

# Semiconductor

## Surveying the technological sublime

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'In nature everything happens all at once.' During our many encounters with scientists, they have often said this to us, yet humankind only has the ability to model parts of nature. Science offers a universal language for exploring the world but a limited viewpoint of nature that also differs from our direct experiences of it. This conflict isn't opposed to the balance of nature and how it orders itself; through its difference we are able to explore who we are as humans. In our artworks we are interested in exploring this dichotomy, between the material nature of the physical world and how we experience and engage with it through the lens of science and technology.

Our experiences of the natural physical world are limited by our sense perceptions. The tools and processes of science can extend these but they come with distinct signatures that manifest as kinds of noise in the resulting science products: cosmic rays in visual solar data, colours associated with scientific interpretation, limitations and viewpoints imposed by technologies, and so on. In our work we embrace these artefacts and employ them as devices to emphasise a human or subjective viewpoint and as a way to question how science mediates nature. Solar physicist Janet Luhmann once told us that 'science is a human invention; it is nature that is real'. We felt this gave us a licence to start interrogating science and search for our place in the larger universe. Are we experiencing nature, the language of science or a combination of both?

Installed at Carriageworks for the 21st Biennale of Sydney, our artwork *Earthworks* (2016) is a five-channel computer-generated animation that immerses audiences in a phenomenological experience of landscape formation through the devices of science and technology that are used to study it. To produce the visual language of the work, we adopted the technique of analogue modelling and created our own digital animatable version. This process applied pressure and motion to layers of multicoloured real-world particles to simulate seismic and tectonic forces, revealing the constant flux of natural landscapes over thousands of years.

Installed at the Art Gallery of New South Wales for the Biennale, *Where Shapes Come From* (2016) is a two-channel moving image work which considers the atomic scale by which nature is translated through science. The work follows a scientist going about their daily work in the mineral sciences laboratory at the Smithsonian National Museum of Natural History in Washington. As the scientist cuts up meteorites and prepares mineral samples for study, mineralogist Jeff Post is heard describing the atomic formation of matter as if happening before our eyes, transcending time and space.

The computer-generated animations in *Where Shapes Come From* are inspired by the various techniques that scientists use to visually document their experiments, calculations and ideas of how matter exists on an atomic scale. By introducing these visual languages to the lab, we want to consider them as part of our everyday, reflect on how extraordinary they seem in light of this and, by combining them with the limits of verbal language, see what matter becomes: is it close to how we experience it? Does it matter? We are not trying to explain matter on an atomic scale but pick apart the languages that are used to do this. This process helps us to reflect on science as a process and ask questions of it.

With both works we want to celebrate the revelatory capacities of modern science to create a kind of technological sublime, using these techniques and processes to produce stunning animations. But at the same time we invite viewers to consider the philosophical problems posed by such technologically mediated observations of suprasensible phenomena.

Semiconductor's *Where Shapes Come From* (2016) is on display at the Art Gallery of New South Wales; *Earthworks* (2016) is on view at Carriageworks; both as part of the 21st Biennale of Sydney from 16 March until 11 June 2018.





Top:  
Semiconductor, *Where Shapes Come From*, 2016, installation view, Phoenix, Leicester, 2017; two-channel HD, 9 mins duration; co-commissioned by EDP Foundation and Phoenix, Leicester; image courtesy the artists; photo: Semiconductor

Bottom:  
Semiconductor, *Earthworks*, 2016, installation view, SónarPLANTA, Barcelona, 2016; five-channel computer-generated animation with four-channel surround sound, 11:20 mins duration; commissioned by SónarPLANTA; produced by Advanced Music; image courtesy the artists; photo: Semiconductor