

DEEP ECOLOGY AND WESTERN ASTROLOGY: THE KUIPER BELT AND
COSMOLOGICAL MYSTERY

by

SALLY HILDRETH

A Thesis Submitted to the Graduate
Faculty of the University of West Georgia in Partial
Fulfillment
of the Requirements for
the Degree of
Master of Arts in Psychology

CARROLLTON, GEORGIA

2017

This paper was originally written in 2017. As it is now 2019, I thought an updated introduction for the Cosmocritic audience was called for. Thank you, Garry, for the suggestion. I want to clarify a few points from the original paper and more generally introduce myself. I'm happy you're here, reader and hope you find value in the work that follows.

When I originally wrote this thesis for my MA in psychology, I wanted to bridge two disparate worlds that better than anything else I knew, captured the magic of interconnection between people and planet(s). I say magic because it feels that way to me in the moment, in the process of being alive with the earth and becoming aware of my entangled aliveness, in the process of doing astrology.

Ecopsychology and astrology are two traditions that live as one in my mind. This paper was my humble attempt to translate each tradition to the other, thus the term, ecological astrology. Ecological astrology is best described in the second chapter of the paper (p. 22). In short, it's an astrology that comes alive through the theories of dialogical psychology and deep ecology in the tradition of David Abram's (1996) *Spell of the Sensuous*. What results is an embodied, imaginal, experiential cosmic dialogue that is inseparable from the environment in which it is occurring.

As writing projects tend to go, what started as a seemingly simple task took a number of turns, especially after encountering Patrick Curry's (2004, 2007) great work on the subject. While reading Curry's material, I felt confident that I needed to center the Kuiper belt and with it, deep time, in my writing. I've become convinced the outer solar system's relatively unknown qualities provide a key to understanding how astrology works. The Kuiper belt illuminates how much is unknown not just about the universe, but

our home within that universe—the solar system. It reveals the mystery lurking within seemingly fixed ways of knowing. It's a mystery that's unfolding in the dynamic present. The Kuiper belt also makes delineation accessible in the here-and-now to non-astrologers. Chapters IV and V cover this ground (pp.41-76).

Another main intention of this paper was to amplify dialogical self theory in astrology as a psychological alternative to archetypal and Jungian understandings of self and cosmos. These theories need not be separate, however, dialogical self theory articulates process with a precision that's uniquely resonant to the process of astrology. For a more-detailed, but concise introduction to dialogical self theory, I recommend Hermans (2015).

I reference the dialogical on p. 29 and dialogical self (DS) theory on p. 30 but they really deserve greater breadth than I had space for in the thesis. DS theory is a postmodern concept of self that does not see bright divisions between self and other, thus self and society, or self and world. Instead, what is defined as self is constantly negotiated through our relationships. While DS theorists tend to focus heavily on social and political others, I'm including cosmic others in the dialogical self as it relates to astrology (these are, of course, interrelated). There's much to say on this topic, including how the dialogical deals with increasing complexity of I-positions, and relative dominance. It deserves its own text: for now, an excerpt from Hermans (2015):

The embodied self and other are situated, localized, and positioned in a physical space in which they are continuously involved in interactions with each other....the self is not a pure 'reflection' of what is taking place outside and it is not simply determined by external factors. On the basis of its own agentic

potentials the dialogical self is able to give, in the form of counter-positioning, any answer to the influences coming from outside. Along these lines, the dialogical self has the potential to escape both determinism and self-other dualism.

(p. 2)

For emphasis, there is no core or essential interiority in a dialogical self (for what it's worth, I argue there is no core or essential interiority in the solar system either).

Through this lens, the cosmos is not a mirror. Rather, in the cosmic, we have dialogical partners, however complexly in motion, that we are in constant communication with as a means of defining our humanity—physical, social, intimate, political, and ecological.

This theory also allows for an elegant incorporation of technology into astrology, which from my perspective is unavoidable. I arrive at this tension in my final chapter, on p. 62.

An ecological-dialogical conception of astrology relies on a malleable sense of self/other and a similarly malleable sense of moment/place (p. 64). What follows is a line between oneness and twoness—unity and duality—that is in itself porous and changing. To clarify, in the process of astrology I'm articulating, one reaches a sense of communion with a dynamic whole (p. 29). The very aliveness of this whole makes it impossible to know completely (thus, mystery). However, an experience of the whole, necessarily pervaded with mystery, arrives before we're able to consider how to divide that whole. Inevitably, the moment fades and can change again, a visceral experience of seeing in darkness (divination) or a kind of cosmic synesthesia. Mystery and uncertainty are necessary factors in my cosmology or the dialogical ground I'm describing. It's impossible to have granular conscious awareness of the whole, though immanence

requires that moment/place is embedded in the whole of the universe and from that place, it is possible to commune with any element of that whole.

Finally, I'm currently expanding this text into a book format that will elaborate on some of the more condensed points; hopefully the clarifications in this introduction suffice in the meantime. There is much more to say regarding the tension I arrive at in the final chapter and my current research interests include the intersections of technology, mystery/uncertainty, and the astrology described here. Generally, I love to write and speak about astrology from the ecological-dialogical perspective and welcome any inquires or requests regarding either. I'm also open to collaboration and hellos! Please get in touch: sally@luminousdark.net

Sally Hildreth, Atlanta, GA, 2019.

References

- Abram, D. (1996). *The spell of the sensuous: Perception and language in a more-than-human world*. New York, NY: Random House.
- Curry, P. (2007). Grounding the stars: Towards an ecological astrology. *Journal for the Study of Religion Nature and Culture*, 1(2), 210-219. doi: 10.1558/jsrnc.v1i2.210
- Hermans, H. J. (2015). Dialogical self in a complex world: the need for bridging theories. *Europe's Journal of Psychology*, 11(1), 1-4. doi:10.5964/ejop.v11i1.917
- Willis, R. & Curry, P. (2004). *Astrology, science and culture: pulling down the moon*. Oxford: Berg.

DEEP ECOLOGY AND WESTERN ASTROLOGY: THE KUIPER BELT AND
COSMOLOGICAL MYSTERY

by

SALLY HILDRETH

A Thesis Submitted to the Graduate
Faculty of the University of West Georgia in Partial
Fulfillment
of the Requirements for
the Degree of
Master of Arts in Psychology

CARROLLTON, GEORGIA

2017

DEEP ECOLOGY AND WESTERN ASTROLOGY: THE KUIPER BELT AND
COSMOLOGICAL MYSTERY

by

SALLY HILDRETH

Approved:

Tobin Hart, Ph.D.
Thesis Chair

Christopher Aanstoos, Ph.D.
Thesis Committee Member

Blyne Olivieri, M.A., MLIS
Thesis Committee Member

Approved:

N. Jane McCandless, Ph.D.
Dean, College of Social Sciences

Date

ABSTRACT

SALLY HILDRETH: Deep Ecology and Western Astrology: The Kuiper Belt and
Cosmological Mystery
(Under the direction of Dr. Tobin Hart)

Despite common representation as a mechanical system of cosmic causes of human personality and behavior, in practice, astrology is ecological dialogue. This thesis theoretically builds upon David Abram's deep ecology and the phenomenology of Merleau-Ponty and Heidegger in conjunction with dialogical psychology. Ecocentric practice, plurality, and the inclusion of contemporary discoveries in astrology are advocated. A brief history of western astrology and review of recent research are conducted. The implications for astrology of the 2006 definition of planet are explored, examining the Kuiper belt's role in Pluto's reclassification as a minor planet. This paper finds that modern astronomy is re-enchanting the earth in the western mind through nomenclature. The discoveries, naming systems, and contemporary cosmic creation stories create a bridge for the reintegration of astrology in a unified whole. Questions are asked of astrological theory through the lens of contemporary planetary discovery, the earth, and the technology that bridges the worlds; finding that a dialogue of archetypal cosmology and divinatory theories best captures the astrological whole of the present moment.

Keywords: astrology, divination, deep ecology, enchantment

© 2017
Sally Hildreth
ALL RIGHTS RESERVED

DEDICATION

To all whose love and friendship inspired deep connection.

TABLE OF CONTENTS

ABSTRACT.....	iii
COPYRIGHT.....	iv
DEDICATION.....	v
LIST OF FIGURES	viii
CHAPTER	
I. INTRODUCTION	1
II. BACKGROUND	4
Brief History	4
Popular Astrology and the Survival of the Newspaper Horoscope	7
Horary Revival, Divinatory Implications	8
Psychological Studies	9
Personality traits.....	9
Belief in astrology.....	11
Astrology as Plurality	12
Major Techniques	12
Major Theories.....	13
Psychological	14
Archetypal Cosmology	16
Divinatory	19
III. ASTROLOGY AS ECOLOGY	22
Astrological Grammar	22
Seasons and Signs	23
The Moon and Aspects	24
Astrology on the Way to Ecology.....	26
Embodiment, Human and Celestial	27
The Dialogical Imperative	29

	The Mythological and the Cosmic	31
	Below the Earth and Above the Horizon	34
	Sunrise and the Houses	35
	Time/Space and Moment/Place	36
	The Presencing of Prediction	37
	Mind, Interiority, and the Cosmos or Psyche as Breath and Sky	38
	Paradox of Body and Distance	40
IV.	MINOR PLANET ASTROLOGY.....	41
	What are Minor Planets?.....	41
	The Whippoorwill and the Kuiper Belt	42
	A Contemporary Cosmic Mystery	43
	Planet was Never a Scientific Term.....	45
	Astrological Implications.....	47
	Boundaries and Borders.....	48
	Naming Minor Planets	49
	An Archaic Bridge	51
	Changing Cosmologies	52
	A Living Language	54
	Borasisi and 1,000 Years Ahead in Time	55
	The Stories We Tell When We Breathe Toxic Air	59
	With Deep Ecology Comes Deep Time.....	60
	A Cosmological Bridge.....	61
V.	DIVINATION, ARCHETYPE, AND DIGITAL REALITIES	62
	Dialog of Archetypal Cosmology and Divinatory Astrology	62
	Minor Planets, Wider Orbits, and Malleable Moments	64
	Complex Holism	65
	Transjective Knowing and Plurality	66
	Minor Planets Facilitate Theoretical Dialogue	67
	Digital Mediarities of Direct Knowing	68
	Turning Inside Out.....	70
	Digital Overwhelm and a Shift from Big to Small	72
	Grounding in Mystery.....	74
	REFERENCES	77

LIST OF FIGURES

FIGURE	PAGE
1. Simplified Astrology Chart Representing a Full Moon Aspect.....	25
2. Simplified Plot of Venus From a Geocentric Perspective	32
3. Simplified Astrology Chart Depicting Only Houses.	35
4. Astronomical Plot of Minor Planets in the Outer Solar System	44

INTRODUCTION

But there are no new ideas still waiting in the wings to save us as women, as human. There are only old and forgotten ones, new combinations, extrapolations and recognitions from within ourselves, along with the renewed courage to try them out.

—Audre Lorde, 1985

Contrary to the mechanistic focus of psychological studies of astrology (Carlson, 1985; Ertl, 1992; Gauquelin, 1976; Hamilton, 2001; Hartman, Reuter & Nyborg, 2006; Steyn, 2013), astrology as practiced throughout western history is a tradition rooted in the human experience of the sky (Willis & Curry, 2004). To tell the story of astrology in the west is to tell the story of disenchantment and the rise of modern science (Tarnas, 1993).

This paper explores astrology from an ecological framework. As astrology is interdisciplinary by nature, the material that follows is similarly reflective of integrative practice—incorporating elements of cultural history, embodiment, mythopoetic knowing, ethics, dialogical psychology, and ecocentric consciousness. While astrology thrives in many parts of the world through a myriad of traditions, I am limiting my scope to modern and contemporary western astrology and the western thought traditions that best support their practice.

It was certainly not the causal and personality-focused research mentioned above that led Stanislov Grof (2012) to name astrology “the long-sought Rosetta stone of consciousness research.” Amidst a revival of astrological scholarship in the academy, two astrological theories emerged from transpersonal, humanistic, and postmodern perspectives—archetypal cosmology (Tarnas, 2006) and divinatory astrology (Cornelius, 1994; Willis & Curry, 2004).

Archetypal cosmology and divinatory astrology are theoretically distinct in astrological literature and have divergent technical practices, but I propose a bridge exists via expanding astrological symbolism to include contemporary planetary discoveries (Brown, 2012). Perhaps working with the illuminations of emergent discovery is a key to understanding astrology itself.

Of course, this paper is not the only advocate for the inclusion of distant orbiting bodies into the astrological lexicon (Dobyns, 2002; Francis, 2015; O'Brien, 2015; Reinhardt, 2013), but the voices are few. Archetypal cosmologists typically limit their focus at Pluto's boundary and divinatory astrologers—grounded in 17th century tradition—may even stop at Saturn. The discovery of Eris in 2005 and subsequent demotion of Pluto in 2006 resulted in the first major change to our solar system since 1930 and presented a boundary problem for astrology and astronomy. Eris forced the International Astronomical Union (IAU) to define planet in concrete terms (Brown, 2012). Astronomers' efforts to adequately define planet revealed the cultural and psychological significance of the natural objects. The IAU's choice was to define planet to include Eris and invite thousands of other similar objects into the nine-planet system or define planet to exclude Pluto and tighten the local boundary. The IAU chose the latter, but by that time astrologers had meaningfully worked with Pluto as planet for over 75 years.

This paper explores the implications of the recent cosmological boundary crossing, joining Patrick Curry (2007) in grounding astrology ecologically, phenomenologically (Merleau-Ponty, 1962), and extending David Abram's (1996) sensual dialogue out to the cosmos. Chapter 1 will explore the history and theoretical background of the present astrological landscape. Chapter 2 will articulate an in-depth understanding of ecological astrology. Chapter 3 will introduce recent discoveries in astronomy and their implications for

astrology. Chapter 4 will begin a dialogue amongst previous chapters and remaining theoretical tensions.

As reflected in the story of Eris, Pluto, and the outer solar system, how humans experience and engage with Earth necessarily includes everything that surrounds it. The sun, moon, and all the planets that orbit in our system are surrounded by a greater system, all of which participate in the ecological dialogue. Our ability to commune with distant and slow moving planets is an opportunity to engage with our world differently, to hold the mundane pace of daily life amidst the rhythm of generations of humans that lived before us and those that will be here long after we die.

I would not be able to write the words that follow without my own moments of connection and enchantment with the surrounding earth. Thus, I am also writing from the vantage of personal experience and theoretical curiosity. My aim is to move the conversation about astrology away from belief and into its rightful context as a human ecological dialogue, paying particular attention to those edges where modern science and mystery meet.

BACKGROUND

In this chapter, I will trace a brief history of astrology in order to show the major theoretical and technical positions presently alive in astrological practice. The chapter will review research related to those theories and practices, as well as point toward the persistence of the sun-sign horoscope in popular culture. Shifts in western thought shaped astrological tradition and resulted in the variety of techniques practiced today. Indeed, the evolution of western thought in conjunction with astrology silently guided Richard Tarnas' (1993) *Passion of the Western Mind*. Research focus in astrology has changed with the tides of paradigmatic science and some research remains theoretically abstinent in order to observe astrology therapeutically or as a meaning-making system. As I hope to demonstrate, astrology is not one static practice, but a plurality of practices that have changed over time.

Brief History

Astrology has its roots in the oral, multi-sensorial ancient world. The precise beginnings of Western Astrology are debatable but commonly cited as originating in 2000 BCE Mesopotamia (Bobrick, 2005; Willis & Curry, 2004). The discipline then traveled through ancient Greece where it gathered the solar zodiacal and geometric emphasis (Tarnas, 1993) that remains in today's practice. Before the split between knowing and being that occurred during the scientific revolution (Toulmin, 1990), astrology and astronomy were essentially one interconnected system. Michael Brown (2008), astronomer and discoverer of Eris, describes the union:

Astrology and astronomy are brothers with roots deeper than just the first five letters.

Until perhaps the Enlightenment they were inseparable. Copernicus, who made one of

the greatest conceptual leaps in human history, pulling the earth out of the center of the universe and replacing it with the sun, was a dedicated astrologer, calculating astrological charts with as much fervor as trying to understand the paths of the planets. (para. 3)

Astrology's drift away from the center of intellectual life was not as simple as humanity's discovery of new models of celestial movement. Heliocentric theories of the universe have dated as far back at least as 270 B.C.E (Kelly, 2010). Historians have described the trajectories of modernity and its effects in great detail (Tarnas, 1993; Toulmin 1990) and there is no need to repeat everything here. However, for astrology's purposes, it is important to emphasize the split between astronomy and astrology was not a clean break.

As Greek philosophy evolved, astrological methods became more mathematically refined, technique changed, and the distinction from Babylonian augury began to emerge. Astrology incorporated concepts like proportional equation, microcosm/macrocosm, and the mysticism of numbers (Bobrick, 2005). The major mathematical discoveries of the ancient era were driven by astrological curiosity—Pythagoras, Hipparchus, Ptolemy, and were all students of astrology.

Astrology remained an integrated part of society for some time as Tarnas (1993) describes, “demand for astrological insight, whether in the imperial courts, the public marketplace, or the philosopher’s study—encouraged astronomy’s further evolution and continued social significance, the two disciplines forming essentially one profession from the classical era through the Renaissance” (p. 82). Even as the human relationship to the sky grew more technologically mediated, astrology persisted.

It was the astrologer Manilius, for example, that first inspired Copernicus to theorize planets as orbiting around the sun (Bobrick, 2005). Kepler and Galileo, whom Polcaro and Martocchia (2010) cite as initiating modern astronomy with their respective publications of

Astronomia Nova (New Astronomy) in 1609 and *Sidereus Nuncius* or Starry Messenger in 1610, were astrologers first and foremost (Campion, 2009). When Kepler became a teacher of mathematics and astronomy in Graz, Austria, in 1594 or 1595, one of his duties was to write the annual astrological almanac which helped supplement his teacher's salary. Kepler's first published almanac accurately predicted the unusually cold winter of 1595 to 1596 and a Turkish invasion. The success of his early predictions helped establish Kepler's reputation as an astrologer. He published 18 more almanacs throughout his life and served as an advisor to General Wallenstein of Ferdinand's army during the thirty years war, offering astronomical calculations and horoscopes for the military (Bobrick, 2005).

Galileo, frequently cited as the founder of the scientific method itself, taught astrology at the University of Padua and was appointed Medici Court astrologer and mathematician after his publication of *Starry Messenger* (Campion, 2009). A horoscope was even found on the back of Galileo's sketches of the moon (Bobrick, 2005). His astronomical contributions, which include technological developments of the telescope and promoting public acceptance of the Copernican theory of the universe, only furthered Galileo's astrological curiosity.

Because all three men are historic scientific figures, the role astrology played in their work and discoveries is often marginalized or omitted entirely. The important point is that astrology, and its connection to the enchanted cosmos it represented, was a driving force behind the great discoveries that still shape how we conceive of modern astronomy. Though an overthrow of Aristotelian cosmology came with astronomical discoveries at the turn of the 17th century, astrology did not fade along with it. Astrology's diminishment from intellectual prominence would prove to be more complexly political.

Popular Astrology and the Survival of the Newspaper Horoscope

Around the birth of the scientific paradigm, during the era of astrological almanacs such as Kepler's, another key historical figure emerged to popularize astrology in print. Born in the United Kingdom in 1602, William Lilly rose to fame as an astrologer in the mid-1600s through the publication and wide distribution of his annual astrological almanacs. Lilly originally moved to London in 1620 to work as a servant for Gilbert Wright (Houlding, 2011). In 1627, he married Wright's widow. After his wife's death six years later, Lilly inherited his former master's property. Lilly's newfound wealth allowed him to study astrology in depth, financial opportunism playing a significant role in his eventual and far-reaching success (Capp, 1979). As a result, his craft and published content were of a higher quality than many of his contemporaries.

Lilly published his first almanac in 1644 and continued publishing annually until his death in 1681. A prediction of the Great Fire of London in 1666 was attributed to Lilly's 1651 prophecy, *Monarchy or No Monarchy in England*. Subsequently, a parliamentary committee questioned Lilly about the fire, though he denied any specific foresight of the event (Curry, 1989). Almanacs played a key role in educating the public about astronomy in Lilly's era. They were affordable, widely distributed, and not subject to standard publishing limitations. Lilly reportedly sold as many as 30,000 copies of his almanac in 1649 (Curry, 1989). Content of the almanacs commonly included calendars, astronomical descriptions, and astrological predictions about religion, politics, health, crops, and weather (Curry, 1989). Though the focus of widely distributed astrological literature has shifted to commentary on individual life, the almanac of Lilly's era was a clear predecessor to the modern sun sign horoscope.

Horary Revival, Divinatory Implications

In addition to his almanacs, Lilly also wrote the first book in English on the craft of Astrology. Published in 1647, Lilly's *Christian Astrology* detailed the technique and art of horary astrology. Lilly was an important figure because he was part of a fading craft. After the Restoration, due to its power of subversion and use as political propaganda, astrology fell out of favor with the establishment. Because techniques were also widely distributed in almanacs, astrological knowledge was available to any reader and astrology had potential to incite public unrest with predictions about the state possible from any member of the public (Curry, 1989).

Of note, *Christian Astrology* was reprinted in 1985. Its reprint and techniques resulted in a revival of astrological scholarship in the west. In particular, Lilly's work revived the practice of traditional horary astrology (Campion, 2003). Modern astrology as a practice had increasingly moved away from prediction and toward purely psychological techniques, particularly since the humanistic movement of the 1960s. Horary astrology reverts back to the more concretely predictive methods of Lilly's era. Presently, *Christian Astrology* is still the primary text used by many horary astrology students.

While astrology's history deserves a more detailed treatment, for this paper's purposes two key changes transpired in the mid-seventeenth century: the scientific revolution and the widespread publication of astrological predictions or almanacs. The condemnation of astrology and almanacs by the political establishment, alongside the increased focus on the scientific method as path to knowledge, helps illuminate how astrology came to live in the current western worldview—surviving through mass publication, but largely disavowed by the intellectual elite. Astrology remained alive as an occult science via the theosophists through the 19th and 20th centuries (Bailey, 1942; Blavatsky, 1888; Leo, 1933) and

philosophically, moved further into the psychological through Carl Jung (1960), but the contemporary popular connection to astrology remains that of the sun-sign horoscope.

The first newspaper astrology column and horoscopes were published in 1930 both in the United States and Britain, but sun-sign horoscopes as seen today, broken into 12 distinct sections, were an American phenomenon. Within less than five years of its initial publication, most mass-market papers carried a horoscope column (Campion, 2013).

Psychological Studies

Influenced by the popular astrology found in horoscope columns and the dominant modern scientific paradigm, research on astrology in psychology, when taken up at all, is done so through a causal mechanical lens with focus on predictive capabilities and correlations to personality (Carlson, 1985; Ertl, 1992; Gauquelin, 1974; Hamilton, 2001; Hartman, Reuter & Nyborg, 2006; Steyn, 2013). In this literature, astrology is envisioned as an outside force acting upon or influencing human affairs, an ancient relic typically met with skepticism.

The literature in this domain generally focuses on quantitative, statistical analyses of various mechanisms of meaning in astrology—an aspect of a birth chart, a written sun-sign horoscope—and well established psychological assessments of personality or well-known biographical facts of the participants' lives to establish predictive significance (Mayo, White, & Eysenck, 1978; Dahlstrom, Hopkins, Dahlstrom, Jackson, & Cumella, 1996; van Rooij, Brak, & Commandeur, 1988; Carlson, 1985; Hume & Goldstein, 1977; Rogers & Glendon, 2008; Von Eye, Losel, & Mayzer, 2003; Wunder, 2003).

Personality traits. The most notorious study of this kind, Gauquelin's (1974) *Cosmic Influences on Human Behavior* was a large-scale study of over 25,000 European birth charts. Gathering participants from *Who's Who*, Gauquelin looked for correlations between planetary placements in birth charts and vocation. He found statistically significant placements of Mars

along the ascendant and descendant of successful athlete's charts. Known as the "Mars Effect," Gauquelin's findings became a catalyst for further statistical analysis of astrological chart placements and personality (Gauquelin 1983, Gauquelin, & Eysenck, 1979) as well as for suggestions for revision to astrological technique (Gauquelin, 1991).

Notably, as James Brockbank (2011) discusses in *The Responsive Cosmos*, despite a long tradition of astrologers citing Gauquelin's work as empirical validation for astrology, the revisions to technique that resulted from his findings were never adopted in practice. The paradox of holding Gauquelin as exemplar of scientific evidence, while simultaneously ignoring his study's implications for practice, reveals the chasm between mainstream science and astrology. While there is desire for validation, there is no reliance on its methods for efficacy.

Nevertheless, Gauquelin's research prompted a series of skeptical studies reanalyzing his data (Comité Para, 1976; Abell, Kurtz, & Zelen, 1983; Ertl, 1988), challenges to gather similar data (Zelen, 1976), responses from Gauquelin (1988, 1991) and more replies from his former skeptics (Ertel & Kurtz, 1992; Ertel & Irving, 2000). As recently as 2003, Dean and Kelly continued to question the legitimacy of Gauquelin's original data, despite Ertl's trip to Paris to personally investigate Gauquelin's files for his 1988 reanalysis. Perhaps the most striking feature of Gauquelin's original study is the polemical cannon of literature "a few fragments of planetary symbolism" (Cornelius, 2003, p. 53) inspired.

Less well known is Phillipson and Case's (2001) research linking the Myers Briggs Type Inventory (MBTI), one of the most popular psychological personality assessments, especially in the domain of career counseling and business management, with the quaternities of renaissance astrology. The bridge between Jung's four psychological types and astrology was, of course, alchemy. Jung connects his psychological types to the four elements and the four seasons, concluding, "The orienting system of consciousness has four aspects, which

correspond to four empirical functions: thinking, feeling, sensation (sense-perception), intuition. This quaternary is an archetypal arrangement” (as cited in Phillipson & Case, p. 67). Jung's interest in astrology is well known, but the direct link between its practice and the four psychological types it inspired has been forgotten. The result is an unconscious application of “astrological character analysis” (p. 55) by administrators of the personality psychometric, an example of the hidden thread of ancient philosophy that underpins modern psychology.

Belief in astrology. Emerging from the studies on prediction and personality, researchers turned their focus to belief in astrology. Chico and Lorenzo-Seva (2006) created an assessment to reliably measure astrological belief. Other researchers focused on favorable personality characterizations as indicators of belief (Glick, Gottesman, & Jolton, 1989; Hamilton, 2001). While many investigated the role of the Barnum Effect (Forer, 1949)—or the vague, general, personality descriptions that apply to a large percentage of the population—and astrological belief (Dean, 1981; Glick et al, 1989; Fichten & Sunerton, 1983; Stachnik & Stachnik, 1980), Sugarman, Impey, Burner, and Antonellis (2011) used belief in astrology as a negative indicator of scientific literacy in their twenty-year large-scale study of college undergraduates.

Though interest in quantitative statistical verification of astrology has declined from within the astrological research community (Tarnas, 2006; Willis & Curry, 2004; Cornelius, 1994) quantitative psychological studies on belief and personality in the spirit of Gauquelin and his critics prevail as the dominant discourse in the psychological literature. The overarching critique of studies in this tradition is the narrow representation of astrological theory. Astrology is exclusively considered a causal-predictive tool, ignoring its theoretical diversity and grounding in human experience.

Astrology has always had, as part of its adoption in ancient western thought, polemical context. The scientific, religious, and skeptical arguments that surround astrology through the 20th century reflect its environment as it moved from Mesopotamia to ancient Greece to Rome. As Campion puts it, “The Greek world was never entirely happy with the introduction of Babylonian astrology in the second century BCE, and that discomfort, and the resulting rhetorical positions, are with us still” (2013, p. 275).

Astrology as Plurality

Closer to my research interests are investigations that account for astrology's long and varied history, acknowledging diverse theory and technique, which are found mostly in theses and dissertations (Brockbank, 2011; Brady, 2004, 2006; Kozlova, 2011; Radermacher, 2011). Brockbank investigated major theories of astrology, demonstrating a case for astrology as divination, which he terms the “responsive cosmos.” Brady researched astrology in the context of chaos theory. Positing that astrological aspects act as strange attractors, Brady describes an astrology that holds space for meaning in a cosmos that is chaotically emergent and spontaneously self-organizing. Kozlova explored the meaning-making process of astrological symbolism, finding that astrology helped provide reorganization and a broad framework through which to expand and evolve the meaning of life experience. Radermacher researched the interpretive astrological dialogue. Her work framed astrology in the tradition of Martin Buber, as an I-thou relationship with the cosmos.

Major Techniques

While technique and theory are related, it is possible to hold opposing theoretical views while practicing the same technique. For clarity, here are some abbreviated definitions:

- **Natal:** A chart is cast for the time and location of birth. This technique is most commonly practiced by psychological astrologers.

- **Mundane:** Charts are cast for the time and place of natural phenomena like eclipses, collective events like breaking news and natural disasters, and the establishment of large entities like nations or corporations.
- **Electional:** Working in reverse compared to the other techniques, electional astrology looks for the best moments, based on potential charts, to initiate events like marriage, conception, or signing contracts. The location of the chart is based on the location of the future event.
- **Horary:** Literally meaning ephemeral or “of the hour”, a chart is cast for the moment a question is asked and for the location of the astrologer that receives the question. Interpretation of the chart provides the answer to the question.

What these major techniques have in common is their focus on time and place. It is important to note the lines between various techniques, like in many other practices, are not clear-cut. So for example, it is possible to read the mundane chart of a nation using natal chart techniques. It is common for an astrologer to specialize in a specific technique, like electional astrology, while having a working knowledge of the others. It is also common practice for an astrologer to violate the rules of their technique in favor of “what works” in the moment, similar to an improvisational musician's willingness to violate the rules of theory and tradition in service of the song.

Major Theories

In addition to the causal modern scientific theories mentioned in the previous studies, there are presently three major theoretical camps in astrology: psychological, archetypal, and divinatory. Similar to technique, it is possible for an astrologer to adopt a hybrid or eclectic theoretical orientation or opt out of considering the question altogether. As Champion writes,

In practice, astrology crosses the boundaries between Modernism and post-modernism precisely because it has no single identity and astrologers disagree on its

fundamental nature. It speaks with radically different voices, and the astrologer plotting correlations between planetary cycles and commodity prices has no need of an astrology of the soul. (2013, p. 285)

It is important to note that part of the contemporary astrological dialogue is an explicitly historical one. Translation efforts of primary ancient texts from within the professional astrological community are in progress through organizations like Project Hindsight—which recently, based on their translations, proposed Eudoxus of Knidos as the founder for Greek astrology (Schmidt & Black, 2016)—and the Archive for the Retrieval of Historical Astrological Texts (ARHAT) established to “procure, protect and publish historical astrological and related manuscripts” (Hand, 2016). Information uncovered through these new translations are informing current practices and creating a direct dialogue between ancient and postmodern worlds. Additionally, in 2002, a more traditional academic study of astrology—through cultural and historical lenses—was revived via the Sophia Centre, currently at the University of Wales Trinity St. David (Sophia Centre, 2017). I mention this to highlight the parallel process that historical dialogue within the astrological tradition has to astrology's current theoretical understandings. As Willis & Curry (2014) note, “Very little in the debate about astrology is entirely new” (p. 1).

Psychological. Currently the most popular form of theory and practice. Psychological astrology was influenced by the theosophists and rooted in the Jungian tradition. Rather than using astrology to support fate and determinism, psychological astrology carried with it a rebirth of destiny and human possibility. Working with the chart as mandala and the planets as archetypes, psychological astrology focuses on the self as symbolic microcosm of the whole (universe). Astrologers within this theoretical orientation often have training in the humanistic and depth psychologies and use astrology therapeutically as a tool for individuation or self-actualization.

Jung, the touchstone for so many psychological astrologers, began studying astrology relatively early in his career—prior to his work on the *Red Book*—in 1910. Jung's astrology research was a catalyst for his theory of synchronicity. It also prompted letters to Freud about astrology's value and work with patient charts in analysis (Campion, 2013). First formulated in 1920, Jung tested his theory of synchronicity with a statistical experiment comparing birth charts of married couples. Jung looked at his data in three batches, only a subsection of the birth charts fit his original hypothesis, but the second and third groups of charts contained two alternate significant planetary correlations. In the end, Jung declared the experiment altered by his own projection and observer bias. He concluded that astrology did not conform to testing via modern science methodologies, but remained convinced of astrology and synchronicity's psychological and therapeutic value.

Based on this research, astrologer Maggie Hyde (1992) explicated Jung's theory of synchronicity as two phenomena instead of one, which she termed synchronicity I—acausal interconnected meaning amongst events themselves and synchronicity II—the interconnected subjectivity of the participating observer. Thus, the difficulties Jung experienced during his attempt to validate synchronicity through astrological synastry. Jung (1960) writes of astrology, “a secret, mutual connivance existed between the material and the psychic state of the astrologer. This correspondence is simply *there* like any other agreeable or annoying accident” (p. 478). Synchronicity's resistance to simple scientific reduction is suggestive of (yet to be discussed) divinatory astrology's dialogical understanding of astrology.

Post-Jungian James Hillman (2013) incorporated astrology into his therapeutic practice (Campion, 2009). He has lectured explicitly on the subject, exploring astrology's archetypal qualities and even noting that all psychology takes place under, “an azure vault” (p. 59). Other researchers (Klitsner, 2015; Lewis, 2003), taking a cue from Hillman and Jung, have explored astrology in the context of therapy. These studies focused primarily on the

experience of the psychotherapist and client, treating the chart and interpretations as a secondary tool to aid the primary psychotherapeutic process.

One of the most influential writers on psychological astrology is Liz Greene. Her Book, *Saturn: A New Look at an Old Devil* (1976) captured the ethos of psychological astrology's departure from old fatalistic tradition. Saturn, a planet previously known as the outer limit of the solar system—and thus symbolic of fear, restriction, and even death—became an opportunity for consciousness raising in Greene's writing. By taking one of the most traditionally feared planetary symbols and turning it into symbolic acceptance of human limitation and thus awareness, Greene showed, “that astrology is not a map of one's destiny, but a potential map of unfolding of the authentic, higher self” (Hand, 2011, p.8). Curiously the statistical studies referenced earlier ignore these methods, excluding the most popular psychological model of astrology from psychological research.

Archetypal Cosmology. Developed out of 20th century psychological astrology, Archetypal cosmology focuses on interpreting collective world history and making predictions about the global future through an archetypal lens. As Le Grice (2011) explains, the human unconscious, having been conceived first as a layer within the encapsulated individual psyche, now, on the evidence of astrology and synchronicity, seems to be embedded in something like an *anima mundi* or cosmic psyche—the interiority of the cosmos itself. It is these two concepts—cosmological archetypes and the *anima mundi*—that are the primary focus of archetypal cosmology. (p. 22)

The newest of the theoretical positions, Richard Tarnas officially demarcated archetypal cosmology as distinct from psychological astrology and other traditions with his publication of *Cosmos and Psyche* (2006) and the subsequent co-founding of the Archetypal Research Collective (ARC) in 2007. Archetypal cosmology also defines itself as “concerned with the analysis of the shifting patterns and cycles of world history, culture, art, and individual

biography. Beyond this, archetypal cosmology examines the theoretical basis for these correlations and their implications for the wider world view” (Le Grice & O’Neil, 2011, vi).

Tarnas, directly inspired by Jung, defines archetype as, “a universal principle or force that affects—impels, structures, permeates—the human psyche and the world of human experience on many levels...” (Tarnas, 2011, p. 36) He further defines archetype as,

possessing a transcendent and numinous quality, yet simultaneously manifesting in specific down-to-earth physical, emotional, and cognitive embodiments. They are enduring a priori structures and essences yet are also dynamically indeterminate, open to inflection by many contingent facts, cultural and biographical, circumstantial and participatory. They are in one sense timeless and above the changing flux of phenomena, as in the Platonic understanding, yet in another sense deeply malleable, evolving, and open to the widest diversity of creative human enaction. They seem to move from both within and without, manifesting as impulses, emotions, images, ideas, and interpretive structures in the interior psyche yet also as concrete forms, events, and contexts in the external world, including synchronistic phenomena.

(Tarnas, 2011, p. 37)

The definition seems broad because, for Tarnas, archetype traverses the entire history of western thought—from Platonic metaphysics to Jungian principles of the individual psyche and collective unconscious. Tarnas even describes the concept of archetype as archetypal itself, “a continually shape-shifting principle of principles” (2011, p. 36). Based on this definition, it may come as no surprise that Tarnas' cosmology requires some form of causal, non-human synthesis.

Archetypal cosmology connects planets to archetypal principles. The planets in our solar system are still known by their Greek and Roman names. Names mostly derived from an era when astrology and astronomy were essentially the same practice and the planets were

physical manifestations of mythic deities. Archetypal thinking would name the mythic associations with planetary bodies as another manifestation of participatory archetype.

Tarnas (2011) also notes a fundamental empiricism in the astrological process. While this empiricism might not conform to modern scientific standards, it speaks to direct observations of consistent correlations between archetypal patterns and planetary movements; also capturing the contemporary astrologer's position in continuously connecting the post-modern and ancient worlds through their practice. Tarnas writes the correlations are, “what appears to be an orchestrated synthesis combining the precision of mathematical astronomy with the psychological complexity of the archetypal imagination, a synthesis whose sources seemingly exist a priori with the fabric of the universe” (p. 38). These empirical and a priori archetypal claims highlight a central tension between archetypal cosmology and divinatory astrology, the theory at the conclusion of this chapter. Tarnas' archetypal empiricism facilitated his historiography of world history through the lens of modern, outer planet transits. Based on this research, Tarnas then predicted (archetypally) future world events in correlation with the coming motion of the same outer planets.

For example, Tarnas wrote about correlations between archetypally similar historical periods—the French Revolution, the 1960s—and alignments (or aspects, to be discussed further in the next chapter) between the planets Uranus and Pluto. Uranus and Pluto were in opposition (180° alignment) from 1787-1798 and in conjunction (0° alignment) during the decade of the 1960s. Archetypally, in broad strokes, the two planets in dialogue represent a conversation between a Promethean-styled creative liberation (Uranus) and intensifying power (Pluto). Viewed on the level of the collective psyche, Tarnas noted psychic complexes of “widespread radical social and political change” (p. 143) were palpable in the zeitgeist. Tarnas even pointed out the word revolution took on new meaning in the 1790s, becoming

the word now associated with the type of social events that occurred during the 1960s, further linking the French Revolution with that historical era.

Based on these historical events, Tarnas then extended archetypal cosmology as a predictive tool to understand the collective psyche during the next Uranus/Pluto alignment. The two planets moved into a square (90°) aspect, with 10° orb (or 10° away from exact), just one year after Tarnas published *Cosmos and Psyche*, in 2007. Uranus and Pluto established exact squares between 2012-2015 and will leave 10° orb in 2020. Based on Tarnas' archetypal historiography and subsequent predictions, current collective revolutionary reverberations have yet to fully unfold.

Divinatory. The final major theoretical orientation, divinatory astrology, quite literally requires entering into a dialogue with non-human intelligence, often termed “divine” (Willis & Curry, 2004). What divine means varies based on the astrologer, but one definition comes from Brockbank's (2011) *Responsive Cosmos*. Brockbank describes divination as involving a non-human agency, “in the coming together of astrologer, astrological chart, client and context in a way that will enable the astrologer to provide relevant guidance on the matter being considered” (p. 76). Deliberately avoiding the word divine to facilitate a contemporary understanding of divination, Brockbank's term for this non-human agency is simply, responsive cosmos. Divinatory astrology does not require a specific or agreed upon definition of divine or even proper use of the term, just an acknowledgement that some form of contact with a non-human intelligence is at the heart of astrology's efficacy. Explained in more detail in the next chapter, this paper considers divination an ecological dialogue, which does not refute Brockbank's terminology, just refines it.

Part of the horary rebirth inspired by Lilly (1647/1985), divinatory astrology's primary theoretical text is Geoffrey Cornelius' (1993/2003) *The Moment of Astrology*. Prior to Cornelius, divination was thought to be associated only with horary astrology—a

technique eclipsed in popularity by natal practices. Other techniques and theories assume a direct connection between the actual objective beginning in material reality (e.g an accurate birth time) and the meaningfulness of the chart cast for that time. For divinatory astrology, however, while there is often a correspondence between the objective time in question and the chart actually cast, in practice it does not always work this way. Cornelius (2003) explains,

the working of astrology does not necessarily require same-timeness at a key moment of its history to connect horoscope and subject-matter. Against the taken-for-granted assumption of our classical astrology, I will assert that the ground for the coming-to-pass of astrological effects or showings is not *founded in a coincidence in objective time* of the heavens above and event below. (p. 38)

Rather, the important moment is the *significant presentation of the symbol to consciousness* (p. 38). What Cornelius' theory suggests is that no matter what type of astrology is happening, a divinatory moment—a dialogue with the divine—is at the core of all astrology working.

An example of the distinction for natal astrology might be as simple as human error. Most of the time an astrologer casts the correct chart for the time of birth, but take the scenario of a simple typo or inaccurate information. An astrologer mistakenly casts a chart for the wrong year of birth, but despite the error, meaningful symbolism emerges from the chart in the moment of consultation. If astrology relied completely on “same-timeness” accuracy in order to work, how would we explain the meaningful symbolism of mistakes? Any practicing astrologer will have a version (or many) of this experience and Cornelius' (2003) inspired discussion is worth reading in detail.

The radical departure from the rest of astrological theory is the focus on the moment of connection between human and symbol. The focus remains on the dialogue with the more-

than-human world, rather than any external mechanism. This is unique, as even psychological and archetypal theories rely on an archetypal causal ground, albeit a participatory one with non-rigid rules.

After briefly traversing astrology's historical and theoretical underpinnings, I hope it is clear that despite the narrow view presented by mainstream science and psychology, astrology is not a unified belief system. Rather it is a plurality of praxis, of human connection with the sky as rich and diverse as the range of western history it has thrived and survived through.

As the following chapters unfold, it is my hope the reader will keep the astrologies reviewed close to the center. I chose to write about astrology from an ecological perspective because the literature is sparse (mainly: Curry, 2007; Willis & Curry, 2004) and this perspective resonates with my experience. My aim is not to invalidate other perspectives, rather facilitate dialogue. The next chapter will begin to establish the contemporary connection between people and planet(s), as this thesis moves into a richer understanding of astrology as ecology.

ASTROLOGY AS ECOLOGY

In an obvious, almost banal sense, the planets and stars are natural objects. However, they have by now been so thoroughly naturalized in a *scientific* sense, as purely material and lifeless bodies moving mechanically through space, that it is difficult to recapture the sense in which they have been “natural” for most of astrology’s history: a sense in which the natural does not preclude the spiritual.

—Patrick Curry (2007, pp. 214-215)

Primarily anchored in the theory of divinatory astrology (Cornelius, 2003) and deep ecology/ecopsychology (Abram, 1996), astrology as ecology is also explored in depth by Patrick Curry’s “Grounding the Stars: Towards an Ecological Astrology” (2007) and *Astrology, Science, and Culture: Pulling Down the Moon* (Willis & Curry, 2004). While I rely on similar theory, my aim is not to traverse the same ground, but to focus the ecological lens specifically on the meeting of the physical and the phenomenal. Beginning with an overview of a few basic elements of western astrology and the phenomenal sky, then moving on to a detailed exploration of Abram (1996) and the dialogical as they relate to astrology.

Astrological Grammar

Before moving on, it is necessary to understand part of the basic structure of astrology itself. All of the various theoretical and technical stances aside, astrology is a practice of connecting with the cosmos. In that practice, astrology functions as dialogue—described variously as poetic, divine, etc.—with the farthest reaches of the natural world. The planets, aspects, signs, and houses are the environmental and symbolic medium or language (see

Radermacher, 2011) through which this dialogue is held. The chart that holds these symbols is the printed text of astrology.

Seasons and Signs

To clarify potential misconceptions, it is important to emphasize that western astrology is a tradition rooted in the seasons of the earth and the observation of the sky during those seasons. The most commonly known piece of the astrological language—the signs of the zodiac—in their simplest form are 12 equal divisions of the ecliptic. The ecliptic is the path the earth traces around the sun, or the apparent path the sun traces around the earth, each 30° regions of the whole. Said another way, the ecliptic is the meeting point of earth and sun as the year unfolds, its equal divisions as intersected by the celestial equator, seasonal markers.

Astrology lives in the connection between sky and people. Since Ptolemy, rather than representing constellations, each sign of the zodiac demarcates a specific time of year when the sun, from our view on earth, travels through that region of the sky. By extension, the seasonal experience is built into the meaning or interpretation of the sign. For example, Aries is synonymous with spring, because the Aries region of the ecliptic is when spring begins in the northern hemisphere. The sun enters Cancer at the start of summer, Libra the first day of fall, and Capricorn, the beginning of winter. These four signs align with Solstices and Equinoxes and are all grouped together for that reason in a classification (or quadruplicity/mode) known as the Cardinal signs. The Cardinal signs are commonly interpreted as initiatory, though each in different ways as each season also has different experiences to bring with it. This is how the sign Libra can become both about initiation and balance, as the emissary of fall, the midpoint between Solstices.

The rest of the signs are similarly divided—a *fixed* mode which contains signs that represent the middle of each season (Taurus, Leo, Scorpio, Aquarius), and a *mutable* mode

which are signs that represent the transition from one season to another (Gemini, Virgo, Sagittarius, Pisces). Of course, any planet can occupy these regions of the sky, not just the sun. But because the western zodiac emerged as distinct from the sidereal zodiac by observing the sun and its relationship to the seasons, it is one way to understand the elevated status the sun-sign receives in the modern worldview.

The Moon and Aspects

It is outside the scope of this paper to explain astrology's grammar in too much further detail, but in order for those potentially unfamiliar with astrology to have a basis for shared understanding, the moon as a feature of planetary dialogue is a helpful resource. The phases of the moon are one of the last semi-integrated sky gazing features left in western society. What is less commonly known is those phases of the moon form the basis of another part of astrological language—the aspects. Aspects are the geometrical relationship between planets as they travel along the ecliptic.

While classically speaking the aspects are ascribed to harmonic divisions of 12, or the whole (Houlding, 2004), as a quick introduction to aspects and planets, observe the moon on the path from new to full. During a new moon, when we discern no visible light reflected from the moon at night, the sun and moon are conjunct (or form a 0° aspect). From our view on earth looking up, the sun and moon are together in the night sky. At the first quarter moon, from our perspective on earth, the sun and moon are in a 90° square aspect (imagine standing on earth amidst the corner where the right angle meets). As the moon reaches full, the sun and moon are in opposition (180° aspect), the earth in the middle of the two celestial bodies on either side (see Figure 1). As the moon makes its way back to new, it will cycle through another square at the quarter and reset at the conjunction (new moon) to begin the cycle again.

There are, of course, other aspects in astrology, but the conjunction (0° “new moon”), square (90° “quarter moon”), and opposition (180° “full moon”) are the major “hard” aspects. While only aspects between the sun and the moon were described, the rest of astrology uses the same basic principles, adding more planets and more possibilities for geometric relationships (e.g., 30° , 60° , 120°) to the mix, until arriving at the full breadth of the cosmos.

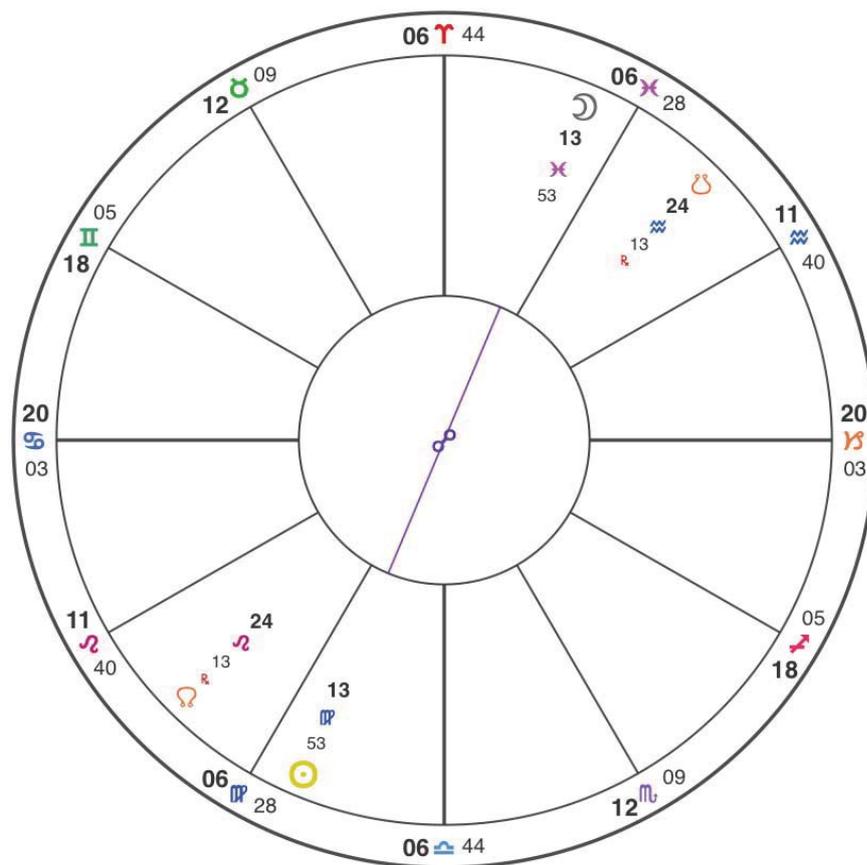


Figure 1. Simplified astrology chart representing a full moon aspect.

As with the seasons and signs, it is possible to understand the interpretations of aspects through the qualities of a moon cycle. So for example, an opposition between any two planets might have a full moon quality to it, further interpreted based on the delineation of the planets involved. Which is to say: understanding or experiencing new and full moon rhythms is doing astrology. It is just a short hop to larger spans of time, then another step to blending many time cycles—and their various convergences along the way to new/full—together. The

blending and listening to so many cycles is, of course, a more intricate art. However, one could learn a lot of astrology by documenting experience during one cycle of the moon, noting the moon phase along the way. Consider, for example, the full moon always occurring with a 180° aspect means the sun and moon are always in opposite signs of the zodiac. These layers of interconnected meaning are the beginning of both understanding more about the signs of the zodiac as well as more about how astrological interpretation emerges with greater fullness. All of the elements build irreducibly on top of each other, functioning as a whole system of relationships, with the earth and people always at the center.

Astrology on the Way to Ecology

If astrology is best understood as ecological dialogue, it is also best understood as ecocentric. Even with a simplified explanation of the zodiacal signs and aspects, it is easier to see how astrology treats the psyche/mind of human and cosmos as connected, rather than existing “in” the bodies of one or the other. As Abram (1996) details, the human body is much more like a porous membrane, one of many participants in a greater ecology, than a distinct body separate from all that surrounds it. To arrive at this point, however, embodiment must first be understood in the context of phenomenology.

In their 2004 book, *Astrology, Science, and Culture: Pulling Down the Moon*, Willis and Curry situate divinatory astrology philosophically and anthropologically in phenomenology. Infusing the dialogical theory of Bakhtin (1990) with the flesh of the world perception of Merleau-Ponty (1962/2005), Curry describes a carnal dialogy that is at the heart of the astrological. Willis and Curry write, “The Dialogical Imperative, if we may so call it with a passing nod to Kant, immerses us from the beginning in perpetual conversation with an environment perceived as pervaded with life and intelligence” (p. 2). This is a dialogy rooted in the phenomenal body of Merleau-Ponty, which recognizes language and perception as the embodied ground of all human knowledge and experience.

Embodiment, Human and Celestial

Unified, irreducible sensory perception is an important philosophical link to astrology; for example, Merleau-Ponty (1945/2014) calls synesthesia a rule rather than an exception of human experience. A byproduct of a disenchanted world, the divided self of modern science has unlearned the innate, united sensory experiences of our embodiment. We have rerouted experience, “we have unlearned seeing, hearing, and sensing in general in order to deduce” (Merleau-Ponty, 2014, p. 238). The point is not that our senses do not have different functions, but that together they are part of an interconnected whole and are experienced that way in the world before our reflective division. But just as Copernicus proved the rational mind capable of finding the sun at the center of the solar system, we too have learned to discount our experience in favor of rational knowledge as the true source of reality.

Extending Merleau-Ponty's philosophy out to the world humans exist within also requires an extended definition of the bodies that do the sensing. To acknowledge an interconnected whole requires a move beyond the apparent boundaries of the human body. In his later work, Merleau-Ponty's focus shifted from describing distinctly human bodies to the necessary reciprocity of embodiment surrounding them. A shift from the individual to the interconnected collective, Merleau-Ponty (1968) described “the flesh of the world”, a binding substrate that “gives rise to both the perceiver and the perceived as interdependent aspects of its own spontaneous activity” (Abram, 1996, p. 66). This Flesh does not privilege the human subject, rather places us in a world of interconnected sensing bodies. We are all subjects, both sensed and sensing. The irreducible extension: a shared, living, breathing, communicative ecology.

Merleau-Ponty's Flesh runs counter to the modern scientific worldview that sanitizes experience out of truth, resulting in a mechanical universe of divided subject (human) and

object (world). Astrology tried to make a home in this modern worldview by assuming “machine of destiny” explanations (Cornelius, 2003), transcending material reality altogether with the spiritual science of theosophy, then later inhabiting a psychological home that reduced the cosmos to a map of the (immaterial) psyche. As Abram (1996) mentions, the result of such a divide of material/science and immaterial/spirit/psyche only perpetuates the separation of human from the natural world. “Neither threatens the common conception of sensible nature as a purely passive dimension suitable for human manipulation and use” (p. 67). For astrology, the divide will always relegate its practice to a “supernatural” domain (Willis & Curry, 2004), a prohibitive position that does not allow for impact or integration, only perpetual invalidation. Astrology through this model remains outside of mundane experience.

A final illustration of the flesh of the world is sensory reciprocity, the notion that our senses are embedded within the sensory fields they perceive. As humans touch, we are simultaneously touched and the eyes through which we see are also seen. Abram (1996) provides a descriptive example,

To touch the coarse skin of a tree is to experience one’s own tactility, to feel oneself touched *by* the tree...*We* can experience things—can touch, hear, and taste things—only because, as bodies, we are ourselves included in the sensible field, and have our own textures, sounds, and tastes. We can perceive things at all only because we ourselves are entirely a part of the sensible world that we perceive! We might say that we are organs of this world, flesh of its flesh, and that the world is perceiving itself *through* us. (p. 68)

And so, with our interconnected reflexive embodiment, we necessarily extend our perceptual field out toward the sky, through the permeable boundaries of the earth and into the cosmos. To experience the rise and fall of the moon is to experience our own ascension and

declination, our own shifting light. When we experience the sky, we participate in perpetual transition between plurality filled darkness and daylight that overwhelms the brightly shining bodies behind our present awareness.

An ecological astrology is an embodied astrology—human and celestial—sensuously rooted in the earth and the sky, for we cannot perceive one without the other. The ground does not exist without everything that sits above and below it and we do not exist without the ground. Our awareness does not separate us from the rest of our environment but embeds us more deeply within it. Our sensuality *is* our inclusivity and we cannot define or exist on our planet without the greater system that supports its malleable borders. Because what is the solar system from our human place on earth, but a system of everything beyond or “out there” that holds our world together?

The Dialogical Imperative

It is not only the sensorial that embeds us in our environment but also the dialogical. Willis and Curry (2004) name the “dialogical imperative” as such in part because of the developmental literature on infant psychology and social interaction (see Trevarthen, 1988, 2011, 2012). As Willis (2004) describes, “the dialogical animal comes into the world dancing in response to language” (p. 132). From the moment of birth, we are communing with a world of speaking subjects, aware of our self in relation to the many others. While dialogism is a varied theoretical field, the crucial point for astrology concerns the dialogical mind:

Many dialogists would prefer the mundane word “thinking” to the more “scientific” term “cognition” which—in modern cognitive psychology—has become strongly associated with only (intra-) individual processes. The dialogical perspective implies that thinking, such as intelligent action and problem-solving, takes place in the world, rather than in autonomous, “cognizing” individual brains. (Linell, 2009, p. 12)

From the dialogical perspective, the mind lives between, as an active social process. To capture the full relationship of the astrological and the dialogical from an ecocentric framework, it is also worth discussing the dialogical understanding of self.

Emerging from Bakhtin's (1984) literary critique of the novel as authored by the many voices and many consciousnesses of the characters within it, voices and worlds blending but never fully merging to create the final work. The dialogical self is similarly not a singular entity inhabiting an objective world. Rather as Bertau, Gonçalves, and Raggatt (2012) describe, “the dialogicality of the self is defined correspondingly in terms of a dynamic multiplicity of I-positions each of which can be endowed with a voice” (xii). The I-positions are not just internal, but also take place in “the extended domain of the self” (xii) and dialogue amongst positions can traverse the internal and external boundaries. So the multiplicity permeates boundaries, the seemingly internal and external, self and other, a chorus of interrelated subjectivity and mutual positioning. In other words, “the reality of the self *is* the reality of relationships” (xiii).

As we embrace the dialogical along with the sensorial, cosmic dialogue does not only seem logical, but unavoidable. Modern distinctions between self and other further give way to tensive porousness. We are born, from the start, into a dynamic universe, replete with relationships, sensual dialogue, our boundaries of self and other in flux. While most theorists might not point explicitly at the cosmic dimension of the logic, it is there in the background, informing the edges of the dialogue. Historically, we have always considered the sky in our deepest thinking about creation and destruction.

Astrologically, whether we take up the divine component of divination through Willis' (2004) definition of “that which is supremely *other*, the highest object and inspiration of dialogue and dialogical knowing” (p. 133), work with Brockbank's (2011) responsive cosmos, or use more explicitly ecological language like planets and stars, it is clear that we as

human, by extension of the dialogical mind, are also participants in a dialogical divinity (divination) or dialogue with an experientially numinous other. A dialogue with the cosmos in this tradition does not leap outside of or over our human worlds but is intimately entangled. Our innate willingness to engage with mystery as ultimate other is an act of negotiating our human borders, part of how we define our human selves and the earth that is our home.

The Mythological and the Cosmic

When we practice astrology, we bring our voice(s) to the cannon of voices that came before us and the multiplicity of voices that create the present moment. And so with the astrological, we also have the great mythological dialogue that imbues the planets and their names with the history of our human practice. The mythological holds generations of human connection to the sky, still alive today by virtue of our participation and dialogical engagement. In this sense, the planet Venus is the goddess of love and fertility, Inanna—whose myth includes descent into and return from the underworld, and also a planet with a 584-day synodic cycle (time between inferior conjunctions with the sun). The cycle, including “morning star” and “evening star,” is reflective of the Inna myth. Repeating itself in full (five conjunctions) every eight years, the synodic cycles result in an observable pattern that looks something like a flower or pentagram (see Figure 2), both symbols of fertility and abundance in their own right, detached from any celestial connections.

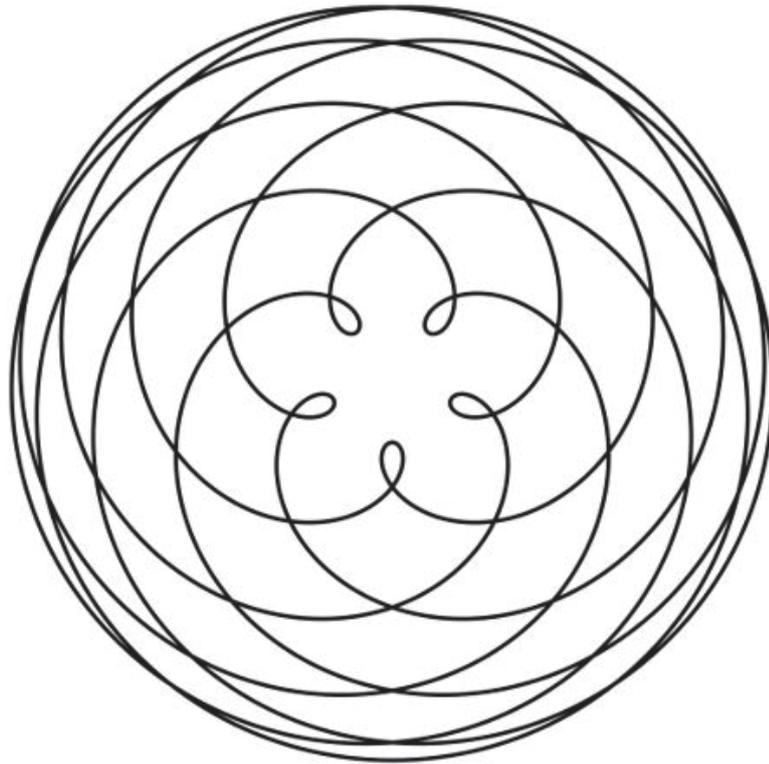


Figure 2. Simplified plot of Venus from a geocentric perspective, the innermost loops are observable retrograde motion. Public domain.

Susan Brind Morrow's (2015) recent translation of the *Pyramid Texts* presents another way of understanding the connection between the cosmic and the linguistic. Considered the oldest religious texts in the world, The *Pyramid Texts* were inscriptions on the walls of pyramids in the Old Kingdom at Saqqara. Morrow's work diverged from previous interpretations of the ancient Egyptian hieroglyphics by focusing on the symbolic as it relates to the physical night sky. A key interpretive point being that just as the symbols always represent both the image and a corresponding letter, so do their interpretations also contain dual meanings. e.g. a falcon represents both a falcon in the natural world and the metaphor of falcon, a falcon's movement through the world. Morrow writes, "The words are after what any true artist or poet is after: to capture, to conjure the living thing—to capture the sense of a thing as it relates to the living world" (p. 18). The cosmos, part of the natural world, is what we see when we look up and also poetry. The experience is inseparable. In this sense, the sky, part of the natural world that we are also embedded within, is a form of dynamic language. In

the spirit of Abram (1996) our words, whether spoken or written, are a way to keep the dialogue alive and negotiate our place within a more-than-human world.

Campion (2008) also wrote about ancient Egyptian astronomy, describing the funeral rites inscribed in the *Pyramid Texts* as descriptions of practices that occurred not just in death, but potentially also in life. In this understanding, kings functioned like shamans, traveling to the sky, “in order to maintain the link between heaven and earth” (p. 89).

Campion's interpretation is even more plausible in light of the significance the horizon held in ancient Egyptian culture. Campion suggests it represented the divide between the living and the dead, “When the sun set the world sent into mourning and when it was reborn there was joy. It was like Easter and Christmas every day” (p. 95).

Astrologically, inherited sky myths function today in much the same way as Morrow speaks of poetry, “... [as] the place where language, nature, and religion meet, where a thing is not simply described but captured alive: the wild and potent life energy of the earth itself identified with fully and prompted on” (p. 190). While Morrow makes careful distinction between myth and poetry, for present purposes the mythological is a way to create a poetic dialogue over a longer span of time—which is necessary to capture the complexity of longer cycles of time, as in the case of the Inanna myth above.

This dialogical inheritance may also be another way to understand the timeless yet malleable aspect of the archetypal cosmological perspective. A priori arguments aside, the timeless/malleable quality of astrological interpretation seems to be part of ritual praxis. So how do the stories we tell change from the vantage of our current moment and place on earth?

Below the Earth and Above the Horizon

Abram (1996) is again helpful in further integrating the sensual landscape. Inspired by Heidegger's (1967, 1972) writing on *real time* or time/space, wherein perceptually the past, present, and future carry us "...toward a particular 'horizon'" (Abram, 1996, p. 209), Abram works with time/space in the context of where the earth meets the sky. In Heidegger's language, the future is "withholding" and the past is "refusing" to open up a "presencing." Abram connects these ecstasies of time experientially to what lies beyond the horizon and under the ground of an open landscape. Asking us to sit in the presencing—Heidegger using gerunds over nouns to convey dynamic experience—and perceive the withholding of the future that is the literal horizon and the refusing of the past that is the ground beneath us.

The ground and the horizon are two features of the natural world so common they are easy to ignore, but in reality, two requirements of present experience in its spatial fullness. As Abram describes, the ground and horizon are the two dimensions "from whence things enter the open presence of the landscape, and into which they depart" (p. 214). Whether it is the flight of a bird or the roots of a tree, these are the invisible realms that support our sensual present. Through tactile connection, the past and the future are not "out there" abstractions, but rooted to place, part of our embodied perceptual field.

Divination views the past and the future on the same terms. The past and future are not abstract monolithic notions, but entered into relationally and perceptually, via the present moment, rooted to the place of the diviner. In divinatory astrology, moment and place are essential, which is why a chart is cast for the place of the astrologer when entering into a dialogue with time. The present is the place from which the astrologer sees, where astrology connects to the grounded earth and only from that place, is then able to touch the past and the future.

Sunrise and the Houses

A so far unexplained, but important basic part of astrological grammar is the houses. These are the twelve, 30° regions of the ecliptic that combine to create the full circle in an astrology chart.

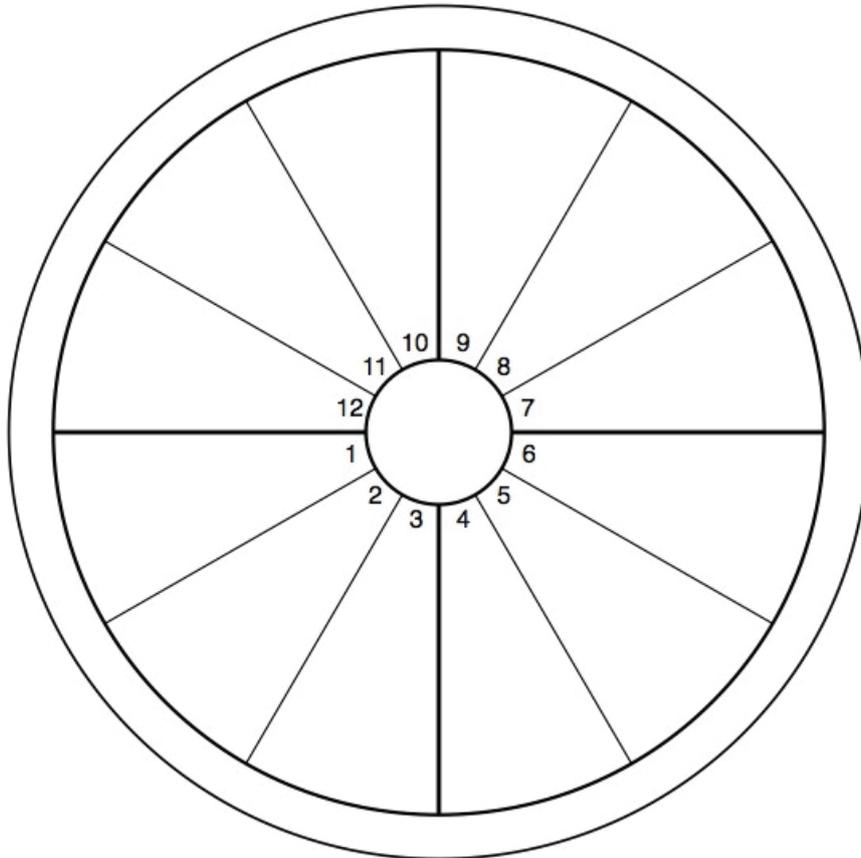


Figure 3. Simplified astrology chart depicting only houses. The line between 1 and 12 represents dawn in the east; the line between 7 and 6, set in the west.

What is relevant to the present point about time/space and moment/place is the relationship of the houses to the horizon. The horizon emerges in an astrology chart if one stands in the center of the circle in Figure 3, then draws a line through the middle from left to right. The furthest left point of the circle, or the ascendant of the chart, represents the eastern horizon, the point of the rising sun. The furthest right: the western horizon, where the sun sets. In a phenomenal sense, the houses are where the sky meets the ground. Symbolically, the houses are also the domains in life where astrological symbolism unfolds or is grounded. With this

new element of astrological understanding in place, suddenly, what may have seemed abstract in its symbolism becomes connected to the earth. It is worth noting the ascendant in any horoscope changes quickly, relying on precision of moment and place for its accuracy.

Just as the sun rises so can any planet rise in the chart; the ascendant representing the experience of night breaking into day, dark into light, the unknown into known, mystery into crystallization. All of the houses can be delineated in this fashion. For example, the sun is at its highest point in midday, so the 10th house can be interpreted as a place of visibility, capturing the quality of the sun's presence at high noon. With this knowledge, Abram's ecological observation comes alive in the symbolic medium. There is a horizon and a ground and from this place, astrology touches the past and the future.

Time/Space and Moment/Place

From the ground and horizon of open presence, Abram furthers his discussion of time/space by describing the ways in which the past and future sensorially merge into one. What Merleau-Ponty (1968) calls the *behind* and *inside* of time, Abram describes as immanence. Abram writes,

The sensorial landscape, in other words, not only opens onto that distant future waiting beyond the horizon but also onto a near future, onto an immanent field of possibilities waiting behind each tree, behind each stone, behind each leaf from whence a spider may at any moment come crawling into our awareness. And this living terrain is supported not only by that more settled or sedimented past under the ground, but by an immanent past resting inside each tree, within each blade of grass, within the very muscles and cells of our own bodies. (p. 215)

From the embodied fluid present, we perceive not only the deep and distant past/future but also the immanent past/future in every feature of our ecology. By entering into a dialogue, the astrologer touches the behind and inside of time. The past and future are not exterior from

this place, but part of the present ecology, the sensorial landscape within which the astrologer is also embedded from her precise moment and place on earth.

From the divinatory perspective, it is precisely through the present moment and precisely from the astrologer's place on earth that she enters a dialogue with time/space, no matter the time/space represented in the chart she is reading. What is radical—in all senses of the word to quote Cornelius (1994/2005)—about divinatory astrology is the understanding that the past/future is accessible in every moment of life. With its basis in horary astrology, a meaningful answer is derived by asking a question and casting a chart for the time and place of the astrologer at the moment the question is asked. Remember that same-timeness is not required for the astrological dialogue. What is required is the present-moment dialogue with the cosmos concerning the human question at hand.

What Abram develops so beautifully from Heidegger and Merleau-Ponty's philosophies is the uncleavable nature of space, time, and the earth. In fact, it is only from a unified space/time that past/future becomes accessible. Infused with reciprocal sensuality, time/space is revived from its modern vapid invisibility, instead a “vast and richly textured field in which we are corporeally immersed” (Abram, 1996, p. 216). To be clear, astrology's domain extends space out through the permeable boundaries of the earth, to the enveloping cosmos, but never at expense of the earth. The earth is the vital ground from which our entire connection to the rest of the cosmos is possible. In this sense, the astrologer can access the expanded time/space of the cosmos but does so through her necessary moment/place on earth.

The Presencing of Prediction

The reality of directly discussing the past/future in concrete terms based on the present moment brings some of the harshest critique toward astrology, but notice how different psychological schools have similar philosophies. Based on clear theory, it is

possible to enter into a transference relationship with the other, a form of bringing a shared past alive in the present moment, and negotiate with it to change a future outcome. Whether that past is filtered through theory accounting for family patterns, social patterns, biological patterns, or a combination of many factors, it is widely assumed we can work with a present psychological crystallization of the past and can see that past from the present moment. It is also assumed that relational work in the present changes future outcomes, with predictive validity!

The radical act of divinatory astrology is not that it makes future prediction possible, but that it opens a space for change of that future by participating in a presencing dialogue. I am not equating astrology with therapy nor astrological symbolism with transference. I am making clear a bias to show that other traditions treat the psyche in the present as also holding the psyche of the past/future. The difference with divinatory astrology is the symbolic language is also the landscape of time/space. Perhaps further discussion of where the psyche is located is necessary.

Mind, Interiority, and the Cosmos or Psyche as Breath and Sky

A final vital element of Abram's (1996) argument is his etymological and cultural explication of air, breath, and language. In contrast to modern conceptions, the etymology of psyche reveals its origins not just as mind, or soul (which was archetypally transformed throughout western history), but also breath and gust of wind. When considered in terms of our environment, the participatory psyche, the mind that makes astrology possible, becomes clearer.

In stride with historical disenchantment, the body became prison to an increasingly immaterial mind as the lifeless air separated us from the rest of the earth. Intertwined in their etymological origins, air and mind bring the active dialogical mind to life. Abram writes,

the air was once a singularly sacred presence. As the experiential source of both psyche and spirit, it would seem that air was once felt to be the very matter of awareness, the subtle body of the mind. And hence that awareness, far from being experienced as a quality that distinguishes humans from the rest of nature, was originally felt as that which invisibly joined human beings to the other animals and to the plants, to the forests and to the mountains. (p. 238)

And also to the sky and the stars. The implications of a sacred enveloping mind, a mind shared with our earth has implications far beyond understanding past cultures' ways of inhabiting the land. If we see our awareness as something that connects us to the earth, out to the extended ecology of the solar system, it becomes clear that our permeable network of awareness enables us to make contact with the farthest reaches of known existence.

Even astronomer Neil DeGrasse Tyson, an outspoken critic of astrology, invoked the cosmic unity of all things in a recent interview expressing that, “we are special because we’re the same, we are one. Not only with each other, but with the universe itself” (O'Brien, 2017, 2:01). DeGrasse Tyson often concludes his talks and recently, his book, *Astrophysics for People in a Hurry* (2017) with “Reflections on the Cosmic Perspective”. An excerpt from a recent interview,

The atoms in your body are traceable to stars that have exploded across the galaxy and spread that enrichment into gas clouds that would later make star systems that have enough elements like carbon, nitrogen, and oxygen, elements of life, in order to make planets and life upon it. So for me, the deepest cosmic perspective there is, is recognizing that not only are we living in this universe, the universe is living within us. (O'Brien, 2017, 3:06)

In the context of the night sky, though more causally framed, an atomistic perspective also articulates an intimate interdependence of human and cosmos. If the universe is in us and we are in the universe, dialogue seems an inescapable meeting ground.

Paradox of Body and Distance

After reviewing astrological symbolism as it directly connects with phenomenal experience, I hope it is clear that astrology is a language of human connection to the sky. Upon deeper examination, ancient astrological practices were an attempt to capture the dynamic poetry that is the night sky—carnal dialogic connecting human, earth, and cosmos in a communicative whole. It is the very ground and horizon of the earth that is also our window to the greater solar system and the ground of astrological experience and symbolism. The Earth and our relationship with it offer a deeper understanding of phenomenal time in conjunction with astrological prediction and cosmic interconnection.

Paradoxically, that means to commune with the stars, we do not transcend embodiment but sink more deeply into it. To feel our body in its interconnected wholeness is to reach the orbiting bodies that hold our world together, our solar system together, our galaxy together. To feel the finitude of our human lives is to make contact with those orbiting elements of our ecology that existed long before us and will remain long after we die. The more we make home in our human embodiment, the more the seemingly firm boundaries between self and nature become permeable, the more easily we are able to hear, to dialogue in the language of space/time, from our local moment/place. When we find home, when we fully inhabit it, we can traverse seemingly vast distances to reach willing and already interconnected dialogical partners. Some of these subjects at the edges of known existence are the minor planets that occupy the Kuiper belt. As the next chapter will describe, the mythological is still very much alive in today's astronomical landscape.

MINOR PLANET ASTROLOGY

Though approached primarily from the theoretical perspective of divinatory astrology in the previous chapter, ecological astrology holds space for both divinatory and archetypal theories. This chapter will describe the minor planets, their importance for an ecological astrology, and their role in connecting archetypal and divinatory orientations.

What are Minor Planets?

Strictly speaking, a minor planet is any celestial body orbiting our sun that is not a planet or a comet. The definition has existed since at least 40 years after asteroids were first discovered in 1801 (Hilton, 2016), but was given new life with recent solar system exploration. From 1930 to 2006 our solar system consisted of nine planets: Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus, Neptune, and Pluto. In 2005, the discovery of Eris, an orbiting body further away than and of similar size to Pluto, provoked debate about planetary classification for the first time since asteroid discoveries in the early 1800s. The IAU formed a working group, deliberated, and ultimately voted in 2006 on a definition of planet that excluded both Eris and Pluto from planetary status, tightening our solar system boundary to eight official planets. The new definition also created a new classification of minor planets: dwarf planets, which were orbiting bodies seemingly like planets, but ones that did not “clear the neighborhood” (or establish dynamical dominance) of their orbits (IAU, 2006). In other words, dwarf planets were planets that existed amongst many other minor planets, a definition that relies principally on the environment surrounding the discovery rather than the discovery itself. So why were a debate and new terminology necessary at all and what impact did a new classification of celestial body have on astrology?

The Whippoorwill and the Kuiper Belt

Thirteen years before Mike Brown and his team discovered Eris and eliminated Pluto from the Solar System; astronomers Jane Luu and David Jewitt were pointing their telescopes toward a region of the sky no one else wanted to explore. Luu commented on the work,

Astronomers thought that they knew everything in the solar system. They knew the contents, they knew about the planets, the satellites, asteroids, comets and so on. The inventory of the solar system was thought to be complete. In fact, if you talked to the typical astronomer [as recently as the early 1990s]...he or she would have questioned you—"Why bother to study the solar system at all, since everything was known already?" (Luu, 2013, 10:16)

Luu and Jewitt were curious about why the outer solar system seemed so empty compared to the inner solar system, so they decided to look. The idea that nothing existed in the solar system beyond Pluto was so astronomically entrenched that when Luu and Jewitt wanted to look for objects at the edge in the late 1980s, they could not get any funding. It did not seem likely they would find anything, so they borrowed telescope time from their other grants and discovered 1992 QB1, the orbiting body that eventually confirmed the existence of the Kuiper belt and led to the demotion of Pluto (Luu, 2013). 1992 QB1 was not very large, but its presence indicated there were more orbiting bodies to find in the region of space everyone thought was empty. Pluto, known as the outermost planet orbiting our sun for 62 years, now had company.

Luu continues, "A lot of people don't like [1992 QB1], because it started all the trouble for Pluto," (Francis, 2012, para. 19). Once it was discovered, astronomers poured time into searching the outer solar system for more planets, leading to the discovery of Eris. When asked why it took 62 years to discover anything beyond Pluto, Luu responded, "These things were always out there, but people didn't look for them. People are not good at finding

things they don't expect to see. What you look for you will find. But sometimes it takes a bit longer than you expect, if it exists” (Francis, 2012, para. 25).

Interestingly, Luu describes cosmic discovery in terms of earth discovery, noting the Kuiper belt should be thought of, “as a new frontier of our solar system. It's just like exploration way back in the 1500s. It's about mapping new worlds” (Francis, 2012, para. 19). Even in the mind of an astronomer that sparked a cosmological renaissance, discoveries of earth and sky are interconnected. Surprisingly, this connection is also true in the most mundane sense. When beginning their exploration of the outer solar system, Luu and Jewitt's observation method of choice—planetary occultation—was disrupted by birds. The nocturnal whippoorwill in Arizona cast shadows that would have appeared like distant planets, making the search method impossible, so they moved to telescopes (Luu, 2013). When considering the literal entanglement of whippoorwill and Kuiper belt, I cannot help but think back to the falcons, owls, and birds in the *Pyramid Texts* of ancient Egypt (Morrow, 2015). Have birds always lived at the gateway of cosmic understanding?

A Contemporary Cosmic Mystery

As of this draft, in August 2017, there are over 2,500 orbiting bodies—Trans-Neptunian Objects and Centaurs—in the outer solar system (see Figure 4). The total number of discovered minor planets throughout our solar system is over 734,000—more than 20,800 of which are named (IAU Minor Planet Center, 2017). The discovery timeline bears emphasis. The five planets visible to the unaided human gaze belong to our collective history, their existence documented in our earliest written records of wandering stars. Uranus, Neptune, and Pluto, discovered in 1781, 1846, and 1930 respectively, all relied on progressive advancements in technology to be seen—each discovery further out than the last, each attributed to an individual. The region beyond Pluto was considered empty, save for untested theory. For 62 years Pluto reigned as the outermost edge of our solar system.

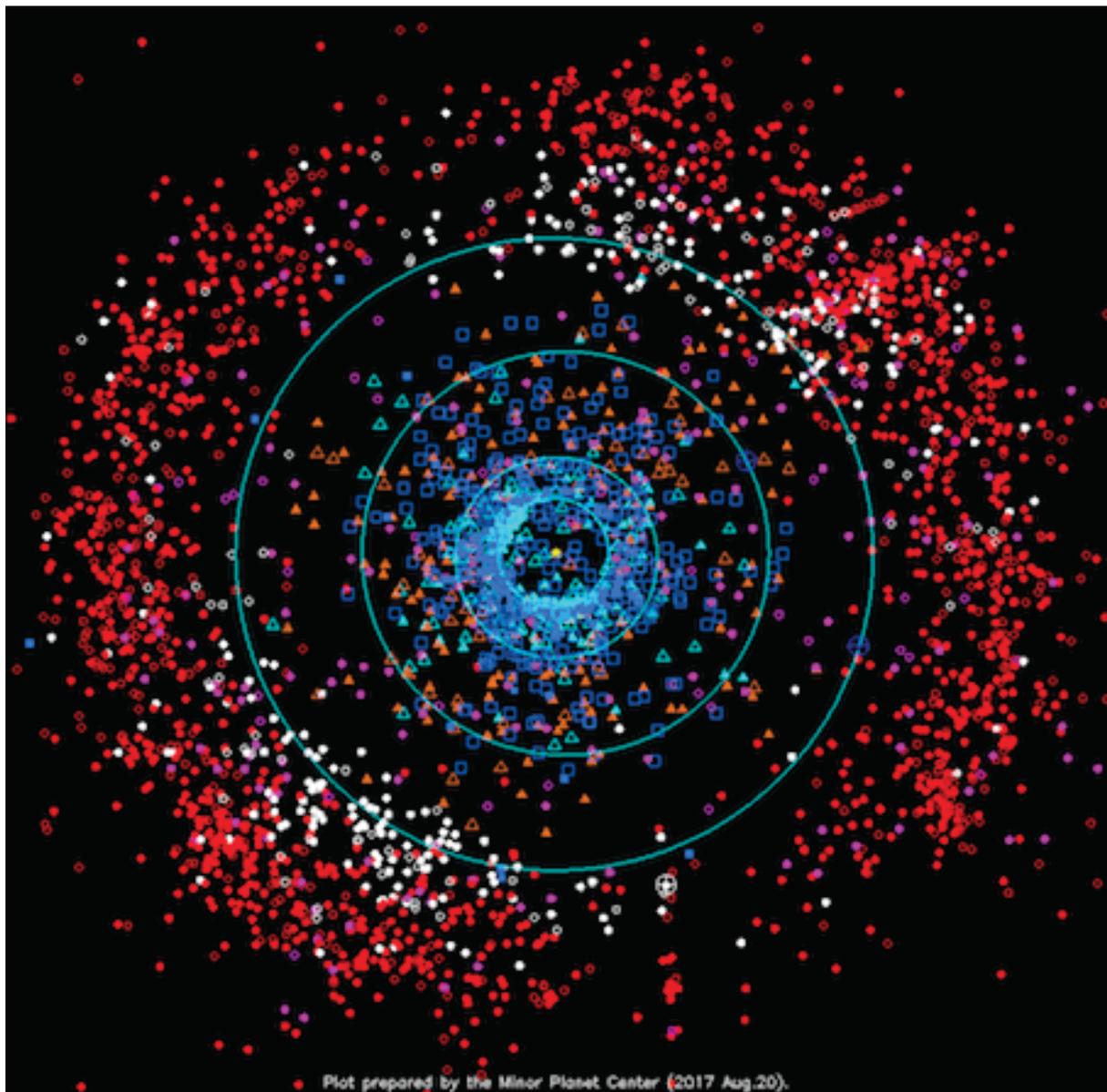


Figure 4: Astronomical plot of minor planets in the outer solar system. The outermost light blue ring represents Neptune's orbit, the small white circle with a cross just outside of it is Pluto, the innermost ring represents Jupiter, and the smaller points denote different classes of minor planet. Image courtesy of IAU, Minor Planet Center, The Smithsonian Astrophysical Observatory, Harvard. Reprinted with permission.

In a span of only 25 years astronomers discovered thousands of similar bodies in Pluto's region of space orbiting our sun, the pace of which continues to eclipse all of the previous discoveries in the solar system combined. What was once thought of as the outermost limit to our local place in the universe turned out to be a door to a multitude of worlds beyond and within. In 2005, a Kuiper belt discovery named Eris finally caused us to collectively redefine our cosmic home.

Not only did the discovery of the Kuiper belt open up vast amounts of unexplored space in our solar system, it also disintegrated the old known limit of planetary formation. No longer could theories stop at a hard edge with Pluto. Instead they had to account for a collective dance that surpassed the last planet in our system, finally connecting the microcosm—space dust—to the macrocosm—planet (Luu, 2013). What was once a certain origin story dissolved back into the unknown. The Kuiper belt not only changed the definition of planet, but also changed our understanding of how our entire solar system formed, earth included. In a sense, 1992 QB1, Eris, and the Kuiper belt gave birth anew to mystery in the mainstream paradigm of our local cosmos.

Planet was Never a Scientific Term

Faced with the cosmic mystery of expansive unexplored space and the rapid discovery of Kuiper belt objects, the IAU had to make a choice. Define planet to exclude Pluto and constrict the solar system to eight planets, or include Pluto and necessarily invite hundreds to thousands of other similar orbiting bodies (discoveries past and future) into our solar system as proper planets. The IAU ultimately chose the former.

Around the time of the Pluto debate, Brown (2012) contemplated the implications of both choices, the role of planets in human consciousness and science's duty in further defining the relationship. In the public mind, planet was simply something in space bigger than Pluto that orbited the sun, why not let that be? To that definition, he wondered, “Why draw such an arbitrary line right around the size of Pluto? Isn't the job of scientists to guide the public's understanding of nature rather than acquiesce to unscientific views?” (p. 184). Demonstrating another tether between earth and sky, Brown further compared the understanding of planets and cosmos to continents and earth. He writes,

Can it really be that the most important classification scheme for our understanding of landforms has no scientific basis whatsoever?...For the public, having a handful of

continents whose names everyone can remember (even when everyone doesn't always agree) is an important way to organize our understanding of the world around us. It is too difficult to make sense of the hundreds of countries on the earth without an organizing principle. The continents are a way to bring the vastness of the earth down to a human scale (p. 187).

Just as the planets bring the universe down to human scale. From a scientific perspective planets, the continents of the sky, have never needed an exact definition because their existence demanded distinction. Humans on earth could not help but notice the wandering stars against the rest of the night sky. In the context of history, a planet's primary role was and remains a dynamic bridge to a greater whole; its meaning lives in the space *between* human and sky, not in any component part. When forced to collectively decide what a planet really was, science had to preserve the interconnection. Thus, an international group of astronomers felt it their scientific duty to protect the essence of planet as irreducible whole, as organizing principle of the cosmos, a kind of interlocutor of cosmic mystery.

The decision remains controversial to some within astronomy. A group of planetary scientists involved with the National Aeronautics and Space Administration's (NASA) New Horizons mission to Pluto, for example, recently proposed a new definition of planet that would bring Pluto back into the solar system. The claim states their definition more completely captures a planet's essence by, "keeping with both sound scientific classification and peoples' intuition" (Runyon et al., 2017, para. 1). However, this new definition requires giving over 100 objects in our solar system planetary status—including objects in the inner solar system and our moon. Despite claims of more pure science, dissenters from the 2006 decision are still forced to reach outside of astronomical distinction when it comes to defining a planet, instead, justifying a change on the basis of intuition and alignment with the

“psychological power” (Kaplan, 2017, para. 7) of the meaning of planet—ultimately agreeing with Brown’s (2012) reasoning.

Astrological Implications

2006 marks a unique time in our relationship to the cosmos. The IAU vote is the distinct moment astronomers decided to preserve cosmic mental clarity on behalf of the public. Yet, as a result, public awareness of all that exists on the other side of the boundary has never been higher. Many still fondly think of Pluto as planet. There remain satellite images, discarded posters, and old planetarium models, but more on that point later. Something else happened with the IAU’s vote. By creating a definition of planet centered on organizing principle of the cosmos, astronomy unknowingly extended a hand to astrology. Since as far back as there exists recorded history, it is clear that astrology has always viewed the planets primarily as organizing principle of a greater mystery. The way humans conceptualized that organizing principle has changed over time, mythology evolving with philosophical reform, but the heart has always remained.

Astrology, framed as a belief, is commonly pitted against science, framed as concrete reality, as if adherence to one practice or worldview cancels out the other. However, the recent astronomical definition of planet revealed the shared center of both practices—the inherent connection between people and planets, earth and sky. The greater whole, almost deemed scientifically sacred, has space for both practices to exist together, “brothers” (Brown, 2012) once again.

To clarify, I am not arguing for a scientific astrology, rather for a worldview in which both disciplines are, and have always been, in constructive dialogue, sharing the same earth. This is the reality of a natural world alive with physical metaphor (Abram, 1996; Morrow, 2016). Even to return to the site of the scientific revolution, the era of slow divergence

between astrology and astronomy, is to return to yet another revelation about the connection of earth and sky.

The radical philosophical shift of the 17th century was not a heliocentric one, but what allowed that model to win public favor. As Campion (2009) notes, when Galileo turned his telescope toward the moon and saw valleys and mountains, he recognized the moon was like the earth. Not only did that connection refute an already crumbling Aristotelean cosmology, but if the moon was like the earth that meant the earth was also like the moon. Earth was a star and it moved in stride with the other wanderers (Campion, 2009). In other words, the scientific revolution would never have happened without recognizing the unity of earth and sky and our embeddedness within the whole. It seems that unity is slowly creeping back into the scientific paradigm.

Boundaries and Borders

Having worked with Pluto meaningfully since its discovery, the IAU vote confronted astrology with a cosmological boundary crossing. From an ecological framework, astrologers should fully agree with the definition of planet presented by the IAU. However, if Pluto was an important part of an astrology chart when officially a planet, its importance did not just disappear with the IAU's decision. Yet for astrologers to acknowledge the significance of one minor planet, should they not acknowledge the significance of all other planets of similar status? Incorporating dwarf planets and minor planets would effectively increase the number of astrological symbols to the hundreds or even thousands. In this sense as well, Pluto's demotion functioned more like a gateway than a limit. Though if history has demonstrated anything, it is that astrology's past is littered with failed reformers. In practice, the minor planets are still largely absent from most astrology charts.

Most astrologers currently reside in a strange middle territory. They continue to work with Pluto but resist the rest of its cohort—a compromise that mirrors earlier irregular

adoption of asteroids and centaurs, two other classes of minor planet. While reasons for including a planet in a chart are likely to vary with each astrologer, Pluto's often incorporates its recent demotion into interpretive symbolism. Of course, Pluto, mythological god of the underworld would don a cloak of darkness and kill its own planetary status. Though even mythical logic offers an opportunity to go beyond Pluto as outer limit to the solar system. If Pluto is delineated as a planet of death and rebirth, could it not also be read as transformer of the boundary? A gatekeeper of cosmic understanding?

The revelation that anything in the sky could take part in the astrological dialogue is not only reflective of the permeable boundaries of Merleau-Ponty but also our embedded dialogical position in a greater whole; a paradigm in which humans are always negotiating an understanding of self/other in the midst of a reflexively dynamic cosmos. There is another more mundane reason for including the minor planets though. An ecological astrology, grounded in the earth, should hold space for the sky as we are aware of it in the here and now. To stay true to the connection between earth and sky is to hold space for the Kuiper belt. The outer solar system is the ground of cosmological mystery in our lifetime, the site of astronomical/astrological interconnection, and as it turns out, an active mythological zone of modern science.

Naming Minor Planets

The numerous discoveries in the outer solar system, in addition to illuminating the meaning of planet, also shine a light on a little-known aspect of astronomical convention: IAU rules on nomenclature. The IAU establishes naming conventions for everything in space, from hills on celestial bodies to newly discovered planets. The same group that voted on the scientific meaning of planet also governs the scientific naming of the sky. The rules are based on the type of discovery and the region in space the planet or feature was discovered. For example, small hills (Colles) discovered on Jupiter's moon Titan are named

after characters from Tolkien's Middle Earth. On Venus, Colles are named after sea goddesses. These are just a couple of examples, but these rules for naming new discoveries are incredibly specific and exist for every astronomical feature of the universe. New discoveries in the solar system beyond Neptune? They are named after “a deity or figure related to creation” (IAU, 2017a). Objects of Pluto's class? Names from the mythological underworld. The IAU states the primary purpose of planetary nomenclature is unique identification, “so that the feature can be easily located, described, and discussed” (IAU, 2017b).

International naming conventions exist at all because of technological advancements that accelerated asteroid discoveries in the late 19th and early 20th centuries (Panko, 2017). Astronomers would publish their discoveries under their own naming systems and it was not clear if the “discoveries” were already published elsewhere under alternate names. The IAU stepped in to help organize the sky and facilitate international cooperation (IAU, 2017c). The conventions, despite belonging to science, retain the tradition of our dialogical/mythological relationship with the sky. It helps to have stories we share with the earth.

The mythological link further suggests the modern split between astrology and astronomy, while polarized on the surface, may not be so deep after all. An invisible tether between the two practices exists, without contention, in these rules of nomenclature. Brown (2010) captures the connection in the naming process for his recent discovery Haumea, named for a Hawaiian childbirth goddess,

Like the name Eris, Haumea seemed almost custom made for this object. The goddess Haumea gave birth to her many children by breaking them off from parts of her body. Sara the dwarf planet also had many children throughout the solar system that had broken off from its body. It seemed a perfect fit. (p. 245)

In this example, the connection between mythology and descriptive physical qualities of the celestial object is clear, as well as a potentially interconnected mythological environment; the “many children” that exist elsewhere in the solar system. As discussed in the previous chapter, in ancient skies, mythology and planetary discovery were a simultaneous act, integrated with the rest of life. Postmodern reality results in a more staccato, but nonetheless, interconnected process. Astronomers watch the sky then draw from an already existing pool of mythology, arguably already created in the past as a form of ecological dialogue. The astronomer, limited by name availability, attempts to marry the mythology and the material reality of the discovery. And another story is reconnected to the earth.

An Archaic Bridge

Haumea is just one example, Eris, goddess of discord, disrupter of the solar system is another. Every celestial discovery has a story. Of course, it is possible other astronomers take a different approach to connecting mythology with a new discovery (asking astronomers about their process would make for a great qualitative study) but the IAU states explicitly that, “The name is intended to reflect the characteristics of the body itself” (IAU, 2017b). In other words, humans still relate to the sky through mythology. Astrologers simply hold space for integrating the process with mundane lived experience.

There are two more consequences of IAU's rules on nomenclature worth discussing. Perhaps unintentionally, as the volume of discoveries surpasses the cannon of Greek and Roman mythology, naming rules result in increasingly diverse cultural representation in the sky. Truilijo and Brown (2010) exemplify the shift in their naming of minor planet Quaoar. The astronomers wanted to honor both the region in the sky and the place on earth where the discovery happened with “new world” mythology—in this case, the Kuiper belt and the Palomar Observatory in Los Angeles. So they consulted with the tribal historian of the Tongva, indigenous to the region, to find an honorable deity. The Tongva gave the

astronomers permission to use the name of the god that “sang and danced the universe into existence” (Brown, 2010, p. 83). Now the cross-cultural dialogue is forever in the sky.

Astrologers can point to Quaoar and not just incorporate the god that danced the universe into existence, but also critical dialogues of colonialism and cosmos. Though outside the scope of this paper, the conversations are important to an ecological understanding of astrology that also relies on new discoveries. As those new discoveries require larger telescopes and those telescopes are sometimes built on sacred lands. The embattled Thirty Meter Telescope on Mauna Kea (Kuwada, 2015) comes to mind.

A second consequence of the IAU's naming conventions is the unintended re-enchantment of the sky. In science's nomenclature exists the seeds of fully developed, enchanted mythology that is directly connected to the discovery process of every feature of the modern solar system. Astronomy certainly does not share this view and it takes more than a name to shift a paradigm, but these are seeds. Modern astronomy is reintegrating poetry with the natural world. A natural world that by astronomy's own standards is subsumed in mystery.

While many names serve as bridges to ancient mythology, some also animate modern mythos. Names play with the poetic resonance of an object's original catalog number like the name Mersenne, prime number series, and Minor Planet 8191 (Panko, 2017). Another example is a thematic category for features on Pluto, “Historic pioneers who crossed new horizons in the exploration of the Earth, sea and sky” (IAU, 2017d), which sounds like a form of honoring the ancestors. Participatory sky mythology never truly died, it just lives a segmented life. How different, really, is the current process from the ancient?

Changing Cosmologies

It might seem odd to jump to an astrology inclusive of the Kuiper belt, such a recent cosmological development, when the west still largely perceives astrology through modern

eyes. But if history is an indicator, it is precisely when there is an astronomical development, when the previously known limit of our local ecology is overthrown in favor of new discoveries, that a new understanding of the human connection to the sky has been possible.

Tycho's supernova observation in 1572 prepared the way for Kepler and Galileo's insights (Campion, 2009). Spotting something new in that region of sky past the moon, previously thought to be totally known and unchanging, required cosmological revolution. Unbelievable to most at the time, the observation sounds quite similar to the cosmological developments emerging from Jewitt and Luu's 1992 discovery. In both cases, with one glimpse, the local boundary moved and we were forced to shift our understanding of our place in the cosmos. As Campion observed of Tycho's discovery, "its implications were to be as great as Einstein's theory of relativity was for the twentieth century" (p. 133). We have yet to experience the full impact of our recent cosmological revolution.

Our notion of "out there" has always been a moving edge, first with observation, then mathematical calculation, then telescopic developments. Incrementally, humans made contact with new regions of the sky. The discovery of the Kuiper belt and thousands of objects in a previously "empty" region of the solar system are no different. Our boundary moved again and with it our understanding of our place in the universe.

The reclassification of Pluto is an early adjustment, a way of shoring up boundaries amidst change. Paradoxically, it also becomes an invitation to dialogue with all that was discounted in the past due to size and cohort (e.g. asteroids). Instead of excluding numerous contemporary discoveries, it opened a door. Whereas divinatory astrology in its strictest tradition works with directly observable planets, Saturn as limit, and archetypal cosmology places special focus on modern discoveries of Neptune through Pluto, the minor planets hold space for the intersection of both theories. With their partitioned discovery, naming, and delineation, the minor planets are a bridge between empirical and enchanted paradigms.

A Living Language

Whether incorporated into astrological practice or not, another reality of the minor planets is their direct relationship to the definition of planet itself. Because they exist, our understanding of Earth as planet changed. As a result, astrological language retains no illusion of complete knowing. The very planet through which we see all others is always subject to shift through our discoveries. By illuminating the darkness, we connect with our home anew, allowing space for the cycle to repeat. The necessary incorporation of change in the astrological is reflective of Abram's (1996) observation that, “the world around us is a continuing ongoing utterance! Thus the activity of speech, like breathing, links humans not just to God, but to all that surrounds us, from the stones to the sparrows” (p. 248).

Like vowels that sealed off the animate power of human breath from written text (Abram, 1996), a disenchanted astrology is one that leans on formulaic prescriptive interpretation. Causal, “cookbook” understanding of astrology is only possible if the symbols are assumed to be static and unchanging. As Curry (2004), channeling Weber, reminds us, “adherence to all-encompassing systems of whatever kind is disenchanting, and the more so the more widespread and general the adherence becomes” (p. 89). Astrology will never be an all-encompassing system of knowing because it acknowledges a mysterious universe. The minor planets resist interpretive traps because they reveal a changing solar system and by extension a changing earth. They are a reminder that astrology is an act of an enchanted world because human and earth, alive and ever changing, participate in the dialogue.

Archetypal astrology, inhabiting an empirical paradigm—though archetypally so—requires “a system of natural laws or principles which underlies the world” (Brockbank, 2011, p. 73). While I disagree with any a priori formulations, I do wonder if an archetypal layer of reality might function not as separate from the earth, but as embedded within it. Similar to the “below the earth” deep and immanent pasts Abram (1996) suggests. Would an

immanent archetypal cosmology fundamentally change the theoretical position? Or does it allow for archetype to be viewed as a condensed inherited dialogue with the earth, like the rings of a tree in Abram's example? Archetypal cosmologists are always insistent on the participatory aspect of the theory, which is based in mystery. Tarnas wrote in 2001,

Only with time has it become apparent that we live in a much vaster, more interesting, radically pluralistic world, an omniscient cosmos with innumerable suns and stars around which are constellated multiple universes of meaning. These meanings are not pre-given and objective but rather are participatively and co-creatively brought forth out of an indeterminate and dynamic matrix of spiritual mystery. (p. 9)

Pluralism is a friend to enchantment, inhabitants of a fundamentally mysterious existence. While the participatory aspect of archetypal cosmology holds space for mystery, I still wonder how an archetypal astrology inclusive of the minor planets allows for the living breathing quality of its symbolic language.

Borasisi and 1,000 Years Ahead in Time

Minor planet astrology can feel elusive. The planets are distant, time cycles long, and discoveries recent. Even if the ecological, phenomenal, and dialogical frames are accepted, how does one dialogue with time/space that exceeds multiple human lifetimes? Kuiper belt orbital periods range from hundreds to thousands of years. An example might help.

Minor planet Borasisi was discovered in the Kuiper belt region of the solar system in 1999. Named for the fictional sun god of Bokanisim in Kurt Vonnegut's (1963) *Cat's Cradle*. Borasisi marks decidedly postmodern cosmological territory. IAU nomenclature does not prohibit mythological references from 20th century literature, though their presence alone evokes Bakhtin (1981). As astrology is a language of experience, it is most helpful at this point to draw upon a personal moment of astrological symbolism.

When I first became aware of the minor planet Borasisi, I cast it in my natal chart out of habit. To my surprise, Borasisi appeared on the exact degree of my ascendant. Minor planets can move slowly, Borasisi's orbit lasting 288 years. However, the ascendant, as part of the symbolic horizon, moves quickly—about 1° every 4 minutes. Any planet that conjuncts the ascendant exactly calls for attention as part of one's personal daybreak. Still, I did not know anything about this point in the outer solar system.

As a means of introduction, it helped to start with the mythological source text, Vonnegut's (1963) *Cat's Cradle*, in which the narrator introduces Borasisi as a myth within a myth:

I learned of the Bokononist cosmogony, for instance, wherein Borasisi, the sun, held Pabu, the moon, in his arms, and hoped that Pabu would bear him a fiery child.

But poor Pabu gave birth to children that were cold, that did not burn; and Borasisi threw them away in disgust. These were the planets, who circled their terrible father at a safe distance.

Then poor Pabu herself was cast away, and she went to live with her favorite child, which was Earth. Earth was Pabu's favorite because it had people on it; and the people looked up at her and loved her and sympathized.

And what opinion did Bokonon hold of his own cosmogony?

“Foma! Lies!” he wrote. “A pack of foma!” (pp. 190-191)

Foma, the “harmless untruths” that run throughout the novel, are the basis of Bokononism—the religion that rebrands piety as self-aware deception. From this lone glimpse, we can start to play with the symbolism and connections between the worlds. Questions like, what are the origin stories we rehearse as foundational lies? What is a religion built on acknowledged “untruths”? How do lies we consider harmless create our reality? How do institutions convince themselves of piety? The list goes on.

Religion and Borasisi's explicit mythology are only part of the delineation process. For more information, we can widen our perspective to broader thematic elements in *Cat's Cradle* (the world Borasisi's voice helps to create), and from this angle, destructive technology emerges as symbolically significant. Astrologer and minor planet specialist Eric Francis (2011) delineated Borasisi based on Vonnegut's inspiration for Ice-9 and the scientist that created it. Both emerged out of Vonnegut's work as a publicist for General Electric (GE) in the 1950s, when GE was developing nuclear energy reactors (Hayman, Michaelis, Plimpton, & Rhodes, 1977). Notably, an atomic bomb is dropped in *Cat's Cradle* but that is not what causes the greatest destruction. Rather it is Ice-9, the seemingly benign technology that made water stable at room temperature, which ends the world with just a drop.

Vonnegut was an outspoken critic of both nuclear energy and arms proliferation (Corry, 1985; Vonnegut, 1982), delivering a speech on the topic in 1982 titled *Fates Worse than Death* at St. John the Divine in New York City. He talked about empathy, the humanizing factor of communications technology, death, and his writing process. Vonnegut begins and ends his speech with two dreams. The first an example of where his writing ideas come from, and the second oriented on his solution:

I dreamed last night of our descendants a thousand years from now, which is to say all of humanity...In my dream, our descendants are numerous. Some of them are rich, some are poor, some are likeable, some are insufferable. I ask them how humanity, against all odds, managed to keep going for another millennium. They tell me that they and their ancestors did it by preferring life over death for themselves and others at every opportunity...

In his short dream, Vonnegut highlights a direct connection between everyone alive on earth today and 1,000 years from now. Experientially, he is able to access this bridge in the present, through a dream. On one level, the statements are obvious, but what does it really

mean to prefer life on a planet that is undergoing ecological and humanitarian crises? The changes called for are deep.

Astrologically, these meandering themes—or voices—all exist in the background until called into focus through a ritual moment/place. Though casting a new planet in a chart is ritual enough, in practice, the symbolism didn't emerge until a few years later (See Radermacher, 2011 for more on the hermeneutics of astrological interpretation). In 2014 an open secret about the place where I was born broke through to public awareness—embedded within my childhood community was a landfill containing illegally dumped radioactive waste from the World War II Era Manhattan Project. Now, the nuclear story was also embedded within the horizon and ground of my experience!

In 1942 Mallinckrodt Chemical, based in St. Louis, contracted with the US government to refine Uranium for the world's first nuclear weapons—including those eventually dropped on Hiroshima and Nagasaki (Johnson, 2017). Mallinckrodt generated more than 133,000 tons of radioactive waste and stored it in open fields, exposed to the elements for over 20 years (Halsey, Guido & Ruhter, 2010). The Atomic Energy Commission tested the area in the 1960s and found levels of Thorium-230 over 25,000 times greater than natural occurrence, the highest concentration of the material in the country (Figgins & Kirby, 1966). In the 1970s 40,000 tons of that radioactive waste was dumped in the West Lake landfill a few miles away from my former home.

It might seem unlikely the community was not aware of the contamination for so many years, but I would argue it is a symptom of modernity, a typical disconnect of people and planet. How else is it possible to create waste that lasts for thousands of years before having a plan to dispose of it? How else could private and government entities have taken no cleanup action in the past 70 years, despite understanding the site's toxicity? The effects of chronic low-level radioactive contamination are not immediately apparent and sometimes

take generations to emerge. The issue only entered public awareness after an underground fire, or sub-surface smoldering event, started in another region of the landfill in 2010 and the smells emitted from the landfilled worsened, traveling miles away. The fire now approaches the nuclear waste and despite increased media attention and escalating community efforts, there is still no remediation plan in place nor a viable method to extinguish the fire (Johnson, 2017).

The Stories We Tell When We Breathe Toxic Air

As I sit here writing today I wonder what this story has to say about Borasisi, astrology, and the ecological connection they all share. A stunning synchronicity, yes. I think of Abram, foma, and psyche/air again—how harmless untruths and open secrets consolidate through generations of people and land. What is the psychic legacy of wartime contamination? How does it pervade the connectedness of earth and bodies, human and cosmic? How does it all make sense in the flow of time?

I do not have any rational answers to these questions. I do not think any form of cosmic causation (archetypal or otherwise) led the US to bomb Japan, Kurt Vonnegut to write his novel, me to arrive in North St. Louis County, and various government and corporate entities to illegally and secretly dump radioactive waste in my childhood community. I do think nuclear energy, its wastes and residues require us to reach many thousands of years into the future, as do war, and other forms of environmental contamination and oppression. These issues require not prescience, but an ability to make sensual contact with future life. Contact beyond rational means and what is easy to hold close. Contact that honors the earth and our humanity. Toxicity in the examples above only increase with age, consolidating through our interconnected ecology; this alone calls for a system of connecting to the future in the present, in a way that honors its full mysterious depth. Because it is a far future that is

urgently part of our present moment. Minor planets are the best planets to hold those distant timescales.

In a moment/place when it is far more comforting to deny mutual awareness—I hope to be distanced by lifeless air in a land of toxicity—astrology is one way to pay attention. One way to listen and feel the connection, no matter how painful the truth or strange and distant in time/space it all seems. There is a certain mourning that comes with the realization that money or power was prioritized over life—earth and people. It happens all the time, but makes a future that is supposedly unknown or free sound like Bokononist mythos. However, access to a symbol that illuminates the complexity moment/place, such as Borasisi, opens dialogue with other voices in the midst of darkness.

With Deep Ecology Comes Deep Time

If humans are to value Earth as our home, as deeply vital on its own terms, then we must value time equally. The deep cycles of time accessible through the minor planets offer the widest known perimeters in the local ecology through which to ground our life(times) on earth. If disenchantment is living an overly partitioned life, treating time/space as two instead of one, perhaps time provides a way back to the earth. Maybe through the gateway of deep time, we can feel the gravity that reconnects space to our mundane daily existence.

Of course, to enter through this gateway, there must be a ground to walk on. Divinatory astrology's insistence on the spatial dimension is one way through. In the act of divining, we do not just open up a moment in time, but also a place in space. As Curry (2004) writes,

the naturalized cosmos includes the place as merely an aspect of space; and since the former is so vast, “here” recedes into absolute insignificance...thus preparing the way for the ultimate scientific triumph, which is also its ultimate hypocrisy, of truth as the view from nowhere. (p. 124)

Deep time brings place to the foreground. Inverting the modernist tendency, it holds seemingly vast time/space through the presencing ground of moment/place. Deep time never discounts the horizon as a view from somewhere; it never discounts the humans that participate in that view. The minor planets allow “somewhere” to extend far into the past and future, reaching cycles of up to 11,408 years—in the case of Sedna, for example—and beyond. With longer spans of time in mind, it is possible archetypal cosmology may provide another path to deep time, as long as archetype is acknowledged as embedded in our greater ecology, earth at the center.

A Cosmological Bridge

What have the discoveries of our lifetime revealed about the nature of astrology? On one level, they are indicative of mystery and enchantment. The Kuiper belt, the minor planets, and the discovery of Eris show the dynamic nature of the meaning of planet itself. One discovery in the present can change the meaning of the past, our creation stories similarly fluid. These discoveries simultaneously tighten boundaries and show the way for us to exceed them. The minor planets reveal the unknowable, changeable nature of the astrological language. Implying, with a nod back to Abram, the importance of the animate breath to enter into the astrological dialogue and speak life into the symbolic from the here and now. For exactly the same symbols—planets, aspects, signs, and houses—may shift in meaning tomorrow.

To follow deep time back to the earth, to the ground of the present available through divination's theoretical framing, is to also find that archetypal cosmology may be viable through immanence and plurality. The minor planets offer a bridge not just from astronomy to astrology, but also from divination to archetype. The next chapter explores the meeting ground in more detail.

DIVINATION, ARCHETYPE, AND DIGITAL REALITIES

This chapter will further describe the relationship between divinatory astrology and archetypal cosmology, highlighting tensions as perceived through an ecological understanding of astrology. With the minor planets as bridge, this chapter will also explore digital connections to astrology and discoveries beyond our solar system.

Dialog of Archetypal Cosmology and Divinatory Astrology

The minor planets, through their present and ongoing discovery, are a reminder that humans can only consciously dialogue with the extent of our collective discoveries. Any chart cast prior to 1992 would have a different range of planetary symbols available compared to what is accessible in 2017. In other words, divination is limited or framed by the era one is born into and same-timeness, on one level, is part of the astrological. Meaning, there is something important about the era in which the astrologer is doing the divining.

Archetypal cosmology directly focuses on this importance. How do humans understand new ecological elements, new worlds, and new symbols revealing themselves to collective consciousness during the times in which they are alive? Similar to the quest to understand the evolution of human consciousness, with big astronomical discoveries there is a temptation to eclipse the earth and therefore the self, by focusing too explicitly on an all-encompassing theory—a standardized empiricism, or universal truth. After all, change through these lenses seems to happen for all of us at the same time, regardless of our location on the planet. A satellite like Cassini, for example, views Saturn from a vantage point seemingly untethered to the earth—we all have access to the same perspective. But remember 1992 QB1 and the Whippoorwill (Luu, 2013). Where does astrology touch the earth in understanding the arc of collective human change?

For example, the astrological houses do not figure into Tarnas' (2006) archetypal historiography and the predictions for the world based upon them. Tarnas is aware of the delicate balance in his work, writing,

Generalizations about historical epochs and the larger cycles of the planets must always be balanced against the infinitely varied particularities of individual lives. Nevertheless, we can also recognize that the drama of the individual life always takes place within the larger drama of the human community, just as our personal psyche and personal unconscious are always embedded within the collective psyche and collective unconscious. (pp. 463-464)

In response, Brockbank (2011) notes a contradiction, “[archetypal cosmology] wants universal meaning but can only provide that meaning through individual participation” (p. 272). Additionally, Tarnas accounts for synchronic (correlations amongst events of the same historical period) and diachronic (correlations amongst events of different historical periods) archetypal patterns in his analysis (p. 146). Though he was reflective of his research process, documenting a shift in how he approached anomalistic data (pp. 458-459), Tarnas seemingly does not take into account the psyche of the participating observer—his own position on earth. Is it possible the residue of Jung’s original astrology study has remained as an archetypal blind spot (Synchronicity II)?

From a minor planet perspective, another question emerges: what if the understanding of moment/place also changed in the midst of recent planetary discoveries? A moment/place in the context of an 11,000 plus year orbit, such as Sedna, would appear quite differently than a moment/place of a lunar cycle. Yet, as participants in the great cosmic dialogue, we engage both voices. An ecologically grounded astrology that also considers the minor planets can hold archetypal cosmology and divinatory astrology in dialogical tension. Maybe dialogue

between the two views in the midst of the greater ecological dialogue is the only way to capture the living astrological in its full resonance.

Minor Planets, Wider Orbits, and Malleable Moments

Clarified emphasis on the moment/place of astrological practice still leaves some questions unresolved. How do we know how wide our moment stretches? Are ground and horizon subject to scale? Archetypal cosmology suggests humans can make contact with wider ground, understanding the trajectory of the collective by analyzing the collective past. Eras and epochs are the present moment for Tarnas and other archetypal cosmologists. But how do these scales of time/space fit with the need for the astrologer to position herself in the midst of the enveloping present? Can an astrology that strives to articulate the evolutionary thrust of consciousness also be the astrology of an enchanted cosmos?

It seems Kuiper belt discoveries hold a key to understanding not just the dialogical relationship between archetypal and divinatory astrologies, but also the practice of astrology itself. To open dialogue in a moment/place with such a slow and distant part of our solar system might feel like tapping into something pre-determined outside of human consciousness. But might it be similar to divination with faster-moving bodies, like a divinatory moment of the collective? Perhaps time-scales play tricks on us. Either way, the process still requires human participation and a willingness to invite the mystery of the sky.

Theoretical tensions aside, why is astrology as a whole not more excited about the discoveries of our lifetime? Most astrologers speak about Pluto as if there were never a shift in planetary status. If aspects between Uranus and Pluto throughout western history are foundational to archetypal cosmology (Tarnas, 2006), why do other dwarf planets or minor planets not incite energized scholarship? Except for some cursory investigation into Eris (Le Grice, 2012), academic astrological research appears to end at Pluto. Perhaps a closer look at an archetypal cosmologist's model of consciousness evolution will provide illumination.

Complex Holism

Archetypal Cosmologist Sean Kelly (2010) details a triphasic evolution of consciousness resulting in what he terms our present “Planetary Era” of consciousness. The Planetary Era, according to Kelly, is the result of dialogue between theological and secular worldviews throughout the history of western thought. Ultimately Kelly's description of the evolution of consciousness, which he carries through to humanity's future, is a view inspired by Tarnas' (2006) archetypal historiography. Methodology described by archetypal cosmologists as empirical evidence for astrology—viewing the future through a historical lens.

Kelly (2010) offers archetypal cosmological perspective along the way to explaining his evolutionary theory. One such perspective is his notion of “complex holism” (p. 133) as a meta-principle of planetary wisdom. Kelly describes the need to avoid simplistic reduction when understanding the whole, honoring the dialogical nature of holism. Here, Kelly writes of a participatory solidarity with the cosmos,

It is not only that the physical “stuff” of which we are made is inextricably woven into the complex fabric of the entire cosmos, it is that this very stuff, which in some mysterious way gives rise to or at least facilitates the emergence of our experience, is also (complexly) co-constituted by our experience of it...we participate as members of the cosmic whole or totality, *and* we participate in bringing this whole into manifestation or actualization. (p. 137)

This cosmic solidarity captures the necessity and tension of the two astrological theories—taking up a view within (divination) and of (archetypal) our place in the cosmos may be two equally important and incomplete human ways of knowing. Kelly's tenuous adherence to cosmic causality might suggest further that archetypal cosmology quests after the impossible—the ultimate cosmological perspective—while knowing we can only glimpse a

greater participatory order. Divinatory astrology is a necessary counterbalance. Recognizing mystery, divination acknowledges there is always further “out there” we can travel, always more perspective we will desire, but never attain as participants in an enchanted whole.

Transjective Knowing and Plurality

Kelly (2010) indicates a destination for our Planetary Era, which is an archetypal union of solar and lunar consciousness or a “transjective” principle of knowing. Though not explicitly stated, a dialogue between subjective and objective ways of knowing seems to reach beyond mere archetypal cosmology and invite dialogue with divinatory astrology as well. Curry (2004), writing from the divinatory perspective, cites plurality when describing the historical difficulty of accurately theorizing astrological experience. He writes,

Both theistic and secular monisms (including their respective internal dualisms) rule out of court the reality of the relational, and therefore plural (which is both objective and subjective, and therefore solely neither) and soulful (which is both spiritual and material, and therefore solely neither) even before enquiry can begin (p. 116).

Whether described as transjective or plural, the union of subjective and objective ways of knowing is at the core of astrology. Both theories agree, the tension lies elsewhere. Kelly (2010) describes,

An astrological perspective like that of the ancients can illuminate and deepen one's understanding of any particular kind of *moment* or *series* of moments of the historical process...but it cannot, by itself, provide a comprehensive or fully coherent account of the telos of history or the evolution of consciousness (p. 171).

Perhaps in direct reference to the “view from nowhere” and the divinatory understanding of moment/place in the tradition of Chaldean omens, Kelly emphasizes the importance of perspective and taking up a view of the past; whereas the perimeter of the moment is the point of divinatory astrology.

The strongest divide between the two theories seems to be a question of orienting on mystery or mastery. Archetypal cosmology is an attempt to bridge transpersonal psychology with an ancient way of knowing. Stanislav Grof (2009) described archetypal cosmology as, “as the long-sought 'Rosetta Stone' of consciousness research” (p. 61). Grof, once a skeptic, became convinced of astrology’s efficacy over 30 years of research. Working with Tarnas in timing holotropic breathwork and other non-ordinary states of consciousness with astrological transits of their participants. They found participants' transits predicted the timing and archetypal content of their sessions with surprising accuracy. Grof described western psychological assessments as “useless” (p. 50) in this regard. Grof further described astrology as complimentary, necessarily so, to modern science. He writes, “Opening up conceptually to this possibility would make it possible to utilize the great potential that astrology holds as a clinical and research tool in psychiatry, psychology, and psychotherapy, as well as for a variety of other disciplines” (p. 64).

Though not attempting research in the modern scientific paradigm, the divinatory perspective would label the types of psychological research applications Grof describes as an effort to eclipse the essential character of astrology all the same—an attempt at exiling enchantment. Maybe the minor planets can offer further commentary on the theoretical tension.

Minor Planets Facilitate Theoretical Dialogue

What Tarnas (2006) and Kelly (2010) describe as a triphasic evolution of consciousness—ancient, modern, planetary/postmodern—could also be described as a dynamic present. If considered in the context of outer solar system cycles of time, our present moment can expand to encompass an era. But with the inclusion of the outer planets also comes an injection of mystery and enchantment. These discoveries are new, understanding their meaning is an interactive, alive process. In theory, this is similar to the participatory

aspect of archetypal cosmology, yet many astrologers from this tradition hesitate to incorporate recent discoveries due to the lack of available historical analysis. It is true we could not necessarily predict decades of future world history based on a past of recent discoveries, but is that not the point?

The minor planets, with their relatively recent entry into human consciousness, are a reminder of an ecological astrology. Because astrologers lack history, one simply has to experience the present, to look at the obvious physical qualities, the story of discovery, and dialogue from there. In the spirit of Merleau-Ponty (1945/2014) and Abram (1996), we must articulate our experience because there is no notion of certainty or cannon of interpretive literature to rely on. In this sense, the phenomenal process offers insight into ancient ways of connecting with the sky. Divinatory astrology's reliance on the present moment as vital to astrology's efficacy breathed new life into the symbolic by also opening space for interpretive dialogue. The sky comes alive in the moment of connection, joining human and earth. Though the question still remains: how might archetypal cosmologists adjust their research methodology to account for the malleable nature of a moment/place?

Digital Mediarities of Direct Knowing

In addition to the dialogue of astrological theories, the minor planets are an undeniable reminder that most contemporary astrological experience is facilitated via digital mediums. As Curry (2007) comments on the experience of astrology,

An astrological chart may be a map of the sky-space, but that is only a ritual prerequisite to its divinatory heart: an experience of a place (not space) and moment (not time) that is animate, whole, and sacred. This experience is subjective and objective, spiritual and material, personal and cosmic. (p. 218)

Just because humans cannot physically see the outer/minor planets, does not mean we are not engaged in an ecological sensual relationship with them. In this sense, we enter the digital via

ecological understanding, instead of using the digital as a means of denying our embedded embodiment. Further, when I connect to distant planets via digital technology, I am inspired to go outside and sit with the moonlight. When I connect with the moon, I am inspired to connect with distant planets—another dialogue of practices.

The pervasive technological intermediary between humans and our discoveries seems to be a distinction of the present cosmological revolution. Telescopes have advanced to the point of capturing new Kuiper belt Objects, but only as photographic dots in distant space (Luu, 2013). For non-astronomers on earth, how does one connect with these discoveries when there is nothing to physically see?

Perhaps what is sacrificed in immediate observation is gained in direct observation of the outer solar system and beyond. Trading the night sky outside our doorstep for one mediated through (telescopic) retreats on mountaintops. Furthermore, humans would never have arrived at our present mythological bridge, without the improvements in technology that allowed us to see the cosmos as we see the earth. Finding the unity of the whole through a telescopic mediary may have started with Galileo in the modern sense, but never stopped growing to encompass further swaths of the solar system as technology captures intimate views of ever-distant planets.

Might an astrology that incorporates the minor planets treat these new discoveries as commentary on the unseen, but sensed—a commentary on the connection between digital and non-digital worlds? If Abram's (1996) thinking is extended, it must include the digital in the phenomenal understanding of time/space, especially where it concerns cosmology of the outer solar system. Current discourse has a tendency to treat technological interconnection as distinct from the interconnection of the natural world. Articulating a growing fear that the natural world may be overtaken by manufactured worlds, that soon it may become impossible to absorb the insights of the sky and trees. Potentially, Kuiper belt astrology suggests an

alternative, that the digital has the opportunity to also become part of the animate universe. The space through which psyche/wind/breath can flow anew.

Turning Inside Out

Abram (1996) and media theorist Marshall McLuhan (1964) both describe “turning inside out” as logical extensions of their thinking—McLuhan as an inescapable by-product of electric media, Abram as a call to re-unite words and senses with the natural world. As Abram traces the historical development of the phonetic alphabet, he describes a relational shift with language. A shift that moves from lively, embodied sensuality toward remote, static, uniformity. Text that once contained implicit dialogue—requiring human breath as animating life force—was eventually treated as a series of symbols with fixed meaning. The change resulting in an enclosed mind removed from the earth.

McLuhan (1964), tracing a similar path of desacralization through the changing landscape of media technology, theorized that while pre-electric media extended our bodies outward, electric media’s extension of the central nervous system effectively turned our insides out, the inversion resulting in an implosion of space, eliminating the boundary between inner and outer consciousness. McLuhan did not place a value on the phenomena, but did note, “The aspiration of our time for wholeness, empathy and depth of awareness is a natural adjunct of electric technology” (p. 21).

Whether by inevitably or prescription, the dialogical mythology practiced through astrology seems to fit the reintegrative task of our current time and place. Even when much of the astrology practiced today happens in a digital medium. As Campion (2013) describes, the sky no longer plays a part. Astrological calculations are performed on computers in the time it takes to feed in the data, and most people in the West—and now a majority in the world as a whole—are shielded from the sky by light pollution. (p. 287)

Yet, the same digital mediums have helped us discover new worlds. A sense of anticipation and mystery in the discoveries of Kuiper belt and beyond has the potential to reinvigorate our sense of direct connection with the cosmos. The astrological language is no longer static, but presently alive, and inevitably thrusts us back into ecological dialogue. Planetary wonder is renewed through present contemplation of our home in the solar system. How can we make sense of these seeming contradictions?

McLuhan's (1964) theories were decidedly egocentric—media framed as “extensions of man”. Is it possible to reframe his thinking ecocentrically, media as extensions of the earth? It is worth noting the earliest Internet experimentation took place amidst early experiments in interconnected consciousness—during the development of Remote Viewing (RV). Both existed under the same working group, the Augmentation Research Center (ARC) at Stanford Research Institute (SRI) in the 1970s (Wilson, 1975; TYMSHARE, 1975; Vallee, 2003).

Post-SRI, an early private internet prototype was even named “Planet”, one of its first applications also explicitly planetary involving experiments in networking between field scientists and their support offices for the US Geological Survey (USGS; Vallee, 2003). Less than a year later, the Planet group organized a conference on psychic phenomena where they, “asked the group members to describe remote targets—a collection of rock samples with special properties, selected for us by a geologist from the USGS” (p. 89). Valle describes further that, “The conference began, appropriately enough, with a solstice celebration held in June 1975” (p. 89).

One of the conference group members was Ingo Swann, pioneer of RV, astrologer, and participant in further psychic explorations of planets. Swann started studying astrology in 1962 (Swann, 1995), predating his RV research by about 10 years (Swann, 1972). Though not explicitly stated, Swann’s astrological scholarship undoubtedly had an effect on his

development of controlled RV. Swann even applied controlled RV to the planets in the solar system, his planetary observations made in advance of NASA satellite imaging. Most notably, Swann described rings on Jupiter prior to Voyager observations (Swann, 1973-1980). I do not know what, if any, conclusions to draw from the network of relationships that exist between the cosmos, humans, and interconnected technology, though it remains rich territory for future exploration.

Digital Overwhelm and a Shift From Big to Small

Do the minor planets provide further commentary on the relationship between digital worlds and ecological experience? Starting with simple physical description, one aspect of minor planet delineation is the lack of distinction between orbiting body and all that surrounds it. A minor planet, by definition, is an orbiting body that does not clear its orbit or is not “dynamically dominant” (IAU, 2006). Not only does a lack of dynamical dominance describe the impossibility of intimately knowing each minor planet, but it also resonates with a shift from individual to collective knowing, as well as with the general availability of digital information.

The reality of hundreds of thousands of orbiting bodies can be overwhelming. It is impossible to give every minor planet a voice and hear clearly. A shift in methodology is required. Just as the IAU drew boundary lines for clarity, so can astrology. Astrologers like Melanie Reinhardt (2013) Eric Francis (2008) and Zipporah Dobyns (2002) have suggested methods for inclusion based on thematic content, exact aspects, and placement in the astrologer's chart. Relevant minor planets in a specific reading might be conjunct a closer-in planet like the moon or aspect an angle like the ascendant, for example. If strong thematic material emerges, an astrologer could then work backwards—casting the position of a minor planet retroactively. An astrologer might also, for example, regularly incorporate a minor planet into readings based on its significance in that astrologer's chart. What ends up in the

chart might also change with each client, conversation, or astrologer enacting the divinatory moment.

The hundreds of thousands of orbiting bodies in our solar system have seemingly always existed, but we were not aware of them in the past. Meaning, astrologers have always made choices about which planets were included in a chart and which were excluded, just not consciously. With the inclusion of minor planets, no longer is astrology a practice of working with a fixed configuration of planets in every reading. Instead, it requires a conscious choice about what to include at the center of the dialogue and what to leave on the periphery. It also acknowledges that boundary line as permeable and fluid.

Astrologer Dale O'Brien (2008) likens the shift in the inclusion of small orbiting bodies to a critical social shift. Just as astrology of days past belonged only to the biggest and brightest planets, so did its practice belong to kings and those of social prominence. Incorporating minor planets into astrology is reflective of the shift in who participates in the astrological dialogue; an astrology for all people is an astrology that also sees the whole sky. The minor planets show flexibility—whether conscious or not—in dialogue within our greater cosmology, further breaking away from the modern causal paradigm. The flexible borders of the astrological dialogue are reflective of the ways in which humans participate in other dialogues in our lives on personal and societal levels. Some voices are heard above others, a factor of how we participate from our moment/place, rather than a monological universal principle.

Could there exist a parallel process between the experience of overwhelm that can come with constant digital connection and the need to make conscious space for the horizon? Due to their digital discovery circumstances (Brown, 2009), dwarf planets and Kuiper belt Objects have digital commentary implicit in their contemporary mythology. In mundane human experience, increasingly time is scheduled to smaller increments, one automated

world flowing seamlessly into another. It is as if the digital horizon does not exist without effort to keep it in place (how long would it take to autoplay one's way through all of YouTube?), the distinction between past and future is similarly slippery. The phenomenal nature of mystery is felt anew in interconnected digital spaces—what happens to time when the space to pause and chose diminishes? Mystery allows us to feel into the past/future. Where is the mystery, as principle, in an interconnected digital world as we have created it? Amidst the vast time/space of the outer solar system, the minor planets are one way to maintain the horizon of digital dialogues. The wider terrain of moment/place allows for mystery to remain, bracing the chaos of interconnected transition.

Grounding in Mystery

If I can connect to cycles of time that are far greater than my daily life, even my whole lifetime, I am also connecting to equally large space. With our noted permeability, this is a simultaneously internal/external space. I can meet the whole, our greater ecology, in a way that does not transcend my mundane earthly existence but includes its deeper roots. That is deep presence via deep time. It is a way to retain motivation and remember the inherent creativity in life, even when it feels like space is collapsing all around and nothing but foreclosed darkness is available. Astrology of this scale is a reminder that ephemeral action touches those that existed in the past and those that inherit the future. My life is short in the context of ten generations of humans, but my actions, thoughts, subtle knowing and love can touch that collective directly. An ecological astrology suggests this sensual dialogue is not really a choice, but fundamental to human experience.

From an ecological perspective, it is clear we need not stop at the Kuiper belt when determining astrological inclusion. Consider for example, how different day and night would be if Earth were located in a different part of our galaxy. Our very concepts of dark and light are connected to not just the sun and the moon, but our solar system's location within our

galaxy. Our galaxy exists within a supercluster of galaxies, amidst other superclusters, and further we could go. All of these physical qualities, even the very far out and distant, are part of our cosmic home, they are part of our experience of Earth.

As astronomers grapple with those further reaches of the local universe, their descriptors inevitably veer toward the mystical. Newly mapping our home supercluster in 2014, astronomers Tully, Courtois, Hoffman, and Pomarède, named their discovery Laniakea, or “immeasurable heaven”. Based on the discovery Tully further described the universe we live in as, “something called 'the cosmic web,' where galaxies are connected in tendrils separated by giant voids,” (Choi, 2014)—a description of uncanny resonance with Indra's net of Buddhist philosophy, especially in light of the astrological thesis. The larger point is that mystery is the lens through which all discoveries emerge. Perhaps in the spirit of enantiodromia, what scientists have once described as the coldest most desolate region of awareness (outer space) becomes the door through which poetry returns to cosmology and enchantment touches our earthly lives.

How do contemporary discoveries inform our dialogical rituals here on earth? They implore us to first be present to our changing sky. As smaller and further away minor planets and Kuiper belt objects are incorporated into the astrological, perhaps our need to take a long-view of time is also changing. As explored throughout this chapter, a moment/place in time and on earth may be malleable, stretching from seconds to eras and back again. To be true to our cosmic carnal dialogy (Willis & Curry, 2004), is to sit with the both/and qualities of moments in time. To see the vapid nature of a moment and also its richness, to see the evolution of consciousness provided by a teleological analysis of history and also its fiction. If we catch the light right, a moment (regardless of scale) is filled with rich meaning, embedded in an emergent pattern as we are similarly embedded amongst the same deep

ecology. The moment/place reaches far and wide (into the past and future) but also contains a dark lack of meaning, a nothingness that blends it into the backdrop of time.

It is always both; in a flash a pattern reveals itself and just as quickly fades away. This is the quality of a realized interpretation or a moment of astrology. Like lightning shared knowing blazes for an instant, then fades to reveal a dark sky. We have traveled down the path of desacralization and disenchantment to reach beyond the earth, to see further, to build technological universes, and realize our participatory, dialogical relationship with distant sky. Now that we have traversed the territory, to see both possibilities we reach again for the enchanted—relinking a lost dialogue with the ever-emerging cosmos. Astrology remains a dialogue of mysteries, an act of perpetually reaching into the dark and finding the lights. An ecological astrology grounds in awareness that the limits of the universe are truly subject to change. There is always more darkness to peer into and there is always light(s) yet undiscovered.

REFERENCES

- Abell, G. O., Kurtz P., & Zelen M. (1983). The Abell-Kurtz-Zelen “Mars effect” experiments: A reappraisal. *The Skeptical Inquirer*, 7(Spring), 77-82.
- Abram, D. (1996). *The spell of the sensuous: Perception and language in a more-than-human world*. New York, NY: Random House.
- Bailey, A. (1998). *Esoteric astrology: A treatise on the seven rays, Vol 3*. Lucis Publishing Company. Retrieved from <http://www.bailey.it/files/Esoteric-Astrology-a-Treatise-on-the-Seven-Rays-Vol-3.pdf> (Original work published 1951)
- Bakhtin, M. (1981). *The dialogic imagination: Four essays*. University of Texas Press.
- Bertau, M. C. Gonçalves, M., & Raggatt, P. (Eds.). (2013). *Dialogic formations: Investigations into the origins and development of the dialogical self*. Charlotte, N.C.: Information Age Publishers.
- Blavatsky, H.P. (1888). *The secret doctrine: The synthesis of science, religion, and philosophy*. Theosophical University Press. Retrieved from: <http://www.theosociety.org/pasadena/sd/sd-hp.htm>
- Bobrick, B. (2005). *The fated sky: Astrology in history*. New York, NY: Simon & Schuster.
- Brady, B. (2004). Can astrology be viewed as an expression of chaosmos and is this the same phenomena currently being described by chaos and complexity theories? (Unpublished masters thesis). University of Wales Trinity St. David, Wales. Retrieved from: <http://cosmocritic.com>
- Brady, B. (2006). *Astrology, a place in chaos*. Bournemouth, England: Wessex Astrologer.

- Brennan, C. (2007). The katarche of horary. *Geocosmic*. Summer. 23-34. Retrieved from:
<http://www.chrisbrennanastrologer.com/>
- Brockbank, J. (2011). *The responsive cosmos: An enquiry into the theoretical foundation of astrology* (unpublished doctoral dissertation). University of Kent at Canterbury.
 Retrieved from: <http://cosmocritic.com>
- Brown, M. (2008). I ♥ astrologers. Retrieved from:
<http://www.mikebrownsplanets.com/2008/01/i-heart-astrologers.html>
- Brown, M. (2012). *How I killed Pluto and why it had it coming*. New York, NY: Spiegel & Grau.
- Campion, N. (2003). The traditional revival in modern astrology: A preliminary history. *Astrology Quarterly*. 74(1), 28-38.
- Campion, N. (2008). *A history of western astrology: Volume 1: The ancient world*. London: Bloomsbury.
- Campion, N. (2013). *A history of western astrology: Volume 2: The medieval and modern worlds*. London: Bloomsbury.
- Capp, B. (1979). *English almanacs 1500-1800: Astrology and the popular press*. Ithaca, NY: Cornell University Press.
- Carlson, S. (1985) A double-blind test of astrology. *Nature*, 318(6045), 419-425.
- Chico, E., & Lorenzo-Seva, U. (2006). Belief in astrology inventory: Development and validation. *Psychological Reports*, 99(3), 851-863.
- Choi, C. (2014). New galactic supercluster map shows Milky Way's 'heavenly' home. *Space*. Retrieved from: <https://www.space.com/27016-galaxy-supercluster-laniakea-milky-way-home.html>

- Cohen, D. (1975). Gauquelin hits back. *New Scientist*, 68(972), 227.
- Cornelius, G. (1994). *The moment of astrology: Origins in divination*. London: Arkana.
- Corry, J. (1985, August 9). A chat with Vonnegut (And Kilgore Trout). *The New York Times*.
Retrieved from: <http://www.nytimes.com/1985/08/09/arts/a-chat-with-vonnegut-and-kilgore-trout.html>
- Curry, P. (1989). *Prophecy and power: astrology in early modern England*. Princeton, NJ: Princeton University Press.
- Curry, P. (2007). Grounding the stars: Towards an ecological astrology. *Journal for the Study of Religion Nature and Culture*, 1(2), 210-219. doi: 10.1558/jsrnc.v1i2.210
- Dahlstrom, W. G., Hopkins, D., Dahlstrom, L., Jackson, E., & Cumella, E. (1996). MMPI findings on astrological and other folklore concepts of personality. *Psychological Reports*, 78(3 suppl), 1059-1070.
- Dean, G. (1981). The acceptance of astrological chart interpretations: a simple test of personal validation using reversed charts. Based on a paper given at the Astrological Research Conference, Institute of Psychiatry. London.
- Dean, G., & Kelly, I. W. (2003). Is astrology relevant to consciousness and psi? *Journal of Consciousness Studies*, 10(6-7), 175-198.
- DeGrasse Tyson, N. (2017). *Astrophysics for people in a hurry*. New York, NY: W. W. Norton & Company.
- Dobyns, Z. (2002). Astrology and reality. Retrieved from:
http://ccrsdodona.org/articles/current/2002_07_astrealuac.html
- Ertel, S., & Kurtz, P. (1992). Update on the "Mars effect". *Skeptical Inquirer*, 16(2), 150.
- Ertel, S. (1988). Raising the hurdle for the athletes' Mars effect: Association co-varies with eminence. *Journal of Scientific Exploration*, 2, 1.

- Ertel, S., & Irving, K. (2000). The Mars effect is genuine: On Kurtz, Niehuys, and Sandhu's missing the evidence. *Journal of Scientific Exploration*, 15(3), 421–430.
- Fichten, C. S., & Sunerton, B. (1983). Popular horoscopes and the “Barnum effect”. *The Journal of Psychology*, 114(1), 123-134.
- Figgins & Kirby (1966). Survey of sources of Ionium (Thorium-230). US Department of Energy. Retrieved from: <https://www.osti.gov/scitech/servlets/purl/4478230>
- Forer, B. R. (1949). The fallacy of personal validation: a classroom demonstration of gullibility. *The Journal of Abnormal and Social Psychology*, 44(1), 118.
- Francis, E. (2008). Small world stories. *Planet Waves*. Retrieved from: http://www.planetwaves.net/smallworlds/contents/articles/project_notes.html
- Francis, E. (2009). The electric tide. *Planet Waves*. Retrieved from: <http://www.planetwavesweekly.com/resources/merx-report-2009.html>
- Francis, E. (2011). With love from borasisi. *Planet Waves*. Retrieved from: <http://planetwaves.net/astrologynews/354545831.html>
- Francis, E. (2012) Cue: be one (or The Kuiper belt turns 20). *Planet Waves*. Retrieved from: <http://1992qb1.com/>
- Francis, E. (2015). 1992 QB1. *Planet Waves*. Retrieved from: <http://members.planetwaves.net/1992-qb1/>
- Gauquelin, M. (1974) *Cosmic Influences on Human Behaviour*, London: Garnstone Press.
- Gauquelin, M., Gauquelin, F., & Eysenck, S. B. G. (1979). Personality and position of the planets at birth: An empirical study. *British Journal of Social and Clinical Psychology*, 18, 71-75.
- Gauquelin, M. (1983). *Birthtime: A scientific investigation of the secrets of astrology*. New York: Kill & Wang.

- Gauquelin, M. (1988, Autumn). Is there really a Mars effect? Above & below. *Journal of Astrological Studies*, 11, 4-7.
- Gauquelin, M. (1991). *Neo-astrology—A Copernican revolution*. London: Penguin.
- Glick, P., Gottesman, D., & Jolton, J. (1989). The fault is not in the stars: Susceptibility of skeptics and believers in astrology to the Barnum effect. *Personality and Social Psychology Bulletin*, 15(4), 572-583.
- Goddard, G. (2005). Counterpoints in transpersonal theory. *Revision*, 27(3), 9-19.
- Goodman, M. J., Nelson, W. W., & Maciosek, M. V. (2005). Births by day of week: A historical perspective. *Journal of Midwifery Women's Health*, 50, 39-43.
- Greene, L. (2013). Love and the alchemical Saturn. In N. Champion & P. Curry (Eds.), *Sky and Psyche: The Relationship Between Cosmos and Consciousness*. pp. 19-34. Edinburgh: Floris Books.
- Grof, S. (2012). Revision and re-enchantment of psychology: Legacy of half a century of consciousness research. *Journal of Transpersonal Psychology*, 44(2), 137-163.
- Halsey, R., Guido J., Ruhter, P. (2010). SEC petition evaluation report. Retrieved from: <https://www.cdc.gov/niosh/ocas/pdfs/sec/slaps/slapsr-150-r0.pdf>
- Hamilton, M. (2001). Who believes in astrology? Effect of favourableness of astrologically derived personality descriptions on acceptance of astrology. *Personality and Individual Differences*, 31, 895-902.
- Hand, R. (2011). Forward. In L. Greene, *Saturn: A new look at an old devil*. (pp. 3-8). San Francisco, CA: Weiser Books.
- Hand, R. (2016). About ARHAT Media. *ARHAT Media*. Retrieved at: <http://www.arhatmedia.com/index.html#about-nav>

- Hartmann, P., Reuter, M. & Nyborg, H. (2006). The relationship between date of birth and individual differences in personality and general intelligence: A large-scale study. *Personality and Individual Differences*, 40, 1349-1362.
- Hayman, D., Michaelis, D., Plimpton, G. & Rhodes, R. (1977). Kurt Vonnegut, the art of fiction. *The Paris Review*. 96(64). Retrieved from:
<https://www.theparisreview.org/interviews/3605/kurt-vonnegut-the-art-of-fiction-no-64-kurt-vonnegut>
- Heidegger, M. (1967). *Being and time* (J. Macquarrie and E. Robinson, Trans). Oxford: Basil Blackwell.
- Heidegger, M. (1972). *On time and being* (J. Stambaugh, Trans). New York: Harper & Row.
- Hermans, H. J. (2015). Dialogical self in a complex world: the need for bridging theories. *Europe's Journal of Psychology*, 11(1), 1-4. doi:10.5964/ejop.v11i1.917
- Hillman, J. (2013). The azure vault: The caelum as experience. In N. Campion & P. Curry (Eds.), *Sky and Psyche: The Relationship Between Cosmos and Consciousness*. pp. 37-54. Edinburgh: Floris Books.
- Hilton, J. (2016). When did the asteroids become minor planets? United States Naval Observatory Astronomical Applications Department. Retrieved from:
<http://aa.usno.navy.mil/faq/docs/minorplanets.php>
- Houlding, D. (2004). The classical origin and traditional use of aspects. Retrieved from:
<http://www.skyscript.co.uk/aspects.html>
- Houlding, D. (2011). An annotated Lilly. Retrieved from:
http://www.skyscript.co.uk/pdf/CA_preface.pdf
- Hume, N., & Goldstein, G. (1977). Is there an association between astrological data and personality? *Journal of Clinical Psychology*, 33(3), 711-713.
- Hyde, M. (1992). *Jung and astrology*. London: Aquarian/Thorsons.

International Astronomical Union. (2006). Resolution B5 definition of a planet in the solar system [Press release]. Retrieved from:

https://www.iau.org/static/resolutions/Resolution_GA26-5-6.pdf

International Astronomical Union. (2017a). Naming of astronomical objects, planetary features. Retrieved from:

<https://www.iau.org/public/themes/naming/#planetaryfeatures>

International Astronomical Union. (2017b) Naming of astronomical objects. Retrieved from:

<https://www.iau.org/public/themes/naming/>

International Astronomical Union. (2017c). About the IAU. Retrieved from:

<https://www.iau.org/about/>

International Astronomical Union. (2017, February 23). Official naming of surface features on Pluto and its satellites: First step approved. Retrieved from:

<https://www.iau.org/news/pressreleases/detail/iau1702/>

IAU Minor Planet Center, (2017) Unusual Minor Planets. Retrieved from:

<http://www.minorplanetcenter.net/iau/lists/Unusual.html>

IAU Minor Planet Center, The Smithsonian Astrophysical Observatory, Harvard. (2017).

Outer Solar System Plot. Retrieved from:

<http://www.minorplanetcenter.net/iau/lists/OuterPlot.html>.

Johnson, L. (2017) The fallout. *Guernica*. Retrieved from:

<https://www.guernicamag.com/the-fallout/>

Jung, C. G. (1960). *The structure and dynamics of the psyche*. Collected works (Vol. 8).

Bollingen Series XX. Princeton, NJ: Princeton University Press, 417-531.

- Kaplan, S. (2017) A new definition would add 102 planets to our solar system—including Pluto. *The Washington Post*. Retrieved from:
<https://www.washingtonpost.com/news/speaking-of-science/wp/2017/03/20/a-new-definition-would-add-102-planets-to-our-solar-system-including-pluto/>
- Kozlova, E. (2011). *A phenomenological inquiry into the process and effects of finding meaning with astrological symbolism*. (Unpublished Dissertation). Institute of Transpersonal Psychology, Palo Alto, California
- Klitsner, Y. S. (2015). Yvonne Smith Klitsner (2015) Synchronicity, intentionality, and archetypal meaning in therapy, *Jung Journal*, 9:4, 26-37, DOI:
 10.1080/19342039.2015.1086946
- Kuwada, B. (2015). We live in the future. Come join us. Ke Kaupu Hehi Ale. Retrieved from: <https://hehiale.wordpress.com/2015/04/03/we-live-in-the-future-come-join-us/>
- Le Grice, K., & O'Neal, R. (2011). *Archai: The Journal of Archetypal Cosmology*. 1(1).
- Leo, A. (1933). *Practical astrology: being a simple method of instruction in the science of astrology*. Philadelphia: David Mckay Company.
- Lewis, J (2003). Therapeutic astrology. *The astrology book*. (pp. 658-661). Canton, MI: Visible Ink Press.
- Lilly, W. (1651). Monarchy or no monarchy in England. London. Retrieved from:
<https://books.google.com/books?id=USAuIQAiWM0C&pg=PA3#v=onepage&q&f=false>
- Lilly, W. (1985). *Christian astrology*. England: Regulus. (Original work published 1647).
- Linell, P. (2009) *Rethinking language, mind, and world dialogically*. (pp. 11-33). Information Age Pub.
- Lorde, A. (1985). Poetry is not a Luxury. In *Sister Outsider: essays and speeches* (p. 36). New York: Crossing.

Luu, J. [The Royal Society] (2013, November 25). The Kuiper Belt and its Implications.

[Video file] Retrieved from:

<https://www.youtube.com/watch?v=cwmCW6eWCRg&t=1736s>

Mayo, J., White, O., & Eysenck, H. J. (1978). An empirical study of the relation between astrological factors and personality. *The Journal of Social Psychology*, 105(2), 229-236. <http://dx.doi.org/10.1080/00224545.1978.9924119>

McLuhan, M. (1964). *Understanding media: The extensions of man*. New York: Signet Books.

Merleau-Ponty, M. (1968). *The visible and the invisible*. (A. L. Evanston, Trans.) Illinois: Northwestern University Press.

Merleau-Ponty, M. (2014). *Phenomenology of perception*. (D. A. Landes, Trans.) London: Routledge. (Original work published 1945)

Munk, K. (2007). Nature is not what is used to be...New cosmological orders in contemporary, western astrology. *Journal for the Study of Religion, Nature and Culture*. 1(2),157-171. doi: 10.1558/jsrnc.v1i2.157

O'Brien, C. [team coco] (2017, May 11). Neil DeGrasse Tyson Explains The Cosmic Perspective. [video file] Retrieved from <https://www.youtube.com/watch?v=6duevT5XQjI>

O'Brien, D. (2015). "Minor" planets: The power and significance of the small. *Planet Waves*. Retrieved from: <http://members.planetwaves.net/minor-planets-the-power-and-significance-of-the-small/>

Panko, B. (2017, March 17). How do new planets get their names? *Smithsonian*. Retrieved from: <http://www.smithsonianmag.com/science-nature/how-do-planets-get-their-names-180962577/>

- Para Committee (Comité Para). (1976). "Considérations critiques sur une recherche faite par M.M. Gauquelin dans le domaine des influences planétaires." *Nouvelles Brèves*, 43, 327-343.
- Phillipson, G. & Case, P. (2001). The hidden lineage of modern management science: Astrology, alchemy, and the myers-briggs type indicator. *Culture and Cosmos* Bristol, U.K. 5(2). pp. 53-72.
- Polcaro, V.F & Martoochia, A. (2010) Guidelines for a Social History of Astronomy. *Culture and Cosmos*. 16(1 & 2).76-87 Bristol.
- Radermacher, L. (2011). The role of dialogue in astrological interpretation. Unpublished Thesis, University of Wales Trinity St. David, Wales. Retrieved from:
<http://cosmocritic.com>
- Reinhardt, R. (2013). Working with weirdos. *The Mountain Astrologer*. June/July. Retrieved from: <http://www.melaniereinhart.com/melanie/Weirdos.htm>
- Rogers, M. E., & Glendon, I. (2008). Personality and birthdate: Taurus, year of the ox, or complete bull?. Retrieved from:
https://www.researchgate.net/publication/50341626_Personality_and_Birth_Date_Taurus_Year_of_the_Ox_or_Complete_Bull
- Rudhyar, D. (1976). *Person centered astrology*. New York: Aurora Press.
- Runyon, K.D, Stern, S.A., Lauer, T.R., Grundy, W., Summers, M.E., Singer, K. N. (2017). A geophysical planet definition. Lunar and planetary science XLVII proceedings (poster presentation). Retrieved from:
<https://www.hou.usra.edu/meetings/lpsc2017/pdf/1448.pdf>
- Schmidt, R., & Black, E. (2016). Eudoxus of Knidos: Founder of Greek Astrology. *Project Hindsight*. Retrieved from: <http://www.projecthindsight.com/>

- Sophia Center. (n.d.). Introduction. Retrieved September 27, 2017, from <http://www.uwtsd.ac.uk/sophia/introduction/>
- Stachnik, T., & Stachnik, B. (1980). Acceptance of non-specific astrological personality descriptions: an empirical demonstration. *Psychological Reports*, 47(2), 537-538.
- Steyn, R. (2013) Astrological planetary alignment and personality differences: Saving us from ignorance. *International Journal of Science in Society*, 4, 117-122.
- Sugarman, H., Impey, C., Buxner, S., & Antonellis, J. (2011). Astrology beliefs among undergraduate students. *Astronomy Education Review*, 10(1), 010101.
- Swann, I. (1973-1980). Series 4: Planetary Remote Viewing (RV) Files. Ingo Swann papers. Annie Belle Weaver Special Collections, Irvine Sullivan Ingram Library, University of West Georgia.
- Swann, I. (1995). Unpublished Draft, Foreword, *The Agony and the ecstasy of the signs of the zodiac*. Series 6: Manuscripts, Research, and Work Files. Ingo Swann papers. Annie Belle Weaver Special Collections, Irvine Sullivan Ingram Library, University of West Georgia.
- Tarnas, R. (1993). *The passion of the western mind: Understanding the ideas that have shaped our world view*. New York: Ballantine Books.
- Tarnas, R. (2001). Foreword. J. Ferrer, *Revisioning transpersonal theory: A participatory vision of human spirituality*. New York: State University of New York Press.
Retrieved from: <https://cosmosandpsyche.com/essays/>
- Tarnas, R. (2006). *Cosmos and psyche: Intimations of a new world view*. London: Penguin.
- Tarnas, R. (2011). Archetypal principles. In Le Grice, K., & O'Neal, R. (Eds.), *Archai: The Journal of Archetypal Cosmology*. 1(1), pp. 31-43.
- Toulmin, S. (1990). *Cosmopolis: The hidden agenda of modernity*. New York: Free Press.

- Trevarthen, C. (1988). Universal cooperative motives: How infants begin to know language and skills of culture. In G. Jahoda & I. M. Lewis (Eds.), *Acquiring culture: Ethnographic perspectives on cognitive development* (pp. 37–90). London: Croom Helm.
- Trevarthen, C. (2011). What is it like to be a person who knows nothing? Defining the active intersubjective mind of a newborn human being. E. Nagy (Ed.), *Infant and Child Development*, 20(1), 119–135.
- Trevarthen, C.(2012). *Dialogic Formations: Investigations into the Origins and Development of the Dialogical Self*, pp. 3–40. IAP.
- Tully B., Courtois, H., Hoffman, Y., & Pomarède, D. (2014). The Laniakea supercluster of galaxies. *Nature*. 513(7516), 71-87.
- Tymshare (1975). Tymshare Manual - Institute for the Future “Planet-1 User Guide”. SRI B4 F10. Ingo Swann papers. Annie Belle Weaver Special Collections, Irvine Sullivan Ingram Library, University of West Georgia.
- Valley, J. (2003). *The Heart of the Internet*. VA: Hampton Roads.
- Van Rooij, J. J., Brak, M. A., & Commandeur, J. J. (1988). Introversion-extraversion and sun-sign. *The Journal of Psychology*, 122(3), 275-278.
- Venus Orbit. (n.d.). In *Wikipedia*. Retrieved August 20, 2017 from:
[https://en.wikipedia.org/wiki/Venus#/media/File:Venus_geocentric_orbit_curve_simplified_Line_\(pentagram\).svg](https://en.wikipedia.org/wiki/Venus#/media/File:Venus_geocentric_orbit_curve_simplified_Line_(pentagram).svg)
- Von Eye, A., Losel, F., & Mayzer, R. (2003). Is it all written in the stars? A methodological commentary on Sachs' astrology monograph and re-analyses of his data on crime statistics. *Psychology Science*, 45(1), 78-91.
- Vonnegut, K. (1998). *Cat's Cradle*. New York: Dell. (Original work published 1963)

Vonnegut, K. (1982). Fates worse than death. Retrieved from:

<http://lacusveris.com/FatesWorseThanDeath/>

Willis, R. & Curry, P. (2004). *Astrology, science and culture: pulling down the moon*.

Oxford: Berg.

Wilson, T. (1975) Ingo Swann papers. B28 F1. Annie Belle Weaver Special Collections,

Irvine Sullivan Ingram Library, University of West Georgia.

Wunder, E. (2003). Self-attribution, sun-sign traits, and the alleged role of favourableness as

a moderator variable: long-term effect or artefact?. *Personality and Individual*

Differences, 35(8), 1783-1789.

Zelen, M. (1976). Astrology and statistics, a challenge. *The Humanist*, 36, 1, 32-33.