

## **Color Chart**

Nick Herman

Who hath laid the measures thereof, if thou knowest? or who hath stretched the line upon it?

*Job 38.5 KJV*

### **IN THE BEGINNING**

Why do art and science rely so heavily on principles of division and schematic depictions of the natural world — on systems by which space and time are divisible, abstractable things? What inspired cultures to label their surroundings and render them using abstract symbols? More specifically, what underlies the inexhaustible interest in geometry, of the X and other more obtuse marks in the proverbial sand? Today artists are returning to an old cult – mathematics – and there is an undeniable resurgence in geometrical abstraction in every medium. More generally the culture at large is awash in invisible patterns and buffeted by the effervescence of wi-fi and up-to-the-minute everything. Our very atmosphere has become a digital sea of triangulating bits. Marshall McLuhan famously predicted the medium was the message...and so today we are a culture defined by codes... fiber optical pulses of light and operating systems that blanket the planet like shifting skeins of solar wind.

One of the primary metaphors for both art and science is the map. The map is a schematic, a bird's eye view, an interpretive rendering. As such, the map purports to reveal truths — be they geographical or mystic in nature. And more to the point, the map suggests a whole by charting its

constituent parts. Whatever the destination, the map provides a working basis for understanding the journey. And it is this impulse, the urge to understand how complex systems operate, that fundamentally informs today's burgeoning culture of abstraction.

To more fully diagram this information age it is helpful to reinvestigate some of the most basic codes of history. I have chosen one of the most widely held and commonly illustrated: That in the beginning there was chaos which was dispelled by light — that light signaled the beginning of order and the advent of the universe. In physics light is energy and marks an event, the most profound example of which is the Big Bang. In both science and myth there is a corresponding conceptual origin point that is depicted as a light source — a spark. Based on this symbolic nexus I would like to explore what follows this flash of light as described in the Old Testament: That the Creator, after creating the light, *divided it*. The first chapter of *Genesis* has a great deal of emphasis on division — of the hours, land from water, and all the beasts from one another and the plants. It's as if the act of division itself somehow substantiated creation and set it on its course. But it is my contention that this process of abstraction — of assigning signs for things — started not with the “naming” as is so often suggested but with the division inherent in the light itself — the nuclear fusion that illuminates the heavens and bifurcates our circadian rhythms. That it is the explosive radiance of light — depicted for millenia as a star burst — that is the generative principle of maps and the basis for abstraction.

## **DIVISION**

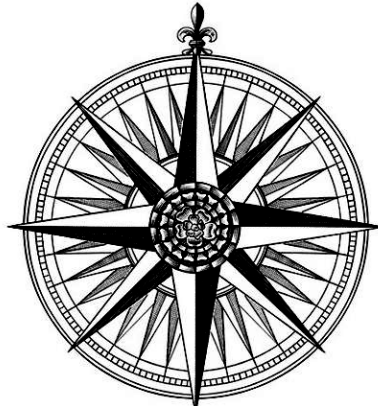
The word division comes from the combination of divide (dis) and (videre) vision. In arithmetic, division can be most easily conceived as repeated subtraction. It is in essence a process of winnowing, of determining the smallest quotient and, as such, it has been a metaphor for philosophical pursuit since Pythagoras. In much the same way, light has historically been a common ontological denominator for aesthetics, technology and physiology. It serves as a constant indicator of beginning and of the intersection of time and space, not to mention a mainstay metaphor for enlightenment and both religious and secular depictions of utopia.

It is this super-arching symbolism of light as a fixed axis of meaning that makes it such a resonant subject today. In this time of polyvalence and unmoored signifiers it is more than the language of radiating vectors that has come to characterize technology and the future, it is light itself. This might come as some surprise, as the mythic basis for much of light's currency has been slowly rejected as religious or empty romanticism. Yet despite the contemporary suspicion surrounding the metaphor of revelation its legacy is all around us, a complex syncopation of chromatic and geometrically explosive depictions – from art to science fiction to glossy advertisement – that map human desire.

I would argue that the key to understanding this continued relevance of light as an abstract conceptual symbol is to be found in its first function: division; i.e., a system that delineated the world in hierarchical terms. For as long as we have been looking to the sun and stars, we have been charting their movement, trying to discern meaning out of their elliptical orbits and effects on our moods and weather systems. And it is this behavior of light, its law of transmutation one might say, that has beguiled us and inspired the many tools for pinpointing and demarcation that characterize civilization. Paul Virilio has written and I think it is apt, "...the optical magnification of our natural environment is emerging as the final 'frontier,' the last horizon of technological activity. Improving the precision of telereal observation is today's analogue to the conquest of territories or the expansion of empires..."<sup>1</sup>

When Isaac Newton successfully showed that light was made up of a spectrum of different waves, and that these waves corresponded to different colors, he deconstructed what had eluded countless generations before him. But in some more symbolic way he only ratified a commonly held belief that had held sway since long before Plato — that light was a unit of measurement that could be charted, and that by studying shadows and the glint off reflected surfaces greater more constituent truths could be obtained and a system for delineating the universe created. Newton's spectrum, and his subsequent study of color that resulted in the first color wheel, resemble in some profound ways the early maps and navigation

systems used by seafarers, especially the compass. And this symbolic connection is no accident. Indeed, it is the common language of travel that underlies the way light is illustrated and functions as heuristic, whether as a beacon or an eclipse. And it is this age-old attempt to measure that concerns us here — the impulse to chart the physical by means of the abstract.



Compass Rose circa 14th century

## **MEASUREMENT and METROPOLIS**

For most of human history, whether you were King, architect or traveler the underlying root of your authority was the ability to deconstruct space and label its regions through some measure, a measure being a graduated method of establishing an object's magnitude. As such culture (and by extension technology and power) became synonymous with a kind of cartography — every overture we make – from music and sport to engineering – is a vocabulary of demarcation and taxonomy of increasingly complex division. This is certainly true in social structures and the gradual hierarchy of power that came to denote different cultures and their arts — a model explicitly made in the first book of the Bible and arguably its most tragic allegory (see Cain and Able).

Our physical cities bear testament to this long history of marking and delineating space and illustrate the way mapping became analogous to

cosmology and governance. In light of this, the early Greeks noted the importance of thresholds as they concerned themselves with what was then called chorography, or the measure of place. Chorography differed from cartography in that it focused on the local (on towns and their buildings) whereas cartography sought to measure greater distances and by extension establish the position of the earth in the universe. It was this ontological desire to locate oneself by observing the sun that would come to be so vital in the advent of the map and the development of the abstract as sign.

The origins of cartography are not just rooted in astronomy and nascent physics, however, but also in myth. And nowhere is this form of storytelling more elegiac in its measurement of leagues and lessons than in the description of the long journey. Indeed, the role of myth can in some ways be seen as framing the need for and vital importance of map making (a looser definition of myth might be synonymous with the etymology of cartography: to chart and write). From the labyrinth to the *Odyssey*, the epic quest serves as a canvas on which to illustrate allegorical themes and shape proto-theories of exegesis — in short it is the basis for philosophy, science and art. Plato made this connection between seafaring and society, arguing in *The Republic* that ship captains were ideal citizens, and that to pilot the state was akin to navigating a boat. Then as now, the ability to orient oneself in the landscape and read its many variables promised more than survival... it promised enlightenment.

This ancient connection is vital, for if we agree that civilization, as defined by systems of orientation, is synonymous with architecture, then cities become one of the most basic manifestations of philosophical ideals. It is this basic tenet that illustrates how the metropolis serves as a rendering of social hierarchy while simultaneously becoming a kind of ontological palimpsest — where the many layers of a city's engineering are akin to the most complex conceptual system governing both biology and philosophy. In this way, the layout of the city can be seen as mimicking the basic order of nature, an idea that can be charted from early Greek city planning through the Eden myth to the discovery of Renaissance

linear perspective and finally to Cartesian materialism on the cusp of modernization. In every iteration it is the threshold, predicated on light, that forms the fundamental basis for political and cosmological order.

In other words, the city came to mime the cartographical schemata for way-finding by employing the basic metaphor for cosmic origin — the radiating spokes of the sun's rays and the natural circadian cycle. And the map serves as an allegory for not only discovery but a kind of hermetic return to cosmic origin, the implicit impulse that informs so many myths.

It is therefore the labyrinth, that terrifying template for psychosis and the dangers of metamorphosis, that becomes the prototype for traveling — from chaos into order (and from darkness into light). The labyrinth is also a template for Greek cities and its architect Daedalus the first engineer, a context wherein the technology of observing and mimicking light becomes synonymous not only with maps but with mathematics — the science of studying patterns in nature.<sup>2</sup> And it is this study of patterns in particular that gives rise to geometry, the foundation of navigation and the visual system for illustrating space in both maps and later a great deal of visual art. And what is the prevailing geometrical motif, especially in maps and visual art? The triangle. From the Pythagorean theorem to modern GPS technology, and from the Masons to modern art, the triangle has been a ubiquitous symbol and tool for describing space and depicting vanguard consciousness. Only the grid has challenged the primacy of the triangle and in many ways it is simply a tool designed to better triangulate.

Geometry today is arguably the most prevalent and powerful conceptual system, informing everything from visual culture and digital technology to warfare and finance. Indeed, geometrical systems of mapping have become the prevailing method for spatial orientation, far more prominent and profound than any previous religious or nationalistic project (a phenomenon that will only grow as global positioning systems become more commonplace). And it is this ubiquity that I believe reveals a latent, some might say atavistic, return to a kind of solar Gnosticism. This

<sup>2</sup> For those interested in the relationship between ornament, architecture and Greek metaphysics I strongly recommend *Socrates' Ancestor* by Indra Kagis McEwen.

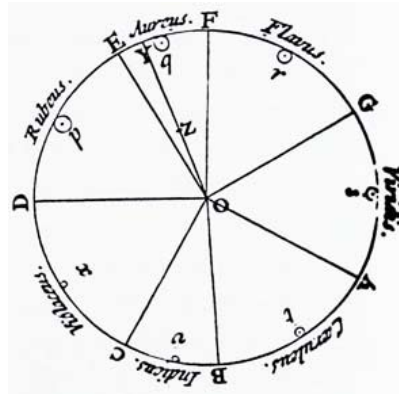
system has its origins in a hierarchy of information technology and the cult-like powers (so often protected as government or corporate secrets) to interpret them using supercomputers, algorithms, or doctrinal law.

## **COLOR WHEEL AND COMPASS**

In May 1493 at the onset of the Renaissance and what has come to be known as the “Age of Discovery,” Spain and Portugal were fighting over territory in the South Pacific and New World. Wishing to avoid conflict and to help consolidate his own power, Pope Alexander issued a papal bull called the *Inter caetera* whereby the remaining undiscovered world was divided with a quick line on the map that dictated “pole to pole” what belonged to whom. This act of tremendous hubris must be seen not only in light of colonialism, but also more broadly as indicative of the way the map was a kind of proxy body beholden to the State and the Church — a relationship rooted in a much older precedent dating back to those earliest explorers who sought to define the world through travel. The dramatic rise in maritime exploration begun in the 15th century only focused, and drew sharper, lines that had been slowly enveloping the globe. For maps, as we have seen, had been in widespread use for over two millennium — describing not only landmass but also fundamental cultural ideas.

One of the most compelling attributes of early maps and a symbolic link between science and art is the way space was rendered i.e., how the maps defined their three dimensional subject. The first really detailed maps were called Portolan charts. Portolan charts illustrated the contours of a continent’s shoreline but were created before the invention of the magnetic compass. Instead of being based around Polar North and using a longitudinal system, these early maps focused on weather, and specifically on wind. The maps were governed by what was known as the “wind rose” or “compass rose” — a device very similar in appearance to contemporary navigational aids. The compass rose demarcated the eight principle winds and could be further divided into 32 subsets allowing experienced sailors a comprehensive method of conceptualizing space. In these early maps, by utilizing the wind rose, the prevailing winds could

be drawn in much the same way as we might render a highway, as lines that, moving across the map, governed direction and dictated speed. These early graphic depictions emanating from the rose were known as rhumb lines (meaning direction) – a familiar criss-crossing network that is familiar to anyone who has looked at old maps – and clearly an inspiration for artists seeking to depict space pictorially.



Isaac Newton, color circle

Indeed, one of the qualities of rhumb lines that is so readily recognizable is that they create highly ornate grid-like compositions that resemble an ornamental motif or crystal matrix. In this light, the geometry of the rhumb lines is both the basis of navigation and illustrates how abstract and highly graphic cartography is, where lines, emerging from an established point, come to symbolically represent not only space but more fundamentally, a collective projection – a kind of azimuthal liturgy.

## FINAL FRONTIER

Is it coincidence that the first book on perspective was written in the 1400s by Alberti and in this same century the widespread advent of the compass rose came to orient travelers? It's as if the 2-dimensional world of art and the 3-dimensional world of science both realized and

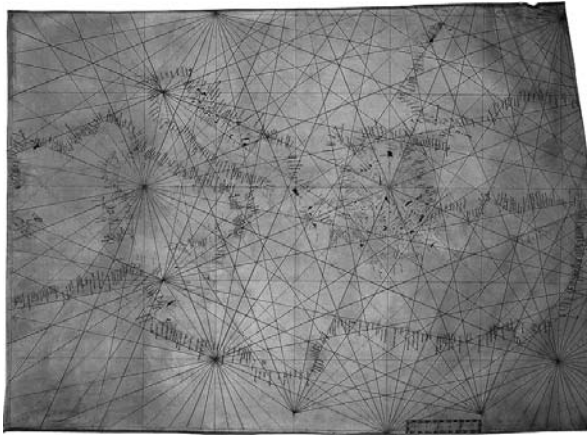


simultaneously applied the mathematical system of coordinates on mapping and illustrating space. This intersection is best exemplified in the advent of perspectival drawing, a system that quickly came to define the Renaissance as an age of technological innovation and observation.

And it is the emphasis on the eye, on perceiving the world empirically rather than through the matrix of religious symbolism, that augured the advent of both the modern and the rational ages that followed. But that is only half the story, as throughout the second half of the last millennium, from the Renaissance to today, there has been an equally robust companion history devoted to theories of consciousness and spiritual zeitgeist that retained the hermetic symbolism of light — the vast majority of which utilized the nascent sciences — especially its schematic vocabularies — to substantiate their theories of consciousness and new-age evolution.

One of the more pronounced marriages of science and art was the burgeoning interest in color theory. Already a major theme by the time of Isaac Newton's *Opticks* it was taken up by the German Romantics as a means of stimulating the sublime — a concept that articulated by Kant and Burke can be seen as a central alternative to Christian transmutation and a foundational principle in the many utopian movements that followed and marked Europe's "Age of Enlightenment." At the same time Goethe was formulating his own unorthodox theories on color and together, the three mark a kind of radical embrace of the power inherent in abstract optical phenomenon. It is in the context of this paradigm shift and the continual attempt to marry consciousness with science that Hermann von Helmholtz wrote his *Handbook of Physiological Optics*, a founding text of the physiology of perception.<sup>3</sup> What followed was a wild rush to do what had been previously only a subject of mystical speculation — create art that could affect the viewer's physical as well as mental state (a return to a mystic tradition largely sublimated by orthodox Christianity).

This era of physiological inquiry influenced everyone from the Impressionists to the Russian Avant-garde, the Futurists to Bauhaus. Indeed, it was the synthesis of science and symbolism that dominated



Nautical chart of the Mediterranean Sea - fourteenth century

the advent of modern art. The idea that by refining the use of color and line human consciousness could be mapped and stimulated to evolve was a basic inspiration for the Theosophists and their acolytes, such as Kandinsky and Mondrian, as well as Suprematism and just as importantly, the burgeoning field of psychology. The ecstatic belief in this ascent of man is well illustrated in the title of an opera written by Kruchenykh, Matiushin, and Malevich titled *Victory over the Sun* for which Malevich is said to have painted a completely abstract background that precipitated his famous *Black Square*. And Malevich is a compelling figure in the development of abstraction in large part because he spoke in a language of numbers, evoking the absolute by alluding to Pythagoras, declaring "I have transformed myself into a zero of form, and have gone beyond 0 to 1."<sup>4</sup>

And it is in this atmosphere of inchoate science that the analogy of movement began to not only be reconnected to artistic discovery but also with a psycho-biological evolution that could be stimulated through visual aids. Art was becoming not a map of but a map to higher consciousness.

Geometrical abstraction comes directly out of this marriage of ancient cosmology, linear perspective, and the new belief in optical physiology.

<sup>4</sup> *ibid.* pg 108

Indeed, it was Pythagoras' reputed interest in music that led to Newton's color wheel by way of Descartes' illustration of harmony as a circle. The map of the mind was viewed as a diagram of natural forces that governed the universe, and numbers, like music, were seen as a common denominator — scales, being synonymous with astronomy, were a map of the universe.

The legacy of this idealism that still reverberates today is less the panoply of pseudo-scientific theories but the many extant vocabularies of abstraction. This can be seen after WWI when many artists abandoned their utopian ideas of higher consciousness but still embraced the underlying technical vocabulary of the machine as a social metaphor. When one compares Kandinsky to Braque or even Duchamp (such as in *The Large Glass*) the evolution towards a schematized nature is clear. What has changed is that the manifestation of light, once held to be benevolent, has come to personify something far more complex and dangerous. But regardless of its coded meaning(s), it is still light's ability to denote a hierarchical order through symbolic division that remains fundamental.

Within this symbolic hierarchy, a central argument that augured the postmodern was the question of whether human civilization and consciousness was evolving; i.e., was humanity moving in a positive Darwinian arc towards greater intelligence or, instead, an absurdist, existential and ultimately apocalyptic endgame? This query is always a little blurry as it shifts from Theosophy to Abstract Expressionism to many of today's contemporary artists who, following Robert Smithson, seem to be employing a kind of semiotic alchemy to investigate the science and psychology of global capitalism and environmental entropy.

## **CORPUS MUNDI**

Whereas the idealism in early modernism focused on a teleological depiction of consciousness, there was always a companion project, begun in earnest by Cezanne, that retained a core commitment to the messiness of observation — a difference that would subsequently be based on the inclusion of and material commitment to the "real," as seen in collage and

the readymade. This inclusion of found objects and material as opposed to strictly "retinal" abstraction was to become a central theme of Dada and Surrealism and subsequently contemporary art and yet, the means by which the real has historically been appropriated – that subjective cutting and editing done by the eye and subsequently by the hand that in many ways prefigures the digital revolution – is, at its core, a central trope of abstraction dating back to those original maps. The critical fulcrum of both modernism and postmodernism – the abstract signifier – can be traced through the map to ancient myths of travel and the urge to chart the unknown. As such it is the depiction of death, the final frontier, that links these different symbolic epochs and points to the underlying subject of reflection as refraction as gnosis so poignantly evoked by Smithson's mirror displacements:

Through the windshield the road stabbed the horizon, causing it to bleed a sunny incandescence. Once couldn't help feeling that this was a ride on a knife covered with solar blood. As it cut through the horizon a disruption took place. The tranquil drive became a sacrifice of matter that led to a discontinuous state of being, a world of quiet delirium. Just sitting there brought one into the wound of a terrestrial victim.<sup>5</sup>

One seminal example of this modernized (necro) geomancy is Mary Shelley's *Frankenstein* wherein the origin of life is depicted not as a divine manifestation but instead as a process of scraps and fragments, furtively sewn together. It is this image of the surgeon's stitch that so powerfully portends the map as a contemporary metaphor — both in the context of digital collage and the theory of plate tectonics that now is the prevailing paradigm of geomorphology. In both, it is the study of collision that articulates creation — a dialectical ideal that is itself based on a kind of proto Greek psychology of space. That Frankenstein's creation is a monster – a new Minotaur – should be seen as an early example of the modern aesthetization of death as machine. And it is this partial embrace of the Promethean myth – artistic vision as technological fragment – that signals a return to the original Greek relationship between ornament and sacred violence — a framework that has in the twentieth century been described most profoundly by Walter Benjamin.

## UR IMAGE

For Benjamin, contemporary abstraction is a visual vocabulary rooted in the fundamental attempt to totalize a cultural desire (progress), what he called an “ur-image.”<sup>6</sup> Nowhere better illustrated than in geometry, the phantasmagoria of progress made explicit in the industrialization of the “new” charts mathematically and concretely both landmass and the information systems that define our material existence. The ur-image was Benjamin’s way of describing the voracious appetite of industrial capitalism — an anthropomorphism that he repeatedly evokes by depicting material objects as fossils. Using this archeological analogy, Benjamin alludes to a central theme of twentieth century art and culture — the fetishization of the temporal. Which is to say, the commercialization of light/ time as the basis of material culture (this is the history of authority from icons to the telereal as evoked by Virilio) — a spiraling edifice similar in spirit to Smithson’s meditation on Art Deco ornament in his essay *Ultramodern*.<sup>7</sup>

Abstraction has at its roots a radical proposition: that one thing could stand in for another. But this ostensibly revolutionary decentering of the solar schematic is consumed in the uncharted realms of the unconsciousness by the ur-image (within Gnostic Christian eschatology could be seen as being illustrated by Lucifer [which means light-bearer] as a fallen angel and in today's world it mirrors more the promise of virtual reality). This is the apocalyptic couched in esoteric terms of apotheosis that never really is fully purged from abstraction and that is especially topical today, for contemporary visual art seems again to be gripped by a devotion to the technologies of optics as cultic milieu.

For Benjamin, this repeated return to a false teleology is another example of the modern aesthetization of decay, a phantasm he famously sees rooted in the shopping arcades of the modern city. The engine of these arcades is, of course, fashion and specifically the inexhaustible photographic reproduction of the image that characterizes our era of perpetual newness. This exponentialism is perpetuated and distributed by the inevitability of light’s refraction — the very same basis for the original totalizing project of the map. In other words, it is the new advance of a powerful mathematical system that has again allowed for a profound rediscovery

<sup>6</sup> For more detail see *The Dialectics of Seeing, Walter Benjamin and the Arcades Project* by Susan Buck-Morss.

<sup>7</sup> “The Ultramoderne puts one in contact with great distances, with the ever-receding square spirals; it projects one into mirrored surfaces or into ascending and descending states of lucidity...The 1930’s reflect the 2030’s

/ reterritorialization of the visual. In this case it is the digital revolution, but is this any different than the original Biblical project of illumination followed by naming? For what lies behind photographic images is of course light – technically speaking the photograph fixes light thereby providing an arrested look at death – the ultimate division as embodied by Adam and Eve. And it is this specter of death that permeates art and literature since *Genesis* first divided the day from night. For death is the germ of the real that remains – like a shadow – in every rendered image and demarcation. It is the inevitability of death that prompts us to make that first scratch in the earth — to mark with an X our presence as real.

This shift to total image refraction as map is what confronts any artist who today embraces abstraction, especially visual vocabularies whose legacy is rooted in ideologies of progress. What makes the map a useful tool, its function as an agreed upon representative abstraction based on common referents e.g., 1 inch = 1 foot, is simultaneously what makes it so dangerous a medium of coercion; that the very basis of its usefulness viz. abstraction, is the ploy by which power can be exercised by a singular force and wisdom divested from the polis. As Situationist Raoul Vaneigem has written "All space is occupied by the enemy. We are living under a permanent curfew. Not just the cops – the geometry."<sup>8</sup>

This semiotic interpretation of the map has grown to include all images – a miasmatic inclusion that has not only divested art of its iconic power to name the real but has similarly extinguished its mythic promise of liberation through travel. It is no wonder that geometry as a formula of precision should reemerge as an attractive strategy given this disorienting and demystified state of affairs. Within this resurgence light is a material dialectic and in our fluxed epoch can be seen either as a dark eclipse or a blinding flare — either way it fits uncannily within a Gnostic hierarchy that to the skeptic suggests not a new beginning but instead a more pronounced and belabored allegory (perhaps in this case it is an appropriation) of "The Fall." In any case, it is the prevailing metaphor of light that defines the origin of abstraction and continues to sustain the power of the map as cosmic schemata. Today's artists charting of this light source indirectly promises a renewed apotheosis, the question remains as always, to what end?

– into a multifaceted domain of chambers that progresses backwards in threes. A tripartite infrastructure that extends forever into the future through the past. Nothing is new, neither is anything old." *ibid.* pgs 64-65  
<sup>8</sup> *Leaving the 20th Century: the Incomplete Work of the Situationist International* ed. Christopher Gray. pg 26