ASTRONOMY

Italian Observatories to Form National Institute

NAPLES, ITALY—Small organizations usually resist being subsumed into a larger one. But for astronomers at Italy's 12 observatories—all independent but funded directly by the government—their amalgamation into the new National Institute of Astrophysics (INAF) can't come soon enough. They argue that the current fragmentation of astronomy in Italy is hampering their ability to play in the international big leagues. "The foundation of this national institute has long been a wish of all Italian astronomers. They want to be able to compete at an international level, which was not possible with small entities like the observatories," says Marcello Rodono, director of the Observatory of Catania.

The 12 observatories, which employ about half of Italy's 700 astronomers, control their own budgets, choose their own scientific programs, and hire their own researchers. In addition, Italy boasts eight astronomical research institutes run by the National Research Council (CNR), and several universities have astronomical facilities. Without some form of central body to manage this scattered enterprise, the observatories have found it hard to work together on large national and international research projects. "It was rather difficult to start national projects that would imply big expenses," says Rodono. "With a [national] institute, you can plan the extra money for the years to come and be sure that this will be allocated for the projects."

The government approved the new institute in July and is expected to appoint a president and two board members in November. Four more board members will be elected nationally, two from the observatories and two from universities. At some point, the research ministry may also transfer the CNR's eight astronomy institutes to INAF, says Rodono, who expects that INAF will become fully operational next summer. INAF headquarters will be in Rome, although technical facilities may be located on La Palma in the Canary Islands. The total budget of INAF will be at least $54 million, the sum of the budgets of the 12 observatories.

Massimo Capaccioli, director of the Capodimonte Observatory in Naples, says the new institute should improve the management of projects such as the recently completed Galileo Telescope, the national 3.5-meter telescope on La Palma; the Large Binocular Telescope, two joined 2.84-meter scopes now under construction at the University of Arizona, in which Italy has a 25% share; and a 2.65-meter survey telescope that the Capodimonte Observatory is building with the European Southern Observatory to aid its Very Large Telescope in Chile. INAF may also give a push to plans for Italy to join Spain in the construction of a replica of the Keck 10-meter telescope to be located on La Palma. The next few years will be a "very critical phase," says Giancarlo Setti of the University of Bologna. **–ALEXANDER HELLEMANS**

Alexander Hellemans writes from Naples, Italy.

Under one roof. Star trails above the Observatory of Catania, shown in a time exposure.

EARTHQUAKES

Prediction Claims Stir Greek Controversy

Bucking any scientific consensus can be rough, but insisting that you can predict earthquakes in a quake-prone country like Greece—when practically no one thinks it can be done anywhere—is sure to create a fuss. For almost 2 decades, a group of Greek scientists has claimed they could predict damaging earthquakes by monitoring electrical currents in the ground. Although many Greek colleagues have questioned the scientific rigor of the method (called VAN, after the initials of its inventors), a run of seeming successes in 1995 caught the attention of researchers outside of Greece (*Science*, 10 November 1995, p. 911). Now, after a lull, the VAN scientists are making new claims. They say the ground gave clear warning signs of the 7 September earthquake that struck near Athens, killing 67, and they think they may have picked up signs of another, perhaps larger, temblor in the offing.

These claims are meeting with scorn, especially in the Greek scientific community. "This has nothing to do with seismology or science," says Leonidas Resvanis, director of the Physics Laboratory of the University of Athens. Adds Gerry Chouliaras, a seismologist at the National Observatory of Athens: "There's no scientific reason to make this alarm. I don't believe their 'signals.' I'm not going to believe anything." This rancor has emerged over years of frustration with VAN, explains seismologist Robert Geller of Tokyo University. Outsiders must compare vague predictions made on the basis of ill-defined criteria against the earthquake record, he says, while being denied access to the full VAN observations.

The controversy began in the early 1980s with laboratory experiments conducted by solid state physicist Panayiotis Varotsos of the University of Athens and his colleagues. They found that rock squeezed in the lab produced a transient electrical current just before fracturing. Might it also give off electrical signals before fracturing under stress in Earth's crust, they wondered—that is, during an earthquake?

To find out, they set up what amount to giant voltmeters around Greece: up to several kilometers of wire connected to two electrodes stuck in the ground. Their equipment turned up signals aplenty, including extraneous currents such as radio broadcasts and industrial noise. But once Varotsos and his colleagues thought they could recognize and weed out noise, they identified "seismic electric signals," or SESs, that seemed to precede quakes of all sizes in Greece.

Some seismologists were intrigued, but many objected that any apparent VAN successes were just dumb luck; by making enough predictions, the VAN group was sure to catch a few of the many quakes that strike Greece each year. Unfazed by such objections, Varotsos and his colleagues expanded their monitoring. On 1 and 2 September, a station near Lamia, about 150 kilometers northwest of Athens, recorded the first powerful signal in its 4 years of running, says Varotsos. He and his University of Athens colleagues, physicists Vassilios and Claire Hadjicontis, say they immediately recognized the signal as the SES of a significant forthcoming earthquake.

Disaster foreseen? Some Greek scientists think the deadly Athens quake gave warning before striking, but others doubt it.

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