

**HOURS OF INFINITY:  
RECORDING THE IMPERFECT ETERNAL**

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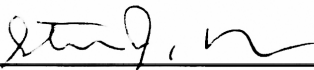
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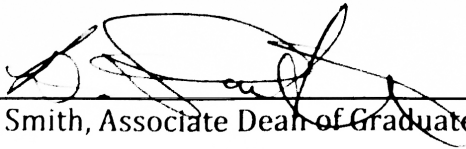
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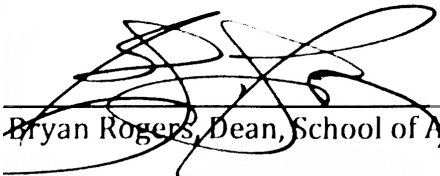
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**ABSTRACT**

*Hours of Infinity* is an ongoing project that seeks to record the “imperfect Eternal” – the human experience of the infinite, with all its flaws. A rigorously imprecise drawing method is at work in the three projects documented here, leading to visual objects that are uneven, absurd, and fragile symbols for something believed to be symmetrical, profound and everlasting. This MFA thesis documents the images, sounds, video, and performance event created thus far for *Hours of Infinity*. It also discusses the artistic, philosophical, and textual influences that fed directly into the creation of the work.

**KEYWORDS**

absurd, acousmatic, active sounds of history, aesthetics, akhet, Amduat, Anaximander, apeiron, archives, authenticity, beauty, cartouche, chance, chance operations, chaos, charcoal, circle, collection, contradiction, creation, curation, cyclic time, debureau, drawing, Egypt, Fibonacci Sequence, fishing line, Fluxus, footsteps, forum, gallery, graphic notation, graphic scores, Greece, Greek, hearing, Hesiod, hieroglyph, imperfect Eternal, imperfection, inaudible, infinite, infinity, installation, John Kannenberg, lemniscate, line, listening, Maria Barosso, metamodernism, mistakes, monofilament, museum, museum theory, objets sonores, paradox, pencil, peras, Pompeii, pre-Socratic philosophy, process, Re, renpet, resonance, Room of the Mysteries, seishintouistu, set theory, sharawadji, shen, sonorous objects, sound, sound art, sounding, still life, still time, sun, sun barge, sun god, temple, Temple Gentis Flaviae, time, universe, visual music, wabi sabi, wonder, writing



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## INTRODUCTION: RULES FOR LISTENING TO TIME

The solitary acts of drawing and listening are inextricably linked; they both observe and record each other.

My goal is to record an experience of expanded time, what I refer to as “the imperfect Eternal” – the purest, yet profoundly incorrect, version of infinity that humans as finite beings are capable of comprehending, through the creation of multiple series of drawings, a sound and video installation, and a performance event within a museum. The drawings, the driving force behind these projects, are themselves weightless objects: etched documents, their grooves and lines indicative of the sounds of specific durations of time; uneven, absurd, fragile symbols for something believed to be symmetrical, profound and everlasting.

The three projects that make up *Hours of Infinity* are based upon self-imposed sets of rules for creating artwork. The first, most all-encompassing rule in these projects was to focus my activity around an imprecise drawing method: attaching a charcoal pencil to fishing line, then attempting to draw only by touching the fishing line while standing over a piece of paper lying flat on the floor (Figure 1). In this process, gravity and momentum take over and my own movements are attempts to guide the pencil back on track, but I never truly succeed in drawing exactly what I want to. This physical separation of myself from the end product causes “mistakes” to be embedded within the work, while creating an ideal circumstance within which I am able to maintain focused attention on the sonic aspects of the experience – the sound of the pencil against the paper, and its merging with other sounds within the surrounding space.

While the artist Roman Opalka chose to document a portion of the infinite by painting a continuous, literal numerical sequence (Opalka), and *Mono-Ha* creator Lee Ufan continues to explore various permutations of infinity through perceived emptiness in the figure/ground relationships, negative space, and sculptural objects he works with (Munroe 19), I have chosen to confront the language of infinity head-on, repetitively depicting specific visual symbols that have represented infinity within various cultures over long spans of time; thus there is a calculated contradiction inherent within the small size and impermanent materials of these drawings, between their own ephemeral nature and the eternity they represent. Incorporating in their construction elements of classical Egyptian and Greek philosophies, mindful meditation, and numerology from mathematical theory, these works investigate the timelessly beautiful imperfection inherent within the human experience of the infinite.

Divided as they are into predetermined durations executed in real time, each drawing in this body of work is a *recording* of time as well as a symbol for it. Assembled within a logical sequence, the drawings exist in relationship to each other as well as in a binary relationship with a viewer.

Opposites attract me; contradiction is, for me, one of the purest forms of existence. I experience wonder in the foregrounding of background, I find beauty in listening to the unheard. I see power in the negation of a positive: light versus dark, loud versus quiet, listening versus looking. In focusing on contradiction as a creative strategy, I embrace the existential notion of the absurd. Albert Camus uses the absence of sound as an example of the absurd in [The Myth of Sisyphus](#): “A man is



talking on the telephone behind a glass partition: you cannot hear him, but you see his incomprehensible dumb show: you wonder why he is alive” (Camus 11). This literary example of the sonic effect known as *deburau* – a listener’s search for an inaudible sound (Augoyard and Torgue 37) – is potentially one aspect of the absurdity of existence. If I want to explore the absurd, why not create an artwork of contradiction? Why not attempt to collect sound by drawing time? Collecting and sequencing time as a series of impermanent objects became the primary impetus behind the first project in this series, *One Hundred Hours of Infinity*.

Bearing witness to the power of time can inspire awe: touching an ancient object, witnessing an eclipse, listening to a sound recording made before you were born. Time itself cannot be controlled, but the perception of its passing may be altered. Truly attentive, or deep listening as Pauline Oliveros describes it (xxi-xxv), requires suspending one’s perception of time – or at least the ability to disregard how long it takes.

And how long has it taken for humanity to comprehend the infinite as well as it currently does? It is an ongoing process, begun by thinkers in humanity’s earliest civilizations. As I continued to work on my own project to comprehend the imperfect Eternal, it made sense to go back as far in time as I could, to find some of the earliest symbols for infinity and record time-based drawings of them as well. Having studied ancient Egyptian mythological texts in the past, I was aware of a particular text that explored the cyclical rebirth of the sun each night, an eternally repetitive process that takes twelve hours each time it occurs. This seemed to be the perfect basis for a second project of more specific time drawings; this became

the foundation for the second project in this series, *Twelve Hours of Infinity: Amduat* – a text about time that I could represent through my own drawn records of time: a manufactured history, a sublime retelling of a fragmentary tale of cyclic time.

Museums collect, preserve and interpret histories. Those histories are told to us through the objects these institutions have acquired over time: temporal ephemera, mute vessels. It's through the display of these objects in deliberate proximities to each other that they begin to resonate, are imbued with meaning, as the museum theorists Spencer Crew and James Sims have stated (163). I follow this approach in my own artwork: by combining different, seemingly meaningless sounds and processes, I allow their juxtaposition to create meaning in tandem with their audience. Like a museum, I present what I collect. Museums are also places of sonic wonder for me; I spend much of my artistic practice recording the sounds inside of museums, attempting to capture what I describe as *the active sounds of history*, a term I will define in **Project 3** below.

This active listening practice inside museum spaces partially inspired my desire to see a group of performers present my fishing line drawing technique, which is also focused on active listening, inside a museum space. Add to this my interests in non-linear time and the sonic experience of museums, and *An Hour of Infinity* – a performance at the Kelsey Museum of Archaeology at the University of Michigan consisting of live drawing, recorded and manipulated museum sound, and visually composed music – becomes a logical outgrowth of this continuing body of work, the summation of my initial foray into creatively responding to the infinite.

## **PROJECT 1. *ONE HUNDRED HOURS OF INFINITY***

This collection of seventeen meditative drawings accompanied by a sound and video installation is the first of three projects within an ongoing series of work that attempts to record “the imperfect Eternal:” the embodiment of the human experience of infinity, the contradictory notion that we as finite beings continuously attempt – yet fail – to comprehend the infinite that stretches beyond our own realm of existence.

### **The Imperfect Eternal**

While developing the work that became *One Hundred Hours of Infinity*, I simultaneously spent my non-drawing time researching the human perception of the infinite. While a survey of the history of philosophical thought regarding infinity is well beyond the scope of this paper, there are a few signposts along that trail of thought that have impacted my concept of the imperfect Eternal which should be noted before I begin a discussion of the work itself. One of the earliest conceptions of infinity, the pre-Socratic philosopher Anaximander’s *to apeiron*, will be discussed in greater detail in **Anaximander and the Silent Sentinels** below.

A. W. Moore, in his exhaustive survey of the history of human thought regarding the Infinite, establishes two main concepts for dealing with infinity: the mathematical and the metaphysical (2). In an attempt to free the study of infinity from “the abyss of absurdity” (2), Moore further breaks down the body of thought into a series of four paradoxes: the infinitely small, the infinitely large, the one and the many, and thought about the infinite itself (3). In my own attempt to free this

thesis from the abyss of absurdity, I will first focus on the metaphysical aspects of infinite thought.

Each of Moore's four paradoxes are rife with contradiction, and many philosophers throughout time rejected them simply because they disagreed with the acceptance of contradiction. However, the nineteenth century German philosopher Georg Wilhelm Friedrich Hegel embraced contradiction as a fact of nature, going so far as to declare that "... every actual thing [in the Universe] involves a coexistence of opposed elements" (Sorenson 305). As an artist concerned with contradiction, this helped alleviate my fears of choosing subject matter that was so inherently vast and confusing, allowing me to embrace the opportunity to, in effect, talk about everything while possibly saying nothing.

Along these same lines, Moore suggests that one possible solution to the paradox of thought about the infinite is that to talk about infinity is to contradict it, so it should not be discussed (11). Yet this answer has yet to catch on, as discussions of infinity obviously continue unabated. As time has passed, more and more ideas related to temporal infinity have been conceptualized as metaphors, to the point that it is impossible to speak about time and the infinite without the use of metaphor (Lakoff and Johnson 166).

In order to enter the discourse surrounding the infinite then, my work must attempt to create new metaphors, to act as embodiments of new ways to mark time. By attempting to draw the act of listening, my drawings use repetition in its traditional sense of defining time (Augoyard and Torgue 93) yet push drawing beyond its typical implementation as a spatial representation to become two-

dimensional depictions of four-dimensional concepts and theoretical concerns. Although it may not be possible to discuss infinity without contradicting it or codifying it within a metaphor, the notion of the unity of time and space as an infinite whole is one of the concepts I hoped to explore in this work by using symbols for time that were close to universal (particularly that of the circle) as well as a Utopian notion that all beings are interconnected. Since my drawing process is simple enough to be accomplished by almost anyone, these drawings – to me at least – could function as universal guides for rumination upon the infinite, and the ubiquitous, repetitive, hushed sound of their making could act as a metaphor for the sound of the Big Bang, still faintly audible throughout the universe (Hawking 61).

The mathematical aspects of the infinite are somewhat more problematic when it comes to proving the existence of an imperfect Eternal. In the 1880s, German mathematician Georg Cantor invented a transfinite mathematics known as the *theory of sets*, and was able to prove that not only are there multiple infinities, but that they can be different sizes (Hofstadter 20). The somewhat startling discovery that there are different sizes of infinity is easily explained by comparing numerical infinities to an infinitely large hotel, as illustrated in the graphic novel [Logicomix](#), a story of the life and philosophy of Bertrand Russell (Figure 2). While Cantor proved the existence of multiple numerical infinities, this is merely an abstraction built of numbers; not only are these infinities number-based, but the mere existence of multiple, different-sized infinities serves to prove that, even though humanity is capable of comprehending infinity – even multiple infinities – these multiple infinities are still perceived by us as finite sets, objects of different

sizes, and if we take perceptions as primary, as philosopher David Hume would have us (Rucker 33), then our perceptions of different infinities are imperfect; for they can not exist as a series of independent objects if they are infinite, as they would be contained within each other and therefore imperceptible to finite humans – a perceptual paradox.

This may seem like a conceptual dead end, and while philosophers might feel that the study of infinity might be a worthless enterprise due to our inability to talk about it without the use of metaphor (Lakoff and Johnson 169), I would argue that it is precisely this reliance upon metaphor that makes infinity the ultimate in artistic subject matter, a tangible “everything” that can only be touched by the poetic.

### **Framing Infinity 1: Durations and Sets**

In the early months of 2011, I began experimenting with new ways to connect my longstanding practice of field recording/attentive listening with drawing, an activity that was once the primary focus of my artistic output but something I had abandoned over a decade ago. After a series of experiments that included listening to drawing paper, scraping graphite onto paper and running it through a printing press, and standing on a piece of paper while moving in a circle to create the subtle impression of my shoes upon the paper, I began a series of time-based drawings of circles made by dangling a charcoal pencil attached to fishing line over a piece of paper placed on the floor, using gravity and momentum to very lightly draw on the paper. The drawings were made in silent, focused attention: I listened to nothing other than the sound of the drawing being made and the

environment around me, and I looked at nothing but the drawing as it was being made. The drawings built up slowly over time, and the process that made them was self-evident within them; this was a visible gradual process, akin to the audibly perceptible processes composed by Steve Reich (Reich 34).

I had been writing titles on these drawings, more like instructions or scores – statements like “Trying to draw a circle for 10 minutes straight with a piece of charcoal attached to fishing line” (Figure 3). These titles acted as declarations of the rules I was using to create the drawings, the name of a task to be completed – much like the text scores of the Fluxus group in the mid-twentieth century, artists who had also “explored the borderline states of audibility” (Kahn 226) as I was now doing with these silent drawing and listening exercises.

Experiments with drawing other shapes led me to attempt drawing the *lemniscate*, the sideways “figure eight” that symbolizes infinity that was first implemented by John Wallis in 1655 for his book *Arithmetica Infinitorum* (Wallace 19). After completing my first hour-long lemniscate drawing, I instinctively wrote “One Hour of Infinity” on the paper instead of a more descriptive, text score title. The spontaneous poetry of this statement struck me, and I began researching infinity as potential subject matter. Eventually, the title *One Hundred Hours of Infinity* came to me, and the components of the process that led to the creation of this series of projects began locking into place. Using very specific instructions for myself to establish this body of work was a way of generating pieces that were not truly indeterminate but allowed for accidents to occur while keeping the work as a whole clear and organized, similar to the way artist and musician Brian Eno has

spoken of experimental music: “. . . an experimental composition aims to set in motion a system or organism that will generate unique (that is, not necessarily repeatable) outputs, but that, at the same time, seeks to limit the range of these outputs” (Eno 335).

Once I decided to create an exhibition of time-based drawings of infinity, I had to decide on the durations that would be drawn. The Fibonacci Sequence is an infinite series of numbers discovered in the early thirteenth century by Leonardo of Pisa (Hofstadter 135). This numerical sequence consists of a set of numbers whose values always equal the sum of the previous two numbers (0, 1, 1, 2, 3, 5, 8, 13, etc. *ad infinitum*). Its connections to the Golden Rectangle of proportions have made it a tool used by artists for centuries. I decided to use this sequence to determine the durations of each drawing in the exhibition; however, there was no easy way to make the numbers in the Fibonacci Sequence add up exactly to one hundred, so I finessed the numbers and came up with a three-part combination of hours and minutes that did (Figure 4). Out of the one hundred hour limitation, the entire structure of the show – with allusions to musical structures as well as numerical structures – presented itself. Each of *One Hundred Hours of Infinity's* sections would be referred to as a “set” of drawings since I was conceiving them as sets of numbers utilized in the mathematical set theory as formalized by Georg Cantor and Richard Dedekind, and first suggested by St. Thomas Aquinas in his thirteenth century treatise *Summa Theologiae* (Wallace 93).

Set 1, the **Prelude** (Figure 8), includes a ten-hour drawing of the oldest symbol representing the concept of infinity I found in my research. The ancient



Egyptian hieroglyph *shen* (Figure 5), when stretched vertically, also formed the cartouches that surround the names of pharaohs in ancient texts (Figure 6), offering the names of royalty eternal protection (Wilkinson 1992, 193). A simple symbol, this circle with a straight line on its underside fit my drawing process well. Rather than create a single image of the *shen* with a ten-hour duration, I decided to make this prelude act like an overture by including multiple *shen* rings of increasing durations, so as to illustrate the accumulation over time on one sheet of paper similar to that which would be on display over the course of the rest of the exhibition's drawings. Using four *shens* for this image made sense on multiple levels; this provided an elegant means by which to illustrate the drawing process, as beginning with a one hour *shen* and increasing the duration of each of the four instances of the hieroglyph by one hour each produced a set of ten hours (1 + 2 + 3 + 4). The number four also symbolized totality and completeness in ancient Egyptian numerology due to its connection to the four cardinal points of direction (Wilkinson 1994, 144).

Set 2, the **Sequence** (Figures 9 – 18) contains the first ten numbers in the Fibonacci Sequence, from zero to thirty four. Alternating lemniscates and circles allowed me to add a rhythmic visual element to the set of drawings by switching between vertical and horizontal compositions, as well as the opportunity to include two different symbols for infinity – with one of them, the circle, containing multiple meanings. The circle could be perceived as just that, a circle, or it could be perceived as the numerical zero. Invented by the ancient Babylonians as a placeholder to improve the clarity of the writing of large numbers (Seife 15), zero can be seen as

the exact opposite of infinity since it signifies, in a sense, nothing. However, like any good contradiction involving infinity, it can be proven that zero can, in many circumstances, also equal infinity (Seife 156). Hence, yet another layer of meaning/paradox exists within the Sequence drawings.

Set 3 – the final “movement” – the **Coda** (Figures 19 – 24) would act as a visual “fade off,” returning the viewer to their own realm of existence after experiencing the previous segments of timelessness. The Coda’s six drawings repeat the first six numbers of the Fibonacci Sequence in reverse, each number multiplied by ten and counted in minutes, not hours.

### **Anaximander and the Silent Sentinels**

Realizing that there would need to be two instances of “zero hours” in the show (since the first number of the Fibonacci Sequence is zero), I hung two blank, somewhat crumpled sheets of paper on my studio wall intending for them to act as silent sentinels that listened to the rest of the drawings as they were made, absorbing the process as it unfolded. As I continued to make drawings, I began thinking about what else these blank sheets of paper could or should represent.

Turning to Pre-Socratic philosophy for inspiration, I found a good match in Athenian philosopher Anaximander’s theory that the universe was created out of a formless, boundless, chaotic space that he named *to apeiron*. This term, although meant as a definition, was “radically indeterminate” (Moore 18) due to its multiple meanings in the ancient Greek language:

The original chaos out of which the world was formed was apeiron.  
An arbitrary crooked line was apeiron. A dirty crumpled handkerchief

was apeiron. Thus, apeiron need not only mean infinitely large, but can also mean totally disordered, infinitely complex, subject to no finite determination. (Rucker 2-3)

By the time of the Pythagoreans, apeiron was beginning to take on more specifically spatial characteristics, “. . . a dark, boundless void beyond the visible heavens” that was in direct opposition to the concept of *peras*, or order (Moore 19). I had already decided that these blank and crumpled drawings would be the only paper in the sets that would include pinholes. I wanted the charcoal drawings to appear like floating artifacts, but these blank pages would be ruptured with holes, complicated by folds in their surfaces.

The notion of rupturing infinite chaos was intriguing; it felt like the drawings themselves were ruptures in time. Adding precisely positioned holes to the two blank pages would be a way of imposing order onto indeterminate chaos, creating an intersection between *apeiron* and *peras* similar to ancient Greek ideas of creation. This led me to incorporate numerical symbolism from the ancient poet Hesiod’s conception of the size of the universe (Figure 7) in the placement of further pinholes in the paper. Hesiod claimed that the distance between the heavens and the earth could be measured temporally, by “. . . a bronze anvil [forged by Hephaistos] dropped from the highest reaches [that] would descend nine days and then land on the earth on the tenth day after it was left to fall” (Hahn 173). This was also the same distance from the earth to the bottom of Tartaros, the Greek underworld; hence, the universe was a symmetrical size, with the flat earth at its center. This notion of “9+1” was a numeric symbol used often in ancient Greek literature and Anaximander’s own cosmogony, with the number nine symbolizing great distance or time, and the

addition of the tenth unit as an intensifier (Hahn 173-186). I proceeded to puncture the larger blank sheet, *Apeiron (alpha)* (Figure 6), making ten holes in a vertical line in the center of the paper, with twice the space between the final two holes as there was between the preceding nine holes, referencing the fall of the bronze anvil. I reconfigured the holes for *Apeiron (omega)* (Figure 21), the final drawing in the exhibition, into an X-shape similar to a connect-the-dots version of a one-point perspective drawing, a crisscross with a multiplicity of meaning. This left the tenth hole missing, which I intend to be created symbolically by the viewer upon leaving the exhibition. Nearly imperceptible, these carefully placed, possibly beautiful holes in the two blank sheets of paper act as “. . . tears in the surface of the world that pull us through, to some vaster space” (Scarry 112).

### **Framing Infinity 2: Still Time**

While the drawings in these projects were conceived as sets or collections of multiple images, each drawing is itself a collection of lines: grooves and pathways which record specific moments in time, the moments of the drawing's own creation. Since each drawing consists of multiple attempts to draw a sign/object – either a circle or lemniscate – their relationship to other forms of visual composition is complex. The drawings are not exactly images, not exactly writing, and not exactly formal compositions (visual nor musical), but they contain elements of all of these.

Strangely, as the project has evolved I have begun thinking about traditional still life, and how my infinity drawings might relate to this genre. The poet Mark Doty, in his concisely beautiful essay on still life painting, describes still life as:

... an art that points to the human by leaving the human out; nowhere visible, we're everywhere. It is an art that points to meaning through wordlessness, that points to timelessness through things permanently caught in time. That points to immensity through intimacy. An art of modest claims that seems perennial, inexhaustible. (Doty 66)

This description has struck me as precisely stating what I have attempted to accomplish with these absurdly imperfect little drawings of the infinite. Again, the absurdity of this rears its head, for my drawings are not still life at all; neither are they particularly still, as their creation requires the momentum of a pendulum swing. But what they capture and embody are finite bits of time. At the risk of sounding too precious about them, I believe these drawings are examples of "still time," an abstracted approach to the creation of a *vanitas* image that uses infinity as its contemplative matrix.

### ***One Hour of Infinity***

Accompanying the drawings in *One Hundred Hours of Infinity* is a sound and video installation piece, *One Hour of Infinity*. While making this body of work during the summer of 2011, I videotaped myself drawing the one hour lemniscate (Figure 7) from start to finish in a single take, using only the natural light from my studio's skylight.

The single shot of the video (Figure 22) is close-cropped on the paper, which rests on the floor. At the beginning, my charcoal pencil dangles above the paper while attached to fishing line, then begins drawing. Over the course of the hour the drawing slowly builds up. I began the drawing at about 6:30 am, and because of the ongoing sunrise the quality of light slowly and subtly changes as the video

progresses. Mistakes were not edited out: the pencil skips across the paper or out of frame, the auto-focus on the video camera loses focus on the paper while following the pencil; the drawing in the video is upside-down when compared to the actual, authentic drawing hanging earlier in the show due to the positioning of the camera.

Sonically, the piece worked as a bridge between the acoustic properties of the gallery space where the exhibition takes place, and the space of my studio where the recording was made. The two-channel soundtrack – a mix between two recordings, one of contact microphones placed directly on either end of the paper, the other from a stereo microphone capturing the sound of the drawing activity as well as the room’s ambient sound – was played back on speakers placed on the floor at either side of the gallery space containing the video. When the viewer/listener sat directly in the video’s optimal viewing position, the sound of the pencil moving back and forth was heard passing directly through the listener, bouncing between the walls: a physical interaction between audience and sonic object, a wave of time not dissimilar to a pendulum’s swing.

By presenting this video in its entirety within the gallery space, the ambient sound of my studio in the past was mixed with the sound of the exhibition space in the present: a hybrid sonic event, one of transference and degraded replication, as in the child’s game known as “Telephone” – an imperfect attempt at sonic communication. Within the context of the exhibition, where the drawing being made in the video was hanging on the wall nearby, *One Hour of Infinity* became an instance of sonic and visual “adumbration,” a term coined by phenomenologist Edmund Husserl and defined by sound theorist Seth Kim-Cohen as a situation “. . . in which an

object is perceived from multiple perspectives, yet understood . . . to be one and the same object with a set of essential qualities” (46). Kim-Cohen equated Husserl’s adumbration with Robert Morris’ 1961 sculpture “Box With the Sound of Its Own Making,” a box containing a three-hour tape recording of Morris building it. Although my application of this concept may be similar, the addition of the visual record of the drawing’s creation in a moving two-dimensional image provides another link between the sonic experience of the act of drawing and its result.

### **The Aesthetics of the Imperfect Eternal**

In my attempt to create work that embodied the notion of the imperfect Eternal, I made specific aesthetic choices along the way to apply to my process for generating the work. Several of these approaches have long been guides or aspirations of mine, and it was during the creation of *Hours of Infinity* that I began to feel as if most of the threads of my artistic practice in years past were finally beginning to coalesce into a coherent personal aesthetic.

By structuring the project as a series of different-sized sets or sequences (Pearce 1994, 157), it embodies infinity through a process of collection. As a project that seeks to achieve a balance between order and chaos, creating a collection is one method in achieving this, whether it is a collection of imperfectly absurd drawings or a haphazard collection of books:

Every passion borders on the chaotic, but the collector’s passion borders on the chaos of memories. More than that: the chance, the fate, that suffuse the past before my eyes are conspicuously present in the accustomed confusion of these books. For what else is this collection but a disorder to which habit has accommodated itself to such an extent that it can appear as order? (Benjamin 60)

Walter Benjamin saw order in personal chaos; my drawings contain chaotic elements, stray marks made by an unruly pencil affected by momentum, but in many cases these stray marks find their own kind of order, clustering into irregular patterns such as the tiny stray marks on the right side of the circle in *Sequence. One Hour of Infinity: Circle* (Figure 7). Beyond chaos and order, collection also suggests a wish on the part of the collector to possess what each object represents (Berger 83), to obtain a sense of completion: “The most singular aspiration behind collections is the desire for completeness and graspable panoptical and universal gaze” (Shelton 16). Each drawing is an attempt to *embody* everything, but not *possess* it, through the collection of multiple elements: stray marks, time, sound, and of course, lines.

In choosing to make drawings, I made a conscious choice to discuss infinity by the making of lines. Lines come in almost infinite varieties; I chose to leave *traces*, defined as “. . . any enduring mark left in or on a solid surface by a continuous movement” (Ingold 43). Although the act of writing, which is similar to drawing, involves language, and language is considered a psychological rather than a sonic phenomenon – i.e., written words do not contain sound, they merely remind us of sound in our minds (Ingold 7), I believe that these drawings are embodiments of the sounds of their own creation, that they include a visual recording of their own making. This is accomplished primarily through the repetition of curved lines and, particularly in the circle drawings, the similarity in their appearance to the form of the phonograph record: “covered with curves, a delicately scribbled, utterly illegible writing . . . structured like a spiral” (Adorno 56). However, the sound on a record, as well as that contained within these drawings, exists like “a text that cannot be ‘read.’”



It must be decoded” (Milner 22). Could these drawings exist as “sonic objects” due to their linear repetition?

Repetition, as both a visual and sonic effect, has been a tool of mine for years. With *One Hundred Hours of Infinity* I have finally made repetition an integral part of the process, meaning, and aesthetics of a work. Each drawing contains countless repetitions of attempts to draw the same shape, while each series of drawings contains repetitions of the same symbols. As repetition in sound can easily represent and mark time, repetition can also be regarded as a symbol for *reproduction*:

The whole domain of electrophonic recording is based on industrialization of the repetition effect: through compact discs, cassettes, or vinyl discs, an original can circulate in millions of copies and *be heard at the same time* on thousands of different media, in thousands of different ways. (Augoyard and Torgue 97, emphasis mine)

The drawings not only contain collections, but they themselves appear to embody the desire to expand outward, to replicate, to always continue. This repetition can also refer to something crisscrossing or folding in upon itself, such as the central element of the lemniscate drawings, a crisscross. During the making of the drawings, while silently watching the charcoal pencil making its marks, I sometimes became aware of a linkage between myself and the drawing, viewing my body as an extension of the drawing’s body or vice versa. This sensation became not unlike the feel of touching one’s own hand with their other hand, activating a psychological space that connected the drawing and myself as its creator to the world outside of myself:

... if my hand, while it is felt from within, is also accessible from without, itself tangible, for my other hand, for example, if it takes its place among the things it touches, is in a sense one of them, opens finally upon a tangible being of which it is also a part. Through this crisscrossing within it of the touching and the tangible, its own movements incorporate themselves into the universe they interrogate, are recorded on the same map as it ... (Merleau-Ponty 133)

My favorite aphorism within Brian Eno and Peter Schmidt's Oblique Strategies instructional cards for artists is "Honor thy error as a hidden intention." I've often found the easiest way to produce desirable artistic errors is through collaboration; in the combination of two or more sensibilities it can be easier to explore the unknown, the uncomfortable, the avoided. By accepting these collisions of fate as decisions rather than barriers, I open myself up to new ways of seeing, or doing, or listening. In the work I make as a solitary artist, I create situations that provoke similarly acceptable "errors." So now, I draw with fishing line.

Errors and chance operations have been incorporated into my artistic practice for many years. As mentioned previously, I was very much thinking about Fluxus event scores during the experimentation process leading up to these works, and Fluxus principles continued to inform my choices as the project developed. Chance played a huge role in Fluxus works, with process determining the work's outcome: "The very form of the work reflects the process by which it was created" (Deuze 75). The proponents of chance in the arts of the mid-twentieth century such as John Cage and Earle Brown would define "chance operations" as options available to the performer of a score and "choice operations" as chance decisions made by the composer of the score offering few options for choices by the

performer (Dezeuze 76); I believe that my rules such as “draw a circle for one hour with a charcoal pencil attached to fishing line” is, while narrow and specific, allowable for chance events during the execution of the artwork. Stray marks from the pencil appear abundantly on each drawing, flecks of intentional accidents when the pencil became momentarily uncontrollable. These accidents are incorporated into the work, even so much as to include a stain on the lower edge of the 34 hour lemniscate of *One Hundred Hours of Infinity* (Figure 21) that was caused by the sole of my shoe rubbing against the lower edge of the paper over the course of the drawing, a roughness that indicates the passage of time.

The ancient Japanese aesthetic *wabi sabi* has long been an influence upon my work. Integrally related to Zen practices, *wabi sabi* can be defined as “. . . an aesthetic ideal and philosophy that . . . eschews intellectualism and pretense and instead aims to unearth and frame the beauty left by the flows of nature” (Juniper 1). In quite literally putting a frame around these results of gravity, momentum, and chance, I am certainly framing a semi-natural occurrence. The Zen term *seishintouistu* refers to the concentration of the soul and the mind on one singular activity (Juniper 91) which is also at work in my process, for no matter how much my mind wandered during each drawing session, it inevitably came back to the task at hand. In more direct terms, some of the design criteria linked with the *wabi sabi* aesthetic include “Rough and uneven . . . Variegated and random . . . Textures formed by natural sporadic processes” (Juniper 110). The results of the fishing line technique embody all of these criteria. This rough, random aesthetic can also be linked to the notion of the crack within experimental music, including rough

treatment of technology to the point of damage or rupture (Kelly 32-37); the pinhole drawings incorporate damage and rupture in an organized, yet nonetheless rough, manner – a violent beauty.

As *wabi sabi* encourages the propagation of the beautiful, so too am I concerned with making beautiful work. Elaine Scarry's treatise on beauty discusses many of the same impulses that drive me to create work that is beautiful. She states that beauty begets beauty – that beautiful things inspire the creation of more beauty, and hence, affirm the existence of eternity:

When the eye sees someone beautiful, the whole body wants to reproduce the person . . . This phenomenon of unceasing begetting sponsors in people like Plato, Aquinas, Dante the idea of eternity, the perpetual duplicating of a moment that never stops. (Scarry 4-5)

She also states that beauty “prompts the search for a precedent” (30), equates beauty with truth “because truth abides in the immortal sphere” (31), and eventually “brings us into contact with our own capacity for making errors” (31). For Scarry, beauty inspires sustained vision, similar to the fixed gaze I imposed upon myself during the drawing process: “Staring . . . is a version of the wish to create; it is directly connected to the acts of drawing, describing, composing” (72). Perhaps most importantly of all, Scarry insists on the existence of a historically sonic connection between beauty and the impulse to create: “. . . ancient and medieval philosophers always referred to it acoustically: beauty is a call” (109). Whatever the case, beauty was a prime motivator for my completion of these projects – my desire to walk into a gallery containing nothing but these drawings fueled my ambitions to complete a body of work that required the endurance to follow a sometimes ridiculous series of rules.

These absurd, contradictory rules that I created and followed in order to generate these drawings helped reinforce my belief that no matter how clearly humanity believes it understands the infinite, we are unable to fully grasp it due to our finite essence – and any attempt to do so results in the acceptance of a beautiful absurdity as one of the rules governing the makeup of the universe.

## **PROJECT 2. *TWELVE HOURS OF INFINITY: AMDUAT***

In this second variation on the theme of the imperfect Eternal, I turned to ancient Egypt for inspiration. As one of humanity's oldest civilizations, the culture of ancient Egypt has been an inspiration to me for as long as I can remember. Finding points of contact with ancient civilizations has been one of the goals of this project, and upon being presented with the opportunity to exhibit a series of drawings in the Kelsey Museum of Archaeology, I was keen to make a more overt connection between the collections held there and the images I chose to draw. The drawing and/or writing of ancient Egyptian hieroglyphs became a self-imposed rule for this next body of work.

### **Cyclic Time in Ancient Egypt**

As this project would be concerned with Ancient Egyptian perceptions of infinite time, I was immediately drawn to an ancient text entitled The Book of Amduat. A hieroglyphic text found inscribed on tomb walls as well as papyri, The Book of Amduat is also referred to as The Book of What is in the Netherworld (Piankoff 227). While the most complete version of The Book of Amduat was found

in the tomb of Seti I (Piankoff 228), the best English translation of this text is based primarily on the version inscribed on the walls of the tomb of the New Kingdom pharaoh Rameses VI, located in the Valley of the Kings in Thebes and designated KV 9 by Egyptologists (Weeks 55).

The Book of Amduat cryptically recounts the tale of the journey of the sun god Re in his solar barge during the twelve hours of night before he is reborn every morning at sunrise. The book, divided into chapters corresponding to each of the twelve hours, is primarily made up of lists of deities who accompany or are passed by Re on his journey; several of them have names related to time or rebirth, such as “The One who rows his Hour” and “He who ignores his annihilation” (Piankoff 296). It also contains declarations connected to the drawing of objects and how, through the act of drawing, knowledge of what is drawn is obtained and is useful on earth and in the netherworld (Wente 164-165). An interesting reference to ambient sound occurs in hour eight:

The texts also describe how the *ba*-souls of the gods and the dead joyfully respond to the sun god from . . . crypts . . . Though the sound of this rejoicing is intelligible speech to [Re], human ears hear it only as the cries of animals or other sounds in nature, such as banging on metal or splashing water: such is the distortion even of sound in the afterlife! (Hornung 39-40)

Many Egyptologists consider the text of The Book of Amduat incomplete; T. G. Wilfong suggests that what was written down in these texts was merely a record of the overall structure of the book intended as a guide for priests to read from as a memory aid (personal communication, July 20, 2011). As such, texts like these would have acted in a similar manner to how a field recording does in contemporary sound art: as an incomplete reproduction that acts as a remembrance for the person

who made the recording, a partially reproduced experience.

It is as a document related to the ancient Egyptian notion of cyclic time that I was most interested in basing this project on the text of The Book of Amduat.

Referring to the grammatical construction of the text – written in primarily the present tense – Edward Wente considers it an example of the ancient Egyptians' ability to think of time as malleable, simultaneous, and cyclic:

...the Egyptian notion of cyclic time permitted the bringing of the past into the present now, as with the concept of creation. I would suggest that ... it would have also been possible for the religious Egyptian to bring the future into this present, so that the realities of death and movement into the netherworld with attendant rebirth could have been genuinely experienced in this life now without reference to the limitations imposed by the barriers of human time. (178)

While this ancient notion of “simultaneous time” may at first glance appear fanciful or even naïve, it corresponds with interpretations of the Special Theory of Relativity, for “... on the basis of modern physical theory we have every reason to think of the passage of time as an illusion. Past, present, and future all exist together in space-time” (Rucker 10). This simultaneity of experience was also something I was interested in terms of the process of both making and observing the drawings, to inspire a sensation of the sublime as described by Julia Kristeva in Powers of Horror:

... always with and through perception and words, the sublime is a something added that expands us, overstrains us, and causes us to be both here, as dejects, and there, as other and sparkling. A divergence, an impossible bounding. Everything missed, joy – fascination. (11-12)

### **Written Objects of Perpetual Sonic Creation**

The Book of Amduat's twelve-hour journey provided me with a given total

duration of hours around which to construct a short collection of drawings (Figure 26). Since the text dealt with the nighttime life of the sun god, I decided to create these drawings in near darkness, as opposed to the sunlight-soaked drawings of *One Hundred Hours of Infinity* (Figure 27). *Twelve Hours of Infinity: Amduat* contains drawings of four hieroglyphs related to infinity, the measurement of time, and the birth/death cycle of the sun. I divided the drawings into two sets entitled *Red Land* and *Black Land*, the names the ancient Egyptians gave to the western desert and the fertile Nile river valley respectively. Using this metaphor was a pathway for me to introduce color into the work; it also refers to Egyptian papyri that used red ink for “charged” text – such as the names of deities – and black ink for conventional text.

The *Red Land* drawings include:

- **Re** (Figure 28). The circular hieroglyph representing the name of the sun god was an obvious choice and begins the series with a single hour drawing.
- **Renpet** (Figure 29). As the sign for “year,” this two-hour image imposes upon the drawings a paradoxical context of time measuring time: I drew a year for two hours – how is that even possible?
- **Akhet** (Figure 30). The sun disc looming above the horizon, caught in its state of rebirth, a three-hour drawing.

The *Black Land* drawings include:

- **Shen rings** (Figures 31 - 33) once again appear, as they did in the Prelude in *One Hundred Hours of Infinity*. Using the same technique, but giving each *shen* its own page this time, I created drawings that were one, two, and three hours in duration.



## Sounding the Words of the Gods

As the ancient Egyptian notion of eternity was so intricately enmeshed with the concept of creation, I considered Egyptian creation myths in my choice to draw hieroglyphs for the *Amduat* series. Ancient Egyptian mythology contains several creation myths, each of which was specific to the particular region of the country where the myth was generally created, and it is difficult to determine which creation stories may have been the most widely adopted (Lurker 42). One myth in particular, centered around the ancient city of Memphis, saw the world created by words spoken aloud – a combination of thought, text, and sound as creative act:

At Memphis the creator god Ptah conceived the idea of creation in his heart and it was given effect by his tongue which spoke the thought. Creation by utterance occurs in numerous of the texts. (Lurker 42)

With this in mind, the selection of hieroglyphs to use as subject matter for this series gained importance, and the theme most prominently in my mind during the creation of these drawings was the speaking of words as an act of creation. Although I did not speak the hieroglyphs aloud during the process – something inherently impossible to accomplish correctly since the true pronunciations of the ancient Egyptian language are lost to history due to the nature of the written language (Allen 13) – the sound of the drawings would act as a kind of speaking, a dialogue between the studio space and myself. As such, I made audio recordings of the sound of all twelve hours of the drawing process.

Although these objects are drawings of ancient hieroglyphs used as *ideograms*, or signs that stand for entire words rather than letters (Allen 2), I believe that through the act of repetitive drawing they cease to become instances of

language *per se*, that their perception as aesthetic objects point to a broader experience than mere language – “the hand that writes does not cease to draw”

(Ingold 124). Lee Ufan, an artist whose practice focuses on the infinite, has stated:

Works of art can speak, but they are not language as such. As long as works of art have a relationship with the outside world, they are necessarily separated from language . . . I sometimes start from the self/language, but I always want to maintain a relationship with the uncertain, unknown world beyond it. I do not want to put the world into words or possess it with my ego but to enter into a relationship with the world that allows me to perceive it. (Ufan 121)

The drawings’ identities as recordings of actions again asserted themselves during this second project. While early versions of my fishing line drawing technique included hand-written titles that could be interpreted as scores, the lines in the final drawings acted simultaneously as recordings and as instructions, simultaneously different states of being similar to a phonograph record and the music it contains:

A gramophone record, the musical idea, the written notes, and the sound-waves, all stand to one another in the same internal relation of depicting that holds between language and the world. They are all constructed according to a common logical pattern. (Wittgenstein 4.014)

Choosing to draw hieroglyphs taken from The Book of Amduat, I intended to create a series of objects that were more than mere drawings: they are drawings, writings, scores, recordings, and *sound* combined. They act as signifiers of the act of creation, a metaphor for the artistic process, an absurd set of scribbles made with fishing line elevated to metaphysics, transient phenomenological descriptions of themselves scrawled on paper (not carved into stone) over and over again as if to stubbornly guarantee their own permanence through their multiplicity.

### **PROJECT 3. *AN HOUR OF INFINITY***

The third component of the *Hours of Infinity* project was a site-specific performance and installation event at the Kelsey Museum of Archaeology at the University of Michigan that took place on March 23, 2012. Designed to be a one night-only, hour-long piece entitled *An Hour of Infinity*, this piece synthesized many of the ideas I have been working with for the past several years including the fishing line drawing process originally developed for *One Hundred Hours of Infinity*, the composition of graphic notation for live performance (Sauer 115-116), attentive listening to nonmusical sound, and the sonic experience of museums. Since much of my work – and this project in particular – concerns itself with long segments of time, it felt appropriate to present this performance in a museum dedicated to the display of ancient objects, especially one containing collections from several of the cultures whose philosophies directly influenced my decision-making during the creation of this body of work.

#### **The Active Sounds of History: Museums as Sonic Object Collections**

In the writing above I have spoken several times about simultaneity – a merging of past, present, and future – a sensation I hoped to evoke through the audience's relationship with the drawings produced by my fishing line technique. This feeling of temporal concurrence is much the same as my experience of a museum, in which my sense of history is seldom linear. Even if the exhibition designers in a museum have organized its collections chronologically, visitors rarely follow that intended path. Museum visitors follow paths that often, if not entirely,

involve a great number of chance operations in tandem with a curatorial guide who, unavoidably, is only partially in control of the situation.

When I walk through a museum, I travel through non-linear time. And often, I record the sounds I hear in museums as a method of collecting time. Museums as sonic environments contain a record of the present day mingled with the past. Every echo, every footstep, every floor creak that I record while visiting a museum captures information about my time in that place – but it also captures information about how contemporary sounds are affected by historical objects. Can physical objects retain a record of these sonic collisions? Do physical objects remember us through sound, and us them? Can we collect sound as a series of objects? Perhaps paintings absorb sounds and sculptures reflect them – and in that case, these sonic collisions are what I term *the active sounds of history*: sonic events produced inside a museum by the intermingling of contemporary visitors and the historical objects contained therein (e.g. the reverberations of sculptures and the muffled thuds of paintings colliding with the sounds of mobile phones, squeaky floors, coughing, elevator bells, crying babies, HVAC systems, camera shutters, docent tours, audio installations, toilet flushes, film projectors, water fountains, gift shop cash registers, dangling jewelry, athletic shoes on newly waxed floors, synthetic fabrics rustling against skin, raised voices of patrons using an audio tour, etc.).

While it is tempting to find one's self wishing that Guglielmo Marconi, the so-called "godfather of radio technology," was correct in theorizing that sound never dies, and that the sounds of the past can somehow be extracted from our surroundings if we could only invent the proper technology (for surely, sounds are

physical waves that never cease to move, correct?), he was, unfortunately, wrong (Milner ix). T. G. Wilfong has spoken of some historians' belief that ancient sounds can be extracted from ancient pottery since it was constructed on a spinning potter's wheel like a phonograph record, pre-dating Morris' "Box With the Sound of Its Own Making" by millennia (personal communication, July 20, 2011). While I am by no means suggesting we can listen to the past by looking at objects, I do believe that the sounds contemporary museum visitors introduce into museum spaces are somehow experientially charged and transformed by their physical contact with the tangible cultural heritage of the past.

This relationship between the sonic present and past is in part reliant upon the authenticity of the historical objects contained within museums:

The presence of the original is the prerequisite to the concept of authenticity . . . Even the most perfect reproduction of a work of art is lacking in one element: its presence in time and space, its unique existence at the place where it happens to be. (Benjamin 220)

The subject of authenticity in the context of museums is a complex one beyond the scope of this paper to properly examine in its entirety, particularly when it has been discussed so well elsewhere (Crew and Sims). An acknowledgement must be made, however, to the complexity of the issue by mentioning an opposing viewpoint to Benjamin's statement above:

Objects . . . have lives which, though finite, can be very much longer than our own. They alone have the power . . . to carry the past into the present by virtue of their "real" relationship to past events, and *this is just as true for casts, copies and fakes* as it is for more orthodox material, for all such copies bear their own "real" relationship to the impulse which created them . . . (Jones 1990 cited in Pearce 1992, 24, emphasis mine)

Although there can be disagreements about the authenticity of museum objects, I

defer to the institution that is displaying the object as an expert to be trusted, so that if the museum in question presents its objects as authentic, it can be said that I have interacted with an authentic historical object; therefore the sound that I hear surrounding that object is physically interacting with a piece of the past that exists within the present.

With the relative authenticity of museum objects up for debate, this leads to yet another potentially nebulous question: can sound itself be an object? Early twentieth century avant-garde composer, sound engineer, and phenomenologist Pierre Schaeffer proposed what he referred to as “*objets sonores*” or *sonorous objects*. According to Schaeffer, the experience of these objects of sound were reliant upon the *acousmatic* experience, or the experience of hearing a sound without seeing its source (Schaeffer 79) – a term invented by the pupils of Pythagoras to refer to their practice of listening to their teacher’s lectures while he sat behind a veil or screen (Nancy 3). Schaeffer’s interest in acousmatic sound was based upon the groundbreaking compositional process he invented, *musique concrète* – the production of music from any sounds, not just musical ones, recorded onto audiotape. Schaeffer insisted that the audiotape containing sounds was not the sonorous object (79), it was the sound waves as perceived by the listener that constituted the object. With this in mind, I believe it valid to compare the sounds heard in museum spaces – those hallowed halls thick with reverberations, “an indication of solemnity and monumentality” (Augoyard and Torgue 116) to Schaeffer’s sonorous objects: sounds produced by persons and practices unseen, or delayed so much due to distance that the disconnect between auditor and sound

becomes like Camus' "incomprehensible dumb show," an absurdly disconnected sound to be pondered or remembered later as a *remanence*, a treasured collection of sounds having been heard (Augoyard and Torgue 88); this sonic effect is, however, dependent upon the distinction between hearing and listening: " 'to hear' is to understand the sense . . . to listen is to be straining toward a possible meaning, and consequently one that is not immediately accessible" (Nancy 6).

In order to perceive sound as a series of objects, one must attentively *listen* to them, not just *hear* them, and ignore the visual relationships that force literal-minded contextualization upon them – "All solitary dreamers know that they hear differently when they close their eyes" (Bachelard 181). Listening to a sound in a vast space can be a very intimate experience, particularly if it is a sound that most other people around the listener are ignoring. Distant sound waves touch the attentive listener's ear and are acknowledged, their origin point indeterminate due to echo or reflection, tiny waves surrounded by vast space which, once acknowledged, also recognizes the intimate space surrounding the sound, a poetic experience akin to looking at a tiny object surrounded by negative space: "To give an object poetic space is to give it more space than it has objectivity; or, better still, it is following the expansion of its intimate space" (Bachelard 202).

Not only are individual sounds objects, but entire soundscapes can function as sonorous objects under the right circumstances; once attuned to the beauty inherent within a complex, disorganized soundscape, a state of *sharawadji* is said to be attained – "the beauty that occurs with no discernable order or arrangement" (Augoyard and Torgue 117). Beyond its perceived beauty, sound is widely felt to be

ephemeral yet its properties are most certainly physical, for the waves that make up sound are indeed physical phenomena (Milner 17); it is not that sound can be an object, it plainly already is. The discussion of sound continues to be based around sound's ephemeral nature, but the widespread adoption of a materialist theory of sound (Cox 2011, 157) could potentially tip the scales of sound's perception as a truly physical object.

Museums, although thought of as silent temples to history and art, can be surprisingly noisy spaces once attention is given to their soundscapes. It is in listening to these tiny/vast, simple/complex, easily ignorable sonic collisions between the present and the past within the architecture of a museum that the active sounds of history become manifest; my practice as an artist involves actively making field recordings in nearly every museum I visit, collecting sonic objects.

With *An Hour of Infinity*, I hoped to experiment with creating a dialogue between sonorous objects that I intentionally introduced into a museum space, the physical objects within the museum, and the sounds generated by the audience at the event; I hoped to observe and record the active sounds of history in situ and add them to my own collection.

### **Listening to the Temple, Performing at the Forum**

Historically, museums have easily been compared to ancient temples due to their hushed and reverent atmosphere; they exist as places visited by the public in order to worship masterpieces by long-dead artists and artisans, to make contemporary visitors feel more knowledgeable about their own society (Cameron



17). As an attempt to move away from this lofty and detached model, museum theorist Duncan Cameron has suggested extending this metaphor to include an alternative institution from the ancient world that might better serve the public's needs – namely that of the forum, a place where people can meet to discuss their opinions, make suggestions, and have a more direct impact on the goings-on within the institution's walls (Cameron 19). In crafting *An Hour of Infinity*, I took this metaphor as a starting point, approaching my project as an examination of the museum as temple, hoping that this one-night performance would generate the feel of a forum. With thoughts of temple versus forum, I structured the event into three distinct components, each of which dealt with different aspects of these topics. The event included:

- Eight **live drawing performers**, drawing circles and lemniscates for the duration of the hour using the same fishing line and charcoal method I used in creating the rest of the work, spread across both floors of the museum's permanent collection galleries.
- Two **surround sound installations** using sounds recorded in the museum as source material for looping compositions that gradually changed over the course of the hour.
- Two musicians performing **visual scores**: one used reproduced paintings from a mysterious room in the ancient city of Pompeii as its source material, the other used the inscriptions of gibberish text on an ancient Babylonian incantation bowl.

These components combined to create a subtle yet complex sonic environment deeply connected to the acoustics and collections of the museum itself,

injecting a layer of low volume sound that encouraged the audience to listen closely enough that the sounds of the museum itself became amplified within the attention of the listeners. With the drawing performers spread throughout the galleries, their gaze directed downward, they became temporary living objects in the museum's collection. The audience was encouraged to wander as they normally would throughout the museum, creating their own personal mix of the generated sounds.

Much like the typical experience of visiting a museum, this hyperreal, performative segment of time set out to lead the audience along certain paths yet due to the audience's group dynamics, a linear experience was an unreal expectation – much as didactic museum exhibitions themselves can only suggest a pathway for independently minded visitors intent on finding their own way through the meaning-making process (Hooper-Greenhill 373).

By providing a series of fixed sonic points in time, this performance challenged the audience to analyze their own behavior in a museum, as well as their own relationship to time itself. I was concerned with several questions related to audience behavior while developing this project: Would the audience members be able to stay quiet for the entire hour? Would they choose one portion of the performance to focus on, or would they try to take it all in at once? Would they return to sonic objects they particularly enjoyed? Would they decide to rush through quickly and leave after five minutes? My interest in mounting this piece had as much to do with the audience reaction to its constituent components as it was about the actual content of the piece itself.

## Live Drawing Performers

Eight performers total, one set of four on each floor of the museum, replicated the fishing line drawing technique I developed for *One Hundred Hours of Infinity*. In the Dynastic Egypt gallery on the ground floor of the museum, the four artists, positioned around the coffin of Djehutymose, attempted to each draw their own circle. The circular aspects of ancient Egyptian notions of time and resurrection are here echoed by the drawings, as well as the performers' somewhat circular placement around the corners of the room (Figure 34).

On the second floor, the second group of artists attempted to draw lemniscates while spread throughout the Ancient Roman galleries. Their placement throughout the galleries approximated the shape of a lemniscate (Figure 35). With the drawings placed on the floor rather than on a wall, the sounds of the drawing process became as important as the process's visual output. My first experience performing this drawing process in front of an audience at the Notations.NL festival of graphic notation in Amsterdam, April 2011 involved amplifying and electronically manipulating the sound of the drawing. For *An Hour of Infinity* I decided to keep the drawing sounds pure and unaltered, allowing the audience and the performers to perceive a more direct, or indeed, more authentic, correlation between the sounds and the performers/objects generating them (Figure 36).

## Surround Sound Installations

Two four-channel surround sound pieces accompanied the drawing performers on both floors. *Footsteps*, an hour-long pre-recorded sound piece, was

presented in the Dynastic Egypt gallery on the ground floor of the museum (Figure 37). Based upon a four-channel surround recording of my own footsteps walking in a circle on the creaky wooden floor of the main hallway of Newberry Hall (the original site of the Kelsey Museum, onto which the new Kelsey exhibition wing addition was built), the piece composed for this event played the recording of my footsteps in a loop that gradually shifted out of phase with itself over the course of the hour to produce a sound not unlike the swishing of the charcoal pencils on the paper as generated by the drawing performers. Here the sound of the Kelsey itself came to the foreground with a sound sample that evoked a sensation of ghosts, a haunting sonic object that referenced life after death, displayed in a gallery filled with funerary objects from ancient Egypt that were meant to serve their owners in the afterlife. This was an attempt to use sound as means of referencing cyclic time, a resonant breaking down of the barriers between past, present, and future, similar to the ancient Egyptian notion of cyclic time; as sound theorist and composer David Toop has said, distant sounds are “ . . . a reaching back into the lost places of the past, the slippages and mirages of memory, history reaching forward in the intangible form of sound to reconfigure the present and future” (Toop ix).

Simultaneously, upstairs in the ancient Roman galleries a second surround sound piece, entitled *Archives*, used the same gradual loop-based phase-shift structure, this time with a surround recording of myself opening and closing drawers in the museum’s off-limits basement archives. This piece was installed within the gallery containing the Kelsey’s reconstruction of the Temple Gentis Flaviae (Figure 38), wherein ancient priests would have held a similar archive of

sacred objects off-limits to the general public, only to be viewed by those with sufficient economic or political power.

Giving voice to the Kelsey's out-of-view collections within this space questioned the power dynamics of museums as a whole, reflecting upon the history of the public's real access to museum materials. Within this reconstructed temple space I injected the sounds of unseen objects, pieces from the collections that the public might be interested to see but are not allowed to, amplifying the museum's position of power while rupturing the barriers between the public and the institution; while these objects still could not be seen, they were at least temporarily given voice – metaphorically bringing the forum into the temple, setting up a repetitive feedback loop between two possible museum identities.

### **Visual Musical Scores**

Two objects in the Kelsey's collection served as the source material for the musical scores performed during *An Hour of Infinity*. One object was converted into a score of traditional musical notation, while the other acted as an ancient graphic score – free of traditional musical notes yet evocative of sound in a visual form. Here again, there are parallels between the “temple versus forum” identities of museums: the traditional notation represented “. . . a hierarchical division of labor that require[s] performers to subject themselves to the will of the composer” (Cox 2004, 188) and the indeterminate interpretation of an ancient inscription as a graphic score allowed for the freedom of instinctive, some might say constructivist, meaning-making of a museum object.

On the ground floor adjacent to the Dynastic Egypt gallery, a painted clay Parthian Period (248 BCE–CE 226) incantation bowl excavated at the Mesopotamian city of Seleucia (in modern-day Iraq) served as a graphic score to be freely interpreted by violinist Collin McRae (Figure 39). An object meant to accompany an ancient ritual, the text inscribed on it is actually gibberish – a non-existent tongue meant to be readable by inhabitants of the spirit world. As an artist and musician, McRae investigates written forms of language and the transformations of meaning across the translation of words from one language to another, making this bowl the perfect source for her to interpret as a musical score for an improvised performance. This type of indeterminate musical interpretation further served my purpose of incorporating elements of the “forum” approach to museum interactions with the public as well, offering the visitors an alternative conduit through which to interpret an object in the Kelsey’s collections. As Earle Brown, a mid-twentieth century composer of graphic notation stated in notes about his move towards graphic notation, this practice is not merely based upon a person in power freeing themselves from the guilt of an artistic dictatorship, but a conscious attempt to bridge the communication gap between composer and audience.

This is not an abandonment of composer responsibility but the musical result inherent in a provoked, multicreative, “synergistic” interaction of the composer’s concept, the graphic score, the performer’s realization, and the audience. Not one of them is independent of the others; there exists, rather, a truly collaborative, creative synergy (Brown 190).

By choosing to incorporate a graphic score into this performance, my intent was to collaborate with the audience and the ancient object, to have a discussion with them both, akin to discussions in ancient forums. McRae’s performance of this open-

ended score was entirely acoustic, without amplification or electronic effects. Simultaneously evoking a classical orchestral performance and a simple street busker, McRae's presence in the museum was an embodiment of contradiction, a slippage between classes and worlds (Figure 40).

Upstairs in the Roman galleries of the Kelsey Museum, the Room of the Mysteries (Figure 41) contains a series of watercolor paintings commissioned by Francis Kelsey, founder of the Kelsey Museum, that were painstakingly copied directly from the originals *in situ* at a singular room inside the Villa of the Mysteries at Pompeii by Italian artist Maria Barosso from 1925-1926 (de Grummond 130-131). A somewhat circular suite of images, the paintings cover all four walls of the room and move in a clockwise sequence from one side of the room's entrance to the other. However, what the figures in the paintings are meant to represent is still uncertain to archaeologists and art historians. It is these figures that served as the basis for the musical notation I generated by overlaying a musical staff onto the paintings in sequence and plotting a note where each figure's eyes and ears intersected the staff (Figure 42). Two rests in the notation served as placeholders for the figures on the damaged panel whose heads no longer exist, creating a gap in the performance of the note sequence. This series of notes and rests were performed by electric guitarist James Warchol, who played the note sequence repeatedly over the course of the hour but was encouraged to improvise within the repetition, eventually returning to a straight performance of the original sequence of notes at the end of the hour. A circular pattern with infinite possible permutations, this performance attempted to embody the notion of beautiful

imperfection within the human experience of the Infinite that my entire project has sought to explore, while its basis in traditional musical notation set it firmly as a representation of the museum as temple. Warhol's placement at the back of the Room of the Mysteries (Figure 43) along with two amplifiers and a series of electronic effects pedals suggested a space wherein the audience could gather to watch and listen, to receive information, to hear enlightened wisdom from a veritable "guitar god" – the audience was, in a way, directly invited to worship inside the temporary temple to music that this museum space had become.

### **Recording Resonance, Curating Wonder**

In the field of Museum Studies, two possible models for museum exhibitions have been categorized as evoking *resonance* or *wonder*:

By *resonance* I mean the power of the displayed object to reach out beyond its formal boundaries to a larger world . . . By *wonder* I mean the power of the displayed object to stop the viewer in his or her tracks, to convey an arresting sense of uniqueness, to evoke an exalted attention (Greenblatt 42).

In developing this performance – in curating this group of sonic and visual objects – I chose to utilize these exhibition models as helpful guidelines. Rather than choosing one over the other as Greenblatt does in his article, I sought to synthesize the two within *An Hour of Infinity*, with different components of the performance taking on either a resonant or wonder-filled role.

Both of the musical score performances can be said to act as elements of wonder. While live music in a museum setting is no rarity, there is still an element of surprise to be had in turning the corner of a gallery to discover that the music



you've been hearing is not a recording, but issuing forth from a live musician. This uniqueness itself is inviting, something to encourage the audience to stop and take note, to wonder at the musicians' prowess.

As embodiments of resonance, the two surround sound pieces on each floor of the Kelsey looked beyond their own formal qualities: non-musical sounds repeating in a manner that wasn't quite monotonous, these pieces not only referenced the museum itself but also concepts outside of this specific location. Indeed, ghosts (for those who believe in them) are everywhere, while the division of power between the "haves" and the "have-nots" is a topic on the minds of everyone in the world who is currently concerned with the "99%" economic movement.

I sought for resonance and wonder to join together in the live drawing performances. Visitors to the museum could not help but stop and watch the artists drawing throughout the museum: their strange behavior, their refusal to make eye contact, the slowly forming drawings laid out upon the museum floor, and the incessant *swishing* of the charcoal pencils upon the paper made for wondrous sights and sounds. Upon closer inspection, however, each artist was drawing something different; some drew lemniscates and others drew circles – or were they zeros? The audience was presented with an activity that was at once filled with wonder and resonated beyond its own formal aspects. What were these people doing? Why were they drawing these signs? How did this all fit together to embody the infinite? Not only were these signs of numbers being drawn in an obsessive manner, they were also elegant drawings slowly being etched into the ground, recording acts of mark-making and generating sounds. This simple, absurd act was able to embody multiple

points of view simultaneously, contradictory action and reaction. Perhaps it made sense, perhaps it didn't. Perhaps the circles were wobbly, perhaps the lemniscates looked more like pretzels than anything else, but for an hour of infinity they were alive within the act of creation, existing simultaneously within past and present and future, voices eager to be heard (Figure 44).

## **CONCLUSION: RULES, RECORDINGS, AND THE METAMODERN**

My rules exist to be followed. My rules exist to craft outcomes before they even happen. I get what I need, not always what I want.

I press RECORD, write a rule and obey it, send out a call for submissions, or create a set of circumstances in a performance space, and see what happens. The results can resemble either an ant colony or a group of lemmings falling off a cliff.

None of this will work without discipline.

*Some pertinent rules and their applications:*

1. *Think about contradictions.*
  - a. *Derive a sound from a sight.*
  - b. *Derive a sight from a sound.*
  - c. *Where should I be looking or listening? Look and listen in the opposite direction.*
  - d. *Convert background into foreground.*
  - e. *Let accidents = decisions.*
2. *Endure.*

- a. *Patience.*
  - b. *Repetition.*
  - c. *The borderline between interest and obsession.*
  - d. *No sane person would do this.*
    - i. *Cantor and Gödel got too close.*
      - 1. *It drove them mad.*
  - e. *Goto 2.*
3. *Collect and interpret.*
- a. *Collect sounds and edit them together into a unified piece.*
    - i. *Let "unified" = "intuited."*
  - b. *Collect multiple images of similar objects. Layer the entire collection together into a single image so as to see the contents of the entire collection simultaneously occupying a single space. Repeat.*
  - c. *Collect work by a group of artists made from a common source material. Exhibit it.*

The end results of these rules – the *final products* – are a combination of both exerting and letting go of control: objects and experiences that form due to my decisions, but not necessarily my actions.

I obey my rules within this context. I disobey them, with great difficulty and regret, at my leisure.

\* \* \*

I have made a series of recordings.

“A recording is nothing until it is decoded, and what it decodes is always an illusion” (Milner 22).

\* \* \*

Existence has the structure of the In-Between, of the Platonic *metaxy*, and if anything is constant in the history of mankind it is the language of tension between life and death, immortality and mortality, perfection and imperfection, time and timelessness, between order and disorder, truth and untruth, sense and senselessness of existence; between *amor Dei* and *amor sui*, *l'ame ouverte* and *l'ame close*; . . . (Eric Voegelin cited in Velmeulen and van den Akker 6)

\* \* \*

A recording of a sound is never the same thing as the sound itself; similarly, a drawing is not the same as the physical act it took to make it. In exploring new drawing methods I have found myself creating situations in which I am unable to actually complete the task I set out for myself. In repeating non-successful actions for long durations of time, I seek a positive by working through a negative. It's a constant act of *trying* to do something rather than *accomplishing* it. What is left is something profoundly human: all that I can do. It's the result of listening to my surroundings, and to myself: a record of an attempt, a series of imperfect, ephemeral objects.

Through this act of *drawing the act of listening*, both in my studio and with a group of other artists inside an archaeology museum surrounded by the collision of contemporary and ancient sonic objects – this absurd, contradictory, *visual* method of recording and collecting *sound* – I feel I've taken another step closer towards achieving an ultimately unreachable goal: “to pursue a horizon that is ever receding” (Velmeulen and van den Akker 12) . . . to listen to time itself.

IMAGE APPENDIX



**Figure 1.** Self-portrait while drawing *Five Hours of Infinity*. Video still, 2011



**Figure 2.** Explanation of different sized infinities using the “infinite hotel” metaphor, p. 126-129 of Logicomix, 2009.

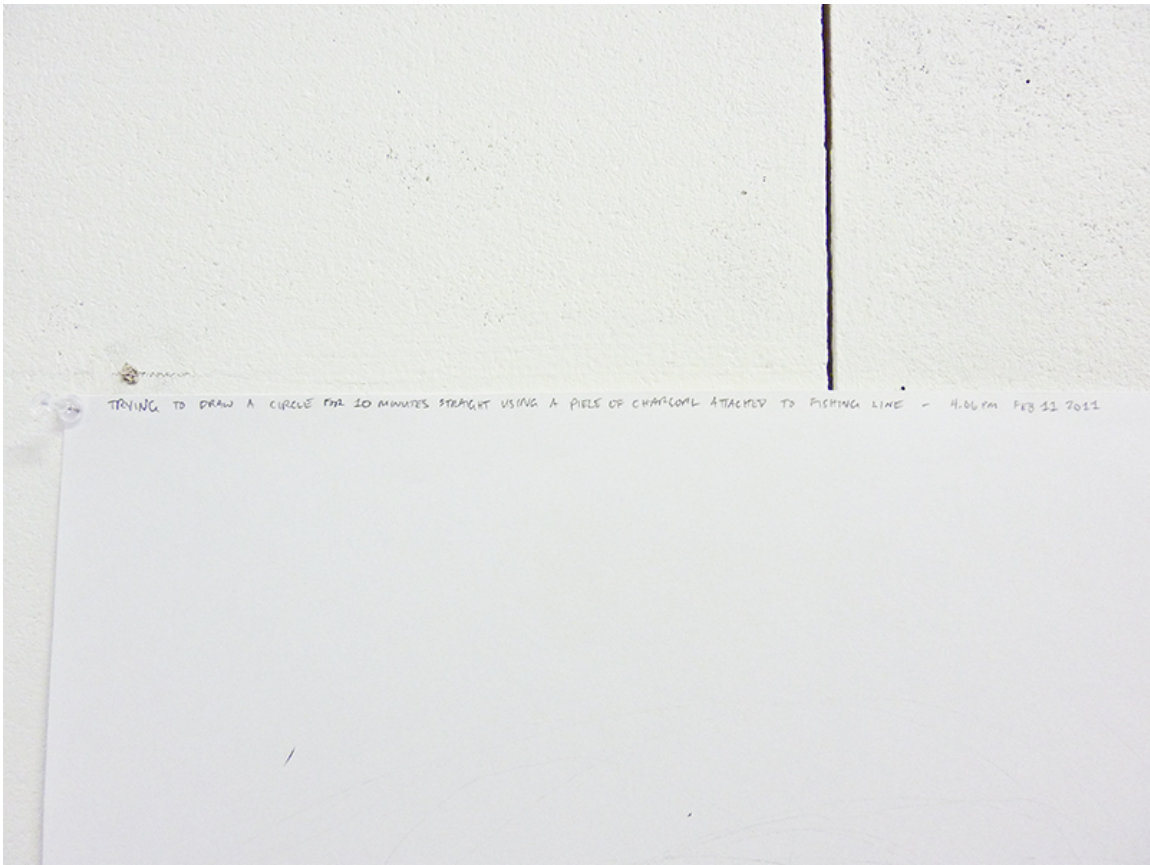


Figure 2. (continued)

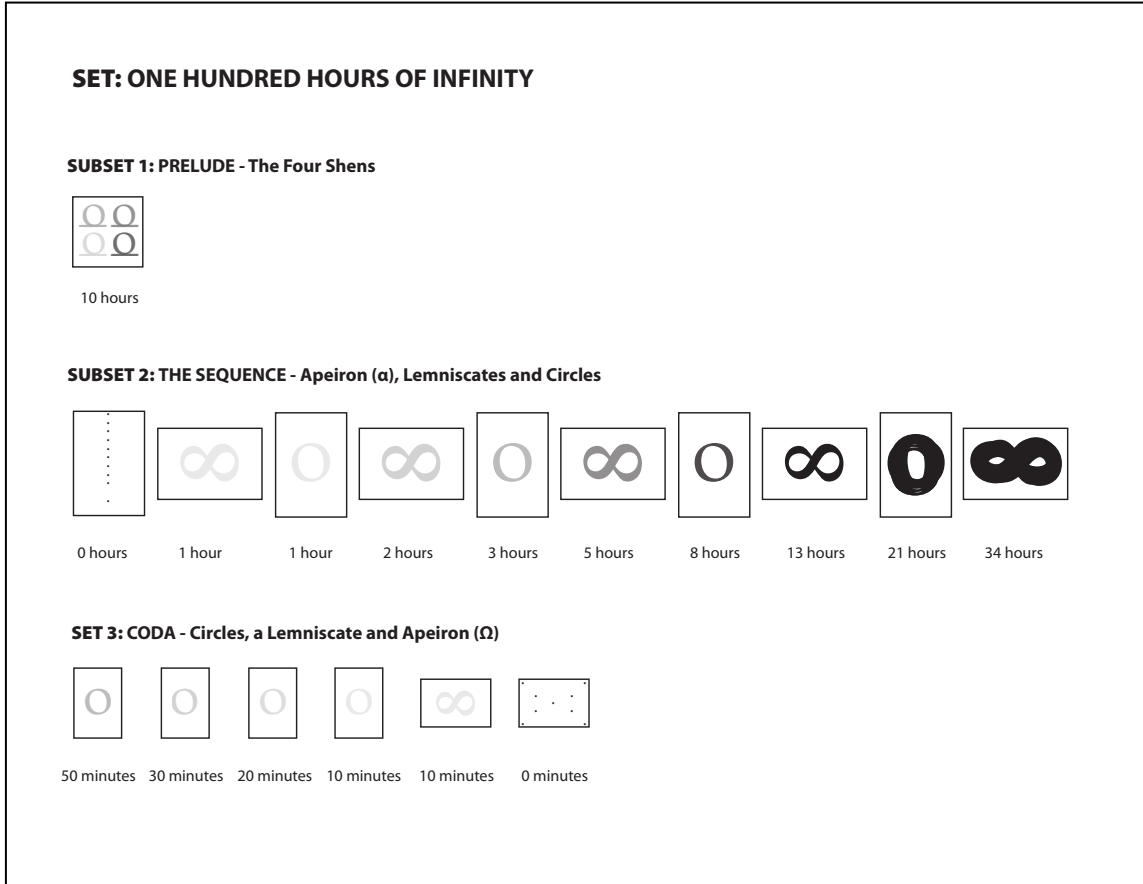


Figure 2. (concluded)





**Figure 3.** Drawing with text score title (detail). Charcoal on paper, 2011, 18" x 24"



**Figure 4.** Plan document for *One Hundred Hours of Infinity*, 2011



Figure 5. Examples of uses of the shen hieroglyph in ancient Egyptian art (Wilkinson 1992, 192)



Figure 6. Examples of uses of the *cartouche* hieroglyph in ancient Egyptian art (Wilkinson 1992, 194)

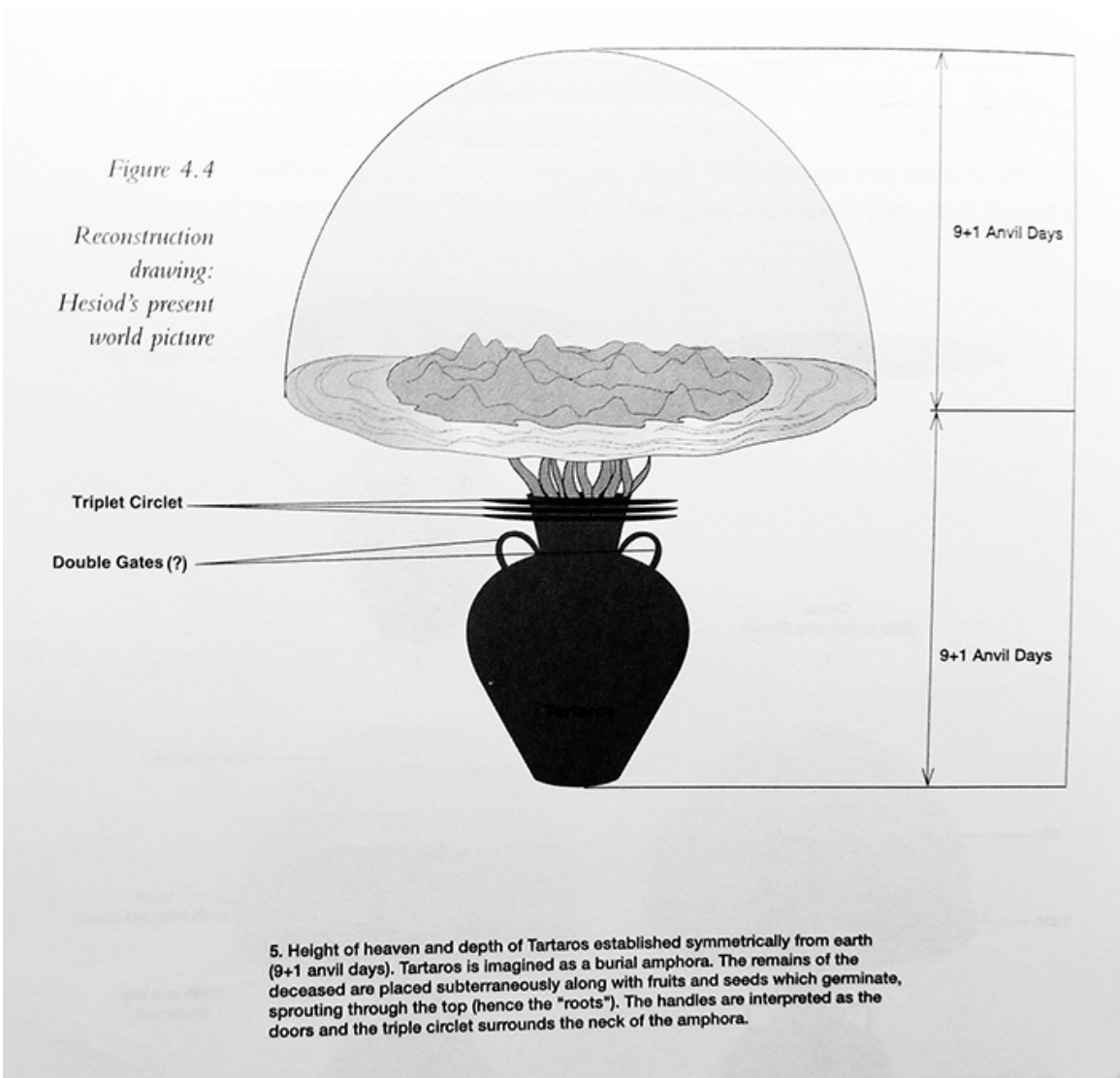
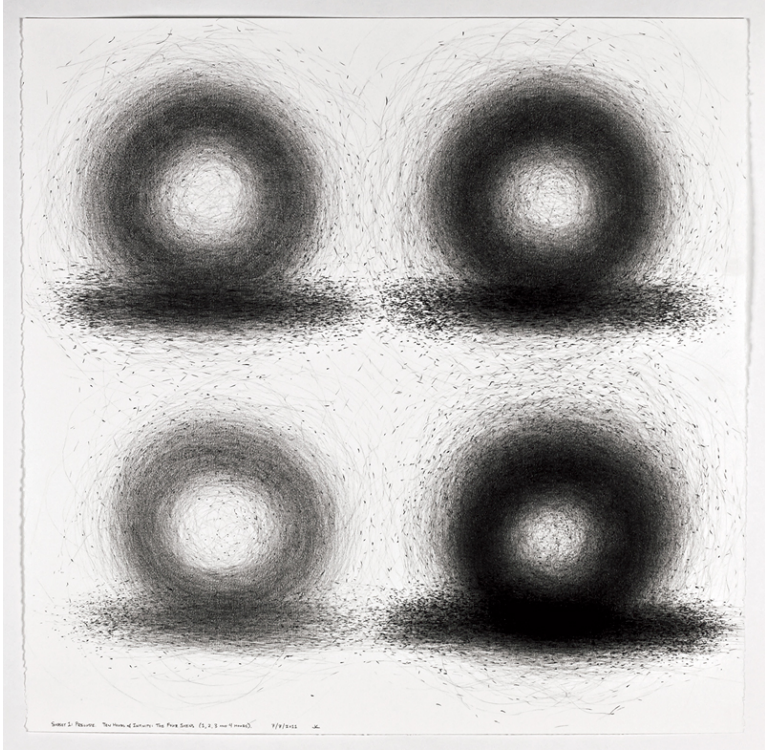


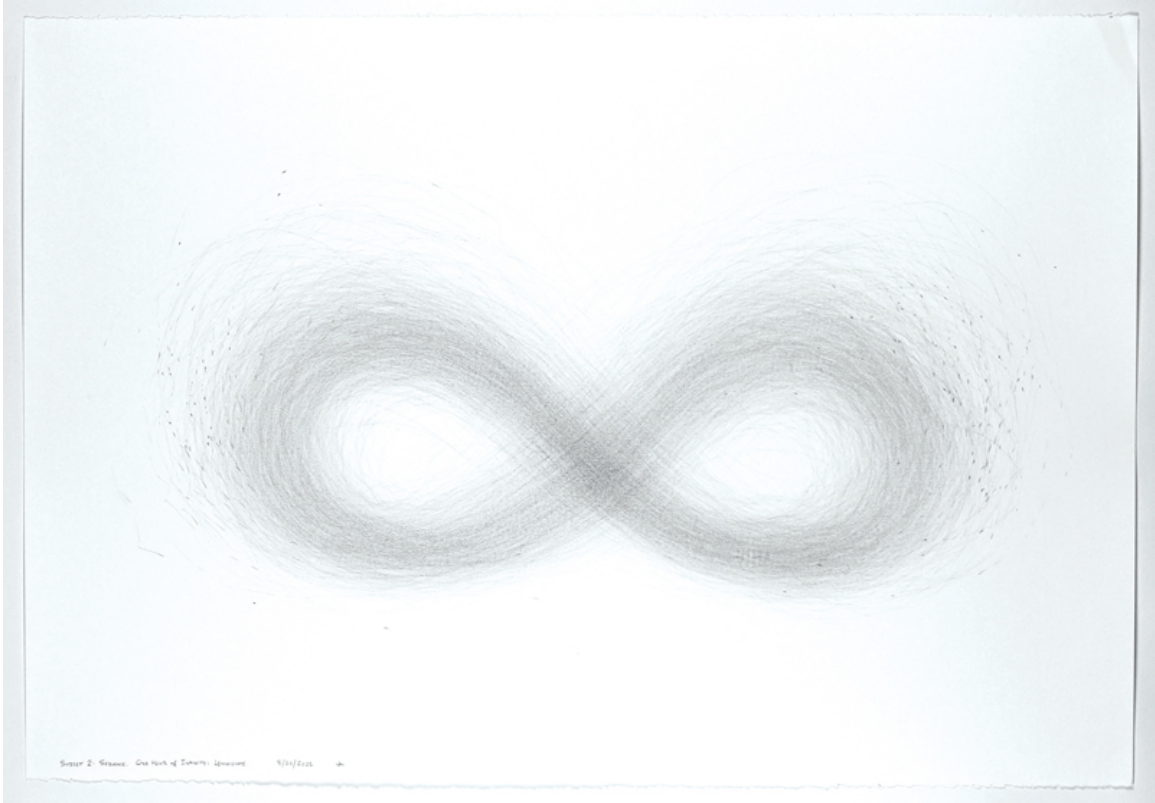
Figure 7. Illustration of Hesiod's conception of the size of the known universe (Hahn 178)



**Figure 8.** *Prelude. The Four Shens*, 2011, 30" x 30"

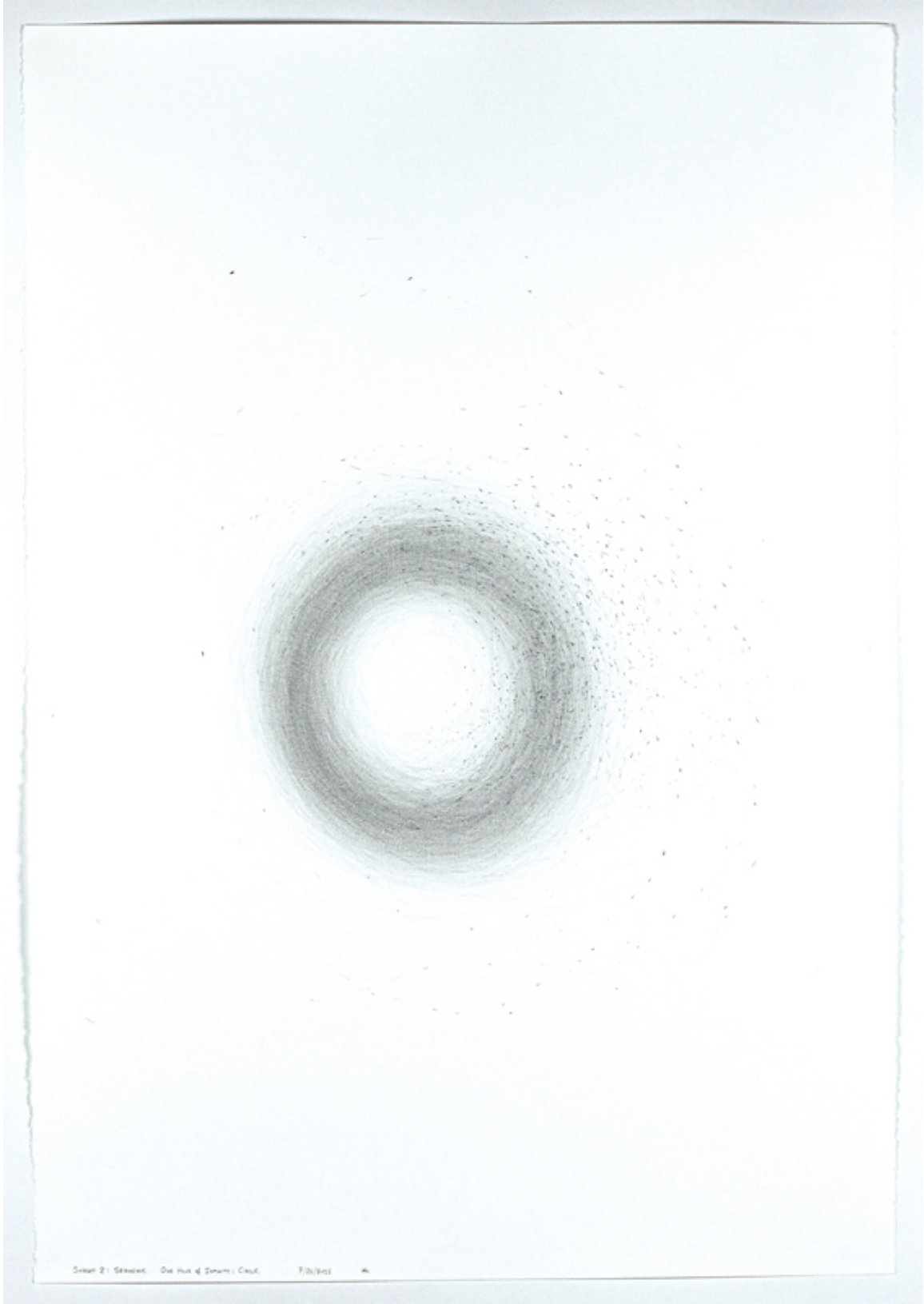


**Figure 9.** *Sequence. Zero Hours of Infinity: Apeiron (alpha), 2011, 30" x 44"*

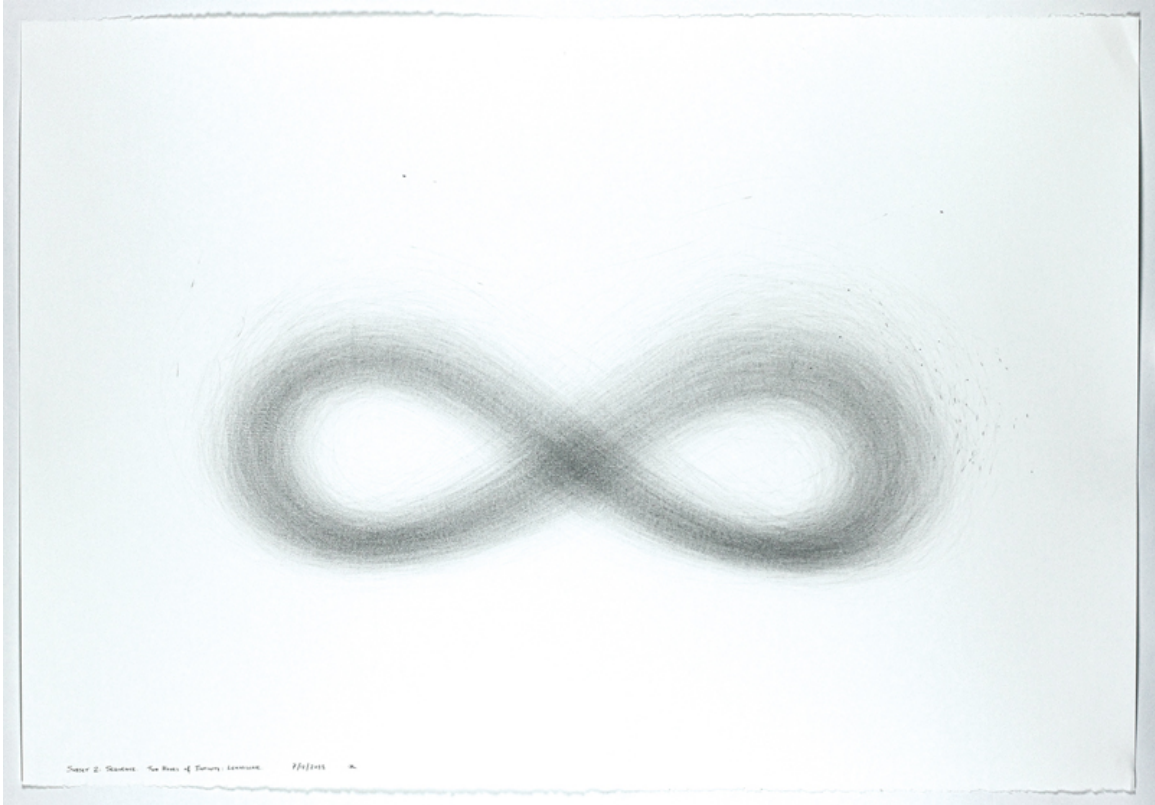


**Figure 10.** *Sequence. One Hour of Infinity: Lemniscate, 2011, 44" x 30"*





**Figure 11.** *Sequence. One Hour of Infinity: Circle, 2011, 30" x 44"*



**Figure 12.** *Sequence. Two Hours of Infinity: Lemniscate, 2011, 44" x 30"*

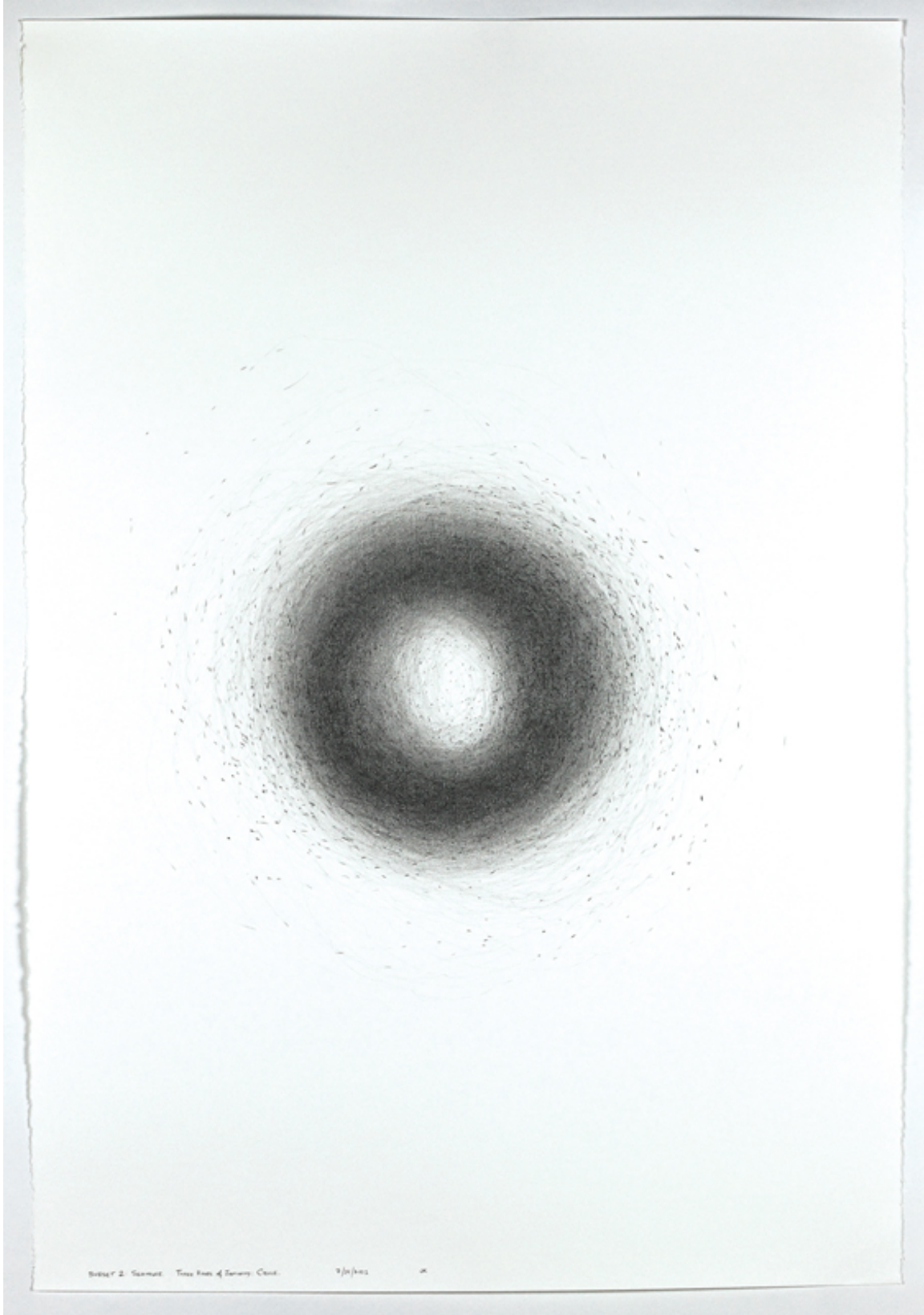
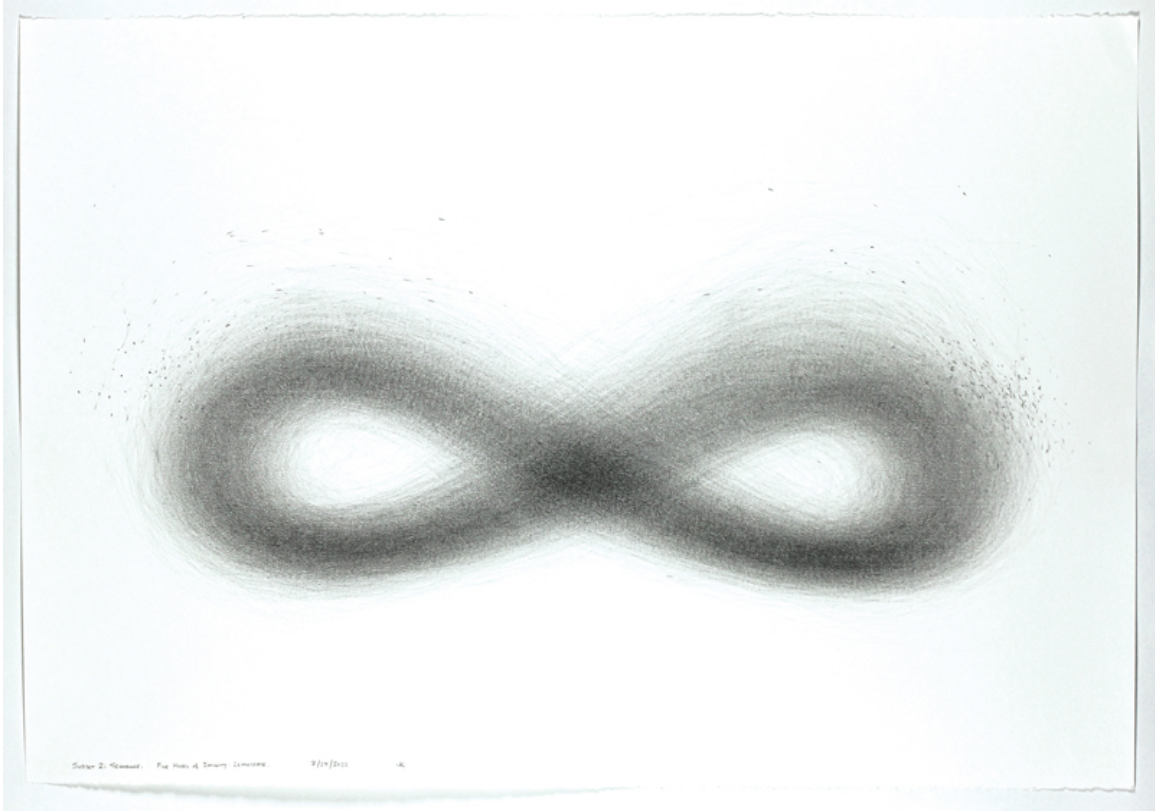


Figure 13. Sequence. Three Hours of Infinity: Circle, 2011, 30" x 44"



**Figure 14.** *Sequence. Five Hours of Infinity: Lemniscate*, 2011, 44" x 30"

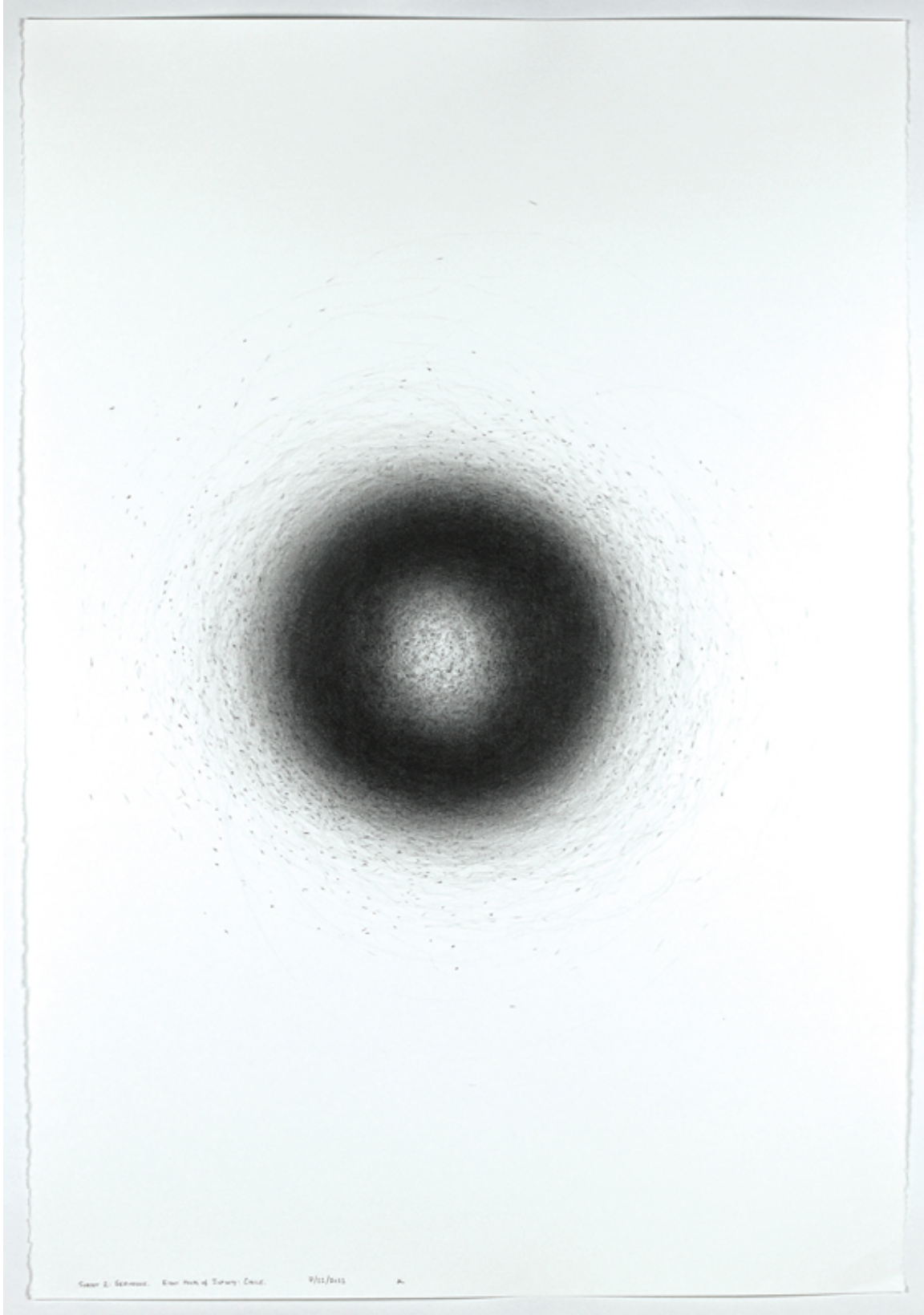
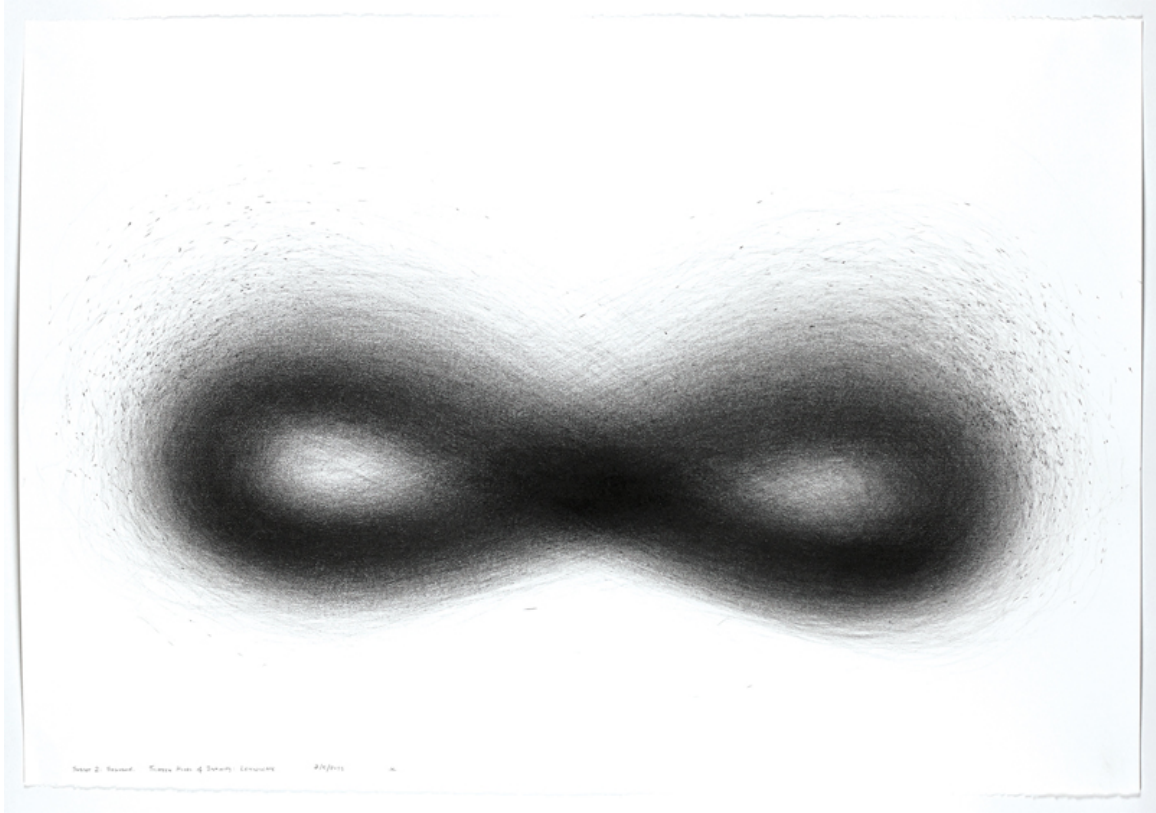
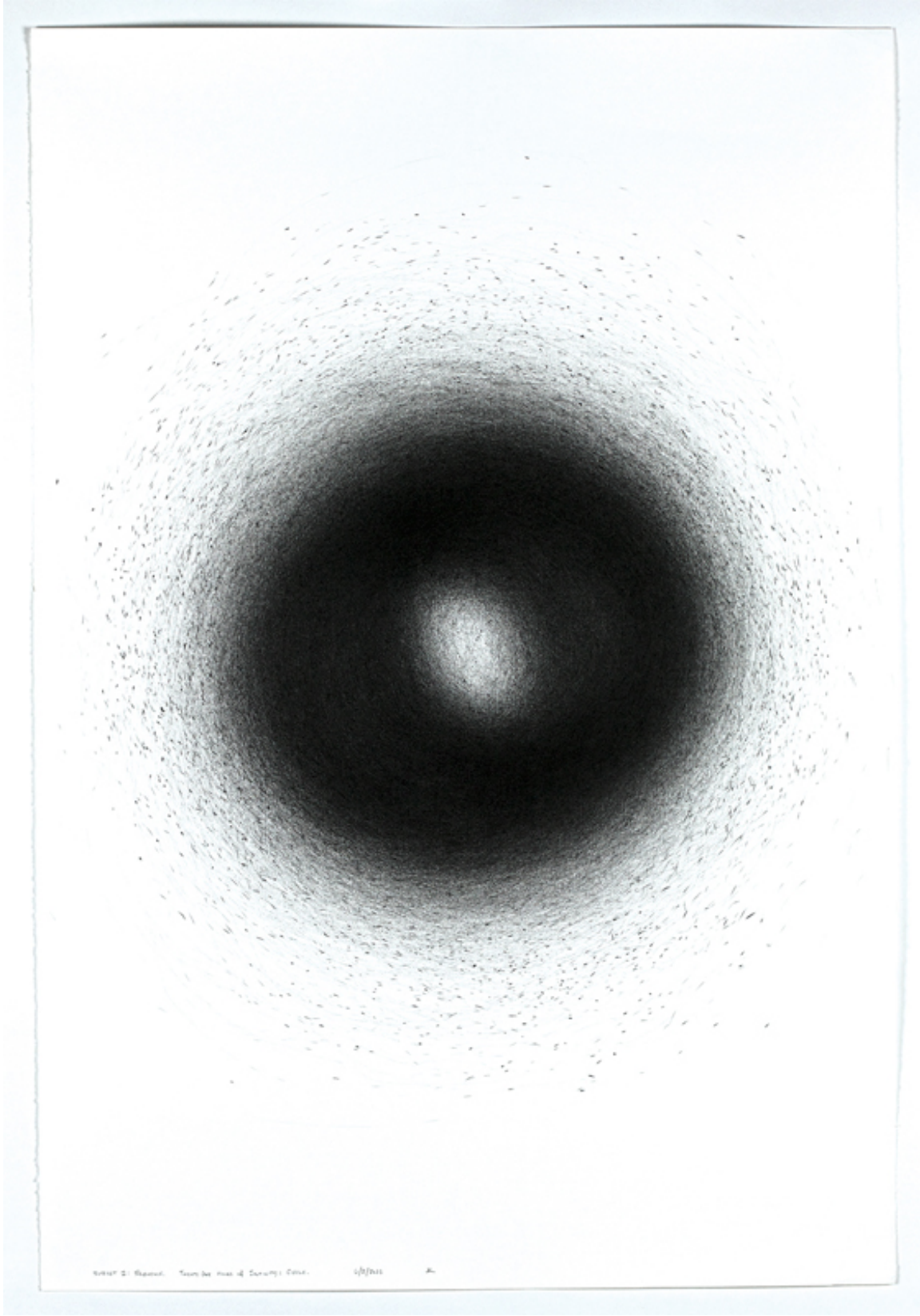


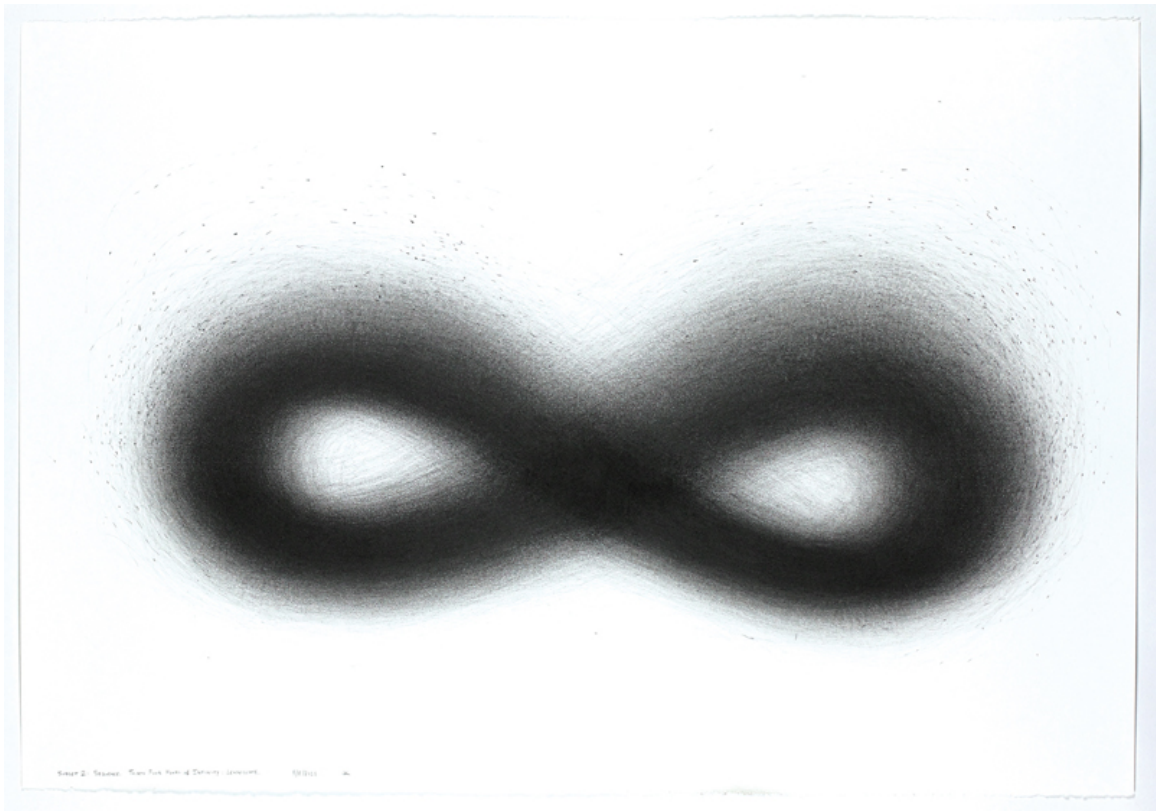
Figure 15. *Sequence. Eight Hours of Infinity: Circle*, 2011, 30" x 44"



**Figure 16.** *Sequence. Thirteen Hours of Infinity: Lemniscate, 2011, 44" x 30"*



**Figure 17.** *Sequence. Twenty One Hours of Infinity: Circle*, 2011, 30" x 44"



**Figure 18.** *Sequence. Thirty Four Hours of Infinity: Lemniscate, 2011, 44" x 30"*



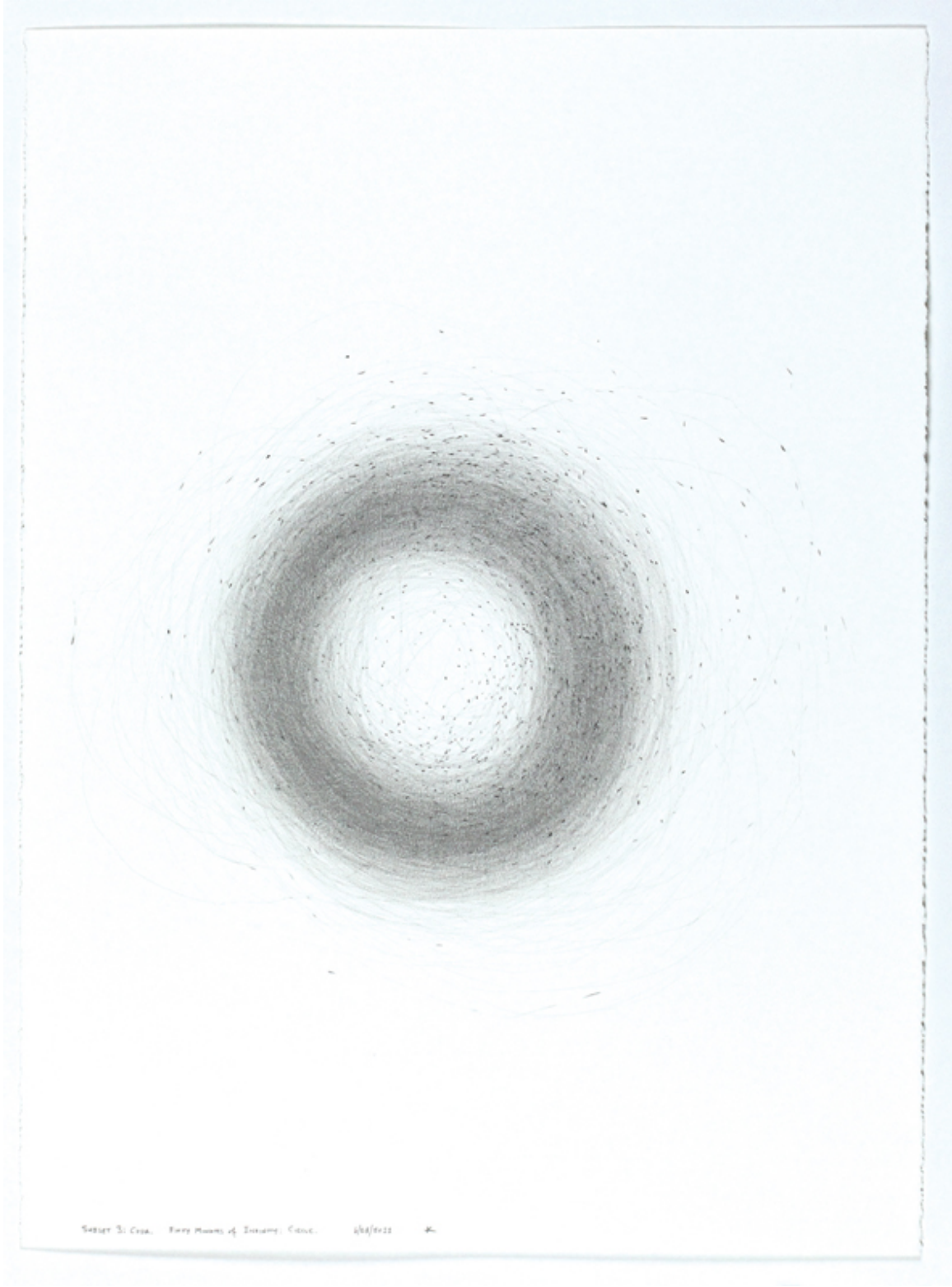


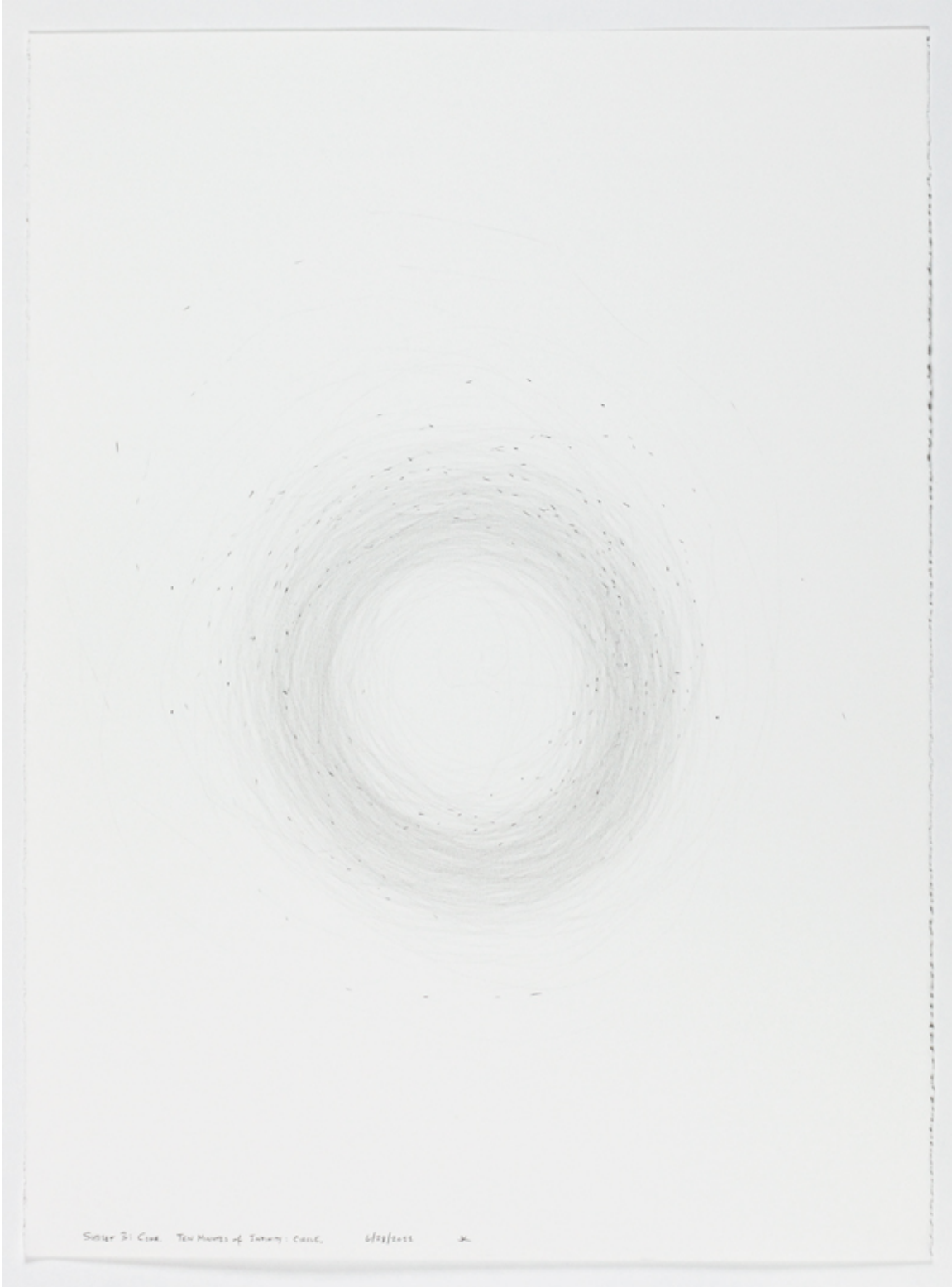
Figure 19. Coda. *Fifty Minutes of Infinity: Circle*, 2011, 22" x 30"



Figure 20. Coda. *Thirty Minutes of Infinity: Circle*, 2011, 22" x 30"



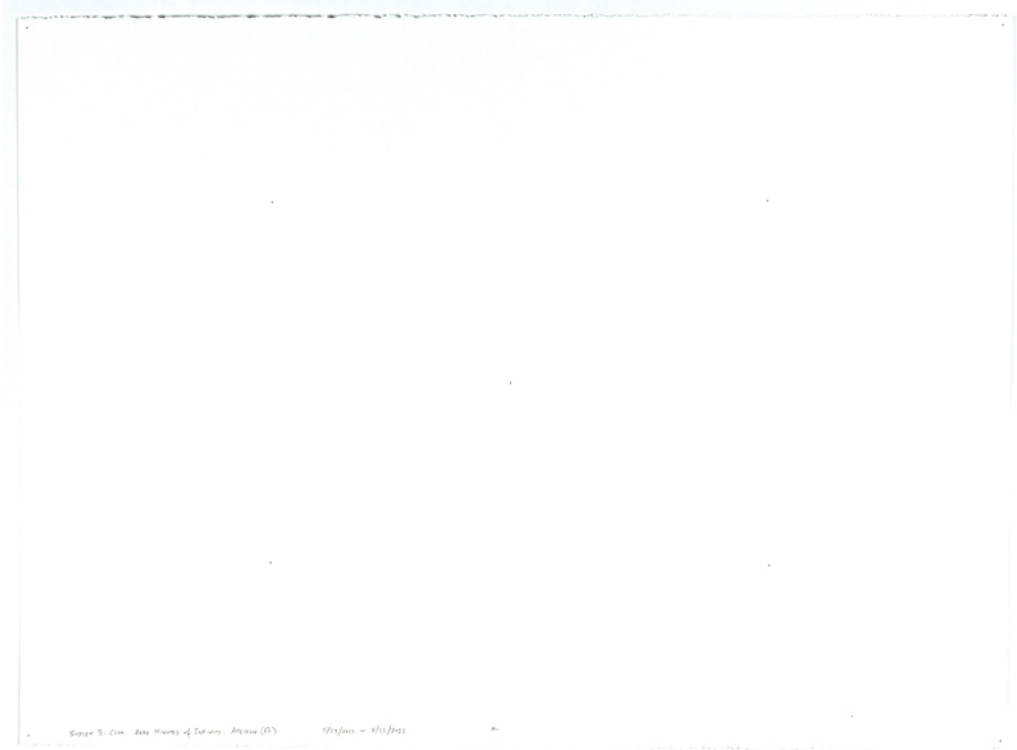
**Figure 21.** *Coda. Twenty Minutes of Infinity: Circle*, 2011, 22" x 30"



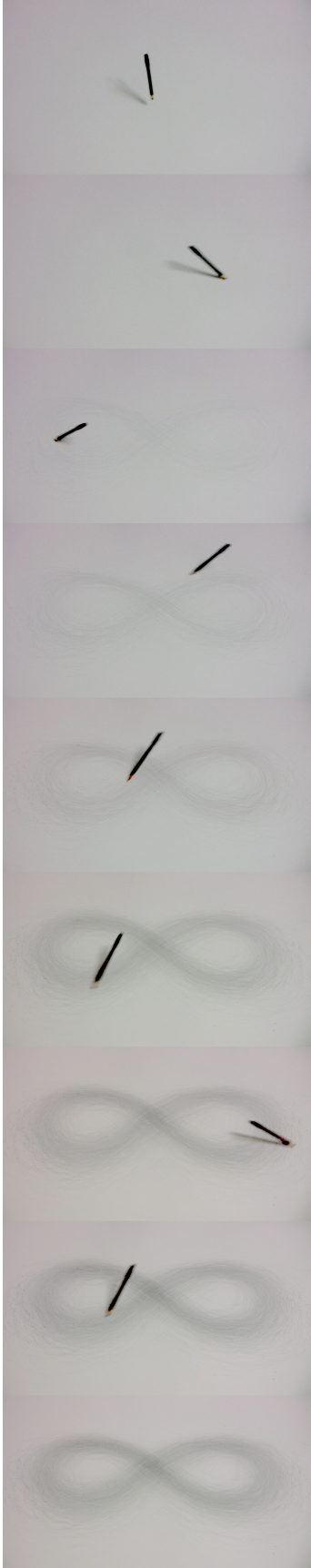
**Figure 22.** Coda. *Ten Minutes of Infinity: Circle*, 2011, 22" x 30"



**Figure 23.** Coda. *Ten Minutes of Infinity: Lemniscate*, 2011, 30" x 22"



**Figure 24.** Coda. *Zero Minutes of Infinity: Apeiron (omega)*, 2011, 30" x 22"



**Figure 25.** Stills from *One Hour of Infinity*, 2011

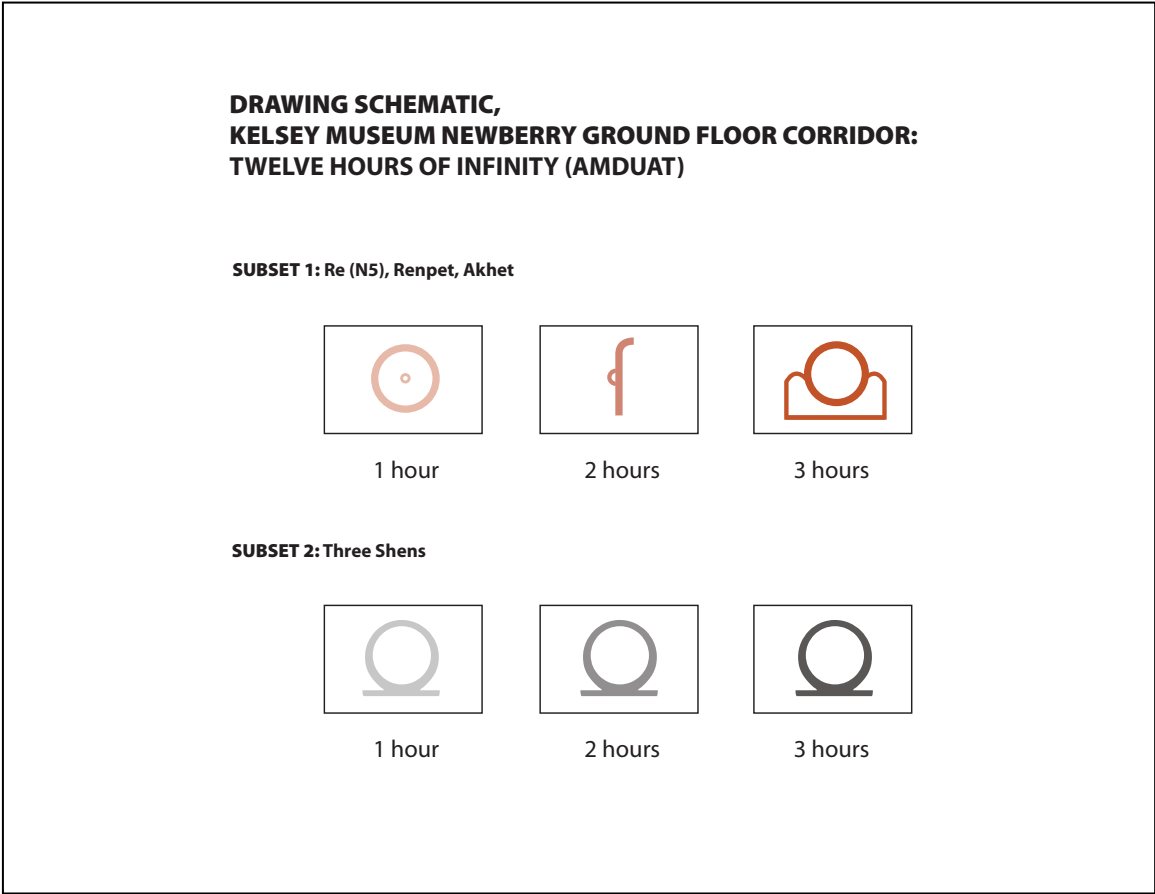


Figure 26. Plan document for *Twelve Hours of Infinity: Amduat*, 2011

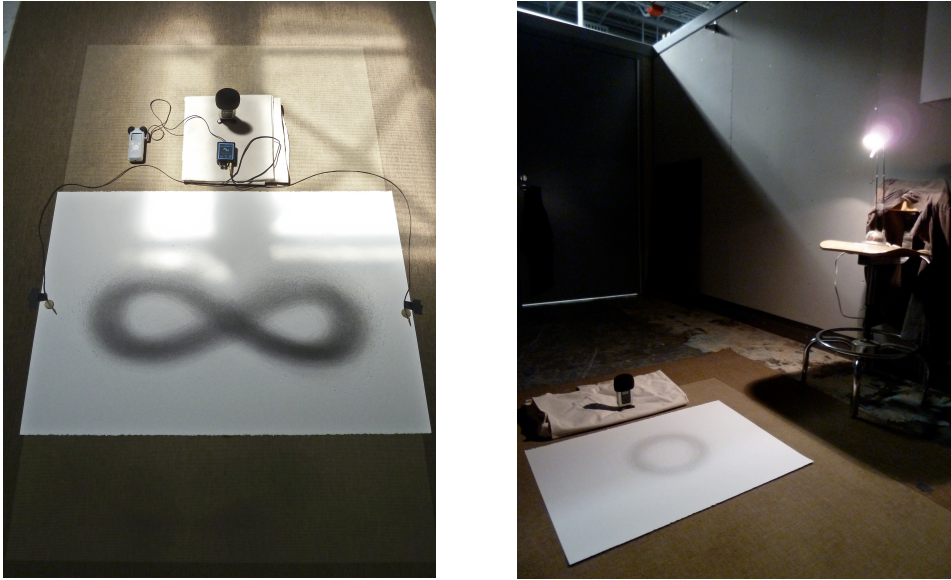
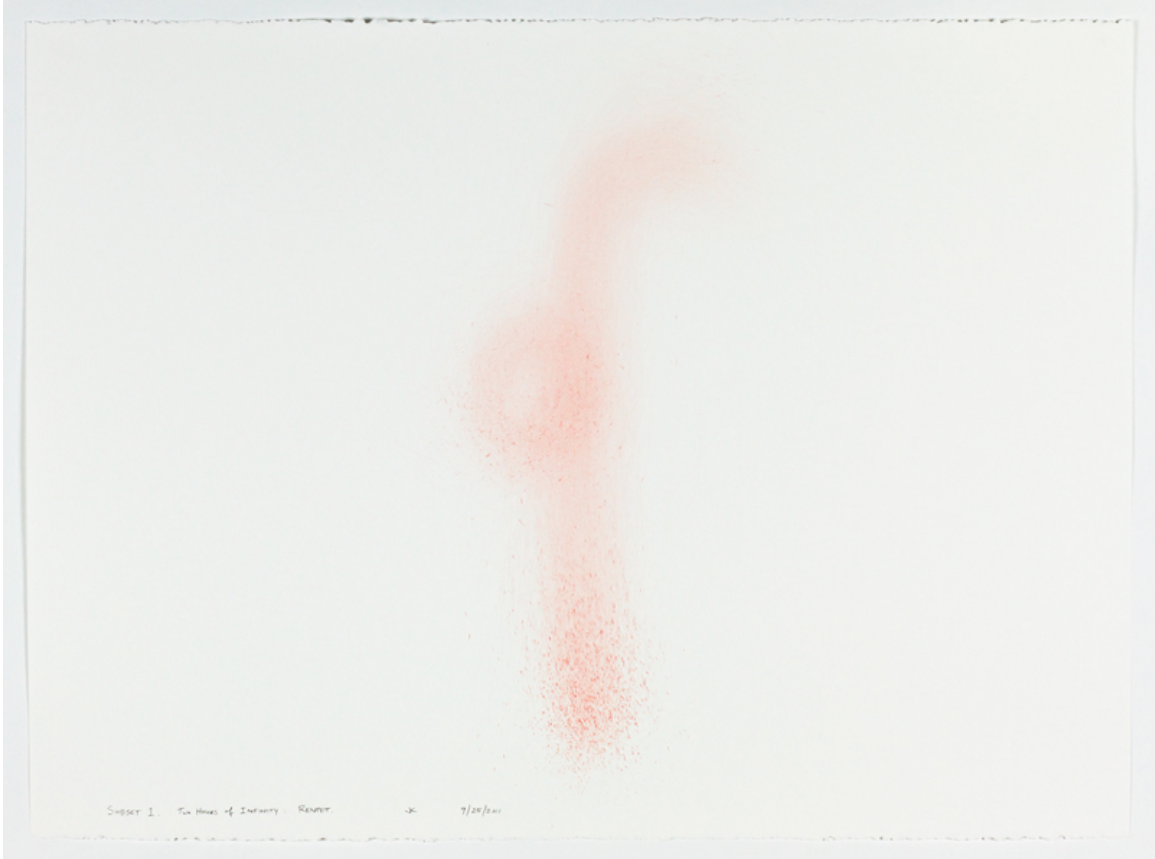


Figure 27. Comparison photographs of lighting conditions for *One Hundred Hours of Infinity* (left) and *Twelve Hours of Infinity* (right), 2011

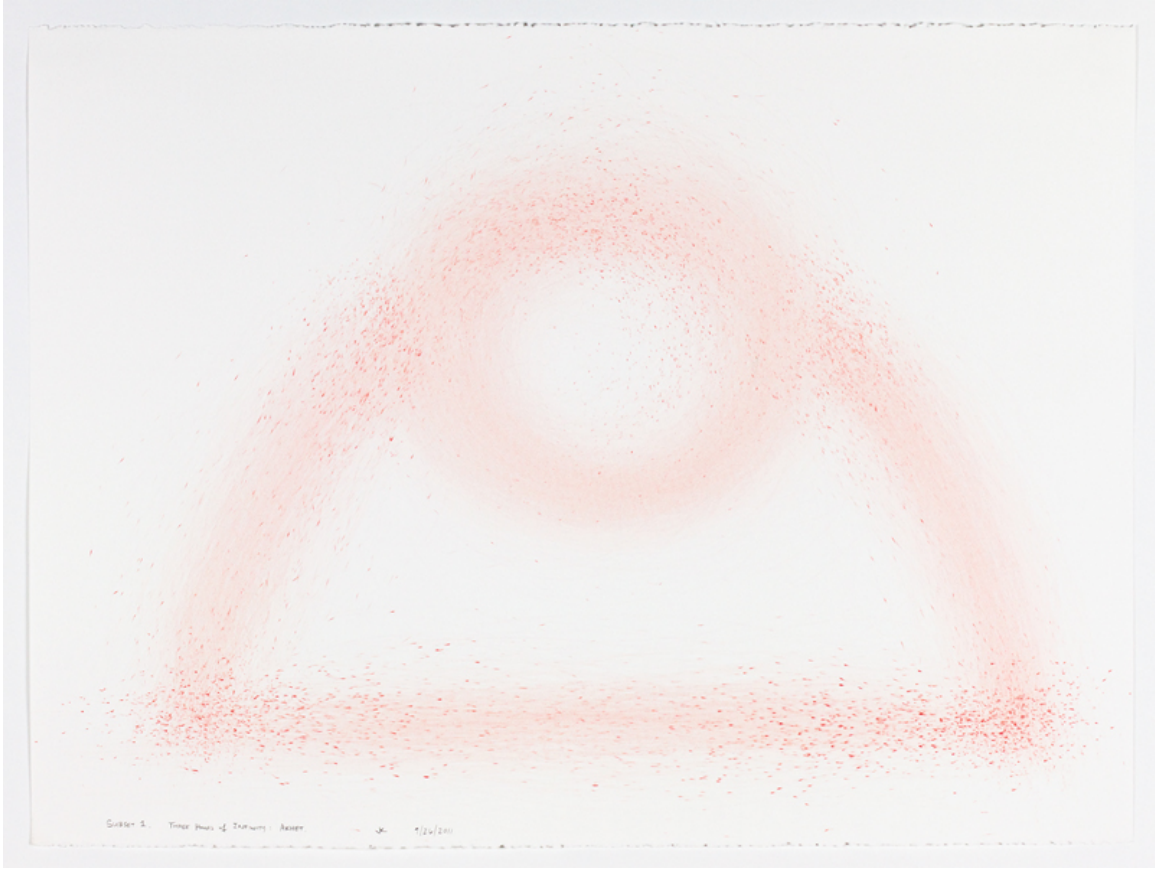


**Figure 28.** *Red Land 1: One Hour of Infinity: Re*, 2011, 30" x 22"





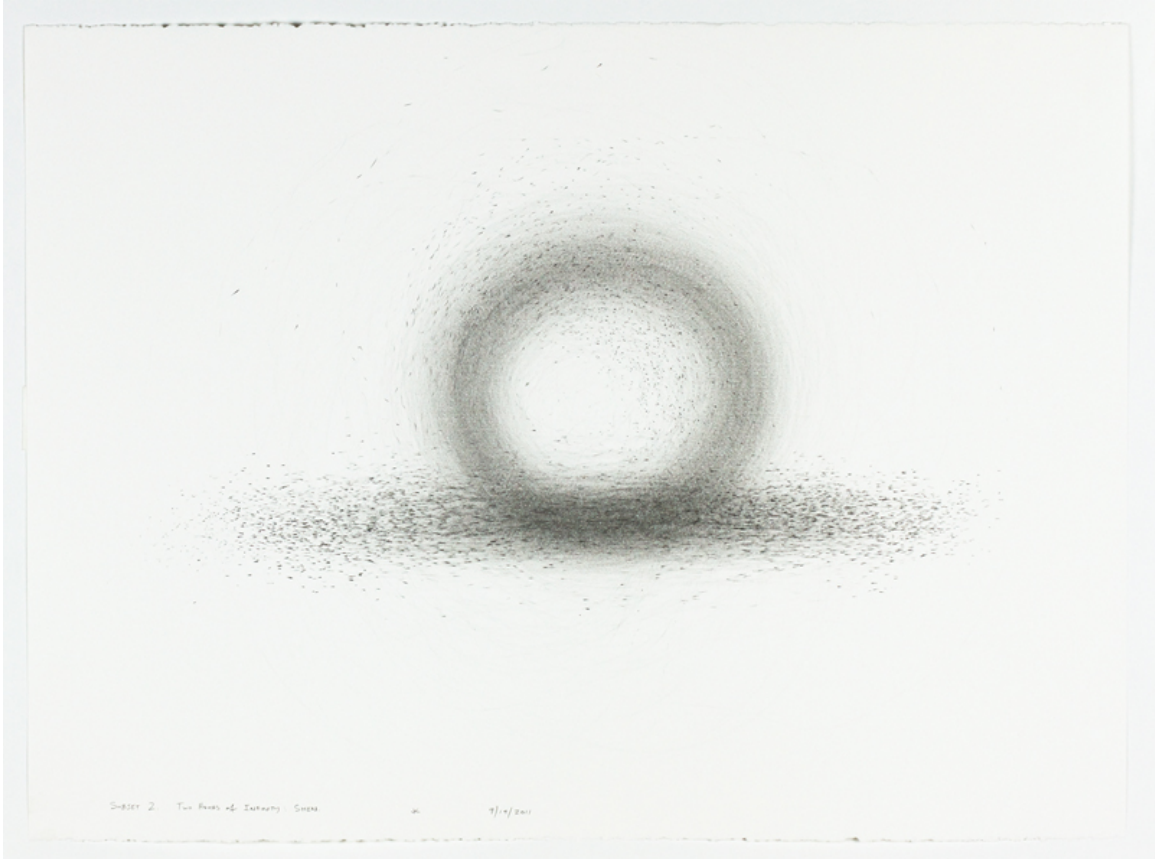
**Figure 29.** *Red Land 2: Two Hours of Infinity: Renpet, 2011, 30" x 22"*



**Figure 30.** *Red Land 3: Three Hours of Infinity: Akhet*, 2011, 30" x 22"



**Figure 31.** *Black Land 1: One Hour of Infinity: Shen, 2011, 30" x 22"*



**Figure 32.** *Black Land 2: Two Hours of Infinity: Shen, 2011, 30" x 22"*



**Figure 33.** *Black Land 3: Three Hours of Infinity: Shen, 2011, 30" x 22"*

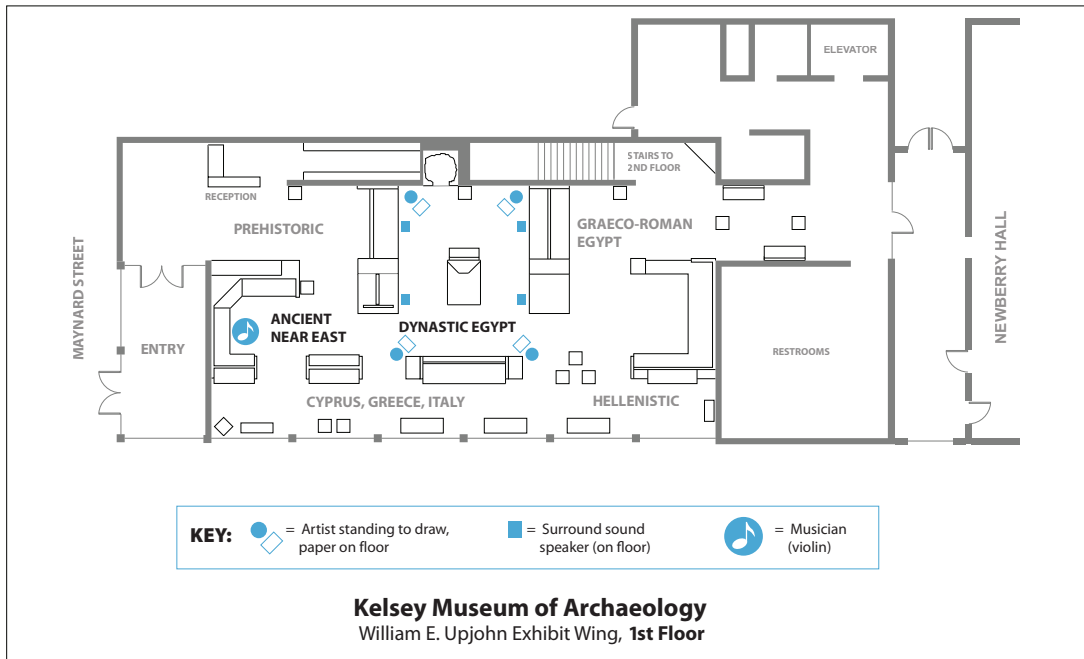


Figure 34. *An Hour of Infinity* performance proposal map, Ground Floor, 2012

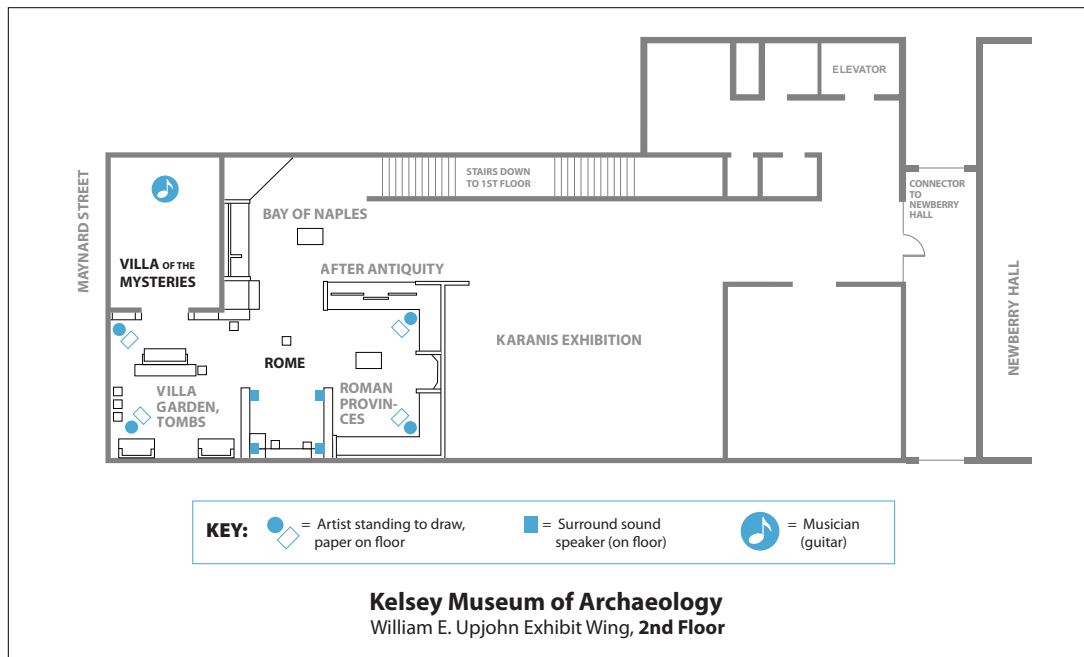


Figure 35. *An Hour of Infinity* performance proposal map, Second Floor, 2012



**Figure 36.** *An Hour of Infinity* drawing performers *in situ* – clockwise from upper left: Charlie Michaels, Larry Cressman, John Kannenberg, James Rotz, Terry Wilfong, Reed Esslinger, Mia Cinelli, Ann Bartges, 2012 (photographs by Kristopher Hunt)



**Figure 37.** Dynastic Egypt gallery at the Kelsey Museum of Archaeology, site of the “Footsteps” surround sound installation, 2012



**Figure 38.** Temple Gentes Flaviae reconstruction at the Kelsey Museum of Archaeology, site of the “Archives” surround sound installation, 2012



**Figure 39.** Babylonian incantation bowl, Kelsey Museum of Archaeology, 2012





**Figure 40.** Violinist Collin McRae playing the incantation bowl as a graphic score, Kelsey Museum of Archaeology, 2012 (photograph by Kristopher Hunt)



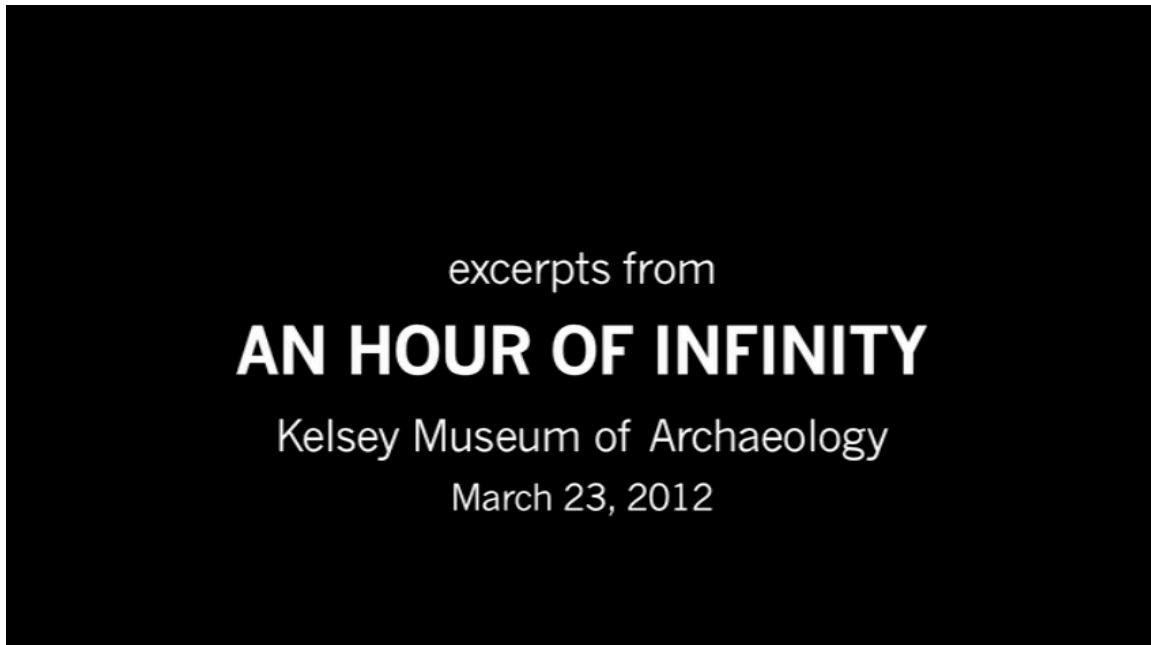
**Figure 41.** Room of the Mysteries, Kelsey Museum of Archaeology, 2012



Figure 42. Musical staff and notes overlaid onto the paintings of the Room of the Mysteries, 2012



Figure 43. Guitarist James Warchol performing in the Room of the Mysteries, 2012 (photograph by Kristopher Hunt)



**Figure 44.** Excerpts from *An Hour of Infinity*. Video, 6:05, 2012. <http://vimeo.com/40366610>

Back-up video link: <http://www.johnkannenberg.com/infinityexcerpts.html>

**WORKS CITED**

- Adorno, Theodor. "The Form of the Phonograph Record." Trans. Thomas Levin. *October* 55 (1990): 56-61. Print.
- Allen, James P. *Middle Egyptian: An Introduction to the Language and Culture of Hieroglyphs*. Cambridge: Cambridge UP, 2010. Print.
- Augoyard, Jean François, Andra McCartney, Henry Torgue, and David Paquette. *Sonic Experience: A Guide to Everyday Sounds*. Montreal: McGill-Queen's UP, 2006. Print.
- Bachelard, Gaston, and M. Jolas. *The Poetics of Space*. Boston: Beacon, 1994. Print.
- Benjamin, Walter. *Illuminations*. Ed. Hannah Arendt. Trans. Harry Zohn. New York: Harcourt, Brace & World, 1968. Print.
- Berger, John. *Ways of Seeing*. London: Penguin, 2008. Print.
- Brown, Earle. "Transformations and Developments of a Radical Aesthetic." Ed. Daniel Warner. *Audio Culture: Readings in Modern Music*. Ed. Christoph Cox. New York: Continuum, 2004. 189-95. Print.
- Cameron, Duncan F. "The Museum, a Temple or the Forum." *Curator: The Museum Journal* 14.1 (1971): 11-24. Print.
- Camus, Albert. *The Myth of Sisyphus, and Other Essays*. New York: Vintage, 1955. Print.
- Cox, Christoph. "Beyond Representation and Signification: Toward a Sonic Materialism." *Journal of Visual Culture* 10.2 (2011): 145-61. Print.
- Cox, Christoph. "Visual Sounds: On Graphic Scores." Ed. Daniel Warner. *Audio Culture: Readings in Modern Music*. New York: Continuum, 2004. 187-88.

Print.

Crew, Spencer, and James Sims. "Locating Authenticity: Fragments of a Dialogue."

Ed. Ivan Karp and Steven Lavine. *Exhibiting Cultures: The Poetics and Politics of Museum Display*. Washington: Smithsonian Institution, 1991. 159-74. Print.

De Grummond, Elizabeth. *The Villa of the Mysteries in Pompeii: Ancient Ritual,*

*Modern Muse*. Ed. Elaine K. Gazda, Catherine Hammer, Brenda Longfellow, and Molly Swetnam-Burland. Ann Arbor: Kelsey Museum of Archaeology and the University of Michigan Museum of Art, 2000. 129-37. Print.

Dezeuze, Anna. "Origins of the Fluxus Score: From Indeterminacy to 'Do-It-Yourself'

Artwork." Ed. Margaret Iversen. *Chance*. London: Whitechapel Gallery, 2010. 73-85. Print.

Doty, Mark. *Still Life with Oysters and Lemon*. Boston: Beacon, 2001. Print.

Eno, Brian. *A Year with Swollen Appendices*. London: Faber and Faber, 1996. Print.

Greenblatt, Stephen. "Resonance and Wonder." *Exhibiting Cultures: The Poetics and*

*Politics of Museum Display*. Ed. Ivan Karp and Steven Lavine. Washington: Smithsonian Institution, 1991. 42-56. Print.

Hahn, Robert. *Anaximander and the Architects: The Contributions of Egyptian and*

*Greek Architectural Technologies to the Origins of Greek Philosophy*. Albany, NY: State Univ. of New York, 2001. Print.

Hawking, S. W., and Leonard Mlodinow. *A Briefer History of Time*. New York: Bantam,

2005. Print.

Hofstadter, Douglas R. *Godel, Escher, Bach: An Eternal Golden Braid*. New York, NY:

Basic, 1999. Print.

- Hooper-Greenhill, Eilean. "Studying Visitors." *A Companion to Museum Studies*. Ed. Sharon Macdonald. New York [u.a.: Wiley-Blackwell, 2011. 362-76. Print.
- Hornung, Erik. *The Ancient Egyptian Books of the Afterlife*. Trans. David Lorton. Ithaca, NY: Cornell UP, 1999. Print.
- Ingold, Tim. *Lines: A Brief History*. London: Routledge, 2007. Print.
- Juniper, Andrew. *Wabi Sabi: The Japanese Art of Impermanence*. Boston: Tuttle Pub., 2003. Print.
- Kahn, Douglas. *Noise, Water, Meat: A History of Sound in the Arts*. Cambridge, MA: MIT, 2001. Print.
- Karp, Ivan, and Steven Lavine. "Resonance and Wonder." *Exhibiting Cultures: The Poetics and Politics of Museum Display*. Washington: Smithsonian Institution, 1991. 42-56. Print.
- Kelly, Caleb. *Cracked Media: The Sound of Malfunction*. Cambridge, MA: MIT, 2009. Print.
- Kim-Cohen, Seth. *In the Blink of an Ear: Toward a Non-cochlear Sonic Art*. New York: Continuum, 2009. Print.
- Kristeva, Julia. *Powers of Horror: An Essay on Abjection*. New York: Columbia UP, 1982. Print.
- Lakoff, George, and Mark Johnson. *Philosophy in the Flesh: The Embodied Mind and Its Challenge to Western Thought*. New York: Basic, 1999. Print.
- Milner, Greg. *Perfecting Sound Forever: An Aural History of Recorded Music*. New York: Faber and Faber, 2009. Print.
- Moore, Adrian W. *The Infinite*. London [u.a.: Routledge, 2001. Print.

- Munroe, Alexandra, Akira Tatehata, and Lee Ufan. *Lee Ufan: Marking Infinity*. New York: Guggenheim Museum Publications, 2011. Print.
- Nancy, Jean-Luc, and Charlotte Mandell. *Listening*. New York: Fordham UP, 2007. Print.
- Oliveros, Pauline. *Deep Listening: A Composer's Sound Practice*. New York: IUniverse, 2005. Print.
- Opalka, Roman. "Roman Opalka, ka - Official Website - Statement." *RomanOpalka.com*. Roman Opalka, 2010. Web. 08 Apr. 2012. <[http://opalka1965.com/en/statement\\_en.php](http://opalka1965.com/en/statement_en.php)>.
- Pearce, Susan M. "Objects Inside and Outside Museums." *Museums, Objects, and Collections: A Cultural Study*. Leicester: Leicester UP, 1992. 15-35. Print.
- Pearce, Susan M. "The Urge to Collect." *Interpreting Objects and Collections*. London: Routledge, 1994. 157-59. Print.
- Piankoff, Alexandre. *The Tomb of Ramesses VI*. [New York]: Pantheon, 1954. Print.
- Reich, Steve, and Paul Hillier. *Writings on Music: 1965 - 2000*. Oxford [u.a.: Oxford Univ., 2002. Print.
- Rucker, Rudy V. B. *Infinity and the Mind: The Science and Philosophy of the Infinite with a New Preface by the Author*. Princeton, NJ: Princeton UP, 2005. Print.
- Sauer, Theresa. *Notations 21*. New York: Mark Batty, 2009. Print.
- Scarry, Elaine. *On Beauty and Being Just*. Princeton, NJ: Princeton UP, 1999. Print.
- Schaeffer, Pierre. "Acousmatics." *Audio Culture: Readings in Modern Music*. Ed. Christoph Cox and Daniel Warner. New York: Continuum, 2004. 76-81. Print.
- Seife, Charles. *Zero: The Biography of a Dangerous Idea*. New York: Viking, 2000.

- Print.
- Sorensen, Roy A. *A Brief History of the Paradox: Philosophy and the Labyrinths of the Mind*. Oxford: Oxford UP, 2003. Print.
- Toop, David. *Sinister Resonance: The Mediumship of the Listener*. New York: Continuum, 2010. Print.
- Ufan, Lee. "On Infinity." *Lee Ufan: Marking Infinity*. Ed. Alexandra Munroe, Akira Tatehata, and Mika Yoshitake. NY, NY: Guggenheim Museum, 2011. 121-23. Print.
- Vermeulen, Timotheus, and Robin Van Den Akker. "Notes on Metamodernism." *Journal of Aesthetics & Culture* 2 (2010): 1-14. Print.
- Wallace, David Foster. *Everything and More: A Compact History of Infinity*. New York: Atlas Book, 2003. Print.
- Weeks, Kent, ed. *Atlas of the Valley of the Kings: Study Edition*. New York: Theban Mapping Project, 2005. Print.
- Wente, Edward F. "Mysticism in Pharaonic Egypt?" *Journal of Near Eastern Studies* 41.3 (1982): 161-79. Print.
- Wilkinson, Richard H. *Reading Egyptian Art: A Hieroglyphic Guide to Ancient Egyptian Painting and Sculpture*. London: Thames and Hudson, 1992. Print.
- Wilkinson, Richard H. *Symbol & Magic in Egyptian Art*. New York, NY: Thames and Hudson, 1994. Print.
- Wittgenstein, Ludwig. *Tractatus Logico-philosophicus*. London: Routledge & Paul, 1961. Print.