Institute of Modern Art, Brisbane, Australia.
5 June - 31 July 2010

Catalogue Essay

Brilliant Noise and Black Rain

Douglas Kahn

Brilliant Noise (2006) and *Black Rain* (2009) were created by the prolific British duo, Ruth Jarman and Joe Gerhardt, known as Semiconductor. They call them 'moving-image works' to account for their different screen, installation, and performance incarnations. These works belong to a long tradition of astronomy in the arts. Both arose from Semiconductor's association with the Space Sciences Laboratory (SSL) at University of California, Berkeley, as did their well-known film, *Magnetic Movie* (2007).

Using data from heliospheric imagers aboard the STEREO satellites, *Black Rain* twists, turns, and plots through the space between the Sun and the Earth known as the heliosphere. About one-and-a-half minutes in, a comet tail fans out in the solar wind and blows across the screen. Then, a distant Comet Encke, a naturally-occurring Icarus, approaches the Sun and a coronal mass ejection blows off its tail. By contrast, *Brilliant Noise* looks directly upon the Sun, the star in our backyard, using images from older satellite and ground-based solar observatories.

Trafficking the energies that form and sustain life on Earth, the Sun captures our attention each day and projects its spherical cinema on the moon each night. Even the fossil fuels that tilt the energy balance against human habitation are little more than stored transmissions of sunlight, recording devices for photosynthesis. 'There never is no light', says artist James Turrell. 'As human beings, we do drink light in the form of vitamin D through the skin, so we are literally light eaters. We orientate to light and have problems if we don't have it—psychological as well as physical.'[1]We also emit stray photons from our bodies as 'body glimmer', related to the circadian processes produced by our daily diet of Sun.

Because we cannot look at the Sun directly, images of it are compelling. Like staring into the white light of the numinous, looking into the Sun means the end of looking. (Likewise, certain images of it are blinded; the coronagraph uses a black circle to create an artificial eclipse to assist viewing solar activity.) People are astonished when they first see images of the solar surface, sunspots, flares, or coronal mass ejections. It happened to Semiconductor at SSL. 'Early on in our fellowship we came across one still image of what turned out to be the Sun. We were fascinated by this image and wondered why we hadn't seen anything like it before.' So too others: 'When we show people *Brilliant Noise*, they ask “Did you make that?”, and we say that's the Sun, and they say, “That's the Sun!” People haven't seen it. That's what we thought when we first saw the photograph. It's this massive powerful thing.'

What we currently call an 'image' sits at the end of mathematical, engineering, and computational manipulation. Once thought to be a one-to-one analogue, the image is, in fact, little more than an interpretive default with modes of sensing and representation intervening at each point. Presumptions are designed into devices and information conditioned by social exigencies. Signals and data stream through cascades of transduction, and energy states pass from one to the next. Solar activity travels through the intervening space via scientific instruments to the receiving station, through data conversion and modelling, audiovisual display and venue, physiology and cultural constructs. Not even the Sun can survive unscathed but still some Sun shines through. Thus, the image is an incremental analogue.

Contemporary astronomical images represent phenomena otherwise invisible to the human senses and are thus open to aesthetic intervention. Images from the Hubble telescope colour-code data to create an impossible jewel-encrusted universe, as though the Cosmic Egg was from Faberge. Semiconductor associate this cleaned-up approach with glossy magazines and, indeed, Hubble books filled with distant galaxies add gravitas to coffee tables around the world. By contrast, the static, glitches, anomalies, and artefacts in *Brilliant Noise* and *Black Rain* reinstate the presence of

human observation through exposing technology's contingency and frailty, especially when confronting natural forces on such a grand scale. In so doing, Semiconductor destroy the God's-eye view of the universe. However, they are equally dedicated to beauty—anyone seeing*Brilliant Noise* and *Black Rain* knows this—but they find it in the expressiveness of raw data, the possibilities of images that evolve and erupt in dynamic phenomenal and informational events. (Art historian Albert Boime showed that Vincent van Gogh painted *The Starry Night* (1889) from astronomical imagery and a desire to recuperate raw data.) To engage contemporary beauty is to understand the energetic nature of information that courses through circuits and animates codes.

In this way, the energies sensed among the scientific instruments sourced in *Brilliant Noise* and*Black Rain* flow through the data. The Sun becomes a large generator of information, adjustable in the brightness and hotness of its screened or projected image. It feels good to bask in its glow, to get out from under the shadow of 'locust swarms of print, which already eclipse the Sun of what city dwellers take for intellect, [which] will grow thicker with each succeeding year', forming clouds of digital dust.[2]

As the instruments are exposed to solar winds and weather, cosmic rays hit the charge-coupled device (CCD) in the digital camera aboard the Transition Region and Coronal Explorer (TRACE) satellite. This weather—which Semiconductor call a 'rain of snow'—accounts for Brilliant Noise's static fields and bursts of visual noise. Just as winds sounded the Aeolian harp, the natural flow of solar winds are particularised in image, data, and sound.

The physicist Robert Millikan once called cosmic rays the birth cries of atoms; the composer Dane Rudhyar imagined the crying coursing through a 'sonal energy' pervading the universe; and the writer Henry Miller heard them, appropriately enough, in the pulverising percussion of Edgar Varese's *Ionisation*. The sound in *Brilliant Noise* is 'derived from solar natural radio . . . controlled via digitally sampling the intensity of the brightness of the image. The sound is intrinsically born from the image, creating a symphony by the Sun.' While straight solar radio would be heard as a near-uniform hiss, Semiconductor emulates forces on the solar surface, flares, coronal mass ejections, and cosmic rays by generating sounds through the informational dynamics of visual events.

Instead of the rain of snow, *Black Rain*'s 'rain' refers to solar radiation falling out through black space. Semiconductor associate it with the fallout precipitating from the weather created by the bombs at Hiroshima and Nagasaki (and, some *hibakusha* thought they were witnessing a new type of oil bomb). Semiconductor's intuition is correct; sixteen hours after Hiroshima, President Harry Truman marvelled at how science unlocked the infinitesimal atom, bringing the Sun to Earth for the first time in history. This image was familiar to Hans Bethe, head of the theoretical division of the Manhattan Project, who first theorised nucleosynthesis at the centre of the Sun.

From the vantage point of the Sun, the Earth is an insignificant dot against a black sky. Only a tiny fraction of its radiating energies (4.5 x 10-10; i.e., between the nano and pico scale) attend to us. However, we don't need the vast vacuum of space to get humble or nihilistic; any day will do. No matter how insignificant Earth is, the Sun is too close for comfort. It has been brought closer not in the big apocalyptic bang but in the slow burn of photosynthesis stored underground, the black rain of an oil bomb. Because we are everywhere dependent and blinded, images of the Sun have uncanny power, and Semiconductor have created uncanny images.

1. Alison Sarah Jacques, 'There Never Is No Light . . . Even When All the Light Is Gone, You Can Still Sense Light: Interview with James Turrell', in *James Turrell: Perceptual Cells*, ed. Jiri Svestka (Stuttgart: Edition Cantz, 1992), 61–3.

2. Walter Benjamin, *One-way Street* (1928).