REAWAKENED

REAWAKENED

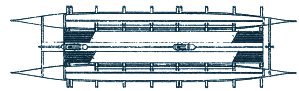
Traditional navigators of Te Moana-nui-a-Kiwa

JEFF EVANS

MASSEY UNIVERSITY PRESS

Year after year he came and took us by the hand. He cares about people, about tradition; he has vision. His impact will be carried beyond himself. His teaching becomes his legacy, and he will not soon be forgotten.

— Nainoa Thompson, 'Reflections on Mau', 1997



CONTENTS

Pwo ceremony on Satawal atoll, 2007.

JAMES KIMO HUGHO/
POLYNESIANVOYAGINGART.COM

FOREWORD

Seated on plaited mats under the thatched roof of a traditional canoe house, 16 men — 11 from the tiny atoll of Satawal in the Caroline Islands and five from Hawai`i — are gathered in a circle. In the centre of the circle are the tools to be used in a spiritual initiation ceremony: pieces of coral, a woven bracelet, bird feathers, special leaves from selected trees, a bowl of food and several coconuts.

For 3000 years oceanic navigators have recognised their most experienced mariners from the tiny atolls of Micronesia by initiating them into the Order of Pwo to become palu, oceanic wayfinders. The ceremony is being conducted by our teacher, Master Navigator Mau Piailug, the last surviving navigator on Satawal atoll. The spiritual process is laden with cultural protocol, song, dance, prayer, reverence and celebration. Students participating in the ceremony recite star directions to distant neighbouring atolls to test their competency.

The ceremony lasts for three days. On the final night at around 1 a.m., when the navigation stars are high in the sky, the initiates participate in navigation school taught by Master Mau. In the lamplit darkness of the canoe house, he chants the sailing directions to distant atolls, their respective courses, and the guiding stars that lead to land. Mau is occasionally respectfully interrupted by the Satawalese

students asking for clarification and confirmation of specific instructions. Volumes of knowledge, all conveyed orally, are stored in Mau's immense memory vault.

The final lesson shared with the new palu is Mau's explanation of the purpose of Pwo. He says that receiving Pwo is to be a light to your community, to provide leadership and command on the canoe, to be a good steward of people and your culture, to provide nourishment to the islanders, and to protect and serve the island by being a resource that they can rely on.

In the morning we walk to the beach as Pwo and welcome the rising sun.

I first met Mau Piailug some 31 years earlier, in April of 1976. He had been recruited by the Polynesian Voyaging Society (PVS) to participate in an experiment in archaeology: he would navigate a design-accurate replica of a traditional Polynesian double-hulled voyaging canoe or wa`a, *Hōkūle`a*, through 37 degrees of latitude to Tahiti on a south–southeast route, completely without instruments, guided only by stars (see map, page 31).

I caught glimpses of Mau as the wa`a spent a week at Honolua Bay, Maui, where her crew were loading food and water and making final preparations for their voyage to Tahiti. Just prior to their departure they assembled for an `awa ceremony, a modern-day Hawaiian ritual regularly practised in Pacific Island cultures. Mau gave a final address to the crew, with Mike McCoy (a Peace Corps volunteer who had married into Mau's family) translating for him. I had never heard a speech of such eloquence, clarity and authority.

Mau told the crew that the time had arrived for them to put the things of land away and to accept this new canoe family, and he encouraged them to place their trust in the canoe's captain and navigator. The trip, he said, would be difficult and challenging to a group unfamiliar with the discipline required to live on a small, open-decked canoe for over

30 days, and that they would struggle. He spoke with a quiet, disarming demeanour, and just by listening to him you could tell that he was a seasoned oceanic leader.

Despite the success of the navigation experiment and of the vessel's seaworthiness, there were human failures in the social nature of the project. Little thought had been given to the crew's ability to live and work together harmoniously during the voyage. Just days before their arrival in Tahiti, tensions boiled over into a physical confrontation. Bitterly disappointed, Mau abandoned the project in Tahiti, refusing to navigate the canoe back to Hawai`i; instead, the voyage was completed with sextant and compass.

Among the crew for the return trip to Hawai`i was a 23-year-old Hawaiian, Nainoa Thompson, who served as a watch captain. He was curious about Mau's navigation system, and he regretted Mau's departure and the lost opportunity to learn from the master navigator. On the voyage home Nainoa filled his notebooks with observations about the night sky, the weather, the sea state, and the daily position of the sun. Once back in Hawai`i, he continued his university studies with a renewed vigour, taking on a liberal studies degree with the intention of re-engineering the art of non-instrument navigation. He studied meteorology, astronomy and oceanography, and over the next four years he designed a system of non-instrument navigation based on mathematics and science.

In 1978 the PVS attempted to sail *Hōkūle`a* back to Tahiti to test Nainoa's theory. But within hours of departure from O`ahu the canoe capsized in bad weather — and crew member Eddie Aikau was lost in a failed rescue attempt.

The PVS went ahead with plans to repair the canoe and make the vessel safer. Meanwhile, Nainoa continued with his studies, and eventually he proposed another attempt to voyage back to Tahiti on board

a rebuilt *Hōkūle`a*, scheduled for 1980. However, he was troubled about the mental and spiritual challenges of such an endeavour. His father made a suggestion: go and find Mau and invite him back to Hawai`i. Nainoa followed his father's advice and located Mau; he invited him to Hawai`i to help him complete his training and prepare for the voyage.

Mau, though, was non-committal. Months passed, then Nainoa received a phone call from a customs agent at Honolulu International Airport. The agent said that he had a Mr Mau Piailug there with him, and he requested that Nainoa come and pick him up. Mau told Nainoa that he had come to Hawai`i to help train him in navigation and to teach him how to sail so that the crew would be safe at sea, but he did not intend to sail with the crew. Mau became Nainoa's mentor — and that was when I became reacquainted with him.

Nainoa's training began far from the traditional four-walled classroom. It took place in the environment that had provided Mau with the tools that made him a competent navigator and sailor: in the wind and the sea, standing on the deck of a vessel as the ocean rises up under your feet. In this environment both Mau and Nainoa were completely at home. Their routine involved watching the sun rise and set on the coastline, learning how to read weather in the clouds, studying the sea swells, their direction and the underlying current from Nainoa's fishing boat, as well as observing the night sky and familiarising Nainoa with the star path to Tahiti.

Nainoa's maths–science system and Mau's oceanic wayfinding system, passed from generation to generation on an island that still lives a traditional lifestyle, are remarkably alike. Nainoa explains that his system makes Mau's traditional wayfinding understandable to him. Nainoa's re-engineered system of non-instrument navigation is grounded in science and the academic principles learnt through the study of meteorology, maths, astronomy and oceanography. It is a robust system, laden with memorised information and data. What it lacks, however, is a sense of spirituality, something that connects him

to his oceanic roots. That is what Mau brings to Nainoa's training — a sense of the navigator's spirit that resonates deep inside and can help the navigator endure the sleepless nights and work through those hard episodes of fatigue . . . and no university course can teach that.

In February of 1980, *Hōkūle`a* was preparing to depart O`ahu for Hilo on Hawai`i Island. After spending almost two years in dry dock recovering from the failed 1978 capsizing, the canoe had been refitted with the addition of bulkheads and fittings to allow water to be pumped manually from the hulls.

A crew of seven had been recruited to take *Hōkūle`a* to Hilo: Gordon Pi`ianai`a as captain; first mate Leon Sterling and his wife, Joanne; Chuck Larson; Tava Taupu; Mau; and myself. Before the start of the Hilo leg we took a break from the hectic rigours of preparing the vessel and had a pre-departure celebration. We had a lot to drink that evening and Mau was very relaxed and in rare form — he was with his crew and 'making happy', as he called these spontaneous parties. Getting together, holding court and 'making happy' was Mau's favourite thing to do, especially after long days spent on the ocean. For me it was an opportunity to watch him up close, and Mau's personality shone through as the date of departure neared. As a person he was very unassuming and humble, but he always drew a crowd around him, and he was well respected.

Mau was a great teacher, and always patient. In dry dock he would sit under the deck of the canoe and instruct the lashers who were working on the long wooden cross-pieces that hold the twin hulls of *Hōkūle`a* together. He would cut a predetermined length of rope and, wrapping it around his fingers, roll it into a ball. He would hand the ball of rope to the lashers, who would pass it between them as they worked the rope around the cross-pieces: the rope stayed tight and organised and spooled out from inside the centre of the ball.

Hōkūle`a *in the Ka`iwi Channel off the coast of O`ahu.*

MONTE COSTA/PHOTO RESOURCE HAWAII

Mau was softly spoken: the only time he raised his voice was when he wanted to emphasise a point, say, when he was teaching you something. He would show you what to do, and tell you to do it that way, and he had this way of raising his voice so you knew you'd better do it that way. It wasn't aggressive or threatening in any way, but you understood.

Mau and I once worked on a sail made up of large panels of pre-woven mats. He showed me how to sew the panels together using coconut fibre and a stitch that would come undone if the wind got too strong. He explained that it was easier to restitch the panels than to have to reweave a whole sail.

We departed O`ahu on a Monday morning, escorted by the 48-foot (14.5-metre) steel-hulled sloop *Ishka*, built and captained by Alex Jakubenko and his wife, Elsa. The passage east to Hilo was to be a 230-nautical-mile beat and was expected to take several days. However, the winds were out of the north and lightening, and by the time we got to Maui the wind had faded away. We took up a tow so that we could maintain our departure schedule to Tahiti. We followed the scenic eastern Maui coastline, passing in front of the town of Hana, and crossed the `Alenuihāhā ('immense grabbing seas') Channel, the last channel of the eight that separate the islands. The `Alenuihāhā Channel separates Maui and Hawai`i islands and is considered by many mariners to be one of the roughest channels in Hawaiian waters. The wind is funnelled between the islands, and the shallower sea floor adds to the enormity of the waves moving through the narrow passage.

En route to Hilo we were caught in a life-threatening storm. It was a close call, but we finally made it through to the leeward commercial port of Kawaihae. It was eerily calm as we tied up at the wharf, and collapsed on the deck exhausted.

We rested for a day before embarking on the final 80-nautical-mile trip to Hilo, from where we would leave for Tahiti. As we approached

the northern headlands of the island, Mau climbed the mast in the pitching sea and, hanging on by one hand, lashed a spacer block between the mast and the spar. When he climbed back down he assumed the role of sailmaster and asked the captain if he could release the tow, and we began tacking up the windward coast. The ride was more comfortable than the tow and my legs adjusted to the pitch and roll of the vessel. We tacked away from the island and then back towards it: this cycle of tacking went on all day and night. The manoeuvre involves the opening and closing of *Hōkūle`a*'s large crab-claw sails: steering the canoe off the wind, and then reopening the sails once the canoe has changed sailing direction. With a small crew of six, the work was exhausting but very satisfying.

From that day forward my respect and appreciation for Mau changed. I had seen him turn from a leader into a commander. His demeanour became very disciplined and focused: he knew exactly what he wanted to do with this large canoe and how to do it.

As night fell and we sailed away from the island, Mau stood at the railing, dressed only in a light rain-jacket. Facing the sea, he chanted in Satawalese. When a wave splashed onto the deck, completely soaking him, he simply wiped the spray out of his eyes and remained stoic and unmoving, and continued chanting. He was reciting knowledge learnt in the canoe house and at sea, drawing strength from the words and feeling a powerful connection to nature. His body rocked back and forth with the rhythm of the sea, and he became the pulse of the ocean that surrounded him. In that moment I realised that I was witnessing a traditional navigator, descended from previous generations of wayfinders, who is at one with the elements.

I mimicked him, copying his stance and staring into the sea. The moon was rising, so we could see the shape of the swells rolling towards us. I asked him the direction of the swells; he answered, 'this one east, this one northeast, this one southeast'. I looked at the shape of the waves and felt the rhythm of the canoe climbing the crests. I began to

recognise patterns, the way the swells cross, intersect, crest as the waves approached the canoe. Gaining confidence, I pointed to the swells and called out the direction to Mau, 'this one east, this one northeast, this one southeast'. Mau nodded and smiled; he looked back at the sea and continued chanting. We spent the rest of the night pointing toward the swells and calling out their direction, tacking, and opening and closing sails until I was too exhausted to continue. Mau stayed up all night. In the morning we tacked our way into Hilo harbour and I felt ready to participate in my first long voyage.

Armed with renewed confidence in the seaworthiness of the vessel and fortified by Mau's agreement to sail as part of the crew, we departed for Tahiti. The 14-member crew — 12 men and two women — were mostly mature 40- to 50-year-olds; at 23 years old I was the youngest. The crew had a sense of mission and purpose, and they were committed to demonstrating that they had learnt discipline and an improved ability to perform as a crew.

I was just a novice, a rookie, on that 1980 voyage: I knew nothing about navigation or the stars, and relied on my energy and my ability to learn quickly. But the work on board the canoe came easy to me and I was energised by the experience of being on the ocean.

So began my apprenticeship under Nainoa and Mau, learning the principles of Nainoa's maths- and science-based system of non-instrument navigation and Mau's hereditary system of oceanic wayfinding. Nainoa's system allows the user to synthesise the tradition that Mau's system is based on, grounding Mau's practice in the physical laws of nature and allowing for understanding through another way of knowing. Today, navigators practise an art that is best described as a hybrid, part Nainoa's re-engineered system and part Mau's traditional

wayfinding; each way informs and benefits the user by providing a broader base of knowledge. It is a holistic approach to navigation and wayfinding.

As the practitioner becomes familiar with the art of wayfinding through practice and experience, they develop a keener intuition based on repetitive familiarity. I sailed with Mau and Nainoa on a voyage in 1985 from Borabora to Rarotonga. The first leg was a 120-nautical-mile section to a coconut tree-lined atoll, Maupiha`a, in French Polynesia. Our departure was delayed and we left later in the day than we wanted, which meant we would be hunting for this atoll in the dead of night. To make matters worse, there was no moon: a dangerous proposition when we would be sailing blind in close proximity to the razor-sharp coral reefs.

Maupiha`a is an uninhabited island with a lot of nesting seabirds. As the sky darkened around us and brought out a black night sky with a spattering of stars overhead, we sailed very slowly west, following the squawking of the seabirds above the canoe as they flew home to their nests. Around midnight Mau got up from his bunk under the canvas awning and took up his stance at the starboard railing next to me. He lit a cigarette and stared off into the blackness, before tapping me on the shoulder and pointing into the dark: 'Island,' he said. I asked where, and he again pointed towards the black. I hurried to the bow, where Nainoa was stationed. He was looking forward to where he anticipated seeing the island.

I communicated to Nainoa what Mau had said, and Nainoa said, 'Can't be. It's got to be ahead of us.' He asked me to check with Mau as to which stars mark each end of the island. Mau pointed out the stars, and once again I relayed the message to Nainoa, who said that the island was a lot larger than what Mau had identified. Mau was insistent that the island was there, so Nainoa instructed me to call the escort vessel and have them check. The escort vessel confirmed the location of the island, exactly where Mau had said it was: we had mistimed our arrival at the island, had sailed by the front of it and were now passing to

the southern, narrow side of the island, under the stars that Mau had pointed out to us. Nainoa and I hovered on the starboard railing and stared into the blackness, waiting for our eyes to adjust, until we saw the dark shape of the island silhouetted against the blackness of the starry, moonless sky.

The lessons from that experience played out some two years later, during our next voyage. We were sailing north of Tahiti on our way to Rangiroa atoll in the Tuamotus, hunting for Makatea, a high coral outcrop. Once again it was a moonless night, and again Nainoa and I were clinging to the starboard railing and searching the darkness for a hidden island. I recalled the story of hunting for Maupiha`a. Our eyes adjusted to the darkness and began to refocus, and in the dark we saw the black silhouette of the Makatea cliffs against the backdrop of a starry sky. We are good navigators, knowing where to look, but without the intuition learnt under the guidance of a master navigator we would be grasping at shadows in the dark. The repetitive familiarity of previous experience was turning us into competent wayfinders.

Today, there are Pwo navigators residing in Hawai`i, Aotearoa and the Cook Islands. Monthly we get together on a Zoom call to discuss hopes and aspirations, and the vision we have for the respective communities we serve. Our continued mission is to inspire our community to be like our mariner ancestors, those bold explorers who settled the vast expanse of the Pacific, guided by stars, faith and confidence in themselves. It is a narrative that the navigators are a living part of, by doing something we discovered that we are good at — exploration, discovery — and sharing the spirit of that story.

As civilisation pushes the horizons of exploration to the interstellar frontiers of our universe, we as humans have to constantly remind ourselves of the necessity to export only the best traditions of our humanity. We have to challenge ourselves to be better in our quest to

continue the spirit of exploration — a tradition grounded in the oceanic history of a people who left the safety of the shore and explored, learnt and discovered the stars along the way.

To be a light in service to your community is a truly aspirational undertaking: it speaks to human relationships and connects you to a larger mission by making humankind better through your participation. This is Mau's gift to the Polynesian community: he influenced our lives by providing us with a way back to our culture through the canoe; he provided all of us with the opportunity to be wayfinders.

Kālepa Baybayan
Kona, Hawai`i, 2020

Mau Piailug, Big Island, Hawai`i.

PHOTO RESOURCE HAWAII / ALAMY STOCK PHOTO

INTRODUCTION

I first heard the name Mau Piailug on a visit to Aurere, in the Far North of Aotearoa New Zealand in 2002. I had just finished interviewing master navigator Heke-nuku-mai-ngā-iwi 'Hec' Busby for a magazine article that would eventually become his biography and was admiring a tear-shaped paddle leaning in the corner of his living room. It was beautifully finished and felt well balanced in the hand. It had been crafted by Mau Piailug. Piailug had stayed at Aurere for several months in 1992 while the voyaging canoe *Te Aurere* was being prepared for its maiden voyage to Rarotonga, and this had been his parting gift. Piailug was, Busby explained, a master boatbuilder and an expert with an adze. He was also a traditional navigator who sailed using the stars and clouds and ocean swell as his compass. That's where Busby finished, but I was intrigued.

Mau Piailug was 43 when he arrived in Hawai`i at the invitation of the Polynesian Voyaging Society (PVS). The PVS had been founded by Ben Finney, Herb Kāne and Tommy Holmes in 1973 to prove that Polynesian ancestors could have purposefully settled the islands of Polynesian using the technology available to them. To achieve this

the PVS built the replica double-hulled voyaging canoe *Hōkūle`a* and set about trying to locate a traditional Polynesian navigator capable of guiding the canoe on her maiden voyage to Tahiti in 1976. When their quest failed, they opted instead to recruit the experienced Micronesian navigator from the tiny Carolinian atoll of Satawal.

Born Pius Piailug, he had been introduced to navigation from a young age by his grandfather, Raangipi, in the mid-1930s. His lessons began at the feet of his elders, listening as they sat and drank and talked about voyaging and navigation in the canoe houses at night. When he was a little older, he started to accompany his grandfather on inter-island voyages. During these journeys he began to learn the star bearings between islands, about distinctive swell patterns and how to read the behaviour of birds while at sea.

When Raangipi passed away, Mau's father, Orranipui, took over as his teacher until, just over a year later, he too passed away. Piailug wasn't introduced to his next teacher, an uncle named Angora from nearby Puluwat atoll, until he was about 17. A highly skilled navigator in his own right, Angora continued to broaden Piailug's knowledge base, honing both his technical skills and his understanding of the magical and spiritual lore that is an intricate part of traditional navigation. Piailug's studies culminated in the Pwo ceremony, during which he was initiated into the Weriyeng school of navigation by Angora. This most likely occurred around 1951.

From then on his renown as a voyager grew and he became known for sailing in most conditions, even those deemed dangerous. Due to this tendency he gained the nickname Mau, a name derived from the Satawalese word maumau, meaning strong.

By the time Piailug arrived in Hawai`i he was a seasoned navigator. He was also searching for a student to pass his knowledge on to. After successfully guiding *Hōkūle`a* to Tahiti in 1976 and introducing Shorty Bertelmann to traditional navigation, Mau became a mentor for Nainoa Thompson during preparations for the 1980 voyage to Tahiti.

This book introduces Bertelmann and Thompson, along with the other eight men who received Pwo as a direct result of Piailug's teachings. It also introduces the reader to a number of key dates and events within the renaissance of voyaging; the launch of *Hōkūle`a* and then her maiden voyage to Tahiti in 1976 (see map, page 31); the successful re-run of that voyage in 1980 that included the first Polynesian to navigate that route using traditional methods in several hundred years; the 1992 maiden voyage of *Te Aurere*; the 1995 graduation voyage of Nainoa Thompson's students; and Pwo ceremonies in 2007, 2008 and 2011.

In telling these stories, I hope this book also honours Mau Piailug and his family for the sacrifices they endured over the course of his 35-year relationship, initially with the Hawaiians, and then with the wider Polynesian community. The story of that relationship is one of understanding and generosity. That he would leave his family at home for months — sometimes many months — to train and mentor his students in the knowledge handed down by his ancestors speaks volumes to his commitment to ensure that their gift will survive for his descendants.

During a visit in 1973, Piailug had seen first-hand what had happened to Hawai`i's indigenous people after they had been stripped of their culture, and he was worried that Satawal might follow the same tragic path. He could already see that the youth on his home island were becoming less and less inclined to follow a traditional lifestyle. The most promising were leaving for continued education, often to the island of Yap, and many were reluctant to return home once they had finished their schooling. The outcome of this was that it was impossible for Piailug to find a suitable student to teach. Sacred knowledge, thousands of years in the making, was in very real danger of dying out under his stewardship. Instead of giving up, he decided to break with protocol and plant the seed in another land, with another culture, so that when his people finally wanted to reclaim their birth right, it would still be there thriving in Polynesia.

It is fair to say that without the Hawaiians searching him out and asking for his assistance, and then Nainoa Thompson's determination

to disseminate his knowledge out into Polynesia, Piailug's navigational knowledge may well have been lost. The success of *Hōkūle`a*'s voyages under his navigation and supervision helped revive interest in the preservation of traditional waka* culture and navigation across Polynesia. For many Pacific Islanders the opportunity to see a voyaging waka for themselves allowed them to connect to the stories of their voyaging forebears and to reconnect with their cultural roots.

But his relationship with the PVS had reciprocal benefits. As Piailug's reputation and fame grew in Polynesia, youth in Satawal began to see that others outside of their culture recognised the value in their traditional knowledge, and they started to become interested in learning the art of traditional navigation for themselves.

I didn't have the pleasure of meeting Mau Piailug myself, but a clear (if incomplete) picture of the man emerged from my interviews with the many who did have the honour. Standing at just over 165 cm, he was stocky and powerful, and spoke broken English with a heavy accent when he first visited Hawai`i. He was self-assured in his ability, but humble with it. He knew what he was about when it came to navigating, waka building, fishing, house building, medicine and other skills essential for survival on his home atoll of Satawal. He was a Renaissance man in the true sense of the term.

My own introduction to voyaging and navigation arrived in 1999 when I saw the voyaging canoe *Te Aurere* sitting at anchor off Hobson Beach at Waitangi, in the north of Aotearoa. I was there to experience Waitangi Day (New Zealand's national day) on the last February of the twentieth century, but a chance meeting with the late Hec Busby, the waka's builder and a future Pwo navigator, led to an invitation to accompany him on an overnight sail.

It was a short but magical experience, highlighted not only by the

*We have used variations of the word waka depending on where the navigator originates: waka for Aotearoa; wa`a for Hawai`i; and vaka for the Cook Islands.

dolphins that joined us at sunset, but also by the roll of the waka under my feet. I had already become interested in the revival of voyaging and had been captivated when I read the late Ben Finney's *Hōkūle`a: The Way to Tahiti.* A crew member during the voyage, Finney's writing put the reader in the thick of the action. It was as if you had to break through a crust of saltwater deposits when you opened your eyes the morning after reading him. I soon found additional books on the topic and added them to my bookcase: *The Last Navigator* (Stephen D. Thomas), *The Voyaging Stars* (David Lewis), *A Song for Satawal* (Kenneth Brower), *East is a Big Bird* (Thomas Gladwin), and latterly Sam Low's masterpiece *Hawaiki Rising* — all of them classics. To experience a small slice of the action aboard *Te Aurere* that night, albeit mostly within touching distance of the coast, was a thrill.

Then, a few years later, during my time working with Hec on his biography, I began to meet a few of his Pwo brothers. Locals Piripi Evans and Jack Thatcher were regular visitors to his Aurere property, and I had the opportunity to interview them for Hec's book, while Hawaiians Nainoa Thompson, `Onohi Paishon and Bruce Blankenfeld each made trips south to Aotearoa at different times. Sometimes their trips were to visit Hec, sometimes they were during voyages, and on one occasion to take delivery of a new voyaging canoe. No matter the reason, they always made time to answer my questions. Later, while writing this book, I also spent some pleasant afternoons with Peia Patai, who was based in Auckland working for the Okeanos Foundation. The other Pwo who I hadn't yet met were all based in Hawai`i and these I either visited in person or interviewed over the phone. All gave their time freely and generously. I thank them all warmly for their support and encouragement.

For anyone who wishes to learn more, I can recommend reading the archived technical knowledge to be found on the Polynesian Voyaging Society's website, http://archive.hokulea.com/ike/hookele/modern_wayfinding.html. It is a treasury of knowledge.

Jeff Evans
Tāmaki Makaurau Auckland, 2021

Hōkūle`a, *sailing off Hawai`i, c. 1997.*

MONTE COSTA / PHOTO RESOURCE HAWAII