

Cosmic dance produces a new galaxy in NGC 3166/9

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A team of astronomers from Queen's University, the Royal Military College of Canada (RMCC) and their world-wide collaborators have detected what is believed to be a "tidal" dwarf galaxy (TDG). Only a handful of bona-fide TDGs have been identified and this particular candidate is the first that has been discovered by the international research team, using high-resolution follow-up observations of the cold group gas mapped by the Arecibo Legacy Fast ALFA (ALFALFA) survey. This detection places tight constraints on the history of its neighbouring galaxies and gives insight into the processes that drive universal galaxy formation and evolution.

The baby-sized galaxy, formed during a cosmic dance between its parents: NGC 3166 and NGC 3169, has all the hallmarks of a TDG. It is located at the high density tip of a gas-rich tidal stream of material, has sufficient mass to be self-gravitating, coincides with an active stellar region and contains little [dark matter](#). The presence of this TDG has strong implications about the dynamics within the NGC 3166/9 group of galaxies.

This research is part of a larger program spearheaded by the Queen's/RMCC team to understand the processes that shape galaxies in group environments. One of the lead researchers, Karen Lee-Waddell, will be presenting these findings at the annual Canadian Astronomical Society meeting in Calgary, Alberta on June 7, 2012.

The team would like to thank the many ALFALFA team members who

contributed to this project.

Provided by Canadian Astronomical Society

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