comments and met with FASEB and other organizations before issuing its final policy. But Pascal says that ORI has stopped the clock to review "both the substance of the policy and the process." A committee staffer says that suspending the rule "is appropriate" and that the panel has not yet decided on its next step. –JOCELYN KAISER

PLANETARY SCIENCE

Cosmic Misfits Elude Star-Formation Theories

TOKYO—Astronomers have become increasingly perplexed over the last few years by a strange new class of celestial body. Too small to fit conventional definitions of brown dwarfs, they nonetheless move through star-forming regions in a manner that separates them from planets orbiting a star. Once seen as anomalies, their growing numbers are forcing astronomers to sit up and take notice (*Science*, 6 October 2000, p. 26). On 14 February, a Japanese team raised the stakes by reporting its discovery of more than 100 of these objects in a star-forming region known as S106. "This poses a big challenge for the standard picture of star formation," says Shu-ichiro Inutsuka, a theorist at Kyoto University.

Yumiko Oasa of the University of Tokyo and colleagues there and at the National Astronomical Observatory of Japan spotted the band of cosmic misfits while using NAOJ's Subaru Telescope on Mauna Kea, Hawaii. They were observing infrared emissions from a region approximately 2000 light-years from Earth in the constellation Cygnus. In addition to hundreds of brown dwarfs, the team spotted more than 100 fainter free-floating objects. Plugging data on luminosity and estimated age into models of how very low-mass stars evolve, the team estimated the objects' masses at 5 to 10 times that of the planet Jupiter. An analysis of their infrared emissions placed the objects within the region.

"Our discovery sheds new light on the ubiquity of isolated planetary-mass objects," says Oasa about her work, the basis for a Ph.D. thesis approved last month. A brief report of the discovery and photos have been posted on the NAOJ Web site (www.nao.ac.jp).

Joan Najita, an astronomer at the U.S. National Optical Astronomy Observatories in Tucson, Arizona, cautions that more work is needed. In particular, spectroscopic analysis of the objects' emissions would determine their temperature, which could be used to confirm their mass. But Najita says the essential message is believable. "I think these kinds of results show that the process that makes stars can also make things that are substellar," she says.

The objects don't neatly fit any conventional definitions. Brown dwarfs are usually smaller than about 75 Jupiter masses, the minimum size needed to ignite the hydrogen stars need to burn, but larger than 13 Jupiter masses, what's necessary to fuse deuterium and produce a faint glow. By failing to reach this lower limit, the new objects are hard to account for. Most astrophysicists believe brown dwarfs and stars condense directly out of vast seas of tenuous gas known as molecular clouds, whereas planets form in disks of matter swirling around nascent stars. Small lone bodies, however, don't mesh well with either scenario.

Mother lode. More than 100 planetlike objects have been found in a star-forming region called S106.

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Two theories about the origins of planetary objects shed light on the elusive creations but fall short of supplying a complete answer. One proposes that they are ejected from young stellar systems, the other that they form from molecular cloud cores with masses too low to give birth to stars. But Inutsuka says neither idea can account for the large numbers of smaller objects spotted in S106. "I think [Oasa's report] will prove extremely important for pushing the modification of currently accepted theories of star formation," he says.

Motohide Tamura, an astronomer at NAOJ and Oasa's thesis adviser, says that scientists need to spend more time observing these phenomena. "So far, only a very limited number of [star-forming] regions have been observed," he says, too few to conclude just how common the objects are. With the teams planning to use Subaru to investigate other regions, the number of free-floating objects seems certain to grow.

–DENNIS NORMILE

CHINA

Two Honored, Other Prizes Go Unclaimed

BEIJING—China's newest—and by far richest—prize for lifetime scientific achievement was awarded last week to a mathematician and an agronomist. But the gala state celebration on 19 February was dampened by evidence of how far the country's research community still must go to compete globally: First place in two other major categories of scientific achievement went unclaimed after officials decided that no researchers were worthy of the honor.

The winners of the new State Supreme Science and Technology Award, which comes with a 5 million yuan ($600,000) prize, are Wu Wenjun and Yuan Longping. Wu, 82, is a topologist who developed a computer algorithm for solving a collection of polynomials, the equivalent of proving a geometric hypothesis. It is useful in pattern recognition and other computer tasks. Newspaper reports say that he also may have been the first Chinese scientist to own a personal computer.

Yuan, 72, is considered the father of hybrid-rice technology in China and is credited with helping China achieve a threefold boost in rice production over the past 4 decades. He has also amassed a personal fortune by lending his name to a high-tech seed company formed last year, in exchange for equity in the new company.

The awards, conferred by Chinese President Jiang Zemin, were created to highlight outstanding achievement and demonstrate the importance of science in the nation's economic development. Some 90% of the prize money will be plowed back into research at their former work sites—in Wu's case, the Chinese Academy of Sciences' Institute of Mathematics and System Science in Beijing; for Yuan, the Hunan Academy of Agricultural Sciences. The remainder is for their personal use, or as Wu told reporters: "I think that is my own business."

Wu and Yuan were chosen from among 14 finalists to receive what is expected to be an