



1
00:00:08,050 --> 00:00:04,020
[no sound]

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00:00:08,070 --> 00:00:12,070
Sunday, October 19th, when a rare comet will pass by at

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00:00:12,090 --> 00:00:16,090
an extremely close distance. And here to tell us more about Comet Siding

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00:00:16,110 --> 00:00:20,130
Spring, from NASA's Goddard Space Flight Center in Greenbelt, Maryland, is

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00:00:20,150 --> 00:00:24,150
NASA scientist Dr. Michelle Thaller. Thank you for joining us. >>MICHELLE: Hey,

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00:00:24,170 --> 00:00:28,180
good morning, thank you for having me. >>INTERVIEWER: So what is a comet and why do we study them?

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00:00:28,200 --> 00:00:32,220
>>MICHELLE: Well for millennia, comets have fascinated people. They almost look like stars

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00:00:32,240 --> 00:00:36,240
with tails. And what the really are, are chunks of ice and dirt

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00:00:36,260 --> 00:00:40,260
a couple miles across. And when they come close to the Sun, some of this material melts

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00:00:40,280 --> 00:00:44,310
off and forms a gas cloud around the comet. The

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00:00:44,330 --> 00:00:48,340
amazing thing is that these things are older than the planets of our solar system. There was a

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00:00:48,360 --> 00:00:52,370
time when the planets were forming, there were just small chunks of material coming through,

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00:00:52,390 --> 00:00:56,420

coming together. And some of this stuff got thrown out to the outer solar system.

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00:00:56,440 --> 00:01:00,440

Every once in a while, one of these things gets nudged and falls in, and what we have is

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00:01:00,460 --> 00:01:04,470

a pristine part of the solar system billions of years old that we can study.

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00:01:04,490 --> 00:01:08,510

>>INTERVIEWER: What makes Comet Siding Spring so special,

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00:01:08,530 --> 00:01:12,540

and will we be able to see it from Earth? >>MICHELLE: Now, Comet Siding

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00:01:12,560 --> 00:01:16,560

Spring has come a long way. We actually think it began its journey about a million years

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00:01:16,580 --> 00:01:20,610

ago. It began to drift very slowly and invisibly toward Mars.

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00:01:20,630 --> 00:01:24,640

It was only discovered about a year and a half ago, and at first it looked like it was going to

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00:01:24,660 --> 00:01:28,680

come right at Mars, maybe even collide with it. Now we know that Mars

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00:01:28,700 --> 00:01:32,700

is going to go through the tail of the comet. And there will be an incredible view from the surface

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00:01:32,720 --> 00:01:36,720

of Mars. This comet will go across the entire sky. Unfortunately, the best

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00:01:36,740 --> 00:01:40,750

view is from Mars. It's not visible with the naked eye here from Earth.

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00:01:40,770 --> 00:01:44,800

With a small telescope, especially in the southern hemisphere, you might have a decent

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00:01:44,820 --> 00:01:48,820

view. In the north it's going to be very close to the horizon and very hard to see.

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00:01:48,840 --> 00:01:52,860

>>INTERVIEWER: How will NASA study Comet Siding Spring from Mars?

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00:01:52,880 --> 00:01:56,900

>>MICHELLE: Well the amazing thing is we have a robotic fleet at Mars just ready

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00:01:56,920 --> 00:02:00,930

to observe this comet. We have two rovers actually on the surface of the planet,

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00:02:00,950 --> 00:02:04,980

and we have as many as five different satellites that are going to be observing it.

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00:02:05,000 --> 00:02:09,030

All in all, there are 15 different satellites, telescopes, and programs

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00:02:09,050 --> 00:02:13,060

that NASA's going to be using to observe this comet. And amazingly, the

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00:02:13,080 --> 00:02:17,100

MAVEN mission has just arrived at Mars. So the stroke of luck

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00:02:17,120 --> 00:02:21,160

was incredible. We launched MAVEN, it's arriving just in time to study this comet,

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00:02:21,180 --> 00:02:25,180

MAVEN is going to be able to look at some of the changes in the Martian atmosphere as

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00:02:25,200 --> 00:02:29,220

the tail goes by and maybe even heats up the atmosphere a little bit.

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00:02:29,240 --> 00:02:33,230

>>INTERVIEWER: Is the comet dangerous, and will the satellites orbiting Mars be

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00:02:33,250 --> 00:02:37,250

damaged? >>MICHELLE: Well one thing we do know is the comet will miss Mars.

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00:02:37,270 --> 00:02:41,260

However, it's going to be traveling very fast as it comes by. So,

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00:02:41,280 --> 00:02:45,270

as it goes by, the dust particles around the comet are moving at about a hundred thousand

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00:02:45,290 --> 00:02:49,310

miles an hour. And even a tiny little particle hitting a spacecraft at

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00:02:49,330 --> 00:02:53,370

that speed, that would be a pretty bad day for that spacecraft. So we've been modeling

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00:02:53,390 --> 00:02:57,380

where the densest part of the dust cloud is, and we think it's actually going to miss Mars.

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00:02:57,400 --> 00:03:01,400

However, we've adjusted the orbits of all of our satellites so they'll be

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00:03:01,420 --> 00:03:05,440

on the other side of Mars when the densest part of the tail goes by.

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00:03:05,460 --> 00:03:09,480

In some ways, we're going to be using the planet as a shield to keep our spacecraft safe.

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00:03:09,500 --> 00:03:11,520

>>INTERVIEWER: Sounds great, where can learn more?

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00:03:11,540 --> 00:03:13,540

>>MICHELLE: Well to learn more, go to

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00:03:13,560 --> 00:03:15,560

the website mars.nasa.gov,

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00:03:15,580 --> 00:03:17,610

and you can learn about all of our programs

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00:03:17,630 --> 00:03:19,620

that are studying Mars, and

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00:03:19,640 --> 00:03:21,640

there's going to be wonderful news coming down about the comet. And hopefully

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00:03:21,660 --> 00:03:23,690

in a couple days we'll even have some images,

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00:03:23,710 --> 00:03:25,710

some of the things that our observatories saw,

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00:03:25,730 --> 00:03:27,730

all the way from Mars. >>INTERVIEWER: Dr.

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00:03:27,750 --> 00:03:29,770

Michelle Thaller, thank you very much for joining us.

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00:03:29,790 --> 00:03:31,800

>>MICHELLE: Thank you, very much.

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00:03:31,820 --> 00:03:33,840

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