



1
00:00:09,139 --> 00:00:10,139
>>> HELLO, EVERYBODY!

2
00:00:10,139 --> 00:00:11,139
YAY!

3
00:00:11,139 --> 00:00:18,400
EVERYBODY HAVE A SEAT.

4
00:00:18,400 --> 00:00:22,000
WELCOME TO THE WHITE HOUSE.

5
00:00:22,000 --> 00:00:24,550
I LOVE ASTRONOMY NIGHT.

6
00:00:24,550 --> 00:00:31,449
WE HAVE A VERY CLEAR NIGHT TO
ENJOY ASTRONOMY NIGHT.

7
00:00:31,449 --> 00:00:36,150
THIS IS SOME OF THE MOST FUN
THAT I HAVE ON THIS JOB.

8
00:00:36,150 --> 00:00:40,300
THEY NEVER LET ME TINKER WITH
THE TELESCOPES.

9
00:00:40,300 --> 00:00:44,300
THEY DON'T LET ME HOLD THE MOON
ROCKS WHEN YOU GUYS AREN'T

10
00:00:44,300 --> 00:00:45,640
AROUND.

11
00:00:45,640 --> 00:00:47,800
MICHELLE IS DYING TO KNOW HOW
THEY GROW LETTUCE ON THE

12

00:00:47,800 --> 00:00:52,489
INTERNATIONAL SPACE STATION.

13
00:00:52,489 --> 00:00:55,329
WHEN YOU GUYS COME I GET TO HAVE
SOME FUN.

14
00:00:55,329 --> 00:00:58,550
WE HAVE SPACE BUFFS HERE
TONIGHT.

15
00:00:58,550 --> 00:01:02,120
WE HAVE A NUMBER OF MEMBERS OF
CONGRESS, INCLUDING FORMER

16
00:01:02,120 --> 00:01:07,780
ASTRONAUT SENATOR BILL NELSON
FROM THE GREAT STATE OF FLORIDA.

17
00:01:07,780 --> 00:01:11,650
MY SCIENCE ADVISER JOHN HOLDEREN
IS HERE.

18
00:01:11,650 --> 00:01:15,600
JOHN, WHERE IS HE?

19
00:01:15,600 --> 00:01:18,500
JOHN'S A SUPERSTAR IN THIS
CROWD.

20
00:01:18,500 --> 00:01:21,130
THE HEAD OF NASA, CHARLIE
BOLDEN.

21
00:01:21,130 --> 00:01:26,820
11 OF HIS FELLOW ASTRONAUTS.

22
00:01:26,820 --> 00:01:29,299
MAY JAMISON, THE FIRST
AFRICAN-AMERICAN WOMAN IN SPACE,

23
00:01:29,299 --> 00:01:32,380
IS HERE.

24
00:01:32,380 --> 00:01:37,689
WE'VE GOT BILL NYE THE SCIENCE
GUY.

25
00:01:37,689 --> 00:01:42,500
WE'VE GOT THE MYTHBUSTERS IN THE
HOUSE.

26
00:01:42,500 --> 00:01:51,710
BUT THE MOST IMPORTANT THING WE
HAVE IN ADDITION TO THIS GUY IS

27
00:01:51,710 --> 00:01:56,659
THE YOUNG PEOPLE WHO ARE HERE.

28
00:01:56,659 --> 00:02:00,950
YOUNG PEOPLE FROM ACROSS THE
COUNTRY WHO ARE ALREADY FOCUSED

29
00:02:00,950 --> 00:02:03,590
ON SOME OF THE GREATEST
MYSTERIES OF UNIVERSE.

30
00:02:03,590 --> 00:02:05,960
I'M GOING TO BEGIN WITH A QUICK
STORY.

31
00:02:05,960 --> 00:02:11,549
A LONG TIME AGO IN A GALAXY FAR,
FAR AWAY†-- ACTUALLY, IT WAS IN

32
00:02:11,549 --> 00:02:13,420
BROOKLYN.

33
00:02:13,420 --> 00:02:18,400

A 14-YEAR-OLD ASKED HIS PARENTS,
WHAT ARE THE STARS?

34

00:02:18,400 --> 00:02:22,739

HIS PARENTS REPLIED, THEY'RE
LIGHTS IN THE SKY, KID.

35

00:02:22,739 --> 00:02:25,000

THE ANSWER DID NOT SATISFY THAT
YOUNG MAN.

36

00:02:25,000 --> 00:02:27,850

SO HE SET OUT TO ANSWER HIS
ENDLESS QUESTIONS ABOUT THE

37

00:02:27,850 --> 00:02:30,580

STARS AND THE PLANET AND THE
POSSIBILITIES OF

38

00:02:30,580 --> 00:02:32,670

EXTRA-TERRESTRIAL LIFE.

39

00:02:32,670 --> 00:02:37,210

AND CARL SAGAN GREW UP TO BECOME
AN ASTRONOMER WHO ENLARGED THIS

40

00:02:37,210 --> 00:02:41,330

COUNTRY'S IMAGINATION AND SENSE
OF WONDER ABOUT THE DEPTHS OF

41

00:02:41,330 --> 00:02:43,769

OUTER SPACE.

42

00:02:43,769 --> 00:02:47,840

WE'VE GOT SOME YOUNG AMERICANS
HERE TONIGHT WITH THAT SAME KIND

43

00:02:47,840 --> 00:02:50,150

OF ADVENTUROUS SPIRIT.

44

00:02:50,150 --> 00:02:55,300

WHEN KUMAR WAS 6 YEARS OLD AND
HE FOUND AN ENCYCLOPEDIA ABOUT

45

00:02:55,300 --> 00:02:57,400

FAMOUS SCIENTISTS LYING AROUND
THE HOUSE.

46

00:02:57,400 --> 00:03:01,000

HE THINKS THEY WERE LYING
AROUND, PROBABLY HIS PARENTS SET

47

00:03:01,000 --> 00:03:04,769

IT OUT HOPING HE WAS GOING TO
RUN INTO IT.

48

00:03:04,769 --> 00:03:08,400

AND HE'S BEEN FASCINATED WITH
OUTER SPACE EVER SINCE.

49

00:03:08,400 --> 00:03:11,239

FOR YEARS, EVERY SATURDAY
MORNING, HIS PARENTS DROVE HIM

50

00:03:11,239 --> 00:03:16,720

AN HOUR TO AN ASTRO PHYSICS LAB
FOR ASK A SCIENTIST CLASS.

51

00:03:16,720 --> 00:03:22,110

BEFORE LONG WITH RESEARCHERS HE
MET THERE TO STUDY GRAVITATIONAL

52

00:03:22,110 --> 00:03:25,830

LENSING OF QUASARS.

53

00:03:25,830 --> 00:03:29,409

THAT IS NOT WHAT I WAS THINKING
ABOUT AT HIS AGE.

54

00:03:29,409 --> 00:03:35,569
HE WAS A GLOBAL FINALIST IN THE
GOOGLE SCIENCE FAIR, NOT ONCE,

55
00:03:35,569 --> 00:03:36,569
BUT TWICE.

56
00:03:36,569 --> 00:03:38,239
SO YOU KNOW HE'S GOING TO DO
SOME IMPORTANT THINGS.

57
00:03:38,239 --> 00:03:44,879
GIVE HIM A BIG ROUND OF
APPLAUSE.

58
00:03:44,879 --> 00:03:50,060
WITH HELP FROM THEIR COACHES,
THE RCS ROCKETRY CHAMPIONS OF

59
00:03:50,060 --> 00:03:52,370
RUSSELLVILLE, ALABAMA, WHERE ARE
YOU?

60
00:03:52,370 --> 00:03:53,370
YOU BACK THERE?

61
00:03:53,370 --> 00:03:55,739
THERE YOU GO.

62
00:03:55,739 --> 00:03:58,110
STAND UP, GUYS.

63
00:03:58,110 --> 00:04:03,930
THEY BUILT A ROCKET THAT FLIES
EGGS, OR AT LEAST ONE EGG,

64
00:04:03,930 --> 00:04:07,150
NEARLY 1,000 FEET INTO THE AIR
AND RETURNS TO THE EARTH

65

00:04:07,150 --> 00:04:10,799

UNBROKEN IN UNDER A MINUTE.

66

00:04:10,799 --> 00:04:13,761

THEY BEAT HUNDREDS OF OTHER
TEAMS TO TAKE FIRST PLACE IN THE

67

00:04:13,761 --> 00:04:17,390

AMERICA AND INTERNATIONAL
ROCKETRY CHALLENGES.

68

00:04:17,390 --> 00:04:19,579

WE ARE VERY PROUD OF YOU,
GENTLEMEN.

69

00:04:19,579 --> 00:04:20,849

AND LADIES.

70

00:04:20,849 --> 00:04:24,210

VERY GOOD JOB.

71

00:04:24,210 --> 00:04:28,240

FROM THE TIME SHE WAS YOUNG
PHOEBE KIN SELL MAN SPENT THE

72

00:04:28,240 --> 00:04:32,039

NIGHT ON HER GRABBED FATHER'S
DRIVEWAY STARING AT STARS

73

00:04:32,039 --> 00:04:34,030

THROUGH A TELESCOPE.

74

00:04:34,030 --> 00:04:39,080

SHE SPENT SUMMERS AT SPACE CAMP
AT NASA JOHNSON SPACE CENTER AND

75

00:04:39,080 --> 00:04:41,130

HER DREAM IS TO BECOME AN
ASTRONAUT.

76

00:04:41,130 --> 00:04:43,720

I THINK SHE SPEAKS FOR MANY OF
US WHEN SHE SAYS ONE OF HER

77

00:04:43,720 --> 00:04:45,840

FAVORITE INSTAGRAM ACCOUNTS IS
SCOTT KELLY'S.

78

00:04:45,840 --> 00:04:51,150

SPACE IS A HUMBLING THING,
PHOEBE SAYS.

79

00:04:51,150 --> 00:04:55,130

YOU CAN'T GET TOO EAGER TO RULE
THE ENTIRE UNIVERSE BUT PHOEBE'S

80

00:04:55,130 --> 00:04:57,220

ON IT.

81

00:04:57,220 --> 00:04:58,220

WHERE'S PHOEBE?

82

00:04:58,220 --> 00:05:04,900

STAND UP, PHOEBE, SO EVERYBODY
CAN GIVE YOU A BIG ROUND OF

83

00:05:13,289 --> 00:05:05,900

APPLAUSE.

84

00:05:13,289 --> 00:05:17,289

SO THESE ARE EXAMPLES OF THE
EXTRAORDINARY YOUNG PEOPLE THAT

85

00:05:17,289 --> 00:05:18,900

WE HAVE HERE TODAY.

86

00:05:18,900 --> 00:05:24,750

PHOEBE'S GIVEN PRETTY WISE

ADVICE FOR A 17-YEAR-OLD.

87
00:05:24,750 --> 00:05:28,090
YOUNG PEOPLE LIKE PHOEBE SHOULD
ENCOURAGE ALL OF US TO HELP OUR

88
00:05:28,090 --> 00:05:31,800
YOUNG PEOPLE SET THEIR SIGHTS AS
HIGH AS THEY WANT.

89
00:05:31,800 --> 00:05:34,800
WE NEED TEACHERS TO LIGHT A
SPARK OF CURIOSITY IN YOUNG

90
00:05:34,800 --> 00:05:38,190
MINDS AND WE'VE GOT SOME
OUTSTANDING TEACHERS HERE TODAY.

91
00:05:38,190 --> 00:05:40,969
WE NEED PARENTS TO LEAVE
ENCYCLOPEDIAS OF FAMOUS

92
00:05:40,969 --> 00:05:45,779
SCIENTISTS LYING AROUND THE
HOUSE OR HELP TURN HOME INTO AN

93
00:05:45,779 --> 00:05:48,200
IDEAS LABORATORY.

94
00:05:48,200 --> 00:05:51,219
WE NEED TO INSPIRE MORE YOUNG
PEOPLE TO ASK ABOUT THE STARS

95
00:05:51,219 --> 00:05:55,469
AND BEGIN THAT LIFETIME QUEST TO
BECOME THE NEXT GREAT SCIENTIST

96
00:05:55,469 --> 00:05:59,469
OR INVENTOR OR ENGINEER OR
ASTRONAUT.

97

00:05:59,469 --> 00:06:03,409

WE HAVE TO WATCH FOR AND
CULTIVATE THE COURAGE THOSE

98

00:06:03,409 --> 00:06:08,020

GLIMMERS OF CURIOSITY AND
POSSIBILITY, NOT TO SQUELCH

99

00:06:08,020 --> 00:06:12,419

THEM, BECAUSE NOT ONLY ARE THE
YOUNG PEOPLE'S FUTURES AT STAKE,

100

00:06:12,419 --> 00:06:17,180

BUT OUR OWN IS AT STAKE.

101

00:06:17,180 --> 00:06:19,850

THAT'S ONE OF THE REASONS MY
ADMINISTRATION'S WORKED SO HARD

102

00:06:19,850 --> 00:06:24,339

TO ENCOURAGE KIDS TO ENTER STEM
FIELDS, ESPECIALLY YOUNG WOMEN,

103

00:06:24,339 --> 00:06:26,380

WHO ARE TOO OFTEN
UNDERREPRESENTED IN THESE

104

00:06:26,380 --> 00:06:27,780

FIELDS.

105

00:06:27,780 --> 00:06:33,010

WE'RE HALFWAY†--
[CHEERS AND APPLAUSE]

106

00:06:33,010 --> 00:06:36,570

WE ARE HALFWAY TO MY GOAL OF
TRAINING 100,000 NEW STEM

107

00:06:36,570 --> 00:06:39,310
TEACHERS BY THE END OF THE
DECADE.

108
00:06:39,310 --> 00:06:42,500
WE'RE ON TRACK TO CONNECT 99% OF
OUR STUDENTS TO HIGH-SPEED

109
00:06:42,500 --> 00:06:45,110
INTERNET BEFORE THE END OF THE
DECADE.

110
00:06:45,110 --> 00:06:48,210
OVER THE PAST SIX YEARS, OUR
EDUCATE TO INNOVATE CAMPAIGN HAS

111
00:06:48,210 --> 00:06:52,950
RAISED \$1 BILLION TO SUPPORT
STEM PROGRAMS NATIONWIDE,

112
00:06:52,950 --> 00:06:55,979
INCLUDING 80 OTHER ASTRONOMY
NIGHTS HAPPENING RIGHT NOW ALL

113
00:06:55,979 --> 00:06:57,680
ACROSS THE COUNTRY.

114
00:06:57,680 --> 00:07:01,820
SO TONIGHT I'M PROUD TO ANNOUNCE
NEW COMMITMENTS BY CITIES AND

115
00:07:01,820 --> 00:07:04,300
ORGANIZATIONS ALL OVER THE
COUNTRY TO EXPOSE EVEN MORE

116
00:07:04,300 --> 00:07:07,870
STUDENTS AND THEIR PARENTS TO
STEM EDUCATION.

117
00:07:07,870 --> 00:07:12,160

BAYLOR IS LAUNCHING A NATIONAL
EFFORT TO HELP 100,000 AMERICAN

118

00:07:12,160 --> 00:07:16,030

PARENTS AND CHILDREN WORK ON
SCIENCE AND ENGINEERING PROJECTS

119

00:07:16,030 --> 00:07:17,320

TOGETHER.

120

00:07:17,320 --> 00:07:20,680

MORE THAN 300 FOUNDATIONS,
MUSEUMS, LIBRARIES AND SCHOOLS

121

00:07:20,680 --> 00:07:23,070

ACROSS THE COUNTRY ARE
PARTNERING TO BRING HANDS-ON

122

00:07:23,070 --> 00:07:26,150

SCIENCE PROGRAMMING TO STUDENTS
WHO DON'T HAVE IT.

123

00:07:26,150 --> 00:07:29,910

EIGHT OBSERVATORIES IN HAWAII
WILL OFFER ALL THE RESIDENTS OF

124

00:07:29,910 --> 00:07:32,830

THAT STATE FREE GUIDED TOURS.

125

00:07:32,830 --> 00:07:34,860

THEY DIDN'T DO THAT WHEN I WAS
IN HIGH SCHOOL, WISH WE'D

126

00:07:34,860 --> 00:07:36,959

THOUGHT THAT UP EARLIER.

127

00:07:36,959 --> 00:07:39,279

BUT THESE ARE JUST A FEW
EXAMPLES OF THE WORK THAT'S

128

00:07:39,279 --> 00:07:41,590

BEING DONE ALL ACROSS THE
COUNTRY AND I HOPE THAT MORE ARE

129

00:07:41,590 --> 00:07:44,390

GOING TO FOLLOW THE LEADS OF
THESE OUTSTANDING ORGANIZATIONS.

130

00:07:44,390 --> 00:07:47,580

BECAUSE THAT'S HOW WE'RE GOING
TO MAKE SURE OUR NEXT GENERATION

131

00:07:47,580 --> 00:07:53,310

OF EXPLORERS TAKE THIS EVEN
FARTHER THAN WE'RE GOING TODAY.

132

00:07:53,310 --> 00:07:55,860

YOU KNOW, A FEW HOURS AGO I GOT
A CHANCE TO TALK TO THE

133

00:07:55,860 --> 00:07:59,029

ASTRONAUTS UP ON THE
INTERNATIONAL SPACE STATION.

134

00:07:59,029 --> 00:08:03,120

WHERE SCOTT KELLY IS LIVING FOR
AN ENTIRE YEAR.

135

00:08:03,120 --> 00:08:07,470

LAST MONTH NASA FOUND WATER
FLOWING ON MARS.

136

00:08:07,470 --> 00:08:12,149

EARLIER THIS YEAR WE MAPPED
PLUTO IN HIGH RESOLUTION.

137

00:08:12,149 --> 00:08:14,830

IN RECENT YEARS WE'VE DISCOVERED
THE FIRST EARTH-SIZED PLANET

138

00:08:14,830 --> 00:08:18,190

ORBITING A STAR IN A DISTANT
GALAXY.

139

00:08:18,190 --> 00:08:21,539

WE'VE SEEN SLIPPED THE OUTERMOST
GRASP OF OUR SOLAR SYSTEM WITH

140

00:08:21,539 --> 00:08:25,589

VOYAGER I, THE FIRST HUMAN-MADE
OBJECT TO VENTURE INTO

141

00:08:25,589 --> 00:08:27,289

INTERSTELLAR SPACE.

142

00:08:27,289 --> 00:08:31,600

IN 2017 WITH THE HELP OF
AMERICAN SPACE COMPANIES OUR

143

00:08:31,600 --> 00:08:34,910

ASTRONAUTS WILL ONCE AGAIN
LAUNCH TO SPACE, DIRECTLY FROM

144

00:08:34,910 --> 00:08:38,960

AMERICAN SOIL, AND TODAY NASA'S
DEVELOPING THE CAPABILITIES TO

145

00:08:38,960 --> 00:08:44,140

SEND HUMANS TO MARS IN THE
2030s.

146

00:08:44,140 --> 00:08:50,390

THAT
MEANS THAT SOME OF THE

147

00:08:50,390 --> 00:08:54,430

YOUNG PEOPLE WHO ARE HERE
TONIGHT MIGHT BE WORKING ON THAT

148

00:08:54,430 --> 00:08:56,470

PROJECT.

149

00:08:56,470 --> 00:09:00,500

SOME OF YOU MIGHT BE ON YOUR WAY
TO MARS.

150

00:09:00,500 --> 00:09:02,360

AMERICA CAN DO ANYTHING.

151

00:09:02,360 --> 00:09:06,410

WE'VE JUST GOT TO KEEP ON
ENCOURAGING EVERY NEW GENERATION

152

00:09:06,410 --> 00:09:11,270

TO EXPLORE AND INVENT AND CREATE
AND DISCOVER, WE'VE GOT TO KEEP

153

00:09:11,270 --> 00:09:14,150

ENCOURAGING SOME YOUNG KID IN
BROOKLYN OR BUDDING ROCKET

154

00:09:14,150 --> 00:09:17,590

SCIENTIST IN ALABAMA OR THAT
YOUNG GIRL WHO'S DREAMING TO

155

00:09:17,590 --> 00:09:19,190

BECOME AN ASTRONAUT.

156

00:09:19,190 --> 00:09:22,700

BECAUSE AS LONG AS YOUNG PEOPLE
LIKE SO MANY OF YOU WHO ARE HERE

157

00:09:22,700 --> 00:09:28,650

TONIGHT KEEP SEEKING ANSWERS TO
THE GREAT QUESTIONS, AMERICA CAN

158

00:09:28,650 --> 00:09:30,220

DO ANYTHING.

159

00:09:30,220 --> 00:09:33,720

WHICH IS WHY I'M SO EXCITED TO
HAVE YOU ALL TONIGHT.

160

00:09:33,720 --> 00:09:36,360

YOU MAKE ME FEEL HOPEFUL ABOUT
OUR FUTURE.

161

00:09:36,360 --> 00:09:40,820

BECAUSE I KNOW THAT YOU'RE NOT
SATISFIED WITH BEING HOME TO THE

162

00:09:40,820 --> 00:09:43,510

LAST GREAT DISCOVERY, YOU WANT
TO BE HOME TO THE NEXT GREAT

163

00:09:43,510 --> 00:09:45,030

DISCOVERY.

164

00:09:45,030 --> 00:09:48,610

AND WHEN I LOOK OUT IN THE FACE
OF THESE YOUNG PEOPLE, I AM

165

00:09:48,610 --> 00:09:52,750

ABSOLUTELY CONFIDENT THAT THERE
ARE NEW FRONTIERS THAT WE'RE

166

00:09:52,750 --> 00:09:55,920

GOING TO BE BUSTING THROUGH.

167

00:09:55,920 --> 00:09:57,760

IN MY LIFETIME AND BEYOND.

168

00:09:57,760 --> 00:09:59,620

SO THANK YOU FOR THAT.

169

00:09:59,620 --> 00:10:01,750

YOU MAKE ME EXCITED, YOU MAKE ME
INSPIRED.

170

00:10:01,750 --> 00:10:02,950

SO ENOUGH TALK.

171

00:10:02,950 --> 00:10:05,460

LET'S HAVE SOME FUN WITH THIS
TELESCOPE!

172

00:10:05,460 --> 00:10:07,460

IT LOOKS PRETTY BIG.

173

00:10:07,460 --> 00:10:11,440

MY UNDERSTANDING IS THAT WE'VE
GOT ANOTHER YOUNG LADY, SOPHIE.

174

00:10:11,440 --> 00:10:14,000

WE NEED YOU TO COME UP HERE AND
HELP ME WITH THIS TELESCOPE

175

00:10:14,000 --> 00:10:15,370

BECAUSE I DON'T KNOW WHAT I'M
DOING.

176

00:10:18,370 --> 00:10:16,870

WHERE ARE YOU?

177

00:10:18,370 --> 00:10:20,290

SAVE ME, HERE WE GO.

178

00:10:20,290 --> 00:10:21,490

OKAY.

179

00:10:21,490 --> 00:10:28,720

I DON'T WANT TO BREAK IT.

180

00:10:28,720 --> 00:10:31,130

ALL RIGHT.

181

00:10:31,130 --> 00:10:33,540
INTRODUCE YOURSELF.

182

00:10:33,540 --> 00:10:39,060
>> HELLO, I'M SOFIA ALVAREZ AND
I'M A STUDENT AT BROOKINGS

183

00:10:39,060 --> 00:10:40,630
NATIONAL HIGH SCHOOL.

184

00:10:40,630 --> 00:10:42,190
I'M FROM PARAGUAY.

185

00:10:42,190 --> 00:10:44,370
>> IT'S GREAT TO SEE YOU,
SOPHIE.

186

00:10:44,370 --> 00:10:47,120
WHAT ARE WE GOING TO DO WITH
THIS BIG TELESCOPE HERE?

187

00:10:47,120 --> 00:10:48,980
>> WE'RE GOING TO SEE THE MOON.

188

00:10:48,980 --> 00:10:51,190
>> WELL, LET'S DO THAT.

189

00:10:51,190 --> 00:10:52,970
I SEE IT THERE.

190

00:10:52,970 --> 00:10:53,970
>> YES.

191

00:10:53,970 --> 00:10:58,350
>> YOU THINK I CAN GET A BETTER
VIEW THROUGH THIS BIG TELESCOPE?

192

00:10:58,350 --> 00:10:59,350
>> PROBABLY.

193

00:10:59,350 --> 00:11:00,350

>> YOU THINK SO?

194

00:11:00,350 --> 00:11:01,350

>> YEAH.

195

00:11:01,350 --> 00:11:02,350

>> OKAY.

196

00:11:02,350 --> 00:11:03,459

SO IS IT ALREADY SET UP FOR ME?

197

00:11:03,459 --> 00:11:04,550

>> OH, YES.

198

00:11:04,550 --> 00:11:06,750

SO I JUST WANTED TO TELL YOU
MORE ABOUT IT.

199

00:11:06,750 --> 00:11:07,750

>> PLEASE DO.

200

00:11:07,750 --> 00:11:10,160

>> SO THESE ARE A REFLECTIVE
TELESCOPE, IT HAS THREE PARTS.

201

00:11:10,160 --> 00:11:11,600

THERE ARE TWO MIRRORS.

202

00:11:11,600 --> 00:11:15,480

ONE OF THEM RIGHT NOW IS
CAPTURING THE LIGHT OF THE MOON.

203

00:11:15,480 --> 00:11:18,550

AND THEN THE OTHER MIRROR IS
JUST MAKING IT FOCUS.

204

00:11:18,550 --> 00:11:23,430
AND THEN THERE IS AN EYEPiece IN
WHICH RIGHT NOW IS MAKING IT

205
00:11:23,430 --> 00:11:25,790
MAGNIFY IN THE IMAGE OF THE
MOON.

206
00:11:25,790 --> 00:11:28,940
AND THAT'S HOW YOU'RE GOING TO
BE ABLE TO SEE THE MOON THAT'S

207
00:11:28,940 --> 00:11:30,600
RIGHT IN FRONT OF YOU.

208
00:11:30,600 --> 00:11:32,660
>> SHE JUST GO AHEAD AND TRY IT?

209
00:11:32,660 --> 00:11:33,660
>> YES.

210
00:11:33,660 --> 00:11:34,660
>> OKAY.

211
00:11:34,660 --> 00:11:35,660
>> YES.

212
00:11:35,660 --> 00:11:36,660
>> DOES IT MATTER WHICH EYE?

213
00:11:36,660 --> 00:11:39,459
>> THE ONE YOU SEE THE BEST
WITH.

214
00:11:39,459 --> 00:11:41,450
>> ALL RIGHT.

215
00:11:41,450 --> 00:11:42,450
WOW.

216

00:11:42,450 --> 00:11:50,690

>> SO RIGHT NOW WHAT YOU'RE
SEEING IS THE BACK-MOST PART,

217

00:11:50,690 --> 00:11:52,510

THE DARK-MOST PARTS ARE MARE
FRIGORIS.

218

00:11:52,510 --> 00:11:53,970

THERE ARE THE CRATERS.

219

00:11:53,970 --> 00:11:58,720

THEY ARE THE RESULT OF HEAVY
ENVIRONMENT.

220

00:11:58,720 --> 00:12:05,370

YOU CAN SEE SPACE STUFF WITH THE
MOON.

221

00:12:05,370 --> 00:12:07,150

>> SPACE STUFF IS A TERM?

222

00:12:07,150 --> 00:12:10,310

>> YES, I THINK SO.

223

00:12:10,310 --> 00:12:13,860

>> CAN I JUST SAY THIS LOOKS
SPECTACULAR?

224

00:12:13,860 --> 00:12:16,370

>> IT DOES.

225

00:12:16,370 --> 00:12:18,790

>> YOU GUYS ARE GOING TO GET A
CHANCE TO SEE THROUGH THIS.

226

00:12:18,790 --> 00:12:22,730

BUT AS GOOD AS IT LOOKS UP

THERE, IT SURE LOOKS BETTER

227

00:12:22,730 --> 00:12:24,380

HERE.

228

00:12:24,380 --> 00:12:29,150

NOW THE INTERESTING THING IS THE
IMAGE IS INVERTED.

229

00:12:29,150 --> 00:12:30,170

>> IT IS?

230

00:12:30,170 --> 00:12:33,250

>> YEAH, IT IS.

231

00:12:33,250 --> 00:12:35,510

IF YOU LOOK UP†--

>> YES?

232

00:12:35,510 --> 00:12:39,380

>> THE RIGHT SIDE, MY RIGHT
SIDE, IS LIT UP.

233

00:12:39,380 --> 00:12:41,580

BUT IF YOU LOOK THROUGH THE
TELESCOPE, IT'S THE LEFT SIDE

234

00:12:41,580 --> 00:12:42,850

THAT'S LIT UP.

235

00:12:42,850 --> 00:12:44,620

>> IT HAS A MIRROR.

236

00:12:44,620 --> 00:12:45,622

IT'S A REFLECTIVE ONE.

237

00:12:45,622 --> 00:12:49,050

>> I WAS JUST TRYING TO MAKE A
POINT.

238

00:12:49,050 --> 00:12:50,220

>> YES, YES.

239

00:12:50,220 --> 00:12:51,670

>> ABOUT OPTICS.

240

00:12:51,670 --> 00:12:55,710

WELL, THIS IS SPECTACULAR.

241

00:12:55,710 --> 00:12:59,379

SOPHIE, WHAT YEAR ARE YOU IN
HIGH SCHOOL?

242

00:12:59,379 --> 00:13:00,379

>> SORRY?

243

00:13:00,379 --> 00:13:01,379

>> WHAT YEAR, WHAT GRADE?

244

00:13:01,379 --> 00:13:02,519

>> I'M A SENIOR.

245

00:13:02,519 --> 00:13:03,980

>> SO WHAT DO YOU WANT TO DO
NEXT?

246

00:13:03,980 --> 00:13:09,330

>> I WANT TO STUDY ASTRONOMY.

247

00:13:09,330 --> 00:13:13,800

I WANT TO DO SOMETHING WITH
THOSE THREE.

248

00:13:13,800 --> 00:13:14,800

>> WOW.

249

00:13:14,800 --> 00:13:15,839

>> IF POSSIBLE.

250

00:13:15,839 --> 00:13:17,290

>> ANYTHING'S POSSIBLE WITH YOU.

251

00:13:17,290 --> 00:13:18,780

YOU'RE A SPECTACULAR YOUNG LADY.

252

00:13:18,780 --> 00:13:20,680

GIVE SOPHIE A BIG ROUND OF
APPLAUSE.

253

00:13:20,680 --> 00:13:22,680

>> THANK YOU.

254

00:13:22,680 --> 00:13:25,690

>> ALL RIGHT, EVERYBODY.

255

00:13:25,690 --> 00:13:27,270

WE ARE SETTING YOU LOOSE.

256

00:13:27,270 --> 00:13:30,160

WE'VE GOT SOME INCREDIBLE
EXHIBITS ALL OVER THE PLACE.

257

00:13:30,160 --> 00:13:33,720

NOT JUST THIS TELESCOPE BUT I
KNOW THAT WE'VE GOT A MINI

258

00:13:33,720 --> 00:13:41,720

PLANETARIUM AND VIRTUAL REALITY
AND REAL REALITY.

259

00:13:41,720 --> 00:13:43,120

SO THERE'S ALL KINDS OF GOOD
STUFF.

260

00:13:43,120 --> 00:13:45,820

I HOPE YOU GUYS HAVE A WONDERFUL

TIME TONIGHT.

261

00:13:45,820 --> 00:13:55,160

AND I HOPE THAT ALL OF YOU ARE
INSPIRED THE WAY I AM BY SCIENCE

262

00:13:55,160 --> 00:13:56,370

AND BY SPACE.

263

00:13:56,370 --> 00:13:57,530

ALL RIGHT?