

James Lovelock states:

“I am pretty sure that only Earth has incubated a creature capable of knowing the cosmos. But I am equally sure that the existence of that creature is imperilled.” (Lovelock, J. and Appleyard, B. (2019) p.5)

Discuss examples of material depicting the relationship between people and the cosmos; how do we act on the knowledge we derive from the cosmos and has that effected the way we interact with our environment?

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It is impossible to know how long Homo sapiens have understood that the night sky is an invaluable tool as well as a source of wonder. It is also difficult to get an idea of how those first ancient people who used their knowledge of heavenly bodies viewed their own world, in relation to the great space beyond the sky. Despite this uncertainty, one thing is sure; our relationship with the cosmos has been evolving and changing for a period reaching back, far into deep time, and continues as a central part of life today. Another certainty for many is that this relationship may soon be broken and knowledge lost, as humans teeter on the brink of a global climate disaster. If humans become an extinct species, will the cosmos plunge back into ignorance? The moon and sun and stars will continue to rise and set over animals and inorganic material but without human beings it will not be *understood*. And does that even matter?

James Lovelock is a renowned scientist and environmentalist, perhaps best known for his authorship of the Gaia hypothesis. During the 1970s, he conceived the idea that the Earth is a self-regulating system which relies on interactions between organisms and inorganic matter to keep the planet habitable. In 2019, he published a book called *Novacene, The Coming Age of Hyperintelligence*, at the age of 100, in which he states that the Anthropocene is coming to an end, and speculates about the future of intelligent beings on Earth. At the beginning of the book, he describes human beings as the “prime understanders of the cosmos”. (Lovelock, J. and Appleyard, B. (2019) p.5) Although Lovelock goes forward to propose his new theory that artificial life will surpass Homo sapiens in intelligence, he has always held the view that our intelligence is important, and that civilisation is an asset to be

protected. In an interview in 2007, he asserted his belief that, although we have driven climate change past the point of no return, “we are natural. We shouldn’t think of ourselves as separate from the Earth. And through our eyes the Earth has seen for the very first time from space what an incredibly beautiful planet she is”.

(Lovelock, J. (2007)

Presently, most of the human population will have, at some point in their lives seen a photograph of Earth from outer space. The more technology advances, the more we learn about distant stars and, indeed, our own Earth. But at the same time, the stars get harder and harder to see from cities blanketed by light and pollution. Climate change is penetrating urban environments. Despite that, we feel distant from nature in built up areas around the world. As Lovelock puts it, “we don’t see anything as much of the environment as our ancestors did.” (Lovelock, J. (2007) It is inevitable that we, particularly in the now densely populated British Isles, approach our environment differently to our ancestors- even though they too would have been the “prime understanders” of the cosmos, as they perceived it with the naked eye. Unknowingly, the first farmers set in motion the age of the Anthropocene¹, during which human beings have excelled, but also catastrophically damaged Gaia’s

¹ Although many dispute the use of the term Anthropocene to describe the current epoch, which is defined by human impact upon the planet, I align myself with the view that it is useful to classify the period this way. I believe that naming it so, as opposed the Capitalocene for instance, may unify us in the idea that we are all complicit in global warming, and that the consumer has the power to influence the decisions of large corporations. I also agree with many researchers in that the Anthropocene began with farming and settlement during the Neolithic revolution, when large scale forest clearance occurred in favour of agriculture and began to affect the landscape significantly. This argument is comprehensively laid out in T.J. Demos’ *Against the Anthropocene* (2017). Alternatively, Lovelock states that the Anthropocene began only 300 years ago, and is already coming to an end.

carefully balanced self-regulatory systems. It seems that the more we study the cosmos, the more we understand about our world. The more we understand, the more we can shape our practices to be more efficient, more productive, more lucrative. But even with this understanding, we have not succeeded in curbing climate change and imminent peril. In light of this, I wish to examine the knowledge that human beings have gleaned from the cosmos, and how, as “prime understanders”, they have used this to survive, flourish, and potentially perish by their own hand. In the interest of being concise, but hopefully not too reductive, I am focusing on sites I have been to, and homing in on two points in time. These are the Early Bronze Age (around 2000BC in Britain and parts of Europe), and present day.

As prehistoric people used their knowledge of the shifting night sky in relation to seasonal changes to farm more efficiently, we now use techniques such as satellite remote sensing to oversee such exploits from above. Fulfilling the basic need to access food regularly has not changed, and will surely grow more desperate as our resources groan under the weight of a swelling population. It has become increasingly clear that the breakdown of our environment is impacting life on earth and humans have begun, perhaps too late, to scramble for solutions. There have always been complicating factors in our way of life, from religion to capitalism, effecting the way we operate and survive. Is it these aspects of human life which are stopping us from successfully tackling climate change?

Part One: Observers

On Minions Moor²

There are three stone circles here. I walk around and around the upright stones, from circle to circle, snapping pictures, trying to conceive their meaning. As if years of professional study can go by with no insights, and on a whim, an art student swoops in and unlocks the ancient meaning of the structures. Just out of reach... but a fantasy.

We climb the hill and stand beneath a huge cairn, only it isn't a cairn at all, but a single stone. Weathered into shape by the elements, like some old God had made their own pile of impossibly balanced stones- but had cheated. I look for the tomb I had heard of, which is hidden somewhere in the landscape below.

When we find the tomb, I realise that it is not so far from the stone circles themselves. The ground here is so bland compared to the spectacle of stone perching just a mile uphill; I can't understand why you'd want to spend all eternity here. But when I look around to see the whole sky spreading out before me, I do. The ground stretches out so far away from me in all directions that I am unsure whether my eyes even have the capacity to see the furthest speck of uninterrupted landscape. I wonder if the way the stars dip below this particular horizon meant something precious to a person who died long, long ago.

² See Figures 1, 2, and 3

Can We Gain any Sense of Early Bronze Age People's Understanding of the Cosmos?

In the summer of 2019 I went on a daytrip to the Minions Moor area of Dartmoor and found myself in complete wonderment at the blend of awesome landscape and ancient human interactions within it. Particularly of interest to me were Rilliton Barrow, and three incomplete but defined stone circles named the Hurlers. The name 'Hurlers' has a complex history itself, but this is concerned with a much later Christian myth, which offers us no insight into prehistory. The story goes that the standing stones used to be men, but as a punishment for playing ball games on a Sunday, God petrified them. In fact, the Christian myth completely overshadows the small scraps of known information about the origins of the circles. Although Rilliton Barrow was excavated in 1837 (Stanier, P. (2007) p.11), when a magnificently preserved gold cup was unearthed³, startlingly little is known about the three circles which make up the Hurlers. It instantly becomes apparent stepping away from the trail car park that the place is a tantalising, but vague, clue to the practices of Bronze Age people and the consistency of their relationship with the cosmos. Is there any way at all to gain a sense of what they understood of the cosmos, and how they used this knowledge or belief in their own lives?

Fabio Silvia describes the practice of archaeoastronomy as "the study of how people have understood, conceptualised and used the phenomena in the sky and what role the sky played in their cultures, by analysing their material remains". (Silvia, F. and

³ Now residing in the British Museum.

Campion, N. (2015), p.2) In this section, I aim to look at the emic⁴ significance of constructing stone circles in Dartmoor's 'ritual landscape'⁵ alongside surviving monumental tombs and natural features. The field of archaeoastronomy is littered with doubt that stone structures placed with undeniable alignments to astronomical features were intentional. Here, we will take their intention as certainty. Ancient people constructed monuments with such alignments on multiple sites across Northern Europe during the Early Bronze Age, and the question is: for what reason?

Answers may lie in what we do know about the situation in Early Bronze Age Europe. The Hurlers date back to 1500BC, the end of the Early Bronze Age. By this time, the Neolithic revolution had spread out from the Middle East and finally made it to northern Europe by around 2500BC⁶. Settlement and agriculture had taken root in Britain. With this relatively new way of life flourishing, it is not a great leap to associate farming with the appearance of stone circles. The age is named so due to technology being developed which allowed ancient people to make bronze by smelting copper and tin, creating a versatile new material. However, in places such as Egypt, China, and the Mediterranean, urban civilisation already existed. The three-stage classification system (Stone-Bronze-Iron), was created by Christian Jürgensen Thomsen to classify prehistoric societies (Encyclopedia Britannica, (2020), as they had yet to develop writing to define themselves in their own words.

⁴ 'Emic' is an ethnographic term meaning that I will attempt to derive meaning from inside the point of view of the ancient people I am researching. I try to put myself in their shoes. This is opposed to 'etic' which means to come from a more objective point of view.

⁵ The term ritual landscape is often criticised for being reductive to the complex cultures inhabiting the environment at the time, but there is so little evidence as to what was going on in this area of Early Bronze Age Dartmoor that there are few alternative phrases to encapsulate the obvious importance of the site to ancient people.

⁶ See Figure 4 (Sonia Cole, *The Neolithic Revolution*)

Thus, the aforementioned areas negate the need for such classification, as they have their own delineated eras.

In Britain, there was no such writing, and so anything we unearth from sites of this period can only be studied through the speculative lens of our contemporary archaeologists. However, there are technologies available to link facts to prehistoric artefacts left behind. In terms of the presence of agriculture, archeobotany can show us that soil from specific periods had an absence of pollen associated with forests, indicating that sudden clearances had occurred, most likely to make room for crops (Cole, S. (1970). p.8). Analysing carbonised matter dating back to the Neolithic period, such as that found in Jarmo (Iraq), proves that certain cultivated grains were already part of daily life. And for clues as to what was going on when people looked skyward, studies in the field of archeoastronomy can show us a glimpse of our ancient relationship with the cosmos. We know that the prehistoric builders of sites like Stonehenge were 'understanders' of the cosmos, in some way.

Ritual/Quotidian

When studying such sites, there will always be a tussle for meaning which we may never know for sure, but as Timothy Darvill states in such a discussion, we can identify patterned behaviour through material remains which unlocks some answers to help us make sense of what these ancient people may have been postulating. He states "cosmologies informed the creation of material culture in the past and thus provide the keys to understanding the past in the present. Recognising patterns without understanding purpose is simply description; statistical probabilities that given monuments tend to focus on the sun or the moon or some recognisable

constellation is interesting but ultimately meaningless unless supported by a back-story.” (Silvia, F. and Campion, N. (2015), p.142) As I look for meaning at the Hurlers stone circle site on Dartmoor, it’s important to know the context and take into account other important sites dating from a similar time before drawing my own conclusions. This will aid my emic analysis. Along with Stonehenge, the Ring of Brodgar on Orkney is key to unpicking the motivations behind assembling stone circles.

The Ring of Brodgar predates Stonehenge and the Hurlers, and is uniquely rich in archaeological material, indicating its great importance to the prehistoric world in Britain. Settled by farmers during the Neolithic period, the landscape has been bent utterly to the will of these early inhabitants; the site is dominated by megaliths. The Ring itself represents a cross section for researchers. Was it constructed for quotidian purpose or ritual? Or both? Or was it first a practical construction, later appropriated for ritual purpose? Archeoastronomy comes into play here, with some of the fields most recognisable names having their say in the Ring’s speculative purpose. Nick Card of the Orkney Research Centre for Archeology argues that “cosmology would have been critical to society then, helping farmers predict the seasons- a point supported by scientists such as the late Alexander Thom, who believed that the Ring of Brodgar was an observatory designed for studying the movement of the moon.” (McKie, R. (2019) To the increasingly secular world of today, it seems natural that such geometrically accurate structures must have been constructed with quotidian purpose; surely the Ring of Brodgar is a tool to increase efficiency in farming practice, as survival back then was so much more delicate. After all, we use such seasonal monitoring via GPS today to ensure maximum crop

production. It is easy to draw a line from early forms of science and mathematics to the fulfillment of projects with practical aims. But surely these people would be benefiting from thousands of years' worth of knowledge from their own ancestors to help them determine the seasonal shifts and farm effectively? In the words of Fred Hoyle, who extensively studied Stonehenge in the field and mathematically, "I will suppose that Neolithic man had meticulously observed the Sun and Moon, not for just a few years, or even a few centuries, but for many millennia. I will suppose that he knew perfectly well that there are 365.25 days in a year." (Hoyle, F. (1977). p.47) Why would they not use preexisting features of the landscape to measure the turning of the year?

Survival has never hinged solely on the mechanics of keeping a body alive for human beings; we are the 'prime understanders'. We second-guess and search for reasons why, and when we draw a blank, we require reassurance. Ritual can provide this essential nurturing aspect to ensure our survival. Why do celestial phenomena indicate to them the changing of the seasons, helping them improve their harvest each year? At face value, these may seem to be autonomous travelers of the sky, with great power and knowledge. Perhaps these Neolithic settlers on Orkney saw the sun and moon as deities, and, unable to know for sure why the deities help them predict the seasons, built something which felt like it connected their world to the world of their deities. One widely accepted theory on the belief systems held by such prehistoric people is that, "in the Old World at least many seem to revolve around a three- level vertically structured conceptual scheme for the universe. Where the origin of such a scheme lies is unclear, but Kaul (1998) has shown that by the second millennium BC in Northern Europe it finds expression as the sky, the earth

and the waters under the earth, each conceived as circular planes that wheel eternally around an *axis mundi*.” (Silvia, F. and Campion, N. (2015), p.141) Perhaps the stones at Brodgar felt like a bridge for these people, allowing them to feel that they understood the cosmos, and that they were connected to it. If they subscribed to this belief, perhaps being among the stones of the ring felt like having a direct line to the force which kept their life-giving crops fruitful from year to year.

The site at the Ring of Brodgar was abandoned after about 1000 years, suddenly and inexplicably. This could have been for any number of reasons; a changing climate affecting crop growth, a shift in belief systems leading them away from the rituals performed there, a change in the population. But it is certain that these ancient people had trade routes with southern parts of Britain. Where the people went, their beliefs followed. We can speculate that the architects of the first circle at Stonehenge were influenced by the Ring of Brodgar which they'd heard of, or their ancestors were involved with, or even that they'd seen themselves. This magical circle of stones which was built so many generations ago that perhaps they themselves couldn't even recall why it came to be; all they know is that these tremendous megaliths align with the celestial bodies above them which they don't understand, or understand as their deities. Without written record, the tale of its making could have been twisted through oral tradition, mystifying them further. If the Ring of Brodgar was originally built as a quotidian tool, stone circles could have passed in to myth and the realm of ritual purpose as knowledge was lost and reinvented over time. We certainly know that Stonehenge had ritual purpose, as the site of great feasts and associated through the Bronze Age with death and burial.

This brings us to the stone circles on Minions Moor and the tomb nearby. With at least a thousand years' worth of unwritten myth behind stone circles by this date, the settlers of Minions Moor erect their own sacred stone circle. Perhaps the ancient geometry is lost, but the structural significance remains. There is, at present, no statistical evidence to suggest the intricate geometric alignments with the celestial bodies associated with sites like the Ring of Brodgar or Stonehenge, but the three circles are laid out neatly with almost identical distances between them. To link the center points of the north and south circles would create a line pointing 18 degrees east of north, with the middle circle lying to the east (*Cambrian Archæological Association* (n.d.), p.253.). I wonder if these circles were associated with the sunrise or built to align with a particularly important feature in the landscape. It is impossible to know without thorough archeoastronomical investigation and statistical analysis. One thing is certain though; as with every stone circle, considerable time and labour was put into building it, in the heart of a Bronze Age farming community, and thus it must have been important to their continued survival in Dartmoor. I postulate that these stone circles were less for the purpose of forming an observatory, and more for the purpose of keeping the community united through ritual activity, and acknowledging the importance of the seasons delineated by the dazzling gods who swept across the dome of the sky above every day and night.

It makes sense, then, to create a tomb for an important person a short way to the east of the stone circles on the moor. As with Stonehenge, it could be that this place was for the community to feel close to the Gods, perhaps they felt that in the circles the boundaries between their realms was thinner. Maybe this sacred area was the perfect place to lay the esteemed member of their community to rest, where the veils

between realms was thin and their journey into the realm of the dead would be easy. In addition, with the lay of the land in that area perfect for viewing the heavens from the stone circles, the Gods could also clearly witness *them* from the wide-open sky. They buried this person in full view of their deities.

From the Minions Moor Settlers to Us

Following this thought, I come back to Lovelock's statement about humans being the 'Prime understanders' of the cosmos. He states that "only when humanity developed the tools and ideas to observe and analyse the bewildering spectacle of the clear night sky did the cosmos begin to awaken from its long sleep of ignorance."

(Lovelock, J. and Appleyard, B. (2019) p.3) But I wonder whether ancient people had a deeper connection with the cosmos, as it was so integral to their environmentally dependant way of life. For all our technology today, did the ancients understand the cosmos in a more profound sense? These stone circles represent a departure from nomadic lifestyles; people settled and constructed huge testaments to their belief systems, places to return to, and upkeep. To live close to. Gone were the days when ritual and thanks-giving was portable; humans in Britain became tied to certain landscapes with ritual significance. And when this happened, forest clearance occurred for farming. The landscape was altered to meet the needs of a growing stationary population. In part, the repercussions of the ritual worship of cosmic phenomena has borne a grave legacy; the emergence of static farming communities laid the ground work for the age of the Anthropocene. And with the Anthropocene came human induced climate change. No longer did people move through the environment, adapting to its changeable nature. They began to change their environment for it to best bare their continued survival in one place.

Lovelock is concerned that the only 'understanders' of the universe are in peril, but it was the understanders themselves who unknowingly built their own endangerment, beginning with settlement and farming. The people of Minions Moor had no way of knowing that in thousands of years, their ancestors would be battling a swiftly disintegrating climate which they, in their own subtle, but crucial way had a part in destabilising. It links back to Lovelock's Gaia hypothesis; from the moment that we began altering the environment for our own survival, without fully understanding its carefully balanced self-regulating systems, we began tipping the scales. Splitting away from the fine-tuned systems which have existed on Earth for millennia. It is important to *know* the cosmos to continue life on Earth, but in order to know it, it seems that human beings can't help but do acts of damage, even when unintended.

Moving on from prehistory, we began to set our separation from nature down in writing. As with the inhabitants of the Ring of Brodgar, the settlers of Minions Moor were gone by the end of the Bronze Age, most likely due to worsening weather conditions (Stanier, P. (2007). p.53) and the site fell silent for many hundreds of years; there was no one living near the stone circles and their true purpose was most likely lost at this time. But soon, writing would come to Britain. People began to lay out their world views in words which we can access in the present. But often, surviving ancient writing is purely human-centric. Take documentation of Halley's comet for example. Even this rarely sighted celestial phenomenon is recorded in relation to which ruler it occurred under and what it meant for them. Historian Dipesh Chakrabarty describes this split from nature as "the age-old humanist distinction between natural history and human history" (Chakrabarty, D. (2009). p.201.)

in the name of the first part of his thesis *The Climate of History*, though he postulates that the climate crisis will bring this to an end. Does this humanist attitude also have repercussions for the climate crisis?

Stone circles are a powerful depiction of the relationship between people and the cosmos, but they also illustrate a moment in history when humans were beginning to think of themselves *and* the universe, as opposed to themselves as *part* of it. We are still trying to awaken the cosmos's 'sleep of ignorance'. But along the way, we have awoken from a great ignorance ourselves. We can now see the huge effect we have on our environment- something I am sure the Bronze Age people of Minions Moor would never have given a thought to. We have different tools now, but fundamentally our task is the same. We are striving to understand. Perhaps with a globalised world, we will find something which prompts us to take control of the climate crisis, and save Gaia.

Part Two: Searching

Changing Attitudes, Changing Climate

Since prehistory, different world views which were held isolated in geographic crucibles have been smashed up, obliterated, integrated and mixed up in a whirl of globalisation. Science has advanced, and although diminished, ritual and religion has endured; a testament to the multiple pathways the 'prime understanders' choose to know the cosmos. Space travel has significantly shifted our view of the universe. Before, we could only observe the small corner of it that we lay claim to with the naked eye. Now, we can go further; we can send vessels out to search the cosmos and send us information back.

Through satellite imagery, we see first-hand the way our human activities are changing the face of our own environment, and we are even changing our earth-bound view of the universe. Recently, with the need for internet connection growing, a 'constellation' of satellites have been launched into space which will outshine the stars. Until now, the experience of looking up at a sky has been largely unchanged throughout history. Now, a view of the cosmos which we have shared with our oldest ancestors, is being altered. In the face of this, "scientists are worried that future 'mega-constellations' of satellites could obscure images from optical telescopes and interfere with radio astronomy observations", and astronomers warn that "their view of the universe could be under threat." (Morelle, R. (2019). Indian space missions have been labelled "irresponsible" by Pakistan's Minister for Science and Technology Fawad Chaudhry (BBC News. (2020), as they leave so much junk to float around Earth for apparently all eternity, while in India thousands of people live in poverty and fossil fuels continue to damage our terrestrial environment (reference). It truly feels as though we are rushing to trash more of the cosmos

before we can make our own world safe and stable. In Britain, climate activists face pushback from the government and the public, despite the crisis being high on the political agenda. The climate crisis is simply not being taken seriously.

Into Nordmarka Forest⁷

It is treacherously icy.

By the time we reach the mouth of the trail we are already quite exhausted from walking on the slippery surface and consider whether we'd be best turning back.

After all, we've come very far and at least been among the trees of the forest. But we are so close to the site... a short hike from the saplings that we came here to visit. It would be a shame not to at least try to get there.

Tip-toeing in our snow boots along the side of the path, where there is still fresh snow to give us some traction, we go slowly forward.

I picture myself among the precious saplings. I actually feel the disturbing desire to stamp on them, and ruin the beautiful project that myself and so many others are following with hopeful hearts. It makes me really sad. I had first thought of touching them but I couldn't stop the ugly, intrusive impulse to destroy. I wonder if this is human nature; when trust is placed in us, we can't help but consider breaking it.

We reach a steep section. The path is becoming dangerous, so I go forward alone. I sense that I would not make it to the saplings after all, with the fading light and biting cold brought to us on Norwegian winds. Eventually, I reach the end of the skiing path and the trail diminishes into a cleared pathway of deep, untrodden snow. I try to go onwards, but find that my boot sinks into a waterway beneath the snow; this is as far as I can go. The pilgrimage would remain only nearly completed.

⁷ See Figure 5, 6 and 7

Like the Builders of Stone Circles, We Respond by Making

“We’re living in this really frightening moment. People are scared. We’re in climate crisis, climate catastrophe. Things move so fast, technology is so fast. It feels like time is running away with us all the time. And this project addresses some basic human needs and desires, that is, to connect with nature and to connect with time, to connect with the ‘past’, and to connect with the ‘future’, and to believe in that future because it’s a future that, right now, seems quite hazardous.” Katie Paterson
(Paterson, K. (2019). *Future Libraries Documentary*)

In January of this year, I attempted to visit the site of Scottish artist Katie Paterson’s project, *Future Libraries*. The previous year, I had seen an exhibition of her work in Edinburgh, and as I was due to go to Norway, I felt compelled to see the physical project myself. It is a work which touches on the issue of sustainability and hope as we move into the future, and one that I find particularly touching. This is a project which will take place over a century, supported by the City of Oslo and hosted by the Deichmanske Bibliotek, Oslo. A small forest has been planted in Norway, which, in 100 years, will be cut down and made into 100 books. One book is written each year from 2014, to 2114; the author will be the only person to know what the book is about until it is printed. By the end of the project, there will be 100 new books to read for future generations, printed on specially grown paper. Margaret Atwood was the first author to contribute a manuscript in 2014. In her words:

“It’s very optimistic to do a project that believes that there will be people in a hundred years, that those people will still be reading, that they will be interested in opening all these boxes and seeing what’s inside them, and that we will be able to communicate

across time-which is what any book is.” Margaret Atwood (Behind the Scenes. (2019)

It is a strange thought that most of us studying now will not live to read the 100 books to be produced in 2114, on paper from trees which are currently still saplings, and certainly not most of the authors. I wonder how Katie Paterson feels, conceiving a huge international collaboration which she will never see the end of. As Atwood discusses, it is a complete leap of faith in the future for those involved with the project today, that the library will remain guarded and safe and that the project will be completed. What if sea levels rise and flood the room which the manuscripts are housed in? Will there be trustees who protect the future library? In terms of life spans, this work is different to Paterson’s other pieces. Already, there are rituals developing around the yearly handover of the manuscripts⁸- a communal hike up to the newly planted forest where the author passes their work to the current Mayor of Oslo. This is a story made of stories; it currently lives in the minds of participants, fuelled by the excitement of something they will never see, and faith in future generations.

When echoing this hike myself, I felt like I was part of the ritual, making a pilgrimage with hope for the future. But I was also conflicted by frustration that I wouldn’t see the end of the project and concerned that the project would not reach its end anyway. In fact, the main reason we didn’t make it to the site of the saplings was due to the ice forming on the path, which had come to be that way due to a heatwave in Norway... in January. As we passed skiers struggling along the way, which should have been

⁸ See Figure 8

powdered with snow, they called out to us, saying 'it's too hot!' In the face of this, it is easy to feel nihilistic. Paterson challenges us to steer away from frustration and place our faith in the future and ourselves, and even change our habits to ensure that the project doesn't get destroyed by environmental damage. This is a material response to the cosmos which invites you to let go of the humanist feelings you hold dear, about preservation of the self, and requests that you join her in hope for the survival of the species as a whole. It is so desperate and pure, and almost primal in its view of continued human existence. Investment in our future is just as important today as it was for the intrepid settlers of the Neolithic revolution, if a little more fragile considering the all-consuming disasters it could face.

Environmental crisis is a great fear of mine. I find myself wondering whether art-making is hopeless when the world may be flooded in 10 years anyway. When I start making work I often seriously consider the impact that the materials I am using have on the planet. It's a conundrum and often halts my productivity as I search for materials with the right balance of price and sustainability. Experiencing Katie Paterson's work felt like the antithesis of this 'ummming and aaaaahing'. It felt like acceptance of a tumultuous cosmos and a spark of hope. It is work like Katie Paterson's which illustrates Lovelock's position that, "we tend to think of ourselves as some sort of plague or destructive agency. We are but at the same time we are something wonderful." (Lovelock, J. (2007)

Visiting the site of the saplings in Norway, even though I didn't quite make it, made me feel close to my ancestors. I was limited by the climate which had made the path too slippery for me to complete, and the window of daylight was so short that it had

to be seriously considered when planning the journey. My visit to the site was completely dictated by nature. It made me think of all I'd learnt about archeoastronomy through studying the Minions Moor site and how that relates to us in the now; what can we learn from the time pre-Anthropocene, and how can we move forward as new obstacles appear in our quest to understand the cosmos. And most importantly, what kind of attitude should we take when regarding our environment in the face of potential extinction. Or do we accept it? Let the cosmos fall back into a state of unknowingness. Being human, I innately don't want this to happen. But thinking from the perspective of an indifferent cosmos, it wouldn't be so bad.

Powerful Forces with Different Priorities

Paterson is acutely aware of human being's place in the universe, and how small we are- and also how unique we are. She has often discussed the fear of climate disaster, particularly in relation to her long-term durational works. In his essay discussing Paterson's work, Lars Bang Larsen states that "Paterson's work is not *about* global warming or *about* the Anthropocene. It is not eco-art any more than it is space art. Devoid of symbolic exhibitionism, it is abstract, cool, laconic. It does make one point very clear though: if cosmology is that which surrounds life, but not life itself, then it is from a cosmological point of view that life and its properties are configured." (Larsen, L., and Paterson, K. (2019) p.222) In order to go forward then, perhaps there is a need to look at life from a cosmological point of view. We can no longer afford to act selfishly, even in the name of our children. To make concessions and be open to change is to secure a future that our children will be safe in. We have grown too used to luxuries, such as driving, and packaged food. Even though these

things make our lives easier, it is a small compromise to avoid them. But all too often we are encouraged by large businesses to take whatever is made most available to us, without stopping to think about our existence relative to the wider world.

Another proposed term to define this era, instead of Anthropocene, is the Capitalocene. (Demos, T. (2017) p.86) This is because although we are all complicit in rising temperatures, it is truly a handful of corporations who are making positive change near impossible, as they chase profit. It was recently reported in the Observer that climate change deniers are beginning to change tactics. They are switching from 'flat out denial' to an attitude of 'no hope so might as well plough on'. Michael Mann of Penn State University reported that "by promoting this doom and gloom attitude this leads people down the path of despair and hopelessness and finally inaction, which actually leads us to the same place as outright climate change denialism". (McKie, R. (2020). p.4) In the face of such capitalist nihilism, it is essential to have artists like Katie Paterson working to instil hope into a despairing population of consumers.

And of course, as crisis unfolds on Earth, we are still looking out into the cosmos, where a whole new world of philosophy and law is unfolding. As human beings move to take more pieces of the cosmos for themselves, experts are rising to critique these actions. Earlier, I mentioned the constellations of satellites being launched to provide better internet. These are being launched largely by SpaceX, a private company founded by Elon Musk, who claim in their mission statement that "the ultimate goal [is to enable] people to live on other planets." (SpaceX. (2020). This is an incredibly complex debate which is not being had; perhaps as it is predominantly being

performed by private companies. Of course, it is fundamentally unfair for half of the world to have access to the internet and half not to; at its best, the internet is an invaluable tool and mode of education. But quietly altering the night sky feels like a new level of corporate privilege that we did not consent to.

Another artist who collaborates with scientists to discuss such matters is Aleksandra Mir. She is another Understander using her work to reach the population of Britain and beyond with huge questions about our relationship with the cosmos. Alongside Mir's exhibition at the Tate Liverpool, *We Can't stop thinking about the Future* (2017), she published a book of interviews with scientists, which I feel compliments the themes in Paterson's work well. However, where Paterson's work is poetic and abstract, Mir's is more blunt, and taps into London life directly. One interview in the book is with Jill Stuart, who is an expert in Space Law. The antagonist of many a space conference, Stuart actively challenges the sense of privilege humans feel when looking up and planning our next conquest. She states, "most people assume that it is a done deal. Once the technology is there, then the colonisation, exploration and exploitation follows along with it, but as in other areas of terrestrial politics I don't believe we should just accept things as being inevitable. Do we for example have the *right* to be colonising other planets?" (Mir, A. (2017). p.76) This problem has come up so recently in our history that technology is outstripping the ethical consideration at present. We have so many pressing matters on earth that we have barely noticed that people who can afford it are already booking trips into space⁹. And inevitably, it

⁹ In 2023, curator Yusaku Maezawa is expected to be the first private passenger to fly around the moon. (SpaceX. (2020)

is seen as territory, with flags planted on the moon and different governments in control of specific satellites.

It seems clear that humans are crying out for real action in regard to the climate crisis, and are searching for different ways to approach the problem, as our current attitude is driving us into the ground. When considering the view of the cosmos that Paterson proposes with her work it is hard to see profit-lead corporations fit into the future. It seems a shame that a capitalist attitude is one of the first things humanity is carrying into space with them. Another notable part of Aleksandra Mir's conversation with Jill Stuart which stood out to me was her statement that "we search the universe to find ourselves." (Mir, A. (2017). p. 78) It seems clear now that it will take strong individuals, who think from a cosmological position, to lead us to a place from which we can turn the tide of climate change- or swiftly adapt to it. But not only that, every person will need to find something in the universe that is precious to them, and is worth the difficulty of adapting for. I am certain that the next decade will show us all what kind of people we are as we tackle environmental crisis as a species.

Hope, and Concluding Thoughts

“Hope is something you create”

-Greta Thunberg (Thunberg, G. and Ocasio-Cortez, A. (2019). Climate crisis special)

One of the concerns I've come up against during the writing of this essay is that Lovelock puts great emphasis on the value of the earth having produced something which can know itself and understand Gaia as a whole, but why is this important? I have come to the conclusion that its important *because* we are part of the self-regulating whole that is Gaia. It's an impressive achievement and it would be a great shame if Gaia lost her bizarre thinking, making, and analysing Homo sapien creatures. When considering the possibility of life on other planets, although Lovelock does not believe there to be any, surely Gaia would be in better standing for survival if there was a creature capable of understanding and reasoning inhabiting it. Perhaps that is our role in Gaia's system, should we survive climate disaster. We are here to protect our planet from other Understanders, should they come and wish to alter Gaia. A defense which may never be used, but in place if necessary. Maybe we will never know exactly how we fit into the great self-regulating system, because currently we are the antagonist.

More importantly I've found that we want to see hope mirrored at us in the night sky. We want a sign that it will all be ok when we search the cosmos. It is all tied up with the age-old search for meaning. This is the basis of stone circle building, and the faith that Paterson's *Future Libraries* project is built on. But our ancestors knew that the landscape was changeable. If conditions changed too much and they did not adapt quickly, they would not survive. With the humanist mindset we carry today, we do not react that way. Paterson is just one example of a person who is striving to

turn that mindset around; we are part of the cosmos, and we must accept that we are not in control of earth's self-regulation.

I am also sure that it is our knowledge of the cosmos that makes us hope that we can save our environment. Like the people who built stone circles to keep their community unified against the troubles that living in a seasonally dependent world threw at them, the makers and Understanders of today must continue to spread the word that there is hope to survive the climate crisis; we just need to turn our thinking around. The Professor for Weather and Climate Risks at ETH Zurich, Prof. Dr. David N. Bresch states "we are in need of many different perspectives on climate change in order to successfully mitigate its effects and adapt to the challenges it presents, and the arts play an important role in providing these." (Drabble, B. and Biemann, U. (n.d.) p. xiii) I firmly believe that contemporary art has a huge role to play in the continued survival of humanity, through challenging the way people consider themselves in relation to the cosmos. It is certain that work like Paterson's is essential in reconnecting the narratives of 'Human' and 'Natural' history. James Lovelock is absolutely right to be concerned that Humankind is imperiled. We now all have decisions ahead of us; do we stick with our humanist views, or can we learn to adapt as a collective?



Figure 1, Stone Circle on Minions Moor, by Andia Newton

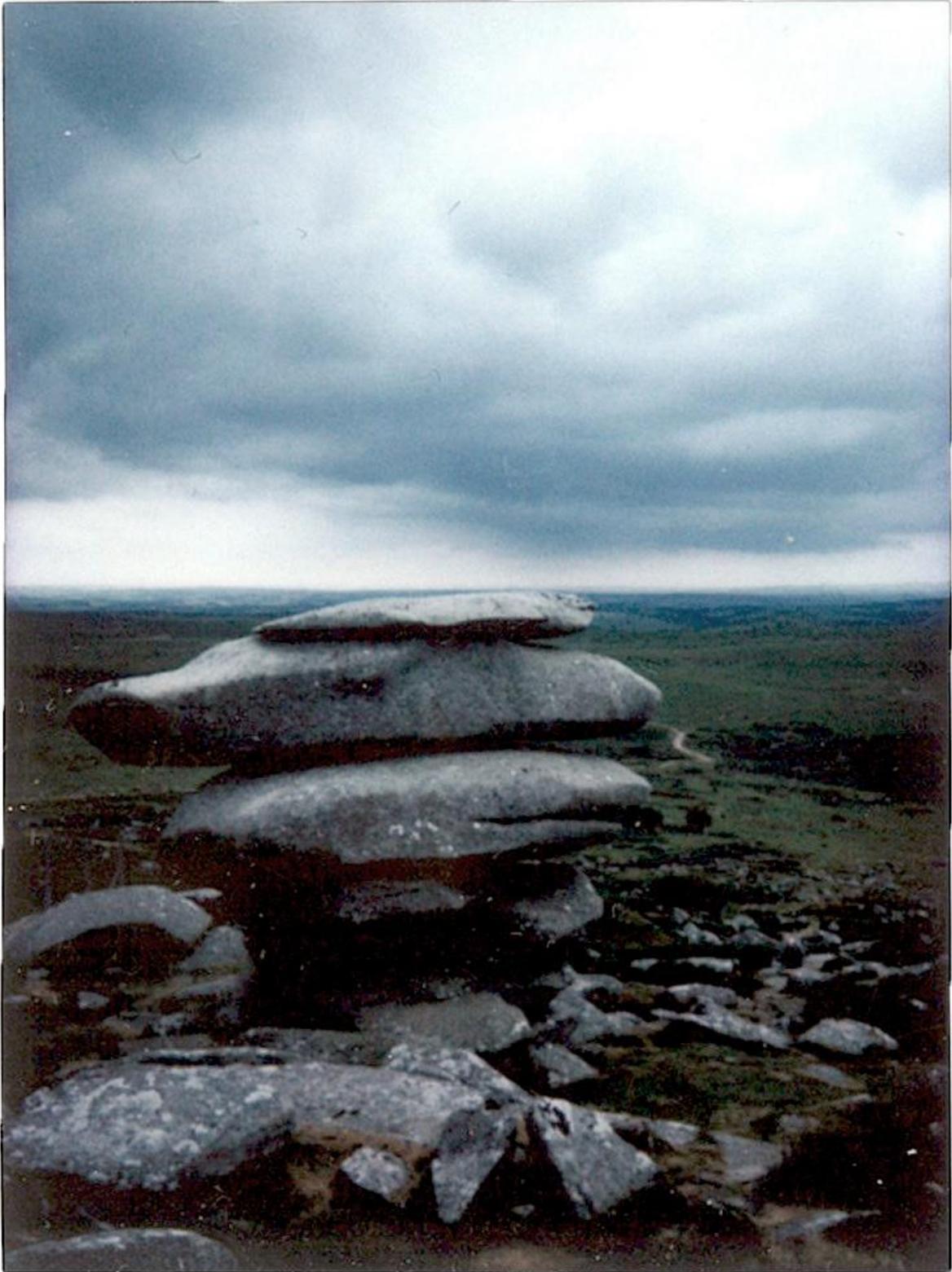
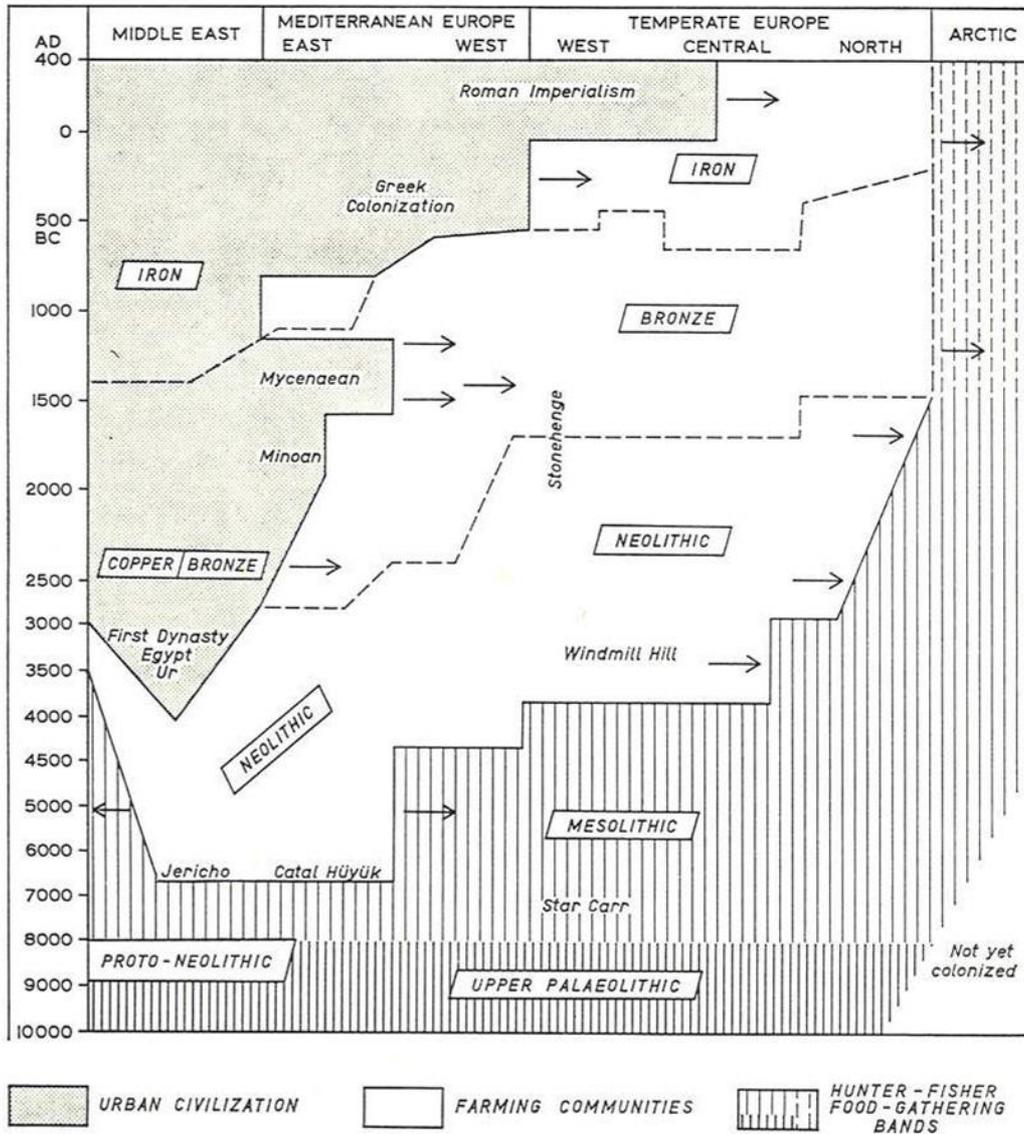


Figure 2, Geographical Feature and Sky on Minions Moor, by Andia Newton



Figure 3, Rilliton Barrow Tomb on Minions Moor, by Andia Newton

Time and space relationships of NEOLITHIC and other early cultures in Europe and the Middle East.



Based on J. G. D. Clark, 1952, with modifications.

Figure 4, (Cole, S. (1970). *The Neolithic revolution.*)



Figure 5, View of Path at Nordmarka Forest, by Andia Newton



Figure 6, View of Path at Nordmarka Forest, by Andia Newton



Figure 7, View of Path at Nordmarka Forest, by Andia Newton



Figure 8, Still from a Video about Katie Paterson's Future Library (Paterson, K. (2019). Future Libraries Documentary.)

Bibliography

Books

Bourriaud, N., Le Feuvre, L., Jacob, M., Larsen, L., Bewley, J., Tarbuck, J. and Paterson, K. (2019). *Katie Paterson*. 1st ed. Unknown.

Cole, S. (1970). *The Neolithic revolution*. 5th ed. London: Trustees of the British Museum.

Demos, T. (2017). *Against the anthropocene*. Sternberg Press.

Drabble, B. and Biemann, U. (n.d.). *Along ecological lines*. Gaia Project.

Haraway, D. (2016). *Staying with the trouble*. Duke University Press.

Hoyle, F. (1977). *On Stonehenge*. San Francisco: W.H. Freeman.

Lovelock, J. and Appleyard, B. (2019). *Novacene*. Penguin Random House UK.

Lovelock, J. (2000). *Gaia*. Oxford [England]: Oxford University Press.

Lovelock, J. (2015). *A rough ride to the future*. London: Penguin Books.

Lewis, S. and Maslin, M. (2018). *Human planet*. Pelican Books.

Mir, A. (2017). *We can't stop thinking about the future*. Strange Attractor Press.

Moore, P. (1974). *Watchers of the stars*. London: Michael Joseph.

Silvia, F. and Campion, N. (2015). Oxford: Oxbow Books.

Stanier, P. (2007). *The Minions Moor*. 3rd ed. The St. Ives Printing & Publishing Company.

Yeomans, D. (1991). *Comets*. New York: John Wiley & Sons.

Websites

BBC News. (2020). *Who is responsible for all the space junk?*. [online] Available at: <https://www.bbc.co.uk/news/50827462> [Accessed 8 Jan. 2020].

Brodgar, ring of. (2005). In J. Ayto, I. Crofton & P. Cavill (Eds.), *Brewer's Britain and Ireland*. [Online]. London: Chambers Harrap. Available from: https://search-credreference-com.gold.idm.oclc.org/content/entry/orionbritainireland/brodgar_ring_of/0?institutionId=1872 [Accessed 30 December 2019].

Davis, N. (2019). *The prehistoric tombs that may have been used as 'telescopes'*. [online] the Guardian. Available at: <https://www.theguardian.com/science/2016/jun/30/the-prehistoric-tombs-that-may-have-been-used-as-telescopes> [Accessed 28 Sep. 2019].

Dazed. (2019). *Charlotte Edey is the FKA twigs-approved artist creating sublime tapestries*. [online] Available at: <https://www.dazeddigital.com/art-photography/article/45838/1/charlotte-edey-is-the-fka-twigs-approved-artist-creating-sublime-tapestries> [Accessed 27 Sep. 2019].

Encyclopedia Britannica. (2020). *Christian Jürgensen Thomsen | Danish archaeologist*. [online] Available at: <https://www.britannica.com/biography/Christian-Jurgensen-Thomsen> [Accessed 7 Sep. 2019].

Estiler, K. (2019). *Charlotte Edey Brings Otherworldly Tapestry Works to London's Public Gallery*. [online] HYPEBEAST. Available at: <https://hypebeast.com/2019/9/charlotte-edey-echolocation-public-gallery-exhibition> [Accessed 27 Sep. 2019].

McKie, R. (2019). *Neolithic discovery: why Orkney is the centre of ancient Britain*. [online] the Guardian. Available at: <https://www.google.co.uk/amp/s/amp.theguardian.com/science/2012/oct/06/orkney-temple-centre-ancient-britain> [Accessed 4 Dec. 2019].

Morelle, R. (2019). *Astronomers say view of night sky is under threat*. [online] BBC News. Available at: <https://www.bbc.co.uk/news/science-environment-50870117> [Accessed 4 Jan. 2020].

National Galleries of Scotland. (2019). *NOW | Katie Paterson, Darren Almond, Shona Macnaughton and Lucy Raven*. [online] Available at:

<https://www.nationalgalleries.org/exhibition/now-katie-paterson-darren-almond-shona-macnaughton-and-lucy-raven> [Accessed 27 Sep. 2019].

The National Space Centre. (2019). *How Halley's Comet Shaped History - The National Space Centre*. [online] Available at: <https://spacecentre.co.uk/blog-post/halleys-comet-shaped-history/> [Accessed 26 Sep. 2019].

Nytimes.com. (2019). *The Unquiet Sky*. [online] Available at: https://www.nytimes.com/2015/07/26/magazine/the-unquiet-sky.html?_r=0 [Accessed 28 Sep. 2019].

Phys.org. (2019). *First sighting of Halley's comet pushed back two centuries*. [online] Available at: <https://phys.org/news/2010-09-sighting-halleys-comet-centuries.html> [Accessed 27 Sep. 2019].

ROBERT MONTGOMERY. (2019). *ROBERT MONTGOMERY*. [online] Available at: <http://www.robertmontgomery.org> [Accessed 27 Sep. 2019].

Sculpture.org.uk. (2019). *Poem in Lights to be Scattered in the Square Mile, | Sculptures | CASS Sculpture Foundation*. [online] Available at: <http://www.sculpture.org.uk/artwork/poem-in-lights-to-be-scattered-in-the-square-mile-2> [Accessed 27 Sep. 2019].

Science.sciencemag.org. (2019). *Science*. [online] Available at: <https://science.sciencemag.org> [Accessed 28 Sep. 2019].

SpaceX. (2020). *Company*. [online] Available at: <https://www.spacex.com/about> [Accessed 3 Jan. 2020].

Tate. (2019). *Aleksandra Mir: Space Tapestry – Exhibition at Tate Liverpool | Tate*. [online] Available at: <https://www.tate.org.uk/whats-on/tate-liverpool/exhibition/space-tapestry> [Accessed 27 Sep. 2019].

Time Out London. (2019). *Charlotte Edey: Echolocation*. [online] Available at: <https://www.timeout.com/london/art/charlotte-edey-echolocation> [Accessed 27 Sep. 2019].

@WWRFD, F. (2019). *What Does "Deep Time" Mean to You?*. [online] Smithsonian. Available at: <https://www.smithsonianmag.com/science-nature/what-does-deep-time-mean-to-you-180952603/> [Accessed 27 Sep. 2019].

Podcasts

Behind the Scenes. (2019). *Katie Patterson - The Matter of Time*. [podcast] Available at: <https://www.bbc.co.uk/sounds/play/m0008nvs> [Accessed 27 Sep. 2019].

PDFs

John G. Robb (1998) The 'ritual landscape' concept in archaeology: a heritage construction, *Landscape Research*

Magazines/Journals/Newspapers

Chakrabarty, D. (2009). The Climate of History: Four Theses. *Critical Inquiry*, 35(2), p.201.

DeLoughrey, E. (2014). Satellite Planetary and the Ends of the Earth. *Public Culture*, 26(2), pp.257-280.

Launceston Meeting- Report. (n.d.). *Cambrian Archæological Association*, p.253.

McKie, R. (2020). Climate change deniers new battle front attacked. *The Observer*, p.4.

MULHOLLAND, J. (1978). Archeoastronomy. *Science*, 199(4334), pp.1197-1198.

Thunberg, G. and Ocasio-Cortez, A. (2019). Climate crisis special. *The Gaurdian Weekend*, p.'Hope is something you create'.

WILLIAMSON, R. (1977). Archeoastronomy at Pueblo Bonito. *American Association for the Advancement of Science, 1200 New York Avenue NW, Washington, DC 20005*, (197).

Transcripts of Live Talks/Discussions

Meineche-Hansen, S. (2019). *Exhibition Walkthrough*.

Videos

Lovelock, J. (2007). *Gaia Hypothesis*.

Paterson, K. (2019). *Future Libraries Documentary*. [Video] Edinburgh: Scottish National Gallery.