

2021 CALENDAR

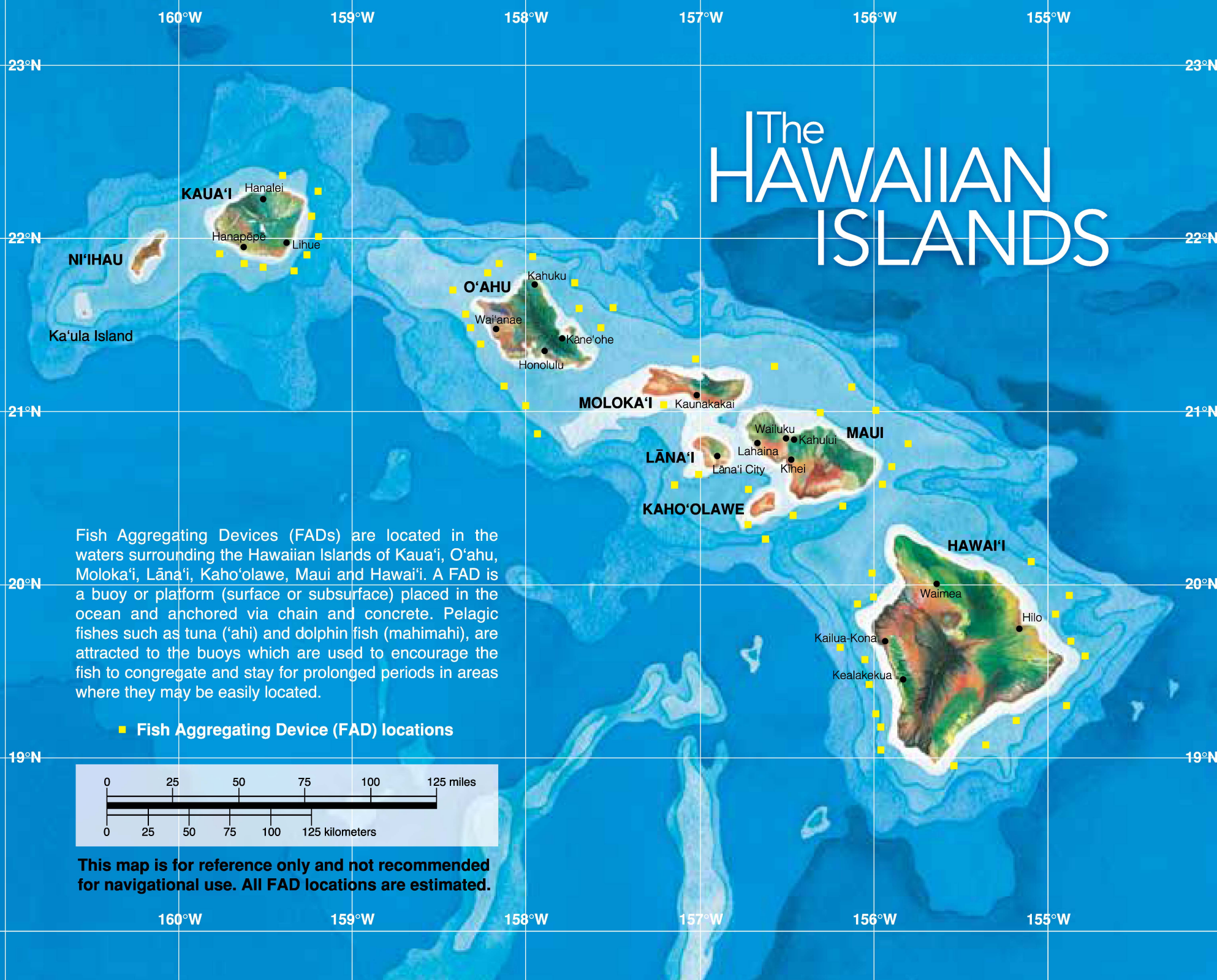
HAWAI'I MARINE TIDE & MOON PHASE

HAWAIIAN ISLANDS HUMPBAC WHALE NATIONAL MARINE SANCTUARY & WAIKIKI AQUARIUM



PHOTOGRAPHY BY THOMAS AYERS

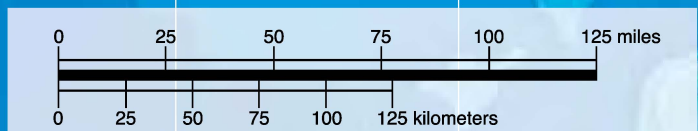




The HAWAIIAN ISLANDS

Fish Aggregating Devices (FADs) are located in the waters surrounding the Hawaiian Islands of Kaua'i, O'ahu, Moloka'i, Lanā'i, Kaho'olawe, Maui and Hawai'i. A FAD is a buoy or platform (surface or subsurface) placed in the ocean and anchored via chain and concrete. Pelagic fishes such as tuna ('ahi) and dolphin fish (mahimahi), are attracted to the buoys which are used to encourage the fish to congregate and stay for prolonged periods in areas where they may be easily located.

■ Fish Aggregating Device (FAD) locations



This map is for reference only and not recommended for navigational use. All FAD locations are estimated.



Founded in 1904 by Charles M. Cooke and James B. Castle, the Waikiki Aquarium is the 2nd oldest aquarium in the United States and Hawaii's State Aquarium. As part of the University of Hawaii, the Aquarium is renowned for its coral propagation program, it's research and education programs, and the conservation husbandry of endemic marine species. The Waikiki Aquarium is committed to providing conservation opportunities, collaborative outreach programs and ocean education for Hawaii's residents and visitors.



Andrew Rossiter

Andrew Rossiter (Ph.D.)
Director
Waikiki Aquarium

Aloha! I am pleased to provide to the public a Hawaii tide calendar for 2021, utilizing artwork depicting the marine environment from people all over Hawaii. I hope you find this calendar useful as you enjoy our ocean waters in Hawaii. The Hawaiian Island Humpback Whale National Marine sanctuary is dedicated to the preservation and protection of the humpback whale in Hawaiian waters. However we do so much more than that. We also host a variety of public lectures, support research, internships, etc. the list goes on and on - check us out at <https://hawaiihumpbackwhale.noaa.gov/> I also want to thank the Waikiki Aquarium, without whom this calendar could never have come to fruition. Over the years, the Waikiki Aquarium has partnered with us on outreach, education and research projects. This calendar is an example of our collaboration together.



Allen

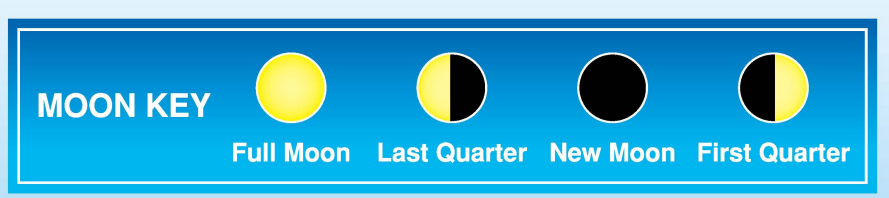
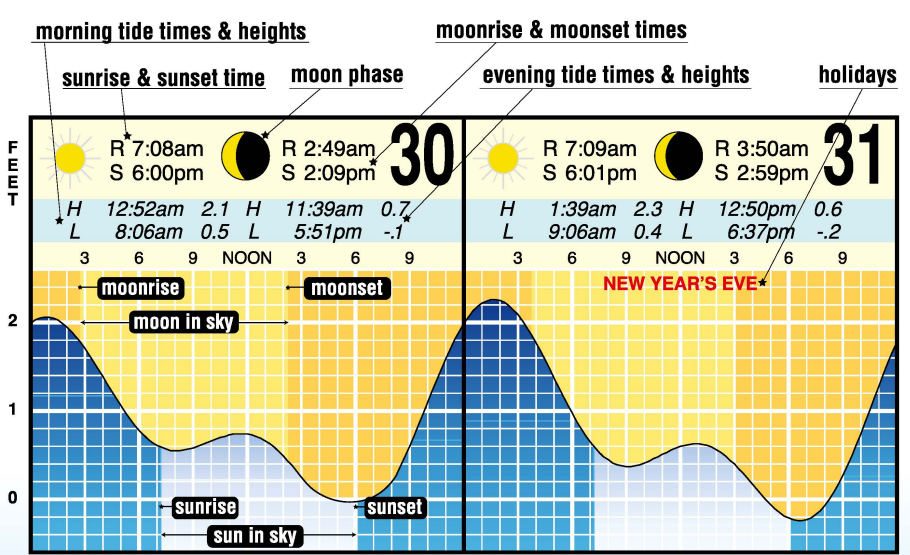
Allen Tom
Superintendent
Hawaiian Islands Humpback Whale National Marine Sanctuary

The Hawai'i Marine Tide and Moon Phase calendar is ideal for Hawai'i's active lifestyle. Watersport enthusiasts can find the time and height of tides, sunrises and sunsets, moonrises and moonsets.

- There are two high and two low tides per day.
- Higher High Water**—higher of the high tides
- Lower High Water**—lower of the high tides
- Higher Low Water**—higher of the low tides
- Lower Low Water**—lower of the low tides

The average level of the Lower Low Water is used as the zero level on depth charts for the Hawaiian Islands.

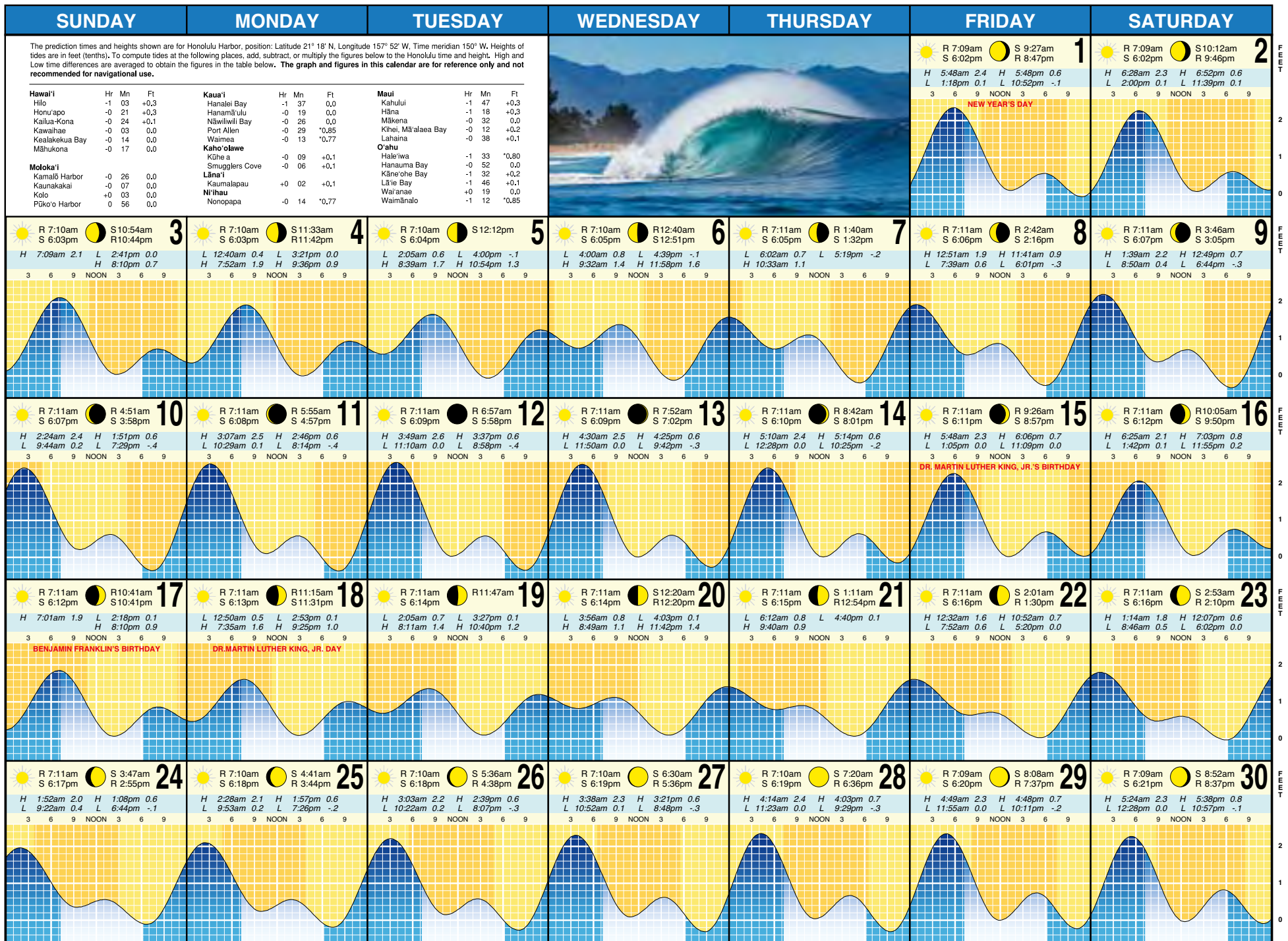
SAMPLE DAYS





January IANUALI 2021

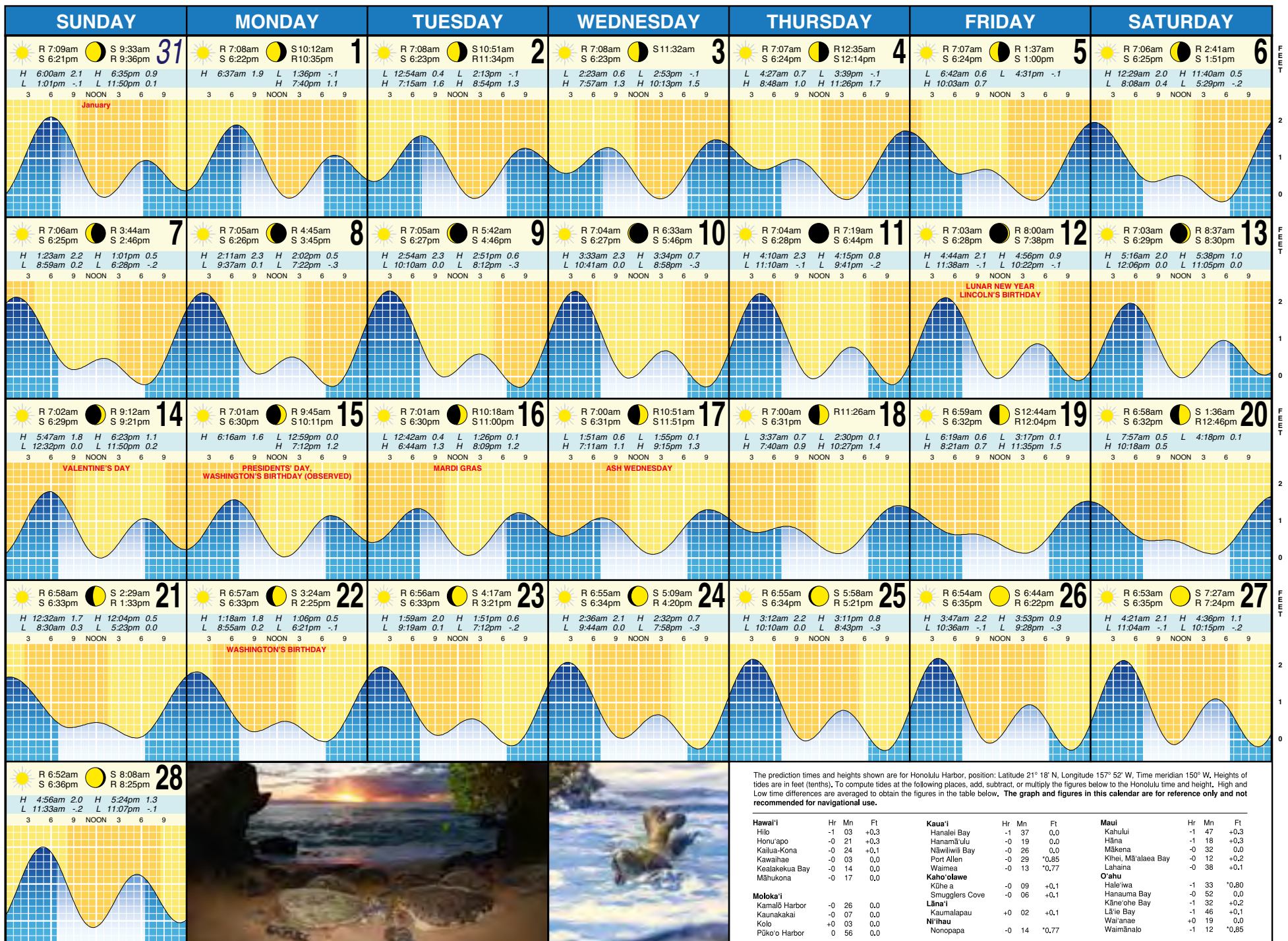
PHOTOGRAPHY BY BEN CASWELL





February PEPELUALI 2021

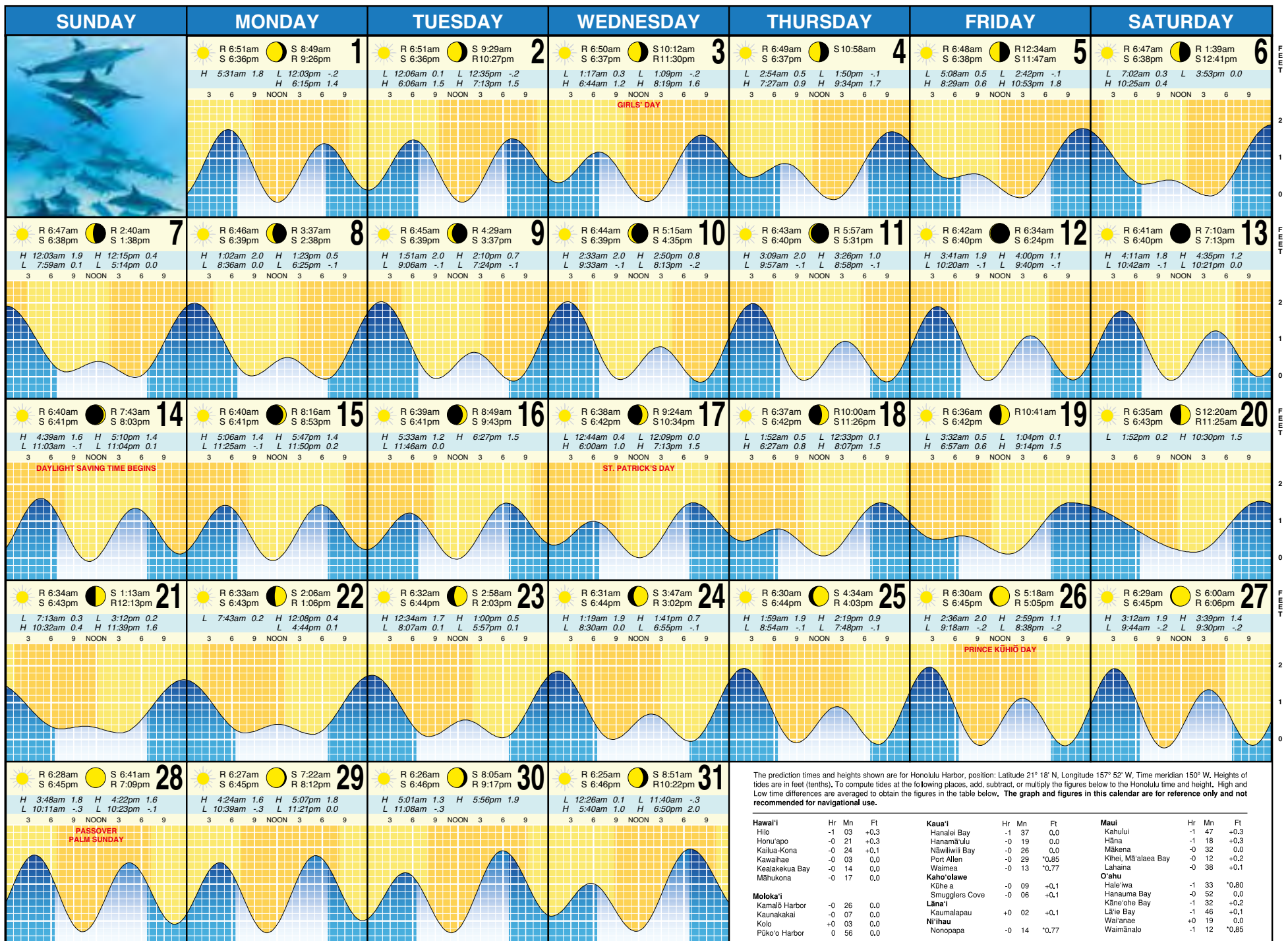
PHOTOGRAPHY BY WILLIAM WEAVER





March MALAKI 2021

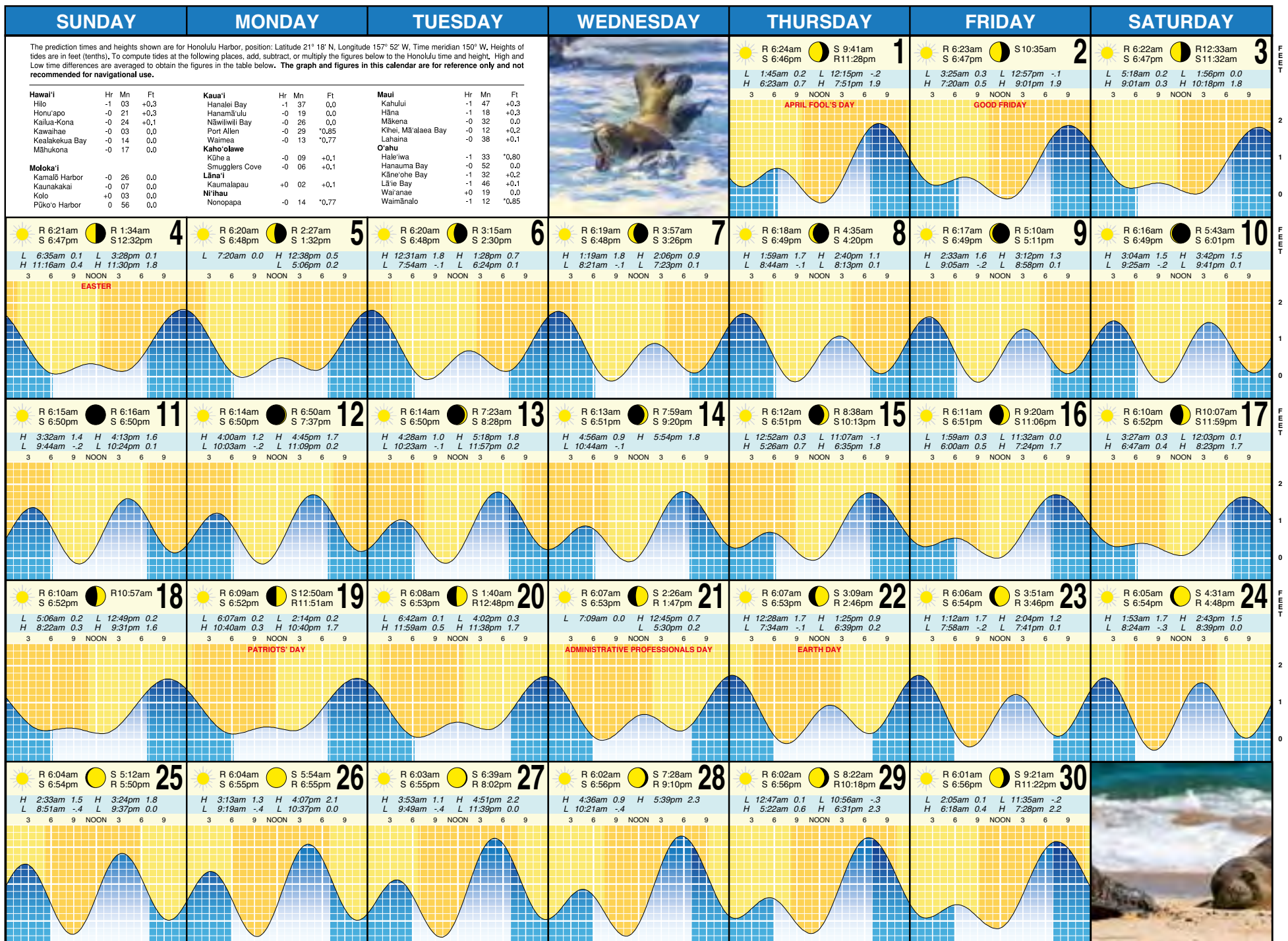
PHOTOGRAPHY BY MELODY BENTZ





April 'APELILA 2021

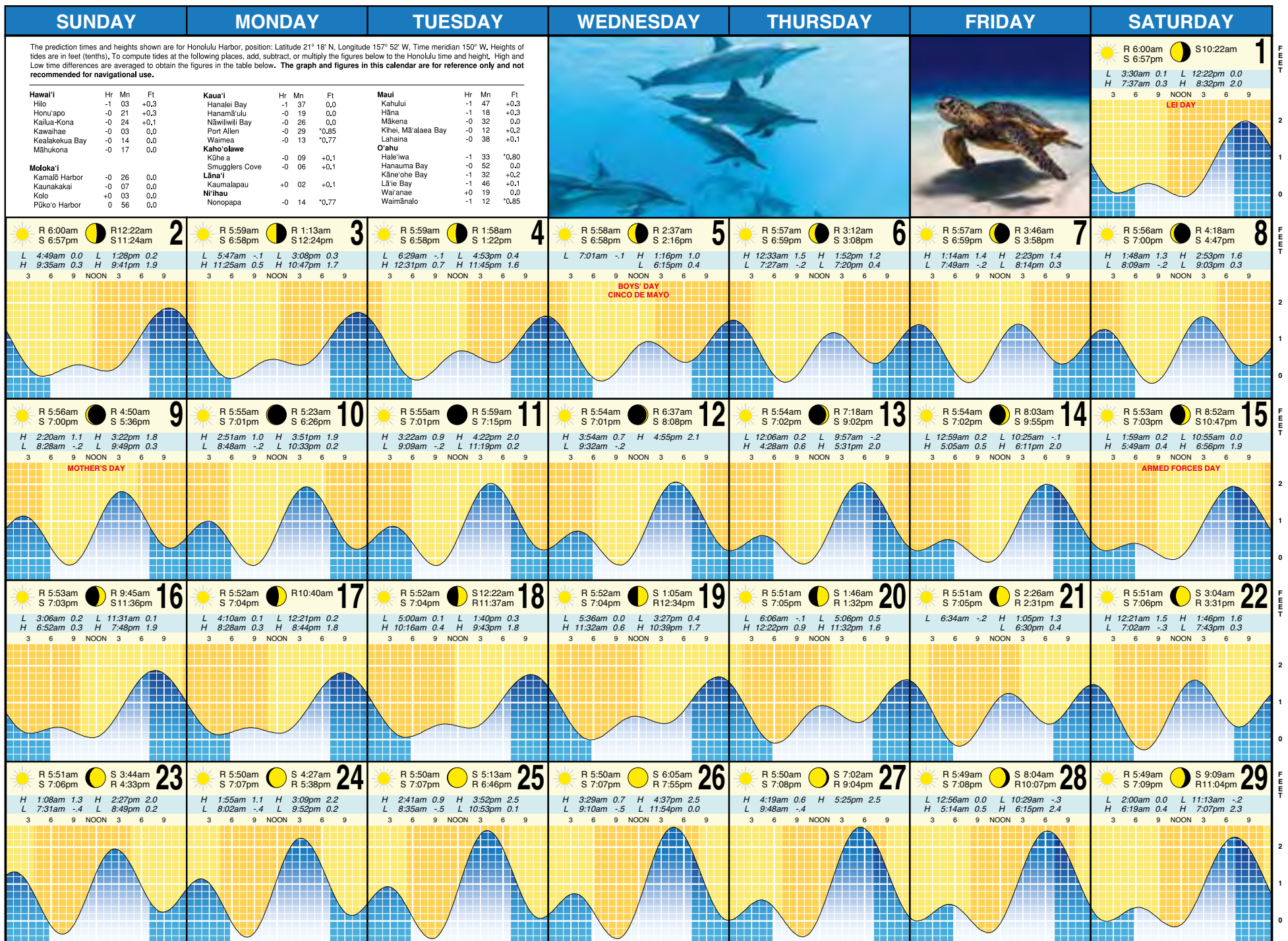
PHOTOGRAPHY BY WRENN OKADA





May MEI 2021

PHOTOGRAPHY BY JASON SMITH

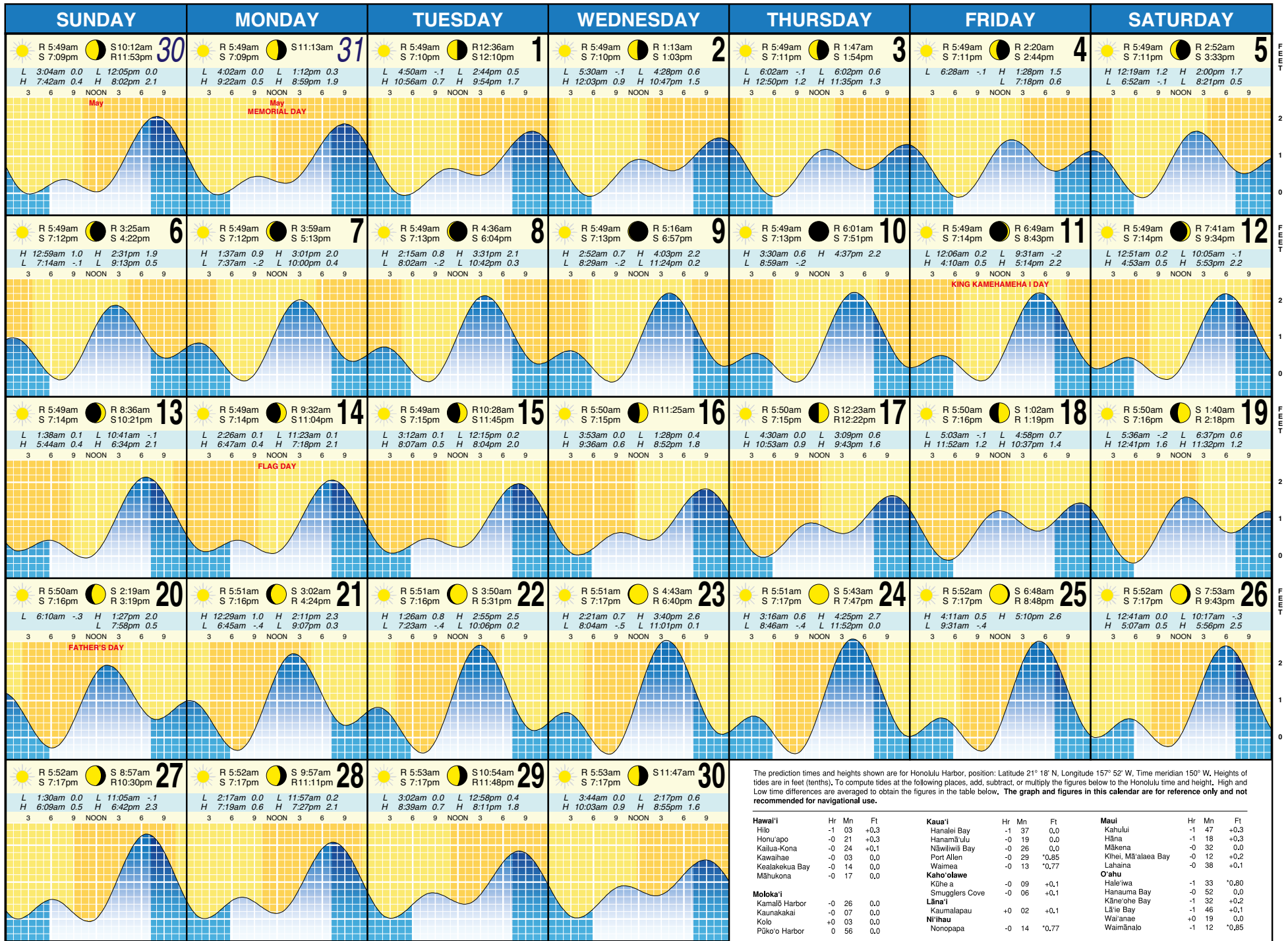


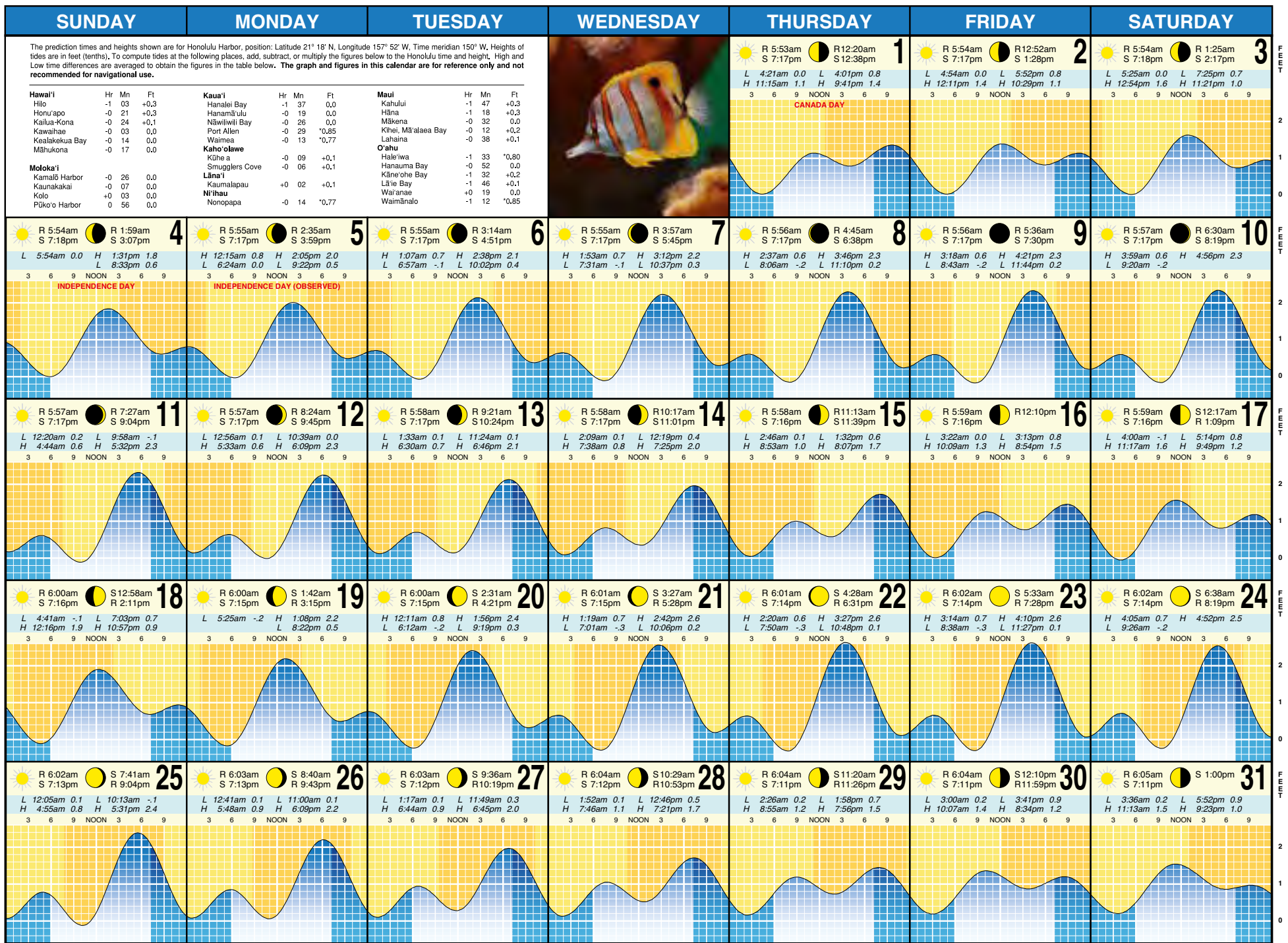


June

JUNE 2021

PHOTOGRAPHY BY JAMES KETCHUM

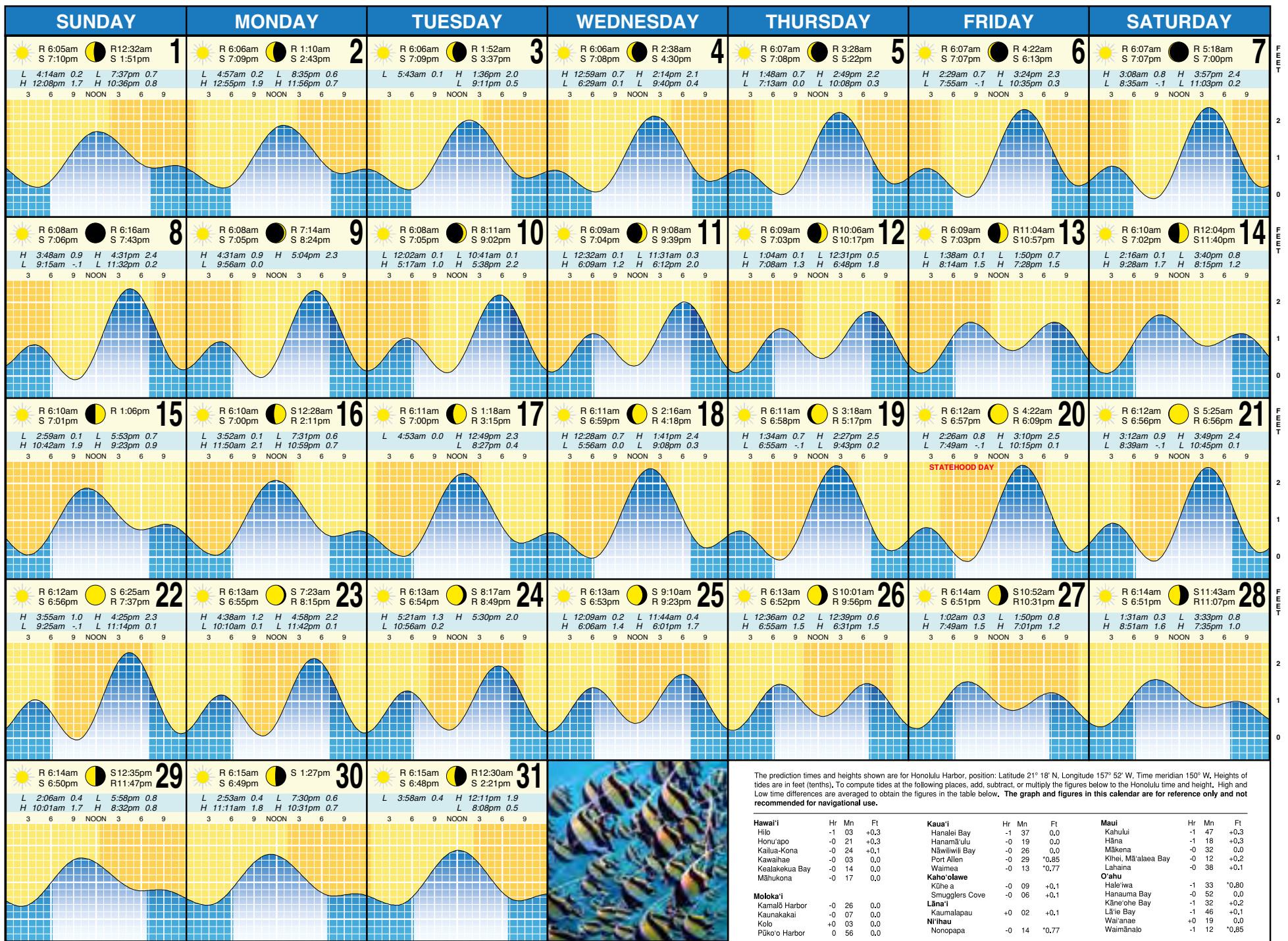






August 'AUKAKE 2021

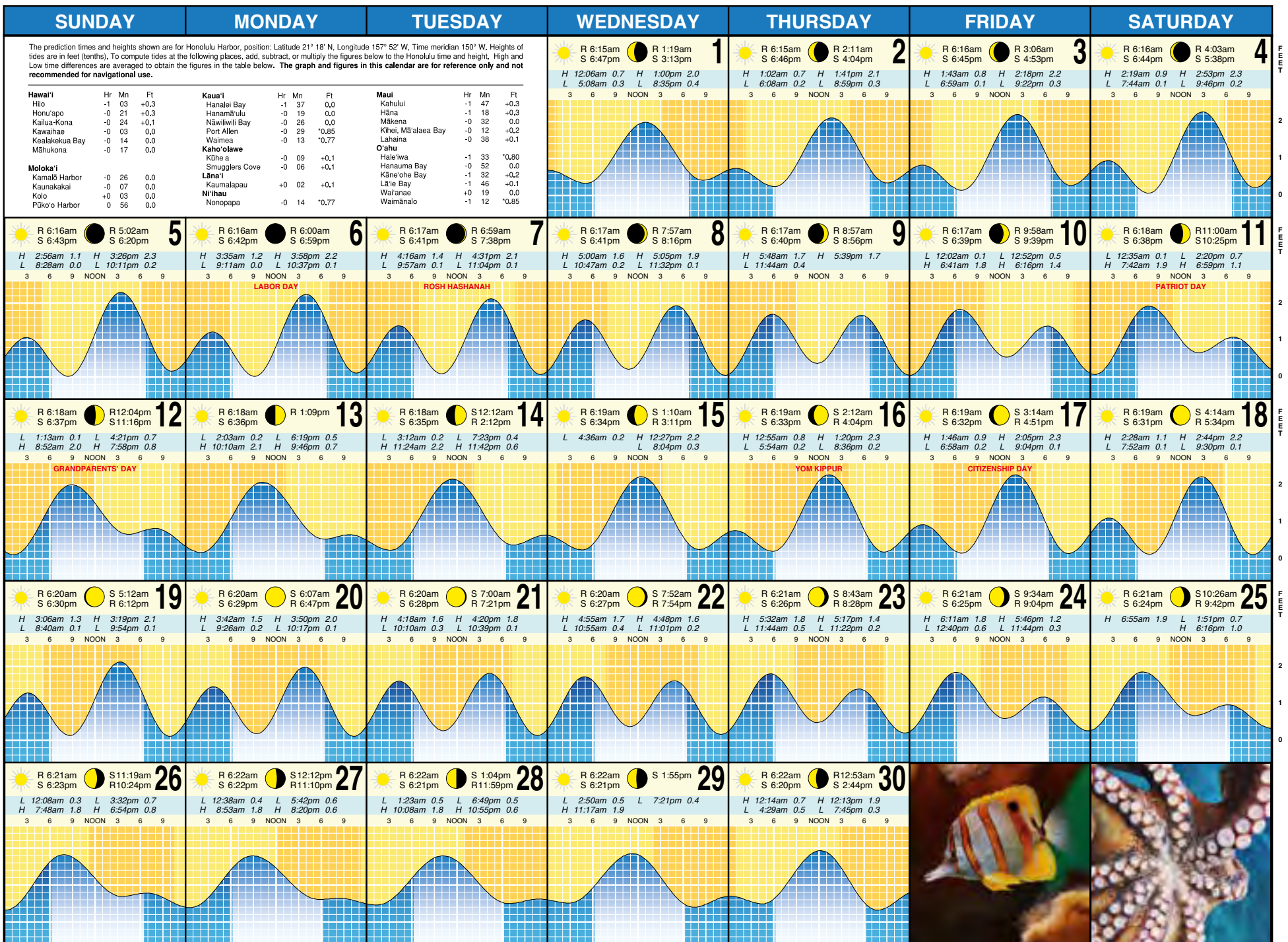
PHOTOGRAPHY BY CHUN TAM





September KEPAKEMAPA 2021

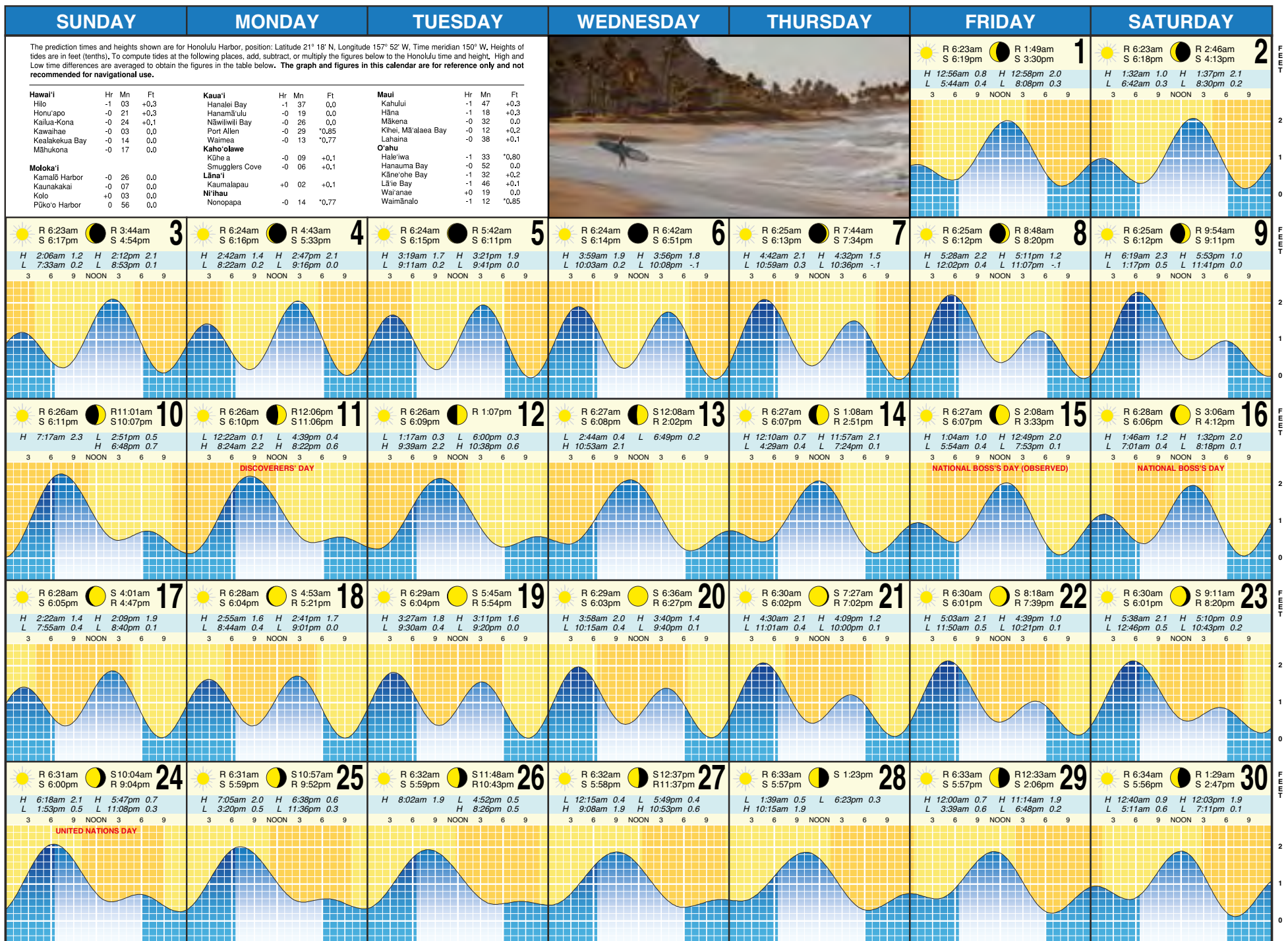
PHOTOGRAPHY BY KELLY QUIN





October 'OKAKOPA 2021

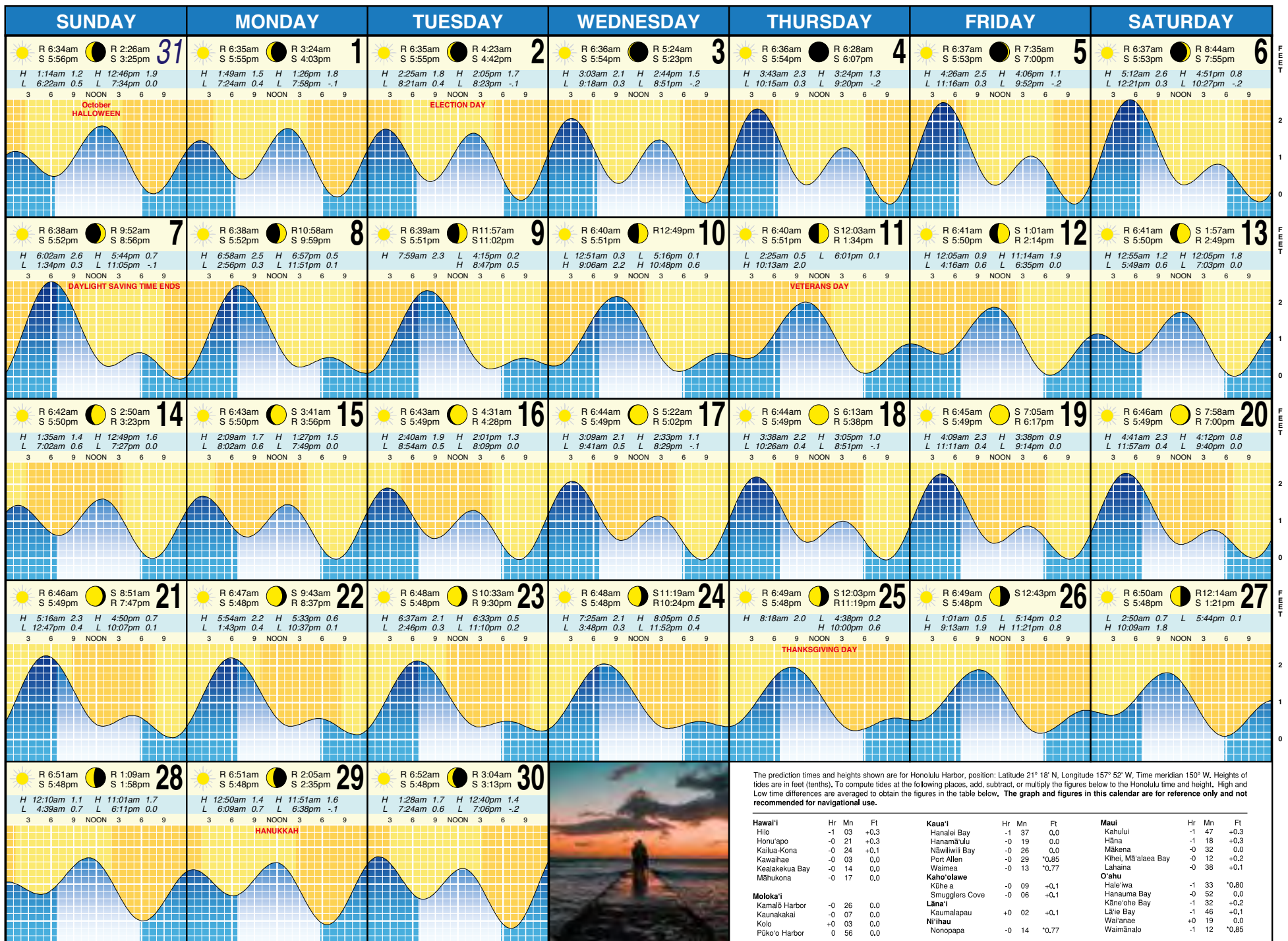
PHOTOGRAPHY BY MEGHAN RODRIGUES





November NOWEMAPA 2021

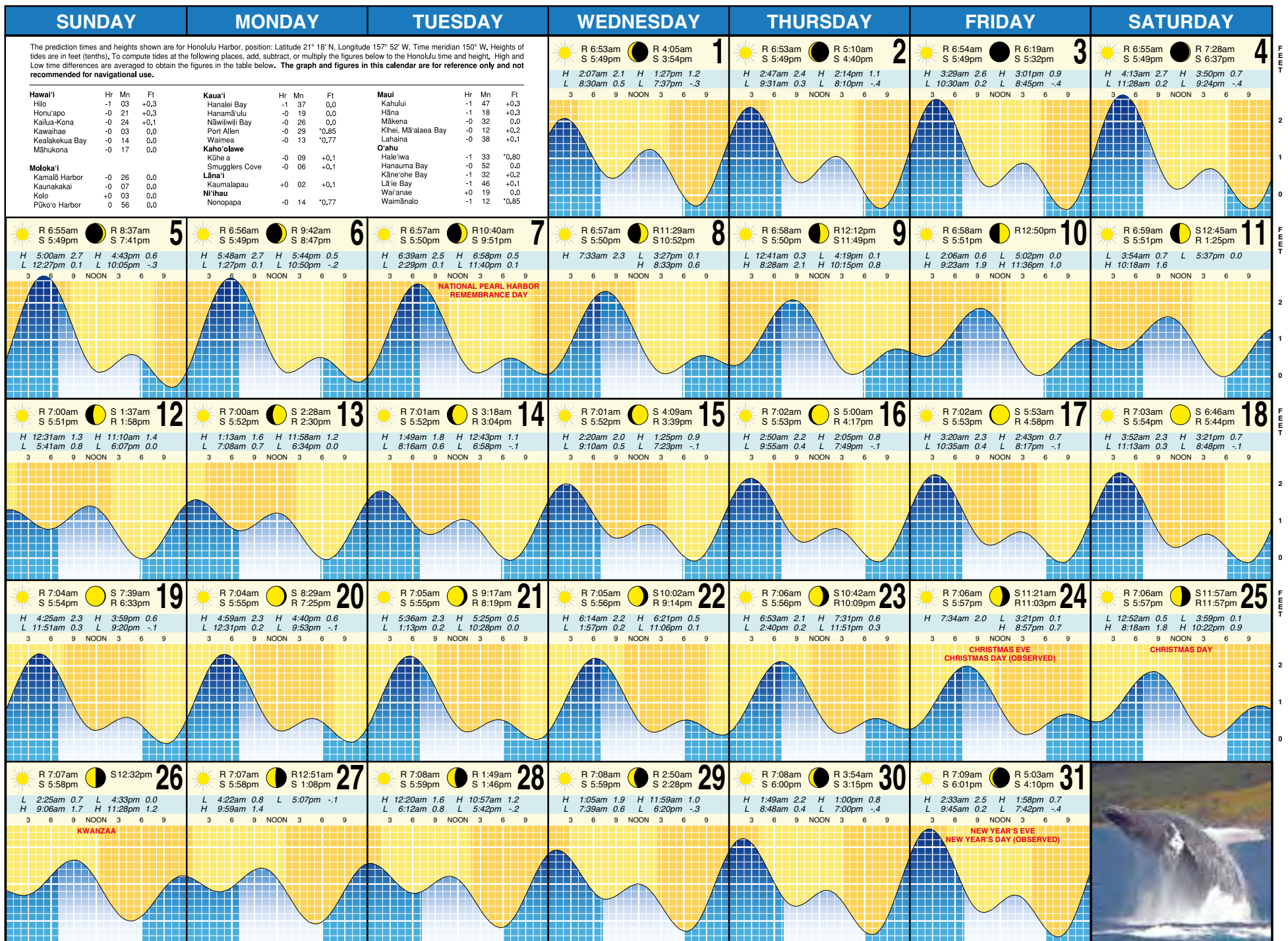
PHOTOGRAPHY BY JAZEL LOSBOG





December KĒKĒMAPA 2021

PHOTOGRAPHY BY MICAH DOLLENTE



HAWAIIAN ISLANDS HUMPBAC WHALE NATIONAL MARINE SANCTUARY AND WAIKIKI AQUARIUM

2021 HAWAI'I MARINE TIDE & MOON PHASE CALENDAR



JANUARY 2021



FEBRUARY 2021



MARCH 2021



APRIL 2021



MAY 2021



JUNE 2021



JULY 2021



AUGUST 2021



SEPTEMBER 2021



OCTOBER 2021



NOVEMBER 2021



DECEMBER 2021

FACTOIDS

- The Hawaiian Islands Humpback whale national marine sanctuary is the largest national marine sanctuary dedicated solely to the humpback whale. you can learn more about the Sanctuary here: <https://hawaiihumpbackwhale.noaa.gov/>
- With more than 200 volunteers, the Hawaiian Islands Humpback whale sanctuary national marine sanctuary has one of the largest volunteer programs in the national marine Sanctuary program. One of our biggest volunteer events in Ocean Count you can learn about how to participate here: <https://hawaiihumpbackwhale.noaa.gov/involved/ocean-count.html>
- Did you know that each year the Hawaiian Islands Humpback whale national marine sanctuary helps save humpback whales by cutting them free from marine debris? Our Risk entanglement program was featured in the award winning documentary "In the Wake of Giants" https://www.youtube.com/results?search_query=in+the+wake+of+giants
- The Sanctuary research team monitors the population of whales via acoustic or listening devices located throughout the Sanctuary waters. Each year the research team publishes findings and reports that can be found here: <https://hawaiihumpbackwhale.noaa.gov/science/publications.html>
Publications | Hawaiian Islands Humpback Whale National Marine Sanctuaries

- January through March tends to be the time we see the most humpback whales in the Sanctuary. Hawaii is one of the few places on earth where you can not only view humpback whales from shore, but if you are lucky when you snorkel or dive in the Sanctuary during these times, you can hear the humpback whale's singing.
- The Hawaiian Islands humpback whale national marine sanctuary is more than 1400 square nautical miles, located off of portions of all the main Hawaiian islands except Kahoolawe and Niihau. We have visitor centers on Maui and Kauai.
- Humpback whales are known as "kohola" in Hawaiian. The Humpback whale is the official state marine mammal of Hawaii, while the monk seal is the official State of Hawaii mammal.
- Humpbacks don't normally have a hump on their backs; the name comes from the large hump that forms when they arch their backs before making a deep dive into the ocean. Their flippers (pectoral fins) can grow up to 16 feet (5 m) long, which is the largest appendage in the world. The scientific name, *Megaptera novaeangliae*, means "big-winged New England."

Mahalo!

Anthony Zerga, John K. "Lee" Bell, Kamaka Pili, Patty Miller, and Chessa Caparros.

The public voted for their top photos out of 389 entries, then the judges selected the 12 winners. Mahalo to our fans for making this possible!

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NOT FOR SALE