

ASTRONOMY

Astronomers keeping an eye on what's hurtling by in space

Tuesday, May 23, 2006

TOM STATLER

Sailing past Earth one by one, the many fragments of Comet Schwassmann-Wachmann 3 have been visible this month to anybody with a backyard telescope or a good pair of binoculars. The comet is on its way to a June swing around the sun, a regular phase of its 5.4-year orbit.

Comets, asteroids, Earth and the other planets of our solar system all orbit around the sun in a complicated gravitational dance. They've been doing this for 5 billion years, and SW3 is no different from millions of other comets that have spent time among the inner planets.

But SW3 reminds us of some important facts of life.

First, nothing lasts forever. Comets are destined to evaporate away under the heat of the sun. SW3 broke apart two orbits ago and is crumbling to bits right before our eyes. In time, nothing will be left but a stream of dust orbiting the sun.

Second, the universe is not guaranteed to be a safe place to live. SW3 passed Earth at a distance of 7 million miles, a wide miss by anybody's standards.

But there are billions of small comets and asteroids orbiting the sun. In July, a shopping mall-size chunk of rock named 2004 XP14 will pass within a quarter-million miles, just beyond the moon. In the past year, nine objects that we know of came closer than the moon's distance.

Is this a reason to be scared? Certainly not. The chance of a catastrophic asteroid impact during your lifetime is about the same as the chance of being in a commercial airliner crash: about 1 in 20 million.

At least a half-dozen new projects around the world are using automated telescopes and sophisticated software to scan the skies in search of "near Earth objects," or NEOs.

This is an exciting time in the NEO hunt. More than 3,500 NEOs have been discovered. Almost 1,000 of these are more than a kilometer in diameter. In 2005, more than 600 were discovered. NASA's NEO program has the goal of cataloguing 90 percent of the objects bigger than 1 kilometer within 10 years.

What if these searches turn up an asteroid that is headed for a collision with Earth? We still don't know enough about the physical makeup of these objects to know what to do if one is heading toward us. I'll talk about some of the alternatives next month.

Tom Statler is director of the Astrophysical Institute at Ohio University in Athens.

statler@ohio.edu

