

NOAA Ship Ronald H. Brown P15N Leg 1 Weekly Scientific Report 01, 16 April 2015
From Jessica Cross, Chief Scientist, and Samantha Siedlecki, Co-chief scientist

6°N, 151°W

5 pm, Saturday, 16 May 2015 (local time and day)

air: 27.44 °C

water: 28.99 °C

winds: 9.5 kts

en route to station 22

The R/V Brown arrived in Tahiti on 1 April after the TAO mission. Following the TAO offload, fleet inspections, and several well-deserved days of crew rest during the Easter holidays in Tahiti, the science party for P16N was scheduled to begin loading and setup of scientific equipment on April 7. Many of the science party arrived early to enjoy a few days on the beach. Unfortunately, Phil Mele, one of our cruise participants, was mugged on Easter Sunday at 10 AM walking through town. He was delivered to the hospital via ambulance and spent several days there recovering from a head injury before he was discharged with permission to fly home. Because of sinus damage and the risk of infection, we thought it was best that Phil not participate on Leg 1 of the cruise. We would like to extend our thanks to Andreas Thurnherr, who flew into town early with Phil to help set up the ADCP and was the primary responder in this situation. We are especially grateful to him for keeping us updated a part of the process, and for his fluency in French at the hospital.

Despite this inauspicious start, we did have a smooth onload process. The crew was very helpful in helping set up the scientific spaces and equipment. The Argo float rack remained installed in the main lab after the TAO mission, with the floats for P16N loaded and ready to deploy. We received the last delivery of science equipment on Wednesday afternoon, May 15 and set sail according to schedule at 1000 on Friday morning, April 10. Phil was still in town on Thursday and helped to set up the ADCP equipment and train a few folks in basic maintenance of the systems. Through his help we will be able to collect ADCP data on the first leg of the cruise.

Our first stations came up pretty quickly after setting sail—during the first 24 hours of being at sea we performed both our test cast and our first two real stations, both overlapping with the previous occupation of P16S during 2015. While there are many new hands on this ship, there are also many folks around who have been a part of the US Repeat Hydrography program for many years, and their expertise and experience have helped greatly in getting us off to a smooth start. During the first few days we were able to work out most of the kinks in the CTD and rosette package, including leaky niskin bottles, a noisy oxygen sensor, the best set points and programming for the ADCP and UVP. Unfortunately, we have also found our first bit of missing materials: Norm Nelson was shipped cellulose instead of membrane

filters, which prevents the collection of CDOM samples. He is having a correct batch of filters shipped to Honolulu for Leg 2.

On Wednesday, 17 April, we had our first major problem with the CTD. During the upcast at station 018 (8 °S), we saw a severe modulation error across all sensors that also caused half of our rosette bottles not to trip. Upon recovery, we reterminated the CTD and during this process, found that water had penetrated the old termination. During this cast, the winch block also seized for a few hundred meters on the upcast. Upon recovery we changed blocks, and found that the problem in the primary block had resulted from salt collecting in the new Stran-Core lubricant used on the CTD. We have established a routine cleaning procedure for the block that should prevent additional problems.

We are now en route to station 22, heading northward along 151 °N and working our way towards Honolulu, HI—the port call between Legs 1 and 2 of P16N. The last several casts have been routine. Due to the problems with the CTD on 17 April, we are approximately two hours behind schedule relative to the station plan we adopted during the planning phase. Morale is generally good now that we have developed a rhythm; the enthusiasm of the new sailors is keeping everyone feeling fresh. We have also started a [cruise blog](#) and are encouraging all of our students to participate.

Additionally, we have had great sight-seeing here in the South Pacific. So far, we have sighted some very tired birds that stop to rest in the winch house or on the deck, some whales, two fishing boats, some fluorescent algae at the bow, and some squid. A number of the science party have also seen their first green flash. The weather has been quite clear and beautiful, with warm days and nights full of clear skies that show the Southern Cross, the pointers, and the Milky Way.

Fair winds and following seas,

--Jessica and Sam