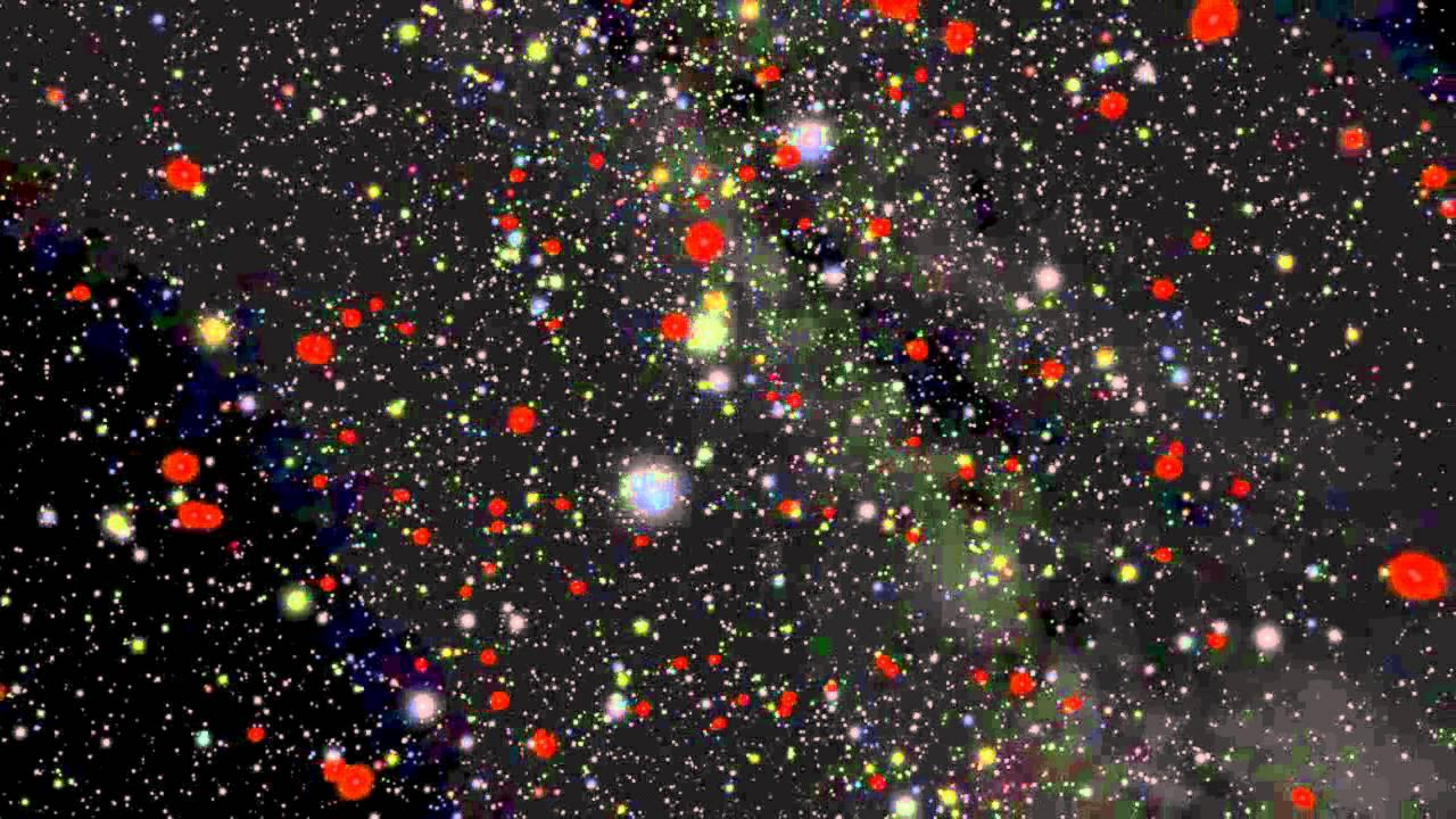

1
00:00:00,000 --> 00:00:05,000
Music.

2
00:00:05,000 --> 00:00:08,000
Davy Kirkpatrick: Astronomers are interested not only in the bright stars in our neighborhood

3
00:00:08,000 --> 00:00:10,000
which are easily seen here around the sun,

4
00:00:10,000 --> 00:00:14,000
but also the small, dim objects we can't readily see.

5
00:00:14,000 --> 00:00:21,000
Finding these is one of the prime objectives of NASA's Wide-field Infrared Survey Explorer, or WISE.

6
00:00:21,000 --> 00:00:27,000
As we move further away from the sun, we focus only on our neighbors within 26 light years.

7
00:00:27,000 --> 00:00:30,000
Within that volume, we increase the brightness of the faintest, reddest stars

8
00:00:30,000 --> 00:00:33,000
to make them more easily visible.

9
00:00:33,000 --> 00:00:41,000
These objects, known as M dwarfs, are the most common type of star in the solar neighborhood.

10
00:00:41,000 --> 00:00:47,000
Now, viewing from a distance of 30 light years, we circle all the known brown dwarfs:

11
00:00:47,000 --> 00:00:51,000
faint objects with too little mass to shine stably as stars do.

12
00:00:51,000 --> 00:00:55,000
The blue circles show all of the previously-known brown dwarfs

13
00:00:55,000 --> 00:01:01,000

while the red circles show the ones that WISE has identified for the very first time.

14
00:01:01,000 --> 00:01:07,000
This updated census of our solar neighborhood now shows that brown dwarfs are much rarer than stars,