



1
00:00:23,529 --> 00:00:25,130
>>> FROM THE JOHNS HOPKINS

2
00:00:25,130 --> 00:00:26,499
LABORATORY THIS LAUREL,

3
00:00:26,499 --> 00:00:27,779
MARYLAND, WELCOME TO NASA'S NEW

4
00:00:27,779 --> 00:00:29,789
HORIZONS COUNTDOWN TO PLUTO.

5
00:00:29,789 --> 00:00:33,120
I'M MIKE FROM PUBLIC AFFAIRS.

6
00:00:33,120 --> 00:00:34,890
WE ARE ON THE SET GETTING

7
00:00:34,890 --> 00:00:37,800
READIER FOR THE HISTORIC FLY BY

8
00:00:37,800 --> 00:00:39,300
ON JULY 14th.

9
00:00:39,300 --> 00:00:40,870
ON JULY 8 WE ARE LESS THAN A

10
00:00:40,870 --> 00:00:43,350
WEEK AWAY, 4 MILLION MILES FROM

11
00:00:43,350 --> 00:00:44,940
PLUTO AND THE MISSION IS ALREADY

12
00:00:44,940 --> 00:00:46,530
MAKING HISTORY.

13
00:00:46,530 --> 00:00:48,820

WE'LL COME TO YOU EACH DAY WITH

14

00:00:48,820 --> 00:00:50,649

QUICK MISSION UPDATES LIKE THIS

15

00:00:50,649 --> 00:00:52,449

FOR NEWS BRIEFINGS OR PROGRAMS

16

00:00:52,449 --> 00:00:56,010

COVERING THE LATEST FROM THE

17

00:00:56,010 --> 00:00:57,379

PLAN TOIR FRONTIER.

18

00:00:57,379 --> 00:02:07,039

WE WANT YOU TO COME ALONG ON THE

19

00:02:07,039 --> 00:02:08,039

ADVENTURE.

20

00:02:08,039 --> 00:02:09,039

\MM

21

00:02:09,039 --> 00:02:10,039

>>> A FAMILIAR FACE FROM OUR

22

00:02:10,039 --> 00:02:11,039

UPDATES IS ALICE BOWMAN, THE

23

00:02:11,039 --> 00:02:12,100

MISSIONS OPERATION MANAGER AT

24

00:02:12,100 --> 00:02:13,100

APL.

25

00:02:13,100 --> 00:02:14,100

WELCOME BACK.

26

00:02:14,100 --> 00:02:15,100

>> THANKS.

27

00:02:15,100 --> 00:02:16,100

NICE TO BE HERE .

28

00:02:16,100 --> 00:02:17,100

>> LET'S START WITH A LOOK

29

00:02:17,100 --> 00:02:19,810

INSIDE MISSION OPERATIONS.

30

00:02:19,810 --> 00:02:23,160

SHOW US AROUND AND EXPLAIN

31

00:02:23,160 --> 00:02:24,160

WHAT'S HAPPENING.

32

00:02:24,160 --> 00:02:25,160

>> SURE.

33

00:02:25,160 --> 00:02:26,160

WHAT YOU ARE LOOKING AT HERE IN

34

00:02:26,160 --> 00:02:28,290

THE FOREGROUND IS THE COMMAND

35

00:02:28,290 --> 00:02:29,290

PIT.

36

00:02:29,290 --> 00:02:31,629

THIS IS WHERE INSTRUCTIONS ARE

37

00:02:31,629 --> 00:02:33,159

SENT TO THE SPACECRAFT.

38

00:02:33,159 --> 00:02:36,900

IT IS WHERE WE'LL GET DATA BACK

39

00:02:36,900 --> 00:02:38,750
FROM THE SPACECRAFT.

40

00:02:38,750 --> 00:02:41,640
ALONG THE BACKLE WALL IS WHERE I

41

00:02:41,640 --> 00:02:44,120
ACTUALLY SIT NEAR THAT WHITE

42

00:02:44,120 --> 00:02:45,120
BOARD.

43

00:02:45,120 --> 00:02:47,819
THEN IN THE BACK ROOM TO THE

44

00:02:47,819 --> 00:02:49,760
WINDOWS IS THE SITUATION ROOM.

45

00:02:49,760 --> 00:02:51,090
IT LOOKS LIKE WE HAVE PEOPLE

46

00:02:51,090 --> 00:02:52,999
OVER THERE NOW.

47

00:02:52,999 --> 00:02:55,079
>> ANOTHER MEETING.

48

00:02:55,079 --> 00:02:56,120
>> ANOTHER.

49

00:02:56,120 --> 00:02:57,400
>> THE TEAM HAD AN EVENTFUL

50

00:02:57,400 --> 00:02:59,690
WEEKEND, JULY 4th.

51
00:02:59,690 --> 00:03:02,519
THE SPACECRAFT WENT INTO A HOLD.

52
00:03:02,519 --> 00:03:04,600
EXPLAIN WHAT HAPPENED.

53
00:03:04,600 --> 00:03:06,650
>> WE HAVE AN AUTONOMY SYSTEM

54
00:03:06,650 --> 00:03:09,659
PROGRAMMED TO TAKE CARE OF IF I

55
00:03:09,659 --> 00:03:11,090
FAULTS ON THE SPACE OF CRAFT IT

56
00:03:11,090 --> 00:03:12,650
WILL DETECT.

57
00:03:12,650 --> 00:03:16,879
THIS WEEKEND WE HAD TOO MANY

58
00:03:16,879 --> 00:03:18,130
OPERATIONS GOING ON AT ONE TIME.

59
00:03:18,130 --> 00:03:20,030
WE WERE ASKING THE MAIN COMPUTER

60
00:03:20,030 --> 00:03:22,270
TO COMPRESS DATA.

61
00:03:22,270 --> 00:03:24,049
AT THE SAME TIME WE UP LINKED

62
00:03:24,049 --> 00:03:26,349
FROM GROUND INSTRUCTIONS THAT

63
00:03:26,349 --> 00:03:27,990

NEEDED TO BE BURNED TO FLASH ON

64

00:03:27,990 --> 00:03:29,299

THE PAIN COMPUTER.

65

00:03:29,299 --> 00:03:33,209

WE OVERLOADED THE COMPUTER SO

66

00:03:33,209 --> 00:03:36,090

THE SYSTEM SWITCHED US TO THE

67

00:03:36,090 --> 00:03:38,209

BACKUP COMPUTER IN ORDER TO KEEP

68

00:03:38,209 --> 00:03:39,959

FLYING THE SPACECRAFT ON ITS

69

00:03:39,959 --> 00:03:41,550

NORMAL TRAJECTORY.

70

00:03:41,550 --> 00:03:44,620

>> SO IT ESSENTIALLY CALLS HOME

71

00:03:44,620 --> 00:03:46,230

AND SAYS IT NEEDS HELP.

72

00:03:46,230 --> 00:03:48,191

>> IT POINTED TO EARTH, SENT

73

00:03:48,191 --> 00:03:51,500

US WHAT WAS GOING ON.

74

00:03:51,500 --> 00:03:53,349

WE WENT INTO ACTION.

75

00:03:53,349 --> 00:03:55,181

>> THE TEAM TRAINED FOR

76

00:03:55,181 --> 00:03:56,910

SITUATIONS LIKE THAT?

77

00:03:56,910 --> 00:04:02,810

>> IT'S ONE OF THE BASIC THINGS.

78

00:04:02,810 --> 00:04:03,810

>> SO I GUESS THAT CONTRIBUTED

79

00:04:03,810 --> 00:04:05,579

TO A QUICK RESPONSE.

80

00:04:05,579 --> 00:04:06,579

HAD TO ACT QUICKLY

81

00:04:06,579 --> 00:04:07,579

>> WE DID.

82

00:04:07,579 --> 00:04:09,340

OF COURSE WE ARE COMING UP ON A

83

00:04:09,340 --> 00:04:10,980

PRIMARY MISSION PHASE.

84

00:04:10,980 --> 00:04:13,120

EVERYBODY WAS PRIMED FOR THIS.

85

00:04:13,120 --> 00:04:14,989

WHEN WE GOT INDICATIONS THAT

86

00:04:14,989 --> 00:04:16,290

SOMETHING WASN'T RIGHT ON THE

87

00:04:16,290 --> 00:04:18,190

SPACECRAFT, EVERYBODY WENT INTO

88

00:04:18,190 --> 00:04:19,190

ACTION.

89

00:04:19,190 --> 00:04:21,350
YOU KNOW, WE WERE ALL A LITTLE

90

00:04:21,350 --> 00:04:23,160
BIT AFFRAYED OF WHAT MIGHT

91

00:04:23,160 --> 00:04:24,160
HAPPEN.

92

00:04:24,160 --> 00:04:25,690
WE PUT ON OUR ENGINEERING HATS

93

00:04:25,690 --> 00:04:28,280
AND WENT DOWN OUR CHECKLIST.

94

00:04:28,280 --> 00:04:30,560
WE DID WHAT FEEDED TO BE DONE TO

95

00:04:30,560 --> 00:04:32,070
RECOVER THE SPACECRAFT TO

96

00:04:32,070 --> 00:04:33,570
OPERATIONAL MODE.

97

00:04:33,570 --> 00:04:36,620
>> I WILL SHOW A PICTURE WHICH

98

00:04:36,620 --> 00:04:37,810
ANSWERS THE QUESTION, BUT I WANT

99

00:04:37,810 --> 00:04:38,960
TO SHOW IT ANYWAY.

100

00:04:38,960 --> 00:04:40,300
THIS IS THE SCIENCE TEAM

101
00:04:40,300 --> 00:04:42,920
CELEBRATING NEWS THAT THE FLY BY

102
00:04:42,920 --> 00:04:44,410
SEQUENCE KICKED IN ON THE

103
00:04:44,410 --> 00:04:45,410
COMPUTERS.

104
00:04:45,410 --> 00:04:46,410
I GUESS THAT ANSWERS THE IDEA

105
00:04:46,410 --> 00:04:48,719
THAT TINGES ARE BACK ON TRACK?

106
00:04:48,719 --> 00:04:51,160
>> THINGS DEFINITELY ARE BACK ON

107
00:04:51,160 --> 00:04:52,160
TRACK.

108
00:04:52,160 --> 00:04:53,340
>> WHAT HAPPENS ON THE

109
00:04:53,340 --> 00:04:54,370
SPACECRAFT OVER THE NEXT FEW

110
00:04:54,370 --> 00:04:55,690
DAYS?

111
00:04:55,690 --> 00:04:59,840
>> IT'S TAKING SCIENCE DATA AND

112
00:04:59,840 --> 00:05:01,710
IT'S ALSO TAKING OPTICAL FAV

113
00:05:01,710 --> 00:05:02,710

INVESTIGATION DATA.

114

00:05:02,710 --> 00:05:03,770

THIS IS IMPORTANT.

115

00:05:03,770 --> 00:05:05,729

IT IS A MEASURE OF OWE WELL WE

116

00:05:05,729 --> 00:05:07,900

ARE DOING ON THAT TRAJECTORY TO

117

00:05:07,900 --> 00:05:11,530

HIT THAT SPECIFIC POINT AT THE

118

00:05:11,530 --> 00:05:14,560

TIME THE SCIENCE TEAM WANTS US

119

00:05:14,560 --> 00:05:15,919

TO HIT.

120

00:05:15,919 --> 00:05:17,490

THAT'S PRETTY MUCH WHAT WE ARE

121

00:05:17,490 --> 00:05:19,770

FOCUSED ON NOW IS TO GET THE

122

00:05:19,770 --> 00:05:21,250

SCIENCE OBSERVATIONS AT THE

123

00:05:21,250 --> 00:05:22,490

RIGHT TIME IN PERFECT

124

00:05:22,490 --> 00:05:23,490

CONDITIONS.

125

00:05:23,490 --> 00:05:26,900

>> NOW YOU'RE REALLY CLOSE.

126
00:05:26,900 --> 00:05:29,740
>> HARD TO BELIEVE WE ARE HERE

127
00:05:29,740 --> 00:05:30,740
NOW.

128
00:05:30,740 --> 00:05:31,940
>> THANKS, ALICE.

129
00:05:31,940 --> 00:05:34,150
>> THANK YOU, MIKE.

130
00:05:34,150 --> 00:05:35,479
>> FOR NASA'S NEW HORIZONS

131
00:05:35,479 --> 00:05:36,810
MISSION INFORMATION COMES IN ALL

132
00:05:36,810 --> 00:05:38,380
SHAPES AND SIZES WHETHER YOU

133
00:05:38,380 --> 00:05:40,220
LIKE A LOT OF DETAILER OR PREFER

134
00:05:40,220 --> 00:05:41,220
A SUMMARY.

135
00:05:41,220 --> 00:05:42,639
IF YOU ARE PRESSED FOR TIME

136
00:05:42,639 --> 00:05:45,300
CHECK OUT THE PODCAST CALLS,

137
00:05:45,300 --> 00:05:47,720
PLUTO THIS A MINUTE.

138
00:05:47,720 --> 00:05:48,970

>> HOW DOES A PLANET GET SO FAR

139

00:05:48,970 --> 00:05:50,570

FROM THE SUN HAVE AN ATMOSPHERE?

140

00:05:50,570 --> 00:05:59,350

THIS IS PLUTO IN A MINUTE.

141

00:05:59,350 --> 00:06:01,280

PLUTO'S ORBIT CROSSES NEPTUNE

142

00:06:01,280 --> 00:06:04,550

SO FOR TWO DECADES OF EVERY 248

143

00:06:04,550 --> 00:06:06,530

EARTH YEAR ORBITS AROUND THE SUN

144

00:06:06,530 --> 00:06:07,889

IT IS INSIDE THE ORBIT OF

145

00:06:07,889 --> 00:06:09,479

NEPTUNE.

146

00:06:09,479 --> 00:06:11,560

NEPTUNE HAS A HUGE EFFECT ON THE

147

00:06:11,560 --> 00:06:13,770

ORBIT OF PLUTO AND THEY ARE IN

148

00:06:13,770 --> 00:06:15,310

RESIDENCE WITH EACH OTHER.

149

00:06:15,310 --> 00:06:17,039

FOR EVERY TWO ORBITS PLUTO MAKES

150

00:06:17,039 --> 00:06:18,319

AROUND THE SUN NEPTUNE MAKES

151
00:06:18,319 --> 00:06:20,270
THREE AND SCIENTISTS THINK

152
00:06:20,270 --> 00:06:22,340
NEPTUNE IS THE REASON PLUTO IS

153
00:06:22,340 --> 00:06:23,449
ARE WHERE IT IS.

154
00:06:23,449 --> 00:06:26,650
ONE MODEL FROM THE 1990s

155
00:06:26,650 --> 00:06:29,210
SUGGESTS THEY FORMED CLOSER TO

156
00:06:29,210 --> 00:06:30,389
THE SUN THAN THEY ARE NOW.

157
00:06:30,389 --> 00:06:36,009
IT IS POSSIBLE IN THE MID 2000s

158
00:06:36,009 --> 00:06:38,650
ANOTHER MEMBER SUGGESTED PLUTO

159
00:06:38,650 --> 00:06:40,960
COULD HAVE FORMED AS CLOSE TO 15

160
00:06:40,960 --> 00:06:44,009
WITH THE HUGE GOING CLOSELY

161
00:06:44,009 --> 00:06:45,009
TOGETHER.

162
00:06:45,009 --> 00:06:46,819
THE GRAVITY THREW THE SYSTEM

163
00:06:46,819 --> 00:06:47,949

INTO CHAOS.

164

00:06:47,949 --> 00:06:50,860

THEY WERE FLUNG OUT AND THE

165

00:06:50,860 --> 00:06:52,729

SMALL BODIES WERE ALSO FLUNG

166

00:06:52,729 --> 00:06:54,770

FURTHER OUT.

167

00:06:54,770 --> 00:06:56,020

PLUTO AND NEPTUNE BECAME LOCKED

168

00:06:56,020 --> 00:06:57,020

TOGETHER.

169

00:06:57,020 --> 00:06:58,849

SO THE QUESTION IS IF PLUTO

170

00:06:58,849 --> 00:06:59,849

FORMER PRESIDENTED CLOSERER TO

171

00:06:59,849 --> 00:07:02,199

THE SUN, HOW CLOSE WAS IT?

172

00:07:02,199 --> 00:07:04,370

THE DATA WILL SHED LIGHT ON THE

173

00:07:04,370 --> 00:07:05,370

QUESTION.

174

00:07:05,370 --> 00:07:06,419

IN THE MEANTIME IF YOU WANT TO

175

00:07:06,419 --> 00:07:07,750

KNOWER MORE CHECK OUT THE NEW

176
00:07:07,750 --> 00:07:10,080
HORIZONS WEBSITE.

177
00:07:10,080 --> 00:07:12,710
USE HASHTAG PLUTO FLY BY.

178
00:07:12,710 --> 00:07:13,710
COME BACK TOMORROW FOR MORE

179
00:07:13,710 --> 00:07:33,199
PLUTO THIS A MINUTE.

180
00:07:33,199 --> 00:07:34,720
>> THE NEW HORIZONS PROJECT

181
00:07:34,720 --> 00:07:35,720
SCIENTISTS FROM APL.

182
00:07:35,720 --> 00:07:36,720
>> HEY, MIKE.

183
00:07:36,720 --> 00:07:39,139
GLAD TO BE BACK.

184
00:07:39,139 --> 00:07:40,139
>> PICTURES OF OH PLUTO ARE

185
00:07:40,139 --> 00:07:41,530
GETTING BETTER AS NEW HORIZONS

186
00:07:41,530 --> 00:07:42,750
GETS CLOSER.

187
00:07:42,750 --> 00:07:44,900
BEFORE THAT, HOW ABOUT REMINDING

188
00:07:44,900 --> 00:07:46,370

US WHAT THE MAIN SCIENCE GOALS

189

00:07:46,370 --> 00:07:47,970

OF NEW HORIZONS ARE AND WHAT THE

190

00:07:47,970 --> 00:07:49,840

MISSION IS GETTINGMENT.

191

00:07:49,840 --> 00:07:54,860

>> SO WHAT PLUTO LOOKS LIKE.

192

00:07:54,860 --> 00:07:58,820

NOT THE PIX LATED BLOBS BUT REAL

193

00:07:58,820 --> 00:08:01,350

WORLDS IN HIGH DEFINITION AND

194

00:08:01,350 --> 00:08:02,350

COLOR.

195

00:08:02,350 --> 00:08:04,770

IN ADDITION WE'LL SEE WHAT PLUTO

196

00:08:04,770 --> 00:08:06,550

IS PAED OF.

197

00:08:06,550 --> 00:08:09,250

64 THOUSAND FOOTPRINTS MEASURING

198

00:08:09,250 --> 00:08:12,000

THE COMPOSITION AND THE

199

00:08:12,000 --> 00:08:13,920

ATMOSPHERE INVESTIGATING

200

00:08:13,920 --> 00:08:15,830

PRESSURE, TEMPERATURE,

201
00:08:15,830 --> 00:08:17,289
ATMOSPHERE AND HOW MUCH ESCAPES

202
00:08:17,289 --> 00:08:18,529
INTO SPACE.

203
00:08:18,529 --> 00:08:20,500
>> AND THERE IS A LOT MORE.

204
00:08:20,500 --> 00:08:24,220
>> WE HAVE A MINI SOLAR SYSTEM.

205
00:08:24,220 --> 00:08:25,220
SIX OBJECTS TOTAL.

206
00:08:25,220 --> 00:08:27,599
WE'LL LOOK ARE AT THEM ALL.

207
00:08:27,599 --> 00:08:30,949
>> LET'S LOOK AT THE MAIN ONE,

208
00:08:30,949 --> 00:08:31,949
PLUTO.

209
00:08:31,949 --> 00:08:32,949
SOME OF THE IMAGES THAT HAVE

210
00:08:32,949 --> 00:08:33,949
COME BACK.

211
00:08:33,949 --> 00:08:34,949
THE DETAIL IS GETTING BETTER.

212
00:08:34,949 --> 00:08:35,949
WHAT ARE YOU SEEING?

213
00:08:35,949 --> 00:08:36,949

>> JUICIER AND JUICIER.

214

00:08:36,949 --> 00:08:41,289

THE SCIENCE TEAM IS DROOLING.

215

00:08:41,289 --> 00:08:42,419

LOOK AT THE NEW PICTURES NOW.

216

00:08:42,419 --> 00:08:45,060

IT'S FIVE OR SIX TIMES BETTER

217

00:08:45,060 --> 00:08:46,060

RESOLUTION THAN WHAT WE HAVE

218

00:08:46,060 --> 00:08:47,140

BEEN ABLE TO GET.

219

00:08:47,140 --> 00:08:49,790

WE ARE STARTING TO SEE

220

00:08:49,790 --> 00:08:50,790

STRUCTURE.

221

00:08:50,790 --> 00:08:55,569

YOU HAVE SOMETHING LIKE A DONUT

222

00:08:55,569 --> 00:08:57,210

JUST ABOVE THE DARK REGION.

223

00:08:57,210 --> 00:08:58,670

CAN YOU IMAGINE THAT WE ARE

224

00:08:58,670 --> 00:09:00,380

GOING TO GET IMAGES OF PLUTO

225

00:09:00,380 --> 00:09:01,970

THAT ARE A HUNDRED TIMES HIGHER

226
00:09:01,970 --> 00:09:05,630
RESOLUTION THAN THESE IMAGES.

227
00:09:05,630 --> 00:09:11,270
SO, YOU KNOW, JUST GETTING

228
00:09:11,270 --> 00:09:13,610
BETTER RESOLUTION WILL BE

229
00:09:13,610 --> 00:09:14,610
AMAZING.

230
00:09:14,610 --> 00:09:16,100
>> SOME OF THE PICTURES COME

231
00:09:16,100 --> 00:09:17,980
BACK AND WE ARE SEEING MORE.

232
00:09:17,980 --> 00:09:18,980
SOME ARE IN COLOR AND SOME ARE

233
00:09:18,980 --> 00:09:20,250
IN BLACK AND WHITE.

234
00:09:20,250 --> 00:09:21,790
ER FOR REASONS TO SEE

235
00:09:21,790 --> 00:09:22,790
STRUCTURES.

236
00:09:22,790 --> 00:09:24,089
SOP ALLOW YOU TO SEE THINGS AND

237
00:09:24,089 --> 00:09:25,930
MAYBE OTHERS DON'T.

238
00:09:25,930 --> 00:09:27,160

>> WE HAVE THE HIGHEST

239

00:09:27,160 --> 00:09:30,329

RESOLUTION CAMERA, WHAT'S CALLED

240

00:09:30,329 --> 00:09:31,770

THE LONG RANGE RECONNAISSANCE

241

00:09:31,770 --> 00:09:35,160

IMAGEER WITHOUT COLOR FILTERERS

242

00:09:35,160 --> 00:09:36,160

BECAUSE IT HAD TO BE AS

243

00:09:36,160 --> 00:09:37,280

SENSITIVE AS POSSIBLE.

244

00:09:37,280 --> 00:09:38,810

IT TAKES IN ALL THE WAVELENGTHS,

245

00:09:38,810 --> 00:09:41,480

GIVES US THE HIGHEST SPATIAL

246

00:09:41,480 --> 00:09:42,480

RESOLUTION.

247

00:09:42,480 --> 00:09:44,890

WE HAVE A COLOR CAMERA THAT WILL

248

00:09:44,890 --> 00:09:49,060

HAVE RED, GREEN AND BLUE THAT WE

249

00:09:49,060 --> 00:09:51,740

CAN TAKE IMAGES AND PUT THEM

250

00:09:51,740 --> 00:09:53,260

TOGETHER WITH THE LAURIE IMAGES,

251
00:09:53,260 --> 00:10:00,980
PAINT THEM ON THE SAME AND SEE

252
00:10:00,980 --> 00:10:02,300
WHAT PLUTO LOOKS LIKE IN LIVING

253
00:10:02,300 --> 00:10:03,300
COLOR.

254
00:10:03,300 --> 00:10:04,470
>> YOU CAN SEE MORE OF THIS AS

255
00:10:04,470 --> 00:10:05,470
IT GETS CLOSERER.

256
00:10:05,470 --> 00:10:07,370
WE SEE MORE PICTURES PEOPLE CAN

257
00:10:07,370 --> 00:10:08,370
VIEW.

258
00:10:08,370 --> 00:10:10,230
>> OH, YEAHMENT WE ARE MAKING

259
00:10:10,230 --> 00:10:11,890
IMAGES AVAILABLE SHORTLY AFTER

260
00:10:11,890 --> 00:10:13,980
THEY ARRIVE ON THE GROUND.

261
00:10:13,980 --> 00:10:14,980
PEOPLE ARE WELCOME TO PLAY WITH

262
00:10:14,980 --> 00:10:16,019
THEM.

263
00:10:16,019 --> 00:10:17,570

>> ALONG FOR THE RIDE AS WELL TO

264

00:10:17,570 --> 00:10:18,630

DO THAT.

265

00:10:18,630 --> 00:10:21,390

SCIENCE IS BACK ONLINE.

266

00:10:21,390 --> 00:10:22,390

WHAT'S NEXT?

267

00:10:22,390 --> 00:10:25,270

>> IT GETS BETTER AND BETTER.

268

00:10:25,270 --> 00:10:26,890

COMING FROM SIX TO THREE DAYS.

269

00:10:26,890 --> 00:10:28,709

YOU DOUBLE THE RESOLUTION.

270

00:10:28,709 --> 00:10:32,010

FOUR TIMES AS MANY PIXELS.

271

00:10:32,010 --> 00:10:34,230

WE'LL GET MORE COMPOSITION FALL

272

00:10:34,230 --> 00:10:37,230

INFORMATION ON PLUTO AND SHARON

273

00:10:37,230 --> 00:10:38,780

TRYING TO TEASE OUT.

274

00:10:38,780 --> 00:10:40,480

WE ARE SEEING THINGS WE HAVE

275

00:10:40,480 --> 00:10:42,170

SEEN IN THE PAST BUT TRYING TO

276
00:10:42,170 --> 00:10:43,650
TEASE OUT NEW INFORMATION,

277
00:10:43,650 --> 00:10:44,650
THINGS WE HAVE NEVER SEEN

278
00:10:44,650 --> 00:10:45,650
BEFORE.

279
00:10:45,650 --> 00:10:46,650
THAT'S WHAT THE MISSION IS

280
00:10:46,650 --> 00:10:47,650
AFTER.

281
00:10:47,650 --> 00:10:49,480
WE'LL REWRITE THE BOOK.

282
00:10:49,480 --> 00:10:51,300
THIS IS MORE THAN JUST VERIFYING

283
00:10:51,300 --> 00:10:52,670
STUFF THAT WAS THERE.

284
00:10:52,670 --> 00:10:53,670
YOU ARE GETTING INTO THE

285
00:10:53,670 --> 00:10:55,129
DETAILS.

286
00:10:55,129 --> 00:10:58,020
>> WE DIDN'T HAVE ANY IDEA

287
00:10:58,020 --> 00:11:00,089
REALLY WHAT TO EXPECT.

288
00:11:00,089 --> 00:11:01,910

HARDLY AT ALL.

289

00:11:01,910 --> 00:11:03,180

THIS IS OUR ONCE IN A LIFETIME

290

00:11:03,180 --> 00:11:04,720

OPPORTUNITY TO SEE IT.

291

00:11:04,720 --> 00:11:05,720

>> ENJOY THE RIDE.

292

00:11:05,720 --> 00:11:07,220

THANKS FOR JOINING US.

293

00:11:07,220 --> 00:11:08,220

>> ABSOLUTELY.

294

00:11:08,220 --> 00:11:09,220

THANK YOU.

295

00:11:09,220 --> 00:11:10,220

>> THERE ARE MANY WAYS TO GET

296

00:11:10,220 --> 00:11:11,750

INVOLVED WITH THE NEW HORIZONS

297

00:11:11,750 --> 00:11:12,750

MISSION.

298

00:11:12,750 --> 00:11:14,500

ONE WAY IS THROUGH PLUTO TIME.

299

00:11:14,500 --> 00:11:16,839

A MOMENT AT DAWN AND DUSK WHEN

300

00:11:16,839 --> 00:11:18,079

THE ILLUMINATION ON EARTH

301
00:11:18,079 --> 00:11:22,560
MATCHES NOON ON PLUTO.

302
00:11:22,560 --> 00:11:51,779
GET READY FOR PLUTO TIME.

303
00:11:51,779 --> 00:11:52,819
>>> JOIN THE CONVERSATION VIA

304
00:11:52,819 --> 00:11:54,230
TWITTERER, FACEBOOK AND OTHER

305
00:11:54,230 --> 00:11:55,900
SOCIAL MEDIA PLATFORMS TALKING

306
00:11:55,900 --> 00:11:58,390
ABOUT THE JULY 14 FLY-BY.

307
00:11:58,390 --> 00:12:01,290
SEND QUESTIONS # PLUTO FLYBY AND

308
00:12:01,290 --> 00:12:02,290
MISSION INFORMATION IS AVAILABLE

309
00:12:02,290 --> 00:12:03,290
AT NASA.GOV/NEW HORIZONS.

310
00:12:03,290 --> 00:12:04,290
THAT'S THE LATEST FROM NASA'S

311
00:12:04,290 --> 00:12:05,290
NEW HORIZONS.

312
00:12:05,290 --> 00:12:06,290
WE ARE LESS THAN A WEEK AWAY.

313
00:12:06,290 --> 00:12:07,290

ABOUT A PLUTO DAY AWAY FROM THE

314

00:12:07,290 --> 00:12:08,290

FLYBY.

315

00:12:08,290 --> 00:12:09,750

4 MILLION MILES TO GO AND THE

316

00:12:09,750 --> 00:12:10,750

COUNTDOWN CONTINUES.

317

00:12:10,750 --> 00:12:11,750

I'M MIKE BUCKLEY.

318

00:12:11,750 --> 00:12:12,750

THANKS FOR WATCHING.

319

00:12:12,750 --> 00:12:13,750

\MM

320

00:12:13,750 --> 00:12:14,750

>>> FROM THE JOHNS HOPKINS

321

00:12:14,750 --> 00:12:15,750

APPLIED PHYSICS

322

00:12:15,750 --> 00:12:16,750

LABORATORY IN LAUREL, MARYLAND,

323

00:12:16,750 --> 00:12:17,750

WELCOME TO NASA'S NEW HORIZONS

324

00:12:17,750 --> 00:12:18,750

COUNTDOWN TO PLUTO.

325

00:12:18,750 --> 00:12:19,750

I'M MIKE BUCKLEY FROM PUBLIC

326
00:12:19,750 --> 00:12:20,750
AFFAIRS.

327
00:12:20,750 --> 00:12:21,750
WE ARE ON PLUTO'S DOORSTEP

328
00:12:21,750 --> 00:12:22,750
GETTING READY FOR THE HISTORIC

329
00:12:22,750 --> 00:12:23,750
FLYBY ON JULY 14th.

330
00:12:23,750 --> 00:12:24,750
ON JULY 8 WE ARE LESS THAN A

331
00:12:24,750 --> 00:12:25,750
WEEK AWAY, 4 MILLION MILES FROM

332
00:12:25,750 --> 00:12:26,750
PLUTO AND THE MISSION IS ALREADY

333
00:12:26,750 --> 00:12:27,750
MAKING HISTORY.

334
00:12:27,750 --> 00:12:28,750
WE'LL COME TO YOU EACH DAY WITH

335
00:12:28,750 --> 00:12:29,750
QUICK MISSION UPDATES LIKE THIS

336
00:12:29,750 --> 00:12:30,750
FOR NEWS BRIEFINGS OR PROGRAMS

337
00:12:30,750 --> 00:12:31,750
COVERING THE LATEST FROM THE

338
00:12:31,750 --> 00:12:32,750

PLANETARY FRONTIER.

339

00:12:32,750 --> 00:12:33,750

WE WANT YOU TO COME ALONG ON THE

340

00:12:33,750 --> 00:12:34,750

ADVENTURE.

341

00:12:36,750 --> 00:12:35,750

\MM

342

00:12:36,750 --> 00:12:37,750

>>> A FAMILIAR FACE FROM OUR

343

00:12:37,750 --> 00:12:38,750

UPDATES IS ALICE BOWMAN, THE

344

00:12:38,750 --> 00:12:39,750

NEW HORIZONS

345

00:12:39,750 --> 00:12:40,750

MISSIONS OPERATION MANAGER AT

346

00:12:40,750 --> 00:12:41,750

APL.

347

00:12:41,750 --> 00:12:42,750

WELCOME BACK.

348

00:12:42,750 --> 00:12:43,750

>> THANKS.

349

00:12:43,750 --> 00:12:44,750

NICE TO BE HERE .

350

00:12:44,750 --> 00:12:45,750

>> LET'S START WITH A LOOK

351
00:12:45,750 --> 00:12:46,750
INSIDE MISSION OPERATIONS.

352
00:12:46,750 --> 00:12:47,750
THE MISSION OPERATIONS CENTER

353
00:12:47,750 --> 00:12:48,750
HERE AT APL.

354
00:12:48,750 --> 00:12:49,750
SHOW US AROUND AND EXPLAIN

355
00:12:49,750 --> 00:12:50,750
WHAT'S HAPPENING.

356
00:12:50,750 --> 00:12:51,750
>> SURE.

357
00:12:51,750 --> 00:12:52,750
WHAT YOU ARE LOOKING AT HERE IN

358
00:12:52,750 --> 00:12:53,750
THE FOREGROUND IS THE COMMAND

359
00:12:53,750 --> 00:12:54,750
PIT.

360
00:12:54,750 --> 00:12:55,750
THIS IS WHERE INSTRUCTIONS ARE

361
00:12:55,750 --> 00:12:56,750
SENT TO THE SPACECRAFT.

362
00:12:56,750 --> 00:12:57,750
IT IS WHERE WE'LL GET DATA BACK

363
00:12:57,750 --> 00:12:58,750

FROM THE SPACECRAFT.

364

00:12:58,750 --> 00:12:59,750

ALONG THE BACK WALL IS WHERE I

365

00:12:59,750 --> 00:13:00,750

ACTUALLY SIT NEAR THAT WHITE

366

00:13:00,750 --> 00:13:01,750

BOARD.

367

00:13:01,750 --> 00:13:02,750

THEN IN THE BACK ROOM TO THE

368

00:13:02,750 --> 00:13:03,750

WINDOWS IS THE SITUATION ROOM.

369

00:13:03,750 --> 00:13:04,750

IT LOOKS LIKE WE HAVE PEOPLE

370

00:13:04,750 --> 00:13:05,750

OVER THERE NOW.

371

00:13:05,750 --> 00:13:06,750

>> ANOTHER MEETING.

372

00:13:06,750 --> 00:13:07,750

>> ANOTHER.

373

00:13:07,750 --> 00:13:08,750

>> THE TEAM HAD AN EVENTFUL

374

00:13:08,750 --> 00:13:09,750

WEEKEND, JULY 4th.

375

00:13:09,750 --> 00:13:10,750

THE SPACECRAFT WENT INTO A HOLD.

376

00:13:10,750 --> 00:13:11,750

EXPLAIN WHAT HAPPENED.

377

00:13:11,750 --> 00:13:12,750

>> WE HAVE AN AUTONOMY SYSTEM

378

00:13:12,750 --> 00:13:13,750

ON BOARD THAT'S PROGRAMMED TO

379

00:13:13,750 --> 00:13:14,750

TAKE CARE OF ANY FAULTS ON THE

380

00:13:14,750 --> 00:13:15,750

SPACECRAFT THAT IT WILL DETECT.

381

00:13:15,750 --> 00:13:16,750

WE HAD TWO PROBLEMS.

382

00:13:16,750 --> 00:13:17,750

THIS WEEKEND WE HAD TOO MANY

383

00:13:17,750 --> 00:13:18,750

OPERATIONS GOING ON AT ONE TIME.

384

00:13:18,750 --> 00:13:19,750

WE WERE ASKING THE MAIN COMPUTER

385

00:13:19,750 --> 00:13:20,750

TO COMPRESS DATA.

386

00:13:20,750 --> 00:13:21,750

AT THE SAME TIME WE UP LINKED

387

00:13:21,750 --> 00:13:22,750

FROM GROUND INSTRUCTIONS THAT

388

00:13:22,750 --> 00:13:23,750

NEEDED TO BE BURNED TO FLASH ON

389

00:13:23,750 --> 00:13:24,750
THE MAIN UH COMPUTER.

390

00:13:24,750 --> 00:13:25,750
WE ACTUALLY OVERLOADED THE

391

00:13:25,750 --> 00:13:26,750
COMPUTER.

392

00:13:26,750 --> 00:13:27,750
THE SYSTEM SWITCHED US TO THE

393

00:13:27,750 --> 00:13:28,750
BACKUP COMPUTER IN ORDER TO KEEP

394

00:13:28,750 --> 00:13:29,750
FLYING THE SPACECRAFT ON ITS

395

00:13:29,750 --> 00:13:30,750
NORMAL TRAJECTORY.

396

00:13:30,750 --> 00:13:31,750
>> SO IT ESSENTIALLY CALLS HOME

397

00:13:31,750 --> 00:13:32,750
AND SAYS IT NEEDS HELP.

398

00:13:32,750 --> 00:13:33,750
>> IT POINTED TO EARTH, SENT US

399

00:13:33,750 --> 00:13:34,750
WHAT WAS GOING ON.

400

00:13:34,750 --> 00:13:35,750
WE WENT INTO ACTION.

401
00:13:35,750 --> 00:13:36,750
>> THE TEAM TRAINED FOR

402
00:13:36,750 --> 00:13:37,750
SITUATIONS LIKE THAT?

403
00:13:37,750 --> 00:13:38,750
>> IT'S ONE OF THE BASIC THINGS

404
00:13:38,750 --> 00:13:39,750
WE TRAIN SPACECRAFT OPERATORS.

405
00:13:39,750 --> 00:13:40,750
>> SO I GUESS THAT CONTRIBUTED

406
00:13:40,750 --> 00:13:41,750
TO A QUICK RESPONSE.

407
00:13:41,750 --> 00:13:42,750
HAD TO ACT QUICKLY

408
00:13:42,750 --> 00:13:43,750
>> WE DID.

409
00:13:43,750 --> 00:13:44,750
OF COURSE WE ARE COMING UP ON A

410
00:13:44,750 --> 00:13:45,750
PRIMARY MISSION PHASE.

411
00:13:45,750 --> 00:13:46,750
EVERYBODY WAS PRIMED FOR THIS.

412
00:13:46,750 --> 00:13:47,750
WHEN WE GOT INDICATIONS THAT

413
00:13:47,750 --> 00:13:48,750

SOMETHING WASN'T RIGHT ON THE

414

00:13:48,750 --> 00:13:49,750

SPACECRAFT, EVERYBODY WENT INTO

415

00:13:49,750 --> 00:13:50,750

ACTION.

416

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

YOU KNOW, WE WERE ALL A LITTLE

417

00:13:51,750 --> 00:13:52,750

BIT AFRAID OF WHAT MIGHT

418

00:13:52,750 --> 00:13:53,750

HAPPEN.

419

00:13:53,750 --> 00:13:54,750

WE PUT ON OUR ENGINEERING HATS

420

00:13:54,750 --> 00:13:55,750

AND WENT DOWN OUR CHECKLIST.

421

00:13:55,750 --> 00:13:56,750

WE DID WHAT NEEDED TO BE DONE TO

422

00:13:56,750 --> 00:13:57,750

RECOVER THE SPACECRAFT TO

423

00:13:57,750 --> 00:13:58,750

OPERATIONAL MODE.

424

00:13:58,750 --> 00:13:59,750

>> I WILL SHOW A PICTURE WHICH

425

00:13:59,750 --> 00:14:00,750

ANSWERS THE QUESTION, BUT I WANT

426
00:14:00,750 --> 00:14:01,750
TO SHOW IT ANYWAY.

427
00:14:01,750 --> 00:14:02,750
THIS IS THE SCIENCE TEAM

428
00:14:02,750 --> 00:14:03,750
CELEBRATING NEWS THAT THE FLY BY

429
00:14:03,750 --> 00:14:04,750
SEQUENCE KICKED IN ON THE

430
00:14:04,750 --> 00:14:05,750
COMPUTERS.

431
00:14:05,750 --> 00:14:06,750
I GUESS THAT ANSWERS THE IDEA

432
00:14:06,750 --> 00:14:07,750
THAT THINGS ARE BACK ON TRACK.

433
00:14:07,750 --> 00:14:08,750
>> THINGS DEFINITELY ARE BACK ON

434
00:14:08,750 --> 00:14:09,750
TRACK.

435
00:14:09,750 --> 00:14:10,750
>> WHAT HAPPENS ON THE

436
00:14:10,750 --> 00:14:11,750
SPACECRAFT OVER THE NEXT FEW

437
00:14:11,750 --> 00:14:12,750
DAYS?

438
00:14:12,750 --> 00:14:13,750

>> IT'S TAKING SCIENCE DATA AND

439

00:14:13,750 --> 00:14:14,750

IT'S ALSO TAKING OPTICAL

440

00:14:14,750 --> 00:14:15,750

NAVIGATION DATA.

441

00:14:15,750 --> 00:14:16,750

THIS IS IMPORTANT.

442

00:14:16,750 --> 00:14:17,750

IT'S A MEASURE OF HOW WELL WE

443

00:14:17,750 --> 00:14:18,750

ARE DOING ON THAT TRAJECTORY TO

444

00:14:18,750 --> 00:14:19,750

HIT THAT SPECIFIC POINT AT THE

445

00:14:19,750 --> 00:14:20,750

TIME THE SCIENCE TEAM WANTS US

446

00:14:20,750 --> 00:14:21,750

TO HIT.

447

00:14:21,750 --> 00:14:22,750

THAT'S PRETTY MUCH WHAT WE ARE

448

00:14:22,750 --> 00:14:23,750

FOCUSED ON NOW IS TO GET THE

449

00:14:23,750 --> 00:14:24,750

SCIENCE OBSERVATIONS AT THE

450

00:14:24,750 --> 00:14:25,750

RIGHT TIME IN PERFECT

451
00:14:25,750 --> 00:14:26,750
CONDITIONS.

452
00:14:26,750 --> 00:14:27,750
>> NOW YOU'RE REALLY CLOSE.

453
00:14:27,750 --> 00:14:28,750
>> WE ARE AMAZINGLY CLOSE.

454
00:14:28,750 --> 00:14:29,750
IT'S HARD TO BELIEVE THAT WE ARE

455
00:14:29,750 --> 00:14:30,750
HERE RIGHT NOW.

456
00:14:30,750 --> 00:14:31,750
>> THANKS, ALICE.

457
00:14:31,750 --> 00:14:32,750
>> THANK YOU, MIKE.

458
00:14:32,750 --> 00:14:33,750
>> FOR NASA'S NEW HORIZONS

459
00:14:33,750 --> 00:14:34,750
MISSION INFORMATION COMES IN ALL

460
00:14:34,750 --> 00:14:35,750
SHAPES AND SIZES WHETHER YOU

461
00:14:35,750 --> 00:14:36,750
LIKE A LOT OF DETAILER OR PREFER

462
00:14:36,750 --> 00:14:37,750
A SUMMARY.

463
00:14:37,750 --> 00:14:38,750

IF YOU ARE PRESSED FOR TIME

464

00:14:38,750 --> 00:14:39,750

CHECK OUT THE DAILY NEW HORIZONS

465

00:14:39,750 --> 00:14:40,750

PODCAST CALLED "PLUTO IN A

466

00:14:40,750 --> 00:14:41,750

MINUTE."

467

00:14:41,750 --> 00:14:42,750

>> HOW DOES A PLANET SOER FAR

468

00:14:42,750 --> 00:14:43,750

FROM THE SUN HAVE AN ATMOSPHERE?

469

00:14:43,750 --> 00:14:44,750

THIS IS PLUTO IN A MINUTE.

470

00:14:44,750 --> 00:14:45,750

PLUTO'S ORBIT CROSSES NEPTUNE SO

471

00:14:45,750 --> 00:14:46,750

FOR TWO DECADES OF EVERY 248

472

00:14:46,750 --> 00:14:47,750

EARTH YEAR ORBITS AROUND THE SUN

473

00:14:47,750 --> 00:14:48,750

IT IS INSIDE THE ORBIT OF

474

00:14:48,750 --> 00:14:49,750

NEPTUNE.

475

00:14:49,750 --> 00:14:50,750

NEPTUNE HAS A HUGE EFFECT ON THE

476
00:14:50,750 --> 00:14:51,750
ORBIT OF PLUTO AND THEY ARE IN

477
00:14:51,750 --> 00:14:52,750
RESIDENCE WITH EACH OTHER.

478
00:14:52,750 --> 00:14:53,750
FOR EVERY TWO ORBITS PLUTO MAKES

479
00:14:53,750 --> 00:14:54,750
AROUND THE SUN NEPTUNE MAKES

480
00:14:54,750 --> 00:14:55,750
THREE AND SCIENTISTS THINK

481
00:14:55,750 --> 00:14:56,750
NEPTUNE IS THE REASON PLUTO IS

482
00:14:56,750 --> 00:14:57,750
ARE WHERE IT IS.

483
00:14:57,750 --> 00:14:58,750
ONE MODEL FROM THE 1990s

484
00:14:58,750 --> 00:14:59,750
SUGGESTS THEY FORMED CLOSER TO

485
00:14:59,750 --> 00:15:00,750
THE SUN THAN THEY ARE NOW.

486
00:15:00,750 --> 00:15:01,750
IT IS POSSIBLE IN THE MID 2000s

487
00:15:01,750 --> 00:15:02,750
ANOTHER MEMBER SUGGESTED PLUTO

488
00:15:02,750 --> 00:15:03,750

COULD HAVE FORMED AS CLOSE TO 15

489

00:15:03,750 --> 00:15:04,750

WITH THE HUGE GOING CLOSELY

490

00:15:04,750 --> 00:15:05,750

TOGETHER.

491

00:15:05,750 --> 00:15:06,750

THE GRAVITY THREW THE SYSTEM

492

00:15:06,750 --> 00:15:07,750

INTO CHAOS.

493

00:15:07,750 --> 00:15:08,750

THEY WERE FLUNG OUT AND THE

494

00:15:08,750 --> 00:15:09,750

SMALL BODIES WERE ALSO FLUNG

495

00:15:09,750 --> 00:15:10,750

FURTHER OUT.

496

00:15:10,750 --> 00:15:11,750

PLUTO AND NEPTUNE BECAME LOCKED

497

00:15:11,750 --> 00:15:12,750

TOGETHER.

498

00:15:12,750 --> 00:15:13,750

SO THE QUESTION IS IF PLUTO

499

00:15:13,750 --> 00:15:14,750

FLEW CLOSER TO THE SUN, OWE

500

00:15:14,750 --> 00:15:15,750

CLOSE WAS IT?

501
00:15:15,750 --> 00:15:16,750
THE DATA WILL SHED LIGHT ON THE

502
00:15:16,750 --> 00:15:17,750
QUESTION.

503
00:15:17,750 --> 00:15:18,750
IN THE MEANTIME IF YOU WANT TO

504
00:15:18,750 --> 00:15:19,750
KNOWER MORE CHECK OUT THE NEW

505
00:15:19,750 --> 00:15:20,750
HORIZONS WEBSITE.

506
00:15:20,750 --> 00:15:21,750
USE HASHTAG PLUTO FLY BY.

507
00:15:21,750 --> 00:15:22,750
COME BACK TOMORROW FOR MORE

508
00:15:22,750 --> 00:15:23,750
PLUTO IN A MINUTE.

509
00:15:23,750 --> 00:15:24,750
>> WE WELCOME BACK HAL WEAVER,ER

510
00:15:24,750 --> 00:15:25,750
THE NEW HORIZONS PROJECT

511
00:15:25,750 --> 00:15:26,750
SCIENTIST FROM APL.

512
00:15:26,750 --> 00:15:27,750
>> HEY, MIKE.

513
00:15:27,750 --> 00:15:28,750

GLAD TO BE BACK.

514

00:15:28,750 --> 00:15:29,750

>> PICTURES OF OH PLUTO ARE

515

00:15:29,750 --> 00:15:30,750

GETTING BETTER AS NEW HORIZONS

516

00:15:30,750 --> 00:15:31,750

GETS CLOSER.

517

00:15:31,750 --> 00:15:32,750

BEFORE THAT, HOW ABOUT REMINDING

518

00:15:32,750 --> 00:15:33,750

US WHAT THE MAIN SCIENCE GOALS

519

00:15:33,750 --> 00:15:34,750

OF NEW HORIZONS ARE AND WHAT THE

520

00:15:34,750 --> 00:15:35,750

MISSION IS GETTING IN PLUTO.

521

00:15:35,750 --> 00:15:36,750

>> THE BIG PICTURE GOALS, THREE

522

00:15:36,750 --> 00:15:37,750

OF THEM, WHAT DO THEY LOOK LIKE.

523

00:15:37,750 --> 00:15:38,750

NOT THE PIXELATED BLOBS BUT REAL

524

00:15:38,750 --> 00:15:39,750

WORLDS IN HIGH DEFINITION AND IN

525

00:15:39,750 --> 00:15:40,750

COLOR.

526
00:15:40,750 --> 00:15:41,750
IN ADDITION WE'LL SEE WHAT PLUTO

527
00:15:41,750 --> 00:15:42,750
IS MADE OF.

528
00:15:42,750 --> 00:15:43,750
64 THOUSAND FOOTPRINTS MEASURING

529
00:15:43,750 --> 00:15:44,750
THE COMPOSITION AND THE

530
00:15:44,750 --> 00:15:45,750
ATMOSPHERE INVESTIGATING

531
00:15:45,750 --> 00:15:46,750
PRESSURE, TEMPERATURE,

532
00:15:46,750 --> 00:15:47,750
ATMOSPHERE AND HOW MUCH ESCAPES

533
00:15:47,750 --> 00:15:48,750
INTO SPACE.

534
00:15:48,750 --> 00:15:49,750
>> AND THERE IS A LOT MORE.

535
00:15:49,750 --> 00:15:50,750
>> WE HAVE A MINI SOLAR SYSTEM.

536
00:15:50,750 --> 00:15:51,750
SIX OBJECTS TOTAL.

537
00:15:51,750 --> 00:15:52,750
WE'LL LOOK ARE AT THEM ALL.

538
00:15:52,750 --> 00:15:53,750

>> LET'S LOOK AT THE MAIN ONE,

539

00:15:53,750 --> 00:15:54,750

PLUTO.

540

00:15:54,750 --> 00:15:55,750

SOME OF THE IMAGES THAT HAVE

541

00:15:55,750 --> 00:15:56,750

COME BACK.

542

00:15:56,750 --> 00:15:57,750

THE DETAIL IS GETTING BETTER.

543

00:15:57,750 --> 00:15:58,750

WHAT ARE YOU SEEING?

544

00:15:58,750 --> 00:15:59,750

>> JUICIER AND JUICIER.

545

00:15:59,750 --> 00:16:00,750

THE SCIENCE TEAM IS DROOLING.

546

00:16:00,750 --> 00:16:01,750

LOOK AT THE NEW PICTURES NOW.

547

00:16:01,750 --> 00:16:02,750

IT'S FIVE OR SIX TIMES BETTER

548

00:16:02,750 --> 00:16:03,750

RESOLUTION THAN WHAT WE HAVE

549

00:16:03,750 --> 00:16:04,750

BEEN ABLE TO GET.

550

00:16:04,750 --> 00:16:05,750

WE ARE STARTING TO SEE

551
00:16:05,750 --> 00:16:06,750
STRUCTURE.

552
00:16:06,750 --> 00:16:07,750
YOU HAVE SOMETHING LIKE A DONUT

553
00:16:07,750 --> 00:16:08,750
JUST ABOVE THE DARK REGION.

554
00:16:08,750 --> 00:16:09,750
CAN YOU IMAGINE THAT WE ARE

555
00:16:09,750 --> 00:16:10,750
GOING TO GET IMAGES OF PLUTO

556
00:16:10,750 --> 00:16:11,750
THAT ARE A HUNDRED TIMES HIGHER

557
00:16:11,750 --> 00:16:12,750
RESOLUTION THAN THESE IMAGES.

558
00:16:12,750 --> 00:16:13,750
SO, YOU KNOW, JUST GETTING

559
00:16:13,750 --> 00:16:14,750
BETTER RESOLUTION WILL BE

560
00:16:14,750 --> 00:16:15,750
AMAZING.

561
00:16:15,750 --> 00:16:16,750
>> SOME OF THE PICTURES COME

562
00:16:16,750 --> 00:16:17,750
BACK AND WE ARE SEEING MORE.

563
00:16:17,750 --> 00:16:18,750

SOME ARE IN COLOR AND SOME ARE

564

00:16:18,750 --> 00:16:19,750
IN BLACK AND WHITE.

565

00:16:19,750 --> 00:16:20,750
ER FOR REASONS TO SEE

566

00:16:20,750 --> 00:16:21,750
STRUCTURES.

567

00:16:21,750 --> 00:16:22,750
SOME ALLOW YOU TO SEE THINGS

568

00:16:22,750 --> 00:16:23,750
MAYBE OTHERS DON'T.

569

00:16:23,750 --> 00:16:24,750
>> WE HAVE THE HIGHEST

570

00:16:24,750 --> 00:16:25,750
RESOLUTION CAMERA, WHAT'S CALLED

571

00:16:25,750 --> 00:16:26,750
THE LONG RANGE RECONNAISSANCE

572

00:16:26,750 --> 00:16:27,750
IMAGER WITHOUT COLOR FILTERS

573

00:16:27,750 --> 00:16:28,750
BECAUSE IT HAD TO BE AS

574

00:16:28,750 --> 00:16:29,750
SENSITIVE AS POSSIBLE.

575

00:16:29,750 --> 00:16:30,750
IT TAKES IN ALL THE WAVELENGTHS,

576
00:16:30,750 --> 00:16:31,750
GIVES US THE HIGHEST SPATIAL

577
00:16:31,750 --> 00:16:32,750
RESOLUTION.

578
00:16:32,750 --> 00:16:33,750
WE HAVE A COLOR CAMERA THAT WILL

579
00:16:33,750 --> 00:16:34,750
HAVE RED, GREEN AND BLUE THAT WE

580
00:16:34,750 --> 00:16:35,750
CAN TAKE IMAGES AND PUT THEM

581
00:16:35,750 --> 00:16:36,750
TOGETHER WITH THE LAURIE IMAGES,

582
00:16:36,750 --> 00:16:37,750
PAINT THEM ON THE SAME AND SEE

583
00:16:37,750 --> 00:16:38,750
WHAT PLUTO LOOKS LIKE IN LIVING

584
00:16:38,750 --> 00:16:39,750
COLOR.

585
00:16:39,750 --> 00:16:40,750
>> YOU CAN SEE MORE OF THIS AS

586
00:16:40,750 --> 00:16:41,750
IT GETS CLOSER.

587
00:16:41,750 --> 00:16:42,750
WE SEE MORE PICTURES PEOPLE CAN

588
00:16:42,750 --> 00:16:43,750

VIEW.

589

00:16:43,750 --> 00:16:44,750

>> OH, YEAH. WE ARE MAKING

590

00:16:44,750 --> 00:16:45,750

IMAGES AVAILABLE SHORTLY AFTER

591

00:16:45,750 --> 00:16:46,750

THEY ARRIVE ON THE GROUND.

592

00:16:46,750 --> 00:16:47,750

PEOPLE ARE WELCOME TO PLAY WITH

593

00:16:47,750 --> 00:16:48,750

THEM.

594

00:16:48,750 --> 00:16:49,750

>> ALONG FOR THE RIDE AS WELL TO

595

00:16:49,750 --> 00:16:50,750

DO THAT.

596

00:16:50,750 --> 00:16:51,750

SCIENCE IS BACK ONLINE.

597

00:16:51,750 --> 00:16:52,750

WHAT'S NEXT?

598

00:16:52,750 --> 00:16:53,750

WHAT'S HAPPENING OVER THE NEXT

599

00:16:53,750 --> 00:16:54,750

FEW DAYS?

600

00:16:54,750 --> 00:16:55,750

>> IT GETS BETTER AND BETTER.

601
00:16:55,750 --> 00:16:56,750
COMING FROM SIX TO THREE DAYS.

602
00:16:56,750 --> 00:16:57,750
YOU DOUBLE THE RESOLUTION.

603
00:16:57,750 --> 00:16:58,750
FOUR TIMES AS MANY PIXELS.

604
00:16:58,750 --> 00:16:59,750
WE'LL GET MORE COMPOSITIONAL

605
00:16:59,750 --> 00:17:00,750
INFORMATION ON PLUTO AND SHARON

606
00:17:00,750 --> 00:17:01,750
TRYING TO TEASE OUT.

607
00:17:01,750 --> 00:17:02,750
WE ARE SEEING THINGS WE HAVE

608
00:17:02,750 --> 00:17:03,750
SEEN IN THE PAST BUT TRYING TO

609
00:17:03,750 --> 00:17:04,750
TEASE OUT NEW INFORMATION,

610
00:17:04,750 --> 00:17:05,750
THINGS WE HAVE NEVER SEEN

611
00:17:05,750 --> 00:17:06,750
BEFORE.

612
00:17:06,750 --> 00:17:07,750
THAT'S WHAT THE MISSION IS

613
00:17:07,750 --> 00:17:08,750

AFTER.

614

00:17:08,750 --> 00:17:09,750
WE'LL REWRITE THE BOOK.

615

00:17:09,750 --> 00:17:10,750
THIS IS MORE THAN JUST VERIFYING

616

00:17:10,750 --> 00:17:11,750
STUFF THAT WAS THERE.

617

00:17:11,750 --> 00:17:12,750
YOU ARE GETTING INTO THE

618

00:17:12,750 --> 00:17:13,750
DETAILS.

619

00:17:13,750 --> 00:17:14,750
>> WE DIDN'T HAVE ANY IDEA

620

00:17:14,750 --> 00:17:15,750
REALLY WHAT TO EXPECT.

621

00:17:15,750 --> 00:17:16,750
HARDLY AT ALL.

622

00:17:16,750 --> 00:17:17,750
THIS IS OUR ONCE IN A LIFETIME

623

00:17:17,750 --> 00:17:18,750
OPPORTUNITY TO SEE IT.

624

00:17:18,750 --> 00:17:19,750
>> ENJOY THE RIDE.

625

00:17:19,750 --> 00:17:20,750
THANKS FOR JOINING US.

626

00:17:20,750 --> 00:17:21,750

>> ABSOLUTELY.

627

00:17:21,750 --> 00:17:22,750

THANK YOU.

628

00:17:22,750 --> 00:17:23,750

>> THERE ARE MANY WAYS TO GET

629

00:17:23,750 --> 00:17:24,750

INVOLVED WITH THE NEW HORIZONS

630

00:17:24,750 --> 00:17:25,750

MISSION.

631

00:17:25,750 --> 00:17:26,750

ONE WAY IS THROUGH PLUTO TIME.

632

00:17:26,750 --> 00:17:27,750

A MOMENT AT DAWN AND DUSK WHEN

633

00:17:27,750 --> 00:17:28,750

THE ILLUMINATION ON EARTH

634

00:17:28,750 --> 00:17:29,750

MATCHES NOON ON PLUTO.

635

00:17:29,750 --> 00:17:30,750

GET READY FOR PLUTO TIME.

636

00:17:30,750 --> 00:17:31,750

\MM

637

00:17:31,750 --> 00:17:32,750

>>> JOIN THE CONVERSATION VIA

638

00:17:32,750 --> 00:17:33,750

TWITTER, FACEBOOK AND OTHER

639

00:17:33,750 --> 00:17:34,750

SOCIAL MEDIA PLATFORMS TALKING

640

00:17:34,750 --> 00:17:35,750

ABOUT THE JULY 14 FLY-BY.

641

00:17:35,750 --> 00:17:36,750

SEND QUESTIONS # PLUTO FLYBY AND

642

00:17:36,750 --> 00:17:37,750

MISSION INFORMATION IS AVAILABLE

643

00:17:37,750 --> 00:17:38,750

AT NASA.GOV/NEW HORIZONS.

644

00:17:38,750 --> 00:17:39,750

THAT'S THE LATEST FROM NASA'S

645

00:17:39,750 --> 00:17:40,750

NEW HORIZONS.

646

00:17:40,750 --> 00:17:41,750

WE ARE LESS THAN A WEEK AWAY.

647

00:17:41,750 --> 00:17:42,750

ABOUT A PLUTO DAY AWAY FROM THE

648

00:17:42,750 --> 00:17:43,750

FLYBY.

649

00:17:43,750 --> 00:17:44,750

4 MILLION MILES TO GO AND THE

650

00:17:44,750 --> 00:17:45,750

COUNTDOWN CONTINUES.

