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Hawaiian Moon Phases
and Traditional Natural Resource Management

HAWAIIANS OBSERVED TWELVE LUNAR MONTHS every year. Each month featured 29 or 30 lunar phases (the *Mauli* phase at times being omitted) and was divided into three *anahulu* called *Ho'onui* (rising), *Poepoe* (full or round) and *Emi* (diminishing).

The start of the year was marked with the rise of *Makali'i*, the "little eyes" (constellation Pleiades). The first lunar month of the year, *Makali'i*, is said to begin on the first new moon following the rise of Pleiades in the Eastern sky. How the calendar was reconciled with the solar year is a secret of the *Kilokilo*, Hawaiian astronomers, but it is believed that periodically a thirteenth month was added to the calendar.

Note: much of the information on this display is O'ahu-centric and specific knowledge may differ at different locations and on different islands.

HO'ONUI *(Rising)* *Good lamalama (torching) and net fishing the first half of the anahulu. Poor fishing the rest of this anahulu.*

POEPOE *(rounding, full)* *Fair to good fishing, near shore and deep sea.*

EMI *(diminishing)* *Poor fishing first half of this anahulu. Second half, good fishing at night and deep sea.*

Hilo	Hoaka	Kukahi	Kulua	Kukolu	Kupau	'Olekukahi	'Olekulua	'Olekukolu	'Olepau	Huna	Mohalu	Hua	Akua	Hoku	Mahealani	Kulu	La'aukukahi	La'aukulua	La'aupau	'Olekukahi	'Olekulua	'Olepau	Kaloakukahi	Kaloakulua	Kaloapau	Kane	Lono	Mauli	Muku
NEW MOON	KAPU - KŪ					Low fishing productivity				KAPU – HUA		FULL MOON PHASES								Low fishing productivity		KAPU – KALOA				KAPU – KANE			NO MOON

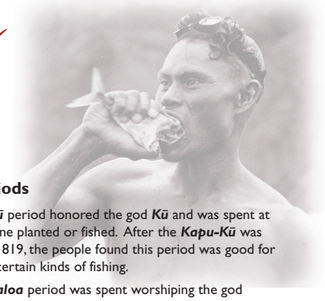
MOON PHASES & TIDES: Location in the sky, rise times, distance from the earth and moon phase affect tidal flow which affects marine activity.

Moon Phases and the Tides

Tides are affected by many factors, such as gravitational pull of the moon and the sun, benthic formations, sea water temperature, coastal geography and storm activity. In general, the highest and lowest tides occur during the *Poepoe* full moon phases and *Muku* and *Hilo* (no moon and new moon) phases.

Hawaiians over many generations observed the effect tides had on the behavior of marine species and incorporated this knowledge into their understanding of the environment and the species of cultural importance to them. Their natural resource management practices were sensitive to the lunar and solar cycles and the cycle of nature. Only the correct practices endured to become tradition.

Tradition & Culture



Traditional Pacific Island communities survived by managing natural resources with an understanding of the cycles of scarcity and abundance. All of their food, materials and supplies came from their environment.

Kilokilo, a professional class of astronomers and observers, developed the calendars. The moon's effect on the ecosystem was learned through generations of observing its phases and the environment.

- Communities lived in a harmonious, reciprocal relationship with the environment and considered themselves part of the ecosystem.
- Conflicts were resolved through cultural protocols.
- Enforcement was strict and penalties were severe.
- Management responded to community needs and was conducted by experts with knowledge of the ecosystem, gained through generations of observation and interaction with the resources.
- Custom and tradition controlled the conduct of activities
- Customary access to resources was by the native land and sea tenure systems and not open access.
- Conservation and resource utilization were linked.
- The culture developed from a long oceanic, island tradition.

Sacred Periods

- The ***Kapu-Kū*** period honored the god ***Kū*** and was spent at temple. No one planted or fished. After the ***Kapu-Kū*** was abolished in 1819, the people found this period was good for planting and certain kinds of fishing.
- The ***Kapu-Kaloa*** period was spent worshiping the god ***Kanaloa***. Certain crops were planted, and certain kinds of fishing were practiced.
- The ***Kapu-Kāne*** period honored the god ***Kāne***, the giver of life. Fishing and planting were restricted. On ***Lono,*** the night after ***Kāne***, prayers and observance were given to the god ***Lono*** and then food was prepared and offered to both gods. In months without ***Mauli***, this *kapu* ends on the dawn of ***Muku***.

Unproductive Periods

- The ***'Ole*** periods in the ***Ho'onui*** and ***Emi*** *anahulu* were unproductive.

The 12 Hawaiian Lunar Months

HO'OILO (WET SEASON)

Ho'oilo **is the wet season beginning with *Welehu* on the first new moon after *'Ikuwā*, the second month of the four month *makahiki* season when war was suspended. Activities were given over to recreation, sport and spectator activities and the god *Lono* was honored. Nights grow longer, and days and nights are cooler. The wet season runs from November to May on the Gregorian calendar.**

During *Ho'oilo*, the lowest tides during the *Poepoe* full moon phases occur at night.

Welehu – First new moon after 'Ikuwā, ending with Muku. *Makali'i*, the constellation Pleiades rises over the horizon this month. The star Antares rises. Southerly storms and murky water. O'io spawn nearshore. Uouoa and kole fat. Generally, few fresh fish for the community.

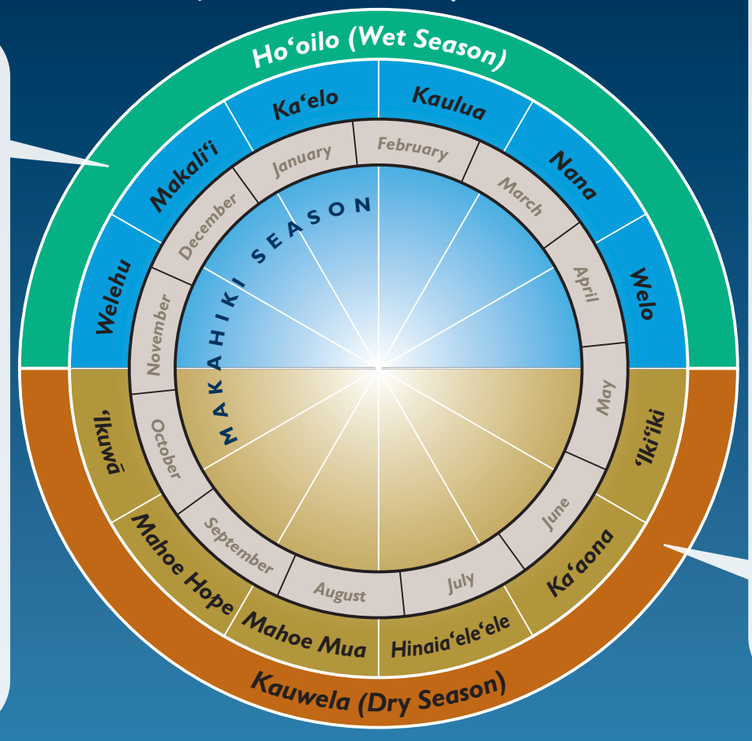
Makali'i – First new moon after Welehu, ending with Muku. The name of this month is the same as the Hawaiian name for the Pleiades but is also the name of a legendary voyager and navigator. Wet month with Kona winds. Turtles come ashore to lay eggs. Pleiades is high in the sky.

Ka'elo – First new moon after Makali'i, ending with Muku. Thunder, lightning, wind and rain. Kapu placed on Aku, kapu on 'opelu lifted. Amaama run. 'Ula walk on the reef at night at high tide during *Poepoe*.

Kaulua – First new moon after Ka'elo, ending with Muku. Stormy weather, fishing on reef and inshore. Kumu, manini, uouoa, manini, ulua la`uli caught. Malolo nets prepared for Nana.

Nana – First new moon after Kaulua, ending with Muku. Sunny but showery. Malolo caught at sea. A'u in the deep sea. O'io, ulua la'uli, kumu, manini, aweoweo and 'ula caught.

Welo – First new moon after Nana, ending with Muku. End of the wet season. Kawakawa plentiful in the deep sea, A'u are caught in the deep sea. O'opu are fat. Akule, weke, moi, and ula caught along with a variety of reef fish.



KAUWELA (DRY SEASON)

Kauwela **is the dry season beginning with *'Iki'iki* on the first new moon in May. Sand moves inshore and fills holes in the reef. Days and nights are warm, and tradewinds blow. Lack of rain means little freshwater flows to the sea. The sun is directly overhead at midday. The days are long, and plants grow quickly. The dry season runs for six lunar months to November on the Gregorian calendar.**

During *Kauwela*, low minus tides occur during the daylight hours, including the lowest tides during the *Poepoe* full moon phases.

'Iki'iki – First new moon after Welo, ending with Muku. Warm and humid, time to prepare nets for 'opelu. Malolo are fat and delicious, good fishing for papio, weke, moi, uhu, akule

Ka'aona – First new moon after 'Iki'iki, ending with Muku. Great harvests of 'opelu to be salted and dried. Moi spawn after the full moon. Women hand harvest near shore. Men fish at sea. Kapu started on 'opelu, kapu lifted on aku.

Hinaia'ele'ele – First new moon after Ka'aona, ending with Muku. Hot, with the possibility of sudden storms, dark clouds over the mountains. Last seasonal spawning of moi after the full moon. Good fishing for many species. Moili'i appear nearshore.

Mahoe Mua – The first twin - First new moon after Hinaia'ele'ele, ending with Muku. Mahoe mua is the name of one of the twin stars Castor and Pollux, probably Pollux because Pollux rises first. Rain and wind alternate with sun. Seas are rough and alternately smooth. Fishermen alert for storms. Good fishing, maiko and a'u plentiful.

Mahoe Hope – The last twin - First new moon after Mahoe Mua, ending with Muku. Increasing showers and rough seas alternating with good days. Excellent deep sea fishing. A'u run with the full moon. Fishing effort increases to harvest, prepare and store fish for the coming makahiki season and the wet season.

'Ikuwā ('Ikuā) – First new moon after Mahoe Hope, ending with Muku. Makahiki season will begin this month. Rain, thunder and lightning and high winds. Preparation for makahiki that starts when Pleiades, *makali'i* rises and is visible over the Eastern horizon. *Makali'i* remains visible for the next six months. Women and children take over the fishing activities in 'Ikuwā, and Welehu, the following month, fishing for o'opu, hinana, hihiwai and 'opae.

"...By doing things Hawaiian, you learn, you are taught, you are shaped."

– Sam Kaha`i Ka`ai, traditional carver, artist, sailor, philosopher

By doing things Hawaiian you begin to understand how our Hawaiian ancestors worked and thought and you gain appreciation for our native traditions and indigenous practices.