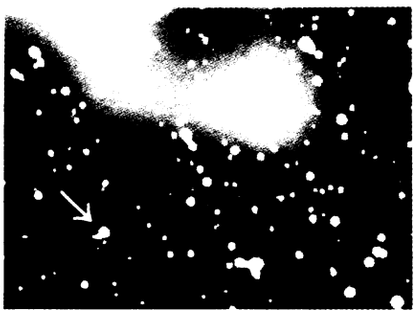
observed young stars in the low-density outskirts of nearby galaxies, including a satellite of the Milky Way known as the Small Magellanic Cloud.

"The potential of this discovery is that by studying star formation in the outer galaxy, where there is a lower abundance of heavy elements, we can learn about starbirth under very different physical conditions than in the solar neighborhood," he says. Finding youthful stars at the edge of our galaxy should allow researchers to study this population up close and in greater detail.

An intriguing finding prompted Vogel and his colleagues to begin their study. Digel and his Harvard-Smithsonian colleague Patrick Thaddeus last year reported evidence for a molecular cloud—a stellar nursery—at the extreme fringes of the Milky Way (SN: 7/4/92, p.13). Figuring that where there's a star-making cloud, there should be stars, Vogel and his colleagues examined the region near the cloud last December using the 1.5-meter telescope on California's Palomar Mountain.



Vogel, de Geus, Gruendl, Digel

The distant star (arrow) sits at Milky Way's edge. Diffuse glow indicates radiation emitted by hydrogen atoms, believed recently ionized by the star.

Rather than looking for a young star directly, the team searched for evidence of its presence: red light emitted by surrounding hydrogen atoms. Hot, young stars ionize hydrogen gas, and the gas radiates red light when its electrons and protons recombine into atoms. After pinpointing this telltale radiation, the team searched for a likely stellar source. They report that a blue supergiant first detected some 20 years ago fits the bill.

Vogel notes that the distance to this hot, young star (no more than a few million years old) had been undetermined when other astronomers first catalogued it in 1974. His team now estimates that the star lies in the plane of the galaxy beyond the visible disk, between 77,000 and 155,000 light-years from the Milky Way's center. The most likely distance is 90,000 light-years.

The study could only detect the most luminous young stars at the galaxy's edge, Vogel says, but more sensitive surveys should find fainter newborns there because a single molecular cloud gives birth to many stars. — *R. Cowen*

Concern grows over expansion of earmarking

In 1985, John Silber, the president of Boston University, justified universities going directly to Congress for financial support by arguing that peer review functioned as an "old-boy" network that deserved to be bypassed because it put most federal support for research into the hands of about 20 institutions (SN: 8/3/85, p.71).

Back then, the practice seemed exceptional. But not anymore. In 1980, Congress earmarked less than $11 million for specific academic projects and set aside none the next year. But in fiscal year (FY) 1992, Congress approved almost $708 million to support 499 such projects. During the past decade, almost $2.5 billion in federal support for academia has skirted traditional merit review, says Rep. George E. Brown Jr. (D-Calif.), chairman of the House Committee on Science, Space, and Technology.

At one time, most earmarks set aside funds for buildings. "But there are more and more instances where [they're] going for research," says Joel Widder, director of legislative affairs for the National Science Foundation. According to Brown's committee, 42 percent of the $708 million earmarked in 1992 supported research and development.

Moreover, it seems these decisions are slipping through the fingers of science's old-boy network into the hands of a different closed circle, that of a few lobbyists and powerful legislators. As a result, just a few institutions reap the rewards of these changes. Out of some 3,600 U.S. colleges and universities, only 170 received these direct federal appropriations in 1992, Brown says.

Early last week, Brown's committee released an interim report on academic earmarks and urged Congress to take steps to prevent the continued expansion of this practice. The committee based its report on figures compiled by the Congressional Research Service and on responses by 50 universities to letters sent by Brown about earmarked projects awarded those institutions.

Several of the institutions receiving large appropriations in fiscal 1992 (see chart) also rank among the top 25 all-time recipients of earmarks. They vary from small schools such as the 1,000-student Wheeling Jesuit College in West Virginia, awarded a total of $29 million, to large universities such as Iowa State University, the leading overall recipient with $91.6 million.

The 170 institutions do not always represent "outsiders" shorted by science's old-boy system, Brown notes. Half of the top 20 recipients of competitively awarded federal research money also have gotten earmarks.

Many of these institutions do so well because "they all have friends in high places," Brown writes.

Two kinds of legislation, and two sets of congressional committees, guide the allocation of funds. Periodically, Congress passes laws proposed by so-called authorizing committees that set budget ceilings for each federal agency. Each year, appropriations committees recommend specific funding amounts — up to that authorized — that Congress then accepts, rejects, or alters.

"The authorizers tend to think that the appropriators have overstepped their bounds," Widder says. The report notes that in FY 1992, 20 states got almost 79 percent of the academic earmarks and that these states have 12 senators and 34 representatives on appropriations committees.

Those individuals can slip unauthorized earmarks into any agency's budget — such as for new hospital buildings in legislation funding the Department of Energy — at the last minute or bury them in reports that accompany a bill. As a result, little discussion about these allocations goes on, says Brown, who urges that site-specific earmarks be banned and that agencies be able to ignore earmarks without fear of political reprisal. — *E. Pennisi*

Top 10 Recipients in FY 1992

Schools	Overall Rank*	Dollars
1. University of Alaska	2	$45,063,000
2. Boston University	10	$29,000,000
3. Michigan State University	13	$23,172,000
4. University of Maryland	23	$22,770,000
5. Wheeling Jesuit College	21	$21,000,000
6. University of Rochester	7	$20,300,000
7. University of West Virginia	5	$19,625,000
8. University of Hawaii	6	$16,941,000
9. Indiana University	17	$13,688,000
10. University of North Dakota	12	$13,681,000

*Rank based on total earmark funding from FY 1980-1992

Chart adapted from Congressional Research Service data