



ULA

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1
00:00:00,223 --> 00:00:02,806
(upbeat music)

2
00:00:07,050 --> 00:00:10,530
- Hi, I'm Dr. Ellen Stofan,
also known as Dr. E,

3
00:00:10,530 --> 00:00:11,850
and I'm thrilled to welcome you

4
00:00:11,850 --> 00:00:15,100
to a very special episode of E.Z. Science,

5
00:00:15,100 --> 00:00:18,260
what we're calling "E.Z. on the Go."

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00:00:18,260 --> 00:00:20,380
Joining us from the Kennedy Space Center

7
00:00:20,380 --> 00:00:23,420
is my cohost, Dr. Thomas Zurbuchen.

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00:00:23,420 --> 00:00:26,511
Dr. Z, where are you right now?

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00:00:26,511 --> 00:00:28,720
- Hey, I'm in Florida, it's really warm.

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00:00:28,720 --> 00:00:31,260
I'm at that Kennedy Space Center,

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00:00:31,260 --> 00:00:34,050
and I'm right near the launch site,

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00:00:34,050 --> 00:00:38,810
where within 48 hours, this
spacecraft will go into space.

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00:00:38,810 --> 00:00:41,541

Right now, you see the rocket

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00:00:41,541 --> 00:00:44,020

moving from a building where it was

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00:00:44,020 --> 00:00:46,800

integrated vertically, standing up.

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00:00:46,800 --> 00:00:49,860

And on top of it, you see,
right, it's a spacecraft,

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00:00:49,860 --> 00:00:52,780

and it's being readied to go to Mars.

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00:00:52,780 --> 00:00:55,540

So we're right here, and
the rocket is moving.

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00:00:55,540 --> 00:00:57,025

Within less than 48 hours,

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00:00:57,025 --> 00:00:59,540

just a few hundred yards this way,

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00:00:59,540 --> 00:01:02,530

the spacecraft is going to go to space.

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00:01:02,530 --> 00:01:04,030

So I look forward to the launch.

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00:01:04,030 --> 00:01:06,640

I really miss you, I was
hoping you'd be here with me,

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00:01:06,640 --> 00:01:08,860

but tell me about your launches.

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00:01:08,860 --> 00:01:12,090

You've been to other
launches before, have you?

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00:01:12,090 --> 00:01:14,880

- That's right, my dad was in charge of,

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00:01:14,880 --> 00:01:17,610

first the Atlas-Centaur and
then the Titan-Centaur rockets.

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00:01:17,610 --> 00:01:20,384

So I went to my first launch
when I was four years old.

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00:01:20,384 --> 00:01:22,490

Went to launches down at the Cape

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00:01:22,490 --> 00:01:23,840

the whole time I was growing up,

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00:01:23,840 --> 00:01:26,540

but probably the most
special launch for me,

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00:01:26,540 --> 00:01:28,780

and one that I definitely, you know,

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00:01:28,780 --> 00:01:30,740

feel very nostalgic with this launch,

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00:01:30,740 --> 00:01:35,380

is the launch of the first
Viking Lander to Mars.

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00:01:35,380 --> 00:01:39,740

In August of 1975, I was 14 years old,

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00:01:39,740 --> 00:01:42,970

and it was at that launch
that I heard Carl Sagan

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00:01:42,970 --> 00:01:46,370

speak about why we were exploring
Mars to search for life,

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00:01:46,370 --> 00:01:47,830

and understanding its geology

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00:01:47,830 --> 00:01:50,700

and comparing it to Earth's
geology that I said,

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00:01:50,700 --> 00:01:52,658

I want to be a planetary geologist,

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00:01:52,658 --> 00:01:55,140

and that was what I ended up doing.

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00:01:55,140 --> 00:01:58,010

- What an amazing beginning of a career.

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00:01:58,010 --> 00:01:59,799

And so of course, on this rocket is

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00:01:59,799 --> 00:02:02,940

the perseverance and
ingenuity of all these

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00:02:02,940 --> 00:02:04,530

thousands of people who built it.

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00:02:04,530 --> 00:02:07,040

But what is the most
exciting part for you,

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00:02:07,040 --> 00:02:08,270
relative to the science,

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00:02:08,270 --> 00:02:10,260
you think we're going to get from this?

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00:02:10,260 --> 00:02:12,760
- So one of the things I'm
most excited about is MOXIE,

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00:02:12,760 --> 00:02:14,289
this instrument on board Perseverance

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00:02:14,289 --> 00:02:16,940
that's actually going
to pull carbon dioxide

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00:02:16,940 --> 00:02:17,860
out of the atmosphere,

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00:02:17,860 --> 00:02:21,310
and split the oxygen away
from the carbon atoms.

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00:02:21,310 --> 00:02:24,011
That's important because
oxygen is a resource

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00:02:24,011 --> 00:02:27,220
that future human explorers
to Mars will need,

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00:02:27,220 --> 00:02:31,100
both for water, to breathe,
and to make rocket fuel.

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00:02:31,100 --> 00:02:34,410
We call it In-Situ Resource Utilization.

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00:02:34,410 --> 00:02:35,850

How do you live off the land?

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00:02:35,850 --> 00:02:37,870

MOXIE's the first step.

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00:02:37,870 --> 00:02:39,570

There's so much I'm excited about,

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00:02:39,570 --> 00:02:40,550

but you know, Thomas,

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00:02:40,550 --> 00:02:42,320

to me, it really comes back to

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00:02:42,320 --> 00:02:45,630

if the Viking launch inspired me,

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00:02:45,630 --> 00:02:48,590

who are we inspiring with this launch

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00:02:48,590 --> 00:02:50,710

with Perseverance, with Ingenuity.

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00:02:50,710 --> 00:02:53,600

- That's, you know for me,
my first launch was only,

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00:02:53,600 --> 00:02:55,950

can you believe that,
when I was in this job.

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00:02:55,950 --> 00:02:58,300

I was never able to go before.

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00:02:58,300 --> 00:03:00,450

And every time see a launch vehicle

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00:03:00,450 --> 00:03:03,060

and I see a launch, I
really turn emotional.

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00:03:03,060 --> 00:03:05,860

It actually affects me a lot
more than I care to admit.

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00:03:05,860 --> 00:03:08,024

That's just such an amazing moment when

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00:03:08,024 --> 00:03:10,290

something that is an engineering project,

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00:03:10,290 --> 00:03:11,860

becomes a space mission.

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00:03:11,860 --> 00:03:13,190

And I really look forward to that.

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00:03:13,190 --> 00:03:16,380

You'll be my thoughts
during the entire time.

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00:03:16,380 --> 00:03:18,020

And I'll be sure to send you

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00:03:18,020 --> 00:03:20,930

some pictures on the way, Ellen.

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00:03:20,930 --> 00:03:21,763

- Awesome.

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00:03:21,763 --> 00:03:23,500

Thank you, Thomas, and good luck.

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00:03:23,500 --> 00:03:25,220

Everybody is rooting for you.

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00:03:25,220 --> 00:03:27,320

Go Atlas, go Perseverance.

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00:03:27,320 --> 00:03:29,310

- Yes, thanks so much Ellen.

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00:03:29,310 --> 00:03:30,170

Bye bye.

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00:03:30,170 --> 00:03:31,120

- Bye.

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00:03:31,120 --> 00:03:33,530

I'm just so impressed by all the work

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00:03:33,530 --> 00:03:35,690

that the scientists

and engineers have done

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00:03:35,690 --> 00:03:37,820

to get us to this point to launch,

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00:03:37,820 --> 00:03:41,250

despite all of the challenges

that COVID-19 has brought.

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00:03:41,250 --> 00:03:43,938

It's shown a lot of perseverance.

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00:03:43,938 --> 00:03:46,837

I'm going to be watching

the launch from DC,

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00:03:46,837 --> 00:03:49,840

fingers crossed everything's

going to go well.

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00:03:49,840 --> 00:03:52,620

Thanks for joining us for this episode of