

# Trick of the light throws up rarely seen dwarf

March 16 2007

---

A galaxy long considered to be a giant has turned out to be an optical illusion, with new observations by an astronomer from The Australian National University revealing that the star group is a dwarf.

The galaxy, known as NGC 5011C, was thought to be the gigantic next door neighbour of the big, bright NGC 5011B stellar system, located 140 million light years away from Earth.

But a new analysis to be published in the *Astronomical Journal* by Dr Helmut Jerjen, from the Research School of Astronomy and Astrophysics, shows that NGC 5011C is a much smaller, dwarf galaxy about 12 million light years away from Earth, in the vicinity of our own Milky Way.

According to Dr Jerjen, the bright light being given off by NGC 5011B had confused the observations of the newly-discovered dwarf, which led to earlier conclusions that the small collection of stars was actually a giant.

“But the characteristics of NGC 5011C were so much like those of a dwarf galaxy when I observed the pair at Siding Spring Observatory that I needed to investigate further,” Dr Jerjen said.

Dwarf galaxies are the building blocks of giant galaxies like our Milky Way, but they are difficult to detect because they have 1000 times fewer stars and predominately contain dark matter. They give off very little light, making them easy to “see right through,” Dr Jerjen said. Cold Dark

Matter theory tells us that most of the Universe is filled with such optically elusive dwarf galaxies.

“When you find one it’s like finding a little jewel,” Dr Jerjen said. “You want to examine it from every angle.”

To confirm his suspicion about NGC 5011C, Dr Jerjen contacted his colleague at the European Southern Observatory, Dr Ivo Saviane, to undertake a Redshift measurement of both galaxies. This test measures the speed at which objects are moving away from Earth.

“The faster the galaxy moves, the further away it is,” Dr Jerjen explains. “What we found with this pair was that the two galaxies actually have very different redshifts, with NGC 5011C moving away from us five times slower than 5011B. It’s rare to find a dwarf galaxy as close as this one.

“This finding offers a new opportunity to study the intricacies of a dwarf galaxy, which provides us with more detail about how galaxies form in the Universe and much to tell about the properties and role of dark matter,” Dr Jerjen said.

Source: Australian National University

Citation: Trick of the light throws up rarely seen dwarf (2007, March 16) retrieved 9 April 2024 from <https://phys.org/news/2007-03-rarely-dwarf.html>

<p>This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.</p>
--