

The Geo_lo_gi_c Im_agi_na_ti_on

Lucas van der Velden
& Arie Altena

We have been studying the sky and the stars since at least Sumerian times. When we look up into the sky, we are looking back in time. Our most advanced telescopes detect radiation from the birth of the universe – the birth of time. We have ventured far into outer space. Voyager 1, dispatched by NASA in 1977, has left our solar system, entered interstellar space, and at a distance of approximately 19.5 billion kilometres from the Sun, is still transmitting data to Earth. But how much do we actually know about the ground beneath our feet? We probably know more about the Moon than about the deep sea, more about the skies than about what is underground.

Inspired by geosciences, *The Geologic Imagination* zooms in on planet Earth. A fundamental starting point for this book is the thesis that we live in a new geological epoch: the Anthropocene. Human activity has irreversibly changed the composition of the atmosphere, the oceans, and even the Earth's crust. In the Anthropocene humans have become a force on a geologic scale. Scientists have estimated, for instance, that humans move more sediment, sand and rocks annually than rivers, erosion and other nonhuman processes. In this book, Matthew Coolidge of the Center for Land Use Interpretation even states that 'every molecule on the surface of the Earth has been affected by humans'.

Another powerful example of radical human influence is the Aral Sea on the border between Kazakhstan and Uzbekistan. Before 1989 this was one of the four largest lakes in the world. Since the 1960s the lake has been shrinking because the rivers that fed it were diverted for irrigation projects. It split into four smaller lakes, and since 2014 the complete south-eastern basin had dried up. Most of what was the Aral Sea just 30 years ago is now the Aralkum desert.

The electromagnetic footprint of human activity is also enormous. Suppose we were equipped with the right senses and sensors, and looked at Earth from outer space. What we would see would resemble a giant Christmas tree, a planet that is brightly 'lit-up' with not only enormous amounts of visible light, but also with electromagnetic radiation ranging from radio waves to wireless telecom frequencies.

The consequence of the thesis of the Anthropocene is that the emphasis is no longer on a world defined by human history. The perspective has shifted to forces that act on timescales beyond the perceivable. This shift is also marked by changes in the images

of Earth. At the end of the 1960s the colour photos of Earth taken during the Apollo missions made such an impact that they are thought to have spawned a new ecological consciousness, simply because we could see Earth from outer space. Now we can look at Earth from space at any time of the day on our communication devices. We can log into the livestream of the International Space Station, travel around the Earth in 90 minutes and see the sun rise twice above the planet's curved edge.

All of this challenges us to rethink our attachments to the world, and our concepts of nature, culture and ecology. How do we conceive of the world? How do we understand the systems and processes of nature, and our intentions and interactions with the planet?

This book brings together different perspectives from the arts, philosophy, science and technology studies, geography, design, and other fields. Rather than presenting a single unified statement, it offers an overview of approaches and practices. Several contributions in *The Geologic Imagination* are the fruit of the first edition of the *Dark Ecology* project, initiated by Sonic Acts and Norwegian curator Hilde Methi. *Dark Ecology* is a three-year art, research and commissioning project in the Barents Region in Northern Norway and Northwest Russia. In October 2014 a group of artists and researchers travelled to the Norwegian border town Kirkenes and the Russian industrial towns Nickel and Zapolyarny, in Murmansk Oblast, for a week-long programme of lectures, presentations of commissioned works, workshops, concerts, and explorations of the area. The project is informed by Timothy Morton's idea that ecology does not privilege the human, and is not something beautiful, but rather something dark. It demands that we think about our intimate interconnections with, for instance, snowflakes and plankton, but also with radiation and iron ore. The effects of global warming and the need to rethink concepts of nature and ecology are relevant anywhere in the world, but they are especially pertinent in the Barents Region with its Arctic nature, industrial pollution and open-pit mining.

The book opens with photographs made by Marijn de Jong during his visit to Kirkenes, Nickel, Zapolyarny, and Prirechny in October 2014. In the first essay of the book Douglas Kahn reinterprets the Icarus myth in the light of global warming. Interviewed by Julian Ross, Kodwo Eshun discusses two of The

Otolith Group's films, *The Radiant* about the Fukushima disaster, and *Medium Earth* about sensing earthquakes. The Center for Land Use Interpretation contributes a visual essay on nuclear landfills in the US, complemented by an interview with Matthew Coolidge explaining the Center's motivations. Historian Dipesh Chakrabarty discusses the moods of the Anthropocene with Liesbeth Koot. Jamie Kruse and Elizabeth Ellsworth contribute a visual reflection on living in the Anthropocene. In his essay 'Poetry and Bookkeeping', Michael Welland takes up the theme of the geologic imagination in science and poetry. Kurt Hentschläger discusses his recent work *Measure* with Mirna Belina. Carsten Seiffarth asked Mexican sound artist Mario de Vega about the use of electromagnetic radiation and infrasound in his installations.

The Geologic Imagination also includes Timothy Morton's keynote lecture for the *Dark Ecology* event, 'Human Thought at Earth Magnitude', in which he outlines what the consequences are when we think about events at the magnitude of the Earth. 'Robotic Arms, Crabs and Algos' by Femke Herregraven is about her commissioned *Dark Ecology* research into a possible landing point for a new undersea cable near Murmansk that will carry global financial data. Raviv Ganchrow's text is an investigation of infrasound, and reflects on his site-specific sound installation *Long-Wave Synthesis* that he is developing in Kirkenes. Sociologist Noortje Marres talks about how things are equipped to speak up. Tim Maughan had a conversation with Liam Young during their expedition on a container ship to key spots in our global economy. Paul Bogard's contribution is about light pollution and accepting darkness as something positive. Mirna Belina's piece looks at the redefinition of landscape in a selection of recent and classic experimental films. It is followed by a visual impression by Karl Lemieux and BJ Nilsen of their travels in the Barents Region. The USB device that comes with this book contains BJ Nilsen's new composition *unearthed*, based on field recordings made in Kirkenes and Bjørnevatn in Finnmark, Norway; and Nickel, Zapolyarny, Prirechny in Murmansk Oblast, Russia. We are extremely grateful to the authors and artists for their contributions.

This book explores a world of long timescales, slow shifts and dark ecology. It asks what happens in the ground beneath our feet, and looks at how unknown territories can be documented in meaningful ways. The contributions examine how the changes and transformations

that occur at Earth magnitude and on a geological scale challenge our imagination and reshape our cultural conceptions. They ask how these transformations become something humans can feel, touch, experience and understand. What ways do artists develop to help us experience these transformations? How can we imagine the slow transformations that we are part of, how do they affect us culturally and emotionally? In that sense this book is an attempt to attune to a conception of the world that is implied by the Anthropocene, taking into account timescales far beyond human history.

Ultimately, both *Dark Ecology* and *The Geologic Imagination* are an attempt to imagine what it means to live in the Anthropocene, in a world where climate change – a catastrophe for humans – is irreversible.