



**dorkbot-sea**  
people doing strange things with  
electricity

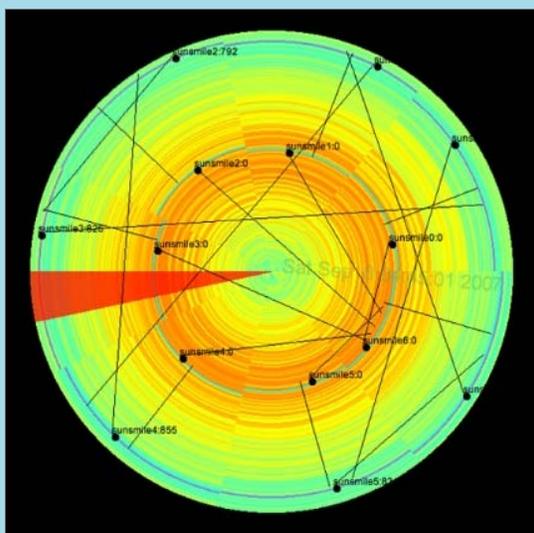
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# PEOPLE DOING *strange things* WITH ELECTRICITY

## exhibiting artists

**artist:** Cross Current Resonance Transducer (Douglas Repetto and LoVid)

**title:** Bonding Energy



**materials:** Web-based installation with projection, Java Applet visualizing light levels from 7 locations in New York state over the past week (Custom solar monitors in remote locations include Acrylic, Cast Plastic, Solar Panels, Electronics, and Aluminum)

**dimensions:** 6' x 6'

**date:** 2007

**description:** "Bonding Energy" is focused on electromagnetic radiation (solar energy). It reflects our growing interest in not only collecting and analyzing environmental data, but also in using the signals we investigate as potential renewable energy sources.

Bonding Energy is an electrogeography and data visualization project inspired by ideas associated with micro-credit loans and distributed computing applications such as SETI@home. It presents a model system for distributed microenergy generation in which geographically dispersed devices collaborate to analyze a large scale phenomenon (light levels) using solar panels. In a microenergy system these panels would also harvest energy from the light they measure. Bonding Energy's live graphical representation of luminance readings suggests the utopian possibility that many such small local energy collecting devices could produce a greater effect than the sum of their parts, helping contribute to energy independence.

Bonding Energy consists of a set of "Sunsmile" devices that measure solar energy from seven sites around New York State. We have invited a group of geographically distributed media arts institutions in New York State to participate in Bonding Energy by hosting one of the Sunsmile devices that measure and send solar data to a central server.

In keeping with our general CCRT working method, the physical form of the devices was determined by our interpretation of a previous generation of solar data manually collected in our studios each day during January 2007. The 31 data points were used to cut acrylic rings for the bodies and to create molds for the cast plastic bases. Each Sunsmile also holds a printed circuit board and has a small solar panel sitting on top.

Every ten minutes each Sunsmile device takes a reading from its solar panel and sends the data to the [turbulence.org](http://turbulence.org) server. When a viewer visits Bonding Energy they are presented with a live visualization of the data collected from the seven devices. Data from each device is represented by a wedge in an animated circle. The colors in the wedges change as the data from the previous seven days is played back; oranges represent low light levels, yellows medium, and blues indicate high ones. Highlighted bands indicate maximum and minimum data values, and a rotating line of text displays the date and time of the data being displayed in the center of the circle at each moment. Shapes overlaid on the animation represent changing data relationships between and within the Sunsmile devices.

*statement:* We are interested in the processes of interpretation and evaluation that are inherent in human attempts to understand natural phenomena. Inspired by the story of the pulsar's discovery, we develop systems for monitoring, manipulating, and interpreting natural signals such as electromagnetic radiation, tidal patterns, ambient temperature gradients, wind, and barometric pressure modulations. Our interest is not so much in presenting the phenomena themselves, but rather in exploring the often flawed but revealing interpretations of those phenomena that ultimately lead to greater human understanding and scientific progress. Our investigation has expanded from an initial focus, which emphasized using standard environmental sensors, to an interest in building our own environmental monitoring devices.

*credits:* Bonding Energy is a 2007 commission of New Radio and Performing Arts, Inc., (aka Ether-Ore) for its Turbulence web site. It was made possible with funding from the Murray G. and Beatrice H. Sherman Charitable Trust.

Bonding Energy was developed at in an AIRtime residency at free103point9 Wave Farm, studios at the Columbia University Computer Music Center, and the Eyebeam Education Studio and R & D Open Lab.

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The seven Sunsmile devices are hosted at sites around New York State thanks to the generosity of:

0. Computer Music Center, Columbia University, Harlem; Host: Douglas Repetto
1. Study Center, free103point9 Wave Farm, Acra. Hosts: Galen Joseph-Hunter and Tom Roe
2. The Redhouse Arts Center, Syracuse; Host: Natalia Mount
3. Artist in Residence Studio, Experimental Television Center, Owego; Host: Sherry Miller Hocking
4. iEAR Studios, Rensselaer Polytechnic Institute, Troy; Host: Tomie Hahn
5. Visual Studies, University of Buffalo, Buffalo; Host: Stephanie Rothenberg
6. Department of Art and Art History, Colgate University, Hamilton; Host: Cary Peppermint

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