

In which we head NE then SE and now E
 April 30-May 7, 2022

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|------|-------------|---------------|-----------|---------------|------|
| GPS | 00:25:25 | Sat 07-May-22 | 00:25:26 | AirTemp-C | 21.5 |
| LAT | 29 59.807N | | | AirTemp-F | 70.7 |
| LON | 134 51.669E | CTD Depth | CTD SPD | RelHumidity% | 81.9 |
| COG | 270.9 | 2112.5 | 64.1 | BaroPres-mb | 1012 |
| SOG | 0.8 | Bottom Depth | Altimeter | Bow TsgTemp-F | 72.9 |
| GYRO | 5.0 | 4713.2 | 99.3 | HDG_Gyro | 5.0 |
| | | | | Bow RelWS-kt | 20.3 |
| | | | | Bow RelWDIR | 19.2 |
| | | | | Bow TrueWS-kt | 20.2 |
| | | | | Bow TrueWDIR | 24.8 |

Figure 1: WinchMet readout partway down on Station 12 Note the 0.8 kt speed over ground. We are sitting in the southeastward flow characterizing the Kuroshio large meander. The ship is well positioned however and the wire angle much improved over the first dip in these waters moving at 1.7 kts to the southwest.

Finally, we are surrounded by water on all sides and as I write this slightly overdue weekly report we are at Station 12, our first station on the 30°N line. We began with an 8-day delay in port as we had to wait to fill a required position amongst the crew. This delay cut not only into our planned Days at Sea, which we cannot get back, but also into the timeframe we had requested for sampling in Japanese waters. An extension has been requested and it may yet come through, but we are unlikely to hear about it until May 10. As we will not turn back, at best an extension will allow us to finish the last station west of 144.67°E, before continue toward Hawaii. We cut our initial plan for 33 stations within the Japan EEZ down to 26.

Over this past week, since we boarded the last of crew and science party, we have dashed northward toward the southern coast of Japan as quickly as feasible. We stopped just once for what started as a test station, became a “test” station and finally earned its rightful place as Station 1. While only going to 1500 m, we practiced combining the Bio GO-SHIP sampling (12 bottles) with the core GO-SHIP sampling (24 bottles). This method has its challenges, but we’re getting the hang of it. Along our transit we deployed two floats in the Philippine Sea – “Chelsea at Sea (WMO:5906519)” on Station 1 and “Wolfie (WMO:5906513)” on a flyby where we slowed to deploy the float and take underway calibration samples. We reached our first P02-proper station in the early hours of May 5 and managed 7 ½ stations that first day including some in the >2 kt Kuroshio. Talk about a crash course!

On May 6 – during the combined core/bio Station 8 we encountered some dubious oxygen numbers that seemed to be related to a failing primary temperature sensor. With that sensor replaced we headed in on Station 9 and came to grinding halt when the deck box started producing errors. After changing & dummied out sensors, reterminating and checking the connections on the deck box we finally got in, down and out on cast 4 without the recurrence of the errors. But with the May 10th clearance deadline looming, we cut yet another station within the Japan EEZ (down to 25) and are now using 40 nm spacing.

So much for the technical. While we haven't had much time yet to consider the science, we do have some. Here are some preliminary results for Station 1 (Figs. 2-3)

Back with more news next week,

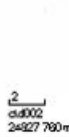
Alison Macdonald and Shuwen Tan

2022 P02/Leg 1 (33RR20220430) Chief and co-Chief Scientists

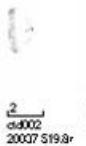
Trichodesmium



Rhizarians



Hydrozoas



Crustaceans



Figure 2: Our UVP is producing some interesting images of the local wildlife. Note while each image has its own scale, they are all the same. Image credit – Stephanie O'Daly.

Figure 3: A Phillipine Sea (21°N, 140°E) comparison of some basic profiles from Station 1 (upper panels, produced using WEB-ODV) and Float 1's profiles from its first ascent (image courtesy of Ken

