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1
00:00:01,110 --> 00:00:05,570
[off camera] "Well this Thanksgiving a rare,
pristine comet will be making a once-in-a-lifetime

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00:00:05,570 --> 00:00:07,330
journey around the sun.

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00:00:07,330 --> 00:00:08,530
Comet ISON.

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00:00:08,530 --> 00:00:12,940
Joining us now to talk a little bit more about
this comet is Dr. Alex Young from NASA's Goddard

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00:00:12,940 --> 00:00:13,940
Space Flight Center.

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00:00:13,940 --> 00:00:14,940
Thanks for joining us."

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00:00:14,940 --> 00:00:15,940
\h
[Young] "Thank you."

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00:00:15,940 --> 00:00:17,920
\h
[off camera] "So tell us what is a comet and

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00:00:17,920 --> 00:00:19,400
why do we study them?"

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00:00:19,400 --> 00:00:22,660
\h
[Young] "Well comets are big chunks of rock

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00:00:22,660 --> 00:00:25,240
and ice from the outer solar system.

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00:00:25,240 --> 00:00:30,680
This particular one has taken a little over
five million years to get here.

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00:00:30,680 --> 00:00:37,010
But what makes comets really, really exciting
is that they are fossils from the early solar

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00:00:37,010 --> 00:00:38,010
system.

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00:00:38,010 --> 00:00:44,010
They are pieces of pristine material from
the formation of the planets and the formation

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00:00:44,010 --> 00:00:45,239
of the sun.

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00:00:45,239 --> 00:00:51,720
So studying comets gives us a look back in
the past and allows us to see the conditions

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00:00:51,720 --> 00:00:54,030
four-and-a-half billion years ago.

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00:00:54,030 --> 00:00:58,640
Now this one is also special because it's
what we call a sun grazing comet.

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00:00:58,640 --> 00:01:03,550
It's going to make a very close approach to
the sun, close to the solar surface through

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00:01:03,550 --> 00:01:05,280
its atmosphere.

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00:01:05,280 --> 00:01:12,030
Now and that's exciting because not only does
it allow us get a better look at the comet

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00:01:12,030 --> 00:01:17,000
itself, but allows us to look at the conditions
in the solar atmosphere and study them in

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00:01:17,000 --> 00:01:19,659
a way that we normally would not be able to
do."

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00:01:19,659 --> 00:01:22,580
\h
[off camera] "Now will we be able to see Comet

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00:01:22,580 --> 00:01:24,240
ISON with the naked eye?"

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00:01:24,240 --> 00:01:26,830
\h
[Young] "Well first we're going to see it

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00:01:26,830 --> 00:01:28,229
pass the sun.

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00:01:28,229 --> 00:01:32,450
We're going to see it with several of our
solar telescopes.

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00:01:32,450 --> 00:01:38,150
In particular the Solar Dynamics Observatory
is going to follow it during its closest approach

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00:01:38,150 --> 00:01:39,150
to the sun.

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00:01:39,150 --> 00:01:41,010
We call that perihelion.

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00:01:41,010 --> 00:01:46,229
And we're going to be able to look at it with
incredible detail and in light that's not

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00:01:46,229 --> 00:01:49,430
visible light, but extreme ultraviolet light.

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00:01:49,430 --> 00:01:54,570
Now once it makes it past the sun, if it's
still in tact and it has a very good chance

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00:01:54,570 --> 00:02:00,200
of being in tact, then we're going to see,
be able to see it in the sky hopefully with

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00:02:00,200 --> 00:02:06,520
our naked eye starting about December 1st
we'll see it low in the sky early in the morning

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00:02:06,520 --> 00:02:12,400
and then it will get progressively higher
and progressively earlier into the darkness.

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00:02:12,400 --> 00:02:18,180
And by December 17th it should be high enough
in the sky that its roughly about the location

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00:02:18,180 --> 00:02:19,210
of the Big Dipper."

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00:02:19,210 --> 00:02:21,380
\h
[off camera] "Now tell us what's so exciting

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00:02:21,380 --> 00:02:22,410
about this comet?"

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00:02:22,410 --> 00:02:25,910
\h
[Young] "Well this comet is exciting because

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00:02:25,910 --> 00:02:28,210

this is the first time it's been here.

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00:02:28,210 --> 00:02:32,220
The first time it's going to pass the sun
and it's also going to be the last time.

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00:02:32,220 --> 00:02:37,950
So its kind of a pristine comet and it's also
a once-in-a-lifetime chance.

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00:02:37,950 --> 00:02:39,780
It's not going to come back.

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00:02:39,780 --> 00:02:46,450
Now the other thing is we've seen many, many
sun grazing comets, almost 3,000 of them,

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00:02:46,450 --> 00:02:50,650
with solar telescopes, but we've only seen
a couple really, really close to the solar

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00:02:50,650 --> 00:02:51,819
atmosphere.

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00:02:51,819 --> 00:02:56,960
And we've only seen one really close that
made it past, Comet Lovejoy.

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00:02:56,960 --> 00:03:02,019
And this particular comet ISON is 10 times
bigger than Lovejoy.

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00:03:02,019 --> 00:03:06,950
So this gives us an even better indication
that it's going to make it and it's also going

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00:03:06,950 --> 00:03:13,180
to be in a different location in the atmosphere
allowing us to study new parts of the sun's

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00:03:13,180 --> 00:03:14,180
atmosphere.

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00:03:14,180 --> 00:03:18,340
And this is just all in all a very exciting
and a very unique object."

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00:03:18,340 --> 00:03:20,740
\h
[off camera] "Where can we learn more about

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00:03:20,740 --> 00:03:21,740
Comet ISON?"

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00:03:21,740 --> 00:03:26,210
\h
[Young] "If you go to nasa.gov / ISON, you

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00:03:26,210 --> 00:03:28,290
can lean all about ISON.

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00:03:28,290 --> 00:03:35,300
You can learn about its close passage to the
sun and see the data that's coming near real-time

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00:03:35,300 --> 00:03:36,940
from SDO.

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00:03:36,940 --> 00:03:42,879
And on Thanksgiving Day on November 28th you'll
have a Google hangout and we'll be following

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00:03:42,879 --> 00:03:47,659
its journey by the sun and through this exciting,
harsh atmosphere."

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00:03:47,659 --> 00:03:50,090
\h
[off camera] "Thank you so much.

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00:03:50,090 --> 00:03:51,970
Dr. Alex Young thanks for joining us."