A circle in the Pacific
12 miles across gives
scientists a laboratory
for studying the sea.

By Timothy Harvy
BusinessStarAdvertiser.com

“Aloha” is the Hawaiian word for love and affection, commonly used to say hello or goodbye and sometimes coupled with other words to express a warm Hawaiian greeting.

Sixty miles north of Oahu, at a joint spot in the Pacific Ocean known as Station ALOHA, the word has a different meaning: “A Large Ocean Flux Study” Habitats Assessment.

On the surface, the researchers don’t quite know what to call the heart-shaped part of the ship. But they do know the scientists who are on board and have spent a month in the region are working to provide a faster, more accurate idea of the health of the ocean. This month marks 25 years.

Please see ALOHA, A8.

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Lack of clues stymies hunt for missing Malaysian airliner

International search teams scour the ocean for debris that might show that the plane is crashed.

By Thomas Fuller
New York Times

SEPANG, MALAYSIA. More than two days after it appeared that Flight 370 vanished, the mystery over its fate has only multiplied. The Beijing-bound plane made two distress calls, officials said, and the Malaysian authorities suggested it might have begun to turn back to Kuala Lumpur in satellite pictures before it disappeared. Despite an intensive international search effort, the waters along the planned route have been quite active.

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ALOHA: Oceanographers gauge man-made changes

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ALOHA: Oceanographers gauge man-made changes

Continued from A1

since University of Hawaii oceanography professors David Karl and Roger Lukas established Station ALOHA in a 4-mile-radius circle in the ocean at 20 degrees north latitude, 158 degrees west longitude.

Since then the remote out- post has become legendary. As part of the Hawaiian Ocean Time-series program, known as HOT, it has figured up an invaluable long-term record of the chemistry and biology found at a typical deep spot in the subtropical North Pacific.

Just about every month over the last quarter-century, scientists from all over the globe have climbed aboard a research vessel in Honolulu and set sail for Sta- tion ALOHA on a mission to conduct open-ocean experi- ments and take measurements of the currents, water chemistry, optical properties, plankton community and more.

Station ALOHA’s most notable achievement is its contribution to the science of climate change. Its data has mirrored the atmos- pheric measurements taken at Mauna Loa Observatory, where the Keeling Curve has illustrated the ongoing change in concentration of carbon dioxide in Earth’s atmos- phere since 1958 and which first alerted the world to the possibility of human contribution to the “green- house-effect” and global warming.

The station itself, Station ALOHA, scientists have recorded the oceanic version of the Keeling Curve: a rise in near-surface carbon dioxide plus a corresponding ocean absorption. The data have been included in reports is- sued by the United Nations’ International Panel on Clim- ate Change and featured prominently in the latest 25-page summary report provided to policymakers.

“Scientists are learning that the oceans in many ways, and measurements made at Station ALOHA are helping us understand and docu- ment how ocean ecosystems are responding to these changes,” said Matthew Church, UN oceanography professor and HOT program principal investigator.

The HOT program was founded in 1998 after funds were awarded by the Na- tional Science Foundation. At the time, scientists were attempting to come to grips with the signs of global warming.

“Back in ’97 the meteorol- ogy didn’t fit their thing, and the oceanographers were doing their thing,” said Carl, who is now director of UH’s Center for Microral Oceanography and Research and Education. “There wasn’t a general understand- ing of the planetary scale of climate change.”

SEARCHING for a site to establish Station ALOHA, Karl and Lukas looked for a location far enough away from the islands to be free from coastal influences yet close enough to the port of Honolulu to make relatively short monthly courses logis- tically and financially feasible. The spot needed to be deep, and representative of the entire ocean.

On Oct. 26, 1988, Karl and Lukas set out for Station ALOHA as a cruise that didn’t exactly herald the success to come. A list of the equipment failed. Sedim- ent traps, for example, were deployed and moni- tored, but shortly after the contraptions used to mea- sure sinking particulate were supposed to be col- lected, they went missing. After searching the ships for 14 hours, they gave up.

“Unless I’m wrong, some- where in the middle of the North Pacific are some sedi- ment traps, drifting from HOT 1,” said Church, who has said he has watched a reliable company to stay as a collector,” Church.

Looking back, Karl said he was using the Station ALOHA monitoring and ex- periments to last for at least a few more years. After 10 years we were just uncovering some of the mysteries — and nobody wanted to stop after look- ing or supporting.”

The National Science Foundation funding kept on coming — and so did the science. There have been 261 cruises to Station ALOHA, each four days in duration, involving 15 re- search workers. Nearly 70 percent of those cruises have been led by non-US scientists.

As of the beginning of this year, there have been some 630 peer-reviewed scientific publica- tions that have relied on HOT program research.

Science conducted at Sta- tion ALOHA has supported 300 doctoral candidates and numerous master’s de- gree candidates, while un- dergraduate students have logged more than 3,000 days at sea.

“Once you’ve been told about Station ALOHA, you think there’s something special about them,” said Eric Gruber, UN oceanography re- searcher. “There’s this thing that, to me, is so glo- rious, places. But in reality it’s just a GPS location in the oceans.”

Gruber, who has sailed on about 50 cruises, some as chief scientist, said Station ALOHA is the perfect place to conduct ocean re- search because of the
After 10 years we thought we would have a pretty good understanding of the ocean and that maybe we would move on to some other challenge. But after 10 years we were just uncovering some of the mysteries — and nobody wanted to stop either looking or supporting.”

David Karl
Oceanography professor, University of Hawaii

Have a rare opportunity, unprecedented possibilities. The magnitude of what we are trying to do is enormous. The technologies are unprecedented, ongoing, and provide the new perspective that new techniques provide. We are able to do things that we have never done before. We’re going to get some amazing data. It’s going to be mind-blowing.”

Ken Davis
Oceanography professor, University of Hawaii

OCEANOGRAPHERS RETRIEVE A SEDIMENT TRAP, ABOVE, PULLED FROM THE SEA AT STATION ALOHA. THE TRAP CAPTURES SITATING PARTICLES IN THE OCEAN. AT LEFT, SCIENTISTS DEPLOY FLOATS ATTACHED TO ANOTHER SEDIMENT TRAP.