How To Relay Relay, or, To Follow Andromeda is to Follow the World
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This essay is a work of fiction. It is a fiction that posits relay as a creative research method. And it is the relay as method that has allowed this fiction to be posited as such. In what follows, I invite you into the creative method of *relay* to explore it spatially, materially, temporally and as a mode of translation. I then turn to pause the relay I am currently in – the relay of Andromeda.

Every Mark is a Relay

As you read this, I want you to take a piece of paper and make a mark. Do this now, and take a moment to examine it. How might you describe this mark? If you can, and if you are willing, write down four or five words that describe it. Now, perhaps, you might read those same words out loud and write down what emotion emerges in you, if any, as you hear them spoken in your own voice, having been asked to do so by an author that you probably do not know well, if at all. Maybe you are reading this far and you have decided not to make a mark, to write or to speak. Perhaps the emotion you are feeling is one related to annoyance, and so you are enacting refusal. Perhaps the emotion is instead boredom, in which case this might be the last sentence you read. Or perhaps you made a mark and wrote down a word, or three, or five. Maybe 'dot', or 'line', or 'letter', or 'form', or 'grey', or 'heavy', or 'sharp' were among them. Maybe you wrote something from an entirely different vocabulary. Maybe in an entirely different language.

If you wrote or spoke the word 'dot', which I did just now, then in the writing and saying of it is hidden the etymology of its meaning. Where you might have written the word to describe what you saw – a small mark of, perhaps, circular or near circular form – 'dot' also holds within it other meanings. It suggests a question about the surface on which it exists, as in 'a spot on a surface'. In Norwegian, 'dot' means 'lump' or 'knot'. In Dutch, on the other hand, it means a 'small bunch' or 'wisp'. Perhaps your use of it references the implied punctuality of the phrase 'on the dot', which is itself an early 20th-century reference to the circular indices on the face of a clock dial,[1] or even the particular representational image of information conveyed by a network of points, a 'dot matrix', which emerged in the last 20 years of the 1900s. Perhaps you knew someone named Dorothy, like I did, whose nickname was Dot or Auntie Dot, and so then in the saying of the word describing your mark, your voice triggered memories that flashed by vertiginously quick, shuttering like snapshots pulled from a box tucked away in some basement, or drawn from a glossy flapped envelope after the film was first developed. Maybe these images have been lost to time – thrown out when a house was emptied after a death, say – and the photographs, so heavy despite their lightness, now represent the 'illogical conjunction of the here-now and the there-then'[2]: a burden others are less willing to bear than, say, the deceased's vase, painting or table. Maybe in the drawing of a dot you suddenly feel grief. If so, I am sorry for your grief and I share it with you now.

Where 'dot' is somewhat straightforward in its etymological relay, however, a word like 'line', if perhaps you drew, wrote and spoke such a thing, is altogether more complex. It contains meanings and implications that range from marks to cords, ropes or measurements, to limits, birth rights, consumer products and drugs, to infrastructures, mathematical theories, financial credit and queueing. The mark you made might have been connected to any of these things, or perhaps none of them at all.

With time and inclination, you might return to the mark. But this time, rather than interpret it representationally, consider it and the making of it materially instead. What key words would you write down? In the reading of them out loud, what emotions would they then conjure? Imagine for a

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[1] Julia Cresswell, *Oxford Dictionary of Word Origins*, (Oxford: Oxford University Press, 2010), p 135.
[2] Roland Barthes, 'The Rhetoric of the Image', in *Image, Music, Text,* translated by Stephen Heath, (New York: Hill and Wang, 1977), p 44.

moment that it was a pencil and paper that you used to make your mark, so you wrote ‘graphite’, ‘wood’, ‘paint’, ‘metal’, ‘rubber’, ‘wood pulp’, ‘paper’, ‘bleach’ or ‘acid’. Maybe it was a pen, or a marker or a crayon. Maybe it was on cardboard, or in a book, or on a notepad, a scrap or a crumple. Let’s stay with graphite for a moment. Etymologically, it follows from the German name ‘*Graphit’*, which was coined by the mineralogist Abraham Gottlob Werner (1750–1817) and is itself based on the Greek word *‘graphein’* for ‘write’, to which the mineral suffix ‘-ite’ is added.[3] One of the largest deposits of graphite in England was found in the 16th century in Borrowdale, near Keswick in the Lake District, where factories opened up in the 19th century to mass produce pencils.[4] Today, it is used in the production of batteries for digital devices and electric vehicles, but has many other applications as well. Graphite’s natural history links us to deep time, as it is one of the two or three oldest materials in this solar system.[5] Your mark might therefore be extra-terrestrial, like many of the minerals of your body, the dust and water in your breath or even the molecules moved by the sound waves produced by your vocalisation of the word ‘graphite’ itself. After all, as Carl Sagan said: ‘we are all star stuff’.[6] Perhaps, then, in this relay of your mark to graphite and stardust we have encountered Andromeda, the galaxy nearest the Milky Way, already.

If you have stayed with me this far, then perhaps I can fill you in on the purpose of this short text. I want to explore a trans-historic method for artistic research that belies more traditional forms of meaning-making in the discipline of history: one that instead relies on metaphors of spatial and temporal relay, such as transmission as telegraphy, as well as signals and signs. I aim to examine what can emerge through the fierce juxtaposition of networked, relayed information that emerges from a kind of search that jumps as one follows a relay from mark-making to semantics, from matter to history. You might call this method one of distraction. Perhaps. Or maybe it represents the critical and historical decision to privilege focus as a method, or the interruption of an undersea cable laid long ago that halted the transit of a message sent from some time and place other to this one. This is a creative method, and one of emergence as much as one of tracing, tracking and following. Where one rests, pauses or gathers breath during a relay is more about the latter – the tracing, tracking and following of feeling, of affinity and of sense – than it is about any kind of trying to ‘making sense’. While a radio station keeps broadcasting, we might, for example, turn it off after a moment to sit with a thought before turning it back on and receiving again. A relay is not a sense-making exercise. It is simply is an exercise in passing sense along. And so this here is both part of a larger, longer relay, and an attempt to relay one.

Let me introduce the term ‘relay’ in this context, both in terms of its grammatical capacity as a noun and as a verb. In short, I wonder what a relay relays (noun verb) and how to relay relays (verb noun). You can, if you like, look up the etymology of the word here. Punch it into a search engine or an online database of some kind. This will save me the time of re-writing what is already available to you, and save you from having to read it now. Instead, I’ll come to ‘relay’ parenthetically thinking it through as a spatial relation (the relay race), as a material conduit (the telegraph), as a repetition in time (the anniversary) and as a matter of interpretation (relayed translation).[7]

1 A Spatial Relation (The Relay Race)

The relay in space has multiple histories. Perhaps the most common is as a form of a race, in which multiple members of a team (whether running, swimming, walking, sailing, etc) cover a distance collectively, but alone. To complete the relay, they must exchange a physical object with one another or connect in some way. The runner needs to pass the baton or slap a hand; the swimmer must touch the edge of the pool. This is a simple sequence. Something linear. There is a beginning and an end. But crucial to the spatiality of this kind of relay is the location and locus of connection from person to person, object to object, site to site.

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[3] Ian Baker, *Fifty Materials That Make The World*, (London: Springer, 2018), p 83.
[4] Henry Petroski, *The Pencil: A History Of Design And Circumstance*, (New York: Albert A Knopf, 2010), p 45-46.
[5] Timothy J. McCoy, (2010). ‘Mineralogical Evolution of Meteorites,’ *Elements*, 6(1), pp 19–23.
[6] ‘The cosmos is within us. We are made of star-stuff. We are a way for the universe to know itself.’ Carl Sagan, *Cosmos: A Personal Voyage*, Episode 1, 28 September 1980.
[7] Much of this work follows from the co-curation of ‘RELAY' at the 2021 Venice Biennale of Architecture, a 24-hour durational relay conversation that travelled the globe. My co-curators for this project were Dr Thandi Loewenson and Dr David Burns.

In athletics, the connector is an object and a site. The changeover box is the space of exchange within which two runners have to transfer a baton. In the 100m and 400m relays at the Olympic level, the changeover box is standardised at 20m long, starting 10m before and stretching 10m beyond the start of each leg of the race.[8] This is currently governed by Rule 170 in Section 24 of the Technical Rules of World Athletics, formerly known as the International Association of Athletics Federations (IAAF). Among the many details outlined in Rule 170 is Section 24.5, which concerns the standardisation of the baton:

> 'The relay baton shall be a smooth hollow tube, circular in section, made of wood, metal or any other rigid material in one piece, the length of which shall be 0.28m to 0.30m. The outside diameter shall be 40mm ± 2mm and it shall not weigh less than 50g. It should be coloured so as to be easily visible during the race.'[9]

Section 24.6 goes on to outline the rules concerning how athletes interact with the baton. The site, the object itself, its exchange and the permitted regulations for interaction with it (this can be skin to baton only – no gloves or additional substances on the hand to aid grip are allowed) are defined in great detail. In the USA, the primary supplier of standardised batons to the Olympics is UCS Inc (United Canvas and Sling), a company founded in 1967 by Lou and Margaret Schwartz, two tailors from Czechoslovakia, as a manufacturer of canvas products.

I grew up in a family of runners, of racers. I remember being just old enough to catch myself from falling; running forward and fast, carrying a baton or a stick, and the thrill of letting go and watching it run away in another person's hand. I also remember dropping the baton, failing to connect, interrupting the relay. A strong and fluid connection feels like a rush of empathetic adrenaline, where a broken one leaves one feeling disembodied, fractured, disoriented. I run faster with a strong connection, and slower with fractured one. I remember practising and practising that moment of connecting with my teammates, over and over and over again. Each of our individual times mattered only as much as the strength of our connection. A relay relies on the connection between parts, and it is precisely within the space of connection that it is most fragile.

2 A Material Conduit (The Telegraph)

In races, what is relayed over space and time is often an object (a baton). However, people also relay information or messages. In communication technology, the 'relay' object is a signal repeater, the first application of was was in long telegraph lines, where the weak electrical pulses received at an intermediate station could be regenerated with power for onward transmission. Relays, then, allowed for telegraph messages and morse code communications to relay.

Before the relays of the electrical telegraph, there were semaphores like the one invented by Claude Chappé and constructed across France from 1792 onwards: towers with wooden arms on them that would be choreographed into multiple angled shapes to visually transmit messages over long distances.[10] Lines of 'relay' towers were built across France for military purposes, eventually extending to the Manche region, as well as to Venice and into Spain.[11] Weather and water got in the way, and the distance that a given message could travel was usually curtailed by either a lack of conveniently placed land masses or good weather. These interconnected points are traditionally understood as early data networks that developed complex systems of coding, including control characters, routing, error control, flow control, message priority and symbol rate control.[12] Some, such as the Swedish system developed in 1794 by Abraham Niclas Edelcrantz allowed messages to travel

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[8] Rahul Venkat, 'All you need to know about relay races: Rules, history, world records', Olympics, 27 June 2023, accessed 15 July 2023.
[9] World Athletics, *World Athletics Technical Rules*, p 48, accessed 15 July 2023.
[10] Patrice Flichy, (1993), 'The Birth of Long Distance Communication. Semaphore Telegraphs in Europe (1790-1840),' *Réseaux: French Journal of Communication*, 1(1), pp 81-101.
[11] Ken Beauchamp, *A History of Telegraphy: Its Technology and Applications* (London: Institution of Engineering and Technology, 2000, p 8.
[12] Gerald J. Holzmann and Björn Pehrson, *The Early History of Data Networks*, (Hoboken: John Wiley & Sons, Inc., 2003), pp 210-218.

twice as fast as the French, because of the innovation in its optical control panel.[13] The Prussian system, first proposed by Postal Privy Councilor Carl Philipp Heinrich Pistor in 1830,[14] on the other hand, brought time into the relaying of messages by requiring distant outposts to send a 'no news', or 'news' message to Berlin every hour on the hour, and synchronised time through the system with a separate message every three days.[15]

Of course the French did not invent optical messaging. Fire in the form of torches and smoke signals has been used for millennia – from the mountain tops of Sri Lanka to the Great Wall of China, First Nations in Canada, Aboriginal nations in Australia and other communities around the world – and possesses an incredible capacity for nuance. Smoke signals of this kind, as well as tracking signals and land signals, function as modes of communication, warning and kinship. Subtle shifts in the materiality of the burn, of the size and shape of the fire, and of the capture, release and choreography of the smoke are all used to form a set of complex semiotic codes.[16]

Elsewhere, the Inukshuk (from the Inuktitut ᐃᓄᒃᓱᒃ) is a stone relay used by the Inuit, Iñupiat, Kalaallit, Yupik and others of the Arctic, primarily seen in contemporary Canada and Greenland. These stone figures are communication devices that remain in place over time. In this system, it is the message itself that remains still, and the relay is the body that finds it. Here the stone figure is a navigation point for travel routes or to demarcate grounds for fishing, hunting or camping; a place of veneration, or one that marks food storage.[17] Its etymology comes from the morphemes *'inuk'* ('person') and *'-suk'* ('ersatz, substitute'). The relay is thus a substitute for a person. But one bound in a single place, and from another time.

And so the relay is also a message from the past. Even in a temporality of instantaneity, the relay is not. It may take nano-seconds to complete, but it still takes nano-seconds. Days after the first transatlantic telegraph cable from the UK to the USA was completed on 5 August 1858, it took 16 hours for the first message from Queen Victoria to reach President James Buchanan.[18] The message, when it arrived, was from 16 hours in the past. Three weeks later, electrical charges destroyed the cable, and it wasn't be re-laid for another eight years. Its brief spell of operation was a three-week experience of the future of communications which occurred before eight more years of the past. In the 19th century, Reuters used passenger pigeons to transmit the price of stocks between Brussels and Aachen.[19] In 1834, François and Joseph Blanc, two bankers trading in government bonds in Bordeaux, hacked the French semaphore lines to allow privileged information to get to traders before the mail coach.[20] A decade ago, mountains and earth between New York and Chicago were terraformed to lay a subterranean cable that would increase the speed of trading signals by three milliseconds.[21] Now, however, that technology is obsolete. Traders today use a system of microwaves to transmit and receive information, and clamour for real estate near to data centres in order to build towers that can capture these waves and bind them to servers in as short a time as possible.[22] Small rural towns are facing complex planning applications and legislation in which metres, centimetres even, can make all the competitive difference in this race to light-speed communication; to get as close to instantaneity as possible. As trading data moves from cables to microwaves, sight once again becomes essential as mobile phone towers and other relays need to be able to physically 'see' each

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[13] Holzmann and Pehrson, *Early History*, pp 104-105.
[14] Bernhard Siegert, *Relays: Literature As An Epoch Of The Postal System*, (Stanford: Stanford University Press, 1999), p 170.
[15] Wikipedia, 'Prussian semaphore system', accessed 28 August 2023.
[16] Grandmother Selma, 'Origins of the Smoke Signal', Mendota Mdewakanton Dakota Tribal Community: "Preserving, Protecting and Promoting the Dakota Culture for Future Generations", accessed 18 July 2023.
[17] Norman Hallendy, *Inuksuit: Silent Messengers of the Arctic*, (Vancouver: Douglas & McIntyre Ltd., 2000), pp 116-119.
[18] Ted Magder, 'The Origins of International Agreements and Global Media: The Post, the Telegraph, and Wireless Communication Before World War I,' in *The Handbook of Global Media and Communication Policy*, edited by Robin Mansell and Marc Raboy, (Oxford: Blackwell Publishing Ltd, 2011), p 23.
[19] Reuters, 'CHRONOLOGY: Reuters, from pigeons to multimedia merger,' *Reuters*, 19 February 2008, accessed 19 July 2023.
[20] This is argued by Tom Standage to be the world's first cyber-attack, and one for which the perpetrators were not convicted because there was no law at the time against interfering in data networks. See Tom Standage, 'The crooked timber of humanity', in *1843 Magazine*, 5 October 2017.
[21] Christopher Steiner, 'Wall Street's Speed War', Forbes, 9 September 2010, accessed 17 July 2023.
[22] Jesse Westbrook, Sam Mamudi, Saijel Kishan and Matthew Leising, 'High-Frequency Traders Find Microwaves Suit Their Need for Speed', Bloomberg, 24 July 2014, accessed 17 July 2023.

other to make up for the curvature of the earth.[23] A modern-day semaphore is in operation in the north-east of the USA.

3 A Repetition in Time (The Anniversary)

The summer of 2021 marked what some consider to be the 40th anniversary of HIV/AIDS.[24] 40 years, because it was in 1981 that public health officials in the USA first began reporting on some conditions that would later become known as AIDS. On 5 June that year, the Center for Disease Control published a report called 'Pneumocystis Pneumonia – Los Angeles'.[25] Just a under a month later, on 3 July, *The New York Times* published an article entitled 'Rare Cancer Seen in 41 Homosexuals'.[26] In their piece 'I Can't Remember the Question, but the Answer Was: Party', Ben Evans, John Freeman, Cea (Constantine Jones), Alexandra Juhasz, and Julie Tolentino ask: 'What does it mean for AIDS to have an anniversary?' and 'Why go about tracing the lineage of a virus to its origin point?'[27] These questions echo back today, as another global pandemic of viral transmission asks for answers, rather than listening for questions. What Would an HIV Doula Do?, 'a collective of people living with and impacted by HIV/AIDS in 2021' explain in their 'AIDS IS / AIN'T 40' project that they constantly 'doula ourselves, each other, institutions and culture'.[28] So what does it mean to choose this date to commemorate, and not any another?

The same summer of 2021 marked a moment of reckoning for settlers and all those living on the land now known as Canada with the First Nations genocide. On 27 May 2021, it was reported by the Tk'emlúps te Secwépemc First Nation that the remains of 215 children were found on the grounds of the former Kamloops Indian Residential School.[29] Since then, many more bodies have been found at schools of this kind across the country, and searches remain ongoing. The Residential School system was a network of mandatory boarding schools for Indigenous peoples funded by the Canadian government and administered by Christian churches. It was created for the purpose of removing Indigenous children from their families and culture in an attempt to assimilate them into the dominant modes of living imposed by white settlers.[30] Over the course of the system's more than 100-year existence (the last such institution closed in 1997), about 30 per cent of First Nations children (around 150,000) were placed in residential schools nationally.[31] Sylvia McAdam, co-founder of the Idle No More movement, has suggested that 'cancelling Canada Day is the bare minimum recognition of the ongoing colonization and genocide perpetrated against Indigenous peoples across Turtle Island'.[32] How does this anniversary build upon, repeat and relay the violent frame of the nation state?

What is an anniversary if not a relay, relayed over time, and time, again and again, each time building more meaning as ripple builds on ripple builds on wave builds on wave? What is the effect as wave becomes memory, becomes history, becomes fact, becomes feeling, becomes felt, becomes lived, becomes oceanic? How might we resist the tidal pull of an anniversary, shift its direction or embolden counter-narratives against it? Could we deploy the lure of the relay anniversary to platform histories that have until now existed outside the narratives of power? What does it mean to interrupt an

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[23] Westbrook et al., 'High-Frequency Traders'

[24] On 5 June 2021, the National Institutes of Health (NIH) Office of AIDS Research (OAR) commemorated the 40th Anniversary of AIDS commemorated the publication of the landmark CDC Morbidity and Mortality Weekly Report (MMWR). The event was called 40 Years of Progress: It's Time to End the HIV Epidemic.

[25] Centre for Disease Control, 'Pneumocystis Pneumonia – Los Angeles', 5 June 1981, accessed 22 July 2023.

[26] Lawrence K Altman, 'Rare Cancer Seen in 41 Homosexuals', in *The New York* Times, 3 July 1981.

[27] Ben Evans, John Freeman, Cea (Constantine Jones), Alexandra Juhasz, and Julie Tolentino, 'I Can't Remember the Question, but the Answer Was: Party', The Body, 5 June 2021, accessed 22 July 2023.

[28] 'AIDS IS / AIDS AIN'T 40', HIV Doula Work, 2021, Accessed 22 July 2023.

[29] Courtney Dickson and Bridgette Watson, 'Remains of 215 children found buried at former B.C. residential school, First Nation says', CBC News, 28 May 2021, accessed 24 July 2023.

[30] Truth and Reconciliation Commission of Canada, 'Canada's Residential Schools: The History, Part 1 Origins to 1939,' *The Final Report of the Truth and Reconciliation Commission of Canada Volume 1*, (Montreal: McGill-Queen's University Press, 2015), p 629-642.

[31] See Eric Taylor Woods, *A Cultural Sociology of Anglican Mission and the Indian Residential Schools in Canada: The Long Road to Apology* (London: Palgrave Macmillan, 2016).

[32] '80 cities and towns respond to Idle No More's calls to #CancelCanadaDay', Idle No More, 28 June 2021, accessed 24 July 2023.

anniversary, to stop celebrating or to question what it is that's bringing us together? Can we drop the baton? Cut the telegraph line? Hack the semaphore?

4 A Matter of Interpretation (The Relayed Translation)

A relayed translation is one that translates a translation, rather than the original source material. Imagine a text written in French and translated into English. Perhaps a Hindi version of it is required. Rather than translating directly from the French to Hindi, a relayed translation would take the translated English as its basis. In the field of translation studies, this form of relay is often called an 'indirect' method of conversion, in the sense that is mediated. A language that serves as a portal or mediator of this kind, through which other languages are translated, is called a 'pivot language'. Much research has traced such languages from the 17th to the 20th century, and made direct connections between relayed translations and the pivot languages used by colonial powers.[33] For historians of translation, understanding these relationships tells them something about the ways in which information is and has been spread, or not, throughout time, about the diffusion of ideas and certainly about the ways in which pivot languages can cause what is termed 'interference' to the originally expressed information.

Perhaps one of the most commonly and well-researched moments of relayed translation is the conversion from Arabic to Latin of Greek texts on philosophy, astronomy, maths and medicine, among others, which occurred in Europe from the 10th to the 13th century.[34] Taken from the original Greek into Arabic by scholars, these texts were then relay translated into Latin and later other languages. Scholars position Arabic as the pivot language that enabled the European Renaissance.[35] For example, one of the foundational texts in astronomy, Ptolemy's *Almagest* (the title itself a medieval adoption of the Arabic title al-Majasṭī for the original Greek Mathematiké Sýntaxis, or 'The Mathematical Composition') had three key translators al-Ḥajjāj, Isḥāq ibn Ḥunayn, and Thābit ibn Qurra, one of whom used the pivot language of Syriac (a now lost edition).[36] The constellation of Andromeda features as one of these originally described and charted celestial bodies. I wonder what we can learn about spaces of history by extrapolating key elements from the language of a relayed translation and positioning it within the methodological pursuit of two key elements: a given source and the distance between a thing happening and our knowing of it. What happens in the pivot? In the changeover zone? Inside the undersea cable? What happens in the time in between messages for a worker in a relay tower standing, telescope in hand, staring at the semaphore some ten kilometres away?

A Relay Relays

We see the sun as a figure of the past. In fact, everything we see is a relay from another time. As light travels from the sun to our eyes in something like eight minutes, we would not know immediately of the sun's collapse if it happened. Only eight minutes later. The idea of something happening simultaneously to our not knowing of it happening *is* perhaps the central conceit of the desire for instantaneous communication; of the drive for simultaneity and the constant and relentless relay of news, information and entertainment. How out of place do we feel, knowing we might have existed for a week in isolation from news, from communication before returning to a changed world. What is that time in between – that suspension? That moment between a thing happening and our having knowledge of it?

This is what I find interesting in both mythology and astronomy, and perhaps it is the in-between of time and space that actually draws the two together. Andromeda is a myth that has been a relay of oral histories, material sources, images, representations and morality. It has been papyrus paper at one point in time and an iron sculpture at another, cast by John Bell and bought by Queen Victoria at

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[33] James St. André, 'Relay,' in *Routledge Encyclopaedia of Translation Studies*, edited by Mona Baker and Gabriela Saldanha, (London: Routledge, 2020), p 472.
[34] James St. André, 'Relay,' p 472.
[35] See Jonathan Lyons, *The House of Wisdom: How the Arabs Transformed Western Civilization*, (London: Bloomsbury Press, 2009).
[36] Paul Kunitzsch, 'The Arabic Translations of Ptolemy's Almagest', *Qatar Digital Library*, 31 July 2018, accessed 20 July 2023.

the Great Exhibition in 1851.[37] The language, the word, the semantics and the etymology of Andromeda is like an anniversary. Each time it is repeated, it reinforces some origin; some primal, core element of it. But just what is that primal quality, when Andromeda is a myth? And if not a myth, then perhaps as a constellation or galaxy even? The constellation Andromeda has been drawn, configured, photographed and measured in countless ways throughout history. Visible to the naked eye, it is a smudge, a blur, something like a cluster or cloud not dissimilar to the Great Nebula that inspired Kant's 'island universes'.[38] It has been a glass plate taken on Mount Wilson Observatory in 1923 and the classification system developed by Henrietta Swan Leavitt to look at variable stars at the Harvard College Observatory. It is also our closest neighbour, and in a cosmic love dance with us; the Milky Way and Andromeda will, after all, collide in about 4.5 billion years.[39]

Andromeda the myth is relayed in time, through history, to us. Andromeda the galaxy is relayed in time, through space, to us. The light of it we see is already 2.5 million years old when it reaches our eye,[40] and so acts as a perpetually updating archive, or an impossibly slow telegraph line between two galaxies. So what do these relays relay? In following Andromeda as a relay, what do we find?

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[37] Royal Collection Trust, 'John Bell (1811-95) Andromeda 1851 Cast bronze | RCIN 41823', accessed 18 July 2023.

[38] G. J. Whitrow, 'Kant and the Extragalactic Nebulae,' *Quarterly Journal of the Royal Astronomical Society*, Vol. 8, pp 48-56.

[39] Riccardo Schiavi, Roberto Capuzzo-Dolcetta, Manuel Arca-Sedda, and Mario Spera, 'Future merger of the Milky Way with eh Andromeda galaxy and the fate of their supermassive black holes,' *Astronomy & Astrophysics*, Vol 643, October 2020.

[40] See David Schultz, *The Andromeda Galaxy and the Rise of Modern Astronomy*, (New York: Springer Science_Business Media, 2012).