

Off-World Wide Web

UNDER THE HOOD
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network of inexpensive probes being developed by NASA's Sensor Webs Project (sensorwebs.jpl.nasa.gov) at the Jet Propulsion Laboratory in Pasadena, California. The early prototype pictured here is fashioned from off-the-shelf components and housed in a watertight shell retrofitted from a half-sandwich-sized Tupperware container. Each

We think there's water on other planets, but is there life? The answer may ultimately come from a net-

sensor acts as a node in a wireless network, monitoring the environment for subtle signs of biological activity. Someday dozens of next-generation probes may be dropped from spacecraft or placed by telerobotic rovers. The resulting planetary snapshot would combine the precision of onsite sensing with the wide coverage of a satellite. JPL has already deployed a test network of probes in the diverse microclimates found at the Huntington Botanical Gardens in San Marino, California. Next stop? Antarctica in 2001 or 2002. And then maybe Mars.

When the sun is shining, two solar cells generate up to 30 milliamps of juice to power the probes. The cells are mounted inside a translucent box to protect them from the elements.

Energy from the solar cells is stored in a rechargeable 9-volt battery, providing uninterrupted power through long nights and cloudy days. If the power level drops considerably in inclement weather, the unit "sleeps" until recharged.

The probe's command center is a microcontroller from Microchip Technology. Running proprietary software, the microcontroller correlates data from the sensors and regulates radio communications while keeping a watchful eye on the probe's power supply and performance.

