



1
00:00:22,330 --> 00:00:25,240
>>> LIVE FROM THE JOHNS HOPKINS
APPLIED PHYSICS LABORATORY IN

2
00:00:25,240 --> 00:00:28,450
LAUREL, MARYLAND, WELCOME TO
NASA'S NEW HORIZONS COUNTDOWN TO

3
00:00:28,450 --> 00:00:29,450
PLUTO.

4
00:00:29,450 --> 00:00:33,330
I'M MIKE BUCKLEY FROM PUBLIC
AFFAIRS JOINED BY DWAYNE BROWN

5
00:00:33,330 --> 00:00:34,840
FROM NASA'S OFFICE OF
COMMUNICATION.

6
00:00:34,840 --> 00:00:35,840
WELCOME.

7
00:00:35,840 --> 00:00:37,860
>> IT'S GOOD TO BE HERE, MIKE.

8
00:00:37,860 --> 00:00:41,640
SINCE ITS LAUNCH IN 2006, NEW
HORIZONS HAS TRAVELED TO THE FAR

9
00:00:41,640 --> 00:00:43,510
REACHES OF THE SOLAR SYSTEM.

10
00:00:43,510 --> 00:00:46,989
WHEN NEW HORIZONS PASSES BY
PLUTO, IT WILL BE NEARLY 3.6

11
00:00:46,989 --> 00:00:50,150
BILLION, THAT'S WITH A "B,"
MILES FROM HOME.

12
00:00:50,150 --> 00:00:53,420
NEW HORIZONS JOINS OTHER NASA
SPACECRAFT UNRAVELING MYSTERIES

13
00:00:53,420 --> 00:00:57,200
IN THE SOLAR SYSTEM AND BEYOND
TO HOPEFULLY ANSWER HOW DID OUR

14
00:00:57,200 --> 00:01:00,440
SOLAR SYSTEM ORIGINATE AND
CHANGE OUR TIME, HOW DID THE

15
00:01:00,440 --> 00:01:05,010
UNIVERSE BEGIN EVOLVE, AND WHAT
WILL BE ITS DESTINY, HOW DID

16
00:01:05,010 --> 00:01:09,280
LIFE ORIGINATE, AND ARE WE
ALONE.

17
00:01:09,280 --> 00:01:11,180
NASA HAS THE SPACECRAFT
EXPLORING TO ANSWER THESE

18
00:01:11,180 --> 00:01:14,790
QUESTIONS BECAUSE WE'RE OUT
THERE.

19
00:01:14,790 --> 00:01:18,420
NEW HORIZONS IS ALREADY SENDING
BACK THE MOST DETAILED IMAGE AND

20
00:01:18,420 --> 00:01:22,040
MEASUREMENTS EVER TAKEN OF PLUTO
AND ITS MOONS, REVEALING

21
00:01:22,040 --> 00:01:25,470
SIGNIFICANT NEW INSIGHTS ABOUT
THE DWARF PLANET.

22

00:01:25,470 --> 00:01:28,210

BUT THIS IS ONLY THE BEGINNING.

23

00:01:28,210 --> 00:01:31,470

SCIENTISTS WILL SEE EVEN MORE
CLEAR DETAIL SINCE THE

24

00:01:31,470 --> 00:01:34,750

SPACECRAFT DRAWS NEARER TO ITS
DESTINATION.

25

00:01:34,750 --> 00:01:38,380

AND NOT ONLY CAN YOU GET THE
LATEST IMAGES, SCIENCE FINDING,

26

00:01:38,380 --> 00:01:41,390

AND MISSION UPDATES HERE ON NASA
TELEVISION FOR THE NEXT SEVERAL

27

00:01:41,390 --> 00:01:45,780

DAYS, JOIN THE CONVERSATION VIA
TWITTER, FACEBOOK, AND OTHER

28

00:01:45,780 --> 00:01:49,940

SOCIAL MEDIA PLATFORMS TALKING
ABOUT THE HISTORIC JULY 14th

29

00:01:49,940 --> 00:01:50,940

FLY-BY.

30

00:01:50,940 --> 00:01:54,220

SEND QUESTIONS AT #PLUTOFLYBY.

31

00:01:54,220 --> 00:01:56,530

AND OF COURSE, ALL MISSION
INFORMATION AND IMAGES ARE

32

00:01:56,530 --> 00:02:00,320

AVAILABLE AT
WWW.NASA.GOV/NEWHORIZONS.

33

00:02:00,320 --> 00:02:05,300

MIKE, I'VE BEEN DEALING WITH
SPACE MISSIONS FOR 30 YEARS.

34

00:02:05,300 --> 00:02:08,860

I AM SO JUICED, PSYCHED TO SHARE
THE SET WITH YOU THESE NEXT

35

00:02:08,860 --> 00:02:10,280

SEVERAL DAYS.

36

00:02:10,280 --> 00:02:11,319

PART OF HISTORY IS PRETTY COOL.

37

00:02:11,319 --> 00:02:13,560

>> IT'S GOING TO BE A GREAT
RIDE.

38

00:02:13,560 --> 00:02:16,480

WE'RE COUNTING DOWN TO NEW
HORIZONS'S HISTORIC FLY BY THE

39

00:02:16,480 --> 00:02:18,069

SOLAR SYSTEM.

40

00:02:18,069 --> 00:02:22,409

WE'RE THREE DAYS AWAY, HALF A
PLUTO DAY, AND HALF A MILLION

41

00:02:22,409 --> 00:02:23,950

MILES FROM LIEUTENANT OH.

42

00:02:23,950 --> 00:02:25,511

SO FAR THIS HAS BEEN AN
INCREDIBLE ADVENTURE.

43

00:02:25,511 --> 00:02:26,511
>> FIVE, FOUR, THREE, TWO --
WE HAVE IGNITION AND LIFTOFF OF

44
00:02:26,511 --> 00:03:33,910
NASA'S NEW HORIZONS SPACECRAFT
ON A DECADES' LONG VOYAGE.

45
00:03:33,910 --> 00:03:37,770
>> BACK WITH US NEW HORIZONS
OPERATION MANAGER, ALICE BOWMAN,

46
00:03:37,770 --> 00:03:41,580
FROM THE REMOTE CENTER AT APL.

47
00:03:41,580 --> 00:03:43,570
ALICE, GOOD MORNING.

48
00:03:43,570 --> 00:03:44,900
>> HI, MIKE.

49
00:03:44,900 --> 00:03:46,720
>> STRAIGHT UP, HOW IS NEW
HORIZONS DOING?

50
00:03:46,720 --> 00:03:49,209
>> OH, THE SPACECRAFT IS DOING
GREAT.

51
00:03:49,209 --> 00:03:53,050
IT'S TAKING LOTS OF SCIENCE DATA
AND SENTENCING ALL BACK TO

52
00:03:53,050 --> 00:03:54,050
EARTH.

53
00:03:54,050 --> 00:03:57,480
>> LET'S LOOK INSIDE THE MISSION
OPERATION CENTER, AND IF WE CAN

54

00:03:57,480 --> 00:03:59,060

-- TELL US WHAT'S THE TEAM UP
TO?

55

00:03:59,060 --> 00:04:02,569

ARE WE IN CONTACT WITH NEW
HORIZONS?

56

00:04:02,569 --> 00:04:04,510

>> WE ARE IN CONTACT WITH NEW
HORIZONS.

57

00:04:04,510 --> 00:04:09,390

WE'RE ACTUALLY UP WITH THE
70-METER STATION AT CAMBERRA.

58

00:04:09,390 --> 00:04:13,530

THIS MORNING WE GOT DOWN OPTICAL
NAVIGATION DATA, WE PROCESSED

59

00:04:13,530 --> 00:04:17,160

THAT AND SENT IT OVER TO THE
NAVIGATION G&C, SORRY, GUNS AND

60

00:04:17,160 --> 00:04:20,989

CONTROL TEAMS, AND SCIENCE
OPERATION TEAMS.

61

00:04:20,989 --> 00:04:24,270

THOSE TEAMS ARE PROCESSING THAT
DATA.

62

00:04:24,270 --> 00:04:28,370

ABOUT 9:00 THIS MORNING, WE SENT
AN UPLINK SIGNAL TO THE REX

63

00:04:28,370 --> 00:04:32,220

EXPERIMENT ON BOARD THE
SPACECRAFT FOR AN OBSERVATION

64

00:04:32,220 --> 00:04:35,940

THAT'S GOING TO HAPPEN ABOUT
1:30 THIS AFTERNOON.

65

00:04:35,940 --> 00:04:38,809

>> ALICE, DWAYNE, WELCOME.

66

00:04:38,809 --> 00:04:41,830

YOU KNOW, THE WORLD IS REALLY
EXCITED, EXCITING TIMES, HOW

67

00:04:41,830 --> 00:04:42,889

DOES THE TEAM FEEL?

68

00:04:42,889 --> 00:04:45,570

>> OH, THE TEAM IS JUST JAZZED
FOR THIS.

69

00:04:45,570 --> 00:04:46,740

WE CAN'T WAIT.

70

00:04:46,740 --> 00:04:51,099

WE'RE USED TO SEEING NUMBERS ON
OUR SCREENS IN THE MISSION

71

00:04:51,099 --> 00:04:52,099

OPERATIONS CENTER.

72

00:04:52,099 --> 00:04:56,400

IT'S JUST FANTASTIC TO SEE THOSE
NUMBERS TURN INTO IMAGES AND

73

00:04:56,400 --> 00:04:57,400

SPECTRA.

74

00:04:57,400 --> 00:04:59,759

>> LET'S -- WHAT'S SOME OF THE
ACTIVITIES, WHAT'S THE TEAM UP

75

00:04:59,759 --> 00:05:01,819
TO THE NEXT DAY OR SO?

76

00:05:01,819 --> 00:05:05,389
>> WE'RE GOING TO CONTINUE TO
GET DOWN OPTICAL NAVIGATION

77

00:05:09,220 --> 00:05:06,389
DATA.

78

00:05:09,220 --> 00:05:12,219
AND WE'RE GOING TO BE WAITING TO
SEE IF WE NEED TO DO A KNOWLEDGE

79

00:05:12,219 --> 00:05:13,579
UPDATE.

80

00:05:13,579 --> 00:05:14,610
>> BUSY TIME.

81

00:05:14,610 --> 00:05:16,180
BUSY TIME GETTING CLOSE.

82

00:05:16,180 --> 00:05:17,319
>> THANKS, ALICE.

83

00:05:17,319 --> 00:05:18,319
>> EXCITING.

84

00:05:18,319 --> 00:05:21,270
>> YOU KNOW, ALICE'S TEAM HAS
ITS EYES ON NEW HORIZONS.

85

00:05:21,270 --> 00:05:23,360
WHAT'S ANOTHER COOL WAY TO
FOLLOW WHAT THE SPACECRAFT IS --

86

00:05:23,360 --> 00:05:25,159

THE SPACECRAFT IS UP TO?

87

00:05:25,159 --> 00:05:26,330

HERE'S AN ANSWER.

88

00:05:26,330 --> 00:05:30,960

>> DID YOU KNOW YOU CAN RIDE
ALONG WITH NEW HORIZONS?

89

00:05:30,960 --> 00:05:31,960

YOU CAN.

90

00:05:31,960 --> 00:05:35,199

THIS IS PLUTO IN A MINUTE.

91

00:05:35,199 --> 00:05:37,789

>> ALL RIGHT.

92

00:05:37,789 --> 00:05:42,599

SO YOU CAN'T ACTUALLY HITCH A
RIDE WITH NEW HORIZONS TO PLUTO,

93

00:05:42,599 --> 00:05:44,419

BUT YOU CAN DO -- PLUTO, BUT YOU
CAN DO THE NEXT BEST THING,

94

00:05:44,419 --> 00:05:47,870

FOLLOW IN REAL TIME WITH A
SIMULATION CALLED "EYES ON

95

00:05:47,870 --> 00:05:48,870

PLUTO."

96

00:05:48,870 --> 00:05:51,150

PART OF "EYES ON THE SOLAR
SYSTEM" FROM NASA'S JET

97

00:05:51,150 --> 00:05:55,039

PROPULSION LABORATORY, AN

AMAZING VIEW OF EVERYTHING IN

98

00:05:55,039 --> 00:05:58,909

THE SOLAR SYSTEM NOW INCLUDING
MISSIONS LIKE NEW HORIZONS.

99

00:05:58,909 --> 00:06:01,919

THE PROGRAM FOLLOWS A PREDICTED
SIMULATION.

100

00:06:01,919 --> 00:06:04,689

THAT IS, IT FOLLOWS THE
TRAJECTORY AND POINTING OF THE

101

00:06:04,689 --> 00:06:07,849

SPACECRAFT AS IT IS PLANNED FOR
NOMINAL SITUATION.

102

00:06:07,849 --> 00:06:11,219

USING THE DATA FROM THE NEW
HORIZONS TEAM, THE TEAM HAS

103

00:06:11,219 --> 00:06:14,339

CREATED A BEAUTIFUL SIMULATION
OF WHAT EXACTLY NEW HORIZONS IS

104

00:06:14,339 --> 00:06:15,360

SEEING RIGHT NOW.

105

00:06:15,360 --> 00:06:18,759

BUT IT'S SO MUCH MORE THAN JUST
A SHOT OF PLUTO AND MOONS MOVING

106

00:06:18,759 --> 00:06:21,280

TOWARD THE CAMERA, I.E., YOUR
COMPUTER SCREEN.

107

00:06:21,280 --> 00:06:24,770

SHOWS WHAT INSTRUMENT ON THE
SPACECRAFT ARE WORKING AND WHEN

108

00:06:24,770 --> 00:06:27,430

AND WHAT THEIR TARGET IS AND
EXACTLY WHERE THEY'RE SHOOTING

109

00:06:27,430 --> 00:06:28,669

AT ANY GIVEN TIME.

110

00:06:28,669 --> 00:06:30,830

YOU SEE WHEN THE CAMERA IS
TAKING PICTURES, WHEN THE

111

00:06:30,830 --> 00:06:34,119

INSTRUMENTS ARE TURNED ON, AND
WHEN THE SPACECRAFT IS TURNED

112

00:06:34,119 --> 00:06:36,860

WITH ITS ANTENNA FACING THE
EARTH TO BEAM BACK DATA.

113

00:06:36,860 --> 00:06:39,189

YOU CAN EVEN SEE THE SPACE AT
WHICH THE CAMERAS AND

114

00:06:39,189 --> 00:06:40,189

INSTRUMENTS ARE AIMED.

115

00:06:40,189 --> 00:06:43,360

IF YOU WANT TO FOLLOW ALONG IN
REAL TIME OR CHECK OUT THE

116

00:06:43,360 --> 00:06:47,399

FLY-BY SEQUENCE NOW BECAUSE YOU
CAN'T WAIT UNTIL THE 14th, GO TO

117

00:06:47,399 --> 00:06:50,139

EYES.NASA.GOV AND DOWNLOAD "EYES
ON PLUTO."

118

00:06:50,139 --> 00:06:53,180
FOR MORE, CHECK OUT THE NEW
HORIZONS WEBSITE.

119
00:06:53,180 --> 00:06:57,930
YOU CAN GO TO FLY BY AND COME
BACK HERE EVERY DAY FOR MORE

120
00:06:57,930 --> 00:07:13,399
"PLUTO IN A MINUTE."

121
00:07:13,399 --> 00:07:16,169
>> JOINING US FOR THE SCIENCE
UPDATE IS JOHN SPENCER, A NEW

122
00:07:16,169 --> 00:07:18,940
HORIZONS CO-INVESTIGATOR FROM
SOUTHWEST RESEARCH INSTITUTE.

123
00:07:18,940 --> 00:07:20,189
JOHN WELCOME TO THE COUNTDOWN.

124
00:07:20,189 --> 00:07:21,189
>> THANK YOU, MIKE.

125
00:07:21,189 --> 00:07:24,869
>> I SHOULD POINT OUT THAT YOU
LED THE NEW HORIZONS HAZARDOUS

126
00:07:24,869 --> 00:07:29,419
INVESTIGATION TEAM WHICH I GUESS
HAD A BUSY IF NOT EVENTFUL AND

127
00:07:29,419 --> 00:07:32,300
SUSPENSEFUL SEVEN WEEKS OVER MAY
AND JUNE.

128
00:07:32,300 --> 00:07:34,949
TELL US WHAT THAT INVESTIGATION
WAS ABOUT.

129

00:07:34,949 --> 00:07:36,059

>> SURE.

130

00:07:36,059 --> 00:07:38,809

WE'D BEEN LOOKING FOR MANY YEARS
AT THE PLUTO SYSTEM WITH THE

131

00:07:38,809 --> 00:07:42,649

HUBBLE TELESCOPE, THE BEST VIEWS
WE COULD GET BEFORE NEW

132

00:07:42,649 --> 00:07:43,649

HORIZONS.

133

00:07:43,649 --> 00:07:46,710

AND IT SEEMED LIKE THE CLOSER WE
LOOKED WITH HUBBLE, THE MORE

134

00:07:46,710 --> 00:07:47,919

MOONS WE FOUND.

135

00:07:47,919 --> 00:07:51,389

WE FOUND A COUPLE IN 2005.

136

00:07:51,389 --> 00:07:54,809

THIS IS -- AS WELL AS THE BIG
MOON THAT WE'VE KNOWN ABOUT FOR

137

00:07:54,809 --> 00:07:55,809

A LONG TIME.

138

00:07:55,809 --> 00:08:00,939

AND THEN WE WENT BACK IN 2011,
FOUND ANOTHER MOON, AND IN 2012

139

00:08:00,939 --> 00:08:04,599

WE WENT BACK AND FOUND A FIFTH
MOON, STYX.

140

00:08:04,599 --> 00:08:07,529

AND THAT WAS ABOUT AS HARD AS WE
COULD LOOK WITH THE HUBBLE

141

00:08:07,529 --> 00:08:08,529

TELESCOPE.

142

00:08:08,529 --> 00:08:11,119

WE WERE CONCERNED THAT EVERY
TIME WE LOOKED CLOSER WE'D FIND

143

00:08:11,119 --> 00:08:12,119

MORE MOONS.

144

00:08:12,119 --> 00:08:14,099

MAYBE THERE'S A GAZILLION MOONS
THERE.

145

00:08:14,099 --> 00:08:18,089

WE MIGHT NOT RUN INTO THE MOON
BUT THE DEBRIS THAT WOULD BE

146

00:08:18,089 --> 00:08:22,280

EJECTED BY METEORITE COLLISIONS
BECAUSE THEY'RE GOING SO FAST,

147

00:08:22,280 --> 00:08:25,689

IT COULD CAUSE DAMAGE TO THE
SPACECRAFT.

148

00:08:25,689 --> 00:08:30,069

SO OUR PLAN HAS BEEN THAT AS WE
APPROACH PLUTO, WE WOULD TAKE A

149

00:08:30,069 --> 00:08:34,480

SERIES OF VERY LONG EXPOSURE
PICTURES OVER A COUPLE OF

150

00:08:34,480 --> 00:08:36,500
MONTHS, AS SOON AS WE WERE CLOSE
ENOUGH THAT WE COULD DO BETTER

151
00:08:36,500 --> 00:08:41,469
THAN HUBBLE HAD DONE AND SEE IF
WE COULD SEE ANYTHING ELSE.

152
00:08:41,469 --> 00:08:42,469
WE DID THAT.

153
00:08:42,469 --> 00:08:47,260
WE STARTED IN MAY AND FINISHED
JUST OVER A WEEK AGO TAKING

154
00:08:47,260 --> 00:08:51,350
CLOSER AND CLOSER PICTURES WITH
VERY LONG EXPOSURES AND RAPIDLY

155
00:08:51,350 --> 00:08:54,650
ANALYZING THEM TO SEE IF WE
MIGHT SEE ANY NEW MOONS THAT

156
00:08:54,650 --> 00:08:56,540
MIGHT BE DANGEROUS TO THE
SPACECRAFT.

157
00:08:56,540 --> 00:08:59,090
AND WE FOUND NOTHING.

158
00:08:59,090 --> 00:09:04,970
WE WERE ABLE TO SAY THAT THERE
WERE PROBABLY NO MOONS ANY

159
00:09:04,970 --> 00:09:09,200
BRIGHTER THAN 10, 20, 30 TIMES
FAINTER THAN STYX IN THE SYSTEM.

160
00:09:09,200 --> 00:09:11,710
THERE MIGHT BE TINY STUFF, BUT

IT WOULD BE LESS THAN A MILE

161

00:09:11,710 --> 00:09:12,710

ACROSS.

162

00:09:12,710 --> 00:09:16,460

>> I'LL POINT OUT FIRST THAT THE
TEAM -- YOU HAD PLANS IN PLACE,

163

00:09:16,460 --> 00:09:19,480

BACKUP PLANS IN PLACE HAD YOU
SEEN SOMETHING THAT NEW HORIZONS

164

00:09:19,480 --> 00:09:22,110

COULD HAVE GONE ON ANOTHER PATH
OR TURNED THE SPACECRAFT TO

165

00:09:22,110 --> 00:09:24,380

PROTECT ITSELF HAD YOU FOUND†--
>> RIGHT.

166

00:09:24,380 --> 00:09:26,500

WE HAD ALTERNATIVES, BUT WE
PREFERRED TO STICK WITH THE

167

00:09:26,500 --> 00:09:29,050

NOMINAL PLAN BECAUSE THAT WAS
THE BEST AND GIVE US THE BEST

168

00:09:29,050 --> 00:09:30,050

SCIENCE.

169

00:09:30,050 --> 00:09:33,710

WE'RE VERY HAPPY THAT WE CAN
CONTINUE AS ORIGINALLY PLANNED

170

00:09:33,710 --> 00:09:36,120

AND GET THE BEST SCIENCE WE
POSSIBLY CAN FROM THE PLUTO

171
00:09:36,120 --> 00:09:37,120
SYSTEM.

172
00:09:37,120 --> 00:09:39,650
>> I'M CURIOUS THAT YOU SAID --
YOU KNOW, ABOUT NOT FINDING

173
00:09:39,650 --> 00:09:41,480
MOONS, SEEING THEM, AND THERE
WAS PROBABLY TALK FROM THE TEAM

174
00:09:41,480 --> 00:09:43,030
WOULD WE FIND SOMETHING OR NOT.

175
00:09:43,030 --> 00:09:44,350
YOU DIDN'T FIND ANY MORE MOONS.

176
00:09:44,350 --> 00:09:45,380
WERE YOU SURPRISED?

177
00:09:45,380 --> 00:09:46,430
>> I WAS SURPRISED.

178
00:09:46,430 --> 00:09:49,460
I EXPECTED WE'D FIND AT LEAST A
COUPLE.

179
00:09:49,460 --> 00:09:50,820
THIS IS TOTALLY UNKNOWN
TERRITORY.

180
00:09:50,820 --> 00:09:54,150
THE PLUTO SYSTEM IS NOWHERE
WE'VE EVER BEEN DVR.

181
00:09:54,150 --> 00:09:55,150
WE'VE NEVER BEEN TO -- BEEN
BEFORE.

182

00:09:55,150 --> 00:09:56,730

WE'VE NEVER BEEN TO ANYTHING
LIKE THE SYSTEM BEFORE.

183

00:09:56,730 --> 00:09:58,370

WE'RE LEARNING WHAT THE RULES
ARE.

184

00:09:58,370 --> 00:10:03,490

AND THE RULES SEEM TO BE BIG
MOONS AND -- NOT MANY SMALLER

185

00:10:03,490 --> 00:10:04,490

ONES.

186

00:10:04,490 --> 00:10:05,870

AND WE'RE LEARNING SOMETHING
ALREADY.

187

00:10:05,870 --> 00:10:08,360

>> LET'S TALK ABOUT PLUTO AND
SHARON.

188

00:10:08,360 --> 00:10:10,130

YOU GUYS ARE FINISHING THE
HAZARDS SEARCH.

189

00:10:10,130 --> 00:10:12,339

WHAT DO YOU THINK ABOUT THE
IMAGES?

190

00:10:12,339 --> 00:10:13,590

>> OH, MY GOODNESS.

191

00:10:13,590 --> 00:10:17,210

IT'S AMAZING WHAT WE'RE SEEING
NOW.

192

00:10:17,210 --> 00:10:19,630

IT WAS A GRADUAL APPROACH, AND
EVERY PICTURE OF JUST A LITTLE

193

00:10:19,630 --> 00:10:20,630

BETTER.

194

00:10:20,630 --> 00:10:23,970

NOW EVERY DAY, WE SEE A WHOLE
NEW VIEW OF PLUTO TELLING US

195

00:10:23,970 --> 00:10:25,630

THING WE NEVER KNEW BEFORE.

196

00:10:25,630 --> 00:10:29,160

AND WE'RE SEEING CRAZY BLACK AND
WHITE PATTERNS.

197

00:10:29,160 --> 00:10:31,330

WE HAVE NO IDEA WHAT THOSE MEAN.

198

00:10:31,330 --> 00:10:33,620

AND WE'RE SEEING A LOT OF
CIRCULAR THINGS AND WONDERING

199

00:10:33,620 --> 00:10:36,310

ARE THOSE CRATERS OR SOMETHING
ELSE.

200

00:10:36,310 --> 00:10:39,540

WE SAW CIRCULAR FEATURES ON
NEPTUNE'S MOON TRITAN THAT ARE

201

00:10:39,540 --> 00:10:40,860

NOT CRATER.

202

00:10:40,860 --> 00:10:44,010

WE SHOULD KNOW IN A FEW DAYS.

203

00:10:44,010 --> 00:10:48,161

NOW WE'RE HAVING AN AWFUL LOT OF
FUN SPECULATING, WHAT DO YOU

204

00:10:48,161 --> 00:10:50,050

THINK THAT IS, WHAT DO YOU THINK
THAT IS.

205

00:10:50,050 --> 00:10:51,959

AND IT'S AMAZING.

206

00:10:51,959 --> 00:10:52,959

>> EXCELLENT.

207

00:10:52,959 --> 00:10:54,860

>> JOHN, THANKS.

208

00:10:54,860 --> 00:10:57,769

>> THANK YOU, JOHN.

209

00:10:57,769 --> 00:11:00,660

>> PLUTO IS UNUSUALLY DIFFICULT
TO STUDY FROM EARTH BECAUSE IT

210

00:11:00,660 --> 00:11:02,950

IS SO SMALL AND FAR AWAY.

211

00:11:02,950 --> 00:11:05,440

COULD MISSION RESULTS PROVIDE
ANSWERS TO QUESTIONS ABOUT HOW

212

00:11:05,440 --> 00:11:07,470

OUR SOLAR SYSTEM FORMED?

213

00:11:07,470 --> 00:11:11,600

LET'S HEAR FROM SOMEONE WHO
CAN'T WAIT TO SEE PLUTO UP CLOSE

214

00:11:11,600 --> 00:11:14,720

AND PERSONAL.

215

00:11:14,720 --> 00:11:20,720

>> HI, I'M JAMES GREEN, I'M THE
DIRECTOR OF THE PLANETARY

216

00:11:20,720 --> 00:11:23,820

SCIENCE DIVISION AT NASA
HEADQUARTERS.

217

00:11:23,820 --> 00:11:26,769

AND THE NEW HORIZONS MISSION IS
WITHIN MY ORGANIZATION.

218

00:11:26,769 --> 00:11:30,880

>> WE HAVE IGNITION AND LIFTOFF
OF NASA'S NEW HORIZONS

219

00:11:30,880 --> 00:11:35,280

SPACECRAFT ON A DECADES' LONG
VOYAGE TO VISIT THE PLANET PLUTO

220

00:11:35,280 --> 00:11:36,610

AND THEN BEYOND.

221

00:11:36,610 --> 00:11:40,590

>> NEW HORIZONS IS SPEEDING
TOWARD PLUTO AT A PHENOMENAL

222

00:11:40,590 --> 00:11:45,820

RATE, 14 KILOMETERS PER SECOND,
BUT YET IT HAS TAKEN YEARS TO

223

00:11:45,820 --> 00:11:47,010

GET TO PLUTO.

224

00:11:47,010 --> 00:11:49,100

WE CAN'T WAIT FOR IT TO GET
THERE.

225

00:11:49,100 --> 00:11:52,950
NOW PLUTO AND OUR UNDERSTANDING
OF IT IS REALLY CHANGING OUR

226
00:11:52,950 --> 00:11:55,970
VIEW OF THE SIZE OF THE SOLAR
SYSTEM.

227
00:11:55,970 --> 00:12:01,510
IN FACT, THE 1990s WE BEGAN TO
OBSERVE PLUTO-LIKE OBJECTS WELL

228
00:12:01,510 --> 00:12:04,090
BEYOND PLUTO.

229
00:12:04,090 --> 00:12:08,620
WE KNOW PLUTO IS ONE OF A FAMILY
OF OBJECTS, WE CALL THOSE

230
00:12:08,620 --> 00:12:09,620
OBJECTS HYPERBELT.

231
00:12:09,620 --> 00:12:12,840
IN FACT, T THE OUTER -- IT IS
THE OUTER SOLAR.

232
00:12:12,840 --> 00:12:18,740
IS FOR THE FIRST TIME WE'LL BE
ABLE TO FLY BY A BRAND NEW

233
00:12:18,740 --> 00:12:19,740
OBJECT.

234
00:12:19,740 --> 00:12:24,810
AN OBJECT THAT'S BEEN FORMING
FOR BILLIONS OF YEARS AND

235
00:12:24,810 --> 00:12:30,460
UNDERSTAND WHAT OUTER PARTS OF
THE SOLAR SYSTEM ARE ALL IT.

236

00:12:30,460 --> 00:12:35,070

NASA MISSIONS AND NEW HORIZONS
IS NO DIFFERENT, REQUIRE

237

00:12:35,070 --> 00:12:36,570

EXCEPTIONAL INDIVIDUALS.

238

00:12:36,570 --> 00:12:41,060

IN FACT, THERE'S SO MANY HEROIC
PEOPLE THAT HAVE GONE IN TO

239

00:12:41,060 --> 00:12:45,360

MAKING THIS MISSION POSSIBLE,
IT'S -- IT'S AN UNBELIEVABLE

240

00:12:45,360 --> 00:12:46,360

VENTURE.

241

00:12:46,360 --> 00:12:49,740

BUT IT IS REALLY THE UNITED
STATES THAT HAS BEEN THE LEADER

242

00:12:49,740 --> 00:12:52,340

IN THE OUTER PLANETS'
EXPLORATION PROGRAM.

243

00:12:52,340 --> 00:12:57,440

THE UNITED STATES IS THE ONLY
COUNTRY THAT HAS SENT MISSIONS

244

00:12:57,440 --> 00:13:00,760

INTO THE OUTER PART OF OUR SOLAR
SYSTEM.

245

00:13:00,760 --> 00:13:03,350

PLANETARY SCIENCE REALLY
PROVIDES I THINK A TREMENDOUS

246

00:13:03,350 --> 00:13:05,540
VALUE TO OUR COUNTRY.

247
00:13:05,540 --> 00:13:11,210
A PLANET
IT'S STILL KIND OF COOL

248
00:13:11,210 --> 00:13:16,120
FAR AWAY
FAR AWAY

249
00:13:16,120 --> 00:13:20,740
>> WELL, WE WANT TO BE ABLE TO
BRING OUR YOUNG STUDENTS ALONG.

250
00:13:20,740 --> 00:13:23,810
WE WANT THEM TO STEP INTO OUR
SHOES.

251
00:13:23,810 --> 00:13:26,260
WE DON'T WANT THE EXPLORATION TO
STOP.

252
00:13:26,260 --> 00:13:29,470
IT'S JUST ONE OF THE INNATE
THINGS THAT WE HAVE IN THE

253
00:13:29,470 --> 00:13:33,270
UNITED STATES, I BELIEVE, IS
THIS EXPLORATION GENE.

254
00:13:33,270 --> 00:13:38,790
WHILE I BELIEVE THE ENCOUNTER OF
PLUTO WITH THE NEW HORIZONS

255
00:13:38,790 --> 00:13:43,130
FLY-BY IS GOING TO BE SO
SPECTACULAR, WE'LL HAVE THE

256
00:13:43,130 --> 00:13:44,130

WORLD'S ATTENTION.

257

00:13:44,130 --> 00:13:46,520

AND NOT JUST FOR A LITTLE BIT.

258

00:13:46,520 --> 00:13:52,220

I BELIEVE IT WILL BE BUILT UP
OVER MANY MONTHS AS WE BEGIN TO

259

00:13:52,220 --> 00:13:54,860

OBSERVE PLUTO, ITS MOONS.

260

00:13:54,860 --> 00:13:59,990

WE MAY EVEN FIND MANY MORE
OBJECTS, PERHAPS RINGS, PERHAPS

261

00:13:59,990 --> 00:14:02,380

OTHER THINGS AWAITING OUR
DISCOVERY.

262

00:14:02,380 --> 00:14:10,500

I THINK THE WORLD WILL SIT UP
AND TAKE NOTICE.

263

00:14:10,500 --> 00:14:12,320

>> HAVE YOU CHECKED YOUR PLUTO
TIME?

264

00:14:12,320 --> 00:14:14,940

THIS IS THE MOMENT DURING DAWN
AND DUSK EACH DAY WHEN THE

265

00:14:14,940 --> 00:14:18,060

ILLUMINATION ON EARTH MATCHES
THAT WAS HIGH NOON ON PLUTO.

266

00:14:18,060 --> 00:14:21,500

AND NASA WANTS TO SEE WHAT PLUTO
TIME LOOKS LIKE IN YOUR AREA.

267

00:14:21,500 --> 00:14:24,400

VISIT THE WEBSITE AND TAG YOUR
PHOTOS WITH THE HASH TAG

268

00:14:24,400 --> 00:14:50,680

#PLUTOTIME.

269

00:14:50,680 --> 00:14:54,370

>> AND AS WE COUNT DOWN TO A
HISTORIC MOMENT FOR OUR NATION

270

00:14:54,370 --> 00:14:56,700

AND THE NATION'S SPACE PROGRAM,
DON'T FORGET YOU CAN GET THE

271

00:14:56,700 --> 00:15:00,560

LATEST IMAGES, SCIENCE FINDINGS,
AND MISSION UPDATES HERE ON NASA

272

00:15:00,560 --> 00:15:02,720

TELEVISION OVER THE NEXT SEVERAL
DAYS.

273

00:15:02,720 --> 00:15:06,180

AND JOIN THE CONVERSATION VIA
TWITTER, FACEBOOK, AND OTHER

274

00:15:06,180 --> 00:15:09,920

SOCIAL MEDIA PLATFORMS TALKING
ABOUT THE HISTORIC JULY 14th

275

00:15:09,920 --> 00:15:10,920

FLY-BY.

276

00:15:10,920 --> 00:15:19,710

AND YES, SEND IN YOUR QUESTIONS
AT #PLUTOFLYBY, AND GO TO

277

00:15:19,710 --> 00:15:21,720

NASA.GOV/NEWHORIZONS.

278

00:15:21,720 --> 00:15:25,420

IF YOU'RE A FAN OF 3D TOYS, MAKE
YOU LIKE THEM, I CERTAINLY LIKE

279

00:15:25,420 --> 00:15:30,700

THEM, YOU CAN GO ON LINE,
THERE'S A ONE-STOP SITE FOR 3D

280

00:15:30,700 --> 00:15:34,920

MODELS, IMAGES, VISUALIZATIONS
ALL FREE.

281

00:15:34,920 --> 00:15:37,500

MIKE, THAT'S THE PRICE EVERYONE
CAN BE HAPPY WITH.

282

00:15:37,500 --> 00:15:38,500

>> I KNOW.

283

00:15:38,500 --> 00:15:39,500

THERE'S SO MUCH ON THERE.

284

00:15:39,500 --> 00:15:41,240

MAKE ONE, MAKE SOME OTHERS, TOO,
TO GET READY FOR THE FLY-BY.

285

00:15:41,240 --> 00:15:43,190

DO IT OURSELVES.

286

00:15:43,190 --> 00:15:45,660

THAT'S THE LATEST FROM NASA'S
NEW HORIZONS MISSION ON PLUTO'S

287

00:15:45,660 --> 00:15:46,660

DOORSTEP.

288

00:15:46,660 --> 00:15:48,850

WE ARE THREE DAYS AND TWO
MILLION MILES TO GO UNTIL THE

289

00:15:48,850 --> 00:15:52,210

FLY-BY, AND THE COUNTDOWN TO
PLUTO IS WINDING DOWN.

290

00:15:52,210 --> 00:15:53,210

I'M MIKE BUCKLEY.

291

00:15:53,210 --> 00:15:54,540

>> I'M DWAYNE BROWN.

292

00:15:54,540 --> 00:15:57,480

>> THANKS FOR WATCHING.