



1
00:00:00,599 --> 00:00:02,749
>>> GOOD MORNING AND WELCOME CAN
TO THE NEWSEUM.

2
00:00:02,749 --> 00:00:03,879
I'M GENE POLICINSKI.

3
00:00:03,879 --> 00:00:12,530
WE ARE IN THE GREAT HALL OF NEWS
AND A VERY HISTORIC MOMENT FOR

4
00:00:12,530 --> 00:00:16,510
WATCHING A SPACE WALK LIVE FROM
THE INTERNATIONAL SPACE STATION.

5
00:00:16,510 --> 00:00:18,450
WE HAVE A VERY SPECIAL GUEST WHO
CAN TELL US WHAT'S GOING ON AT

6
00:00:18,450 --> 00:00:24,730
THIS VERY MOMENT, TOM MARSHBURN
WHO HAS WALKED IN SPACE AND IS

7
00:00:24,730 --> 00:00:26,990
BACK IN MAY.

8
00:00:26,990 --> 00:00:28,660
TELL US WHAT'S GOING ON RIGHT
NOW.

9
00:00:28,660 --> 00:00:32,780
>> GOOD MORNING.

10
00:00:32,780 --> 00:00:34,129
THEY STARTED A LITTLE EARLY.

11
00:00:34,129 --> 00:00:37,739
I DID MY SPACE WALK JUST A
LITTLE OVER TWO MONTHS WITH ONE

12

00:00:37,739 --> 00:00:39,440

OF THESE GENTLEMEN CHRIS
CASSIDY.

13

00:00:39,440 --> 00:00:43,609

WHO YOU SEE ON THE SCREEN THERE
THOUGH IS THE VERY FIRST ITALIAN

14

00:00:43,609 --> 00:00:44,859

TO EVER DO A SPACE WALK.

15

00:00:44,859 --> 00:00:48,179

THAT'S LUCA PARMITANO.

16

00:00:48,179 --> 00:00:52,929

THEY'RE HARD CHARGERS AND I'M
NOT THE LEAST BIT SURPRISED THAT

17

00:00:52,929 --> 00:00:54,049

THEY'VE COME OUT EARLY.

18

00:00:54,049 --> 00:00:57,159

THIS IS LUCA'S VERY FIRST SPACE
WALK.

19

00:00:57,159 --> 00:01:03,030

EVERY TIME YOU DO A SPACE WALK
YOUR EYES ARE WIDE OPEN AND IT'S

20

00:01:03,030 --> 00:01:04,030

JUST SPECTACULAR.

21

00:01:04,030 --> 00:01:06,810

YOU SEE THE BLACKNESS OF SPACE.

22

00:01:06,810 --> 00:01:09,460

THE SPACE STATION HAS THE GOLDEN
GLOW TO IT.

23
00:01:09,460 --> 00:01:12,899
THOSE ARE THE LIGHTS THAT ARE ON
THE SPACE STATION THAT ARE

24
00:01:12,899 --> 00:01:13,899
LIGHTING IT UP.

25
00:01:13,899 --> 00:01:17,140
SOMETIMES YOU WILL SEE IT GET
BRIGHTER.

26
00:01:17,140 --> 00:01:20,439
I DON'T KNOW WHEN SUNRISE IS
GOING TO BE, BUT THAT'S WHEN

27
00:01:20,439 --> 00:01:24,910
SUNRISE IS WHEN THE CREW CAN SEE
THE EARTH AND ALL OF ITS GLORY

28
00:01:24,910 --> 00:01:27,799
AND ITS BEAUTY AND IT'S
BREATHTAKING ESPECIALLY WITH

29
00:01:27,799 --> 00:01:30,189
THAT BIG HELMET ON YOU CAN GET
THE BEST VIEW YOU CAN POSSIBLY

30
00:01:30,189 --> 00:01:33,020
GET IN THE VACUUM OF SPACE.

31
00:01:33,020 --> 00:01:35,710
IT'S VERY HARD TO CONCENTRATE ON
YOUR WORK.

32
00:01:35,710 --> 00:01:39,570
THEY'VE BEEN TRAINING FOR TWO
MONTHS SO THEY'RE FOCUSED ON THE

33

00:01:39,570 --> 00:01:43,720

JOB.

34

00:01:43,720 --> 00:01:46,320

YOU CAN SEE TWO BAGS THAT ARE
OUT OF THE HATCH AND THE ONE

35

00:01:46,320 --> 00:01:48,570

THING HE DID IS BEEN OF THE MOST
IMPORTANT THINGS YOU CAN DO ON A

36

00:01:48,570 --> 00:01:54,700

SPACE WALK AND THAT IS TO ATTACH
A SAFETY TETHER.

37

00:01:54,700 --> 00:02:00,200

IT'S 85^FEET LONG AND IT'S A
FISHING REEL NEXT TO YOUR BODY

38

00:02:00,200 --> 00:02:03,079

AND HE HAS JUST HOOKED THAT UP
AND THAT IS YOUR ATTACHMENT TO

39

00:02:03,079 --> 00:02:04,450

THE SPACE STATION.

40

00:02:04,450 --> 00:02:05,450

IT'S NOT A SPACE SHUTTLE.

41

00:02:05,450 --> 00:02:07,960

IF SOMEONE COMES LOOSE AND
FLOATS FREE INTO THE VACUUM OF

42

00:02:07,960 --> 00:02:10,780

SPACE THEY ARE ORBITING
SATELLITE AND THEY WILL DIE

43

00:02:10,780 --> 00:02:14,140

BECAUSE THERE IS NO WAY TO GO
GET THEM.

44

00:02:14,140 --> 00:02:19,040

WE HAVE JET PACKS THAT WE CAN
TURN AROUND AND FLY BACK, BUT

45

00:02:19,040 --> 00:02:22,690

THAT'S DICEY AND NOBODY WANTS TO
GET IN THAT POSITION, BUT THE

46

00:02:22,690 --> 00:02:27,070

JET PACK IS THE LAST-DITCH
EFFORT TO SAVE OUR OWN LIVES IF

47

00:02:27,070 --> 00:02:30,520

WE COME FREE OF THE SPACE
STATION, BUT THAT SAFETY TETHER

48

00:02:30,520 --> 00:02:33,550

WILL KEEP YOU ATTACHED AND
THAT'S WHY IT'S SO IMPORTANT AND

49

00:02:33,550 --> 00:02:35,890

LUCA HAD THE JOB OF ATTACHING
THOSE.

50

00:02:35,890 --> 00:02:38,950

YOU CAN SEE CHRIS CASSIDY'S FEET
AS THEY'RE COMING OUT.

51

00:02:38,950 --> 00:02:40,660

THEY'RE TALKING TO EACH OTHER
RIGHT NOW AND THEY'RE CHECKING

52

00:02:40,660 --> 00:02:44,980

THE SAFETY TETHERS TO MAKE SURE
THERE'S A CONNECTION.

53

00:02:44,980 --> 00:02:50,570

IT'S JUST LIKE ROCK CLIMBING AND
YOU CHECK EVERY CARABINER TO

54

00:02:50,570 --> 00:02:56,640

MAKE SURE YOU DON'T FALL OR
FLOAT AWAY.

55

00:02:56,640 --> 00:03:01,850

THESE BAGS WEIGH ANYWHERE FROM
50^TO 100OUNDS ON EARTH AND

56

00:03:01,850 --> 00:03:03,840

MAYBE A LITTLE BIT MORE THAN
THAT.

57

00:03:03,840 --> 00:03:05,120

YOU CAN FEEL THE MASS OF THEM.

58

00:03:05,120 --> 00:03:07,680

THEY'RE WEIGHTLESS IN SPACE, BUT
YOU CAN FEEL THEIR MASS AND

59

00:03:07,680 --> 00:03:10,280

THEY'RE HARD TO PUSH AND THEY'RE
NOT HARD TO MOVE.

60

00:03:10,280 --> 00:03:14,320

YOU CAN USE A FINGER TO MOVE
THEM AROUND.

61

00:03:14,320 --> 00:03:19,570

YOU ATTACH THEM TO A BODY
RESTRAINT AND IT'S A BIG, THICK

62

00:03:19,570 --> 00:03:20,680

TUBE, REALLY.

63

00:03:20,680 --> 00:03:24,850

THAT'S SOMETHING YOU CAN TIGHTEN
DOWN INTO A RIGID BAR TO HOLD ON

64

00:03:24,850 --> 00:03:28,340
TO SOMETHING, AND LUCA^-- IT
LOOKS LIKE LUCA ATTACHED ONE OF

65
00:03:28,340 --> 00:03:29,960
THOSE TO HIS SIDE.

66
00:03:29,960 --> 00:03:33,750
WE HAVE ANOTHER BAG THERE THEY
PULLED OUT AND GETTING READY.

67
00:03:33,750 --> 00:03:36,220
THEY'RE BASICALLY PACKING THEIR
BAGS AND GETTING THEIR SUITS

68
00:03:36,220 --> 00:03:41,330
READY TO LEAVE THERE AND GO INTO
THE SPACE STATION AND GO TO THE

69
00:03:41,330 --> 00:03:43,230
OUTSIDE AND GO TO WORK.

70
00:03:43,230 --> 00:03:44,460
>> JUST REMARKABLE.

71
00:03:44,460 --> 00:03:46,770
CHRIS CASSIDY WILL BE IN THE
SUIT WITH RED STRIPES AND

72
00:03:46,770 --> 00:03:53,709
PARMITANO IN THE WHITE.

73
00:03:53,709 --> 00:03:56,630
>> WHAT'S UNIQUE THAT JUST
HAPPENED IS LUCA CAME OUT FIRST.

74
00:03:56,630 --> 00:04:01,070
TYPICALLY EV-1^WHICH IS THE MOST
EXPERIENCED WALKER WILL HAVE THE

75
00:04:01,070 --> 00:04:02,070
RED STRIPES.

76
00:04:02,070 --> 00:04:04,900
WE CAN'T SEE THEIR FACES SO WE
NEED A WAY TO IDENTIFY THEM.

77
00:04:04,900 --> 00:04:07,750
EV-1^COMES OUT FIRST.

78
00:04:07,750 --> 00:04:10,150
CHRIS PROBABLY TOLD LUCA I WANT
YOU TO GO OUT FIRST SO YOU CAN

79
00:04:10,150 --> 00:04:13,880
GET THE EXPERIENCE OF OPENING
THE HATCH AND GET USED TO DO IT.

80
00:04:13,880 --> 00:04:16,959
AND YOU HAVE THE CONFIDENCE THAT
LUCA WILL DO IT AND THE

81
00:04:16,959 --> 00:04:22,130
CONFIDENCE THAT ONE DAY LUCA
WILL DO ANOTHER SPACE WALK.

82
00:04:22,130 --> 00:04:26,880
LUCA CAME OUT FIRST ACCORDING TO
THE TIMELINE AND THEY'RE MOVING

83
00:04:26,880 --> 00:04:28,370
TO THEIR RESPECTIVE WORK SITES.

84
00:04:28,370 --> 00:04:30,360
>> HOW HIGH ARE THEY ABOVE THE
EARTH?

85
00:04:30,360 --> 00:04:33,970
>> THEY'RE 250^MILES AND

TRAVELING ALONG AT 17,100^MILES

86

00:04:33,970 --> 00:04:38,130

AN HOUR, WAY ABOVE THE
ATMOSPHERE.

87

00:04:38,130 --> 00:04:42,090

>> WE'D LIKE TO WELCOME OUR NASA
TELEVISION AUDIENCE, AS WELL AND

88

00:04:42,090 --> 00:04:48,030

51^SCHOLARS PART OF THE 2013
FREE SPIRIT AND JOURNALIST

89

00:04:48,030 --> 00:04:52,000

CONFERENCE AND WE ARE GLAD TO
HAVE YOU JOINING US FOR THIS

90

00:04:52,000 --> 00:04:56,090

VERY HISTORIC MOMENT HERE AT THE
NEWSEUM.

91

00:04:56,090 --> 00:04:59,510

WHEN YOU'RE OUT, THE FIRST THING
YOU DO YOU SAY CHECK EVERYTHING

92

00:04:59,510 --> 00:05:02,910

AND HOW DO YOU MOVE WHEN THEY'LL
DO A SERIES OF REPAIRS AND

93

00:05:02,910 --> 00:05:05,180

INSTALLATIONS AT THIS POINT.

94

00:05:05,180 --> 00:05:06,180

>> THAT'S RIGHT.

95

00:05:06,180 --> 00:05:10,000

WE'LL DO THAT AND A LOT OF CABLE
ATTACHMENTS AND GETTING SET UP

96

00:05:10,000 --> 00:05:12,800

FOR CONTINUED BUILDING OF THE
SPACE STATION.

97

00:05:12,800 --> 00:05:15,300

WE CALL IT A SPACE WALK AND IT'S
A SPACE CRAWL.

98

00:05:15,300 --> 00:05:18,490

THEY USE THEIR HANDS AND THE
SPACE STATION IS COVERED IN

99

00:05:18,490 --> 00:05:22,330

HANDRAILS AND THEY USE THEIR
HANDS ON THE HANDRAILS TO CRAWL

100

00:05:22,330 --> 00:05:24,890

AROUND ON THE OUTSIDE OF THE
SPACE STATION.

101

00:05:24,890 --> 00:05:27,540

WE DON'T DO ANY JUMPING FROM ONE
PART TO THE NEXT.

102

00:05:27,540 --> 00:05:31,300

I SUPPOSE WE COULD, BUT WE TRAIN
TO NOT DO THAT, BECAUSE WHEN YOU

103

00:05:31,300 --> 00:05:34,340

GET TO THE PROBLEM I MENTIONED
BEFORE OF LETTING GO OF THE

104

00:05:34,340 --> 00:05:37,960

SPACE STATION AND POTENTIALLY
GETTING PUSHED OUT INTO SPACE

105

00:05:37,960 --> 00:05:41,740

AND THEY'RE METICULOUS IN MOVING
OFF.

106

00:05:41,740 --> 00:05:44,810

YOU CAN SEE ON YOUR SCREEN THERE
OFF TO THE LEFT AND IT LOOKS

107

00:05:44,810 --> 00:05:47,750

LIKE A BAR THAT THEY'VE MOVED UP
ON.

108

00:05:47,750 --> 00:05:52,930

THAT'S VERY EXCITING BECAUSE
THAT BAR TAKES YOU FOR THE

109

00:05:52,930 --> 00:05:56,280

CYLINDER THAT YOU SEE WHICH IS
THE AIR LOCK UP TO THE MAIN

110

00:05:56,280 --> 00:05:59,410

SPACE STATION WHICH IS A
FOOTBALL FIELD IN LENGTH, AND

111

00:05:59,410 --> 00:06:02,991

I'VE DONE MY SPACE WALK OUT TO
THE END OF THAT AND YOU REALLY

112

00:06:02,991 --> 00:06:08,030

FEEL LIKE YOU'RE HANGING OUT UP
UNDER A CLIFF IN THE BRILLIANT

113

00:06:08,030 --> 00:06:09,530

EARTH BELOW YOU.

114

00:06:09,530 --> 00:06:13,610

SO THAT IS WHERE THEY ARE GOING
RIGHT NOW, AND THAT LITTLE BAR

115

00:06:13,610 --> 00:06:17,740

WITH LITTLE HANDRAILS ON IT, AND
IT'S ACTUALLY VERY EXCITING.

116

00:06:17,740 --> 00:06:20,950

>> I THINK I WOULD BE HOLDING ON
PRETTY TIGHT.

117

00:06:20,950 --> 00:06:26,110

ON THEIR FIRST SPACE WALK, THEY
BRING A BRAND NEW SPACEWALKER

118

00:06:26,110 --> 00:06:27,940

TEN MINUTES TO MOVE AROUND A
LITTLE BIT AND GET USED TO WHAT

119

00:06:27,940 --> 00:06:32,090

IT FEELS LIKE WITH THE 250-POUND
SUIT AROUND YOUR BODY AND KIND

120

00:06:32,090 --> 00:06:36,389

OF STIFF AND GET USED TO MOVING
AROUND AND HOLDING ON TO THINGS

121

00:06:36,389 --> 00:06:37,509

WITH JUST YOUR HANDS REALLY.

122

00:06:37,509 --> 00:06:40,460

>> TELL US A LITTLE BIT ABOUT
YOU WHILE THEY'RE MAKING THEIR

123

00:06:40,460 --> 00:06:41,460

WAY DOWN TO THE RAIL.

124

00:06:41,460 --> 00:06:44,930

HOW DID YOU JOIN NASA AND BECOME
AN ASTRONAUT?

125

00:06:44,930 --> 00:06:49,260

>> I STARTED OFF AS A PHYSICS
MAJOR AND WENT TO ENGINEERING

126

00:06:49,260 --> 00:06:51,000

AND FOUND OUT I LOVED MEDICINE.

127

00:06:51,000 --> 00:06:53,040

SO I DECIDED TO GO INTO
MEDICINE.

128

00:06:53,040 --> 00:06:55,880

I FELL IN LOVE WITH MEDICINE,
AND I HAD ALWAYS BEEN A BIG FAN

129

00:06:55,880 --> 00:07:02,210

OF THE SPACE PROGRAM AND
DISCOVERED THAT MEDICINE WAS SO

130

00:07:02,210 --> 00:07:04,389

EXCITING AND ENGROSSING THAT I
FORGOT ABOUT EVERYTHING ELSE AND

131

00:07:04,389 --> 00:07:07,910

IT WAS AFTER I FINISHED MY
RESIDENCY IN EMERGENCY MEDICINE

132

00:07:07,910 --> 00:07:13,460

THAT NASA STARTED TAKING DOCTORS
AND MAKE US FLIGHT SURGEONS.

133

00:07:13,460 --> 00:07:19,770

SO I BECAME A FLIGHT SURGEON FOR
TEN YEARS AND APPLIED FOR THE

134

00:07:19,770 --> 00:07:22,440

ASTRONAUT CORPS WHILE I WAS AT
THE JUSTICE SPACE CENTER AND GOT

135

00:07:22,440 --> 00:07:24,199

IN.

136

00:07:24,199 --> 00:07:27,790

ONE THING I SHOULD MENTION THAT
EACH ASTRONAUT HAS CAMERAS ON

137

00:07:27,790 --> 00:07:30,669

THEIR HELMET AND WHAT YOU SEE
RIGHT NOW IS A HELMET CAM VIEW

138

00:07:30,669 --> 00:07:33,080

IS WHAT THEY CALL IT SO
ENGINEERS AND EVERYBODY ON THE

139

00:07:33,080 --> 00:07:36,020

GROUND CAN SEE EXACTLY WHAT
THEY'RE DOING WITH THEIR HANDS.

140

00:07:36,020 --> 00:07:38,199

IT'S A LITTLE BIT HIGH UP ABOVE
THE EYES.

141

00:07:38,199 --> 00:07:42,170

SOMETIMES THE CAMERA WILL BUMP
SOMETHING OR A FLAP WILL GET IN

142

00:07:42,170 --> 00:07:46,020

THE CAMERA AND IT DOESN'T MEAN
THEY HIT THEIR VISOR, IT JUST

143

00:07:46,020 --> 00:07:48,990

MEANS THE CAMERA ITSELF IS
COVERED UP.

144

00:07:48,990 --> 00:07:53,479

>> AND WE HAD A VERY QUICK SHOT
OF MISSION CONTROL THERE.

145

00:07:53,479 --> 00:07:54,479

>> YES.

146

00:07:54,479 --> 00:07:55,479

>> THAT'S HOUSTON?

147

00:07:55,479 --> 00:07:56,479

>> THAT'S RIGHT.

148

00:07:56,479 --> 00:07:57,479

THAT'S HOUSTON.

149

00:07:57,479 --> 00:07:58,479

A VERY INTENSE TIME.

150

00:07:58,479 --> 00:08:02,320

THERE WAS ONE PERSON ON THE
GROUND WHO I BELIEVE IT WILL BE

151

00:08:02,320 --> 00:08:03,320

SHANE KIMBRO.

152

00:08:03,320 --> 00:08:06,090

HE WAS THE LAST ASTRONAUT WHO
WORKED THE LAST SPACE WALK WHO

153

00:08:06,090 --> 00:08:11,190

IS READING STEP BY STEP THROUGH
A DETAILED TIMELINE AND IT'S 93

154

00:08:11,190 --> 00:08:14,389

PAGES LONG AND THEY DON'T HAVE
IT WITH THEM AND I SUPPOSE THEY

155

00:08:14,389 --> 00:08:19,340

MEMORIZED THE WHOLE THING AND
HE'S STILL READING UP THE

156

00:08:19,340 --> 00:08:21,600

REMINDERS AND THE SERIAL
NUMBERS.

157

00:08:21,600 --> 00:08:26,229

>> EVERYTHING IS STRAPPED IN AND
TIED DOWN SO IT DOESN'T FLOAT

158

00:08:26,229 --> 00:08:27,229

AWAY.

159

00:08:27,229 --> 00:08:29,670

>> THE BIG COBRA, WE CALL IT.

160

00:08:29,670 --> 00:08:32,779

INSIDE THAT BAG THAT HAS A
HANDLE ON THE OUTSIDE OF IT IS

161

00:08:32,779 --> 00:08:37,659

AN ELECTRICAL CABLE, AND IT'S
ONE THAT HASN'T BEEN BROUGHT OUT

162

00:08:37,659 --> 00:08:38,659

YET.

163

00:08:38,659 --> 00:08:39,659

THEY'LL HOOK THAT UP.

164

00:08:39,659 --> 00:08:40,659

I'M NOT SURE WHICH ONE THIS IS.

165

00:08:40,659 --> 00:08:44,629

THEY HAVE SEVERAL TO HOOK UP AND
IT'S TIED VERY TIGHTLY AND TIED

166

00:08:44,629 --> 00:08:48,050

DOWN BECAUSE IF THEY DON'T DO
THAT IT WILL START TO UNFURL IN

167

00:08:48,050 --> 00:08:51,430

ZERO GRAVITY AND IT CAN WRAP
AROUND YOUR BODY AND WRAP AROUND

168

00:08:51,430 --> 00:08:54,879

SOMETHING ELSE AND YOU HAVE TO
BE VERY CAREFUL ABOUT IT.

169

00:08:54,879 --> 00:08:56,560
>> WE'LL GO TO SOME QUESTIONS
HERE.

170
00:08:56,560 --> 00:09:00,670
IT'S HARD TO TEAR AWAY FROM WHAT
THEY'RE DOING.

171
00:09:00,670 --> 00:09:02,209
>> OH, I KNOW.

172
00:09:02,209 --> 00:09:03,899
>> IT REALLY IS REMARKABLE.

173
00:09:03,899 --> 00:09:06,990
WE HAVE A LARGE SCREEN AT THE
NEWSEUM WHICH WE USE FOR A

174
00:09:06,990 --> 00:09:09,940
VARIETY OF PROGRAMS AND WE ARE
GETTING TO SEE THIS ON A PRETTY

175
00:09:09,940 --> 00:09:13,610
BIG SCREEN, AND WE'LL GO TO OUR
FIRST QUESTION IF YOU CAN TELL

176
00:09:13,610 --> 00:09:16,889
US YOUR NAME AND THE STATE
YOU'RE FROM WE'LL GET SOME

177
00:09:16,889 --> 00:09:20,110
QUESTIONS FROM THE FREE SPIRIT
KOHL SCHOLARS.

178
00:09:20,110 --> 00:09:22,450
>> I'M KEN GIENDO.

179
00:09:22,450 --> 00:09:29,029
WHY DO YOU THINK THE EXPLORATION
AND BEING CURIOUS IS IMPORTANT.

180

00:09:29,029 --> 00:09:32,189

>> WHY ADVENTURE EXPLORATION AND
BEING CURIOUS IS IMPORTANT.

181

00:09:32,189 --> 00:09:34,850

I'LL START BY SAYING THAT WAS
SUNRISE.

182

00:09:34,850 --> 00:09:38,769

WHAT YOU SAW, 16^SUNRISES AND
SUNSETS A DAY BECAUSE WE'RE

183

00:09:38,769 --> 00:09:43,000

GOING SO FAST AROUND THE WORLD,
16^TIMES A DAY.

184

00:09:43,000 --> 00:09:48,180

SO THAT'S WHAT YOU SEE.

185

00:09:48,180 --> 00:09:49,430

I THINK IT'S OUR HUMAN NATURE.

186

00:09:49,430 --> 00:09:51,149

I DON'T THINK WE CAN STOP DOING
IT.

187

00:09:51,149 --> 00:09:54,740

THE REASON WHY WE HAVE A SPACE
STATION, THIS ABOUT ABILITY TO

188

00:09:54,740 --> 00:09:58,249

COMMUNICATE USING ELECTRICITY
AND MICROPHONES IS BECAUSE WE

189

00:09:58,249 --> 00:10:01,029

LOVE EXPLORATION.

190

00:10:01,029 --> 00:10:04,370

IT'S PART OF THE FABRIC OF HUMAN
BEINGS.

191

00:10:04,370 --> 00:10:07,399

I DON'T THINK WE CAN AVOID IT.

192

00:10:07,399 --> 00:10:10,879

WHEN IT COMES TO SPACE FLIGHT
IT'S A NATURAL EXTENSION OF WHO

193

00:10:10,879 --> 00:10:13,070

WE ARE, I BELIEVE.

194

00:10:13,070 --> 00:10:15,819

THE QUESTION IS WHETHER WE
CHOOSE TO DO IT TODAY DURING OUR

195

00:10:15,819 --> 00:10:19,050

LIFETIMES OR WHETHER WE CHOOSE
TO DO IT LATER IN LIFE.

196

00:10:19,050 --> 00:10:22,480

IT'S IMPORTANT BECAUSE IT
IMPROVES OUR LIVES AND IT

197

00:10:22,480 --> 00:10:24,529

BECOMES ESSENTIAL TO OUR
SURVIVAL.

198

00:10:24,529 --> 00:10:27,910

SOME DAY OUR PLANET WILL BE
UNLIVABLE FOR ONE REASON OR

199

00:10:27,910 --> 00:10:32,529

ANOTHER WHETHER IT IS A CLIMATE
CHANGE ISSUE OR AN ASTEROID OR

200

00:10:32,529 --> 00:10:33,910

SUPER VOLCANO.

201

00:10:33,910 --> 00:10:36,950

I FIRMLY BELIEVE AND A LOT OF
PEOPLE BELIEVE AND IF YOU LOOK

202

00:10:36,950 --> 00:10:40,149

FAR ENOUGH IN THE FUTURE WE'LL
HAVE TO LEAVE THE PLANET AND

203

00:10:40,149 --> 00:10:43,209

THESE ARE FIRST BABY STEPS TO DO
THAT.

204

00:10:43,209 --> 00:10:44,569

>> THANK YOU.

205

00:10:44,569 --> 00:10:50,339

>> LET ME SAY WHAT A PRIVILEGE
IT IS TO TALK TO YOU AND I FEEL

206

00:10:50,339 --> 00:10:53,290

VERY HONORED TO GET A CHANCE TO
ANSWER YOUR QUESTIONS.

207

00:10:53,290 --> 00:10:54,459

SO I APPRECIATE IT.

208

00:10:54,459 --> 00:10:55,459

>> THANK YOU.

209

00:10:55,459 --> 00:10:58,379

I'M KIMBERLY HOLIDAY FROM THE
STATE OF WYOMING.

210

00:10:58,379 --> 00:11:01,819

I KNOW NASA IS SELECTIVE WITH
YOUR ASTRONAUT PROGRAM SO I

211

00:11:01,819 --> 00:11:04,920

WONDER HOW YOU WENT ABOUT BEING

SELECTED TO DO SOMETHING SO

212

00:11:04,920 --> 00:11:06,269

INCREDIBLE.

213

00:11:06,269 --> 00:11:10,529

>> SURE, AND I WILL CONTINUE TO
BREAK AWAY.

214

00:11:10,529 --> 00:11:13,329

I'M STILL TRYING TO FIGURE OUT
WHO THAT IS.

215

00:11:13,329 --> 00:11:16,970

IF THAT'S LUCA OR CHRIS CASSIDY
THERE.

216

00:11:16,970 --> 00:11:20,550

YOU WILL SEE HIM WORKING WITH
THAT CABLE FOR QUITE A WHILE.

217

00:11:20,550 --> 00:11:24,339

IT'S ACTUAL WILLY VERY HARD ON
THE HANDS.

218

00:11:24,339 --> 00:11:26,959

WORKING IN THAT SPACE SUIT IS
VERY TIGHT.

219

00:11:26,959 --> 00:11:30,040

I CAN TELL YOU, OVER TIME YOUR
FOREARMS START TO GET TIRED AND

220

00:11:30,040 --> 00:11:32,089

YOUR HANDS START TO GET TIRED
AND THEY'RE WORKING PRETTY HARD

221

00:11:32,089 --> 00:11:37,240

AND THEY'RE PROBABLY STARTING TO
SWEAT WITH THEIR WORK.

222

00:11:37,240 --> 00:11:39,350

ONE THING THAT'S IMPORTANT TO
KNOW ABOUT BECOMING AN ASTRONAUT

223

00:11:39,350 --> 00:11:43,749

IS THAT WE'LL BE SEEING A LOT OF
PRIVATE COMPANIES COMING UP.

224

00:11:43,749 --> 00:11:48,170

SO FOR THE NEAR FUTURE IT
CONTINUES TO BE YOUR STEMFIELDS

225

00:11:48,170 --> 00:11:51,739

AND THE TECHNICAL ENGINEERING
AND MATHEMATICS THAT BECOME SOME

226

00:11:51,739 --> 00:11:54,830

OF THE MOST IMPORTANT FOR FIELDS
FOR PEOPLE AS WE CONTINUE TO

227

00:11:54,830 --> 00:11:57,029

LEARN HOW TO GET INTO SPACE.

228

00:11:57,029 --> 00:11:59,029

SO GOING INTO THAT KIND OF A
FIELD IS IMPORTANT.

229

00:11:59,029 --> 00:12:01,610

HOWEVER, WITH THE COMMERCIAL
CREW AND WITH THE EXTENSION OF

230

00:12:01,610 --> 00:12:05,149

THE SPACE STATION AS WE GO
DEEPER INTO SPACE, IT'S ALL

231

00:12:05,149 --> 00:12:06,149

OPEN.

232

00:12:06,149 --> 00:12:07,809
EVERYTHING, WHO WILL BE THE
FIRST JOURNALIST AND THE FIRST

233

00:12:07,809 --> 00:12:12,499
WHO IS UP THERE SPECIFICALLY TO
DO THE WORK AND TO BE ABLE TO

234

00:12:12,499 --> 00:12:15,680
TELL THE GROUND ABOUT WHAT'S
GOING ON.

235

00:12:15,680 --> 00:12:19,569
SO YOU'VE TAKEN^-- YOU'VE ALL
TAKEN THE FIRST IMPORTANT STEP

236

00:12:19,569 --> 00:12:22,629
AND THAT IS TO FOLLOW YOUR
PASSION AND FOLLOW YOUR DREAM,

237

00:12:22,629 --> 00:12:25,880
AND EVERY ASTRONAUT I'VE EVER
TALKED TO LOVED WHAT THEY DID

238

00:12:25,880 --> 00:12:30,829
BEFORE THEY BECAME AN ASTRONAUT
SO THAT'S ABSOLUTELY CRUCIAL TO

239

00:12:30,829 --> 00:12:33,769
BECOMING AN ASTRONAUT, BUT IF
YOU'RE TAKING CARE OF YOURSELF

240

00:12:33,769 --> 00:12:38,139
PHYSICALLY AND DOING WHAT YOU
LOVE, WHAT YOUR PASSION IS AND

241

00:12:38,139 --> 00:12:41,519
NEVER GIVING UP TRYING TO BECOME
AN ASTRONAUT WHETHER IT MEANS

242

00:12:41,519 --> 00:12:45,480
GETTING READY WITH A PRIVATE
COMPANY TO FLY, YOU'LL PROBABLY

243
00:12:45,480 --> 00:12:48,339
BE ABLE TO BUY A TICKET TO BUY
AND MAYBE YOU'LL WORK WITH AN

244
00:12:48,339 --> 00:12:53,120
INSTITUTION WHO CAN BUY YOUR
TICKET TO FLY OR APPLYING FOR

245
00:12:53,120 --> 00:12:56,360
THE ASTRONAUT CORPS WITH THE
GOVERNMENT AND NASA, THOSE WILL

246
00:12:56,360 --> 00:13:00,399
ALL BE OPTIONS COMING UP.

247
00:13:00,399 --> 00:13:01,399
DON'T GIVE UP.

248
00:13:01,399 --> 00:13:02,950
I HAD TO APPLY THEE TIMES BEFORE
I GOT IN.

249
00:13:02,950 --> 00:13:05,769
>> THANK YOU.

250
00:13:05,769 --> 00:13:07,179
>> HI.

251
00:13:07,179 --> 00:13:10,160
MY NAME IS ROBERT EVANS AND I'M
FROM TEXAS.

252
00:13:10,160 --> 00:13:13,119
KIND OF FLYING OFF OF WHAT YOU
WERE TALKING ABOUT EARLIER, THAT

253

00:13:13,119 --> 00:13:16,579

I CAN BUY A TICKET TO SPACE.

254

00:13:16,579 --> 00:13:21,110

SO UP UNTIL NOW IT'S BEEN A
PUBLIC SPACE^-- NOT PUBLIC,

255

00:13:21,110 --> 00:13:25,749

THROUGH GOVERNMENT FUNDED SPACE
FLIGHT AND NOW WE'RE TURNING

256

00:13:25,749 --> 00:13:28,239

MORE TOWARD COMMERCIAL SPACE
FLIGHT.

257

00:13:28,239 --> 00:13:32,880

SO IN THAT REGARD, DO YOU
THINK^-- DO YOU THINK THAT SPACE

258

00:13:32,880 --> 00:13:37,319

EXPLORATION IS BETTER SUITED FOR
GOVERNMENT-FUNDED INSTITUTIONS

259

00:13:37,319 --> 00:13:40,670

OR COMMERCIALY FUNDED
INSTITUTIONS?

260

00:13:40,670 --> 00:13:45,649

>> THE WAY IT'S HAPPENED IN THE
SPAT OF THAT THE THINGS THAT ARE

261

00:13:45,649 --> 00:13:48,949

EXTREMELY DIFFICULT TO DO THAT
AN ENTIRE NATION HAS REQUIRED

262

00:13:48,949 --> 00:13:54,389

BOTH THE FUNDED AND EXPERTISE
LIKE LANDING ON A THE MOON AND

263

00:13:54,389 --> 00:13:58,579
GETTING ACCESS TO LOW EARTH
ORBIT AND ENTIRE COUNTRIES HAVE

264
00:13:58,579 --> 00:13:59,689
TO DO IT.

265
00:13:59,689 --> 00:14:02,019
THERE'S NO MARKET AND NO ONE
PERSON HAS ENOUGH MONEY TO

266
00:14:02,019 --> 00:14:04,489
DEVELOP THE TECHNOLOGY TO
ACCOMPLISH THAT.

267
00:14:04,489 --> 00:14:07,310
ONCE THAT NASA HAS ESTABLISHED
THAT.

268
00:14:07,310 --> 00:14:09,449
IT'S NOT RETAINED BY ANY MEANS
AND IT'S STILL A VERY DIFFICULT

269
00:14:09,449 --> 00:14:12,769
THING TO DO.

270
00:14:12,769 --> 00:14:15,089
PRIVATE COMPANIES CAN LEVERAGE
OFF OF THAT AND THEY CAN DO IT

271
00:14:15,089 --> 00:14:19,569
FASTER, BETTER, MORE EFFICIENTLY
AND CONTINUE TO DEVELOP NEW

272
00:14:19,569 --> 00:14:25,369
TECHNOLOGIES TO MAKE IT EVEN
EASIER TO GET UP THERE, BUT IT'S

273
00:14:25,369 --> 00:14:28,959
REALLY A MARRIAGE BETWEEN THE

TWO AND WHAT NASA HAS TALKED

274

00:14:28,959 --> 00:14:36,379
ABOUT WITH ASTEROIDS AND DOING
THOSE THINGS THAT A COMPANY

275

00:14:36,379 --> 00:14:40,379
AGAIN CAN'T DO, LACK OF FUNDING,
LACK OF EXPERTISE AND LACK OF

276

00:14:40,379 --> 00:14:42,699
KNOW HOW.

277

00:14:42,699 --> 00:14:46,149
AS A GROUP OF NATIONS WE CAN
FIGURE IT OUT AND THEN WHATEVER

278

00:14:46,149 --> 00:14:49,730
WE FIEND OUT, GIVE THAT
INFORMATION TO PRIVATE COMPANIES

279

00:14:49,730 --> 00:14:52,889
AND THEN THEY JUMP ON OUR
SHOULDERS AND CAN TAKE OVER FROM

280

00:14:52,889 --> 00:14:53,889
THAT.

281

00:14:53,889 --> 00:14:55,819
IT SEEMS TO BE A WONDERFUL
PROCESS AND THIS IS THE FIRST

282

00:14:55,819 --> 00:14:59,440
TIME IT'S EVER HAPPENED IN THE
WORLD, IN OUR HUMAN HISTORY AND

283

00:14:59,440 --> 00:15:01,750
WE'LL SEE HOW IT GOES.

284

00:15:01,750 --> 00:15:05,569
>> I'LL INTERRUPT FOR JUST A
SECOND TO SAY, WE'RE SEEING A

285
00:15:05,569 --> 00:15:07,079
BIT MORE OF MISSION CONTROL
HERE.

286
00:15:07,079 --> 00:15:10,720
HOW MUCH OF THE MISSION COMMAND
IS IN HOUSTON AND HOW MUCH IS

287
00:15:10,720 --> 00:15:13,850
RESTING ON THE FOLKS IN THE
STATION THEMES?

288
00:15:13,850 --> 00:15:16,829
THERE'S A CREW IN THE STATION
RIGHT NOW WORKING WITH

289
00:15:16,829 --> 00:15:17,829
ASTRONAUTS OUTSIDE.

290
00:15:17,829 --> 00:15:18,829
>> THAT'S RIGHT.

291
00:15:18,829 --> 00:15:20,540
THERE ARE FOUR OTHERS INSIDE.

292
00:15:20,540 --> 00:15:27,249
KAREN NEIBERG, SHE WAS PUTTING
THEIR SUITS ON AND NOW SHE'S

293
00:15:27,249 --> 00:15:30,980
GETTING TO WORK THE ROBOTIC ARM,
AND TAKING CARE OF THAT.

294
00:15:30,980 --> 00:15:33,120
SHE ACTUALLY HAS ONE OF THE MOST
DIFFICULT JOBS RIGHT NOW FOR

295

00:15:33,120 --> 00:15:34,489

THIS SPACE WALK.

296

00:15:34,489 --> 00:15:38,029

THE COMMAND STRUCTURE IS PRETTY
INTRICATE.

297

00:15:38,029 --> 00:15:40,430

THERE IS A COMMAND OR THE SPACE
STATION AND THEN THE FLIGHT

298

00:15:40,430 --> 00:15:43,749

DIRECTOR AND MISSION CONTROL AND
THEY ARE IN CHARGE OF THE ACTUAL

299

00:15:43,749 --> 00:15:45,420

EXECUTION OF THIS SPACE WALK.

300

00:15:45,420 --> 00:15:49,470

THE FLIGHT DIRECTOR IS SECOND
GENTLEMAN FROM THE BOTTOM OF THE

301

00:15:49,470 --> 00:15:50,470

SCREEN.

302

00:15:50,470 --> 00:15:52,069

HE'S PROBABLY HANDING IT OVER TO
SOMEONE SO I DON'T KNOW WHO IS

303

00:15:52,069 --> 00:15:53,069

PRIME RIGHT NOW.

304

00:15:53,069 --> 00:15:56,769

IT LOOKS LIKE DAVID CORE WHO I
BELIEVE IS THE RIGHT DIRECTOR.

305

00:15:56,769 --> 00:15:58,230

TO HIS RIGHT IS MEGAN MACARTHUR.

306

00:15:58,230 --> 00:15:59,920

SHE IS AN ASTRONAUT.

307

00:15:59,920 --> 00:16:03,559

SHE FLEW AND REPAIRED THE HUBBLE
ON THE MISSION.

308

00:16:03,559 --> 00:16:05,459

SHE'S A ROBOTIC ARM EXPERT.

309

00:16:05,459 --> 00:16:09,790

SHE'S THERE TO HELP KAREN WITH
THE ROBOTIC ARM AND NEXT TO HER

310

00:16:09,790 --> 00:16:13,939

IN THE BLUE SHIRT IS SHANE
KIMBRO AND HE IS THE GROUND GUY

311

00:16:13,939 --> 00:16:15,489

THAT'S READING UP THE STEPS.

312

00:16:15,489 --> 00:16:19,689

WHEN IT COMES TO MISSION SAFETY,
THE CREW CALLS THE SHOTS BECAUSE

313

00:16:19,689 --> 00:16:22,689

THEY KNOW WHAT'S GOING ON AND
THEY HAVE TO TAKE QUICK ACTION

314

00:16:22,689 --> 00:16:25,689

TO KEEP THEMSELVES SAFE AND THE
SPACE STATION SAFE.

315

00:16:25,689 --> 00:16:28,829

WHEN IT COMES TO EXECUTION OF
THE MISSION AND GETTING THE JOB

316

00:16:28,829 --> 00:16:32,339

DONE THE FLIGHT DIRECTOR MAKES
THE CALL, AND USUALLY IT'S A

317

00:16:32,339 --> 00:16:33,339

GIVE AND TAKE.

318

00:16:33,339 --> 00:16:34,339

THEY RESPECT EACH OTHER.

319

00:16:34,339 --> 00:16:36,220

THEY EACH HAVE DIFFERENT
PERSPECTIVES AND THAT'S PRETTY

320

00:16:36,220 --> 00:16:37,220

CRITICAL.

321

00:16:37,220 --> 00:16:38,249

ONE THING I MENTIONED.

322

00:16:38,249 --> 00:16:40,120

THIS IS CHRIS CASSIDY RIGHT NOW.

323

00:16:40,120 --> 00:16:44,410

HE IS DOING SOME ELECTRICAL
CONNECTIONS AND IT SOUNDS PRETTY

324

00:16:44,410 --> 00:16:45,410

EASY.

325

00:16:45,410 --> 00:16:49,549

YOU UNPLUG THE LAMPS AND HE'S
BEEN UP THERE A LONG TIME AND

326

00:16:49,549 --> 00:16:53,149

THEY'RE INCREDIBLY STIFF AND
FROM WHAT I HEARD HE'S TRYING TO

327

00:16:53,149 --> 00:16:57,139

DO THIS FROM THE LAST SPACE WALK

AND IT'S THE HARDEST THING HE'S

328

00:16:57,139 --> 00:16:58,459

TRIED TO DO SOME SPACE.

329

00:16:58,459 --> 00:16:59,470

HE'S A NAVY S.E.A.L.

330

00:16:59,470 --> 00:17:02,130

AND HE'S A

HUGE GUY SO IF HE SAYS IT'S

331

00:17:02,130 --> 00:17:06,279

HARD, IT'S PROBABLY REALLY HARD

TO DO.

332

00:17:06,279 --> 00:17:10,589

THESE ARE STEEL AND IT'S

PROBABLY WHAT IT FEELS LIKE.

333

00:17:10,589 --> 00:17:16,480

EVERY TIME YOU PUSH ON SOMETHING

YOU HAVE TO PUSH YOURSELF AWAY

334

00:17:16,480 --> 00:17:18,299

SO IF YOU HAVE TO USE TWO HANDS

AND YOU HAVE TO FIGURE OUT A WAY

335

00:17:18,299 --> 00:17:25,169

TO RESTRAIN YOURSELF SO YOU

DON'T PUSH YOURSELF BACK.

336

00:17:25,169 --> 00:17:26,169

>> THERE'S THE TETHER.

337

00:17:26,169 --> 00:17:29,159

>> YOU WON'T FLY MORE THAN FIVE

FEET AWAY, BUT WE TRAIN ALWAYS

338

00:17:29,159 --> 00:17:30,340
HAVE THAT UP THERE.

339

00:17:30,340 --> 00:17:34,270
YOU GET GRADED WHEN YOU'RE AN
ASTRONAUT, AND YOU GET GRADED ON

340

00:17:34,270 --> 00:17:38,740
ANY TIME YOU FORGET TO PUT THAT
LOCAL TETHER DOWN, AND YOU CAN

341

00:17:38,740 --> 00:17:40,930
FAIL AS WELL AND HAVE TO REDO
IT.

342

00:17:40,930 --> 00:17:44,130
SO WE'RE HIGHLY MOTIVATED TO
ALWAYS KEEP TRACK OF THAT.

343

00:17:44,130 --> 00:17:45,130
>> VERY GOOD.

344

00:17:45,130 --> 00:17:46,130
QUESTION HERE.

345

00:17:46,130 --> 00:17:47,370
>> MATTHEW CALLAHAN FROM HAWAII.

346

00:17:47,370 --> 00:17:50,260
AND OBVIOUSLY, YOU GUYS GO
THROUGH A LOT OF RIGOROUS

347

00:17:50,260 --> 00:17:52,851
TRAINING LEADING UP TO A SPACE
WALK SO AFTER ALL OF THIS TIME

348

00:17:52,851 --> 00:17:56,000
AND PREPARATION, WHAT ARE YOUR
EMOTIONS ONCE YOU'RE OUT THERE

349

00:17:56,000 --> 00:17:59,490

AND ONCE THE SPACE WALK'S DONE?

350

00:17:59,490 --> 00:18:01,850

>> I DON'T KNOW IF YOU'VE EVER
DONE ANYTHING^-- I'M SURE YOU

351

00:18:01,850 --> 00:18:06,731

HAVE, LIKE TAKING AN EXAM OR I
REFER TO ROCK CLIMBING OR

352

00:18:06,731 --> 00:18:07,731

SOMETHING LIKE THAT.

353

00:18:07,731 --> 00:18:10,889

A HUGE AMOUNT OF EMOTION LEADING
UP TO IT AND FOR A SPACE WALK

354

00:18:10,889 --> 00:18:14,549

IT'S A COMBINATION OF GOING OUT
ON STAGE FOR THE FIRST TIME AS

355

00:18:14,549 --> 00:18:17,650

INTO THE LEAD-UP TO A PLAY AND
CHRISTMAS MORNING.

356

00:18:17,650 --> 00:18:21,490

INCREDIBLY EXCITED, A LITTLE BIT
NERVOUS AND YOU JUST CAN'T WAIT

357

00:18:21,490 --> 00:18:24,929

TO GET OUT THERE, AND ONCE THE
WORK STARTS IT'S JUST LIKE

358

00:18:24,929 --> 00:18:26,490

TRAINING.

359

00:18:26,490 --> 00:18:32,360

WE TRAIN IN A HUGE POOL, YOU

MEMORIZE ALMOST EVERY HANDRAIL

360

00:18:32,360 --> 00:18:36,100

AND EVERY HAND MOVEMENT AND YOU
JUST SINK INTO IT.

361

00:18:36,100 --> 00:18:39,880

SPACE WALKING CAN GO SIX, EIGHT
HOURS AND TIME JUST FLIES BY.

362

00:18:39,880 --> 00:18:40,880

IT'S INCREDIBLE.

363

00:18:40,880 --> 00:18:42,389

YOU DON'T REALIZE YOU'RE TIRED
AND HUNGRY UNTIL YOU GET BACK

364

00:18:42,389 --> 00:18:45,799

INSIDE.

365

00:18:45,799 --> 00:18:47,110

THE EMOTION IS HUGE.

366

00:18:47,110 --> 00:18:48,850

UP UNTIL THE TIME YOU OPEN THE
HATCH AND YOU SEE THE EARTH FOR

367

00:18:48,850 --> 00:18:50,309

THE FIRST TIME AND YOU GO TO
WORK.

368

00:18:50,309 --> 00:18:54,309

WHEN YOU COME BACK YOU REALIZE
WHAT YOU ACCOMPLISHED AND WHAT

369

00:18:54,309 --> 00:18:56,510

THE GROUND ACCOMPLISHED AND YOU
TALK ABOUT WHAT HAPPENED AND

370

00:18:56,510 --> 00:19:02,100
THERE IS A SENSE OF RELIEF AND
FATIGUE SETS IN AND I THINK

371
00:19:02,100 --> 00:19:05,440
THAT'S WHEN IT'S MOST EXCITING
ESPECIALLY JUST BEFORE YOU GET

372
00:19:05,440 --> 00:19:07,669
IN THE HATCH TO COME IN THE LAST
TIME AND YOU LOOK DOWN AND SEE

373
00:19:07,669 --> 00:19:10,010
THE EARTH BELOW YOU.

374
00:19:10,010 --> 00:19:12,450
YOU CAN TAKE A FEW BREAKS WHILE
YOU'RE OUT THERE AND JUST GET AN

375
00:19:12,450 --> 00:19:13,840
IDEA OF WHAT'S GOING ON.

376
00:19:13,840 --> 00:19:20,850
WHEN I DID MY SPACE WALK, AND I
GRABBED THE VERY LAST HAND AND

377
00:19:20,850 --> 00:19:24,600
IT TOOK A COUPLE OF SECONDS TO
LOOK DOWN AND LOOK BACK AT THIS

378
00:19:24,600 --> 00:19:29,550
ENTIRE ENORMOUS \$100^BILLION
SPACE STATION THAT WAS ON THE

379
00:19:29,550 --> 00:19:34,500
EARTH THAT WAS OFF MY RIGHT HAND
AND IT TAKES YOUR BREATH AWAY.

380
00:19:34,500 --> 00:19:38,360
IT'S HARD^-- IT'S REALLY HARD TO

TAKE IT ALL IN.

381

00:19:38,360 --> 00:19:41,559

YOU DOWNLOAD IT TO YOUR BRAIN SO
YOU CAN THINK ABOUT IT LATER?

382

00:19:41,559 --> 00:19:42,710

THAT IS AN AMAZING EXPERIENCE.

383

00:19:42,710 --> 00:19:47,450

I CAN ONLY IMAGINE WHAT OOH LIKE
TO SEE THE STATION OUT THERE.

384

00:19:47,450 --> 00:19:51,120

>> STICK YOUR HAND OUT AND
SPREAD YOUR FINGERS APART ABOUT

385

00:19:51,120 --> 00:19:55,270

AN INCH AND THAT'S HOW THICK IS
THE ATMOSPHERE AND YOU HAVE THIS

386

00:19:55,270 --> 00:20:01,799

WHITE AND BLUE AND THIS THIN,
NEON BRIGHT ELECTRIC BLUE

387

00:20:01,799 --> 00:20:04,690

ATMOSPHERE THAT'S ABOUT THAT
THICK AND THE REST IS SPACE.

388

00:20:04,690 --> 00:20:07,860

IT'S A BLACK THAT YOU CAN'T
RE-CREATE ON EARTH.

389

00:20:07,860 --> 00:20:12,690

IT'S AN ABSENCE OF EVERYTHING,
IT'S A THICK, OILY, ALMOST

390

00:20:12,690 --> 00:20:17,120

PALPABLE DEPTH TO IT EVEN THOUGH
IT'S JUST BLACK.

391

00:20:17,120 --> 00:20:21,519

IT SEEMS TO SOAK UP LIGHT AND
COLOR INTO IT SO IT'S

392

00:20:21,519 --> 00:20:24,659

ACTUALLY^-- IT REALLY GRABS YOUR
SOUL WHEN YOU SEE THE BLACKNESS

393

00:20:24,659 --> 00:20:27,000

OF SPACE.

394

00:20:27,000 --> 00:20:28,870

SOME DATA FROM NASA.

395

00:20:28,870 --> 00:20:33,029

171^SPACE WALKS IN SUPPORT OF
THE STATION'S CONSTRUCTION.

396

00:20:33,029 --> 00:20:34,169

>> RIGHT.

397

00:20:34,169 --> 00:20:37,210

>> YOU'VE LOGGED ALMOST SIX
HOURS TOTAL, I GUESS, IN SPACE?

398

00:20:37,210 --> 00:20:38,210

IN WALK?

399

00:20:38,210 --> 00:20:41,759

>> IN SPACE WALK, NO, I'VE DONE
FOUR NOW.

400

00:20:41,759 --> 00:20:45,409

I CAME OUT, I'M NOT SURE WHAT IT
ADDS UP TO.

401

00:20:45,409 --> 00:20:48,910

I THINK WE'RE UP TO 25, 26

HOURS, BUT I WOULD HAVE TO GO

402

00:20:48,910 --> 00:20:50,980

BACK AND DO THE MATH.

403

00:20:50,980 --> 00:20:52,100

I'M SORRY.

404

00:20:52,100 --> 00:20:55,669

>> MY NAME IS RILEY McGREEN FROM
RHODE ISLAND.

405

00:20:55,669 --> 00:20:58,361

I WAS WONDERING WHAT YOU SEE AS
THE FUTURE OF THE U.S. SPACE

406

00:20:58,361 --> 00:21:01,909

PROGRAM WITH REGARDS TO GOING TO
THE MOON AND MAYBE MARS.

407

00:21:01,909 --> 00:21:05,080

DO YOU THINK IT'S IMPORTANT TO
SET NATIONAL GOALS LIKE THAT

408

00:21:05,080 --> 00:21:08,840

LIKE JOHN F. KENNEDY DID WHEN HE
SAID WE'LL GO TO THE MOON AND DO

409

00:21:08,840 --> 00:21:12,520

YOU THINK IT'S IMPORTANT FOR THE
NATION TO HAVE HUGE GOALS LIKE

410

00:21:12,520 --> 00:21:14,190

THOSE?

411

00:21:14,190 --> 00:21:19,429

>> AS AN ASTRONAUT, I DO THE
MISSION AND THAT'S A SIGN.

412

00:21:19,429 --> 00:21:24,509
WHAT I UNDERSTAND IS OUR CURRENT
PLAN.

413
00:21:24,509 --> 00:21:27,149
WE TALKED ABOUT GRABBING AN
ASTEROID AND GRABBING IT BACK TO

414
00:21:27,149 --> 00:21:31,440
LUNAR ORBIT AND I KNOW THERE'S A
LOT OF INTEREST IN THE PUBLIC OF

415
00:21:31,440 --> 00:21:34,429
DOING ALL OF THOSE THINGS.

416
00:21:34,429 --> 00:21:36,500
>> THESE PROJECTS TAKE A LONG
TIME AND THEY LAST LONGER THAN

417
00:21:36,500 --> 00:21:42,000
AN ADMINISTRATION SO I DO
BELIEVE IT'S IMPORTANT TO HAVE

418
00:21:42,000 --> 00:21:47,409
THE GOAL AND STICK TO IT, AND^--
BECAUSE IT WILL TAKE, YOU KNOW,

419
00:21:47,409 --> 00:21:50,020
IT TOOK US FROM THE TIME WE
DECIDED TO GO, NINE, ALMOST TEN

420
00:21:50,020 --> 00:21:51,960
YEARS TO LAND ON THE MOON.

421
00:21:51,960 --> 00:21:54,889
I WOULD LOVE TO SEE US TAKE ANY
ONE OF THOSE GOALS, PARTICULARLY

422
00:21:54,889 --> 00:22:00,529
THE ASTEROID MISSION DEPENDING

ON FUNDING ISSUES AND I THINK

423

00:22:00,529 --> 00:22:03,630

IT'S A LAUDABLE GOAL AND ALL OF
THESE THINGS ARE INCREDIBLY HARD

424

00:22:03,630 --> 00:22:04,630

TO DO.

425

00:22:04,630 --> 00:22:06,779

WOE CAN BARELY DO THIS.

426

00:22:06,779 --> 00:22:11,120

IT'S SO COMPLICATED AND SO
DIFFICULT TO DO.

427

00:22:11,120 --> 00:22:14,360

EVERY LAUNCH, EVERY LANDING,
EVERY SPACE WALK FROM SOMEONE

428

00:22:14,360 --> 00:22:16,880

WHO'S BEEN THERE AND SEEN
EVERYTHING IT TAKES TO DO IT.

429

00:22:16,880 --> 00:22:23,059

SO THESE OTHER ENDEAVORS WILL BE
RISKY, BE EXTREMELY DIFFICULT

430

00:22:23,059 --> 00:22:27,059

THINGS TO DO, HOWEVER, THAT IS
WHAT HOW WE GET BENEFIT FROM THE

431

00:22:27,059 --> 00:22:29,090

SPACE PROGRAM BECAUSE YOU HAVE
TO DEVELOP BRAND NEW

432

00:22:29,090 --> 00:22:33,240

TECHNOLOGIES AND BRAND NEW
PROCESSES AND THE GOAL IS TO

433

00:22:33,240 --> 00:22:34,540

EXPLORE THE STARS.

434

00:22:34,540 --> 00:22:37,350

SO IT'S HIGHLY MOTIVATING AND
HAS A LOT OF BENEFIT FOR PEOPLE.

435

00:22:37,350 --> 00:22:38,960

I'D LOVE TO SEE IT.

436

00:22:38,960 --> 00:22:41,560

>> WHILE WE'RE GETTING TO
ANOTHER QUESTION, I WANT TO

437

00:22:41,560 --> 00:22:43,690

WELCOME THOSE WHO JOINED US FROM
NASA TV.

438

00:22:43,690 --> 00:22:48,960

WE'RE COMING TO YOU FROM THE
GREAT HALL OF NEWS AT THE

439

00:22:48,960 --> 00:22:52,190

NEWSEUM FROM WASHINGTON, D.C.,
AND WE HAVE A VERY SPECIAL

440

00:22:52,190 --> 00:22:58,320

GUEST, DR. ^THOMAS MARSHBURN WHO
WALKED ON THE SPACE STATION AND

441

00:22:58,320 --> 00:22:59,730

RETURNED TO EARTH.

442

00:22:59,730 --> 00:23:05,630

WE'RE WATCHING NUMBER 26, RIGHT?

443

00:23:05,630 --> 00:23:07,310

>> RIGHT.

444

00:23:07,310 --> 00:23:10,330

>> THERE'S SOME OF THE INTRICATE
WORK.

445

00:23:10,330 --> 00:23:13,200

>> THOSE ARE ELECTRICAL CABLES
AND THEY CAN GET STIFF AND OLD

446

00:23:13,200 --> 00:23:17,010

AND THEY'RE HARD TO MANIPULATE
AFTER THEY'VE BEEN IN THE

447

00:23:17,010 --> 00:23:20,210

BLACKNESS OR VACUUM OF SPACE FOR
A WHILE SO THEY'RE WORKING HARD

448

00:23:20,210 --> 00:23:21,210

RIGHT NOW.

449

00:23:21,210 --> 00:23:22,599

>> WE HAVE ANOTHER QUESTION.

450

00:23:22,599 --> 00:23:25,590

>> HI, MY NAME IS CASSANDRA, AND
I'M FROM VERMONT.

451

00:23:25,590 --> 00:23:30,820

I'M WONDERING WHAT IS THE EXTENT
OF THE TRAINING, FOR EXAMPLE,

452

00:23:30,820 --> 00:23:32,899

HOW LONG DOES IT GO ON FOR?

453

00:23:32,899 --> 00:23:36,290

WHAT ARE THE DIFFERENT TASKS YOU
HAVE TO ACCOMPLISH, ET CETERA.

454

00:23:36,290 --> 00:23:39,909

>> FOR TRAINING TO BECOME^-- TO

FLY TO THE SPACE STATION AND TO

455

00:23:39,909 --> 00:23:40,909

DO A SPACE WALK?

456

00:23:40,909 --> 00:23:41,909

>> YES.

457

00:23:41,909 --> 00:23:44,650

>> ONCE YOU'RE ASSIGNED TO BE AN
ASTRONAUT YOU START TRAINING AND

458

00:23:44,650 --> 00:23:48,299

IT'S A TWO-YEAR PERIOD.

459

00:23:48,299 --> 00:23:53,139

YOU ARE LEARNING HOW TO FLY JETS
AND WORK IN THE SIMULATORS AND

460

00:23:53,139 --> 00:23:55,980

BASIC ORBITAL MECHANICS SO
EVERYONE GETS UP TO THE SAME

461

00:23:55,980 --> 00:23:59,799

LEVEL WHETHER YOU'RE A DOCTOR OR
ENGINEER OR STARTING OFF AS A

462

00:23:59,799 --> 00:24:00,970

PILOT.

463

00:24:00,970 --> 00:24:03,580

AFTER THAT, IT'S TWO AND A HALF
YEARS OF TRAINING TO GET READY

464

00:24:03,580 --> 00:24:08,220

TO FLY TO THE SPACE STATION AND
TYPICALLY AROUND 20^HOURS OF

465

00:24:08,220 --> 00:24:11,039

SPACE WALK, TRAINING IN THE
POOL.

466

00:24:11,039 --> 00:24:13,100

IT USED TO BE A LOT MORE THAN
THAT.

467

00:24:13,100 --> 00:24:16,159

>> I'M SURPRISED IT'S NOT MORE.

468

00:24:16,159 --> 00:24:18,139

>> WELCOME TO THE CLUB OUTSIDE.

469

00:24:18,139 --> 00:24:20,120

>> IT FEELS THAT WAY SOMETIMES.

470

00:24:20,120 --> 00:24:24,029

I DID MY FIRST SPACE WALKS ON
THE SHUTTLE AND WE DID AT LEAST

471

00:24:24,029 --> 00:24:28,590

SEVEN TIMELINE RUNS LIKE WE'LL
DO THEM IN SPACE BEFORE WE DO IT

472

00:24:28,590 --> 00:24:31,299

AND NOW WITH THE SPACE STATION,
YOU DON'T NECESSARILY KNOW WHAT

473

00:24:31,299 --> 00:24:34,259

YOU'RE GOING TO BE DOING AND
THEY TRAIN US ON THE WHOLE SKILL

474

00:24:34,259 --> 00:24:39,769

SET AND TYPICALLY IT'S ABOUT
AFTER THE 12th HOUR OF WORKING

475

00:24:39,769 --> 00:24:42,660

IN THE POOL TO HAVE AN IDEA OF
WHAT YOU'LL BE ABLE TO DO AND

476

00:24:42,660 --> 00:24:46,559

THEY CAN TRAIN YOU BEYOND THAT
TO MORE TASKS AND TYPICALLY AN

477

00:24:46,559 --> 00:24:51,240

ASTRONAUT WILL GET 20, 25^HOURS
IN THE POOL OF WORK BEFORE THEY

478

00:24:51,240 --> 00:24:55,179

CAN^-- EXCUSE ME, THAT'S 12^RUNS
IN THE POOL.

479

00:24:55,179 --> 00:24:58,450

NOT HOURS, BUT 12^RUNS AND
TYPICALLY 10^TO 20^RUNS IN THE

480

00:24:58,450 --> 00:24:59,450

POOL.

481

00:24:59,450 --> 00:25:01,989

TO LEARN THE BASIC SKILLS YOU'LL
BE ABLE TO DO THESE THINGS.

482

00:25:01,989 --> 00:25:02,989

>> OKAY.

483

00:25:02,989 --> 00:25:03,989

THANK YOU.

484

00:25:03,989 --> 00:25:04,989

>> THANKS.

485

00:25:04,989 --> 00:25:06,070

NEXT QUESTION HERE.

486

00:25:06,070 --> 00:25:10,070

HI, I'M JOE V. HILL FROM
COLORADO, AND I WAS WONDERING AS

487

00:25:10,070 --> 00:25:14,090

A KID DID YOU EVER PICTURE
YOURSELF BECOMING AN ASTRONAUT?

488

00:25:14,090 --> 00:25:17,639

IS THERE SOMETHING THAT ASPIRED
YOU TO BE AN ASTRONAUT BY A KID?

489

00:25:17,639 --> 00:25:21,320

>> I WAS VERY FASCINATED WITH
ASTRONAUTS AND FLYING IN SPACE

490

00:25:21,320 --> 00:25:22,559

AND I NEVER THOUGHT I COULD BE
ONE.

491

00:25:22,559 --> 00:25:26,680

I'D THOUGHT YOU WERE CRAZY IF
AND I HAD THE CHANCE TO DO IT

492

00:25:26,680 --> 00:25:29,280

AND I DID.

493

00:25:29,280 --> 00:25:33,310

I LOVED ADVENTURE STORIES AND I
DON'T KNOW IF YOU'VE SEEN THE

494

00:25:33,310 --> 00:25:39,179

MOVIE "2001^SPACE ODYSSEY" WHEN
IT CAME OUT IT CHANGED MY LIFE

495

00:25:39,179 --> 00:25:42,110

IN THE SENSE THAT I BECAME
FASCINATED WITH SPACE.

496

00:25:42,110 --> 00:25:44,590

IT WAS WHEN I WAS IN HIGH SCHOOL
I WAS AN AVID READER AND I

497

00:25:44,590 --> 00:25:48,789
STARTED READING ABOUT BUILDING
COMMUNICATION SATELLITES AND

498
00:25:48,789 --> 00:25:51,940
THAT TURNED ME AROUND TO WANTING
TO GO INTO SCIENCE AND

499
00:25:51,940 --> 00:25:55,149
ENGINEERING MATH BECAUSE I
COULDN'T BELIEVE PEOPLE COULD DO

500
00:25:55,149 --> 00:25:59,340
THAT, AND IT WASN'T UNTIL I
BECAME A PROFESSIONAL AND BECAME

501
00:25:59,340 --> 00:26:03,149
A PHYSICIAN THAT I THOUGHT MAYBE
I COULD BE AN ASTRONAUT.

502
00:26:03,149 --> 00:26:05,309
ONE THING I DID DO THAT I THINK
IS IMPORTANT FOR PEOPLE WHO WANT

503
00:26:05,309 --> 00:26:07,190
TO BECOME AN ASTRONAUT.

504
00:26:07,190 --> 00:26:12,490
PICK AN ASTRONAUT THAT INSPIRES
YOU AND CHECK OUT WHAT THEY DID,

505
00:26:12,490 --> 00:26:16,539
YOU DON'T HAVE TO FOLLOW THEIR
PATH, BUT SEE WHAT SCHOOLS THEY

506
00:26:16,539 --> 00:26:20,040
WENT TO, WHAT DEGREES DID THEY
GET?

507
00:26:20,040 --> 00:26:22,850

YOU HAVE THE ADVANTAGE EVER
HAVING A WHOLE PALETTE OF

508

00:26:22,850 --> 00:26:31,210

OPTIONS

SO YOU'LL HAVE A LOT

509

00:26:31,210 --> 00:26:37,609

MORE OPTIONS FOR FLYING IN SPACE
THAN I DID GROWING UP FOR SURE.

510

00:26:37,609 --> 00:26:40,789

>> NASA.GOV HAS A LOT OF THAT
BIOGRAPHICAL INFORMATION AND

511

00:26:40,789 --> 00:26:42,159

INFORMATION ABOUT THE PROGRAM
AND^--

512

00:26:42,159 --> 00:26:43,159

>> OKAY.

513

00:26:43,159 --> 00:26:45,790

>> THAT'S A GOOD WEBSITE TO
START WITH, BUT IT'S ALL OVER

514

00:26:45,790 --> 00:26:48,340

THE WEB IN THE LAST FEW YEARS.

515

00:26:48,340 --> 00:26:51,269

AT THE NEWSEUM WE HAVE A LOT OF
THINGS RELATED TO SPACE FLIGHT.

516

00:26:51,269 --> 00:26:55,960

ONE OF OUR TRUSTEES WAS ALAN
SHEPARD, THE FIRST AMERICAN TO

517

00:26:55,960 --> 00:27:01,129

GO INTO SPACE AND WE HAVE ALMOST
EVERYTHING AT THE NEWSEUM IS THE

518

00:27:01,129 --> 00:27:02,129

THING.

519

00:27:02,129 --> 00:27:04,500

IT'S NOT A REPLICA AND IT'S NOT
A REPRODUCTION, BUT I HAVE TO

520

00:27:04,500 --> 00:27:09,720

ADMIT I HAVE A SATELLITE, THAT'S
NOT THE ACTUAL SATELLITE.

521

00:27:09,720 --> 00:27:11,110

THAT WAS A TRAINING MODEL.

522

00:27:11,110 --> 00:27:13,559

EVERYTHING ELSE IS PRETTY MUCH
REAL AND THAT WAS UP IN SPACE

523

00:27:13,559 --> 00:27:17,860

AND THAT WAS ONE OF THE FIRST
BROADCAST SATELLITES, BUT THE

524

00:27:17,860 --> 00:27:21,340

SPACE PROGRAM HAS BEEN A PART OF
THIS NATION'S HISTORY SINCE THE

525

00:27:21,340 --> 00:27:26,320

1950s AND REALLY IN TERM OF
THEORY EVEN BEFORE THAT AND WE

526

00:27:26,320 --> 00:27:29,530

HAVE SOME REMARKABLE EXAMPLES OF
THE NEWS REPORTS HERE AT THE

527

00:27:29,530 --> 00:27:33,160

NEWSEUM, BUT IF YOU WANT TO GO
AHEAD WITH ANOTHER QUESTION,

528

00:27:33,160 --> 00:27:34,160
PLEASE.

529
00:27:34,160 --> 00:27:35,160
>> HI.

530
00:27:35,160 --> 00:27:37,570
I'M ALEXANDRIA BROWN FROM
CALIFORNIA, AND I WAS JUST

531
00:27:37,570 --> 00:27:41,419
WONDERING DURING THE WHOLE
PROCESS WHETHER IT BE TRAINING

532
00:27:41,419 --> 00:27:46,350
OR ONCE YOU WENT UP THERE, WAS
IT FRIGHTENING?

533
00:27:46,350 --> 00:27:48,450
>> THE BOTTOM LINE QUESTION, I
THINK.

534
00:27:48,450 --> 00:27:51,149
>> IT PROBABLY FEELS ABOUT THE
SAME AS WHEN YOU'LL TAKE AN

535
00:27:51,149 --> 00:27:52,149
EXAM.

536
00:27:52,149 --> 00:27:53,149
YOU DON'T WANT TO MESS UP.

537
00:27:53,149 --> 00:27:56,110
SO DURING TRAINING I'M SURE
ASTRONAUTS HAVE THAT FEELING

538
00:27:56,110 --> 00:27:58,830
THAT CROSSES THEIR MINDS.

539

00:27:58,830 --> 00:28:01,630
THE GOOD THING IS THAT YOU'RE
THERE AND HAVE GOTTEN TO THAT

540
00:28:01,630 --> 00:28:04,879
POINT AND THE TRAINING TEAM
WANTS TO MAKE SURE YOU SUCCEED

541
00:28:04,879 --> 00:28:08,259
SO YOU CAN GO BACK, IF YOU EVER
NEED TO YOU CAN ANY BARK AND

542
00:28:08,259 --> 00:28:11,409
THEY'LL GET YOU THE TRAINING YOU
NEED TO GET YOU WHERE YOU NEED

543
00:28:11,409 --> 00:28:12,409
TO GO.

544
00:28:12,409 --> 00:28:15,059
SO WHEN YOU GET OUTSIDE THE
SPACE STATION IT CROSSES YOUR

545
00:28:15,059 --> 00:28:17,809
MIND THAT YOU DON'T WANT TO MESS
UP SO YOU'RE VERY FOCUSED ON

546
00:28:17,809 --> 00:28:19,110
WHAT YOU'RE DOING.

547
00:28:19,110 --> 00:28:23,970
I WOULD NOT SAY THERE IS A FEAR
OF^-- IT'S A VERY RISKY

548
00:28:23,970 --> 00:28:24,970
ENDEAVOR.

549
00:28:24,970 --> 00:28:26,760
THEY'RE IN A VACUUM OF SPACE
WITH JUST A SPACE SUIT BETWEEN

550

00:28:26,760 --> 00:28:31,399

THEM AND THE VACUUM, BUT THERE'S
SO MUCH GOING ON THAT YOU HAVE

551

00:28:31,399 --> 00:28:34,009

TO TRUST THE ENGINEERS THAT HAVE
BUILT YOUR SUITS AND THE

552

00:28:34,009 --> 00:28:37,360

ENGINEERS WATCHING THAT SUIT AND
THAT ARE CHECKING OUT THE WORK

553

00:28:37,360 --> 00:28:38,850

THAT YOU'RE DOING AND THEY'RE
WORKING WITH ELECTRICAL

554

00:28:38,850 --> 00:28:42,149

CONNECTORS AND YOU HAVE TO TRUST
PEOPLE ON THE GROUND TO HAVE

555

00:28:42,149 --> 00:28:45,070

STOPPED THE FLOW OF CURRENT SO
YOU DON'T SHOCK YOURSELF WHILE

556

00:28:45,070 --> 00:28:49,730

YOU'RE WORKING WITH THIS AND
THAT IS SO OVERWHELMING THAT YOU

557

00:28:49,730 --> 00:28:50,730

DON'T THINK ABOUT IT.

558

00:28:50,730 --> 00:28:55,320

YOU REALLY DON'T AND YOU'RE
EXCITED ABOUT GOING OUT AND YOU

559

00:28:55,320 --> 00:29:00,350

UNDERSTAND THE RISK, BUT IT'S
SOMETHING YOU ACCEPTED LONG AGO.

560

00:29:00,350 --> 00:29:03,500

IT'S AN ELEPHANT IN THE ROOM,
BUT IT'S A WAY BACK BEHIND YOU

561

00:29:03,500 --> 00:29:04,500

THERE.

562

00:29:04,500 --> 00:29:05,500

>> THANK YOU.

563

00:29:05,500 --> 00:29:08,340

>> WE HAVE A QUESTION HERE.

564

00:29:08,340 --> 00:29:09,340

>> ALL RIGHT.

565

00:29:09,340 --> 00:29:10,340

GOOD MORNING.

566

00:29:10,340 --> 00:29:14,139

MY NAME IS KEITH McCLURE FROM
MISSISSIPPI, AND I WAS WONDERING

567

00:29:14,139 --> 00:29:18,580

WHAT'S IT LIKE LIVING ON A
SPACECRAFT, LIKE, IN SPACE.

568

00:29:18,580 --> 00:29:20,659

CAN YOU DESCRIBE THE FOOD?

569

00:29:20,659 --> 00:29:22,830

WHAT DO YOU GUYS DO AT NIGHT?

570

00:29:22,830 --> 00:29:25,230

DO YOU ALL GO TO SLEEP?

571

00:29:25,230 --> 00:29:29,759

AND IN THE FUTURE WILL THERE BE

THE OPPORTUNITY FOR YOUNG

572

00:29:29,759 --> 00:29:33,820

STUDENTS TO GO UP THERE LIKE FOR
INTERNS AND STUFF?

573

00:29:33,820 --> 00:29:35,389

>> AN INTERN ON THE SPACE
STATION.

574

00:29:35,389 --> 00:29:37,249

AN INTERESTING CONCEPT.

575

00:29:37,249 --> 00:29:38,490

>> GOOD QUESTION.

576

00:29:38,490 --> 00:29:40,919

THE SECOND PART OF YOUR
QUESTION, MAYBE NOT ANY TIME

577

00:29:40,919 --> 00:29:44,030

REAL SOON, BUT ULTIMATELY ALL
ASTRONAUTS WOULD LOVE TO SEE THE

578

00:29:44,030 --> 00:29:46,029

DAY WHEN EVERYBODY CAN GO.

579

00:29:46,029 --> 00:29:50,370

EVERY MAJOR TRANSFORMATION OF
OUR ABILITY TO TRAVEL HAS

580

00:29:50,370 --> 00:29:53,460

OCCURRED IN EXACTLY THE SAME WAY
IT'S HAPPENING RIGHT NOW.

581

00:29:53,460 --> 00:29:56,350

HUGE GOVERNMENT ENTITIES SEND
OUT SAILING SHIPS AND STEAM

582

00:29:56,350 --> 00:30:00,129
SHIPS OR AIRPLANES AND PRIVATE
COMPANIES TAKE OVER.

583
00:30:00,129 --> 00:30:03,159
REALLY WEALTHY PEOPLE CAN BUY
TICKETS ON THOSE AND IT OPENS IT

584
00:30:03,159 --> 00:30:08,419
UP EVERYBODY ELSE TO GET THE
TECHNOLOGY WE NEED.

585
00:30:08,419 --> 00:30:11,820
I FEEL CONFIDENT IT'S GOING TO
HAPPEN WHEN STUDENTS WILL BE

586
00:30:11,820 --> 00:30:14,379
GOING UP THERE AS WELL.

587
00:30:14,379 --> 00:30:18,200
LIFE IN SPACE IS GREAT RIGHT
NOW.

588
00:30:18,200 --> 00:30:22,070
AS A SPACE FARING NATION AFTER A
DECADE OF FLYING IN SPACE WE'RE

589
00:30:22,070 --> 00:30:23,389
GOOD AT IT.

590
00:30:23,389 --> 00:30:25,480
IT'S REICH A CAMPING TRIP.

591
00:30:25,480 --> 00:30:28,179
YOU CAN'T TAKE A SHOWER AND NOT
GET ALL OF THE FOOD YOU WANT.

592
00:30:28,179 --> 00:30:31,730
I MISSED FRESH FRUIT, FRESH
VEGETABLES AND FRESH BREAD.

593

00:30:31,730 --> 00:30:36,900

YOU CAN'T GET COFFEE IN A CUP,
YOU GET IT IN A POUCH SORT OF

594

00:30:36,900 --> 00:30:38,610

THING.

595

00:30:38,610 --> 00:30:42,320

THE FOOD IS GREAT AND IT KEEPS
US HEALTHY.

596

00:30:42,320 --> 00:30:45,480

THE WORK IS MEANINGFUL AND
PLENTIFUL AND THERE'S A LOT TO

597

00:30:45,480 --> 00:30:48,499

KEEP YOU BUSY AND YOU END UP
EVERY DAY TIRED BECAUSE OF THE

598

00:30:48,499 --> 00:30:50,600

WORK IN THE LABORATORY.

599

00:30:50,600 --> 00:30:52,860

THIS HAS TO BE DONE EVERY ONCE
IN A WHILE AND OUR MAIN JOB UP

600

00:30:52,860 --> 00:30:56,580

THERE IS TO DO RESEARCH AT THIS
NATIONAL LABORATORY WHICH IS OUR

601

00:30:56,580 --> 00:31:01,249

SPACE STATION AND THAT ACTUALLY
ADDS A LOT TO IT.

602

00:31:01,249 --> 00:31:05,190

TIME FLIES AND EVERY DAY YOU
FEEL GOOD ABOUT WHAT YOU'VE

603

00:31:05,190 --> 00:31:06,190
DONE.

604
00:31:06,190 --> 00:31:09,840
SO I THINK THAT'S ONE OF THE
THINGS THAT MAKES LIFE UP THERE

605
00:31:09,840 --> 00:31:10,840
SO GOOD.

606
00:31:10,840 --> 00:31:13,570
SLEEPING AND ALL OF THAT IS ALL
UNIQUE AND WONDERFUL AND OUR

607
00:31:13,570 --> 00:31:15,470
BODIES ARE GOOD AT ADAPTING AT
THAT SORT OF THING.

608
00:31:15,470 --> 00:31:17,799
SO LIFE IS GOOD UP THERE.

609
00:31:17,799 --> 00:31:18,880
>> THANK YOU.

610
00:31:18,880 --> 00:31:19,880
>> THANKS.

611
00:31:19,880 --> 00:31:21,389
>> THERE'S ANOTHER ASPECT TO
LIVING ON THE STATION AND THAT'S

612
00:31:21,389 --> 00:31:23,279
THE PHYSICAL IMPACT ON YOU.

613
00:31:23,279 --> 00:31:26,480
TALK FOR A MOMENT ABOUT WHAT
IT'S LIKE TO SPEND THAT MUCH

614
00:31:26,480 --> 00:31:30,139

TIME IN SPACE AND THE THINGS
THAT OCCUR TO THE HUMAN BODY AND

615

00:31:30,139 --> 00:31:32,919

THE THINGS YOU HAVE TO WORRY
ABOUT AS A FLIGHT SURGEON.

616

00:31:32,919 --> 00:31:33,919

>> YEAH.

617

00:31:33,919 --> 00:31:37,460

AS SOON AS YOU GET UP IN TO
SPACE THERE'S A THING CALLED

618

00:31:37,460 --> 00:31:42,299

SPACE ADAPTATION SYNDROME THAT
AFFECTS THREE OUT OF FIVE

619

00:31:42,299 --> 00:31:46,350

ASTRONAUTS AND THEY LOSE THEIR
APPETITE AND YOU FEEL QUEASY AND

620

00:31:46,350 --> 00:31:51,070

AT WORST, YOU GET ACTIVELY SICK
AND THAT LASTS 12^TO 24^HOURS

621

00:31:51,070 --> 00:31:59,559

AND AFTER THAT YOU ARE GOING
PRETTY WELL.

622

00:31:59,559 --> 00:32:04,450

I REALIZED ON MY STATION FLIGHT
THAT MY BODY REALLY TOOK ABOUT A

623

00:32:04,450 --> 00:32:06,970

WEEK^-- IT TOOK ABOUT A MONTH TO
SIX WEEKS TO ADAPT.

624

00:32:06,970 --> 00:32:10,540

I WAS BACK TO COMPLETELY BEING

NORMAL WITH MY APPETITE AND

625

00:32:10,540 --> 00:32:15,549

SLEEP SCHEDULE AFTER ABOUT A
MONTH, MAYBE ABOUT SIX WEEKS.

626

00:32:15,549 --> 00:32:17,320

ONE THING THAT HAPPENS TO YOUR
BODY THOUGH THAT WE ARE

627

00:32:17,320 --> 00:32:20,450

CONCERNED ABOUT IS YOUR BONES
REABSORB, YOU START TO TURN INTO

628

00:32:20,450 --> 00:32:26,509

JELLYFISH SORT OF AND THAT IS
WHY WE EXERCISE SO HARD.

629

00:32:26,509 --> 00:32:29,549

FLOATING IN SPACE IS MORE
RELAXING TO YOUR BODY THAN

630

00:32:29,549 --> 00:32:33,899

SITTING IN YOUR CHAIR OR LYING
IN BED BECAUSE YOUR MUSCLES ARE

631

00:32:33,899 --> 00:32:36,450

WORKING TO KEEP YOURSELF UPRIGHT
AND YOU DON'T EVEN HAVE TO DO

632

00:32:36,450 --> 00:32:37,450

THAT IN SPACE.

633

00:32:37,450 --> 00:32:39,000

>> SO THAT'S THE BICYCLE WE'VE
SEEN.

634

00:32:39,000 --> 00:32:43,630

>> SO TWO AND A HALF HOURS A DAY
OF EXERCISE ON A STATIONARY BIKE

635

00:32:43,630 --> 00:32:50,519

WITH BUNGEEES THAT PULL YOU DOWN
TO KEEP YOU ON THE TREADMILL.

636

00:32:50,519 --> 00:32:54,330

YOU CAN DO 600OUNDS^-- I
CAN'T, BUT 600OUND SLOTS,

637

00:32:54,330 --> 00:32:58,639

MAYBE ONE OF THESE GUYS CAN,
THEY'RE INCREDIBLE ATHLETES AND

638

00:32:58,639 --> 00:33:02,659

MOST ASTRONAUTS COME BACK WITH
MORE LEAN MASS AND LESS FAT THAN

639

00:33:02,659 --> 00:33:06,090

WHEN THEY LEFT BECAUSE WE ARE SO
COMMITTED TO GETTING EXERCISE

640

00:33:06,090 --> 00:33:07,090

WHILE WE'RE UP THERE.

641

00:33:07,090 --> 00:33:09,200

>> IF WE DIDN'T DO THAT YOU
WOULDN'T BE ABLE TO GET SPACE

642

00:33:09,200 --> 00:33:10,960

FLIGHTS.

643

00:33:10,960 --> 00:33:14,230

IT HAS HAPPENED IN THE RUSSIAN
SPACE HISTORY THAT THEY DIDN'T

644

00:33:14,230 --> 00:33:19,240

CLOSE THE HATCH ONCE THEY WENT
OUT BECAUSE THEIR MUSCLES ARE

645

00:33:19,240 --> 00:33:23,600
HAVING A HARD TIME AND THEY CAME
AROUND AND GOT INTO AN ALTERNATE

646
00:33:23,600 --> 00:33:26,529
WAY BACK INTO THE SPACE STATION,
AND WE WANT TO AVOID THAT

647
00:33:26,529 --> 00:33:30,159
HAPPENING AND WE WANT TO WORK
HARD ONCE WE GET THERE.

648
00:33:30,159 --> 00:33:34,710
>> I HAVEN'T ADJUSTED YET AND
I'VE BEEN BACK TWO MONTHS AND I

649
00:33:34,710 --> 00:33:37,549
FEEL NORMAL RIGHT NOW AND I
THINK IT WILL TAKE SIX MONTHS

650
00:33:37,549 --> 00:33:40,940
FOR MY BONES TO GET BACK TO
NORMAL.

651
00:33:40,940 --> 00:33:42,960
THEY'RE STILL A LITTLE BIT WEAK
AND NOT THAT I CAN TELL.

652
00:33:42,960 --> 00:33:43,960
I FEEL FINE.

653
00:33:43,960 --> 00:33:48,230
MY STAMINA IS NOT WHAT IT WAS
BEFORE I LEFT WHEN I WORKED OUT

654
00:33:48,230 --> 00:33:52,499
AND IT TOOK A COUPLE OF WEEKS
BEFORE I WASN'T FALLING OVER

655
00:33:52,499 --> 00:33:56,029

WHEN I TRIED TO WALK OR LETTING
GOES OF THINGS IN THE AIR AND

656

00:33:56,029 --> 00:33:59,990
EXPECTING THEM HOVER AND FALLING
DOWN IN THE GROUND.

657

00:33:59,990 --> 00:34:01,860
IN THE KITCHEN.

658

00:34:01,860 --> 00:34:02,860
>> YEAH.

659

00:34:02,860 --> 00:34:05,440
MY FAMILY WOULDN'T LET ME HAVE A
DRINK UNLESS IT WAS IN A PLASTIC

660

00:34:05,440 --> 00:34:09,170
SIPPY CUP FOR A WHILE FOR FEAR
THAT I WOULD BREAK IT.

661

00:34:09,170 --> 00:34:11,160
THIS IS A GREAT VIEW.

662

00:34:11,160 --> 00:34:14,350
THIS IS A HELMET CAMERA VIEW
LOOKING BACK.

663

00:34:14,350 --> 00:34:16,700
WE HAVE A LOT OF STATIC THERE.

664

00:34:16,700 --> 00:34:20,090
THAT WAS THE EXTENSION OF THE
RUSSIAN SEGMENT ALL OF THE WAY

665

00:34:20,090 --> 00:34:22,760
BACK TO AFTER THE SPACE STATION.

666

00:34:22,760 --> 00:34:25,610

THEY'RE IN THE BRIGHT SUN LIGHT
RIGHT NOW AND YOU CAN FEEL THAT

667

00:34:25,610 --> 00:34:27,340

THROUGH YOUR SUIT.

668

00:34:27,340 --> 00:34:31,170

YOU HAVE A TEMPERATURE CONTROL
ON YOUR SPACE SUIT AND IT'S A

669

00:34:31,170 --> 00:34:35,020

PULLING GARMENT, A MILE OF
TUBING THAT'S IN THE UNDERWEAR

670

00:34:35,020 --> 00:34:39,860

OF THE SPACE SUIT, AND YOU CAN
CONTROL THAT FLOW.

671

00:34:39,860 --> 00:34:44,010

TYPICALLY PEOPLE LEAVE IT IN ONE
PLACE SO THAT ON THE SUN SIDE

672

00:34:44,010 --> 00:34:47,030

YOU GET SWEATY AND KIND OF WARM
AND ON THE NIGHT SIDE YOU GET

673

00:34:47,030 --> 00:34:50,000

CHILLS AND YOU CAN DEFINITELY
FEEL THE TEMPERATURE CHANGES

674

00:34:50,000 --> 00:34:55,340

ABOUT 300^DEGREES ON THE SUNNY
SIDE AND NEGATIVE 200^DEGREES ON

675

00:34:55,340 --> 00:34:58,440

THE DARK SIDE SO THAT SUIT IS
REALLY PROTECTING YOU.

676

00:34:58,440 --> 00:35:00,720

ANOTHER QUESTION, PLEASE.

677

00:35:00,720 --> 00:35:03,140

>> I'M DONALD PUTNAM AND I'M
FROM MARYLAND AND I WAS

678

00:35:03,140 --> 00:35:05,700

WONDERING WHAT ARE THE BIGGEST
CHALLENGES YOU FACE IN THIS

679

00:35:05,700 --> 00:35:09,100

CAREER AND WHAT MAKES THIS
CHALLENGE WORTH OVERCOMING?

680

00:35:09,100 --> 00:35:13,660

>> THERE ARE A LOT OF CHALLENGES
AND ONE OF THE MAIN THING IS

681

00:35:13,660 --> 00:35:17,440

JUST GRASPING SO MANY DIFFERENT
FIELDS ALL AT ONCE AND WE HAVE

682

00:35:17,440 --> 00:35:21,890

TO LEARN HOW TO BE PLUMBERS,
ELECTRICIANS AND PLUMBERS AND

683

00:35:21,890 --> 00:35:24,660

EVERYBODY TAKES FIRST AID AND
THERE'S ALWAYS A MEDICAL OFFICER

684

00:35:24,660 --> 00:35:26,530

EVEN IF IT'S NOT A DOCTOR.

685

00:35:26,530 --> 00:35:29,530

YOU HAVE TO BECOME AS BEST YOU
CAN A SPECIALIST IN EVERY AREA.

686

00:35:29,530 --> 00:35:33,300

YOU ARE WORKING WITH PEOPLE THAT
HAVE A PH.D LEVEL OF EXPERIENCE.

687

00:35:33,300 --> 00:35:36,690

AN ASTRONAUT'S KNOWLEDGE IS
ABOUT AN INCH DEEP AND VERY

688

00:35:36,690 --> 00:35:43,410

BROAD WHEREAS THE SPECIALISTS
ARE A MILE DEEP AND VERY NARROW.

689

00:35:43,410 --> 00:35:46,140

WE TRY MAINTAIN OUR BREATH AND
WE GET AS DEEP AS WE CAN AND

690

00:35:46,140 --> 00:35:50,000

IT'S A LIFELONG STUDY.

691

00:35:50,000 --> 00:35:53,551

ONE ASPECT OF THAT THAT IS
CHALLENGING, WE NEED LEARN

692

00:35:53,551 --> 00:35:59,840

RUSSIAN TO FLY ON THE SOYUZ
SPACECRAFT AND FLY ON IT.

693

00:35:59,840 --> 00:36:03,630

ONE-THIRD OF THE SPACE STATION
IN TERMS OF AREA IS THE VOLUME

694

00:36:03,630 --> 00:36:09,370

AND BUILT BY THE RUSSIANS.

695

00:36:09,370 --> 00:36:14,320

WE COMMUNICATE IN RUSSIAN WHILE
WE'RE FLYING UP THERE AND SO I

696

00:36:14,320 --> 00:36:15,530

THINK THAT'S PROBABLY THE
BIGGEST CHALLENGE.

697

00:36:15,530 --> 00:36:19,252

THE OTHER CHALLENGE IS WAITING
FOR YOUR FLIGHT AND THERE'S BEEN

698

00:36:19,252 --> 00:36:20,920

ANOTHER ASPECT THAT'S
INTERESTING IS EVERYBODY'S

699

00:36:20,920 --> 00:36:24,350

ALWAYS WATCHING YOU, NO MATTER
WHAT YOU'RE DOING AND THERE ARE

700

00:36:24,350 --> 00:36:30,070

PEOPLE EVALUATING HOW YOU WORK
AND WHETHER YOU'RE IN A

701

00:36:30,070 --> 00:36:32,150

SIMULATOR OR UP IN SPACE.

702

00:36:32,150 --> 00:36:34,630

SO THOSE ARE ALL PRETTY
SIGNIFICANT CHALLENGES, I THINK.

703

00:36:34,630 --> 00:36:35,820

IT'S WORTH IT.

704

00:36:35,820 --> 00:36:37,290

IT WAS A LOT OF FUN.

705

00:36:37,290 --> 00:36:40,050

>> FOR THOSE OF US WHO JUST
JOINED US, WE'RE COMING TO YOU

706

00:36:40,050 --> 00:36:44,440

FROM NASA TELEVISION FROM THE
NEWSEUM IN WASHINGTON, D.C. AND

707

00:36:44,440 --> 00:36:50,020

ASKING QUESTIONS RIGHT NOW ARE
MEMBERS OF THE 2013^FREE SPIRIT

708

00:36:50,020 --> 00:36:53,630

AND JOURNALISM CONFERENCE WHO
ARE HERE THIS WEEK FROM ALL 51

709

00:36:53,630 --> 00:36:58,680

STATES AND THEY'RE ASKING
QUESTIONS OF ASTRONAUT TOM

710

00:36:58,680 --> 00:37:02,190

MARSHBURN WHO IS THE LAST
ASTRONAUT TO WALK IN SPACE IN

711

00:37:02,190 --> 00:37:04,800

THE SPACE STATION AND RETURNED
TO EARTH IN MID-MAY AND HE'S

712

00:37:04,800 --> 00:37:09,020

HERE WATCHING THE SCHEMATIC OF
THE WORK THAT THEY'RE DOING AND

713

00:37:09,020 --> 00:37:11,590

SOME OF THE LIVE SHOTS FROM THE
INTERNATIONAL SPACE STATION

714

00:37:11,590 --> 00:37:14,200

WHERE IT'S A SIX AND A HALF HOUR
SPACE WALK.

715

00:37:14,200 --> 00:37:16,090

>> I BELIEVE THAT'S WHAT WAS
PLANNED.

716

00:37:16,090 --> 00:37:17,090

YEP.

717

00:37:17,090 --> 00:37:18,369

SIX AND A HALF HOURS.

718

00:37:18,369 --> 00:37:22,120

>> THOSE OF YOU IN THE NEWSEUM
ARE WATCHING IT ON A LARGE

719

00:37:22,120 --> 00:37:25,530

SCREEN WHICH IS ONE OF OUR
SIGNATURE EXPERIENCES HERE.

720

00:37:25,530 --> 00:37:26,810

LET'S HAVE ANOTHER QUESTION.

721

00:37:26,810 --> 00:37:27,810

>> HI.

722

00:37:27,810 --> 00:37:29,310

I'M MAXY GENING, AND I'M FROM
OREGON.

723

00:37:29,310 --> 00:37:30,760

SO WHERE DO YOU GO FROM HERE?

724

00:37:30,760 --> 00:37:34,420

OBVIOUSLY, YOU'VE BEEN TO SPACE,
SO WHERE DO YOU SEE YOUR CAREER

725

00:37:34,420 --> 00:37:35,420

PROGRESSING?

726

00:37:35,420 --> 00:37:36,420

DO YOU WANT TO RETURN TO NASA?

727

00:37:36,420 --> 00:37:41,050

DO YOU WANT TO RETURN TO SPACE
OR DO YOU HAVE OTHER PLANS?

728

00:37:41,050 --> 00:37:45,570

>> MOST PEOPLE THAT GO TO SPACE
WANT TO GO BACK, SO I WANT TO GO

729

00:37:45,570 --> 00:37:46,570

BACK.

730

00:37:46,570 --> 00:37:48,970

MORE IMPORTANTLY, NOW THAT I'VE
BEEN UP THERE, I KNOW I CAN'T GO

731

00:37:48,970 --> 00:37:49,970

BACK.

732

00:37:49,970 --> 00:37:52,520

THERE ARE A LOT OF PEOPLE
WAITING IN LINE TO GO.

733

00:37:52,520 --> 00:37:56,230

PEOPLE THAT HAVE NEVER FLOWN IN
SPACE ARE WAITING IN LINE, SO I

734

00:37:56,230 --> 00:37:59,580

WANT TO HELP THEM BE SUCCESSFUL
WHEN THEY FLY IN SPACE AND

735

00:37:59,580 --> 00:38:02,940

LARGELY, THAT'S WHAT EVERY JOB
OF EVERY ASTRONAUT IS.

736

00:38:02,940 --> 00:38:06,810

YOU CAN EASILY SPEND A YEAR AS
AN ASTRONAUT FOR EVERY DAY YOU

737

00:38:06,810 --> 00:38:11,290

GET TO SPEND IN SPACE AND WE
SPEND THE REST OF THAT TIME,

738

00:38:11,290 --> 00:38:15,490

ABOUT 30% OF OUR TIME TRAINING
AND THE REST OF IT HELPING OTHER

739

00:38:15,490 --> 00:38:17,090

ASTRONAUTS TO FLY IN SPACE.

740

00:38:17,090 --> 00:38:20,330

IT TAKES THAT BIG OF AN EFFORT
TO MAKE ONE PERSON SUCCESSFUL UP

741

00:38:20,330 --> 00:38:21,330

THERE.

742

00:38:21,330 --> 00:38:24,830

SO I WOULD LIKE TO GO BACK AND
TALK ABOUT WHAT I'VE DONE.

743

00:38:24,830 --> 00:38:27,620

TALK ABOUT WHAT'S DIFFERENT UP
THERE AND HELP TRAIN ASTRONAUTS

744

00:38:27,620 --> 00:38:30,490

AS THEY GET READY FOR THEIR
SPACE FLIGHTS AND HELP OUT ANY

745

00:38:30,490 --> 00:38:31,700

WAY I CAN.

746

00:38:31,700 --> 00:38:33,410

THAT'S MY IMMEDIATE GOAL.

747

00:38:33,410 --> 00:38:34,500

YEAH.

748

00:38:34,500 --> 00:38:35,590

THANKS.

749

00:38:35,590 --> 00:38:38,140

>> JUST AMAZED AT THE
INTRICACIES HERE OF^--

750

00:38:38,140 --> 00:38:39,140

>> YEAH.

751

00:38:39,140 --> 00:38:40,140

>> OF THE PIPING.

752

00:38:40,140 --> 00:38:43,460

WE DON'T SEE THAT IMAGE WHEN YOU
LOOK AT THE STATION IN A TYPICAL

753

00:38:43,460 --> 00:38:44,460

SHOT.

754

00:38:44,460 --> 00:38:45,540

THE HOOD'S UP ON THIS THING
RIGHT NOW.

755

00:38:45,540 --> 00:38:49,070

>> LET ME JUST TELL YOU, I THINK
THAT WAS A SHOT OF CHRIS

756

00:38:49,070 --> 00:38:50,070

CASSIDY.

757

00:38:50,070 --> 00:38:52,890

I'M NOT QUITE SURE BECAUSE WE
CAN'T SEE THE STRIPES.

758

00:38:52,890 --> 00:38:57,780

WHAT YOU SEE IS CALLED THE RAT'S
NEST.

759

00:38:57,780 --> 00:39:01,580

THE JUNCTION BETWEEN THE RUSSIAN
AND U.S. SEGMENTS, A LOT OF

760

00:39:01,580 --> 00:39:02,600

COMMUNICATION CABLES.

761

00:39:02,600 --> 00:39:06,150

THE CABLES THEY'RE PUTTING OUT
THERE RIGHT NOW ARE^-- THERE ARE

762

00:39:06,150 --> 00:39:09,180

SEVERAL OF THEM WITH SEVERAL
PURPOSES AND I BELIEVE THAT ONE

763

00:39:09,180 --> 00:39:13,150

RIGHT THERE IS SPECIFICALLY SO
THAT IF WE HAVE A POWER FAILURE

764

00:39:13,150 --> 00:39:16,260

LIKE WE HAD OR ACTUALLY A
COOLING FAILURE THAT LED TO A

765

00:39:16,260 --> 00:39:19,190

POWER DOWN LIKE WE HAD AT THE
END OF OUR MISSION THAT

766

00:39:19,190 --> 00:39:23,770

GENERATED OUR LAST EMERGENCY
SPACE WALK THAT IF THAT HAPPENED

767

00:39:23,770 --> 00:39:25,900

THEY CAN TRANSFER POWER.

768

00:39:25,900 --> 00:39:28,840

THAT'S WHAT THEY'RE DOING RIGHT
NOW.

769

00:39:28,840 --> 00:39:32,200

>> MY NAME IS JACKSON DENNIS AND
I'M FROM TUCSON ARIZONA, AND I

770

00:39:32,200 --> 00:39:36,640

WAS JUST WONDERING HOW HAS BEING
IN SPACE AND BEING SURROUNDED BY

771

00:39:36,640 --> 00:39:41,571

THE VASTNESS OF IT CHANGED YOUR
PERSPECTIVE ON EARTH OR LIFE

772

00:39:41,571 --> 00:39:42,930

ITSELF.

773

00:39:42,930 --> 00:39:45,930

DO YOU HAVE A NEW, I GUESS,
PERSPECTIVE ON EVERYTHING FROM

774

00:39:45,930 --> 00:39:47,730

BEING IN SPACE?

775

00:39:47,730 --> 00:39:49,090

>> YEAH.

776

00:39:49,090 --> 00:39:51,930

THAT'S A GREAT QUESTION, AND
IT'S INDIVIDUAL FOR EVERY

777

00:39:51,930 --> 00:39:56,380

ASTRONAUT BECAUSE I THINK IT
DOES SOMETHING TO WHAT YOU HAD

778

00:39:56,380 --> 00:40:00,790

AS YOUR BELIEFS AND YOUR FEELING
ABOUT THE WORLD WHEN IT CAME UP.

779

00:40:00,790 --> 00:40:08,400

EVERY ASTRONAUT TALKS ABOUT THE
FACT THAT WE DON'T SEE MORTARS

780

00:40:08,400 --> 00:40:09,400

WHEN WITH YOU'RE UP THERE.

781

00:40:09,400 --> 00:40:11,770

YOU CAN RECOGNIZE IT RIGHT AWAY
AND YOU'RE OVER THE ATLANTIC

782

00:40:11,770 --> 00:40:15,660

OCEAN DEPENDING ON THE ORBITAL
PATH AND SUDDENLY YOU'RE IN

783

00:40:15,660 --> 00:40:18,130

EUROPE, EASTERN EUROPE AND THE
MIDDLE EAST.

784

00:40:18,130 --> 00:40:23,370

SO THE UNITY OF HUMAN BEINGS
WITHOUT SEEING ANY BORDERS, ANY

785

00:40:23,370 --> 00:40:27,060

SIGNS OR ANYTHING LIKE THAT IS
VERY PROFOUND NOT TO MENTION THE

786

00:40:27,060 --> 00:40:32,860

FACT THAT HUMAN BEINGS SEEM TO
HAVE A TENUOUS GRASP, HOLD ON

787

00:40:32,860 --> 00:40:34,350

THE EARTH, AS WELL.

788

00:40:34,350 --> 00:40:36,950

SO IT MAKES YOU FALL IN LOVE
WITH THE EARTH AS OUR HUMAN

789

00:40:36,950 --> 00:40:40,070

KIND'S BIRTHPLACE WITH ALL OF
ITS BEAUTY AND CHARACTERISTICS.

790

00:40:40,070 --> 00:40:43,750

YOU GET TO KNOW THE EARTH VERY
WELL AND THE PERSONALITIES OF IT

791

00:40:43,750 --> 00:40:47,780

AND ALSO THE HUMAN BEINGS THAT
ARE VERY, VERY PRECIOUS THAT ARE

792

00:40:47,780 --> 00:40:48,780

LIVING ON IT.

793

00:40:48,780 --> 00:40:51,910

SO YOU WISH HEADS OF STATE AND
EVERYBODY CAN COME UP AND SEE

794

00:40:51,910 --> 00:40:54,460

THAT SAME VIEW, AND I FEEL WE'VE
TAKEN BETTER CARE OF EACH OTHER,

795

00:40:54,460 --> 00:40:55,950

AND YOU CAN SEE IT.

796

00:40:55,950 --> 00:40:57,470

>> THANK YOU VERY MUCH.

797

00:40:57,470 --> 00:40:59,300

>> ANOTHER QUESTION, PLEASE?

798

00:40:59,300 --> 00:41:02,370

>> I'M SHERRY BUCKHOUSER FROM
IDAHO.

799

00:41:02,370 --> 00:41:08,390

I WAS WONDERING HOW DO YOU
PHYSICALLY TRAIN^-- BUT MENTALLY

800

00:41:08,390 --> 00:41:09,390

OR EMOTIONALLY.

801

00:41:09,390 --> 00:41:11,930

THAT HAS TO TAKE A TOLL LEAVING
EITHER AND GOING TO THE

802

00:41:11,930 --> 00:41:12,930

VASTNESS.

803

00:41:12,930 --> 00:41:16,730

HOW DO YOU PREPARE FOR THAT?

804

00:41:16,730 --> 00:41:17,930

>> PHYSICALLY AND EMOTIONALLY.

805

00:41:17,930 --> 00:41:20,820

>> MENTALLY AND EMOTIONALLY FOR
GETTING INTO SPACE AND LIVING UP

806

00:41:20,820 --> 00:41:22,660

THERE.

807

00:41:22,660 --> 00:41:26,340

>> EMOTIONALLY, YOU DON'T REALLY
KNOW WHAT TO DO.

808

00:41:26,340 --> 00:41:28,700

MENTALLY, THERE ARE A LOT OF
THINGS YOU CAN DO.

809

00:41:28,700 --> 00:41:34,920

WHAT NASA DOES IS FIRST OF ALL
IS SELECT PEOPLE THAT HAVE DONE,

810

00:41:34,920 --> 00:41:38,140

I DON'T WANT TO SAY RISKY THING,
BUT THINGS THAT ALLOW CALCULATED

811

00:41:38,140 --> 00:41:41,730

RISK IN THEIR PROFESSIONAL LIVES
SO THEY'VE ACCEPTED IT AS PART

812

00:41:41,730 --> 00:41:45,750

OF THEIR LIVES AND WE DO HAVE A
LOT OF TRAINING TRIPS WHERE WE

813

00:41:45,750 --> 00:41:50,350

GO OFF AND DO SURVIVAL TRAINING
AND SAY, I DID SURVIVAL TRAINING

814

00:41:50,350 --> 00:41:53,540

ON THE CONTINENTAL DIVIDE IN
FEBRUARY IN THE STATE OF WYOMING

815

00:41:53,540 --> 00:41:56,410

WHERE IT'S 20^BELOW AND LOTS OF
WIND AND WE HAD TO FIND OUR FOOD

816

00:41:56,410 --> 00:41:59,060

AND DIG THROUGH THE SNOW AND
THAT KIND OF THING.

817

00:41:59,060 --> 00:42:03,140

THOSE ARE TRAINING TRIPS AND WE
LEARNED HOW TO TAKE CARE OF

818

00:42:03,140 --> 00:42:06,110

YOURSELF SO OTHERS DON'T HAVE
TO.

819

00:42:06,110 --> 00:42:09,380

NUMBER TWO, REALIZE YOUR
LIMITATIONS.

820

00:42:09,380 --> 00:42:12,380

EVERYBODY HAS THEM AND ACCEPT
THEM AND HAVE OTHER PEOPLE HELP

821

00:42:12,380 --> 00:42:15,310

YOU AND LEARN HOW TO HELP
OTHERS.

822

00:42:15,310 --> 00:42:18,290

IF YOU GET FRUSTRATED OR SCARED
OR IN PAIN OR SOMETHING LIKE

823

00:42:18,290 --> 00:42:21,120

THAT, LEARN HOW TO DEAL WITH
THAT SO YOU DEVELOP A LOT OF

824

00:42:21,120 --> 00:42:24,330

TOOLS TO WORK THROUGH THE
PSYCHOLOGICAL ISSUES WHEN WE DO

825

00:42:24,330 --> 00:42:29,420

OUR TRAINING AND IT'S A VERY
IMPORTANT PART OF IT.

826

00:42:29,420 --> 00:42:31,940

ONE ASPECT IS INTERACTIONS WITH
OTHERS BECAUSE YOU'RE IN A TOUGH

827

00:42:31,940 --> 00:42:36,530

SPOT WITH A LOT OF PEOPLE FOR A
LONG TIME AND IT'S LIKE A

828

00:42:36,530 --> 00:42:37,690

FAMILY.

829

00:42:37,690 --> 00:42:41,760

THEY'RE LIKE MY BROTHERS AND
JUST LIKE ANY FAMILY THERE ARE

830

00:42:41,760 --> 00:42:44,690

ISSUES THAT COME UP, SMALL ONES
USUALLY AND YOU CAN LEARN HOW TO

831

00:42:44,690 --> 00:42:50,470

DEAL WITH THEM, PUT THEM AWAY OR
FIGURE THEM OUT.

832

00:42:50,470 --> 00:42:52,940

WE ACTUALLY HAD A GREAT TIME UP
THERE TOGETHER THE WHOLE TIME.

833

00:42:52,940 --> 00:42:57,270

THERE WAS NO FRICTION AMONGST
OUR CREW AND HOPEFULLY THAT'S

834

00:42:57,270 --> 00:42:59,280

THE WAY EVERY CREW CAN BE AS
THEY GO THROUGH THIS

835

00:42:59,280 --> 00:43:01,990
GROUND-BASED TRAINING AND THE
LAST THING THAT'S TRAINING IS

836
00:43:01,990 --> 00:43:05,070
LEARNING TO BE SEPARATED FROM
THOSE YOU LOVE, FROM YOUR FAMILY

837
00:43:05,070 --> 00:43:10,250
AND FROM FRIENDS AND THAT'S A
SOLUTION THAT EVERY ASTRONAUT

838
00:43:10,250 --> 00:43:12,700
HAS TO WORK OUT WITH THEIR
FAMILIES.

839
00:43:12,700 --> 00:43:16,190
SO THERE ARE A LOT OF TECHNIQUES
THAT NASA IS VERY FAMILIAR WITH.

840
00:43:16,190 --> 00:43:18,560
THEY'VE DONE A LOT OF RESEARCH
IN THIS AREA ON DEALING WITH

841
00:43:18,560 --> 00:43:21,700
THAT AND THAT'S AN IMPORTANT
ASPECT OF IT, TOO, GETTING READY

842
00:43:21,700 --> 00:43:22,700
TO GO.

843
00:43:22,700 --> 00:43:24,470
>> THANK YOU.

844
00:43:24,470 --> 00:43:26,910
>> WE SHOULD MENTION THAT YOUR
FAMILY IS HERE TODAY.

845
00:43:26,910 --> 00:43:29,250
>> MY WIFE ANNA AND MY DAUGHTER

GRACE.

846

00:43:29,250 --> 00:43:30,370

SHE'S 10.

847

00:43:30,370 --> 00:43:35,420

SHE SPENT HALF OF HER FOURTH
GRADE WHILE I WAS IN OUTER SPACE

848

00:43:35,420 --> 00:43:38,470

SO SHE HAS AN INTERESTING
PERSPECTIVE ON IT, TOO, WITH

849

00:43:38,470 --> 00:43:41,290

SCHOOL KIDS ASKING HER EVERY DAY
ABOUT HER DAD IN SPACE.

850

00:43:41,290 --> 00:43:44,140

I DON'T KNOW IF IT HAPPENS EVERY
DAY.

851

00:43:44,140 --> 00:43:45,930

>> IT'S NICE HAVE YOU HERE.

852

00:43:45,930 --> 00:43:51,570

GRACE PROMISED TO TELL US TO SIT
UP STRAIGHT AND JUST TO BE SURE

853

00:43:51,570 --> 00:43:53,000

WE'RE DOING THE RIGHT THING.

854

00:43:53,000 --> 00:43:54,020

THANKS, CHRIS.

855

00:43:54,020 --> 00:43:55,210

YOU'VE BEEN A BIG HELP.

856

00:43:55,210 --> 00:43:57,390

LET'S GO TO ANOTHER QUESTION.

857

00:43:57,390 --> 00:43:58,880

>> I'M ERIN GEIGER FROM UTAH.

858

00:43:58,880 --> 00:44:03,390

I WAS JUST WONDERING WHAT ARE
THE MAIN QUALITIES TO BECOME AN

859

00:44:03,390 --> 00:44:07,020

ASTRONAUT?

860

00:44:07,020 --> 00:44:08,560

>> THAT'S A GREAT QUESTION.

861

00:44:08,560 --> 00:44:14,710

A LOT OF PEOPLE LOOKED AT WHAT
MAKES ASTRONAUTS SIMILAR AND

862

00:44:14,710 --> 00:44:15,710

THEY'RE ALL QUITE DIFFERENT.

863

00:44:15,710 --> 00:44:17,500

HOWEVER, THEY ALL LOVE TO WORK.

864

00:44:17,500 --> 00:44:21,300

THEY ALL ARE PASSIONATE ABOUT
THEIR WORK AND THEY'VE ALWAYS

865

00:44:21,300 --> 00:44:27,260

LOVED WHAT THEY'VE DONE AND
THAT'S GREAT ADVICE AND DO WHAT

866

00:44:27,260 --> 00:44:31,090

YOU LOVE AND THAT'S A
SIMILARITY.

867

00:44:31,090 --> 00:44:34,780

ALL OF THEM HAVE FALLEN IN LOVE
WITH SOME KIND OF PHYSICAL

868

00:44:34,780 --> 00:44:37,700

ACTIVITY AND SOME KIND OF SPORT,
AS WELL AND THEY'VE FALLEN IN

869

00:44:37,700 --> 00:44:41,370

LOVE WITH SOMETHING IN THEIR
PROFESSIONAL OR SPORTS CAREERS

870

00:44:41,370 --> 00:44:44,840

THAT INVOLVE SOME LEVEL OF
CALCULATED RISK WHETHER IT'S

871

00:44:44,840 --> 00:44:47,270

FLYING OR WORKING IN THE
SUBMARINE OR SKYDIVING OR

872

00:44:47,270 --> 00:44:51,640

SOMETHING LIKE THAT AND I SAY
CALCULATED RISK, BEING ABLE TO

873

00:44:51,640 --> 00:44:55,460

PLAN AHEAD AND UNDERSTANDING
YOUR LIMITS AND, YES, YOU'RE

874

00:44:55,460 --> 00:44:57,000

ACCEPTING A CERTAIN AMOUNT OF
RISK, BUT UNDERSTANDING WHAT

875

00:44:57,000 --> 00:45:00,520

YOU'RE GETTING INTO AS OPPOSED
TO OTHER CRAZY STUFF.

876

00:45:00,520 --> 00:45:04,660

SO I THINK THAT'S WHAT MAKES
THEM ALL SIMILAR.

877

00:45:04,660 --> 00:45:06,220

>> THANK YOU.

878

00:45:06,220 --> 00:45:07,220

>> THANKS.

879

00:45:07,220 --> 00:45:13,640

>> WE'RE WATCHING THE SPACE WALK
TODAY LIVE ON NASA TELEVISION.

880

00:45:13,640 --> 00:45:17,690

I THINK IT'S STREAMED ON
NASA.GOV AND OUR GUEST IS HERE

881

00:45:17,690 --> 00:45:22,120

IN THE NEWSEUM, DR.^THOMAS
MARSHBURN WHO IS A NASA

882

00:45:22,120 --> 00:45:28,010

ASTRONAUT AND THE LAST ASTRONAUT
TO WALK, AND I THINK YOU HAVE

883

00:45:28,010 --> 00:45:32,100

TWO NOW, HIS CURRENT MISSION.

884

00:45:32,100 --> 00:45:33,760

>> THIS IS CHRIS' HELMET CAMERA.

885

00:45:33,760 --> 00:45:37,150

I CAN'T SEE THE STRIPES TO
IDENTIFY WHO'S WHO.

886

00:45:37,150 --> 00:45:40,780

HE HAS A CAMERA OUT RIGHT NOW
AND HE'S TAKING A PICTURE OF I

887

00:45:40,780 --> 00:45:42,570

THINK THAT'S LUCA.

888

00:45:42,570 --> 00:45:46,270

HE'S WEDGED HIMSELF DOWN IN
THERE DOING SOME WORK.

889

00:45:46,270 --> 00:45:52,420

I HOPE I'M NOT WRONG IN THAT.

890

00:45:52,420 --> 00:45:56,820

>> BECAUSE HE HAS THAT, AND LUCA
IS ADJUSTING HIS LIGHTS AND HE

891

00:45:56,820 --> 00:45:59,230

HAS TO WEDGE HIMSELF INTO A
PLACE THAT'S DARK.

892

00:45:59,230 --> 00:46:02,130

CHRIS IS GIVING HIM GUIDANCE.

893

00:46:02,130 --> 00:46:10,110

THAT BIG BACKPACK CONTAINS THE
WATER WE NEED FOR COOLING AND

894

00:46:10,110 --> 00:46:12,020

CONTAINS THE OXYGEN, AS WELL.

895

00:46:12,020 --> 00:46:14,400

>> AND THE UNIT RIGHT AT THE
BOTTOM OF THE PACK, THAT'S THAT

896

00:46:14,400 --> 00:46:15,500

EMERGENCY UNIT?

897

00:46:15,500 --> 00:46:16,500

>> THAT'S RIGHT.

898

00:46:16,500 --> 00:46:21,410

>> YOU SEE THE VERTICAL ROW AND
IT THERE ARE HOLES ALL AROUND

899

00:46:21,410 --> 00:46:24,800

THAT AND YOU SEE THE TWO
EXTENSIONS THAT COME AND IT'S

900

00:46:24,800 --> 00:46:29,340

LIKE A LONG L AND THAT IS THE
JET BACKPACK SO IF THEY CUT

901

00:46:29,340 --> 00:46:35,180

FREE, COMPLETELY FREE THEN THAT
IS THEIR RIDE BACK WITH THE JET

902

00:46:35,180 --> 00:46:37,780

PACK AND WE TRAIN TO DO THIS,
THROUGH, TO FLY THROUGH THE

903

00:46:37,780 --> 00:46:41,310

VACUUM OF SPACE FREELY TO GET
BACK AND GRAB ON TO THE SPACE

904

00:46:41,310 --> 00:46:42,310

STATION.

905

00:46:42,310 --> 00:46:43,750

>> LET'S GO TO A QUESTION.

906

00:46:43,750 --> 00:46:44,750

>> HI.

907

00:46:44,750 --> 00:46:49,730

I'M CARLY LENNOX FROM INDIANA,
AND OBVIOUSLY YOU TALKED ABOUT

908

00:46:49,730 --> 00:46:54,131

HOW STRESSFUL IT CAN BE GOING
INTO SPACE COMPARED TO TAKING AN

909

00:46:54,131 --> 00:46:55,790

EXAM.

910

00:46:55,790 --> 00:46:57,720

I WAS WONDERING IF THERE WAS

ANYTHING YOU AND OTHER

911

00:46:57,720 --> 00:47:03,310

ASTRONAUTS DO TO LIGHTEN UP THAT
TENSION IN SPACE.

912

00:47:03,310 --> 00:47:07,890

>> THE MOST IMPORTANT THING,
FIRST OF ALL, IS COMPETENCY,

913

00:47:07,890 --> 00:47:10,660

BEING READY AND THAT'S A LOT OF
HOMEWORK.

914

00:47:10,660 --> 00:47:13,210

SO WE^-- ASTRONAUTS DEVELOP A
LOT OF TECHNIQUES FOR GETTING

915

00:47:13,210 --> 00:47:14,210

READY.

916

00:47:14,210 --> 00:47:17,090

I KNOW IT DOESN'T LIGHTEN THINGS
UP, BUT YOU CAN'T GET TO THAT

917

00:47:17,090 --> 00:47:19,970

POINT UNLESS YOU ARE REALLY
READY TO GO.

918

00:47:19,970 --> 00:47:23,040

GET IN THE MIND SET OF PUTTING
YOURSELF INTO THAT POSITION SO

919

00:47:23,040 --> 00:47:27,710

THAT WHEN YOU GET TO IT YOU'VE
COVERED WHAT YOU NEED TO DO, AND

920

00:47:27,710 --> 00:47:31,790

WHAT YOU COULD DO IF THINGS
DON'T GO RIGHT.

921

00:47:31,790 --> 00:47:34,650

YOU KNOW YOUR CREW MATES WELL.

922

00:47:34,650 --> 00:47:38,740

TYPICALLY, YOU'VE TRAINED
TOGETHER AND AT THAT POINT WHILE

923

00:47:38,740 --> 00:47:43,020

YOU ARE ALL FOCUSED ON THE TASK,
HUMOR IS A WONDERFUL WAY TO

924

00:47:43,020 --> 00:47:46,010

SPEND THE TIME TO WORK AND TO
LIGHTEN THE AIR A LITTLE BIT.

925

00:47:46,010 --> 00:47:49,480

SO THERE WILL BE JOKES GOING
BACK AND FORTH ALL OF THE TIME.

926

00:47:49,480 --> 00:47:53,330

ONE THING THAT I REMEMBER VERY
WELL FROM MY^-- NOT MY LAST

927

00:47:53,330 --> 00:47:56,820

SPACE WALK AND I'VE DONE THREE
WITH CHRIS CASSIDY AND HE HAS A

928

00:47:56,820 --> 00:48:01,410

GREAT SENSE OF HUMOR AND HE HAS
A DAUGHTER NAMED GRACE.

929

00:48:01,410 --> 00:48:04,800

I HAD THE UNIQUE OPPORTUNITY
WHILE I WAS DOING A SPACE WALK

930

00:48:04,800 --> 00:48:10,260

SAYING HELLO TO MY FAMILY AND I
SAID HI, GRACE.

931

00:48:10,260 --> 00:48:12,510

AND CHRIS SAID WHY DID YOU SAY
HELLO TO MY DAUGHTER?

932

00:48:12,510 --> 00:48:19,820

AND HE SAID NO, THAT WAS MY
GRACE.

933

00:48:19,820 --> 00:48:23,560

SOMETIMES YOU GET THE GIGGLES
AND YOU CAN'T EVEN STOP.

934

00:48:23,560 --> 00:48:26,820

IT'S A GREAT WAY TO CONTINUE THE
FOCUS AND IT RACKS YOUR BRAIN

935

00:48:26,820 --> 00:48:29,650

FOR A SECOND SO YOU CAN CONTINUE
TO WORK.

936

00:48:29,650 --> 00:48:34,170

>> YOU KNOW, YOU WOULD BE 250
MILES UP?

937

00:48:34,170 --> 00:48:38,060

A CHANCE TO SPIN OFF INTO SPACE
AND THERE YOU GUYS ARE IN A VERY

938

00:48:38,060 --> 00:48:40,050

REAL MOMENT LIKE THAT.

939

00:48:40,050 --> 00:48:42,090

THAT'S JUST THE TRAINING AND
GETTING READY, I GUESS.

940

00:48:42,090 --> 00:48:43,720

>> YOU HAVE TO BE READY FIRST.

941

00:48:43,720 --> 00:48:44,720

>> WOW!

942

00:48:44,720 --> 00:48:45,720

>> ANOTHER QUESTION.

943

00:48:45,720 --> 00:48:47,130

>> I CAN SEE THE ITALIAN FLAG.

944

00:48:47,130 --> 00:48:49,000

>> THERE'S THE ITALIAN FLAG.

945

00:48:49,000 --> 00:48:50,000

>> HI.

946

00:48:50,000 --> 00:48:54,720

I'M GABBY FROM ILLINOIS, AND
BEING SUCH AN ACCOMPLISHED

947

00:48:54,720 --> 00:48:58,160

ASTRONAUT YOU'VE TALKED TO A LOT
OF PRESS AND A LOT OF IMPORTANT

948

00:48:58,160 --> 00:49:02,190

PEOPLE, BUT IT BEING LIFE
CHANGING AND REALLY FUNNY, CAN

949

00:49:02,190 --> 00:49:05,540

YOU TELL US ONE OF THE FONDEST
MOMENTS THAT YOU HAVEN'T TOLD A

950

00:49:05,540 --> 00:49:06,540

LOT OF PEOPLE.

951

00:49:06,540 --> 00:49:10,690

>> WHILE I WAS IN SPACE, FONDEST
MEMORIES.

952

00:49:10,690 --> 00:49:21,580

WELL, I'VE TOLD A LOT OF PEOPLE

ABOUT MOST OF THEM, AND ONE OF

953

00:49:21,580 --> 00:49:23,750

THE GREATEST THINGS OF FLYING IN
SPACE AND BEING AN ASTRONAUT IS

954

00:49:23,750 --> 00:49:26,060

WHO YOU GET TO WORK WITH.

955

00:49:26,060 --> 00:49:28,270

THEY'RE FINE PEOPLE, BUT YOU'RE
ALSO SHARING AN INCREDIBLE

956

00:49:28,270 --> 00:49:34,250

EXPERIENCE TOGETHER AND ONE OF
THE MOST SPECIAL MOMENTS IN

957

00:49:34,250 --> 00:49:36,310

SPACE IS WHEN YOU'RE LOOKING OUT
THE WINDOW WHEN YOU HAVE MOMENTS

958

00:49:36,310 --> 00:49:39,460

OF DOWN TIME AND YOU CAN LOOK
OUT THE WINDOW AND WITH EACH ONE

959

00:49:39,460 --> 00:49:44,600

OF MY CREW MATES WE HAPPEN TO
LOOK OUT THE WINDOW AND WE COME

960

00:49:44,600 --> 00:49:48,540

ACROSS SOMETHING ABSOLUTELY
SPECTACULAR AND WE'RE NOT

961

00:49:48,540 --> 00:49:51,480

INTERACTING WITH EACH OTHER
OTHER THAN BOTH OF US POINTING

962

00:49:51,480 --> 00:49:55,080

OUT WHAT WE SEE, LEARNING FROM
EACH OTHER AND ALSO JUST

963

00:49:55,080 --> 00:49:56,530

ENJOYING IT TOGETHER.

964

00:49:56,530 --> 00:49:59,420

WITH CHRIS CASSIDY AND I WE HAD
ONE OF THOSE MOMENTS COMING

965

00:49:59,420 --> 00:50:01,761

ACROSS SOUTH AMERICA AND IT WAS
VERY CLEAR OVER THE ANDES AND

966

00:50:01,761 --> 00:50:07,880

YOU CAN SEE THE ORBITAL PATH
COMING OVER PATAGONIA AND THE

967

00:50:07,880 --> 00:50:12,630

SOUTHERN ANDES AND JUST OOHING
AND AHHING AND TAKING PICTURES

968

00:50:12,630 --> 00:50:16,950

AS FAST AS WE COULD AND POINTING
IT OUT, AND THAT'S A MOMENT I'LL

969

00:50:16,950 --> 00:50:20,490

NEVER FORGET AND IS A REAL
TREASURE.

970

00:50:20,490 --> 00:50:24,450

>> THE TECHNOLOGY, IS STILL A
VERY HUMAN EXPERIENCE.

971

00:50:24,450 --> 00:50:25,450

>> VERY MUCH SO.

972

00:50:25,450 --> 00:50:29,040

THAT'S WHY WE PUT PEOPLE UP
THERE SO THEY CAN TALK ABOUT IT

973

00:50:29,040 --> 00:50:31,070
AND RELAY IT TO EVERYBODY ON THE
GROUND.

974
00:50:31,070 --> 00:50:32,800
>> ANOTHER QUESTION?

975
00:50:32,800 --> 00:50:35,910
I'M MARLEY WALLACE FROM
HUNTSVILLE, ALABAMA,

976
00:50:35,910 --> 00:50:36,910
APPROPRIATELY.

977
00:50:36,910 --> 00:50:41,610
SO I WOULD LIKE TO KNOW THAT
SENSE THIS IS SUCH A RISKY

978
00:50:41,610 --> 00:50:46,000
VENTURE AND THERE'S SUCH A GREAT
RISK OF^-- IF SOMETHING GOES

979
00:50:46,000 --> 00:50:50,470
WRONG THEN YOU'RE IN REAL,
PRESENT DANGER.

980
00:50:50,470 --> 00:50:53,620
WHEN YOU'RE INITIALLY APPROACHED
WITH THIS OPPORTUNITY WHAT

981
00:50:53,620 --> 00:50:59,080
WAS^-- WAS THERE A PROCESS OF
DEBATE IN YOUR MIND AND IF SO,

982
00:50:59,080 --> 00:51:01,670
HOW DID THAT GO?

983
00:51:01,670 --> 00:51:03,830
>> NOT A DEBATE IN MY MIND
BECAUSE I WOULD WANT TO BE AN

984

00:51:03,830 --> 00:51:07,350

ASTRONAUT MY WHOLE LIFE AND TO
EVEN GET TO THE POINT WHICH IS

985

00:51:07,350 --> 00:51:11,130

THE FIRST DAY OF INTERVIEWS WHEN
YOU'RE APPLYING TO BE AN

986

00:51:11,130 --> 00:51:14,200

ASTRONAUT THAT'S WHEN ALL OF
THAT COMES UP.

987

00:51:14,200 --> 00:51:18,460

YOU KNOW YOU'RE ONE OF 120^THAT
MIGHT BE SELECTED TO BE^-- IN MY

988

00:51:18,460 --> 00:51:20,330

MIND THAT WAS SELECTED.

989

00:51:20,330 --> 00:51:23,150

YOU KNOW YOU'RE DOWN TO A SMALL
GROUP.

990

00:51:23,150 --> 00:51:27,821

THEY START WITH THE LECTURE ON
THE RISK OF SPACE FLIGHT WITH

991

00:51:27,821 --> 00:51:31,480

JUST THE NUMBERS OF HOW MANY
PEOPLE WHO ARE GETTING READY TO

992

00:51:31,480 --> 00:51:32,480

FLY IN SPACE.

993

00:51:32,480 --> 00:51:38,830

YOU ARE SO EXCITED TO BE AT THAT
POINT THAT YOU SAY YEAH, YEAH, I

994

00:51:40,830 --> 00:51:39,830

KNOW.

995

00:51:40,830 --> 00:51:45,010

LET'S PRESS ON, BUT THEN WHEN IT
CAME FOR MY CHANCE TO FLY IN

996

00:51:45,010 --> 00:51:50,670

SPACE, THE COLUMBIA ACCIDENT HAD
HAPPENED NOT TOO LONG AGO, AND

997

00:51:50,670 --> 00:51:52,460

SO THEN IT REALLY MATTERS WITH
YOUR FAMILY.

998

00:51:52,460 --> 00:51:56,810

SO I HAD TO SIT DOWN AND TALK
WITH MY FAMILY AND FORTUNATELY

999

00:51:56,810 --> 00:51:59,930

MY WIFE AND DAUGHTER ARE BEHIND
THE SPACE PROGRAM.

1000

00:51:59,930 --> 00:52:03,770

TYPICALLY THE FAMILIES ARE OF
PEOPLE WHO FLY IN SPACE AND

1001

00:52:03,770 --> 00:52:05,660

THAT'S WHEN YOU HAVE THE REAL
HEART TO HEART DISCUSSION ABOUT

1002

00:52:05,660 --> 00:52:10,380

WHAT THIS MEANS AND THE KIND OF
RISK YOU'RE TAKING AND THAT'S AS

1003

00:52:10,380 --> 00:52:15,460

MUCH OF AN EMOTIONAL PREPARATION
FOR WHAT'S COMING UP IF IT

1004

00:52:15,460 --> 00:52:16,940

HELPS.

1005

00:52:16,940 --> 00:52:19,880

>> THANK YOU.

1006

00:52:19,880 --> 00:52:22,820

>> I'M NATHAN STROLL FROM SOUTH CAROLINA.

1007

00:52:22,820 --> 00:52:27,100

I WAS WONDERING THE FIRST TIME YOU WENT INTO SPACE WHAT WAS IT

1008

00:52:27,100 --> 00:52:31,010

LIKE THE FIRST TIME YOU FELT THE REAL SENSE OF ZERO GRAVITY.

1009

00:52:31,010 --> 00:52:35,970

>> THE SENSE OF ZERO GRAVITY HITS YOU LIKE A TON OF BRICKS.

1010

00:52:35,970 --> 00:52:42,490

THE SHUTTLE FLIGHT IS A LOUD, RATTLING RIDE, AND THEN AS YOU

1011

00:52:42,490 --> 00:52:45,240

GET CLOSE TO MAIN ENGINE CUTOFF EIGHT AND A HALF MINUTES AFTER

1012

00:52:45,240 --> 00:52:50,500

LAUNCH YOU FEEL THREE Gs LIKE A GORILLA SITTING ON YOUR CHEST

1013

00:52:50,500 --> 00:52:55,590

THAT YOU'RE TAKING YOUR BREATH IN SIPS AND YOU HAVE THE

1014

00:52:55,590 --> 00:52:59,031

VIBRATION AND THE ROAR OF THE ENGINE BEHIND YOU AND THEN IT'S

1015

00:52:59,031 --> 00:53:00,060

JUST GONE LIKE THAT.

1016

00:53:00,060 --> 00:53:02,660

AT ENGINE CUTOFF EVERYTHING
STOPS AND THE THING YOU CAN HEAR

1017

00:53:02,660 --> 00:53:06,610

IS THE CABIN FAN THAT'S
CIRCULATING YOUR AIR TO KEEP YOU

1018

00:53:06,610 --> 00:53:08,400

MOVING AND KEEP YOU ALIVE.

1019

00:53:08,400 --> 00:53:12,400

ALMOST COMPLETE SILENCE EXCEPT
FOR THAT FAN GOING AND YOU

1020

00:53:12,400 --> 00:53:15,910

ACTUALLY COME OUT OF YOUR SEAT.

1021

00:53:15,910 --> 00:53:18,260

YOU ACTUALLY JUMP OUT OF YOUR
SEAT A LITTLE BIT AND YOU HAVE

1022

00:53:18,260 --> 00:53:19,490

YOUR SEAT BELTS ON.

1023

00:53:19,490 --> 00:53:22,250

A PENCIL AND THE LANYARD CAME
OUT ASK IT STARTED SPINNING

1024

00:53:22,250 --> 00:53:26,061

AROUND AND YOU CAN FEEL YOUR
BLOOD GOING OVER YOUR HEAD AND

1025

00:53:26,061 --> 00:53:32,800

YOUR ORGANS LIKE ON A ROLLER

COASTER OR THE CAR, YOU

1026

00:53:32,800 --> 00:53:35,000

DEFINITELY GET THAT FEELING
RIGHT AWAY.

1027

00:53:35,000 --> 00:53:38,770

AFTER THAT, IT'S JUST PURE
MAGIC.

1028

00:53:38,770 --> 00:53:43,740

IT'S ABSOLUTELY DELIGHTFUL TO
LIVE IN ZERO GRAVITY AND I THINK

1029

00:53:43,740 --> 00:53:45,980

IT'S ABOUT A BIG A CHANGE AS
WHAT WE MUST HAVE GONE THROUGH

1030

00:53:45,980 --> 00:53:47,210

WHEN WE WERE BORN.

1031

00:53:47,210 --> 00:53:52,651

HOW TO EAT, HOW TO PUT ON YOUR
CLOTHES, EVERYTHING IS NEW.

1032

00:53:52,651 --> 00:53:57,050

I CAN'T IMAGINE ANY
TRANSFORMATION THAN THAT AS WHEN

1033

00:53:57,050 --> 00:53:58,950

YOU GET TO MAIN ENGINE CUTOFF
AND OUTER SPACE.

1034

00:53:58,950 --> 00:54:06,400

I HAVE TO TELL YOU, I UNCLIPPED
MY SEAT BELT, TOOK ALL OF THOSE

1035

00:54:06,400 --> 00:54:10,250

OFF AND MY GOAL WAS TO GET UP
AND START TAKING OFF MY SPACE

1036

00:54:10,250 --> 00:54:11,250

SUIT.

1037

00:54:11,250 --> 00:54:14,370

I DID HAVE A BAG UNDER THE SEAT
SO I REACHED UNDER TO GET THE

1038

00:54:14,370 --> 00:54:18,520

BAG UNDER MY SEAT SO I CAN START
PUTTING THINGS IN IT AND I FOUND

1039

00:54:18,520 --> 00:54:22,390

MYSELF COMPLETELY UPSIDE DOWN IN
EXACTLY THE POSITION I DIDN'T

1040

00:54:22,390 --> 00:54:26,190

WANT TO BE IN AND THAT WAS MY
FIRST MOVE IN ZERO GRAVITY.

1041

00:54:26,190 --> 00:54:28,980

IT'S HARD TO STOP YOURSELF FROM
TUMBLING AND YOU HAVE TO

1042

00:54:28,980 --> 00:54:32,600

RESTRAIN YOURSELF AND MOVE
AROUND.

1043

00:54:32,600 --> 00:54:36,850

>> I'M MADDIE GREEN AND I'M FROM
HERE IN D.C.

1044

00:54:36,850 --> 00:54:39,640

I WAS WONDERING IF YOU REMEMBER
WHERE YOU WERE WHEN NEIL

1045

00:54:39,640 --> 00:54:42,920

ARMSTRONG WALKED ON THE MOON AND
WHAT IMPACT DOES THAT HAVE ON

1046
00:54:42,920 --> 00:54:44,550
YOUR CAREER?

1047
00:54:44,550 --> 00:54:46,180
>> THAT'S A GREAT QUESTION.

1048
00:54:46,180 --> 00:54:51,740
I'M TRYING TO THINK WHAT SPACE
EVENT WOULD HAVE BEEN A SIMILAR

1049
00:54:51,740 --> 00:54:56,370
ONE IN EVERYBODY'S LIFE HERE AND
WHAT EVENTS WOULD ON OCCURS WITH

1050
00:54:56,370 --> 00:54:57,370
9/11.

1051
00:54:57,370 --> 00:55:01,800
FOR ME, IT WAS PROBABLY THE
BIGGEST, VENT OF MY CHILDHOOD IN

1052
00:55:01,800 --> 00:55:06,630
TERMS OF THE IMPACT AND MY
PARENTS LET US GET UP AND GET

1053
00:55:06,630 --> 00:55:10,080
DOWN IN THE LIVING ROOM AND I
KNEW WHERE I WAS ON THE LIVING

1054
00:55:10,080 --> 00:55:12,750
ROOM, ON THE FLOOR WITH THE
FAMILY WATCHING THE GRAINY BLACK

1055
00:55:12,750 --> 00:55:18,300
AND WHITE TELEVISION SET AND
JUST IN COMPLETE WONDER.

1056
00:55:18,300 --> 00:55:22,160
DIDN'T KNOW^^- I WAS 8^YEARS OLD

AND I DIDN'T KNOW IF THERE WERE

1057

00:55:22,160 --> 00:55:24,620

GOING TO BE ALIENS RUNNING
AROUND OR MICROBES THAT THEY

1058

00:55:24,620 --> 00:55:30,290

WERE GOING BRING BACK TO EARTH,
BUT I KNEW IT WAS AN INCREDIBLE,

1059

00:55:30,290 --> 00:55:35,120

VENT THAT WAS HAPPENING, AND I
DON'T KNOW WHY I FELT THAT AT 8

1060

00:55:35,120 --> 00:55:40,820

YEARS OF AGE, BUT^-- AND I WOULD
NOT SAY THAT I STARTED ON MY

1061

00:55:40,820 --> 00:55:43,850

PATH TO WANTING TO BE AN
ASTRONAUT AFTER THAT, HOWEVER,

1062

00:55:43,850 --> 00:55:48,040

IT DID FEED THAT QUITE A BIT AND
MY WONDERED FASCINATION OF SPACE

1063

00:55:48,040 --> 00:55:51,460

WAS VERY MUCH JUMP-STARTED BY
WATCHING THAT.

1064

00:55:51,460 --> 00:55:52,460

>> THANK YOU.

1065

00:55:52,460 --> 00:55:53,460

>> YEAH, THANKS.

1066

00:55:53,460 --> 00:55:56,130

>> WE'RE JUST AT THE START OF
MAN'S EXPLORATION OF SPACE AND

1067

00:55:56,130 --> 00:55:59,130

WE'RE ABOUT FIVE HOURS LEFT IN
THE SPACE WALK, BUT WE'VE COME

1068

00:55:59,130 --> 00:56:01,180

TO THE END OF OUR TIME THIS
MORNING HERE.

1069

00:56:01,180 --> 00:56:02,180

>> YEAH.

1070

00:56:02,180 --> 00:56:03,870

>> ALTHOUGH THOSE OF YOU IN THE
GREAT HALL OF NEWS HERE WILL

1071

00:56:03,870 --> 00:56:06,670

CONTINUE FOR A LITTLE WHILE
LONGER, BUT WE'LL HAVE TO SAY

1072

00:56:06,670 --> 00:56:08,720

GOOD-BYE TO OUR NASA TELEVISION
AUDIENCE.

1073

00:56:08,720 --> 00:56:12,350

WE'D LIKE TO THANK ASTRONAUT
THOMAS MARSHBURN FOR BEING WITH

1074

00:56:12,350 --> 00:56:14,521

US THIS MORNING AS WELL AS OUR
FREE SPIRIT SCHOLARS.

1075

00:56:14,521 --> 00:56:15,521

IF YOU WILL JOIN ME IN THANKING
DR.^MARSHBURN.

1076

00:56:15,521 --> 00:56:16,521

>> THANK YOU.

1077

00:56:16,521 --> 00:56:17,521

[^APPLAUSE^]

>> AND FOR OUR NEWSEUM MEMBERS

1078

00:56:17,521 --> 00:56:18,521

AND VISITORS, DR.^MARSHBURN IS
ABLE TO STAY AND ANSWER SOME OF

1079

00:56:18,521 --> 00:56:19,521

YOUR QUESTIONS NOW FOR A LITTLE
BIT LONGER AND THE FREE SPIRIT

1080

00:56:19,521 --> 00:56:20,521

SCHOLARS AND I WILL DISAPPEAR TO
THE CONFERENCE CENTER UPSTAIRS

1081

00:56:20,521 --> 00:56:21,521

AND WE'RE GOING TO HAVE A
FURTHER DISCUSSION.

1082

00:56:21,521 --> 00:56:22,521

WE'LL BE TALKING IN JUST A
MOMENT TO RON NESSUM FORMER

1083

00:56:22,521 --> 00:56:23,521

SECRETARY TO GENERAL FORD.