

A nova visible to the naked eye

Novas erupt frequently throughout the heavens, but the brilliant stellar outburst recently observed in the constellation Cygnus has special significance. It represents the first nova visible to the naked eye since 1975.

Discovered Feb. 18 by amateur astronomer Peter Collins of Boulder, Colo., the new nova — a Milky Way outburst dubbed Nova Cygni 1992 — has lasted longer than many such flare-ups, which typically fade from view in a few days.

Nova Cygni peaked in luminosity on Feb. 20 and remained nearly that bright for three days, after which it began to dim. Observations with the International Ultraviolet Explorer (IUE) satellite on Feb. 26, however, revealed a puzzling finding: After days of dimming, the nova had brightened somewhat in both ultraviolet and visible light. (This week, though, observers may need binoculars to see it.)

Novas occur in double-star systems that feature a dense star, called a white dwarf, which steals mass from a closely orbiting companion. The accumulation of mass on the surface of the dwarf sparks a thermonuclear explosion, hurling a shell of hot, luminous gas into space. Unlike a supernova explosion, which destroys the entire star, a nova leaves the white dwarf intact, enabling it to later repeat its violent behavior.

Sumner G. Starrfield of Arizona State University in Tempe and his colleagues, who are studying the nova's spectra with the IUE, report that light emissions from iron now mask the presence of other elements in the newly ejected gas shell. He says the nova may contain relatively little carbon, since this element would have shortened the duration of the outburst.

Star cluster may harbor brown dwarfs

For 50 years, researchers have searched unsuccessfully for brown dwarfs — dim, gaseous bodies that could represent some of the missing mass needed to keep the universe from expanding forever. Now a research team contends it has found six of the elusive objects in a nearby star cluster.

Too massive for a planet but too small to become a star, brown dwarfs represent a missing link between the two. To hunt for brown dwarfs, Claia Bryja of the University of Minnesota in Minneapolis and her colleagues scanned old photographic plates of the Hyades star cluster, a mere 150 light-years from Earth.

Several features of this Milky Way cluster enabled the team to discern two characteristics attributed to brown dwarfs, low luminosity and reddish color. First, the cluster's known distance from Earth made it easy to calculate the intrinsic brightness, and thus the mass, of candidate dwarfs within it. Second, the cluster's proximity to Earth allowed the team to spot dim bodies on the photographic plates.

The youth of the Hyades cluster — an estimated 600 million years old — also favored observations, Bryja says. Brown dwarfs radiate heat left over from their formation but have no other energy source, such as the nuclear furnace inside stars. A dwarf in the Hyades would still emit enough light for researchers to detect it, but it would have faded enough that it couldn't masquerade as a heavier, brighter object. Older brown dwarfs, lying farther from Earth, would "be cooled to oblivion" and could not be detected, notes Bryja.

Among 89 dwarf candidates found by Bryja's team, 12 were observed by the NASA Infrared Telescope Facility in Hawaii. Six of these had an infrared luminosity indicative of brown dwarfs.

The findings definitively identify the six candidates as brown dwarfs with masses about 70 times that of Jupiter and luminosities as low as one four-thousandth that of the sun, Bryja reported last January at a meeting of the American Astronomical Society in Atlanta. She and her team detail their work in an upcoming *ASTROPHYSICAL JOURNAL LETTERS*.

Folk therapy for vaginitis looking good

For years, mothers have advised their daughters to eat yogurt to cure or prevent recurrent vaginal yeast infections. But gynecologists have remained divided over the efficacy of the treatment.

Now, the first controlled study using yogurt to fight yeast infections shows that eating an 8-ounce carton of the dairy food every day can relieve chronic vaginal yeast infections. However, the yogurt must contain live cultures of the bacterium *Lactobacillus acidophilus*, the study found.

Gynecologist Eileen Hilton and her colleagues at the Long Island Jewish Medical Center in New Hyde Park, N.Y., tested the benefits of eating yogurt among 13 women with a history of vaginal yeast infections. The women ate yogurt daily for six months, then abstained from yogurt for the following six months.

During the time that they ate yogurt, the women proved less likely to develop a yeast infection, Hilton's group reports in the March 1 *ANNALS OF INTERNAL MEDICINE*. Moreover, women protected from yeast infections by the therapy had higher levels of *L. acidophilus* in their rectums or vaginas. The authors attribute the yogurt's effects to movement of the bacteria from the rectal area into the vagina.

"It appears that the gastrointestinal strain of *L. acidophilus* colonized the vaginal tract of our patients," Hilton and her colleagues write. These benign bacteria are more resistant to digestive acids than other gut microbes. Once in the vagina, the researchers suggest, the bacteria may out-compete yeast for growth nutrients, preventing infection.

In an editorial accompanying the article, physician David J. Drutz of St. Michael's Medical Center in Newark, N.J., comments that the study "represents a needed first step" in demonstrating the effectiveness of *L. acidophilus*. However, he warns women against seeking a therapy for their yeast infections from the grocery shelves. Most commercial brands of yogurt do not contain *L. acidophilus*, and many are pasteurized, which would kill the bacterium. He adds that several research groups are now investigating whether direct application of *L. acidophilus* to the vagina — using either yogurt or suppositories containing the bacterium — may provide the best route of administration.

Snoring: All in the family

If Mama and Papa snore loudly enough to raise the roof, chances are you do too, according to a study involving the families of patients with obstructive sleep apnea.

A report in the February *AMERICAN REVIEW OF RESPIRATORY DISEASE* presents evidence that this disorder, which is characterized by frequent pauses in breathing during sleep, may have a genetic cause.

Physician Susan Redline of the Cleveland Veterans Hospital and a team of colleagues in Ohio, Rhode Island and Massachusetts questioned the close relatives of 29 diagnosed sleep apnea patients. The researchers found that relatives of patients were nearly twice as likely as relatives of individuals without the disorder to report symptoms of sleep apnea — such as loud snoring, daytime sleepiness, and snorting or jerking during sleep. The association remained even when the researchers controlled for body weight and alcohol consumption, factors known to contribute to snoring and sleep apnea.

"These findings indicate that familial clustering of sleep apnea may be substantially more prevalent than has been suggested by the few published single-family studies," Redline's group writes. Sleep researchers currently estimate that between 1 and 4 percent of the U.S. population suffers from the disorder. Heritable traits that could cause sleep apnea include jaw abnormalities and longer-than-normal tongues or soft palates, Redline's group suggests.