

1
00:00:00,000 --> 00:00:02,300

[Music]

2
00:00:02,300 --> 00:00:07,420

Using data from NASA's Fermi Gamma-ray Space Telescope and other facilities, an international team

3
00:00:07,460 --> 00:00:11,140

has found the first gamma-ray binary in another galaxy.

4
00:00:11,140 --> 00:00:16,200

The system, named LMC P3, was found 163,000 light-years away in a small galaxy called the

5
00:00:16,200 --> 00:00:18,200

Large Magellanic Cloud

6
00:00:20,400 --> 00:00:24,920

It is at the center of an expanded cloud of debris from a supernova explosion

7
00:00:26,720 --> 00:00:30,820

In LMC P3, a hot, massive normal star and a neutron star orbit each other every 10.3 days

8
00:00:31,520 --> 00:00:35,520

The big star is 25 to 40 times the mass of our sun

9
00:00:38,340 --> 00:00:43,940

It's the most luminous gamma-ray binary in gamma-rays, X-rays, radio and visible light

10
00:00:45,720 --> 00:00:50,960

Fermi has detected four of these systems in our own galaxy, plus LMC P3, the first found in another galaxy.

11
00:00:52,020 --> 00:00:56,320

Observing the changing emission from these binaries helps scientists understand gamma-ray

12
00:00:56,320 --> 00:00:59,160

processes found in many different kinds of objects.