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00:00:00,010 --> 00:00:06,200
Reporter: Today is an exciting day and that's because
Mercury will transit across the face of the sun

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00:00:06,200 --> 00:00:12,220
and here to tell us about this rare phenomenon is Dr. Alex
Young at NASA's Goddard Space Flight Center.

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00:00:12,220 --> 00:00:13,410
Thanks so much for joining us.

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00:00:13,410 --> 00:00:14,430
Alex: Thank you

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00:00:14,430 --> 00:00:18,440
Reporter: So Mercury is trekking across the sun today for
the first time in ten years.

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00:00:18,440 --> 00:00:20,450
How can we see this transit?

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00:00:20,450 --> 00:00:24,600
Alex: If you're fortunate to have the right kind of solar
viewing

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00:00:24,600 --> 00:00:28,620
equipment, telescope or binoculars with the appropriate
filters

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00:00:28,620 --> 00:00:32,630
you can see it from the ground but the best way to see is
from space.

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00:00:32,630 --> 00:00:36,650
We've got data coming from the Solar Dynamics Observatory

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00:00:36,650 --> 00:00:40,830
which is going to show this roughly seven hour transit
uninterrupted.

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00:00:40,830 --> 00:00:45,850
Reporter: Why are transits so important to astronomers?

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00:00:45,850 --> 00:00:49,860
Alex: Well transits have been used for hundreds of years to
show

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00:00:49,860 --> 00:00:53,890
us distances, like a ruler we can figure out how far away

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00:00:53,890 --> 00:00:55,960
planets and the sun are.

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00:00:55,960 --> 00:00:59,960
We've also be able to out sizes or even the fact that Venus has

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00:00:59,960 --> 00:01:02,180
an atmosphere using transits.

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00:01:02,180 --> 00:01:06,200
But transits are also important because they're how we

19
00:01:06,200 --> 00:01:10,210
figure out if there planets around other stars outside

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00:01:10,210 --> 00:01:13,220
of our own solar system.

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00:01:13,220 --> 00:01:16,430
Reporter: Why does NASA watch the sun?

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00:01:16,430 --> 00:01:20,440
Alex: The sun is constantly putting out huge amounts of
energy

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00:01:20,440 --> 00:01:24,720
and material, it's producing its own space weather

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00:01:24,720 --> 00:01:28,900
that effects us here on Earth, effects our astronauts in space

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00:01:28,900 --> 00:01:33,090
and moves through out the entire solar system and

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00:01:33,090 --> 00:01:37,100
this transit is import because it allows us to fine tune

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00:01:37,100 --> 00:01:41,290
our observations of the sun to see even better detail

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00:01:41,290 --> 00:01:45,300
by using the transit itself to fine tune and focus the telescope

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00:01:45,300 --> 00:01:49,480
to give us the best possible data to show us the sun

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00:01:49,480 --> 00:01:52,490
in all its glorious detail.

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00:01:52,490 --> 00:01:56,520
Reporter: So NASA is using the transit method to study planets beyond our

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00:01:56,520 --> 00:02:01,710
solar system, what do we expect to learn from future missions doing this?

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00:02:01,710 --> 00:02:05,740
Alex: We've already found thousands of planets around other stars

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00:02:05,740 --> 00:02:08,920
and we've got future missions like the

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00:02:08,920 --> 00:02:11,950
Transiting Exoplanet Survey Sattelite or TESS

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00:02:11,950 --> 00:02:15,000
which is going to look closest, brightest starts

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00:02:15,000 --> 00:02:18,010
to give us a whole set of potential

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00:02:18,010 --> 00:02:21,010
candidates that we can then point even more

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00:02:21,010 --> 00:02:24,040
powerful telescopes like the James Webb space telescope

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00:02:24,040 --> 00:02:28,110
at to see the atmosphere's of these stars

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00:02:28,110 --> 00:02:32,130
look for the finger prints of life itself and hopefully get
a better

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00:02:32,130 --> 00:02:37,330
understanding life on other planets and ultimately life on
our own planet.

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00:02:37,330 --> 00:02:39,510
Reporter: Where can we learn more?

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00:02:39,510 --> 00:02:43,530
Alex: You can go to www.nasa.gov/transit

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00:02:43,530 --> 00:02:47,540
to see all this amazing imagery, videos,

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00:02:47,540 --> 00:02:50,550
as well as learn more about transits