

# Brown-0113 (13 Jan 2020)

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## 1. Objective

Left the new NTAS buoy at 07:00 local and transited ~ 7 nm to the new buoy. The intention was to intercompare with the new one and conduct CTD casts but given the “confused” seas and high winds, we decided to make a track to the NW and map currents, SST, and salinity to identify locations to deploy the SWIFTS. Once it is calmer, we will return to NTAS and recover the old buoy. At 10:00 local we started to head on a course of 340 deg to do the mapping and keep the wind forward of the beam for atmospheric sampling. At 16:45 we stopped and turned into the wind at 15.87N, 51.4W to ready the SWIFTS and underway CTD. We plan to turn and go along the same track to the SE and deploy the SWIFTS and UCTD ~ every 5 nm along the track. Radiosonde launches continue every 4 hours.

## 2. Synoptic Situation

Not pleasant. Winds 25 – 30 kts. Sea state of 7 - 9.

| Field                    | Quantity        | Notes            |
|--------------------------|-----------------|------------------|
| RH                       | (75.7, 3.1)     | 18 m asl         |
| Tair                     | (25.9, 0.41)    | 18 m asl         |
| Wind                     | (11.5, 1.9 m/s) | 18 m asl         |
| SST                      | (26.4, 0.18)    | 5 m bsl          |
| Salinity                 | (35.4, 0.34)    | 5 m bsl          |
| Precipitable water       |                 |                  |
| CN                       | (280, 98)       | 18 m asl         |
| CCN                      | (125, 30)       | 18 m asl         |
| Dust                     | No indication   |                  |
| Trade Inversion          |                 |                  |
| Cloud Obs (low/mid/high) | 08:00 Local     | Cu, St, Sc/na/na |
| Coverage (low/mid/high)  | 2/8, 0/8, 0/8   |                  |
| Cloud Obs (low/mid/high) | 12:00 Local     | Sc/Ac/na         |
| Coverage (low/mid/high)  | 4/8, 2/8, 0/8   |                  |
| Cloud Obs (low/mid/high) | 16:00 Local     | Cu, Sc/As/Ci     |
| Coverage (low/mid/high)  | 2/8, 1/8, 1/8   |                  |

### 3. Cruise-day Elements

| Element    | Position [°N, °W] | Time [UTC] | Notes |
|------------|-------------------|------------|-------|
| CTD Cast 1 | 14.8N, 51W        | 12:00      |       |
| CTD Cast   | 15.87N, 51.4W     | 22:00      |       |

**CTD Station:** Two shallow casts to 250 m. The temperature inversion we have seen beneath the mixed layer is gone.

### 4. Instrument Status

Cloud radar, microwave radiometer, and Picarro isotope instrument are not operational and haven't been since the beginning of the cruise.

### 5. Outlook

We are following the same track to the SE and will deploy 6 SWIFTS overnight in a line perpendicular to the wind ~ 5 nm apart. Once all 6 are off the ship we will head to NTAS to sample into the wind and perform CTD casts.

### 6. Figures

Today's track:



