Company founded by AU alumni has a 'deep impact' on space mission
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In January 2005, NASA launched the Deep Impact space mission. On July 4th, a portion of the two-part spacecraft was intentionally smashed into the comet Tempel 1 at a speed of 23,000 mph. The impact created a crater the size of a 14-story deep football stadium in the Manhattan-sized comet. This will allow scientists to peer into the interstellar materials contained within the core of the comet. While this may sound like a Hollywood special effect that most of us have witnessed in a myriad of space-based theme movies, the collision will in fact have a deep impact in helping scientists finally understand the composition and origin of comets.Comets are like cosmic fossils. They have gone virtually unchanged since their creation nearly four and a half billion years ago, when they and the rest of our solar system were formed. Not only will the mission help scientists understand the composition of comets, but the impact also produced a huge outburst of gas and dust, which was closely monitored by scientists all around the world. Images from numerous ground-based telescopes and the spacecraft itself will enable scientists to better understand the origin of the solar system, as well as the origin of earth water. The information extracted from this mission may also tell scientists how to avoid collisions with comets in the future, or divert their path away from earth.Lake Shore Cryotronics, Inc. is the world's leading supplier of highly specialized cryogenic temperature sensors that are capable of measuring temperatures down to -560 F, as well as sensors for measuring magnetic fields. While actual temperatures in outer space depend on the proximity to the sun, the temperatures that the Deep Impact spacecraft were subjected to during its journey from earth to Tempel 1 were very, very cold! Lake Shore's sensors were not only used because they could withstand the harsh conditions of space, which includes extremely cold temperatures and intense levels of ionizing radiation, but also because they could survive the violent shaking associated with rocket launches. While the only thing that remains of some of these sensors resides in the debris of Deep Impact on Tempel 1, the sensors themselves were a critical flight component and as such, the Westerville, Ohio-based company has had a deep impact on the mission's success.A former professor of electrical engineering at The Ohio State University, Dr. John Swartz along with his brother David founded Lake Shore Cryotronics, Inc. in 1967. Both John and David are alumni of the ceramic engineering program at Alfred University. John earned his BS in 1958, and David earned his BS and MS in 1951 and 1953, respectively.Lake Shore is the international leader in cryogenic thermometry and instrumentation. Over the years, their product portfolio has been extended to include a line of magnetic measurement instruments and sensors, as well as systems used for characterizing the magnetic and electronic transport properties of materials. Lake Shore also has a Tucson, Arizona-based division, Desert Cryogenics. For more information about Lake Shore Cryotronics, Inc., visit their website at www.lakeshore.com.