Cruise Report
AX07

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Version: AMVERSEAS_10.0.0.0.0.0.0.0.0.0

Cruise Line: AX07
Transect: 01
Start Date: 04/06/2022
End Date: 05/01/2022
Company Name: HapagLloyd
Ship Name: Chicago Express
Call Sign: DCUJ2
IMO: 9295268
Rider: Christian Saiz
christian.saiz@noaa.gov
305-361-4450

XBTs Deployed:

Number of launches: 345

A total of 281 XBT(s) have been deployed.

Note: None

Drifters Deployed:

A total of 0 Drifter(s) have been deployed.

Note: None

Argos Deployed:

A total of 0 Argo(s) have been deployed.

Note: None

Transmission:

Note: All transmissions were completed with AOML Iridium Modems with commercial SIM cards.

Narrative:

A- Loading and Setup

On Wednesday morning of April 6 2022, the M/V Chicago Express (Hapag-Lloyd) arrived at the Port of Miami around 9 AM EST. Zach Barton, Pedro Pena, Grant Rawson and Christian Saiz (rider) boarded the ship around 10 AM, and started loading ~31 Deep Blue XBT boxes and the gear. Thanks to the generosity of the crew, cadets on board the Chicago Express, helped us load the equipment by the stairway. It should be mentioned that this ship has already been helping NOAA during the COVID19 pandemic to deploy XBTs in Frequently Repeated mode (1 deployment every ~6hs), with the equipment that it's still installed on the bridge, and will be used again on their return from Algeciras to New York.

Regarding the AX07 High Density transect, the equipment was installed as follows:
A) MK-21 LMC-16, laptop MacBook Pro running Linux with Amverseas, 220/110V transformer and UPS was set up in the Owner's room 804, located in the center of G-deck (7 floors above the upper deck) and facing to the front of the ship.
B) Autolauncher ALX01 was set up on the aft-starboard side.
The CAT5 cable connected the equipment in A with the Autolauncher in B, with approximately 180m.
C) The GPS and iridium antenna was mounted on the bridge's port side. The bridge is located on the floor right above the G-deck.

The first test deployment was successfully performed and transmitted around 2 PM EST: DCUJ2_20220406180300_N01_XBT.

The Chicago Express left the Port of Miami the next day Thursday April 7 19:00 EST due to delays in the cargo loading.

The first XBT deployment was performed on April 7 20:00 EST:
DCUJ2_20220407235400_N01_XBT.

B- Troubleshooting:

1- Autolauncher not deploying XBTs:
Since the first day, several autolauncher tubes failed to deploy the XBTs, with the "No Splash detected" error message. Since the deployment plan was set for 1 retry after the "No-splash detected error", the following (N+1) tube was deployed the XBT in more than half of these cases. In the other cases, the deployment had to be done manually from the N+2 tube, since the N+1 tube also failed. Even though this happened in most of the tubes, 5, 6 and 7 were the most problematic. The Amverseas-Autolauncher-Diagnostic tool was used to retract and extend pins. It worked in few cases, but couldn't move most of the pins. Turning pins by hand was also tested, and in some cases pins were loose enough to move them. Silicon spray was applied too but didn't help.
Between retries, the system takes ~5 minutes to deploy from the following tube, which is a considerable time for the 1 XBT every 10 km section (~15 min between deployments).

The most likely cause of this problem was low voltage at the pin motor's leads in the

autolauncher due to the long cable run (~180m). In previous cruises the rider was given a room on F-deck and facing to the back, with a consequently shorter run of cable.

On April 9 the CAT5 cable was cut as much as possible (~10m) and re-terminated. This slightly decreased the number of times the pins were not retracting/extending.

On April 11, after 2 days of storm, a second CAT5 cable was run and connected in parallel to the power conductors (+12V & GND) in about 2/3rds of the total length (from AL to ~ Suez cabin location). The system remained offline during this period.
Connections/splices:
- 2 wires to white/blue +12V
- 2 wires to blue +12V
- 4 wires to brown GND
This parallel connection reduced the total resistance of the 12V power lines ~2 times.

XBT deployments after April 11 19:00 UTC had no more issues and the pins started to retract/extend properly. No more "No splash detected" errors appeared.

2- Amverseas detecting a probe loaded when empty:
Every so often, after an XBT probe was deployed from a tube, Amverseas kept showing that tube as "loaded" with a typical resistance (~20k). After single-checking that tube a second time, it remained showing it as loaded, even though it was empty.

3- Erratic GPS position
In the morning of April 12 the 8 XBT probes loaded the previous night had been deployed, and the alarm of no GPS was on the screen. The Transceiver interface, showed that there was no iridium or GPS. After checking all the connections and restarting the computer, the problem persisted. Once it was noticed that there was no light on the DC 19.5V power supply, powering the GPS and iridium interface box, it was replaced and the GPS and iridium connection were restored.

As soon as the system was running again, it was noted that the longitude had an abrupt change: it went from 39 55.9 W to 46 23.4 W. The correct position of 46 23.4W was matched the ship's bridge, meaning that a number of prior profiles had been saved with a wrong position. At all times and until the "no gps" alarm went off, Amverseas showed a coherent latitude and longitude displacement, only showing signs of a reduced time between deployments during the previous day (April 11)..

After analyzing data from the previous day, it was noted that the GPS on Amverseas started moving east at a faster rate than the average for the cruise. The average displacement until 4/11/2022 6:15 AM UTC (last good position) was ~0.318 longitude degrees per hour (versus ~0.6 for the bad position profiles). A total of 39 profiles were detected to have a wrong position. This includes deployments made from 4/11 6:49 AM UTC to 4/12 7:54 AM UTC that should be flagged as bad.

The list of good and bad positions, based on the speed analysis are:

List of bad position profiles

GOOD	20220412141100_N19_XBT.bin
GOOD	20220412131300_N18_XBT.bin
GOOD	20220412121400_N17_XBT.bin
GOOD	20220412111700_N16_XBT.bin
GOOD	20220412101900_N15_XBT.bin
GOOD	20220412092400_N14_XBT.bin
GOOD	20220412083100_N13_XBT.bin
BAD	20220412075400_N12_XBT.bin
BAD	20220412053200_N11_XBT.bin
BAD	20220412045900_N10_XBT.bin
BAD	20220412042600_N09_XBT.bin
BAD	20220412035300_N08_XBT.bin
BAD	20220412032000_N07_XBT.bin
BAD	20220412024700_N06_XBT.bin
BAD	20220412021500_N05_XBT.bin
BAD	20220412014200_N04_XBT.bin
BAD	20220412010500_N03_XBT.bin
BAD	20220412003200_N02_XBT.bin
BAD	20220412000000_N01_XBT.bin
BAD	20220411232700_N34_XBT.bin
BAD	20220411225300_N33_XBT.bin
BAD	20220411221700_N32_XBT.bin
BAD	20220411214400_N31_XBT.bin
BAD	20220411210800_N30_XBT.bin
BAD	20220411210300_N29_XBT.bin
BAD	20220411203200_N28_XBT.bin
BAD	20220411184900_N27_XBT.bin
BAD	20220411171400_N26_XBT.bin

BAD	20220411170600_N25_XBT.bin
BAD	20220411163100_N24_XBT.bin
BAD	20220411155600_N23_XBT.bin
BAD	20220411152300_N22_XBT.bin
BAD	20220411145000_N21_XBT.bin
BAD	20220411141700_N20_XBT.bin
BAD	20220411134400_N19_XBT.bin
BAD	20220411130800_N18_XBT.bin
BAD	20220411123500_N17_XBT.bin
BAD	20220411120200_N16_XBT.bin
BAD	20220411112900_N15_XBT.bin
BAD	20220411105600_N14_XBT.bin
BAD	20220411102300_N13_XBT.bin
BAD	20220411094700_N12_XBT.bin
BAD	20220411082800_N11_XBT.bin
BAD	20220411075500_N10_XBT.bin
BAD	20220411072200_N09_XBT.bin
BAD	20220411064900_N08_XBT.bin
GOOD	20220411061500_N07_XBT.bin
GOOD	20220411051600_N06_XBT.bin
GOOD	20220411041700_N05_XBT.bin
GOOD	20220411031800_N04_XBT.bin
GOOD	20220411021800_N03_XBT.bin
GOOD	20220411012000_N02_XBT.bin
GOOD	20220411002200_N01_XBT.bin
GOOD	20220411232600_N26_XBT.bin

As shown in the following "GPS drift plot", the profile positions (red) started drifting after 4/11 6 AM UTC.
The estimated positions (green) were calculated based on the average (*) 0.318 degree/h displacement, which aligns at the right end of the plot when the power supply was replaced.

GPS drift plot
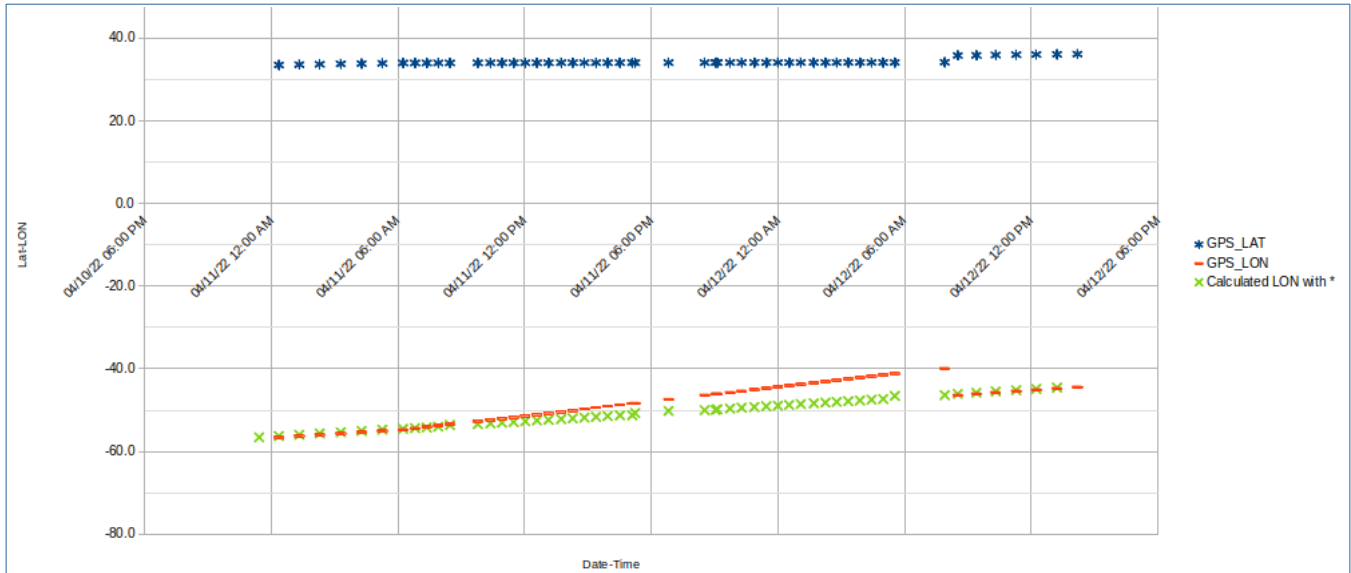
With the coordinates per hour provided by the Chicago Express, it was determined by interpolation, that the position for the bad profiles should be:

Interpolated Positions for bad profiles

20220412075400_N12_XBT.bin	04/12/22 07:54 AM	35 48.267 N
20220412053200_N11_XBT.bin	04/12/22 05:32 AM	35 39.263 N
20220412045900_N10_XBT.bin	04/12/22 04:59 AM	35 37.252 N
20220412042600_N09_XBT.bin	04/12/22 04:26 AM	35 35.128 N
20220412035300_N08_XBT.bin	04/12/22 03:53 AM	35 33.007 N
20220412032000_N07_XBT.bin	04/12/22 03:20 AM	35 30.894 N
20220412024700_N06_XBT.bin	04/12/22 02:47 AM	35 28.867 N
20220412021500_N05_XBT.bin	04/12/22 02:15 AM	35 27.03 N
20220412014200_N04_XBT.bin	04/12/22 01:42 AM	35 24.868 N
20220412010500_N03_XBT.bin	04/12/22 01:05 AM	35 22.193 N
20220412003200_N02_XBT.bin	04/12/22 12:32 AM	35 19.834 N
20220412000000_N01_XBT.bin	04/12/22 12:00 AM	35 17.55 N

20220411232700_N34_XBT.bin	04/11/22 11:27 PM	35 15.109 N
20220411225300_N33_XBT.bin	04/11/22 10:53 PM	35 12.607 N
20220411221700_N32_XBT.bin	04/11/22 10:17 PM	35 10.014 N
20220411214400_N31_XBT.bin	04/11/22 09:44 PM	35 7.841 N
20220411210800_N30_XBT.bin	04/11/22 09:08 PM	35 5.708 N
20220411210300_N29_XBT.bin	04/11/22 09:03 PM	35 5.412 N
20220411203200_N28_XBT.bin	04/11/22 08:32 PM	35 3.342 N
20220411184900_N27_XBT.bin	04/11/22 06:49 PM	34 56.601 N
20220411171400_N26_XBT.bin	04/11/22 05:14 PM	34 50.154 N
20220411170600_N25_XBT.bin	04/11/22 05:06 PM	34 49.595 N
20220411163100_N24_XBT.bin	04/11/22 04:31 PM	34 47.29 N
20220411155600_N23_XBT.bin	04/11/22 03:56 PM	34 45.028 N
20220411152300_N22_XBT.bin	04/11/22 03:23 PM	34 42.995 N
20220411145000_N21_XBT.bin	04/11/22 02:50 PM	34 40.918 N
20220411141700_N20_XBT.bin	04/11/22 02:17 PM	34 38.738 N
20220411134400_N19_XBT.bin	04/11/22 01:44 PM	34 36.51 N
20220411130800_N18_XBT.bin	04/11/22 01:08 PM	34 34.024 N
20220411123500_N17_XBT.bin	04/11/22 12:35 PM	34 31.572 N
20220411120200_N16_XBT.bin	04/11/22 12:02 PM	34 29.063 N
20220411112900_N15_XBT.bin	04/11/22 11:29 AM	34 26.627 N
20220411105600_N14_XBT.bin	04/11/22 10:56 AM	34 24.186 N
20220411102300_N13_XBT.bin	04/11/22 10:23 AM	34 21.681 N
20220411094700_N12_XBT.bin	04/11/22 09:47 AM	34 18.903 N
20220411082800_N11_XBT.bin	04/11/22 08:28 AM	34 12.525 N
20220411075500_N10_XBT.bin	04/11/22 07:55 AM	34 9.806 N
20220411072200_N09_XBT.bin	04/11/22 07:22 AM	34 7.144 N
20220411064900_N08_XBT.bin	04/11/22 06:49 AM	34 4.501 N

The difference between the interpolated values and the Amverseas-gps positions for the good profiles (before and after the GPS issue) turned out to be within (LAT) 0.208 minutes and (LON) 0.699 minutes (max). Meaning that the interpolated positions calculated for the bad profiles should have around less than 1 minute of error (~ <1.852km).

Deployment map trajectories – Without interpolation
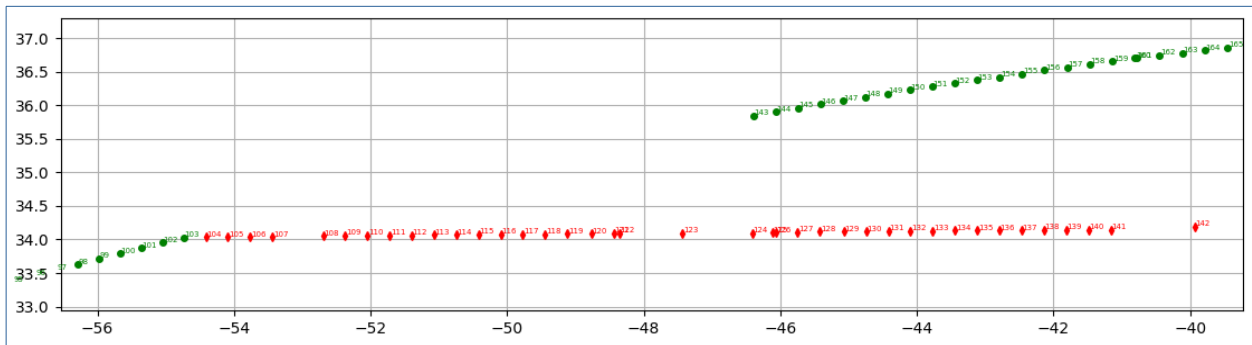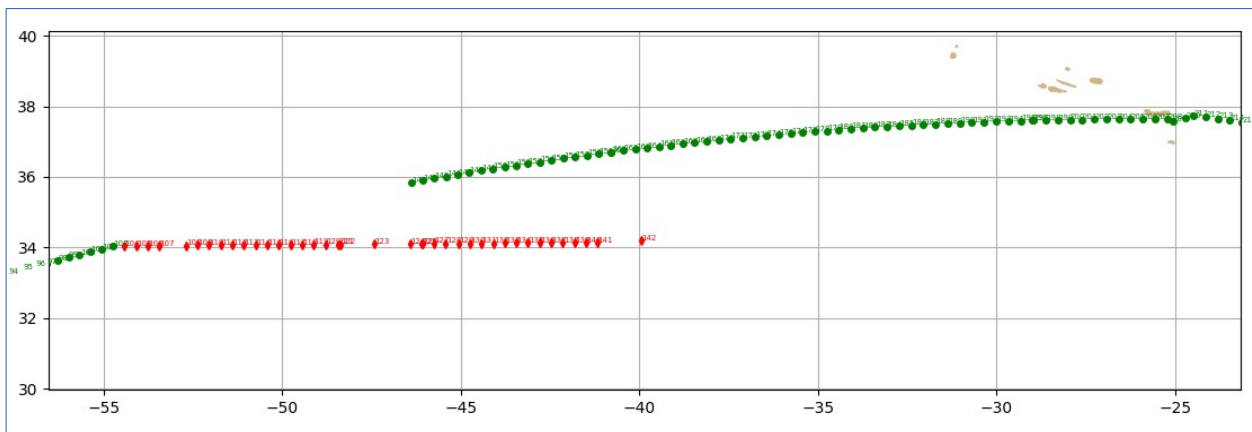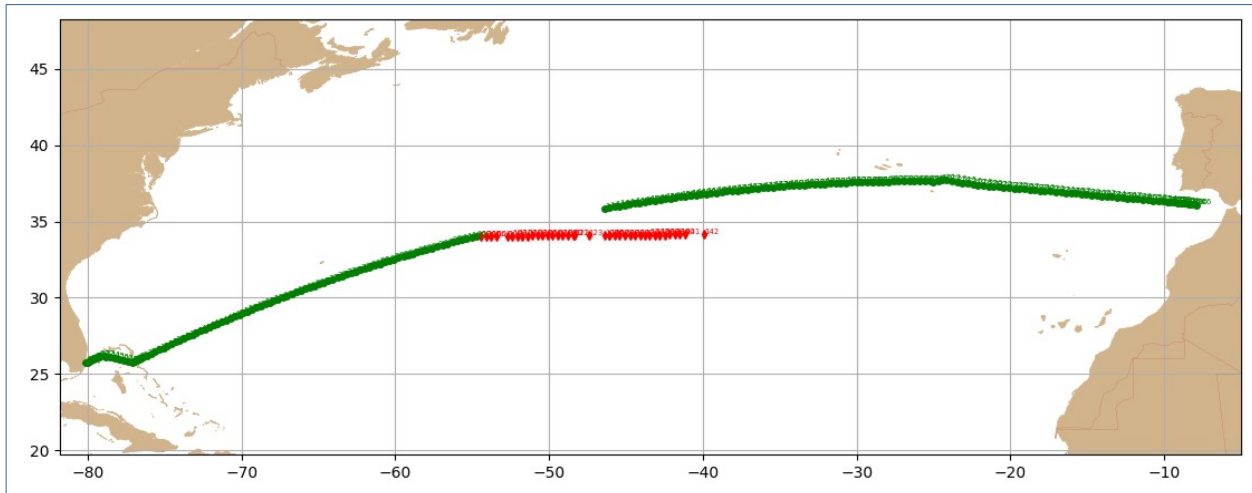
XBT deployment sites. Bad positions and good positions in red and green respectively.

Deployment map trajectories – With interpolation

XBT deployment sites. In green are shown good position deployments, in red the bad position deployments, and in brown the estimated positions by interpolation with the Chicago Express coordinates log.
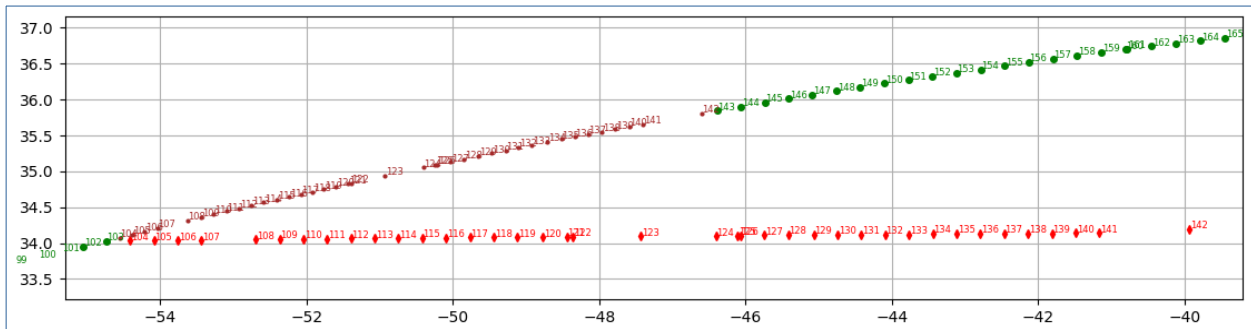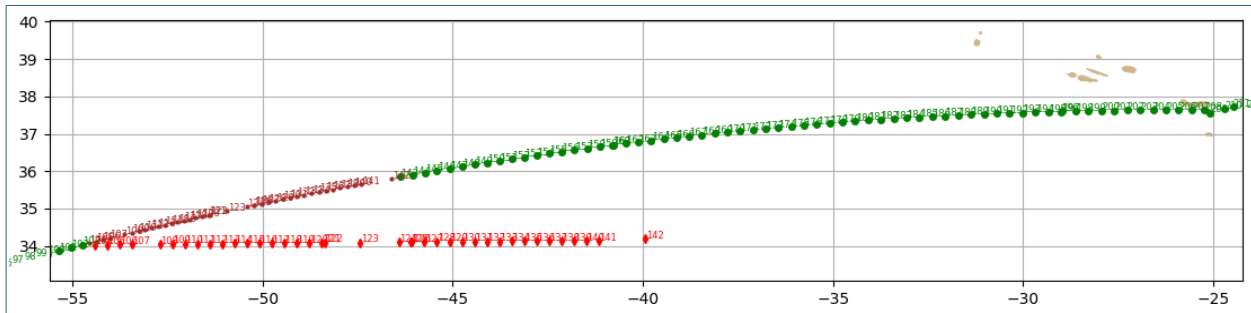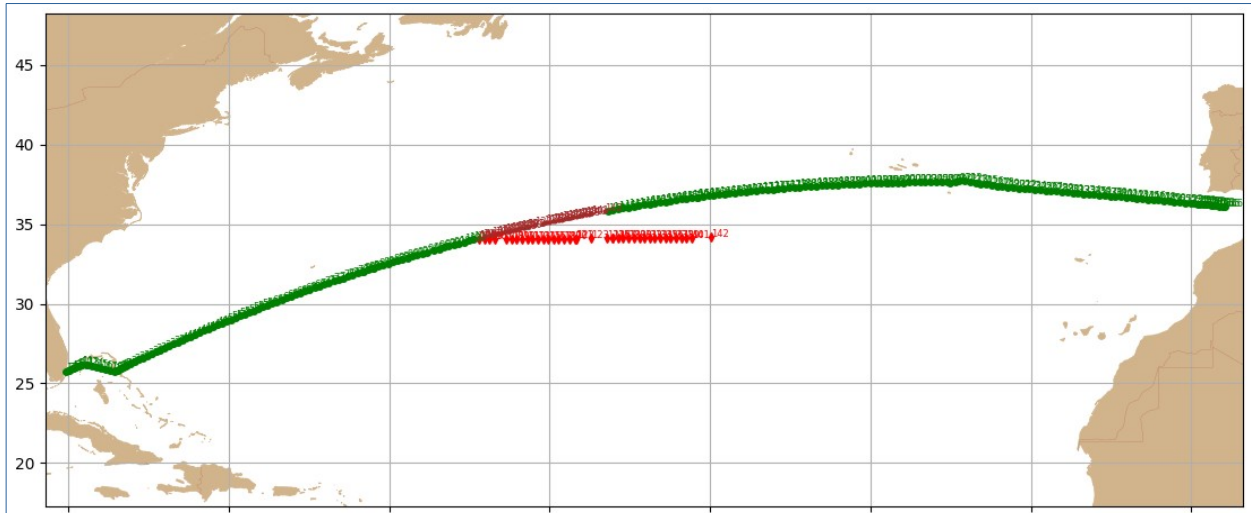
M/V Chicago Express positions

DATE	TIME	LAT	LON
04/12/22	7:00 PM	36 24.947 N	042 47.722 W
04/12/22	6:00 PM	36 22.346 N	043 08.160 W
04/12/22	5:00 PM	36 19.170 N	043 28.680 W
04/12/22	4:00 PM	36 15.994 N	043 49.316 W
04/12/22	3:00 PM	36 13.005 N	044 09.644 W
04/12/22	2:00 PM	36 09.780 N	044 29.899 W
04/12/22	1:00 PM	36 06.315 N	044 50.064 W
04/12/22	12:00 PM	36 03.087 N	045 10.120 W
04/12/22	11:00 AM	35 59.805 N	045 30.736 W
04/12/22	10:00 AM	35 56.051 N	045 50.825 W
04/12/22	9:00 AM	35 52.252 N	046 13.599 W
04/12/22	8:00 AM	35 48.653 N	046 34.132 W
04/12/22	7:00 AM	35 44.795 N	046 54.365 W
04/12/22	6:00 AM	35 40.967 N	047 14.874 W
04/12/22	5:00 AM	35 37.316 N	047 35.152 W
04/12/22	4:00 AM	35 33.455 N	047 55.616 W
04/12/22	3:00 AM	35 29.613 N	048 16.001 W
04/12/22	2:00 AM	35 26.169 N	048 36.353 W
04/12/22	1:00 AM	35 21.832 N	048 56.838 W
04/12/22	12:00 AM	35 17.550 N	049 16.948 W
04/11/22	11:00 PM	35 13.111 N	049 37.100 W
04/11/22	10:00 PM	35 08.789 N	049 56.796 W
04/11/22	9:00 PM	35 05.234 N	050 15.688 W
04/11/22	8:00 PM	35 01.180 N	050 33.960 W
04/11/22	7:00 PM	34 57.327 N	050 52.693 W
04/11/22	6:00 PM	34 53.369 N	051 10.520 W
04/11/22	5:00 PM	34 49.176 N	051 27.703 W
04/11/22	4:00 PM	34 45.274 N	051 44.848 W
04/11/22	3:00 PM	34 41.579 N	052 01.840 W
04/11/22	2:00 PM	34 37.615 N	052 19.298 W

04/11/22	1:00 PM	34 33.472 N	052 37.544 W
04/11/22	12:00 PM	34 28.911 N	052 56.079 W
04/11/22	11:00 AM	34 24.490 N	053 14.901 W
04/11/22	10:00 AM	34 19.935 N	053 33.807 W
04/11/22	9:00 AM	34 15.171 N	053 52.591 W
04/11/22	8:00 AM	34 10.209 N	054 11.305 W
04/11/22	7:00 AM	34 05.370 N	054 30.042 W
04/11/22	6:00 AM	34 00.630 N	054 49.258 W
04/11/22	5:00 AM	33 55.920 N	055 08.444 W

On April 14 at 22:00 UTC the ship stopped south of the Azores 37 33.9N - 25 4.34W to avoid an early arrival to the Port of Algeciras. A probe was deployed manually and the deployment cycle was stopped. The ship started moving again the next day April 15 15:45 UTC, and an XBT was deployed manually, followed by restarting the deployment cycle. After the deployment cycle was restarted, the system tried to deploy a second probe, which was manually stopped, After a couple of minutes of moving, the cycle was started once again without further issues.

It should be noted that once or twice a day a switch of a pair of powerful pumps is made (A and B stop, and switch to C and D). This causes micro power cuts of less than a second. This event does not affect the XBT system since everything is powered by UPS.

On April 17 it was found that over night, pin on tube 3 remained all the way down. A first command to extend pin was sent (Amverseas-Autolauncher-Diagnostic) but didn't extend. A second attempt sending 1 retract and 3 extend commands didn't produce any change, and the autolauncher remained until the end of the cruise with the pin stuck completely retracted.

April 17 12:36 UTC multiple issues came up:
- Drop 263, tube 4, manual launch MK-21 – MK21 board not detected at current port base address.
- Automatic attempt to deploy from tube 3 (empty), then moved to tube 1 (empty too) instead of tube 4.
- Manually deployed from tube 4, but no splash detected. Finally, a manual deployment from tube 5 was successful.
- There was no iridium communication. Profiles from 4/16 N26 to 4/17 N18 were not transmitted. Over 10 attempts were made to login to the AOML FTP. The laptop was restarted, and communications were re-established. All the profiles in queue were uploaded.

April 17 13:58 UTC: while launching from tube 8, an error message popped up: "Drop 266, tube 8, MK-21 – MK21 board not detected at current port base address. The probe was deployed shortly after this message.

Example of empty tube detected as loaded:

C- Stored gear and boxes

The deployments finalized on April 17 ~20:00 UTC with a total of 281 profiles.

All the gear was removed, cleaned and stored back into their respective boxes inside the Suez cabin, along with a total of 6 ½ XBT boxes remain stored in the Suez cabin.

D- Suggestions
1) Add an alarm for "Ship is underway" with the possibility of setting a speed threshold.
Ex.: If speed >= V trigger alarm, and restart cycle (this could be a check mark).
This would allow Amverseas tell apart when the ship is stopped and drifting (with 1-2 kt), vs. when it actually starts moving.

2) Add an option in the autolauncher setup menu to cancel or skip a given tube. In case there's an empty tube (because it's not working), the cycle would skip this tube without causing an alarm or "burning" a retry if the previous tube didn't detect a splash. Also, it would avoid the delay of testing that tube, which is particularly important to avoid in sections deploying every 10km.

Garbage classified as Cardboard, ABS empty canisters, and ABS white lids & pins.

Cruise Report
AX07

XBT Deployment Log

Launch	Date	Time	Latitude	Longitude	Tube	Probe type	File name
2	04/06/2022	18:03:00	25 45.97 N	080 09.13 W	8	Sippican Deep Blue	DCUJ2_20220406180300_N01_XBT.bin
3	04/07/2022	23:54:00	25 47.28 N	080 01.19 W	1	Sippican Deep Blue	DCUJ2_20220407235400_N01_XBT.bin
4	04/08/2022	00:13:00	25 49.69 N	079 55.81 W	2	Sippican Deep Blue	DCUJ2_20220408001300_N01_XBT.bin
5	04/08/2022	00:31:00	25 52.38 N	079 50.62 W	3	Sippican Deep Blue	DCUJ2_20220408003100_N02_XBT.bin
6	04/08/2022	00:48:00	25 54.83 N	079 45.25 W	4	Sippican Deep Blue	DCUJ2_20220408004800_N03_XBT.bin
8	04/08/2022	01:09:00	25 57.50 N	079 38.97 W	6	Sippican Deep Blue	DCUJ2_20220408010900_N04_XBT.bin
13	04/08/2022	01:34:00	26 01.29 N	079 31.18 W	7	Sippican Deep Blue	DCUJ2_20220408013400_N05_XBT.bin
14	04/08/2022	01:50:00	26 03.95 N	079 25.96 W	8	Sippican Deep Blue	DCUJ2_20220408015000_N06_XBT.bin
15	04/08/2022	02:05:00	26 06.58 N	079 20.72 W	1	Sippican Deep Blue	DCUJ2_20220408020500_N07_XBT.bin
16	04/08/2022	02:21:00	26 09.08 N	079 15.38 W	2	Sippican Deep Blue	DCUJ2_20220408022100_N08_XBT.bin
17	04/08/2022	02:36:00	26 11.37 N	079 09.95 W	3	Sippican Deep Blue	DCUJ2_20220408023600_N09_XBT.bin
18	04/08/2022	03:25:00	26 09.25 N	078 52.08 W	4	Sippican Deep Blue	DCUJ2_20220408032500_N10_XBT.bin
19	04/08/2022	03:28:00	26 09.00 N	078 50.67 W	5	Sippican Deep Blue	DCUJ2_20220408032800_N11_XBT.bin
21	04/08/2022	04:19:00	26 05.43 N	078 31.98 W	7	Sippican Deep Blue	DCUJ2_20220408041900_N12_XBT.bin
22	04/08/2022	05:06:00	26 01.38 N	078 14.56 W	8	Sippican Deep Blue	DCUJ2_20220408050600_N13_XBT.bin
23	04/08/2022	05:54:00	25 57.02 N	077 57.22 W	1	Sippican Deep Blue	DCUJ2_20220408055400_N14_XBT.bin
24	04/08/2022	06:44:00	25 52.90 N	077 39.81 W	2	Sippican Deep Blue	DCUJ2_20220408064400_N15_XBT.bin
25	04/08/2022	07:33:00	25 48.55 N	077 22.49 W	3	Sippican Deep Blue	DCUJ2_20220408073300_N16_XBT.bin
26	04/08/2022	08:16:00	25 45.15 N	077 06.97 W	4	Sippican Deep Blue	DCUJ2_20220408081600_N17_XBT.bin
27	04/08/2022	08:33:00	25 47.66 N	077 01.65 W	5	Sippican Deep Blue	DCUJ2_20220408083300_N18_XBT.bin
28	04/08/2022	08:50:00	25 50.23 N	076 56.36 W	6	Sippican Deep Blue	DCUJ2_20220408085000_N19_XBT.bin
29	04/08/2022	09:06:00	25 52.80 N	076 51.10 W	7	Sippican Deep Blue	DCUJ2_20220408090600_N20_XBT.bin
30	04/08/2022	09:23:00	25 55.39 N	076 45.85 W	8	Sippican Deep Blue	DCUJ2_20220408092300_N21_XBT.bin
31	04/08/2022	09:39:00	25 57.97 N	076 40.56 W	1	Sippican Deep Blue	DCUJ2_20220408093900_N22_XBT.bin
32	04/08/2022	09:56:00	26 00.55 N	076 35.28 W	2	Sippican Deep Blue	DCUJ2_20220408095600_N23_XBT.bin
33	04/08/2022	10:13:00	26 03.11 N	076 29.98 W	3	Sippican Deep Blue	DCUJ2_20220408101300_N24_XBT.bin
34	04/08/2022	10:29:00	26 05.63 N	076 24.66 W	4	Sippican Deep Blue	DCUJ2_20220408102900_N25_XBT.bin
35	04/08/2022	11:19:00	26 13.11 N	076 08.67 W	5	Sippican Deep Blue	DCUJ2_20220408111900_N26_XBT.bin
36	04/08/2022	12:07:00	26 20.88 N	075 52.83 W	6	Sippican Deep Blue	DCUJ2_20220408120700_N27_XBT.bin
37	04/08/2022	12:56:00	26 28.76 N	075 37.06 W	7	Sippican Deep Blue	DCUJ2_20220408125600_N28_XBT.bin
38	04/08/2022	13:43:00	26 36.06 N	075 20.90 W	8	Sippican Deep Blue	DCUJ2_20220408134300_N29_XBT.bin
39	04/08/2022	14:29:00	26 43.29 N	075 04.70 W	1	Sippican Deep Blue	DCUJ2_20220408142900_N30_XBT.bin
40	04/08/2022	15:14:00	26 51.02 N	074 48.77 W	2	Sippican Deep Blue	DCUJ2_20220408151400_N31_XBT.bin
41	04/08/2022	16:00:00	26 58.35 N	074 32.61 W	3	Sippican Deep Blue	DCUJ2_20220408160000_N32_XBT.bin
42	04/08/2022	16:48:00	27 05.74 N	074 16.44 W	4	Sippican Deep Blue	DCUJ2_20220408164800_N33_XBT.bin
43	04/08/2022	17:36:00	27 13.30 N	074 00.37 W	5	Sippican Deep Blue	DCUJ2_20220408173600_N34_XBT.bin
44	04/08/2022	18:24:00	27 20.60 N	073 44.13 W	6	Sippican Deep Blue	DCUJ2_20220408182400_N35_XBT.bin
45	04/08/2022	19:11:00	27 27.83 N	073 27.83 W	7	Sippican Deep Blue	DCUJ2_20220408191100_N36_XBT.bin
46	04/08/2022	20:00:00	27 34.88 N	073 11.41 W	8	Sippican Deep Blue	DCUJ2_20220408200000_N37_XBT.bin
47	04/08/2022	20:49:00	27 42.11 N	072 55.07 W	1	Sippican Deep Blue	DCUJ2_20220408204900_N38_XBT.bin
48	04/08/2022	21:38:00	27 49.45 N	072 38.78 W	2	Sippican Deep Blue	DCUJ2_20220408213800_N39_XBT.bin
49	04/08/2022	22:28:00	27 56.31 N	072 22.20 W	3	Sippican Deep Blue	DCUJ2_20220408222800_N40_XBT.bin
50	04/08/2022	23:17:00	28 03.49 N	072 05.78 W	4	Sippican Deep Blue	DCUJ2_20220408231700_N41_XBT.bin
52	04/09/2022	00:11:00	28 11.75 N	071 48.77 W	6	Sippican Deep Blue	DCUJ2_20220409001100_N01_XBT.bin
53	04/09/2022	01:02:00	28 18.99 N	071 32.36 W	7	Sippican Deep Blue	DCUJ2_20220409010200_N02_XBT.bin
54	04/09/2022	01:54:00	28 25.90 N	071 15.73 W	8	Sippican Deep Blue	DCUJ2_20220409015400_N03_XBT.bin
55	04/09/2022	02:45:00	28 32.66 N	070 59.01 W	1	Sippican Deep Blue	DCUJ2_20220409024500_N04_XBT.bin
56	04/09/2022	03:38:00	28 39.70 N	070 42.43 W	2	Sippican Deep Blue	DCUJ2_20220409033800_N05_XBT.bin
57	04/09/2022	04:29:00	28 46.62 N	070 25.76 W	3	Sippican Deep Blue	DCUJ2_20220409042900_N06_XBT.bin

58	04/09/2022	05:21:00	28 53.67 N	070 09.15 W	4	Sippican Deep Blue	DCUJ2_20220409052100_N07_XBT.bin
59	04/09/2022	06:13:00	29 00.45 N	069 52.37 W	5	Sippican Deep Blue	DCUJ2_20220409061300_N08_XBT.bin
60	04/09/2022	07:06:00	29 07.48 N	069 35.70 W	6	Sippican Deep Blue	DCUJ2_20220409070600_N09_XBT.bin
61	04/09/2022	07:58:00	29 14.13 N	069 18.82 W	7	Sippican Deep Blue	DCUJ2_20220409075800_N10_XBT.bin
62	04/09/2022	08:51:00	29 21.05 N	069 02.05 W	8	Sippican Deep Blue	DCUJ2_20220409085100_N11_XBT.bin
63	04/09/2022	09:43:00	29 27.87 N	068 45.22 W	1	Sippican Deep Blue	DCUJ2_20220409094300_N12_XBT.bin
64	04/09/2022	10:32:00	29 34.41 N	068 28.21 W	2	Sippican Deep Blue	DCUJ2_20220409103200_N13_XBT.bin
65	04/09/2022	11:23:00	29 41.31 N	068 11.39 W	3	Sippican Deep Blue	DCUJ2_20220409112300_N14_XBT.bin
66	04/09/2022	12:15:00	29 47.82 N	067 54.32 W	4	Sippican Deep Blue	DCUJ2_20220409121500_N15_XBT.bin
67	04/09/2022	13:06:00	29 54.35 N	067 37.26 W	5	Sippican Deep Blue	DCUJ2_20220409130600_N16_XBT.bin
69	04/09/2022	14:00:00	30 00.91 N	067 19.12 W	7	Sippican Deep Blue	DCUJ2_20220409140000_N17_XBT.bin
70	04/09/2022	14:55:00	30 07.73 N	067 02.16 W	8	Sippican Deep Blue	DCUJ2_20220409145500_N18_XBT.bin
72	04/09/2022	16:02:00	30 15.69 N	066 41.22 W	2	Sippican Deep Blue	DCUJ2_20220409160200_N19_XBT.bin
73	04/09/2022	16:58:00	30 22.20 N	066 24.06 W	1	Sippican Deep Blue	DCUJ2_20220409165800_N20_XBT.bin
74	04/09/2022	17:53:00	30 28.59 N	066 06.83 W	2	Sippican Deep Blue	DCUJ2_20220409175300_N21_XBT.bin
75	04/09/2022	18:49:00	30 35.16 N	065 49.66 W	3	Sippican Deep Blue	DCUJ2_20220409184900_N22_XBT.bin
76	04/09/2022	19:45:00	30 41.34 N	065 32.27 W	4	Sippican Deep Blue	DCUJ2_20220409194500_N23_XBT.bin
77	04/09/2022	20:41:00	30 47.54 N	065 14.90 W	5	Sippican Deep Blue	DCUJ2_20220409204100_N24_XBT.bin
78	04/09/2022	21:38:00	30 53.78 N	064 57.51 W	6	Sippican Deep Blue	DCUJ2_20220409213800_N25_XBT.bin
79	04/09/2022	22:35:00	31 00.13 N	064 39.82 W	7	Sippican Deep Blue	DCUJ2_20220409223500_N26_XBT.bin
80	04/09/2022	23:33:00	31 06.28 N	064 22.36 W	1	Sippican Deep Blue	DCUJ2_20220409233300_N27_XBT.bin
82	04/10/2022	00:33:00	31 13.03 N	064 04.17 W	3	Sippican Deep Blue	DCUJ2_20220410003300_N01_XBT.bin
85	04/10/2022	01:33:00	31 19.71 N	063 45.68 W	4	Sippican Deep Blue	DCUJ2_20220410013300_N02_XBT.bin
86	04/10/2022	02:31:00	31 25.43 N	063 27.96 W	5	Sippican Deep Blue	DCUJ2_20220410023100_N03_XBT.bin
87	04/10/2022	03:30:00	31 31.48 N	063 10.36 W	6	Sippican Deep Blue	DCUJ2_20220410033000_N04_XBT.bin
88	04/10/2022	04:29:00	31 37.29 N	062 52.63 W	7	Sippican Deep Blue	DCUJ2_20220410042900_N05_XBT.bin
89	04/10/2022	05:27:00	31 43.37 N	062 35.00 W	8	Sippican Deep Blue	DCUJ2_20220410052700_N06_XBT.bin
90	04/10/2022	06:24:00	31 49.32 N	062 17.30 W	1	Sippican Deep Blue	DCUJ2_20220410062400_N07_XBT.bin
91	04/10/2022	07:21:00	31 55.14 N	061 59.53 W	2	Sippican Deep Blue	DCUJ2_20220410072100_N08_XBT.bin
92	04/10/2022	08:17:00	32 00.95 N	061 41.74 W	3	Sippican Deep Blue	DCUJ2_20220410081700_N09_XBT.bin
94	04/10/2022	08:34:00	32 02.69 N	061 36.37 W	4	Sippican Deep Blue	DCUJ2_20220410083400_N10_XBT.bin
95	04/10/2022	09:29:00	32 08.32 N	061 18.95 W	1	Sippican Deep Blue	DCUJ2_20220410092900_N11_XBT.bin
96	04/10/2022	10:26:00	32 13.94 N	061 01.04 W	2	Sippican Deep Blue	DCUJ2_20220410102600_N12_XBT.bin
97	04/10/2022	10:31:00	32 14.46 N	060 59.37 W	3	Sippican Deep Blue	DCUJ2_20220410103100_N13_XBT.bin
98	04/10/2022	11:29:00	32 20.25 N	060 41.51 W	4	Sippican Deep Blue	DCUJ2_20220410112900_N14_XBT.bin
100	04/10/2022	12:29:00	32 26.12 N	060 22.65 W	6	Sippican Deep Blue	DCUJ2_20220410122900_N15_XBT.bin
101	04/10/2022	13:26:00	32 31.87 N	060 04.72 W	7	Sippican Deep Blue	DCUJ2_20220410132600_N16_XBT.bin
102	04/10/2022	14:23:00	32 37.42 N	059 46.68 W	8	Sippican Deep Blue	DCUJ2_20220410142300_N17_XBT.bin
103	04/10/2022	15:20:00	32 42.72 N	059 28.53 W	5	Sippican Deep Blue	DCUJ2_20220410152000_N18_XBT.bin
104	04/10/2022	16:18:00	32 48.17 N	059 10.42 W	6	Sippican Deep Blue	DCUJ2_20220410161800_N19_XBT.bin
105	04/10/2022	17:17:00	32 53.56 N	058 52.27 W	7	Sippican Deep Blue	DCUJ2_20220410171700_N20_XBT.bin
106	04/10/2022	18:16:00	32 58.89 N	058 34.07 W	8	Sippican Deep Blue	DCUJ2_20220410181600_N21_XBT.bin
107	04/10/2022	19:14:00	33 04.45 N	058 15.96 W	1	Sippican Deep Blue	DCUJ2_20220410191400_N22_XBT.bin
108	04/10/2022	20:11:00	33 09.72 N	057 57.70 W	2	Sippican Deep Blue	DCUJ2_20220410201100_N23_XBT.bin
109	04/10/2022	21:09:00	33 14.69 N	057 39.30 W	3	Sippican Deep Blue	DCUJ2_20220410210900_N24_XBT.bin
113	04/10/2022	22:25:00	33 21.90 N	057 14.51 W	6	Sippican Deep Blue	DCUJ2_20220410222500_N25_XBT.bin
117	04/10/2022	23:26:00	33 27.35 N	056 54.31 W	7	Sippican Deep Blue	DCUJ2_20220410232600_N26_XBT.bin
118	04/11/2022	00:22:00	33 32.43 N	056 35.89 W	8	Sippican Deep Blue	DCUJ2_20220411002200_N01_XBT.bin
119	04/11/2022	01:20:00	33 37.73 N	056 17.24 W	3	Sippican Deep Blue	DCUJ2_20220411012000_N02_XBT.bin
120	04/11/2022	02:18:00	33 42.73 N	055 58.76 W	1	Sippican Deep Blue	DCUJ2_20220411021800_N03_XBT.bin
121	04/11/2022	03:18:00	33 47.49 N	055 40.17 W	1	Sippican Deep Blue	DCUJ2_20220411031800_N04_XBT.bin
122	04/11/2022	04:17:00	33 52.41 N	055 21.60 W	2	Sippican Deep Blue	DCUJ2_20220411041700_N05_XBT.bin
123	04/11/2022	05:16:00	33 57.25 N	055 03.01 W	3	Sippican Deep Blue	DCUJ2_20220411051600_N06_XBT.bin
124	04/11/2022	06:15:00	34 01.84 N	054 44.30 W	4	Sippican Deep Blue	DCUJ2_20220411061500_N07_XBT.bin
125	04/11/2022	06:49:00	34 02.01 N	054 24.79 W	5	Sippican Deep Blue	DCUJ2_20220411064900_N08_XBT.bin
126	04/11/2022	07:22:00	34 02.08 N	054 05.28 W	6	Sippican Deep Blue	DCUJ2_20220411072200_N09_XBT.bin
127	04/11/2022	07:55:00	34 02.15 N	053 45.77 W	7	Sippican Deep Blue	DCUJ2_20220411075500_N10_XBT.bin
128	04/11/2022	08:28:00	34 02.22 N	053 26.26 W	8	Sippican Deep Blue	DCUJ2_20220411082800_N11_XBT.bin
134	04/11/2022	09:47:00	34 03.00 N	052 41.73 W	1	Sippican Deep Blue	DCUJ2_20220411094700_N12_XBT.bin
135	04/11/2022	10:23:00	34 03.61 N	052 22.23 W	2	Sippican Deep Blue	DCUJ2_20220411102300_N13_XBT.bin
136	04/11/2022	10:56:00	34 03.69 N	052 02.71 W	3	Sippican Deep Blue	DCUJ2_20220411105600_N14_XBT.bin
137	04/11/2022	11:29:00	34 03.76 N	051 43.19 W	4	Sippican Deep Blue	DCUJ2_20220411112900_N15_XBT.bin

138	04/11/2022	12:02:00	34 03.83 N	051 23.67 W	5	Sippican Deep Blue	DCUJ2_20220411120200_N16_XBT.bin
139	04/11/2022	12:35:00	34 03.90 N	051 04.15 W	6	Sippican Deep Blue	DCUJ2_20220411123500_N17_XBT.bin
140	04/11/2022	13:08:00	34 03.97 N	050 44.63 W	7	Sippican Deep Blue	DCUJ2_20220411130800_N18_XBT.bin
141	04/11/2022	13:44:00	34 04.58 N	050 25.12 W	8	Sippican Deep Blue	DCUJ2_20220411134400_N19_XBT.bin
142	04/11/2022	14:17:00	34 04.66 N	050 05.60 W	1	Sippican Deep Blue	DCUJ2_20220411141700_N20_XBT.bin
143	04/11/2022	14:50:00	34 04.73 N	049 46.08 W	2	Sippican Deep Blue	DCUJ2_20220411145000_N21_XBT.bin
144	04/11/2022	15:23:00	34 04.80 N	049 26.56 W	3	Sippican Deep Blue	DCUJ2_20220411152300_N22_XBT.bin
145	04/11/2022	15:56:00	34 04.87 N	049 07.04 W	4	Sippican Deep Blue	DCUJ2_20220411155600_N23_XBT.bin
147	04/11/2022	16:31:00	34 04.99 N	048 46.00 W	6	Sippican Deep Blue	DCUJ2_20220411163100_N24_XBT.bin
148	04/11/2022	17:06:00	34 05.27 N	048 26.48 W	1	Sippican Deep Blue	DCUJ2_20220411170600_N25_XBT.bin
149	04/11/2022	17:14:00	34 05.35 N	048 21.64 W	2	Sippican Deep Blue	DCUJ2_20220411171400_N26_XBT.bin
152	04/11/2022	18:49:00	34 05.67 N	047 25.80 W	2	Sippican Deep Blue	DCUJ2_20220411184900_N27_XBT.bin
153	04/11/2022	20:32:00	34 05.80 N	046 24.34 W	3	Sippican Deep Blue	DCUJ2_20220411203200_N28_XBT.bin
154	04/11/2022	21:03:00	34 06.12 N	046 06.63 W	4	Sippican Deep Blue	DCUJ2_20220411210300_N29_XBT.bin
155	04/11/2022	21:08:00	34 06.19 N	046 04.19 W	6	Sippican Deep Blue	DCUJ2_20220411210800_N30_XBT.bin
156	04/11/2022	21:44:00	34 06.80 N	045 44.68 W	5	Sippican Deep Blue	DCUJ2_20220411214400_N31_XBT.bin
157	04/11/2022	22:17:00	34 06.87 N	045 25.15 W	6	Sippican Deep Blue	DCUJ2_20220411221700_N32_XBT.bin
159	04/11/2022	22:53:00	34 06.99 N	045 04.11 W	8	Sippican Deep Blue	DCUJ2_20220411225300_N33_XBT.bin
160	04/11/2022	23:27:00	34 07.15 N	044 44.58 W	3	Sippican Deep Blue	DCUJ2_20220411232700_N34_XBT.bin
161	04/12/2022	00:00:00	34 07.22 N	044 25.05 W	4	Sippican Deep Blue	DCUJ2_20220412000000_N01_XBT.bin
162	04/12/2022	00:32:00	34 07.29 N	044 05.52 W	1	Sippican Deep Blue	DCUJ2_20220412003200_N02_XBT.bin
163	04/12/2022	01:05:00	34 07.36 N	043 45.99 W	2	Sippican Deep Blue	DCUJ2_20220412010500_N03_XBT.bin
164	04/12/2022	01:42:00	34 07.97 N	043 26.47 W	1	Sippican Deep Blue	DCUJ2_20220412014200_N04_XBT.bin
165	04/12/2022	02:15:00	34 08.04 N	043 06.94 W	2	Sippican Deep Blue	DCUJ2_20220412021500_N05_XBT.bin
166	04/12/2022	02:47:00	34 08.11 N	042 47.41 W	3	Sippican Deep Blue	DCUJ2_20220412024700_N06_XBT.bin
167	04/12/2022	03:20:00	34 08.18 N	042 27.88 W	4	Sippican Deep Blue	DCUJ2_20220412032000_N07_XBT.bin
168	04/12/2022	03:53:00	34 08.25 N	042 08.34 W	5	Sippican Deep Blue	DCUJ2_20220412035300_N08_XBT.bin
169	04/12/2022	04:26:00	34 08.32 N	041 48.80 W	6	Sippican Deep Blue	DCUJ2_20220412042600_N09_XBT.bin
170	04/12/2022	04:59:00	34 08.39 N	041 29.26 W	7	Sippican Deep Blue	DCUJ2_20220412045900_N10_XBT.bin
171	04/12/2022	05:32:00	34 08.46 N	041 09.72 W	8	Sippican Deep Blue	DCUJ2_20220412053200_N11_XBT.bin
194	04/12/2022	07:54:00	34 11.56 N	039 55.92 W	1	Sippican Deep Blue	DCUJ2_20220412075400_N12_XBT.bin
195	04/12/2022	08:31:00	35 50.72 N	046 23.40 W	2	Sippican Deep Blue	DCUJ2_20220412083100_N13_XBT.bin
196	04/12/2022	09:24:00	35 53.81 N	046 03.79 W	3	Sippican Deep Blue	DCUJ2_20220412092400_N14_XBT.bin
197	04/12/2022	10:19:00	35 57.29 N	045 44.27 W	4	Sippican Deep Blue	DCUJ2_20220412101900_N15_XBT.bin
198	04/12/2022	11:17:00	36 00.87 N	045 24.78 W	5	Sippican Deep Blue	DCUJ2_20220412111700_N16_XBT.bin
199	04/12/2022	12:14:00	36 03.89 N	045 05.14 W	6	Sippican Deep Blue	DCUJ2_20220412121400_N17_XBT.bin
200	04/12/2022	13:13:00	36 07.05 N	044 45.52 W	7	Sippican Deep Blue	DCUJ2_20220412131300_N18_XBT.bin
201	04/12/2022	14:11:00	36 10.41 N	044 25.91 W	8	Sippican Deep Blue	DCUJ2_20220412141100_N19_XBT.bin
202	04/12/2022	15:10:00	36 13.60 N	044 06.25 W	1	Sippican Deep Blue	DCUJ2_20220412151000_N20_XBT.bin
203	04/12/2022	16:08:00	36 16.41 N	043 46.51 W	2	Sippican Deep Blue	DCUJ2_20220412160800_N21_XBT.bin
204	04/12/2022	17:05:00	36 19.46 N	043 26.81 W	3	Sippican Deep Blue	DCUJ2_20220412170500_N22_XBT.bin
205	04/12/2022	18:03:00	36 22.48 N	043 07.07 W	4	Sippican Deep Blue	DCUJ2_20220412180300_N23_XBT.bin
206	04/12/2022	19:01:00	36 25.02 N	042 47.23 W	5	Sippican Deep Blue	DCUJ2_20220412190100_N24_XBT.bin
207	04/12/2022	20:01:00	36 28.09 N	042 27.49 W	6	Sippican Deep Blue	DCUJ2_20220412200100_N25_XBT.bin
208	04/12/2022	21:01:00	36 31.20 N	042 07.75 W	7	Sippican Deep Blue	DCUJ2_20220412210100_N26_XBT.bin
209	04/12/2022	22:01:00	36 34.04 N	041 47.92 W	8	Sippican Deep Blue	DCUJ2_20220412220100_N27_XBT.bin
210	04/12/2022	23:00:00	36 36.74 N	041 28.05 W	1	Sippican Deep Blue	DCUJ2_20220412230000_N28_XBT.bin
211	04/12/2022	23:58:00	36 39.33 N	041 08.16 W	2	Sippican Deep Blue	DCUJ2_20220412235800_N29_XBT.bin
212	04/13/2022	00:56:00	36 41.90 N	040 48.26 W	3	Sippican Deep Blue	DCUJ2_20220413005600_N01_XBT.bin
213	04/13/2022	01:00:00	36 42.07 N	040 46.92 W	4	Sippican Deep Blue	DCUJ2_20220413010000_N02_XBT.bin
214	04/13/2022	02:00:00	36 44.53 N	040 26.97 W	1	Sippican Deep Blue	DCUJ2_20220413020000_N03_XBT.bin
215	04/13/2022	03:00:00	36 46.65 N	040 06.95 W	2	Sippican Deep Blue	DCUJ2_20220413030000_N04_XBT.bin
216	04/13/2022	04:01:00	36 49.12 N	039 46.98 W	3	Sippican Deep Blue	DCUJ2_20220413040100_N05_XBT.bin
217	04/13/2022	05:06:00	36 51.42 N	039 26.97 W	4	Sippican Deep Blue	DCUJ2_20220413050600_N06_XBT.bin
218	04/13/2022	06:09:00	36 53.45 N	039 06.92 W	5	Sippican Deep Blue	DCUJ2_20220413060900_N07_XBT.bin
219	04/13/2022	07:10:00	36 56.02 N	038 46.94 W	6	Sippican Deep Blue	DCUJ2_20220413071000_N08_XBT.bin
220	04/13/2022	08:09:00	36 58.23 N	038 26.89 W	7	Sippican Deep Blue	DCUJ2_20220413080900_N09_XBT.bin
221	04/13/2022	09:06:00	37 00.18 N	038 06.79 W	8	Sippican Deep Blue	DCUJ2_20220413090600_N10_XBT.bin
222	04/13/2022	10:04:00	37 02.23 N	037 46.70 W	1	Sippican Deep Blue	DCUJ2_20220413100400_N11_XBT.bin
223	04/13/2022	11:02:00	37 04.62 N	037 26.66 W	2	Sippican Deep Blue	DCUJ2_20220413110200_N12_XBT.bin
224	04/13/2022	11:59:00	37 06.30 N	037 06.48 W	3	Sippican Deep Blue	DCUJ2_20220413115900_N13_XBT.bin
225	04/13/2022	12:57:00	37 08.16 N	036 46.31 W	4	Sippican Deep Blue	DCUJ2_20220413125700_N14_XBT.bin

226	04/13/2022	13:56:00	37 10.10 N	036 26.16 W	5	Sippican Deep Blue	DCUJ2_20220413135600_N15_XBT.bin
227	04/13/2022	14:53:00	37 11.58 N	036 05.93 W	6	Sippican Deep Blue	DCUJ2_20220413145300_N16_XBT.bin
228	04/13/2022	15:53:00	37 13.36 N	035 45.75 W	7	Sippican Deep Blue	DCUJ2_20220413155300_N17_XBT.bin
229	04/13/2022	16:53:00	37 14.93 N	035 25.54 W	8	Sippican Deep Blue	DCUJ2_20220413165300_N18_XBT.bin
230	04/13/2022	17:54:00	37 16.85 N	035 05.36 W	1	Sippican Deep Blue	DCUJ2_20220413175400_N19_XBT.bin
231	04/13/2022	18:53:00	37 18.09 N	034 45.08 W	1	Sippican Deep Blue	DCUJ2_20220413185300_N20_XBT.bin
232	04/13/2022	19:53:00	37 19.90 N	034 24.87 W	2	Sippican Deep Blue	DCUJ2_20220413195300_N21_XBT.bin
233	04/13/2022	20:54:00	37 21.66 N	034 04.65 W	3	Sippican Deep Blue	DCUJ2_20220413205400_N22_XBT.bin
234	04/13/2022	21:55:00	37 22.77 N	033 44.35 W	4	Sippican Deep Blue	DCUJ2_20220413215500_N23_XBT.bin
235	04/13/2022	22:56:00	37 24.17 N	033 24.07 W	5	Sippican Deep Blue	DCUJ2_20220413225600_N24_XBT.bin
236	04/13/2022	23:56:00	37 25.07 N	033 03.74 W	6	Sippican Deep Blue	DCUJ2_20220413235600_N25_XBT.bin
237	04/14/2022	00:55:00	37 26.36 N	032 43.42 W	7	Sippican Deep Blue	DCUJ2_20220414005500_N01_XBT.bin
238	04/14/2022	01:55:00	37 27.51 N	032 23.09 W	1	Sippican Deep Blue	DCUJ2_20220414015500_N02_XBT.bin
239	04/14/2022	02:54:00	37 28.51 N	032 02.76 W	2	Sippican Deep Blue	DCUJ2_20220414025400_N03_XBT.bin
240	04/14/2022	03:52:00	37 29.55 N	031 42.43 W	3	Sippican Deep Blue	DCUJ2_20220414035200_N04_XBT.bin
241	04/14/2022	04:50:00	37 30.47 N	031 22.08 W	4	Sippican Deep Blue	DCUJ2_20220414045000_N05_XBT.bin
242	04/14/2022	05:49:00	37 31.47 N	031 01.72 W	5	Sippican Deep Blue	DCUJ2_20220414054900_N06_XBT.bin
243	04/14/2022	06:46:00	37 32.41 N	030 41.35 W	6	Sippican Deep Blue	DCUJ2_20220414064600_N07_XBT.bin
244	04/14/2022	07:45:00	37 33.10 N	030 20.97 W	7	Sippican Deep Blue	DCUJ2_20220414074500_N08_XBT.bin
245	04/14/2022	08:36:00	37 33.83 N	030 00.59 W	8	Sippican Deep Blue	DCUJ2_20220414083600_N09_XBT.bin
246	04/14/2022	09:34:00	37 34.53 N	029 40.21 W	1	Sippican Deep Blue	DCUJ2_20220414093400_N10_XBT.bin
247	04/14/2022	10:31:00	37 34.98 N	029 19.82 W	2	Sippican Deep Blue	DCUJ2_20220414103100_N11_XBT.bin
248	04/14/2022	11:29:00	37 35.65 N	028 59.42 W	3	Sippican Deep Blue	DCUJ2_20220414112900_N12_XBT.bin
249	04/14/2022	11:33:00	37 35.71 N	028 57.76 W	4	Sippican Deep Blue	DCUJ2_20220414113300_N13_XBT.bin
250	04/14/2022	12:31:00	37 36.27 N	028 37.35 W	5	Sippican Deep Blue	DCUJ2_20220414123100_N14_XBT.bin
251	04/14/2022	13:29:00	37 36.50 N	028 16.94 W	6	Sippican Deep Blue	DCUJ2_20220414132900_N15_XBT.bin
252	04/14/2022	14:26:00	37 37.06 N	027 56.54 W	7	Sippican Deep Blue	DCUJ2_20220414142600_N16_XBT.bin
253	04/14/2022	15:24:00	37 37.37 N	027 36.12 W	8	Sippican Deep Blue	DCUJ2_20220414152400_N17_XBT.bin
254	04/14/2022	16:20:00	37 37.49 N	027 15.69 W	1	Sippican Deep Blue	DCUJ2_20220414162000_N18_XBT.bin
255	04/14/2022	17:18:00	37 37.54 N	026 55.26 W	2	Sippican Deep Blue	DCUJ2_20220414171800_N19_XBT.bin
256	04/14/2022	18:16:00	37 37.91 N	026 34.84 W	3	Sippican Deep Blue	DCUJ2_20220414181600_N20_XBT.bin
257	04/14/2022	19:12:00	37 38.58 N	026 14.42 W	4	Sippican Deep Blue	DCUJ2_20220414191200_N21_XBT.bin
258	04/14/2022	20:11:00	37 38.41 N	025 53.99 W	5	Sippican Deep Blue	DCUJ2_20220414201100_N22_XBT.bin
259	04/14/2022	21:10:00	37 38.11 N	025 33.56 W	6	Sippican Deep Blue	DCUJ2_20220414211000_N23_XBT.bin
260	04/14/2022	22:08:00	37 38.20 N	025 13.13 W	7	Sippican Deep Blue	DCUJ2_20220414220800_N24_XBT.bin
261	04/14/2022	22:49:00	37 33.65 N	025 04.25 W	8	Sippican Deep Blue	DCUJ2_20220414224900_N25_XBT.bin
262	04/15/2022	09:35:00	37 39.59 N	024 42.32 W	1	Sippican Deep Blue	DCUJ2_20220415093500_N01_XBT.bin
263	04/15/2022	15:43:00	37 43.47 N	024 28.51 W	1	Sippican Deep Blue	DCUJ2_20220415154300_N02_XBT.bin
265	04/15/2022	17:00:00	37 41.85 N	024 08.15 W	2	Sippican Deep Blue	DCUJ2_20220415170000_N03_XBT.bin
266	04/15/2022	17:59:00	37 38.98 N	023 48.05 W	3	Sippican Deep Blue	DCUJ2_20220415175900_N04_XBT.bin
267	04/15/2022	18:58:00	37 35.95 N	023 27.99 W	4	Sippican Deep Blue	DCUJ2_20220415185800_N05_XBT.bin
268	04/15/2022	19:58:00	37 32.89 N	023 07.96 W	5	Sippican Deep Blue	DCUJ2_20220415195800_N06_XBT.bin
270	04/15/2022	20:59:00	37 29.95 N	022 46.87 W	7	Sippican Deep Blue	DCUJ2_20220415205900_N07_XBT.bin
271	04/15/2022	21:57:00	37 26.97 N	022 26.85 W	8	Sippican Deep Blue	DCUJ2_20220415215700_N08_XBT.bin
272	04/15/2022	22:54:00	37 24.04 N	022 06.81 W	5	Sippican Deep Blue	DCUJ2_20220415225400_N09_XBT.bin
273	04/15/2022	23:52:00	37 21.37 N	021 46.74 W	4	Sippican Deep Blue	DCUJ2_20220415235200_N10_XBT.bin
274	04/16/2022	00:49:00	37 19.61 N	021 26.51 W	1	Sippican Deep Blue	DCUJ2_20220416004900_N01_XBT.bin
275	04/16/2022	01:46:00	37 17.73 N	021 06.32 W	2	Sippican Deep Blue	DCUJ2_20220416014600_N02_XBT.bin
276	04/16/2022	02:44:00	37 15.99 N	020 46.10 W	3	Sippican Deep Blue	DCUJ2_20220416024400_N03_XBT.bin
277	04/16/2022	03:42:00	37 14.03 N	020 25.93 W	4	Sippican Deep Blue	DCUJ2_20220416034200_N04_XBT.bin
278	04/16/2022	04:41:00	37 12.27 N	020 05.75 W	5	Sippican Deep Blue	DCUJ2_20220416044100_N05_XBT.bin
279	04/16/2022	05:40:00	37 10.77 N	019 45.53 W	6	Sippican Deep Blue	DCUJ2_20220416054000_N06_XBT.bin
280	04/16/2022	06:34:00	37 08.90 N	019 25.36 W	7	Sippican Deep Blue	DCUJ2_20220416063400_N07_XBT.bin
281	04/16/2022	07:32:00	37 07.16 N	019 05.18 W	8	Sippican Deep Blue	DCUJ2_20220416073200_N08_XBT.bin
282	04/16/2022	08:36:00	37 05.28 N	018 45.04 W	1	Sippican Deep Blue	DCUJ2_20220416083600_N09_XBT.bin
283	04/16/2022	09:33:00	37 03.56 N	018 24.87 W	2	Sippican Deep Blue	DCUJ2_20220416093300_N10_XBT.bin
284	04/16/2022	10:25:00	37 01.91 N	018 04.71 W	3	Sippican Deep Blue	DCUJ2_20220416102500_N11_XBT.bin
285	04/16/2022	11:18:00	37 00.01 N	017 44.60 W	4	Sippican Deep Blue	DCUJ2_20220416111800_N12_XBT.bin
287	04/16/2022	12:13:00	36 58.22 N	017 23.37 W	6	Sippican Deep Blue	DCUJ2_20220416121300_N13_XBT.bin
288	04/16/2022	13:06:00	36 56.41 N	017 03.24 W	7	Sippican Deep Blue	DCUJ2_20220416130600_N14_XBT.bin
289	04/16/2022	14:00:00	36 54.64 N	016 43.12 W	8	Sippican Deep Blue	DCUJ2_20220416140000_N15_XBT.bin
290	04/16/2022	14:54:00	36 52.92 N	016 23.00 W	1	Sippican Deep Blue	DCUJ2_20220416145400_N16_XBT.bin

291	04/16/2022	15:46:00	36 51.20 N	016 03.85 W	2	Sippican Deep Blue	DCUJ2_20220416154600_N17_XBT.bin
292	04/16/2022	16:41:00	36 49.38 N	015 43.76 W	3	Sippican Deep Blue	DCUJ2_20220416164100_N18_XBT.bin
293	04/16/2022	17:36:00	36 47.66 N	015 23.68 W	4	Sippican Deep Blue	DCUJ2_20220416173600_N19_XBT.bin
294	04/16/2022	18:31:00	36 45.97 N	015 03.60 W	5	Sippican Deep Blue	DCUJ2_20220416183100_N20_XBT.bin
295	04/16/2022	19:25:00	36 44.19 N	014 43.52 W	6	Sippican Deep Blue	DCUJ2_20220416192500_N21_XBT.bin
296	04/16/2022	20:20:00	36 42.52 N	014 23.46 W	1	Sippican Deep Blue	DCUJ2_20220416202000_N22_XBT.bin
297	04/16/2022	21:14:00	36 40.46 N	014 03.46 W	2	Sippican Deep Blue	DCUJ2_20220416211400_N23_XBT.bin
298	04/16/2022	22:09:00	36 38.73 N	013 43.40 W	3	Sippican Deep Blue	DCUJ2_20220416220900_N24_XBT.bin
299	04/16/2022	23:04:00	36 37.08 N	013 23.34 W	4	Sippican Deep Blue	DCUJ2_20220416230400_N25_XBT.bin
300	04/16/2022	23:59:00	36 35.19 N	013 03.34 W	5	Sippican Deep Blue	DCUJ2_20220416235900_N26_XBT.bin
301	04/17/2022	00:54:00	36 33.43 N	012 43.33 W	6	Sippican Deep Blue	DCUJ2_20220417005400_N01_XBT.bin
302	04/17/2022	01:48:00	36 31.61 N	012 23.32 W	1	Sippican Deep Blue	DCUJ2_20220417014800_N02_XBT.bin
303	04/17/2022	02:43:00	36 30.01 N	012 03.29 W	2	Sippican Deep Blue	DCUJ2_20220417024300_N03_XBT.bin
304	04/17/2022	03:37:00	36 28.06 N	011 43.31 W	3	Sippican Deep Blue	DCUJ2_20220417033700_N04_XBT.bin
305	04/17/2022	04:31:00	36 26.24 N	011 23.32 W	4	Sippican Deep Blue	DCUJ2_20220417043100_N05_XBT.bin
306	04/17/2022	05:25:00	36 24.62 N	011 03.31 W	5	Sippican Deep Blue	DCUJ2_20220417052500_N06_XBT.bin
307	04/17/2022	06:20:00	36 22.76 N	010 43.36 W	6	Sippican Deep Blue	DCUJ2_20220417062000_N07_XBT.bin
308	04/17/2022	07:15:00	36 20.66 N	010 23.45 W	7	Sippican Deep Blue	DCUJ2_20220417071500_N08_XBT.bin
309	04/17/2022	08:10:00	36 18.95 N	010 03.49 W	8	Sippican Deep Blue	DCUJ2_20220417081000_N09_XBT.bin
310	04/17/2022	08:55:00	36 17.41 N	009 47.02 W	1	Sippican Deep Blue	DCUJ2_20220417085500_N10_XBT.bin
311	04/17/2022	09:21:00	36 16.62 N	009 37.04 W	2	Sippican Deep Blue	DCUJ2_20220417092100_N11_XBT.bin
312	04/17/2022	09:48:00	36 15.87 N	009 27.04 W	5	Sippican Deep Blue	DCUJ2_20220417094800_N12_XBT.bin
313	04/17/2022	10:16:00	36 15.10 N	009 17.05 W	6	Sippican Deep Blue	DCUJ2_20220417101600_N13_XBT.bin
314	04/17/2022	10:43:00	36 14.21 N	009 07.08 W	7	Sippican Deep Blue	DCUJ2_20220417104300_N14_XBT.bin
315	04/17/2022	11:09:00	36 12.82 N	008 57.19 W	4	Sippican Deep Blue	DCUJ2_20220417110900_N15_XBT.bin
316	04/17/2022	11:36:00	36 11.69 N	008 47.25 W	1	Sippican Deep Blue	DCUJ2_20220417113600_N16_XBT.bin
317	04/17/2022	12:03:00	36 10.49 N	008 37.33 W	2	Sippican Deep Blue	DCUJ2_20220417120300_N17_XBT.bin
321	04/17/2022	12:37:00	36 08.89 N	008 24.67 W	5	Sippican Deep Blue	DCUJ2_20220417123700_N18_XBT.bin
322	04/17/2022	13:04:00	36 07.73 N	008 14.46 W	6	Sippican Deep Blue	DCUJ2_20220417130400_N19_XBT.bin
323	04/17/2022	13:31:00	36 06.61 N	008 04.31 W	7	Sippican Deep Blue	DCUJ2_20220417133100_N20_XBT.bin
326	04/17/2022	13:58:00	36 05.29 N	007 54.36 W	8	Sippican Deep Blue	DCUJ2_20220417135800_N21_XBT.bin
327	04/17/2022	14:24:00	36 04.00 N	007 44.49 W	1	Sippican Deep Blue	DCUJ2_20220417142400_N22_XBT.bin
328	04/17/2022	14:50:00	36 02.75 N	007 34.60 W	2	Sippican Deep Blue	DCUJ2_20220417145000_N23_XBT.bin
329	04/17/2022	14:54:00	36 02.57 N	007 33.05 W	4	Sippican Deep Blue	DCUJ2_20220417145400_N24_XBT.bin
330	04/17/2022	15:21:00	36 01.45 N	007 23.12 W	5	Sippican Deep Blue	DCUJ2_20220417152100_N25_XBT.bin
331	04/17/2022	15:47:00	36 00.30 N	007 13.21 W	6	Sippican Deep Blue	DCUJ2_20220417154700_N26_XBT.bin
332	04/17/2022	15:50:00	36 00.15 N	007 12.31 W	7	Sippican Deep Blue	DCUJ2_20220417155000_N27_XBT.bin
335	04/17/2022	16:34:00	35 57.92 N	006 57.44 W	2	Sippican Deep Blue	DCUJ2_20220417163400_N28_XBT.bin
336	04/17/2022	16:40:00	35 57.68 N	006 55.65 W	4	Sippican Deep Blue	DCUJ2_20220417164000_N29_XBT.bin
337	04/17/2022	17:09:00	35 56.34 N	006 45.79 W	5	Sippican Deep Blue	DCUJ2_20220417170900_N30_XBT.bin
338	04/17/2022	17:38:00	35 55.14 N	006 35.92 W	6	Sippican Deep Blue	DCUJ2_20220417173800_N31_XBT.bin
339	04/17/2022	18:06:00	35 54.06 N	006 26.02 W	7	Sippican Deep Blue	DCUJ2_20220417180600_N32_XBT.bin
340	04/17/2022	18:34:00	35 53.49 N	006 16.06 W	8	Sippican Deep Blue	DCUJ2_20220417183400_N33_XBT.bin
341	04/17/2022	19:01:00	35 53.54 N	006 06.07 W	1	Sippican Deep Blue	DCUJ2_20220417190100_N34_XBT.bin
342	04/17/2022	19:28:00	35 54.42 N	005 56.14 W	2	Sippican Deep Blue	DCUJ2_20220417192800_N35_XBT.bin
345	04/17/2022	19:58:00	35 55.69 N	005 45.03 W	4	Sippican Deep Blue	DCUJ2_20220417195800_N36_XBT.bin