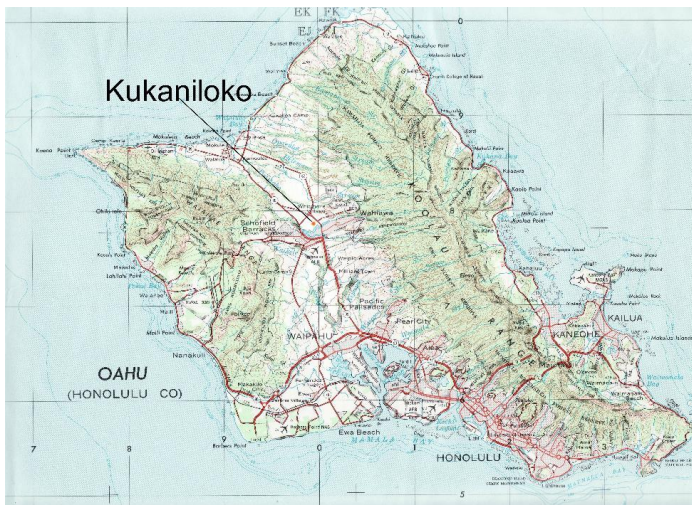


MARTHA H. NOYES

From Kūkaniloko: the Celestial Rulers of Space and Time

Introduction

Kūkaniloko is the piko, the navel and center both geographically and culturally, of the island of O‘ahu in the Hawaiian Islands. It is also known as one of two royal birthing sites in the Hawaiian Islands (the other is Holoholokū in Wailua on the east side of Kaua‘i). The state’s archaeologists place the founding of Kūkaniloko between 1100 AD to 1400 AD. The kahu of the site puts the founding at 1060 AD. During the range of the presumed founding dates O‘ahu was associated with Kaua‘i and Ni‘ihau as the Northern Kingdom of the Hawaiian Islands, a kingdom the principal deity of which was Kāne.



USGS (United States Geographical Service) map of O‘ahu

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The geographical centrality of Kūkaniloko is its being nine miles west of the Ko'olau Mountain Range and seven miles east of the Wai'anae Mountain Range and nearly equidistant from the ocean in the north and the ocean in the south. The most visible astronomical form of Kāne is the sun, and Kāne is also much associated with both cosmogony and hōkū (stars, asterisms, constellations, and planets). The mountain ranges provide mountains and hills and declivities that were named for the rise in the east and set in the west of stars and of the sun.

This paper addresses the precontact recognition of celestial objects as creators and rulers of space and time from the point of view of Kūkaniloko.

Spacetime – the wā

The term spacetime is usually attributed to Einstein, although Hermann Minkowski, one of Einstein's teachers, may have coined the term before Einstein did. Minkowski also showed that Einstein's special theory of relativity could be understood through geometry as a four-dimensional spacetime. Four dimensional space-time combines three dimensions of space with time to create the four dimensions.

The Hawaiian word for space is also the word for time – *wā*. *Wā* is not only space and time but is also the interval between places in space and moments in time. *Wā* is thus spacetime in a single uncompound word. It is already four-dimensional, but it has an additional quality. *Wā* as interval between moments in time and places in space and points in spacetime is not empty; it is a connection, a connecting ether, tissue, whatever one wishes to call it. Thus the *wā* has an additional quality, the connection between the past, present, and future.¹

The present is the nexus, the *piko*, that centers and mediates past and future. The terrestrial nexus and *piko* of O'ahu is Kūkaniloko, which centers and mediates complementary, or if you prefer opposites that can create unity,

¹ See the Pukui and Elbert Hawaiian Dictionary, Honolulu: University of Hawaii Press, 1986, also online at <http://wehewehe.org>.

celestial objects and events that structure time and space. One element of that structure is east-west directionality. Directionality is a component the structure of space. East, of course, is where stars and the sun rise, and west is where stars and the sun set. Hawaiian worldview understands the west of an island to be the front of the island and the east to be the back.

The west, the front of the island, looks into the past, to origins and creation and the realm of ancestors. The east looks into the future, to what is becoming and will become, and to descendants. The center holds the west and east, the past and the future, together in the present. Neither the past nor the future are absent in the present; they coexist in and with the present. That coexistence is evident in Hawaiian epistemology.²

This is represented in the astronomy. The cyclical nature of astronomy, the stars that rise and set twice each year, once with or just before sunrise and once with the sunset or just after the sunset every year, the planets that meet one another in conjunctions at irregular but predictable intervals, the sun's annual travels and its annual relationships with stars and periodic associations with planets are the foundations of precontact space-time.

The principal actors in precontact space-time are male-female pairs, particularly Wākea and Papa, Antares and Aldebaran, and Jupiter and Venus. Each pair participates in the structure of space and time and in the foundation-creation of spacetime. Each pair are rulers space and time.

There was, for those who accept that Io and Kolekole were known in precontact Hawai'i, a sort of Big Bang. Io resided in Kolekole, Te Kore and Korekore in Maori, where he simply was. He was inactive, the pith or essence, the potentiality, until he self-activated and became the parentless all-parent of everything that came after – the beginning of the beginning, the Polynesian Big Bang. The Polynesian Big Bang continues in the

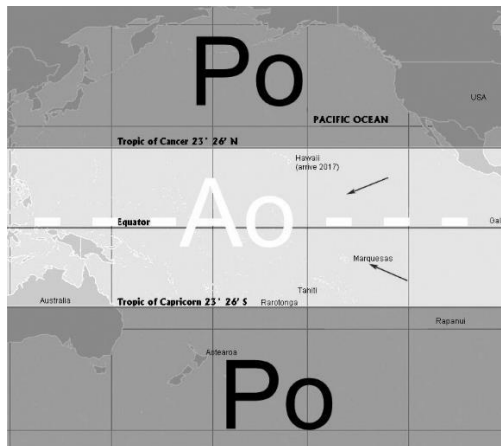
² Manulani Meyer, *Ho'oulu: Our Time of Becoming*, Honolulu: Ai Pohaku Press, 2004.

present as does Western science. As a Maori *tupuna*, elder, said of Korekore, “it is the never-ending beginning.”³

Pō and Ao

The eras of *Pō*, of darkness during which increasingly complex forms appeared, in the absence of light, emanated from Io in Korekore. For those who prefer not to address the knowledge of Io in precontact Hawai‘i, we can look to *Pō* as the beginning. The eras of *Pō* culminated in the advent of ‘*īlio* (dogs) and ‘*olohe* (dog-men). Dogs and dog-men introduce the era of *ao*, of light and the sun and humankind. That makes dogs liminal creatures, at threshold between *pō* and *ao*.

But *Pō* did not cease to exist when *ao* began. It remains in the present as the terrestrial realm bounded by the limits of the sun’s, of Kāne’s, annual travels. The Tropics, the region between 23.5° north of the equator and 23.5° south of the equator is the terrestrial realm of *ao*, of light, and the regions north and south of the Tropics are the terrestrial realm of *pō*.



Map from Wikimedia commons, ao and pō designations by author.

³ T. P. Tawhai, 2002, Chapter 9: Maori Religion," in *The World's Religions: The Study of Religion, Traditional and New Religion*, edited by Peter Clarke and Stewart Sutherland, London: Routledge. 96-105, pp 99-100.

Terrestrial Ao and Pō

Pō has other meanings. Night is *pō*. So, too, is the realm of ancestors, the deceased, potentiality, spirit, mystery, the unknown, and the not yet born. Thus *pō* is with us in the present. *Ao*, too, has other meanings. It means realm, the Earth, world, and enlightenment. As *a'o* it means learning, counsel, teach, and teachings.

Pō and *ao* have cosmogonic and structural functions. Cosmogonically they are the two eras of development and evolution, first of non-human forms, and then of humankind and human culture. In the structure of daily life *pō* is night, *ao* is day, which together form the twenty-four hour day, whether you measure from sunset to sunset, sunrise to sunrise, or midnight to midnight. *Pō* is also the realm of existence before life and the realm of existence after life. *Ao* is the realm in which we are alive, the realm of the living. These last realms may not seem to us to be structural, but in a culture in which the past and ancestors remain in the present and in which death provides an entrance to the realm of spirit and ancestors and birth is the exit from *pō* and entrance into *ao*, these realms are a part of the structure of time and space.

The celestial pairs

The pairs of celestial objects are male-female pairs. They are complementary pairs, and their unions are productive. That is the nature of complementary relationships, or if you prefer of duality and the union of opposites.⁴

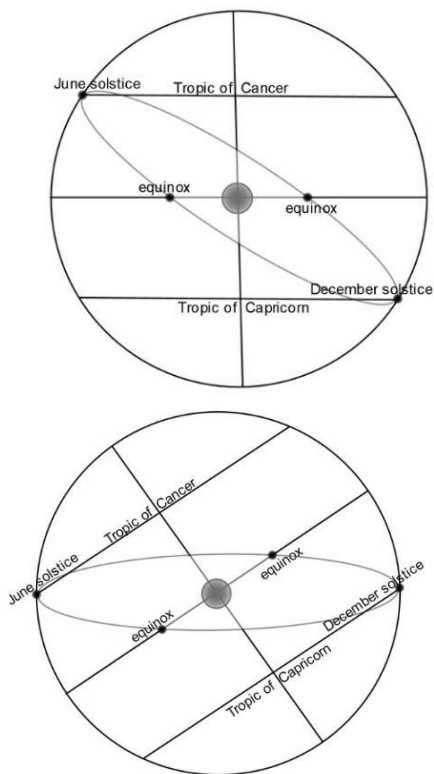
It is easy to recognize the complementarity of Wākea (Sky Father) and Papa (Earth Mother). They represent the productive union of earth and sky. Earth without sky is unable to produce; sky without earth is unable to produce. The relationship between sky and earth produces new life. Sun shines, rain falls,

⁴ F. Allan Hanson and Louise Hansen, *Counterpoint in Maori Culture*, London: Routledge and Kegan Paul, 1983, p. 29.

earth warms, water feeds – and thus plants and animals and people grow.

The celestial equator is the path to the piko of Wākea. The literal celestial piko of Wākea is the star Mintaka in the Belt of Orion, which sits almost on the celestial equator. The name of Mintaka is Kaawili – meaning the rolling (*kaa*) braiding/twisting (*wili*), the (*ka*) coiling or spiral (*awili*), and the management/rulership (*ka'a*) of the spiral/coil which is time and space. Coiling and spiraling refer to the braiding or interrelationship of time and times – of the past, present, and future – and their cyclical nature. This is generally understood in the West as literally cyclical, but the coiling and spiraling is not literally cyclical. The coiling/spiraling means that although cycles repeat they do not repeat in exactly the same way year after year. Coils/spirals move cycles up (present and future) and down (present and past) in space and time and thus in the different conditions present in each cycle.

Twice a year the celestial equator intersects the ecliptic – the path of the sun, moon, and planets. Those intersections are the equinoxes, one in March and one in September. Twice each year the ecliptic reaches its limits, its boundaries. The sun travels to the limits of the ecliptic but no farther. The northern limit is the Tropic of Cancer, at 23.5° north of the equator, and the southern limit is the Tropic of Capricorn, at 23.5° south of the equator. The ecliptic moves from the Tropic of Cancer to the Tropic of Capricorn and back every year. When the sun reaches the Tropic of Cancer it is the June solstice. When the sun reaches the Tropic of Capricorn it is the December solstice.



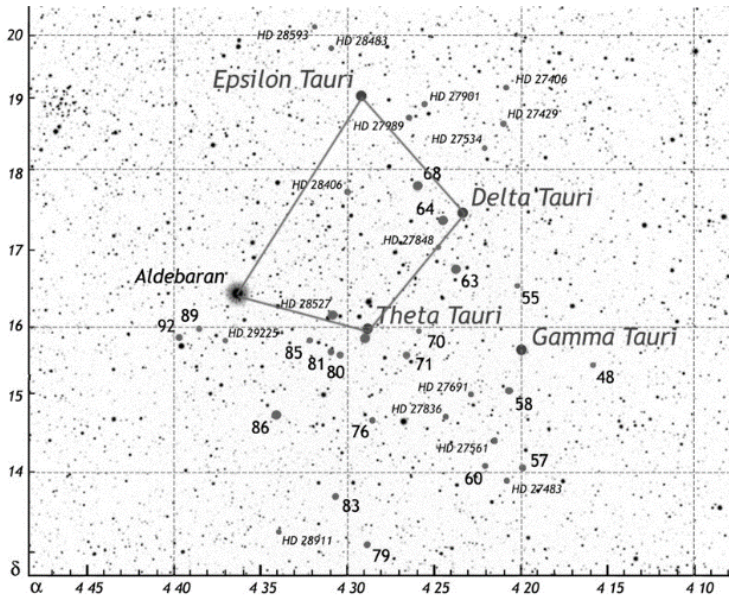
Top: if the earth's N and S were at 90° to celestial horizontal; Bottom: the earth at the 23.5° angle it actually is from horizontal. Author's drawings

Thus the celestial equator and the ecliptic and the two Tropics are elements of the structure of space and time. Particular pairs of celestial objects have principal roles in this structure.

The male celestial objects Antares and Jupiter share the name Kahuaokalani – the foundation of the sky/the foundation/source of high chiefs. *Hua* of *kahua* has generative meanings – testicles, seed, ovum, egg. This is a primary quality

of the productivity of male-female union. It is not, though, the only production of such unions.

Aldebaran is the bright red star in the Hawaiian constellation Hinaieleele which the star lists equate to the constellation the West knows as Taurus. Taurus, a bull, is not a Hawaiian constellation. There were no bulls or other bovines in Oceania. A more likely constellation is Kete, the Rapa Nui constellation made up of Aldebaran and three other members of the Western asterism called the Hyades. Kete in Hawaiian is *'eke*, and both words mean container, basket. *Hina'i* also means basket and container, a much more likely fit than a bovine bull. A female basket/container is, among other things, a womb. *'Ele* is embryo. It also means dark or black, which in the case of an embryo refers to the *pō* of the womb, from which an infant will in time emerge at birth into the *ao* realm, the world of the living.



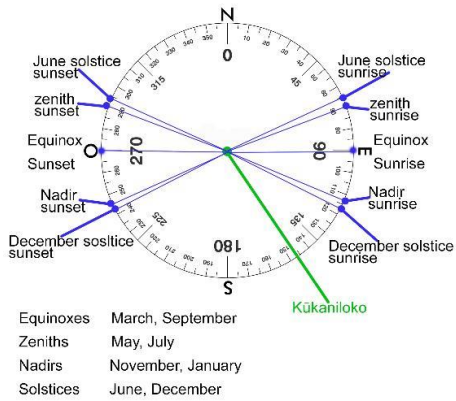
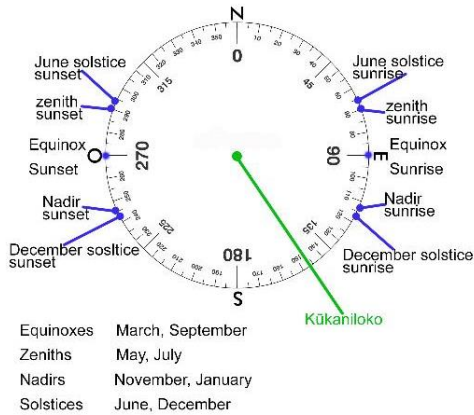
The stars of Kete, map from Wikipedia Commons, Creative Commons. Attribution, lines connecting stars of Kete by author

One of Aldebaran's names is Haumea. Haumea is the goddess of childbirth, and when Papa divorced Wākea she took or retook the name Haumea. Another of her names is Oma. *Oma* has multiple meanings. It is an oven – another metaphor for the womb. It is a chief who assists as a partner of another chief. That does not exhaust the meanings of *oma*, but we turn for a bit to her celestial partner, Antares.

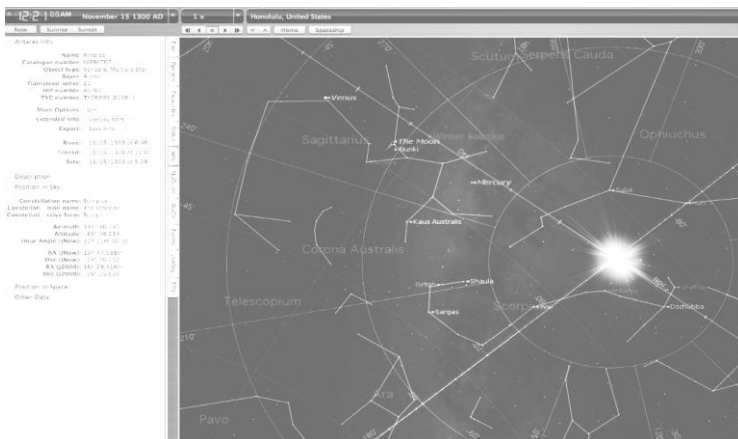
Antares is the bright red star in the constellation the West knows as Scorpius, and which Hawai'i knows as Manaiakalani, the magical hook of Maui. One of the names for Antares is Ikuwa – the supreme lord of space-time. A name for Aldebaran is Keoma-aiku – the chief who rules with the supreme lord of spacetime. Structurally, one way Antares and Aldebaran rule time and space is through their relationship with the sun – Kāne.

Solar zeniths and nadirs

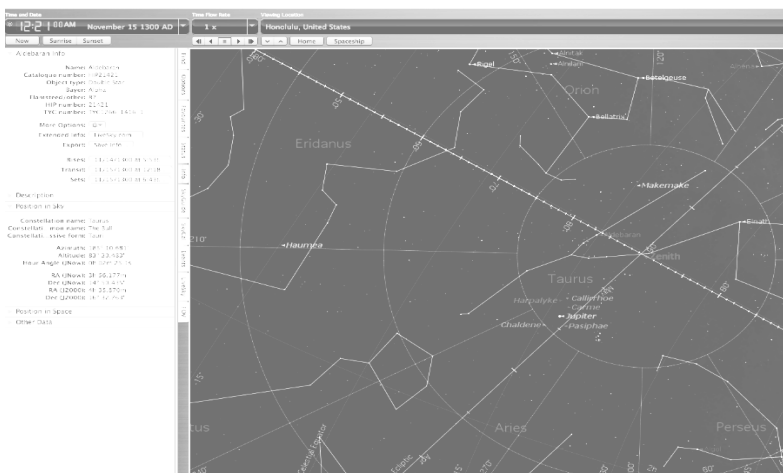
The sun has eight major sun stations in the Tropics, and only in the Tropics. There are the two solstices and the two equinoxes which every place in the world experience. But in the Tropics there are also two solar zeniths, when at approximately noon the sun is 90° above you, and two solar nadirs, when at approximately midnight the sun is 90° below you.



Author's drawings over copyright free 360° compass



Antares and the sun at the November solar nadir

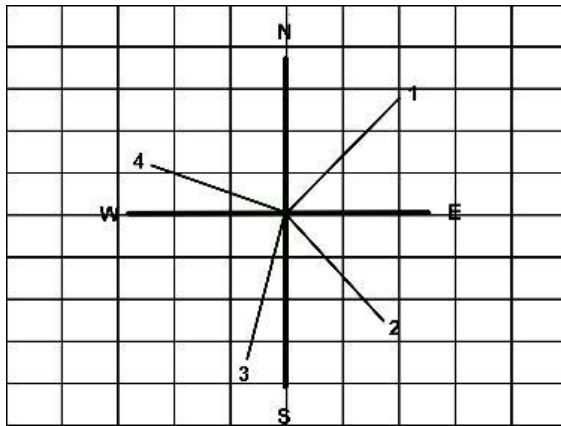


Aldebaran at the zenith at the time of the solar nadir

The sun is with Aldebaran some minutes after noon for the May solar zenith. (The exact dates and times of the zeniths and nadirs depend on one's latitude within the Tropics.) months later the sun is with Antares some minutes after midnight for the November solar nadir. At the same moment that the sun

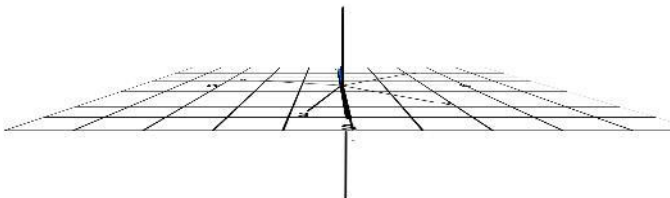
and Antares are together 90° below one's place in the Tropics, Aldebaran is at the celestial zenith, 90° above one's place on the earth. This is one quality of the two stars as a complementary pair, a pair of opposites whose union produces something. In this case the product is the up-down/above-below axis.

North-south and east-west are also axes, and they intersect in an two-dimensional cross-shape.



Author's drawing

The addition of the Aldebaran-Antares up/down above/below axis creates three dimensions.



Author's drawing

Aldebaran and Antares

More than that, Aldebaran and Antares are principal builders of the celestial house, the metaphoric *hale* (house) that structures space and time. That structural function is apparent in the names of Aldebaran and Antares and in the names of their landscape markers. Many of these names also show their function as rulers of space and time.

Antares

The tables below examine the names for Antares.

Kukulukulu

Kū	To rule, reign	Rulership
	To remain, endure, exist	Continuity, perpetuity
Kulu	Time	Time
	Timber used in houses	Structure
Kūkulu	To build a house	Structure
	Pillar, post	Element of structure
	To establish, organize, et up	Creation, foundation
Kulukulu	To tie, tether	How parts are secured together, structure
	To multiply, become numerous	Cosmogony, genealogy

Ikuwa

I	Supreme, great	Status, rulership
Kū	Rule, reign	Status, rulership
Wā	Time, space, the intervals between	Structure

Kao

Kao	Mediate/mediator, intercede/ intercessor, peacemaking/peacemaker	Up-down axis as center – structure
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Ana Mua – Tahiti

Ana	Pillar/post	Structure
Mua	First, in front	Structure

Among the landscape markers for Antares from the point of view of Kūkaniloko are:

Halekou	House of kou wood As Halekōū House of male potency	The celestial house House of looking in all directions The house representing the male half of a productive pair
Kahanalii	The chief's place (house) The chief's work/responsibilities	Who resides in the celestial hale Structure and rule of space/time
Hapapa	Part/half of an enclosure Breath (life) of the foundation-earth (Papa)	Half/part of a solar year, half/part of a house - structure The relationship between sky and earth and the re-warming of the earth starting with the December solstice; the four foundations – structure

	Hawk-catching stick	The stick catches the hawk, a symbol of the sun, and holds the hawk until the bird-catcher arrives – the sun (sol) stands still (stice) for 2-3 days at each solstice – structure and time
Kaupakuhale	Roof beam	House structure; figuratively the greatest

Alderbaran

Aldebaran is the Pillar/Post Behind/In Back.

Ana Muri – Tahiti

Ana	Pillar/post	Structure
Muri	Behind/in back	Structure

Oma

Oma	High officer of a chief	Rulership
'Oma	Oven	Womb; the heat at the May zenith – femaleness, cosmogony; structure
	small adze/axe	structure
	space between	small adze/axe – zenith
	opposing armies where	– structure; war –
	sacrifices were offered;	cosmogony; sacrifice –
	first man killed in war	cosmogony

Lilioma

Oma	High officer of a chief	Oma repeated
'Oma	Oven; small adze or axe; space between opposing armies where sacrifices were offered; first man killed in war	'Oma repeated
Lili	Jealousy, anger;	Cosmogony – the story of Papa returning to Wākea because of jealousy of his new relationship;
	Blasted, withered, as fruit	The eventual “withering” of Haumea ⁵

Muakeoma

Mū	Gather together, of crowds of people; public executioner, the one who procured victims for sacrifice; A name for the kōnane game (Kōnane – a game resembling checkers; bright moonlight	Sacrifice – an incident in cosmogony, and a practice with relationship to the calendar ⁶ Symbolizing the females Hina/Mahina and Papa, Haumea, and La'ila'i
Mua	In front, first; leader; senior branch of a family	Status – rulership
Ke	The	
Oma	High officer of a chief	

⁵ Martha Beckwith, *The Kumulipo*, Honolulu: University of Hawaii Press, 1951, pp. 116-117.

⁶ For example, sacrifices were not conducted during the Makahiki period, now from October to March, formerly a shorter period.

'Oma	Oven; small adze/axe; space between opposing armies where sacrifices were offered; first man killed in war	The meanings of oma and 'oma
Hulikahikeoma		
Huli	To turn, reverse	Aldebaran crossing the zenith
	Section of a place or a house	Structure (house)
Kahi	To cut longitudinally One, only one; companion, wife	The cut = November nadir Aldebaran is the only one who does this; she is companion/wife of Antares and Wākea
	Place, location	Where it takes place (the November solar nadir)
Ke	The	
Oma	See Oma	
Keoma-aiku		
Ke	The	
Oma	See Oma above	
'Ai	To reign, to rule	Rulership
Kū	To rise, to anchor; to rule, reign; to remain, endure, exist; suitable, proper	Rulership; structure
Iku	Officer, as in a society (Pukui and Elbert); highest, head of all (N. B. Emerson)	Rulership

Kao- Maaiku

Kao	Mediate/mediator, intercede/ intercessor, peacemaking/peacemaker	Up-down axis as center and mediator – structure
Ma	By means of/ through	
Maa	To tie (to)	House joinery – structure
	Knowing thoroughly, accustomed to	Relationship with Antares - structure
Iku	Lord, highest ruler	Rulership
Aiku	Ruler (ai – rule; ku – rule) and Iku	Rulership

Oma has in its meanings the first warrior killed in battle, the place where that warrior was offered in sacrifice, and possibly also the oven in which the sacrifice was burned, all of which refer to an episode in cosmogony. Wākea was Haumea’s husband (after he was Papa’s husband, but Papa and Haumea are often interchangeable).⁷ The O’ahu chief Kumuhonua captured Wākea and tied him to an ‘ulu (breadfruit) tree. Haumea *honied* (greeted him nose to nose) him and in doing so entered herself and Wākea into the ‘ulu tree, thus saving Wākea. Haumea then went to war against Kumuhonua from which she emerged as victor.

Haumea as the goddess of childbirth, and the ‘ulu tree is one of her *kino lau* (body forms). But Haumea signifies more. She is associated with cliffs, especially a cliff at Kualoa on the mountain Kānehoalani, which is one of Haumea’s (Aldebaran’s) rise markers. She is associated with war, which is reflected in her *Oma* names, especially war against a bad chief in order to restore pono – balance, correct relationships, and harmony.⁸

The name *Hinaielele* is container/basket. In addition to the womb basket also may also refer to the three baskets of

⁷ Martha Beckwith, *Hawaiian Mythology*, Honolulu: University of Hawaii Press, 1982, pp. 276, 280.

⁸ Noenoe Silva, “Nānā I Ke Kumu: Look to the Source,” *Te Kaharoa*, vol. 2, 2008, p. 68.

knowledge that with the help of Antares Kāne received from Io. “Hare Hongi explained that the women's womb was the first Hawaiki, the second was Te Po, and the 3rd was Te Ao Marama. In Kaitahu korero the Supreme Being resides in the Po which [is] above the 10 heavens. Hinehauone or first woman is the connecting link between the spiritual and physical realm via her whare tanagata or womb. . . Her womb materializes things from spiritual realm into the physical realm. . . Ka titiria, ka poupoua - the 3 Baskets of Esoteric Lore were planted and firmly fixed into Papatuanuku and came forth via the process of Ira-tangata.”⁹

Antares is the Pillar or Post in Front and Aldebaran is the Pillar or Post in Back. In our modern world we tend to think of the person in front as more important, of higher status, than the person in back or behind. But when we remember that when Aldebaran rises in the east Antares sets in the west, and when Antares rises in the east Aldebaran sets in the west, each star takes a turn being in front and in back. This speaks to several things, including interpretations of words indicating front and back, and perhaps more importantly our understanding of precontact gender status.

Landscape marker names for Aldebaran

Star	Rise az	Rise marker	Set az	Set marker
ALDEBARAN	74	69-74 Kahana – ridgepost 74-80 Kaaawa – in charge of wā for a long time 79 Puu Pauao – mediate 81-85 Kanehoalani – Kane who rules the heavens	286	280-284 Kahanahaiki – smaller ridgepost 283-287 Keawaula – sacred time-space intersection 283 Puu Pueo – main purlin of house

⁹ Phillip Lambert via Facebook, April 9, 2017.

82 Kaoio – continuing
presence of Io

The names of Aldebaran's markers show her structural function. She is a house post, she is in charge of spacetime, she is the main purlin of the celestial house. Her landscape marker names Kanehoalani and Kaoio show her association with Kāne.

Kaoio's association with Kāne needs explanation. Access to Io required the assent and assistance of Antares. The only being to whom Antares granted this assent and assistance was Kāne. Kāne then ascended to the highest level of the sky, where Io had his home, and Io gave Kāne the baskets of knowledge.

The better known Hawaiian meaning of Kaoio is the (*ka*) marchers of the night (*oio*), the spirits or ghost of deceased chiefs and warriors who walk on earth during the nights of Pō Kāne, the dark nights of the moon. This meaning also applies to Haumea through her defeat of the chief Kumuhonua and his warriors.

Here there is intertwining of knowledge systems that are integrated and interwoven in Hawaiian astronomical knowledge. The *mo'olelo* (story, history) tells us something about why Kāne is the god who is the source of highest wisdom. It tells us of the great importance and status of Antares, and it tells us that Hinaieleele, with Aldebaran as its brightest star and the female partner of Antares, is a basket, a container of knowledge.

As previously noted, the basket-container is also a metaphor for the womb, the place where conception occurs and the foetus develops, the place in which an infant grows and from which it is born out of the *pō* of the dark, *eelee*, womb and into the *ao* of the living. *Pō* and *ao* are essential parts of the structure of spacetime. An infant emerges from *pō* and enters *ao*, matures and ages, and at death re-enters *pō* where it resides until it is again conceived and again emerges from *pō* to *ao*, the world of the living.

Brief Discussion

Space and time are thus cyclical. A Polynesian perception of cyclical time is that it is not exactly circular but is, rather, a coil or spiral. That perception includes time, in the sense of a fourth dimension. If time and space were simply cyclical we would all be living in Groundhog Day, when Michael Keaton repeated a single day over and over again. But as a coil or spiral, the cycles of space and time have motion upward and downward. Cycles are not identically repeated. Each cycle is in some way different from the cycle before and the cycle after, sitting on the coil-spiral that is not static but ever-evolving, ever-moving, yet repeating in essence. This meaning is indicated in the name Kaawili for Mintaka, the star that is the celestial *piko* (navel) of Wākea. *Ka'a* is to turn, to twist, to revolve, and also to be in charge of, and *wili* is to wind, to coil, spiral.

Venus and Jupiter

Two other crucial members of the celestial rule of space and time are the planets Venus, who is female, and Jupiter, who is male. Both have variants of the same name.

Venus	Hoku	Morning star; day	Structure –
	Ao	star; eastern star;	direction and
		enlightenment star	time
Jupiter	Ao	Morning star; day	Structure –
	Hoku	star; eastern star;	direction and
		enlightenment star	time

Both Venus and Jupiter rise in the east in the early morning and are thus morning star and eastern stars. Morning sunrise and east are directional and thus structural. *Ao* also means enlightenment and we'll return to that meaning. Also as day star, Venus and Jupiter, alone among the planets, are sometimes visible during the day (*ao*).

Planets do not have cycles that match the solar year like stars do. Venus completes her cycle in 584 days. Jupiter

completes his in 399 days. Venus, like Mercury, is between the earth and the sun, and thus, like Mercury, Venus has an eastern or morning apparition and a western or evening apparition. Both the morning/eastern and evening/western apparitions of Venus last approximately 270 days – nine months, the period of human pregnancy.

Because no two planets take the same number of days to complete a cycle, they often meet in a conjunction. Likewise, conjunctions take place between a star and a planet. Venus and Jupiter meet approximately every eighteen months, two periods of human pregnancy.

Venus

Venus has names that reflect and refer to her structural functions. Her names include:

Ka eleele o ka wanaao

Ka	The	
'Ele	Embryo	Cosmogony (Haloa the First)
Ka'ele	Darkened	
'Elele	Messenger	Signals an event
O	Of	
Wā	Time/space/interval	Structure
Na	By, for	
Wana	A streak of light, as at dawn; to appear, as a ray of light	Structure – morning/east – direction; time – morning
Wana'ao	Dawn	Structure – morning/east; time – morning
Ao	Day; the realm of ao – of humankind and light (the sun)	Structure and cosmogony

This name is usually translated as “messenger of the dawn. *'Ele'ele*, though, means dark, while *'elele* means messenger. I suspect that *'ele'ele* represents both dark and messenger. If dark is indeed an intended meaning it refers to the fact that Venus, like the moon, has phases.



Phases de Vénus et évolution de son diamètre apparent.

If the phases of Venus are intended, this name probably applies to the dark phases of Venus as well as to her function of announcing the dawn. And when Venus is a dawn or morning star she is always in the east, and thus a directional indicator, an element of the structure of spacetime.

Ka hoku komohana

Ka	The	
Hoku	Star, asterism, planet, constellation	
Komo	To enter, go into	Time – evening, thus structure
Hana	Duty, office, function	rulership
Hānā	Ridgepost supporting ridgepole	Structure
Komohana	West, western	Direction – structure

This name tells us she is in her evening and western appearance, and thus again a directional indicator. It is her duty, office, and function to indicate the directions, in this case when she enters, *komo*, the western horizon and thus when she is descending in the evening.

Hoku-kau-ahiahi

Hoku	Star, planet, constellation	
Kau	Period of time To rise up	Time Time
Ahi	Fire	The sun
Ahiahi	Evening, late afternoon	Time, the sun, West – direction, thus structure

This name speaks of Venus when she is in the west in the evening.

Holo-i-kahiki

Holo	To go, sail, ride	
I Kahiki	To Tahiti	Indicates the direction West (the direction of Tahiti from Hawai‘i)

Holo-i-kahiki is another directional name that indicates West and refers to Venus in her evening/Western apparition.

Mulehu/Molehu

Mōlehu	Twilight	Sunset – the direction west – structure
Mō	Short for moku – island; short for mo'o – dragon, lizard, genealogy	Female deity protecting water; Genealogy, cosmogony
Mū	Public executioner A name for the kōnane game	Cosmogony and calendar/time Kōnane refers also to bright moonlight which Venus resembles
Lehu	400,000, figuratively very many	The increase of the population – cosmogony
Mole	Taproot, main root	Structure and origin/cosmogony
Hū	To rise, swell; commoners as a mass; to unite, join	When Venus rises in the West she is associated with Polynesian origins in the West, and the increase of population

following initial
cosmogony in Hawai'i

This name has several interpretations. Mōlehu tells us she is an evening star. *Mō* tells us she has a role in cosmogony and genealogies and that she is a protector of water.

As public executioner *mū* indicates that Venus has a role in sacrifice – a role she shares with Aldebaran and Antares. In Central American cultures that share our latitude Venus did have that association. As we will see, the females in the pairs have equivalencies with one another and the males likewise have equivalencies with one another.

Mū as a name for *kōnane*, a Hawaiian game somewhat like checkers. *Kōnane* also means the light or luminescence of the moon, Hina, which Venus resembles through the dark and light phases both Venus and the Moon have. That resemblance also implies an equivalence of Venus with Hina, an equivalence that extends to Papa, Haumea, and La'ila'i, all females who figure in Hawaiian cosmogony.¹⁰

Lehu indicates the growth of population, something important in precontact Hawai'i.¹¹ Venus as a taproot, *mole*, is another reference to Venus as a crucial actor in cosmogony.

Hu is not well known and not present in any of the literature I have found, but oral histories from Kāne practitioners in the Wai'anae region of O'ahu say that the Hu were the original people of the island.

Hoku-alii-wahine

Hoku	Star, planet, constellation	
Ali'i	Chief, chiefess, ruler, monarch,	Rulership
	royal	
Wahine	Woman	Gender – complementary

¹⁰ See footnote 7.

¹¹ See Benjamin K. Namakaokoehi, Malcolm Chun, translator, *The History of Kanalu: Mo'oku'auhau Elua*.

elements of
structure

This name shows us that Venus was a royal female chief and a chief for women.

Pulukea

Pū	Conch shell trumpet Container To drip, as water	Announces events The womb Menstruation
Pulu	Wet, moist, saturated	The wetness of birth and the wetness/moistness of menstruation
Kea	White, clear; breast milk	Reproduction – pō into ao; childbirth
Ke'a	Cross, crossed piece Main house purlin	Structure, including the ecliptic (the path of the sun, moon, and planets) and what intersects it; the celestial hale (house) Structure

Because she was a particularly important celestial being, Venus's rises and sets were culturally significant and were thus "announcements." Container, drip water, moistness, and breast milk refer to Venus's involvement with sexual fertility and reproduction.

Ke'a speaks to Venus's function in the structure of time and space, her journeys up and down the ecliptic, thus her morning and evening appearances and her place as part of the structure of the celestial *hale* (house).

Kahela

Ka The

Lā	Sun, day(s)	Time; Kāne – god of wisdom and cosmogony
Kahe	To flow, menstruate	Gender as structure
Kāhela	To lie spread out as a wide expanse Summation of productive forces of land and sea	The broad expanse – the sky Productive forces – union of male and female

The overarching meaning of Kahela is the summation of productive forces, and part of productive forces is sexual reproduction. The more detailed meaning of Kahela is the time of menstruation, an element of female fertility.

Kopu (Maori)

Kopu	The womb, belly	Cosmogony, structure
Hawaiian ‘ōpū	Stomach, abdomen, womb	Cosmogony, structure

A Maori colleague told me “Hinehauone or first women is the connecting link between the spiritual and physical realm via her whare tanagata or womb. It so happens that her womb is called "Kopu" or the star Venus. Her womb materializes things from spiritual realm into the physical realm.”¹²

Pualoa

Pū	Conch shell trumpet; container	Announcement; the womb; knowledge
‘Ā	To glitter or sparkle like a star	

¹² Phillip Lambert, via Facebook, April 9, 2017.

Pua	Blossom; to shine; to appear; descendant	Blossom – growth, child, descendant cosmogony
Pū'ā	To cut crosswise To feed by passing from mouth to mouth, as infants were fed	The November solar nadir, 3 rd axis Reproduction, productive union of complements (female and male)
Loa	Far, permanent	Eternally repeating – structure

This name reprises the meaning of *pū* as an something that announces and as a container. 'Ā indicates Venus's glittering quality as one of the brightest objects in the sky.

Pua also refers to her brightness. *Pua* as blossom and descendant it speaks of her cosmogonic role in the growth of a foetus and the growth of the population and *pū'ā* speaks of her character as a mother.

Loa indicates her distance from us. As Tui Atua Tupua Tamasese Efi tells us, distance from us is a characteristic of a senior deity.¹³ Tupualegase is the planet Juiter, thus here we return to Venus's partner, her complement, Jupiter.

The Tui Atua explained that Tupualegase, Jupiter, and *le fee, ka he'e* in Hawaiian, the octopus, are gods who were celebrated in a yearly festival in two districts in Upolu in Samoa. The Tui Atua said that *tapu (kapu)* offerings were made to the octopus, but that offerings to Tupualegase, Jupiter, were the *amo*, the burden, carried for Tupualegase.¹⁴

The octopus is close by and we can see and feel and touch an octopus. We can catch an octopus, but Jupiter cannot be touched and we cannot catch him. The Tui Atua said that

¹³ Tui Atua Tupua Tamasese Ta'isi Efi, "Tupualegase: The Eternal Riddle," Keynote speech, Center for Pacific Studies, University of Auckland, March 11, 2008, at http://www.head-of-state-samoa.ws/pages/speech_tupualegase.html, accessed May 14, 2017.

¹⁴ Tui Atua Tupua Tamasese Ta'isi Efi, "Tupualegase."

offerings to the octopus recognize the equality and “affinity” between humans and animals, but the offerings, the burden, to Jupiter recognize “the relationship between man and their gods ... [and] to the cosmos.”¹⁵

Octopus is a *kino lau*, a body form, of Kanaloa (Tangaroa, Ta’aroa), the creator god in Western Polynesia. The creator role in Hawai’i is taken by Kāne, and his most prominent forms are the sun and fluids other than salt water, but in Samoa and as the astronomy at Kūkaniloko research indicates, in Hawai’i Jupiter is a senior male deity who was/is a creator and ruler of space and time.

Something of that was apparent when the name Kahuaokalani was addressed above – the foundation of heaven/the sky and the foundation of cosmogony and high chiefs – that is shared by Antares and Jupiter. There is thus an equivalence between Antares and Jupiter just as there is between Aldebaran and Venus. Other names of Jupiter add more.

Iwa

'Ī	Supreme, great; To speak	Rulership
Wā	Space; Time; The space between places; The space between moments in time To reason	Space, time, spacetime – structure Speech – rulership
Iwa	Frigate bird	Relationship with Kane/the sun and cosmogony

'Iwa is a frigate bird, a large mostly black bird the males of which have a red gular pouch that they inflate to attract females. Male and female 'Iwa both care for their young, and do

¹⁵ Tui Atua Tupua Tamasese Ta’isi Efi, “Tupualegase.”

so for a longer period of time than almost any other birds. The color red indicates both royalty and Kāne.¹⁶

Iao

Ī	Supreme, great; to speak	Rulership
'Ā	To glitter or sparkle like a star; the booby bird, a bird associated with Kāne	Association with Kāne, thus with cosmogony and the sun
Ao	Light, dawn, enlightened; world, earth, realm Cosmogonic era of light and humankind	Eastern/morning star – structure; realm of rulership Cosmogony
A'o	Teaching, advice, counsel	Rulership
Ō	To remain, continue, endure; continuing Resonance as of the sound made by thumping a drum	Eternity, repeated cycles Rhythm = time

Ikaika

Ikaika	Strong, powerful, potent	Rulership
Ī	Supreme, great; to speak	Rulership
Kā	To hit, strike as on a drum; a drum beater	Rhythm = time
Ka'i	To lead, to direct; to lift up and carry	Rulership
Ika	Strong	Rulership

¹⁶ For red associated with Kāne see Valerio Valeri, *Kingship and Sacrifice*, Chicago: University of Chicago Press, 1985, p. 15; Beckwith, *Mythology*, pp. 52-53, 62; for red as a royal color see Beckwith, *Mythology*, p. 94.

Three of Jupiter's names begin with "I." This signals that he is supreme, great, and someone whose words have force and importance. In our present era the spoken word does not have the power and significance that it did – and still does – in cultures that did not until the last couple of hundred years use writing. In precontact Hawai'i the spoken word, especially from someone of the status and consequent mana of Jupiter, was powerful and power-filled and not easily ignored or forgotten. A frequently quoted 'ōlelo noeau (traditional wise saying) says

I ka 'ōlelo no ke ola, i ka 'ōlelo nō ka make.

In words is life, in words is death.

(Words can heal, words can destroy.)

Conclusion

What does all this mean? First, it means that these pairs structure spacetime, the *wā* that is both spacetime and the connecting intervals between moments in time and places in space. Second, it means that these pairs rule the structure of the *wā*. Third, it means the celestial house, the metaphorical perception of the celestial structure of spacetime. Fourth, it means that spacetime replicates cosmogony and vice-versa. Fifth, it means that completion of the structure of spacetime requires the joint creation and rulership of male and female. Sixth, it means the female rulers, while not interchangeable are nevertheless equivalent to one another, and that that is also true for the male rulers. Seventh, it means that we need to revisit and revise the understanding of male-female relations and status in precontact Hawai'i, which I hope to do in a future paper.

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