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Taiwanese team observes galaxy eating neighbor

CANNIBALISM: Using US radio telescopes, a team led by Jeremy Lim, an associate research fellow at Academia Sinica, was able to prove a long-held scientific theory

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Taiwanese astrophysicists have demonstrated for the first time that a Seyfert galaxy will devour its neighboring galaxies, indicating that a black hole could exist inside a Seyfert galaxy, local news reports said yesterday.

The Seyfert galaxy is characterized by its extremely bright nucleus. Astronomers have long suspected that a black hole should be present near the core of a Seyfert galaxy and that the bright light is the result of emissions generated by matter as it is consumed by the black hole.

Until now, however, there had been insufficient evidence to prove the hypothesis.

The team, led by Jeremy Lim (林仁良), an associate research fellow at Academia Sinica's Institute of Astronomy and Astrophysics, published its finding in this month's issue of The Astrophysical Journal.

In their paper, the researchers said that with the Very Large Array radio telescope at the US-based National Science Foundation, they were able to determine that atomic hydrogen gas was being sucked into the center of a Seyfert galaxy named AKN 539.

Furthermore, when PGC 23700360, another galaxy, collided with AKN 539, the hydrogen gas found in the former galaxy was drawn toward AKN 539, showing that the Seyfert galaxy was feeding on its counterpart. The movement of the gaseous mass to AKN 539 was observed forming a "bridge" between the two galaxies.

As the structure of AKN 539 was disturbed by PGC 23700360, substances were likelier to be subject to the gravitational attraction of the Seyfert galaxy.

The researchers said that previous research using visible-light telescopes had only partially observed the phenomenon — dubbed "galactic cannibalism" — as the galaxies appear to be eating each other. Only by using radio telescopes and focusing on the changes that occur in hydrogen gas could a full picture of galactic cannibalism be obtained, they said.