



Goodnight Moon

Q&A WITH ASTRONAUTS THOMAS MARSHBURN
AND MARK VANDE HEI

1
00:00:00,867 --> 00:00:05,305
[Clapping and cheering]

2
00:00:07,173 --> 00:00:06,740
Test.

3
00:00:07,173 --> 00:00:13,079
[Children laughing]

4
00:00:13,713 --> 00:00:14,147
Hello.

5
00:00:14,147 --> 00:00:15,715
My name is Tom Marshburn

6
00:00:15,715 --> 00:00:18,852
and I'm an astronaut living and working
aboard the International Space Station.

7
00:00:19,386 --> 00:00:22,522
This is a spacecraft
about the size of a five bedroom house

8
00:00:22,522 --> 00:00:26,192
orbiting 250 miles high, traveling
17,500 miles

9
00:00:26,326 --> 00:00:30,063
per hour around the earth so fast
that we circle the earth every 90 minutes.

10
00:00:30,430 --> 00:00:32,265
Still,
we're close enough to be seen from Earth

11
00:00:32,265 --> 00:00:34,567
and we look like a bright star
moving across the sky.

12

00:00:34,968 --> 00:00:37,037

We get to see
spectacular views of the Earth.

13

00:00:37,037 --> 00:00:40,106

We also love the gaze,
the beauty of the moon and our universe.

14

00:00:40,607 --> 00:00:43,710

But NASA's getting ready for this one
the first test of our new space

15

00:00:43,710 --> 00:00:45,011

launch system

16

00:00:45,011 --> 00:00:48,648

and the Orion spacecraft that will travel
thousands of miles beyond the moon.

17

00:00:49,182 --> 00:00:51,484

This mission is helping us
get ready to put the first woman

18

00:00:51,484 --> 00:00:53,853

and the first person of color
on the moon surface

19

00:00:54,120 --> 00:00:56,623

as we build the knowledge
we need to go even further.

20

00:00:57,323 --> 00:01:00,727

I'm excited today to read a book that has
inspired kids on Earth about our moon

21

00:01:00,727 --> 00:01:04,264

and encouraged them to explore the world
around them for 75 years.

22

00:01:08,201 --> 00:01:10,503

Goodnight Moon by Margaret Wise Brown.

23

00:01:11,504 --> 00:01:14,674

Pictures by Clement Hurd.

24

00:01:14,674 --> 00:01:17,610

In the great green room

There was a telephone and a red balloon

25

00:01:18,144 --> 00:01:20,447

And a red balloon

And a picture of -

26

00:01:24,250 --> 00:01:26,152

The cow jumping over the moon

27

00:01:26,152 --> 00:01:29,322

And there were three little bears
sitting on chairs

28

00:01:31,958 --> 00:01:34,094

And two little kittens

And a pair of mittens

29

00:01:34,761 --> 00:01:37,564

And a little toyhouse

And a young mouse

30

00:01:41,601 --> 00:01:44,003

And a comb and a brush and a bowl full of mush

31

00:01:44,003 --> 00:01:46,806

And a quiet old lady who was whispering "hush"

32

00:01:51,444 --> 00:01:53,213

Goodnight room

33

00:01:57,584 --> 00:01:59,385

Goodnight moon

34

00:01:59,519 --> 00:02:01,521

Goodnight cow jumping over the moon

35

00:02:04,958 --> 00:02:06,593

Goodnight light

And the red balloon

36

00:02:06,593 --> 00:02:07,694

Goodnight bears

37

00:02:07,694 --> 00:02:10,263

Goodnight chairs

38

00:02:12,899 --> 00:02:15,101

Goodnight kittens

And goodnight mittens

39

00:02:16,503 --> 00:02:19,072

Goodnight clocks

And goodnight socks

40

00:02:23,176 --> 00:02:24,744

Goodnight little house

41

00:02:24,744 --> 00:02:26,980

And goodnight mouse

42

00:02:29,983 --> 00:02:30,917

Goodnight comb

43

00:02:30,917 --> 00:02:33,419

And goodnight brush

44

00:02:37,457 --> 00:02:39,626

Goodnight nobody

45

00:02:39,626 --> 00:02:41,561

Goodnight Mush

46

00:02:44,597 --> 00:02:47,333

And goodnight

to the little old lady whispering hush

47

00:02:52,772 --> 00:02:53,907

Goodnight Stars

48

00:02:53,907 --> 00:02:55,408

Goodnight Air

49

00:02:59,112 --> 00:03:01,181

Goodnight noises everywhere

50

00:03:04,651 --> 00:03:10,356

[Clapping and cheering]

51

00:03:13,159 --> 00:03:16,729

Several questions were submitted
by students about our experiences here

52

00:03:16,763 --> 00:03:18,932

on the space station,
which we're happy to answer now.

53

00:03:18,932 --> 00:03:21,100

I'm Tom Marshburn. Mark Vande Hei.

54

00:03:21,901 --> 00:03:23,269

Both astronauts.

55

00:03:23,269 --> 00:03:24,904

And the first question is by Nathalie G.

56

00:03:24,904 --> 00:03:26,706

from Pennsylvania.

57

00:03:26,773 --> 00:03:30,410

What do you do to pass the time
when you aren't working on the ISS?

58

00:03:31,377 --> 00:03:32,412

Great question.

59

00:03:32,412 --> 00:03:34,013

I like to look out the windows.

60

00:03:34,013 --> 00:03:35,682

The views are incredible.

61

00:03:35,682 --> 00:03:37,217

I really like to read a lot.

62

00:03:37,217 --> 00:03:40,920

And one of my favorite things
is to talk to my family back on the earth.

63

00:03:40,954 --> 00:03:42,889

We are very well supported with

64

00:03:42,889 --> 00:03:45,091

the ability
to make phone calls from up here.

65

00:03:45,091 --> 00:03:46,125

Tom this is a good one.

66

00:03:46,125 --> 00:03:48,361

This one is from Thea W.

67

00:03:48,361 --> 00:03:53,266

from Kansas who asks,
when will we go to the moon again?

68

00:03:53,466 --> 00:03:54,367

Great question.

69

00:03:54,367 --> 00:03:56,402

There's the space launch system.

70

00:03:56,402 --> 00:03:58,605

We're going to be testing it out
and soon we'll be launching

71

00:03:58,605 --> 00:04:00,840

that in the Orion
spacecraft deep into space.

72

00:04:01,274 --> 00:04:04,644

We hope to go to the moon
and bring the first crew soon

73

00:04:04,644 --> 00:04:07,380

in the next few years to the moon
and even land on the moon.

74

00:04:07,680 --> 00:04:09,182

Here in the next decade.

75

00:04:09,182 --> 00:04:09,849

Ashlyn B.

76

00:04:09,849 --> 00:04:13,152

from Michigan asks,
Can you see color in space?

77

00:04:13,152 --> 00:04:15,555

How would it look
if you drew on a piece of paper

78

00:04:15,989 --> 00:04:18,324

would the colors
look the same as on Earth?

79

00:04:19,859 --> 00:04:20,627

Yes, absolutely.

80

00:04:20,627 --> 00:04:22,328

We can see colors in space

81

00:04:22,328 --> 00:04:26,466

as our eyes work just the same as,
of course, we're in air up here.

82

00:04:26,766 --> 00:04:29,769

And when I look out the window,
I'm looking from an air environment

83

00:04:30,003 --> 00:04:31,638

out the window into space.

84

00:04:31,638 --> 00:04:36,109

But it's very much like when you look up
into space and see stars, of course,

85

00:04:36,342 --> 00:04:39,979

you can see mildly different colors
because a lot of brightness.

86

00:04:40,747 --> 00:04:43,182

But as you can see around
us, we've got lots of different colors.

87

00:04:43,449 --> 00:04:46,386

Tom and I are dressed
in kind of drab colors,

88

00:04:46,386 --> 00:04:50,390

both of us are wearing gray,
but we've got lots of flags behind us.

89

00:04:50,390 --> 00:04:54,027

You can see colors in there.

90

00:04:54,027 --> 00:04:56,329

And when we look out the window,
like I mentioned earlier,

91

00:04:56,529 --> 00:05:00,633

we can see the colors of the ocean
and the deserts and all the shades

92

00:05:00,633 --> 00:05:04,904

of different browns and and the full moon

93

00:05:04,904 --> 00:05:08,441

shining on the terrain is beautiful.

94

00:05:08,441 --> 00:05:12,478

And then with city lights at night
and the orange of those lights,

95

00:05:12,812 --> 00:05:16,349

so many different
colors are a joy for us to see up here.

96

00:05:16,382 --> 00:05:19,118

So I'm very, very happy that we can see
colors in space.

97

00:05:19,652 --> 00:05:21,321

OK, another good question, Tom.

98

00:05:21,321 --> 00:05:23,389

Chloe O. from Texas.

99

00:05:23,389 --> 00:05:27,760

Where Tom and I both live asks
what was the biggest challenge

100

00:05:27,760 --> 00:05:31,798

you faced in space so far
and how did you overcome it?

101

00:05:32,465 --> 00:05:35,335

Waiting for your flight is challenging.

102

00:05:35,802 --> 00:05:37,837

We do do a lot of work to get here.

103

00:05:37,837 --> 00:05:39,972

One of the things we have to do
is learn another language.

104

00:05:39,972 --> 00:05:42,542

Probably learning Russian
was one of the biggest challenges I had

105

00:05:43,943 --> 00:05:45,278

as a requirement to get here.

106

00:05:45,278 --> 00:05:47,180

To the space station.

107

00:05:47,180 --> 00:05:49,349

But the other challenge
is there's so much to do,

108

00:05:49,682 --> 00:05:52,018

so much to see up here
it's quite distracting.

109

00:05:52,285 --> 00:05:54,687

And so getting any one thing
done can be a challenge.

110

00:05:55,355 --> 00:05:57,690

All right, Mark Rocco M.

111

00:05:57,690 --> 00:06:00,193

from Iowa is asking,
if you didn't become an astronaut,

112

00:06:00,293 --> 00:06:02,395

what would you have wanted to be?

113

00:06:02,395 --> 00:06:05,798

Part of me wants to join the circus,
but I'm kind of joking.

114

00:06:06,232 --> 00:06:08,468

But that's not going to happen.

115

00:06:08,501 --> 00:06:12,271

I, I would have loved
to have been a teacher.

116

00:06:13,306 --> 00:06:15,241

That was a potential career for me.

117

00:06:15,241 --> 00:06:18,010

I also was very interested
in using my physics background

118

00:06:18,511 --> 00:06:22,548

to get involved in the production
of alternate forms of energy,

119

00:06:22,548 --> 00:06:23,916

because we're going to need energy,

120

00:06:23,916 --> 00:06:26,018

and we've got to find a renewable way
to get that.

121

00:06:26,319 --> 00:06:29,088

That's inexpensive
enough for people to want to use it.

122

00:06:29,756 --> 00:06:31,924

So those are very appealing things to me.

123

00:06:32,492 --> 00:06:35,161

Also, I especially even after flying,

124

00:06:35,161 --> 00:06:38,564

I'm very I have a lot of concern
about our environment.

125

00:06:38,564 --> 00:06:42,368

So any job that's associated
with helping us live more sustainably

126

00:06:42,368 --> 00:06:42,902

in the future

127

00:06:42,902 --> 00:06:46,839

is is something I was interested in and
I might be even more motivated about it

128

00:06:46,839 --> 00:06:49,776

now that I've been able to look back
on our beautiful planet from space.

129

00:06:50,343 --> 00:06:51,511

Caleb W.

130

00:06:51,511 --> 00:06:56,082

from Maryland asks
What do stars look like in outer space?

131

00:06:56,783 --> 00:06:59,018

Stars look a bit like they do on Earth.

132

00:06:59,018 --> 00:07:02,855

If you went out into a field away
from a big city on a cold winter night

133

00:07:03,122 --> 00:07:07,860

with no clouds, just bright

and brilliant, you could see so many stars

134

00:07:09,195 --> 00:07:12,131

and almost countless stars there.

135

00:07:12,165 --> 00:07:14,700

However, in space,

when we see them, they don't twinkle.

136

00:07:15,101 --> 00:07:17,236

There's no atmosphere

for the starlight to go through.

137

00:07:17,737 --> 00:07:21,541

So they're just direct, steady

points of light and quite fascinating

138

00:07:21,541 --> 00:07:23,342

and absolutely beautiful.

139

00:07:23,342 --> 00:07:27,980

So Mark, Grayson B from Missouri asks,

What is it like to float in space.

140

00:07:28,648 --> 00:07:31,484

If I'm not touching any surfaces or like

Tom is right now,

141

00:07:31,784 --> 00:07:36,389

not touching any surfaces then it's

kind of like being in a pool where for us

142

00:07:36,389 --> 00:07:40,893

right now, the only thing that's touching

us is our clothes and our...

143

00:07:41,561 --> 00:07:42,495

and the air.

144

00:07:42,495 --> 00:07:44,297

If you're in a pool,
the only thing that's touching you

145

00:07:44,297 --> 00:07:46,265

is the water and you're swimming suit.

146

00:07:46,265 --> 00:07:49,001

So that's the closest analogy I can make.

147

00:07:49,001 --> 00:07:51,204

What I would say the best part about it

148

00:07:51,204 --> 00:07:54,307

here, though, is the complete
freedom of motion.

149

00:07:54,540 --> 00:07:57,810

We have a lot of fun doing flips
like Tom and I are doing right now.

150

00:08:02,181 --> 00:08:04,684

And actually Tom doesn't know I'm
going to ask him to do this yet.

151

00:08:05,017 --> 00:08:07,253

And who knows if they'll actually
leave this in the video,

152

00:08:07,253 --> 00:08:09,755

but you want to try doing that super fast
spin? OK.

153

00:08:24,670 --> 00:08:26,506

So, that does make us very dizzy.

154

00:08:26,506 --> 00:08:28,374

When you're spinning like that.

155

00:08:28,374 --> 00:08:30,009

The person that's being spun

156

00:08:30,009 --> 00:08:32,311

can't tell what's going on
because things are going by so fast.

157

00:08:32,311 --> 00:08:35,114

They have to be very trusting
because you have no control over

158

00:08:35,181 --> 00:08:36,215

where you're going to end up

159

00:08:36,215 --> 00:08:39,051

and then you actually don't get dizzy
until the person gets stopped.

160

00:08:39,051 --> 00:08:40,753

And then all of a sudden
everything else keeps spinning

161

00:08:40,753 --> 00:08:42,989

even though you've stopped
moving your body.