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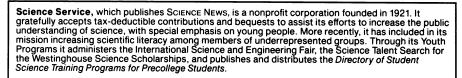
56 Guiding Light

Cover: Air scatters light from a powerful laser beam shooting into the sky. This beam excites atoms in a sodium-rich layer of the atmosphere about 95 kilometers above Earth's surface to create a bright spot of light — an artifical star — that astronomers can use to adjust a telescope's optics to correct for atmospheric turbulence. (Photo: Lawrence Livermore National Laboratory)

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## Letters

### Designing deuterium

The statement that deuterium has "been created only once - during the birth of the universe" is incorrect ("Keck Telescope looks at the Big Bang," SN: 5/28/94, p.349). Deuterium can be created in several ways, each of which has been observed.

Henry E. Heatherly Lafayette, La.

According to Len Cowie of the University of Hawaii, one can make deuterium in the laboratory, but there are no main astrophysical sources of deuterium after the Big Bang. Some people speculate that deuterium might have been formed by supernova explosions, but if so, this amount would be insignificant. - R. Cowen

#### Worldwide shot statistics upheld

I am very skeptical of the EPI's report that 80 percent of the world's children were immunized against six major diseases ("A Shot in Time," SN: 5/28/94, p.344). If the United States musters only 87 percent coverage, how in the world are countries like Bangladesh, India, China, Chad, and the populous Latin American countries getting 80 percent of their children immunized, as stated?

I spent 33 days in rural India on a trip for the U.S. Bureau of Mines. Most of that population, whether child or adult, is nowhere near a medical facility and almost certainly never had a vaccination of anything, let alone the six reported. I strongly suspect that dozens of other countries have the same conditions.

Gordon L. Kinney Collins, Mo.

The Expanded Program on Immunization bases its 80 percent claim on routine reporting of vaccinations carried out in the field or on randomized national surveys. Despite the lack of amenities in many developing countries, says Amie E. Batson, a technical officer with EPI, "an incredibly complex network exists to deliver vaccines to some of the most remote corners of the globe.

Although all 50 states require that children be fully vaccinated before they enter school, many children fail to receive vaccines when they are younger and most vulnerable to disease. A 1992 U.S. survey of children age 19 months to 32 months found that 83 percent had received three doses of DPT, 83 percent had been vaccinated for measles, and only 72 percent had been given all three polio shots. By 1990, more than 80 percent of the developing world's children were being brought in four or five times for vaccinations before their first birthday.

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As a result, Calcutta, Lagos, and Mexico City today have higher rates of immunization of children at ages 1 and 2 than New York City, Washington, D.C., or even the United States as a whole. – D. Christensen

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