

## **AU professor, student tracking asteroid once thought on collision course with Earth**

8/12/02

ALFRED Twice this year, scientists discovered asteroids they believed had the potential to collide with Earth. Fortunately, both will pass safely by our planet, but astronomers continue to follow the progress of one, which will be visible this weekend. An Alfred University professor and student are among hundreds around the world tracking the movement of the asteroid 2002 NY40. The asteroid, roughly one-quarter mile in diameter, was first observed in early July. Scientists, after gauging the asteroid's path of travel and speed, believed it would eventually cross into the Earth's orbit and collide with it in the year 2060. They have since determined 2002 NY40 will miss Earth, as will 2002 NT7, an asteroid discovered earlier this year which they originally believed would collide with our planet in the year 2019. Dr. David DeGraff, professor of physics and astronomy at Alfred University, and Carolyn Windus, a junior from Cuba, NY, have been tracking the progress of the asteroid 2002 NY40 since its discovery in July. Using the 32-inch Austin-Fellows telescope at the Stull Observatory on the AU campus, they have been viewing the asteroid at night, taking photographs to track its path, determine its speed and brightness, and reporting the data to the Minor Planet Center in Cambridge, MA. Data collected at observatories all over the world is being passed on to the Minor Planet Center. Windus, a biology major who is pursuing a minor in astronomy, has been working with DeGraff this summer, assisting him on his ongoing research of asteroids. "The research I was doing has to do with asteroid families, which are large masses that have broken up but maintained the same path of travel," said Windus. DeGraff's research turned to the asteroid 2002 NY40 shortly after it was discovered. He and Windus will likely resume their normal research after the asteroid leaves the Northern Hemisphere and can no longer be seen from Alfred. The other asteroid, NT7 (at more than two miles in diameter substantially larger than NY40) has already moved into the Southern Hemisphere. DeGraff said NY40 will be visible with the aid of only binoculars this Saturday evening, Aug. 17. On that night, the asteroid will have achieved its highest brightness, as light from the sun reflects off the largest area of the asteroid's surface. Windus compared the effect to that of sunlight reflecting off the moon. DeGraff said the asteroid will be in view for about two hours, sometime after 10 p.m. It can be viewed with binoculars and will travel between the star Alberio and the Dumbbell Nebula. "This will be the one time to see it without a telescope," he said. The closest the asteroid will get to Earth is approximately 375,000 miles. By comparison, the moon is about 250,000 miles away. DeGraff said that had the asteroid continued its path toward Earth, steps could have been taken to move it safely off course. A "solar sail" could have been used, for example, with a large piece of aluminum used to shine sunlight directly at the asteroid, "nudging" its path of travel away from Earth. While the NT7 and NY40 asteroids won't hit Earth, or have any impact on its orbit, DeGraff said it is only a matter of time before an object does strike our planet. In 1972, an object about 100 meters in diameter "skipped" across the Earth's atmosphere and back into space. And in 1908, DeGraff said, a small asteroid hit in Siberia, flattening trees for 40 miles. "We will be hit by something in the next couple million years," he said "We have no idea when. That's why we look for these things."