

LIFE IN ASTRONOMY: KATIE PATERSON



From sending messages to the moon to cosmic archaeology, the artist reveals her fascination with the universe beyond planet Earth

'Astronomy affords the most extensive example of the connection of the physical sciences. In it are combined the sciences of number and quantity, of rest and motion. In it we perceive the operation of a force which is mixed up with everything that exists in the heavens or on earth; which pervades every atom, rules the motions of animate and inanimate beings, and is as sensible in the descent of a rain-drop as in the falls of Niagara; in the weight of the air, as in the periods of the moon.'

Mary Somerville, *On the Connexion of the Physical Sciences* (1834)

I was sitting in a cupboard in Reykjavik when I learned that it was possible to send messages to the moon. I was scrolling through pages of lunar information and came across the

technology 'Earth-Moon-Earth', which allows messages to be sent to the moon and back, fragmented by space and distance. Later, walking under a full moon, I imagined what messages I might transmit there myself. My interest in astronomy wasn't a childhood obsession: it crept up on me, as if for years I had been climbing a mountain and then all of a sudden arrived at a summit. It's not surprising that this encounter happened in a landscape of geological wonders, midnight suns and 24-hour daylight, where time is inscribed in place and distance becomes closer, as the Earth's tilting on its axis is tangibly felt. The simple, yet striking, realization that this is a planet, one of billions of others, happened to me in Iceland more than a decade ago.

Katie Paterson,
Totality, 2016.
Courtesy: the artist,
Arts Council
Collection and
Ingleby Gallery,
Edinburgh

Since then, I've made disco balls that reflect solar eclipses, light bulbs that re-create the luminosity of a full moon and written letters to proclaim the death of stars. I've been an artist in residence at University College London's (UCL) Department of Physics and Astronomy, travelled to the W.M. Keck Observatory in Hawaii with cosmologists searching for the 'cosmic dawn', and had the chance to collaborate with hundreds of researchers, charting darkness from throughout space, concocting the scent of Saturn's moon and, most recently, determining the colour of the first-ever stars (pale blue) to the maroon of the end of time.

My concern with what lies beyond naturally manifested as a keen interest in astronomy. The strata in the rocks in Iceland provide the link to deep time

that I later found in distant stars. Even the spheres of fossils I strung on a necklace resemble miniature planets, merging microcosm with macrocosm. Now, I have learned that time is inscribed everywhere. For me, the universe equals creativity. Astronomy is the place I 'go' to that provides me with the most freedom and the most insight. Gravitational waves, galaxy formation, the emergence of dark matter, Martian sunsets, the death of the last stars and the volcanism of Io: from whimsical distraction to engendering a sense of ontological vertigo, the contemplation of deep space provides access to a new, palpable kind of knowledge.

My journey in astronomy has been a search for connection: understanding that we are not separate from the universe but are intrinsically linked to it, being composed of the same materials that exist everywhere. In physics, the term 'unified field' describes the unity of all the forces and particles of creation. This fascinates me. Remote supernova, billions of years past, connect to our blood cells and our breathing; moons break up and reassemble into proto planets; particles communicate across vast expanses; grains of sand become mountains and vice versa. I'm compelled by the Buddhist notion that: 'All phenomena are interdependent and interrelated with other phenomena. Everything is energy in continuous transformation. All forms can be nothing other than a fragment of a moment in an endless process.'

I first came across the idea of cosmic archaeology at UCL. I learned that, each time we look at the night sky, we are like archaeologists, exploring the history of the universe. Our cosmic horizon is around 42 billion light years away. What lies beyond, whether finite or infinite, will forever remain out of our experience. Creating artwork is as much my own way of grappling with this 'divine incommensurability' – as the historian Mircea Eliade defined it in *The Sacred and the Profane* (1957) – of our position in the universe as it is an attempt to communicate it with others.

'In the vast space of cosmic repose, I have reached the black world of the absence of objects, the manifestation of nothingness revealed.'

Kazimir Malevich,
Manifesto of Suprematism, 1915

My inspirations over time have been wide and varied. Life-adjusting experiences include looking through



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telescopes to extremely distant galaxies and worlds, tending a 1m² moss garden in a Zen monastery (a universe in itself) and watching a ray of light in a Florentine cathedral mark the longest day of the year. Eroding Egyptian statues, swathes of white cloth at Ise Jingu Shrine, letters from bygone astronomers on the discovery of comets and the echoes of a Norwegian Kulok singer mesh with Carl Sagan's pale-blue dots and Yves Klein's voids. They all blend into a kind of bank of internal moments that continue to inspire awe.

I've always drawn influence from artists, writers, musicians and thinkers whose work has a cosmic dimension: Hiroshi Sugimoto, Lucio Fontana, light and land artists, master raku ceramists moulding 'the cosmos in a tea bowl', Jorge Luis Borges's labyrinths, Italo Calvino's ladders to the moon, James Turrell's portholes, Li Bai's eighth-century poem 'Quiet Night Thoughts', On Kawara's *One Million Years* (1999). Not forgetting sublime encounters with

Lucio Fontana,
Concetto spaziale
(Spatial Concept),
1954. Courtesy:
Guggenheim Museum
Bilbao, Fondazione
Lucio Fontana, Lévy
Corvy, London/New
York, and Skarstedt
Gallery, London/
New York

Rei Naito and Ryue Nishizawa's sculpture *Matrix* (2010) on the island of Teshima a few years ago and with the paintings and music of Vija Celmins, Philip Glass, Mark Rothko and Lawrence Weiner, amongst many others. In other words, I'm drawn to artworks that deal with the indeterminate, the incalculable, the indescribable and the immense. In Emily Dickinson's words: 'They leave us with the Infinite.'

I connect most deeply with the universe through my imagination. I recently published a book titled *A place that exists only in moonlight* (2019). It contains ideas for artworks that are meant to take shape only in the mind, many of which refer to suns, stars, moons, planets and earthly and cosmic matter. The cover is printed with a mixture of moon dust, dust from Mars and shooting stars, ancient meteorites and asteroids. I wanted the reader to be able to hold and touch the material the words describe, whilst taking them in.

A few weeks after the book came out, I received a message from a group of scientists working on a mission proposal to NASA, inviting me to join their team as a 'space-artist/co-investigator' inquiring into cosmic dust. One of the group, Tibor Balint, wrote: 'Our proposal is called FOSSIL (short for Fragments from the Origins of the Solar System and our Interstellar Locale). If selected, we will be sending a small spacecraft near Earth, looking at interstellar and interplanetary dust particles, by analyzing their compositions and velocity vectors.' Each of those specks of dust is described as a tiny time capsule from one of the solar system's most primitive bodies, a piece of one of the last surviving building blocks of our planetary system. The message ends with: 'Did you know that every day more than 100 metric tonnes of cosmic dust rains down on Earth, carrying both organic and inorganic matter?' It's questions like this, appearing out of the blue, that make it easy for me to see the great mystery of the universe in the most insignificant of things. In this case, a speck of dust may contain revelations about the origins of all of our lives B

KATIE PATERSON is an artist based in Fife, UK. Her 100-year commission, *Future Library*, will take place in Oslo, Norway, until 2114. In 2019, 'Katie Paterson and JMW Turner' was held at Turner Contemporary, Margate, UK; her solo exhibition at the Scottish National Gallery of Modern Art, Edinburgh, UK, will run from 26 October until 31 May 2020. Paterson's commission 'First There Is a Mountain' is touring to 25 venues throughout 2019. Her book *A place that exists only in moonlight* was published by Kerber in January.