
M51
X-ray

1
00:00:00,470 --> 00:00:03,990
The galaxy Messier 51

2
00:00:03,990 --> 00:00:07,830
is perhaps better known by its nickname,
the Whirlpool Galaxy.

3
00:00:07,830 --> 00:00:12,679
Like the Milky Way, the Whirlpool is a
spiral galaxy

4
00:00:12,679 --> 00:00:17,029
with spectacular arms of stars and
dust.

5
00:00:17,029 --> 00:00:21,640
M51 is located about 25 million light
years from Earth,

6
00:00:21,640 --> 00:00:25,180
and its face-on orientation to
Earth

7
00:00:25,180 --> 00:00:28,460
gives us a perspective that we can never get from our

8
00:00:28,460 --> 00:00:34,170
own spiral galactic home. By studying the Whirlpool in X-ray light,

9
00:00:34,170 --> 00:00:38,290
astronomers can reveal things that would
otherwise be invisible

10
00:00:38,290 --> 00:00:41,300
in other wavelengths. For example,

11
00:00:41,300 --> 00:00:44,320
nearly a million seconds of observing time

12
00:00:44,320 --> 00:00:49,899
from NASA's Chandra X-ray Observatory
were used to create this new image.

13
00:00:49,899 --> 00:00:54,840
These data reveal over 400 X-ray
sources

14
00:00:54,840 --> 00:00:58,899
within the galaxy. Most of these are so-called

15
00:00:58,899 --> 00:01:02,410
X-ray binary systems, in which a neutron
star

16
00:01:02,410 --> 00:01:06,080
or black hole is in orbit with a star
like our sun.

17
00:01:06,080 --> 00:01:09,250
Understanding where these systems are,

18
00:01:09,250 --> 00:01:13,560
how they behave over time and their role
in the evolution