such pairings between neutron stars and ordinary stars. Still, he won't disregard the fascinating possibility that PSR J1740-5340 is a cosmic newborn. "It may or may not be knowable," he says. "But they've done very good detective work so far just to find it."

–ROBERT IRION

RADIO ASTRONOMY

Japan and Korea To Link Networks

TOKYO—Japan and Korea are teaming up to create an Asian network of radio telescopes that will match the capabilities of existing arrays in the United States and Europe. Last month scientists from both countries announced their first joint observations using two antennas, the forerunner of what they hope will be a string of 10 dishes operating in unison by 2005. The observations mark a scientific coming of age for Korea in very long baseline interferometry (VLBI), which combines signals from two or more radio antennas into an image equivalent to what would be captured by a single antenna spread over the entire area.

"This is really a big step forward for Korean astronomy," says Se-Hyung Cho, director of the Taeduk Radio Astronomy Observatory, one of two telescopes making the initial observations. "We hope this leads to more opportunities for our community to make important contributions."

In VLBI, the wider the spacing of the antennas, the better the resolution. The United States currently operates the 10-station U.S. Very Long Baseline Array that stretches nearly 13,000 kilometers from Hawaii to the Virgin Islands, and the 18-station European VLBI Network covers an even larger region.

The Asian array, although smaller, is expected to be ideal for investigating silicon monoxide masers, sources of coherent radiation produced when energy from an expanding star excites silicon monoxide molecules within a surrounding dust cloud. These excited molecules release powerful radio waves, just as excited molecules within a laser release coherent light waves. Silicon monoxide masers are believed to eject mass from very old stars.

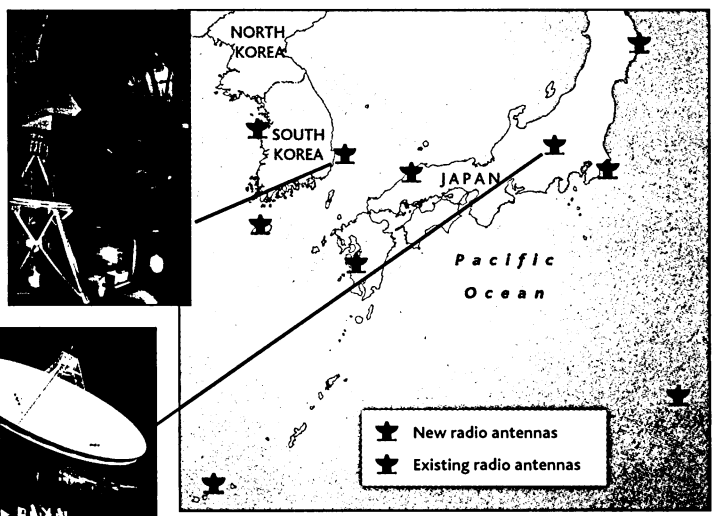
But widely spaced arrays are too powerful to image the entire maser, which are in our galaxy and, thus, relatively close. Katsunori Shibata, a radio astronomer at Japan's National Astronomical Observatory, Mitaka, compares it to training a very powerful telescope on a distant house and seeing only a section of wall instead of an outline of the entire building. "The 1000 kilometers separating Taeduk and Nobeyama is ideal for observing these masers," explains his colleague, Hideyuki Kobayashi. Scientists hope that the observations will shed light on how the masers form and what drives them.

The larger network will incorporate a new array of four, 20-meter antennas scattered throughout Japan, as well as three, 20-meter diameter radio antennas being built in Korea (see map). On its own, the $58 million Japanese array, called VERA (VLBI Exploration of Radio Astrometry) and expected to come online next year, will try to pinpoint the location of masers throughout the Milky Way. In doing so, it will also plot the movement of the galaxy's spiraling arms. The $16 million Korean VLBI Network, to be completed in 2005, hopes to study active galactic nuclei and star-forming regions as well as being part of the larger array.

The Korean and Japanese observatories will also give a boost to the Asia-Pacific Telescope, an informal framework for cooperation among radio observatories throughout the Pacific Rim. "It makes a lot of sense to build in collaborations among regional neighbors as early as possible," says David Jauncey, a radio astronomer at the Australia Telescope National Facility, Canberra, one of 21 observatories in 10 countries that belong to the consortia.

–DENNIS NORMILE

With reporting by Mark Russell in Seoul.



CREDITS: (TOP TO BOTTOM) TRAO; NAO

Asian Array. Japan and Korea will link up new and existing radio telescopes into one instrument for observing masers.

BIOMEDICAL RESEARCH

Tritium Lab to Close After Loss of NIH Funds

BERKELEY, CALIFORNIA—Long a target of local activists, a government-funded tritium labeling facility here is shutting down next month. Federal officials say the 19-year-old facility has outlived its usefulness, but supporters see it as a victim of political pressure founded on scientific ignorance.

The National Tritium Labeling Facility (NTLF) at Lawrence Berkeley National Laboratory develops reagents for biomedical researchers to label molecules with tritium, a radioactive hydrogen isotope used to trace the movements, activities, and binding sites of existing and potential drugs. Local officials have twice passed a resolution urging the government to shut it down for fear that its emissions of tritium gas and tritiated water pose a health hazard, and local Representative Barbara Lee (D–CA) has raised the issue with officials at the National Institutes of Health (NIH). But NIH officials say the facility is safe and that fiscal and scientific shortcomings, not politics, led to its decision to end funding.

"I did not consider the NTLF among our highest priorities in view of ... resources needed for genomics," says Judith Vaitukaitis, director of NIH's National Center for Research Resources (NCRR), which has supported the facility since its inception. "It was never mentioned during our workshops to set priorities for biomedical technology." The NTLF also had become "too much of a service facility for industry," she adds. Figures show that it has provided a total subsidy to users of $97,000 over the last 2 years. Michael Marron, NCRR's director of biomedical technology, says that the primary reasons for closure were low publication rates, inadequate service to NIH grantees, and failure to fill a safety position.

Supporters of the center question that explanation and accuse NIH of caving in to outside pressure. They cite a 1999 NIH review laced with effusive praise that gave the center an exceptional score and say that the subsidy is a small part of a $1-million-a-year budget. "It's an extraordinary example of a bunch of extremely ill-informed and antiscience people destroying a precious scientific lab," says Elmer Grossman, a professor emeritus at the University of California, San Francisco, and chair of Berkeley's Community Environmental Advisory Commission.

"It's a real loss scientifically and an awful event politically."

Marron and Vaitukaitis adamantly deny that they bowed to political pressure. But they admit that NCRR took notice of the political overtones of the conflict with residents during its review of the center's grant. On 30 August 1999, for example, Vaitukaitis wrote Lee that "the peer review process ...

Empty-handed. NTLF's Philip Williams, left, and Hiromi Morimoto will soon lose their jobs when the facility closes.

was modified to address the concerns expressed by the Berkeley community about tritium emissions." That modification consisted of a safety site visit by outside evaluators and a meeting with community activists. "We knew the [perceived emission dangers] weren't significant," says Vaitukaitis, "but to them they were real, and you have to respect that."

Although the safety panel concluded that radiation emission and risks were "extremely small," it also concurred with activists that the lab could better monitor smokestack emissions of tritium, which have decreased 10-fold in the past decade. NIH told center officials to hire a Ph.D.-level health physicist to oversee the work, a condition that NTLF director David Wemmer says he accepted "because they said if you don't agree, you won't get the grant." But the person hired was let go during his 6-month probationary period, and no replacement was found.

In addition, the center "has had a dwindling impact on the biomedical community," says Marron. Wemmer admits that publication rates have fallen since 1999 but attributes it to time spent fighting community activism. "We've been busy going to city council meetings," says facility manager Philip Williams, one of four staffers who will lose their jobs.

Not surprisingly, users praise its importance. "The NTLF has been invaluable in my research, and closing it down will destroy a decade's worth of investment and advancement," wrote Jerome Parness of the University of Medicine and Dentistry of New Jersey in a letter of protest to NIH. Parness is using tritium to understand how the drug dantrolene treats a rare and potentially fatal muscle disorder.

The NTLF's doors will shut on 6 December, a deadline that supporters are desperately trying to forestall. Grossman, who has filed a Freedom of Information Act request to learn more about how the decision was made, says he hopes "we can get enough people enraged at high enough levels." Although community activists believe that NIH's decision marks the end of a long fight to close the facility, they plan to monitor the shutdown and cleanup process. **–JAY WITHGOTT**

Jay Withgott writes from San Francisco.

PRION DISEASES

U.S. Gets Tough Against Chronic Wasting Disease

Veterinary officials in Colorado are anxiously trying to curtail an outbreak of chronic wasting disease (CWD), which affects deer and elk and is related to bovine spongiform encephalopathy (BSE) or "mad cow" disease. After the alarming finding that elk from an infected farm have been shipped to more than a dozen states, some fear that CWD may spread across the United States. In late September, U.S. Department of Agriculture (USDA) Secretary Ann Veneman declared the CWD situation an emergency, a measure that enabled her department to spend $2.6 million in federal funds to kickstart an aggressive eradication campaign.

CWD is one of the transmissible spongiform encephalopathies, such as BSE and variant Creutzfeldt-Jakob disease—the human form of BSE that has now claimed more than 100 lives in the U.K. Currently, there's no evidence that CWD could pose a similar threat. Experiments suggest that it doesn't spread to cattle under natural circumstances, and there's no evidence that humans can get sick from eating infected deer or elk meat (*Science*, 1 June, p. 1641). However, nobody can exclude that possibility either.

But even if it only affects elk and deer, CWD could ruin the elk industry, which raises the animals for their meat and velvety antlers, a popular ingredient in dietary supplements. Already, Canada has closed its borders to U.S. deer and elk. "If this is not dealt with, the industry is doomed," says Wayne Cunningham, the state veterinarian at the Colorado Department of Agriculture (CDA).

Believed to be caused by an aberrant protein called a prion, CWD causes listlessness, emaciation, and eventually death. It is thought to spread through direct contact between animals or through environmental contamination with the prion protein. The disease has been endemic for decades in wild deer and elk populations in northeastern Colorado, southeastern Wyoming, and a small part of neighboring Nebraska. Now, there is concern that infections on elk farms could spread the disease to wild populations of deer and elk anywhere in the United States, dealing a blow to the hunting industry. In Eastern states especially, which have huge populations of white-tailed deer, the disease could take a big toll, says Michael Miller, a veterinarian with the Colorado Department of Natural Resources.

CWD has popped up at 15 different elk farms in Colorado, Montana, Nebraska, Oklahoma, and South Dakota since 1997. Since August, Colorado officials have found CWD in six elk, five of which originated at a single elk ranch in Stoneham. So far, CDA has quarantined nine ranches with ties to that ranch; the more than 1300 elk living there will be killed and tested. (The only way researchers can definitively diagnose the disease is by studying the animal's brain.)

Over the past 5 years, the farm, one of the biggest in the country, has shipped some 160 animals to other parts of Colorado and more than 200 to elk farms in 15 different states as far east as Pennsylvania, says Cunningham. Because the animals can be infected for years without showing any symptoms, all of those are being tracked down to be tested. If found to have CWD, the herds they live in will have to be quarantined as well. Colorado also has imposed a moratorium on elk movements within the state.

The recent outbreaks underscore the need for an eradication program for elk farms, which the USDA has had in the works since 1999, says Lynn Creekmore, a veterinarian with the agency. Currently, farmers often don't get full reimbursement when their herds are confiscated, says Creekmore—which means they have little incentive to report sick animals. Under the

Moribund. Emaciation and drooling are symptoms of chronic wasting disease in elk.

CREDITS: (LEFT TO RIGHT) NTLF; ELIZABETH WILLIAMS/UNIVERSITY OF WYOMING DEPARTMENT OF VETERINARY SCIENCE