

Lithic Elements (Pilbara Series)

Almost all the work in this exhibition along with the exhibition itself, the first for STEAMM Studios, came about through an invitation extended by Darren Dougan, director of the Big Questions Institute, to artist Helga Groves. Dougan knew of Groves' keen interest in stromatolites, ancient life forms whose fossilized remains are found in various locations around the world.

At Dougan's invitation Groves joined an expedition to the Pilbara in August 2022 led by University of New South Wales geologist and astrobiologist, Professor Martin Van Kranendonk. The Pilbara is home to the oldest rocks on earth and rich in fossilized stromatolites which are among the planet's first photosynthesizers. Comprising bacterial communities that grew in a microbial mat, stromatolites deposited layers of sand and calcium carbonate. The photosynthetic action of these "growing stones" transformed earth's atmosphere by dramatically increasing the amount of oxygen, enabling more complex life forms to evolve. As the most ancient, best-preserved signs of life on earth, stromatolites are of tremendous interest to scientists studying the origins of earthly life as well as the possibility of life elsewhere in the universe.

Inspired by the fossils' appearance and their meaning, as well as certain forms of twentieth century abstraction, Groves' work displays a sense of awed attention to detail. We see this in the exhibition in a work made before the Pilbara expedition, *Patterns of interaction (Banded Iron Formation Series)* 2018. Groves translates a geological process that occurred around 240 million years ago, meticulously arranging bands of colour across three canvases to create a pronounced sense of sedimentation and the slow, slow accretion of time itself.

In her work prompted by the Pilbara expedition, Groves uses a range of media and materials, noting the broad extent of the fossilized stromatolites in the Pilbara along with their varying ages across the vastness of geological time.

She recalls the expedition quite specifically in collages of pigment prints on acetate and map pins. *Field Map #1 (Pilbara Series)*, *Field Map #2 (Pilbara Series)*, and *Micro Universe (Pilbara Series) #1* all show a range of fossilized Pilbara stromatolites of different ages. The *Field Maps* acknowledge the personal map of stromatolite locations made by Professor Van Kranendonk,

repeating the overlapping format of such guides. The metallic pins used—their colors blending with the prints' Pilbara tones—are tactile reminders of how the maps are made and used in the field while the pins' durable materiality recalls the minerals contained within the region's fossils. The translucent pigment prints overlap each other on their horizontal and vertical edges so that the topographical lines or patterns in the images of the fossilized stromatolites appear to unite with or flow into the next image, suggesting an interconnected terrain of very distant time.

Micro Universe (Pilbara Series) #1, another collage of pigment prints on acetate, uses photomicrographs of highly magnified, ultra-fine slices taken from fossilized stromatolites, revealing the unique fine-scale textures, composition and mineral elements within the fossil layers. In this collage of overlapping prints Groves creates a central band of blended darker tones and patterns, an effect suggesting the universe's deep space and deep time, a macrocosmic view playing off the microcosmic detail of the prints themselves. Although the pins here appear camouflaged by the prints, their subtle reveal at different angles indicates the fossils' mineral elements.

Groves layers etched Perspex—a technique new to her practice- to create a sculpture that operates more abstractly. *Lithic Elements (Pilbara Series)* repeats and reverses a photomicrograph of a highly magnified stromatolite fossil around 3.5 billion years old. Groves drew the image and this drawing was then digitally etched onto clear Perspex, repeated nine times in a grid format. The image's wavelike pattern, multiplied, gives form to the dynamic nature of ancient geophysical processes, reanimating it in a sense. Underneath, a layer of dark grey Perspex is edged with Pilbara iron oxide orange, like a frame. The work is installed on a plinth so that it is viewed from above, precisely the pose adopted by Groves when examining the fossilized stromatolites embedded in rocks on the Pilbara expedition.

From Shallow Waters #2 is based on a younger stromatolite specimen approximately 5,000 years old from Western Australia's Shark Bay that Groves saw in the Western Australian Museum immediately after the 2022 expedition.

Laser cut Perspex layers here suggest processes of sedimentation and the work's blue base recalls the shallow marine conditions in which so-called modern stromatolites grow. (Shark Bay is still home to living stromatolites today.) Groves calls this work “an abstract version of the real thing.”

The animation *Earth Time* and accompanying stills operate in a very different visual register with their painstakingly detailed drawings of stromatolites whose

age is almost beyond our understanding. *Earth Time (24 animation stills) #1* comprises 24 drawings of a drill core sample from the 3.48 billion year old Dresser Formation in the Pilbara. The sample, taken from deep below the earth's surface, was cut in half the better to reveal the layered traces of fossilized stromatolites within. Groves details these layers as they appear in twenty four tiny changes of position as the sample rotates 180 degrees, from front to back. A younger Pilbara fossil, 2.72 billion years is the subject of *Earth Time (24 animation stills) #2*; the drawings slowly reveal the fossil's undulating features evolving as it too is turned from front to back. The resulting animation, which comprises both sets of stills, shows the two samples turning, alive to Groves' hand and our gaze in a movement she describes as "interpreting their own evolution."

Rendering these water-born ancient rocks, Groves uses the same kind of scrutiny that a geologist might employ. Her work, with its careful transcription, attentive details and imaginative translation is the fruit of long slow looking. It asks viewers to do the same.

Ingrid Periz 2023