

## Symposium Set To Explore the Mysteries of the Universe

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DURHAM, N.H. -- Gamma ray experts from the University of New Hampshire and other research institutions will discuss the latest findings in black holes, gamma ray bursts and supernova remnants and preparations for the upcoming solar maximum, a year-long period of increased solar activity, at the 5th Compton Symposium on gamma ray astronomy.

"Gamma ray bursts have, for many years, represented one of the greatest mysteries in all of astrophysics," says Physics Professor James Ryan, one of the organizers of the conference. "Only in recent years have we begun to understand their true nature. And their true nature is really bizarre. Many theories now envision colliding black holes in the far distant reaches of the universe, but no one really knows for sure."

The symposium, hosted by the UNH Space Science Center, is set for Sept. 15-17 at the Sheraton Harborside Hotel in Portsmouth.

The meeting, expected to attract more than 200 researchers from around the world, is hosted by NASA / Goddard Space Flight Center's Compton Gamma Ray Observatory (CGRO) Science Support Center, as well as the UNH Space Science Center, located within the Institute for the Study of Earth, Oceans and Space. The symposium highlights findings and theories stemming from the observatory and other high-energy telescopes.

Also presented will be the long-awaited release of the COMPTEL source catalogue, which is a list of the 63 gamma ray sources detected by the COMPTEL instrument on NASA's Compton Gamma Ray Observatory, and presentations on the relationship between supernova remnant shock waves and cosmic ray origin.

The COMPTEL catalog is of particular interest to researchers at UNH, since it involves scientists from UNH as well as several European institutions. For the

past eight years, the daily operations of COMPTEL have been controlled from Morse Hall on the UNH campus in Durham.

"The COMPTEL catalog represents several years of data analysis," says Mark McConnell, UNH associate research professor and member of the COMPTEL team, "and yet it underscores how little we know about the universe as seen in the gamma ray part of the spectrum. Imagine looking up at the night sky and seeing only a few dozen stars, rather than the thousands that we actually see. That is what the sky looks like with COMPTEL."

Gamma rays occupy the highest energy range in the electromagnetic spectrum, well beyond visible light, ultraviolet and X-rays. They are produced by extreme forces of energy and by nuclear decay (radioactivity). Although gamma ray astronomy is only 40 years old, the field has made major advances in instrument development and the observation of highly energetic phenomena.

One topic of discussion at the symposium will be the possible origins of gamma ray bursts. These mysterious bursts outshine the entire universe in the few seconds they glow, but are difficult to observe since they appear without warning and last for a short period.

CGRO is the second of NASA's Great Observatories and the gamma ray equivalent to the Hubble Space Telescope and the recently-launched Chandra X-ray Observatory. Compton was launched aboard the Space Shuttle Atlantis in April, 1991.

The symposium is the fifth in a series of international symposia dedicated to research in gamma-ray astronomy with an emphasis on results from CGRO.

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