Halophilic

Christine Lorenz

These photographs are acts of engagement with the nonhuman world, in forms that reflect the entanglement of the organic and the synthetic. In the *Halophilic 2* series, I use polarized light to illuminate salt crystals, chasing color effects that activate the imagination. The colors come from the interaction of light and plastic: layers of various disposable, transparent plastics are put to use as retarders, standing between the crystals and the light source. As a result, the salt and plastic collaborate in refraction to create shimmering constellations and uncanny, gravity-defying spaces.

In our time, salt and plastic are everywhere humans are, and most of the places where we are not. These are materials that have thoroughly permeated the physical earth, enmeshing all its creatures. As familiar and close at hand as salt is, imagery of it abounds in cultural expression, from the enigmatic to the mundane. Plastics have become as inevitable as salt, and nowhere near as benign. What kind of poetics do we have for a world that is infused with plastics at every level? What kinds of stories could possibly fit the world we are creating now?

I spend a lot of time with macro photography and the perceptual scale shifts it creates: the sense of finding yourself absorbed in something that had previously seemed ordinary, and the particular ways that it changes your own sense of how you occupy space. Think of the difference between how you feel looking out across the open space of a football stadium versus how it feels to bend down to tie a child's shoe, or the difference between looking up at a ceiling fresco and looking down at an illuminated manuscript. Our senses transition into differently scaled worlds. As we visually enter them, our sense of space expands or contracts.

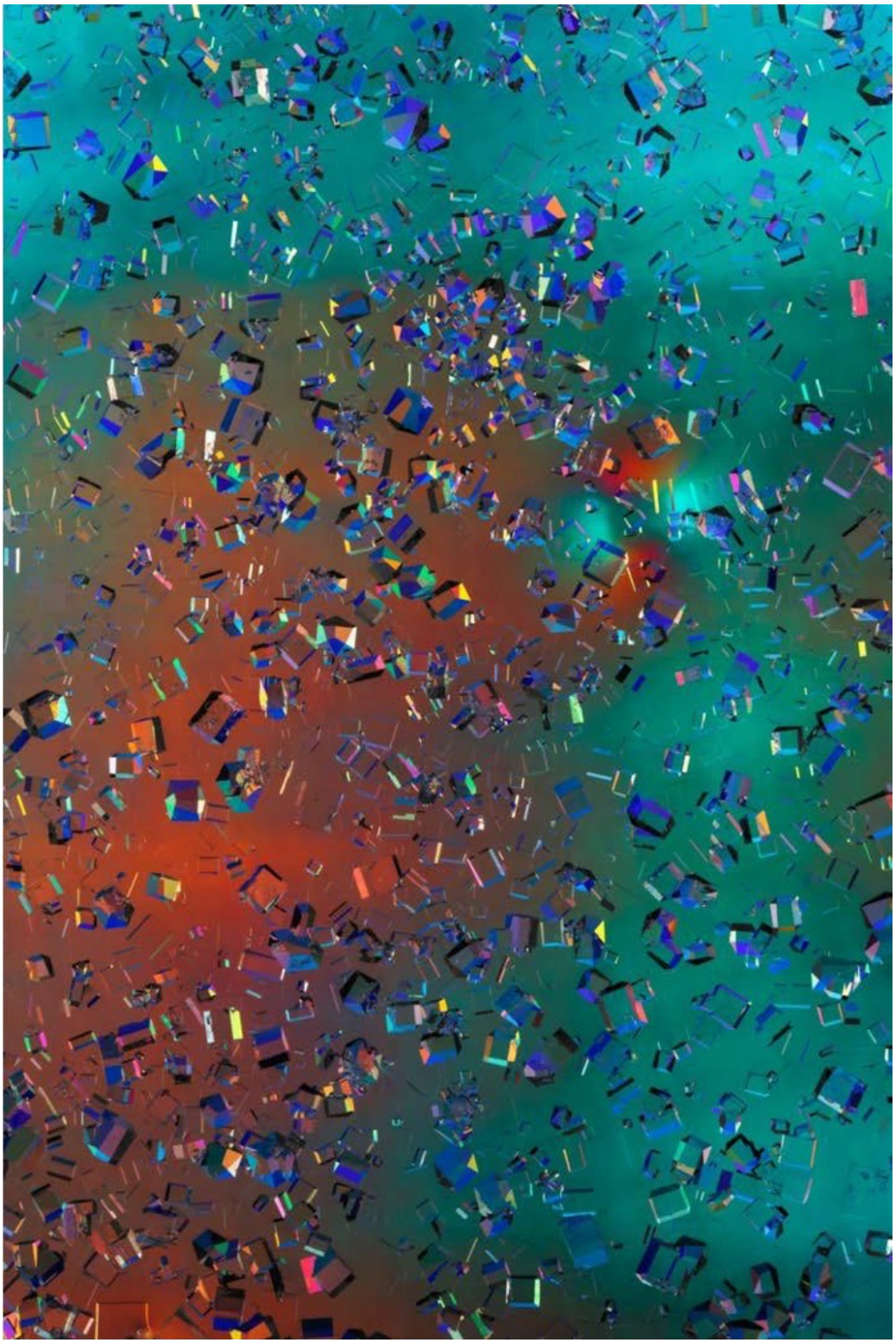

Figure 1 Christine Lorenz, Halophilic 2-1344*, 2022. Courtesy of the artist*

Figure 2 Christine Lorenz, Halophilic 2-1330*, 2022. Courtesy of the artist.*

Contemplation of the vast cosmos can make everything we do seem insignificant; so can the domain of the electron microscope. Something different happens when our spatial reorientation transpires on a scale that is just a few steps bigger or smaller than the familiar. A broader view opens to us—maybe one with surprising details, maybe with a new sense of openness—but it does not feel quite so alien. Rather, it feels like a new part of the world that was already our own, and the span that we extend ourselves into opens a little farther.

I started working with salt crystals some years ago, as part of an effort to help one of my kids with a science experiment. They had been following the familiar directions, trying to grow a crystal using a glass of saline solution, a pencil, and a string. Nothing was happening, and we were running out of time. We started trying different ways to get the salt to crystallize faster, and at one point we put splashes of the solution on a dark pan in a low oven. This worked. I already had my macro gear handy (I had been spending time shooting bits of toy packaging) and could not resist photographing the results. The salt formations began to look like galaxies and alien topographies. I started spending time cultivating crystals, to pursue more of these distinctive forms.

The process brought one surprise after another, with each step giving me a better sense of how the mineral functions in the world. It became less like a science project and more like gardening. It came to feel like there was a kind of give-and-take involved: something like what Donna Haraway has described as making string figures with nonhuman kin. *In Staying with the Trouble: Making Kin with the Chthulucene*, for example, the string figure becomes a way to envision the generative interplay among human and nonhuman species, life-forms, and intelligences.[1]
The string figure reflects an ongoing tension among multiple participants, tracing specific actions of passing and holding. In the practice of cultivating and photographing the salt crystals, each photograph becomes a trace of an ongoing interaction, rather than simply a document of a previously existing form.

Beyond the simple wonder of the macro world, I came to see salt as a substance with a kind of life of its own. Its drive to crystallize is under pressure from different factors in its environment. Fluctuating temperatures, an occasional jostle, particulate in the solution, changes in humidity—any number of things will thwart a crystal's movement toward geometric precision. Its forms are always temporary ones, which often bear traces of what led to that point. At any moment, they can dissolve and vanish from our sight, perhaps moving on to crystallize again, perhaps to recombine and become part of another form entirely.

It is easy to imagine how the wealth of allegorical associations with this material could have begun in these sorts of observations over time. Salt is freighted with significance, for example, in depth psychology, which finds underlying human

Figure 3 Christine Lorenz, Halophilic 2-1349*, 2022. Courtesy of the artist.*

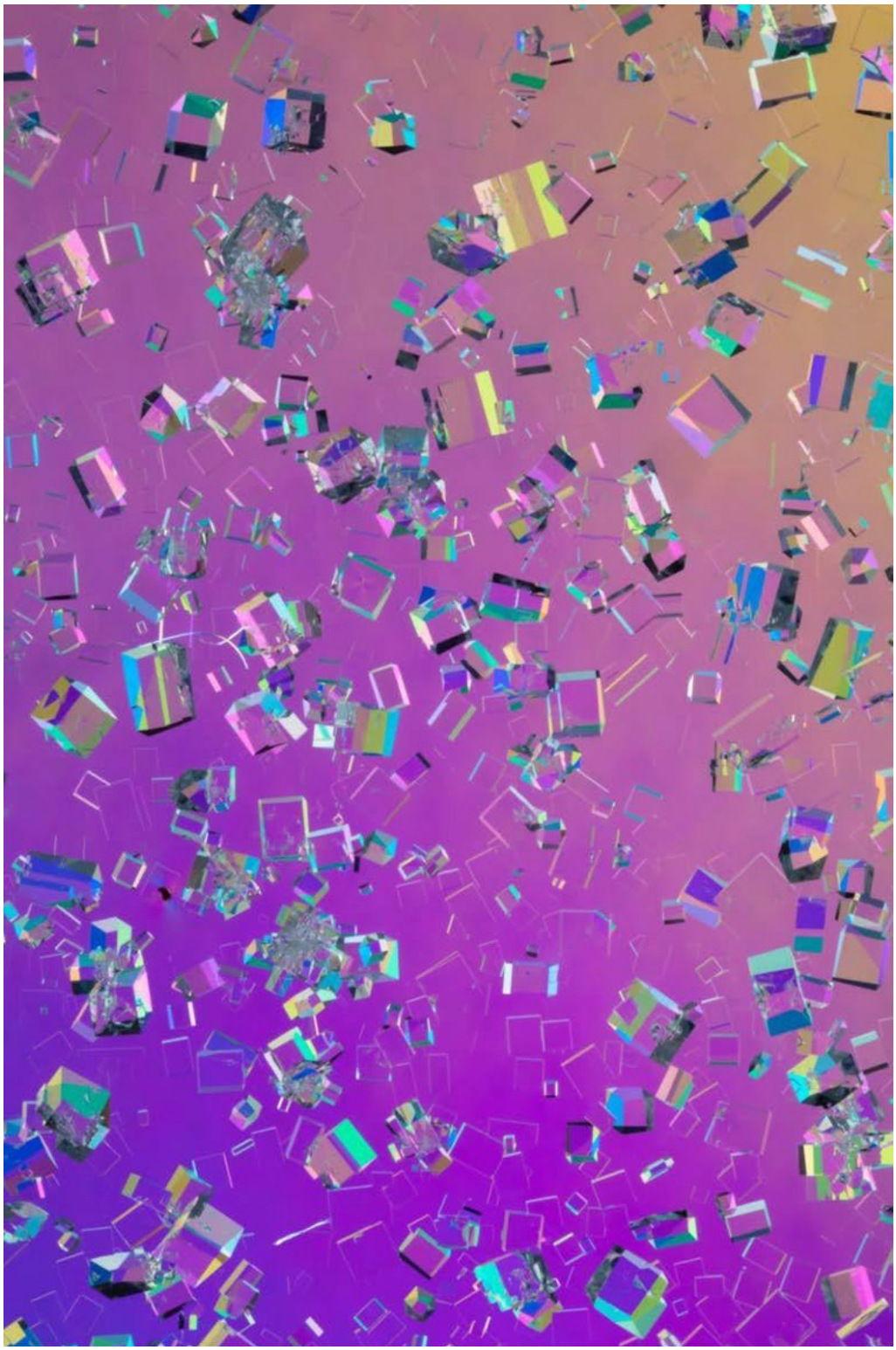

Figure 4 Christine Lorenz, Halophilic 2-1392*, 2022. Courtesy of the artist.*

purpose in the narratives handed down from scripture, folklore, and alchemy. Readers interested in this approach will find much to chew on in Stanton Marlan's collection *Salt and the Alchemical Soul*.[2] Marlan, a practicing psychoanalyst, brought together a series of essays that trace a tortuous route of symbolism and association through Western, Islamic, and medieval philosophy, ultimately synthesized in archetypal psychology. The centerpiece of his collection is drawn from the writings of none other than Carl Jung, in an essay titled "Salt: The Arcane Substance." His work with this subject resists quick summary but moves circuitously toward a sense of how salt can function in this particular approach to analysis. "In philosophical alchemy, [it is] a cosmic principle"[3] that evokes deep-rooted creative endeavor, drawing from shadow and moonlight the possibility of expressive color. Diagramming its associations to a set of archetypes, he explains that

> apart from its lunar wetness and its terrestrial nature, the most outstanding qualities of salt are bitterness and wisdom. . . . The factor common to both, however incommensurable they may seem, is, psychologically, the function of feeling. Tears, sorrow and disappointment are bitter, but wisdom is the comforter in all psychic suffering. Indeed, bitterness and wisdom form a pair of alternatives: where there is bitterness wisdom is lacking, and where wisdom is there can be no bitterness.[4]

Salt, he continues, is "the carrier of this fateful alternative," a bridge that allows the person to bring insight and feeling together, to cultivate wisdom from the bitterness of suffering.[5] The ability to employ visual forms to express emotion becomes an essential component of the subject's analytic process. This is just a glimpse of the role of salt in this system of archetypes. While it can take a deliberate effort to break from its gravitational pull, it is worthwhile to look at the vortex of the things that salt can mean and has meant, the volumes that have been written and the ideological alignments that they foster. The many varieties of salt's significance evoke the functional, physical presence of salt in premodern life: its connections to the sea, its value in seasoning and preserving food, and its crucial role in sustaining human health. The role of salt in the articulation of abstract thought begins to look like another dimension of its usefulness: it becomes an instrument in a process of making meaning, offering people a way to articulate profound things that otherwise have no physical form.

In the commodity-driven culture of the twenty-first century, it is safe to say that an everyday experience of salt is far removed from its esoteric significance. It seems equally detached from its presence as a mineral in the earth. By the time

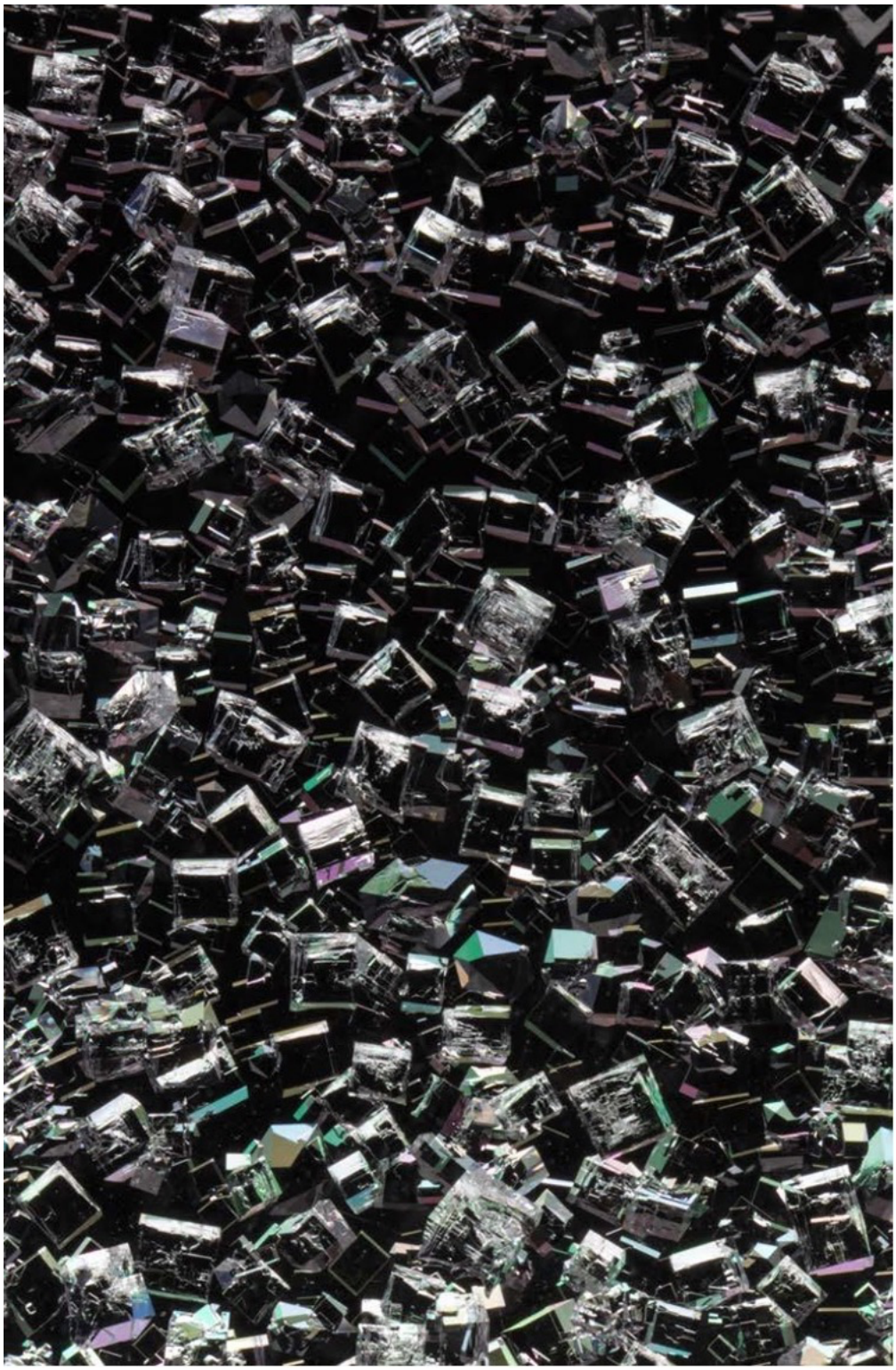

Figure 5 Christine Lorenz, Halophilic 2-1330*, 2022. Courtesy of the artist.*

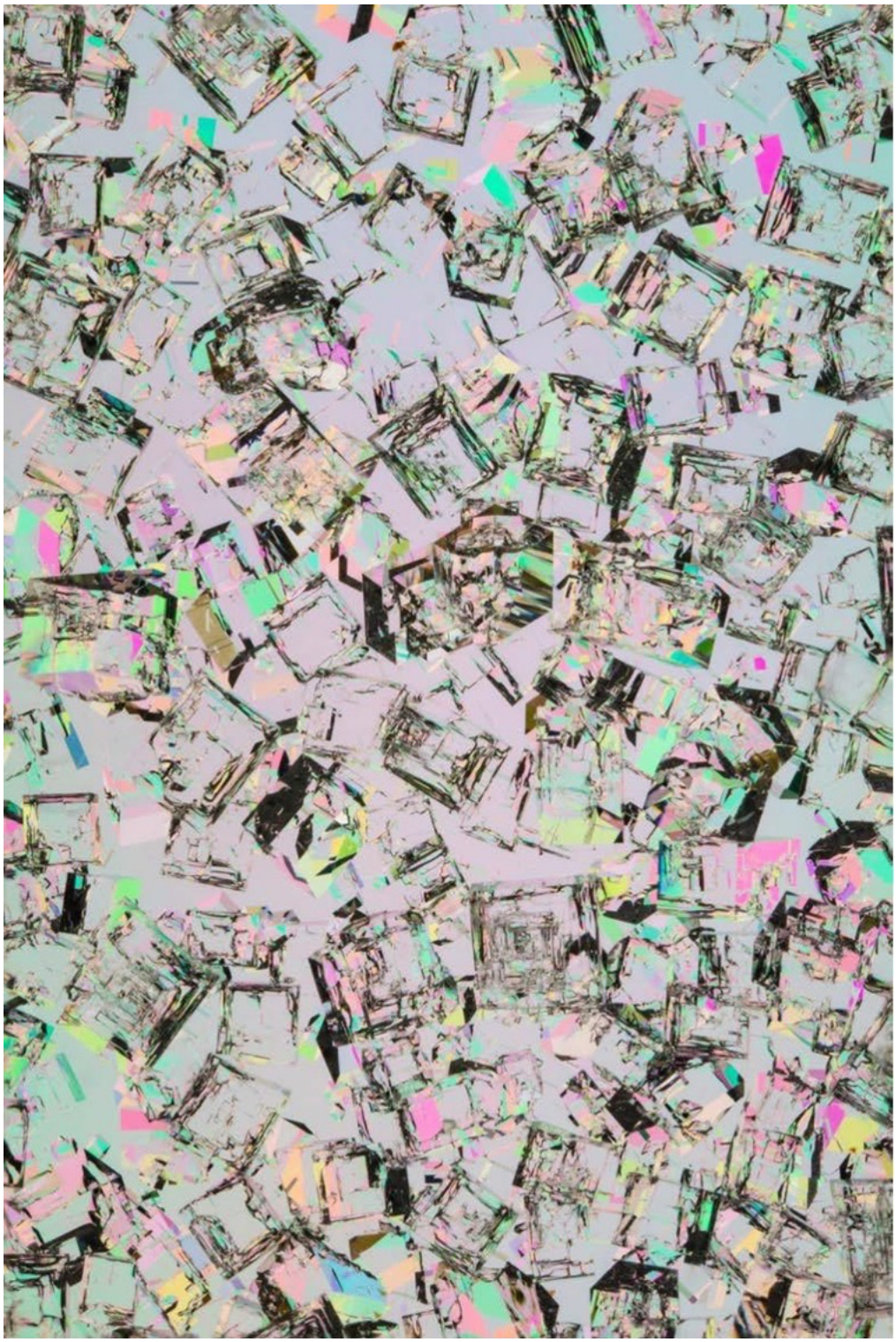

Figure 6 Christine Lorenz, Halophilic 2-1228*, 2022. Courtesy of the artist.*

salt reaches our table, it has been processed, purified, branded, packaged, and delivered with such convenience that we would hardly think of it as something geological. We typically use salt as a consumable good, and consumer logic keeps our attention on how we can get a product and what it can do for us—not on where it comes from or where it goes. Where does it come from? It comes from the store. Where does it go? It goes away. In that respect, the mineral has become a lot like plastic: endlessly malleable and abundant, to a degree that makes it an intentional act to even notice.

In some culinary circles, the desire for connection with a sense of place finds satisfaction in specialty salt that has a terroir. This kind of experience is appealing, but more the exception than the rule. When we taste salt, the material of a place passes through our senses, independent of any knowledge of what that place was. The Caribbean Sea? The Great Salt Lake? Somewhere . . . else? Systems of extraction and commerce bring salt to our daily lives by liberating it from its origins, such that we can have no idea where on earth it has been. Salt mining is a massive, global industry. In the United States, a majority of salt production begins in colossal underground deposits; near where I live, for example, there are mining operations that stretch for miles underneath Lake Erie. It took millions of years for that mineral layer to accumulate. Humans around the world are moving countless tons of salt at any given time, and only a very small fraction of it goes to culinary use. Most of it goes either to road maintenance or to chemical production.[6] The global trucking system that hauls that salt (and everything else) to its destinations cannot function on icy roads. The pipes that carry water to our kitchens? In most modern buildings, those pipes are made of polyvinyl chloride. Can't make that chloride without chlorine, and sodium chloride is an abundant feedstock. So, when I salt the water for my pasta, whatever that flavor evokes for my senses, in reality I am participating in the life cycle of a substance that traces back to places I do not know, to geological time spans I can barely imagine, and to processes I do not have the faintest knowledge of.

Halophilic is a word used to describe the inhabitants of saline ecosystems. Geologists will tell you that salt and petroleum have a complex, intrinsic relationship, and in many parts of the world certain salt formations are signs of where oil and methane can be found. This relationship continues in mutated forms once the substances are above ground. Human use of these materials extends their symbiotic life cycles in darker, irrevocable ways.

The stories of salt are old stories, its roles in culture tracing back as far as humanity itself. Stories about plastic tend to be stories of the future. Visions of future convenience were essential to the way plastics were originally marketed to the public. Public discussions about plastics today tend to revolve around the

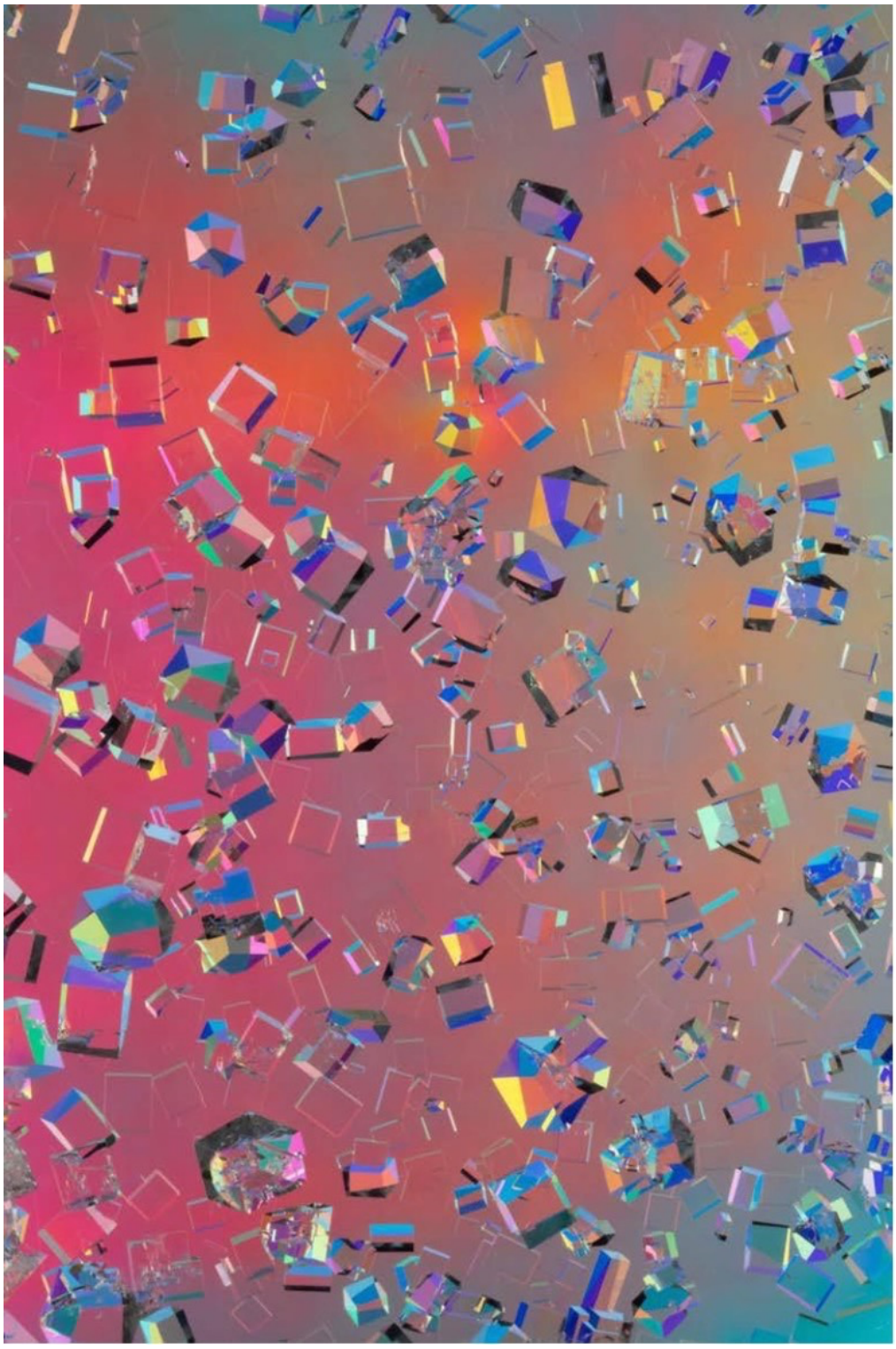

Figure 7 Christine Lorenz, Halophilic 2-1381*, 2022. Courtesy of the artist.*

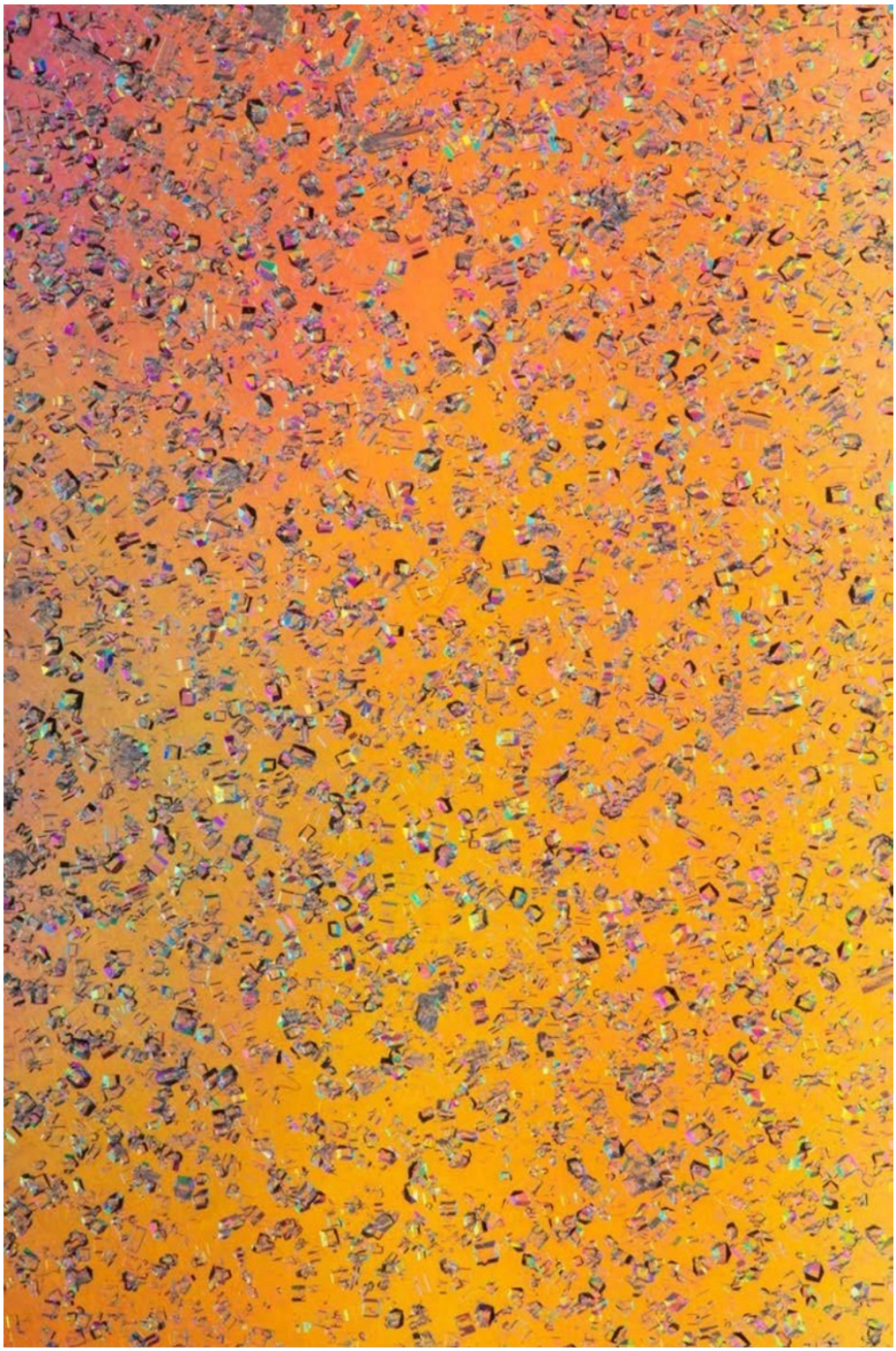

Figure 8 Christine Lorenz, Halophilic 2-1322*, 2022. Courtesy of the artist.*

places the materials are being found, the dawning awareness of their permanence in the environment, the distressingly accelerating rate of their production, and the impossibility of cleaning them up once they have broken down into microparticles. Plastics have now been found just about everywhere that we have learned how to look for them, from the Pacific Gyre to the Antarctic,[7] in human breast milk[8] and in the blood of livestock animals.[9] And yes, they have turned up in our familiar table salt.[10] Much remains unknown about exactly how these materials operate as they degrade, and about the health dangers they pose to humans and to the planet's food chains. The scientific understanding of the material, so urgently needed and so rapidly progressing, has an uncanny feeling of a frontier. We are advancing toward an understanding of an unknown that humans created and live with. When reports on the subject are addressed in the news, they are typically delivered with an undertone of concern about future implications. The question always seems to be how we are going to deal with plastics—as if we were not already in the middle of them, as if they were not in the middle of us before we picked up our phones this morning. Our imagination is immediately cast into a future that stretches far beyond where we can see, dissolving in a polluted haze.

And somehow, we are touching that future when we twist the cap off a bottle of water. Timothy Morton describes the feeling of little splashes of water as an example of how it feels to encounter a hyperobject. Paraphrasing Immanuel Kant, he writes:

> Consider raindrops: you can feel them on your head—but you can't perceive the actual raindrop in itself. You only ever perceive your particular, anthropomorphic translation of the raindrops. Isn't this similar to the rift between weather, which I can feel falling on my head, and global climate, not the older idea of local patterns of weather, but the entire system? I can think and compute climate in this sense, but I can't directly see or touch it. The gap between phenomenon and thing yawns open, disturbing my sense of presence and being in the world.[11]

Vast in multiple dimensions (scale, temporal, and ontological among them), the hyperobject cannot be apprehended in its entirety, even in the imagination. Despite our familiarity with the way it manifests on a human scale, there will always be more to it than we can account for.

Plastics in the world constitute a hyperobject, one that defies the limits of our imagination, let alone our capacity to rein in our behavior as a species. When we look at the interplay of salt and plastics in the physical world, we are catching

glimpses of an interobjective mesh, where the gaps between the connections may be easier to see than the patterns they create.[12] It can be a lot to try to grasp at once. Sometimes a little at a time is what we can manage. But the small parts only matter if we see them as part of something larger and begin to accept that what we are a part of in the world is more than what any one of us can comprehend.

In the sphere of the everyday, salt is the commonest of common things. We tasted salt before we could name it, and it has been cycling through our bodies ever since. When we think about salt, our countless poetic and cultural associations trace back to what is familiar, which is what we can taste—but all of that is only one facet of human entanglement with the life cycles of salt on our planet. Plastics are part of that entanglement, which extends far beyond what we can grasp, even as we apprehend it through the senses, even as we participate in advancing it. From my position as an artist, thinking about salt and plastic means thinking about individual experiences of time and scale, about things visible and invisible (to us), about our human limitations and what may as yet be beyond them.

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Christine Lorenz holds a dual BA in English and photography from the Ohio State University and an MFA from the University of California, Santa Barbara. She teaches visual culture and the history of photography at Duquesne University and Point Park University. Her photographs have been seen at photo-eye gallery in Santa Fe, in Pittsburgh spaces, and in collections across the United States and Europe. Her work has been featured by Lenscratch, CENTER Santa Fe, *Vice*, Photolucida, *Fraction Magazine*, Humble Arts Foundation, Magenta Foundation, and *Rogue Agent*. She lives with her family in Pittsburgh, Pennsylvania.

Notes

[1] Donna J. Haraway, *Staying with the Trouble: Making Kin in the Chthulucene* (Durham, NC: Duke University Press, 2016), 9–16, https://doi.org/10.1215/9780822373780.

[2] Stanton Marlan, ed., *Salt and the Alchemical Soul: Three Essays* (Woodstock, CT: Spring Publications, 1995).

[3] Stanton Marlan, ed., *Salt and the Alchemical Soul*, 106.

[4] Ibid., 130–31.

[5] Ibid., 131. From this point forward, Jung's archetypal axes are tied to principles

that would take us farther down the rabbit hole than we can manage here, particularly given the problematically gendered structure of these archetypes. It is fair to summarize that Jung finds salt to serve a function that undermines a certain polarity between masculine and feminine principles, but his argumentation merits a longer discussion.

[6] "Salt Statistics and Information | U.S. Geological Survey," accessed August 22, 2022, https://www.usgs.gov/centers/national-minerals-information-center/salt-statistics-and-information.

[7] Margaret Osborne, "In a First, Microplastics Are Found in Fresh Antarctic Snow," *Smithsonian Magazine*, June 16, 2022, https://www.smithsonianmag.com/smart-news/in-a-first-microplastics-are-found-in-fresh-antarctic-snow-180980264/.

[8] K. Mendonca et al., "Bisphenol A Concentrations in Maternal Breast Milk and Infant Urine," *International Archives of Occupational and Environmental Health* 87, no. 1 (2012): 13–20, https://doi.org/10.1007/s00420-012-0834-9.

[9] I. van der Veen et al., "Plastic Particles in Livestock Feed, Milk, Meat and Blood: A Pilot Study," Plastic Soup Foundation, Vrije Universiteit Amsterdam, 2022, https://www.plasticsoupfoundation.org/wp-content/uploads/2022/07/Final-Report-pilot-study-plastic-particles-in-livestock-feed-milk-meat-and-blood-SIGNED-1.pdf.

[10] H. Lee et al., "Microplastic Contamination of Table Salts from Taiwan, including a Global Review," *Scientific Reports* 9, no. 10145 (2019), DOI: 10.1038/s41598-019-46417-z; Timothy Morton, *Hyperobjects: Philosophy and Ecology after the End of the World* (Minneapolis: University of Minnesota Press, 2013).

[11] Morton, *Hyperobjects*, 11–12.

[12] Ibid., 83.