tions as noise.

The detector on the present telescope is considerably more sensitive than the older version, so the hypothesized comets should show up much more clearly now, if they exist, says Harris. The telescope has found none thus far, he reports.

The comets have also eluded the Navy's string of radar installations spanning the southern United States. Stephen H. Knowles and his colleagues at the Naval Research Laboratory in Washington, D.C., examined data collected by this radar fence over 6 weeks. The system should have captured the comets at a rate of one every few minutes, but it failed to detect any of these snowballs among the thousands of objects observed, reports Knowles.

While Frank steadfastly supported his hypothesis at the meeting, several teams offered more mundane explanations for the black splotches in the satellite images. Larry J. Paxton of the Johns Hopkins University Applied Physics Laboratory in Laurel, Md., proposed that the spots could come from clouds in the lower atmosphere.

Although the satellites' ultraviolet imagers were designed to capture only ultraviolet radiation, tests on similar systems show that they often absorb some visible light. As a result, they detect some of the sunlight bouncing off clouds, says Paxton. In fact, Frank and his colleagues last year reported seeing outlines of clouds in a few Polar ultraviolet images.

Paxton hypothesized that breaks in the clouds could show up on the satellite images as dark spots. Their numbers vary precisely with the daily and seasonal cycle of cloud cover, he says.

"I think the simplest answer is that, in all likelihood, these [small comets] don't exist. But it's going to take some more tests," Paxton told SCIENCE NEWS.

Two teams offered evidence that the dark spots could come from static in the camera systems themselves. Scientists from the University of Washington in Seattle and the University of California, Berkeley argued that Frank's analyses have been misled by electrical noise in the camera, creating the illusion of atmospheric holes where none exist.

Frank angrily rejected the criticisms, calling some of the rhetoric "detestable." In his rebuttals, he ridiculed his opponents, triggering strong responses.

The assault on the small comet hypothesis continued into another meeting session, which explored the atmospheric implications of the idea. According to Frank, if small comets exist, the tremendous amount of water they carry would force scientists to reconsider the origin of water on Earth.

Satellite measurements of the middle atmosphere, however, show it to be extremely dry. If the small comets do exist and are moistening the atmosphere, they would have to be much rarer than Frank has hypothesized, calculate researchers from the University of California, Irvine; Hampton (Va.) University; and the Naval Research Laboratory.

The weight of the current criticism is swaying some researchers who last year voiced cautious support for Frank. "I think Frank's been seriously challenged," says Donahue. "There's a strong likelihood that it is instrumental [noise]. That's the way the wind is blowing." —*R. Monastersky*

Hubble takes first image of possible planet

The dim white dot that Susan Terebey and her colleagues spied in images of a nearby star-forming region could easily have been dismissed as a background star. The astronomers were intrigued, however, by the object's location—at one end of a long, luminous trail. At the other end lies a pair of newborn stars.

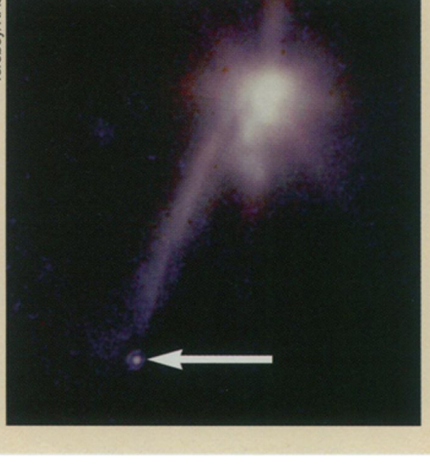
The team suggests that the youthful pair are parents and that the white dot is their runaway offspring—a planet with two to three times the mass of Jupiter speeding away at 10 kilometers per second. If that speculation is correct, then the images, recorded by the Hubble Space Telescope, will go down in history as the first ever taken of a planet outside the solar system. Terebey, president of Extrasolar Research Corp. in Pasadena, Calif., unveiled the pictures last week at a press briefing in Washington, D.C.

Although researchers have inferred the presence of eight planets outside the solar system, their evidence is based solely on wobbles in the motion of the stars the planets are thought to orbit.

To image the object, Hubble's near-infrared camera penetrated the dust in a star-forming region in the constellation Taurus, 450 light-years from Earth. The argument that the body, designated TMR-1C, is a planet rests on its proximity to the luminous, 200 billion-km-long trail that leads directly to the two young stars. Terebey's team says there's only a 2 percent chance that the object is a distant star that happens to lie at that position.

The researchers say the trail represents dust pushed out of the way as the planet was kicked out of its birthplace and went barreling into space. In this scenario, the planet is about the same age as the stars, a few hundred thousand years old. Given the planet's age and luminosity, theory suggests that TMR-1C has a mass several times that of the largest planet in the solar system.

Those numbers would seem to pose a puzzle, says Alan P. Boss of the Carnegie Institution of Washington (D.C.). Theorists have generally believed it takes a two-step process lasting 10 million years for a giant planet like Jupiter to form. First, bits of dust and ice lying in a disk around a young star assemble into a solid core. Then, the core snares enough gas from the disk to make a full-fledged, massive planet. In a model described by Boss in the May 14 NATURE, however, parts of the disk clump directly into a large ball of gas and dust heavy enough to form a giant planet in as little as 1,000 years.



Terebey/NASA

Arrow indicates an object that could be the first extrasolar planet imaged.

Boss' model requires that very young stars have relatively dense disks. In a report accepted for publication in NATURE, Luis F. Rodriguez of the National Autonomous University of Mexico in Mexico City and his collaborators find such compact disks in a star-forming region known as L1551. Rodriguez declined to discuss the article but noted that "our results and those of Terebey *et al.*, if fully confirmed, open new avenues in the issue of planet formation in binary systems."

Adam S. Burrows of the University of Arizona in Tucson cautions that the crudeness of stellar models and observational uncertainties make it difficult to estimate the mass and age of TMR-1C. For example, if the object lies in an unusually dusty region of Taurus, its true luminosity—and mass—might be underestimated. It's possible, in fact, that the object might be massive enough to qualify as a kind of failed star called a brown dwarf.

After studying the object's spectra, researchers expect to determine whether it has the mass and composition of a star, a brown dwarf, or a planet. —*R. Cowen*