# Crossroads Cruise Report 6026 R/V Atlantic Explorer
# July 24 - August 8 2025
# Version Date: March 9, 2026

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# 1 Overview

The goal of this cruise is deploy 6 sound source moorings around the Flemish Cap and Tail of the Grand Banks for the NSF funded U.S. Crossroads project. The aim of the project is to deploy 80 RAFOS floats in the deepest extension of the Deep Western Boundary Current to track pathways, connectivity and interactions with the North Atlantic current. The 6 sound source moorings are used to track the deep floats below the surface.

This cruise was rescheduled and postponed from May 2025. Originally, we were supposed to deploy all 6 sound sources and all 80 RAFOS floats during a month long cruise from the R/V Revelle. However, a week before mobilization, the bow thruster on the Revelle broke down and the ship needed to go back into emergency dry dock. Our entire cruise was canceled and we were forced to pivot. We were able to secure 16 days on the R/V Atlantic Explorer to deploy the moorings however that did not leave us with enough time to deploy the floats. The floats have been sent to collaborators Christian Mertens (Bremen University), Damien Desbruyeres (Ifremer) and Steve Snook (Fisheries and Oceans Canada) who all have cruises of opportunity in the region later this year.

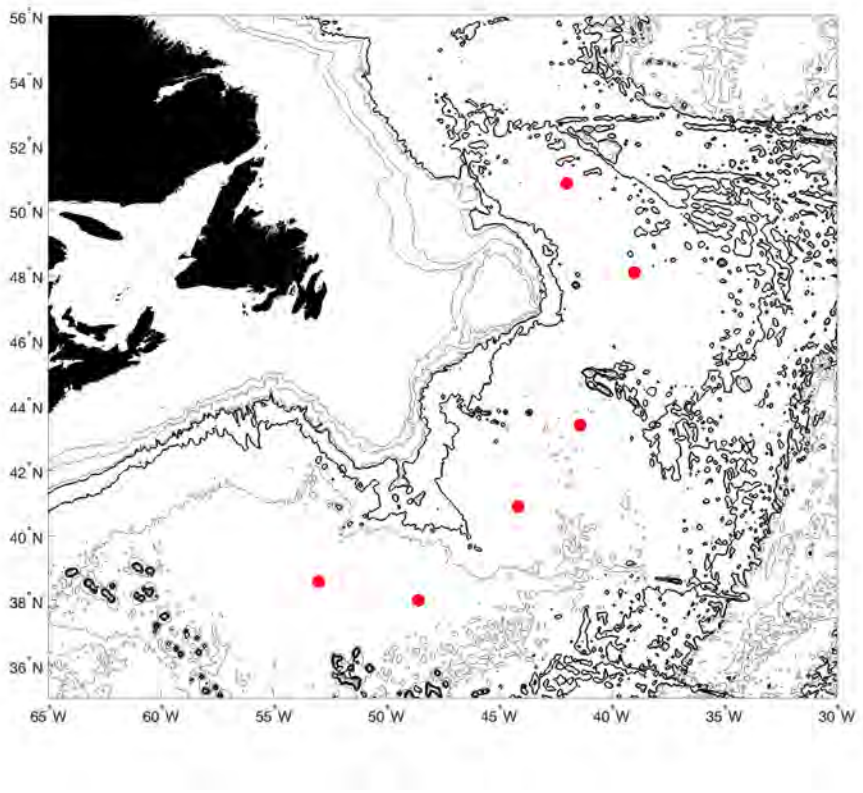



**Figure 1:** Planned mooring locations. Bathymetry is contoured every 1000 meters. 3000 and 4000 meter isobath are bolded.

| Station | Latitude | Longitude | Water Depth (m) | Sound Source |
|---|---|---|---|---|
| SOSO Mooring 6 acoustic release test | 50°49.80'N | 42°00.00'W | 4303 | 97 |
| SOSO Mooring 5 S2BGC Argo RAFOS | 48°04.80'N | 39°00.00'W | 4566 | 91 |
| SOSO Mooring 4 NAVIS BGC | 43°24.00'N | 41°24.60'W | 4800 | 84 |
| SOSO Mooring 3 NAVIS BGC | 40°54.00'N | 44°09.60'W | 4862 | 90 |
| SOSO Mooring 2 NAVIS BGC Deep SOLO + RAFOS | 38°00.00'N | 48°34.80'W | 5376 | 96 |
| SOSO Mooring 1 | 38°34.80'N | 53°00.00'W | 5346 | 95 |

**Table 1:** The deployment plan for Crossroads Cruise 6026 on the R/V Atlanic Explorer

# 2 Science Team and Crew

| Science Party | Affiliation | Role |
|---|---|---|
| Ali Johnson Exley | Woods Hole Oceanographic Institution | Chief Scientist |
| Adam Houk | Woods Hole Oceanographic Institution | Technician |
| Nico Llanos | Woods Hole Oceanographic Institution | Deck Lead |

**Table 2:** Cruise Participants

| Name | Role |
|---|---|
| George Gunther | Captain |
| Jeorge Yu | Chief Mate |
| Olivia Le Blanc | Second Mate |
| Garrett Brann | Chief Engineer |
| Rodney Jumeras | Motorman |
| Al Soliva | Motorman |
| Ronaldo De Leon | Boatswain |
| Joseph Paitone | AB |
| Ciriaco Mutas | AB |
| Joven De Guzman | AB |
| Dexter Ojano | Chief Cook |
| Riggie Sanqui | Asst. Cook |
| Max Unterberger | Marine Tech |
| Vladek Petrusevich | Marine Tech |
| Emily Tate | Marine Tech |

**Table 3:** Crew

# 3 Chronology

The complete event log that recorded every deployment and recovery of scientific instrumentation is reproduced in Section FILL. The following is a brief narration of our daily activities and challenges. All times are in approximate local (Bermuda) time. For time of record in UTC refer to event log and log sheets.

The Atlantic Explorer (AE) arrived into Woods Hole on the morning of Tuesday, July 22, a day later than originally scheduled. The arrival delay did not hinder mobilization in any way. Mobilization started around 0730 the morning of Wednesday, July 23rd when the Baxter crane arrived to lift the 20 ft container onto the 01 deck of the AE. Deb West-Mack, Kat Parise and Aiden Thayer loaded 3 NAVIS BGC Argo Floats, 1 S2BGC Argo float and 1 Deep Solo Argo float. The ship departed as scheduled around 0900 on Thursday, July 24.

Mooring #6 was spooled around mid-day on Friday, July 25. Acoustic releases SN 33043, 33409 and 54683 were tested at 1000 m the morning of Tuesday, July 29. We had success communicating with the releases via the in-hull transducer and all three successfully released. To save time, the remaining three releases will likely not be tested before deployment. Flotation spheres were also picked from the container on the 01 deck.

Mooring 6 was deployed on the morning of July 30th. There was a mix up with the flotation spheres and 2 sets did not get added to the top but were instead included near the bottom. Deployment only took about an hour and 20 minutes (plus some time to steam closer to drop site) but there were challenges ranging on the release using the in-hull transducer. We switched to the over the side transducer and that worked much better to range on the mooring. The mooring drifted about 700 meters from drop location due to the current speed. After deployment, we realized the pre-set sound source schedules did not correspond to the planned schedules on the mooring log. We checked the next sound source (91) for mooring 5 and it to was programmed wrong. We reset sound source 91 to align with the planned source schedule.

Mooring 5 was deployed on the morning of July 31st. It was a beautiful sunrise before the fog settled in. Deployment started around 0430 ship time and took a bit less than 2 hours. Everything went very smoothly and we were greeted by a pod of pilot whales after the anchor was released. Ranging on the release took about 45 minutes using the over the side transducer. During the survey, we spooled for mooring 4. After we surveyed for the mooring, we deployed the S2BGC Argo float followed by a RAFOS float. The deck was then prepared for mooring 4 deployment.

Mooring 4 was deployed in the evening of August 1st. Deployment started around 17:20 ship time and took about an hour and a half. Everything went smoothly and ranging on the release was simple however the mooring did drift quite a ways from the release site. During the survey, we spooled for mooring 3. After the survey, we deployed a NAVIS BGC float. The deck was then prepared for both mooring 3 and 2 deployment because we were expecting weather the following day.

Mooring 3 was deployed in the evening of August 2nd. We were prepared for bad weather today but the storm passed to the north of us and we were not impacted during the transit or during the deployment. Deployment started around 17:45 ship time and took about an hour and 45 minutes. The bathymetry here was a bit shallower ($\sim$ 50 meters) than expected. It took about 40 minutes for the anchor to reach the bottom and communication with the

release was easy. There was minimal fallback on the mooring and we ranged it to within 500 meters of the drop site. During the survey, we spooled for mooring 2. After the survey, we deployed a NAVIS BGC float. The deck was already ready for mooring 2 so we did not need to pick after the deployment. We were therefore only on station for about 3.5 hours. Weather picked up a bit overnight and so the ship was slowed down some transiting to the next mooring site.

Mooring 2 was deployed in the morning of August 4th. Deployment started around 03:00 ship time and took about an hour and 50 minutes. The bathymetry was shallower than estimated by about 75 meters and so Ali made the decision to remove a 100 meter shot of wirerope from the bottom of the mooring. It took about 50 minutes for the anchor to reach the bottom and communication with the release was easy. The current was pretty strong and the mooring did drift about 500 meters from the drop site. After the mooring, we deployed a deep solo Argo, a NAVIS BGC Argo and a RAFOS float.

Ali decided not to deploy mooring 1. Our ETA into Bermuda back from mooring site 2 is the morning of August 8th, which is already later than anticipated and we expected a delay due to tropical storm Dexter which passed just northeast of our cruise track.

| Date (2025) | Cruise Day | Day of Week | Activities |
|---|---|---|---|
| July 22 | 0 | Tuesday | AE arrival into WH |
| July 23 | 1 | Wednesday | AE MOB |
| July 24 | 2 | Thursday | Depart WH 0900 |
| July 25 | 3 | Friday | Mooring 6 spooled + transit |
| July 26 | 4 | Saturday | Transit |
| July 27 | 5 | Sunday | Transit |
| July 28 | 6 | Monday | Transit |
| July 29 | 7 | Tuesday | Acoustic release test and deck prep + transit |
| July 30 | 8 | Wednesday | Mooring 6 deployment and spool for mooring 5 |
| July 31 | 9 | Thursday | Mooring 5 deployment and spool for mooring 4 |
| August 1 | 10 | Friday | Mooring 4 deployment and spool for mooring 3 |
| August 2 | 11 | Saturday | Mooring 3 deployment and spool for mooring 2 |
| August 3 | 12 | Sunday | Transit |
| August 4 | 13 | Monday | Mooring 2 deployment |
| August 5 | 14 | Tuesday | Transit |
| August 6 | 15 | Wednesday | Transit |
| August 7 | 16 | Thursday | Transit and arrival into BIOS |
| August 8 | 17 | Friday | demob |

**Table 4:** Daily operations

# 4 Mooring Deployments

An array of six moorings were deployed to support underwater tracking of RAFOS floats. Each mooring was equipped with a single sound source, nominally placed at 1200 meters depth at approximately the sound speed maximum to enhance sound propagation. The sources are the URI-Valdes configuration, and emit a low-frequency 286 Hz 80-second long signal two times per day. Three of the sources had been used previously in other sound source mooring deployments and three were new. The resonator tube of the new sources were smaller in diameter but longer in length than the original, recycled sources.

## 4.1 Acoustic Release Test

Three Edgetech acoustic releases were tested by attaching them to the CTD frame (Fig. 2) and lowering to 1000 meters. Releases were held at 1000 meters for approximately 15 minutes while communication with the in-hull transducer was tested. Three releases were successfully tested on Tuesday, July 29 at 0915 ADT. The remaining three (plus one spare) releases were not be tested to save time for mooring deployments.

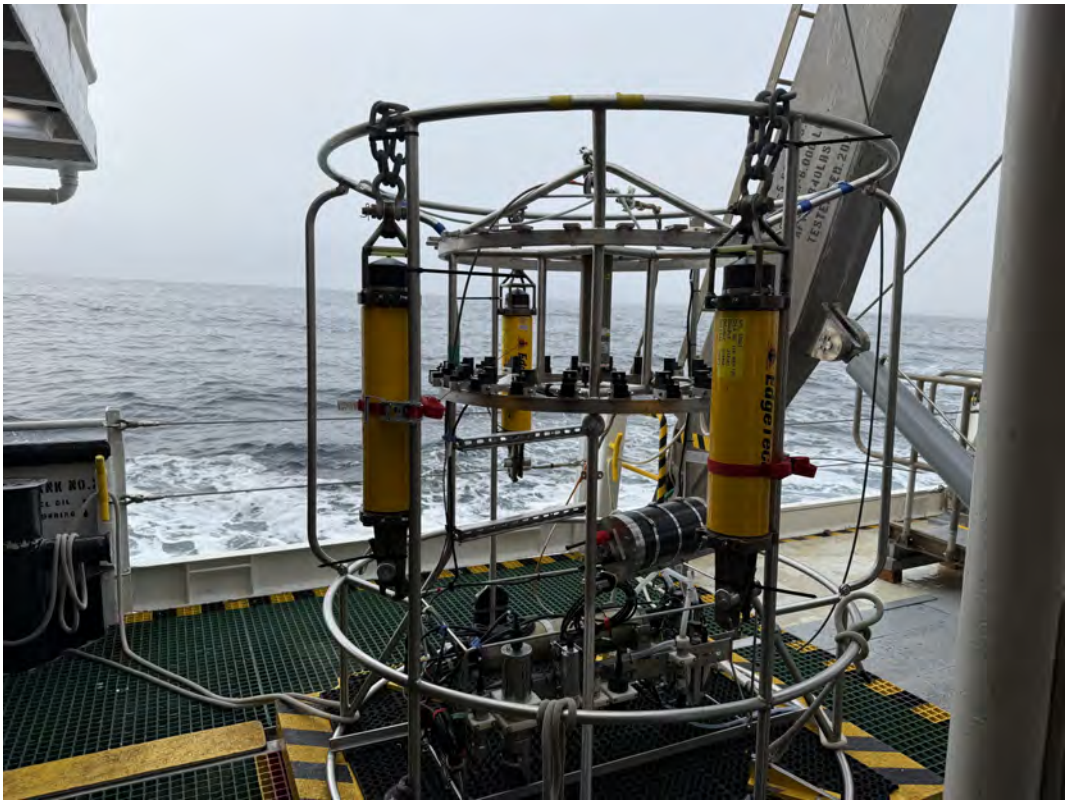


**Figure 2:** Acoustic releases attached to CTD frame

| Edgetech SN | Tested Y/N | Released Y/N | Depth (m) | Location | Mooring |
|---|---|---|---|---|---|
| 33409 | Y | Y | 1000 | 49°28.070N 45°40.087W | 4 |
| 48275 | N | N/A | N/A | 38°00.919'N 48°34.618'W | 2 |
| 33043 | Y | Y | 1000 | 49°28.070N 45°40.087W | 5 |
| 54683 | Y | Y | 1000 | 49°28.070N 45°40.087W | 6 |
| 48282 | N | N/A | N/A | 40°54.230'N 44°09.820'W | 3 |
| 48280 | N | N/A | N/A | N/A | N/A |
| 54690 | N | N/A | N/A | N/A | N/A |

**Table 5:** Acoustic release deployment table

## 4.2 Deck Setup for Deployment Operations

The OS42 Big Squid (or Dusch 4) belonging to the Atlantic Explorer was used for all of the mooring operations and was located on the aft deck on center with the A frame.

**Figure 3:** Deck setup for deployment

**Figure 4:** Sound source setup for deployment

## 4.3 Source Schedule reset

After deployment of sound source mooring 6, we noticed that the source schedule on the mooring deployment sheet (and the table print out from email between Heather and Jim) did not match the pre-scheduled ping time that was recorded during start up of the sound source. The source (SN 94) was supposed to be scheduled for 0015 and 1215 UTC but was instead scheduled for 0145 and 1345 UTC. Sound source 91 (mooring M5) was already started up and ready for deployment on deck and so we checked the pre-scheduled pong times against the documents and found another discrepancy. Source 91 was supposed to be scheduled for 0030 and 1230 but was instead scheduled for 0130 and 1330. We decided to reprogram source 91 to match the mooring deployment sheets and table in the email. The source at mooring 5 (91), and all subsequent sources, were reprogrammed before deployment (if needed) however the sound source at mooring 6 (97) was not caught before deployment.

| Mooring | Sound Source | Planned schedule (UTC) | Pre-set schedule (UTC) | Deployed schedule |
|---|---|---|---|---|
| 6 | 97 | 0015 & 1215 | 0145 & 1345 | 0145 & 1345 |
| 5 | 91 | 0030 & 1230 | 0130 & 1330 | 0030 & 1230 |
| 4 | 84 | 0045 & 1245 | 0115 & 1315 | 0045 & 1245 |
| 3 | 90 | 0100 & 1300 | 0100 & 1300 | 0100 & 1300 |
| 2 | 96 | 0115 & 1315 | 0145 & 1345 | 0115 & 1315 |
| 1 | 95 | 0130 & 1330 | 0130 & 1330 | 0130 & 1330 |

**Table 6:** Sound source pre-set and planned schedules

## 4.4 Mooring SOSO #6

Sound source mooring number 6 was deployed on the morning of Wednesday, July 30th. Science team and techs met on the bridge at 0200 ship time and deployment started soon after. Upon arriving on site, bottom depth was measured at 4300 meters, in very good agreement with estimated depth (4303 m). We took the ship 4 miles upwind of the drop point and steamed back at around 1 – 1.5 knots.

After the sound source went into the water, we realized 2 sets of glass flotation balls had been left off the chain at the top. This was partially due to the limited deck space and not being able to see all the flotation balls that were lined up on the deck. This left us with 5 sets of 4" glass balls and the 3 ball radio float at the top of the mooring. Nico assured us this would be enough flotation to keep the mooring upright and if anything might only slow the return to the surface during recovery. Ali decided to add the extra balls to the chain at the bottom of the mooring so we didn't have to worry about the return. This added 5 meters of length below the sound source.

It only took about an hour and 12 minutes to deploy the radio float to the final glass sphere before the release. We were therefore still very far from our target drop point and would have had to steam for another hour and a half to get to the target. Ali watched the depth and made the decision to drop about 2 nautical miles away from target location. Drop time was 0442 ship time (0742 UTC). The bottom depth at that location was 4263 meters, about 40 meters shallower than the estimated depth. Accounting for the extra 5 meters of flotation balls, we are closer to 45 meters shallower than the estimated depth. This should put our sound source nominally at around 1155 meters. However, upon deployment the mooring drifted quite a bit (700 meters) in the direction of the target location and so it might sit a bit closer to target depth.

Communication with the release was immediately challenging. Deck box was originally connected to the in-hull transducer. We talked to it on the way down but ship noise/bubbles/other various pings made it challenging to range. We tried to range on it without success once it hit the bottom but the ship was still moving slowing away from the release site so we asked the bridge to stop and let us drift. As we drifted back closer to the release site, we ranged on it successfully a few times. We asked to move one nm to the east but could not communicate with it at all and so at 0615 ship time, we switched to the over the side transducer which was run through the port side pass through and into the aft lab (Figs. 5 & 6). The current was strong and so Nico put a weight on the end to keep it straight down. This worked great and within about 45 minutes we were able to trilaterate (not triangulate!) on it. Important note: we forgot to disable the acoustic release at the end of the survey. This will affect the battery life and might be dead upon return.

We were on our way to the next mooring site by 0735. We slowed down for half an hour or so to crane flotation balls for the next deployment out of the container. The currents are strong here. The mooring drifted about 700 meters to the northeast from release location. Will have to be aware of this upon recovery, it could be a challenge.

**Figure 5:** Deck box setup with over the side transducer

**Figure 6:** Over the side transducer into the port side pass through

## 4.5 Mooring SOSO #5

Sound source mooring number 5 was deployed on the morning of Thursday, July 31. Science team and techs met on the bridge at 0400 ship time and deployment started soon after. Bottom depth about one nm from planed deployment site was measured at 4567, good agreement with estimated depth (4566) and so Ali decided to target that location for the drop. For this deployment, we moved 2.5 nm away from the target drop site and started deployment.

After the sound source went into the water, we realized we were going to overshoot the target drop site. Compared to M6 deployment, we had about half as much current working against us so we were making better time to drop site. Ali decided to have the bridge slowly and slightly change course to navigate towards the original target position (pre-planned before the cruise) which added some extra distance before drop. This worked out and we dropped between the two target locations. Bottom depth was measured at 4544 at the drop site. We released the anchor at 0610 ship time for a total of about 1 hour and 50 minutes for

mooring deployment. Ranging on the release worked great with the over the side transducer and took about 45 minutes. During this time, the deck team spooled for mooring 4.

After we surveyed for the release, we deployed S2BGC Argo float SN 4008 over the port side. Deployment was easy and release worked great. We then deployed RAFOS 058 also over the port side. The deck was busy because they were setting up for the next mooring deployment so we also went over the side with the RAFOS float which worked well.

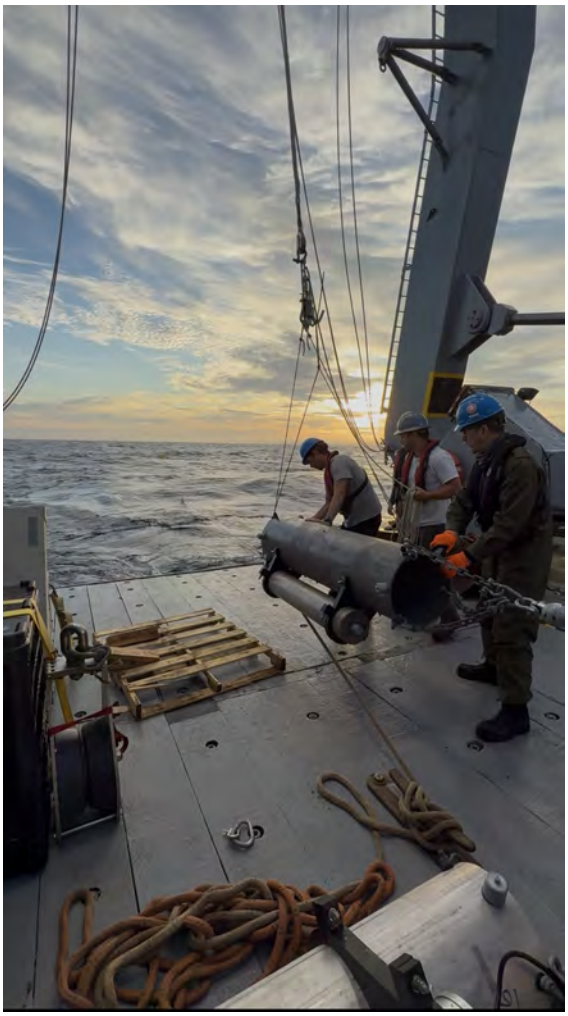


**Figure 7:** Sound source rigging and deployment strategy

## 4.6 Mooring SOSO #4

Sound source mooring number 4 was deployed on the evening of Friday, August 1st. Science team and techs met on the bridge at 1600 and started deployment right away. The bottom was very flat and depth at pre-planned target drop was measured at 4785, in good agreement with estimated depth (4800). We used the pre-planned coordinates as the target drop site. For this deployment, we moved 3 nm away from the target drop.

Deployment went according to plan with nothing notable along the way. Anchor was

dropped at 17:50 ship time about 1/2 a nm away from target drop. Total deployment time was about 1 hour and 30 minutes. We pinged the release on the way down, paused for dinner and then ranged on it. We had no problem ranging on the release however we found that the mooring drifted significantly from the release site. We aren't quite sure why, the current was no stronger today than other days however the range was consistent. It took a few tries to disable the releases but we lowered the transducer a bit more and eventually had success. Deck team spooled for Mooring 3 while we ranged on the release. They also picked for the next two moorings in preparation for bad weather the following day.

We deployed NAVIS BGC Argo float SN F1680 over the starboard side. Navigating the deck with sensitive sensors on the top of the float was challenging given the spooling and deck work happening. Might be better off deploying from the port side next time.

## 4.7 Mooring SOSO #3

Sound source mooring number 3 was deployed on the evening of Saturday, August 2nd. We were prepared for the weather to slow us down during the day however the storm passed behind us and we made good time to the drop site. Conditions were a bit rougher during deployment than at previous sites however it didn't have any impact on deck operations or communication with the release.

Upon reaching the site, it was clear the bathymetry was about 40 - 50 meters shallower than expected however we proceeded as planned. The bottom was measured at 4822 meters about half a nm from the target position while the estimated depth was 4862 meters. Deployment stared around 17:45 and went smoothly. Anchor was dropped at about 19:30 ship time about 150 meters from the target position. It took about 40 minutes for the mooring to settle on the bottom and we had good communication with the release on the way down despite a rougher sea state than we had the previous deployments. Once the mooring settled on the bottom, we ranged on it and again had good communication. The mooring was found to have settled pretty close to the target position. Deck team spooled for mooring 2 while we ranged on the release but didn't need to pick for the next deployment since we had prepped the deck for that already.

We deployed NAVIS BGC Argo float SN F1675 over the starboard side again because the wind was stronger and that was the leeward direction. The line was a bit tangled and deployment was a bit more awkward but it was successfully deployed without any issues. In total, we only spent about 3.5 hours on site.

## 4.8 Mooring SOSO #2

Sound source mooring number 2 was deployed on the morning of Monday, August 4th. Science team and techs met on the bridge at 02:30 ship time and surveyed the bottom. The bottom was very flat and quite a bit shallower than expected, about 75 meters. Ali and Nico decided that if we were still measuring shallow at the end of the deployment, we would remove the 100 meter wirerope shot from the bottom of the mooring. We were still measuring about 5303 meters to the bottom when our estimated depth was 5376 meters and so the 100 meter shot was removed from the mooring. We dropped the anchor about 500 meters from the target position at 05:06 ship time. The deployment took about an hour and

50 minutes. We had good communication with the release on the way down and it settled to the bottom in about 50 minutes. We ranged on it with no issues but found it did drift quite ways. The current was strong here so it wasn't unexpected. We deployed the Deep Solo Argo float (SN 1211), the NAVIS BGC float (SN F1667) and the RAFOS float (SN 060) off the starboard side. Upon leaving, it looks as if we will not be able to deploy the final mooring and so we did not spool or pick from the container.

## 4.9 Mooring SOSO #1

Ali made the decision not to deploy sound source mooring #1. It wouldn't be possible to go to the planned deployment site and make it back to Bermuda by the morning of August 8th. We considered dropping it on our route back to Bermuda, which would have saved some time and made it possible to get back on time however we were keeping an eye on tropical storm Dexter which was headed towards us. We anticipated slowing down some and so Ali didn't want to risk a late arrival. Plus, while the captain was ok with returning on the 8th, we were really supposed to be scheduled for return on the 7th.

| M# | Date and Time (UTC) | Coordinates (survey pos) | Sound Source | Pong Schedule (UTC) | Expected Water Depth (m) | Measured Water Depth (m) | Additional Shot | Depth of Source (m) |
|---|---|---|---|---|---|---|---|---|
| 6 | 07/30/25 07:42:21 | 50°51.442'N 42°00.046'W | 97 | 01:45 13:45* | 4303 | 4263 | 5** | 1155 |
| 5 | 07/31/25 09:10:09 | 48°05.556'N 38°59.722'W | 91 | 00:30 12:30 | 4566 | 4544 | none | 1178 |
| 4 | 08/01/25 20:50:11 | 43°25.114'N 41°24.070'W | 84 | 00:45 12:45 | 4800 | 4785 | none | 1185 |
| 3 | 08/02/25 22:25:13 | 40°54.230'N 44°09.820'W | 90 | 01:00 13:00 | 4862 | 4812 | none | 1150 |
| 2 | 08/04/25 08:06:10 | 38°00.919'N 48°34.618'W | 96 | 01:15 13:15 | 5376 | 5303 | -100 | 1227 |

**Table 7:** Mooring deployment table. *pong schedule is different than what was originally planned (see section 4.3). **Additional shot due to mooring ball mix up.

# 5 RAFOS floats

RAFOS float 058 was deployed after mooring #5. The back deck was crowded as the deck team prepared for the next deployment and so we decided not to use the A frame and deployed off the port side above 2 feet above water line. The cradle worked well and deployment was smooth. RAFOS float 060 was deployed after mooring #2. We deployed off the starboard side and lowered into the water.

| Float s/n | Mission Length (days) | Target Pressure (dbar) | Date | Time (UTC) | Coordinates |
|---|---|---|---|---|---|
| 058 | 14 | 3000 | 07/31/25 | 11:10:25 | 48°04.139 N 39°02.035 W |
| 060 | 14 | 3000 | 08/04/25 | 09:53:58 | 38°00.576'N 48°36.438'W |

**Table 8:** RAFOS deployment table

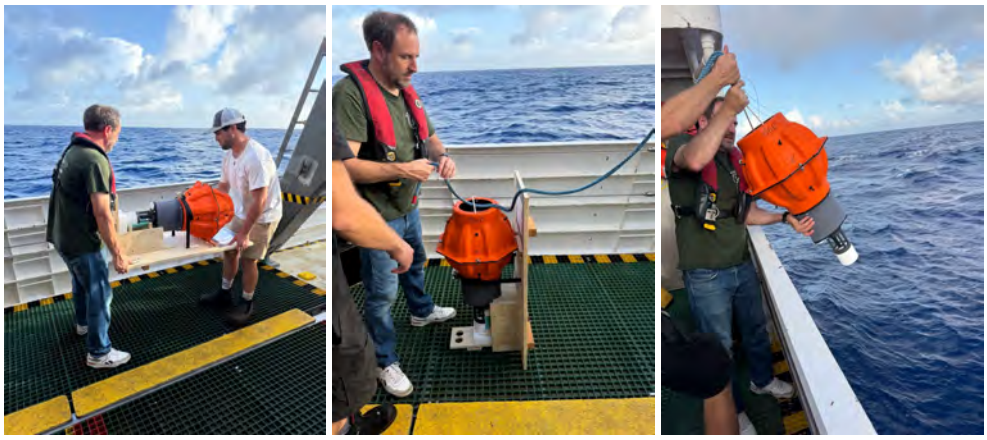


**Figure 8:** RAFOS deployment

# 6 Argo Floats

The S2BGC (4008) was deployed after mooring 5. This was the float in the biodegradable cardboard box. Deployment was easy and uneventful, we removed the packaging, brought it on deck and used the straps to lower it over the port side. The release worked in about 5 seconds.

NAVIS float F1680 was deployed after mooring 4. Sensors were cleaned with DI water and the lens wipes per instructions. We deployed off the starboard side of the ship at about 2 knots. Moving the float around the deck was a bit challenging, especially having to be so careful with the sensors on the top, and so it might be easier to keep deployments to the port side. NAVIS float F1675 was deployed after mooring 3. Sensors were cleaned again and due to the wind, we deployed off the starboard side of the ship again, steaming at about 1.5 knots. NAVIS float F1667 and Deep Solo float 1211 were deployed after mooring 2. The deep solo was packaged in a cardboard box with a water release and a backup pull release. However, when we tipped the box over to cut the red line on the bottom, the pull release got caught and so the float accidentally released on the deck. We ended up throwing the whole cardboard box overboard which worked fine. The float came free and successfully reported in.

| Type | Float s/n | Deployment Coordinates | Date | Time (UTC) |
|---|---|---|---|---|
| S2BGC | 4008 | 48°05.177'N 39°01.401'W | 07/31/2025 | 10:57:56 |
| NAVIS | F1680 | 43°24.020'N 41°24.552'W | 08/01/2025 | 22:46:34 |
| NAVIS | F1675 | 40°53.94'N 44°11.22'W | 08/02/2025 | 00:08:32 |
| NAVIS | F1667 | 38°00.560'N 48°36.288'W | 08/04/2025 | 09:50:07 |
| Deep Solo | 12111 | 38°00.505'N 48°35.9998'W | 08/04/2025 | 09:42:41 |

**Table 9:** ARGO deployment table

**Figure 9:** S2BGC deployment (left) and NAVIS deployment (right)

# 7 Demob

Demobilization was a challenge. The truck for the container arrived late and so we offloaded the container and then starting loading it on the pier. However, once the truck arrived, we realized the container was too heavy for the ships crane to move it onto the truck and so we had to spend a bunch of extra time unloading the container and then reloading it once it was on the truck. They were also trying to fuel the ship at the same time, and the crane could not be used while they were actively fueling and so we would have to stop for 45 minutes at a time. Once everything was loaded, we tried to put the top on the container however it must have been warped during the cruise and would not latch down. We tried everything, including attempting to weight down the top of the container to straighten it back out but nothing was working. Eventually, we brute forced the latches down. There is a good chance this may be dangerous to open upon return but was the only solution.

**Figure 10:** Attempting to latch lid onto container

# 8 Lessons Learned

- Was nice to have extra mooring diagrams for the winch operators. We attached it to the frame of the winch so they knew what to expect for shots both winding and deploying.
- The sources are so fussy. Can we make them easier to work with at sea? Adam worried about the connectors/cables rubbing on the side of the sound source. Did not give him the "warm and fuzzies".

# 9 Deployment Logs

## 9.1 Moorings

## 9.2 Surveys

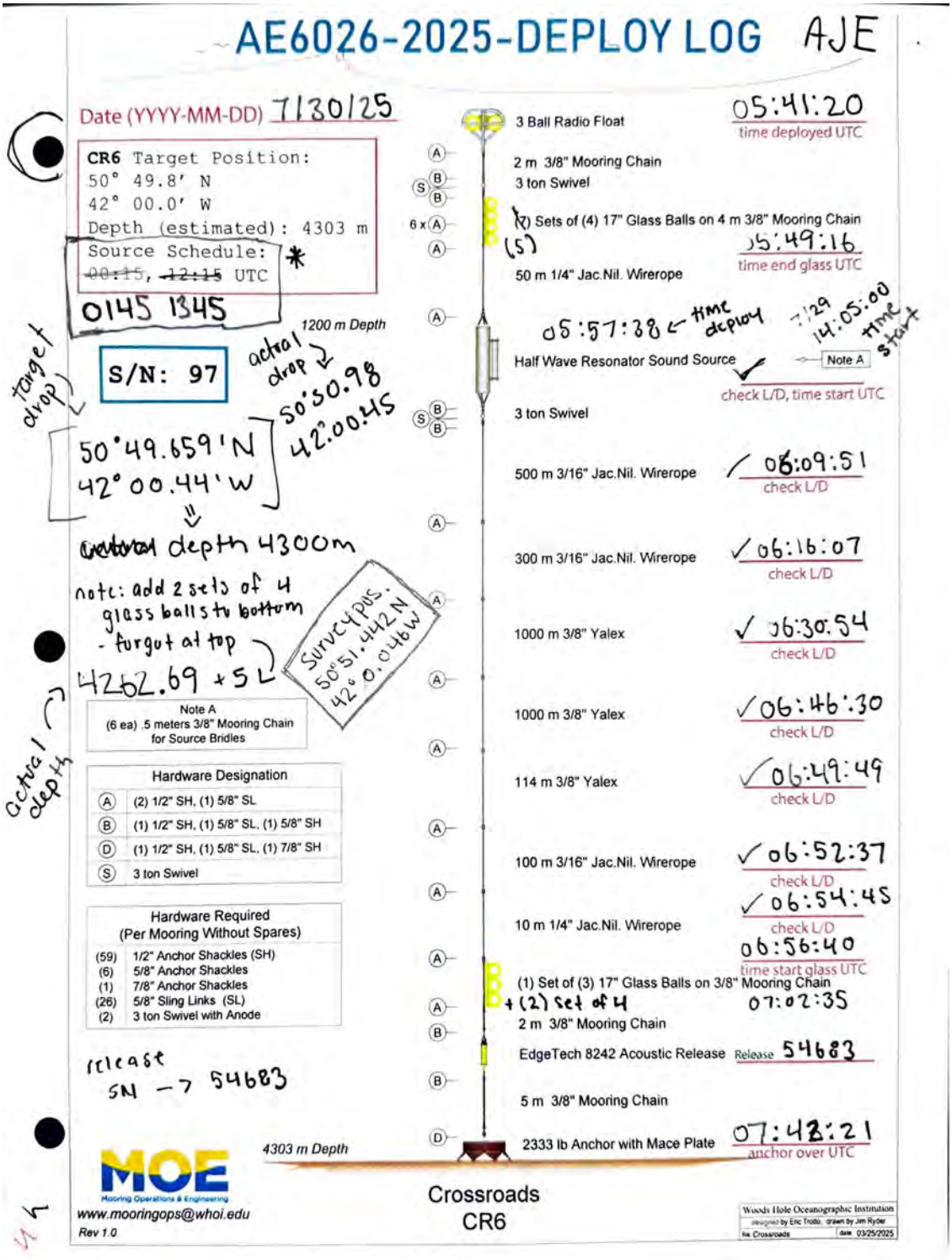
## 9.3 Releases

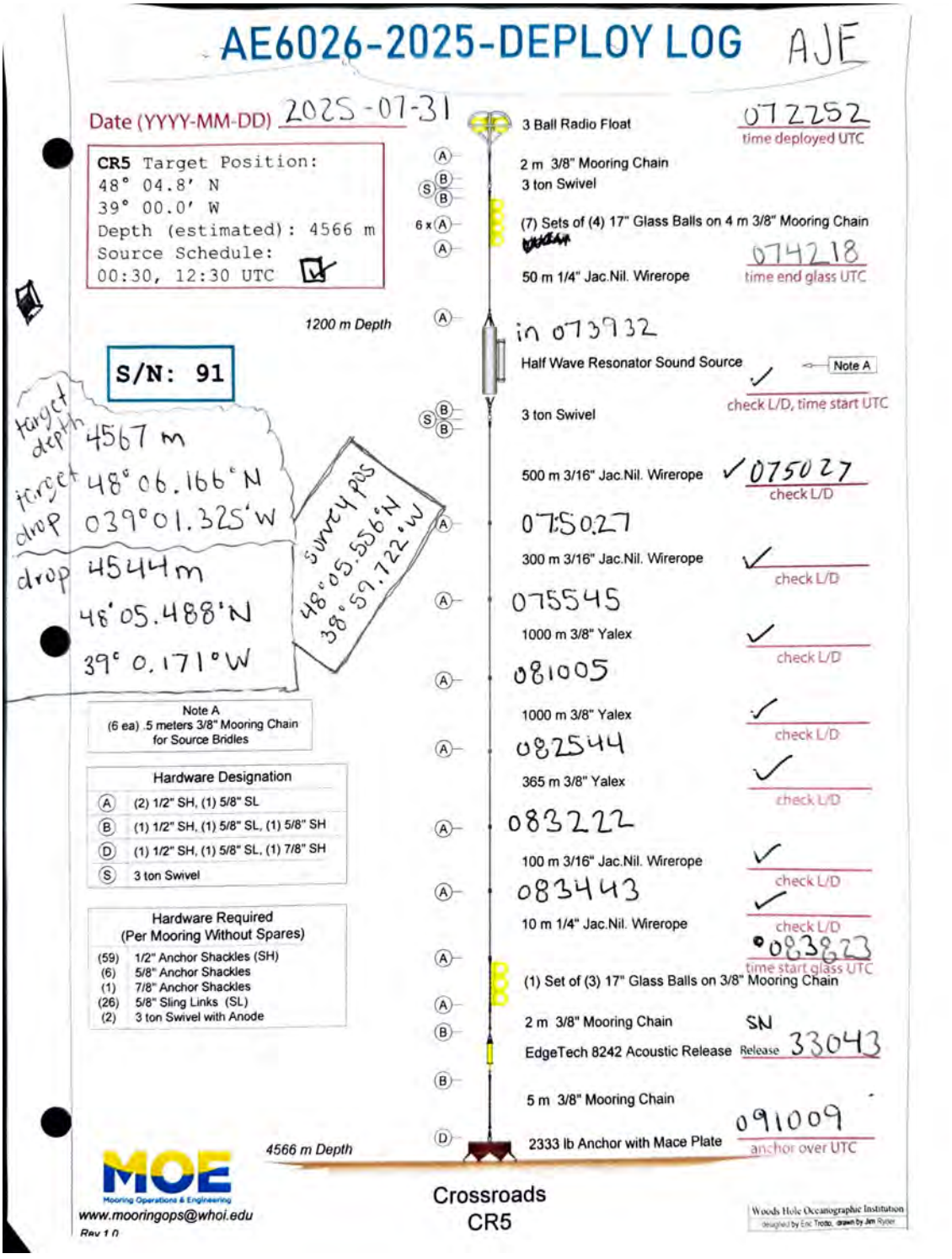
## 9.4 Sound Sources

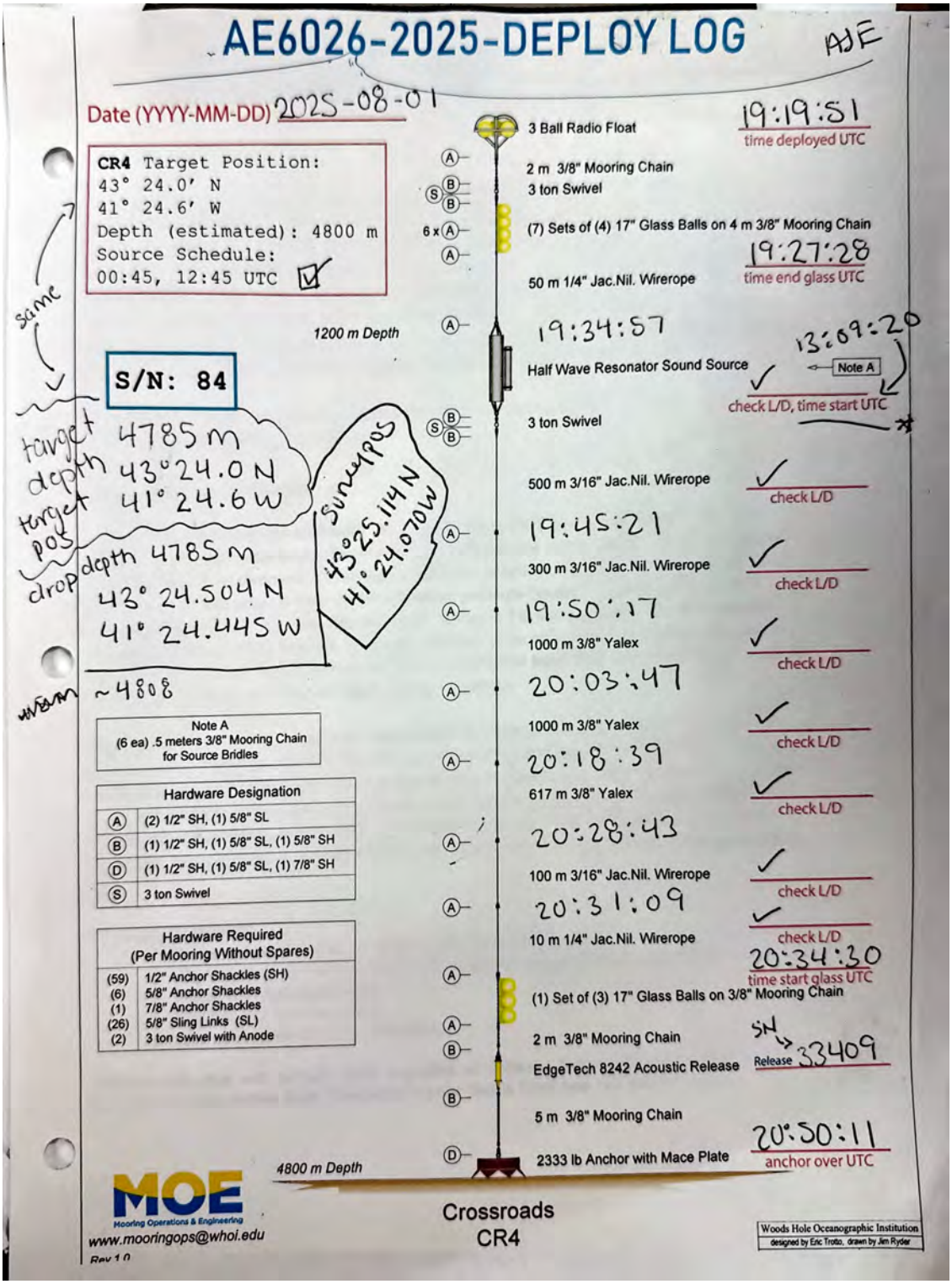
## 9.5 RAFOS

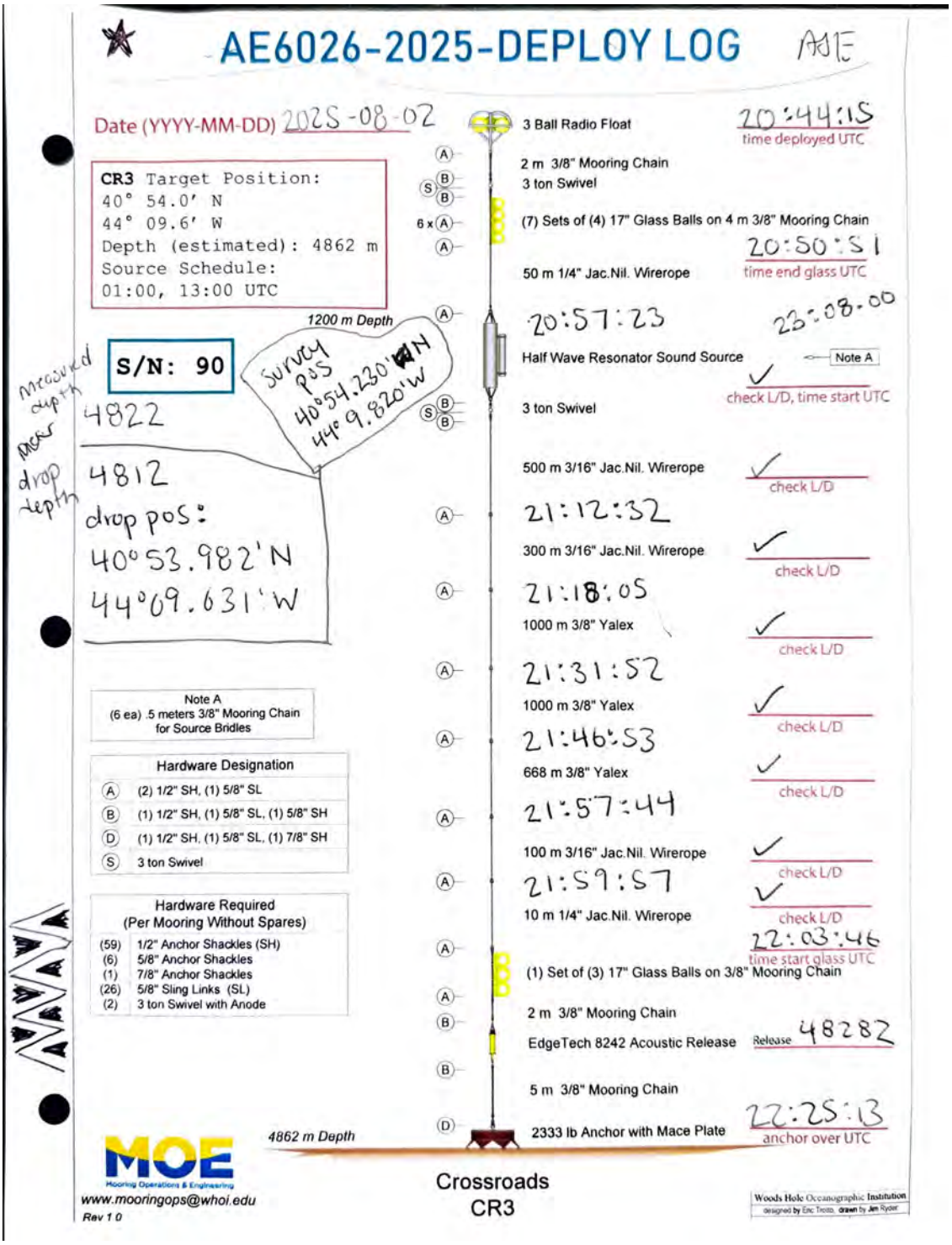
## 9.6 CTD

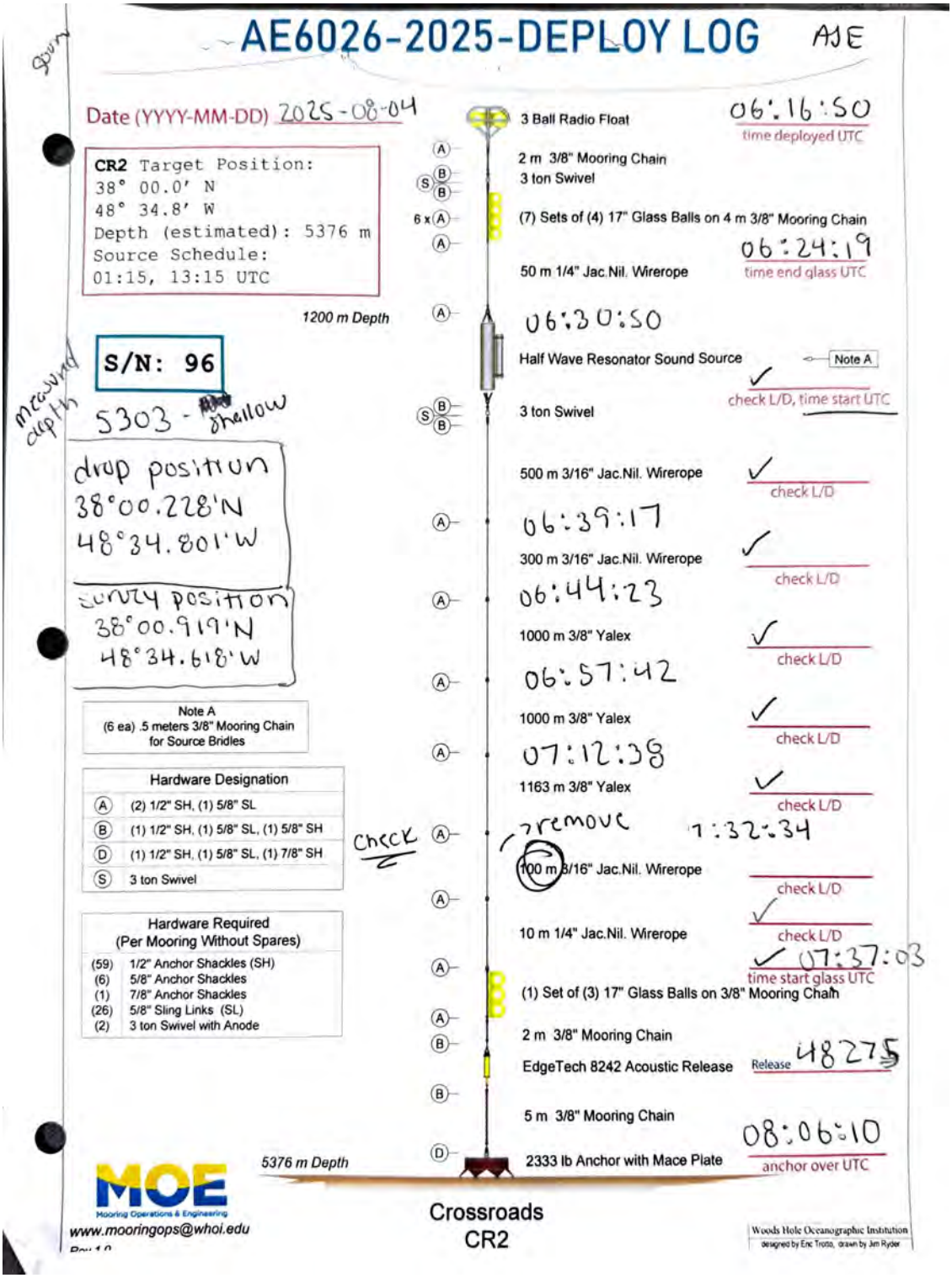
## 9.7 Argo

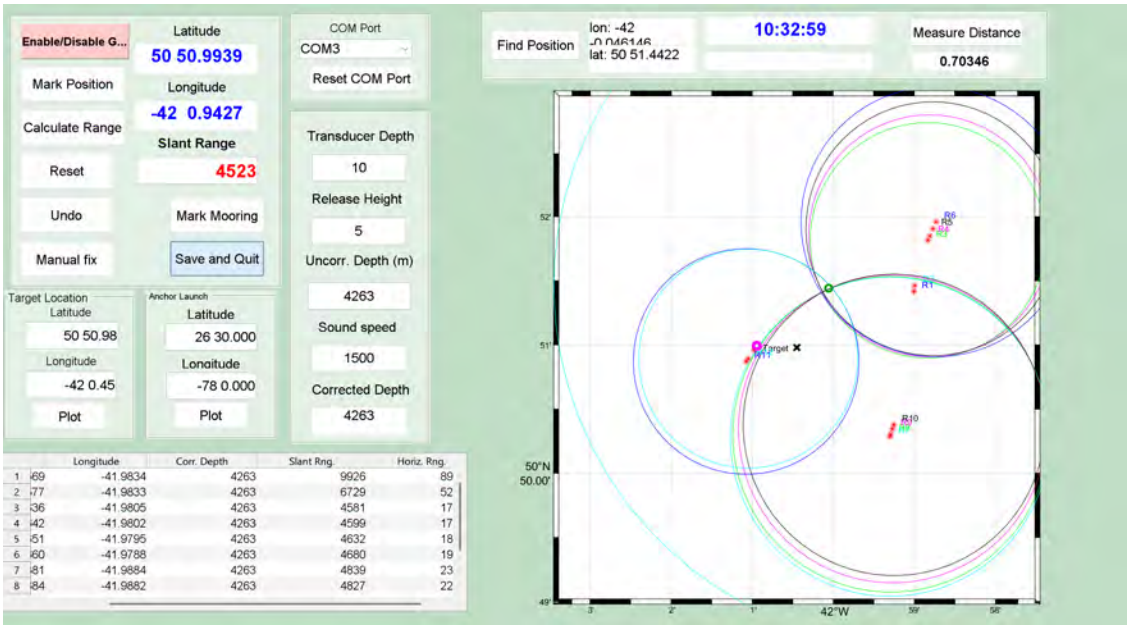

AE6026-2025-DEPLOY LOG AJE
Date (YYYY-MM-DD) 7/30/25
CR6 Target Position:
50° 49.8' N
42° 00.0' W
Depth (estimated): 4303 m
Source Schedule:
~~00:15~~, ~~12:15~~ UTC
0145 1345
1200 m Depth
S/N: 97
target drop
actual drop
50°50.98
42°00.45
50°49.659'N
42°00.44'W
actual depth 4300m
note: add 2 sets of 4 glass balls to bottom - forgot at top
4262.69 + 5L
Survey pos. 50°51.442 N 42° 0.046W
actual depth
Note A
(6 ea) .5 meters 3/8" Mooring Chain for Source Bridles
Hardware Designation
(A) (2) 1/2" SH, (1) 5/8" SL
(B) (1) 1/2" SH, (1) 5/8" SL, (1) 5/8" SH
(D) (1) 1/2" SH, (1) 5/8" SL, (1) 7/8" SH
(S) 3 ton Swivel
Hardware Required (Per Mooring Without Spares)
(59) 1/2" Anchor Shackles (SH)
(6) 5/8" Anchor Shackles
(1) 7/8" Anchor Shackles
(26) 5/8" Sling Links (SL)
(2) 3 ton Swivel with Anode
release SN – 54683
MOE
Mooring Operations & Engineering
www.mooringops@whoi.edu
Rev 1.0
4303 m Depth
3 Ball Radio Float
05:41:20
time deployed UTC
2 m 3/8" Mooring Chain
3 ton Swivel
(7) Sets of (4) 17" Glass Balls on 4 m 3/8" Mooring Chain
(5)
05:49:16
time end glass UTC
50 m 1/4" Jac.Nil. Wirerope
05:57:38 ← time deploy
7/29 14:05:00 time start
Half Wave Resonator Sound Source
Note A
check L/D, time start UTC
3 ton Swivel
500 m 3/16" Jac.Nil. Wirerope
06:09:51
check L/D
300 m 3/16" Jac.Nil. Wirerope
06:16:07
check L/D
1000 m 3/8" Yalex
06:30:54
check L/D
1000 m 3/8" Yalex
06:46:30
check L/D
114 m 3/8" Yalex
06:49:49
check L/D
100 m 3/16" Jac.Nil. Wirerope
06:52:37
check L/D
10 m 1/4" Jac.Nil. Wirerope
06:54:45
check L/D
06:56:40
time start glass UTC
(1) Set of (3) 17" Glass Balls on 3/8" Mooring Chain
+ (2) set of 4
07:02:35
2 m 3/8" Mooring Chain
EdgeTech 8242 Acoustic Release
Release 54683
5 m 3/8" Mooring Chain
2333 lb Anchor with Mace Plate
07:43:21
anchor over UTC
Crossroads
CR6
Woods Hole Oceanographic Institution
designed by Eric Trotto, drawn by Jim Ryder
file Crossroads
date 03/25/2025

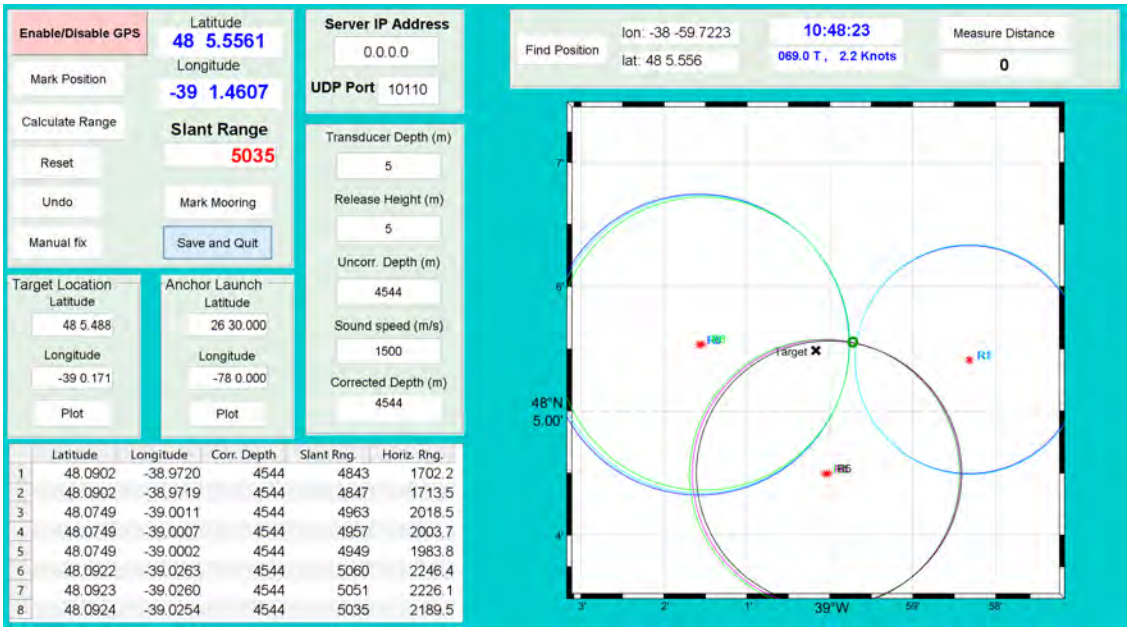

AE6026-2025-DEPLOY LOG AJE
Date (YYYY-MM-DD) 2025-07-31
CR5 Target Position:
48° 04.8' N
39° 00.0' W
Depth (estimated): 4566 m
Source Schedule:
00:30, 12:30 UTC
1200 m Depth
S/N: 91
target depth 4567 m
target 48° 06.166' N
drop 039° 01.325' W
drop 4544 m
48° 05.488' N
39° 0.171° W
survey pos 48° 05.556' N 38° 59.722' W
Note A
(6 ea) .5 meters 3/8" Mooring Chain for Source Bridles
Hardware Designation
A (2) 1/2" SH, (1) 5/8" SL
B (1) 1/2" SH, (1) 5/8" SL, (1) 5/8" SH
D (1) 1/2" SH, (1) 5/8" SL, (1) 7/8" SH
S 3 ton Swivel
Hardware Required (Per Mooring Without Spares)
(59) 1/2" Anchor Shackles (SH)
(6) 5/8" Anchor Shackles
(1) 7/8" Anchor Shackles
(26) 5/8" Sling Links (SL)
(2) 3 ton Swivel with Anode
3 Ball Radio Float
072252 time deployed UTC
2 m 3/8" Mooring Chain
3 ton Swivel
6 x (7) Sets of (4) 17" Glass Balls on 4 m 3/8" Mooring Chain
074218 time end glass UTC
50 m 1/4" Jac.Nil. Wirerope
in 073932
Half Wave Resonator Sound Source
Note A
check L/D, time start UTC
3 ton Swivel
500 m 3/16" Jac.Nil. Wirerope
075027 check L/D
075027
300 m 3/16" Jac.Nil. Wirerope
check L/D
075545
1000 m 3/8" Yalex
check L/D
081005
1000 m 3/8" Yalex
check L/D
082544
365 m 3/8" Yalex
check L/D
083222
100 m 3/16" Jac.Nil. Wirerope
check L/D
083443
10 m 1/4" Jac.Nil. Wirerope
check L/D
083823 time start glass UTC
(1) Set of (3) 17" Glass Balls on 3/8" Mooring Chain
2 m 3/8" Mooring Chain
SN
EdgeTech 8242 Acoustic Release Release 33043
5 m 3/8" Mooring Chain
091009 anchor over UTC
2333 lb Anchor with Mace Plate
4566 m Depth
MOE Mooring Operations & Engineering
www.mooringops@whoi.edu
Rev 1.0
Crossroads CR5
Woods Hole Oceanographic Institution

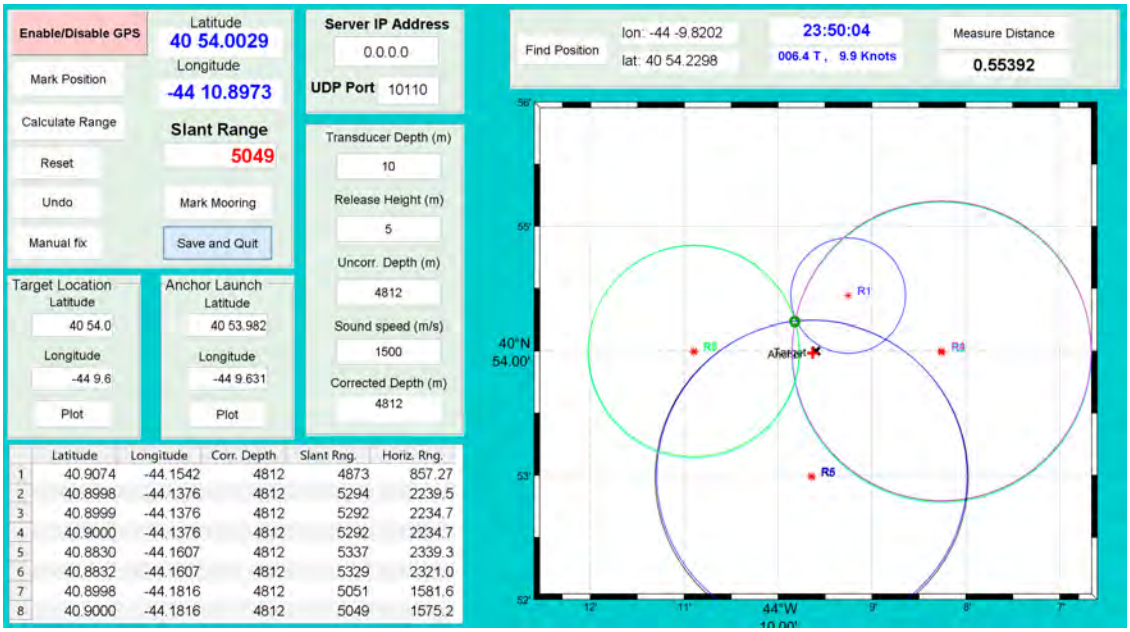

AE6026-2025-DEPLOY LOG
AJE
Date (YYYY-MM-DD) 2025-08-01
CR4 Target Position:
43° 24.0' N
41° 24.6' W
Depth (estimated): 4800 m
Source Schedule:
00:45, 12:45 UTC
same
1200 m Depth
S/N: 84
target depth 4785 m
target pos 43°24.0 N 41° 24.6 W
drop depth 4785 m
43° 24.504 N
41° 24.445 W
surveyed pos 43°25.114 N 41° 24.070 W
~4808
Note A
(6 ea) .5 meters 3/8" Mooring Chain for Source Bridles
Hardware Designation
(A) (2) 1/2" SH, (1) 5/8" SL
(B) (1) 1/2" SH, (1) 5/8" SL, (1) 5/8" SH
(D) (1) 1/2" SH, (1) 5/8" SL, (1) 7/8" SH
(S) 3 ton Swivel
Hardware Required (Per Mooring Without Spares)
(59) 1/2" Anchor Shackles (SH)
(6) 5/8" Anchor Shackles
(1) 7/8" Anchor Shackles
(26) 5/8" Sling Links (SL)
(2) 3 ton Swivel with Anode
3 Ball Radio Float
19:19:51 time deployed UTC
2 m 3/8" Mooring Chain
3 ton Swivel
6 x (7) Sets of (4) 17" Glass Balls on 4 m 3/8" Mooring Chain
19:27:28 time end glass UTC
50 m 1/4" Jac.Nil. Wirerope
19:34:57
Half Wave Resonator Sound Source
13:09:20
Note A
check L/D, time start UTC
3 ton Swivel
500 m 3/16" Jac.Nil. Wirerope
check L/D
19:45:21
300 m 3/16" Jac.Nil. Wirerope
check L/D
19:50:17
1000 m 3/8" Yalex
check L/D
20:03:47
1000 m 3/8" Yalex
check L/D
20:18:39
617 m 3/8" Yalex
check L/D
20:28:43
100 m 3/16" Jac.Nil. Wirerope
check L/D
20:31:09
10 m 1/4" Jac.Nil. Wirerope
check L/D
20:34:30 time start glass UTC
(1) Set of (3) 17" Glass Balls on 3/8" Mooring Chain
2 m 3/8" Mooring Chain
SN → Release 33409
EdgeTech 8242 Acoustic Release
5 m 3/8" Mooring Chain
20:50:11 anchor over UTC
2333 lb Anchor with Mace Plate
4800 m Depth
MOE Mooring Operations & Engineering
www.mooringops@whoi.edu
Rev 1.0
Crossroads CR4
Woods Hole Oceanographic Institution
designed by Eric Trotto, drawn by Jim Ryder

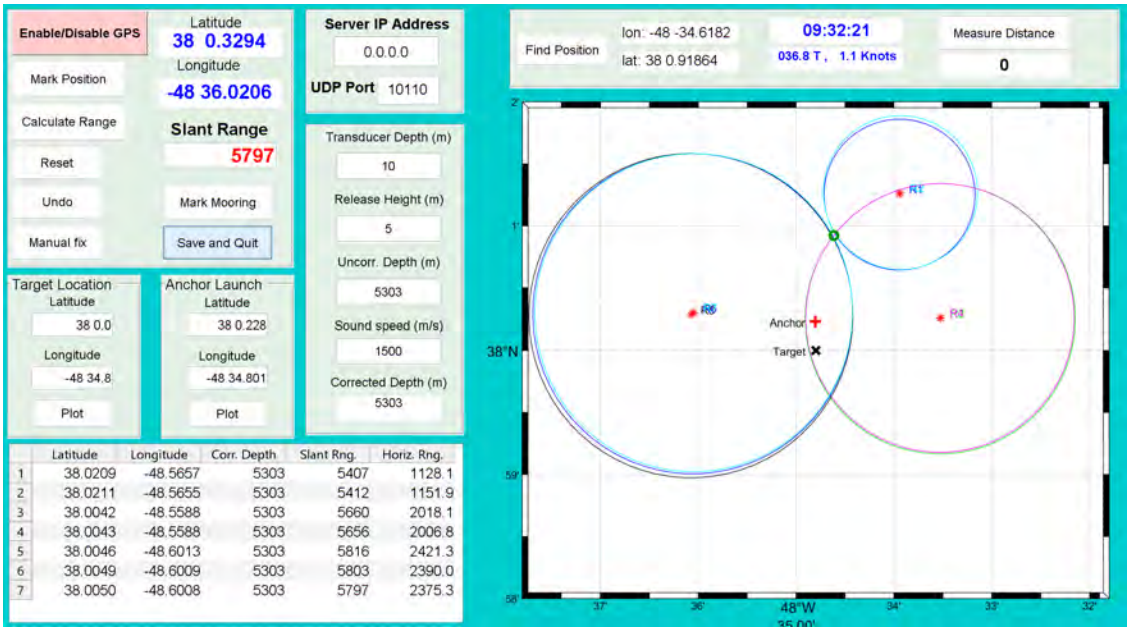

AE6026-2025-DEPLOY LOG
ADE
Date (YYYY-MM-DD) 2025-08-02
CR3 Target Position:
40° 54.0' N
44° 09.6' W
Depth (estimated): 4862 m
Source Schedule:
01:00, 13:00 UTC
1200 m Depth
S/N: 90
Survey POS 40°54.230'N 44° 9.820'W
measured depth 4822
drop depth 4812
drop pos:
40°53.982'N
44°09.631'W
3 Ball Radio Float
20:44:15
time deployed UTC
2 m 3/8" Mooring Chain
3 ton Swivel
(7) Sets of (4) 17" Glass Balls on 4 m 3/8" Mooring Chain
20:50:51
time end glass UTC
50 m 1/4" Jac.Nil. Wirerope
20:57:23
23:08.00
Half Wave Resonator Sound Source
Note A
check L/D, time start UTC
3 ton Swivel
500 m 3/16" Jac.Nil. Wirerope
check L/D
21:12:32
300 m 3/16" Jac.Nil. Wirerope
check L/D
21:18:05
1000 m 3/8" Yalex
check L/D
21:31:52
1000 m 3/8" Yalex
check L/D
21:46:53
668 m 3/8" Yalex
check L/D
21:57:44
100 m 3/16" Jac.Nil. Wirerope
check L/D
21:59:57
10 m 1/4" Jac.Nil. Wirerope
check L/D
22:03:46
time start glass UTC
(1) Set of (3) 17" Glass Balls on 3/8" Mooring Chain
2 m 3/8" Mooring Chain
EdgeTech 8242 Acoustic Release
Release 48282
5 m 3/8" Mooring Chain
2333 lb Anchor with Mace Plate
22:25:13
anchor over UTC
4862 m Depth
Note A
(6 ea) .5 meters 3/8" Mooring Chain for Source Bridles
Hardware Designation
A (2) 1/2" SH, (1) 5/8" SL
B (1) 1/2" SH, (1) 5/8" SL, (1) 5/8" SH
D (1) 1/2" SH, (1) 5/8" SL, (1) 7/8" SH
S 3 ton Swivel
Hardware Required (Per Mooring Without Spares)
(59) 1/2" Anchor Shackles (SH)
(6) 5/8" Anchor Shackles
(1) 7/8" Anchor Shackles
(26) 5/8" Sling Links (SL)
(2) 3 ton Swivel with Anode
MOE
Mooring Operations & Engineering
www.mooringops@whoi.edu
Rev 1.0
Crossroads
CR3
Woods Hole Oceanographic Institution
designed by Eric Trotto, drawn by Jen Ryder


AE6026-2025-DEPLOY LOG
AJE
Date (YYYY-MM-DD) 2025-08-04
CR2 Target Position:
38° 00.0' N
48° 34.8' W
Depth (estimated): 5376 m
Source Schedule:
01:15, 13:15 UTC
1200 m Depth
S/N: 96
5303 - shallow
drop position
38°00.228'N
48°34.801'W
survey position
38°00.919'N
48°34.618'W
Note A
(6 ea) .5 meters 3/8" Mooring Chain for Source Bridles
Hardware Designation
A (2) 1/2" SH, (1) 5/8" SL
B (1) 1/2" SH, (1) 5/8" SL, (1) 5/8" SH
D (1) 1/2" SH, (1) 5/8" SL, (1) 7/8" SH
S 3 ton Swivel
Hardware Required (Per Mooring Without Spares)
(59) 1/2" Anchor Shackles (SH)
(6) 5/8" Anchor Shackles
(1) 7/8" Anchor Shackles
(26) 5/8" Sling Links (SL)
(2) 3 ton Swivel with Anode
3 Ball Radio Float
06:16:50
time deployed UTC
2 m 3/8" Mooring Chain
3 ton Swivel
6 x
(7) Sets of (4) 17" Glass Balls on 4 m 3/8" Mooring Chain
06:24:19
time end glass UTC
50 m 1/4" Jac.Nil. Wirerope
06:30:50
Half Wave Resonator Sound Source
Note A
check L/D, time start UTC
3 ton Swivel
500 m 3/16" Jac.Nil. Wirerope
check L/D
06:39:17
300 m 3/16" Jac.Nil. Wirerope
check L/D
06:44:23
1000 m 3/8" Yalex
check L/D
06:57:42
1000 m 3/8" Yalex
check L/D
07:12:38
1163 m 3/8" Yalex
check L/D
check
remove
7:32:34
100 m 3/16" Jac.Nil. Wirerope
check L/D
10 m 1/4" Jac.Nil. Wirerope
check L/D
07:37:03
time start glass UTC
(1) Set of (3) 17" Glass Balls on 3/8" Mooring Chain
2 m 3/8" Mooring Chain
EdgeTech 8242 Acoustic Release
Release 48275
5 m 3/8" Mooring Chain
08:06:10
anchor over UTC
2333 lb Anchor with Mace Plate
5376 m Depth
MOE
Mooring Operations & Engineering
www.mooringops@whoi.edu
Crossroads
CR2
Woods Hole Oceanographic Institution
designed by Eric Trotto, drawn by Jim Ryder


Enable/Disable G...
Latitude
50 50.9939
Mark Position
Longitude
-42 0.9427
Calculate Range
Slant Range
Reset
4523
Undo
Mark Mooring
Manual fix
Save and Quit
COM Port
COM3
Reset COM Port
Transducer Depth
10
Release Height
5
Uncorr. Depth (m)
4263
Sound speed
1500
Corrected Depth
4263
Target Location
Latitude
50 50.98
Longitude
-42 0.45
Plot
Anchor Launch
Latitude
26 30.000
Longitude
-78 0.000
Plot
Find Position
lon: -42
lat: 50 51.4422
10:32:59
Measure Distance
0.70346
Target
R1
R5
R6
R10
50°N
50.00'
42°W
Longitude Corr. Depth Slant Rng. Horiz. Rng.
1 69 -41.9834 4263 9926 89
2 77 -41.9833 4263 6729 52
3 36 -41.9805 4263 4581 17
4 42 -41.9802 4263 4599 17
5 51 -41.9795 4263 4632 18
6 60 -41.9788 4263 4680 19
7 81 -41.9884 4263 4839 23
8 84 -41.9882 4263 4827 22


Enable/Disable GPS
Latitude
48 5.5561
Mark Position
Longitude
-39 1.4607
Calculate Range
Slant Range
Reset
5035
Undo
Mark Mooring
Manual fix
Save and Quit
Server IP Address
0.0.0.0
UDP Port 10110
Transducer Depth (m)
5
Release Height (m)
5
Uncorr. Depth (m)
4544
Sound speed (m/s)
1500
Corrected Depth (m)
4544
Target Location
Latitude
48 5.488
Longitude
-39 0.171
Plot
Anchor Launch
Latitude
26 30.000
Longitude
-78 0.000
Plot
Find Position
lon: -38 -59.7223
lat: 48 5.556
10:48:23
069.0 T, 2.2 Knots
Measure Distance
0
Target
R1
R5
R6
48°N
5.00'
39°W
Latitude Longitude Corr. Depth Slant Rng. Horiz. Rng.
1 48.0902 -38.9720 4544 4843 1702.2
2 48.0902 -38.9719 4544 4847 1713.5
3 48.0749 -39.0011 4544 4963 2018.5
4 48.0749 -39.0007 4544 4957 2003.7
5 48.0749 -39.0002 4544 4949 1983.8
6 48.0922 -39.0263 4544 5060 2246.4
7 48.0923 -39.0260 4544 5051 2226.1
8 48.0924 -39.0254 4544 5035 2189.5


Enable/Disable GPS
Latitude
40 54.0029
Longitude
-44 10.8973
Mark Position
Calculate Range
Slant Range
5049
Reset
Undo
Mark Mooring
Manual fix
Save and Quit
Server IP Address
0.0.0.0
UDP Port 10110
Transducer Depth (m)
10
Release Height (m)
5
Uncorr. Depth (m)
4812
Sound speed (m/s)
1500
Corrected Depth (m)
4812
Target Location
Latitude
40 54.0
Longitude
-44 9.6
Plot
Anchor Launch
Latitude
40 53.982
Longitude
-44 9.631
Plot
Latitude Longitude Corr. Depth Slant Rng. Horiz. Rng.
1 40.9074 -44.1542 4812 4873 857.27
2 40.8998 -44.1376 4812 5294 2239.5
3 40.8999 -44.1376 4812 5292 2234.7
4 40.9000 -44.1376 4812 5292 2234.7
5 40.8830 -44.1607 4812 5337 2339.3
6 40.8832 -44.1607 4812 5329 2321.0
7 40.8998 -44.1816 4812 5051 1581.6
8 40.9000 -44.1816 4812 5049 1575.2
Find Position
lon: -44 -9.8202
lat: 40 54.2298
23:50:04
006.4 T, 9.9 Knots
Measure Distance
0.55392
R1
R5
40°N
54.00'
44°W


Enable/Disable GPS
Latitude
38 0.3294
Longitude
-48 36.0206
Mark Position
Calculate Range
Slant Range
5797
Reset
Undo
Mark Mooring
Manual fix
Save and Quit
Server IP Address
0.0.0.0
UDP Port 10110
Transducer Depth (m)
10
Release Height (m)
5
Uncorr. Depth (m)
5303
Sound speed (m/s)
1500
Corrected Depth (m)
5303
Target Location
Latitude
38 0.0
Longitude
-48 34.8
Plot
Anchor Launch
Latitude
38 0.228
Longitude
-48 34.801
Plot
Latitude Longitude Corr. Depth Slant Rng. Horiz. Rng.
1 38.0209 -48.5657 5303 5407 1128.1
2 38.0211 -48.5655 5303 5412 1151.9
3 38.0042 -48.5588 5303 5660 2018.1
4 38.0043 -48.5588 5303 5656 2006.8
5 38.0046 -48.6013 5303 5816 2421.3
6 38.0049 -48.6009 5303 5803 2390.0
7 38.0050 -48.6008 5303 5797 2375.3
Find Position
lon: -48 -34.6182
lat: 38 0.91864
09:32:21
036.8 T, 1.1 Knots
Measure Distance
0
R1
R5
R3
Anchor
Target
38°N
48°W

## EDGETECH 8242XS RELEASE LOGSHEET

| | |
|---|---|
| HORIZ / NOT RELEASED: | 7 PULSES @ 2.0 SEC PERIOD |
| HORIZ / RELEASED: | 7 PULSES @ 1.0 SEC PERIOD |
| VERTICAL / NOT RELEASED: | 15 PULSES @ 2.0 SEC PERIOD |
| VERTICAL / RELEASED: | 15 PULSES @ 1.0 SEC PERIOD |

| | |
|---|---|
| **PROJECT:** | CRUISE 0405 '25 |
| **DATE:** | 4 August 2025 |
| **MOORING:** | M2 55:96 |
| **SERIAL #:** | 48275 |

| | | IN-AIR / IN-WATER CHECK | ON BOTTOM CHECK | PRE-RELEASE CHECK |
|---|---|---|---|---|
| **TRANSPONDER ENABLE COMMAND** | 567444 | ✓ | ✓ | |
| **TRANSPONDER DISABLE COMMAND** | 567467 | ✓ | ✓ | |
| **TRANSPONDER INTERROGATE FREQUENCY** | 11 kHz | ✓ | ✓ | |
| **TRANSPONDER REPLY FREQUENCY** | 12 kHz | ✓ | ✓ | |
| **RELEASE COMMAND** | 551100 | ✓ | | |

| | |
|---|---|
| **TIME RELEASED** | |
| **RELEASE DEPTH** | 5298 m |
| **BOTTOM DEPTH** | 5303 m |

NOTES:
survey position: 38° 0.919' N
48° 34.618' W

## EDGETECH 8242XS RELEASE LOGSHEET

| | |
|---|---|
| HORIZ / NOT RELEASED: | 7 PULSES @ 2.0 SEC PERIOD |
| HORIZ / RELEASED: | 7 PULSES @ 1.0 SEC PERIOD |
| VERTICAL / NOT RELEASED: | 15 PULSES @ 2.0 SEC PERIOD |
| VERTICAL / RELEASED: | 15 PULSES @ 1.0 SEC PERIOD |

| | |
|---|---|
| **PROJECT:** | CROSSROADS 2025 |
| **DATE:** | 2 Aug. 2025 |
| **MOORING:** | M3 SS: 90 |
| **SERIAL #:** | 48282 |

| | | IN-AIR / IN-WATER CHECK | ON BOTTOM CHECK | PRE-RELEASE CHECK |
|---|---|---|---|---|
| **TRANSPONDER ENABLE COMMAND** | 570013 | ✓ | ✓ | |
| **TRANSPONDER DISABLE COMMAND** | 570030 | ✓ | ✓ | |
| **TRANSPONDER INTERROGATE FREQUENCY** | 11 kHz | ✓ | ✓ | |
| **TRANSPONDER REPLY FREQUENCY** | 12 kHz | ✓ | ✓ | |
| **RELEASE COMMAND** | 551262 | ✓ | | |

| | |
|---|---|
| **TIME RELEASED** | |
| **RELEASE DEPTH** | |
| **BOTTOM DEPTH** | 4812 m (4822 ~~bat~~ target) @ drop |

**NOTES:** on-deck tested only

survey position: 40° 54.230'N
44° 9.820'W

## EDGETECH 8242XS RELEASE LOGSHEET

| | |
|---|---|
| HORIZ / NOT RELEASED: | 7 PULSES @ 2.0 SEC PERIOD |
| HORIZ / RELEASED: | 7 PULSES @ 1.0 SEC PERIOD |
| VERTICAL / NOT RELEASED: | 15 PULSES @ 2.0 SEC PERIOD |
| VERTICAL / RELEASED: | 15 PULSES @ 1.0 SEC PERIOD |

| | |
|---|---|
| **PROJECT:** | Crossroads |
| **DATE:** | 1 August 2025 |
| **MOORING:** | M4 SS: 84 |
| **SERIAL #:** | 33409 |

| | | IN-AIR / IN-WATER CHECK | ON BOTTOM CHECK | PRE-RELEASE CHECK |
|---|---|---|---|---|
| **TRANSPONDER ENABLE COMMAND** | 361073 | ✓ | ✓ | |
| **TRANSPONDER DISABLE COMMAND** | 361102 | ✓ | ✓ | |
| **TRANSPONDER INTERROGATE FREQUENCY** | 11 kHz | ✓ | ✓ | |
| **TRANSPONDER REPLY FREQUENCY** | 12 kHz | ✓ | ✓ | |
| **RELEASE COMMAND** | 346362 | ✓ | | |

| | |
|---|---|
| **TIME RELEASED** | |
| **RELEASE DEPTH** | 4780 m |
| **BOTTOM DEPTH** | 4785 m |

**NOTES:**

4761 4767
4762 4767
4765

survey position:
43° 25.114' N
41° 24.070' W

## EDGETECH 8242XS RELEASE LOGSHEET

| | |
|---|---|
| HORIZ / NOT RELEASED: | 7 PULSES @ 2.0 SEC PERIOD |
| HORIZ / RELEASED: | 7 PULSES @ 1.0 SEC PERIOD |
| VERTICAL / NOT RELEASED: | 15 PULSES @ 2.0 SEC PERIOD |
| VERTICAL / RELEASED: | 15 PULSES @ 1.0 SEC PERIOD |

| | |
|---|---|
| PROJECT: | Crossroads |
| DATE: | 31 July 2025 |
| MOORING: | MS (5591) |
| SERIAL #: | 33043 |

| | | IN-AIR / IN-WATER CHECK | ON BOTTOM CHECK | PRE-RELEASE CHECK |
|---|---|---|---|---|
| TRANSPONDER ENABLE COMMAND | 314363 | ✓ | ✓ | |
| TRANSPONDER DISABLE COMMAND | 314404 | ✓ | ✓ | |
| TRANSPONDER INTERROGATE FREQUENCY | 11 kHz | ✓ | ✓ | |
| TRANSPONDER REPLY FREQUENCY | 12 kHz | ✓ | ✓ | |
| RELEASE COMMAND | 332273 | ✓ | | |

| | |
|---|---|
| TIME RELEASED | |
| RELEASE DEPTH | 4539 |
| BOTTOM DEPTH | 4544 m |

NOTES:

survey position: 48° 5.556' N
38° 59.7223' W

## EDGETECH 8242XS RELEASE LOGSHEET

| | |
|---|---|
| HORIZ / NOT RELEASED: | 7 PULSES @ 2.0 SEC PERIOD |
| HORIZ / RELEASED: | 7 PULSES @ 1.0 SEC PERIOD |
| VERTICAL / NOT RELEASED: | 15 PULSES @ 2.0 SEC PERIOD |
| VERTICAL / RELEASED: | 15 PULSES @ 1.0 SEC PERIOD |

| | |
|---|---|
| PROJECT: | Crossroads |
| DATE: | 30 July 2025 |
| MOORING: | M6 55:97 |
| SERIAL #: | 54683 |

| | | IN-AIR / IN-WATER CHECK | ON BOTTOM CHECK | PRE-RELEASE CHECK |
|---|---|---|---|---|
| TRANSPONDER ENABLE COMMAND | 272224 | ✓ | ✓ | |
| TRANSPONDER DISABLE COMMAND | 272241 | ✓ | | |
| TRANSPONDER INTERROGATE FREQUENCY | 11 kHz | ✓ | ✓ | |
| TRANSPONDER REPLY FREQUENCY | 12 kHz | ✓ | ✓ | |
| RELEASE COMMAND | 250420 | ✓ | | |

| | |
|---|---|
| TIME RELEASED | |
| RELEASE DEPTH | 4258 m |
| BOTTOM DEPTH | 4263 m |

NOTES: hull transducer not working well, switched to over-the-side 'ducer * release was NOT disabled at end of survey battery life will be affected

04:42
4520 range

**U.S. Crossroads**
**URI-Valdes Sound Source – AE6026**
WHOI Bower/Furey
Contact: alexis.exley@whoi.edu/1.207.321.9091
July-August 2025
R/V *Atlantic Explorer* Woods Hole, MA – Bermuda
Total Deployments: 6 sound source moorings

Sound Source Startup & Log SHEET

Sound Source s/n # 97 (Mooring 6)

1. Connect to sound source
2. Start log
3. Swipe magnet
4. ?S ✓
5. ?I ✓
6. ?T ✓
7. !R ✓

schedule:
00 01:44:00 set up
00 01:45:00 trigger
00 13:44:00 set up
00 13:45:00 trigger

Vacuum = 75

Vaux = 10.4

VCpu = 10.3

Sound Source schedule:

Time Check (YY-MM-DD HH:MM:SS @) 250729 140500 clock set ✓

Source !Run Time (YY-MM-DD HH:MM) 250729 1408

Cruise # AE6026 Station/CTD # _____

Adjusted ( Y / N ) Water Depth (m) _____

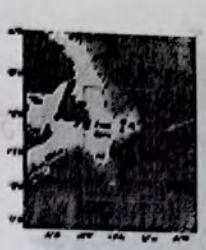
Launch Position 50° 50.98' (lat) -42 0.45' (long)

Launch Date (yy/mm/dd) 25/7/30 Time (hh:mm) 07:42 UTC

Comments: survey position: 50 51.442 N
* 42 0.046 W

Preparer: _____

**U.S. Crossroads**
**URI-Valdes Sound Source – AE6026**
WHOI Bower/Furey
Contact: alexis.exley@whoi.edu/1.207.321.9091
July-August 2025
R/V *Atlantic Explorer* Woods Hole, MA – Bermuda
Total Deployments: 6 sound source moorings



Sound Source Startup & Log SHEET

Sound Source s/n # 91 (mooring 5)

1. Connect to sound source
2. Start log
3. Swipe magnet
4. ?S ✓
5. ?I ✓
6. ?T ✓
7. !R

Vacuum = 74

Vaux = 10.3

VCpu = 10.3

correct schedule:
00 00:29 setup
00 00:30 trigger
00 12:29 setup
00 12:30 trigger
00 23:00 end

schedule:
00 01:29:00 setup
00 01:30:00 trigger
00 13:29:00 setup
00 13:30:00 trigger
00 23:00:00 end of window

xmit level: C

Sound Source schedule:

Time Check (YY-MM-DD HH:MM:SS @) 25-07-30 12:15:55 clock set ✓

Source !Run Time (YY-MM-DD HH:MM) ~~25-07-30 12:24~~ 25-07-30 14:45 UTC (redeploy time)

Cruise # AE6026 Station/CTD # _____

Adjusted ( Y / N ) Water Depth (m) _____

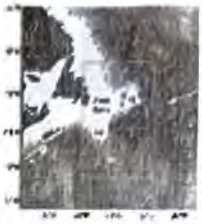
Launch Position _____ (lat) _____ (long)

Launch Date (yy/mm/dd) _____ Time (hh:mm) _____

Comments: source had incorrect schedule, had to reprogram and redeploy

Preparer: ABH

**U.S. Crossroads**
**URI-Valdes Sound Source – AE6026**
WHOI Bower/Furey
Contact: alexis.exley@whoi.edu/1.207.321.9091
July-August 2025
R/V *Atlantic Explorer* Woods Hole, MA – Bermuda
Total Deployments: 6 sound source moorings



Sound Source Startup & Log SHEET

Sound Source s/n # 84 (mooring 4)

1. Connect to sound source
2. Start log
3. Swipe magnet
4. ?S ✓
5. ?I ✓
6. ?T ✓
7. !R ✓

Vacuum = 45

Vaux = 10.5

VCpu = 10.5

Schedule:
00 00:44:00 setup
00 00:45:00 trigger
00 12:44:00 set up
00 12:45:00 trigger
00 23:00:00 end window

Sound Source schedule:

Time Check (YY-MM-DD HH:MM:SS @) 25-07-31 13:09:20 clock set ✓

Source !Run Time (YY-MM-DD HH:MM) 25-07-31 13:18

Cruise # AE6026 Station/CTD # M4

Adjusted ( Y / N ) Water Depth (m) 4785

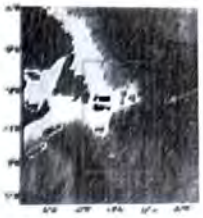
~~Launch~~ Survey Position 43° 25.114 N (lat) 41° 24.070' W (long)

Launch Date (yy/mm/dd) _____ Time (hh:mm) _____

Comments: pre-programed schedule was incorrect, set correct schedule

Preparer: _____

**U.S. Crossroads**
**URI-Valdes Sound Source – AE6026**
WHOI Bower/Furey
Contact: alexis.exley@whoi.edu/1.207.321.9091
July-August 2025
R/V *Atlantic Explorer* Woods Hole, MA – Bermuda
Total Deployments: 6 sound source moorings



Sound Source Startup & Log SHEET

Sound Source s/n # 90 (Mooring 3)

1. Connect to sound source
2. Start log
3. Swipe magnet
4. ?S ✓
5. ?I ✓
6. ?T ✓
7. !R ✓

Vacuum = 76

Vaux = 10.4

VCpu = 10.4

schedule
00 00:59:00 set up
00 01:00:00 trigger
00 12:59:00 set up
00 13:00:00 trigger
00 23:00:00 end window

xmit level : C

Sound Source schedule:

Time Check (YY-MM-DD HH:MM:SS @) 25-08-01 23:08:00 clock set ✓

Source !Run Time (YY-MM-DD HH:MM) 25-08-01 23:10

Cruise # AE6026 Station/CTD # M3

Adjusted ( Y / N ) Water Depth (m) 4812

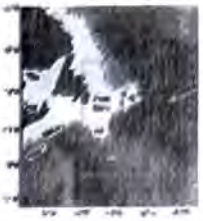
~~Launch~~ Survey Position 40° 54.230' N (lat) 44° 9.820' W (long)

Launch Date (yy/mm/dd) 25-8-2 Time (hh:mm) 22:25

Comments:

Preparer: AEE

**U.S. Crossroads**
**URI-Valdes Sound Source – AE6026**
WHOI Bower/Furey
Contact: alexis.exley@whoi.edu/1.207.321.9091
July-August 2025
R/V *Atlantic Explorer* Woods Hole, MA – Bermuda
Total Deployments: 6 sound source moorings



Sound Source Startup & Log SHEET

Sound Source s/n # 96 (Moorly 2)

1. Connect to sound source
2. Start log
3. Swipe magnet
4. ?S
5. ?I
6. ?T
7. !R

Vacuum = 76

Vaux = 10.5

VCpu = 10.4

schedule

00 01:14:00 set up
00 01:15:00 trigger
00 13:14:00 set up
00 13:15:00 trigger
00 23:00:00 end time
xmit level : A
Wave's 2

Sound Source schedule:

Time Check (YY-MM-DD HH:MM:SS @) 25-08-03 11:44:40 clock set ✓

Source !Run Time (YY-MM-DD HH:MM) 25-08-03 11:46:00 ✓

Cruise # AE6026 Station/CTD # M2

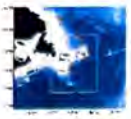
Adjusted ( Y / N ) Water Depth (m) 5303 m

Launch Position _____ (lat) _____ (long)

Launch Date (yy/mm/dd) 4 August 2025 Time (hh:mm) 08:06 UTC

Comments: initial schedule was incorrect, had to reprogram for correct times

Preparer: AEM



**U.S. Crossroads SRFS Launch Sheet**
WHOI Exley/Bower/Furey
Contact: alexis.exley@whoi.edu / 1.207.321.9091
July-Aug 2025: Woods Hole → Bermuda
AE6026
Total Deployments: 2 Spherical RAFOS

---

Number of windows (days) __14____ Forced Start Count (30-minute intervals) ___4800___

Cruise # ____AE6026_____ Overpressure value____4000 dbar_____

---

Float s/n # 058 AJE

Do float and dropweight serial numbers match? yes!

Ballast Pressure (dbar) 3000 Station # 2 (M5)

Adjusted ( Y / N ) Water Depth (m) 4560

Launch Position 48°04.139 N (lat) 39°02.035 W (long)

Launch Date/Time GMT (yyyy/mm/dd hh:mm) 2025/07/31 11:10:25

---

Float s/n # 060

Do float and dropweight serial numbers match? yes

Ballast Pressure (dbar) 3000 Station # 5 (M2)

Adjusted ( Y / N ) Water Depth (m) 5303

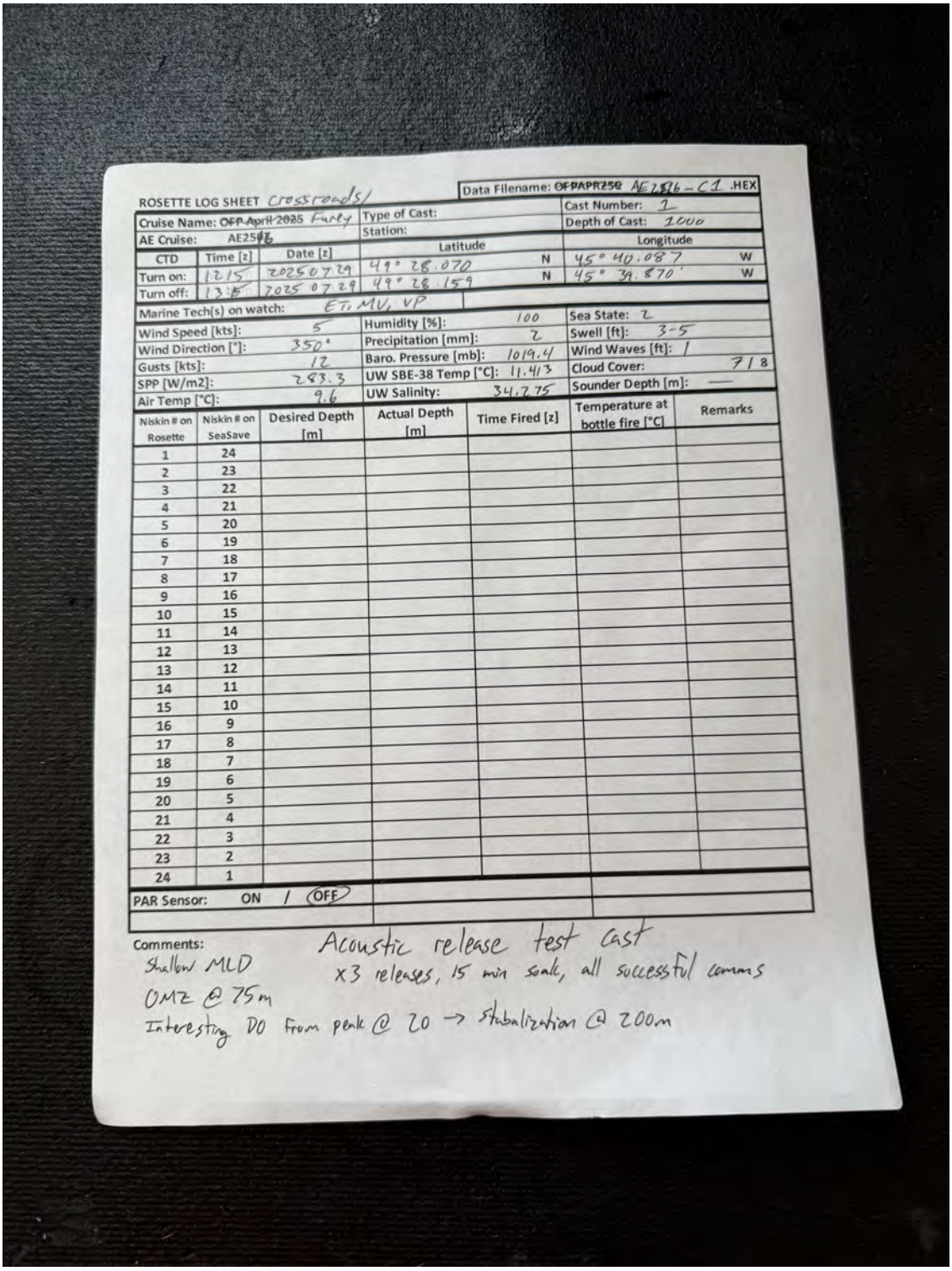
Launch Position 38°00.576'N (lat) 48.36.438'W (long)

Launch Date/Time GMT (yyyy/mm/dd hh:mm) 2025/08/04 09:53:58

---

Comments:

Preparer: AJE



ROSETTE LOG SHEET Crossroads/ Data Filename: ~~OFPAPR25~~ AE2516-C1 .HEX

| | | | | | |
|---|---|---|---|---|---|
| Cruise Name: ~~OFP April 2025~~ Fury | | | Type of Cast: | Cast Number: 1 | |
| AE Cruise: AE25~~04~~16 | | | Station: | Depth of Cast: 1000 | |
| CTD | Time [z] | Date [z] | Latitude | Longitude | |
| Turn on: | 1215 | 20250729 | 49° 28.070 N | 45° 40.087 | W |
| Turn off: | 13:15 | 2025 07 29 | 49° 28.159 N | 45° 39.870' | W |

| | | | | | |
|---|---|---|---|---|---|
| Marine Tech(s) on watch: ET, MV, VP | | | | | |
| Wind Speed [kts]: | 5 | Humidity [%]: | 100 | Sea State: | 2 |
| Wind Direction [°]: | 350° | Precipitation [mm]: | 2 | Swell [ft]: | 3-5 |
| Gusts [kts]: | 12 | Baro. Pressure [mb]: | 1019.4 | Wind Waves [ft]: | 1 |
| SPP [W/m2]: | 283.3 | UW SBE-38 Temp [°C]: | 11.413 | Cloud Cover: | 7/8 |
| Air Temp [°C]: | 9.6 | UW Salinity: | 34.275 | Sounder Depth [m]: | — |

| Niskin # on Rosette | Niskin # on SeaSave | Desired Depth [m] | Actual Depth [m] | Time Fired [z] | Temperature at bottle fire [°C] | Remarks |
|---|---|---|---|---|---|---|
| 1 | 24 | | | | | |
| 2 | 23 | | | | | |
| 3 | 22 | | | | | |
| 4 | 21 | | | | | |
| 5 | 20 | | | | | |
| 6 | 19 | | | | | |
| 7 | 18 | | | | | |
| 8 | 17 | | | | | |
| 9 | 16 | | | | | |
| 10 | 15 | | | | | |
| 11 | 14 | | | | | |
| 12 | 13 | | | | | |
| 13 | 12 | | | | | |
| 14 | 11 | | | | | |
| 15 | 10 | | | | | |
| 16 | 9 | | | | | |
| 17 | 8 | | | | | |
| 18 | 7 | | | | | |
| 19 | 6 | | | | | |
| 20 | 5 | | | | | |
| 21 | 4 | | | | | |
| 22 | 3 | | | | | |
| 23 | 2 | | | | | |
| 24 | 1 | | | | | |
| PAR Sensor: ON / (OFF) | | | | | | |

Comments:
Acoustic release test cast
x3 releases, 15 min soak, all successful comms
Shallow MLD
OMZ @ 75m
Interesting DO from peak @ 20 → stabalization @ 200m

| WHOI Argo Float Deployment Log | | | | |
|---|---|---|---|---|
| Please email info to: deploymentinfo@whoi.edu | | | | |
| Pre-deployment information | | | | |
| Argo Float Type | ☐ S2A/ALTO ☒ NAVIS BGC ☐ Deep | | | |
| Float Serial # | F1667 | Ship Atlantic Explorer | | |
| Cruise name | Crossrocads | | | |
| Pre-deployment startup and check | | | | |
| Startup operator | | | | |
| Magnet swipe (startup) | Date | | Time (UTC) | |
| Shockwatch | ☐ Activated (red) ☐ Not activated (white) | | | |
| Temperature sticker | ☐ < 100 ☐ 100 ☐ 110 ☐ 120 ☐ 130 ☐ 140 ☐ 150 | | | |
| ☐ Verify with WHOI that the float has been started up and startup messages received | | | | |
| Deployment | | | | |
| Deployment operator | Ali Exley | Institution | WHOI | |
| Date | 8/4/2025 | Time (UTC) | 09:50:07 | |
| Latitude | 38° 00.560' N | Longitude | 48° 36.288' W | |
| Deployment type | ☐ Boxed ☒ Unboxed<br>☐ Lowered with water release ☐ Sling method ☒ Lowered by hand | | | |
| Vessel lee position | ☐ Stern ☒ Starboard ☐ Port | | | |
| Deployment height | | Ship speed (kts) | 1.5 | |
| Wind (Beaufort) | | Sea State | | |
| Bathymetry (m) | 5300 | | | |
| CTD station (if applicable) | | | | |
| Additional comments | | | | |

/data1/lab/Manuals_and_Documentatoin/deployment/DeploymentLog.docx

| WHOI Argo Float Deployment Log | | | | |
|---|---|---|---|---|
| Please email info to: deploymentinfo@whoi.edu | | | | |
| Pre-deployment information | | | | |
| Argo Float Type | ☐ S2A/ALTO ☒ NAVIS BGC ☐ Deep | | | |
| Float Serial # | F1675 | Ship | Atlantic explorer | |
| Cruise name | crossrocals | | | |
| Pre-deployment startup and check | N1A | | | |
| Startup operator | | | | |
| Magnet swipe (startup) | Date | | Time (UTC) | |
| Shockwatch | ☐ Activated (red) ☐ Not activated (white) | | | |
| Temperature sticker | ☐ < 100 ☐ 100 ☐ 110 ☐ 120 ☐ 130 ☐ 140 ☐ 150 | | | |
| ☐ Verify with WHOI that the float has been started up and startup messages received | | | | |
| Deployment | | | | |
| Deployment operator | Ali Exley | Institution | WHOI | |
| Date | 08/03/25 | Time (UTC) | 00:08:32 | |
| Latitude | 40°53.9'N | Longitude | 44°11.22'W | |
| Deployment type | ☐ Boxed ☒ Unboxed<br>☐ Lowered with water release ☐ Sling method ☒ Lowered by hand | | | |
| Vessel lee position | ☐ Stern ☒ Starboard ☐ Port | | | |
| Deployment height | | Ship speed (kts) | 1.5 | |
| Wind (Beaufort) | 6 | Sea State | moderate - rough | |
| Bathymetry (m) | 4812 | | | |
| CTD station (if applicable) | | | | |
| Additional comments | | | | |

| WHOI Argo Float Deployment Log | | | | |
|---|---|---|---|---|
| Please email info to: deploymentinfo@whoi.edu | | | | |
| Pre-deployment information | | | | |
| Argo Float Type | ☐ S2A/ALTO ☑ NAVIS BGC ☐ Deep | | | |
| Float Serial # | F1680 | Ship Atlantic Explorer | | |
| Cruise name | Crossroads | | | |
| Pre-deployment startup and check | N/A | | | |
| Startup operator | | | | |
| Magnet swipe (startup) | Date | | Time (UTC) | |
| Shockwatch | ☐ Activated (red) ☐ Not activated (white) | | | |
| Temperature sticker | ☐ < 100 ☐ 100 ☐ 110 ☐ 120 ☐ 130 ☐ 140 ☐ 150 | | | |
| ☐ Verify with WHOI that the float has been started up and startup messages received | | | | |
| Deployment | | | | |
| Deployment operator | Ali Exley | Institution | WHOI | |
| Date | 08/01/2025 | Time (UTC) | 22:46:34 | |
| Latitude | 43° 24.020' N | Longitude | 41° 24.552' W | |
| Deployment type | ☐ Boxed ☒ Unboxed<br>☐ Lowered with water release ☐ Sling method ☑ Lowered by hand | | | |
| Vessel lee position | ☐ Stern ☑ Starboard ☐ Port | | | |
| Deployment height | | Ship speed (kts) | 2 | |
| Wind (Beaufort) | 2 | Sea State | 8 Calm | |
| Bathymetry (m) | 4785 | | | |
| CTD station (if applicable) | | | | |
| Additional comments | | | | |

| WHOI Argo Float Deployment Log | | | | |
|---|---|---|---|---|
| Please email info to: deploymentinfo@whoi.edu | | | | |
| Pre-deployment information | | | | |
| Argo Float Type | ☒ S2A/ALTO ☐ NAVIS BGC ☐ Deep | | | |
| Float Serial # | 4008 | Ship | Atlantic explorer | |
| Cruise name | | | | |
| Pre-deployment startup and check | N/A | | | |
| Startup operator | [illegible] | | | |
| Magnet swipe (startup) | Date | | Time (UTC) | |
| Shockwatch | ☐ Activated (red) ☐ Not activated (white) | | | |
| Temperature sticker | ☐ < 100 ☐ 100 ☐ 110 ☐ 120 ☐ 130 ☐ 140 ☐ 150 | | | |
| ☒ Verify with WHOI that the float has been started up and startup messages received | | | | |
| Deployment | | | | |
| Deployment operator | Ali | Institution | WHOI | |
| Date | 2025-07-31 | Time (UTC) | 10:57:56 | |
| Latitude | 48°05,177 N | Longitude | 39°01,461 W | |
| Deployment type | ☒ Boxed ☐ Unboxed<br>☒ Lowered with water release ☐ Sling method ☐ Lowered by hand | | | |
| Vessel lee position | ☐ Stern ☐ Starboard ☒ Port | | | |
| Deployment height | | Ship speed (kts) | 4 | |
| Wind (Beaufort) | 5 | Sea State | moderate | |
| Bathymetry (m) | ~~5~~ 4544 | | | |
| CTD station (if applicable) | | | | |
| Additional comments | | | | |

| WHOI Argo Float Deployment Log | | | | |
|---|---|---|---|---|
| Please email info to: deploymentinfo@whoi.edu | | | | |
| Pre-deployment information | | | | |
| Argo Float Type | ☐ S2A/ALTO ☐ NAVIS BGC ☑ Deep | | | |
| Float Serial # | 1211 | Ship | Atlantic explorer | |
| Cruise name | crossrocds | | | |
| Pre-deployment startup and check | | | | |
| Startup operator | | | | |
| Magnet swipe (startup) | Date | | Time (UTC) | |
| Shockwatch | ☐ Activated (red) ☐ Not activated (white) | | | |
| Temperature sticker | ☐ < 100 ☐ 100 ☐ 110 ☐ 120 ☐ 130 ☐ 140 ☐ 150 | | | |
| ☐ Verify with WHOI that the float has been started up and startup messages received | | | | |
| Deployment | | | | |
| Deployment operator | Ali Exley | Institution | WHOI | |
| Date | 8/4/25 | Time (UTC) | 09:42:41 | |
| Latitude | 38°00.508'N | Longitude | 48°35.99'W | |
| Deployment type | ☑ Boxed ☐ Unboxed<br>☑ Lowered with water release ☐ Sling method ☐ Lowered by hand | | | |
| Vessel lee position | ☐ Stern ☑ Starboard ☐ Port | | | |
| Deployment height | | Ship speed (kts) | 1.5 | |
| Wind (Beaufort) | | Sea State | | |
| Bathymetry (m) | 5300 | | | |
| CTD station (if applicable) | | | | |
| Additional comments | | | | |

/data1/lab/Manuals_and_Documentatoin/deployment/DeploymentLog.docx