24:27,440
uh when we're

648
00:24:31,669 --> 00:24:30,159
at infrared wavelengths and the wow

649
00:24:33,990 --> 00:24:31,679
factor wise is that we're going to go

650
00:24:36,470 --> 00:24:34,000
much much deeper a hundred hundred times

651
00:24:37,830 --> 00:24:36,480
deeper in in some wavelengths and even a

652
00:24:40,390 --> 00:24:37,840
thousand times deeper in other

653
00:24:42,870 --> 00:24:40,400
wavelengths than we've ever gone before

654
00:24:45,350 --> 00:24:42,880
we're going to see in the solar system

655
00:24:46,630 --> 00:24:45,360
uh a hundred thousand new asteroids or

656
00:24:47,830 --> 00:24:46,640
more

657
00:24:49,909 --> 00:24:47,840
we'll see

658
00:24:51,830 --> 00:24:49,919
new structures and targets in the milky

659
00:24:55,110 --> 00:24:51,840
way and we're going to see hundreds of

660
00:24:58,390 --> 00:24:55,120
millions of objects around the sky

661
00:25:00,390 --> 00:24:58,400
and open up the extra galactic

662
00:25:01,830 --> 00:25:00,400
full sky survey and this is going to

663
00:25:03,750 --> 00:25:01,840

support

664
00:25:05,750 --> 00:25:03,760
our other missions

665
00:25:07,830 --> 00:25:05,760
that we have up there flying now and

666
00:25:08,950 --> 00:25:07,840
we'll be flying in the future

667
00:25:11,110 --> 00:25:08,960
and so

668
00:25:13,110 --> 00:25:11,120
not only is wise going to be a fantastic

669
00:25:15,750 --> 00:25:13,120
science mission in itself but the

670
00:25:17,590 --> 00:25:15,760
support it will give to other missions

671
00:25:19,830 --> 00:25:17,600
in the future

672
00:25:21,669 --> 00:25:19,840
following a long legacy of

673
00:25:22,789 --> 00:25:21,679
previous sky surveys at other

674
00:25:24,789 --> 00:25:22,799
wavelengths

675
00:25:27,510 --> 00:25:24,799
is going to be fantastic for for

676
00:25:31,830 --> 00:25:27,520
astronomers to use so wise's legacy

677
00:25:31,840 --> 00:25:35,669
are there any further questions

678
00:25:39,669 --> 00:25:37,269
with no further questions this will

679
00:25:41,830 --> 00:25:39,679
conclude our pre-launch news conference

680
00:25:45,269 --> 00:25:41,840
our next event will be the wise mission

681
00:25:47,350 --> 00:25:45,279
science briefing scheduled at 1 45.