
COMET COUNTER
NO. OF OBSERVED COMETS
2

1
00:00:00,000 --> 00:00:04,100
Music

2
00:00:04,120 --> 00:00:08,200
People have been

3
00:00:08,220 --> 00:00:12,320
hunting for sungrazing comets for hundreds of years, but as of

4
00:00:12,340 --> 00:00:16,390
1979 we only knew of less than a dozen. Today,

5
00:00:16,410 --> 00:00:20,500
we have seen about 2,500. Why did the number increase?

6
00:00:20,520 --> 00:00:24,550
Understanding this starts with the Kreutz path. In the

7
00:00:24,570 --> 00:00:28,580
late 1800s, Heinrich Kreutz observed that many recent comets

8
00:00:28,600 --> 00:00:32,760
traveling near the sun appeared to follow the same orbit. On this Kreutz

9
00:00:32,780 --> 00:00:36,820
path, as we've come to call it, it takes the comet about 800 years

10
00:00:36,840 --> 00:00:40,930
to complete one loop around the sun. While there are other orbits of

11
00:00:40,950 --> 00:00:45,040
sungrazers, Kreutz comets are the most common. All of the comets

12
00:00:45,060 --> 00:00:49,120
in this orbit came from a single comet, observed thousands of years ago.

13
00:00:49,140 --> 00:00:53,180

As the comet moved closer to the sun, the ice binding it

14
00:00:53,200 --> 00:00:57,240
together evaporated, breaking it into smaller pieces that the sun's gravity

15
00:00:57,260 --> 00:01:01,310
pulled apart. Every time the comet comes around the Kreutz path, this can

16
00:01:01,330 --> 00:01:05,420
happened again, resulting in a new generation of comets. It might

17
00:01:05,440 --> 00:01:09,530
sound like this would clutter the solar system full of comets, but that is not the case.

18
00:01:09,550 --> 00:01:13,580
Some of the new comets are small enough that they become completely vaporized

19
00:01:13,600 --> 00:01:17,650
as they approach the sun. There are more comets observed, not because

20
00:01:17,670 --> 00:01:21,680
there are more in the solar system but because we have better ways to see them.

21
00:01:21,700 --> 00:01:25,890
Spotting a sungrazer from the ground is difficult because of the blinding sunlight.

22
00:01:25,910 --> 00:01:29,920
Now, spacecraft designed to observe the sun make the job a lot

23
00:01:29,940 --> 00:01:34,120
easier. Since the joint ESA/NASA mission SOHO launched in 1995,

24
00:01:34,140 --> 00:01:38,180
it has shown us thousands more comets than any tool before.

25
00:01:38,200 --> 00:01:42,270
To date, it has found 2,387 comets.

26
00:01:42,290 --> 00:01:46,370
With SOHO we can now see the smaller, fainter comets

27
00:01:46,390 --> 00:01:50,480
close to the sun, just long enough to ad them to our list of sungrazers

28
00:01:50,500 --> 00:01:54,670
before they vaporize. The spacecraft's data is available online,

29
00:01:54,690 --> 00:01:58,700
so now, anyone can discover a comet. Roughly 75%

30
00:01:58,720 --> 00:02:02,790
of these comets have been found by amateur astronomers.

31
00:02:02,810 --> 00:02:06,880
Other solar observatories, such as NASA's SDO, weren't expected to provide

32
00:02:06,900 --> 00:02:10,910
good comet observations, but they captured some beautiful images, creating

33
00:02:10,930 --> 00:02:14,960
more possibilities for comet research using unexpected tools. Now

34
00:02:14,980 --> 00:02:19,020
that we can observe comets better than ever - who knows? - maybe you

35
00:02:19,040 --> 00:02:23,060
will spot the next sungrazer.