NEOWISE

REVEALING CHANGES IN THE UNIVERSE

Jet Propulsion Laboratory
California Institute of Technology

1
00:00:04,970 --> 00:00:02,230
[Music]

2
00:00:07,309 --> 00:00:04,980
new time lapse movies from NASA's

3
00:00:09,830 --> 00:00:07,319
neowise Mission give astronomers the

4
00:00:12,470 --> 00:00:09,840
opportunity to observe objects like

5
00:00:15,530 --> 00:00:12,480
stars and black holes as they move and

6
00:00:17,630 --> 00:00:15,540
change over time the videos were made by

7
00:00:18,680 --> 00:00:17,640
combining more than 10 years of

8
00:00:25,910 --> 00:00:18,690
observations

9
00:00:30,769 --> 00:00:28,189
and its goal was to study the universe

10
00:00:33,410 --> 00:00:30,779
outside our solar system

11
00:00:36,590 --> 00:00:33,420
but NASA repurposed the mission now

12
00:00:38,990 --> 00:00:36,600
under the name neowise its main job is

13
00:00:43,069 --> 00:00:39,000

to actually find and track asteroids

14
00:00:45,350 --> 00:00:43,079
comets and other near-earth objects

15
00:00:47,569 --> 00:00:45,360
to do that it continuously takes

16
00:00:50,810 --> 00:00:47,579
pictures just like scanning the inside

17
00:00:52,970 --> 00:00:50,820
of a globe to complete one all Sky image

18
00:00:56,389 --> 00:00:52,980
every six months

19
00:00:58,729 --> 00:00:56,399
by combining 18 all Sky images taken

20
00:01:01,430 --> 00:00:58,739
over more than a decade the mission is

21
00:01:03,889 --> 00:01:01,440
opening up a deeper understanding of the

22
00:01:06,289 --> 00:01:03,899
universe like this feeding black hole

23
00:01:08,390 --> 00:01:06,299
you can see that as gas is pulled in

24
00:01:10,910 --> 00:01:08,400
close to the black hole it gets hotter

25
00:01:12,770 --> 00:01:10,920
and brighter indicating the black hole

26
00:01:15,530 --> 00:01:12,780
may have eaten a star

27
00:01:17,990 --> 00:01:15,540
here you see a star reaching the end of

28
00:01:20,510 --> 00:01:18,000
its life as it runs out of fuel it

29
00:01:21,830 --> 00:01:20,520
appears to pulse as it expands and

30
00:01:24,350 --> 00:01:21,840
contracts

31
00:01:27,050 --> 00:01:24,360
this star-forming region is home to more

32
00:01:29,270 --> 00:01:27,060
than a dozen protostars observations

33
00:01:31,850 --> 00:01:29,280
like this show scientists how these

34
00:01:33,770 --> 00:01:31,860
clumps of gas and dust eventually grow

35
00:01:36,170 --> 00:01:33,780
into Stars

36
00:01:38,690 --> 00:01:36,180
these frames capture a brown dwarf

37
00:01:41,510 --> 00:01:38,700
moving across the sky

38
00:01:43,910 --> 00:01:41,520

round dwarfs are objects that form like

39
00:01:47,929 --> 00:01:43,920
stars but aren't massive enough to

40
00:01:50,389 --> 00:01:47,939
become Stars using wise and neowise data

41
00:01:52,609 --> 00:01:50,399
scientists have identified hundreds of

42
00:01:53,929 --> 00:01:52,619
brown dwarfs hiding in our Cosmic

43
00:01:56,569 --> 00:01:53,939
neighborhood

44
00:01:58,370 --> 00:01:56,579
and more discoveries outside our solar

45
00:02:01,130 --> 00:01:58,380
system are expected

46
00:02:04,609 --> 00:02:01,140
as with this star scientists don't yet

47
00:02:06,889 --> 00:02:04,619
know what's causing it to brighten

48
00:02:09,820 --> 00:02:06,899
there are many more Treasures yet to be