

UNKNOWN PROSPECT

EXHIBIT CATALOG: *BODY, PIGMENT, SWATCH*

INTRODUCTION

Unknown Prospect is a particular place on a map, but also a body of work surveying so-called "public lands" through Ochre pigments, design research, and printmaking. *Unknown Prospect* is an iterative atlas of mining sites and their geological memory as told through color. My print work and architectural training in documents/drawing have led to an interest in maps and atlases as products of information, communication, narrative, and world-making.

My design process begins in the field, in active participation with Ochres. I assemble raw materials, or 'Ochre bodies', as design research practice in earth materiality and color. Ochre bodies are later processed in the studio to produce mineral pigments used in various products of design. Currently, I'm investigating Ochres in combination with letterpress printmaking. Prints are made on a Vandercook No. 3 press in my studio. I use various sources of information to generate photopolymer plates for printing — analog drawings, GIS maps, digital photography, USGS data/images, and images generated from analysis on a Scanning Electron Microscope. My work distills experience at landscape scale into products at body, print, and book scale.

This exhibit is assembled according to the ontology of my Ochre practice as organized by original Ochre bodies from various mining sites and their pigment and swatch extensions. These extensions are used in print and digital works exploring alternative past and future narratives. I wonder if these products can lead to design ethics and practices that prioritize the relation between human and more-than-human. As an alternative to conventional, colonial mapping practices in the United States, these works are emergent with observations from experience, facts derived and measured by technology, and multiplicities generated by Ochre on the page.

The sites I visit up and down the Colorado Plateau are stolen in settler-colonial terms as mines, prospects, claims, and sorted as "public land" — but these lands are Indigenous territories of Ute, Paiute, Shoshone, Timpanogos, Goshute, Dine, Ute Mountain Ute, Zuni, and Hopi.

OCHRE

The term *ochre* has several meanings — a color, a material, a yellow or a red. Ochres are mineral pigment, yet I also conceive of Ochre as terrestrial being, with the memory of iron throughout geological time. Many traditions name additional earths as Ochre but I am interested in iron oxides. They can be found anywhere, as iron is the most common element on earth by mass, and the fourth most abundant element in the earth's crust.

I understand Ochres to have agency, not by merit of their communication in human terms, but by their very existence as more-than-human beings who have travelled the universe to transform in the very making of our planet. They re-present geological time through various dimensions of form and hue in the manner described by Eduardo Kohn as he illuminates "the way forests think." Iron is always in a state of becoming as it cycles through "geo" and "bio" in our terrestrial systems — becoming red, becoming blood, becoming rock, becoming dust. It moves effortlessly between human and non-human bodies and structures.

Iron has set a multiplicity of stories in motion. It is from iron that industry was born. For iron, extraction grinds on. Through iron, people shift borders and cross seas. Each Ochre body I meet is a confluence of histories — so-called natural histories, state histories, my own histories. Attempting to know Ochre reveals the many worlds in each site.

EXTENSION

Ochres occur in the earth in plural forms, from rock to the finest of clay dust, as solid or in solution. In my research practice I organize Ochre beings as body, pigment, or swatch. The Ochre bodies I present here are fragments of iron beings assembled from washes or tailings piles. By grinding, erosion is quickened and bodies are reduced to a pigment extension of iron. When pigment is swatched — that is, combined with binder and applied to a substrate — its agency in hue is extended. These extensions offer additional dimensions to understand our worlds beyond Cartesian limits,

from the birth of ancient stars to the material earth below our feet.

In this exhibit, each extension of Ochre is concomitant with particular sites and their multiple histories and intersections:

Volume One: Body focuses on the East Tintic Mining district which I first visited by chance on an early Covid-lock-down-drive with my family. Tintic, the district, is second only to Bingham for the greatest mineral yields in the state. Research into the area reveals entanglements of what Marisol de la Cadena calls the "anthropo-not-seen" — which "mentions existents that are within a historically formulated hegemonic condition of impossibility: they simply cannot be—therefore they are not-seen, not-heard, not-felt, not-known." (De la Cadena 2019)

Volume Two: Pigment presents a selection of Ochre pigments assembled from 19 field visits to various sites associated with mining throughout Utah over the past three years. I'm currently preparing a digital catalog on the OmekaS platform hosted by the Marriott Library where the public will be able to navigate related Ochre bodies, pigments, swatches, and the resulting products of design in *Unknown Prospect*. My long-term goal is to create a global, open-source pigment archive and supporting metadata language for this inter-disciplinary field of research.

Volume Three: Swatch is dedicated to the San Rafael Swell, an anticline pushed up 60 million years ago during the Laramide Orogeny. It measures roughly 64 km wide and 121 km long. The reef surrounding "the Swell" is perforated with adits and claims. Temple Mountain campground was once a booming Uranium town and gateway to the miles of roads built for mining and grazing which now mostly serve a more recent extractive industry in the state: recreation.

MINING

I am captivated by mining in the American West for several reasons. To honor my Cretan-American community and our immigrant



Ochre bodies and pigments from the San Rafael Swell.

ancestors is to learn their early stories and keep their sacrifice front of mind. I arrive here at the bottom of an ancient sea from multiple migrations, some willing, some forced. But also, there is a nostalgic romance in abandoned sites and disintegrating structures. A kind of beauty resides in the strictly utilitarian building vernacular and mundane artifacts left out in the sun. I am alarmed, however, by our human capacity to reshape the very form of our planet, how quickly we undo millions and billions of years.

Ochres have led me to a long and ongoing reading of the USGS and its many surveys, maps, and professional papers. I have a love/hate relationship with geologists publishing maps over a century ago. I'm obsessed with the effort and poetry in carefully describing detail upon detail of rock and mineral across the globe — less so the translation of these observational poems into data accounting of wealth and "prospect." I admire each line and articulation engraved and printed with craft — less so the power to marginalize and erase as each map executes colonial violence.

DESIGN

If you believe, like I do, that there are infinite possible design solutions to every question, then it follows that there would be infinite possibilities elsewhere... in economic models, human expression, ways of being or living, or loving.

I suppose these works are each a broadcast by and through Ochre, in different forms to multiple dimensions. As pigment tamata, Ochre becomes agent for petition and promise. As swatches Ochre becomes a technology for communication. Each exploring various dimensions of material color. In *The Stellar Corpse Atlas*, Ochre illustrates an allegory of "wilderness" in the West, except I don't believe there is any such thing as wilderness. I'm not the first to argue that the concept of wilderness in the United States has been constructed to justify the violent dispossession and erasure of Indigenous people.

"Resources" are material made anonymous, supposedly pristine, unused and waiting to be claimed. Beyond surveying mineral resources and their market value, these works organize a paradigm for further research into the unknown prospect of complex historical narratives, human and more-than-human relations, and cultural dynamics underlying materials and products of design.

Historic image of the Temple Mountain, Marriott Library archives.

VOLUME ONE: BODY

The Stellar Corpse Atlas of the so-called East Tintic Mining District 2021

Title page and seven maps printed on cotton rag on the Vandercook No. 3 using rubber based ink on photopolymer plates. Ochre pigments in gum arabic. Folio cover is Duo book cloth, birch.

Ochre bodies are assembled from tailings at the so-called Tintic Mining District. They sit on iron nails and pins retrieved from the foreshore of the River Thames.

VOLUME TWO: PIGMENT

Ochre Tamata 2021

Traditional Gesso, oak, brass, borosilicate glass vials, and cotton string. Ochre pigments ground from bodies assembled at various mining sites throughout the Colorado Plateau. Images of the San Rafael Swell, Tintic Mountains, and Red Canyon, are printed on cotton rag on the Vandercook no. 3 using rubber based ink on photopolymer plates.

τάμα, pl. *τάματα* [tamata]: n. a vow. From Ancient Greek: *τάγμα* [táigma] something which has been ordered or arranged. Tama are a form of votive offering or ex-voto used in the Greek Orthodox Church, but tama have been offered to the gods and supernatural forces since ancient times.

"... once, as I went past, I drew a sign at a point in space, just so I could find it again two hundred million years later, when we went by the next time around." — *A Sign in Space, Cosmicomics; Italo Calvino*

VOLUME THREE: SWATCH

Temple Mountain Dispatch 2021

Ochre transmission in binary code from the Temple Mountain Mining District.

Temple Mountain Dispatch Stills 2021

Printed on cotton rag on the Vandercook No. 3 using rubber based ink on a photopolymer plate of an archive image of the historic mining district from 1918. Swatches are Ochre pigment from the site in gum arabic.

Ochre bodies and respective pigments from the Temple Mountain and adjacent mining districts in the San Rafael Swell.

Iron oxide, steel wire, and iron filings were all used in the first experiments for the magnetic recording of information. The development of digital technology relied on iron oxides for magnetic storage. Data was transcribed in binary code, in which a series of ones (1) and zeros (0) translated to text and numbers.



G78 (343) Temple Mountain, San Rafael Swell. LaPlata, Chinle, Shinarump, Moenkopi. Emery County, Utah, June 1918.



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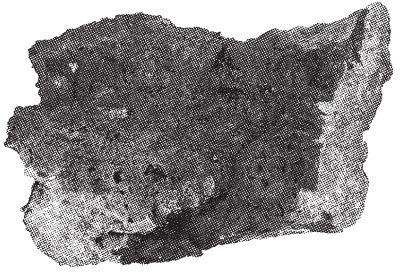
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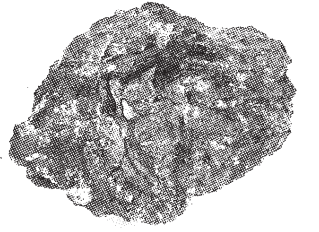
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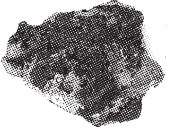
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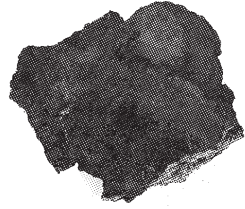
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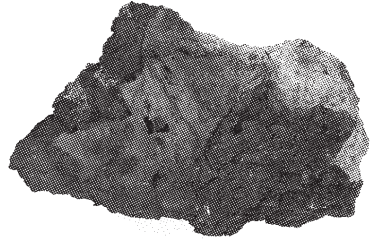
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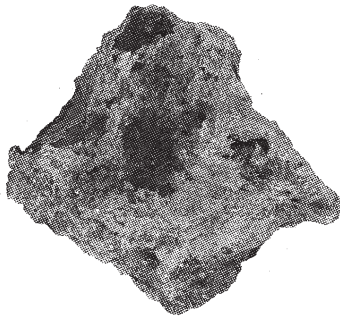
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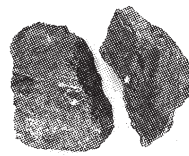
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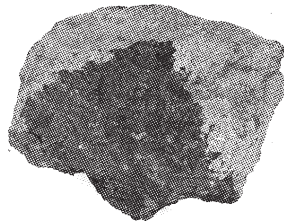
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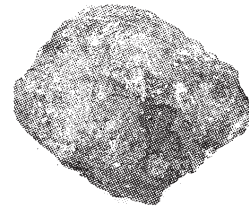
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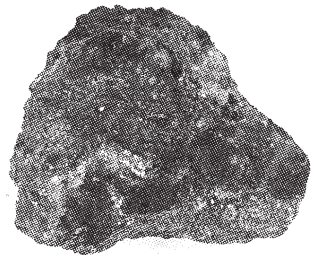
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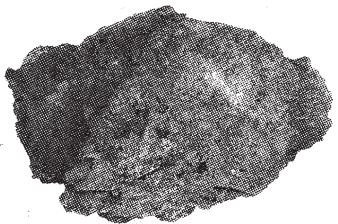
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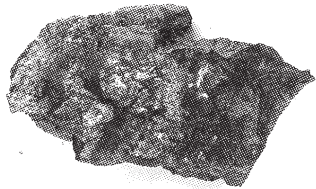
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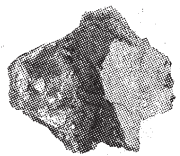
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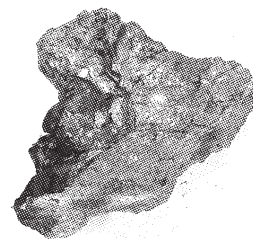
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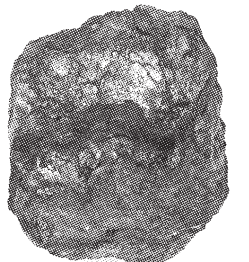
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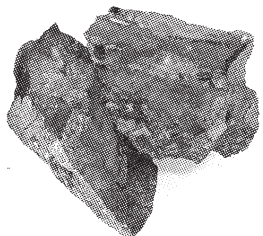
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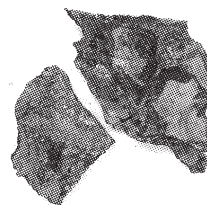
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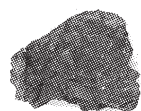
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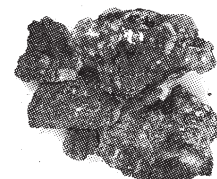
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THE STELLAR CORPSE ATLAS OF THE SO-CALLED EAST TINTIC MINING DISTRICT

Plate I: Stars + Supernova

Iron is born of ancient stars. Exploded in supernova, dust is sent across the universe to assemble as earth.¹ Stellar corpses make our blood.

Tintic —iron, comes into being.

Plate II: The Great Oxygenation

Slowly, over time, ferrophagic hunger in vast iron oceans excreted oxygen.² Stellar bodies become proto-bodies, become iron bodies — banded in the earth’s crust.

Tintic —color, is transformed.

Plate III: Geology

Sediments dreaming at the bottom of deep seas³ are thrust to the sky for erosion⁴ to waste at the surface. Fissures flow forth and erect.⁵ Mountains are made and then water⁶ trickles, seeps, rises. To break bonds and forge alliances between mineral beings raised by volcanoes.

Tintic —mountains, are born.

Plate IV: Ochre Bodies

Color is the voice⁷ of stellar corpses. Witness of story from beginning to end. Ochre bodies⁸ are multiple agents,⁹ infinitely shaping worldly dimensions.

Tintic —Ochre, is recognized.

Plate V: Ancestral Territories

Ferrophagic siblings grew arms and legs.¹⁰ It took billions of years but they became quite dexterous. In the modern era new strata are born of sapient capacities.¹¹

Tintic —valley, is in relationship.

Plate VI: Resistance

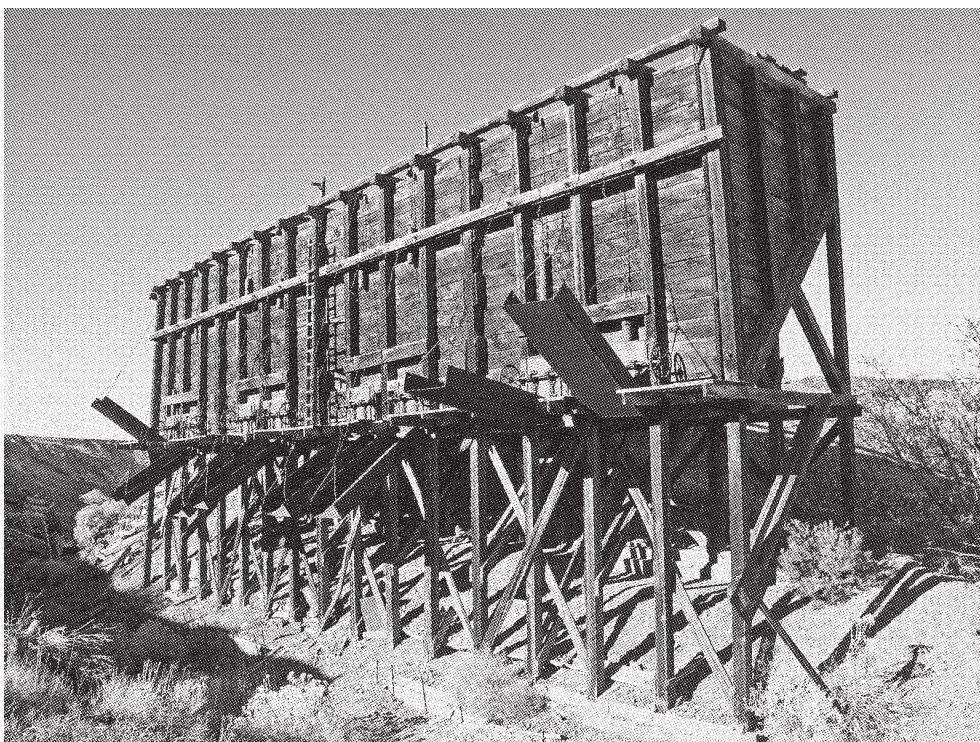
Indigenous stewards resisted colonial invasion, imperial attempts; to be criminalized and slandered in so-called historic texts.¹² Pioneers murdered and plundered, laid human and non-human to waste.¹³ They lied then; they lie now.

Tintic —warrior, is maligned.

Plate VII: Extraction

The US Geological Survey accomplishes its total and complete conversion of earth beings into cash money through products like the MRDS.¹⁴ It carefully monitors the national stockpile of material wealth.

Tintic —beings, are commodified.



Mining structure at the Tintic Mining District.

DESCRIPTION

The Tintic Mining district is located 60 miles southwest of Salt Lake City at the eastern most edge of the Basin and Range. The district is named for the East Tintic Mountains, which in turn are named for Chief Tintic (1820–1858), a resistance leader of the Timpanogos who retreated to the mountains after losing in battle to the Mormon invasion of his ancestral territory. The region including so-called Utah Lake, Utah Valley and the adjacent Goshen, Tintic, and Cedar Valleys, is the ancestral territory of Timpanogos, Ute, Paiute and Shoshone.

In 1849 the Mormons invaded Timpanogos territory to establish Fort Utah. The Mormon settlers interfered with Indigenous practices of land management in order to establish their own grazing and agricultural practices. They restricted access and caused decline in the resources local Indigenous groups depended on. The Mormon settlers decimated hunting game, diverted water, stole lands, over-fished the lake, and introduced disease. The Mormon strategy, explicitly led by Brigham Young, was to let the

Indigenous people starve to death in the second winter following pioneer settlement in the valley.

Timpanogos did everything they could to survive the violent invasion of their lands, but were eventually outnumbered by the Mormons and Federal Officers. After the so-called Tintic War, the Federal Government intervened and removed any remaining Indigenous people from their homeland in the valley. Tintic retreated to the mountains and was never captured. After his death in 1858 the Mormons abducted his only daughter. She would have been 12 years old when the first prospectors laid claims in the so-called Tintic Mining District.

Established in 1869, the district is the second most productive mining district in Utah. Supposedly, a man named George Rust found silver in the East Tintic Mountains. The historic record of Rust’s initial find is scant. Most accounts refer to his “discovery” as accidental, but there are several historic records that note he was prospecting known Indigenous mining sources. Activity in the district has varied, but it has been in production at some level since 1869 to the present.

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ILLUSTRATION REFERENCES:

Title Page: Geological Map of the Tintic Mining District; Professional Paper 107, Plate IV

Plate I: Photomicrographs of Ores; Professional Paper 107, Plate XXVI Mosaic image of the Crab Nebula; NASA, ESA, J. Hester and A. Loll (Arizona State University) Topography of East Tintic Mining District; Megan Petitt

Plate II: Photomicrographs of Ores; Professional Paper 107, Plate XXVI Topography of East Tintic Mining District; Megan Petitt

Plate III: Structure Sections Along Lines A-A', B-B', C-C', D-D', on Plate I, Geologic Map of Tintic Quadrangle, Utah; Professional Paper 107,

Plate II Photomicrographs of Ores; Professional Paper 107, Plate XXVI

Plate IV: Topography of East Tintic Mining District; Megan Petitt Digital photograph of a tailings pile at the Tintic Mining District, October 27, 2021

Plate V: Topography of East Tintic Mining District; Megan Petitt Images generated on the Scanning Electron Microscope at the Utah Nanolab Fig. 26. East Tintic Mountains. Above: 1911 [Loughlin 4]. Below: 1995.; Creque, Jeffrey A., "An Ecological History of Tintic Valley, Juab County, Utah"

Plate VII: Figure 32. Section showing Silveropolis shoot, Mammoth mine; Professional Paper 107 Table, Page 108 — Quantity and value of ore sold or treated in Tintic district, 1869-1916, and total metals recovered; Professional Paper 107 View showing open cut of Eureka Hill Mine and principal northeast and northwest faults in vicinity. Professional Paper 107, Plate XVII

In 1879 the United States Geological Survey (USGS) was established as a government agency in the United States Department of the Interior. Today, the center of activity for the USGS continues to be the surveying and mapping of “resources.” The USGS first published Special Folio 65 on the Tintic District in 1900, following with Professional Paper 107 in 1919. Since these two initial reports, there have been numerous surveys and professional papers describing the research, geology, and “productivity” of the district.

In Tintic Folio 65, geologist George Otis Smith, writes a detailed speculation of the geological formation of the Tintic Mountains in four major phases. It begins with Paleozoic sedimentation in a deep ancient sea 541–252 million years ago, followed by uplift and erosion in the Mesozoic 252–65 million years ago. The mountain range was “rejuvenated” by volcanic activity as Tertiary rhyolitic lavas were followed by andesitic flows 66–2.6 million years ago. Finally, alluvial and lacustrine deposits were eroded during the Pleistocene 2.6 million–11,700 years ago.

All of this geologic activity moved and shifted elements in various strata and formations to create the precious “commodities” later sought by ambitious miners, including iron ore. The iron, which originated in ancient stars across the universe, was exploded in supernova to dust that formed the Earth 4.5 billion years ago. This original iron, as well as additional space iron our planet picks up from the surrounding universe, is a critical element to life on our planet in what scientists refer to as the “Iron Cycle”. This iron formed pyrite in the Tintic Mountains which slowly combined with oxygen in the rising ground water to create iron oxides: limonite, hematite, and goethite. Today, sage brush and juniper cover an entire mountain of Ochre, born of stellar corpses and assembled over millions of years.

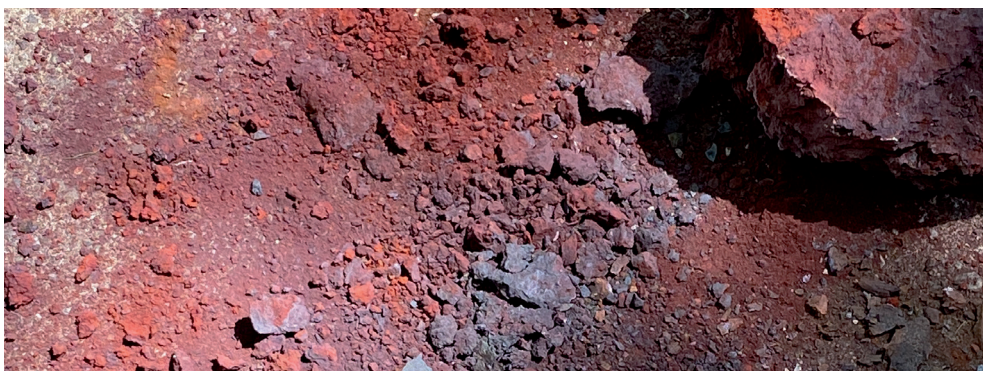
Iron was not always red, however. Before the Great Oxygenation Event an estimated 2.4–2.2 billion years ago, Iron was held in solution in great green oceans feeding bacteria

that survived on the abundant element. These early terrestrial beings excreted oxygen, slowly over millions of years, which combined with the iron to form iron oxide. In waters across the planet, early earthly iron turned from green to red. Bands and spots of green leave memories of water tables in strata across the Utah desert where water is now so scarce that mere *drops* are considered abundant.

Each map presented here is only a beginning, a prologue, a point and a line towards further unraveling of past, present, and future. At Tintic, multiple worlds unfold human stratifications intersecting mineral strata. Cartesian notions of time and space, nature or culture, are inadequate to reconcile the plural universes within our earthly landscapes. To navigate multiplicity, we must engage new epistemological tools and return to knowledge embedded in relationship between human and non-human. In the Stellar Corpse Atlas, unknown prospects of Tintic are cataloged in print — by design as an act of making, through Ochre as material agent.



Digging Ochre bodies out of a tailings pile at Tintic. Photograph by Megan Petitt.



Elpitha D. Tsoutsounakis (she/her) is a Cretan American designer, printer, and educator based in so-called Salt Lake City, Utah. She is assistant professor and founding faculty in the Multi-disciplinary Design program at the University of Utah, where she teaches design studios, research methods, and visual strategy. She completed her BS in architecture at the University of Utah and her master’s in architecture at the University of Texas at Austin. Her creative practice with Ochre engages issues of design ethics, materiality, ecofeminism, and the human relationship to the more-than-human. @elpitha | Elpitha.studio

Megan Petitt (she/her) is a Multi-Disciplinary Design student studying at the University of Utah. Having been a Teaching Assistant for Sophomore Product Design Studios and Design History Theory, Megan finds the words put to an object as an opportunity to practice a design process that culminates in “research as product.” Graduating in the spring of 2022, Megan hopes to expand upon said language and vocabulary assigned to a fixed set of designed artifacts as a mechanism for developing her research practice. @meganpetitt

Kevin Howard (he/him) is a designer based in Salt Lake City, Utah. He is a recent graduate of the University of Utah, where he received his BS in Multi-disciplinary Design. While his individual practice is forever shifting in focus, he is currently interested in the ecological and political contexts surrounding the themes of extraction, production, and materiality. @kv.hwr | kevinhoward.myportfolio.com

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