

Oceanography Branch CTD Data Report
CTD_REPORT_2011009DE

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DATE: Revised: March 5, 2012

Oceanography Branch CTD Data Report

CTD_REPORT_2011009DE

NOAA Fisheries Service
Northeast Fisheries Science Center
Woods Hole, MA 02543

DE 11-09
ECOMON/NASA Ground Truth Measurements Survey
Data Coverage: 31 October – 19 November, 2011
Mid Atlantic Bight, Georges Bank, Gulf of Maine

This report presents a summary of surface and bottom temperature and salinity data collected during the Northeast Fisheries Science Center's DEL1109 ECOMON/NASA Ground Truth Measurements Survey aboard the NOAA FSV *Delaware II*. Data was obtained with a Seabird Electronics SBE Model 19/19+ profiling CTD (s/n's 4758 & 2277) and a Seabird Electronics SBE Model 9/11+ CTD (s/n 0420). Sea water samples were taken for the purpose of correcting salinity values for both instruments. No salinity correction was necessary for any instrument.

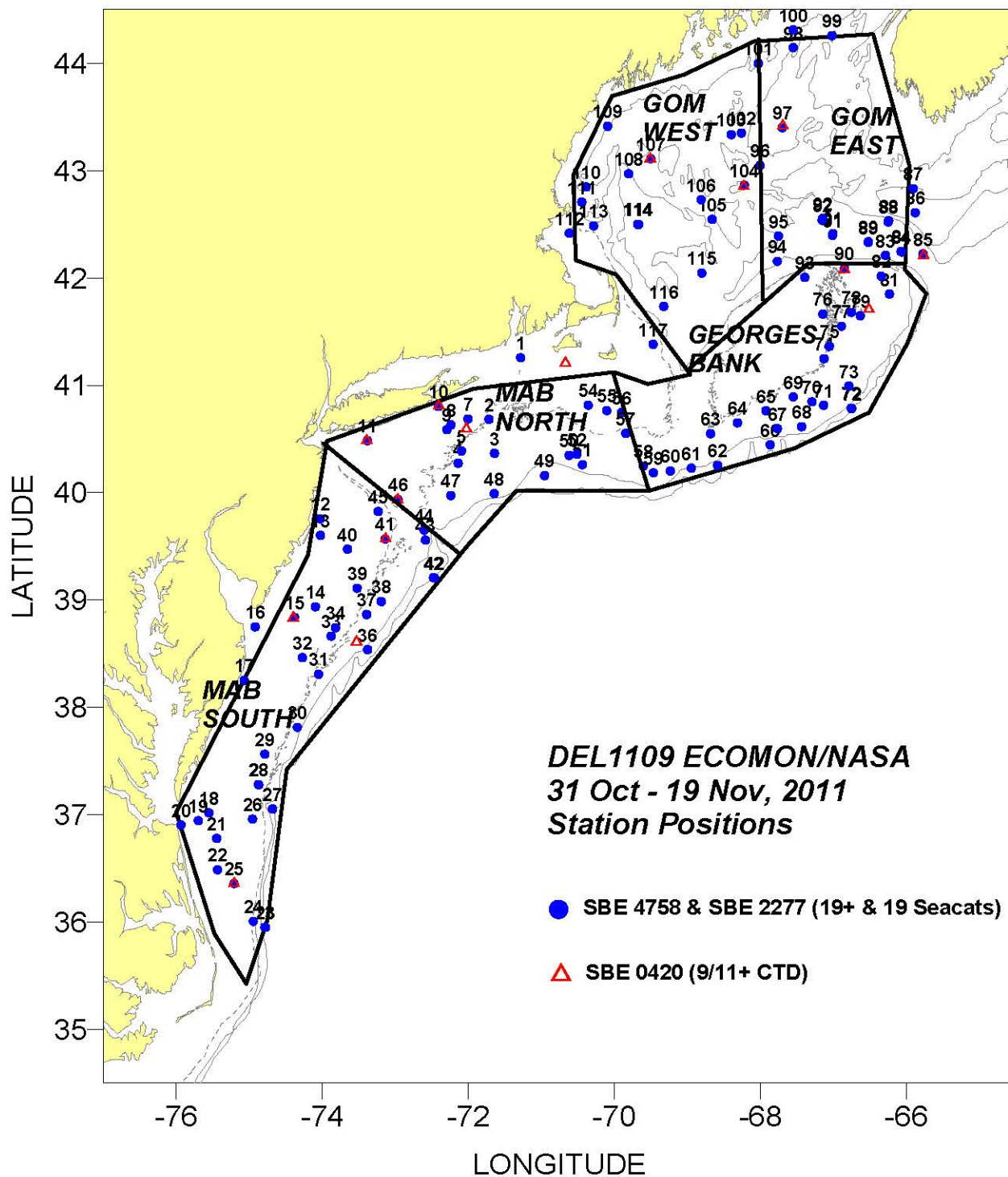
Data presented here have been audited, however, corrections and/or updates may be applied at a later time. The most recent and complete station data can be found in an NODC formatted ASCII file at:
<ftp://ftp.nefsc.noaa.gov/pub/hydro/del1109.dat>

This report may be viewed on the Oceanography Branch website at:

<http://www.nefsc.noaa.gov/HydroAtlas/>

choose: **2011 Cruises**
 OCT_ECOMON_DEL1109
 CTD_REPORT_2011009DE.pdf

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DEL1109 ECOMON/NASA GROUND TRUTH MEASUREMENTS
31 October - 19 November, 2011

		SURFACE						BOTTOM						
CRUISE	CD	#obs	T/S	Anomaly	SDV1	SDV2	Flag	#obs	T/S	Anomaly	SDV1	SDV2	Flag	Purpose
Western Gulf of Maine														
DEL1109	321	19	10.72	1.11	0.24	1.87	1	17	8.36	1.28	0.23	3.29	1	22
DEL1109	321	19	32.20	-0.60	0.16	5.11	1	17	33.86	0.07	0.13	1.07	1	22
Eastern Gulf of Maine														
DEL1109	319	16	10.76	0.21	0.26	2.47	1	11	8.13	0.05	0.30	4.77	1	22
DEL1109	319	16	31.97	-0.66	0.17	1.13	1	11	34.91	0.02	0.14	1.52	1	22
Georges Bank														
DEL1109	318	28	12.91	0.70	0.22	1.22	0	23	13.81	2.32	0.25	2.24	0	22
DEL1109	318	28	32.44	-0.38	0.13	0.54	0	23	33.43	0.25	0.15	0.71	0	22
MAB North														
DEL1109	311	24	14.21	0.13	0.27	1.00	0	23	14.95	1.67	0.28	1.83	0	22
DEL1109	311	24	32.39	-0.62	0.17	0.82	0	23	33.38	-0.34	0.16	0.71	0	22
MAB South														
DEL1109	311	39	15.70	0.17	0.22	1.47	0	37	15.09	0.49	0.25	1.11	0	22
DEL1109	311	39	32.32	-0.65	0.17	1.22	0	37	32.57	-0.82	0.15	0.61	0	22

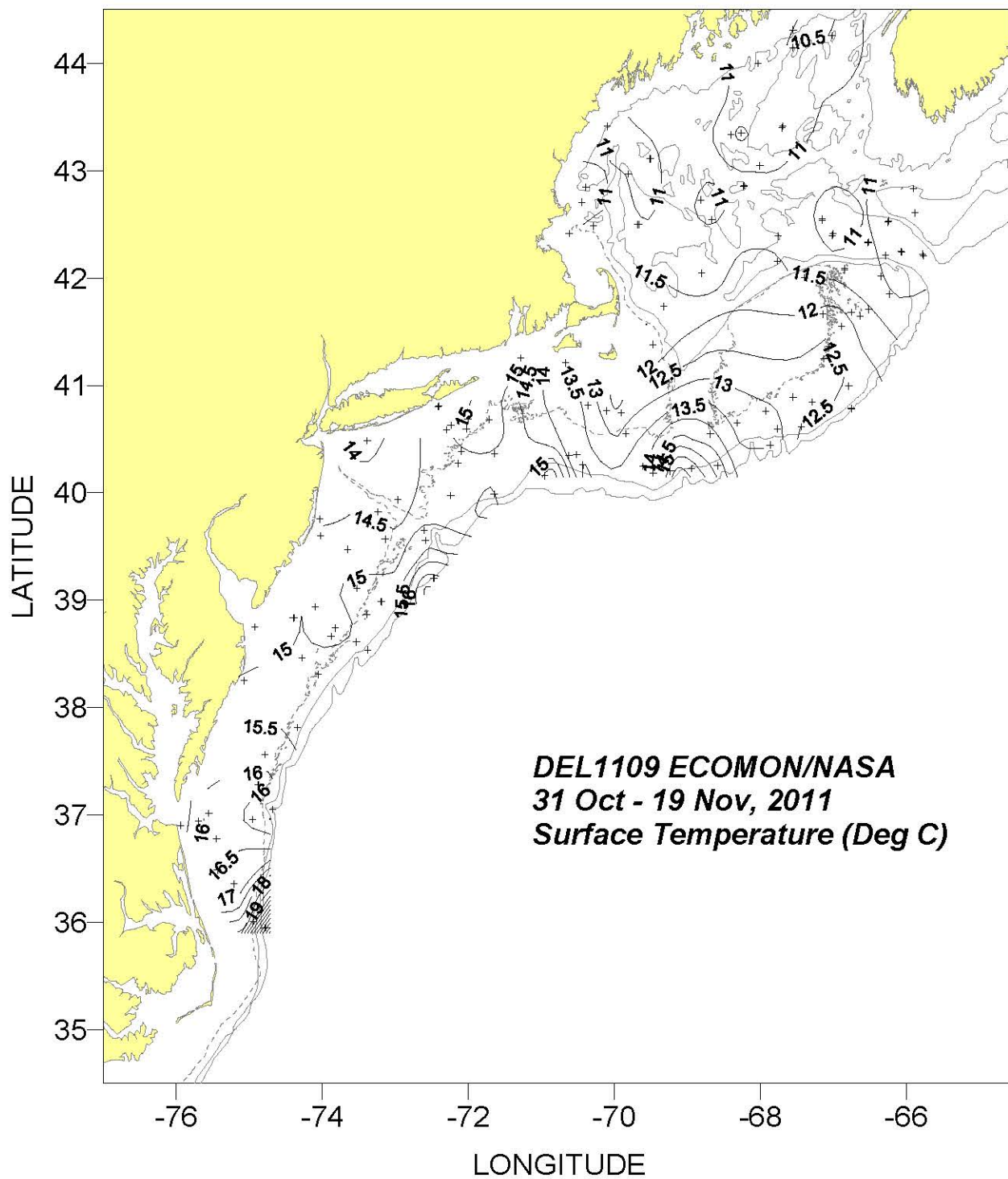
"CRUISE", the code name for a cruise: "CD", the calendar mid-date of all the stations within a region for a cruise:

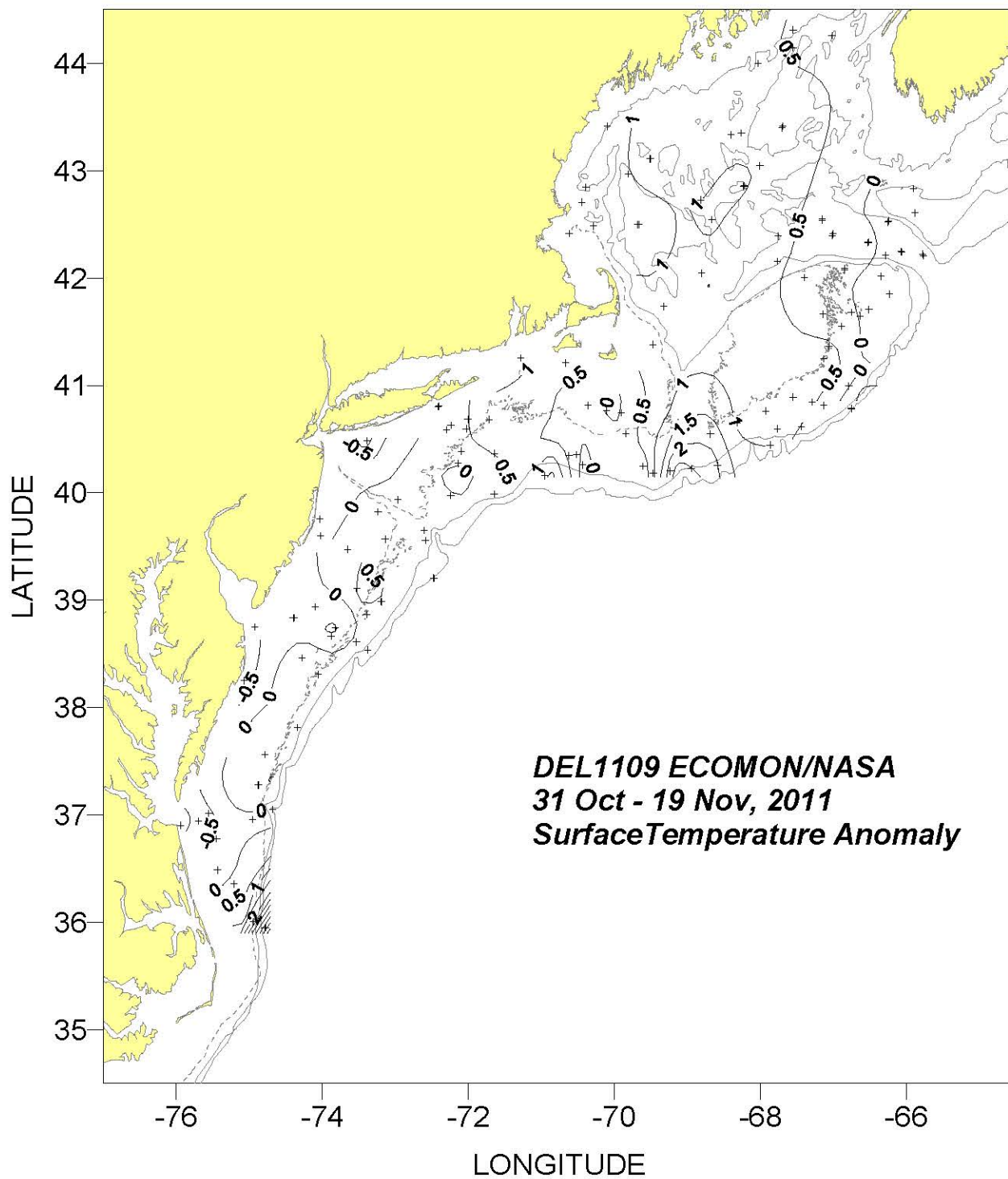
"#obs", the number of observations included in each average: "T/S", the areal average temp/salt: "Anomaly", the areal average temp/salt anomaly:

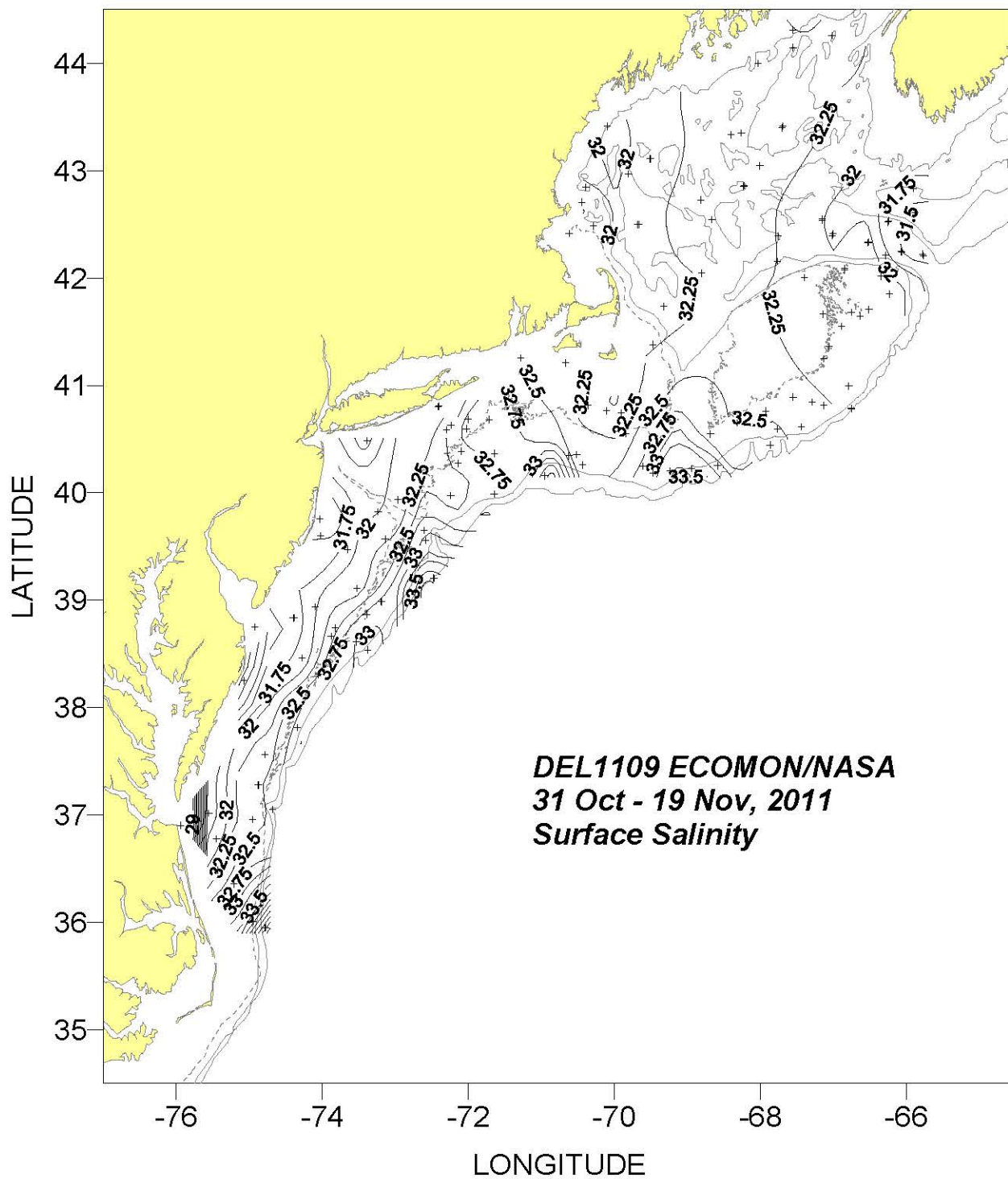
"SDV1", the standard deviation associated with the average temp/salt anomaly: "SDV2", the standard deviation of the individual anomalies from which the average anomaly was derived

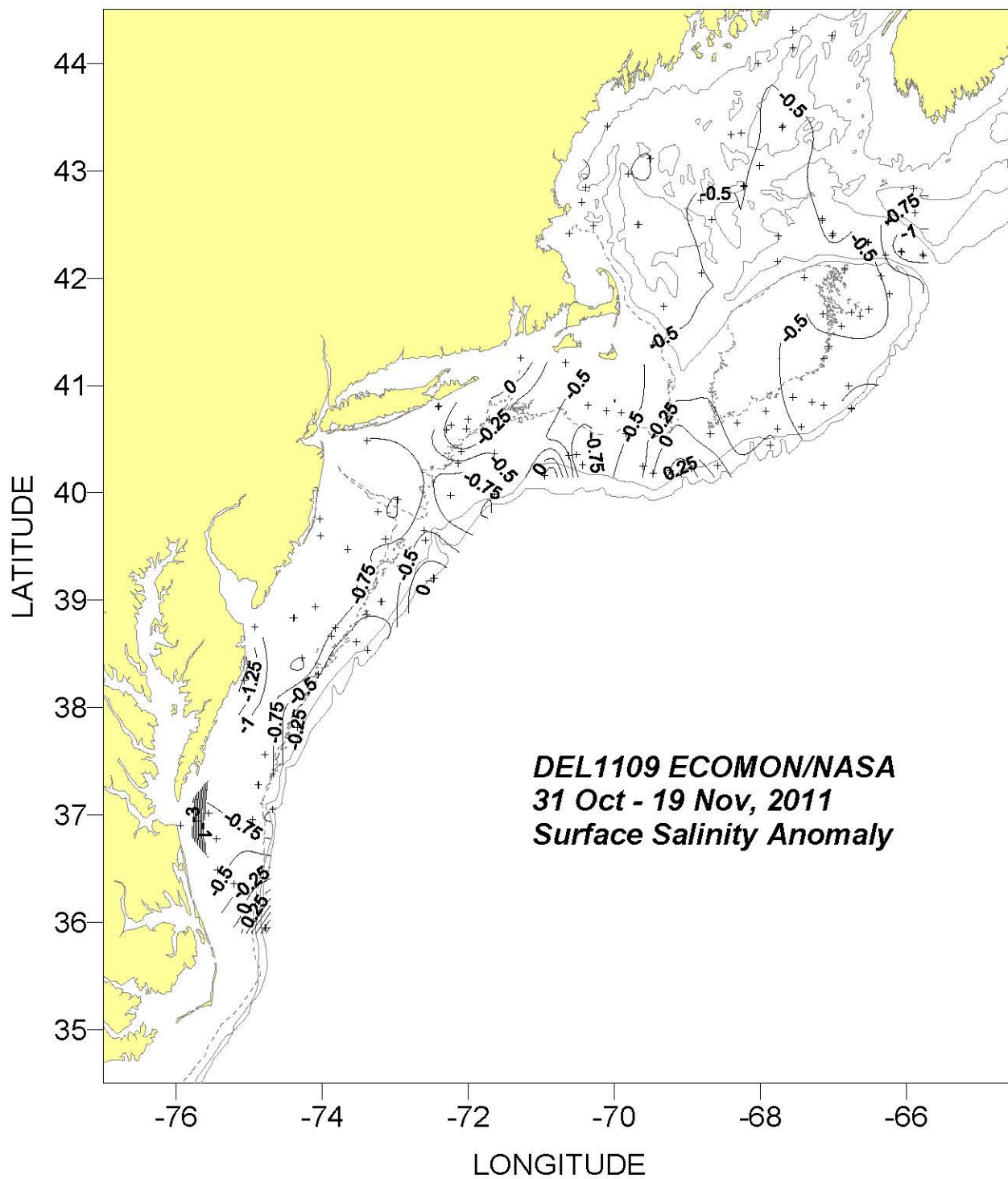
"Flag", a value of "1" indicates that a true areal average could not be calculated due to poor station coverage. The areal averages listed were derived from a simple average of the observations within the region.

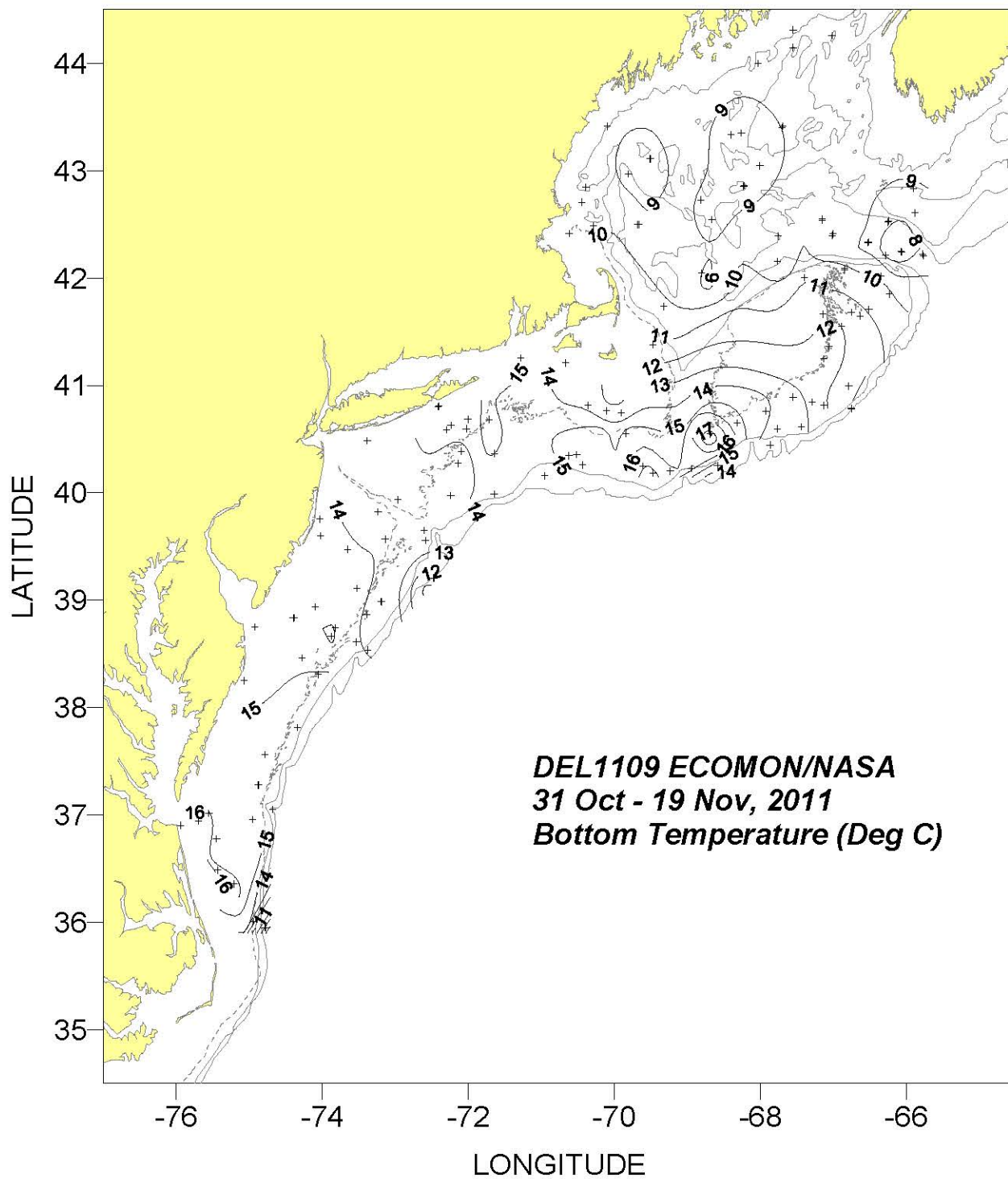
"Purpose", 2 digit code assigned by DMS to identify a unique NEFSC program survey.

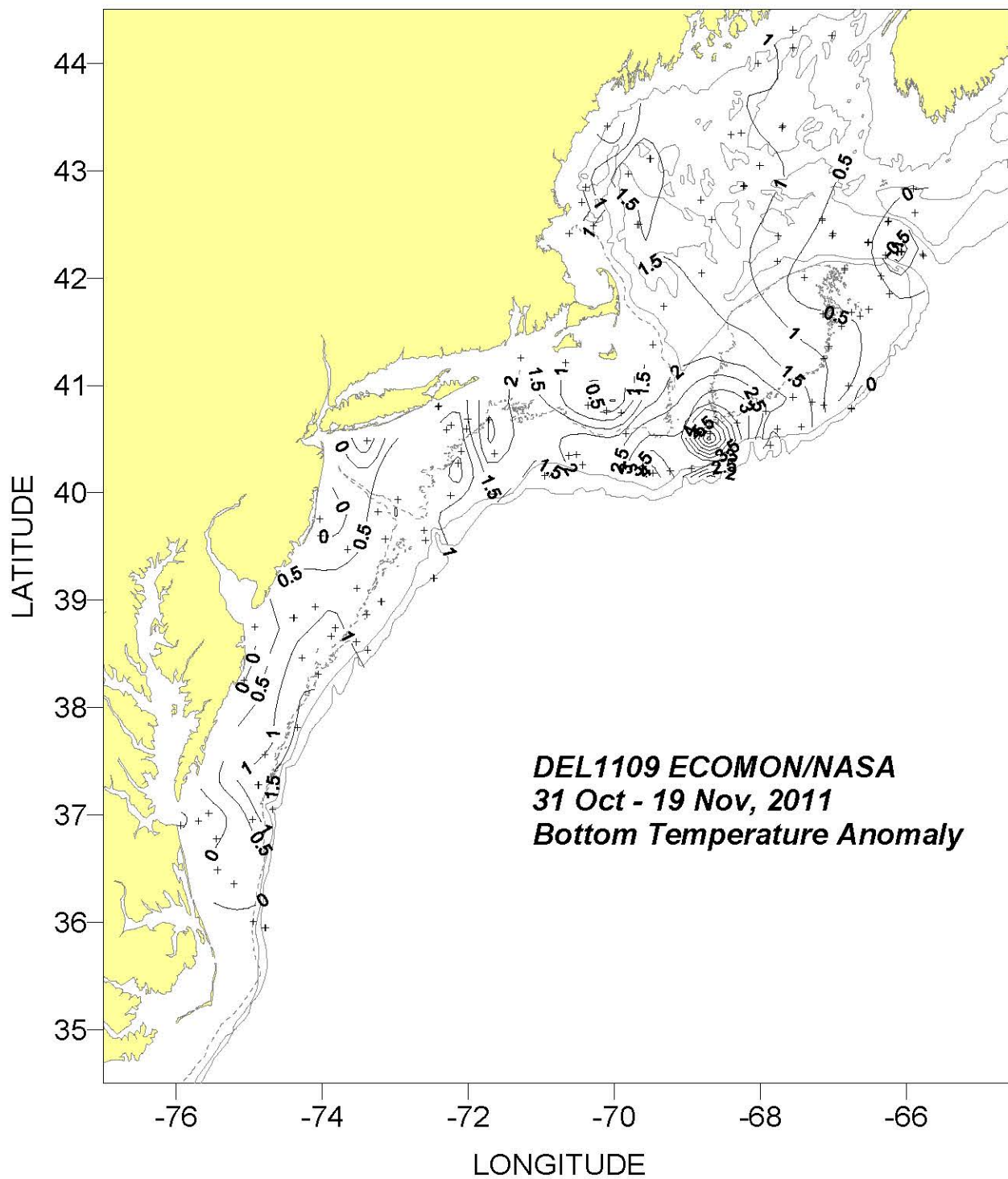


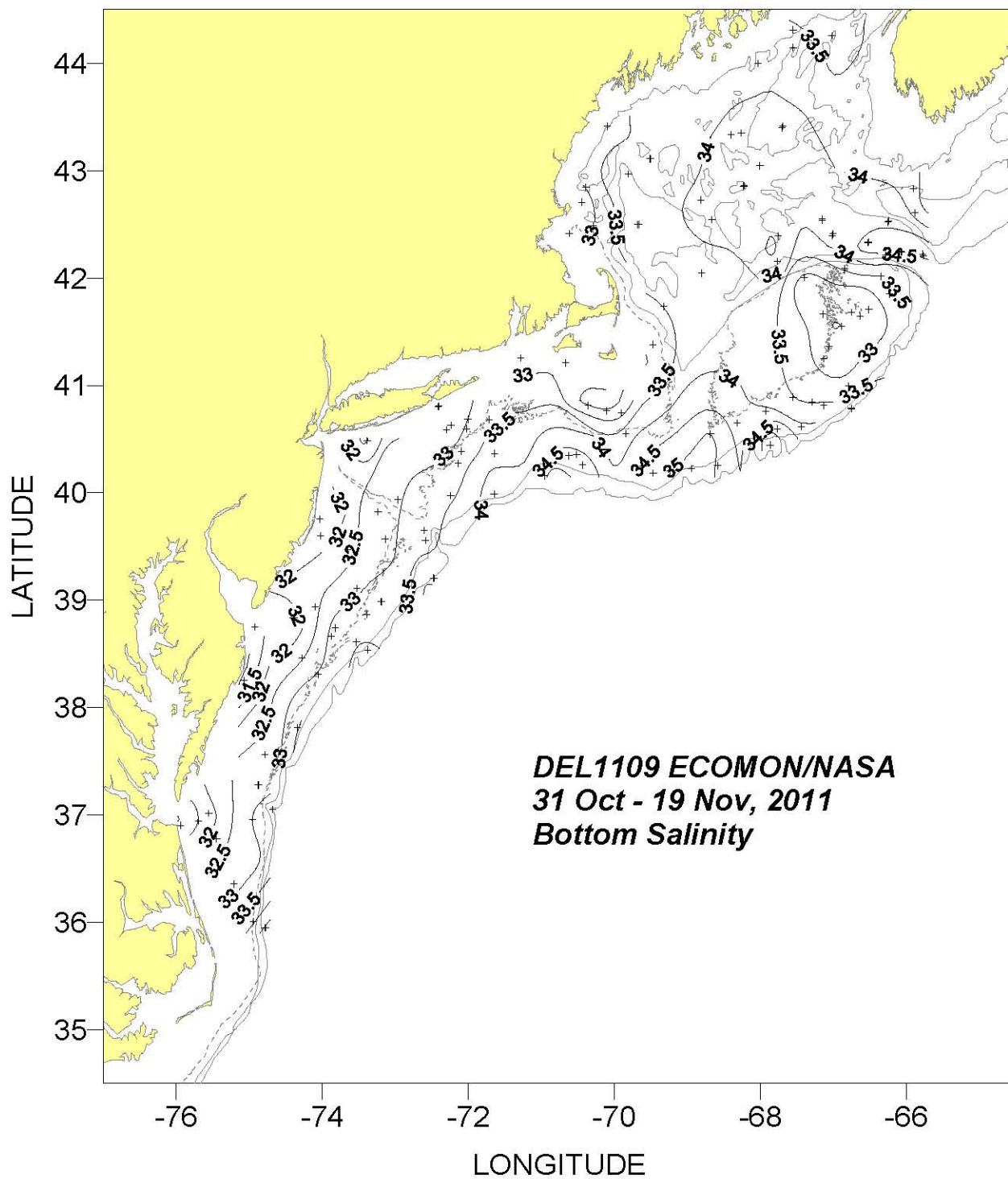


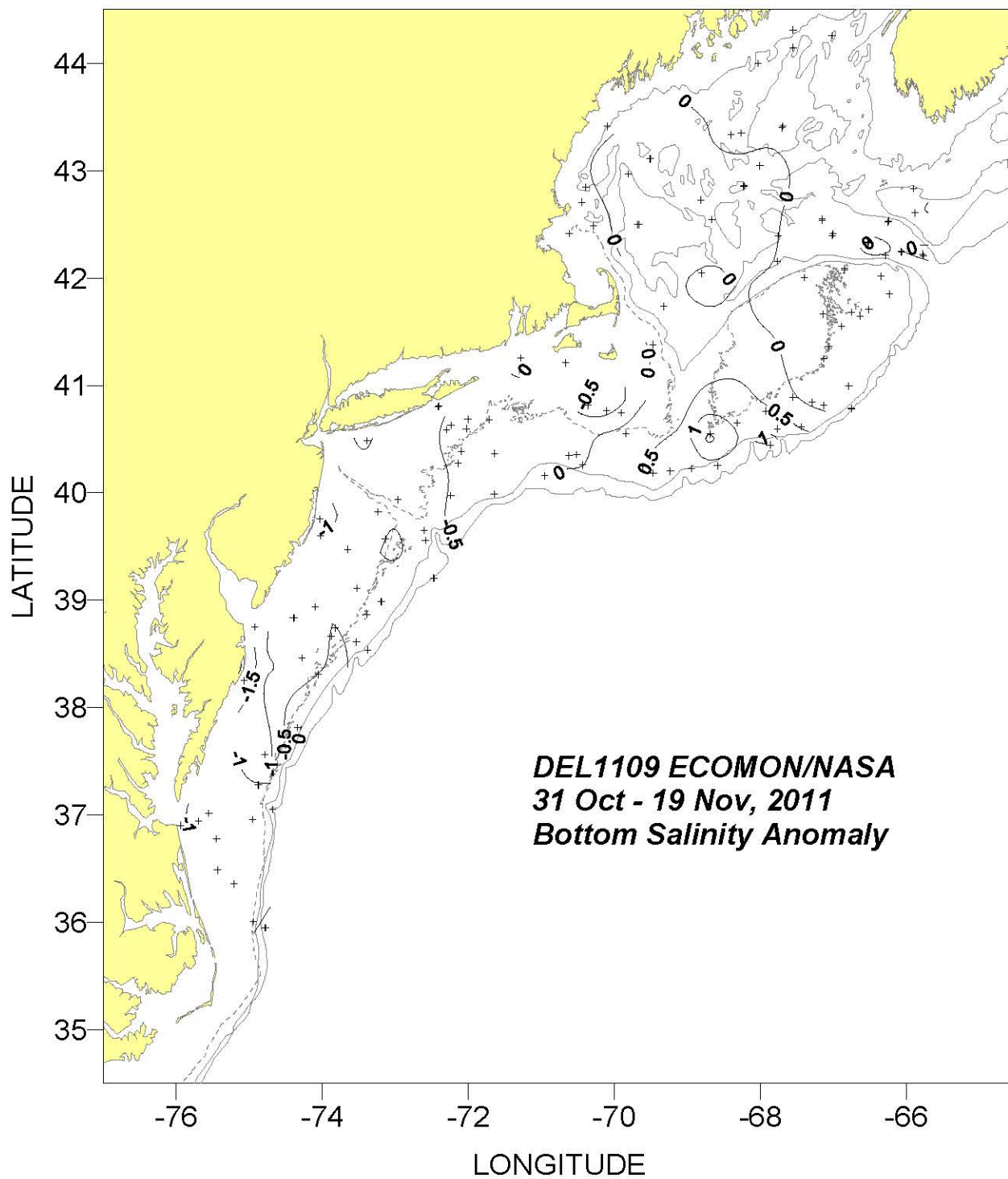












DEL1109 ECOMON/NASA GROUND TRUTH MEASUREMENTS
31 October - 19 November, 2011

Cast #	Sta #	Lat deg N	Long deg W	Day	Mo	Year	Time (GMT)	Btm Depth m	Surface Temp deg C	Surface Salinity PSU	Deepest Observed Temp deg C	Deepest Observed Salinity PSU	Meters from Bottom
1	1	4115.4	7116.9	31	10	2011	23:10	37	15.09	32.51	15.40	32.73	5
2	2	4041.0	7143.0	1	11	2011	3:49	64	16.64	33.76	16.47	33.75	4
3	3	4022.0	7138.4	1	11	2011	6:11	80	15.05	32.89	16.03	33.93	3
4	4	4016.4	7208.3	1	11	2011	8:41	62	14.35	32.38	12.17	33.27	4
5	5	4023.3	7205.5	1	11	2011	9:43	62	15.81	33.25	12.19	32.99	5
1	6	4035.8	7201.5	1	11	2011	11:28	54	15.73	33.49	15.73	33.49	3
6	7	4041.1	7200.2	1	11	2011	12:53	49	15.05	32.89	15.25	33.02	5
7	8	4037.9	7214.2	1	11	2011	14:07	51	14.40	31.94	14.46	32.60	4
8	9	4035.2	7217.6	1	11	2011	14:43	50	14.48	32.15	14.77	32.47	3
9	10	4048.2	7224.6	1	11	2011	17:07	29	14.49	31.21	14.49	31.23	5
2	10	4048.5	7224.2	1	11	2011	17:22	29	14.36	31.17	14.44	31.21	8
10	11	4029.1	7322.9	1	11	2011	22:38	22	13.50	31.32	13.49	31.34	6
3	11	4029.1	7323.4	1	11	2011	22:55	22	13.51	31.32	13.54	31.32	3
11	12	3945.4	7401.8	2	11	2011	4:31	17	13.83	30.41	13.90	30.44	4
12	13	3936.1	7401.5	2	11	2011	5:41	23	14.68	30.84	14.73	30.86	6
13	14	3856.2	7405.7	2	11	2011	9:56	37	15.20	31.44	15.15	31.88	3
14	15	3850.2	7422.9	2	11	2011	11:40	33	15.01	31.50	15.02	31.50	4
4	15	3850.0	7423.8	2	11	2011	12:01	31	14.98	31.50	15.00	31.50	4
15	16	3845.0	7455.2	2	11	2011	15:19	20	14.30	30.34	14.39	30.82	5
16	17	3815.1	7504.2	2	11	2011	18:58	18	14.83	29.57	14.78	29.67	7
17	18	3700.9	7533.2	3	11	2011	2:58	20	16.05	31.70	16.10	31.75	5
18	19	3656.6	7541.8	3	11	2011	3:58	18	16.41	31.26	16.43	31.26	4
19	20	3654.2	7556.1	3	11	2011	5:22	16	14.80	24.63	16.15	30.64	6
20	21	3646.7	7526.8	3	11	2011	8:10	25	16.43	32.09	16.43	32.09	4
21	22	3629.2	7526.1	8	11	2011	2:07	27	16.19	32.17	16.30	32.26	4
22	23	3557.0	7446.7	8	11	2011	6:46	479	24.61	35.79	5.72	35.02	1
23	23	3557.0	7447.1	8	11	2011	7:10	426	24.37	35.73	6.23	35.04	3
24	24	3600.4	7456.6	8	11	2011	8:19	66	16.66	33.21	18.27	33.85	4
25	25	3621.5	7512.5	8	11	2011	10:49	30	16.68	32.88	16.77	32.94	5
5	25	3621.5	7512.4	8	11	2011	11:10	30	16.69	32.88	16.76	32.93	2
26	26	3657.5	7457.3	8	11	2011	15:04	42	15.81	32.33	14.93	32.97	1
27	27	3703.2	7440.9	8	11	2011	17:02	88	15.15	32.58	15.06	33.72	5
28	28	3716.7	7452.2	8	11	2011	21:27	47	16.36	32.68	16.04	32.67	4
29	28	3716.8	7452.5	8	11	2011	21:38	44	16.35	32.68	16.04	32.67	4
30	29	3733.8	7447.2	8	11	2011	23:27	43	15.87	32.38	15.12	32.32	5

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31	30	3748.8	7420.4	9	11	2011	2:16	69	15.26	33.49	16.74	34.45	6
32	31	3818.5	7403.1	9	11	2011	5:43	66	15.93	33.71	15.78	33.88	5
33	32	3827.8	7416.4	9	11	2011	7:10	44	14.94	31.63	14.84	32.48	5
34	33	3839.8	7352.7	9	11	2011	9:34	48	14.74	32.55	15.78	33.42	5
35	34	3844.4	7349.2	9	11	2011	10:16	48	14.78	32.36	14.95	33.08	4
6	35	3836.6	7331.8	9	11	2011	12:04	74	15.01	33.40	13.19	33.46	3
36	36	3832.2	7322.7	9	11	2011	13:07	104	15.41	33.65	14.32	34.67	5
37	37	3851.9	7323.5	9	11	2011	15:18	67	15.15	33.30	13.79	33.13	3
38	38	3859.1	7311.4	9	11	2011	16:40	67	15.21	33.16	12.56	33.00	6
39	38	3859.2	7311.7	9	11	2011	16:51	70	15.34	33.18	13.44	33.38	2
40	39	3906.6	7331.4	9	11	2011	18:40	49	15.14	31.72	14.52	33.02	4
41	40	3928.4	7339.2	9	11	2011	20:58	33	15.14	31.59	14.52	31.95	7
42	41	3934.1	7308.2	9	11	2011	23:32	43	14.56	32.24	14.31	32.90	5
7	41	3934.2	7307.9	9	11	2011	23:43	43	14.53	32.25	14.32	32.90	3
43	42	3912.4	7228.6	10	11	2011	3:40	330	18.37	35.07	11.73	35.49	129
44	42	3912.3	7227.8	10	11	2011	4:07	399	18.41	35.08	7.26	35.09	5
45	43	3933.4	7235.2	10	11	2011	6:37	83	15.20	33.12	13.77	33.49	7
46	44	3939.0	7236.2	10	11	2011	7:28	76	14.74	32.96	12.95	33.15	5
47	45	3949.4	7314.0	10	11	2011	10:49	45	14.49	31.57	12.75	32.74	4
48	46	3956.1	7257.7	10	11	2011	12:23	53	13.97	31.88	13.41	33.00	5
8	46	3956.1	7257.9	10	11	2011	12:58	53	13.91	31.81	13.58	33.02	1
49	47	3958.4	7214.3	10	11	2011	16:25	82	14.03	32.03	15.07	34.43	6
50	48	3959.4	7138.6	10	11	2011	19:25	97	13.86	32.19	14.91	35.21	5
51	49	4009.5	7057.2	10	11	2011	23:21	140	16.82	34.62	13.55	35.65	5
52	50	4020.8	7037.1	11	11	2011	1:31	95	13.67	32.17	16.99	35.05	5
53	51	4015.6	7026.1	11	11	2011	2:45	104	13.17	32.14	16.01	35.28	7
54	52	4021.4	7030.8	11	11	2011	3:49	89	13.69	32.22	17.50	34.97	6
9	53	4112.6	7040.1	12	11	2011	12:01	31	13.50	32.20	13.51	32.19	5
55	54	4048.9	7021.5	12	11	2011	14:46	48	13.48	32.12	13.50	32.13	4
56	55	4045.9	7006.2	12	11	2011	16:01	39	no data	no data	12.37	31.67	6
57	56	4044.8	6954.0	12	11	2011	17:01	35	11.54	31.57	11.70	31.66	5
58	57	4033.1	6950.5	12	11	2011	18:19	66	12.71	32.15	16.88	34.49	4
59	58	4014.8	6936.1	12	11	2011	21:07	79	14.78	33.26	18.18	34.99	5
60	59	4011.1	6927.9	12	11	2011	22:07	87	12.98	32.53	18.05	34.95	3
61	60	4012.1	6913.9	12	11	2011	23:22	96	17.44	34.40	16.71	35.36	4
62	61	4013.7	6856.7	13	11	2011	1:04	118	17.62	34.47	16.24	35.73	4

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63	62	4015.2	6835.1	13	11	2011	3:04	136	15.98	33.80	11.85	35.51	4
64	63	4032.9	6840.9	13	11	2011	5:48	68	14.29	32.65	19.55	35.17	3
65	64	4039.0	6818.7	13	11	2011	7:58	76	13.32	32.23	17.40	34.25	4
66	65	4045.7	6755.4	13	11	2011	10:13	72	13.10	32.26	14.66	33.32	7
67	66	4026.7	6751.9	13	11	2011	13:11	135	13.61	32.78	12.76	35.54	3
68	67	4035.8	6745.9	13	11	2011	14:23	87	12.77	32.35	14.52	34.97	3
69	68	4036.9	6726.0	13	11	2011	16:07	100	11.99	32.36	13.64	34.78	4
70	69	4053.5	6732.9	13	11	2011	18:34	74	13.27	32.25	13.32	33.02	5
71	70	4050.8	6717.4	13	11	2011	21:08	90	12.54	32.32	13.43	33.39	5
72	71	4048.8	6707.9	13	11	2011	22:16	95	12.77	32.23	12.05	33.37	4
73	72	4046.9	6644.8	14	11	2011	0:28	249	12.31	32.21	8.77	35.14	47
74	72	4047.2	6645.2	14	11	2011	0:53	222	12.30	32.21	8.41	35.13	3
75	73	4059.6	6647.2	14	11	2011	2:19	76	12.37	32.25	11.35	32.62	5
76	74	4114.9	6707.6	14	11	2011	4:45	60	13.38	32.10	13.00	32.21	4
77	75	4121.8	6703.3	14	11	2011	5:37	63	13.14	32.14	12.65	32.23	4
78	76	4139.8	6708.6	14	11	2011	7:48	59	12.67	32.12	12.64	32.13	4
79	77	4133.0	6653.2	14	11	2011	9:07	68	12.54	32.22	12.58	32.22	5
80	78	4140.8	6645.2	14	11	2011	10:23	70	11.83	32.26	11.81	32.26	5
81	79	4138.9	6637.8	14	11	2011	11:10	68	12.13	32.24	11.67	32.30	6
10	80	4142.5	6630.6	14	11	2011	12:15	77	11.00	32.38	10.88	32.41	1
82	81	4151.0	6613.8	14	11	2011	14:06	83	10.63	32.34	10.15	32.56	5
83	82	4201.0	6620.6	14	11	2011	15:22	82	10.74	32.09	10.28	32.54	5
84	83	4212.6	6617.1	14	11	2011	16:42	207	10.65	31.91	8.37	34.99	4
85	84	4214.8	6604.3	14	11	2011	18:23	256	10.70	31.40	6.21	34.98	55
86	84	4214.5	6603.8	14	11	2011	18:51	256	10.70	31.45	5.63	34.97	2
87	85	4213.4	6546.3	14	11	2011	20:25	227	10.56	31.29	8.12	35.03	24
11	85	4212.5	6545.6	14	11	2011	20:57	225	10.56	31.28	8.19	35.03	2
88	86	4236.5	6552.6	14	11	2011	23:52	88	10.46	30.70	7.94	32.77	5
89	87	4249.9	6554.2	15	11	2011	1:23	88	9.95	31.99	9.37	32.81	4
90	88	4232.0	6614.4	15	11	2011	4:25	216	10.58	31.34	7.97	34.98	16
91	88	4231.3	6614.9	15	11	2011	4:52	221	10.58	31.34	7.86	34.99	5
92	89	4220.3	6631.2	15	11	2011	7:13	296	11.14	32.24	8.92	35.05	95
93	89	4219.8	6631.3	15	11	2011	7:37	291	11.14	32.24	8.54	35.08	3
94	90	4205.3	6650.8	15	11	2011	11:43	69	11.41	32.24	10.26	32.62	4
12	90	4204.8	6650.8	15	11	2011	12:03	74	11.41	32.23	10.73	32.47	4
95	91	4224.8	6700.3	15	11	2011	16:57	368	10.57	31.85	8.96	35.11	165

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96	91	4223.8	6700.7	15	11	2011	17:28	357	10.57	31.85	8.37	35.06	5
97	92	4233.2	6708.9	15	11	2011	19:40	324	10.60	31.91	9.40	35.11	124
98	92	4232.2	6709.1	15	11	2011	20:07	326	10.60	31.91	8.75	35.09	4
99	93	4200.3	6723.5	16	11	2011	0:40	50	11.34	32.22	11.28	32.22	5
100	94	4209.3	6745.9	16	11	2011	2:40	208	11.69	32.26	8.41	34.96	6
101	95	4223.4	6745.1	16	11	2011	4:56	202	11.22	32.32	8.67	35.00	6
102	96	4302.8	6800.2	16	11	2011	9:10	196	10.78	32.56	8.24	34.27	4
103	97	4324.0	6742.0	16	11	2011	12:07	248	10.70	32.53	8.43	34.48	47
13	97	4325.1	6741.4	16	11	2011	12:45	246	10.64	32.55	8.45	34.48	7
104	98	4408.8	6732.9	16	11	2011	17:40	198	10.03	32.38	8.44	34.35	3
105	99	4415.5	6701.0	16	11	2011	20:27	74	10.28	32.53	10.01	32.81	4
107	100	4418.7	6732.9	16	11	2011	23:55	101	10.28	32.69	9.97	32.98	8
108	101	4359.9	6801.6	17	11	2011	3:19	174	10.32	32.60	8.96	33.86	7
109	102	4321.0	6815.5	17	11	2011	7:43	183	10.37	32.44	8.06	34.09	6
110	103	4320.1	6823.8	17	11	2011	8:40	177	10.85	32.49	8.10	34.09	6
111	104	4251.8	6813.1	17	11	2011	11:49	191	11.00	32.29	8.34	34.45	8
16	104	4251.2	6813.6	17	11	2011	12:31	210	11.01	32.36	8.39	34.48	4
112	105	4232.7	6839.6	17	11	2011	15:22	193	10.79	32.51	8.64	34.80	4
113	106	4243.7	6848.6	17	11	2011	16:58	164	10.50	32.63	8.10	34.09	4
114	107	4306.6	6930.0	17	11	2011	21:16	145	10.73	32.06	8.29	33.58	5
17	107	4306.6	6930.4	17	11	2011	21:51	142	10.74	32.06	8.31	33.58	1
115	108	4258.2	6948.2	17	11	2011	23:30	199	10.81	31.82	8.11	34.24	6
116	109	4324.8	7005.5	18	11	2011	2:54	117	10.51	31.81	8.84	33.22	6
117	110	4250.9	7023.2	18	11	2011	6:35	71	10.63	32.19	8.78	32.64	12
118	111	4242.4	7026.7	18	11	2011	7:39	75	10.51	31.65	8.44	32.61	7
119	112	4225.0	7037.0	18	11	2011	9:49	85	10.97	31.42	10.02	32.58	6
120	113	4229.1	7017.0	18	11	2011	11:43	80	11.00	31.56	10.05	32.68	7
121	114	4229.9	6939.9	18	11	2011	14:34	252	10.66	32.19	8.18	34.35	36
122	114	4229.9	6940.8	18	11	2011	15:01	261	10.68	32.19	8.18	34.38	2
123	115	4202.7	6848.1	18	11	2011	20:01	148	10.94	32.21	7.25	33.39	7
124	116	4144.1	6919.3	19	11	2011	1:23	176	10.86	32.01	7.80	33.79	9
125	117	4122.9	6928.1	19	11	2011	4:04	33	10.58	32.14	10.56	32.17	6

data in bold are from 9/11+ CTD (s/n 0420)