

area," giving astronomers batteries of distant searchlights for probing the layout and makeup of the early universe.

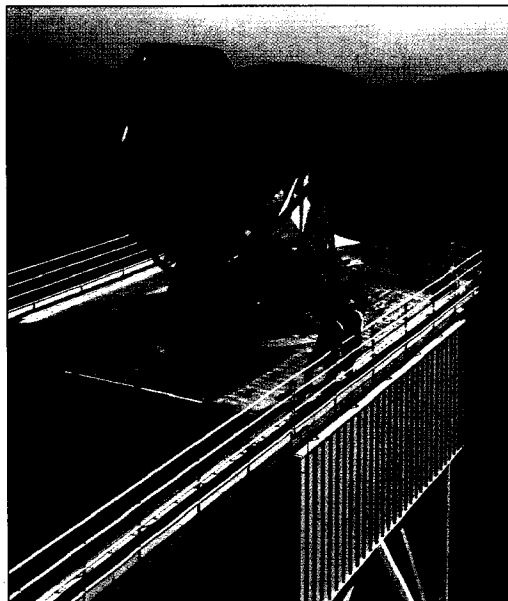
Quasars are not the only quarry. The Sloan survey aims to census about one-quarter of the entire northern sky and selected slices in the south, using an automated telescope at Apache Point Observatory in New Mexico (*Science*, 29 May, p. 1337). From hundreds of millions of celestial objects, special software will cull particularly interesting ones for a follow-up look with the same telescope, which will break their light into spectra, rich in information about the objects' nature and distance. For example, spectra of the million brightest galaxies in the census will determine their "redshift"—a measure of distance. That information will go toward creating a giant three-dimensional map of the sky.

Most of the bright galaxies will be in our neighborhood, cosmically speaking—within a billion light-years or so. But quasars, which appear as bright points of reddish light, remain visible at greater distances, to the very outskirts of the visible universe, and the Sloan organizers hope to find 100,000 of them as well. The telescope's first sweep of the sky, mostly in September, covered just 1% of the area of the final survey. But Sloan collaborators, including Michael Strauss and Xiaohui Fan of Princeton University, have picked out 19 quasar candidates so far by analyzing the five-color images, and follow-up spectra confirmed 12 of them as actual quasars—a 70% success rate.

That far exceeds the 10% success rate typical of quasar hunts, probably because the Sloan's images have more colors than most surveys produce. The farthest of the quasars, at a redshift of 5.00—corresponding roughly to 13 billion light-years away—just edged out the redshift 4.897 quasar reported in 1991 by James Gunn of Princeton University, Donald Schneider of Pennsylvania State University, and Maarten Schmidt of the California Institute of Technology (Caltech). Gunn, however, can take some credit for the new record-holder as well, because he led the team that built the Sloan's sophisticated electronic camera.

Researchers hope to use the thousands of quasars expected from the Sloan as markers of cosmic structure in the early universe and probes of the gases wafting through space over billions of light-years. But they won't start amassing more of them until at least January. Before then, collaborators need to work the kinks out of optics and software and rig the telescope so it can move freely—right now

they rely on Earth's rotation to slew the telescope along the equator. And so far, the astronomers have been taking their follow-up spectra one by one with a nearby 3.5-meter telescope rather than with the Sloan telescope itself, which will gob-



**Night hunter.** The Sloan survey's automated telescope sweeps the sky for galaxies and distant quasars.

ble them up 640 at a time, through holes drilled in pizza-sized aluminum disks.

But the quasar finds—the Sloan's first harvest for science—have other astronomers giving it the thumbs-up. "This is one of the things they wanted to do better than anyone else," says Charles Steidel of Caltech. "It looks very promising."

—JAMES GLANZ

## PEDIATRIC VACCINES

### Gates Launches \$100 Million Initiative

The planet's richest individual is donating a portion of his fortune in hopes of buying some of the world's poorest children a priceless gift—good health. Last week Bill Gates, the chair of Microsoft Corp., gave \$100 million to create the Bill and Melinda Gates Children's Vaccine Program. The program will enlist existing international health organizations in a battle against four diseases through its support of vaccine trials, public education, and new funding mechanisms. "Our goal is to make the vaccines you and I take for granted available to children no matter where they live," Gates said at a press briefing in New York City.

The donation comes from the William H. Gates Foundation and will be administered by a Seattle-based organization called the Program for Appropriate Technology and Health (PATH). The money, to be given over 10 years, will fund efforts to improve delivery of existing vaccines rather than to develop new ones, says Gordon Perkin, president of PATH. In particular, it is aimed at disseminating vaccines proven effective against:

- \* *Haemophilus influenzae* type b (Hib), which causes pneumonia and meningitis;

- \* Rotavirus, which causes severe diarrhea and dehydration;

- \* Hepatitis B, which causes cirrhosis and liver cancer; and

- \* *Streptococcus pneumoniae*, which causes ear infections and pneumonia.

About three-fourths of the money is expected to go to the World Health Organization (WHO), the United Nations Children's Fund (UNICEF), and the International Vaccine Institute (IVI). The fledgling IVI, based in Seoul, Korea, has already received \$250,000 to supplement drug company funding of a study of the distribution of Hib throughout China, Korea, and Vietnam. "The Korean government got us off the ground, the companies helped us start our first project, and now the PATH grant assures that we are expanding," says immunologist Barry Bloom, chair of IVI's board of trustees and incoming dean of the Harvard School of Public Health in Boston.

PATH has assembled an international advisory panel of seven eminent scientists that will meet in March to recommend ground rules for the new program. But Perkin says that two funding priorities are clear: to coordinate cost-effectiveness studies and trials to improve the vaccines' performance in the developing world, and to explore new ways of financing large-scale childhood immunization efforts, such as interest-free loans from the World Bank. "This \$100 million is going to be a catalyst to do the advocacy work, the vaccine trials, and [to improve] the financing mechanisms," says epidemiologist Mark Kane, a WHO veteran who will head the new program.

The Gates program will not pay for the tens of millions of doses that will be needed throughout the world, says Perkin. Even so, says Carol Bellamy, executive director of UNICEF, the donation is certainly welcome. "The bottom line is that this money will keep more children alive."

—DAN FERBER



**Cash injection.** Bill Gates bankrolls vaccine program.

Dan Ferber is a writer in Urbana, Illinois.