

Clemson gets grant to study galaxy's glow

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CLEMSON — Clemson University astronomers have been awarded a \$244,000 NASA grant to study a mysterious glow coming from the central regions of the Milky Way galaxy.

The glow, which can't be seen by the naked eye, is created by gamma rays, and is a different spectrum of light than the familiar glow of the Milky Way in the starry night sky, said Clemson astronomy professor Mark Leising.

Leising and his students will use data from space-based gamma ray telescopes, working in collaboration with colleagues from Germany, France and NASA's Goddard Space Flight Center.

The emissions are coming in part from massive stars that explode as supernovae, but the surprising finding is that the brightest part of the glow is from a region near the center of the galaxy, where supernova explosions rarely occur, Leising said.

Possible explanations involve black holes or decay-

ing dark matter particles, he said.

Graduate and undergraduate students will analyze data from multiple detectors over a long period of time and combine the various data to learn more about the origin of the glow, black holes and anti-matter.

Students also will build computational and three-dimensional models of what they find, combining the research with theoretical study, Leising said.

The research is primarily curiosity driven — “we want to know what's out there,” Leising said — but also has earth-bound benefits. Students develop computational skills that can be applied to many fields, and spin-off benefits can include technical advances.

Earlier versions of the study aided development of instrumentation PET scans, or positron emission tomography, in which patients ingest radioactive elements that decay and emit antimatter.

“We are doing much the same thing, except that we have to sit back 25,000 light years to measure the gamma rays,” Leising said.