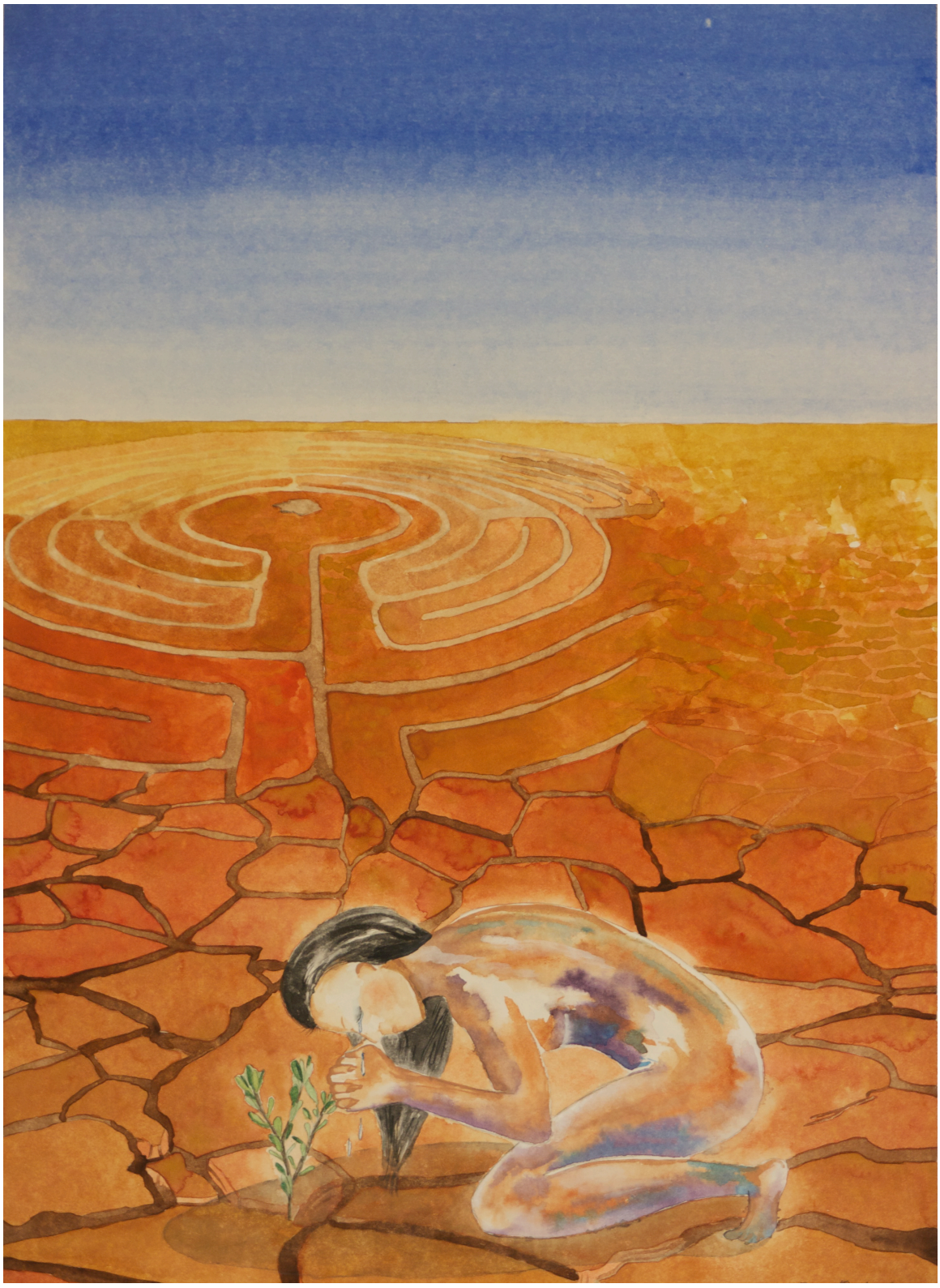
Drought & Hope

by

Becca Tarnas



Becca Tarnas

Archetypal Ecology: Drought in a Rhythmic Cosmos

"In the last part of May the sky grew pale and the clouds that had hung in high puffs for so long in the spring dissipated. The sun flared down on the growing corn day after day until a line of brown spread along the edge of each green bayonet. The clouds appeared, and went away, and in a while they did not try anymore. The weeds grew darker green to protect themselves, and they did not spread any more. The surface of the earth crusted, a thin hard crust, and as the sky became pale, so the earth became pale, pink in the red country and white in the gray country. . . . And as the sharp sun struck day after day, the leaves of the young corn became less stiff and erect; they bent in a curve at first, and then, as the central ribs of strength grew weak, each leaf tilted downward. Then it was June and the sun shone more fiercely. The brown lines on the corn leaves widened and moved in on the central ribs."

– *John Steinbeck,* The Grapes of Wrath[1]

Dry earth, cloudless skies. Waiting, anticipating, counting days, weeks, months. Perhaps years. When will the rain fall? The moisture slowly leaves the soil, plants begin to die. The emotional atmosphere is defined by denial and groundless hope, anxiety and concern, worry and prayer. Dust builds, crops fail. Water—translucent and fluid, so easy to take for granted when in abundance, all one can think about when it is lacking.

What is a drought? Droughts are evasively difficult to define, even by those who study their patterns extensively. Essentially a drought is constituted by a lack of precipitation in a certain area, extended over a significant period of time.[2] Of course, the precipitation levels and length of time rain is absent will all vary from bioregion to bioregion, which is part of what makes a clear definition of drought so evasive. The human experience of drought is a complex interplay of unusual or unexpected natural events, such a lower precipitation, combined with the demands human beings put on

---

[1] John Steinbeck, *The Grapes of Wrath* (New York, NY: Penguin Books, 1992), 3.

[2] Donald A. Wilhite and Margie Buchanan Smith, "Drought As Hazard: Understanding the Natural and Social Context," in *Drought and Water Crises: Science, Technology, and Management Issues*, ed. Donald A. Wilhite (Boca Raton, FL: CRC Press, Taylor & Francis Group, 2005), 5.
"What Is Drought?" National Drought Mitigation Center, 2015, accessed May 11, 2015, http://drought.unl.edu/DroughtBasics/WhatisDrought.aspx.

water resources. Due to a variety of complicated interacting factors, droughts can have widespread and devastating consequences.

The words opening this essay are drawn from John Steinbeck's iconic book *The Grapes of Wrath*, which narrates the story of migrant farming families who had to abandon their fields and homes on the Great Plains when the 1930s Dust Bowl droughts decimated their crops and whipped up blinding dust storms that choked plants and blackened skies. Many factors went into making this one of the worst 20th century droughts in North America, including a lack understanding of the Great Plains ecology, the widespread introduction of mechanized farming, and the crippling economic crash of the Great Depression that began in 1929. The deep-rooted native grasses of the Great Plains had been ploughed by homesteading settlers and overgrazed by their livestock, leaving the unanchored soil tremendously vulnerable to the wind.[3]

When the Dust Bowl droughts hit the Great Plains in three successive waves, in 1934, 1936, and 1939, vast numbers of farmers migrated across the United States to the fertile crescent of Central California to eke out a living harvesting the fruits and vegetables growing in abundance here. California's Central Valley is still the breadbasket—or rather "fruit and vegetable basket"— of the United States, growing the vast majority of fresh produce not only for the country but for international export.[4] "No other state, or even combination of states, can match California's output per acre," the

---

[3] Donald Worster, *Dust Bowl: The Southern Plains in the 1930s* (New York, NY: Oxford University Press, 2004), 4-5.

[4] Brian Palmer, "The C-Free Diet: If We Didn't Have California What Would We Eat?" *Slate*, July 10, 2013, accessed May 12, 2015, http://www.slate.com/articles/health_and_science/explainer/2013/07/california_grows_all_of_our_fruits_and_vegetables_what_would_we_eat_without.html.

journalist Brian Palmer writes.[5] Yet it now seems the cornucopia of agriculture in the U.S. may be facing an insurmountable obstacle.

Now in 2015, California is entering its fourth year of drought, eleven trillion gallons of water shy of relief,[6] with only about a year of surface water left stored in the state's reservoirs.[7] California was able to become the land of plentiful bounty through heavy irrigation, and now as the Sierra Nevada snowpack is a fraction of what it should be, farmers are turning more frequently to pumping groundwater. Groundwater is drawn from underground aquifers, massive geological formations that have held vast amounts of pristine waters for millennia. Some water experts refer to such water as "fossil water" because it will never replenish on any meaningful human timescale. As Christiana Z. Peppard writes in her book *Just Water*,

> Most aquifers take upward of ten thousand years to refill—an extraordinarily long time, considering that just as many years ago, our ancestors were scribbling on cave walls with hard rocks. Many aquifers take much, much longer to refill—on the order of millions of years.[8]

As the drought worsens the state's nonrenewable water sources are being rapidly drained to maintain maladaptive agricultural practices—namely highly irrigated, industrial agriculture in a semi-arid bioregion. Human actions, including continuously increasing greenhouse gas emissions that are inducing anthropogenic climate change, are

---

[5] Palmer, "The C-Free Diet."

[6] Tony Phillips, "Needed: 11 Trillion Gallons to Replenish California Drought," *NASA Science: Science News*, December 16, 2014, accessed February 23, 2015, http://science.nasa.gov/science-news/science-at-nasa/2014/16dec_drought/.

[7] Jay Famiglietti, "California Has About One Year of Water Stored. Will You Ration Now?" *Los Angeles Times*, March 12, 2015, accessed March 23, 2015, http://www.latimes.com/opinion/op-ed/la-oe-famiglietti-drought-california-20150313-story.html.

[8] Christiana Z. Peppard, *Just Water: Theology, Ethics, and the Global Water Crisis* (Maryknoll, NY: Orbis Books, 2014), 26.

exacerbating the consequences of the recent diminishment in rainfall.[9] The lack of precipitation during the Dust Bowl was only part of what made the 1930s droughts so devastating. Another major factor was the methods of mechanized agriculture, which did not take into account the basic ecology of the landscape and stripped the soil of its capability to hold moisture. Today we seem to be having a repetition of history.

Drought is often referred to as "a creeping phenomenon"[10] and "an elusive climate event."[11] Scientifically predicting the onset of a drought cannot be done more than a month or two in advance, because prediction "depends on the ability to forecast two fundamental meteorological surface parameters, precipitation and temperature," according to the National Drought Mitigation Center.[12] The historical record indicates the inherent variability of the climate, making long-term forecasts elusive because, as the Drought Center States:

> . . . anomalies of precipitation and temperature may last from several months to several decades. How long they last depends on air–sea interactions, soil moisture and land surface processes, topography, internal dynamics, and the accumulated influence of dynamically unstable synoptic weather systems at the global scale.[13]

While different bioregions each have their own rhythms of wet and dry spells that repeat with varying degrees of stability, the capacity to determine the length and impact of any given drought remains evasive. As Ivan Ray Tannehill wrote eloquently back in 1947:

---

[9] Benjamin I. Cook, et al. "Unprecedented 21st Century Drought Risk in the American Southwest and Central Plains," *Science Advances* February 12, 2015, accessed May 13, 2015, doi: 10.1126/sciadv.1400082, http://advances.sciencemag.org/content/1/1/e1400082.

[10] H.P. Gillette, "A Creeping Drought Under Way," *Water and Sewage Works*, March 1950: 104-5.

[11] "North American Drought: A Paleo Perspective," NOAA Paleoclimatology Program, November 12, 2003, accessed May 11, 2015, http://www.ncdc.noaa.gov/paleo/drought/drght_story.html.

[12] "Predicting Drought," National Drought Mitigation Center, 2015, accessed May 11, 2015, http://drought.unl.edu/DroughtBasics/PredictingDrought.aspx.

[13] Ibid.

> The first rainless day in a spell of fine weather contributes as much to the drought as the last, but no one knows how serious it will be until the last dry day is gone and the rains have come again. . . we are not sure about it until the crops have withered and died.[14]

How any given drought is defined, and its duration and impact on the land and its human inhabitants—both immediate and lasting—all shape how droughts are perceived.

Three North American droughts stand out as the most severe of the 20th century, according to the National Oceanic and Atmospheric Administration. These are the 1930s Dust Bowl drought, the major 1950s drought in the central United States, and the late 1980s drought covering the West Coast to the Great Plains.[15] Today's drought in the U.S. West may be joining that list. "In the California and Nevada region," recently stated the climatologist Kelly Redmond, "this is among the worst we've seen it in the last 120 years or so."[16] Of course, this statement refers particularly to the region being affected by the current drought, but Redmond's statement is nonetheless significant.

As a life-long California resident I have become increasingly aware of the drought's impacts on my home state. Discussions of water shortage have become commonplace, ranging from wondering if the state's mandatory 25% reductions in water usage are enough,[17] to questioning why the cuts do not apply to the agricultural sector that uses 80% of the state's water,[18] and sitting with the real possibility that this drought may not end and California's climate has fundamentally changed. Another issue has also

---

[14] Ivan Ray Tannehill, *Drought and Its Causes and Effects* (Princeton, NJ: Princeton University Press, 1947), 597.

[15] "20th Century Drought," NOAA Paleoclimatology Program, November 12, 2003, accessed May 11, 2015, http://www.ncdc.noaa.gov/paleo/drought/drght_history.html.

[16] Kelly Redmond, qtd in Alison Vekshin, "Drought Transcends State Lines as U.S. West Turns Ever-More Arid," *Bloomberg Politics*, May 11, 2015, accessed May 11, 2015, http://www.bloomberg.com/politics/articles/2015-05-11/drought-transcends-state-lines-as-u-s-west-turns-ever-more-arid.

[17] "State Water Board Adopts 25 Percent Mandatory Water Conservation Regulation," California Drought, May 5, 2015, accessed May 13, 2015, http://ca.gov/drought/.

[18] Emily Alpert Reyes, "Brown Defends Not Requiring Water Cuts for California Farmers," *Los Angeles Times*, April 5, 2015, accessed May 13, 2015, http://www.latimes.com/local/lanow/la-me-ln-gov-brown-agriculture-water-restrictions-20150405-story.html.

come to the foreground of my attention, one that scientists would certainly not be inclined to look at in relation to drought patterns. Like factors such a temperature and precipitation, this is also a naturally recurring cycle grounded in the rhythms of the natural world, but rather than an ecosystem pattern it is a solar system pattern, a much larger scale than meteorologists take into account.

If we turn our eyes to the cosmos, we can see that currently the planet Saturn and the planet Neptune are at a 90° angle to each other, forming what is called a square aspect. The alignment began in January 2014, when the two planets came within 10° of each other, and will end in October 2017 when they pass out of the same 10° range. If one looks back at an ephemeris to see where these same planets were during the three most prominent North American droughts of the 20th century, an interesting pattern appears: in 1934-38 Saturn was in 180° opposition to Neptune in the sky, the same years as the worst of the Dust Bowl droughts; in 1950-56 Saturn was conjoined with Neptune in the same place on the ecliptic, the same years as the 1950s drought; and in 1987-91 Saturn and Neptune were also in a conjunction, encompassing the years of the late 1980s drought.

What is the significance of such planetary alignments and their correlations to these droughts? As has been argued by Richard Tarnas in *Cosmos and Psyche: Intimations of a New World View*, a significant body of evidence has come forward indicating a profound correlation between the positions of the planets and events unfolding on Earth in human history and world events, individual biography and psychology, and even in natural ecological events. What emerged from this body of evidence was a revival of an ancient practice long-dismissed by the modern paradigm, re-

engaged with new rigor and empiricism. As the Jungian psychologist and professor Keiron Le Grice writes,

> Archetypal astrology, as this new approach been called, is based on an observed correspondence between the planets in the solar system and specific themes, qualities, and impulses associated with a set of universal principles and thematic categories known as planetary archetypes. Each of the planetary bodies, as well as the Sun and the Moon, is associated with a distinct archetypal principle.[19]

The planetary archetypes associated with each planet are expressed in world events in multivalent and multidimensional ways. As Tarnas writes,

> . . . an essential characteristic of this analysis was that it did not predict specific events or personality traits. Rather, it articulated the deeper archetypal dynamics of which events and traits were the concrete expression. This is seemed to do with astonishing precision and subtlety.[20]

While *Cosmos and Psyche* looks at a vast array of cultural, social, artistic, scientific, psychological, and political events in relation to several planetary alignments, for this study I am focusing on one particular phenomenon—namely droughts—in relation to the corresponding planetary alignments. To begin, I am looking at the relationship between droughts and the Saturn-Neptune cycle of alignments, before looking further at certain apparent anomalies to this pattern and from there exploring the more nuanced dynamics unfolding in relation to specific drought events.

As previously mentioned, the droughts of the mid-1930s, early to mid-1950s, and late 1980s all took place under Saturn-Neptune alignments, as is our current drought in the western U.S. today. Why does Saturn-Neptune archetypally correlate with drought? The archetype of Saturn relates to contraction, negation, restriction, lack, and boundaries; it is the principle of time and structure, decay and death, loss and endings. Any archetype

---

[19] Keiron Le Grice, "The Birth of a New Discipline," *Archai: The Journal of Archetypal Cosmology* Volume 1 (Summer 2009): 5.

[20] Richard Tarnas, *Cosmos and Psyche: Intimations of a New World View* (New York, NY: Viking Penguin, 2006), 66.

with which Saturn comes into relationship it will problematize, negate, constrain and create obstacles. The archetype of Neptune, on the other hand, is the principle of fluidity, boundlessness, and interconnectivity, that which unifies and merges, dissolves and dilutes; Neptune is the archetype of oceanic oneness, transcendent spirituality, the heavenly cosmos, image and imagination, illusion and mirage—it is the principle of water itself, both as symbol and physical liquid.

One can see how the combination of archetypal qualities associated with Saturn and Neptune manifest as drought: lack of water, low moisture, negation of water's life-giving properties. To draw some images from the Dust Bowl, Saturn-Neptune came through not only in the absence of precipitation, but in the dry particles of dust that flowed boundless across the land, reducing visibility and even blackening the skies. The Saturnian themes of lack, absence, dryness, reduction, and darkness are present here, combined with the Neptunian qualities of rainwater, boundlessness, clarity of vision and perception, and the image of the celestial sky (all negated, blocked, and obscured by the previously mentioned Saturnian characteristics). Another expression of the Saturn-Neptune alignment that contributed to the Dust Bowl droughts was the lack of understanding of the intricate interconnected dynamics of ecosystem structures that led to the agricultural practice of ploughing the deep-rooted grassed that retained moisture and maintained soil structure. Again, Neptune comes through as the soil moisture and interconnected unity of the ecosystem, while Saturn is present in the structures, retention and maintenance, the anchoring roots, and even the sharp cut of the metal plow. The elusive quality of droughts and the scientific difficulty in defining them also have a

Saturn-Neptune quality, as Saturn relates to difficulty and definition, Neptune to the slippery aspects of evasiveness and illusion.

The Saturn-Neptune opposition came into 15° orb (recognized by archetypal astrologers as the general range when archetypally correlated events occur) in 1934, and was in exact alignment in 1936-7 when the drought was at its worst. The third wave of drought that came in during 1939 was after the Saturn-Neptune opposition had moved past operative alignment—a topic we will explore later in this essay.

An opposition between two planets is the same configuration as a Full Moon, when the Moon is on one side of the Earth and the Sun on the other. The completion of that cycle is the New Moon, when the Sun and the Moon are conjoined in the same place in the sky relative to the Earth. After the Saturn-Neptune opposition of the mid-1930s, when they were in the "Full Moon" alignment, these two planets reached the conclusion of their cycle, or the "New Moon" alignment, in the conjunction of the 1950s. Saturn started to come into 15° orb with Neptune in 1950, right as the drought began in the southwestern states, and was having a major impact on Oklahoma, Kansas, and Nebraska by 1953 when the conjunction was exact. According to the National Oceanic and Atmospheric Administration,

> By 1954, the drought encompassed a ten-state area reaching from the mid-west to the Great Plains, and southward into New Mexico. The area from the Texas panhandle to central and eastern Colorado, western Kansas and central Nebraska experienced severe drought conditions.[21]

While the Saturn-Neptune conjunction went out of orb in 1955, the drought ended when the 1957 spring rains began to pour down on the parched soil. Like in the 1930s, the

---

[21] "20th Century Drought."

effects of the drought persisted beyond the Saturn-Neptune transit under which they commenced—again, a topic we will explore later in the essay.

Now to turn to the third of the major 20th century North American droughts, the 1987-89 drought that severely affected the West Coast and the northern Great Plains. Although the late 1980s drought covered just 36% of the United States, compared to the Dust Bowl's 70%, it was the costliest drought, indeed the costliest natural disaster of any kind to effect the U.S., with damages and losses exceeding approximately $39 billion.[22] As the environmental studies and philosophy professor Dale Jamieson describes,

> Much of the United States spent the summer [of 1988] in the grip of extreme heat and serious drought. Fires raged in Yellowstone National Park, agricultural production declined dramatically, and water levels in the Mississippi River system dropped precariously, resulting in channel closings and ship groundings.[23]

Sure enough, beginning in 1987 Saturn had started to conjoin Neptune again, one full cycle after the 1950s conjunction. Once again the themes of Saturnian lack of Neptunian rains can be seen here, as well as the loss (Saturn) of an idealized, pristine (Neptune) national park, and the grounding (Saturn) of water-going vessels (related to both archetypes as Saturn is the container and Neptune the water) in the river systems. This was the first drought of this magnitude in the U.S. since the 1950s and it took the population by surprise, which is partially why the damage was so great.[24] Interestingly, Saturn and Neptune were joined in a rare triple conjunction by the planet Uranus at this time—archetypally Uranus relates to the unexpected, the sudden and the disruptive,

---

[22] "20th Century Drought."

[23] Dale Jamieson, *Reason in a Dark Time: Why the Struggle Against Climate Change Failed—And What It Means for Our Future* (New York, NY: Oxford University Press, 2014), 31.

[24] "20th Century Drought."

which can be seen in the unanticipated severity and consequences of the late 1980s drought.

What about the intervening Saturn-Neptune opposition of 1970-73 and the following opposition of 2004-07? It happens that in 1972-73 the El Niño Southern Oscillation was particularly strong, causing droughts in multiple locations around the globe.[25] As Jamieson remarks:

> The El Niño of 1972-73 brought worldwide devastation and was followed by other climate anomalies. Drought-related famine killed hundreds of thousands of people in African Sahel and in India. Drought struck other countries as well, including the United States. Crop failures brought the Soviet Union into the world grain market. . . .[26]

The patterning of strong El Niño and La Niña events (they are ranked weak, moderate, and strong) correlates with surprising consistency to two major outer planetary cycles, which we will explore more closely toward the end of this analysis.

The most recent opposition of Saturn and Neptune in 2004-08 manifested in major climate events that carried the Saturn-Neptune archetypal complex, but in many ways expressed the opposite side of the archetypal spectrum from a drought. The major climate events of the 2004-08 were the Indonesian tsunami of December 2004, and Hurricane Katrina in August 2005. Each exhibited strong Saturn-Neptune characteristics, as Tarnas describes,

> death caused by water, the ocean as source of suffering and loss, contamination of water, water-borne and infectious diseases, numberless haunting images of death and sorrow transmitted throughout the world and permeating collective consciousness.[27]

---

[25] Jan Null, "El Niño and La Niña Years and Intensities," Golden Gate Weather Services, updated May 6, 2015, accessed May 11, 2015, http://ggweather.com/enso/oni.htm.
[26] Jamieson, *Reason in a Dark Time*, 25.
[27] Tarnas, *Cosmos and Psyche*, 471.

Like under drought conditions, water is the cause of death, suffering, and loss, but in the case of hurricanes and tsunamis it is the flooding of water, rather than its lack, which brings about the Saturnian devastation. To draw a parallel image, the dust storms of the 1930s Dust Bowl drought looked like a "massive wall of blowing dust that resembled a land-based tsunami."[28]

Even though this Saturn-Neptune opposition was characterized by such destructive watery events, a major drought was occurring in the Amazon rainforest at the same time, beginning in 2005. The Amazon drought was so severe it lasted until 2010, two years after the Saturn-Neptune transit had ended. Like the major North American droughts of the 1930s and 1950s, the Amazon drought extended beyond the Saturn-Neptune alignment under which it started. They all ended under a different alignment of two outer planets, Saturn and *Pluto*. While we have been looking closely at the Saturn-Neptune themes associated with drought, Pluto in relationship with Saturn has a significantly different quality.

> Pluto is associated with the principle of elemental power, depth, and intensity; with that which compels, empowers, and intensifies whatever it touches, sometimes to overwhelming and catastrophic extremes. . . . It is the dark, mysterious, taboo, and often terrifying reality that lurks beneath the surface of things, beneath the ego, societal conventions, and the veneer of civilization, beneath the surface of the Earth, that is periodically unleashed with destructive and transformative force.[29]

When Saturn and Pluto align, the same Saturnian themes of constraint, obstacles, oppression, suffering, and death are present but instead acting upon the powerful intensity of the Pluto archetype described above. Saturn-Pluto alignments are associated with,

---

[28] "The 'Black Sunday' Dust Storm of 14 April 1935," National Weather Service, updated February 12, 2015, accessed May 11, 2015, http://www.srh.noaa.gov/oun/?n=events-19350414.
[29] Tarnas, *Cosmos and Psyche*, 99.

> especially challenging historical periods marked by a pervasive quality of intense *contraction*: eras of international crisis and conflict, empowerment of reactionary forces and totalitarian impulses, organized violence and oppression, all sometimes marked by lasting traumatic effects.[30]

What is the significance of so many of the most devastating droughts of the last century ending during Saturn-Pluto transits? While the drought events themselves reflect the Saturn-*Neptune* themes of extended periods of time without precipitation, the long-term impacts of such meteorological changes can cause tremendous suffering on a mass scale with conditions of food scarcity leading to famine and potentially death, much more reflective of the qualities of Saturn-*Pluto*.

This project has been to research which planetary alignments correlated with the most significant droughts of the last century or so, for which we have the most accurate records and dates. The repeated correlation between major droughts and the Saturn-Neptune cycle certainly has compelling evidence, but anomalies to the pattern must exist. After all, because of the multivalence and indeterminacy of archetypal manifestations, the occurrence of a drought under every single Saturn-Neptune alignment would seem to indicate a fixed rigidity to the archetypal expressions that is not supported by the larger astrological evidence. As Tarnas writes, "I gradually came to recognize that, contrary to its traditional reputation and deployment, such an astrology is not concretely predictive but, rather, *archetypally* predictive."[31] Noticing how the 1930s, 1950s, and 2000s droughts concluded under Saturn-*Pluto* alignments, I decided to look at the correlations with the other major droughts my research had turned up.

---

[30] Tarnas, *Cosmos and Psyche*, 209.
[31] Ibid, 67.

In her book *This Changes Everything*, Naomi Klein draws forward evidence that every major volcanic eruption for which we have accurate records has been followed by debilitating drought around the globe. Looking at her research I recognized an additional overlying correlation: each of these events in which there was a sequence of volcanic eruption, drought, and famine, correlated with a Saturn-Pluto or Saturn-Neptune alignment, and almost always both in succession. What is archetypally significant about the relationship of Saturn-Pluto alignments with volcanic eruptions is that Pluto is the principle of volcanic, eruptive power unleashing from the underworld realm, while Saturn is the problematic and often dire consequences caused by such eruptions.

We can begin by looking at Mount Pinatubo in the Philippines, which erupted June 12, 1991 when the Saturn-Neptune conjunction (which correlated with the devastating late 1980s western U.S. drought) was at 20° orb, the outer range of when archetypally relevant correlations have been observed for conjunctions, while the Saturn-Pluto square was entering 12° orb, right at the penumbral phase when correlations begin to be more frequent for squares (conjunctions and oppositions appear to have a wider orb of influence ranging 15°-20°, while squares have a slightly narrower orb of 10°-15°). Large sections of Africa were already suffering from drought, under the Saturn-Neptune conjunction just ending, and by 1992 when the Saturn-*Pluto* alignment was tightening in orb there was a 20% reduction in precipitation in southern Africa, and a 10-15% reduction in South Asia which had a negative impact on approximately 120 million people.[32]

---

[32] Naomi Klein, *This Changes Everything* (New York, NY: Simon & Schuster, 2014), 272.

Cycling back to the previous quadrature alignment of Saturn and Pluto, the conjunction of 1980-84, Mexico's El Chichón volcano erupted from March to September 1982 as the conjunction was approaching exact alignment. The eruption led to low precipitation and drought, particularly affecting the African continent where 20 nations were already suffering from drought conditions.[33] While there had been a Saturn-Neptune square in from 1978 to late 1980, the African droughts are recorded to have begun in early 1981, right at the tale end of the alignment. The El Chichón eruption seems to have severely exacerbated the drought conditions, giving them a particularly Saturn-*Pluto* quality.

The three years with the lowest global average precipitation in the last half century were after the eruptions of Pinatubo, Chichón, and the 1963 eruption of Mount Agung in Bali.[34] Agung's detonation occurred under the Saturn-*Neptune* square of 1961-64, and also corresponded with low global precipitation and drought. In the U.S. the drought was experienced most strongly in the Northeast, the Midwest, and the Great Plains, and this drought too concluded under the Saturn-Pluto opposition of the mid-1960s.[35] It is interesting to note, however, that Agung did not erupt under a Saturn-Pluto alignment but rather a *Uranus*-Pluto transit. Further research would need to be done to discern the differences in quality and effects of this volcanic eruption compared to those that become active under Saturn-Pluto alignments.

To conclude this particular inquiry we will look at the eruption of two other volcanoes clearly connected with widespread drought: Alaska's Mount Katmai eruption

---

[33] Klein, *This Changes Everything*, 274.
[34] Ibid.
[35] "Why Are We Concerned About Drought?" NOAA Paleoclimatology Program, November 12, 2003, accessed May 11, 2015, http://www.ncdc.noaa.gov/paleo/drought/drght_alleve.html.

in 1912, and Iceland's Laki volcano in 1783. While Katmai did not erupt under Saturn-Pluto, the drought-related famine hit in 1913-14 under a Saturn-Pluto conjunction,[36] killing 125,000 people in western Africa alone.[37] To look further back into history, Laki erupted in Iceland in 1783 under a Saturn-*Neptune* square, which was followed by famine and plague in Egypt, Japan, India, Western and Central Europe under the Saturn-*Pluto* conjunction in the following two years.[38] A more in-depth study than this one could explore the nuances of each of these volcanic eruptions and their related droughts and famines, particularly to see what particular differences may exist if an eruption occurred under Saturn-Neptune versus Saturn-Pluto. Each combination, while having the Saturnian elements in common, manifest quite differently in world events. Yet there seems to be a significant relationship between these two planetary alignments and the unfolding impacts of drought-related events.

As mentioned earlier in this essay, the patterning of strong El Niño and La Niña events—according to records kept since the middle of the 20th century—happen to correlate every time with a Saturn-Neptune or Saturn-Pluto quadrature alignment. In 1957-58, 1965-66, and 1982-83 El Niño coincided with a Saturn Pluto transit, while in 1972-73, 1987-88, and 1997-98 El Niño coincided with a Saturn-Neptune transit. Furthermore, the La Niña climate patterns of 1973-74, 1988-89, and 1999-2000 all aligned with Saturn-Neptune quadrature transits, and in 1975-76 and 2010-11 correlated

---

[36] This Saturn-Pluto conjunction aligned with the beginning of World War I, just as the Saturn-Pluto square that concluded the 1930s droughts aligned with the beginning of World War II, and the Saturn-Pluto opposition of the mid-1960s that concluded the early 1960s droughts aligned with the Vietnam War.

[37] Klein, *This Changes Everything*, 274.

[38] Ibid, 273.

with Saturn-Pluto.[39] The pattern is only present for the strong oscillations, however, because the moderate and weak ones are too frequent to appear to have astrological significance. The effects of each of these La Niña and El Niño events, and whether they had a more Neptunian or Plutonic impact, would be interesting to look into for further research.

I would like to look at one final archetypally correlated pattern before concluding this essay, which relates to why the Dust Bowl droughts in the 1930s were so devastating, not only ecologically but economically. As mentioned at the beginning of this essay, the Dust Bowl followed directly on the heels of the Great Depression, which greatly exacerbated the impact caused by the droughts. The Depression played out under a rare *T-square* configuration of Saturn, Uranus, and Pluto that lasted from 1929 to 1933.[40] A configuration of these three planets correlates with the collapse and breakdown of old structures, often unleashing powerful forces of destruction and transformation. As Tarnas writes, "Entrenched assumptions and expectations confront the unpredictable and the disruptive. . . . Such periods have generally been marked by critical events and cultural phenomena that both climax and catalyze longer-term processes."[41] The instability and social collapse that followed the Depression left farmers far more economically vulnerable when the Dust Bowl struck.

The next time such a T-square alignment of Saturn, Uranus, and Pluto came into the sky was in 2008-11, lining up exactly with the economic collapse of the Great Recession. One can see the clear diachronic patterning in the breakdown of social and

---

[39] Null, "El Niño and La Niña Years and Intensities."

[40] A T-square consists of a 180° opposition and two 90° squares.

[41] Tarnas, *Cosmos and Psyche*, 479.

institutional structures, unleashing powerful reactionary forces of revolution and rebellion worldwide—from Occupy Wall Street, to the Arab Spring, to the Black Lives Matter movements and many others still playing out on the world stage under the continuing Uranus-Pluto square that will last till the end of this decade.

Not only did the 2008-11 Saturn, Uranus, Pluto T-square line up with the Recession but—to look at another pattern we have been studying—the volcano Eyjafjallajökull erupted in Iceland in April and May 2010, sending vast amounts of ash and particulates into the atmosphere and grounding aircraft for days.[42] While Klein did not use Eyjafjallajökull as an example of a volcanic eruption followed by drought, I noticed that major droughts occurred worldwide following the eruption, still under the Saturn-Uranus-Pluto alignment: beginning in 2010-11 droughts began in the U.S., Mexico, China, East Africa, the Sahel, Australia, and the South Pacific island Tuvalu. Indeed, because so many droughts are occurring worldwide, and because of the difficulty in clearly defining drought and predicting its conclusion, greater hindsight may be needed to determine the duration and impact of these droughts that opened the current decade. What I particularly want to draw attention to is the diachronic patterning of the Saturn-Uranus-Pluto T-square followed by a Saturn-Neptune transit correlated with an economic crash and major droughts—which happened both in the 1930s and is unfolding before us today.

To fill in the picture further, I looked back to the T-square of Saturn, Uranus, and Pluto just prior to the 1930s T-square, that occurred in the mid-1870s. In North China the worst drought over the past three hundred years was unfolding beginning in 1876 right as

---

[42] Sue Loughlin, "Eyjafjallajökull Eruption, Iceland," British Geological Survey, updated August 9, 2010, accessed May 13, 2015, http://www.bgs.ac.uk/research/volcanoes/icelandic_ash.html.

Saturn, Uranus, and Pluto were not only in a T-square configuration, but as Jupiter aligned to form a Grand Cross[43] (Saturn opposite Uranus and Jupiter opposite Pluto, respectively) greatly amplifying and magnifying the energies. The drought led to one of the worst famines in world history, leading to the deaths of between 9 and 14 million people.[44] The haunting depictions of the famine, of adults and children alike trying to survive off grass and tree bark,[45] and allegedly at times resorting to human flesh,[46] express the most shadowy aspects of the Saturn-Uranus-Pluto alignment—societal collapse, mass suffering and death, and even the reversion to the Plutonic barbarity of cannibalism to stay alive.

Today, the drought does not exist in the western U.S. only. Globally we are entering into a fresh water crisis for which we, as of yet, have no viable solutions in place. Peppard gives a concise definition of what the global fresh water crisis is:

> Fresh water is essential for every human being, society, and ecosystem. There is no substitute for fresh water. But it represents less than 2.5 percent of all available water on earth. Our current rates and types of fresh water use are unsustainable, even while demand for fresh water continues to rise. The causes of global fresh water scarcity are complex but can be traced to increased demand for fresh water, coupled with unsustainable rates of extraction and consumption of fresh water (especially from nonrenewable groundwater sources such as deep aquifers).[47]

The current Saturn-Neptune square is bringing such issues as the global water crisis and the impacts of sustained drought to the forefront of the collective consciousness. The

---

[43] A Grand Cross consists of two 180° oppositions and four 90° squares between them, creating a cross with the Earth in the middle.

[44] Chris Bramall, *Chinese Economic Development* (New York, NY: Routledge, 2009), 139.

[45] Committee of the China Famine Relief Fund, *The Great Famine* (Shanghai, China: American Presbyterian Mission Press, 1879), 71.

[46] China Famine Relief Fund, *The Great Famine*, 66.

[47] Peppard, *Just Water*, 21.

solutions required to address such issues are complex and diverse. Peppard points out that we do not have a global water crisis, but rather cris*es* plural:

> . . . while there is a universal need for fresh water, there is no such thing as a universal solution to fresh water scarcity. The water situation facing the Sahara desert or the Tibetan plateau is simply not the same as that in Brazil or Seattle. The shape of human or ecosystem need depends very much on the particular context, and responses to fresh water scarcity will be appropriate only insofar as they take this into account. Therefore, it is more accurate to speak of fresh water crises in the plural than of a singular fresh water crisis.[48]

Peppard's book, *Just Water*, was published in 2014 during the first year of the current Saturn-Neptune square. One can hear the archetypal themes in her language, the Saturnian need, scarcity, problems, and crises in the unifying, universal Neptunian realm of water.

Saturn-Neptune alignments bring such issues as the universal need for water and its impending scarcity to the forefront, yet they are also time periods that offer the opportunity to address such issues in an archetypally relevant way. Major gains were made under previous Saturn-Neptune alignments in the realm of protecting clean air and water sources: the U.S. Clean Air Act was passed 1963 under Saturn-square-Neptune, and the Clean Water Act in 1972 under the following Saturn-Neptune conjunction. Under the same alignment the Marine Mammal Protection Act was also passed in 1972, and the Safe Drinking Water Act in 1974; in Canada the Water Act was passed in 1970 and Clean Air Act in 1971.[49] Measures could be passed today that similarly address the need for universal access to clean fresh water.

The Saturn-Neptune archetypal complex has many gifts as well as challenges, both for those born with the alignment in their natal charts and for the collective when the

---

[48] Peppard, *Just Water*, 35.
[49] Klein, *This Changes Everything*, 202.

transit is in the sky as it is today. Saturn-Neptune brings the ability to imagine practical solutions to concrete problems, to build a bridge between one's spiritual ideals and the real challenges facing the human community, to bring, as Tarnas writes,

> . . . spiritual values (Neptune) into practical expression and enduring embodiment (Saturn) both within and against the resistances of concrete social and political structures (also Saturn), through hard work and disciplined pragmatic organization (also Saturn.)[50]

The gifts of Saturn-Neptune can become the medicine to its challenges, providing one with the ability to see through the denial and delusions related to the current ecological crises, and to pragmatically envision a more universally just world. "In its perhaps most admirable form," Tarnas writes, "the Saturn-Neptune complex appears to be associated with the courage to face a hard and often tragic reality without illusion and still remain true to the ideals and dreams of a better world."[51] By recognizing both the shadow and gifts of our archetypally patterned past, perhaps now we can learn from the rhythms of the cosmos and change the course of the stream of the future—and making sure there is still water flowing in that stream as well.

Works Cited

Bramall, Chris. *Chinese Economic Development*. New York, NY: Routledge, 2009.

California Drought. "State Water Board Adopts 25 Percent Mandatory Water Conservation Regulation." May 5, 2015. Accessed May 13, 2015. http://ca.gov/drought/.

Committee of the China Famine Relief Fund. *The Great Famine*. Shanghai, China: American Presbyterian Mission Press, 1879.

---

[50] Richard Tarnas, "The Ideal and the Real," *Archai: The Journal of Archetypal Cosmology* Volume 1 (Summer 2009): 186.
[51] Tarnas, *Cosmos and Psyche*, 477.

Cook, Benjamin I., Toby R. Ault and Jason E. Sperdon. "Unprecedented 21st Century Drought Risk in the American Southwest and Central Plains." *Science Advances*, February 12, 2015. Accessed May 13, 2015. doi: 10.1126/sciadv.1400082. http://advances.sciencemag.org/content/1/1/e1400082.

Famiglietti, James. "California Has About One Year of Water Stored. Will You Ration Now?" *Los Angeles Times*, March 12, 2015. Accessed March 23, 2015. http://www.latimes.com/opinion/op-ed/la-oe-famiglietti-drought-california-20150313-story.html.

Gillette, H.P. "A Creeping Drought Under Way," *Water and Sewage Works*, March 1950.

Jamieson, Dale. *Reason in a Dark Time: Why the Struggle Against Climate Change Failed—And What It Means for Our Future.* New York, NY: Oxford University Press, 2014.

Klein, Naomi. *This Changes Everything.* New York, NY: Simon & Schuster, 2014.

Le Grice, Keiron. "The Birth of a New Discipline." *Archai: The Journal of Archetypal Cosmology* Volume 1 (Summer 2009): 3-29.

Loughlin, Sue. "Eyjafjallajökull Eruption, Iceland." *British Geological Survey*. Updated August 9, 2010. Accessed May 13, 2015. http://www.bgs.ac.uk/research/volcanoes/icelandic_ash.html.

National Drought Mitigation Center. "Predicting Drought." 2015. Accessed May 11, 2015. http://drought.unl.edu/DroughtBasics/PredictingDrought.aspx.

National Drought Mitigation Center. "What Is Drought?" 2015. Accessed May 11, 2015. http://drought.unl.edu/DroughtBasics/WhatisDrought.aspx.

National Weather Service. "The 'Black Sunday' Dust Storm of 14 April 1935." Updated February 12, 2015. Accessed May 11, 2015. http://www.srh.noaa.gov/oun/?n=events-19350414.

NOAA Paleoclimatology Program. "20th Century Drought." November 12, 2003. Accessed May 11, 2015. http://www.ncdc.noaa.gov/paleo/drought/drght_history.html.

NOAA Paleoclimatology Program. "North American Drought: A Paleo Perspective." November 12, 2003. Accessed May 11, 2015. http://www.ncdc.noaa.gov/paleo/drought/drght_story.html.

NOAA Paleoclimatology Program. "Why Are We Concerned About Drought?" November 12, 2003. Accessed May 11, 2015. http://www.ncdc.noaa.gov/paleo/drought/drght_alleve.html.

Null, Jan. "El Niño and La Niña Years and Intensities." *Golden Gate Weather Services*. Updated May 6, 2015. Accessed May 11, 2015. http://ggweather.com/enso/oni.htm.

Palmer, Brian. "The C-Free Diet: If We Didn't Have California What Would We Eat?" *Slate*, July 10, 2013. Accessed May 12, 2015. http://www.slate.com/articles/health_and_science/explainer/2013/07/california_grows_all_of_our_fruits_and_vegetables_what_would_we_eat_without.html.

Peppard, Christiana Z. *Just Water: Theology, Ethics, and the Global Water Crisis*. Maryknoll, NY: Orbis Books, 2014.

Phillips, Tony. "Needed: 11 Trillion Gallons to Replenish California Drought." *NASA Science: Science News*, December 16, 2014. Accessed February 23, 2015. http://science.nasa.gov/science-news/science-at-nasa/2014/16dec_drought/.

Reyes, Emily Alpert. "Brown Defends Not Requiring Water Cuts for California Farmers." *Los Angeles Times*, April 5, 2015. Accessed May 13, 2015. http://www.latimes.com/local/lanow/la-me-ln-gov-brown-agriculture-water-restrictions-20150405-story.html.

Steinbeck, John. *The Grapes of Wrath*. New York, NY: Penguin Books, 1992.

Tannehill, Ivan Ray. *Drought and Its Causes and Effects*. Princeton, NJ: Princeton University Press, 1947.

Tarnas, Richard. *Cosmos and Psyche: Intimations of a New World View*. New York, NY: Viking Penguin, 2006.

Tarnas, Richard. "The Ideal and the Real." *Archai: The Journal of Archetypal Cosmology* Volume 1 (Summer 2009): 175-99.

Vekshin, Alison. "Drought Transcends State Lines as U.S. West Turns Ever-More Arid." *Bloomberg Politics*, May 11, 2015. Accessed May 11, 2015. http://www.bloomberg.com/politics/articles/2015-05-11/drought-transcends-state-lines-as-u-s-west-turns-ever-more-arid.

Wilhite, Donald A. and Margie Buchanan Smith. "Drought As Hazard: Understanding the Natural and Social Context." In *Drought and Water Crises: Science, Technology, and Management Issues*. Edited by Donald A. Wilhite. Boca Raton, FL: CRC Press, Taylor & Francis Group, 2005.

Worster, Donald. *Dust Bowl: The Southern Plains in the 1930s*. New York, NY: Oxford University Press, 2004.