



1
00:00:14,250 --> 00:00:18,460
WELCOME TO THE SMITHSONIAN'S
NATIONAL AIR AND SPACE MUSEUM.

2
00:00:18,460 --> 00:00:21,760
THIS MORNING, WE ARE IN OUR
MOVING BEYOND EARTH GALLERY,

3
00:00:21,760 --> 00:00:25,450
WHERE WE DEAL WITH THE SPACE
TRAVEL AND THE INTERNET SPACE

4
00:00:25,450 --> 00:00:26,930
STATION ERA.

5
00:00:26,930 --> 00:00:30,221
WE HAVE A LIVE AUDIENCE AND
STUDENTS AND FAMILIES WHO ARE

6
00:00:30,221 --> 00:00:31,860
VISITING THE MUSEUM.

7
00:00:31,860 --> 00:00:35,280
I'D ALSO LIKE TO WELCOME OUR
VIEWERS ONLINE.

8
00:00:35,280 --> 00:00:37,300
THIS IS BEING WEBCAST.

9
00:00:37,300 --> 00:00:40,040
ALSO IT'S BEING BROADCAST ON
NATIONAL TELEVISION.

10
00:00:40,040 --> 00:00:44,620
THANKS TO ALL OF YOU WATCHING
FROM OUTSIDE THE MUSEUM.

11
00:00:44,620 --> 00:00:48,850
IT'S VERY EXCITING TO HAVE

ANOTHER ASTRONAUT WITH US TODAY.

12

00:00:48,850 --> 00:00:55,390
HE IS ASTRONAUT REESE WEISSMAN,
I'M SORRY, ASTRONAUT REED

13

00:00:55,390 --> 00:01:00,700
WEISSMAN WHO HAS JUST RETURNED
FROM A SIX-MONTH STAY ON THE

14

00:01:00,700 --> 00:01:02,960
INTERNATIONAL SPACE STATION.

15

00:01:02,960 --> 00:01:06,140
IF YOU HAVEN'T HAD A LOOK AT THE
INTERNATIONAL SPACE STATION

16

00:01:06,140 --> 00:01:09,780
ONLINE BEFORE, WE HAVE A MODEL
OF IT HERE IN THE GALLERY.

17

00:01:09,780 --> 00:01:13,460
THIS IS A 125th SIZE SPACE
STATION.

18

00:01:13,460 --> 00:01:17,860
SO IMAGINE 25 TIMES BIGGER THAN
THIS AND YOU GET TO A SPACE

19

00:01:17,860 --> 00:01:20,580
STATION THAT'S THE SIZE OF A
FOOTBALL FIELD.

20

00:01:20,580 --> 00:01:23,250
OR IT'S ACTUALLY ABOUT
TWO-THIRDS THE SIZE OF OUR

21

00:01:23,250 --> 00:01:24,470
MUSEUM.

22

00:01:24,470 --> 00:01:29,390

IT'S A HUGE LIVING AND WORKING
SPACE THAT'S BEEN OCCUPIED

23

00:01:29,390 --> 00:01:34,790

CONTINUOUSLY SINCE THE YEAR
2000.

24

00:01:34,790 --> 00:01:40,090

REED JUST RETURNED FROM HIS
SIX-MONTH STAY, DURING WHICH HE

25

00:01:40,090 --> 00:01:46,159

DID SPACEWALK, HE TWEETED LIVE
FROM SPACE, HE DID SCIENTIFIC

26

00:01:46,159 --> 00:01:50,690

EXPERIMENTS ON BOARDS AND HE'S
COME BACK TODAY TO TELL US ABOUT

27

00:01:50,690 --> 00:01:51,960

THAT.

28

00:01:51,960 --> 00:01:56,530

BEFORE HE WENT TO SPACE, HE HAD
OTHER INTERESTING THINGS IN

29

00:01:56,530 --> 00:01:57,530

LIFE.

30

00:01:57,530 --> 00:01:58,850

HE'S KIND OF LIKE NEIGHBOR TO
US.

31

00:01:58,850 --> 00:02:00,920

HE GREW UP IN BALTIMORE.

32

00:02:00,920 --> 00:02:06,700

HIS PARENTS LIVE IN BALTIMORE

HIM HE SPENT TIME IN VIRGINIA IN

33

00:02:06,700 --> 00:02:07,870

THE NAVY.

34

00:02:07,870 --> 00:02:12,630

HE'S A FIGHTER PIPE HE LAND ON
AIRCRAFT CARRIERS.

35

00:02:12,630 --> 00:02:17,540

HE HAS QUITE A HISTORY OF DOING
HIGH RISK, HIGH ADVENTURE

36

00:02:17,540 --> 00:02:18,700

ACTIVITY.

37

00:02:18,700 --> 00:02:23,460

SO PLEASE JOIN ME IN WELCOMING
TODAY ASTRONAUT ROOET WEISSMAN.

38

00:02:23,460 --> 00:02:30,460

[APPLAUSE]

>> I WILL MAKE SURE MY MIC IS

39

00:02:30,460 --> 00:02:31,460

GOING.

40

00:02:31,460 --> 00:02:34,220

CAN YOU HEAR ME OUT THERE?

41

00:02:34,220 --> 00:02:38,209

FOR ME TO COME TO THE MUSEUM.

42

00:02:38,209 --> 00:02:40,340

I CAME HERE MANY TIMES AS A KID.

43

00:02:40,340 --> 00:02:44,290

SO THIS IS KIND OF WHERE
AVIATION BUILT ITS FUNDAMENTALS

44

00:02:44,290 --> 00:02:45,290
IN ME.

45

00:02:45,290 --> 00:02:48,260
THIS IS WHERE YOU GET TO LOOK AT
ALL OF HISTORY FROM DPLIEDTORIES

46

00:02:48,260 --> 00:02:49,260
ROCKETSHIPS.

47

00:02:49,260 --> 00:02:51,480
I REMEMBER MY BROTHER AND I
RUNNING THROUGH THIS MUSEUM.

48

00:02:51,480 --> 00:02:56,040
SO MANY MANY WAYS THIS IS MY WAY
TO COME BACK TO THIS PLACE.

49

00:02:56,040 --> 00:02:59,670
WE HAVE A MELTO, A MONTAGE FROM
OUR MISSION.

50

00:02:59,670 --> 00:03:02,800
>> THAT IS YOUR MISSION PAST?

51

00:03:02,800 --> 00:03:06,090
>> MISSION PAST, THAT WAS FLOWN
IN SPACE.

52

00:03:06,090 --> 00:03:07,090
>> WONDERFUL.

53

00:03:07,090 --> 00:03:08,090
>> I WAS, TOO.

54

00:03:08,090 --> 00:03:09,290
ALL RIGHT.

55

00:03:16,849 --> 00:03:10,620

THANK YOU.

56

00:03:16,849 --> 00:03:24,599

>> SO I DON'T FORMALLY GET A
CIRCULAR TO STAND.

57

00:03:24,599 --> 00:03:27,270

LOOKING OUT REAL QUICK, I HAVE
AN OLD FLIGHT INSTRUCTOR SITTING

58

00:03:27,270 --> 00:03:31,190

IN THE FRONT ROW.

59

00:03:31,190 --> 00:03:32,420

I HAVE A BUNCH OF NEW FRIENDS IN
THE BACK.

60

00:03:32,420 --> 00:03:39,069

I WANT TO WANTED IF ANYBODY'S
FEATURE, BE PROUD OF WHAT YOU

61

00:03:39,069 --> 00:03:45,180

DO, TO ALL THE ELEMENTARY HIGH
SCHOOL TEACHERS WE HAVE.

62

00:03:45,180 --> 00:03:50,050

NOT HERE.

63

00:03:50,050 --> 00:03:54,019

AND WE HAVE TWO SCREENS.

64

00:03:54,019 --> 00:03:58,950

THE BIG PART IS LOOK DOWN INTO
EARTH AND GETTING TO SEE A

65

00:03:58,950 --> 00:04:01,130

DIFFERENT PERSPECTIVE OF WHAT
IT'S LIKE.

66

00:04:01,130 --> 00:04:04,230

SO IF I CAN HOLD THE ATTENTION
OF, I'LL PICK THESE GUY, IF I

67

00:04:04,230 --> 00:04:06,140

CAN HOLD THEIR ATTENTION, I WILL
BE DOING GOOD.

68

00:04:06,140 --> 00:04:08,739

IF I SEE THEM TO FIZZLE, I'LL
SPEED UP.

69

00:04:08,739 --> 00:04:15,569

I WILL GO THROUGH GROUP MEMBER,
A LITTLE OF OUR TRAINING AND THE

70

00:04:15,569 --> 00:04:16,630

LAUNCH UP TO THE SPACE STATION.

71

00:04:16,630 --> 00:04:21,109

WE WILL GO THROUGH A LITTLE LIFE
IN ZERO GRAVITY THE SCIENCE WE

72

00:04:21,109 --> 00:04:22,109

ARE DOING.

73

00:04:22,109 --> 00:04:27,270

WE WILL TAKE A FEW LOOKS OUT AT
OUR PLANET AND RIDE THE ROCKET

74

00:04:27,270 --> 00:04:28,270

HOME.

75

00:04:28,270 --> 00:04:29,270

THEN WE'LL DO QUESTIONS.

76

00:04:29,270 --> 00:04:30,270

I'LL TALK 30 MINUTES.

77

00:04:30,270 --> 00:04:32,300

>> THAT SHOULD LEAVE US 15
MINUTES FOR SOME QUESTIONS.

78

00:04:32,300 --> 00:04:34,750

I THINK THROUGHOUT PEOPLE COME
AND GO AS THEY PLEASE.

79

00:04:34,750 --> 00:04:36,340

THIS SHOULD BE A FUN DAY FOR
EVEN.

80

00:04:36,340 --> 00:04:39,410

SO YOU GOT SOMETHING ELSE YOU
WANT TO DO, GO DO IT.

81

00:04:39,410 --> 00:04:40,630

ALL RIGHT.

82

00:04:40,630 --> 00:04:43,520

I HAVE TO SAY NEXT WHEN I WANT
TO FLY UP THERE.

83

00:04:43,520 --> 00:04:45,760

THAT WAS AN INTERIM FLY ON THE
SPACEWALK.

84

00:04:45,760 --> 00:04:49,050

WE WILL GET TO THAT IN A BIT.

85

00:04:49,050 --> 00:04:52,960

A LITTLE VIDEO TO GIVE YOU A
TASTE OF WHAT OUR EARTH LOOKS

86

00:04:52,960 --> 00:04:53,960

LIKE FROM SPACE.

87

00:04:53,960 --> 00:04:57,770

CAN YOU SEE THE SUN SETTING
BEHIND OUR CARGO VEHICLES THERE.

88

00:04:57,770 --> 00:04:59,680
THESE ARE ALL TIME LAPSED FOR
THE MOST PART.

89

00:04:59,680 --> 00:05:03,360
SO IT'S BASICALLY A PHOTO, A
SECOND AND WE STITCH THEM

90

00:05:03,360 --> 00:05:04,360
ALTOGETHER.

91

00:05:04,360 --> 00:05:06,449
SO THEY'RE GOING PRETTY FAST.

92

00:05:06,449 --> 00:05:08,144
THERE YOU CAN SEE ONLY
LIGHTENING.

93

00:05:08,144 --> 00:05:11,310
WHAT IT LOOKS LIKE DOWN FROM
ABOVE, CRAWLING 32 YOU THE

94

00:05:11,310 --> 00:05:13,040
CLOUDS.

95

00:05:13,040 --> 00:05:15,050
OUR SOLAR RAYS, THEY A TRACT THE
SUN.

96

00:05:15,050 --> 00:05:16,760
OBVIOUSLY, WE'RE NOT FLYING THAT
PAST.

97

00:05:16,760 --> 00:05:17,760
HERE WE'RE OVER IN AFRICA.

98

00:05:17,760 --> 00:05:19,680
WE ARE COMING UP ON THE
MEDITERRANEAN.

99
00:05:19,680 --> 00:05:20,680
I LOVE THAT CONTRAST.

100
00:05:20,680 --> 00:05:24,010
THIS IS THE BAHAMAS T. BLUEST
WATER CAN YOU EVER SEE.

101
00:05:24,010 --> 00:05:26,320
BEYOND YOUR IMAGINATION.

102
00:05:26,320 --> 00:05:29,000
NORTHERN AND SOUTHERN LIGHTS,
LOOKING DOWN FROM ABOVE, THERE

103
00:05:29,000 --> 00:05:30,460
IS A WHOLE DIFFERENT
PERSPECTIVE.

104
00:05:30,460 --> 00:05:32,610
THIS IS US COMING UP OVER
EUROPE.

105
00:05:32,610 --> 00:05:36,940
I FLEW WITH A GERMAN SNAUHLT HE
DID A LOT OF TIME OVER HERE.

106
00:05:36,940 --> 00:05:40,180
THAT'S WHAT IT LOOKS LIKE WHEN
YOU HAVE A FULL MOON BOUNCINGS

107
00:05:40,180 --> 00:05:41,180
DOWN ON YOUR EARTH.

108
00:05:41,180 --> 00:05:42,242
IT'S REALLY GREAT AT NIGHT.

109

00:05:42,242 --> 00:05:54,811

AND HERE IN A SECOND, O'RIAN,
IT'S THE QUICKEST, ORION IN THE

110

00:05:54,811 --> 00:05:55,811

ORION CONSTELLATION.

111

00:05:55,811 --> 00:05:56,811

ALL RIGHT.

112

00:05:56,811 --> 00:05:59,960

NEXT SLIDE.

113

00:05:59,960 --> 00:06:03,130

WHEN I LAUNCHED INTO SPACE, WE
HAVEN'T LAUNCHED FOR A LONG

114

00:06:03,130 --> 00:06:04,130

TIME.

115

00:06:04,130 --> 00:06:05,870

1960s, A LOT OF FOLKS HAVE GONE.

116

00:06:05,870 --> 00:06:08,509

I WAS TRYING TO PUT IT INTO
PERSPECTIVE IN MY HEAD, WHAT IS

117

00:06:08,509 --> 00:06:13,539

IT LIKE TO BE IN SPACE, HOW MANY
HAVE GONE?

118

00:06:13,539 --> 00:06:17,250

WE SENT 538 PEOPLE THROUGHOUT
THE ENTIRE WORLD INTO LOWER

119

00:06:17,250 --> 00:06:18,620

ORBIT ORRION.

120

00:06:18,620 --> 00:06:19,740
SO THIS NUMBER IS NEVER REVISED.

121
00:06:19,740 --> 00:06:23,320
WE WALKED ON THE MOON, EVERYBODY
IS STAYING IN ORBIT.

122
00:06:23,320 --> 00:06:26,020
THAT'S COINCIDENTALLY THE SAME
AMOUNT OF PEOPLE THAT CAN FIT IN

123
00:06:26,020 --> 00:06:31,350
COACH CLASS IN AN AIR 380
AIRBUS, IT'S A PRETTY UNIQUE

124
00:06:31,350 --> 00:06:32,350
EXPERIENCE.

125
00:06:32,350 --> 00:06:33,480
YOU GET TO GO INTO SPACE.

126
00:06:33,480 --> 00:06:37,960
ALL RIGHT, NEXT SLIDE HERE WE
HAVE OUR ASTRONAUT CLASS AND I

127
00:06:37,960 --> 00:06:41,569
WON'T GO THROUGH EVERY SINGLE
INDIVIDUAL, I GOT HIRED IN 2009

128
00:06:41,569 --> 00:06:43,940
WITH THESE FOLKS HERE, I THINK
IT WAS SOMEWHERE BETWEEN THREE

129
00:06:43,940 --> 00:06:47,259
AND 4,000 PEOPLE APPLIED TO THE
2009 CLASS.

130
00:06:47,259 --> 00:06:49,020
THERE IS WHAT WE ENDED UP WITH.

131

00:06:49,020 --> 00:06:51,760

SO PEOPLE ASK WHAT IT TAKES TO
BE AN ASTRONAUT.

132

00:06:51,760 --> 00:06:54,830

IT TAKES A GREAT BACK GROUND, A
LOT OF MATH, A LOT OF SCIENCE.

133

00:06:54,830 --> 00:06:56,169

IT TAKES AN INTANGIBLE.

134

00:06:56,169 --> 00:06:57,449

>> THAT IS LUCK.

135

00:06:57,449 --> 00:06:59,330

IT TAKES A LOT OF LUCK TO GET
HIRED.

136

00:06:59,330 --> 00:07:01,060

ESPECIALLY WHEN YOU DO YOU EL
WITH THOSE NUMBERS.

137

00:07:01,060 --> 00:07:06,340

IN THESE PICTURES, WE HAVE MEN
AND WOMEN FOLKS FROM JAPAN,

138

00:07:06,340 --> 00:07:10,650

U.S., MILITARY TEST PILOT, THE
ENGINEERS SCIENTISTS.

139

00:07:10,650 --> 00:07:14,889

>> THAT IS REALLY WHAT NASA IS
LOOKING FOR A BROAD SPECTRUM OF

140

00:07:14,889 --> 00:07:15,889

PEOPLE.

141

00:07:15,889 --> 00:07:20,050

WE HAVE SCHOOL TEACHERS DOWN

THERE, WE DIDN'T HAVE ANY AND IN

142

00:07:20,050 --> 00:07:21,050

OUR CLASS.

143

00:07:21,050 --> 00:07:23,460

SO NEXT SLIDE.

144

00:07:23,460 --> 00:07:25,740

A LITTLE BIT ON OUR TRAINING,
SOME OF THE FUNDAMENTAL THINGS

145

00:07:25,740 --> 00:07:27,390

THAT WE DO IN OUR TRAINING.

146

00:07:27,390 --> 00:07:31,230

THIS IS MY CREW AND WE'RE
STANDING JUST OUTSIDE OF MOSCOW.

147

00:07:31,230 --> 00:07:34,770

IT'S FEBRUARY AND IT'S 30
DEGREES BELOW ZERO.

148

00:07:34,770 --> 00:07:37,069

AND THEY DUMP YOU OFF THERE FOR
THREE DAYS.

149

00:07:37,069 --> 00:07:40,030

THE ONLY THING THEY DID DO IS
WHEN YOU ACTUALLY HAVE IN YOUR

150

00:07:40,030 --> 00:07:42,699

SOYUZ, OUR SPACECRAFT, THAT'S
THE ONLY THING YOU HAVE TO

151

00:07:42,699 --> 00:07:43,699

SURVIVE.

152

00:07:43,699 --> 00:07:46,380

CAN YOU SEE THERE WE HAVE A
LITTLE COLD WEATHER THERE WE ARE

153

00:07:46,380 --> 00:07:51,510

WEARING, WE HAVE A TEE PEA USING
A PARACHUTE AND FALLEN TIMBER.

154

00:07:51,510 --> 00:07:53,569

YOU CAN SEE THE TOP OF THE TEE
PEA STARTING TO GO BROWN.

155

00:07:53,569 --> 00:07:56,910

WE HAD A FIRE TO KEEP US WARM AT
NIGHT.

156

00:07:56,910 --> 00:07:58,889

WE LIVED OUT THERE
TWO-AND-A-HALF DAY, THREE DAYS

157

00:07:58,889 --> 00:08:04,639

IN THAT MINUS 30 DEGREES T. BEST
PART ABOUT THE TRAINING IS, I

158

00:08:04,639 --> 00:08:06,289

THOUGHT IT WAS ALL ABOUT
SURVIVAL TRAINING.

159

00:08:06,289 --> 00:08:11,920

IN THE END, IT WAS COHESION AND
GETTING TO KNOW THESE TWO GUYS.

160

00:08:11,920 --> 00:08:14,550

WE BECAME A REALLY PHYTE TIGHT
KNIT GROUP AFTER LIVING TOGETHER

161

00:08:14,550 --> 00:08:15,939

IN A HARSH ENVIRONMENT.

162

00:08:15,939 --> 00:08:18,759

>> NEXT SLIDE.

163

00:08:18,759 --> 00:08:21,430

THE OFF CHANCE YOU GET TO DO A
SPACEWALK, YOU HAVE TO PRACTICE

164

00:08:21,430 --> 00:08:22,990

THIS TASK BEFORE YOU LAUNCH.

165

00:08:22,990 --> 00:08:25,860

SO HERE YOU CAN SEE THE PANTS
I'M WEARING MADE ME LOOK LIKE

166

00:08:25,860 --> 00:08:27,830

THE STAY PUFF MARSHMALLOW MAN.

167

00:08:27,830 --> 00:08:29,889

THEY KEEP YOU PROTECTED IN
SPACE.

168

00:08:29,889 --> 00:08:32,860

I'M WEARING A LIQUID COOLED
UNGARMENT.

169

00:08:32,860 --> 00:08:36,329

IF ANY OF YOU NEVER HAD LIQUID
COOLING IN YOUR PANTS, I HIGHLY

170

00:08:36,329 --> 00:08:37,329

RECOMMEND IT.

171

00:08:37,329 --> 00:08:40,660

IN THE SUMMERTIME, ESPECIALLY,
IT'S GREAT.

172

00:08:40,660 --> 00:08:44,620

WE PROVIDE COLD WATER THROUGH
THESE LITTLE TUBES.

173

00:08:44,620 --> 00:08:46,190

IT FEELS REAL NICE.

174

00:08:46,190 --> 00:08:49,440
MY LEFT HAND IS ON THE UPPER
TORSO, WHICH IS WHERE OUR

175

00:08:49,440 --> 00:08:51,540
MACHINERY IN THE SPACE SUIT
LIVES.

176

00:08:51,540 --> 00:08:52,540
NEXT SLIDE.

177

00:08:52,540 --> 00:08:55,250
HOW WE PRACTICE FOR THAT ON
EARTH.

178

00:08:55,250 --> 00:08:58,120
WE HAVE A GUY GANTIC POOL IN
HOUSTON, TEXAS.

179

00:08:58,120 --> 00:09:02,110
WE HAVE AN ENTIRE SPACE STATION,
NOT THAT SIZE, A REAL SIZE, WHAT

180

00:09:02,110 --> 00:09:04,050
WAS IT 25 TIMES THAT SIZE.

181

00:09:04,050 --> 00:09:05,050
IT'S UNDER WATER.

182

00:09:05,050 --> 00:09:07,760
WHEN WE GO UNDER WATER IN THE
SPACE SUIT, WE HAVE DIVERS THAT

183

00:09:07,760 --> 00:09:08,760
ARE THERE.

184

00:09:08,760 --> 00:09:10,440

THEY MAKE US BOYANT.

185

00:09:10,440 --> 00:09:12,250

WE CAN PRETEND LIKE WE ARE IN
SPACE.

186

00:09:12,250 --> 00:09:16,120

THIS IS SOME OF THE BEST
TRAINING THAT I DID AT NASA.

187

00:09:16,120 --> 00:09:19,470

WHEN I WENT OUT ON MY FIRST
SPACEWALK, I REACHED OUT AND

188

00:09:19,470 --> 00:09:22,850

THERE WAS A HAND RAIL I KNEW IT
WAS GOING TO BE THERE, THIS IS

189

00:09:22,850 --> 00:09:24,930

REALLY RELATABLE.

190

00:09:24,930 --> 00:09:26,790

NEXT.

191

00:09:26,790 --> 00:09:29,320

WE HAVE NO DOCTORS ON BOARD AND
I'M A NAVY PILOT.

192

00:09:29,320 --> 00:09:31,330

I DON'T LIKE THE SIGHT OF BLOOD.

193

00:09:31,330 --> 00:09:34,500

I DON'T LIKE ANYTHING TO DO WITH
SURGERY OR ANYTHING LIKE THAT.

194

00:09:34,500 --> 00:09:36,740

BUT WE HAD TO LEARN HOW TO DO
THAT.

195

00:09:36,740 --> 00:09:38,920
THIS POOR MANNEQUIN GETS ABUSED.

196
00:09:38,920 --> 00:09:41,260
HE IS PRETTY BEAT UP.

197
00:09:41,260 --> 00:09:44,180
HE HAS EKGs THE A.D.

198
00:09:44,180 --> 00:09:46,610
CENTERS ON
HIM, THE DEFIBRILLATOR.

199
00:09:46,610 --> 00:09:48,000
MAX IS OFF THE SCREEN.

200
00:09:48,000 --> 00:09:50,269
HE HAS A BONE INJECTION GUN.

201
00:09:50,269 --> 00:09:53,790
IT SHOVES A HUGE NEEDLE IN YOUR
CALF AND SUPPLIES I.D.

202
00:09:53,790 --> 00:09:55,440
FLUIDS IN
EMERGENCY.

203
00:09:55,440 --> 00:10:00,250
SO WE HAVE TO TRAIN IN CPR, BAKE
MEDICAL CARE.

204
00:10:00,250 --> 00:10:01,250
NEXT.

205
00:10:01,250 --> 00:10:03,550
OH, LIE LOVE THIS PICTURE.

206
00:10:03,550 --> 00:10:06,260
THROUGH THAT LITTLE WINDOW, I'M

SITTING IN A SPACE SUIT.

207

00:10:06,260 --> 00:10:08,490

AND I'M IN A VACUUM CHAMBER IN
RUSSIA.

208

00:10:08,490 --> 00:10:11,230

THERE IS NO AIR IN THIS ROOM AT
ALL.

209

00:10:11,230 --> 00:10:14,110

THE WHOLE POINT OF THIS TRAINING
IS YOU GOT TO TRUST YOUR

210

00:10:14,110 --> 00:10:15,410

HARDWARE WHEN YOU FLY IN SPACE.

211

00:10:15,410 --> 00:10:18,050

IT WILL PUT YOU IN SOME REALLY
WEIRD ENVIRONMENTS.

212

00:10:18,050 --> 00:10:20,529

SO IN THIS CHAMBER THERE IS NO
AIR.

213

00:10:20,529 --> 00:10:23,690

IF MY SPACE SUIT LEAKS OR A
GLOVE POPS OFF, THAT'S IT, I'M

214

00:10:23,690 --> 00:10:24,690

DODGE.

215

00:10:24,690 --> 00:10:29,250

SO YOU SIT IN THERE TWO HOURS
WITH ALL THE AIR SUCKED OUT.

216

00:10:29,250 --> 00:10:32,720

I HAVE TO TELL YOU, WHEN YOU SIT
THERE AT FIRST, YOU ARE NERVOUS,

217

00:10:32,720 --> 00:10:34,190
SHAKING A LITTLE BIT.

218

00:10:34,190 --> 00:10:36,820
ANY TIME YOU MOVE, YOU HEAR A
POP OR A CREEK IN YOUR SPACE

219

00:10:36,820 --> 00:10:40,930
SUIT, YOU INSTANTLY FREEZE,
LIKE, ALL RIGHT, I'M STILL

220

00:10:40,930 --> 00:10:41,930
ALIVE.

221

00:10:41,930 --> 00:10:44,170
THEN YOU SETTLE BACK, AAH.

222

00:10:44,170 --> 00:10:45,540
THEN YOU SETTLE DOWN.

223

00:10:45,540 --> 00:10:48,750
AFTER TWO HOURS HAVE YOU TOTAL
TRUST IN THAT SPACE SUIT.

224

00:10:48,750 --> 00:10:50,370
THEY'RE ALL CUSTOM TAILORED FOR
US.

225

00:10:50,370 --> 00:10:56,920
THAT'S THE ONE I WOULD WEAR WHEN
I LAUNCH BACK TO EARTH.

226

00:10:56,920 --> 00:10:59,060
WE HAVE TO LEARN TO DO THE
SCIENCE WE DO UP THERE.

227

00:10:59,060 --> 00:11:00,550
SO WE DON'T WASTE A LOT OF TIME.

228

00:11:00,550 --> 00:11:03,410

HERE I'M DOING AN ULTRASOUND ON
MY HEART.

229

00:11:03,410 --> 00:11:06,610

ON THE SCREEN, I HAVE AN
INSTRUCTOR, ONE OF OUR OFFICE

230

00:11:06,610 --> 00:11:07,970

SOUND RESEARCHERS.

231

00:11:07,970 --> 00:11:10,650

HE'S POINTING OUT HEART VALVES.

232

00:11:10,650 --> 00:11:13,630

I CAN ACTUALLY WATCH MY HEART
BEAT ON THIS SCREEN.

233

00:11:13,630 --> 00:11:16,019

IF YOU NEVER DONE THAT, IT'S
REALLY WEIRD.

234

00:11:16,019 --> 00:11:19,730

LIKE A WEIRD SENSORY OVERLOAD
THAT COMES INTO YOUR HEAD.

235

00:11:19,730 --> 00:11:21,540

YOU FEEL YOUR HEART BEAT, YOU
WATCH YOUR HEART VALVE

236

00:11:21,540 --> 00:11:23,450

SWAPPING AROUND.

237

00:11:23,450 --> 00:11:29,050

I LEARNED ALL THAT, SO I CAN GO
UP AND DO THE SCIENCE.

238

00:11:29,050 --> 00:11:30,510

NEXT SLIDE.

239

00:11:30,510 --> 00:11:33,339

AND I HAD TO LEARN MY
ROCKETSHIP.

240

00:11:33,339 --> 00:11:37,209

I FLEW WITH THE RUSSIANS
ALONGSIDE THEM AND EVERYTHING

241

00:11:37,209 --> 00:11:38,220

WAS IN RUSSIAN.

242

00:11:38,220 --> 00:11:40,220

>> THAT MANUAL I'M HOLDING, ALL
IN RUSSIAN.

243

00:11:40,220 --> 00:11:44,019

ALL THOSE KNOB, ALL IN RUSSIAN
T. GUYS SITTING NEXT TO ME IN

244

00:11:44,019 --> 00:11:46,340

MISSION CONTROL, IT'S ALL IN
RUSSIAN.

245

00:11:46,340 --> 00:11:50,470

SO I SPENT A SOLID FOUR-TO-FIVE
YEARS OF MY LIFE AT NASA WITH A

246

00:11:50,470 --> 00:11:52,420

RUSSIAN TUTOR LEARNING THAT
LANGUAGE.

247

00:11:52,420 --> 00:11:55,959

BY THE TIME WE LAUNCHED, WE WERE
PRETTY GOOD AT SPACE RUCHLGS I'M

248

00:11:55,959 --> 00:12:00,800

NOT TOO GOOD AT RUSSIAN BUT I'M
GOOD AT SPACE RUSSIAN.

249

00:12:00,800 --> 00:12:02,740

HERE'S THAT THING YOU SAW
EARLIER.

250

00:12:02,740 --> 00:12:05,019

THIS IS US IN THE BACK OF A C-9
AIRPLANE.

251

00:12:05,019 --> 00:12:08,019

WE'RE FLOATING FOR THE FIRST
TIME IN OUR LIVES.

252

00:12:08,019 --> 00:12:13,670

YOU GET 20 SECONDS OF
WEIGHTLESSNESS, IT PITCHES UP,

253

00:12:13,670 --> 00:12:15,511

THE PILOT PUSHES PITCH FORWARD
AND YOU GET WEIGHTLESSNESS.

254

00:12:15,511 --> 00:12:19,920

WE USED TO DO IT WHEN WE WERE
YOUNGER.

255

00:12:19,920 --> 00:12:23,170

YOU CAN TELL BY THE LOOK ON OUR
FACES, THIS IS BORING.

256

00:12:23,170 --> 00:12:24,170

IT'S NO FUN.

257

00:12:24,170 --> 00:12:25,529

I DON'T RECOMMEND IT TO ANYBODY.

258

00:12:25,529 --> 00:12:33,940

IF YOU HAVE A CHANCE TO DO A
GUARANTEED FLIGHT, SAY NO, AT

259

00:12:33,940 --> 00:12:36,610

THE END OF TWO YEARS OF
TRAINING, THEY GIVE YOU THE KEYS

260

00:12:36,610 --> 00:12:37,610

TO YOUR ROCKETSHIP.

261

00:12:37,610 --> 00:12:41,060

THERE IS ME, MAX AND ALEX
STANDING AT THE END OF THE

262

00:12:41,060 --> 00:12:43,250

SOYUZ, IT'S A SMALL ROCKET.

263

00:12:43,250 --> 00:12:49,450

IT LOOKS LIKE A SERIOUS FIRE
POWER.

264

00:12:49,450 --> 00:12:54,079

BY THE TIME I GOT HIRED IN 2009
AND LAUNCHED IN 2014, I WAS

265

00:12:54,079 --> 00:12:57,700

ABSOLUTELY CRAVING THE RIDE ON
THIS MACHINE.

266

00:12:57,700 --> 00:12:58,700

NEXT SLIDE.

267

00:12:58,700 --> 00:13:02,200

HOW MANY KIDS ARE TRAINED OUT
THERE?

268

00:13:02,200 --> 00:13:04,910

WHEN I GREW UP, I LOVED
TRAINING.

269

00:13:04,910 --> 00:13:09,440

WHEN I GOT TO SEE THE LAUNCHPAD,
IT WORE MY HEART.

270

00:13:09,440 --> 00:13:11,910

IT WOULD BE BETTER IF IT WASN'T
A HELICOPTER OR A FIGHTER JET

271

00:13:11,910 --> 00:13:13,810

ESCORTING IT OUT THERE.

272

00:13:13,810 --> 00:13:17,320

I COULDN'T GET EVERYTHING I
WANTED.

273

00:13:17,320 --> 00:13:18,850

>> THAT 227 LOOKED GOOD.

274

00:13:18,850 --> 00:13:20,320

THAT'S IN THE MIDDLE OF
KAZAHKSTAN.

275

00:13:20,320 --> 00:13:24,520

I JOKE WITH MY KIDS, WE DRIVE
THROUGH THE WESTERN PARTS.

276

00:13:24,520 --> 00:13:26,560

THIS IS TRULY THE MIDDLE OF
NOWHERE.

277

00:13:26,560 --> 00:13:28,380

NEXT SLIDE.

278

00:13:28,380 --> 00:13:29,470

>> HERE'S MY CREW.

279

00:13:29,470 --> 00:13:33,360

REAL QUIRKS OVER ON THE LEFT,
THE GUY LACKING HAIR, IS ALEX

280

00:13:33,360 --> 00:13:34,360

GERTH.

281

00:13:34,360 --> 00:13:39,010

HE IS A GERMAN GEOPHYSICIST,
STUDIED VOLCANOS, LIVED ON THE

282

00:13:39,010 --> 00:13:42,920

RIMS OF VOLCANOS, DODGING LIKE
THESE THINGS CALLED BOMB,

283

00:13:42,920 --> 00:13:44,709

THEY'RE GETTING EJECTED OUT OF
THE VOLCANO.

284

00:13:44,709 --> 00:13:45,959

SO HE IS A LUNATIC.

285

00:13:45,959 --> 00:13:48,320

HE HAS DONE A LOT OF PARACHUTE
DUMP U JUMPS.

286

00:13:48,320 --> 00:13:52,620

HE LIVED IN PLACES I WOULD NEVER
VOLUNTEER TO GO IN MY LIFE.

287

00:13:52,620 --> 00:13:55,000

A SUPER SALT OF THE EARTH.

288

00:13:55,000 --> 00:13:57,600

HE WAS OUR BOOK OF KNOWLEDGE UP
THERE.

289

00:13:57,600 --> 00:14:02,620

THEN IN THE MIDDLE, WE HAVE
MAXINE, A RUSSIAN FIGHTER PILOT

290

00:14:02,620 --> 00:14:03,620

BY TRADE.

291

00:14:03,620 --> 00:14:04,620

HE FLEW SAYS S-27s.

292

00:14:04,620 --> 00:14:10,010

WHEN I JOINED THE NAVY, THOSE
WERE THE PEOPLE WE TRAINED

293

00:14:10,010 --> 00:14:12,270

AGAINST.

294

00:14:12,270 --> 00:14:13,530

IN THE END, WE'RE BEST FRIENDS.

295

00:14:13,530 --> 00:14:17,260

WHAT I LOVE ABOUT IT IS IF YOU
GET UNDER THE POLITICAL LEVEL,

296

00:14:17,260 --> 00:14:21,390

YOU ARE ONE GROUP OF PEOPLE, YOU
WANT TO DO THAT MISSION.

297

00:14:21,390 --> 00:14:25,860

THEN YOU GOT ME ON THE NEXT
SLIDE.

298

00:14:25,860 --> 00:14:29,620

LET'S GET US OFF INTO SPACE.

299

00:14:29,620 --> 00:14:31,610

PEOPLE ASK ME THE HARDEST PART
OF FLYING IN SPACE IS SAYING

300

00:14:31,610 --> 00:14:32,850

GOOD-BYE TO YOUR KIDS.

301

00:14:32,850 --> 00:14:38,610

THAT WAS ME ON THE BUS, SAYING
GOOD-BYE AND THAT'S REAL HARD.

302

00:14:38,610 --> 00:14:41,000

HERE WE HAVE THE HEAD OF THE

RUSSIAN SPACE AGENCY.

303

00:14:41,000 --> 00:14:42,240

HE'S GIVING US ALL BEST WISHES.

304

00:14:42,240 --> 00:14:43,940

HE TELLS US HE BUILT A GOOD
ROCKET.

305

00:14:43,940 --> 00:14:48,089

IT WAS VERY REASSURING AT THAT
PHASE.

306

00:14:48,089 --> 00:14:49,240

THEN WE'RE CLIMBING UP THE
LADDER.

307

00:14:49,240 --> 00:14:51,390

YOU SEE THAT ROCKET BEHIND US,
IT'S ALIVE.

308

00:14:51,390 --> 00:14:55,250

IT'S LIKE BREATHING, RUMBLING,
SHAKING, READY TO GO INTO SPACE.

309

00:14:55,250 --> 00:14:56,839

WE SIT THERE ABOUT THREE HOURS.

310

00:14:56,839 --> 00:14:58,730

THEN IT'S TIME TO LIGHT THE
ENGINES.

311

00:14:58,730 --> 00:15:01,139

THEY BURN TEN SECONDS BEFORE
LIFTOFF.

312

00:15:01,139 --> 00:15:02,430

YOU FEEL IT AT NIGHT.

313

00:15:02,430 --> 00:15:04,770
IT RUMBLES A LITTLE MORE.

314
00:15:04,770 --> 00:15:06,340
YOU CAN HEAR THAT SOUND.

315
00:15:06,340 --> 00:15:07,970
THAT'S LIFTOFF.

316
00:15:07,970 --> 00:15:09,600
IT'S REALLY PRETTY GENTLE.

317
00:15:09,600 --> 00:15:12,350
PITCH PLAQUE OUTSIDE.

318
00:15:12,350 --> 00:15:15,209
THERE IS MY WIFE WITH MY KIDS,
MY BROTHER, MY MOM IN THE LOWER

319
00:15:15,209 --> 00:15:16,209
LEFT.

320
00:15:16,209 --> 00:15:20,350
THE ONLY THING ILLUMINATING
RIGHT THEN IS THAT HUGE FIREBALL

321
00:15:20,350 --> 00:15:22,650
COMING UP.

322
00:15:22,650 --> 00:15:25,780
>> THAT RIDE INTO SPACE, IT'S
ONLY NINE-AND-A-HALF MINUTES.

323
00:15:25,780 --> 00:15:27,120
IT'S NOTHING.

324
00:15:27,120 --> 00:15:30,100
IT TAKES FROM ZERO TO
17-AND-A-HALF MILES PER HOUR IN

325

00:15:30,100 --> 00:15:31,779

THAT NINE-AND-A-HALF MINUTES.

326

00:15:31,779 --> 00:15:34,510

SO YOU CAN IMAGINE THE FORCES ON
THE BODIES ON THAT THE

327

00:15:34,510 --> 00:15:35,720

THREE-STAGE ROCKETS.

328

00:15:35,720 --> 00:15:40,420

EACH ONE OF THOSE STAGES TAKES
YOU UP, IN THE END, YOU ARE

329

00:15:40,420 --> 00:15:43,579

GETTING PUSHED BACK HARDER AND
HARDER IN YOUR SEATS T. FIRST

330

00:15:43,579 --> 00:15:44,579

STAGE GETS DONE.

331

00:15:44,579 --> 00:15:45,579

YOU FLIP FORWARD.

332

00:15:45,579 --> 00:15:49,320

THE SECOND STAGE COMES ON,
PUSHES YOU BACK HEARD, HARDER,

333

00:15:49,320 --> 00:15:51,050

HARDER INTO YOUR SEATS.

334

00:15:51,050 --> 00:15:55,649

THERE IS MISSION CONTROL, MOSCOW
IN THE UPPER LEFT.

335

00:15:55,649 --> 00:15:56,940

THIS IS GOING TO BE MADE INTO A
CUTOUT.

336

00:15:56,940 --> 00:15:58,529

YOU CAN SEE IT'S VERY DYNAMIC.

337

00:15:58,529 --> 00:16:01,020

IT JOLTS YOU.

338

00:16:01,020 --> 00:16:03,649

WE'RE IN SPACE RIGHT NOW, THE
FIRST TIME EVER.

339

00:16:03,649 --> 00:16:06,830

YOU CAN SEE THERE IS THIS
FEELING OF EXTREME HAPPINESS.

340

00:16:06,830 --> 00:16:08,509

IT'S TOUGH TO SEE THAT.

341

00:16:08,509 --> 00:16:09,730

BUT WE MADE IT.

342

00:16:09,730 --> 00:16:11,220

I DREAMED OF THIS MY WHOLE LIFE.

343

00:16:11,220 --> 00:16:12,390

NOW WE'RE THERE.

344

00:16:12,390 --> 00:16:15,509

THAT'S A TOY MY DAUGHTER GAVE
ME.

345

00:16:15,509 --> 00:16:20,370

THEN WE HAD A GoPro MOUNTED TO
THE CONTROL PANEL.

346

00:16:20,370 --> 00:16:24,459

THIS IS OUR FIRST LOOK OUTSIDE.

347

00:16:24,459 --> 00:16:27,310
AND I LOVE THAT REACTION FROM
THE CROWD AND BECAUSE THAT

348

00:16:27,310 --> 00:16:29,990
REALLY IS, THAT'S THE AWE
MOMENT.

349

00:16:29,990 --> 00:16:33,410
THAT'S THE FIRST LOOK OUTSIDE
AND I HAD DREAMED AND THIS FOR

350

00:16:33,410 --> 00:16:34,410
SO LONG IF MY LIFE.

351

00:16:34,410 --> 00:16:38,300
I HAD LOOKED AT SO MANY PICTURES
AND I HAD BEEN TO SO MANY GREAT

352

00:16:38,300 --> 00:16:41,290
DISPLAYS LIKE THIS I WAS REALLY
WORRIED THAT AFTER

353

00:16:41,290 --> 00:16:44,779
NINE-AND-A-HALF MINUTES I'D LOOK
OUTSIDE AND GO, EH.

354

00:16:44,779 --> 00:16:48,139
I CAN TELL YOU, WHEN YOU SEE IS
THAT WITH YOUR OWN EYE, YOU ARE

355

00:16:48,139 --> 00:16:51,240
FLOWING, YOU FEEL WEIRD,
EVERYTHING IS CRAZY IN YOUR

356

00:16:51,240 --> 00:16:52,240
BODY.

357

00:16:52,240 --> 00:16:53,680
THERE IS NOTHING LIKE THAT.

358

00:16:53,680 --> 00:16:58,500

THAT IS THE AWKWARD MOMENT OF
YOUTH, OF PASSION RIGHT THERE TO

359

00:16:58,500 --> 00:17:00,050

LOOK OUTSIDE OF YOUR PLANET.

360

00:17:00,050 --> 00:17:01,410

ALL RIGHT.

361

00:17:01,410 --> 00:17:02,779

NEXT SLIDE.

362

00:17:02,779 --> 00:17:05,730

SO ONCE THAT NINE-AND-A-HALF
MINUTE LAUNCH RIDE IS OVER, THEN

363

00:17:05,730 --> 00:17:09,820

WE'RE IN SPACE, HURLING US
AROUND THE PLANET.

364

00:17:09,820 --> 00:17:11,459

>> THAT TAKES SIX HOURS.

365

00:17:11,459 --> 00:17:14,839

THAT'S US ON THE LEFT TALKING TO
THE SPACE STATION ON THE RIGHT.

366

00:17:14,839 --> 00:17:15,839

TOTALLY AUTOMATED SYSTEM.

367

00:17:15,839 --> 00:17:19,410

ALL WE HAD TO DO IS TALK TO
MISSION CONTROL, KEEP OURSELVES

368

00:17:19,410 --> 00:17:20,470

ALIVE.

369

00:17:20,470 --> 00:17:24,270

THE ROCKET TOOK US UP THERE AND
GOT US DONE.

370

00:17:24,270 --> 00:17:27,220

HERE IN A MINUTE, YOU WILL SEE
ALEX COME THROUGH THE HATCH.

371

00:17:27,220 --> 00:17:30,500

I'LL FOLLOW HIM TWO SECONDS
LATER.

372

00:17:30,500 --> 00:17:34,470

AND I'M SURE EVERYBODY IN THIS
ROOM HAS HAD THAT DREAM WHERE

373

00:17:34,470 --> 00:17:35,539

YOU ARE FLOATING.

374

00:17:35,539 --> 00:17:37,110

IT'S A MAGICAL FEELING.

375

00:17:37,110 --> 00:17:40,440

I CAN TELL YOU, WHEN YOU PUT THE
WHOLE HUMAN BODY IN

376

00:17:40,440 --> 00:17:45,400

WEIGHTLESSNESS, THERE IS NOT A
WHOLE LOT THAT DOESN'T FEEL

377

00:17:45,400 --> 00:17:46,400

RIGHT.

378

00:17:46,400 --> 00:17:47,690

YOU SEE ME COME THROUGH.

379

00:17:47,690 --> 00:17:51,660

IT'S DRAGGING ME THROUGH THE
SPACE STATION TO GET ME WHERE I

380

00:17:51,660 --> 00:17:53,539

NEED TO GO.

381

00:17:53,539 --> 00:17:55,880

WE GO TO THE NEXT SLIDE, I'LL
KIND OF HIT ON MY INITIAL

382

00:17:55,880 --> 00:17:56,880

FEELINGS.

383

00:17:56,880 --> 00:18:00,669

I HAD TRAINED ESSENTIALLY FIVE
YEARS FOR THIS MISSION.

384

00:18:00,669 --> 00:18:03,039

SO I KNEW THE SPACE STATION
INSIDE AND OUT.

385

00:18:03,039 --> 00:18:06,210

WHAT I DIDN'T KNOW WAS THE SPACE
STATION INSIDE AND OUT WHEN HAVE

386

00:18:06,210 --> 00:18:07,240

YOU NO GRAVITY.

387

00:18:07,240 --> 00:18:11,510

SO YOU TAKE GRAVITY AWAY, NOW MY
ENVIRONMENT WAS UNBELIEVABLY

388

00:18:11,510 --> 00:18:13,419

CONFUSING FOR THE FIRST TWO OUR
THREE DAYS.

389

00:18:13,419 --> 00:18:14,690

I WOULD GET LOST.

390

00:18:14,690 --> 00:18:16,390

THERE IS NO UP OR DOWN, NO WALL,

STUFF EVERYWHERE.

391

00:18:16,390 --> 00:18:19,910

IT'S AN OPERATIONAL LABORATORY.

392

00:18:19,910 --> 00:18:22,630

IT'S A MESS IN THERE OF WIRES
AND EXPERIMENTS.

393

00:18:22,630 --> 00:18:24,660

IT WAS CRAZY.

394

00:18:24,660 --> 00:18:27,621

NEXT SLIDE WILL KIND OF START TO
HIT ON SOME OF THAT.

395

00:18:27,621 --> 00:18:29,630

MY STOMACH FELT FULL ALL THE
TIME.

396

00:18:29,630 --> 00:18:32,390

IMAGINE YOU TURN OFF GRAVITY,
EVERYTHING YOU ATE FOR

397

00:18:32,390 --> 00:18:38,799

BREAKFAST, A NICE BIG GLASS OF
MILK, NOW THAT HAS NOWHERE TO

398

00:18:38,799 --> 00:18:39,799

SIT.

399

00:18:39,799 --> 00:18:40,919

IT'S LIKE UP THERE.

400

00:18:40,919 --> 00:18:43,110

IT'S LIKE WAY UP TO THERE.

401

00:18:43,110 --> 00:18:45,340

SO YOU KNOW YOU NEED TO EAT BUT

YOU DON'T WANT TO EAT.

402

00:18:45,340 --> 00:18:47,419

YOU KNOW YOU NEED TO DRINK, BUT
YOU DON'T WANT TO DRINK.

403

00:18:47,419 --> 00:18:49,750

IT'S LIKE, AH, THIS IS NOT GOOD.

404

00:18:49,750 --> 00:18:51,030

BUT IT GETS BETTER.

405

00:18:51,030 --> 00:18:55,630

NEXT SLIDE, AROUND DAY THREE WE
WERE GETTING BETTER AT FLOATING,

406

00:18:55,630 --> 00:19:02,530

THE DRILL THOUGHT ALEX AND I
WERE ROOKIE, YOU WOULD PLOW

407

00:19:02,530 --> 00:19:04,240

STUFF RIGHT OFF THE WALL.

408

00:19:04,240 --> 00:19:07,030

SO LONNIE WOULD COME BEHIND US,
HE HAD BEEN UP THERE THREE

409

00:19:07,030 --> 00:19:10,700

MONTHS AND GENTLY BE PUTTING ALL
THE STUFF BACK WE KNOCKED OFF.

410

00:19:10,700 --> 00:19:11,880

HE WASN'T YEBLG AT US.

411

00:19:11,880 --> 00:19:13,980

HE KNEW IT WOULD GET BETTER OVER
TIME.

412

00:19:13,980 --> 00:19:18,260

THE INSTANT THING FOR ME WAS HOW
MUCH THE TOP OF MY FEET HURT.

413

00:19:18,260 --> 00:19:21,950

WHEN WE GET INTO SPACE THE FIRST
THING YOUR MIND WANTS TO DO IS

414

00:19:21,950 --> 00:19:26,760

GET YOU ORIENTED LIKE THIS, WE
HAVE HAND RAILS EVERYWHERE.

415

00:19:26,760 --> 00:19:29,310

YOU PULL UP WITH YOUR TOES,
STABILIZE YOURSELF AND THEN THE

416

00:19:29,310 --> 00:19:34,190

TOPS OF YOUR FEET END UP GETTING
BLISTERS AND TAKE TALENT.

417

00:19:34,190 --> 00:19:36,840

NEXT SLIDE.

418

00:19:36,840 --> 00:19:40,530

MY FIRST RUN ON THE TREAD MIL,
THIS IS SOMETHING THAT I

419

00:19:40,530 --> 00:19:41,530

TWEETED.

420

00:19:41,530 --> 00:19:42,530

MY HEELS WERE TINGLING.

421

00:19:42,530 --> 00:19:43,530

IT FELT WEIRD.

422

00:19:43,530 --> 00:19:44,980

THE FOOD BOUNCING IN YOUR
STOMACH.

423

00:19:44,980 --> 00:19:49,080
NOT ONLY DO YOU FEEL FOOD THE
FOOD ON THE ON THE OF YOUR

424
00:19:49,080 --> 00:19:50,640
STOMACH AND BACK DOWN.

425
00:19:50,640 --> 00:19:53,440
IT'S A REALLY WEIRD IT ALMOST
FELT LIKE I WAS EATING A BUNCH

426
00:19:53,440 --> 00:19:56,000
OF GOLF BAUSHLGS THEY WERE
HURLING AROUND.

427
00:19:56,000 --> 00:19:57,320
I DON'T KNOW.

428
00:19:57,320 --> 00:19:59,520
I CAN'T DO CART WHEELS.

429
00:19:59,520 --> 00:20:00,520
I DON'T THINK SO.

430
00:20:00,520 --> 00:20:01,520
IT WAS WEIRD.

431
00:20:01,520 --> 00:20:02,520
BUT IT GOT BETTER.

432
00:20:02,520 --> 00:20:03,520
ALL RIGHT.

433
00:20:03,520 --> 00:20:04,520
NEXT SLIDE.

434
00:20:04,520 --> 00:20:05,650
THEN I WOKE UP ONE DAY BORED.

435

00:20:05,650 --> 00:20:10,320

IT WAS LIKE MAGIC, LIKE A FAIRY
HAD VISITED ME IN SPACE AND SAID

436

00:20:10,320 --> 00:20:12,970

EVERYTHING WILL BE GOOD FROM
HERE ON OUT.

437

00:20:12,970 --> 00:20:13,970

I WOKE UP.

438

00:20:13,970 --> 00:20:15,210

I FELT GREAT.

439

00:20:15,210 --> 00:20:18,630

THEN I STARTED TO REALIZE SPACE
IS LIKE EVERY LAZY MAN'S DREAM.

440

00:20:18,630 --> 00:20:21,920

YOU CAN JUST FLOAT FROM ONE SIDE
TO THE OTHER WITHOUT WALKING.

441

00:20:21,920 --> 00:20:27,030

YOU CAN LIFT UP THIS WHOLE STAGE
OVER ON THE OTHER SIDE.

442

00:20:27,030 --> 00:20:28,540

EVERYTHING TURNED EASY.

443

00:20:28,540 --> 00:20:29,540

MY MIND LOVED IT.

444

00:20:29,540 --> 00:20:30,740

MY BODY LOVED IT.

445

00:20:30,740 --> 00:20:34,140

YOU CAN TELL THE HUMAN BODY IS
AN AMAZING ADAPTIVE MACHINE.

446

00:20:34,140 --> 00:20:35,750

IT TOOK THIS NEW CHALLENGE.

447

00:20:35,750 --> 00:20:36,750

ALL RIGHT.

448

00:20:36,750 --> 00:20:39,100

IT TOOK ME FOUR DAYS.

449

00:20:39,100 --> 00:20:40,530

THEN I FELT GREAT.

450

00:20:40,530 --> 00:20:41,530

ALL RIGHT.

451

00:20:41,530 --> 00:20:42,530

NEXT SLIDE.

452

00:20:42,530 --> 00:20:45,000

SO WE DO SPACE TOURISM HERE IN
THE FUTURE, MAKE SURE YOUR

453

00:20:45,000 --> 00:20:47,020

MISSION IS AT LEAST FIVE DAYS.

454

00:20:47,020 --> 00:20:50,420

BECAUSE THE FIRST FOUR ARE NOT
GOING TO BE SUPER.

455

00:20:50,420 --> 00:20:53,630

LIKE REAL QUICK ON THE SPACE
STAKES, CAN YOU LOOK AT THE

456

00:20:53,630 --> 00:20:57,240

MONITOR, ON THE SCREEN, ANYTHING
YOU SEE RUNNING HORIZONTAL THERE

457

00:20:57,240 --> 00:20:58,999

IS ALL TRUST WORK.

458

00:20:58,999 --> 00:21:02,980

>> THAT IS THERE TO SUPPORT THE
HUGE SOLAR RAYS BASICALLY ON THE

459

00:21:02,980 --> 00:21:04,280

OUTSIDE.

460

00:21:04,280 --> 00:21:08,330

OUR SPACE STATION, WE HAVE NO
ENGINE, NO NUCLEAR REACTOR.

461

00:21:08,330 --> 00:21:10,730

ALL THE POWER WE GET INSIDE
COMES FROM THE SUN.

462

00:21:10,730 --> 00:21:15,280

IT'S THOSE ARRAYS THAT ARE ORG
LOOK VERTICALS ON THE SIDE.

463

00:21:15,280 --> 00:21:18,350

IN THE CENTER, YOU SEE WHAT
LOOKS LIKE AN EXWING FIGHTER TO

464

00:21:18,350 --> 00:21:20,929

THE BACK OF THE FRONT IN THAT
PICTURE.

465

00:21:20,929 --> 00:21:22,559

THAT'S A EUROPEAN RESUPPLY SHIP.

466

00:21:22,559 --> 00:21:27,380

ANYTHING VERT TAL, IF YOU HAVE A
LASER POINTER, I HOPE I'M

467

00:21:27,380 --> 00:21:31,409

GETTING GOOD ENOUGH, THIS
VERTICAL PART THERE, THIS LITTLE

468

00:21:31,409 --> 00:21:35,830

C, THIS VERTICAL PART HERE, AND
THEN THE LITTLE T THERE, THAT'S

469

00:21:35,830 --> 00:21:36,919

THE PRESSURIZED HAVING A YUM.

470

00:21:36,919 --> 00:21:37,919

THAT'S WHERE WE LIVE.

471

00:21:37,919 --> 00:21:42,750

THAT'S OUR HOME T. NEXT SLIDE,
I'M GOING TO START RIGHT HERE

472

00:21:42,750 --> 00:21:43,750

AGAINST THIS WALL.

473

00:21:43,750 --> 00:21:45,130

SO I'M KIND OF TAPPING ON THIS
WALL.

474

00:21:45,130 --> 00:21:47,240

LY FLOAT ALL THE WAY THROUGH TO
THIS SIDE.

475

00:21:47,240 --> 00:21:50,760

WE WILL GO BACK HERE FLOAT TO
THIS SIDE.

476

00:21:50,760 --> 00:21:53,390

FOR THOSE OF YOU WHO HAVE SEEN
THIS VIDEO BEFORE, LISTEN TO THE

477

00:21:53,390 --> 00:21:56,950

FAN NOISE, TRY TO PICK UP TO THE
NUANCE, THOSE WHO HAVE IT

478

00:21:56,950 --> 00:21:57,950

ENJOYED IT.

479

00:21:57,950 --> 00:21:58,950

I WILL START ON THE RUSSIAN
SIDE.

480

00:21:58,950 --> 00:21:59,950

IT'S REAL CONFINED.

481

00:21:59,950 --> 00:22:02,130

IT WILL BE A JOKE AT THE
BEGINNING ABOUT THAT.

482

00:22:02,130 --> 00:22:05,030

WHEN I GO ON THE U.S. SIDE, YOU
WILL SEE IT LAUNCHED IN THE

483

00:22:05,030 --> 00:22:06,030

SPACE SHUTTLE.

484

00:22:06,030 --> 00:22:07,030

IT'S A BIG MACHINE.

485

00:22:07,030 --> 00:22:08,040

ALL RIGHT.

486

00:22:08,040 --> 00:22:10,980

GO AHEAD AND PLAY THE NEXT ONE.

487

00:22:10,980 --> 00:22:11,980

>> OKAY.

488

00:22:11,980 --> 00:22:13,110

HERE WE ARE IN THE BACK OF THE
ATV.

489

00:22:13,110 --> 00:22:16,070

WE ARE IN THE BACK END OF THE
SPACE STATION WITH REGOING

490

00:22:16,070 --> 00:22:19,049

18,000 MILES AN HOUR IN THIS
DIRECTION.

491

00:22:19,049 --> 00:22:21,520

SO WE WILL TAKE OFF AND GO
THROUGH THE STACK OF THE

492

00:22:21,520 --> 00:22:23,070

INTERNATIONAL SPACE STATION.

493

00:22:23,070 --> 00:22:28,370

WE WILL PASS SOME FUN THINGS ON
THE WAY.

494

00:22:28,370 --> 00:22:40,290

>> DINNER TABLE APE GEN, GOT
BACK.

495

00:22:40,290 --> 00:22:42,450

AAHH!

496

00:22:42,450 --> 00:22:46,770

>> IT'S DIFFICULT.

497

00:22:46,770 --> 00:22:50,210

ESPECIALLY WHEN MAX IS
450E6R789.

498

00:22:50,210 --> 00:22:59,710

NOW WE ARE GOING THROUGH TO THE
ATV.

499

00:22:59,710 --> 00:23:01,350

RIGHT.

500

00:23:01,350 --> 00:23:11,190

DOWN IN THE NOSE ONE SEAT.

501
00:23:11,190 --> 00:23:15,580
YOU CAN OPEN UP.

502
00:23:15,580 --> 00:23:16,580
PUSH.

503
00:23:16,580 --> 00:23:18,419
IF HIGH.

504
00:23:18,419 --> 00:23:31,169
THROUGH THE ROLL, TO THE LEFT.

505
00:23:31,169 --> 00:23:34,600
INTO THE BALL FLOOR.

506
00:23:34,600 --> 00:23:38,309
HERE WE ARE AT THE END OF THE
INTERNATIONAL STAKES.

507
00:23:38,309 --> 00:23:41,750
STILL GOING 18 MILES AN HOUR.

508
00:23:41,750 --> 00:23:42,750
I ROUND IT UP.

509
00:23:42,750 --> 00:23:43,750
I THINK IT'S 17, 5.

510
00:23:43,750 --> 00:23:44,970
IT'S FAST.

511
00:23:44,970 --> 00:23:49,950
YOU CAN SEE FROM THAT, THERE IS
A HUGE VOLUME INSIDE.

512
00:23:49,950 --> 00:23:52,750
YOU WANT TO ESCAPE, YOU NEVER
DO, IT'S HUGE.

513

00:23:52,750 --> 00:23:56,570

BEING WEIGHTLESS, YOU NO LONGER
HAVE THIS DEFINING FLOOR, WALL,

514

00:23:56,570 --> 00:23:58,880

CEILING, YOU HAVE EVERYTHING.

515

00:23:58,880 --> 00:24:01,150

IT'S REAL NICE WHEN YOU GET USED
TO LIVING UP THERE.

516

00:24:01,150 --> 00:24:02,150

ALL RIGHT.

517

00:24:02,150 --> 00:24:03,659

NEXT SLIDE.

518

00:24:03,659 --> 00:24:05,770

MAYBE.

519

00:24:05,770 --> 00:24:08,020

I THOUGHT WHEN I WAS UP THERE, I
INVENTED THE SELFIE STICK.

520

00:24:08,020 --> 00:24:10,890

I FOUND THE BIGGEST WRENCH WE
HAD.

521

00:24:10,890 --> 00:24:12,120

I MADE THAT VIDEO.

522

00:24:12,120 --> 00:24:16,000

I TAPED THAT CAMERA TO THAT BIG
WRENCH AND FLOATED TO THE SACK

523

00:24:16,000 --> 00:24:17,000

WITH IT.

524

00:24:17,000 --> 00:24:18,000

I COME BACK.

525

00:24:18,000 --> 00:24:19,000

PRESIDENT OBAMA IS ON THE LAWN.

526

00:24:19,000 --> 00:24:22,220

MY VISION IS RUINED.

527

00:24:22,220 --> 00:24:39,950

I
THE WHOLE CREW, I GO GoPro IN

528

00:24:39,950 --> 00:24:42,330

THE MIDDLE OF THAT BOTTLE OF
WATER.

529

00:24:42,330 --> 00:24:45,909

YOU SEE THOSE BEERS IN THERE, WE
HAD PUT AN ALKA-SELTZER IN

530

00:24:45,909 --> 00:24:46,909

THERE.

531

00:24:46,909 --> 00:24:50,100

IT MADE THE AIR POCKETS.

532

00:24:50,100 --> 00:24:55,149

I LOVE, IT'S REALLY WILD.

533

00:24:55,149 --> 00:25:01,220

>> THAT GUY HAS A Ph.D.
HE LOOKS LIKE HE'S 5-YEARS-OLD

534

00:25:01,220 --> 00:25:09,550

PLAYING WITH A TOY FOR THE FIRST
TIME.

535

00:25:09,550 --> 00:25:12,150
THAT'S ONE OF OUR RUSSIAN
BUDDIES.

536
00:25:12,150 --> 00:25:14,850
I WANTED TO BOUNCE, AFTER THAT
WATER BUBBLE, THEN I WANTED TO

537
00:25:14,850 --> 00:25:16,810
PLAY WITH WATER FOR THE REST OF
MY LIFE.

538
00:25:16,810 --> 00:25:23,039
I WANTED TO BOUNCE WATER BUBBLES
OFF EACH OTHER USING A STRAND

539
00:25:23,039 --> 00:25:27,580
AND A TEFLON CATHETER AND THIS
BASICALLY, THEY GIVE US SUNDAY

540
00:25:29,580 --> 00:25:28,580
OFF.

541
00:25:29,580 --> 00:25:31,080
THIS WASTED MY WHOLE DAY RIGHT
HERE.

542
00:25:31,080 --> 00:25:33,390
I COULD NOT PUT THIS DOWN.

543
00:25:33,390 --> 00:25:34,660
I THINK THE RAVENS WERE PLAYING.

544
00:25:34,660 --> 00:25:37,180
I HAD THEM UP ON THE BACKGROUND.

545
00:25:37,180 --> 00:25:40,740
SO HERE YOU'LL SEE, IF YOU HIT
IT SOFT ENOUGH, YOU ARE BOUNCING

546
00:25:40,740 --> 00:25:42,480
THEM OFF EACH OTHER.

547
00:25:42,480 --> 00:25:49,390
WHICH IS GREAT THEN IN A SECOND,
I WILL STICK IT IN THE TOP AND

548
00:25:49,390 --> 00:25:52,090
ADD A LITTLE WATER.

549
00:25:52,090 --> 00:25:54,260
I HAD A BUBBLE OF AIR.

550
00:25:54,260 --> 00:25:55,600
I LOVE WHAT HAPPENED WITH THE
AIR.

551
00:25:55,600 --> 00:26:02,830
THERE IS A LITTLE WATER ADDED I
WILL SUCK IT INTO THE FRIDGE AND

552
00:26:02,830 --> 00:26:09,309
YOU GET A WATER BUBBLE AND YOU
GOT TO SEE IT THROUGH THE LENS

553
00:26:09,309 --> 00:26:10,309
IN THERE.

554
00:26:10,309 --> 00:26:16,860
I WILL BOUNCE THE AIR BUBBLE
AROUND THE INSIDE OF THE WATER

555
00:26:16,860 --> 00:26:17,860
BUBBLE.

556
00:26:17,860 --> 00:26:20,191
>> THEN WE HAD TO KNOW WHAT
HAPPENS WHEN YOU PUT A HUMAN TO

557

00:26:20,191 --> 00:26:21,480

THE WATER BUBBLE.

558

00:26:21,480 --> 00:26:25,820

SO IN AN UNFORTUNATE VIALS OF
ALL NATURAL RULE, WE HAD ANOTHER

559

00:26:25,820 --> 00:26:29,020

GIGANTIC WATER BUBBLE.

560

00:26:29,020 --> 00:26:31,510

THERE IS ELECTRONICS IN THE
WATER.

561

00:26:31,510 --> 00:26:33,450

BUT WE HAD BOWSER READY.

562

00:26:33,450 --> 00:26:38,160

ALEX GOT VOLUNTEERED AS THE GUY
TO GO INTO THE WATER BUBBLE.

563

00:26:38,160 --> 00:26:41,360

AND OF COURSE THAT WASN'T ROOM
TEMPERATURE WATER.

564

00:26:41,360 --> 00:26:44,870

WE HAD IT DOWN THERE ABOUT 30,
32 DEGREES, TO MAKE SURE IT'S

565

00:26:44,870 --> 00:26:49,429

PLEASANT FOR THEM.

566

00:26:49,429 --> 00:26:52,760

ABOUT A YEAR BEFORE WE DID THIS,
LUKE WAS ON A SPACE WALK.

567

00:26:52,760 --> 00:26:55,049

HE HAD WATER LEAKING INTO THE
HELMET OF HIS SPACESUIT.

568

00:26:55,049 --> 00:26:57,789

HE TALKED ABOUT HOW IT FELT LIKE
HE WAS GOING TO DROWN.

569

00:26:57,789 --> 00:27:00,659

I DON'T THINK ANYBODY RECOGNIZED
THAT.

570

00:27:00,659 --> 00:27:03,900

HE HAD A SOFTBALL AMOUNT OF
WATER IN HIS HELD ME.

571

00:27:03,900 --> 00:27:07,940

YOU TALK ABOUT DROWNING, WHEN
YOU LOOK AT THAT VIDEO AND TALK

572

00:27:07,940 --> 00:27:10,630

TO ALEX, WATER STICKS TO YOU.

573

00:27:10,630 --> 00:27:15,470

HE SAID THE CREEPIEST FEELING
WAS THE WATER GOING DOWN INTO

574

00:27:15,470 --> 00:27:16,640

HIS NOSTRIL INTO HIS EAR.

575

00:27:16,640 --> 00:27:19,720

IF YOU COULDN'T TOUCH YOUR FACE,
YOU COULDN'T GET IT OUT.

576

00:27:19,720 --> 00:27:25,530

THAT'S PERSPECTIVE HOW SERIOUS
THAT WAS AND HOW LUCKY LUCA WAS

577

00:27:25,530 --> 00:27:28,130

TO MAKE IT OUT OF THAT FIELD.

578

00:27:28,130 --> 00:27:29,410

ALL RIGHT.

579

00:27:29,410 --> 00:27:30,690

NEXT SLIDE.

580

00:27:30,690 --> 00:27:33,929

THE NEXT TWO STATEMENTS, I'LL
SEE IF I CAN KEEP THEIR

581

00:27:33,929 --> 00:27:37,350

ATTENTION.

582

00:27:37,350 --> 00:27:38,960

I GOT TO TOUCH ON WHAT ARE WE
DOING?

583

00:27:38,960 --> 00:27:41,250

FIRST, IT'S ABOUT A WEEK IN
SPACE.

584

00:27:41,250 --> 00:27:45,010

I WILL MISS THE TACK HERE AND
WHACK MY HEAD ON THE BOTTOM.

585

00:27:45,010 --> 00:27:52,350

BUT YOU HAVE TO MAKE MISTAKES TO
BE SUCCESSFUL ABOUT SIX HOURS OF

586

00:27:52,350 --> 00:28:01,539

OUR DAY ARE DEDICATED TO THE
SIGNS.

587

00:28:01,539 --> 00:28:03,380

SOME WE COMPLETED.

588

00:28:03,380 --> 00:28:05,250

THIS IS REALLY WHAT KEPT ME
GOING.

589

00:28:05,250 --> 00:28:08,130
I DIDN'T EXPECT TO LOVE THE
SCIENCE WHEN I LAUNCHED, BUT

590
00:28:08,130 --> 00:28:10,250
WHEN I GOT UP THERE, I REALLY
LOVED IT.

591
00:28:10,250 --> 00:28:13,870
YOU ARE IN COMMUNICATION THROUGH
SPACE GROUND COMMUNICATION LINK

592
00:28:13,870 --> 00:28:16,700
WITH ALL THE SCIENTIST, THE
RESEARCHERS THAT HAVE SPENT A

593
00:28:16,700 --> 00:28:18,830
LOT OF THEIR LIVES WORKING ON
THIS RESEARCH.

594
00:28:18,830 --> 00:28:20,350
WE ARE ON THE OPERATIONAL END.

595
00:28:20,350 --> 00:28:22,950
WE'RE CONDUCTING THE EXPERIMENTS
FOR THEM.

596
00:28:22,950 --> 00:28:25,380
EVERY DAY YOU WAKE UP, YOU DON'T
KNOW WHAT'S COMING, IT COULD BE

597
00:28:25,380 --> 00:28:30,880
THE ELECTROMAGNETIC RANGE USING
THE MAGNETIC FORCES ON THE TWO

598
00:28:30,880 --> 00:28:31,880
SATELLITES.

599
00:28:31,880 --> 00:28:33,299
IT DIDN'T WORK OUT THE WAY WE

WANTEDIST.

600

00:28:33,299 --> 00:28:34,820

THE DATA WAS AWESOME.

601

00:28:34,820 --> 00:28:40,690

THEY'RE USING OPTICAL DEVICE,
THIS IS A CAPILLARY FLOW

602

00:28:40,690 --> 00:28:41,690

EXPERIMENT.

603

00:28:41,690 --> 00:28:43,890

THERE WILL BE ANOTHER ONE FROM
GERMANY, MOVING FLUSD AROUND

604

00:28:43,890 --> 00:28:47,179

WITHOUT ANY PUMPS, WITHOUT ANY
VALVES, GOING ON THEIR OWN

605

00:28:47,179 --> 00:28:51,399

FORCES AND WHEN YOU HEAR THE
REACTION OF THE SCIENTISTS OAK,

606

00:28:51,399 --> 00:28:55,399

WHOA, GO BACK, I DID NOT EXPECT
WHAT JUST HAPPENED.

607

00:28:55,399 --> 00:28:59,440

PULL THAT EXPERIMENT APART, LOOK
WHAT'S GOING ON.

608

00:28:59,440 --> 00:29:00,440

THAT WAS REALLY FASCINATING.

609

00:29:00,440 --> 00:29:04,520

THIS IS A FLAMEING SPHERE OF
FUEL AND THEY WERE LOOKING AT

610

00:29:04,520 --> 00:29:09,410
THIS HIGH AND THEN AN UNEXPECTED
LOWER TEMPERATURE AND I LOVED

611
00:29:09,410 --> 00:29:10,410
ALL THAT.

612
00:29:10,410 --> 00:29:15,240
I WAS A RESIDENT FIRE BURNER, SO
ALL THIS IS BURNING SOLIDS UNDER

613
00:29:15,240 --> 00:29:18,590
DIFFERENT OXYGENS AND AIR FLOW
KIND OF SETTINGS.

614
00:29:18,590 --> 00:29:22,720
IT WAS REALLY FUN TO GET TO SET
INTENTIONAL FIRES ON THE SPACE

615
00:29:22,720 --> 00:29:24,059
STATION.

616
00:29:24,059 --> 00:29:26,929
WE HAD TWO UNINTENTIONAL FIRES, A
LOT LESS FUN.

617
00:29:26,929 --> 00:29:30,330
WE HAD A LOT OF POTENTIAL FIRES.

618
00:29:30,330 --> 00:29:33,350
IN THE END OF OUR HOME, I DON'T
HAVE ANY VIDEO OF IT.

619
00:29:33,350 --> 00:29:35,300
WE WERE BASICALLY A ZOO.

620
00:29:35,300 --> 00:29:40,980
WE HAD 20 MICS WITH US, 12 FISH,
SNAIL, WORM, ONE OF OUR

621

00:29:40,980 --> 00:29:44,710

RUSSIANLES ACTUALLY SNUCK UP AN
ONION AND GRU AN ONION UP THERE.

622

00:29:44,710 --> 00:29:46,120

I GUESS HE DIDN'T SNEAK IT UP.

623

00:29:46,120 --> 00:29:47,529

I SHOULDN'T SAY THAT.

624

00:29:47,529 --> 00:29:49,330

IT WAS A REALLY WILD PLACE.

625

00:29:49,330 --> 00:29:51,460

WE HAD SO MUCH GOING ON.

626

00:29:51,460 --> 00:29:55,559

EVERY SINGLE DAY WAS PACKED
FILLED WITH THIS RESEARCH WE

627

00:29:55,559 --> 00:29:56,559

WERE CONDUCTING.

628

00:29:56,559 --> 00:29:57,559

ALL RIGHT.

629

00:29:57,559 --> 00:29:58,559

NEXT SLIDE.

630

00:29:58,559 --> 00:30:01,360

AND THEN THERE'S THE LEFT HAND
COMMUNAL RESEARCH.

631

00:30:01,360 --> 00:30:03,500

WHAT IS GOING ON WITH ME?

632

00:30:03,500 --> 00:30:06,080

I CHANGED A LOT UP THERE.

633

00:30:06,080 --> 00:30:08,700

THE RESEARCHERS WANT TO KNOW
WHAT'S GOING ON WITH OUR BODIES.

634

00:30:08,700 --> 00:30:12,970

DOC KELLY WILL SPEND AN ENTIRE
YEAR IN SPACE.

635

00:30:12,970 --> 00:30:16,870

IF WE EVER GO TO MARS, WE NEED
THIS DATA FOR THESE 500 DAY

636

00:30:16,870 --> 00:30:18,240

MISSIONS TO MARS.

637

00:30:18,240 --> 00:30:19,940

SO WHAT IS GOING ON?

638

00:30:19,940 --> 00:30:22,020

MY CALF MUSCLES WASTED AWAY.

639

00:30:22,020 --> 00:30:23,350

I WAS WORKING OUT.

640

00:30:23,350 --> 00:30:26,370

THEY WENT AROUND TO THE FRONT OF
MY LEGS.

641

00:30:26,370 --> 00:30:27,669

I WAS RESHAPEEN.

642

00:30:27,669 --> 00:30:29,320

OUR EYES CHANGED.

643

00:30:29,320 --> 00:30:31,320

THE BACK OF OUR EYEBALLS
CHANGED.

644

00:30:31,320 --> 00:30:33,270

SOME HAVE VISION CHANGES.

645

00:30:33,270 --> 00:30:37,470

I WAS LOOKING AT BLOOD FLOW IN
THE BACK OF MY EYE.

646

00:30:37,470 --> 00:30:43,090

WE USED ULTRASOUND TO SHAPE ALL
PARTS OF OUR EYE.

647

00:30:43,090 --> 00:30:49,200

STICKING THE GOY MESS UP TO YOUR
EYE, I DIDN'T SEE CHANGES, THEY

648

00:30:49,200 --> 00:30:52,740

SAW THE SAME THINGS IN ME.

649

00:30:52,740 --> 00:30:56,780

THEY SAID SINCE I'M YOUNG, MAYBE
MY EYE WAS COMPENSATING FOR IT.

650

00:30:56,780 --> 00:30:59,480

WE SPENT AN HOUR-AND-A-HALF
EVERY DAY ON THIS MACHINE,

651

00:30:59,480 --> 00:31:00,480

A-RED.

652

00:31:00,480 --> 00:31:01,490

IT'S OUR WEIGHT LIFTING MINUTE.

653

00:31:01,490 --> 00:31:06,220

WE SPENT A HALF HASN'T HOUR A
DAY THE TREADMILL IS MOUNTED ON

654

00:31:06,220 --> 00:31:07,220

THE WALL.

655

00:31:07,220 --> 00:31:10,600

IT'S RUNNING DOWN TO EARTH.

656

00:31:10,600 --> 00:31:13,290

IT DOESN'T MEAN ANYTHING, THERE
IS NO STRAIGHT UP, NO STRAIGHT

657

00:31:13,290 --> 00:31:14,290

DOWN.

658

00:31:14,290 --> 00:31:15,399

YOU GET USED TO IT REAL QUICK.

659

00:31:15,399 --> 00:31:17,380

WE ALSO HAVE A BICYCLE UP THERE.

660

00:31:17,380 --> 00:31:19,450

IT DOESN'T HAVE A SEAT.

661

00:31:19,450 --> 00:31:22,789

IT'S IN THAT MOCK-UP.

662

00:31:22,789 --> 00:31:29,450

AND THEN THIS LAST ONE THERE IS
US FREEZING URINE SAMPLE, SALIVA

663

00:31:29,450 --> 00:31:32,490

SAMPLE, SKIN SAMPLES, A LOT OF
BLOOD SAMPLES.

664

00:31:32,490 --> 00:31:34,380

WE HAVE NO WAY TO ANALYZE THAT
IN SPACE.

665

00:31:34,380 --> 00:31:36,809

WE PUT THEM IN THE FREEZERS.

666

00:31:36,809 --> 00:31:43,690

WHEN THE DRAGON RESUPPLY SHIP
LAND AND WE GET THEM STRAIGHT

667

00:31:43,690 --> 00:31:50,700

OVER TO THE SCIENTISTS.

668

00:31:50,700 --> 00:31:53,030

FINALLY I GET THE DOOR CLOSED.

669

00:31:53,030 --> 00:31:54,030

RIGHT.

670

00:31:54,030 --> 00:31:57,650

THEN GO TO THE NEXT VIDEO.

671

00:31:57,650 --> 00:32:02,120

THEN THE OTHER PART OF OUR DAY
IS KIND OF MY FAVORITE PART.

672

00:32:02,120 --> 00:32:05,700

YOU KNOWB WHEN YOU GET TO THE
END OF A LONG WEEK, YOU GO HOME

673

00:32:05,700 --> 00:32:06,700

TO YOUR APARTMENT.

674

00:32:06,700 --> 00:32:11,279

THERE IS PROBABLY A SQUEAKY
DOOR.

675

00:32:11,279 --> 00:32:13,080

WE HAVE ALL THAT.

676

00:32:13,080 --> 00:32:14,240

SO IT'S UP TO US TO FIX ALL.

677

00:32:14,240 --> 00:32:16,670

THAT RIGHT THERE IS OUR WATER
RECLAMATION SYSTEM.

678

00:32:16,670 --> 00:32:20,330

THAT IS TAKING ALL OUR URINE AND
OUR SWEAT AND SENDING IT THROUGH

679

00:32:20,330 --> 00:32:21,330

THIS FILTER.

680

00:32:21,330 --> 00:32:23,990

IT IS PUTTING IT RIGHT BACK INTO
OUR DRINKING SUPPLY, OUR WATER

681

00:32:23,990 --> 00:32:25,510

SUPPLY.

682

00:32:25,510 --> 00:32:27,080

WE CAN STRIP THE HYDROGEN OFF
THAT.

683

00:32:27,080 --> 00:32:28,679

SO WE CAN BREATHE IT.

684

00:32:28,679 --> 00:32:31,960

SO IT'S A REALLY NEAT SELF
CONTAINED SYSTEM WE HAVE UP

685

00:32:31,960 --> 00:32:32,960

THERE.

686

00:32:32,960 --> 00:32:35,760

THERE I'M WORKING ON THIS
FURNACE, THE COMPLEXITY OF THAT

687

00:32:35,760 --> 00:32:37,170

BLOWS MY MIND.

688

00:32:37,170 --> 00:32:39,080

I HAVE A THOUSAND PEOPLE ON THE
GROUND THERE, RIGHTING MY

689

00:32:39,080 --> 00:32:42,470

PROCEDURE, GETTING EVERYTHING
TOGETHER, TALKING THROUGH THESE

690

00:32:42,470 --> 00:32:43,630

EXPERIMENTS.

691

00:32:43,630 --> 00:32:48,899

WE ARE WORKING OAN SPACE SUIT
AND WE PULLED THE PUMP OUT AND

692

00:32:48,899 --> 00:32:50,590

SENT THAT THING OUT ON A SPACE
WALK.

693

00:32:50,590 --> 00:32:52,289

OUR TREADMILL BROKE I LAD TO
WORK ON THAT.

694

00:32:52,289 --> 00:32:56,399

OF COURSE, EVEN IF YOU GOT THE
AC, IT DOESN'T PROTECT YOU FROM

695

00:32:56,399 --> 00:33:01,640

FIXING THE TOILET.

696

00:33:01,640 --> 00:33:03,269

IT BROKE ON US TWO OR THREE
TIMES.

697

00:33:03,269 --> 00:33:04,700

WHEN THE TOILET BREAK, IT'S ALL
STOPS.

698

00:33:04,700 --> 00:33:07,450

EVEN IF MISSION CONTROL SAYS
KEEP GOING IT'S ALL STOPS.

699

00:33:07,450 --> 00:33:11,100
SO WE SPENT EVERY MINUTE WORKING
ON THE TOILET.

700
00:33:11,100 --> 00:33:12,880
IT'S A RELIABLE SCENE.

701
00:33:12,880 --> 00:33:16,130
IT WORKED REALLY WELL WITH A FEW
HICCUPS.

702
00:33:16,130 --> 00:33:17,309
NEXT SLIDE.

703
00:33:17,309 --> 00:33:21,169
AND THEN THERE IS THE, HOW MANY
RACE FANS DO I HAVE OUT THERE?

704
00:33:21,169 --> 00:33:24,570
I THINK PEOPLE WATCH A RACE
BECAUSE SECRETLY THEY WANT TO

705
00:33:24,570 --> 00:33:25,570
SEE A CRASH.

706
00:33:25,570 --> 00:33:28,090
EVEN FEW DON'T ADMIT IT,
SECRETLY, YOU WANT TO SEE A

707
00:33:28,090 --> 00:33:29,090
CRASH.

708
00:33:29,090 --> 00:33:31,060
WHEN ARE YOU IN SPACE, YOU
SECRETLY WANT SOMETHING ON THE

709
00:33:31,060 --> 00:33:33,659
OUTSIDE OF THE SPACE STATION TO
BREAK.

710

00:33:33,659 --> 00:33:36,351

THE ONLY WAY TO FIX THAT IS TO
GO OUTSIDE AND DO A FACE SPACE

711

00:33:36,351 --> 00:33:37,351

WALK.

712

00:33:37,351 --> 00:33:39,380

SO YOU CAN SEE ME DOWN AT THE
BOTTOM.

713

00:33:39,380 --> 00:33:43,380

I'M BARELY HANGING ONTO THE EDGE
OF THE SPACE STATION RIGHT

714

00:33:43,380 --> 00:33:45,970

THERE.

715

00:33:45,970 --> 00:33:47,480

AND ALEX TOOK THIS.

716

00:33:47,480 --> 00:33:48,899

IT'S A 10 MILLIMETER LENS.

717

00:33:48,899 --> 00:33:50,620

IT RESHAPES IT.

718

00:33:50,620 --> 00:33:55,860

SHE'S WALKING, I SPENT
12-AND-A-HALF HOURS, AND

719

00:33:55,860 --> 00:33:57,300

SIX-AND-A-HALF ON MY NEXT ONE.

720

00:33:57,300 --> 00:33:59,890

THE HARDEST THING I'VE EVER DONE
IN MY LIFE.

721

00:33:59,890 --> 00:34:02,500
I WOULD TAKE 100 NIGHT TERROR
LANDINGS.

722
00:34:02,500 --> 00:34:05,210
IT WAS PHYSICALLY GRUELING,
MENTALLY GRUELING.

723
00:34:05,210 --> 00:34:09,940
EVERYTHING YOU TOUCH, IF YOU
DON'T TETHER IT, YOU WILL LOSE

724
00:34:09,940 --> 00:34:10,940
IT.

725
00:34:10,940 --> 00:34:12,600
THEY WILL MAKE FUN OF YOU.

726
00:34:12,600 --> 00:34:14,990
OR IF YOU BROKE SOMETHING, YOU
HAVE TO TAKE ANOTHER SPAIK SPACE

727
00:34:14,990 --> 00:34:20,429
WALK TO FIX WHAT YOU BROKE.

728
00:34:20,429 --> 00:34:23,300
ONE ANECDOTE I'LL TELL, IT'S
CUTE.

729
00:34:23,300 --> 00:34:24,580
I'M SCARED OF HEIGHTS.

730
00:34:24,580 --> 00:34:27,540
LIKE I CAN SURVIVE HERE, IF I
WENT UP ON THE ROOF, I DON'T

731
00:34:27,540 --> 00:34:29,690
KNOW I CAN HANG OUT ON THE EDGE.

732

00:34:29,690 --> 00:34:33,050
SO WHEN I LAUNCHED INTO SPACE, I
DIDN'T KNOW IF I WOULD DO A

733
00:34:33,050 --> 00:34:34,050
SPACE WALK.

734
00:34:34,050 --> 00:34:40,420
MY WIFE TOLD ME, REED, IF YOU
OPEN THE HATCH AND YOU BREATHE

735
00:34:40,420 --> 00:34:44,800
YOU DON'T MAKE IT OUTSIDE, DON'T
EVEN BOTHER COMING HOME.

736
00:34:44,800 --> 00:34:47,240
SO I HAD THAT MOTIVATION WHEN I
GOT THE HATCH OPENED.

737
00:34:47,240 --> 00:34:54,570
I KNEW MY WIFE WOULD NOT ACCEPT
ME BACK IN THE HOUSE.

738
00:34:54,570 --> 00:34:57,329
ALEX AND I WERE TWO ROOKIE, WE
WON'T OUT TOGETHER.

739
00:34:57,329 --> 00:34:59,160
WE GOT THE HATCH OPENED.

740
00:34:59,160 --> 00:35:02,109
I WAS LOOKING STRAIGHT OUT A
HOLE THIS BIG STRAIGHT DOWN AT

741
00:35:02,109 --> 00:35:03,109
THE EARTH.

742
00:35:03,109 --> 00:35:04,109
IT WAS THE MIDDLE OF THE NIGHT.

743

00:35:04,109 --> 00:35:07,500

WE WERE OVER THE PACIFIC OCEAN
T. MOON WAS ILLUMINATING THE

744

00:35:07,500 --> 00:35:08,500

CLOUDS.

745

00:35:08,500 --> 00:35:09,500

IT WAS THIS FEEL.

746

00:35:09,500 --> 00:35:10,750

FIRST I THOUGHT COLD AIR SHOULD
RUSH IN.

747

00:35:10,750 --> 00:35:11,750

THERE IS NO AIR.

748

00:35:11,750 --> 00:35:13,030

IT DOESN'T HAPPEN.

749

00:35:13,030 --> 00:35:17,010

IT WAS LIKE MY BEST FRIEND
SAYING, COME ON OUT, WATER IS

750

00:35:17,010 --> 00:35:18,010

GREAT.

751

00:35:18,010 --> 00:35:19,010

LET'S GO.

752

00:35:19,010 --> 00:35:21,860

I WENT OUTSIDE, YEAH, IT WAS
EXHAUSTING, IT WAS REALLY A

753

00:35:21,860 --> 00:35:23,020

WILD, WILD EXPERIENCE.

754

00:35:23,020 --> 00:35:24,680

OH, THIS DOESN'T WORK.

755

00:35:24,680 --> 00:35:25,680

NEXT SLIDE.

756

00:35:25,680 --> 00:35:26,880

ALL RIGHT.

757

00:35:26,880 --> 00:35:29,990

LET'S GET ONTO THE PICTURES.

758

00:35:29,990 --> 00:35:35,320

I'M POINT TO THIS AND ON THE
OTHER SIDE OVER THERE.

759

00:35:35,320 --> 00:35:38,579

I'M FLOATING HERE IN THE CUP LO,
A SERIES OF SIX WINDOWS GOES

760

00:35:38,579 --> 00:35:42,770

AROUND IN A 360 DEGREES, FIELD
OF VIEW.

761

00:35:42,770 --> 00:35:46,060

OUT IN THE CENTER IS LIKE A BIG
MAN HOLE COVER A HUBCAP, YOU CAN

762

00:35:46,060 --> 00:35:47,390

LOOK STRAIGHT DOWN THE EARTH.

763

00:35:47,390 --> 00:35:49,990

NEXT SLIDE.

764

00:35:49,990 --> 00:35:53,010

I GOT ALL OF THESE IMAGES, ALL
OF THESE VIDEOS I'LL SHOW ARE

765

00:35:53,010 --> 00:35:55,020

THROUGH ABOUT A 40 MILLIMETER

LENS.

766

00:35:55,020 --> 00:35:58,079

FOR THE KIDS, IF YOU WANT TO
KNOW WHAT IT'S LIKE IN SPACE TO

767

00:35:58,079 --> 00:36:02,750

LOOK DOWN, THESE IMAGES ARE
EXACTLY WHAT THE HUMAN EYE SEES.

768

00:36:02,750 --> 00:36:06,320

THIS GIVES YOU A FEELING OF THAT
CURVATURE OF THE EARTH BEHIND ME

769

00:36:06,320 --> 00:36:08,250

THERE AND IN THESE SLIDES.

770

00:36:08,250 --> 00:36:10,580

I'LL POINT OUT HERE, WE'RE
COMING UP ON THE COAST OF

771

00:36:10,580 --> 00:36:12,800

CALIFORNIA, THE CENTRAL VALLEY
HERE.

772

00:36:12,800 --> 00:36:17,150

DOWN TO L.A. DOWN HERE AND OFF
TO BAJA, CALIFORNIA.

773

00:36:17,150 --> 00:36:20,060

YOU CAN SEE THE FOG ROLLING INTO
SAN FRANCISCO AND THEN IN THE

774

00:36:20,060 --> 00:36:21,060

CENTRAL VALLEY.

775

00:36:21,060 --> 00:36:23,910

IT GOES DOWN INTO L.A. AND BAJA.

776

00:36:23,910 --> 00:36:28,160
AND FORBE ME, A HUMAN BEING,
LIKE THIS IS THE BEST.

777

00:36:28,160 --> 00:36:30,910
LOOKING OUT AT YOUR PLANET.

778

00:36:30,910 --> 00:36:32,160
IT'S AMAZING IN THAT WAY.

779

00:36:32,160 --> 00:36:34,060
I WILL USE THAT A THOUSAND MORE
TIMES.

780

00:36:34,060 --> 00:36:37,060
I'M SORRY IF I USE AMAZING OR
PHENOMENAL.

781

00:36:37,060 --> 00:36:39,339
NEXT SLIDE.

782

00:36:39,339 --> 00:36:42,599
ANY TIME YOU CATCH THE SUN LOW
ON THE HORIZON AND GET THE SUN

783

00:36:42,599 --> 00:36:46,160
OFF THE OAKS AND GIVE YOUR
CLOUDS SHADOWS BENEATH IT IS

784

00:36:46,160 --> 00:36:48,140
GREAT.

785

00:36:48,140 --> 00:36:51,750
IT'S HARD OVER ON THAT SCREEN,
YOU START TO SEE OUR ATMOSPHERE

786

00:36:51,750 --> 00:36:54,730
AND THAT LITTLE BLUE FUZZ OUT
THERE, THAT'S IT.

787

00:36:54,730 --> 00:36:58,170

THAT'S ALL WE HAVE, IT LOOKS
LIKE WIND WOULD COME ALONG AN

788

00:36:58,170 --> 00:36:59,170

PUSH IT OFF.

789

00:36:59,170 --> 00:37:00,220

IT WOULD BE GONE.

790

00:37:00,220 --> 00:37:02,150

WE WOULD BE LIKE MERCURY.

791

00:37:02,150 --> 00:37:05,020

IT STAYS THERE, IT'S INCREDIBLE
FOR ME TO LOOK DOWN AND SEE HOW

792

00:37:05,020 --> 00:37:07,589

TINY THAT ATMOSPHERE IS, THAT
LITTLE BUZZ.

793

00:37:07,589 --> 00:37:09,520

NEXT SLIDE.

794

00:37:09,520 --> 00:37:12,890

WHEN I LAUNCHED, WE WERE IN THIS
PERIOD WHERE THE SUN NEVER SETS,

795

00:37:12,890 --> 00:37:16,060

THIS IS ONE PHOTO A MINUTE FOR
AN ORBIT OF THE EARTH.

796

00:37:16,060 --> 00:37:18,990

YOU SEE THE SUN MAKES A CIRCULAR
PATTERN.

797

00:37:18,990 --> 00:37:22,890

IF THERE IS ANY ENGINEERING
MINDED FOLKS IN THE AUDIENCE THE

798

00:37:22,890 --> 00:37:27,470

SPACE STATION IS GOING THROUGH A
CYCLE OF 300 PLUS TO 300 MINUS

799

00:37:27,470 --> 00:37:28,500

IN TEMPERATURES.

800

00:37:28,500 --> 00:37:31,820

WHEN WE ARE IN THIS PHASE THE
SUN NEVER SETS, IT'S HEATING

801

00:37:31,820 --> 00:37:35,170

UMM, HEATING UP, HEATING UP, SO
IT'S REALLY HARD FOR OUR FLIGHT

802

00:37:35,170 --> 00:37:39,260

CONTROLLERS TO MANAGE OUR
THERMAL SYSTEMS.

803

00:37:39,260 --> 00:37:41,000

WE LOVED IT.

804

00:37:41,000 --> 00:37:43,010

THE FLIGHT CONTROLLERS, MAN,
THEY DIDN'T LIKE IT AT ALL.

805

00:37:43,010 --> 00:37:45,710

IF WE WOULD LEAVE OUR WINDOW
SHUTTERS OFF, THEY WOULD TELL

806

00:37:45,710 --> 00:37:50,420

US, THEY HAVE TEMPERATURE
SENSORS, IT'S TOO HOT.

807

00:37:50,420 --> 00:37:52,600

NEXT SLIDE.

808

00:37:52,600 --> 00:37:53,690

OKAY.

809

00:37:53,690 --> 00:37:56,710

SO IN THE NAVY I SPENT A LOT OF
TIME IN THE MIDDLE EAST.

810

00:37:56,710 --> 00:37:59,670

THIS WILL BE A QUICK PHOTO TOUR
THROUGH THE MIDDLE EAST.

811

00:37:59,670 --> 00:38:04,470

AT LEAST OIL WELLS KIND OF
BURNING OFF THERE I'M GUESSING

812

00:38:04,470 --> 00:38:05,790

NATURAL GAS RIGHT HERE.

813

00:38:05,790 --> 00:38:07,870

THOSE ARE ALWAYS POINTED DOWN TO
IRAQ.

814

00:38:07,870 --> 00:38:09,210

SO WE'RE LOOKING TO THE SOUTH.

815

00:38:09,210 --> 00:38:11,720

THIS IS IRAQ.

816

00:38:11,720 --> 00:38:15,500

THERE ARE THE FIRE, THE OIL
WELLS, THEN THIS IS IRAQ DOWN IN

817

00:38:15,500 --> 00:38:16,500

HERE.

818

00:38:16,500 --> 00:38:18,619

AS WE MOVE AROUND
COUNTERCLOCKWISE WE COME UP TO

819

00:38:18,619 --> 00:38:20,349

THE CITY OF KUWAIT.

820

00:38:20,349 --> 00:38:21,950

THAT'S KUWAIT RIGHT THERE.

821

00:38:21,950 --> 00:38:26,030

THEN WE GO UP TO RIYADH, SAUDI
ARABIA, THAT'S RIYADH THERE.

822

00:38:26,030 --> 00:38:30,920

AS WE WORK OUR WAY DOWN, QATAR
AND BAHRAIN ARE THERE.

823

00:38:30,920 --> 00:38:34,410

THEN WE GET DOWN TO DUBAI, SPEND
A LOT OF TIME IN DUBAI.

824

00:38:34,410 --> 00:38:38,420

MAYBE SOME OF YOU HAVE BEEN
THERE.

825

00:38:38,420 --> 00:38:41,070

THEN ALL OF THIS OVER HERE IS
IRAN.

826

00:38:41,070 --> 00:38:44,960

SO IT'S ONE LOOK OUT THE WINDOW,
YOU GET ALL THOSE COUNTRIES AND

827

00:38:44,960 --> 00:38:47,190

ALL THOSE CONFLICTS AND ALL
THOSE PEOPLE.

828

00:38:47,190 --> 00:38:48,960

ALL RIGHT, NEXT SLIDE.

829

00:38:48,960 --> 00:38:53,480

HERE, A LOT OF PEOPLE SAY YOU
CAN'T SEE BORDERS FROM SPACE AND

830

00:38:53,480 --> 00:38:55,210

I'LL SEE IF YOU GUYS CAN FIND
ONE.

831

00:38:55,210 --> 00:38:56,790

THIS IS SAN DIEGO.

832

00:38:56,790 --> 00:38:58,130

THIS IS MEXICO.

833

00:38:58,130 --> 00:39:00,170

>> THAT IS NOT ADDED IN PHOTO
SHOP.

834

00:39:00,170 --> 00:39:04,290

SO OVER HERE, SAN DIEGO, MEXICO,
AND THEN OUR BORDER.

835

00:39:04,290 --> 00:39:07,589

SO YOU CAN DEFINITELY SEE
BORDERS, ESPECIALLY AT NIGHT.

836

00:39:07,589 --> 00:39:10,240

I'LL SHOW YOU A COUPLE OTHERS IN
A MINUTE HERE.

837

00:39:10,240 --> 00:39:11,440

NEXT SLIDE.

838

00:39:11,440 --> 00:39:14,310

SOMETIMES CAN YOU GET THIS LOW
SUN ANGLE THAT THROWS THESE

839

00:39:14,310 --> 00:39:17,820

SHADOWS OFF THE CLOUDS THAT
SPILL OFF INTO THE GALAXY.

840

00:39:17,820 --> 00:39:19,650

IT'S AMAZING TO LOOK AT.

841

00:39:19,650 --> 00:39:22,730

NO PICTURE CAN DO THAT JUST
TICHLTS I LOVE THAT.

842

00:39:22,730 --> 00:39:24,810

NEXT SLIDE.

843

00:39:24,810 --> 00:39:27,440

HERE'S ANOTHER SHOT OF ONE OF MY
FAVORITE PARTS OF THE WORLD.

844

00:39:27,440 --> 00:39:31,190

SO WE HAVE THE NILE RIVER COMING
UP HERE, NEAR CAIRO AND THE

845

00:39:31,190 --> 00:39:32,190

PYRAMIDS.

846

00:39:32,190 --> 00:39:33,190

THIS IS THE NILE.

847

00:39:33,190 --> 00:39:34,620

YOU SEE IT'S ALL GREEN AROUND
THE NILES.

848

00:39:34,620 --> 00:39:36,060

THE PYRAMIDS IN CAIRO.

849

00:39:36,060 --> 00:39:39,849

WE HAVE THE SUEZ CANAL WHICH
SPILLS OUT INTO THE RED SEA THE

850

00:39:39,849 --> 00:39:41,450

SUEZ AND THE RED SEA.

851

00:39:41,450 --> 00:39:44,010

WE GO UP HERE TO THE DEAD SEA.

852

00:39:44,010 --> 00:39:47,380

THE CAMERA IS IN THE WAY.

853

00:39:47,380 --> 00:39:50,450

I WANT YOU TO LOOK AT DESERT,
DESERT, DESERT, AND THEN RIGHT

854

00:39:50,450 --> 00:39:53,599

HERE, IT'S LIKE THIS GREY.

855

00:39:53,599 --> 00:39:56,960

SO LOOKING OVER HERE, LIKE ALL
DESERT AND THEN THERE'S GREY.

856

00:39:56,960 --> 00:40:02,400

AND THAT GREY IS PEOPLE,
BUILDING, ISRAEL, LEBANON, URBAN

857

00:40:02,400 --> 00:40:03,400

DEVELOPMENT.

858

00:40:03,400 --> 00:40:05,140

PRETTY INCREDIBLE.

859

00:40:05,140 --> 00:40:08,930

IF YOU THINK ABOUT THE MILLIONS
OF PEOPLE IN THAT ONE IMAGE,

860

00:40:08,930 --> 00:40:11,380

THEY'RE MAKING THAT GREY RIGHT
THERE.

861

00:40:11,380 --> 00:40:14,290

NEXT SLIDE.

862

00:40:14,290 --> 00:40:15,290

THIS IS A NEAT ONE.

863

00:40:15,290 --> 00:40:17,910

THIS IS BANGKOK.

864

00:40:17,910 --> 00:40:19,880

AND THEN IT'S HARD TO SEE OVER
HERE, THESE ARE LIKE THOUSANDS

865

00:40:19,880 --> 00:40:23,220

OF GREEN LIGHTS DOWN THERE.

866

00:40:23,220 --> 00:40:25,830

THOSE ARE ALL SQUID FISHING
BOATS.

867

00:40:25,830 --> 00:40:28,829

THEY TAKE THESE GREEN LIGHTS AND
SHINE THEM IN THE WATER.

868

00:40:28,829 --> 00:40:29,960

SQUID COME UP TO THE SURFACE.

869

00:40:29,960 --> 00:40:33,190

THE FISHERMEN TAKE NETS AND
SCOOP THEM ALL UP.

870

00:40:33,190 --> 00:40:36,670

SO LUCKILY, IF YOU SEE A GREEN
LIGHT TODAY, RUN IN OTHER

871

00:40:36,670 --> 00:40:37,849

DIRECTION.

872

00:40:37,849 --> 00:40:39,790

>> THAT I WOULD NEVER WANT TO BE
A SQUID IN THERE.

873

00:40:39,790 --> 00:40:41,700

NEXT SLIDE.

874

00:40:41,700 --> 00:40:42,800
THIS IS COOL.

875
00:40:42,800 --> 00:40:45,880
A LITTLE KID SENT ME AN E-MAIL,
WHY DON'T I EVER SEE SCARS FROM

876
00:40:45,880 --> 00:40:47,109
SPACE?

877
00:40:47,109 --> 00:40:52,640
I WENT TO THE CUPOLA, I LEFT THE
SHUTTER OPENED A LITTLE LONGER

878
00:40:52,640 --> 00:40:53,839
THAN YOU NORMALLY WOULD.

879
00:40:53,839 --> 00:40:55,071
THIS WAS THE RESULT.

880
00:40:55,071 --> 00:40:56,250
IT BLEW ME AWAY.

881
00:40:56,250 --> 00:41:00,640
YOU SEE THE SOLAR RAYS HERE,
THEY'RE A LITTLE BLURRY.

882
00:41:00,640 --> 00:41:03,470
THEN YOU SEE THOUSANDS OF STARS.

883
00:41:03,470 --> 00:41:05,710
WOW, WHAT IS GOING ON WITH OUR
ATMOSPHERE RIGHT THERE?

884
00:41:05,710 --> 00:41:10,160
WHAT IS GOING ON WITH THIS RED
BAND, THIS GREEN BAND AND YELLOW

885
00:41:10,160 --> 00:41:11,680

UNDERNEATH.

886

00:41:11,680 --> 00:41:18,170

WE DEFINE SPACE 100 KILOMETERS
OFF THE EARTH.

887

00:41:18,170 --> 00:41:21,710

THEY RELEASE PHOTONS AND
DIFFERENT WAVE LENGTHS THIS

888

00:41:21,710 --> 00:41:25,480

YELLOW, SOME SAY IT'S MET
METEORITES.

889

00:41:25,480 --> 00:41:30,820

IT GAVE ME A WHOLE DIFFERENT
PERSPECTIVE OF WHAT'S GOING ON,

890

00:41:30,820 --> 00:41:32,839

NEXT SLIDE.

891

00:41:32,839 --> 00:41:34,510

LIKE WE HAVE A FORCE FIELD
AROUND THE EARTH.

892

00:41:34,510 --> 00:41:38,550

YOU GET TO LOOK DOWN ON NATURAL
DISASTERS THAT LOOK BEAUTIFUL.

893

00:41:38,550 --> 00:41:41,819

HERE IS A POWERFUL HURRICANE,
FROM MY PERSPECTIVE, IT'S

894

00:41:41,819 --> 00:41:43,660

ABSOLUTELY BEAUTIFUL.

895

00:41:43,660 --> 00:41:45,970

NEXT SLIDE.

896

00:41:45,970 --> 00:41:48,440

>> I LOVE THIS ONE THE NORTHERN
LIGHTS ARE OVER HERE TO THE

897

00:41:48,440 --> 00:41:49,440

LEFT.

898

00:41:49,440 --> 00:41:51,950

YOU GOT CANADA UP THERE ON THE
NORTHERN SIDE.

899

00:41:51,950 --> 00:41:55,119

AS WE COME DOWN THE COAST HERE,
I'M GOING TO BLOCK IT.

900

00:41:55,119 --> 00:41:57,470

HERE'S SAN FRANCISCO RIGHT HERE.

901

00:41:57,470 --> 00:41:59,099

SAN FRANCISCO AT NIGHT.

902

00:41:59,099 --> 00:42:06,950

IS THERE ANYWAY TO TAKE ME OFF
AND DO THE PICTURE OR NOT?

903

00:42:06,950 --> 00:42:07,950

THERE YOU GO.

904

00:42:07,950 --> 00:42:10,300

A LITTLE WHITE SET OF LIGHTS
RIGHT THERE.

905

00:42:10,300 --> 00:42:11,990

VEGAS, BABY.

906

00:42:11,990 --> 00:42:15,190

LAS VEGAS RIGHT IN THE MIDDLE OF
THE DESERT.

907

00:42:15,190 --> 00:42:17,260
IT STICKS OUT LIKE A SORE THUMB.

908
00:42:17,260 --> 00:42:19,310
>> ALL RIGHT.

909
00:42:19,310 --> 00:42:21,349
NEXT ONE.

910
00:42:21,349 --> 00:42:23,040
ALMOST TO THE END OF OUR PHOTO
TOUR.

911
00:42:23,040 --> 00:42:26,329
THIS ONE SPARKED MY POST-LIFE
VACATION.

912
00:42:26,329 --> 00:42:29,130
THIS IS A BAHAMAS LOOKING
STRAIGHT DOWN.

913
00:42:29,130 --> 00:42:30,180
>> THAT WATER IS SO GORGEOUS.

914
00:42:30,180 --> 00:42:33,430
I SENT THIS TO MY WIFE, SAID
LET'S GO TO THE BAHAMAS.

915
00:42:33,430 --> 00:42:34,970
WE TOOK A CRUISE IN JANUARY.

916
00:42:34,970 --> 00:42:37,410
I'M NOT SUPPORTING BAHAMAS OR
BAHAMAS TOURISM.

917
00:42:37,410 --> 00:42:38,880
IT'S BEAUTIFUL.

918
00:42:38,880 --> 00:42:39,880

THAT WAS AMAZING.

919

00:42:39,880 --> 00:42:41,740

NEXT SLIDE.

920

00:42:41,740 --> 00:42:43,720

ANY TIME YOU CAN LOOK AT THE
NORTHERN AND SOUTHERN LIGHTS

921

00:42:43,720 --> 00:42:46,450

FROM ABOVE AND SLIDE THROUGH
THEM AS THEY'RE FLOATING AND

922

00:42:46,450 --> 00:42:48,170

FLICKERING AROUND, IT'S AWESOME.

923

00:42:48,170 --> 00:42:50,440

NEXT SLIDE.

924

00:42:50,440 --> 00:42:51,890

AND THIS IS LONDON.

925

00:42:51,890 --> 00:42:55,990

THERE IS TAKEN WITH A LOT OF
MAGNIIFICATION.

926

00:42:55,990 --> 00:43:03,849

THE RIVER TEMS ROLLS THROUGH
THIS IS A FERRIS WHEEL THEN ALL

927

00:43:03,849 --> 00:43:06,960

THESE BUILDING, GREAT SHADOW,
FEW LOOK RIGHT HERE, THAT ITSELF

928

00:43:06,960 --> 00:43:08,380

THE TOWER OF LONDON.

929

00:43:08,380 --> 00:43:10,319

IT'S HARD TO SEE ON THIS SCREEN.

930

00:43:10,319 --> 00:43:18,400

SURROUNDING THAT IS A LITTLE
RED.

931

00:43:18,400 --> 00:43:20,079

I DIDN'T KNOW IT WAS THERE.

932

00:43:20,079 --> 00:43:22,670

PEOPLE ON TWITHS RESPONDED THAT
WAS WHAT WAS GOING ON.

933

00:43:22,670 --> 00:43:24,760

IT MADE THAT RICH TO ME.

934

00:43:24,760 --> 00:43:25,760

I LOVE IT.

935

00:43:25,760 --> 00:43:26,760

OKAY.

936

00:43:26,760 --> 00:43:27,970

NEXT SLIDE.

937

00:43:27,970 --> 00:43:31,589

IF THEY CAN LEAVE THE AUDIO
DOWN, I'LL EXPLAIN WHAT'S GOING

938

00:43:31,589 --> 00:43:32,819

ON HERE.

939

00:43:32,819 --> 00:43:34,500

WE'RE LIKE IN OVER THE OAKS.

940

00:43:34,500 --> 00:43:41,349

OVER THE HORIZON IS THIS
BROWNISH SOOT OVER HERE SEE THIS

941

00:43:41,349 --> 00:43:42,800
KIND OF BROWNISH SOOT.

942

00:43:42,800 --> 00:43:47,210
I COME OUT TO THE RIGHT, I'M
LOOK MORE TOWARDS THE SOUTH NOW.

943

00:43:47,210 --> 00:43:50,630
AND THAT SOOT NOW TAKES ABOUT
HALF OF THE OCEAN THERE THIS IS

944

00:43:50,630 --> 00:43:59,780
ALL KIND OF SAND AND DEBRIS AS I
PAN OVER BRAZIL, THERE IS A

945

00:43:59,780 --> 00:44:04,339
SAHARA DESERT IN AFRICA LIFTING
UP SAND, CARRYING IT ACROSS THE

946

00:44:04,339 --> 00:44:08,110
ENTIRE ATLANTIC OCEAN,
DEPOSITING IT IN BRAZIL.

947

00:44:08,110 --> 00:44:13,050
IMAGINE YOU WAKE UP IN BRAZIL,
ARE YOU IN THE RAINFOREST, YOUR

948

00:44:13,050 --> 00:44:14,880
CAR IS COVERED IF DUST.

949

00:44:14,880 --> 00:44:18,170
THERE IS SNOW WAY YOU WOULD EVER
SAY THERE IS SAND FROM THE

950

00:44:18,170 --> 00:44:19,500
SAHARA DESERT.

951

00:44:19,500 --> 00:44:23,339
THIS WAS THE MOMENT THAT I HAD
THAT FEELING IN SPACE OUR EARTH

952

00:44:23,339 --> 00:44:25,069
IS INCREDIBLY ALIVE.

953

00:44:25,069 --> 00:44:27,810
IT IS CHANGING AT ALL TIMES,
IT'S CHANGING, REDEFINING

954

00:44:27,810 --> 00:44:28,810
ITSELF.

955

00:44:28,810 --> 00:44:33,230
WE ARE LITTLE GUESTS A PART OF
THIS BICKER EARTH JOURNEY.

956

00:44:33,230 --> 00:44:42,760
NEXT SLIDE HERE IS REAL QUICK,
PARIS, LONDON, THEN I'M COVERING

957

00:44:42,760 --> 00:44:43,760
IT UP.

958

00:44:43,760 --> 00:44:45,079
THERE IS A GREAT BORDER RIGHT
HERE.

959

00:44:45,079 --> 00:44:47,710
YOU CAN SEE WHERE THE CHEMICALS
AND THE LIGHT CHANGE AND THE

960

00:44:47,710 --> 00:44:48,710
STREET LIGHTS.

961

00:44:48,710 --> 00:44:49,800
IT GOES FROM YELLOW HERE.

962

00:44:49,800 --> 00:44:53,400
THEN YOU SEE THEM TURN REAL
WHITE IN HERE.

963

00:44:53,400 --> 00:44:55,380

ALL RIGHT.

964

00:44:55,380 --> 00:45:01,430

NEXT SLIDE I PUT THIS IN BECAUSE
OF YESTERDAY AFTERNOON.

965

00:45:01,430 --> 00:45:05,010

SO I MEAN, MY PHONE WAS GOING
CRAZY WITH WEATHER ALERTS AN ALL

966

00:45:05,010 --> 00:45:08,640

THAT, IF WE LOOK REAL HARD THE
CHESAPEAKE BAY COMES UP HERE.

967

00:45:08,640 --> 00:45:11,480

THIS IS AROUND D.C., RIGHT IF
HERE.

968

00:45:11,480 --> 00:45:13,890

CHESAPEAKE BAY WILL BE IN THERE.

969

00:45:13,890 --> 00:45:16,420

THIS IS THAT AUGUST THUNDERSTORM
THAT WE, WHEN I WAS A KID

970

00:45:16,420 --> 00:45:18,670

GROWING UP IN BALTIMORE, EVERY
AFTERNOON, THIS IS WHAT KICKED

971

00:45:18,670 --> 00:45:19,809

YOU OUT OF THE POOL.

972

00:45:19,809 --> 00:45:22,510

>> THAT AT PICTURE OF THAT.

973

00:45:22,510 --> 00:45:24,860

I CALLED MY PARENTS AND TOLD

THEM TO GO IN ID THAT DAY.

974

00:45:24,860 --> 00:45:27,849

THIS IS COMING RIGHT FOR THEM.

975

00:45:27,849 --> 00:45:34,619

NEXT SLIDE AND THIS IS A VIDEO
CAMERA OUT THE WINDOW AT NIGHT.

976

00:45:34,619 --> 00:45:40,290

WE HAVE D.C., BALTIMORE,
PHILADELPHIA, NEW YORK, BOSTON.

977

00:45:40,290 --> 00:45:44,190

YOU CAN BARELY MAKE OUT OTTOWA,
BUFFALO.

978

00:45:44,190 --> 00:45:47,970

OVER HERE, D.C., BALTIMORE,
PHILADELPHIA, NEW YORK, LOOK AT

979

00:45:47,970 --> 00:45:48,970

LONG ISLAND.

980

00:45:48,970 --> 00:45:49,970

THIS IS AMAZING.

981

00:45:49,970 --> 00:45:54,560

ALL MANHATTAN, UP INTOBOUND
BOSTON, OTTOWA, I THINK IT'S

982

00:45:54,560 --> 00:45:56,520

BUFFALO AND TORONTO RIGHT THERE.

983

00:45:56,520 --> 00:46:00,420

I-95 PAINTS THIS PATH.

984

00:46:00,420 --> 00:46:01,650

INCREDIBLE AT NIGHT.

985

00:46:01,650 --> 00:46:03,720

YOU SEE THE LIGHTS ALL THE WAY
UP.

986

00:46:03,720 --> 00:46:06,970

WHAT THIS VIDEO DOESN'T SHOW
YOU, YOU GO THROUGH RICHMOND,

987

00:46:06,970 --> 00:46:10,869

LOOK OUT THE BACK WINDOW OF THE
SPACE STATION, ARE YOU DOWN TO

988

00:46:10,869 --> 00:46:11,869

MIAMI.

989

00:46:11,869 --> 00:46:12,869

THINK ABOUT.

990

00:46:12,869 --> 00:46:14,410

THAT THAT'S EVERYONE I HAVE EVER
KNOWN IN ONE SHOT OUT THE

991

00:46:14,410 --> 00:46:15,410

WINDOW.

992

00:46:15,410 --> 00:46:16,410

NEXT SLIDE.

993

00:46:16,410 --> 00:46:20,520

PEOPLE ASK ME MY FAVORITE PHOTO.

994

00:46:20,520 --> 00:46:21,869

LET'S USE THIS SCREEN.

995

00:46:21,869 --> 00:46:26,000

SORRY FOR YOU GUY THE RESOLUTION
IS A LOT BETTER ITALIANS ARE

996

00:46:26,000 --> 00:46:27,210

GREAT PEOPLE.

997

00:46:27,210 --> 00:46:28,780

THEY OUTLINE THEIR GREAT
COUNTRY.

998

00:46:28,780 --> 00:46:30,180

THEY MAKE GREAT SPORTS CARS.

999

00:46:30,180 --> 00:46:33,350

IT'S EASY TO SEE THEIR COUNTRY
FROM SPACE.

1000

00:46:33,350 --> 00:46:38,020

YOU WORK DOWN FROM ROME,
VATICAN, NAPEMENTS THE BOOT OF

1001

00:46:38,020 --> 00:46:41,250

ITALY THIS IS THE ISLAND OF
SICILY.

1002

00:46:41,250 --> 00:46:44,230

RIGHT HERE IS MOUNT AETNA, A
BLACK RING.

1003

00:46:44,230 --> 00:46:48,270

>> THAT LITTLE ONE DOT IN THE
CENTER THAT'S LAVA.

1004

00:46:48,270 --> 00:46:55,730

UM UP ON THE RIM THE SUNRISEING
IN THE DISTANCE AND I LOVE.

1005

00:46:55,730 --> 00:46:58,730

THAT WHEN YOU COME UP, IT'S
MAGNIFICENT.

1006

00:46:58,730 --> 00:47:01,060

NEXT SLIDE.

1007

00:47:01,060 --> 00:47:05,750

THEN PEOPLE ASK, ARE THERE
ALIENS, WHEN YOU WALK OUT, LOOK

1008

00:47:05,750 --> 00:47:07,180

AT THAT IMAGE.

1009

00:47:07,180 --> 00:47:10,430

THERE ARE NO WAYS YOU CAN LOOK
AT THAT MANY STARS AND NOT THINK

1010

00:47:10,430 --> 00:47:14,140

THERE ARE PLANETS ON EVERY ONE
OF THEM AND SOMEWHERE THERE ARE

1011

00:47:14,140 --> 00:47:18,220

PEOPLE GREEN SLUGS OR WEIRD
WORMS OR SOMETHING, CRAWLING

1012

00:47:18,220 --> 00:47:19,520

AROUND ON THE PLAN IT.

1013

00:47:19,520 --> 00:47:20,569

NEXT LINE.

1014

00:47:20,569 --> 00:47:25,589

AFTER SIX MONTHS IN SPACE, IT'S
TIME TO COME HOME AND THAT'S US

1015

00:47:25,589 --> 00:47:28,990

HUGGING EACH OTHER, GETTING
READY TO BOARD OUR SOYUZ

1016

00:47:28,990 --> 00:47:29,990

SPACECRAFT.

1017

00:47:29,990 --> 00:47:35,040

THIS IS A FEMALE RUSSIAN
COSMONAUT.

1018

00:47:35,040 --> 00:47:41,730

THEY HAVEN'T LAUNCHED A WOMAN IN
QUITE A LONG TIME, 20 YEARS.

1019

00:47:41,730 --> 00:47:43,119

WE WOULD LEAVE THEM UP THERE.

1020

00:47:43,119 --> 00:47:50,089

YELE NA AND SASHA WOULD STAY UP.

1021

00:47:50,089 --> 00:47:52,960

UNDOCKING IS JUST LIKE COMING
UMM.

1022

00:47:52,960 --> 00:47:55,360

I HIT ONE BUTTON IN THE LEFT
SEED OF THE SOYUZ, IT OPENS UP

1023

00:47:55,360 --> 00:47:58,430

THESE HOOKS, THEY PUSH THEM
SLOWLY AWAY FROM THE SPACE

1024

00:47:58,430 --> 00:48:00,300

STATION.

1025

00:48:00,300 --> 00:48:03,059

THE DIFFERENCE THE THERE IS A
LOT MORE FIRE ON THE WAY HOME.

1026

00:48:03,059 --> 00:48:06,619

THIS IS A VIEW OUT THE WINDOW.

1027

00:48:06,619 --> 00:48:08,680

ALL THOSE LITTLE FLAKES ARE
PARTS OF OUR HEAT SHIELD.

1028

00:48:08,680 --> 00:48:10,990
WE ARE ACTUALLY ACCIDENT
CREATING A BIT.

1029
00:48:10,990 --> 00:48:13,170
IT'S SUPPOSED TO HAPPEN.

1030
00:48:13,170 --> 00:48:14,170
IT'S A WEIRD FEELING.

1031
00:48:14,170 --> 00:48:17,210
THERE ARE 3,000 DEGREES, MAYBE
LESS THAN THAT.

1032
00:48:17,210 --> 00:48:21,900
YOUR WINDOW IS SLOWLY GETTING
MORE AND MORE CHARDS.

1033
00:48:21,900 --> 00:48:26,050
THEN AFTER ABOUT FOUR, FIVE
MINUTES, PARACHUTE COMES OUT.

1034
00:48:26,050 --> 00:48:27,290
YOU CAN SEE THE LANDING GOPHER.

1035
00:48:27,290 --> 00:48:28,930
THEY CALL IT SOFT.

1036
00:48:28,930 --> 00:48:32,752
IT IS ANYTHING BUT, AND THEN YOU
ARE HOME.

1037
00:48:32,752 --> 00:48:35,359
YOUR PARACHUTE THE FLAMES, OUR
RESCUE FORCES WERE ON SKIS.

1038
00:48:35,359 --> 00:48:38,260
WE GOT BASICALLY A PINPOINT
TOUCHDOWN.

1039

00:48:38,260 --> 00:48:43,200

YOU CAN SEE, WHEN IT GOES TO THE
NEXT SLIDE, OUR PARACHUTE DRUG

1040

00:48:43,200 --> 00:48:47,760

US ACROSS THE FLOOR OF
KAZAHKSTAN BEFORE THEY GOT IT

1041

00:48:47,760 --> 00:48:48,760

BOUNCED.

1042

00:48:48,760 --> 00:48:50,000

THERE IS ME IN THE CAPSULE.

1043

00:48:50,000 --> 00:48:52,349

THE NEXT PICTURE IS A GREAT ONE.

1044

00:48:52,349 --> 00:48:54,270

IT'S PULLING ME OUT.

1045

00:48:54,270 --> 00:48:55,590

YOU CAN SEE HOW CHARRED THE
CAPSULE IS.

1046

00:48:55,590 --> 00:49:02,290

THERE IS THAT SITTING IN THE
SEAT T. EUPHORIA, AN ADRENALINE

1047

00:49:02,290 --> 00:49:03,290

RUSH.

1048

00:49:03,290 --> 00:49:05,400

>> THAT LASTS ABOUT 20 MINUTES.

1049

00:49:05,400 --> 00:49:07,109

THEN WHEN THAT GOES AWAY.

1050

00:49:07,109 --> 00:49:09,359

YOU FEEL REALITY AND GRAVITY.

1051

00:49:09,359 --> 00:49:10,620

IT IS AWFUL.

1052

00:49:10,620 --> 00:49:13,060

I MEAN EMPBLGS IS HEAVY.

1053

00:49:13,060 --> 00:49:14,950

YOUR STOMACH IS SICK.

1054

00:49:14,950 --> 00:49:20,800

SO YOU ARE LACKING IN BLOOD.

1055

00:49:20,800 --> 00:49:21,829

YOU GET DIZZY REAL EASY.

1056

00:49:21,829 --> 00:49:23,390

YOU HAVE TO LEARN TO WALK.

1057

00:49:23,390 --> 00:49:25,850

YOUR CALFS HAVEN'T FELT WEIGHT.

1058

00:49:25,850 --> 00:49:28,242

YOUR LEGS A TWITCHING AND FIND
BALANCE.

1059

00:49:28,242 --> 00:49:29,650

IT TAKES YOU TWO DAYS.

1060

00:49:29,650 --> 00:49:31,849

IT WORKS ITS WAY OUT.

1061

00:49:31,849 --> 00:49:36,329

THAT'S MY SALES PITCH WHICH
BEING AT NASA IS A GREAT THING.

1062

00:49:36,329 --> 00:49:37,900

IT IS A GREAT THING.

1063

00:49:37,900 --> 00:49:42,390

ALL I TOUCHED ON TODAY WAS THIS
TINY PART OF NASA.

1064

00:49:42,390 --> 00:49:47,530

WE ARE ABOUT TO HAVE A SPACE
CRAFT GO BY.

1065

00:49:47,530 --> 00:49:50,130

IN TWO WEEKS, IT WILL BE THE
FIRST TIME WE GET A CLOSE-UP

1066

00:49:50,130 --> 00:49:51,869

LOOK.

1067

00:49:51,869 --> 00:49:56,630

WE HAVE 20 SATELLITES AROUND OUR
EARTH LOOKING DOWN AT OUR EARTH.

1068

00:49:56,630 --> 00:49:58,300

WE HAVE ROVERS ON MARS.

1069

00:49:58,300 --> 00:50:01,300

WE ARE GOING TO THE SUN.

1070

00:50:01,300 --> 00:50:04,579

WE'RE EVERYWHERE, IT'S A NEAT
TIME FOR NASA.

1071

00:50:04,579 --> 00:50:08,780

SO I'D LIKE TO OPEN IT UP FOR
QUESTIONS.

1072

00:50:08,780 --> 00:50:11,450

MAYBE TEN OR 15 MINUTES.

1073

00:50:11,450 --> 00:50:17,660

FOR THE PERSON RUNNING THE
PROJECTOR, KIDS ARE ALLOWED TO

1074

00:50:17,660 --> 00:50:18,660

LAUGH.

1075

00:50:18,660 --> 00:50:19,660

THERE ARE FUNNY STUFF.

1076

00:50:19,660 --> 00:50:20,660

US JUST GOOFING AROUND.

1077

00:50:20,660 --> 00:50:26,330

I'M LIT GUYS DECIDE THAT.

1078

00:50:26,330 --> 00:50:36,060

>> ALEX WOULD MAKE THE MORNING
COFFEE AND DRIVER IT TO ME IN MY

1079

00:50:36,060 --> 00:50:37,460

CREW QUARTERS.

1080

00:50:37,460 --> 00:50:41,569

THAT'S ME, I WOULD MAKE THE
AFTERNOON COFFEE AFTER LUNCH.

1081

00:50:41,569 --> 00:50:43,890

IT'S KIND OF OUR RULE.

1082

00:50:43,890 --> 00:50:49,210

SHE ASKED DID I GROW TWO INCHES?

1083

00:50:49,210 --> 00:50:53,950

I ALMOST MADE IT TO 6 FEET TALL
IN NODE ONE THE CENTER OF THE

1084

00:50:53,950 --> 00:50:57,780

SPACE STATION, THERE WAS THIS
REALLY CUTE, HOW MANY PARENTS

1085

00:50:57,780 --> 00:51:01,030

OUT HERE HAVE A SIZE CHART ON
THE WALL WITH OUR KIDS?

1086

00:51:01,030 --> 00:51:04,960

SO THERE IS A TAPE MEASURE ON
THE WALL, CAN YOU SEE DOZENS OF

1087

00:51:04,960 --> 00:51:08,510

ASTRONAUTS, WE HAVE ONE GARRETT
REESEMAN, A SHORT GUY, HE'S GOT

1088

00:51:08,510 --> 00:51:12,280

THE BIGGEST NAME ON THERE,
DEREK, TWO INCHES TALLER.

1089

00:51:12,280 --> 00:51:13,280

WE DID GROW QUITE A BIT.

1090

00:51:13,280 --> 00:51:16,950

AS SOON AS YOU COME BACK,
GRAVITY SAYS UH-HUH, IT SHRINKS

1091

00:51:16,950 --> 00:51:18,280

YOU BACK DOWN.

1092

00:51:18,280 --> 00:51:23,190

DO WE GET THE AUDIO WORKING?

1093

00:51:23,190 --> 00:51:26,890

WE CAN ALWAYS ASK QUESTIONS, I
CAN REPEAT THEM.

1094

00:51:26,890 --> 00:51:33,050

SO [INAUDIBLE QUESTION]
>> COULD YOU DESCRIBE WHAT YOUR

1095

00:51:33,050 --> 00:51:36,700

SENSE PICKED UP WHEN THEY OPENED
THE HATCH ON THE SOYUZ ON

1096
00:51:36,700 --> 00:51:37,720
LANDING?

1097
00:51:37,720 --> 00:51:40,380
>> WHAT DID MY SENSELES PICK UP
WHEN THEY OPENED THE HATCH ON

1098
00:51:40,380 --> 00:51:43,390
THE SOYUZ AFTER LANDING?

1099
00:51:43,390 --> 00:51:45,000
I CAN GIVE YOU A LONG VERSION.

1100
00:51:45,000 --> 00:51:46,180
BUT WE LAND.

1101
00:51:46,180 --> 00:51:48,170
WE TIPPED OVER.

1102
00:51:48,170 --> 00:51:49,530
WE GOT DRAGGED A BIT.

1103
00:51:49,530 --> 00:51:52,850
SO TEN AT THE END OF BEING
TIPPED OVER, WE HAD ALEX WAS

1104
00:51:52,850 --> 00:51:54,309
DOWN THERE, MAX WAS RATE HERE.

1105
00:51:54,309 --> 00:51:56,359
I WAS UP ABOVE.

1106
00:51:56,359 --> 00:51:59,990
WE HAD STARTED TAKING OUR GLOVES
OFF.

1107

00:51:59,990 --> 00:52:01,930

MAX ASKED US HOW WE ARE FEELING.

1108

00:52:01,930 --> 00:52:05,950

MY RESPONSE IS I THINK I WILL
THROW UP.

1109

00:52:05,950 --> 00:52:10,460

THE TWO GUYS UNDER MY, NOW WE
GOT GRAVITY, OH, NO, THEY'RE

1110

00:52:10,460 --> 00:52:11,920

GETTING READY.

1111

00:52:11,920 --> 00:52:12,980

I DID NOT THROW UP.

1112

00:52:12,980 --> 00:52:15,550

I MADE IT.

1113

00:52:15,550 --> 00:52:18,140

WHEN THEY OPENED THAT HATCH UP,
THE FIRST THING THAT YOU WANTED.

1114

00:52:18,140 --> 00:52:20,770

>> THAT I WANTED TO, DO I WANTED
TO LOOK OUTED ON GRAB.

1115

00:52:20,770 --> 00:52:22,200

YOU HAD SNOW ON THE GROUND.

1116

00:52:22,200 --> 00:52:25,180

YOU FELT THAT COLD AIR RUSH IN.

1117

00:52:25,180 --> 00:52:28,809

IN THE SPACE STATION, IT'S 72
DEGREES PERIOD, EVERY DAY,

1118

00:52:28,809 --> 00:52:33,070
FEELING COLD AIR WASH OVER MY
SWEATY FACE AFTER REENTRY WAS

1119
00:52:33,070 --> 00:52:34,290
SUPERB.

1120
00:52:34,290 --> 00:52:37,400
AND THEN YOU REALLY THAT'S THE
FEELING IS JUST ADRENALINE.

1121
00:52:37,400 --> 00:52:41,670
IT'S JUST LIKE YOU HAVE SURVIVED
THIS INCREDIBLY CRAZY 15 MINUTES

1122
00:52:41,670 --> 00:52:45,480
OF FIRE AND PARACHUTES AND YOU
ARE FLIPPING AROUND AND SMASHING

1123
00:52:45,480 --> 00:52:47,240
INTO THE GROUND AT A HIGH RATE
OF SPEED.

1124
00:52:47,240 --> 00:52:48,240
YOU ARE LIVE.

1125
00:52:48,240 --> 00:52:49,700
I WANTED TO TALK TO MY WIFE AND
PARENTS.

1126
00:52:49,700 --> 00:52:51,450
I WANTED TO CELEBRATE LIFE.

1127
00:52:51,450 --> 00:52:54,940
>> WE HAVE AN ONLINE QUESTION
NEXT.

1128
00:52:54,940 --> 00:52:58,700
DID THE NORTHERN LIGHTS AFFECT
THE INSTRUMENT INSTRUMENTS?

1129

00:52:58,700 --> 00:52:59,849

>> I WORKED WITH THE ITT GUY.

1130

00:52:59,849 --> 00:53:01,480

I WORKED ON THE COMPUTERS.

1131

00:53:01,480 --> 00:53:07,770

WE HAVE BIG SOUTHERN LIGHTS UP
THERE FOR SOLAR STORMS AND IT

1132

00:53:07,770 --> 00:53:08,770

WAS ALWAYS GOOD.

1133

00:53:08,770 --> 00:53:12,760

AFTER YOU GO THROUGH, IF THEY
COME UP FAR ENOUGH TO THE NORTH

1134

00:53:12,760 --> 00:53:15,430

THAT YOUR SPACECRAFT IS LYING
THROUGH THEM.

1135

00:53:15,430 --> 00:53:17,369

WILL YOU HAVE HARD DRIVES.

1136

00:53:17,369 --> 00:53:21,410

THE THING WE MOSTLY SAW WAS HARD
DRIVES GOING OUT.

1137

00:53:21,410 --> 00:53:24,370

WE NEVER SAW ANY OF OUR HARD
TECHNICAL GORE WAITING ON US.

1138

00:53:24,370 --> 00:53:27,190

HARD DRIVE REPLACEMENT WAS
DEFINITELY TOM'S.

1139

00:53:27,190 --> 00:53:31,849

>> HEY THERE, SO EARLIER, I

TEACH MIDDLE SCHOOL DOWN THE

1140

00:53:31,849 --> 00:53:33,930

STREET AT JEFFERSON ACADEMY.

1141

00:53:33,930 --> 00:53:38,910

MIDDLE SCHOOL KIDS LEARN READING
WRITING, AND THE SCIENTIFIC

1142

00:53:38,910 --> 00:53:42,890

METHOD, BUT BESIDES THE SUBJECTS
IF SCHOOL, WHAT ARE SOME THINGS

1143

00:53:42,890 --> 00:53:45,660

YOU NEED TO HAVE TO BECOME AN
ASTRONAUT LIKE YOU?

1144

00:53:45,660 --> 00:53:47,369

>> THE THINGS YOU NEED TO HAVE.

1145

00:53:47,369 --> 00:53:51,290

BESIDES THE CORE FUNDAMENTAL
MATH-SCIENCE STUFF.

1146

00:53:51,290 --> 00:53:53,650

TO ANSWER THAT, I WOULD LOOK AT
MY CLASS OF ASTRONAUTS.

1147

00:53:53,650 --> 00:53:56,740

IN 2013, WE HIRED MORE FOLKS.

1148

00:53:56,740 --> 00:54:00,470

AN ASTRONAUT ARGUED THIS.

1149

00:54:00,470 --> 00:54:03,140

WE ALL HAD OPERATIONAL KIND OF
BACKGROUND.

1150

00:54:03,140 --> 00:54:04,839

WE WERE RESEARCHERS IN THE
FIELD.

1151

00:54:04,839 --> 00:54:07,150

WE WERE PILOTS IN AIRCRAFT.

1152

00:54:07,150 --> 00:54:10,740

WE WERE TRAUMA SURGEONS IN THE
TRAUMA CENTER OPERATING ON

1153

00:54:10,740 --> 00:54:11,740

PEOPLE.

1154

00:54:11,740 --> 00:54:15,869

WHEN I LOOK ACROSS THE MODERN
ASTRONAUTS, IT SEEMS TO ME THAT

1155

00:54:15,869 --> 00:54:20,099

THOSE LIFE SKILLS OF BEING OUT
AND DOING WITH YOUR HANDS AND

1156

00:54:20,099 --> 00:54:23,660

YOUR MIND, THAT SEEMED TO BE
WHAT IS DRIVING OUR CORE RIGHT

1157

00:54:23,660 --> 00:54:26,730

NOW SO THAT'S WHAT I WOULD SAY.

1158

00:54:26,730 --> 00:54:28,500

FIND SOMETHING YOU LOVE TO DO.

1159

00:54:28,500 --> 00:54:33,150

GO OUT ON IT
>> WHAT WAS THE BIGGEST SURPRISE

1160

00:54:33,150 --> 00:54:34,579

YOU HAD?

1161

00:54:34,579 --> 00:54:37,350

>> THE BIGGEST SURPRISE I HAD,
THERE WAS ABOUT A THOUSAND BIG

1162
00:54:37,350 --> 00:54:41,500
SURPRISES, THE FIRST BIG
SURPRISE I HAD WAS THAT THERE

1163
00:54:41,500 --> 00:54:44,340
IS, IT'S REALLY HARD TO EAT
PEANUTS.

1164
00:54:44,340 --> 00:54:47,760
YOU OPEN A BAG IN SPACE, YOU
HAVE PEANUTS ABSOLUTELY

1165
00:54:47,760 --> 00:54:48,760
EVERYWHERE.

1166
00:54:48,760 --> 00:54:52,090
SO MY SOLUTION TO THAT WAS I
QUIT EATING PEANUTS.

1167
00:54:52,090 --> 00:54:56,540
OTHER BIG SURPRISES, WATCHING
LIGHTNING FROM SPACE, WATCHING

1168
00:54:56,540 --> 00:54:57,540
THE EARTH FROM SPACE.

1169
00:54:57,540 --> 00:54:58,960
I EKTS EXPECTED IT TO BE
BEAUTIFUL.

1170
00:54:58,960 --> 00:55:01,040
I DIDN'T EXPECT IT TO BE
CAPTIVATING.

1171
00:55:01,040 --> 00:55:08,190
YOU COULD NEVER WALK BY A WINDOW
AND NEVER STARE OUTSIDE.

1172

00:55:08,190 --> 00:55:13,060

TO EAT A SALAD ON LAND TO DRINK
A SODA OR EAT A PIZZA, THOSE ARE

1173

00:55:13,060 --> 00:55:16,230

THINGS I KIND OF MISS THEN AT
THE END YOU SIT DOWN, THE FIELD

1174

00:55:16,230 --> 00:55:17,970

OF GRAVITY IS GREAT.

1175

00:55:17,970 --> 00:55:21,320

>> WE HAVE AN ONLINE QUESTION
NEXT.

1176

00:55:21,320 --> 00:55:25,049

WHAT IS THE MOST NEEDED BUT
CURRENTLY MISSING GIANT LEAP

1177

00:55:25,049 --> 00:55:29,339

FORWARD IN MANNED EXPLORATION?

1178

00:55:29,339 --> 00:55:33,010

>> I WOULD SAY WORKING ON
RELIABILITY AND WORKING, THIS IS

1179

00:55:33,010 --> 00:55:34,010

ME PERSONALLY.

1180

00:55:34,010 --> 00:55:35,010

THIS IS NOT MY FIELD OF STUDY.

1181

00:55:35,010 --> 00:55:40,450

SO THERE IS A LOT OF GREAT
SCIENTIST, IF WE GO TO MARS, THE

1182

00:55:40,450 --> 00:55:45,310

ONE BIG MISSING PIECE IS

SHIELDING UP THE RADIATION.

1183

00:55:45,310 --> 00:55:48,960

AND WE ALL WERE UP THERE TO
WATCH THE RAID YANGS.

1184

00:55:48,960 --> 00:55:54,140

WHEN YOU GET OUTSIDE OF THE
EARTH'S PROTECTIVE ATMOSPHERE,

1185

00:55:54,140 --> 00:55:56,280

AIRLINE PILOT VERSUS TO DEAL
WITH THAT ALL THE TIME.

1186

00:55:56,280 --> 00:55:59,330

THEY ARE GETTING MORE RADIATION
THROUGHOUT THEIR LIVES, SO I

1187

00:55:59,330 --> 00:56:01,290

THINK THAT'S THE ONE HURDLE WE
HAVE TO LOOK AT.

1188

00:56:01,290 --> 00:56:02,290

RELIABILITY, RADIATION.

1189

00:56:02,290 --> 00:56:05,890

BUT WE'RE ON OUR WAY.

1190

00:56:05,890 --> 00:56:10,690

>> THE LAST 35 YEARS, GOING
THROUGH THE SHUTTLE PROGRAM, THE

1191

00:56:10,690 --> 00:56:15,230

CONSTRUCTION OF THE ISS, WHAT DO
YOU FORESEE THE NEXT 30, 40

1192

00:56:15,230 --> 00:56:17,739

YEARS BRIGG FOR SPACE
EXPLORATION?

1193

00:56:17,739 --> 00:56:25,670

>> A QUICK ANSWER, HUMANS IN
MARS AND GOING INTO SPACE.

1194

00:56:25,670 --> 00:56:29,529

THAT'S IT.

1195

00:56:29,529 --> 00:56:34,960

>> LET'S ALL JOIN TOGETHER IN
THANKING REED WEISSMAN FOR HIS

1196

00:56:34,960 --> 00:56:37,319

INCREDIBLE STORY.

1197

00:56:37,319 --> 00:56:40,569

[APPLAUSE]

>> I THINK THIS IS THE LIVELIEST

1198

00:56:40,569 --> 00:56:43,150

MOST VIVID ACCOUNT WE'VE EVER
HEARD.

1199

00:56:43,150 --> 00:56:44,150

>> ALL RIGHT.

1200

00:56:44,150 --> 00:56:45,150

I DIDN'T EVEN DO A JIG.

1201

00:56:45,150 --> 00:56:46,230

>> SO WHO WANTS TO GO?

1202

00:56:46,230 --> 00:56:49,670

ANYBODY ELSE WANT TO GO TO SPACE
AFTER HEARING THIS?

1203

00:56:49,670 --> 00:56:50,670

YEAH.

1204

00:56:50,670 --> 00:56:54,599
WE'D LIKE TO THANK OUR ONLINE
AUDIENCE AND OUR TELEVISION

1205
00:56:54,599 --> 00:56:58,380
AUDIENCE AS WELL, OUR LIVE
AUDIENCE, OUR TEACHERS,

1206
00:56:58,380 --> 00:57:02,530
STUDENTS, FAMILIES, WHO ARE HERE
TODAY AND ALSO ESPECIALLY, WE'D

1207
00:57:02,530 --> 00:57:06,660
LIKE TO THANK BOEING CORPORATION
WHICH MAKES THESE PROGRAMS

1208
00:57:06,660 --> 00:57:08,339
POSSIBLE.

1209
00:57:08,339 --> 00:57:15,089
SO THANK YOU BOEING.