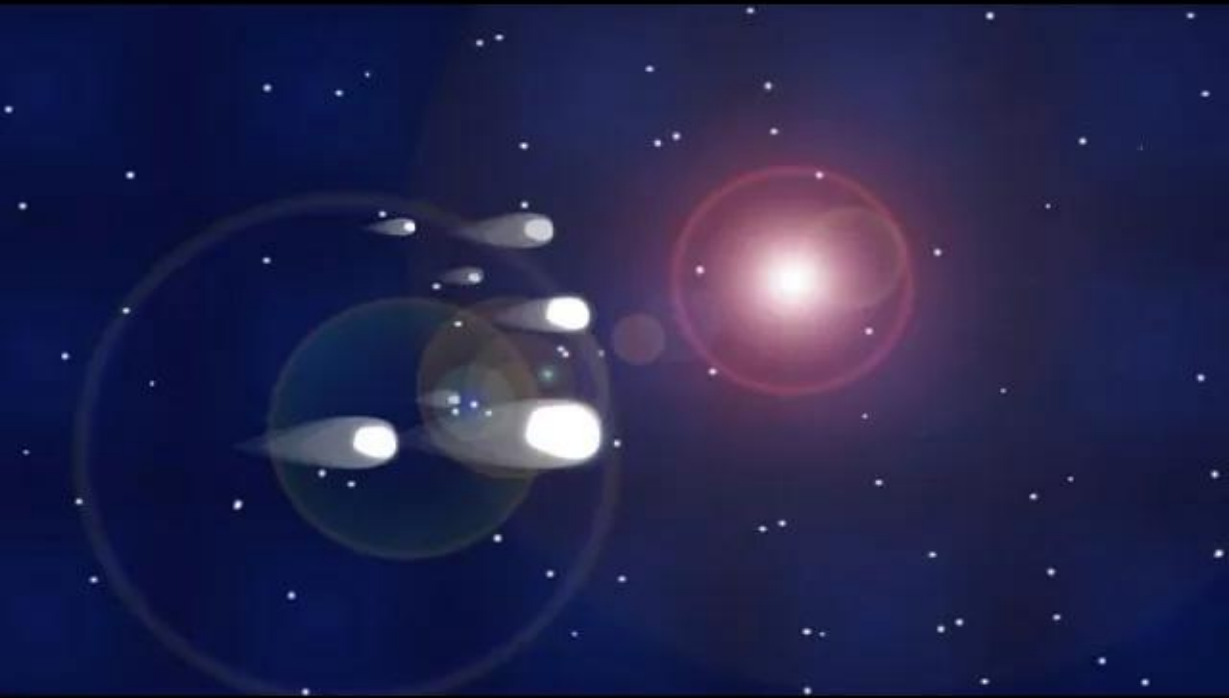

1
00:00:00,000 --> 00:00:01,069
<music throughout> Narrator: People have been hunting for sungrazing comets

2
00:00:01,070 --> 00:00:05,070
<music throughout>

3
00:00:05,070 --> 00:00:00,000
Narrator: People have been hunting for sun grazing comets for well over 100 years,

4
00:00:05,040 --> 00:00:09,040
for well over a hundred years, but up to 1979

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00:00:09,040 --> 00:00:13,040
we only knew of less than a dozen. As of 2020, we have seen

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00:00:13,040 --> 00:00:17,040
around 4,000 sungrazers. Why did the number increase?

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00:00:17,040 --> 00:00:21,040
The answer lies along the route most sungrazers follow.

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00:00:21,040 --> 00:00:25,040
In the late 1800s, Heinrich Kreutz observed that a few recent comets

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00:00:25,040 --> 00:00:29,040
comets traveling near the Sun appeared to follow the same orbit.

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00:00:29,040 --> 00:00:33,040
On this Kreutz sungrazer path, as we've come to call it, it takes

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00:00:33,040 --> 00:00:37,040
the comet several hundred years to complete one loop around the Sun.

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00:00:37,040 --> 00:00:41,040
While there are other orbits of sungrazers, Kreutz comets are the most common.

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00:00:41,040 --> 00:00:45,040

All of the comets in this orbit came from a single comet that fell apart

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00:00:45,040 --> 00:00:49,040
near the Sun thousands of years ago.

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00:00:49,040 --> 00:00:53,040
As the comet moved closer to the sun, the ice binding it together evaporated, breaking it into

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00:00:53,040 --> 00:00:57,040
smaller pieces that the Sun's gravity pulled apart.

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00:00:57,040 --> 00:01:01,040
Every time a comet comes around the Kreutz path, this can happen again, resulting

18
00:01:01,040 --> 00:01:05,040
in a new generation of comets. It might sound

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00:01:05,040 --> 00:01:09,040
like this would clutter the solar system full of comets, but that is not the case.

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00:01:09,040 --> 00:01:13,040
Most of the new comets are small enough that they become completely vaporized as they approach

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00:01:13,040 --> 00:01:17,040
the Sun. There are more comets observed\hin the last few decades,

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00:01:17,040 --> 00:01:21,040
not because there are more in the solar system but because we have better ways

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00:01:21,040 --> 00:01:25,040
to see them\hwhen they are close to the Sun.

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00:01:25,040 --> 00:01:29,040
Spotting a sungrazer from the ground is almost impossible because of the blinding sunlight.

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00:01:29,040 --> 00:01:33,040
Now, spacecraft uniquely design to look at the Sun can

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00:01:33,040 --> 00:01:37,040
block the brightest sunlight, making the job a lot easier.

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00:01:37,040 --> 00:01:41,040
Since the joint ESA/NASA mission SOHO launched in 1995,

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00:01:41,040 --> 00:01:45,040
it has shown us thousands more comets than any tool before it.

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00:01:45,040 --> 00:01:49,040
With SOHO we can now see the smaller, fainter comets

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00:01:49,040 --> 00:01:53,040
close to the sun, just long enough to add them to our list of sungrazers

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00:01:53,040 --> 00:01:57,040
before they vaporize. The spacecraft's data is available online,

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00:01:57,040 --> 00:02:01,040
so now, anyone can discover a comet.

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00:02:01,040 --> 00:02:05,040
Roughly 95% of these comets have been found by amateur astronomers.

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00:02:05,040 --> 00:02:09,040
SOHO isn’t the only Sun-observing spacecraft to have surprised us

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00:02:09,040 --> 00:02:13,040
with beautiful images of comets. NASA’s Solar Dynamics Observatory

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00:02:13,040 --> 00:02:17,040
has spotted sungrazers, too, though less frequently than SOHO

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00:02:17,040 --> 00:02:21,040
Now that we can observe comets better than ever - who knows?

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00:02:21,040 --> 00:02:25,040

- maybe you will spot the next sungrazer.