
M60-UCD1
Composite

1
00:00:05,950 --> 00:00:03,260
astronomers may have discovered the

2
00:00:10,900 --> 00:00:05,960
densest galaxies in the nearby universe

3
00:00:13,490 --> 00:00:10,910
the galaxies known as m60 - UCD one is

4
00:00:18,560 --> 00:00:13,500
located about 54 million light-years

5
00:00:21,019 --> 00:00:18,570
from Earth m6e UCD one is packed with an

6
00:00:23,540 --> 00:00:21,029
extraordinary number of stars and this

7
00:00:26,929 --> 00:00:23,550
has led scientists to classify it as an

8
00:00:29,419 --> 00:00:26,939
ultra-compact dwarf galaxy this means

9
00:00:32,860 --> 00:00:29,429
that this galaxy is smaller and has more

10
00:00:35,510 --> 00:00:32,870
stars than just a regular dwarf galaxy

11
00:00:37,340 --> 00:00:35,520
while astronomers already knew this

12
00:00:39,889 --> 00:00:37,350
it wasn't until these latest results

13
00:00:42,110 --> 00:00:39,899

from Chandra Hubble and telescopes on

14
00:00:48,080 --> 00:00:42,120
the ground that they knew just how dense

15
00:00:50,810 --> 00:00:48,090
this galaxy truly is m6d UCD 1 has the

16
00:00:54,110 --> 00:00:50,820
mass of about 200 million times our Sun

17
00:00:56,930 --> 00:00:54,120
and remarkably about half of this mass

18
00:01:00,139 --> 00:00:56,940
is packed into a radius of just about 80

19
00:01:02,689 --> 00:01:00,149
light years that translates into the

20
00:01:05,990 --> 00:01:02,699
density of stars in this part of M 60

21
00:01:07,820 --> 00:01:06,000
you see D 1 being about fifteen thousand

22
00:01:11,320 --> 00:01:07,830
times greater than what's found in

23
00:01:13,219 --> 00:01:11,330
Earth's neighborhood in the Milky Way

24
00:01:14,719 --> 00:01:13,229
astronomers have been trying to

25
00:01:17,109 --> 00:01:14,729
determine where these ultra-compact

26
00:01:20,420 --> 00:01:17,119
dwarf galaxies fit into the Galactic

27
00:01:23,480 --> 00:01:20,430
evolutionary chain some have suggested

28
00:01:27,140 --> 00:01:23,490
they start off not as galaxies but as

29
00:01:31,160 --> 00:01:27,150
giant star clusters the latest results

30
00:01:33,380 --> 00:01:31,170
on M 60 UCD 1 challenge that idea the

31
00:01:35,330 --> 00:01:33,390
new Chandra data indicate that there may

32
00:01:38,490 --> 00:01:35,340
be a supermassive black hole at the

33
00:01:41,580 --> 00:01:38,500
centre of M 60 you see T 1

34
00:01:43,890 --> 00:01:41,590
if that's the case then it's unlikely

35
00:01:47,400 --> 00:01:43,900
this objects could have ever been a star

36
00:01:49,200 --> 00:01:47,410
cluster instead the x-ray data point to

37
00:01:51,330 --> 00:01:49,210
this galaxy being the remnants of a

38
00:01:53,850 --> 00:01:51,340

larger galaxy that had its outer stars

39
00:01:55,440 --> 00:01:53,860
ripped away by tidal forces leaving

40
00:02:00,270 --> 00:01:55,450
behind the dense inner core of the

41
00:02:02,730 --> 00:02:00,280
galaxy other information about m60 UC d1

42
00:02:06,330 --> 00:02:02,740
including its large mass point to the

43
00:02:08,550 --> 00:02:06,340
same conclusion regardless this galaxy