



**MARS 2020**  
**IN THE MIST OF A**  
**PANDEMIC**

1  
00:00:07,810 --> 00:00:10,300  
We've had people that have gotten sick.

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00:00:10,300 --> 00:00:16,520  
The NASA Kennedy Launch team has persevered through a global pandemic to get a Mars Rover

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00:00:16,520 --> 00:00:20,560  
named Perseverance to the launch pad on time.

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00:00:20,560 --> 00:00:23,570  
But yeah, Perseverance, what a perfect name.

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00:00:23,570 --> 00:00:31,180  
The cloud of doubt the virus cast over the Mars mission and how NASA overcame it, next

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00:00:31,180 --> 00:00:32,550  
on the Rocket Ranch.

7  
00:00:32,550 --> 00:00:36,360  
EGS Program Chief Engineer verifying no constraints to launch.

8  
00:00:36,360 --> 00:00:39,720  
Three, two, one, and lift off.

9  
00:00:39,720 --> 00:00:41,500  
Welcome to space.

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00:00:44,600 --> 00:00:50,360  
The Mars Rover, Perseverance came to the Kennedy Space Center from JPL in California in mid

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00:00:50,370 --> 00:00:56,430  
February, just before it was confirmed COVID-19 was starting to spread in the United States.

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00:00:56,430 --> 00:01:02,530

NASA's Launch Services Program, Senior Launch Director, Omar Baez is at the helm of a mission

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00:01:02,530 --> 00:01:07,820

to launch the Perseverance to the red planet, and the current pandemic has made this already

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00:01:07,820 --> 00:01:12,420

difficult and challenging task, that much more daunting.

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00:01:12,420 --> 00:01:17,909

Omar took some time from his hectic schedule to share his team's journey to launch Mars

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00:01:17,909 --> 00:01:20,030

2020.

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00:01:20,030 --> 00:01:21,030

Hi everyone.

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00:01:21,030 --> 00:01:25,149

I'm Darrol Nail, your host for today's Rocket Ranch, and we want to let the audience know

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00:01:25,149 --> 00:01:30,479

first that due to the community spread of COVID-19 here in Florida, I'm here at my home

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00:01:30,479 --> 00:01:35,979

and I'm speaking to Omar Baez of the Launch Services Program remotely.

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00:01:35,979 --> 00:01:41,740

So it looks pretty spiffy there in your spot there, Omar, is that a NASA studio?

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00:01:41,740 --> 00:01:42,869

Where are you?

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00:01:42,869 --> 00:01:43,869

Yes.

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00:01:43,869 --> 00:01:49,860

So, this is not a NASA studio this is actually my dining room.

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00:01:49,860 --> 00:02:02,920

I've put, some logos around, and yeah, this is not a professional environment but it's

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00:02:02,920 --> 00:02:08,020

much more comfortable than being in a stuffy studio somewhere with the lights on you.

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00:02:08,020 --> 00:02:09,170

All right.

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00:02:09,170 --> 00:02:11,400

Well, comfort is key.

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00:02:11,400 --> 00:02:14,770

And of course we appreciate the conversion of your dining room to a makeshift studio.

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00:02:14,770 --> 00:02:19,810

I want to ask you first, how excited were you when you saw that you're going to be the

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00:02:19,810 --> 00:02:25,879

launch manager in charge of sending the Perseverance rover on it's way to Mars?

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00:02:25,879 --> 00:02:34,760

So I started seeing this mission come up on our manifest about five years ago.

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00:02:34,760 --> 00:02:43,900

And the excitement with the Mars missions is always elevated, especially for me.

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00:02:43,900 --> 00:02:52,709  
I was able to get in on the Mars missions beginning with Sojourner back in the 96, 97

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00:02:52,709 --> 00:03:00,850  
time period, follow it up with the Spirit and Opportunity mission, where I was Launch

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00:03:00,850 --> 00:03:08,879  
Director on those two, and also with Curiosity when it flew.

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00:03:08,879 --> 00:03:18,010  
So I've got a special relationship with Mars.

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00:03:18,010 --> 00:03:29,120  
My name's a one letter off of that name, Mars, so I enjoy that.

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00:03:29,120 --> 00:03:38,209  
It's a cool place to go, and, and I know it's very hard to do it, and I have respect for

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00:03:38,209 --> 00:03:40,290  
everybody that's ever tried to do it.

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00:03:40,290 --> 00:03:47,409  
We've had a lot of failures in getting to Mars and it's not as easy as we make it look.

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00:03:47,409 --> 00:03:51,990  
And I'm looking forward to making this one a success too.

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00:03:51,990 --> 00:03:54,480  
And we are wishing you great success as well.

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00:03:54,480 --> 00:03:59,959  
Currently, Omar, the State of Florida is in  
the midst of dealing with the COVID-19 pandemic,

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00:03:59,959 --> 00:04:00,989  
as you know.

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00:04:00,989 --> 00:04:06,359  
Traditionally, it's very important that your  
launch teams work very closely together, so

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00:04:06,359 --> 00:04:12,030  
when did you know that this could impact the  
Mars 2020 launch?

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00:04:12,030 --> 00:04:16,730  
At first I was in denial that any of this  
was going to affect us.

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00:04:16,730 --> 00:04:26,100  
And then we happened to be working the Solar  
Orbiter Mission, which had a European contingent.

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00:04:26,100 --> 00:04:34,190  
And this was back in February when we launched  
that, and I saw that what the effects of the

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00:04:34,190 --> 00:04:44,840  
virus was doing to that team as they came  
back from Europe during their holiday time.

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00:04:44,840 --> 00:04:51,199  
And it was affecting their families and their  
travel.

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00:04:51,199 --> 00:05:00,490  
And Corona wasn't a word we were using in  
the January, December, February time period.

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00:05:00,490 --> 00:05:10,190

So, I didn't know the extent at that time  
of what it would do us.

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00:05:10,190 --> 00:05:21,400

And when I saw the country shutting down,  
I thought, for sure there is no way we're

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00:05:21,400 --> 00:05:25,000

going to be able to continue this.

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00:05:25,000 --> 00:05:33,020

Because we've been through missions where  
we're limited in people or we're remote.

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00:05:33,020 --> 00:05:41,210

We're in a furlough, so we're down to minimal  
essential people.

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00:05:41,210 --> 00:05:43,120

We did that through the Maven Mission.

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00:05:43,120 --> 00:05:47,500

Tomorrow's a couple of years ago, we worked  
through the furlough, we were able to get

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00:05:47,500 --> 00:05:48,500

it done.

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00:05:48,500 --> 00:05:50,580

But this was everybody.

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00:05:50,580 --> 00:05:51,580

Everybody's shut down.

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00:05:51,580 --> 00:05:58,870

The airlines have shut down, restaurants,  
it was hard to imagine that we would be able

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00:05:58,870 --> 00:06:04,840  
to do Mars 2020 in this year.

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00:06:04,840 --> 00:06:09,720  
I was seriously thinking Mars would be Mars  
2022.

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00:06:09,720 --> 00:06:11,540  
Wow.

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00:06:11,540 --> 00:06:16,721  
And that's because we can only launch a mission  
to Mars in about a month long window, every

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00:06:16,721 --> 00:06:22,290  
two years when earth and Mars orbits are aligned  
on the same side of the sun.

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00:06:22,290 --> 00:06:24,460  
So what'd you do?

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00:06:24,460 --> 00:06:35,520  
We worked to get an exception for Mars 2020,  
and what that meant is it was mission essential

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00:06:35,520 --> 00:06:37,520  
work only.

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00:06:37,520 --> 00:06:47,330  
And so we immediately went through plans on  
what that would look like, and I think we've

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00:06:47,330 --> 00:06:51,660  
read that plan 10 times in the last couple  
of months.

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00:06:51,660 --> 00:06:55,850  
So it's been a learning experience as we go  
on.

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00:06:55,850 --> 00:06:59,740

At first, you're hearing about this virus,  
but it's not really here.

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00:06:59,740 --> 00:07:08,580

It's in places like New York, or Washington,  
or Washington state, and it hadn't hit Florida.

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00:07:08,580 --> 00:07:11,199

It hadn't hit Brevard County.

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00:07:11,199 --> 00:07:20,509

And so there was things that we were doing  
that we were planning for.

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00:07:20,509 --> 00:07:24,600

We had to make shifts.

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00:07:24,600 --> 00:07:31,330

We couldn't run a flight readiness review  
like I do in conditions where we don't have

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00:07:31,330 --> 00:07:37,680

pandemic, where we have a bunch of people  
show up, we gathered together in a big meeting

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00:07:37,680 --> 00:07:45,139

room, we go over the presentation, we dry  
run the presentation beforehand with all the

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00:07:45,139 --> 00:07:46,139

teams.

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00:07:46,139 --> 00:07:50,889

I'm able to have small talk with the team  
to be able to adjust the presentation to what

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00:07:50,889 --> 00:07:59,379

it needs to be for when we actually roll out

that presentation in a launch readiness review.

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00:07:59,379 --> 00:08:11,050  
And so the idea of using online tools such as Microsoft Teams or WebEx was just foreign

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00:08:11,050 --> 00:08:14,229  
to that environment for us.

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00:08:14,229 --> 00:08:18,819  
And we quickly came up to speed.

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00:08:18,819 --> 00:08:27,560  
The applications for online collaborating are okay, they're not perfect, but we were

91  
00:08:27,560 --> 00:08:36,550  
able to use them and use them effectively and get all the work that we needed done accomplished.

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00:08:36,550 --> 00:08:43,470  
Now, can I say that I took the opportunity to train a bunch of new people?

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00:08:43,470 --> 00:08:47,350  
No, it had to be the essential folks.

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00:08:47,350 --> 00:08:53,390  
There wasn't a lot of bench strength.

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00:08:53,390 --> 00:09:03,029  
If some of the people, and this is going further on, we learned from other programs as to how

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00:09:03,029 --> 00:09:10,230  
they would staff their control rooms and so forth, and we took a lot from the DM2 Mission

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00:09:10,230 --> 00:09:18,230

and their rehearsals as to how we apply that  
to our work in Hangar AE, or the way the review

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00:09:18,230 --> 00:09:23,220  
process or the reviews end up taking place.

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00:09:23,220 --> 00:09:32,430  
And so putting that package together where  
I normally would have a team of folks that

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00:09:32,430 --> 00:09:40,880  
I could get in a room, we'd all decide how  
everything goes, where we put everything,

101  
00:09:40,880 --> 00:09:42,350  
we have to do all that virtually.

102  
00:09:42,350 --> 00:09:43,810  
It's not the same.

103  
00:09:43,810 --> 00:09:44,810  
You lose some of it.

104  
00:09:44,810 --> 00:09:54,090  
So I have to balance, is the material worthy  
of making it into a NASA flight readiness

105  
00:09:54,090 --> 00:09:56,130  
review?

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00:09:56,130 --> 00:10:03,120  
Are we going to inform our stakeholders the  
correct way, at the same time balancing it

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00:10:03,120 --> 00:10:06,050  
with not getting a team sick?

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00:10:06,050 --> 00:10:11,190  
And that's a tremendous amount of pressure

on me, but I have to have the data.

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00:10:11,190 --> 00:10:19,010

I don't want to get the team sick, and I don't want anybody to get their family sick or any

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00:10:19,010 --> 00:10:20,010

of that.

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00:10:20,010 --> 00:10:27,550

So it's a delicate balance, it's based on the data that we have at that moment.

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00:10:27,550 --> 00:10:35,310

We are exercising what we know we can with regards to mask, hand cleaning, spacing, et

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00:10:35,310 --> 00:10:36,300

cetera.

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00:10:36,300 --> 00:10:40,520

Well, it must've helped because the Rover made it to the launch pad in time.

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00:10:40,529 --> 00:10:46,540

And now I'd like to ask you to reflect on the name of this Rover, even before the pandemic

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00:10:46,550 --> 00:10:52,350

was spreading rapidly in the United States and also Florida, a seventh grader from Virginia

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00:10:52,350 --> 00:10:55,649

gave it the name, Perseverance.

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00:10:55,649 --> 00:11:02,290

At first I was like, eh, when I first heard it, and then this thing struck and man, it's

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00:11:02,290 --> 00:11:03,399  
been perfect.

120  
00:11:03,399 --> 00:11:04,810  
What a name.

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00:11:04,810 --> 00:11:09,970  
It's wild that that's the name that was picked  
because I don't think you could pick a better

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00:11:09,970 --> 00:11:14,540  
matching description of what the team is doing.

123  
00:11:14,540 --> 00:11:16,110  
They have persevered through this.

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00:11:16,110 --> 00:11:19,320  
Nobody has given up, everybody's fighting  
through it.

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00:11:19,320 --> 00:11:27,350  
We've had people that have gotten sick, and  
people are still wanting to come in and work.

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00:11:27,350 --> 00:11:31,750  
And they've got to go through the quarantines,  
they got to go through getting the testing

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00:11:31,750 --> 00:11:36,730  
done, and everybody wants to work through  
it.

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00:11:36,730 --> 00:11:42,850  
And that is the whole spectrum, I have not  
heard anyone say, we don't want to go through

129  
00:11:42,850 --> 00:11:43,850  
with this.

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00:11:43,850 --> 00:11:48,649

Yeah, I don't want to be in a room with a hundred people, but yeah, I want to go get

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00:11:48,649 --> 00:11:50,130

this mission done.

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00:11:50,130 --> 00:12:01,720

And I think the team, and it's the broad team, it's from public affairs to the range, ULA,

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00:12:01,720 --> 00:12:09,779

our spacecraft customer and all the supporter organizations that feed us so that we're able

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00:12:09,779 --> 00:12:11,440

to do this job.

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00:12:11,440 --> 00:12:13,790

And I think we have persevered through this.

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00:12:13,790 --> 00:12:15,769

We will get this mission done.

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00:12:15,769 --> 00:12:18,760

We will get it done through the pandemic.

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00:12:18,760 --> 00:12:26,470

And hopefully when this thing does get to Mars and lands in February, we'll be able

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00:12:26,470 --> 00:12:34,290

to do it in an environment where everybody can be together without a mask and so forth.

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00:12:34,290 --> 00:12:37,480

I hope that that is where we end up.

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00:12:37,480 --> 00:12:41,020

And all of us here at NASA shared that same hope.

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00:12:41,020 --> 00:12:46,339

Omar Baez, with NASA's Launch Services Program, thank you very much for joining us.

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00:12:46,339 --> 00:12:50,019

Well, I'm Darrol Nail, and that is our show.

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00:12:50,019 --> 00:12:55,190

And thanks for stopping by the Rocket Ranch, and special thanks to our guest, Omar Baez

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00:12:55,190 --> 00:12:56,690

with Launch Services Program.

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00:12:56,690 --> 00:13:03,990

Now to learn more about LSP, you could visit [NASA.gov/launch services](https://www.nasa.gov/launchservices), and to learn more

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00:13:03,990 --> 00:13:08,690

about everything going on at the Kennedy Space Center, go to [NASA.gov/Kennedy](https://www.nasa.gov/Kennedy).

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00:13:08,690 --> 00:13:13,990

You can check out NASA's other podcasts to learn more about what's happening in all of

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00:13:13,990 --> 00:13:14,990

our centers.

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00:13:14,990 --> 00:13:15,990

Just go to [NASA.gov/podcast](https://www.nasa.gov/podcast).

151

00:13:15,990 --> 00:13:24,089

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152

00:13:24,089 --> 00:13:28,639

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