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TROPIC HEAT II-1987 LEG 1

Rapid-Sampling Vertical Profiler
Observations

by
M. M. Park
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College of Oceanography
Oregon State University

Reference 87-22
June 1987
Data Report 136

National Science Foundation
OCE82-14639
OCE86-08256

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OREGON STATE UNIVERSITY

TROPIC HEAT II - 1987 LEG 1

by

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REPORT

National Science Foundation
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INTRODUCTION

Our component of the TROPIC HEAT 1987 experiment was designed to investigate a number of questions raised by our TROPIC HEAT 1984 measurements (Park et al, 1985; Moum and Caldwell, 1985; Moum et al, 1986; Chereskin et al, 1986; Moum et al; 1987). In particular, the goals of LEG 1 of our TROPIC HEAT 1987 experiment (results from LEG 2 are presented in a separate report) were:

- 1) to examine the cross-equatorial variability in mixing rates to determine if there really is a well-defined peak in mixing associated with the equatorial current system (Moum et al, 1986);
- 2) to extend our measurements of turbulent dissipation to include a larger dynamic range in wind speeds so that we could further investigate the relation between wind power and dissipation (Moum and Caldwell, 1985);
- 3) to acquire longer series of simultaneous towed thermistor chain and RSVP measurements to investigate in more detail the relation between turbulence bursts and internal waves discovered during the TROPIC HEAT 1984 experiment.

To address the questions posed above, we executed a long transect across the equator along 140°W (28 February - 31 March 1987). We deployed our instrumentation at 33°N, proceeding southward at approximately 5 knots to 25°N, during which time we obtained 727 RSVP profiles. The transect was interrupted from 25°N to 17°N where we began measurements again, obtaining 2452 RSVP profiles from 17°N to 6°S, including an 18-hour station at 1°N which was unfortunately discontinued due to repeated and aggressive shark attacks. Our measurement suite included:

- 1) surface temperature and conductivity;
- 2) high-quality meteorological measurements;
- 3) towed thermistor chain;
- 4) hull-mounted acoustic Doppler current profiler (ADCP);
- 5) Rapid Sampling Vertical Profiler (RSVP).

INSTRUMENTATION

The RSVP is described by Caldwell et al (1985). Sensors mounted on the nose for the TROPIC HEAT 1987 experiment included a fast-response thermistor (Thermometrics), Neil Brown conductivity cell, pressure sensor and two orthogonally-mounted airfoil (shear) probes from which we have made estimates of turbulent kinetic energy dissipation rates (following Osborn and Crawford, 1980). During the thermistor chain tows, we mounted 2 Seabird conductivity sensors on the chain at 123 m depth. We used these plus thermistors positioned 1 m higher on the chain to compare profiler measurements of temperature and conductivity so that we might detect possible sensor drifts. A number of CTD profiles were made to compare to our conductivity and temperature measurements. The second transect also included a series of profiles (51/54 - 55/20) made while maintaining station at 1°N, 140°W. The instrument was reconfigured to reduce vibrational

noise (yielding lower ϵ noise levels) and depths to 200m+ were reached.

DATA REDUCTION

The primary data acquisition computer sampled six signals from the RSVP; pressure, temperature, temperature derivative, conductivity and two airfoil (shear) probes. The signals were sampled at 60 Hz except the shear sensors which were sampled at 240 Hz. Raw data were stored on magnetic tape and simultaneously sent across a high speed parallel interface to a second computer for further analysis. Plots of individual profiles presented in this report were produced at the time of each RSVP cast. Problems with the implementation of some new software to handle the parallel interface transfer caused approximately 20% of the profiles to be recorded but not plotted. Methods to utilize data from the towed thermistor chain, the surface thermosalinograph and the CTD for calibration purposes were in the development stage and corrections were not obtained and applied to plots as rapidly as during Tropic Heat leg 2 (Park et al, 1987). Hence caution must be used when attempting to obtain absolute values of hydrographic data from the RSVP profiles.

Temperature and conductivity raw data were averaged over 128 points (approximately 2 meters at our fall speed of 110 cm/s) for the plot profiles. Salinity and σ_t were computed using the UNESCO 1978 algorithms from the 128-point averages of temperature and conductivity. The computation of σ_t was being done incorrectly (the pressure term was included in the computation) until after tape 27, batch 18. During the first transect, comparisons between RSVP temperature values, a thermosalinograph system and the towed thermistor chain indicated that the RSVP temperature calibration was high uniformly by 0.2°C. Salinity was found to be high by 0.1ppt at both the surface and at 123m depth. Periodic checks of CTD casts during transect 2 indicated that our calibrations were off by as much as 0.2°C and 0.1ppt at the surface and 0.5°C and 0.5ppt at 123m.

A separate pass on the hydrographic profiles obtained a series of temperature averaged over 1m at 3, 20 and subsequent 20m depth intervals. The temperature series was then adjusted to reflect calibration information available. This analysis is available for the second transect only.

The processing of the outputs from the two shear probes follows the procedure described by Park et al (1985). The turbulent dissipations computed from these data and plotted as profiles here have not been deglitched. Occasional plankton spikes, line glitches and other contaminants are sometimes apparent in the profiles. These were subsequently detected and removed before averaging to produce the summary plots shown.

THE DATA PLOTS

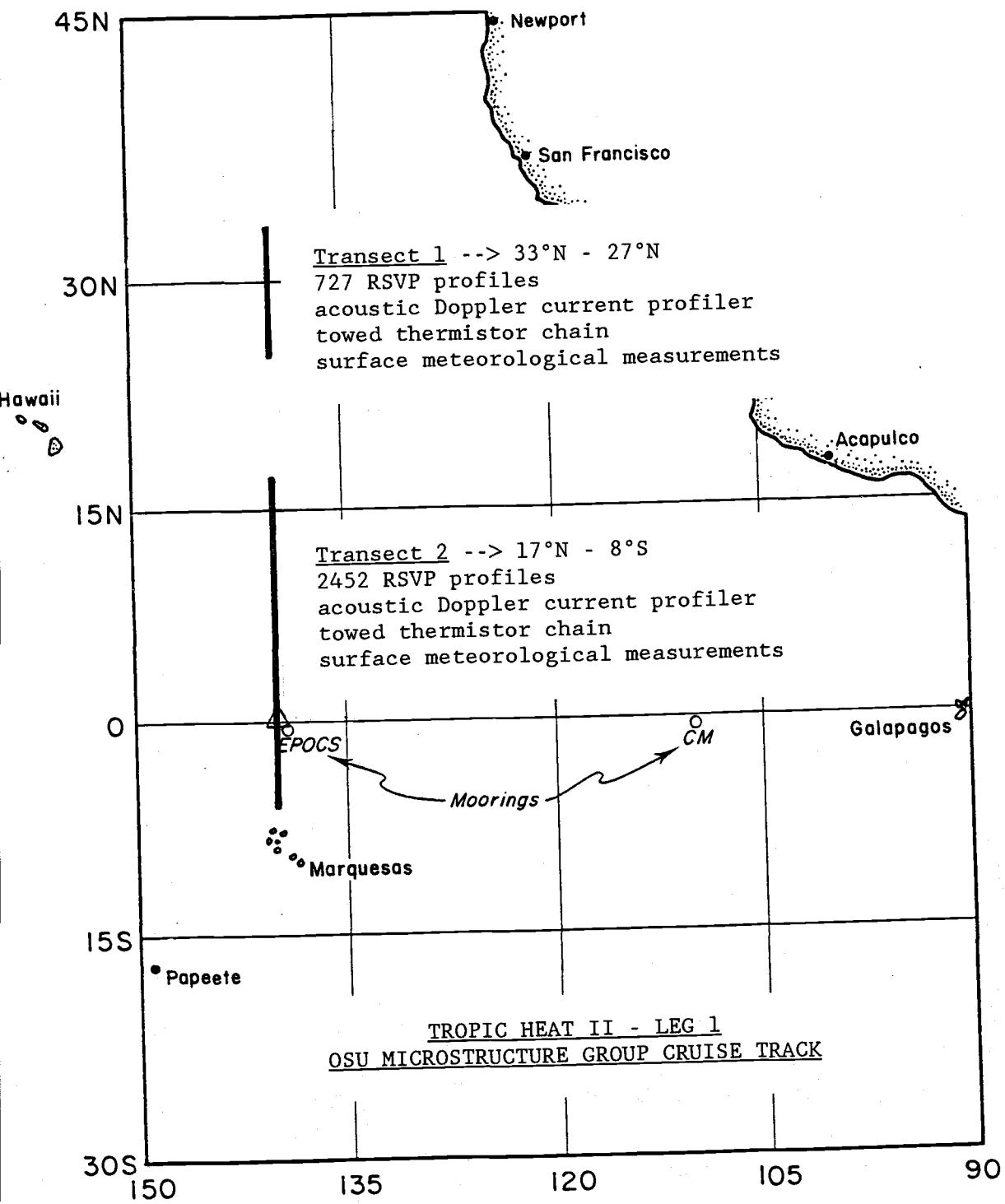
The RSVP profiles represented as the bulk of this report include roughly one-third of the total collected profiles. An effort to select profiles for every RSVP operating hour was made, with gaps due to 1) failure of the high speed parallel analysis computer 2) CTD casts or other instrument deployment 3) RSVP mechanical failure. Each profile page has four RSVP casts plotted representing approximately 25-35 minutes of operation. Gaps from parallel processor failure are readily apparent by the absence of one or more profile plots. Julian and calendar day can be referenced to position by referring to the half-hourly mean position obtained from the navigation data listed at the beginning of this report.

Each real-time plot of an RSVP cast contains labeled solid line traces for temperature and σ_t (except where previously noted), a dotted line for salinity and a solid trace for dissipation. Vertical and horizontal scales were occasionally adjusted to compensate for changes in measured signal. The profiler sampled at depths between 150-200 meters. The ship speed determines the amount of line available for free fall and hence, the maximum depth of the profile.

This report is organized into two sections separated by colored sheets. The first section of the transect from 33°N to 25°N at 140°W begins with a summary plot of processed and deglitched dissipation over 20m vertical averaging intervals and plotted with wind speed and insolation. The second transect from 17°N to 6°S includes the previous summary plot and in addition includes a plot of dissipation averaged over 20m, centered at 60m and plotted linearly along with the insolation to illustrate the diurnal cycle apparent at this depth. The second transect also includes a plot of temperature selected from each profile at 3, 20, 40, 60, 80, 100, 120, 140, 160, 180 and 200 meter depth bins (again depending on the profilers' maximum depth). The temperature series for this plot was recomputed to reflect our best comparison to independent measurements of temperature at the time of the cruise.

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TROPIC HEAT 87 TWICE DAILY POSITIONS

Day (Mar 87)	Time	Longitude (Deg W)	Latitude (Deg)
5	1200	140.1382	33.4931
6	0000	139.8744	33.0182
6	1200	139.9862	32.5411
7	0000	139.9943	31.8010
7	1200	139.9897	31.0065
8	0000	140.0014	30.1966
8	1200	139.9925	29.3782
9	0000	140.0079	28.6537
9	1200	140.0179	27.9976
10	0000	139.9757	27.4066
10	1200	140.0328	26.7690
11	0000	139.9857	26.1863
11	1200	140.0006	25.5389
12	0000	140.0204	24.6913
12	1200	139.9849	22.4653
13	0000	140.0061	20.1045
13	1200	140.0264	17.7186
14	0000	140.0177	16.5717
14	1200	140.0289	15.8005
15	0000	139.9953	14.9493
15	1200	140.0090	14.0759
16	0000	139.9922	13.2593
16	1200	140.0143	12.4051
17	0000	140.0210	11.6120
17	1200	139.9774	10.8163
18	0000	139.9793	9.9998
18	1200	140.0061	9.0681
19	0000	140.0152	8.2377
19	1200	140.0039	7.3842
20	0000	140.0039	6.4871
20	1200	139.9990	5.5975
21	0000	139.9884	4.9091
21	1200	140.0054	4.0468
22	0000	140.0240	3.0879
22	1200	140.0131	2.0353
23	0000	139.9753	0.9884
23	1200	140.0712	0.8578
24	0000	140.0758	0.8516
24	1200	139.9941	0.2905
25	0000	140.0068	-0.6470
25	1200	140.0047	-1.7810
26	0000	139.9814	-2.8676
26	1200	139.9956	-3.8631
27	0000	140.0076	-4.7283
27	1200	139.9971	-5.4830
28	0000	140.9938	-6.8973
28	1200	142.4252	-8.8560
29	0000	143.9240	-10.8477

TROPIC HEAT HALF-HOURLY POSITIONS

DATE	TIME	LONGITUDE	LATITUDE	DATE	TIME	LONGITUDE	LATITUDE
5-MAR	800	139 56.56	33 22.99	5-MAR	830	139 58.29	33 23.67
5-MAR	900	140 0.02	33 24.35	5-MAR	930	140 0.64	33 25.45
5-MAR	1000	140 2.15	33 26.25	5-MAR	1030	140 3.65	33 27.04
5-MAR	1100	140 5.16	33 27.84	5-MAR	1130	140 6.73	33 28.71
5-MAR	1200	140 8.29	33 29.59	5-MAR	1230	140 9.85	33 30.46
5-MAR	1300	140 9.92	33 30.38	5-MAR	1330	140 9.80	33 30.19
5-MAR	1400	140 9.25	33 29.69	5-MAR	1430	140 6.56	33 27.72
5-MAR	1500	140 3.88	33 25.75	5-MAR	1530	140 1.19	33 23.77
5-MAR	1600	139 58.51	33 21.79	5-MAR	1630	139 57.36	33 20.06
5-MAR	1700	139 56.61	33 18.33	5-MAR	1730	139 55.84	33 16.51
5-MAR	1800	139 55.45	33 14.60	5-MAR	1830	139 55.05	33 12.68
5-MAR	1900	139 53.89	33 10.84	5-MAR	1930	139 53.27	33 9.01
5-MAR	2000	139 52.65	33 7.19	5-MAR	2030	139 52.03	33 5.36
5-MAR	2100	139 51.51	33 3.71	5-MAR	2130	139 51.67	33 3.27
5-MAR	2200	139 51.83	33 2.84	5-MAR	2230	139 51.98	33 2.40
5-MAR	2300	139 52.15	33 1.96	5-MAR	2330	139 52.30	33 1.53
6-MAR	0	139 52.46	33 1.09	6-MAR	30	139 53.05	33 0.82
6-MAR	100	139 54.92	33 0.70	6-MAR	130	139 57.00	33 0.57
6-MAR	200	139 59.08	33 0.44	6-MAR	230	140 0.74	33 0.10
6-MAR	300	140 0.72	32 58.93	6-MAR	330	140 0.70	32 57.74
6-MAR	400	140 0.69	32 56.57	6-MAR	430	140 0.67	32 55.39
6-MAR	500	140 0.74	32 54.11	6-MAR	530	140 0.98	32 52.61
6-MAR	600	140 1.16	32 51.22	6-MAR	630	140 1.34	32 49.82
6-MAR	700	140 1.42	32 48.25	6-MAR	730	140 1.48	32 46.67
6-MAR	800	140 1.54	32 45.09	6-MAR	830	140 1.60	32 43.51
6-MAR	900	140 1.75	32 42.15	6-MAR	930	140 2.24	32 41.62
6-MAR	1000	140 2.50	32 40.81	6-MAR	1030	140 1.66	32 38.71
6-MAR	1100	140 0.82	32 36.61	6-MAR	1130	139 59.97	32 34.51
6-MAR	1200	139 59.17	32 32.47	6-MAR	1230	139 58.93	32 31.13
6-MAR	1300	139 58.69	32 29.80	6-MAR	1330	139 58.45	32 28.46
6-MAR	1400	139 58.44	32 27.28	6-MAR	1430	139 58.46	32 25.83
6-MAR	1500	139 58.48	32 24.38	6-MAR	1530	139 58.51	32 22.93
6-MAR	1600	139 58.47	32 21.19	6-MAR	1630	139 58.37	32 19.33
6-MAR	1700	139 58.34	32 17.34	6-MAR	1730	139 58.33	32 15.35
6-MAR	1800	139 58.31	32 13.36	6-MAR	1830	139 58.72	32 11.32
6-MAR	1900	139 59.00	32 9.23	6-MAR	1930	139 59.29	32 7.15
6-MAR	2000	139 59.57	32 5.05	6-MAR	2030	139 59.71	32 2.92
6-MAR	2100	139 59.78	32 0.76	6-MAR	2130	139 59.84	31 58.61
6-MAR	2200	139 59.88	31 56.48	6-MAR	2230	139 59.75	31 54.43
6-MAR	2300	139 59.58	31 52.39	6-MAR	2330	139 59.61	31 50.23
7-MAR	0	139 59.66	31 48.06	7-MAR	30	139 59.81	31 46.68
7-MAR	100	139 59.98	31 45.35	7-MAR	130	140 0.14	31 44.03
7-MAR	200	140 0.25	31 42.22	7-MAR	230	140 0.32	31 40.09
7-MAR	300	140 0.39	31 37.97	7-MAR	330	140 0.46	31 35.84
7-MAR	400	140 0.53	31 33.72	7-MAR	430	140 0.60	31 31.59
7-MAR	500	140 0.76	31 29.42	7-MAR	530	140 0.91	31 27.26
7-MAR	600	140 1.07	31 25.09	7-MAR	630	140 1.22	31 22.92
7-MAR	700	140 1.37	31 20.75	7-MAR	730	140 1.29	31 18.57
7-MAR	800	140 1.12	31 16.37	7-MAR	830	140 0.86	31 14.21
7-MAR	900	140 0.42	31 12.04	7-MAR	930	139 59.99	31 9.99

TROPIC HEAT HALF-HOURLY POSITIONS

DATE	TIME	LONGITUDE	LATITUDE	DATE	TIME	LONGITUDE	LATITUDE
7-MAR	1000	139 59.81	31 8.00	7-MAR	1030	139 59.63	31 6.01
7-MAR	1100	139 59.47	31 4.07	7-MAR	1130	139 59.39	31 2.32
7-MAR	1200	139 59.38	31 0.39	7-MAR	1230	139 59.38	30 58.46
7-MAR	1300	139 59.37	30 56.53	7-MAR	1330	139 59.36	30 54.60
7-MAR	1400	139 59.35	30 52.67	7-MAR	1430	139 59.35	30 50.74
7-MAR	1500	139 59.35	30 48.80	7-MAR	1530	139 59.47	30 46.69
7-MAR	1600	139 59.60	30 44.57	7-MAR	1630	139 59.79	30 42.38
7-MAR	1700	139 59.99	30 40.20	7-MAR	1730	140 0.18	30 38.02
7-MAR	1800	140 0.51	30 35.87	7-MAR	1830	140 0.86	30 33.67
7-MAR	1900	140 1.23	30 31.41	7-MAR	1930	140 1.67	30 29.17
7-MAR	2000	140 1.63	30 27.17	7-MAR	2030	140 1.52	30 25.20
7-MAR	2100	140 1.41	30 23.22	7-MAR	2130	140 1.30	30 21.24
7-MAR	2200	140 1.19	30 19.26	7-MAR	2230	140 1.08	30 17.28
7-MAR	2300	140 0.97	30 15.30	7-MAR	2330	140 0.86	30 13.32
8-MAR	0	140 0.08	30 11.80	8-MAR	30	139 59.82	30 9.73
8-MAR	100	139 59.55	30 7.66	8-MAR	130	139 59.35	30 5.59
8-MAR	200	139 59.20	30 3.52	8-MAR	230	139 59.05	30 1.46
8-MAR	300	139 58.89	29 59.39	8-MAR	330	139 59.10	29 57.31
8-MAR	400	139 59.31	29 55.23	8-MAR	430	139 59.60	29 53.18
8-MAR	500	139 59.90	29 51.14	8-MAR	530	140 0.22	29 49.07
8-MAR	600	140 0.67	29 46.85	8-MAR	630	140 1.12	29 44.62
8-MAR	700	140 1.57	29 42.40	8-MAR	730	140 2.02	29 40.17
8-MAR	800	140 2.09	29 38.10	8-MAR	830	140 1.70	29 36.22
8-MAR	900	140 1.09	29 34.45	8-MAR	930	140 0.85	29 32.51
8-MAR	1000	140 0.61	29 30.56	8-MAR	1030	140 0.34	29 28.60
8-MAR	1100	140 0.07	29 26.63	8-MAR	1130	139 59.80	29 24.65
8-MAR	1200	139 59.55	29 22.69	8-MAR	1230	139 59.38	29 20.73
8-MAR	1300	139 59.77	29 18.73	8-MAR	1330	139 59.81	29 16.72
8-MAR	1400	139 59.86	29 14.70	8-MAR	1430	139 59.90	29 12.68
8-MAR	1500	139 59.95	29 10.67	8-MAR	1530	139 59.99	29 8.65
8-MAR	1600	140 0.04	29 6.64	8-MAR	1630	140 0.07	29 4.82
8-MAR	1700	140 0.10	29 3.11	8-MAR	1730	140 0.12	29 1.41
8-MAR	1800	140 0.15	28 59.70	8-MAR	1830	140 0.17	28 58.00
8-MAR	1900	140 0.20	28 56.29	8-MAR	1930	140 0.23	28 54.58
8-MAR	2000	140 0.26	28 52.87	8-MAR	2030	140 0.29	28 51.17
8-MAR	2100	140 0.31	28 49.46	8-MAR	2130	140 0.34	28 47.75
8-MAR	2200	140 0.37	28 46.05	8-MAR	2230	140 0.40	28 44.34
8-MAR	2300	140 0.42	28 42.64	8-MAR	2330	140 0.45	28 40.93
9-MAR	0	140 0.47	28 39.22	9-MAR	30	140 0.50	28 37.51
9-MAR	100	140 0.53	28 35.81	9-MAR	130	140 0.56	28 34.10
9-MAR	200	140 0.59	28 32.39	9-MAR	230	140 0.61	28 30.68
9-MAR	300	140 0.64	28 28.98	9-MAR	330	140 0.67	28 27.27
9-MAR	400	140 0.79	28 25.69	9-MAR	430	140 0.98	28 24.19
9-MAR	500	140 1.16	28 22.69	9-MAR	530	140 1.35	28 21.18
9-MAR	600	140 1.54	28 19.68	9-MAR	630	140 1.72	28 18.18
9-MAR	700	140 1.76	28 16.54	9-MAR	730	140 1.76	28 14.87
9-MAR	800	140 1.76	28 13.19	9-MAR	830	140 1.89	28 11.51
9-MAR	900	140 2.29	28 9.83	9-MAR	930	140 2.29	28 8.15
9-MAR	1000	140 1.91	28 6.49	9-MAR	1030	140 1.55	28 4.83
9-MAR	1100	140 1.34	28 3.17	9-MAR	1130	140 1.21	28 1.51

TROPIC HEAT HALF-HOURLY POSITIONS

DATE	TIME	LONGITUDE	LATITUDE	DATE	TIME	LONGITUDE	LATITUDE
9-MAR	1200	140 1.07	27 59.86	9-MAR	1230	140 0.87	27 58.08
9-MAR	1300	140 0.66	27 56.30	9-MAR	1330	140 0.45	27 54.53
9-MAR	1400	140 0.24	27 52.75	9-MAR	1430	140 0.03	27 50.98
9-MAR	1500	139 59.82	27 49.20	9-MAR	1530	139 59.62	27 47.42
9-MAR	1600	140 0.01	27 45.50	9-MAR	1630	140 0.56	27 43.55
9-MAR	1700	140 1.12	27 41.60	9-MAR	1730	140 1.67	27 39.64
9-MAR	1800	140 2.22	27 37.69	9-MAR	1830	140 2.78	27 35.74
9-MAR	1900	140 3.33	27 33.78	9-MAR	1930	140 3.82	27 31.84
9-MAR	2000	140 2.14	27 30.38	9-MAR	2030	140 0.46	27 28.93
9-MAR	2100	139 59.89	27 27.91	9-MAR	2130	139 59.62	27 27.40
9-MAR	2200	139 59.50	27 27.30	9-MAR	2230	139 59.39	27 27.21
9-MAR	2300	139 59.17	27 26.59	9-MAR	2330	139 58.85	27 25.49
10-MAR	0	139 58.54	27 24.40	10-MAR	30	139 58.22	27 23.30
10-MAR	100	139 58.36	27 21.63	10-MAR	130	139 58.54	27 19.91
10-MAR	200	139 58.72	27 18.19	10-MAR	230	139 58.90	27 16.46
10-MAR	300	139 59.08	27 14.74	10-MAR	330	139 59.26	27 13.02
10-MAR	400	139 59.44	27 11.30	10-MAR	430	139 59.62	27 9.58
10-MAR	500	139 59.80	27 7.86	10-MAR	530	140 0.19	27 6.20
10-MAR	600	140 0.64	27 4.56	10-MAR	630	140 1.09	27 2.92
10-MAR	700	140 1.54	27 1.28	10-MAR	730	140 1.99	26 59.58
10-MAR	800	140 2.53	26 57.89	10-MAR	830	140 2.83	26 56.21
10-MAR	900	140 2.23	26 54.61	10-MAR	930	140 2.18	26 53.20
10-MAR	1000	140 2.14	26 51.79	10-MAR	1030	140 2.09	26 50.38
10-MAR	1100	140 2.05	26 48.96	10-MAR	1130	140 2.01	26 47.55
10-MAR	1200	140 1.97	26 46.14	10-MAR	1230	140 1.76	26 44.71
10-MAR	1300	140 1.52	26 43.27	10-MAR	1330	140 1.28	26 41.83
10-MAR	1400	140 1.04	26 40.39	10-MAR	1430	140 0.80	26 38.95
10-MAR	1500	140 0.56	26 37.51	10-MAR	1530	140 0.33	26 36.07
10-MAR	1600	140 0.09	26 34.64	10-MAR	1630	139 59.85	26 33.20
10-MAR	1700	139 59.62	26 31.79	10-MAR	1730	139 59.42	26 30.46
10-MAR	1800	139 59.22	26 29.13	10-MAR	1830	139 59.23	26 27.77
10-MAR	1900	139 59.74	26 26.30	10-MAR	1930	140 0.24	26 24.85
10-MAR	2000	140 0.74	26 23.39	10-MAR	2030	140 1.18	26 21.92
10-MAR	2100	140 1.12	26 20.38	10-MAR	2130	140 1.07	26 18.83
10-MAR	2200	140 0.88	26 17.31	10-MAR	2230	140 0.38	26 15.81
10-MAR	2300	139 59.97	26 14.27	10-MAR	2330	139 59.56	26 12.72
11-MAR	0	139 59.14	26 11.18	11-MAR	30	139 59.15	26 9.53
11-MAR	100	139 59.33	26 7.85	11-MAR	130	139 59.42	26 6.23
11-MAR	200	139 59.45	26 4.65	11-MAR	230	139 59.47	26 3.07
11-MAR	300	139 59.50	26 1.50	11-MAR	330	139 59.53	25 59.92
11-MAR	400	139 59.56	25 58.34	11-MAR	430	139 59.59	25 56.77
11-MAR	500	139 59.78	25 55.30	11-MAR	530	140 0.10	25 53.92
11-MAR	600	140 0.42	25 52.54	11-MAR	630	139 59.98	25 51.26
11-MAR	700	140 0.40	25 49.62	11-MAR	730	140 0.91	25 47.94
11-MAR	800	140 0.86	25 46.25	11-MAR	830	140 0.70	25 44.56
11-MAR	900	140 0.55	25 42.86	11-MAR	930	140 0.40	25 41.17
11-MAR	1000	140 0.28	25 39.55	11-MAR	1030	140 0.22	25 37.74
11-MAR	1100	140 0.16	25 35.94	11-MAR	1130	140 0.10	25 34.13
11-MAR	1200	140 0.04	25 32.33	11-MAR	1230	139 59.98	25 30.53
11-MAR	1300	139 59.92	25 28.73	11-MAR	1330	139 59.85	25 26.93

TROPIC HEAT HALF-HOURLY POSITIONS

DATE	TIME	LONGITUDE	LATITUDE	DATE	TIME	LONGITUDE	LATITUDE
11-MAR	1400	139 59.79	25 25.12	11-MAR	1430	139 59.73	25 23.32
11-MAR	1500	139 59.67	25 21.52	11-MAR	1530	139 59.60	25 19.72
11-MAR	1600	139 59.54	25 17.91	11-MAR	1630	139 59.50	25 16.10
11-MAR	1700	139 59.47	25 14.26	11-MAR	1730	139 59.45	25 12.43
11-MAR	1800	139 59.92	25 10.69	11-MAR	1830	139 59.79	25 8.98
11-MAR	1900	139 59.35	25 7.23	11-MAR	1930	139 59.43	25 5.44
11-MAR	2000	139 59.52	25 3.65	11-MAR	2030	139 59.61	25 1.85
11-MAR	2100	139 59.80	24 59.30	11-MAR	2130	140 0.03	24 56.33
11-MAR	2200	140 0.27	24 53.36	11-MAR	2230	140 0.51	24 50.39
11-MAR	2300	140 0.75	24 47.42	11-MAR	2330	140 0.98	24 44.45
12-MAR	0	140 1.22	24 41.48	12-MAR	30	140 1.46	24 38.51
12-MAR	100	140 0.97	24 33.15	12-MAR	130	140 0.25	24 27.05
12-MAR	200	139 59.69	24 23.69	12-MAR	230	139 59.28	24 20.30
12-MAR	300	139 59.39	24 14.33	12-MAR	330	139 59.51	24 8.35
12-MAR	400	139 59.62	24 2.38	12-MAR	430	139 59.73	23 56.40
12-MAR	500	139 59.84	23 50.42	12-MAR	530	139 59.96	23 44.44
12-MAR	600	140 0.07	23 38.47	12-MAR	630	140 0.18	23 32.49
12-MAR	700	140 0.29	23 26.51	12-MAR	730	140 0.41	23 20.54
12-MAR	800	140 0.52	23 14.56	12-MAR	830	140 0.56	23 8.62
12-MAR	900	140 0.35	23 2.81	12-MAR	930	140 0.14	22 56.99
12-MAR	1000	139 59.93	22 51.18	12-MAR	1030	139 59.72	22 45.36
12-MAR	1100	139 59.51	22 39.55	12-MAR	1130	139 59.30	22 33.73
12-MAR	1200	139 59.09	22 27.92	12-MAR	1230	139 59.47	22 22.27
12-MAR	1300	139 59.94	22 16.64	12-MAR	1330	140 0.15	22 10.88
12-MAR	1400	140 0.20	22 5.06	12-MAR	1430	140 0.09	21 59.16
12-MAR	1500	139 59.98	21 53.26	12-MAR	1530	139 59.86	21 47.37
12-MAR	1600	139 59.74	21 41.47	12-MAR	1630	139 59.63	21 35.58
12-MAR	1700	139 59.51	21 29.68	12-MAR	1730	139 59.36	21 23.66
12-MAR	1800	139 59.35	21 17.64	12-MAR	1830	139 59.45	21 11.62
12-MAR	1900	139 59.70	21 5.61	12-MAR	1930	140 0.25	20 59.60
12-MAR	2000	140 0.60	20 53.59	12-MAR	2030	140 0.50	20 47.54
12-MAR	2100	140 0.41	20 41.50	12-MAR	2130	140 0.20	20 35.55
12-MAR	2200	140 0.08	20 29.65	12-MAR	2230	140 0.08	20 23.71
12-MAR	2300	140 0.07	20 17.77	12-MAR	2330	140 0.13	20 11.92
13-MAR	0	140 0.37	20 6.27	13-MAR	30	140 0.42	20 0.26
13-MAR	100	140 0.47	19 54.24	13-MAR	130	140 0.41	19 48.22
13-MAR	200	140 0.31	19 42.20	13-MAR	230	140 0.19	19 36.17
13-MAR	300	140 0.08	19 30.15	13-MAR	330	139 59.97	19 24.13
13-MAR	400	140 0.69	19 17.47	13-MAR	430	140 0.67	19 11.54
13-MAR	500	140 0.65	19 5.62	13-MAR	530	140 0.63	18 59.69
13-MAR	600	140 0.49	18 53.72	13-MAR	630	140 0.25	18 47.71
13-MAR	700	140 0.19	18 41.77	13-MAR	730	140 0.19	18 35.87
13-MAR	800	140 0.19	18 30.01	13-MAR	830	140 0.19	18 24.14
13-MAR	900	140 0.20	18 18.27	13-MAR	930	140 0.40	18 12.40
13-MAR	1000	140 0.59	18 6.53	13-MAR	1030	140 0.78	18 0.67
13-MAR	1100	140 0.98	17 54.80	13-MAR	1130	140 1.28	17 49.13
13-MAR	1200	140 1.58	17 43.12	13-MAR	1230	140 1.90	17 37.09
13-MAR	1300	140 1.97	17 31.16	13-MAR	1330	140 1.62	17 25.34
13-MAR	1400	140 1.04	17 19.46	13-MAR	1430	140 0.47	17 13.58
13-MAR	1500	139 59.90	17 7.71	13-MAR	1530	140 0.19	17 4.87

TROPIC HEAT HALF-HOURLY POSITIONS

DATE	TIME	LONGITUDE	LATITUDE	DATE	TIME	LONGITUDE	LATITUDE
13-MAR	1600	140 0.69	17 2.80	13-MAR	1630	140 1.20	17 0.73
13-MAR	1700	140 1.70	16 58.66	13-MAR	1730	140 2.21	16 56.59
13-MAR	1800	140 2.72	16 54.53	13-MAR	1830	140 3.22	16 52.46
13-MAR	1900	140 3.55	16 50.36	13-MAR	1930	140 2.87	16 49.62
13-MAR	2000	140 1.55	16 49.51	13-MAR	2030	140 0.86	16 48.34
13-MAR	2100	140 0.89	16 46.33	13-MAR	2130	140 0.92	16 44.33
13-MAR	2200	140 0.94	16 42.32	13-MAR	2230	140 0.97	16 40.31
13-MAR	2300	140 1.00	16 38.31	13-MAR	2330	140 1.03	16 36.31
14-MAR	0	140 1.06	16 34.30	14-MAR	30	140 1.09	16 32.29
14-MAR	100	140 1.12	16 30.29	14-MAR	130	140 1.15	16 28.28
14-MAR	200	140 1.18	16 26.28	14-MAR	230	140 1.21	16 24.27
14-MAR	300	140 1.24	16 22.27	14-MAR	330	140 1.27	16 20.26
14-MAR	400	140 1.31	16 18.33	14-MAR	430	140 1.36	16 16.41
14-MAR	500	140 1.40	16 14.49	14-MAR	530	140 1.45	16 12.57
14-MAR	600	140 1.49	16 10.65	14-MAR	630	140 1.54	16 8.73
14-MAR	700	140 1.58	16 6.80	14-MAR	730	140 1.63	16 4.88
14-MAR	800	140 1.67	16 2.96	14-MAR	830	140 1.72	16 1.04
14-MAR	900	140 1.77	15 59.12	14-MAR	930	140 1.81	15 57.20
14-MAR	1000	140 1.81	15 55.36	14-MAR	1030	140 1.79	15 53.53
14-MAR	1100	140 1.77	15 51.70	14-MAR	1130	140 1.75	15 49.87
14-MAR	1200	140 1.73	15 48.03	14-MAR	1230	140 1.71	15 46.20
14-MAR	1300	140 1.70	15 44.37	14-MAR	1330	140 1.68	15 42.53
14-MAR	1400	140 1.66	15 40.70	14-MAR	1430	140 1.64	15 38.87
14-MAR	1500	140 1.21	15 36.85	14-MAR	1530	140 0.76	15 34.81
14-MAR	1600	140 0.31	15 32.78	14-MAR	1630	139 59.85	15 30.74
14-MAR	1700	139 59.39	15 28.70	14-MAR	1730	139 59.17	15 26.55
14-MAR	1800	139 59.14	15 24.29	14-MAR	1830	139 59.11	15 22.03
14-MAR	1900	139 58.68	15 19.78	14-MAR	1930	139 58.57	15 17.47
14-MAR	2000	139 58.64	15 15.16	14-MAR	2030	139 59.24	15 12.90
14-MAR	2100	139 59.63	15 10.64	14-MAR	2130	139 59.65	15 8.36
14-MAR	2200	139 59.66	15 6.08	14-MAR	2230	139 59.68	15 3.80
14-MAR	2300	139 59.69	15 1.52	14-MAR	2330	139 59.70	14 59.24
15-MAR	0	139 59.72	14 56.96	15-MAR	30	139 59.73	14 54.68
15-MAR	100	139 59.74	14 52.39	15-MAR	130	139 59.75	14 50.11
15-MAR	200	139 59.77	14 47.83	15-MAR	230	139 59.81	14 45.55
15-MAR	300	139 59.96	14 43.24	15-MAR	330	140 0.11	14 40.93
15-MAR	400	140 0.25	14 38.63	15-MAR	430	140 0.40	14 36.32
15-MAR	500	140 0.55	14 34.03	15-MAR	530	140 0.71	14 31.84
15-MAR	600	140 0.87	14 29.66	15-MAR	630	140 1.03	14 27.47
15-MAR	700	140 1.13	14 25.36	15-MAR	730	140 1.20	14 23.29
15-MAR	800	140 1.11	14 21.26	15-MAR	830	140 0.92	14 19.23
15-MAR	900	140 0.86	14 17.13	15-MAR	930	140 0.81	14 15.04
15-MAR	1000	140 0.76	14 12.94	15-MAR	1030	140 0.70	14 10.84
15-MAR	1100	140 0.65	14 8.75	15-MAR	1130	140 0.59	14 6.65
15-MAR	1200	140 0.54	14 4.55	15-MAR	1230	140 0.49	14 2.46
15-MAR	1300	140 0.43	14 0.36	15-MAR	1330	140 0.38	13 58.27
15-MAR	1400	140 0.32	13 56.17	15-MAR	1430	140 0.26	13 54.07
15-MAR	1500	140 0.21	13 51.98	15-MAR	1530	140 0.16	13 49.88
15-MAR	1600	140 0.10	13 47.78	15-MAR	1630	140 0.05	13 45.69
15-MAR	1700	139 59.99	13 43.59	15-MAR	1730	139 59.94	13 41.50

TROPIC HEAT HALF-HOURLY POSITIONS

DATE	TIME	LONGITUDE	LATITUDE	DATE	TIME	LONGITUDE	LATITUDE
15-MAR	1800	139 59.92	13 39.40	15-MAR	1830	140 0.13	13 37.27
15-MAR	1900	139 59.89	13 35.03	15-MAR	1930	139 59.65	13 32.78
15-MAR	2000	139 59.56	13 30.75	15-MAR	2030	139 59.56	13 28.86
15-MAR	2100	139 59.57	13 26.96	15-MAR	2130	139 59.57	13 25.07
15-MAR	2200	139 59.58	13 23.18	15-MAR	2230	139 59.86	13 21.46
15-MAR	2300	139 59.93	13 19.61	15-MAR	2330	139 59.73	13 17.59
16-MAR	0	139 59.53	13 15.56	16-MAR	30	139 59.62	13 13.48
16-MAR	100	139 59.70	13 11.39	16-MAR	130	139 59.78	13 9.31
16-MAR	200	139 59.85	13 7.24	16-MAR	230	139 59.90	13 5.18
16-MAR	300	139 59.95	13 3.13	16-MAR	330	139 59.99	13 1.07
16-MAR	400	140 0.04	12 59.01	16-MAR	430	140 0.08	12 56.95
16-MAR	500	140 0.12	12 54.87	16-MAR	530	140 0.15	12 52.79
16-MAR	600	139 59.99	12 50.60	16-MAR	630	139 59.76	12 48.53
16-MAR	700	139 59.94	12 46.24	16-MAR	730	139 59.98	12 44.07
16-MAR	800	140 0.06	12 41.91	16-MAR	830	140 0.25	12 39.68
16-MAR	900	140 0.45	12 37.46	16-MAR	930	140 0.62	12 35.11
16-MAR	1000	140 0.78	12 32.77	16-MAR	1030	140 0.89	12 30.46
16-MAR	1100	140 0.88	12 28.41	16-MAR	1130	140 0.87	12 26.36
16-MAR	1200	140 0.86	12 24.31	16-MAR	1230	140 0.85	12 22.26
16-MAR	1300	140 0.83	12 20.21	16-MAR	1330	140 0.82	12 18.16
16-MAR	1400	140 0.82	12 16.10	16-MAR	1430	140 0.80	12 14.05
16-MAR	1500	140 0.79	12 12.00	16-MAR	1530	140 0.66	12 10.04
16-MAR	1600	140 0.47	12 8.14	16-MAR	1630	140 0.29	12 6.23
16-MAR	1700	140 0.10	12 4.32	16-MAR	1730	140 0.00	12 2.39
16-MAR	1800	140 0.16	12 0.40	16-MAR	1830	140 0.32	11 58.40
16-MAR	1900	140 0.49	11 56.41	16-MAR	1930	140 0.58	11 54.43
16-MAR	2000	140 0.65	11 52.46	16-MAR	2030	140 0.71	11 50.49
16-MAR	2100	140 0.77	11 48.52	16-MAR	2130	140 0.83	11 46.55
16-MAR	2200	140 0.90	11 44.59	16-MAR	2230	140 0.96	11 42.62
16-MAR	2300	140 1.03	11 40.65	16-MAR	2330	140 1.09	11 38.69
17-MAR	0	140 1.26	11 36.72	17-MAR	30	140 1.46	11 34.76
17-MAR	100	140 1.66	11 32.80	17-MAR	130	140 1.63	11 30.82
17-MAR	200	140 1.46	11 28.84	17-MAR	230	140 1.29	11 26.85
17-MAR	300	140 1.13	11 24.86	17-MAR	330	140 1.10	11 22.86
17-MAR	400	140 1.08	11 20.85	17-MAR	430	140 0.98	11 18.94
17-MAR	500	140 0.85	11 17.08	17-MAR	530	140 0.34	11 15.28
17-MAR	600	139 59.78	11 13.48	17-MAR	630	139 59.49	11 11.52
17-MAR	700	139 59.23	11 9.54	17-MAR	730	139 59.05	11 7.51
17-MAR	800	139 58.88	11 5.48	17-MAR	830	139 58.70	11 3.46
17-MAR	900	139 58.52	11 1.43	17-MAR	930	139 58.35	10 59.40
17-MAR	1000	139 58.41	10 57.32	17-MAR	1030	139 58.47	10 55.23
17-MAR	1100	139 58.52	10 53.15	17-MAR	1130	139 58.58	10 51.07
17-MAR	1200	139 58.64	10 48.98	17-MAR	1230	139 58.70	10 46.90
17-MAR	1300	139 58.76	10 44.81	17-MAR	1330	139 58.82	10 42.73
17-MAR	1400	139 58.87	10 40.64	17-MAR	1430	139 58.93	10 38.56
17-MAR	1500	139 58.94	10 36.35	17-MAR	1530	139 58.94	10 34.11
17-MAR	1600	139 58.94	10 31.87	17-MAR	1630	139 58.94	10 29.63
17-MAR	1700	139 59.03	10 27.38	17-MAR	1730	139 59.14	10 25.13
17-MAR	1800	139 59.24	10 22.88	17-MAR	1830	139 59.35	10 20.62
17-MAR	1900	139 59.46	10 18.37	17-MAR	1930	139 59.44	10 16.44

TROPIC HEAT HALF-HOURLY POSITIONS

DATE	TIME	LONGITUDE	LATITUDE	DATE	TIME	LONGITUDE	LATITUDE
17-MAR	2000	139 59.36	10 14.69	17-MAR	2030	139 59.27	10 12.94
17-MAR	2100	139 59.18	10 11.20	17-MAR	2130	139 59.09	10 9.45
17-MAR	2200	139 59.00	10 7.70	17-MAR	2230	139 58.91	10 5.96
17-MAR	2300	139 58.84	10 4.11	17-MAR	2330	139 58.79	10 2.05
18-MAR	0	139 58.76	9 59.99	18-MAR	30	139 58.72	9 57.93
18-MAR	100	139 59.05	9 56.20	18-MAR	130	139 59.12	9 53.63
18-MAR	200	139 59.19	9 51.05	18-MAR	230	139 59.25	9 48.46
18-MAR	300	139 59.32	9 45.88	18-MAR	330	139 59.38	9 43.29
18-MAR	400	139 59.45	9 40.79	18-MAR	430	139 59.51	9 38.39
18-MAR	500	139 59.57	9 36.01	18-MAR	530	139 59.64	9 33.61
18-MAR	600	139 59.71	9 31.22	18-MAR	630	139 59.77	9 28.82
18-MAR	700	139 59.83	9 26.44	18-MAR	730	139 59.90	9 24.04
18-MAR	800	140 0.00	9 21.68	18-MAR	830	140 0.16	9 19.39
18-MAR	900	140 0.19	9 17.20	18-MAR	930	140 0.22	9 15.02
18-MAR	1000	140 0.25	9 12.83	18-MAR	1030	140 0.28	9 10.64
18-MAR	1100	140 0.31	9 8.46	18-MAR	1130	140 0.34	9 6.28
18-MAR	1200	140 0.37	9 4.09	18-MAR	1230	140 0.46	9 1.86
18-MAR	1300	140 0.54	8 59.66	18-MAR	1330	140 0.59	8 57.52
18-MAR	1400	140 0.65	8 55.37	18-MAR	1430	140 0.62	8 53.28
18-MAR	1500	140 0.59	8 51.19	18-MAR	1530	140 0.56	8 49.11
18-MAR	1600	140 0.45	8 47.26	18-MAR	1630	140 0.33	8 45.40
18-MAR	1700	140 0.21	8 43.55	18-MAR	1730	139 59.96	8 41.59
18-MAR	1800	139 59.86	8 39.44	18-MAR	1830	139 59.99	8 37.27
18-MAR	1900	140 0.14	8 35.09	18-MAR	1930	140 0.25	8 32.96
18-MAR	2000	140 0.23	8 30.87	18-MAR	2030	140 0.31	8 28.71
18-MAR	2100	140 0.54	8 26.51	18-MAR	2130	140 0.76	8 24.32
18-MAR	2200	140 0.99	8 22.12	18-MAR	2230	140 1.17	8 20.05
18-MAR	2300	140 1.22	8 18.05	18-MAR	2330	140 1.07	8 16.16
19-MAR	0	140 0.91	8 14.26	19-MAR	30	140 0.76	8 12.37
19-MAR	100	140 0.68	8 10.24	19-MAR	130	140 0.64	8 8.04
19-MAR	200	140 0.58	8 5.84	19-MAR	230	140 0.50	8 3.65
19-MAR	300	140 0.41	8 1.45	19-MAR	330	140 0.35	7 59.27
19-MAR	400	140 0.38	7 57.17	19-MAR	430	140 0.41	7 55.06
19-MAR	500	140 0.43	7 52.96	19-MAR	530	140 0.46	7 50.85
19-MAR	600	140 0.49	7 48.74	19-MAR	630	140 0.51	7 46.64
19-MAR	700	140 0.53	7 44.53	19-MAR	730	140 0.56	7 42.43
19-MAR	800	140 0.59	7 40.32	19-MAR	830	140 0.61	7 38.21
19-MAR	900	140 0.64	7 36.11	19-MAR	930	140 0.58	7 33.94
19-MAR	1000	140 0.51	7 31.76	19-MAR	1030	140 0.44	7 29.59
19-MAR	1100	140 0.37	7 27.41	19-MAR	1130	140 0.30	7 25.23
19-MAR	1200	140 0.23	7 23.05	19-MAR	1230	140 0.16	7 20.87
19-MAR	1300	140 0.10	7 18.70	19-MAR	1330	140 0.02	7 16.52
19-MAR	1400	139 59.96	7 14.35	19-MAR	1430	139 59.89	7 12.17
19-MAR	1500	139 59.82	7 9.99	19-MAR	1530	139 59.75	7 7.81
19-MAR	1600	139 59.68	7 5.64	19-MAR	1630	139 59.61	7 3.46
19-MAR	1700	139 59.63	7 1.22	19-MAR	1730	139 59.72	6 58.94
19-MAR	1800	139 59.81	6 56.66	19-MAR	1830	139 59.90	6 54.38
19-MAR	1900	139 59.95	6 52.08	19-MAR	1930	139 59.99	6 49.78
19-MAR	2000	140 0.03	6 47.48	19-MAR	2030	140 0.06	6 45.18
19-MAR	2100	140 0.02	6 42.92	19-MAR	2130	139 59.99	6 40.67

TROPIC HEAT HALF-HOURLY POSITIONS

DATE	TIME	LONGITUDE	LATITUDE	DATE	TIME	LONGITUDE	LATITUDE
19-MAR	2200	139 59.98	6 38.42	19-MAR	2230	139 59.98	6 36.16
19-MAR	2300	140 0.07	6 33.85	19-MAR	2330	140 0.15	6 31.54
20-MAR	0	140 0.23	6 29.23	20-MAR	30	140 0.28	6 26.93
20-MAR	100	140 0.29	6 24.66	20-MAR	130	140 0.31	6 22.38
20-MAR	200	140 0.33	6 20.10	20-MAR	230	140 0.35	6 17.83
20-MAR	300	140 0.37	6 15.55	20-MAR	330	140 0.38	6 13.27
20-MAR	400	140 0.40	6 10.99	20-MAR	430	140 0.40	6 8.73
20-MAR	500	140 0.37	6 6.54	20-MAR	530	140 0.34	6 4.35
20-MAR	600	140 0.31	6 2.15	20-MAR	630	140 0.28	5 59.96
20-MAR	700	140 0.25	5 57.77	20-MAR	730	140 0.22	5 55.58
20-MAR	800	140 0.19	5 53.39	20-MAR	830	140 0.16	5 51.19
20-MAR	900	140 0.13	5 49.00	20-MAR	930	140 0.10	5 46.81
20-MAR	1000	140 0.07	5 44.62	20-MAR	1030	140 0.04	5 42.43
20-MAR	1100	140 0.00	5 40.24	20-MAR	1130	139 59.97	5 38.04
20-MAR	1200	139 59.94	5 35.85	20-MAR	1230	139 59.91	5 33.65
20-MAR	1300	139 59.88	5 31.46	20-MAR	1330	139 59.85	5 29.27
20-MAR	1400	139 59.82	5 27.08	20-MAR	1430	139 59.79	5 24.89
20-MAR	1500	139 59.75	5 22.70	20-MAR	1530	139 59.72	5 20.50
20-MAR	1600	139 59.69	5 18.31	20-MAR	1630	139 59.66	5 16.12
20-MAR	1700	139 59.65	5 14.87	20-MAR	1730	139 59.63	5 13.73
20-MAR	1800	139 59.44	5 13.10	20-MAR	1830	139 59.12	5 12.78
20-MAR	1900	139 58.81	5 12.46	20-MAR	1930	139 58.57	5 12.04
20-MAR	2000	139 59.28	5 10.06	20-MAR	2030	139 59.80	5 8.45
20-MAR	2100	139 59.69	5 7.98	20-MAR	2130	139 59.68	5 6.17
20-MAR	2200	139 59.67	5 4.33	20-MAR	2230	139 59.59	5 1.90
20-MAR	2300	139 59.50	4 59.42	20-MAR	2330	139 59.41	4 56.94
21-MAR	0	139 59.30	4 54.55	21-MAR	30	139 59.15	4 52.33
21-MAR	100	139 59.14	4 50.08	21-MAR	130	139 59.17	4 47.83
21-MAR	200	139 59.19	4 45.58	21-MAR	230	139 59.22	4 43.33
21-MAR	300	139 59.27	4 41.09	21-MAR	330	139 59.32	4 38.86
21-MAR	400	139 59.36	4 36.64	21-MAR	430	139 59.44	4 34.42
21-MAR	500	139 59.63	4 32.24	21-MAR	530	139 59.83	4 30.08
21-MAR	600	140 0.02	4 27.94	21-MAR	630	140 0.21	4 25.79
21-MAR	700	140 0.31	4 23.68	21-MAR	730	140 0.34	4 21.58
21-MAR	800	140 0.36	4 19.49	21-MAR	830	140 0.38	4 17.41
21-MAR	900	140 0.37	4 15.32	21-MAR	930	140 0.35	4 13.24
21-MAR	1000	140 0.33	4 11.16	21-MAR	1030	140 0.32	4 9.08
21-MAR	1100	140 0.30	4 7.00	21-MAR	1130	140 0.28	4 4.91
21-MAR	1200	140 0.32	4 2.81	21-MAR	1230	140 0.40	4 0.66
21-MAR	1300	140 0.50	3 58.48	21-MAR	1330	140 0.61	3 56.30
21-MAR	1400	140 0.71	3 54.12	21-MAR	1430	140 0.72	3 51.74
21-MAR	1500	140 0.73	3 49.34	21-MAR	1530	140 0.73	3 46.94
21-MAR	1600	140 0.73	3 44.53	21-MAR	1630	140 0.73	3 42.13
21-MAR	1700	140 0.74	3 39.73	21-MAR	1730	140 0.74	3 37.32
21-MAR	1800	140 0.74	3 34.92	21-MAR	1830	140 0.74	3 32.51
21-MAR	1900	140 0.74	3 30.11	21-MAR	1930	140 0.75	3 27.71
21-MAR	2000	140 0.75	3 25.31	21-MAR	2030	140 0.76	3 22.90
21-MAR	2100	140 0.76	3 20.50	21-MAR	2130	140 0.76	3 18.10
21-MAR	2200	140 0.86	3 15.57	21-MAR	2230	140 1.01	3 13.00
21-MAR	2300	140 1.15	3 10.42	21-MAR	2330	140 1.30	3 7.85

TROPIC HEAT HALF-HOURLY POSITIONS

DATE	TIME	LONGITUDE	LATITUDE	DATE	TIME	LONGITUDE	LATITUDE				
22-MAR	0	140	1.44	3	5.27	22-MAR	30	140	1.58	3	2.70
22-MAR	100	140	1.72	3	0.13	22-MAR	130	140	1.87	2	57.55
22-MAR	200	140	1.96	2	54.95	22-MAR	230	140	1.99	2	52.31
22-MAR	300	140	2.02	2	49.67	22-MAR	330	140	2.05	2	47.04
22-MAR	400	140	2.08	2	44.40	22-MAR	430	140	2.11	2	41.76
22-MAR	500	140	2.04	2	39.22	22-MAR	530	140	1.97	2	36.67
22-MAR	600	140	1.85	2	34.19	22-MAR	630	140	1.71	2	31.58
22-MAR	700	140	1.55	2	28.79	22-MAR	730	140	1.48	2	26.15
22-MAR	800	140	1.45	2	23.58	22-MAR	830	140	1.42	2	21.01
22-MAR	900	140	1.37	2	18.42	22-MAR	930	140	1.18	2	15.65
22-MAR	1000	140	1.07	2	12.89	22-MAR	1030	140	0.98	2	10.13
22-MAR	1100	140	0.88	2	7.37	22-MAR	1130	140	0.86	2	4.75
22-MAR	1200	140	0.79	2	2.12	22-MAR	1230	140	0.64	1	59.41
22-MAR	1300	140	0.50	1	56.71	22-MAR	1330	140	0.35	1	54.01
22-MAR	1400	140	0.22	1	51.18	22-MAR	1430	140	0.08	1	48.35
22-MAR	1500	139	59.94	1	45.53	22-MAR	1530	139	59.80	1	42.70
22-MAR	1600	139	59.66	1	39.87	22-MAR	1630	139	59.44	1	37.01
22-MAR	1700	139	59.20	1	34.15	22-MAR	1730	139	58.97	1	31.28
22-MAR	1800	139	58.73	1	28.42	22-MAR	1830	139	58.49	1	25.55
22-MAR	1900	139	58.25	1	22.69	22-MAR	1930	139	58.02	1	19.82
22-MAR	2000	139	58.06	1	17.01	22-MAR	2030	139	58.19	1	14.23
22-MAR	2100	139	58.31	1	11.44	22-MAR	2130	139	58.51	1	8.47
22-MAR	2200	139	58.75	1	5.30	22-MAR	2230	139	58.76	1	2.76
22-MAR	2300	139	58.48	1	0.98	22-MAR	2330	139	58.31	0	59.53
23-MAR	0	139	58.52	0	59.30	23-MAR	30	139	58.73	0	59.09
23-MAR	100	139	58.95	0	58.87	23-MAR	130	139	59.16	0	58.65
23-MAR	200	139	59.38	0	58.43	23-MAR	230	139	59.59	0	58.21
23-MAR	300	139	59.80	0	57.99	23-MAR	330	140	0.02	0	57.77
23-MAR	400	140	0.23	0	57.56	23-MAR	430	140	0.45	0	57.34
23-MAR	500	140	0.66	0	57.12	23-MAR	530	140	0.88	0	56.90
23-MAR	600	140	1.09	0	56.68	23-MAR	630	140	1.34	0	56.36
23-MAR	700	140	1.61	0	56.00	23-MAR	730	140	1.90	0	55.59
23-MAR	800	140	2.20	0	55.15	23-MAR	830	140	2.51	0	54.72
23-MAR	900	140	2.82	0	54.28	23-MAR	930	140	3.13	0	53.84
23-MAR	1000	140	3.41	0	53.39	23-MAR	1030	140	3.62	0	52.91
23-MAR	1100	140	3.84	0	52.43	23-MAR	1130	140	4.06	0	51.95
23-MAR	1200	140	4.27	0	51.47	23-MAR	1230	140	4.49	0	50.99
23-MAR	1300	140	4.78	0	50.48	23-MAR	1330	140	5.11	0	49.97
23-MAR	1400	140	5.44	0	49.45	23-MAR	1430	140	5.77	0	48.94
23-MAR	1500	140	6.26	0	48.40	23-MAR	1530	140	6.83	0	47.86
23-MAR	1600	140	7.39	0	47.32	23-MAR	1630	140	7.96	0	46.79
23-MAR	1700	140	8.53	0	46.25	23-MAR	1730	140	8.98	0	45.73
23-MAR	1800	140	9.11	0	45.81	23-MAR	1830	140	8.89	0	46.12
23-MAR	1900	140	8.51	0	46.49	23-MAR	1930	140	8.09	0	47.06
23-MAR	2000	140	7.74	0	47.61	23-MAR	2030	140	7.13	0	48.05
23-MAR	2100	140	6.52	0	48.49	23-MAR	2130	140	5.94	0	48.92
23-MAR	2200	140	5.66	0	49.36	23-MAR	2230	140	5.38	0	49.79
23-MAR	2300	140	5.11	0	50.23	23-MAR	2330	140	4.82	0	50.66
24-MAR	0	140	4.55	0	51.10	24-MAR	30	140	4.25	0	51.55
24-MAR	100	140	3.50	0	52.48	24-MAR	130	140	2.75	0	53.42

TROPIC HEAT HALF-HOURLY POSITIONS

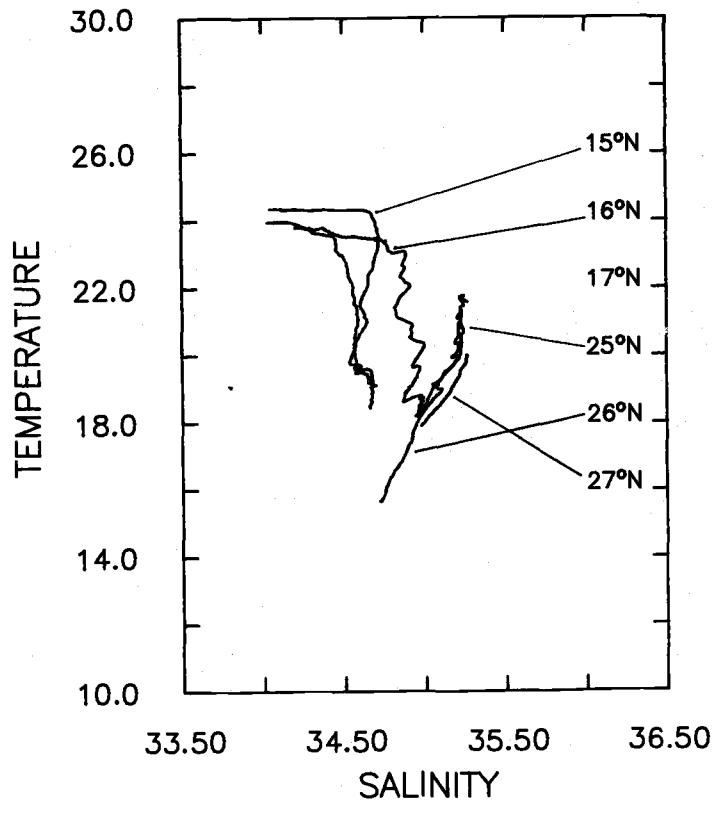
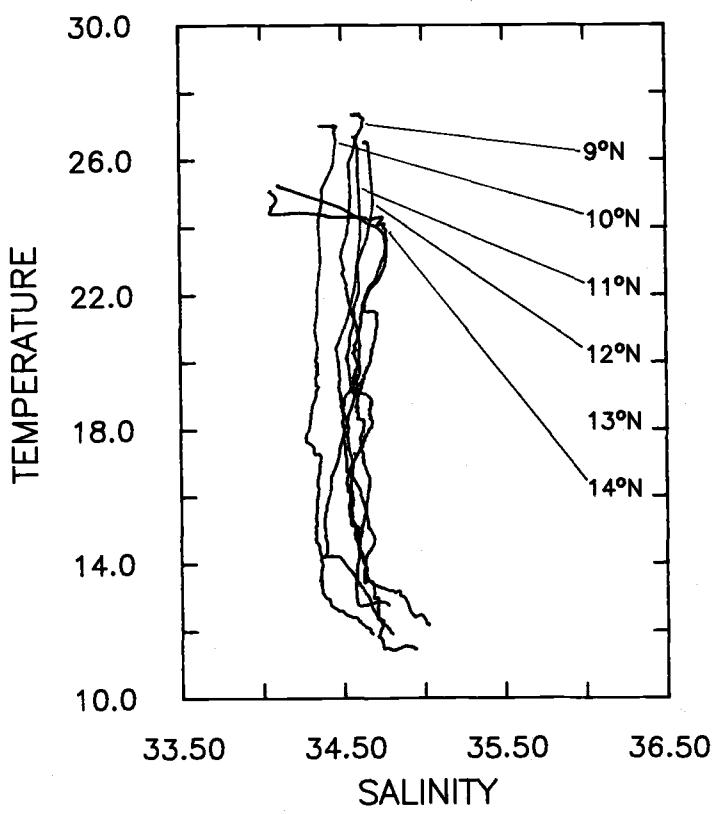
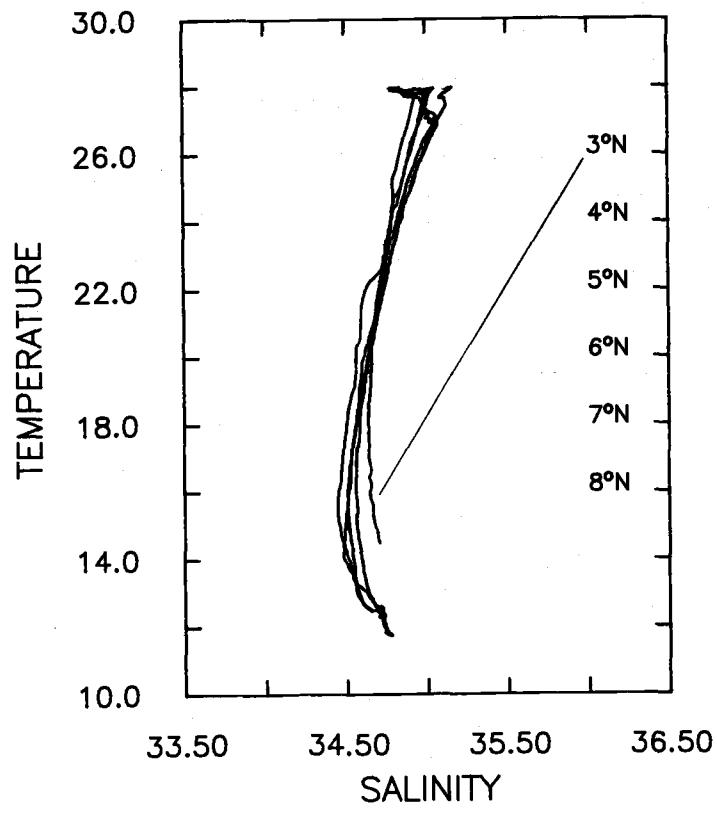
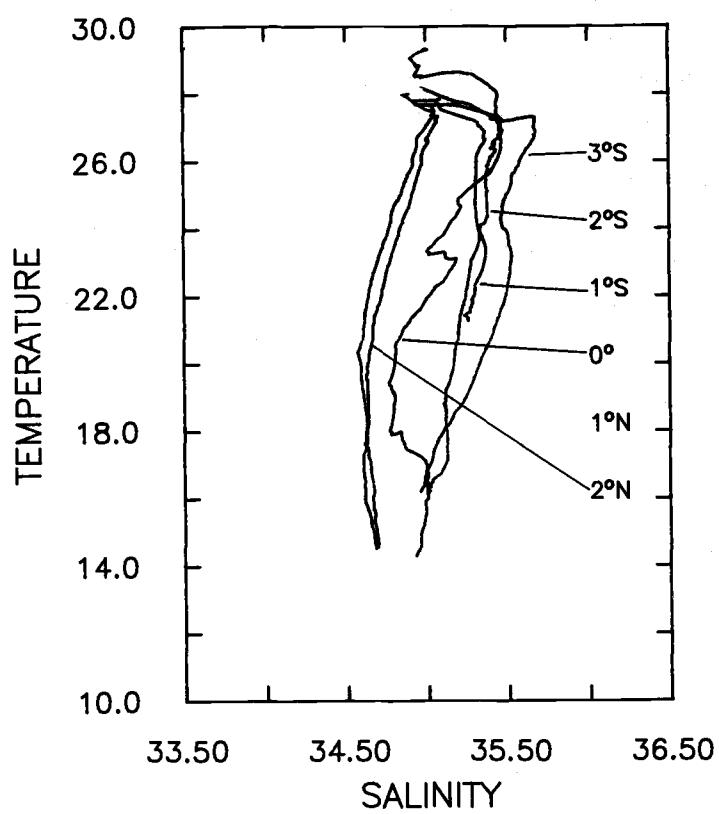
DATE	TIME	LONGITUDE	LATITUDE	DATE	TIME	LONGITUDE	LATITUDE
24-MAR	200	140 2.01	0 54.35	24-MAR	230	140 1.26	0 55.28
24-MAR	300	140 0.52	0 56.22	24-MAR	330	140 0.13	0 55.57
24-MAR	400	140 0.10	0 53.33	24-MAR	430	140 0.07	0 51.08
24-MAR	500	140 0.04	0 48.84	24-MAR	530	140 0.01	0 46.60
24-MAR	600	139 59.99	0 44.36	24-MAR	630	139 59.96	0 42.11
24-MAR	700	139 59.93	0 39.87	24-MAR	730	139 59.90	0 37.63
24-MAR	800	139 59.87	0 35.38	24-MAR	830	139 59.84	0 33.14
24-MAR	900	139 59.81	0 30.89	24-MAR	930	139 59.79	0 28.65
24-MAR	1000	139 59.76	0 26.41	24-MAR	1030	139 59.73	0 24.16
24-MAR	1100	139 59.71	0 21.92	24-MAR	1130	139 59.68	0 19.67
24-MAR	1200	139 59.65	0 17.43	24-MAR	1230	139 59.62	0 15.19
24-MAR	1300	139 59.59	0 12.95	24-MAR	1330	139 59.56	0 10.70
24-MAR	1400	139 59.54	0 8.46	24-MAR	1430	139 59.53	0 6.35
24-MAR	1500	139 59.53	0 4.29	24-MAR	1530	139 59.53	0 2.23
24-MAR	1600	139 59.53	0 0.16	24-MAR	1630	139 59.59	-0 1.87
24-MAR	1700	139 59.71	-0 3.88	24-MAR	1730	139 59.81	-0 5.88
24-MAR	1800	139 59.92	-0 7.89	24-MAR	1830	140 0.04	-0 9.89
24-MAR	1900	140 0.14	-0 11.90	24-MAR	1930	140 0.26	-0 13.90
24-MAR	2000	140 0.37	-0 15.96	24-MAR	2030	140 0.53	-0 18.88
24-MAR	2100	140 0.70	-0 21.80	24-MAR	2130	140 0.86	-0 24.73
24-MAR	2200	140 1.03	-0 27.65	24-MAR	2230	140 1.03	-0 30.50
24-MAR	2300	140 0.82	-0 33.28	24-MAR	2330	140 0.62	-0 36.05
25-MAR	0	140 0.41	-0 38.82	25-MAR	30	140 0.31	-0 41.70
25-MAR	100	140 0.20	-0 44.58	25-MAR	130	140 0.10	-0 47.45
25-MAR	200	140 0.03	-0 50.29	25-MAR	230	140 0.00	-0 53.05
25-MAR	300	140 0.03	-0 55.86	25-MAR	330	140 0.22	-0 58.76
25-MAR	400	140 0.40	-1 1.66	25-MAR	430	140 0.59	-1 4.55
25-MAR	500	140 0.77	-1 7.46	25-MAR	530	140 0.96	-1 10.36
25-MAR	600	140 0.97	-1 13.25	25-MAR	630	140 0.95	-1 16.14
25-MAR	700	140 0.93	-1 19.03	25-MAR	730	140 0.91	-1 21.92
25-MAR	800	140 0.89	-1 24.81	25-MAR	830	140 0.79	-1 27.62
25-MAR	900	140 0.64	-1 30.38	25-MAR	930	140 0.50	-1 33.13
25-MAR	1000	140 0.36	-1 35.89	25-MAR	1030	140 0.33	-1 38.62
25-MAR	1100	140 0.30	-1 41.36	25-MAR	1130	140 0.27	-1 44.09
25-MAR	1200	140 0.28	-1 46.86	25-MAR	1230	140 0.32	-1 49.66
25-MAR	1300	140 0.37	-1 52.46	25-MAR	1330	140 0.41	-1 55.27
25-MAR	1400	140 0.26	-1 57.99	25-MAR	1430	140 0.10	-2 0.71
25-MAR	1500	139 59.95	-2 3.43	25-MAR	1530	139 59.78	-2 6.14
25-MAR	1600	139 59.63	-2 8.86	25-MAR	1630	139 59.47	-2 11.58
25-MAR	1700	139 59.31	-2 14.30	25-MAR	1730	139 59.12	-2 17.07
25-MAR	1800	139 58.90	-2 19.88	25-MAR	1830	139 58.70	-2 22.71
25-MAR	1900	139 58.52	-2 25.55	25-MAR	1930	139 58.42	-2 28.36
25-MAR	2000	139 58.37	-2 31.32	25-MAR	2030	139 58.40	-2 34.49
25-MAR	2100	139 58.59	-2 36.97	25-MAR	2130	139 58.82	-2 39.31
25-MAR	2200	139 58.96	-2 41.89	25-MAR	2230	139 58.89	-2 44.41
25-MAR	2300	139 58.82	-2 46.93	25-MAR	2330	139 58.78	-2 49.47
26-MAR	0	139 58.88	-2 52.06	26-MAR	30	139 58.99	-2 54.64
26-MAR	100	139 59.09	-2 57.23	26-MAR	130	139 59.20	-2 59.81
26-MAR	200	139 59.30	-3 2.40	26-MAR	230	139 59.41	-3 4.99
26-MAR	300	139 59.51	-3 7.57	26-MAR	330	139 59.62	-3 10.16

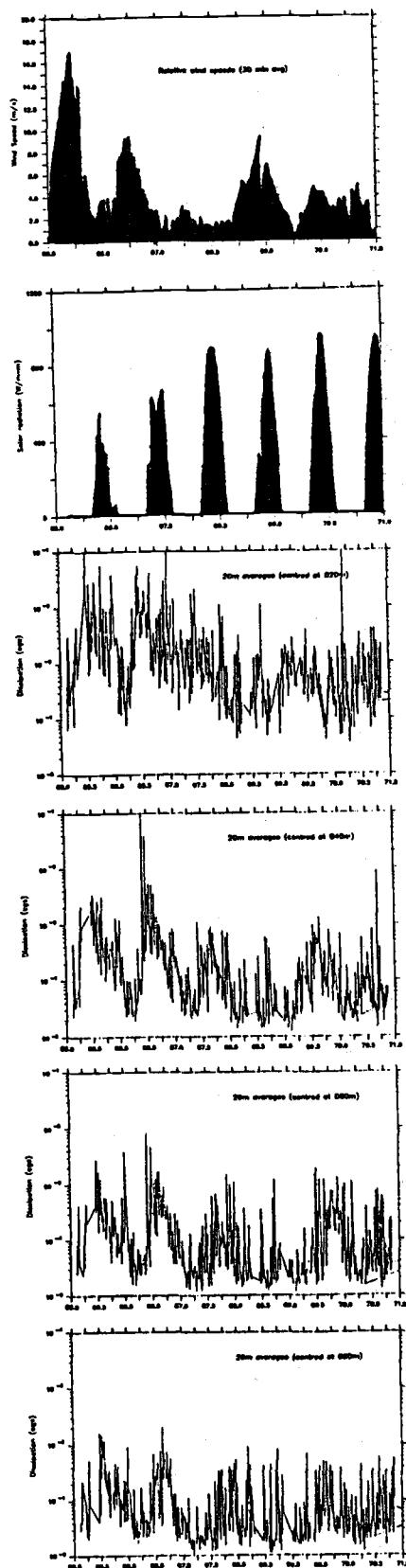
TROPIC HEAT HALF-HOURLY POSITIONS

DATE	TIME	LONGITUDE	LATITUDE	DATE	TIME	LONGITUDE	LATITUDE
26-MAR	400	139 59.72	-3 12.75	26-MAR	430	139 59.82	-3 15.34
26-MAR	500	139 59.93	-3 17.92	26-MAR	530	140 0.03	-3 20.51
26-MAR	600	140 0.13	-3 23.09	26-MAR	630	140 0.11	-3 25.48
26-MAR	700	140 0.07	-3 27.83	26-MAR	730	140 0.02	-3 30.17
26-MAR	800	139 59.98	-3 32.53	26-MAR	830	139 59.95	-3 34.93
26-MAR	900	139 59.92	-3 37.34	26-MAR	930	139 59.89	-3 39.75
26-MAR	1000	139 59.86	-3 42.16	26-MAR	1030	139 59.83	-3 44.56
26-MAR	1100	139 59.80	-3 46.97	26-MAR	1130	139 59.77	-3 49.38
26-MAR	1200	139 59.74	-3 51.79	26-MAR	1230	139 59.71	-3 54.19
26-MAR	1300	139 59.68	-3 56.60	26-MAR	1330	139 59.65	-3 59.01
26-MAR	1400	139 59.62	-4 1.42	26-MAR	1430	139 59.59	-4 3.82
26-MAR	1500	139 59.50	-4 6.13	26-MAR	1530	139 59.37	-4 8.33
26-MAR	1600	139 59.24	-4 10.54	26-MAR	1630	139 59.11	-4 12.74
26-MAR	1700	139 58.98	-4 14.95	26-MAR	1730	139 58.85	-4 17.16
26-MAR	1800	139 58.86	-4 19.31	26-MAR	1830	139 58.97	-4 21.41
26-MAR	1900	139 59.10	-4 23.50	26-MAR	1930	139 59.69	-4 25.21
26-MAR	2000	139 59.77	-4 27.26	26-MAR	2030	139 59.86	-4 29.32
26-MAR	2100	139 59.95	-4 31.37	26-MAR	2130	140 0.03	-4 33.43
26-MAR	2200	140 0.11	-4 35.48	26-MAR	2230	140 0.20	-4 37.54
26-MAR	2300	140 0.28	-4 39.59	26-MAR	2330	140 0.37	-4 41.65
27-MAR	0	140 0.46	-4 43.70	27-MAR	30	140 0.54	-4 45.75
27-MAR	100	140 0.62	-4 47.81	27-MAR	130	140 0.71	-4 49.86
27-MAR	200	140 0.79	-4 51.91	27-MAR	230	140 0.88	-4 53.94
27-MAR	300	140 0.98	-4 55.88	27-MAR	330	140 1.09	-4 57.82
27-MAR	400	140 1.13	-4 59.75	27-MAR	430	140 1.04	-5 1.65
27-MAR	500	140 0.94	-5 3.55	27-MAR	530	140 0.40	-5 5.66
27-MAR	600	140 0.46	-5 7.21	27-MAR	630	140 0.91	-5 8.39
27-MAR	700	140 0.60	-5 10.49	27-MAR	730	140 0.29	-5 12.61
27-MAR	800	139 59.98	-5 14.71	27-MAR	830	139 59.66	-5 16.82
27-MAR	900	139 59.66	-5 18.60	27-MAR	930	139 59.70	-5 20.33
27-MAR	1000	139 59.75	-5 22.06	27-MAR	1030	140 0.11	-5 23.80
27-MAR	1100	140 0.51	-5 25.53	27-MAR	1130	140 0.31	-5 27.26
27-MAR	1200	139 59.83	-5 28.98	27-MAR	1230	139 59.57	-5 30.68
27-MAR	1300	139 59.97	-5 32.32	27-MAR	1330	140 0.36	-5 33.97
27-MAR	1400	140 0.75	-5 35.60	27-MAR	1430	140 0.82	-5 36.62
27-MAR	1500	140 0.74	-5 37.38	27-MAR	1530	140 0.67	-5 38.14
27-MAR	1600	140 2.29	-5 40.34	27-MAR	1630	140 5.50	-5 43.88
27-MAR	1700	140 8.70	-5 47.43	27-MAR	1730	140 11.90	-5 50.98
27-MAR	1800	140 15.17	-5 55.62	27-MAR	1830	140 18.83	-6 0.43
27-MAR	1900	140 23.15	-6 5.32	27-MAR	1930	140 26.78	-6 10.06
27-MAR	2000	140 30.28	-6 14.77	27-MAR	2030	140 34.31	-6 19.70
27-MAR	2100	140 38.34	-6 24.62	27-MAR	2130	140 42.17	-6 29.73
27-MAR	2200	140 45.76	-6 34.67	27-MAR	2230	140 49.22	-6 39.47
27-MAR	2300	140 52.69	-6 44.26	27-MAR	2330	140 56.16	-6 49.05
28-MAR	0	140 59.63	-6 53.84	28-MAR	30	141 3.10	-6 58.63
28-MAR	100	141 6.56	-7 3.42	28-MAR	130	141 10.03	-7 8.21
28-MAR	200	141 13.50	-7 13.00	28-MAR	230	141 16.97	-7 17.80
28-MAR	300	141 20.44	-7 22.59	28-MAR	330	141 23.90	-7 27.38
28-MAR	400	141 27.37	-7 32.17	28-MAR	430	141 30.84	-7 36.96
28-MAR	500	141 34.31	-7 41.75	28-MAR	530	141 37.78	-7 46.54

TROPIC HEAT HALF-HOURLY POSITIONS

DATE	TIME	LONGITUDE	LATITUDE	DATE	TIME	LONGITUDE	LATITUDE
28-MAR	600	141 41.24	-7 51.34	28-MAR	630	141 44.71	-7 56.12
28-MAR	700	141 48.29	-8 1.14	28-MAR	730	141 52.01	-8 6.18
28-MAR	800	141 55.72	-8 11.22	28-MAR	830	141 59.44	-8 16.26
28-MAR	900	142 3.16	-8 21.30	28-MAR	930	142 6.87	-8 26.33
28-MAR	1000	142 10.60	-8 31.33	28-MAR	1030	142 14.33	-8 36.34
28-MAR	1100	142 18.07	-8 41.34	28-MAR	1130	142 21.80	-8 46.34
28-MAR	1200	142 25.51	-8 51.36	28-MAR	1230	142 29.22	-8 56.39
28-MAR	1300	142 32.93	-9 1.43	28-MAR	1330	142 36.64	-9 6.46
28-MAR	1400	142 40.34	-9 11.50	28-MAR	1430	142 44.05	-9 16.52
28-MAR	1500	142 47.77	-9 21.56	28-MAR	1530	142 51.46	-9 26.61
28-MAR	1600	142 55.19	-9 31.67	28-MAR	1630	142 58.91	-9 36.74
28-MAR	1700	143 2.64	-9 41.80	28-MAR	1730	143 6.40	-9 46.89
28-MAR	1800	143 10.19	-9 51.99	28-MAR	1830	143 13.99	-9 57.03
28-MAR	1900	143 17.78	-10 1.97	28-MAR	1930	143 21.58	-10 6.92
28-MAR	2000	143 25.37	-10 11.86	28-MAR	2030	143 29.17	-10 16.80
28-MAR	2100	143 32.98	-10 21.73	28-MAR	2130	143 36.87	-10 26.56
28-MAR	2200	143 40.76	-10 31.39	28-MAR	2230	143 44.66	-10 36.22
28-MAR	2300	143 48.10	-10 41.14	28-MAR	2330	143 51.62	-10 46.04
29-MAR	0	143 55.44	-10 50.86	29-MAR	30	143 59.24	-10 55.70
29-MAR	100	144 3.02	-11 0.55	29-MAR	130	144 6.77	-11 5.45
29-MAR	200	144 10.52	-11 10.39	29-MAR	230	144 14.27	-11 15.32
29-MAR	300	144 18.02	-11 20.26	29-MAR	330	144 21.77	-11 25.19
29-MAR	400	144 25.51	-11 30.12	29-MAR	430	144 29.02	-11 35.15
29-MAR	500	144 32.51	-11 40.18				





WIND

SUN

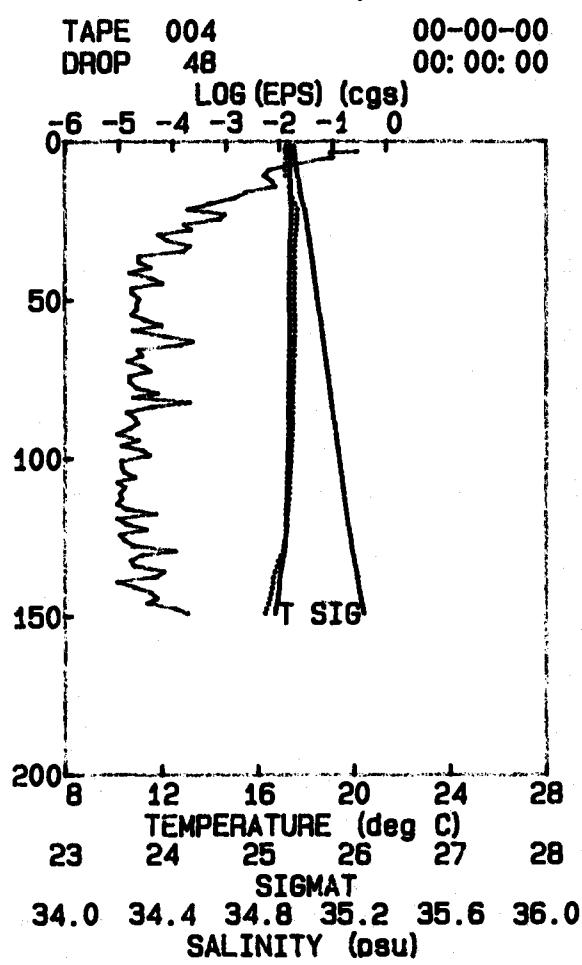
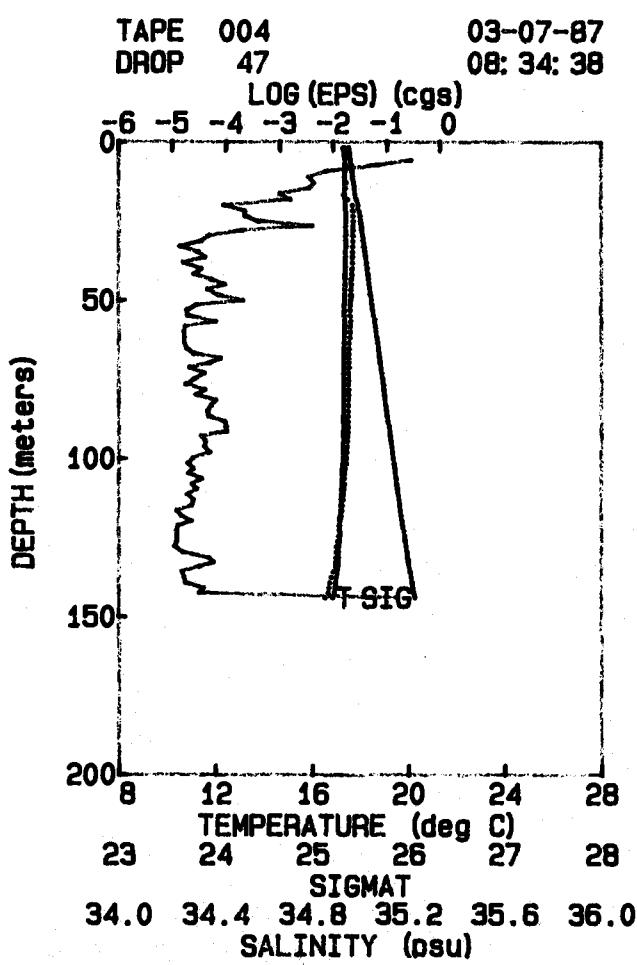
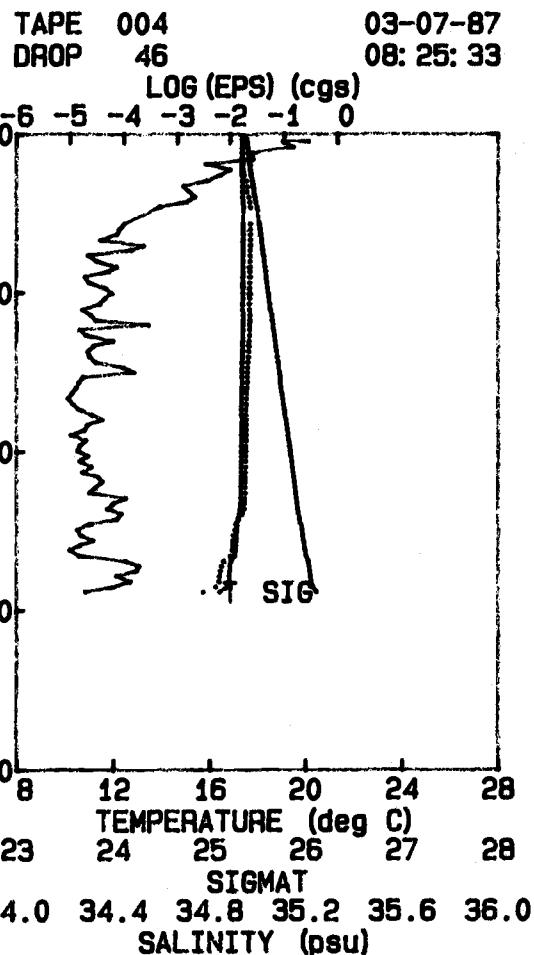
Wind/insolation/dissipation vs time as the ship proceeded from 33°N to 25°N along 140°W. The top plot represents wind speed, the next represents solar insolation. The bottom 4 plots show 20-meter vertically averaged dissipation rate, ϵ , centered at depths of 20, 40, 60 and 80 meters.

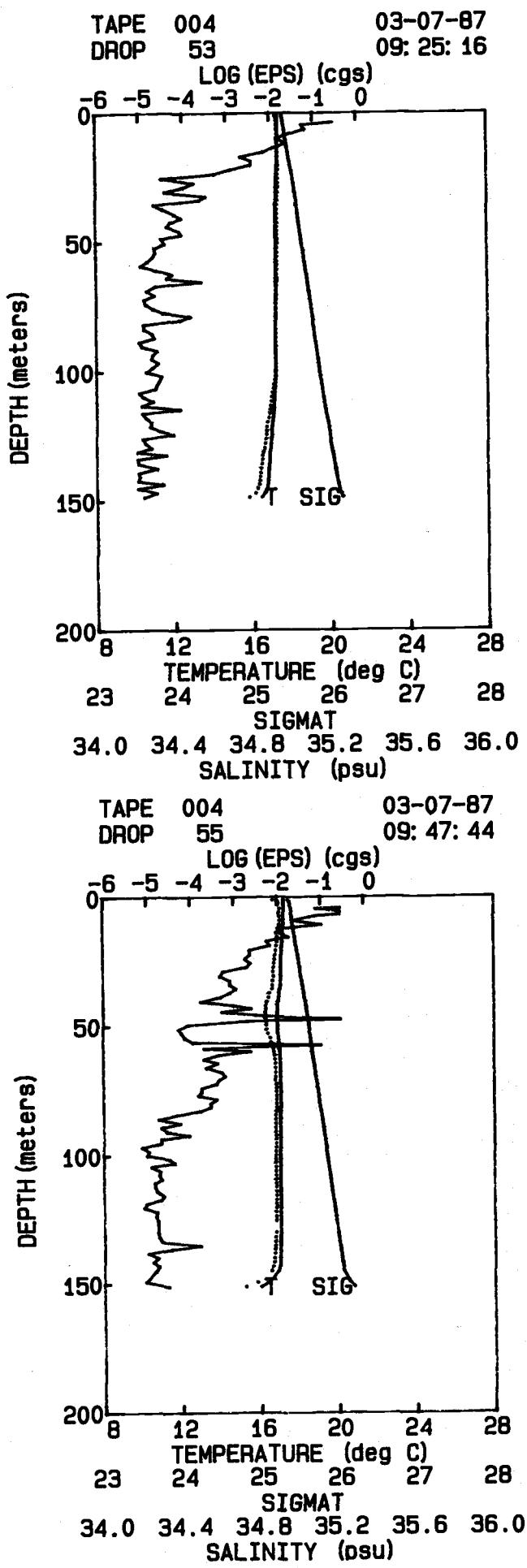
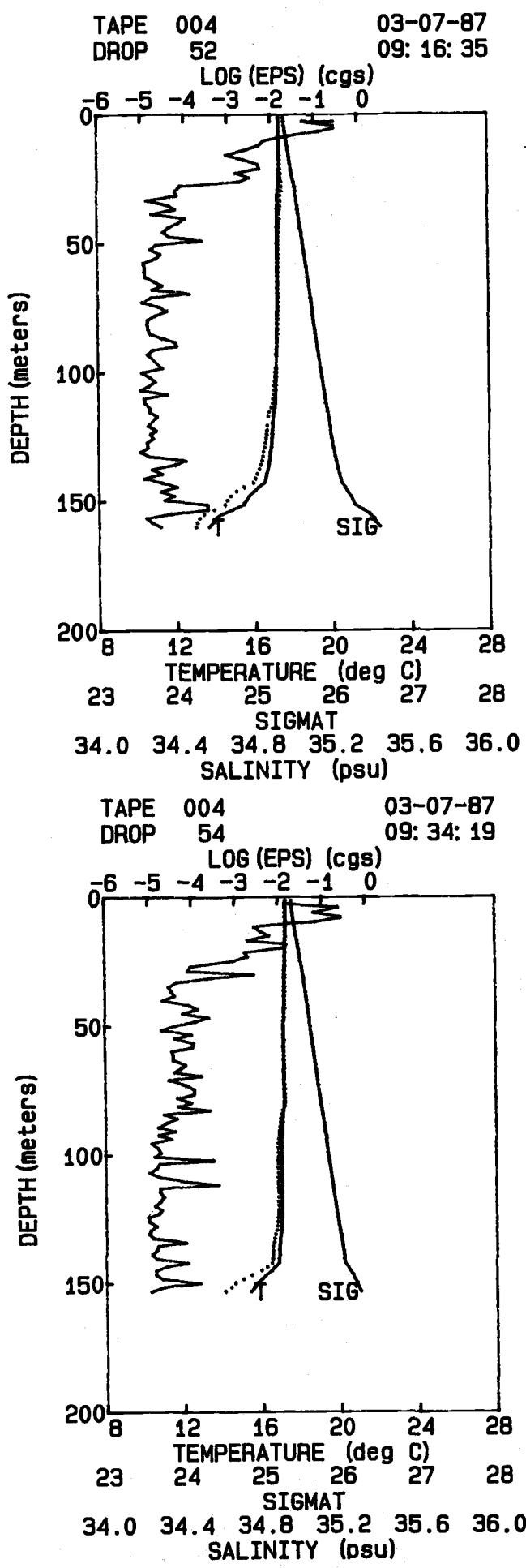
10-30 METER DISSIPATION RATE

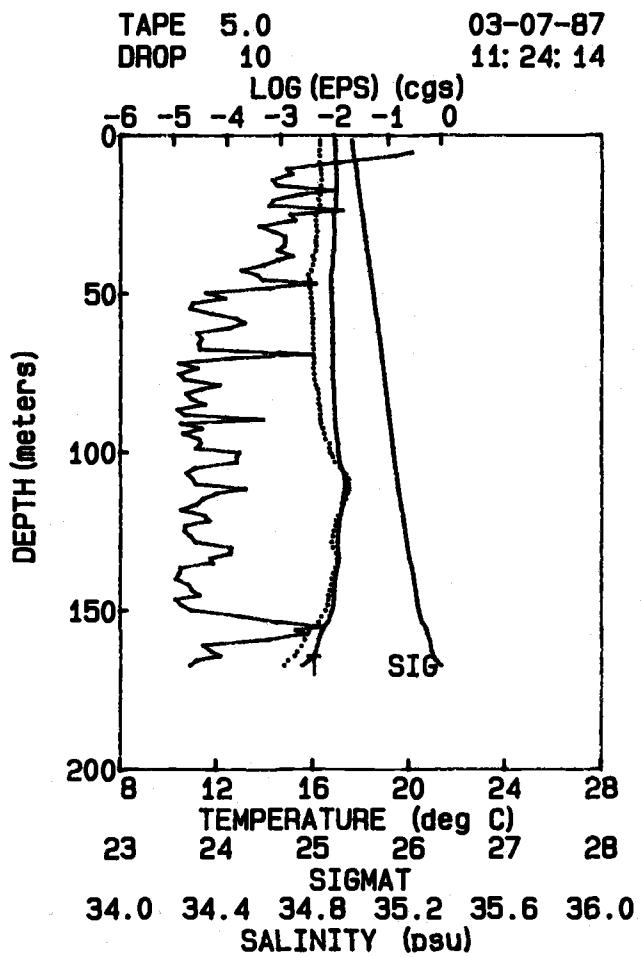
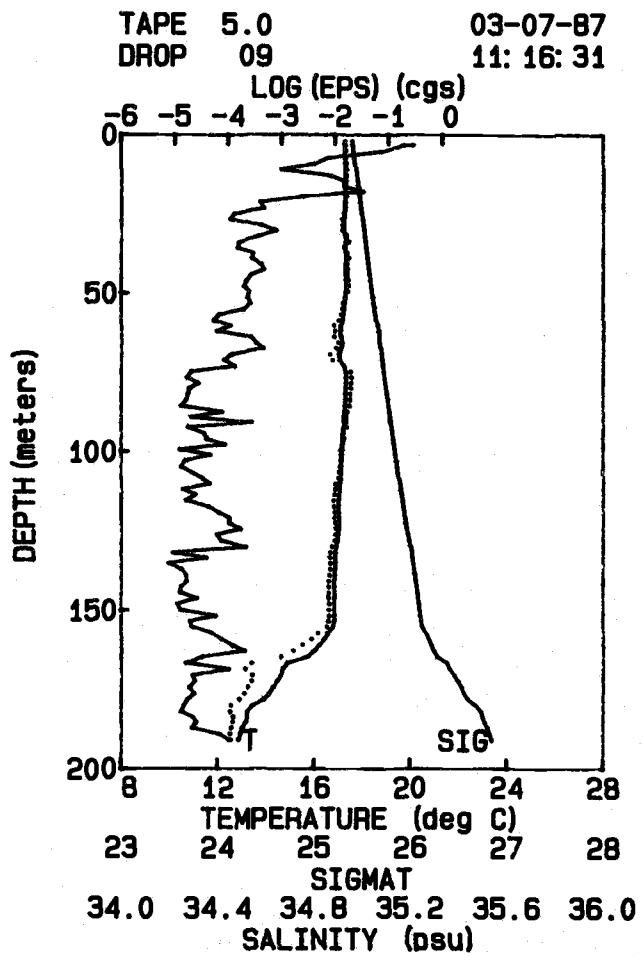
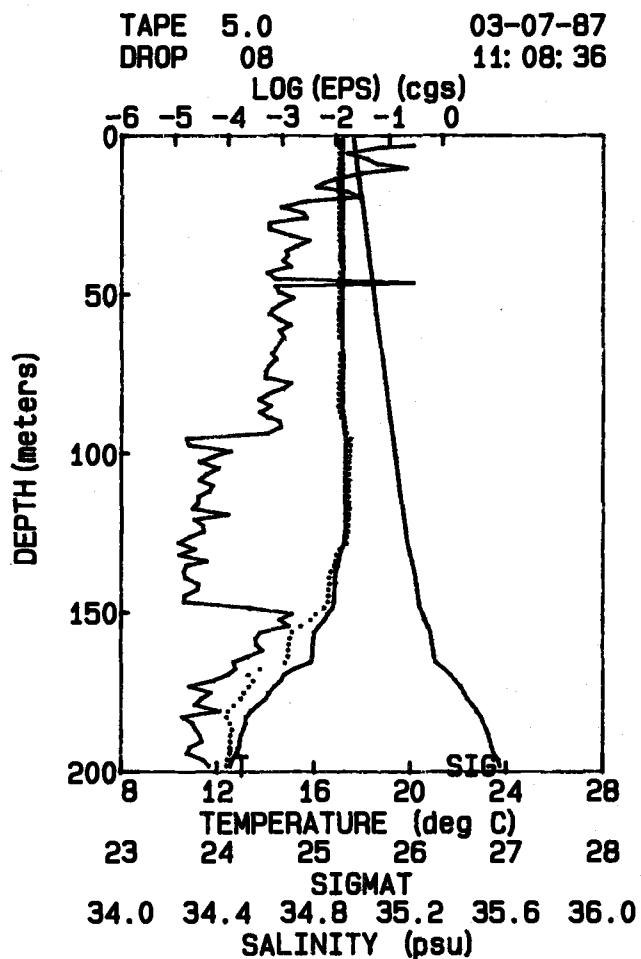
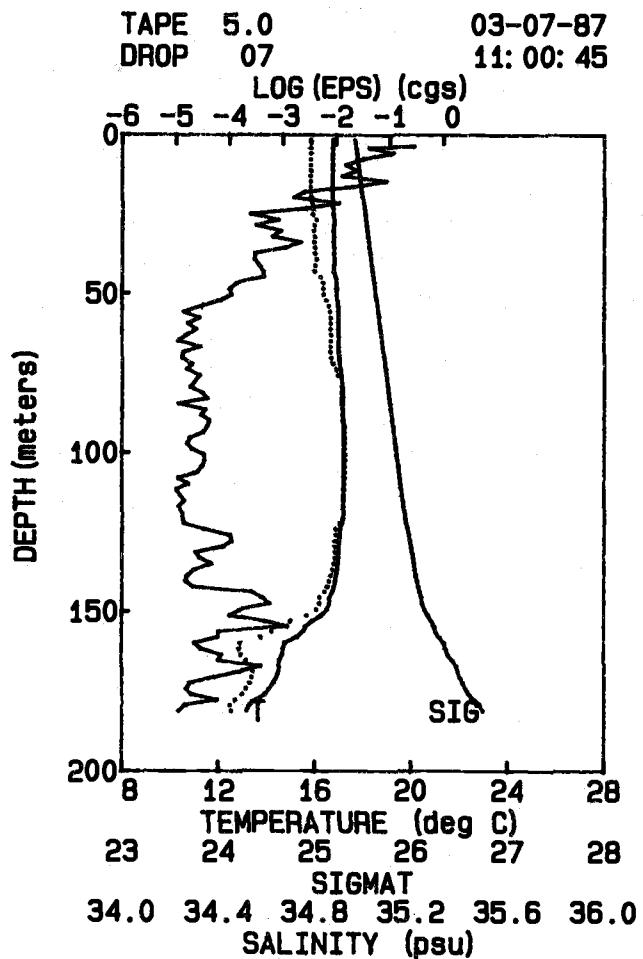
30-50 METER DISSIPATION RATE

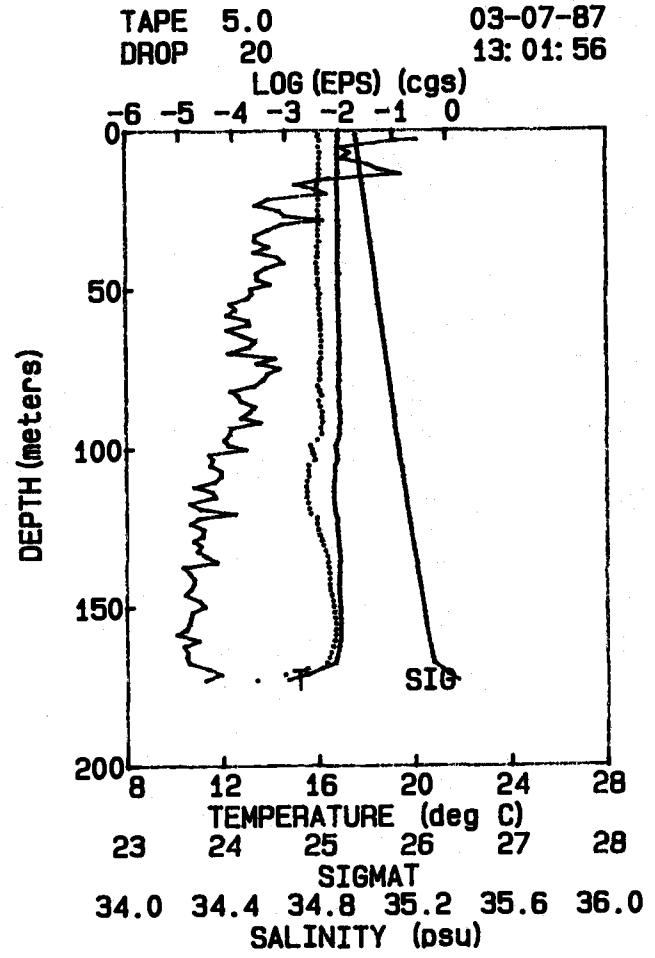
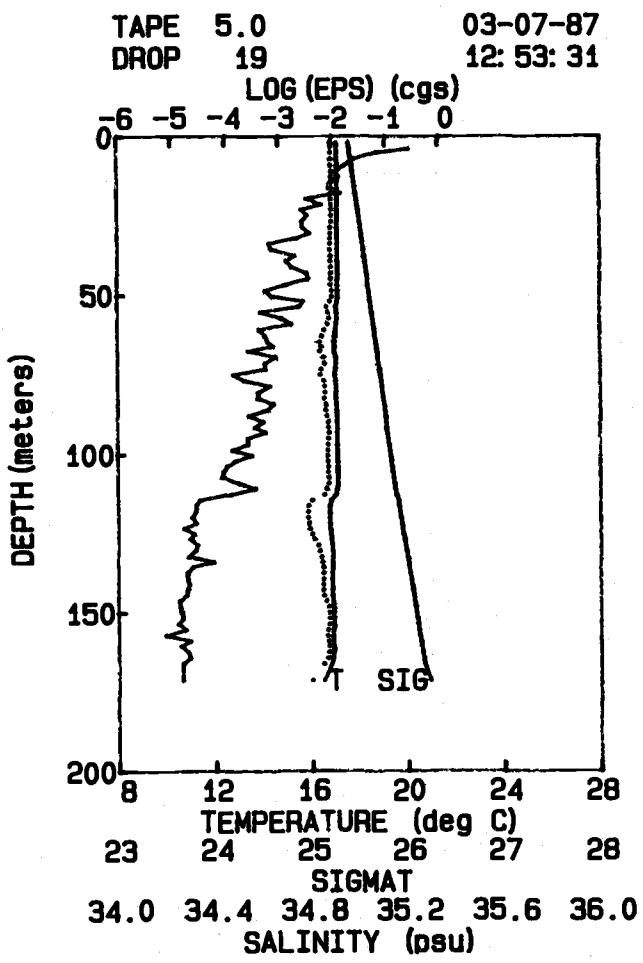
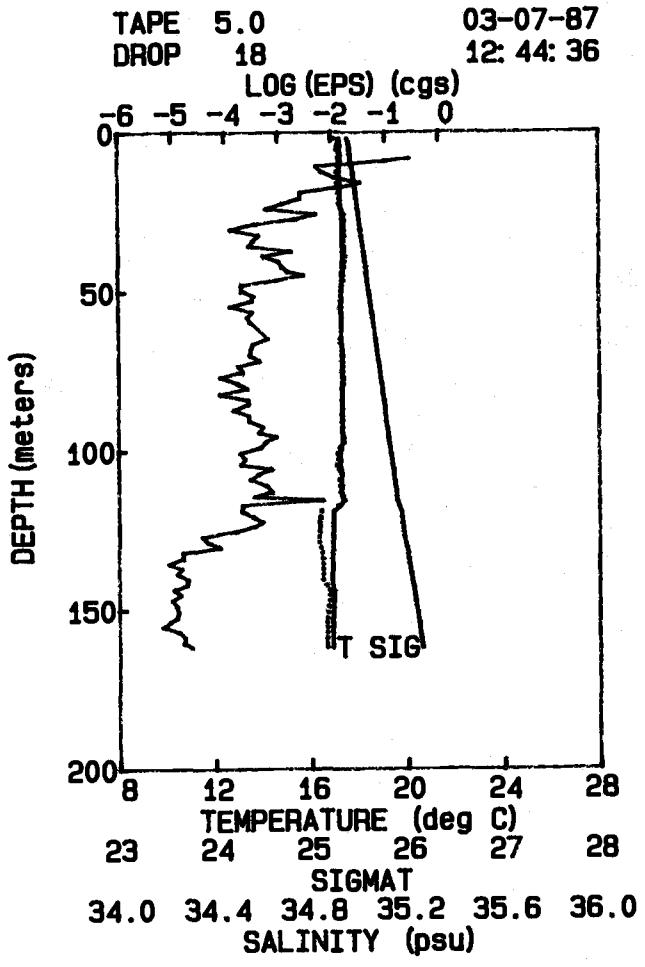
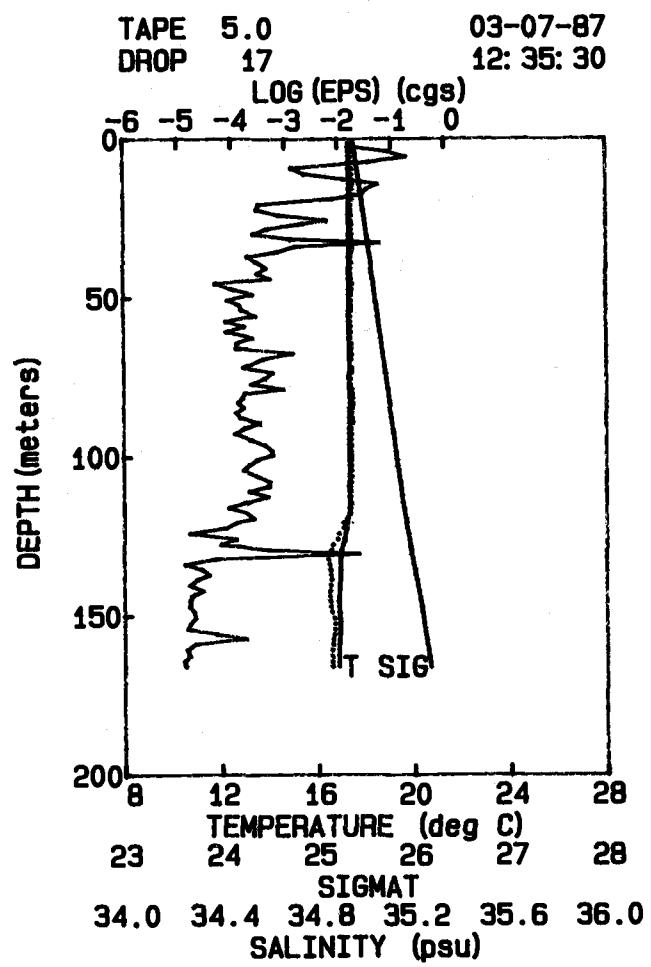
50-70 METER DISSIPATION RATE

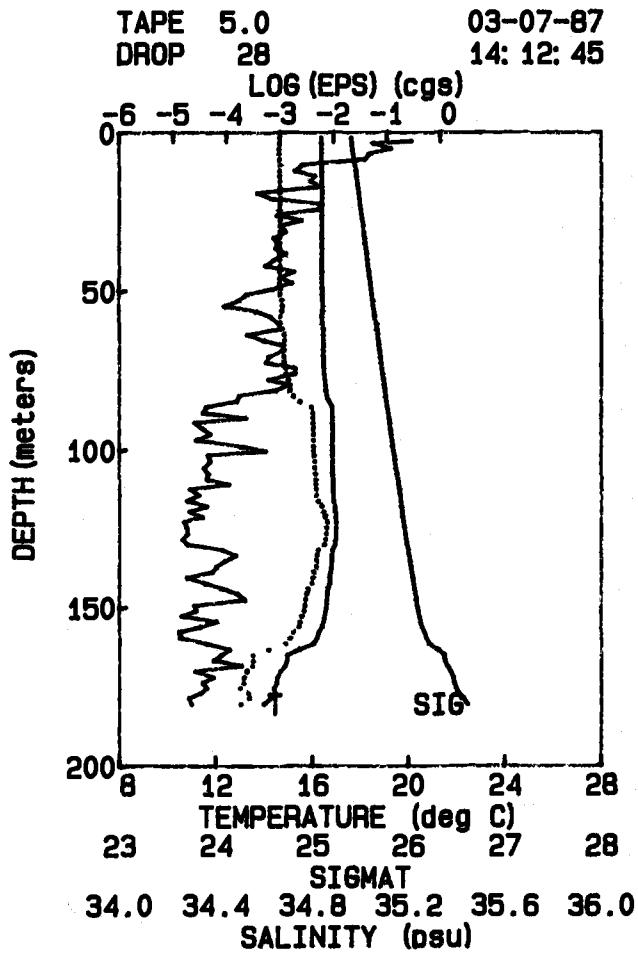
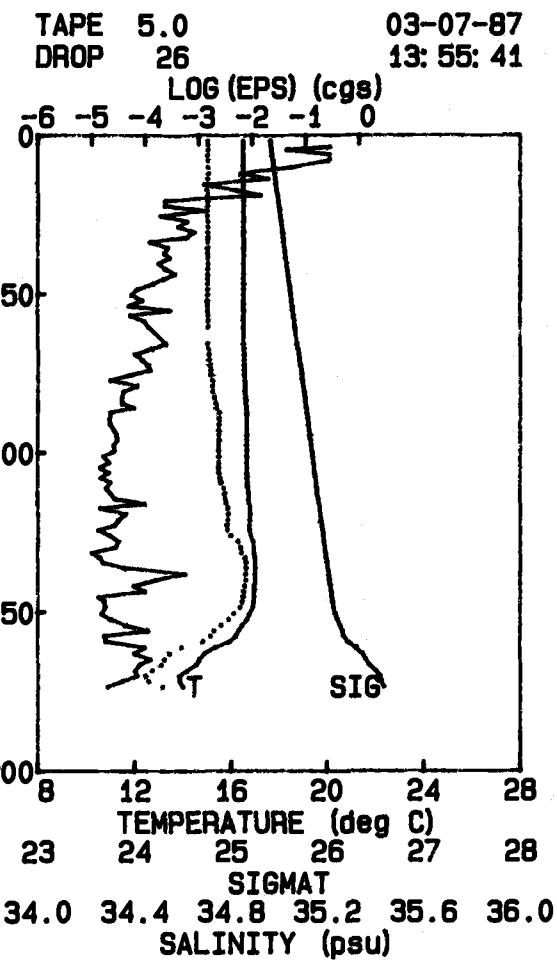
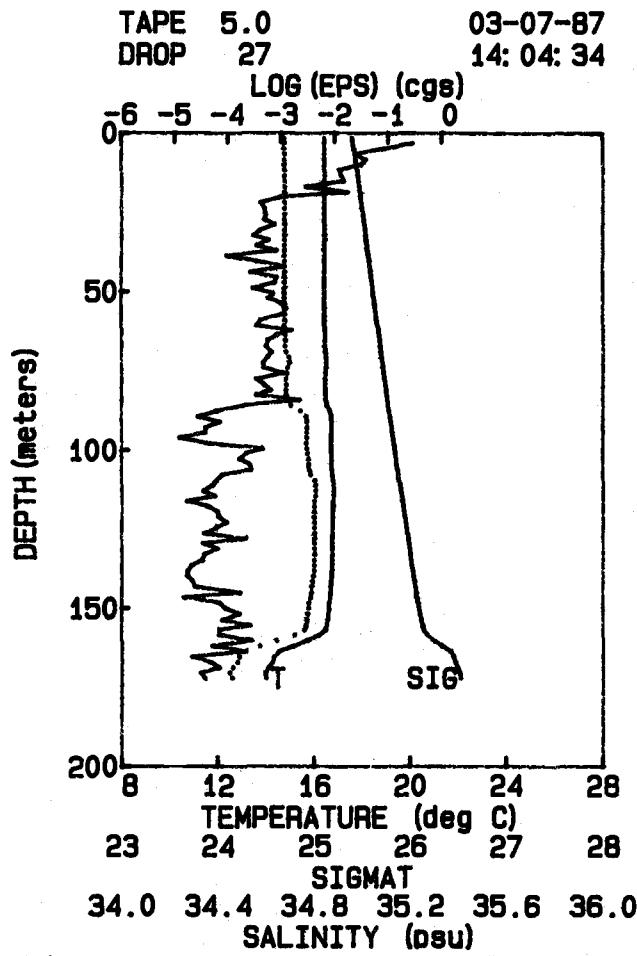
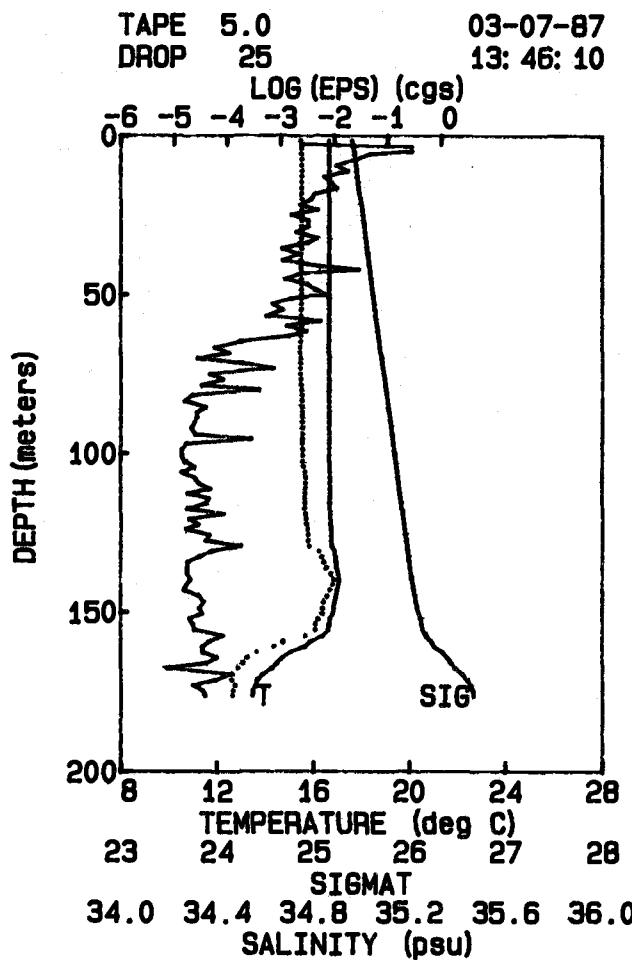
70-90 METER DISSIPATION RATE

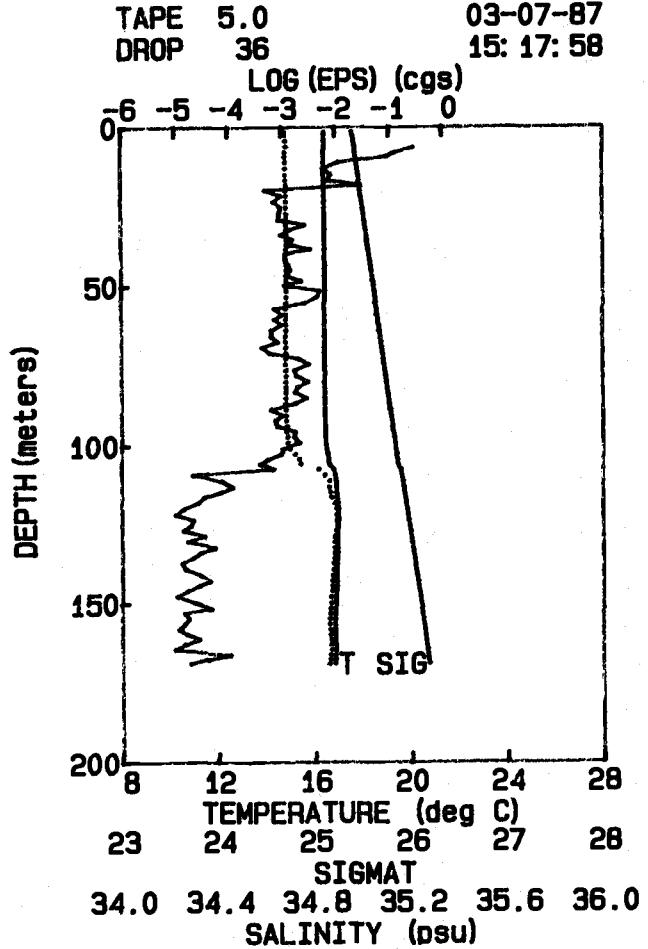
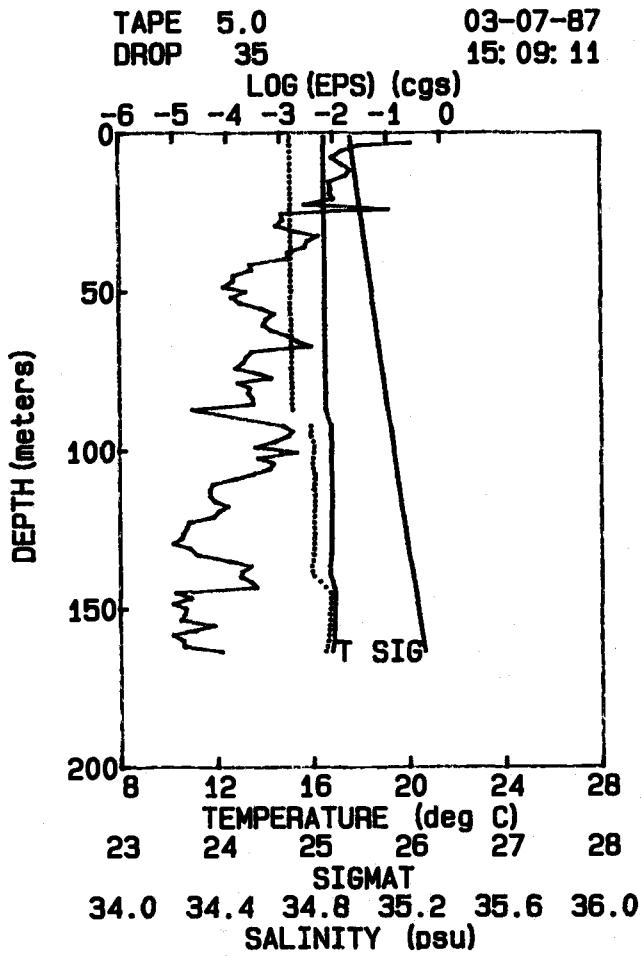
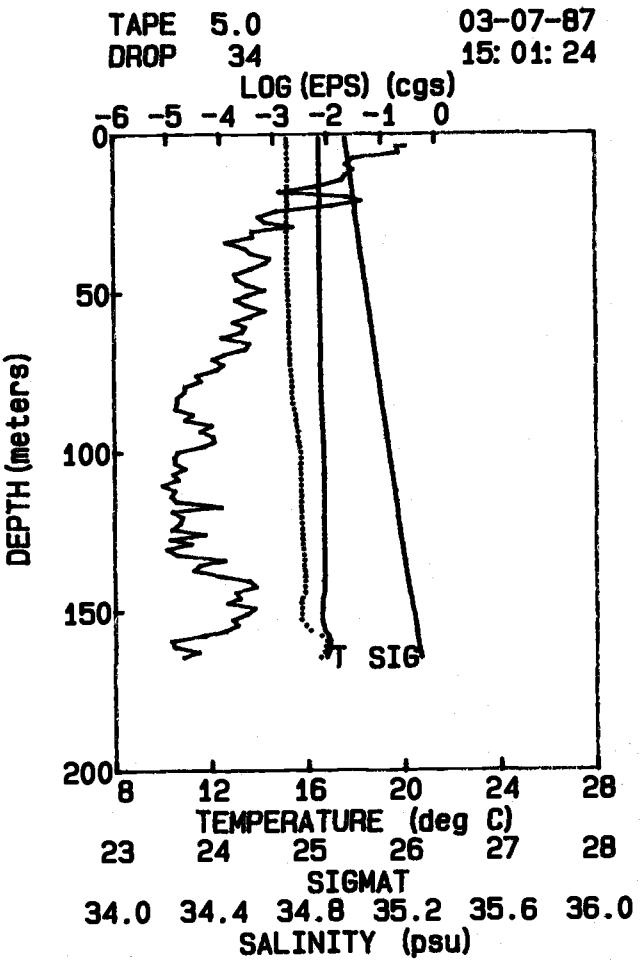
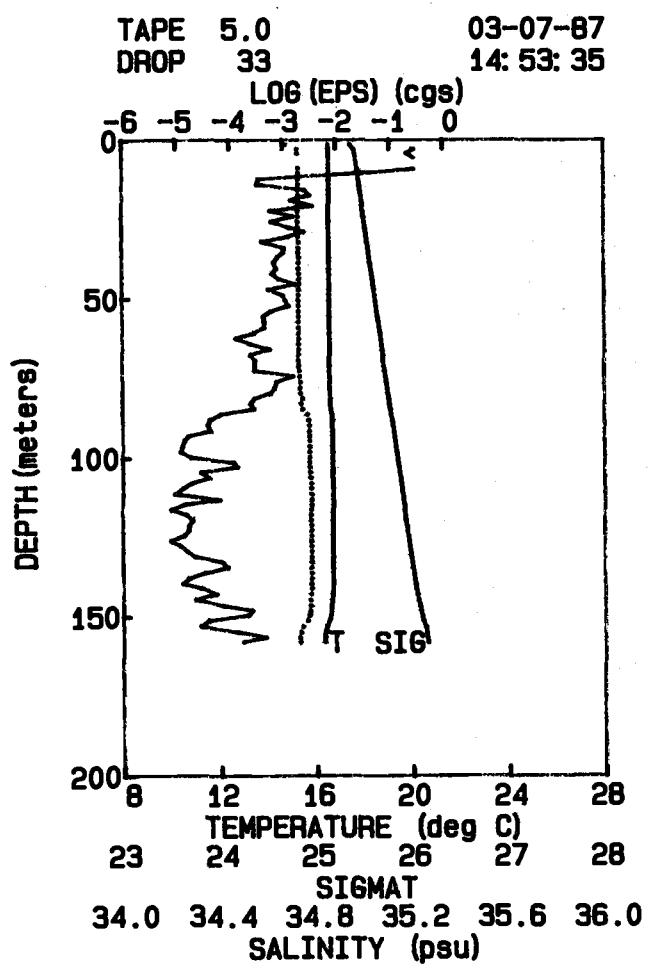


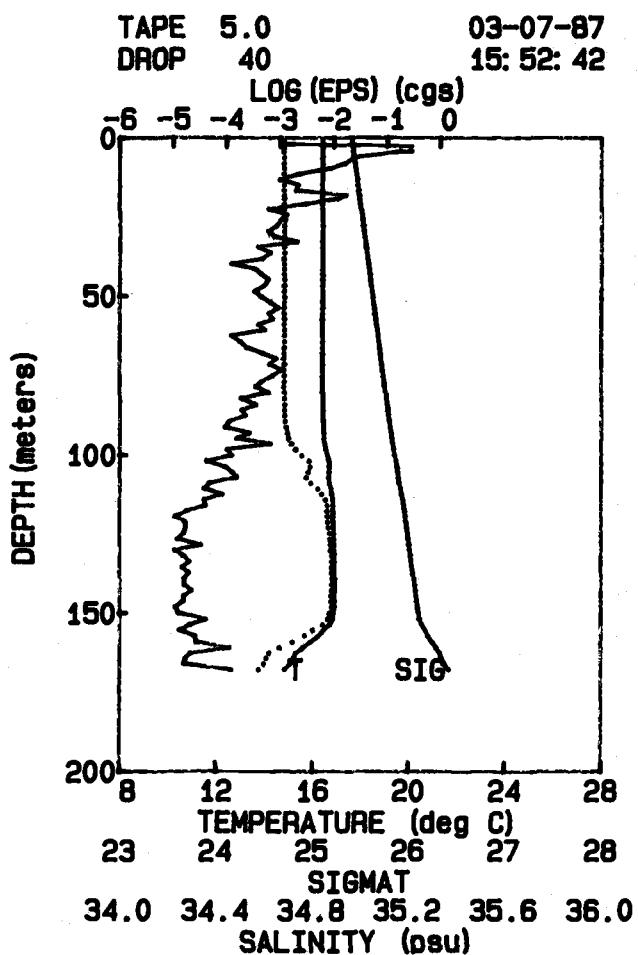
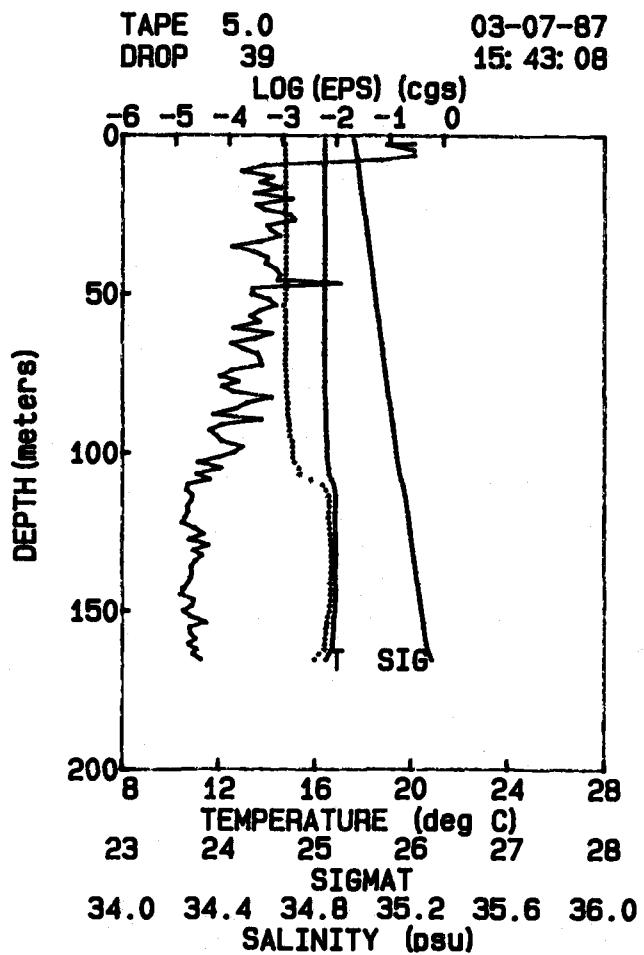
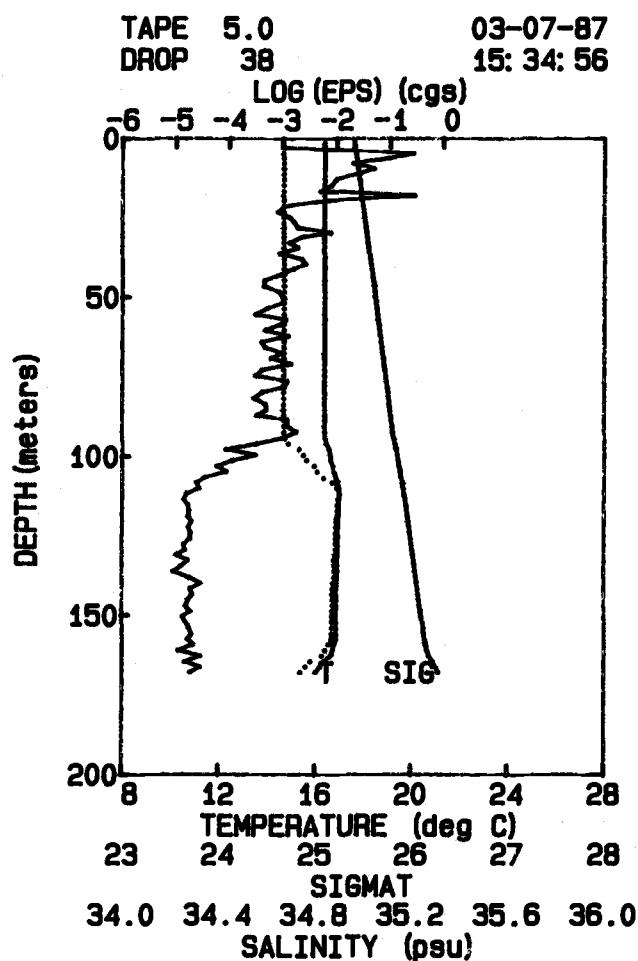
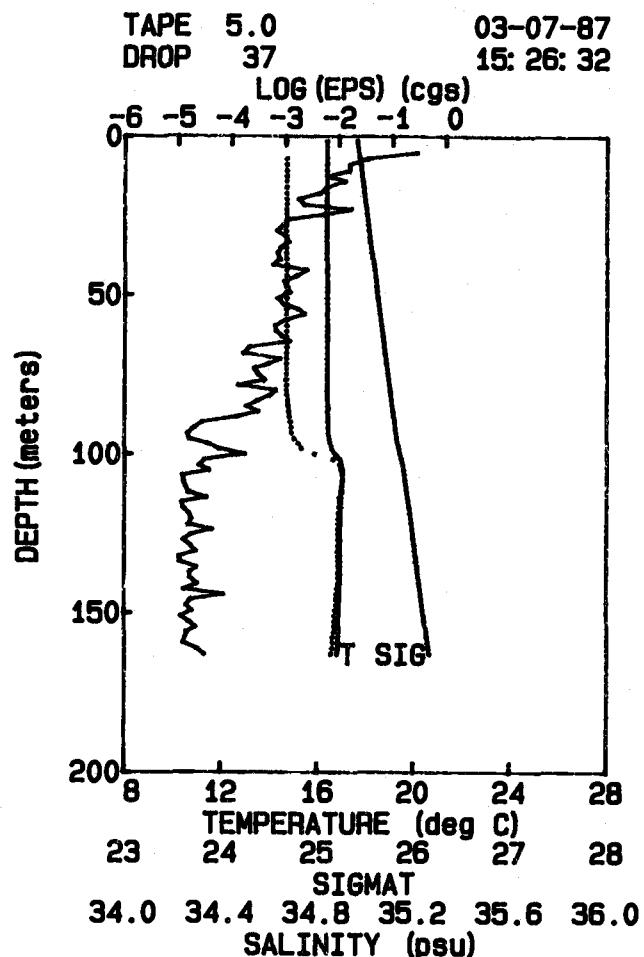


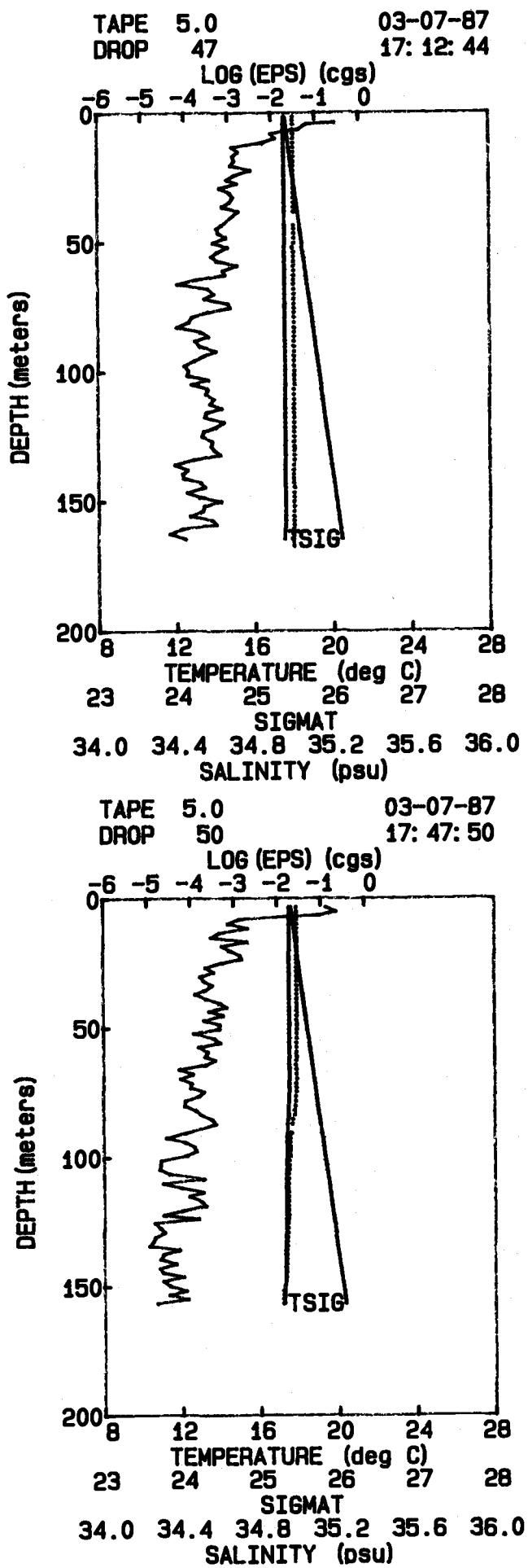
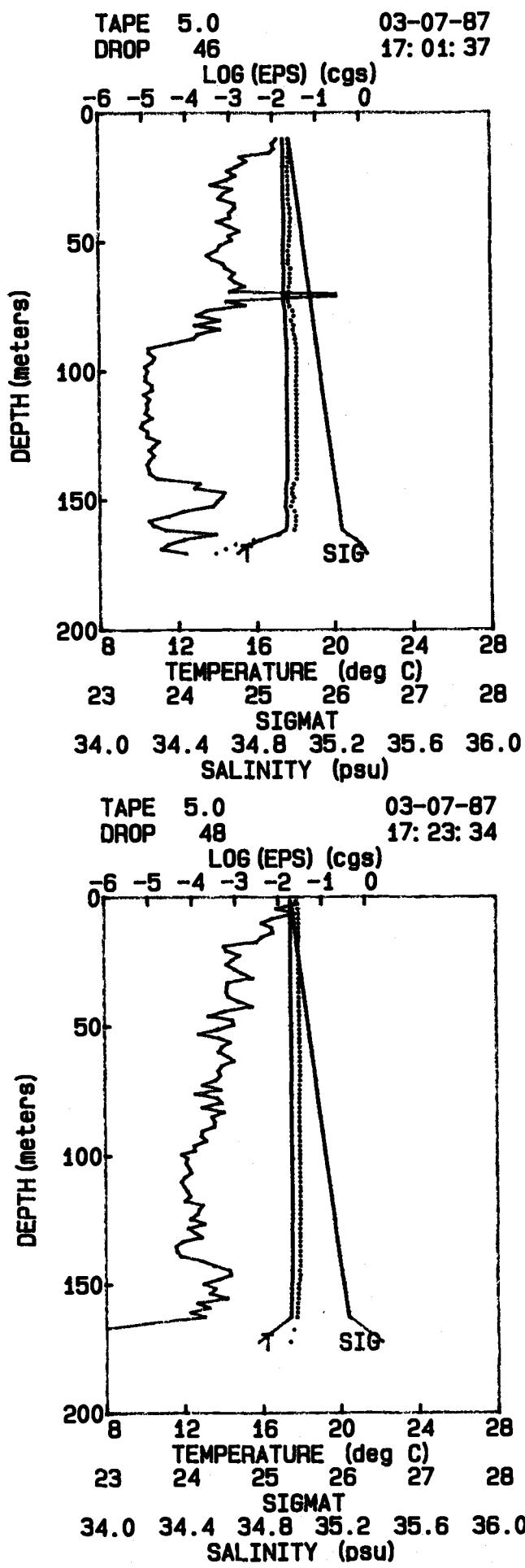


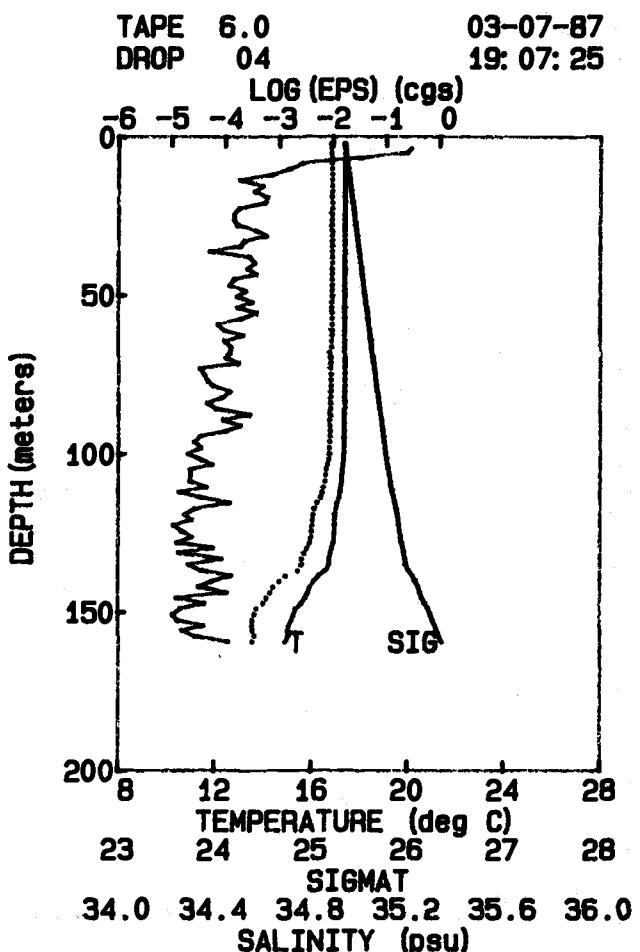
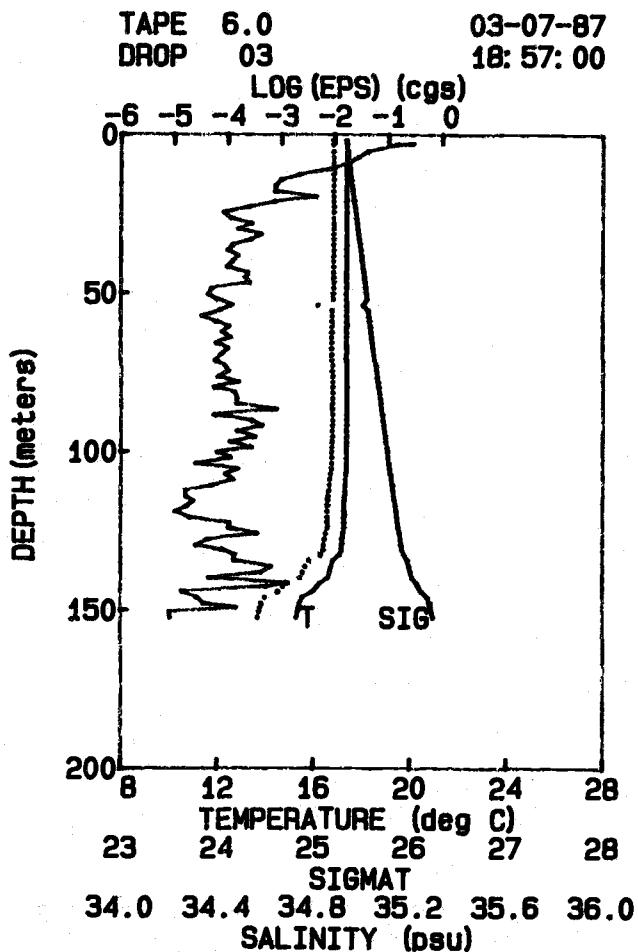
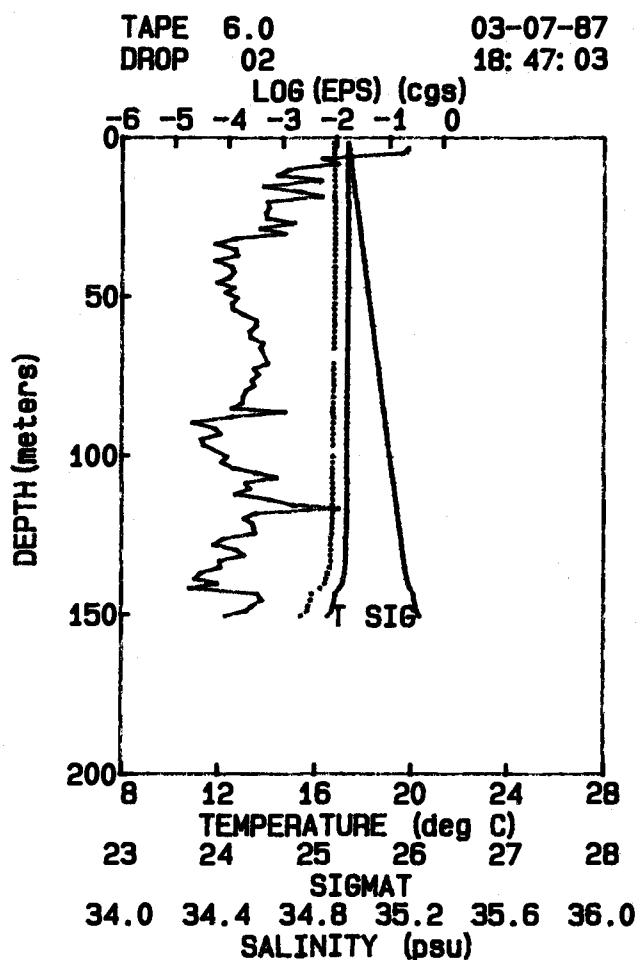
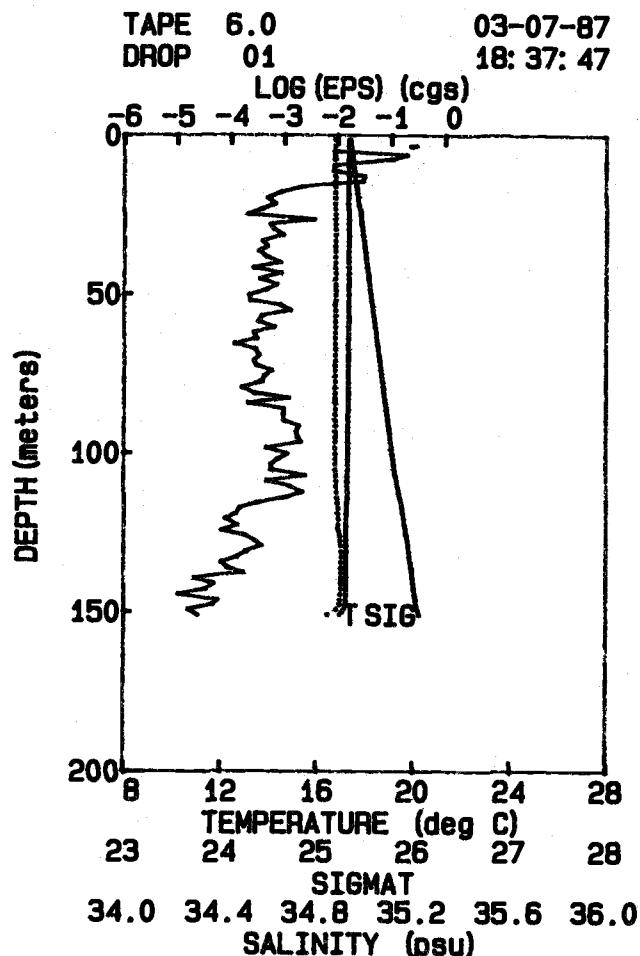


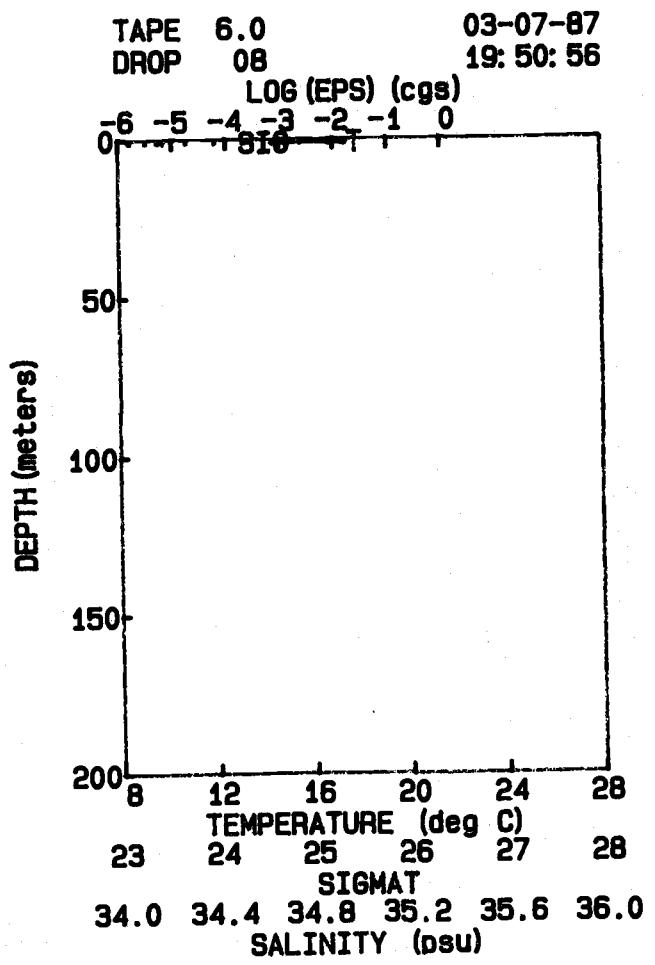
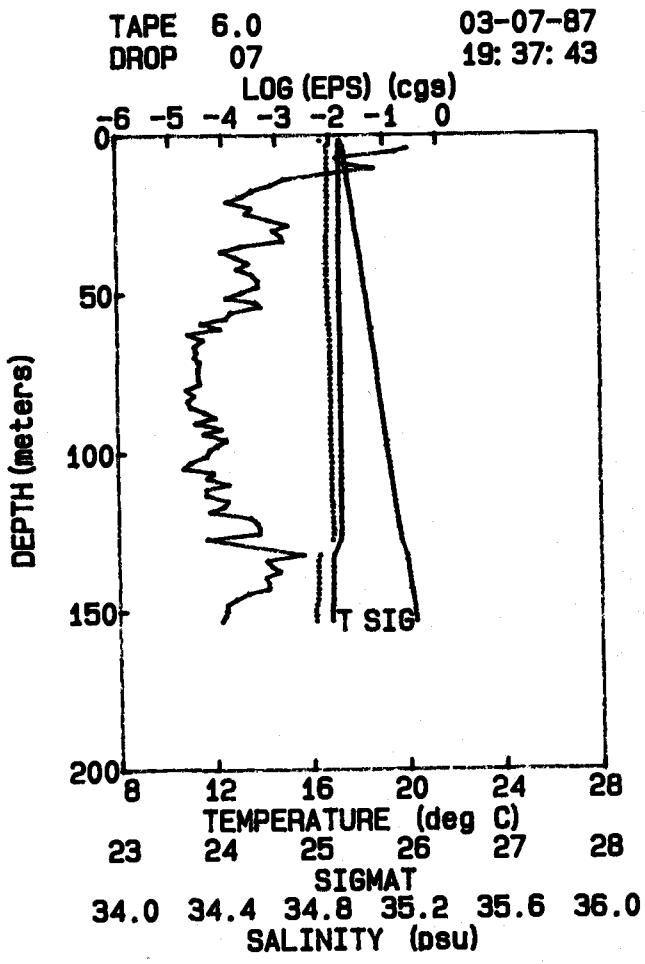
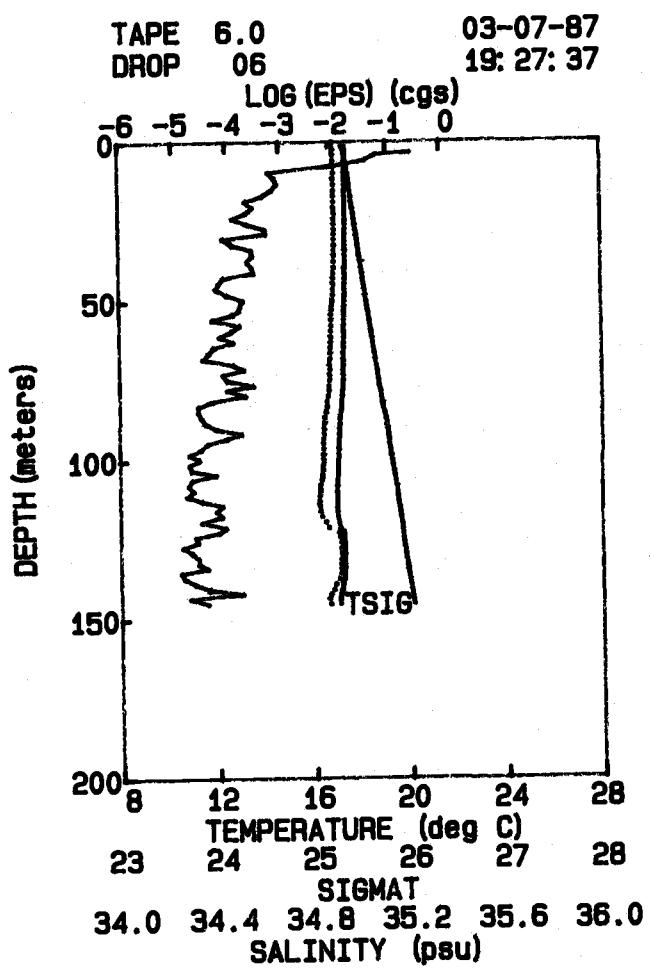
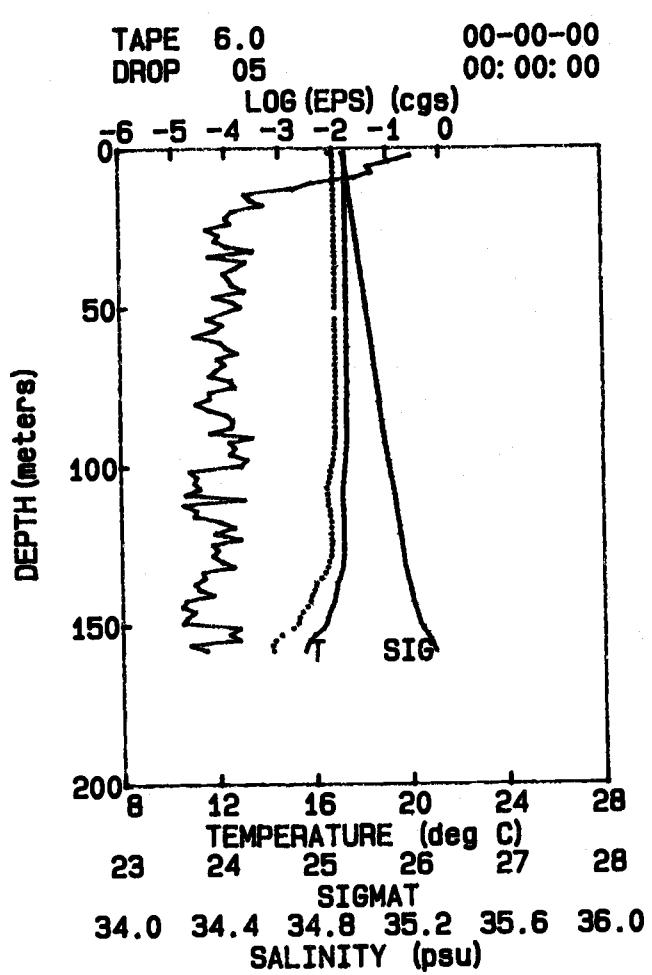


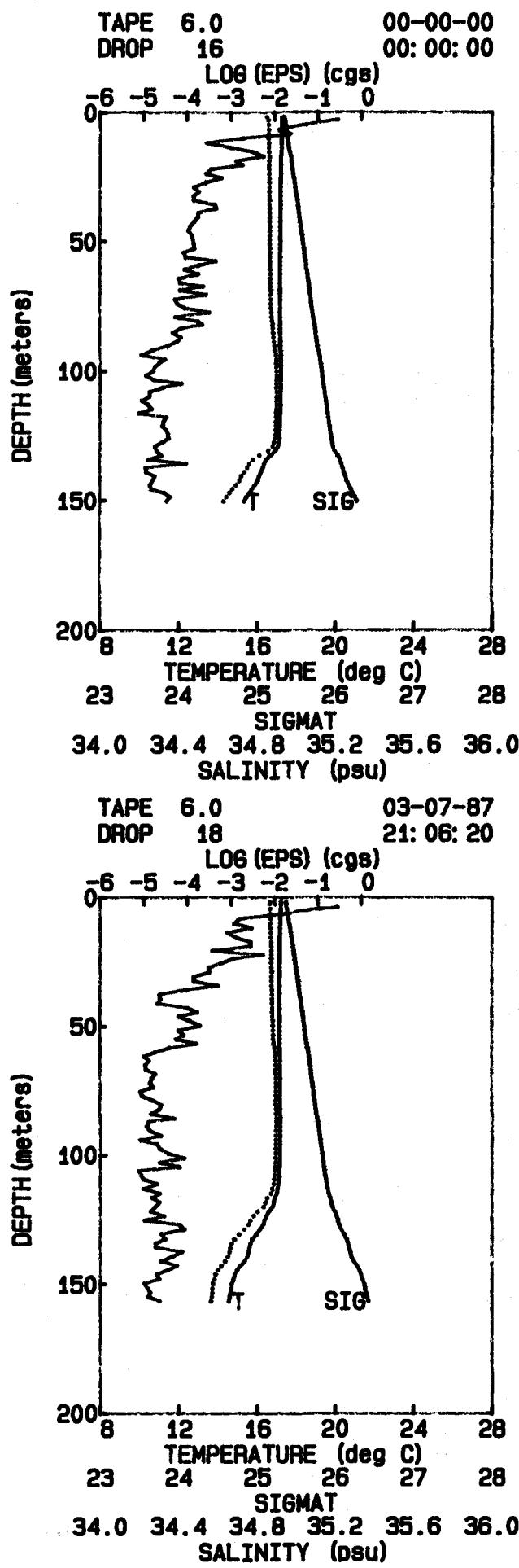
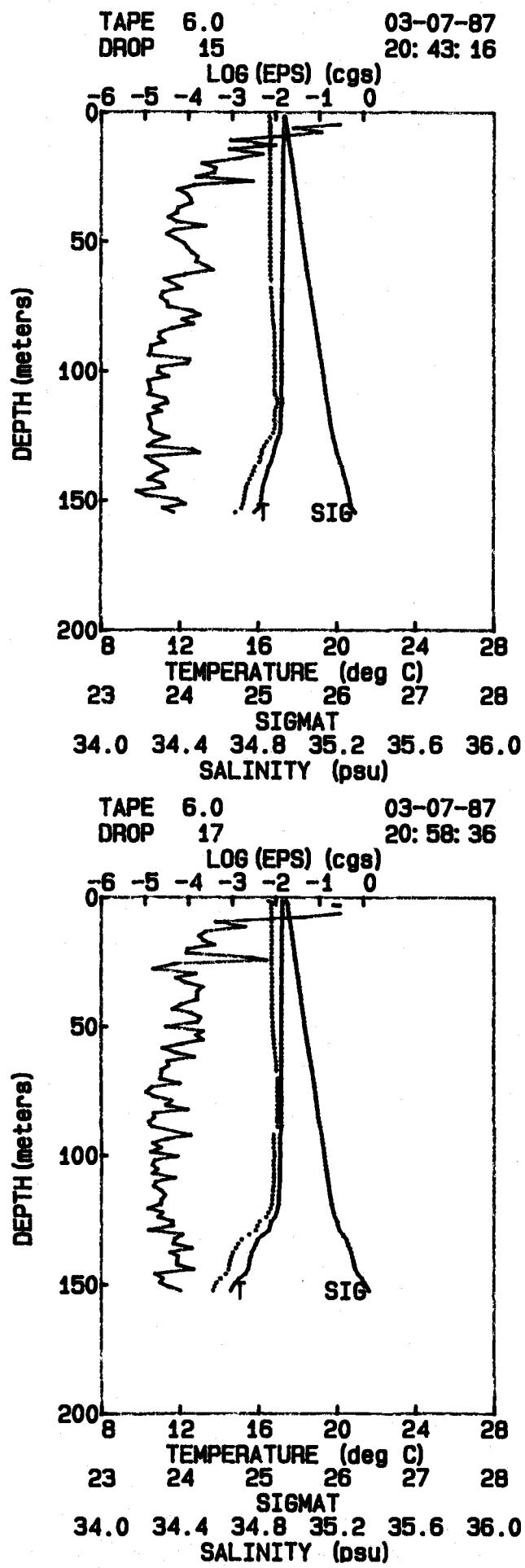


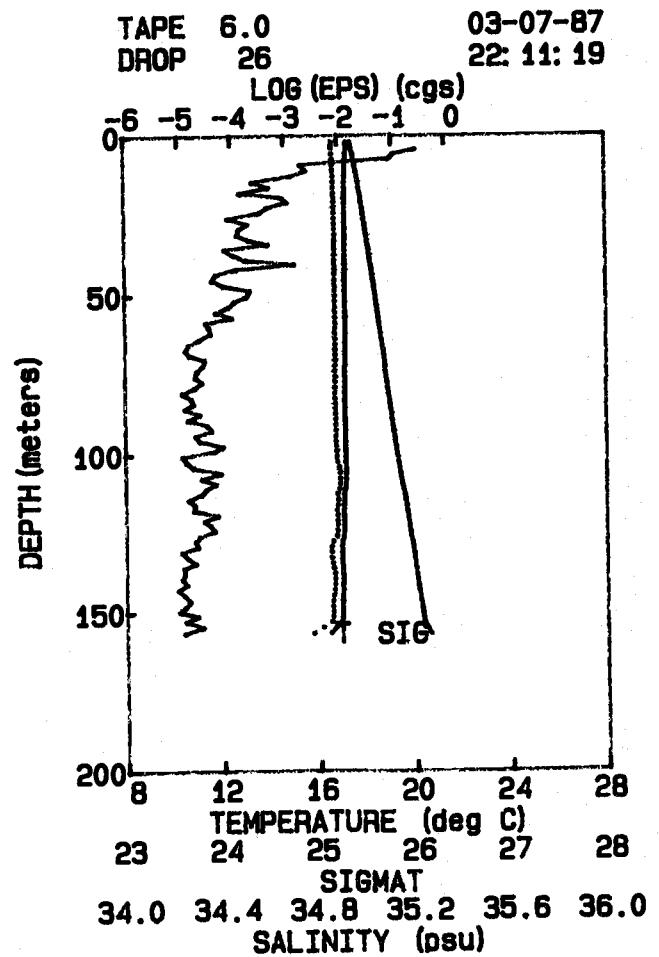
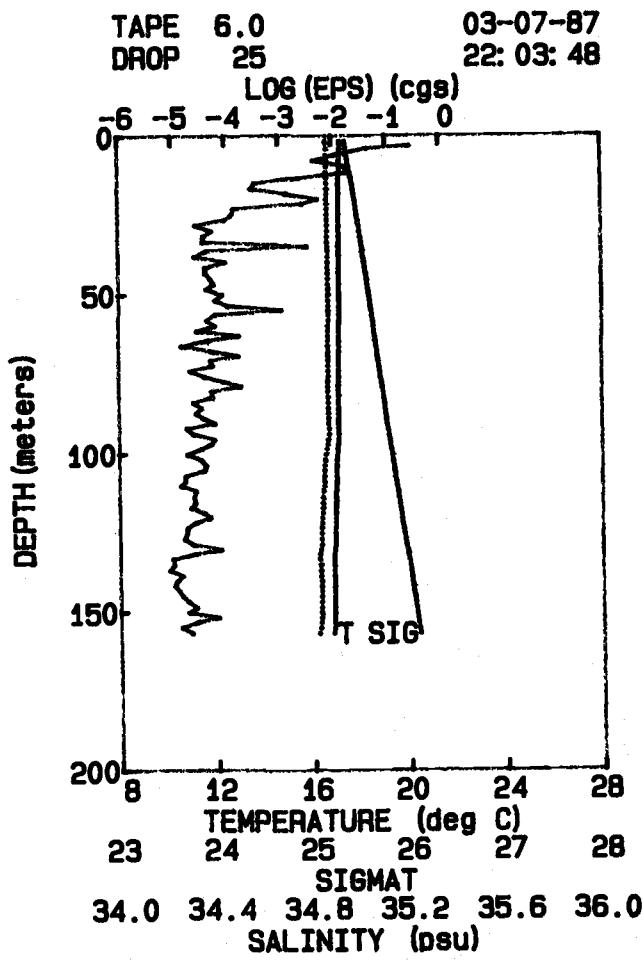
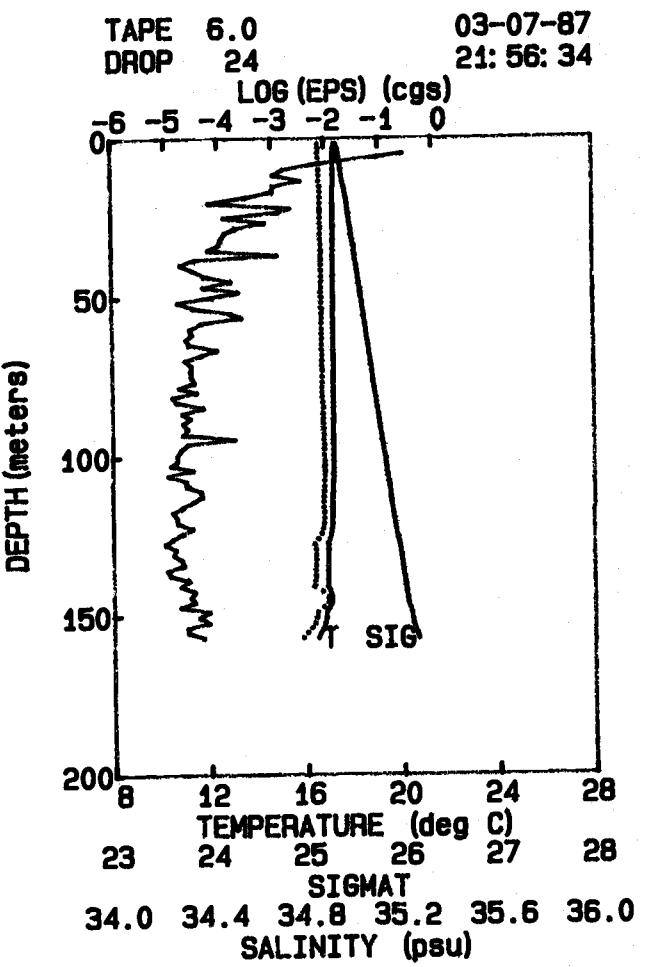
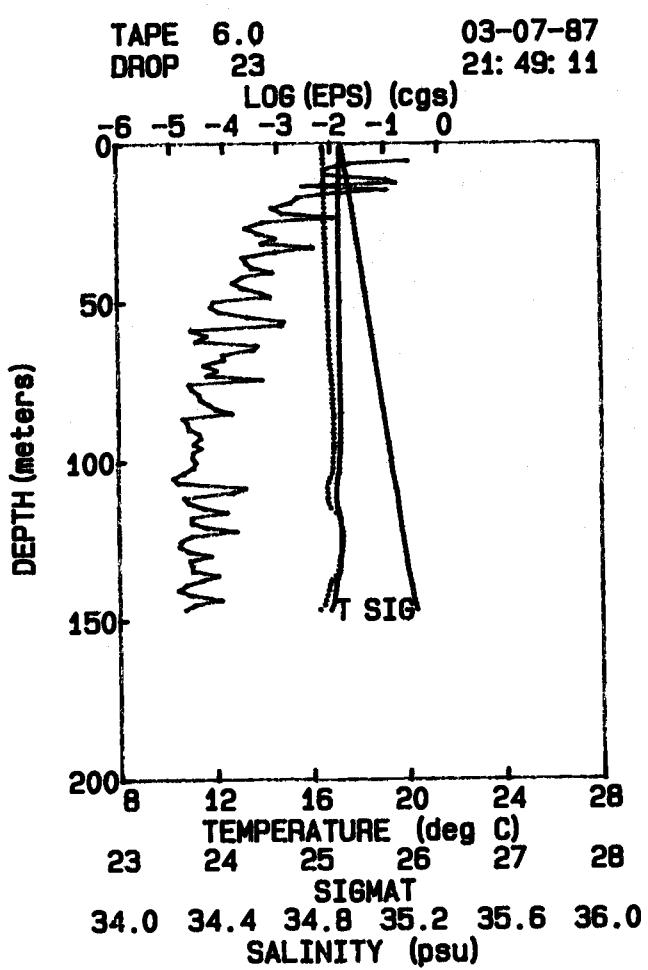


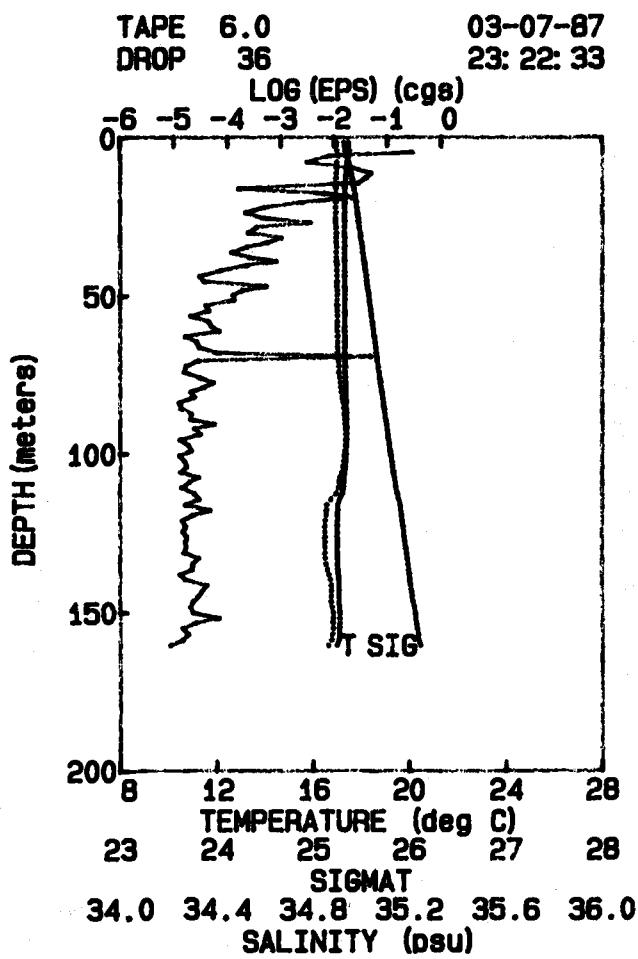
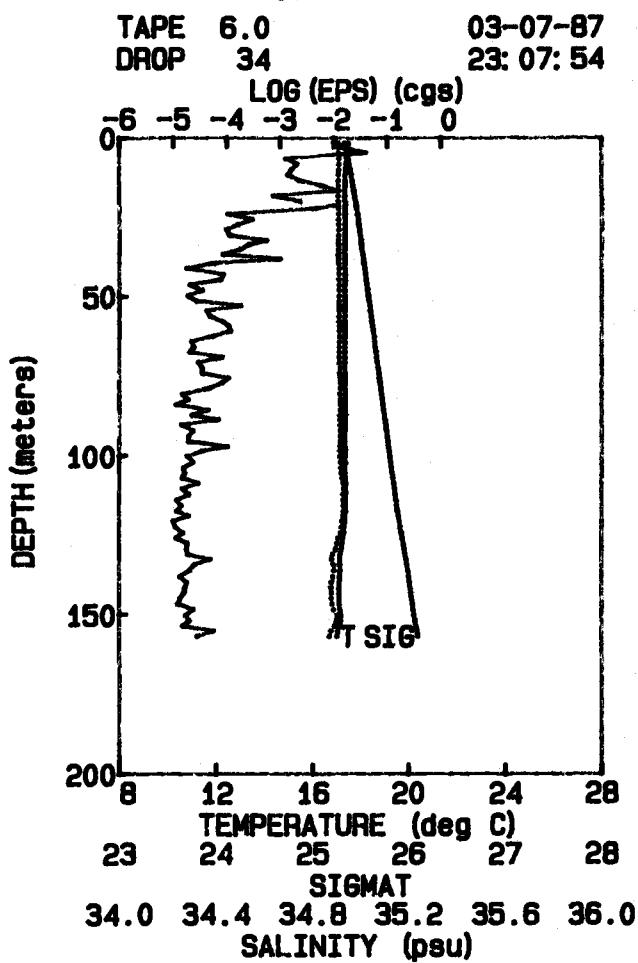
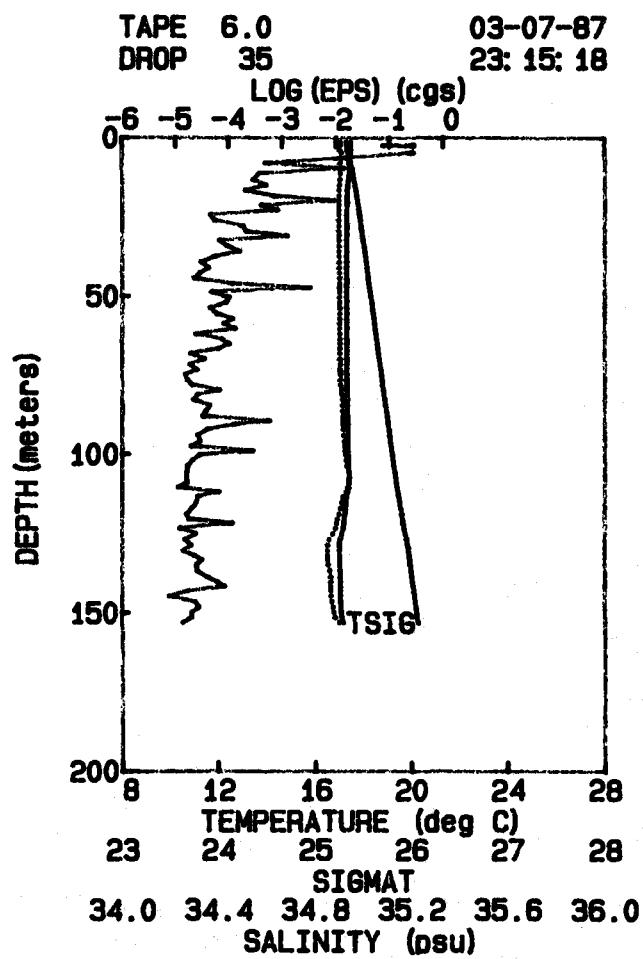
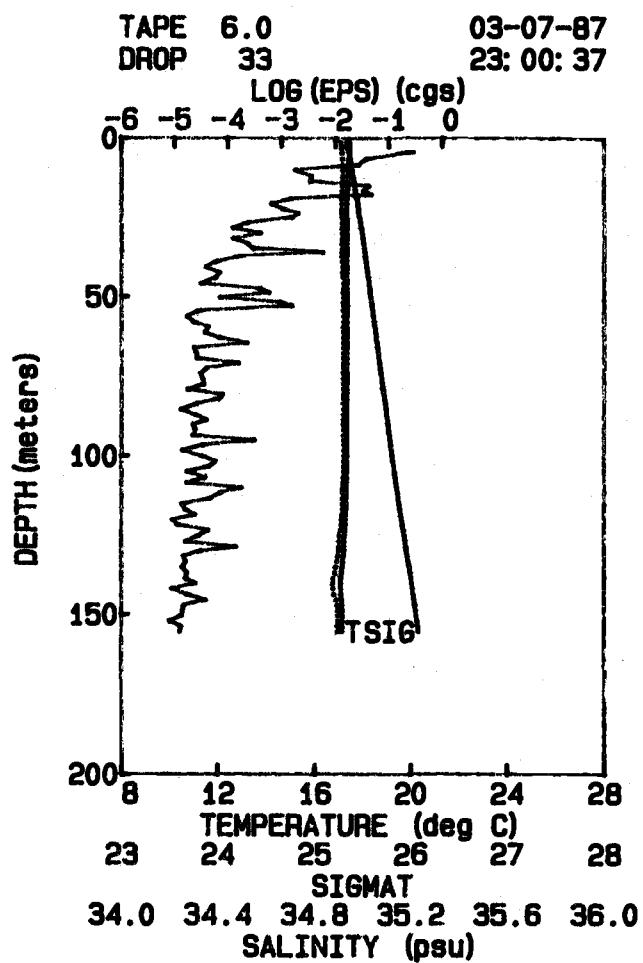


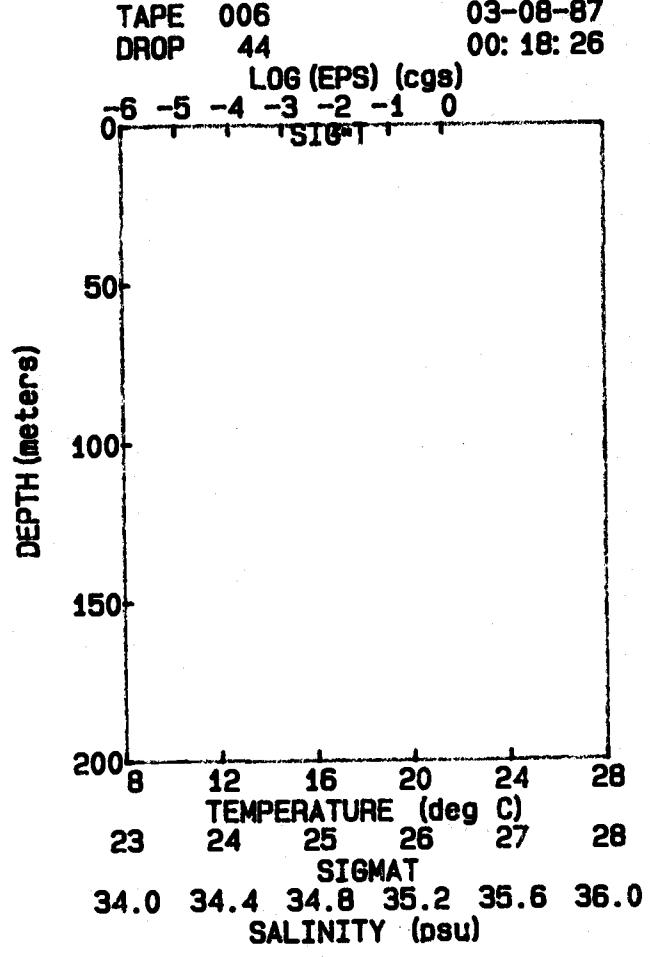
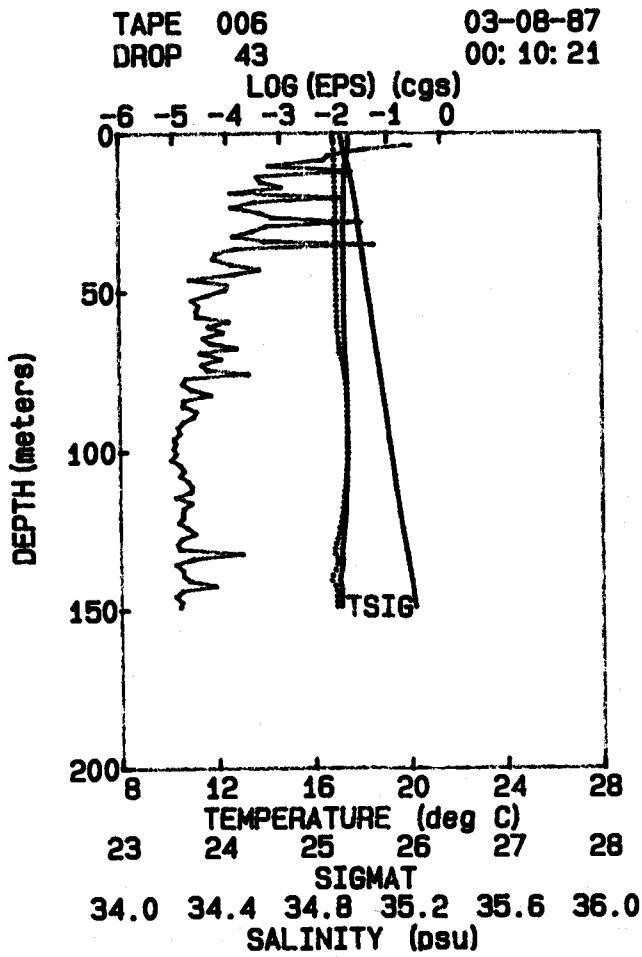
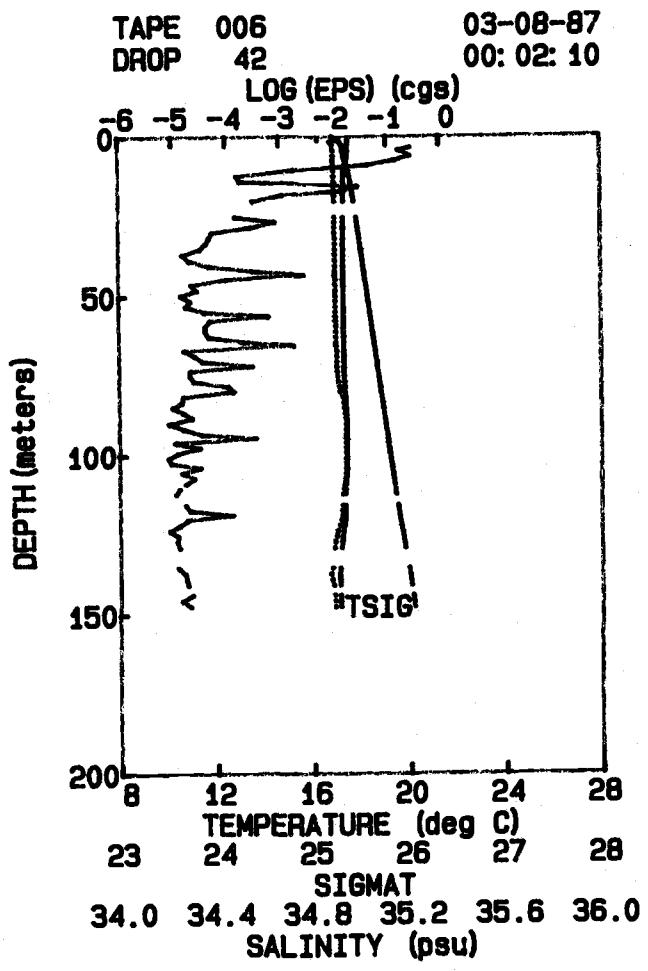
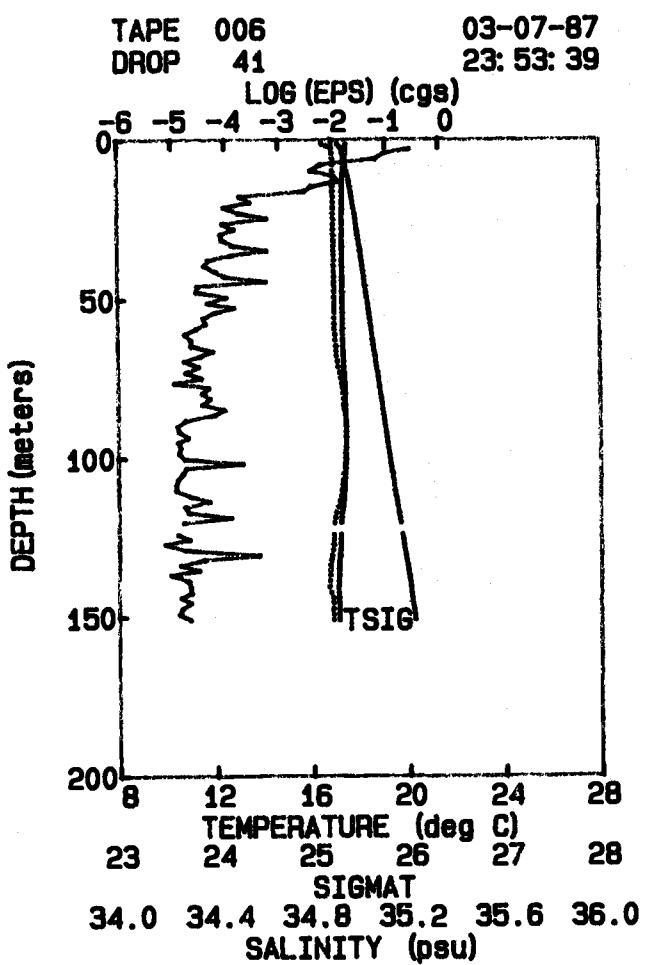


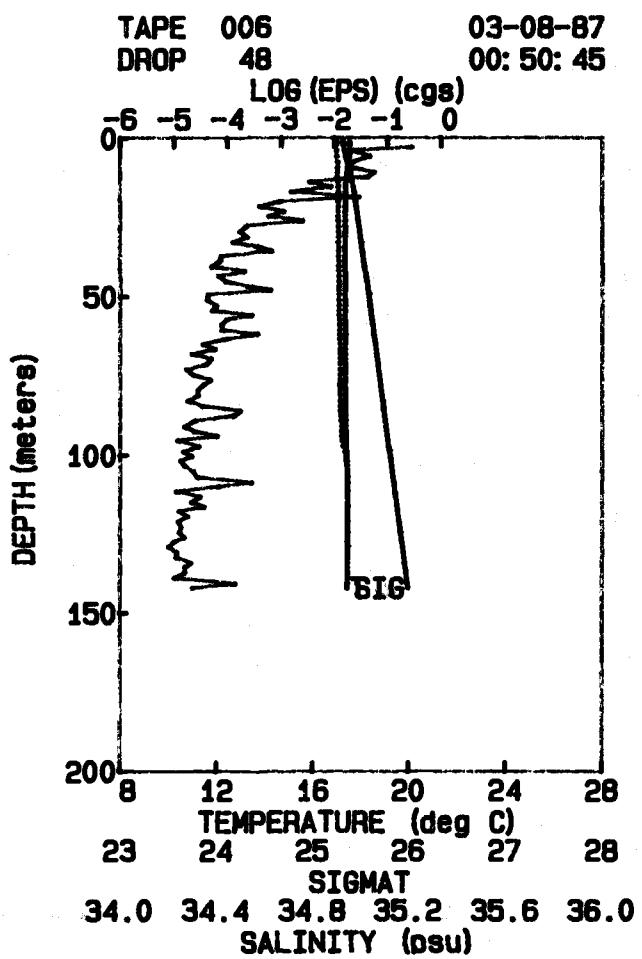
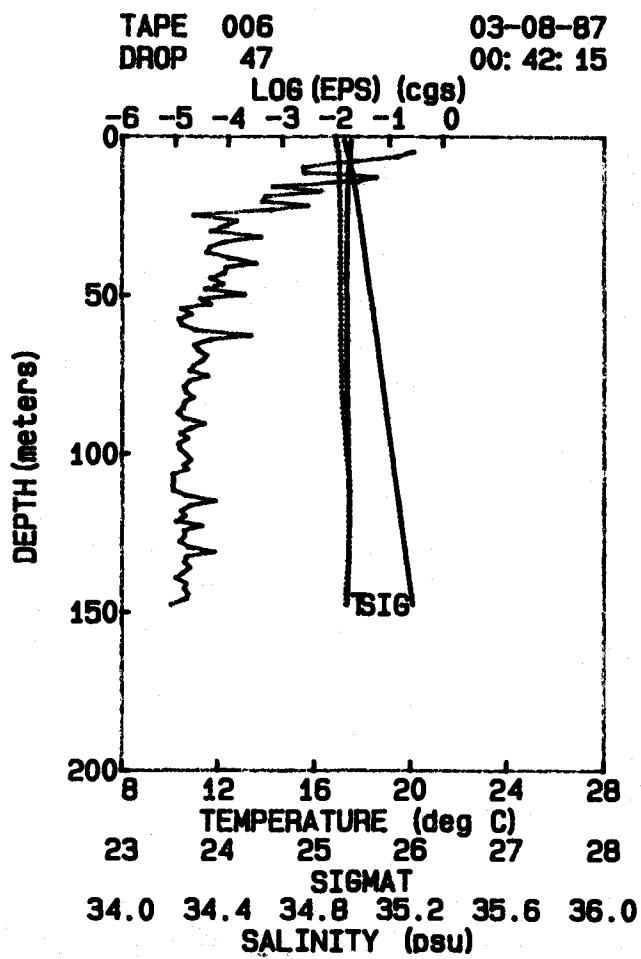
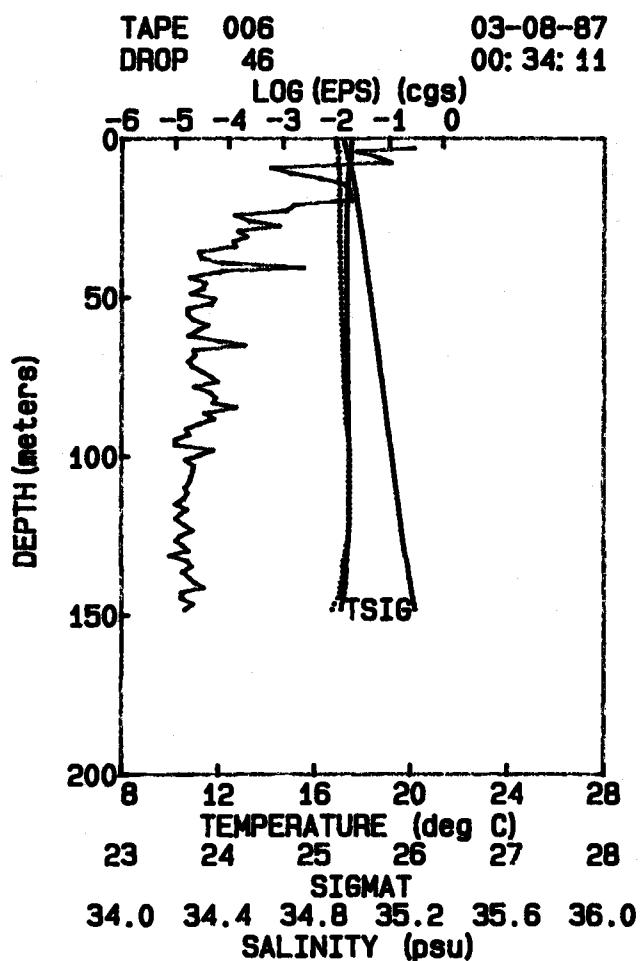
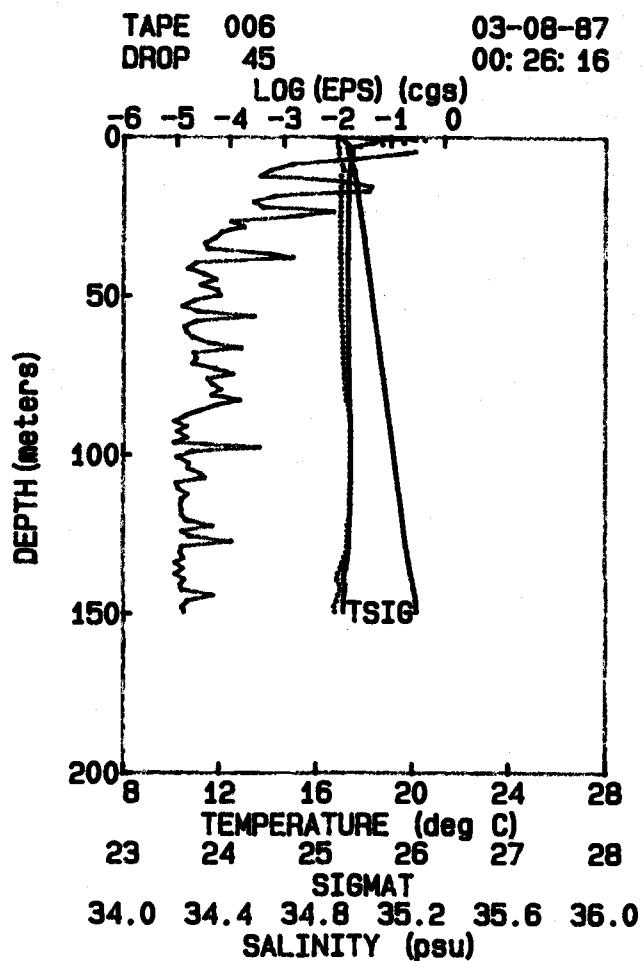


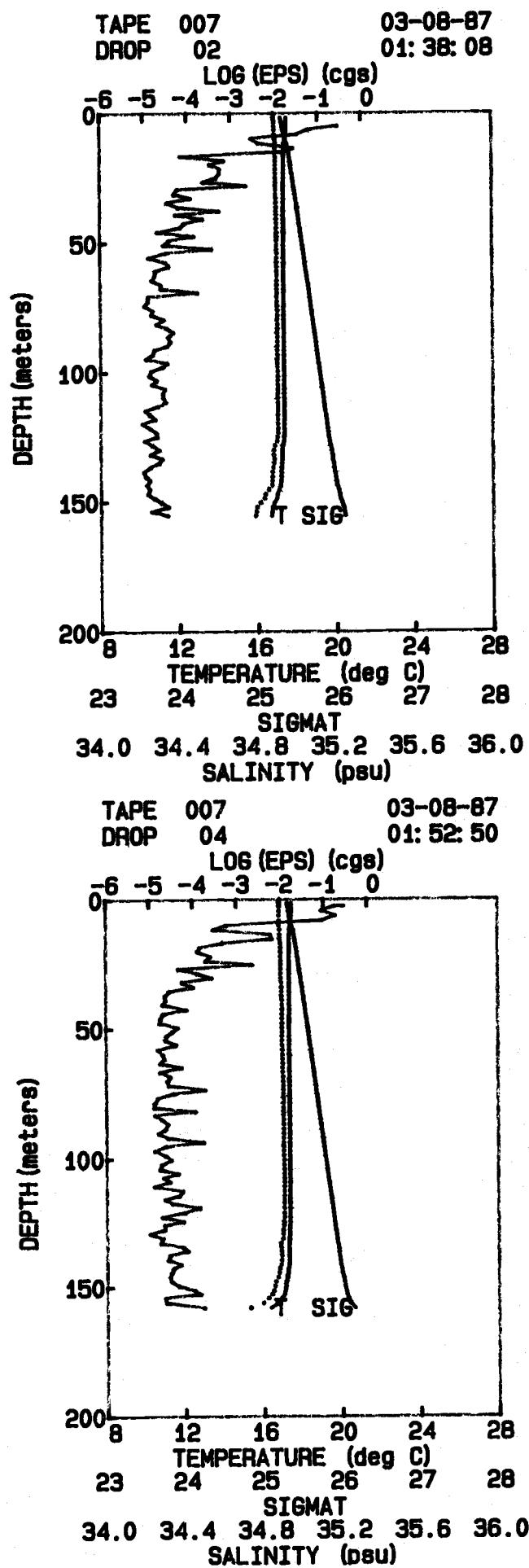
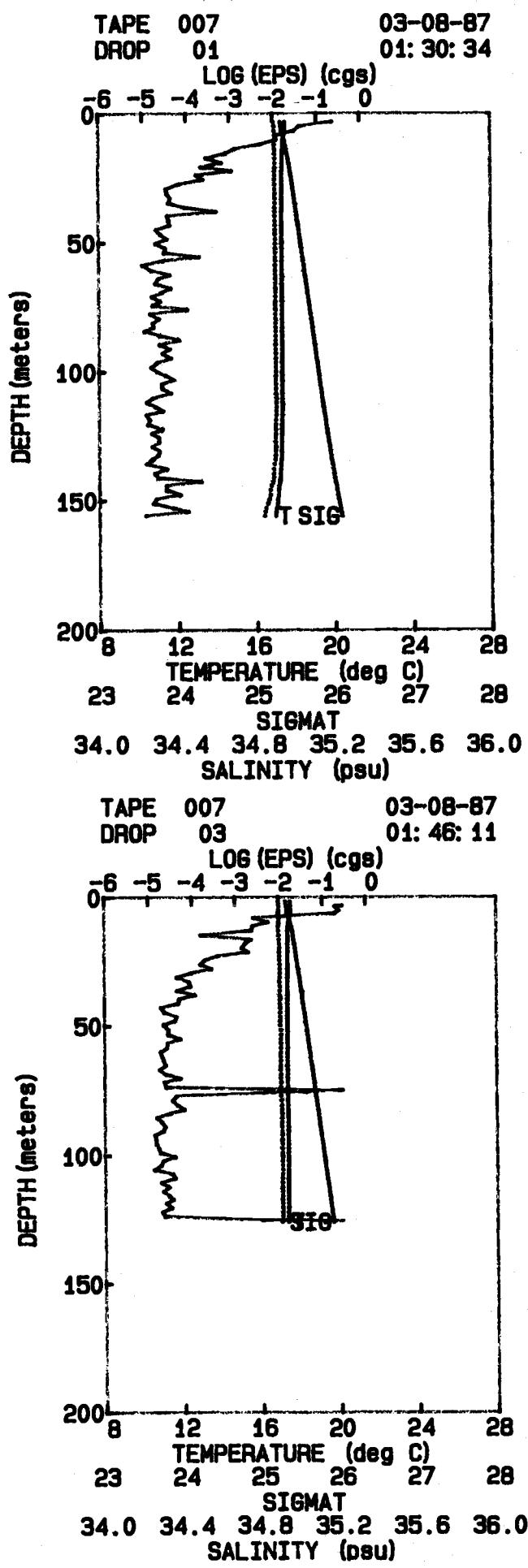


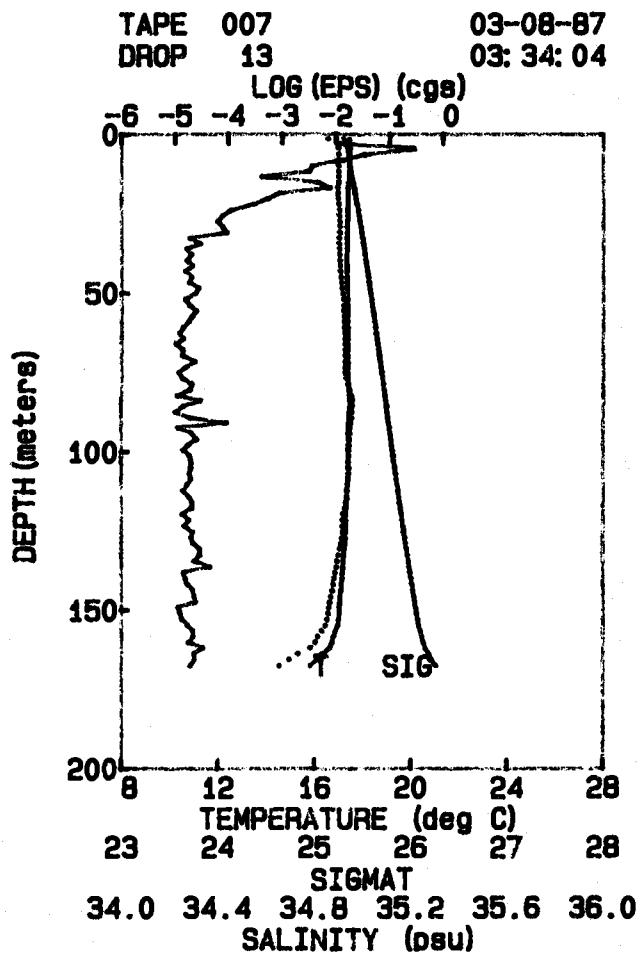
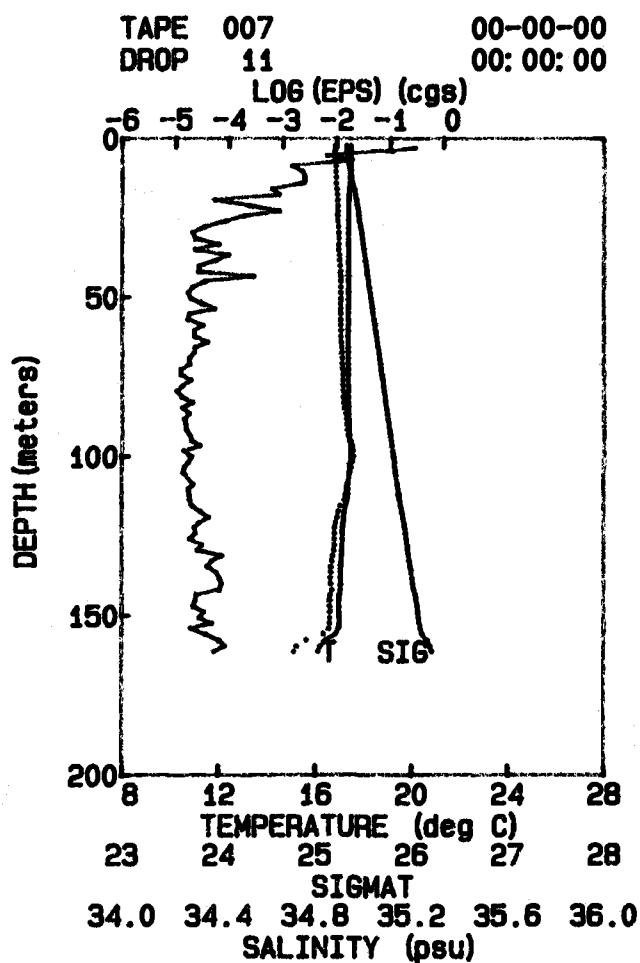
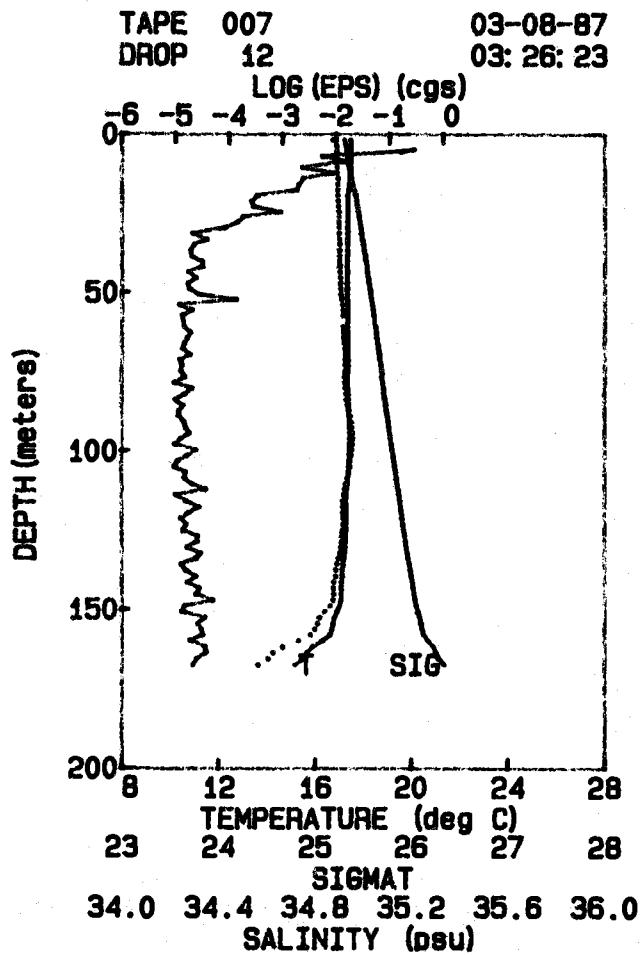
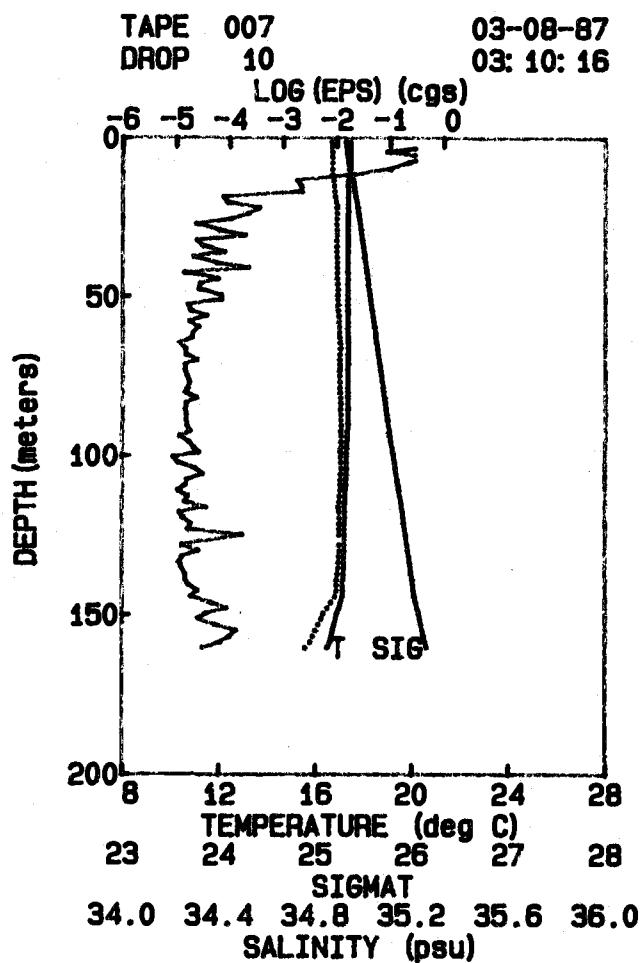


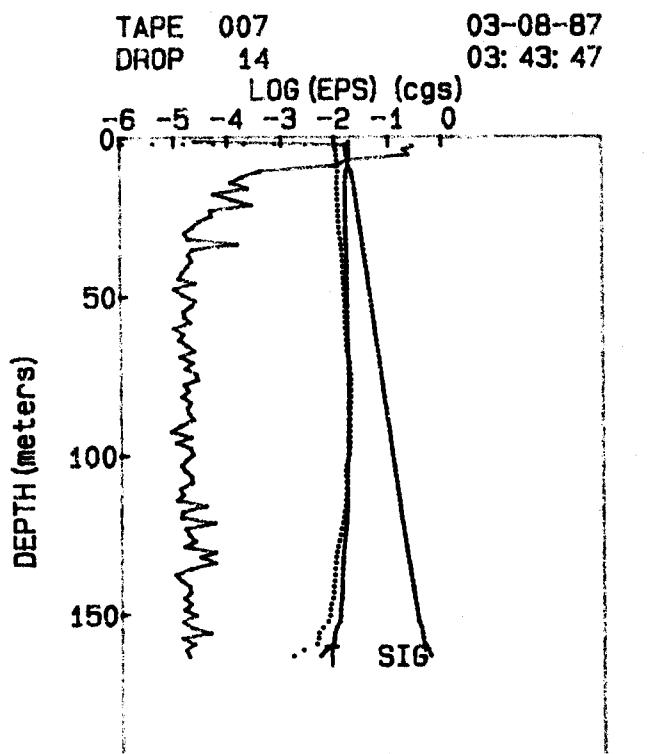






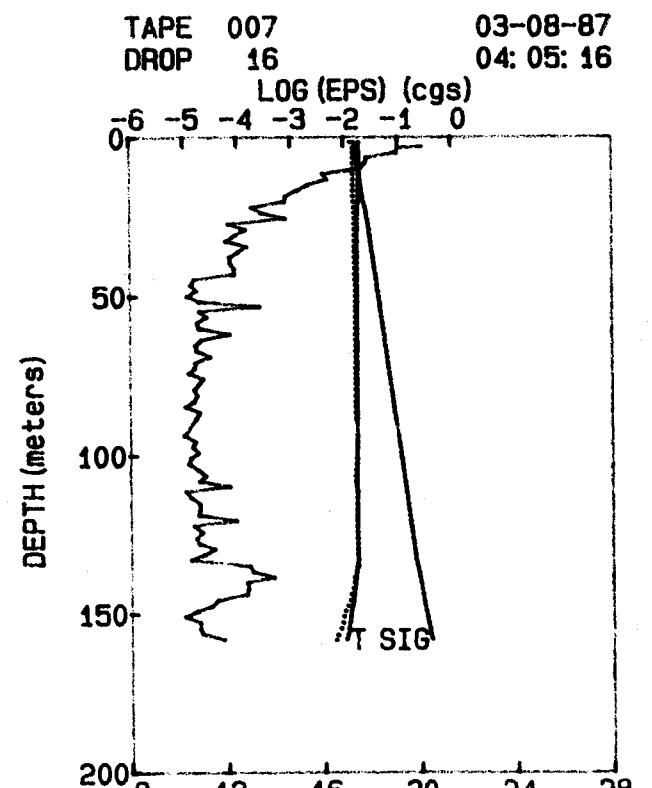






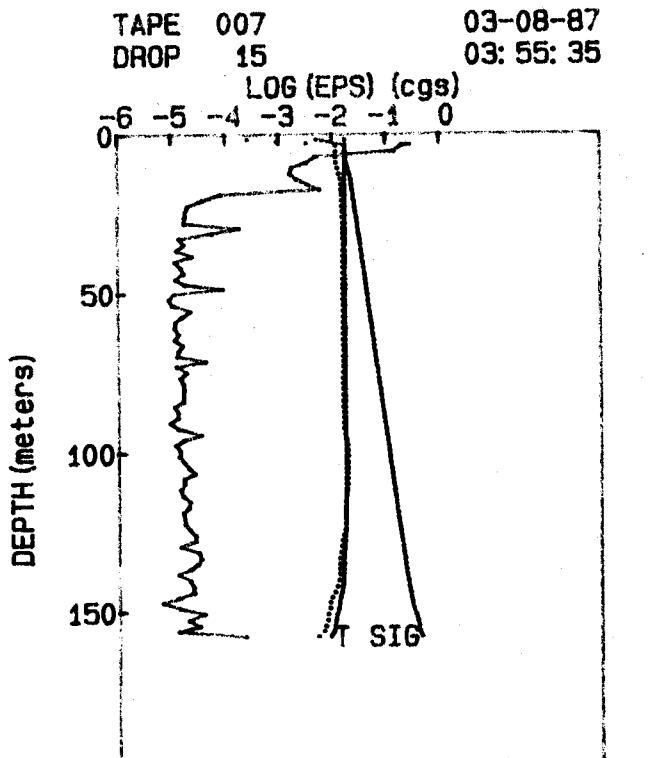
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23	24	25	26	27	28
TEMPERATURE (deg C)					

SIGMAT
34.0 34.4 34.8 35.2 35.6 36.0
SALINITY (psu)



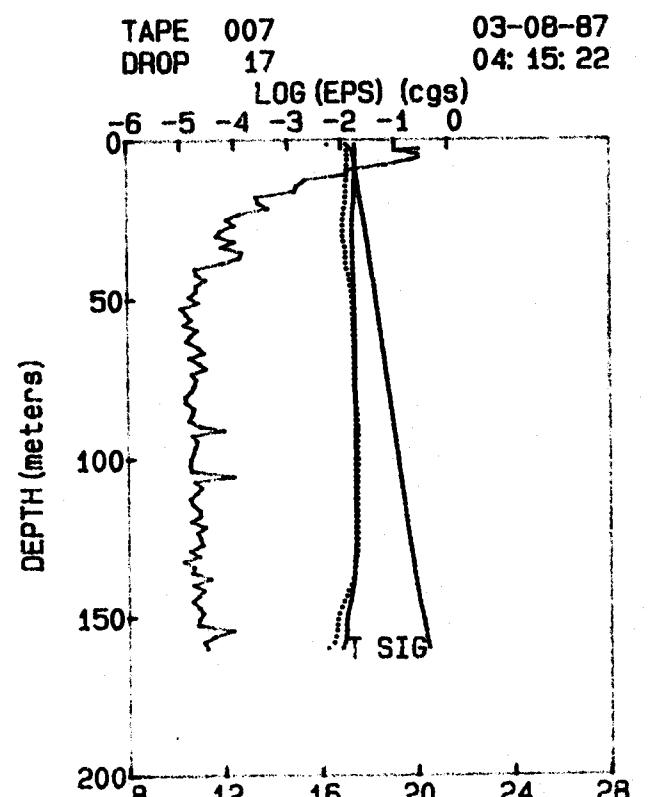
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TEMPERATURE (deg C)					

SIGMAT
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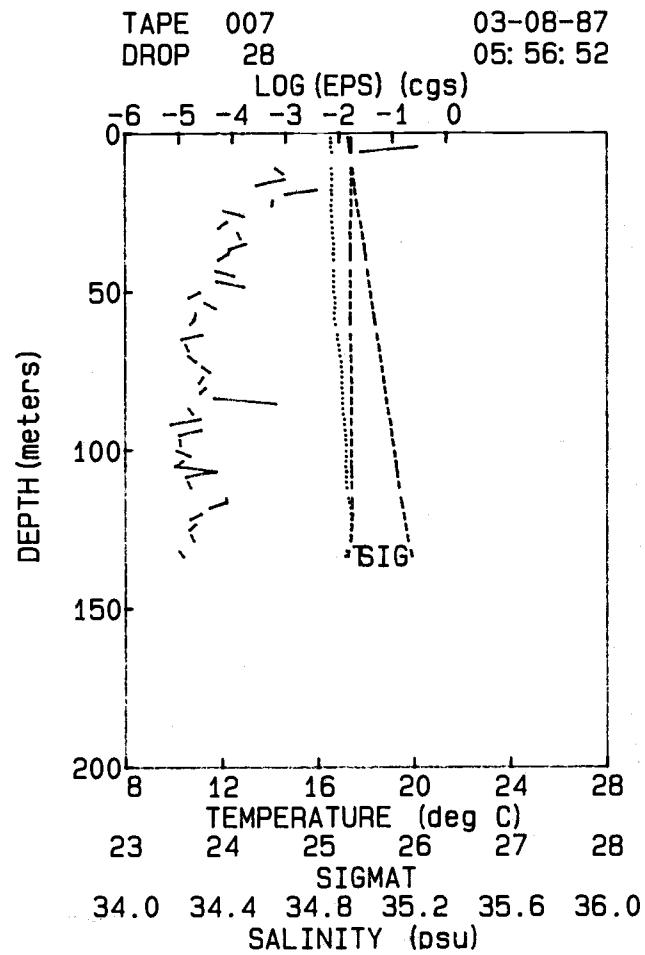
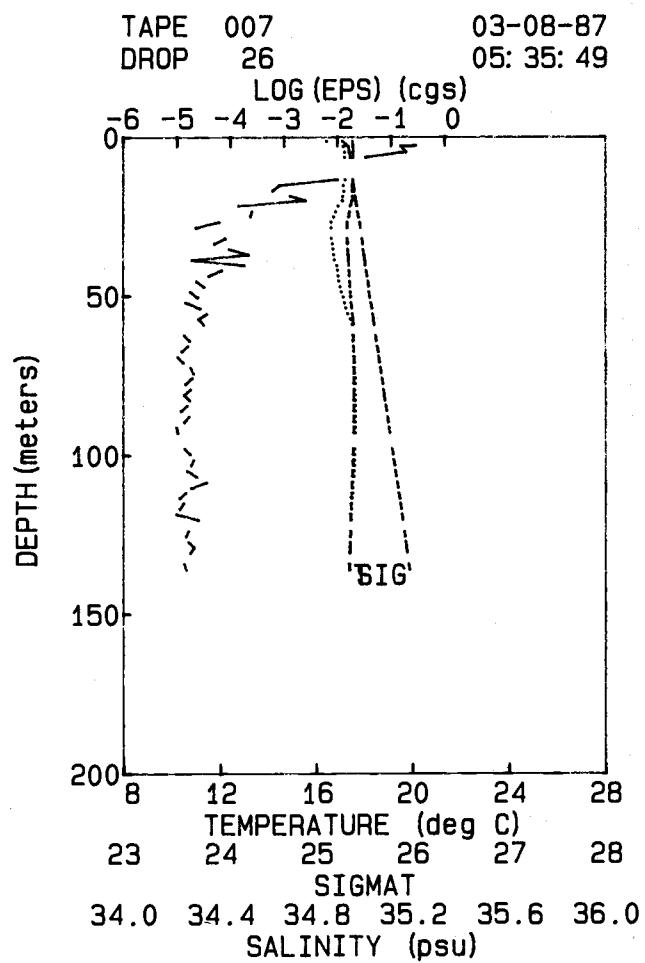
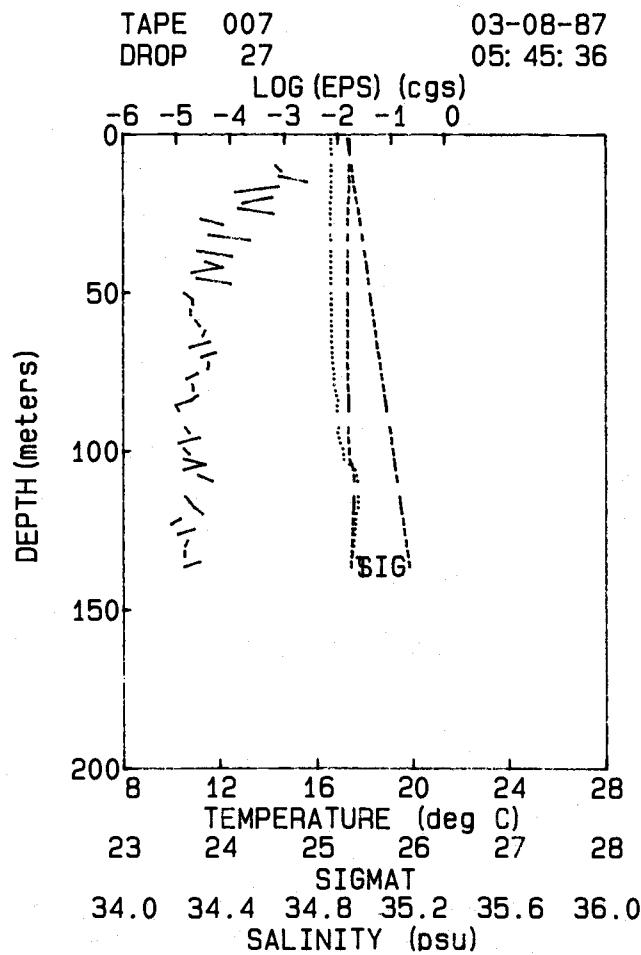
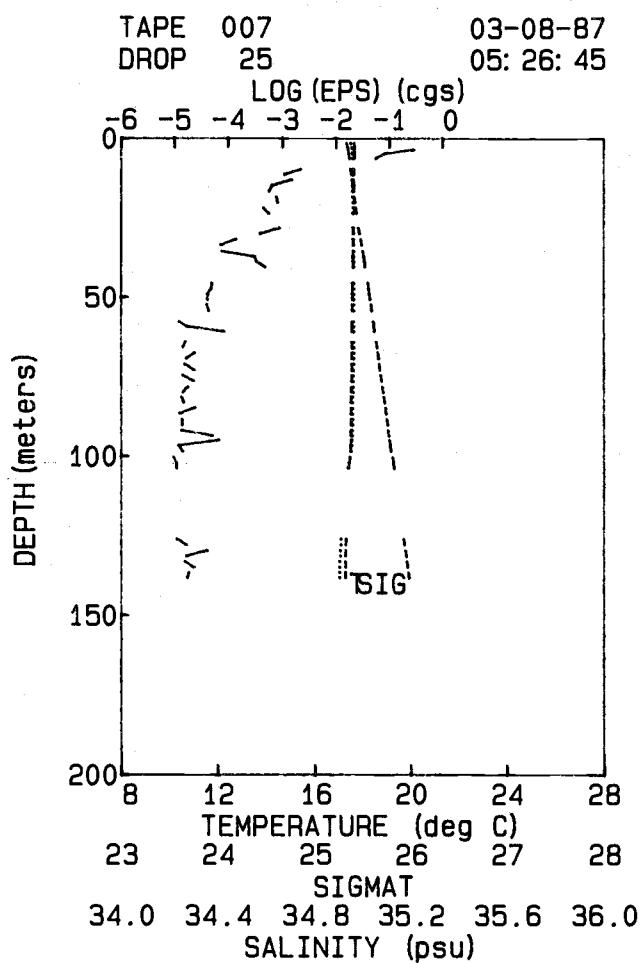
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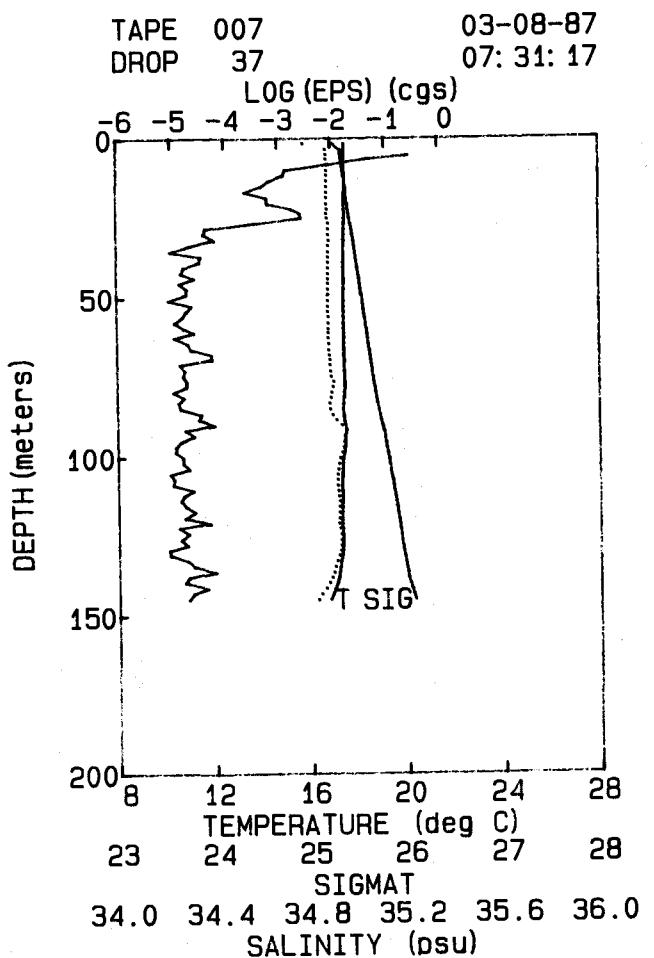
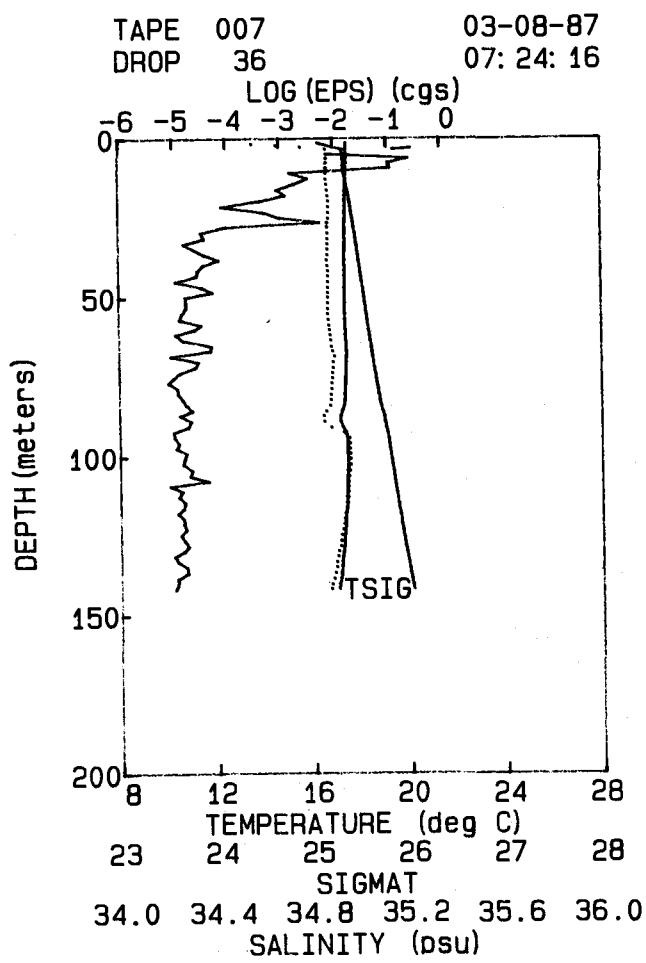
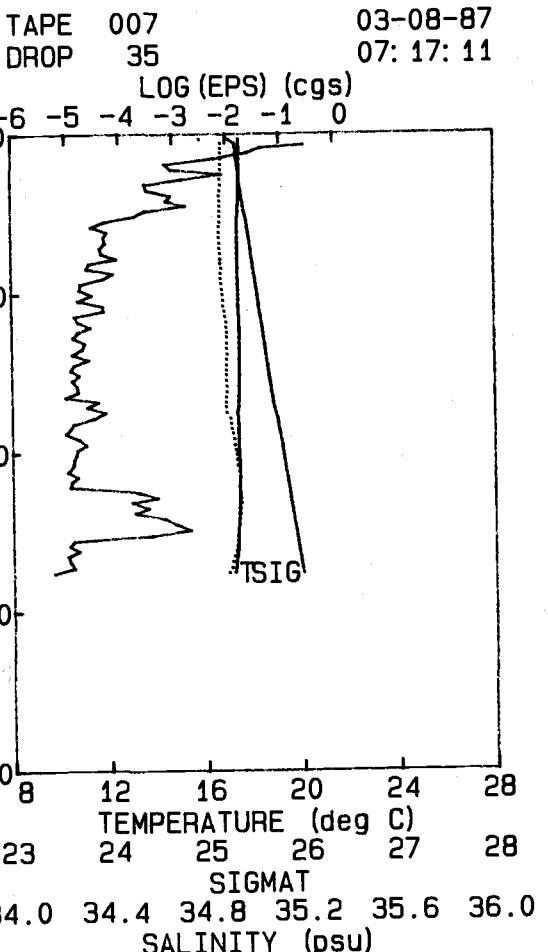
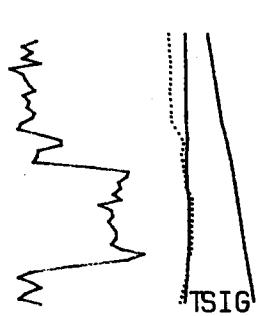
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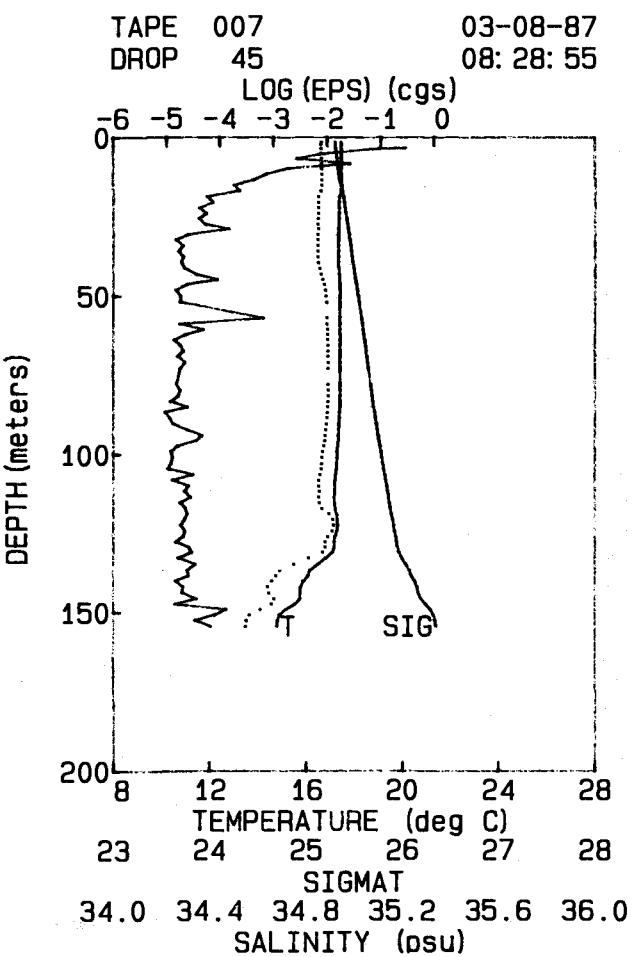
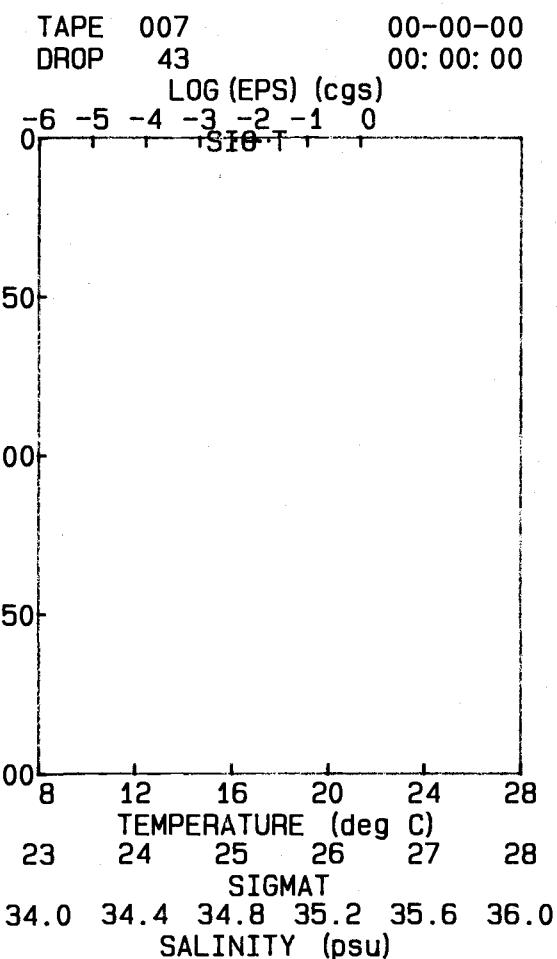
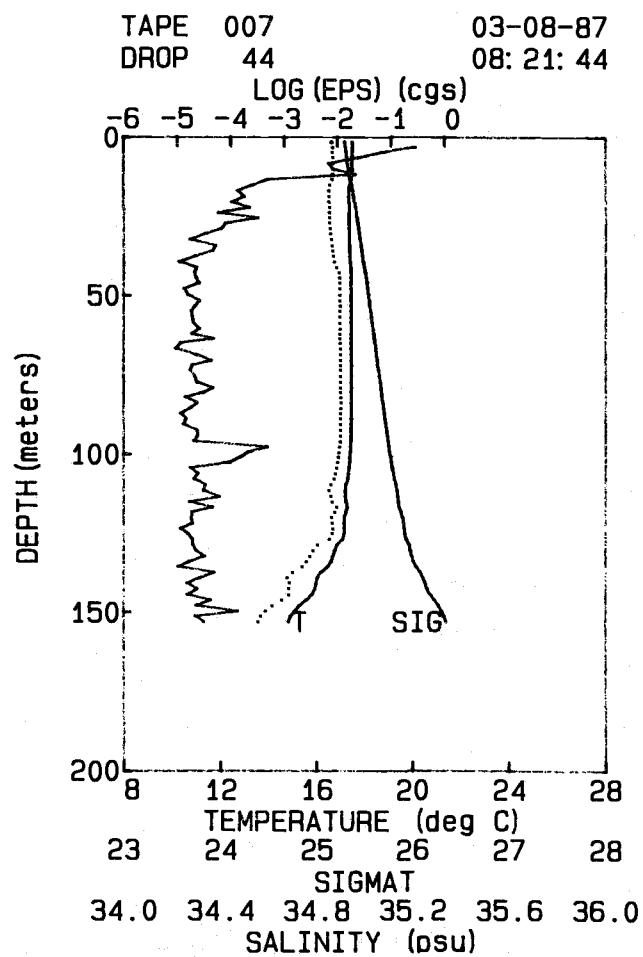
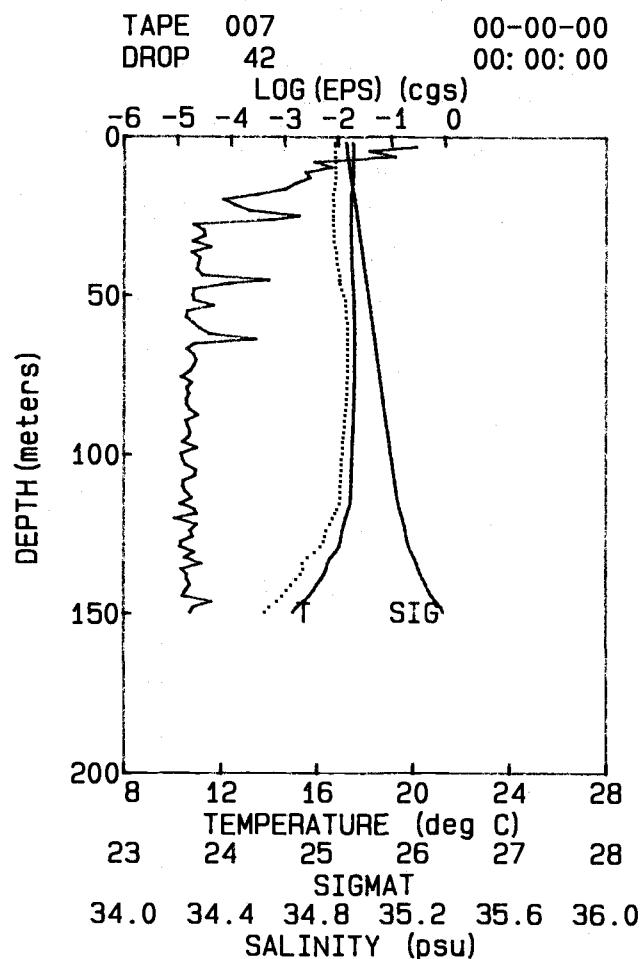


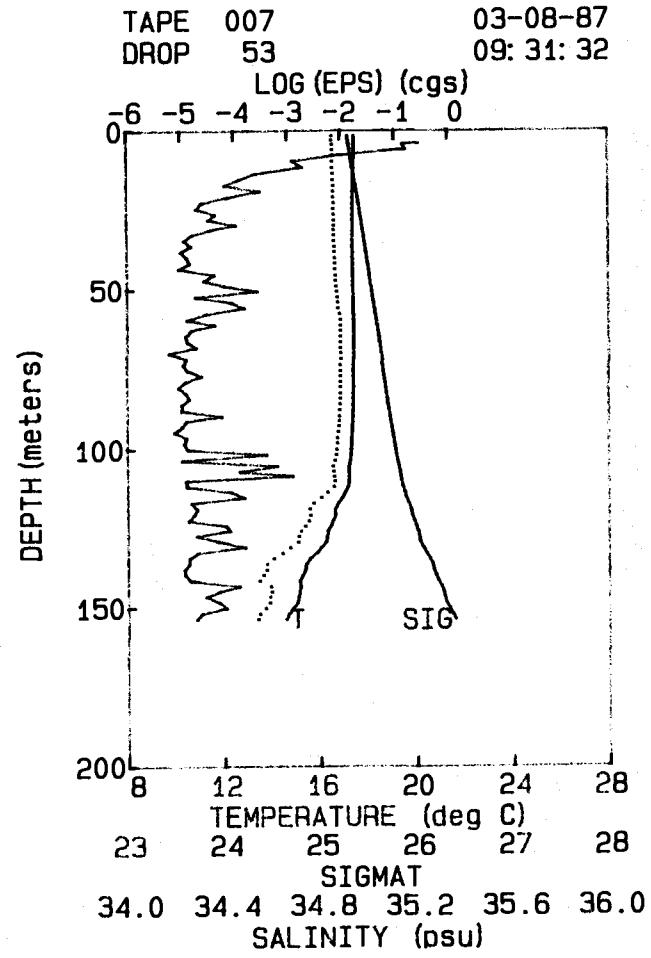
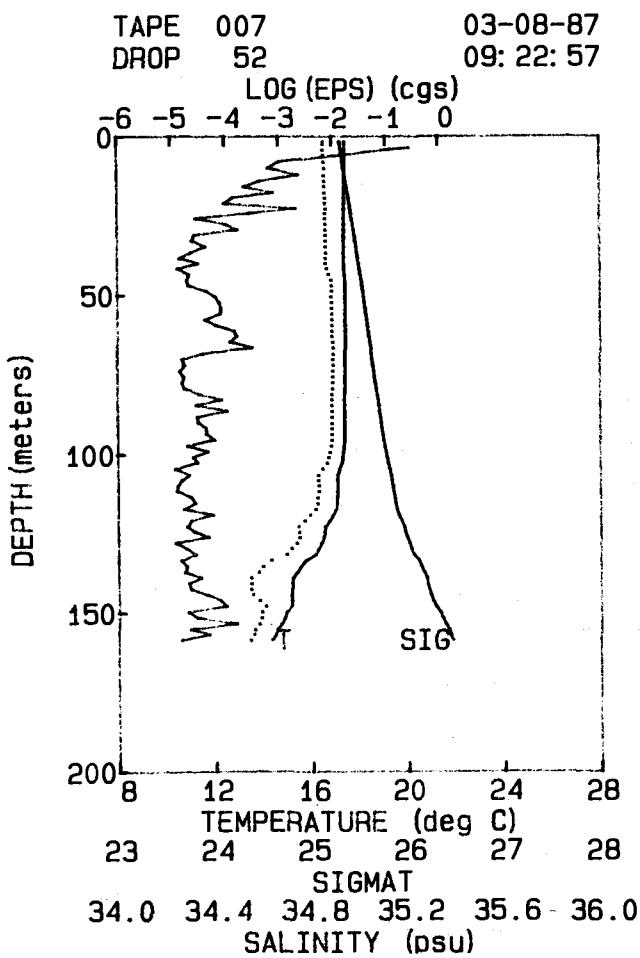
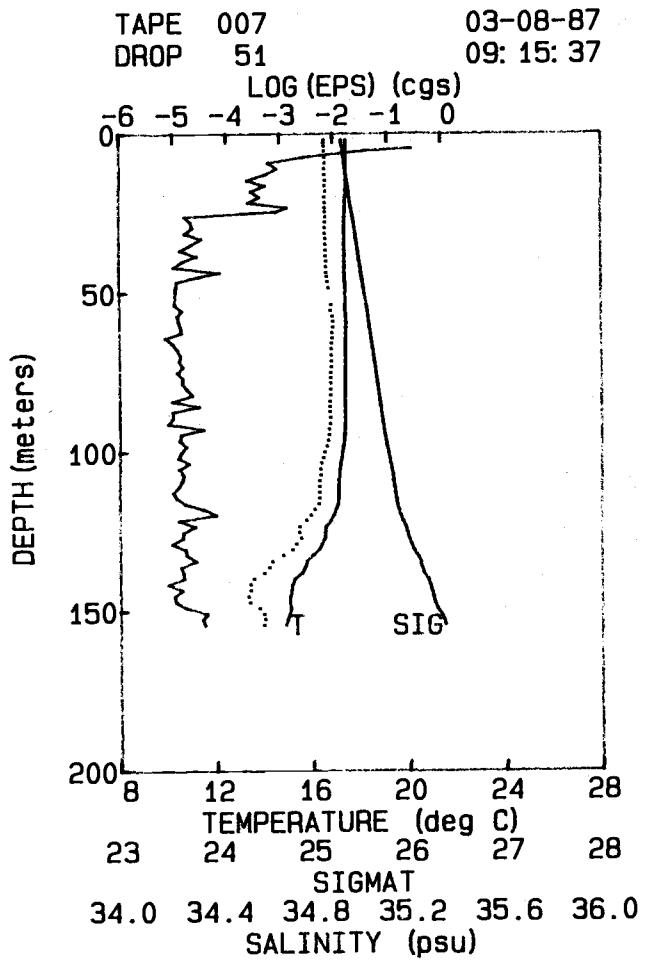
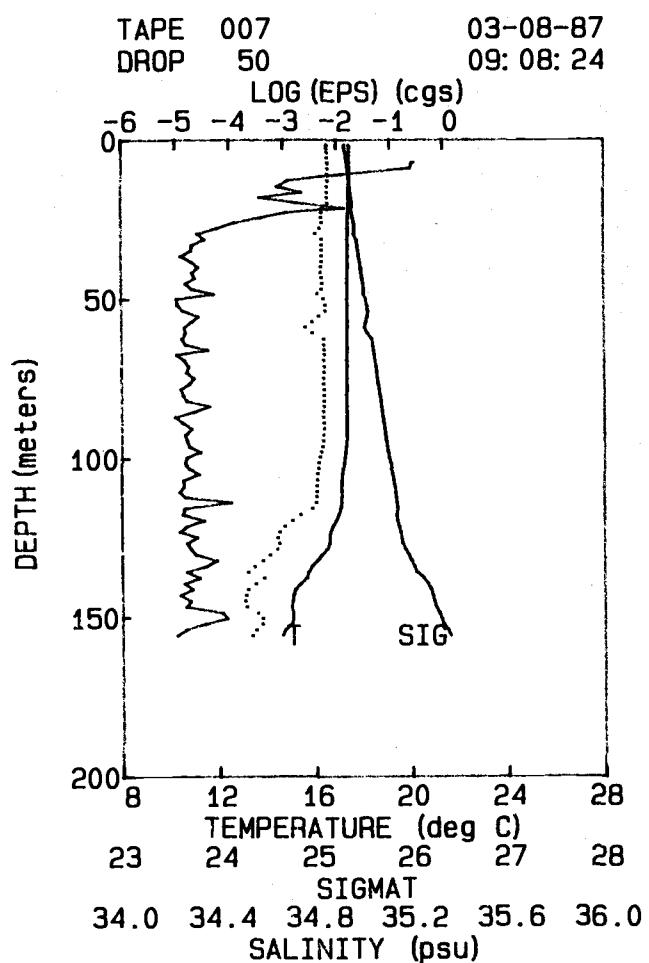
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23	24	25	26	27	28
TEMPERATURE (deg C)					

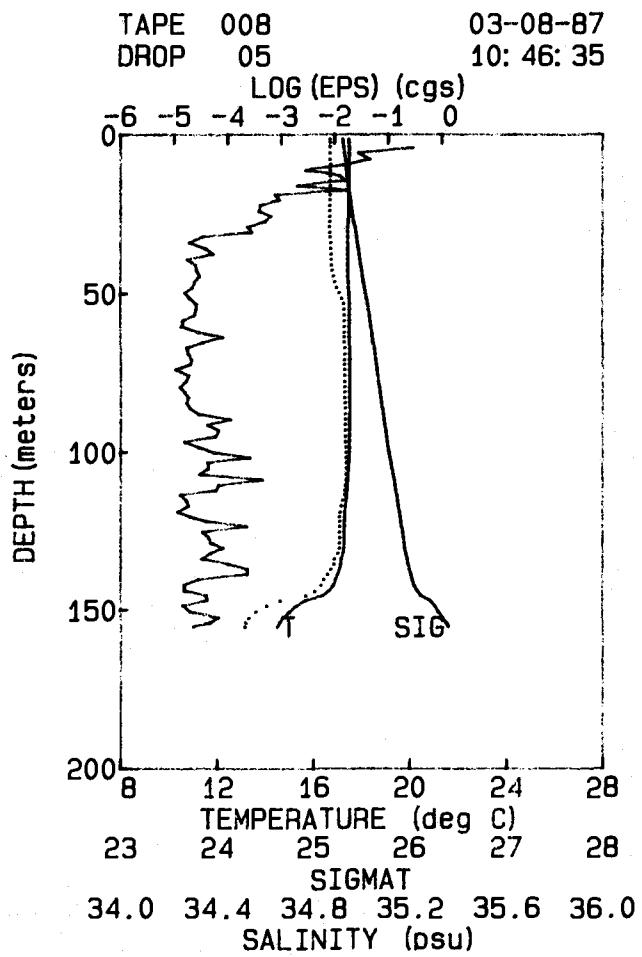
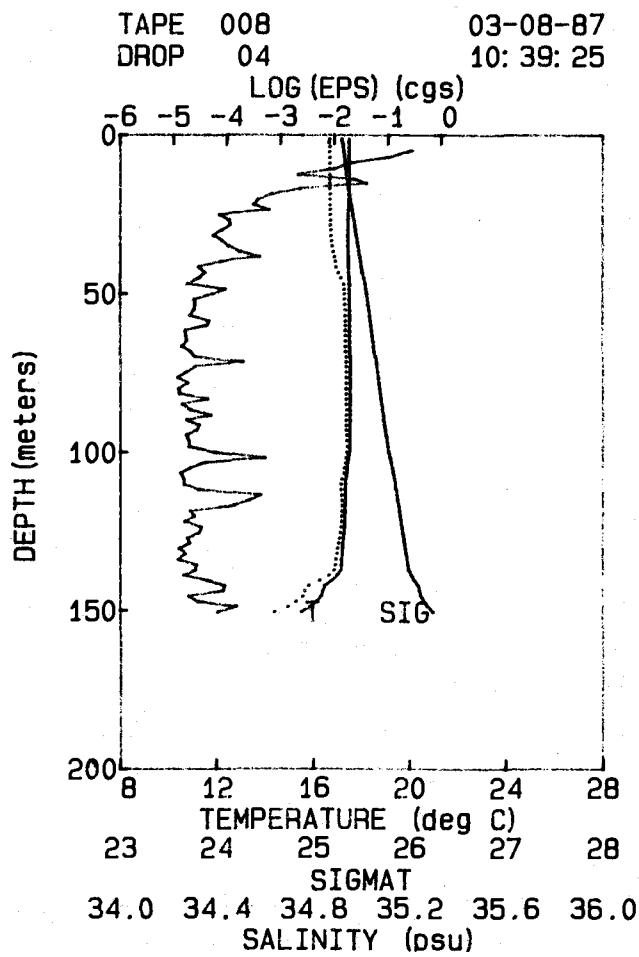
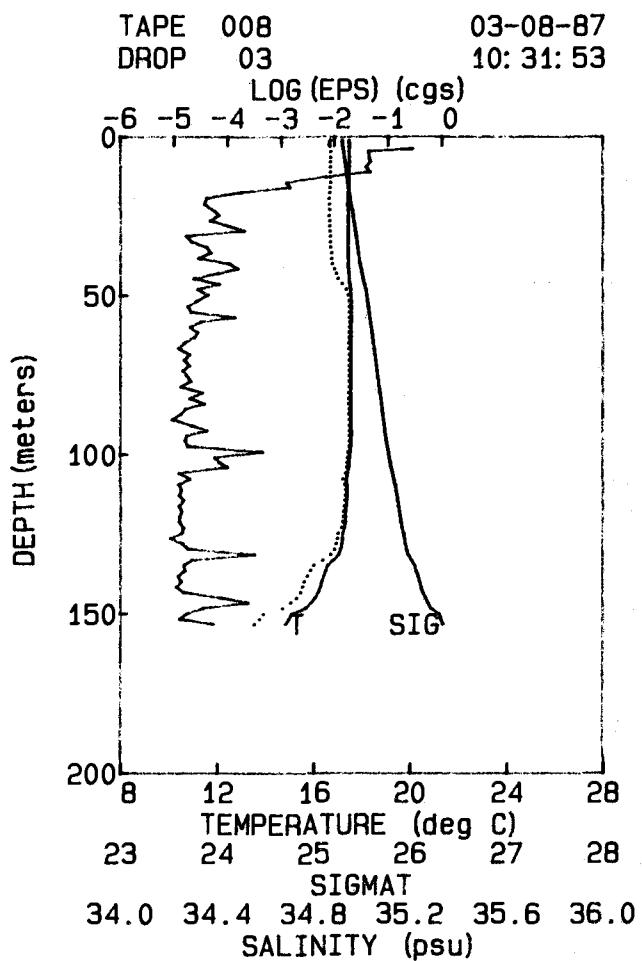
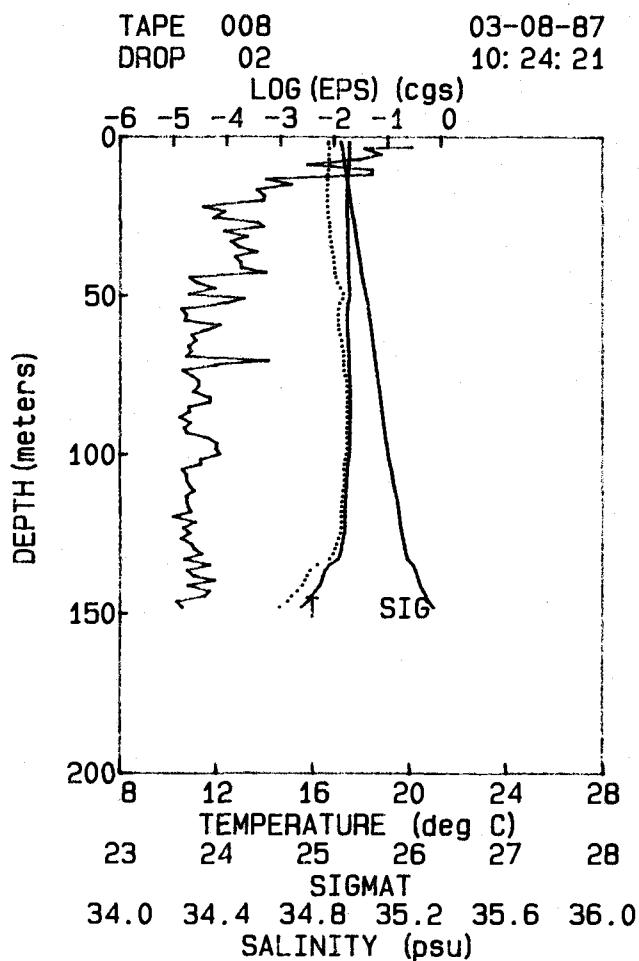
SIGMAT
34.0 34.4 34.8 35.2 35.6 36.0
SALINITY (psu)

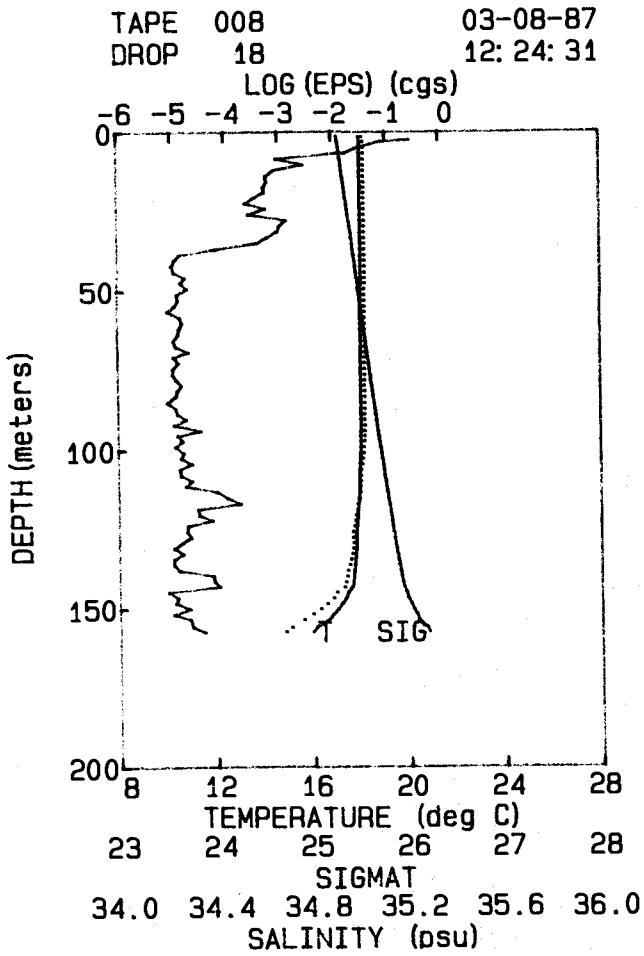
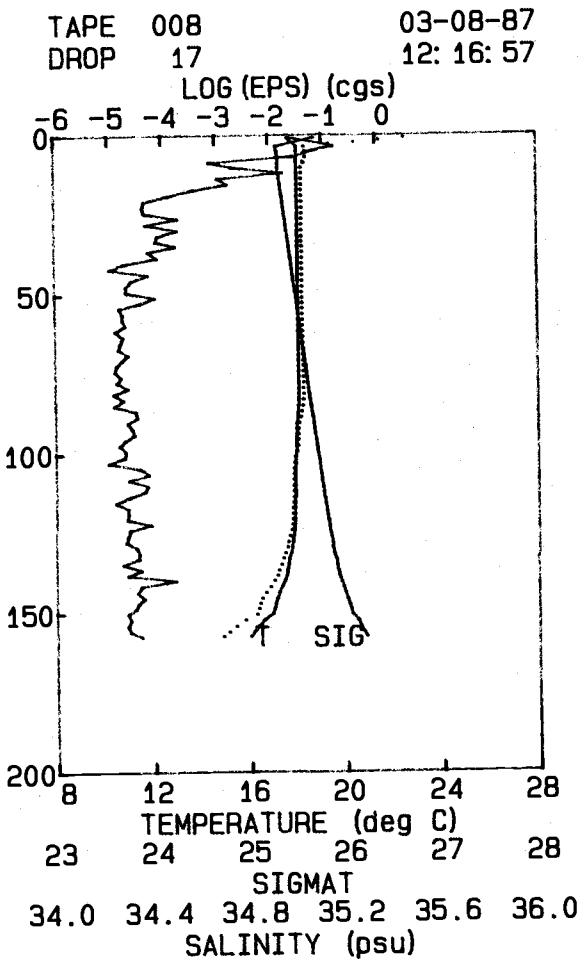
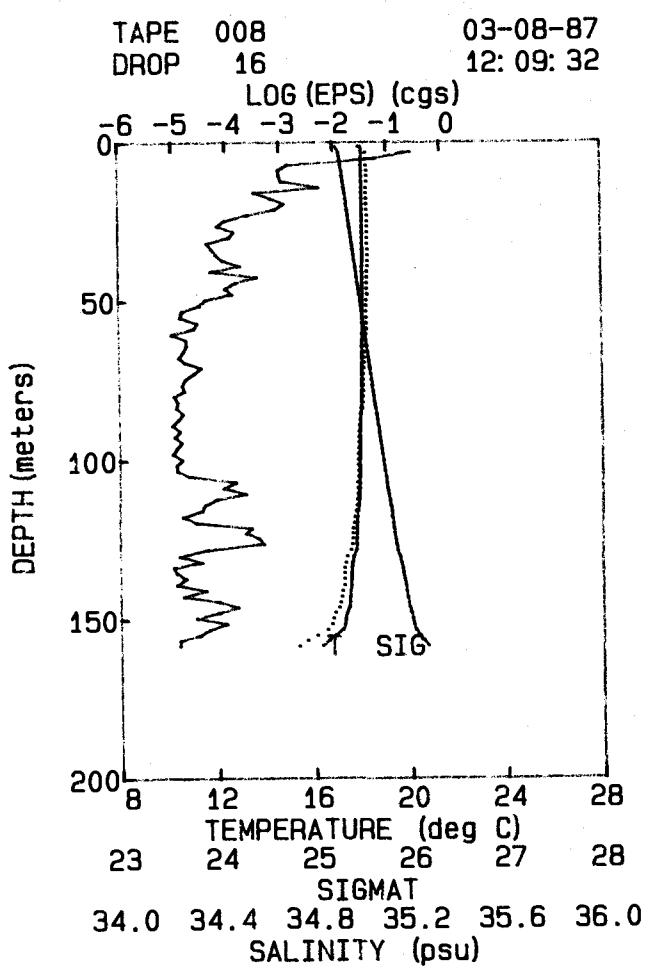


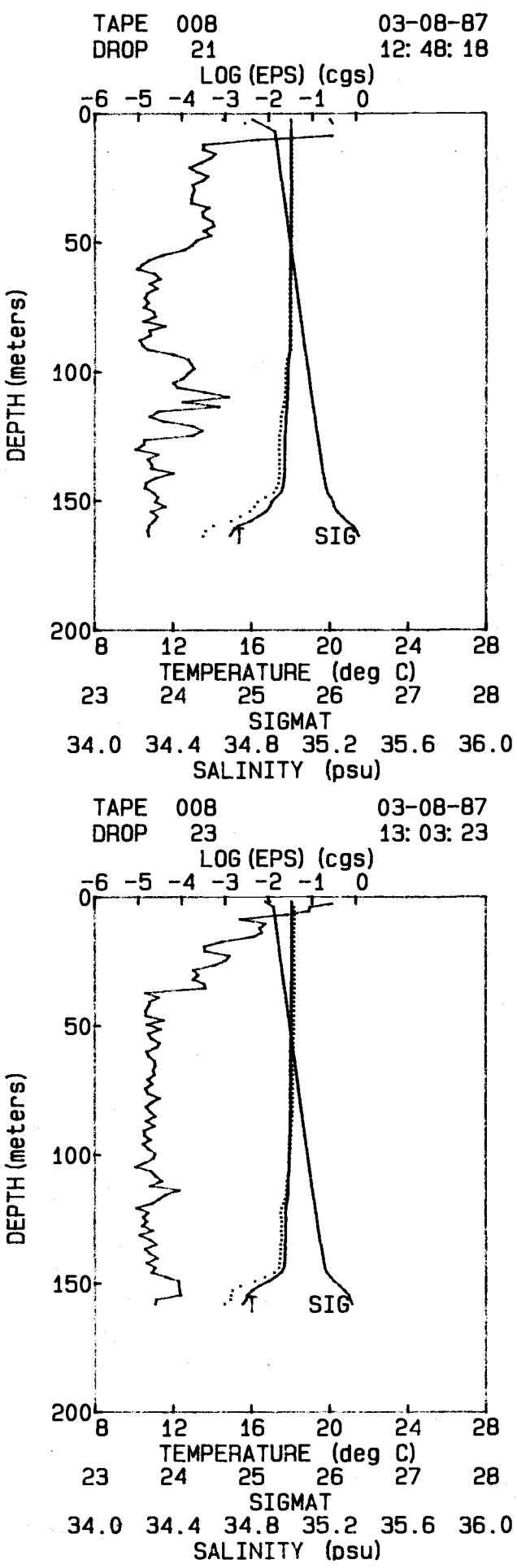
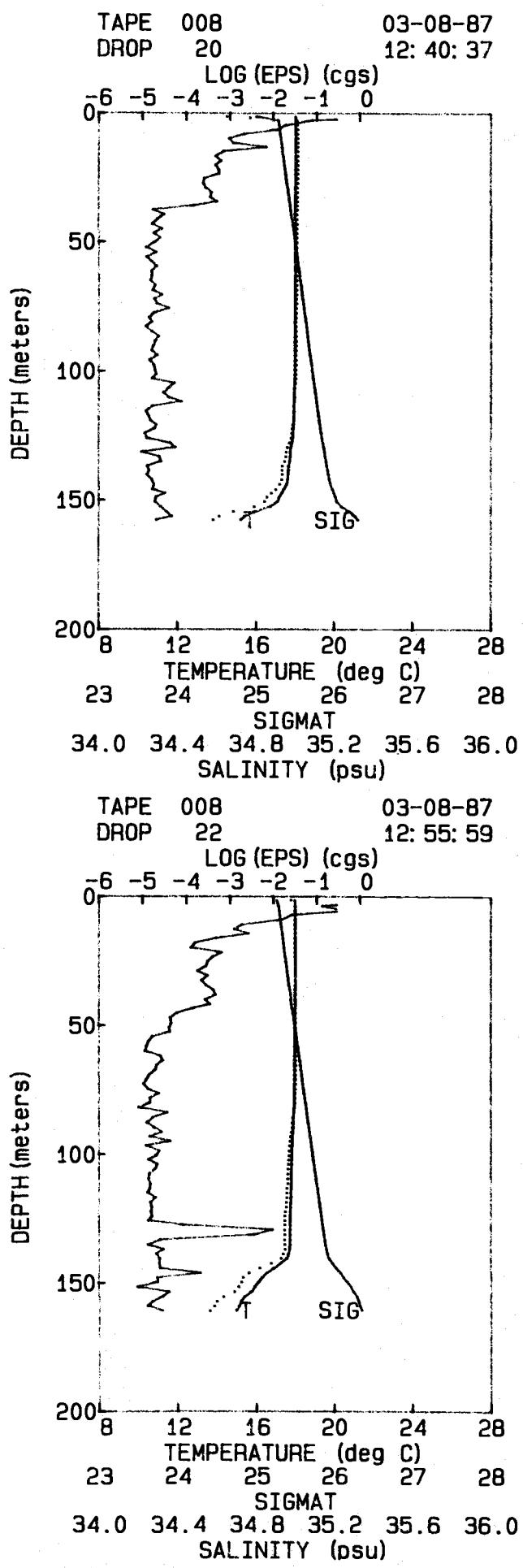


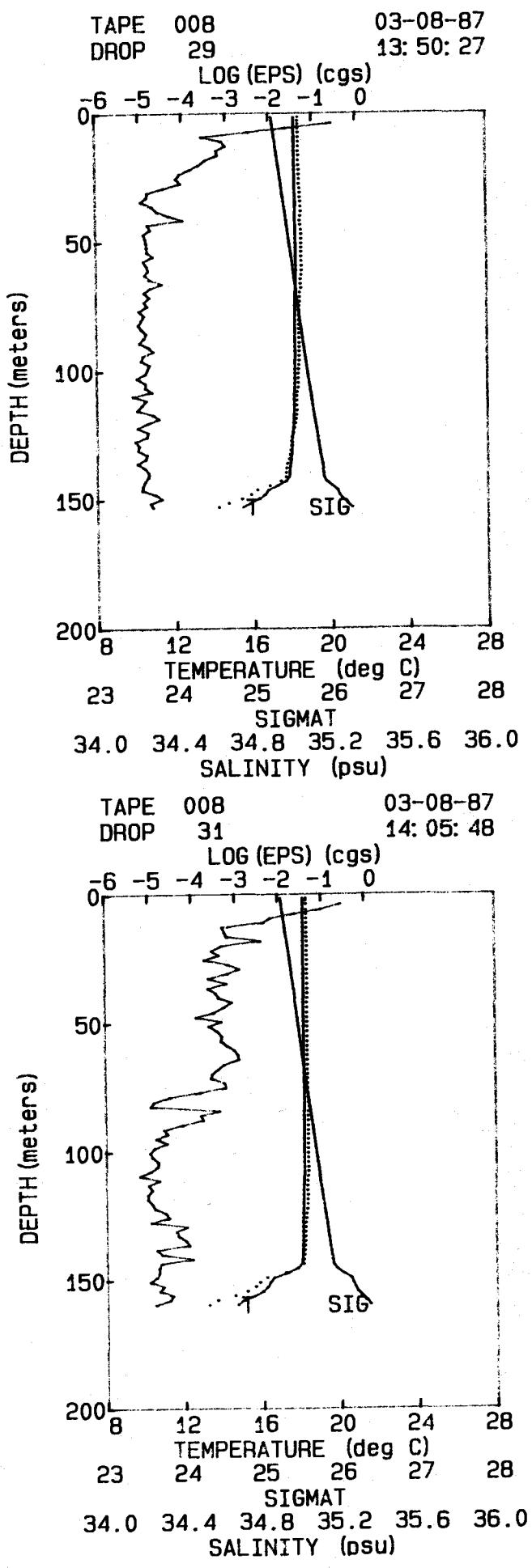
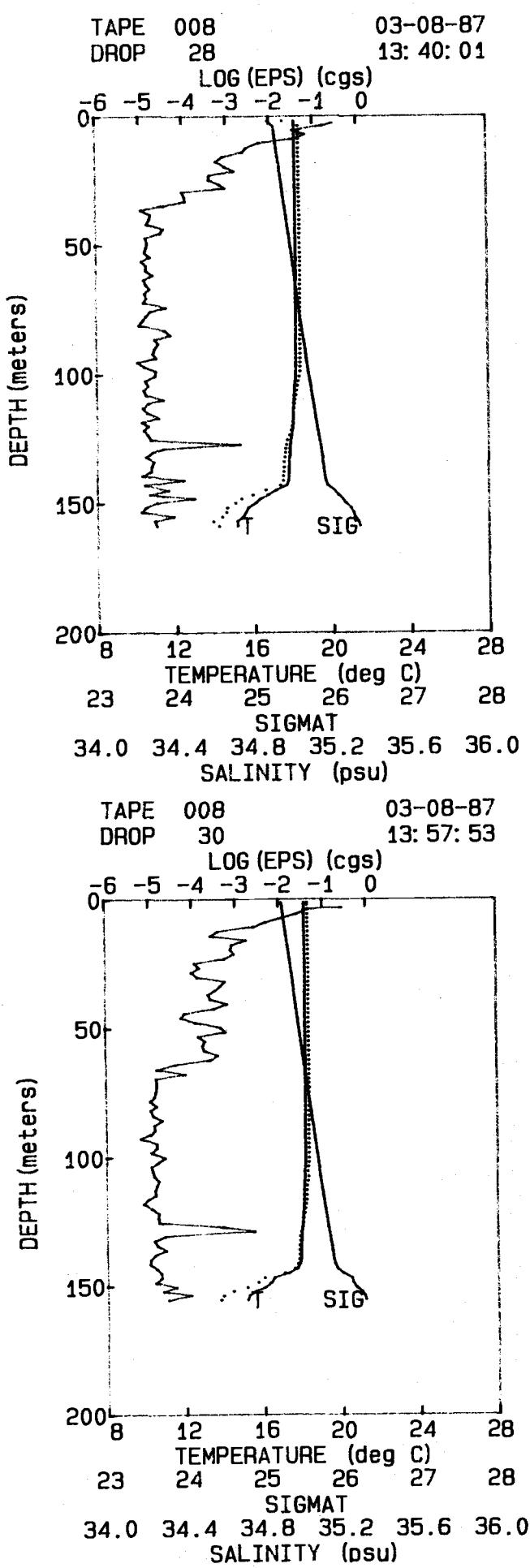


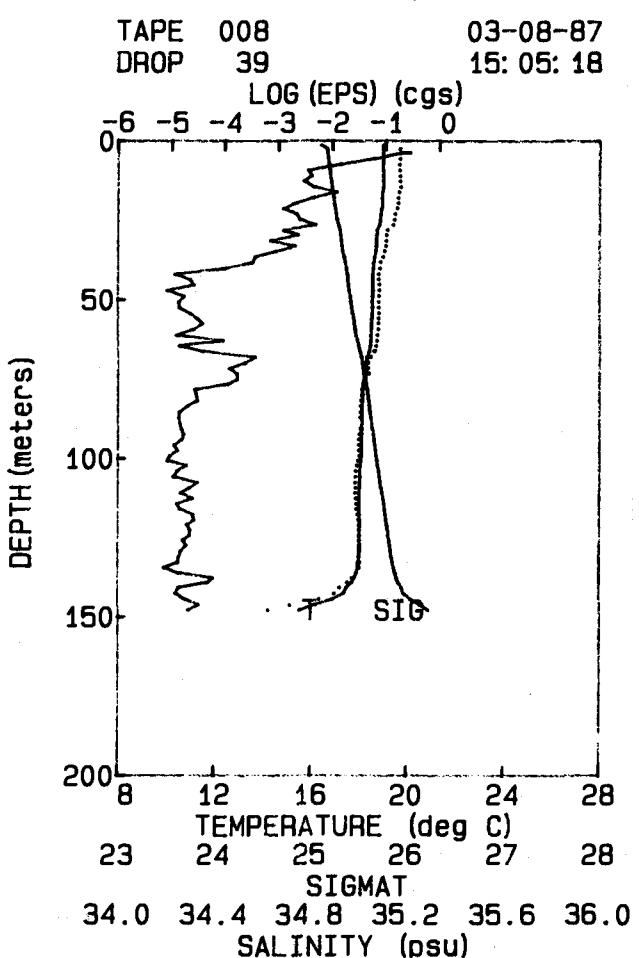
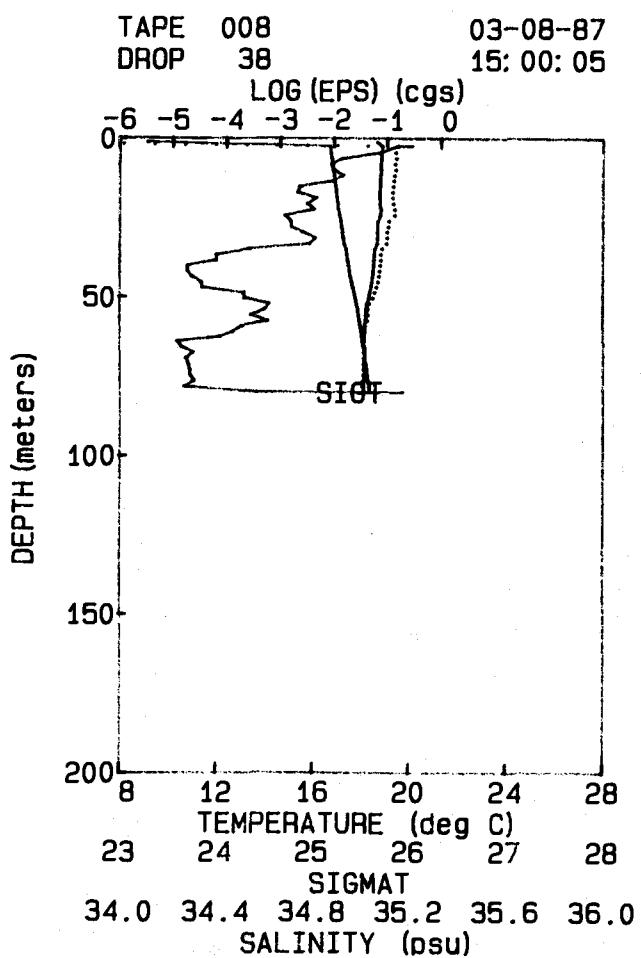
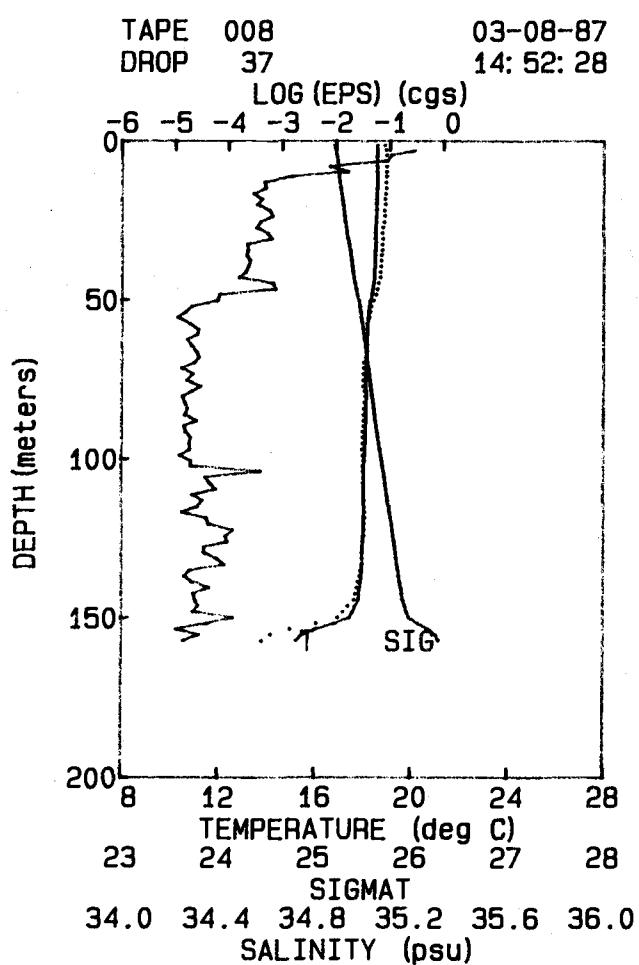
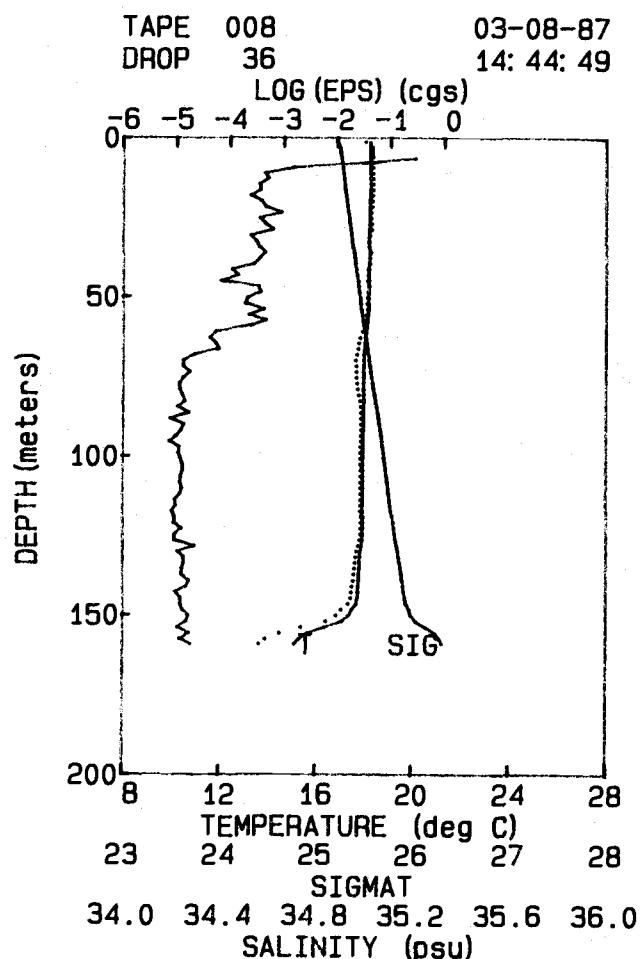


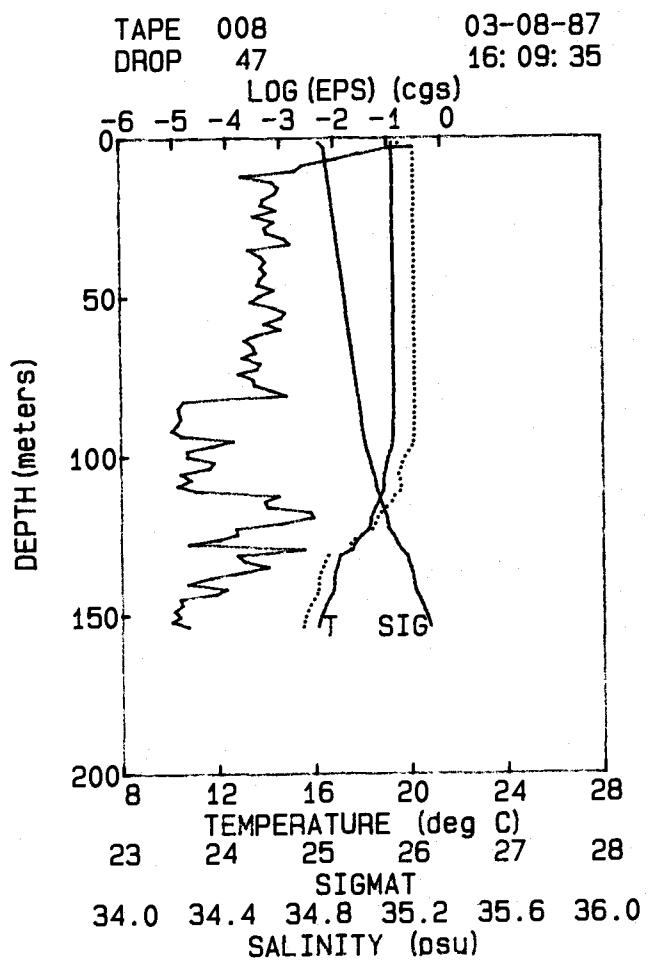
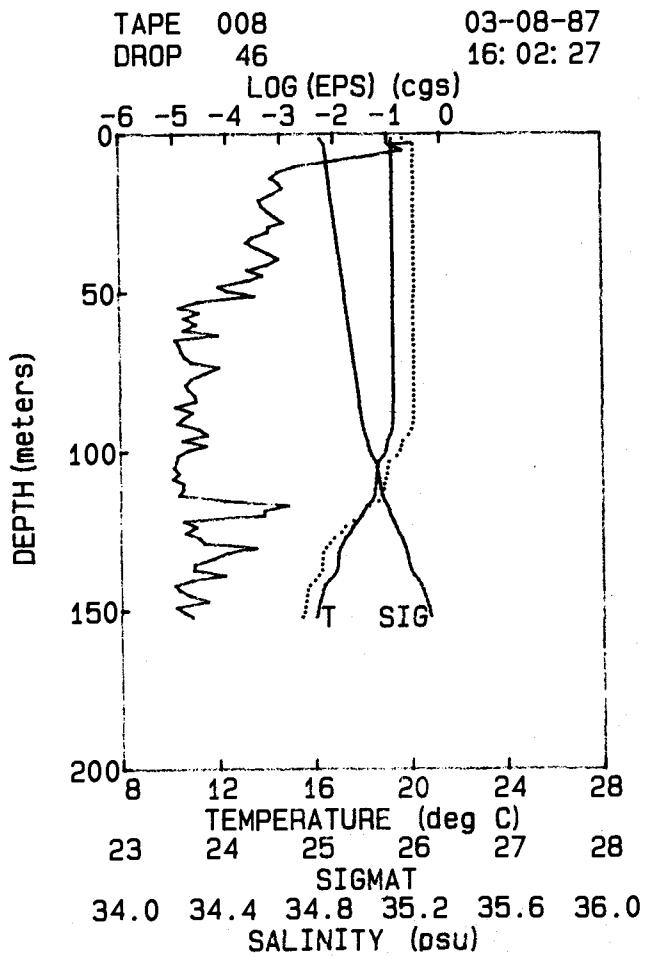
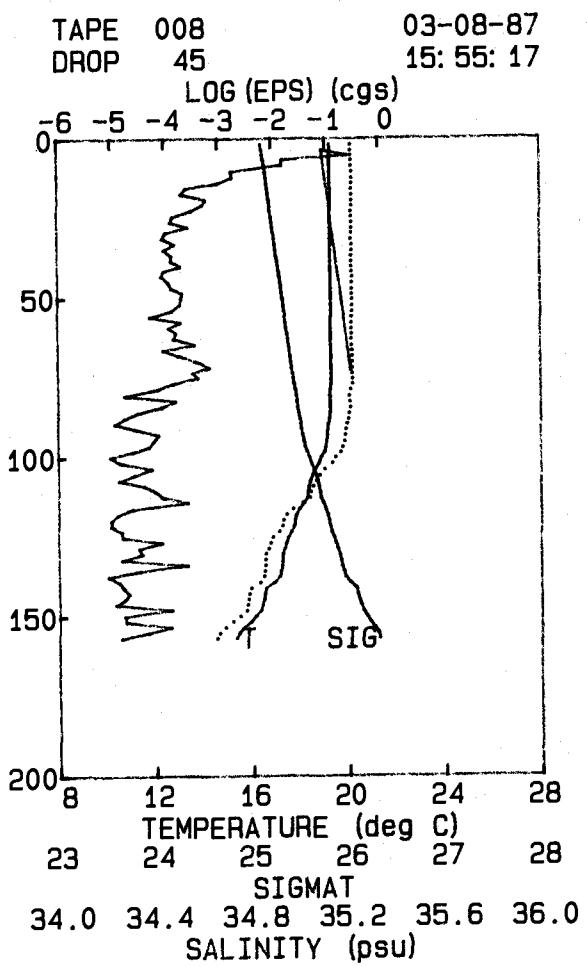
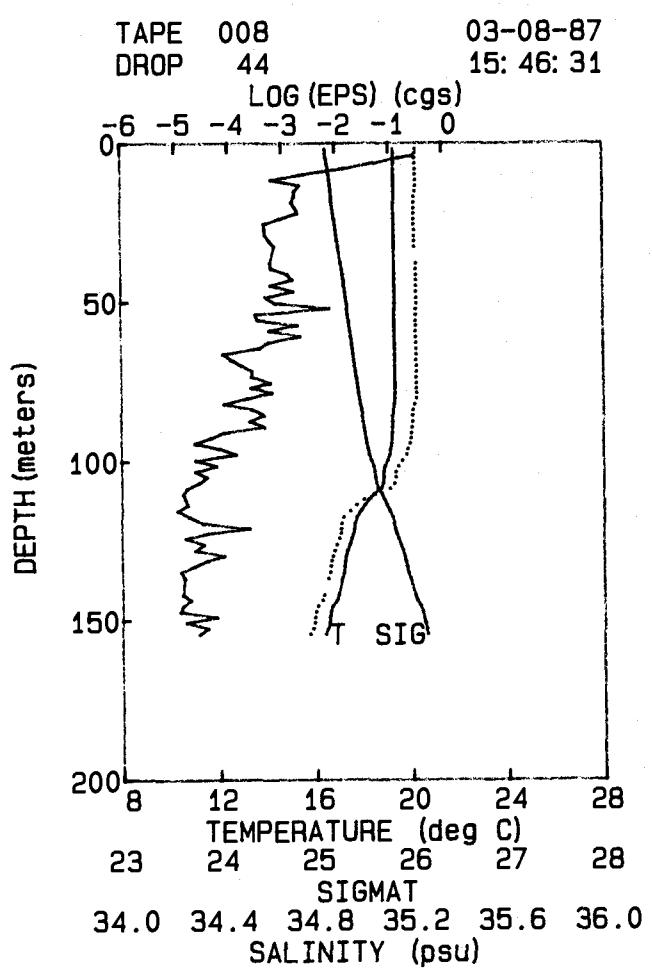


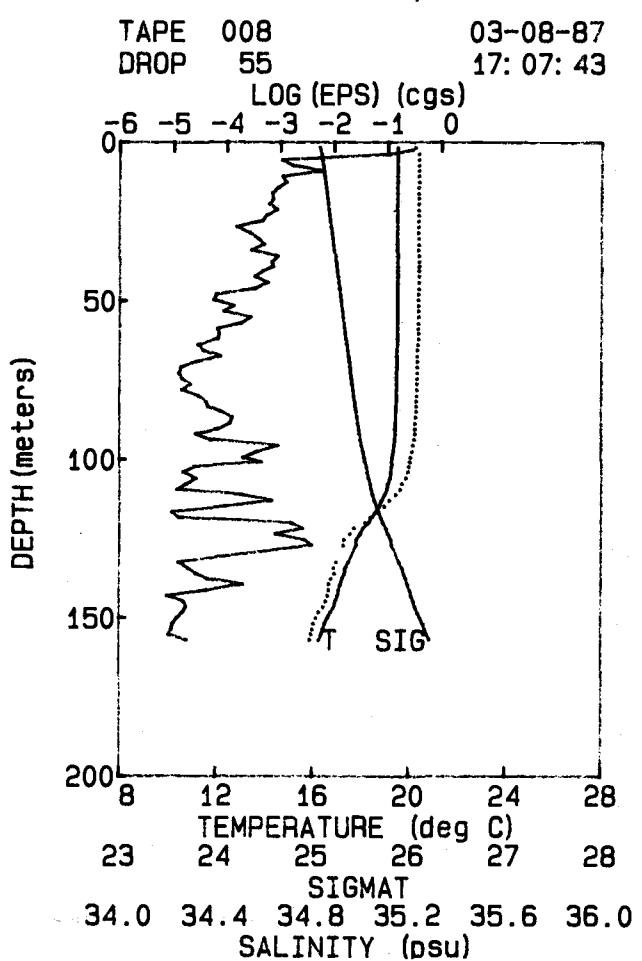
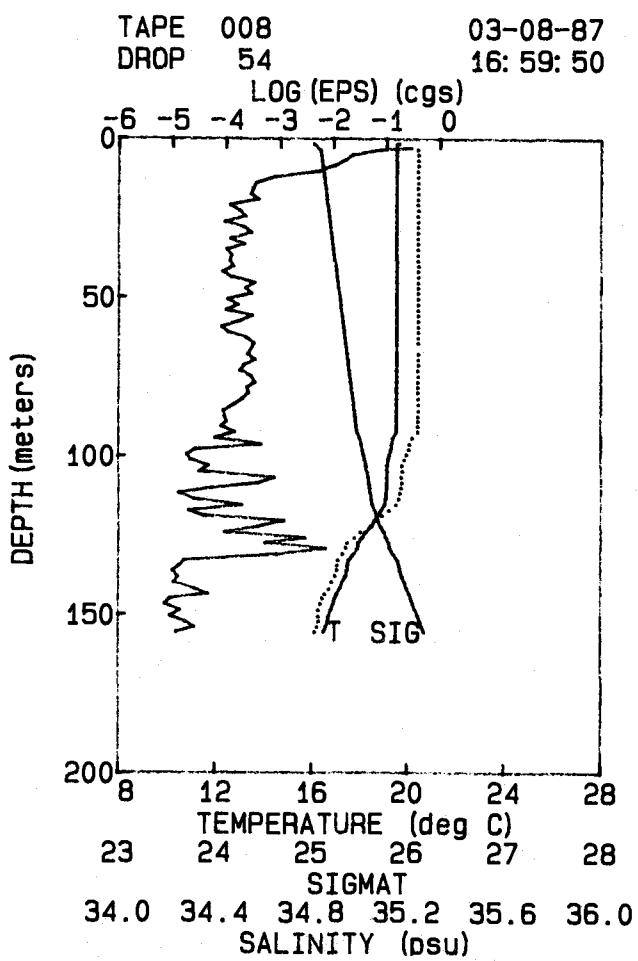
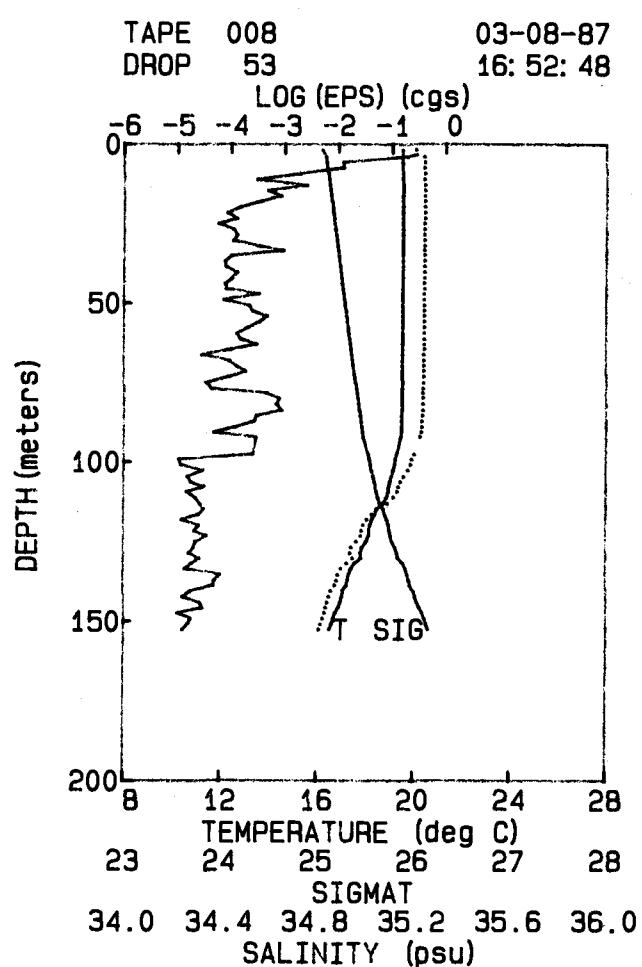
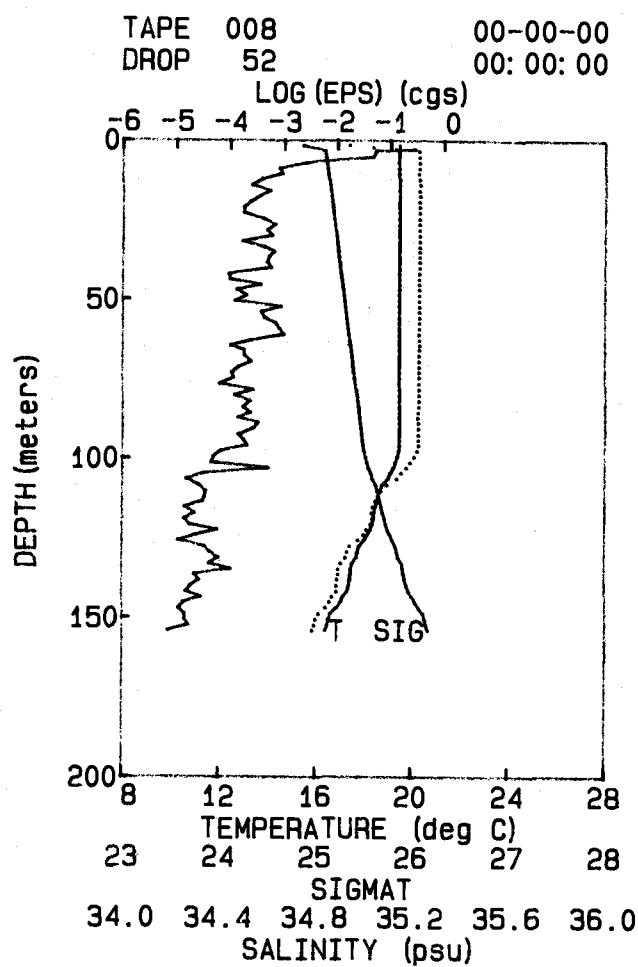


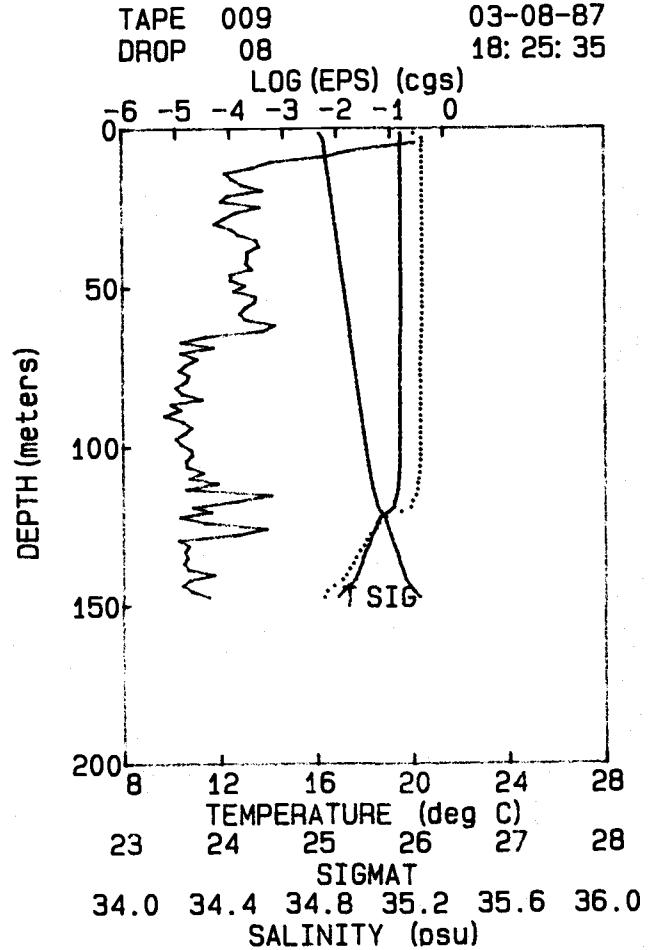
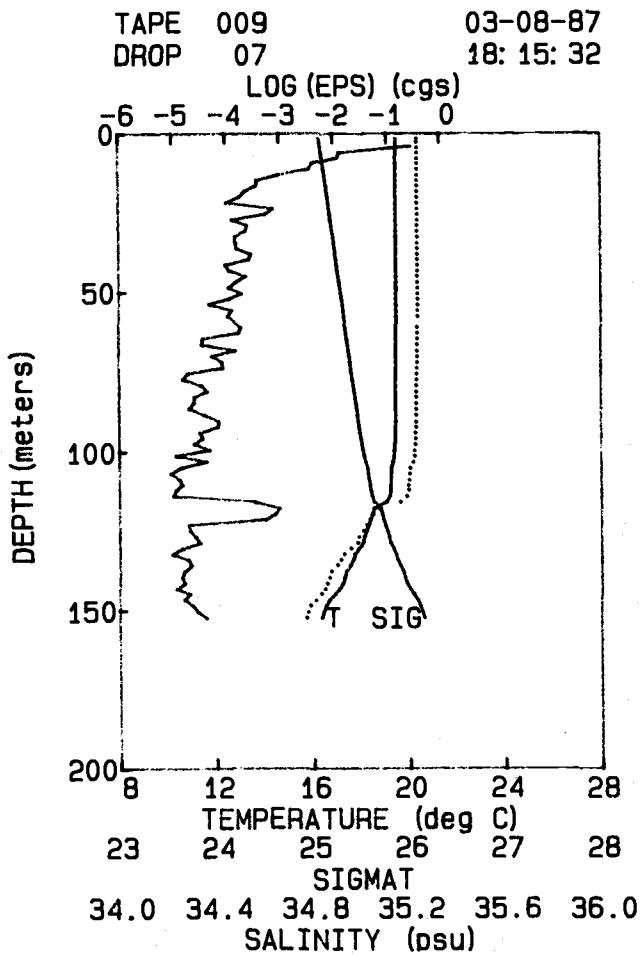
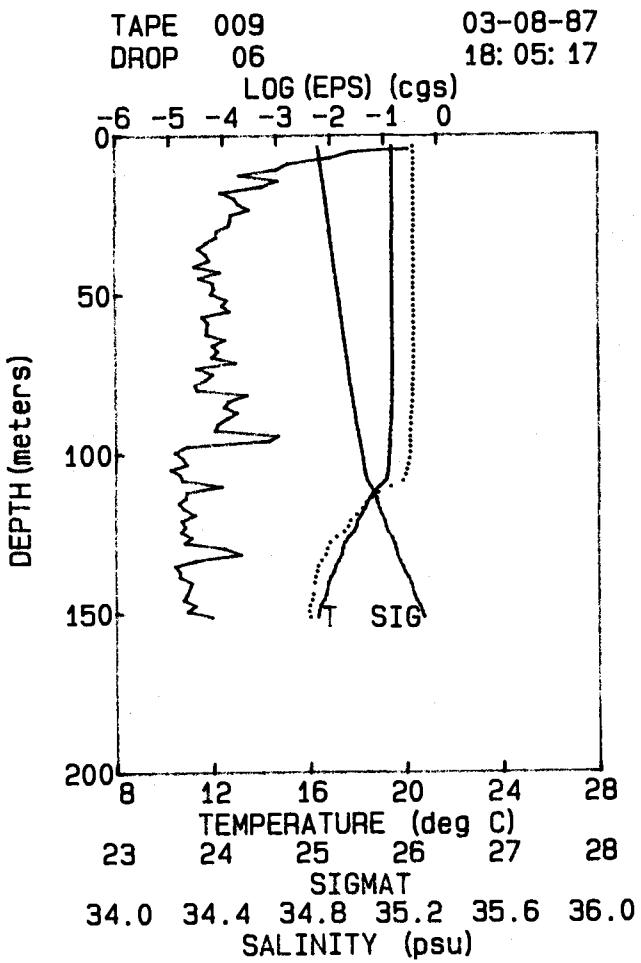
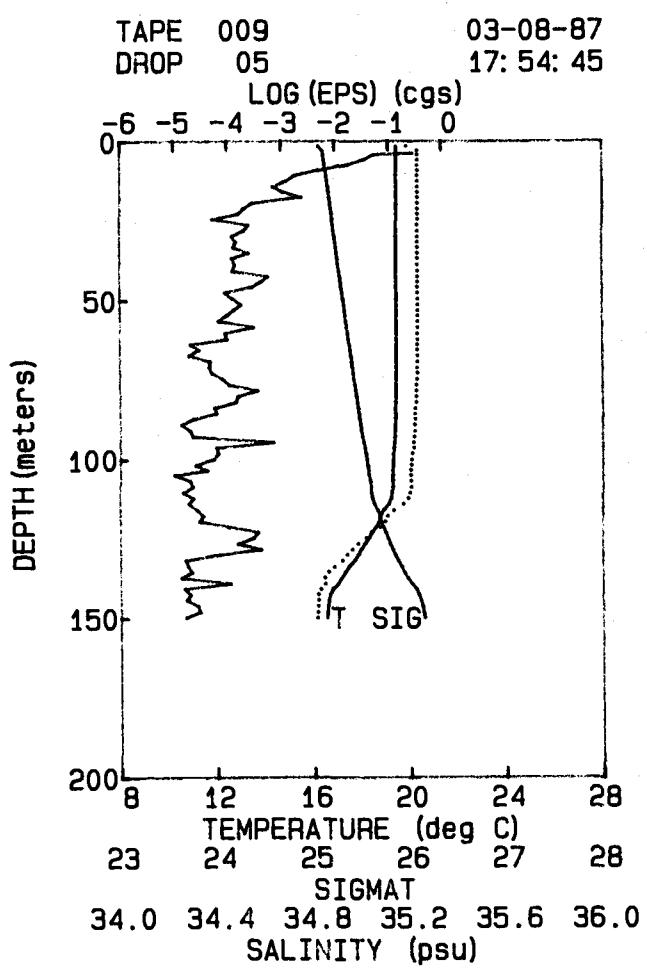


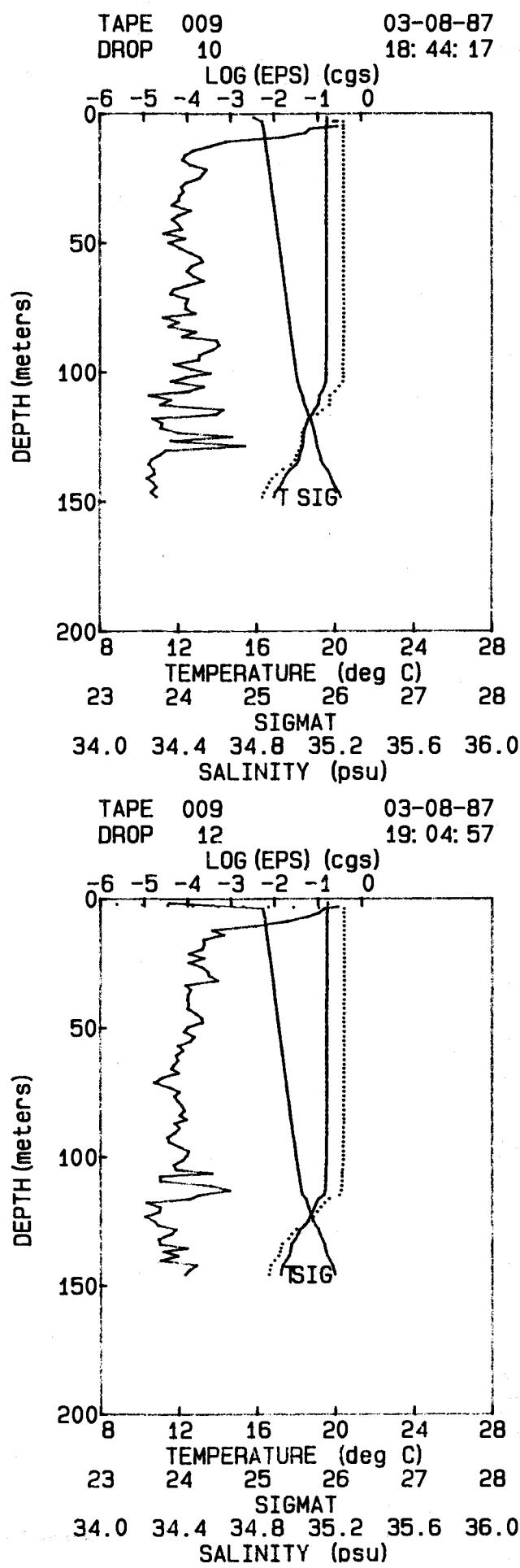
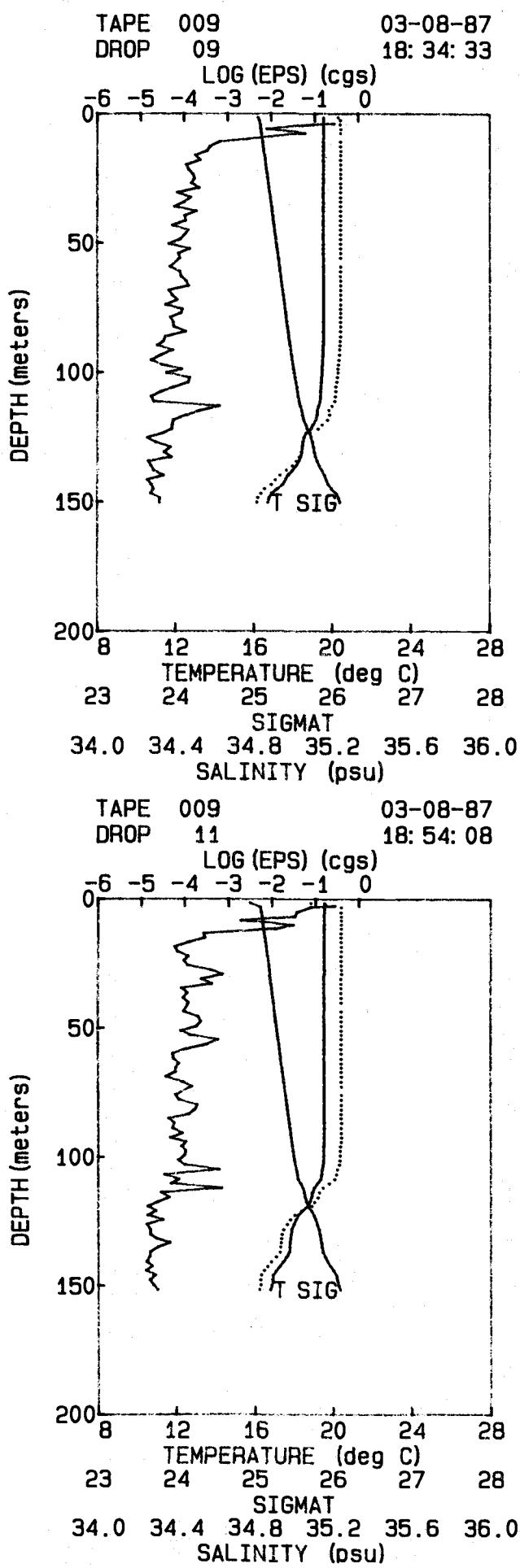


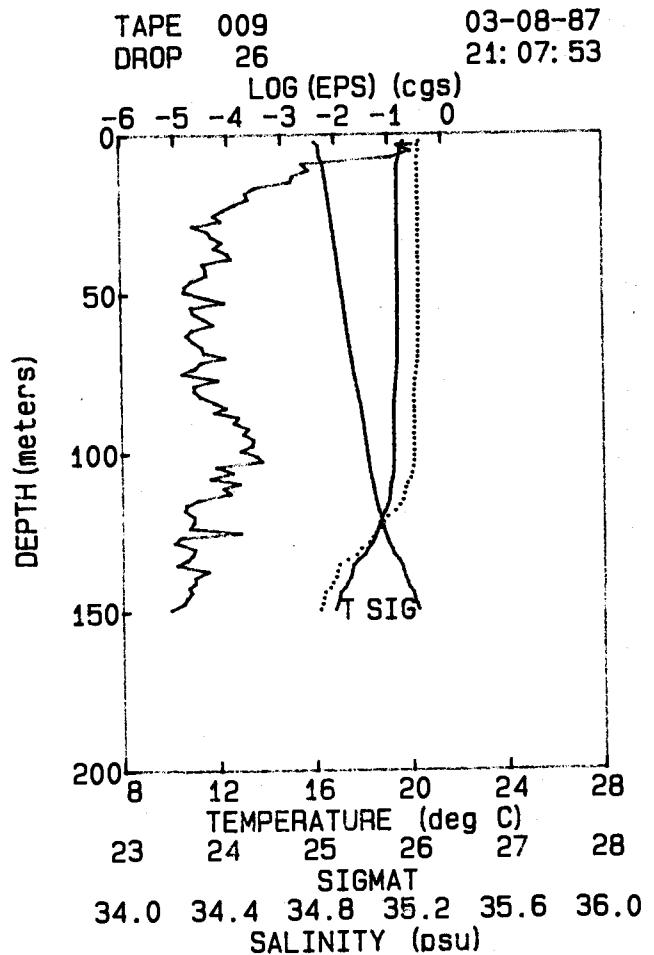
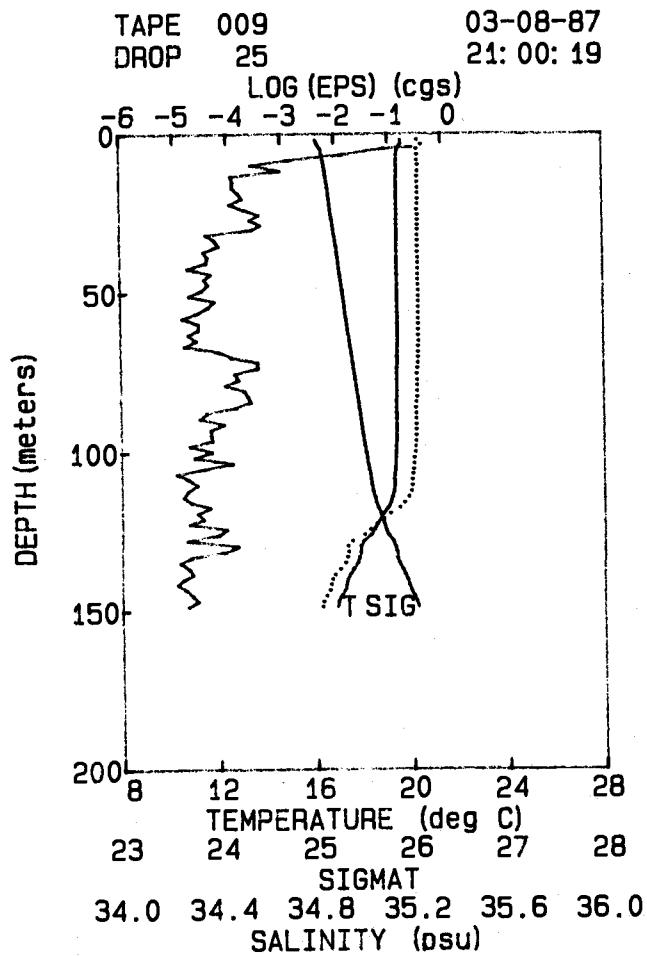
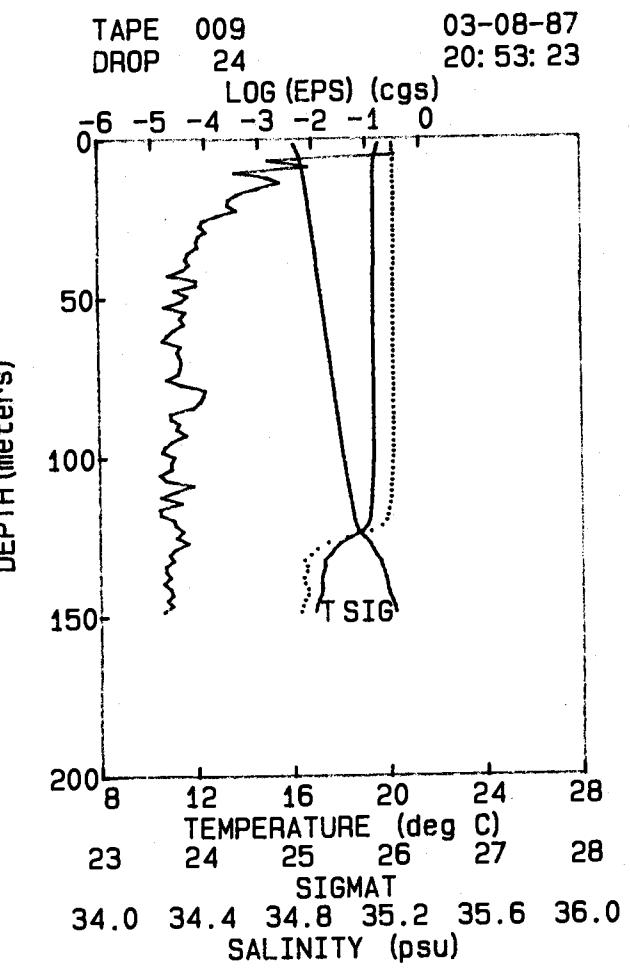
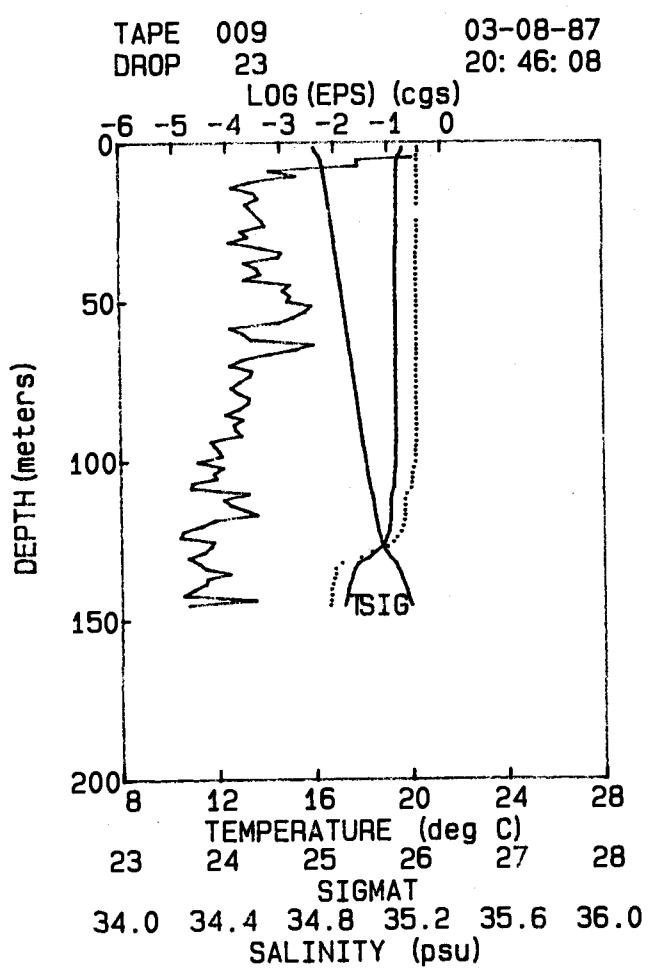


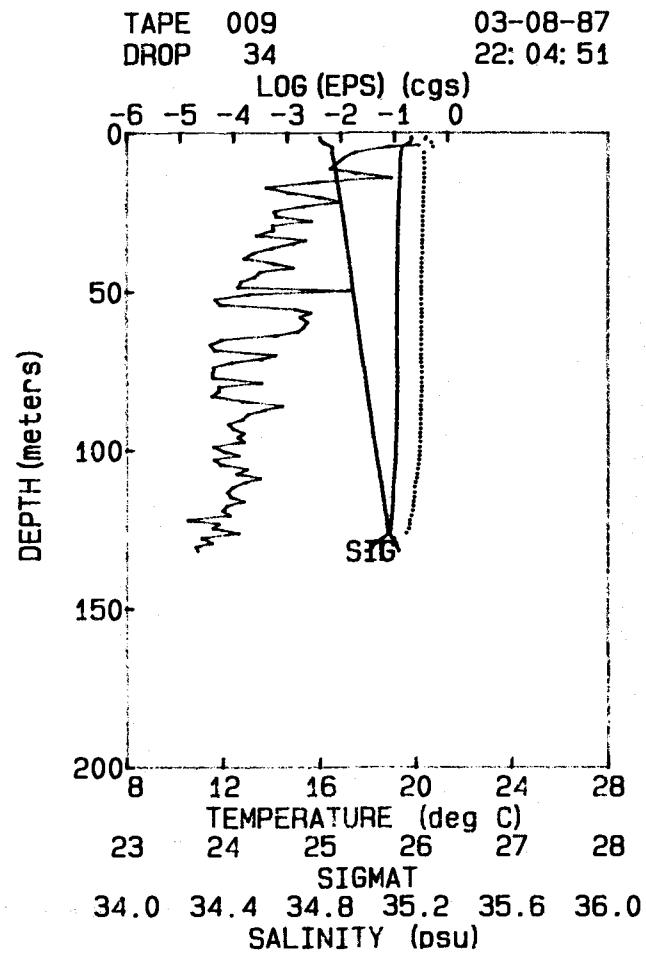
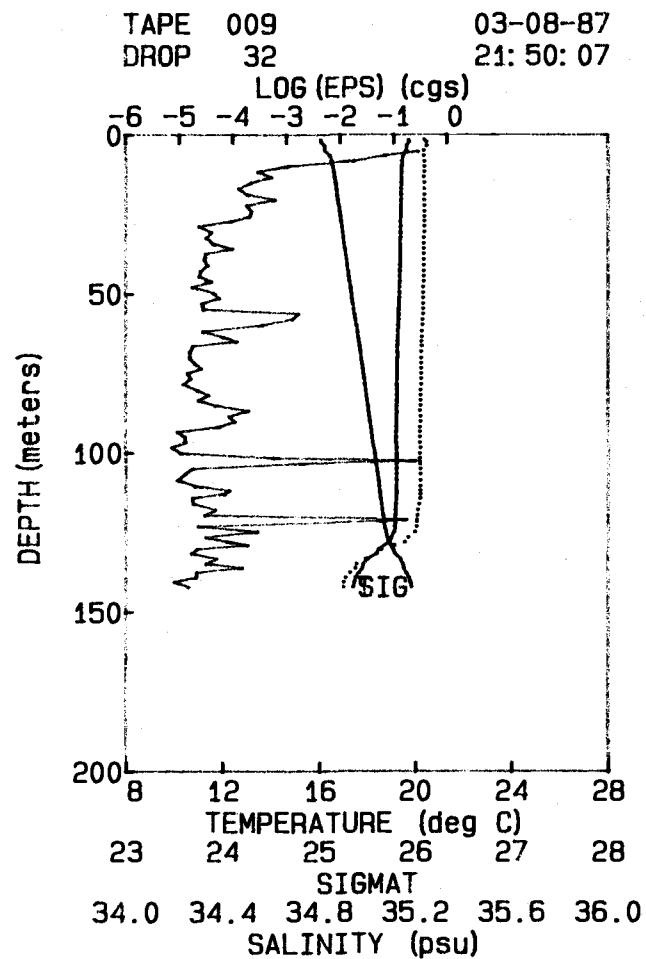
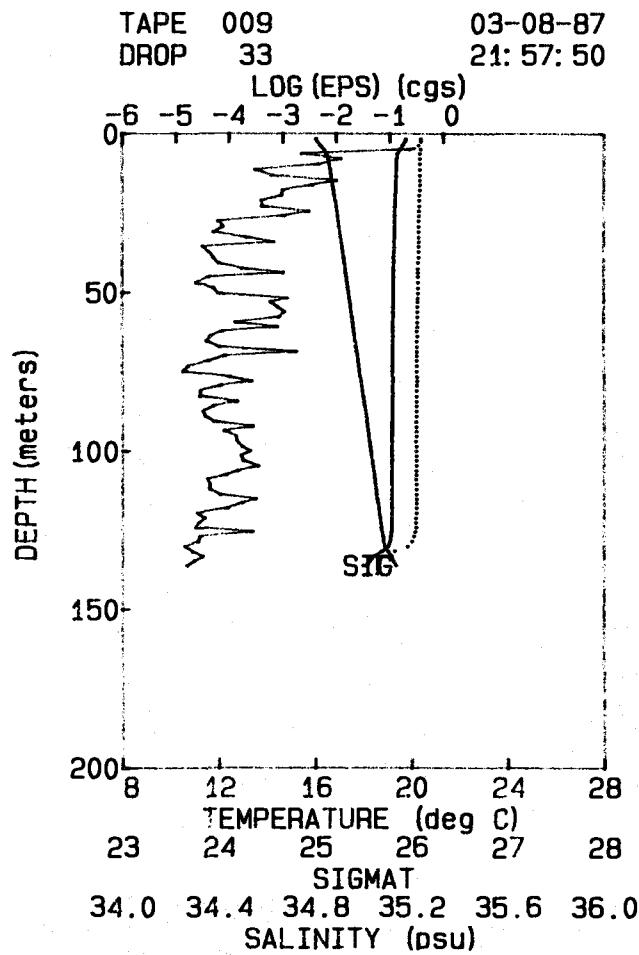
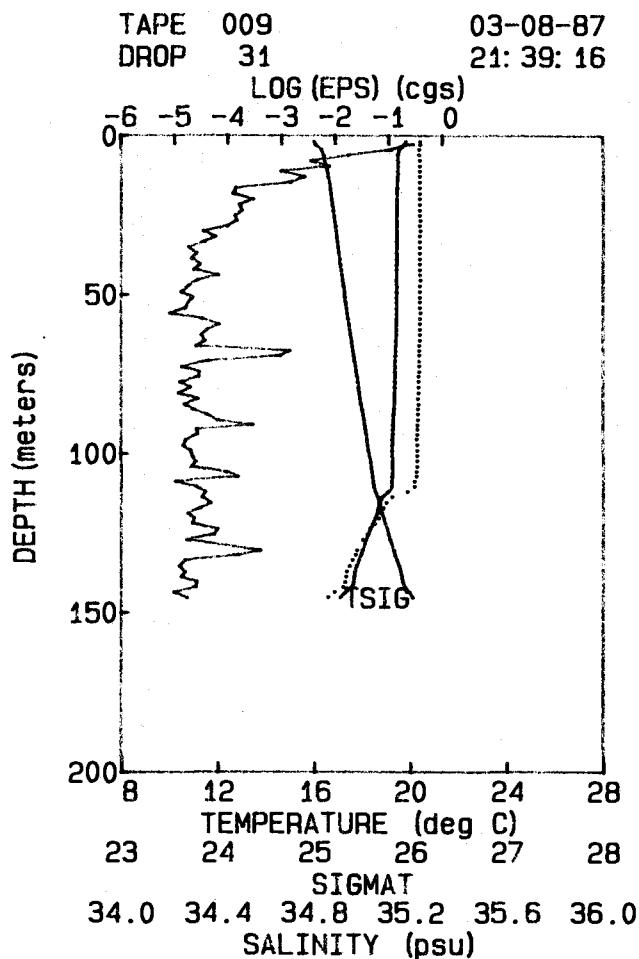




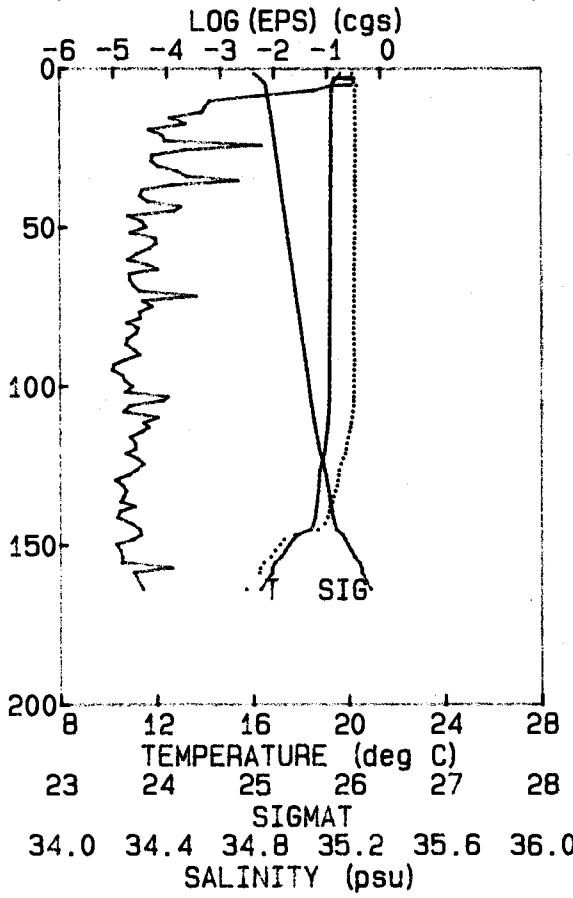






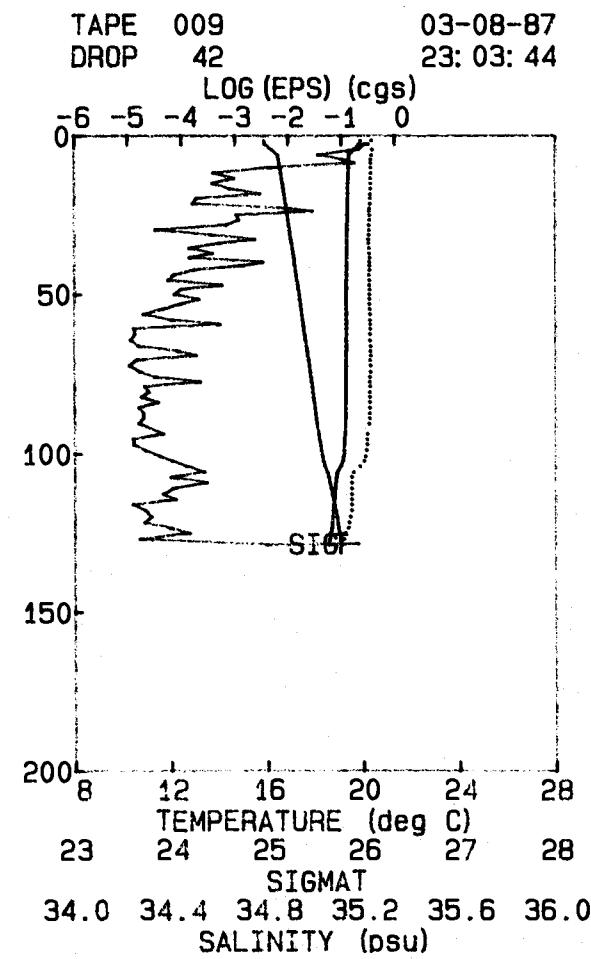


TAPE 009 03-08-87
 DROP 39 22: 41: 20



DEPTH (meters)

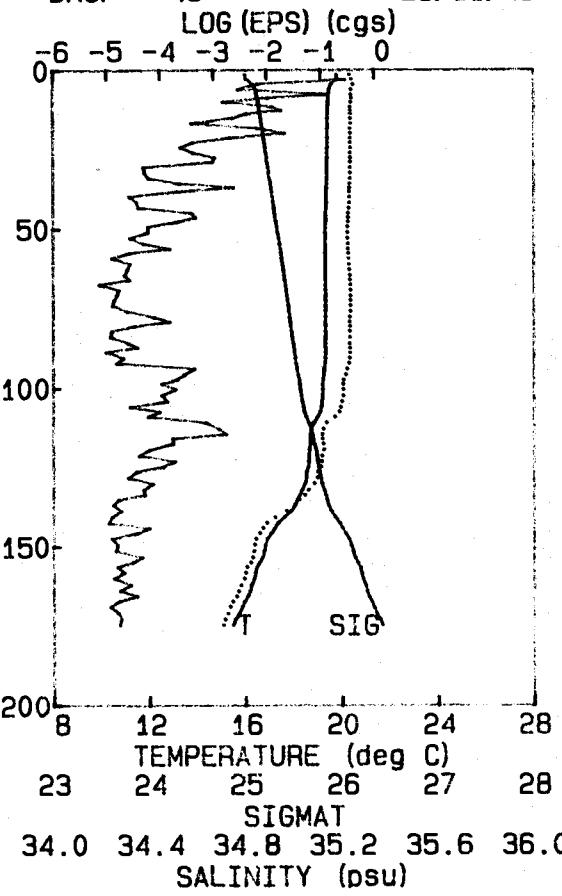
DEPTH (meters)

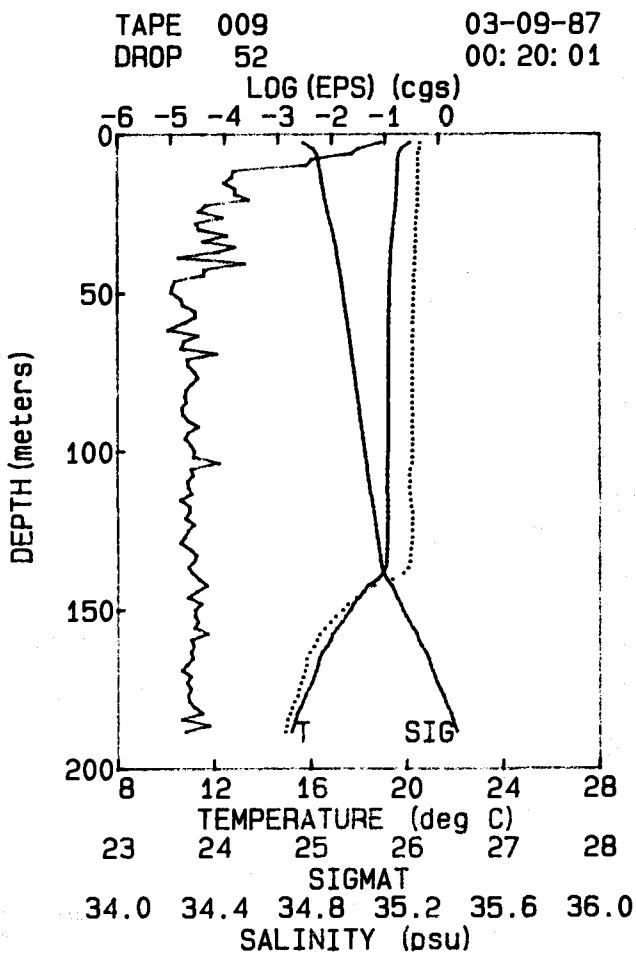
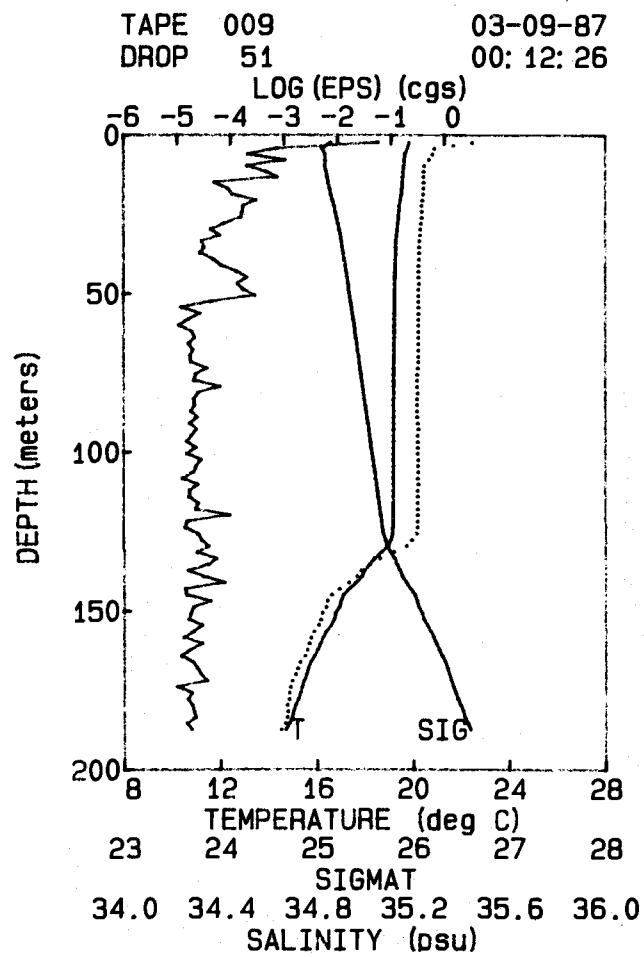
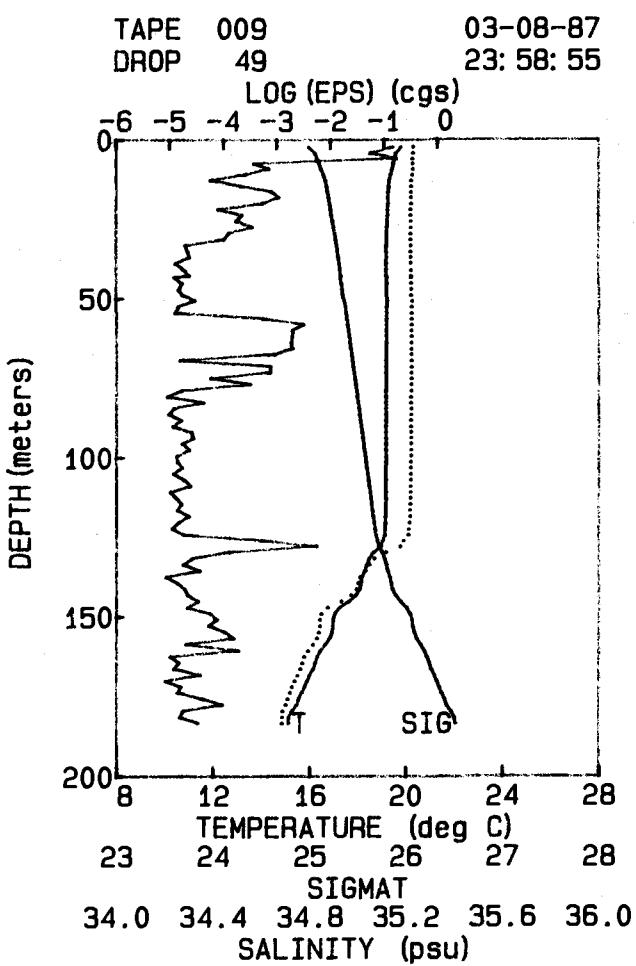
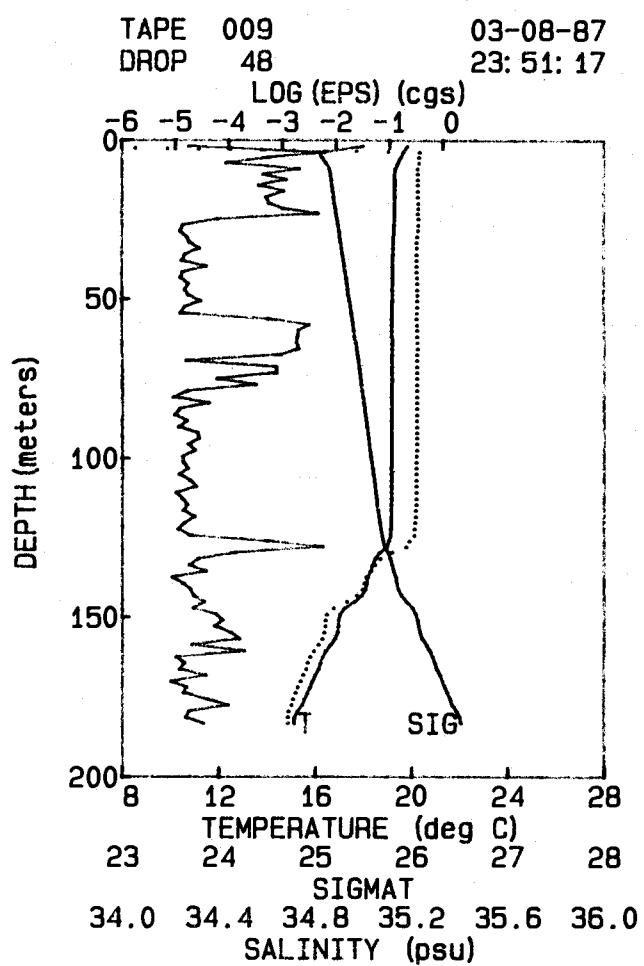


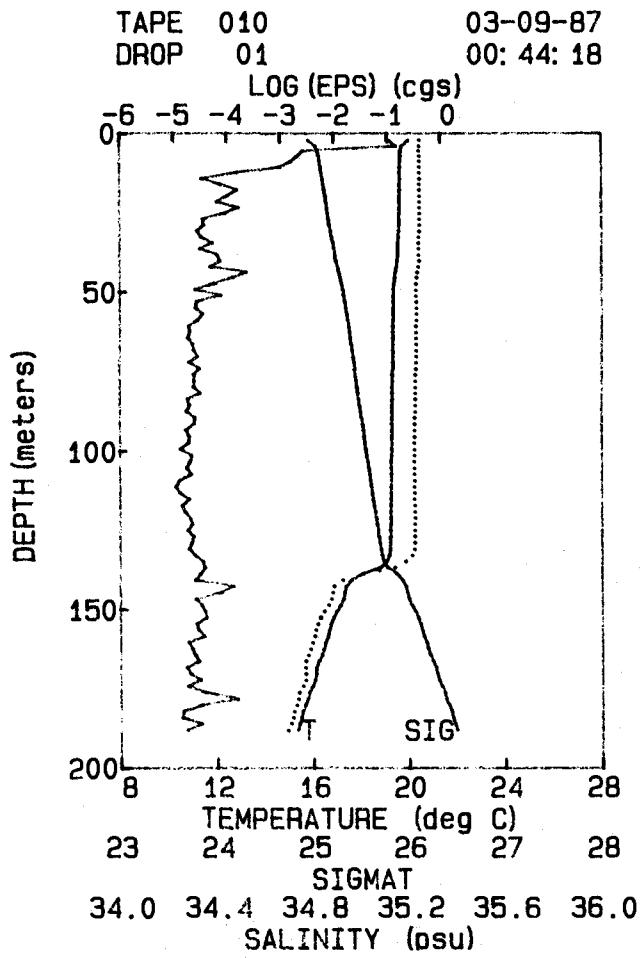
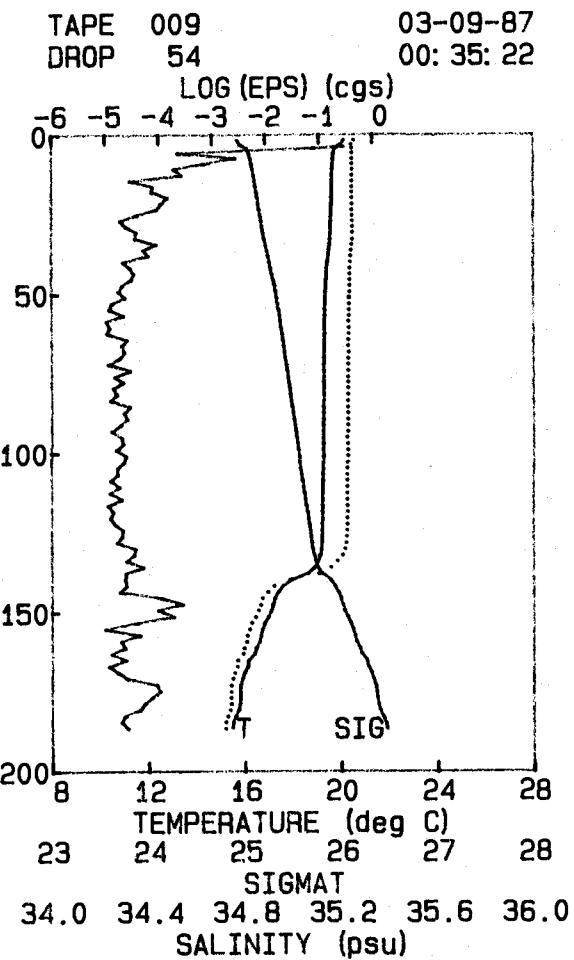
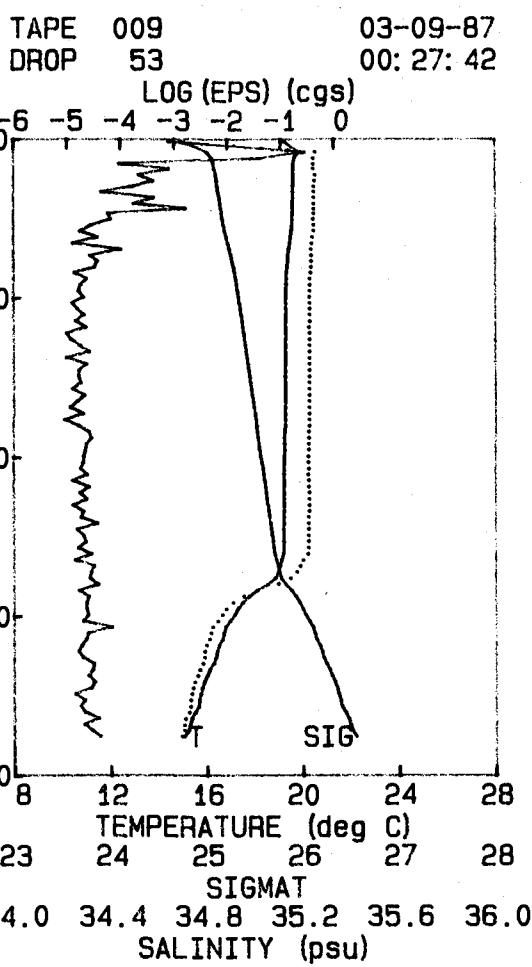
DEPTH (meters)

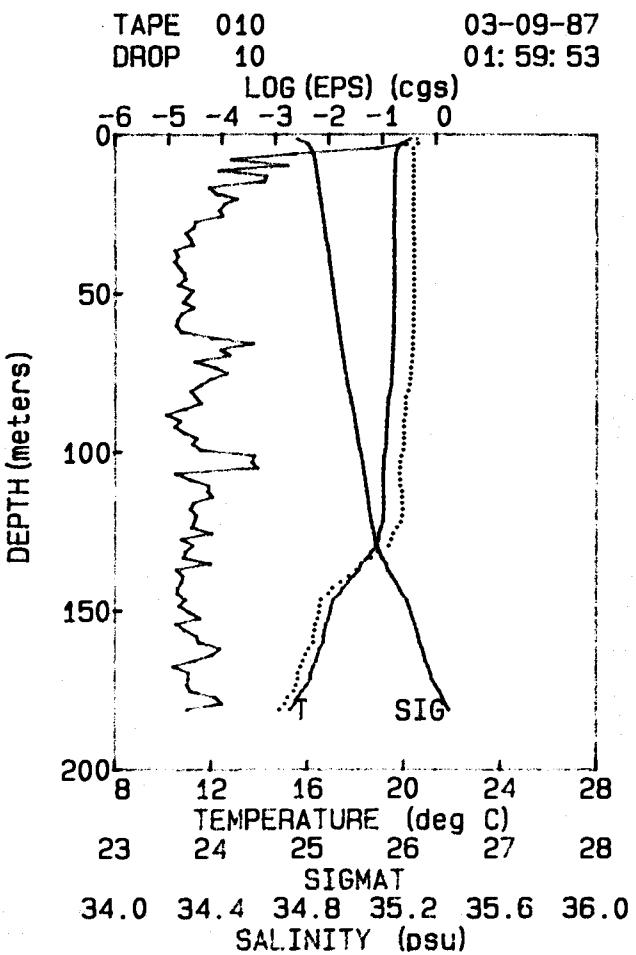
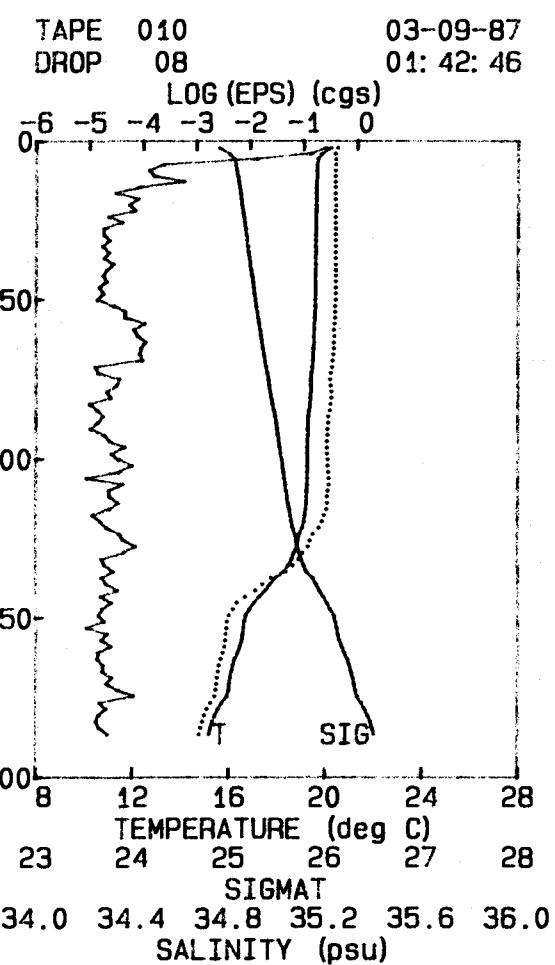
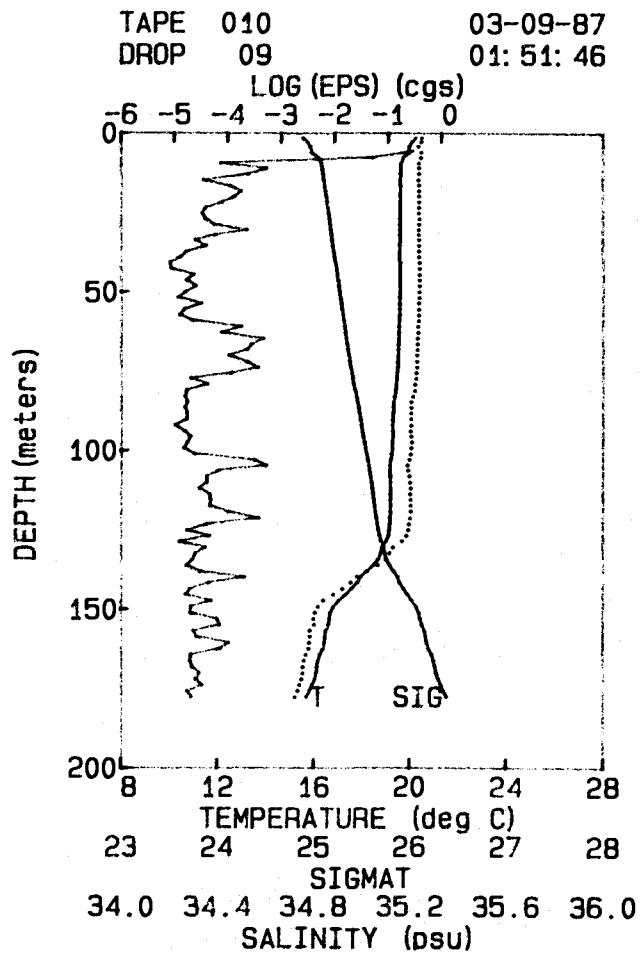
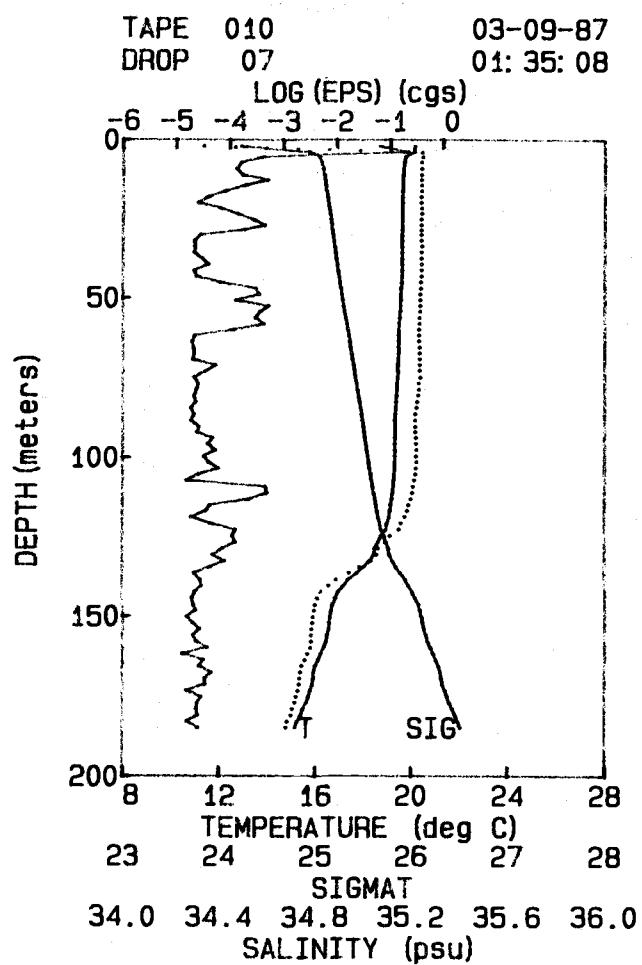
DEPTH (meters)

TAPE 009 03-08-87
 DROP 43 23: 11: 49







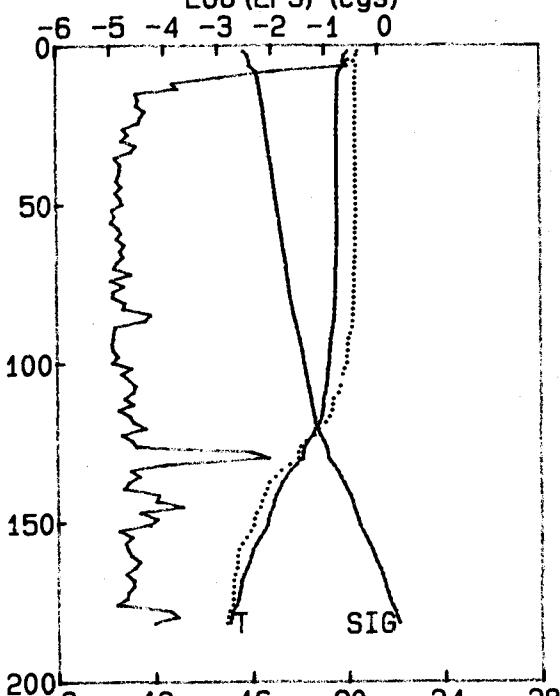


TAPE 011
DROP 01

03-09-87
03: 03: 28

LOG (EPS) (cgs)

DEPTH (meters)



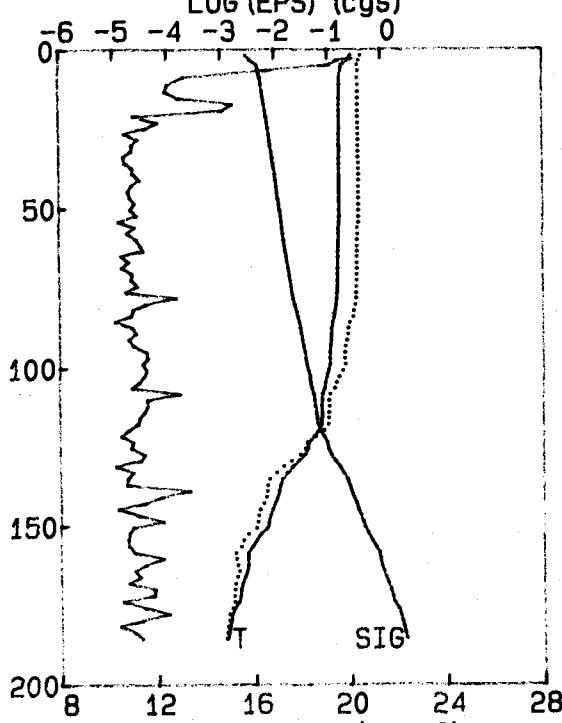
8 12 16 20 24 28
23 24 25 26 27 28
SIGMAT
34.0 34.4 34.8 35.2 35.6 36.0
SALINITY (psu)

TAPE 011
DROP 03

03-09-87
03: 19: 32

LOG (EPS) (cgs)

DEPTH (meters)



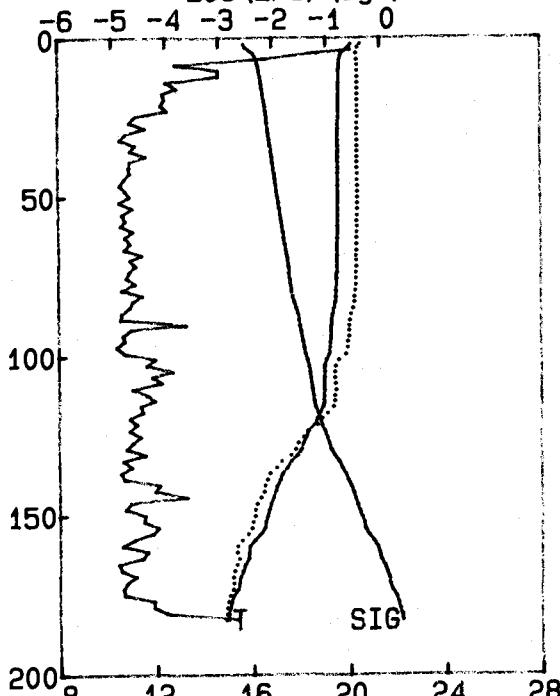
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23 24 25 26 27 28
SIGMAT
34.0 34.4 34.8 35.2 35.6 36.0
SALINITY (psu)

TAPE 011
DROP 02

03-09-87
03: 11: 24

LOG (EPS) (cgs)

DEPTH (meters)



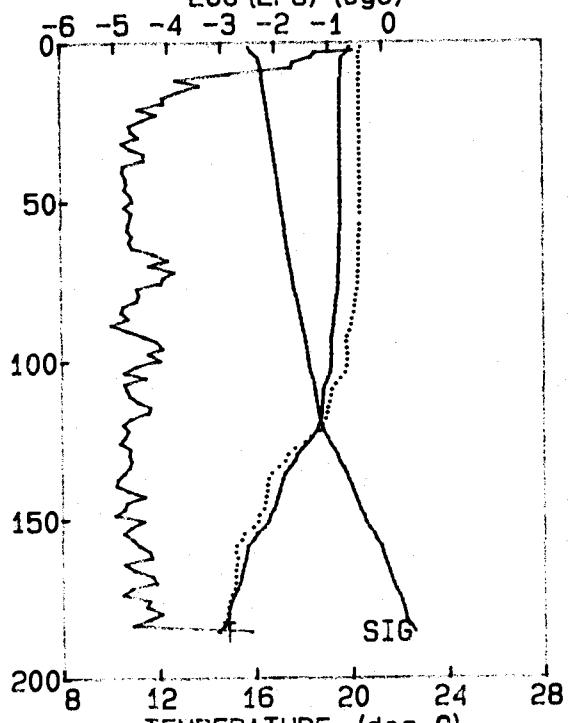
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SIGMAT
34.0 34.4 34.8 35.2 35.6 36.0
SALINITY (psu)

TAPE 011
DROP 04

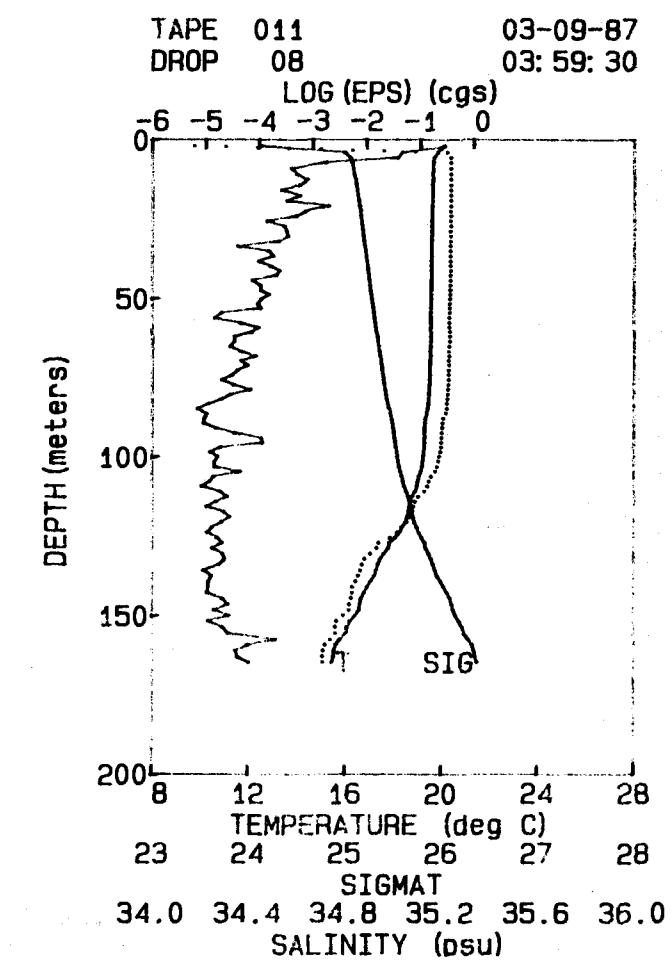
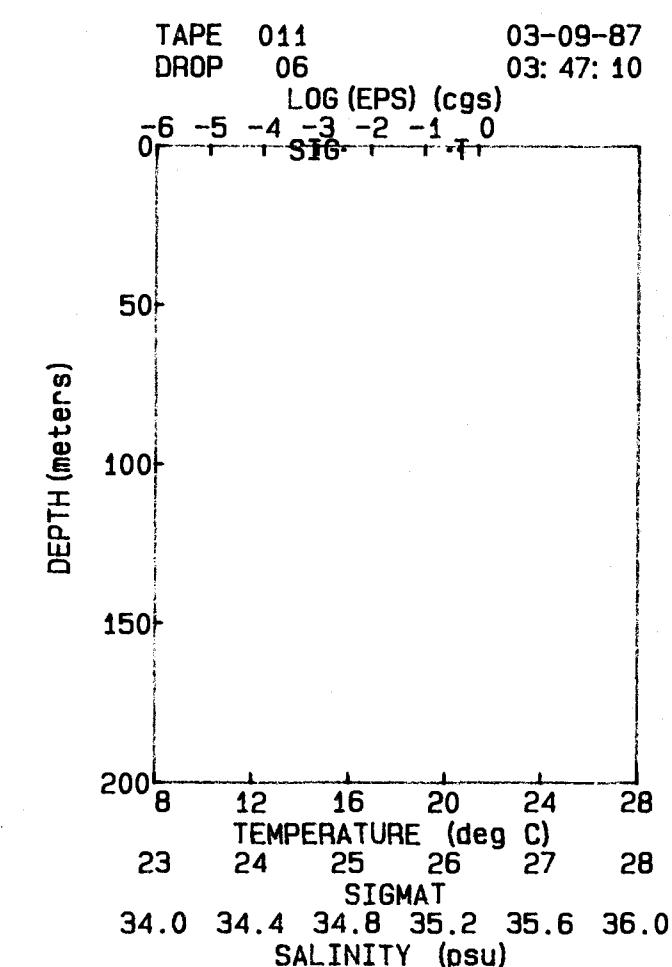
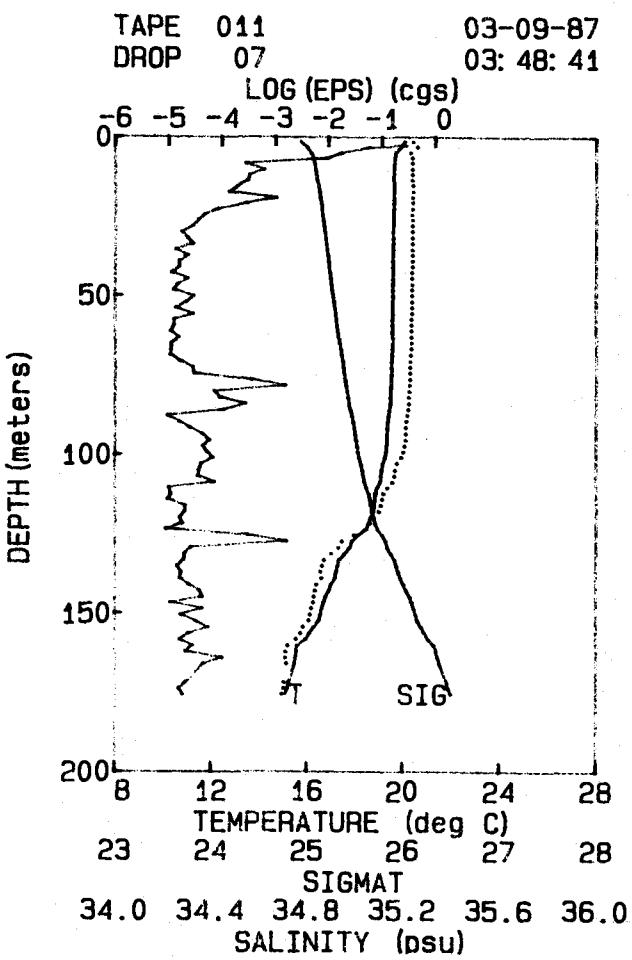
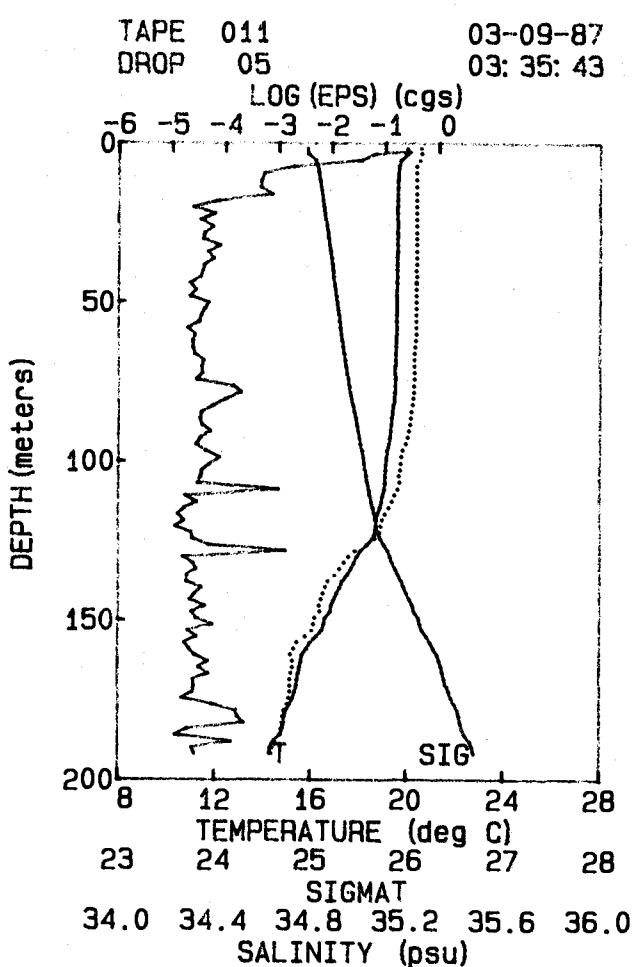
03-09-87
03: 27: 32

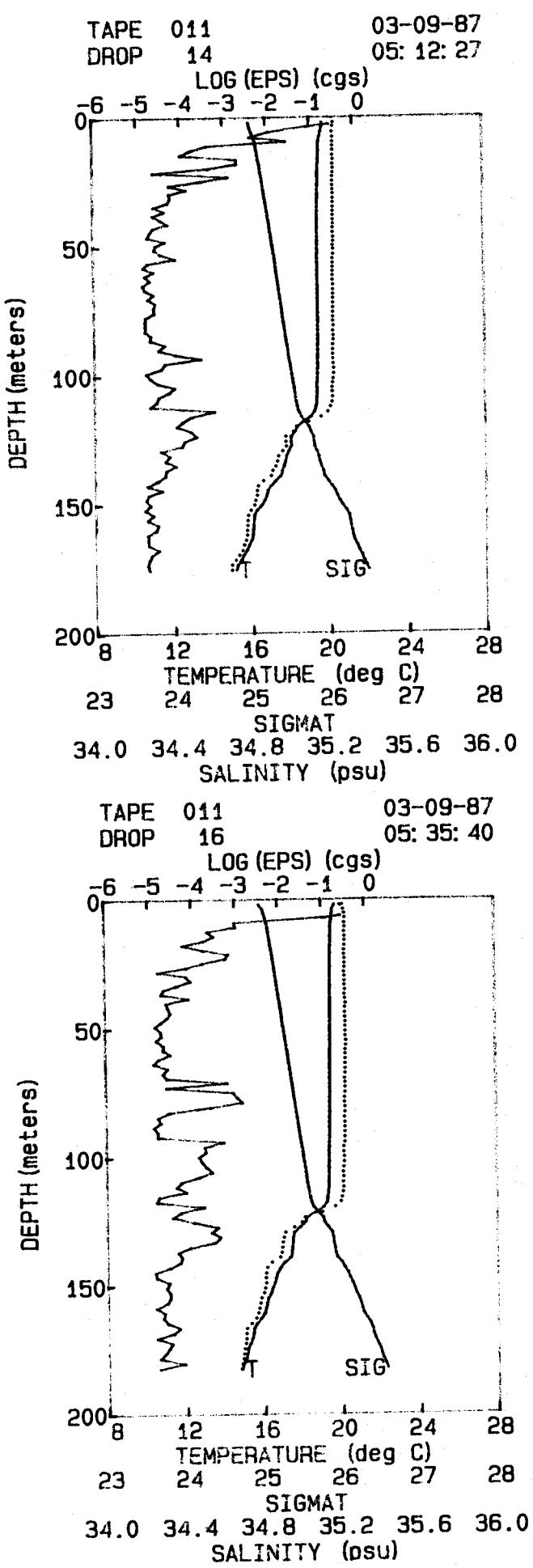
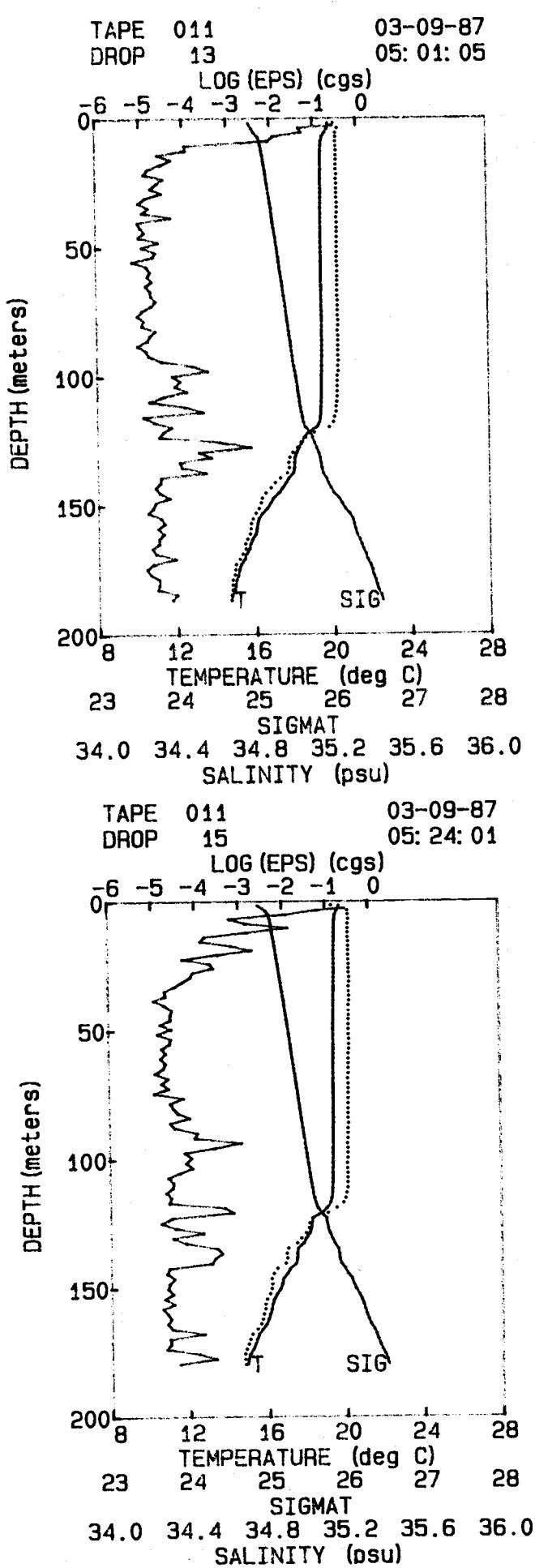
LOG (EPS) (cgs)

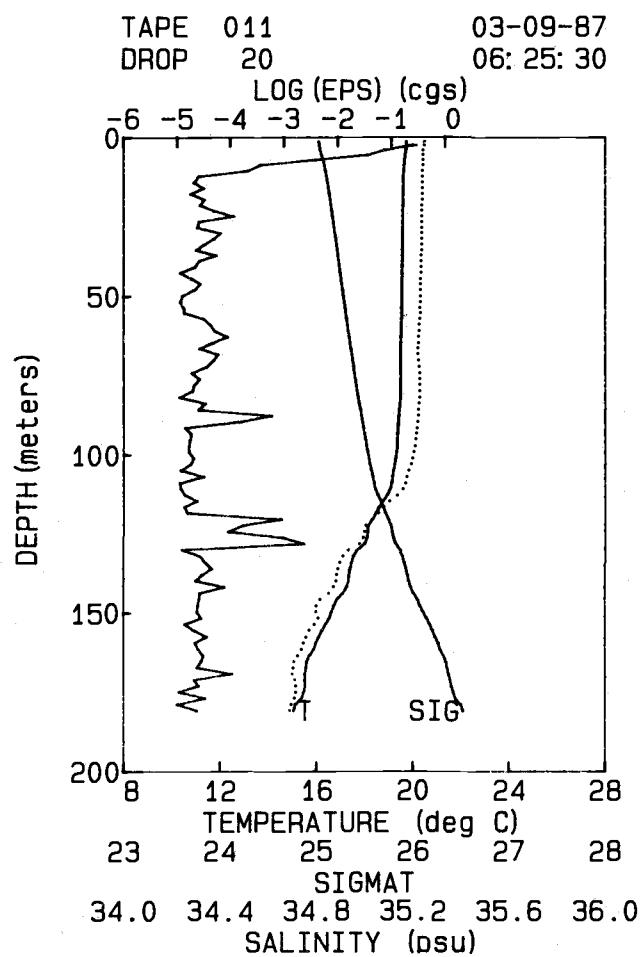
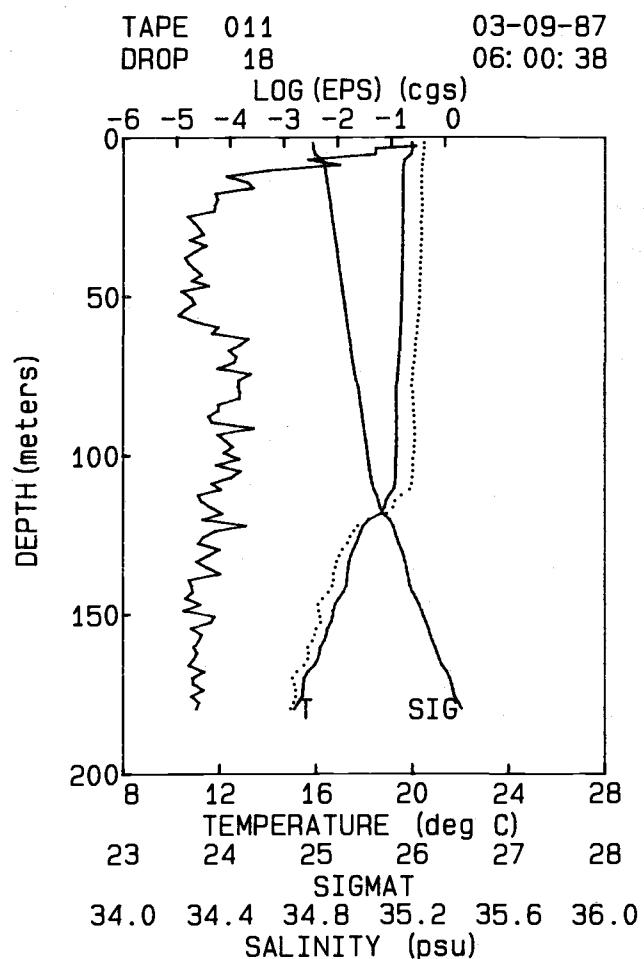
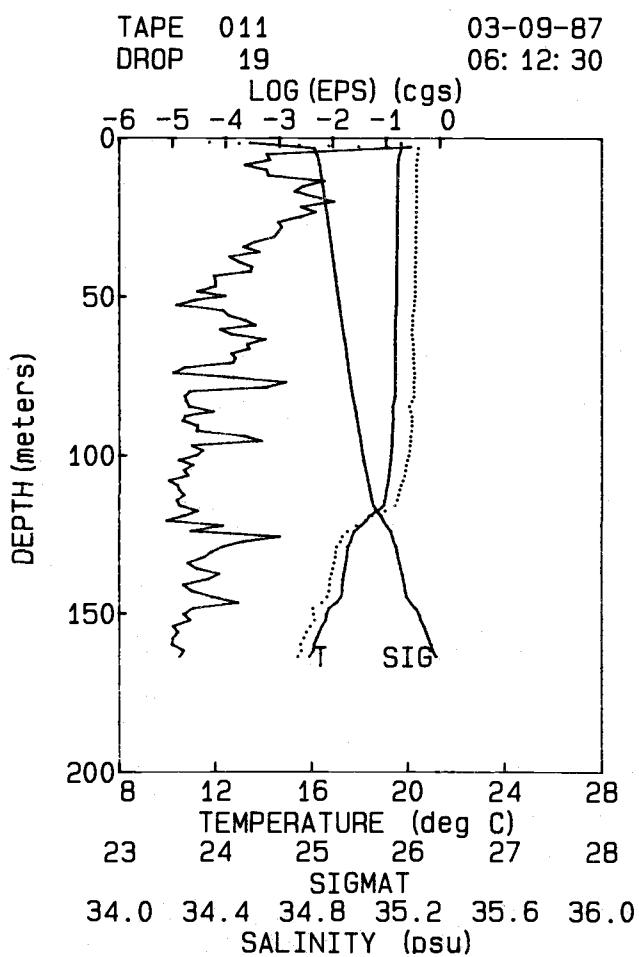
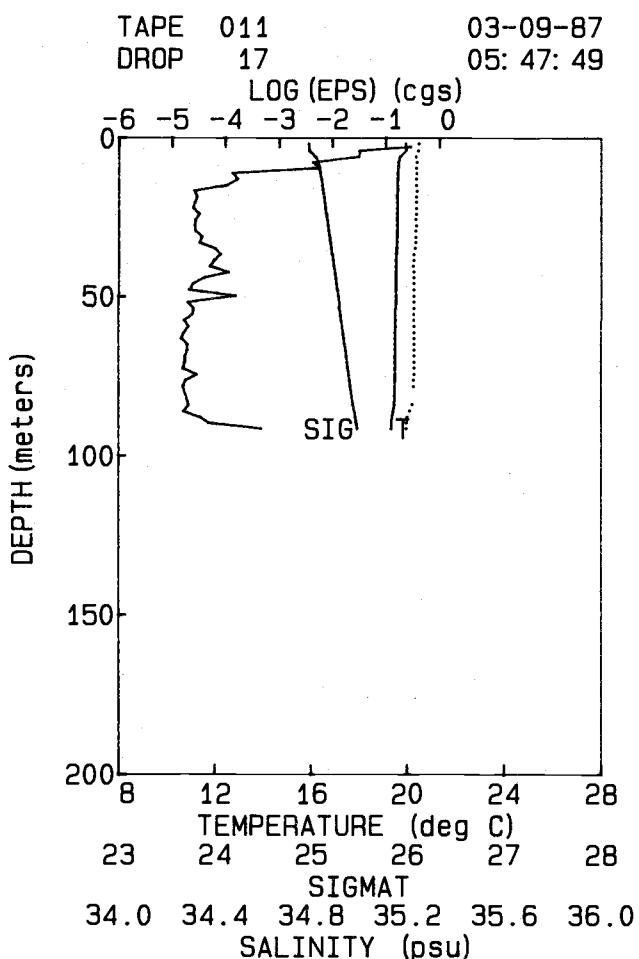
DEPTH (meters)

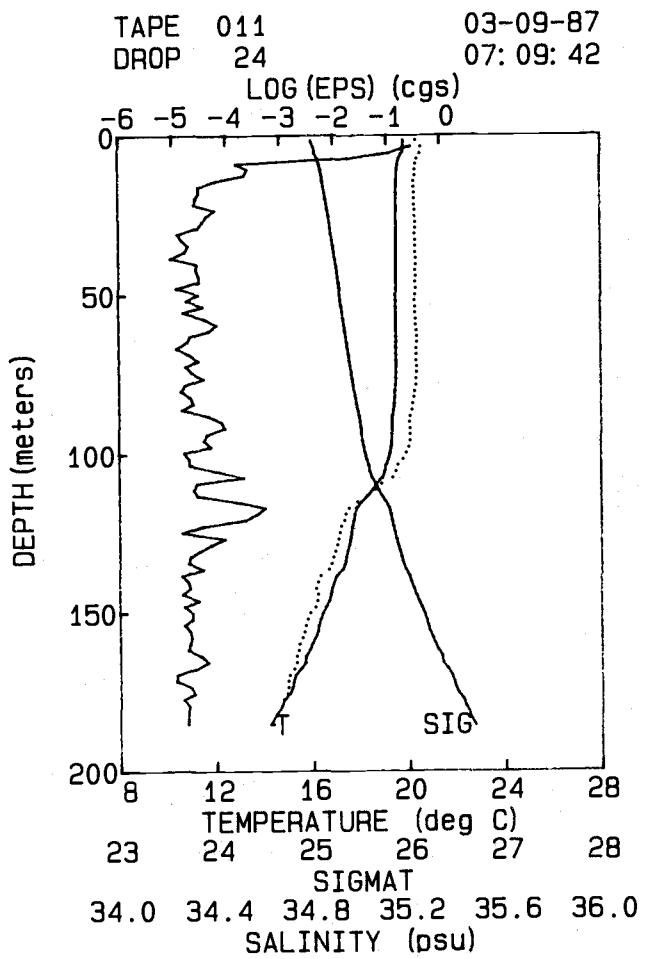
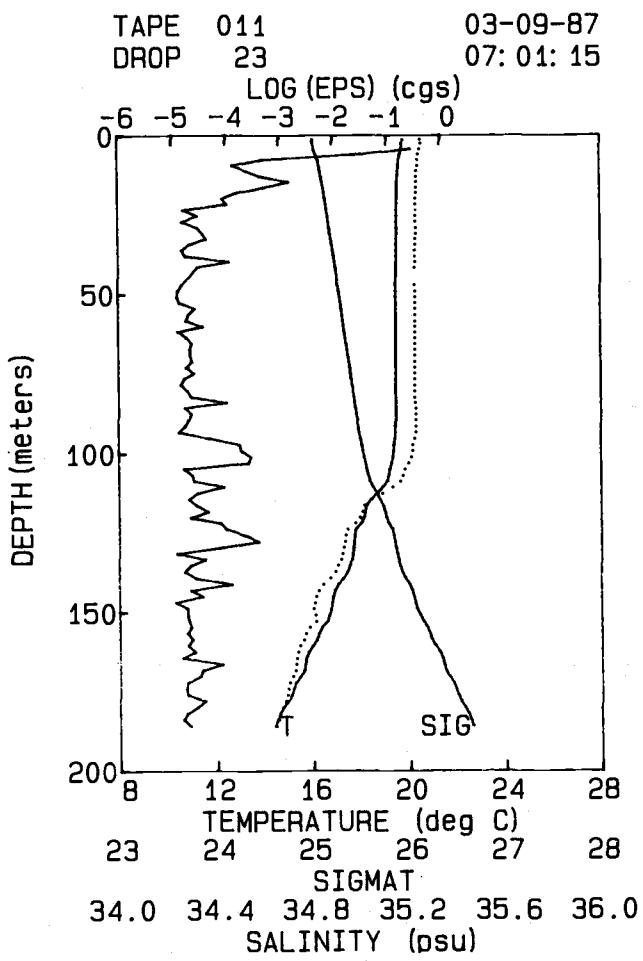
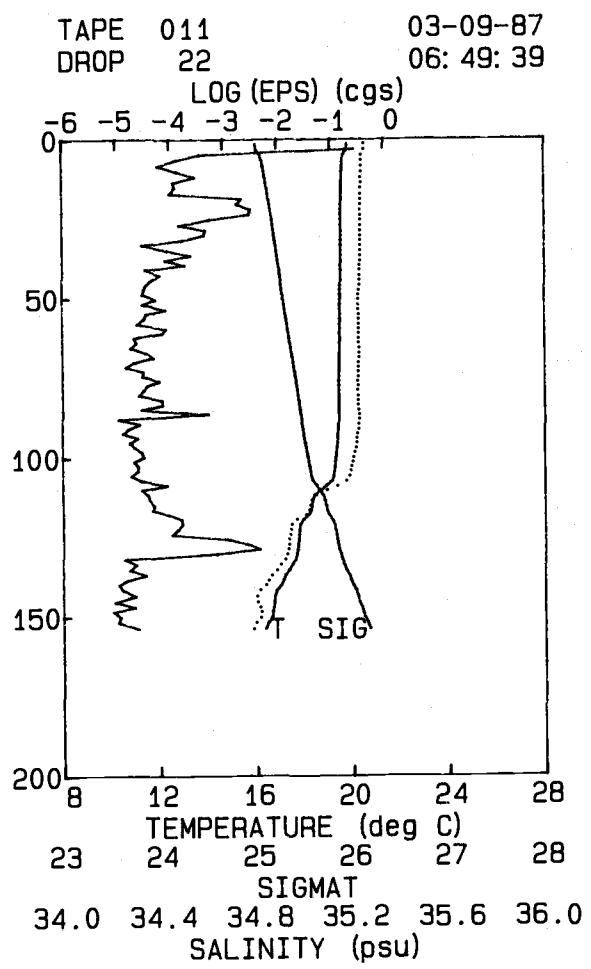
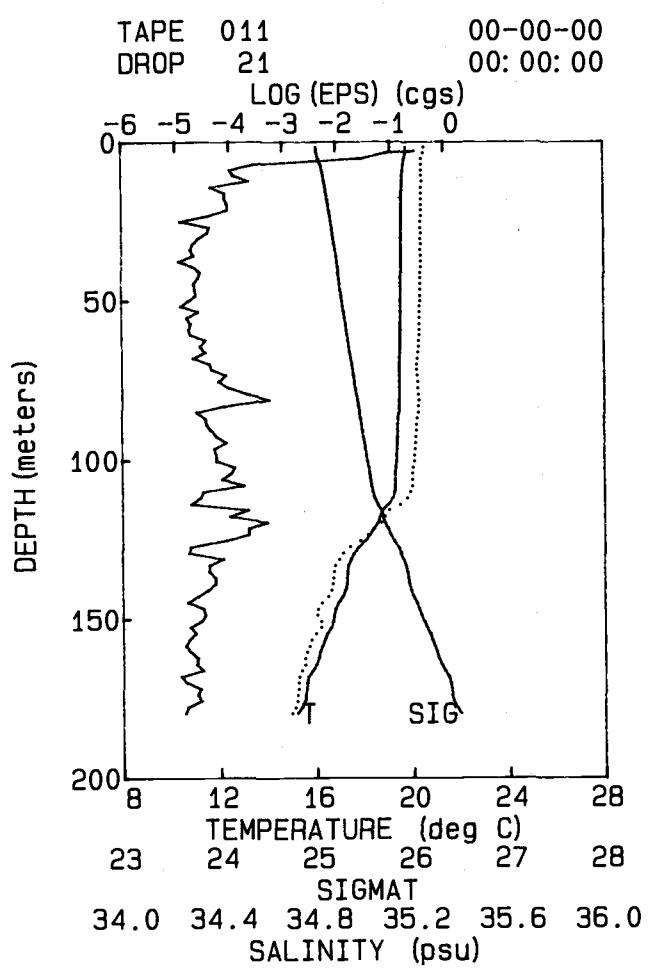


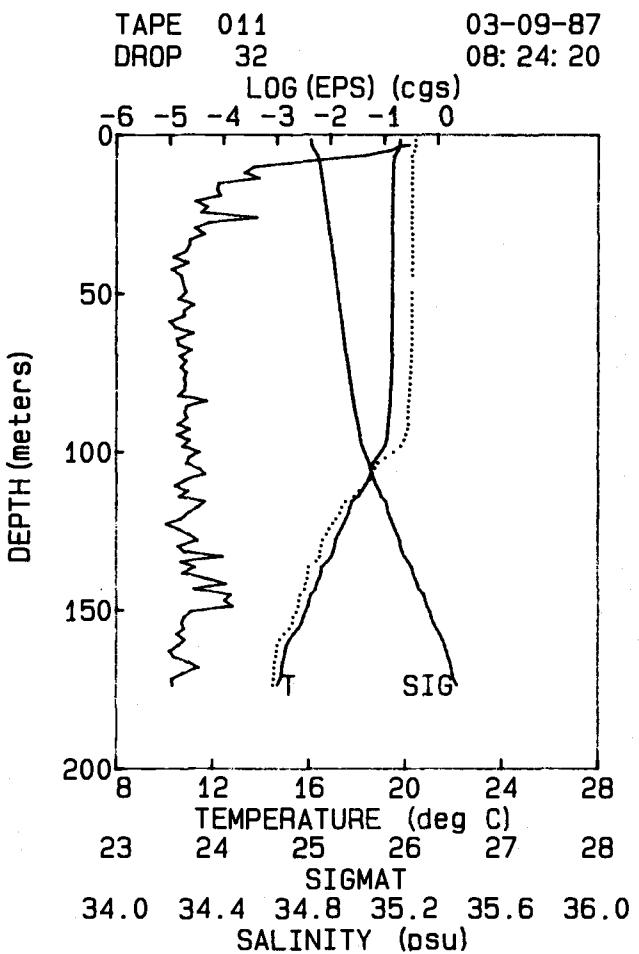
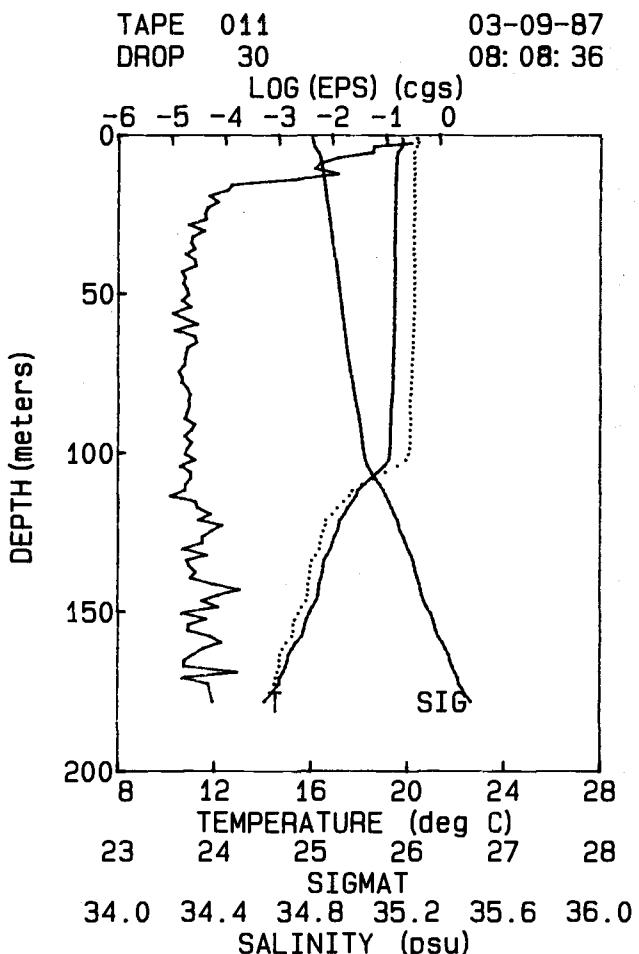
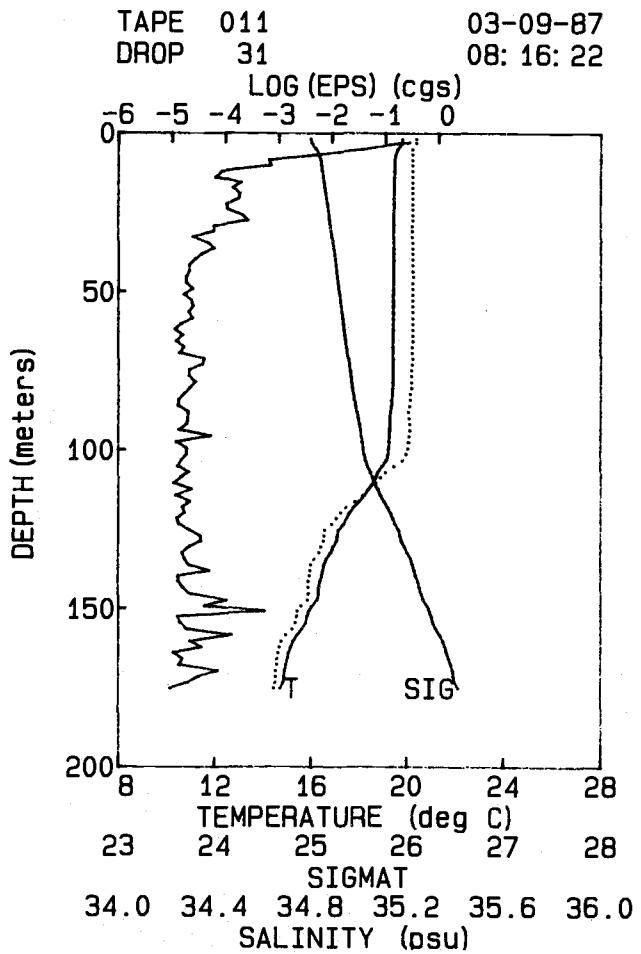
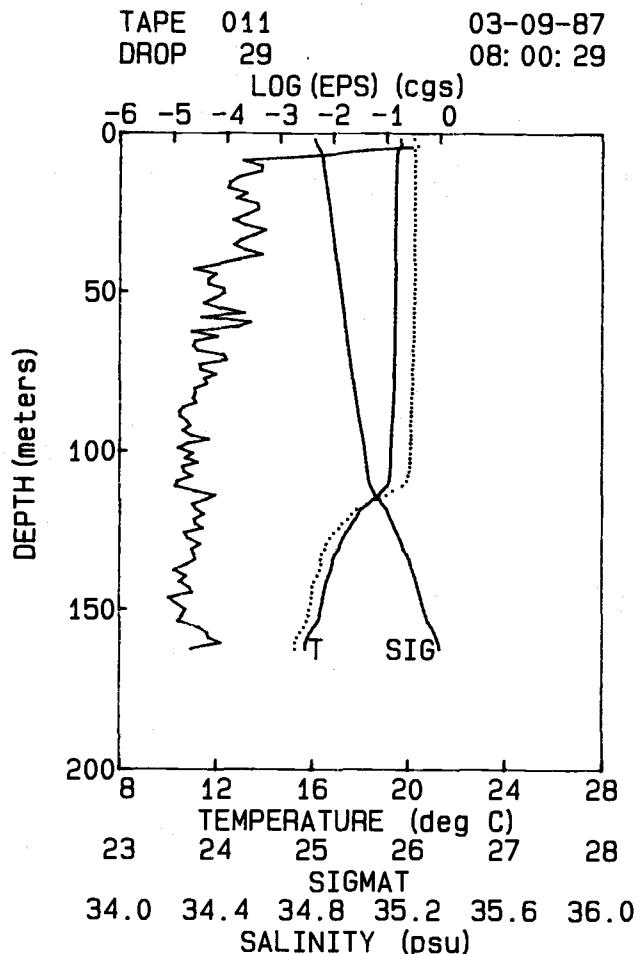
8 12 16 20 24 28
23 24 25 26 27 28
SIGMAT
34.0 34.4 34.8 35.2 35.6 36.0
SALINITY (psu)

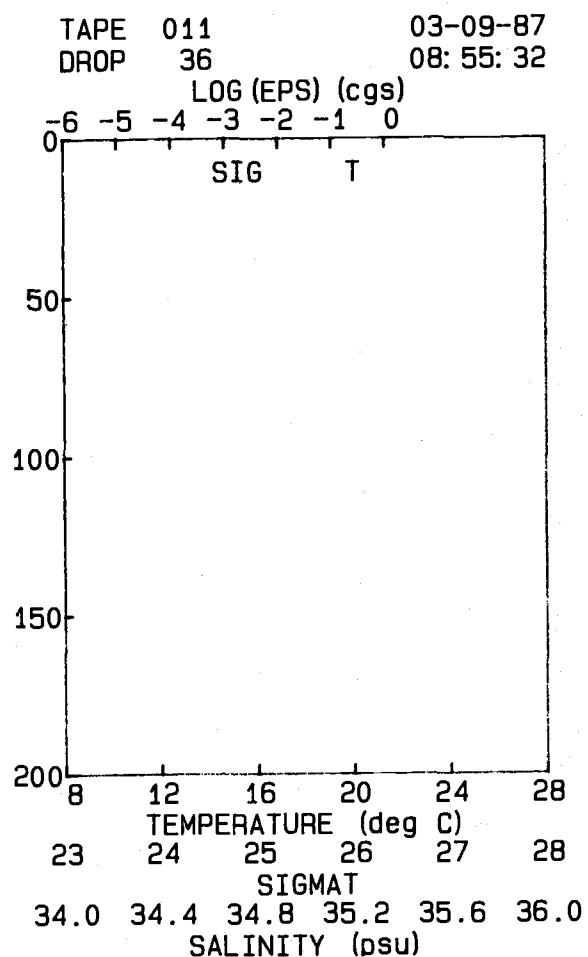
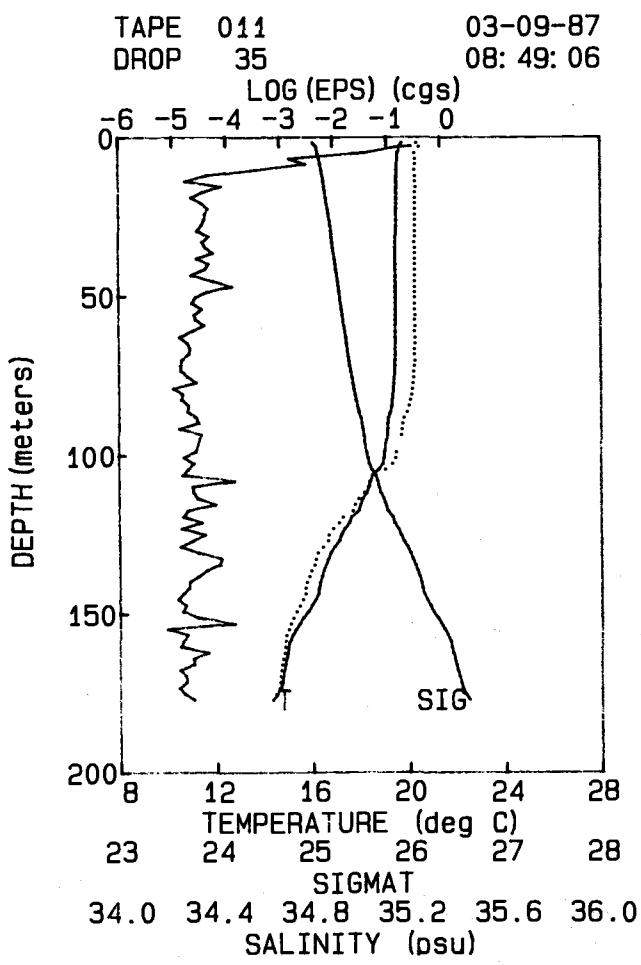
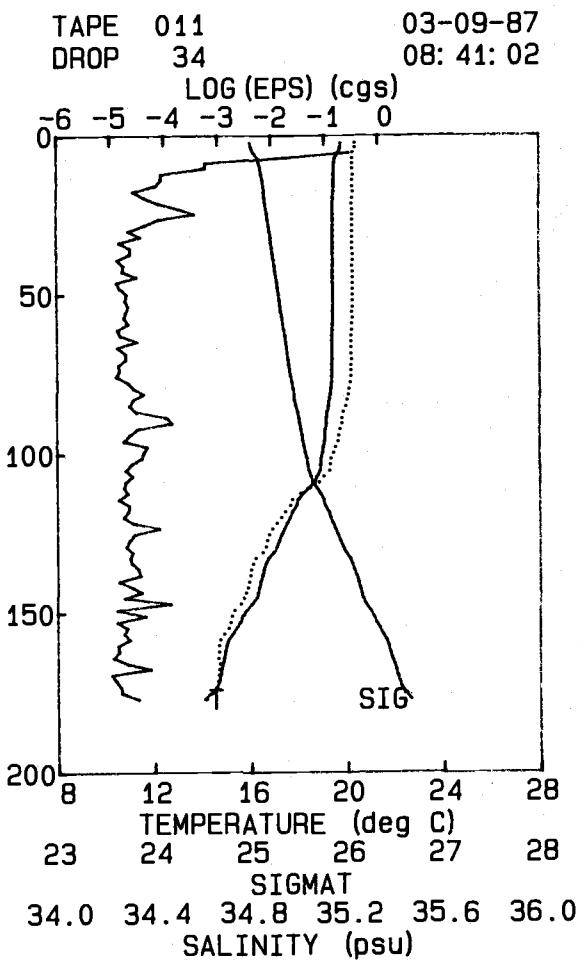
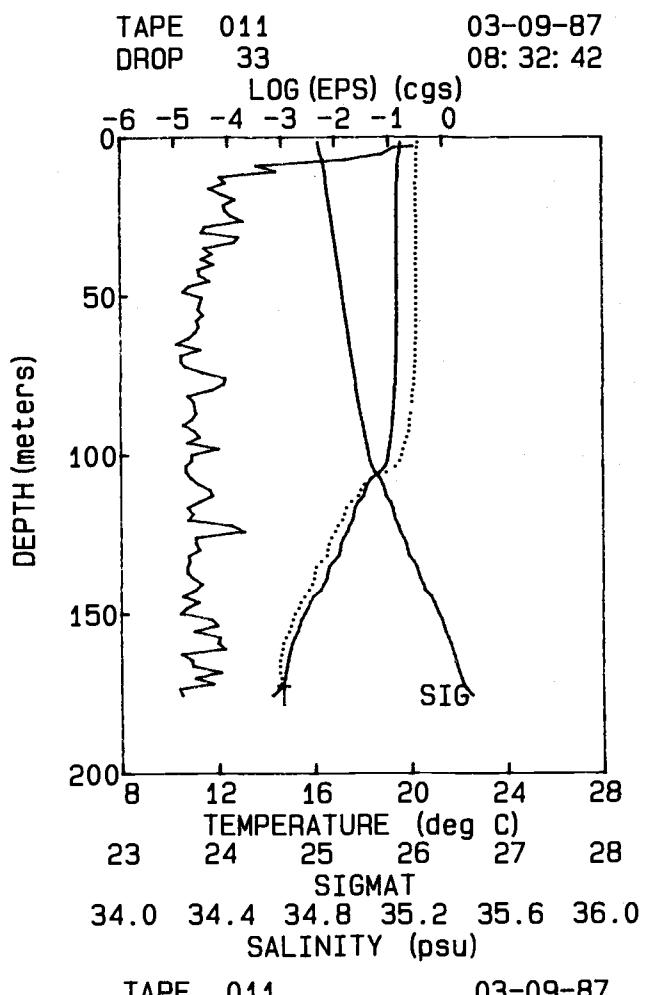


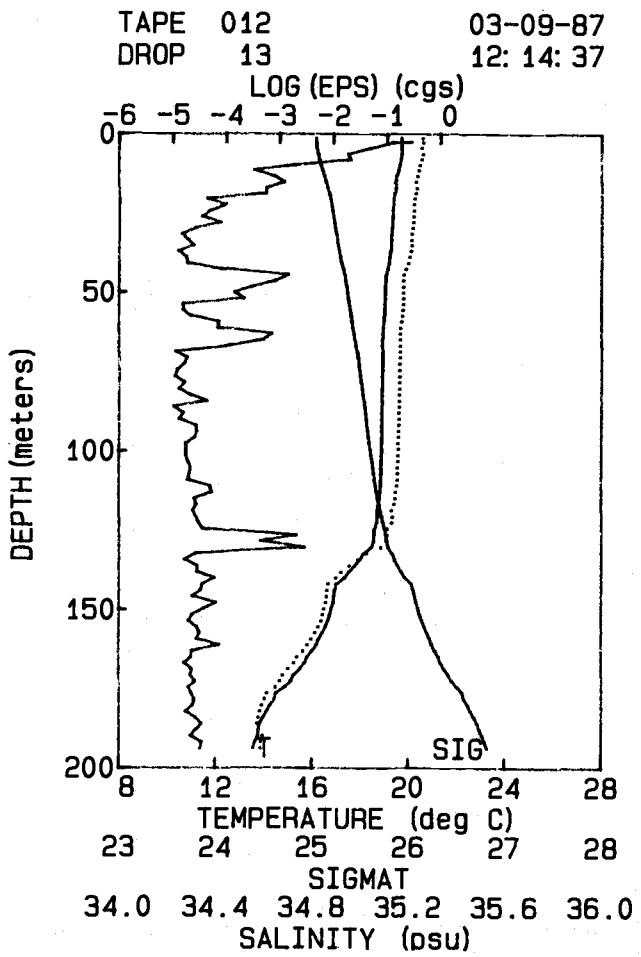
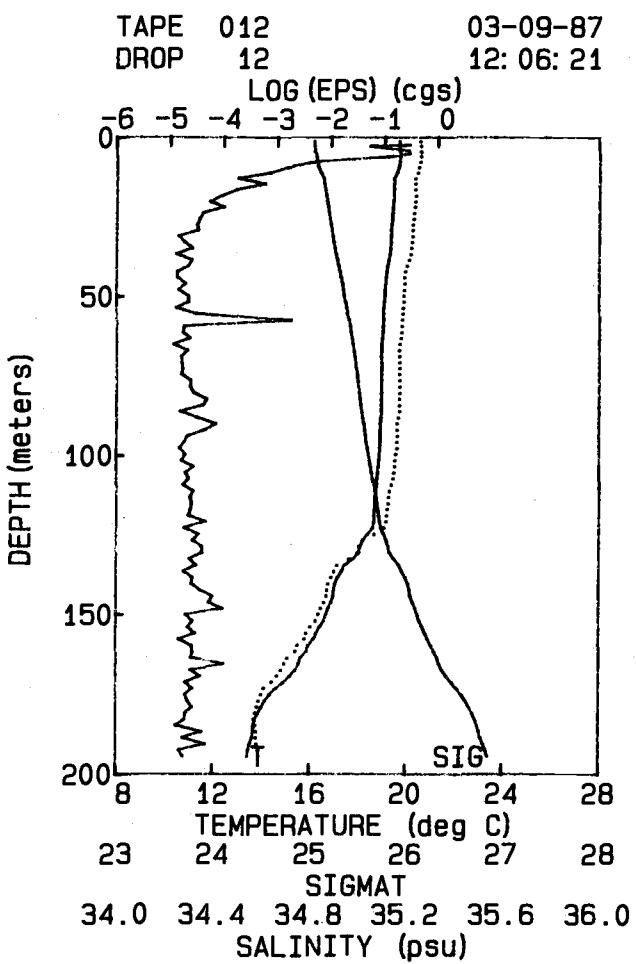
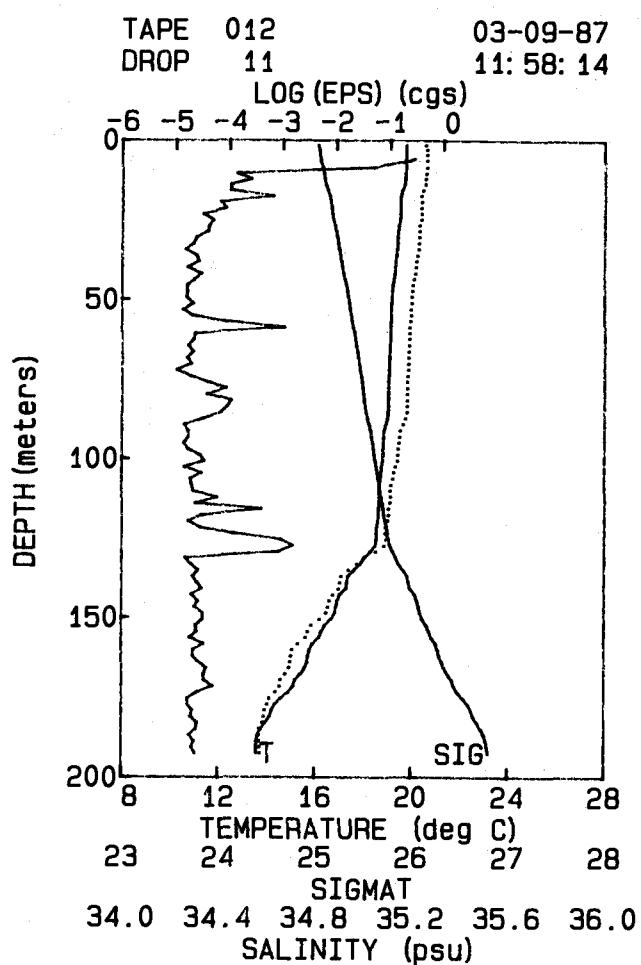


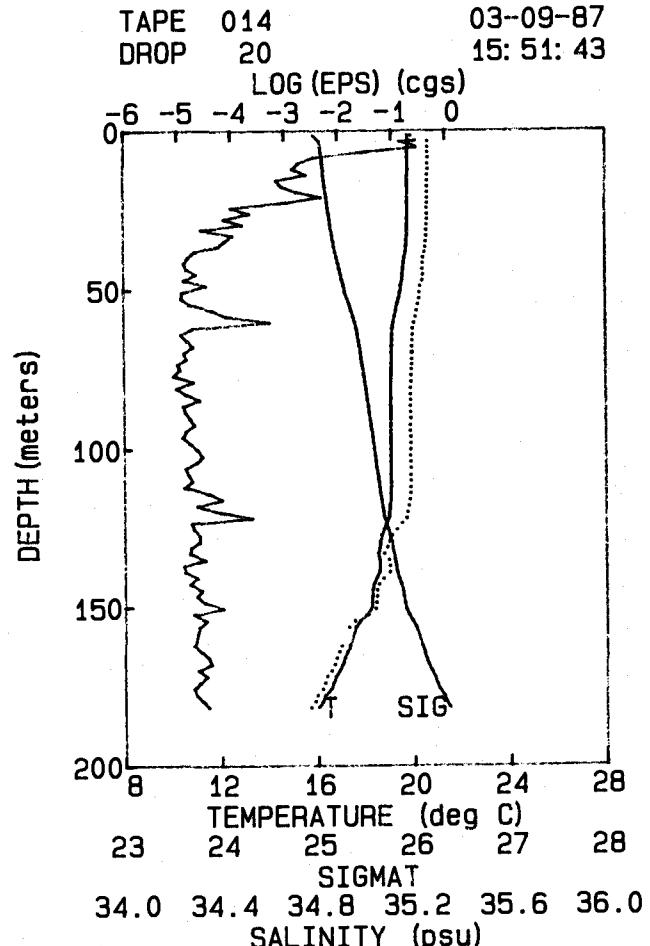
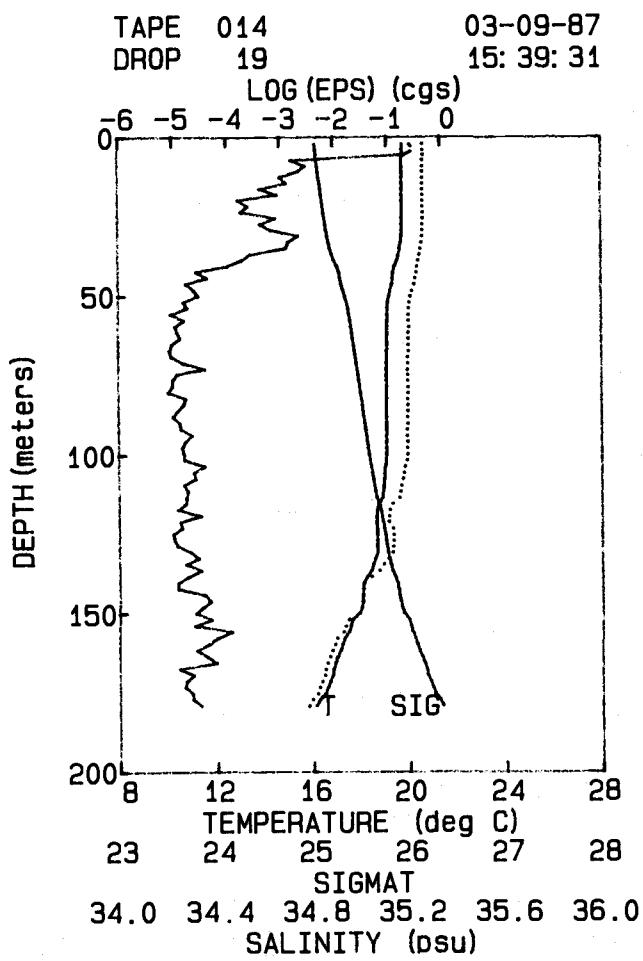
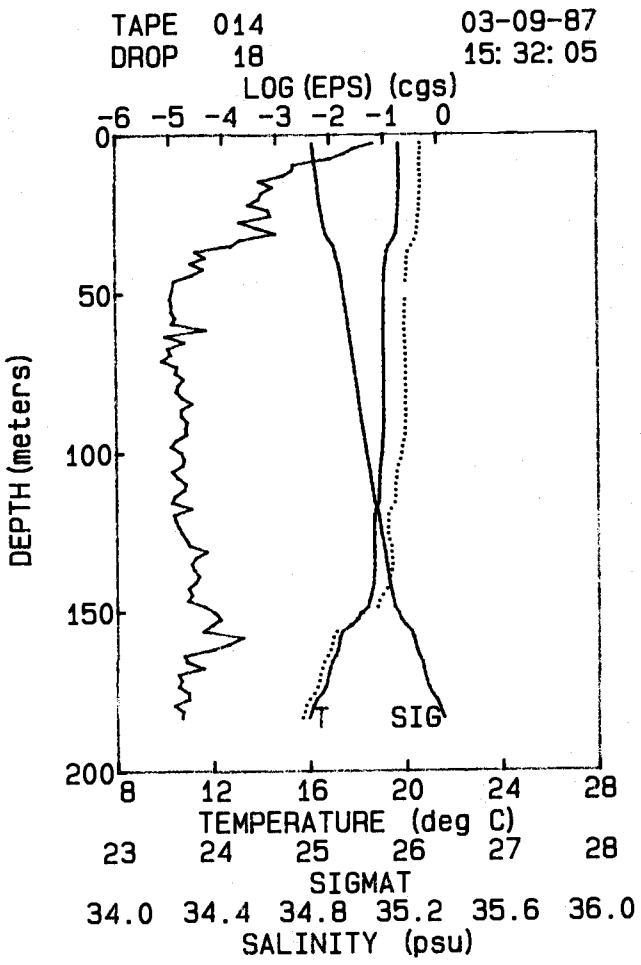
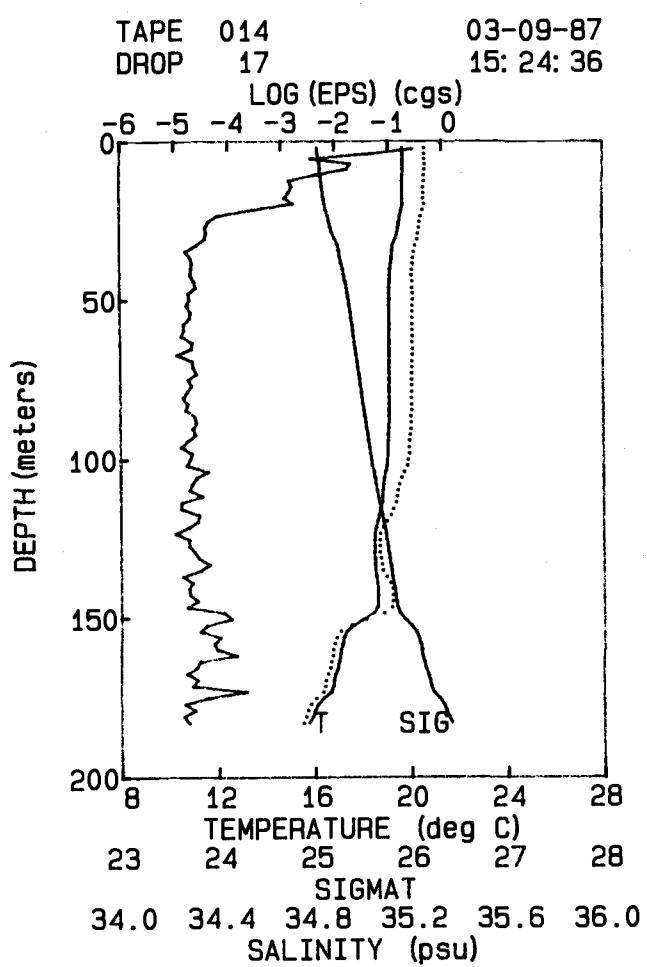


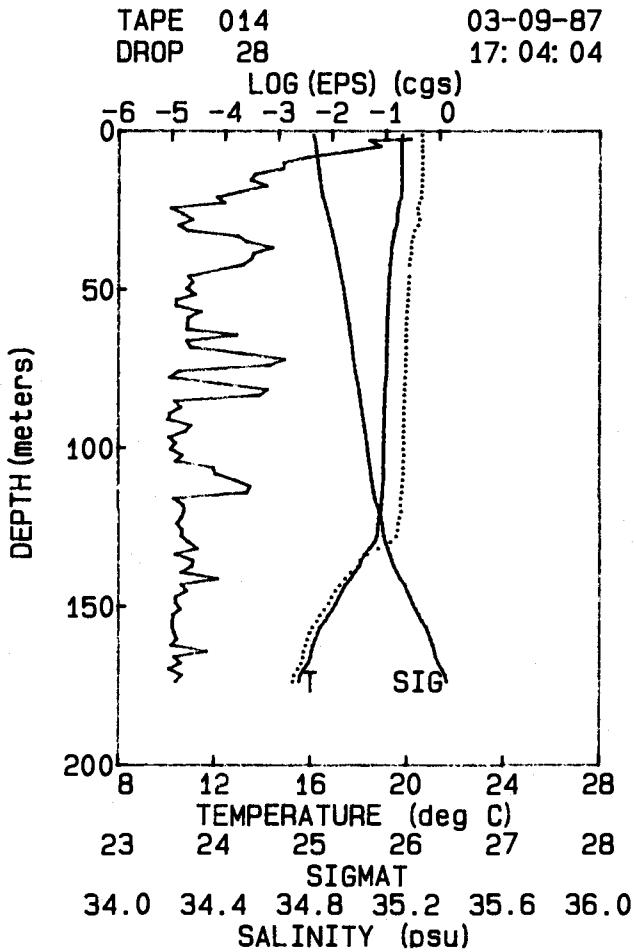
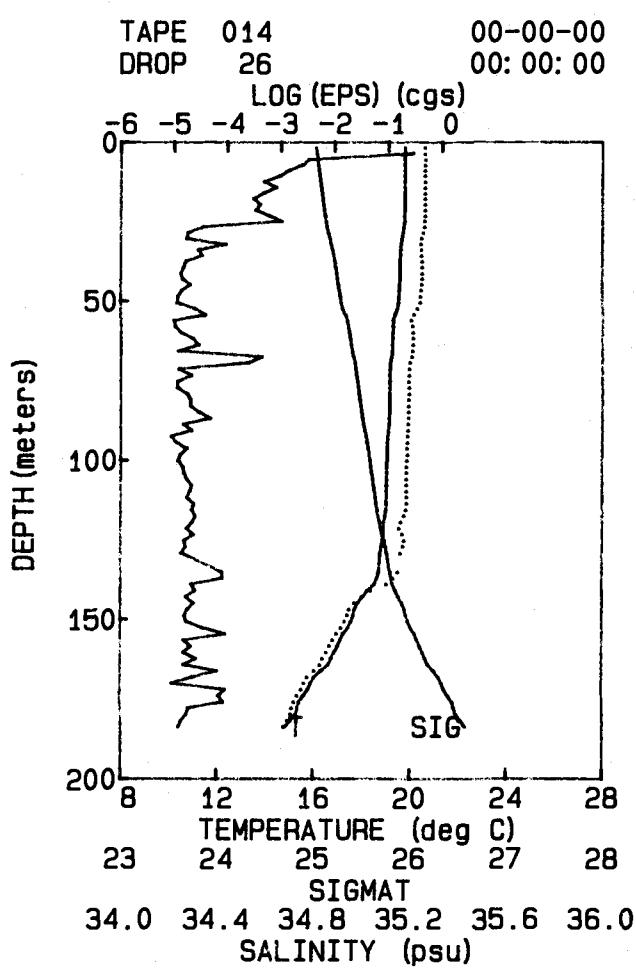
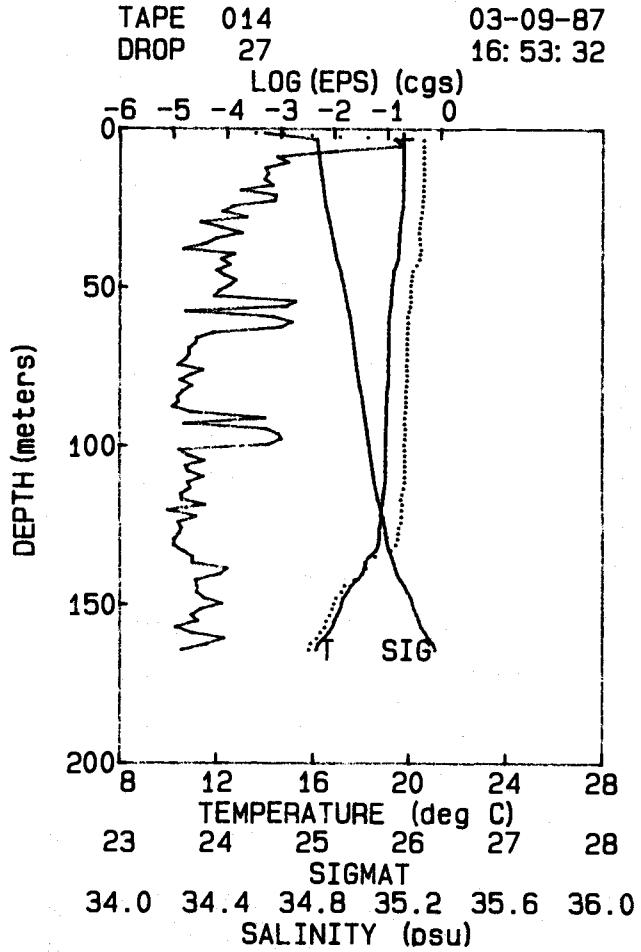
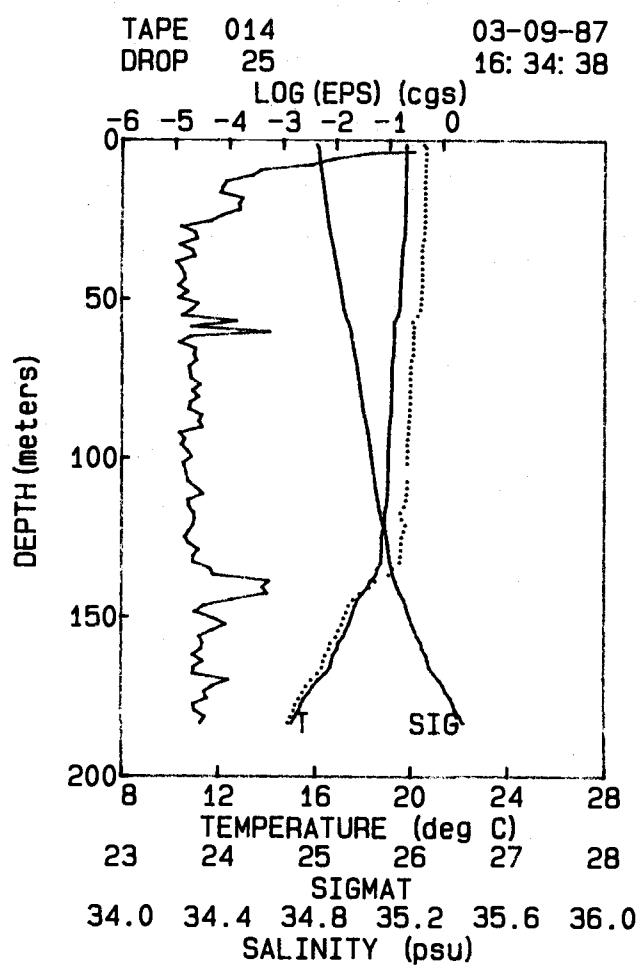


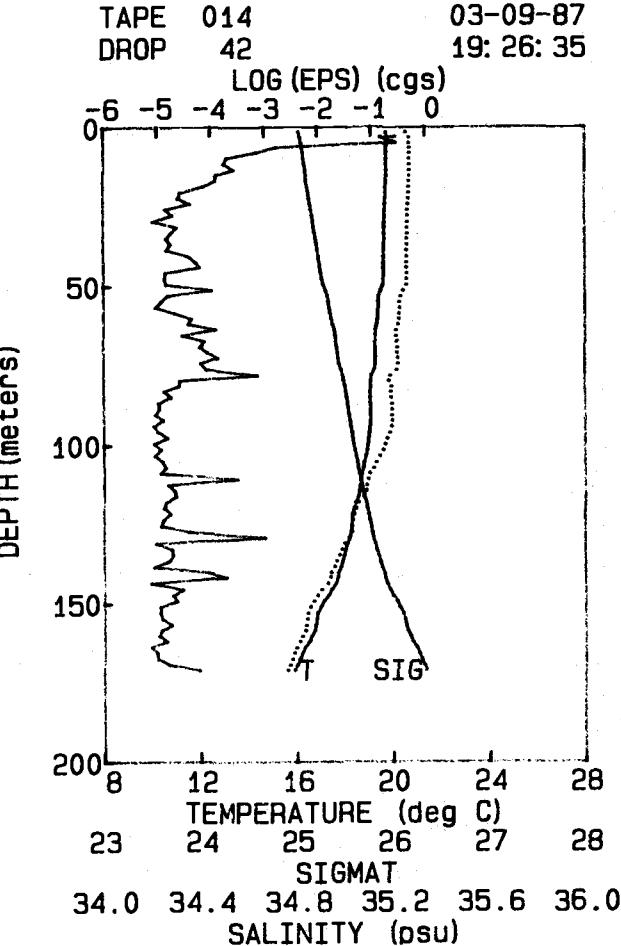
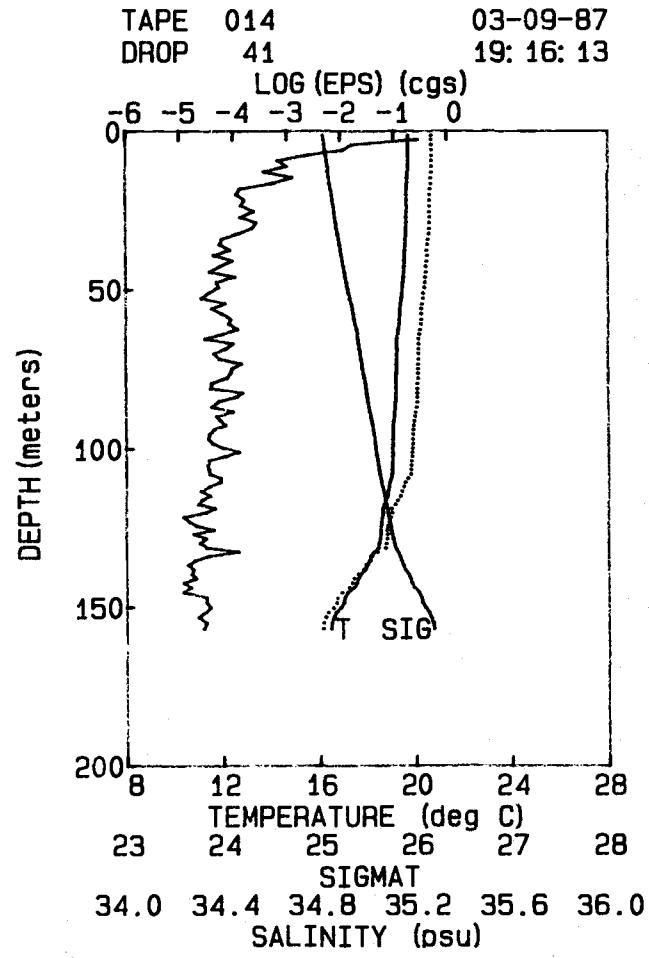
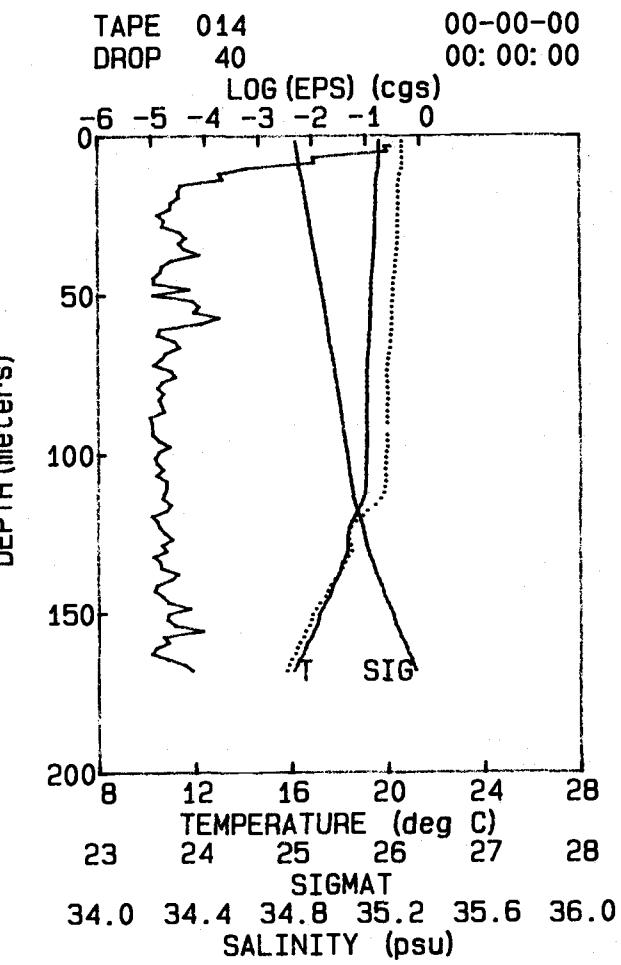
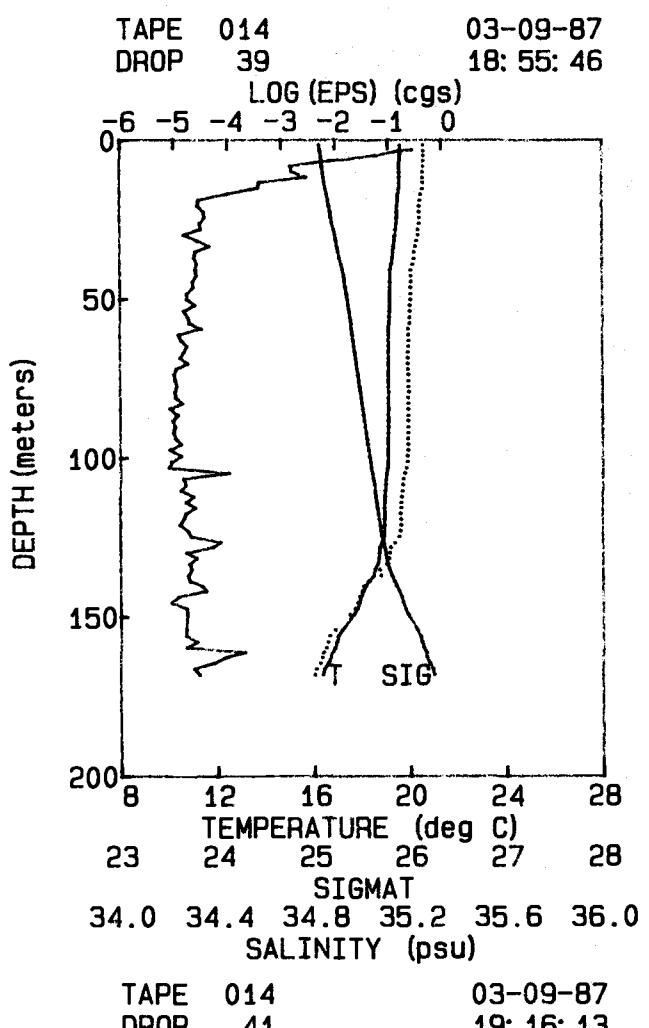


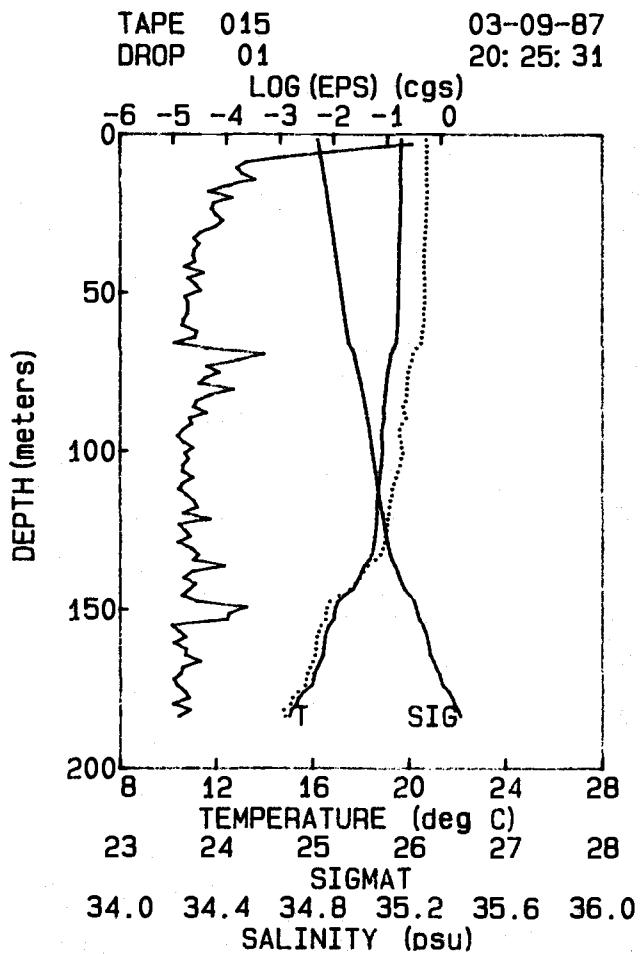
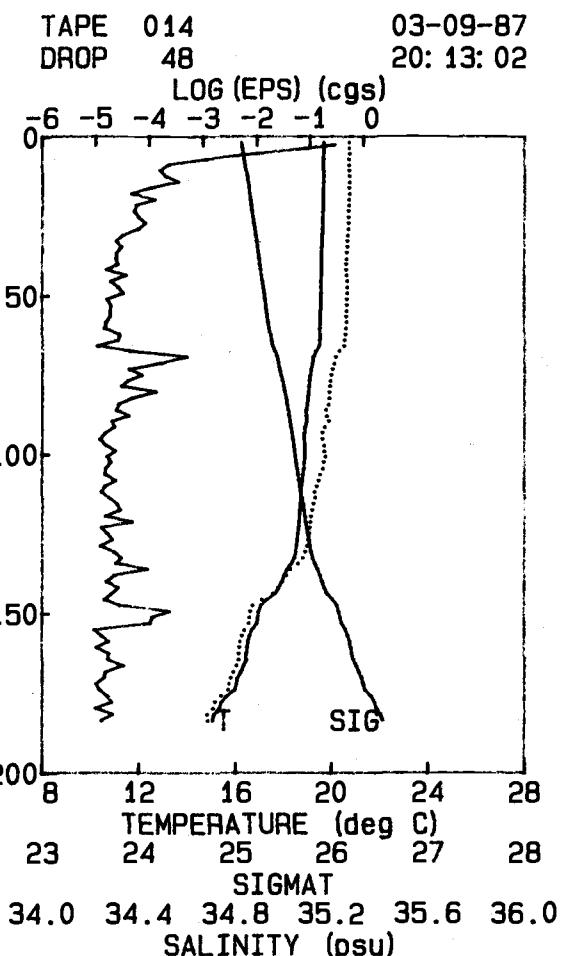
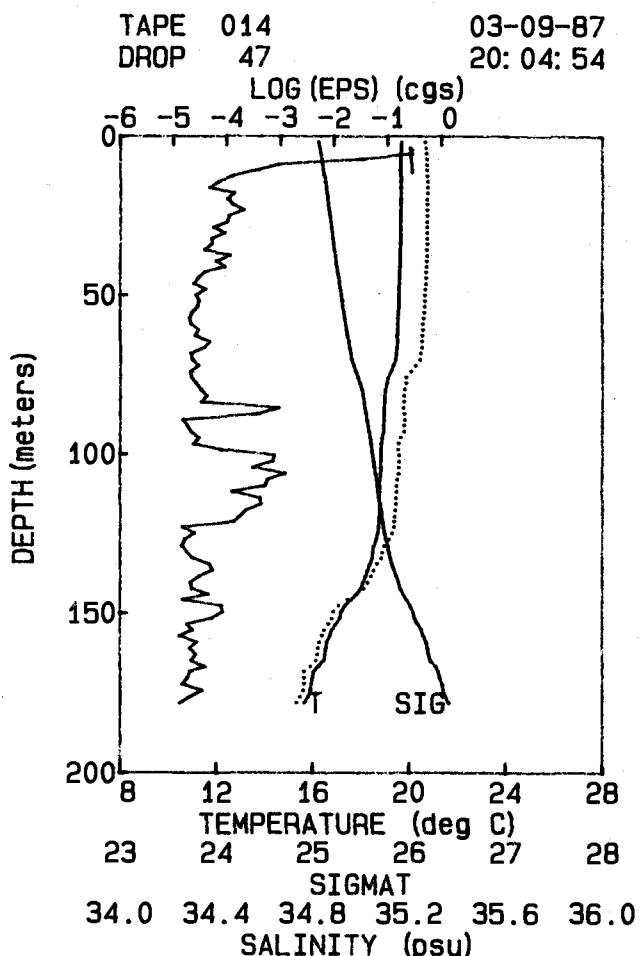


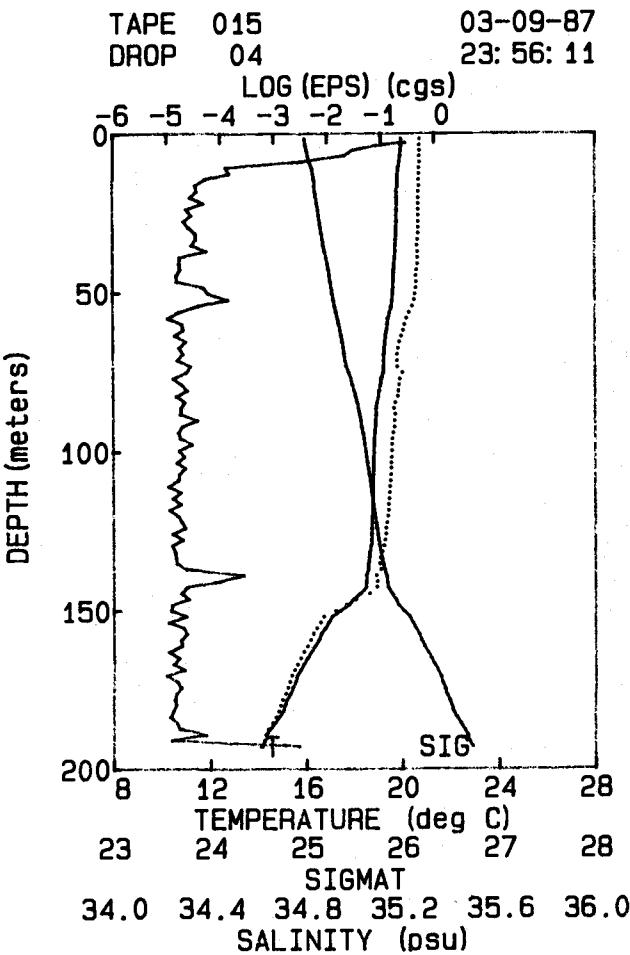
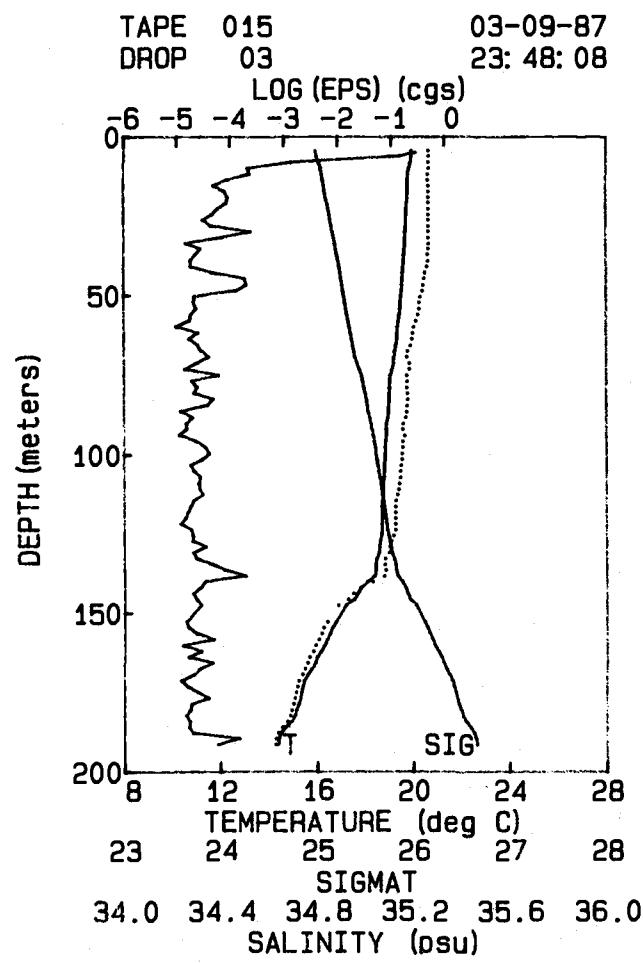
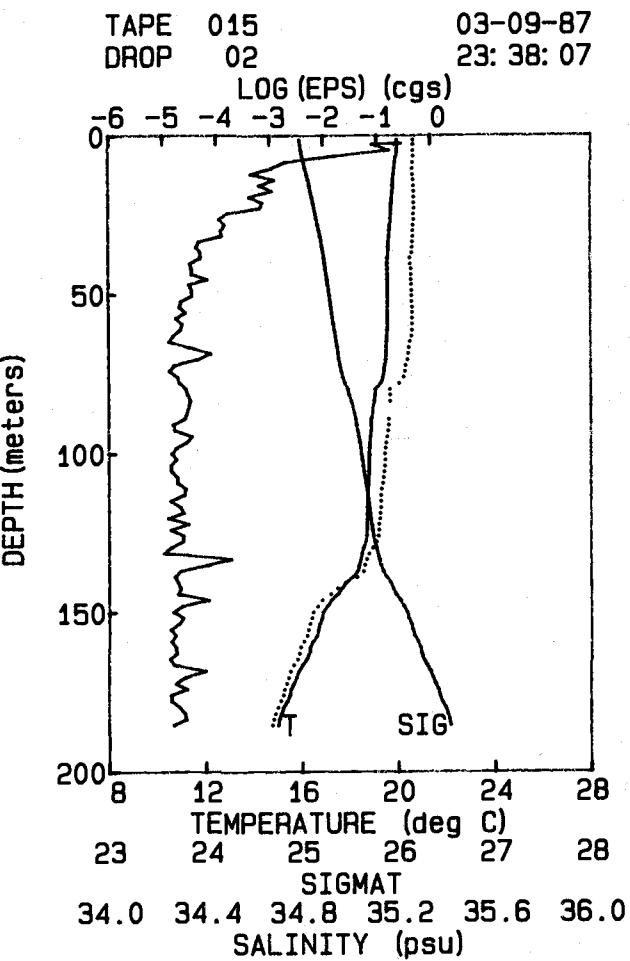
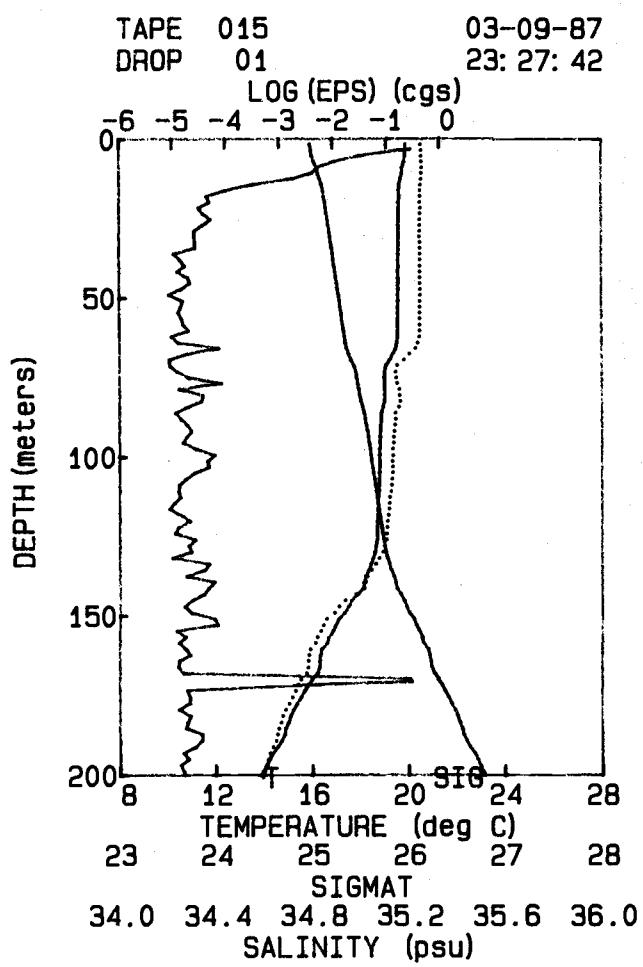


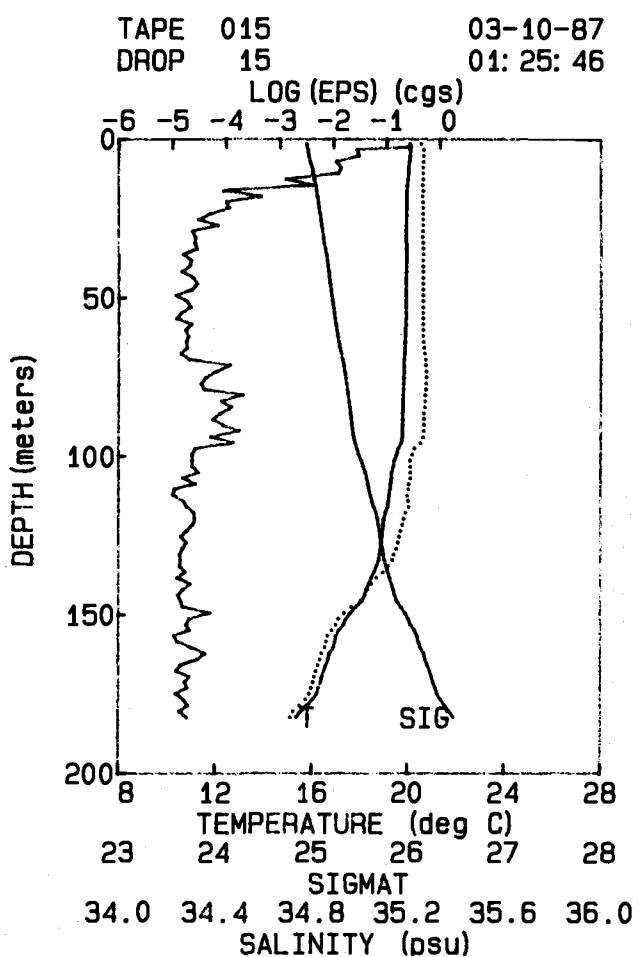
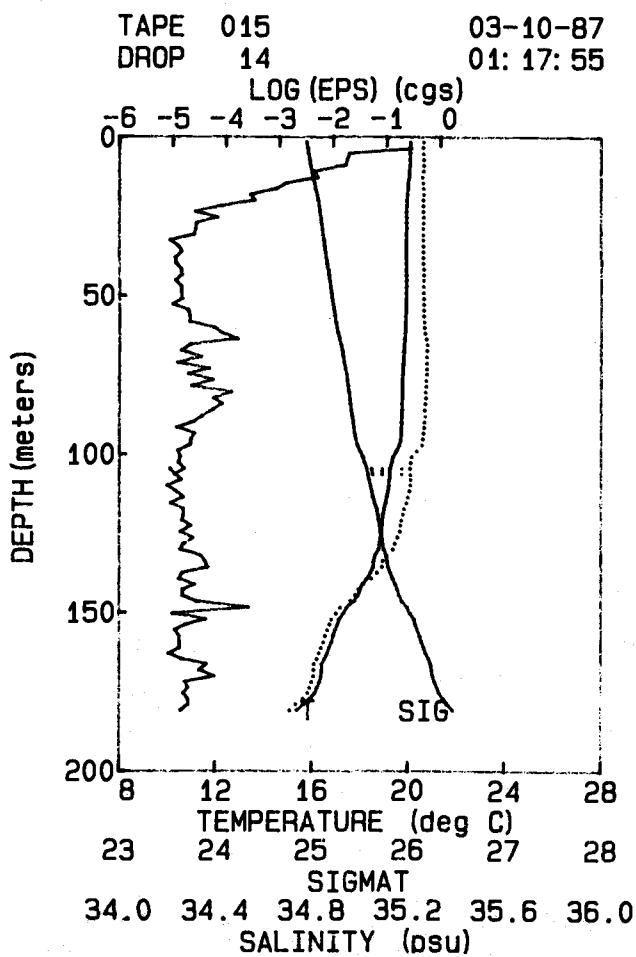
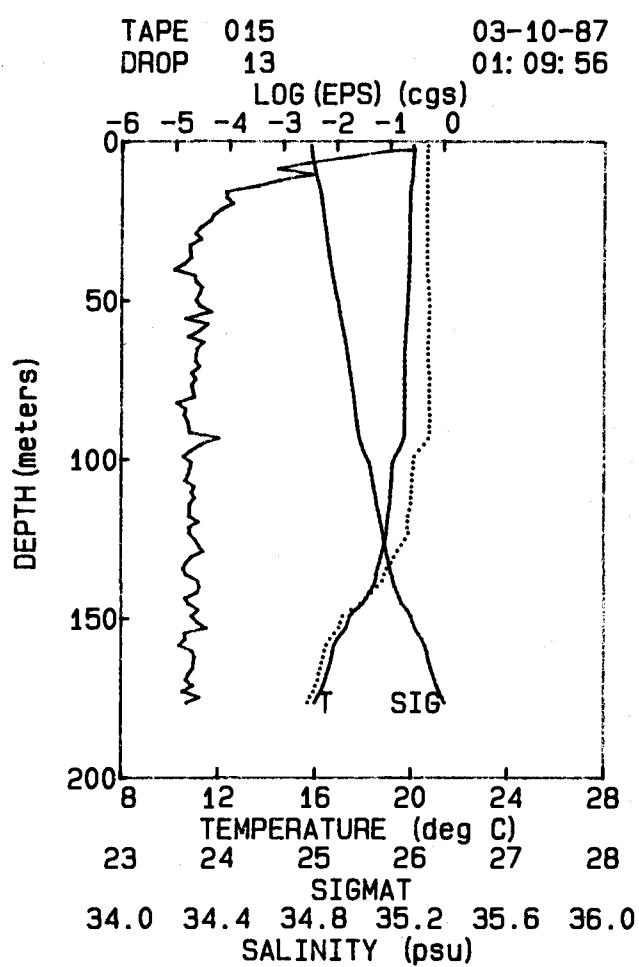
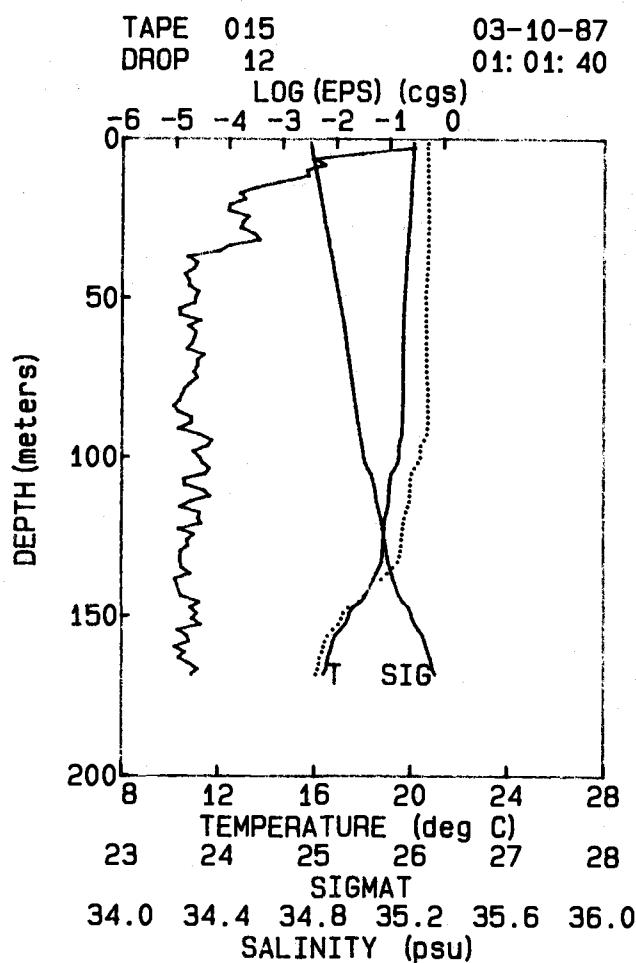


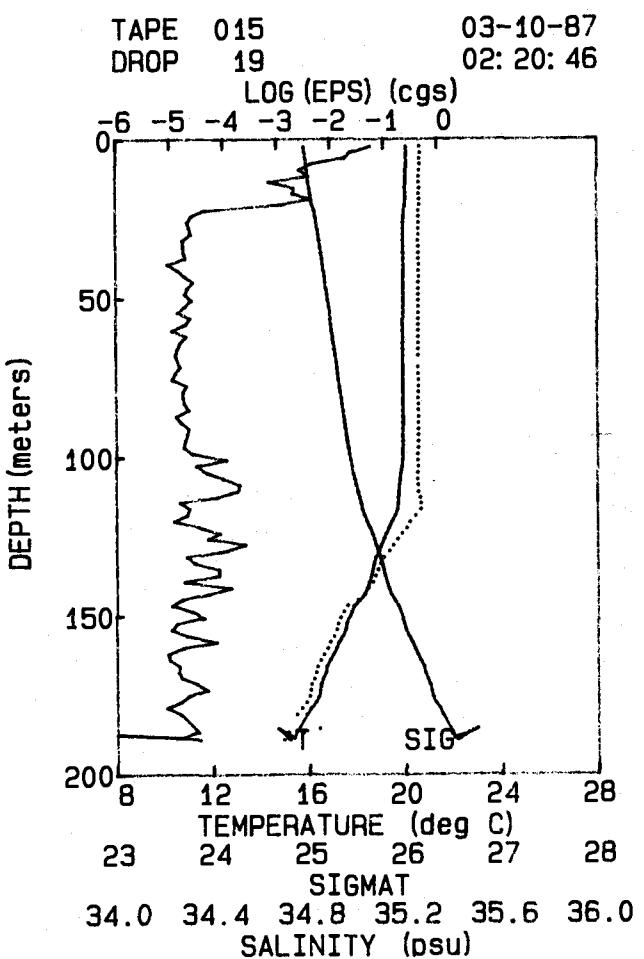
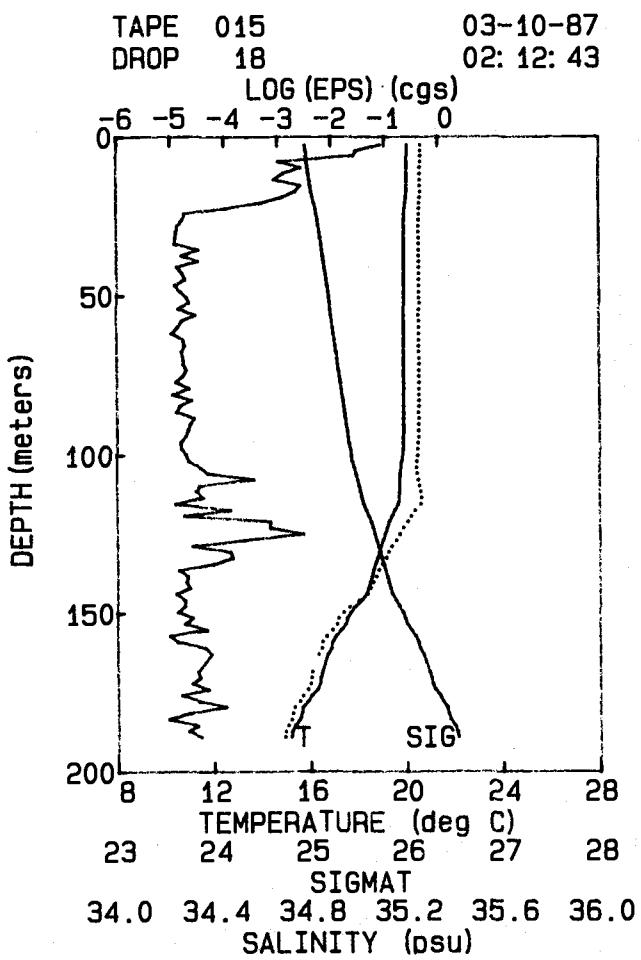
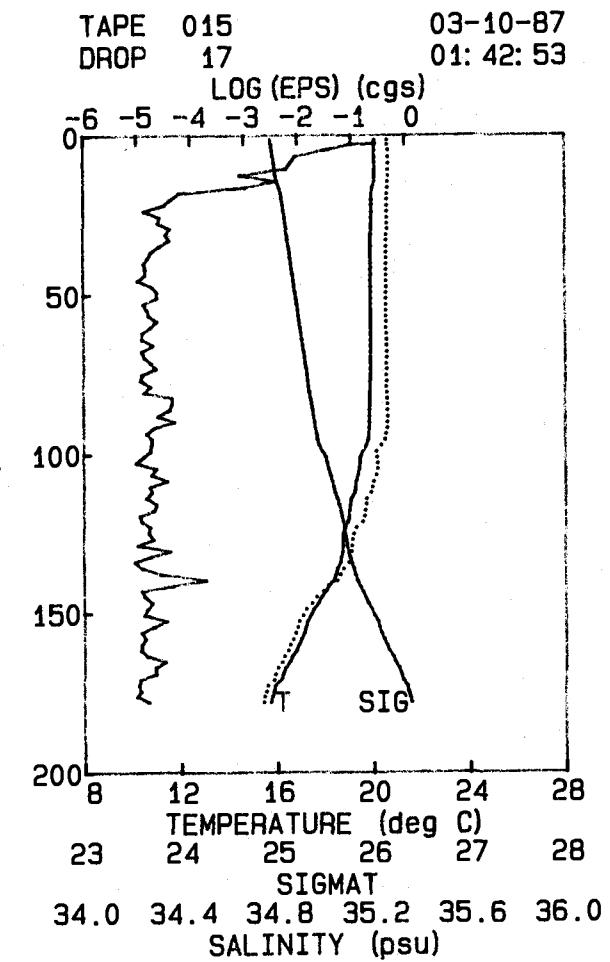
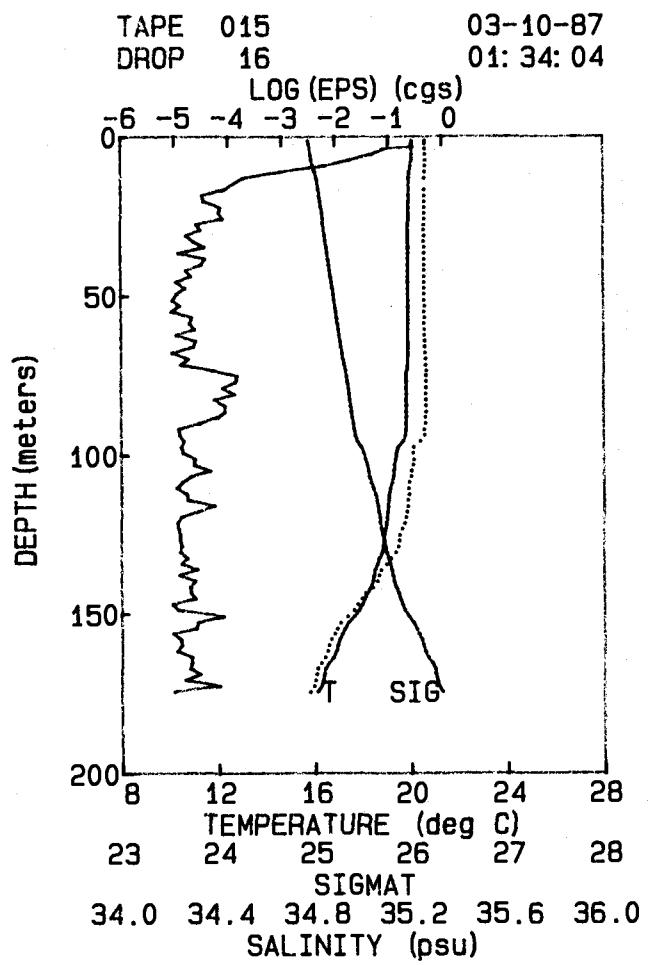


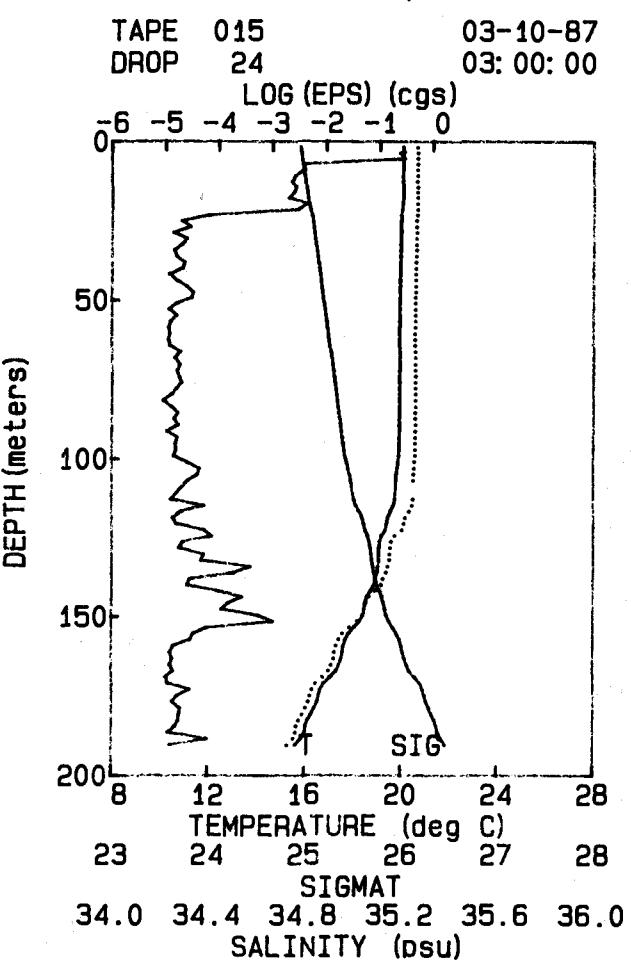
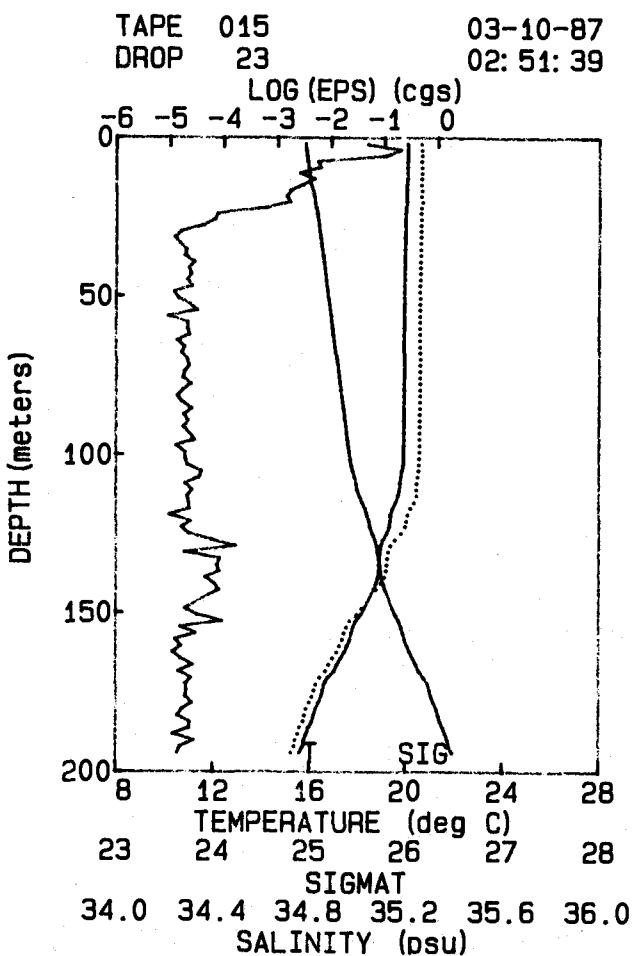
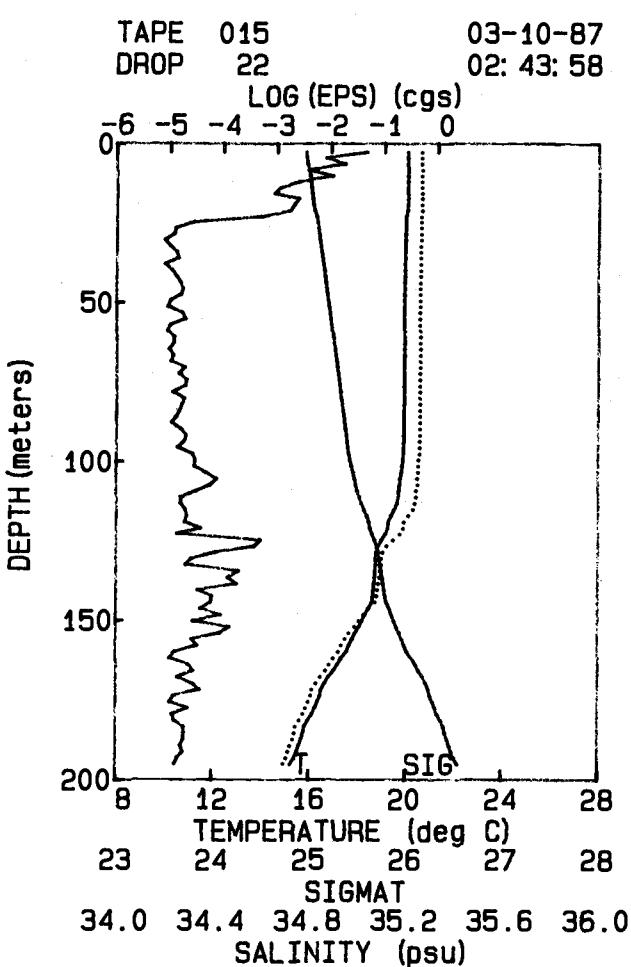
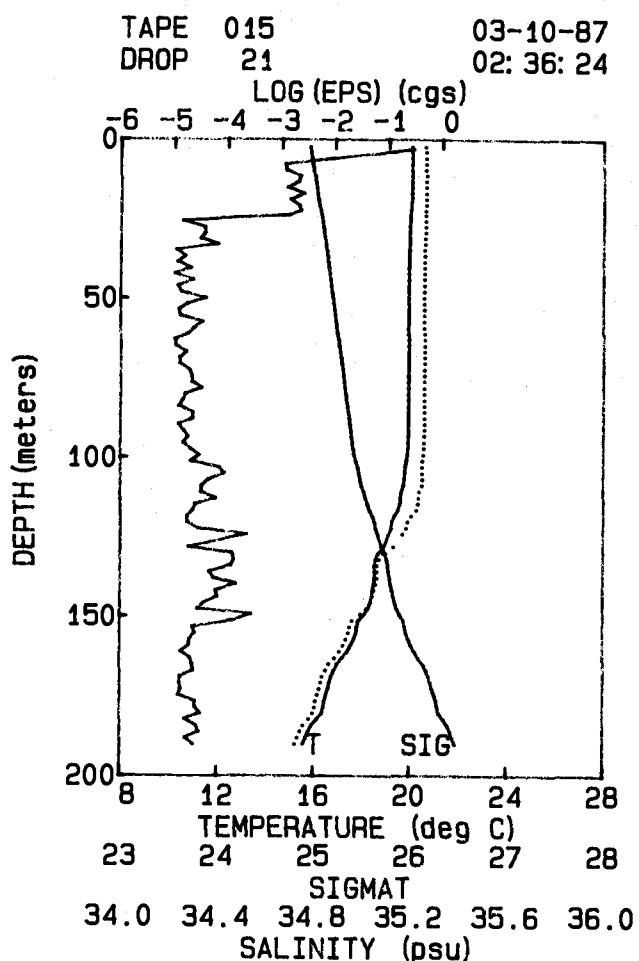


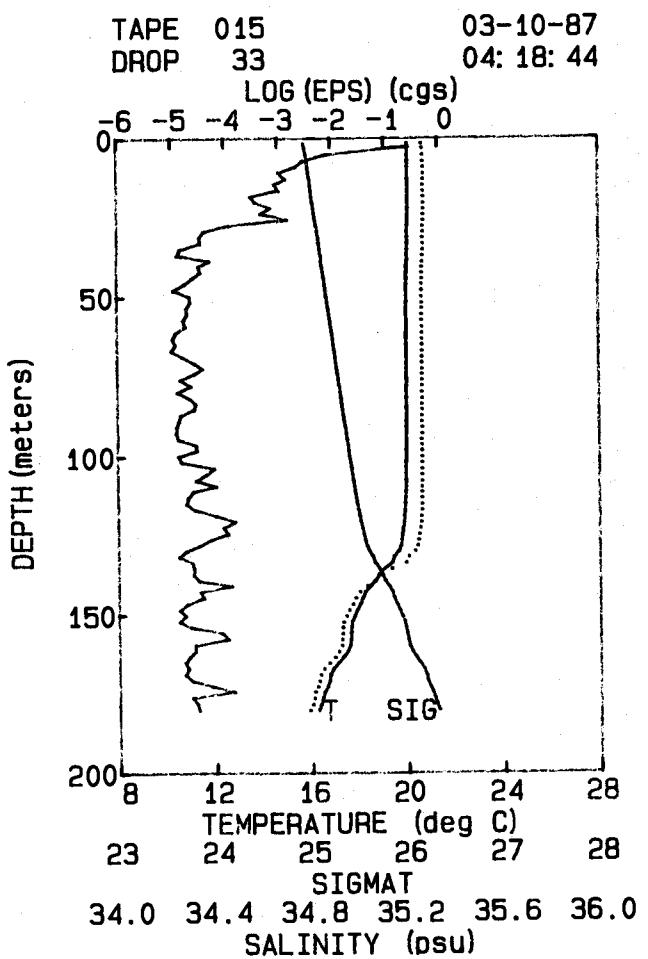
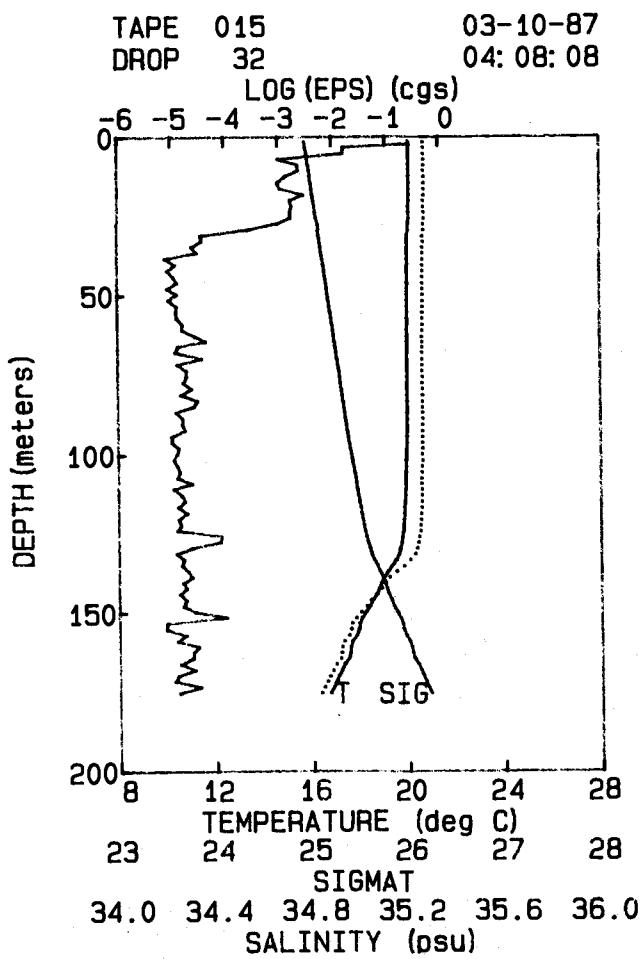
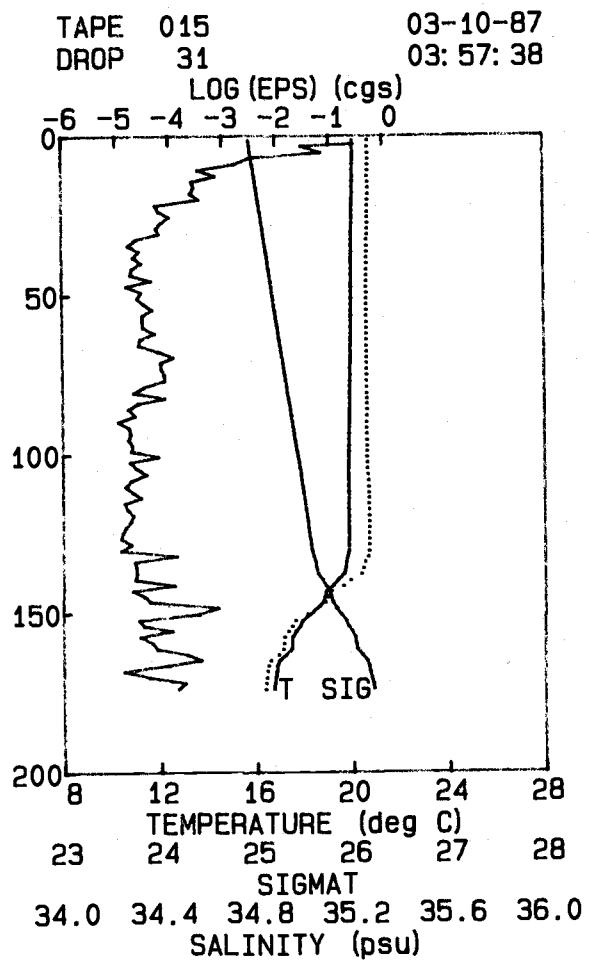
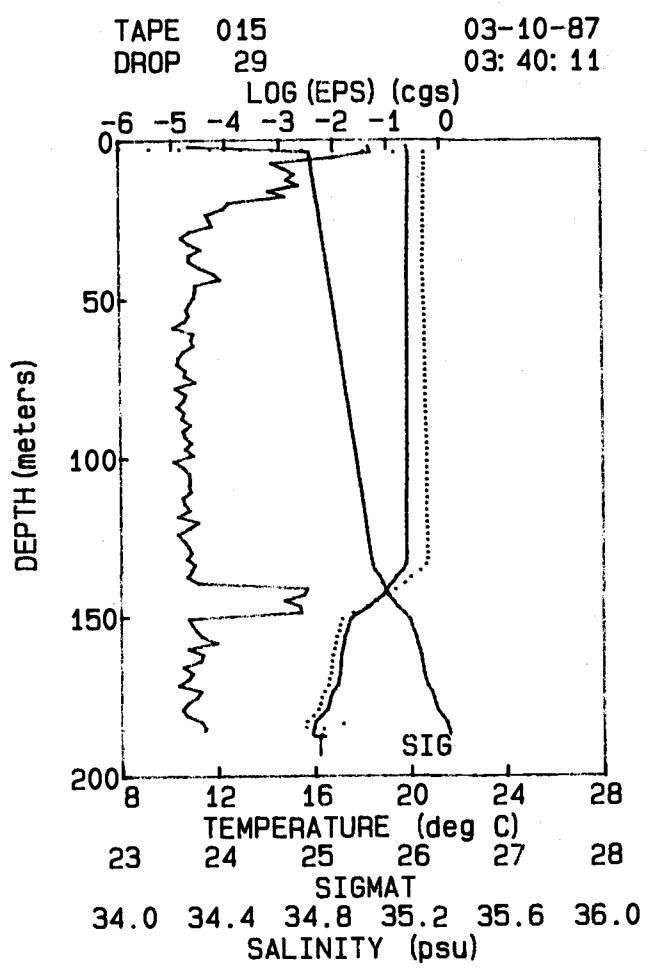


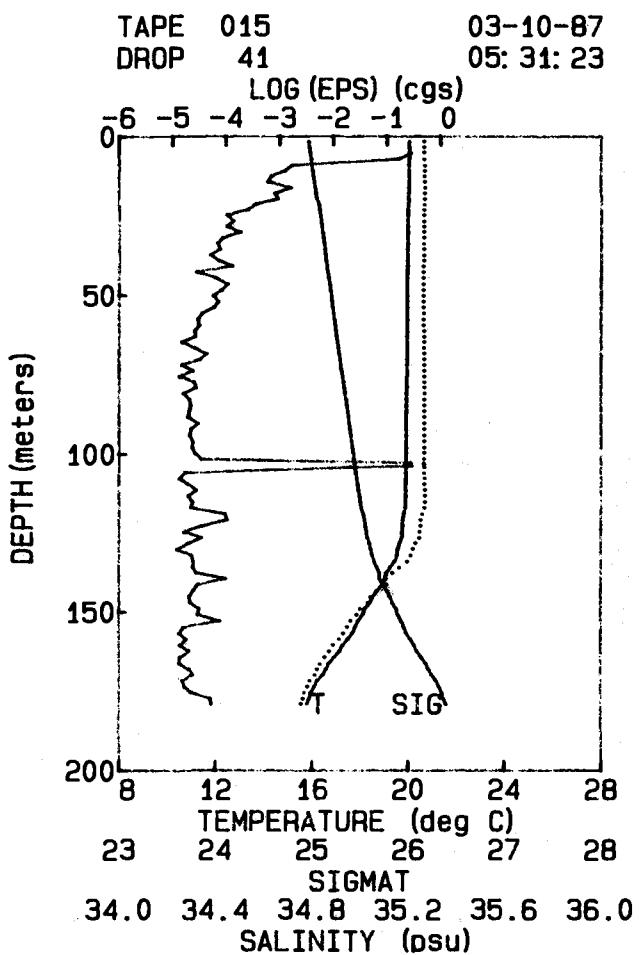
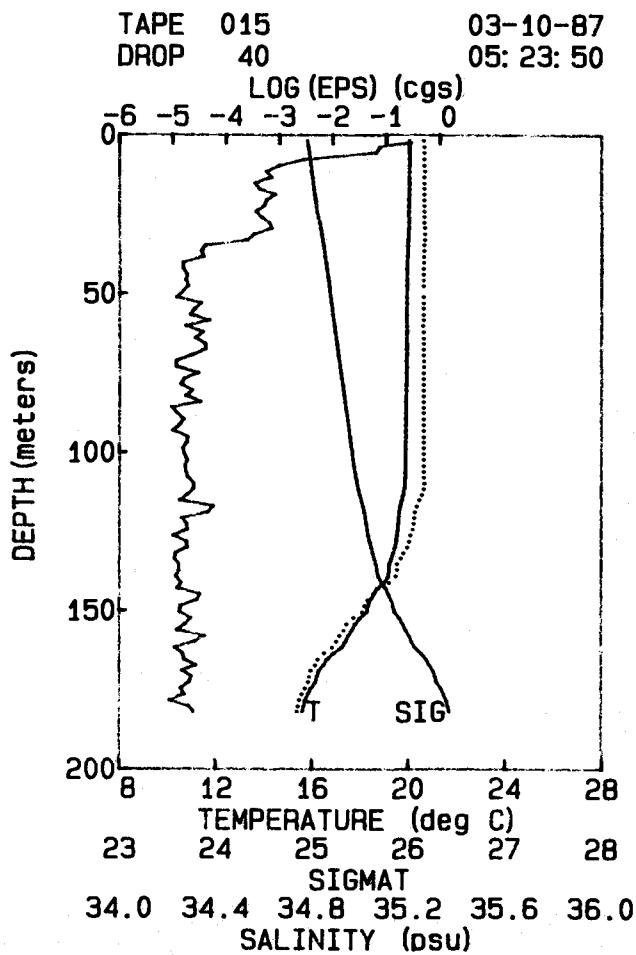
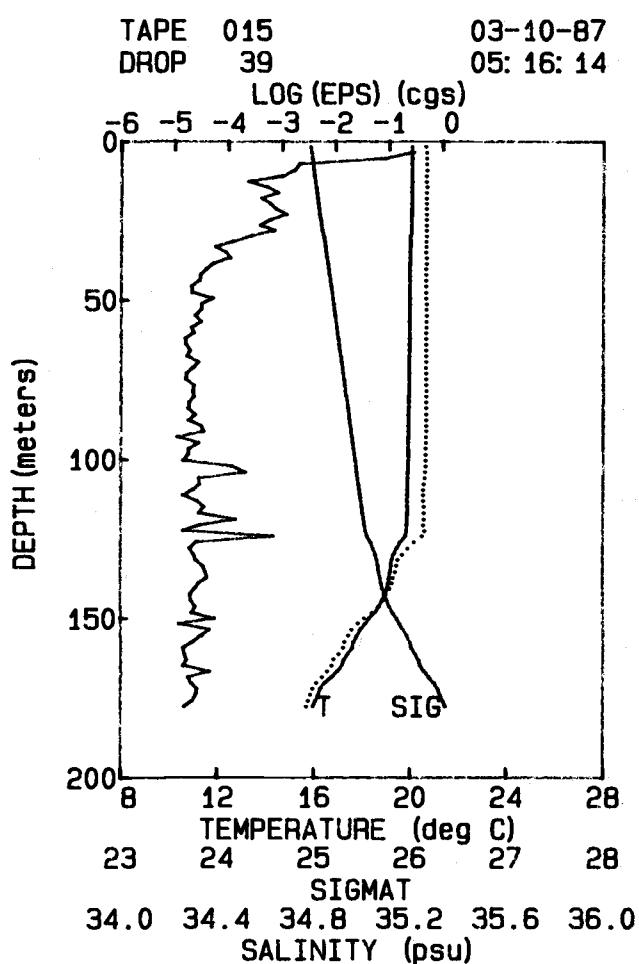
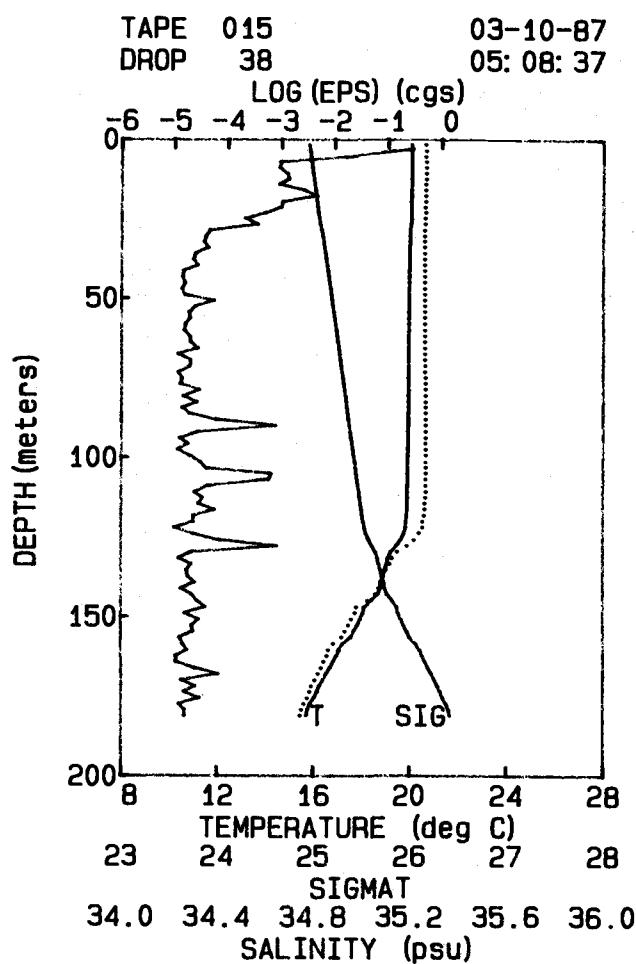


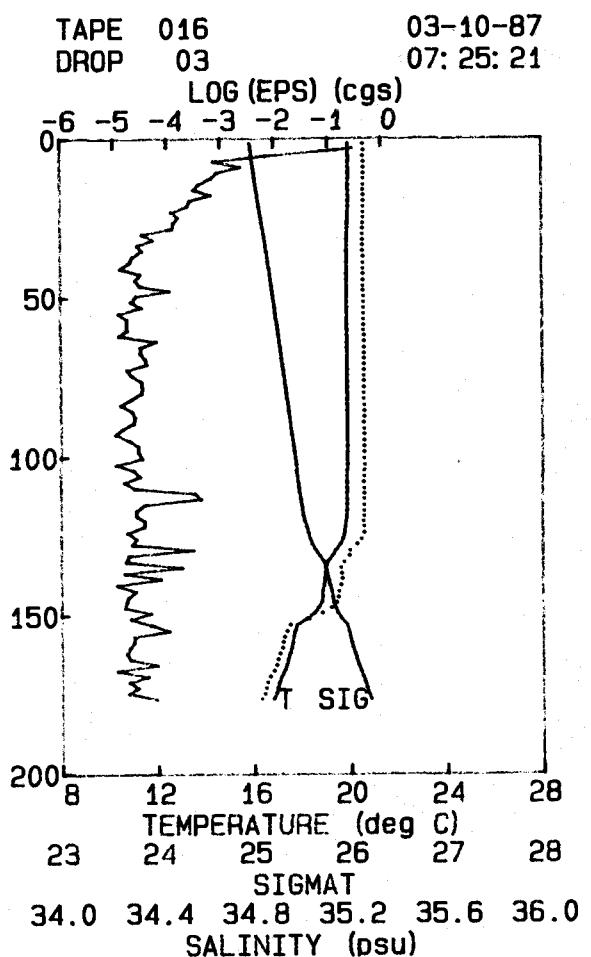
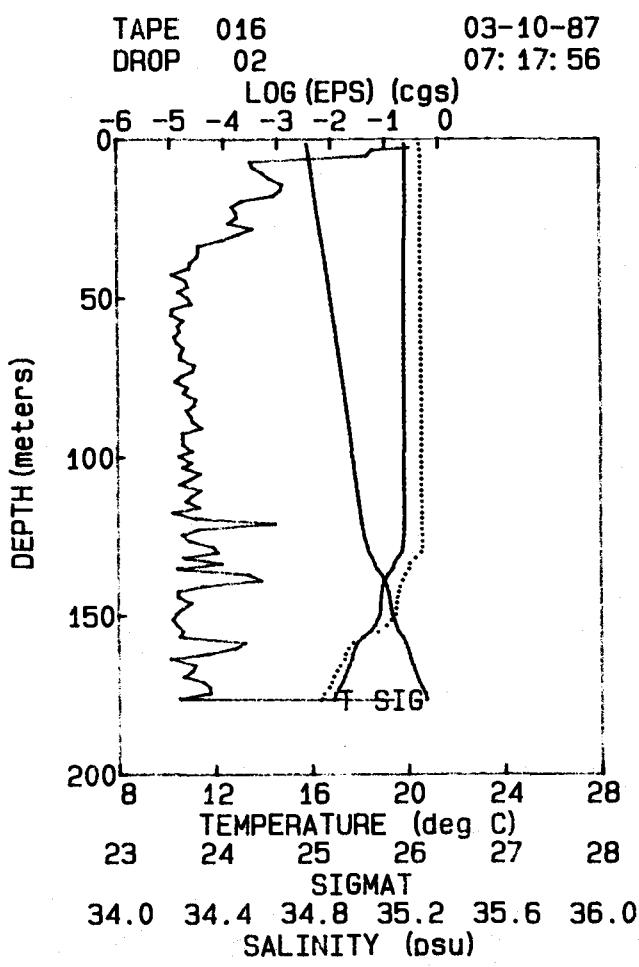
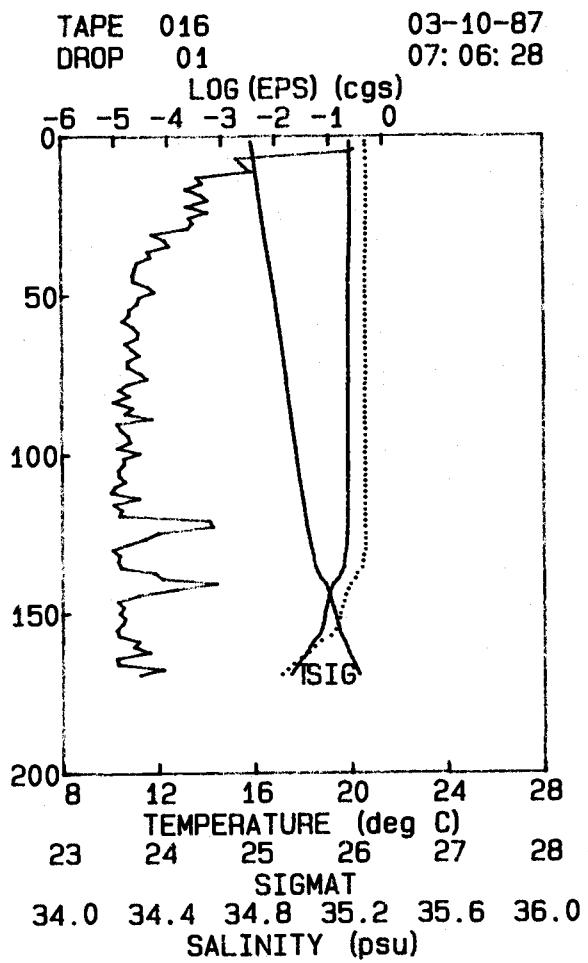
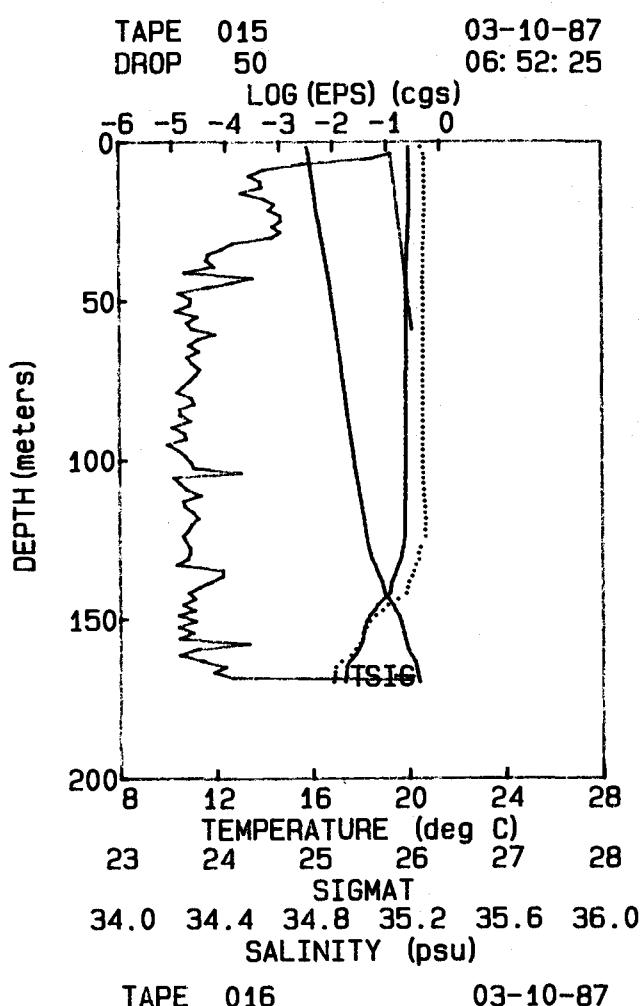


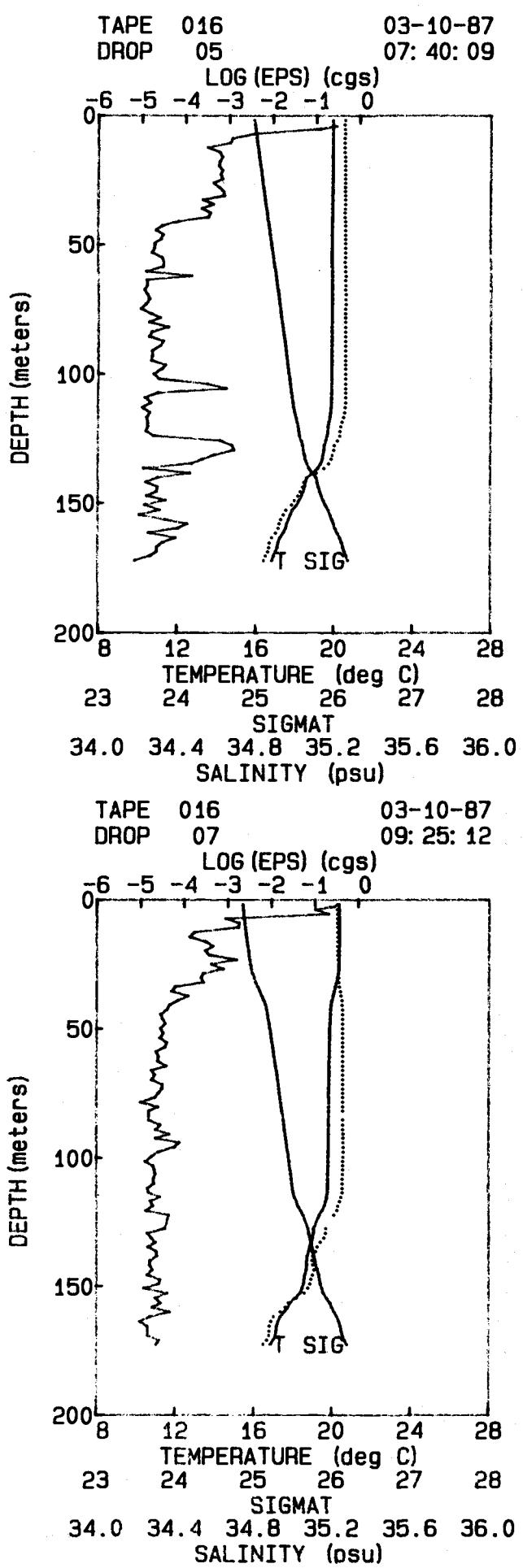
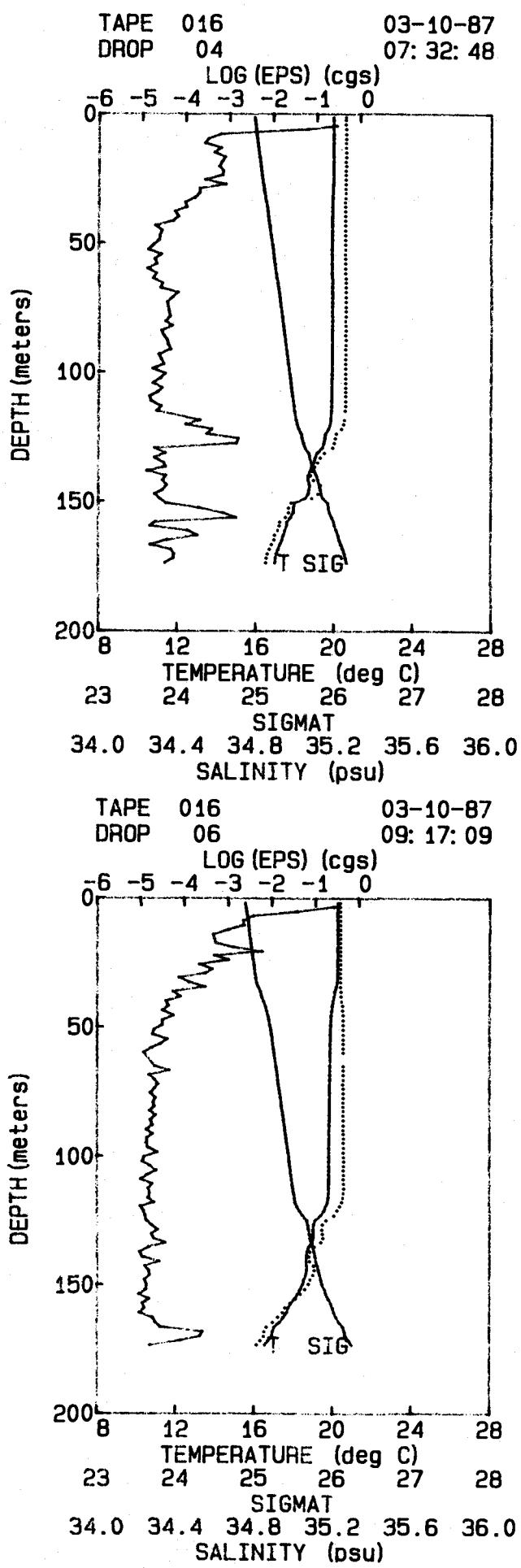


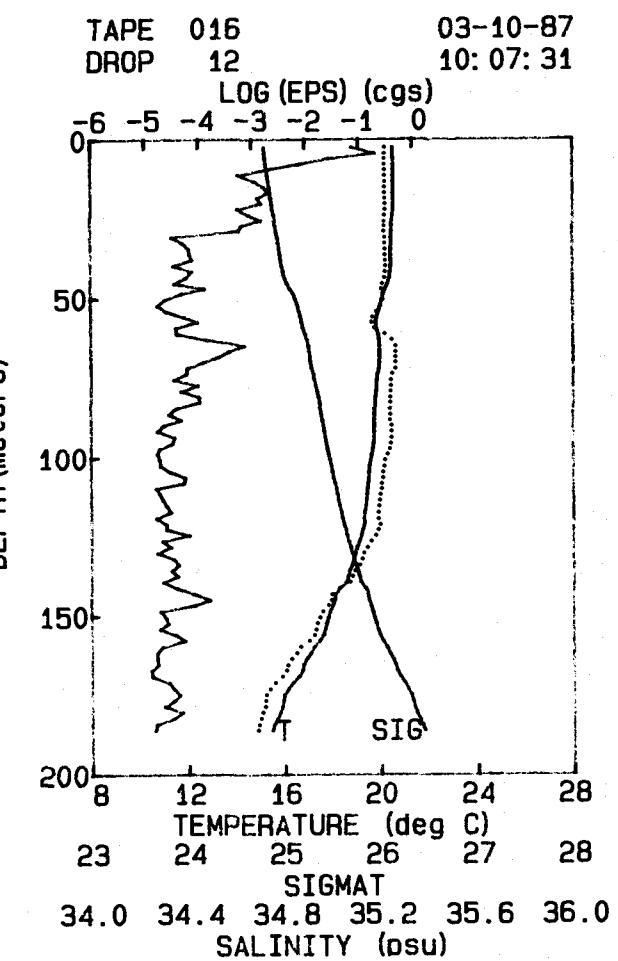
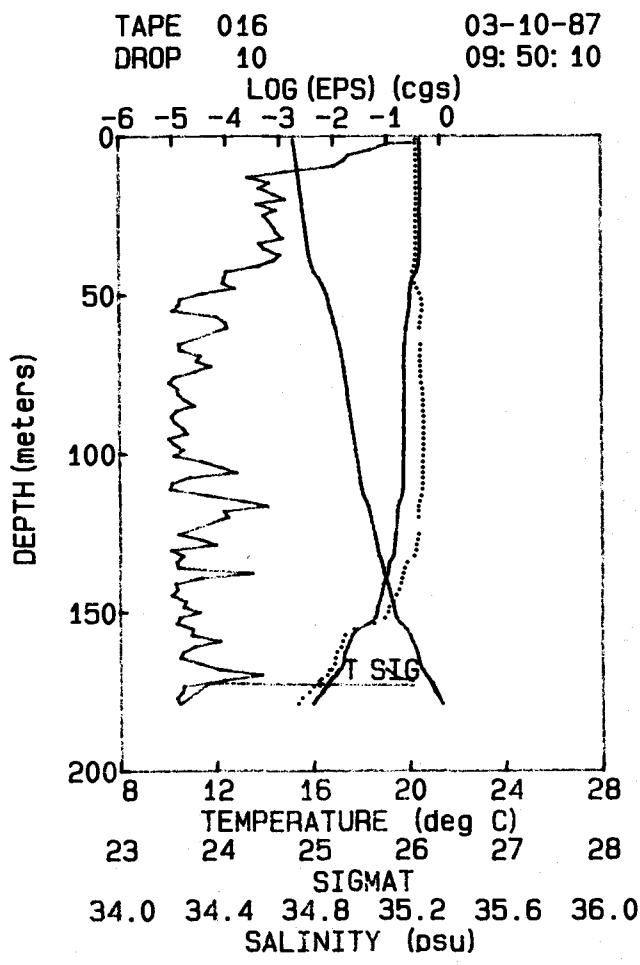
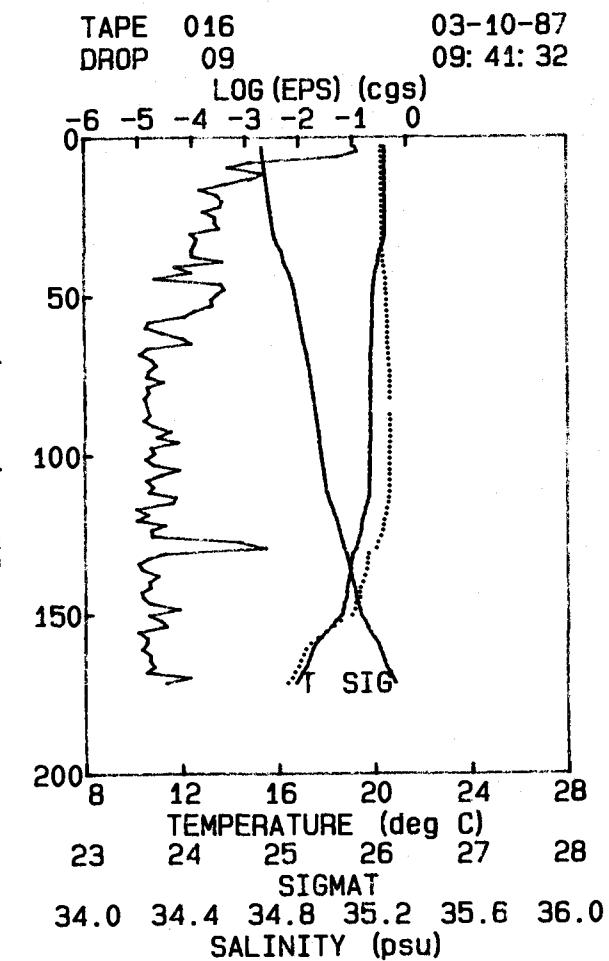
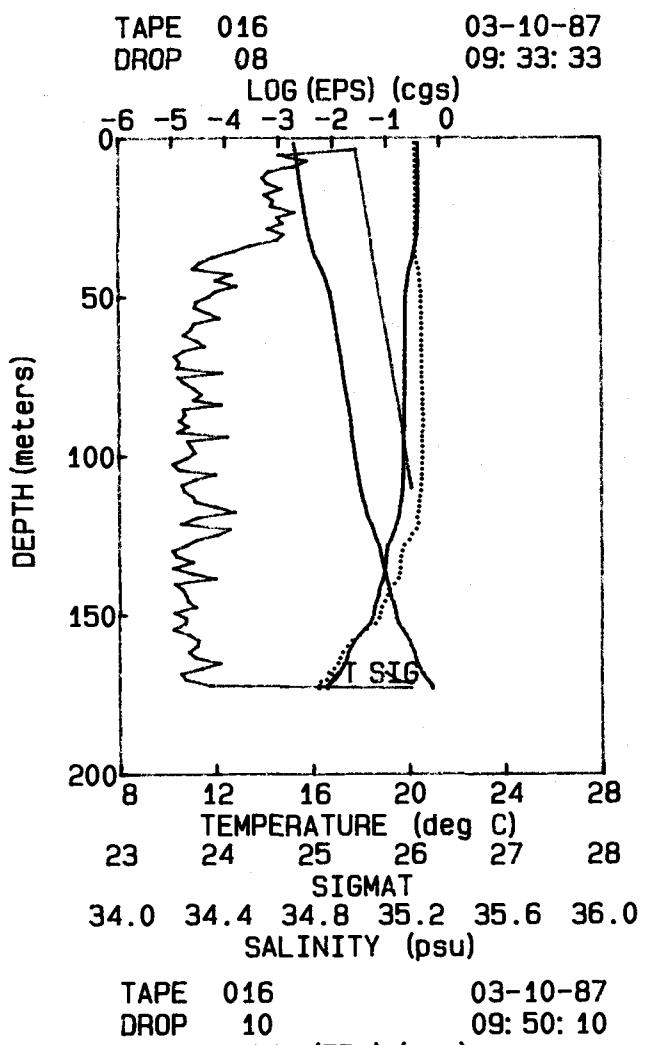


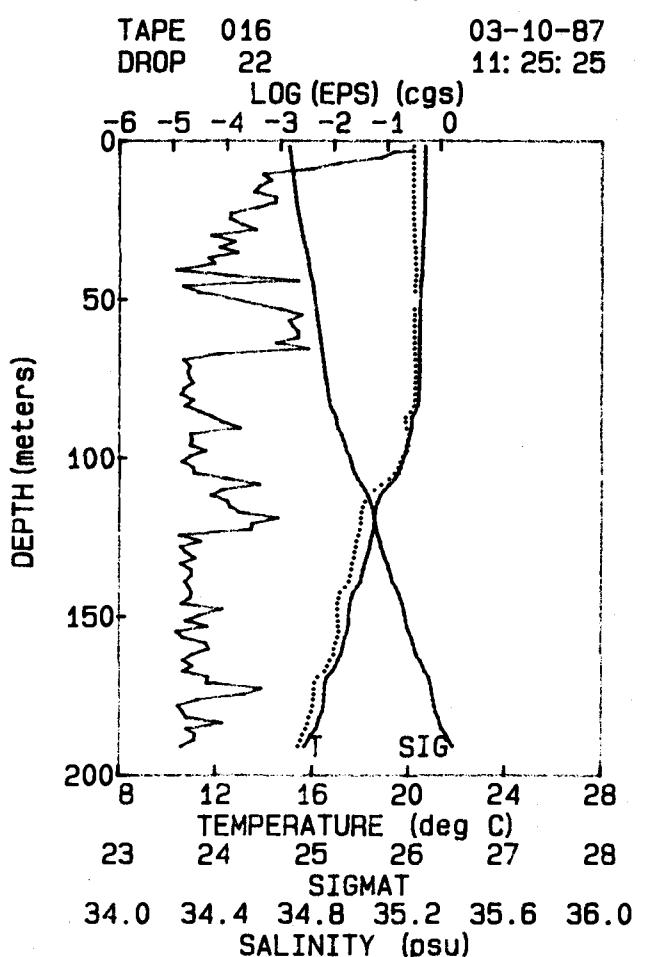
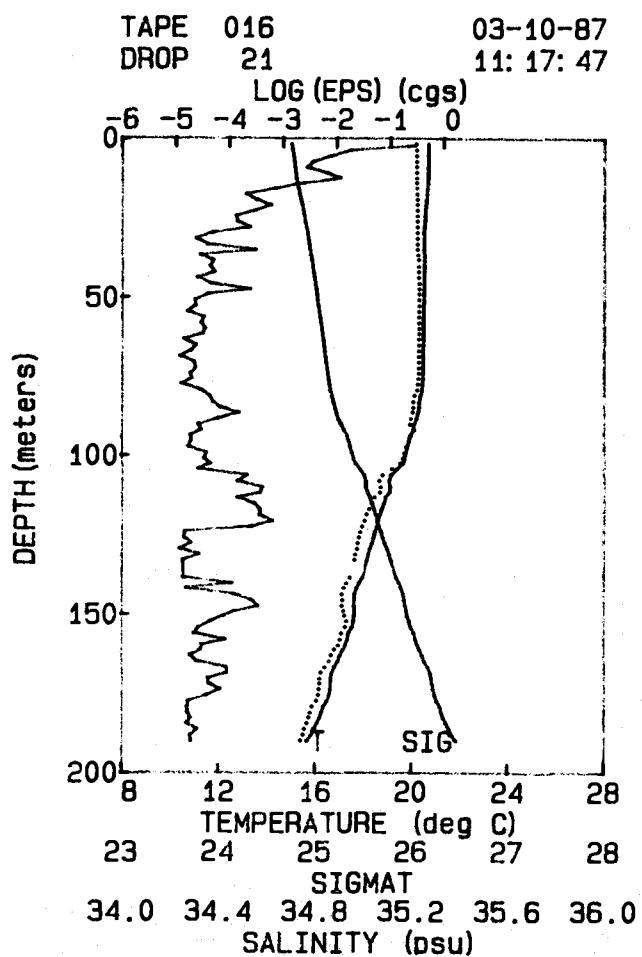
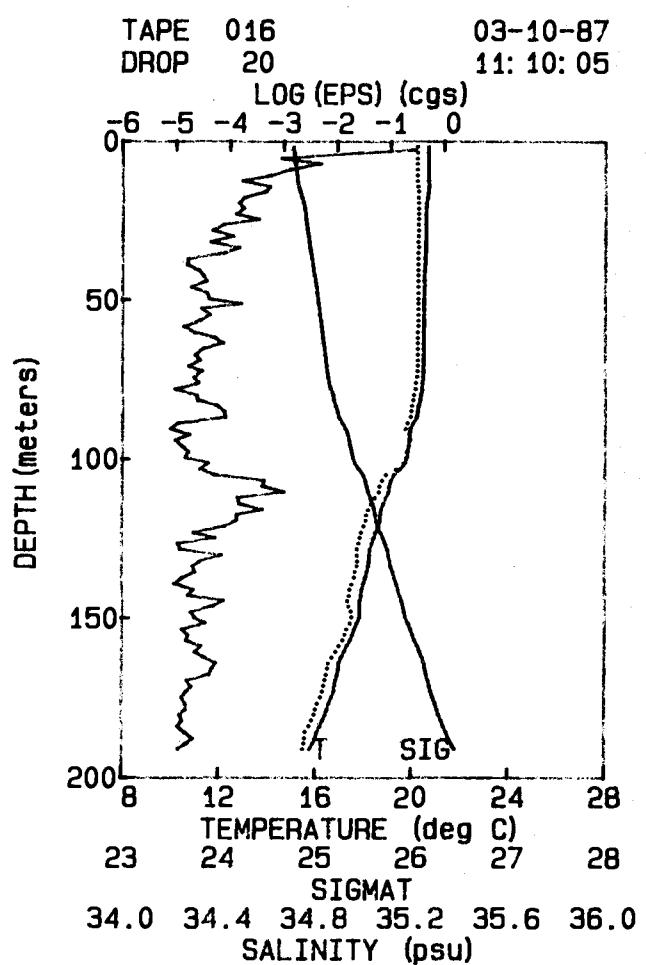
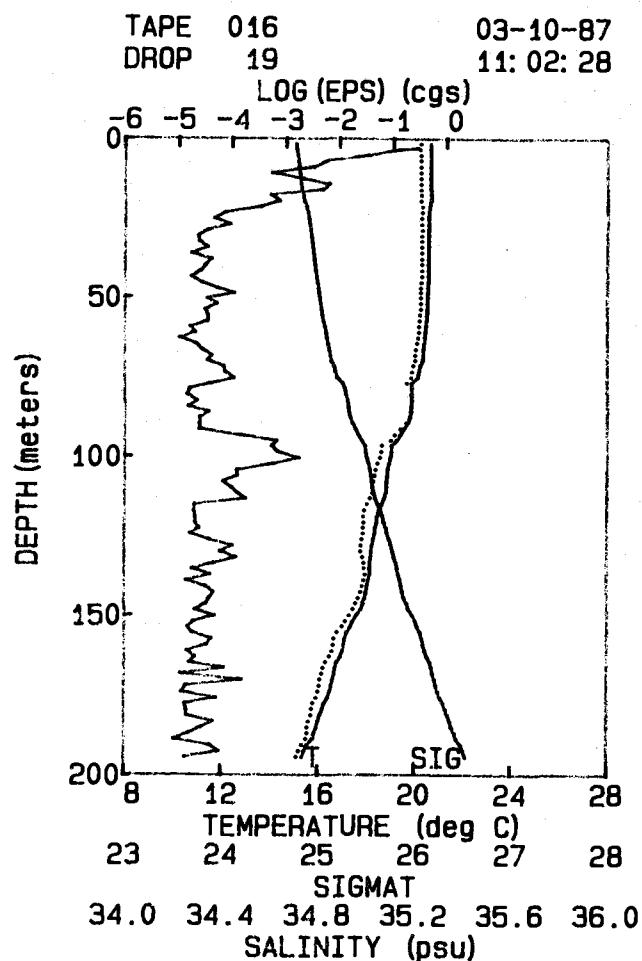


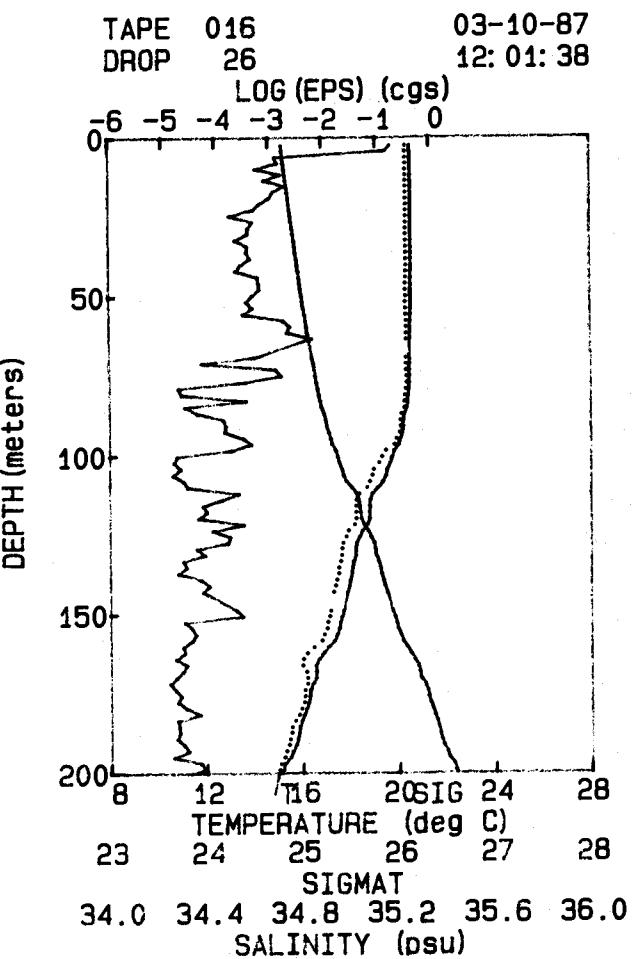
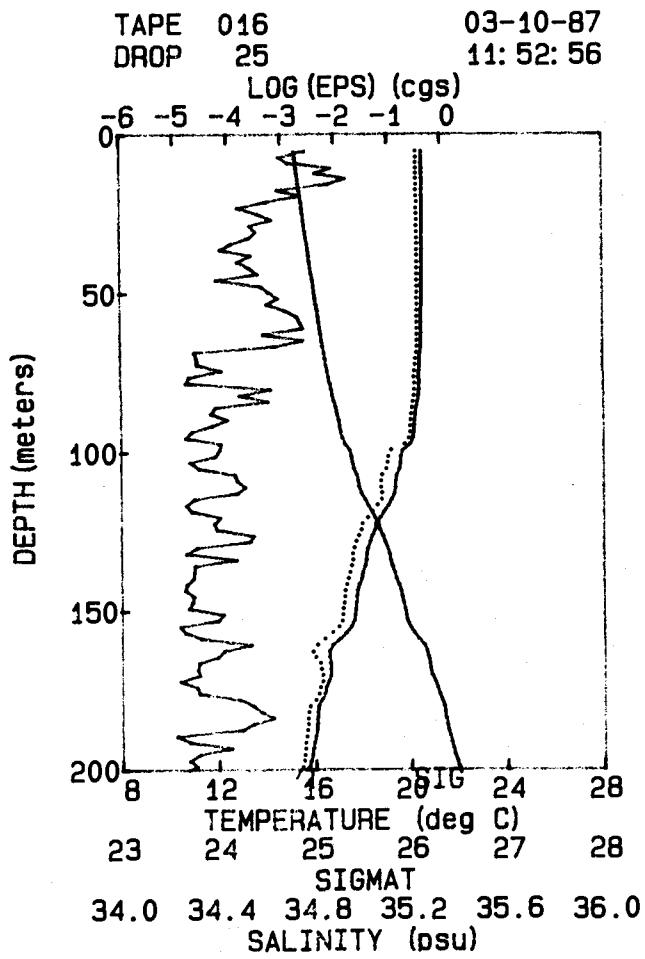
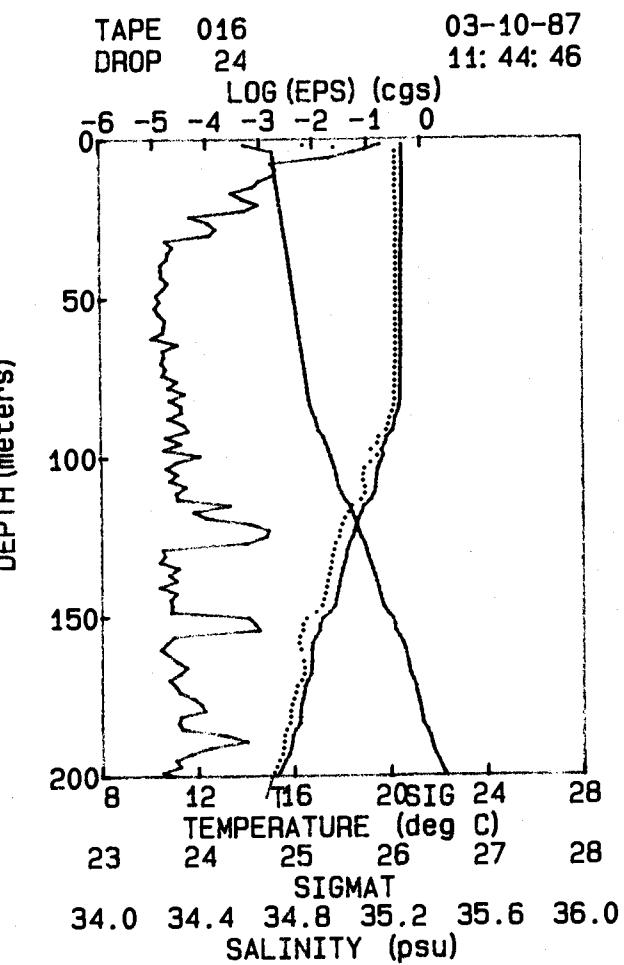
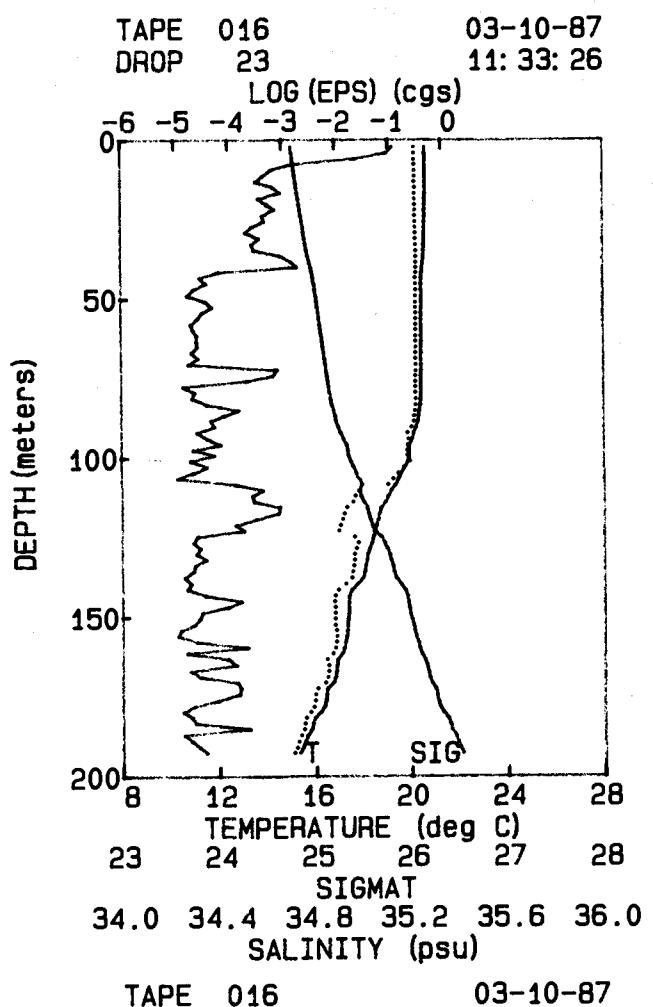


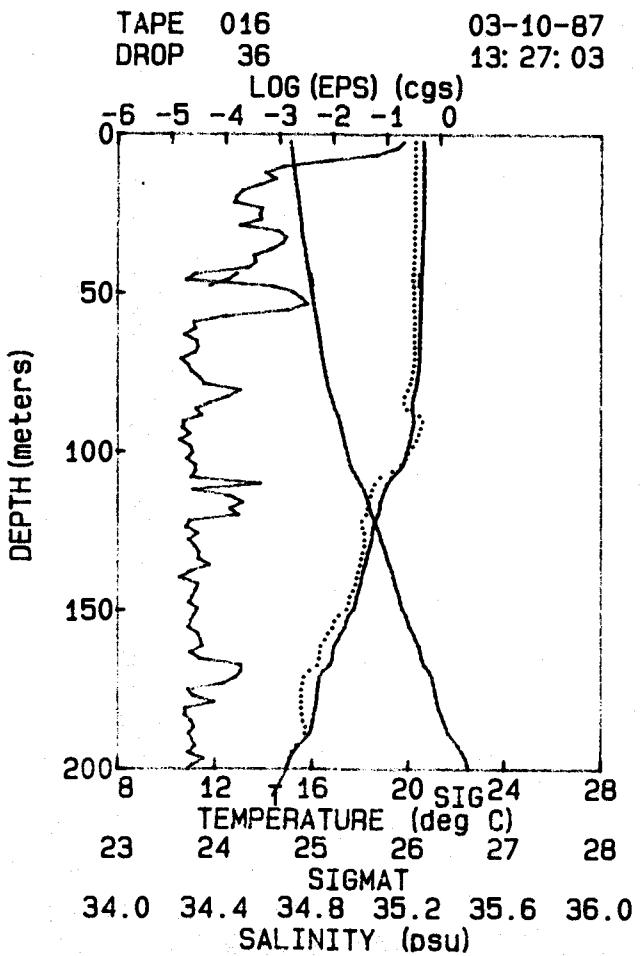
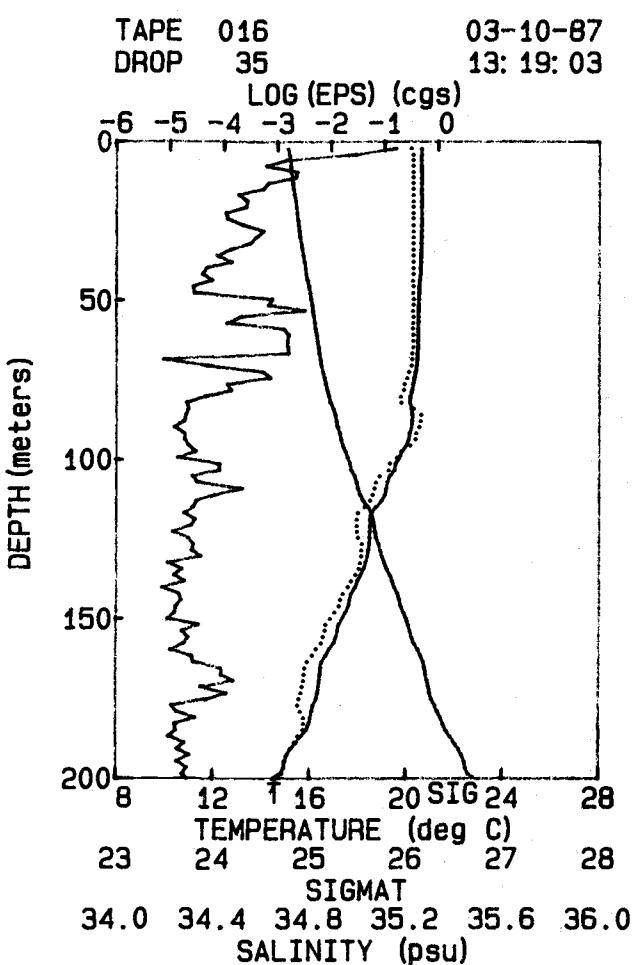
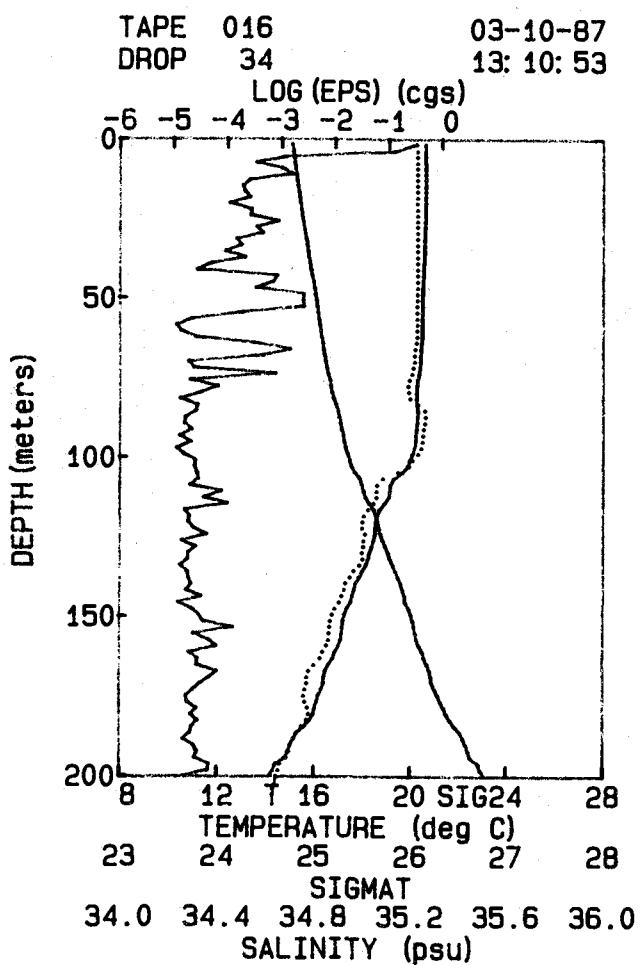


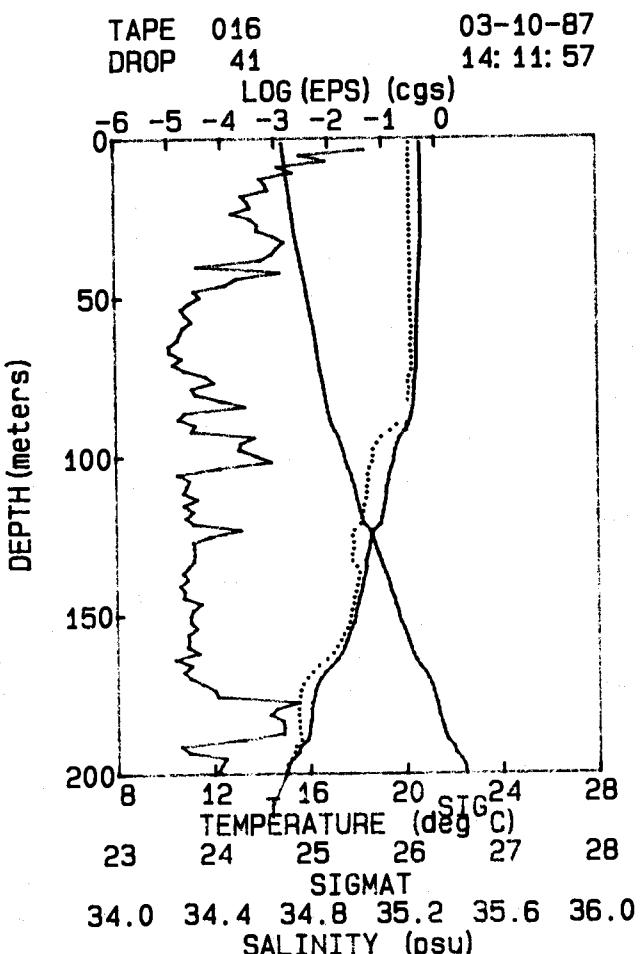
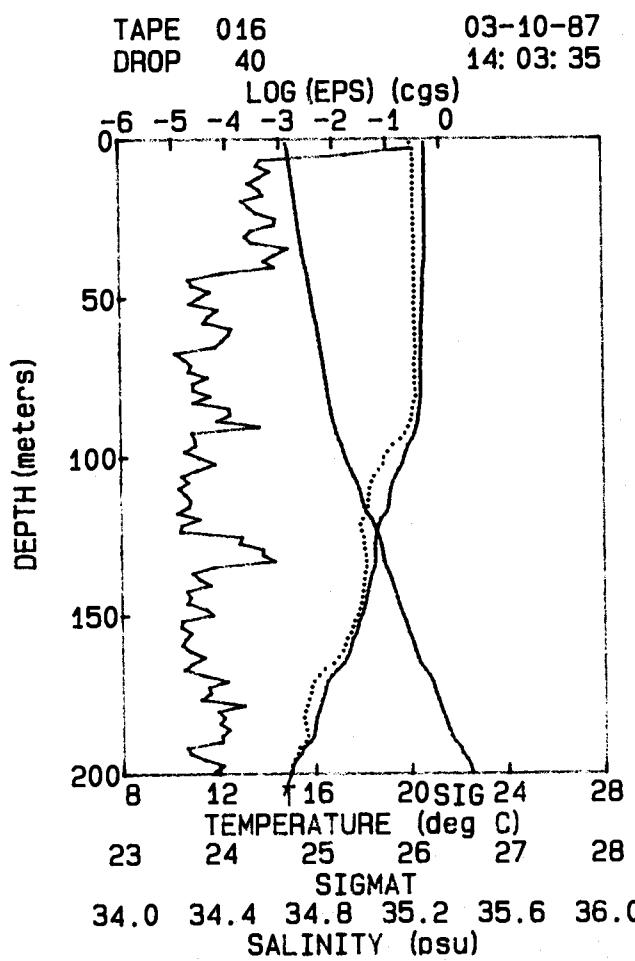
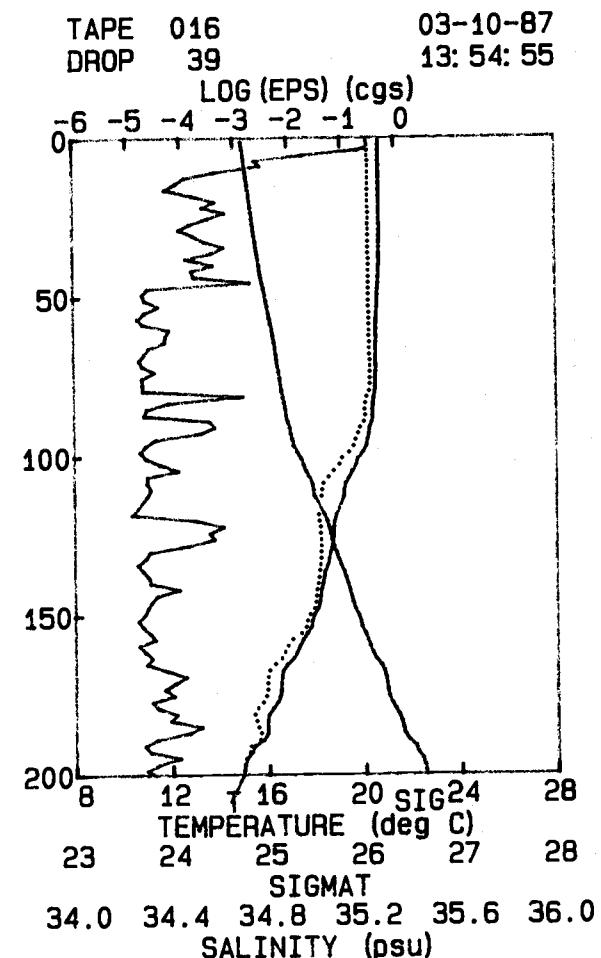
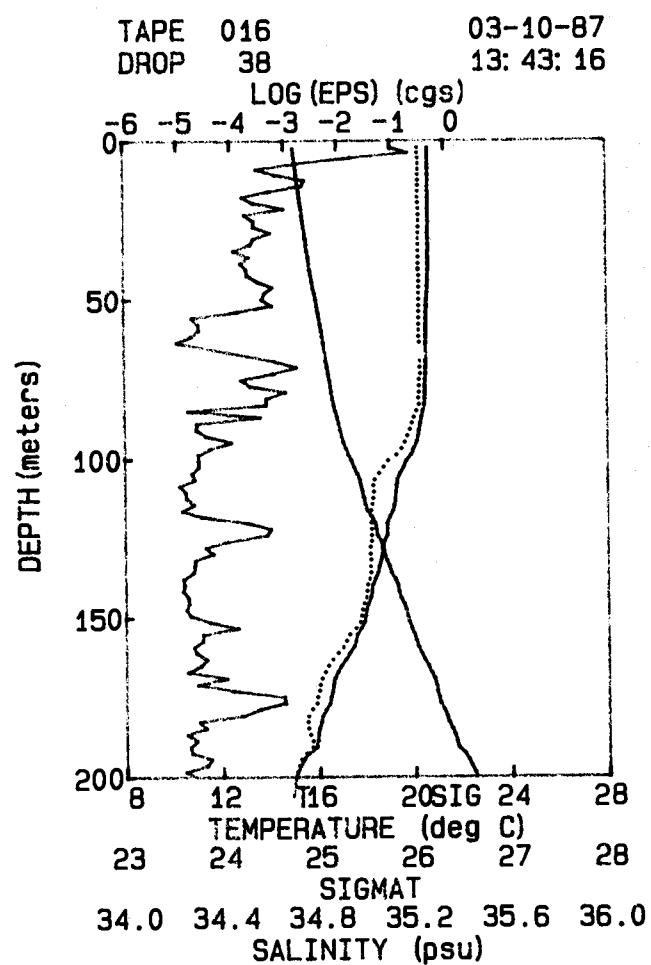


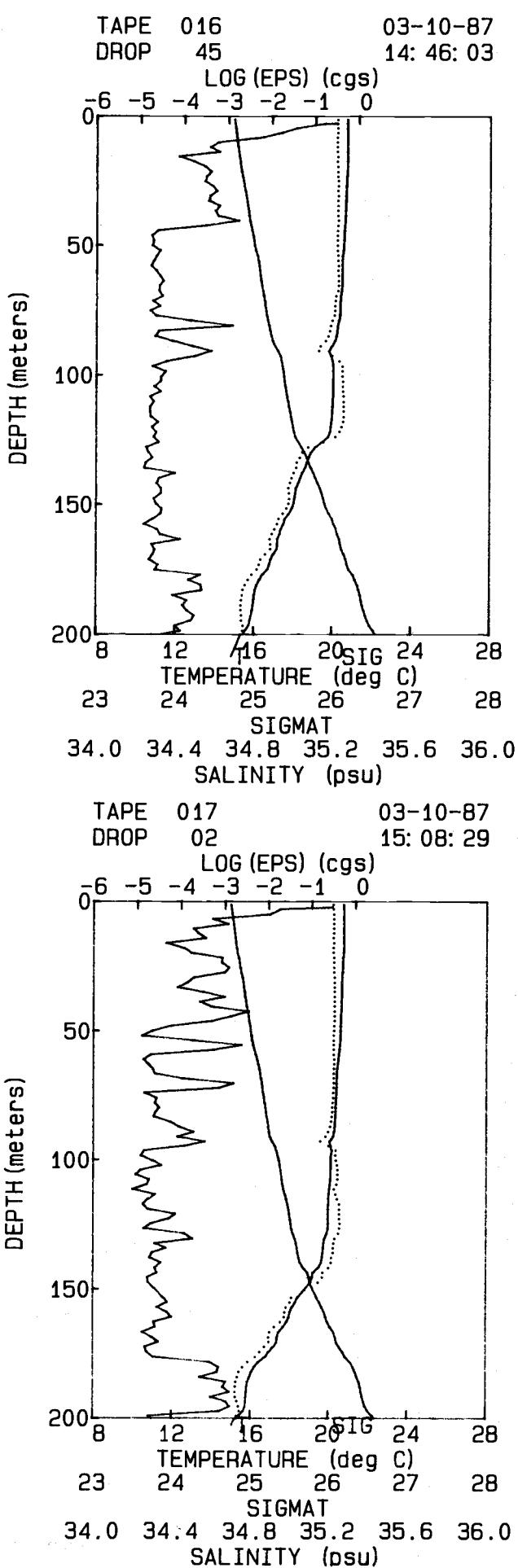
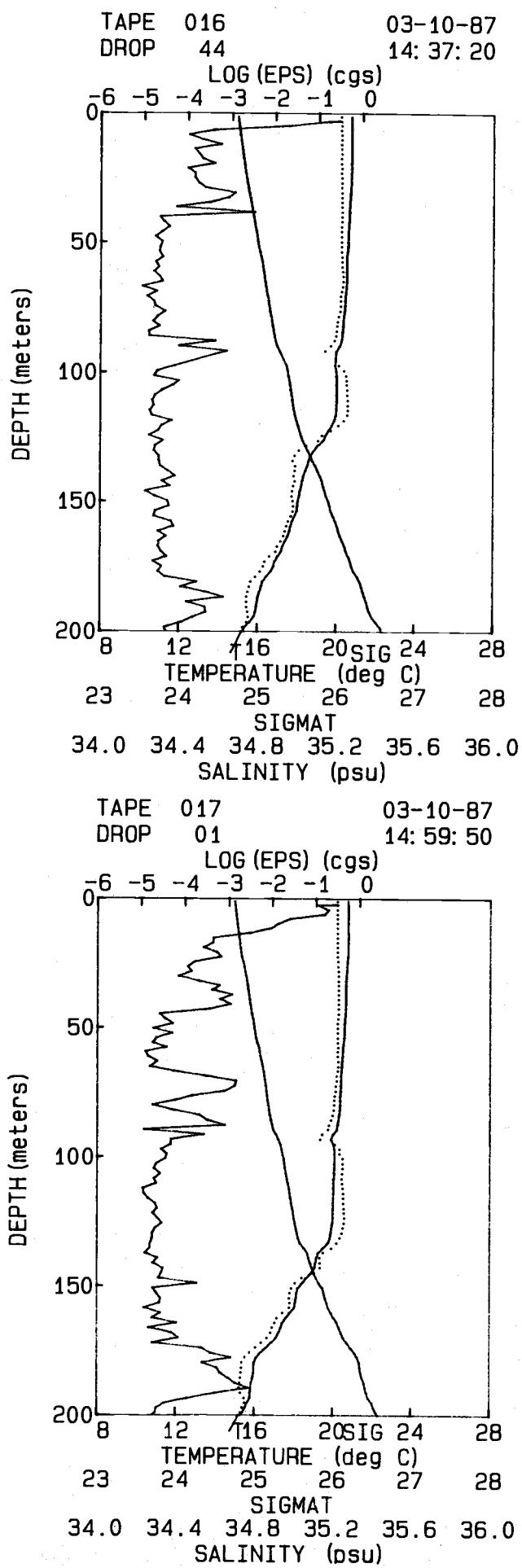


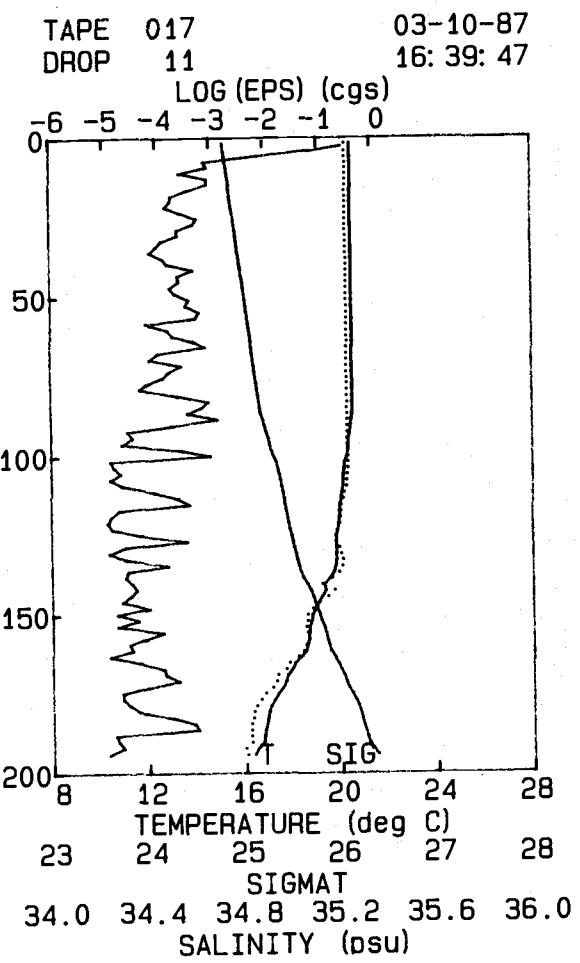
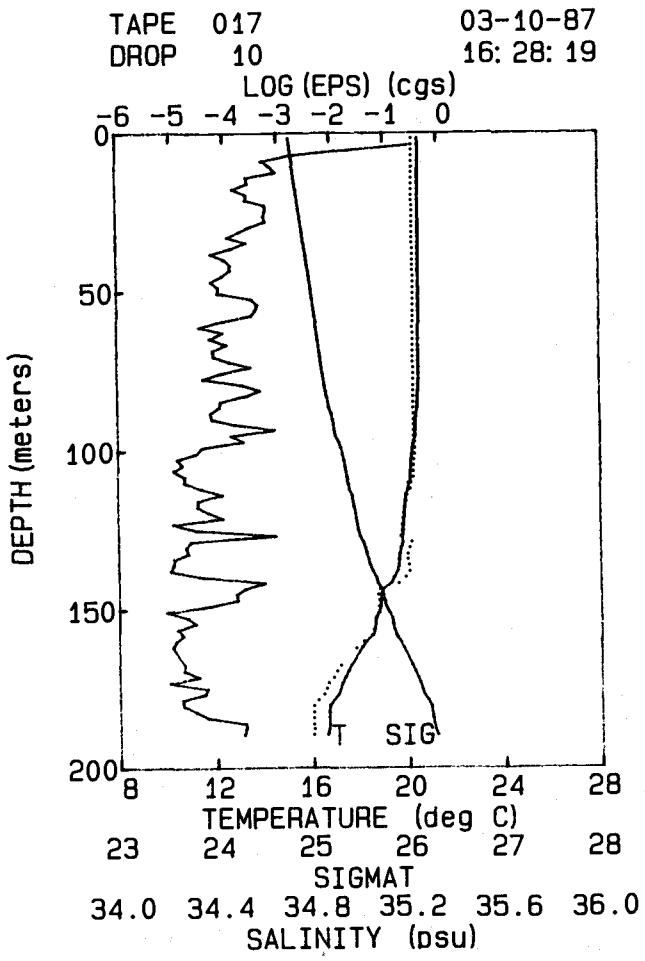
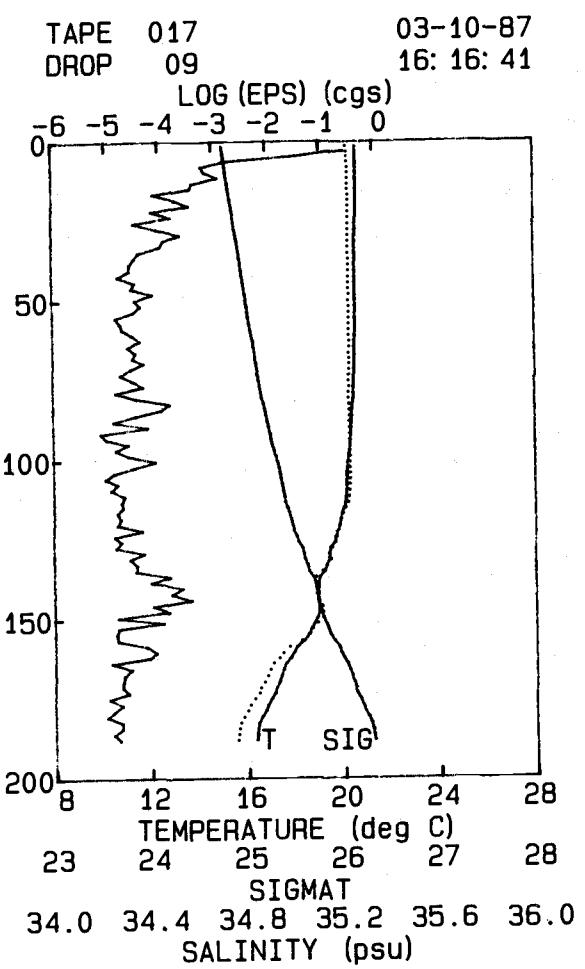
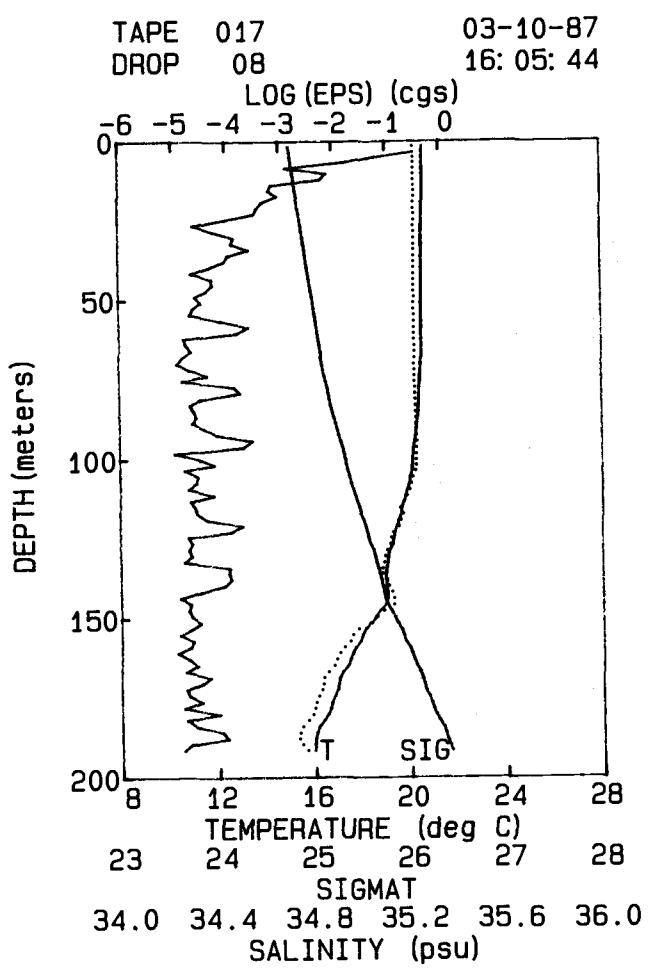


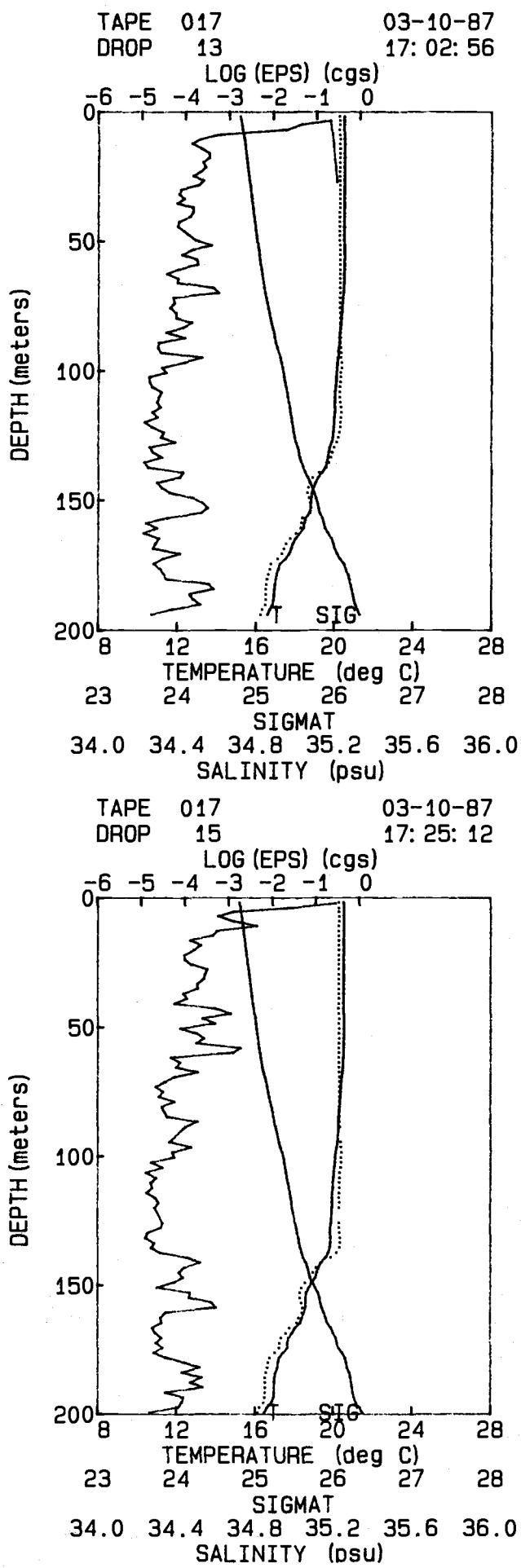
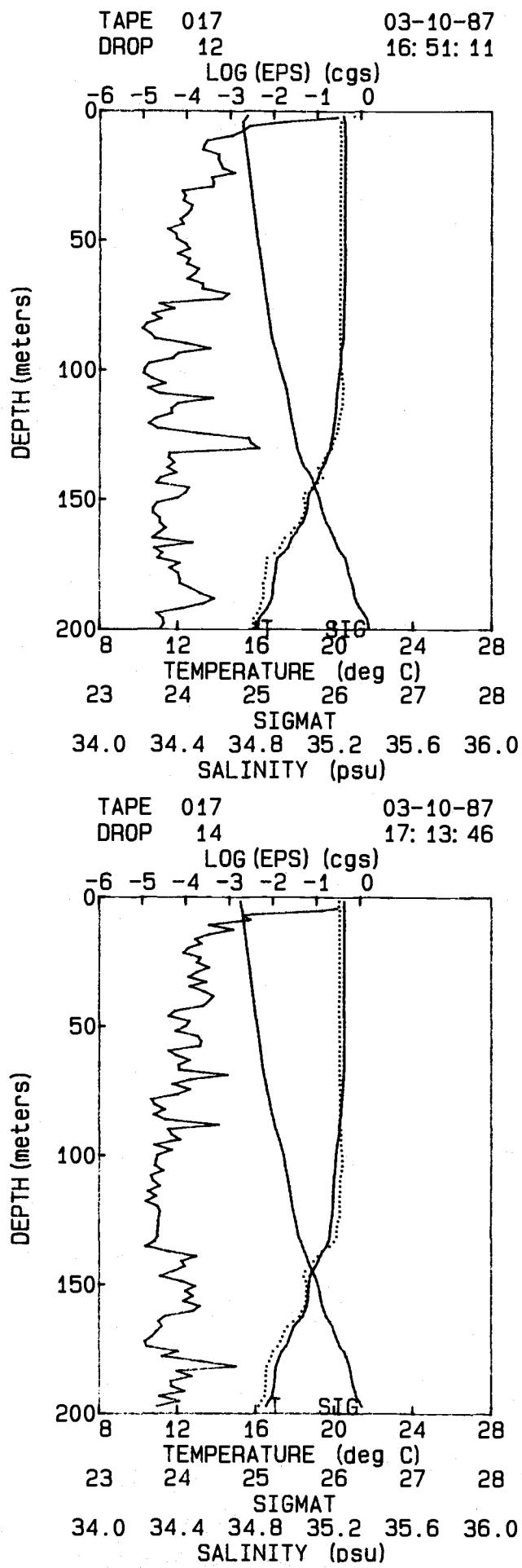


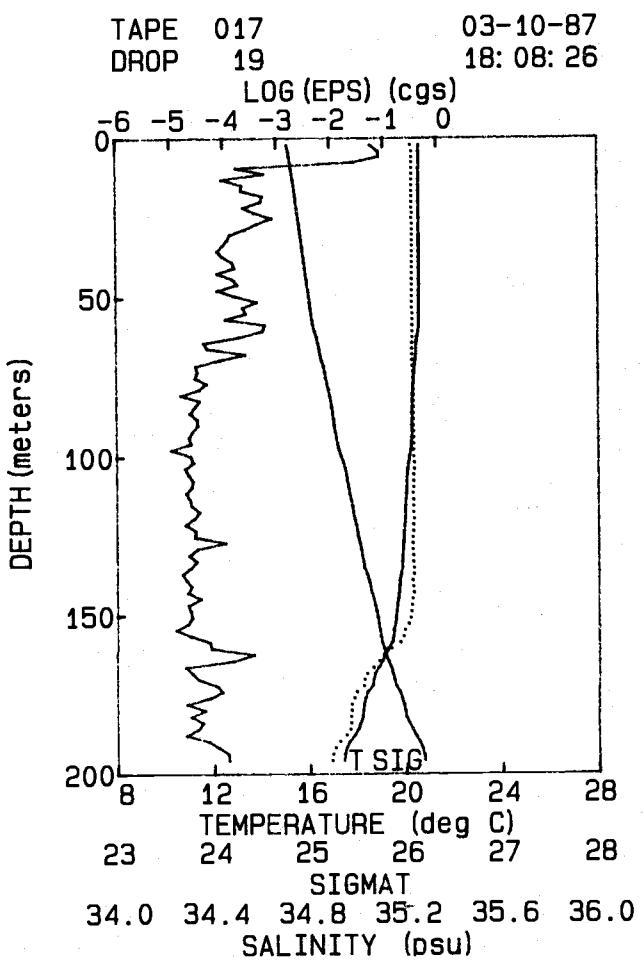
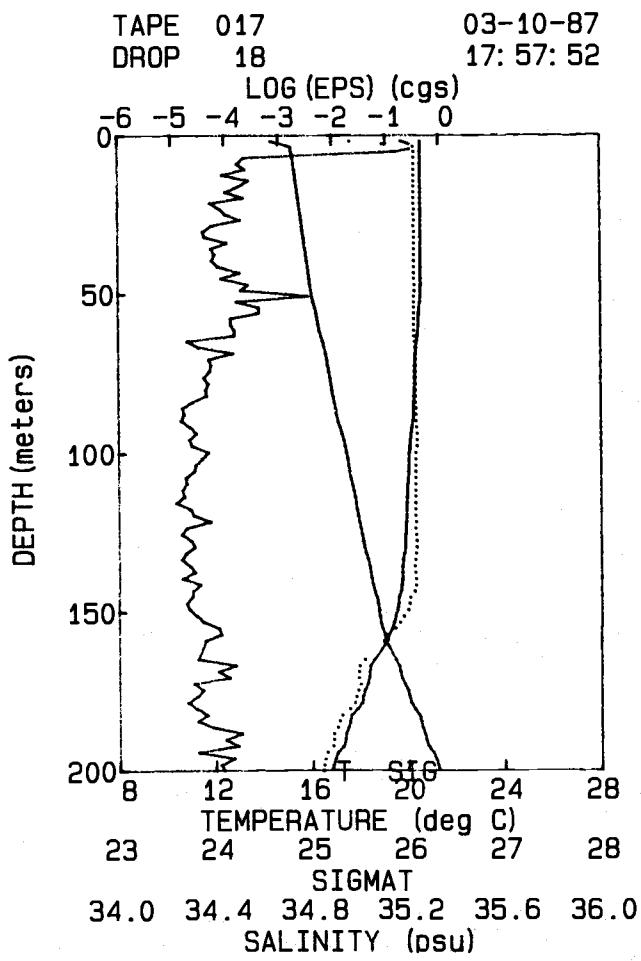
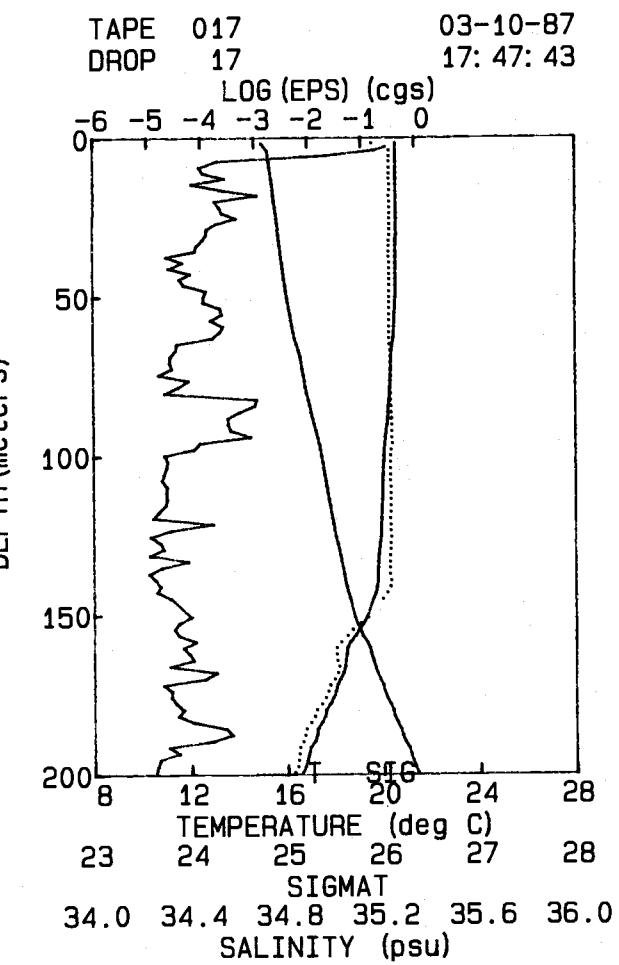
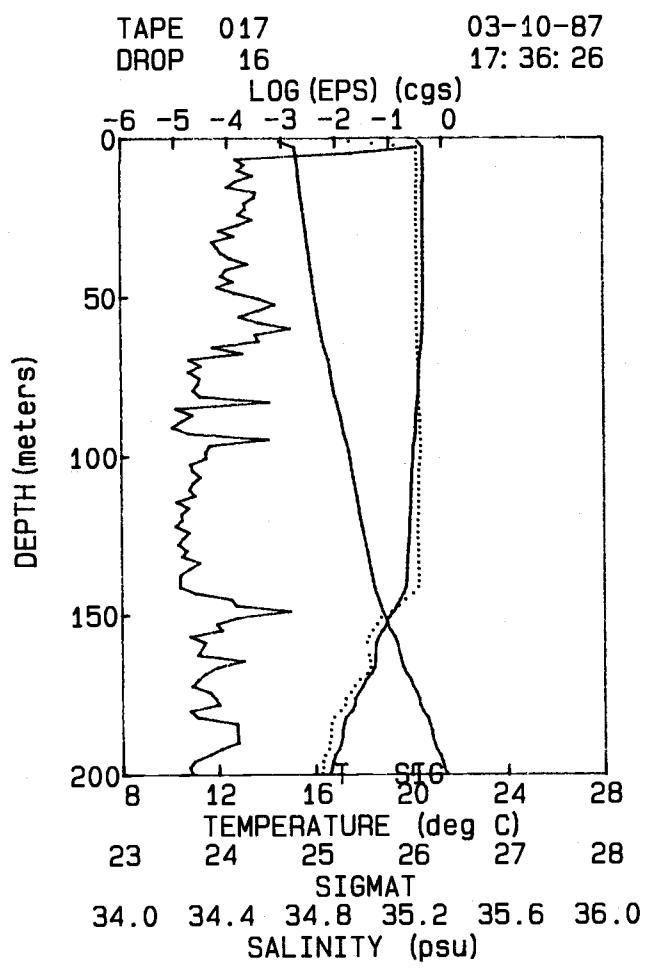


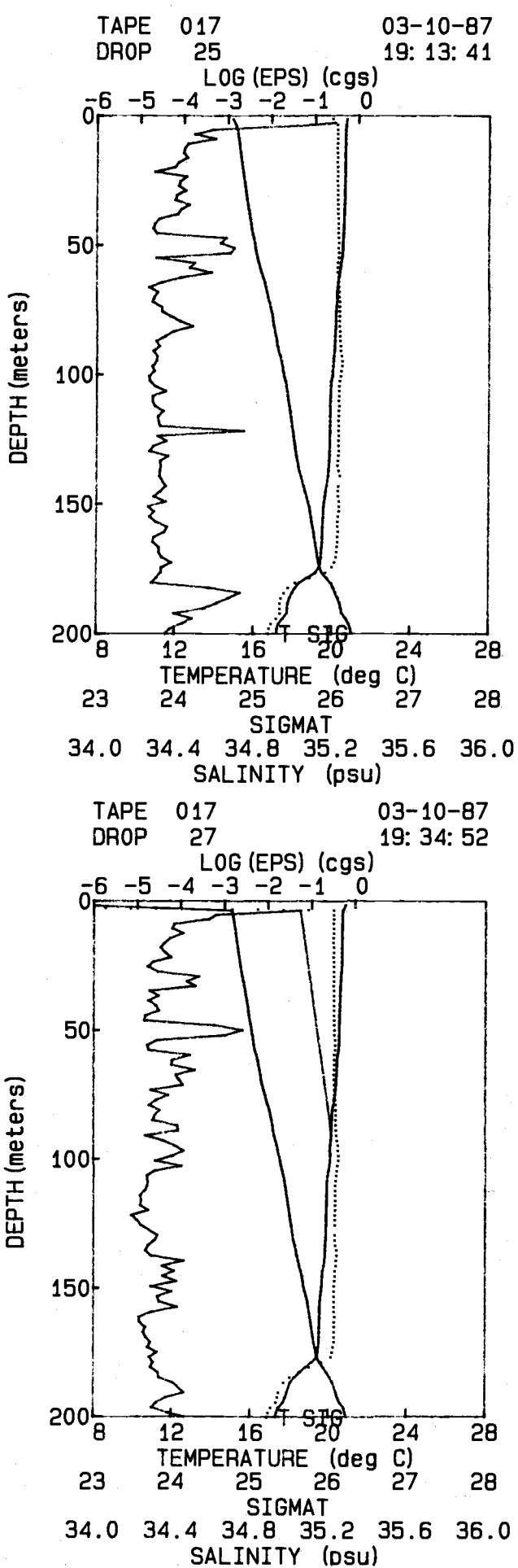
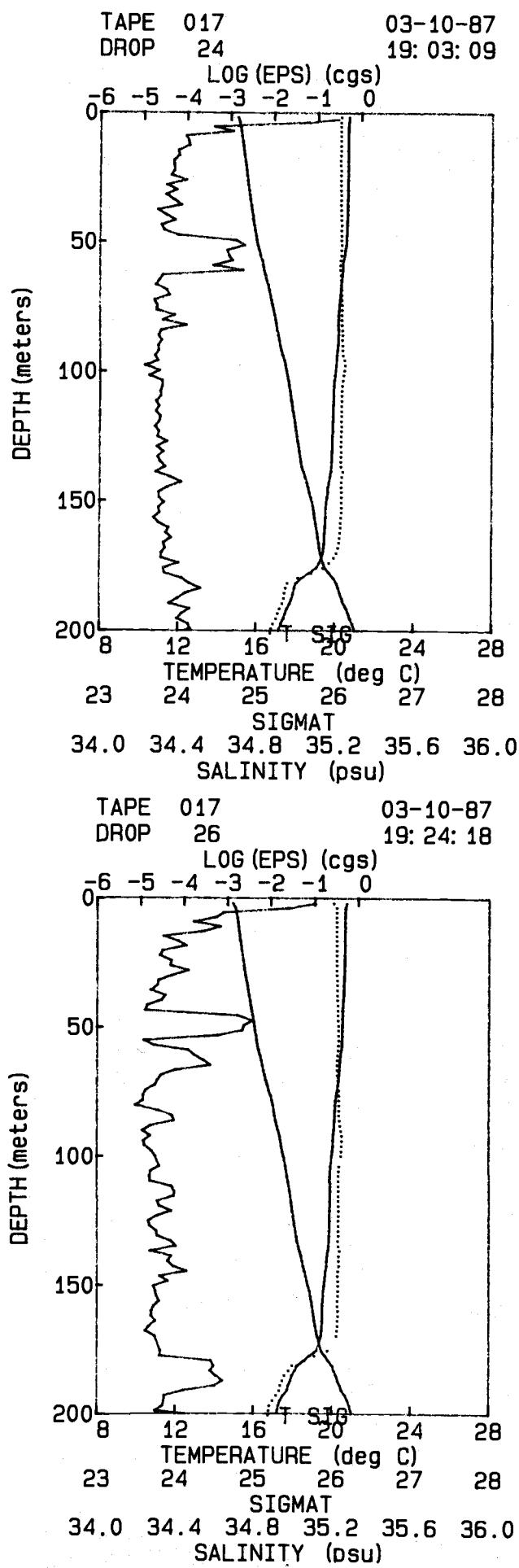


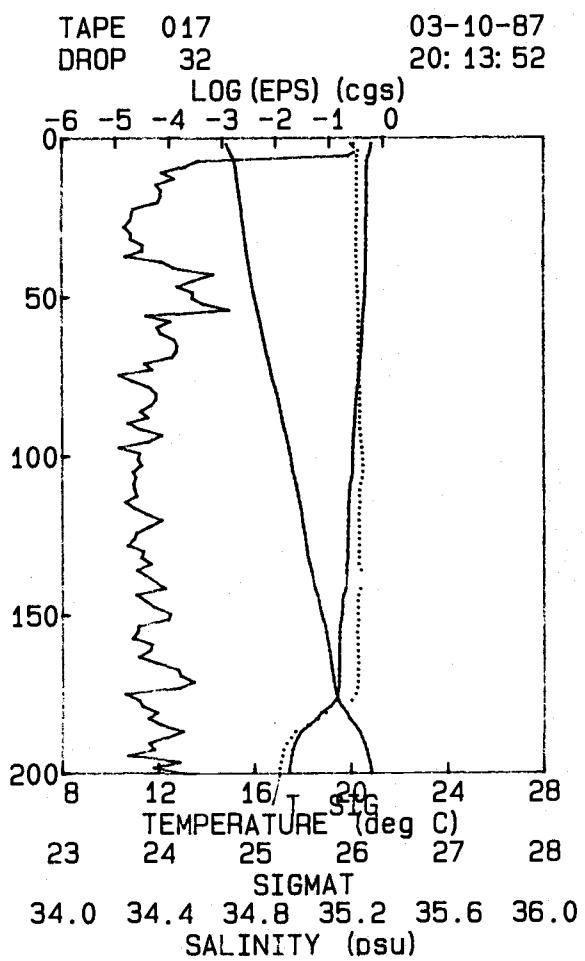
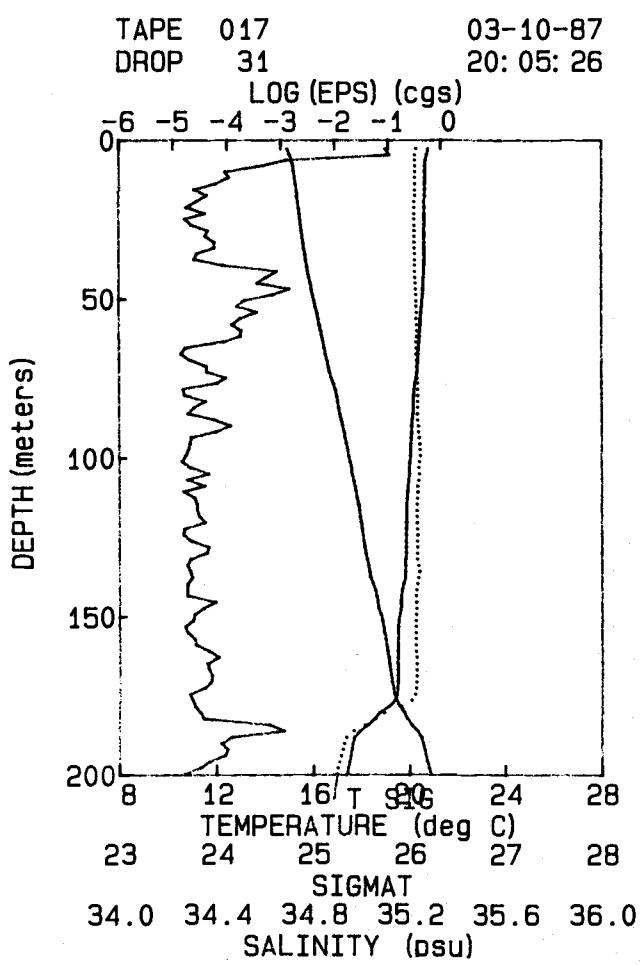
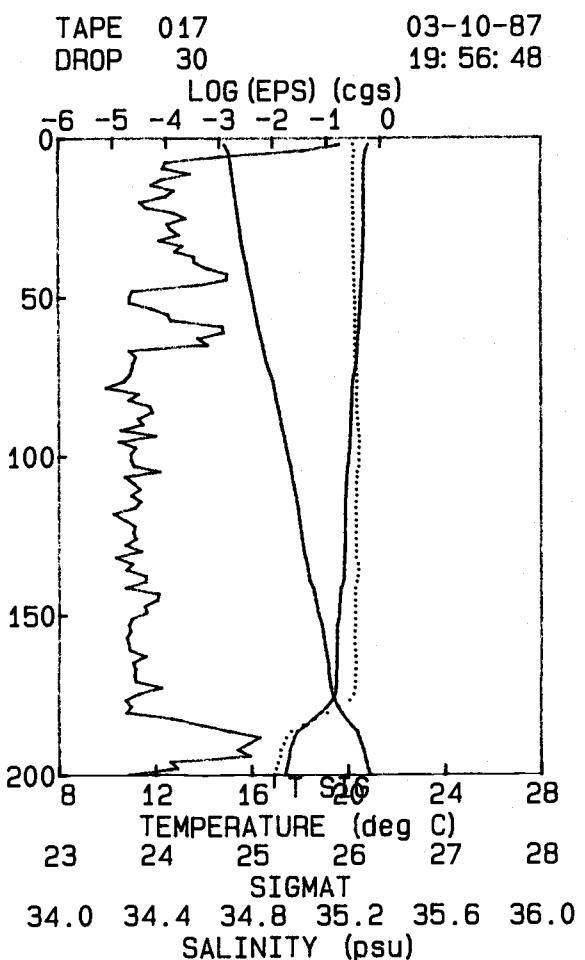


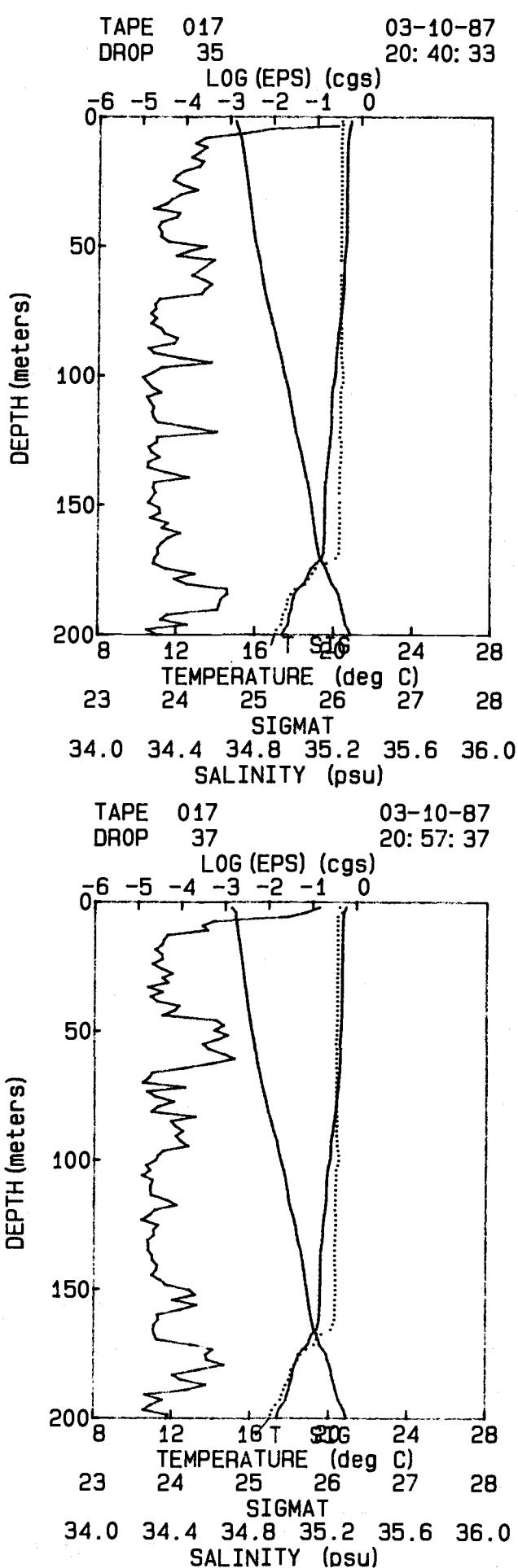
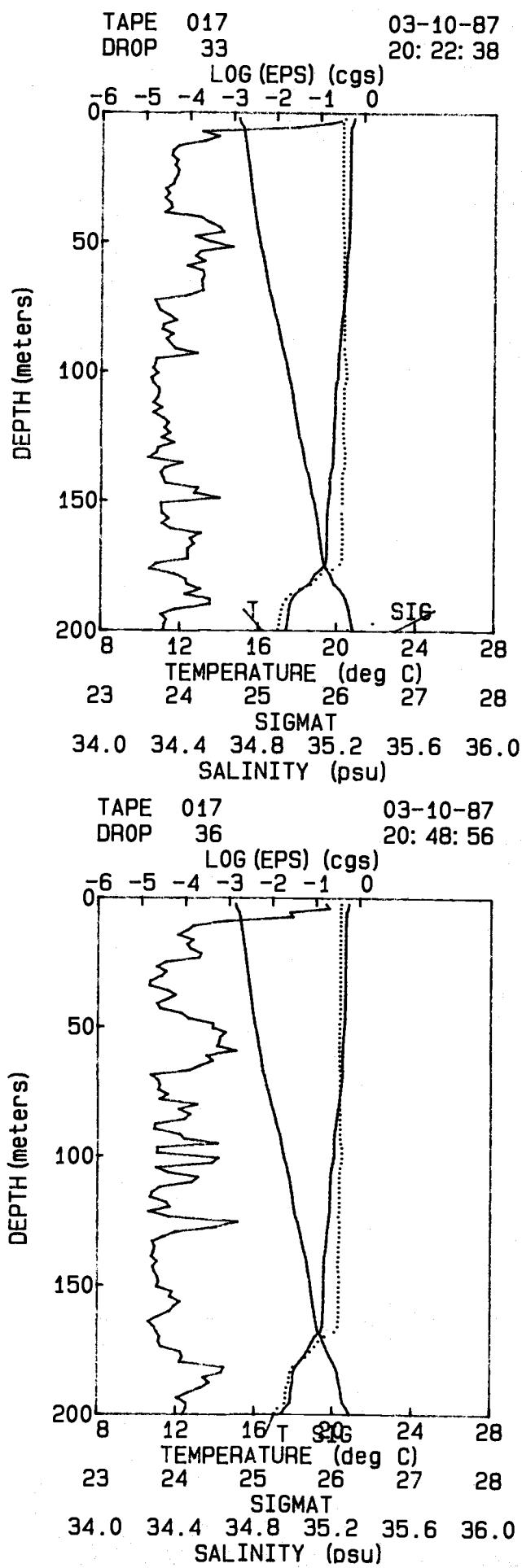


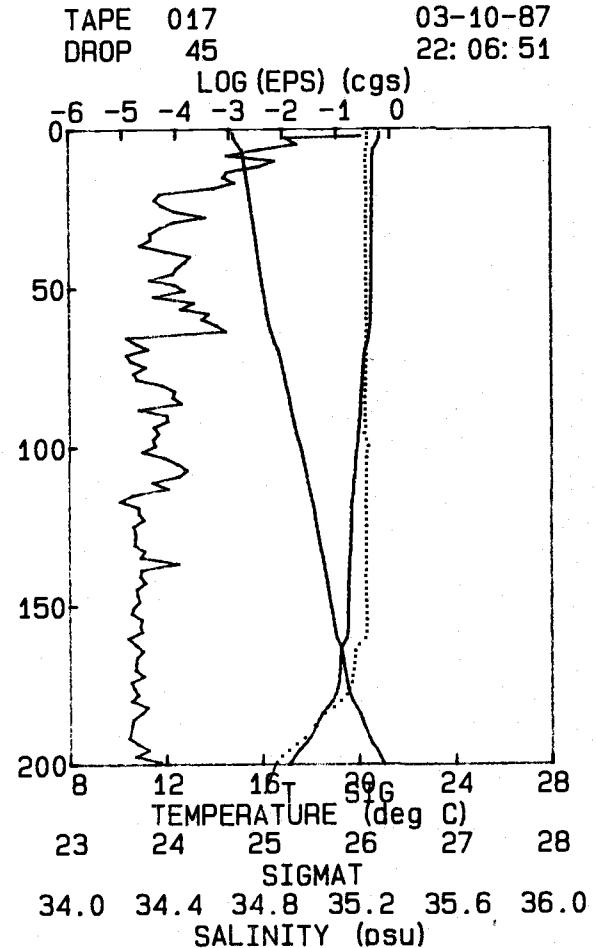
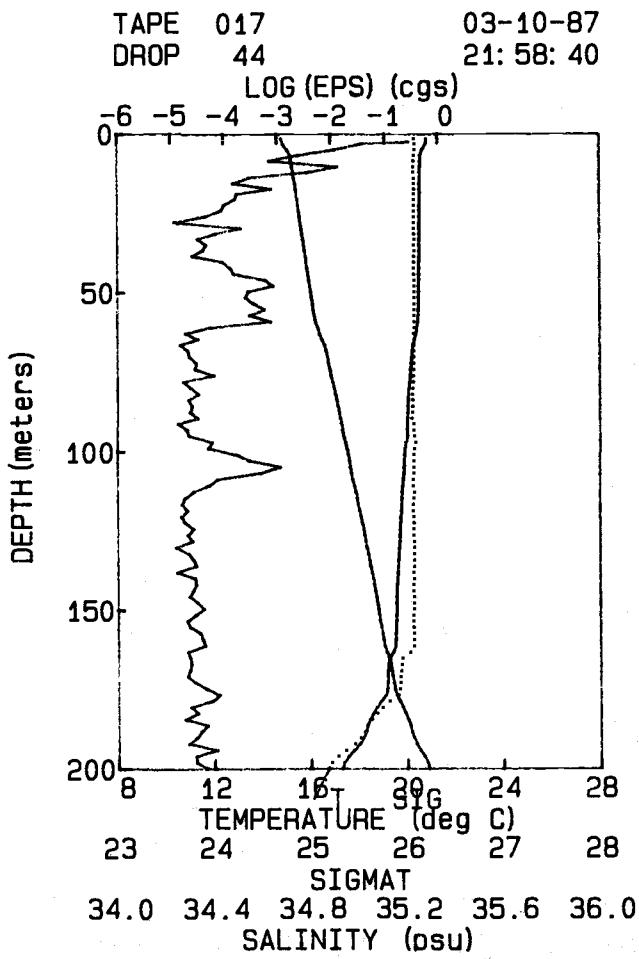
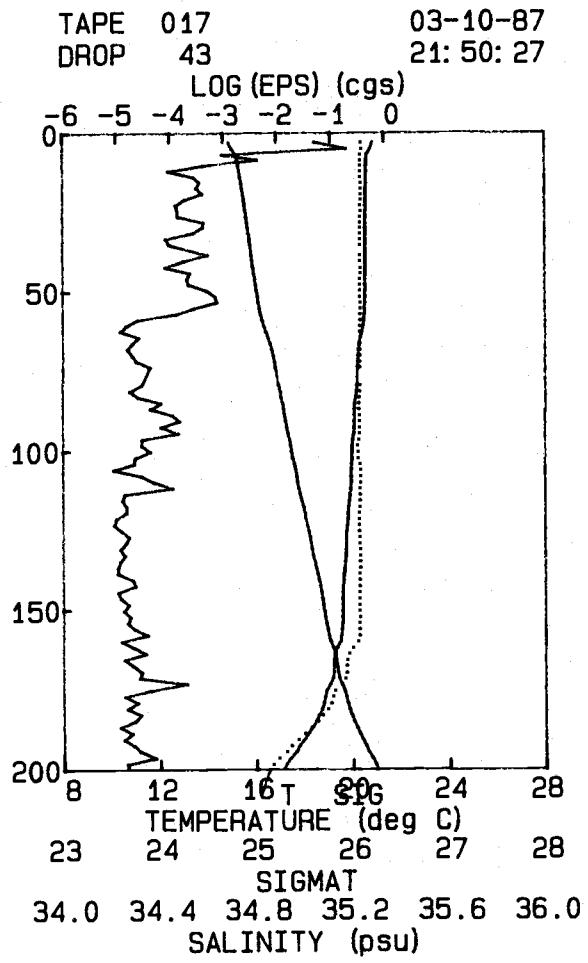
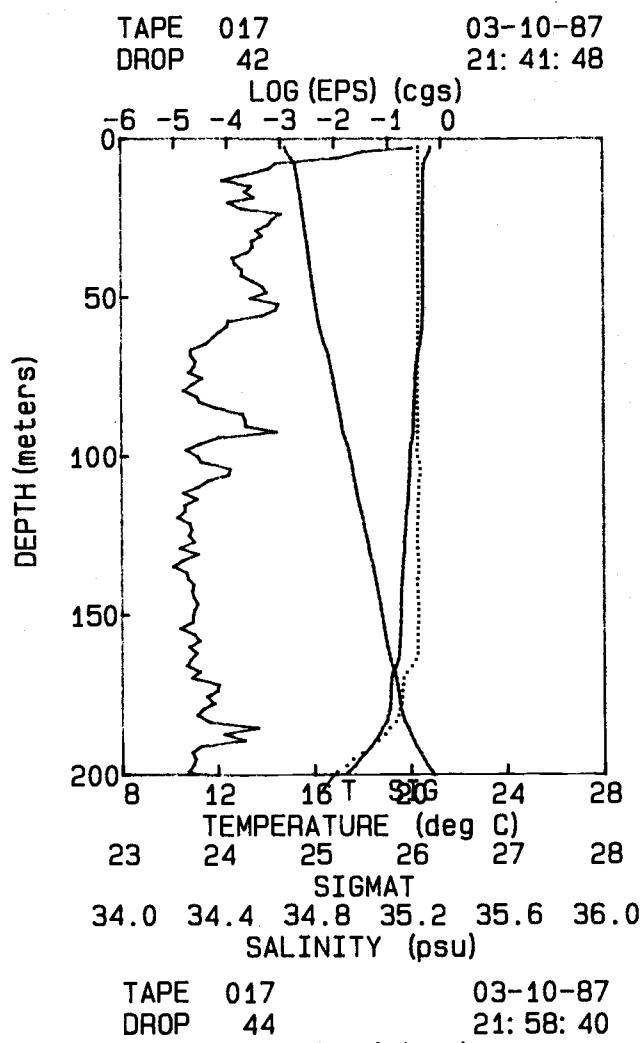


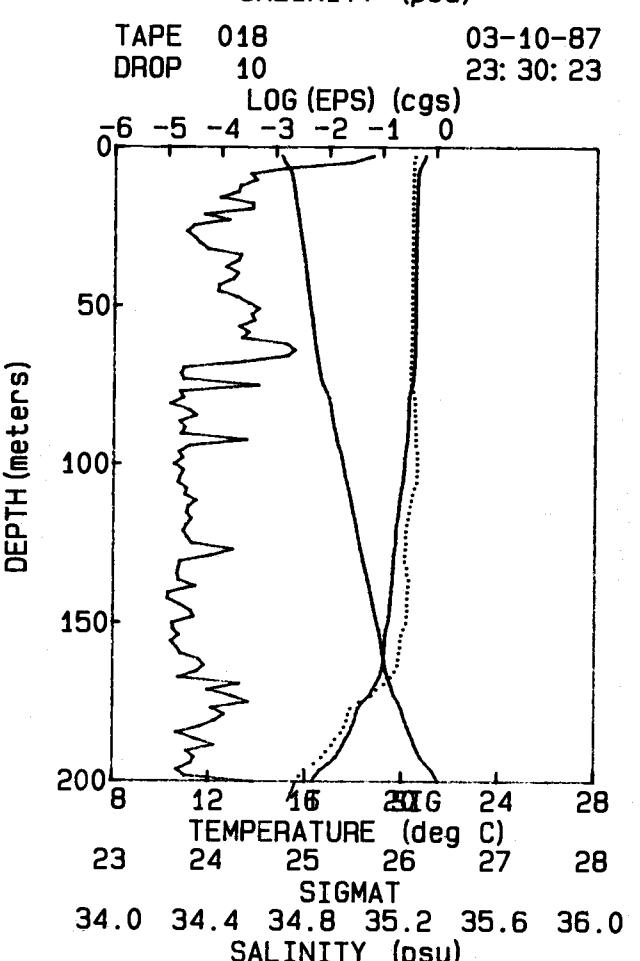
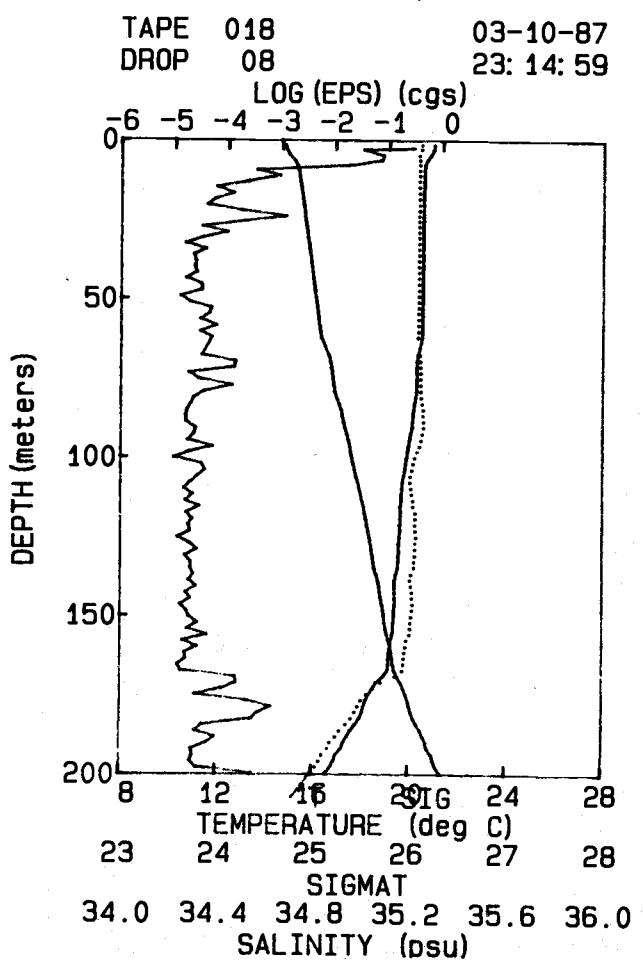
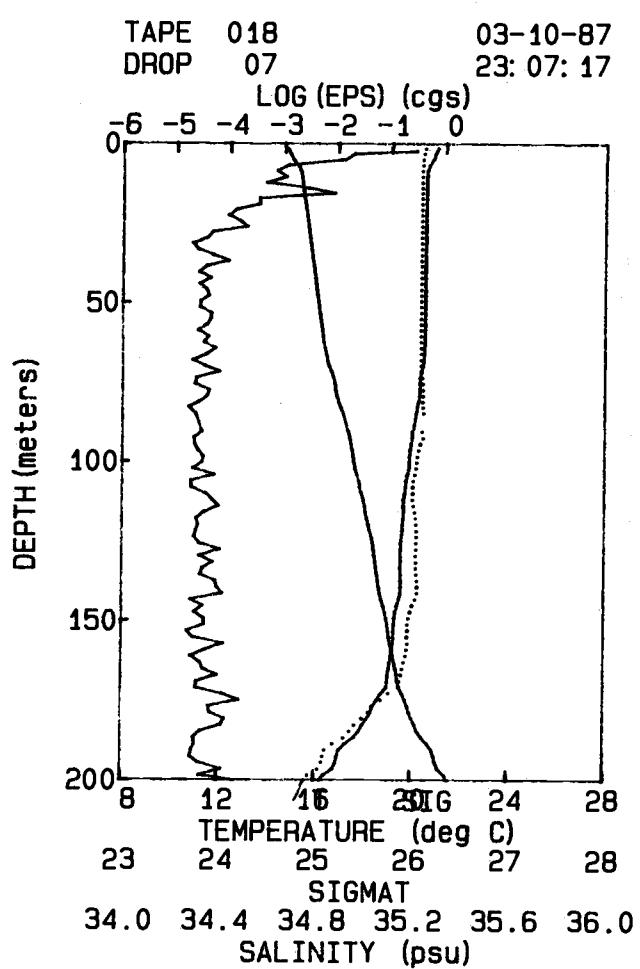
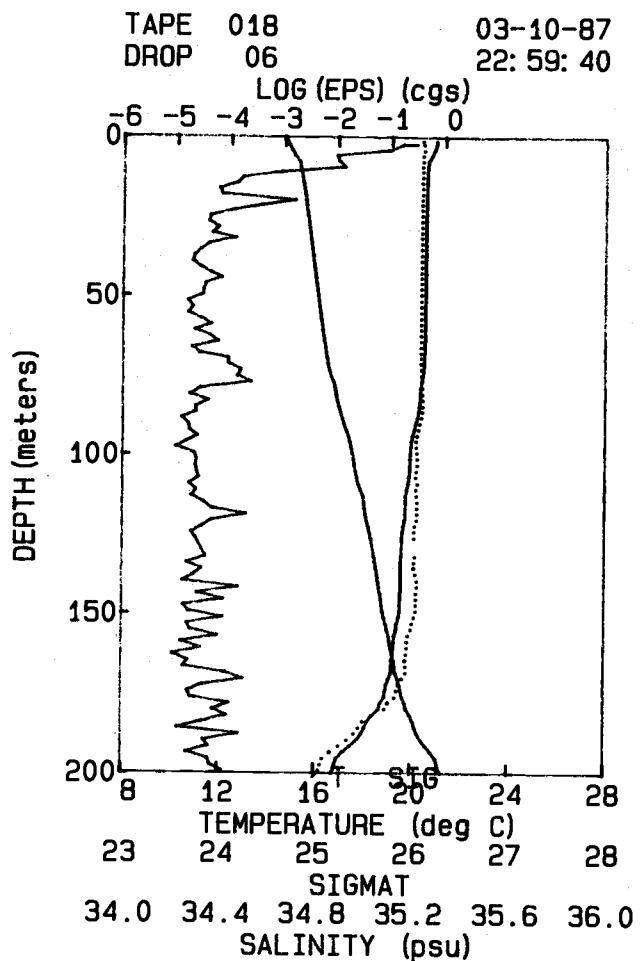


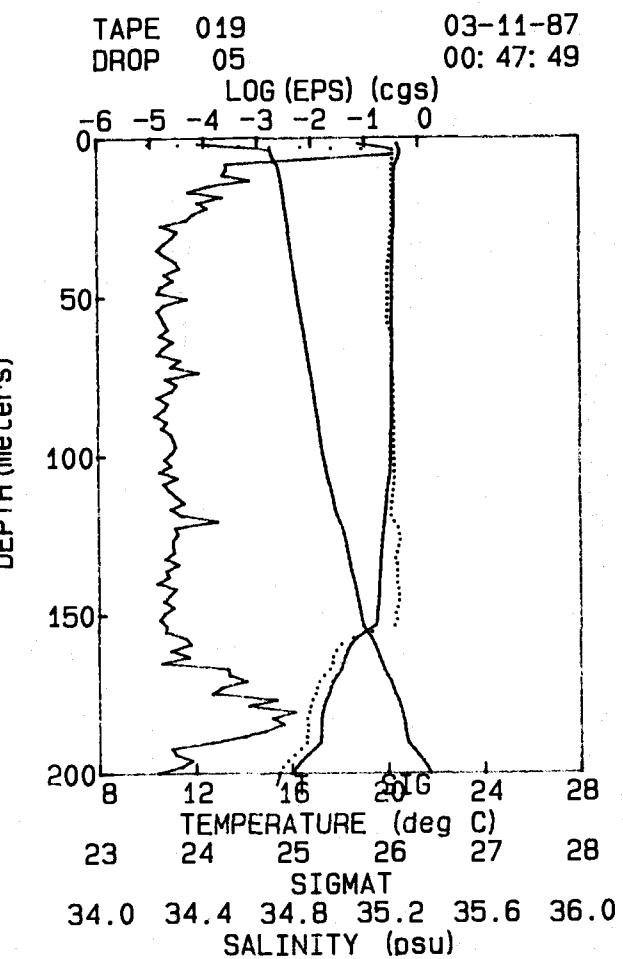
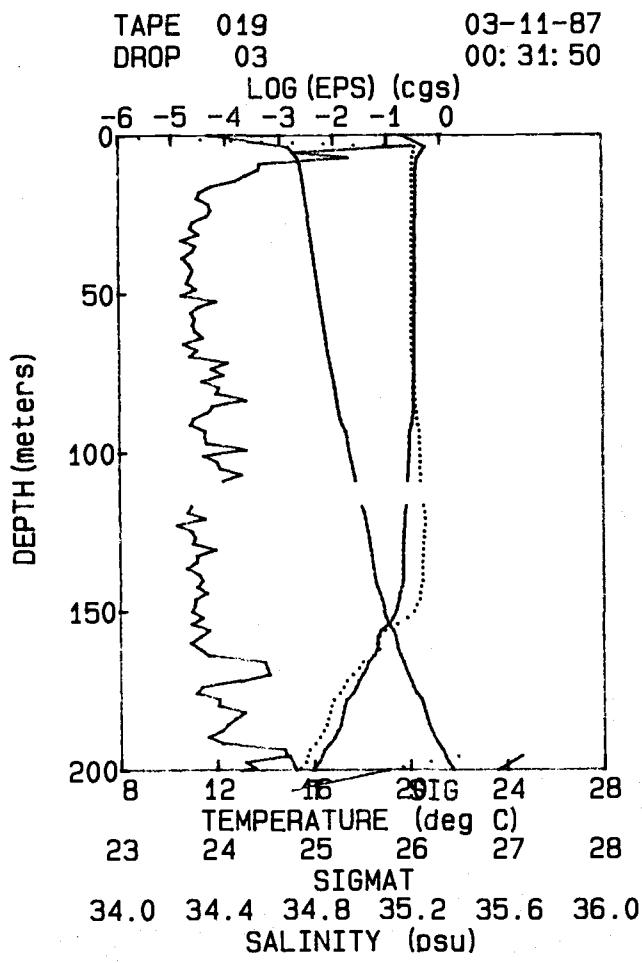
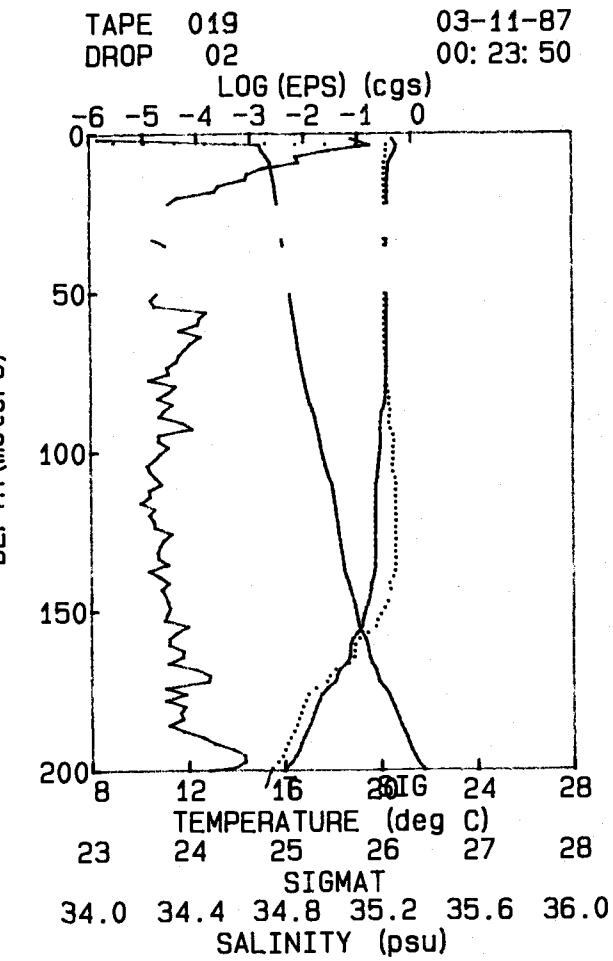
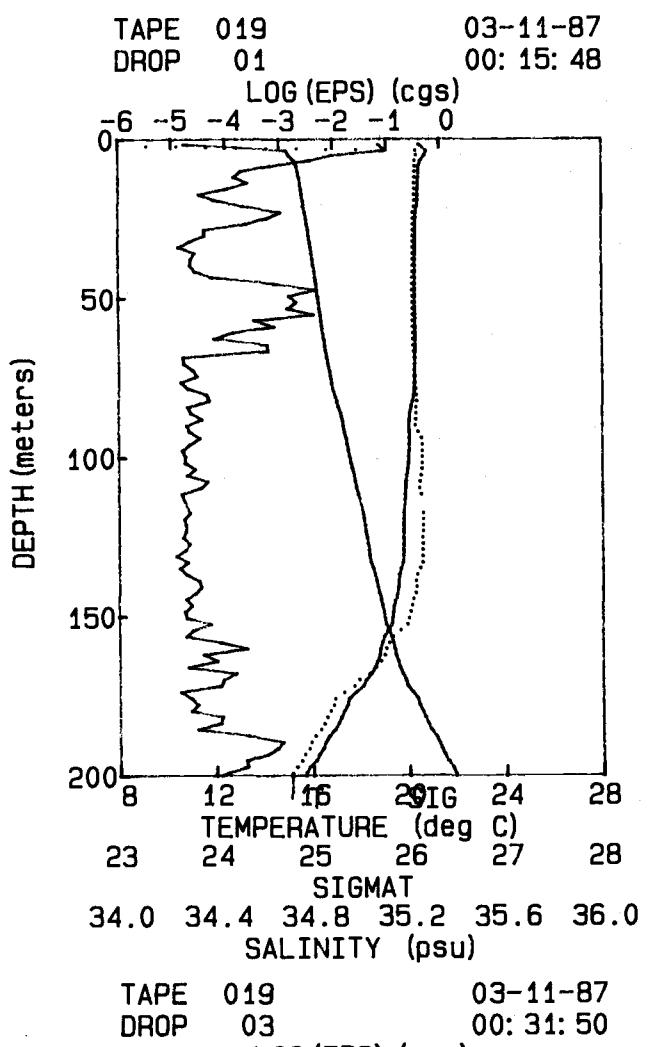


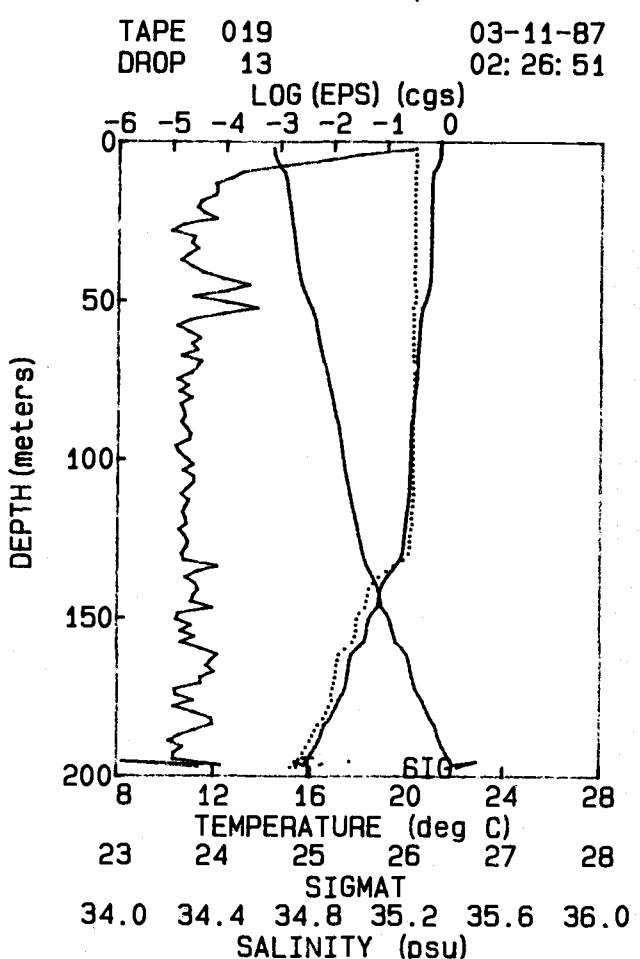
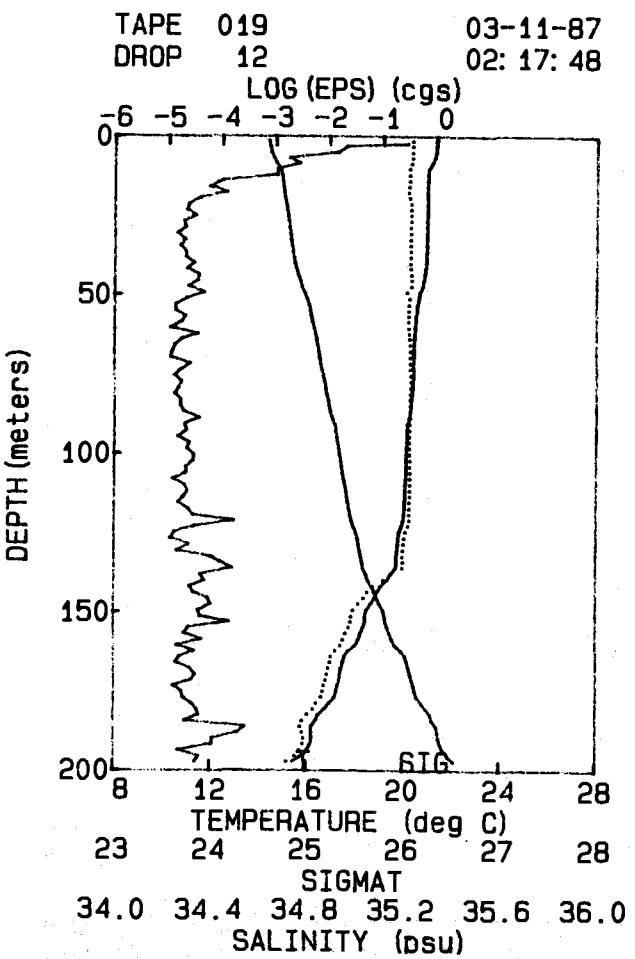
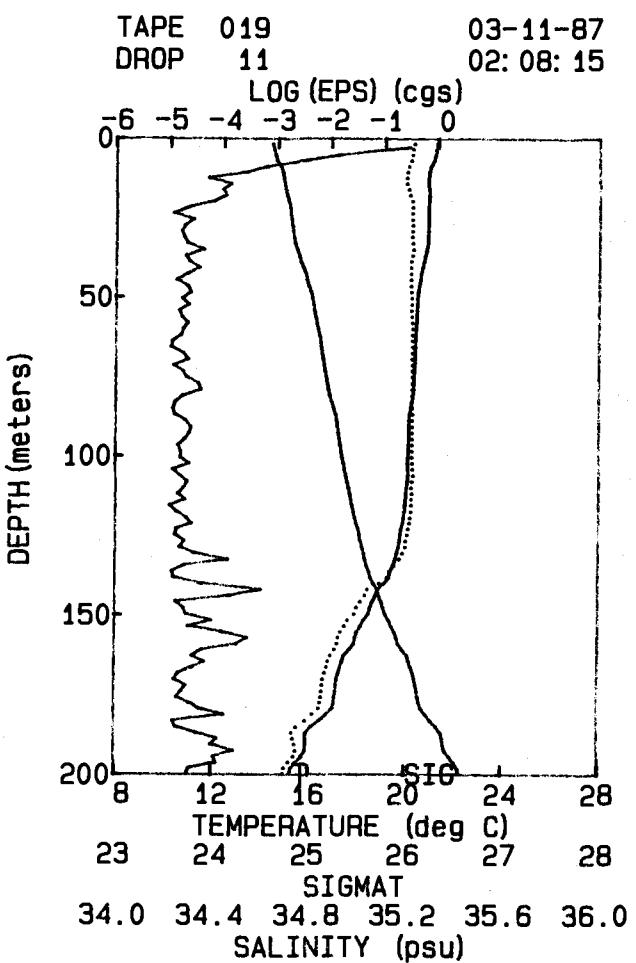
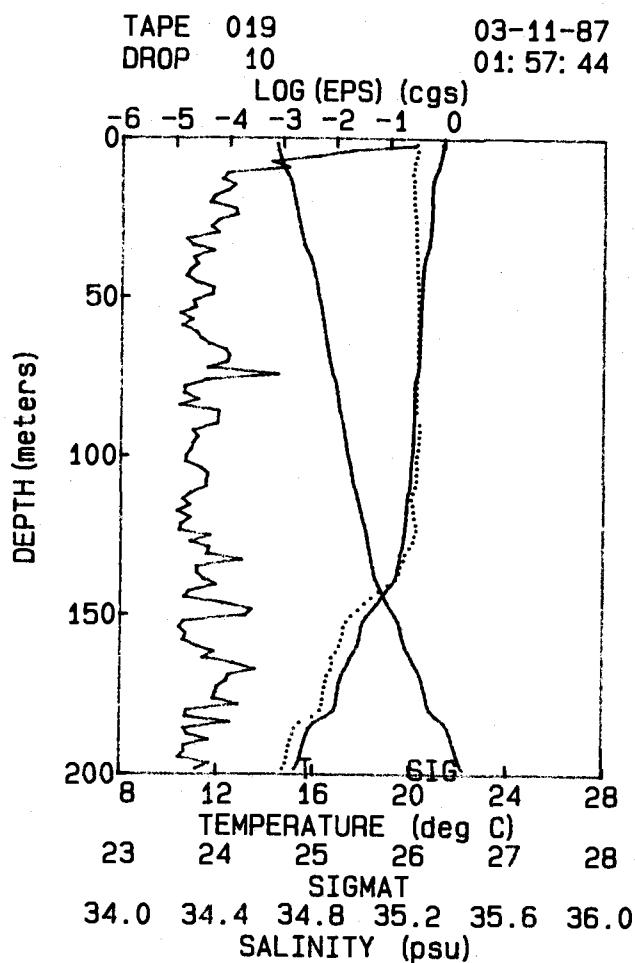


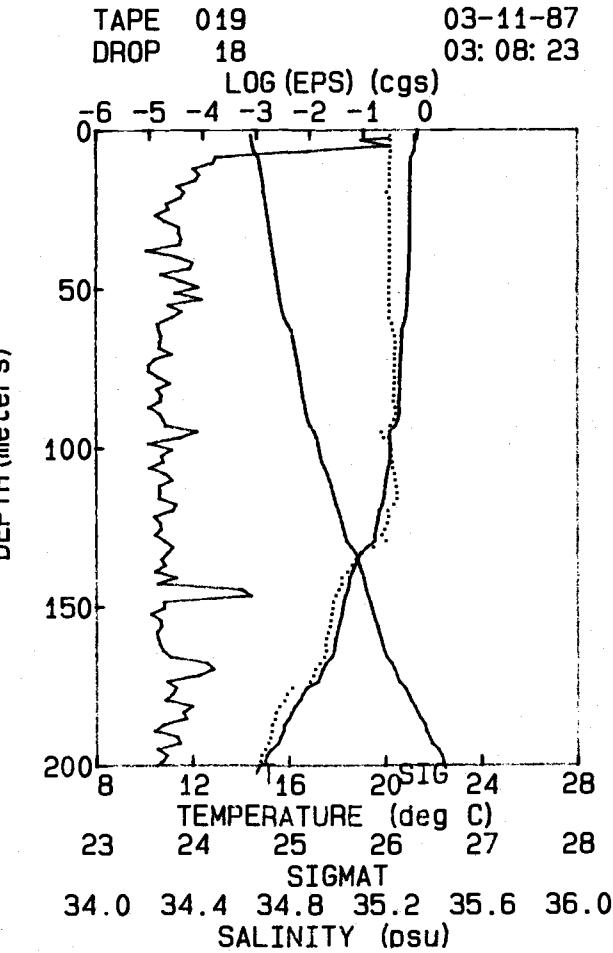
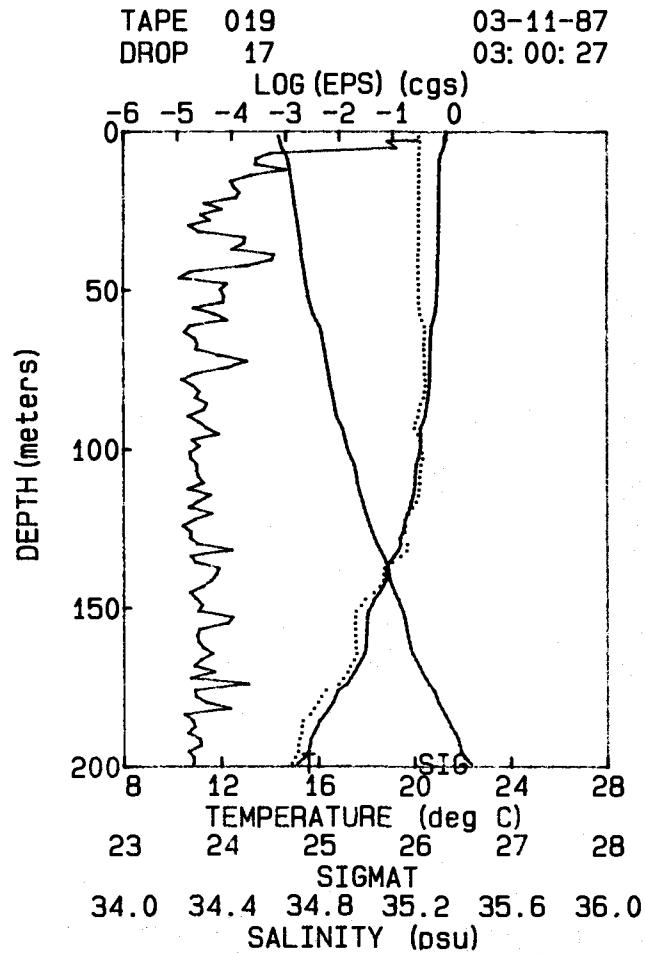
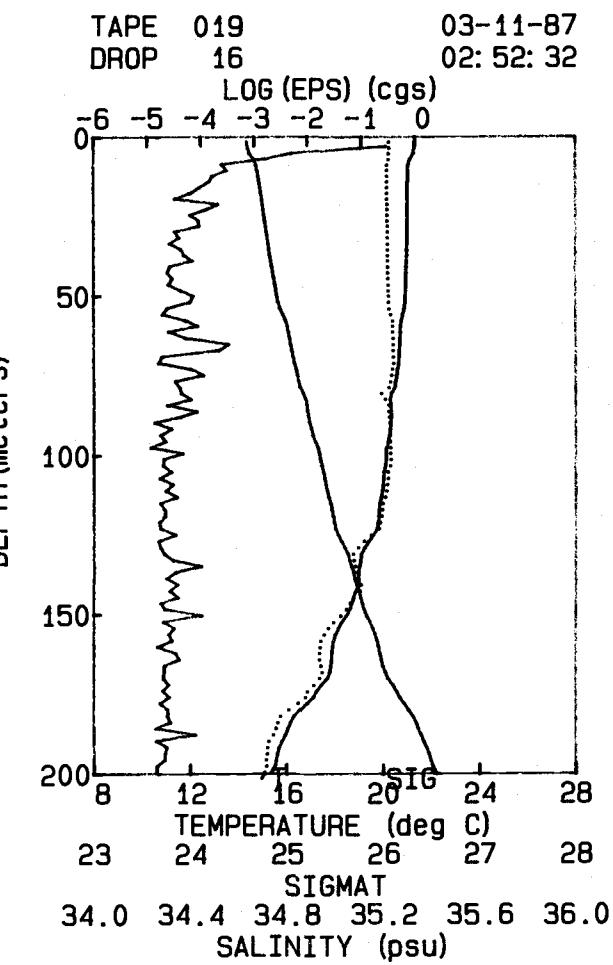
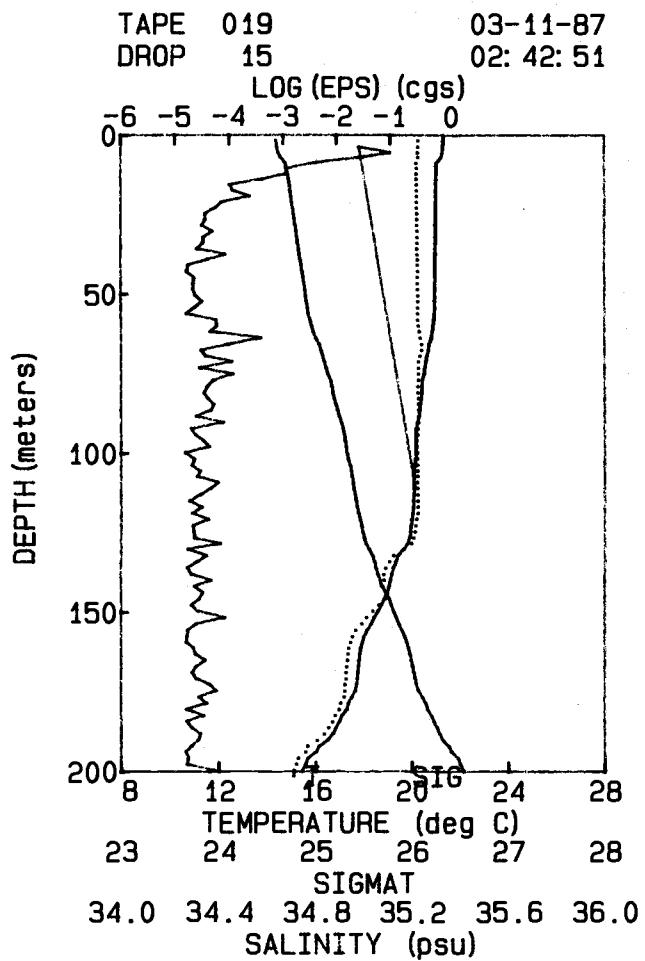


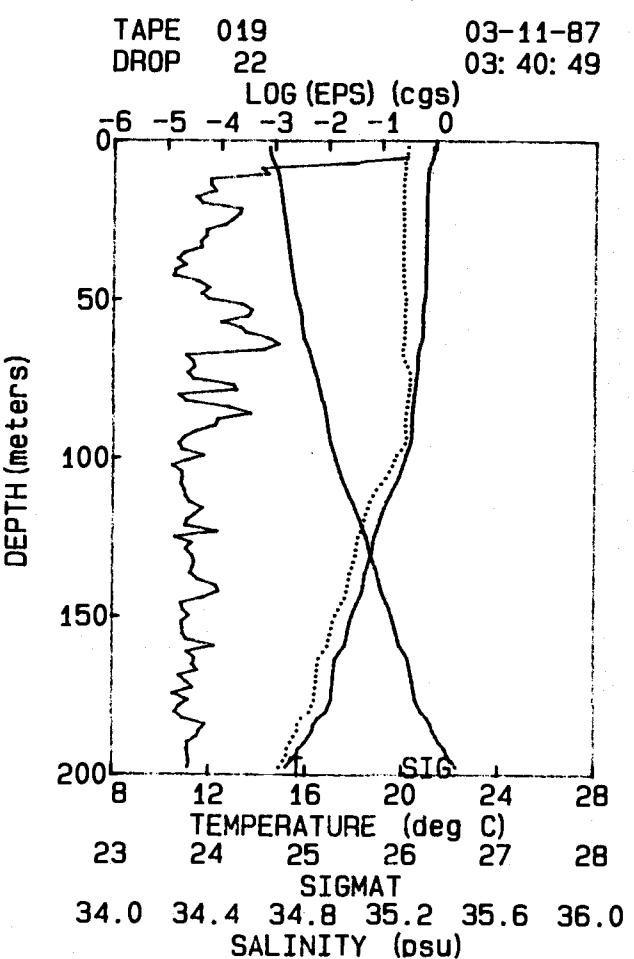
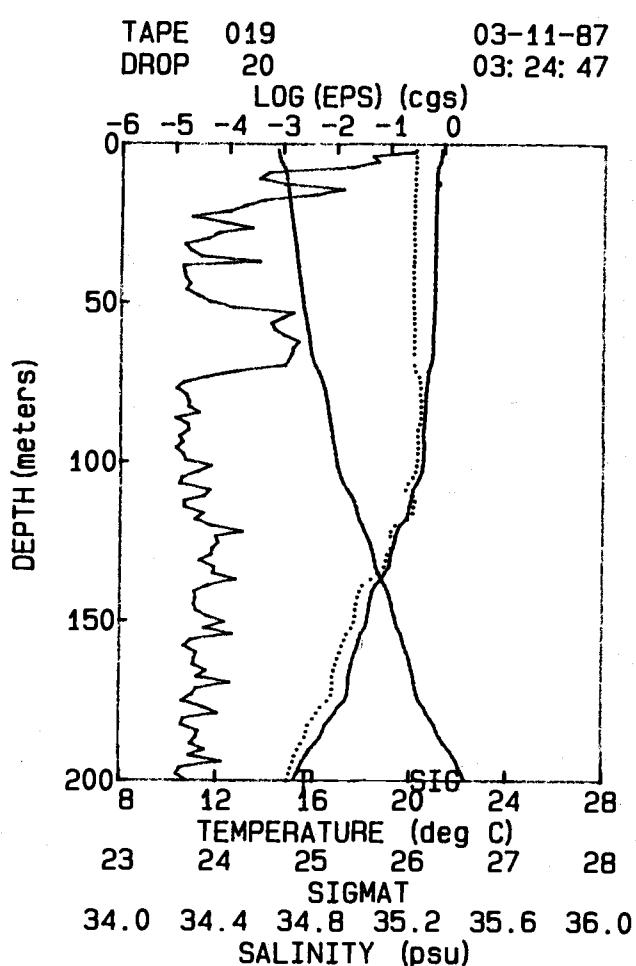
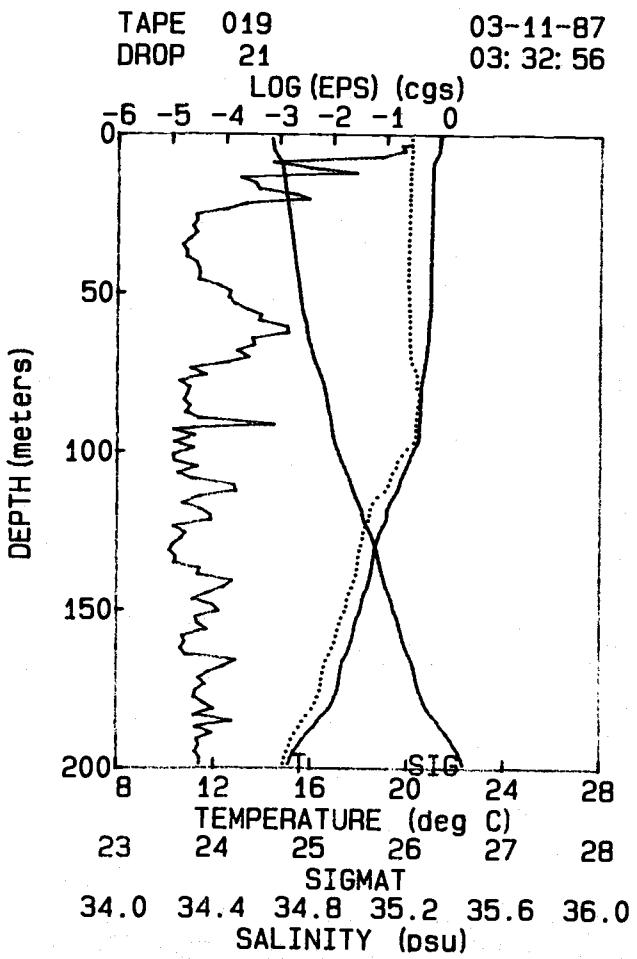
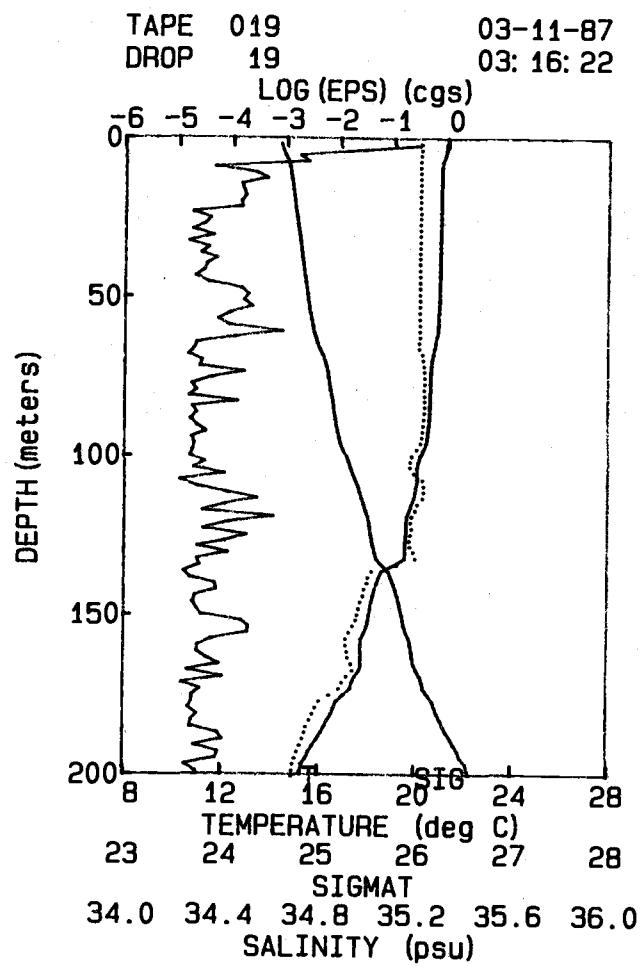


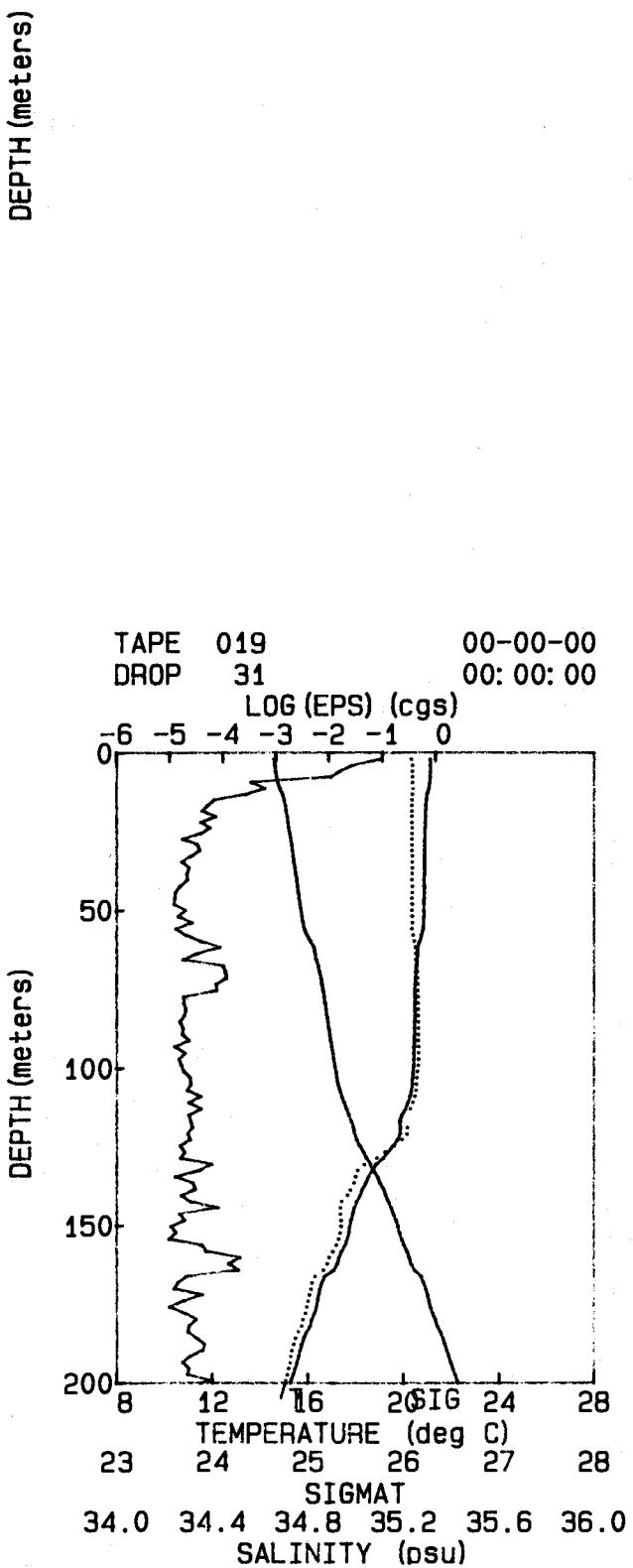
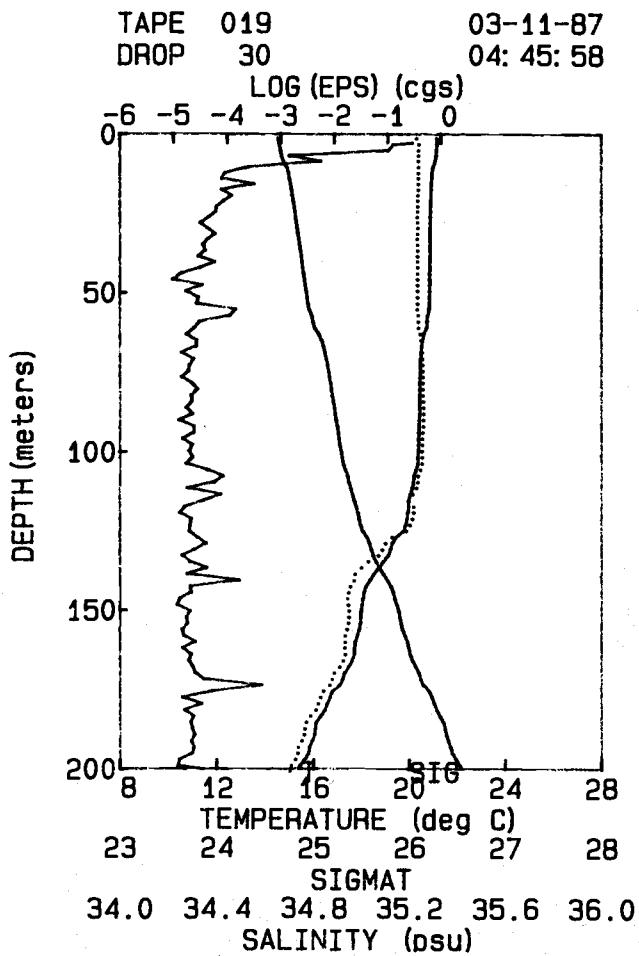
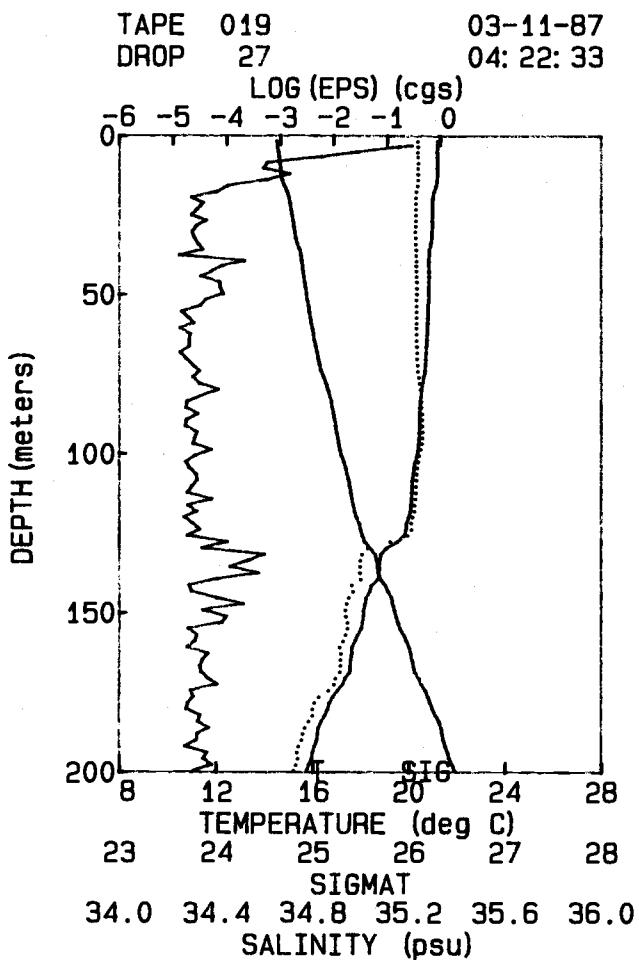


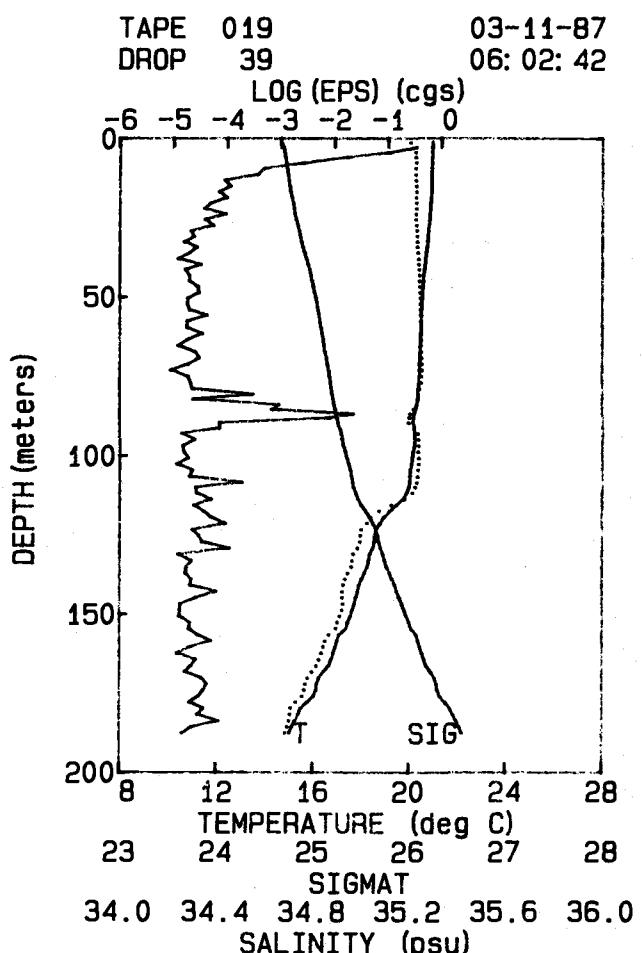
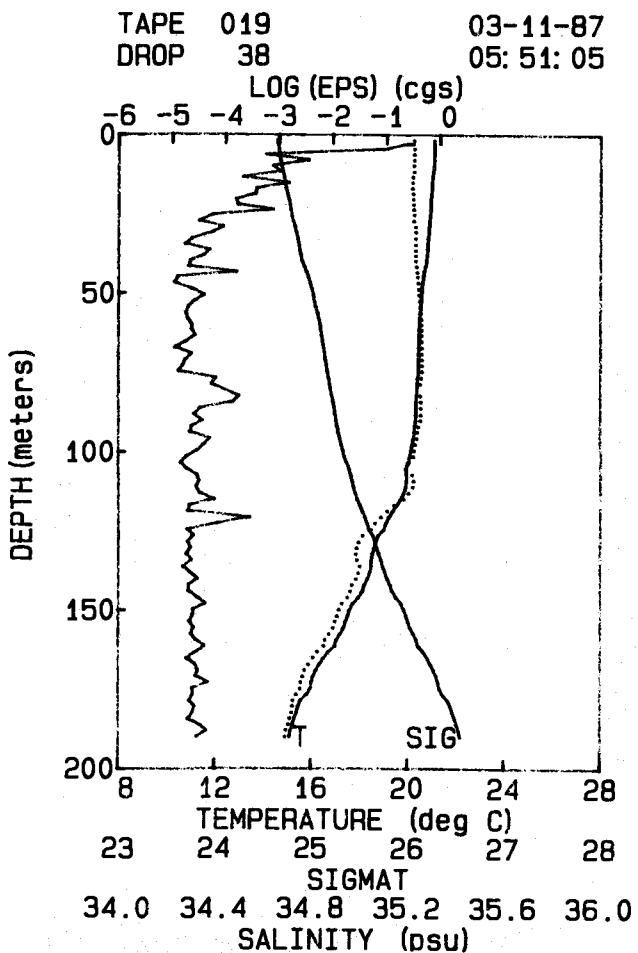
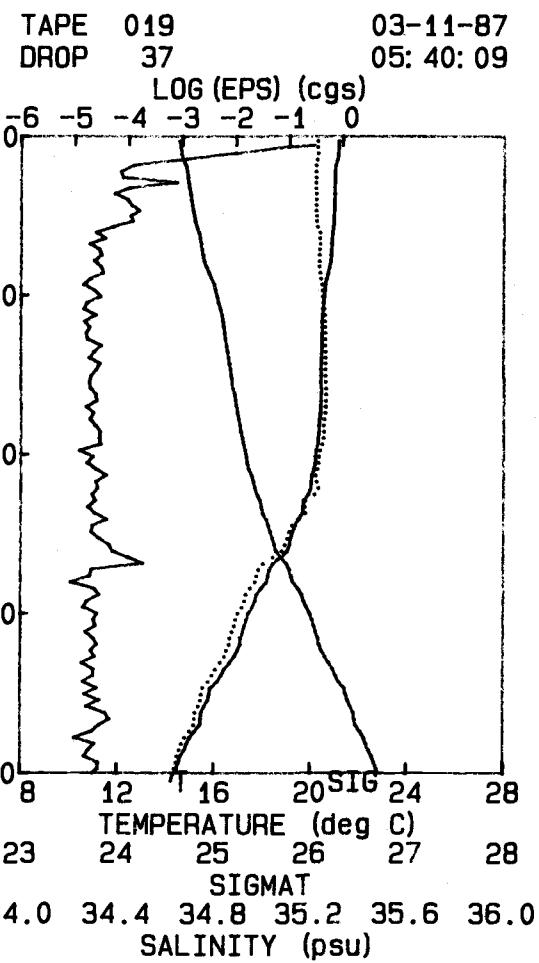
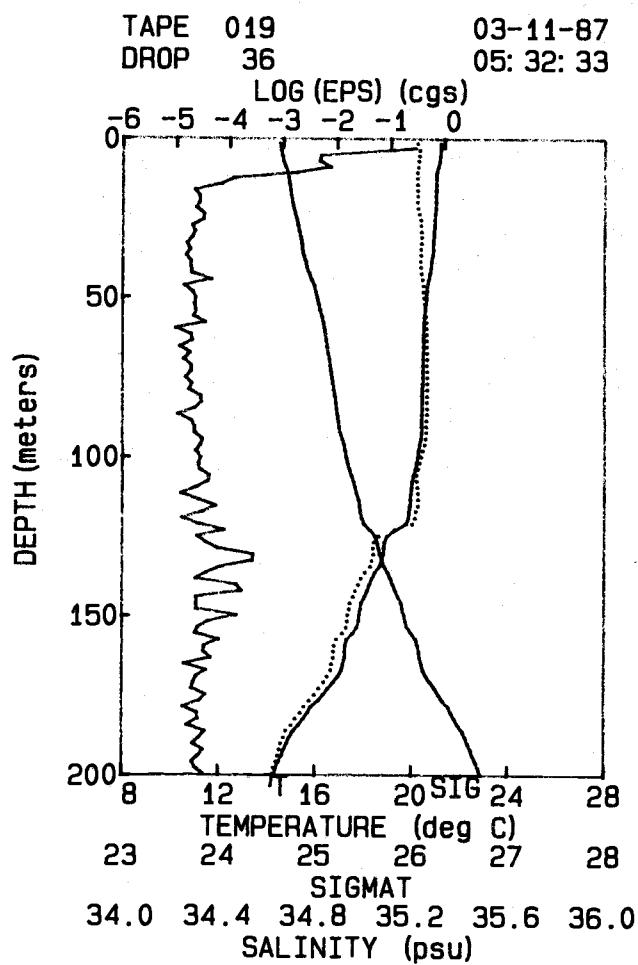


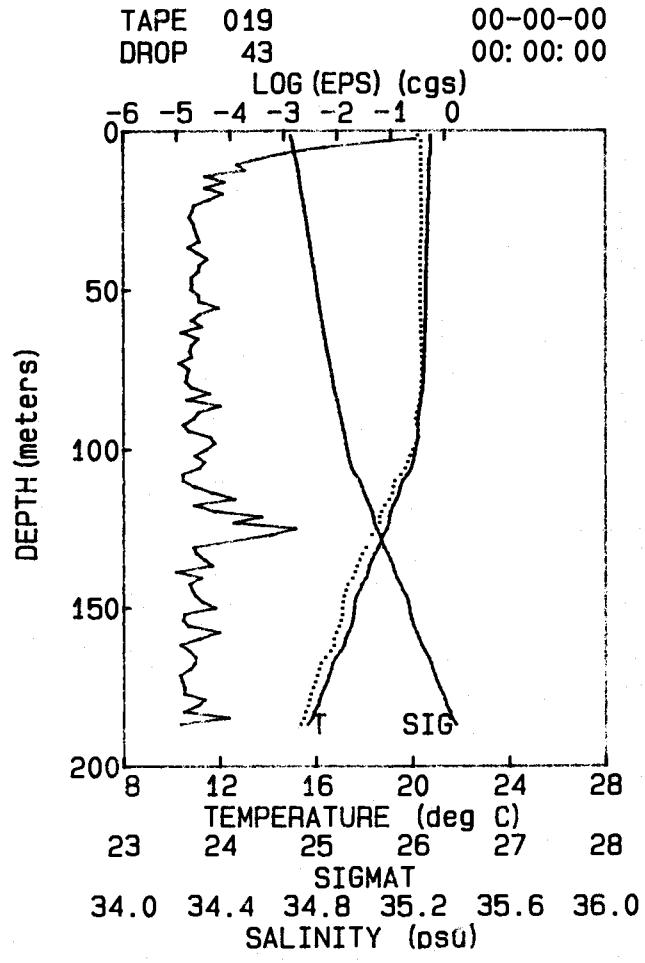
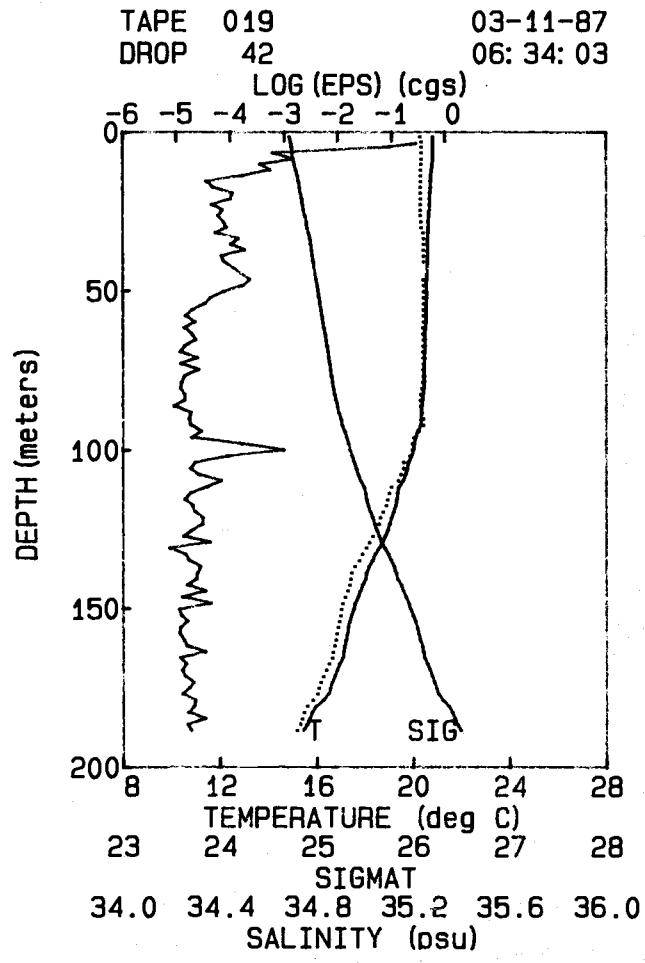
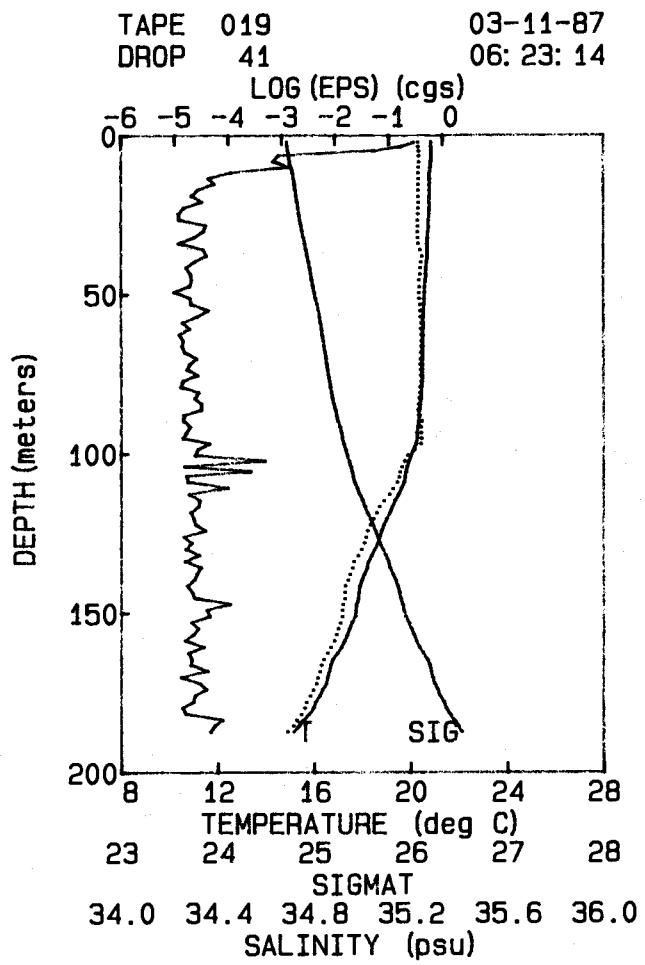
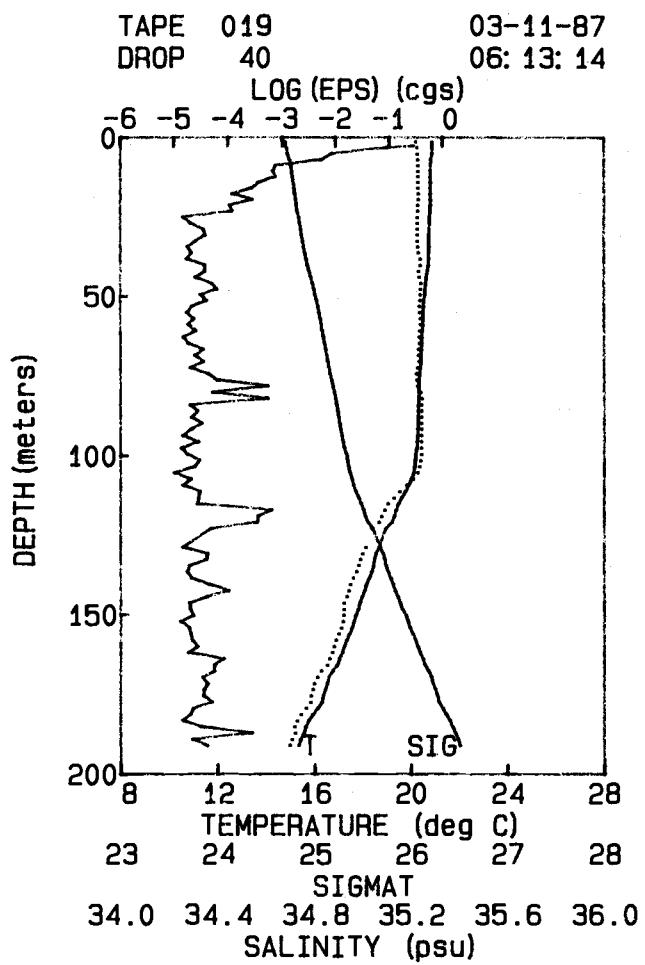


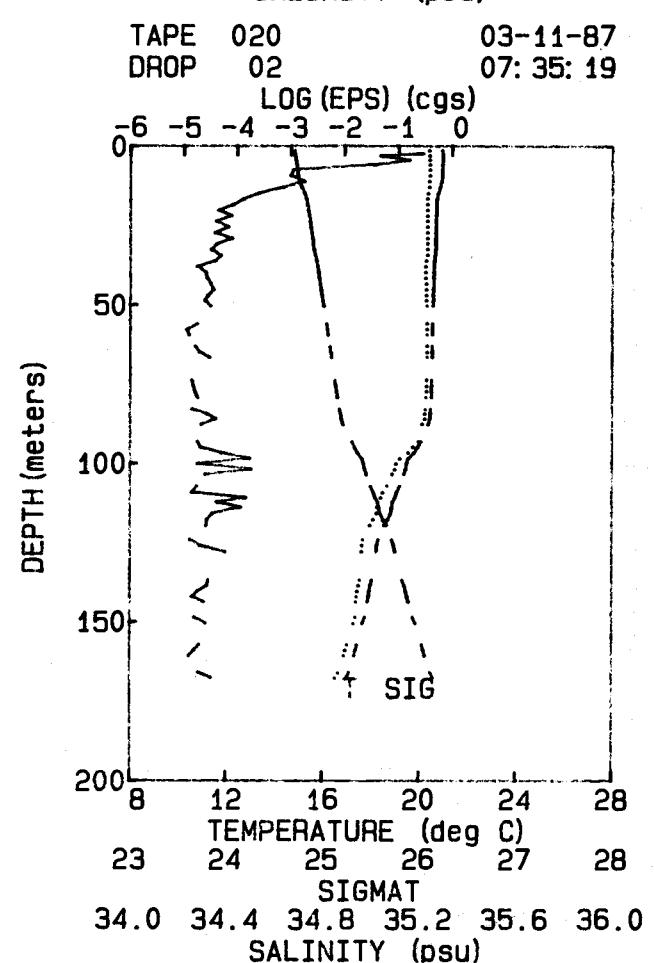
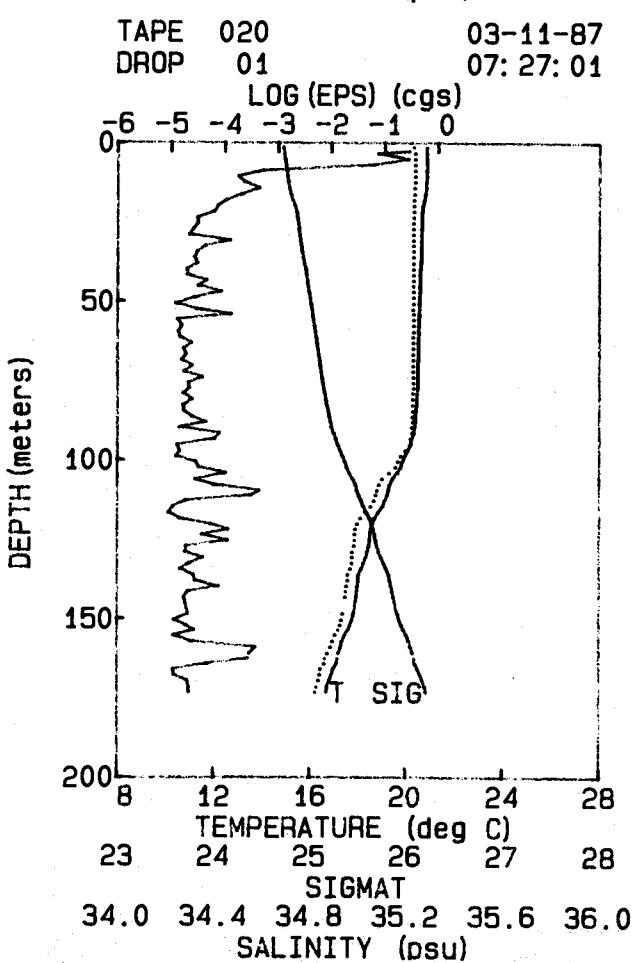
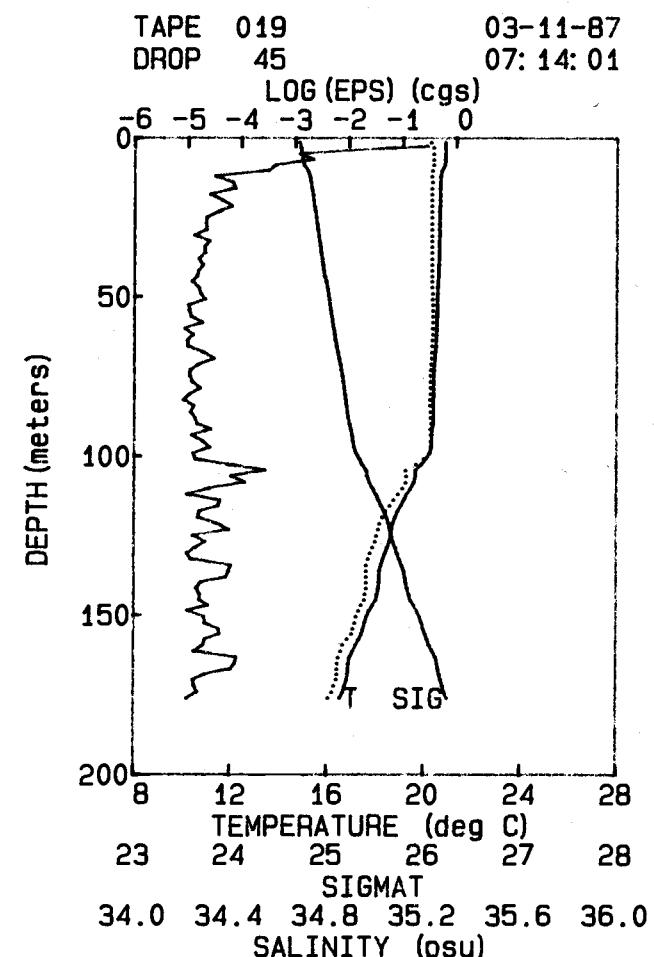
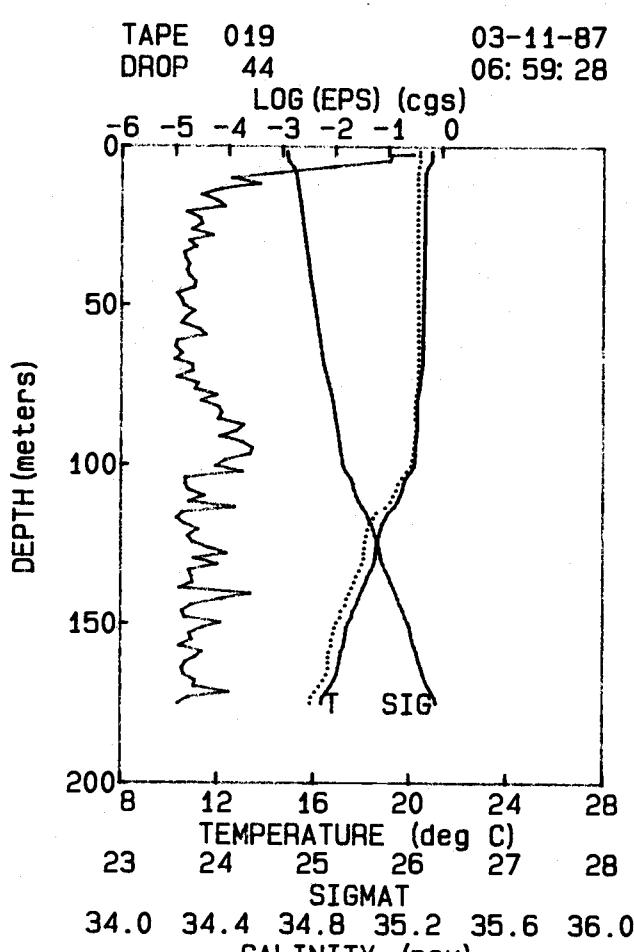


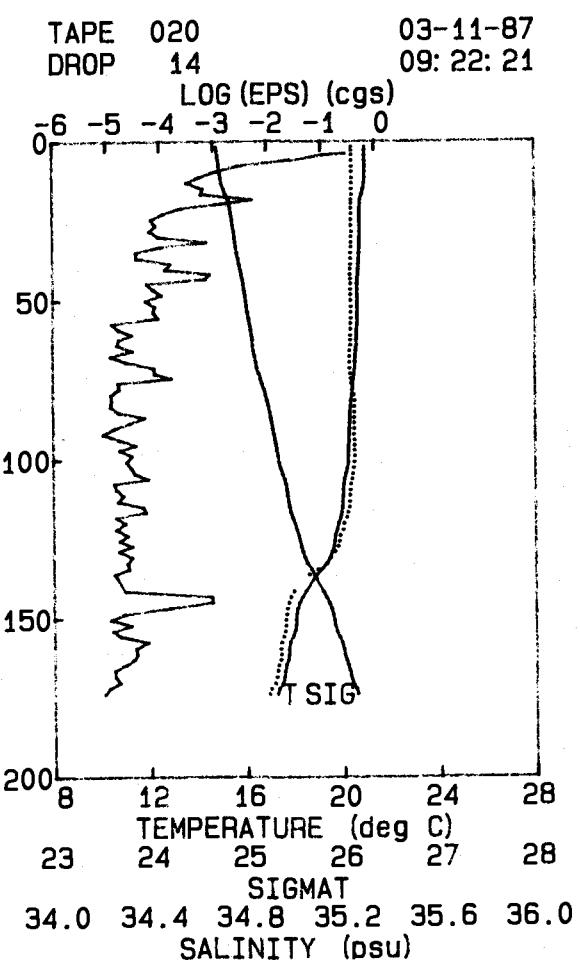
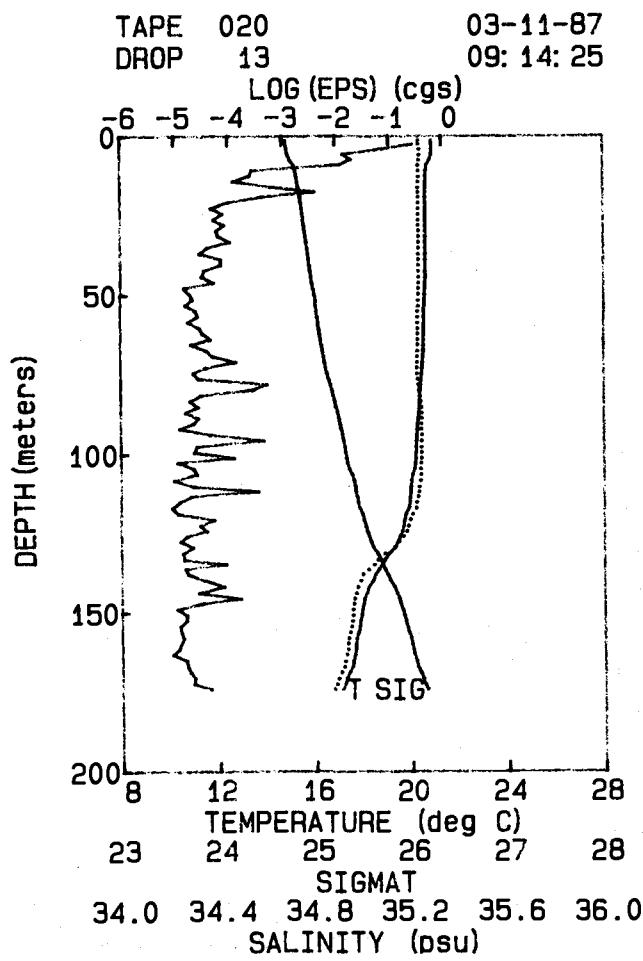
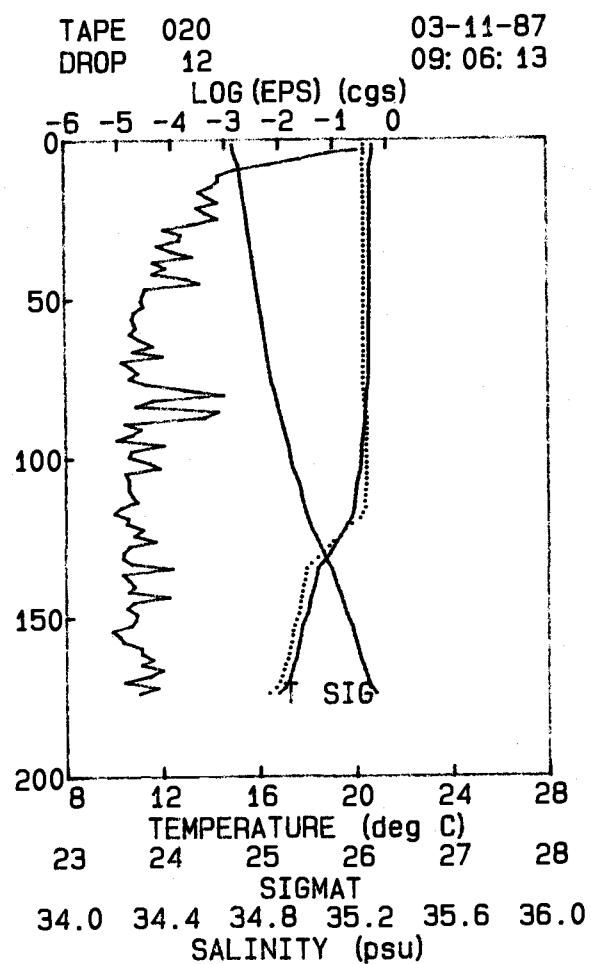
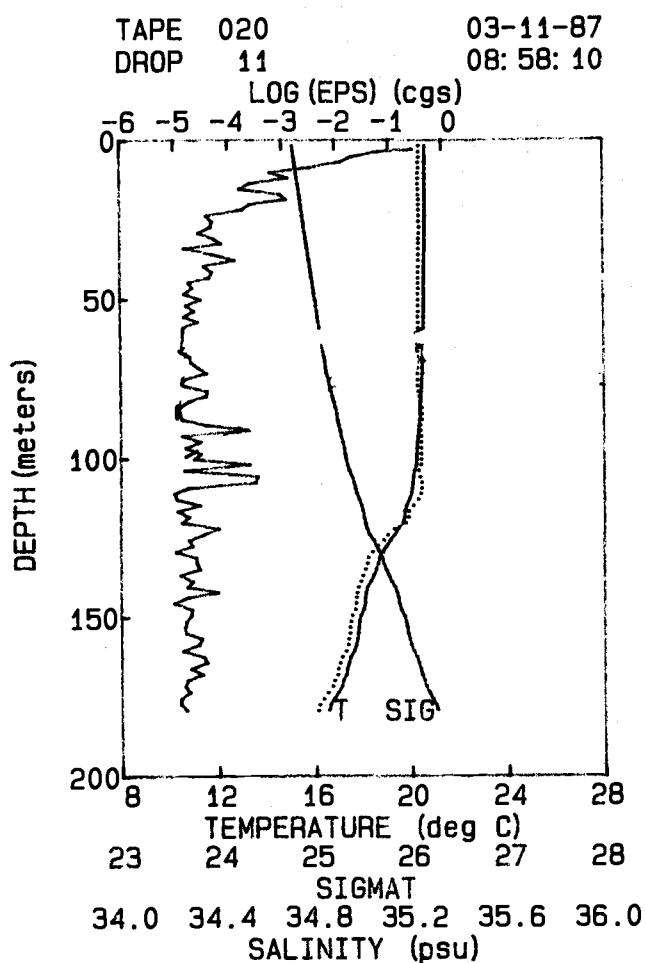


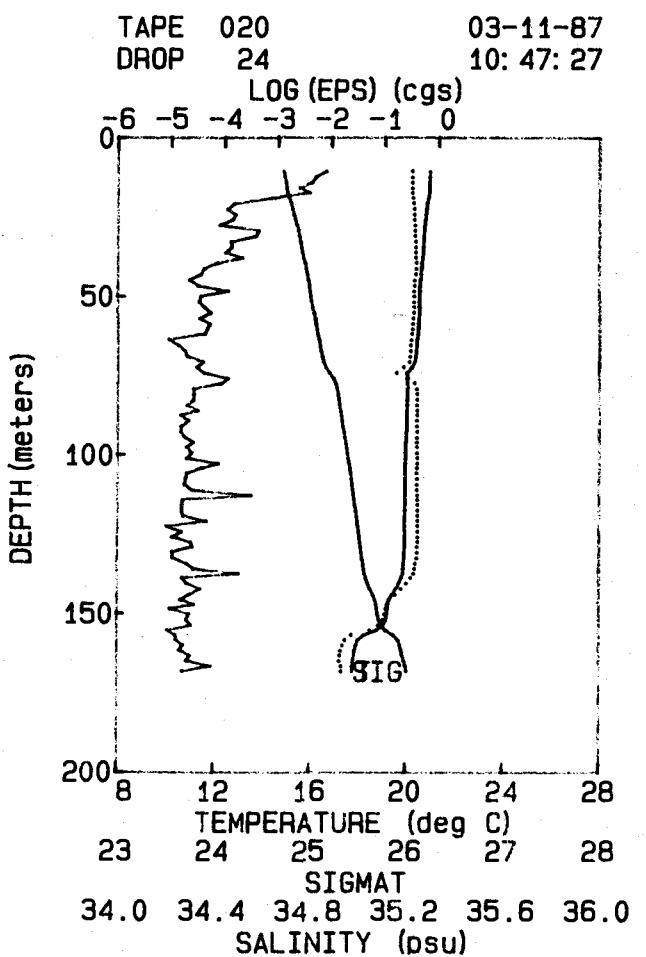
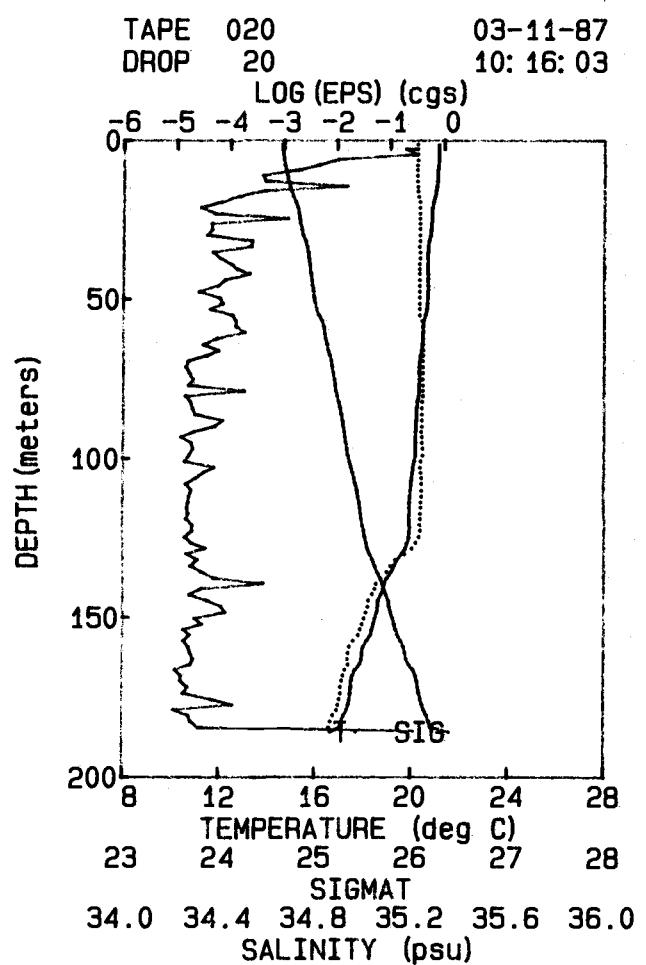
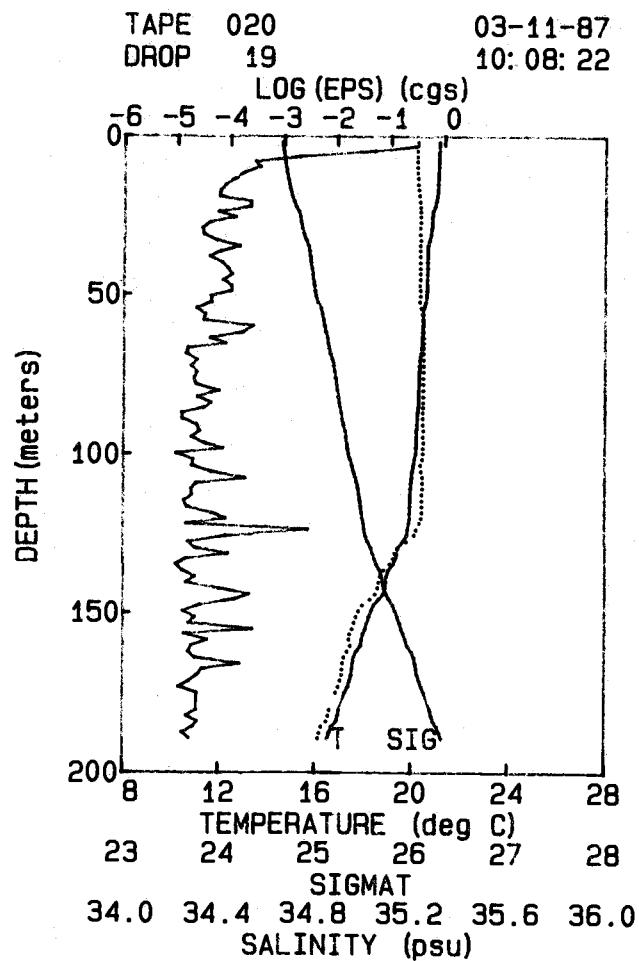








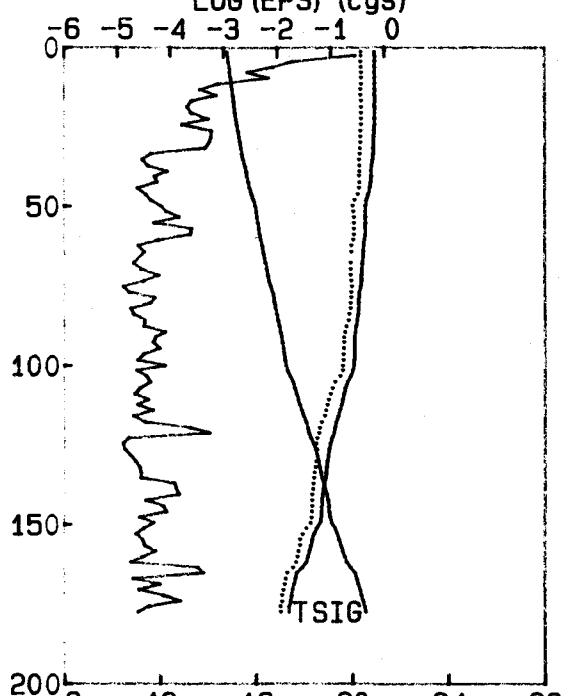




TAPE 020
DROP 31

03-11-87
11: 46: 01

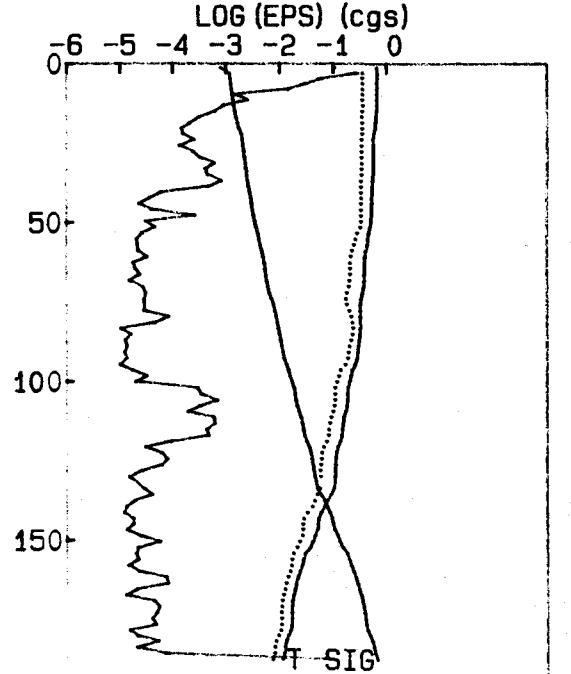
LOG (EPS) (cgs)



TEMPERATURE (deg C)
23 24 25 26 27 28
SIGMAT
34.0 34.4 34.8 35.2 35.6 36.0
SALINITY (psu)

TAPE 020
DROP 32

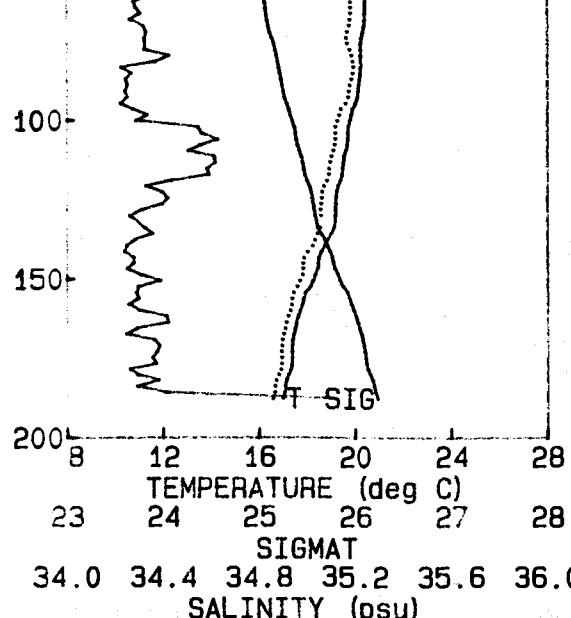
03-11-87
11: 54: 12

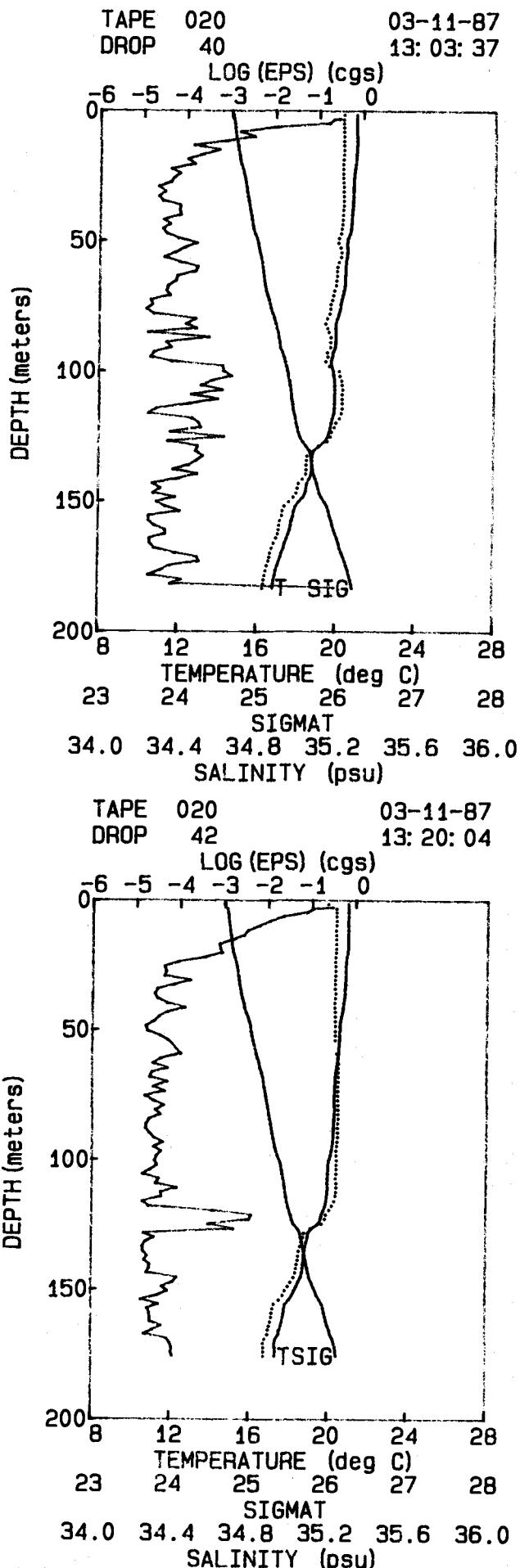
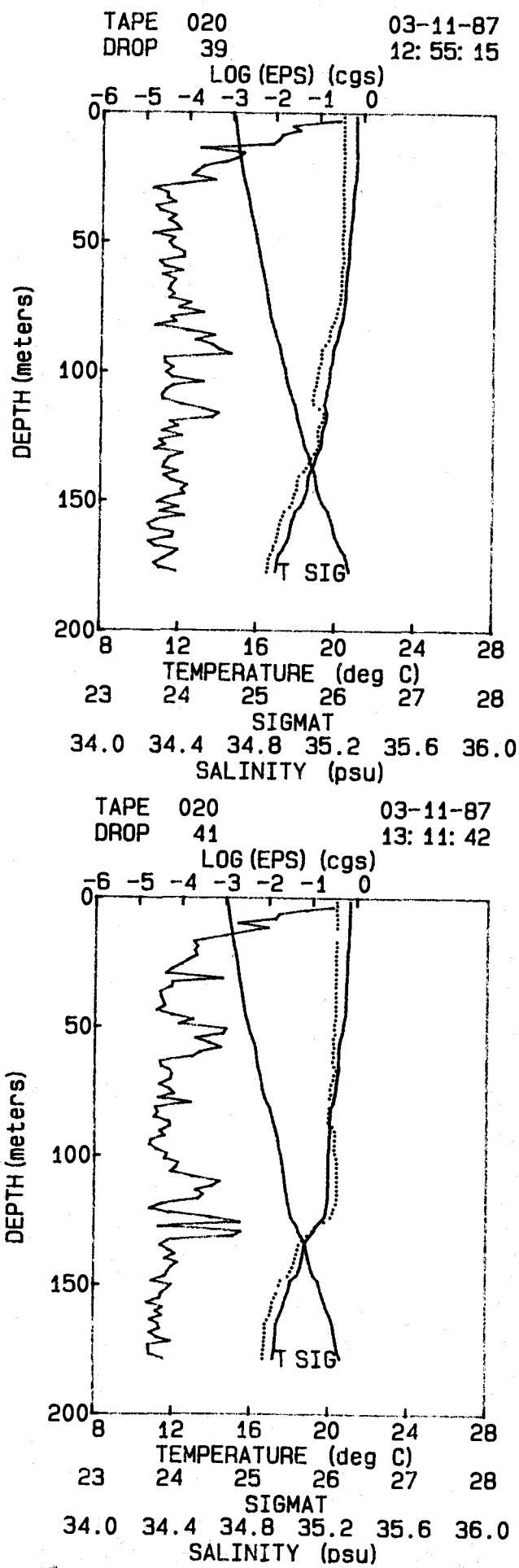


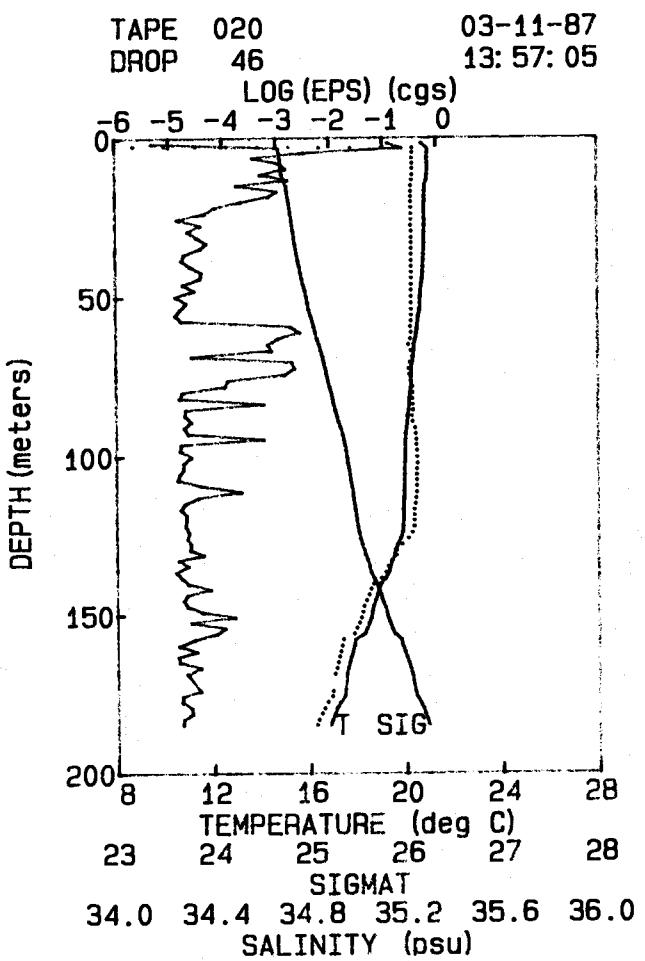
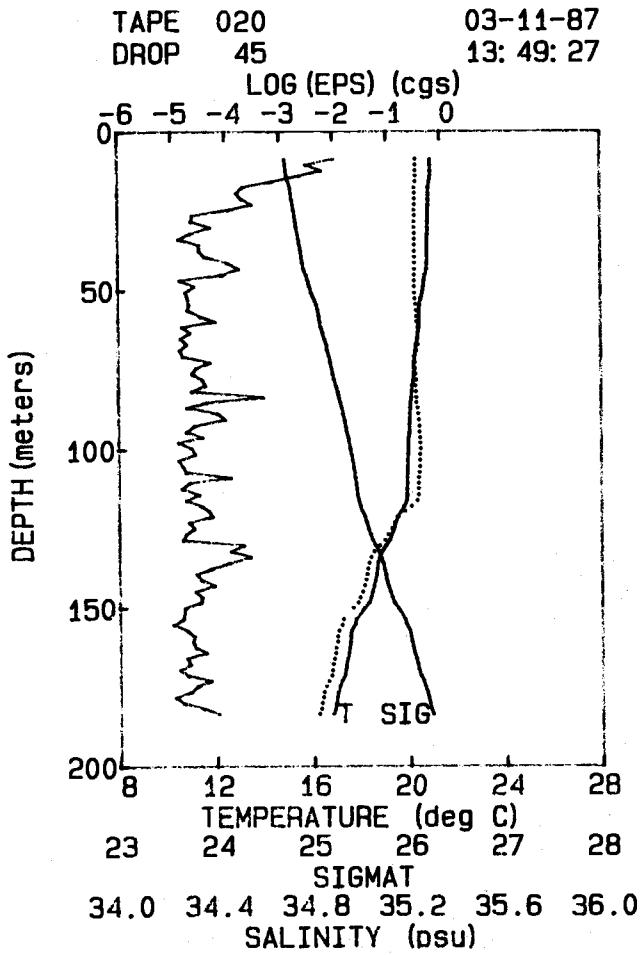
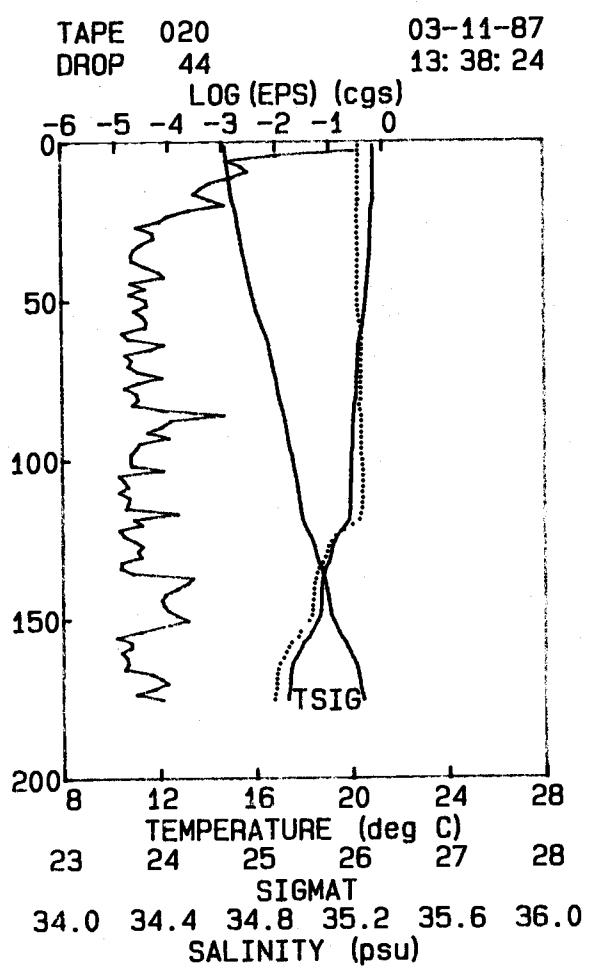
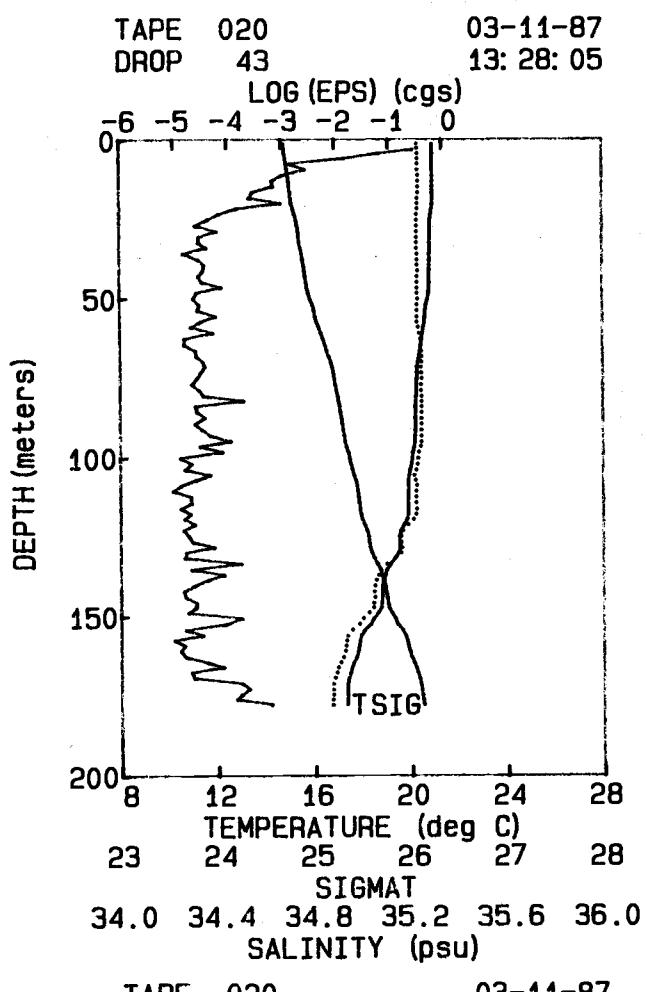
TEMPERATURE (deg C)
23 24 25 26 27 28
SIGMAT
34.0 34.4 34.8 35.2 35.6 36.0
SALINITY (psu)

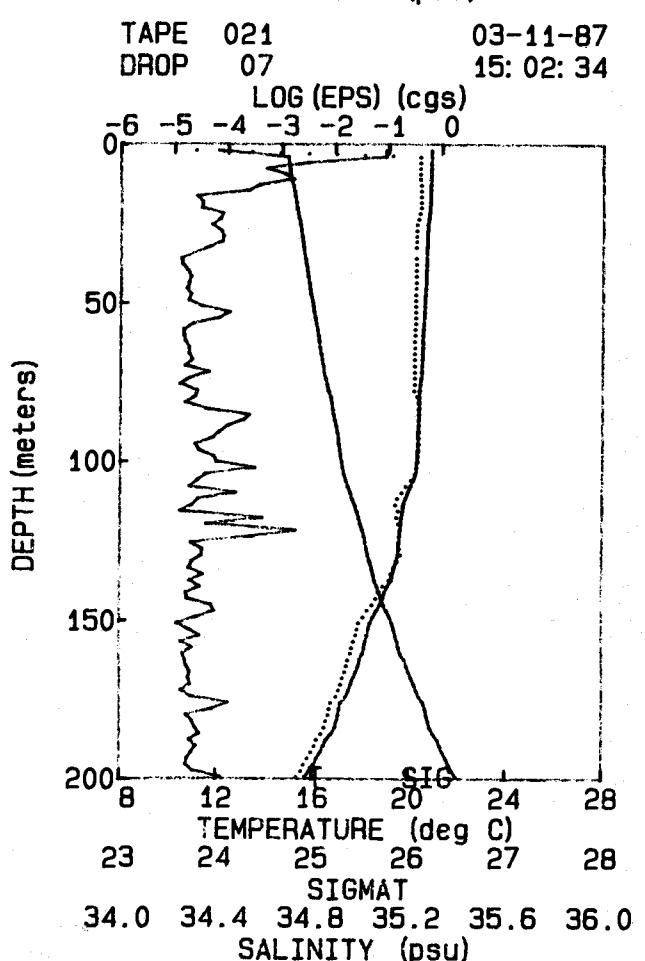
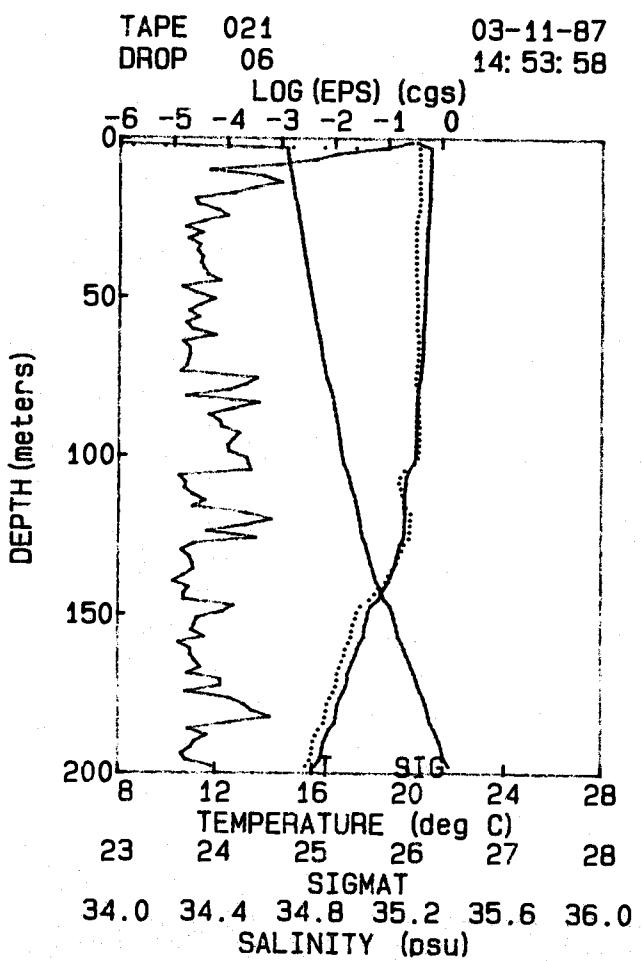
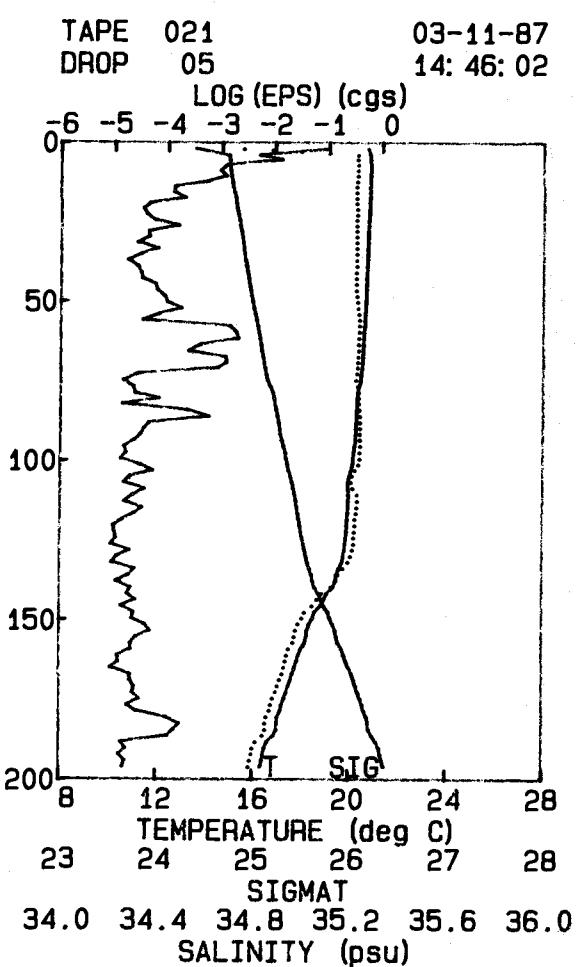
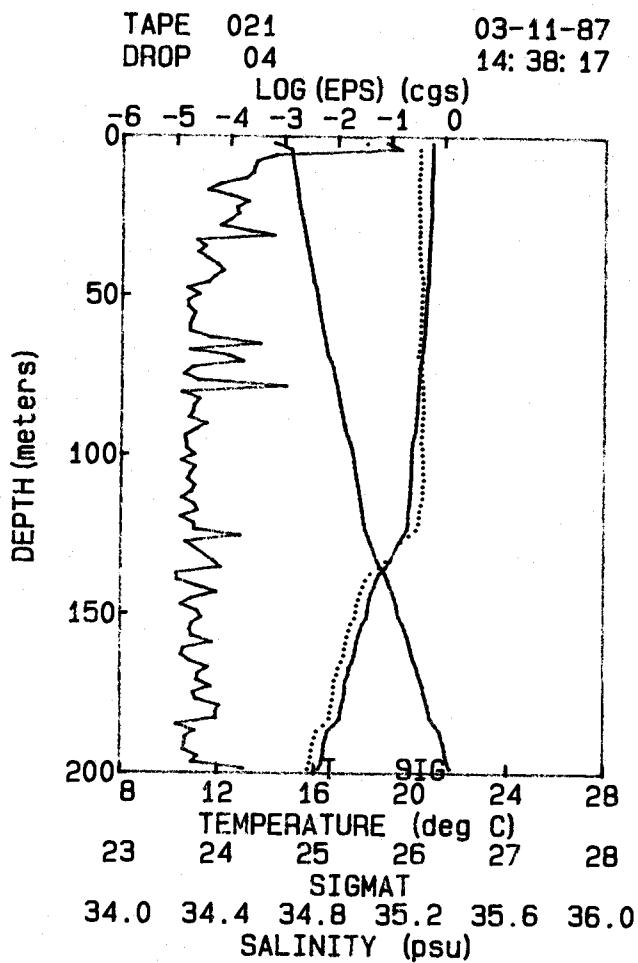
TAPE 020
DROP 33

03-11-87
12: 05: 47





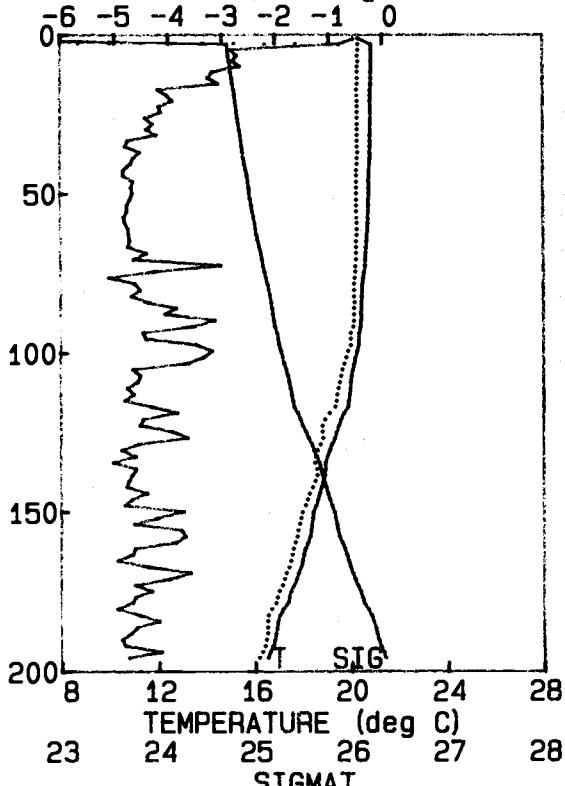




TAPE 021
DROP 12

03-11-87
15: 41: 53

LOG (EPS) (cgs)

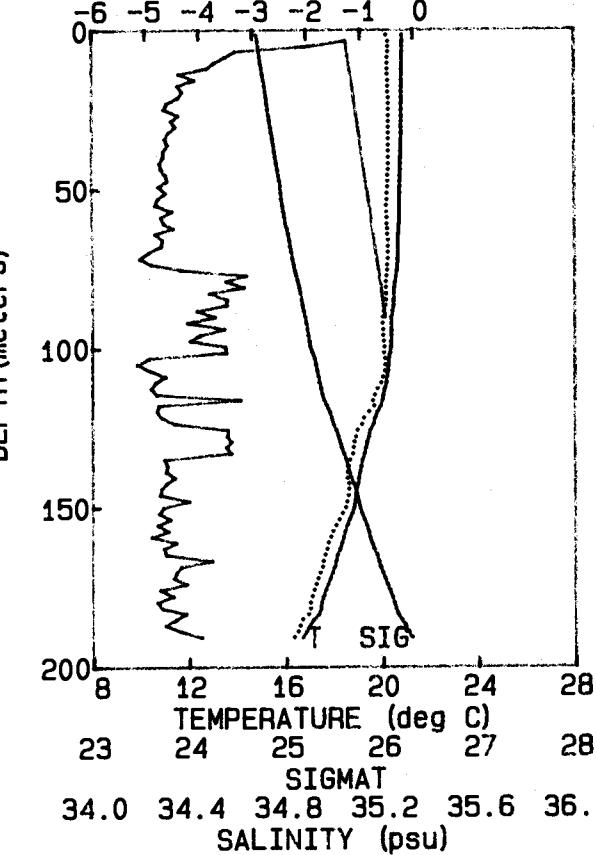


34.0 34.4 34.8 35.2 35.6 36.0
SALINITY (psu)

TAPE 021
DROP 13

03-11-87
15: 49: 54

LOG (EPS) (cgs)

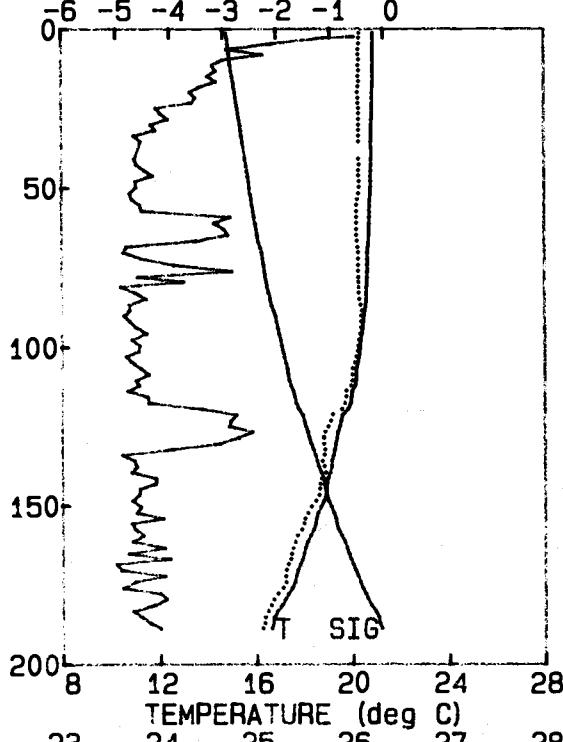


34.0 34.4 34.8 35.2 35.6 36.0
SALINITY (psu)

TAPE 021
DROP 14

03-11-87
15: 57: 28

LOG (EPS) (cgs)

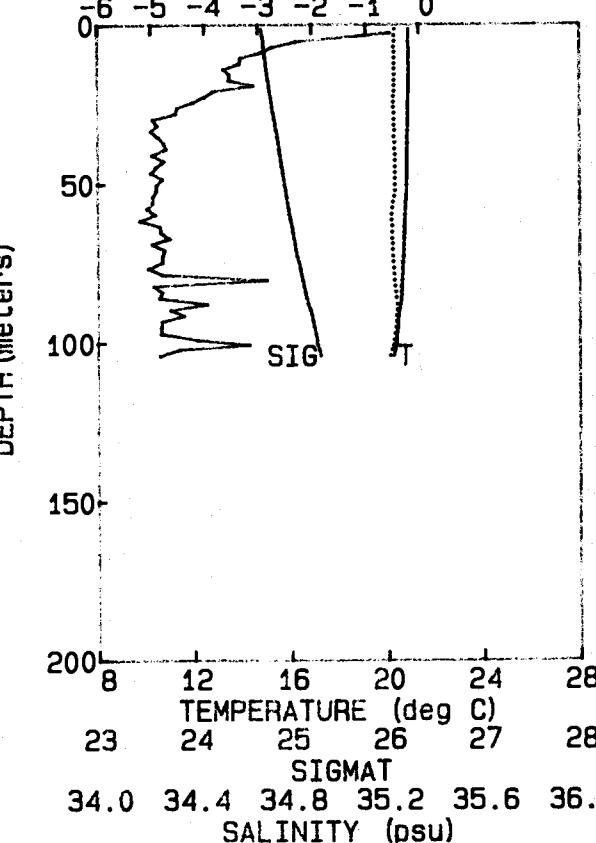


34.0 34.4 34.8 35.2 35.6 36.0
SALINITY (psu)

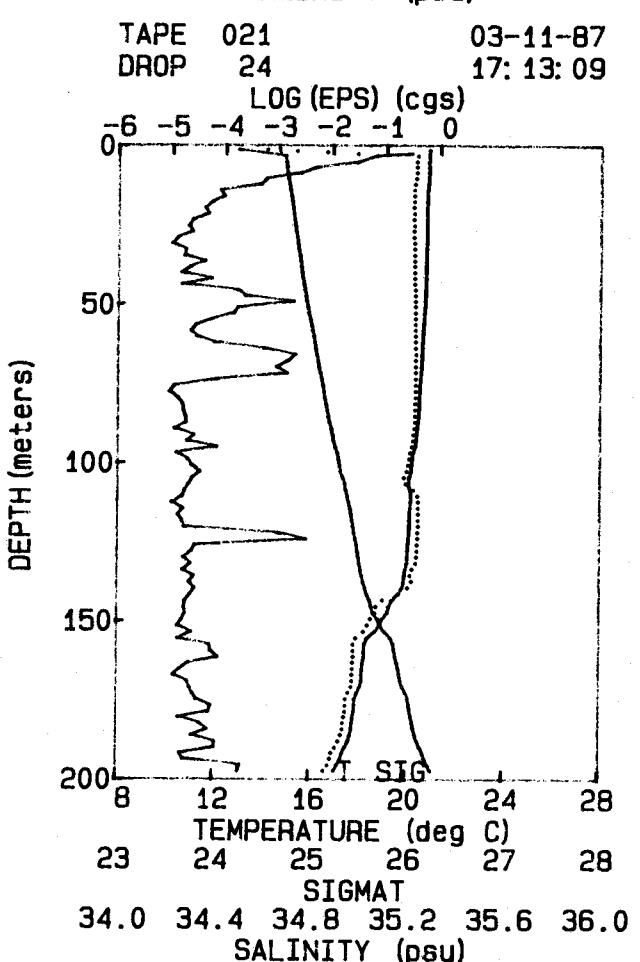
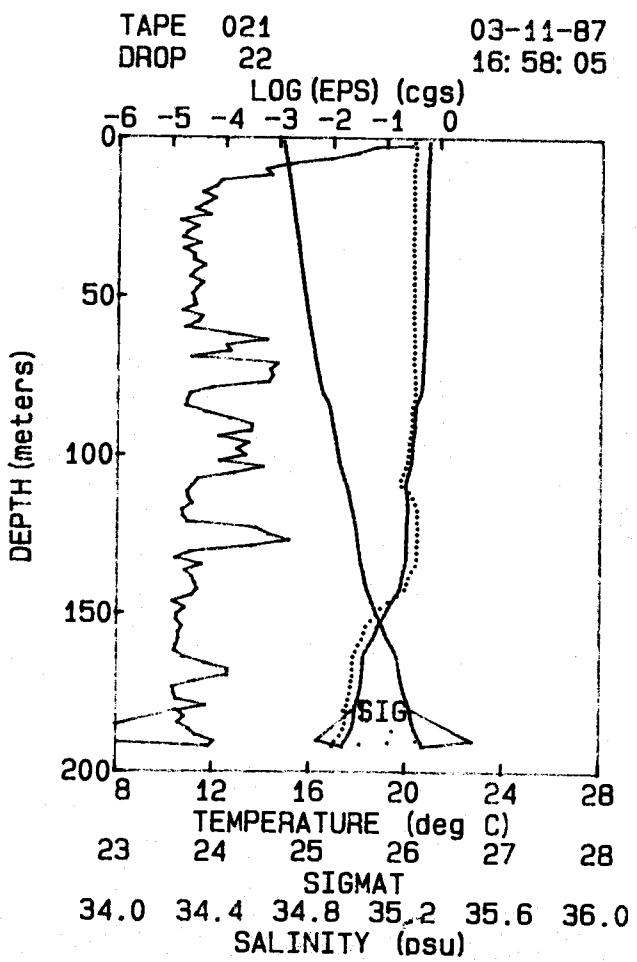
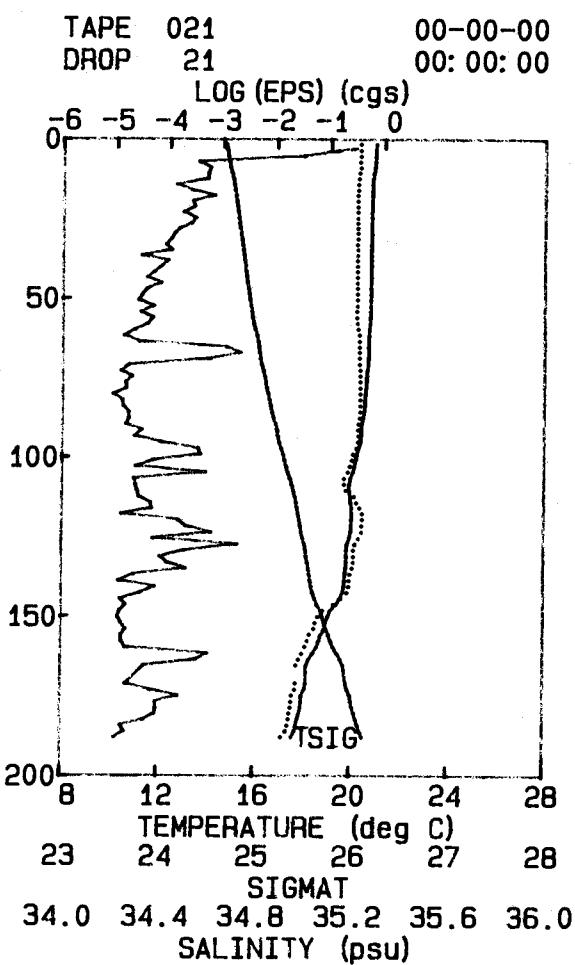
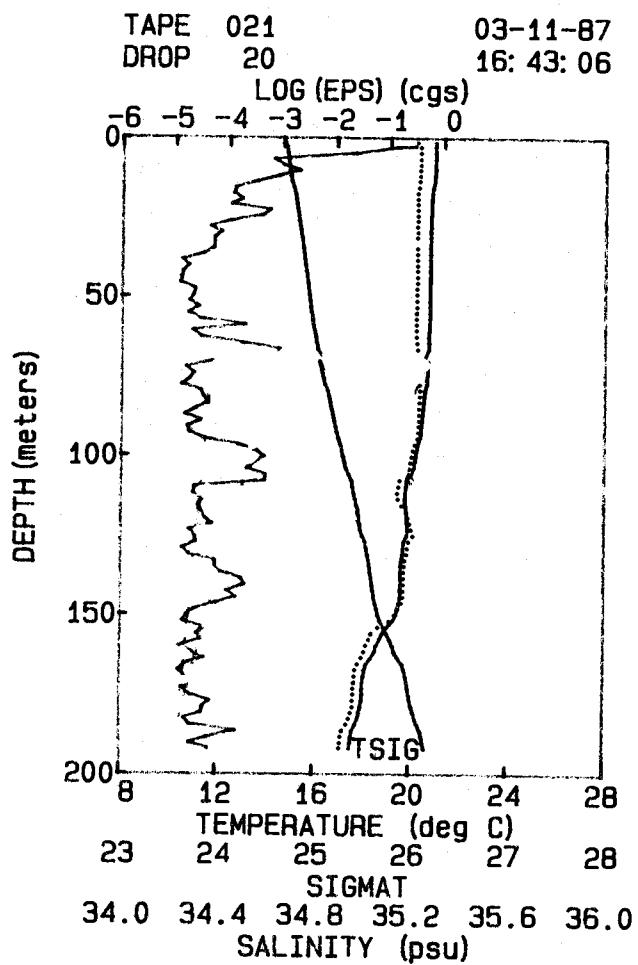
TAPE 021
DROP 15

03-11-87
16: 05: 05

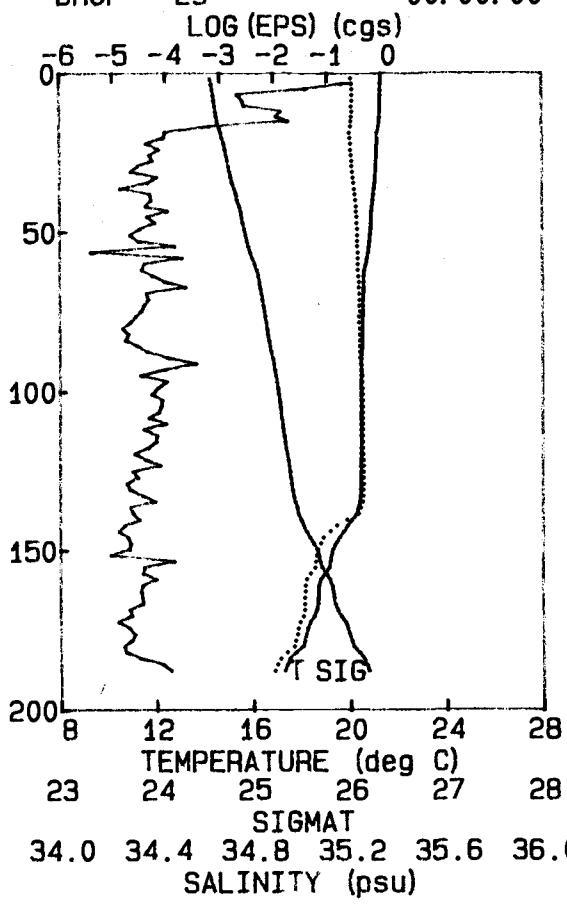
LOG (EPS) (cgs)



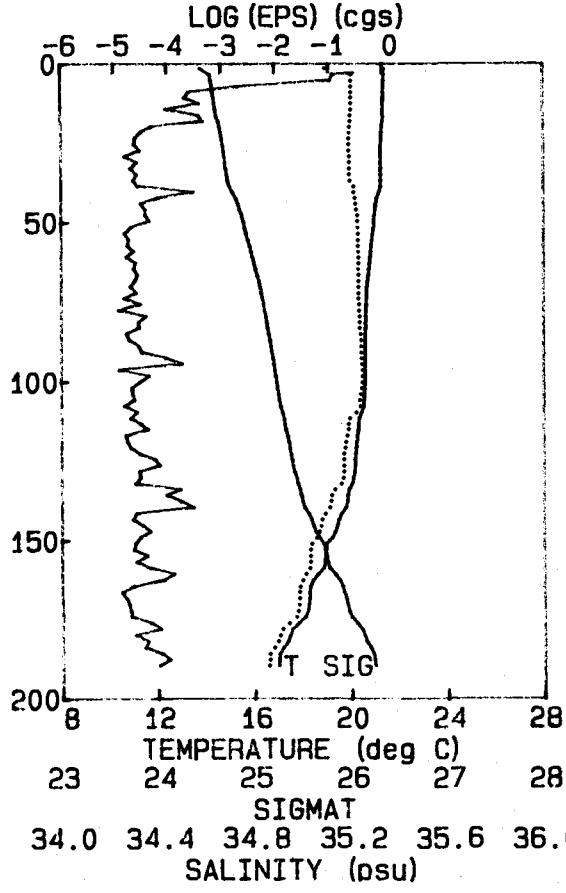
34.0 34.4 34.8 35.2 35.6 36.0
SALINITY (psu)



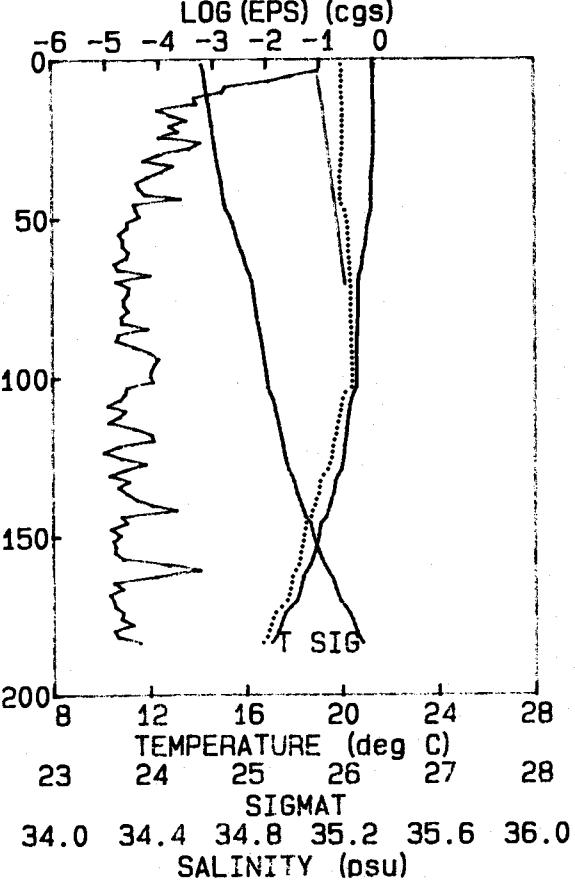
TAPE 021 00-00-00
 DROP 29 00: 00: 00

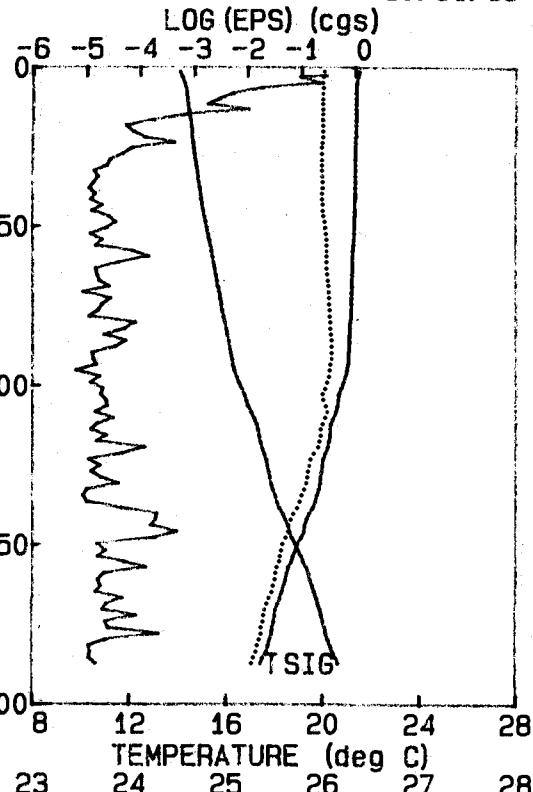
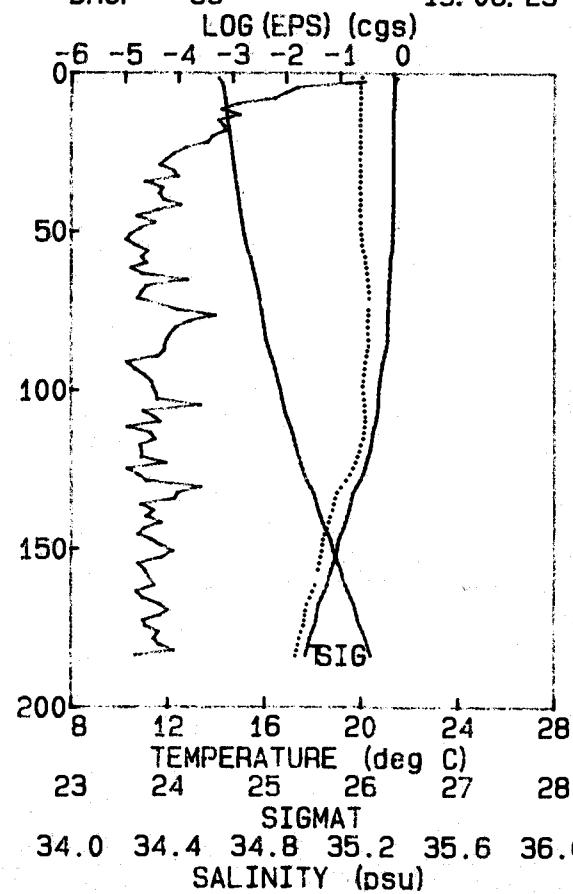
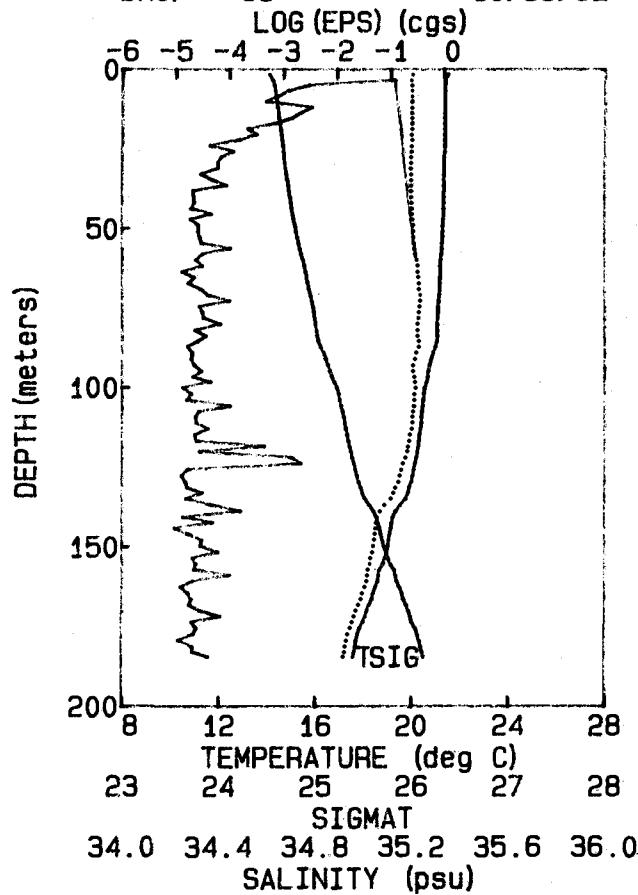
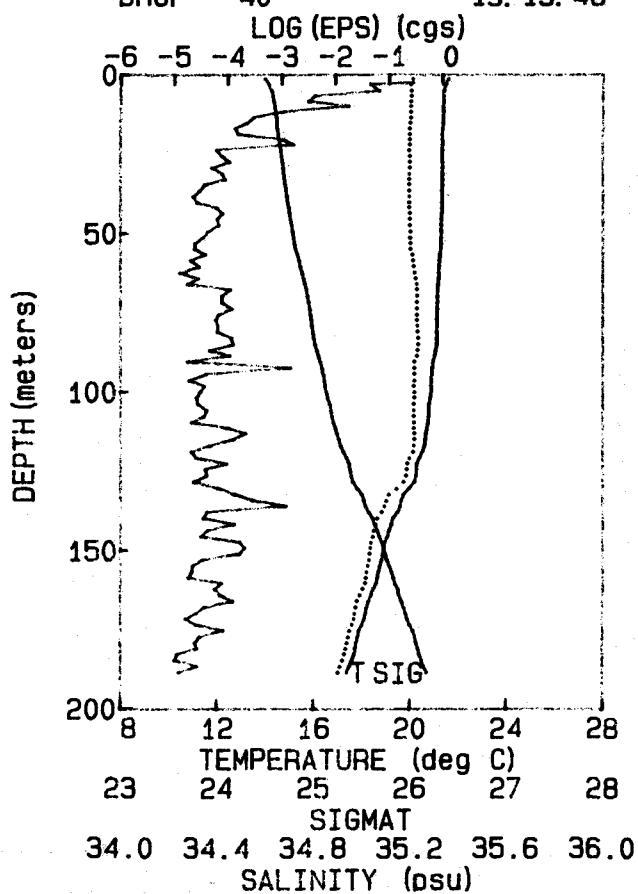


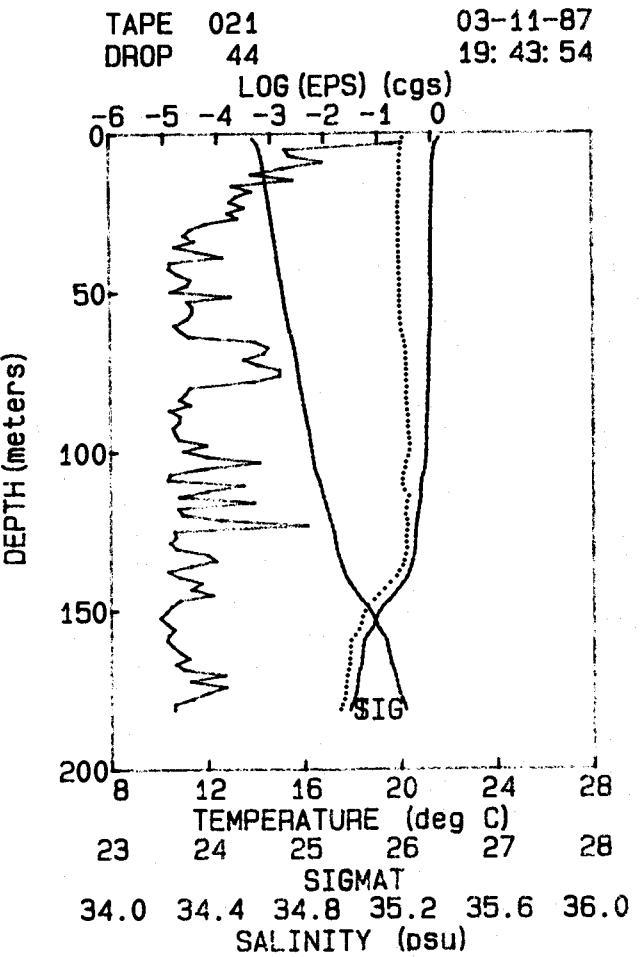
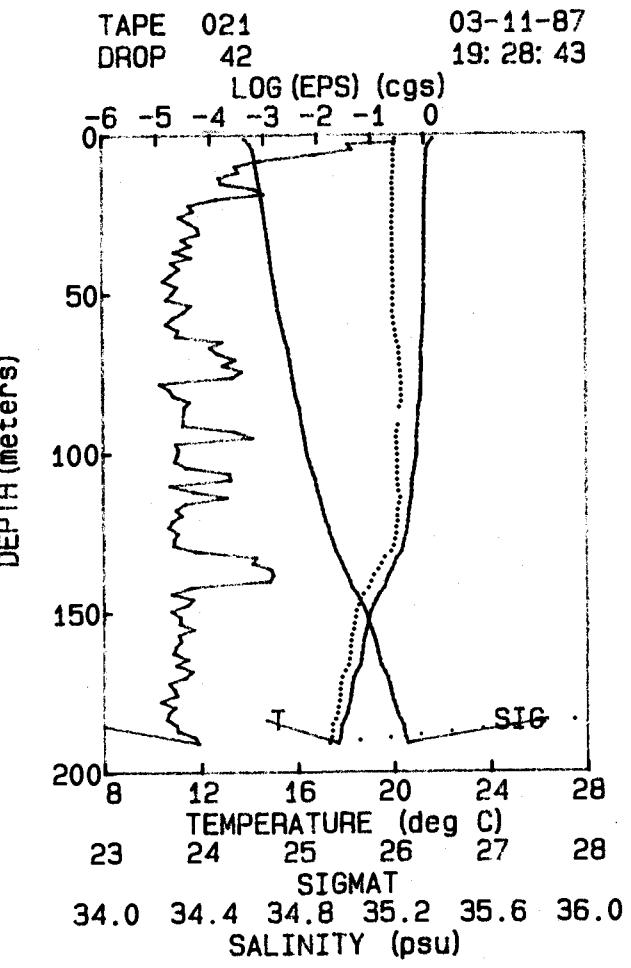
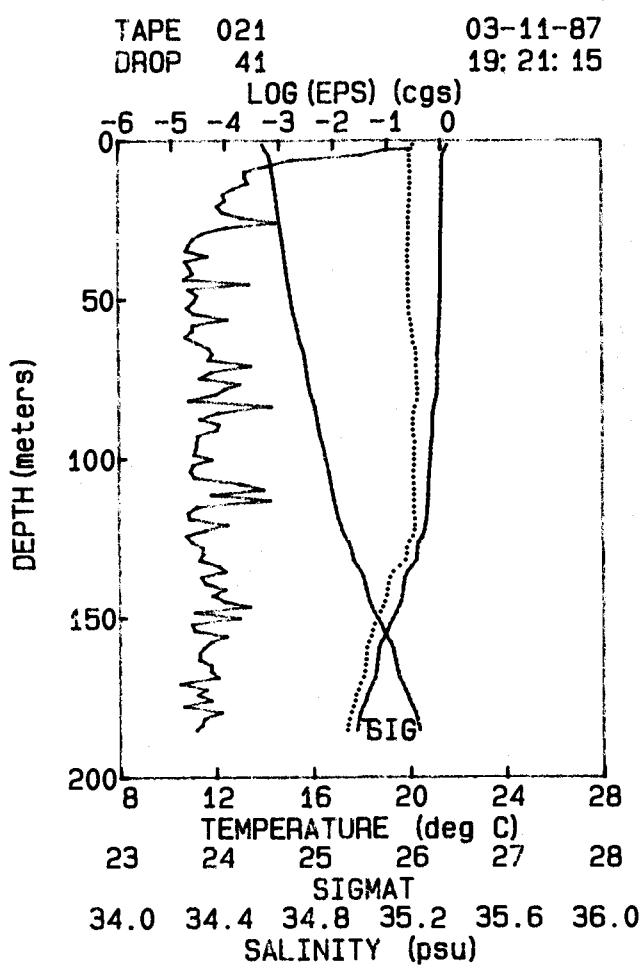
TAPE 021 03-11-87
 DROP 31 18: 06: 12

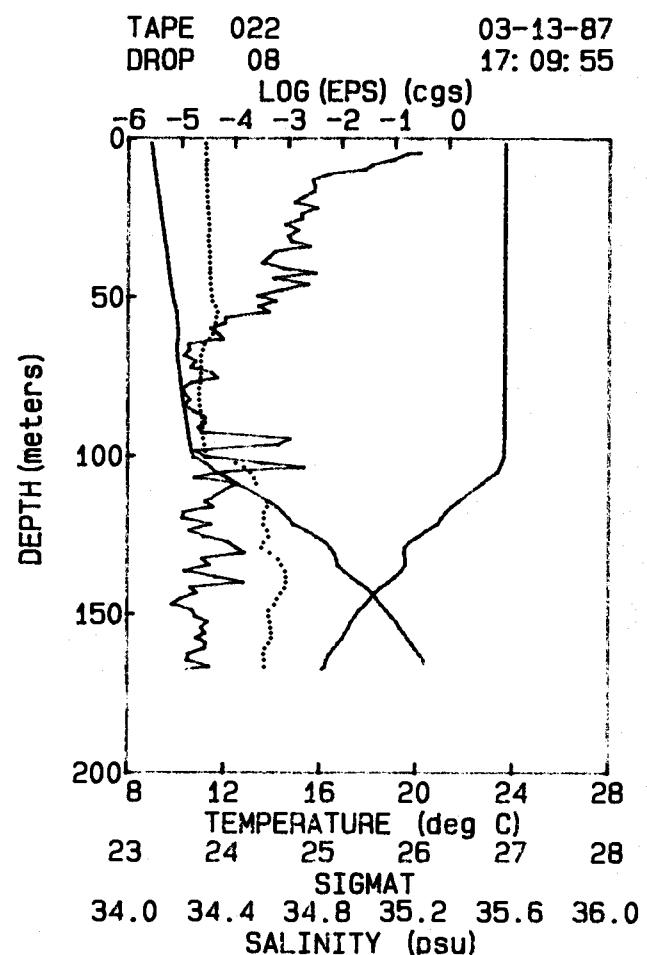
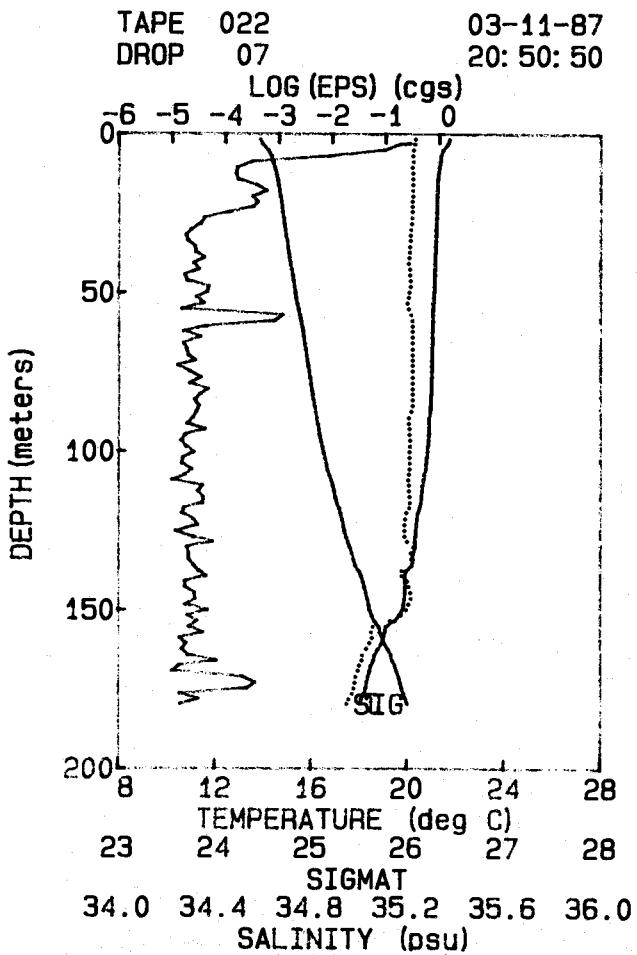
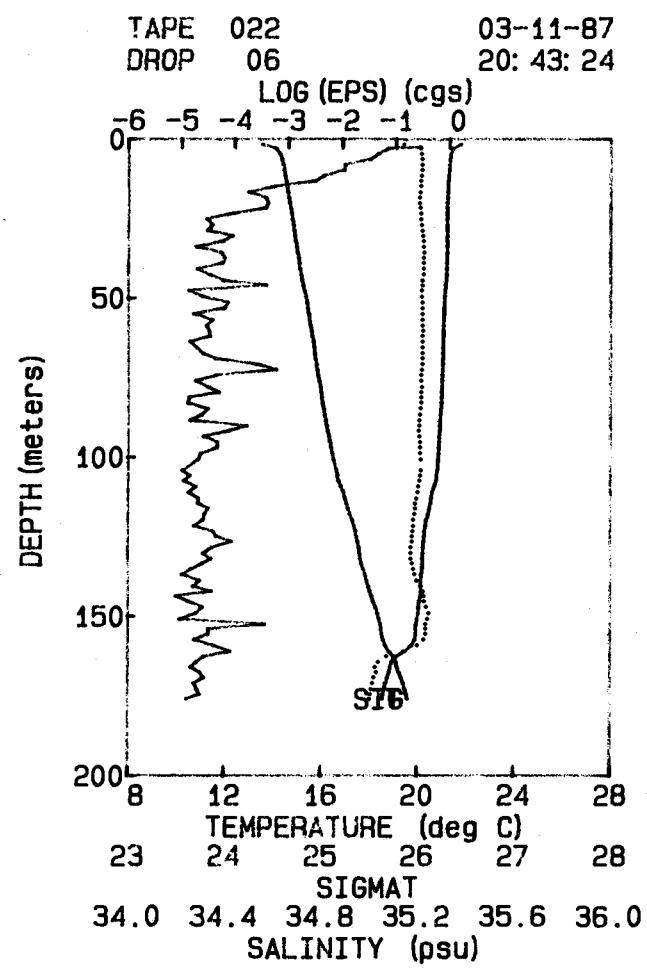
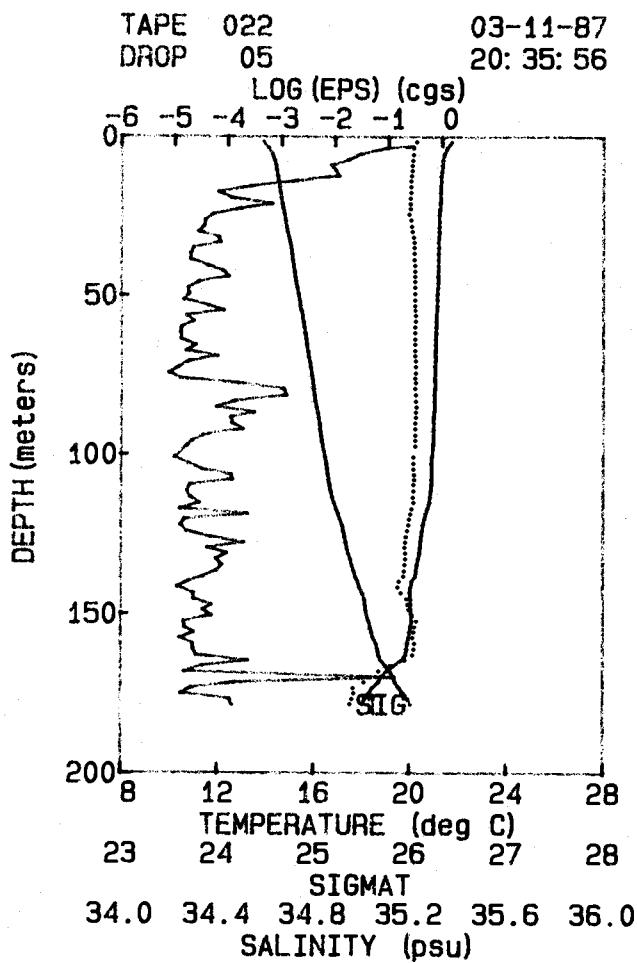


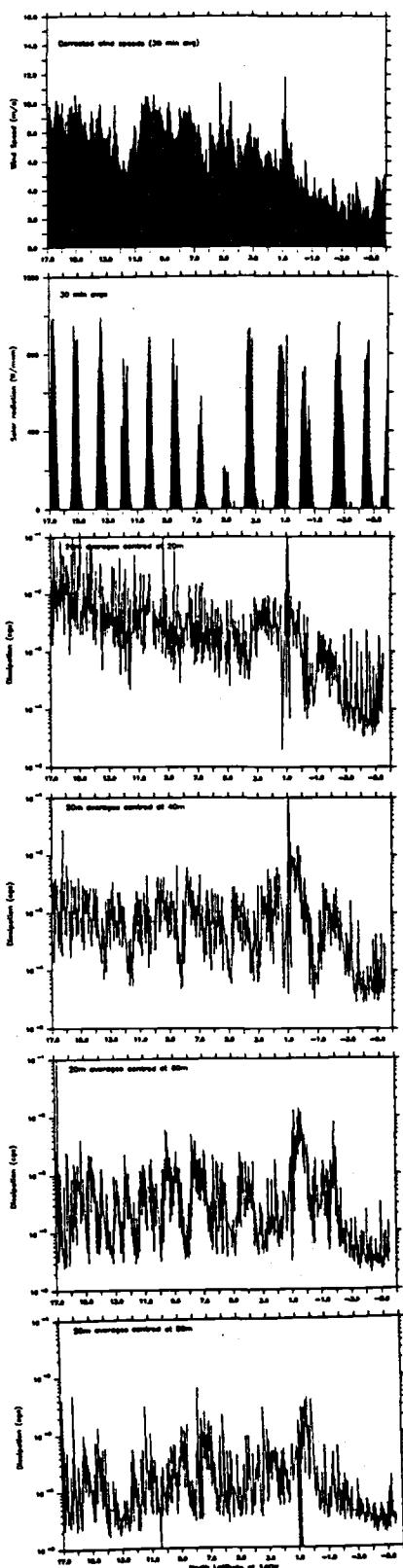
TAPE 021 03-11-87
 DROP 32 18: 13: 43



TAPE 021
DROP 3703-11-87
18: 51: 29TAPE 021
DROP 3903-11-87
19: 06: 23TAPE 021
DROP 3803-11-87
18: 58: 52TAPE 021
DROP 4003-11-87
19: 13: 46







WIND

SUN

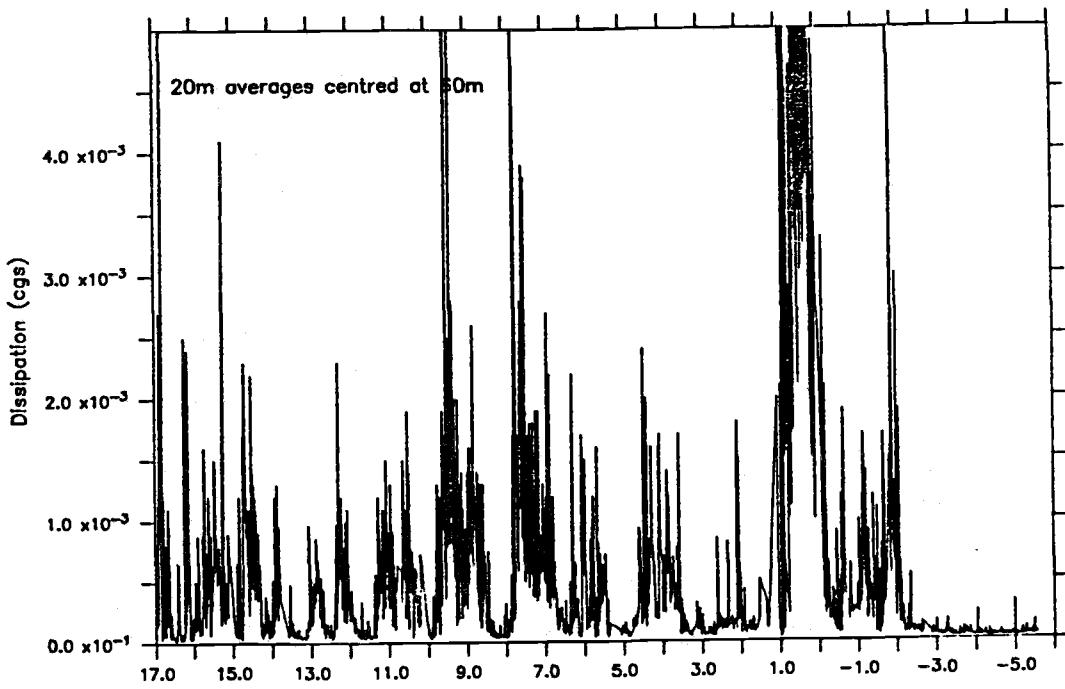
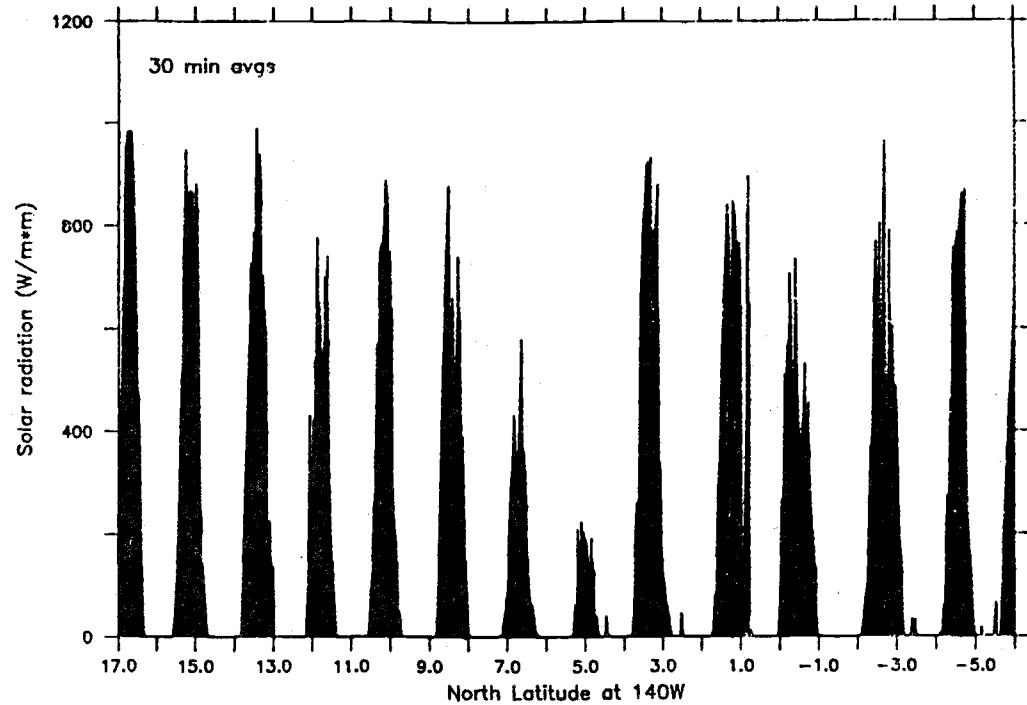
Wind/insolation/dissipation vs latitude from 17°N to 6°S along 140°W. The top plot represents wind speed, the next represents solar insolation. The bottom 4 plots show 20-meter vertically-averaged dissipation rate, ϵ , centered at depths of 20, 40, 60 and 80 meters. The scale for ϵ is logarithmic.

10-30 METER DISSIPATION RATE

30-50 METER DISSIPATION RATE

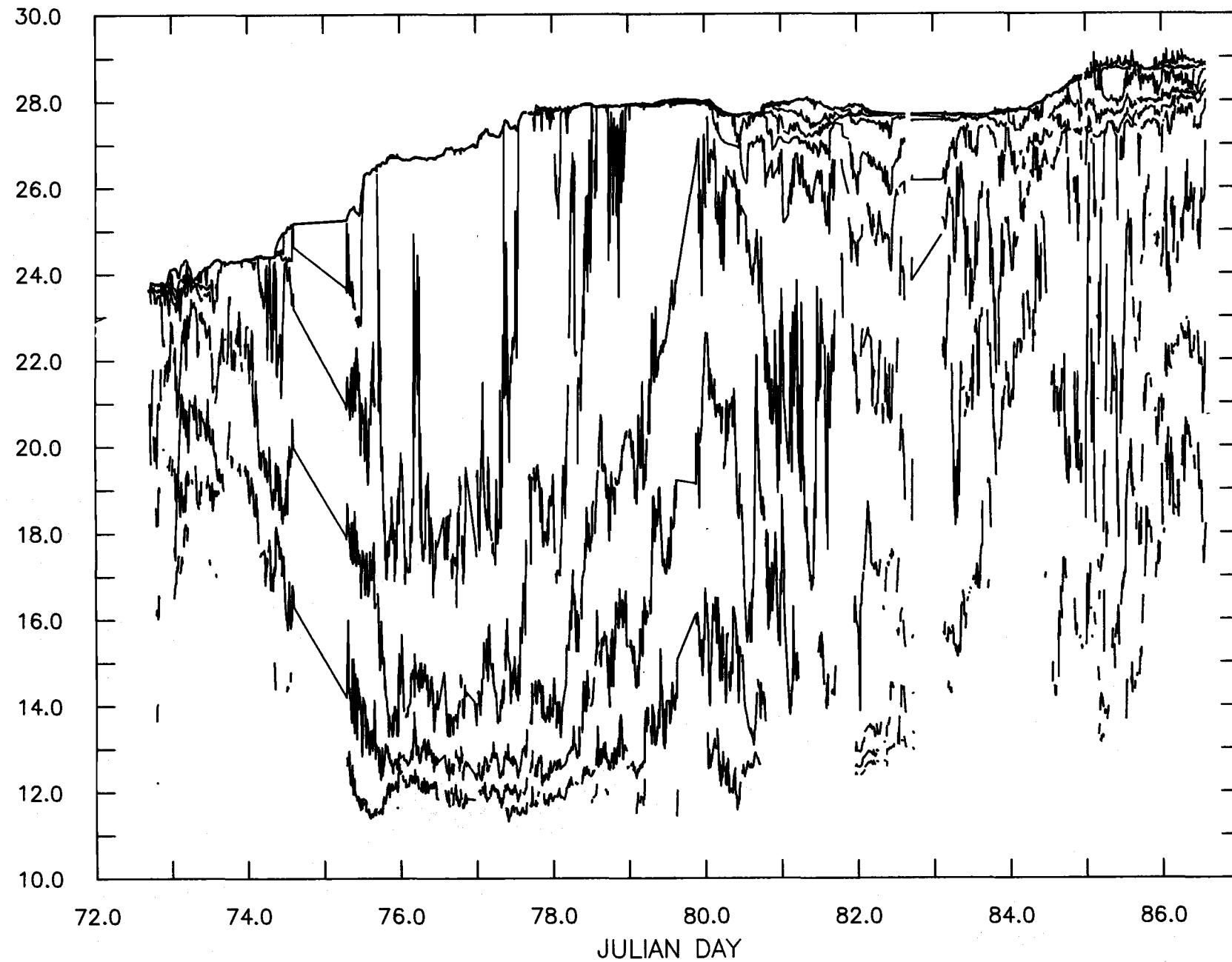
50-70 METER DISSIPATION RATE

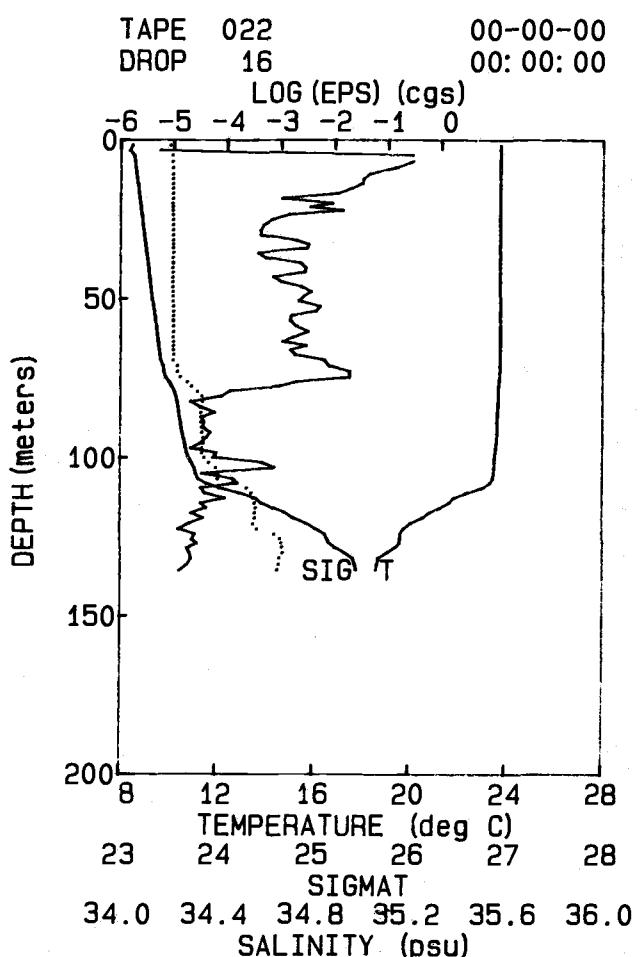
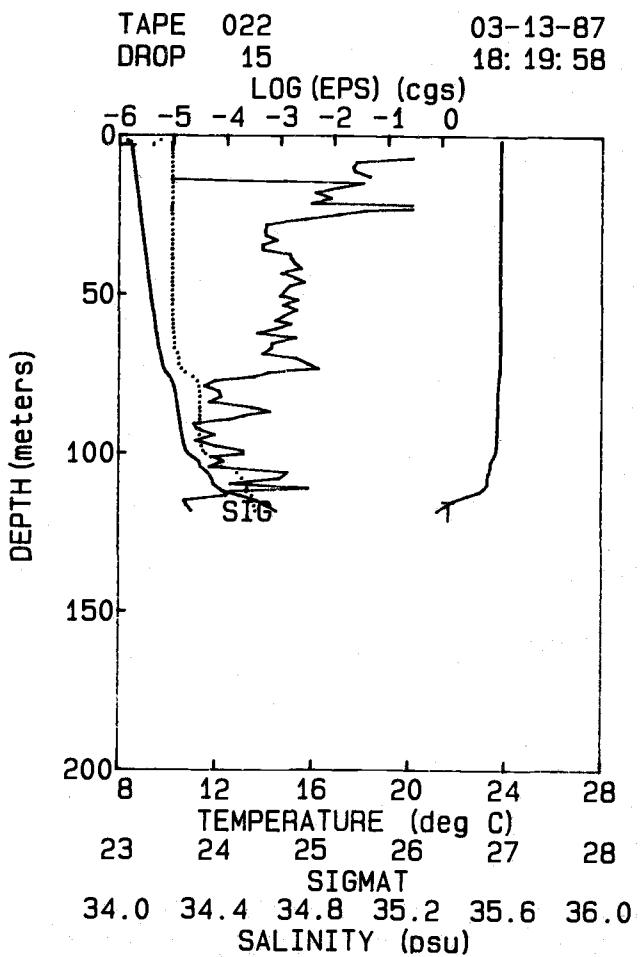
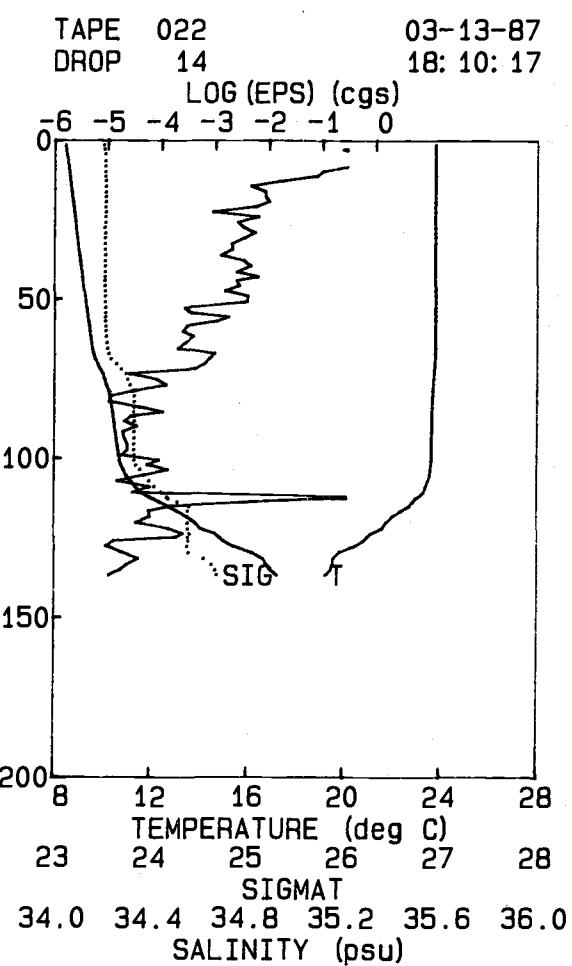
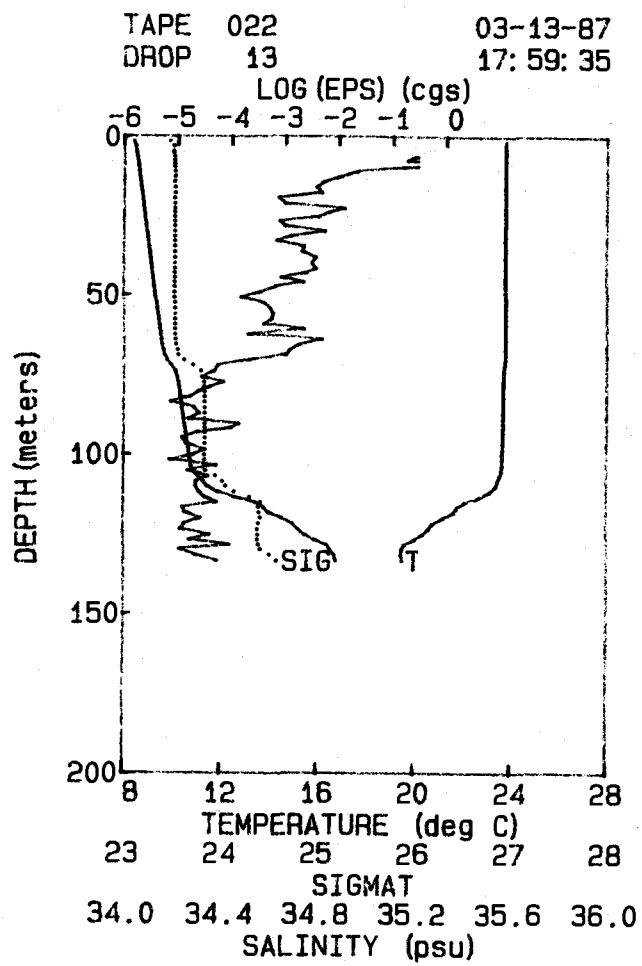
70-90 METER DISSIPATION RATE

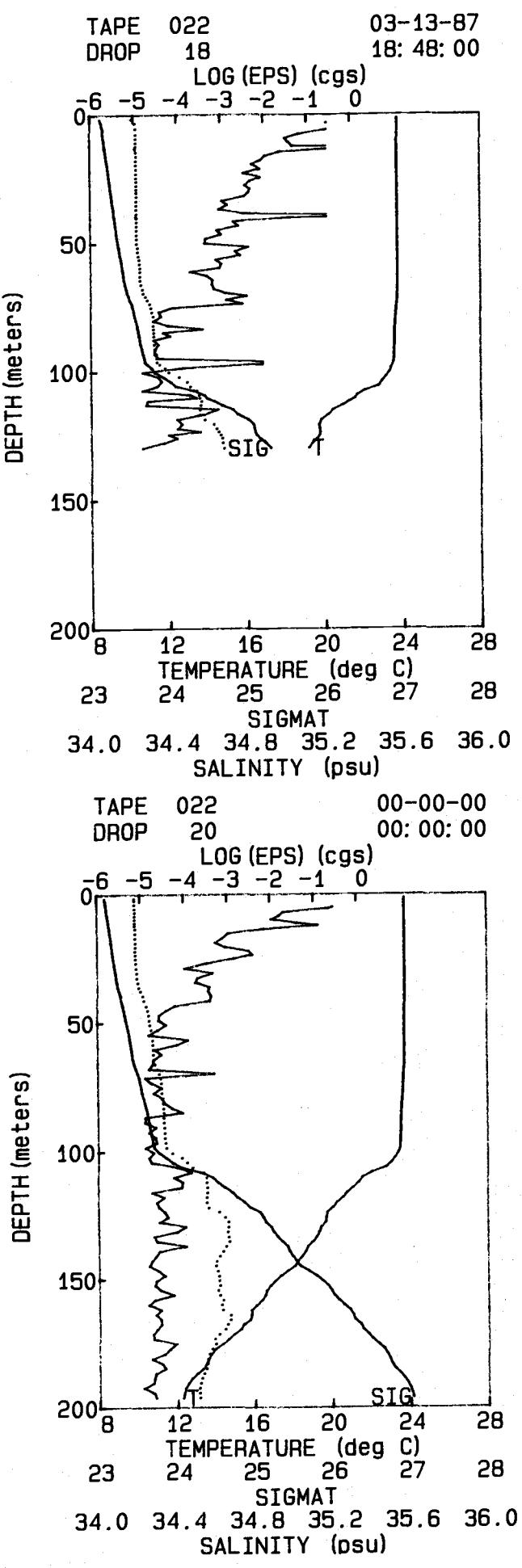
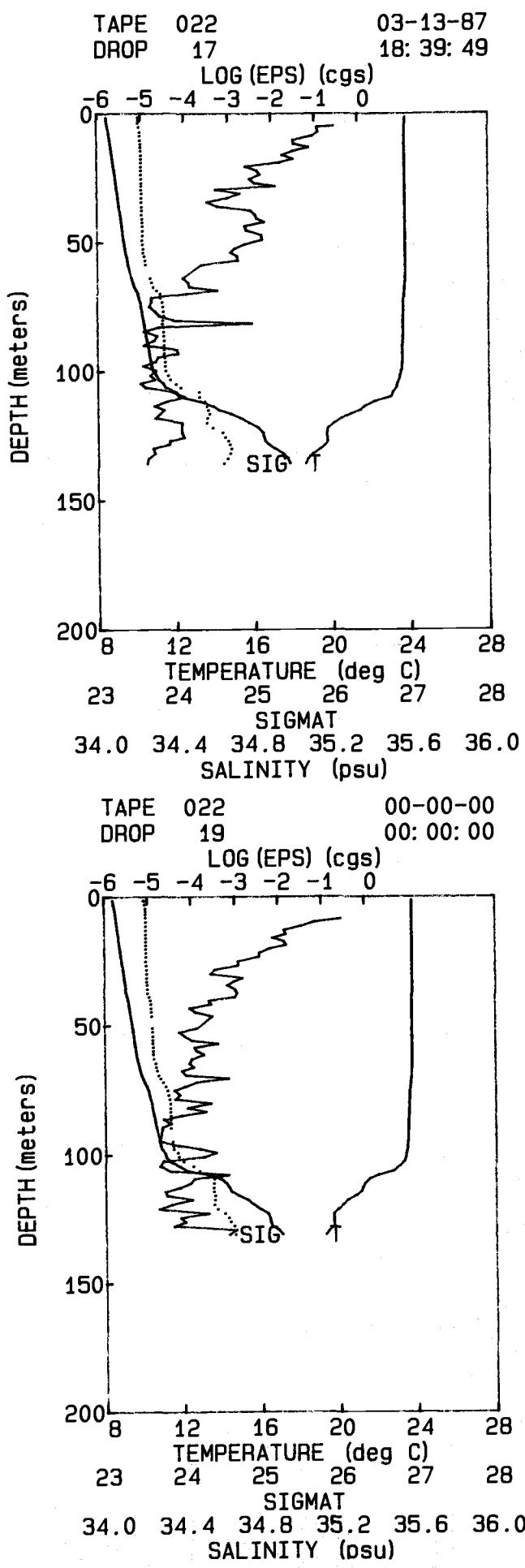


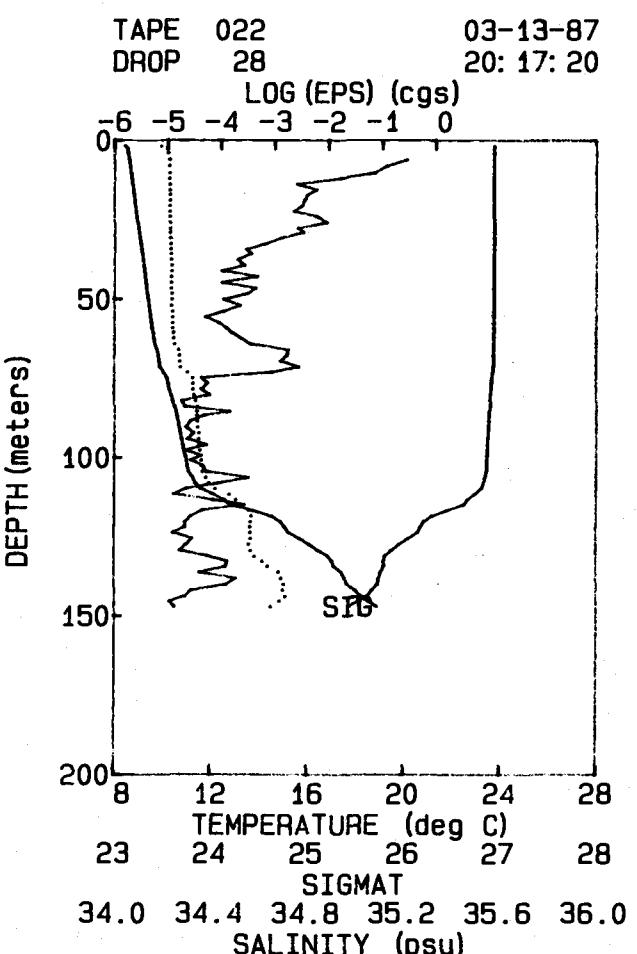
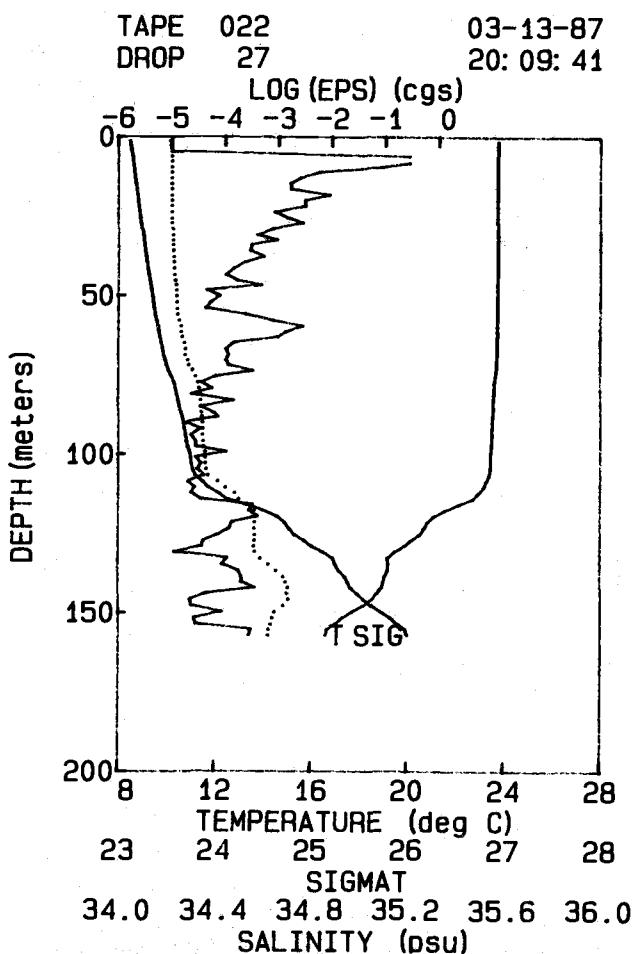
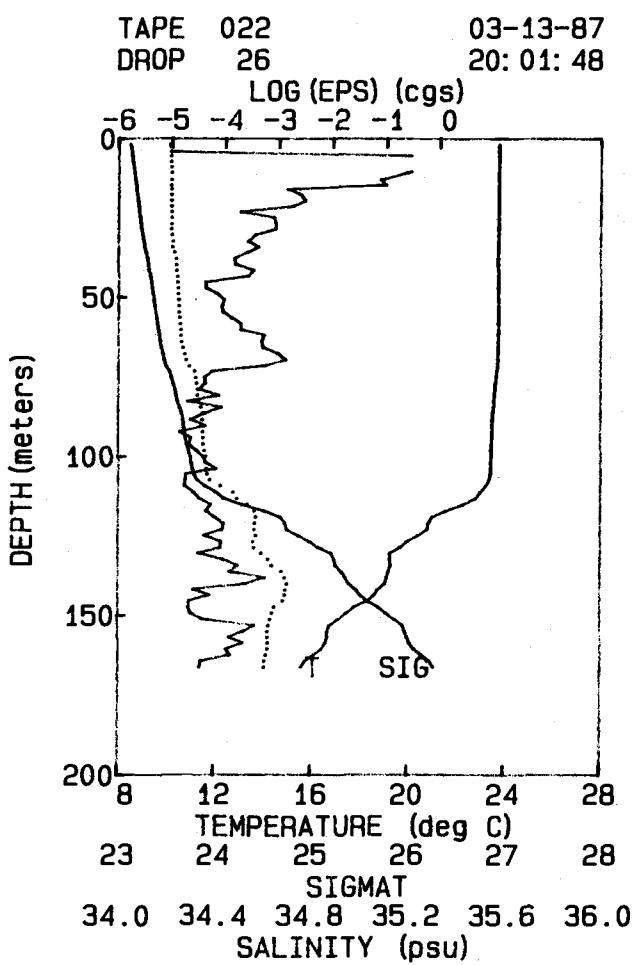
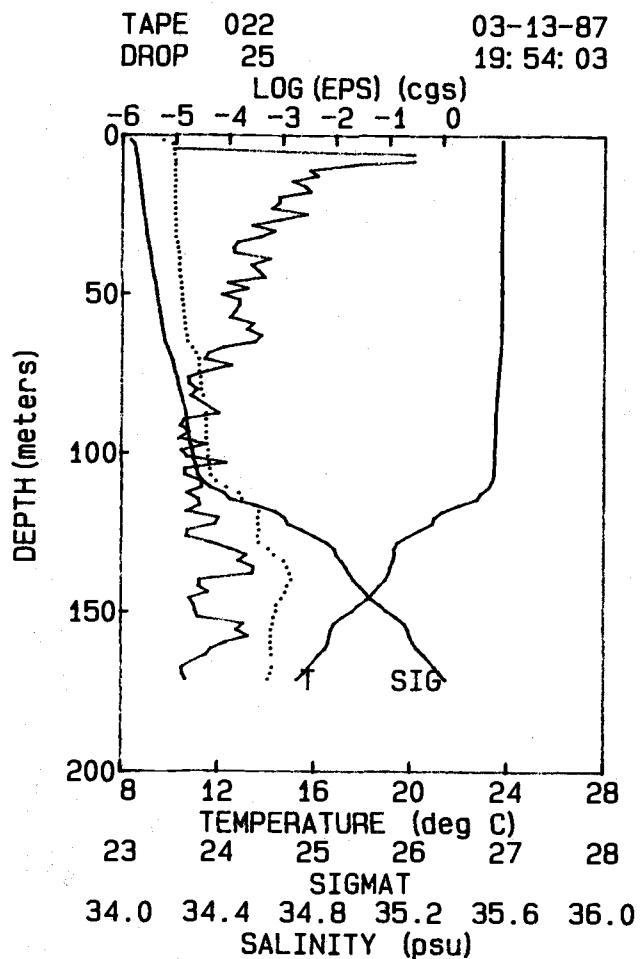
Solar insolation and 50-70 meter ϵ from 17°N to 6°S along 140°W. The scale for ϵ is linear.

TEMPERATURE

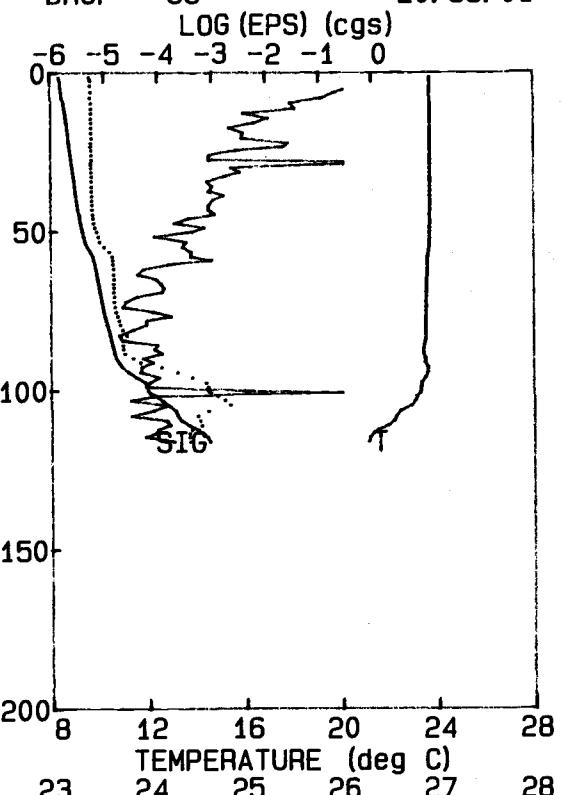




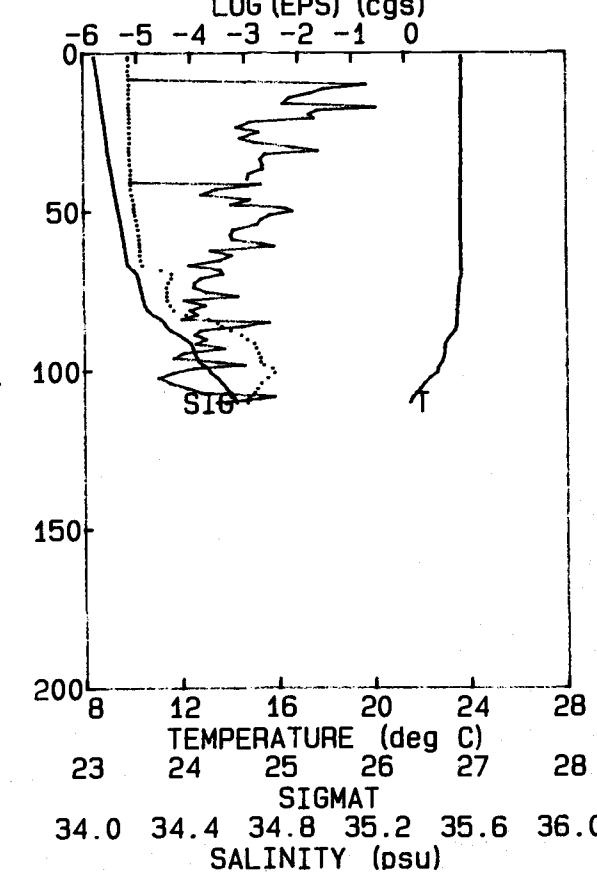




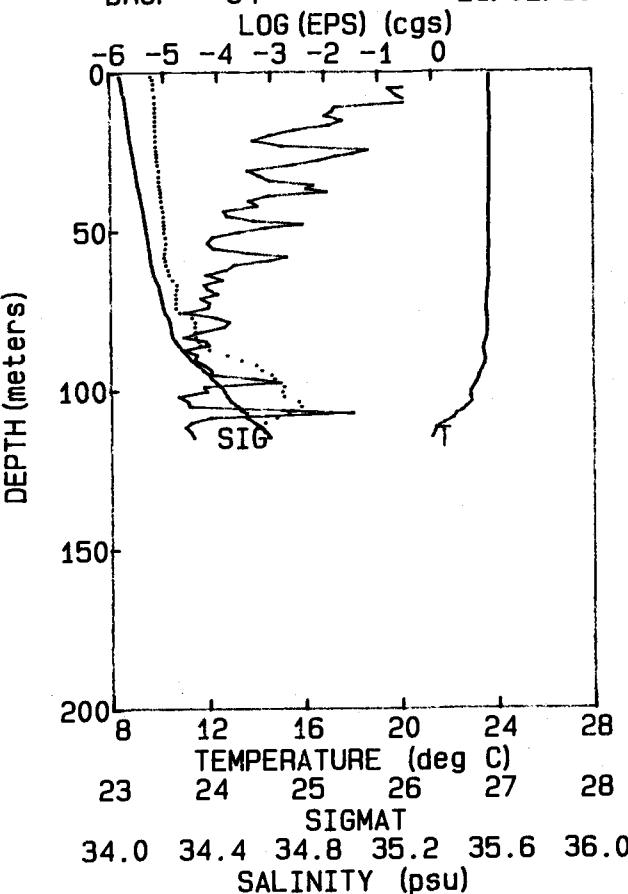
TAPE 022 03-13-87
DROP 33 20: 55: 01



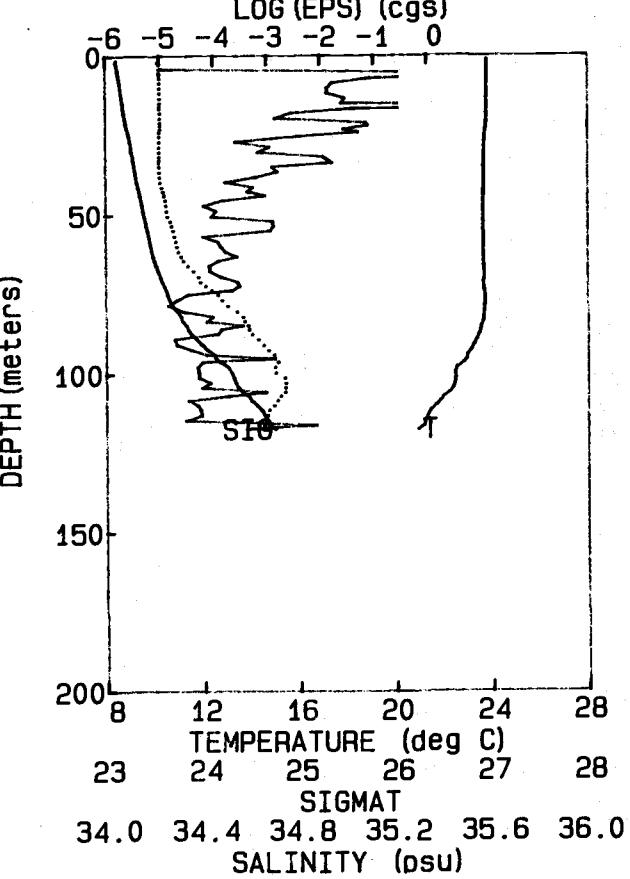
TAPE 022 03-13-87
DROP 35 21: 09: 31



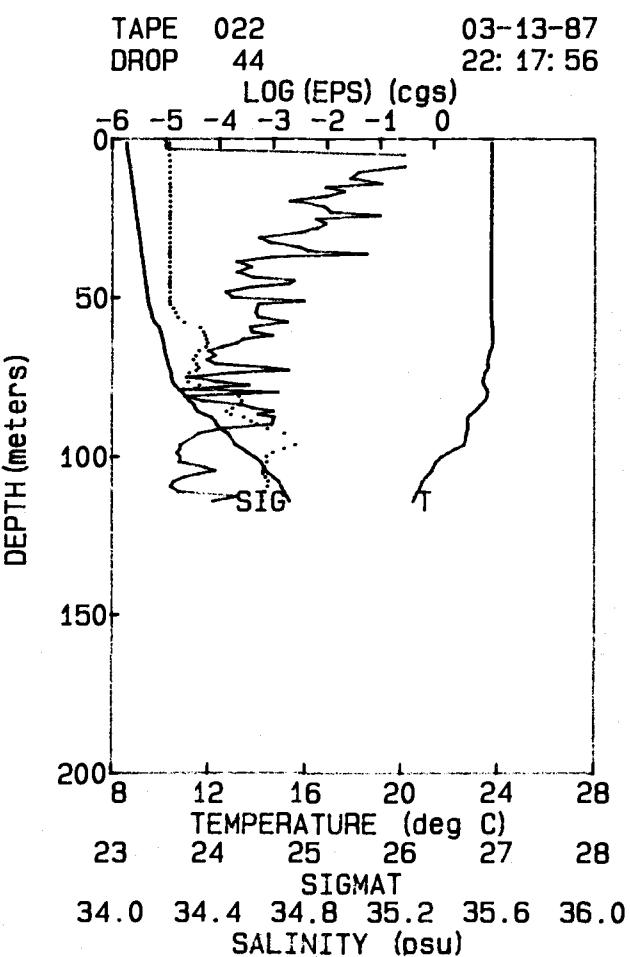
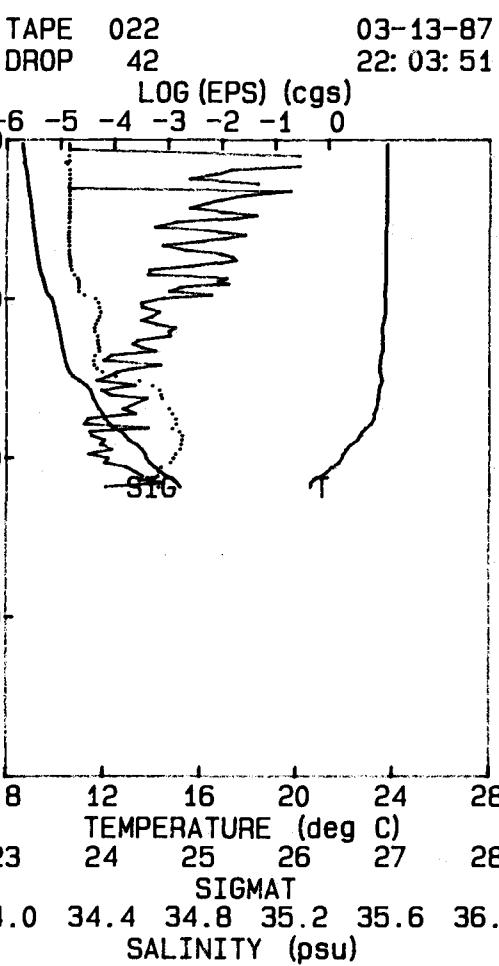
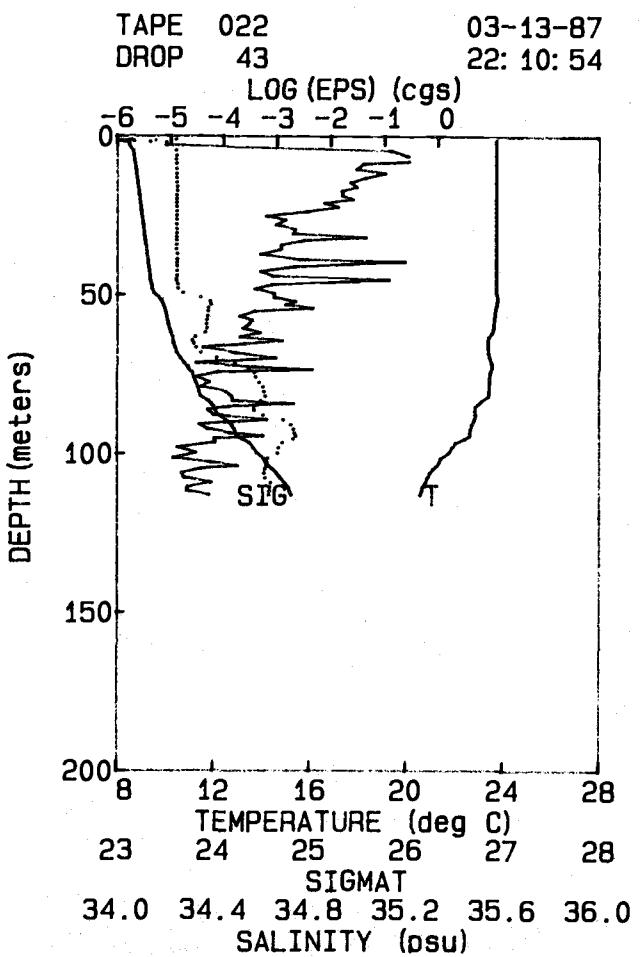
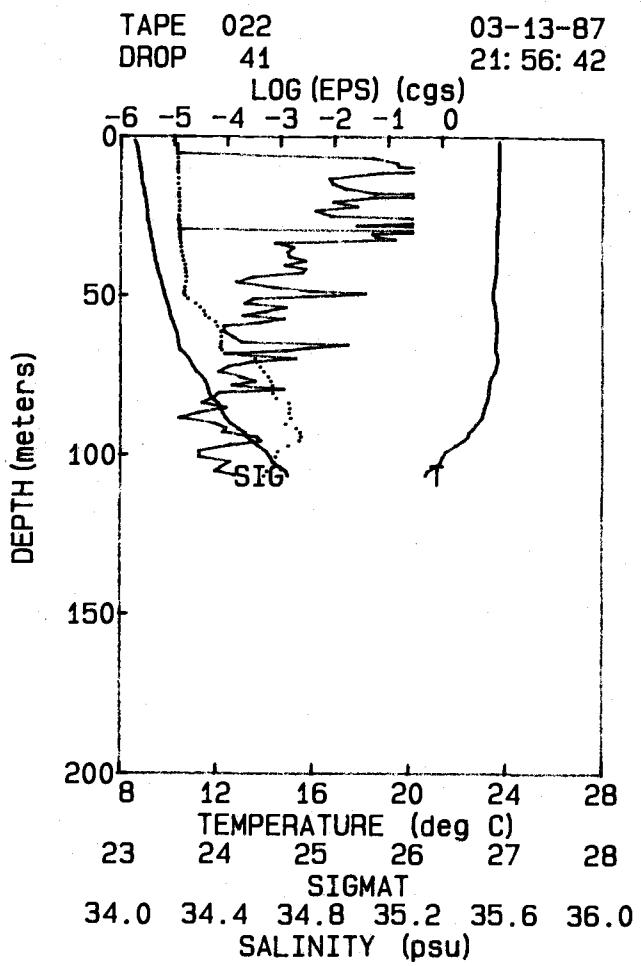
TAPE 022 03-13-87
DROP 34 21: 02: 13

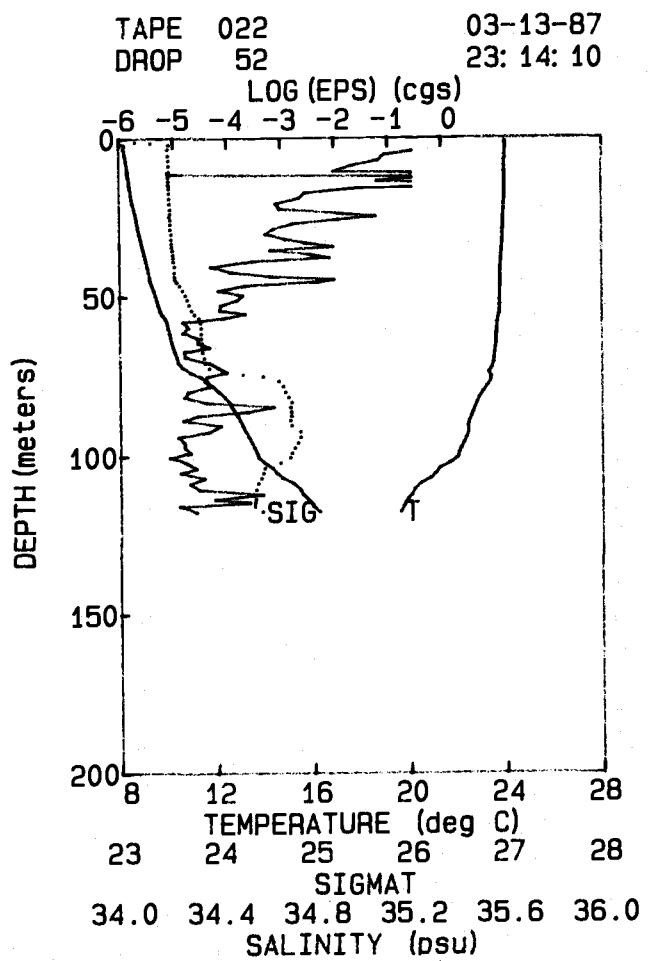
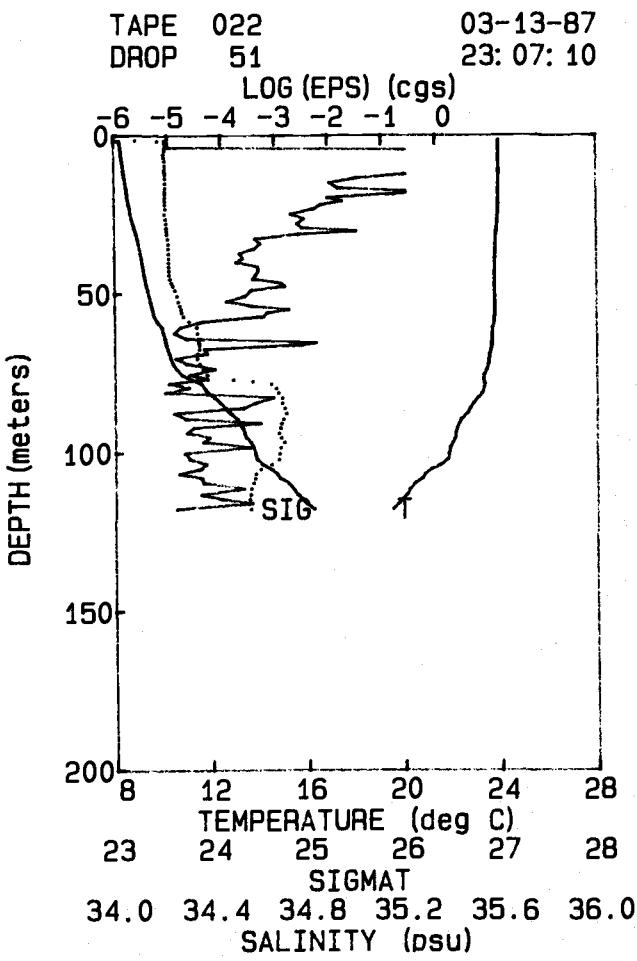
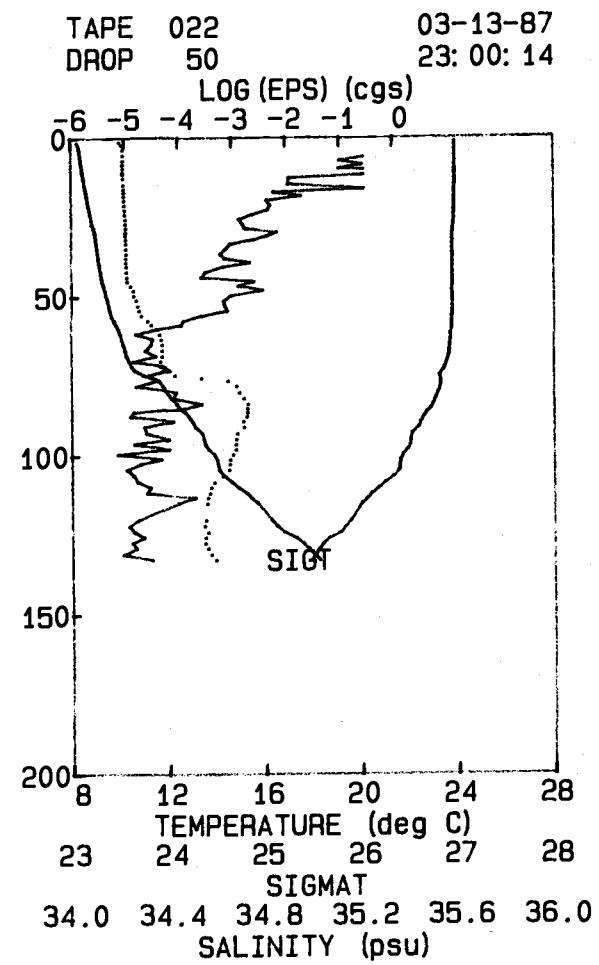
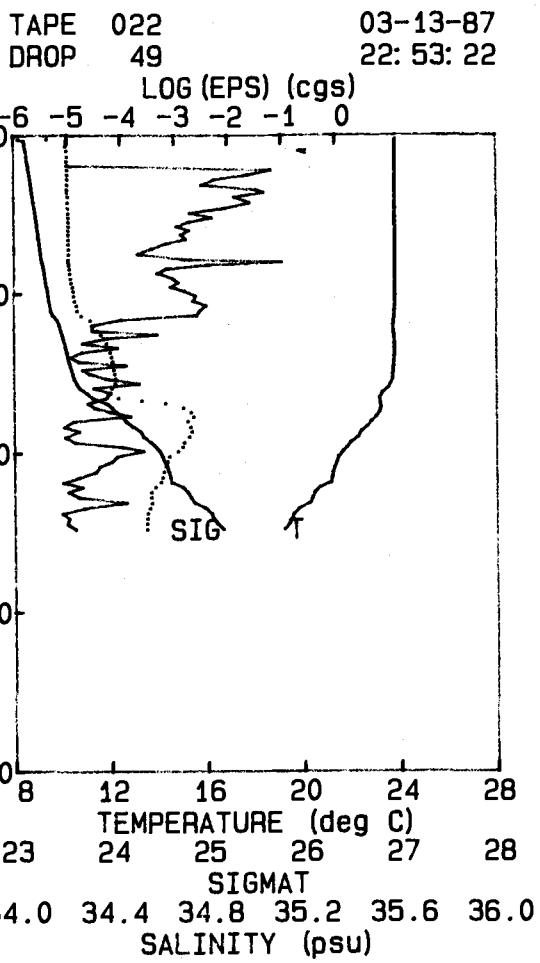


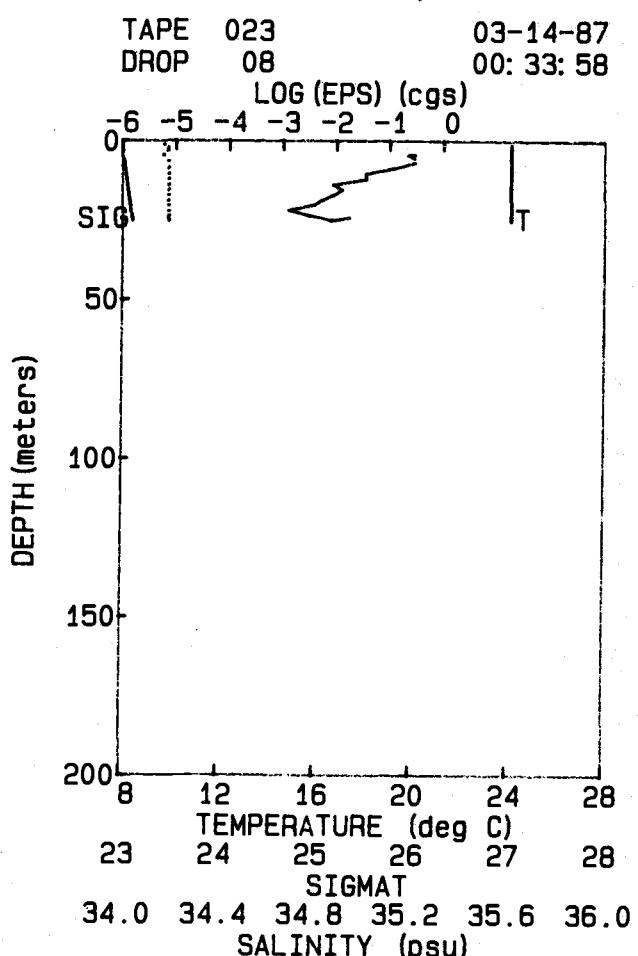
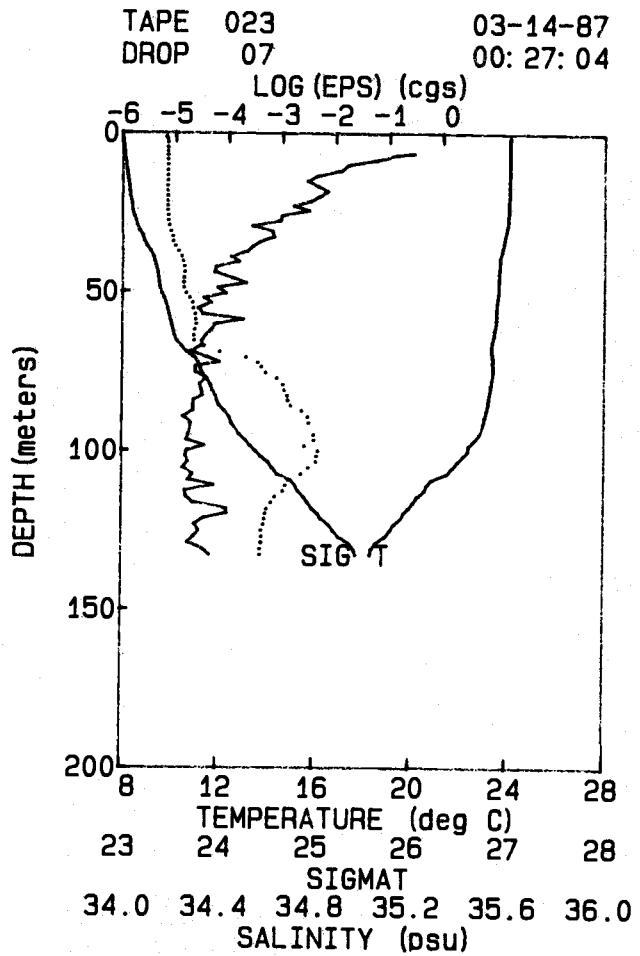
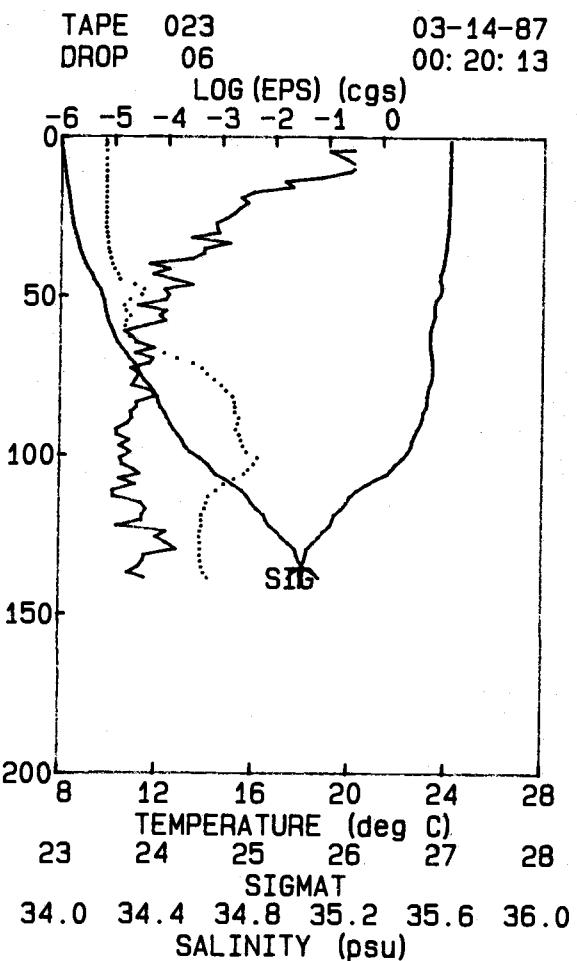
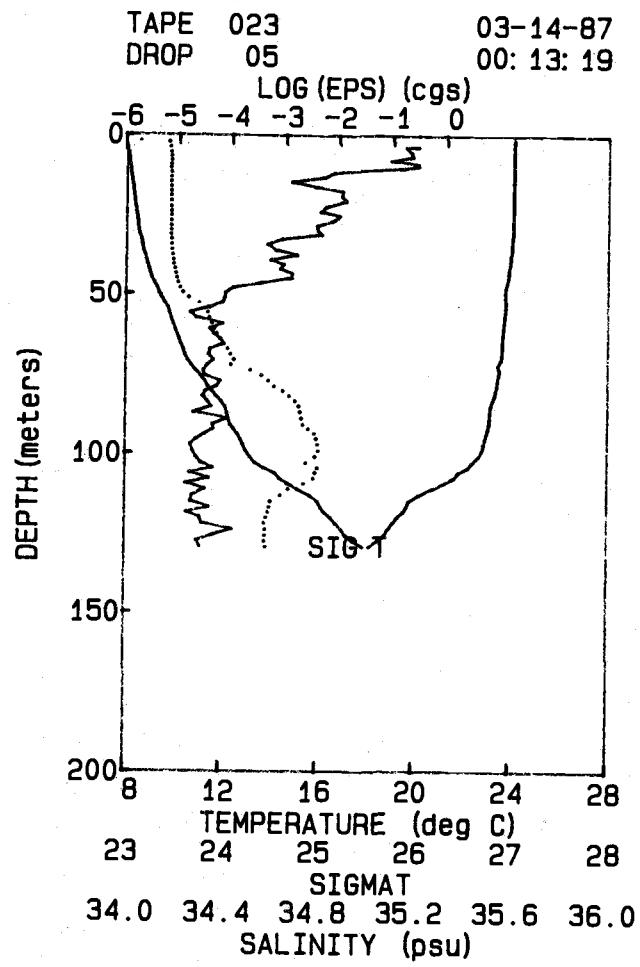
TAPE 022 03-13-87
DROP 36 21: 17: 05



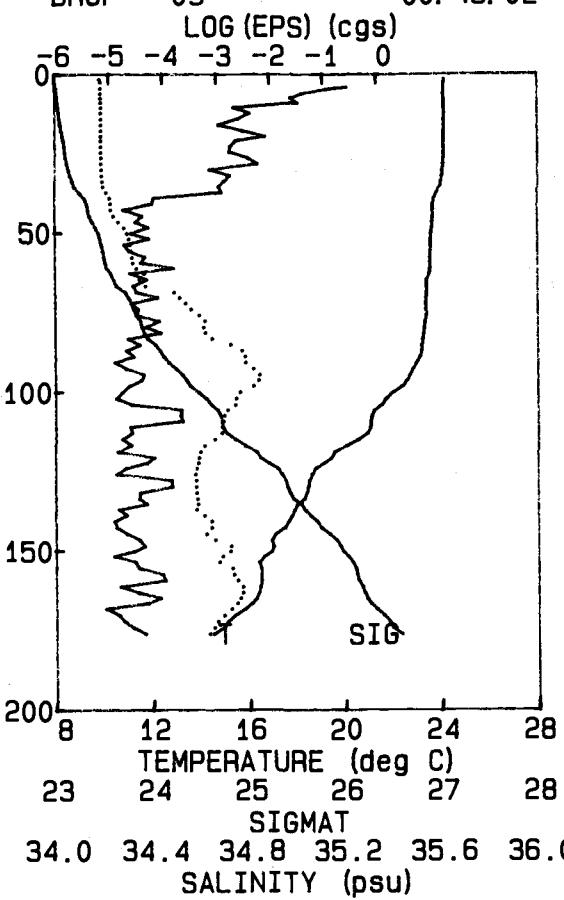
120



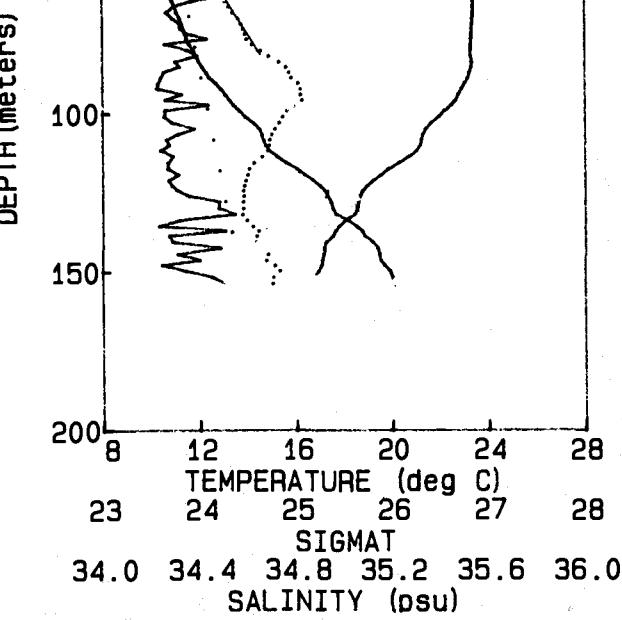




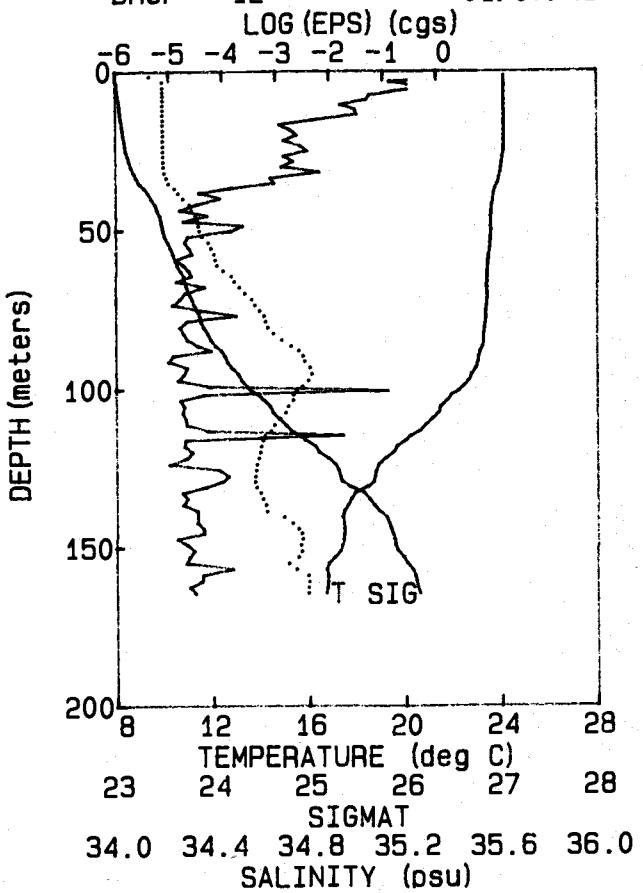
TAPE 023 03-14-87
 DROP 09 00: 45: 02

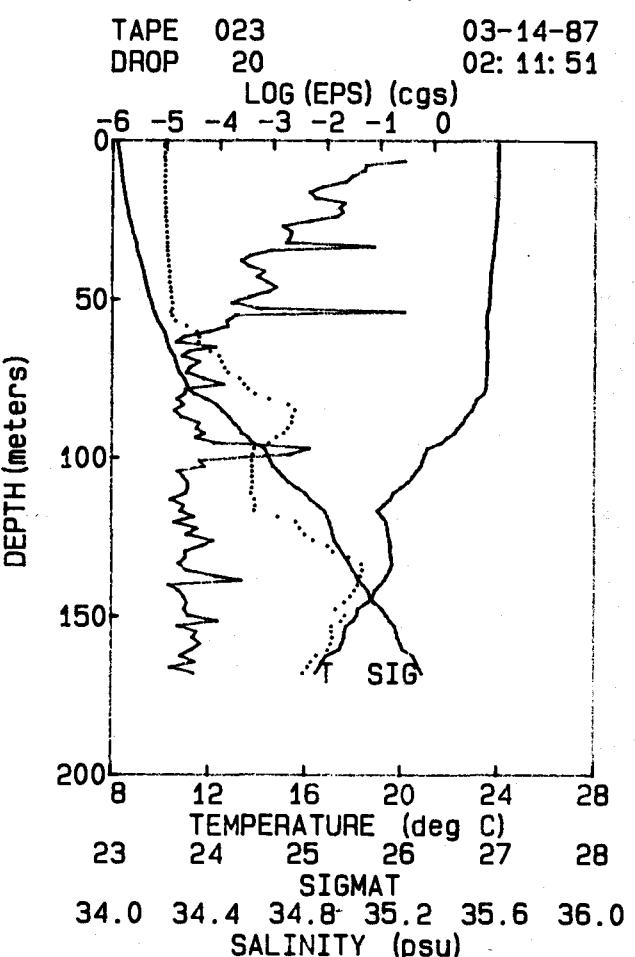
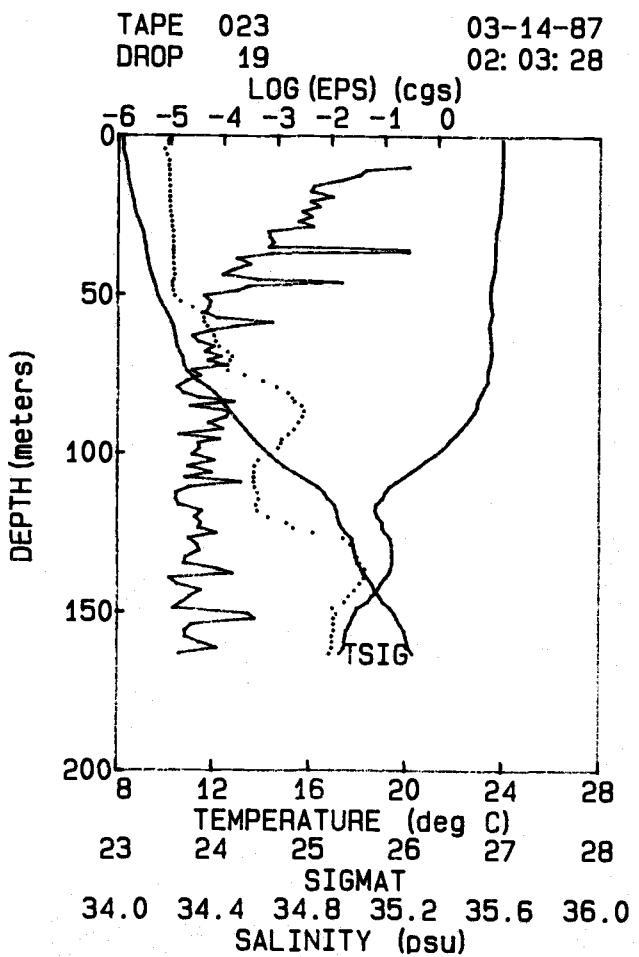
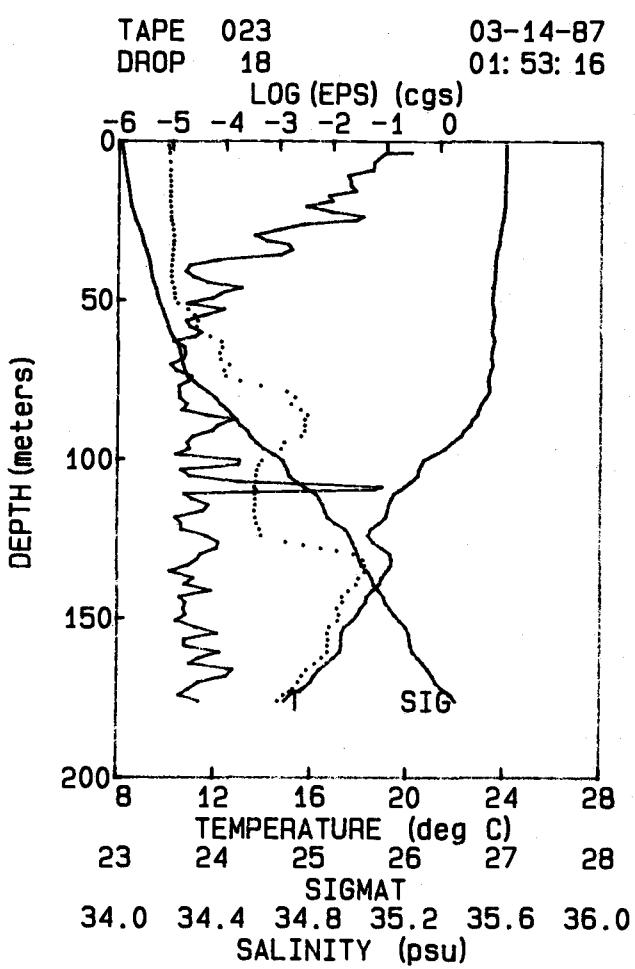
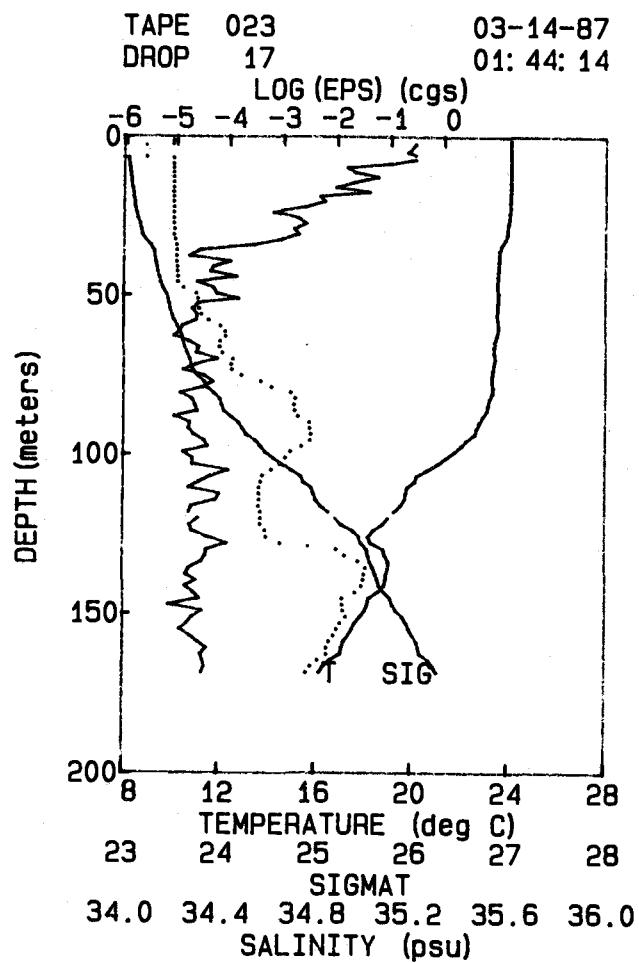


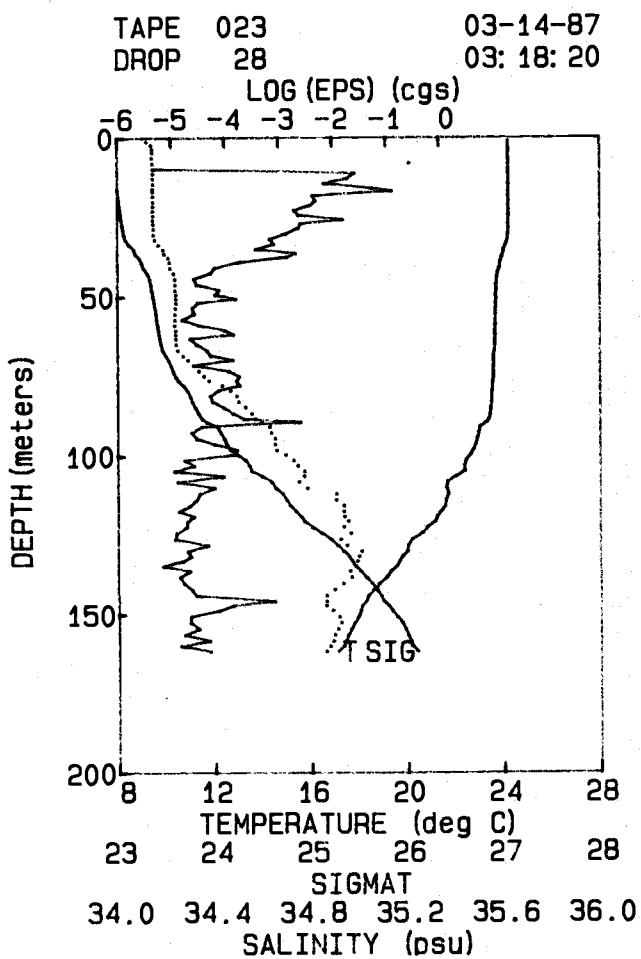
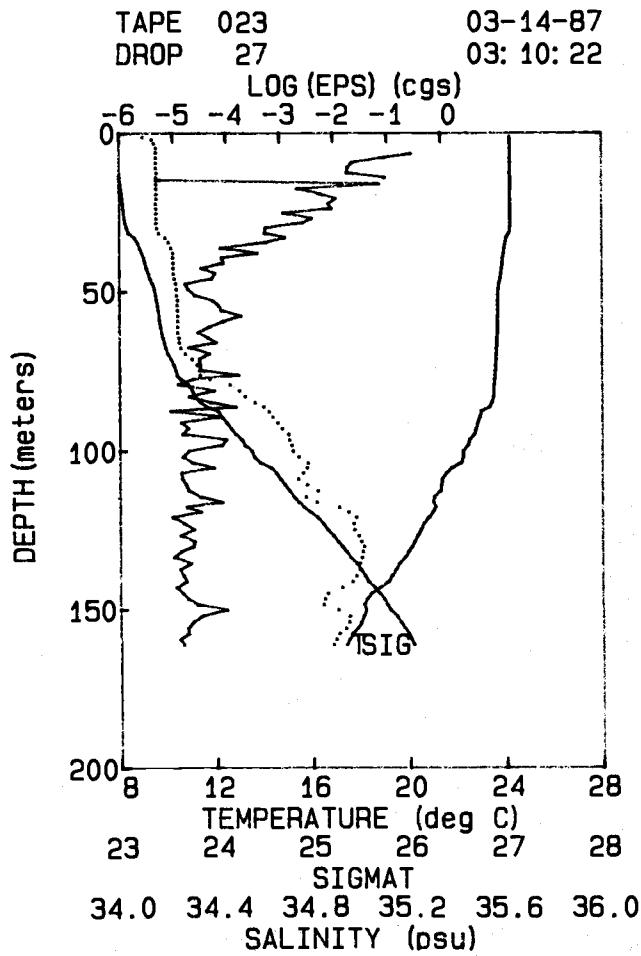
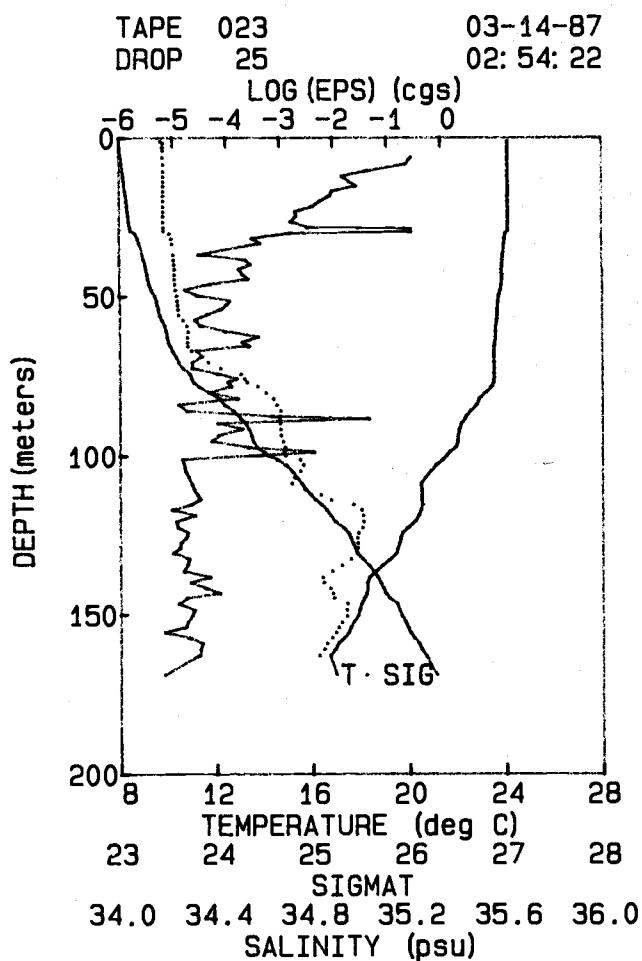
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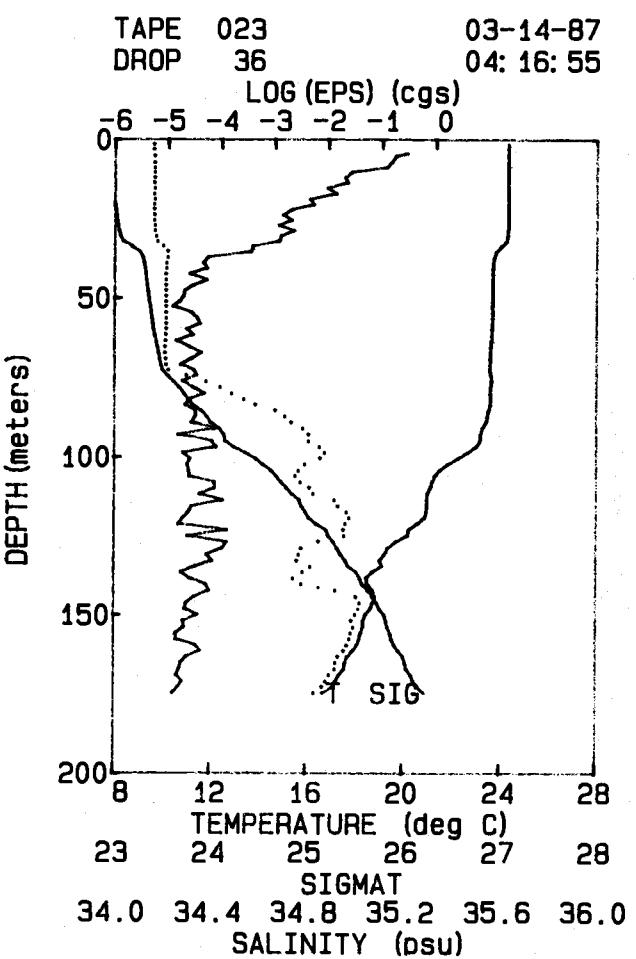
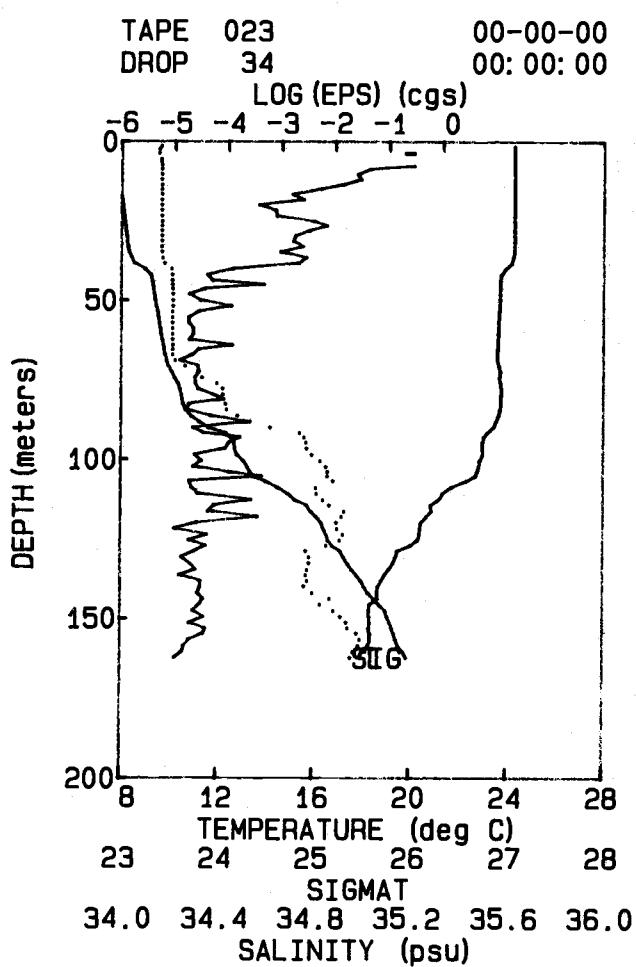
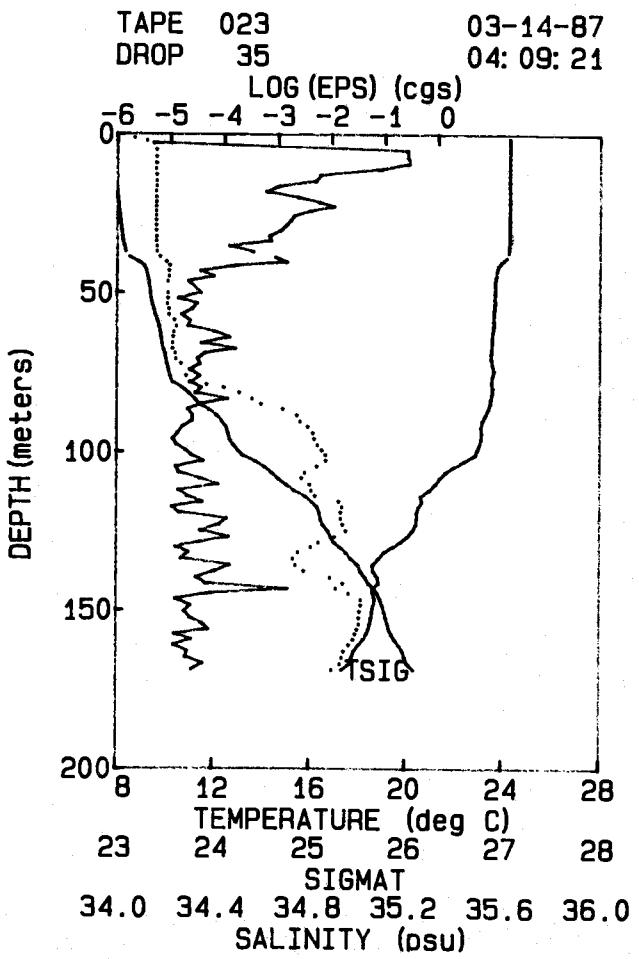
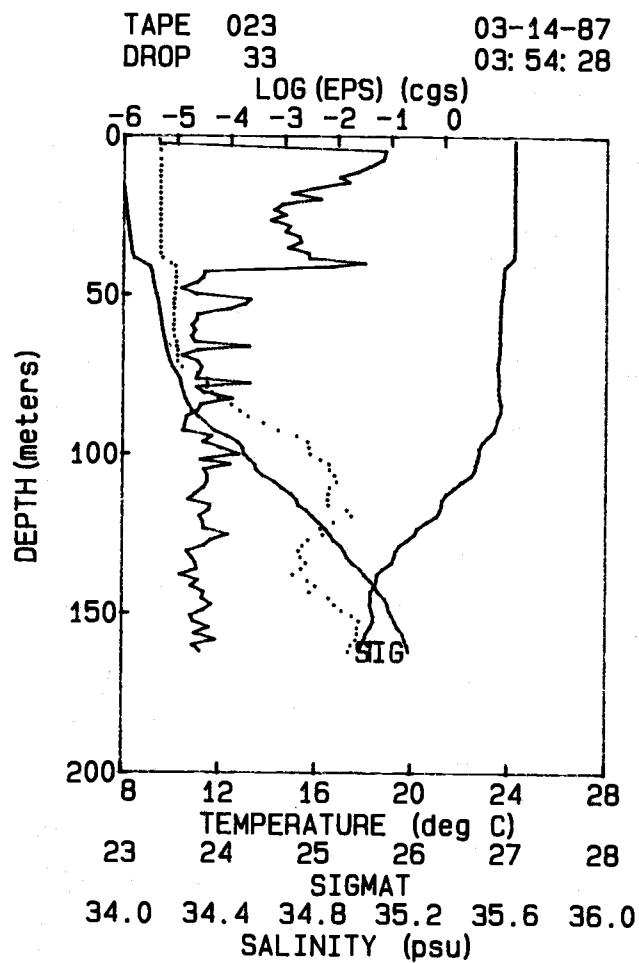


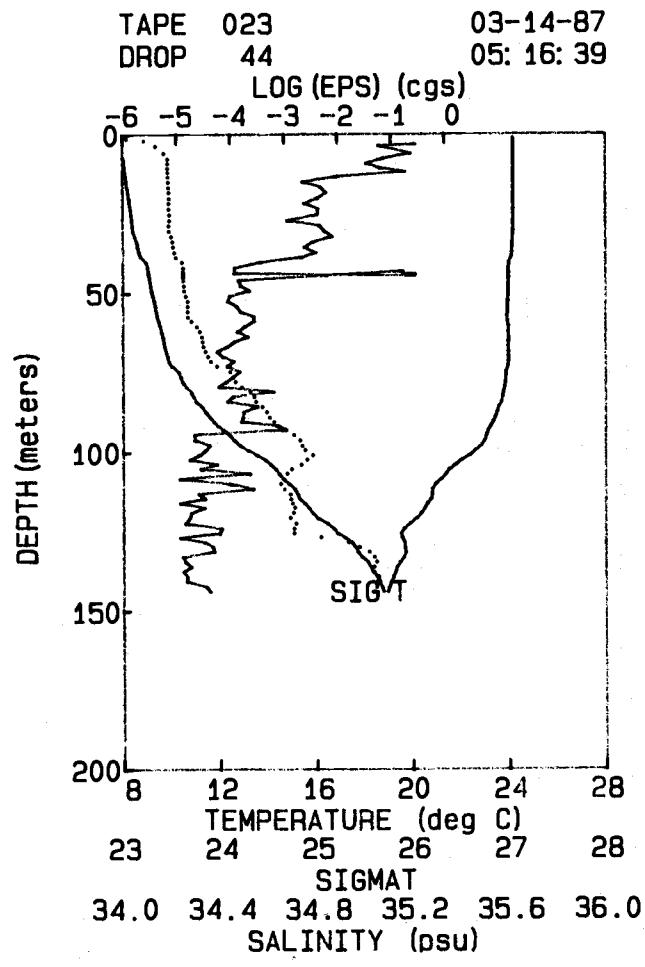
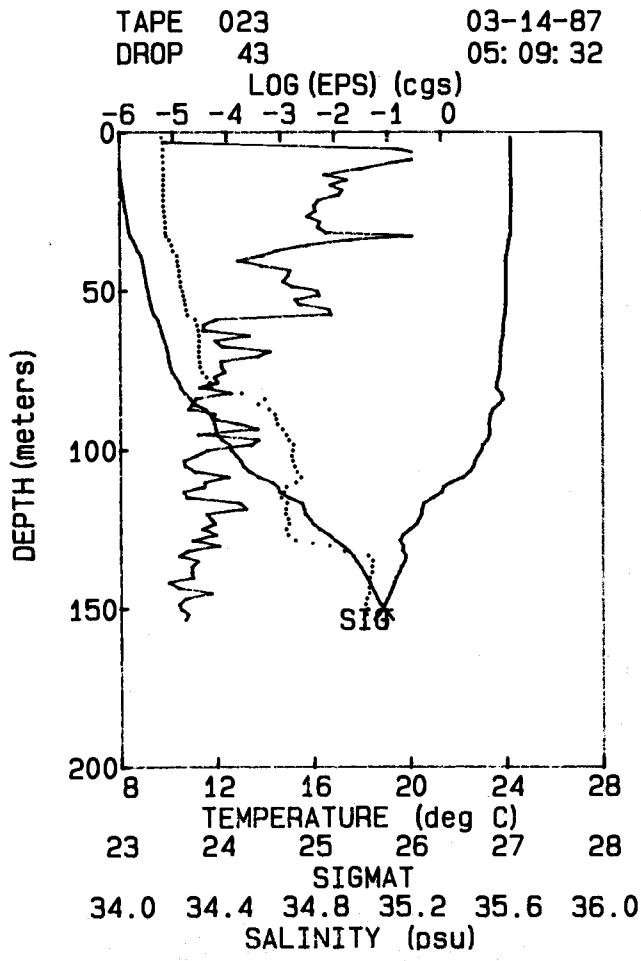
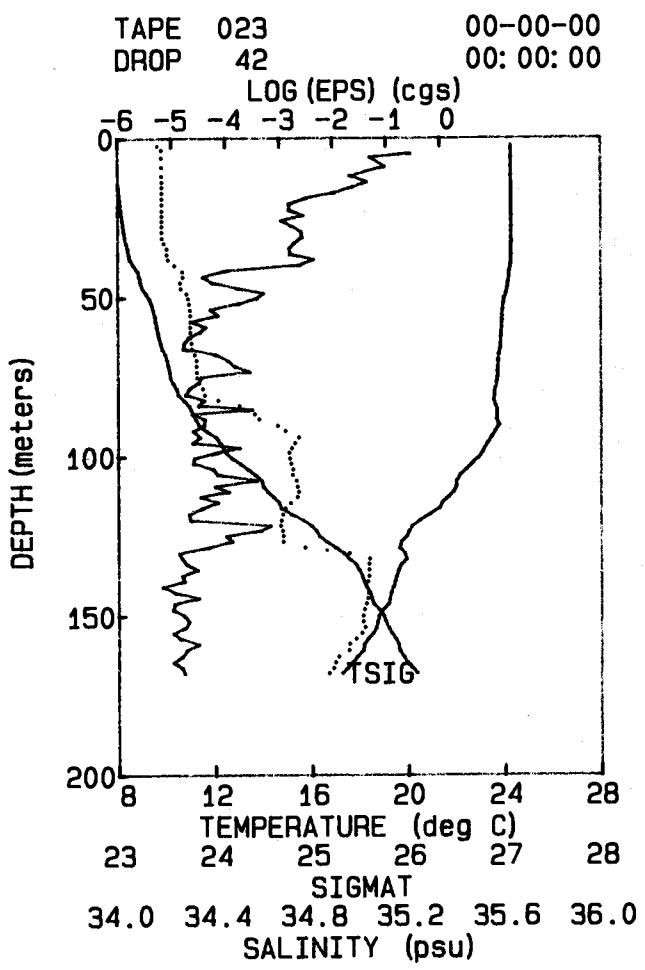
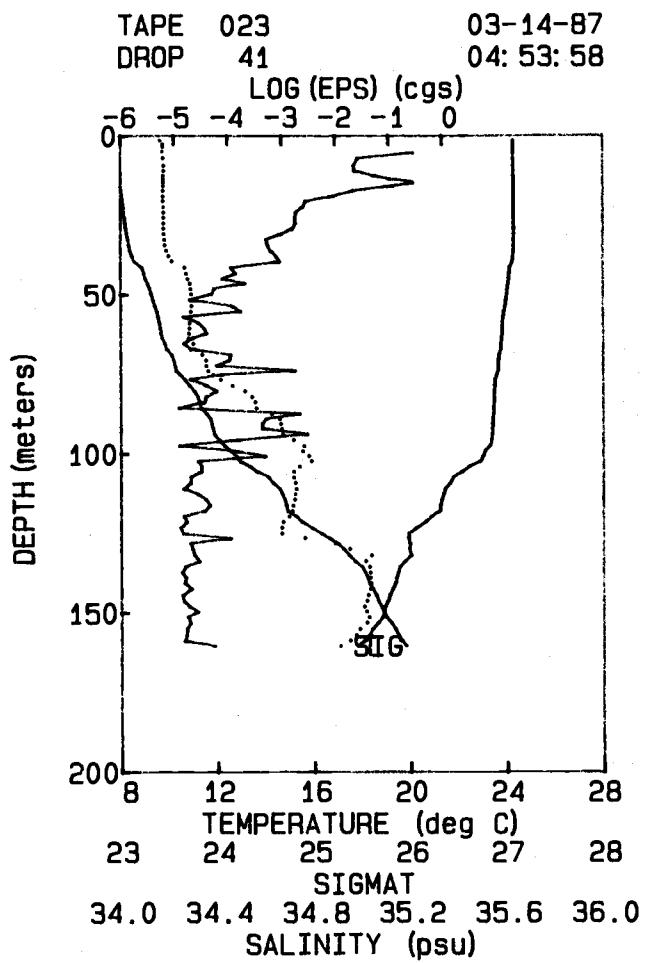
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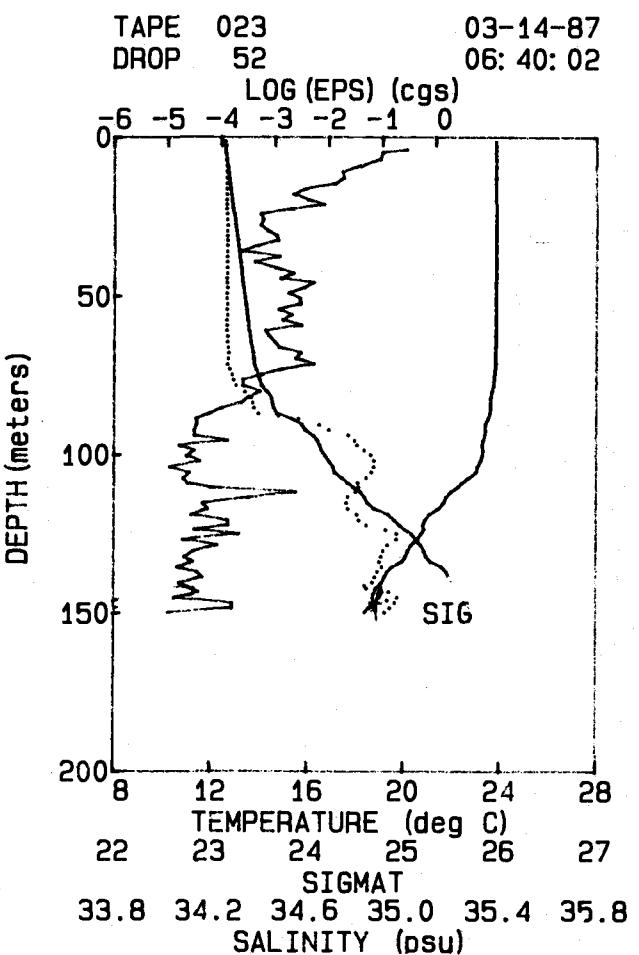
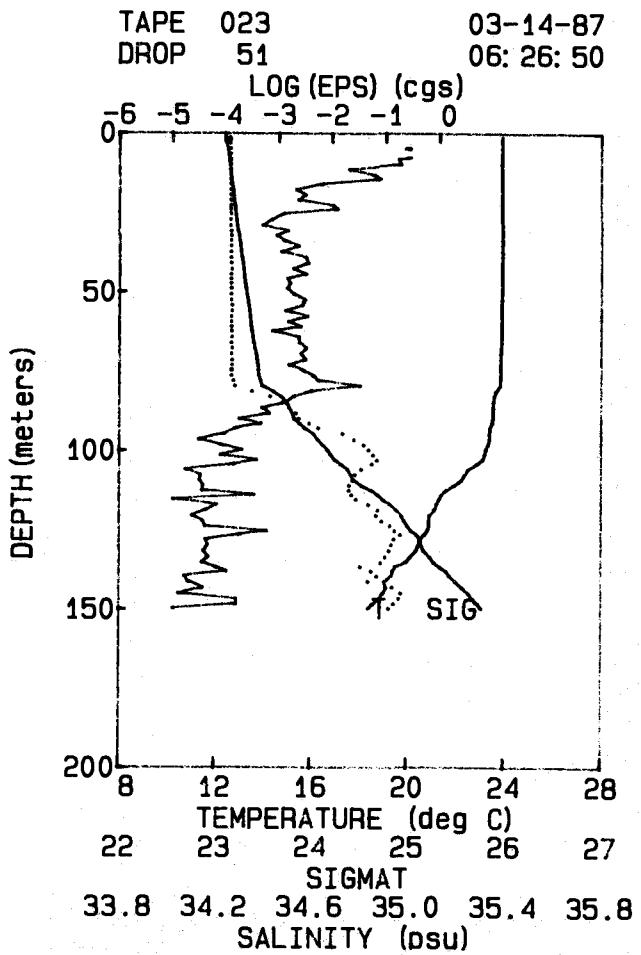
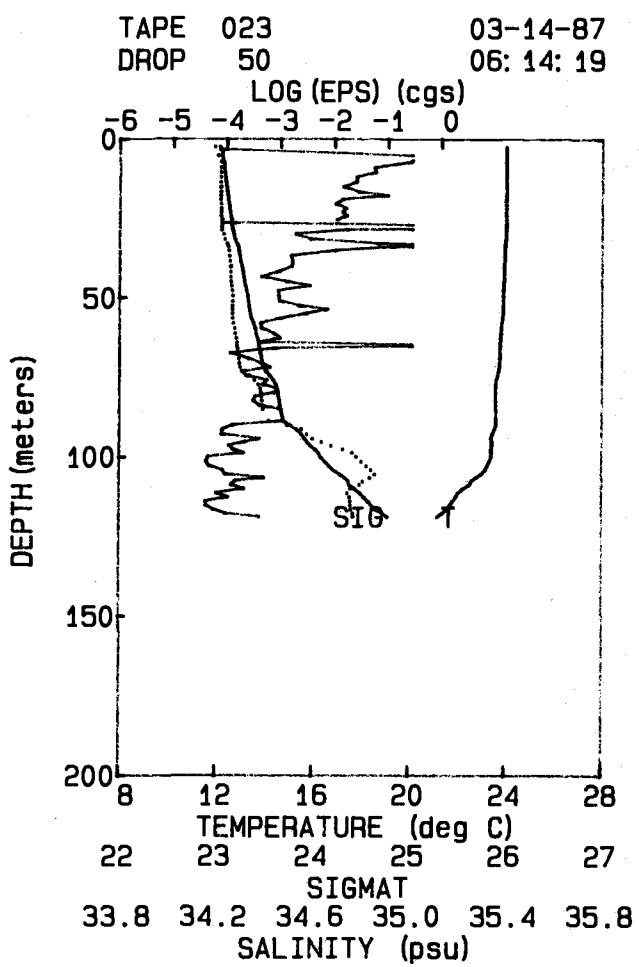
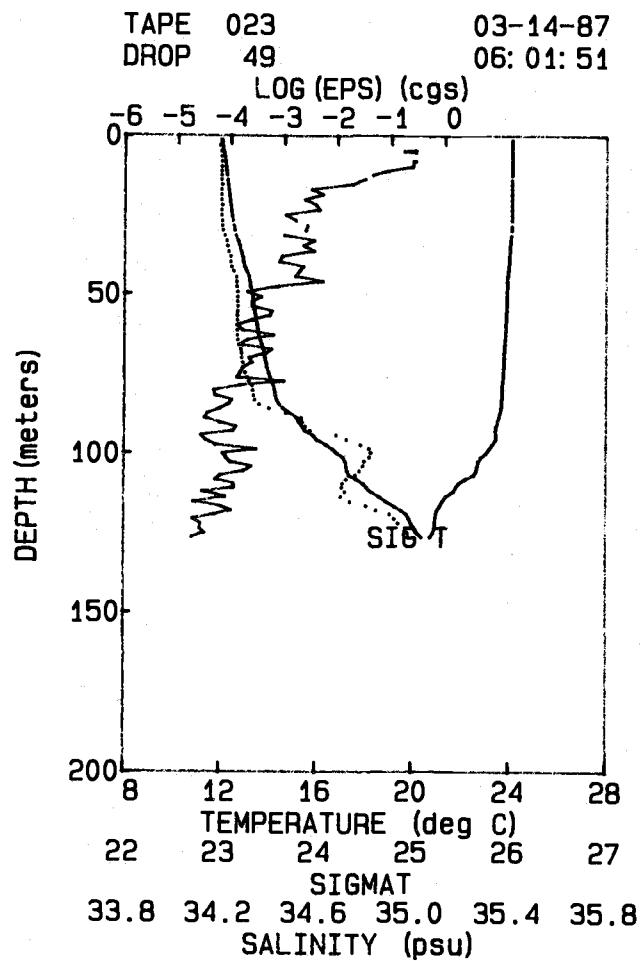


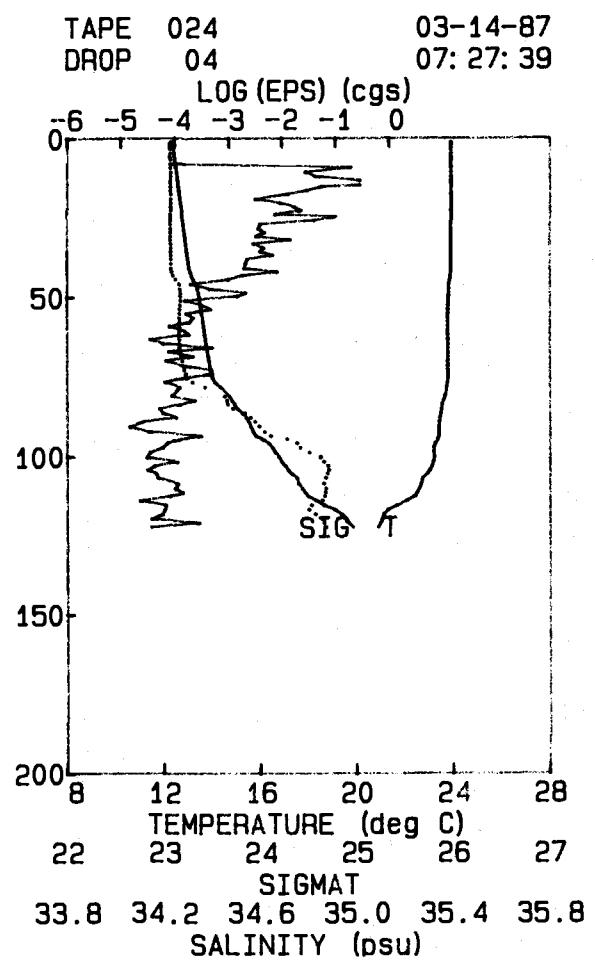
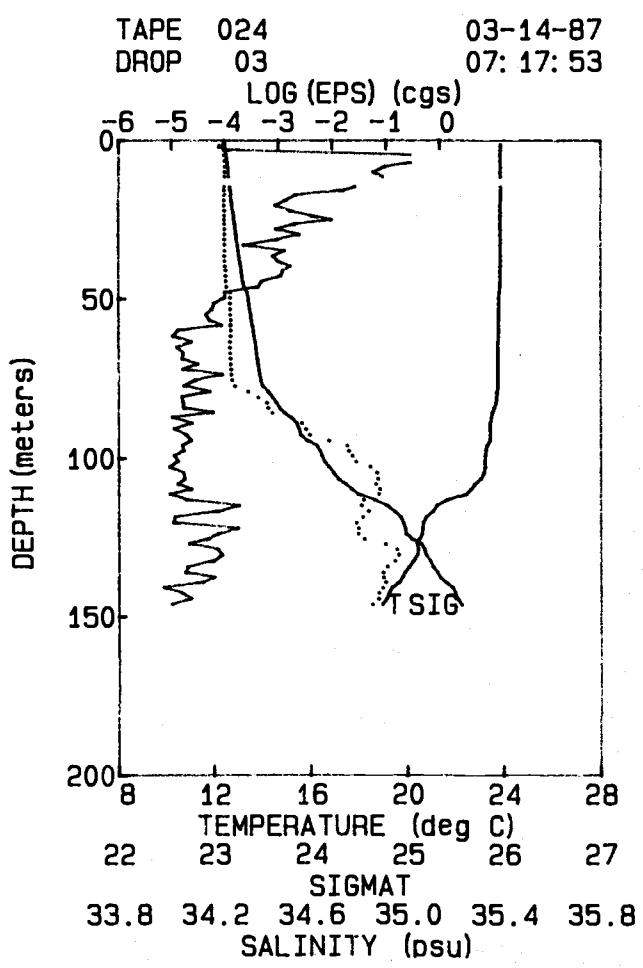
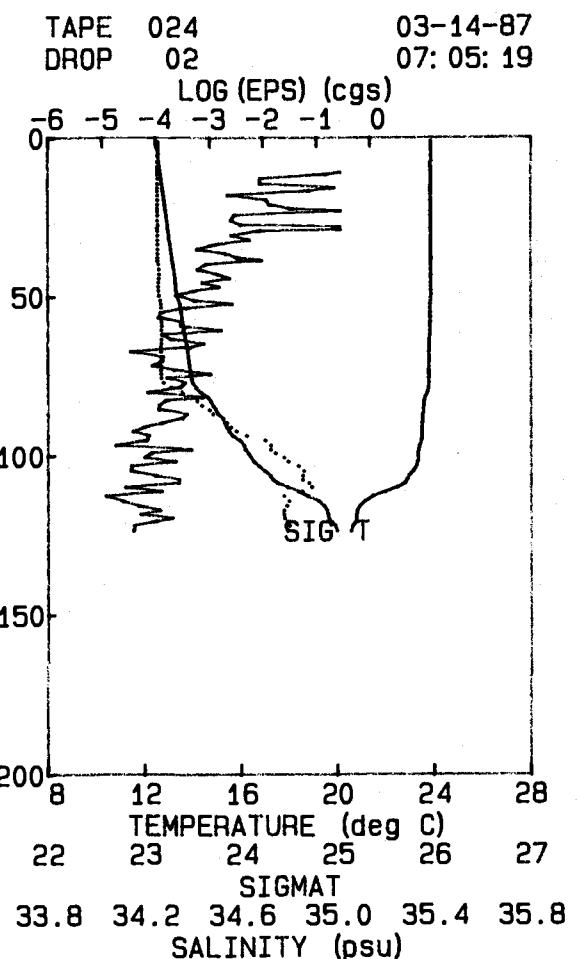


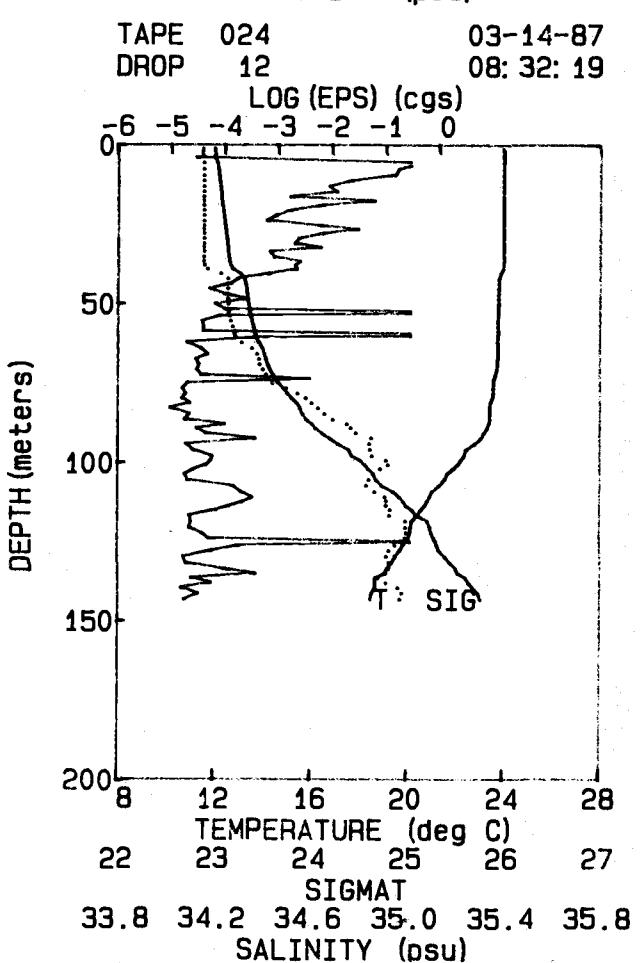
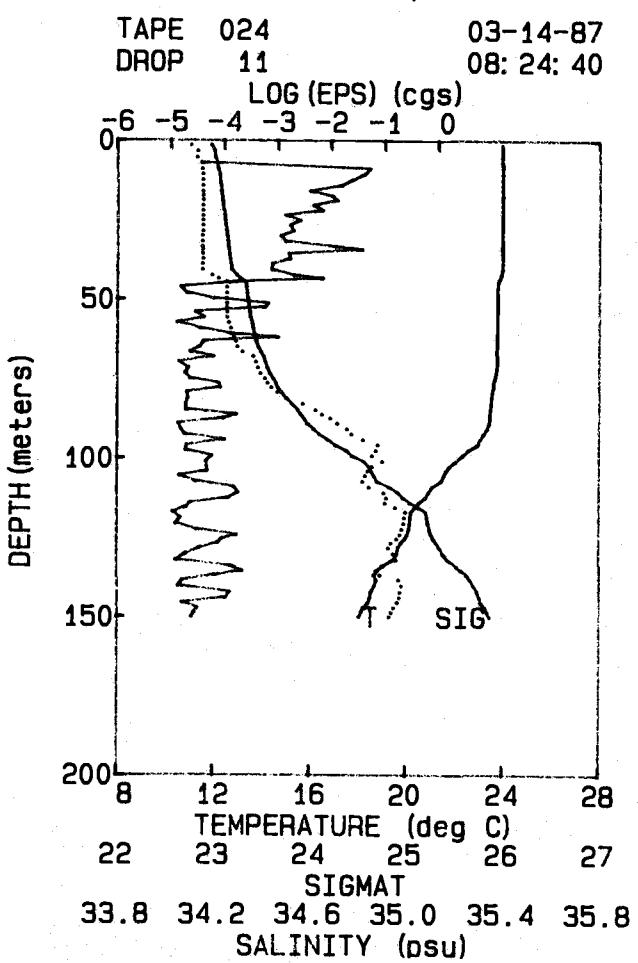
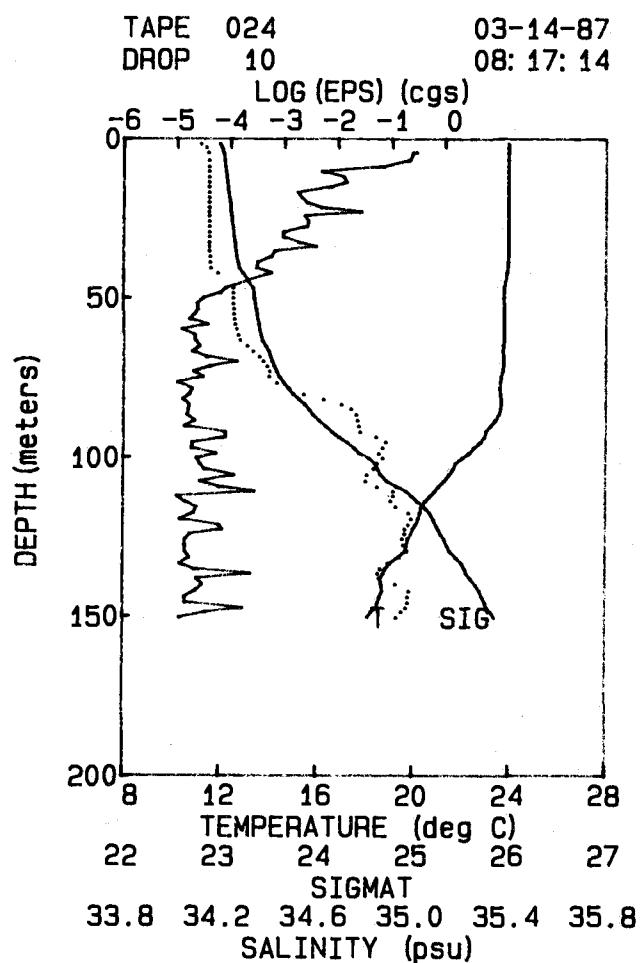
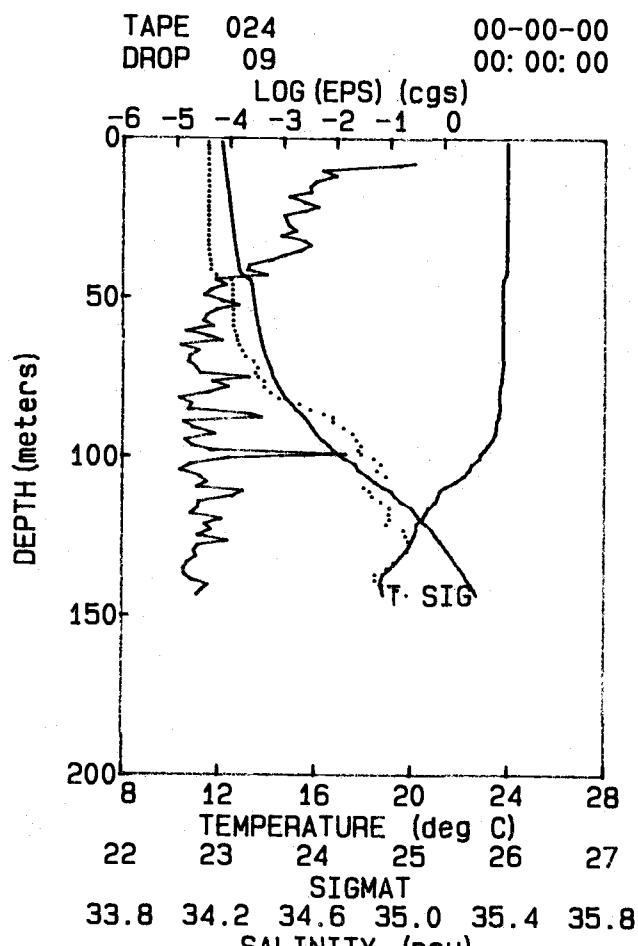




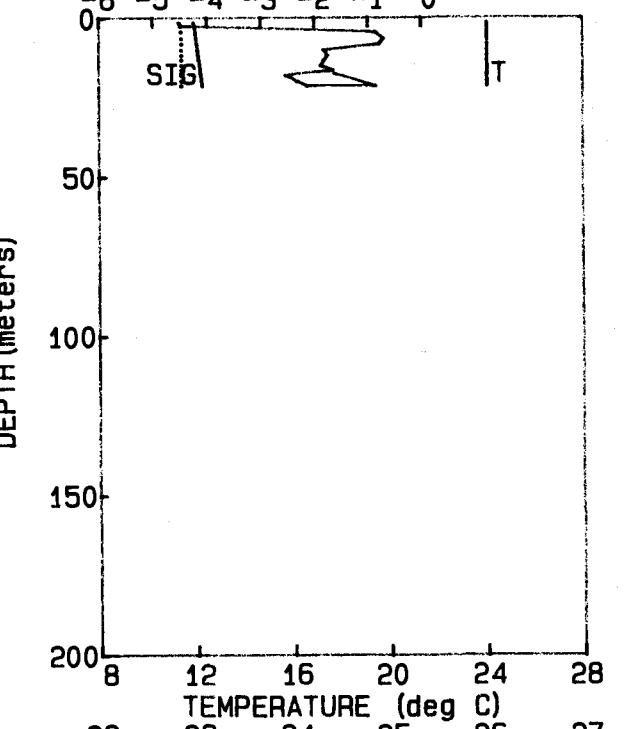




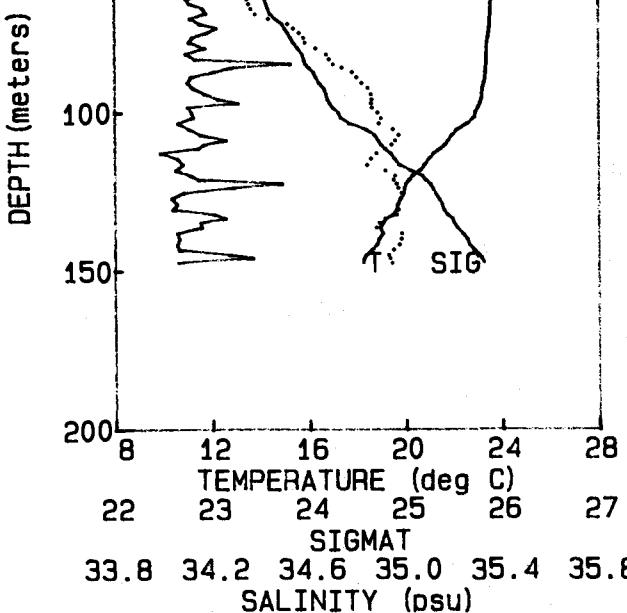




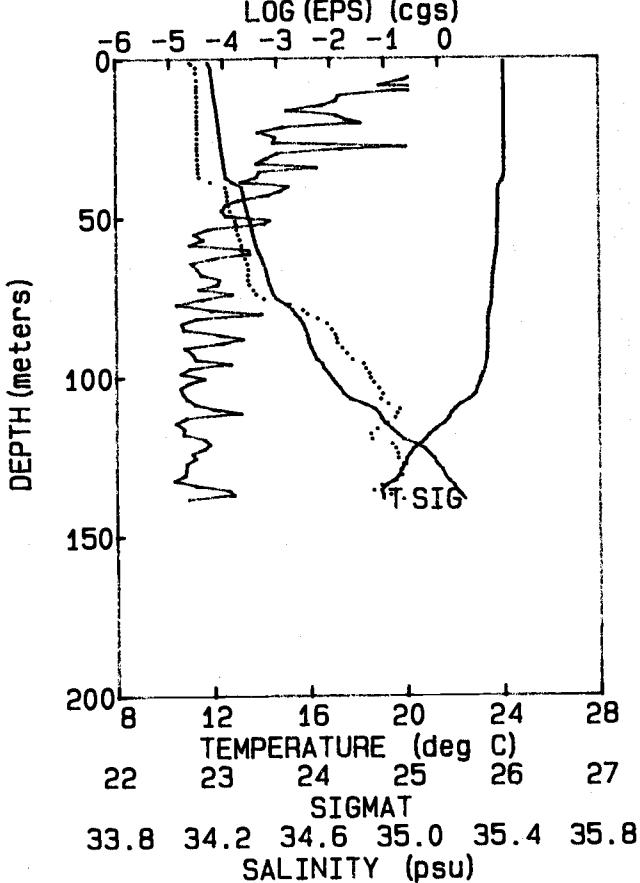
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 LOG (EPS) (cgs)



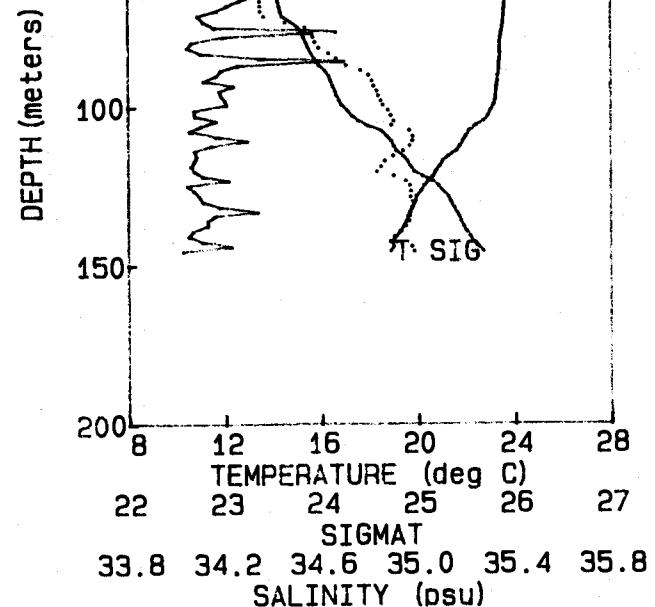
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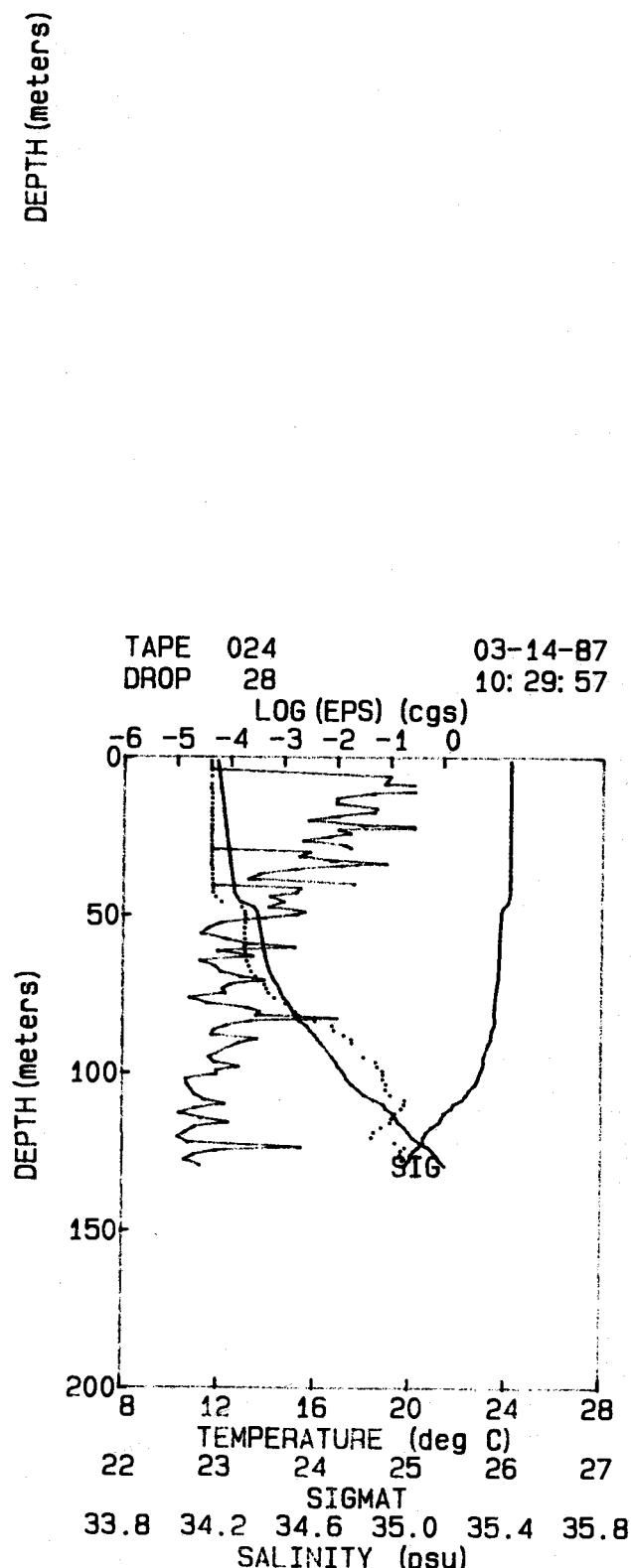
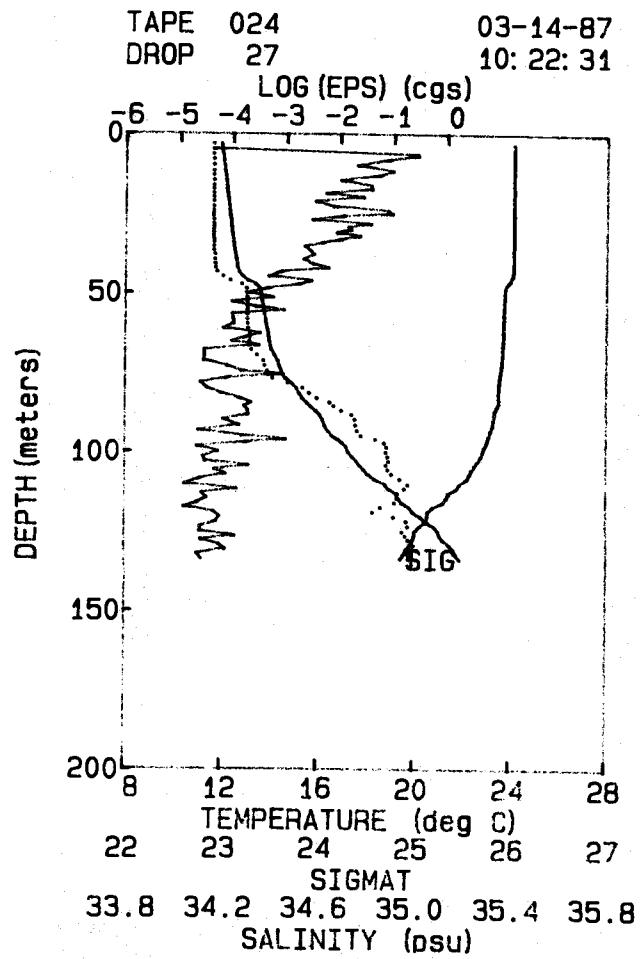
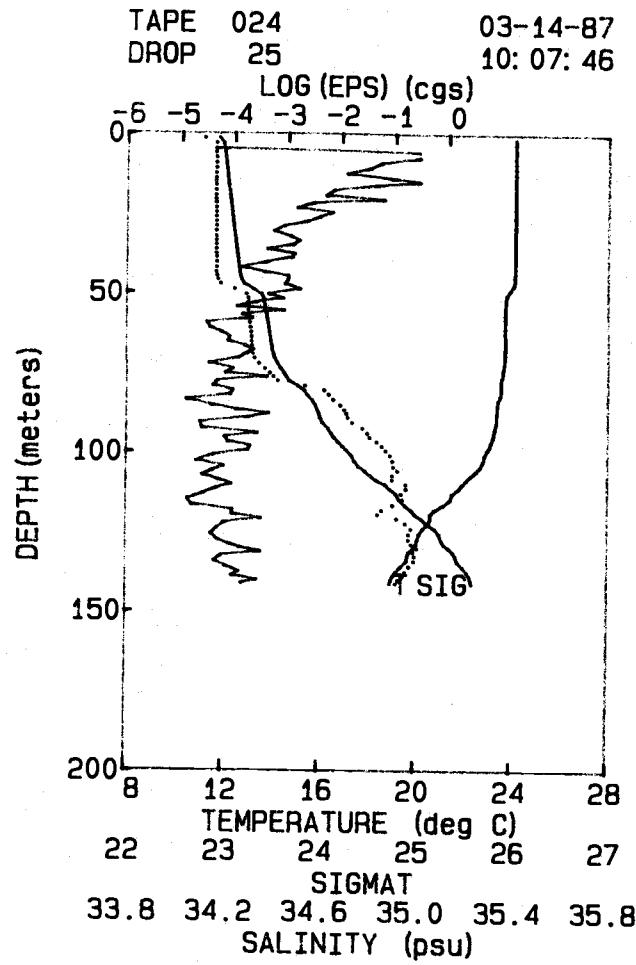


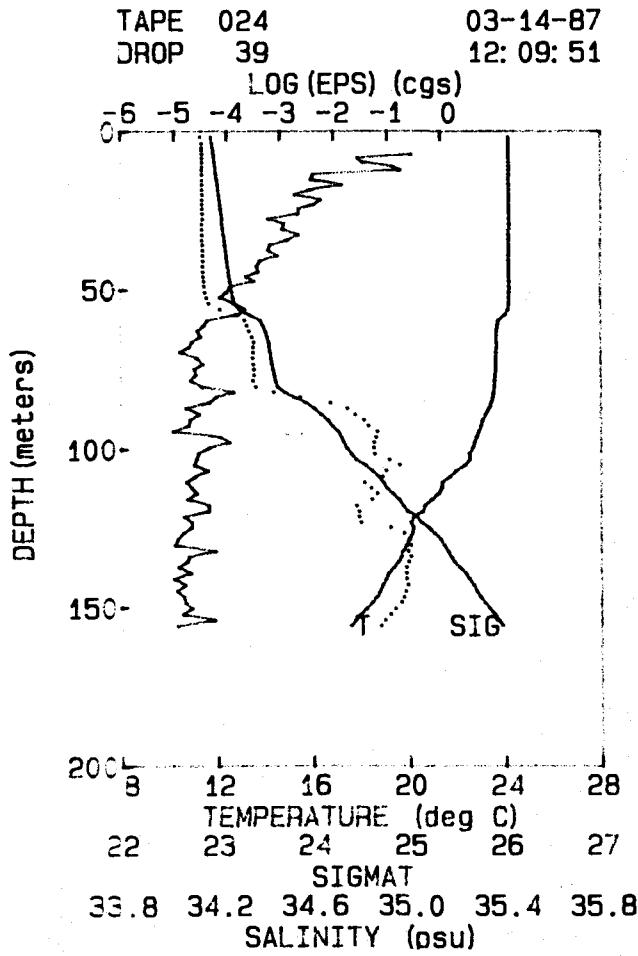
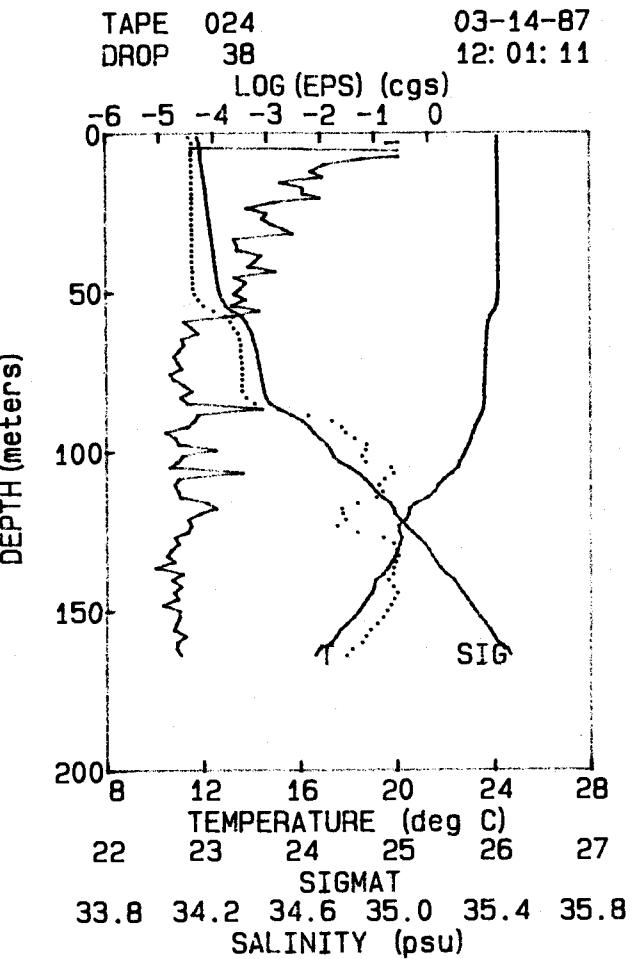
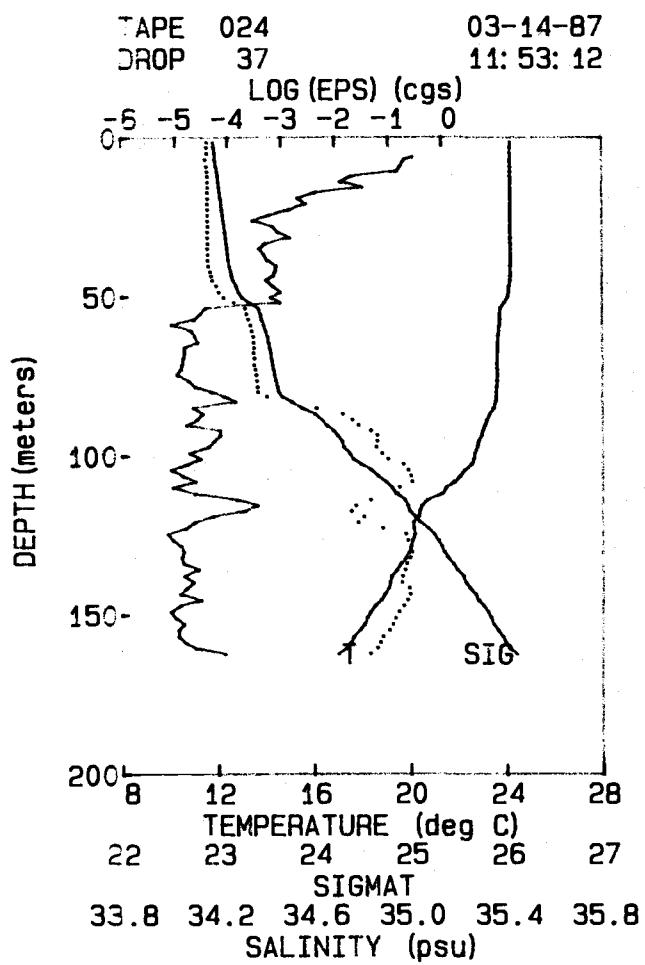
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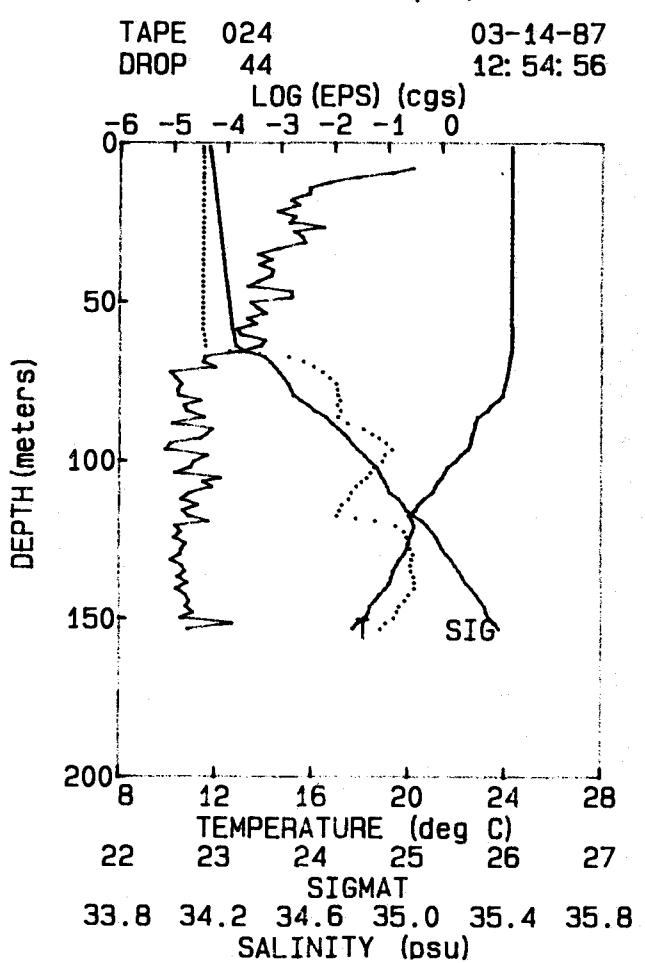
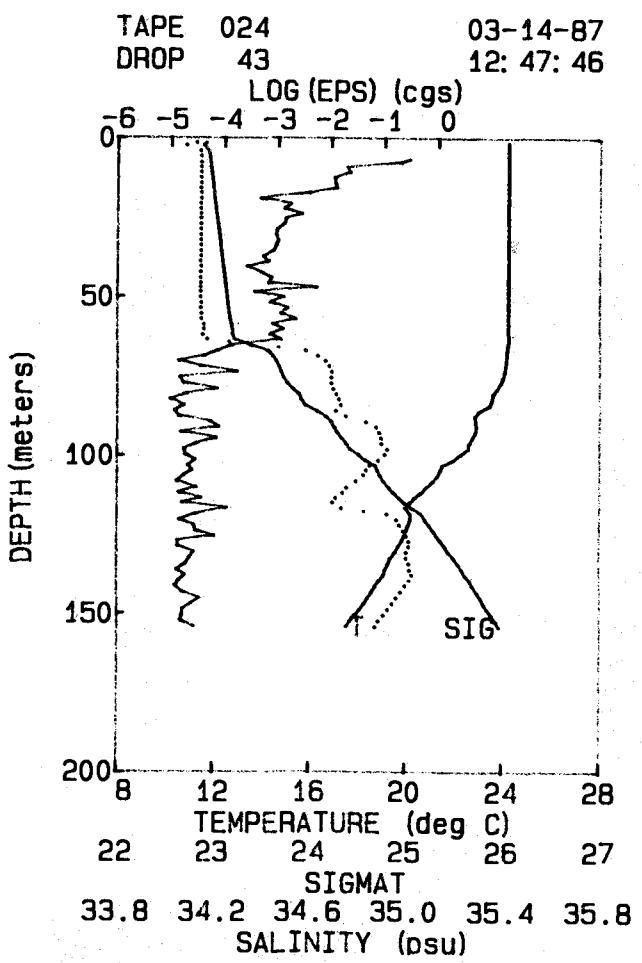
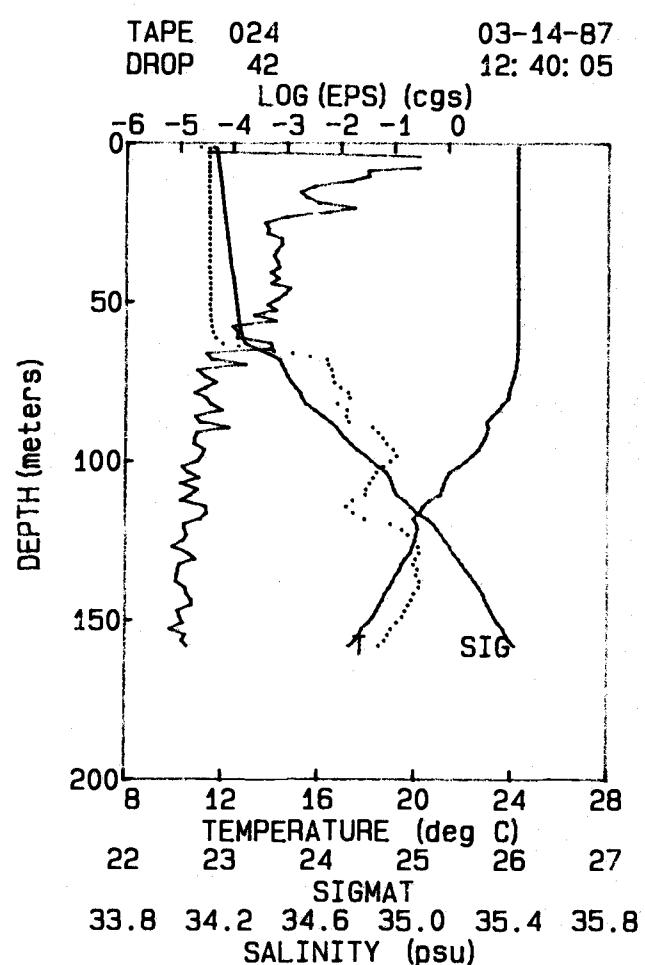
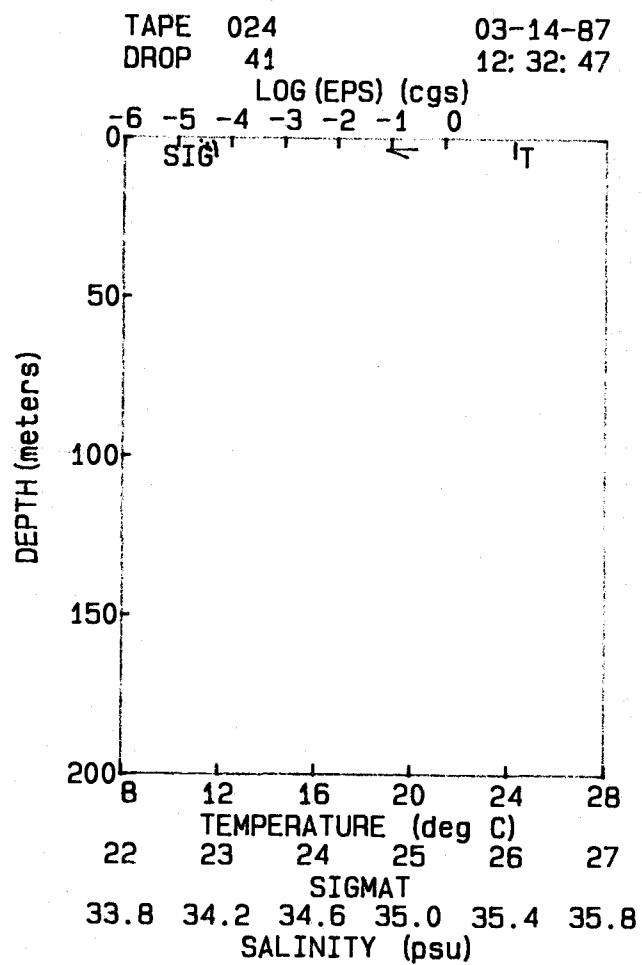


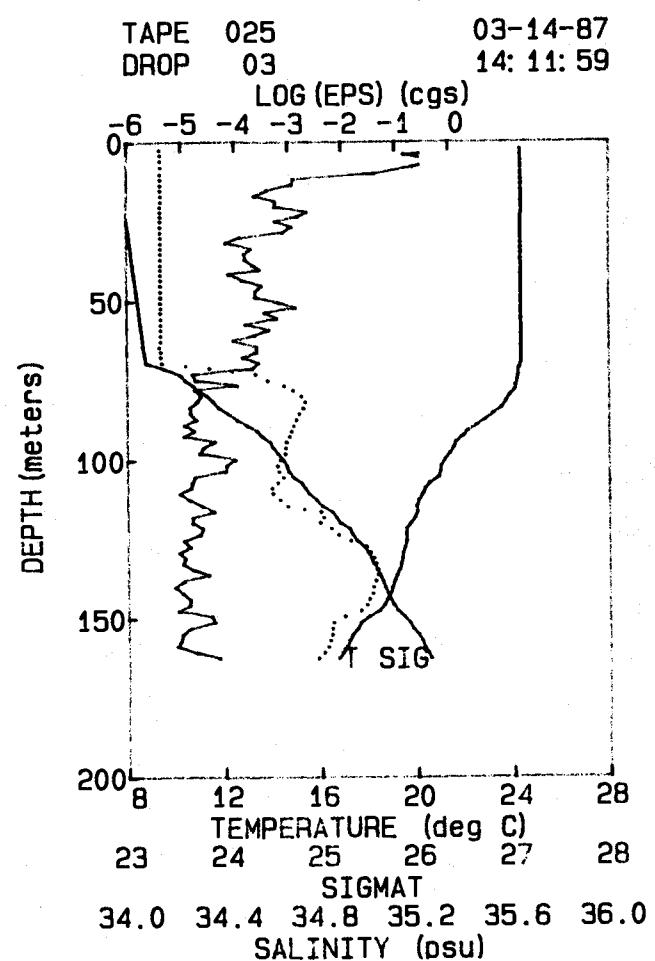
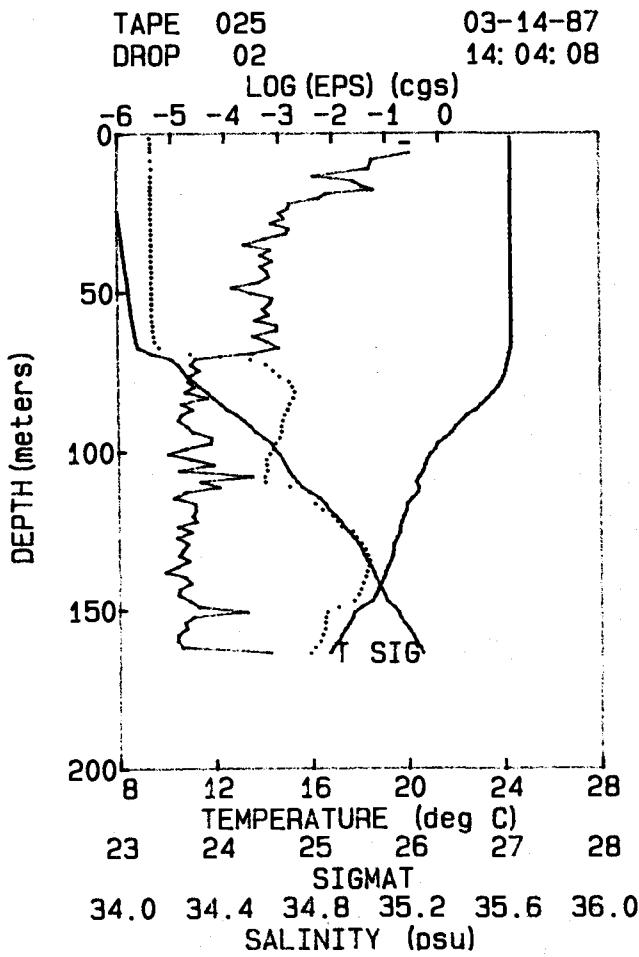
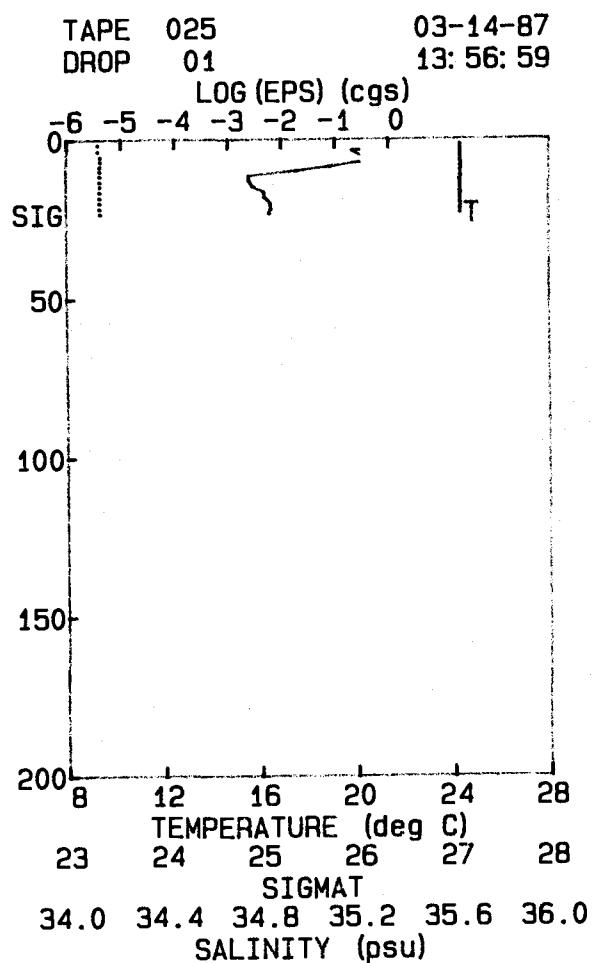
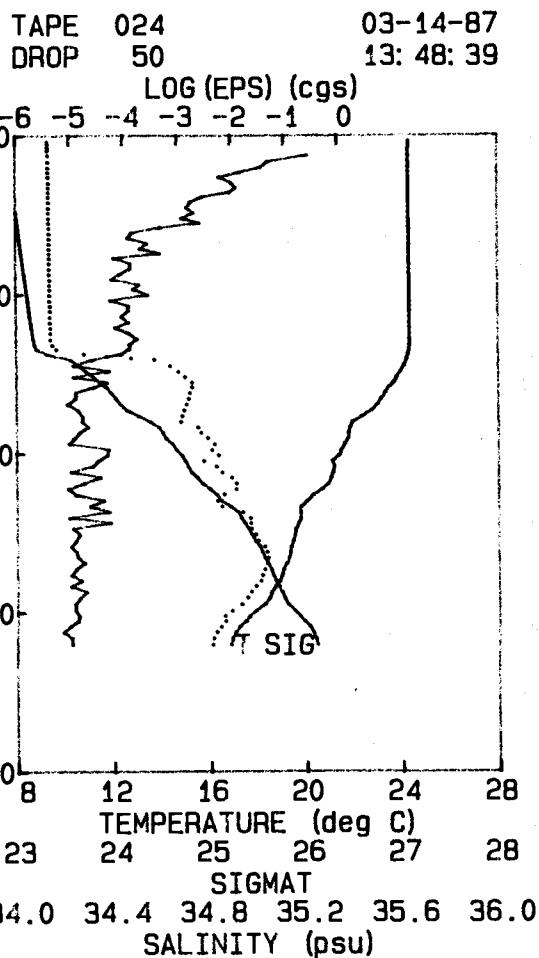
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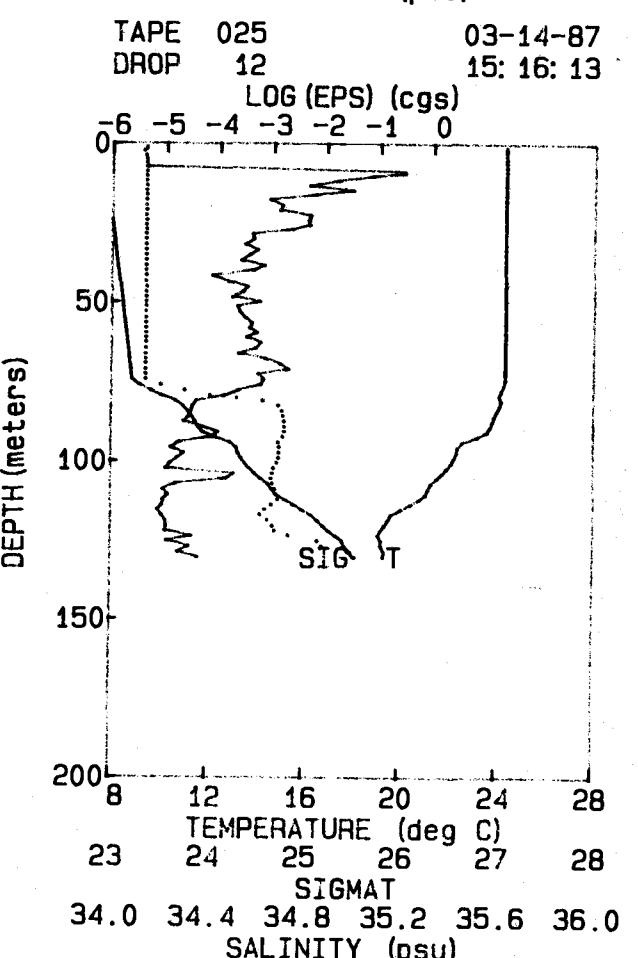
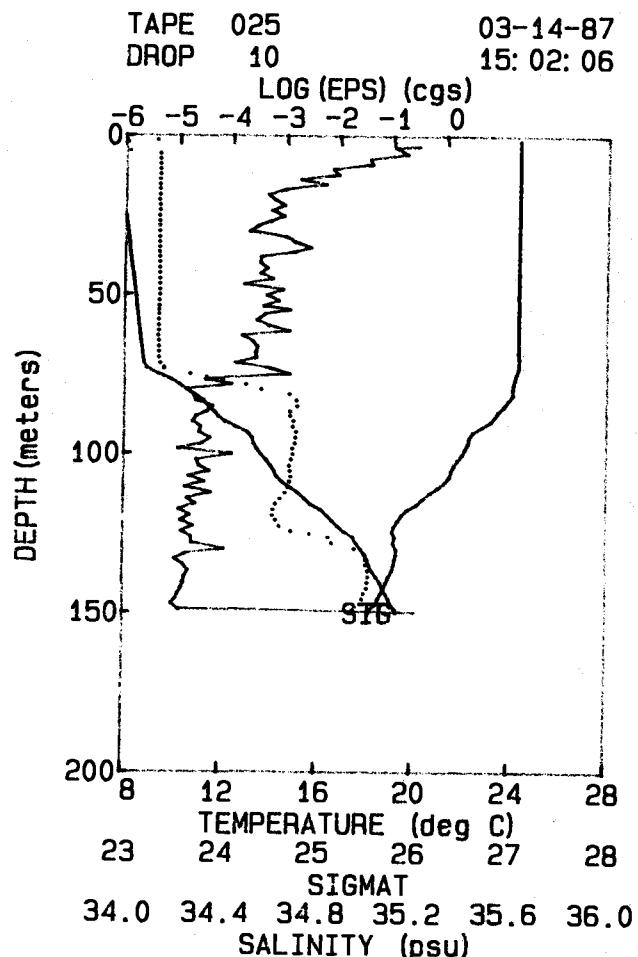
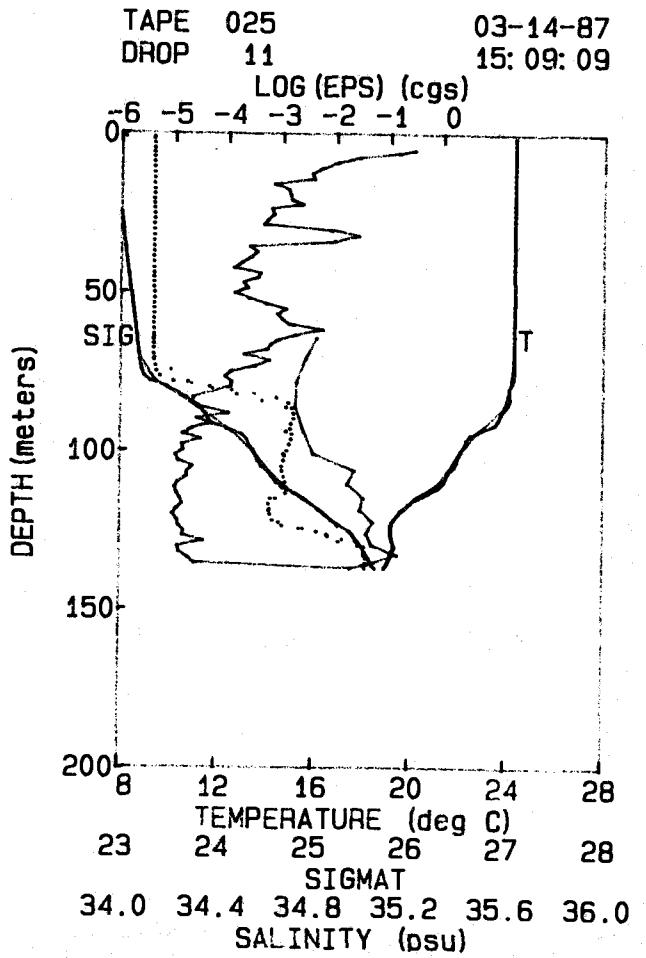
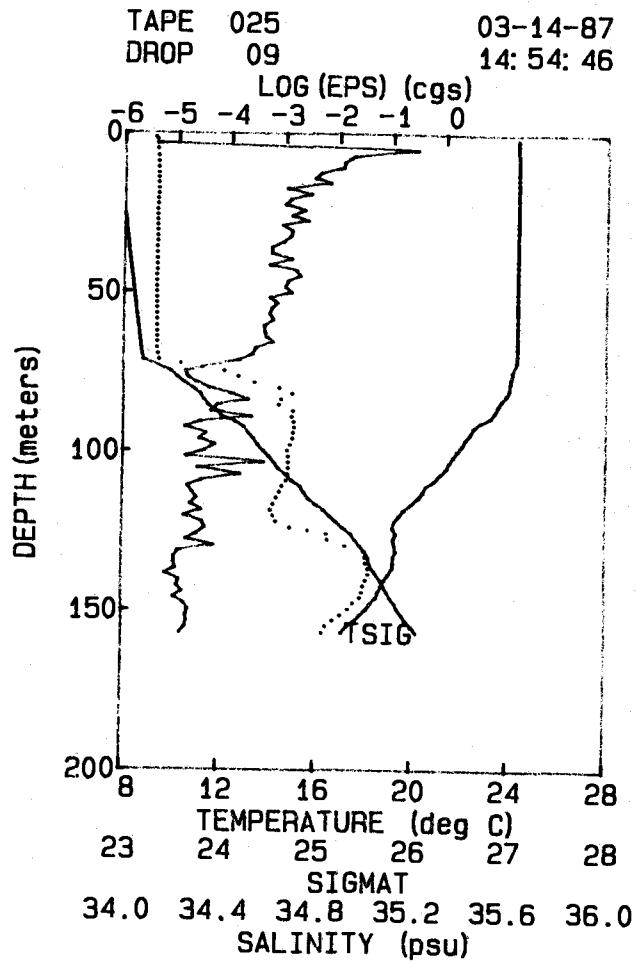


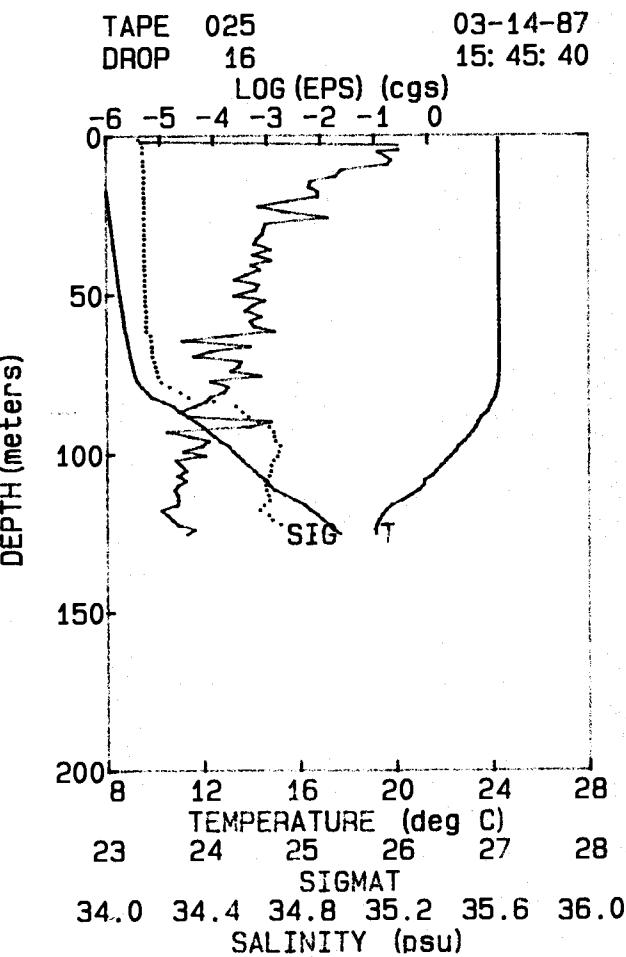
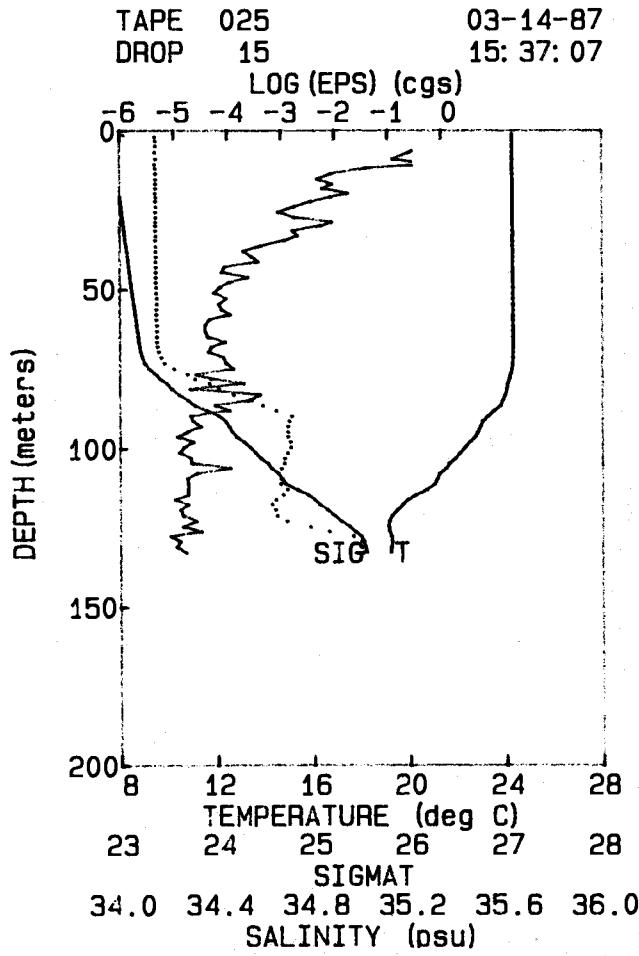
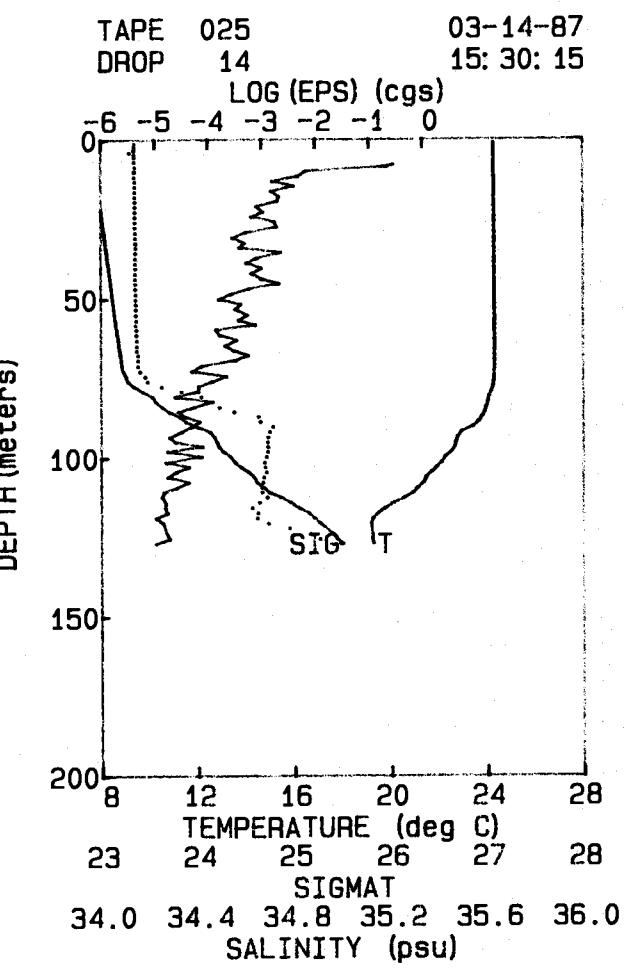
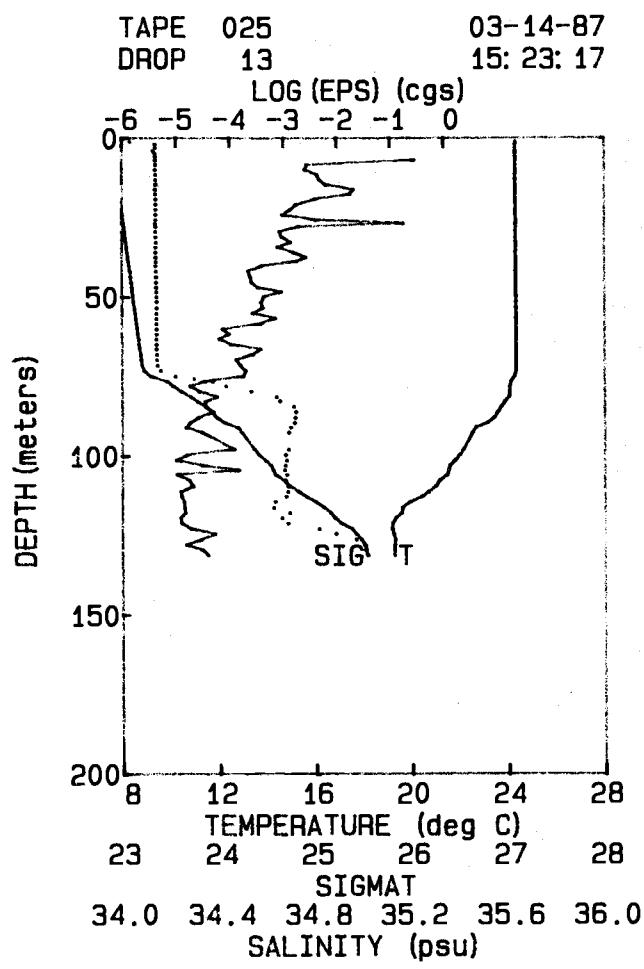


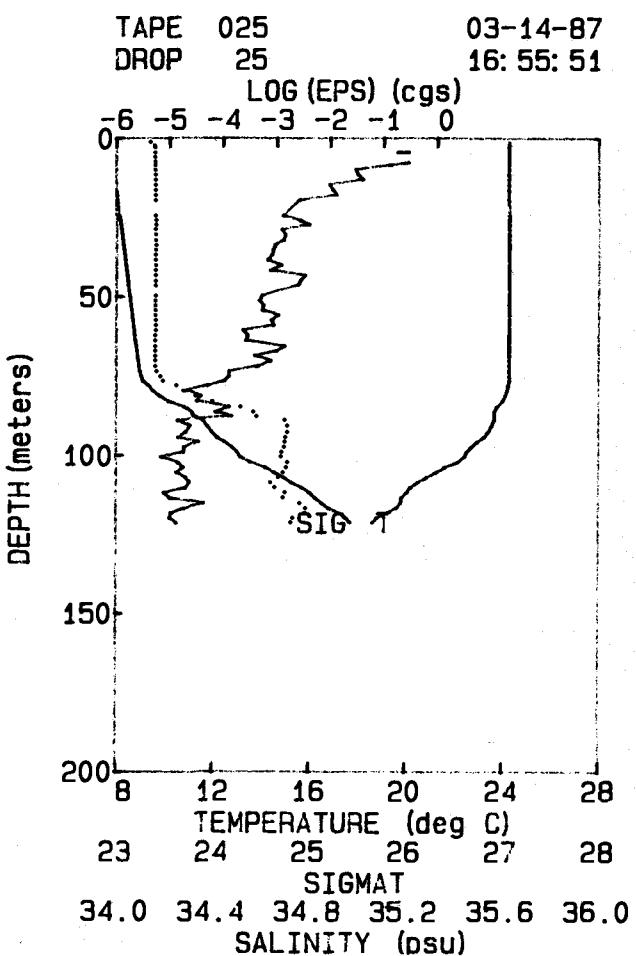
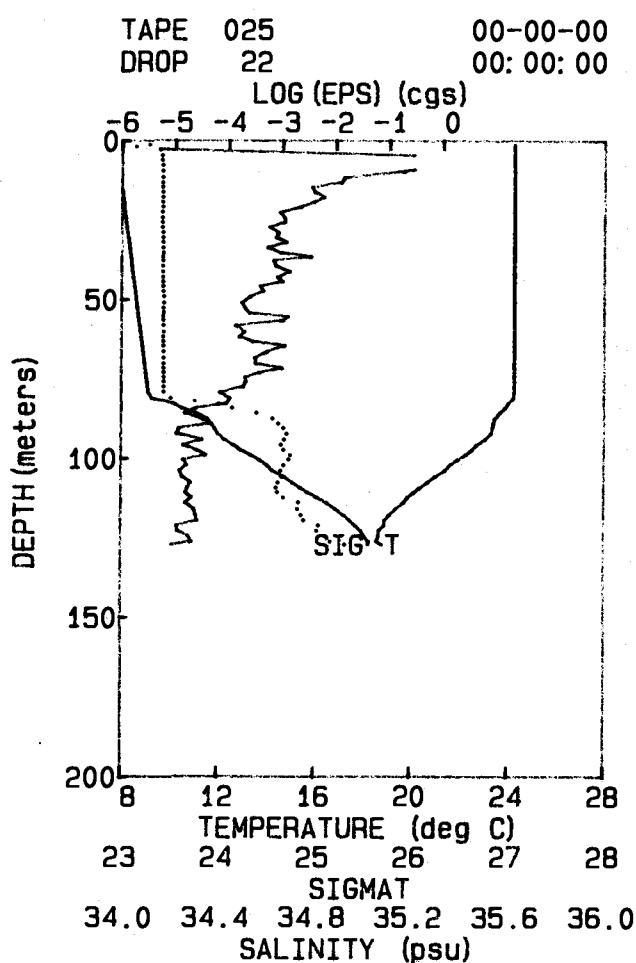
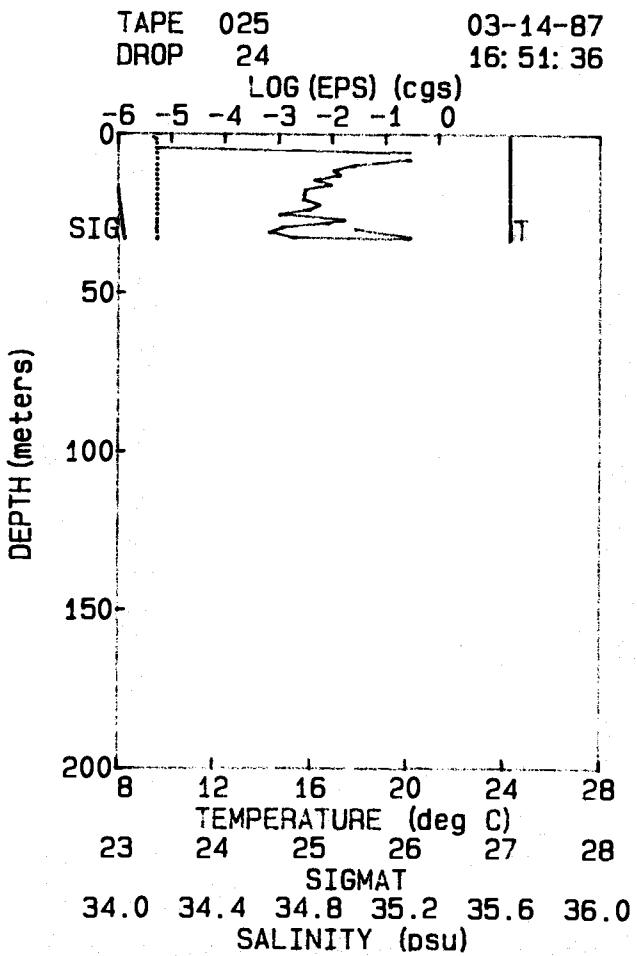
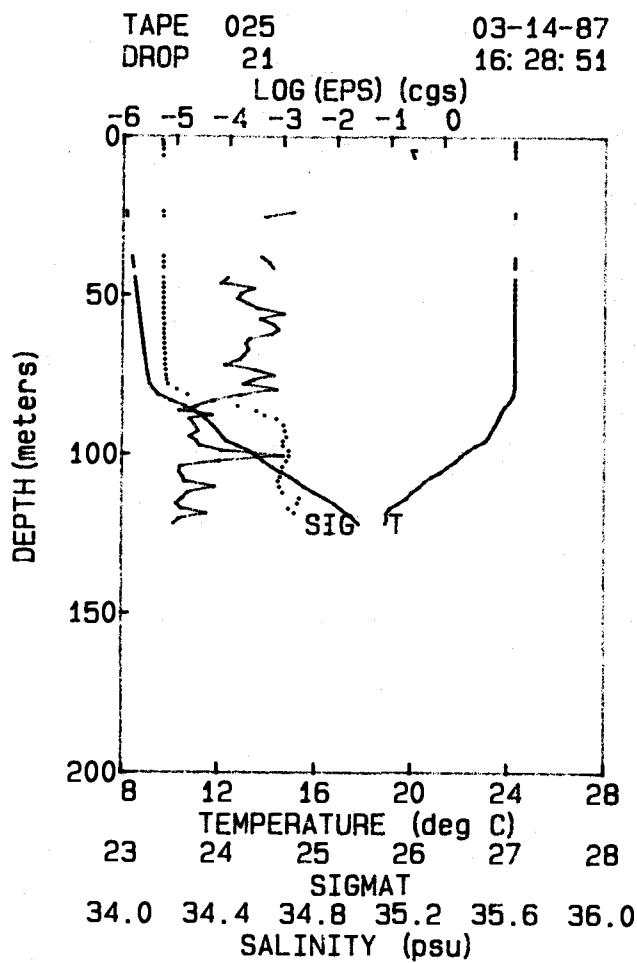


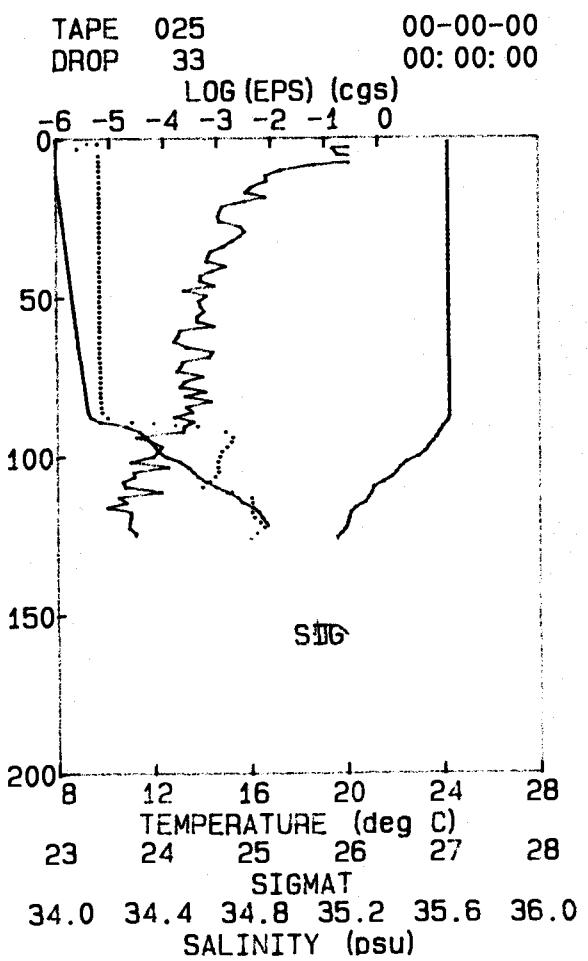
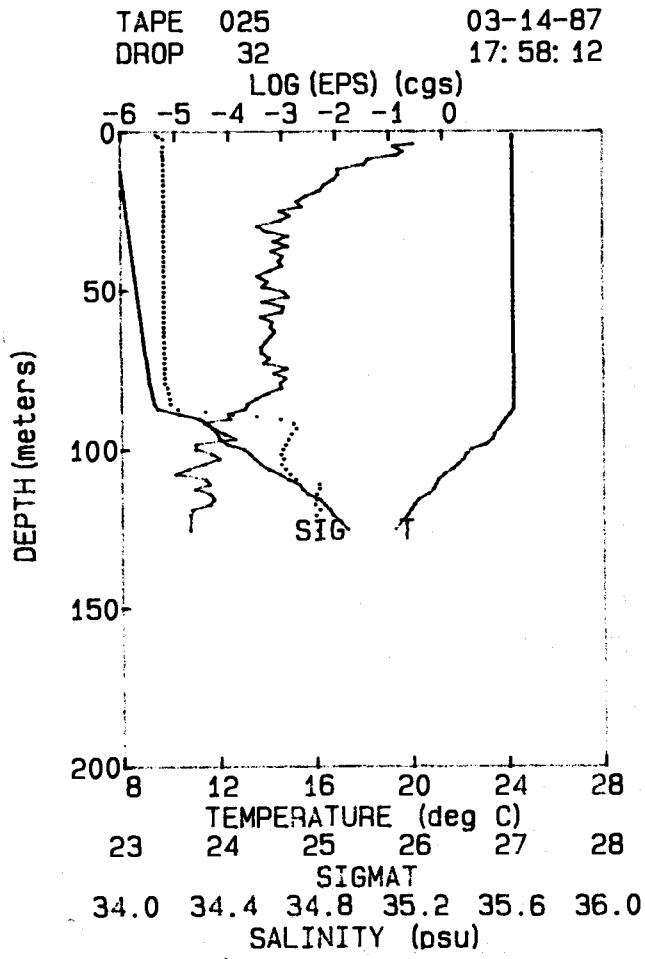
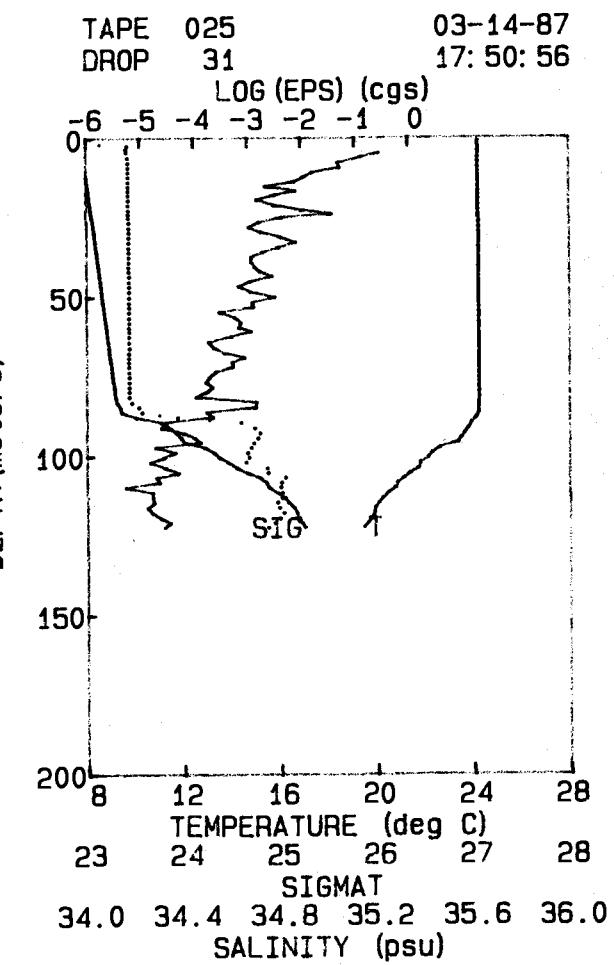
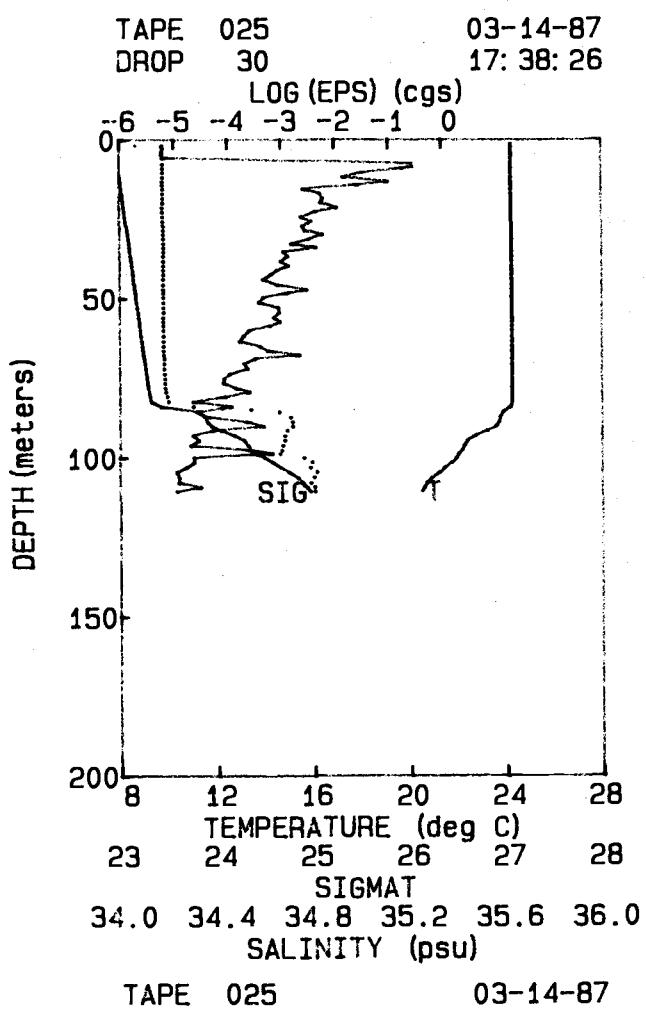


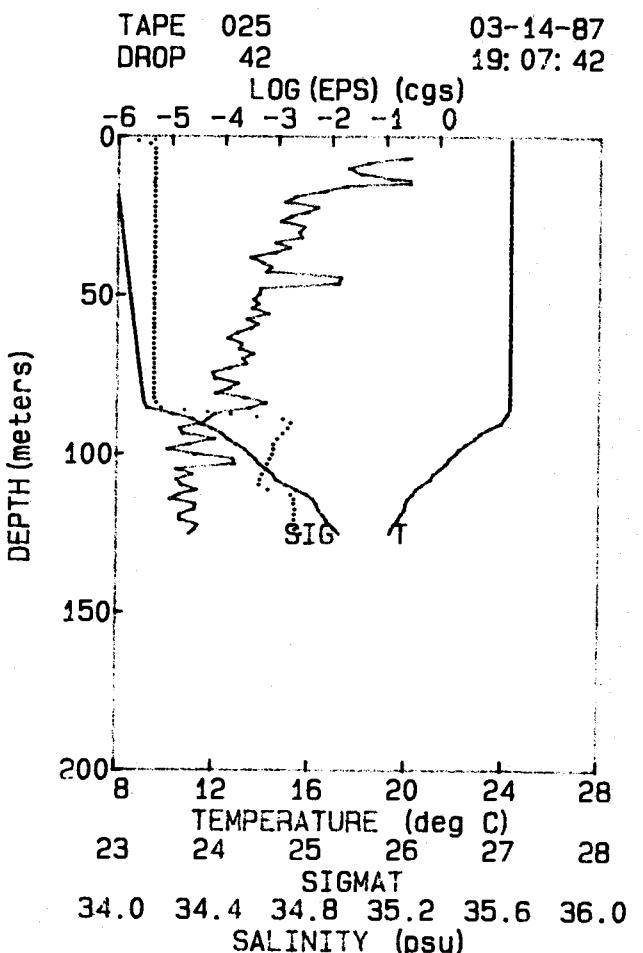
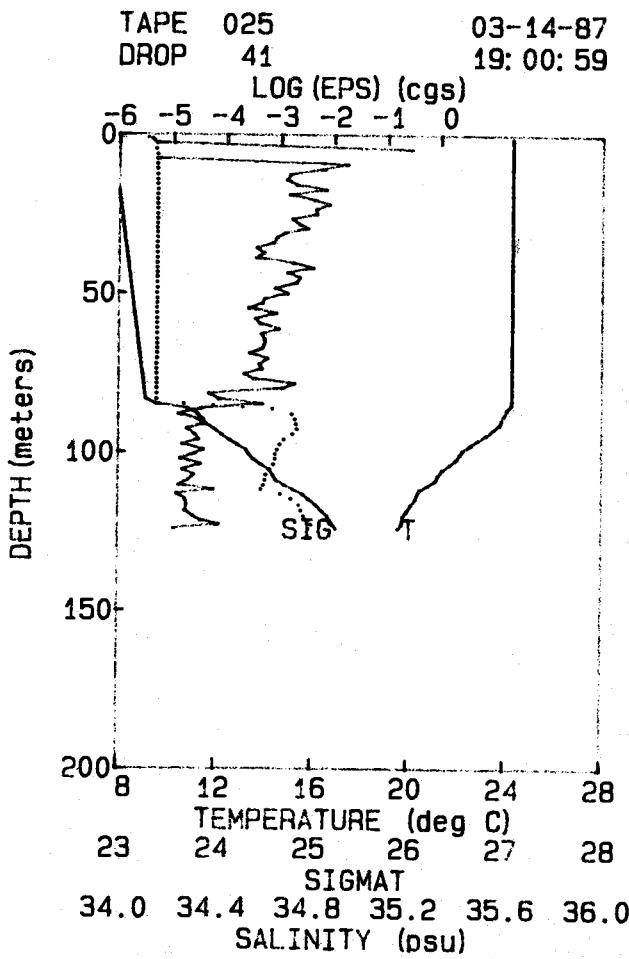
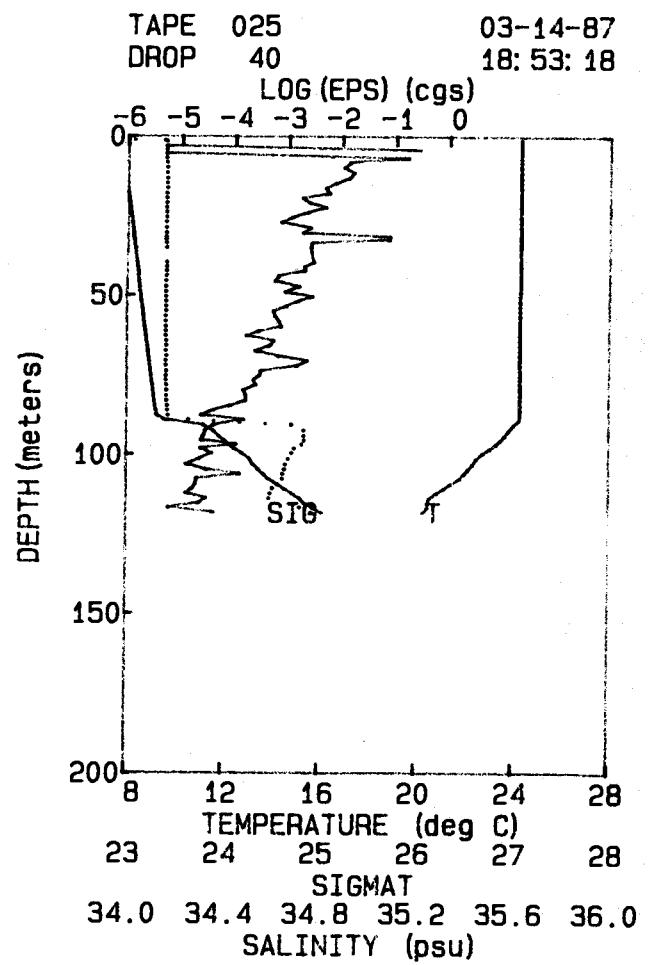
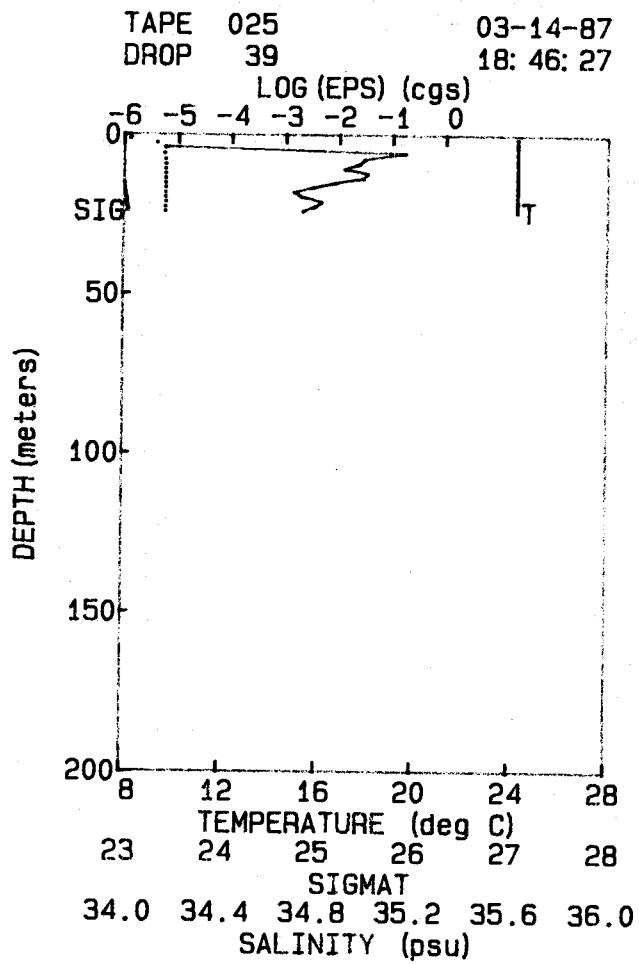


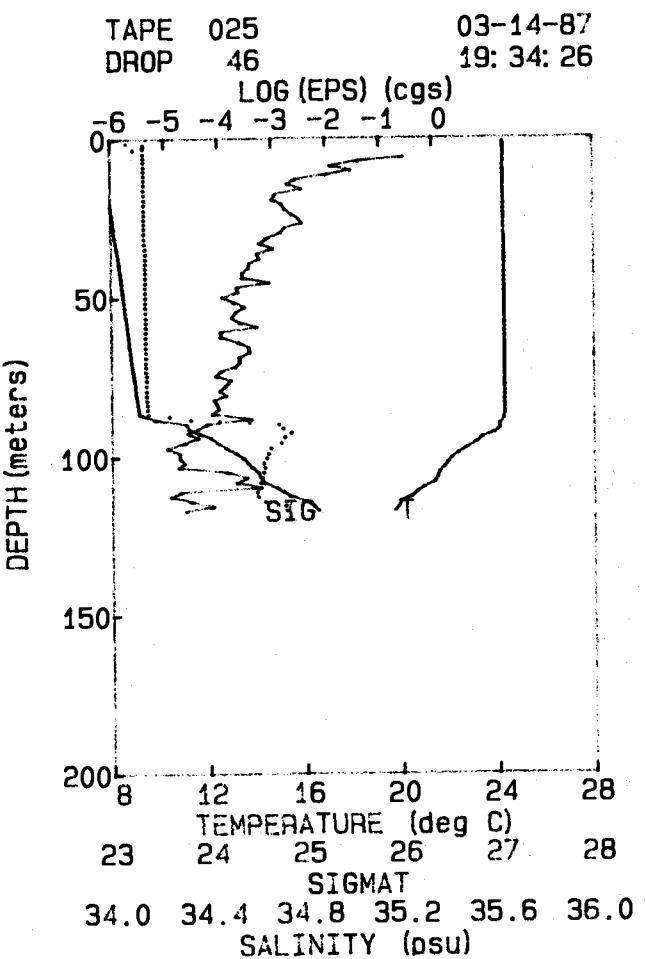
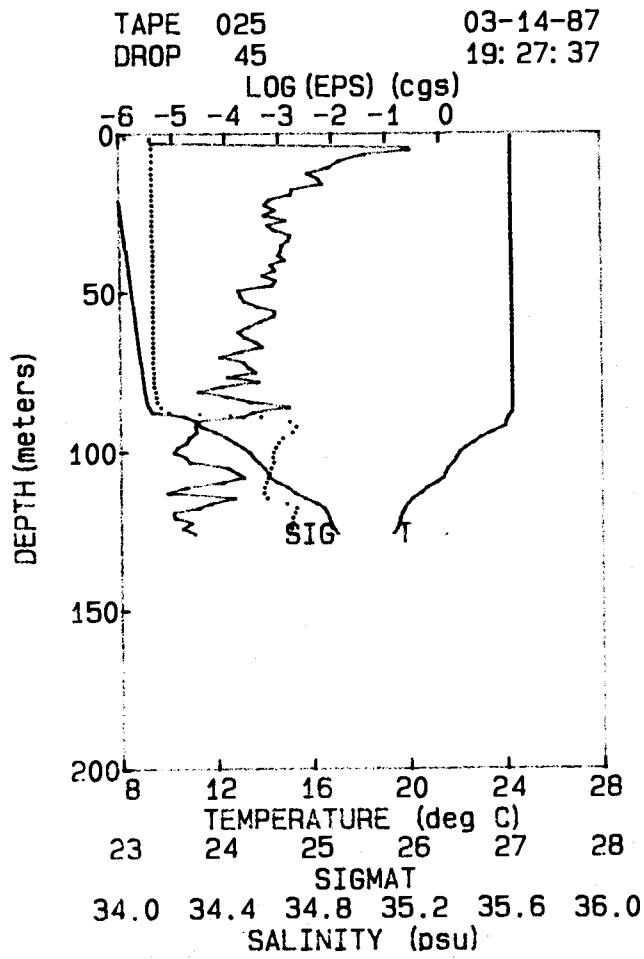
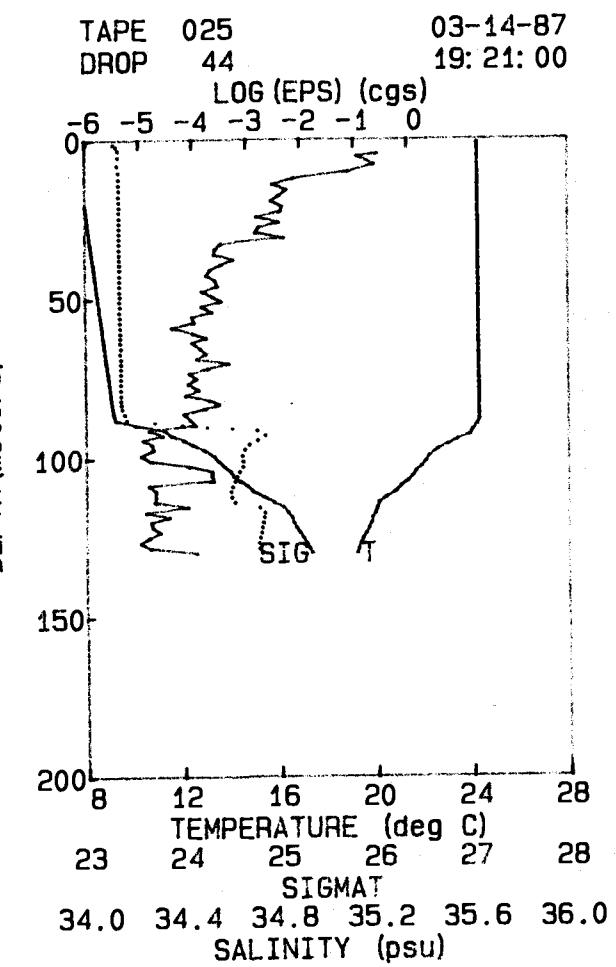
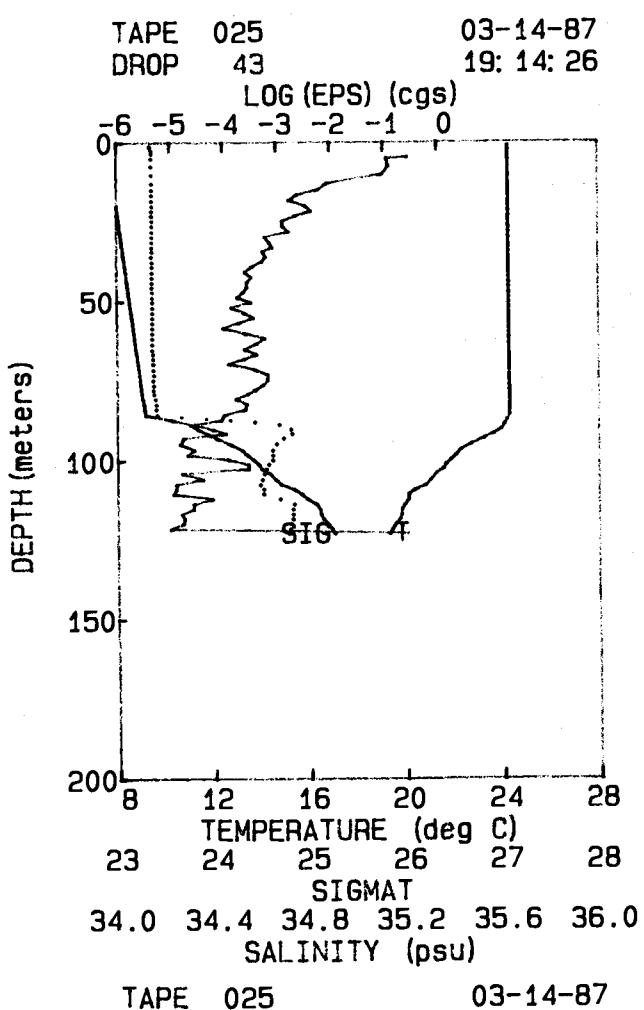


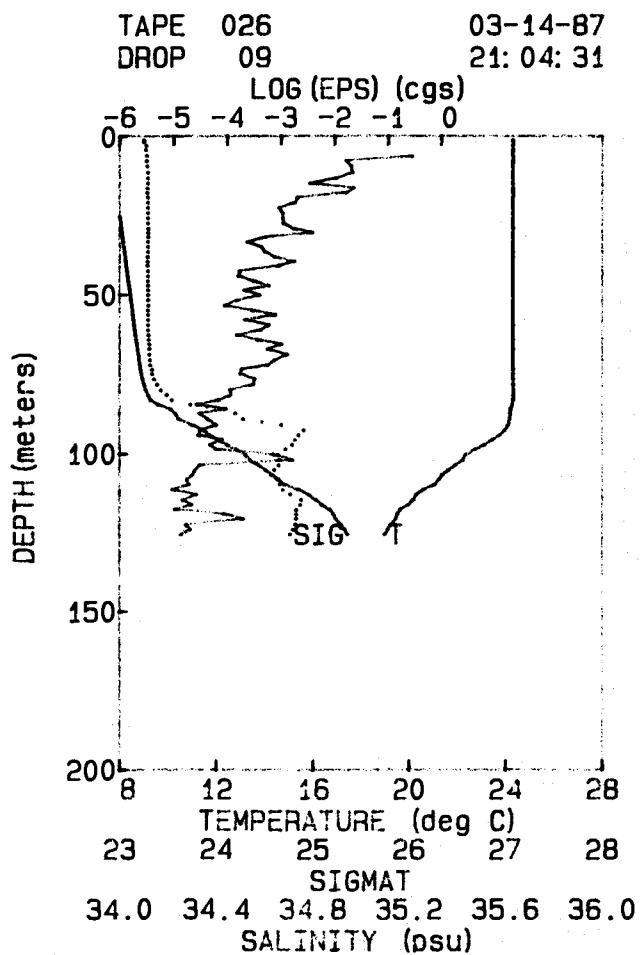
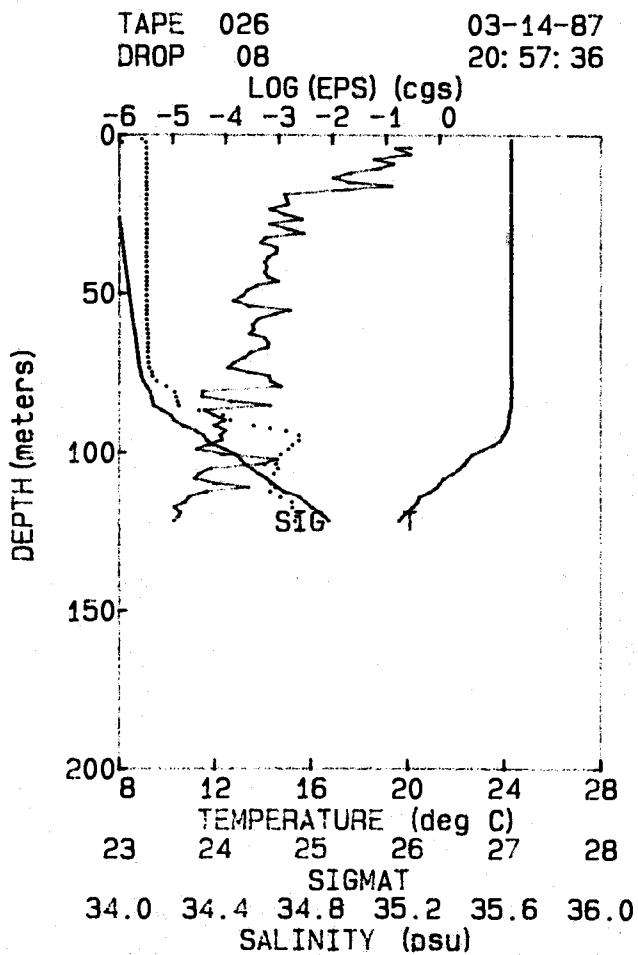
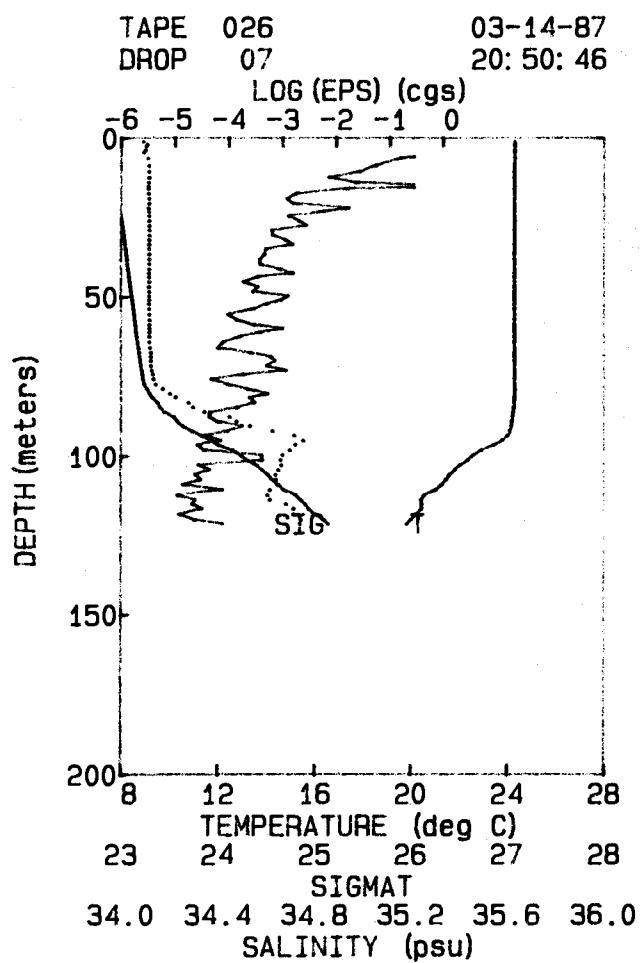
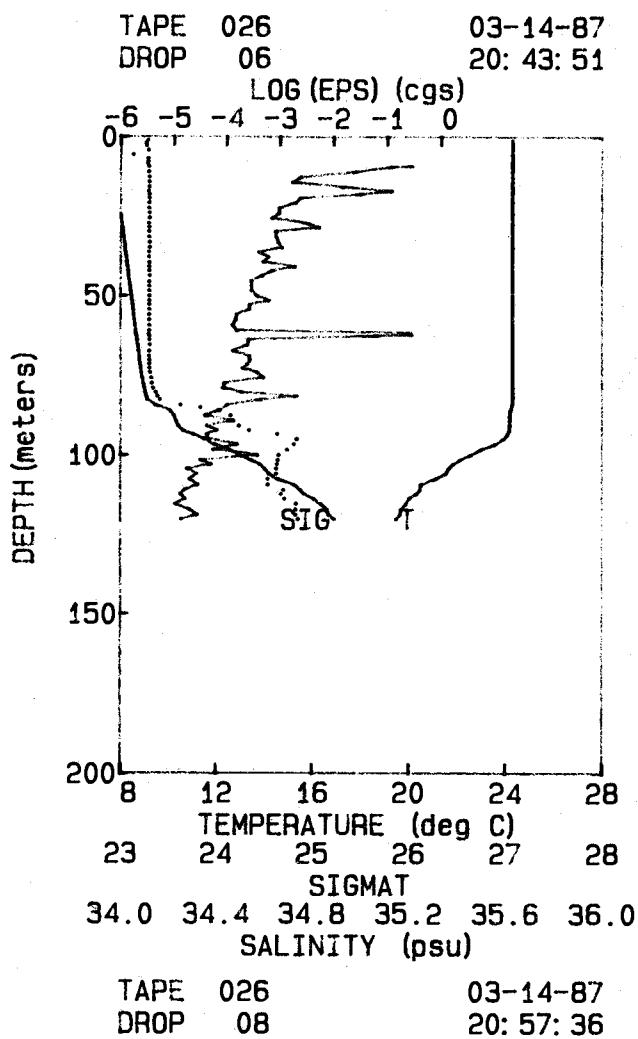


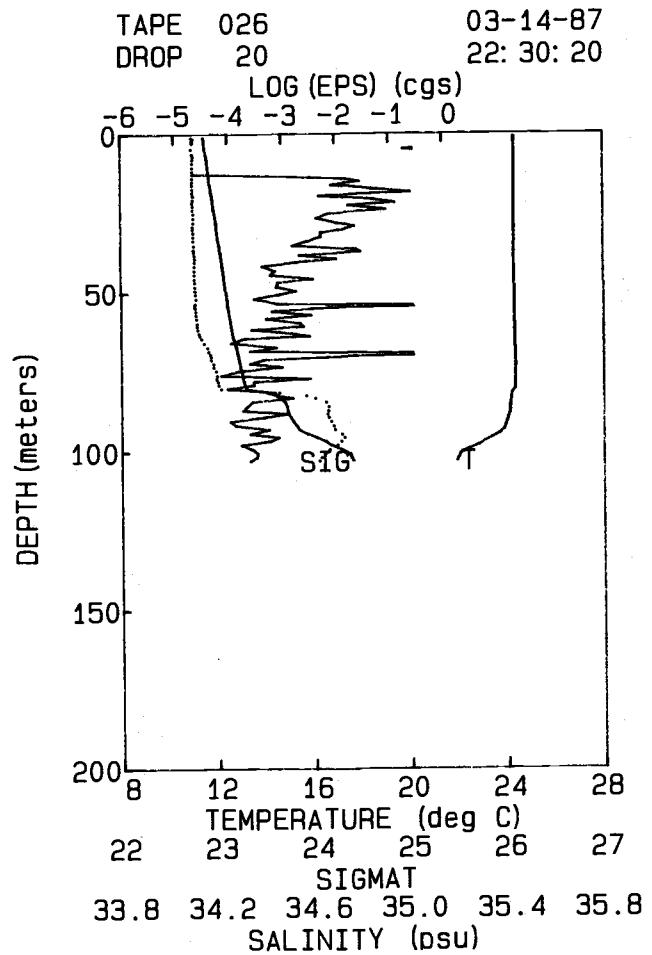
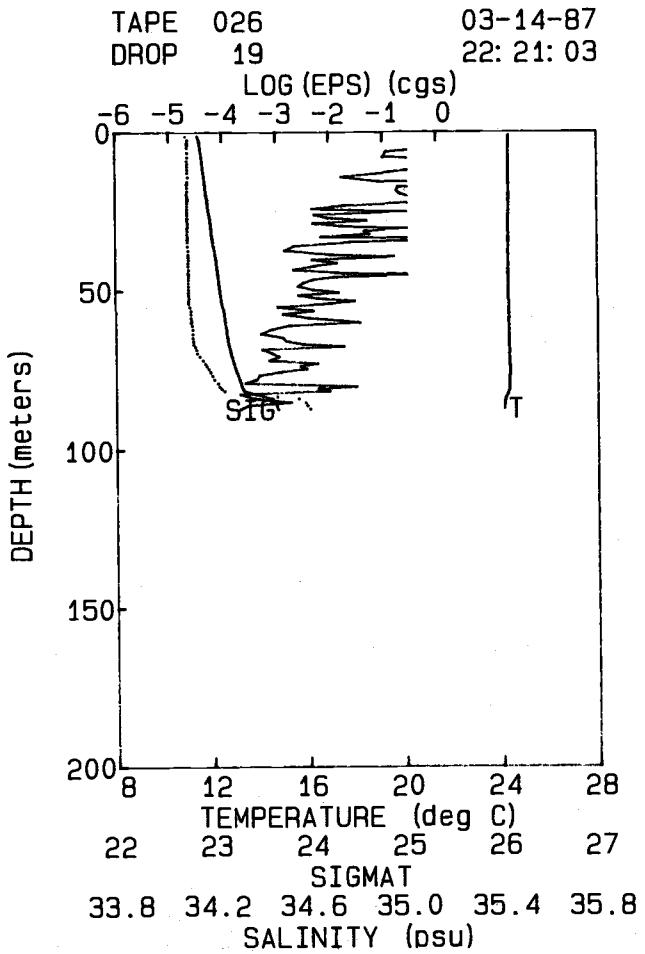
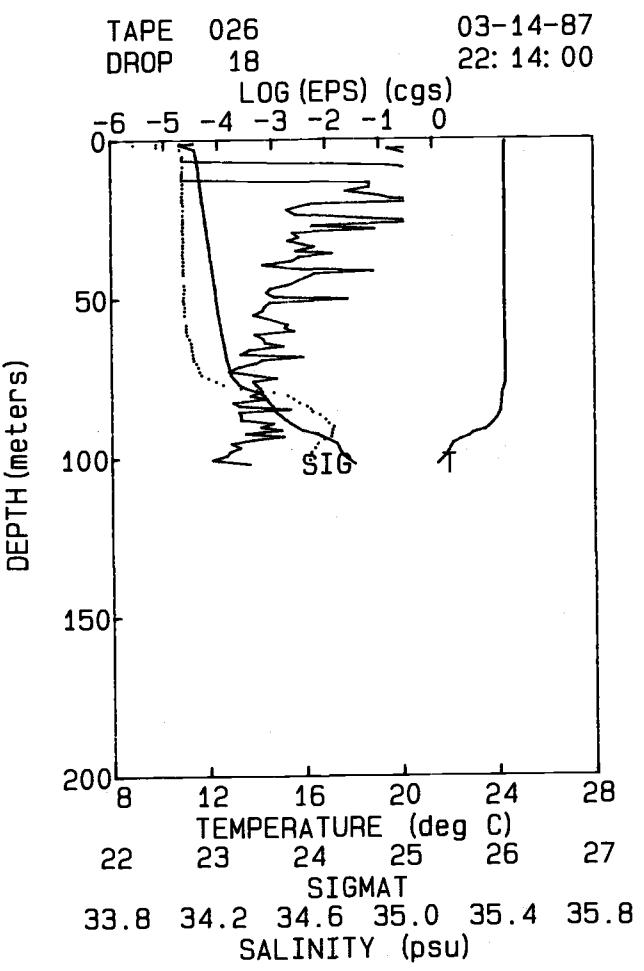
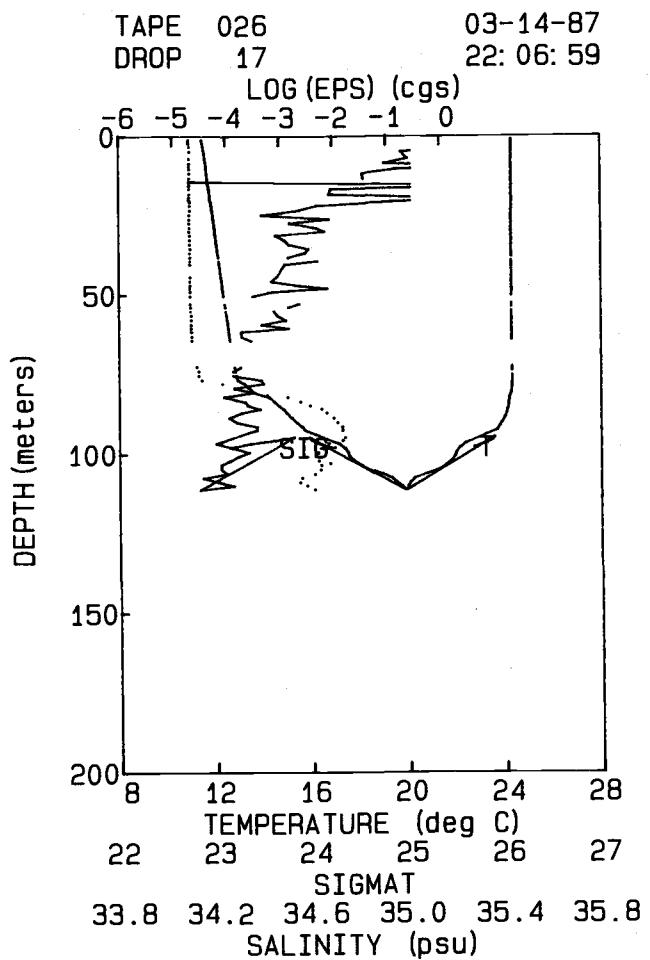


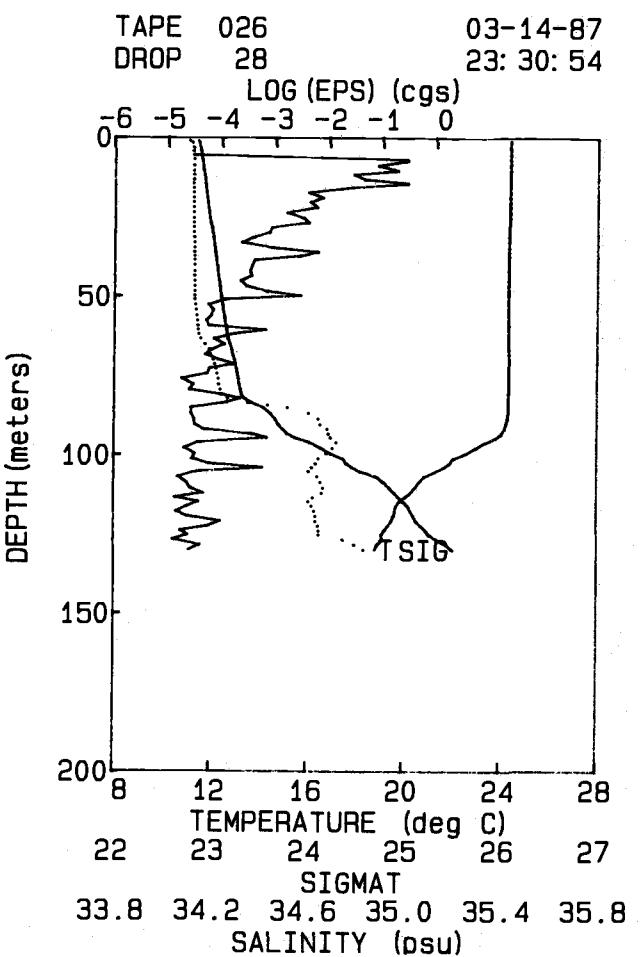
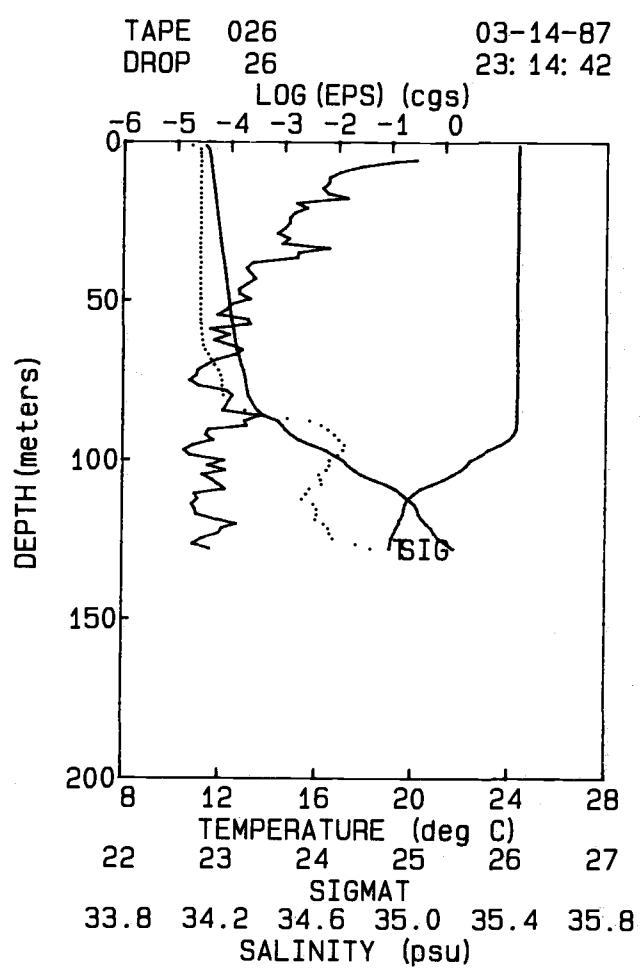
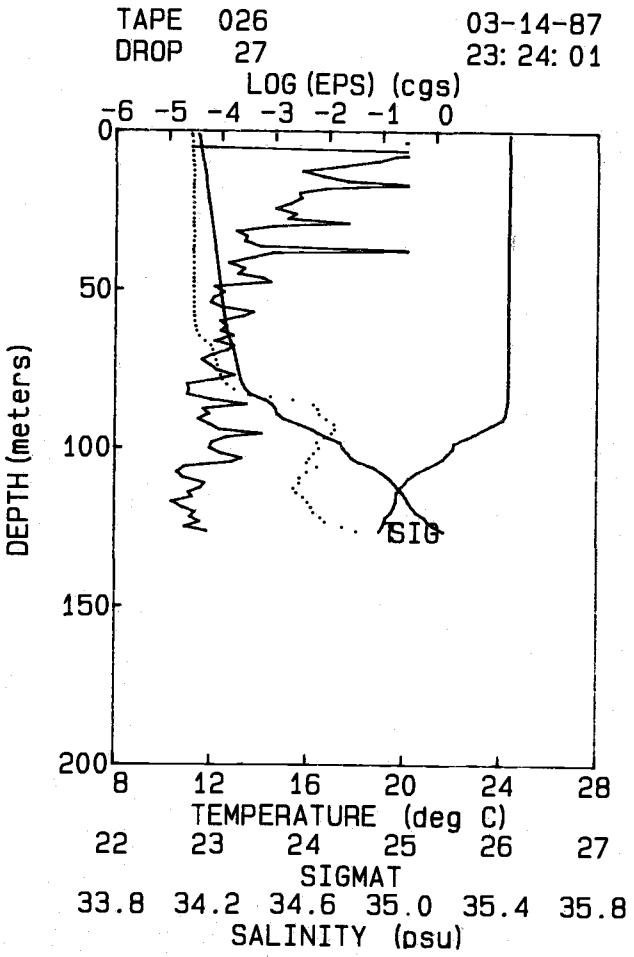
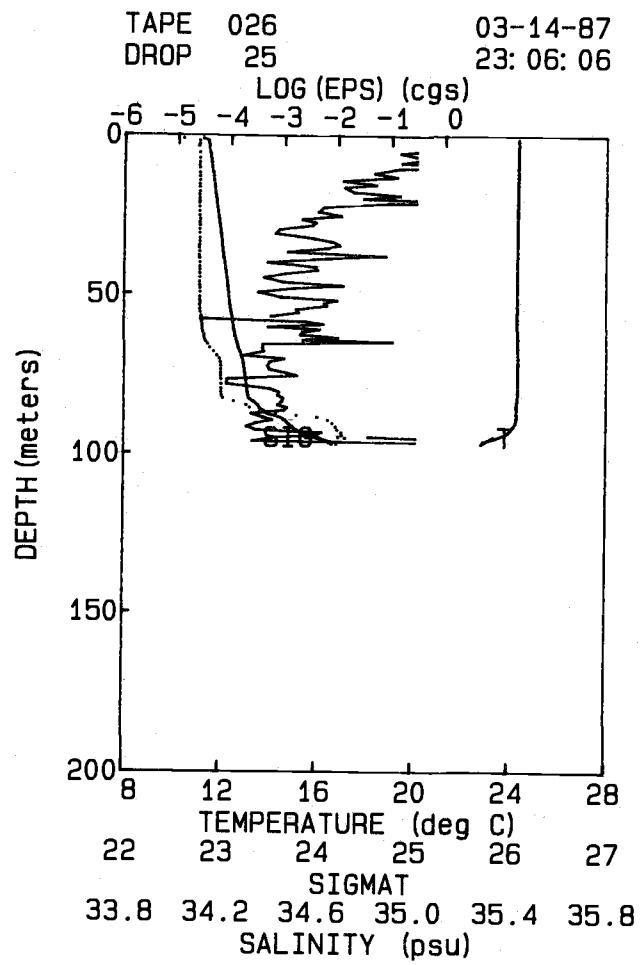


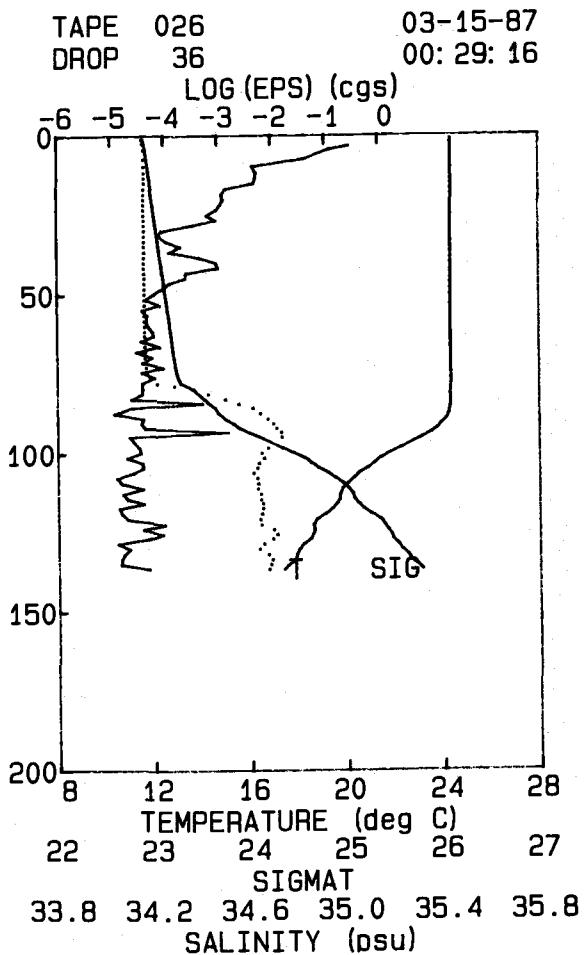
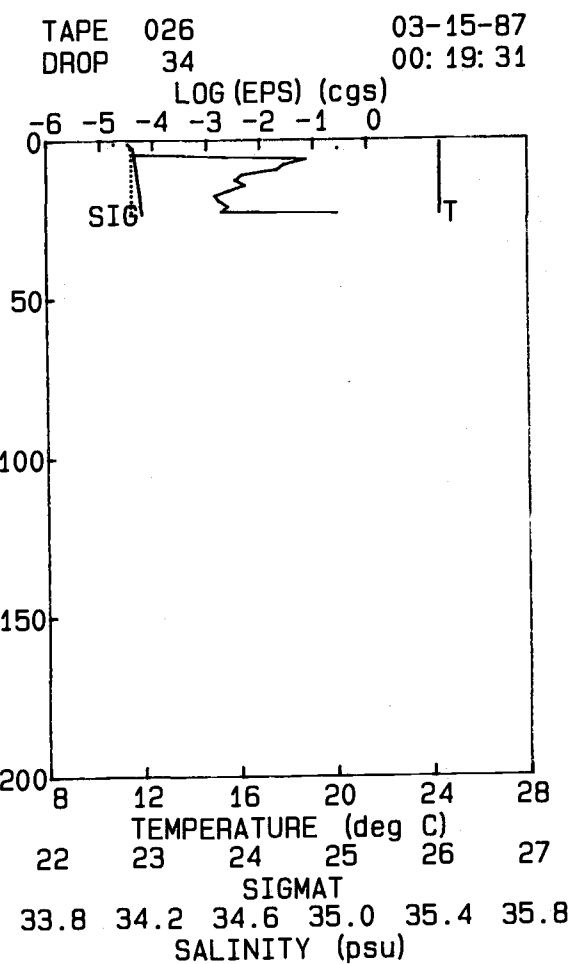
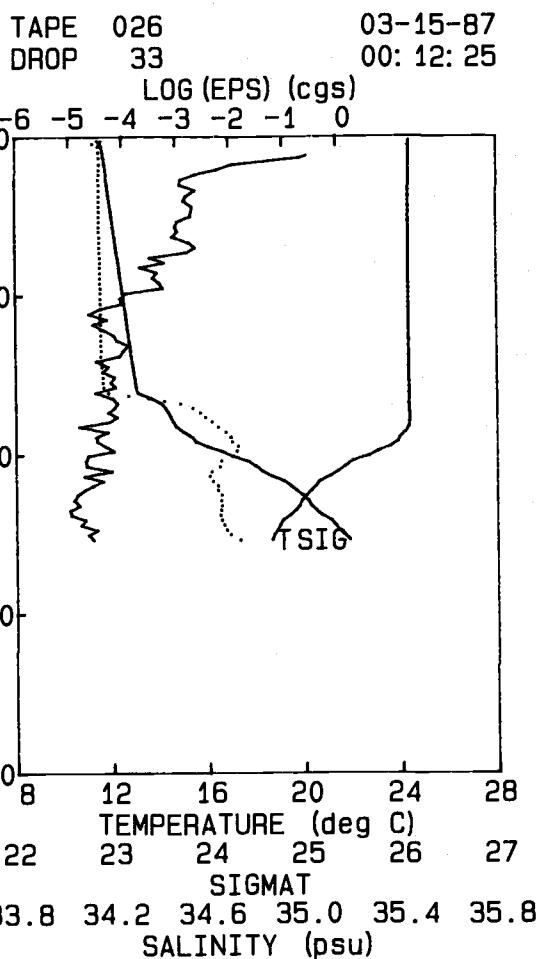


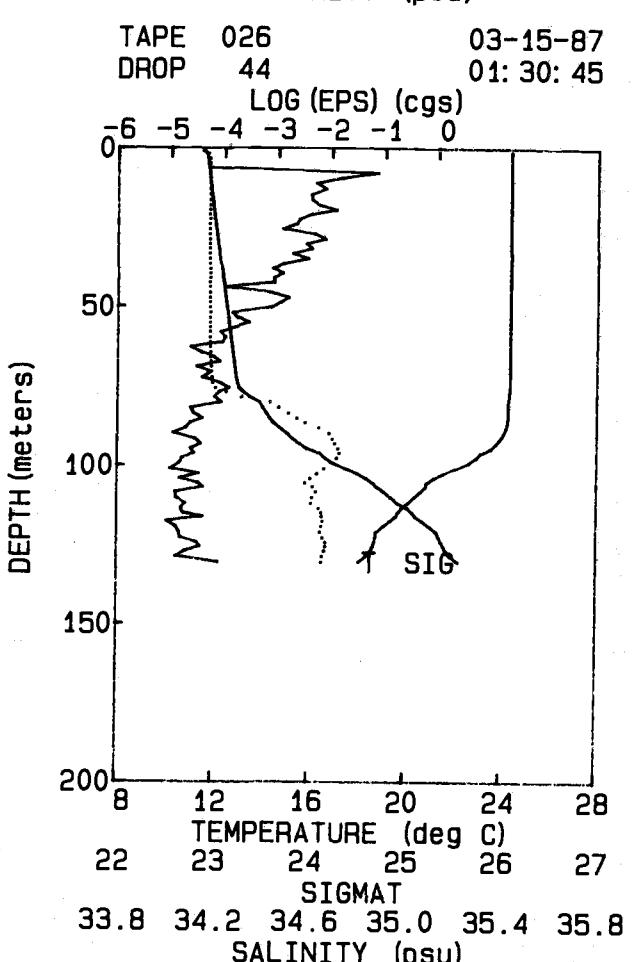
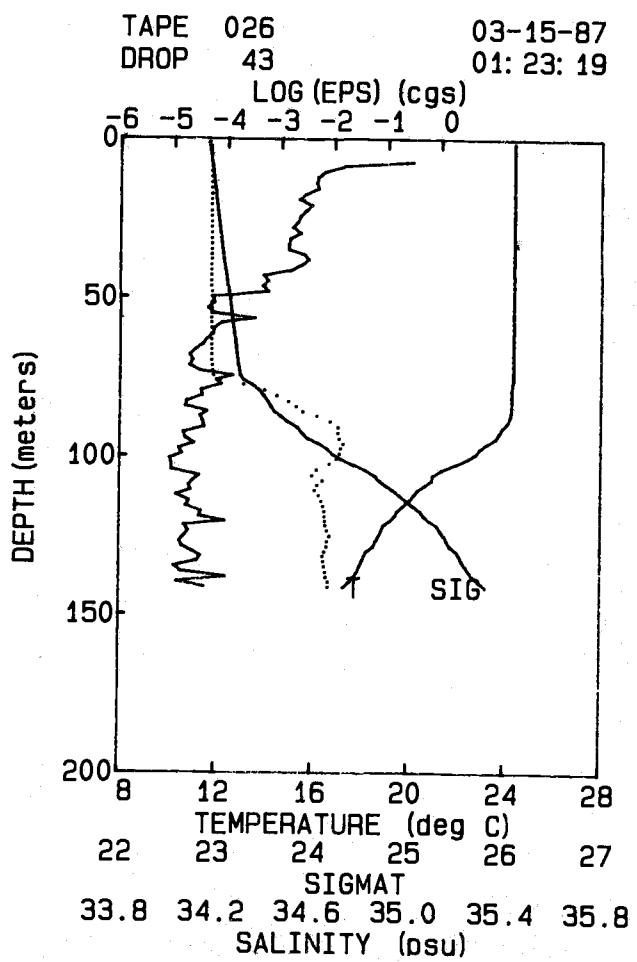
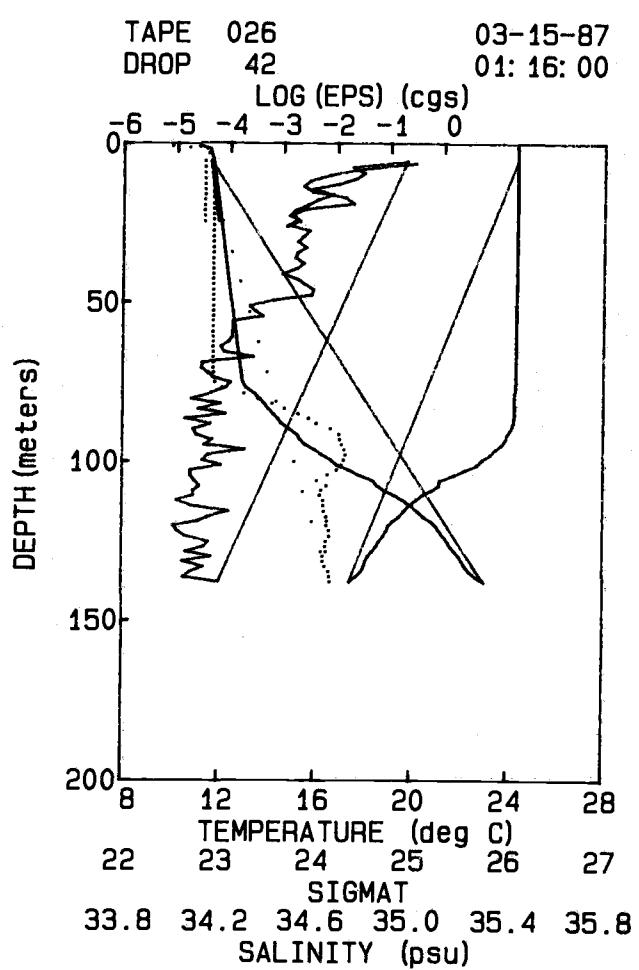
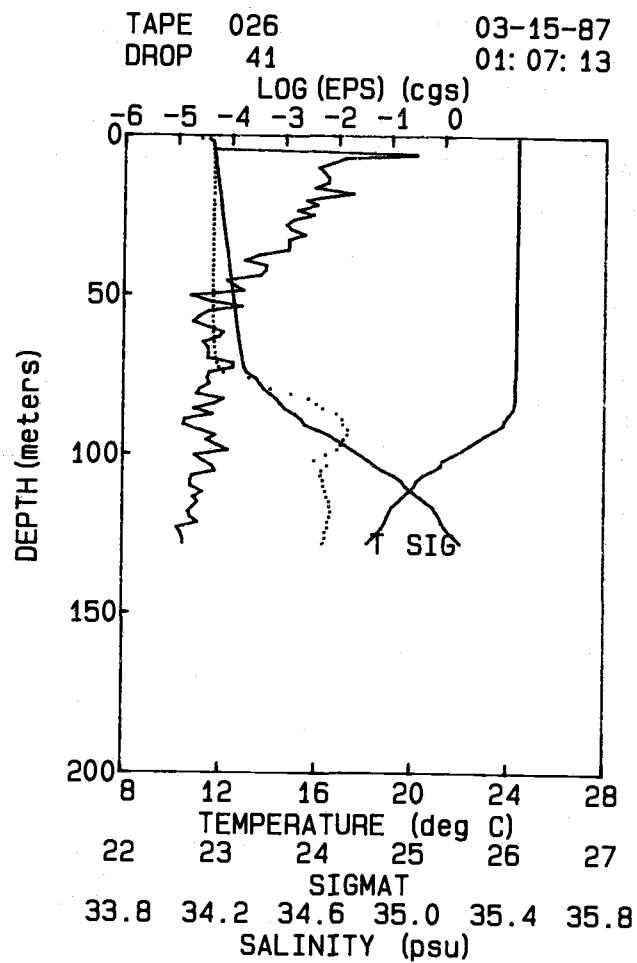


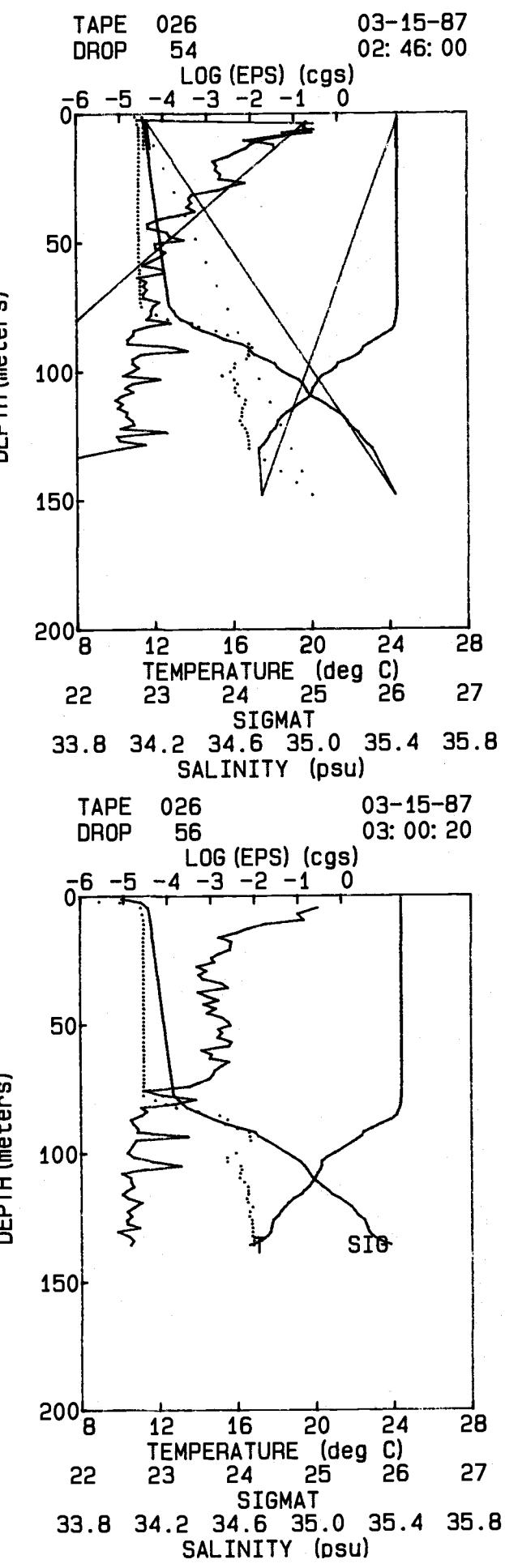
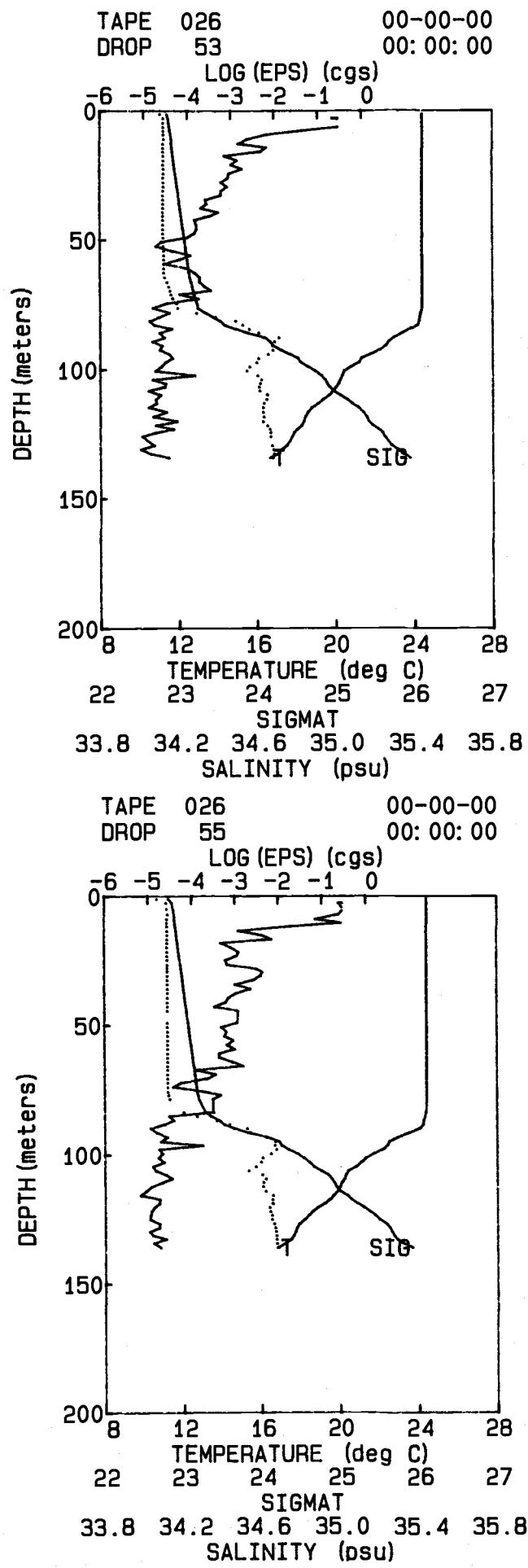


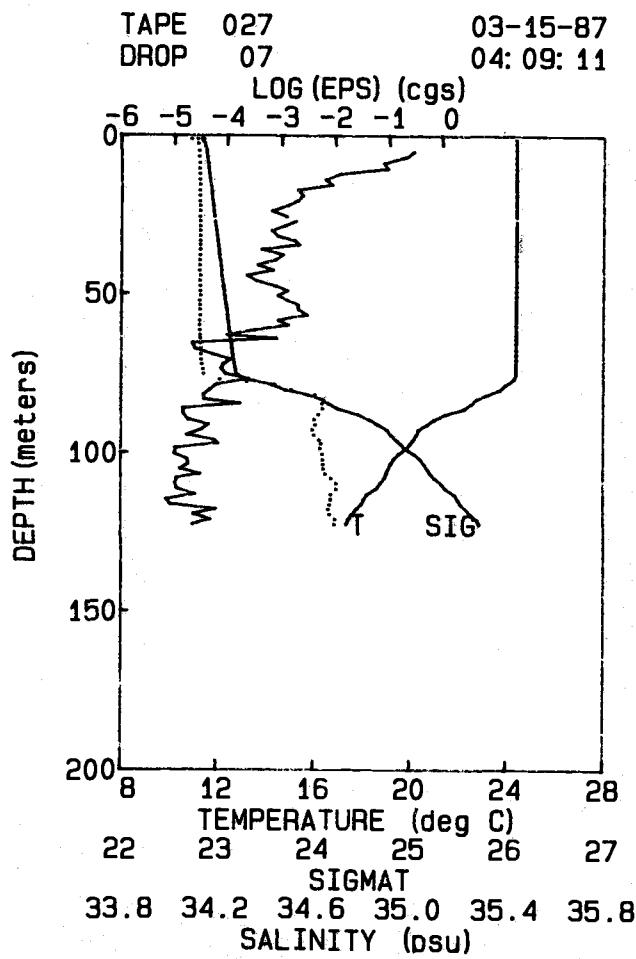
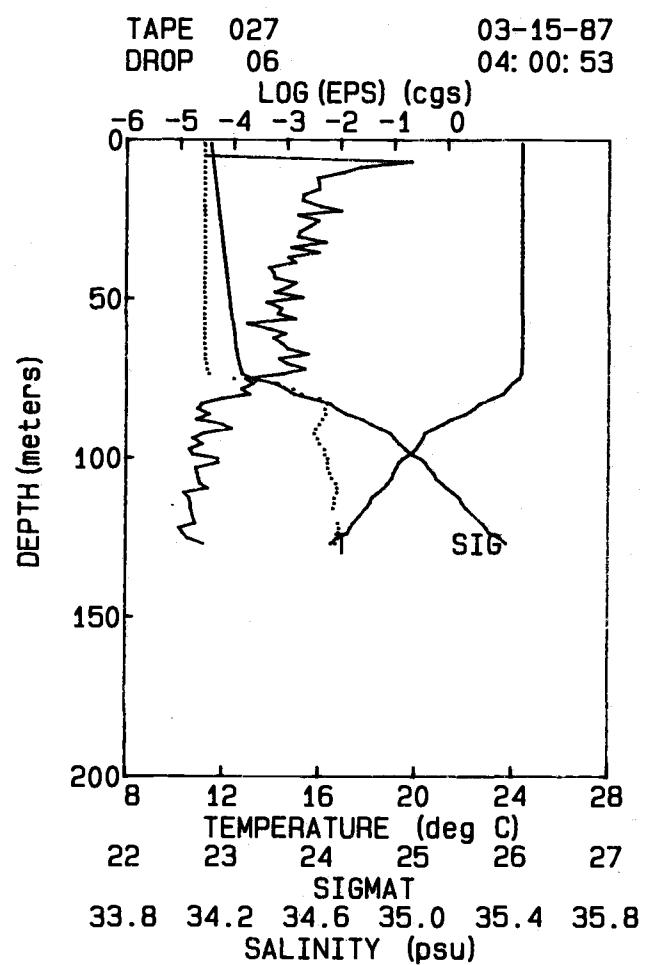
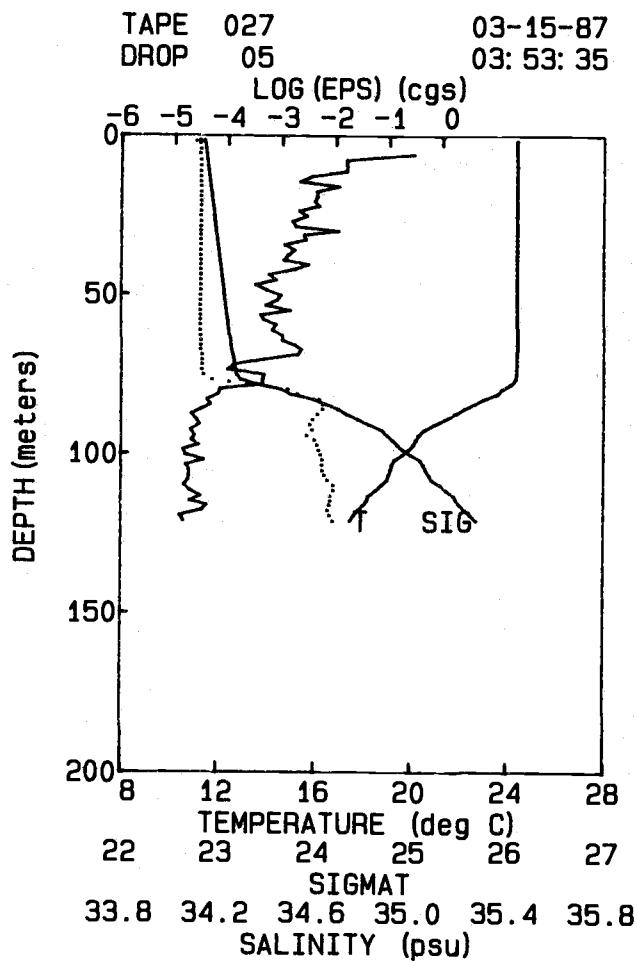




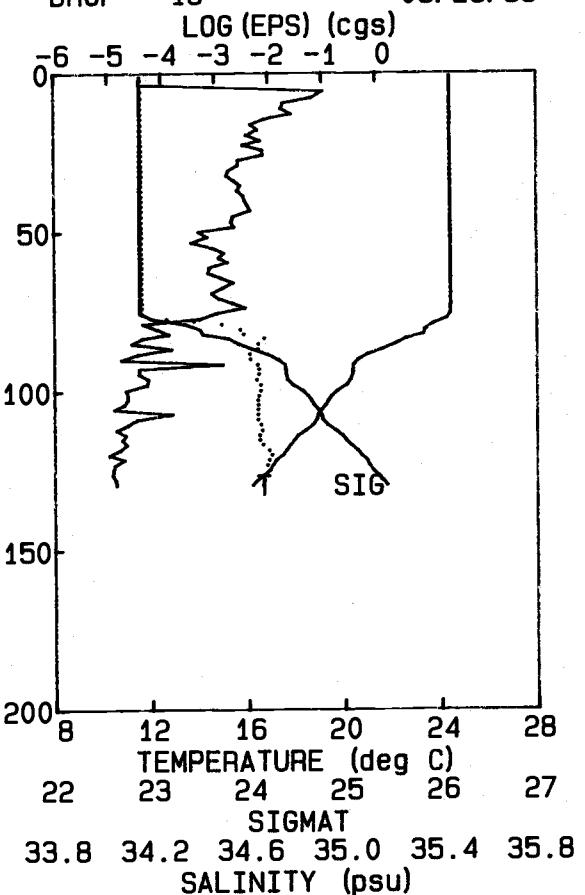




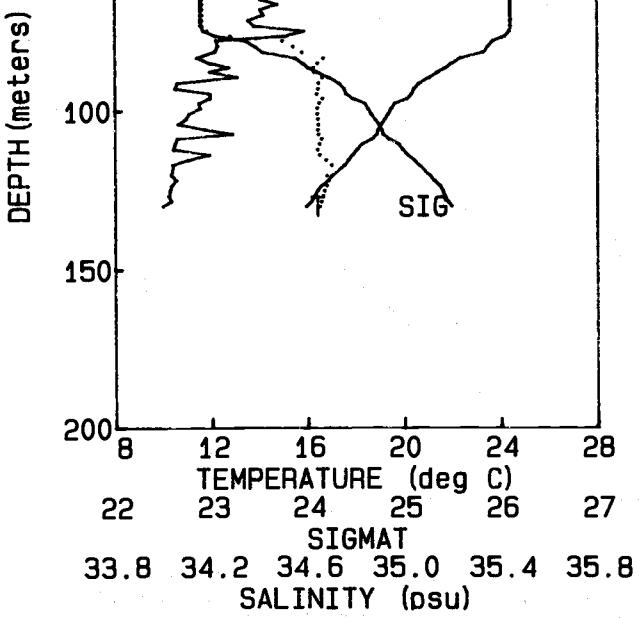




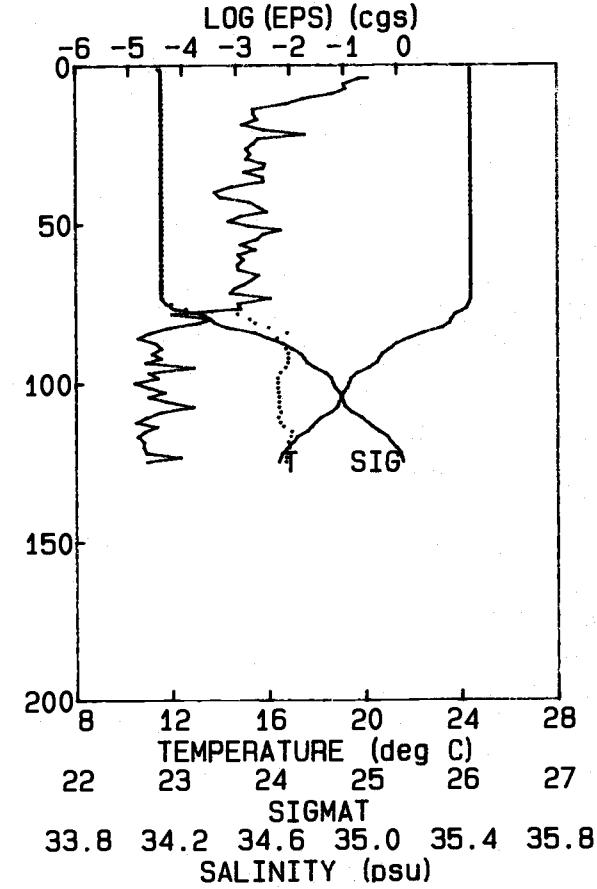
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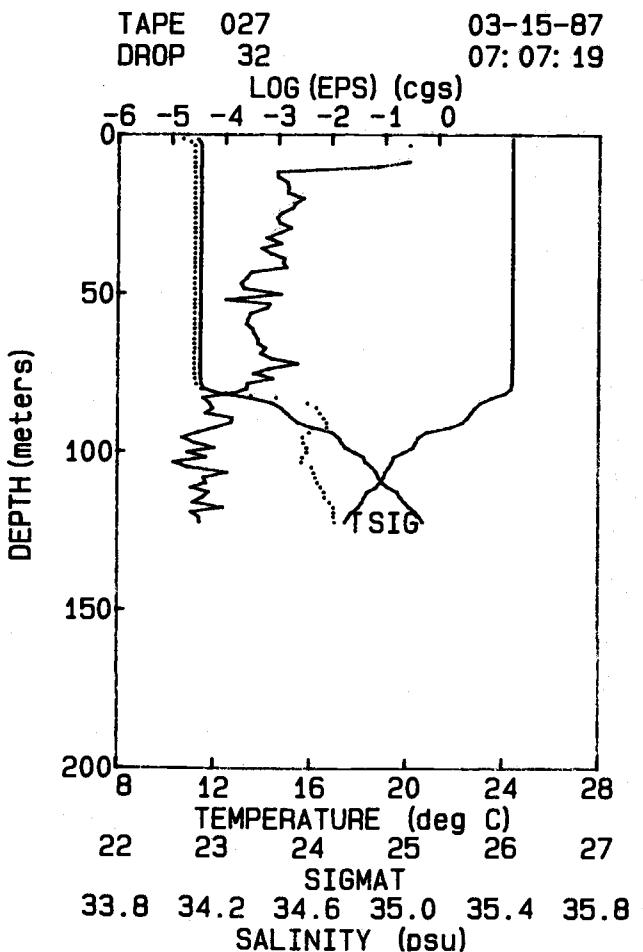
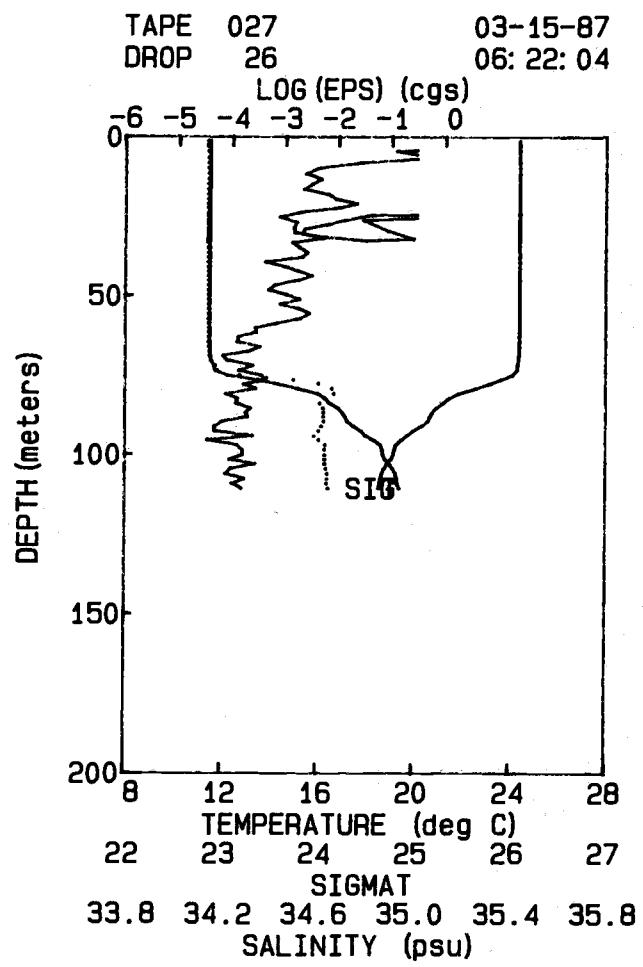
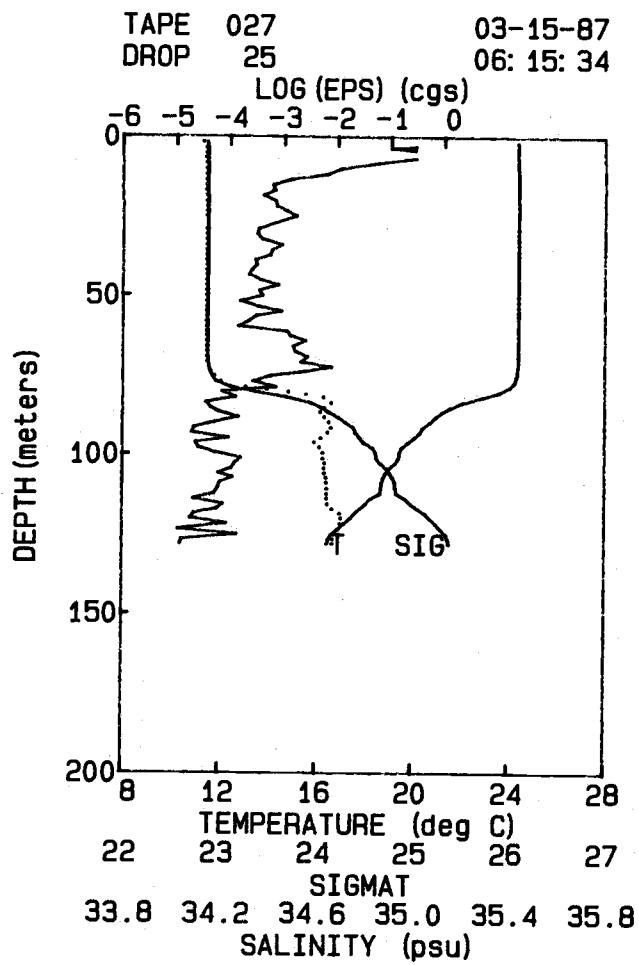


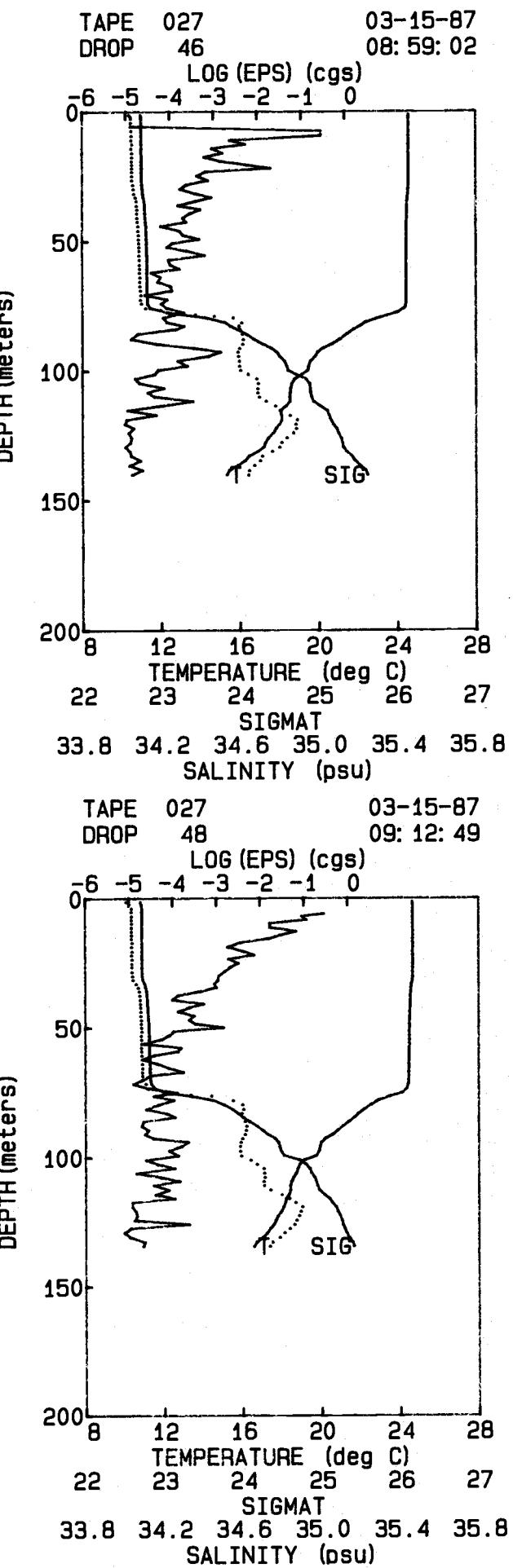
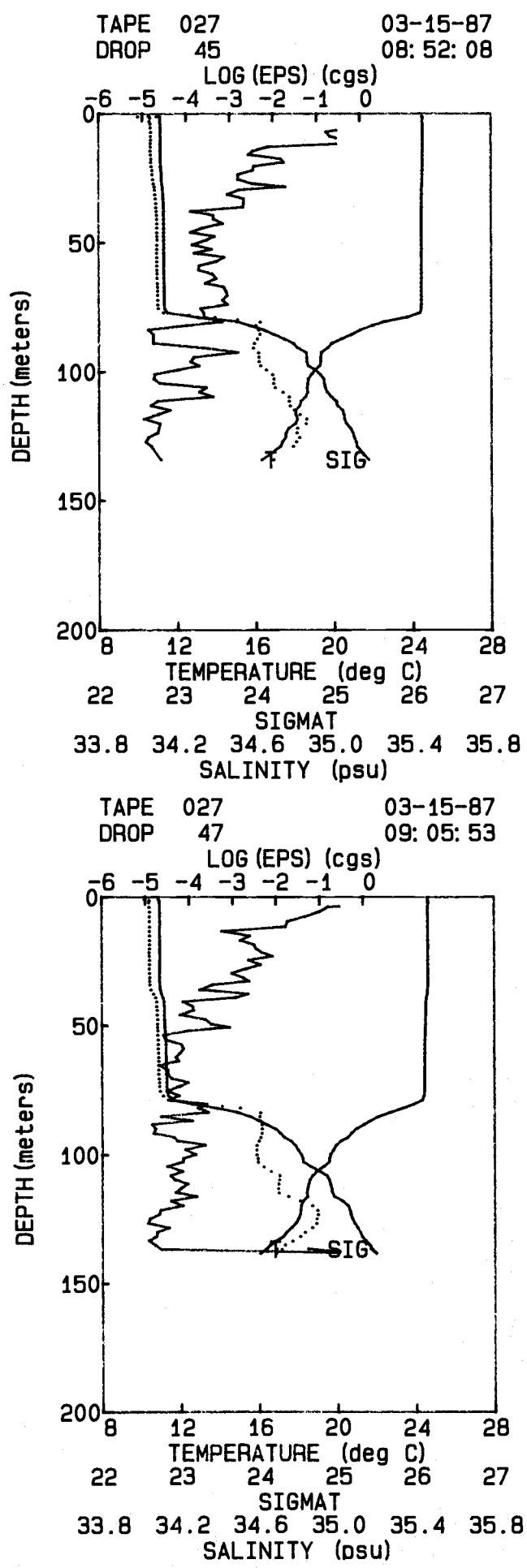
TAPE 027 03-15-87
DROP 19 05: 36: 14

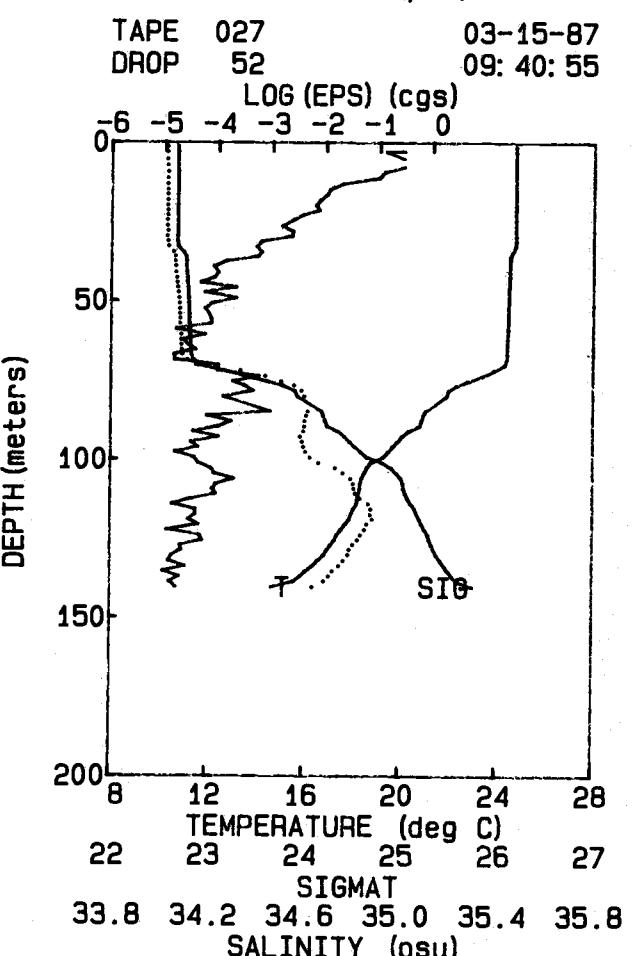
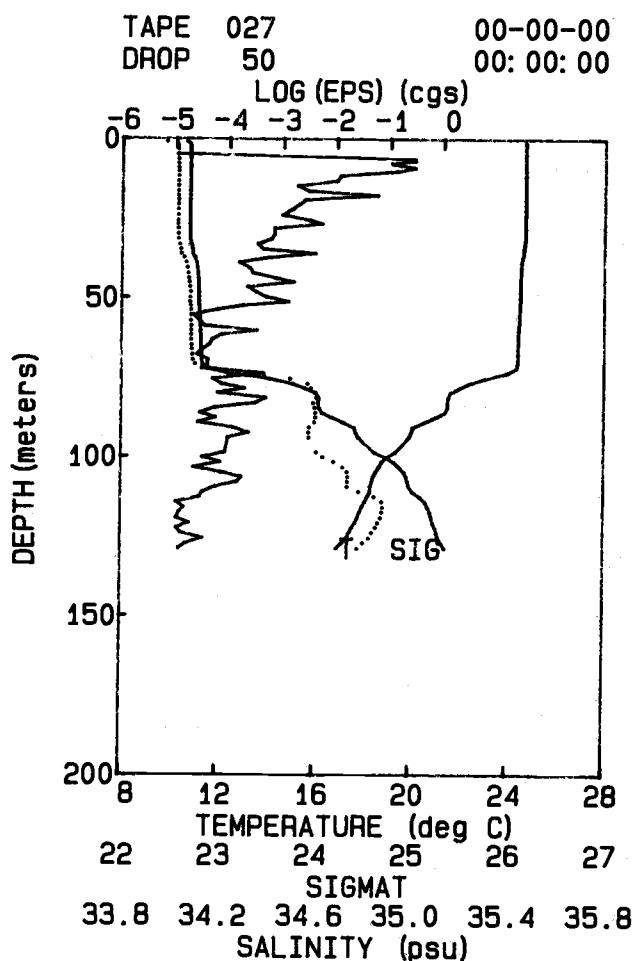
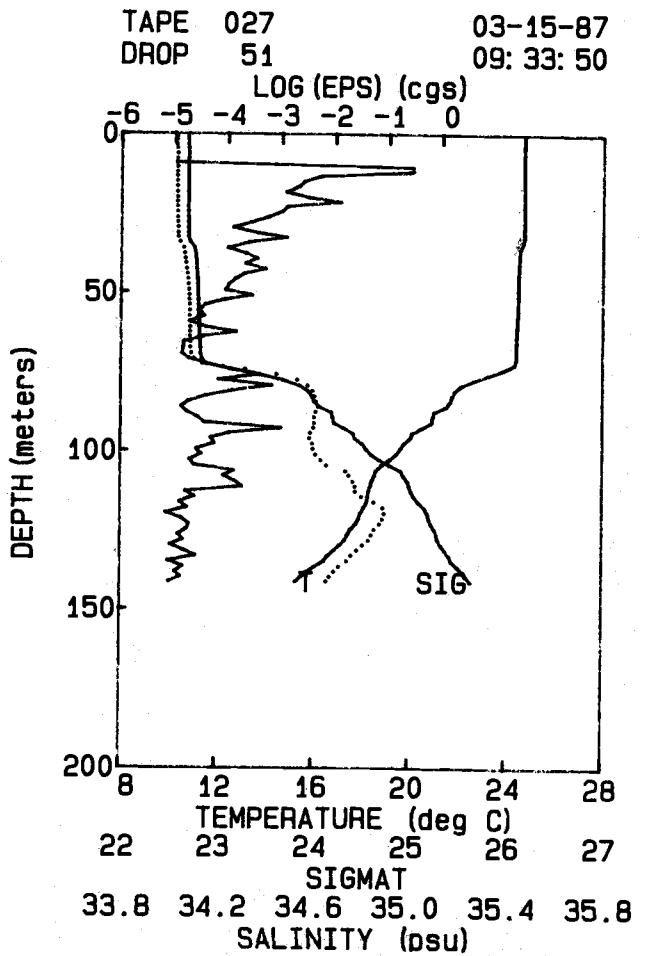
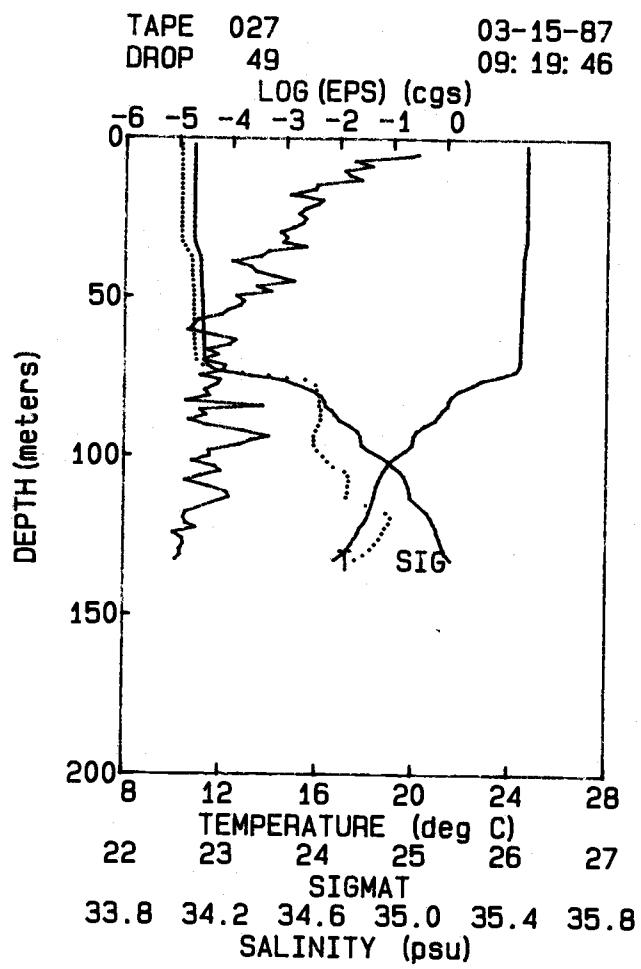


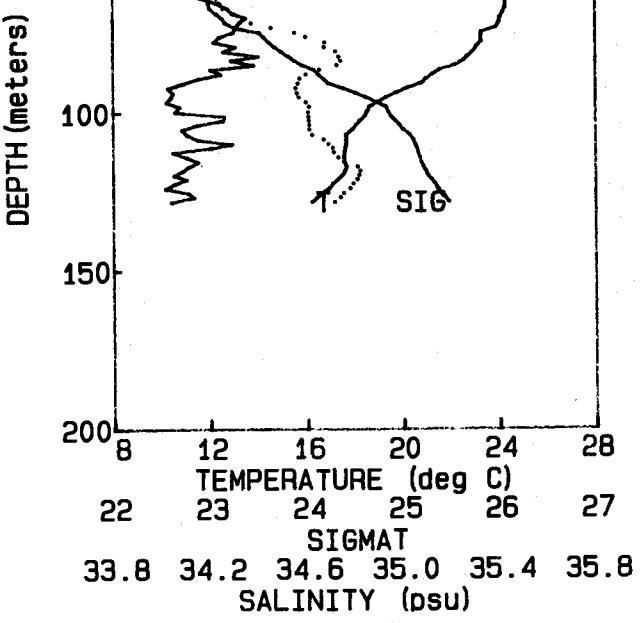
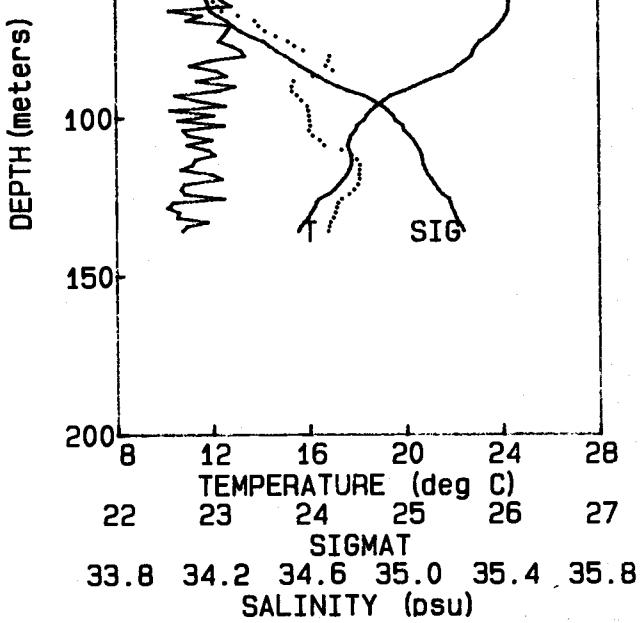
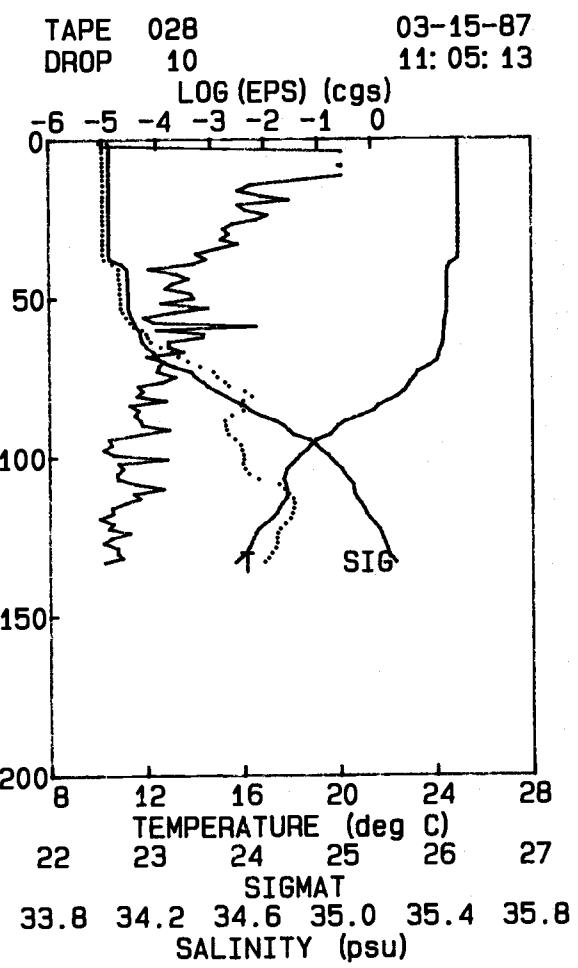
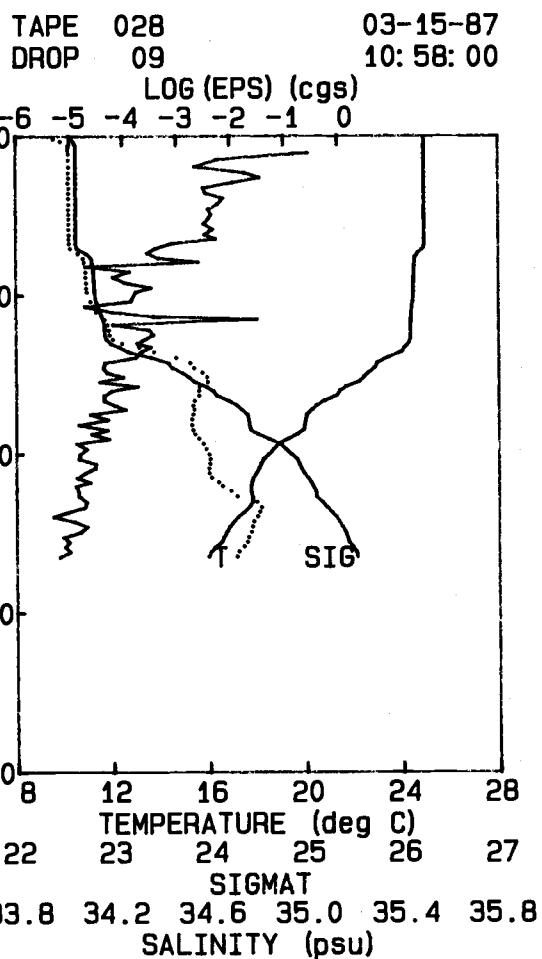
TAPE 027 03-15-87
DROP 20 05: 43: 14

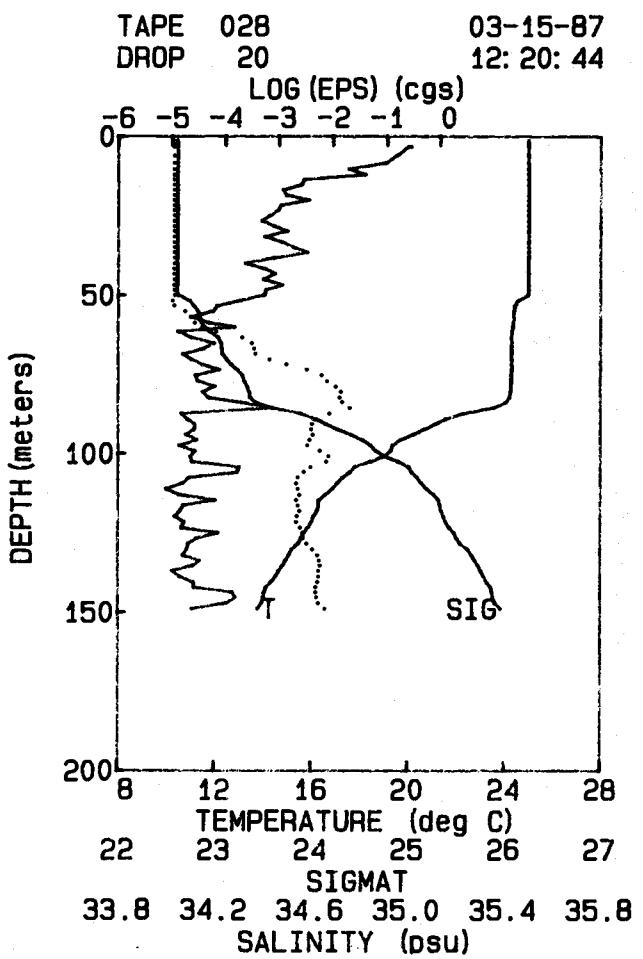
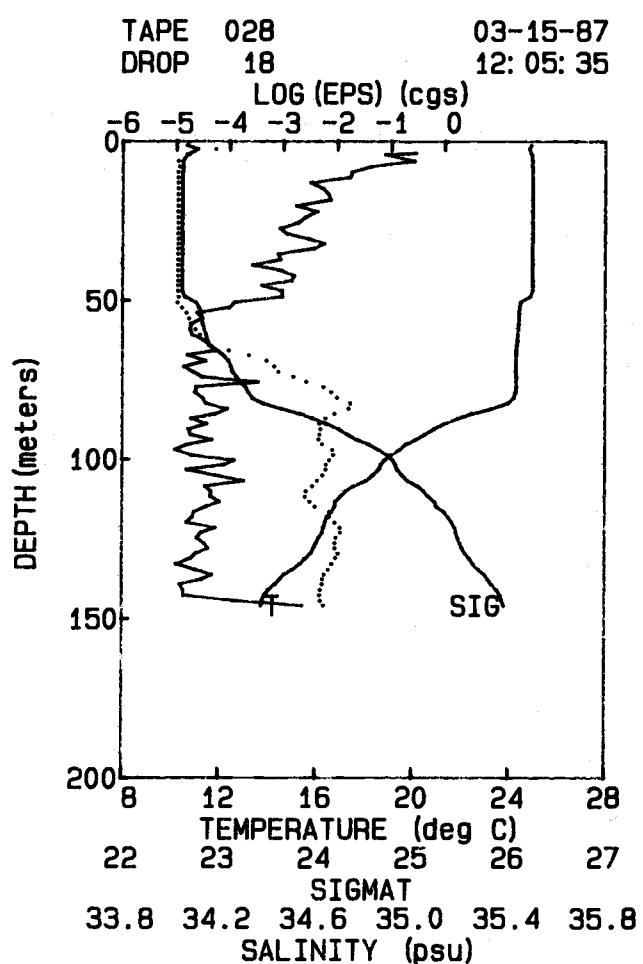
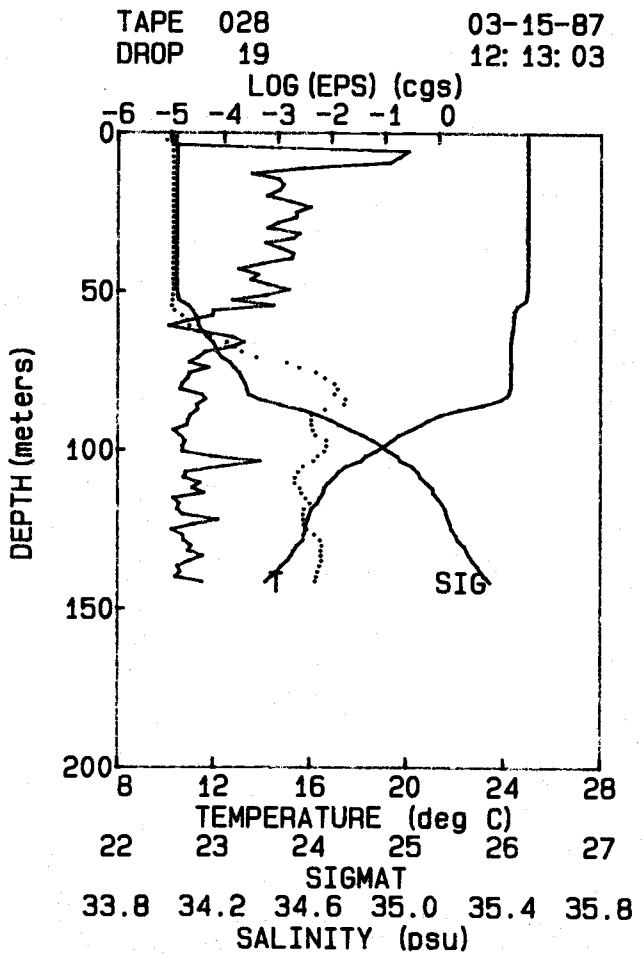
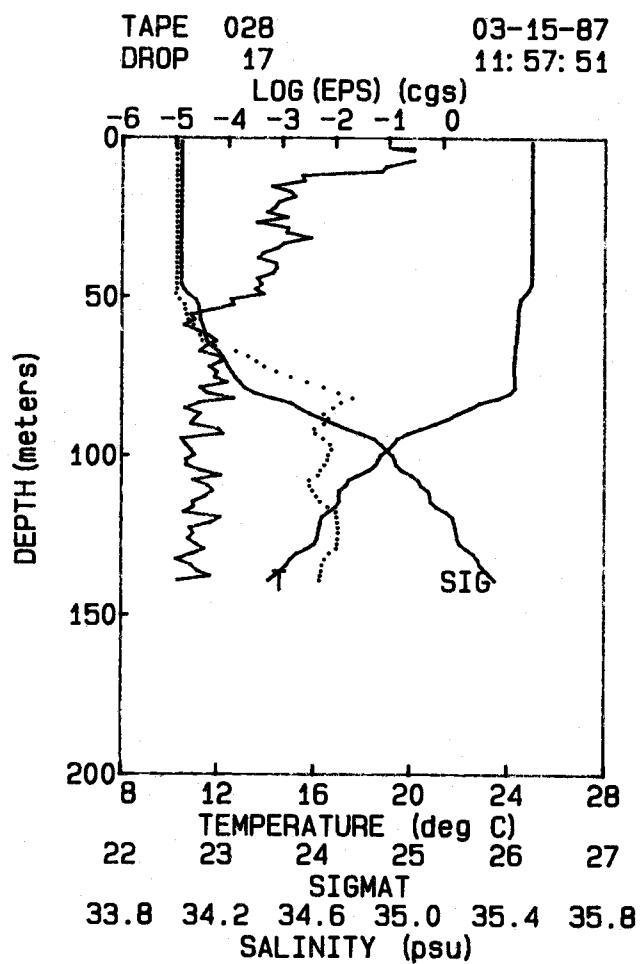


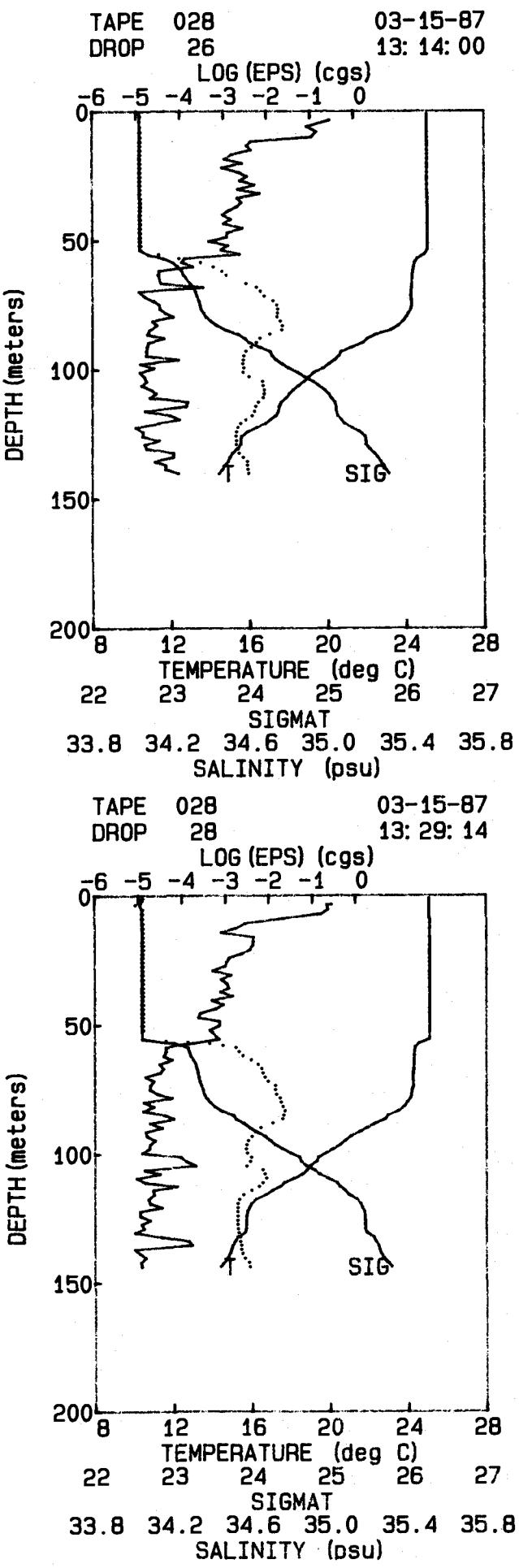
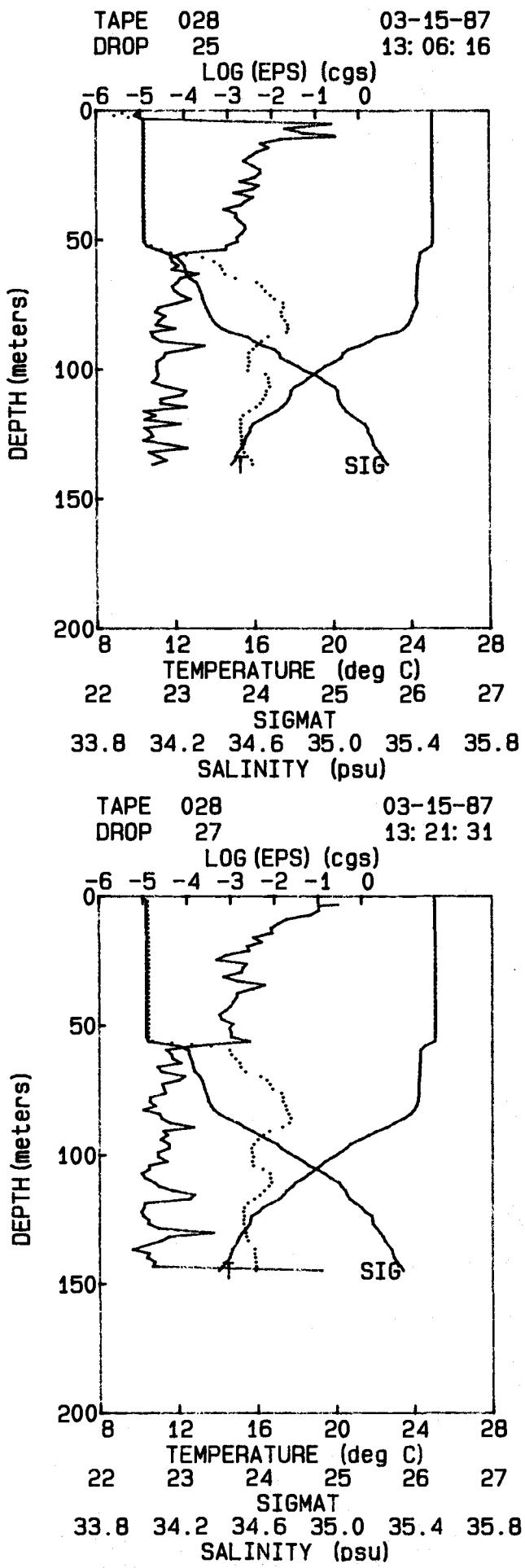


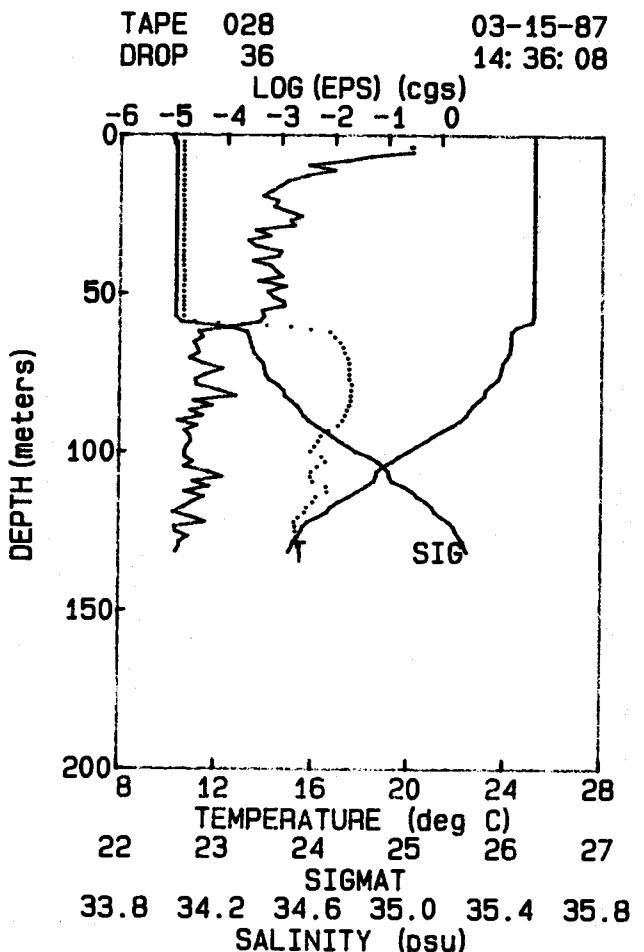
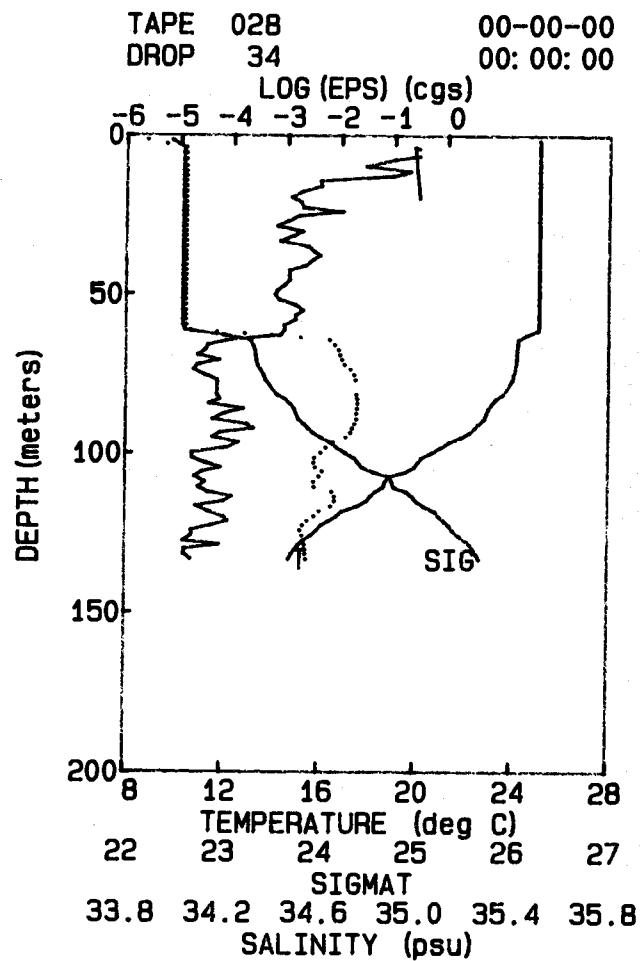
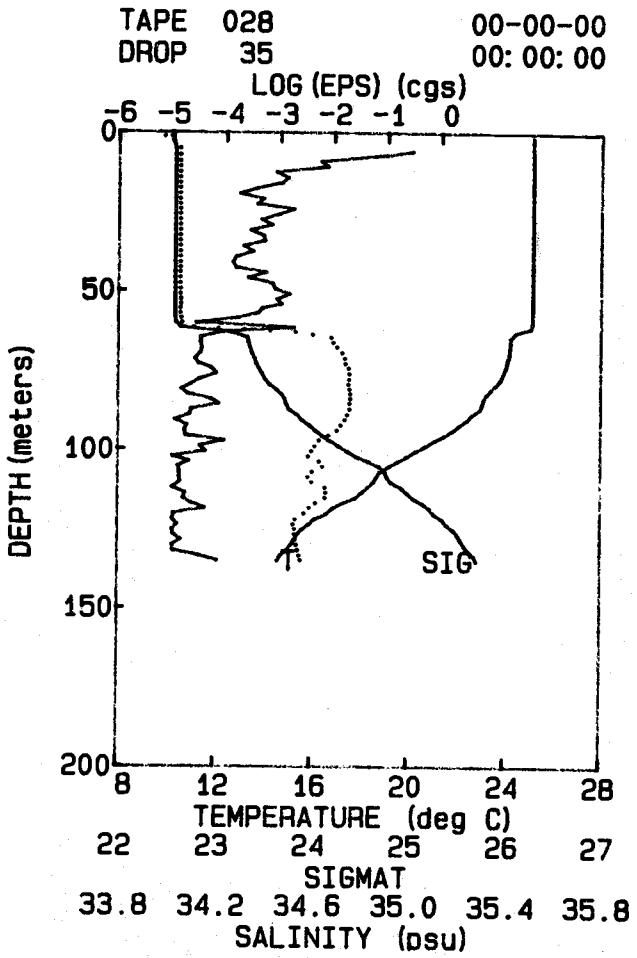
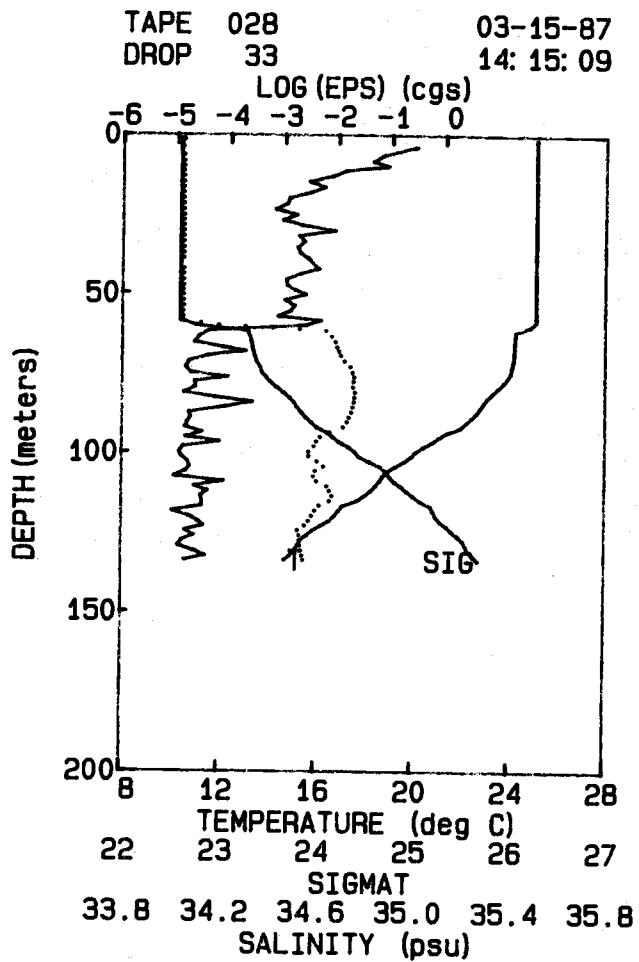


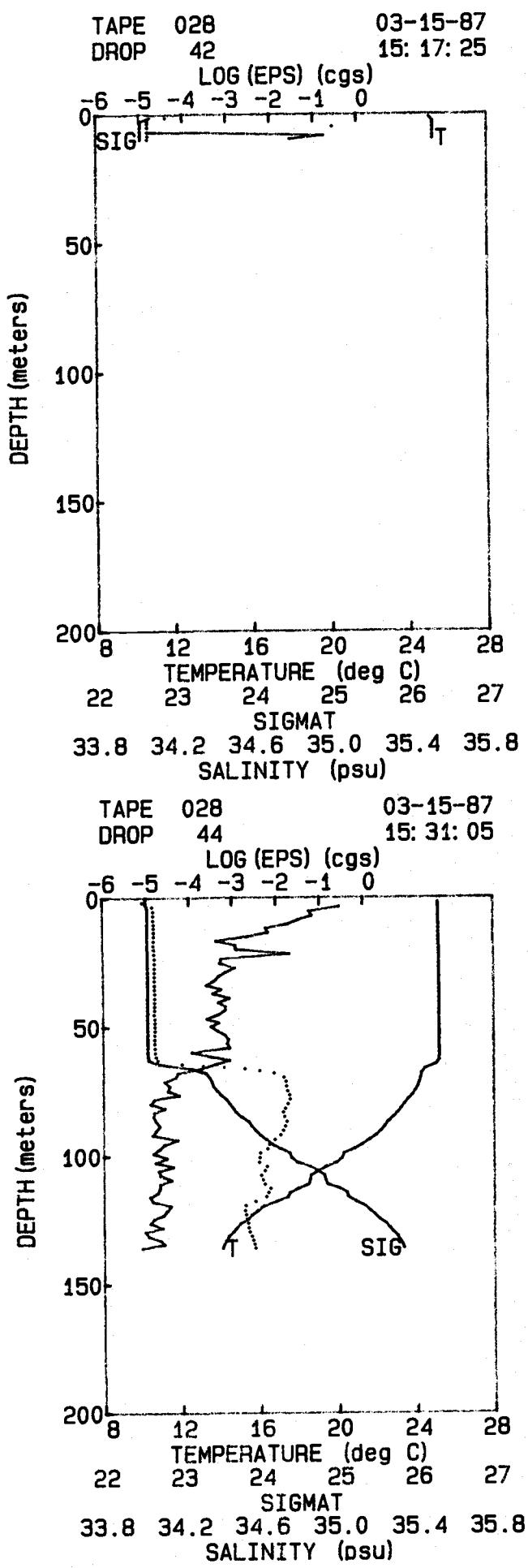
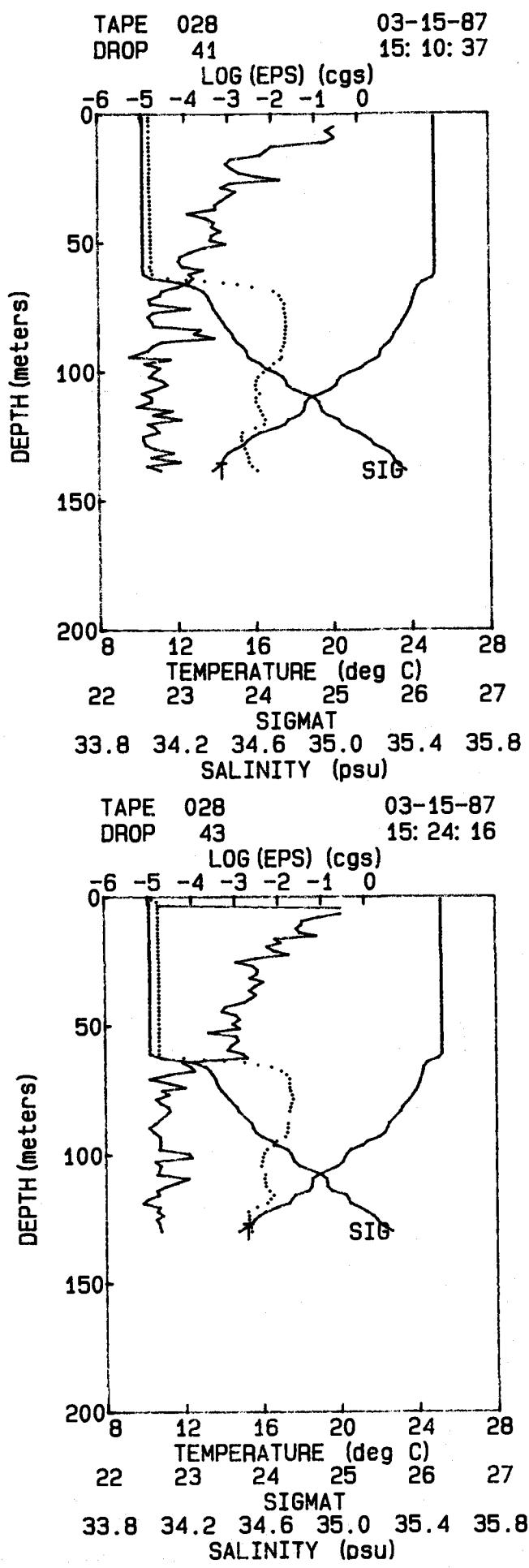


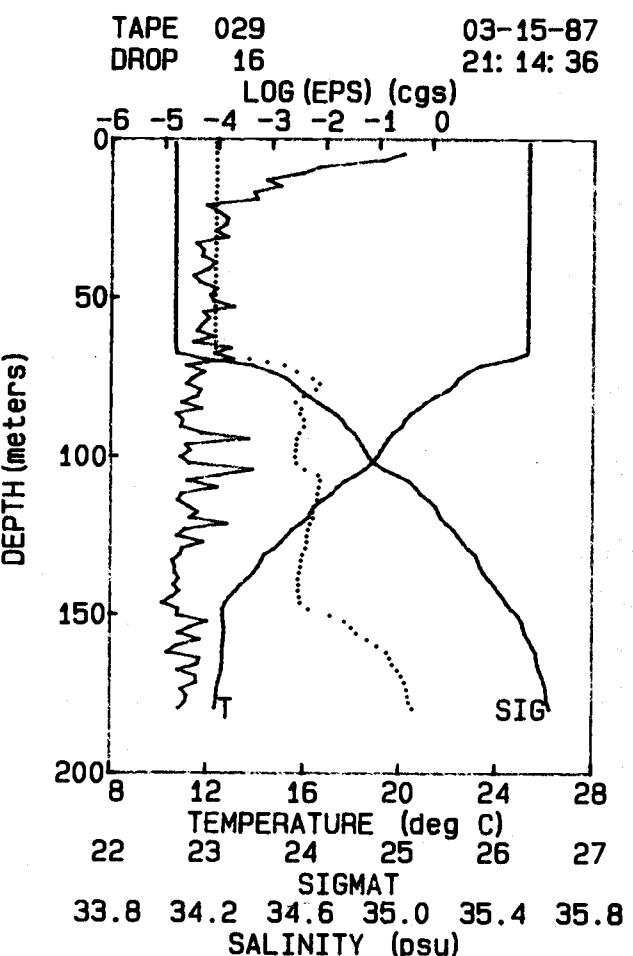
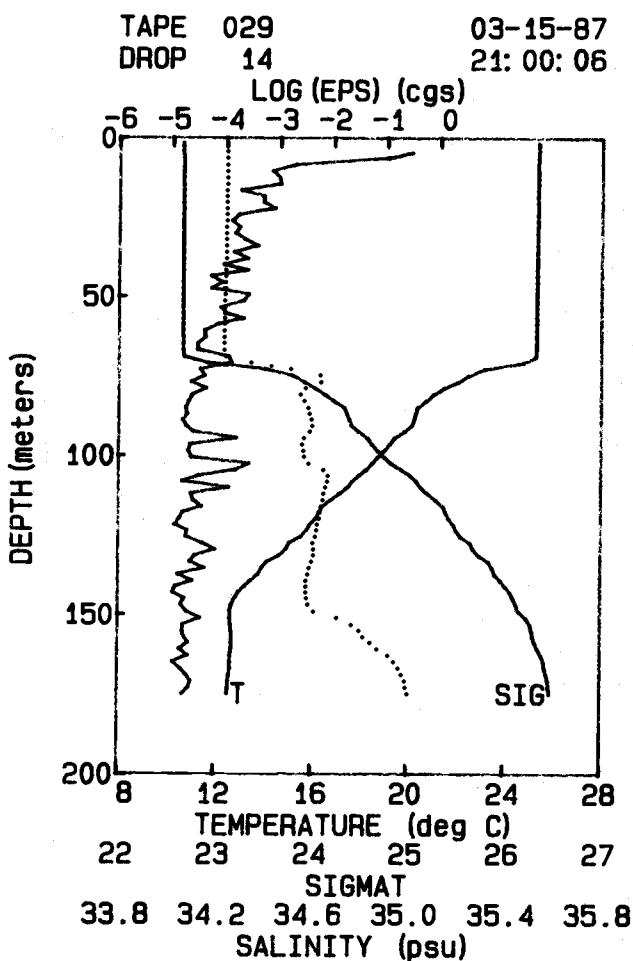
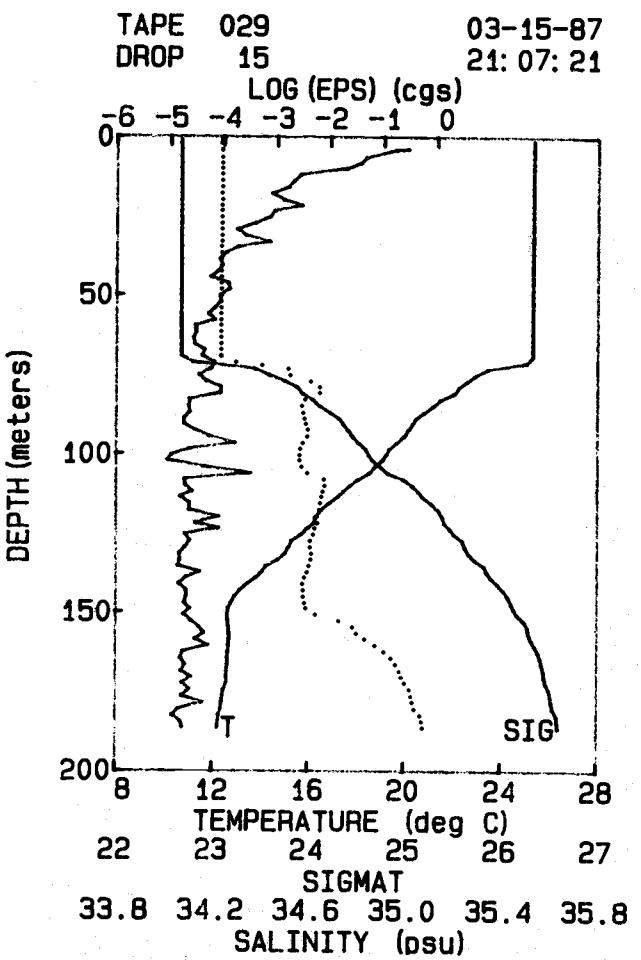
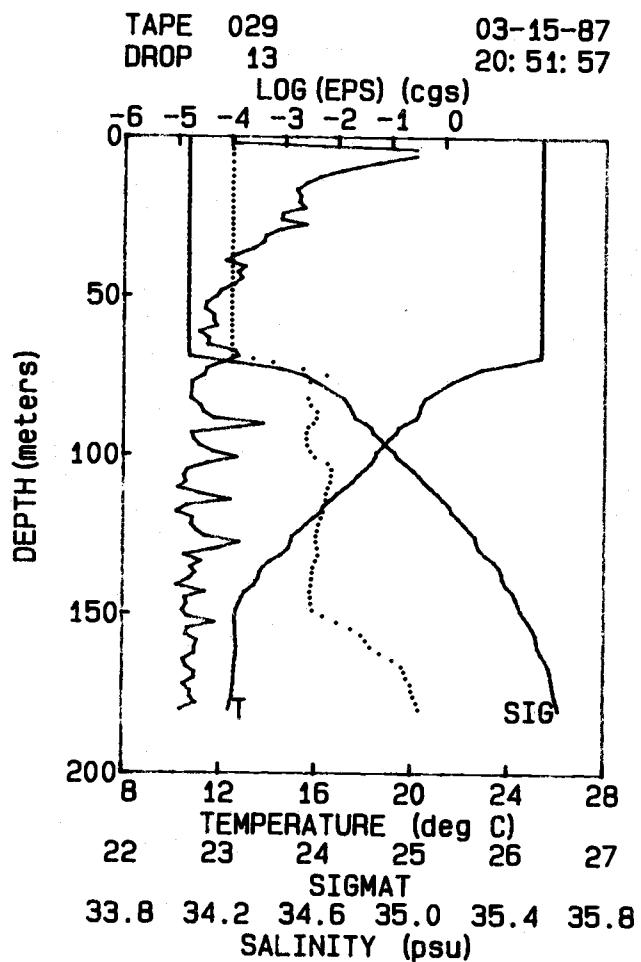


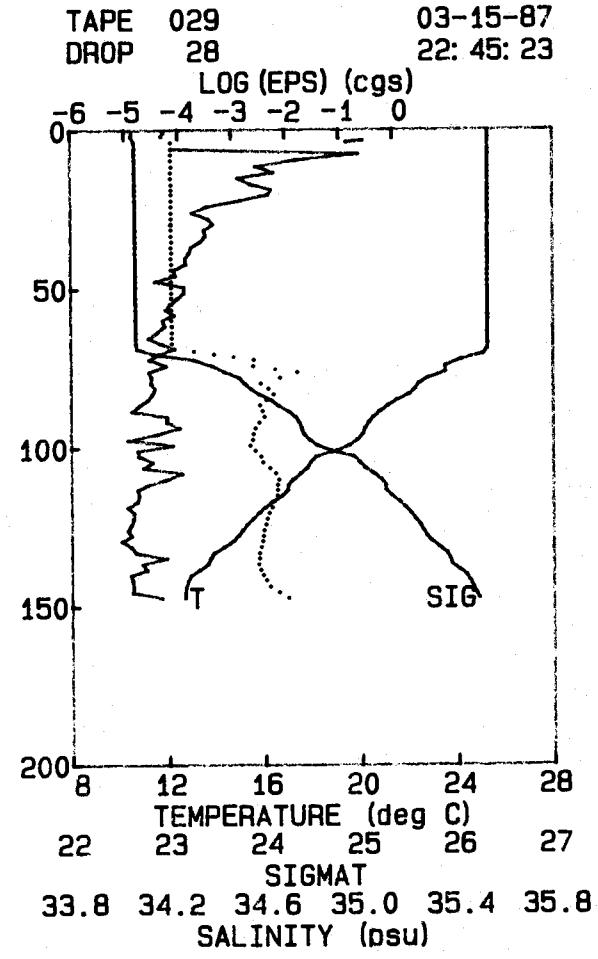
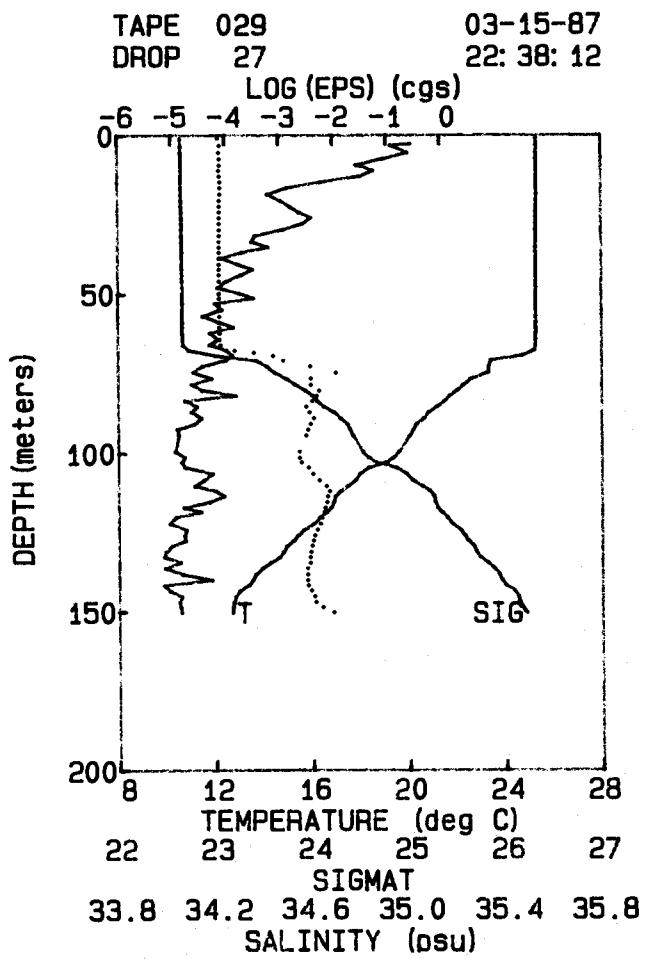
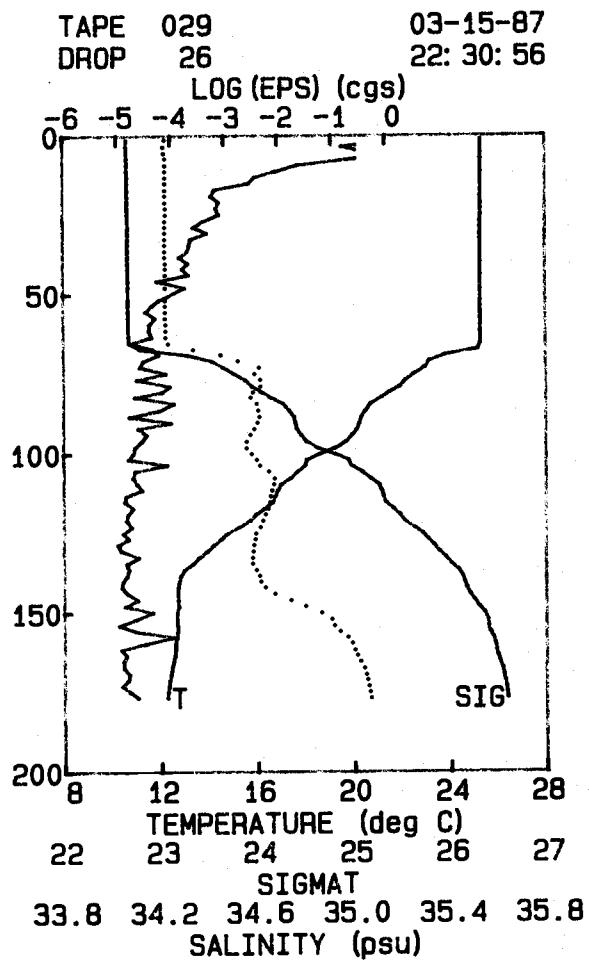
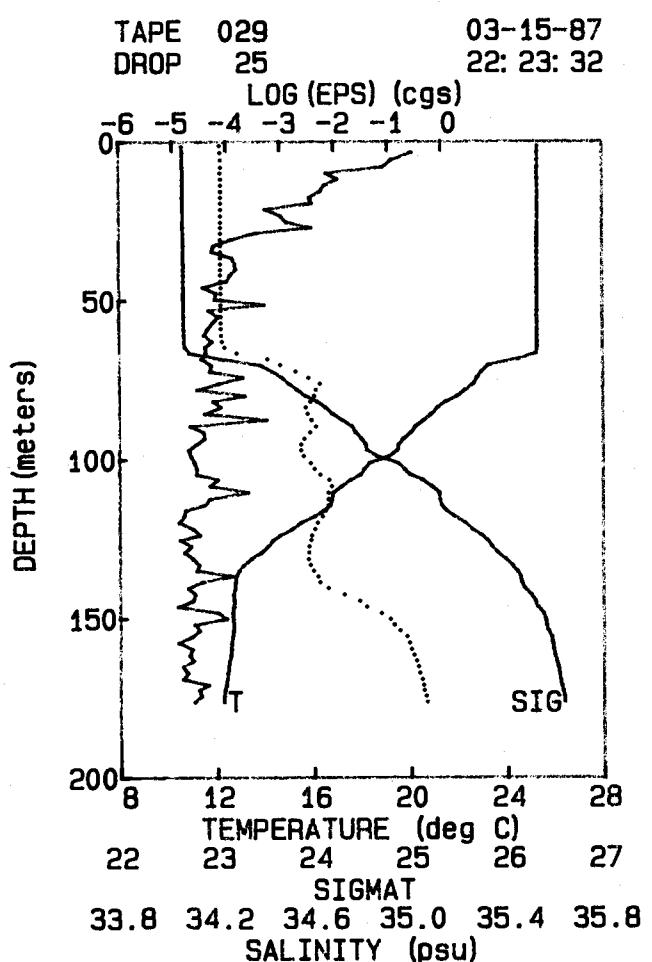


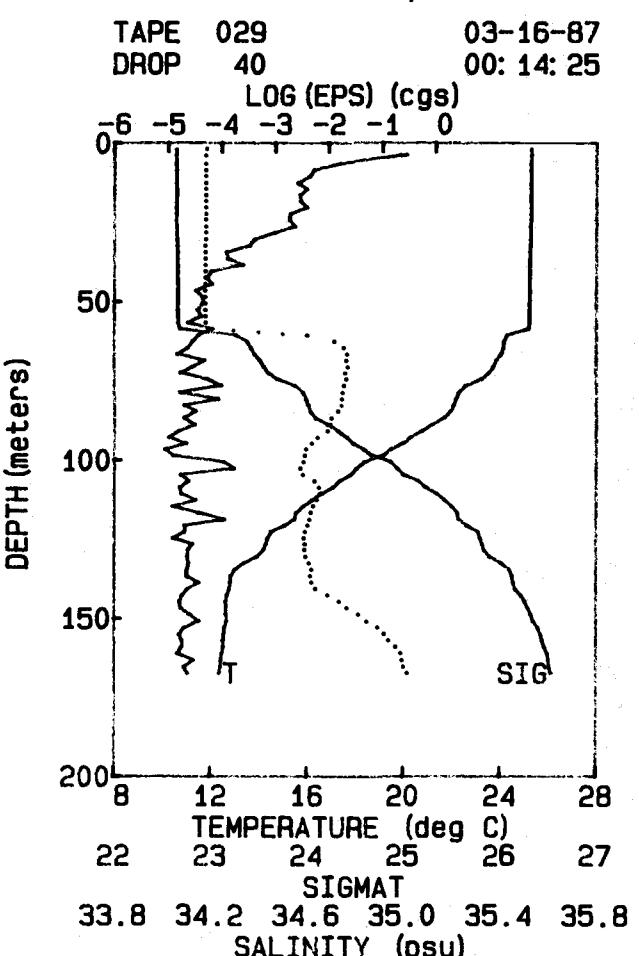
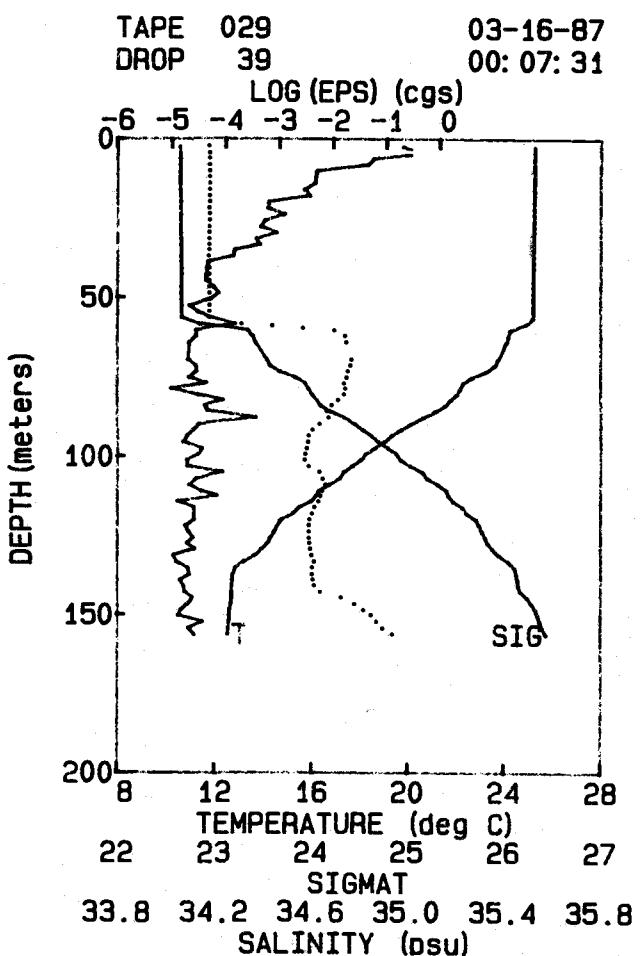
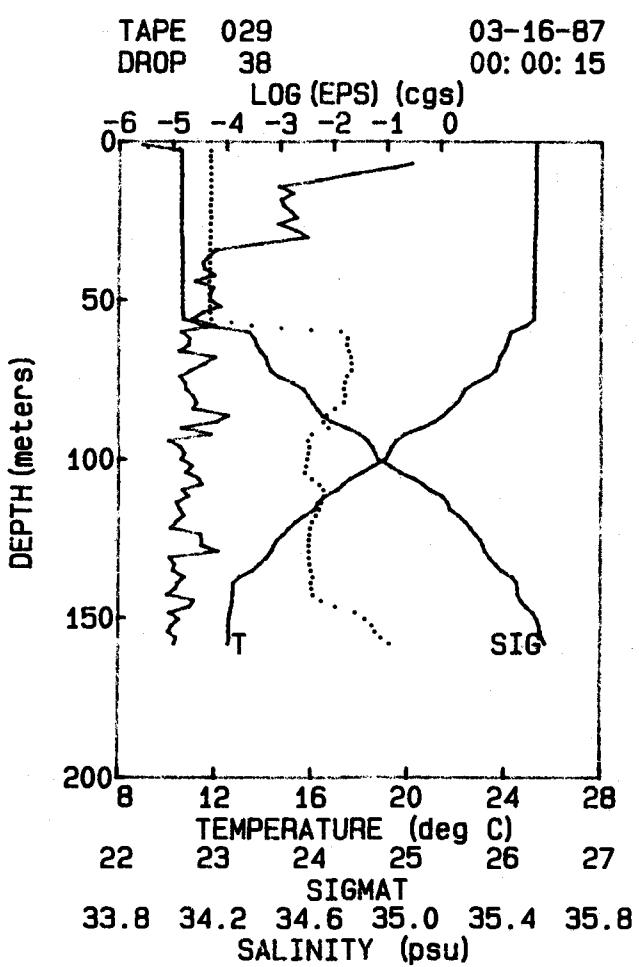
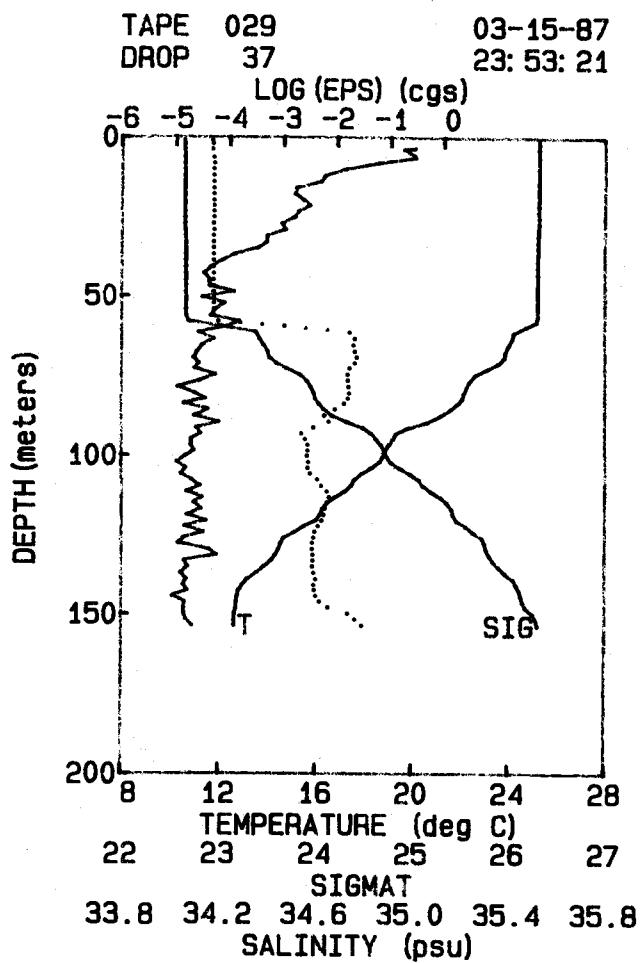








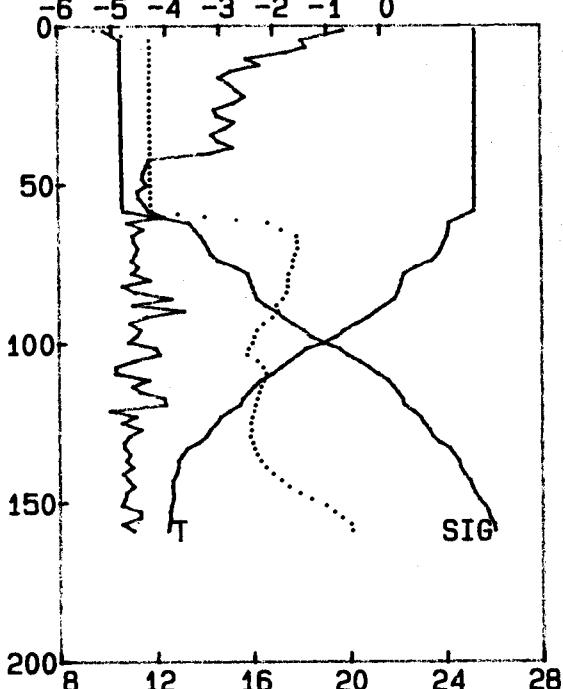




TAPE 029
DROP 41

03-16-87
00: 21: 21

LOG (EPS) (cgs)

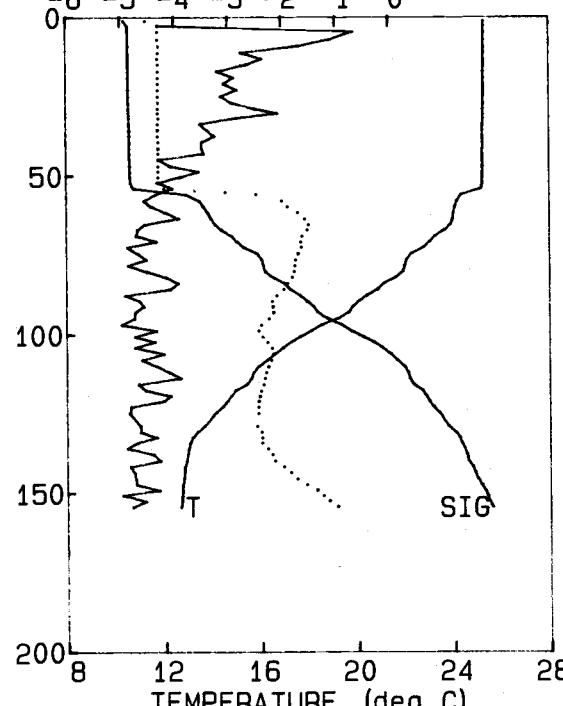


SIGMAT
33.8 34.2 34.6 35.0 35.4 35.8
SALINITY (psu)

TAPE 029
DROP 43

03-16-87
00: 35: 21

LOG (EPS) (cgs)

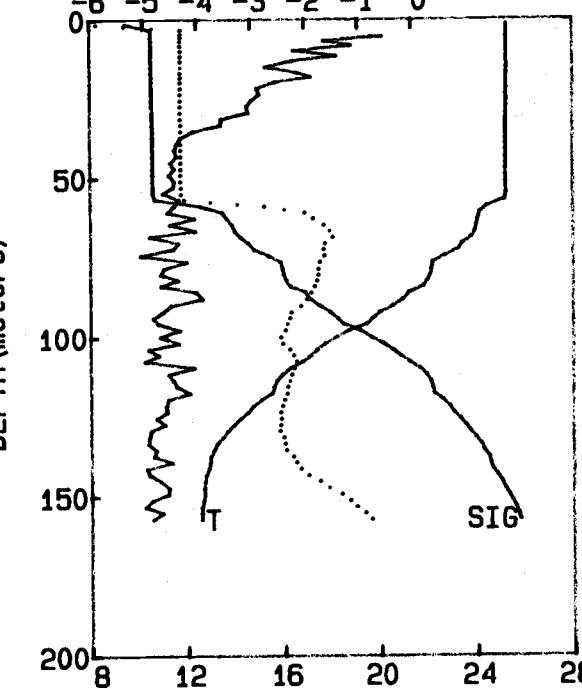


SIGMAT
33.8 34.2 34.6 35.0 35.4 35.8
SALINITY (psu)

TAPE 029
DROP 42

03-16-87
00: 28: 22

LOG (EPS) (cgs)

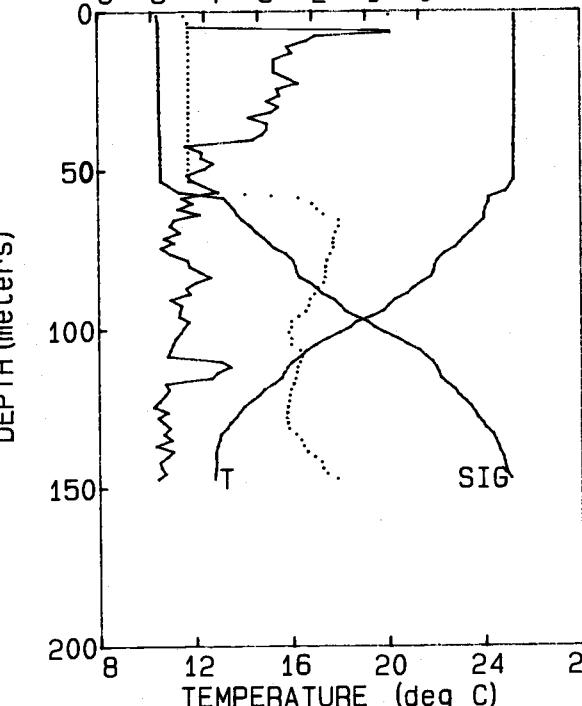


SIGMAT
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SALINITY (psu)

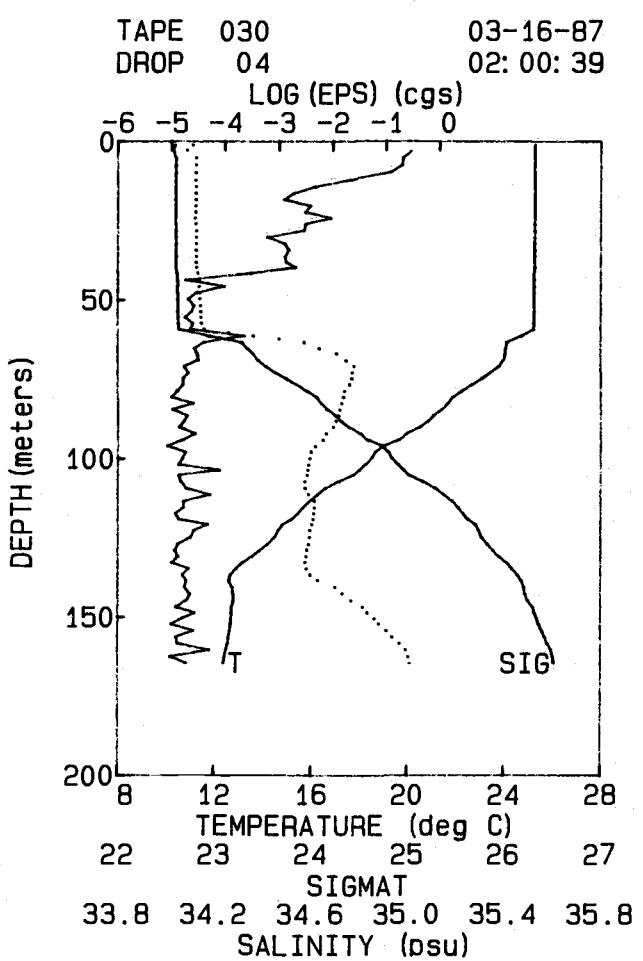
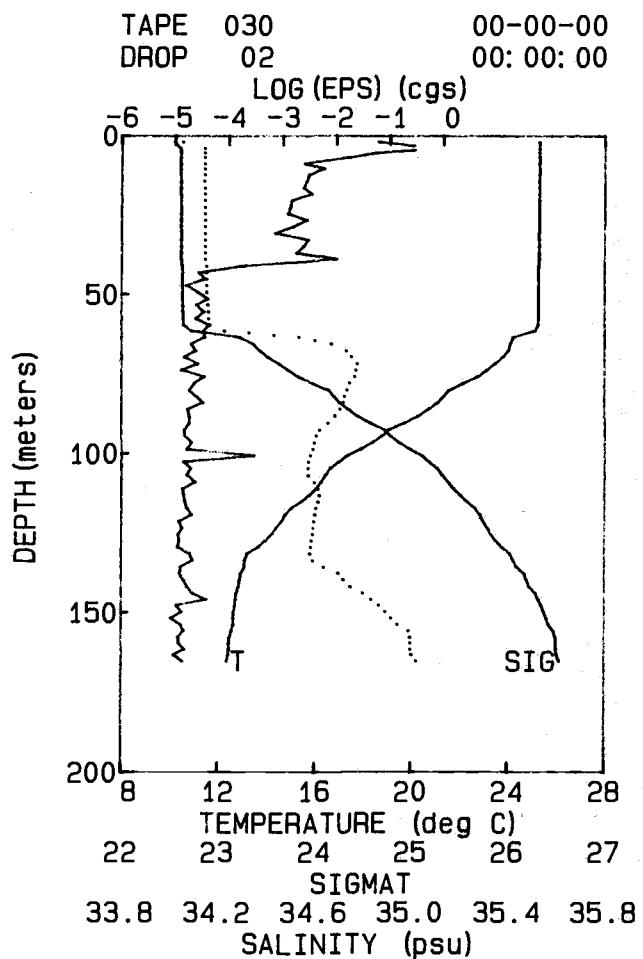
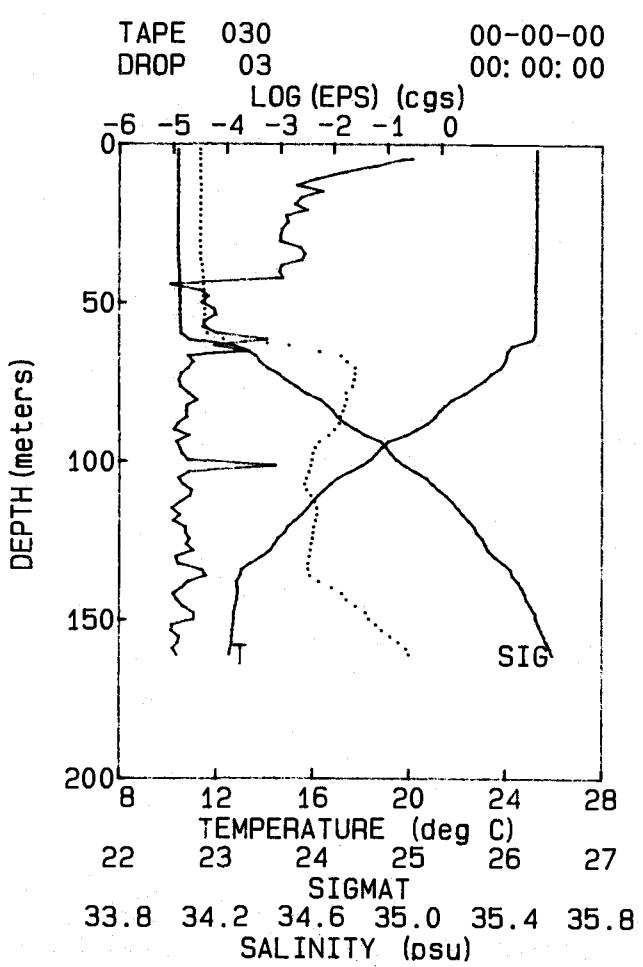
TAPE 029
DROP 44

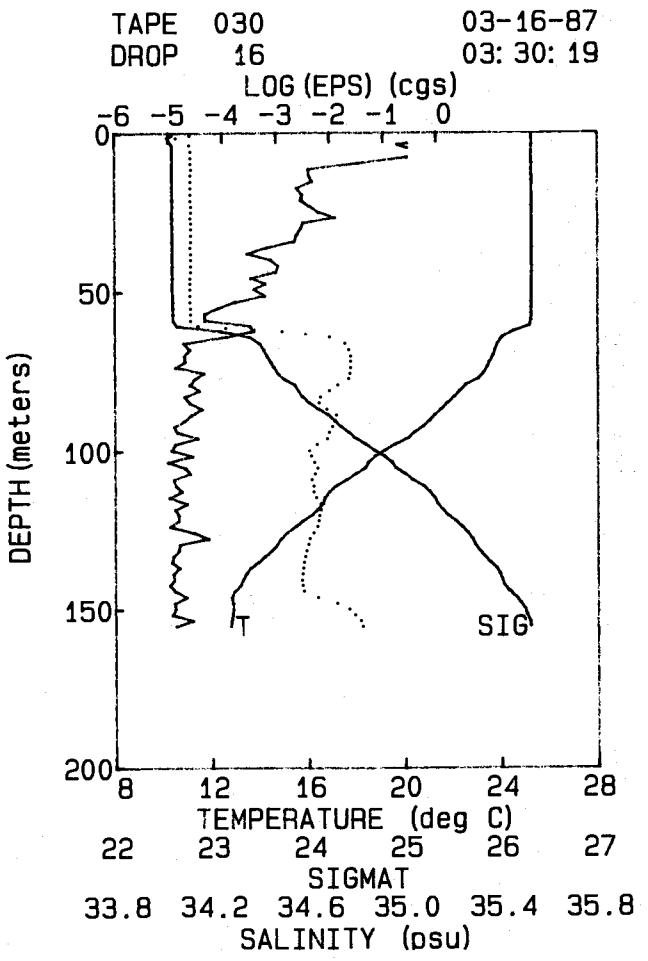
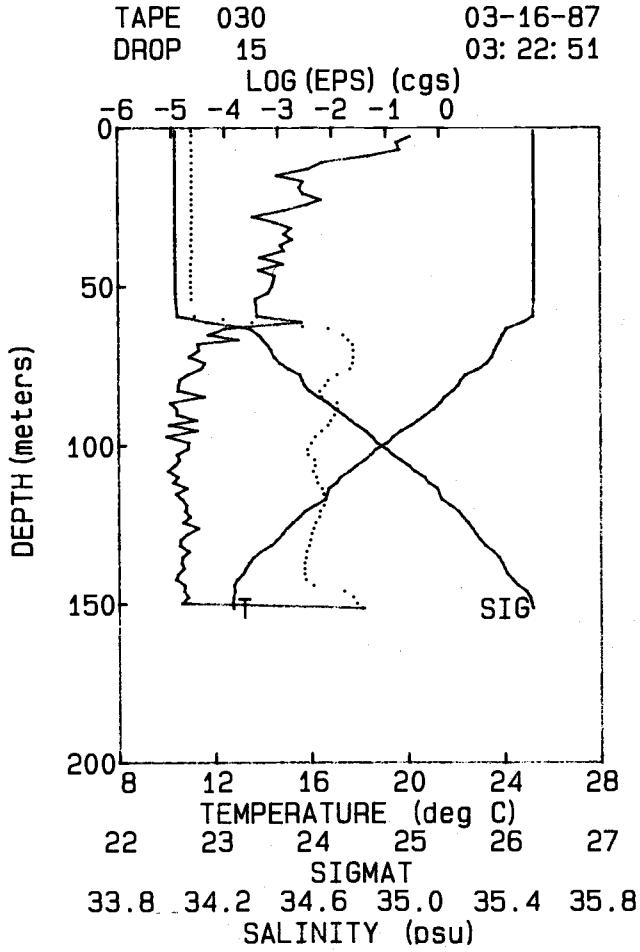
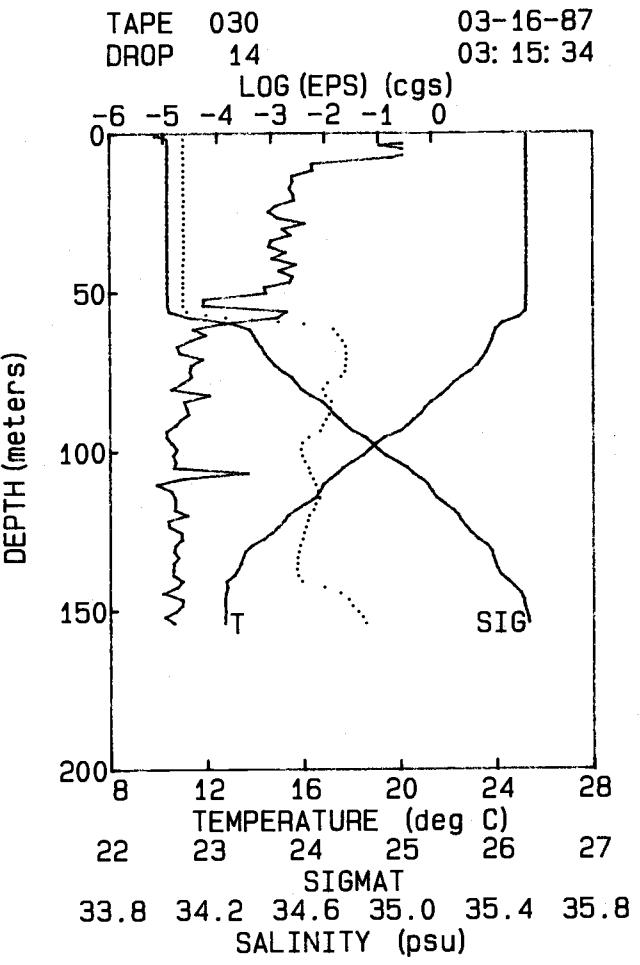
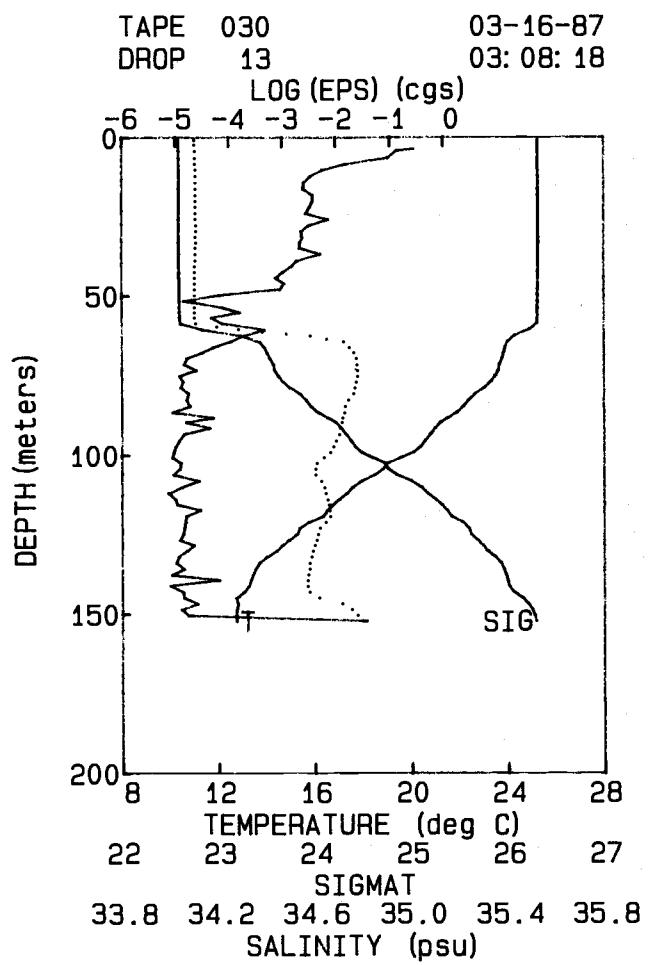
03-16-87
00: 42: 32

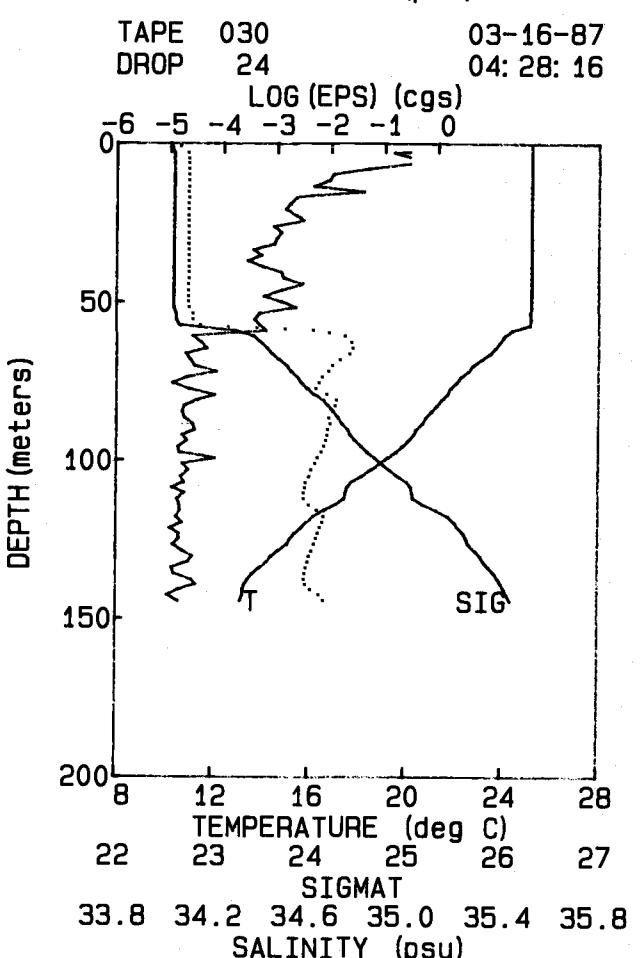
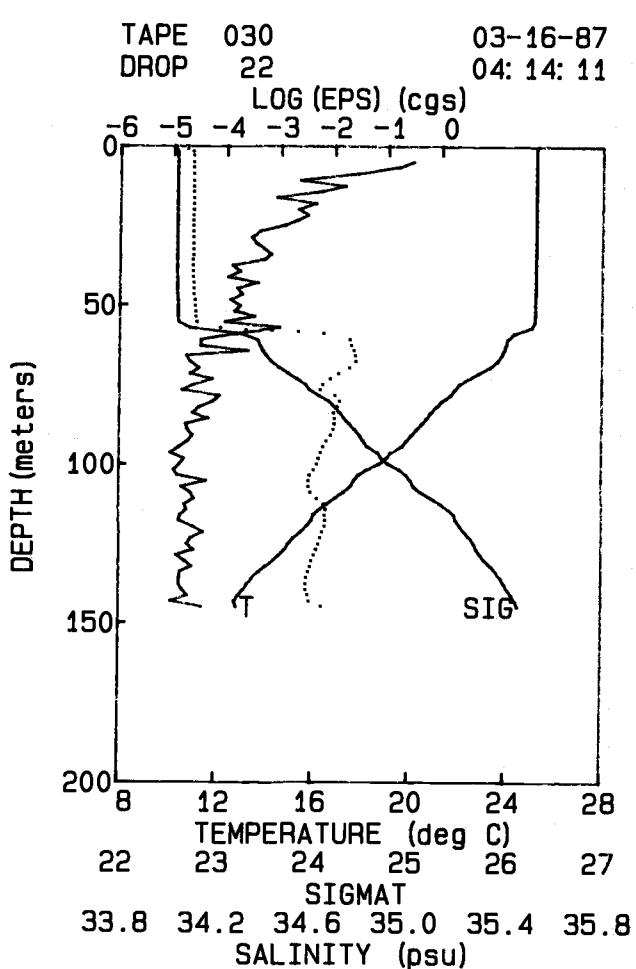
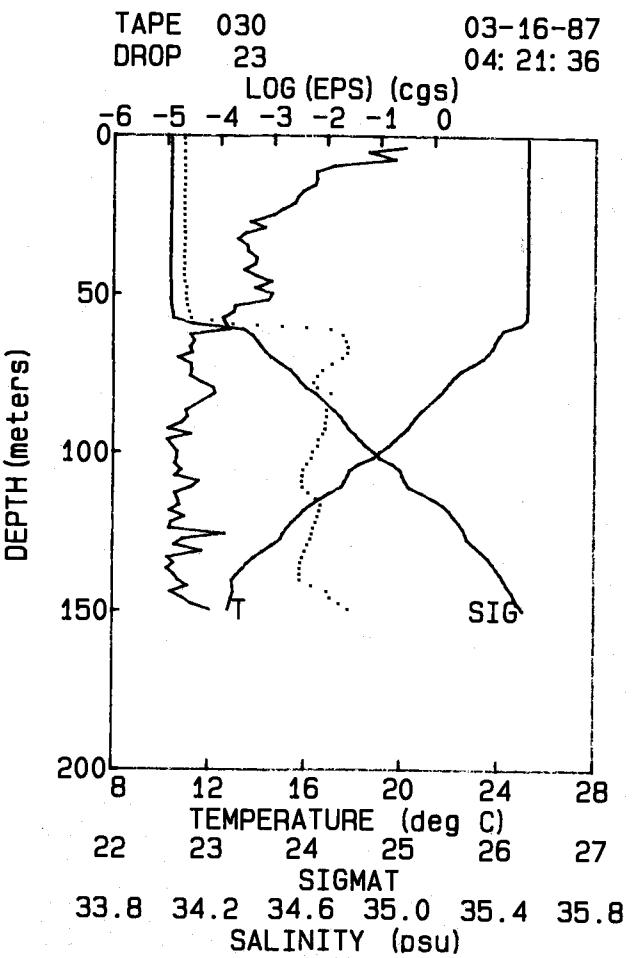
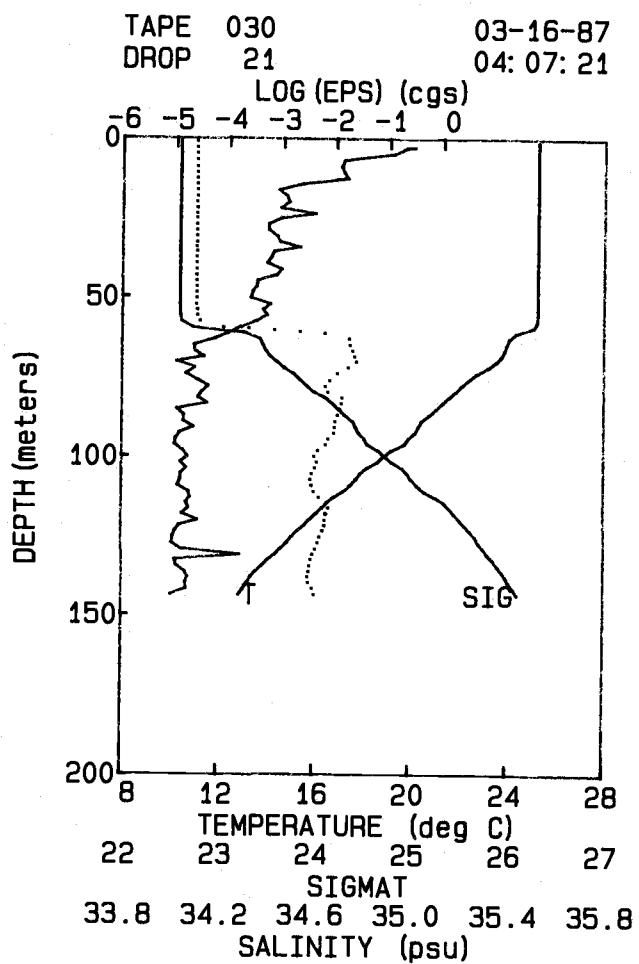
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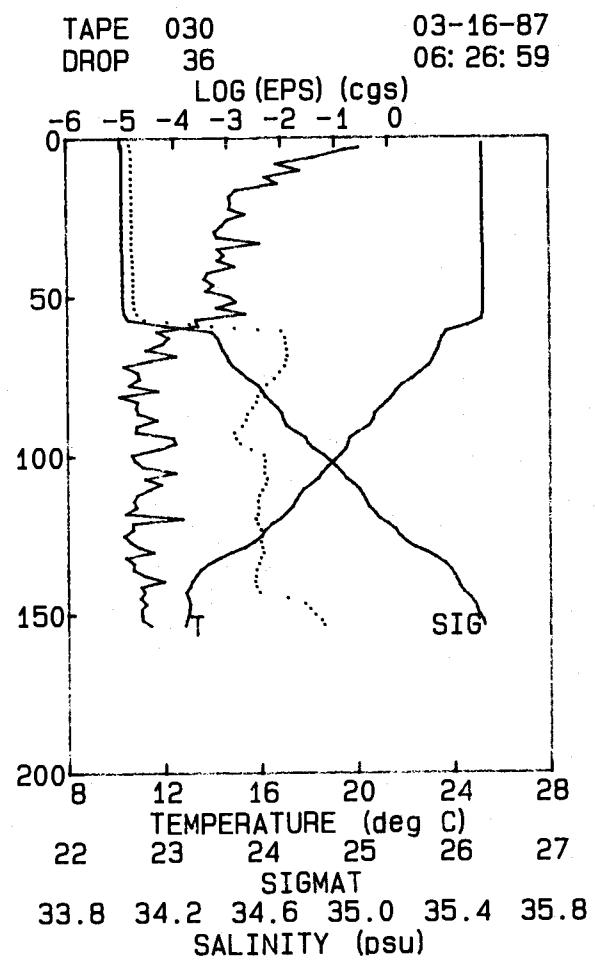
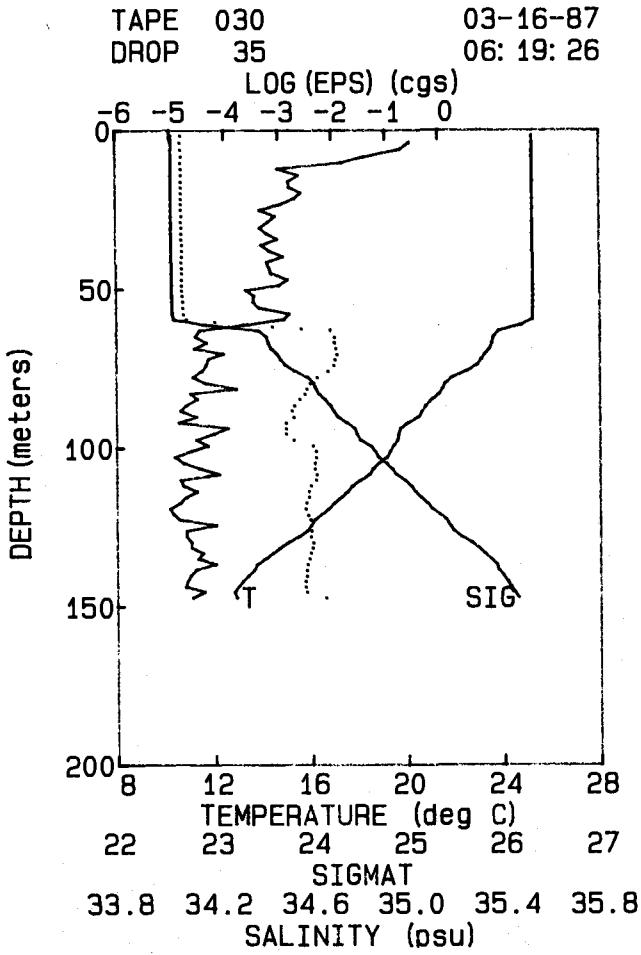
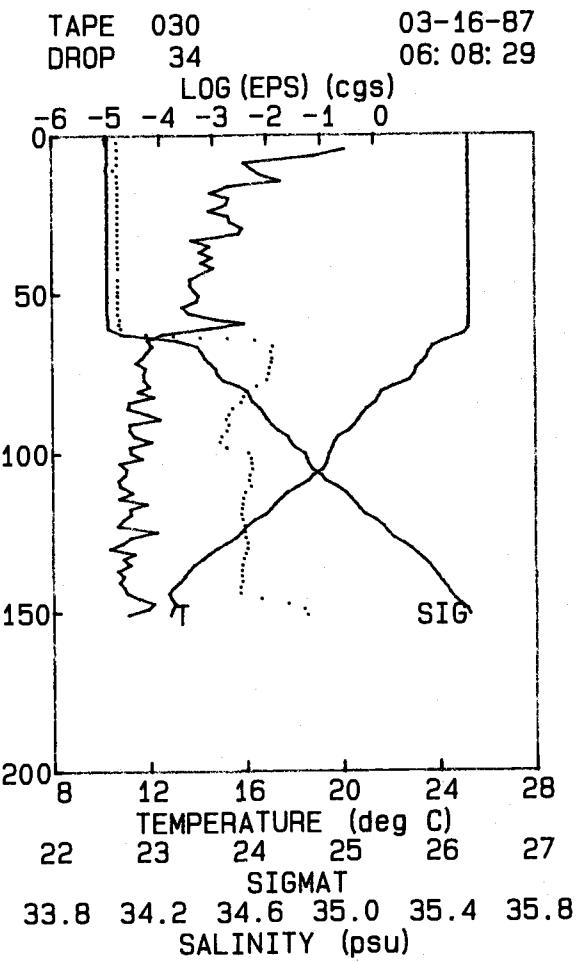
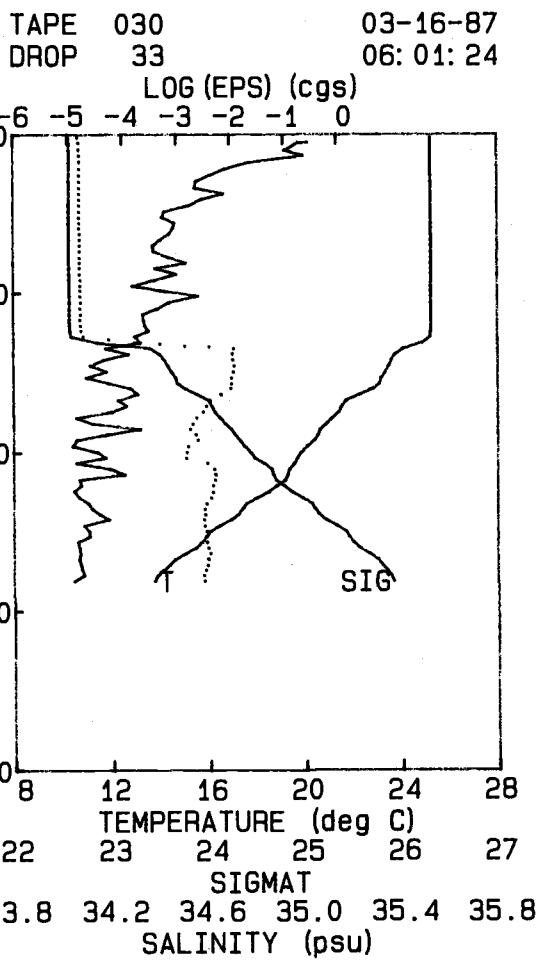


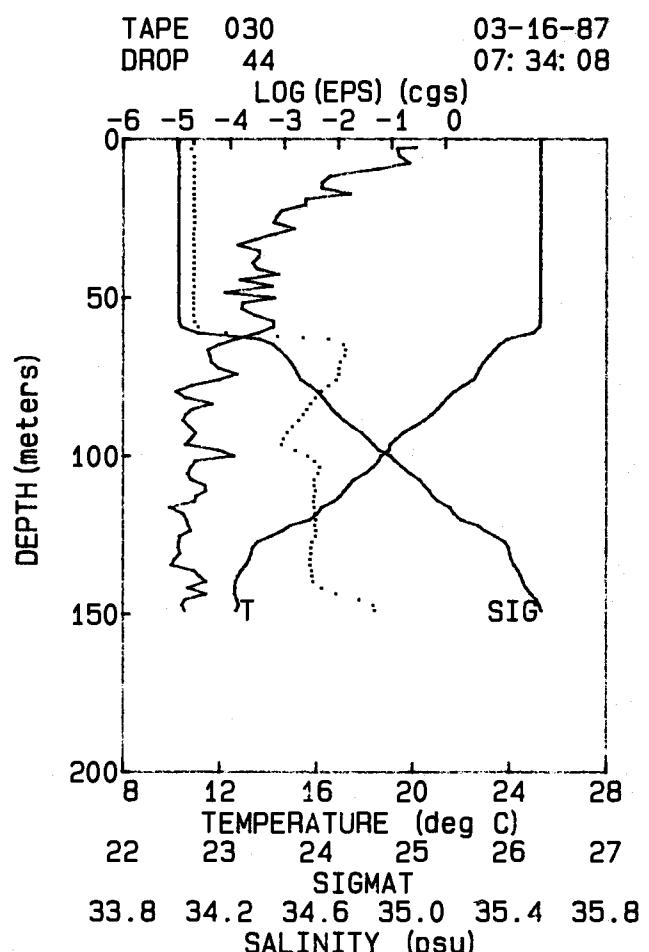
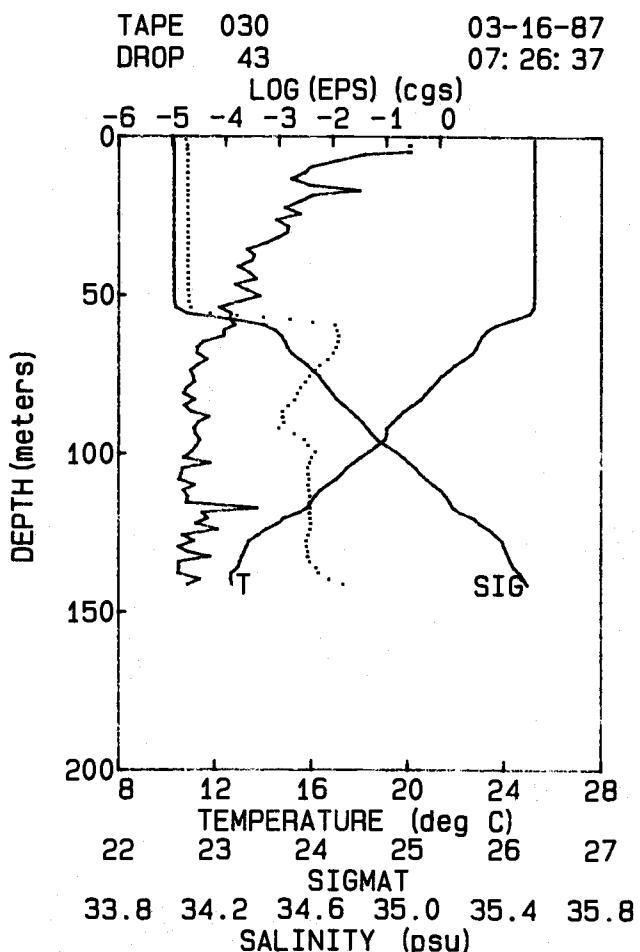
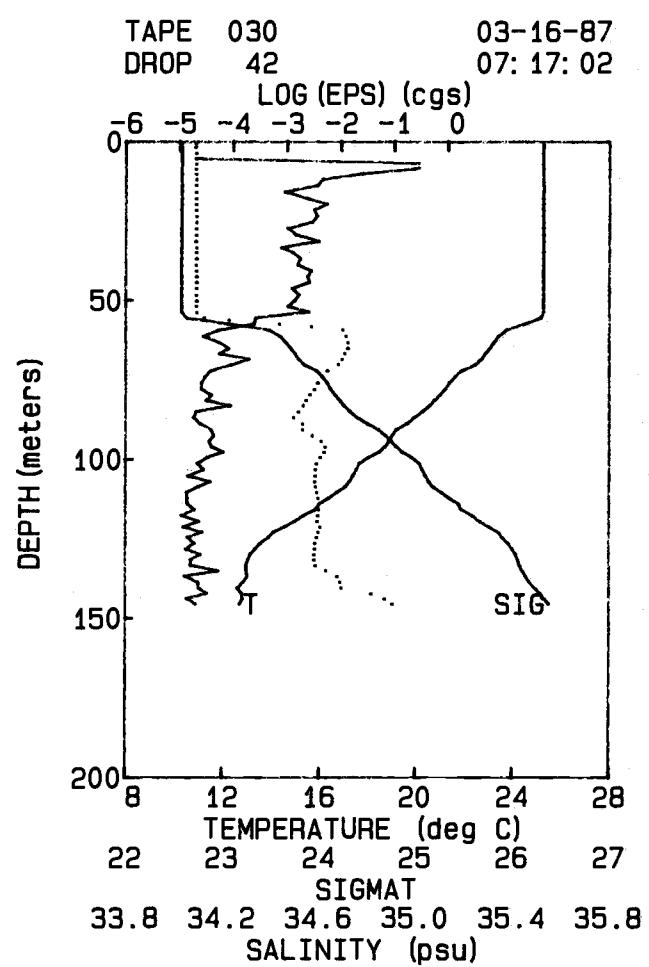
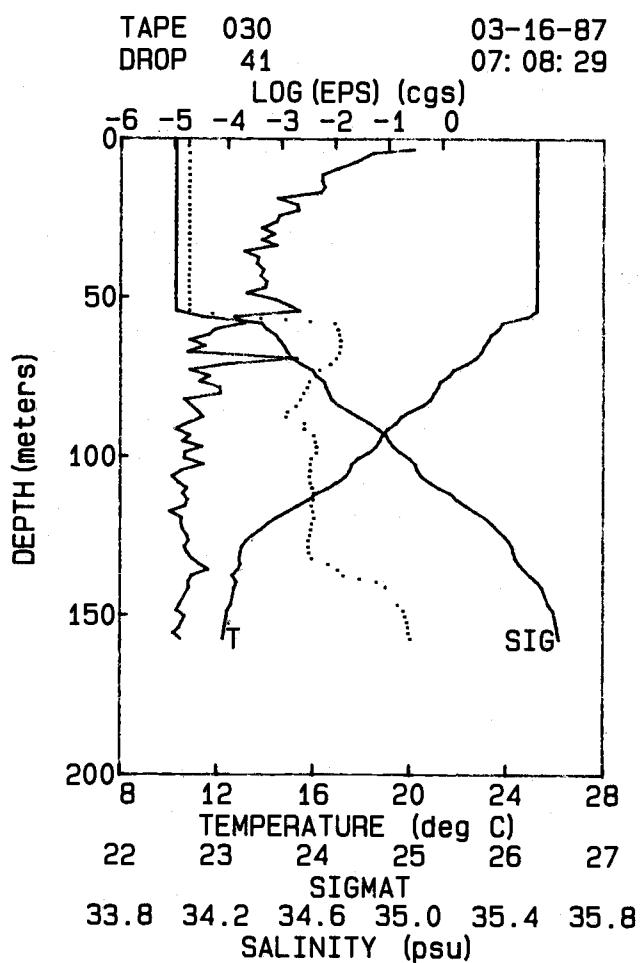
SIGMAT
33.8 34.2 34.6 35.0 35.4 35.8
SALINITY (psu)

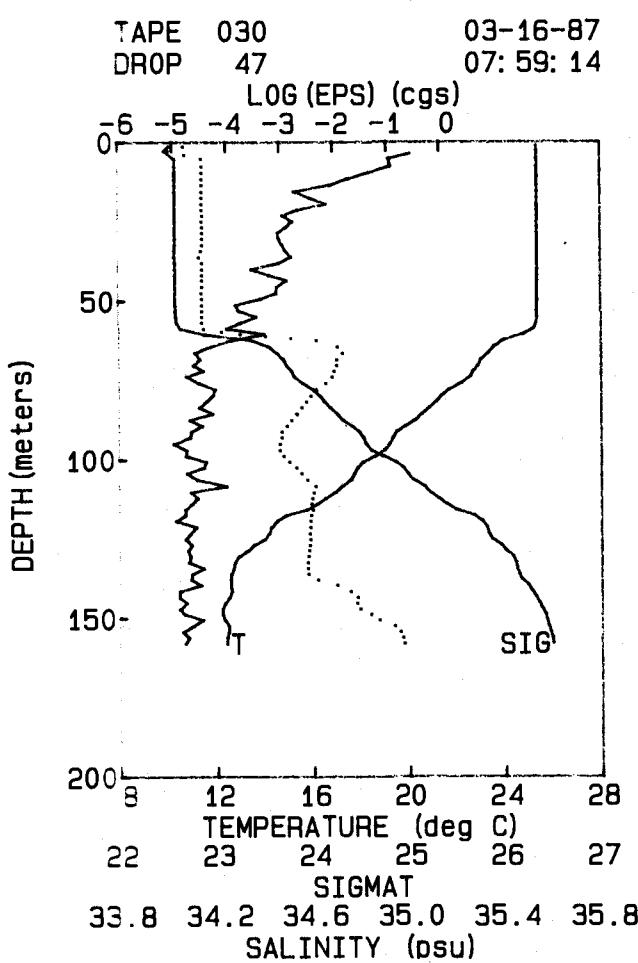
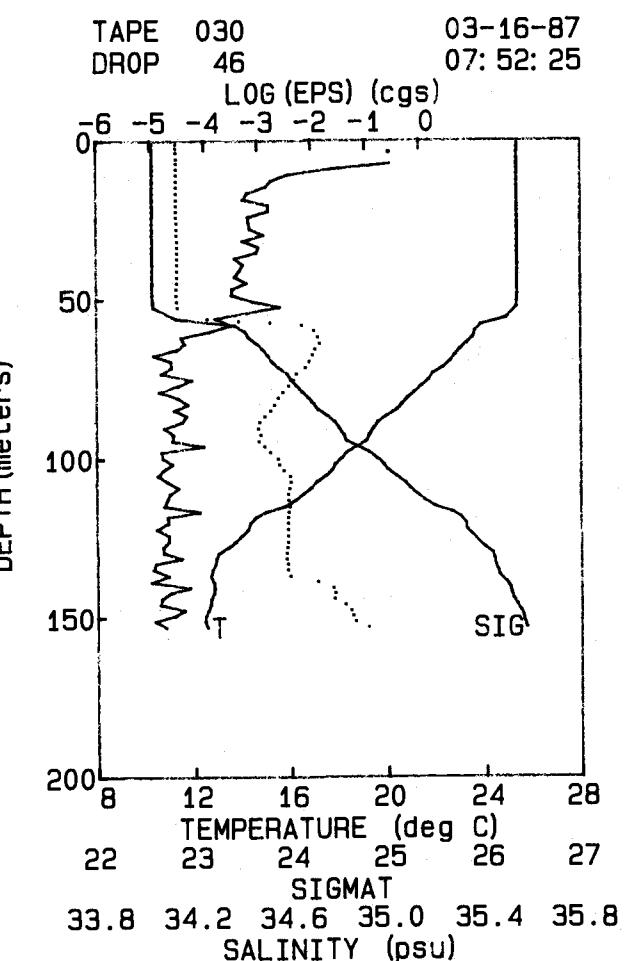
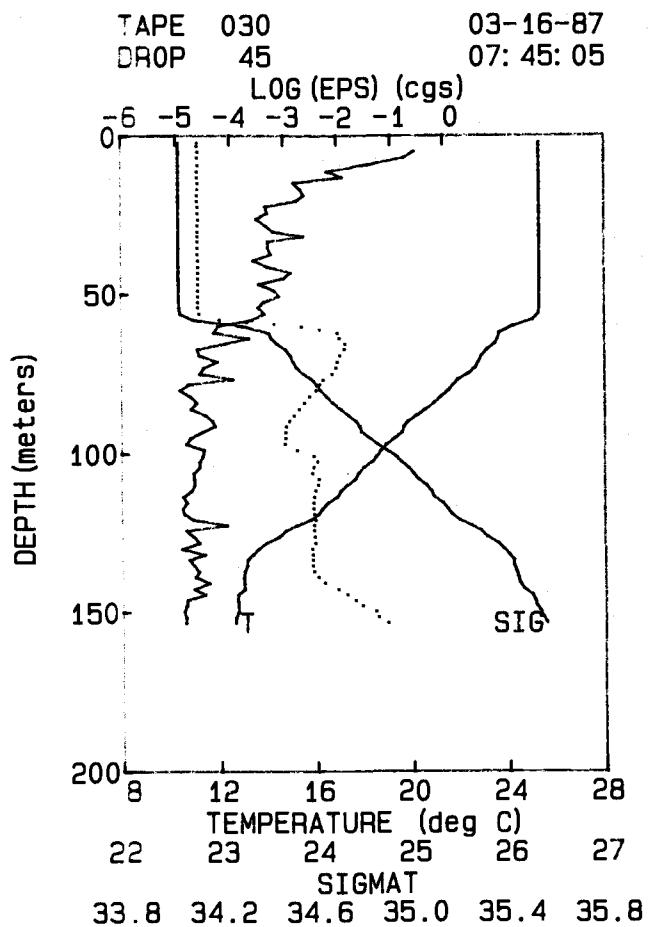


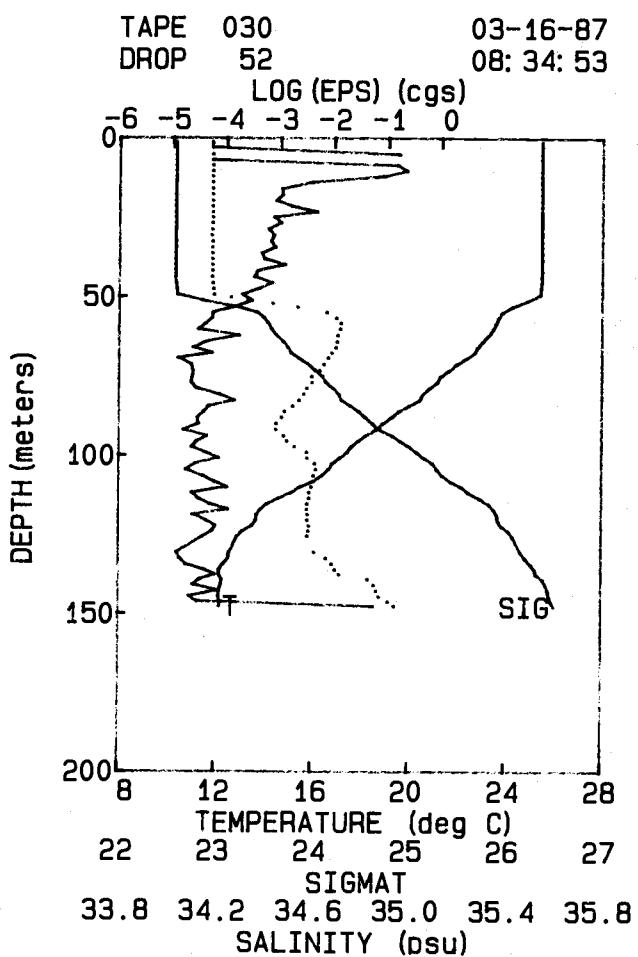
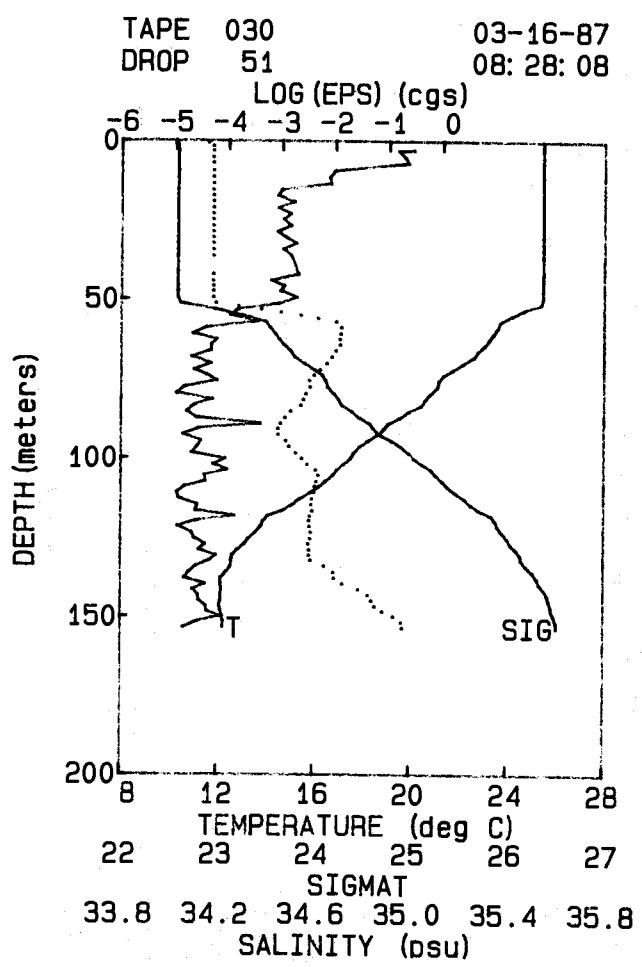
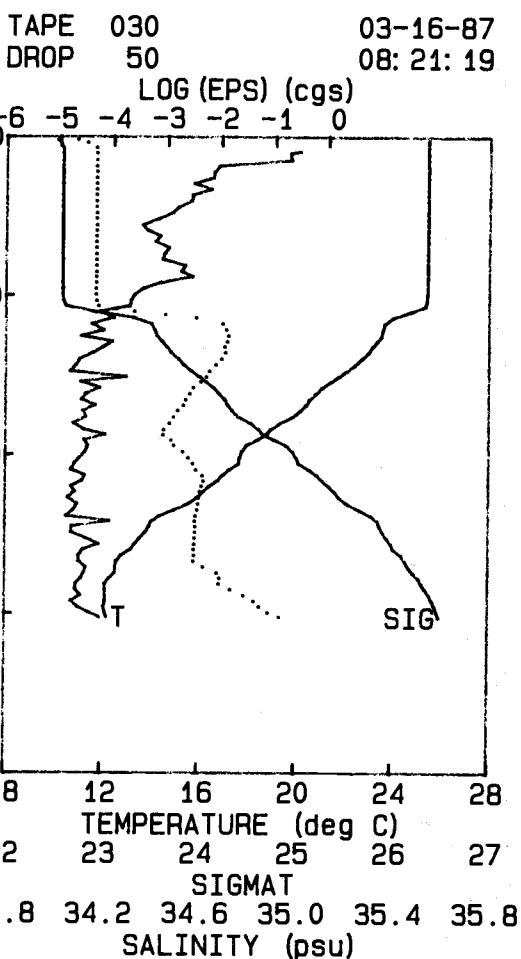


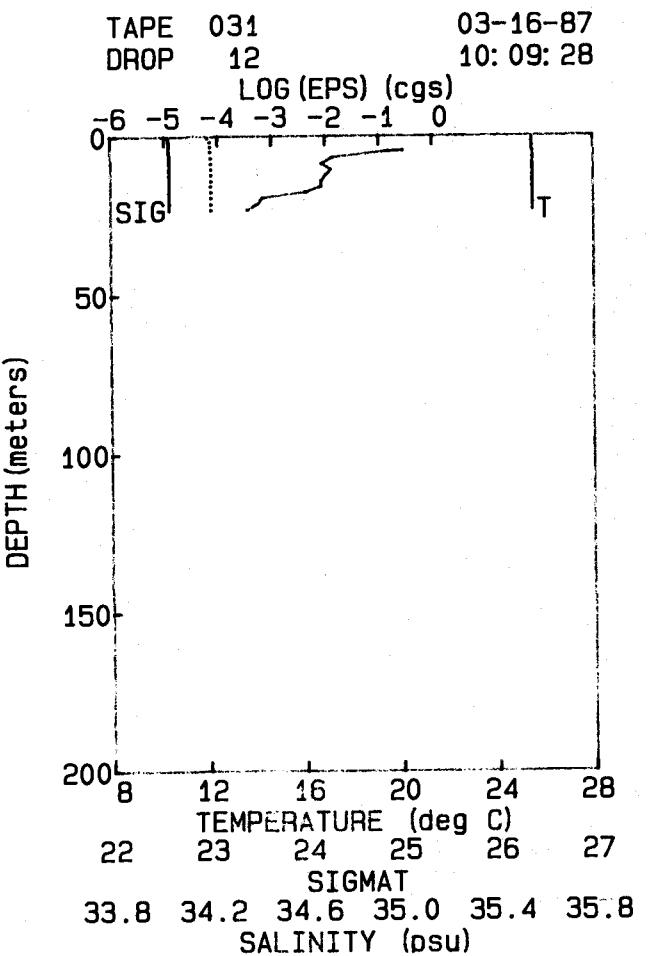
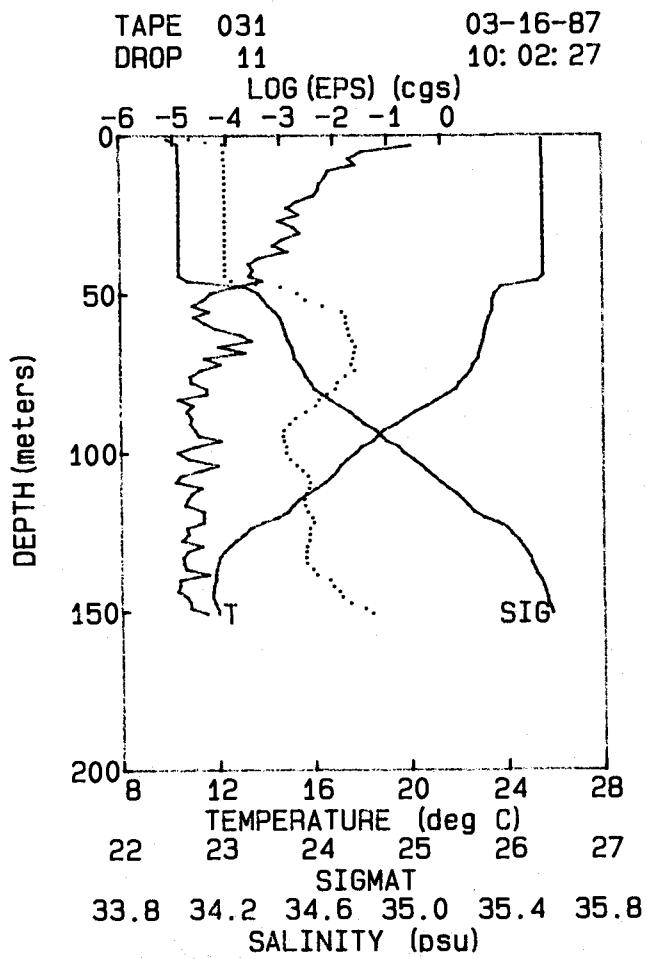
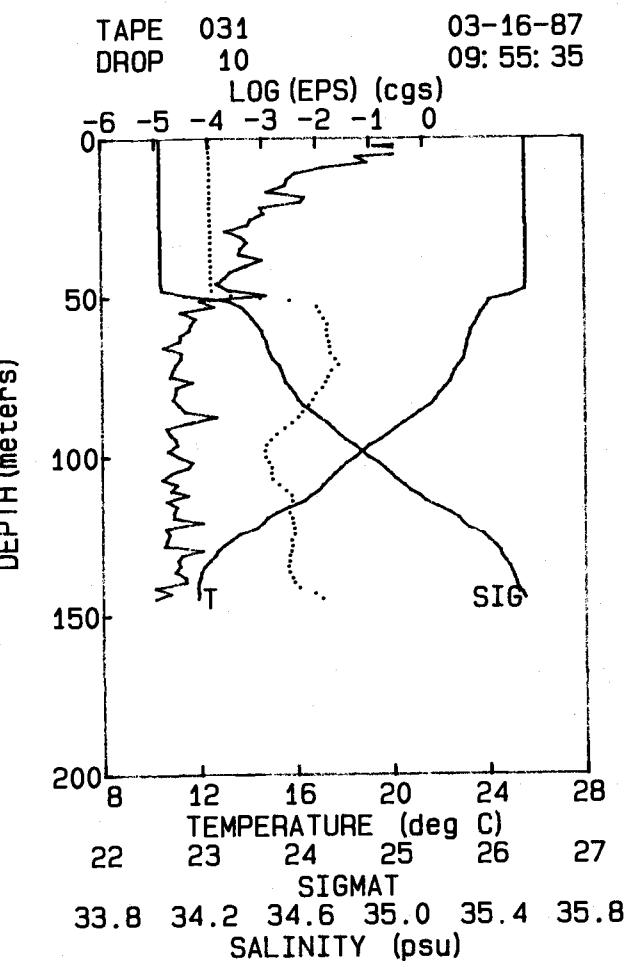
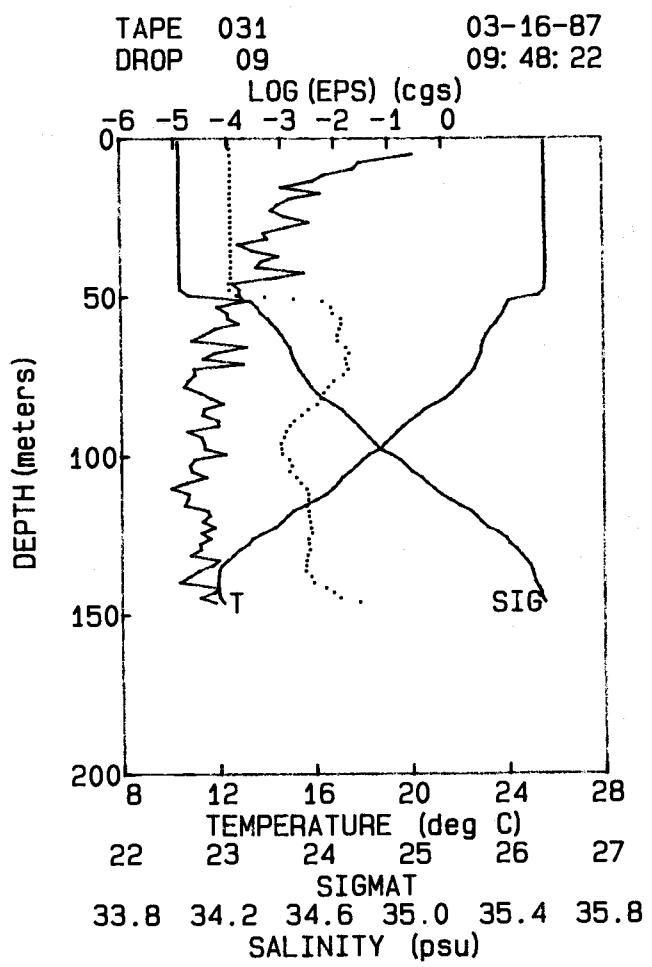


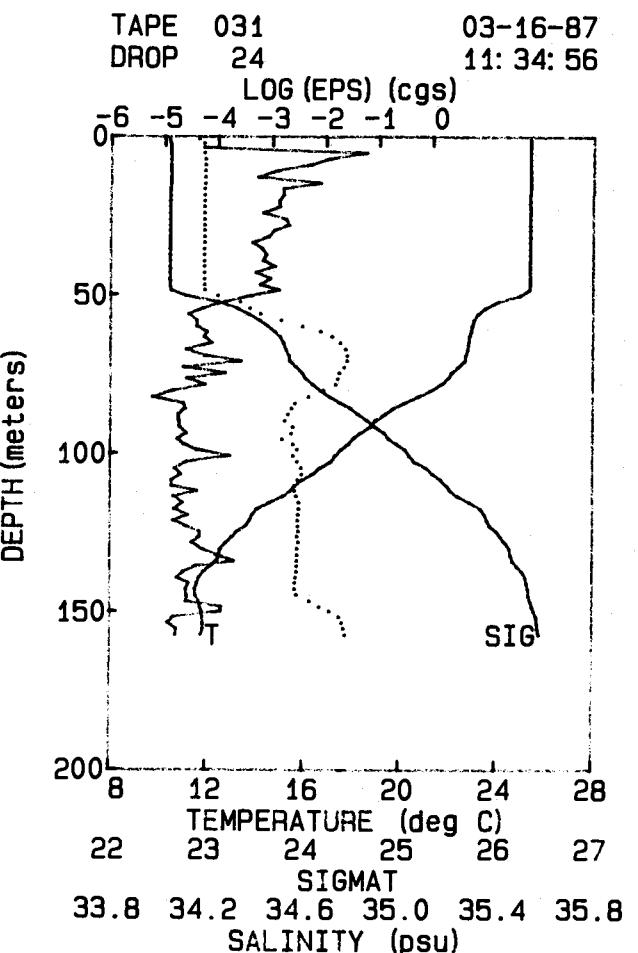
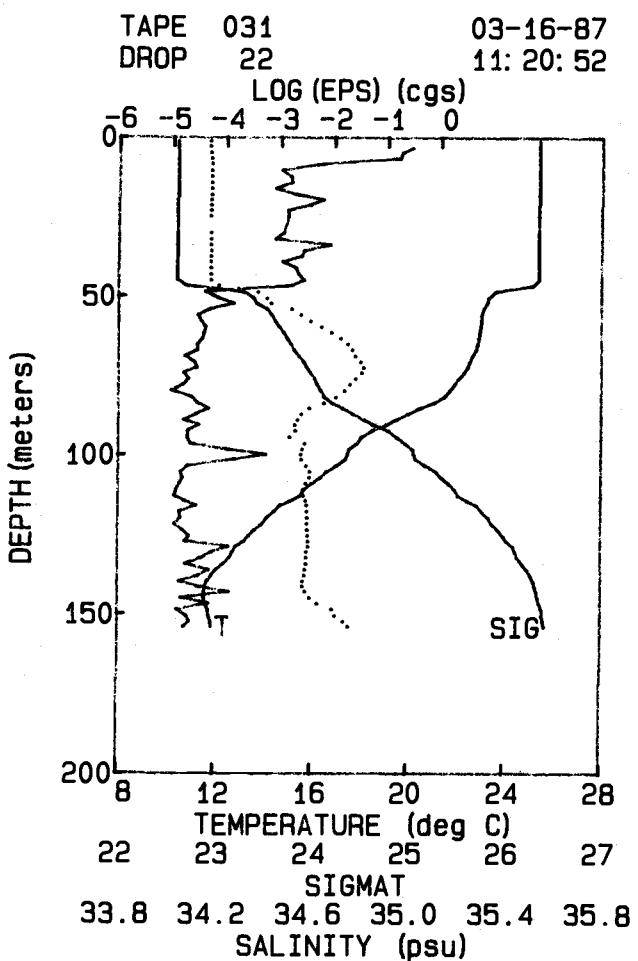
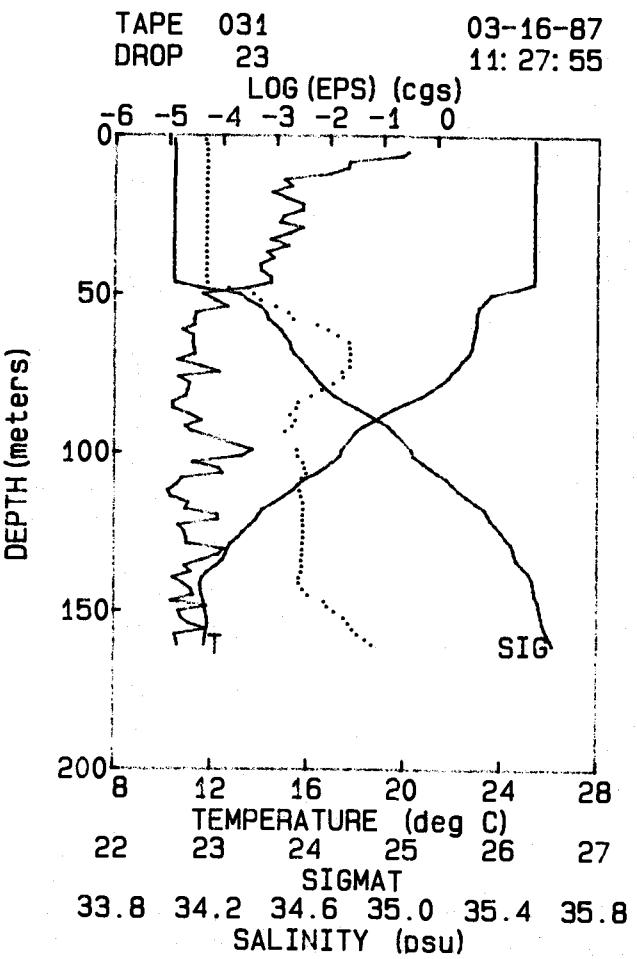
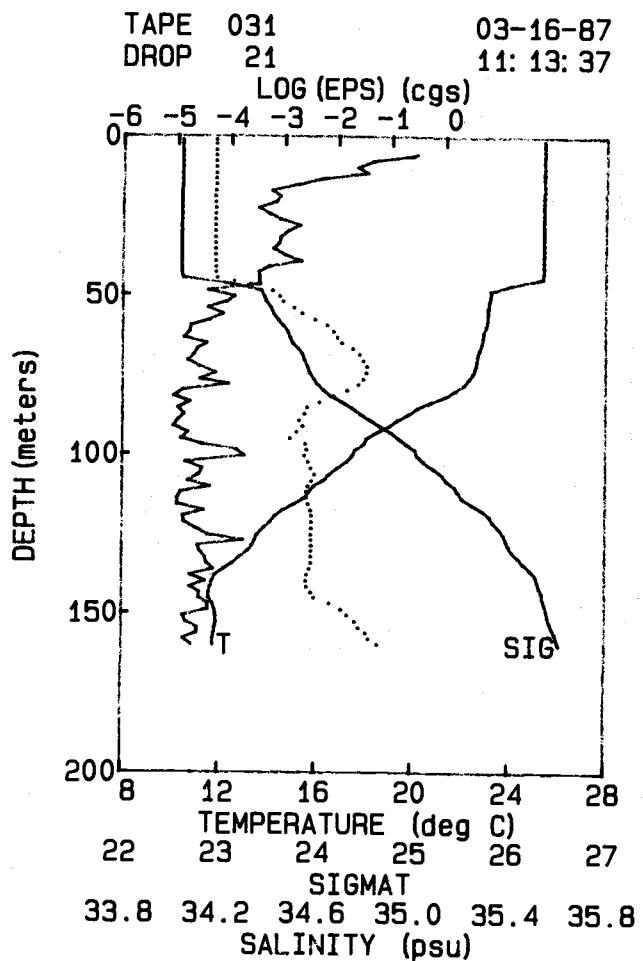


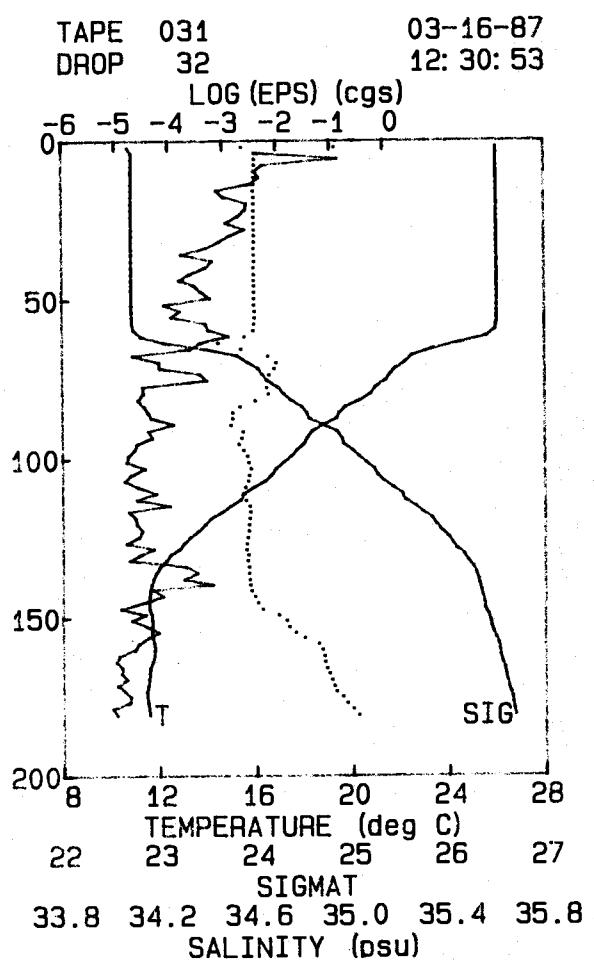
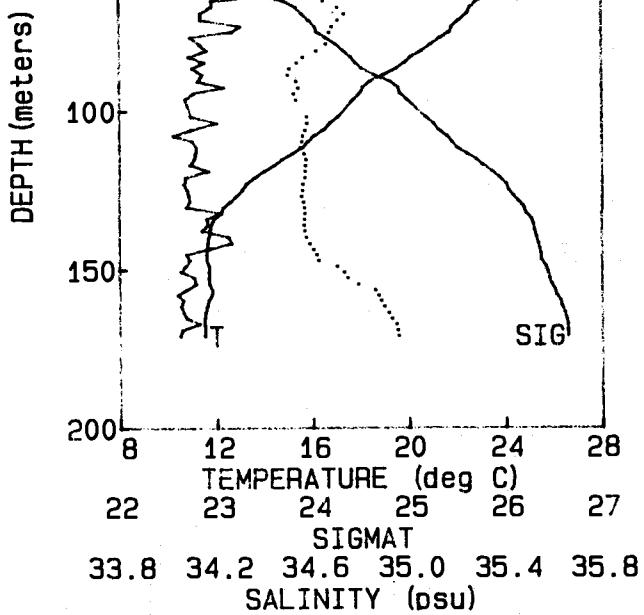
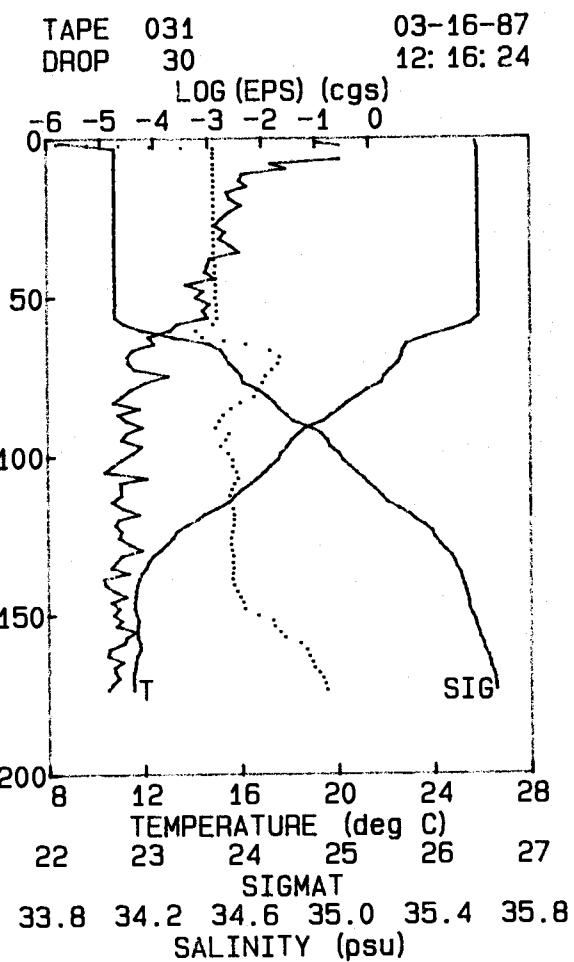
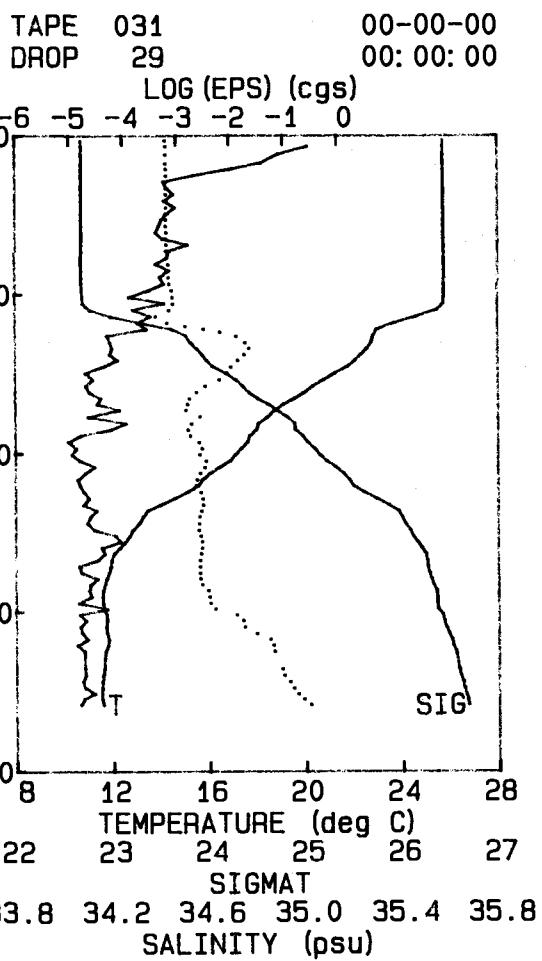


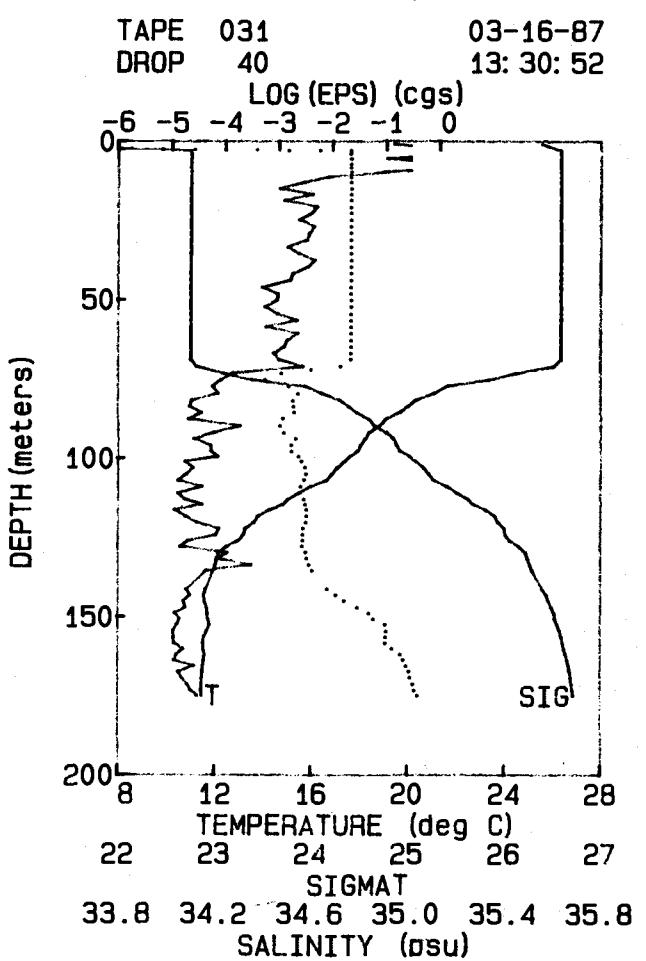
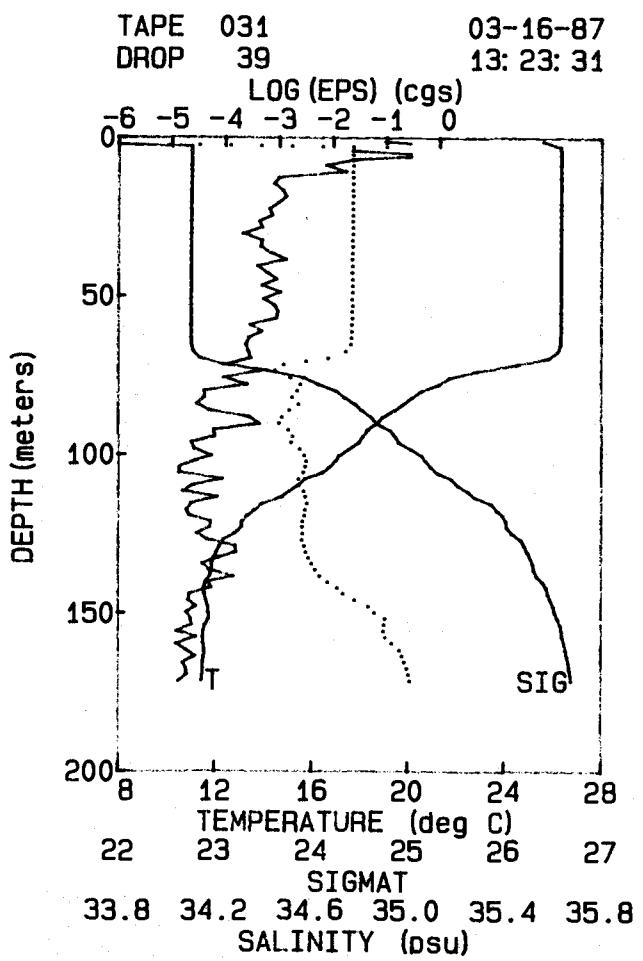
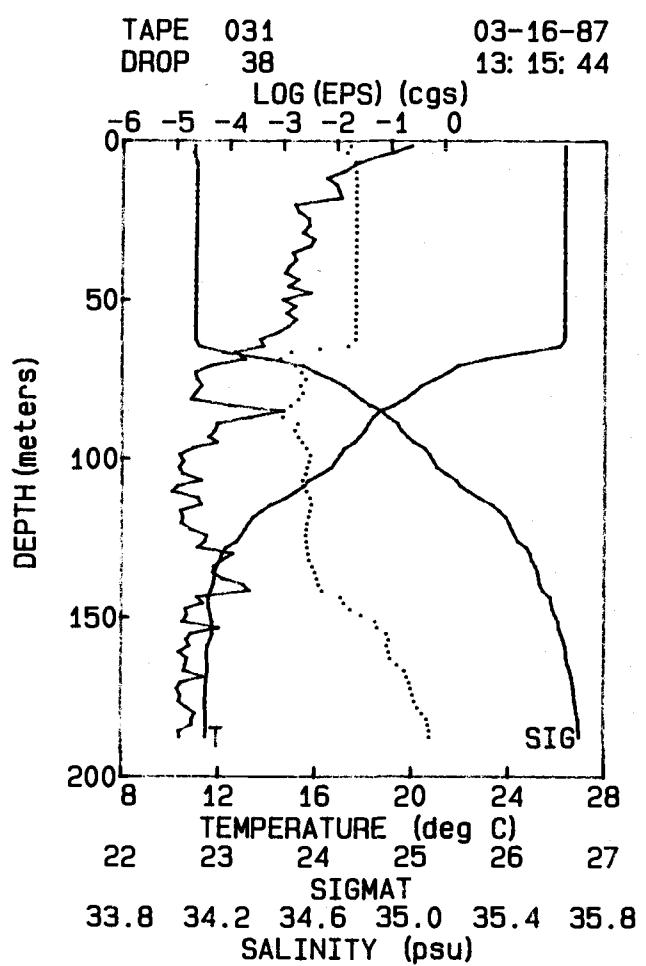
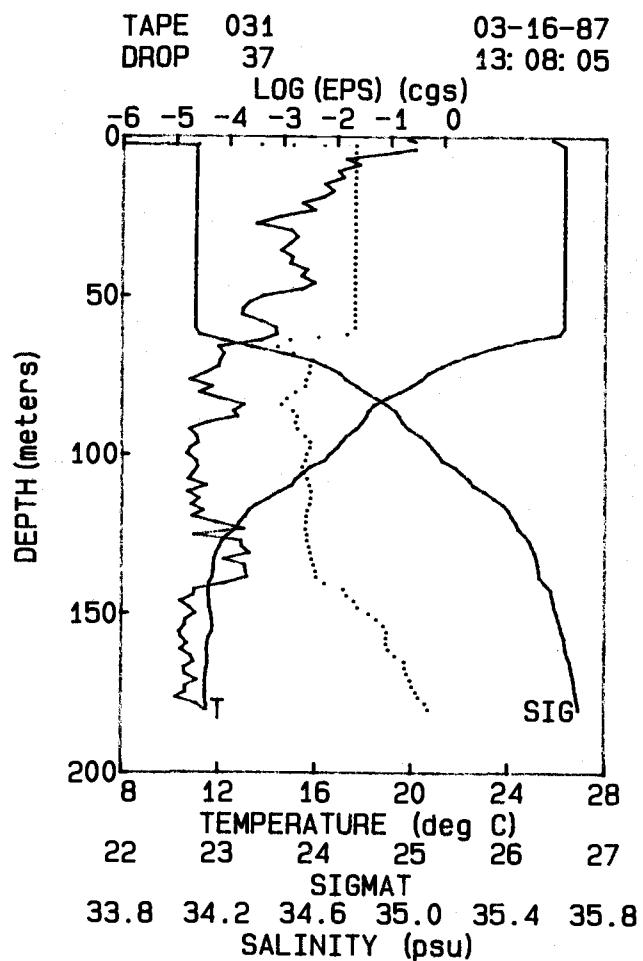


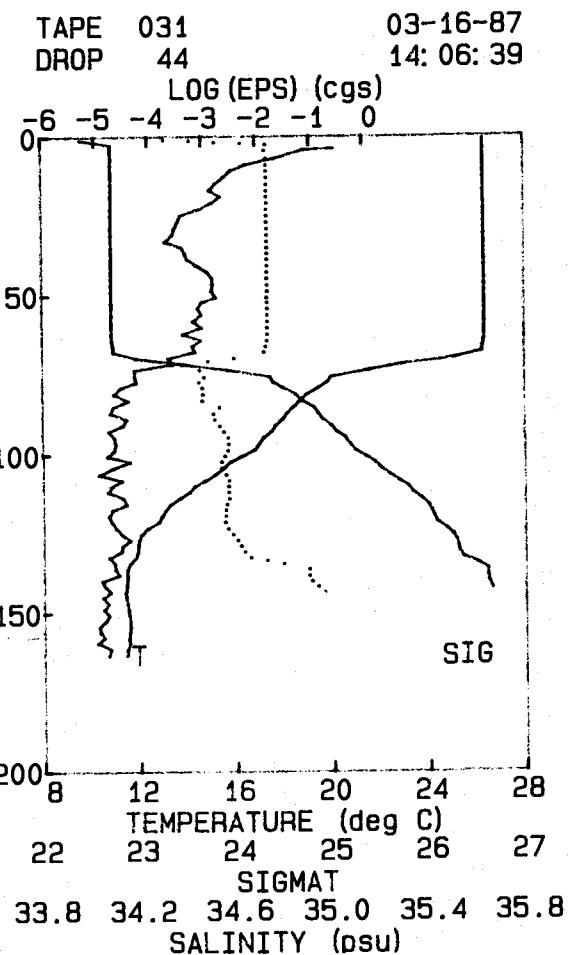
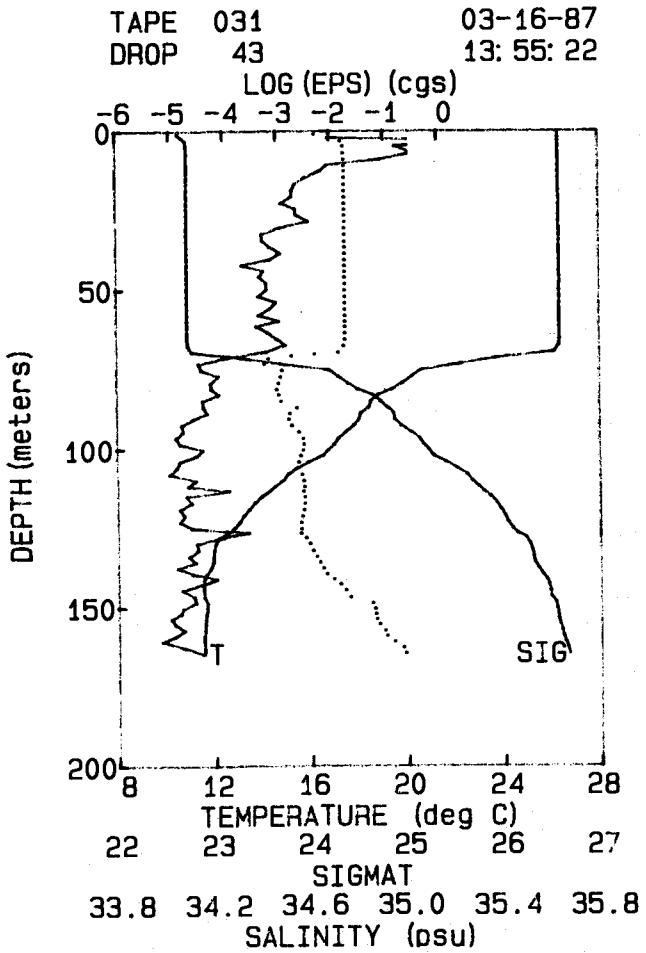
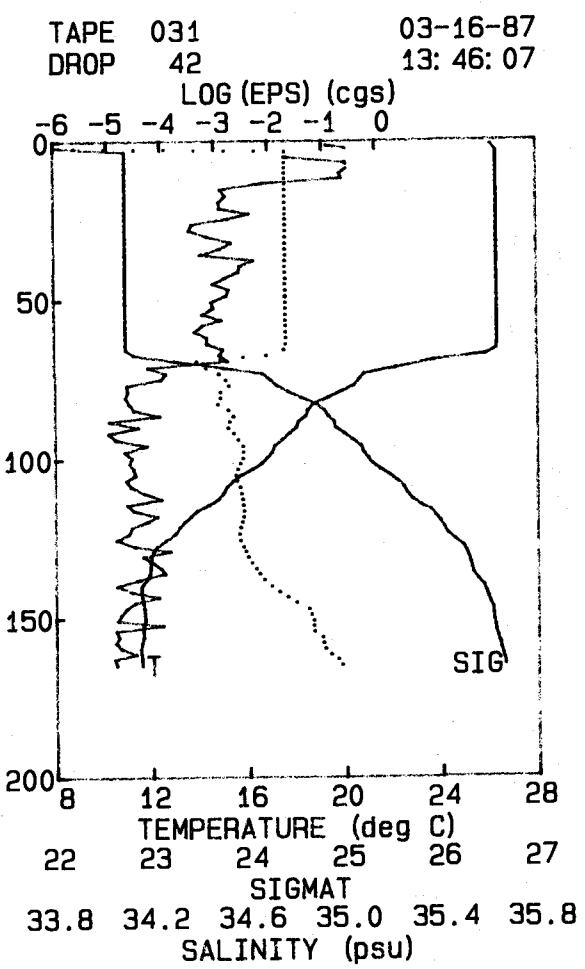
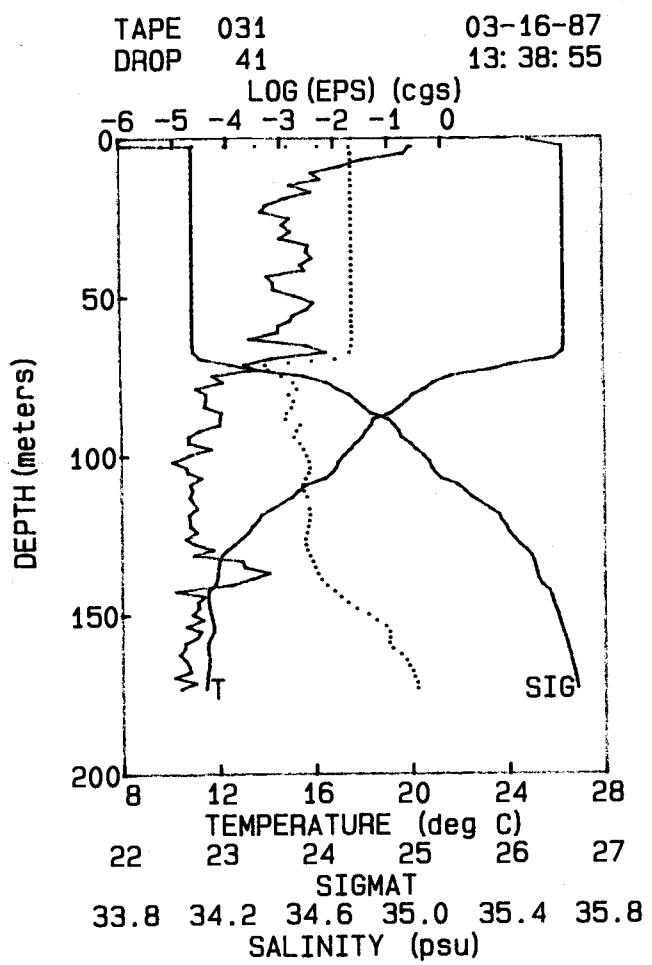


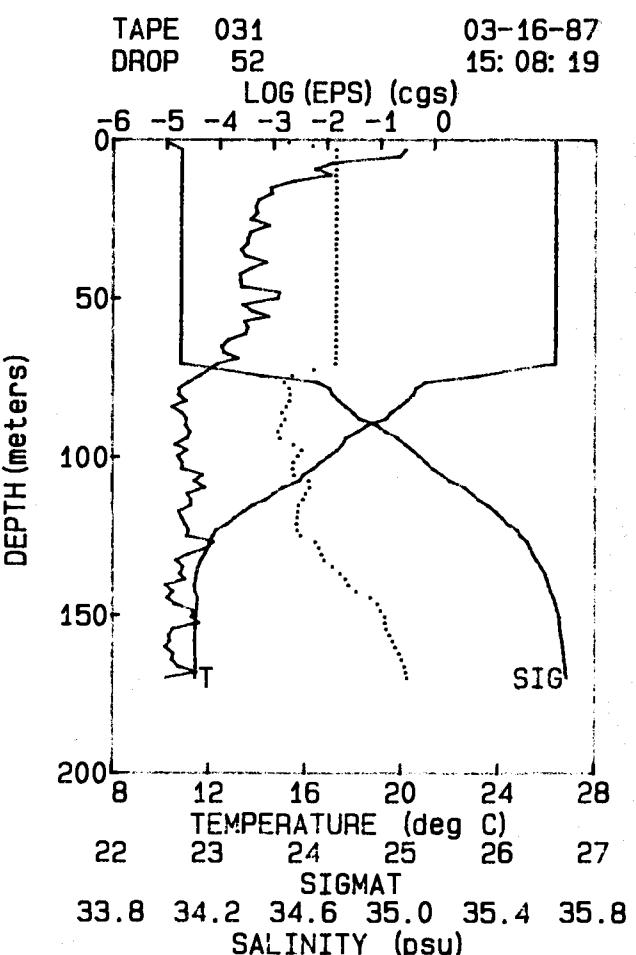
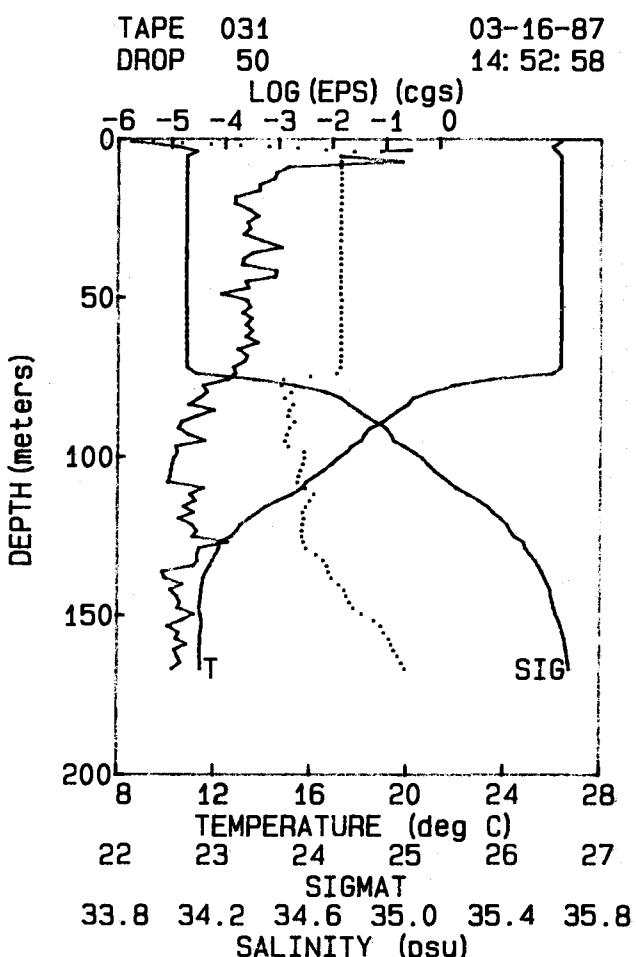
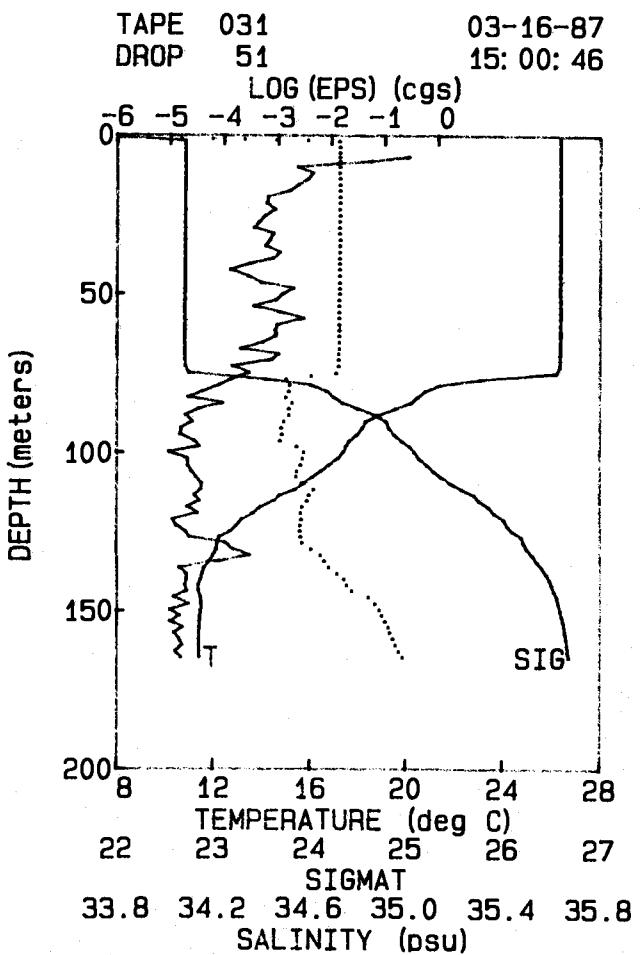
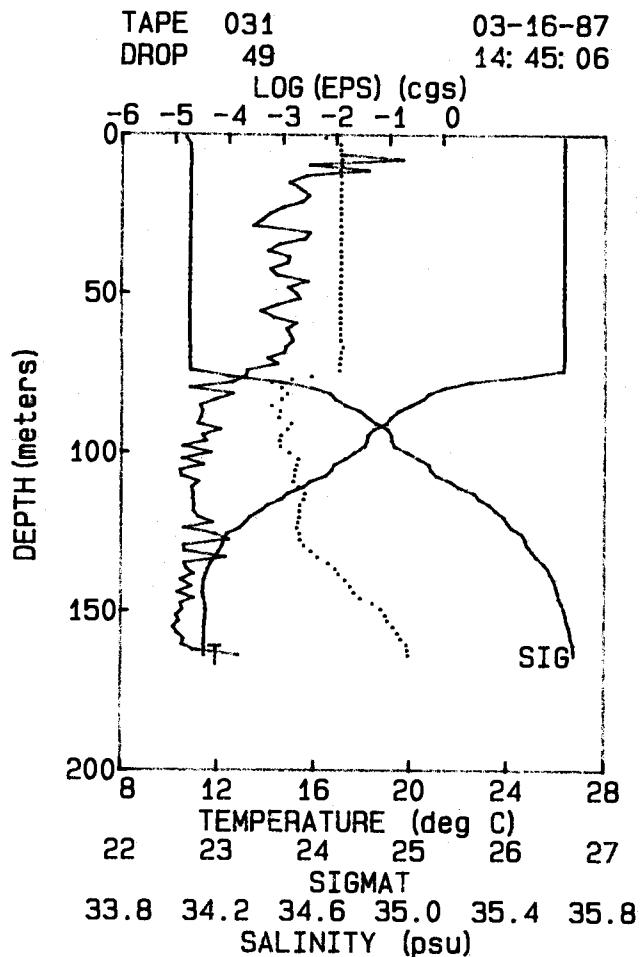


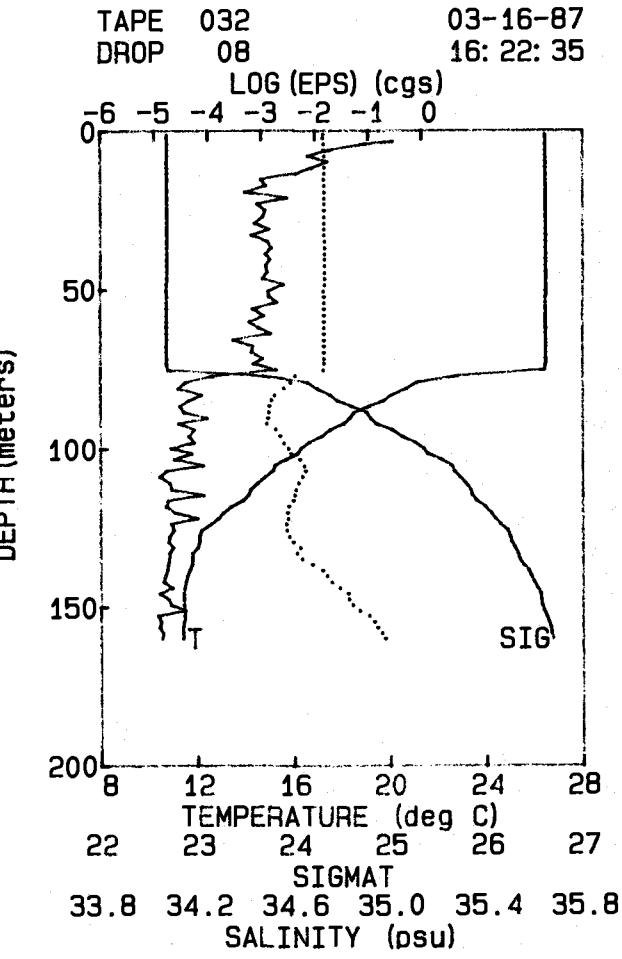
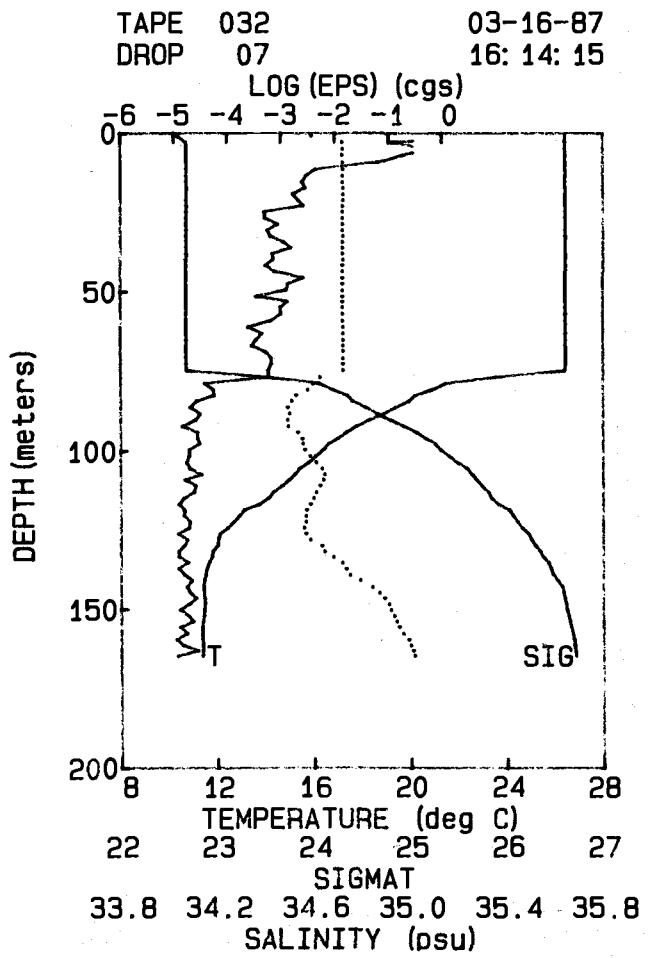
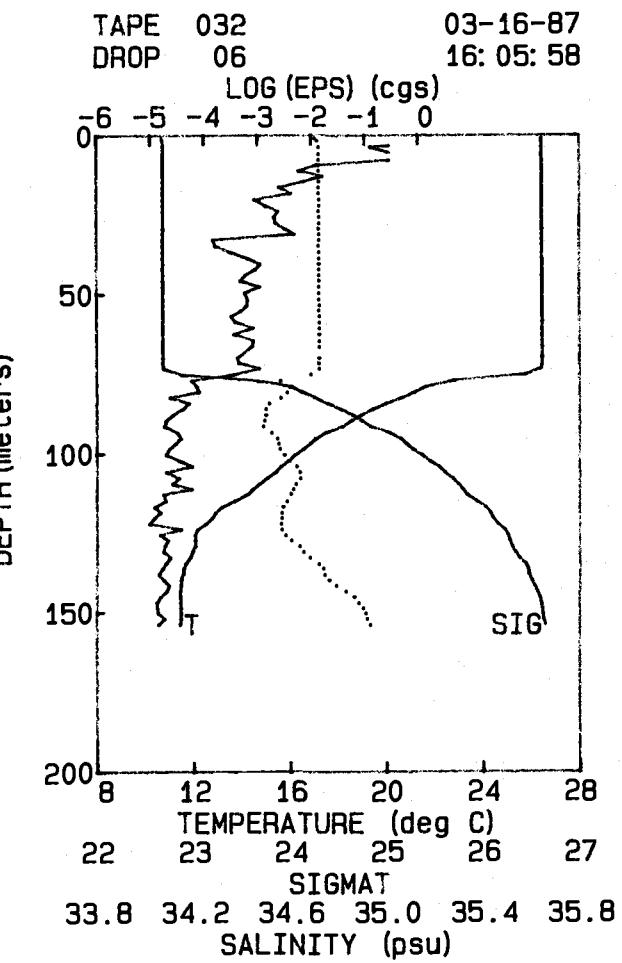
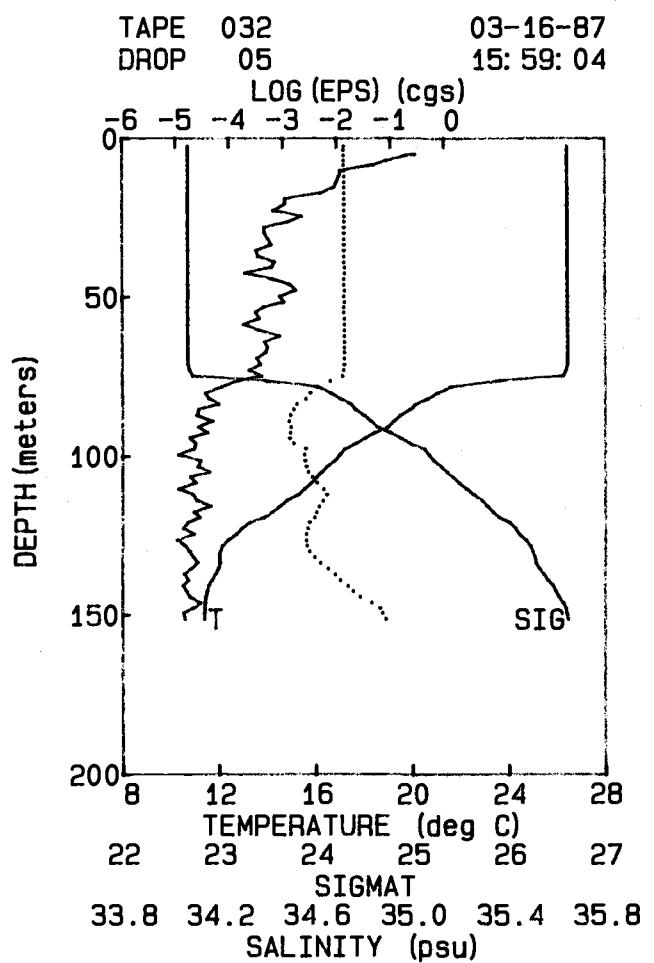


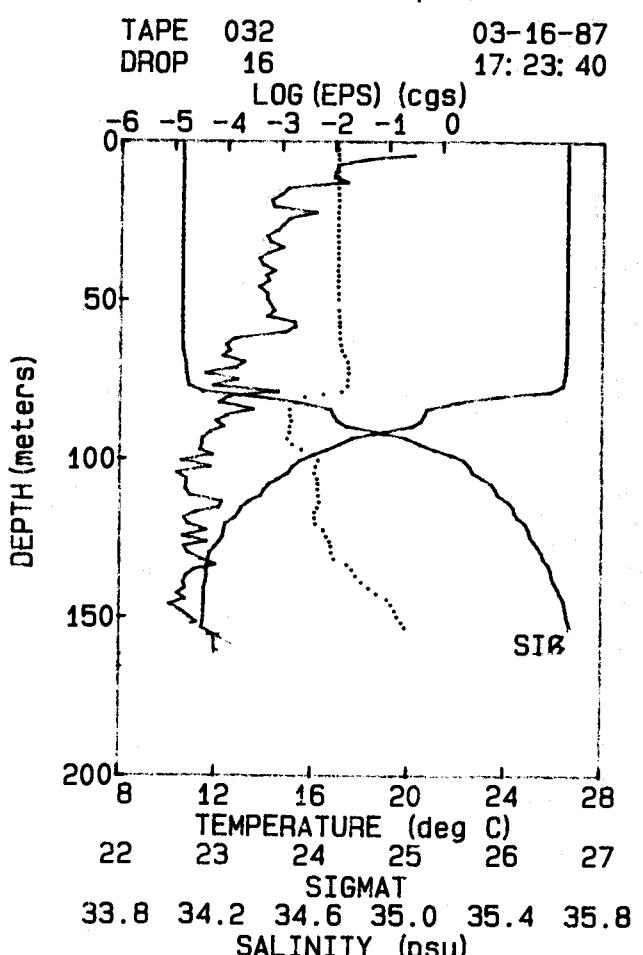
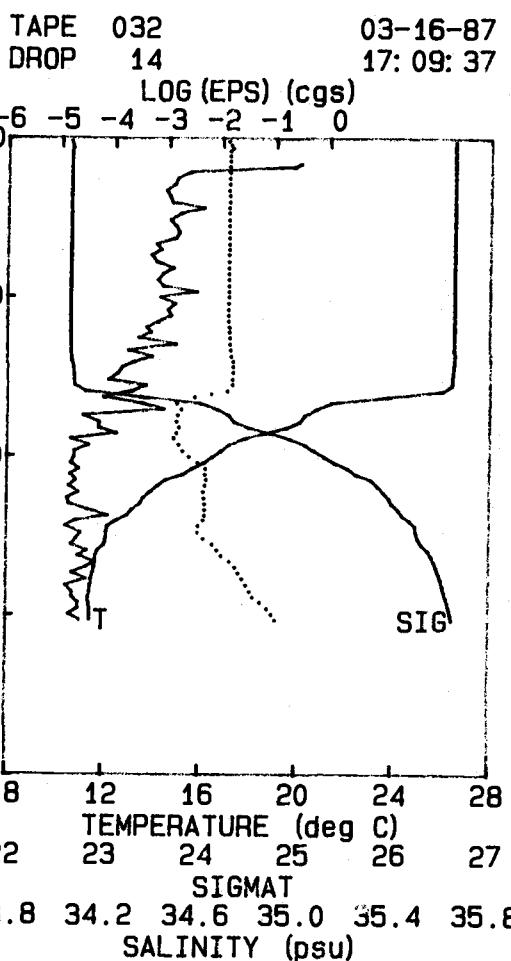
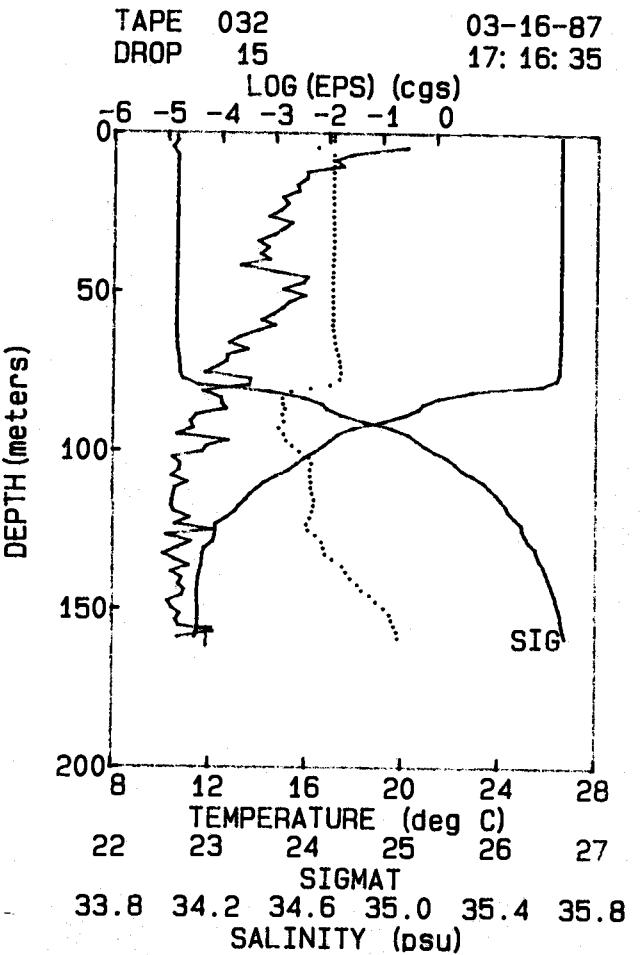
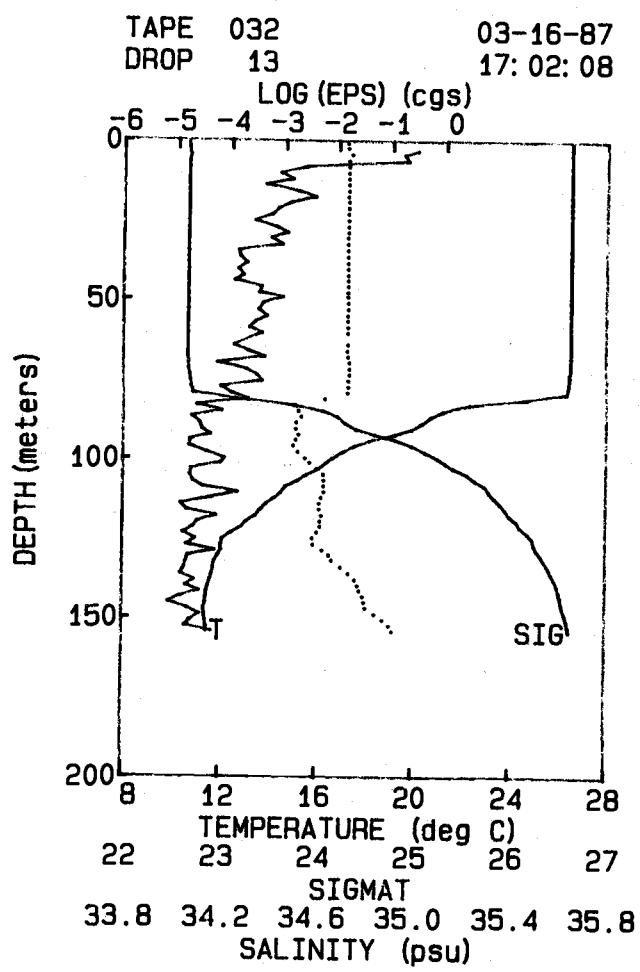


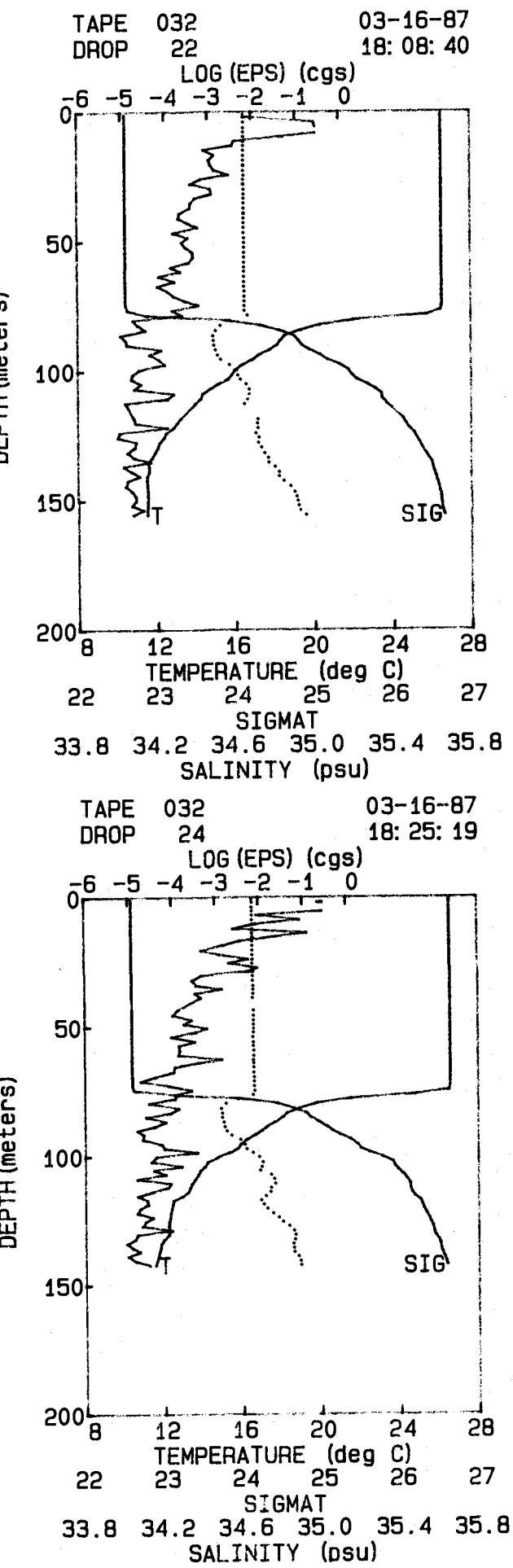
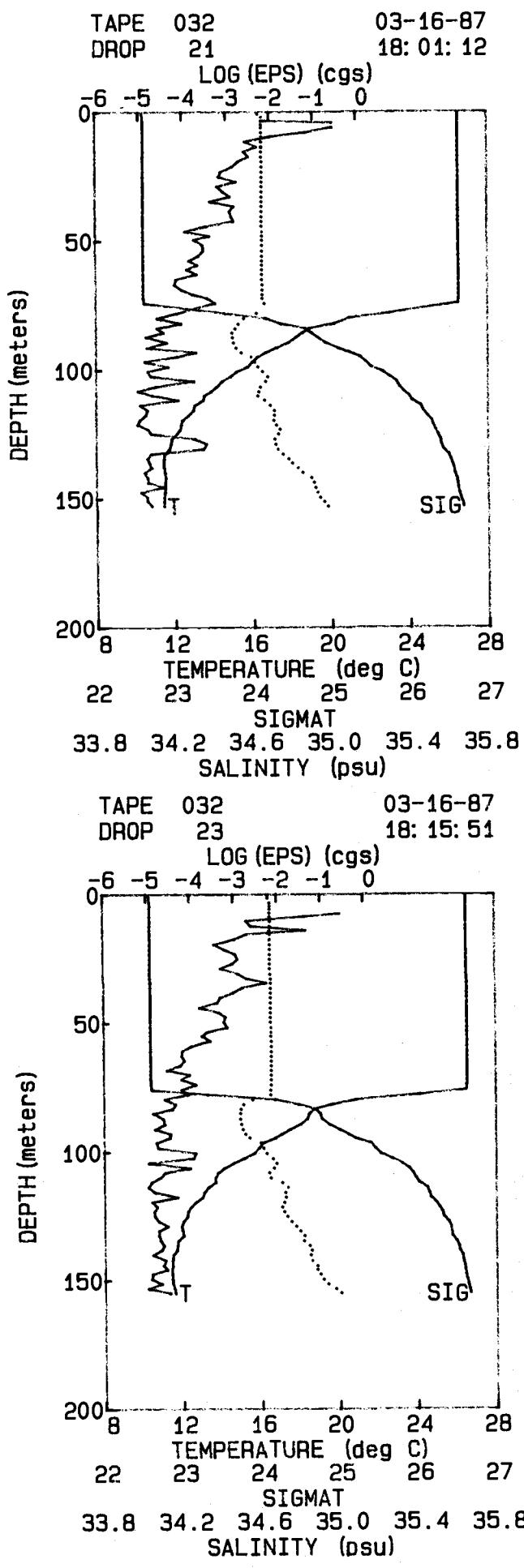


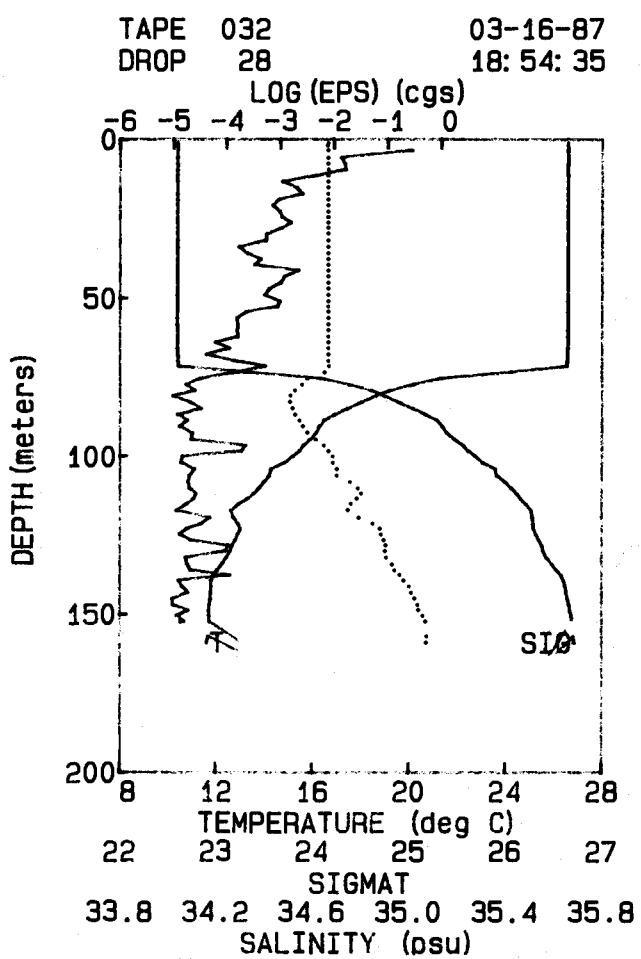
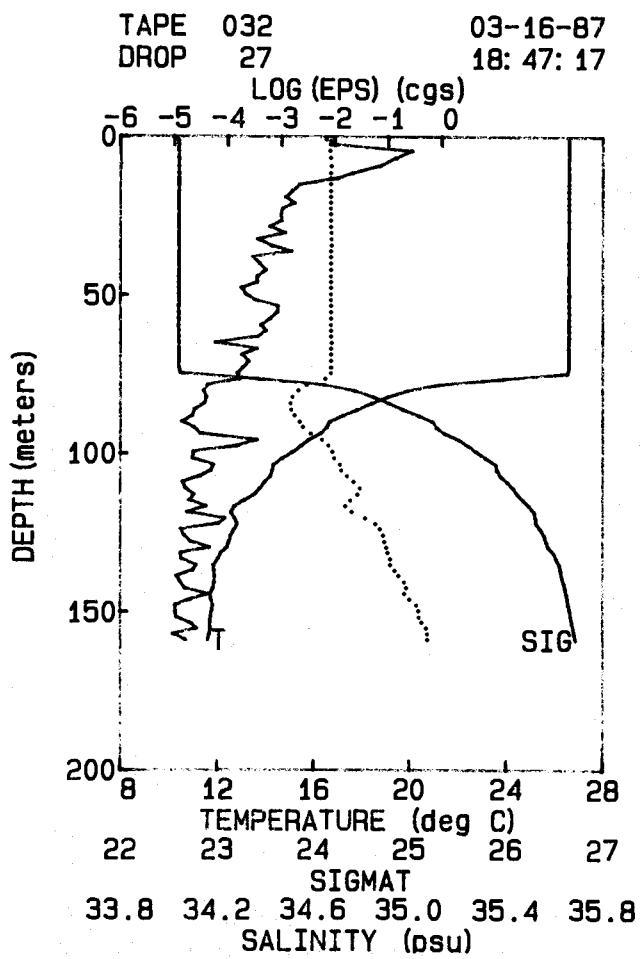
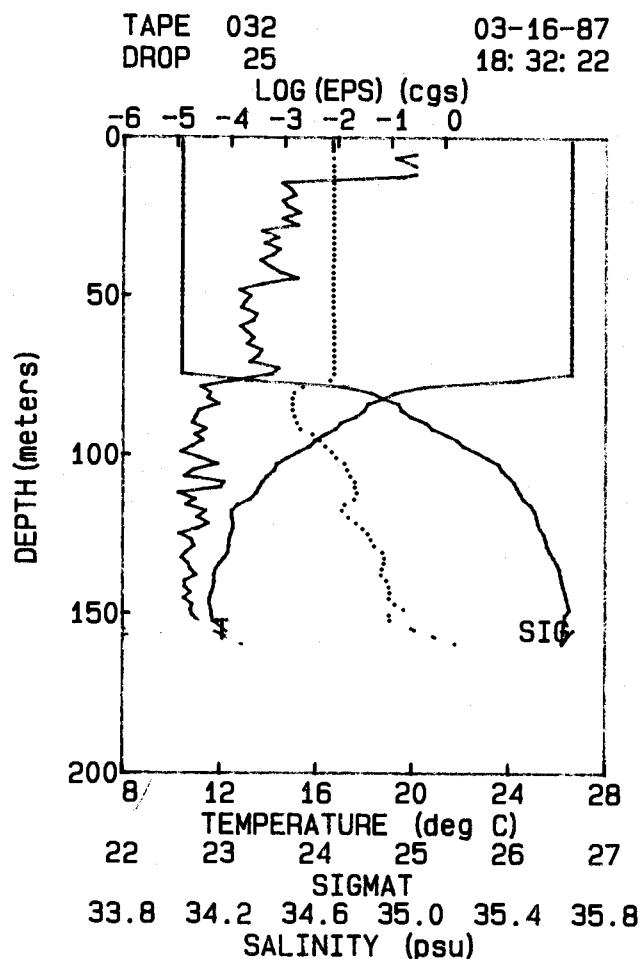


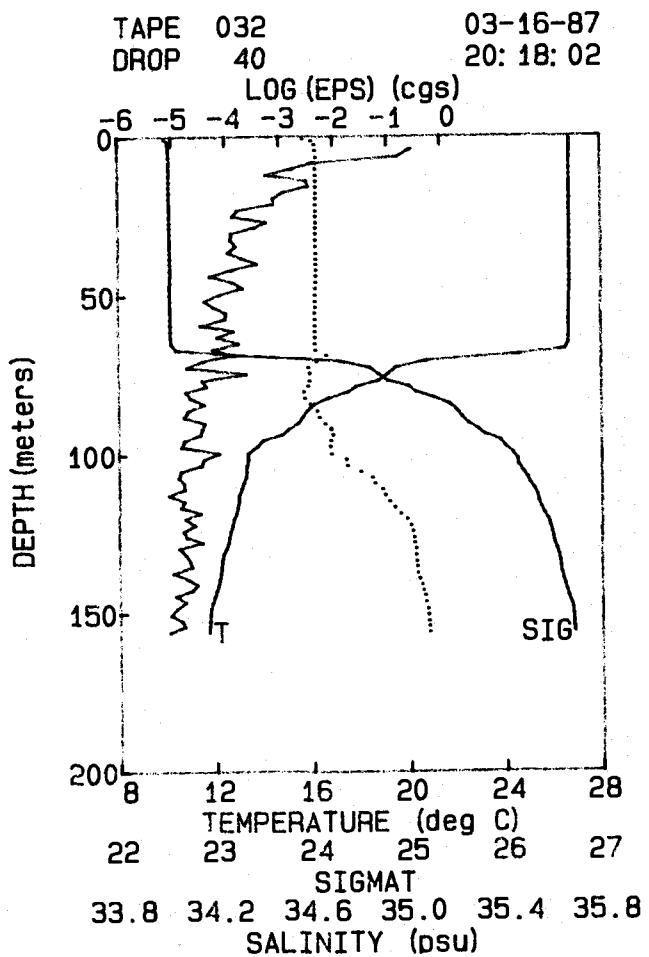
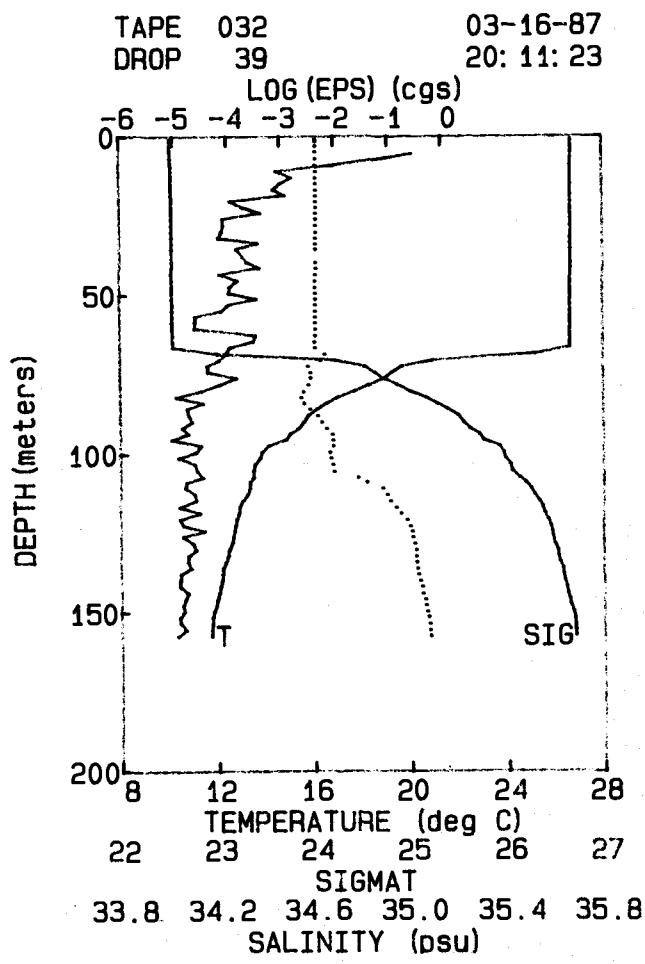
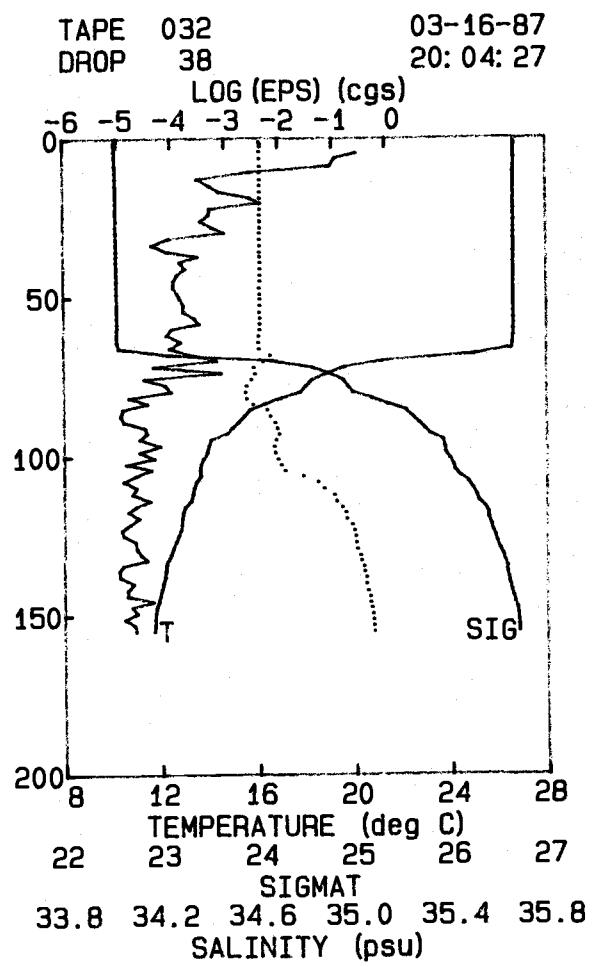
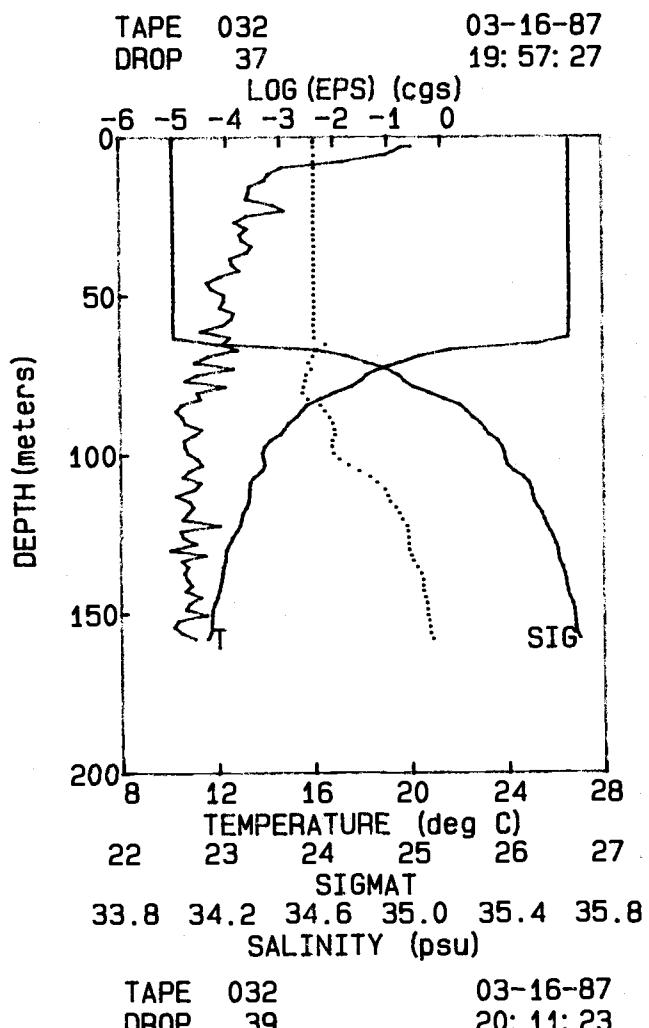




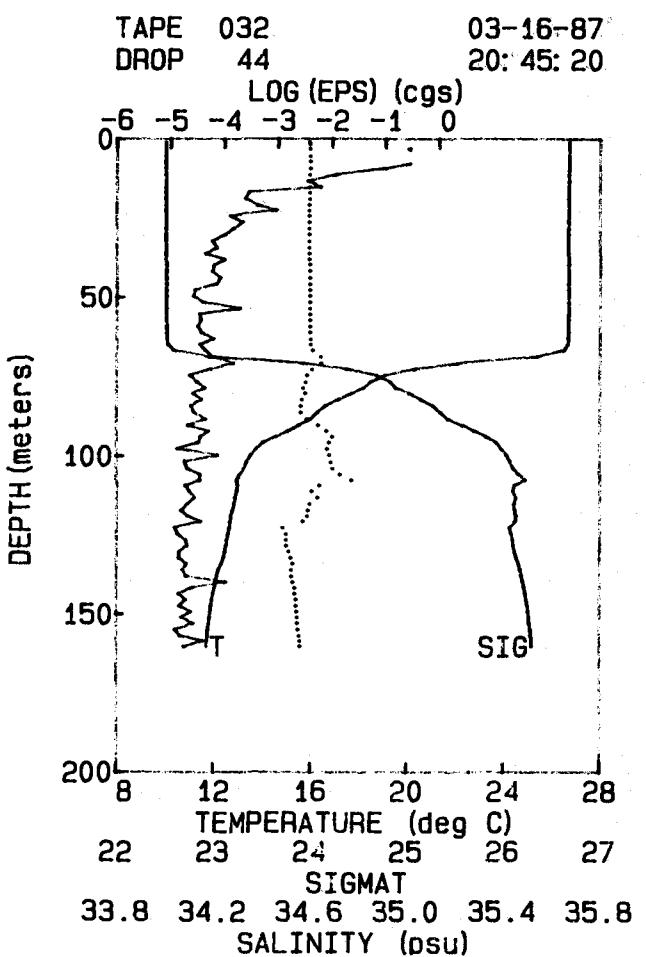
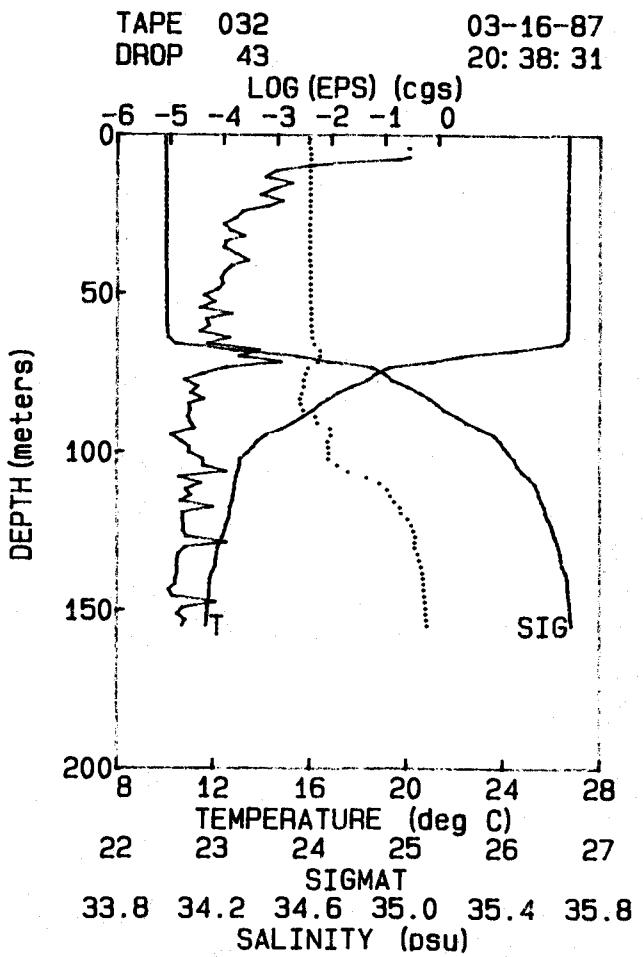
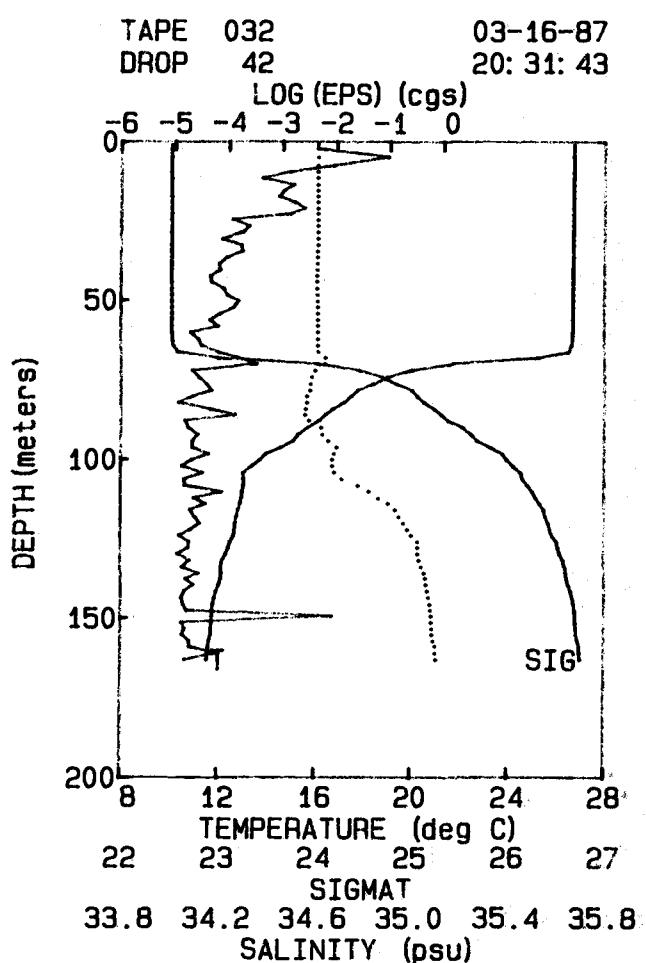
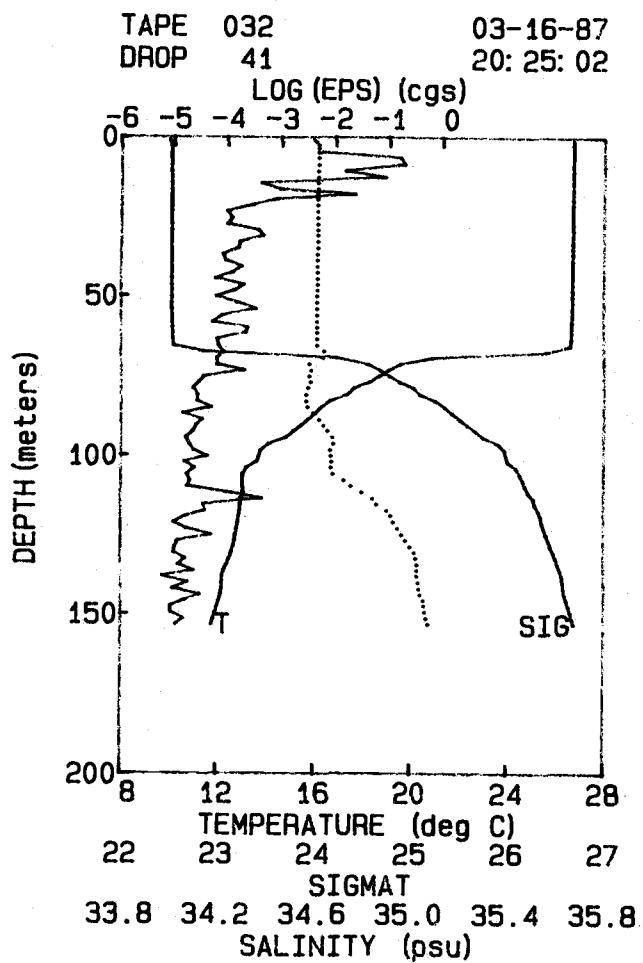


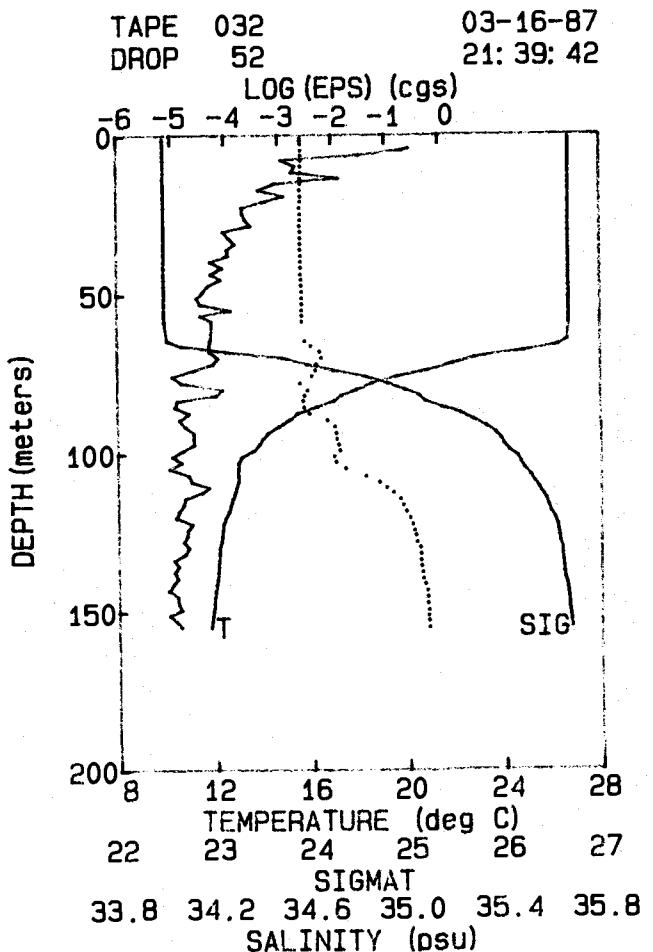
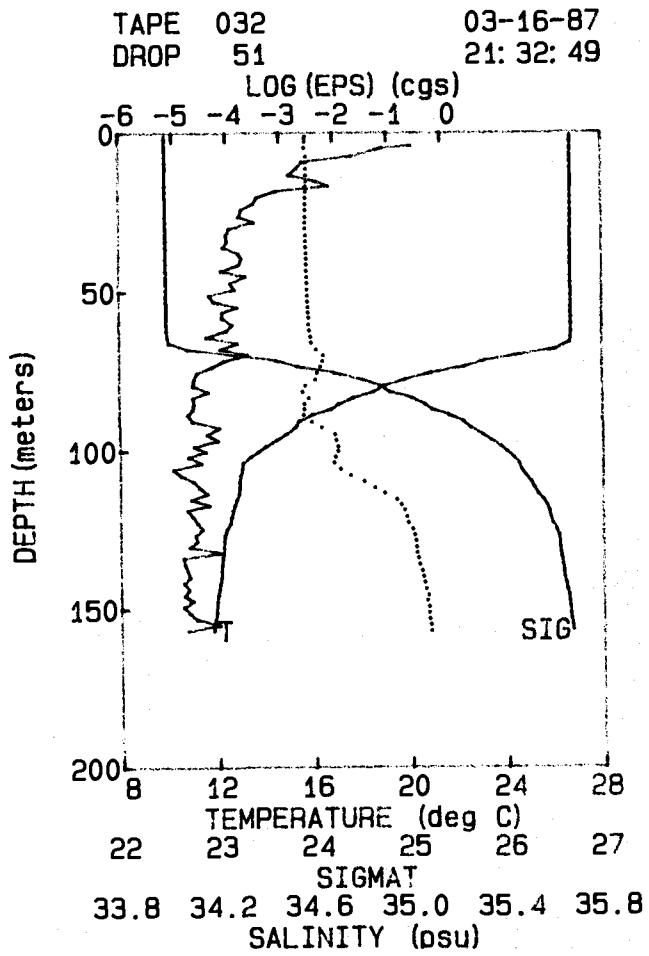
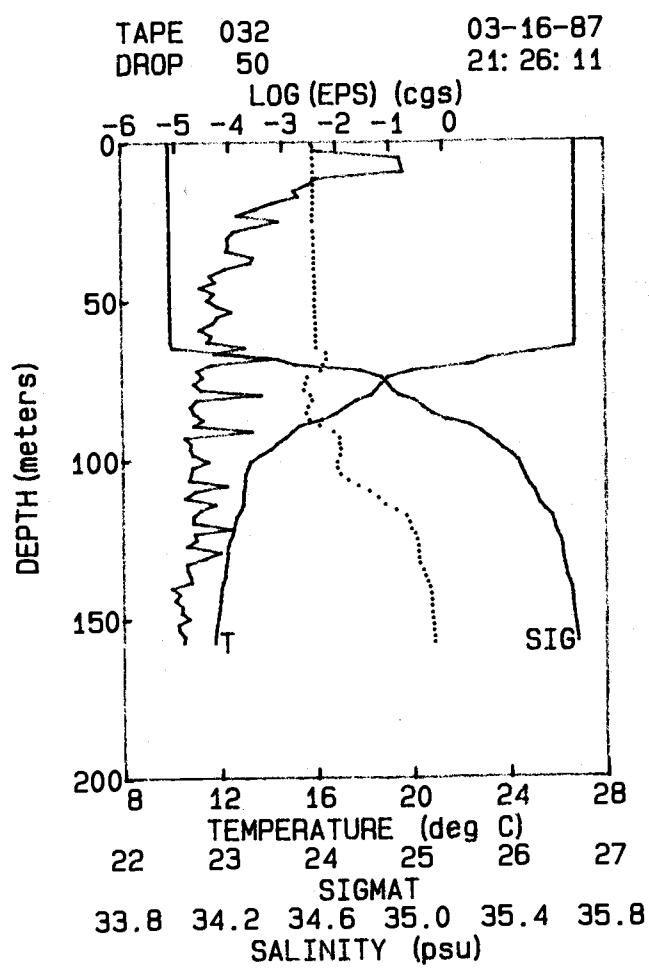
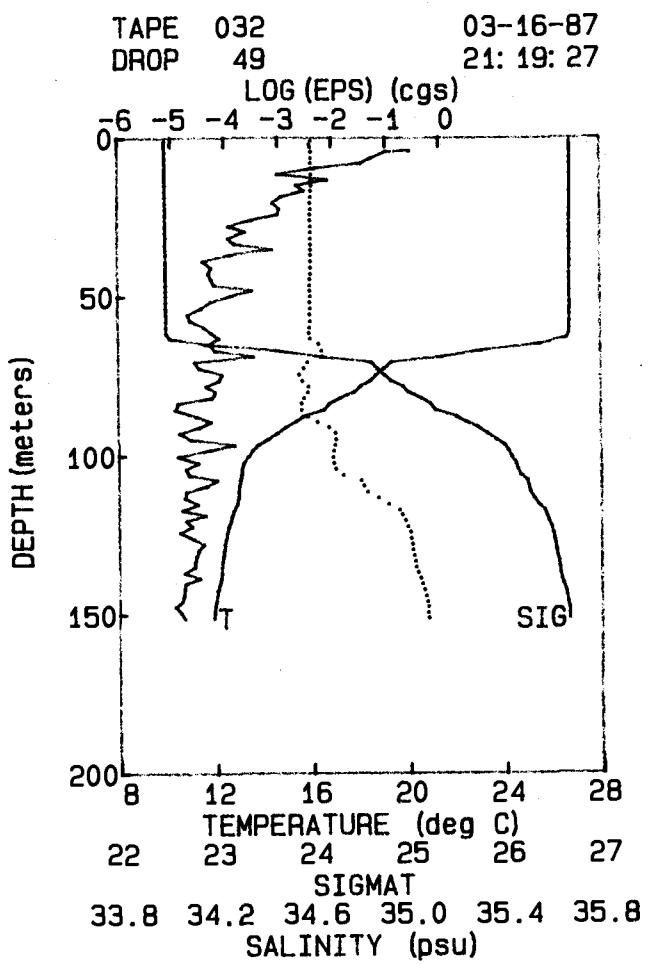




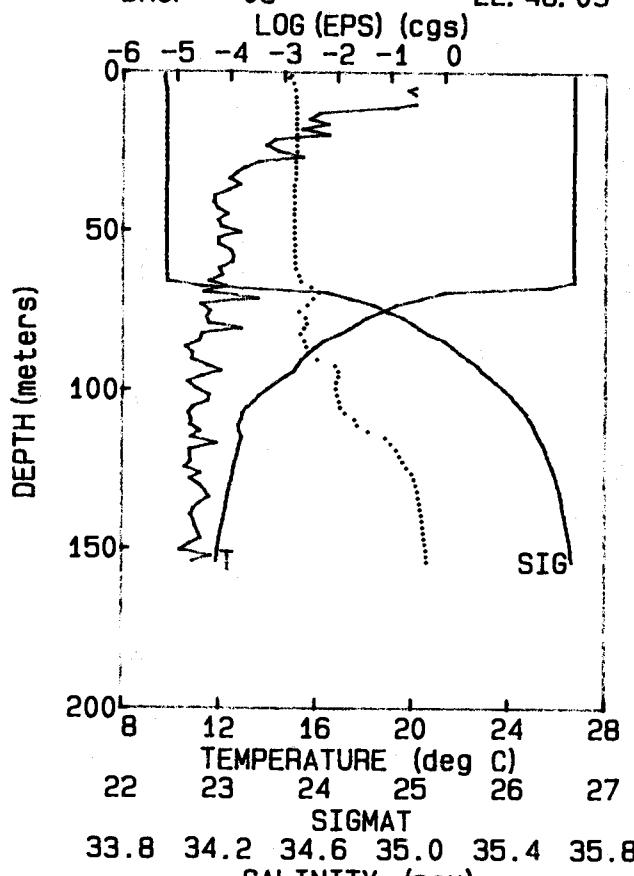


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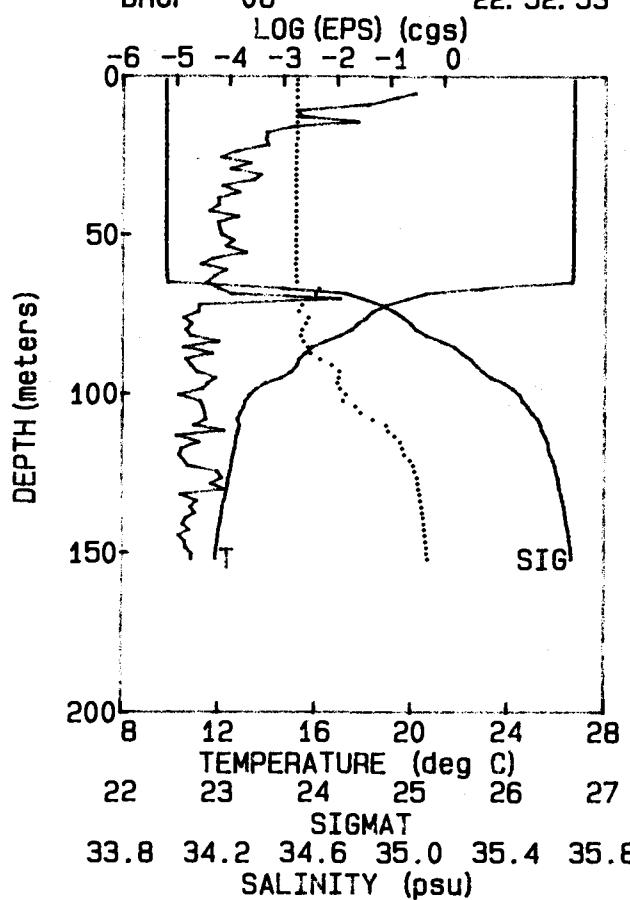




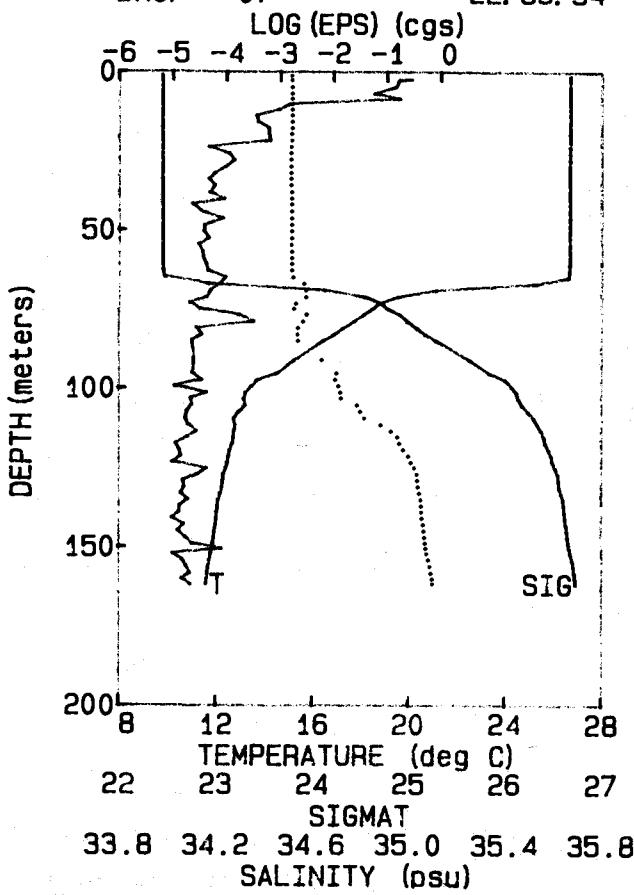
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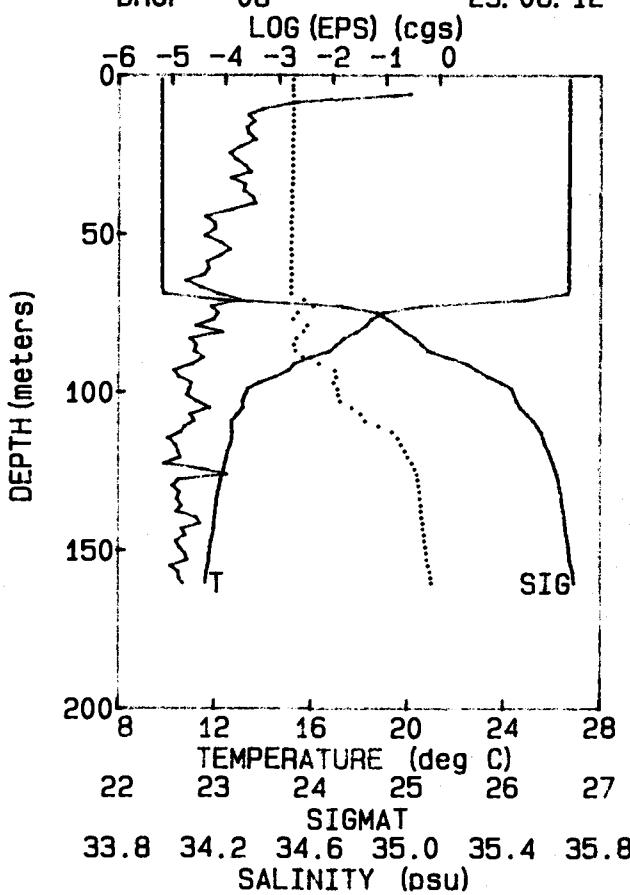
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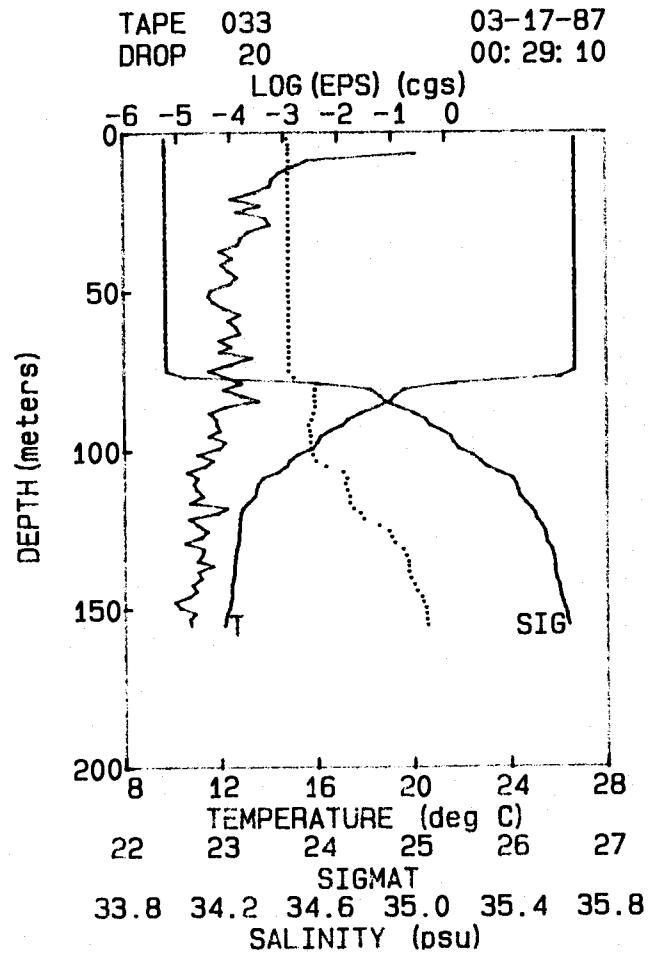
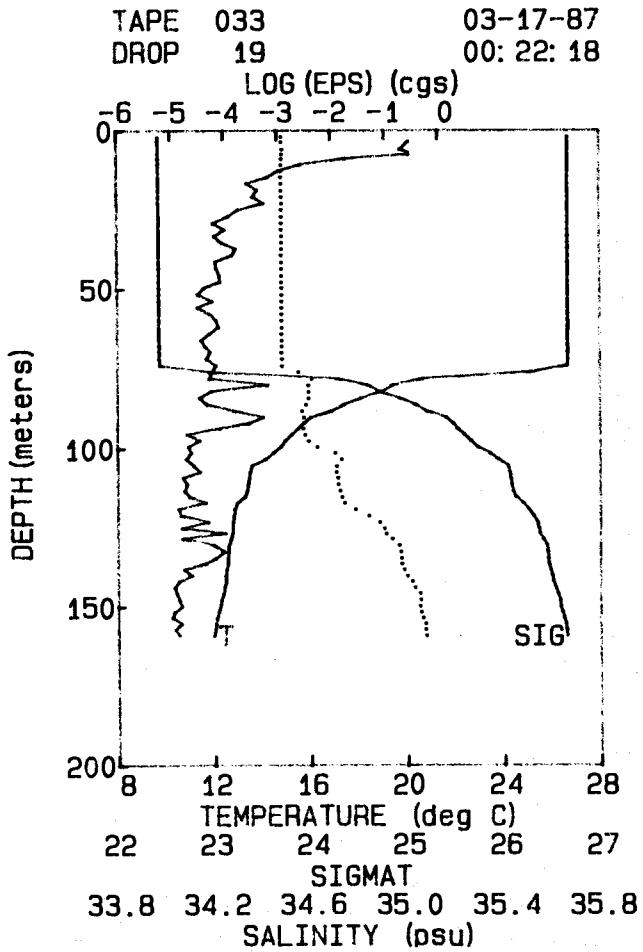
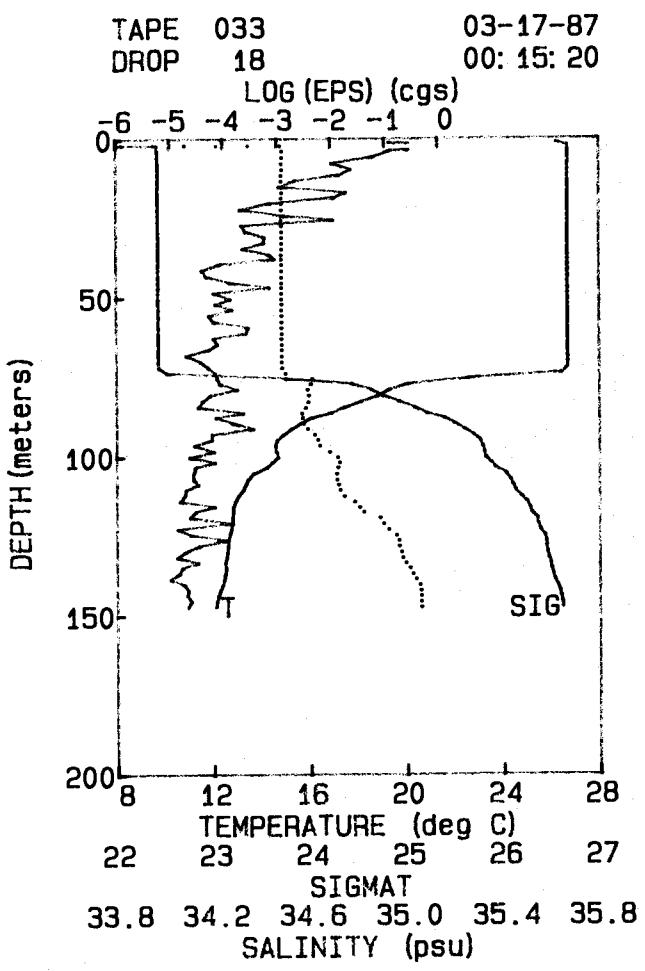
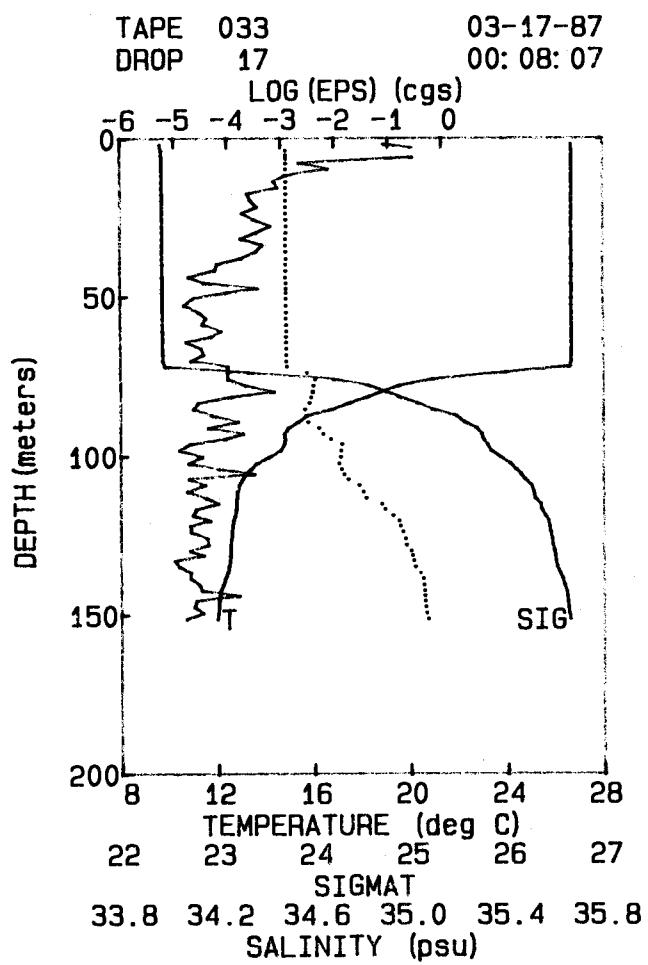


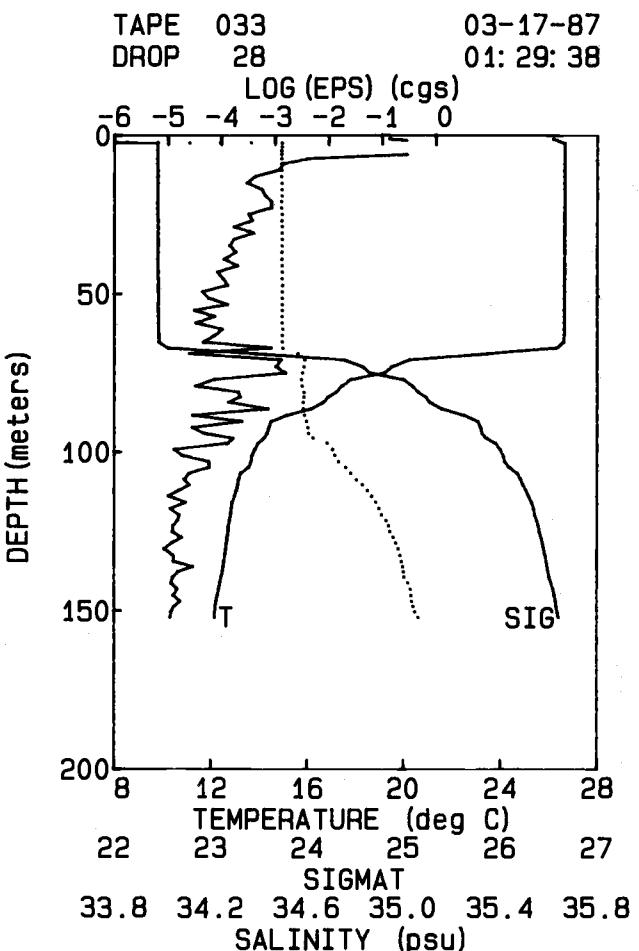
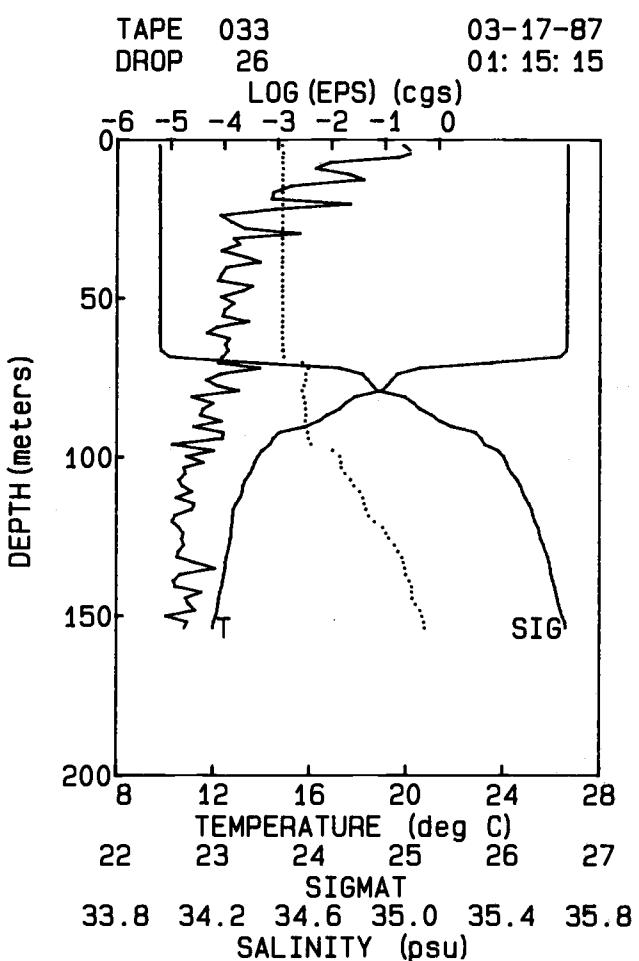
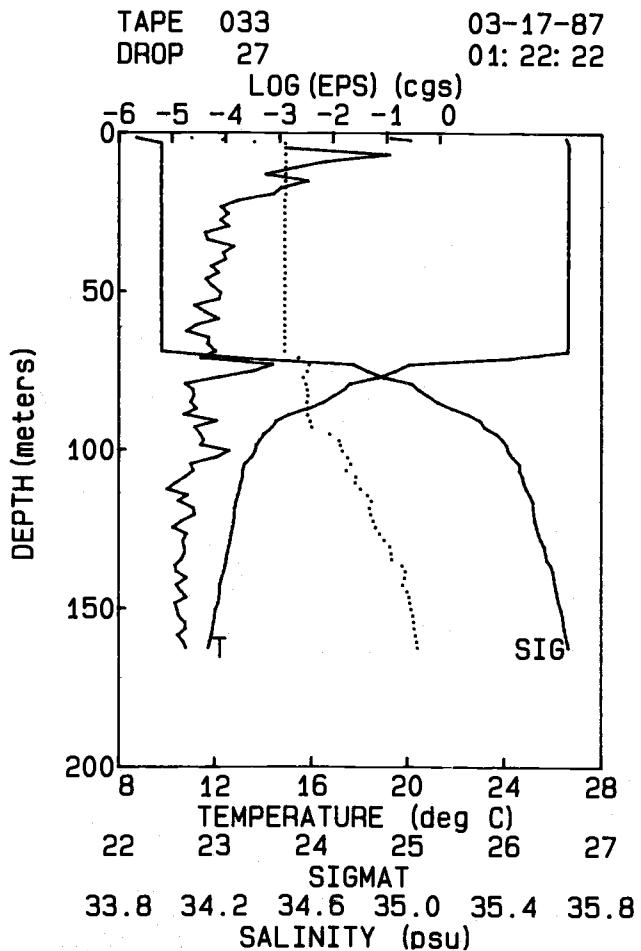
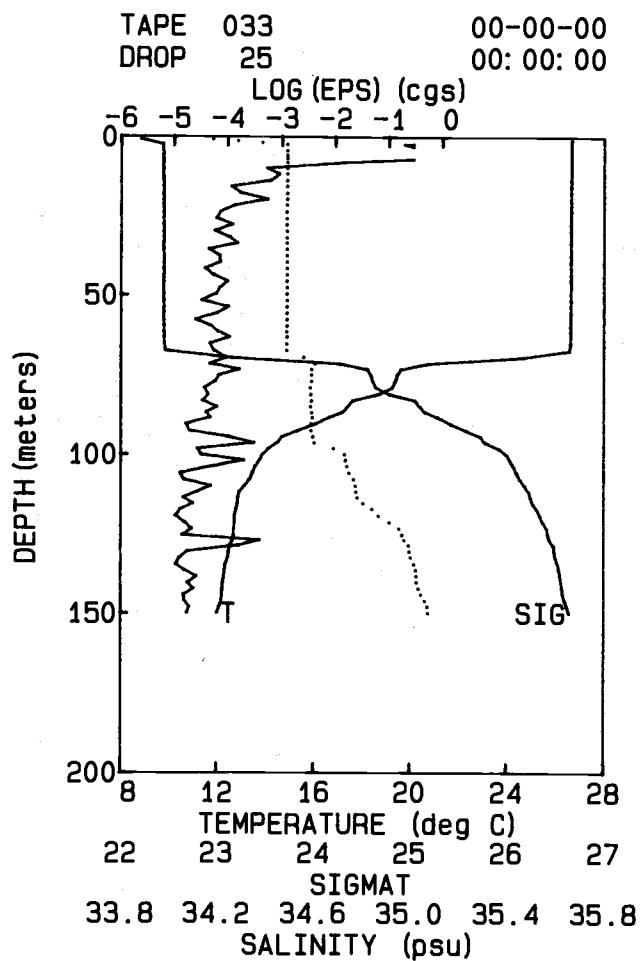
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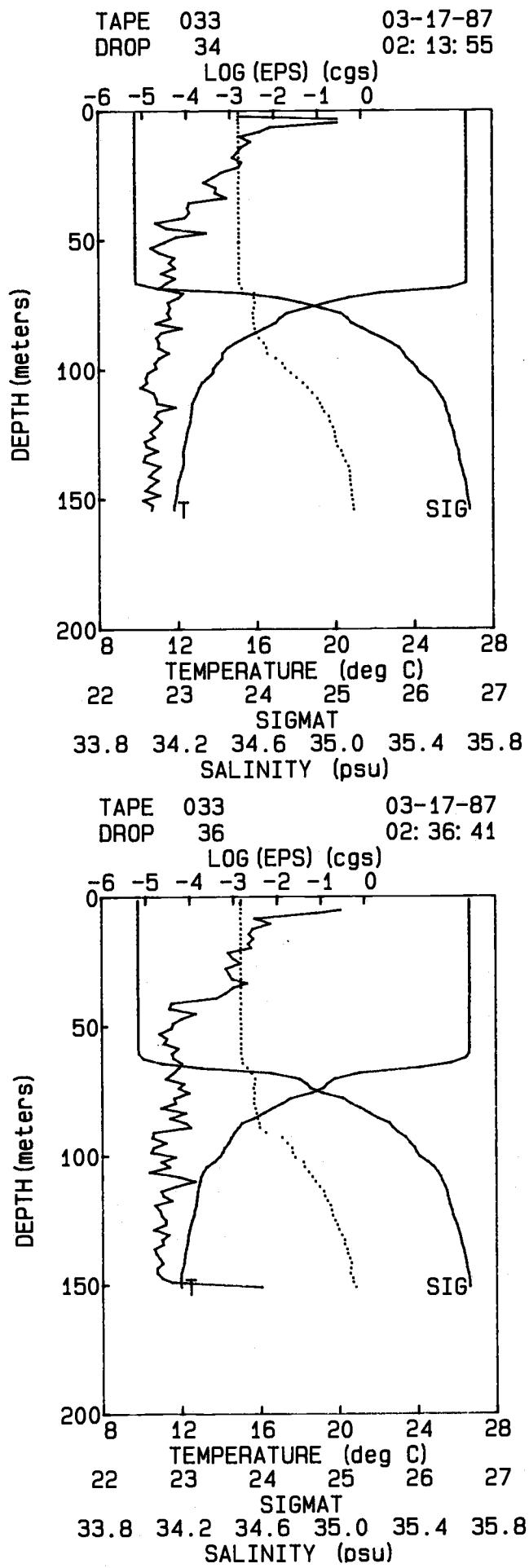
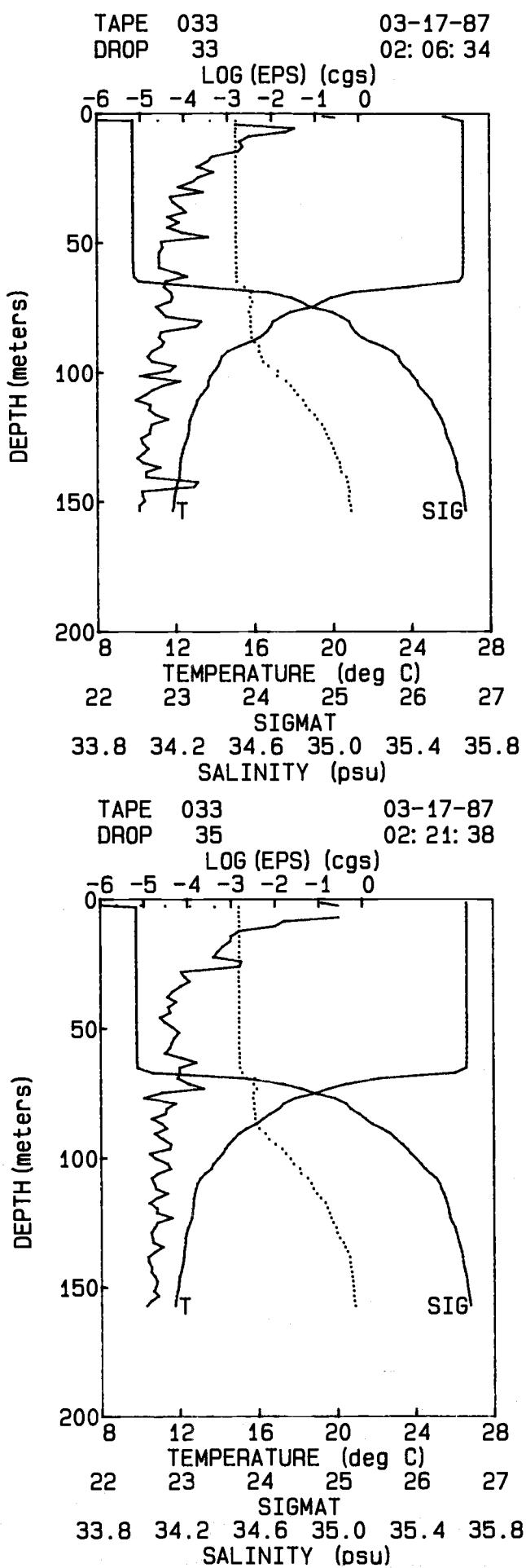


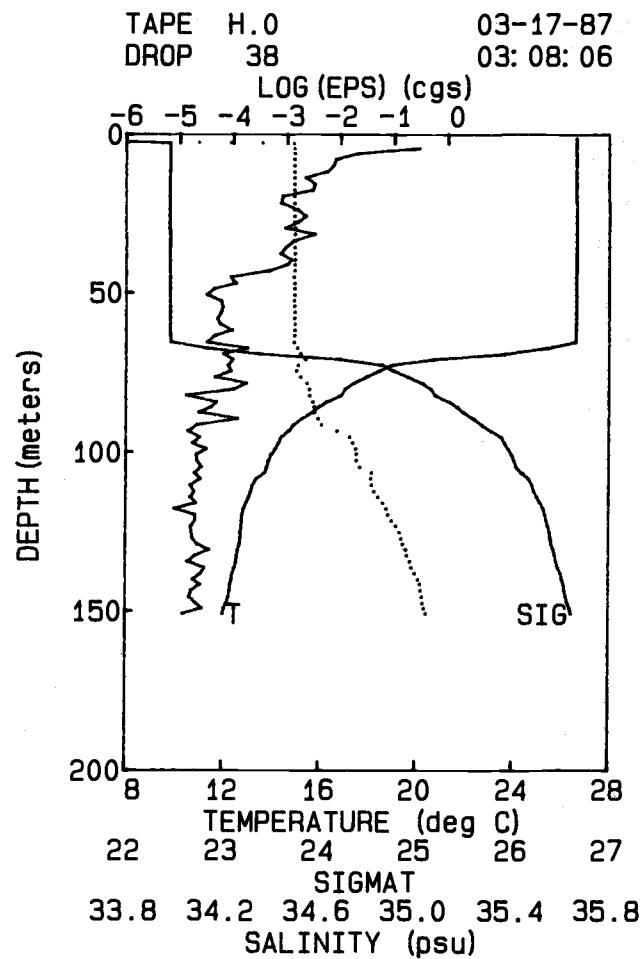
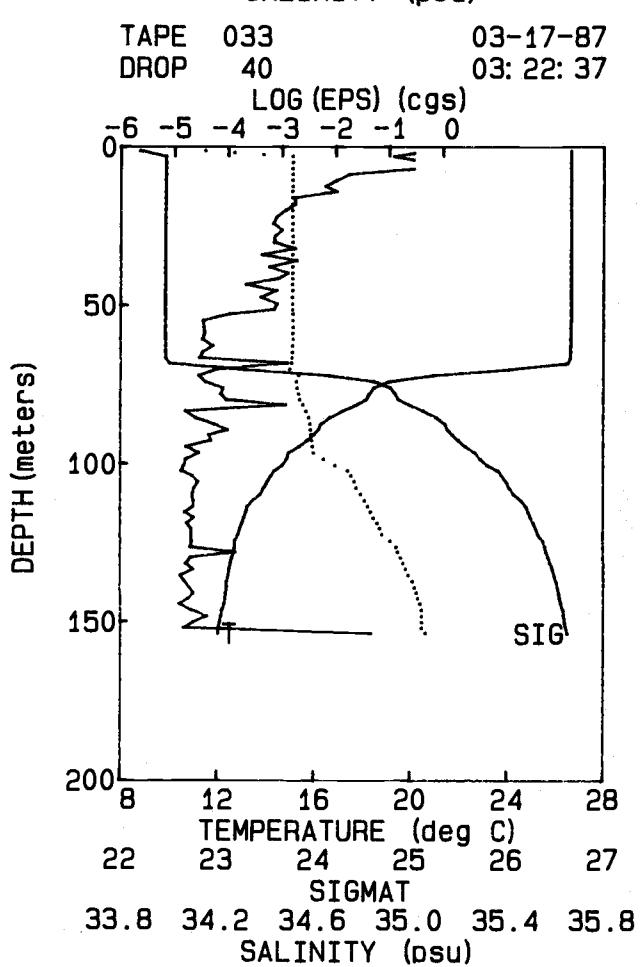
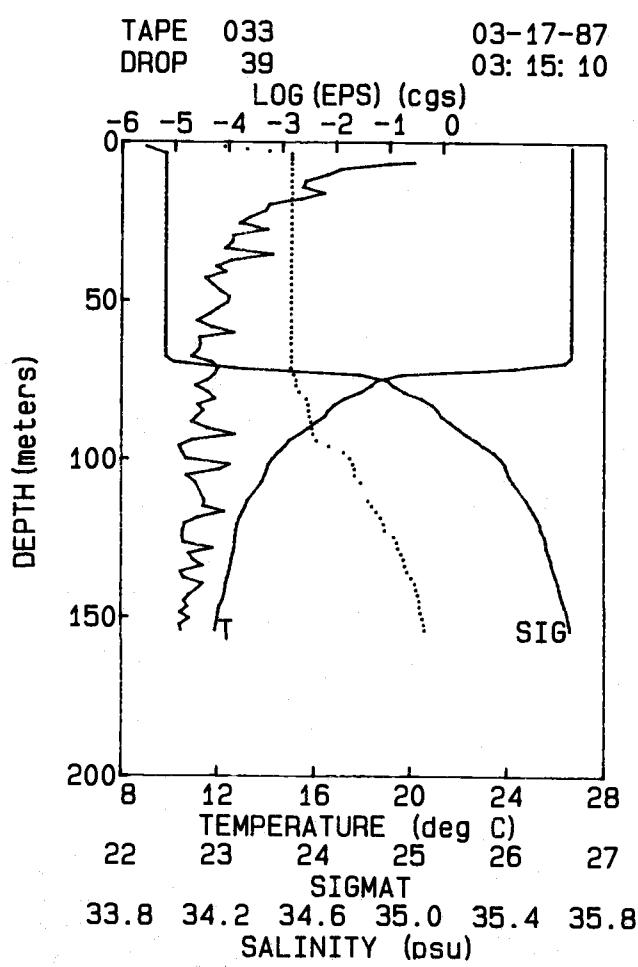
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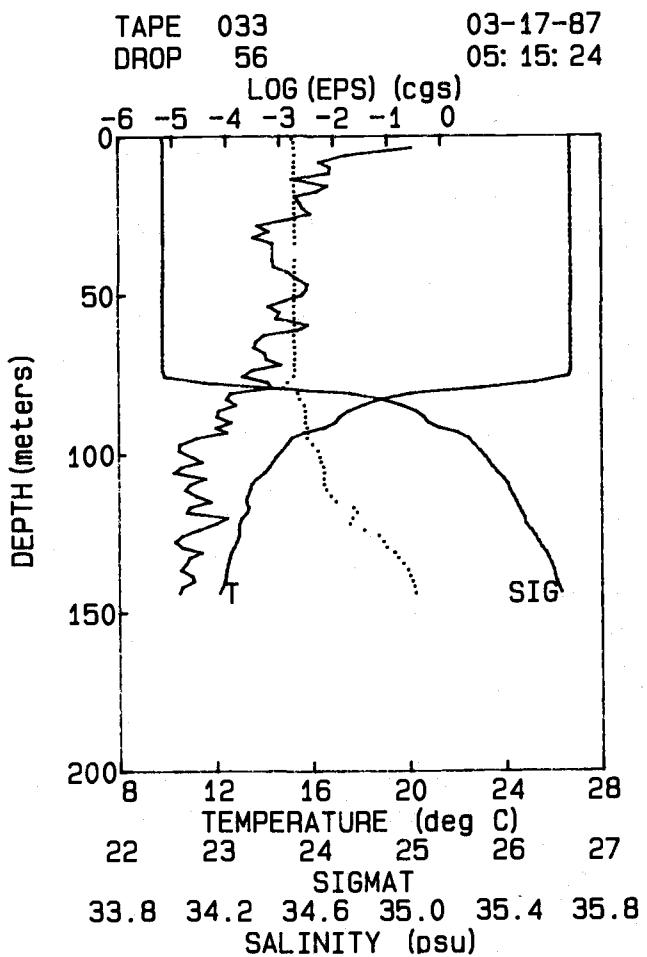
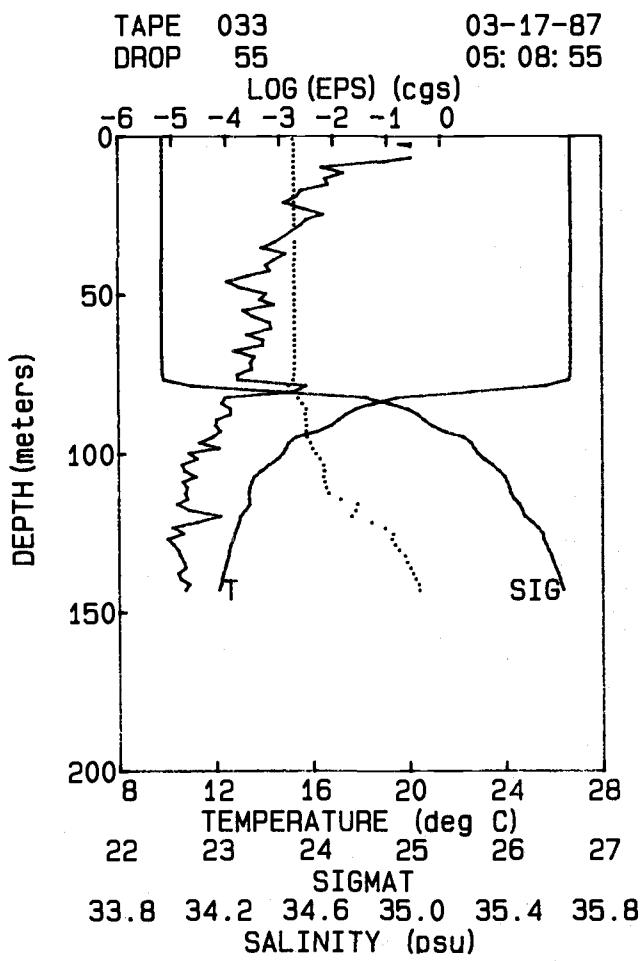
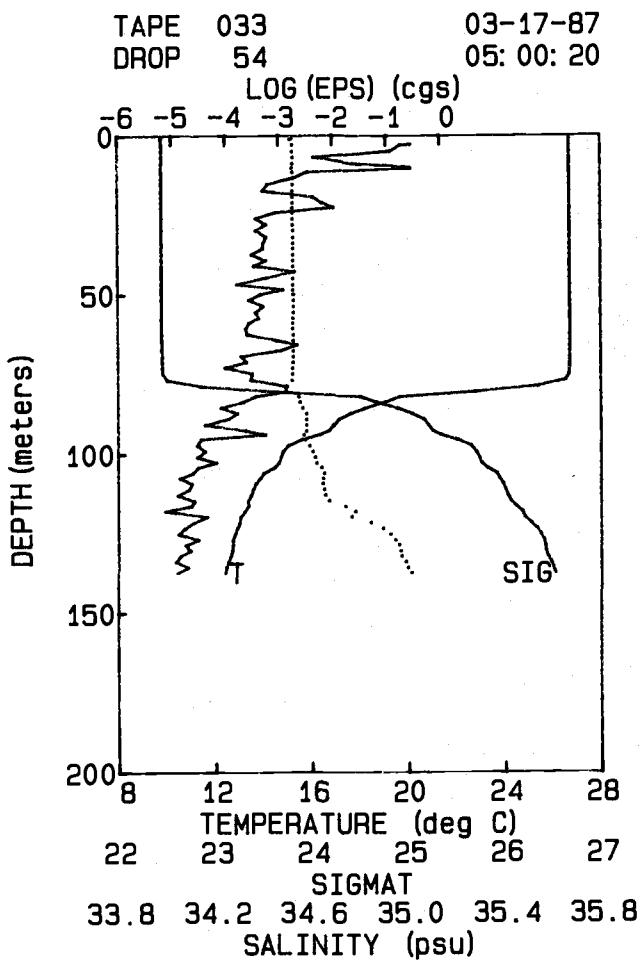
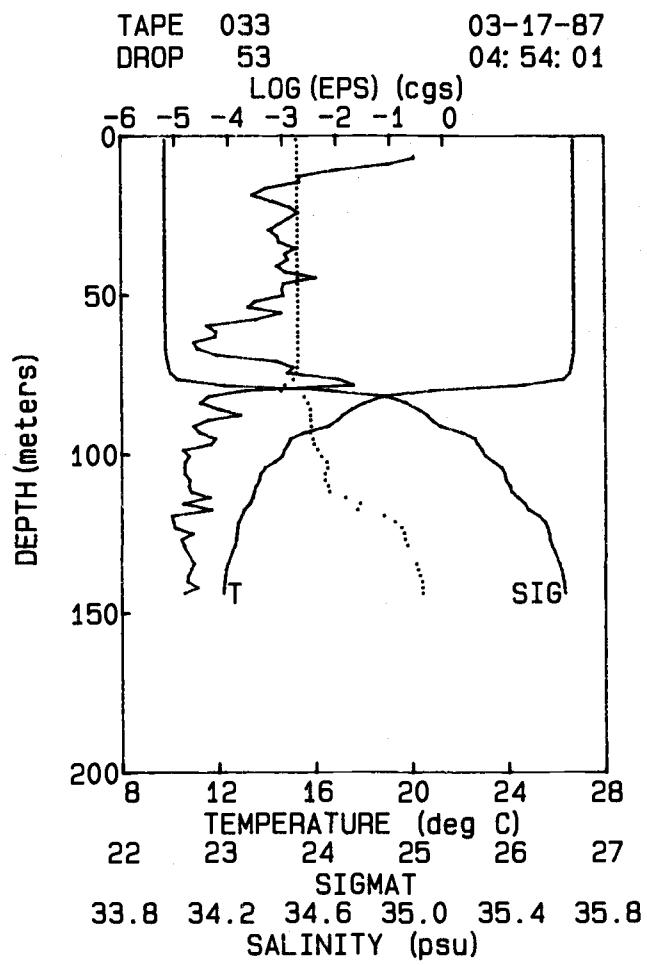




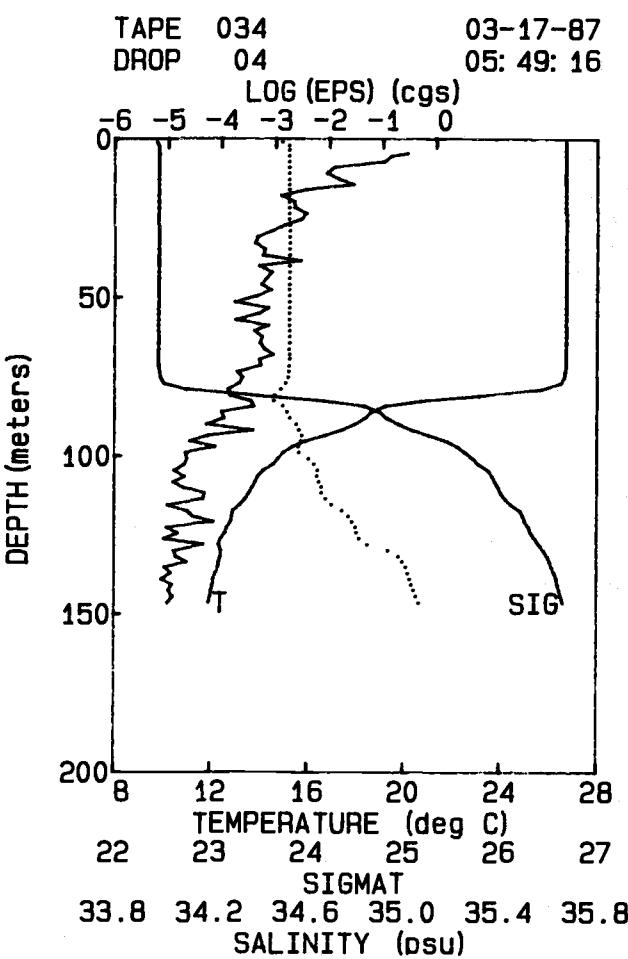
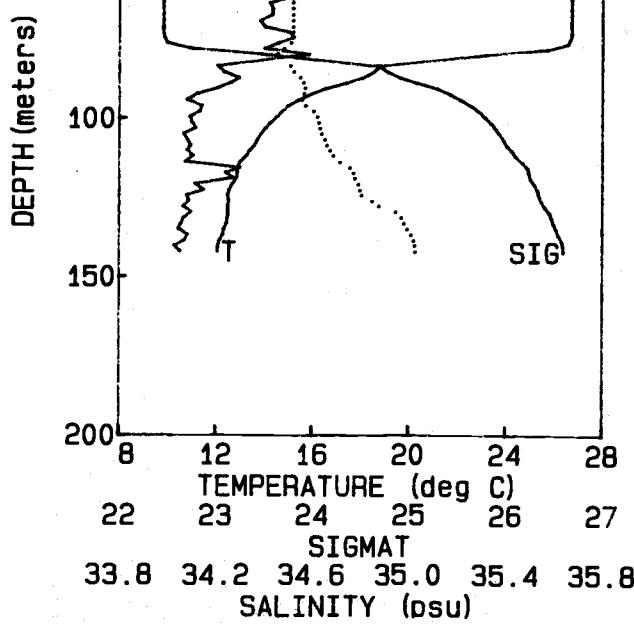
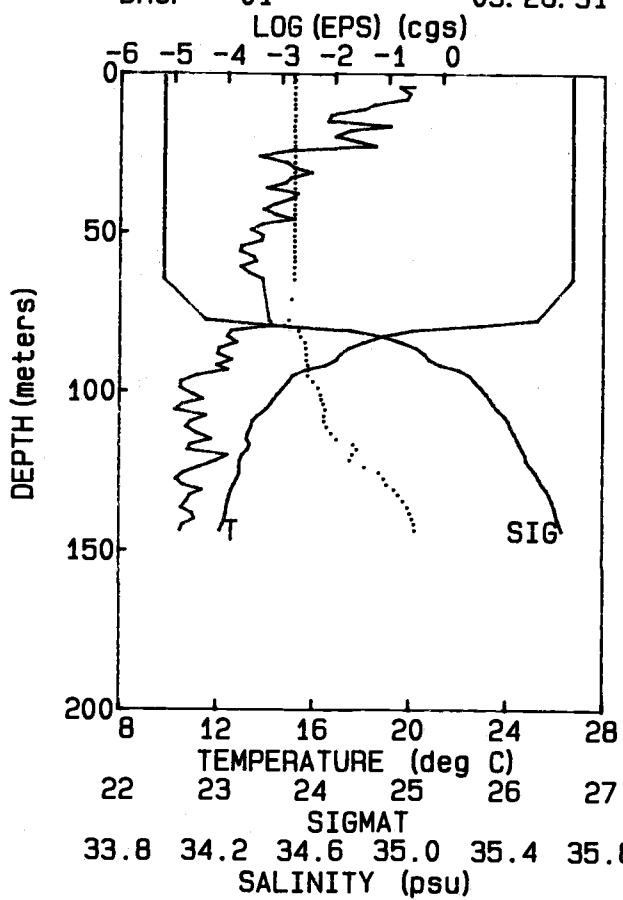


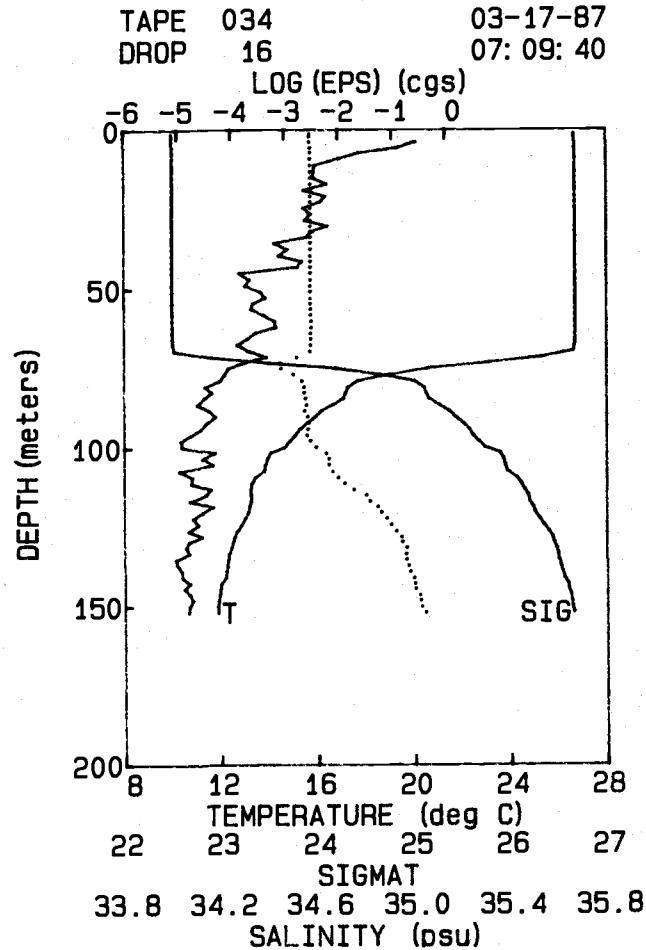
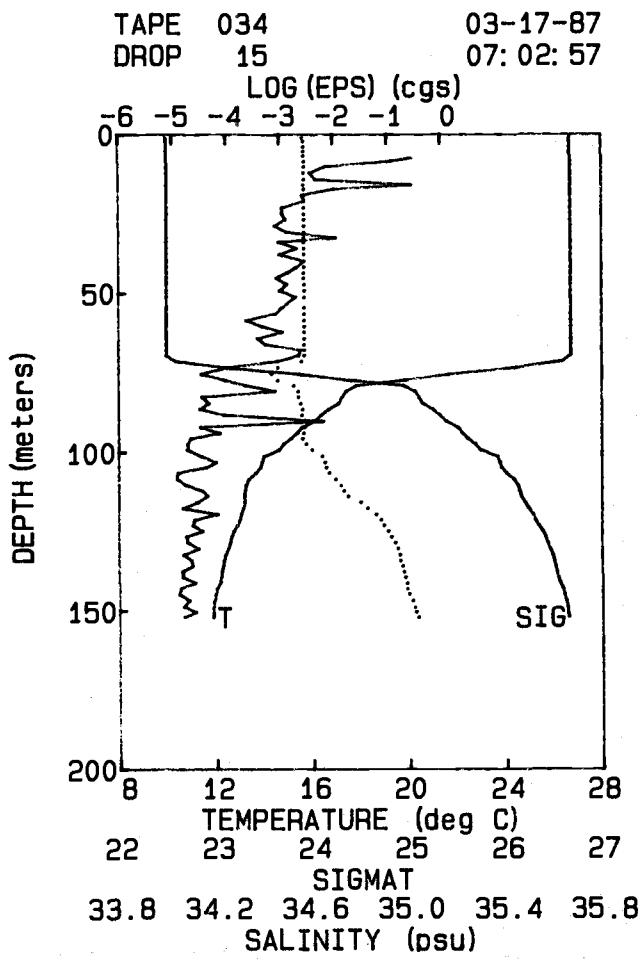
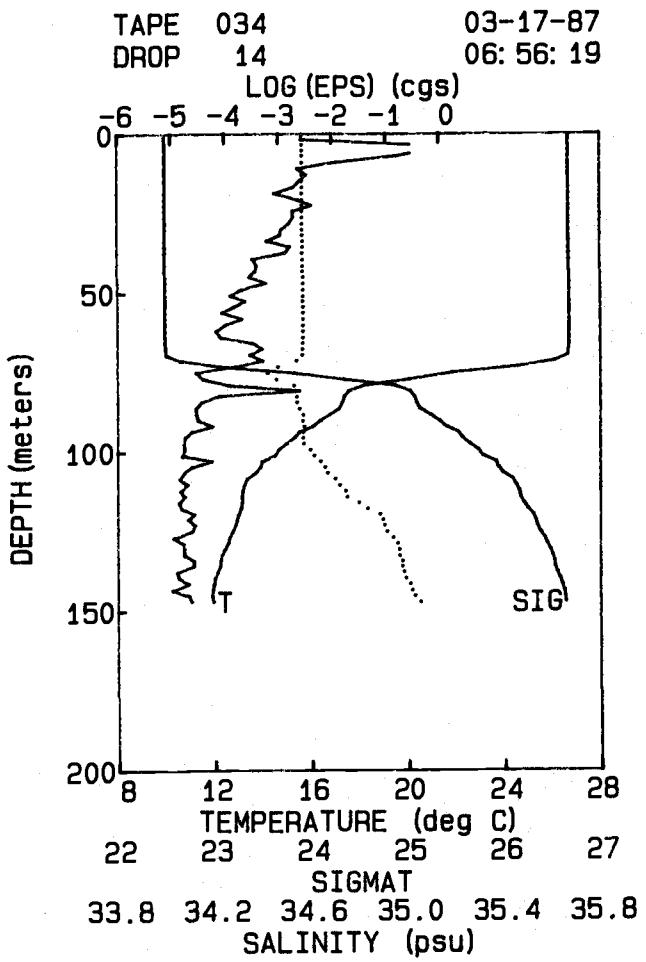
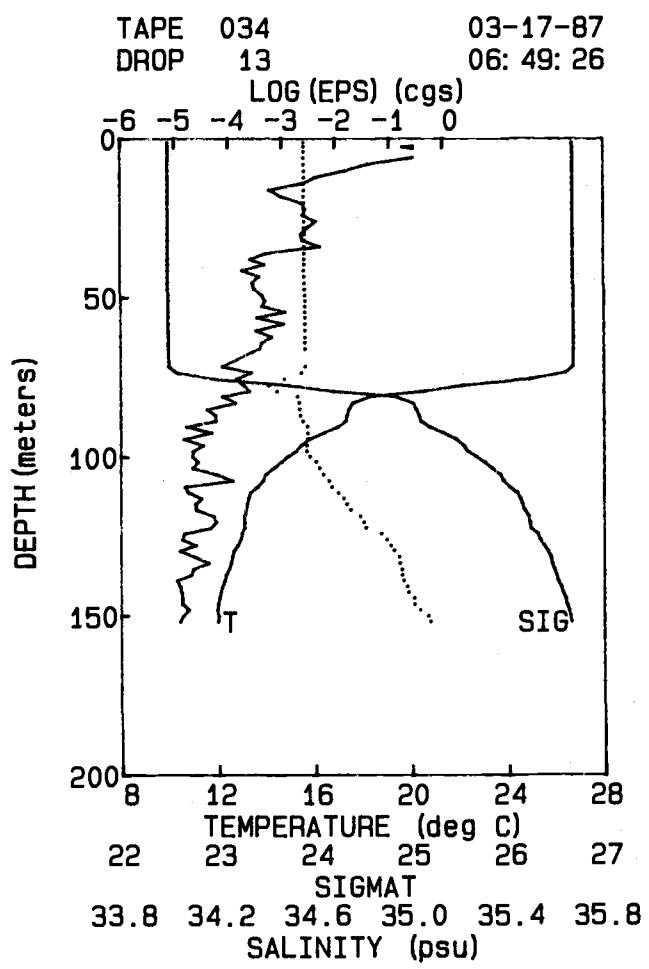


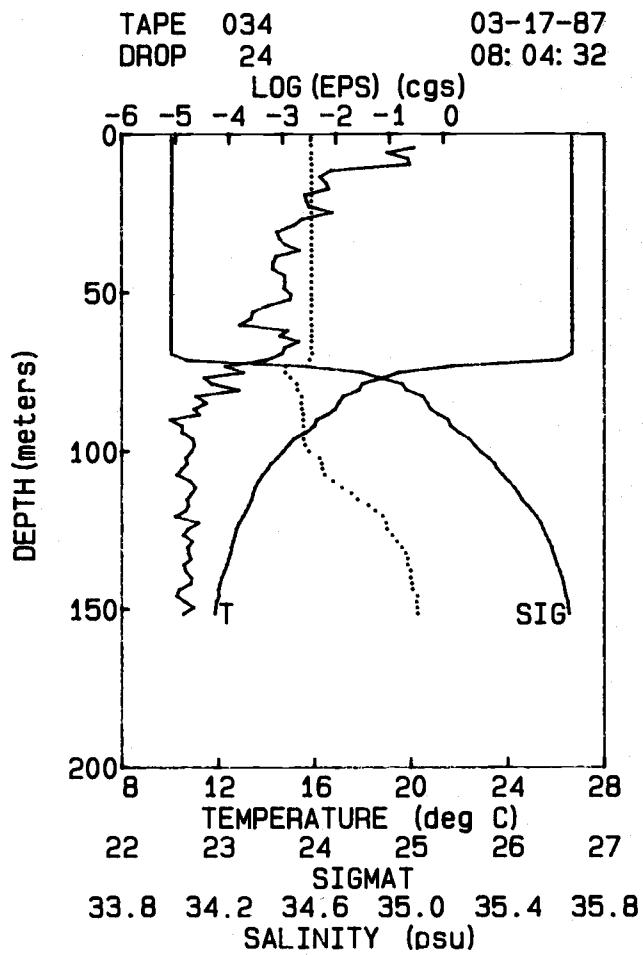
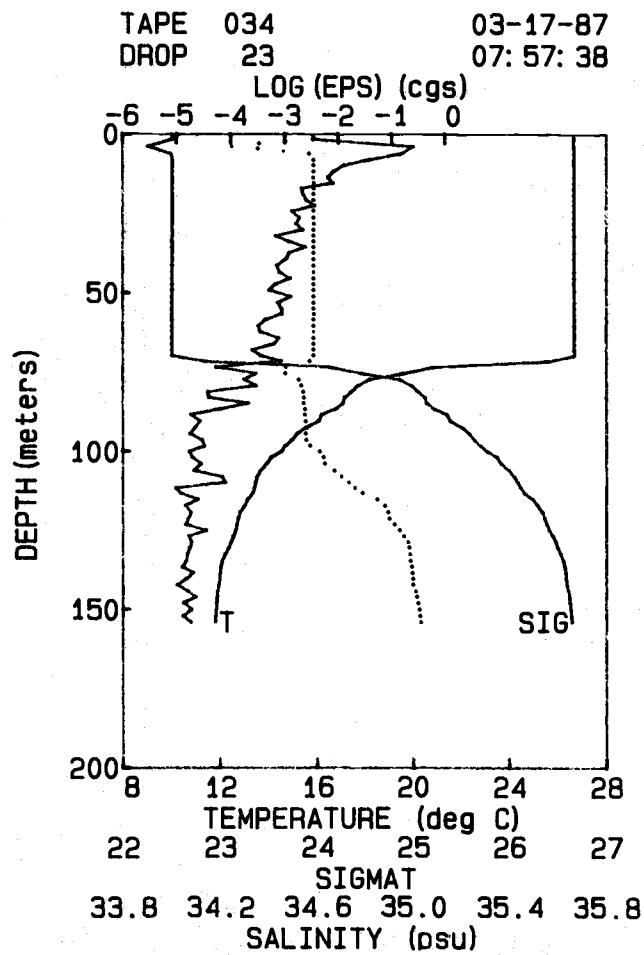
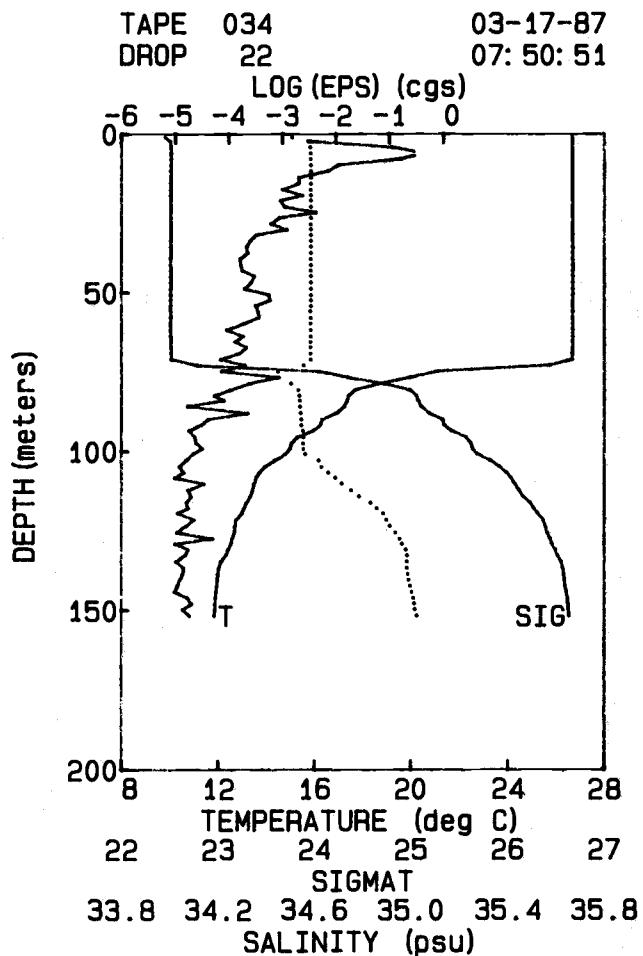
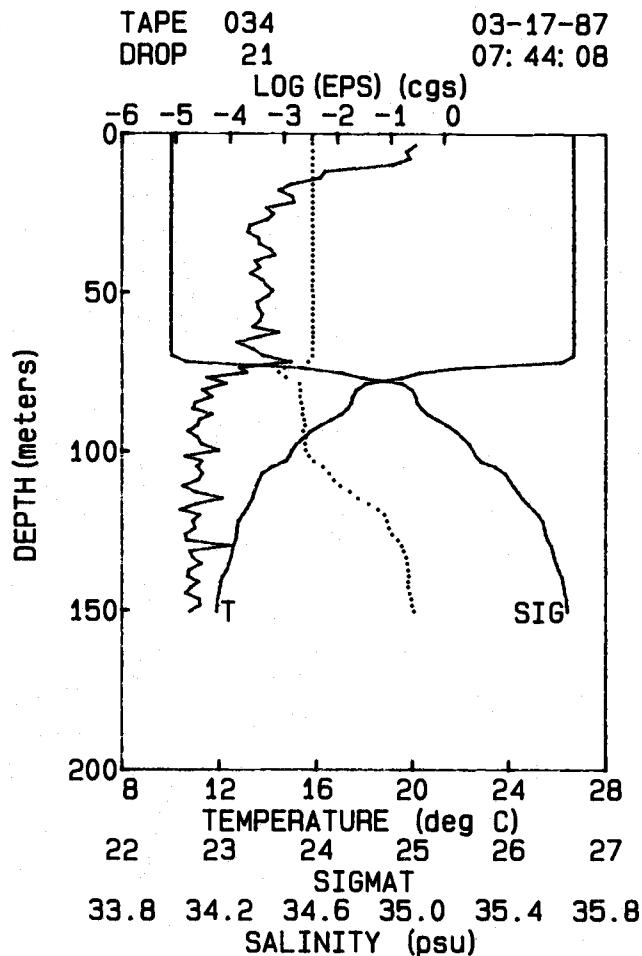


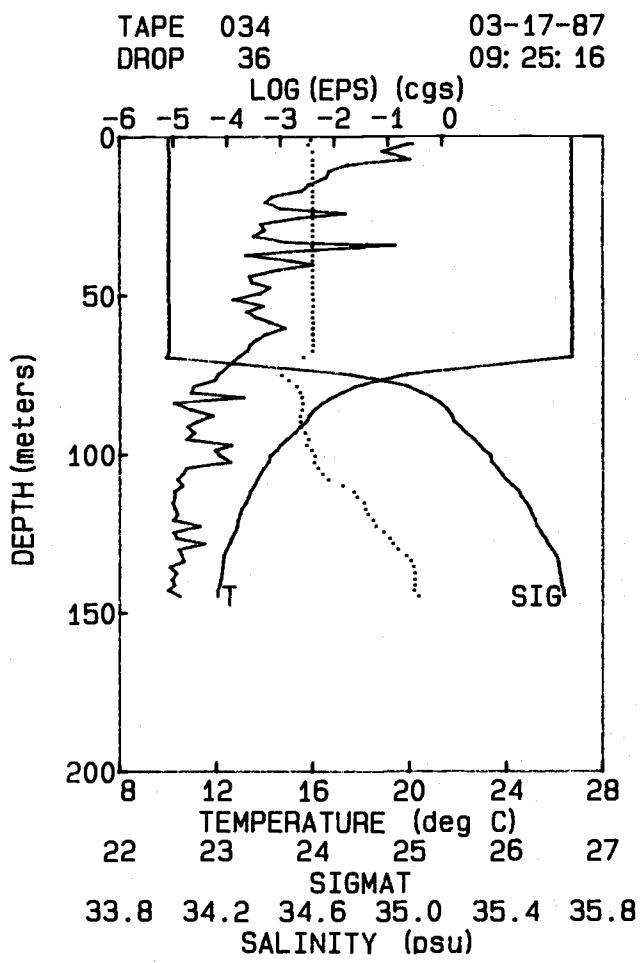
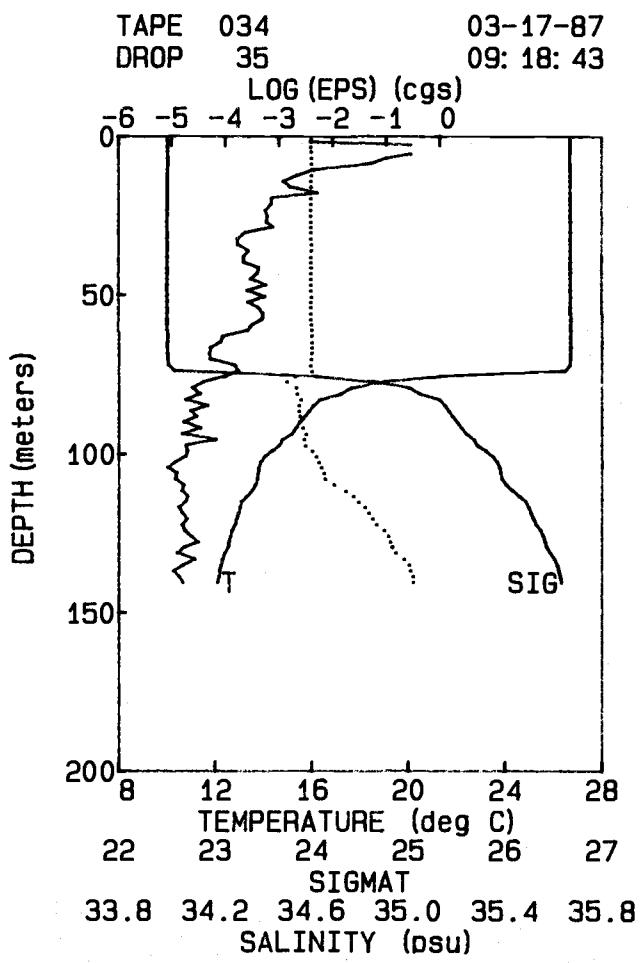
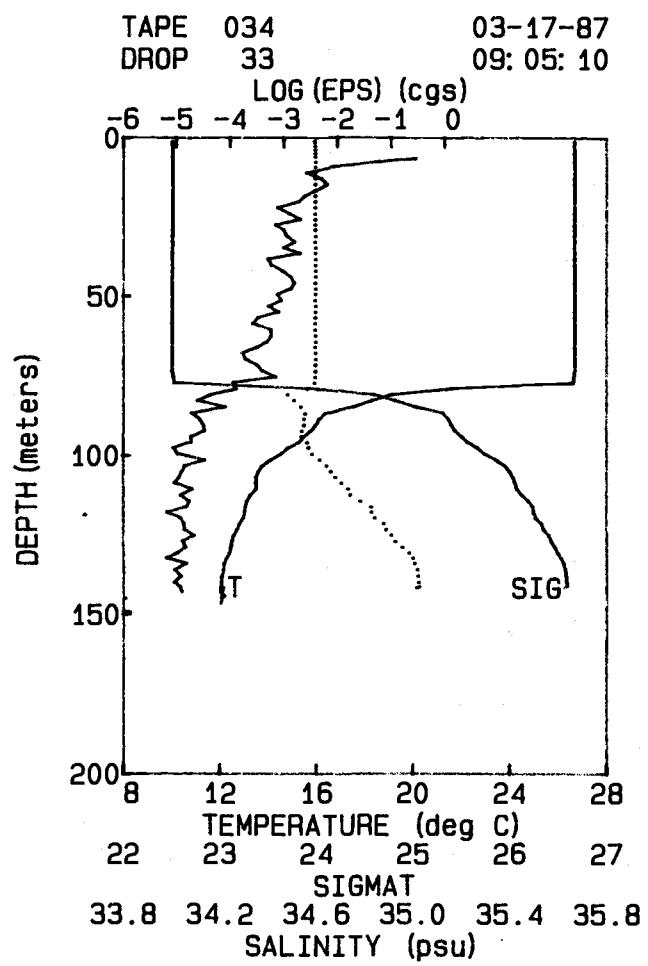


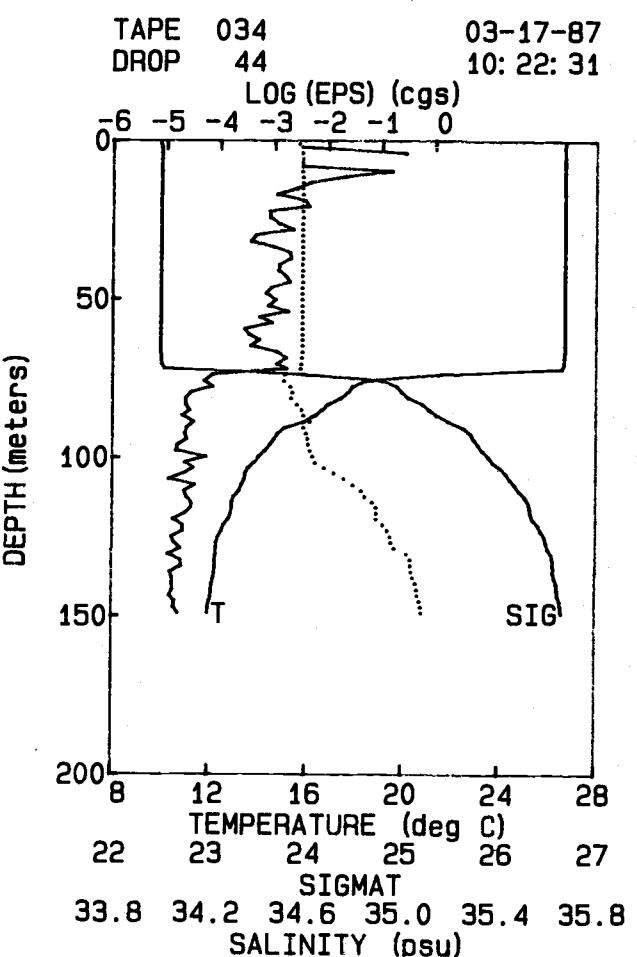
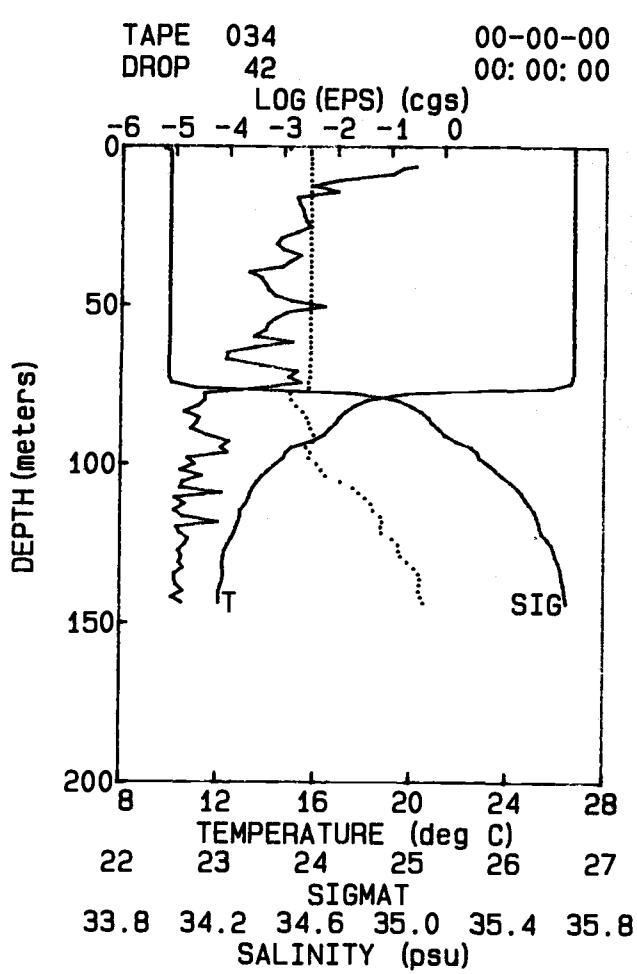
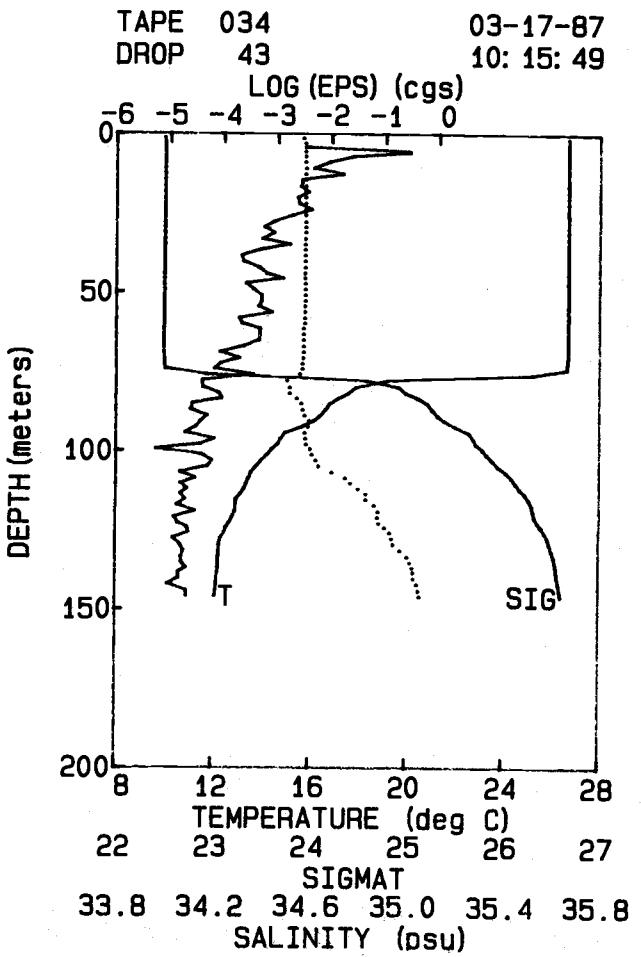
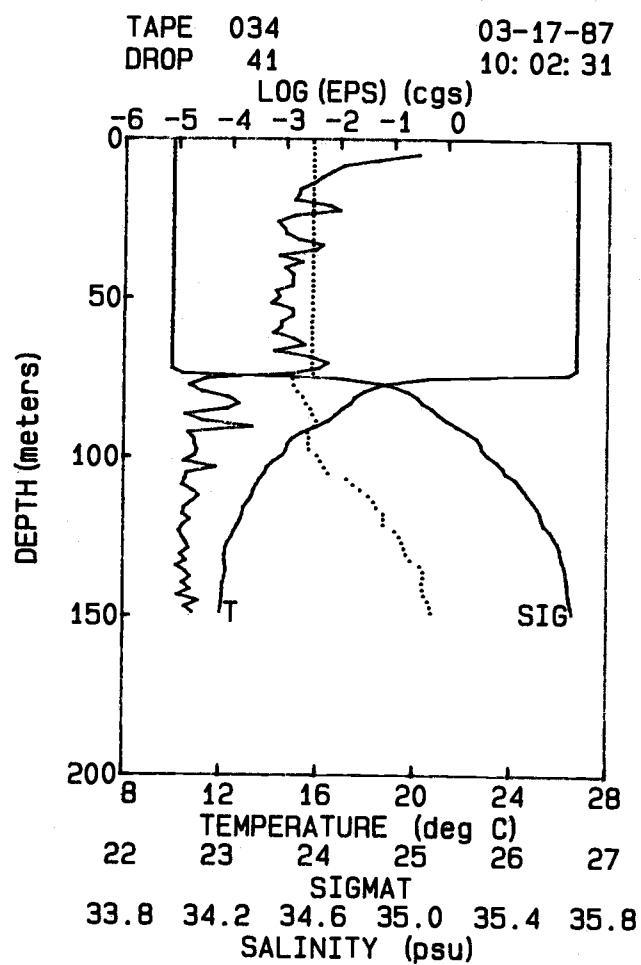
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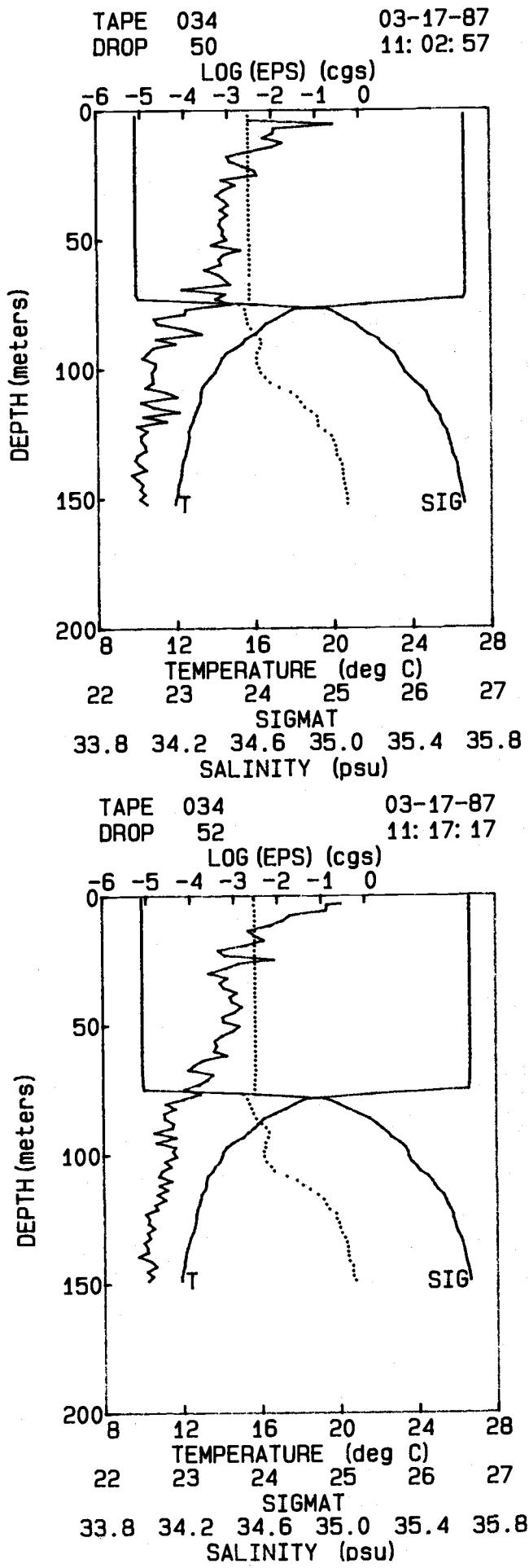
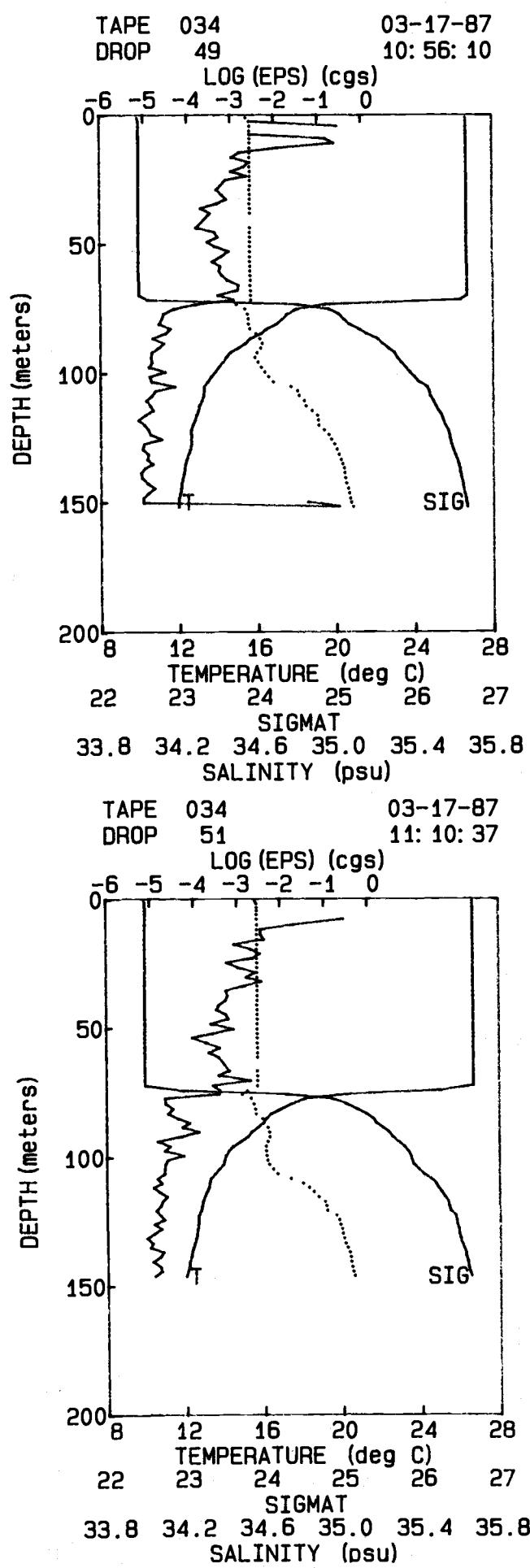


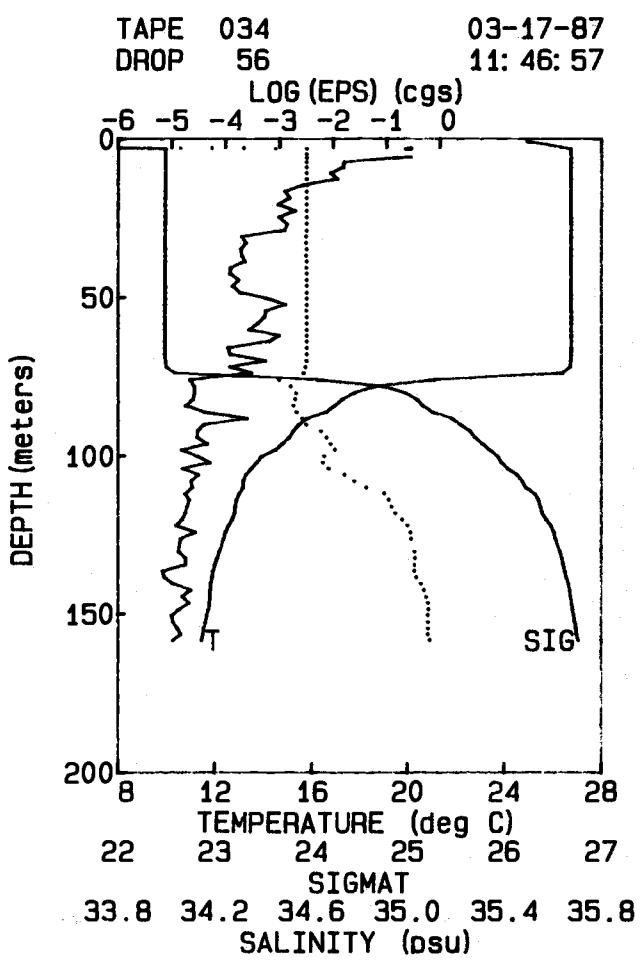
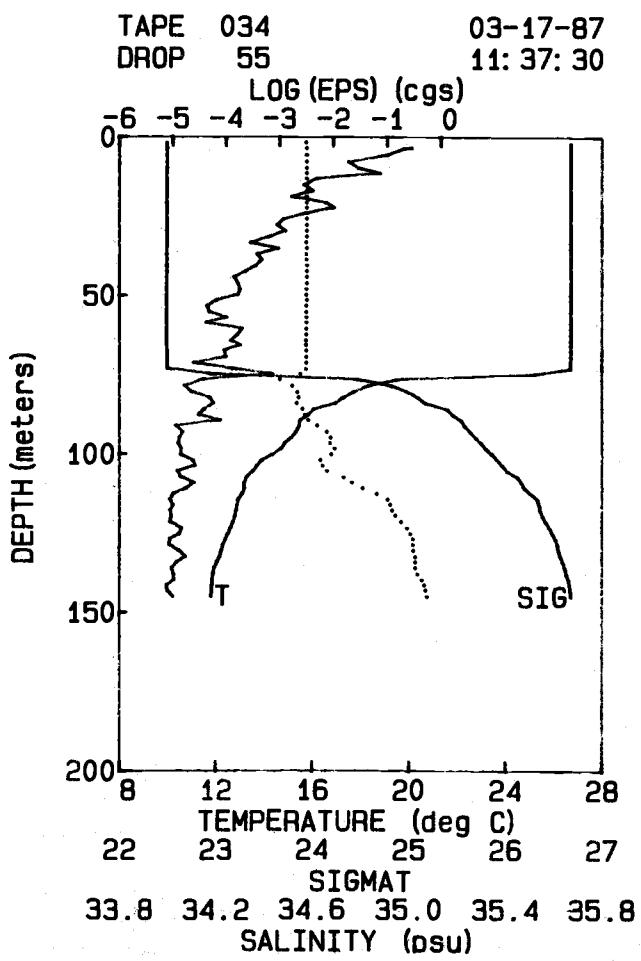
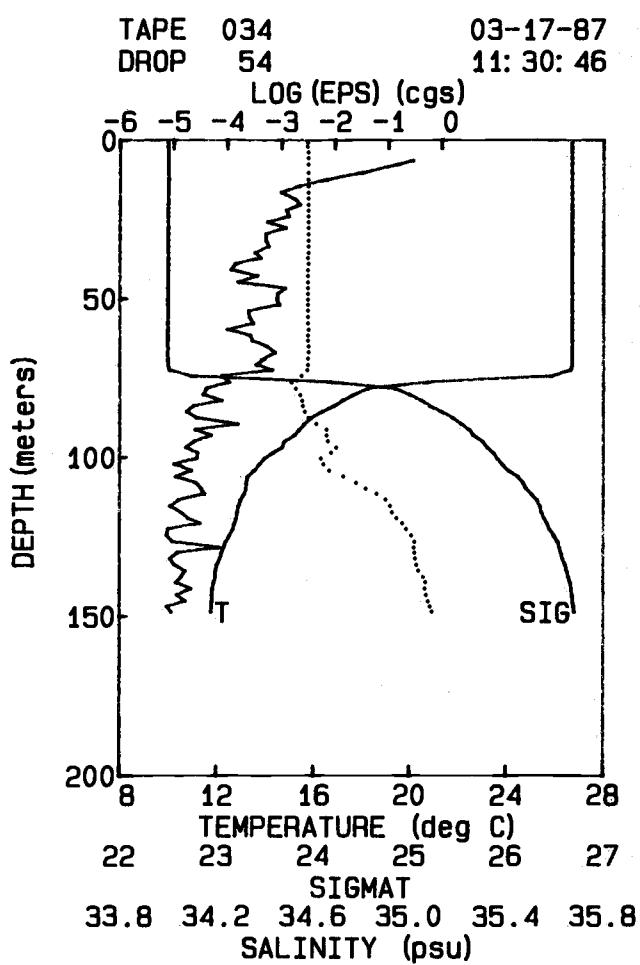
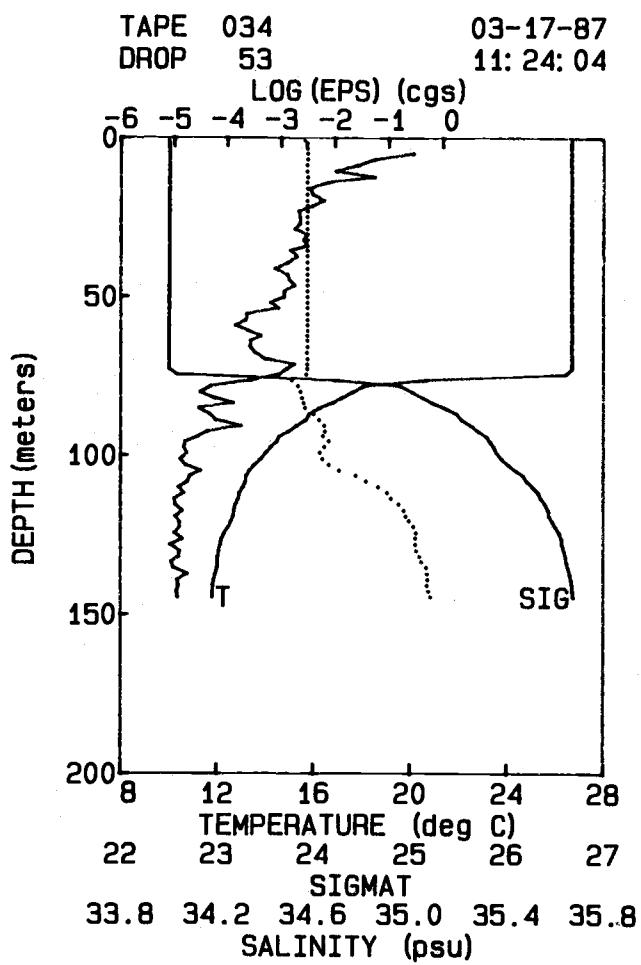


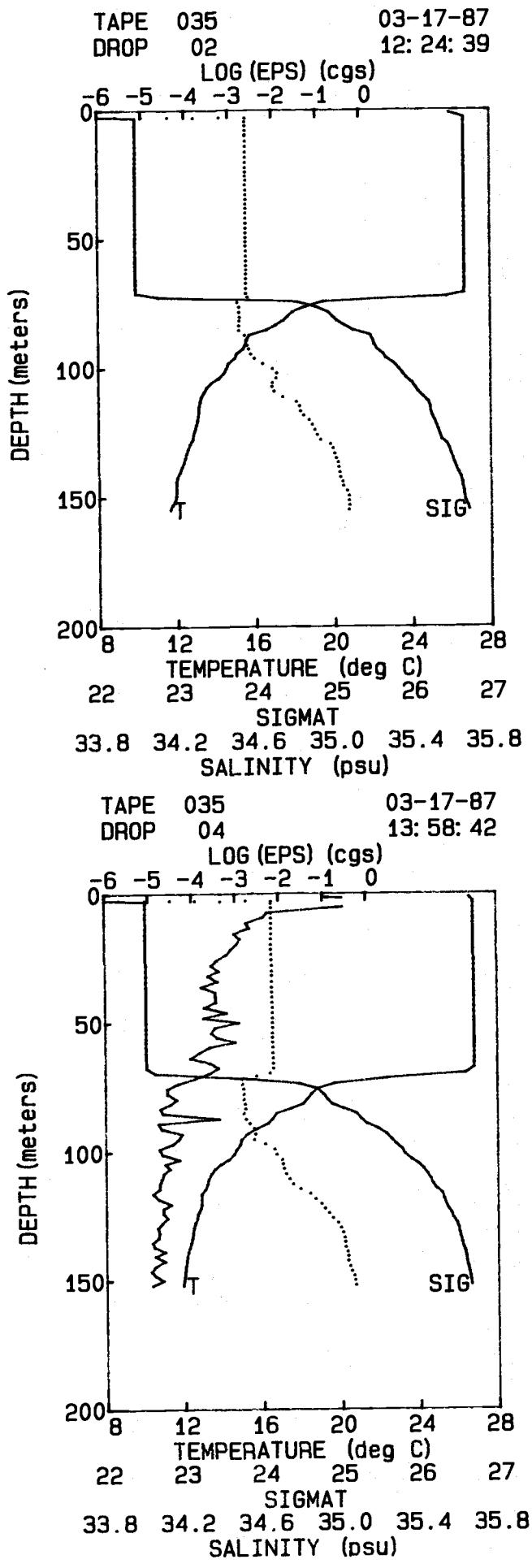
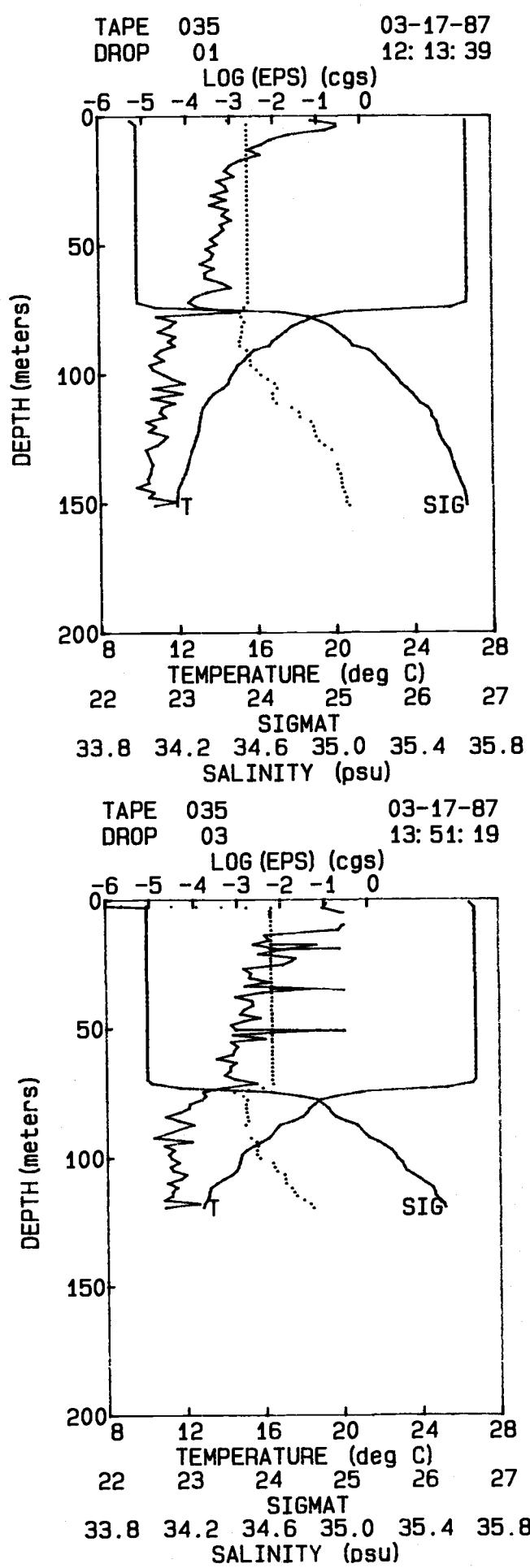


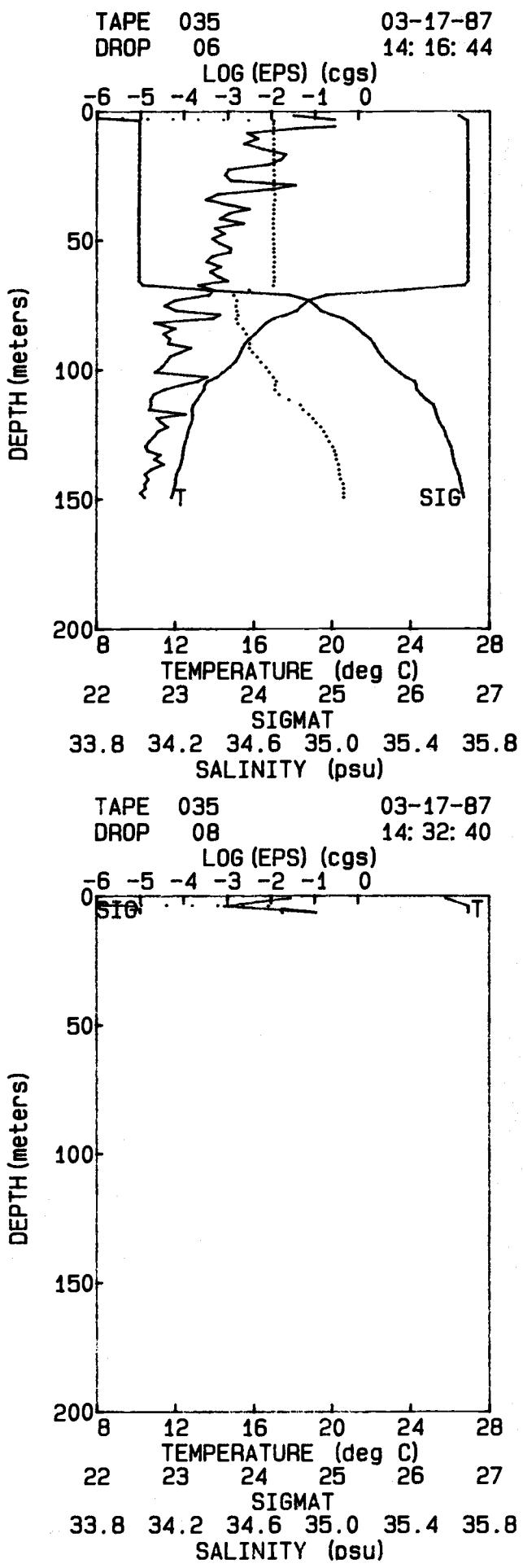
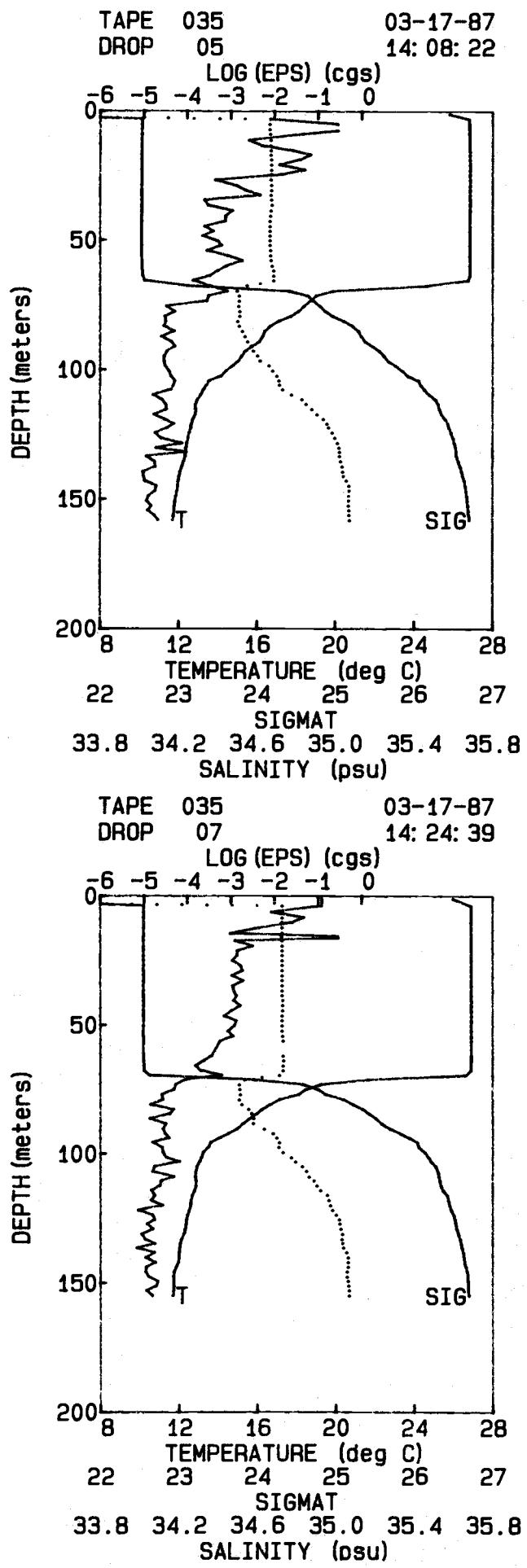


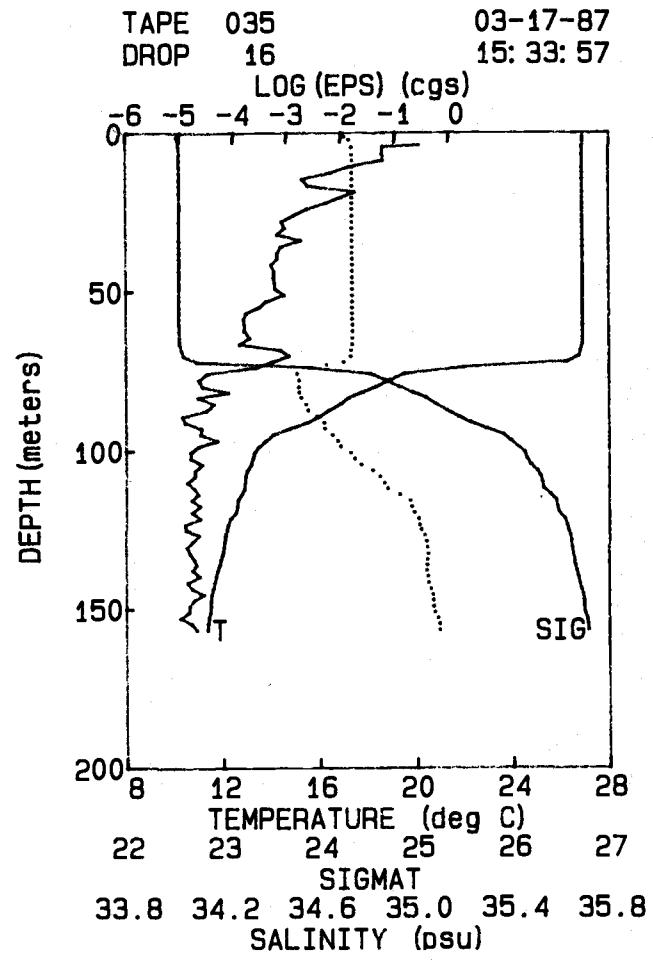
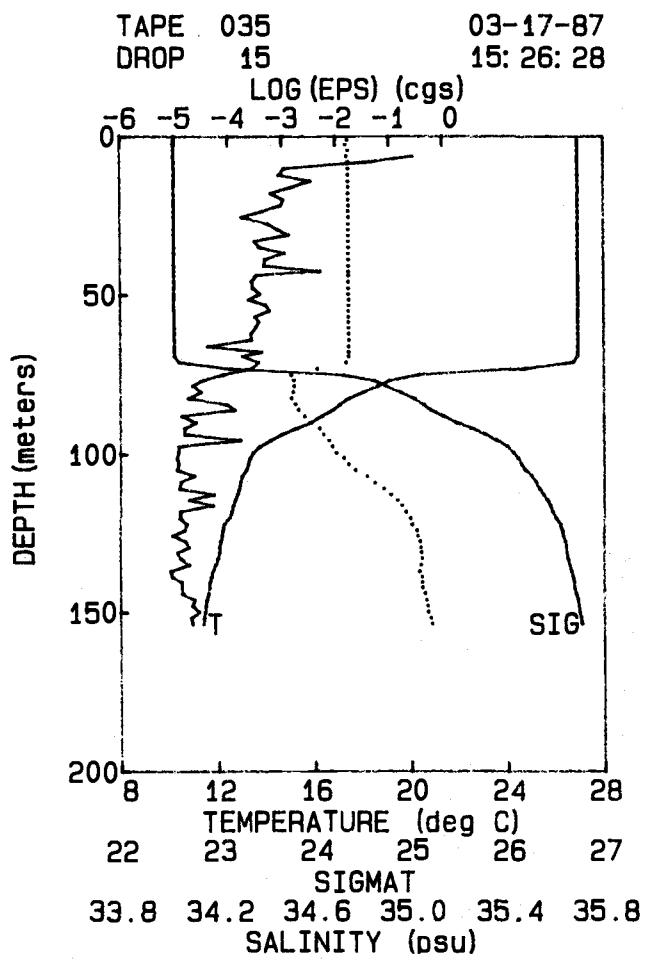
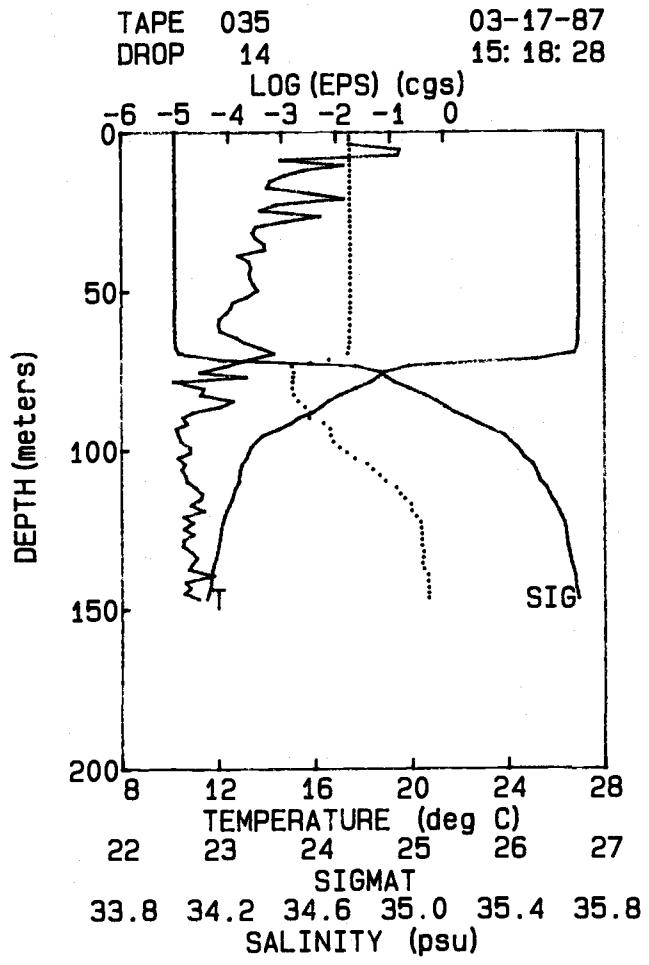
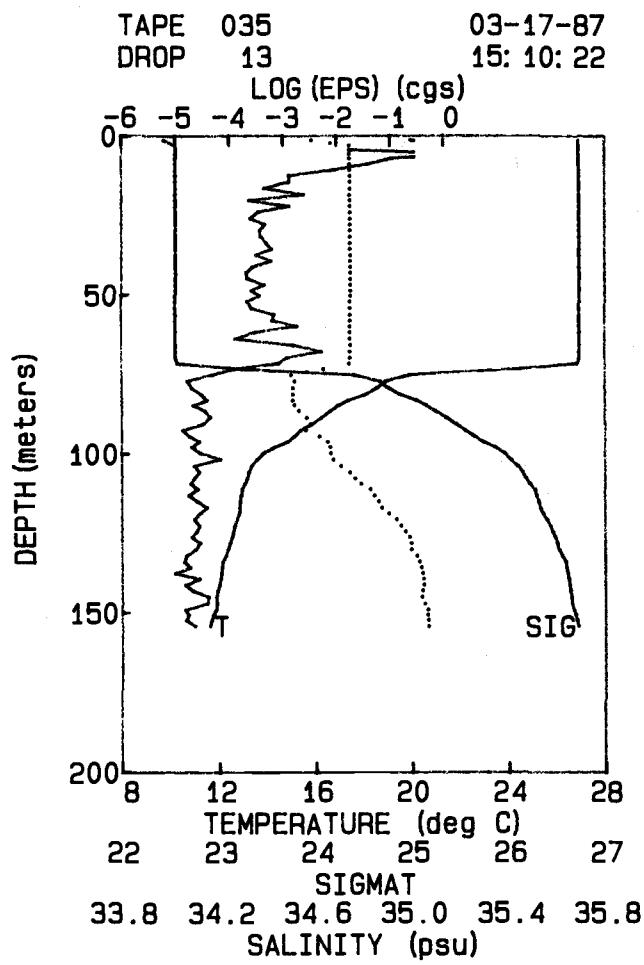


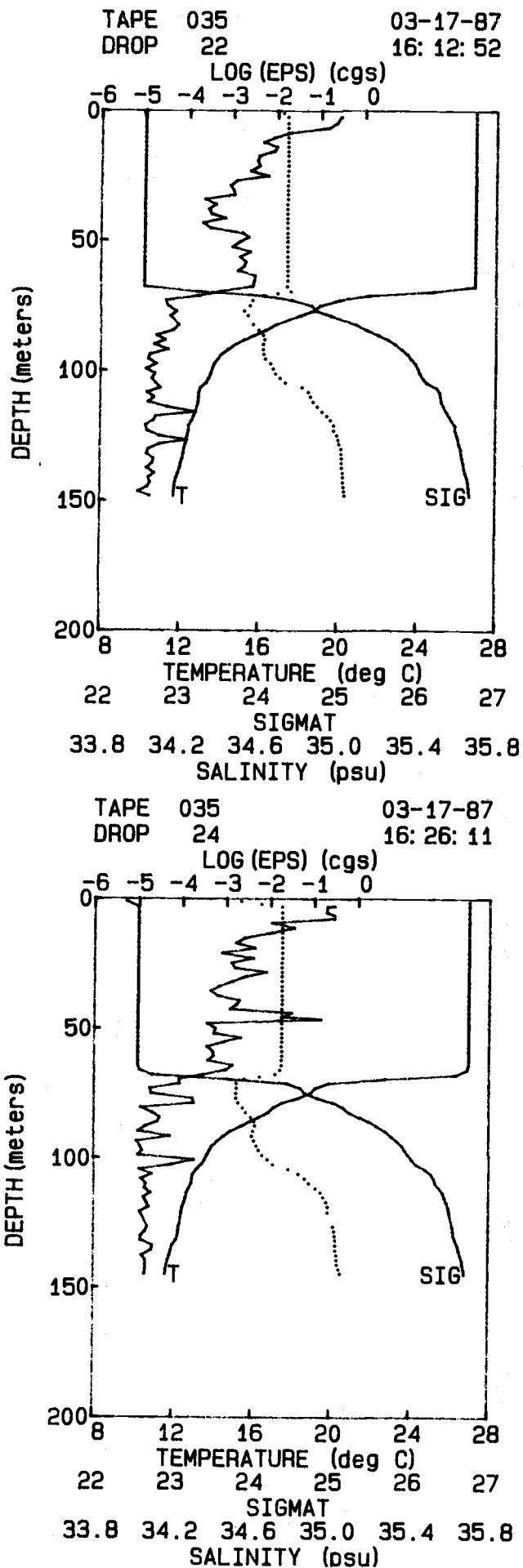
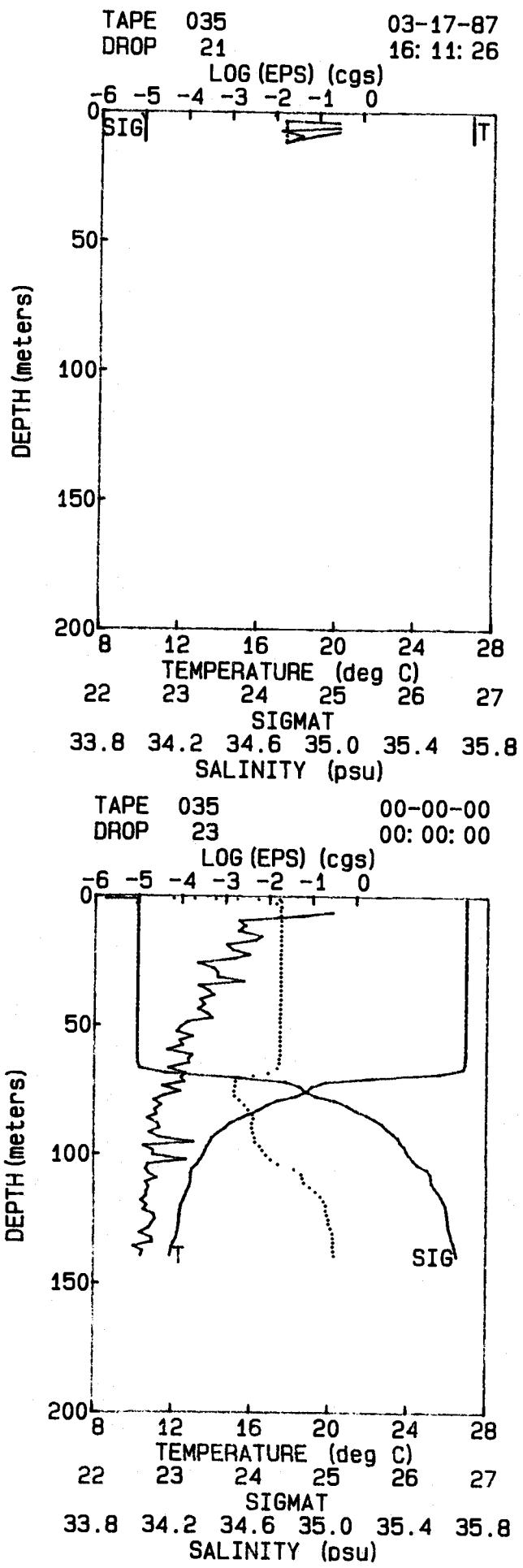


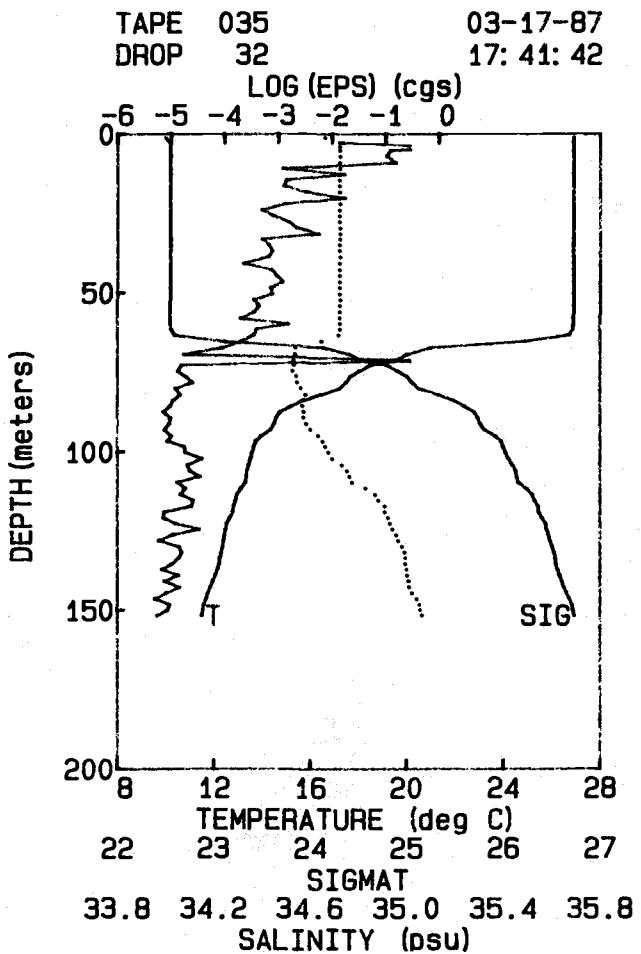
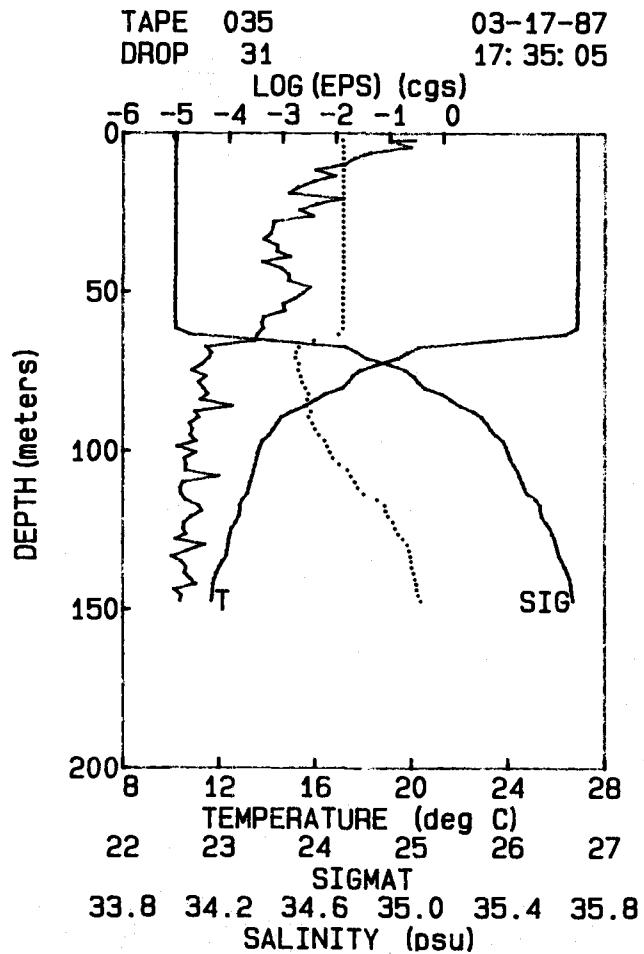
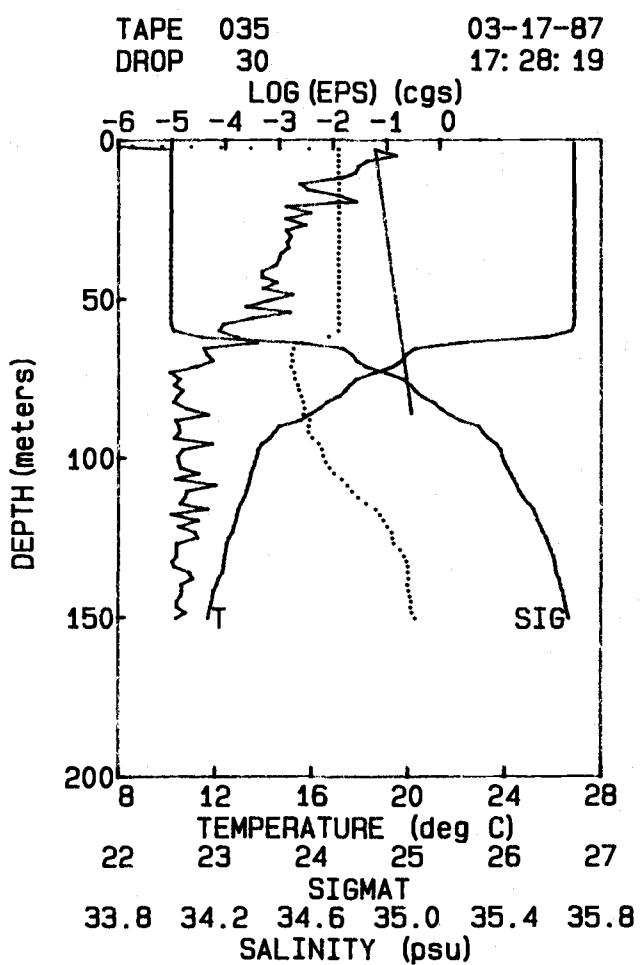
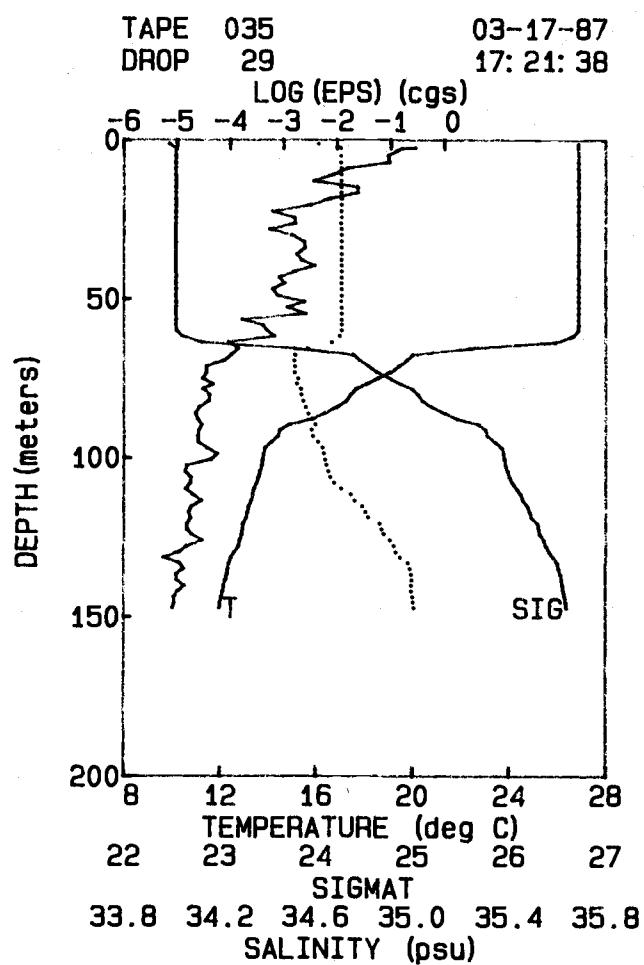


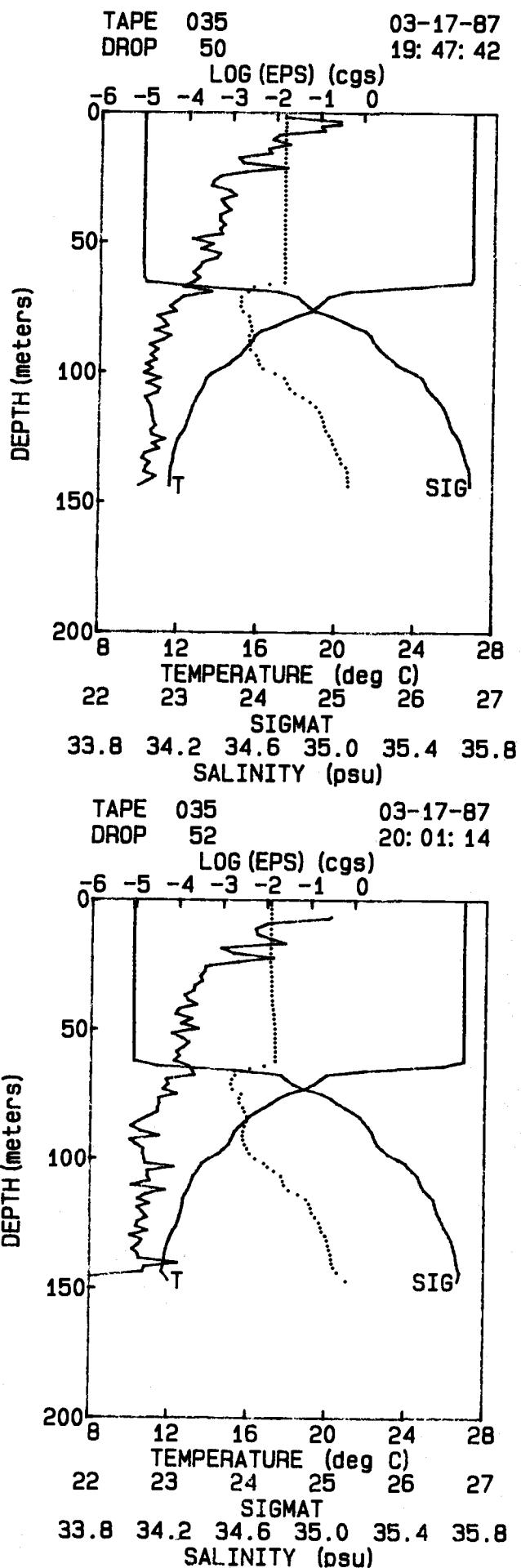
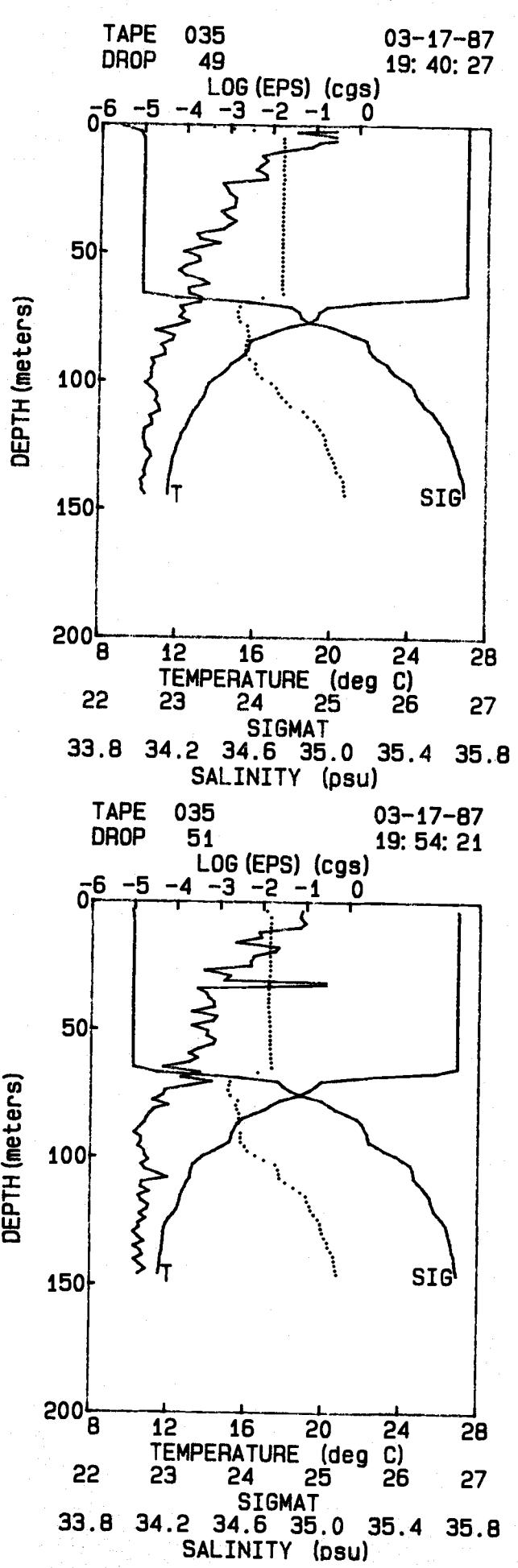


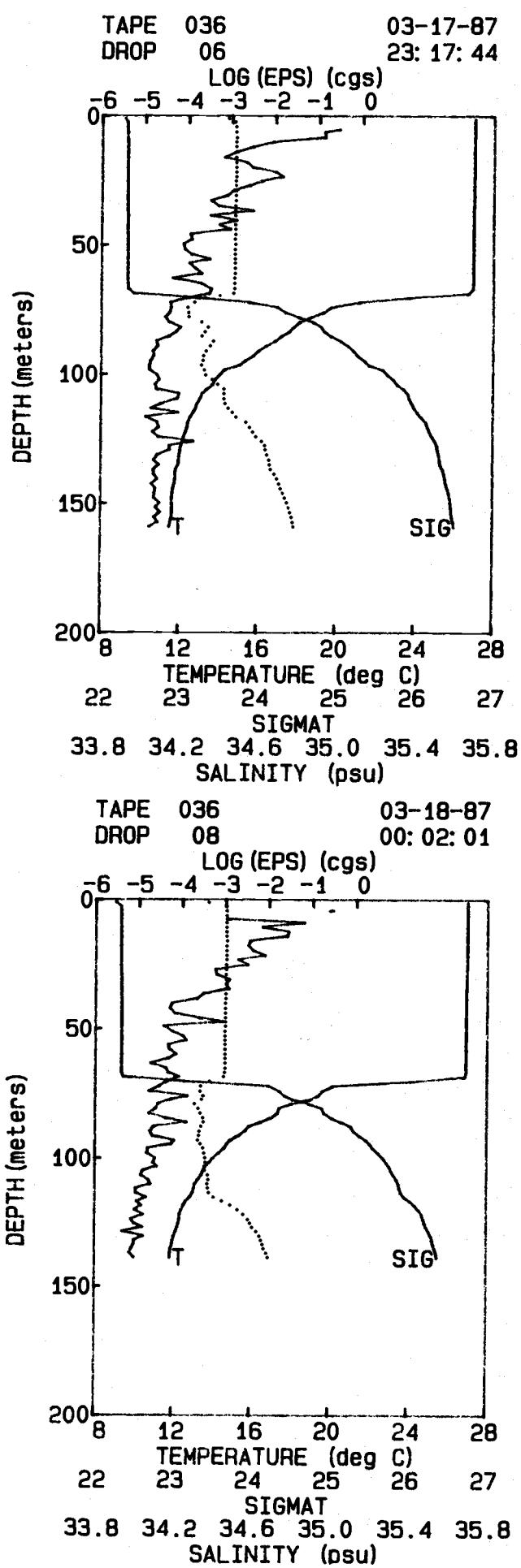
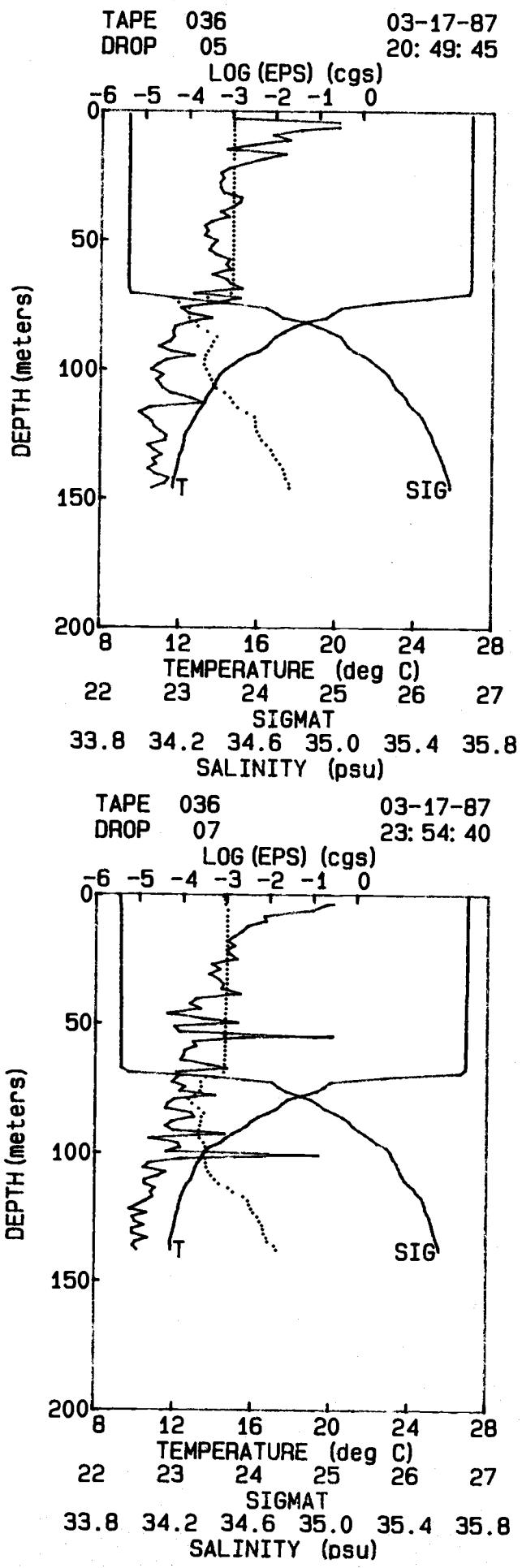


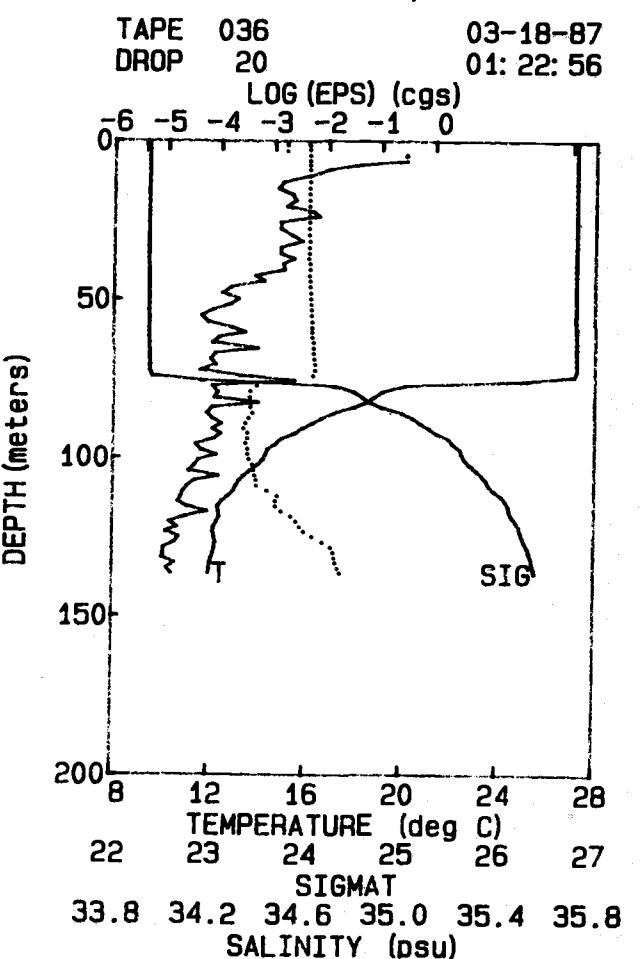
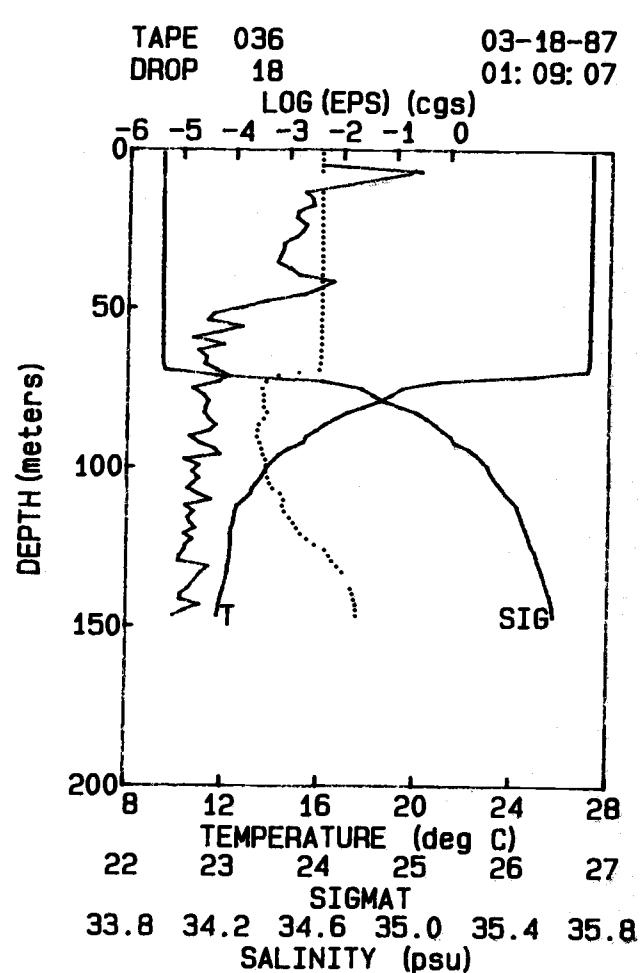
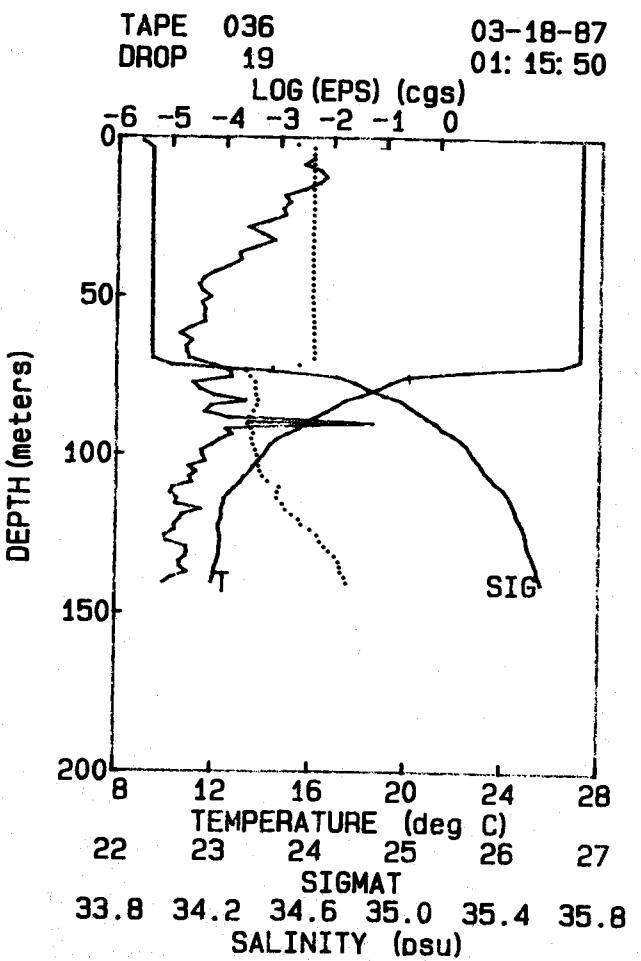
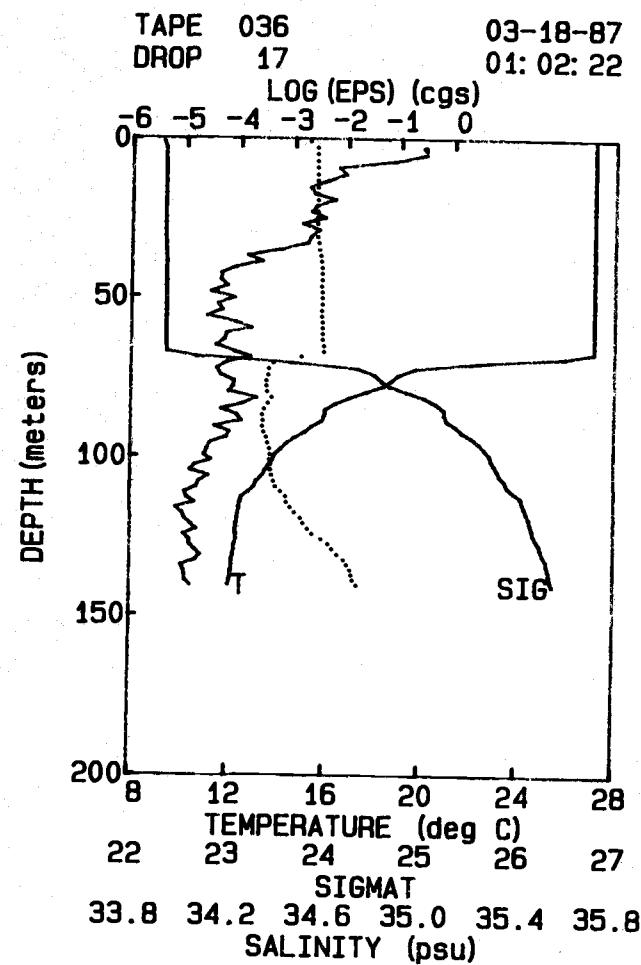


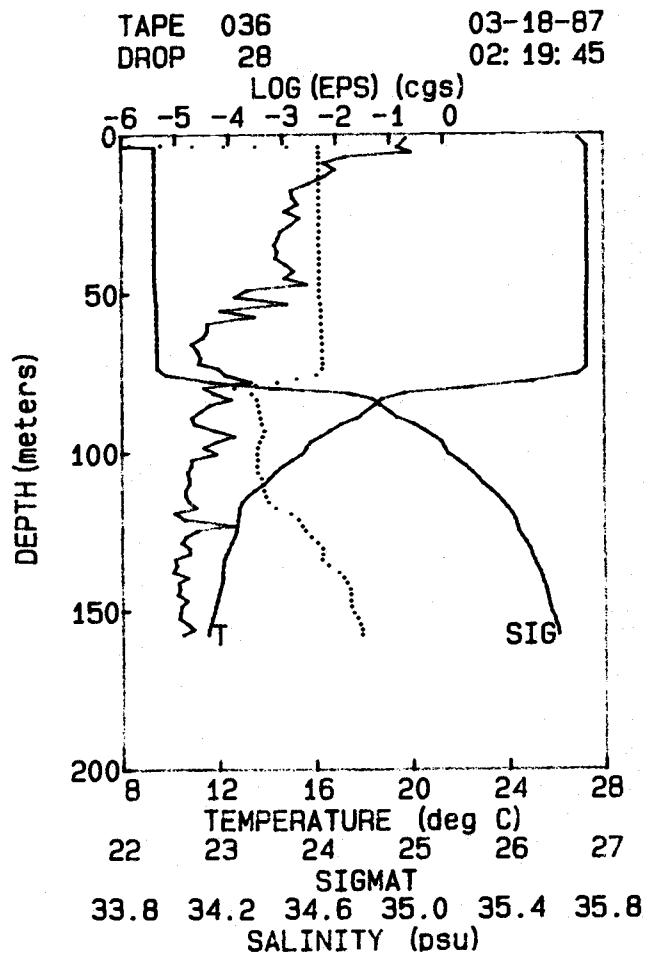
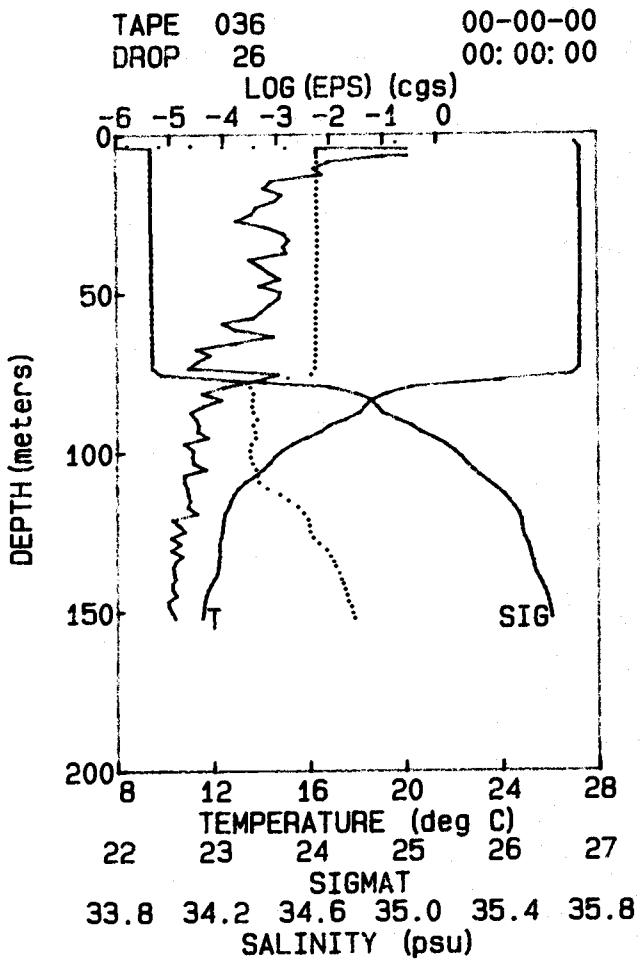
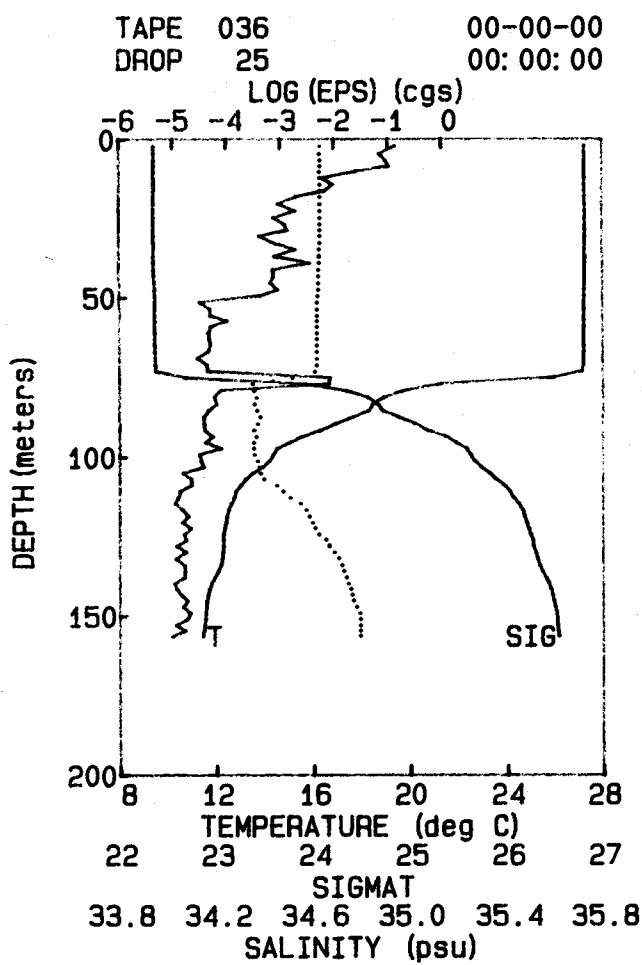


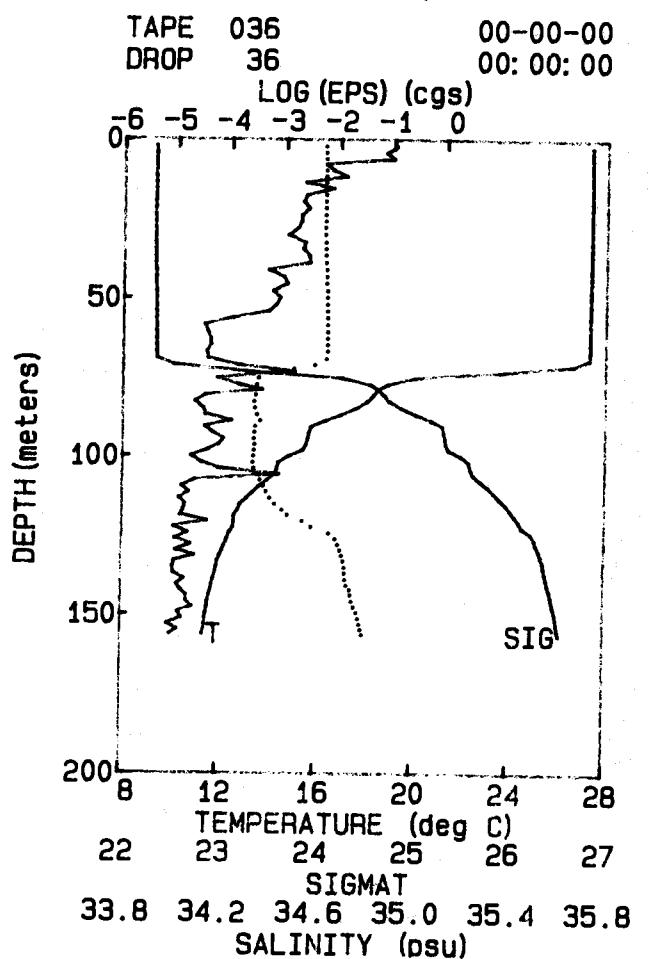
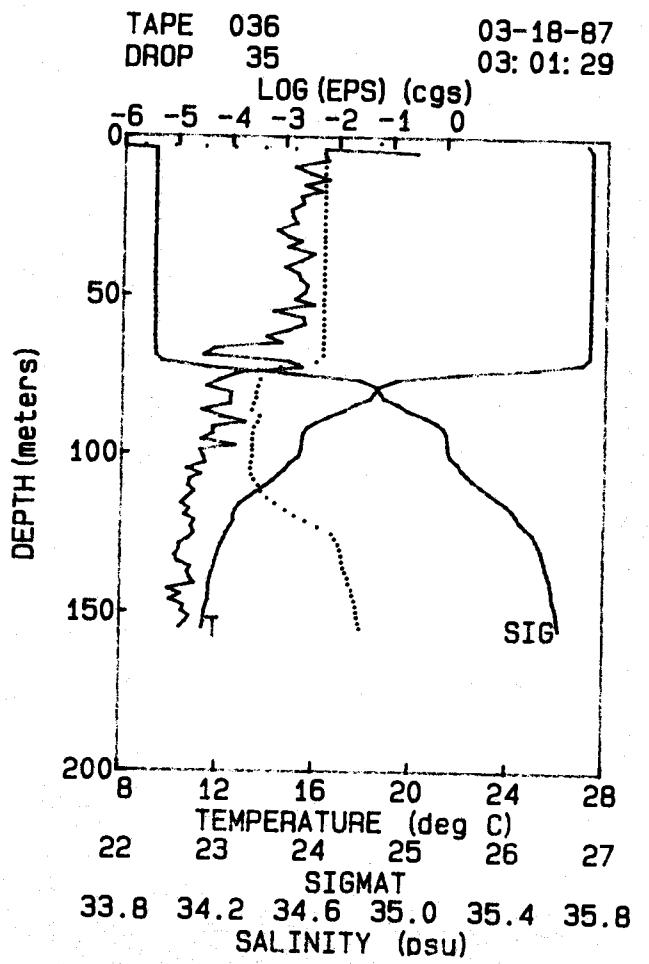
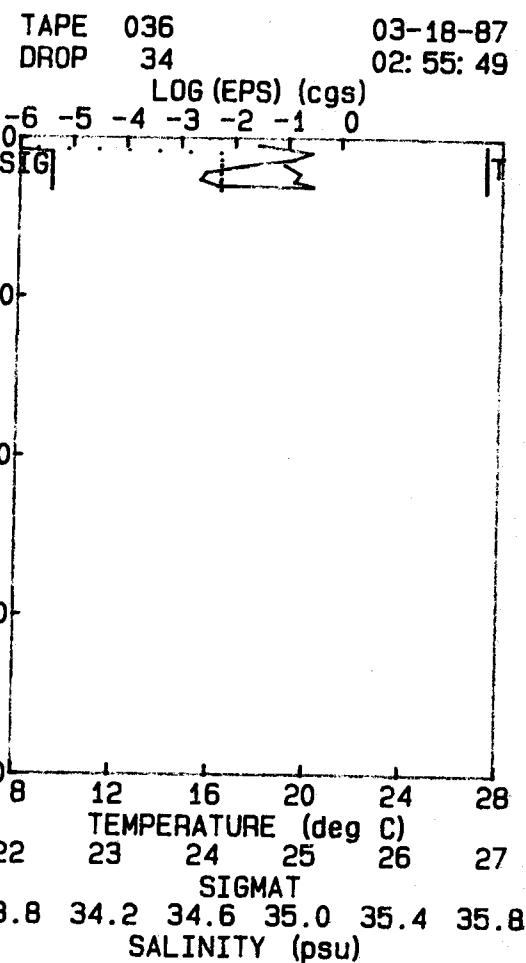
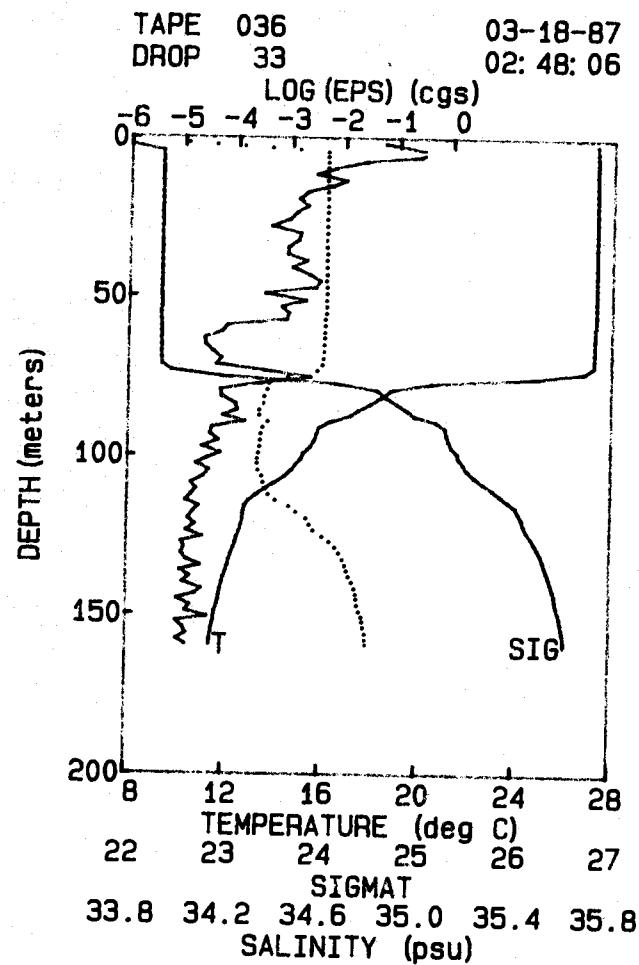




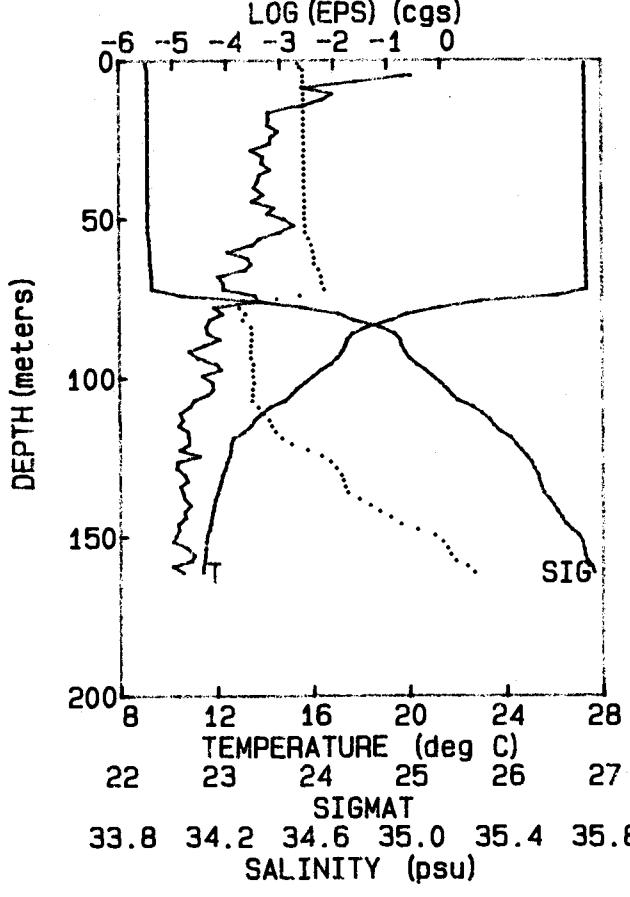




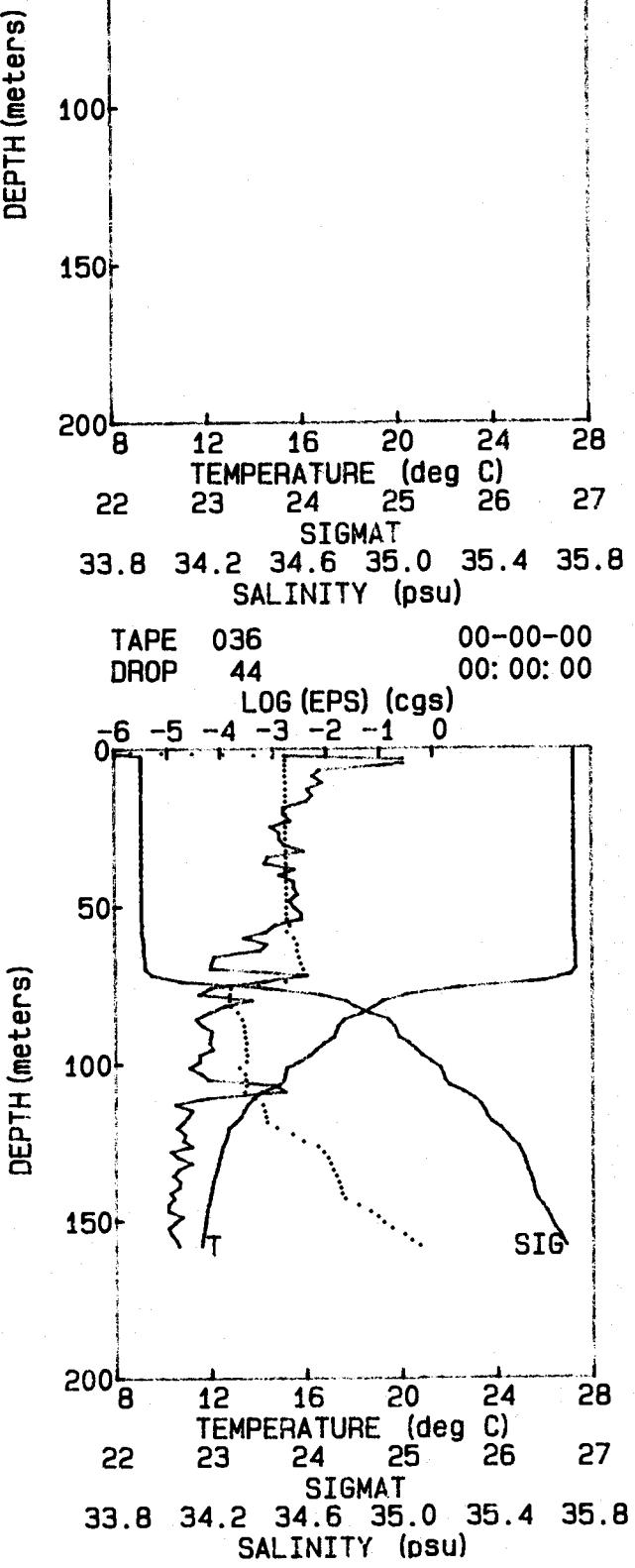


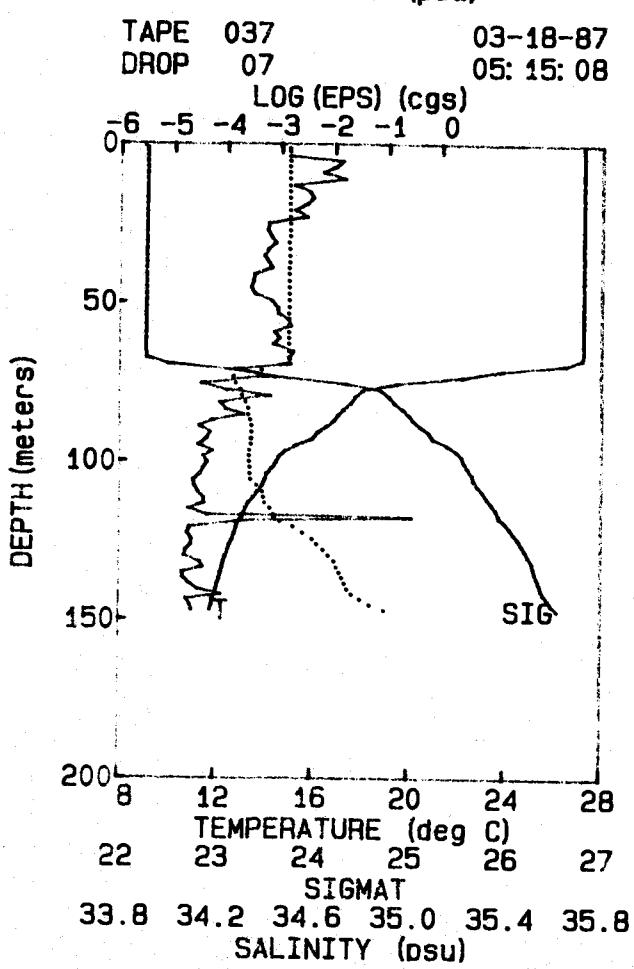
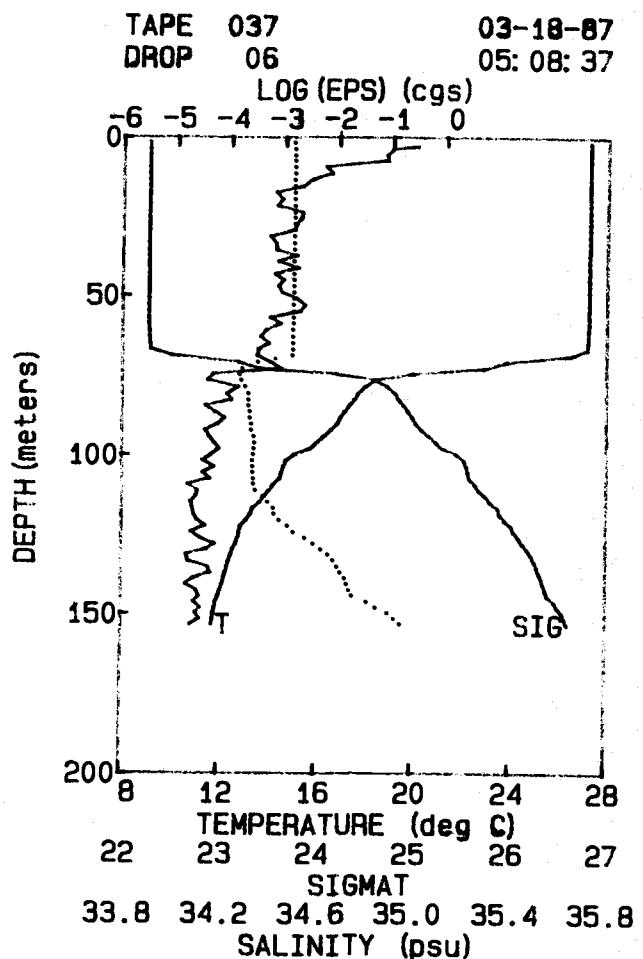
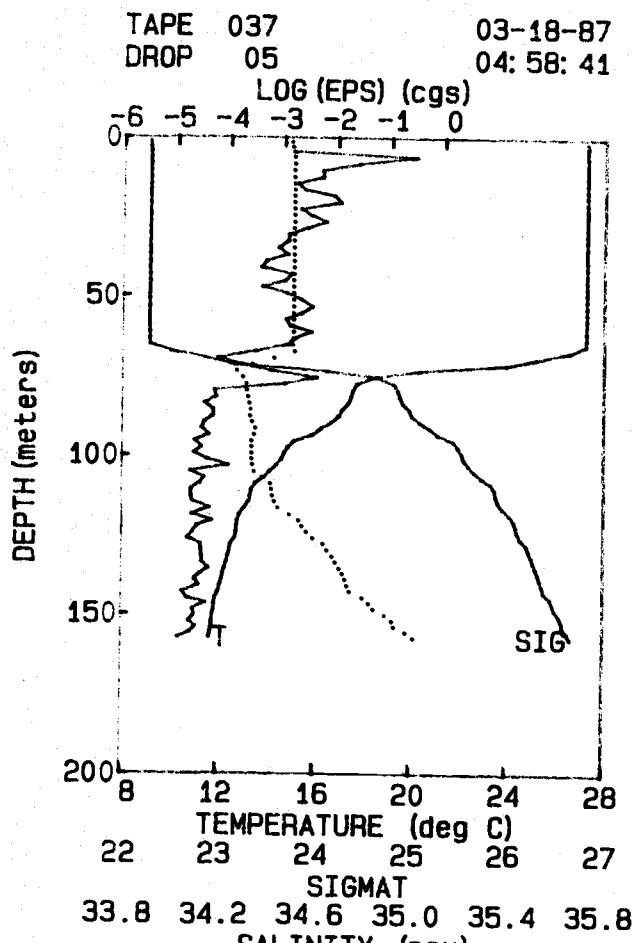


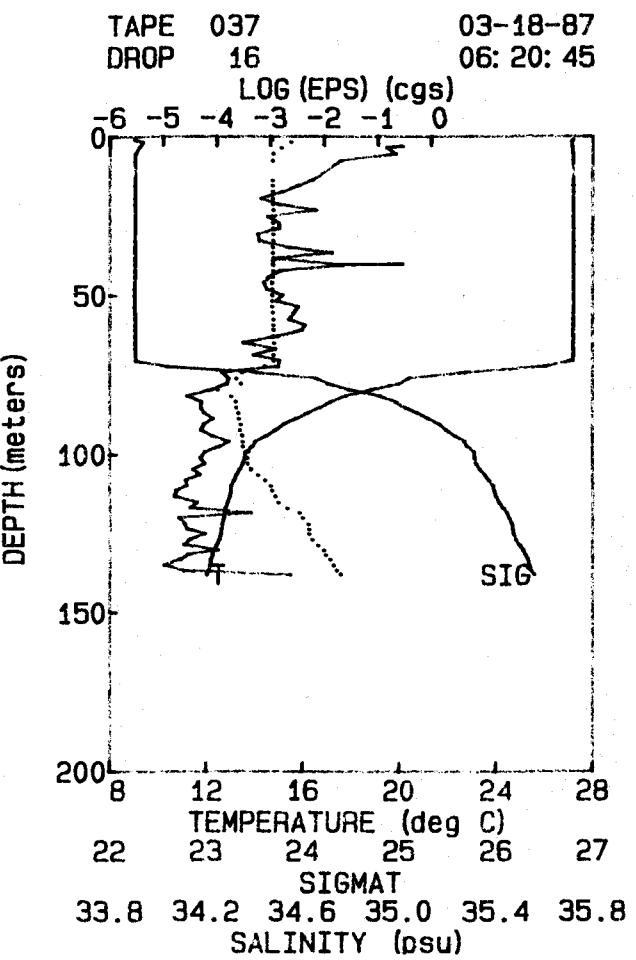
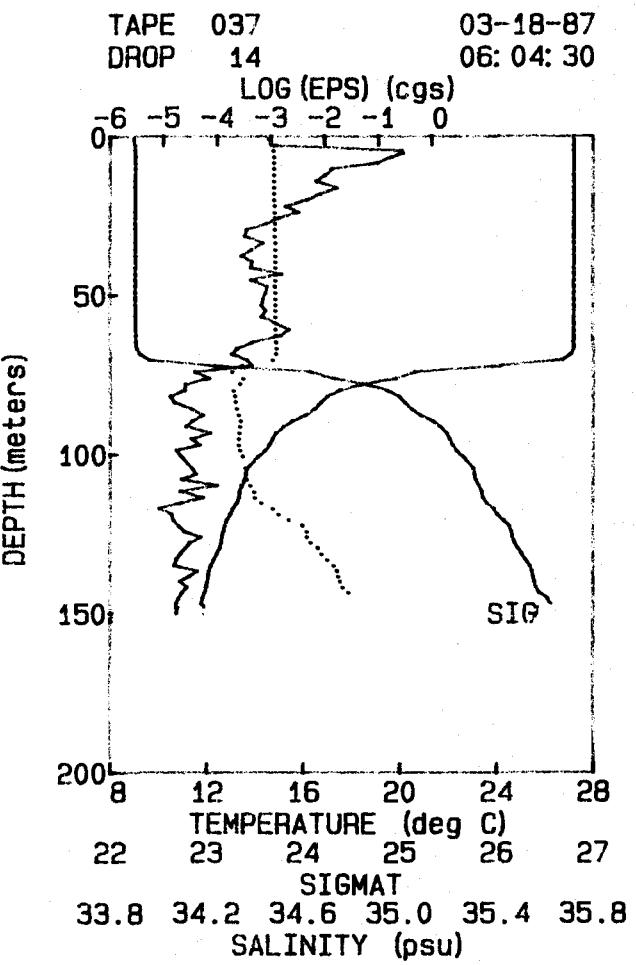
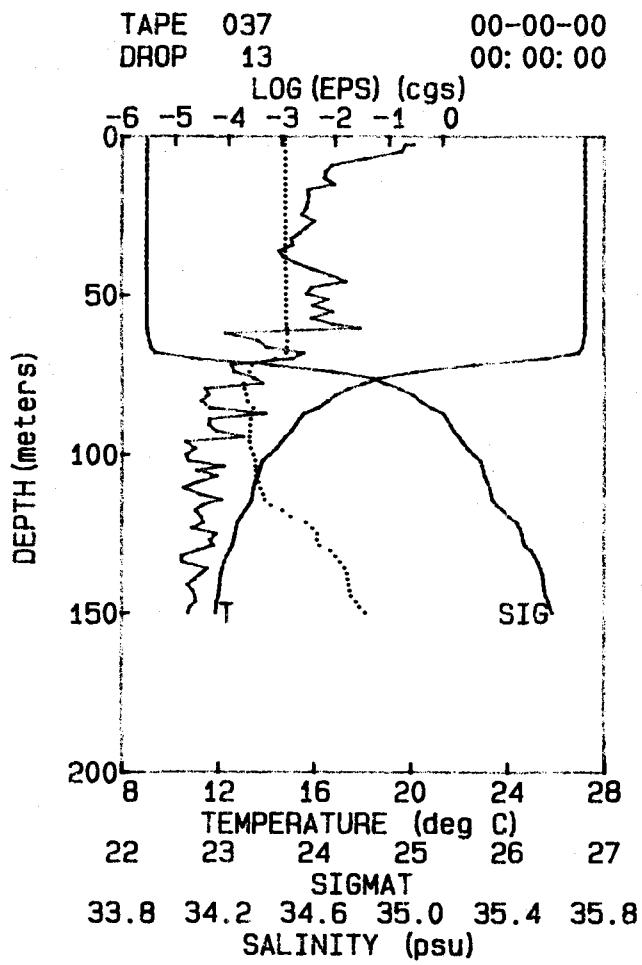
TAPE 036 03-18-87
DROP 41 03: 54: 54



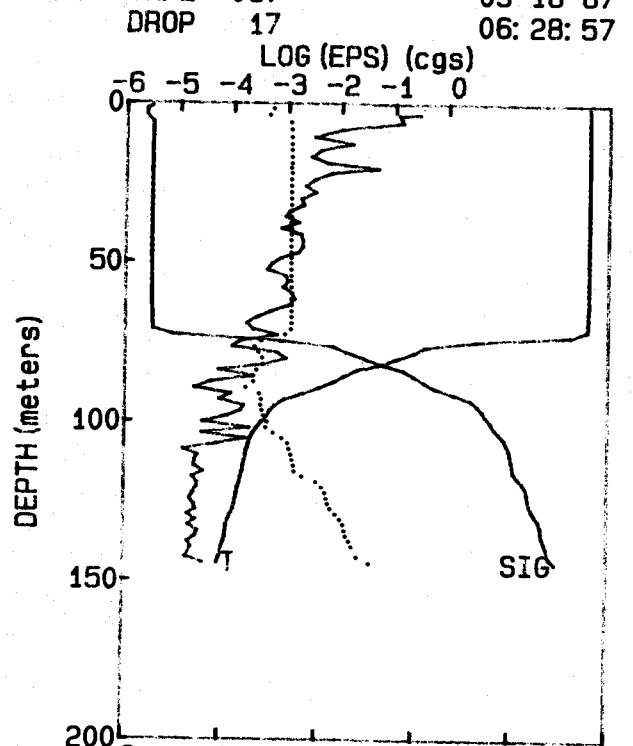
TAPE 036 03-18-87
DROP 42 04: 01: 55





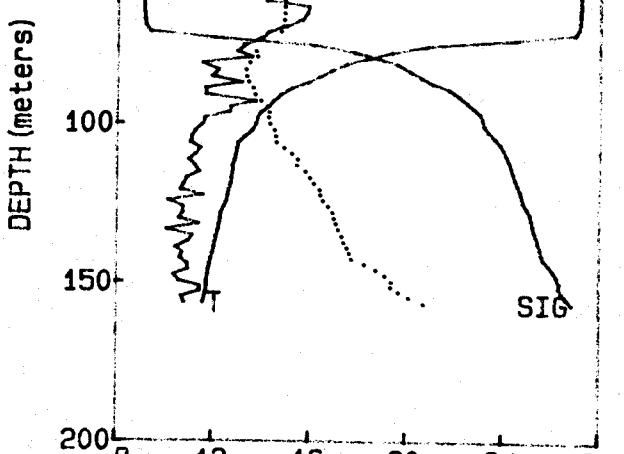


TAPE 037 03-18-87
DROP 17 06: 28: 57



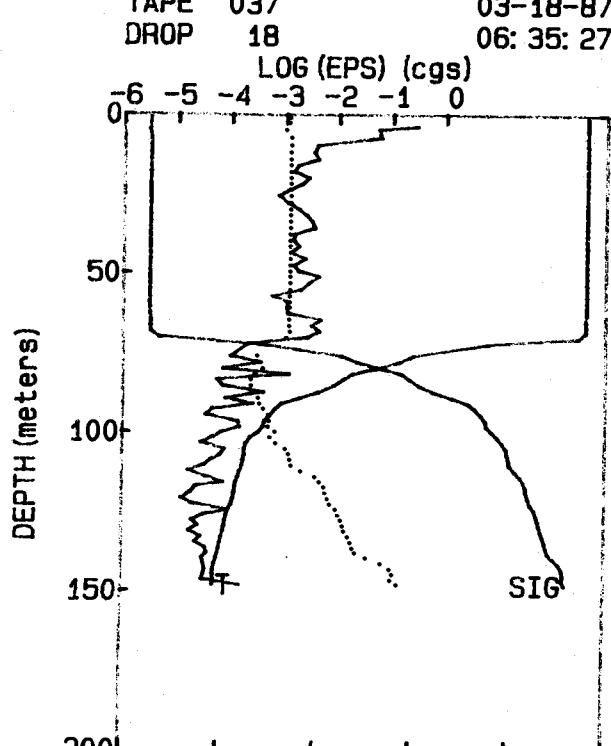
SIGMAT
33.8 34.2 34.6 35.0 35.4 35.8
SALINITY (psu)

TAPE 037 03-18-87
DROP 19 06: 42: 03



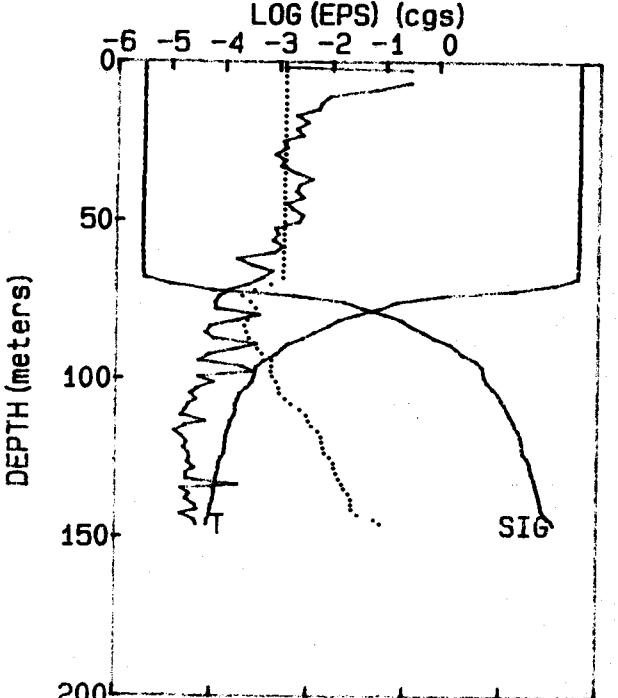
SIGMAT
33.8 34.2 34.6 35.0 35.4 35.8
SALINITY (psu)

TAPE 037 03-18-87
DROP 18 06: 35: 27

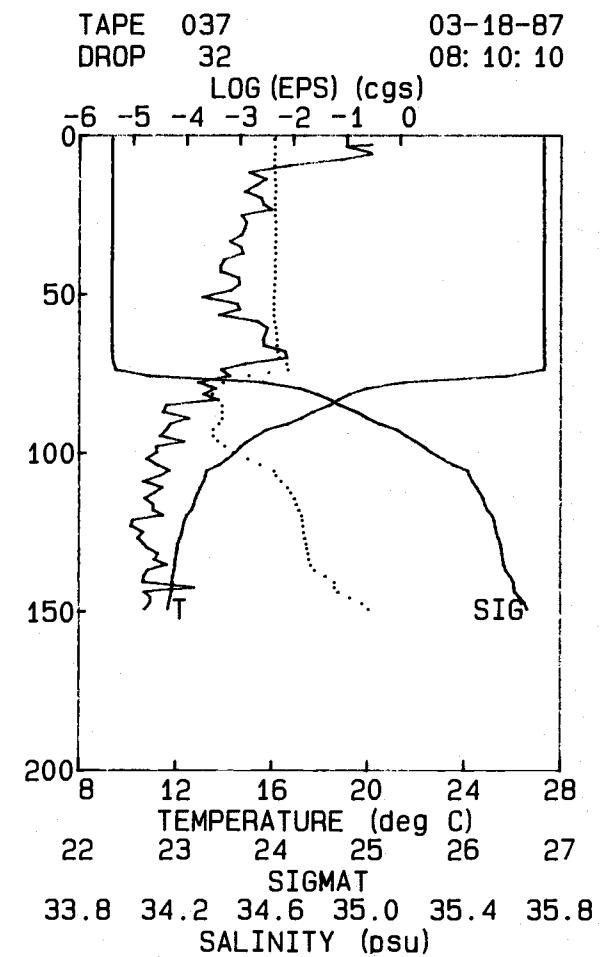
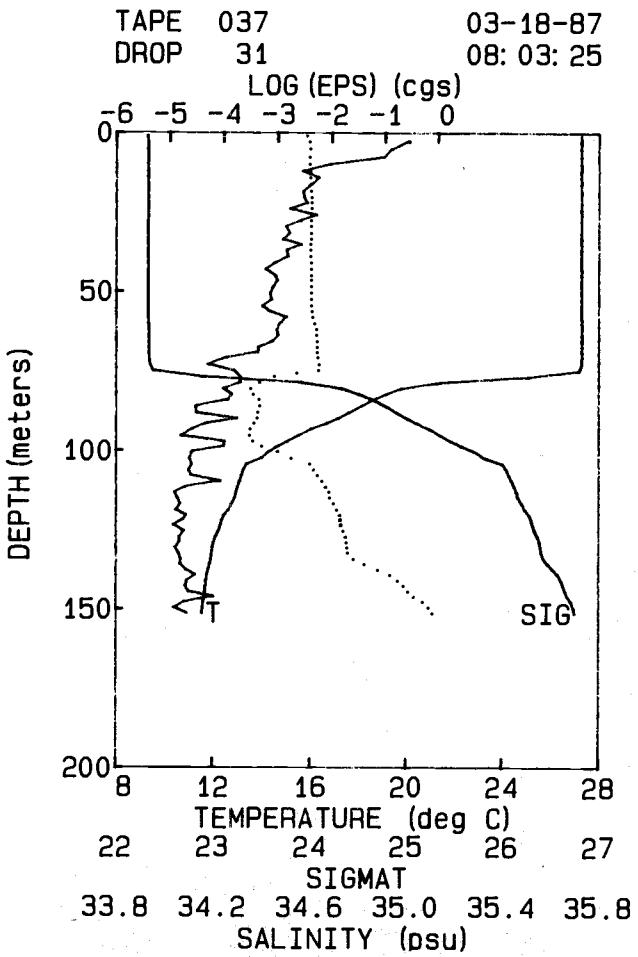
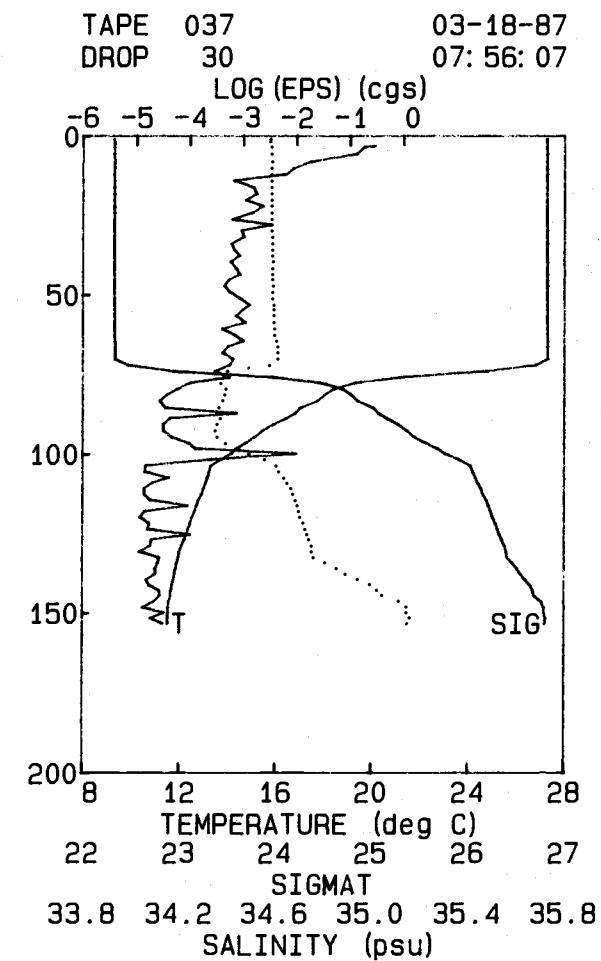
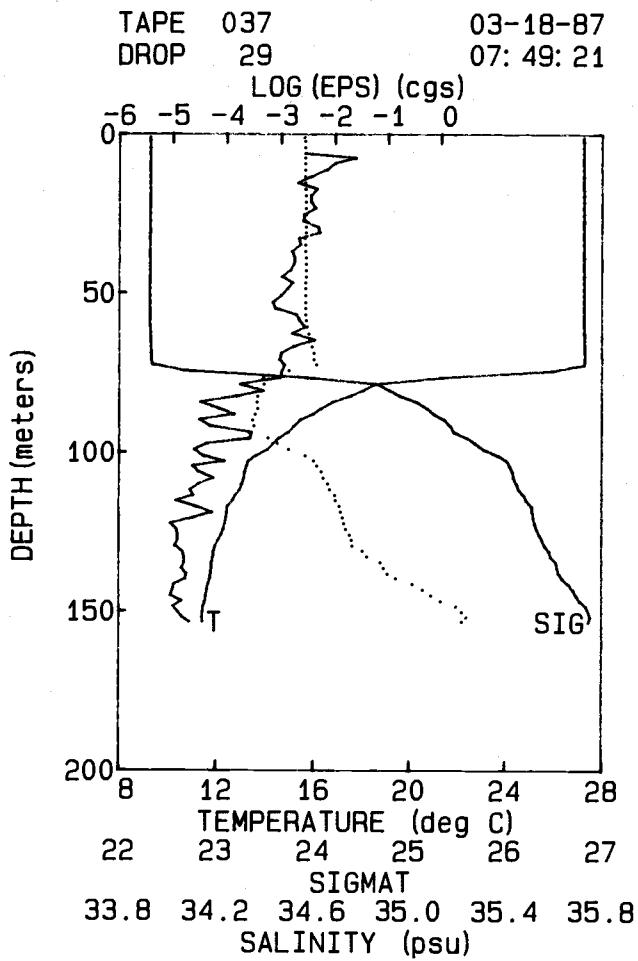


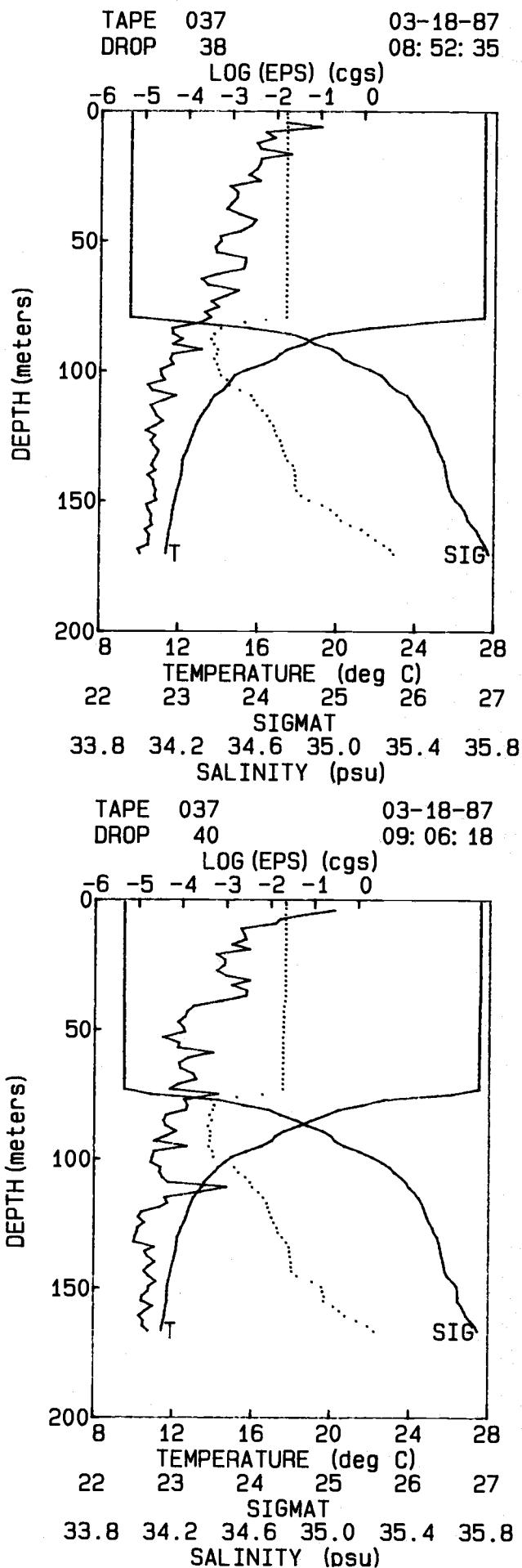
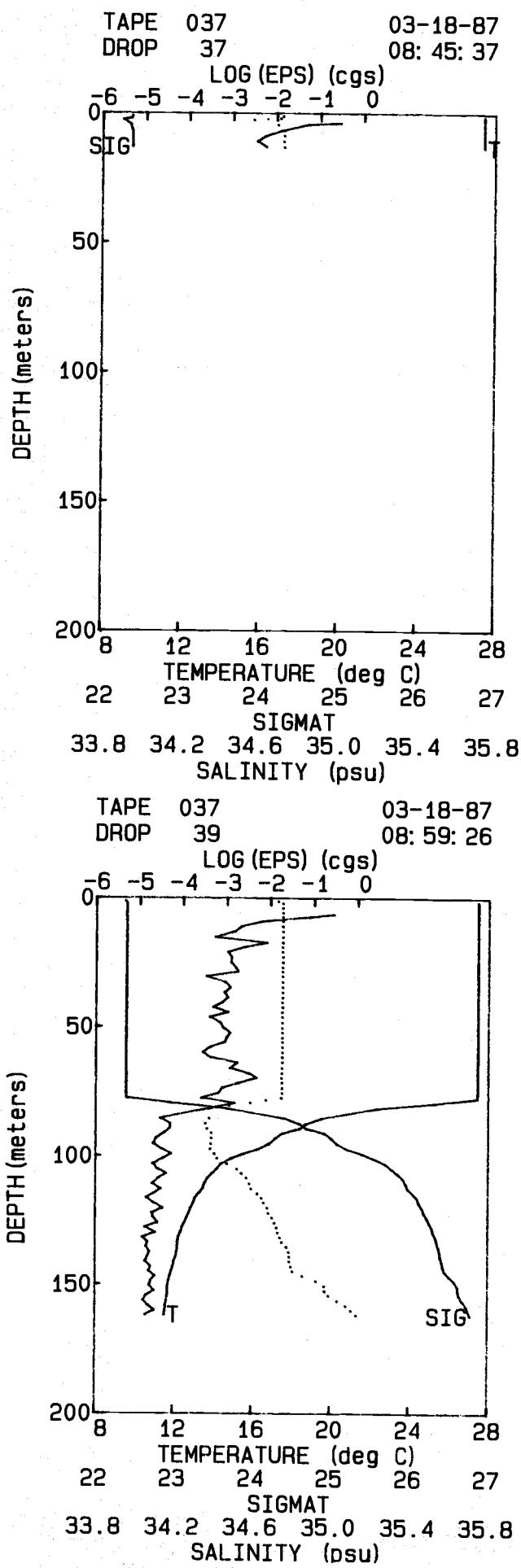
SIGMAT
33.8 34.2 34.6 35.0 35.4 35.8
SALINITY (psu)

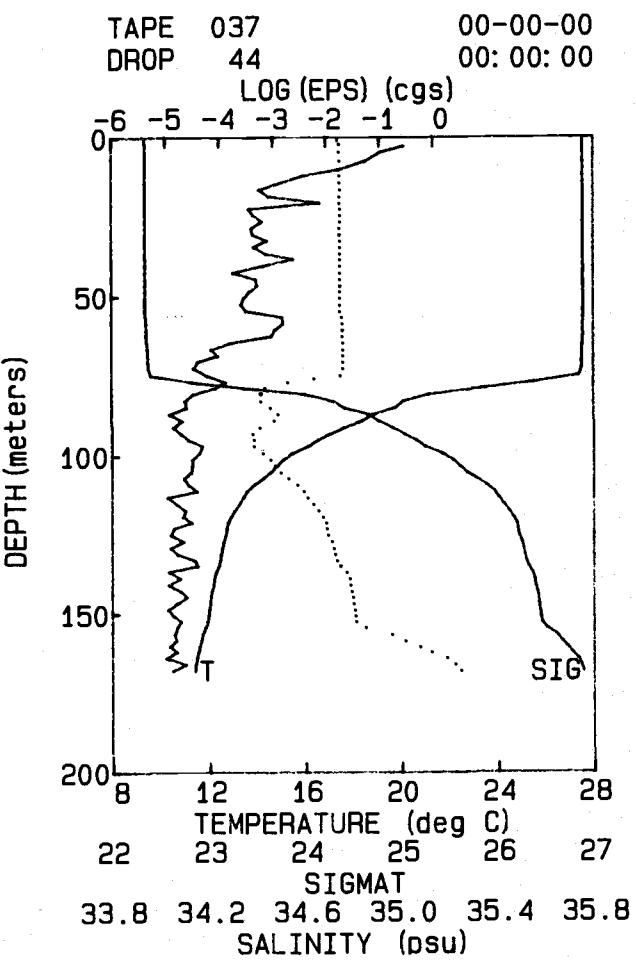
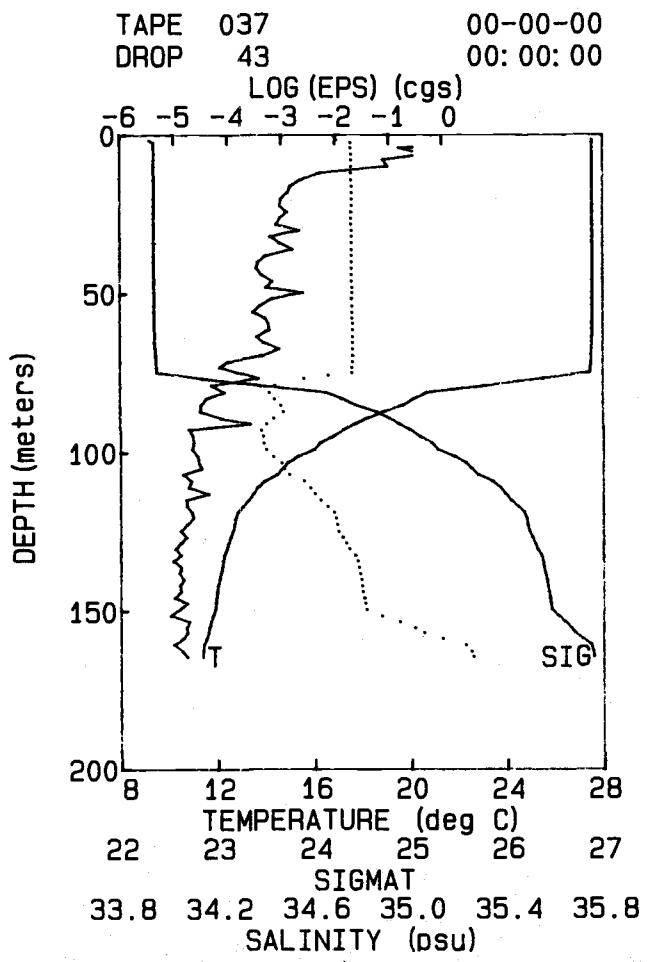
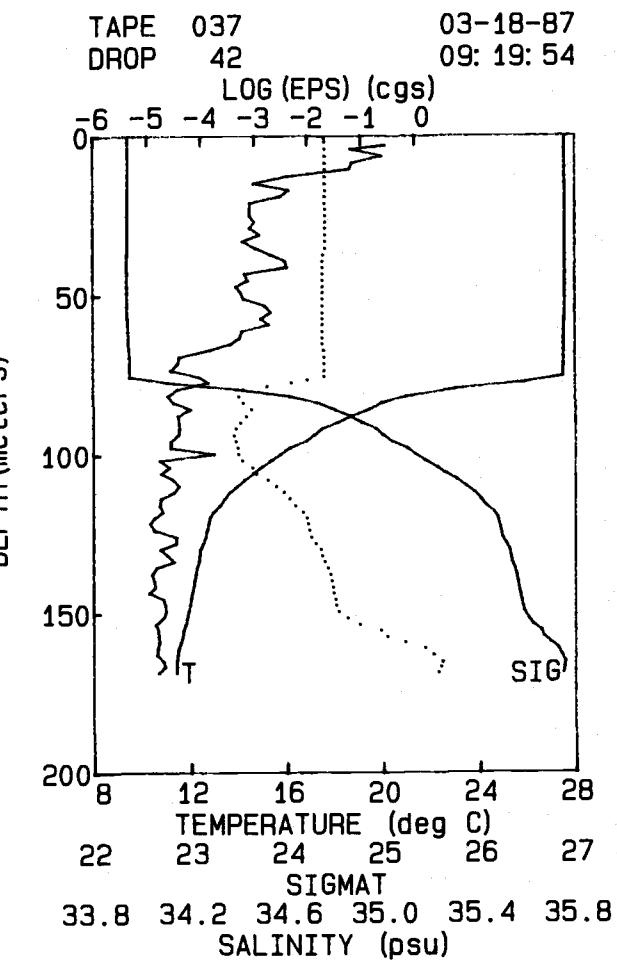
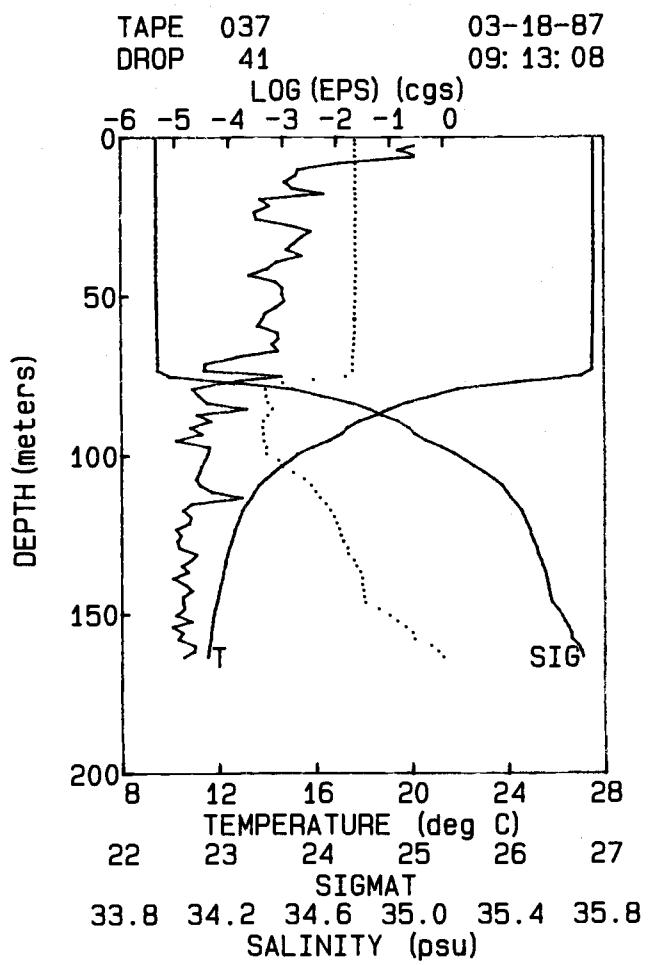
TAPE 037 03-18-87
DROP 20 06: 48: 59

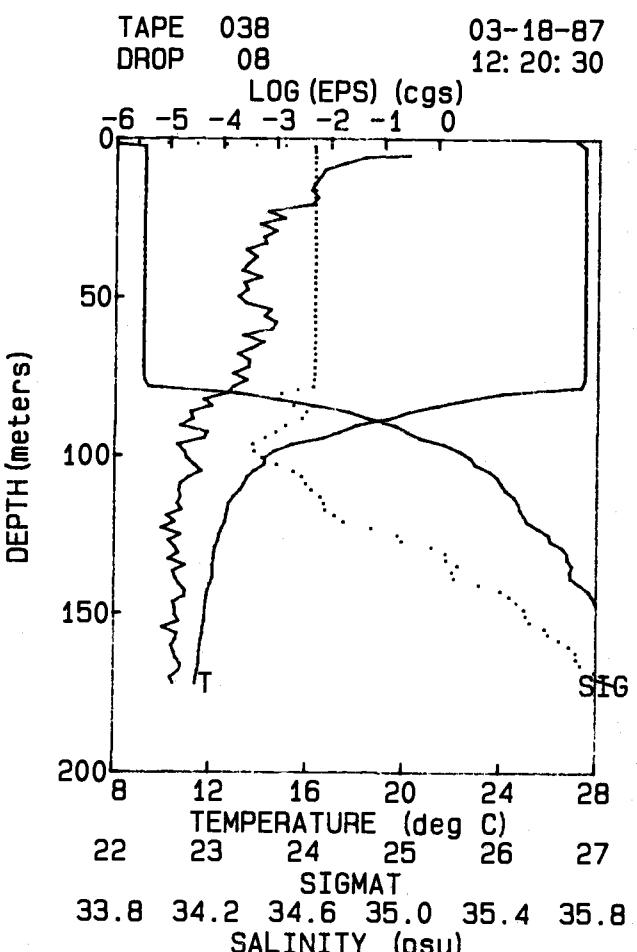
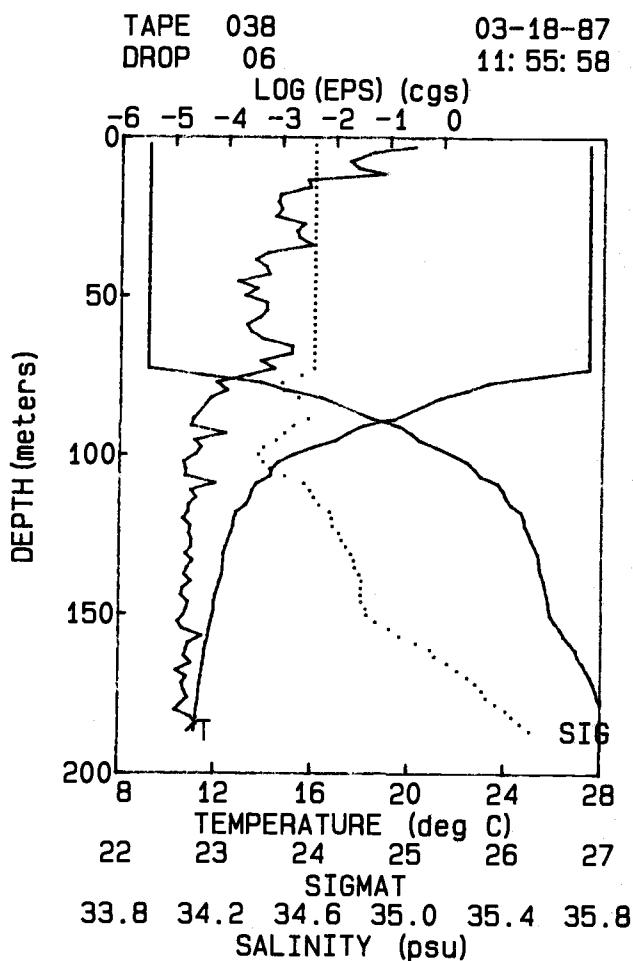
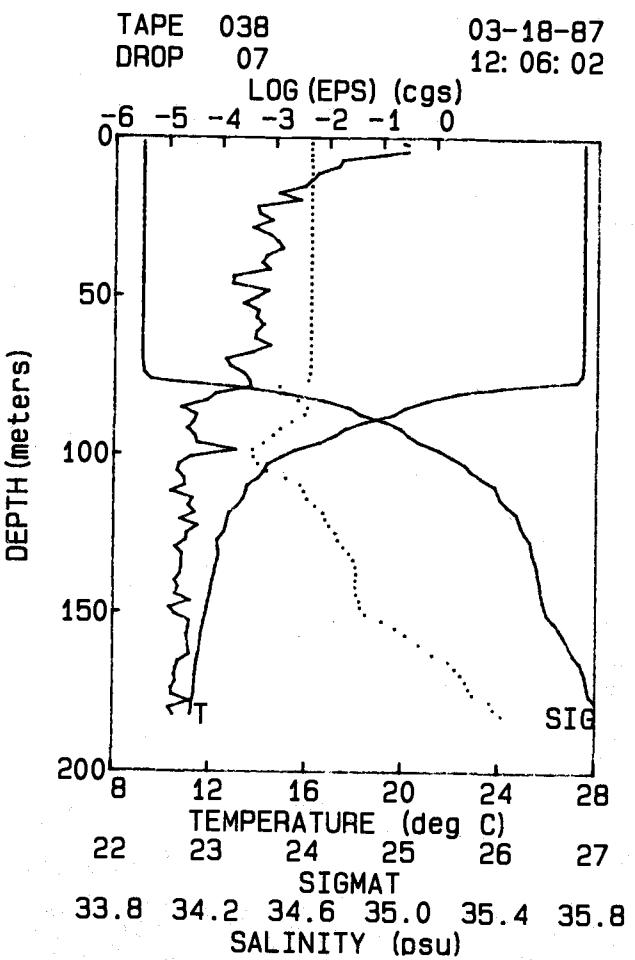
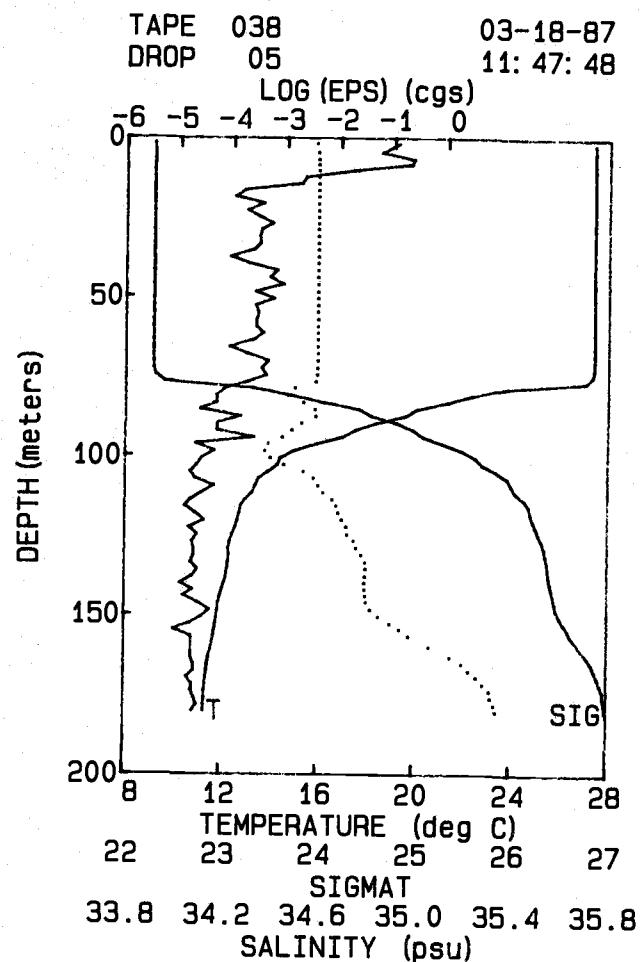


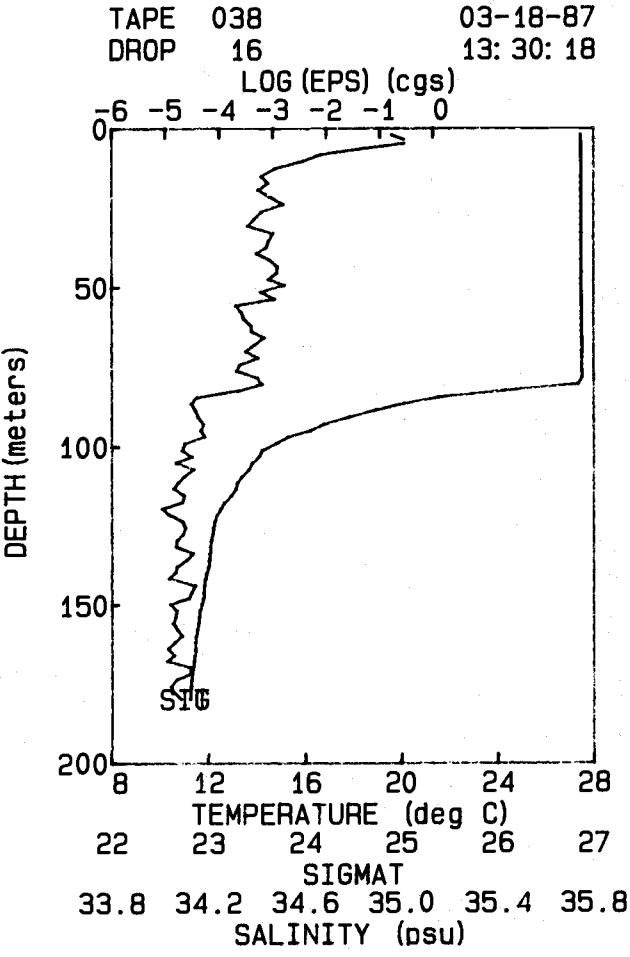
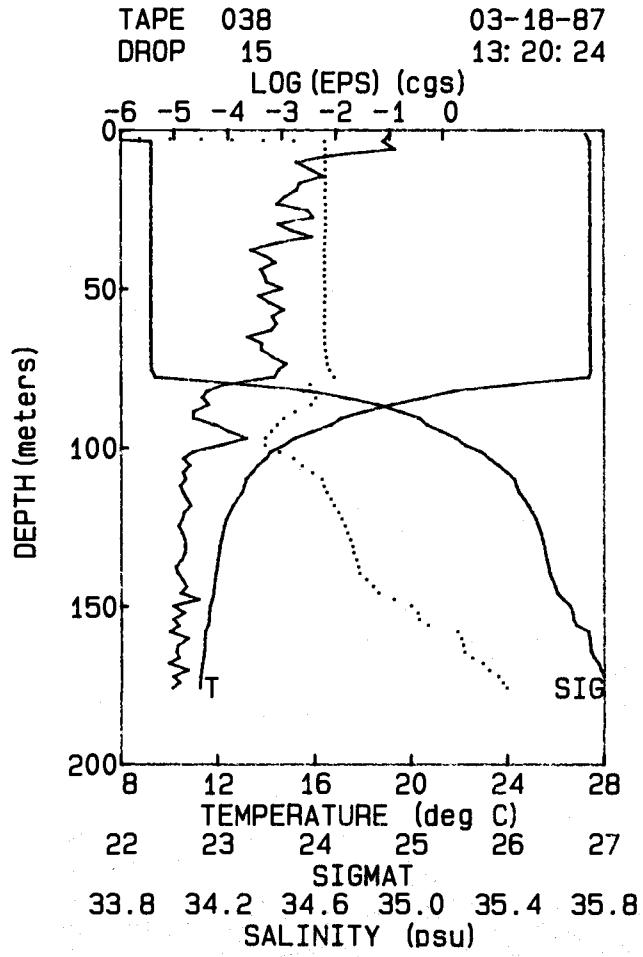
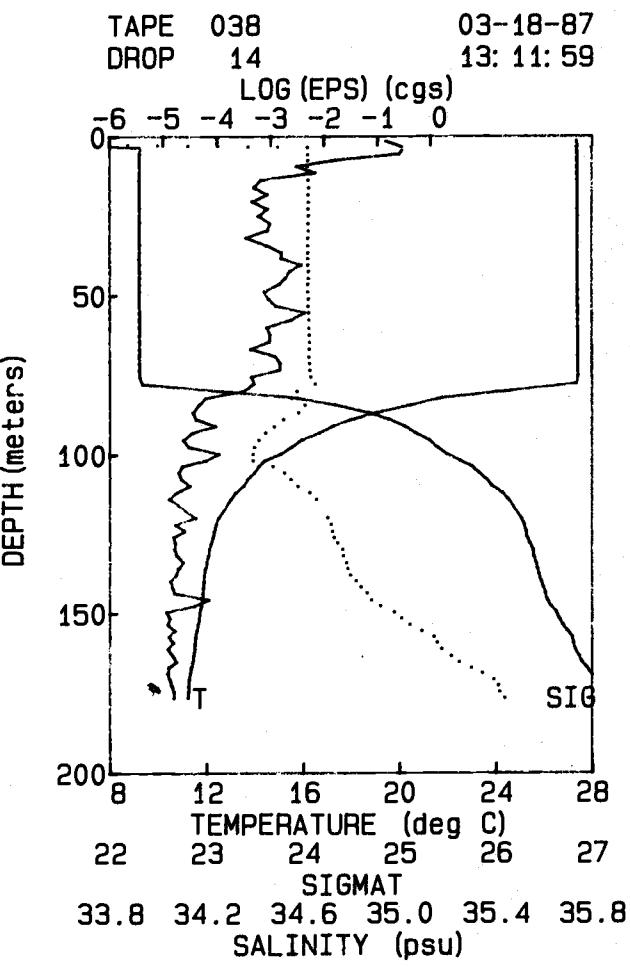
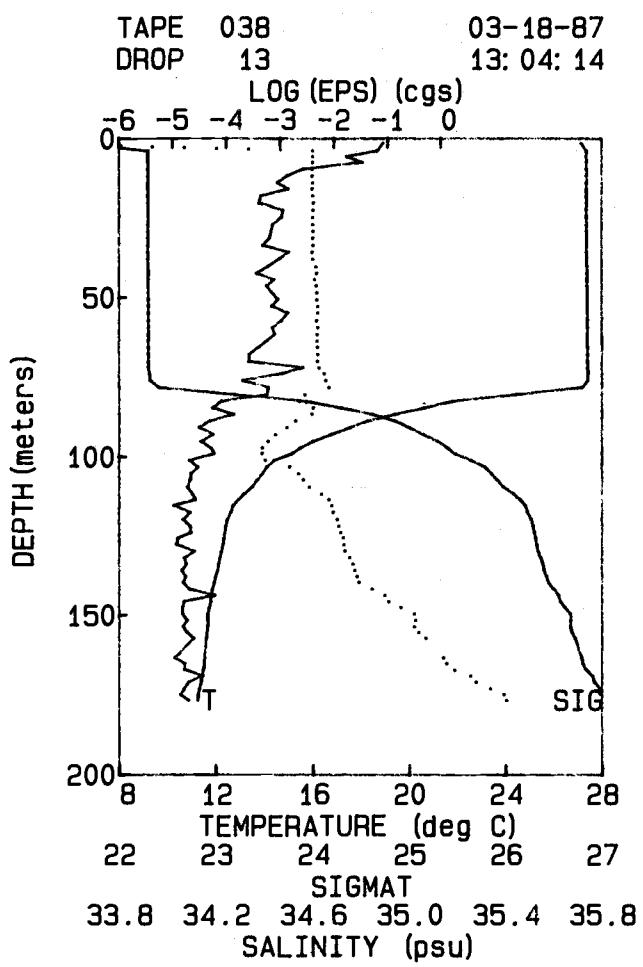
SIGMAT
33.8 34.2 34.6 35.0 35.4 35.8
SALINITY (psu)

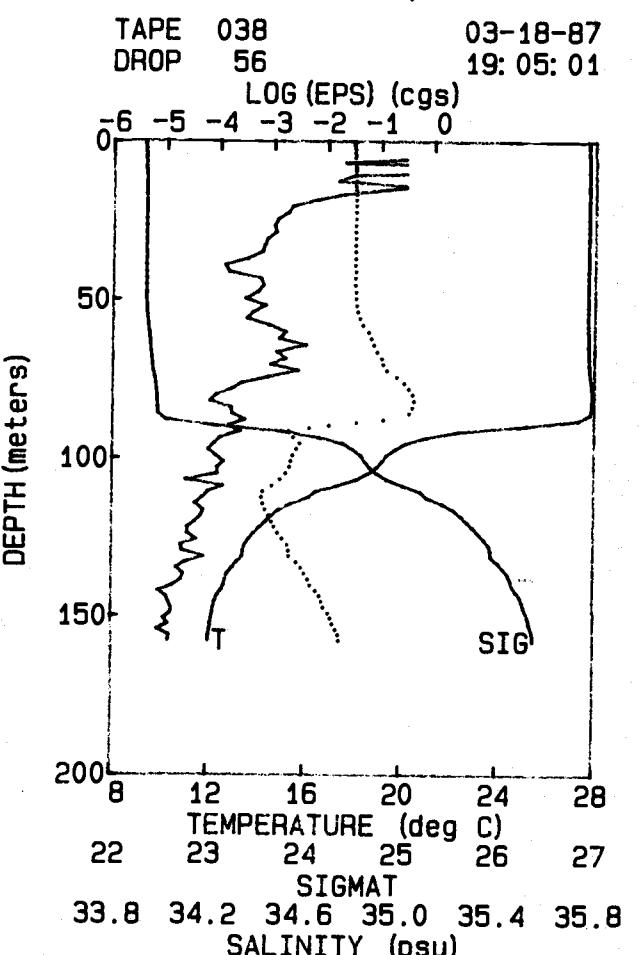
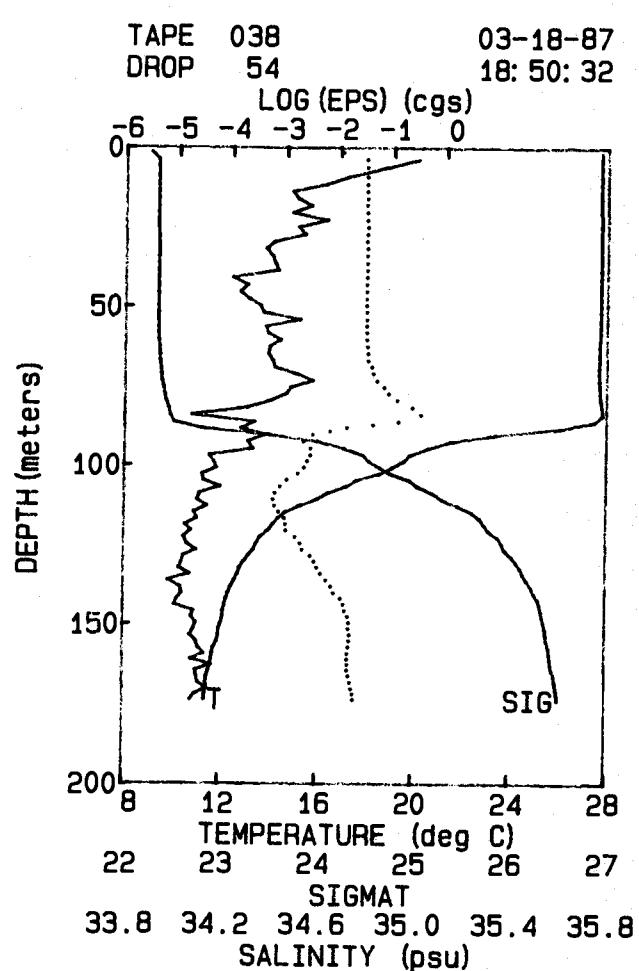
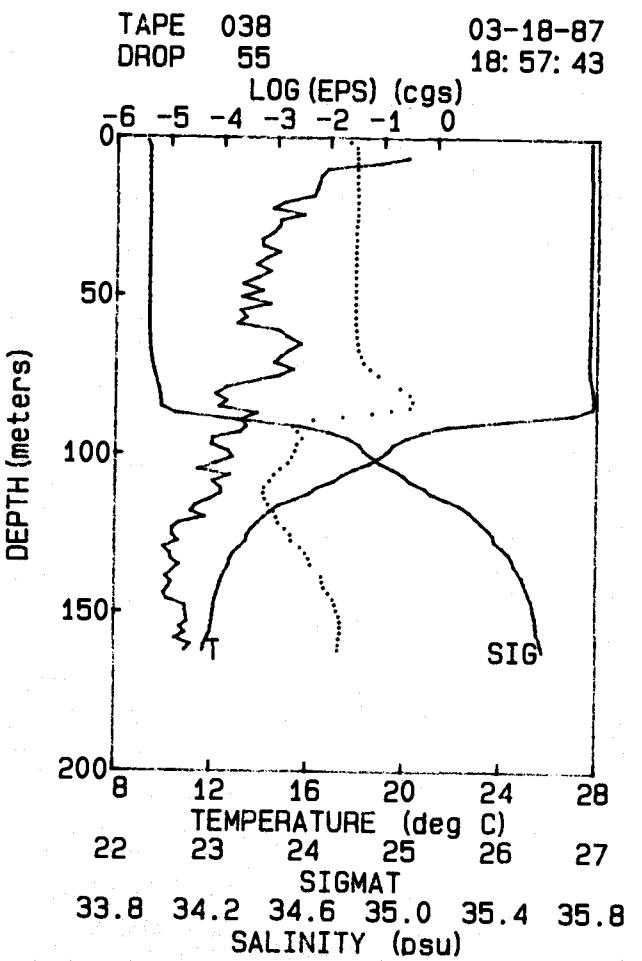
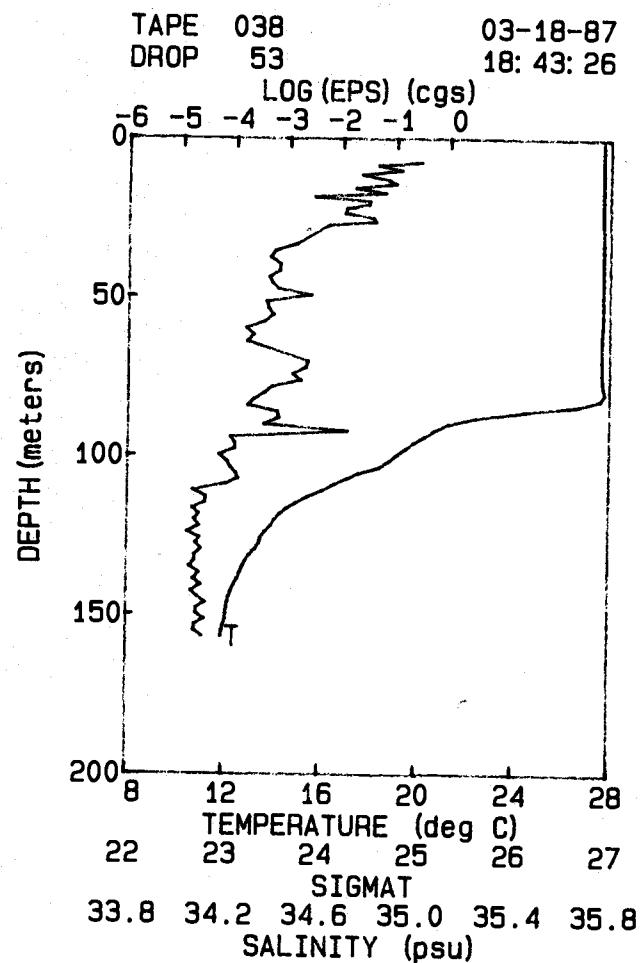


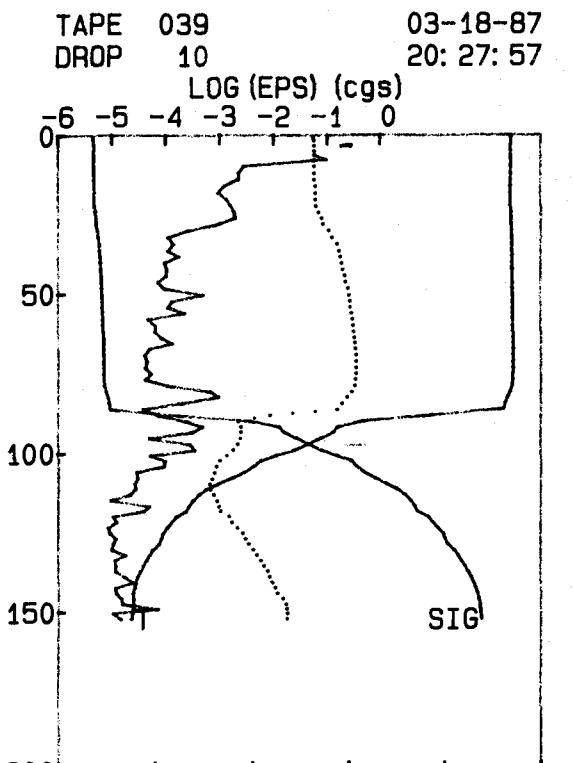
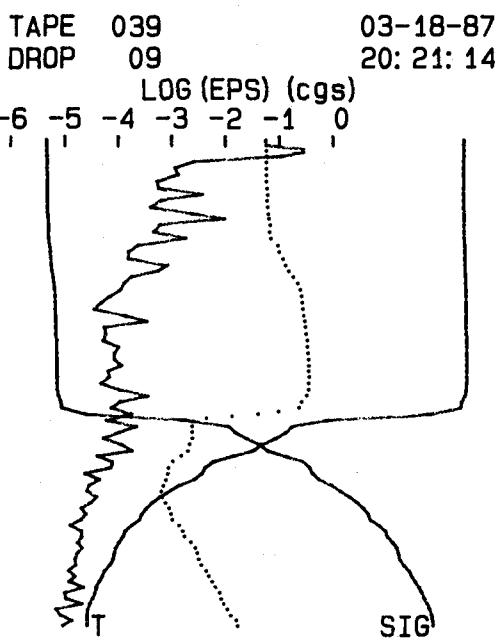










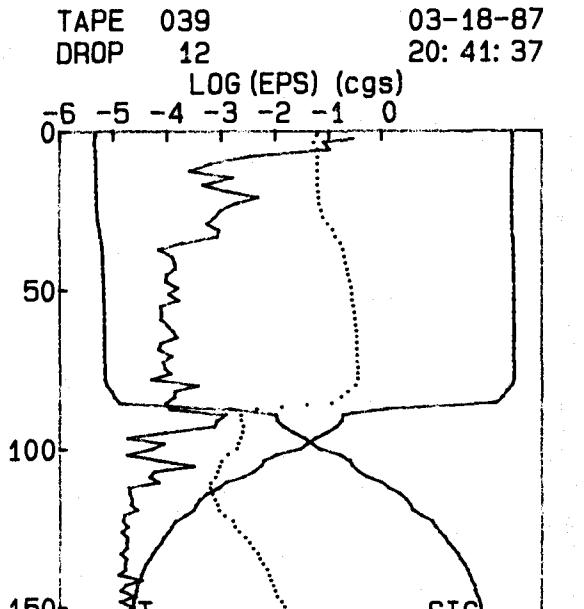
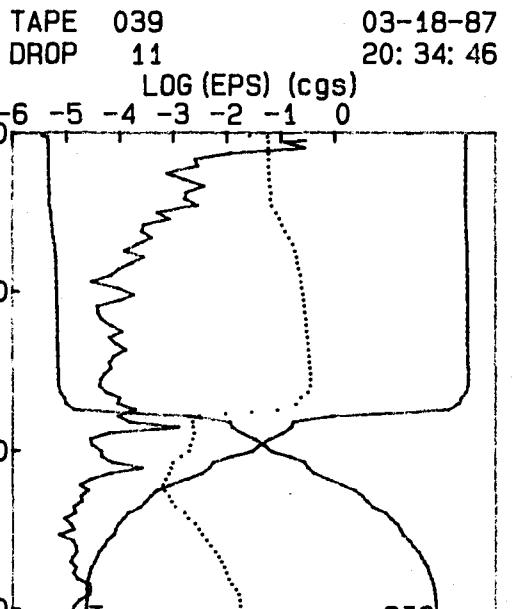


200-

	TEMPERATURE (deg C)				
22	23	24	25	26	27
SIGMAT					
33.8	34.2	34.6	35.0	35.4	35.8
SALINITY (psu)					

200 9 13 17 21 25 29

	TEMPERATURE (deg C)				
22	23	24	25	26	27
SIGMAT					
33.8	34.2	34.6	35.0	35.4	35.8
SALINITY (psu)					

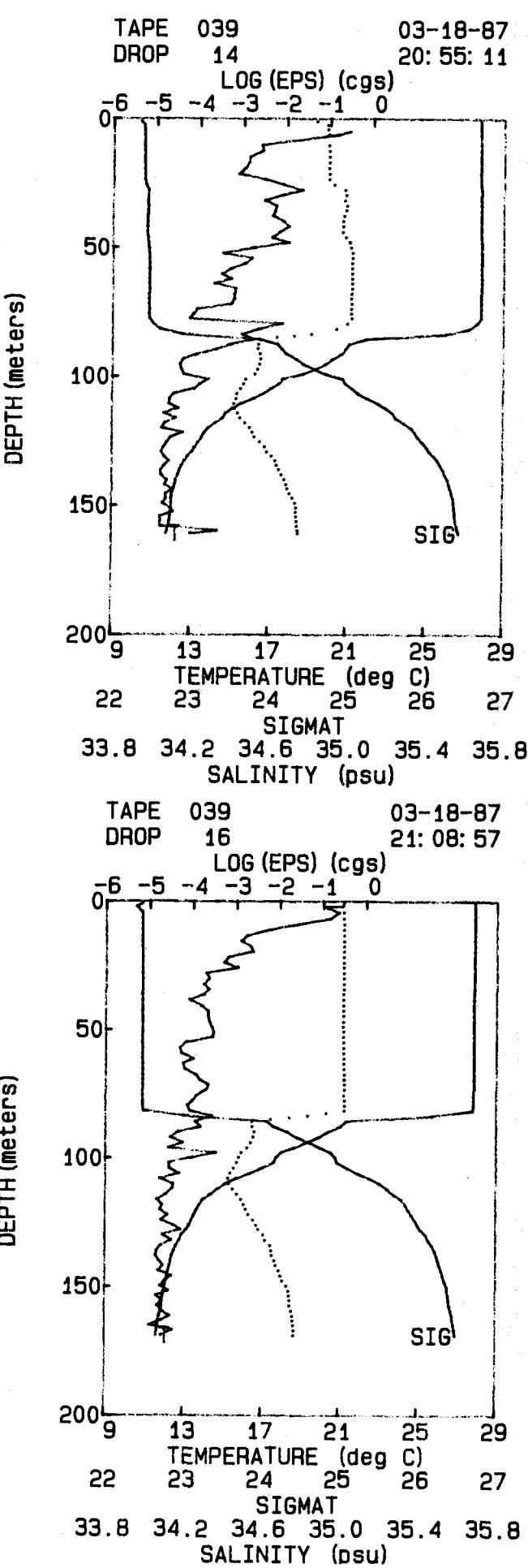
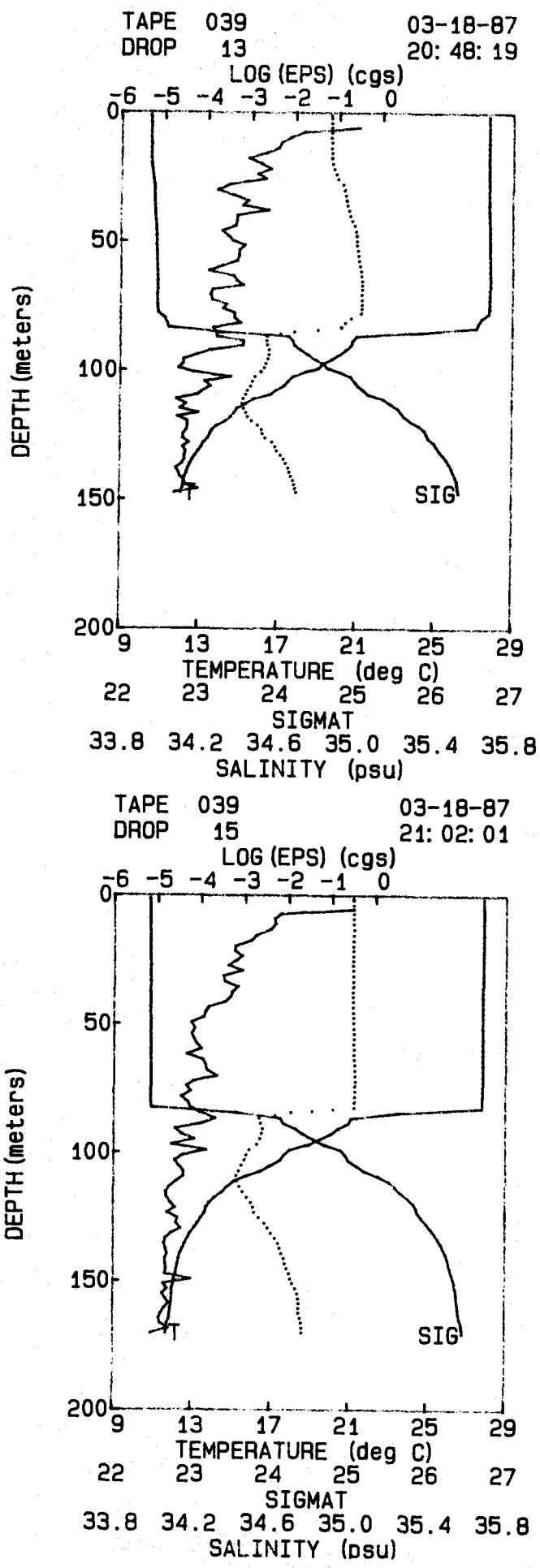


200 9 13 17 21 25 29

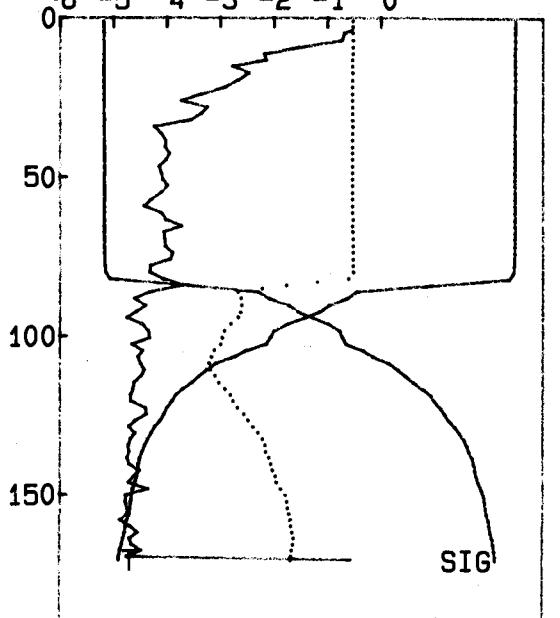
	TEMPERATURE (deg C)				
22	23	24	25	26	27
SIGMAT					
33.8	34.2	34.6	35.0	35.4	35.8
SALINITY (psu)					

200 9 13 17 21 25 29

	TEMPERATURE (deg C)				
22	23	24	25	26	27
SIGMAT					
33.8	34.2	34.6	35.0	35.4	35.8
SALINITY (psu)					

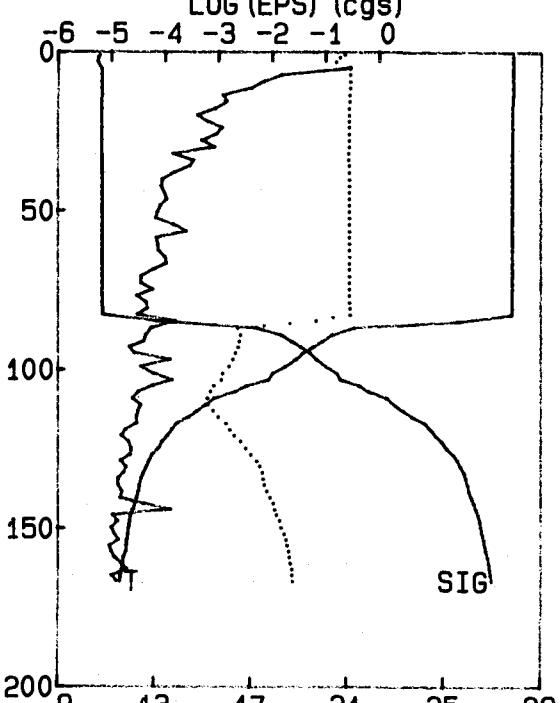


TAPE 039 03-18-87
DROP 17 21: 15: 42
LOG (EPS) (cgs)



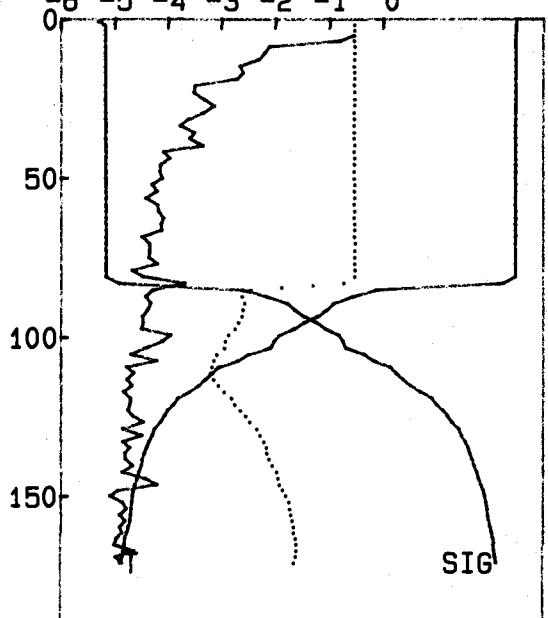
9	13	17	21	25	29
22	23	24	25	26	27
TEMPERATURE (deg C)					
SIGMAT					
33.8	34.2	34.6	35.0	35.4	35.8
SALINITY (psu)					

TAPE 039 03-18-87
DROP 19 21: 29: 22
LOG (EPS) (cgs)



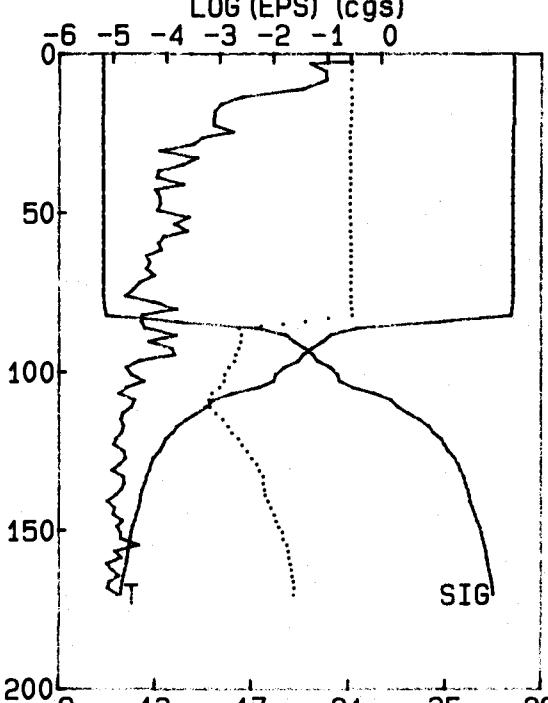
9	13	17	21	25	29
22	23	24	25	26	27
TEMPERATURE (deg C)					
SIGMAT					
33.8	34.2	34.6	35.0	35.4	35.8
SALINITY (psu)					

TAPE 039 03-18-87
DROP 18 21: 22: 30
LOG (EPS) (cgs)

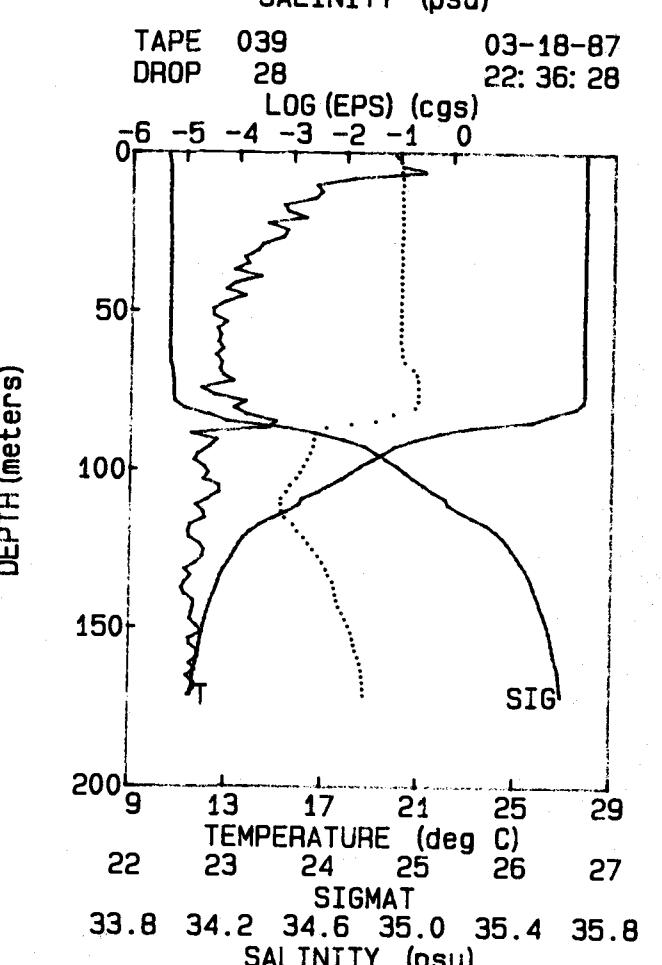
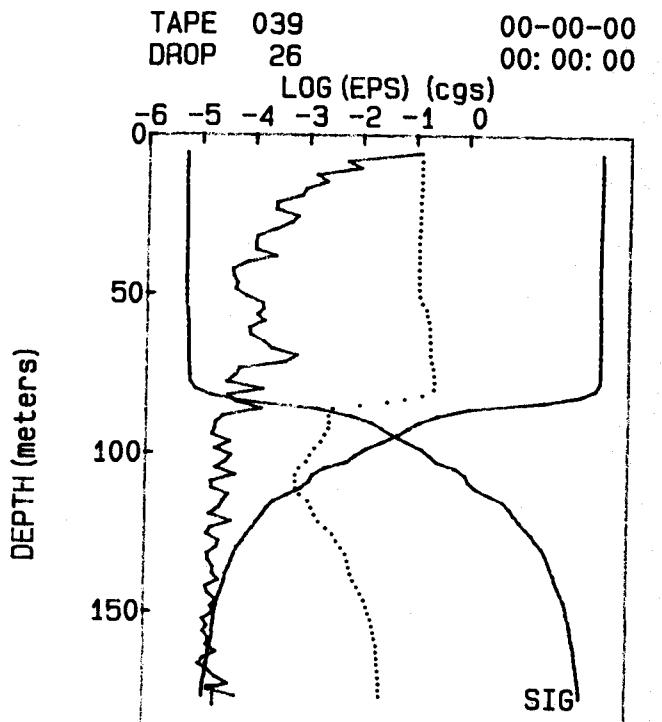
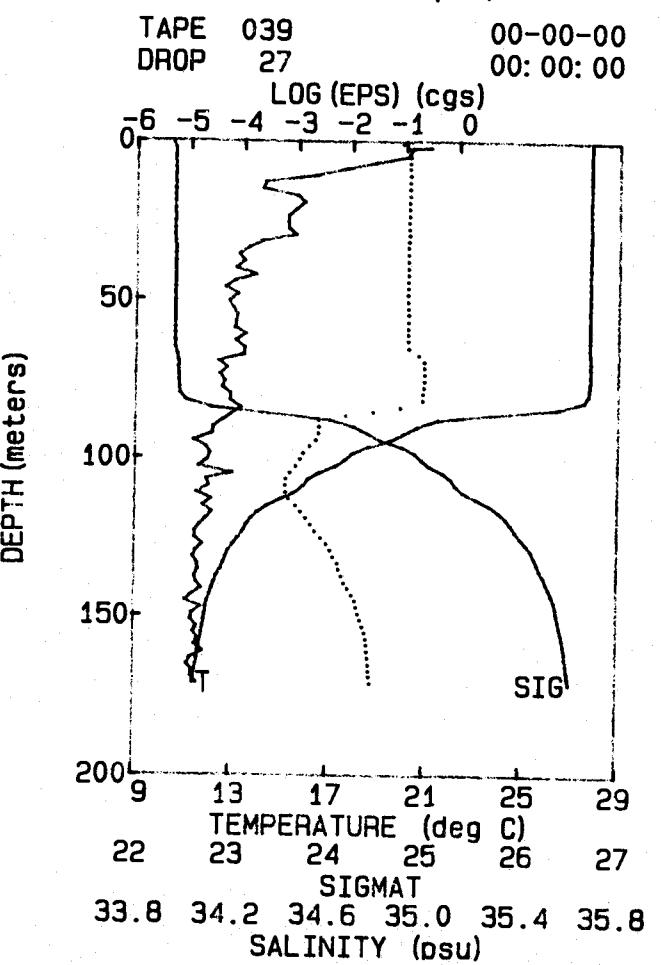
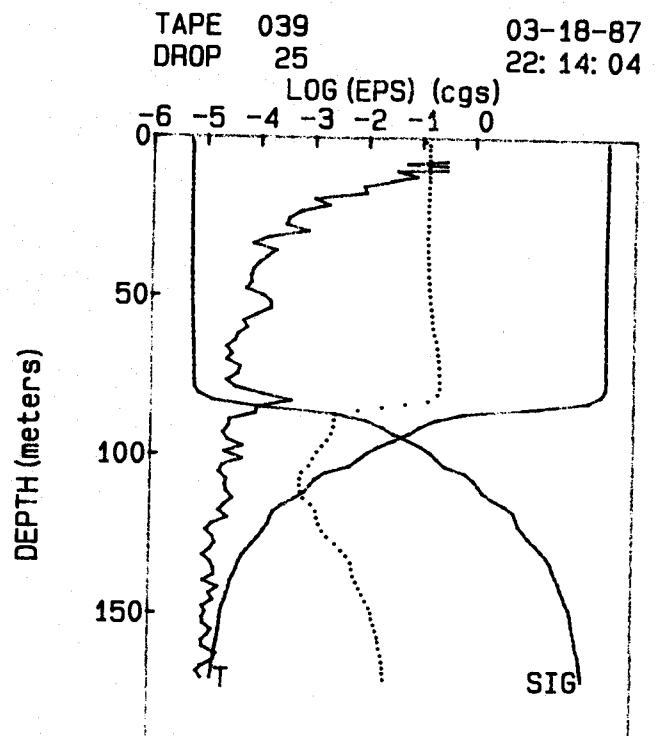


9	13	17	21	25	29
22	23	24	25	26	27
TEMPERATURE (deg C)					
SIGMAT					
33.8	34.2	34.6	35.0	35.4	35.8
SALINITY (psu)					

TAPE 039 03-18-87
DROP 20 21: 36: 14
LOG (EPS) (cgs)

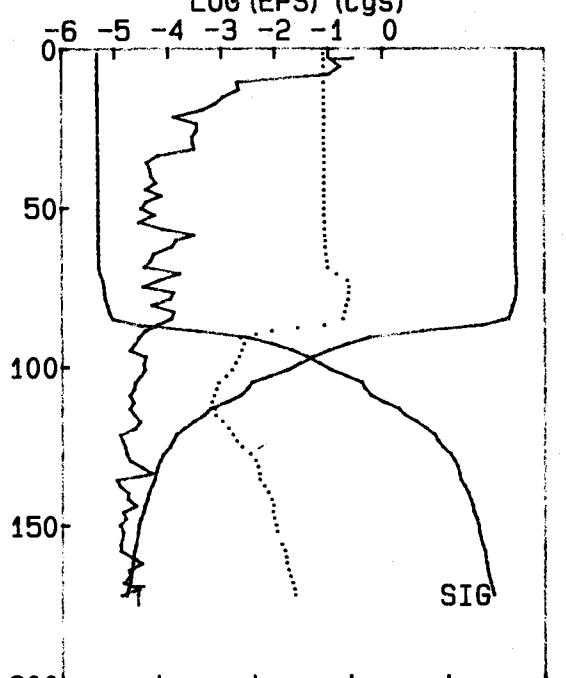


9	13	17	21	25	29
22	23	24	25	26	27
TEMPERATURE (deg C)					
SIGMAT					
33.8	34.2	34.6	35.0	35.4	35.8
SALINITY (psu)					



TAPE 039 03-18-87
DROP 33 23: 11: 00

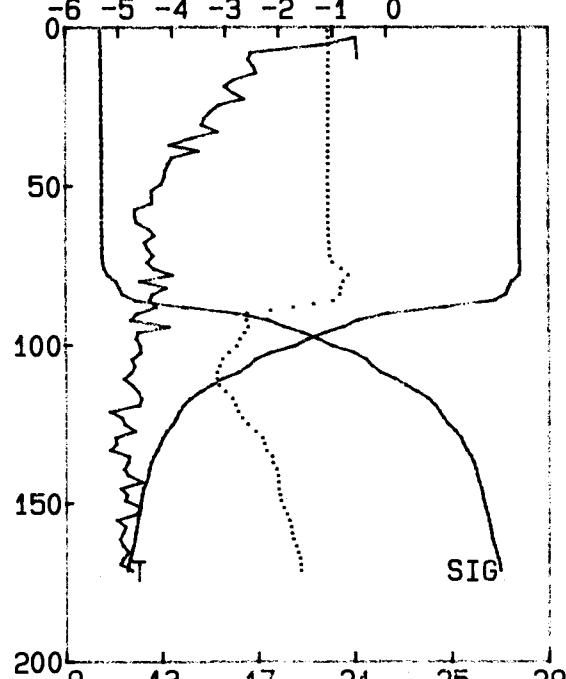
LOG (EPS) (cgs)



TEMPERATURE (deg C)
22 23 24 25 26 27
SIGMAT
33.8 34.2 34.6 35.0 35.4 35.8
SALINITY (psu)

TAPE 039 00-00-00
DROP 35 00: 00: 00

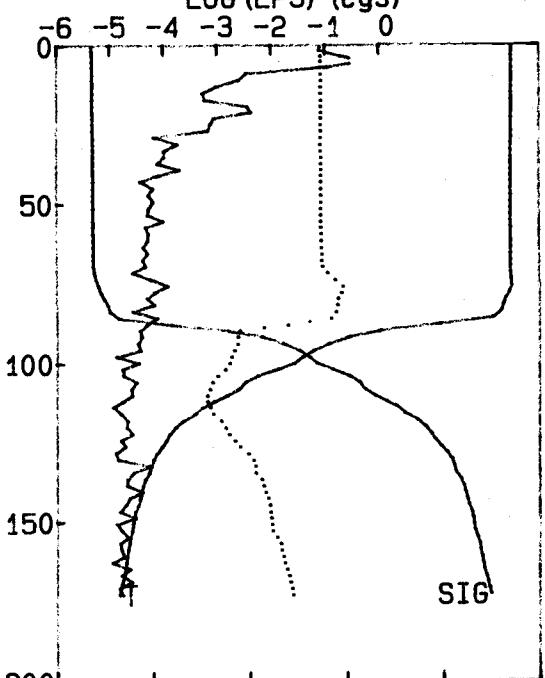
LOG (EPS) (cgs)



TEMPERATURE (deg C)
22 23 24 25 26 27
SIGMAT
33.8 34.2 34.6 35.0 35.4 35.8
SALINITY (psu)

TAPE 039 03-18-87
DROP 34 23: 17: 46

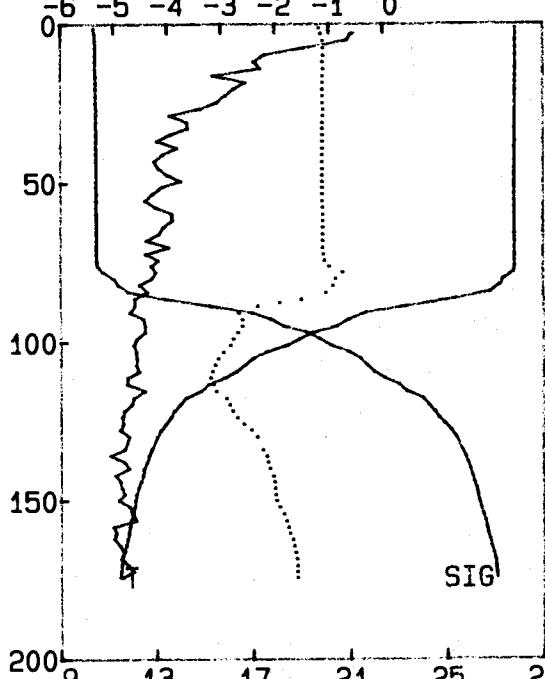
LOG (EPS) (cgs)



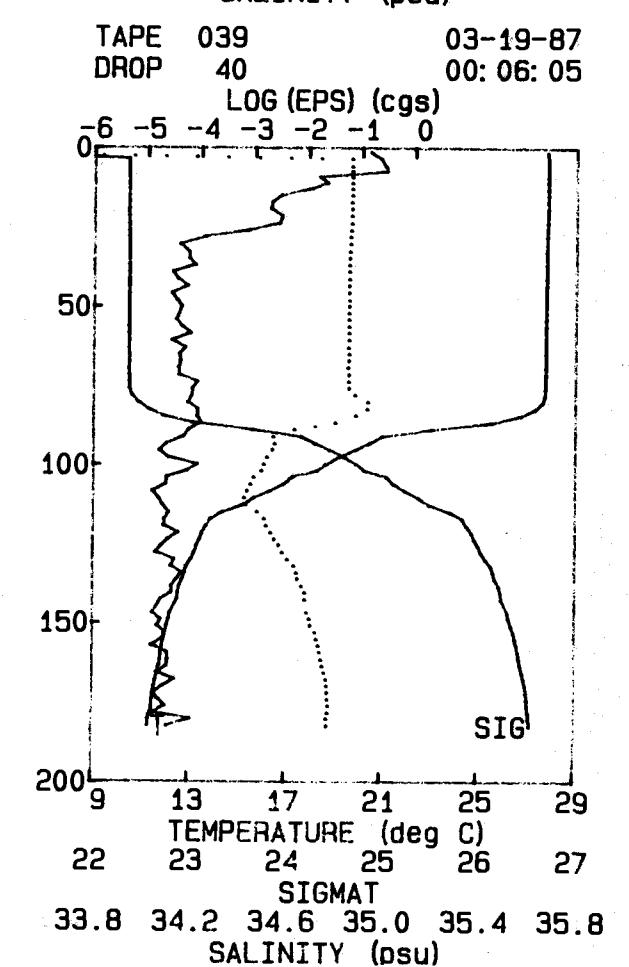
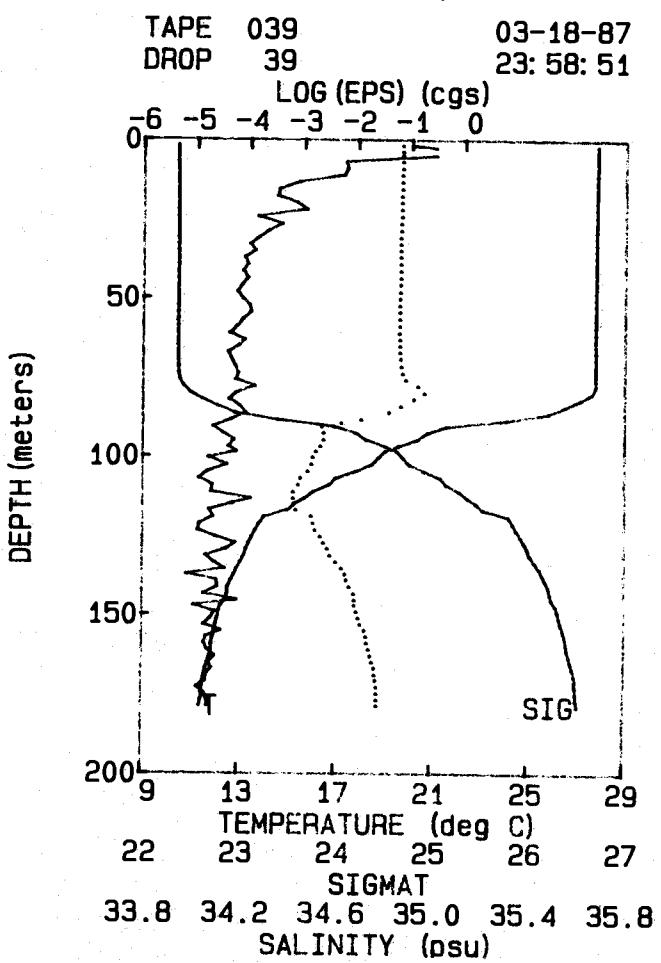
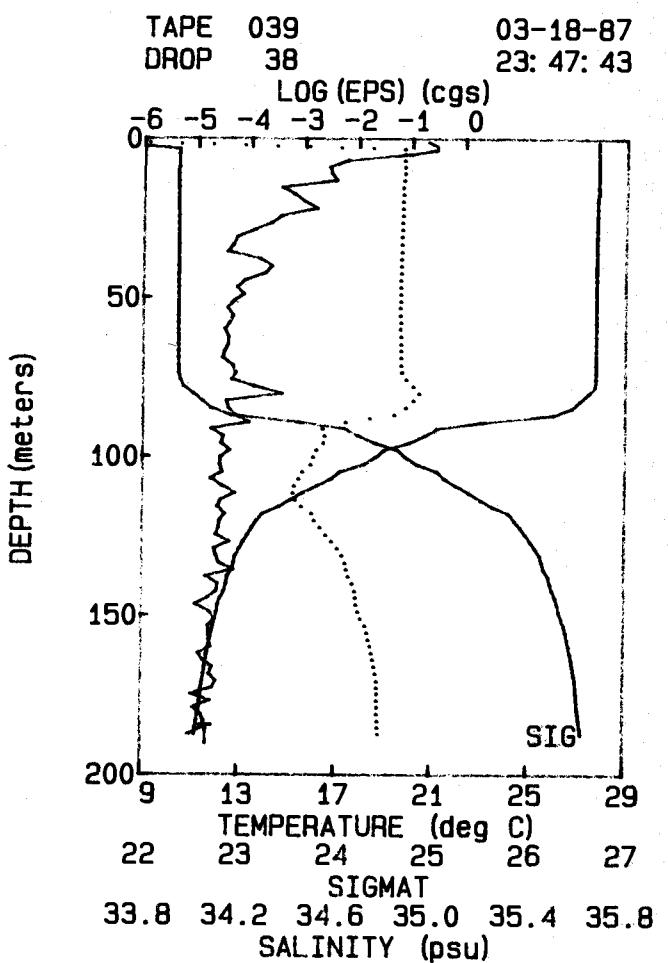
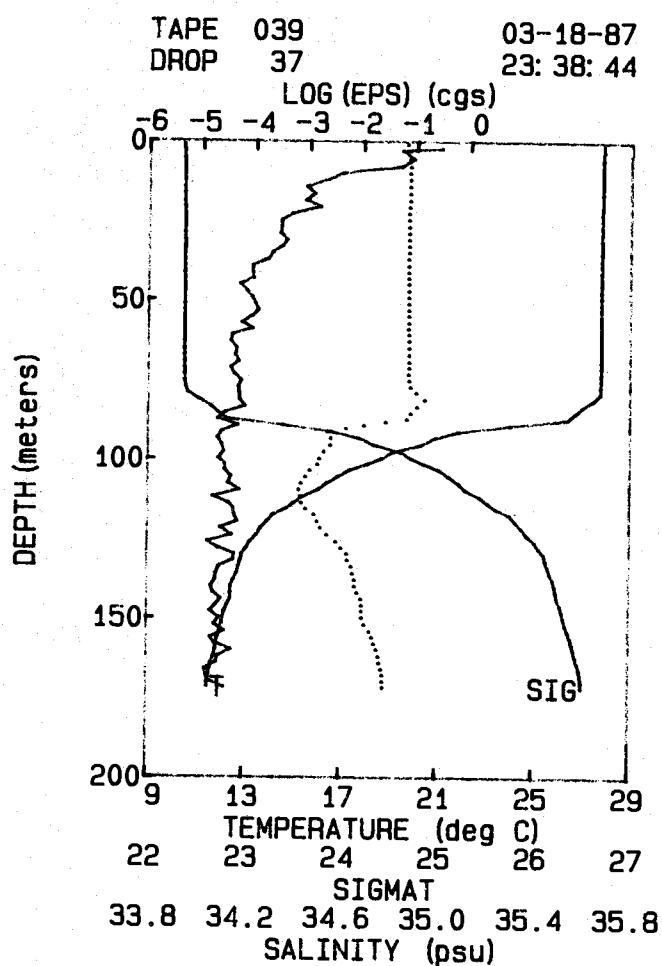
TEMPERATURE (deg C)
22 23 24 25 26 27
SIGMAT
33.8 34.2 34.6 35.0 35.4 35.8
SALINITY (psu)

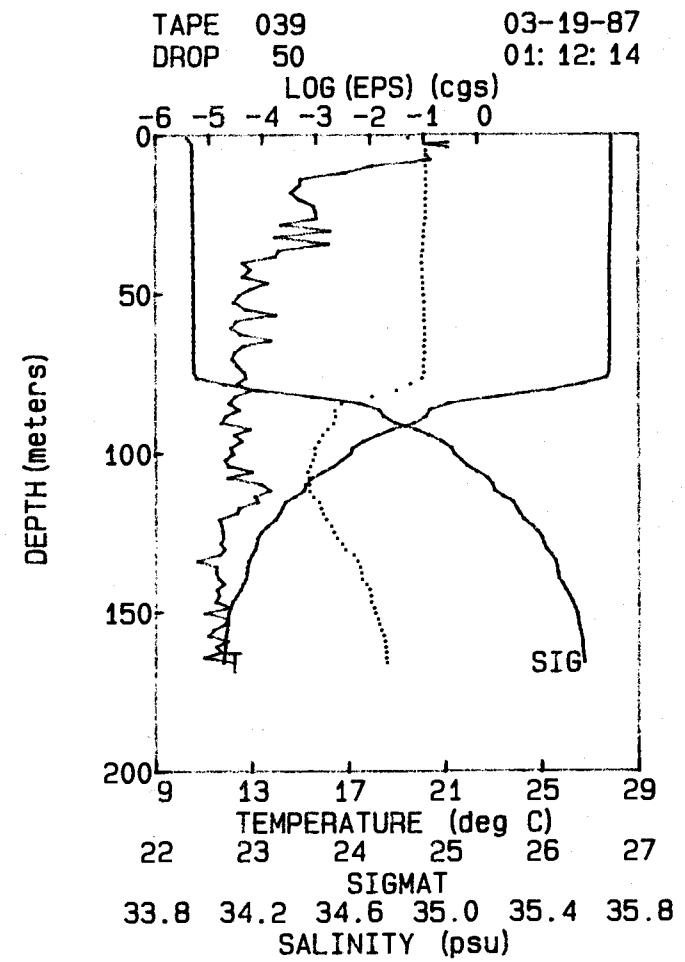
TAPE 039 00-00-00
DROP 36 00: 00: 00

LOG (EPS) (cgs)

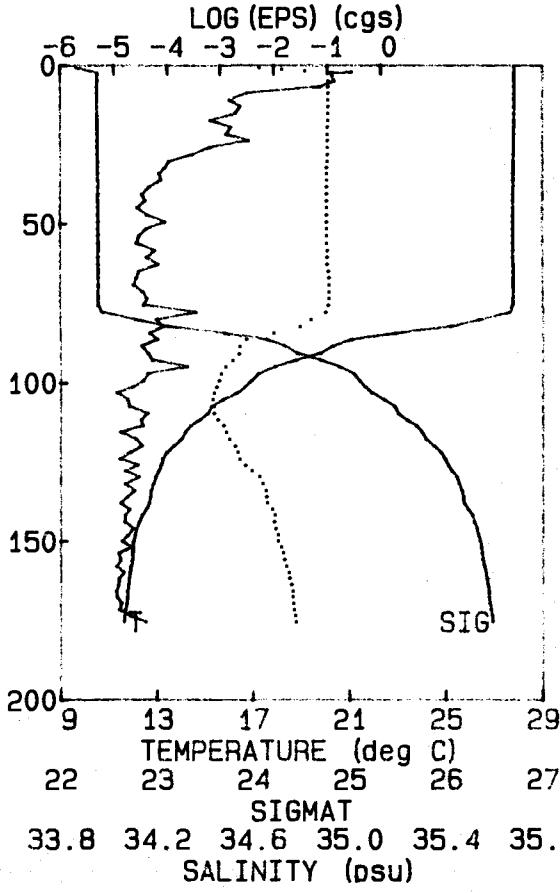


TEMPERATURE (deg C)
22 23 24 25 26 27
SIGMAT
33.8 34.2 34.6 35.0 35.4 35.8
SALINITY (psu)

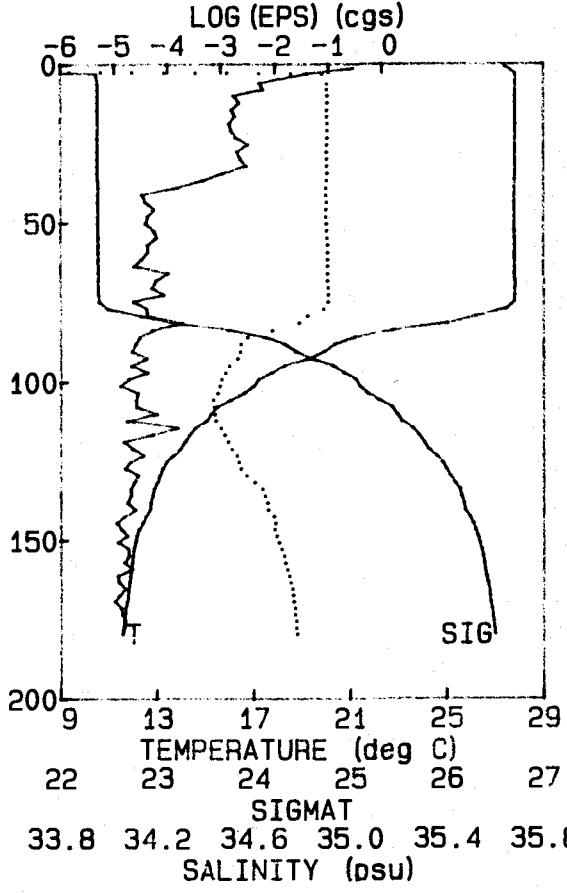


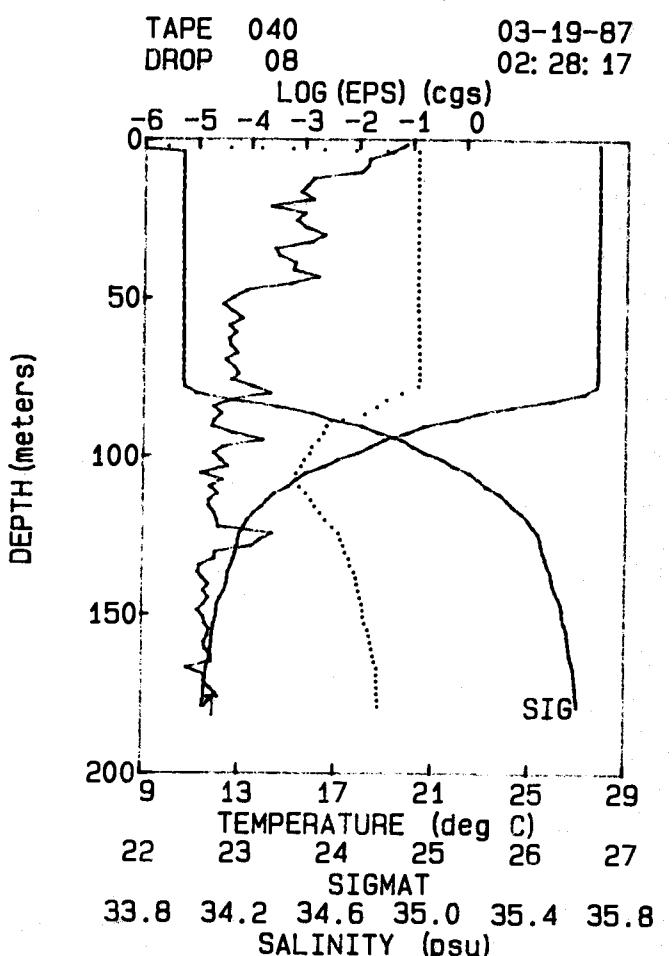
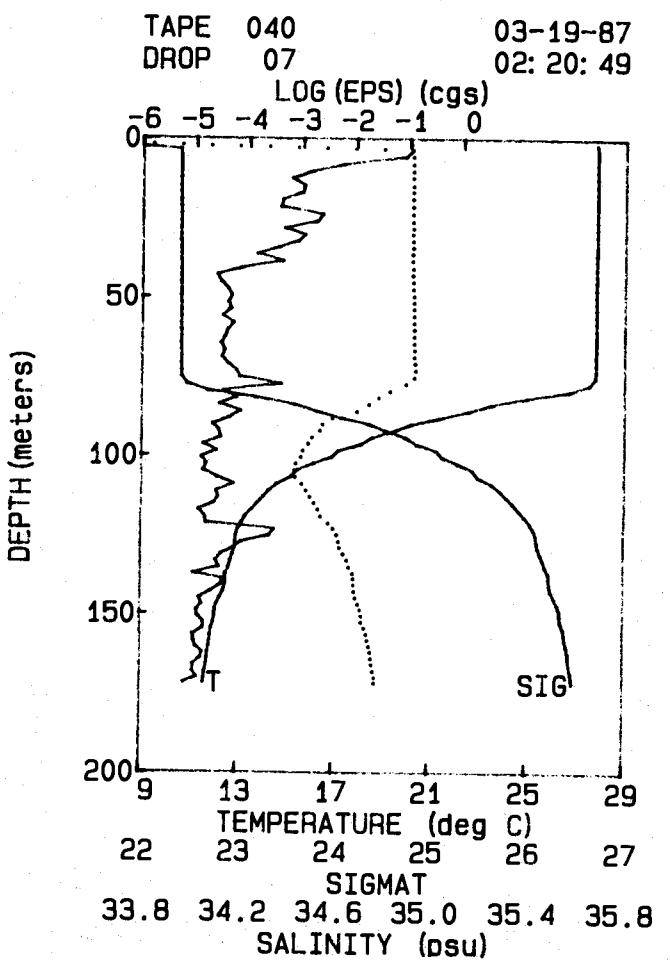
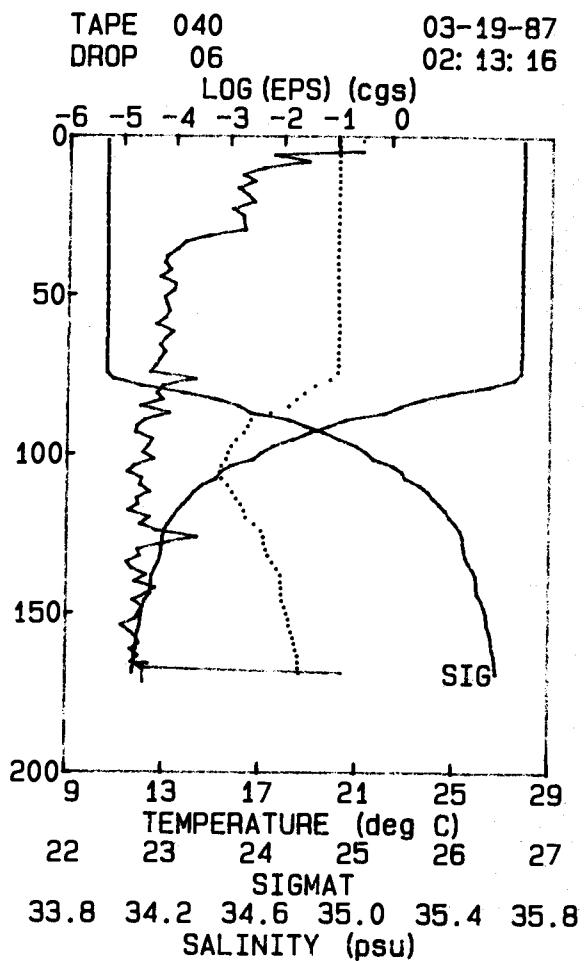
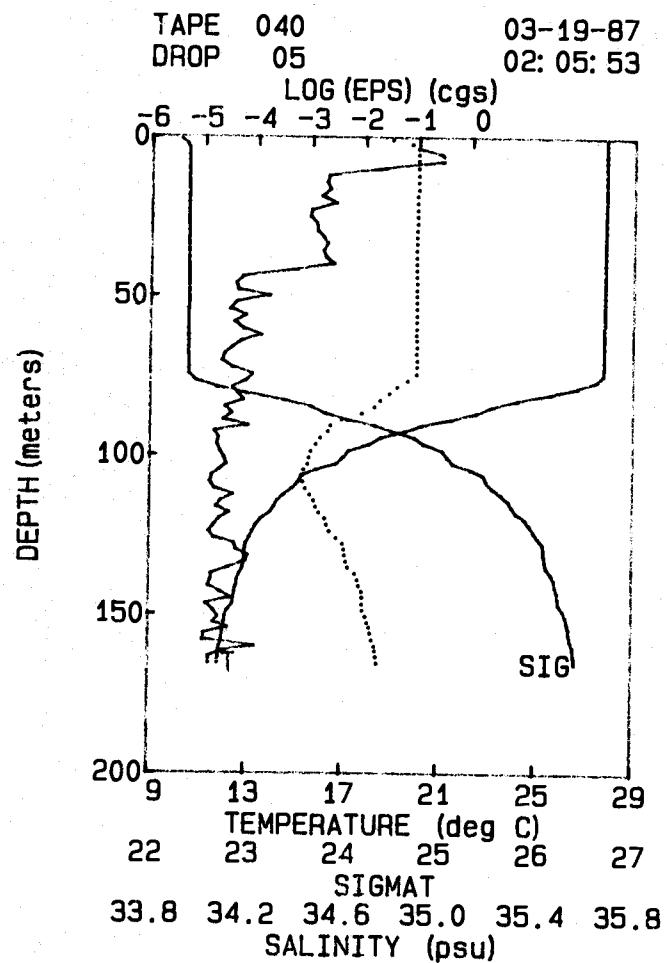


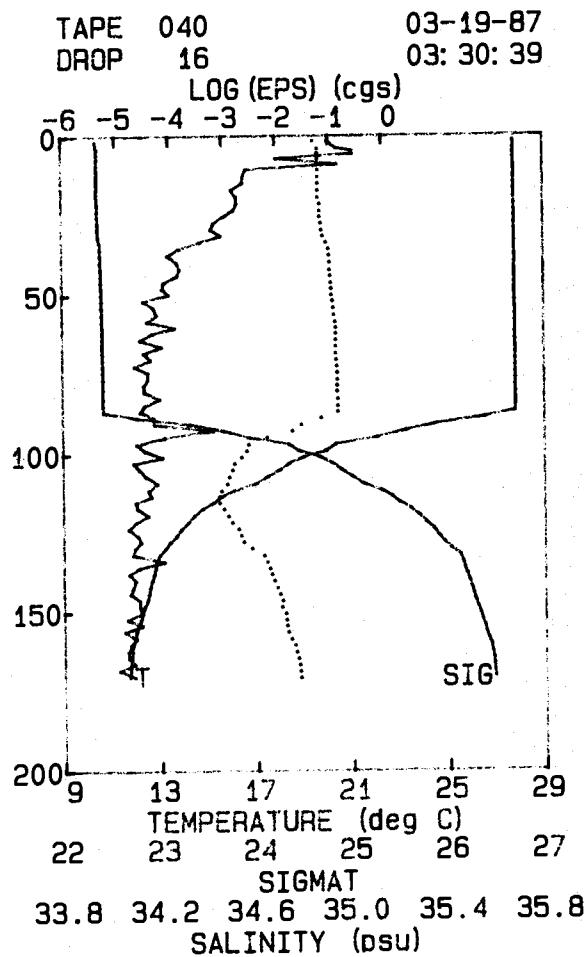
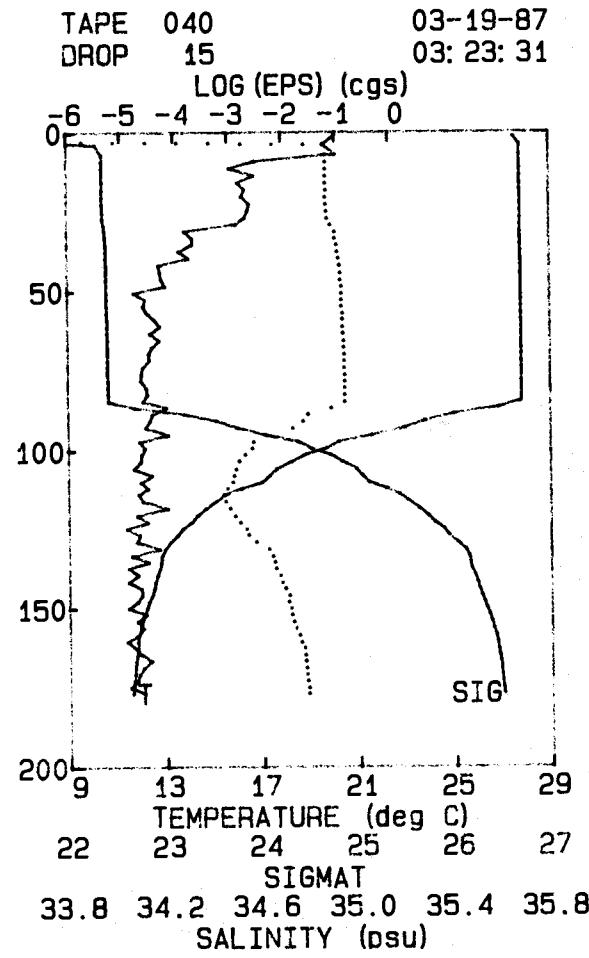
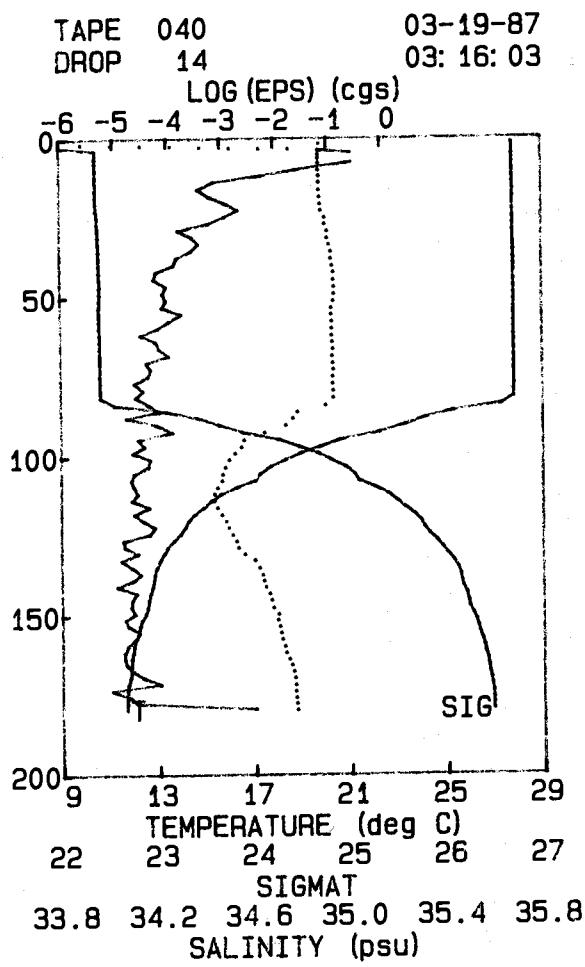
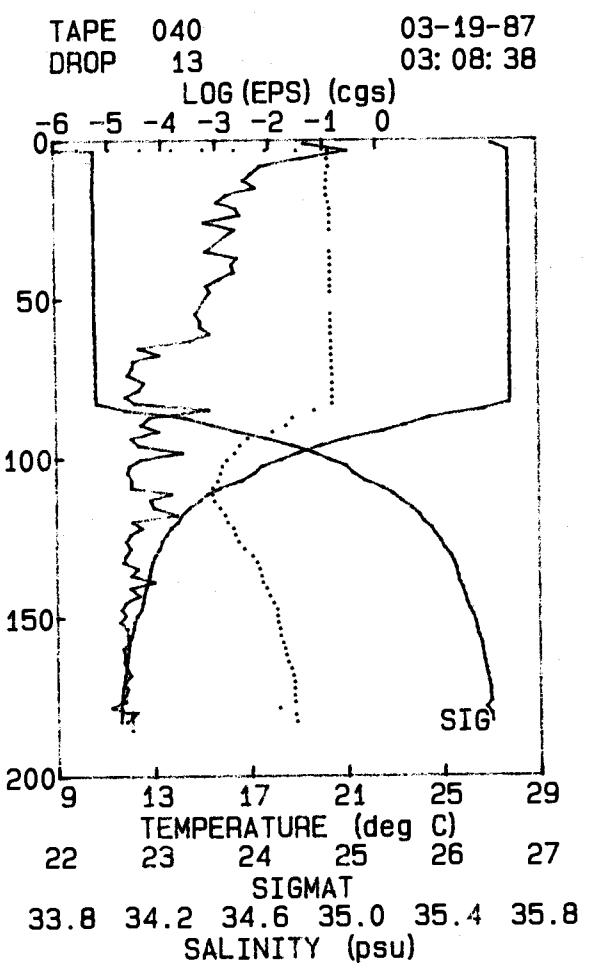
TAPE 039 03-19-87
 DROP 51 01: 19: 16

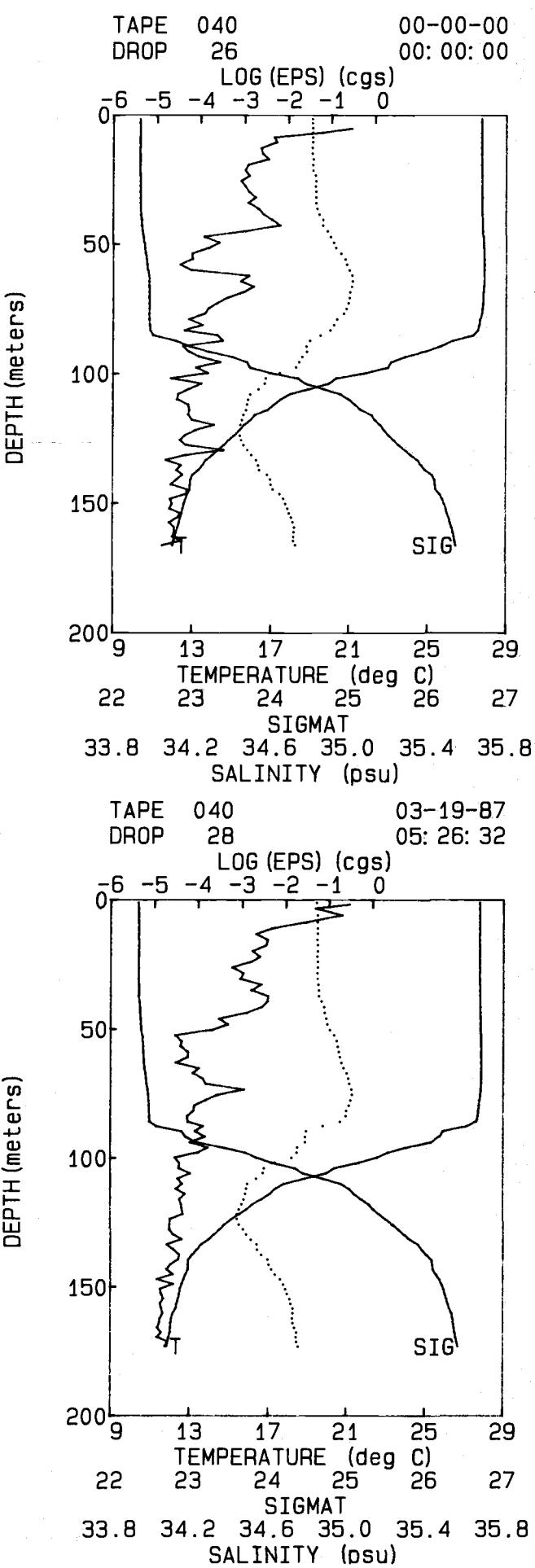
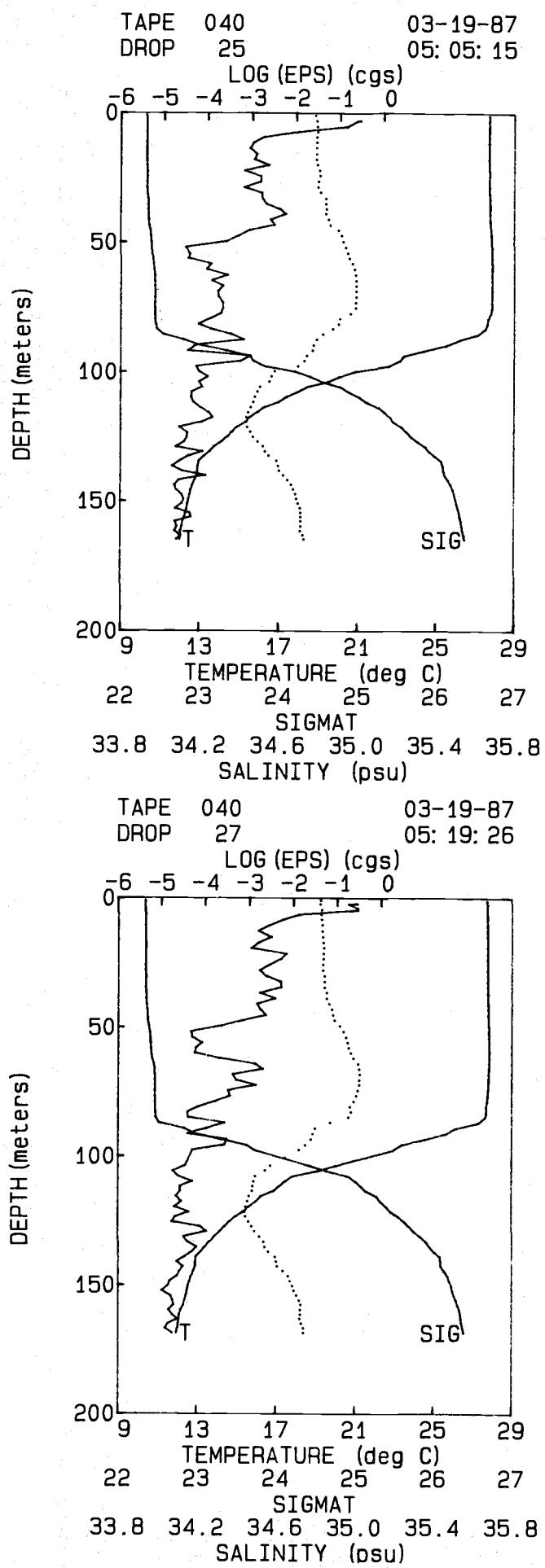


TAPE 039 03-19-87
 DROP 52 01: 26: 18

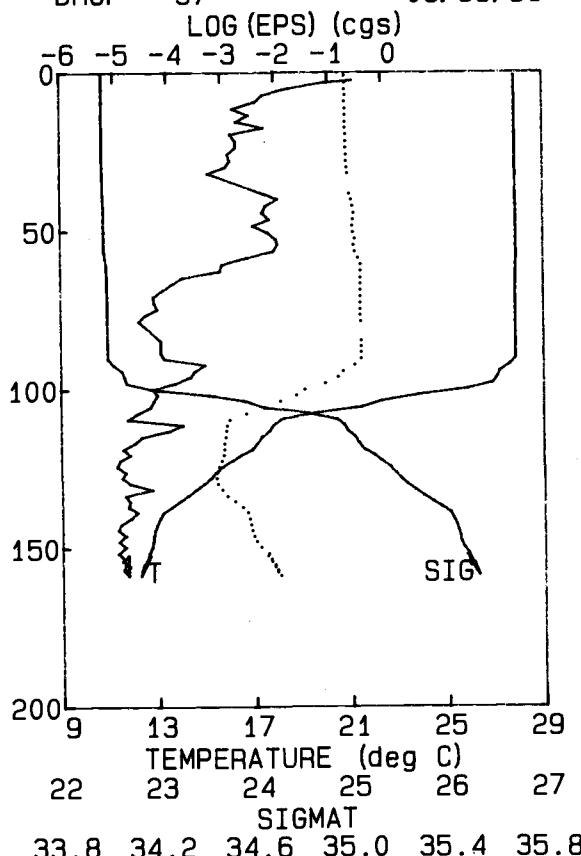




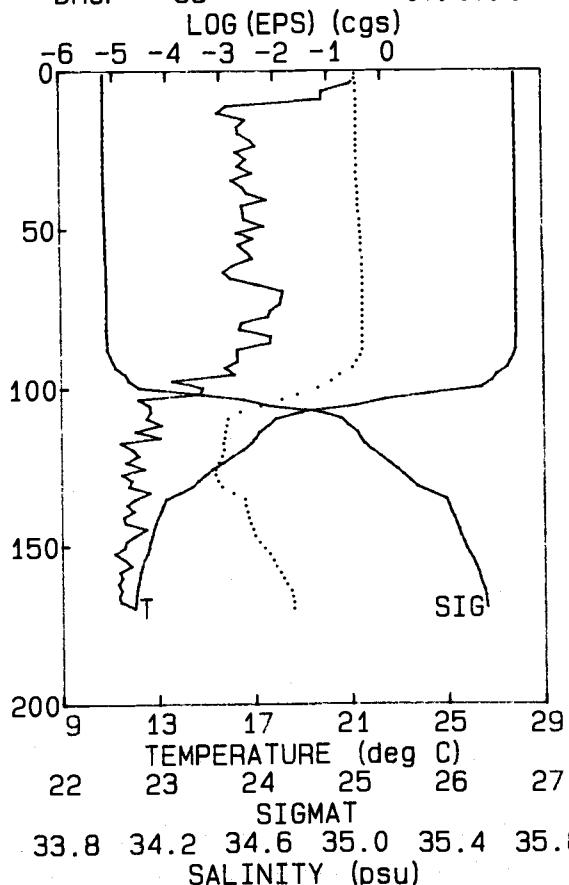




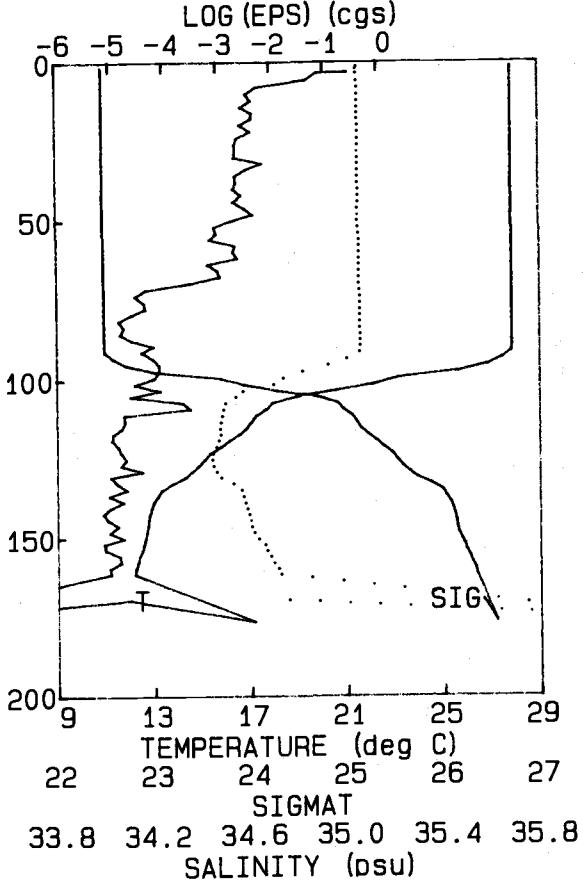
TAPE 040 03-19-87
 DROP 37 06: 53: 51

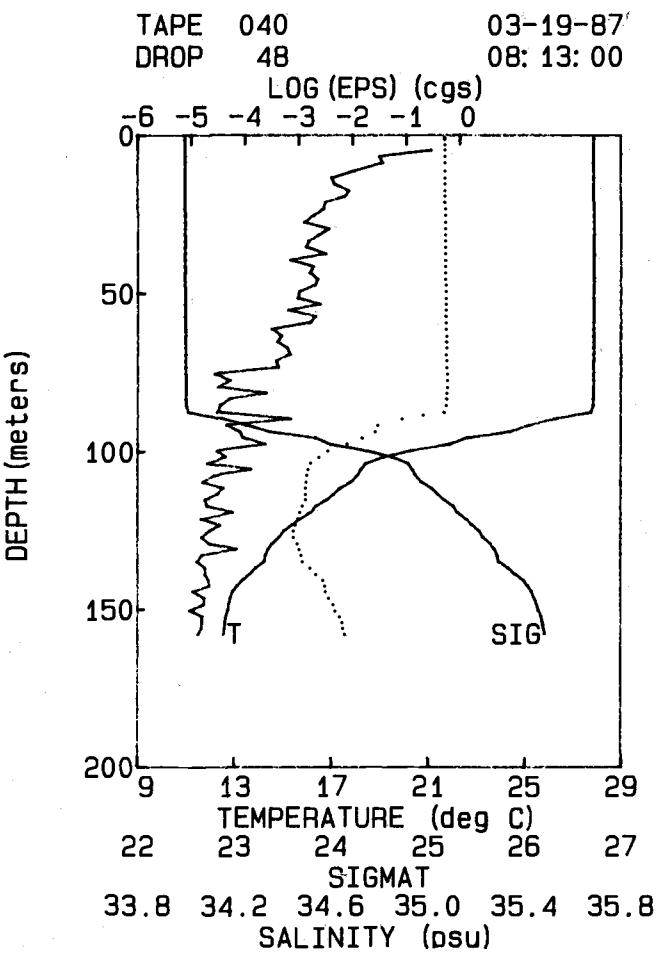
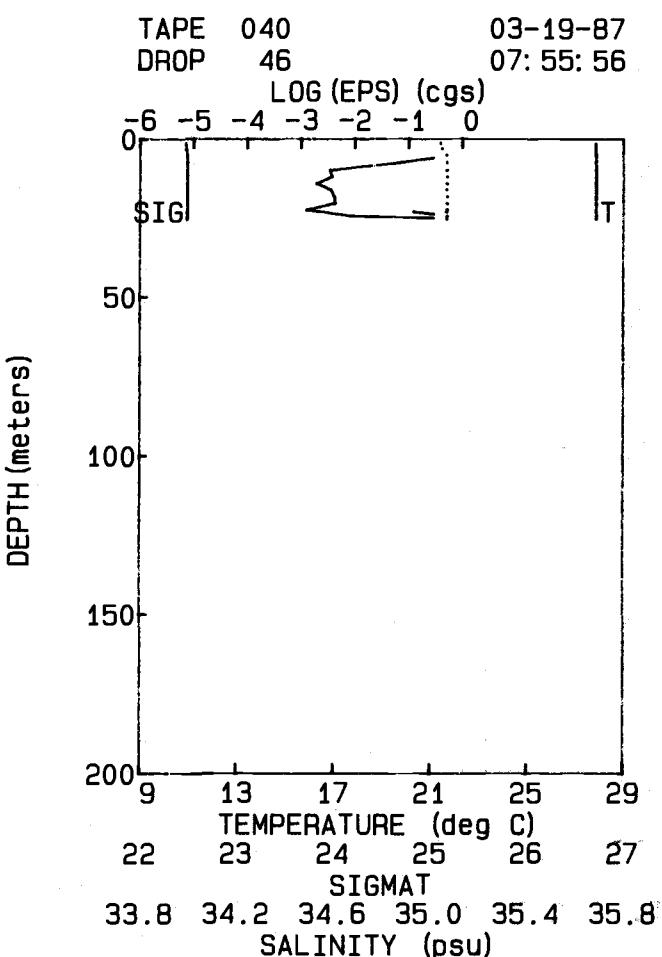
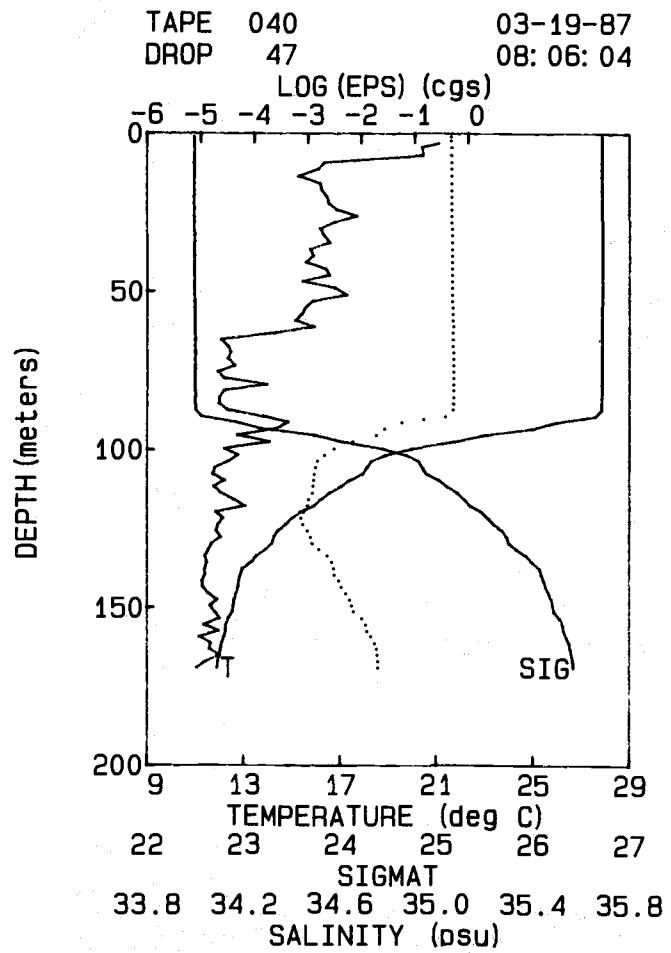
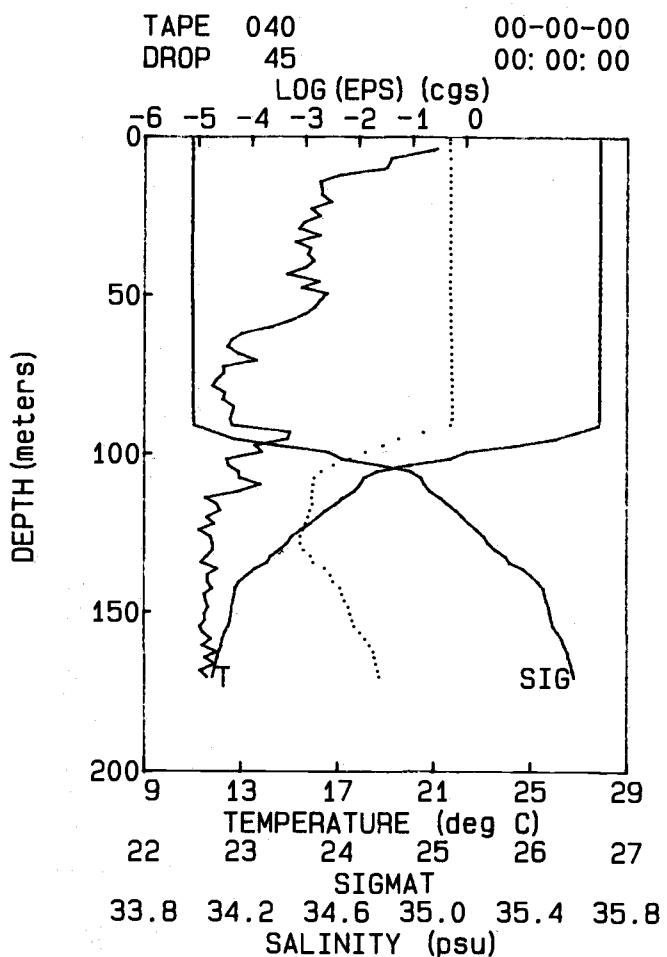


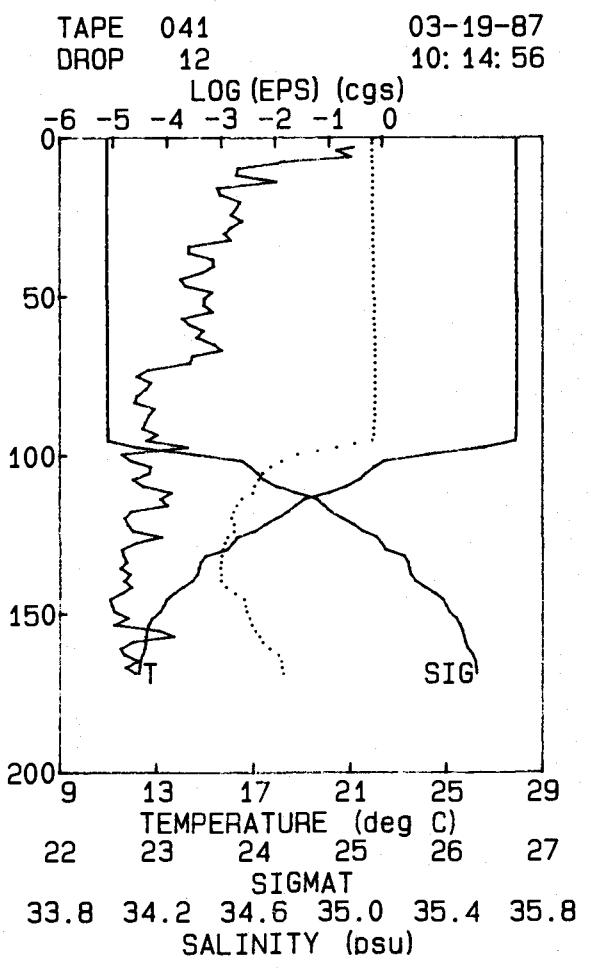
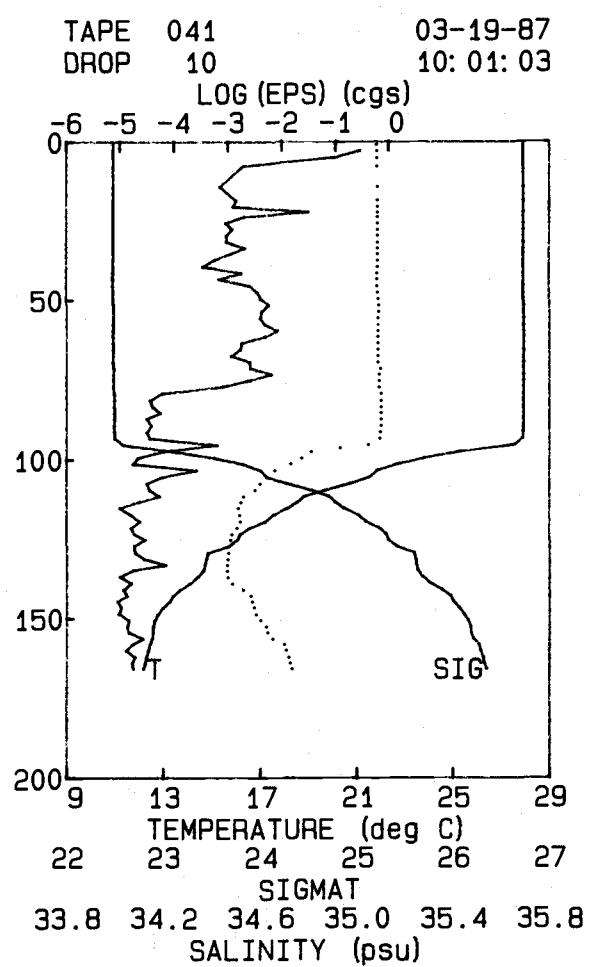
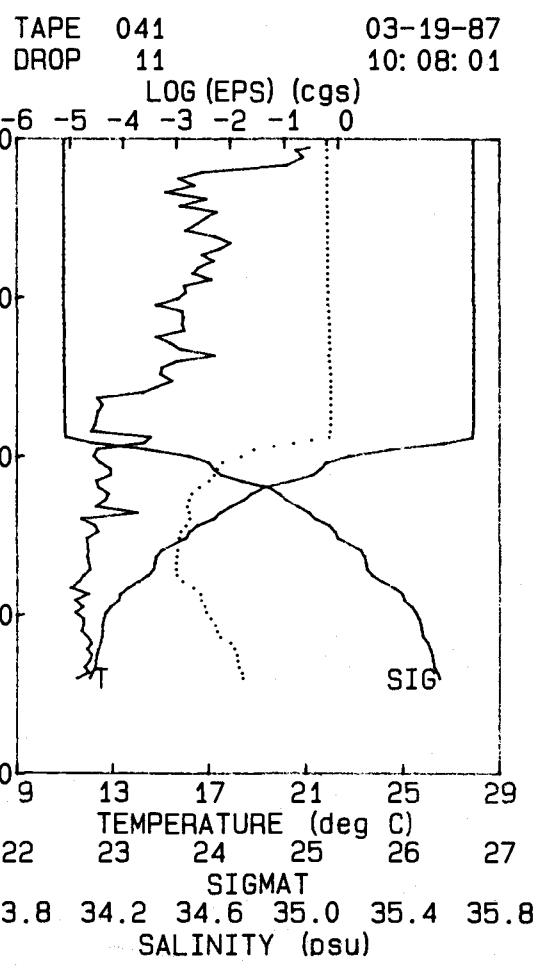
TAPE 040 03-19-87
 DROP 39 07: 07: 05



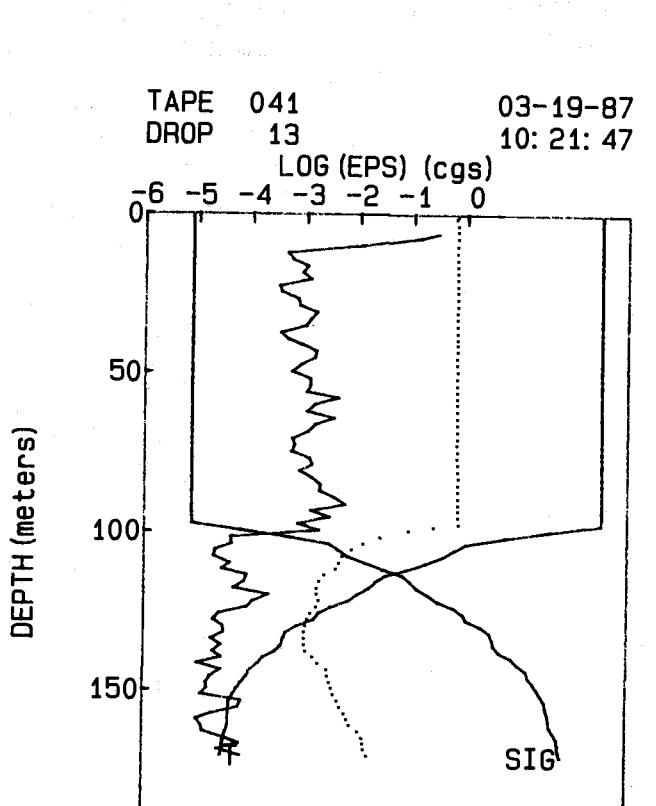
TAPE 040 03-19-87
 DROP 40 07: 13: 47



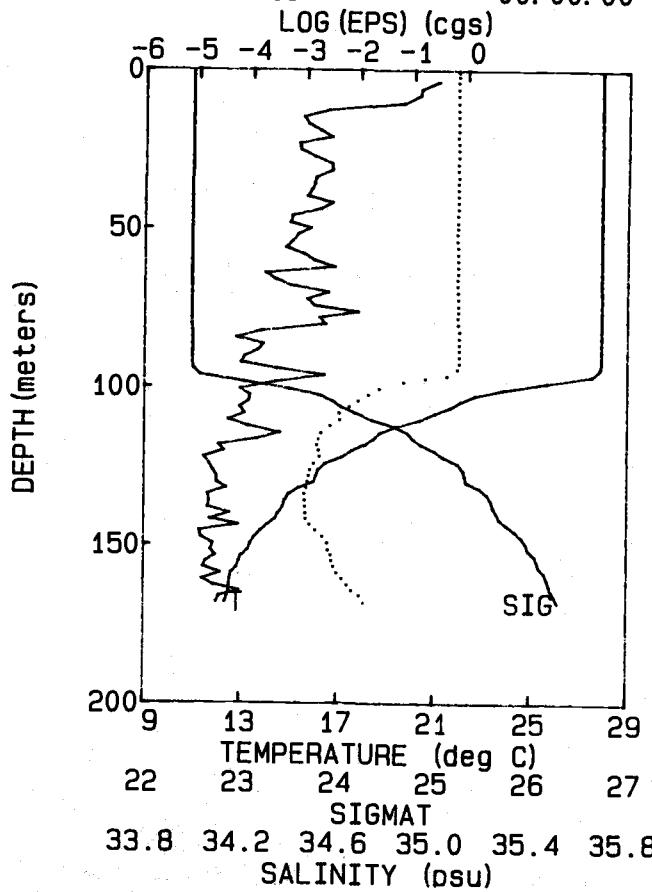




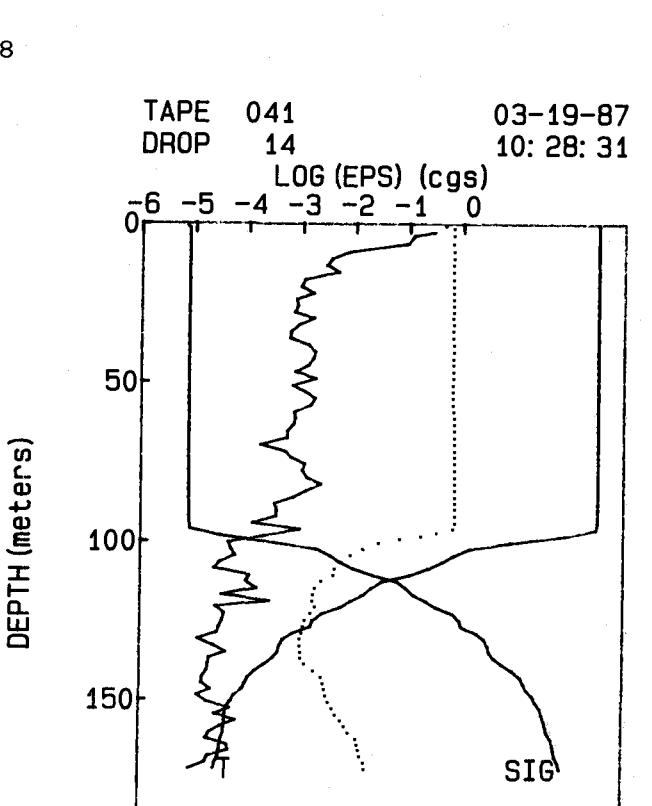
TAPE 041
DROP 13 03-19-87
10: 21: 47



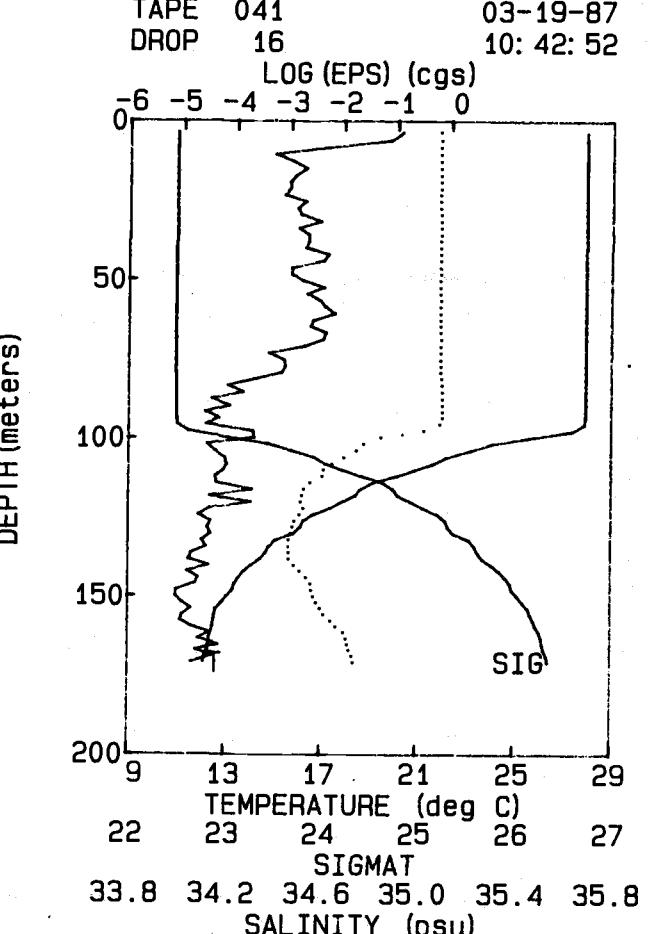
TAPE 041 00-00-00
DROP 15 00: 00: 00



TAPE 041
DROP 14 03-19-87
10: 28: 31

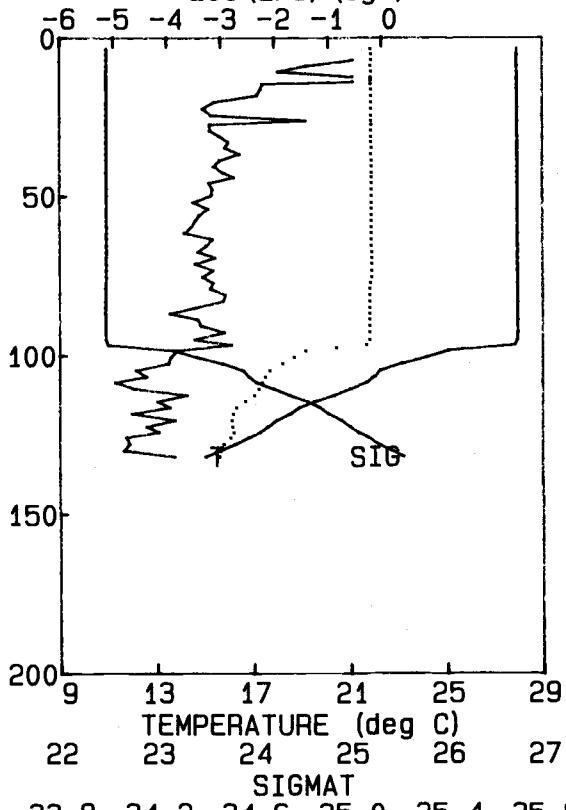


TAPE 041 03-19-87
DROP 16 10: 42: 52



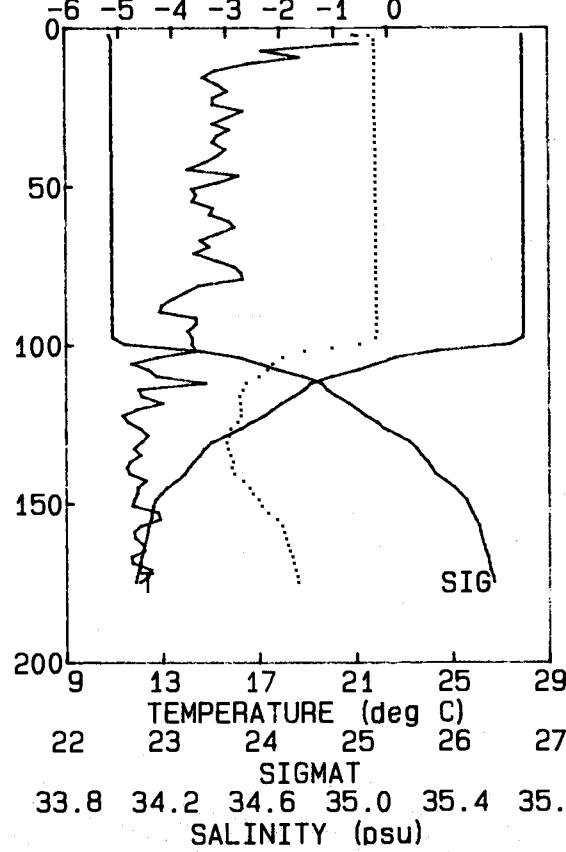
TAPE 041 00-00-00
DROP 25 00: 00: 00

LOG (EPS) (cgs)



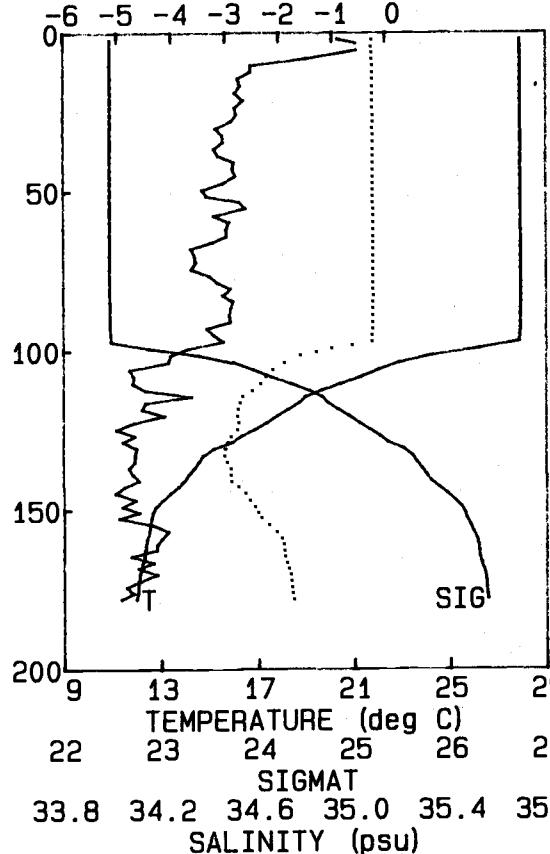
TAPE 041 03-19-87
DROP 27 11: 56: 54

LOG (EPS) (cgs)



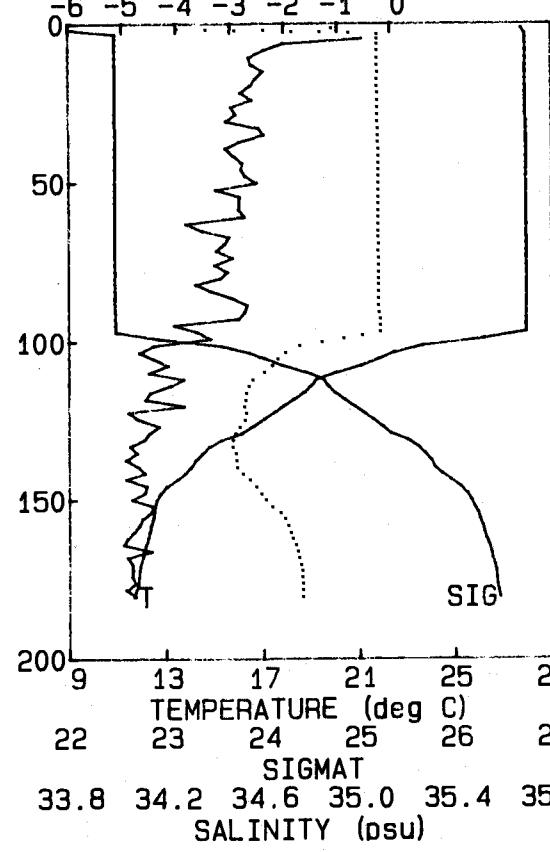
TAPE 041 03-19-87
DROP 26 11: 48: 51

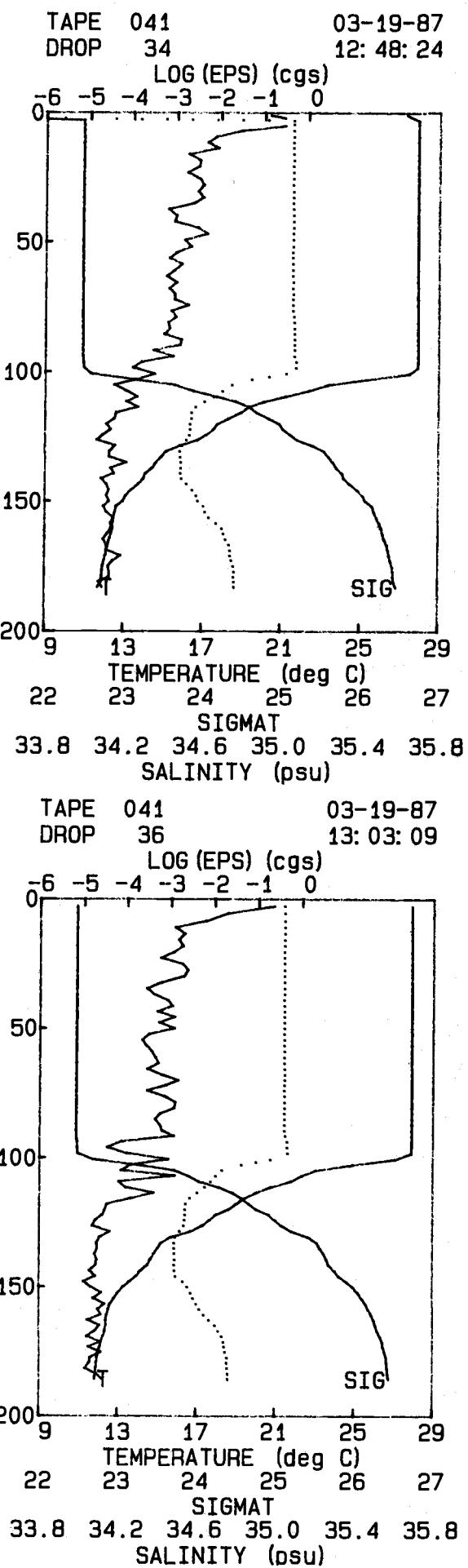
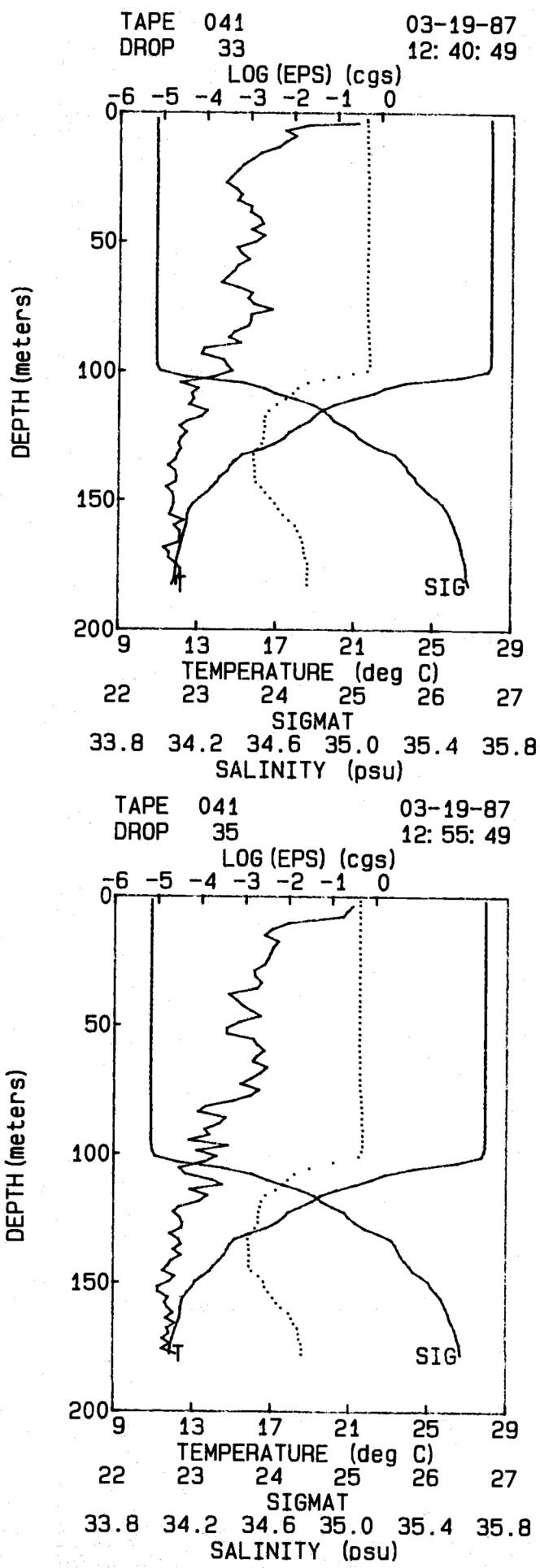
LOG (EPS) (cgs)

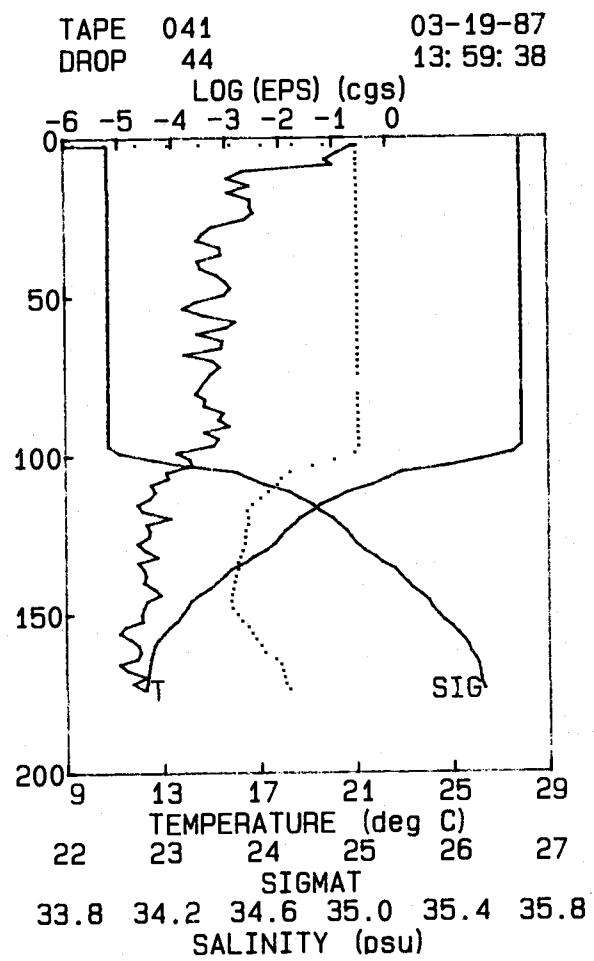
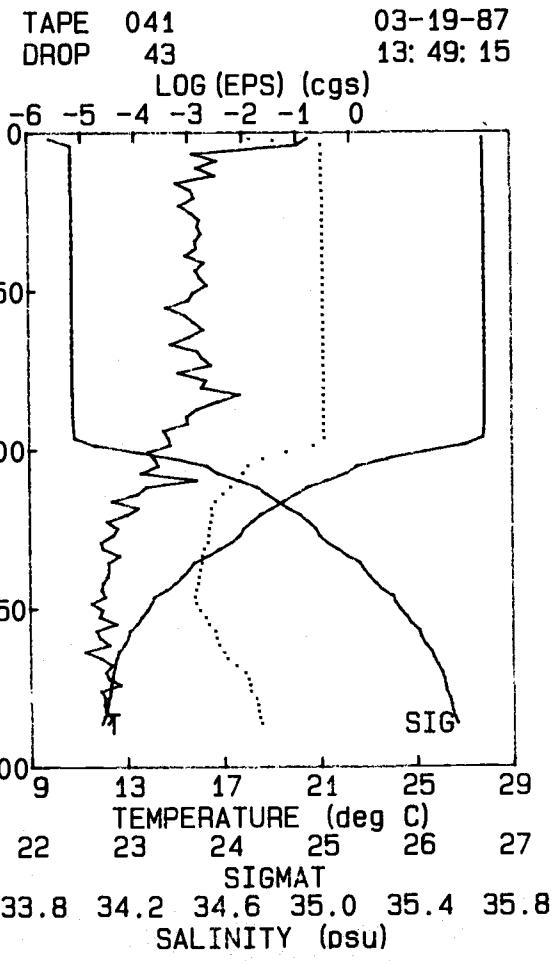
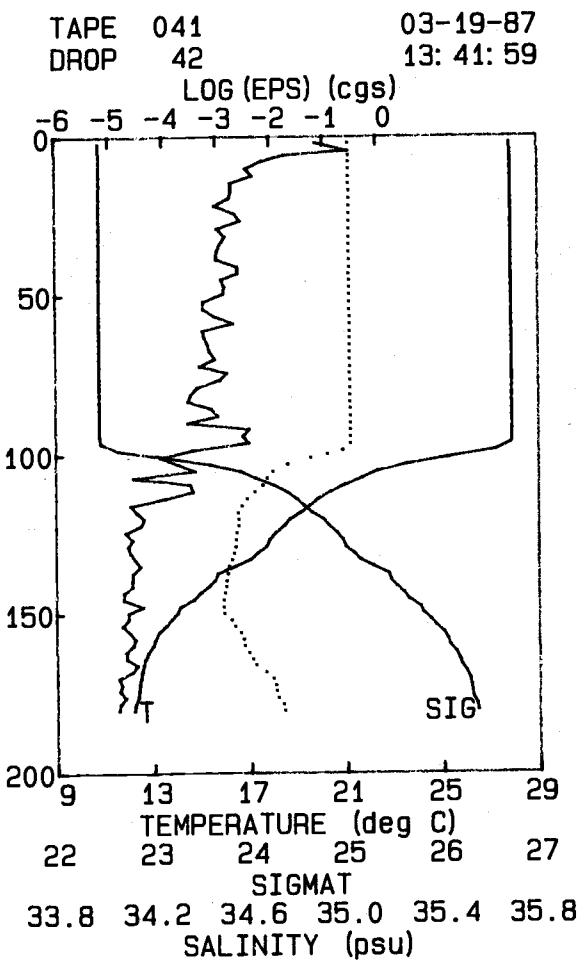
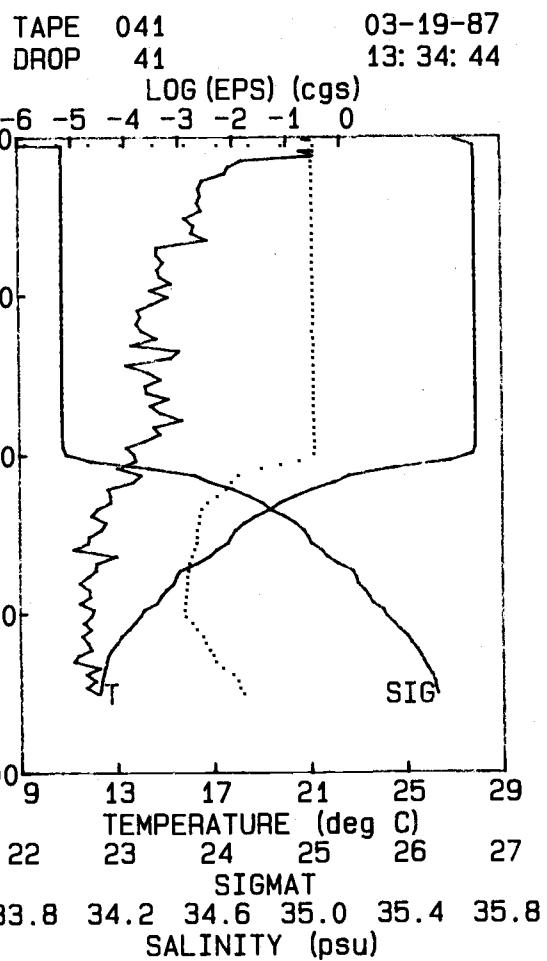


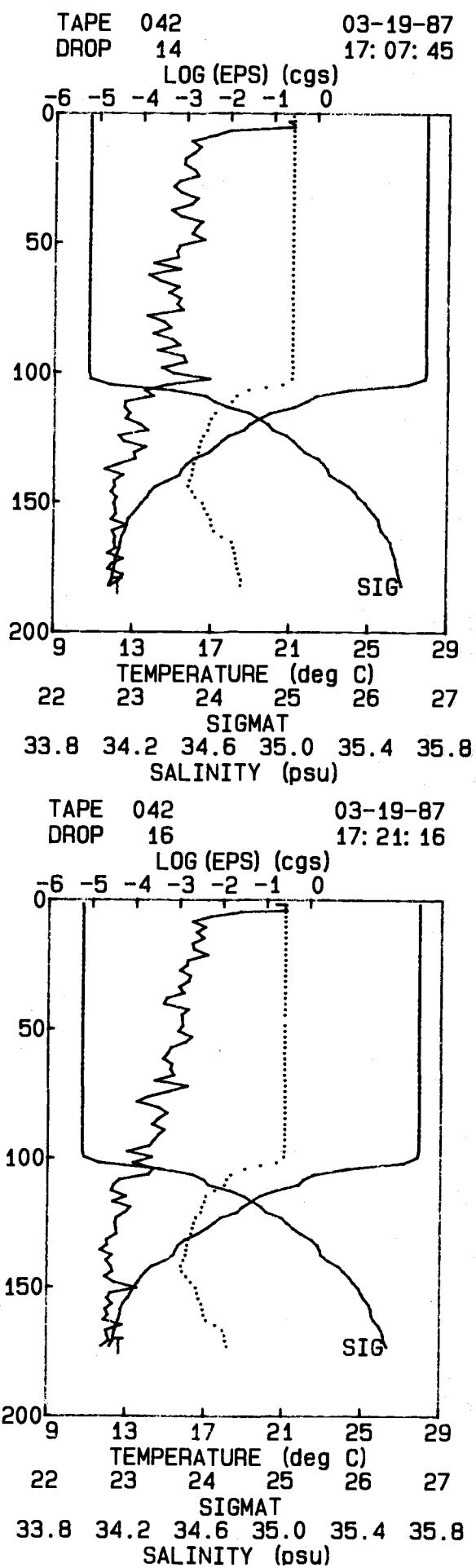
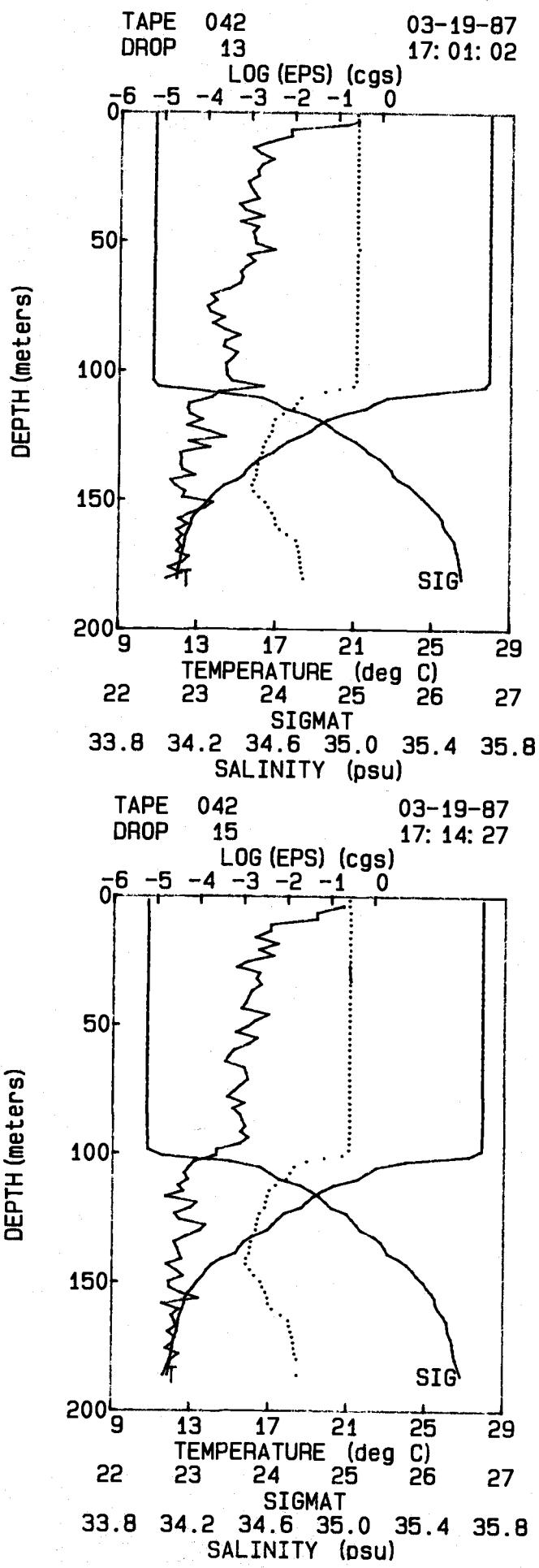
TAPE 041 03-19-87
DROP 28 12: 04: 22

LOG (EPS) (cgs)

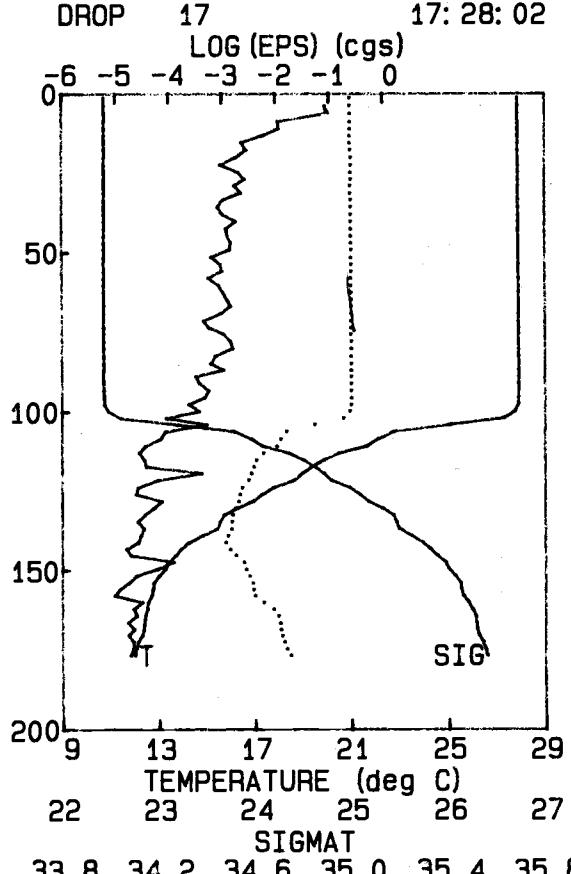




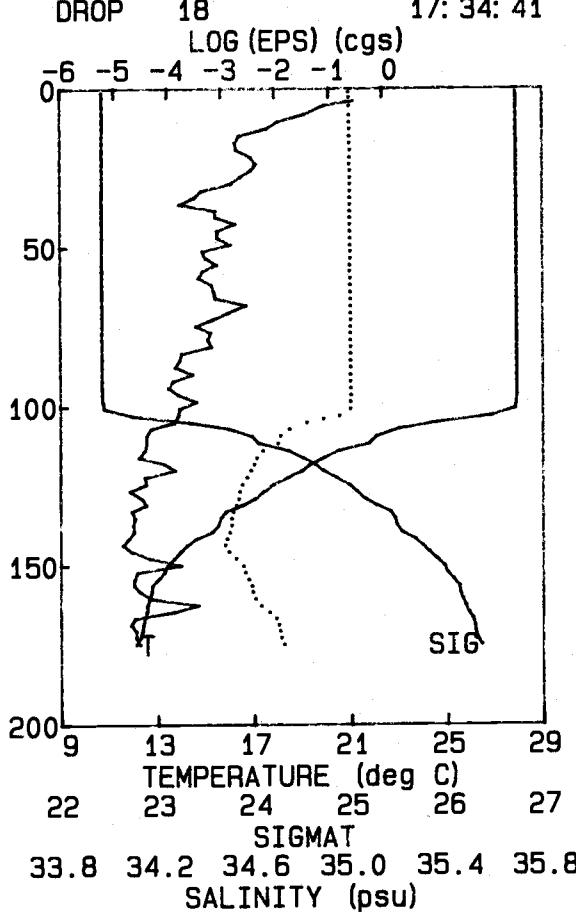




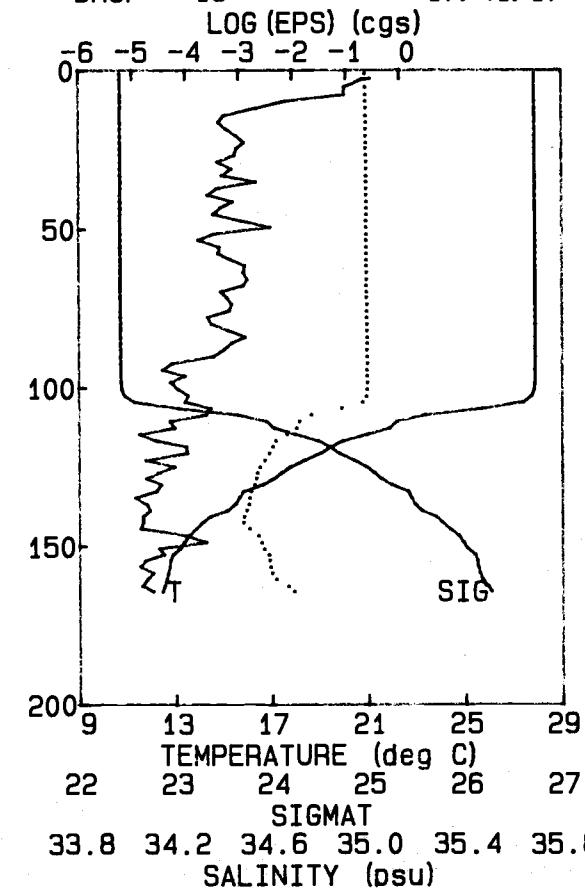
TAPE 042 03-19-87
DROP 17 17: 28: 02



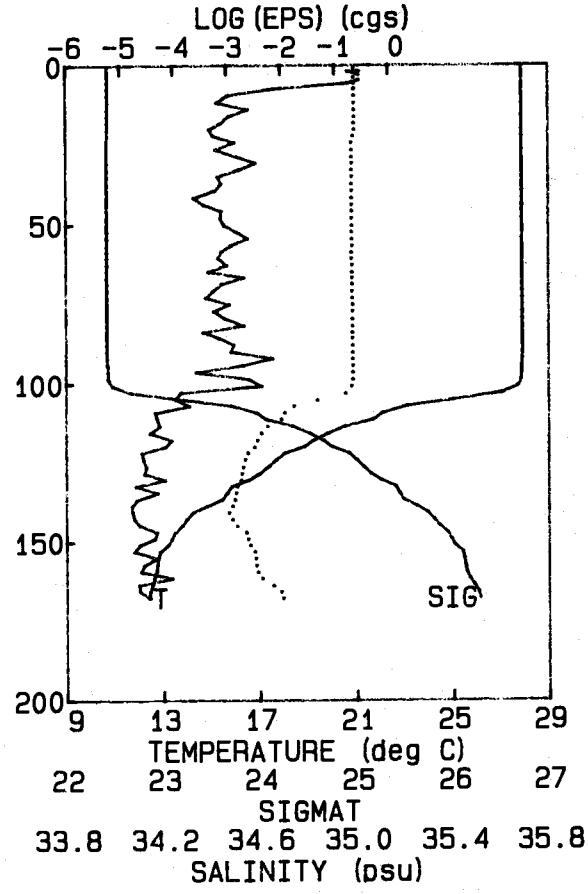
TAPE 042 03-19-87
DROP 18 17: 34: 41

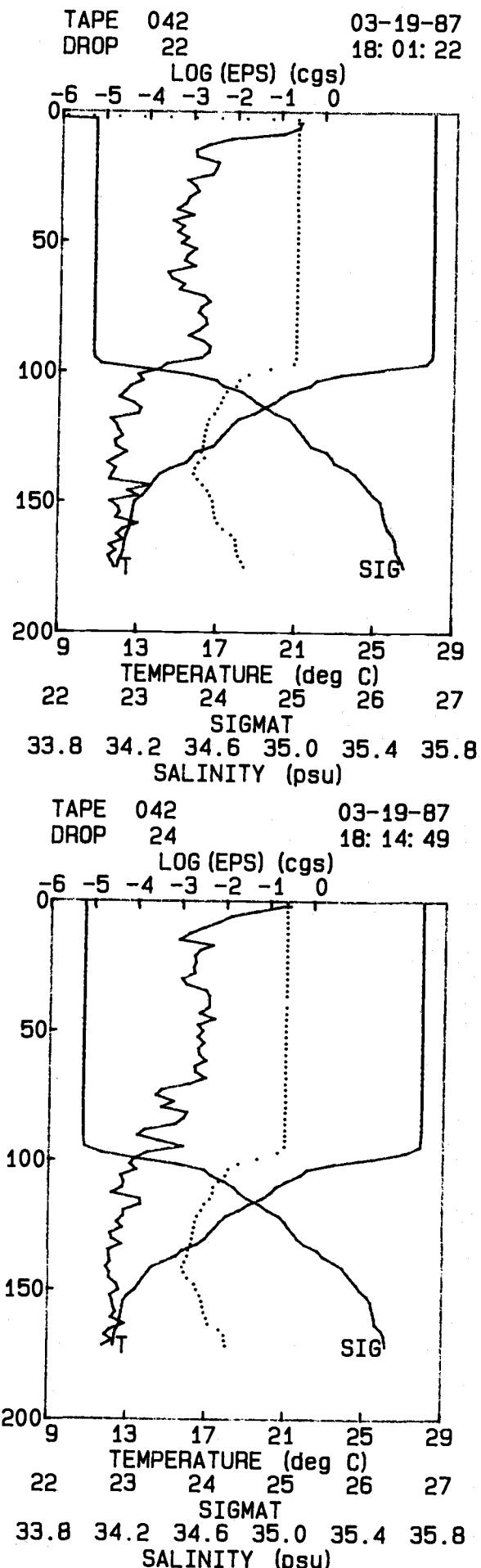
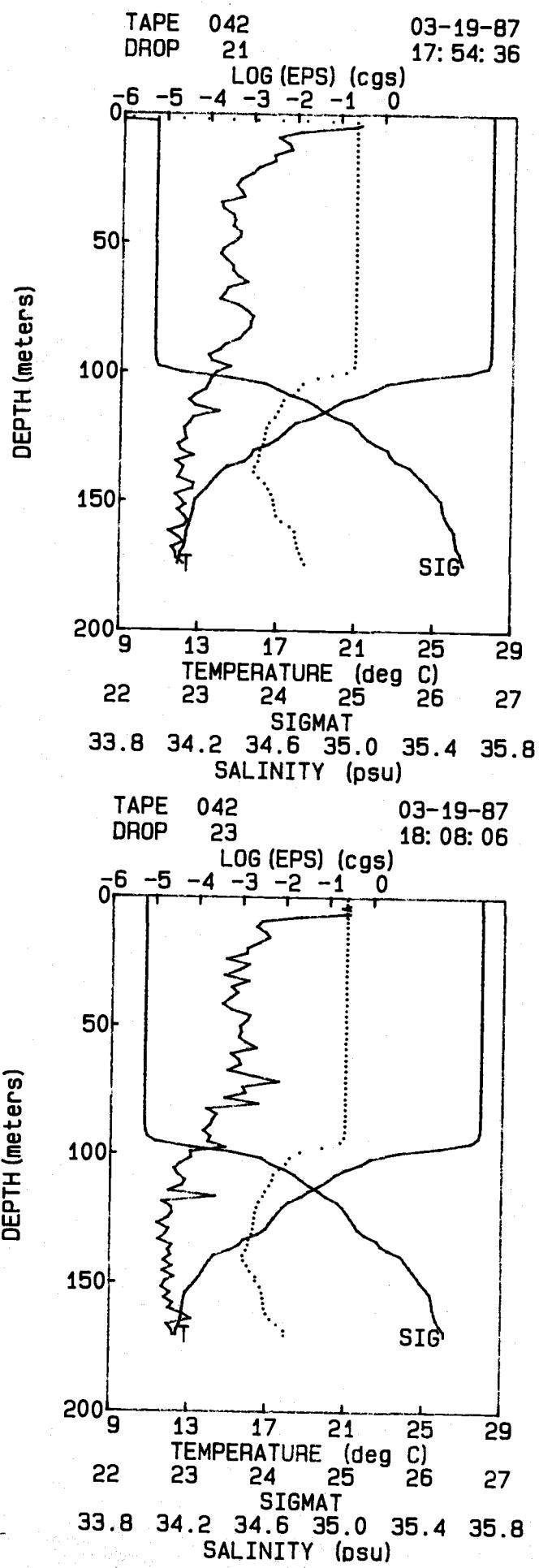


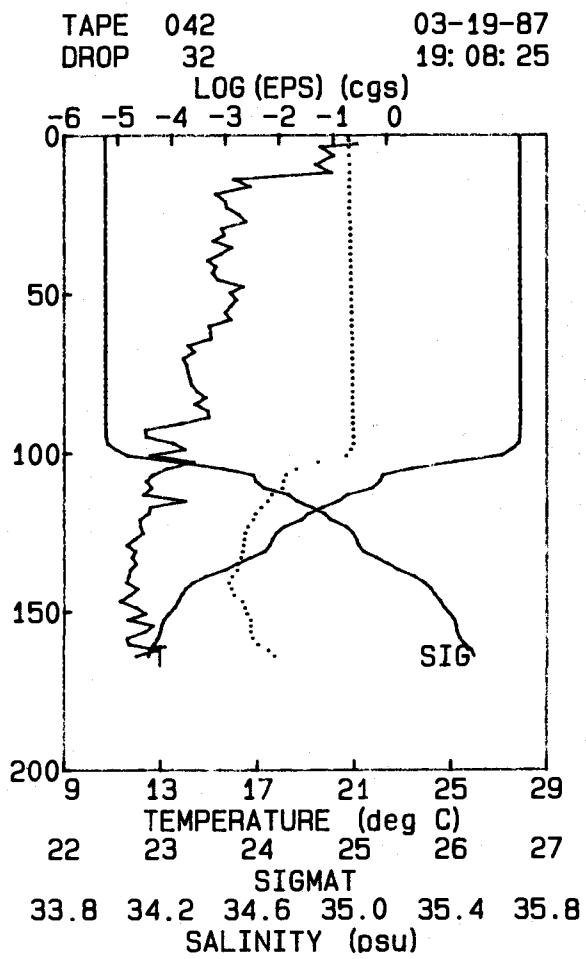
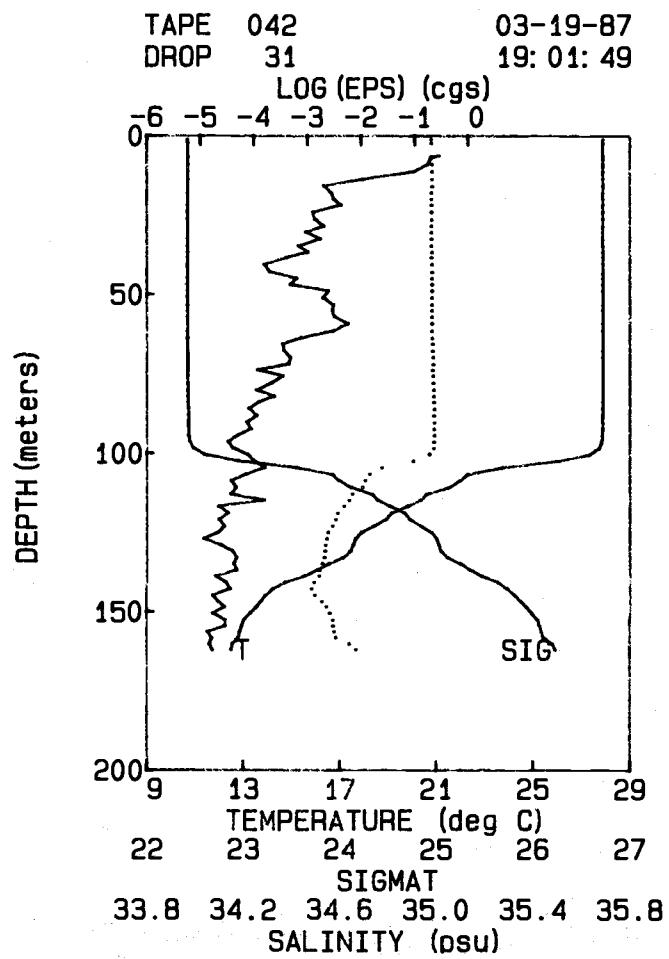
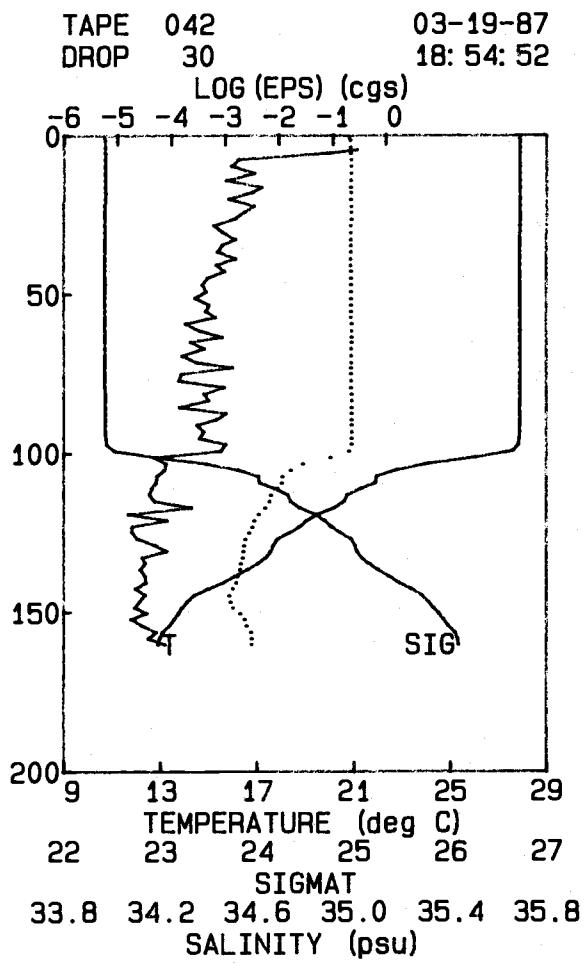
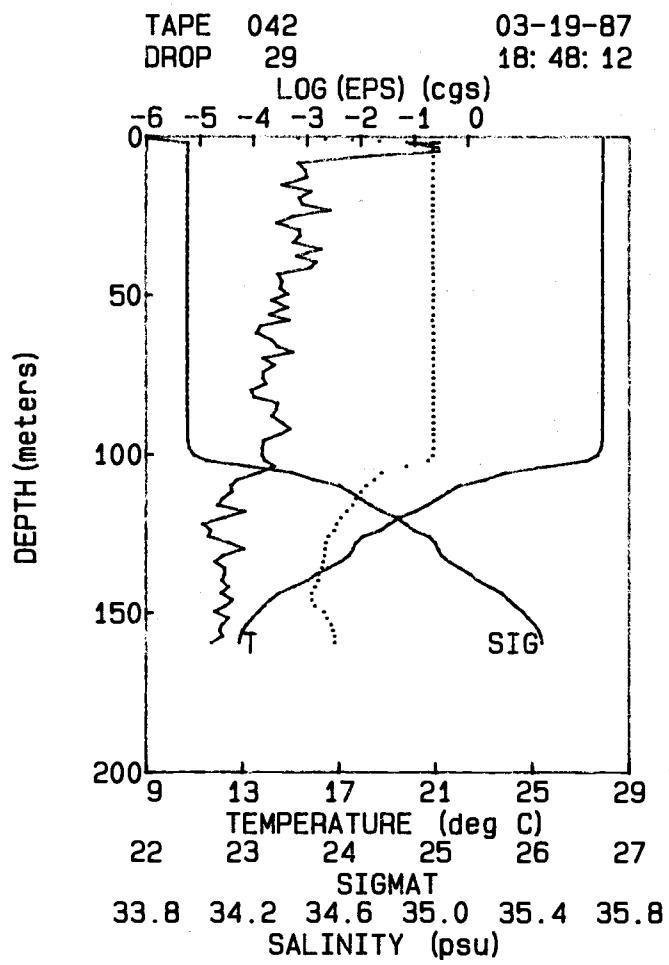
TAPE 042 03-19-87
DROP 19 17: 41: 17

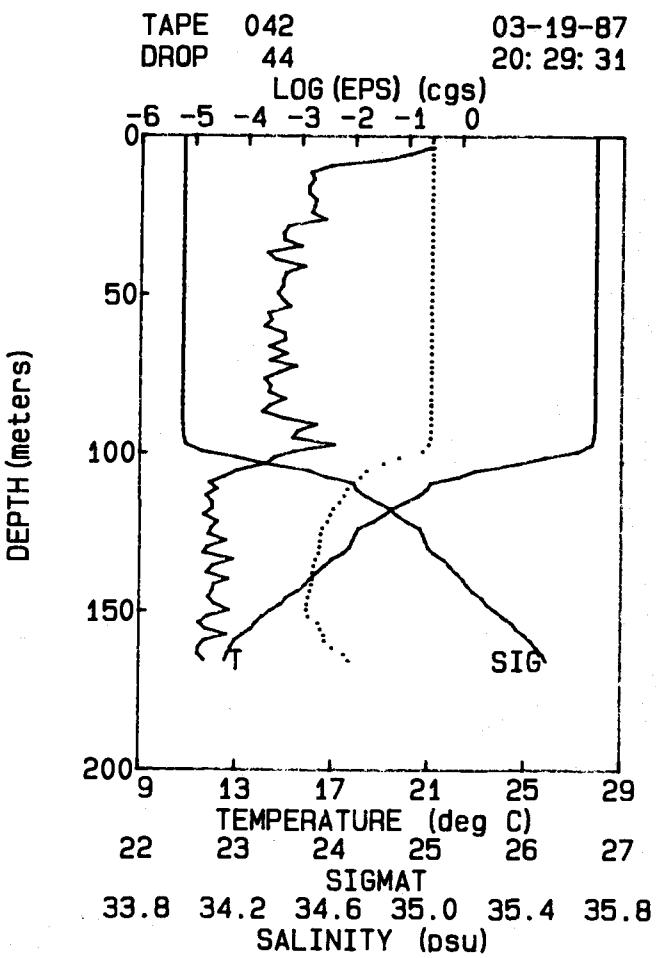
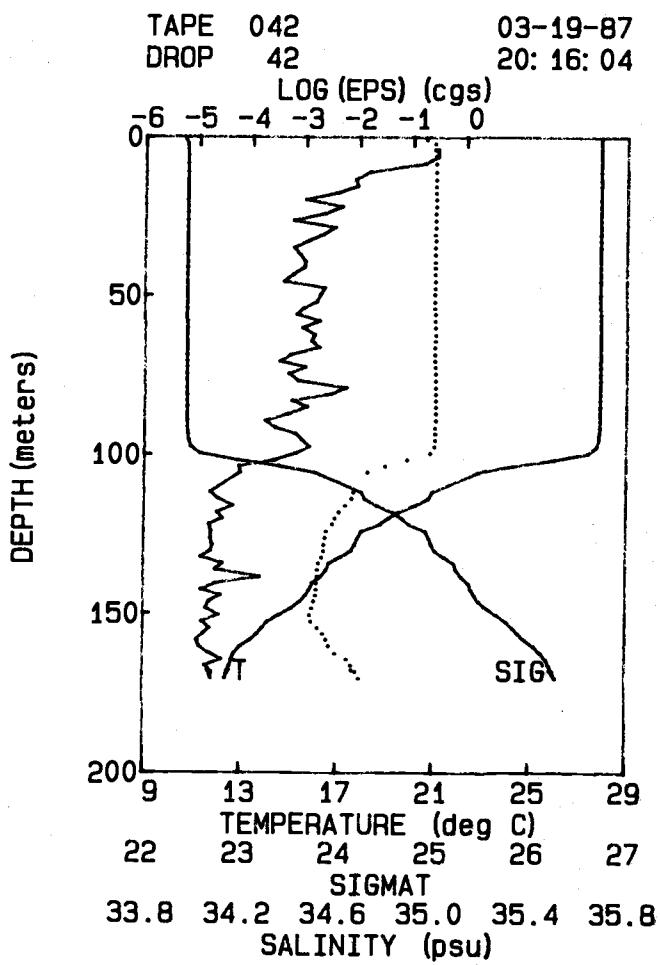
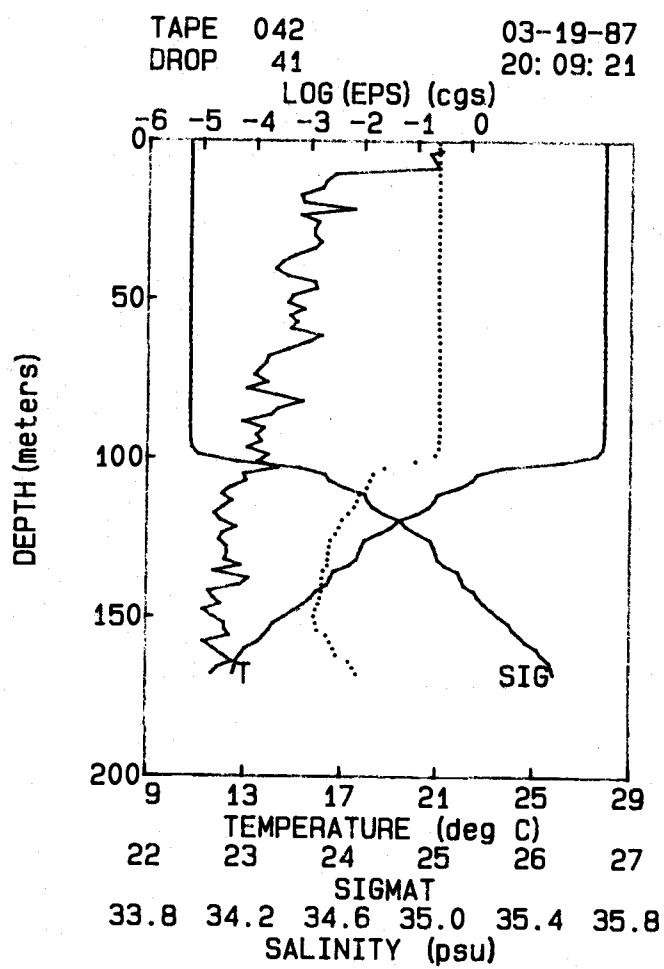


TAPE 042 03-19-87
DROP 20 17: 47: 57





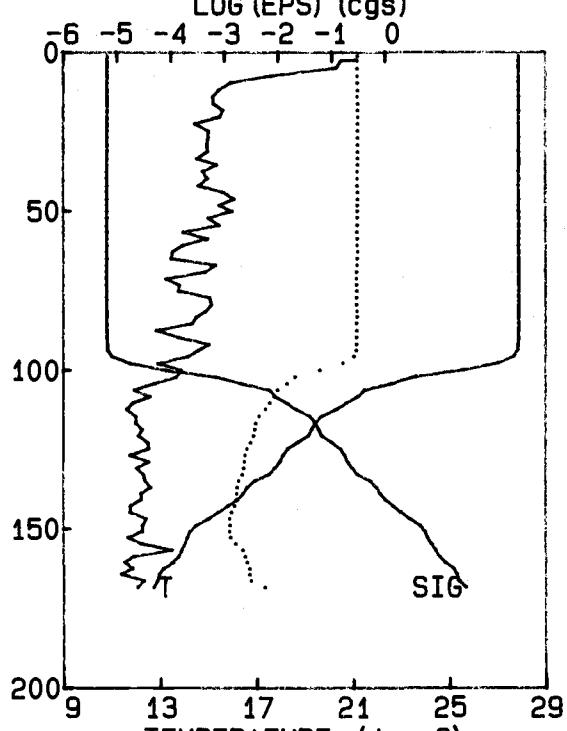




TAPE 042
DROP 49

03-19-87
21: 03: 21

LOG (EPS) (cgs)

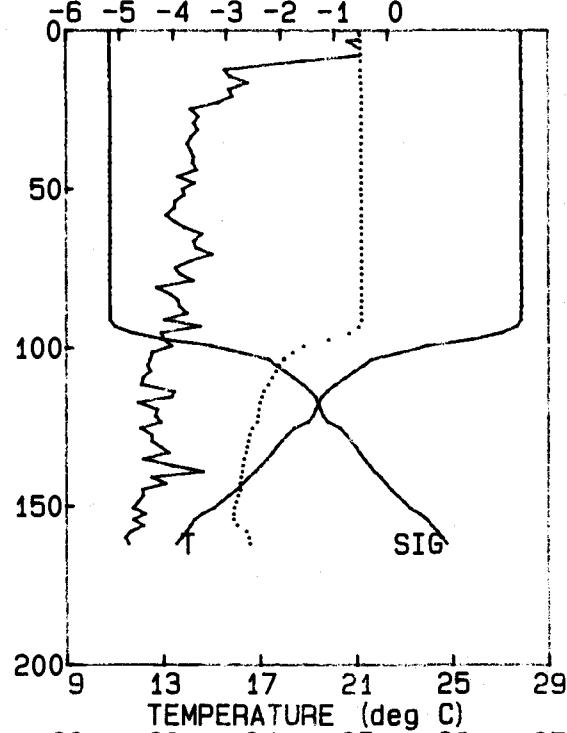


33.8 34.2 34.6 35.0 35.4 35.8
SIGMAT
SALINITY (psu)

TAPE 042
DROP 51

03-19-87
21: 17: 00

LOG (EPS) (cgs)

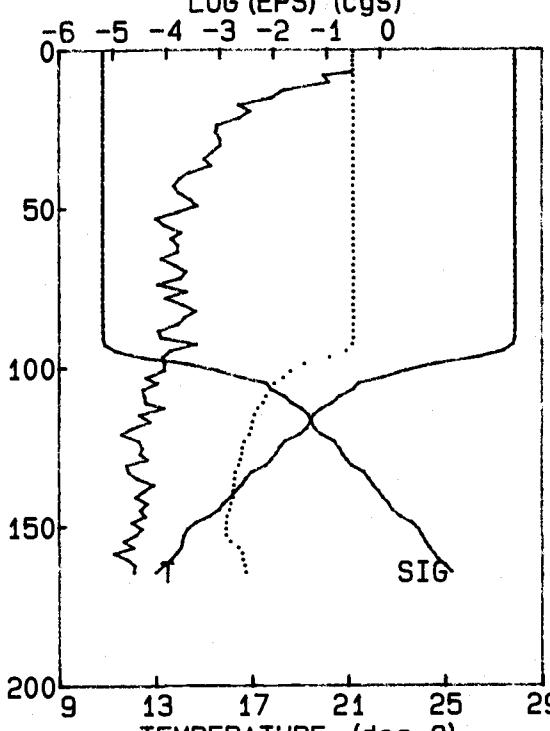


33.8 34.2 34.6 35.0 35.4 35.8
SIGMAT
SALINITY (psu)

TAPE 042
DROP 50

03-19-87
21: 10: 07

LOG (EPS) (cgs)

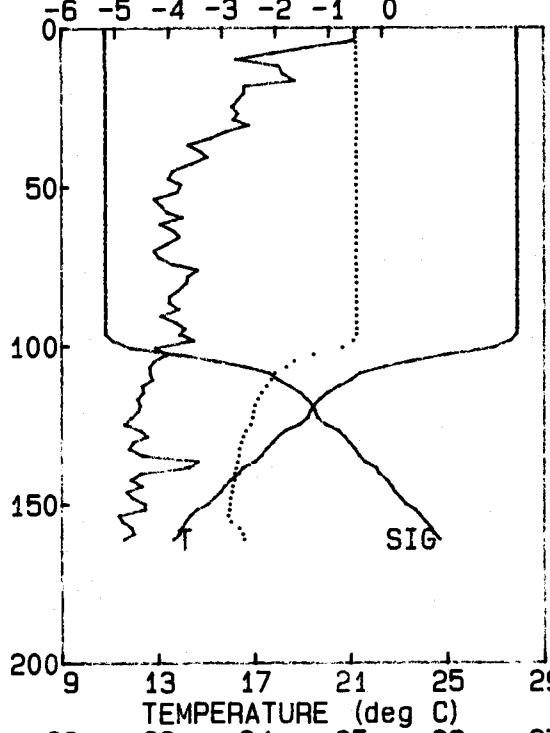


33.8 34.2 34.6 35.0 35.4 35.8
SIGMAT
SALINITY (psu)

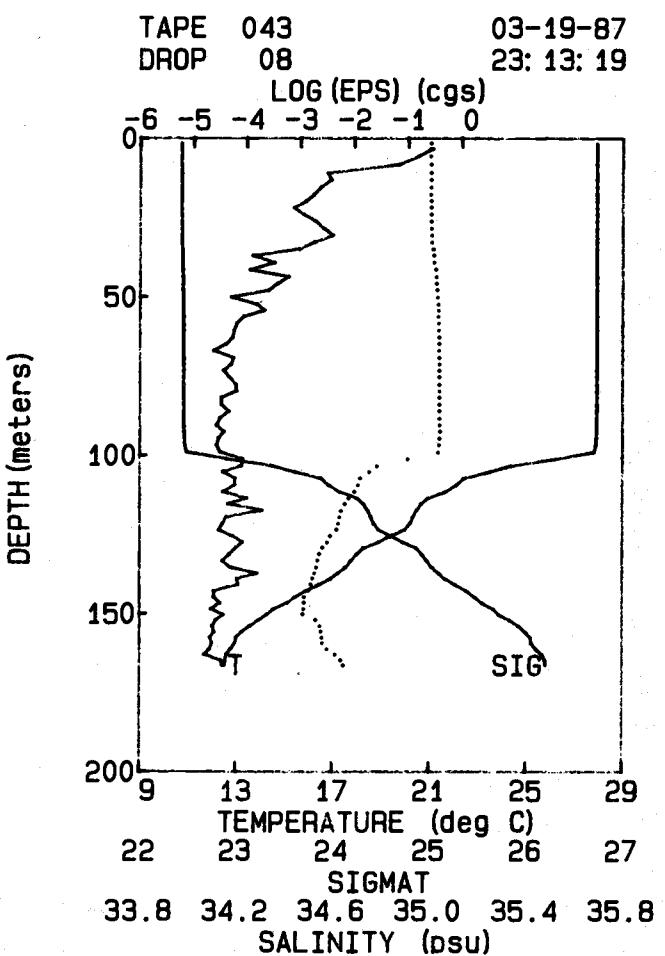
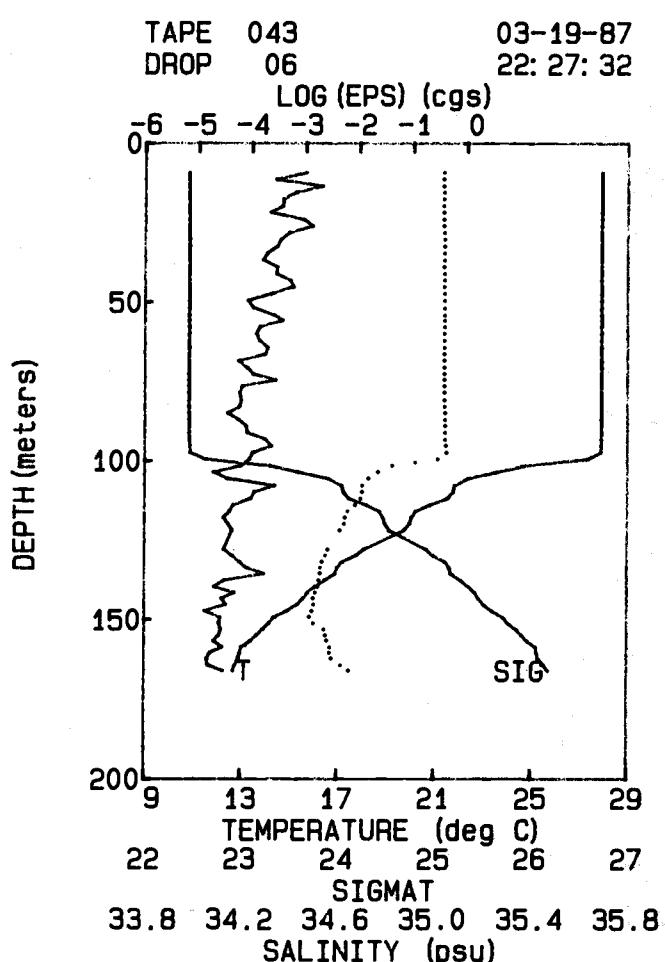
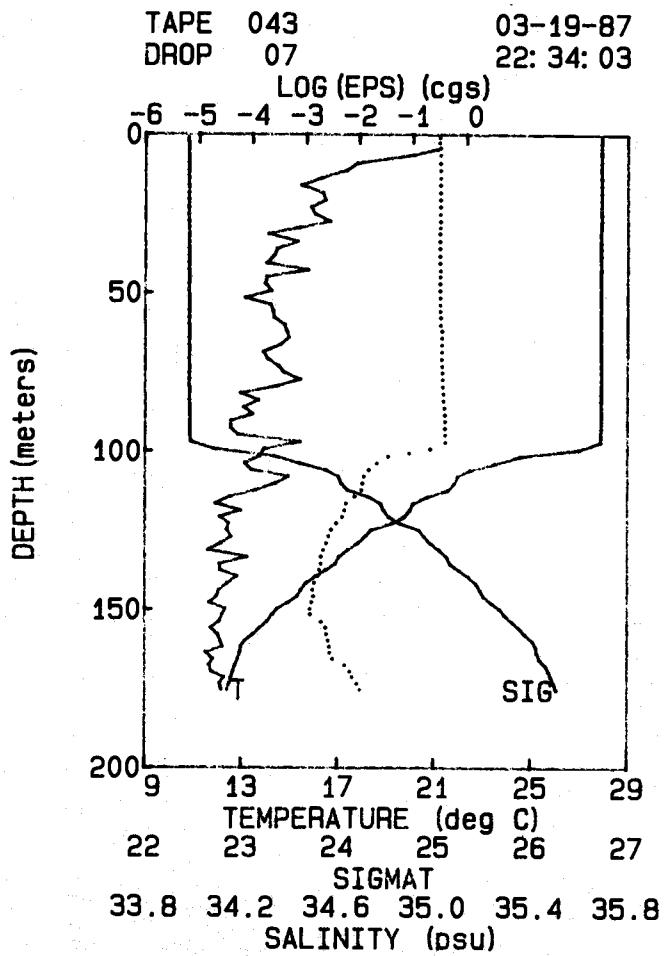
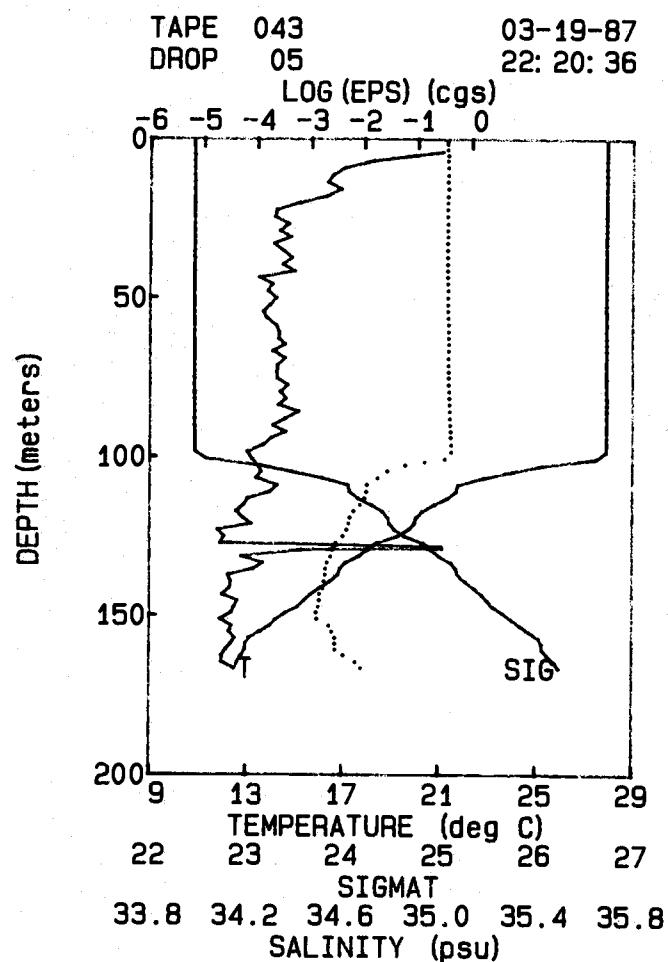
TAPE 042
DROP 52

03-19-87
21: 24: 43

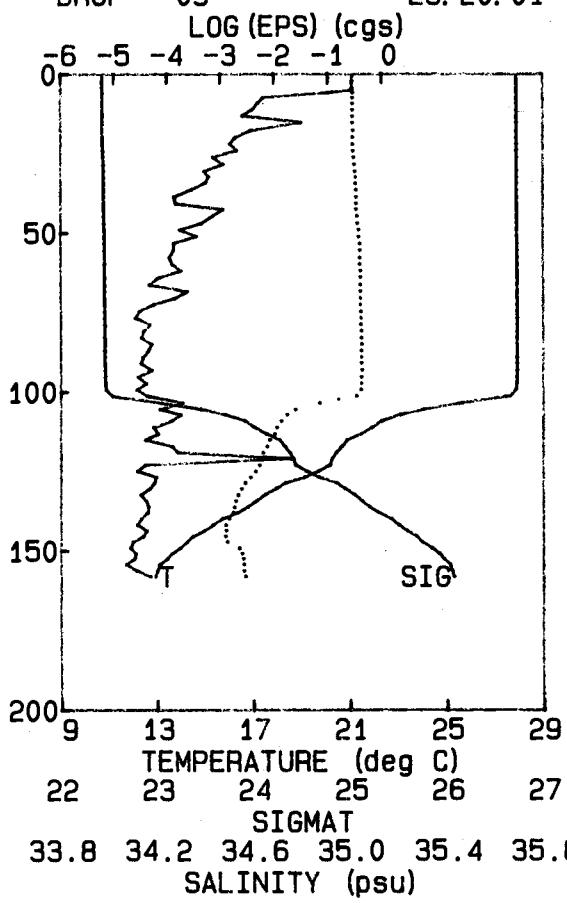
LOG (EPS) (cgs)



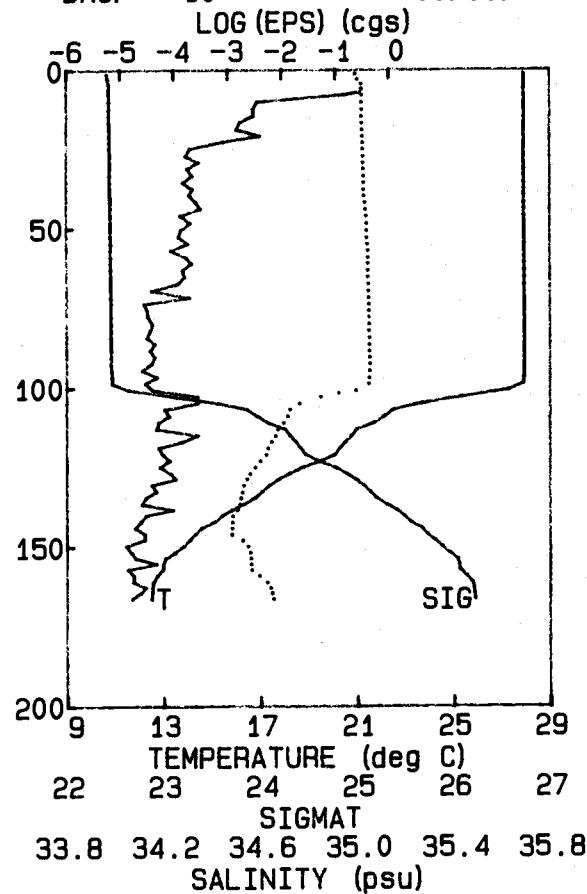
33.8 34.2 34.6 35.0 35.4 35.8
SIGMAT
SALINITY (psu)



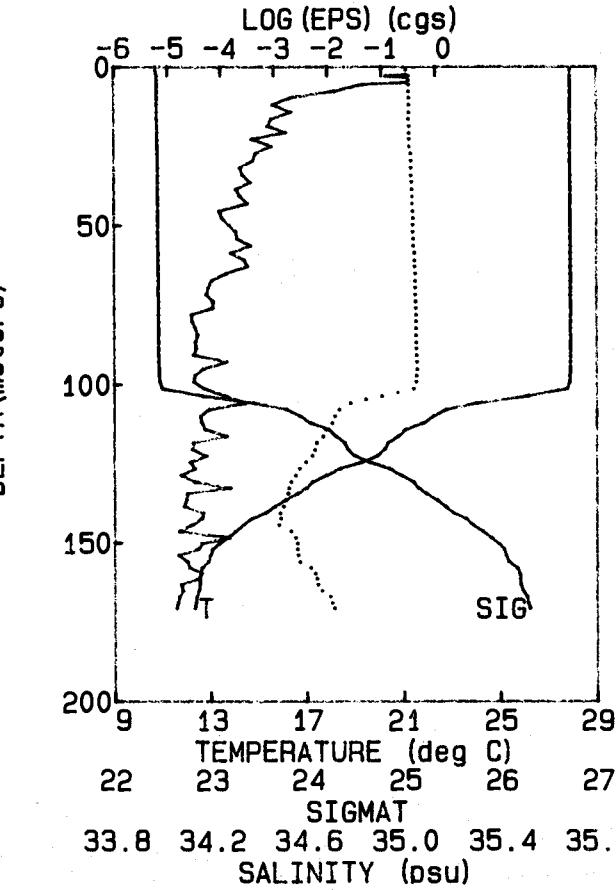
TAPE 043 03-19-87
DROP 09 23: 20: 01



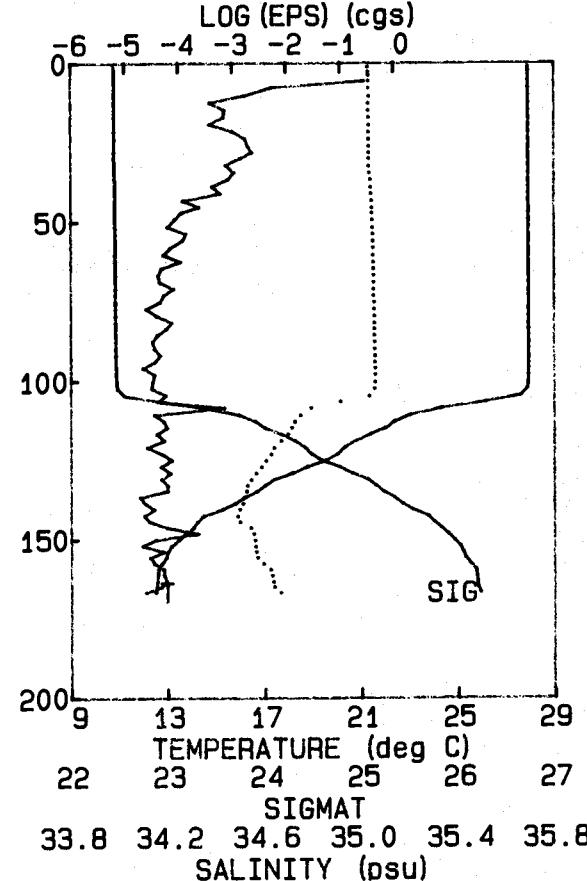
TAPE 043 00-00-00
DROP 10 00: 00: 00



TAPE 043 03-19-87
DROP 11 23: 33: 36



TAPE 043 00-00-00
DROP 12 00: 00: 00

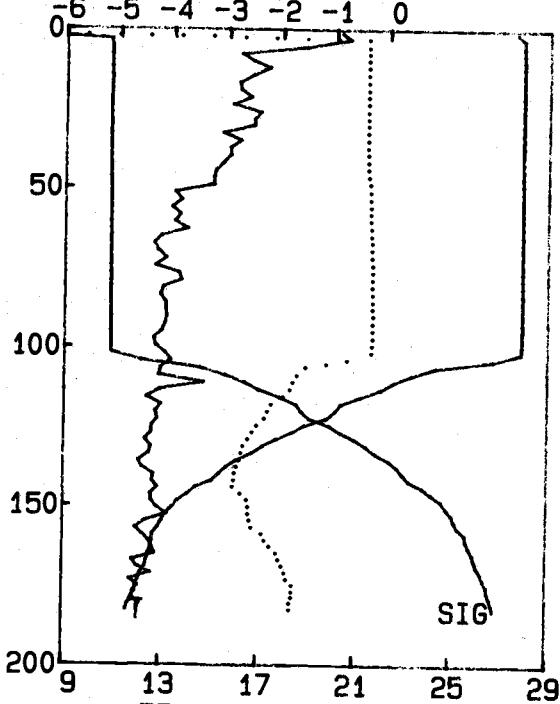


240

TAPE 043 03-20-87
 DROP 21 00: 48: 27

LOG (EPS) (cgs)

DEPTH (meters)

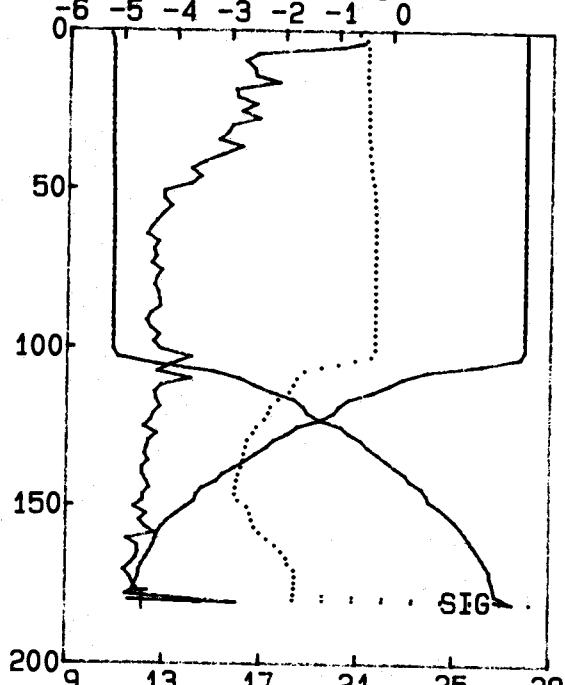


33.8 34.2 34.6 35.0 35.4 35.8
 SIGMAT
 SALINITY (psu)

TAPE 043 03-20-87
 DROP 23 01: 02: 15

LOG (EPS) (cgs)

DEPTH (meters)

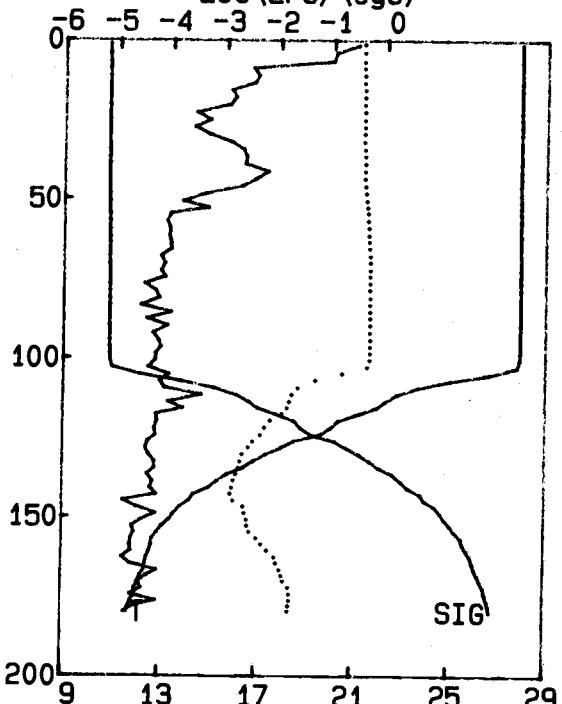


33.8 34.2 34.6 35.0 35.4 35.8
 SIGMAT
 SALINITY (psu)

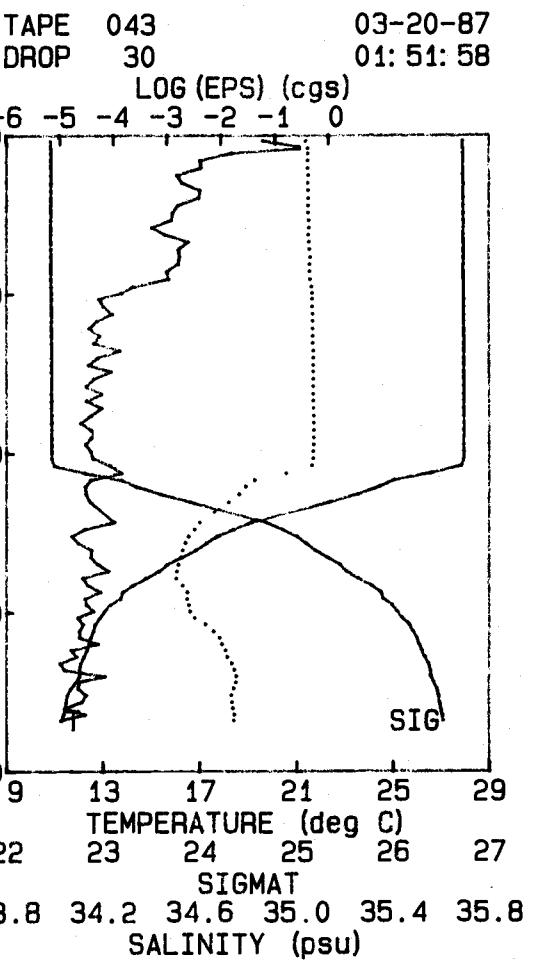
TAPE 043 03-20-87
 DROP 22 00: 55: 19

LOG (EPS) (cgs)

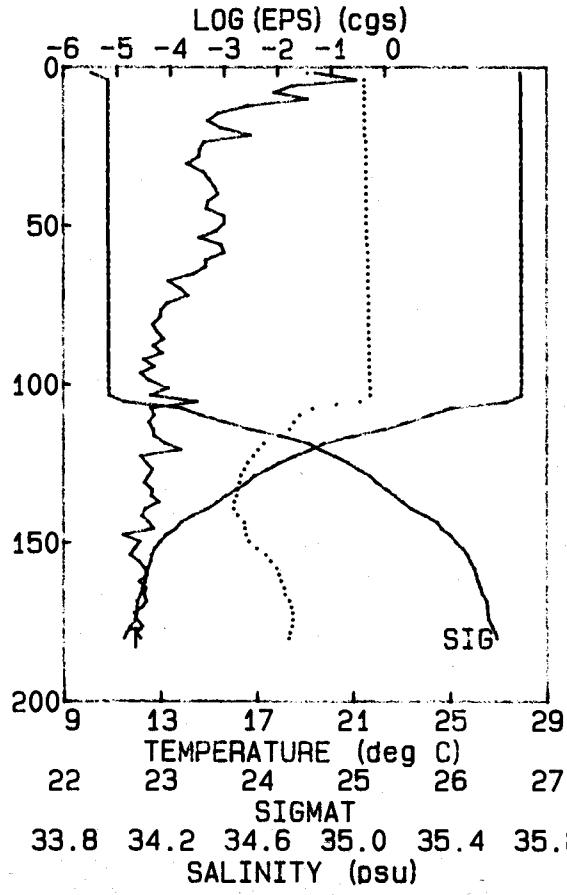
DEPTH (meters)



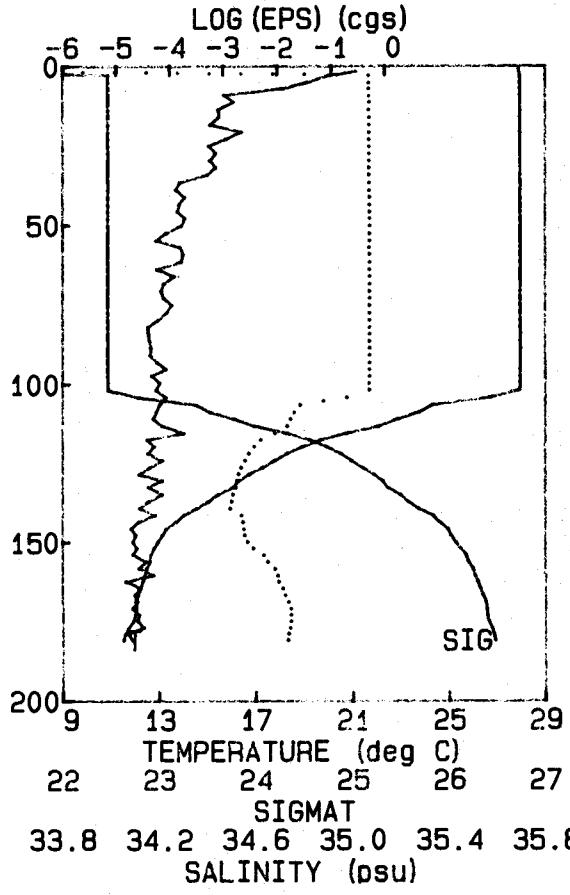
33.8 34.2 34.6 35.0 35.4 35.8
 SIGMAT
 SALINITY (psu)



TAPE 043 03-20-87
 DROP 31 01: 58: 57



TAPE 043 03-20-87
 DROP 32 02: 07: 35



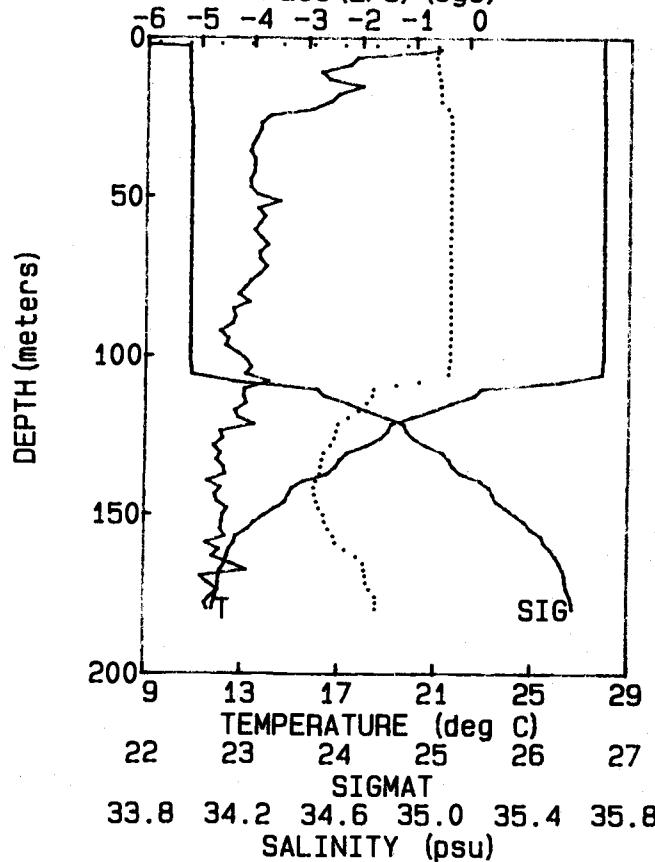
03-20-87

TAPE 043

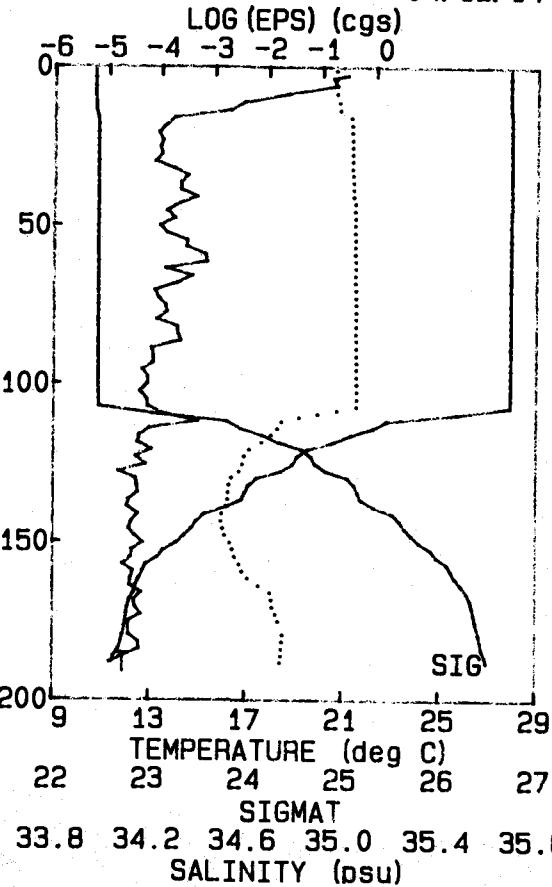
DROP 46

04: 01: 55

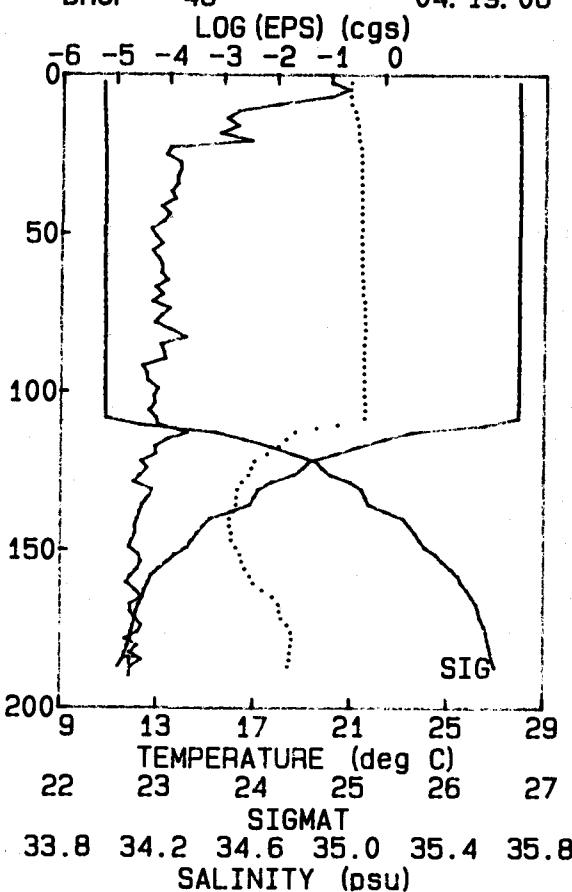
LOG (EPS) (cgs)

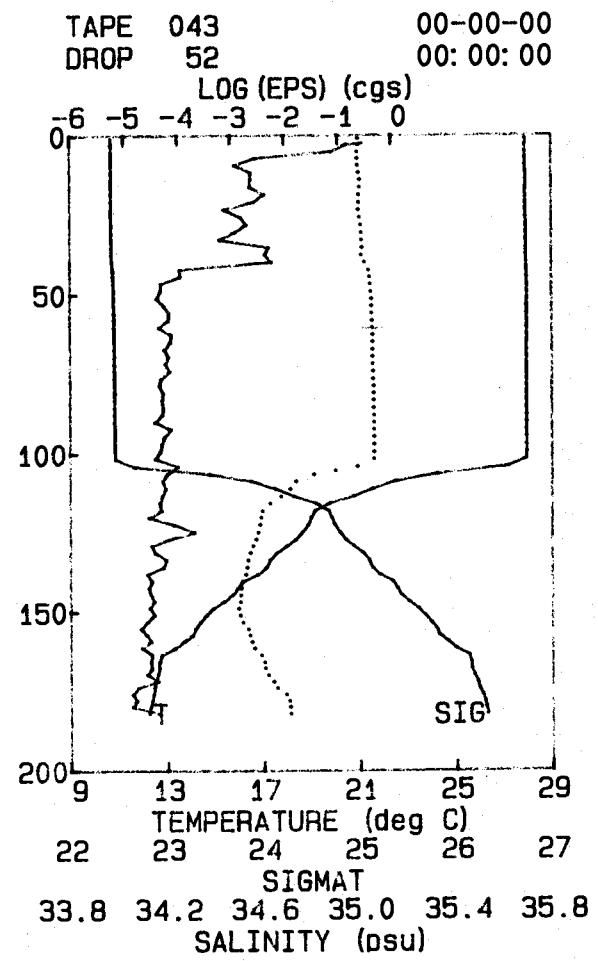
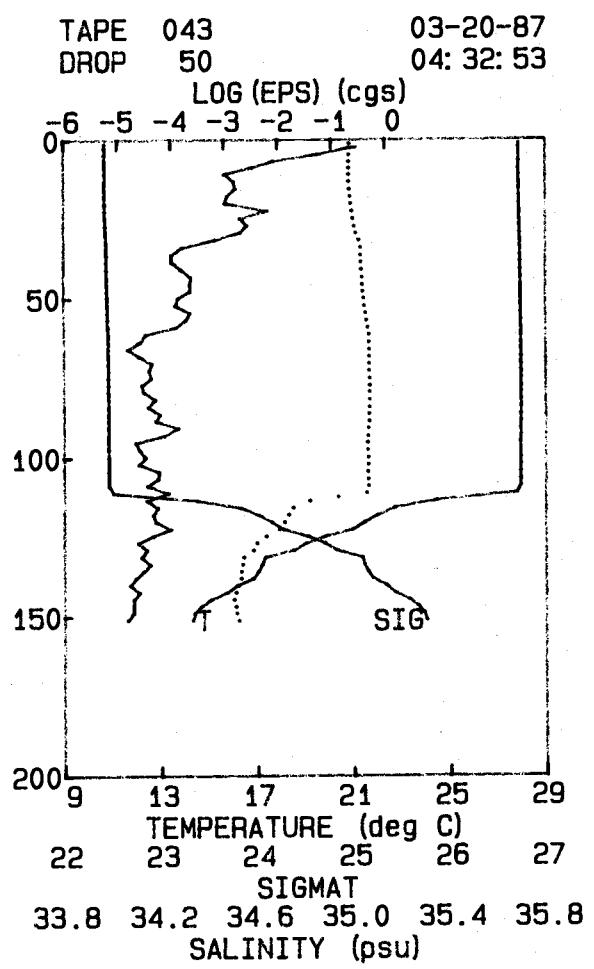
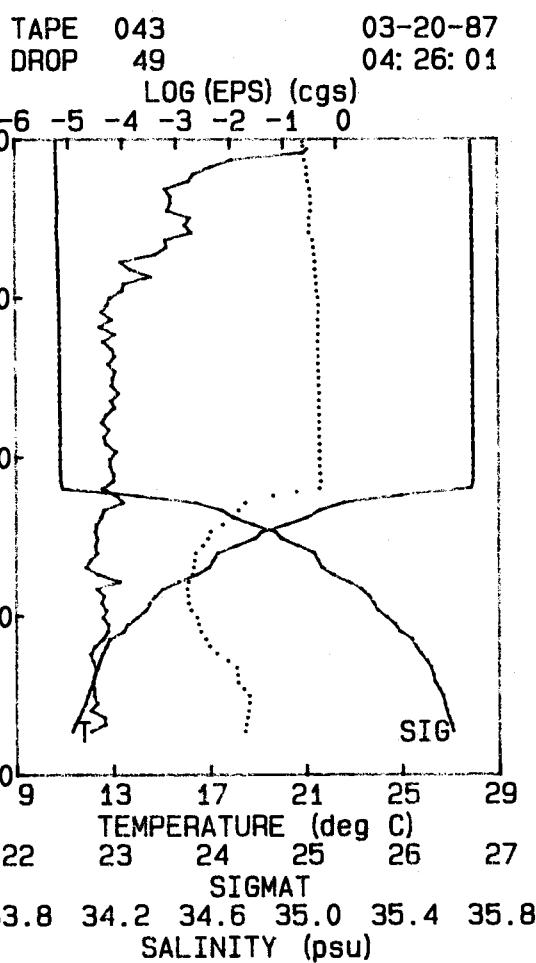


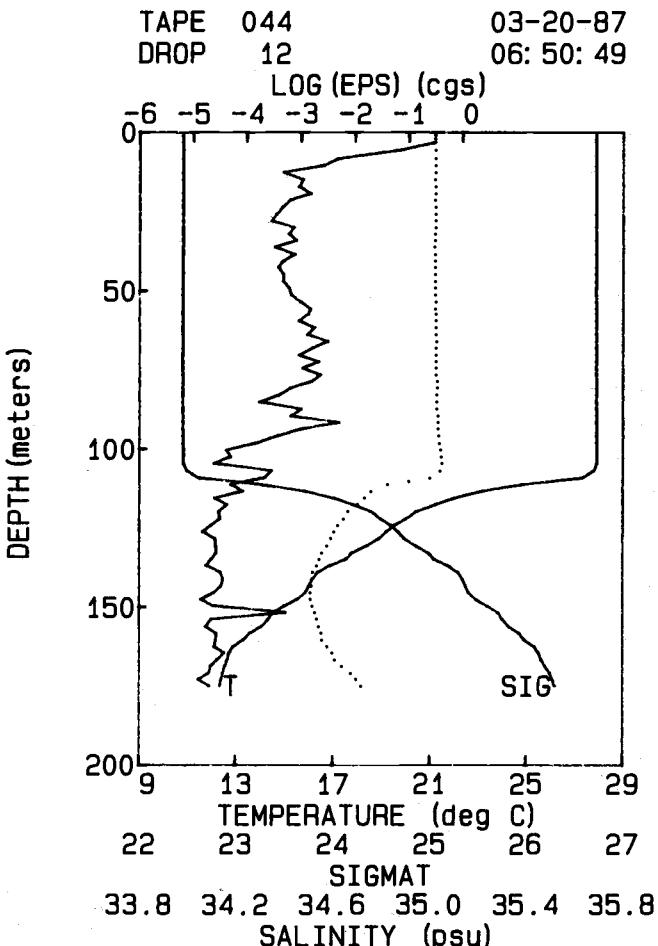
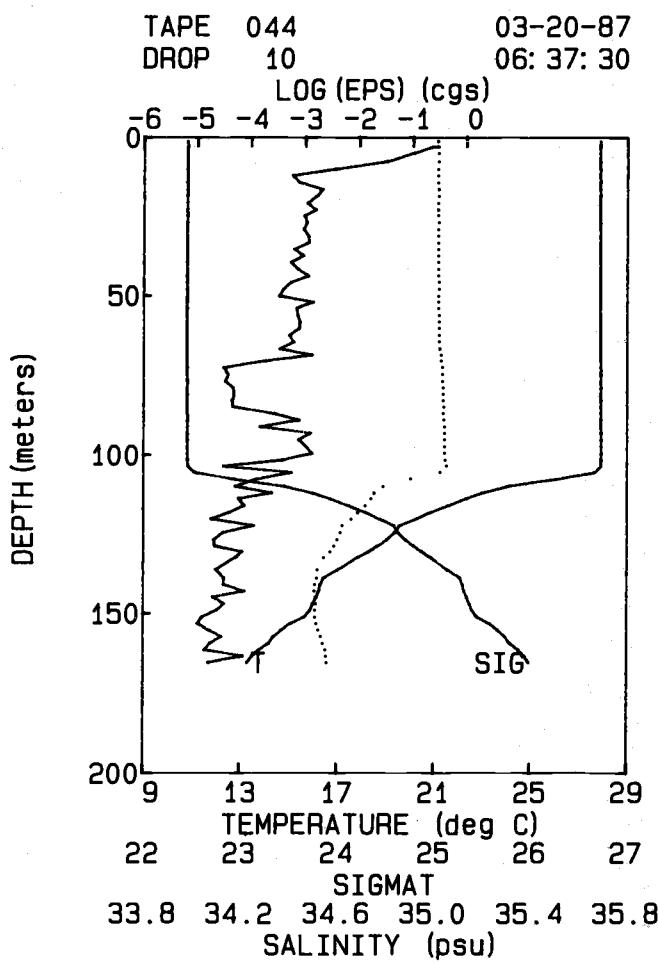
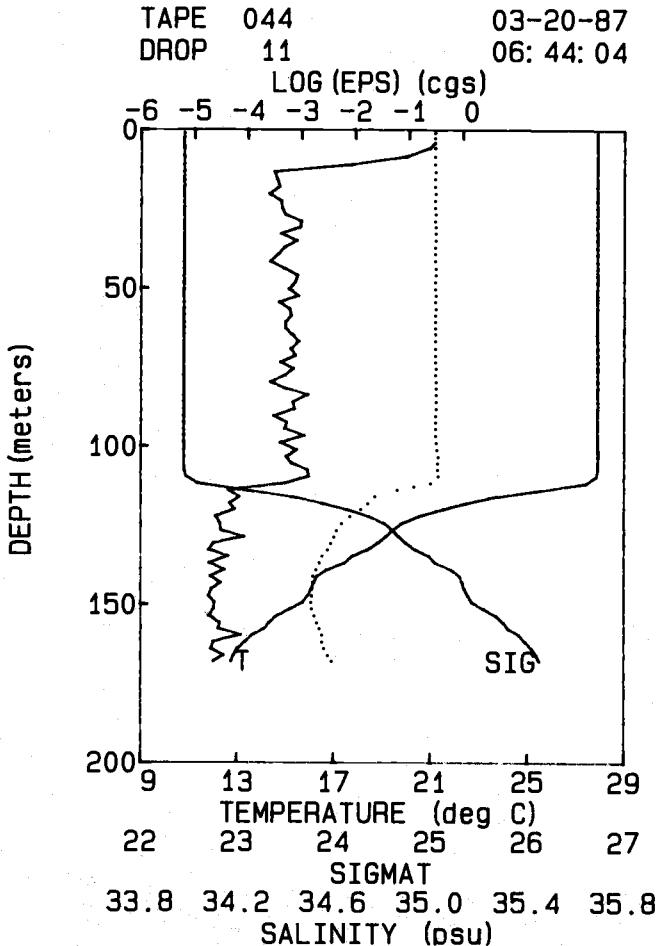
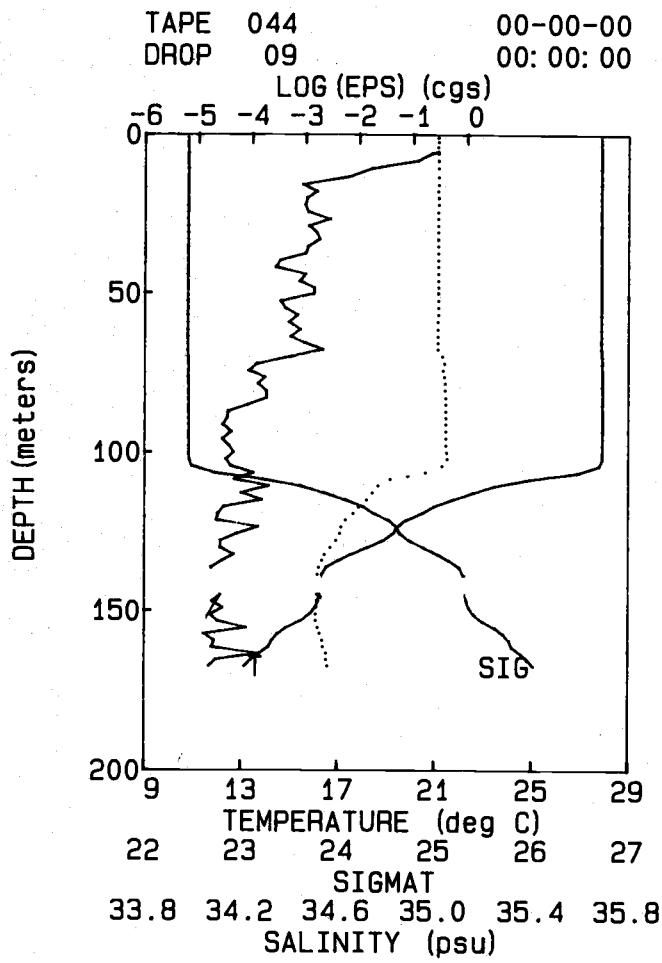
TAPE 043 03-20-87
DROP 47 04: 12: 14

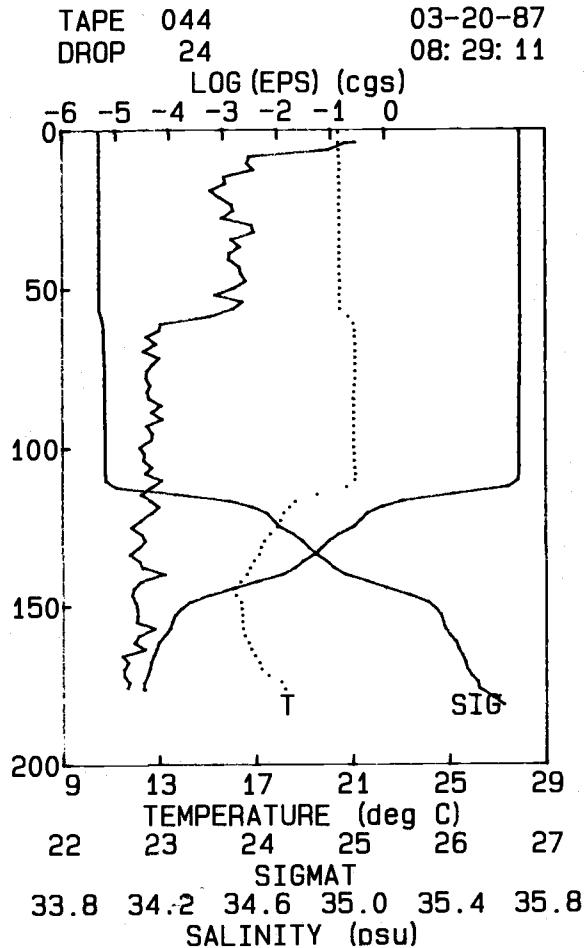
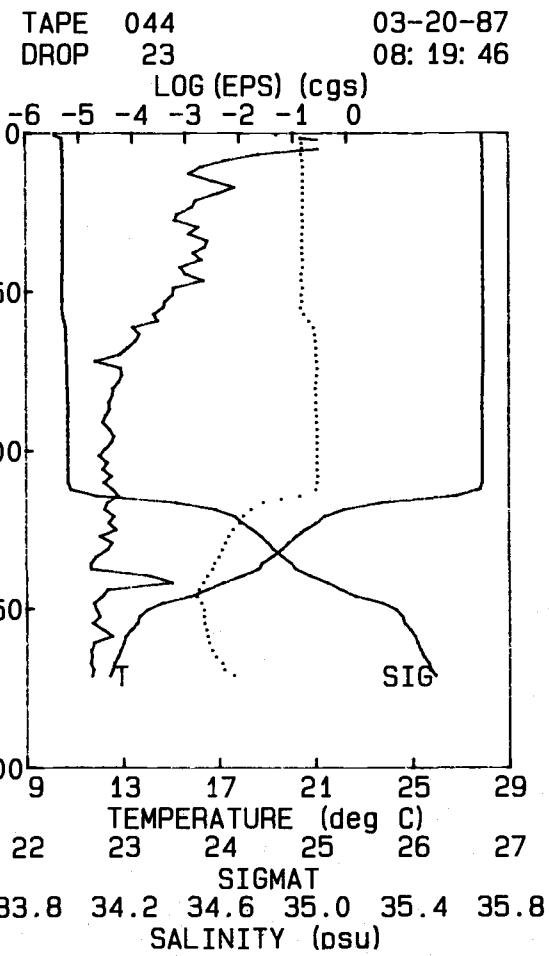
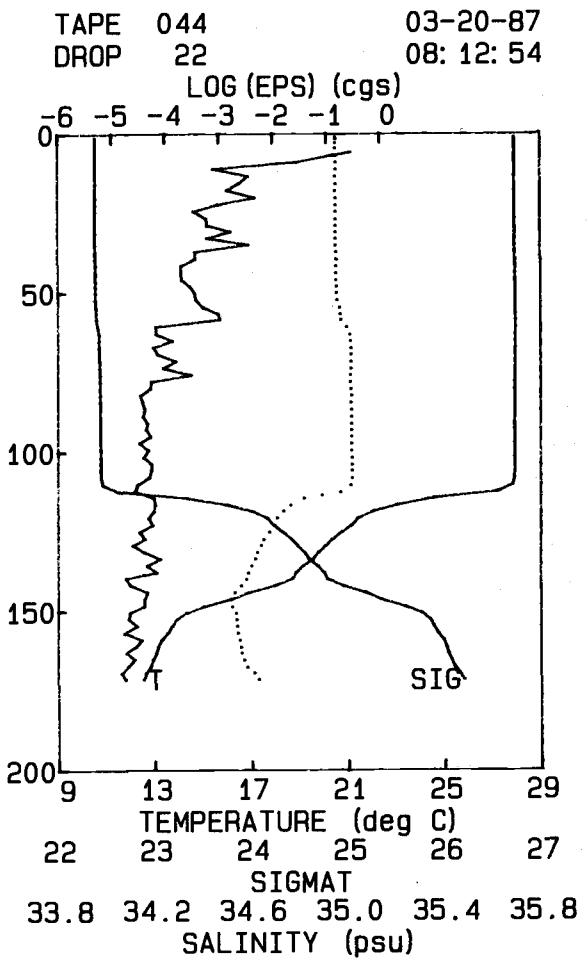
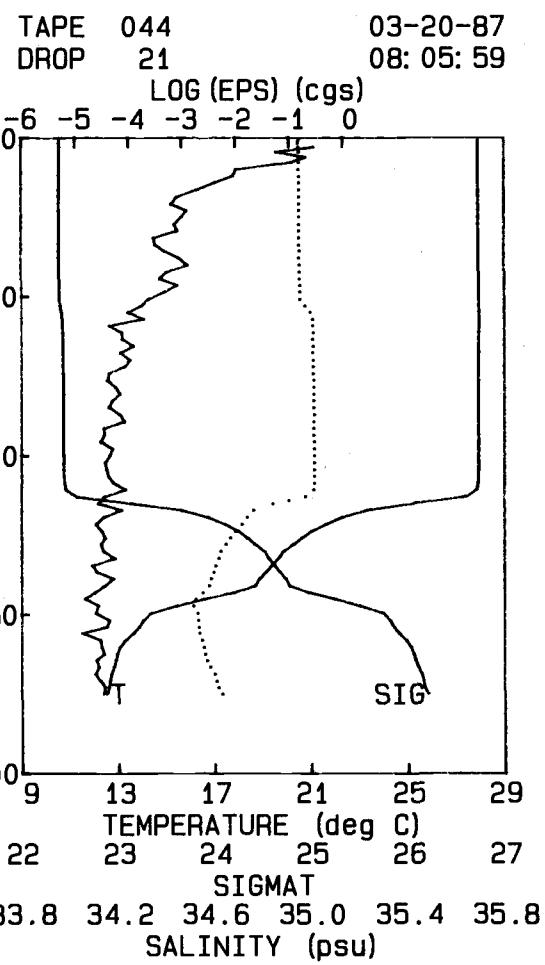


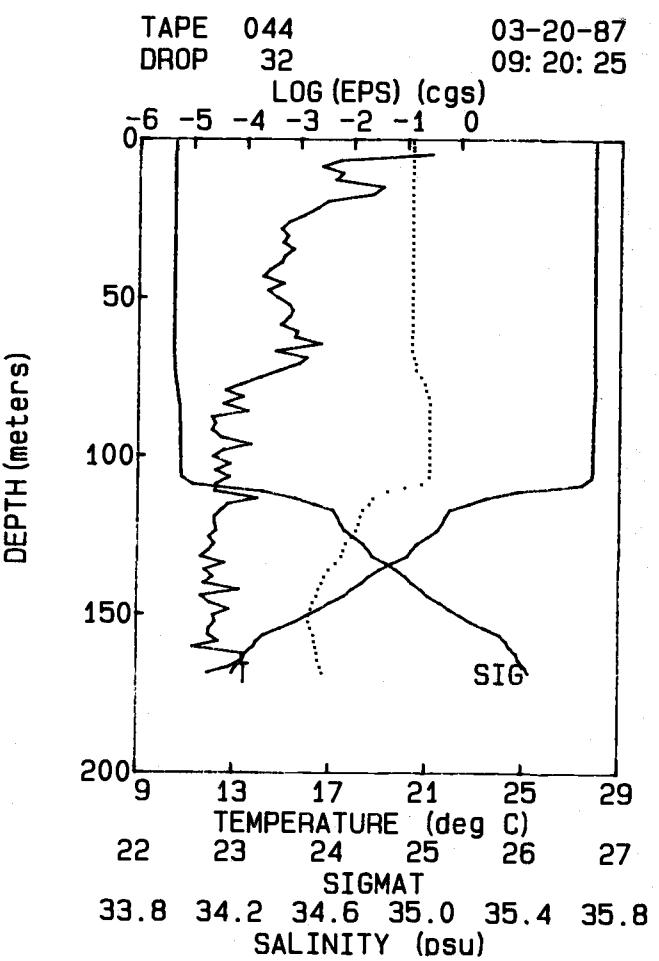
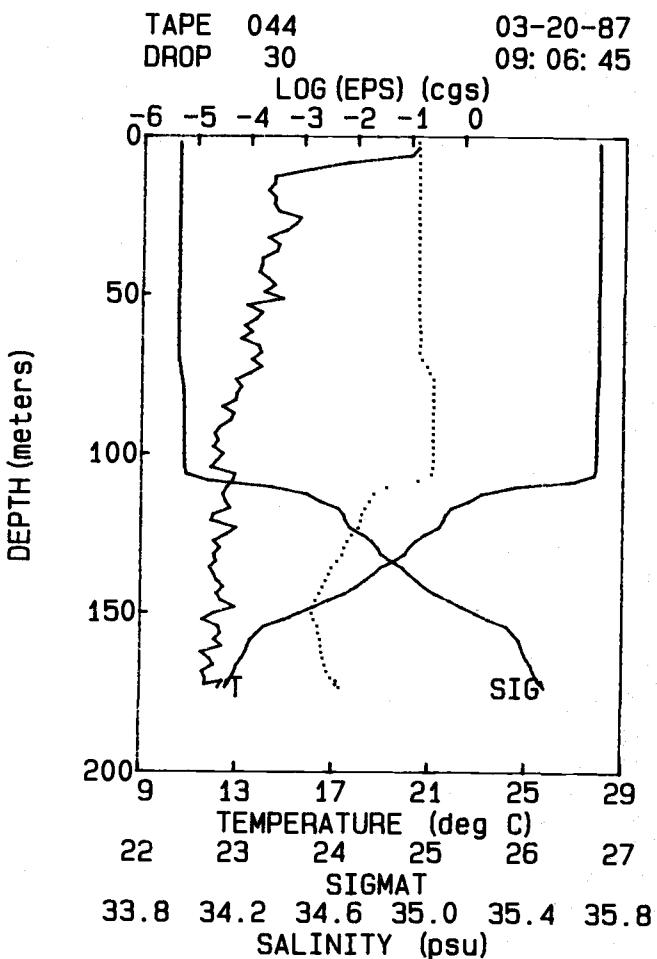
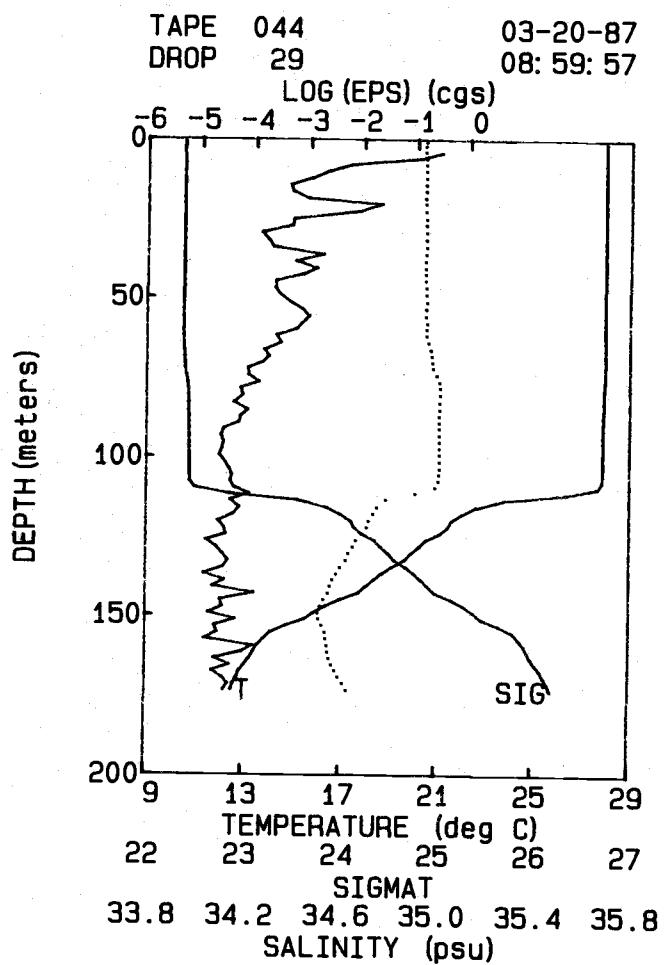
TAPE 043 03-20-87
DROP 48 04: 19: 06



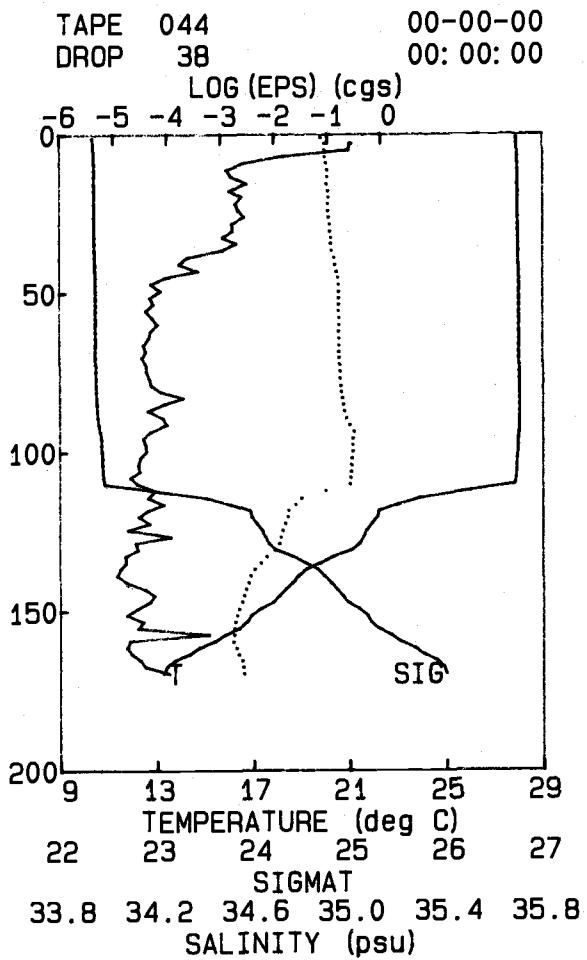
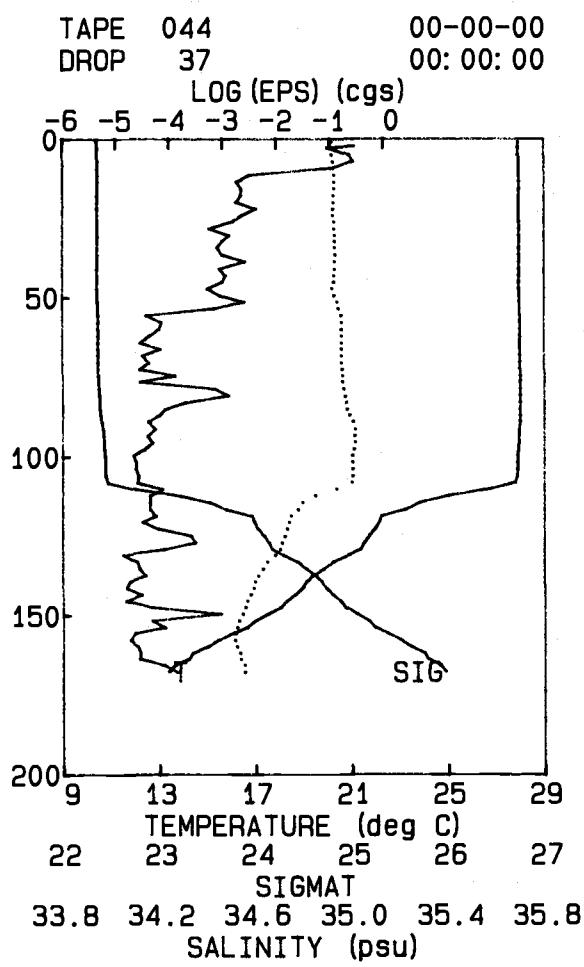




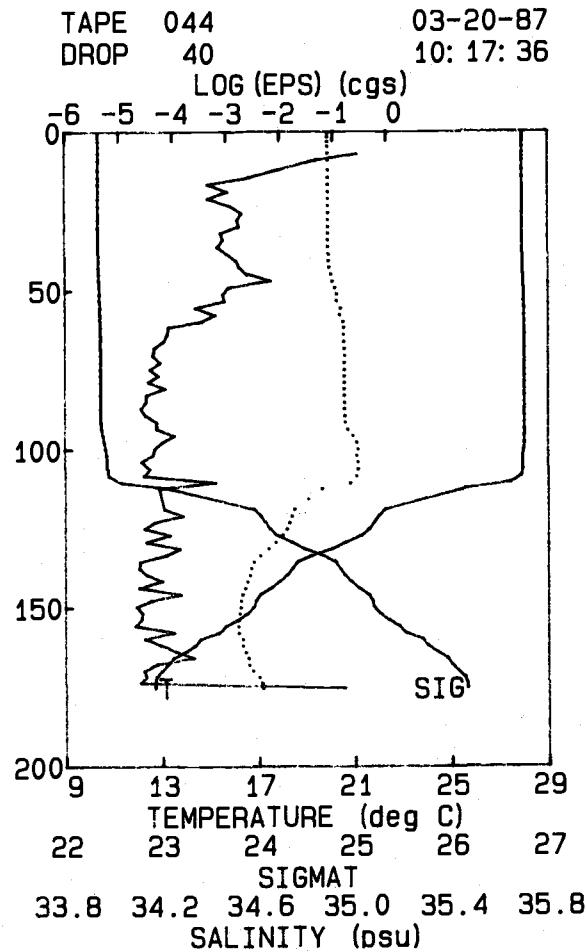
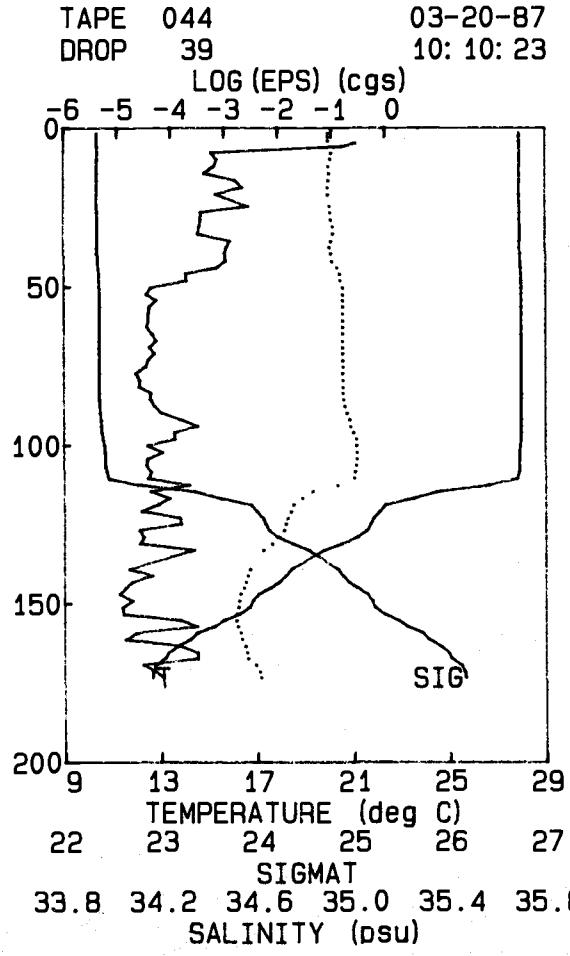


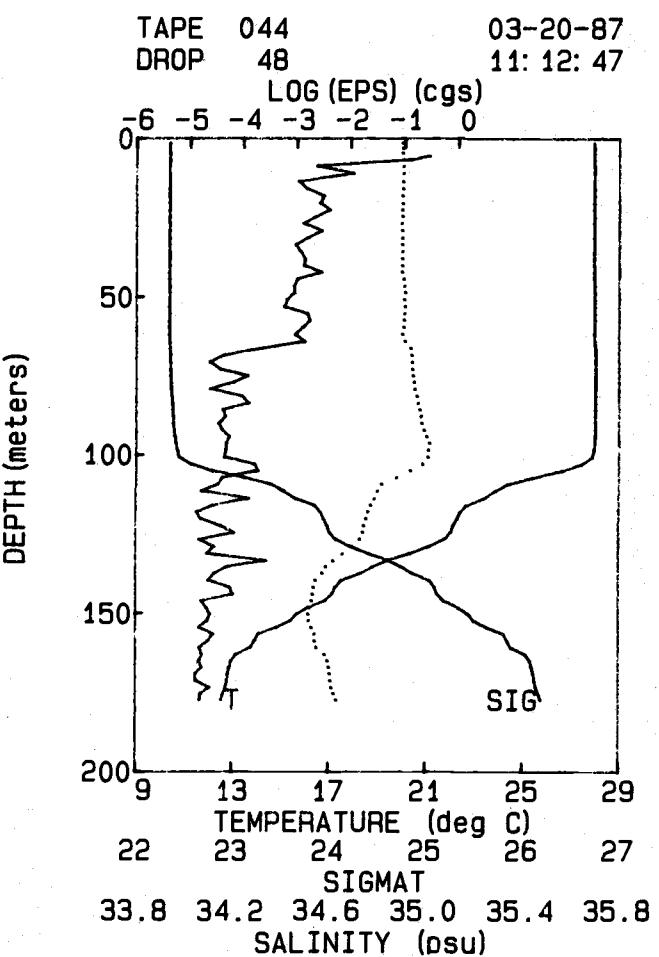
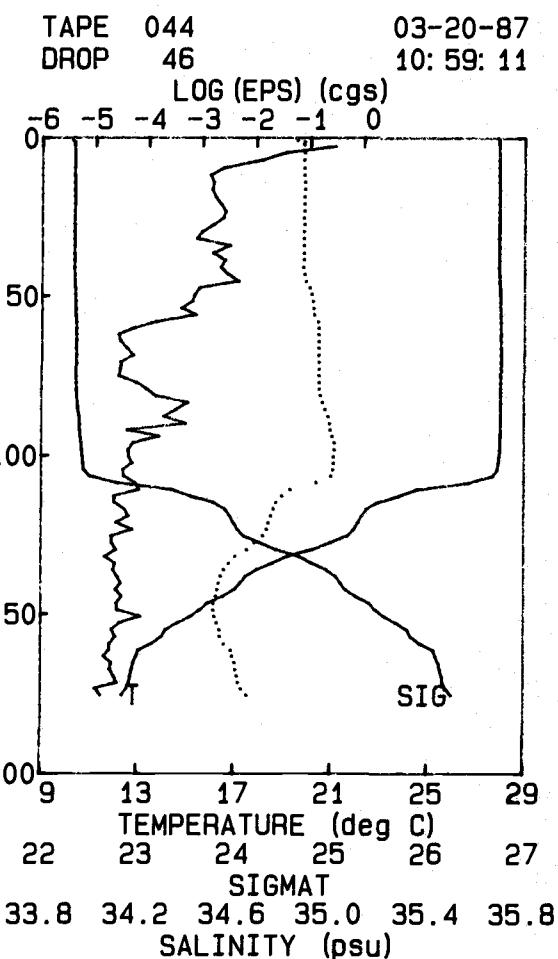
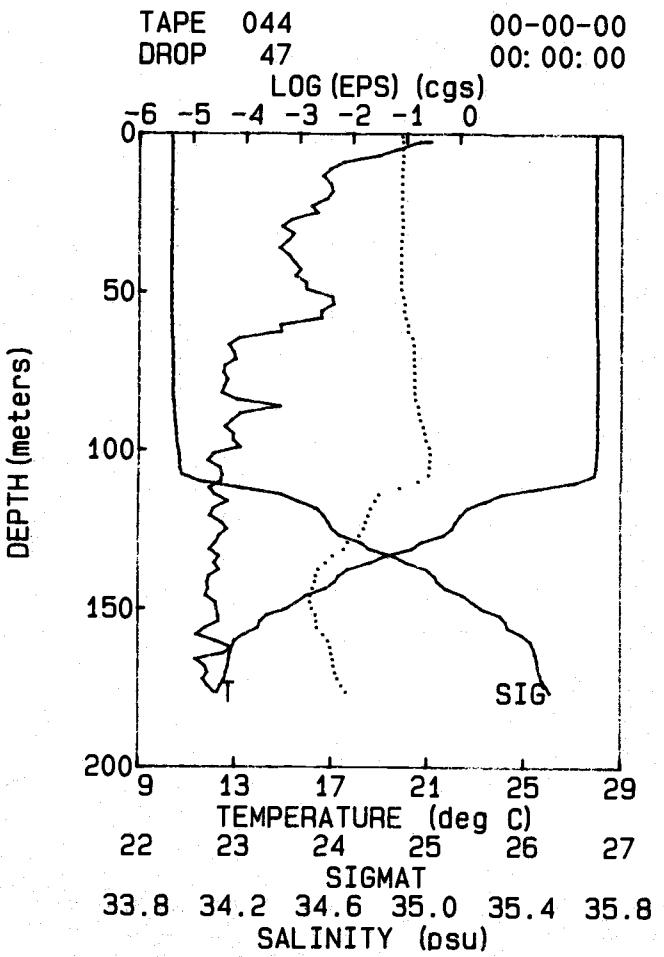
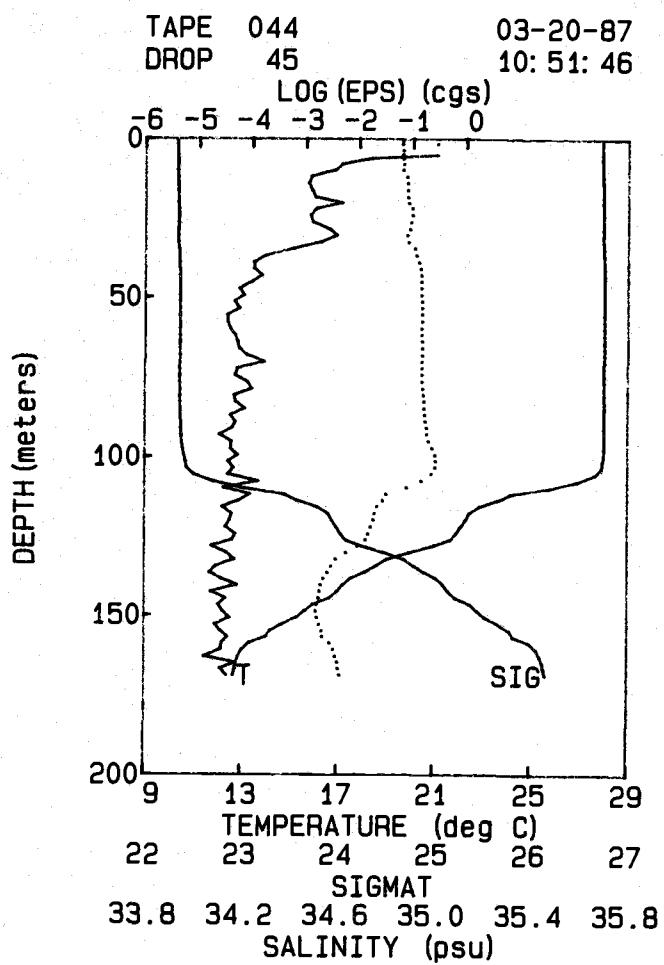


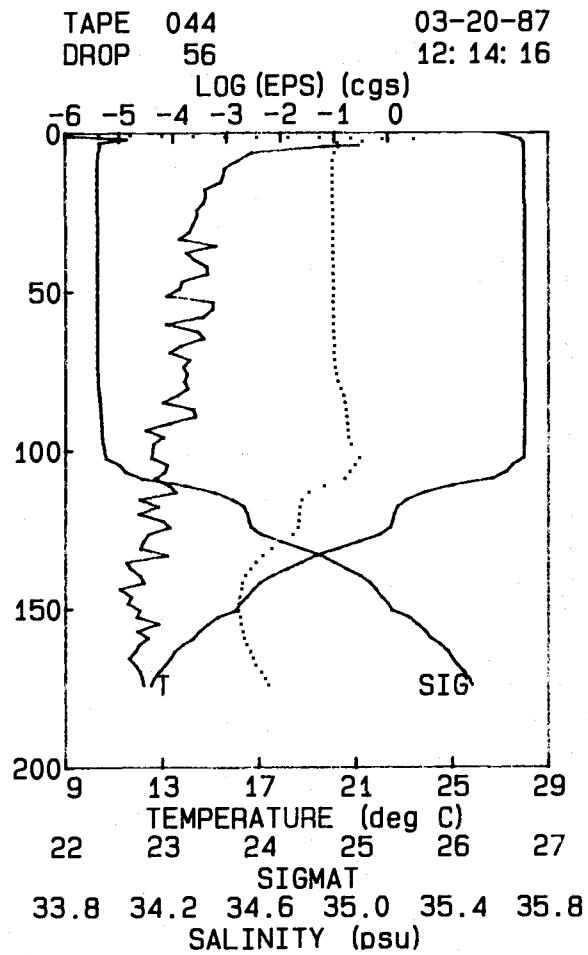
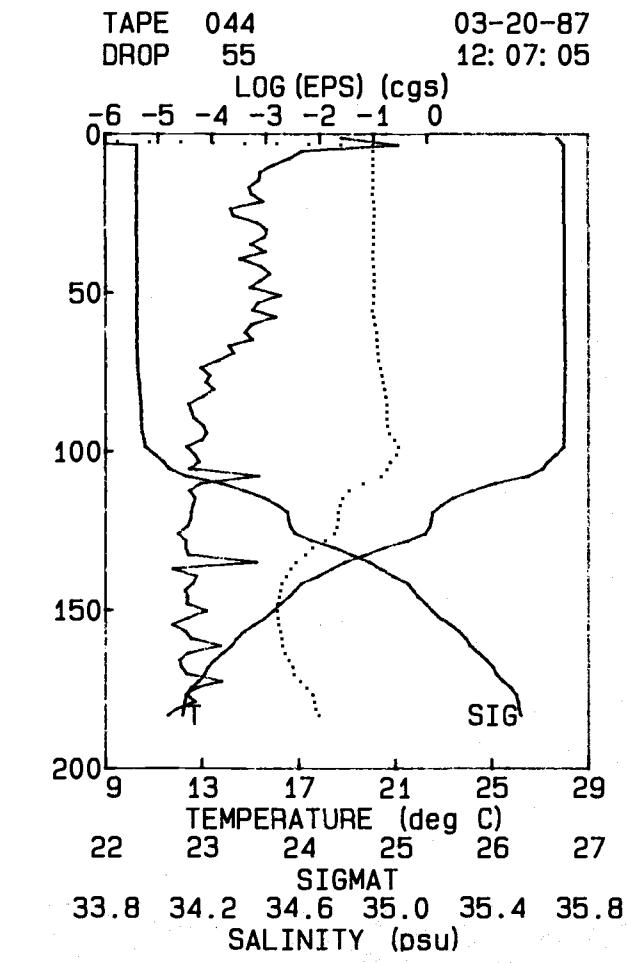
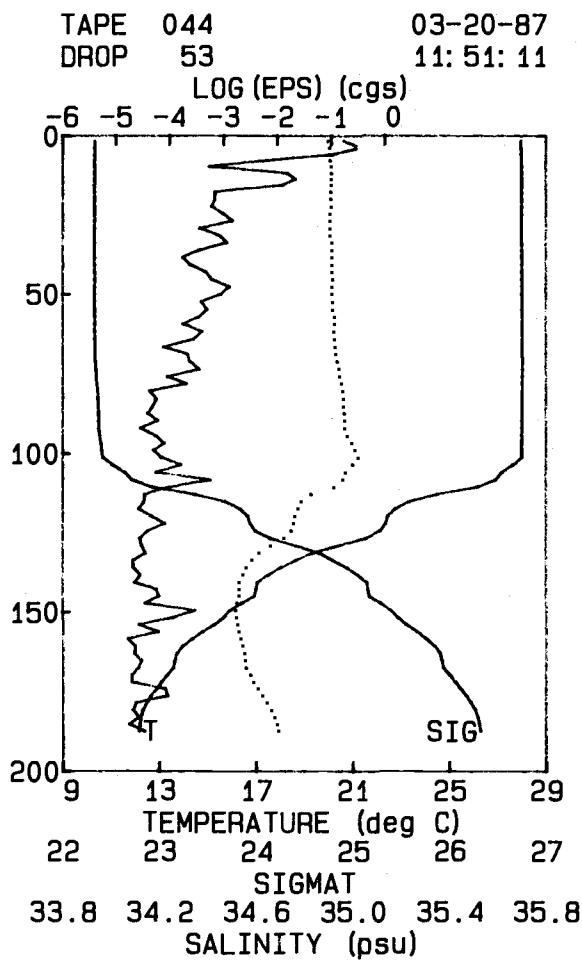
DEPTH (meters)



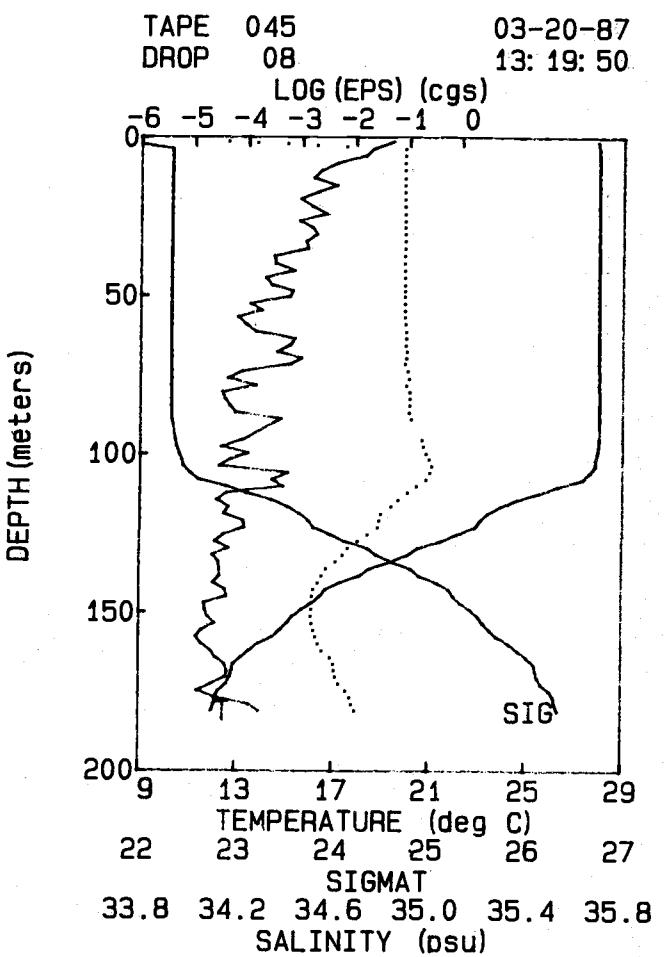
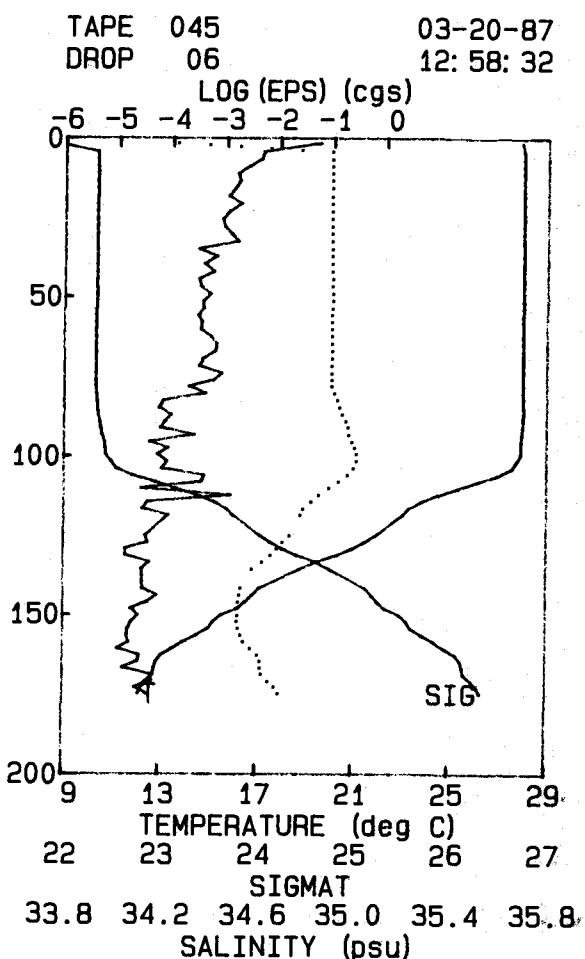
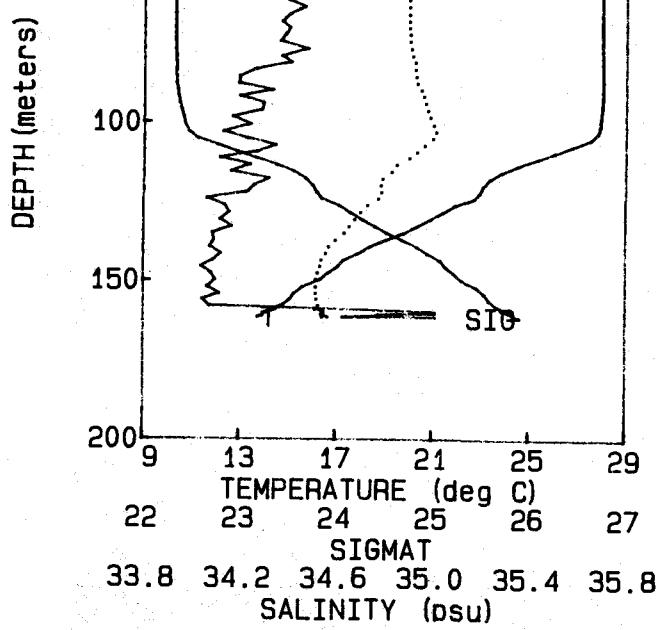
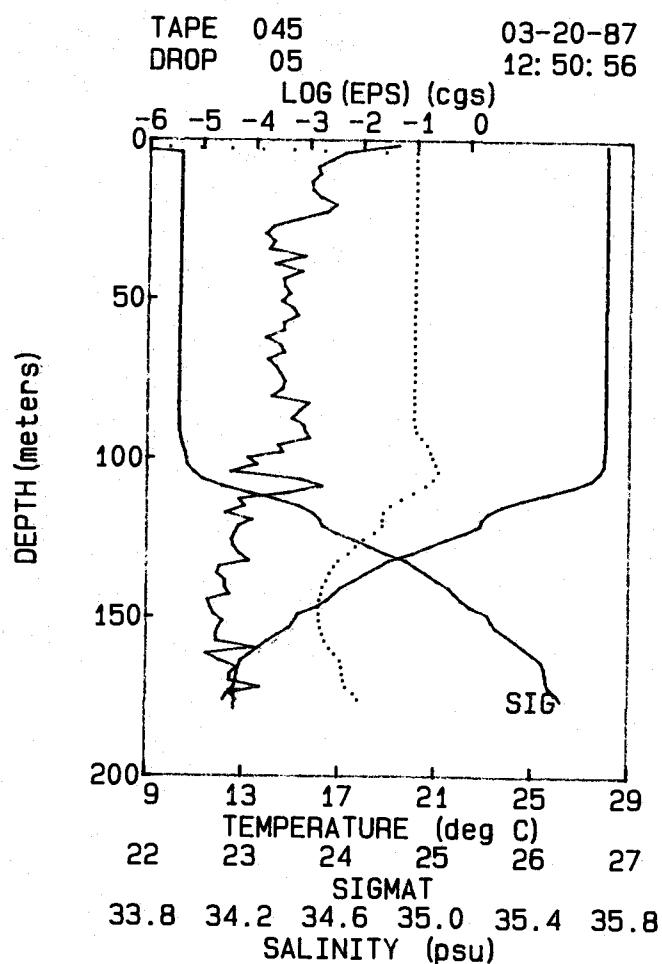
DEPTH (meters)

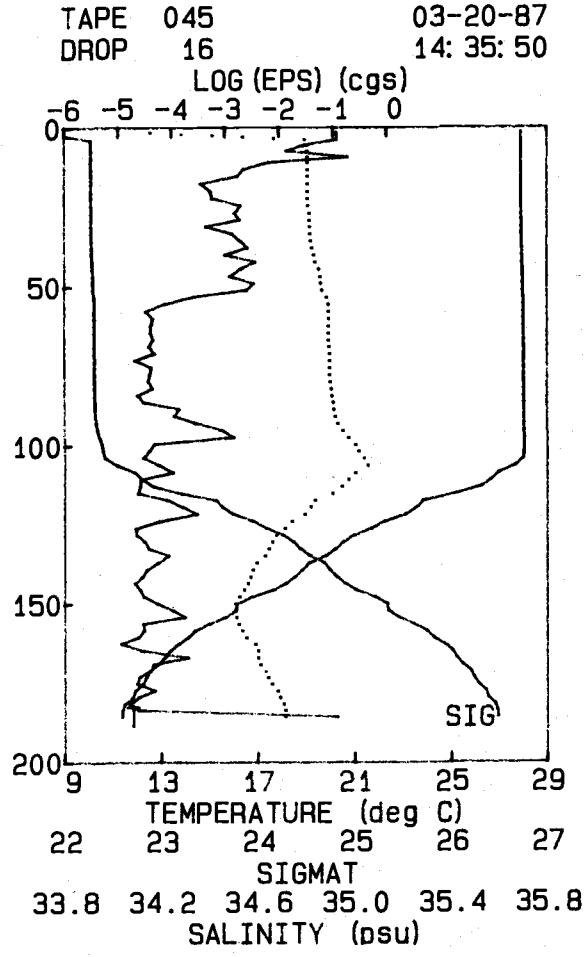
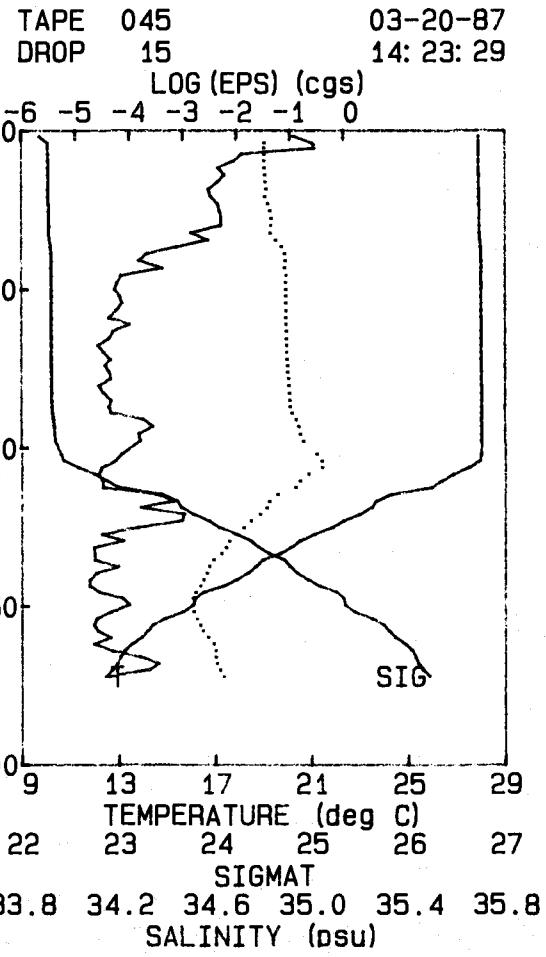
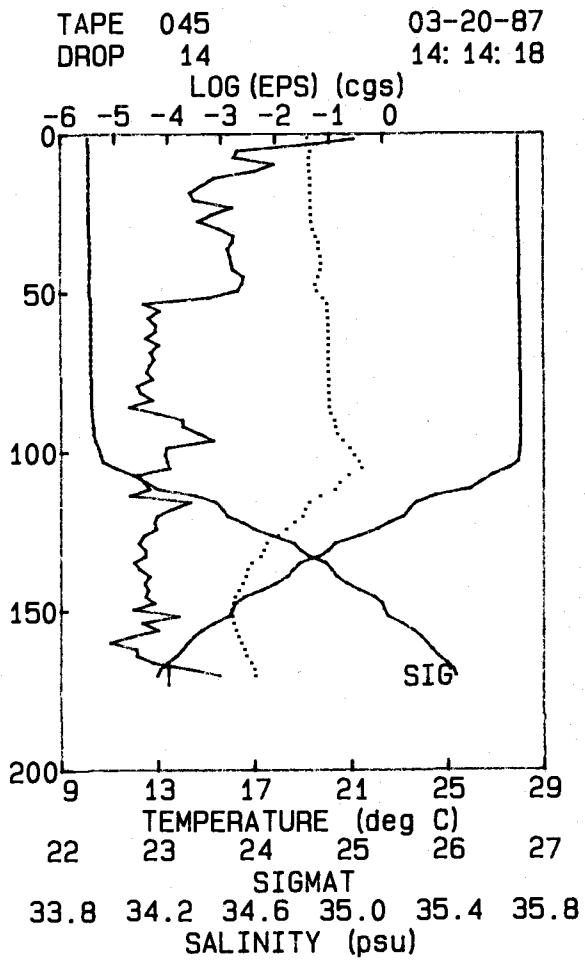
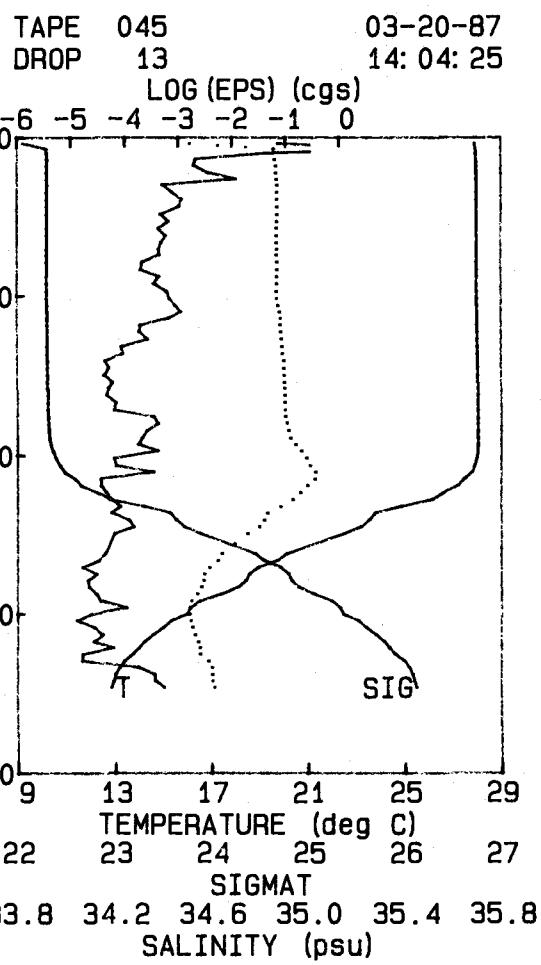


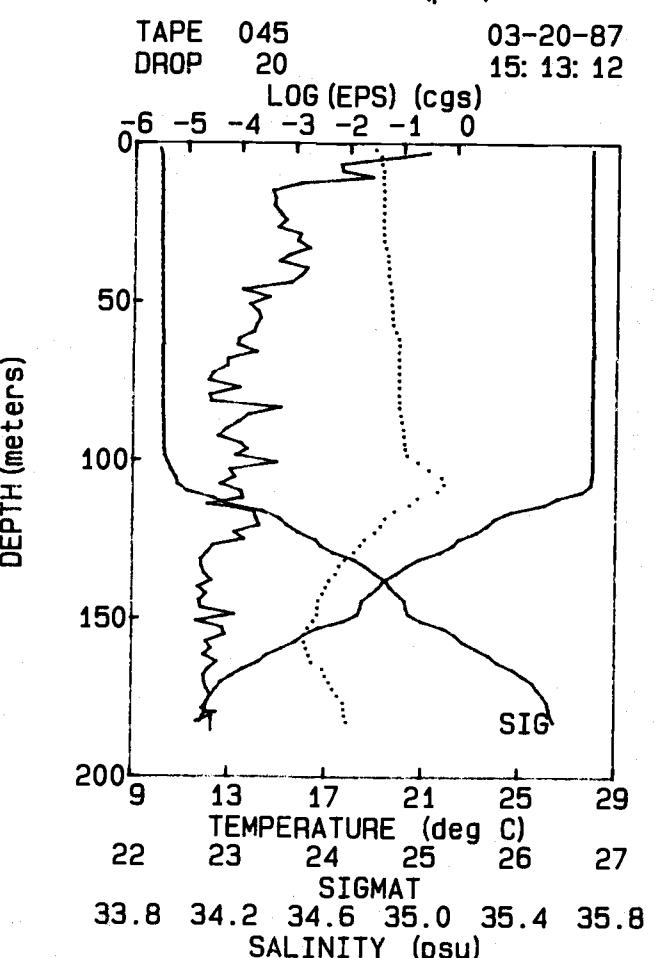
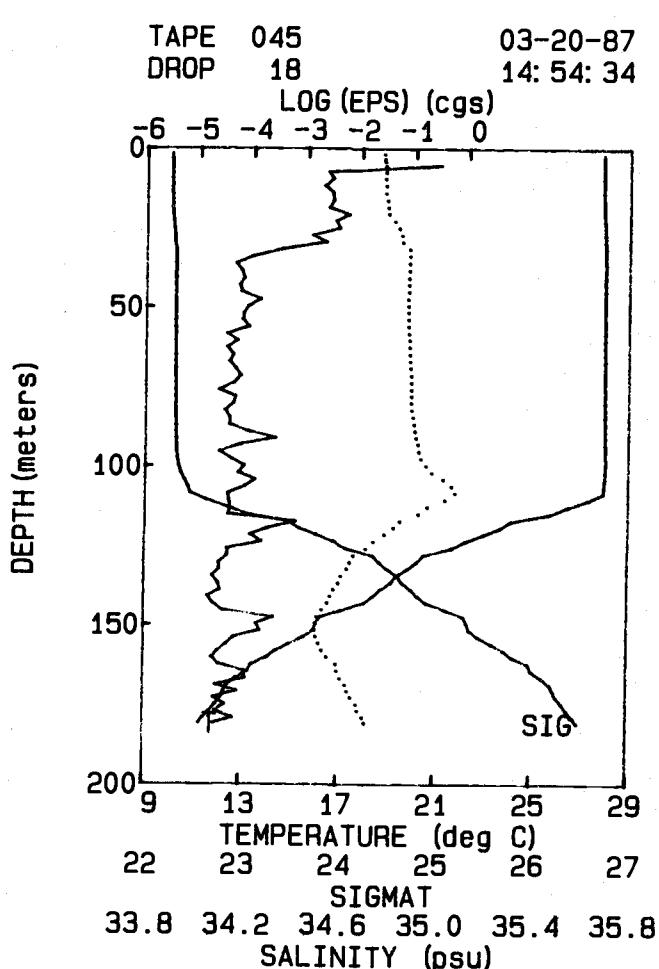
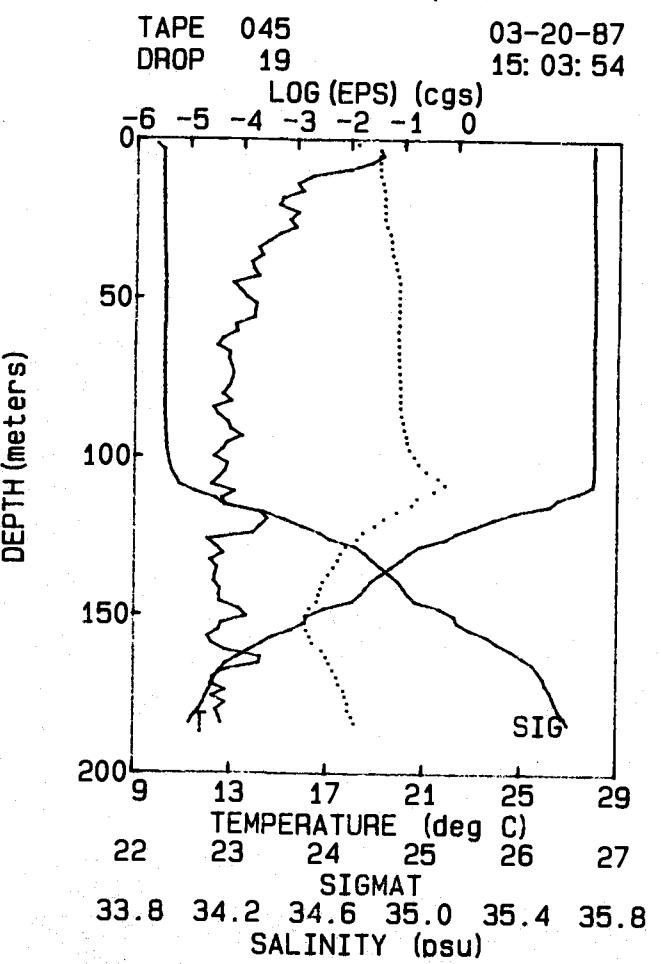
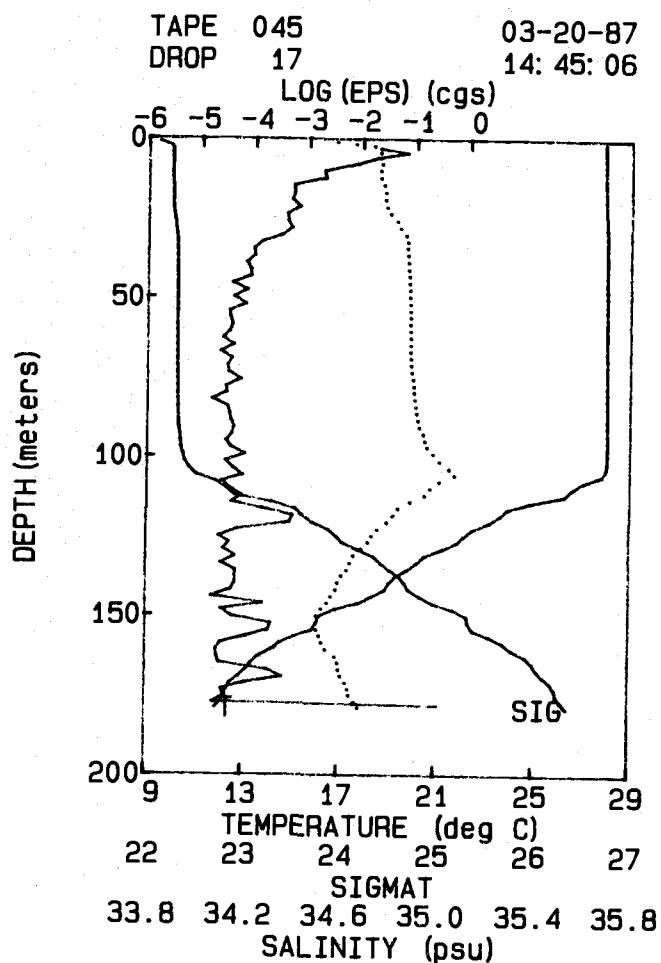




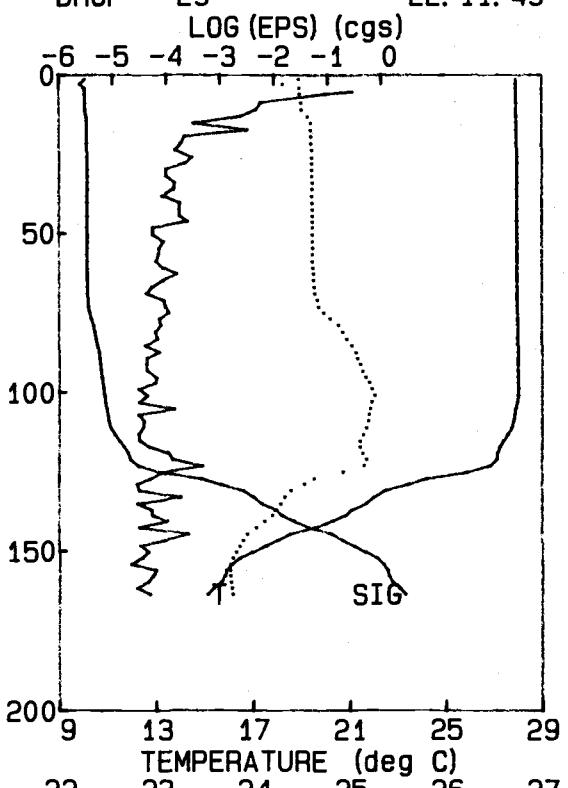
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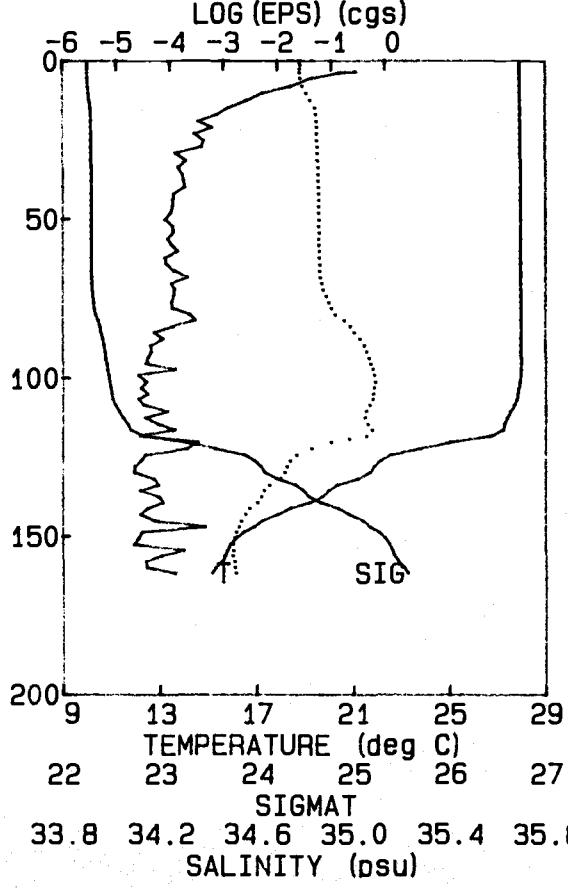




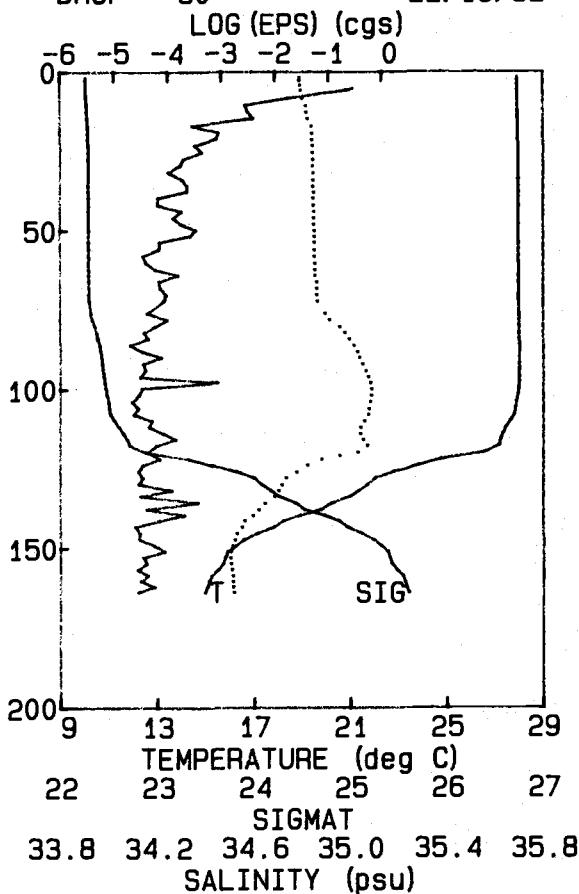
TAPE 045 03-20-87
DROP 29 22: 11: 49



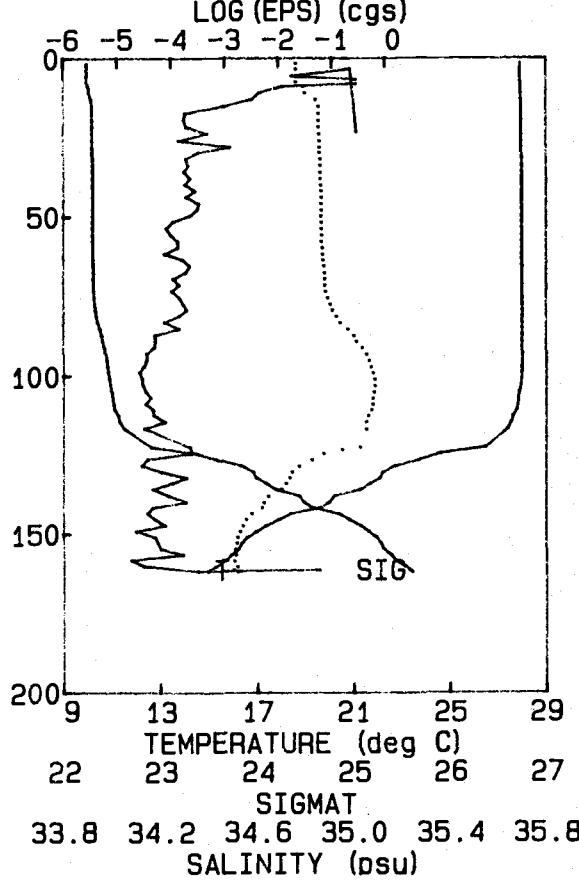
TAPE 045 03-20-87
DROP 31 22: 26: 33

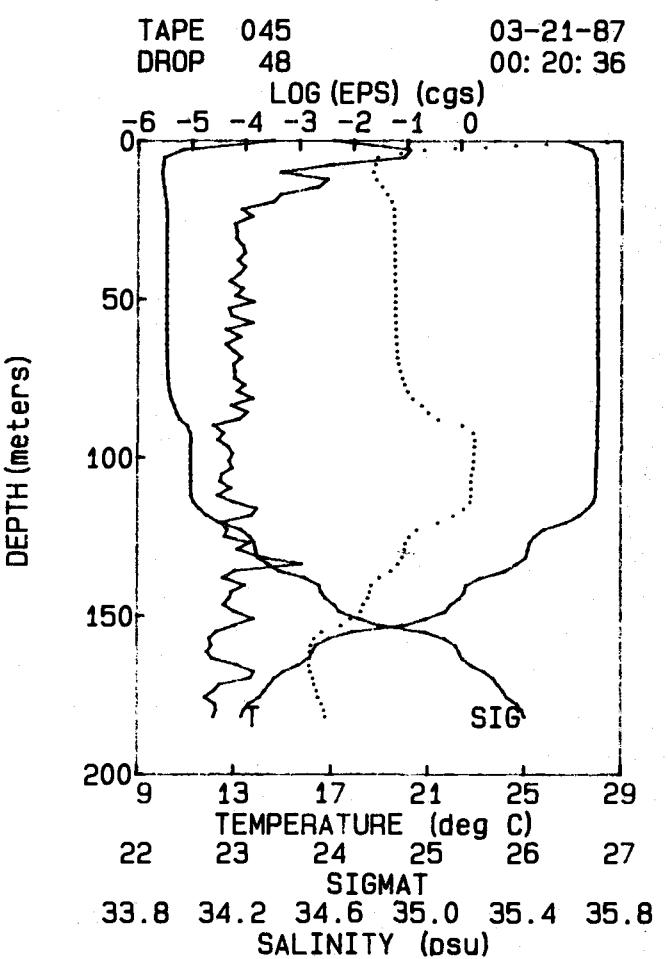
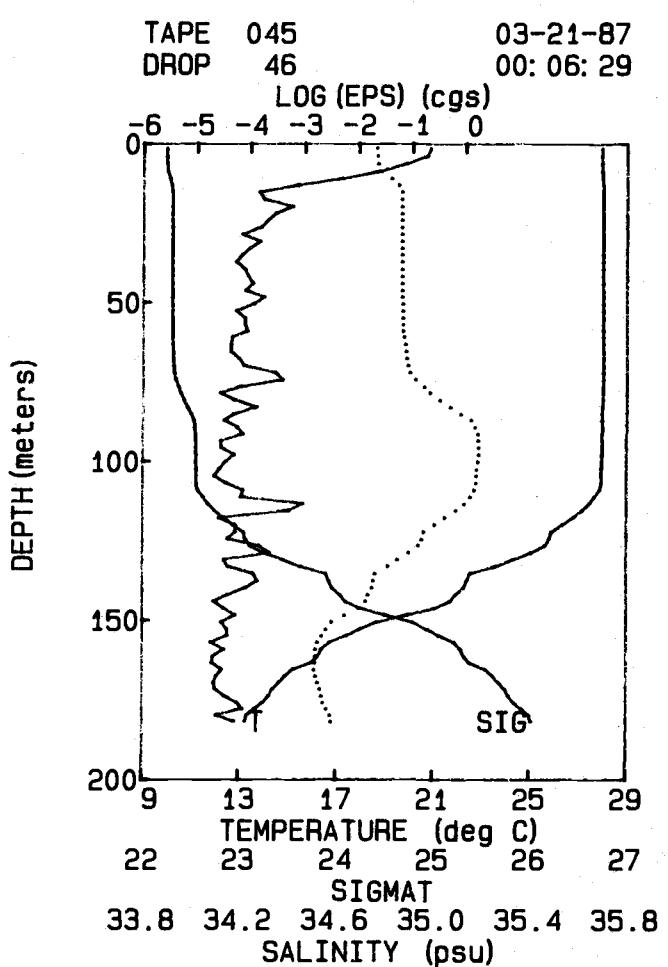
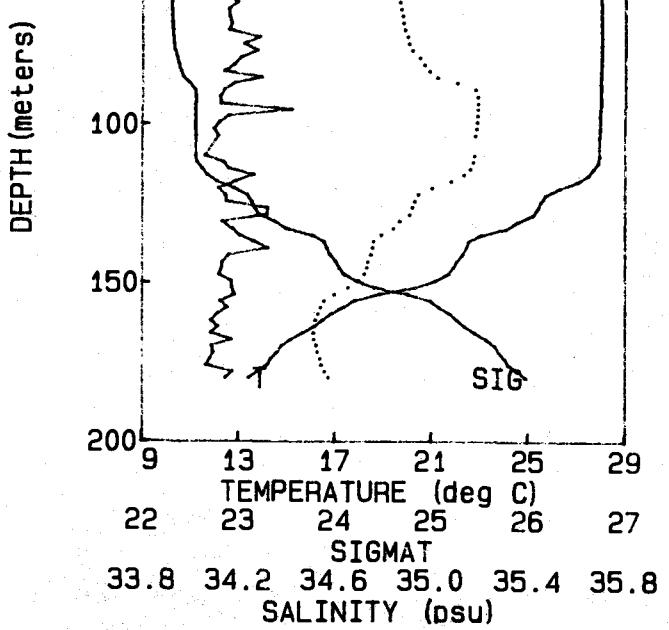
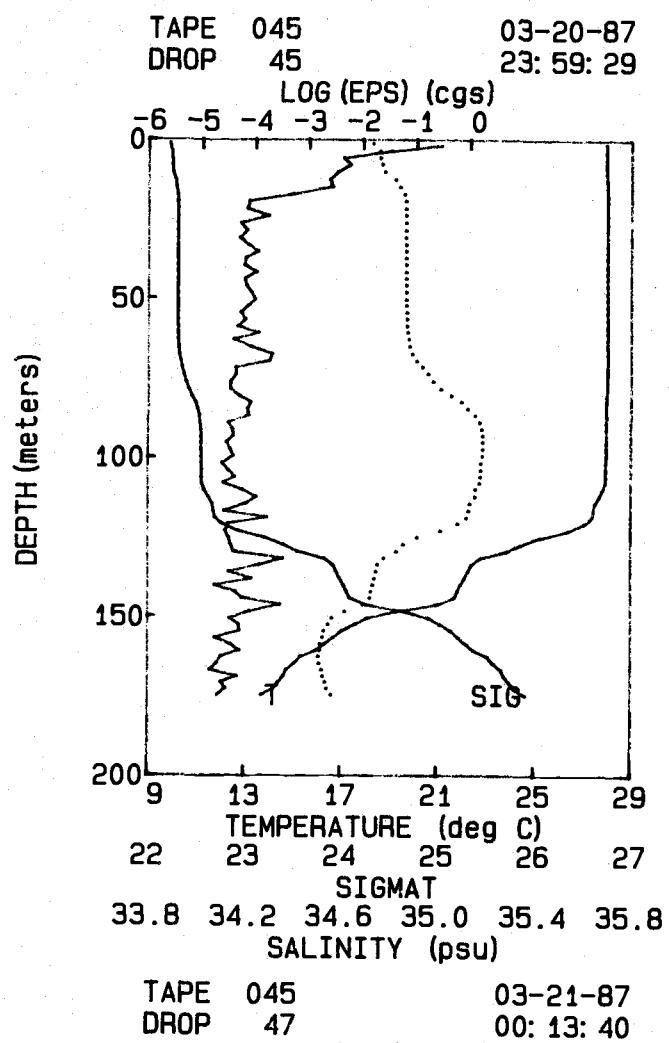


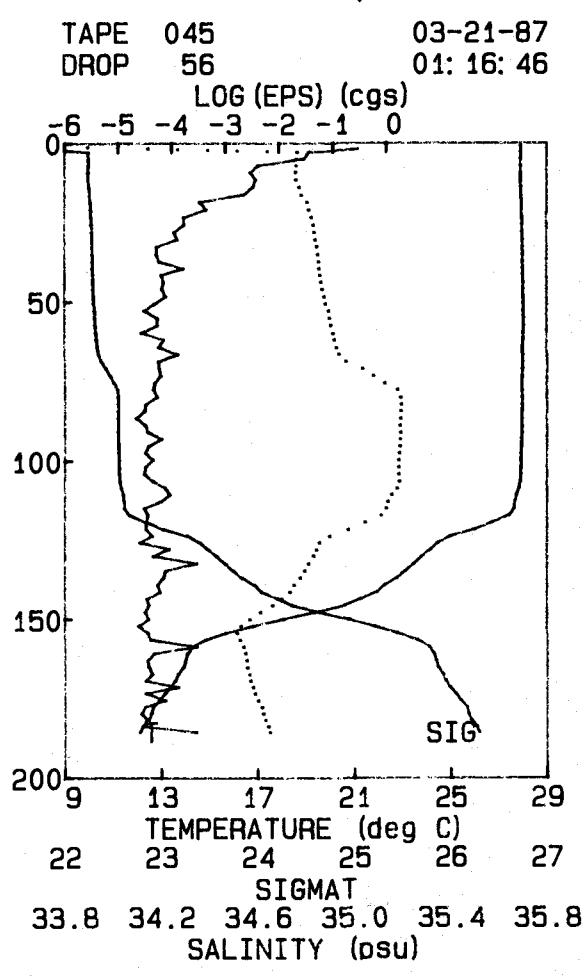
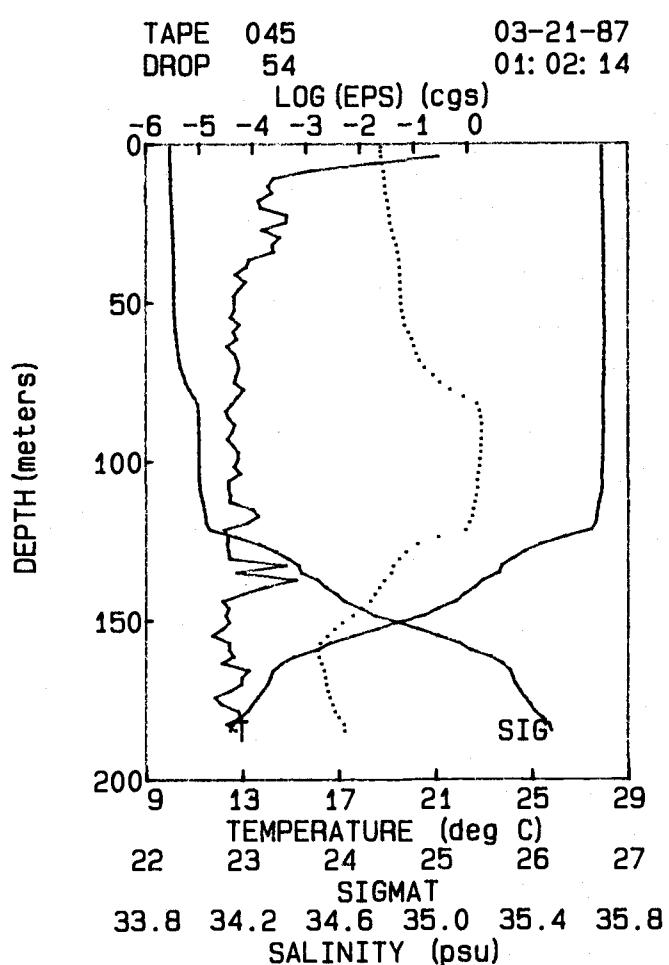
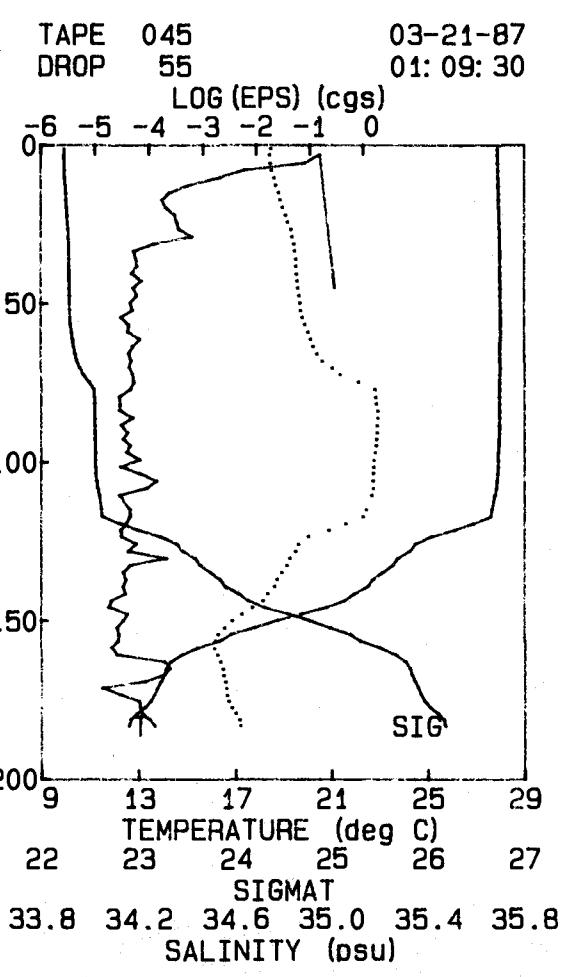
TAPE 045 03-20-87
DROP 30 22: 19: 32

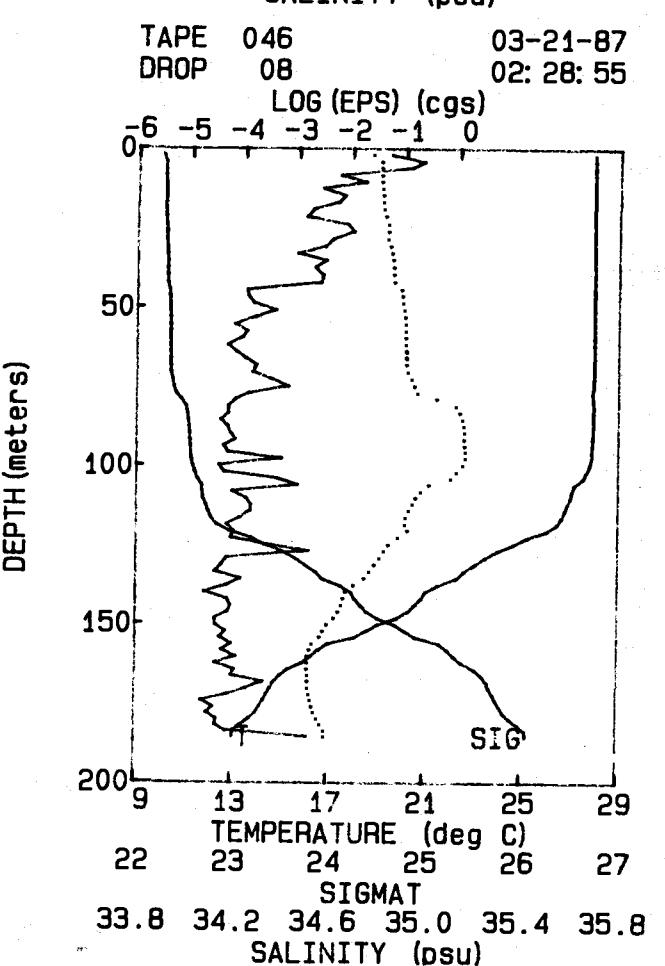
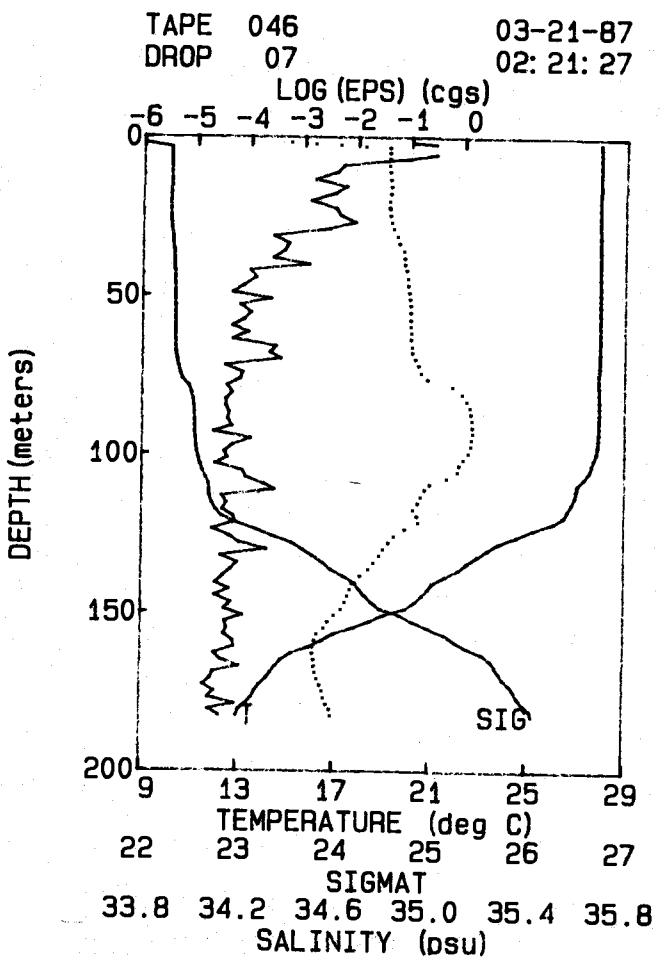
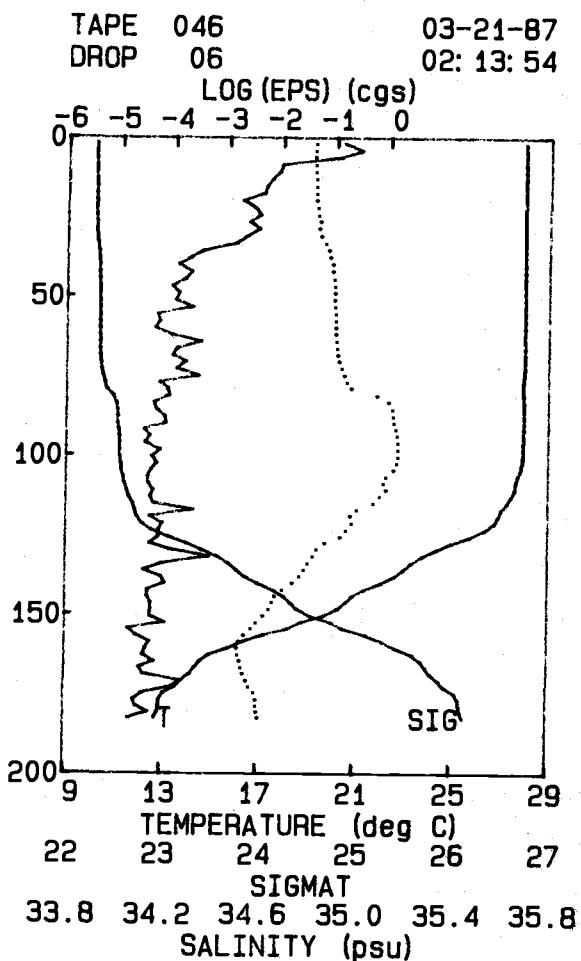
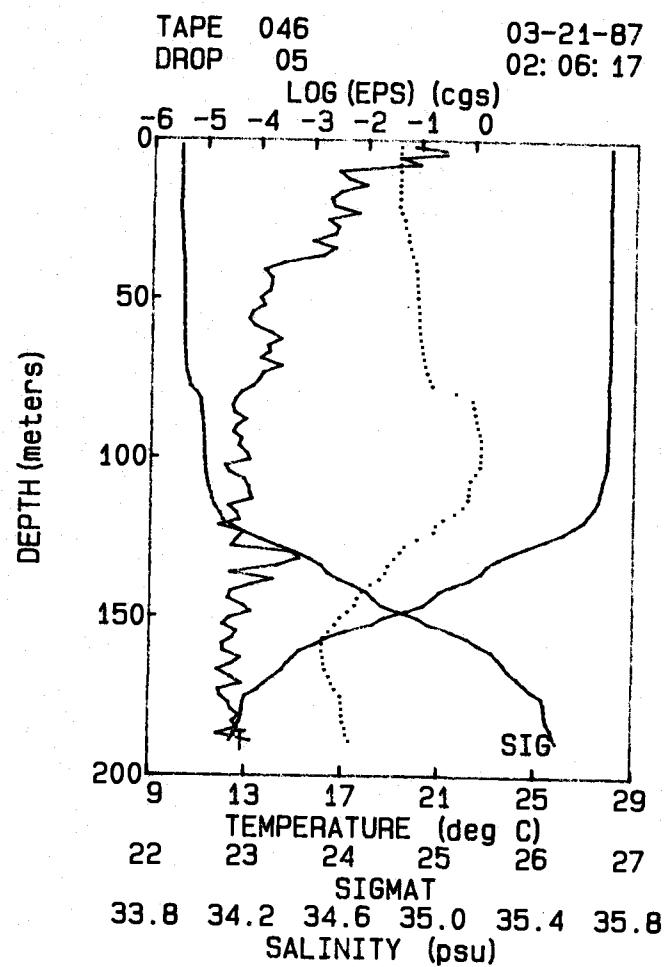


TAPE 045 03-20-87
DROP 32 22: 33: 38



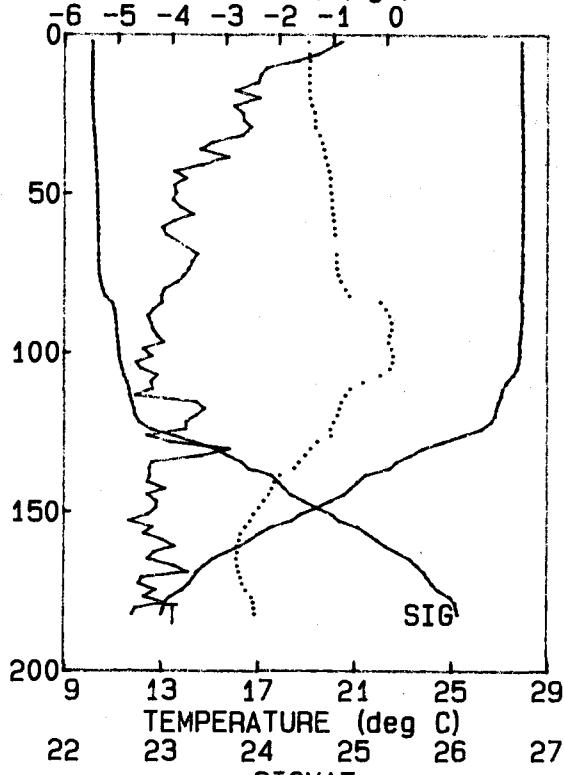






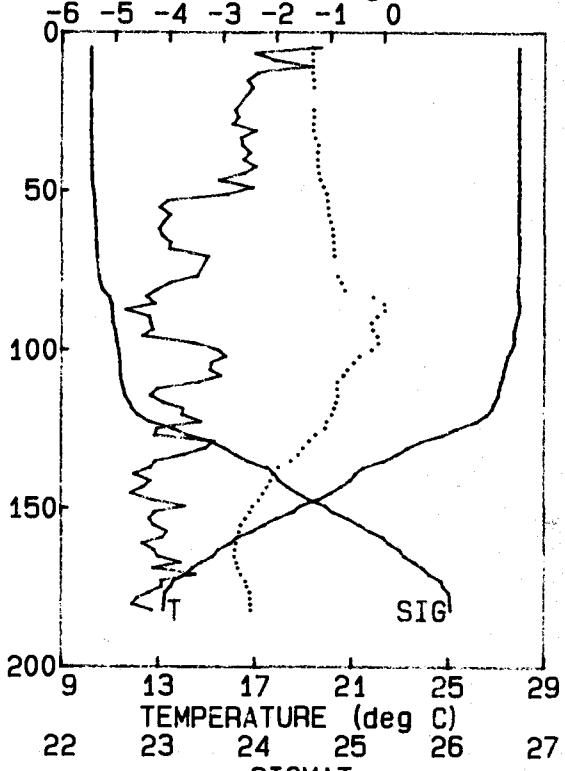
TAPE 046 00-00-00
DROP 09 00: 00: 00

LOG (EPS) (cgs)



TAPE 046 03-21-87
DROP 11 02: 51: 42

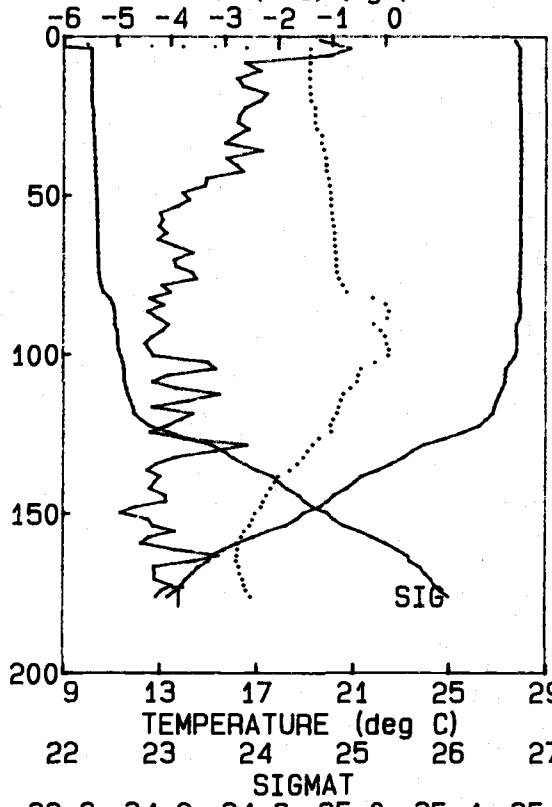
LOG (EPS) (cgs)



SIGMAT
33.8 34.2 34.6 35.0 35.4 35.8
SALINITY (psu)

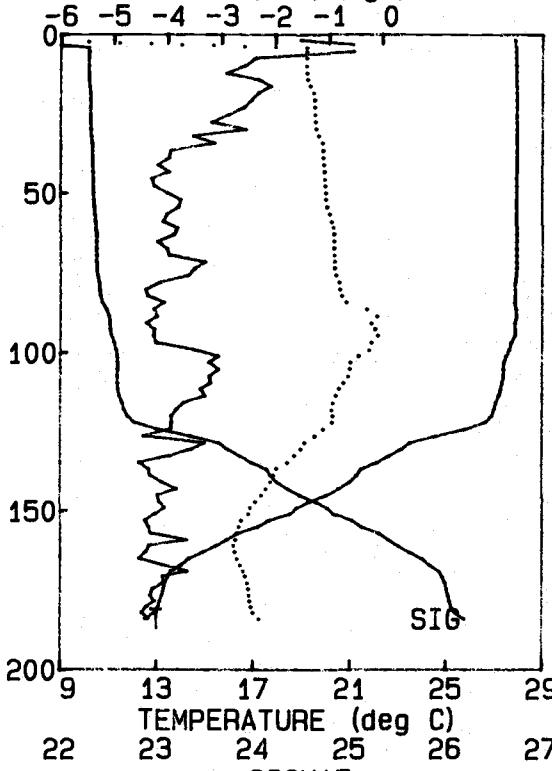
TAPE 046 03-21-87
DROP 10 02: 43: 45

LOG (EPS) (cgs)



TAPE 046 00-00-00
DROP 12 00: 00: 00

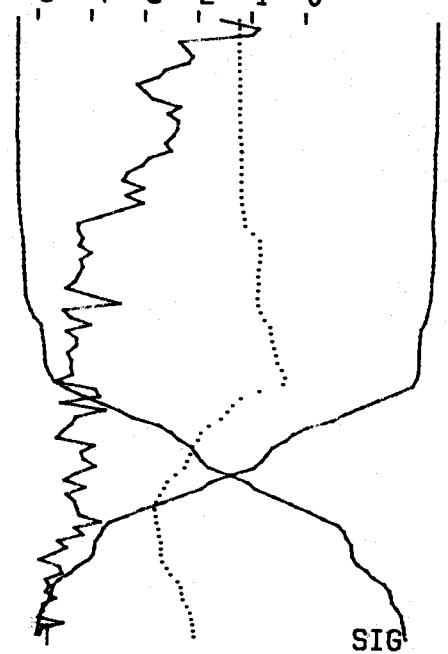
LOG (EPS) (cgs)



SIGMAT
33.8 34.2 34.6 35.0 35.4 35.8
SALINITY (psu)

TAPE 046
DROP 25 00-00-00
00: 00: 00

LOG (EPS) (cgs)
-6 -5 -4 -3 -2 -1 0

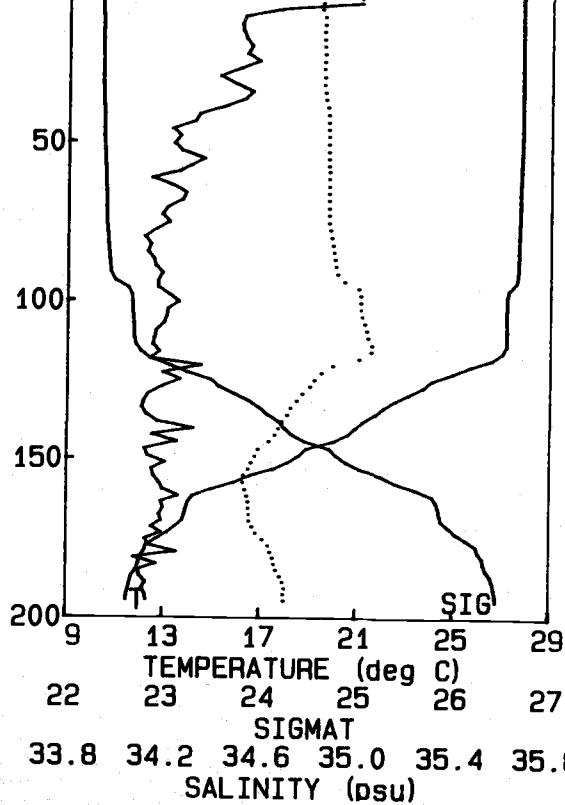


TEMPERATURE (deg C)
22 23 24 25 26 27
SIGMAT
33.8 34.2 34.6 35.0 35.4 35.8
SALINITY (psu)

TAPE 046 03-21-87
DROP 27 04: 53: 33

LOG (EPS) (cgs)
-6 -5 -4 -3 -2 -1 0

DEPTH (meters)

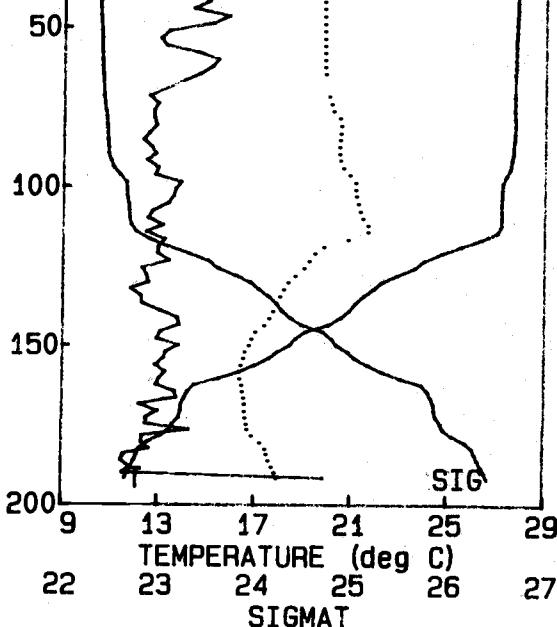


TEMPERATURE (deg C)
22 23 24 25 26 27
SIGMAT
33.8 34.2 34.6 35.0 35.4 35.8
SALINITY (psu)

TAPE 046
DROP 26 00-00-00
00: 00: 00

LOG (EPS) (cgs)
-6 -5 -4 -3 -2 -1 0

DEPTH (meters)

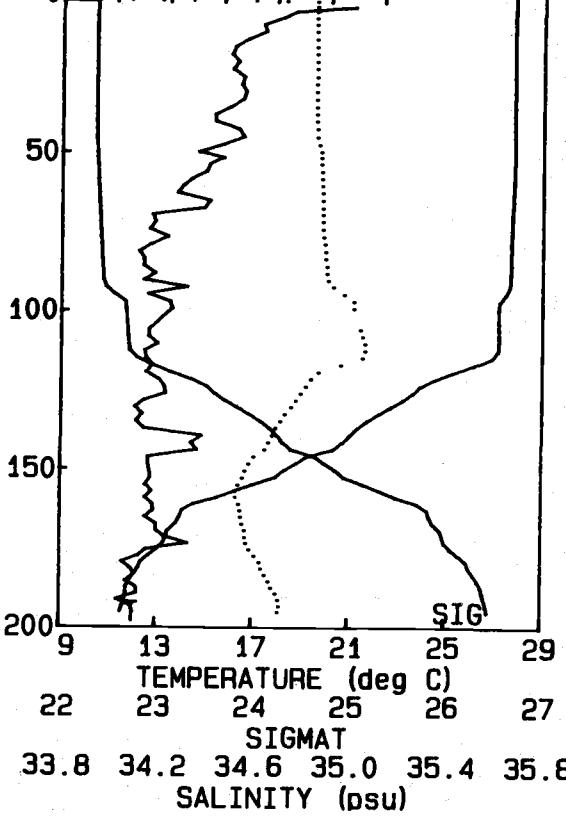


TEMPERATURE (deg C)
22 23 24 25 26 27
SIGMAT
33.8 34.2 34.6 35.0 35.4 35.8
SALINITY (psu)

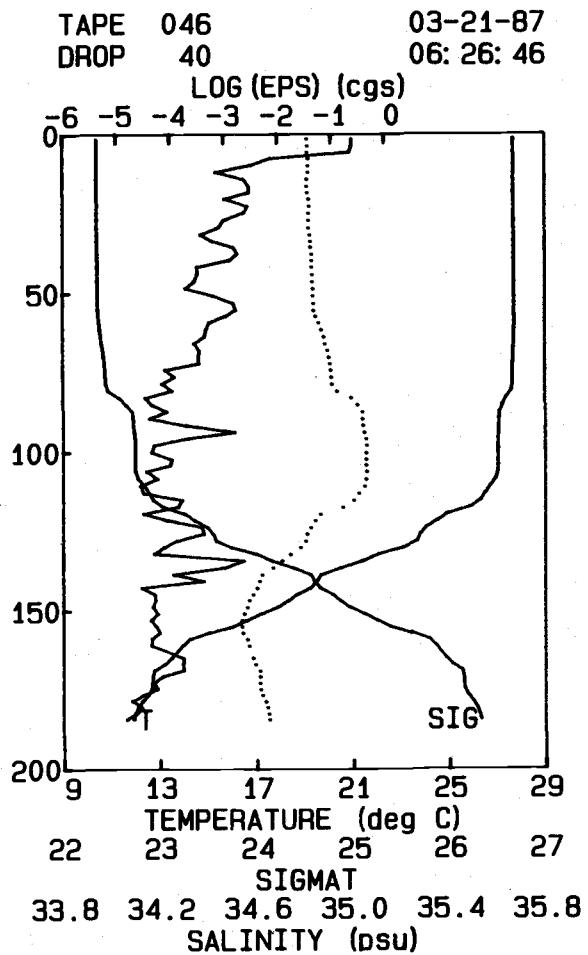
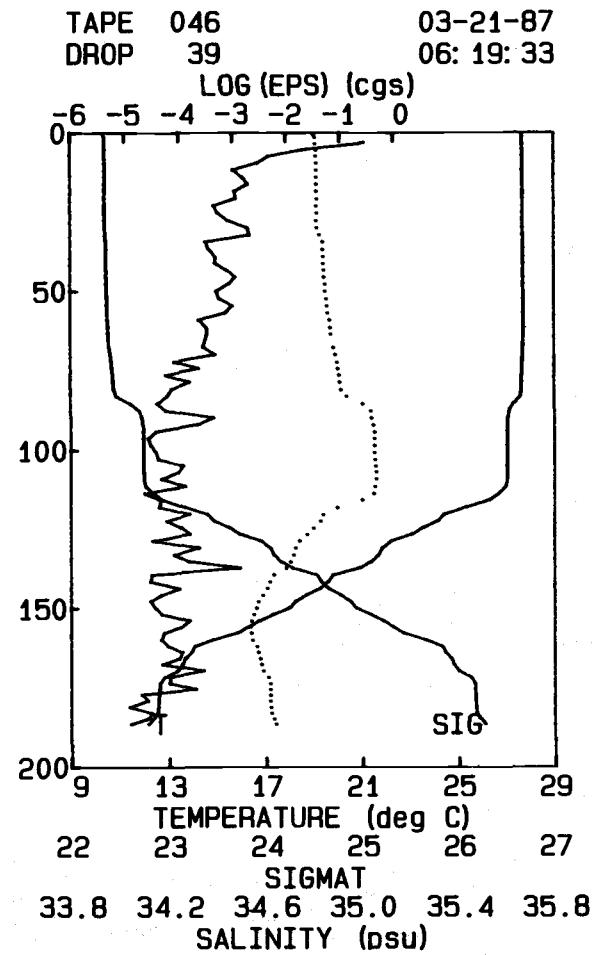
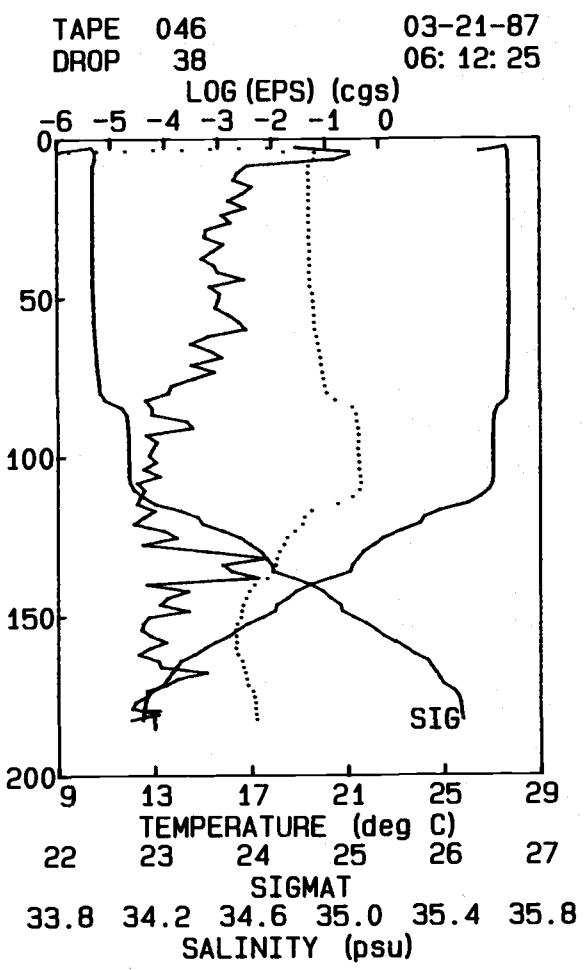
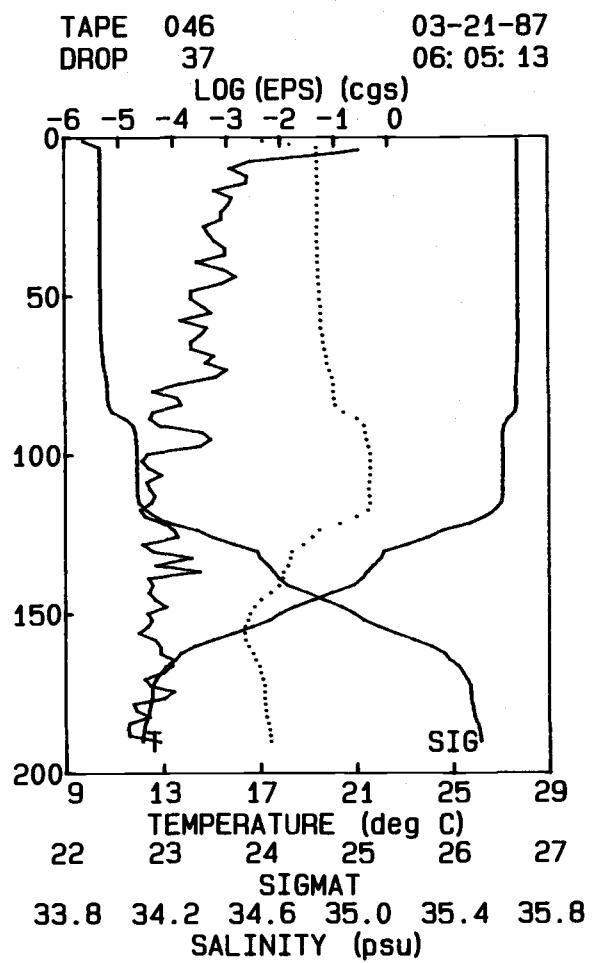
TAPE 046 03-21-87
DROP 28 05: 00: 53

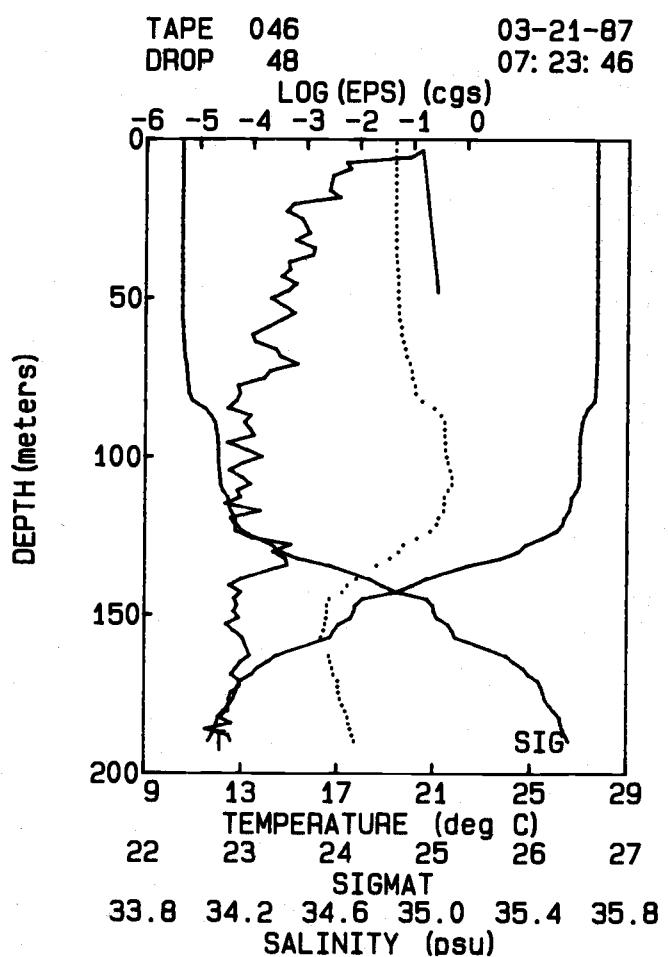
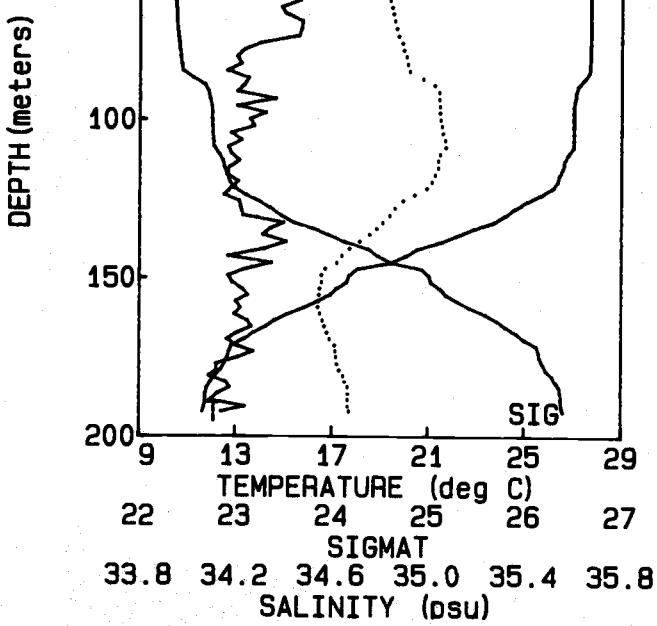
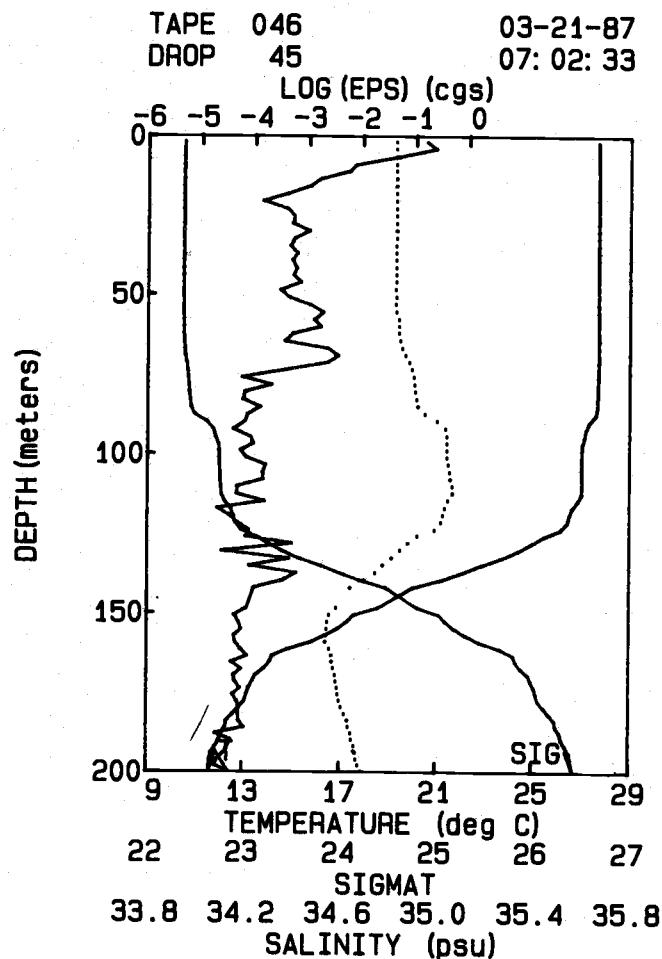
LOG (EPS) (cgs)
-6 -5 -4 -3 -2 -1 0

DEPTH (meters)

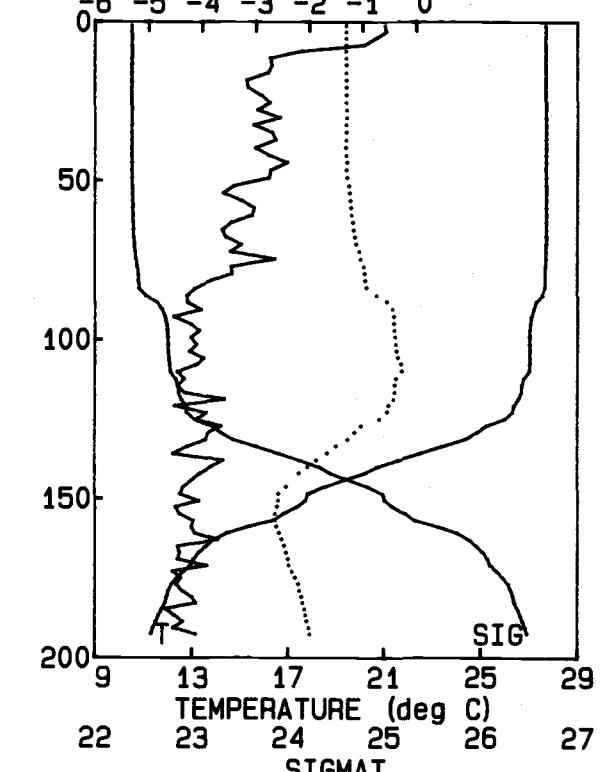


TEMPERATURE (deg C)
22 23 24 25 26 27
SIGMAT
33.8 34.2 34.6 35.0 35.4 35.8
SALINITY (psu)

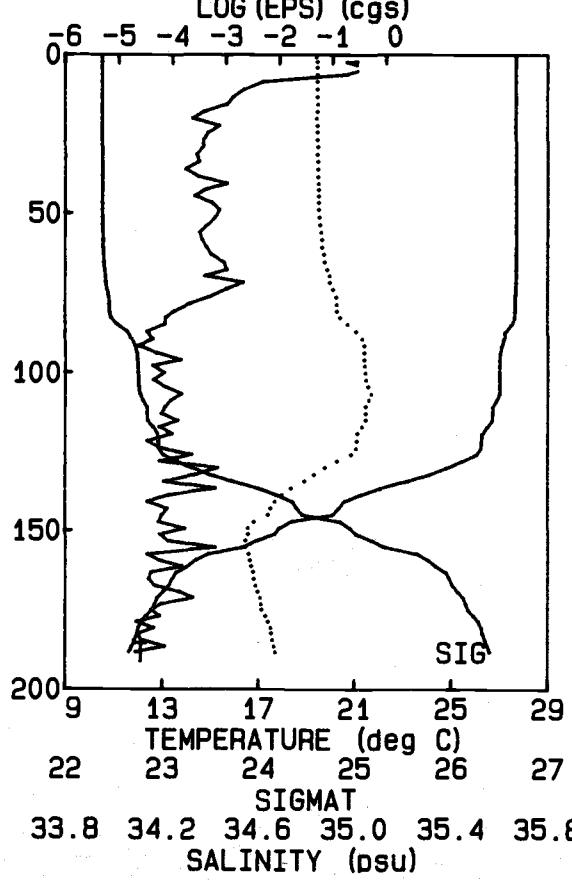




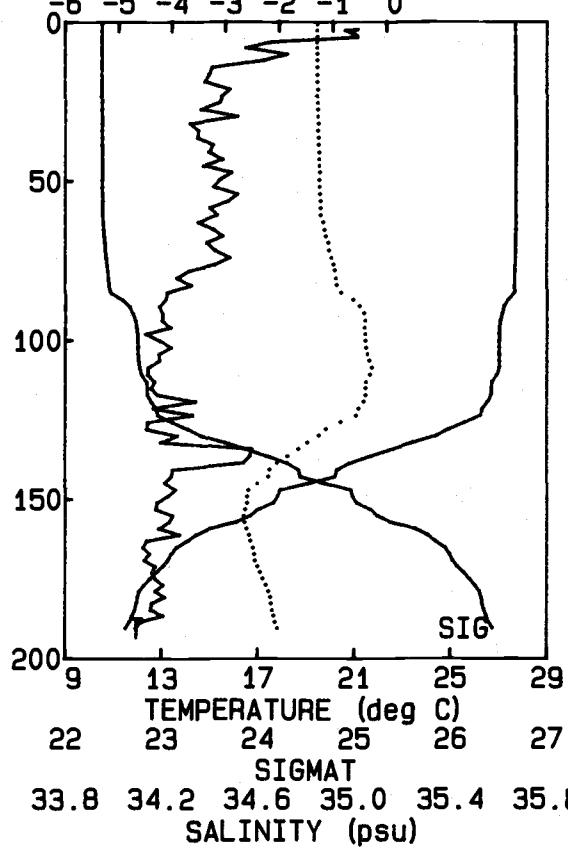
TAPE 046 03-21-87
 DROP 49 07: 30: 40
 LOG (EPS) (cgs)



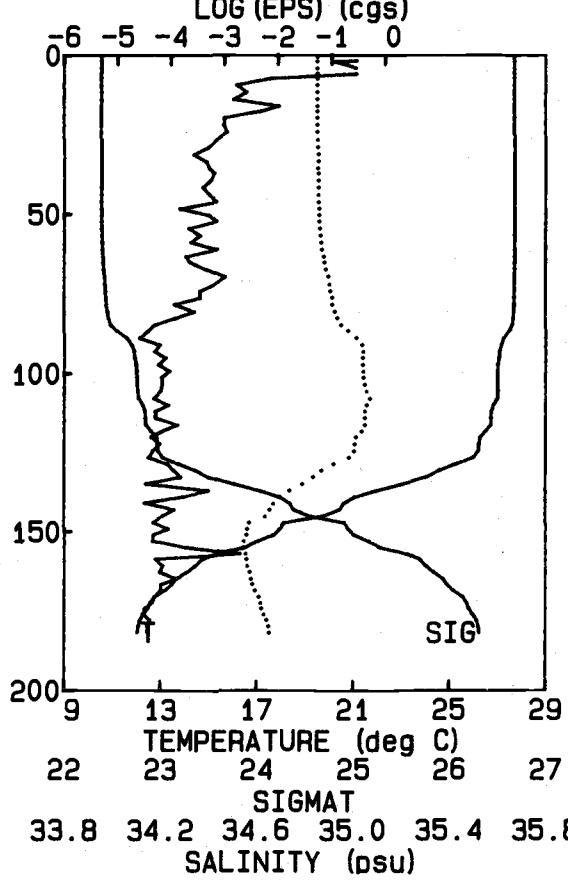
TAPE 046 03-21-87
 DROP 51 07: 45: 59
 LOG (EPS) (cgs)

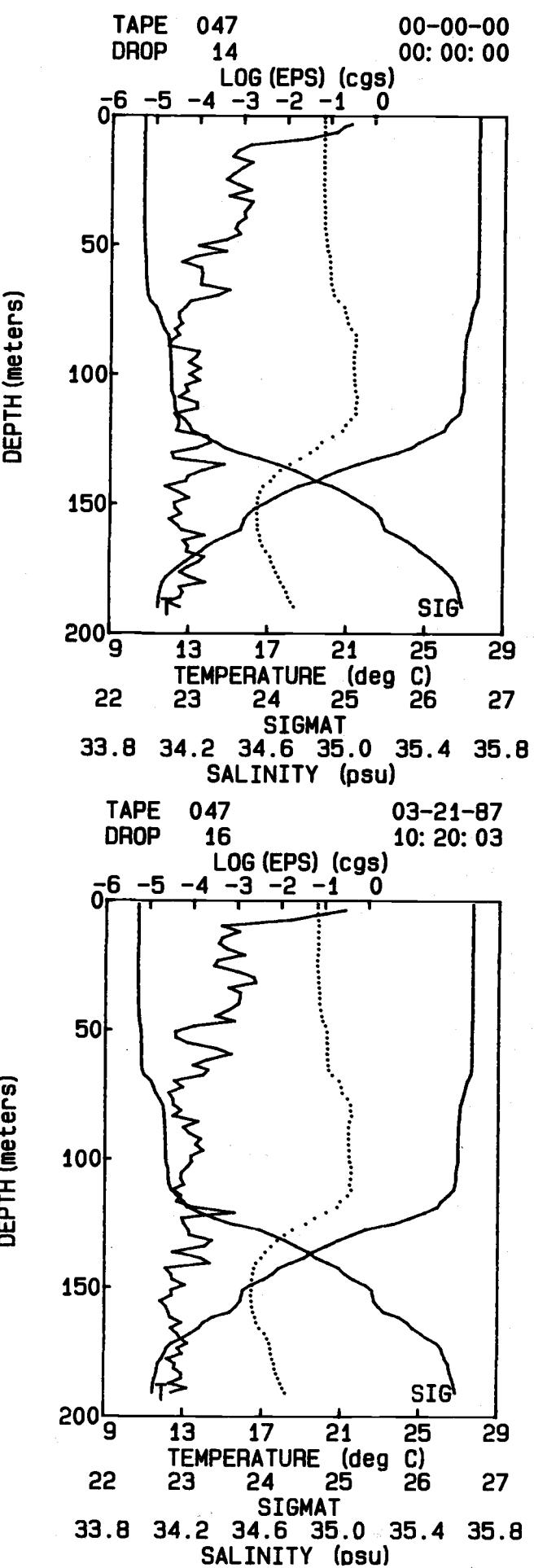
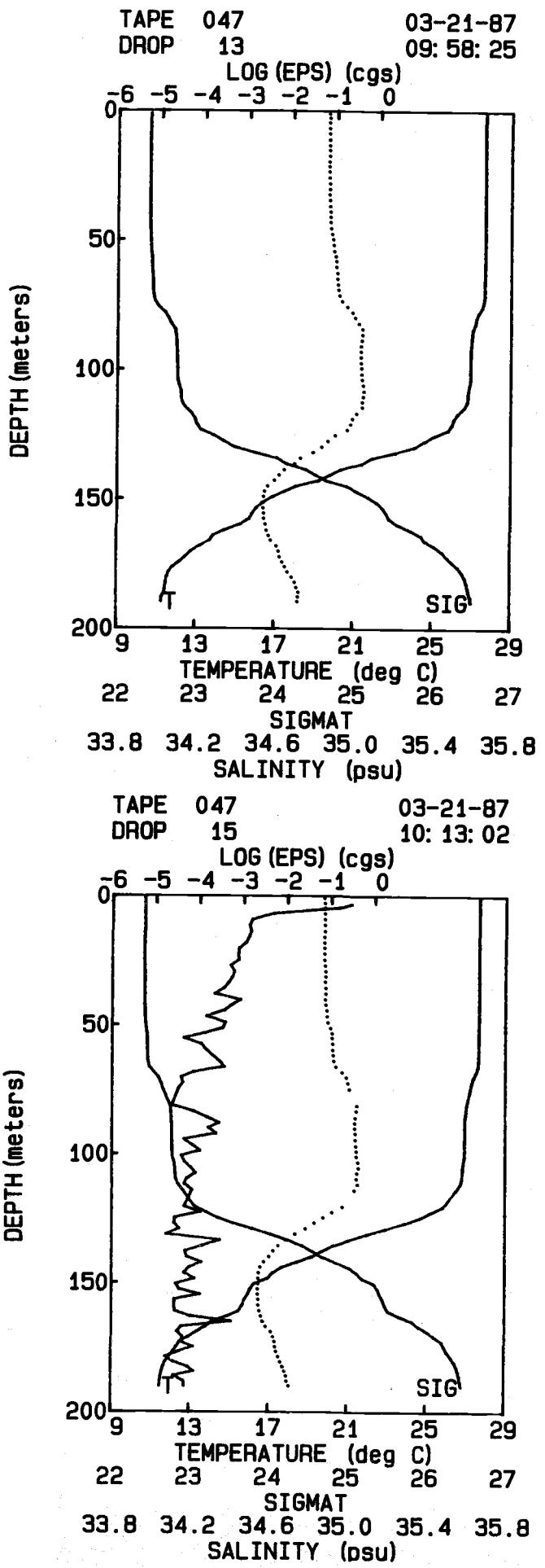


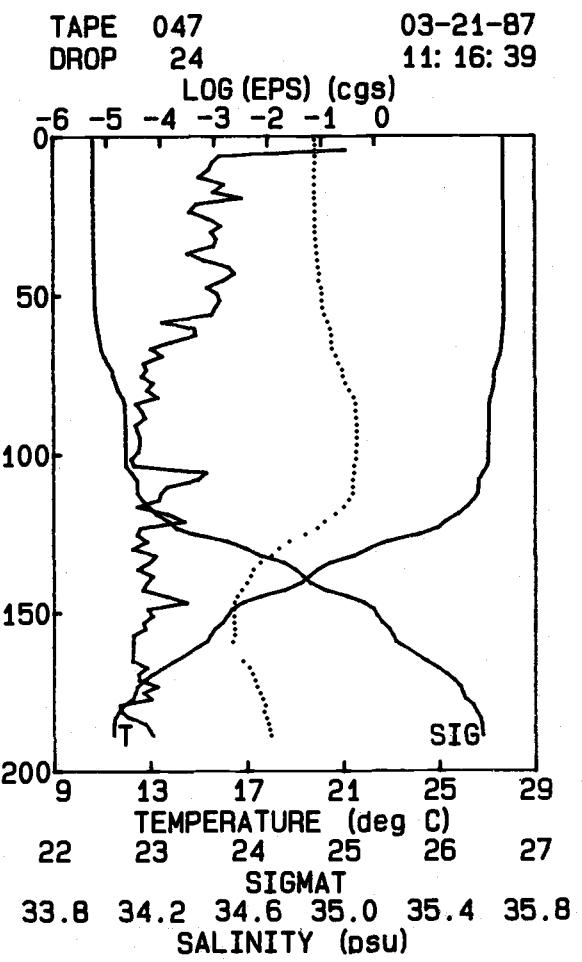
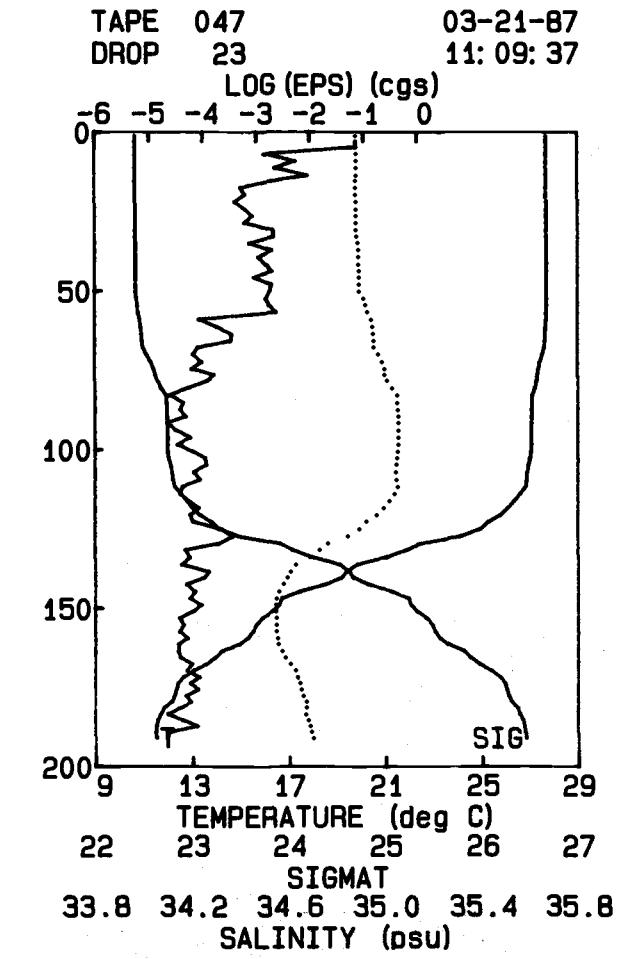
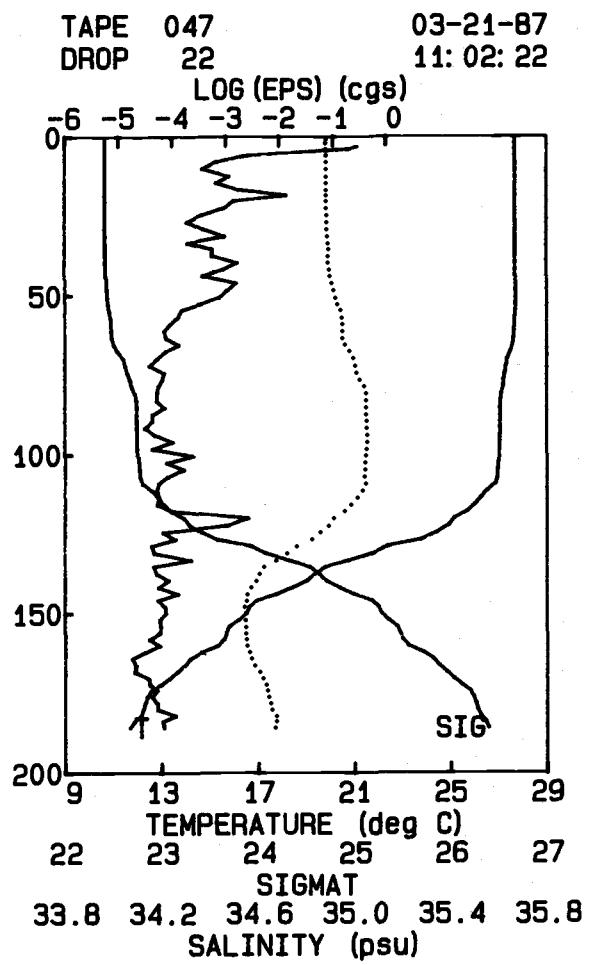
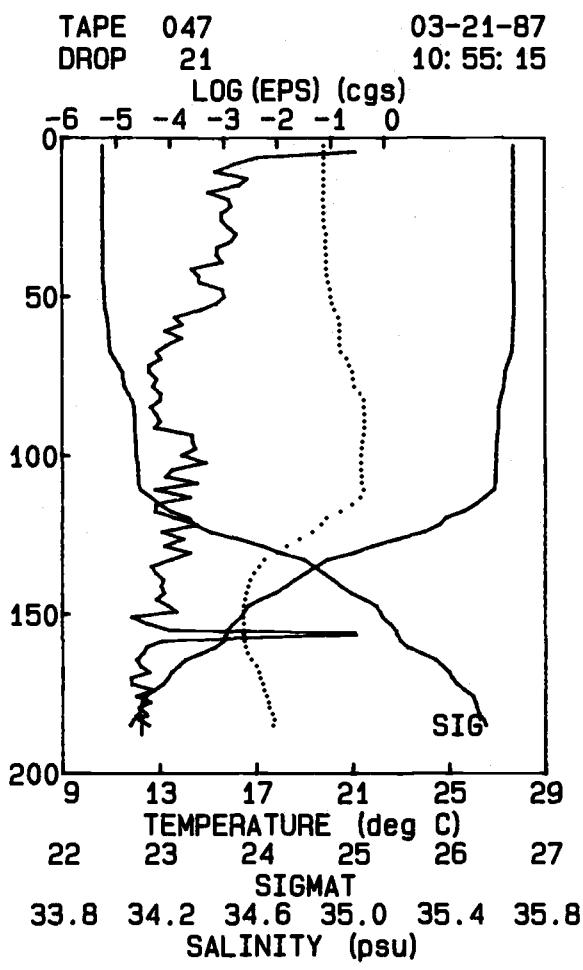
TAPE 046 03-21-87
 DROP 50 07: 37: 57
 LOG (EPS) (cgs)

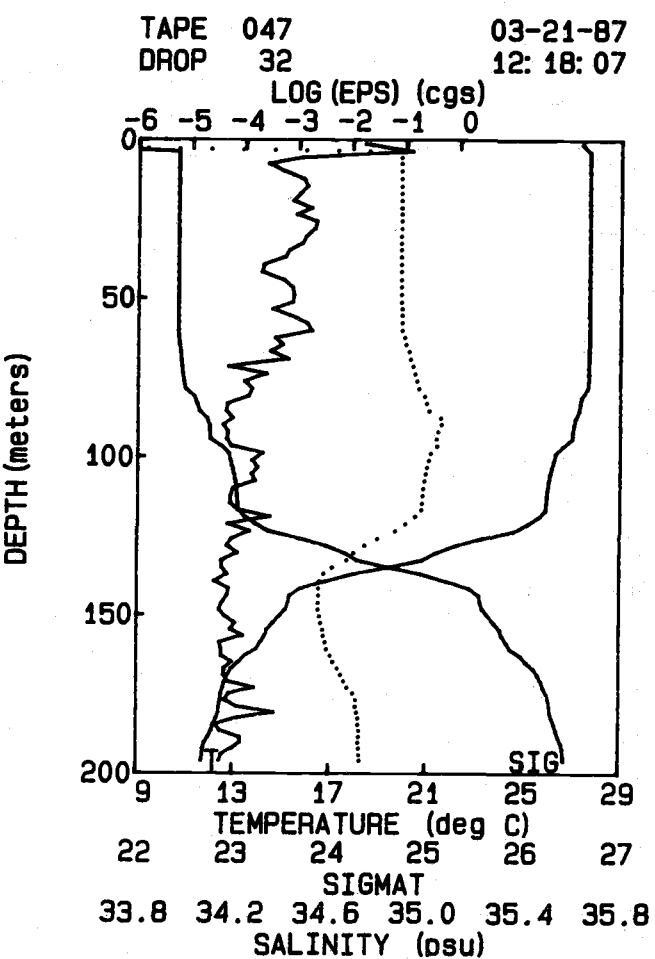
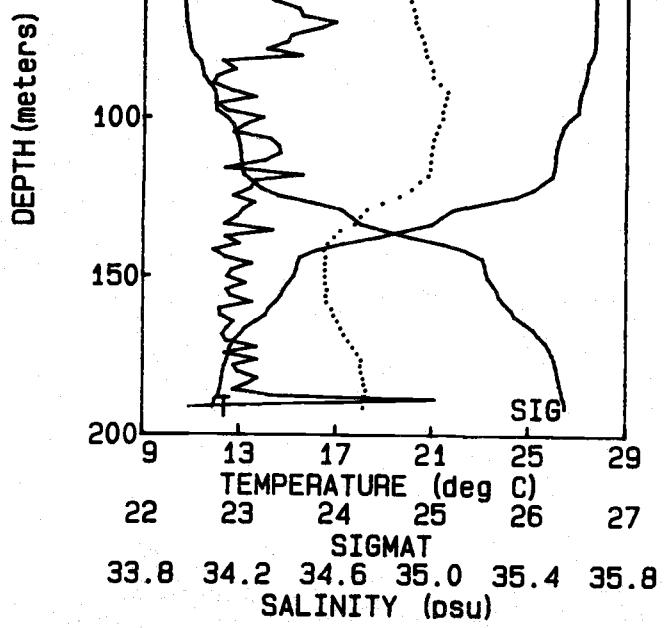
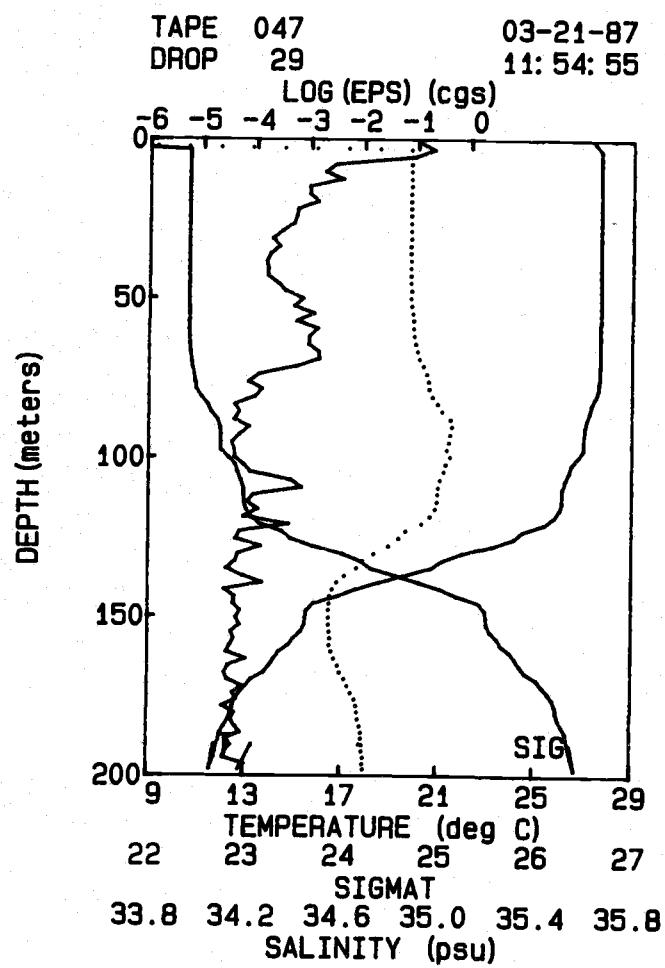


TAPE 046 03-21-87
 DROP 52 07: 53: 02
 LOG (EPS) (cgs)

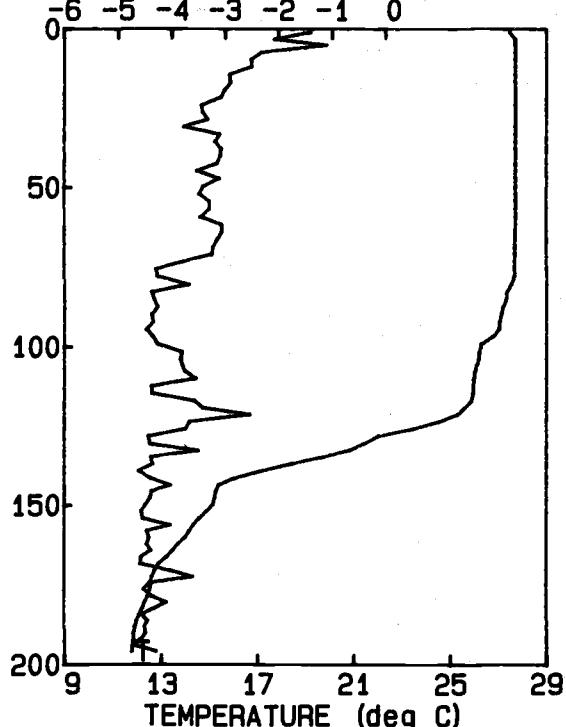




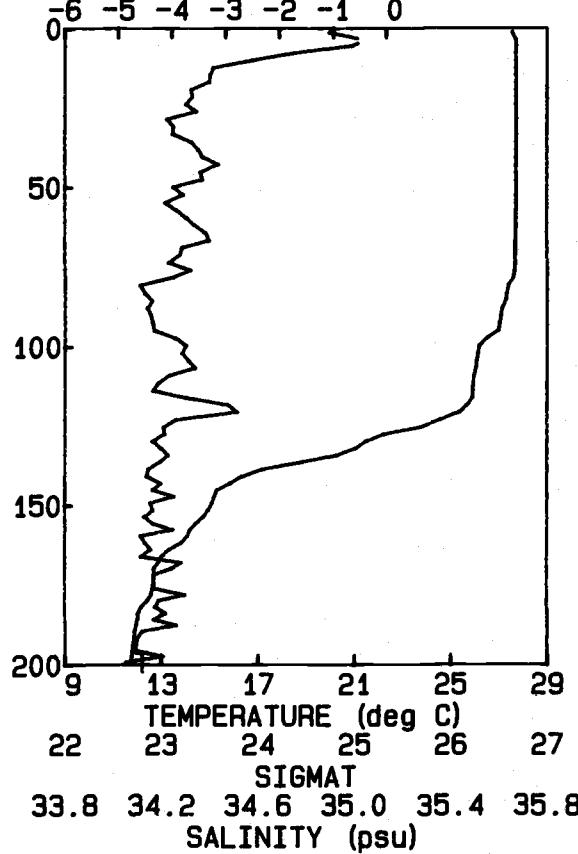




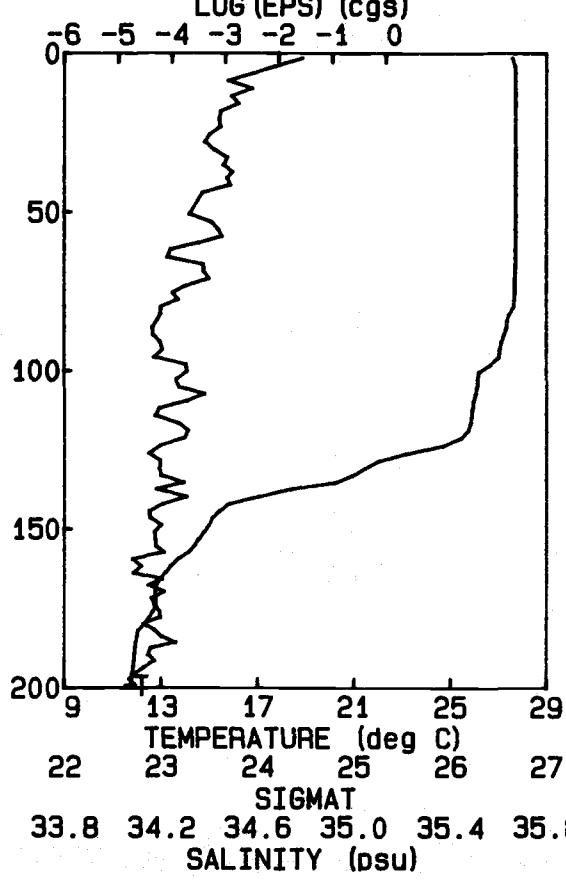
TAPE 047 03-21-87
 DROP 33 12: 25: 33
 LOG (EPS) (cgs)

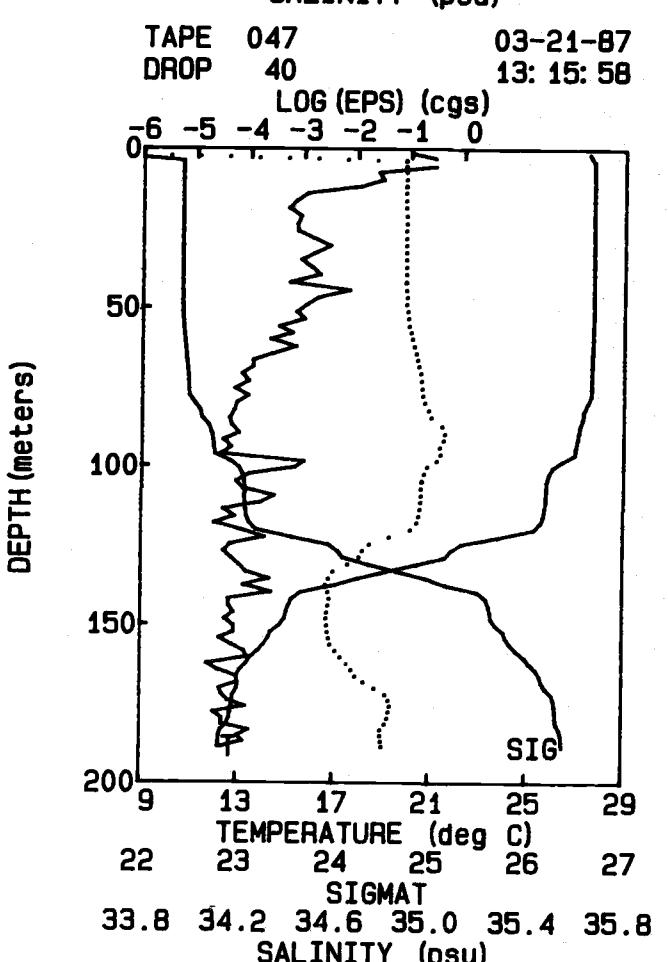
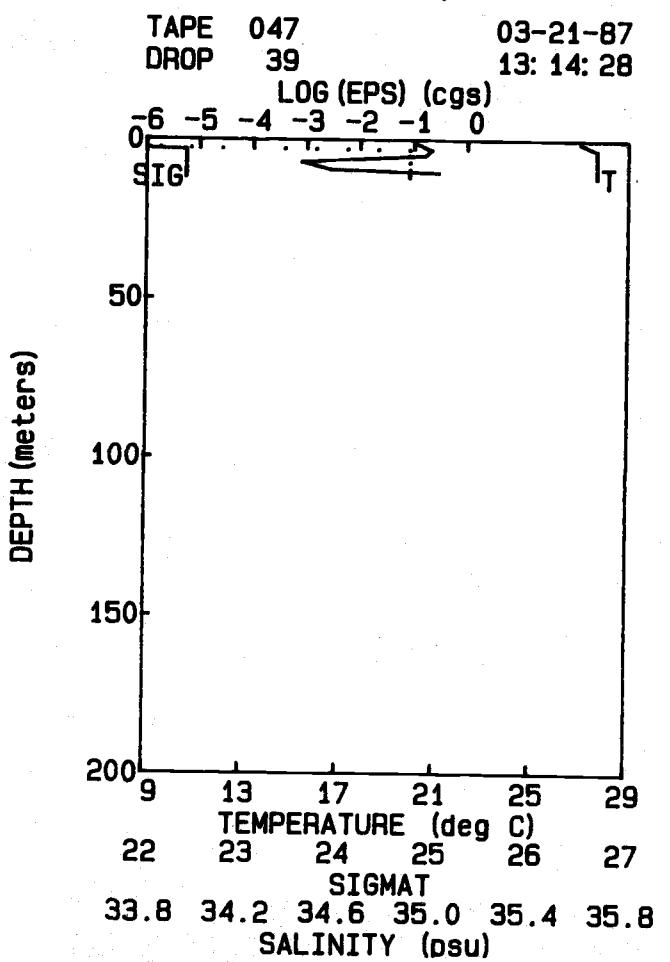
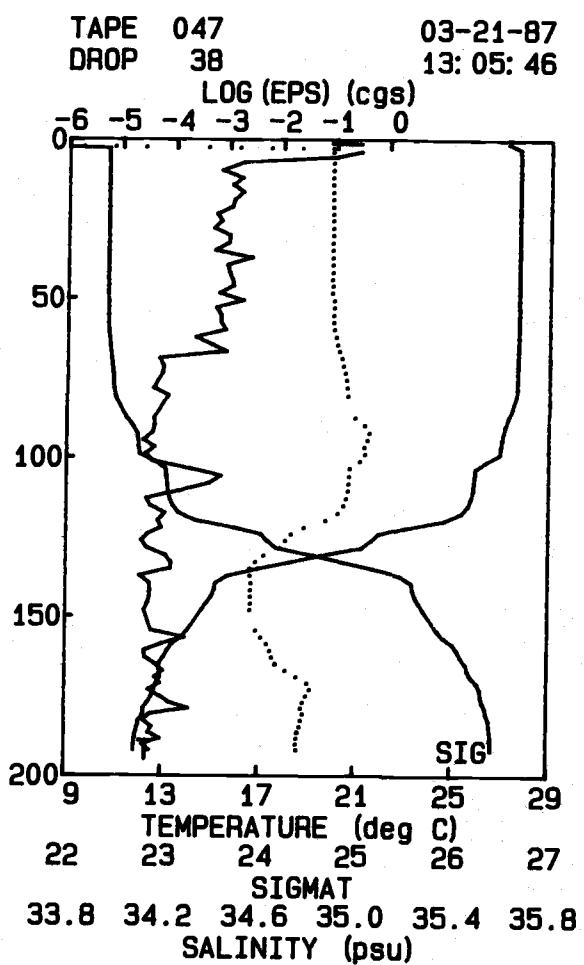
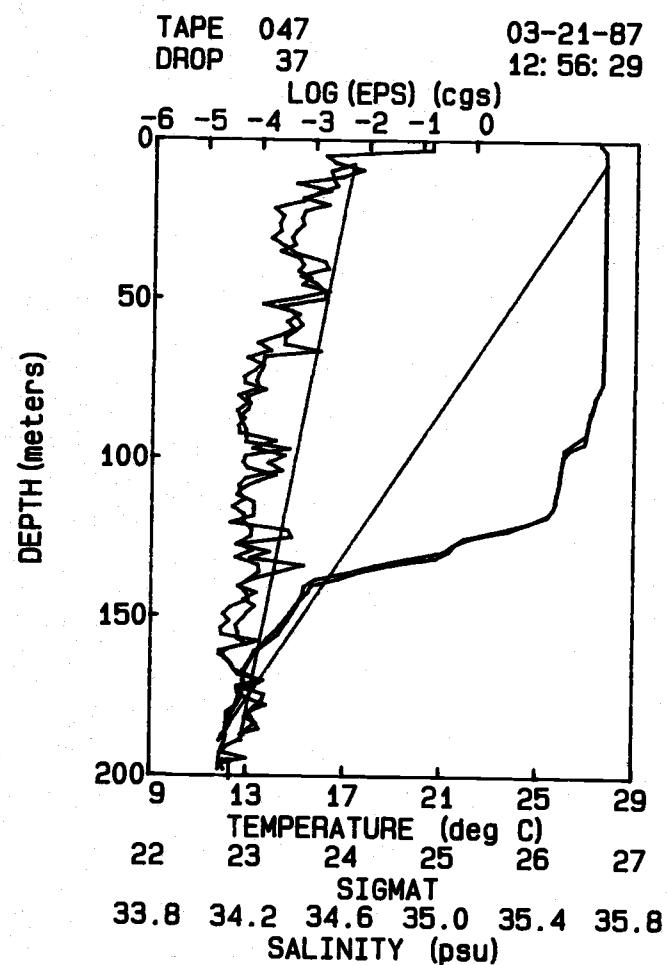


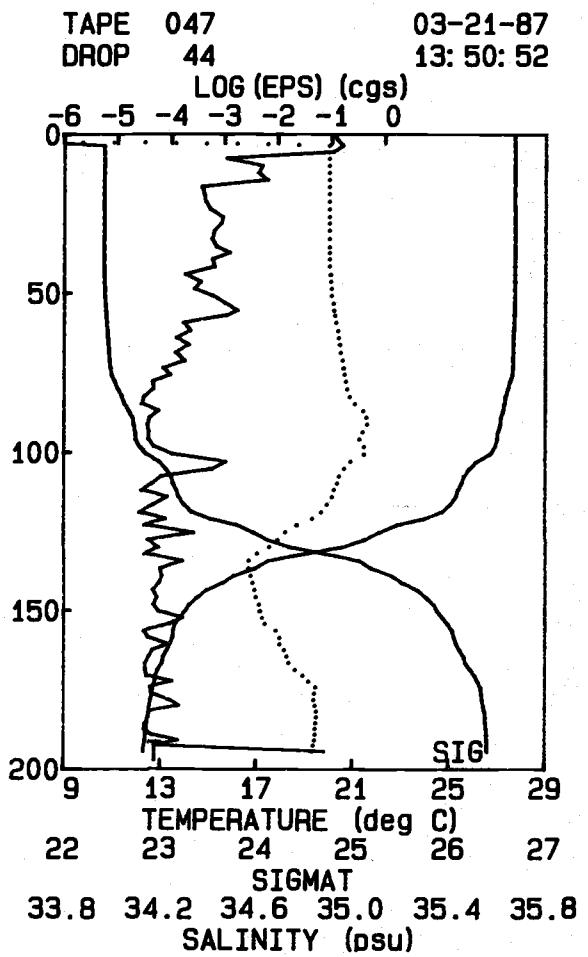
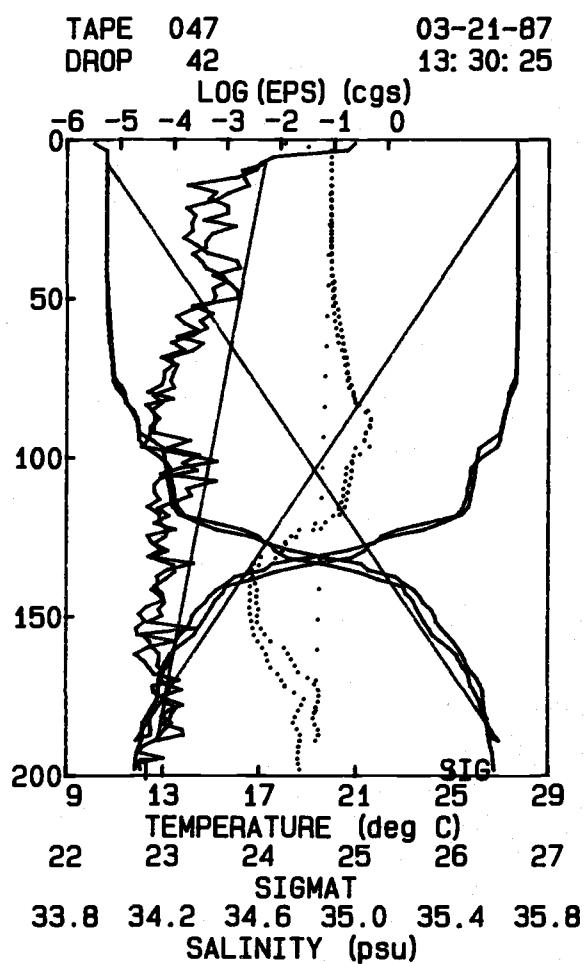
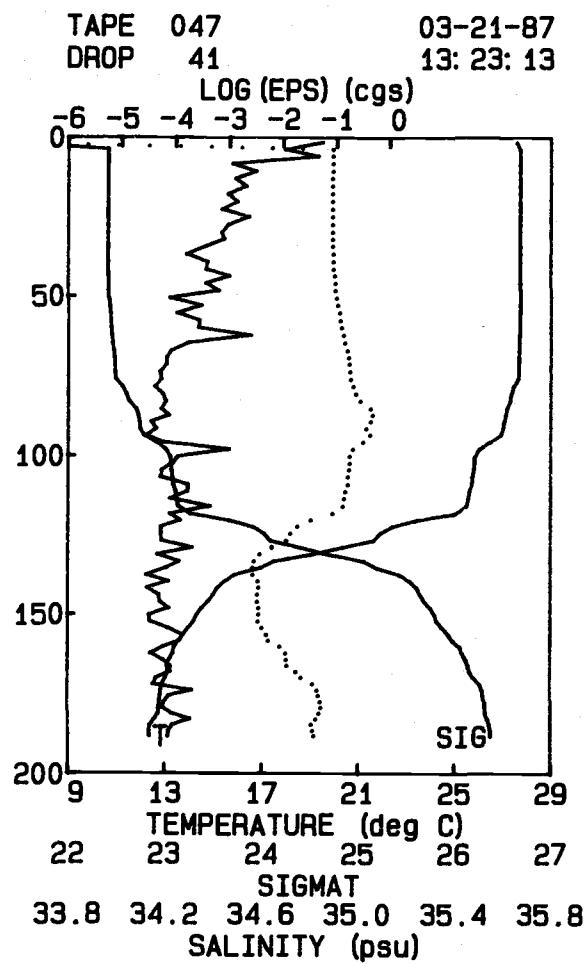
TAPE 047 03-21-87
 DROP 34 12: 33: 27
 LOG (EPS) (cgs)

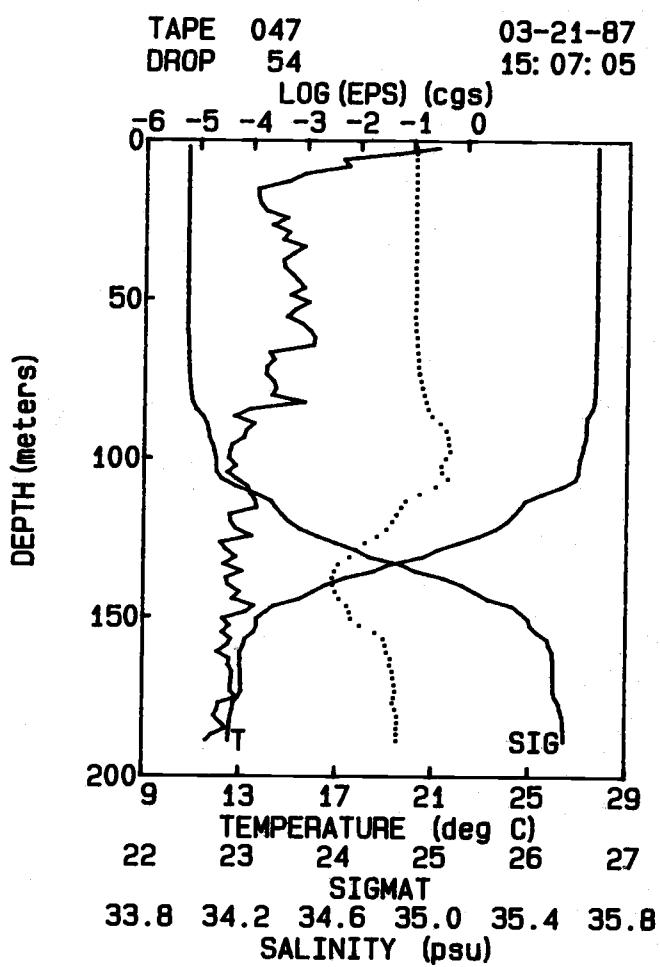
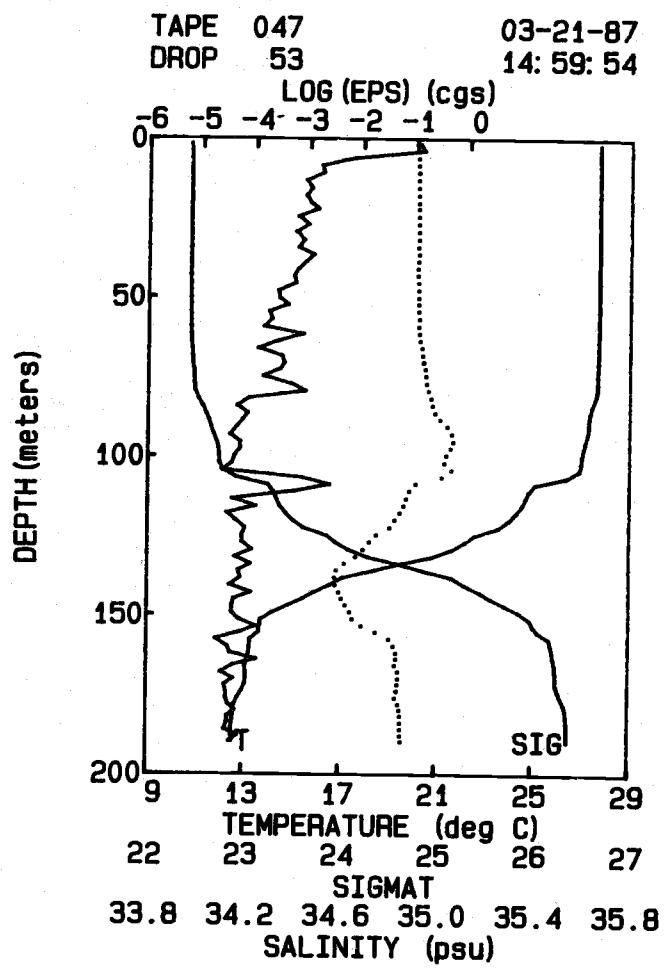


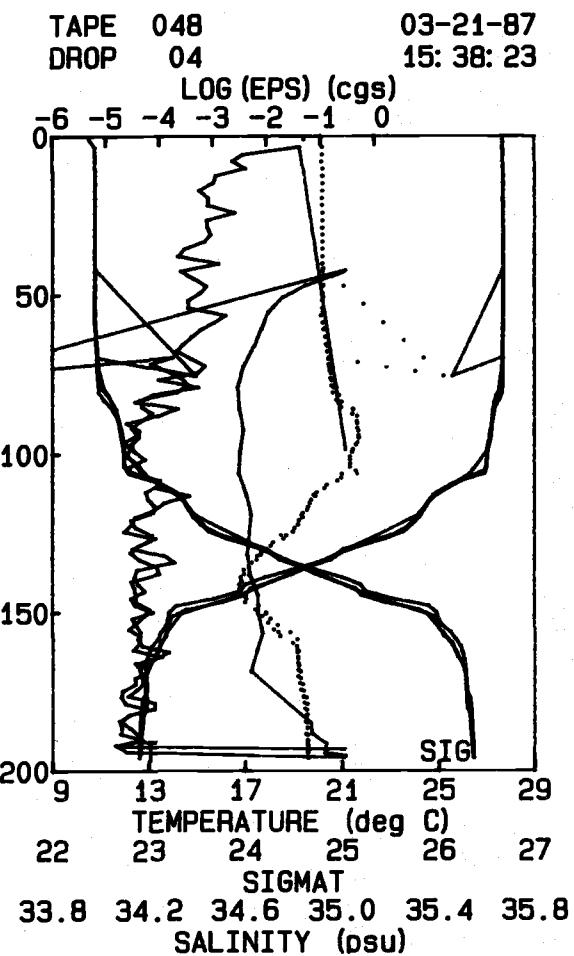
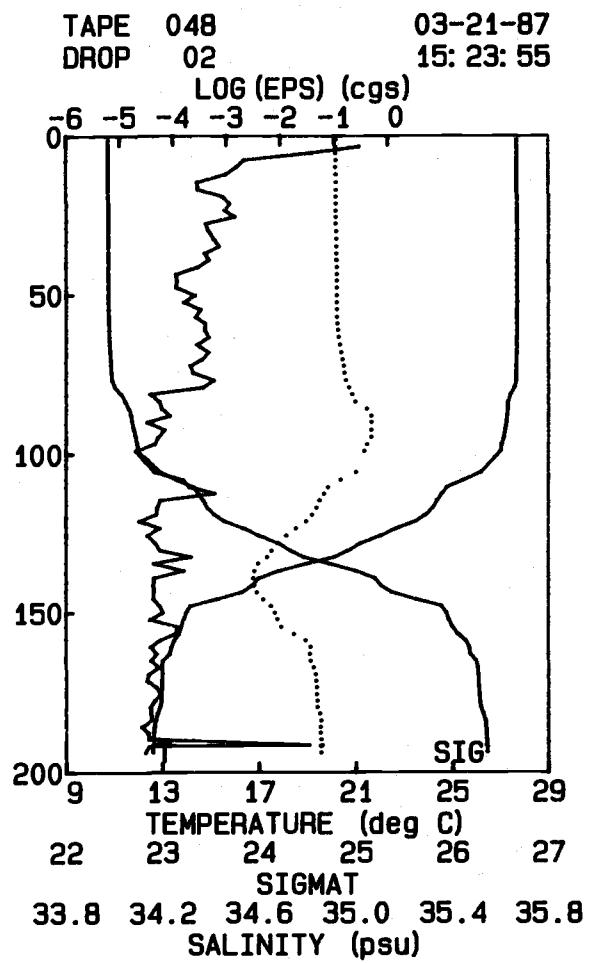
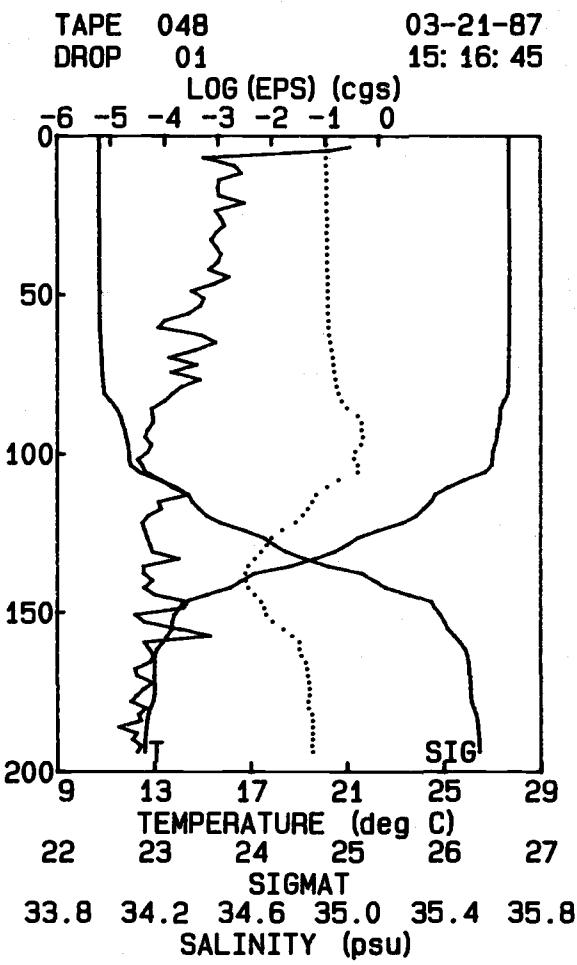
TAPE 047 03-21-87
 DROP 35 12: 40: 43
 LOG (EPS) (cgs)

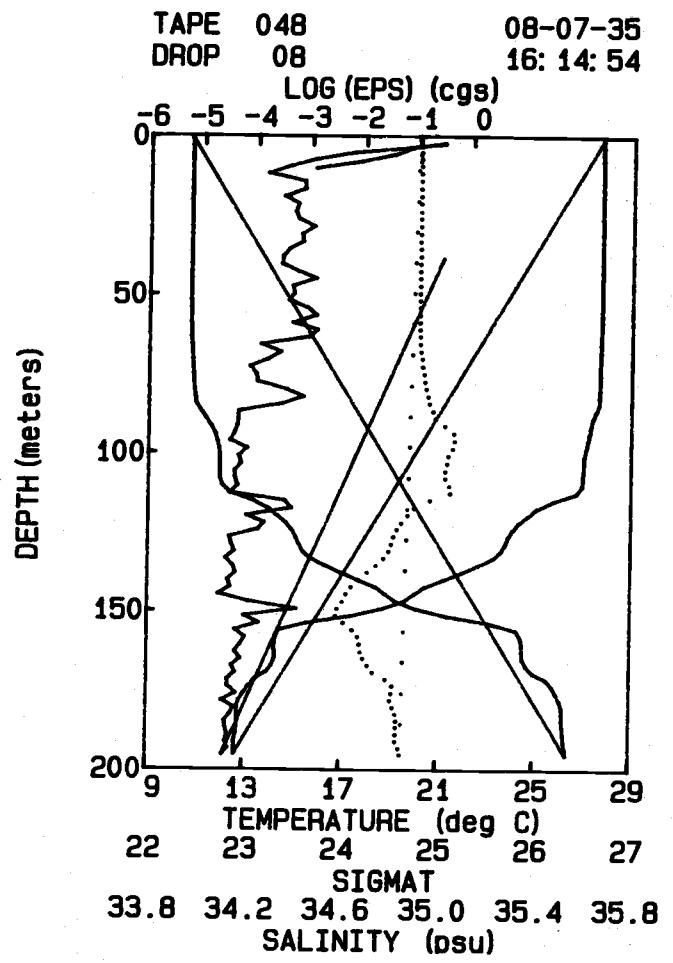
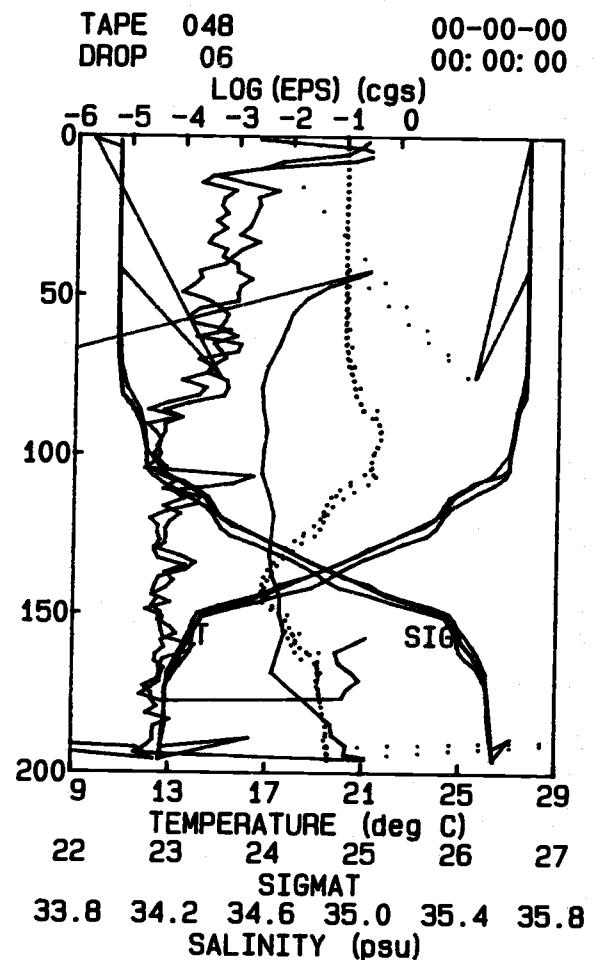


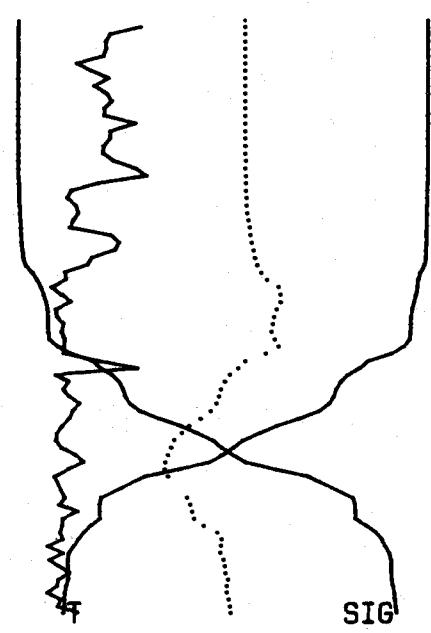








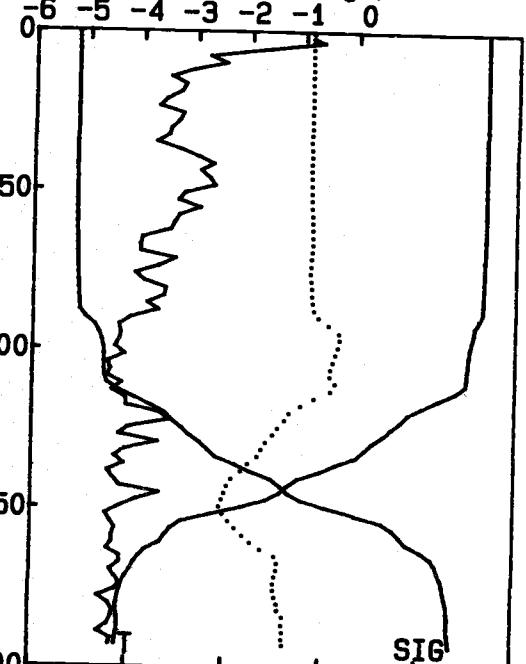




TAPE 048
DROP 13

03-21-87
16: 53: 09

LOG (EPS) (cgs)



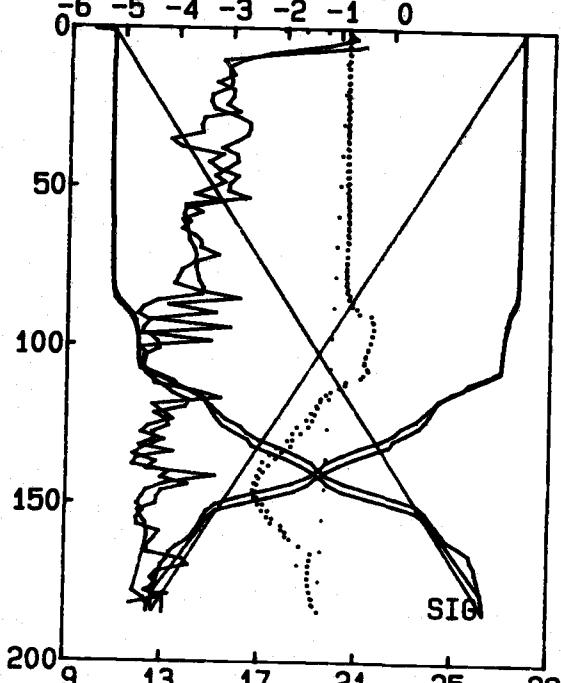
33.8 34.2 34.6 35.0 35.4 35.8
SALINITY (psu)

TAPE 048
DROP 15

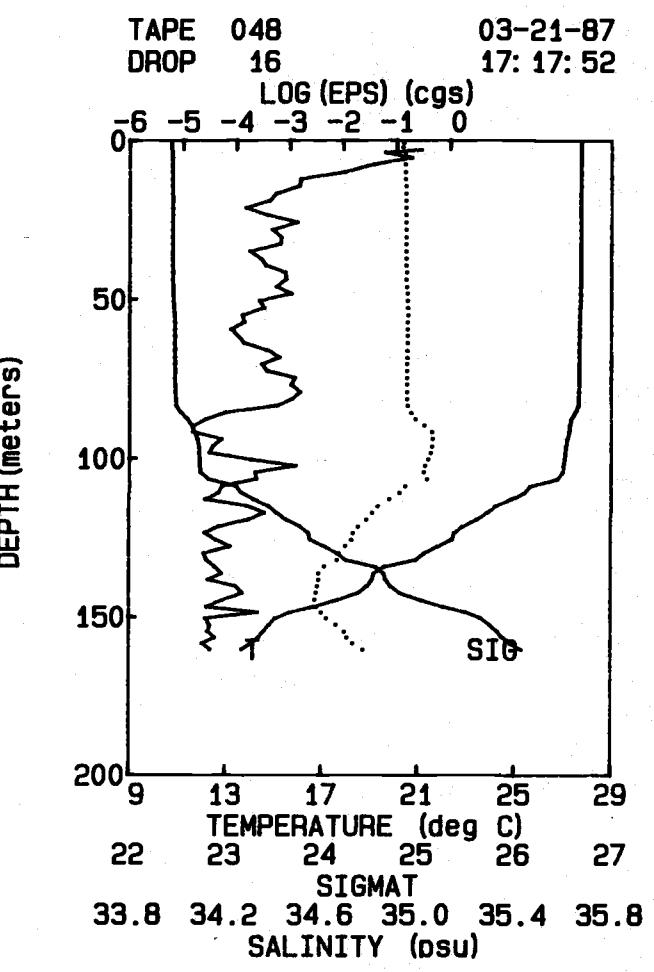
03-21-87
17: 06: 57

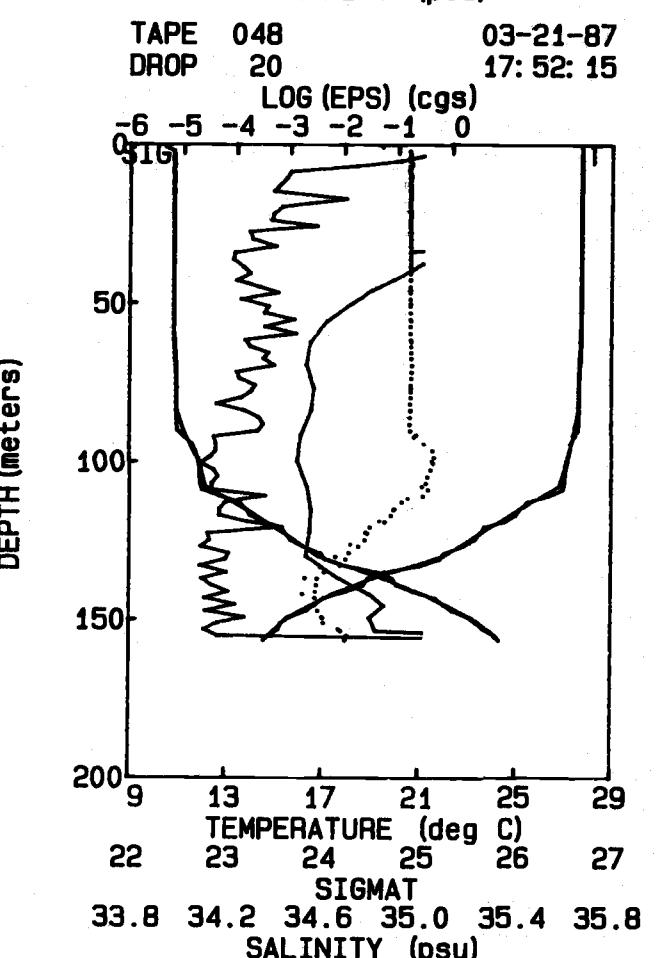
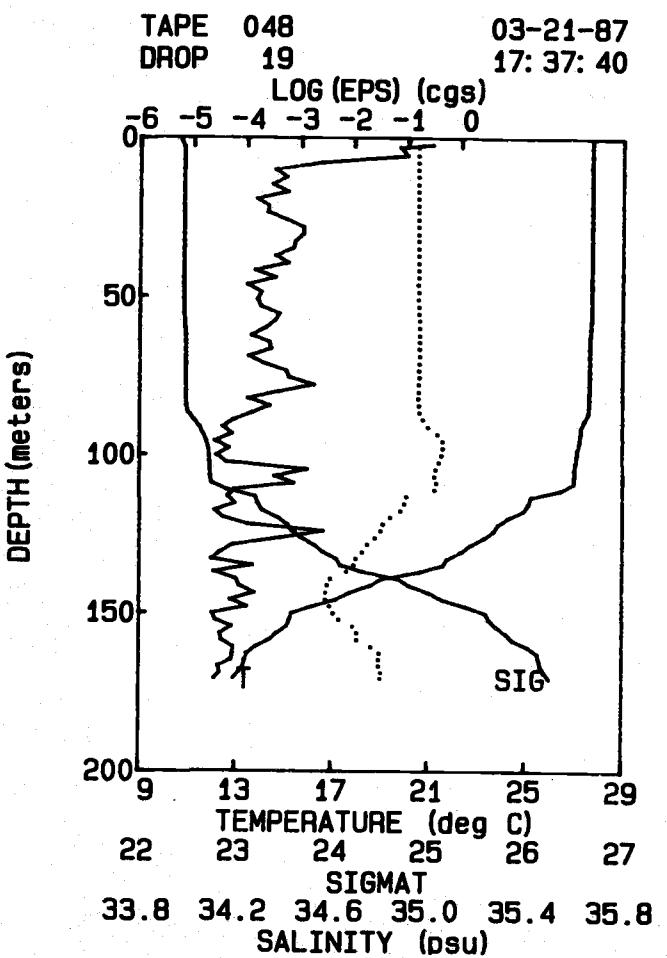
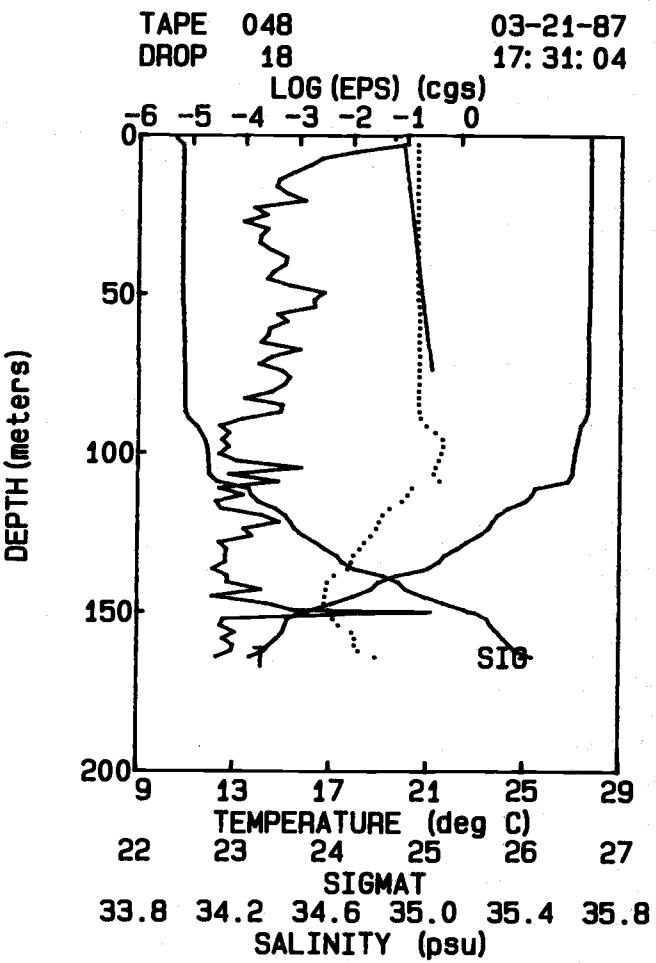
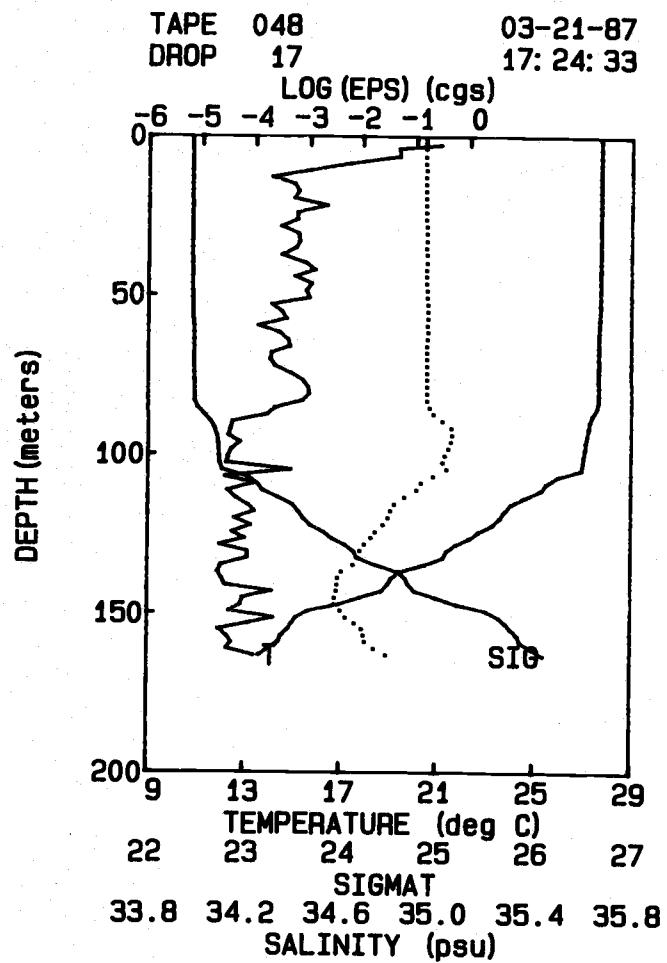
LOG (EPS) (cgs)

DEPTH (meters)



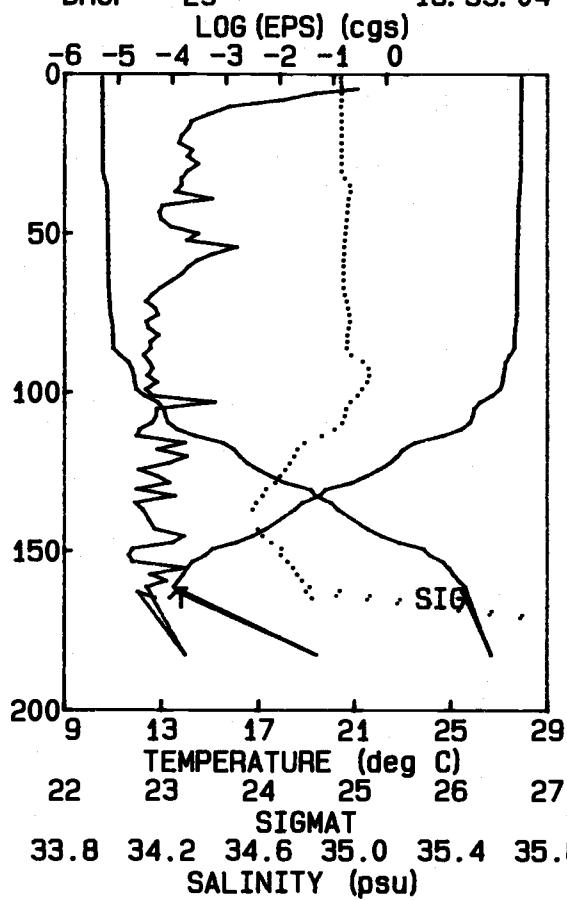
33.8 34.2 34.6 35.0 35.4 35.8
SALINITY (psu)





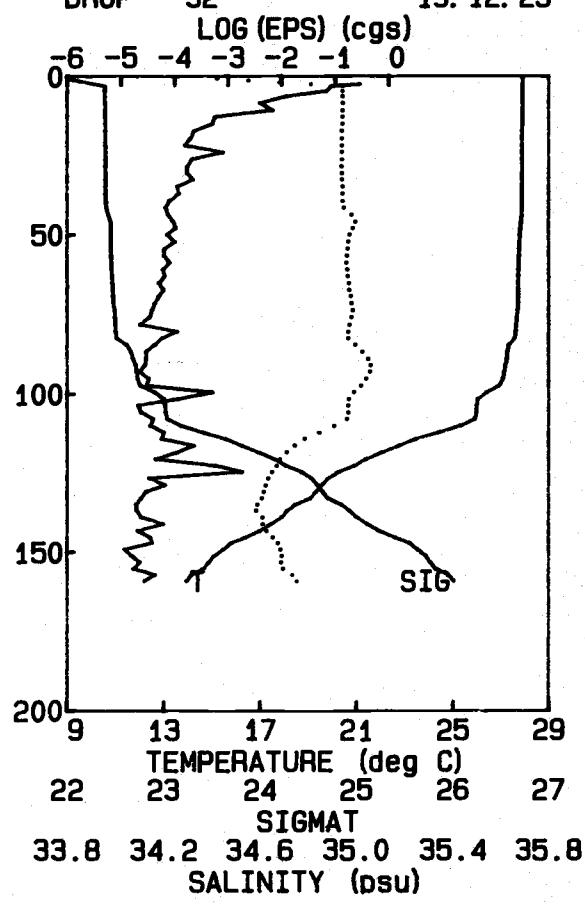
TAPE 048
DROP 29

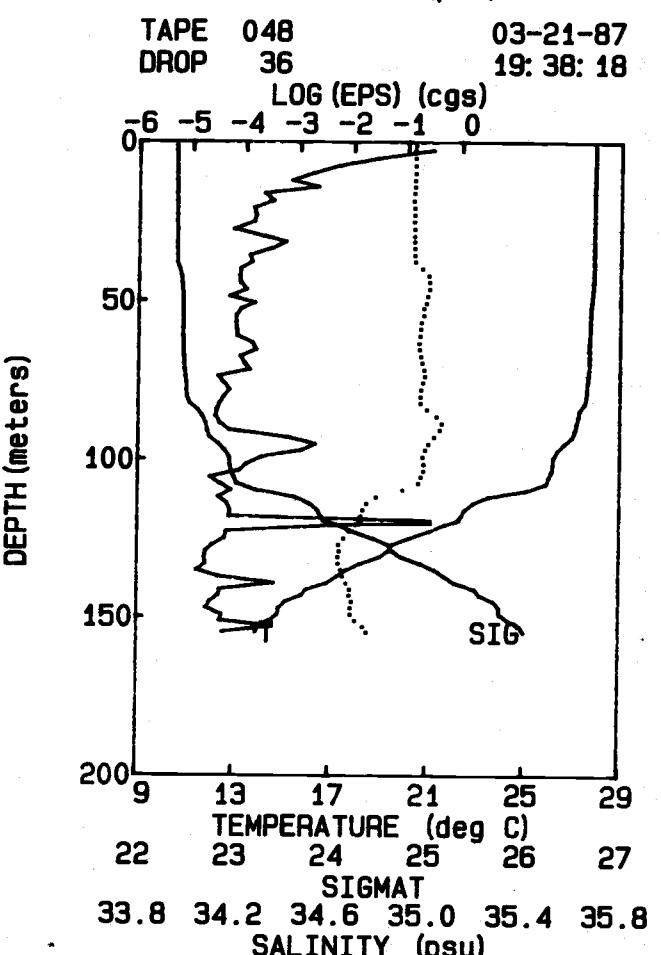
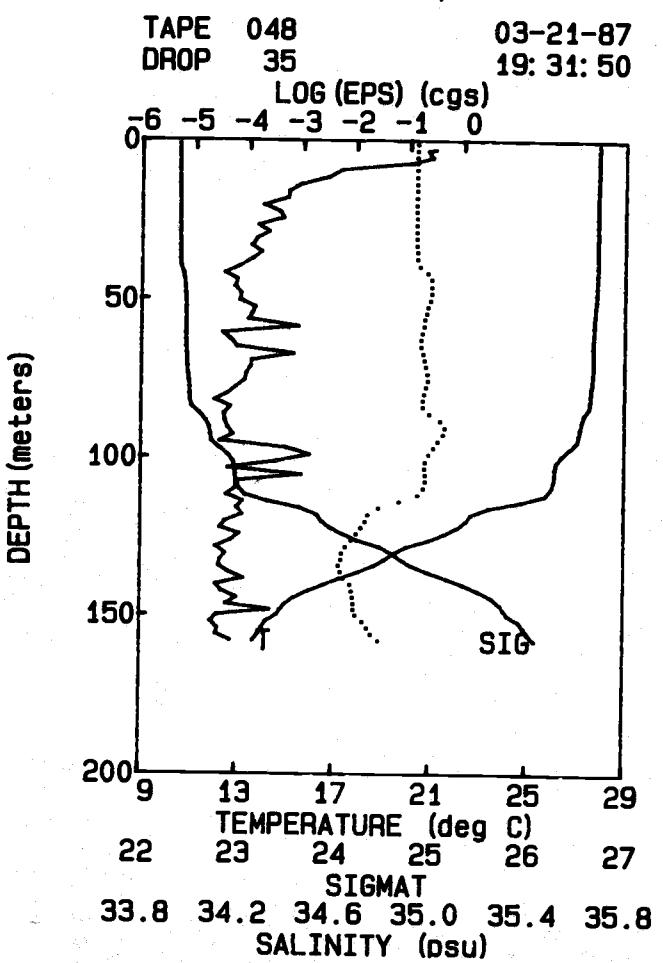
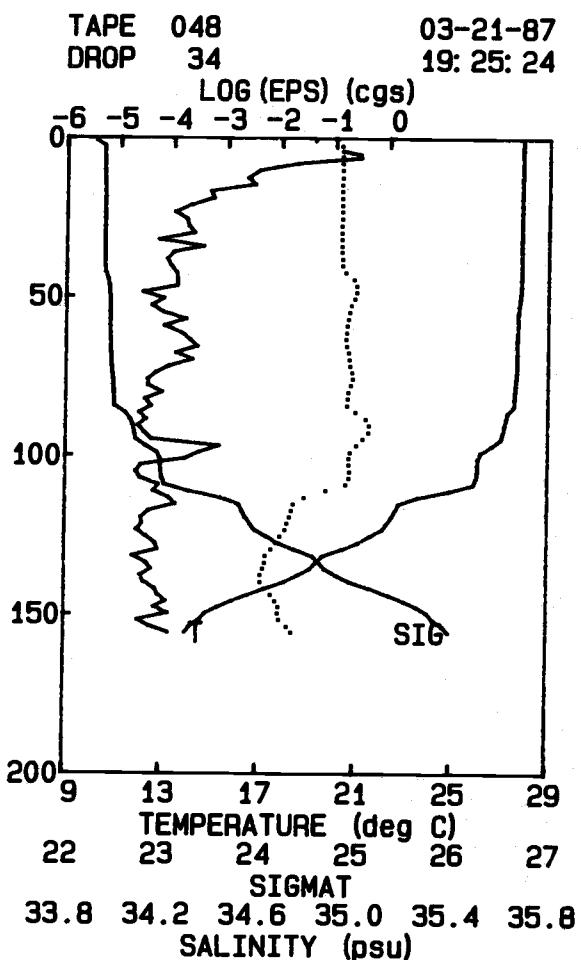
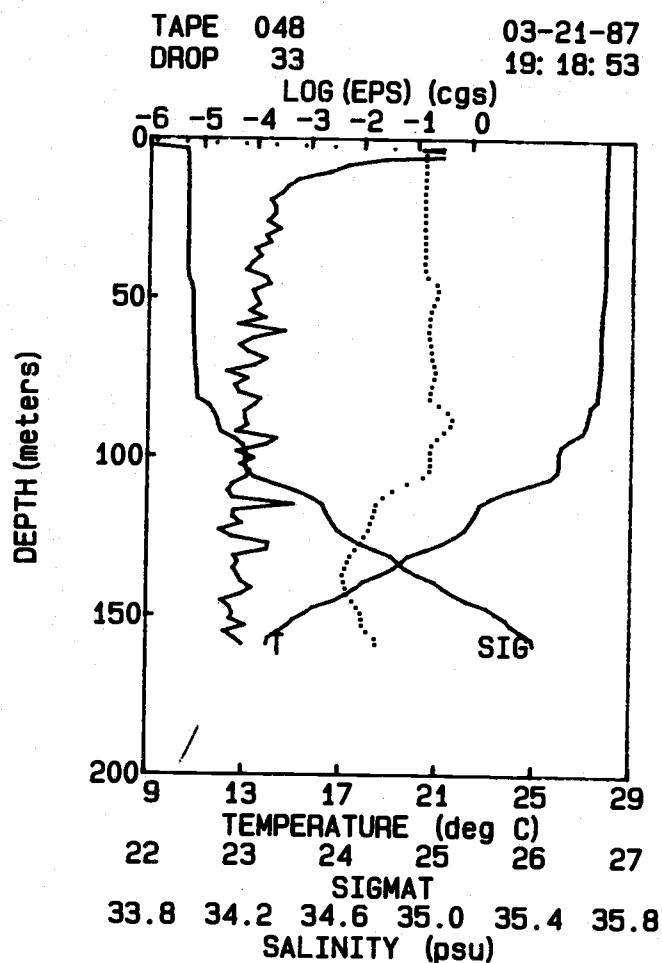
03-21-87
18: 53: 04

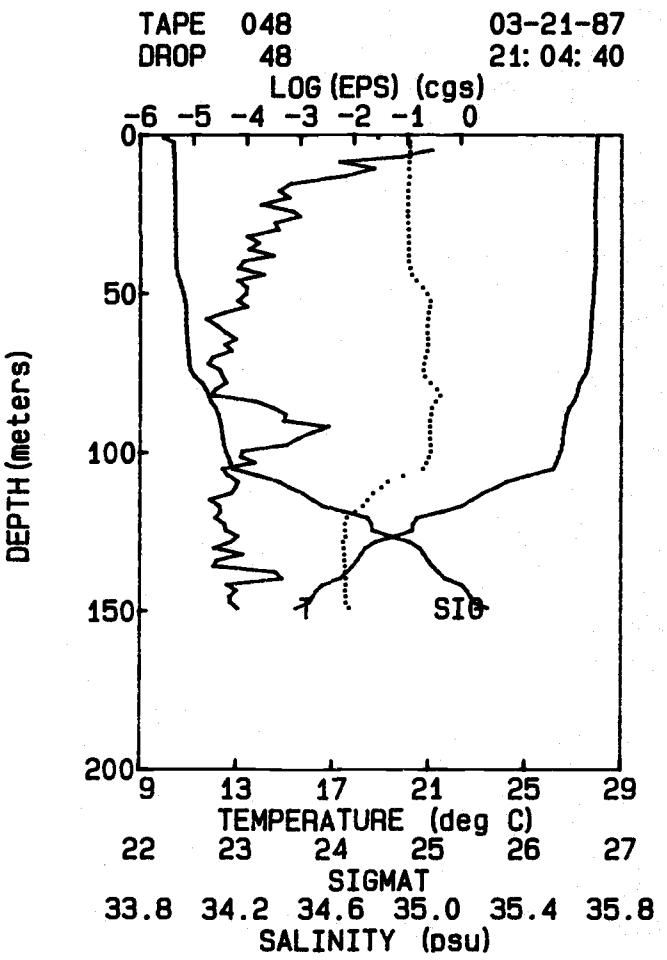
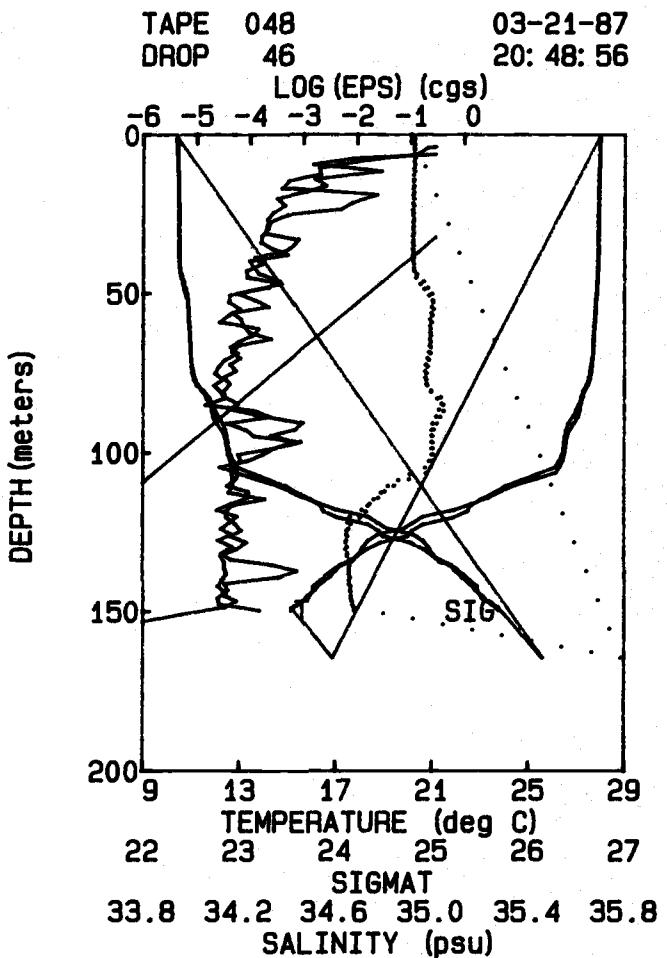


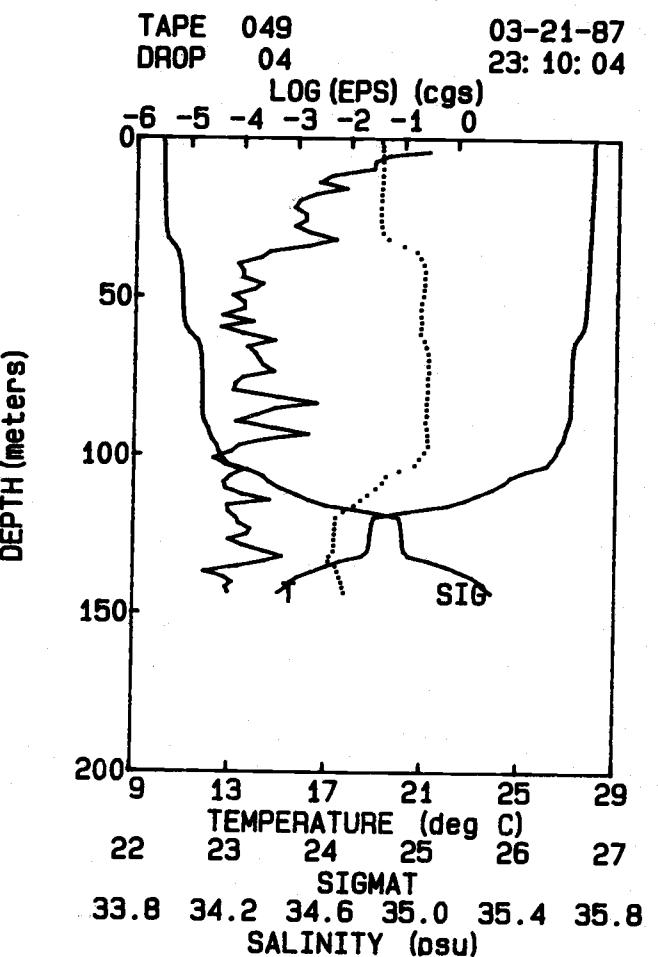
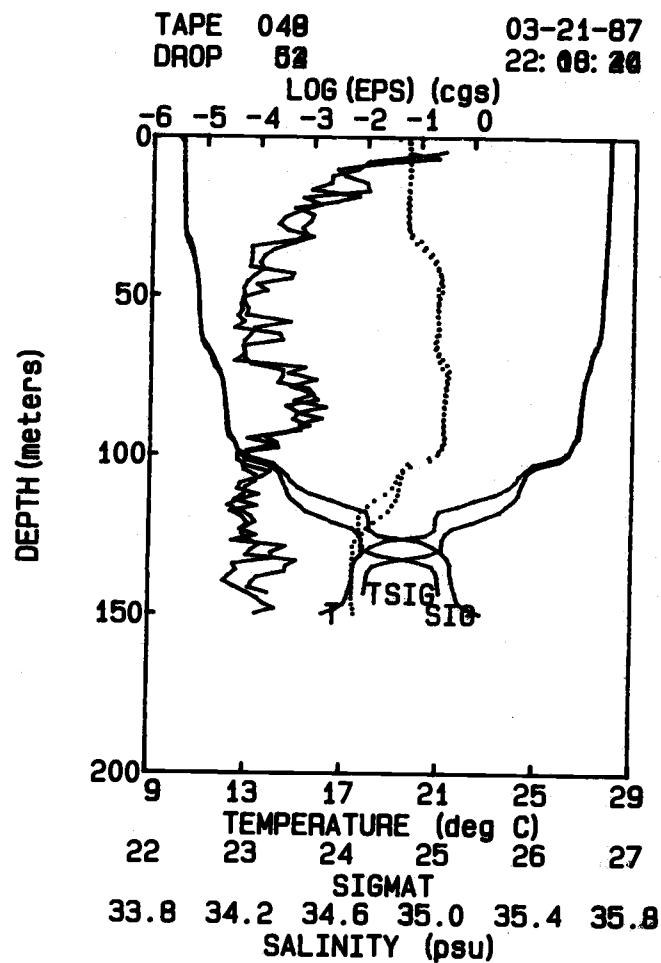
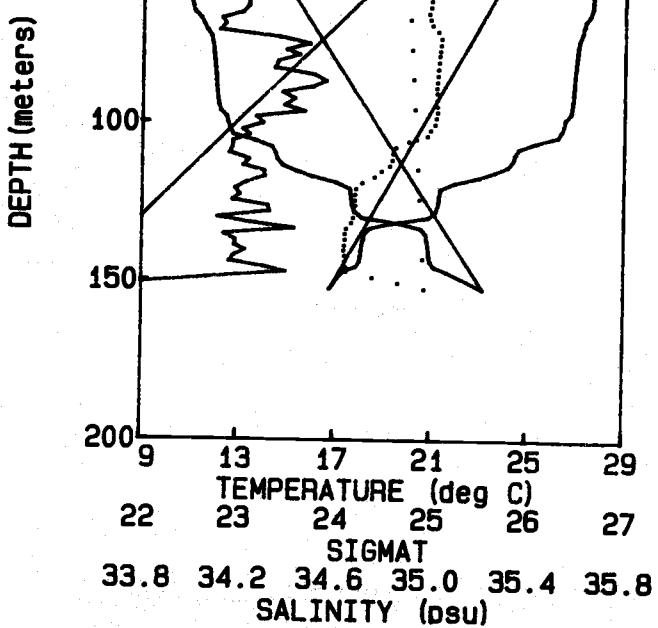
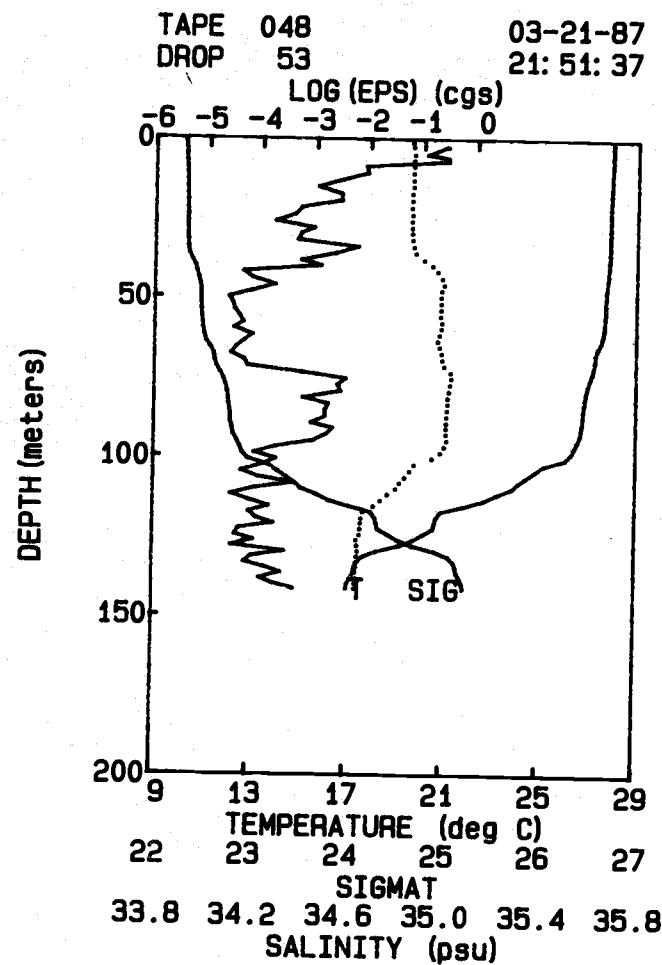
TAPE 048
DROP 32

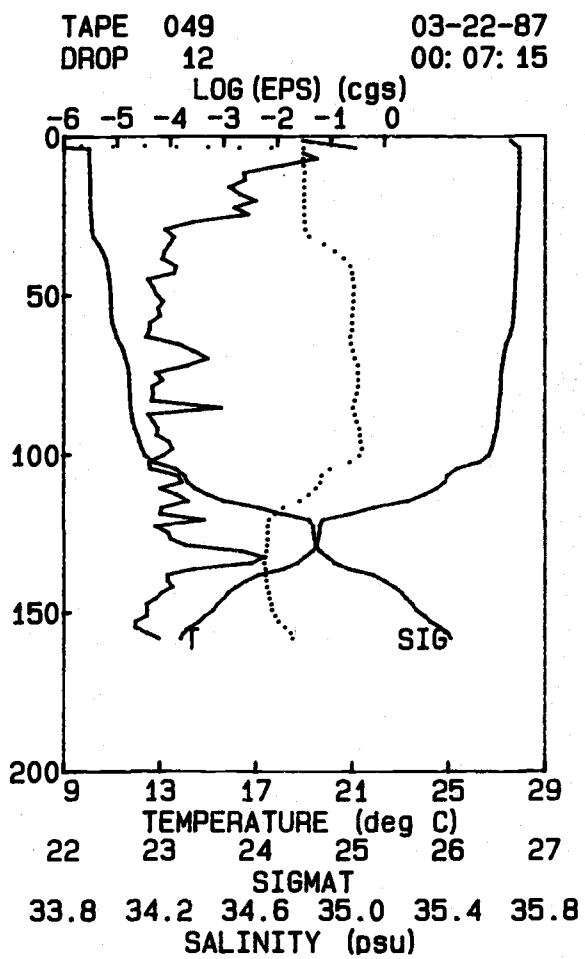
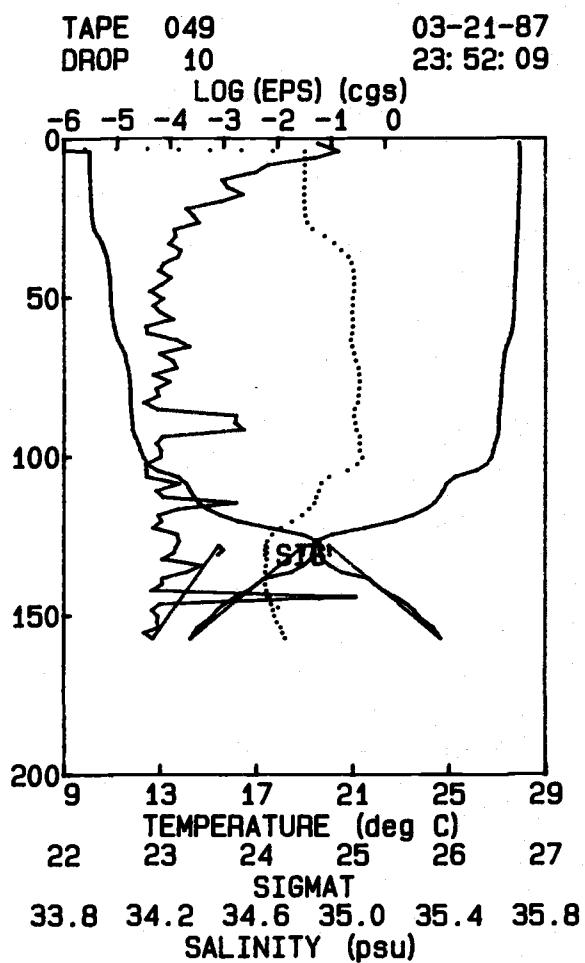
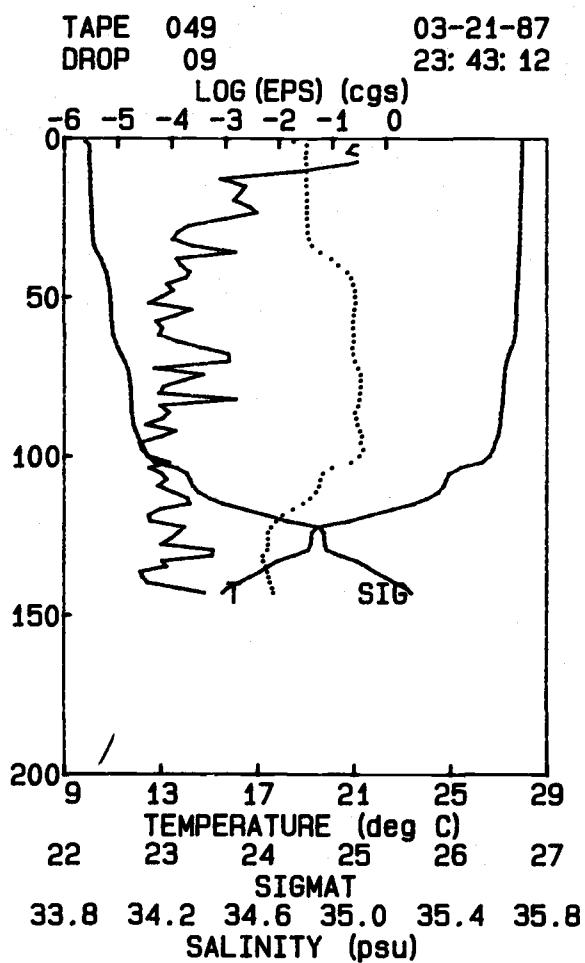
03-21-87
19: 12: 25

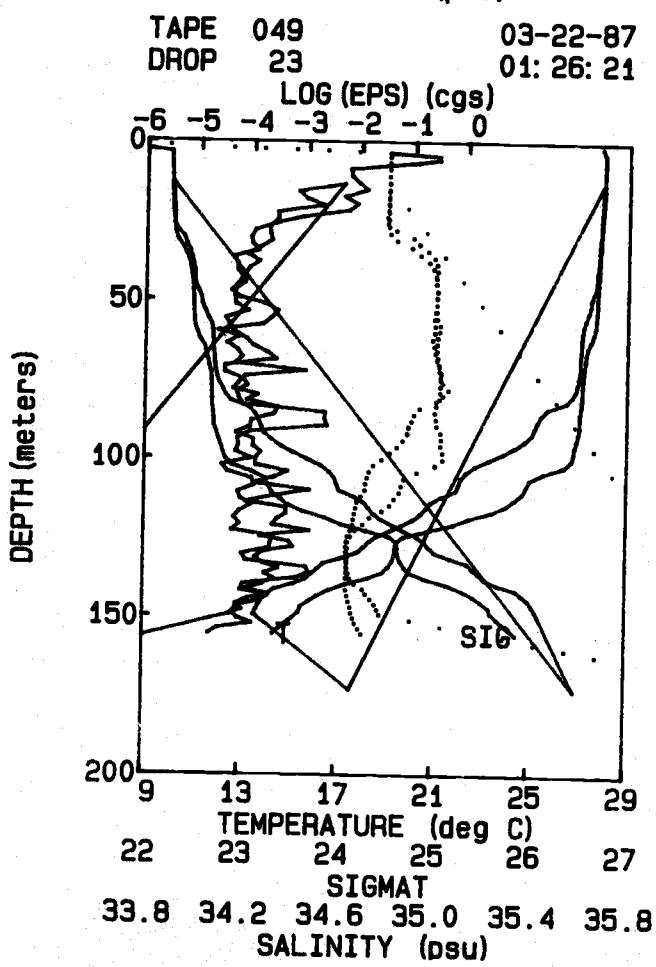
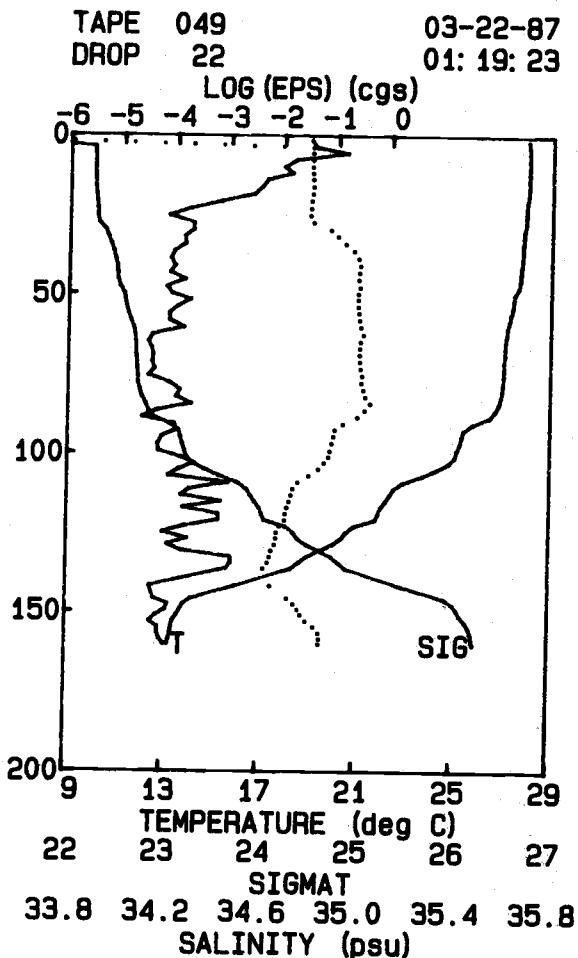
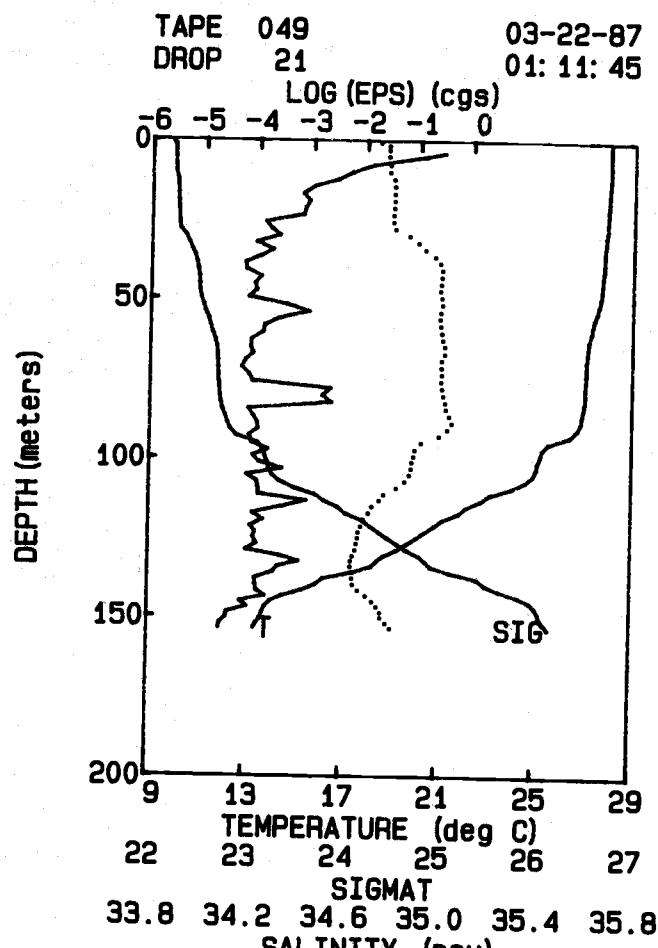


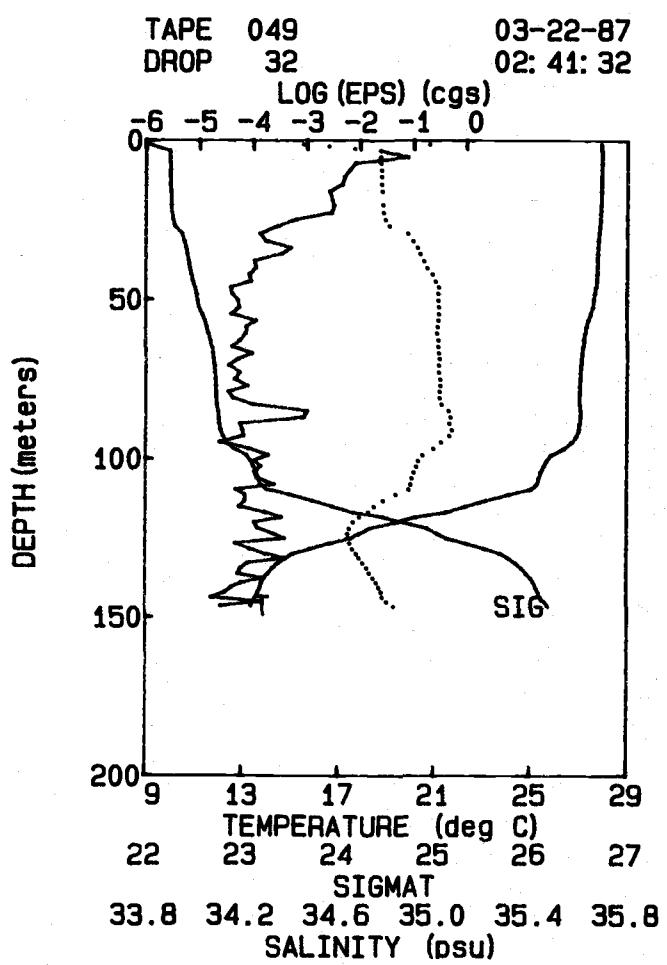
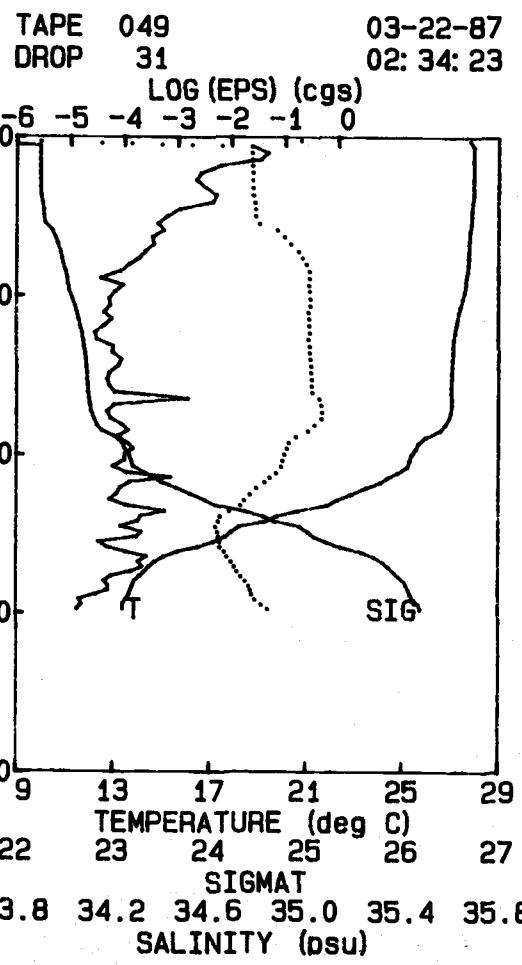




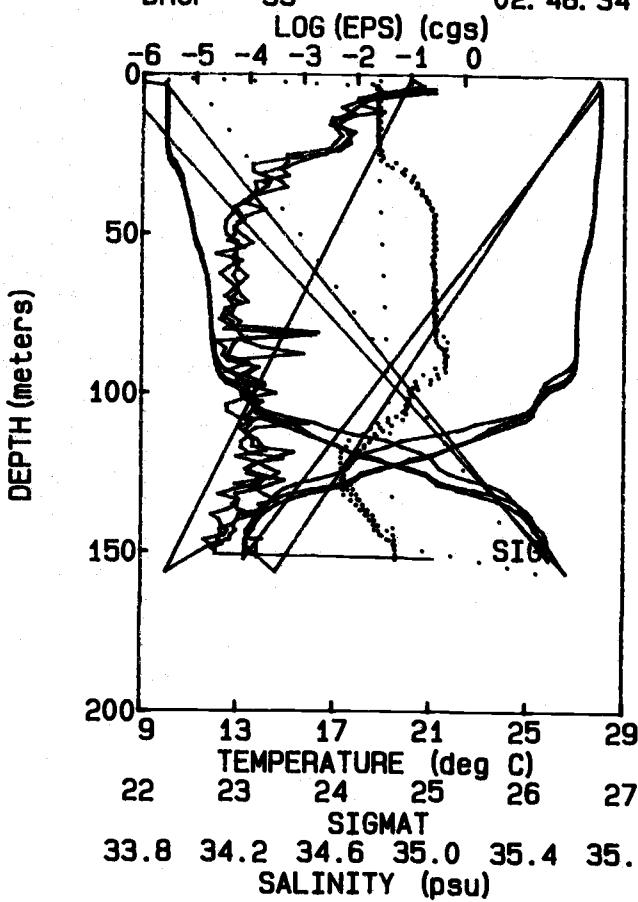




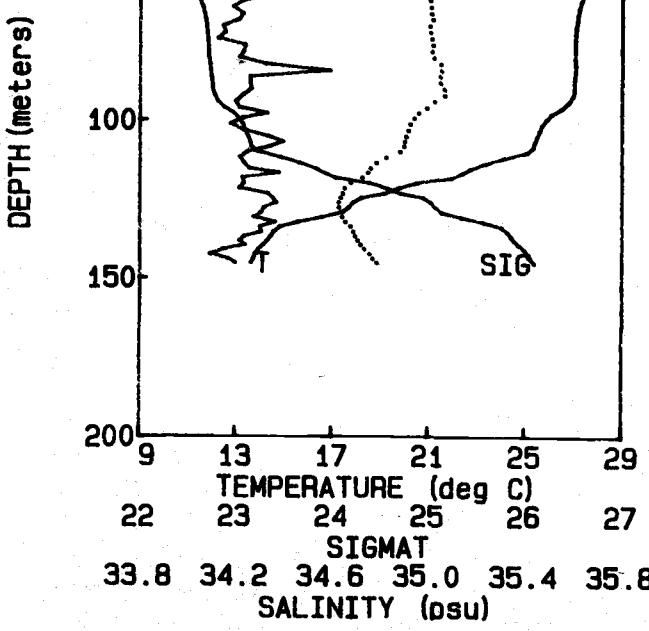




TAPE 049 03-22-87
 DROP 33 02: 48: 34

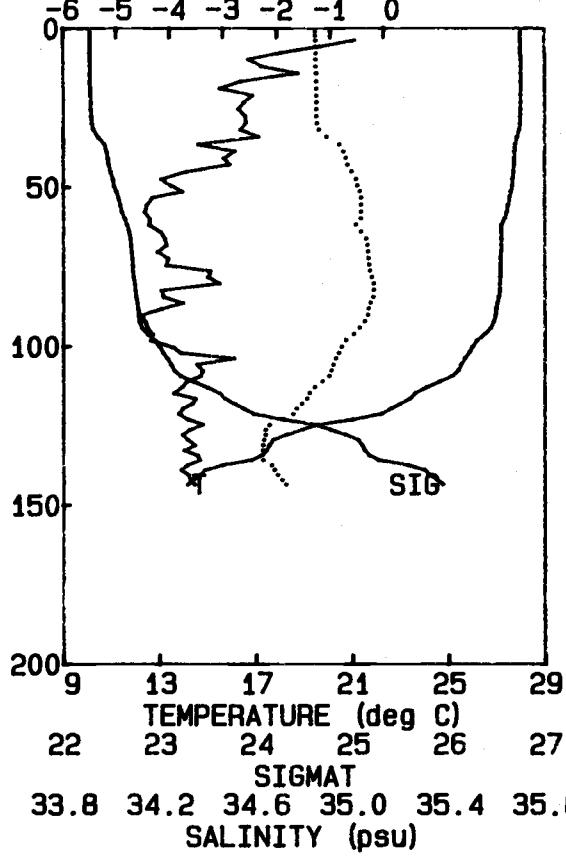


TAPE 049 03-22-87
 DROP 35 03: 03: 10



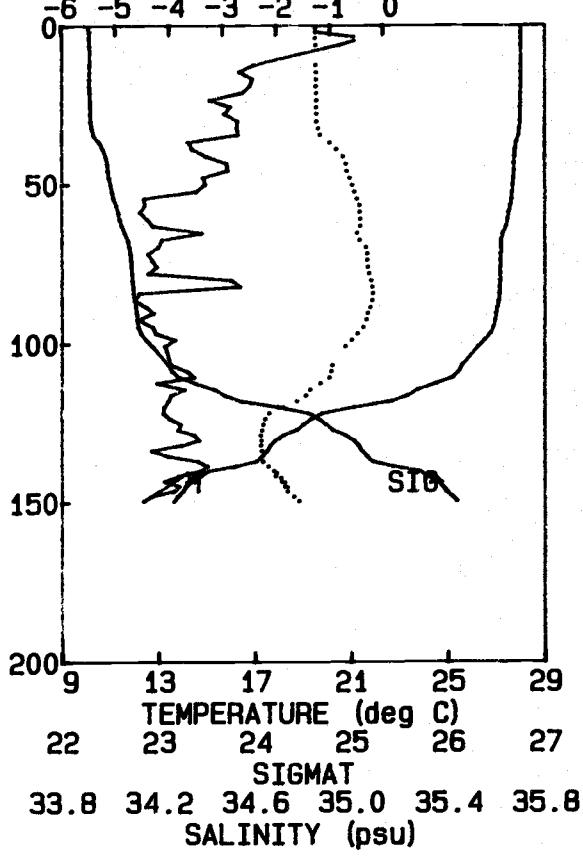
TAPE 049 03-22-87
 DROP 45 04: 14: 55
 LOG (EPS) (cgs)

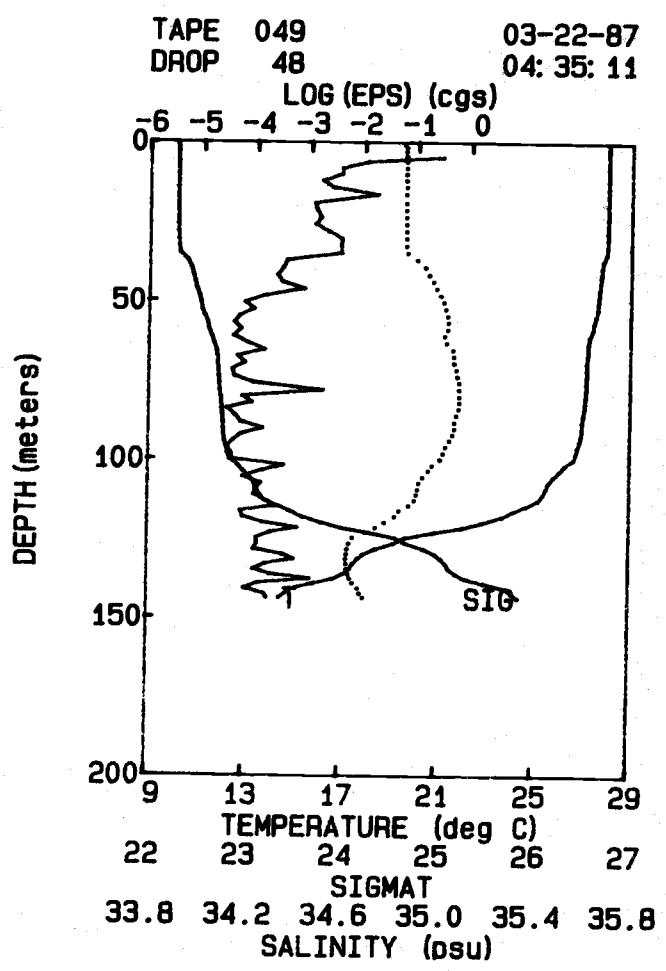
DEPTH (meters)

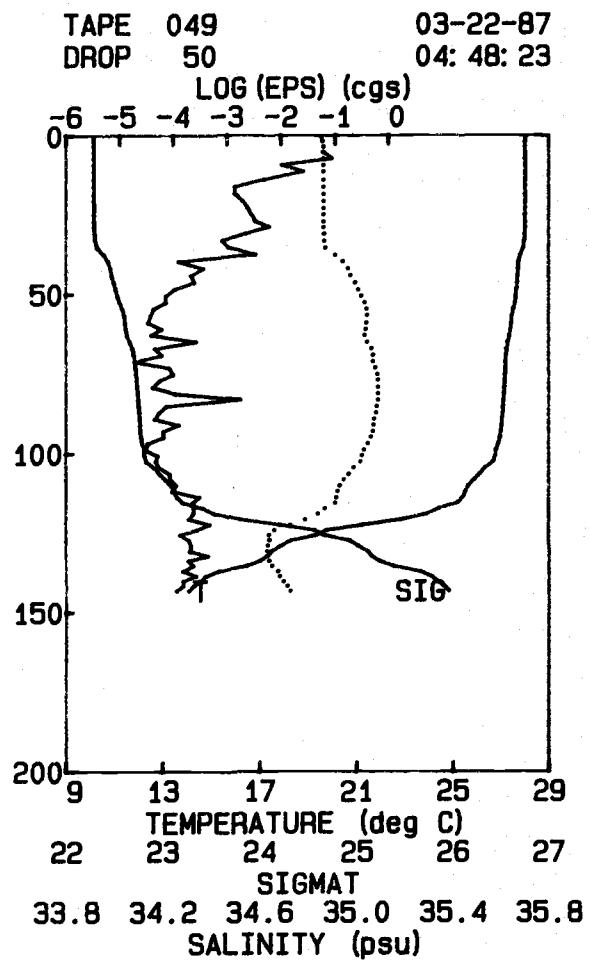
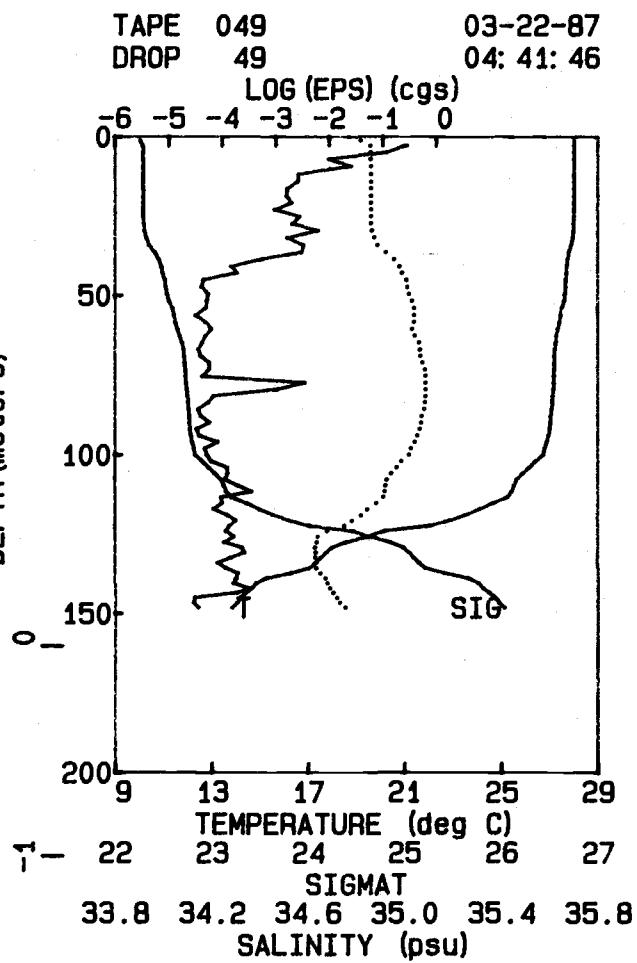


TAPE 049 03-22-87
 DROP 46 04: 21: 36
 LOG (EPS) (cgs)

DEPTH (meters)







-2-

-3-

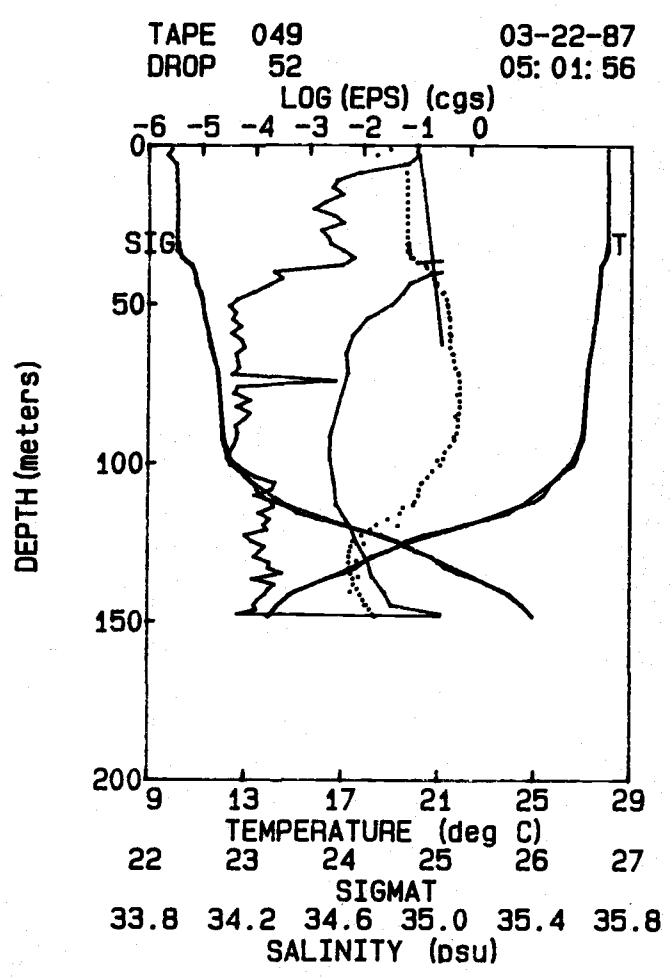
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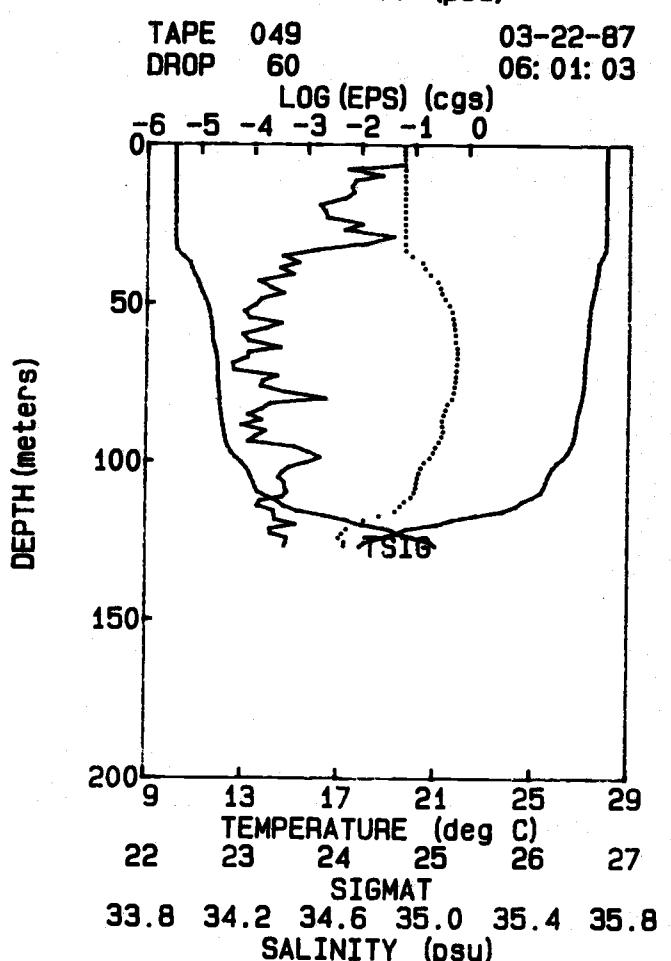
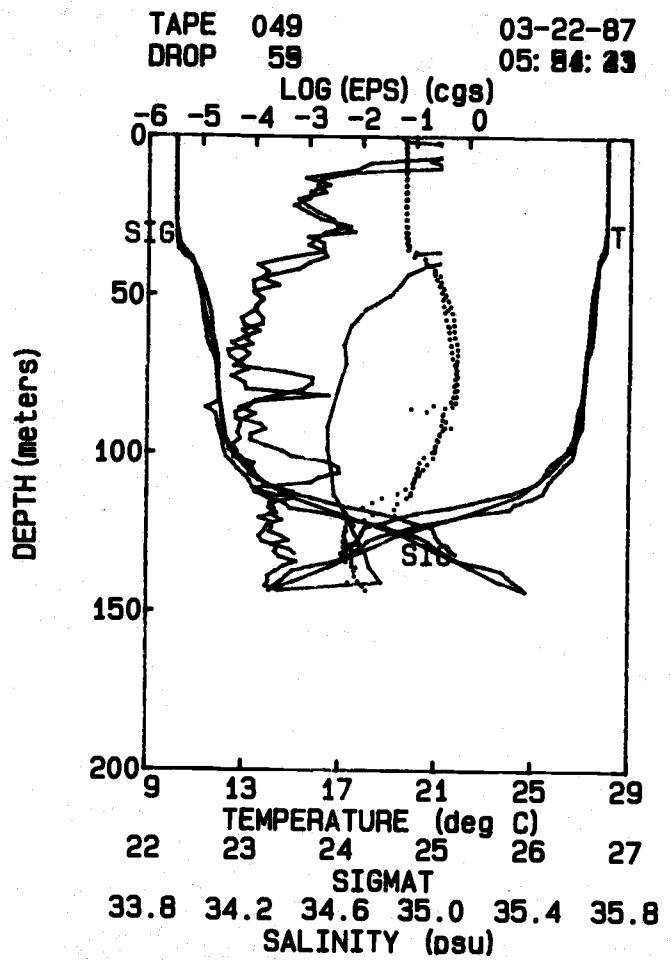
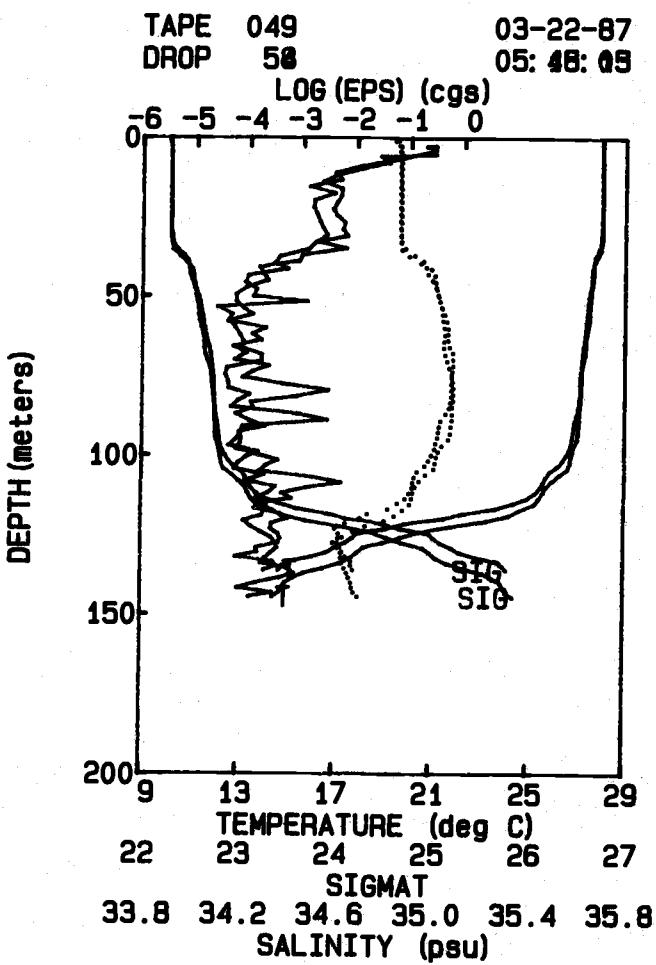
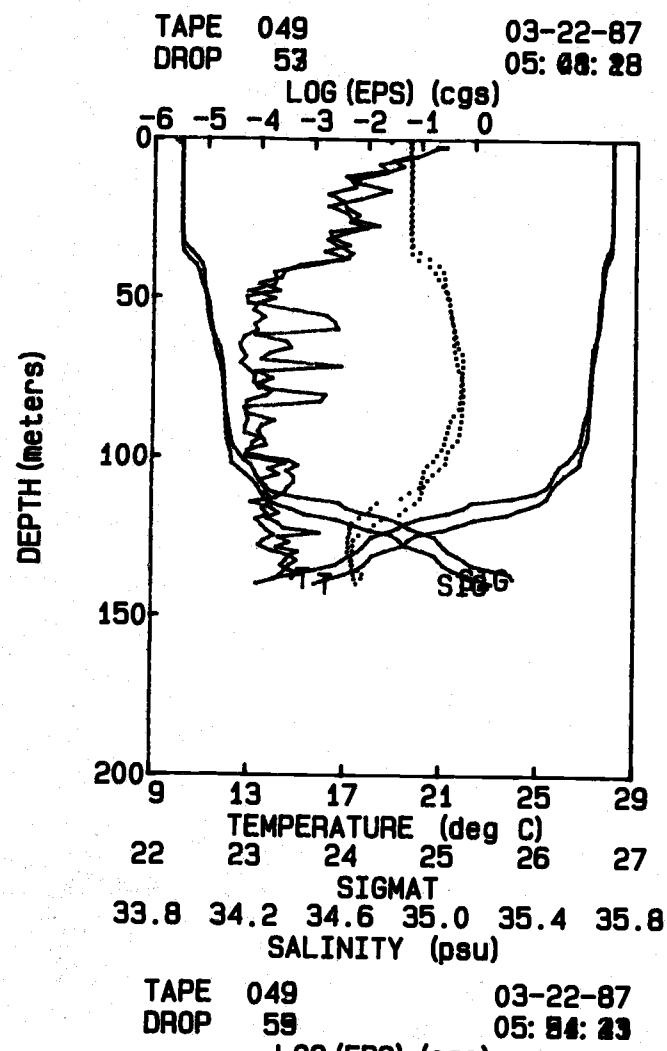
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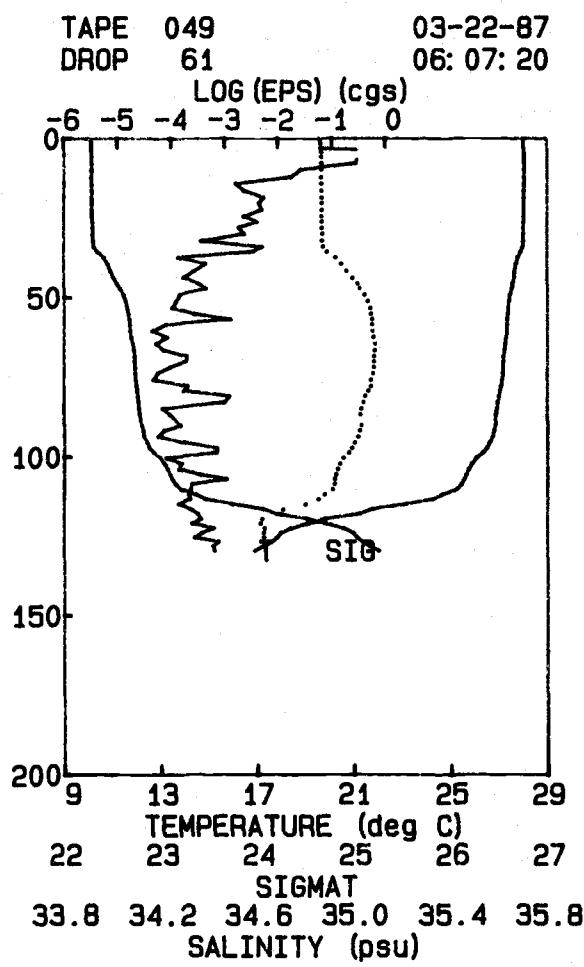
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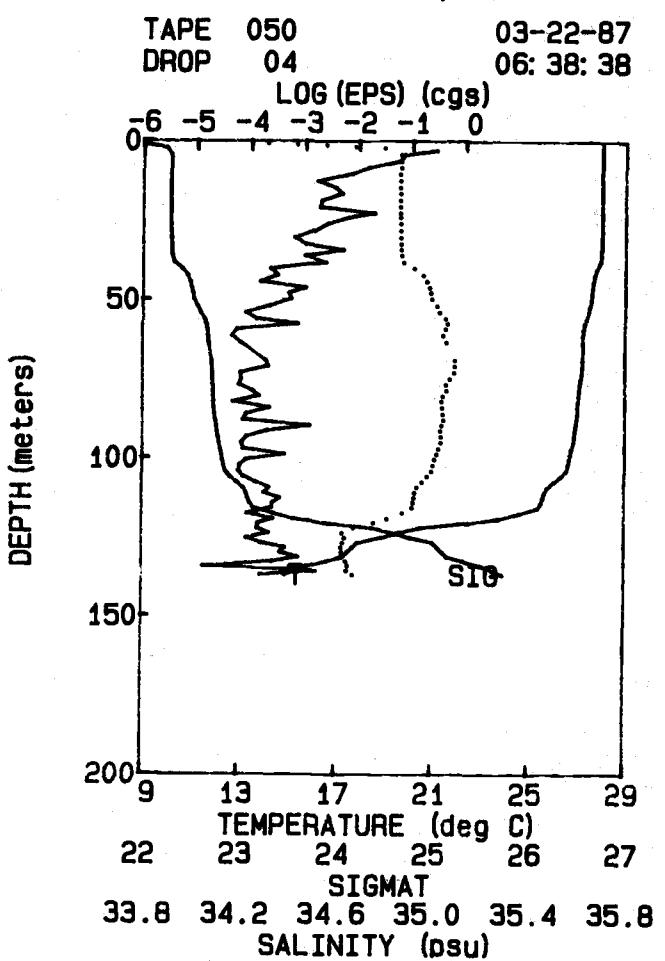
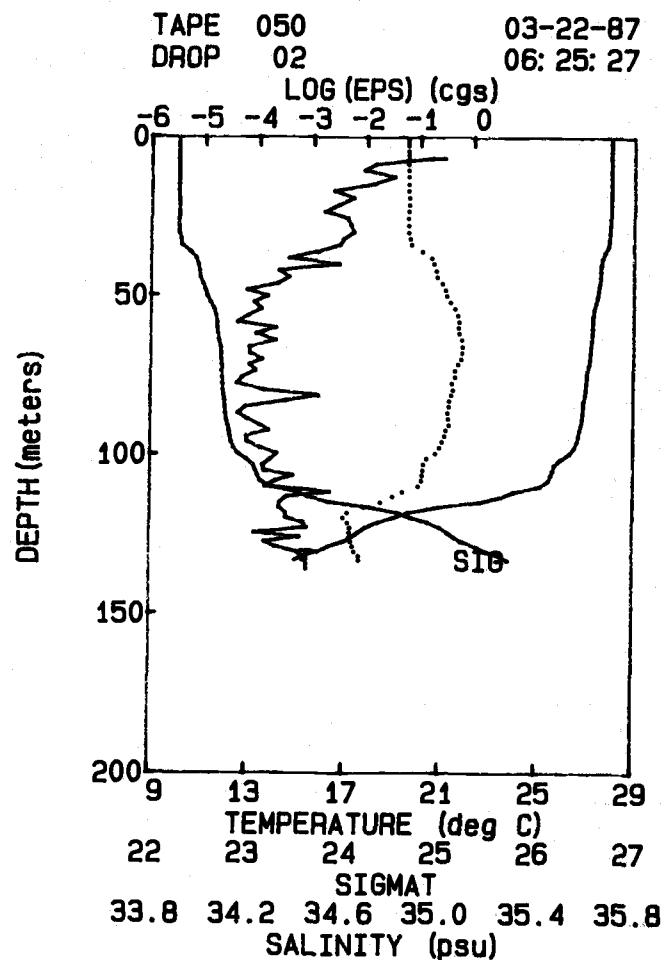
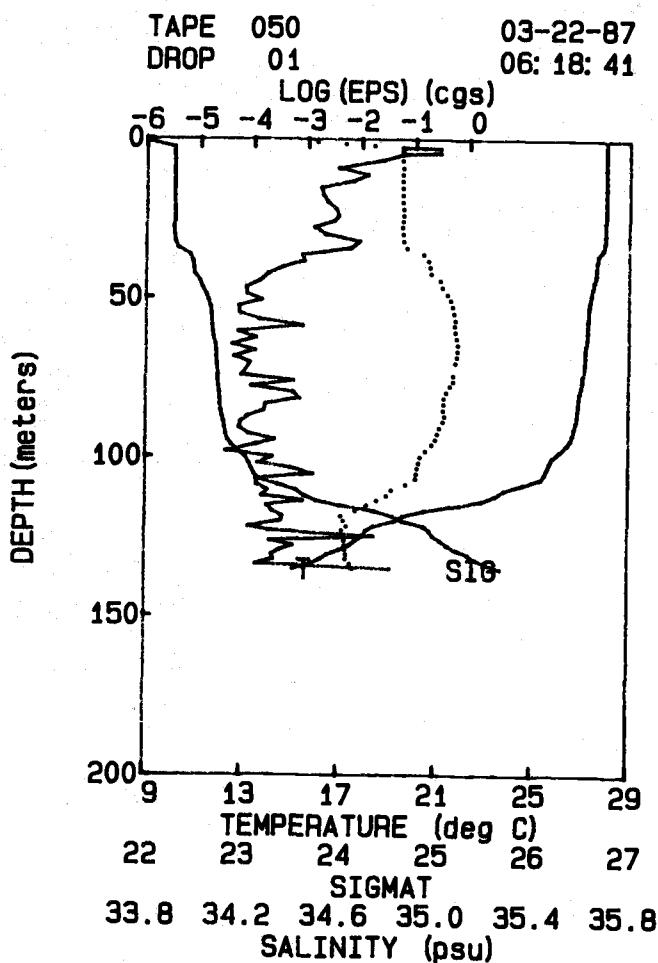
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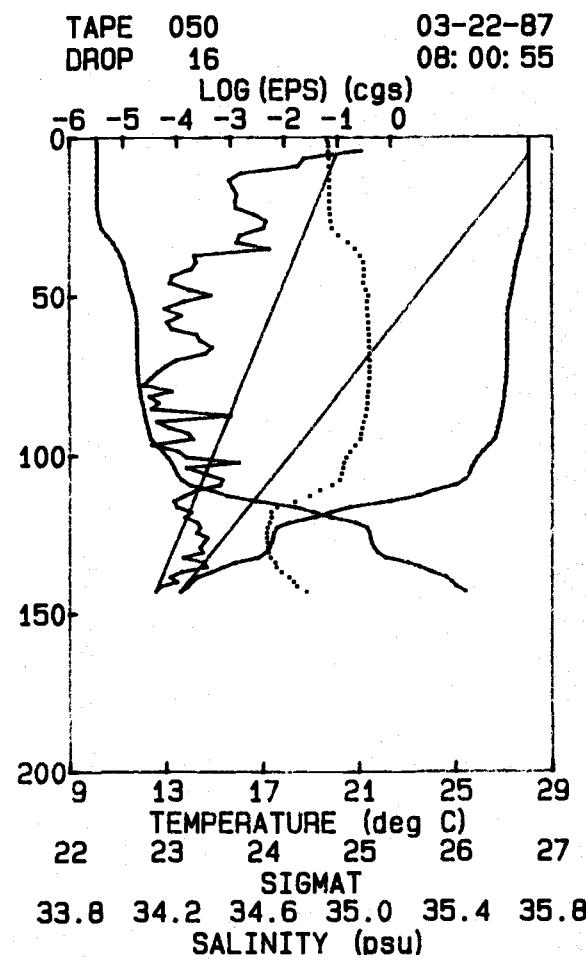
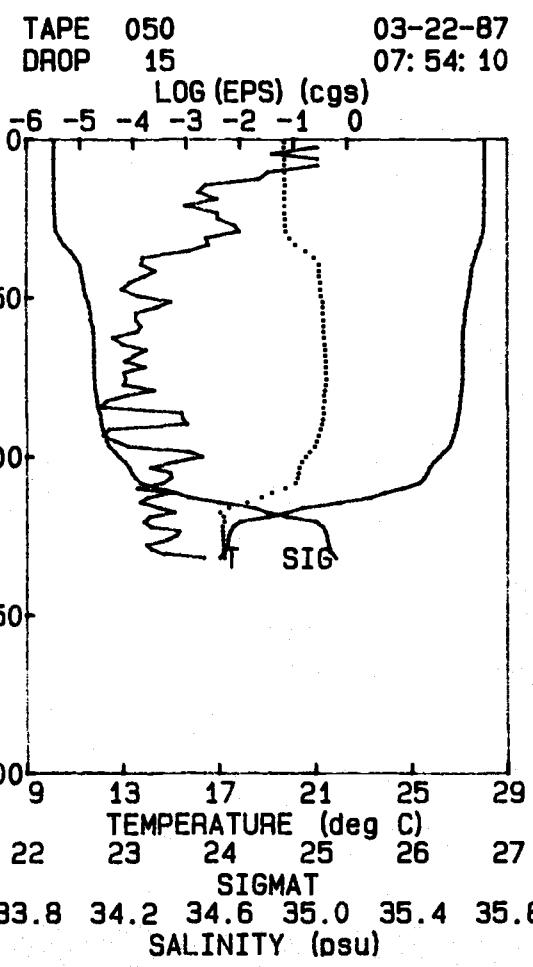


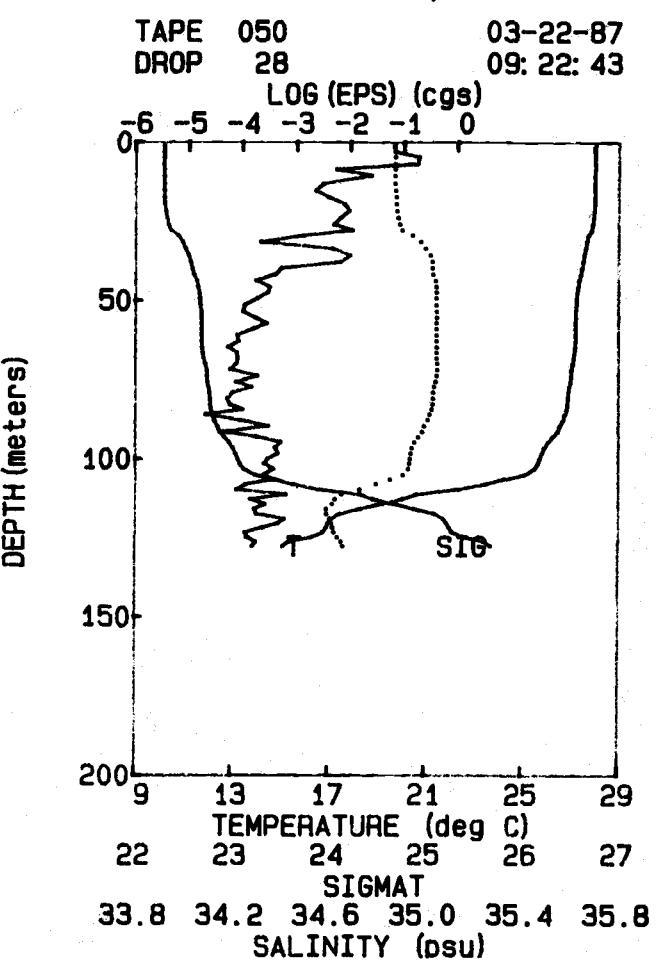
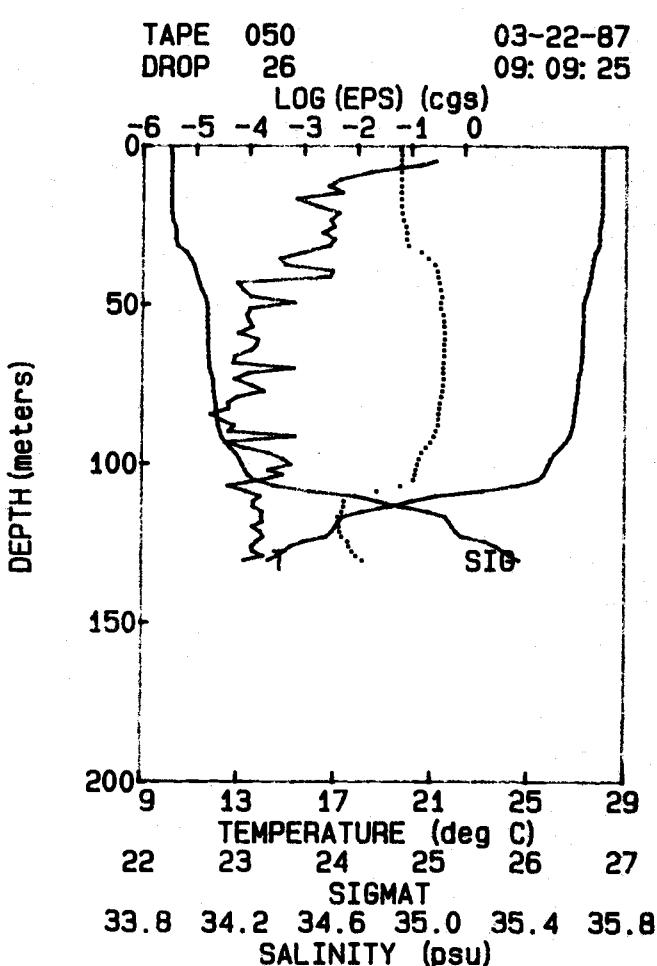
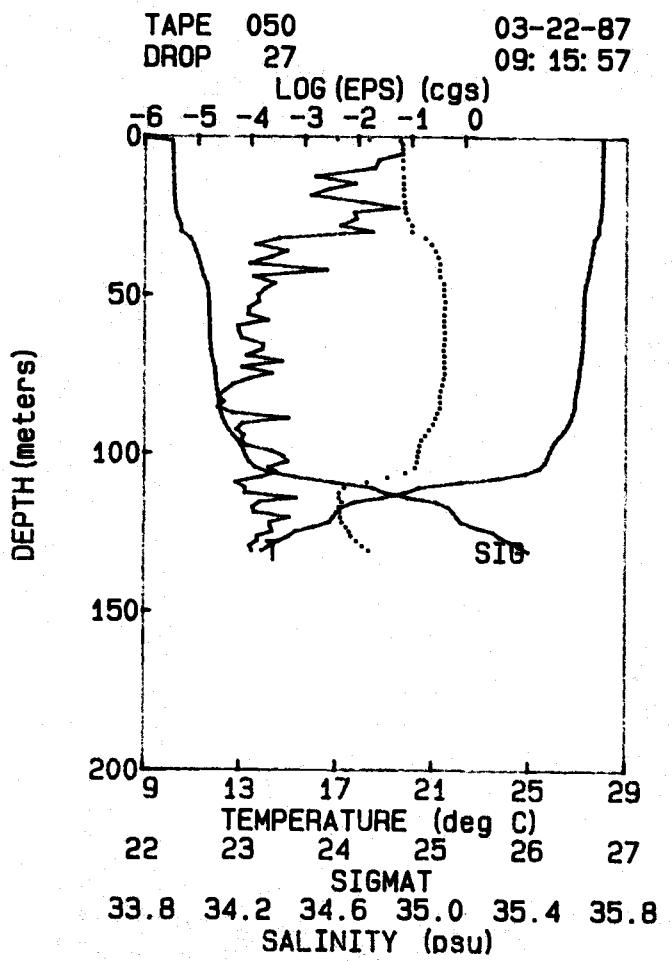
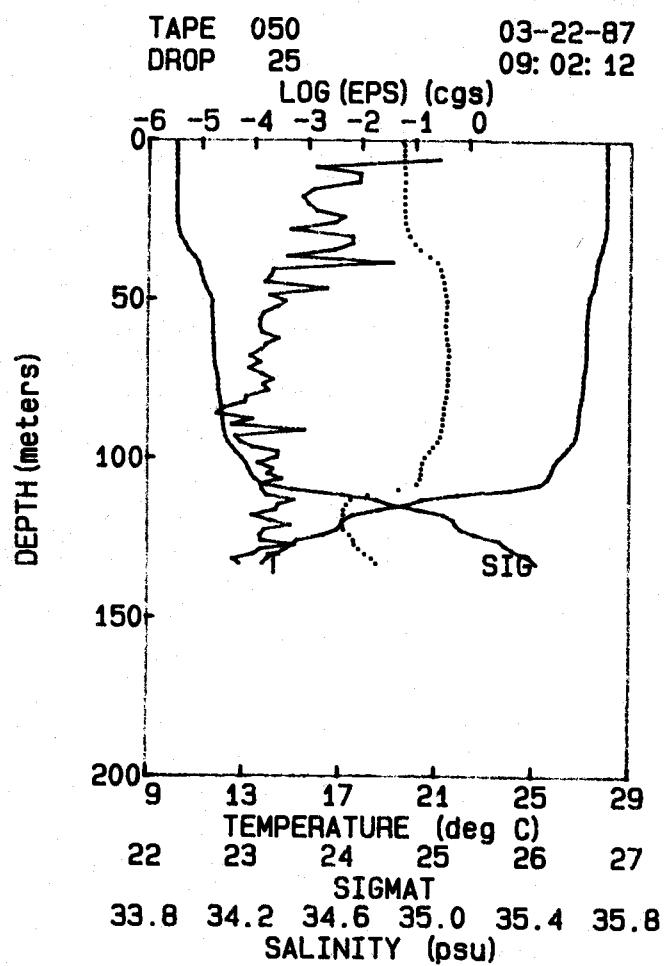


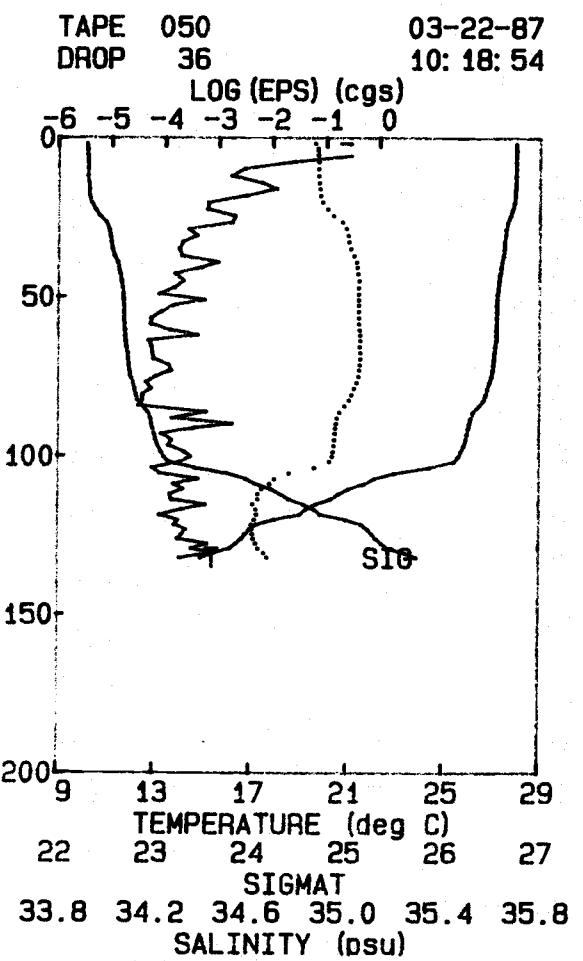
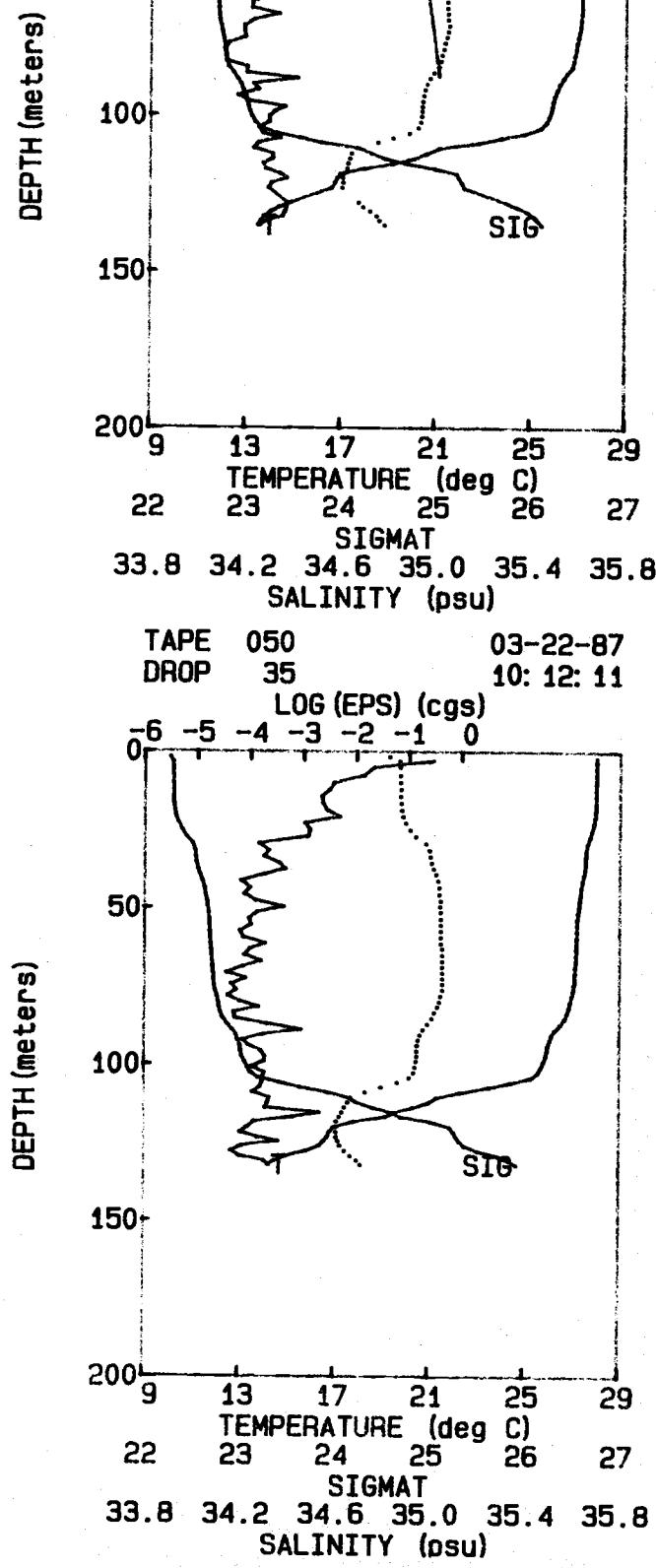
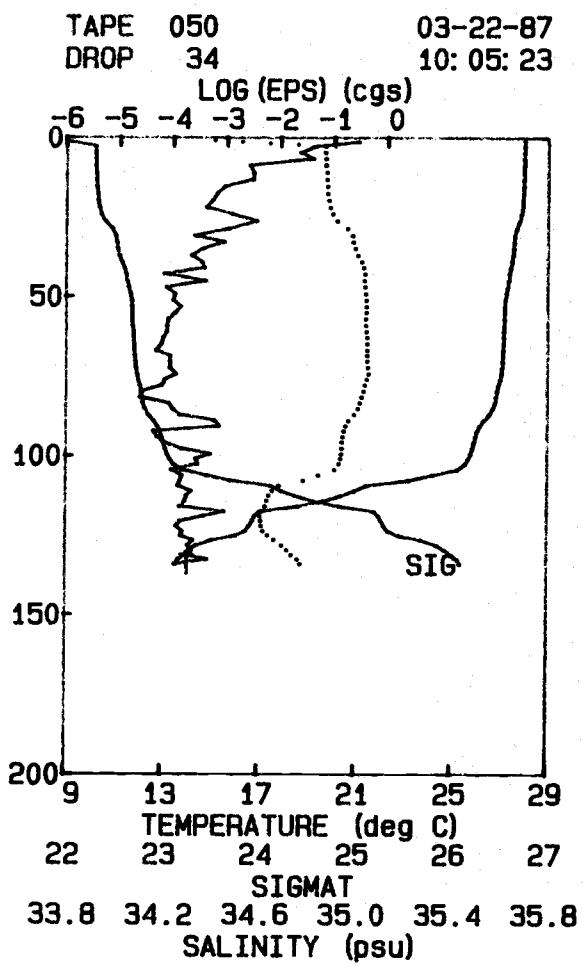
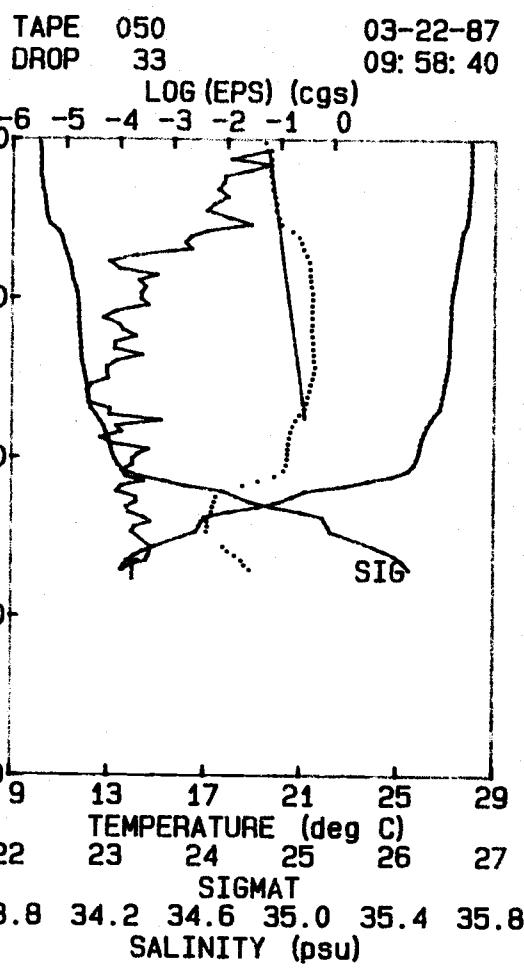


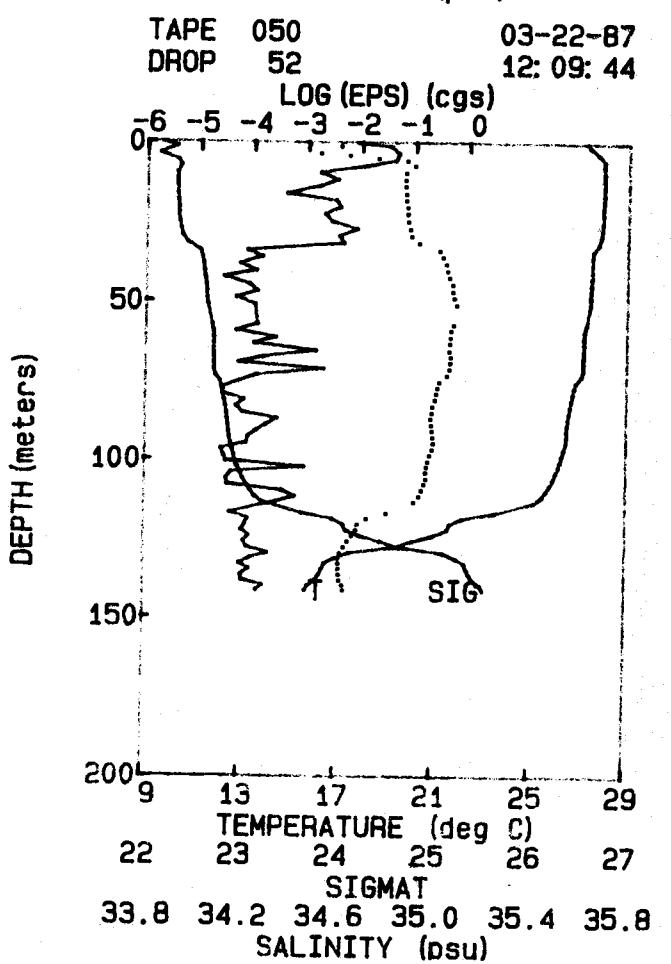
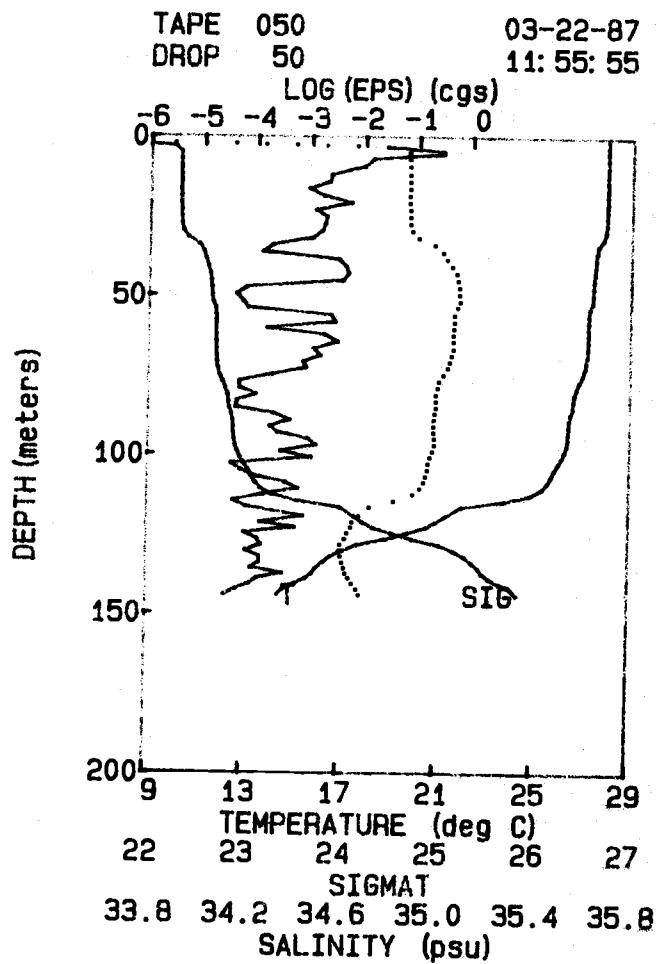
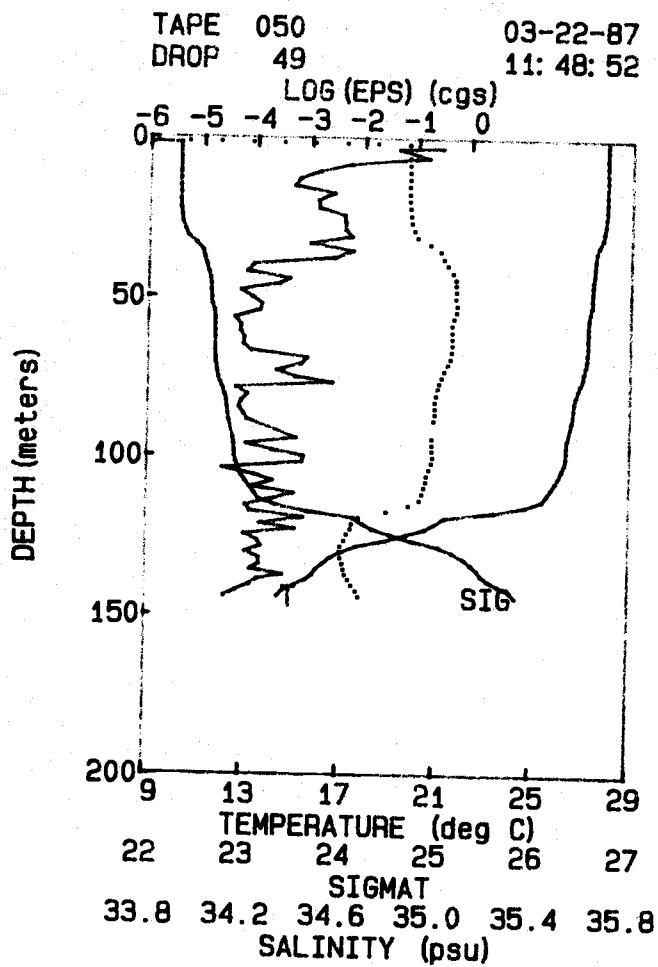


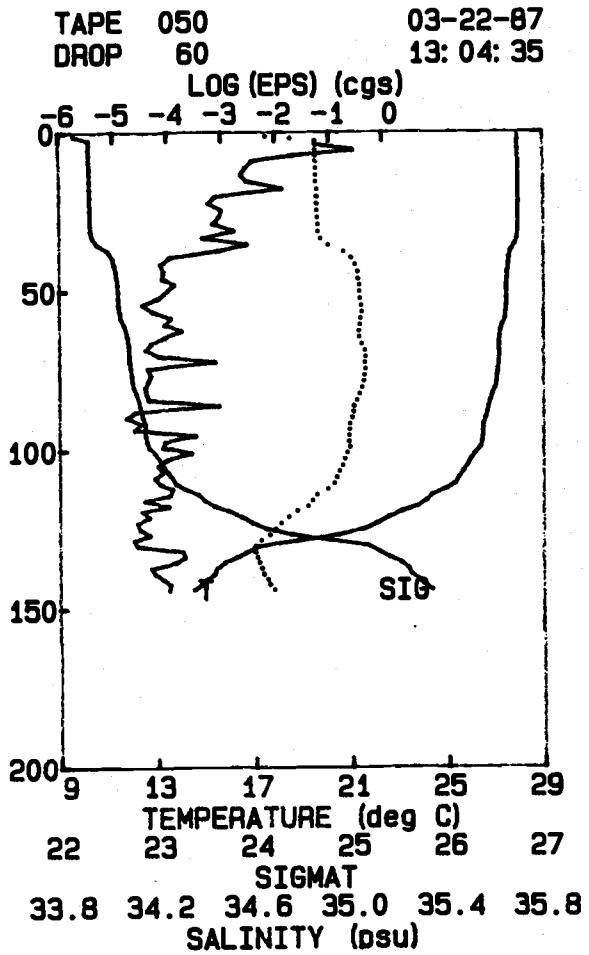
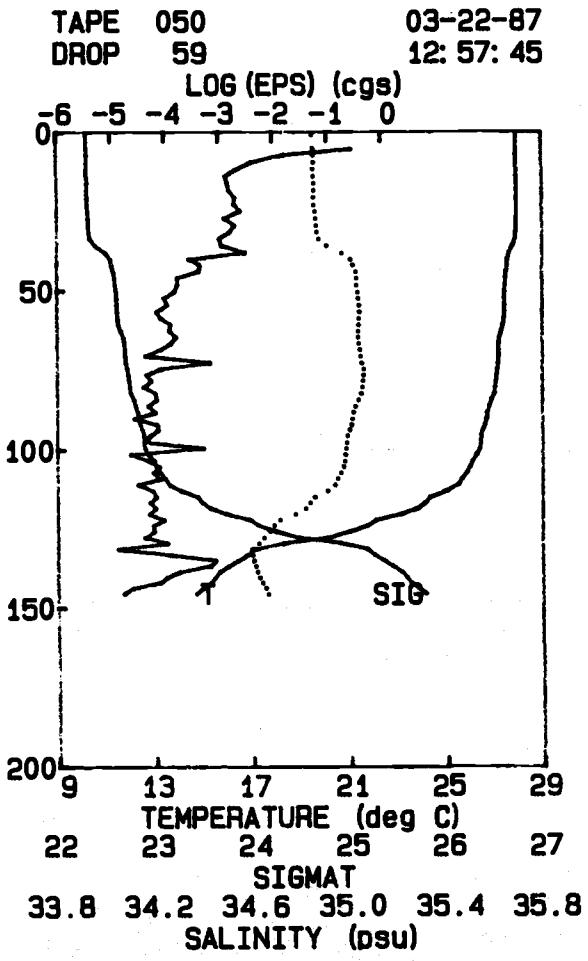
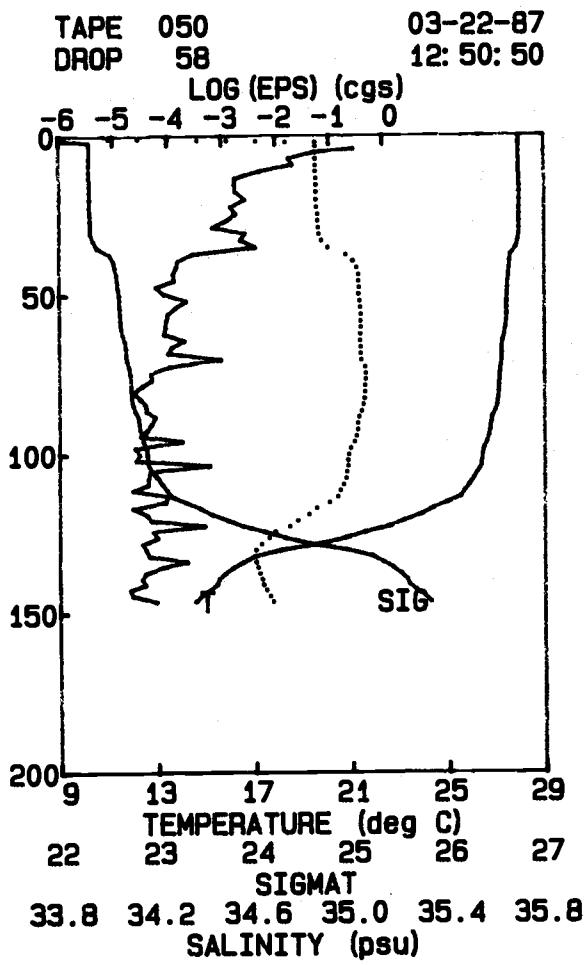
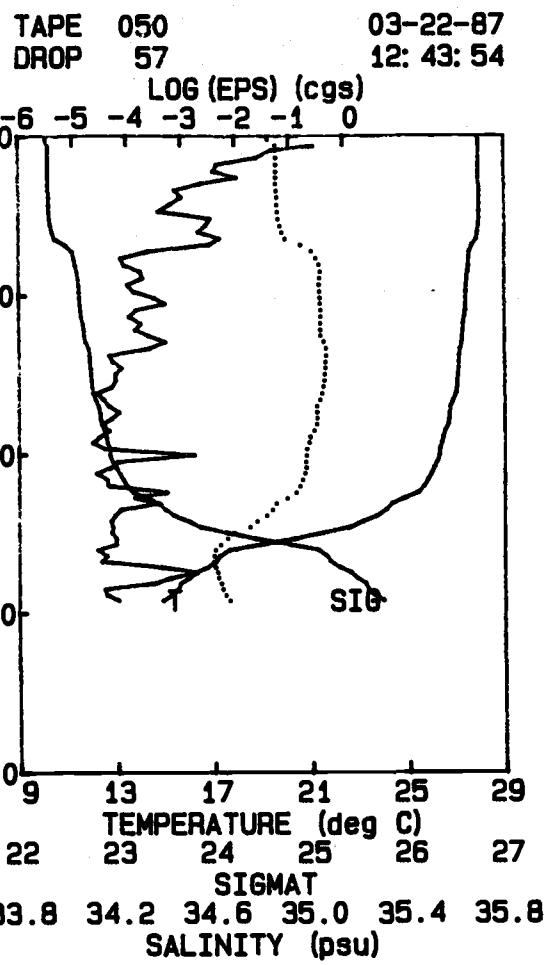


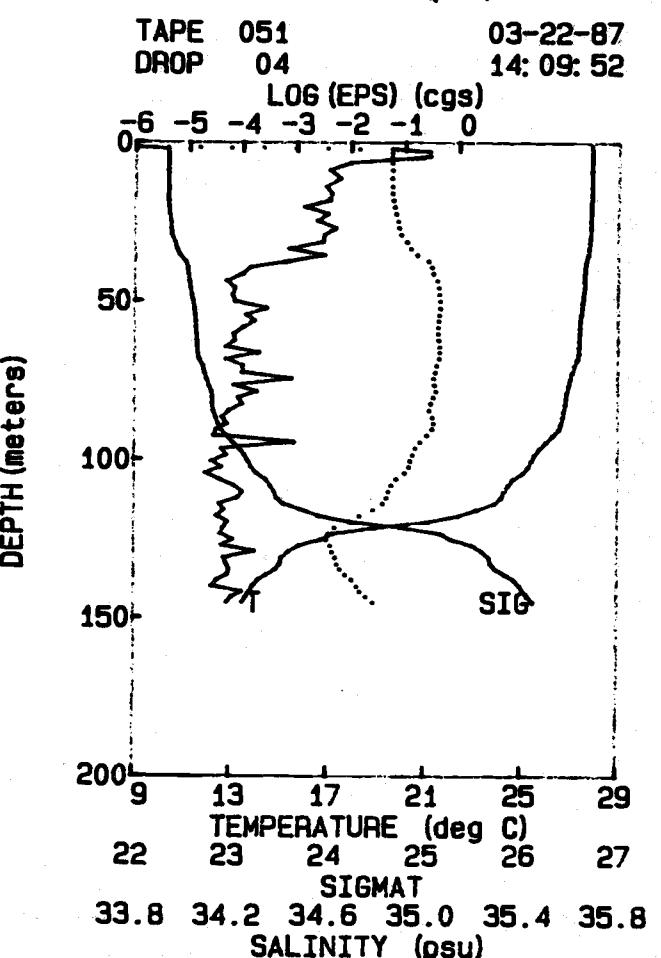
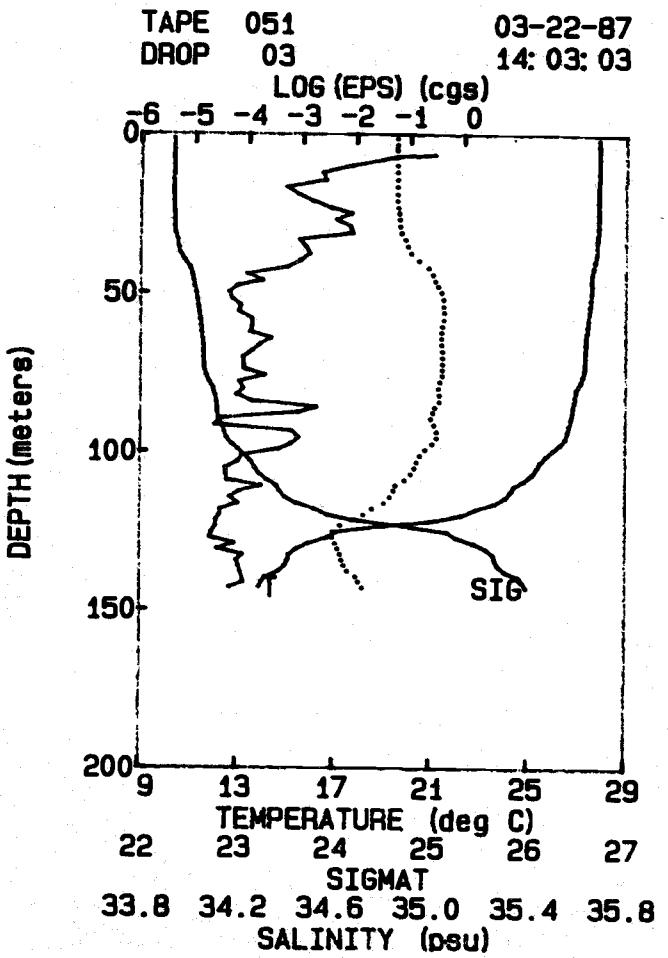
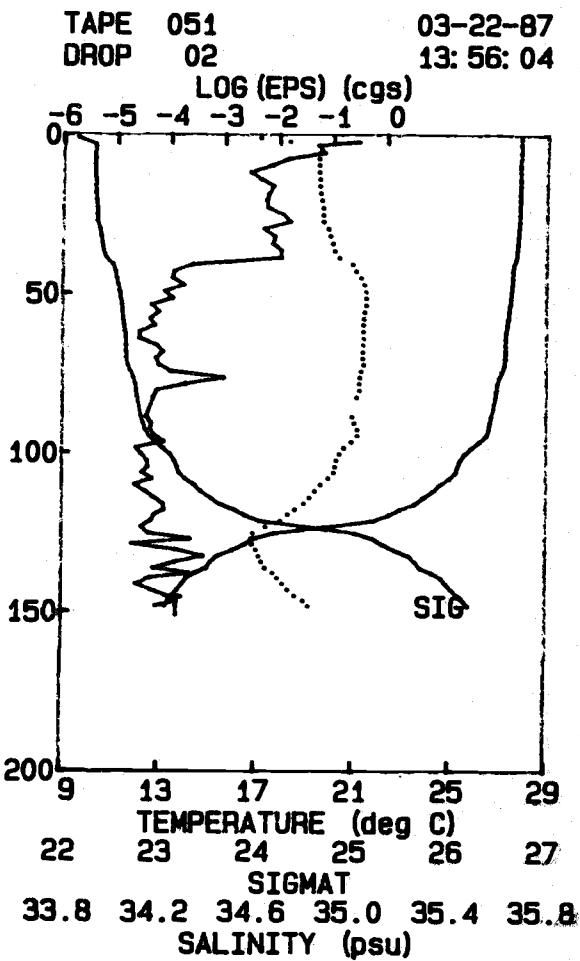
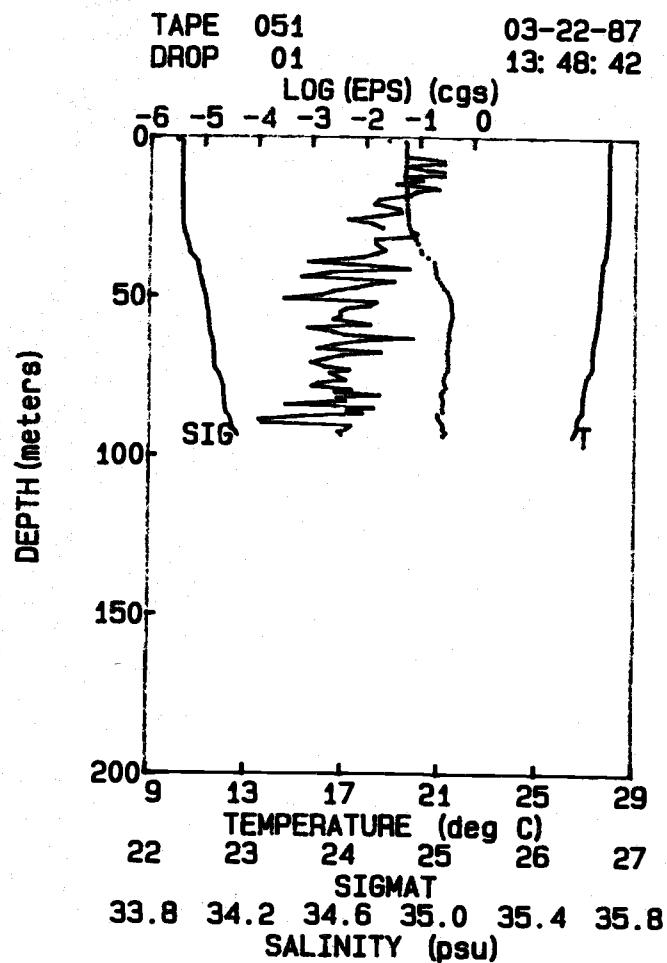




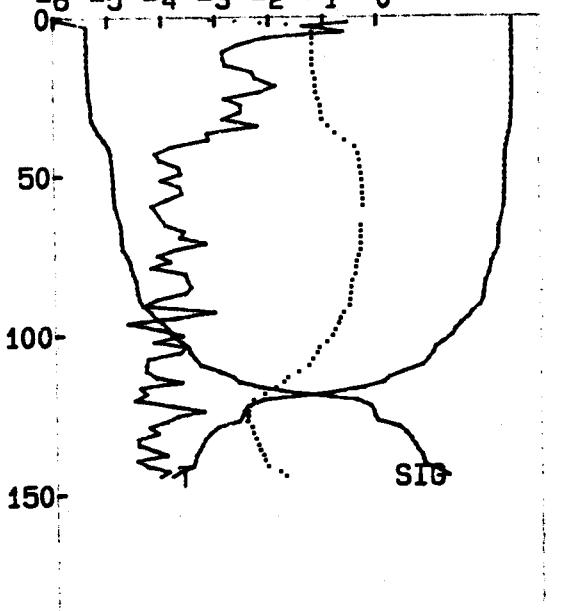






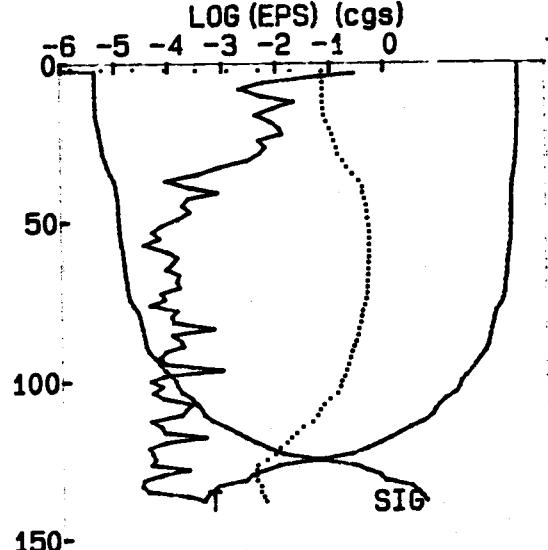


TAPE 051 03-22-87
 DROP 09 14: 44: 19
 LOG (EPS) (cgs)



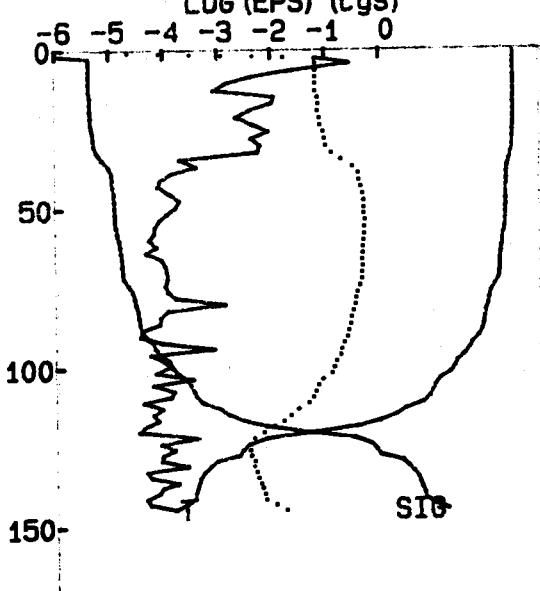
200 9 13 17 21 25 29
 22 23 24 25 26 27
 TEMPERATURE (deg C)
 SIGMAT
 33.8 34.2 34.6 35.0 35.4 35.8
 SALINITY (psu)

TAPE 051 03-22-87
 DROP 11 14: 57: 48



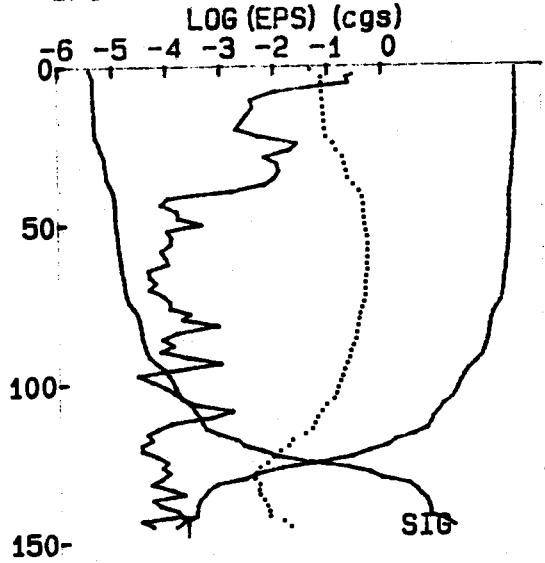
200 9 13 17 21 25 29
 22 23 24 25 26 27
 TEMPERATURE (deg C)
 SIGMAT
 33.8 34.2 34.6 35.0 35.4 35.8
 SALINITY (psu)

TAPE 051 03-22-87
 DROP 10 14: 51: 09
 LOG (EPS) (cgs)

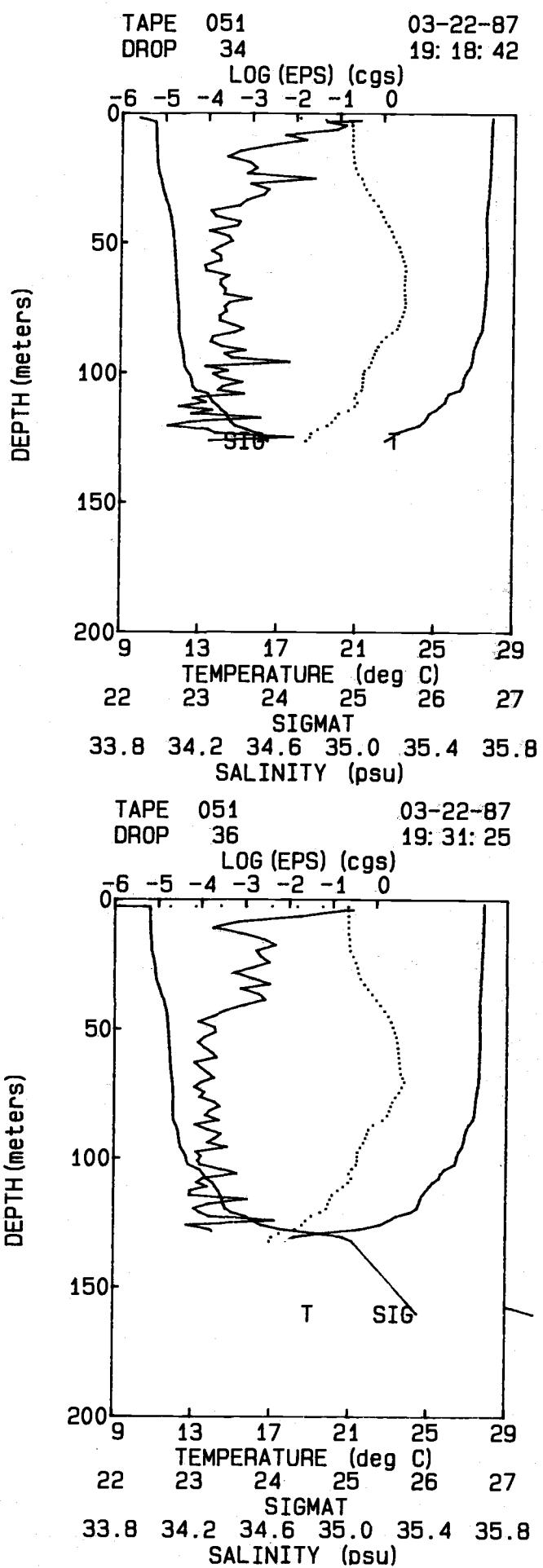
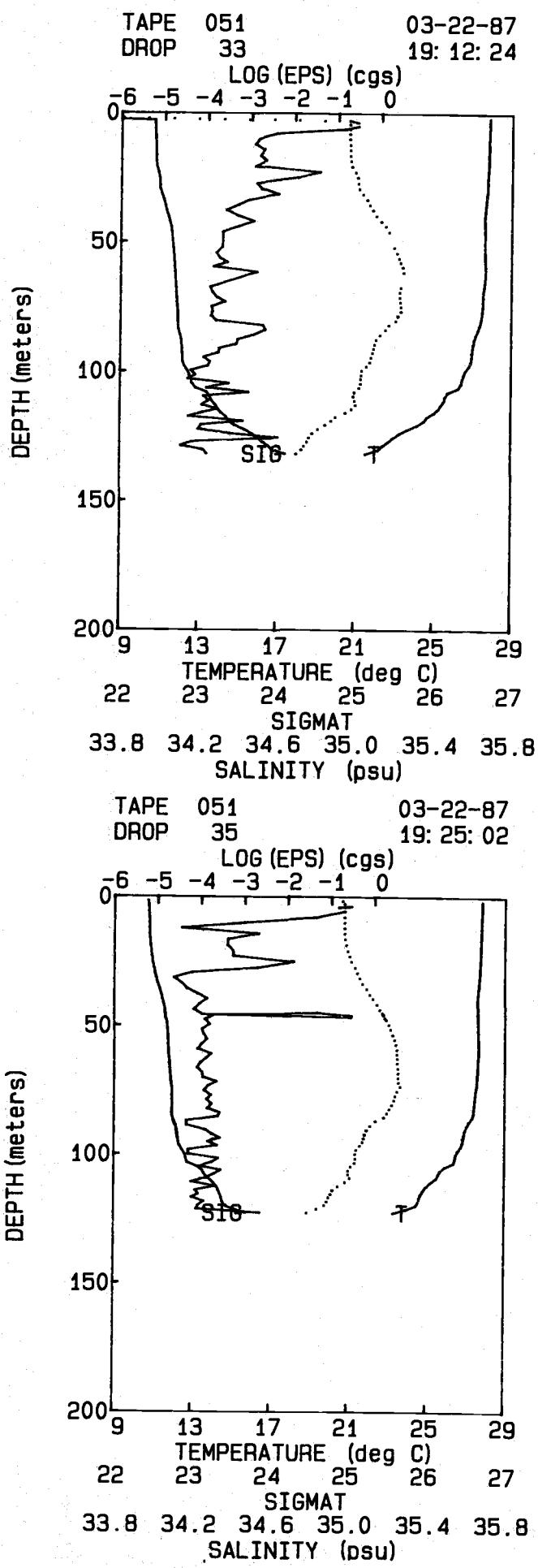


200 9 13 17 21 25 29
 22 23 24 25 26 27
 TEMPERATURE (deg C)
 SIGMAT
 33.8 34.2 34.6 35.0 35.4 35.8
 SALINITY (psu)

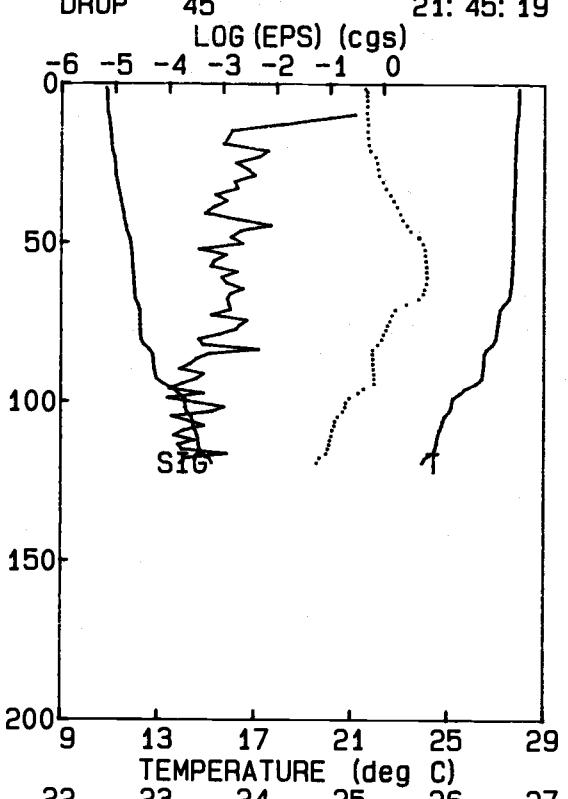
TAPE 051 03-22-87
 DROP 12 15: 04: 35



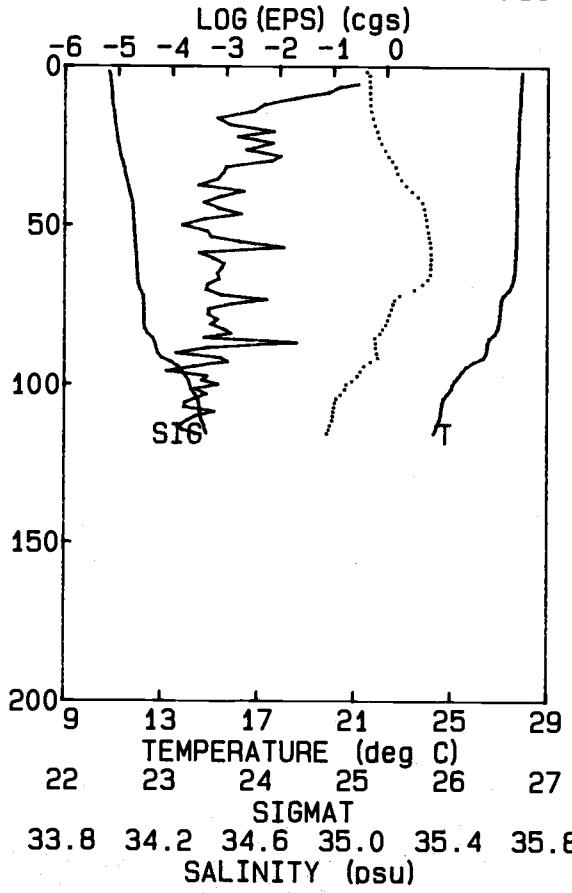
200 9 13 17 21 25 29
 22 23 24 25 26 27
 TEMPERATURE (deg C)
 SIGMAT
 33.8 34.2 34.6 35.0 35.4 35.8
 SALINITY (psu)



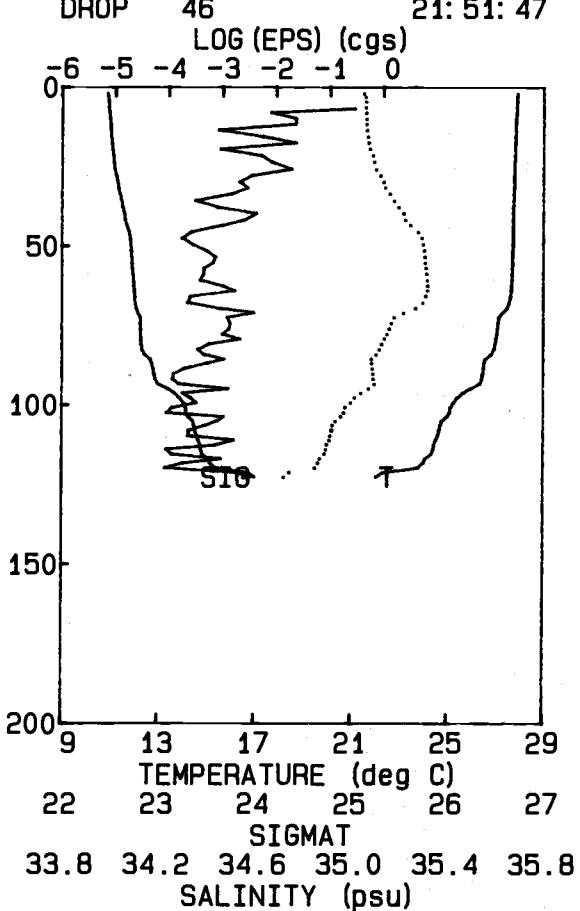
TAPE 051
DROP 45 03-22-87
21: 45: 19



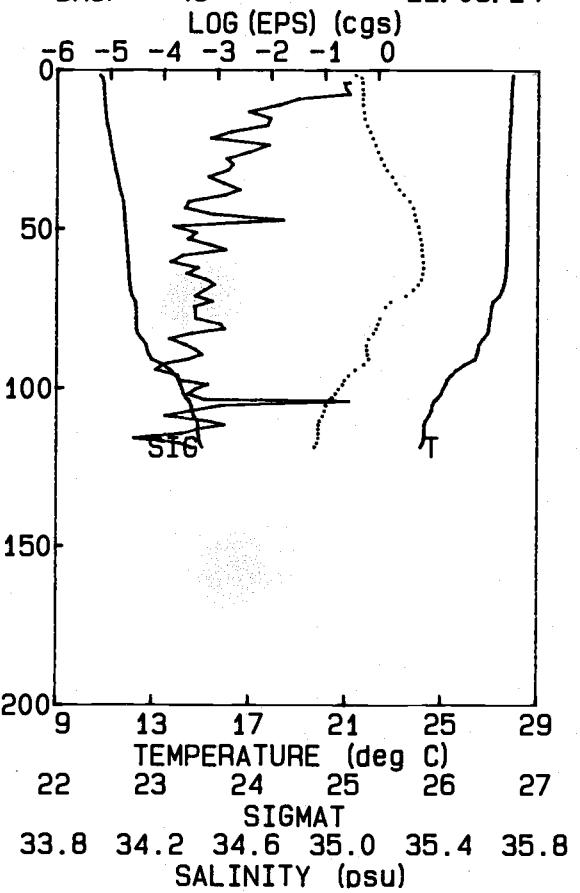
TAPE 051
DROP 47 03-22-87
21: 58: 58



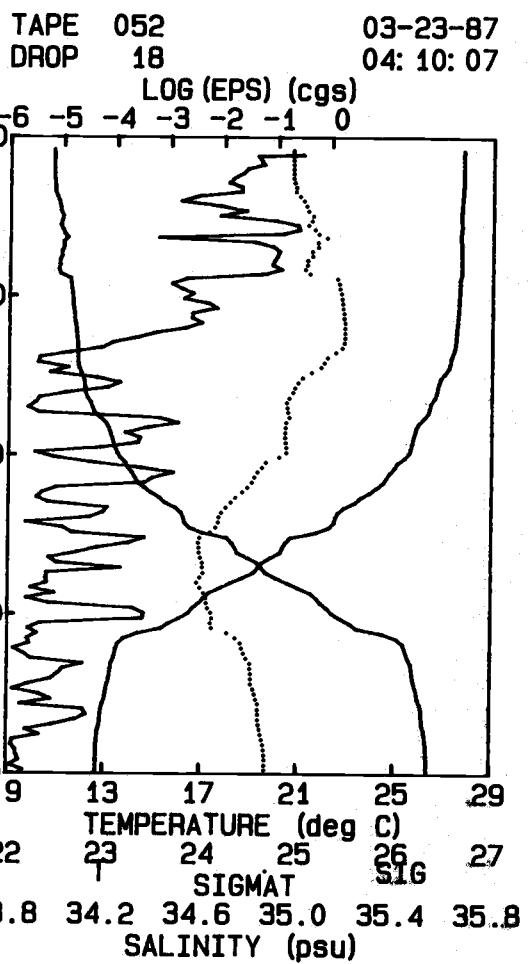
TAPE 051
DROP 46 03-22-87
21: 51: 47



TAPE 051
DROP 48 03-22-87
22: 05: 24



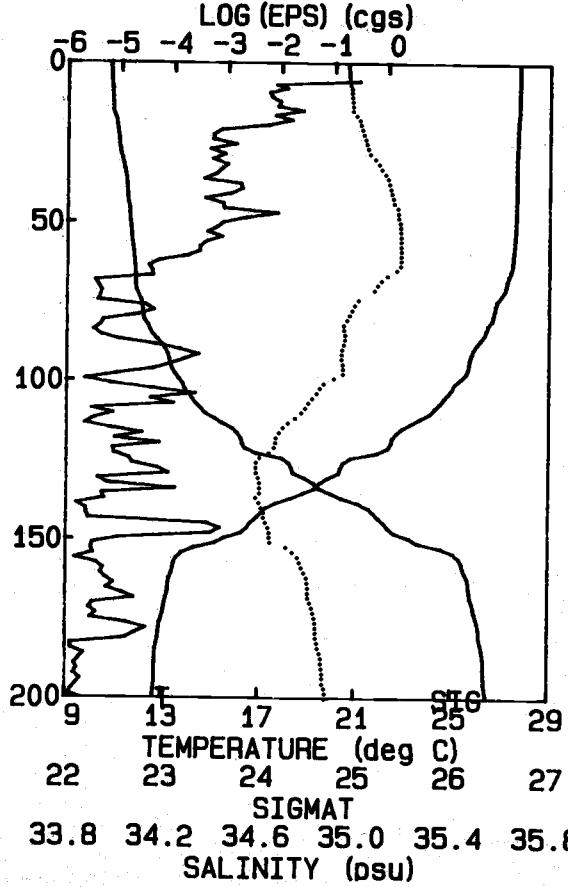
300



TAPE 052 03-23-87
 DROP 19 04: 23: 13

LOG (EPS) (cgs)

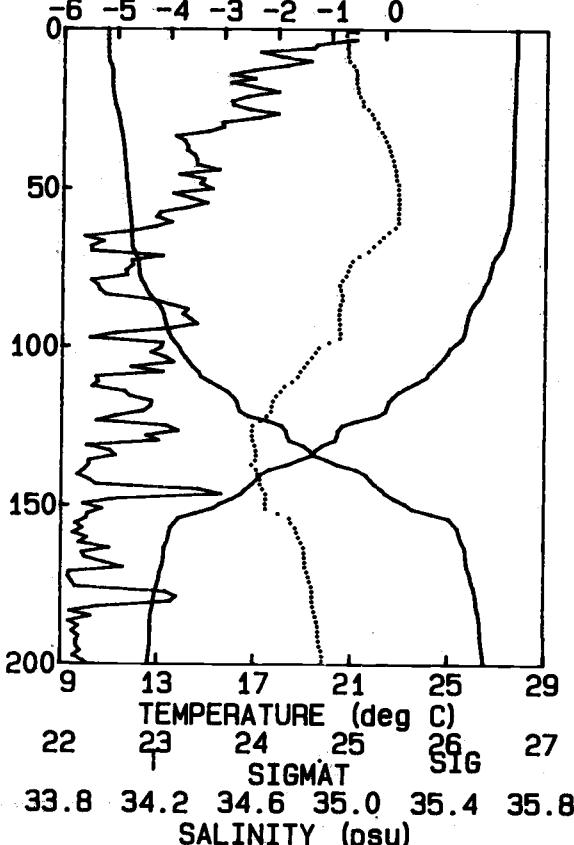
DEPTH (meters)

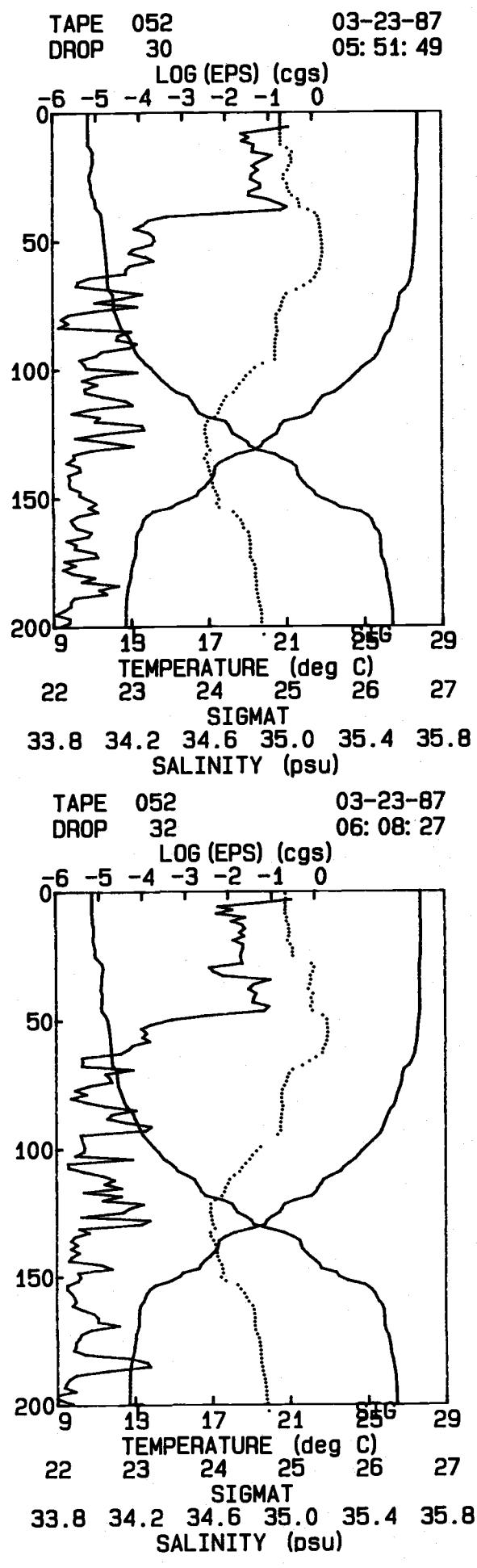
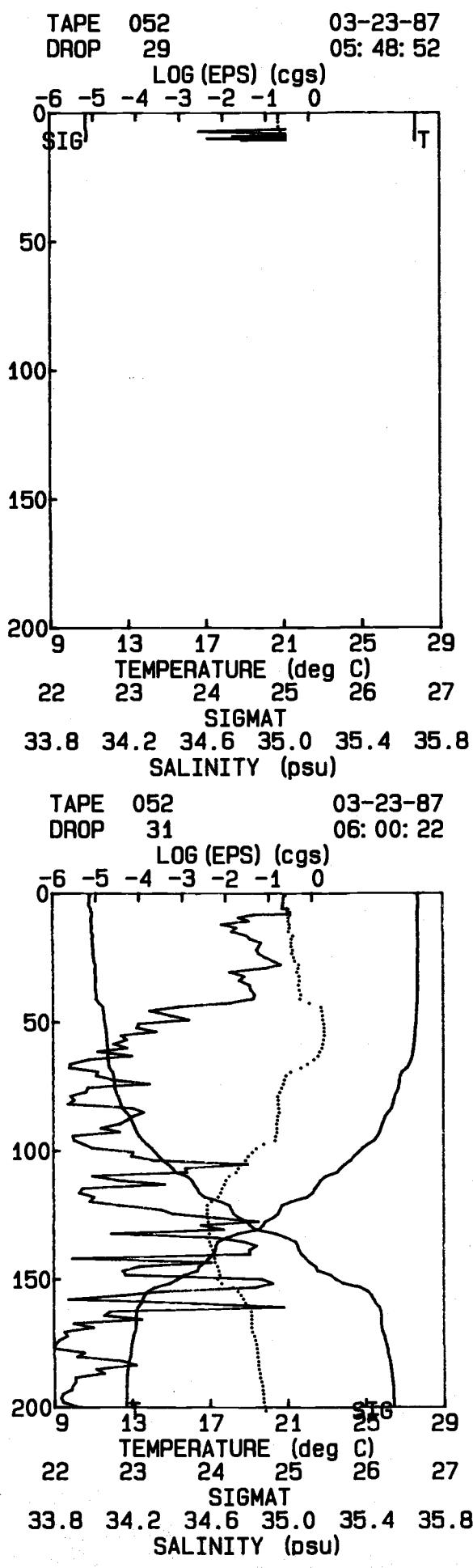


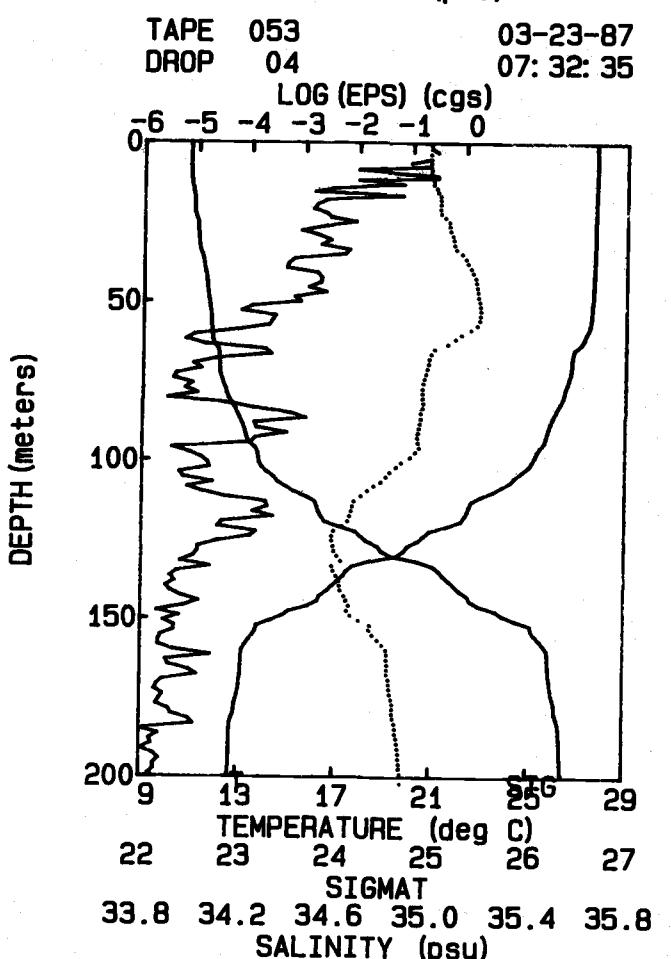
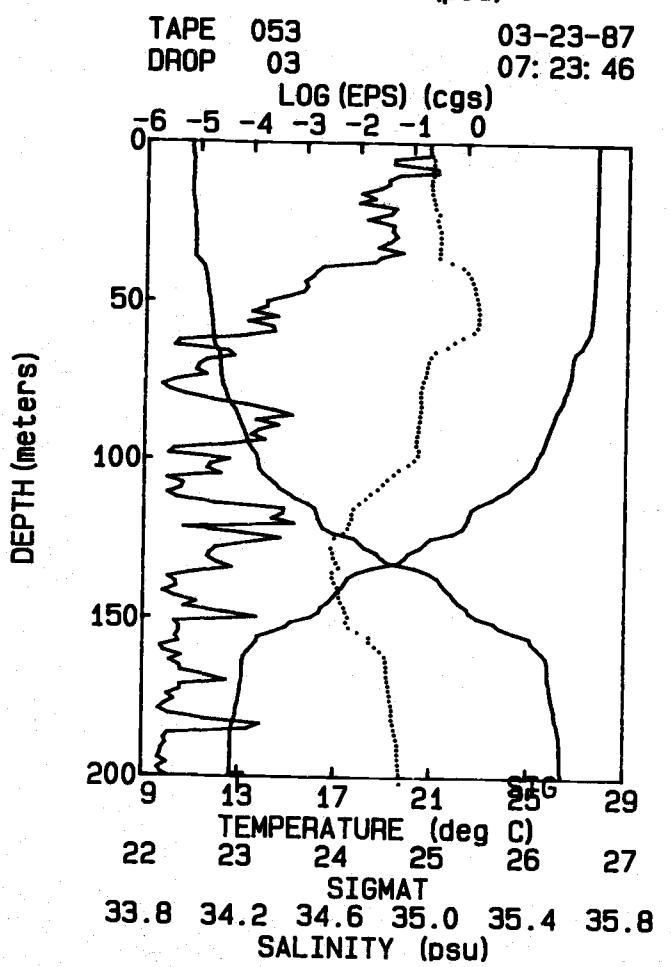
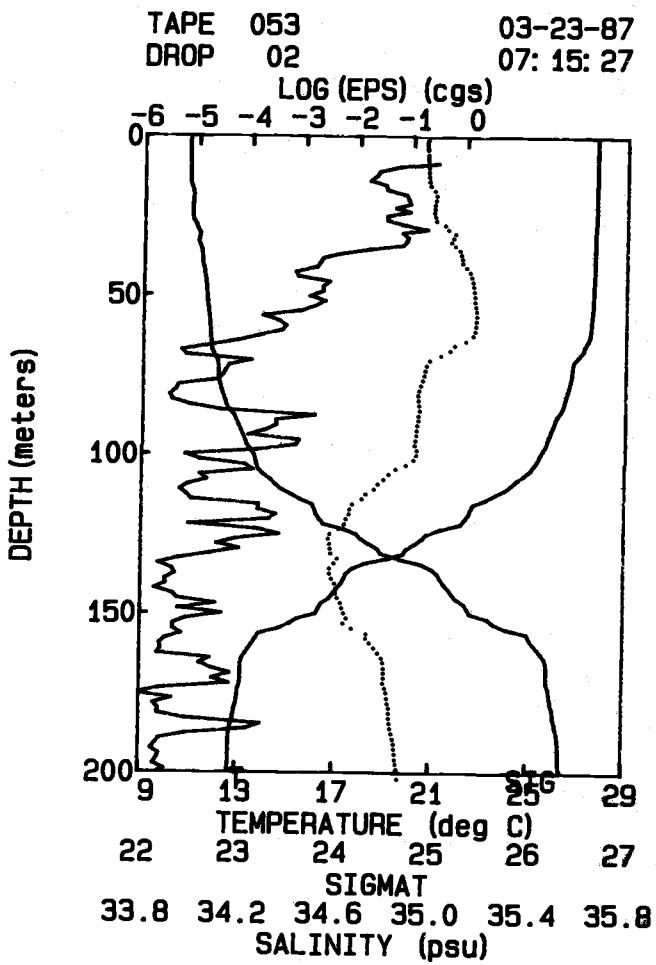
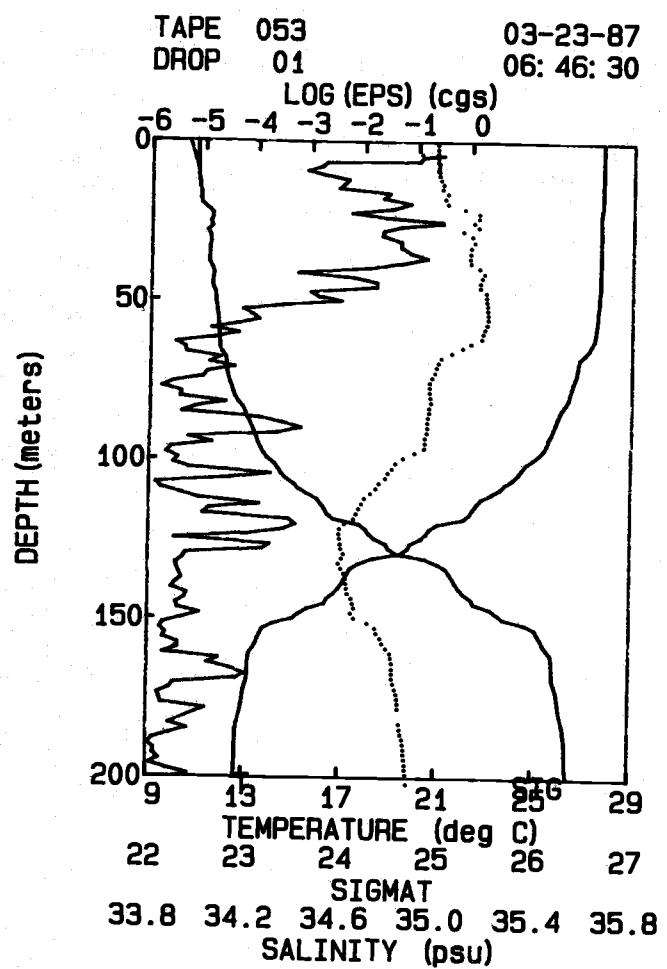
TAPE 052 03-23-87
 DROP 20 04: 31: 51

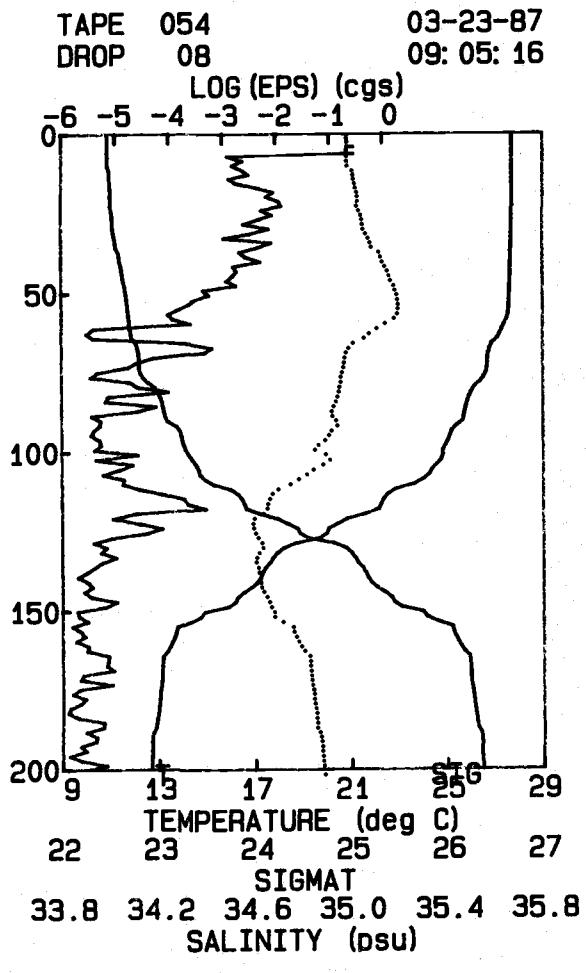
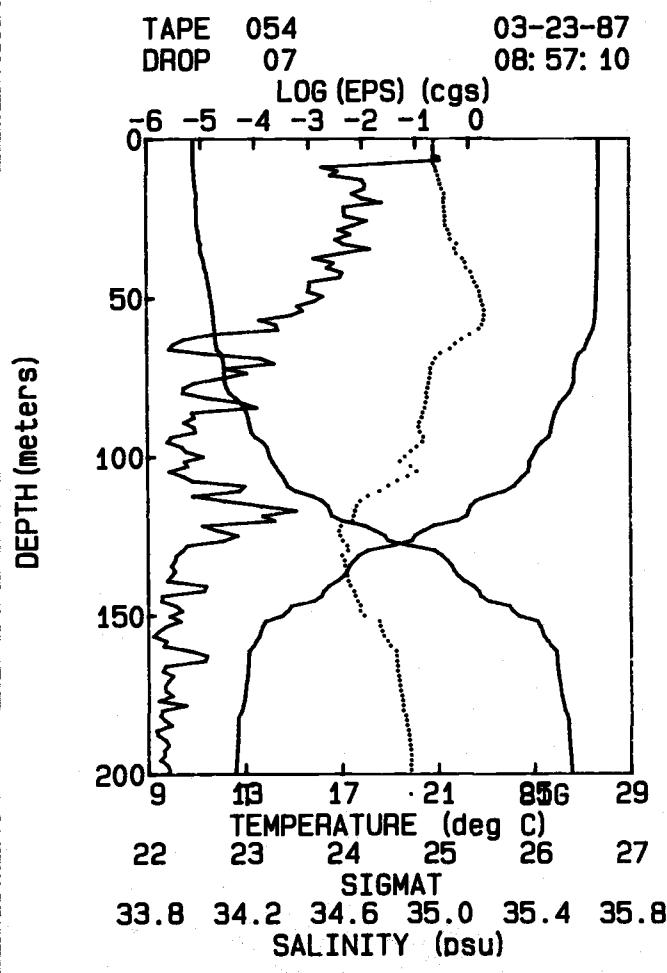
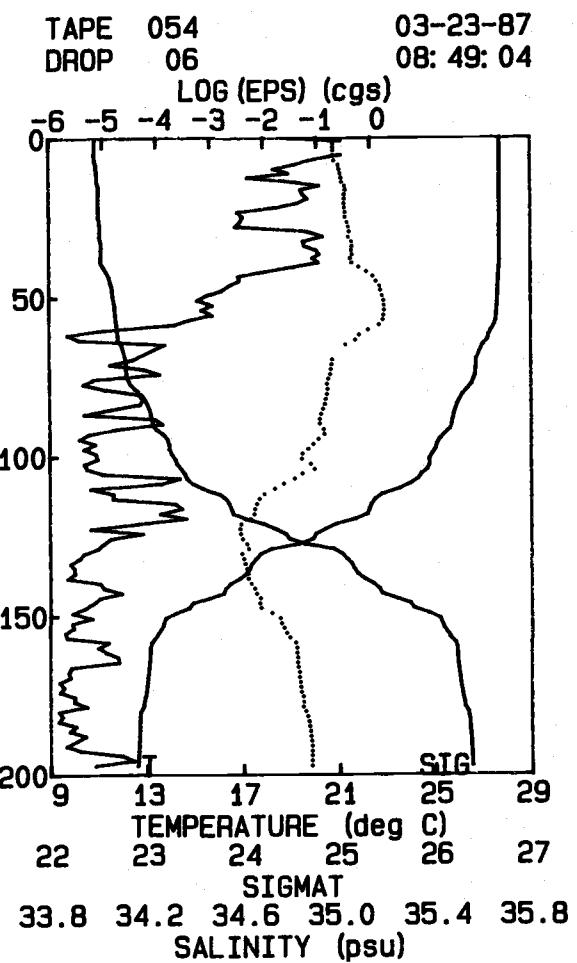
LOG (EPS) (cgs)

DEPTH (meters)

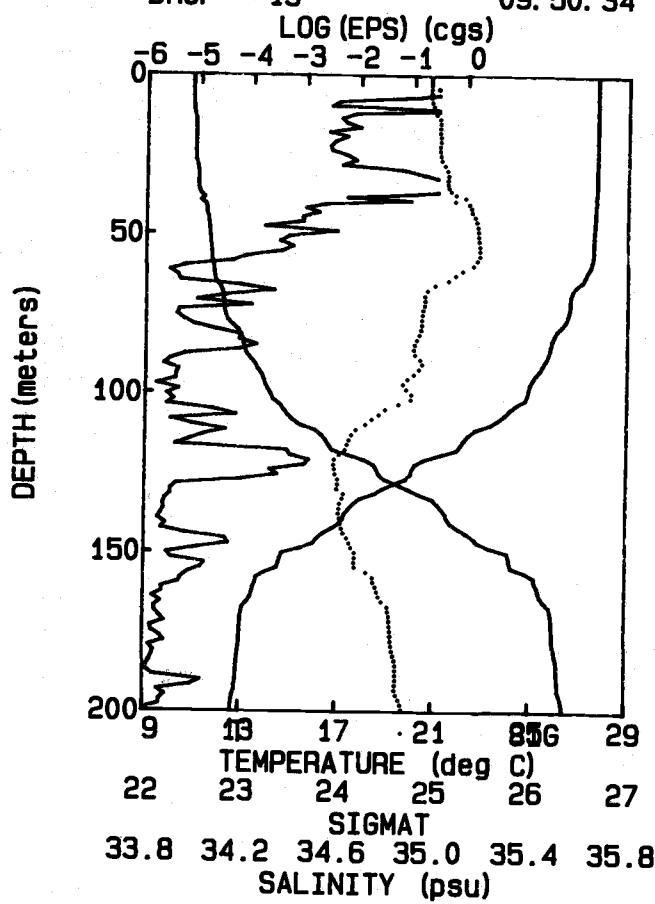




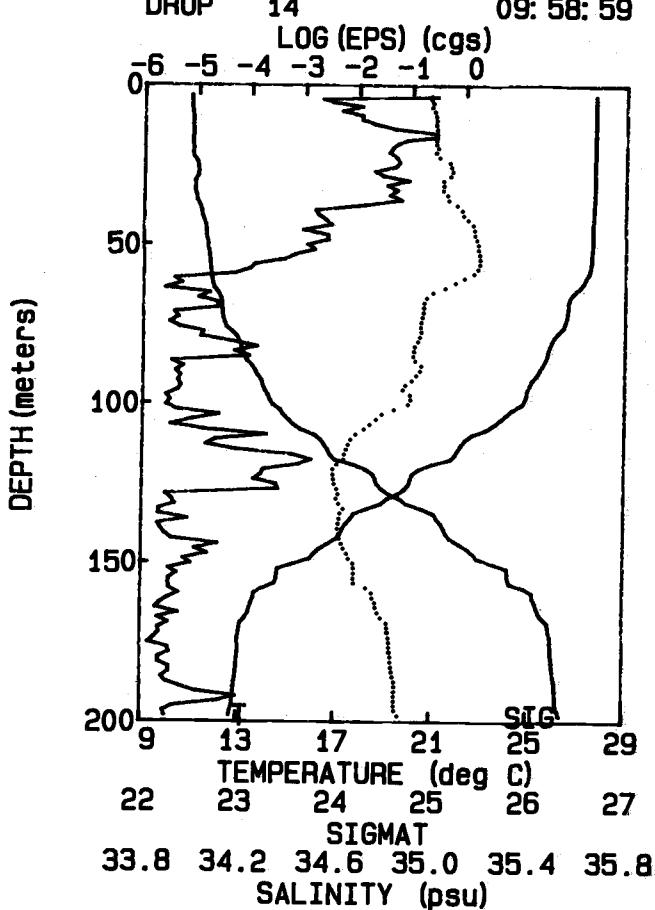




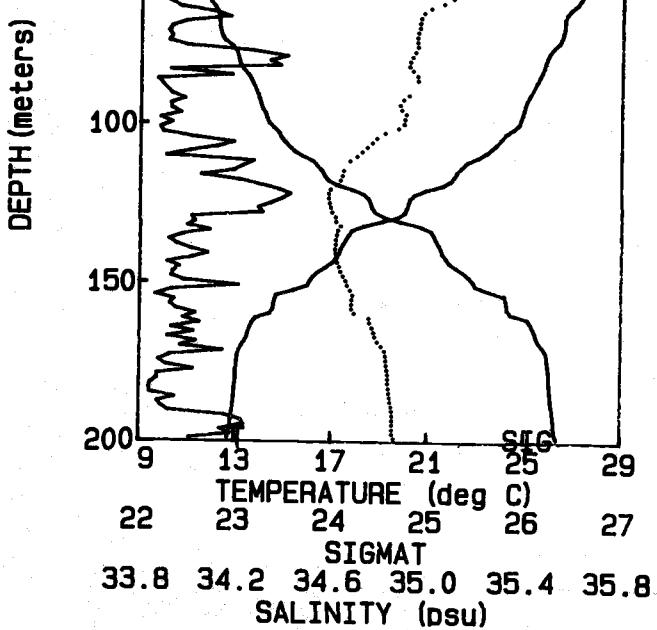
TAPE 054
DROP 13 03-23-87
 09: 50: 34



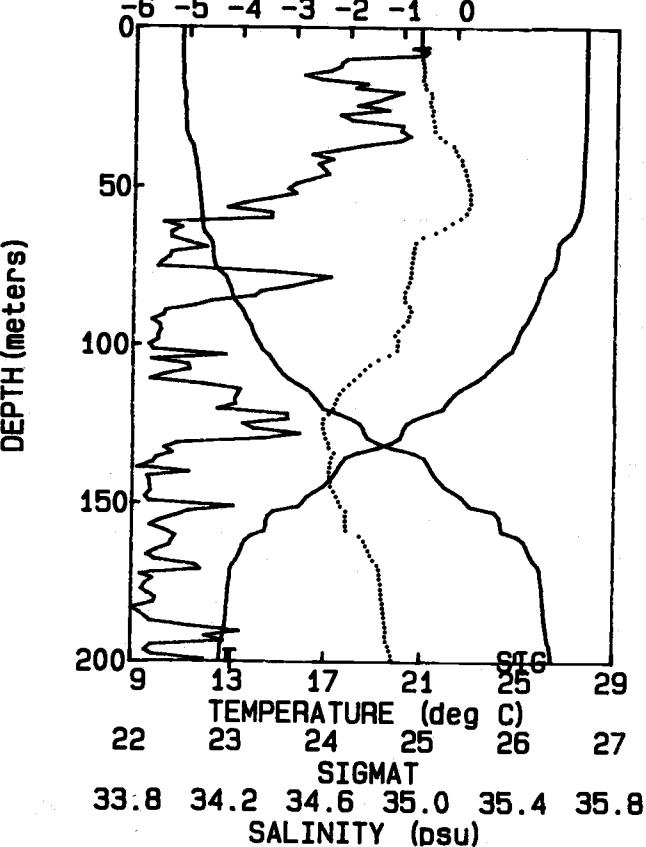
TAPE 054
DROP 14 03-23-87
 09: 58: 59



TAPE 054 03-23-87
DROP 15 10: 09: 37

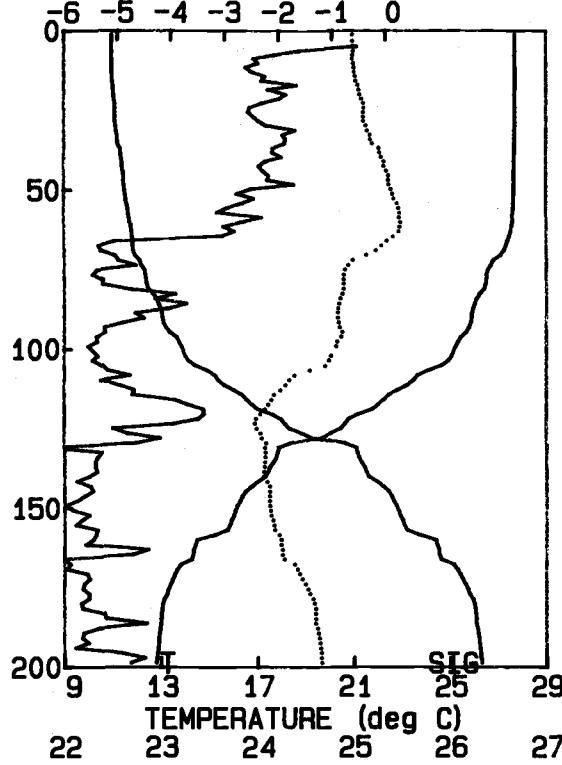


TAPE 054
DROP 16 03-23-87
 10: 18: 28



TAPE 054 03-23-87
DROP 25 11: 36: 12

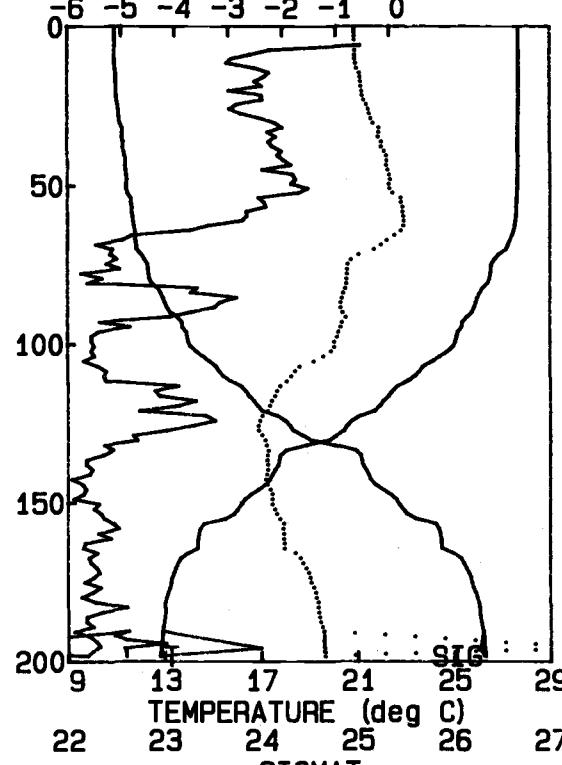
LOG (EPS) (cgs)



33.8 34.2 34.6 35.0 35.4 35.8
SIGMAT
SALINITY (psu)

TAPE 054 03-23-87
DROP 23 11: 18: 34

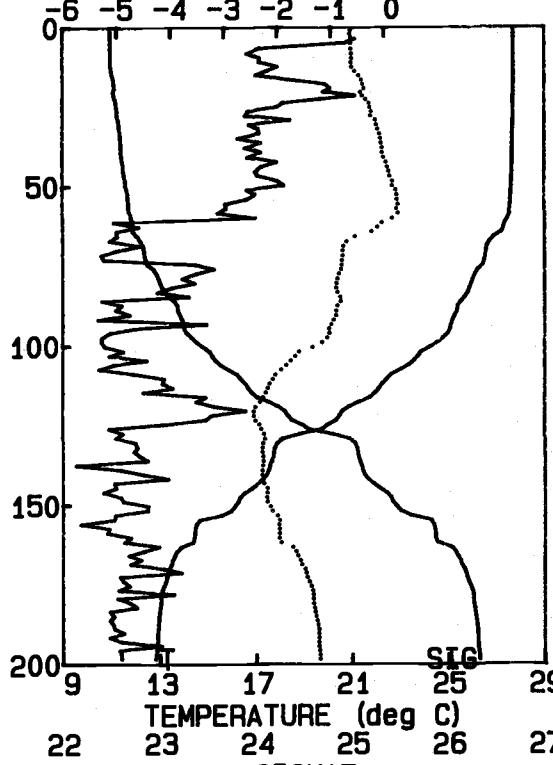
LOG (EPS) (cgs)



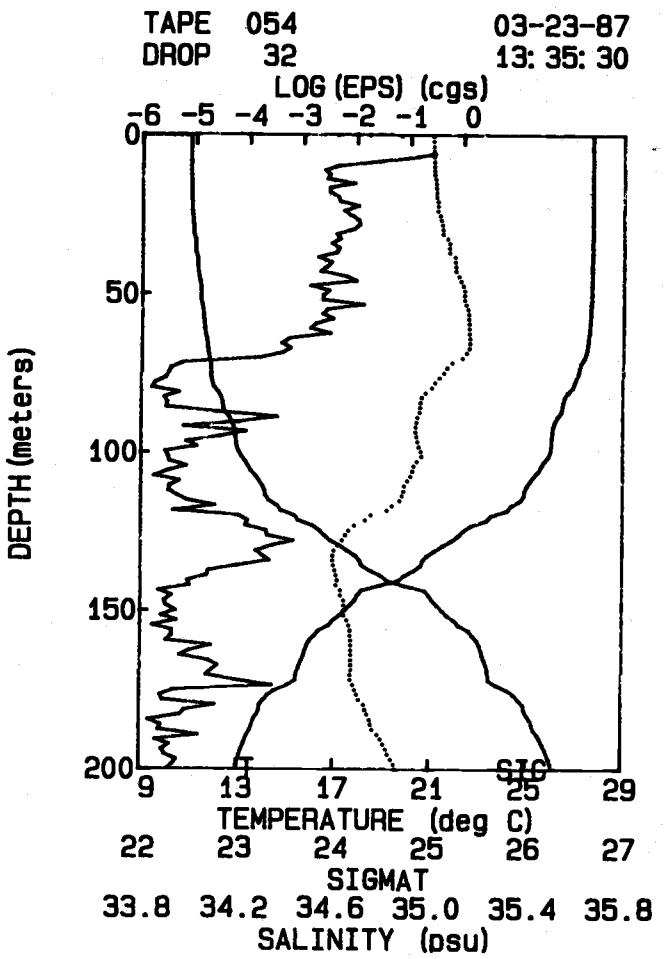
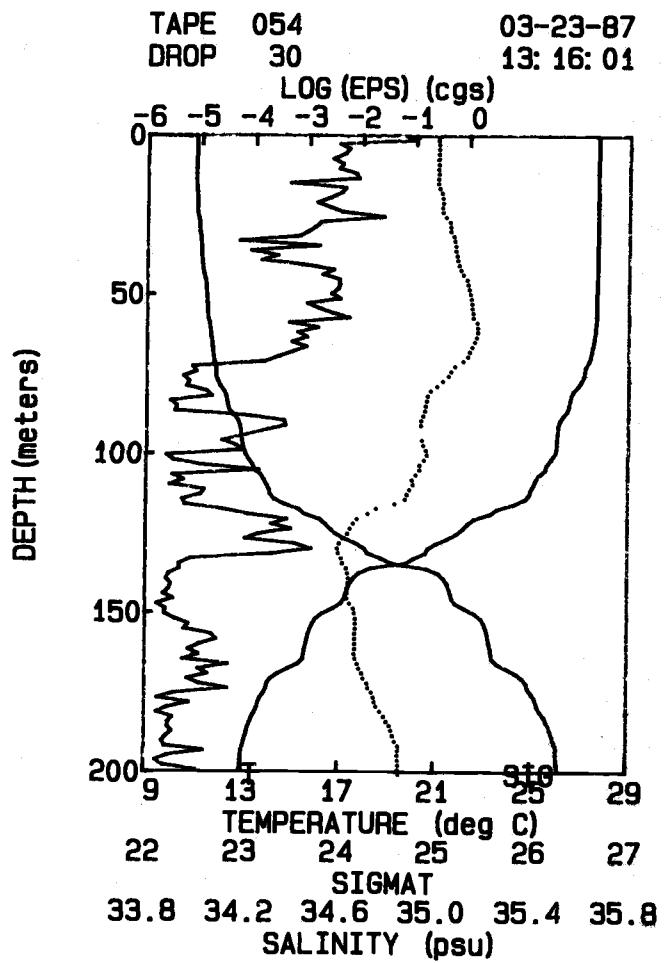
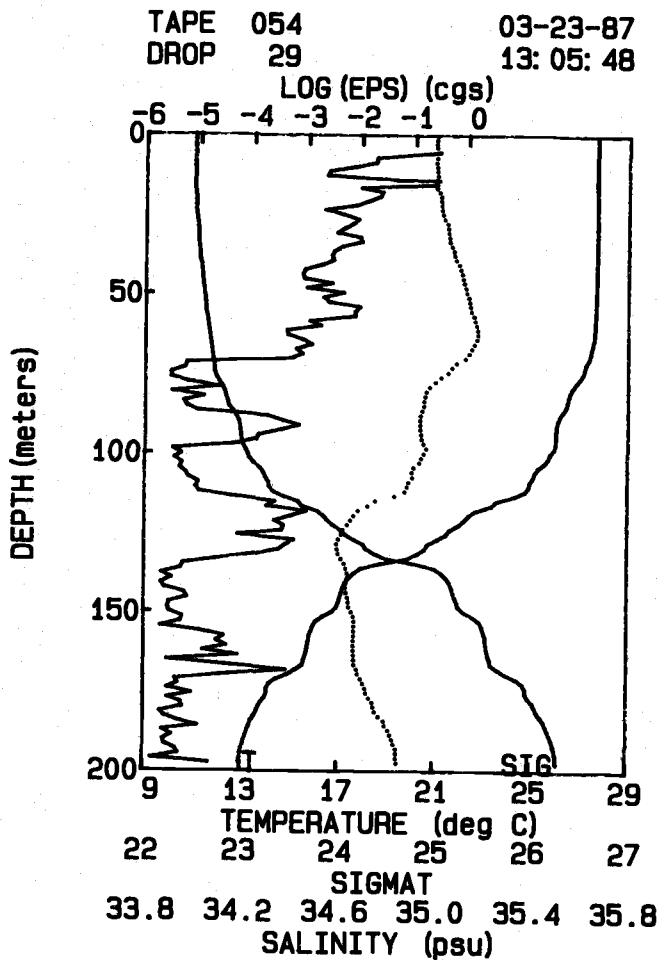
33.8 34.2 34.6 35.0 35.4 35.8
SIGMAT
SALINITY (psu)

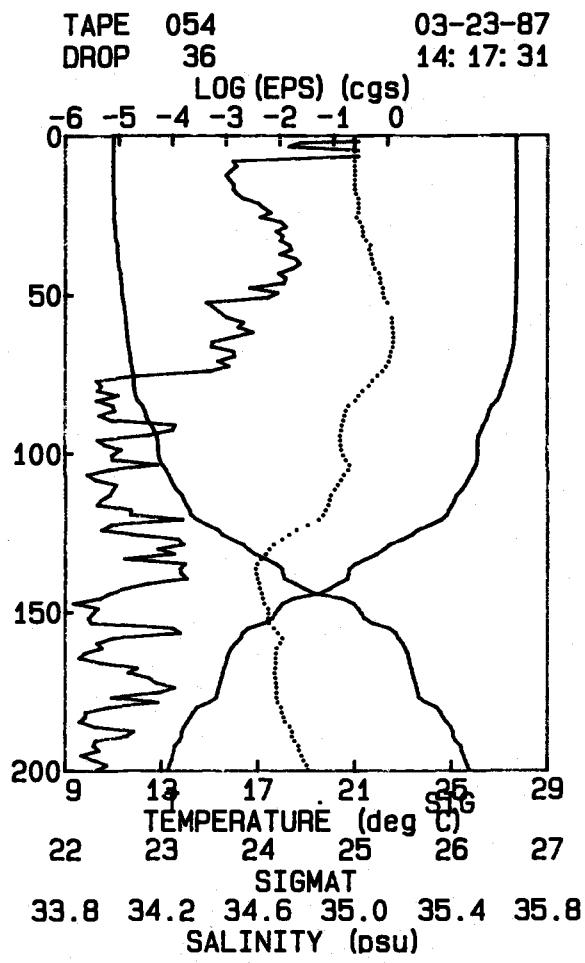
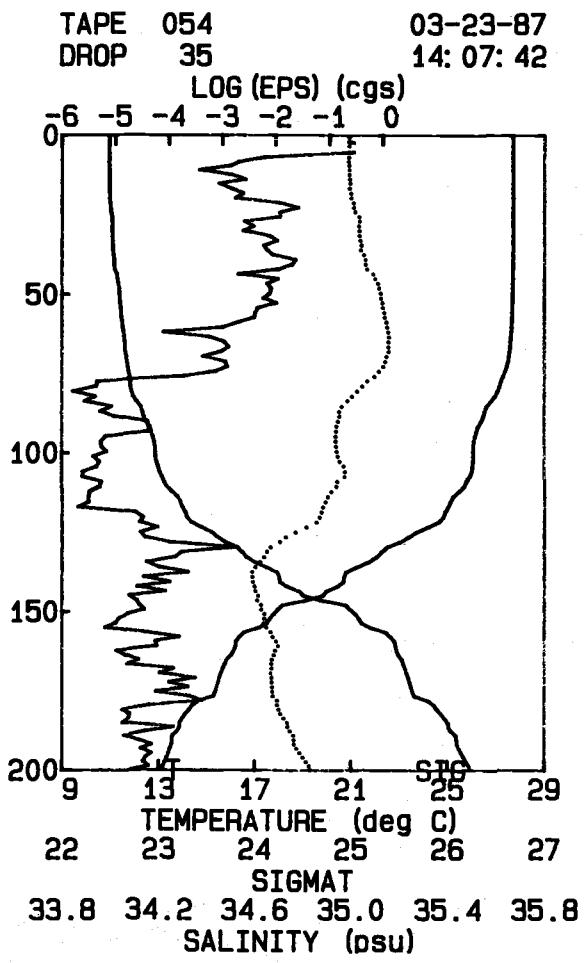
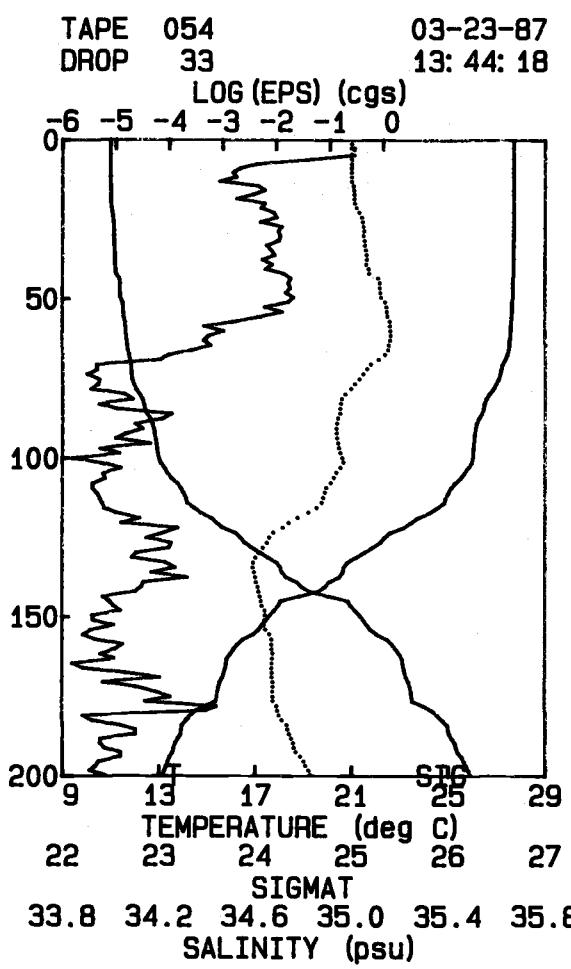
TAPE 054 03-23-87
DROP 22 11: 09: 43

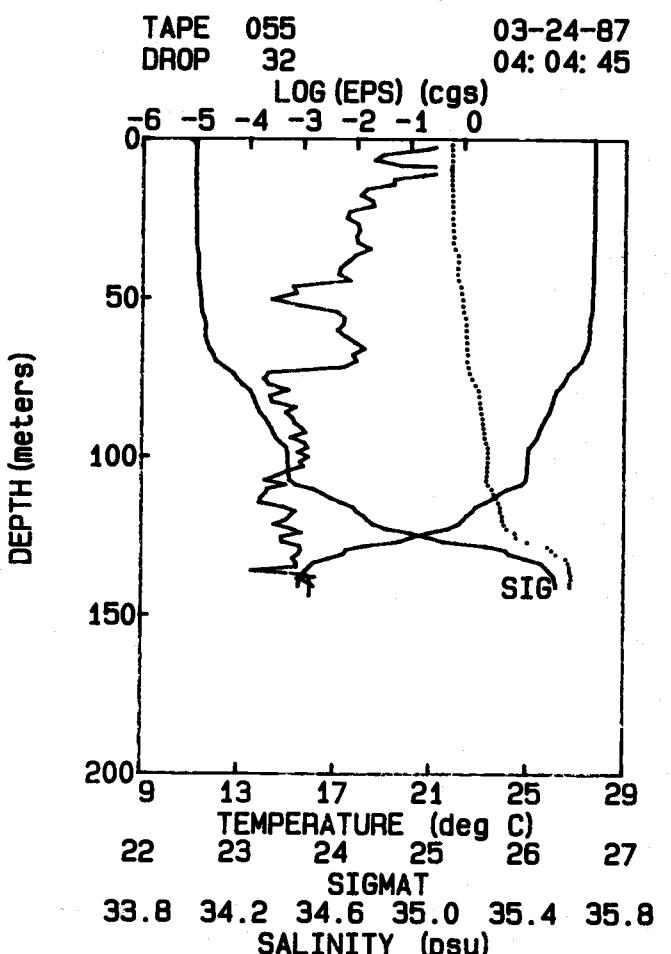
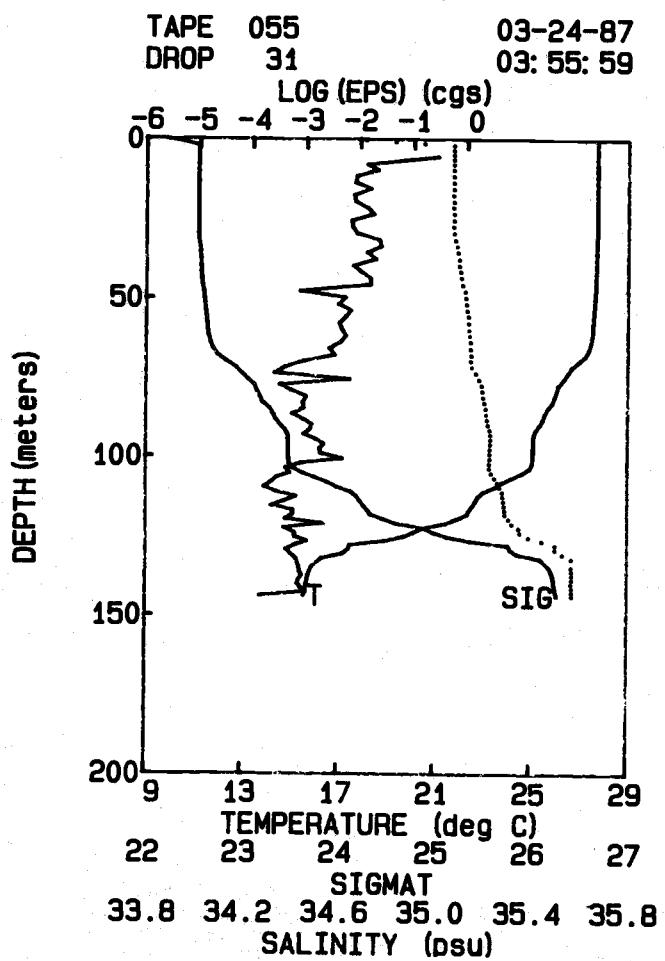
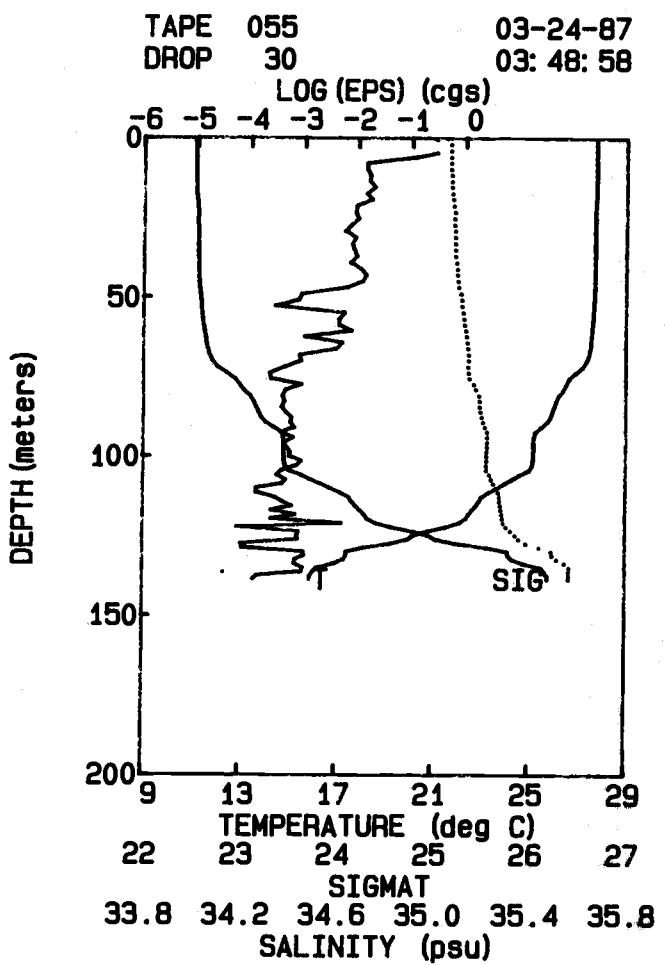
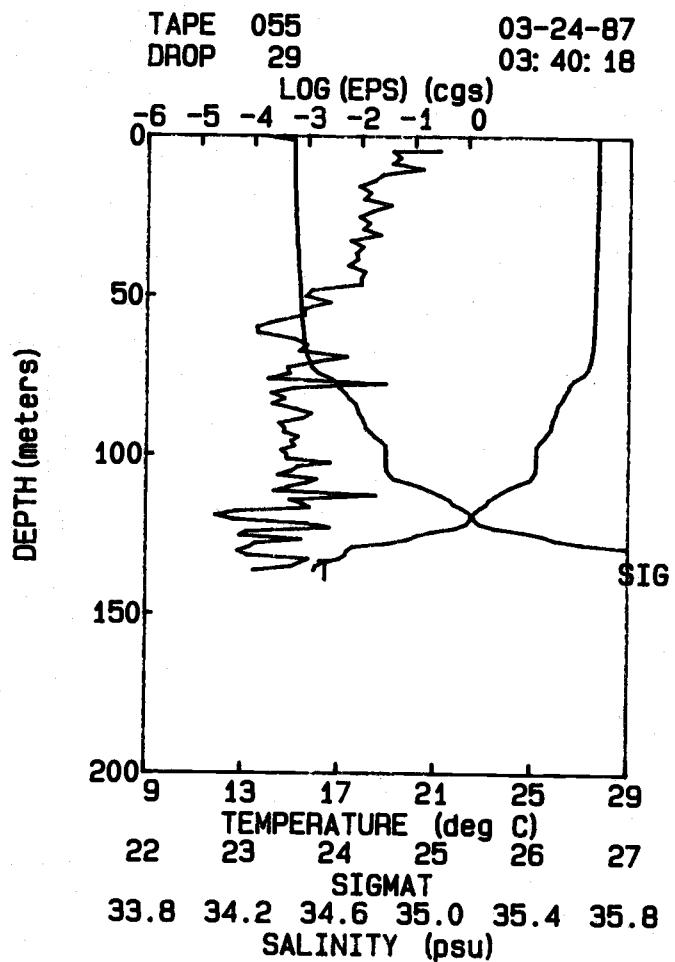
LOG (EPS) (cgs)



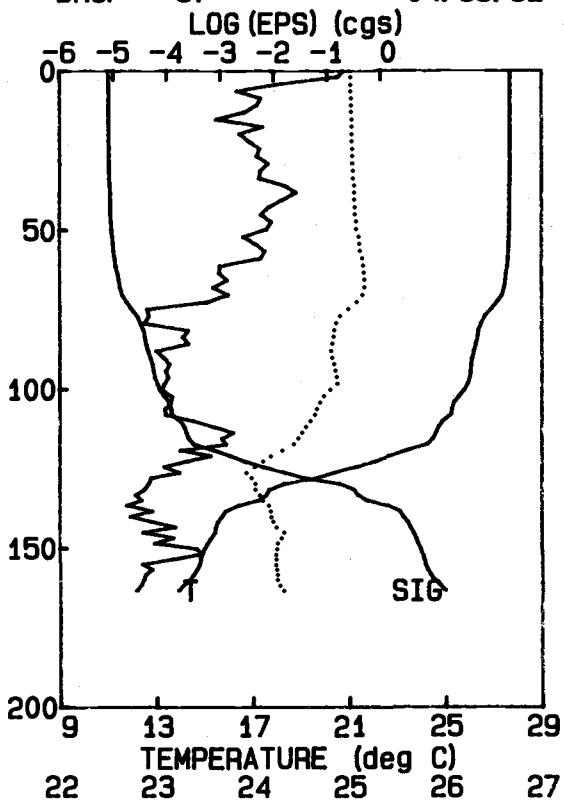
33.8 34.2 34.6 35.0 35.4 35.8
SIGMAT
SALINITY (psu)





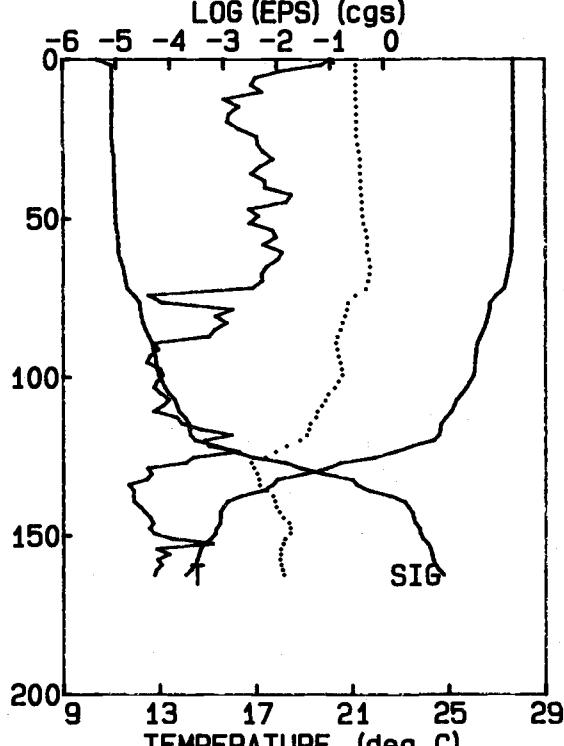


TAPE 055 03-24-87
 DROP 37 04: 53: 52



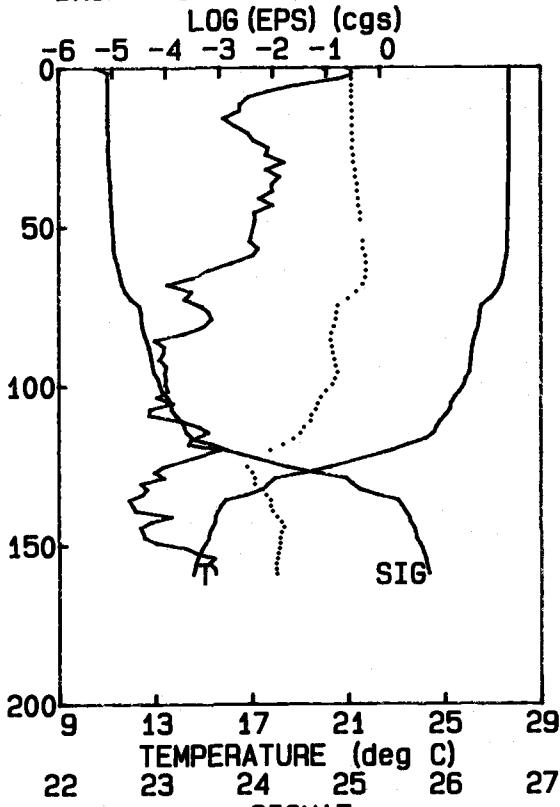
33.8 34.2 34.6 35.0 35.4 35.8
 SIGMAT
 SALINITY (psu)

TAPE 055 03-24-87
 DROP 39 05: 08: 13



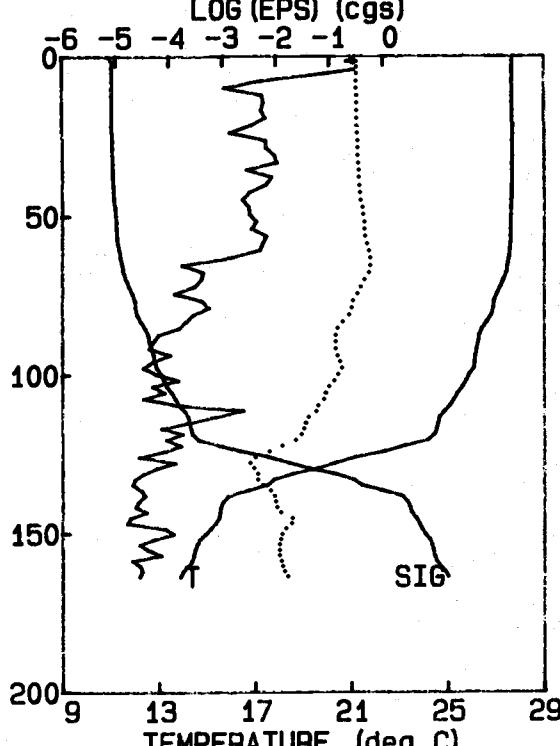
33.8 34.2 34.6 35.0 35.4 35.8
 SIGMAT
 SALINITY (psu)

TAPE 055 03-24-87
 DROP 38 05: 00: 59



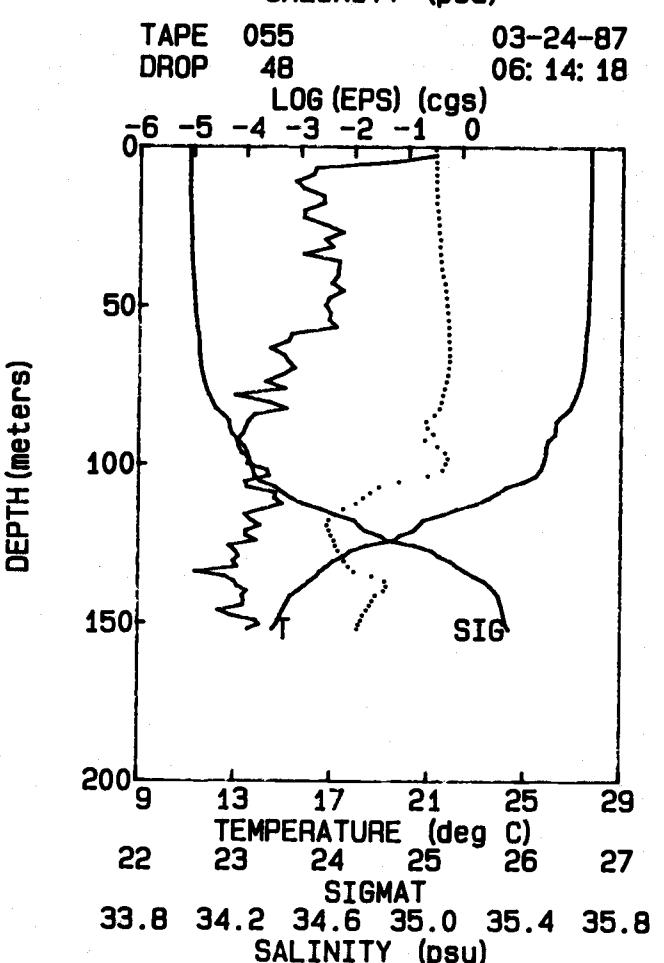
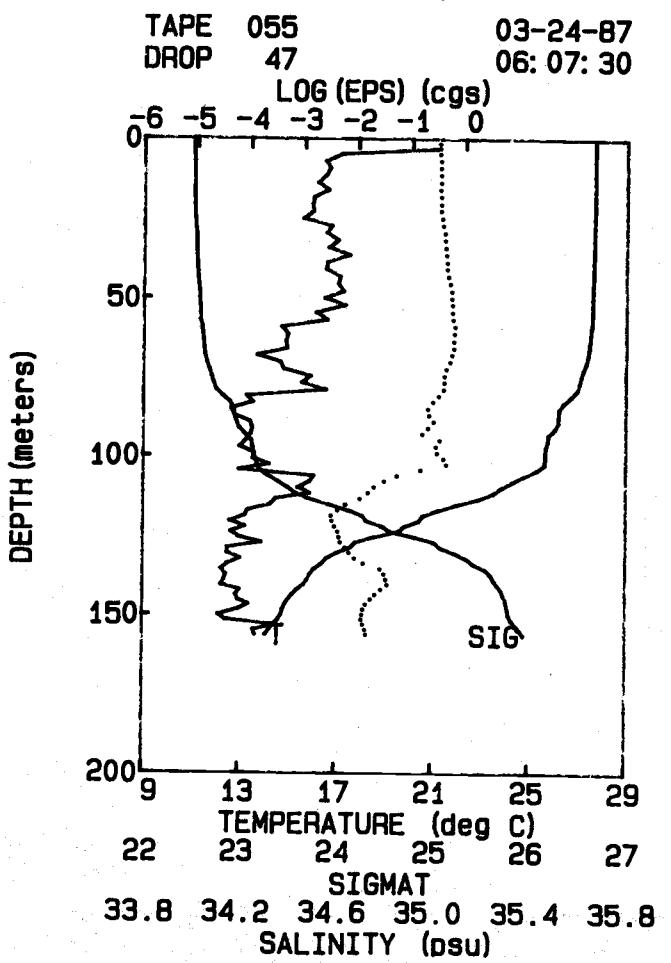
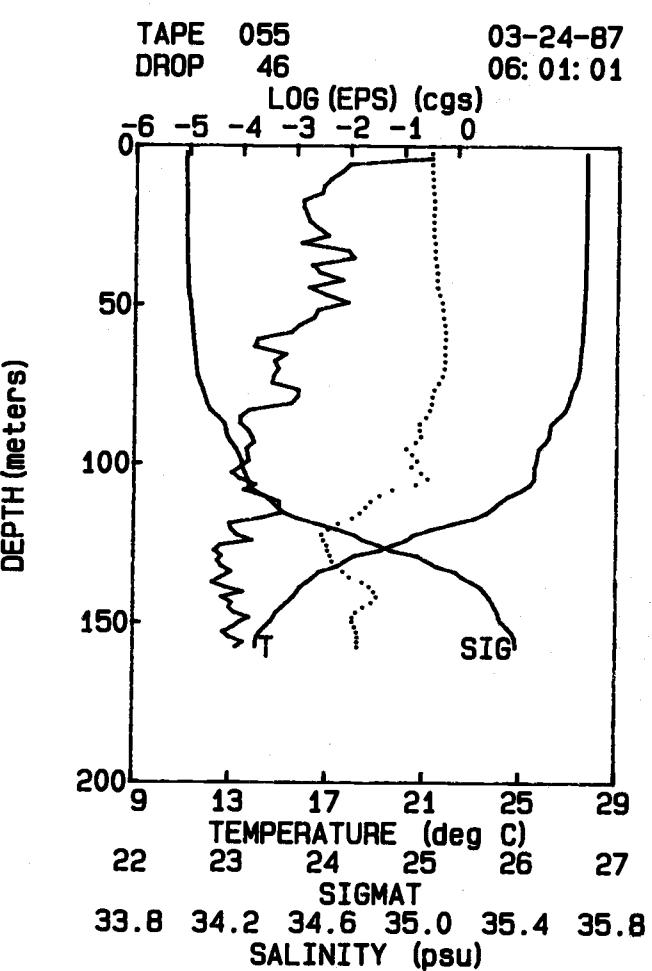
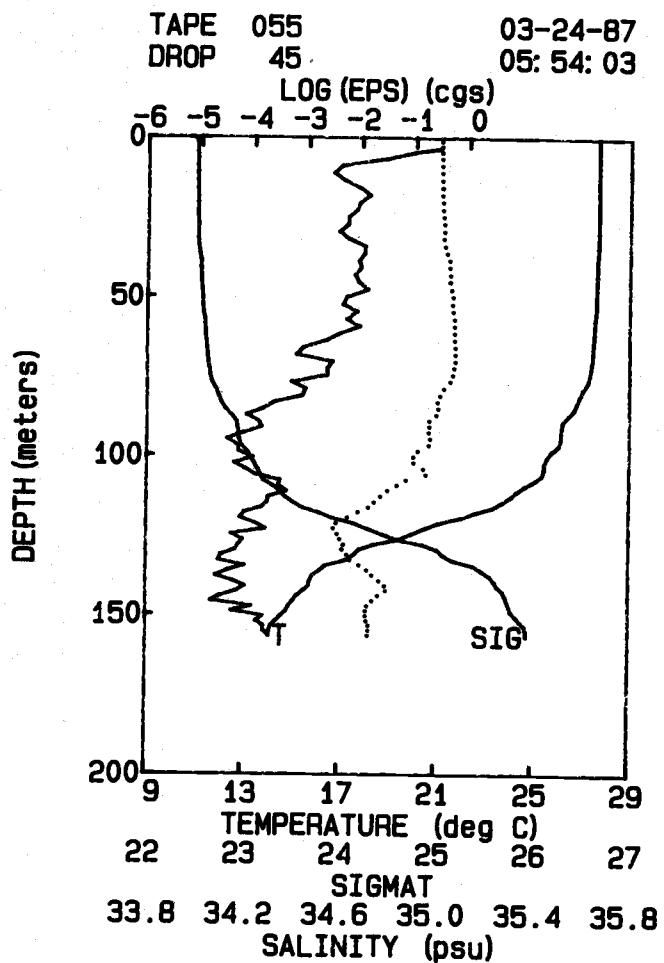
33.8 34.2 34.6 35.0 35.4 35.8
 SIGMAT
 SALINITY (psu)

TAPE 055 03-24-87
 DROP 40 05: 15: 27

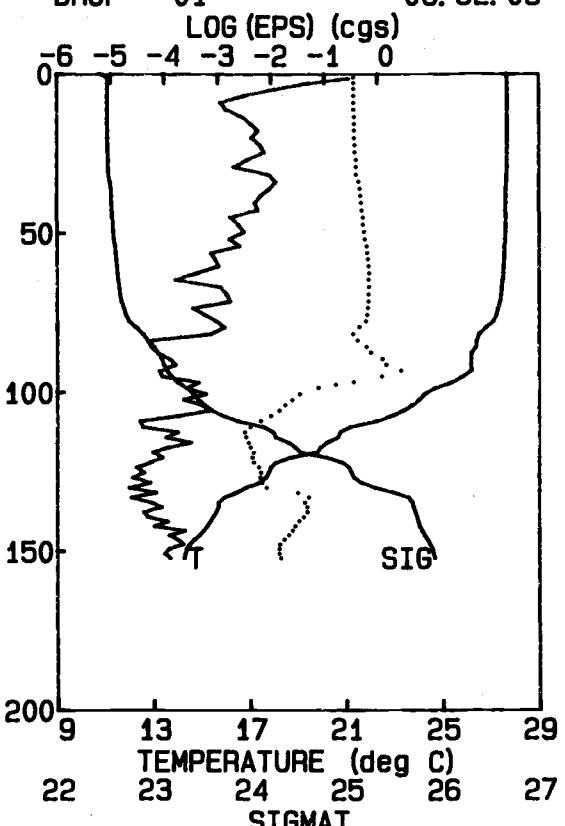


33.8 34.2 34.6 35.0 35.4 35.8
 SIGMAT
 SALINITY (psu)

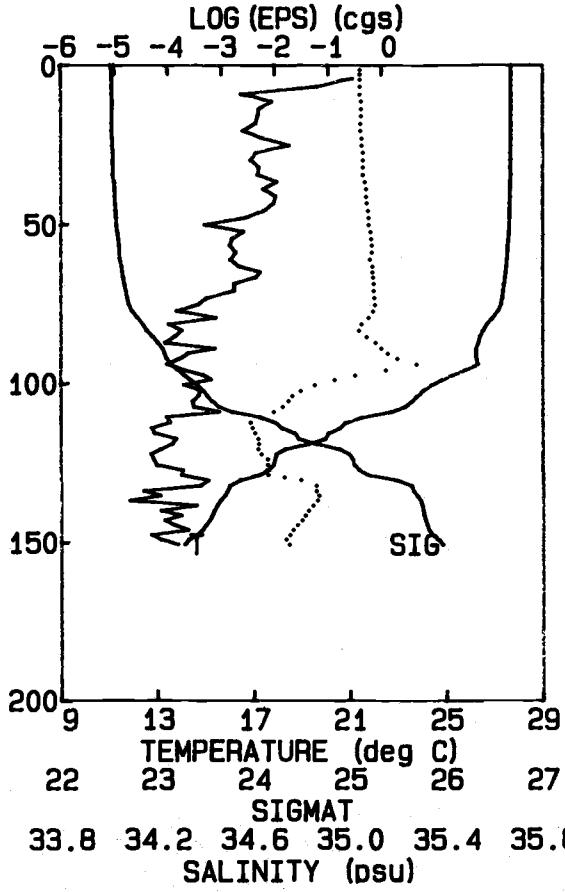
310



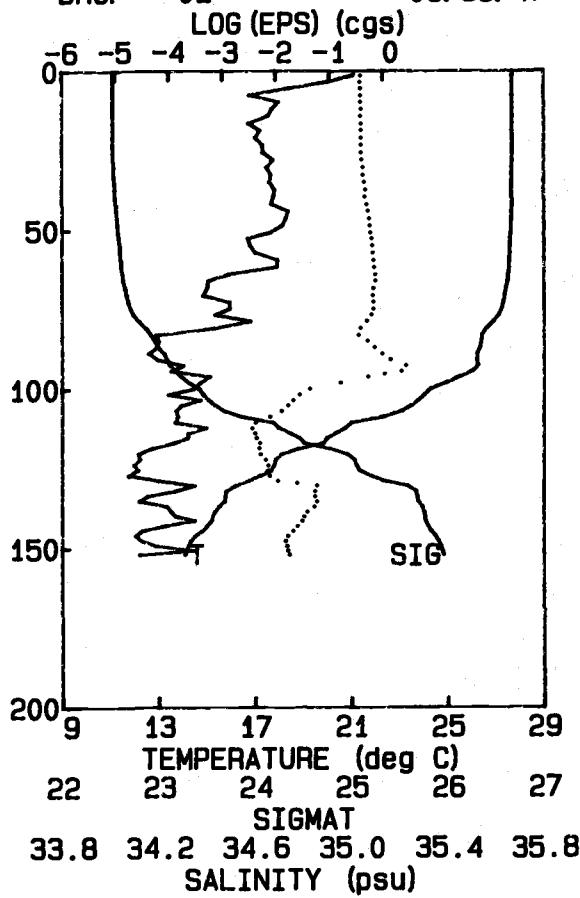
TAPE 056 03-24-87
DROP 01 06: 52: 05



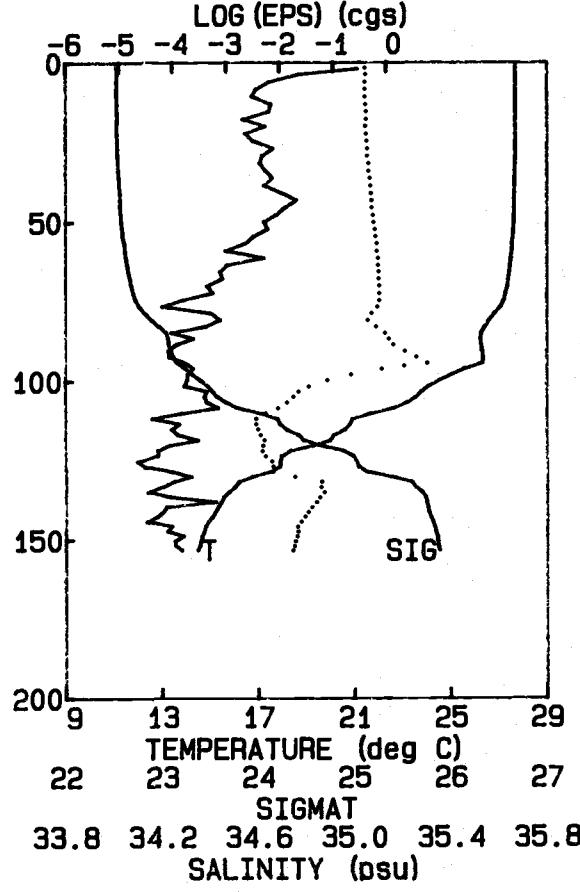
TAPE 056 03-24-87
DROP 03 07: 05: 32

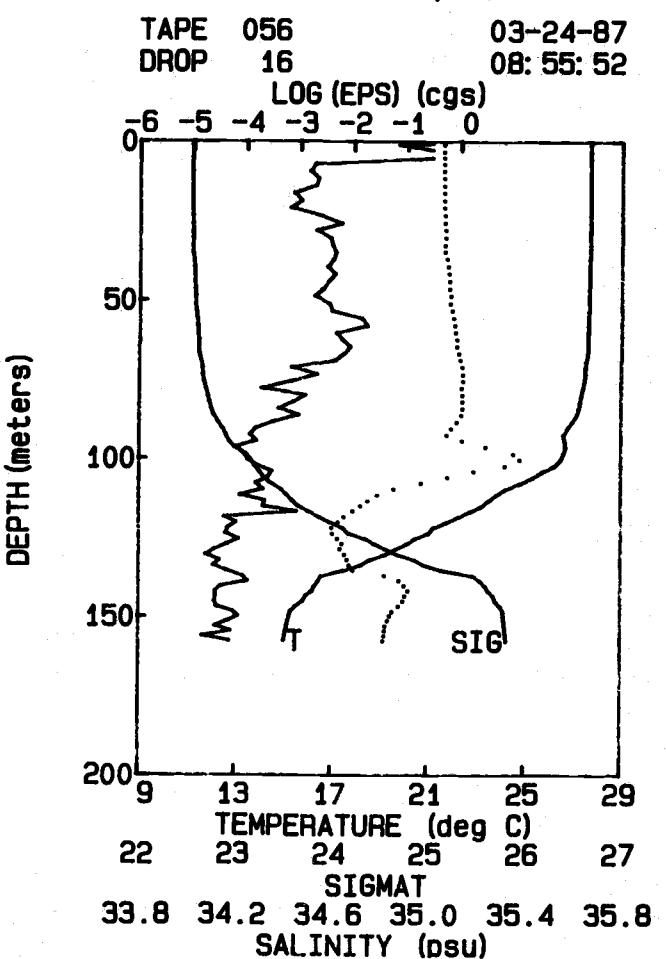
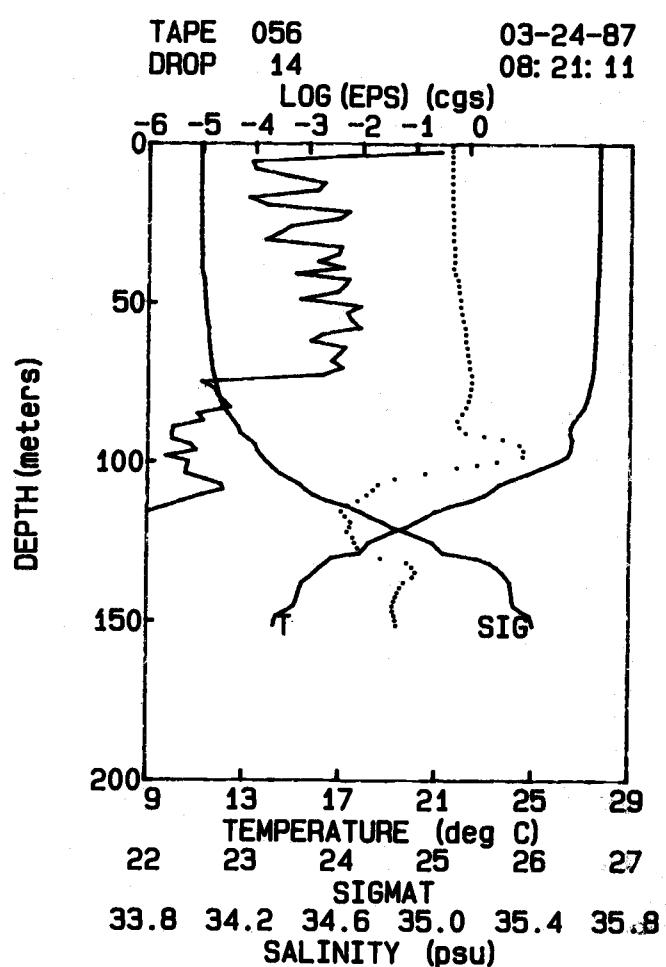
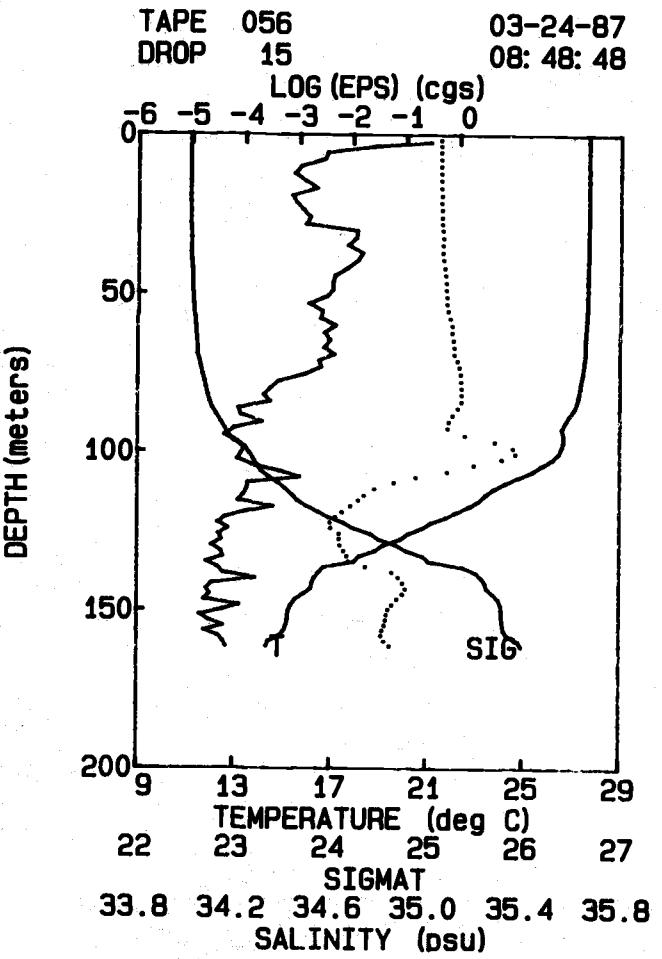
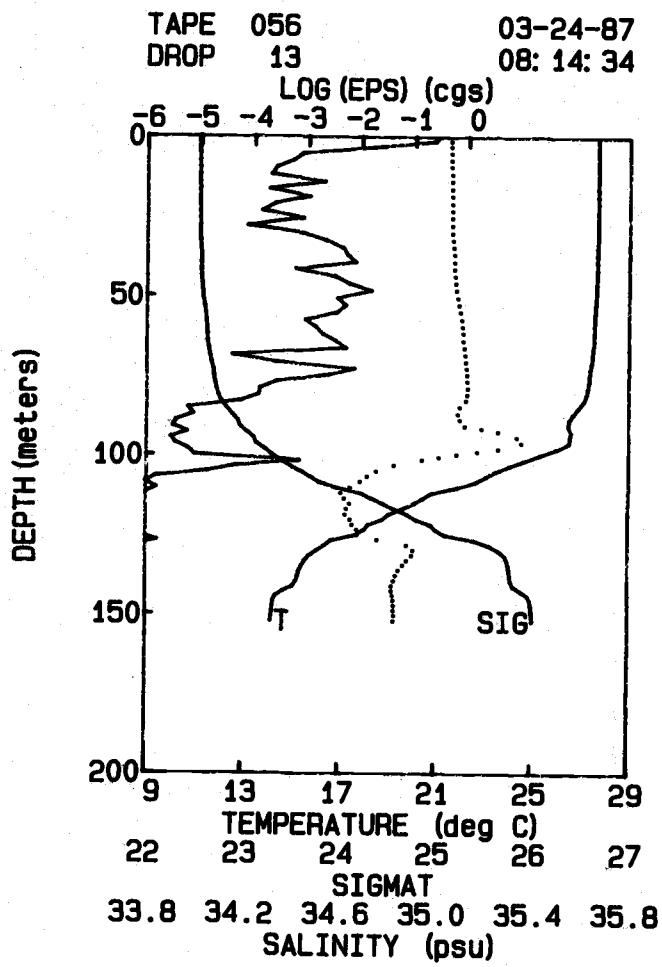


TAPE 056 03-24-87
DROP 02 06: 58: 47



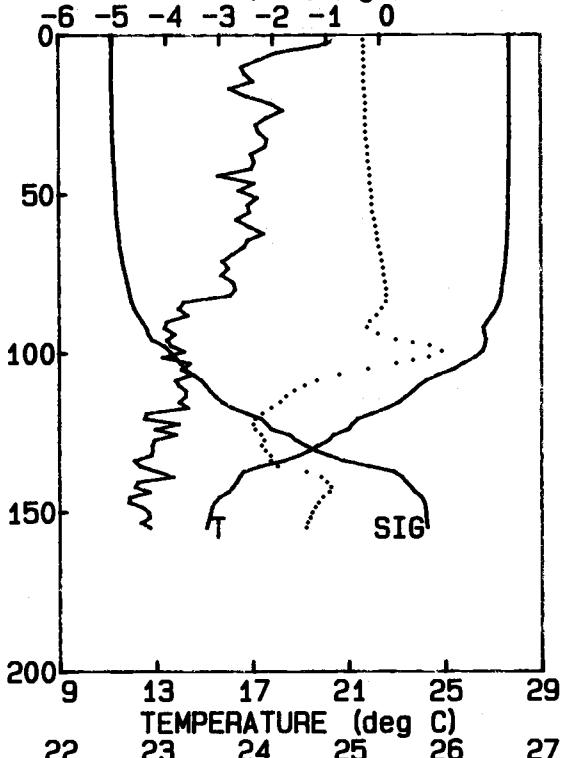
TAPE 056 03-24-87
DROP 04 07: 12: 31





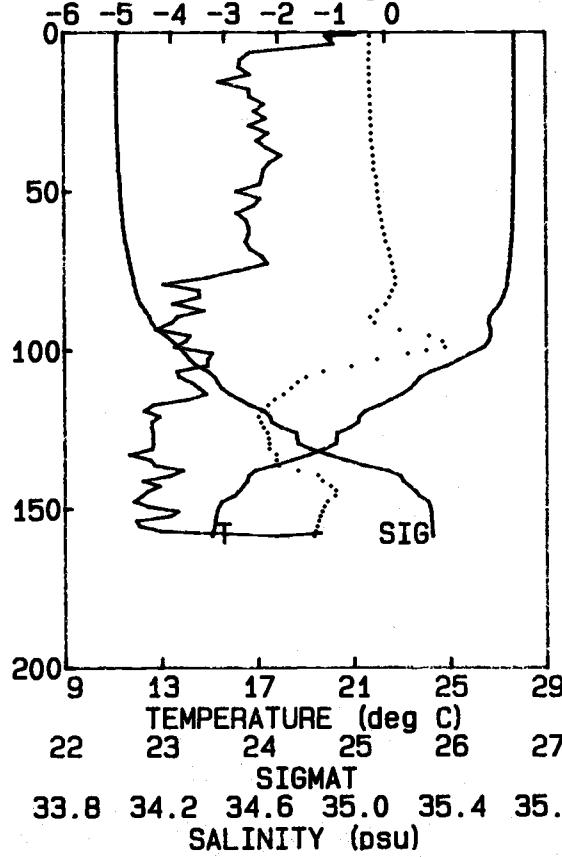
TAPE 056 03-24-87
DROP 17 09: 02: 26

LOG (EPS) (cgs)



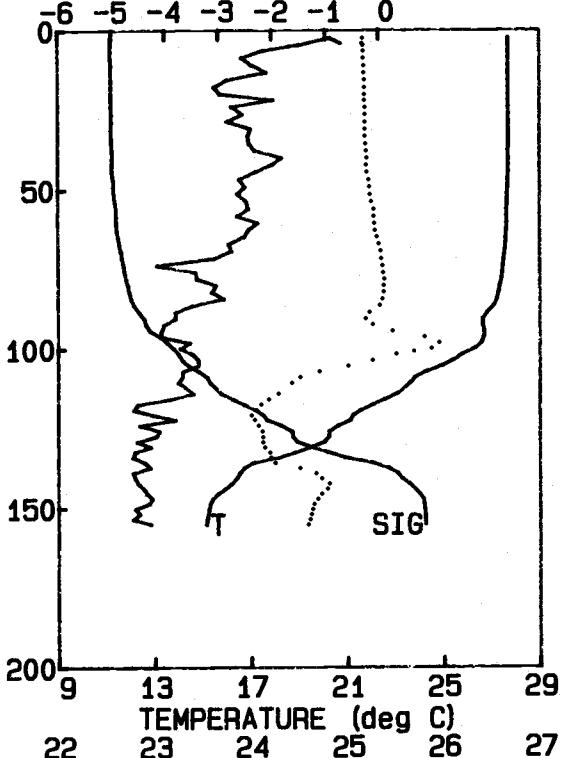
TAPE 056 03-24-87
DROP 19 09: 15: 41

LOG (EPS) (cgs)



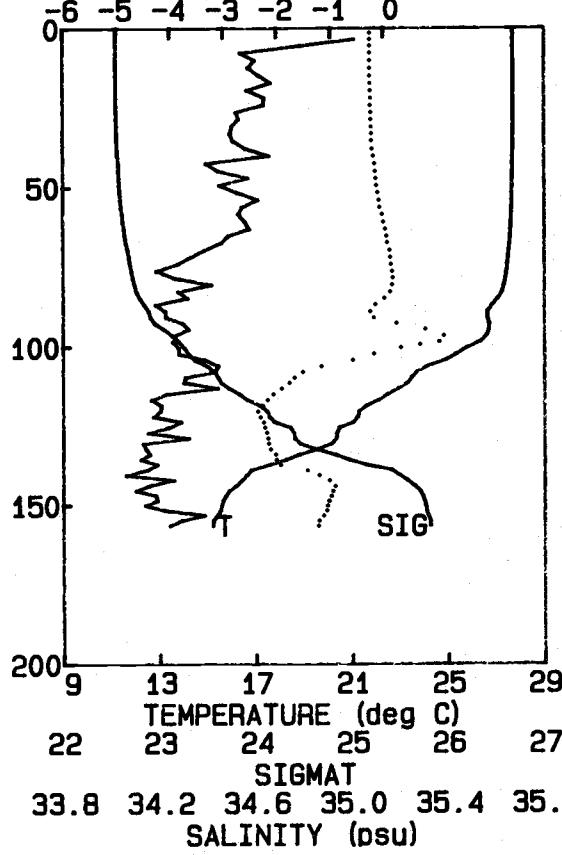
TAPE 056 03-24-87
DROP 18 09: 09: 03

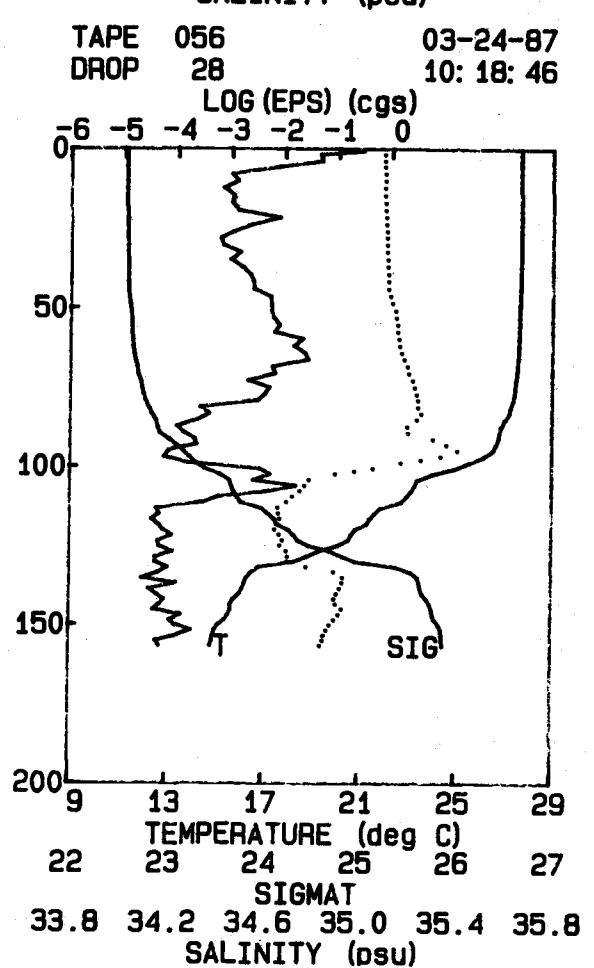
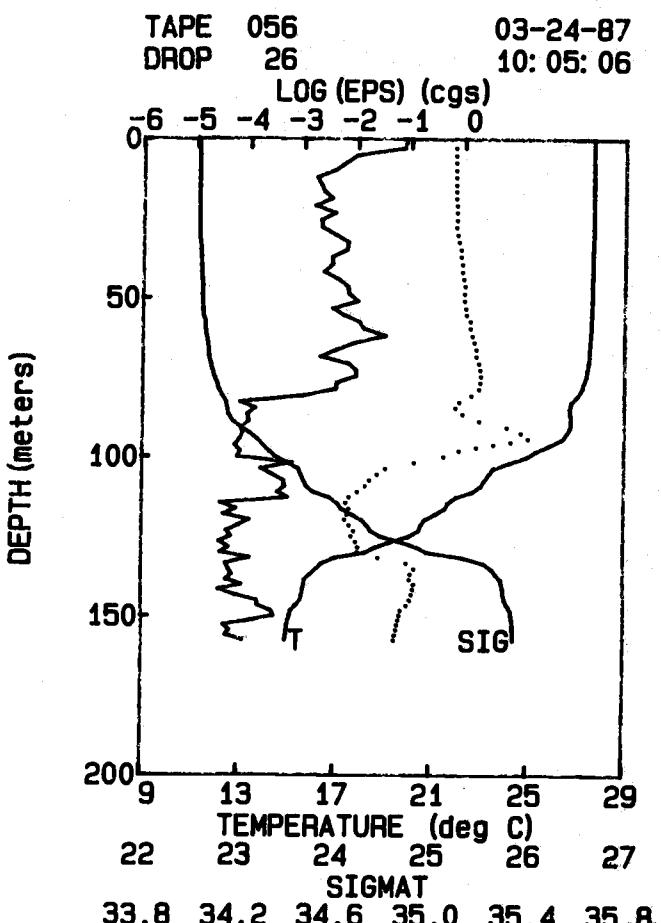
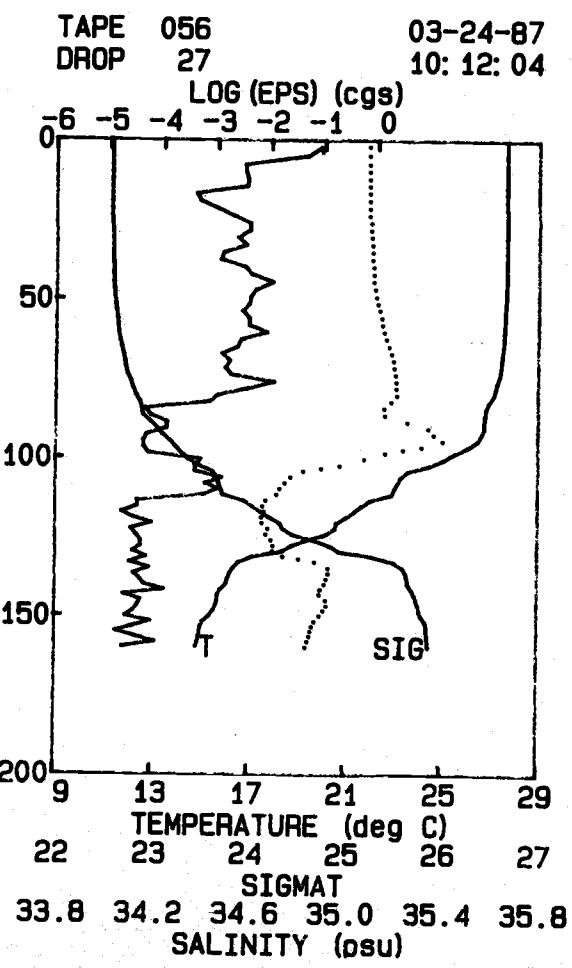
LOG (EPS) (cgs)



TAPE 056 03-24-87
DROP 20 09: 22: 20

LOG (EPS) (cgs)

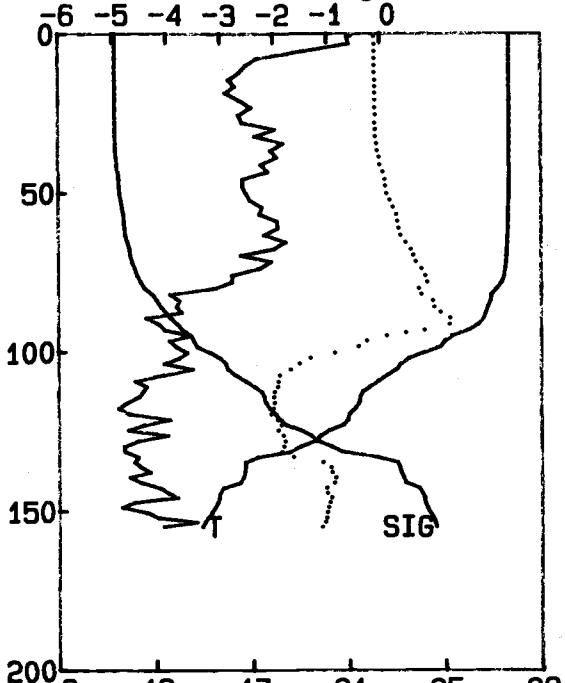




TAPE 056
DROP 37

03-24-87
11: 18: 45

LOG (EPS) (cgs)

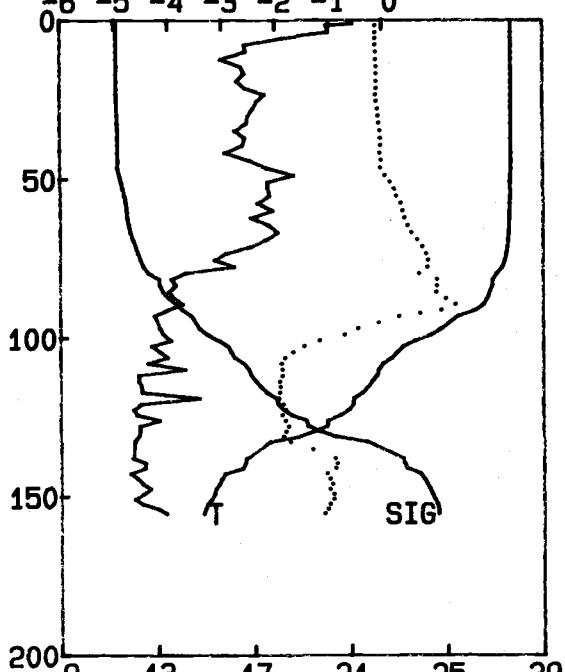


TEMPERATURE (deg C)
22 23 24 25 26 27
SIGMAT
33.8 34.2 34.6 35.0 35.4 35.8
SALINITY (psu)

TAPE 056
DROP 39

03-24-87
11: 31: 52

LOG (EPS) (cgs)

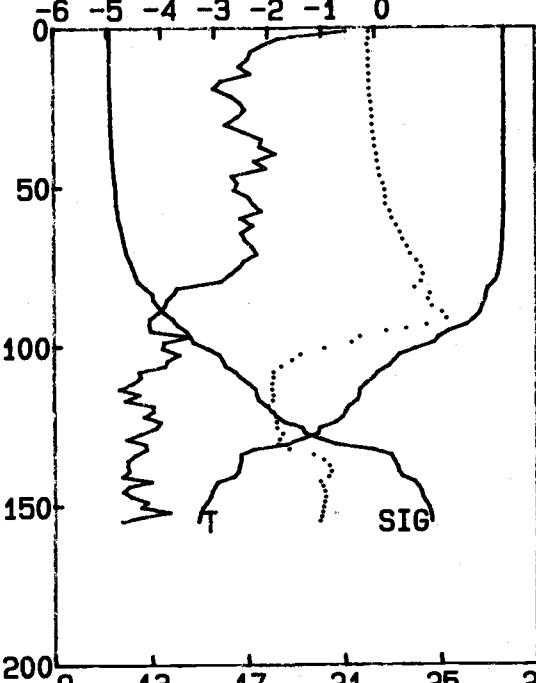


TEMPERATURE (deg C)
22 23 24 25 26 27
SIGMAT
33.8 34.2 34.6 35.0 35.4 35.8
SALINITY (psu)

TAPE 056
DROP 38

03-24-87
11: 25: 21

LOG (EPS) (cgs)

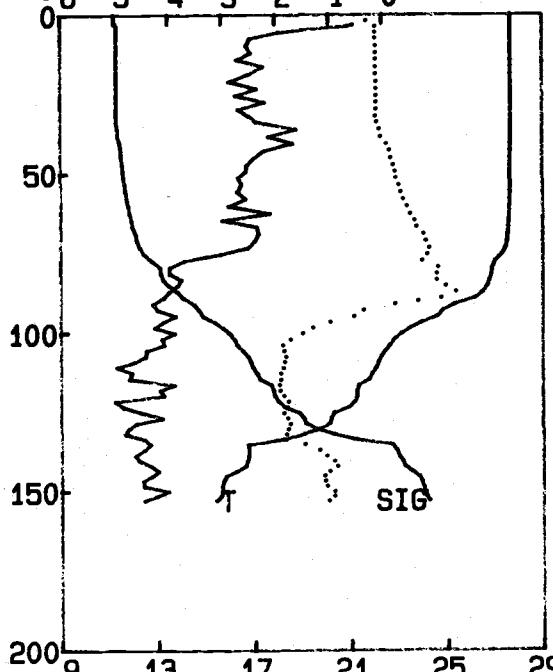


TEMPERATURE (deg C)
22 23 24 25 26 27
SIGMAT
33.8 34.2 34.6 35.0 35.4 35.8
SALINITY (psu)

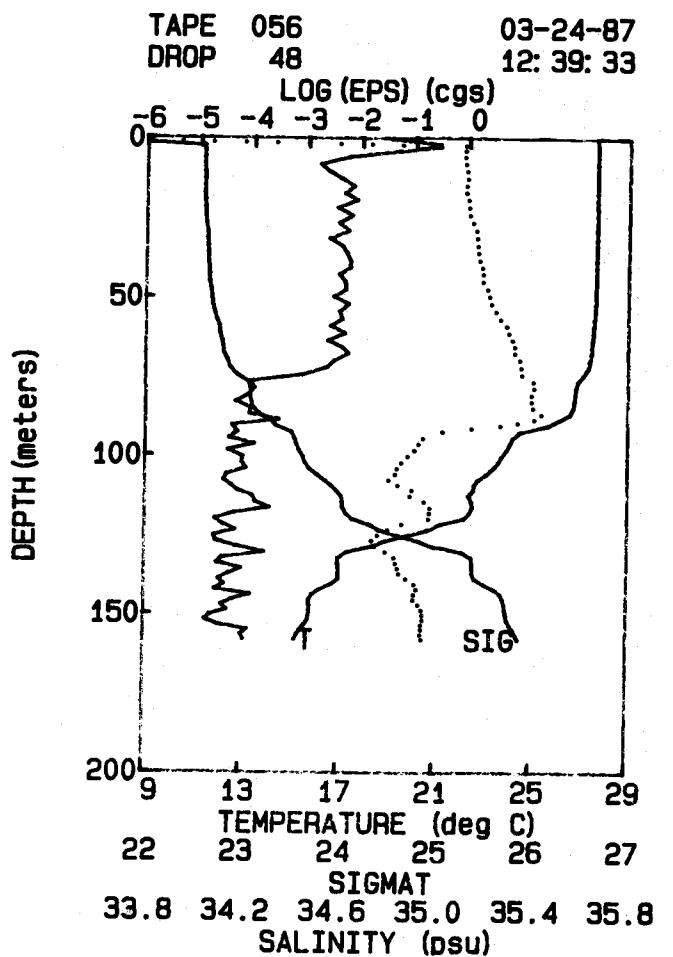
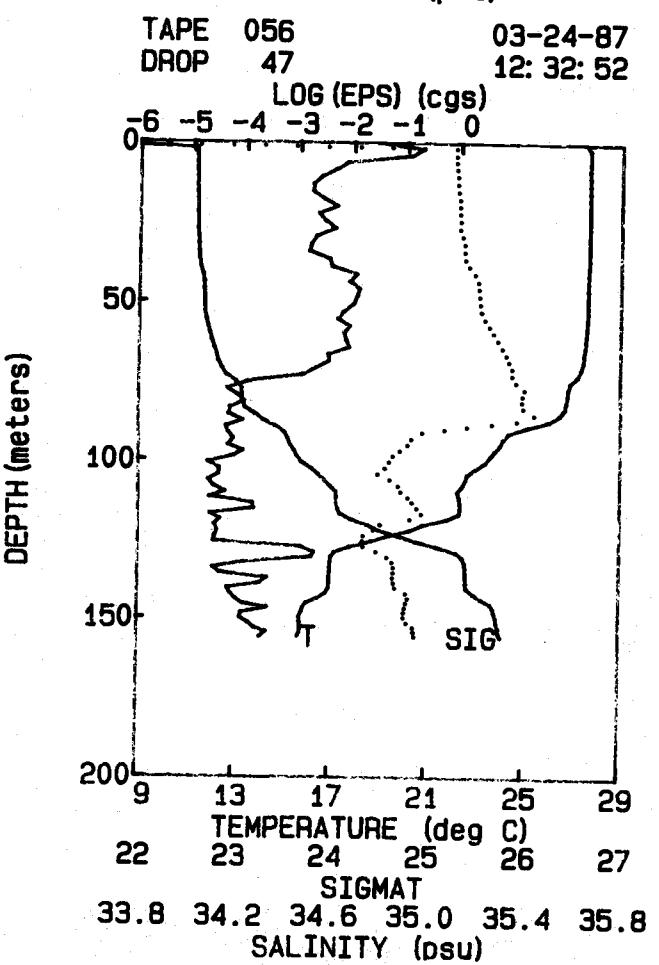
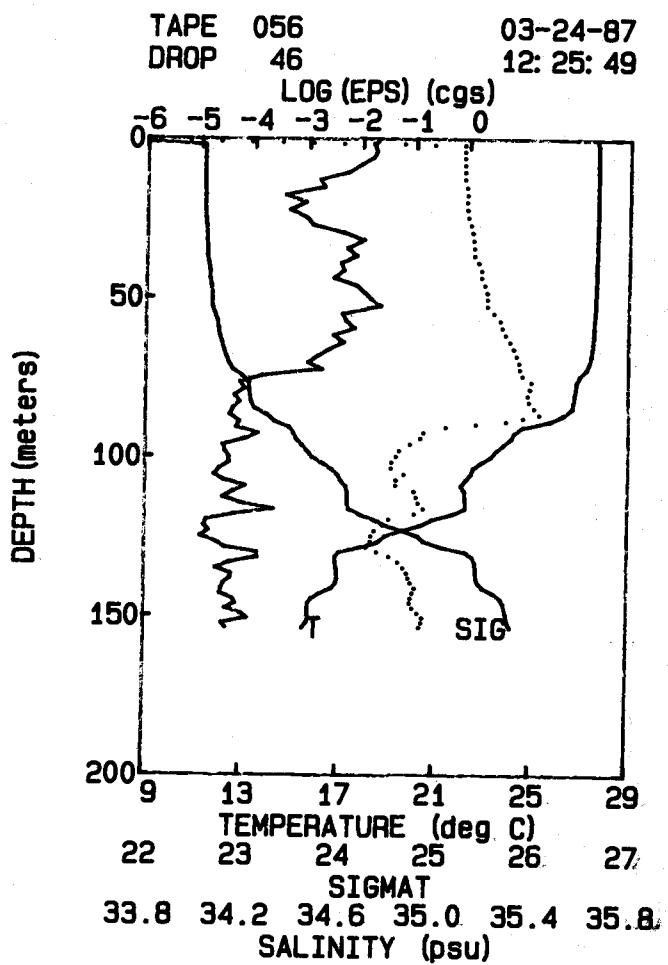
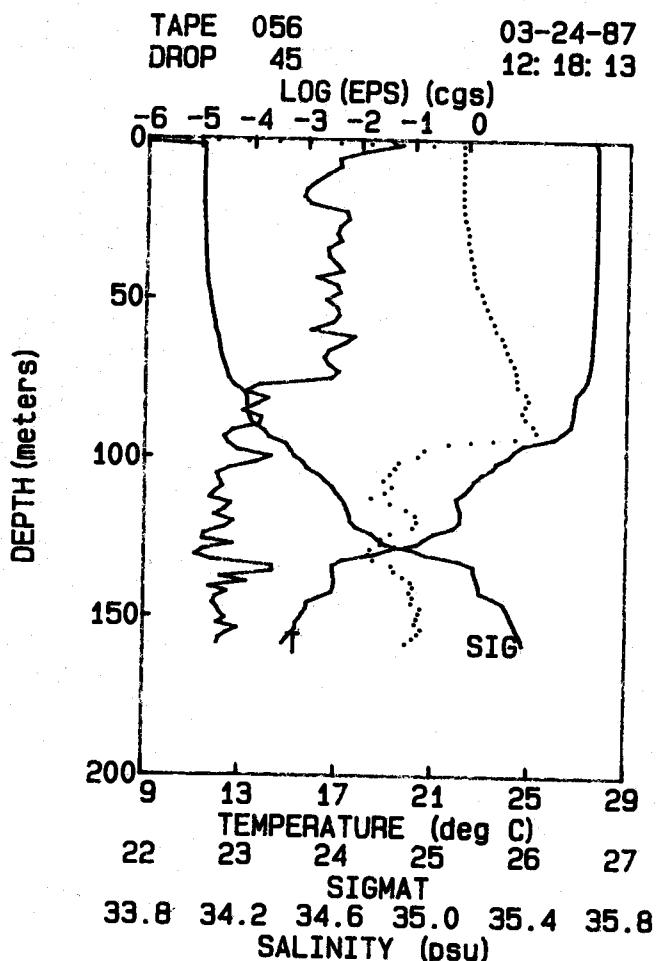
TAPE 056
DROP 40

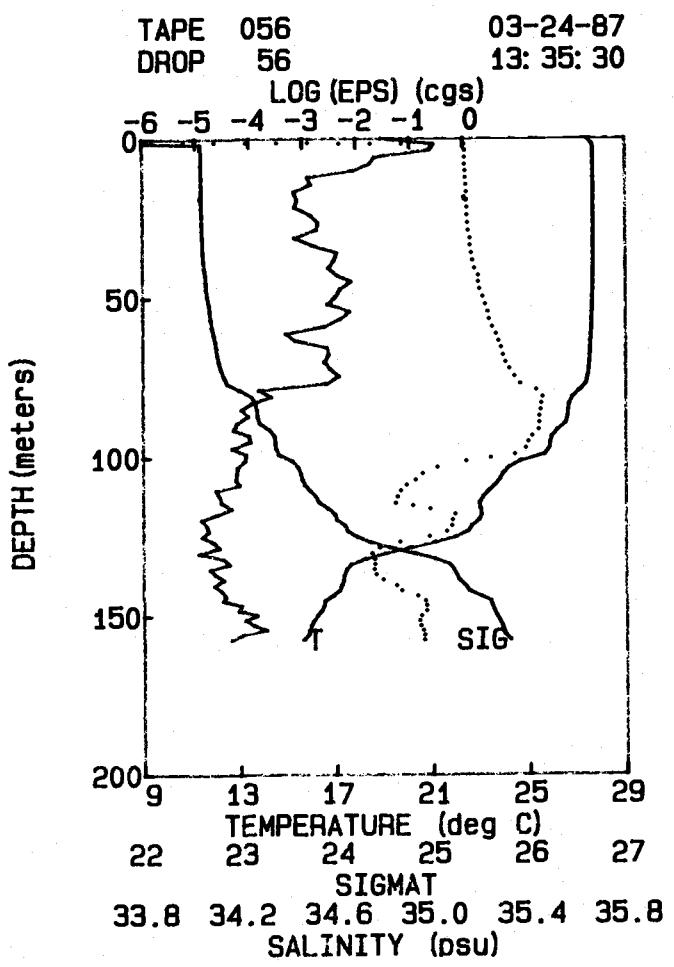
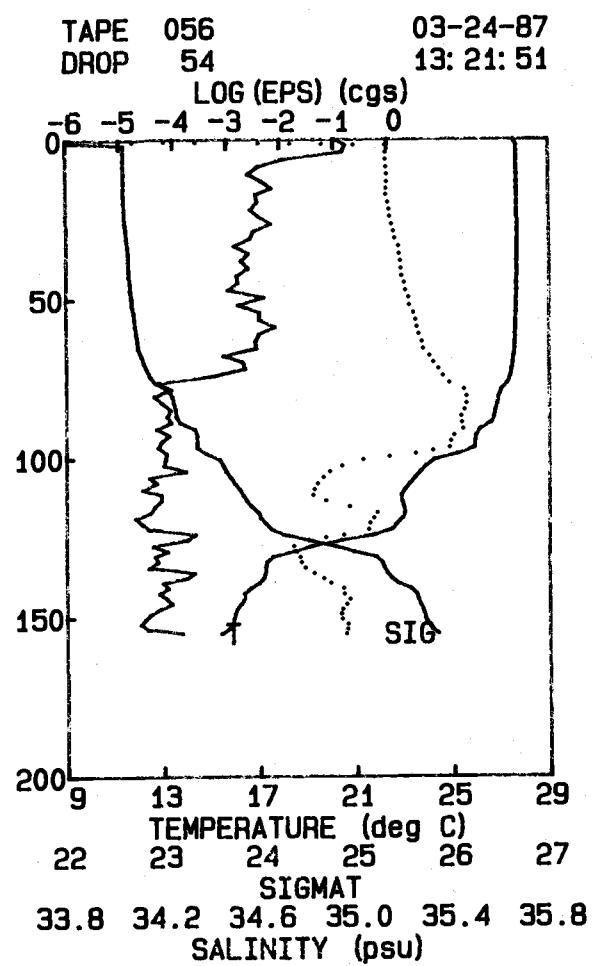
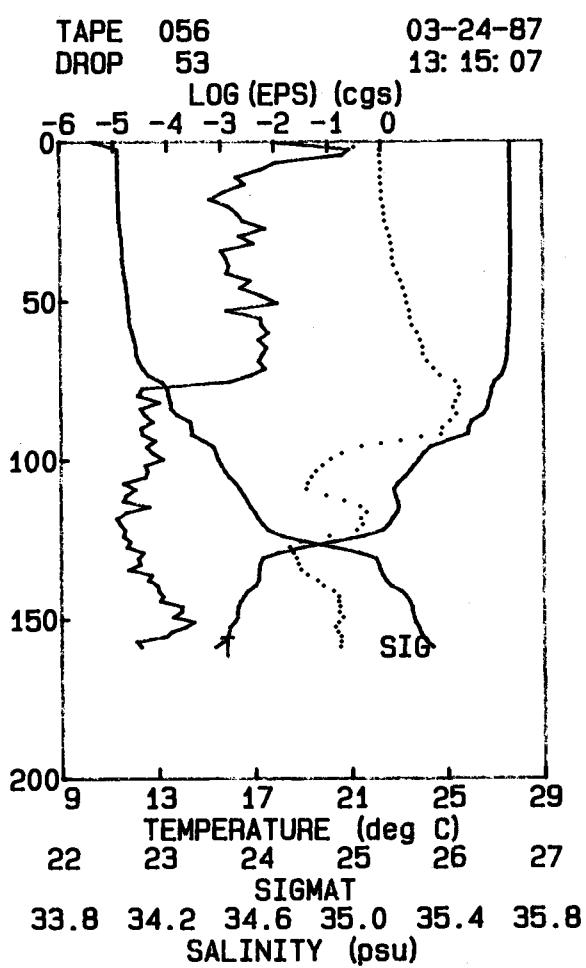
03-24-87
11: 38: 28

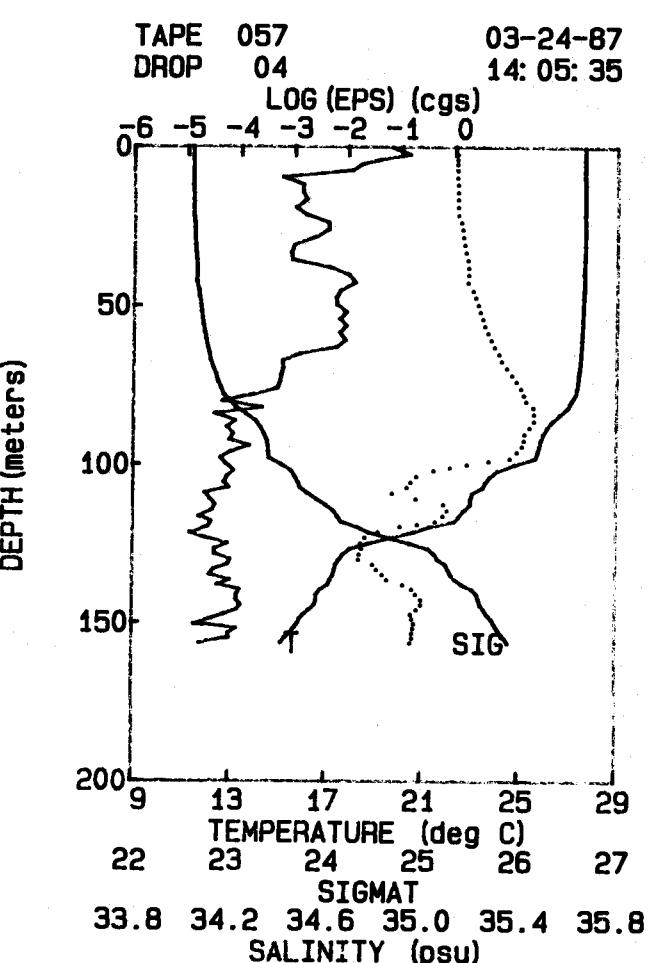
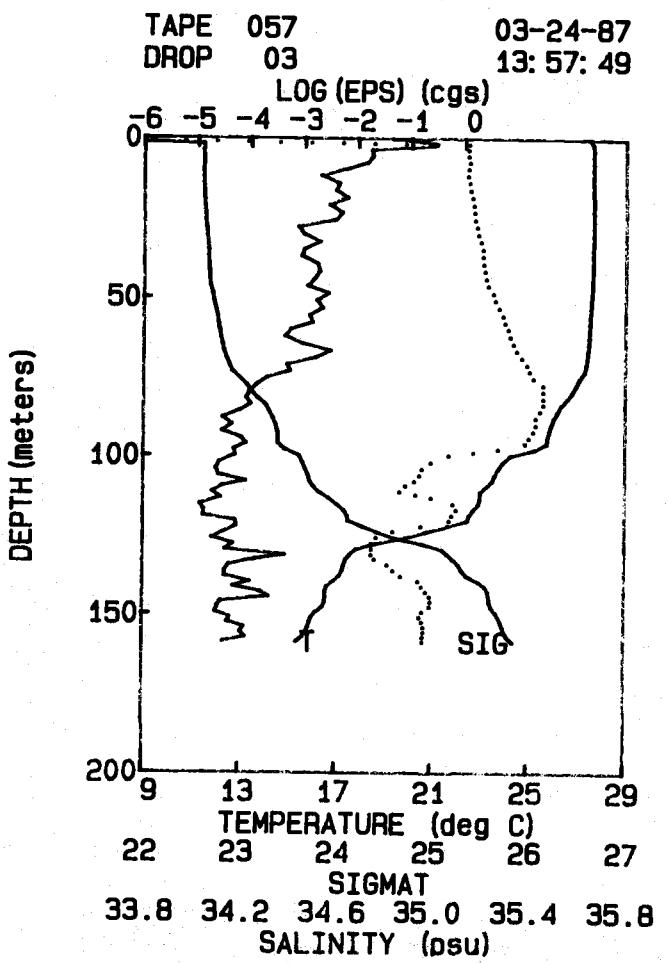
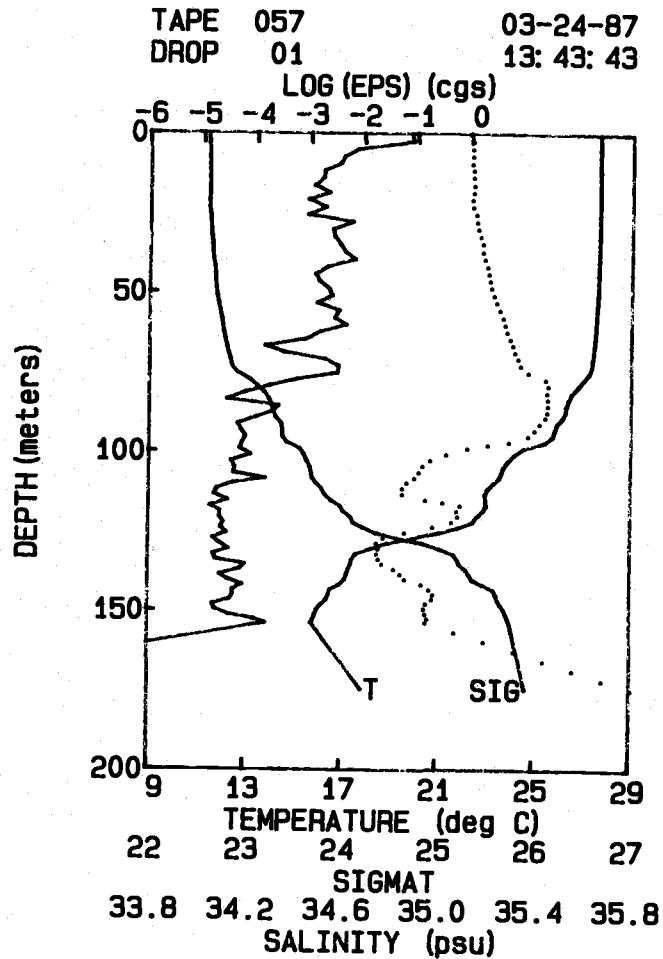
LOG (EPS) (cgs)

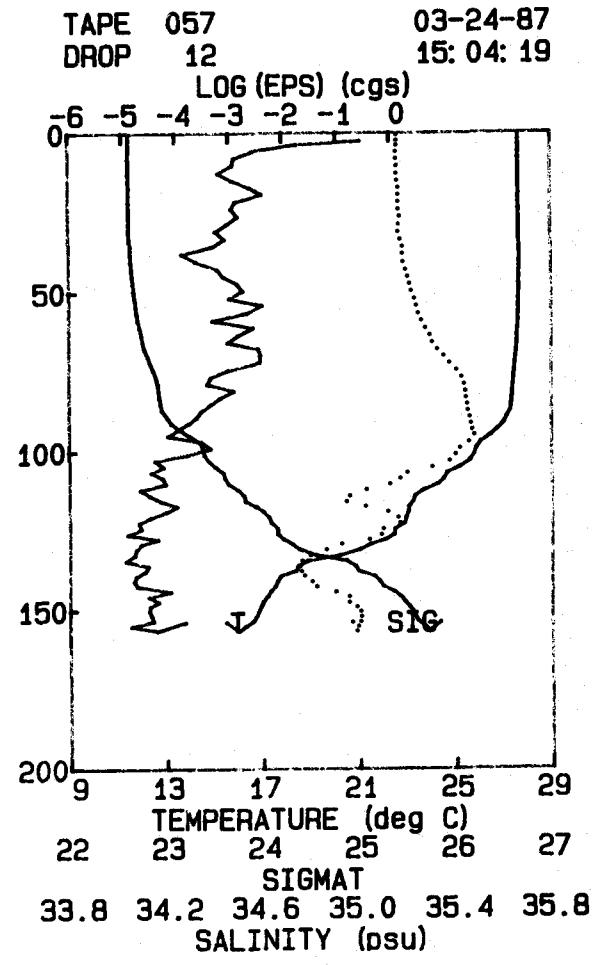
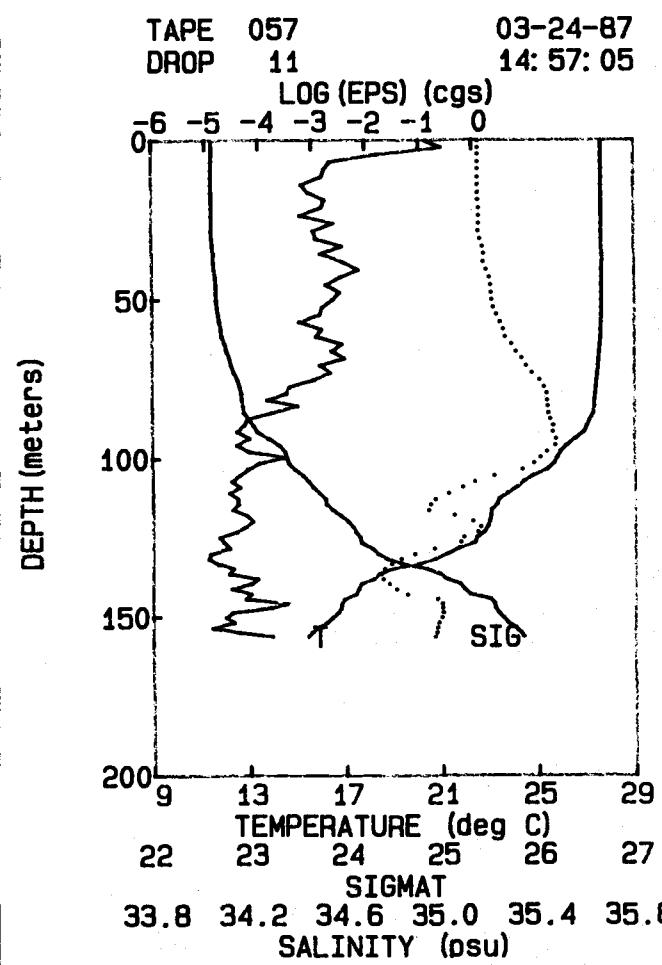
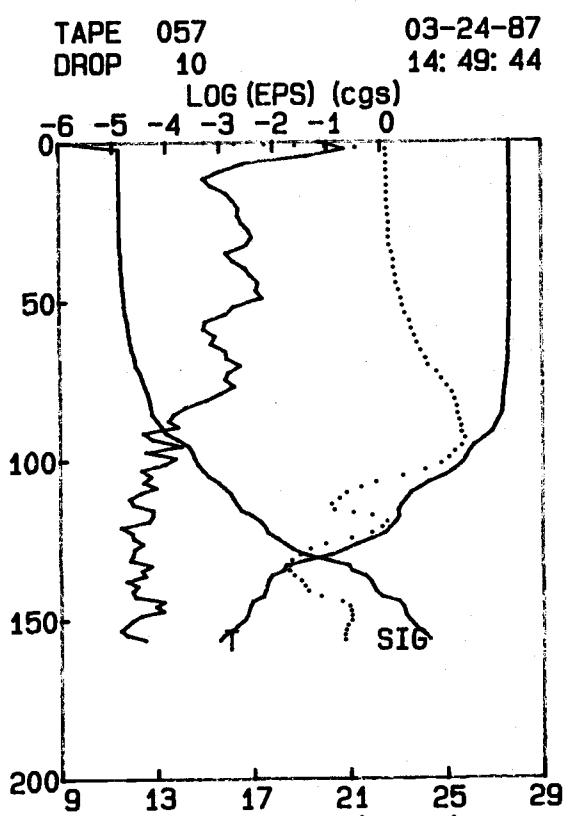
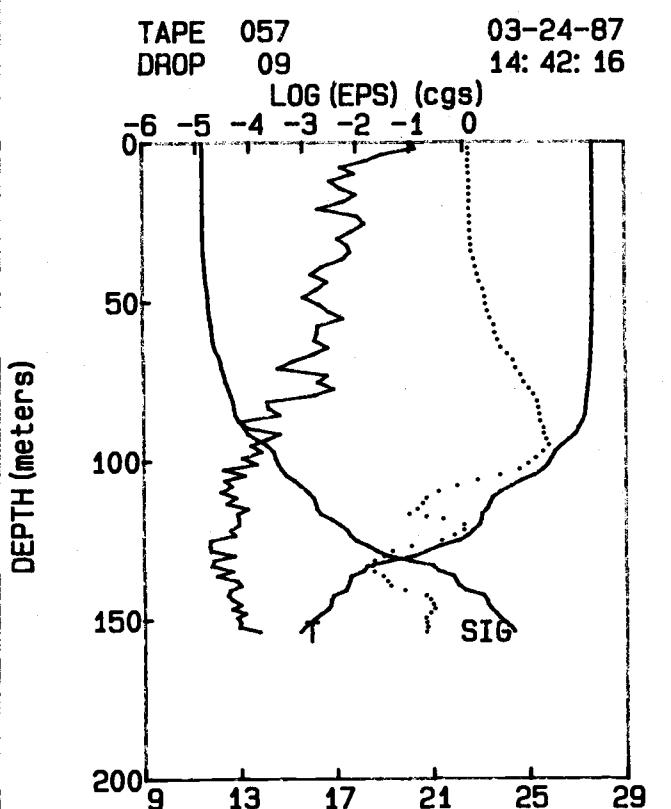


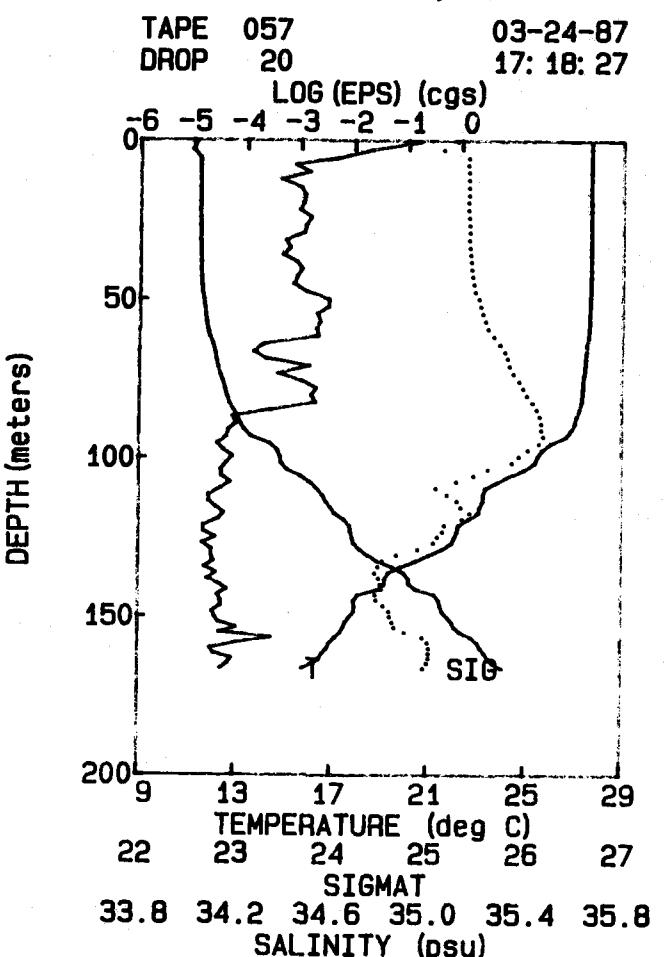
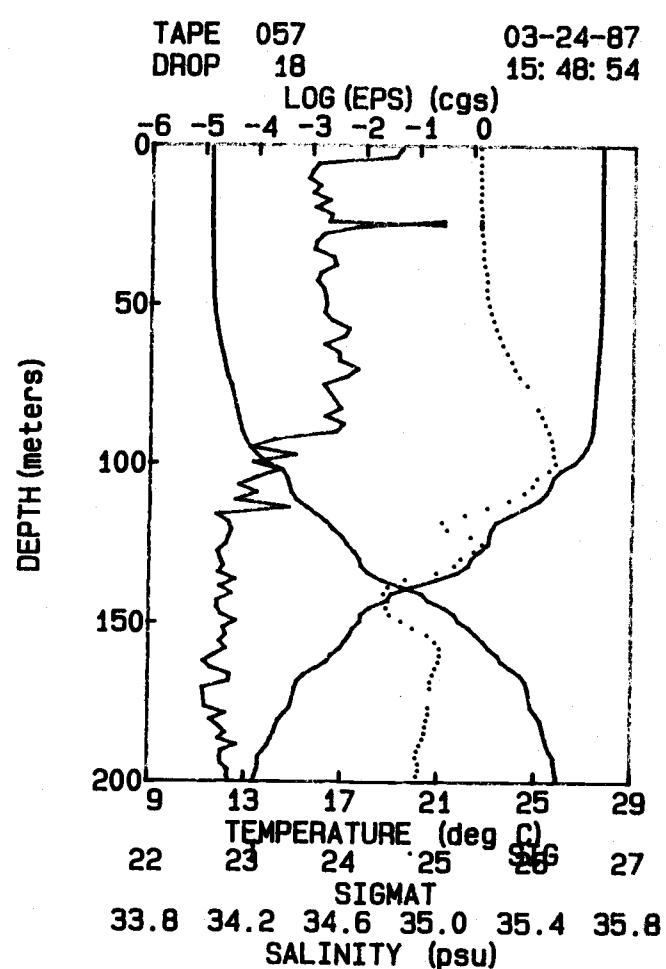
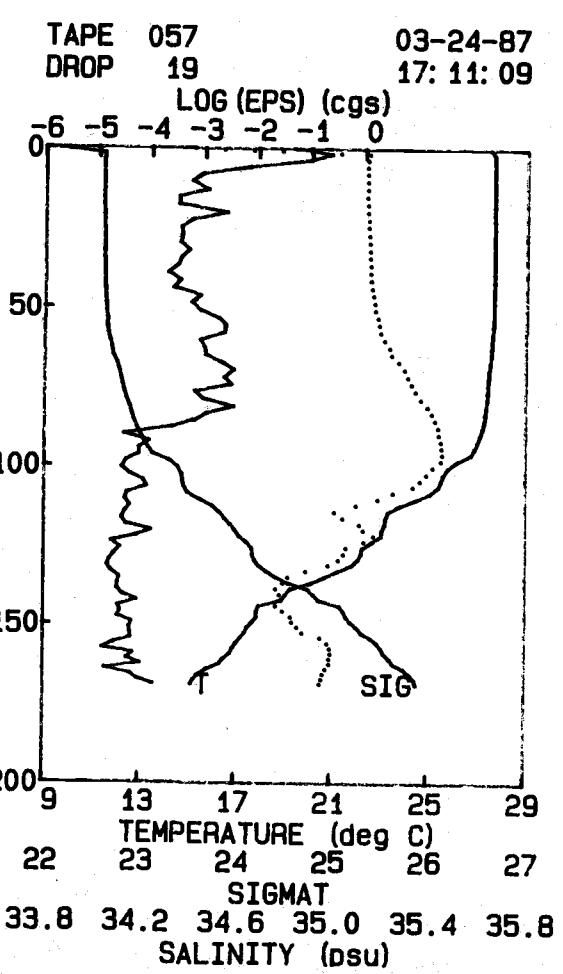
TEMPERATURE (deg C)
22 23 24 25 26 27
SIGMAT
33.8 34.2 34.6 35.0 35.4 35.8
SALINITY (psu)

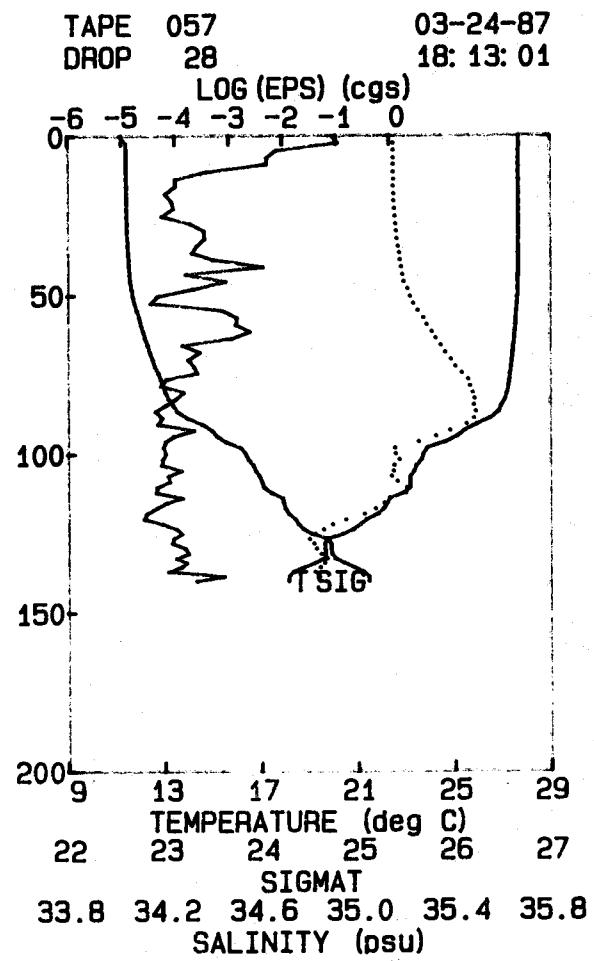
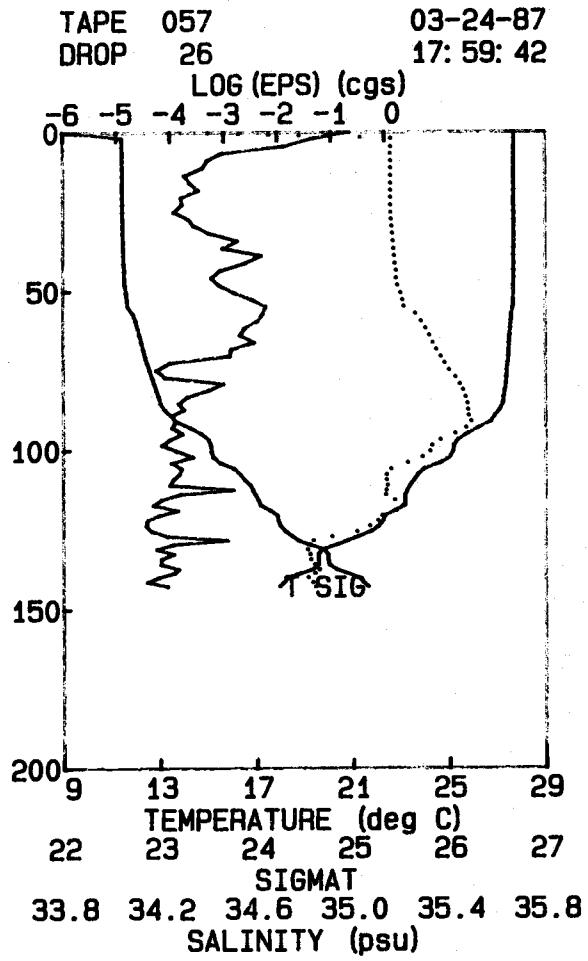
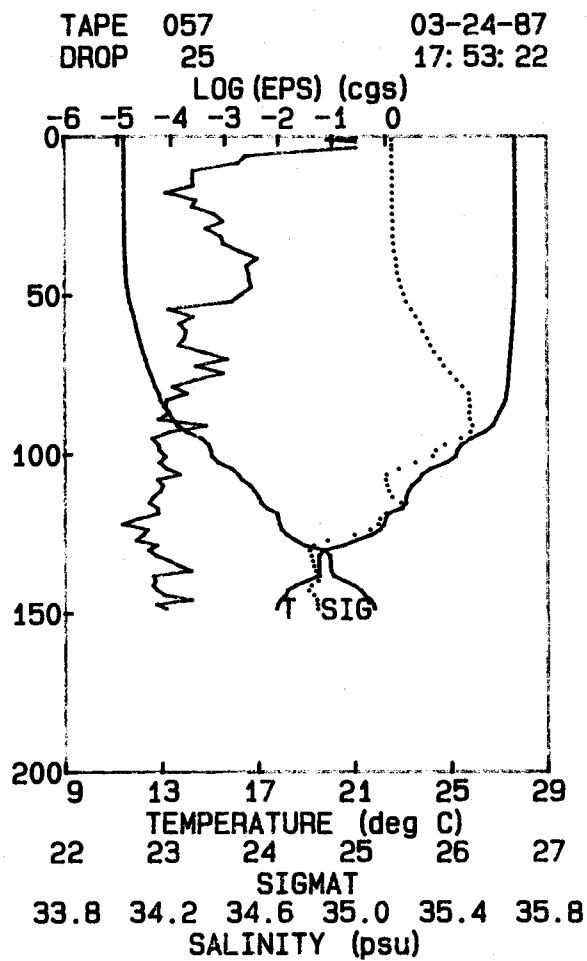


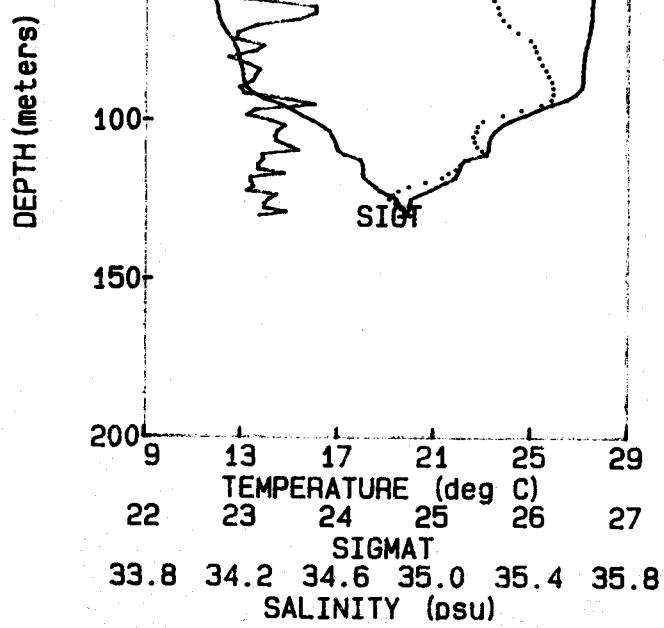
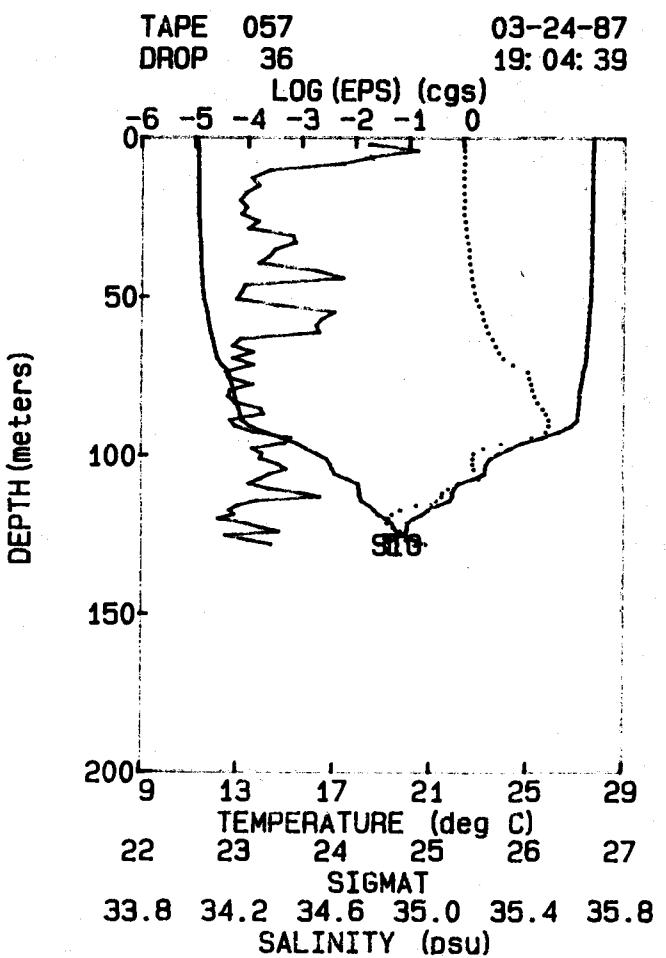
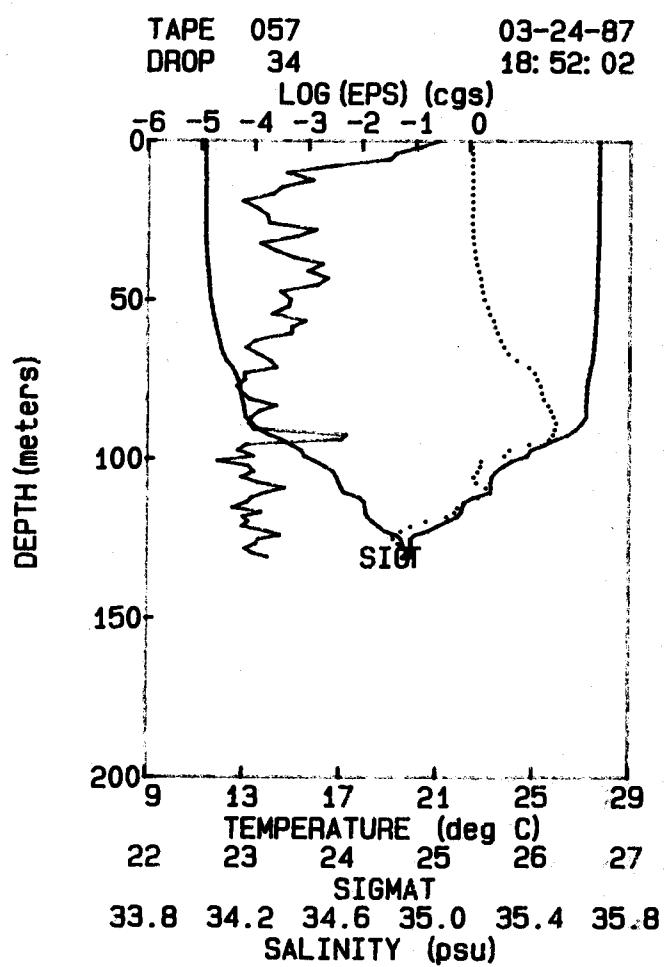
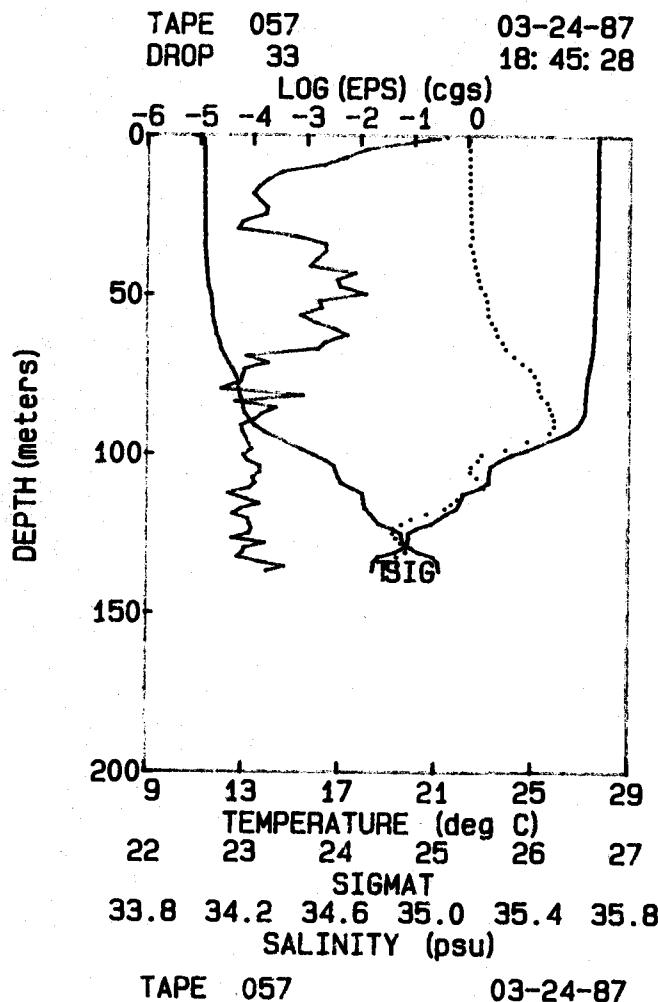








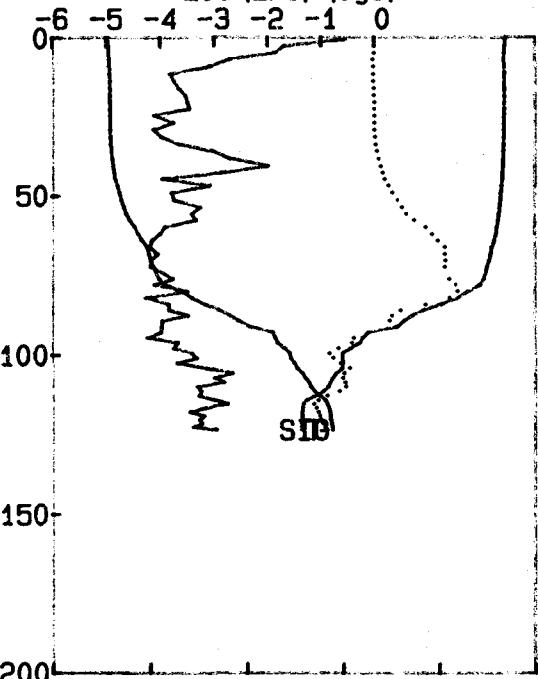




TAPE 057
DROP 45

03-24-87
20: 02: 28

LOG (EPS) (cgs)

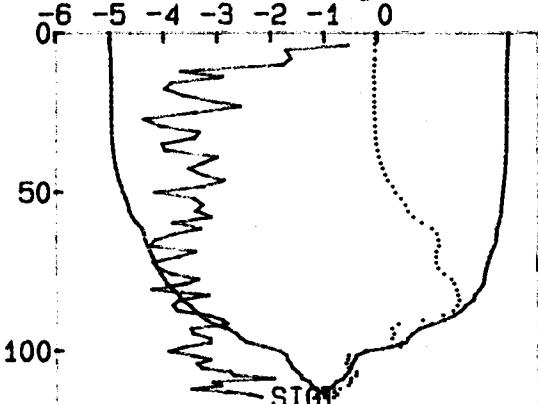


200
9 13 17 21 25 29
TEMPERATURE (deg C)
22 23 24 25 26 27
SIGMAT
33.8 34.2 34.6 35.0 35.4 35.8
SALINITY (psu)

TAPE 057
DROP 47

03-24-87
20: 41: 32

LOG (EPS) (cgs)

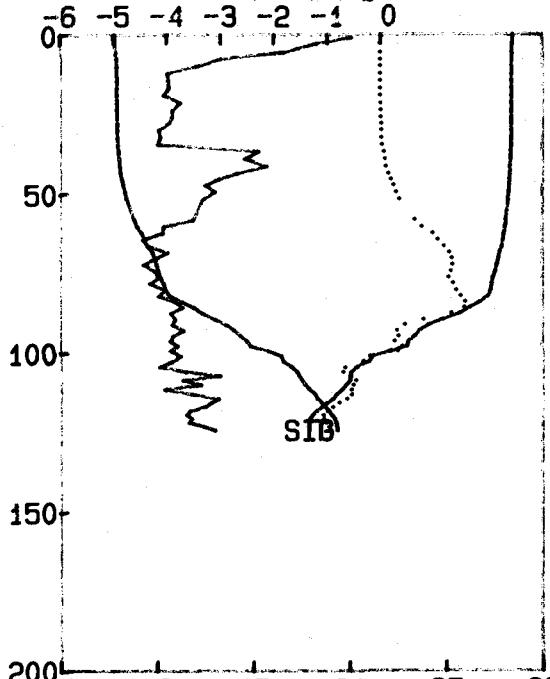


200
9 13 17 21 25 29
TEMPERATURE (deg C)
22 23 24 25 26 27
SIGMAT
33.8 34.2 34.6 35.0 35.4 35.8
SALINITY (psu)

TAPE 057
DROP 46

03-24-87
20: 09: 18

LOG (EPS) (cgs)

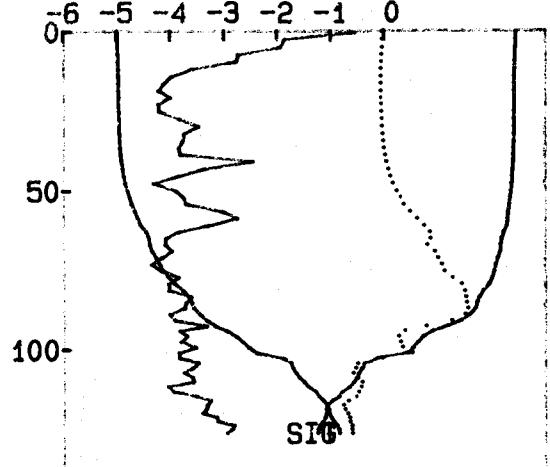


200
9 13 17 21 25 29
TEMPERATURE (deg C)
22 23 24 25 26 27
SIGMAT
33.8 34.2 34.6 35.0 35.4 35.8
SALINITY (psu)

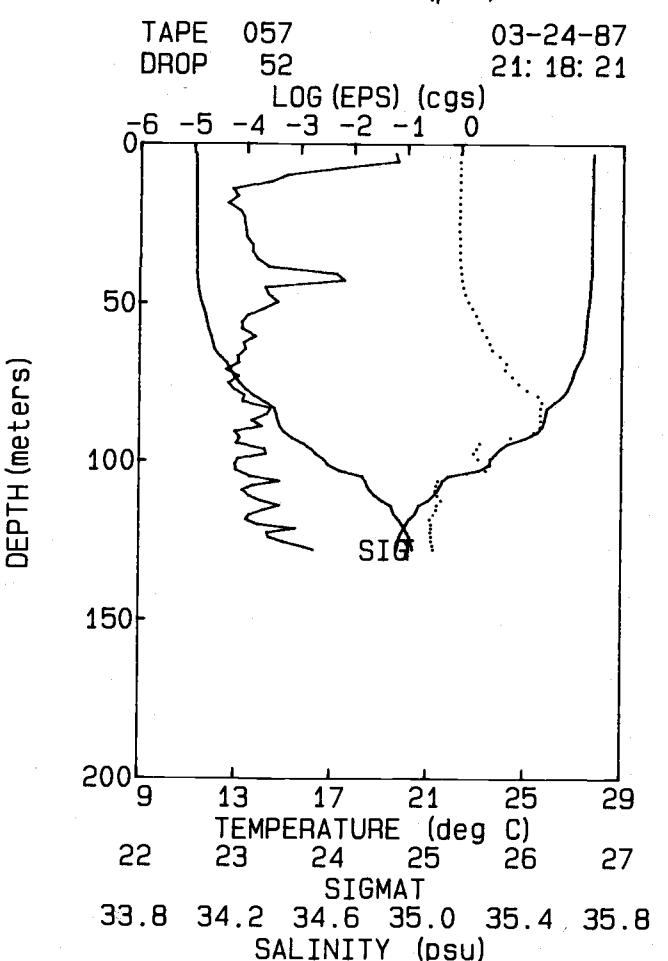
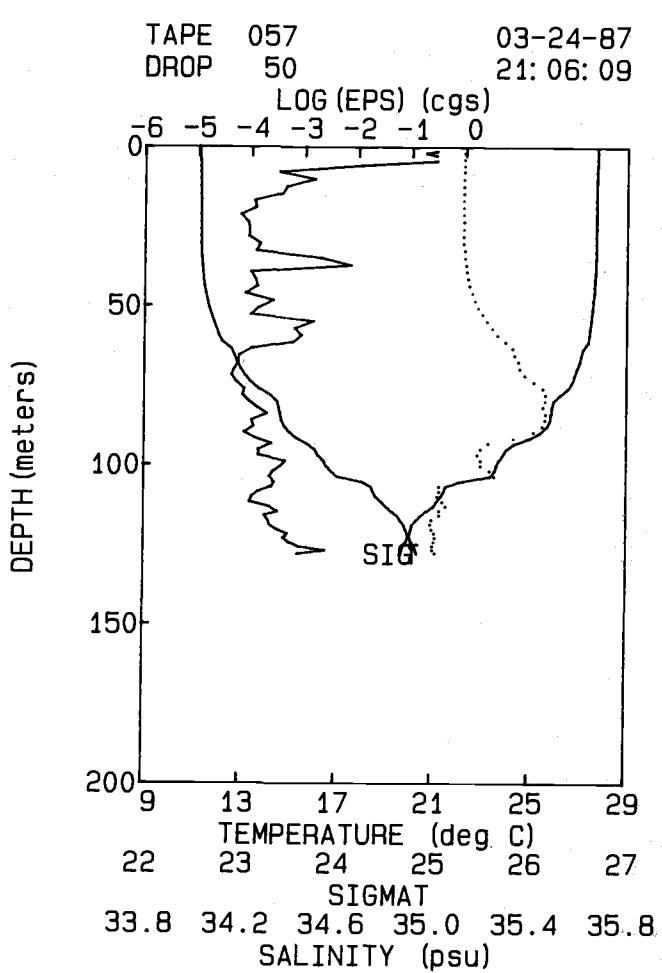
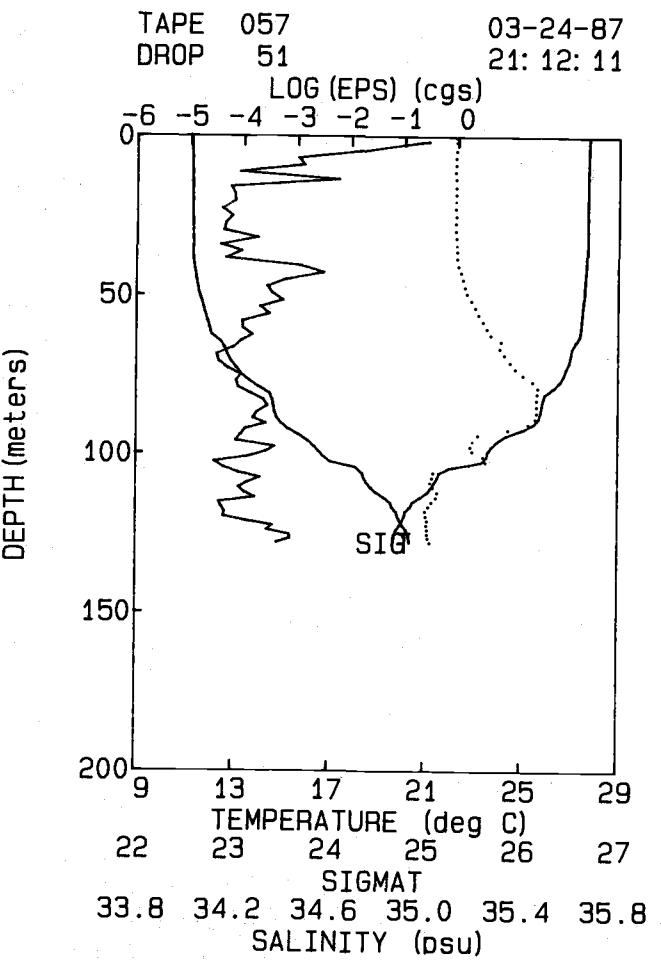
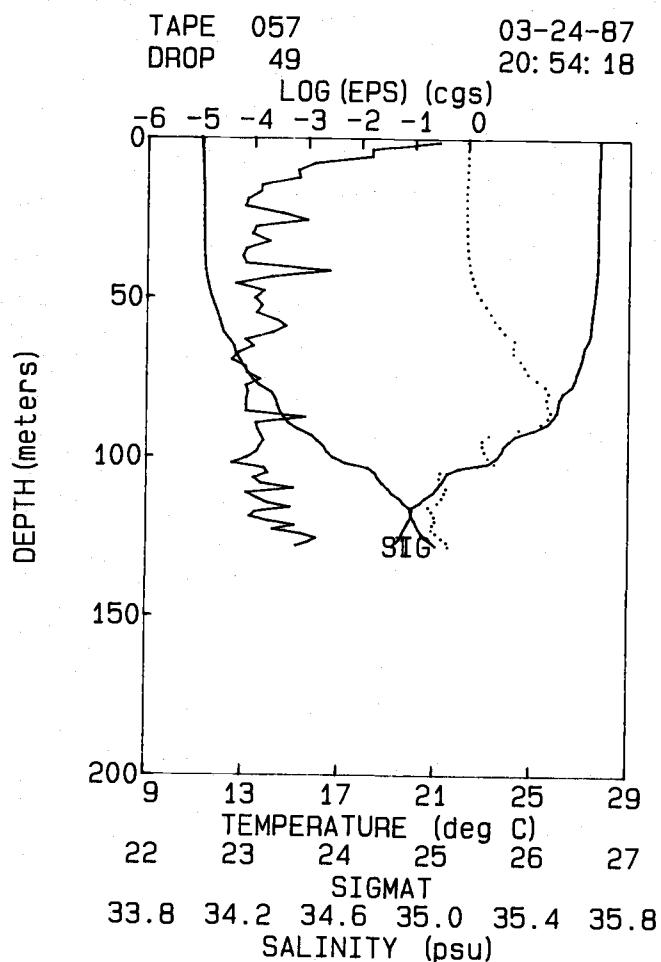
TAPE 057
DROP 48

03-24-87
20: 48: 11

LOG (EPS) (cgs)

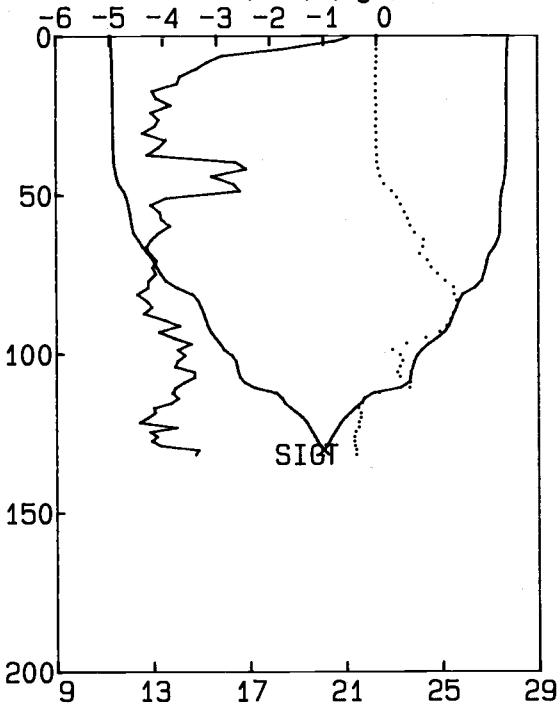


200
9 13 17 21 25 29
TEMPERATURE (deg C)
22 23 24 25 26 27
SIGMAT
33.8 34.2 34.6 35.0 35.4 35.8
SALINITY (psu)



TAPE 057 03-24-87
DROP 57 22: 03: 31

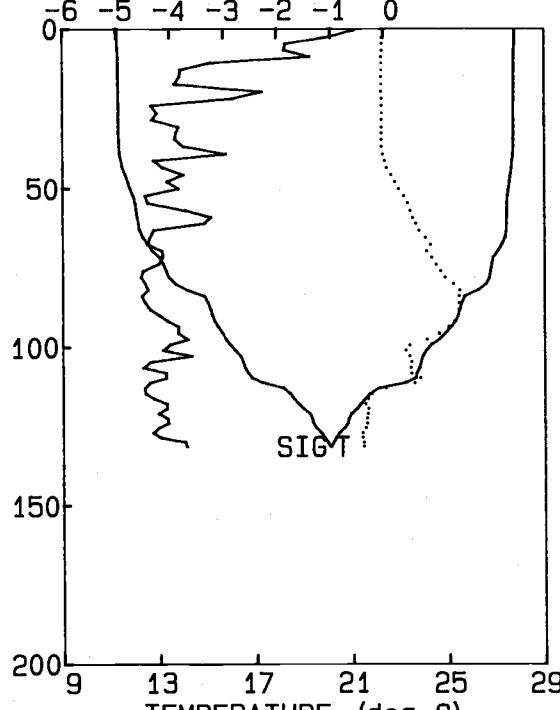
LOG (EPS) (cgs)



TEMPERATURE (deg C)
22 23 24 25 26 27
SIGMAT
33.8 34.2 34.6 35.0 35.4 35.8
SALINITY (psu)

TAPE 057 03-24-87
DROP 59 22: 15: 56

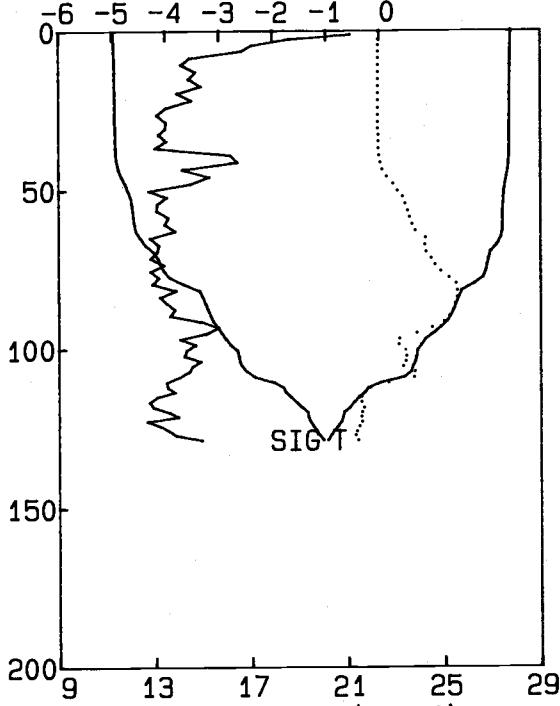
LOG (EPS) (cgs)



TEMPERATURE (deg C)
22 23 24 25 26 27
SIGMAT
33.8 34.2 34.6 35.0 35.4 35.8
SALINITY (psu)

TAPE 057 03-24-87
DROP 58 22: 09: 43

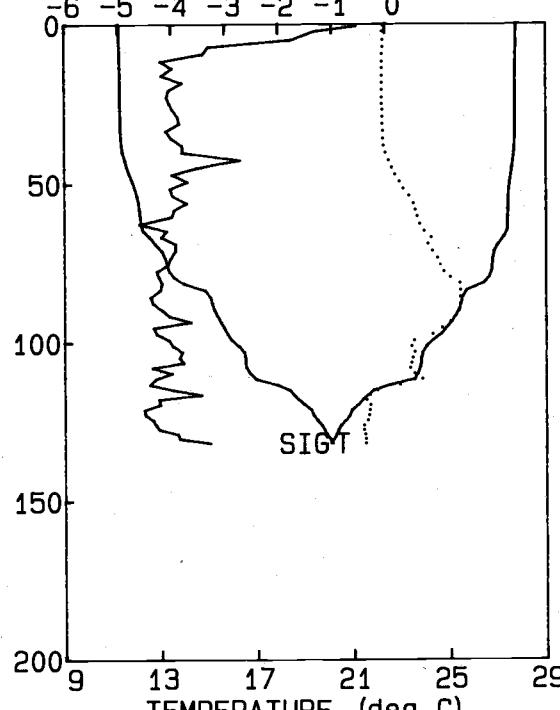
LOG (EPS) (cgs)



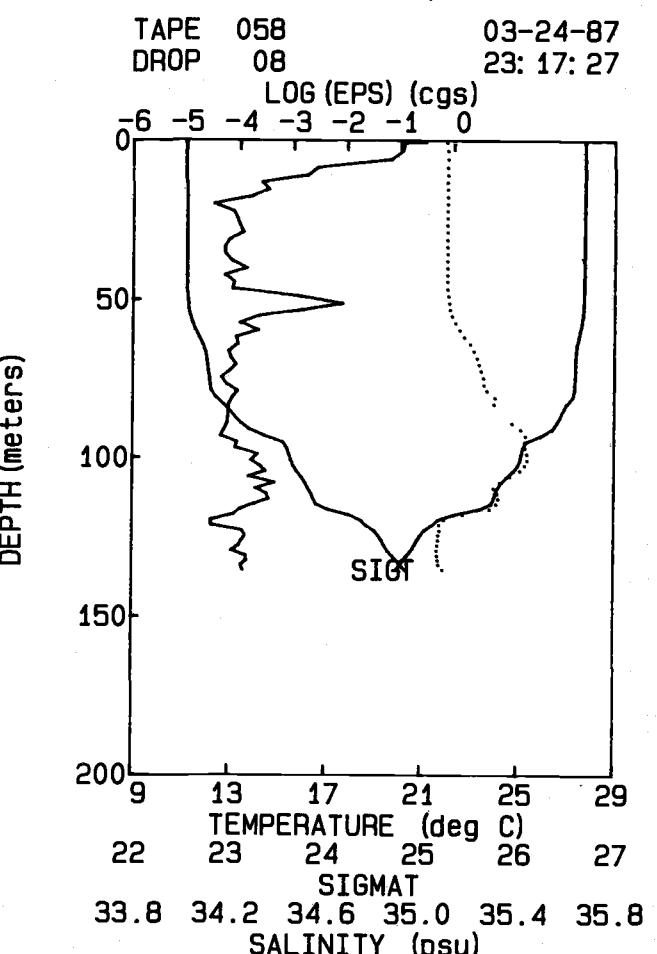
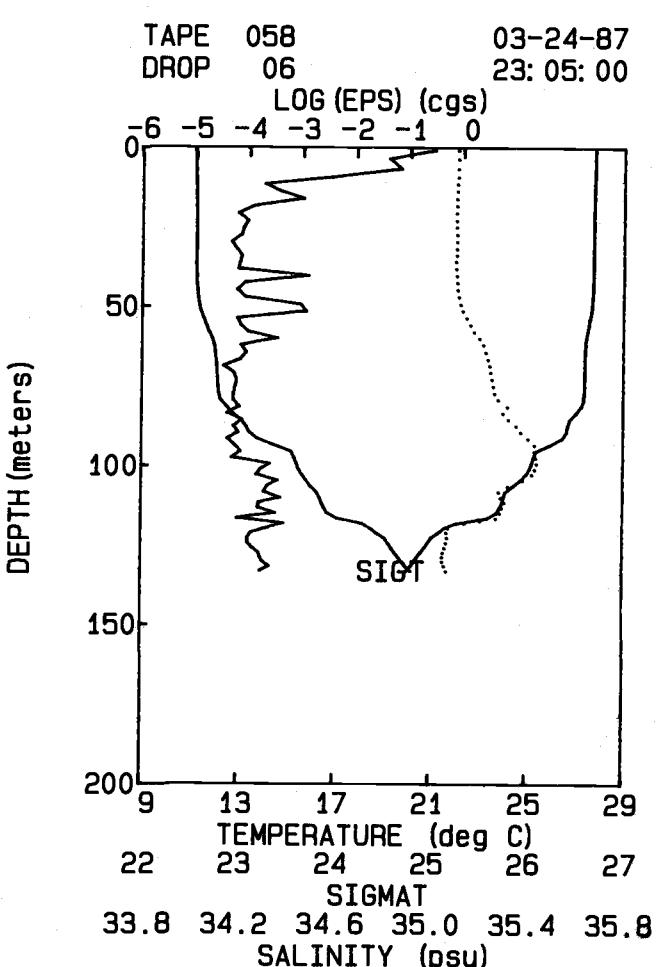
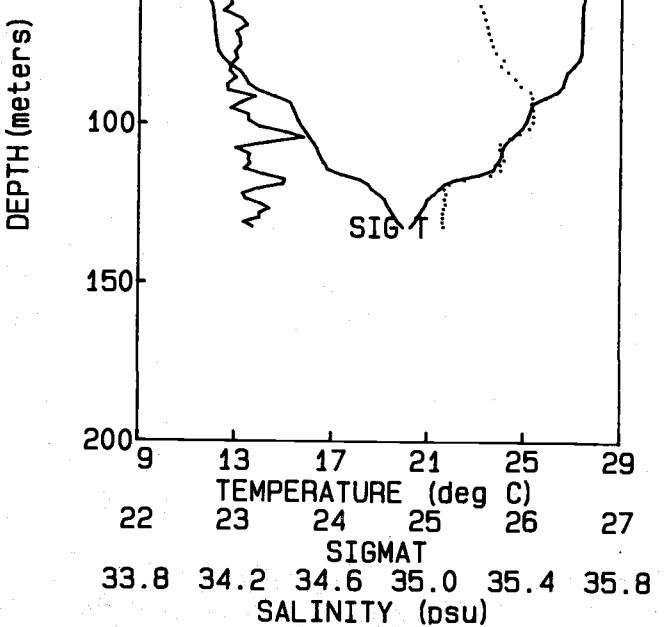
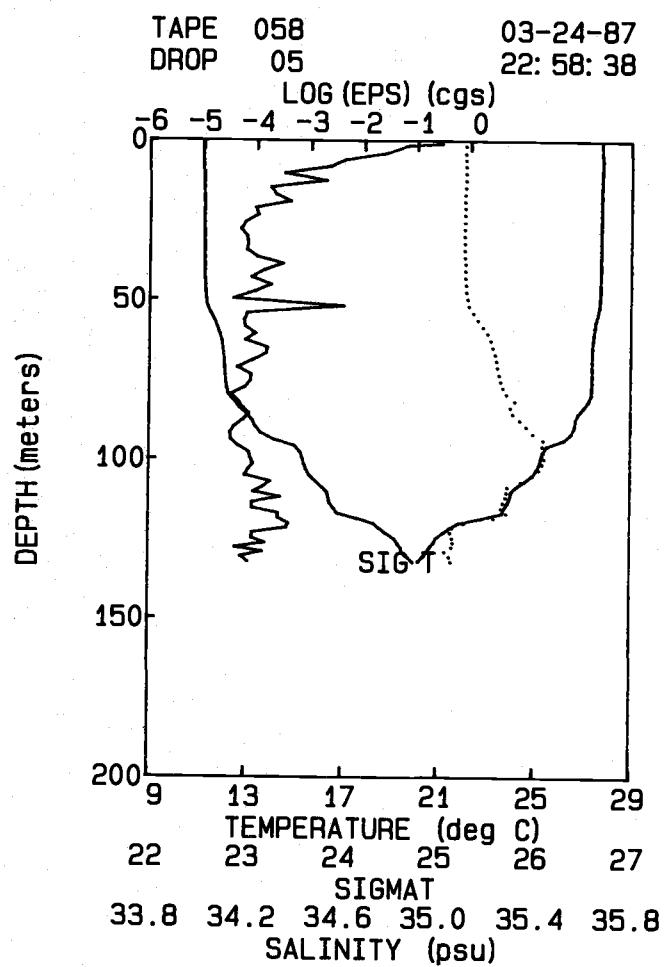
TEMPERATURE (deg C)
22 23 24 25 26 27
SIGMAT
33.8 34.2 34.6 35.0 35.4 35.8
SALINITY (psu)

TAPE 057 03-24-87
DROP 60 22: 22: 01

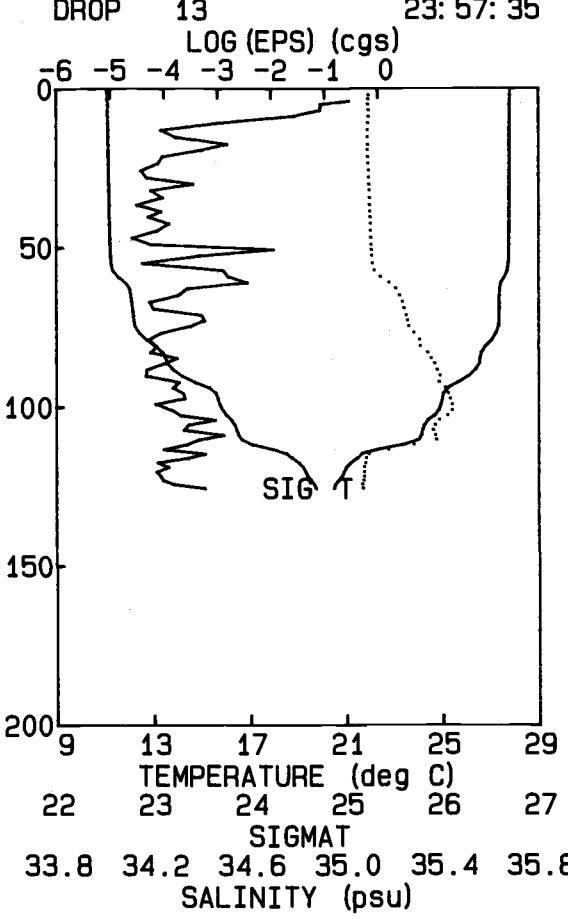
LOG (EPS) (cgs)



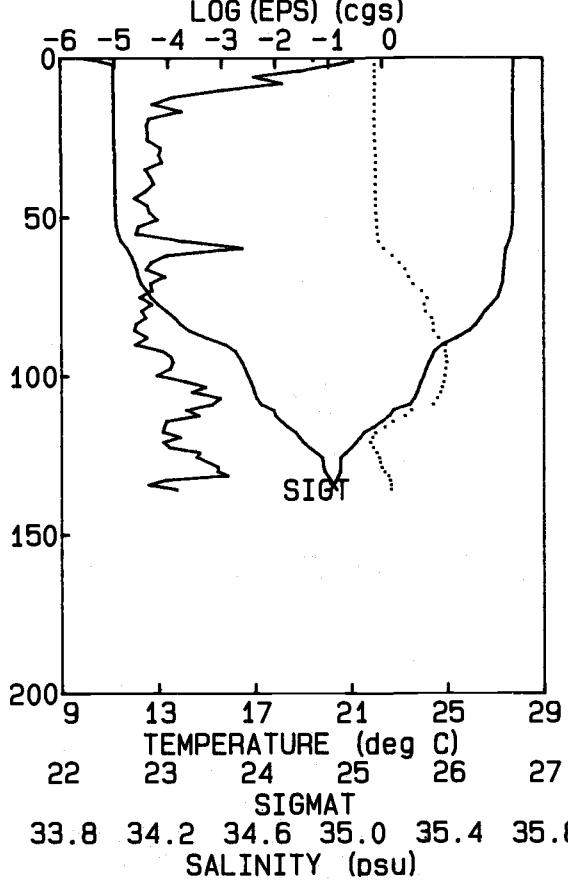
TEMPERATURE (deg C)
22 23 24 25 26 27
SIGMAT
33.8 34.2 34.6 35.0 35.4 35.8
SALINITY (psu)



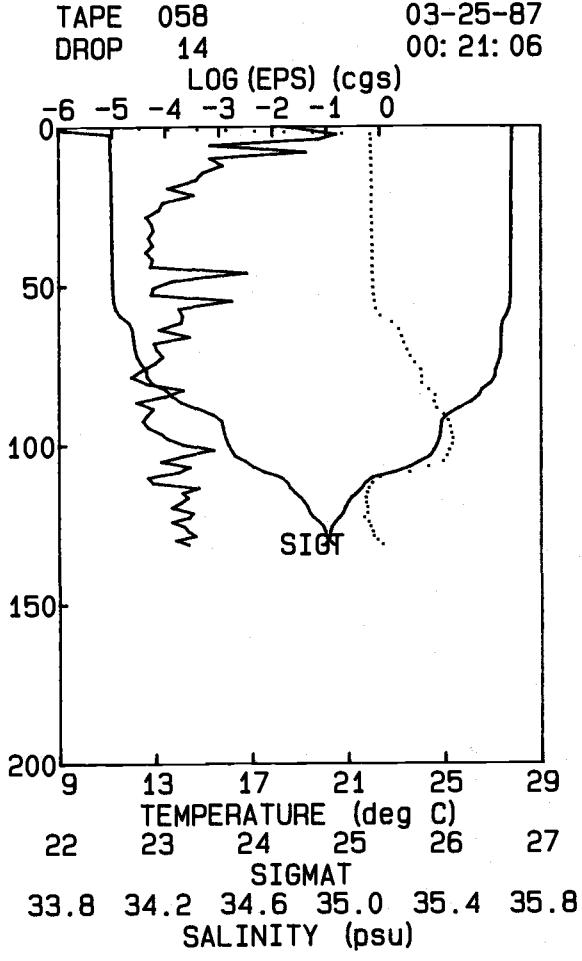
TAPE 058
DROP 13 03-24-87
23: 57: 35



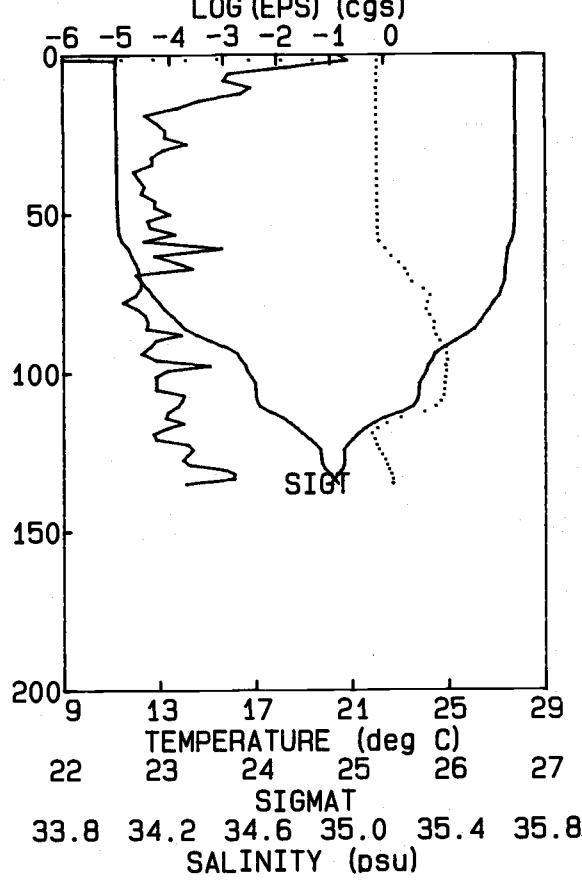
TAPE 058 03-25-87
DROP 15 01: 01: 32

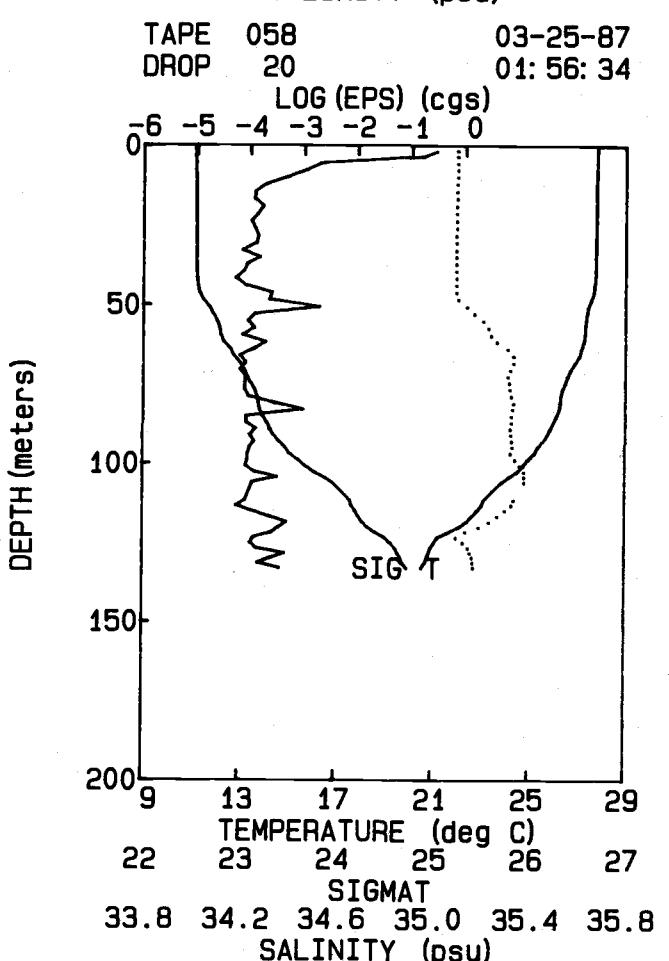
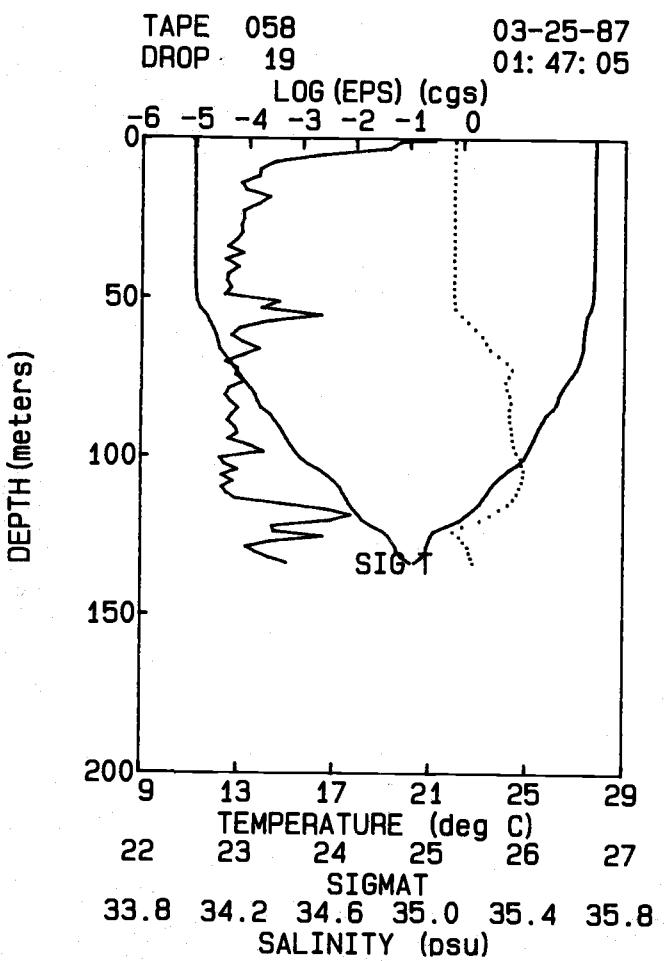
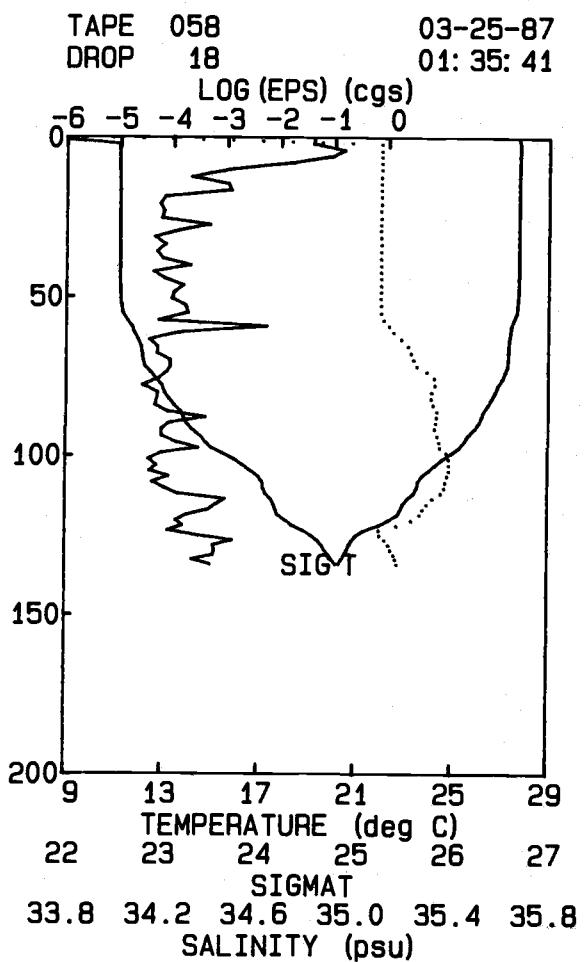
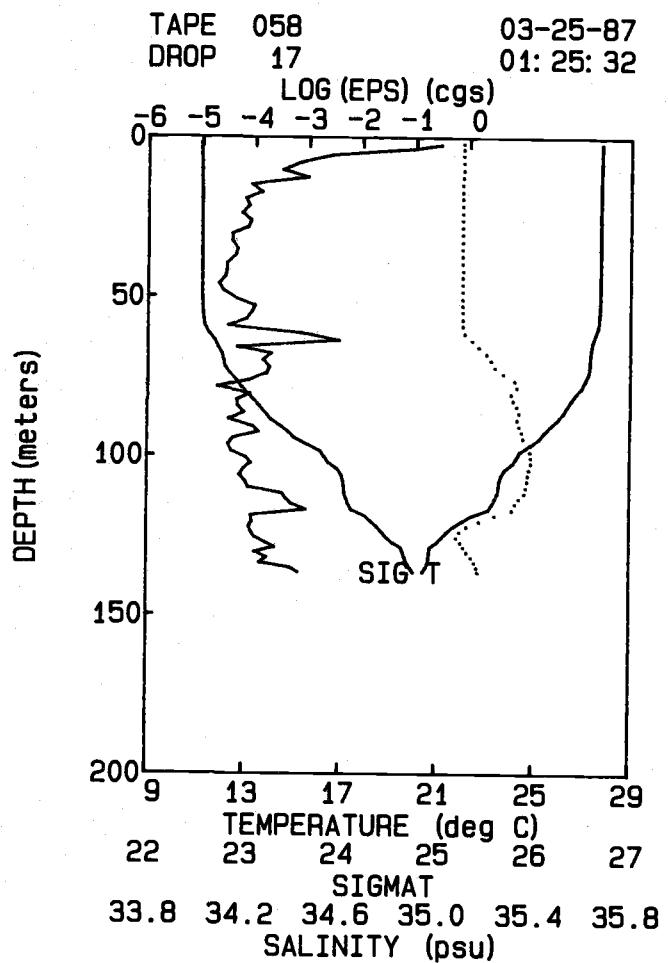


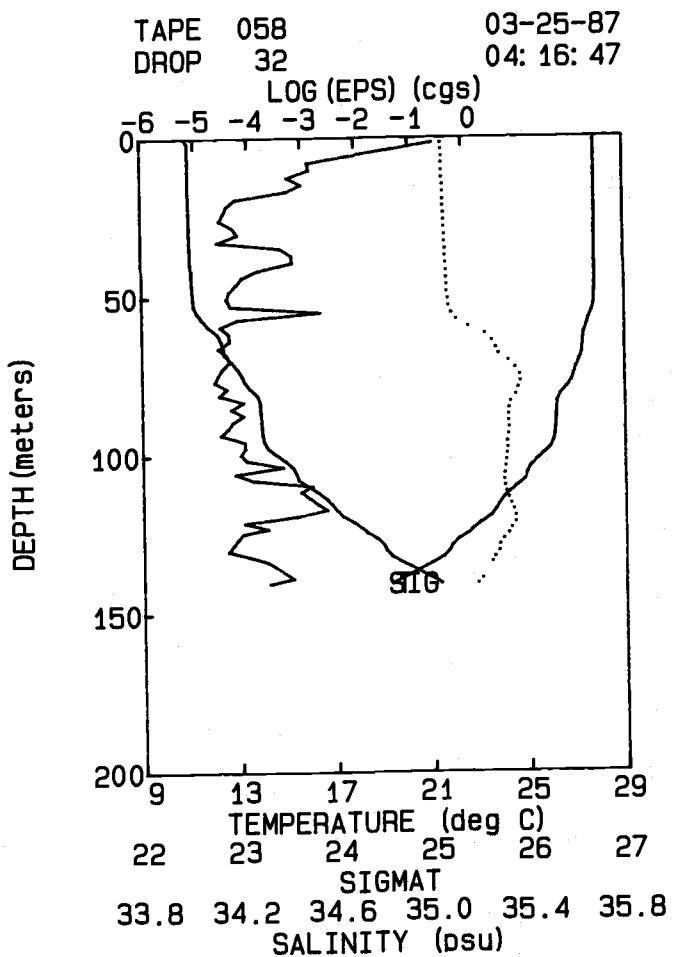
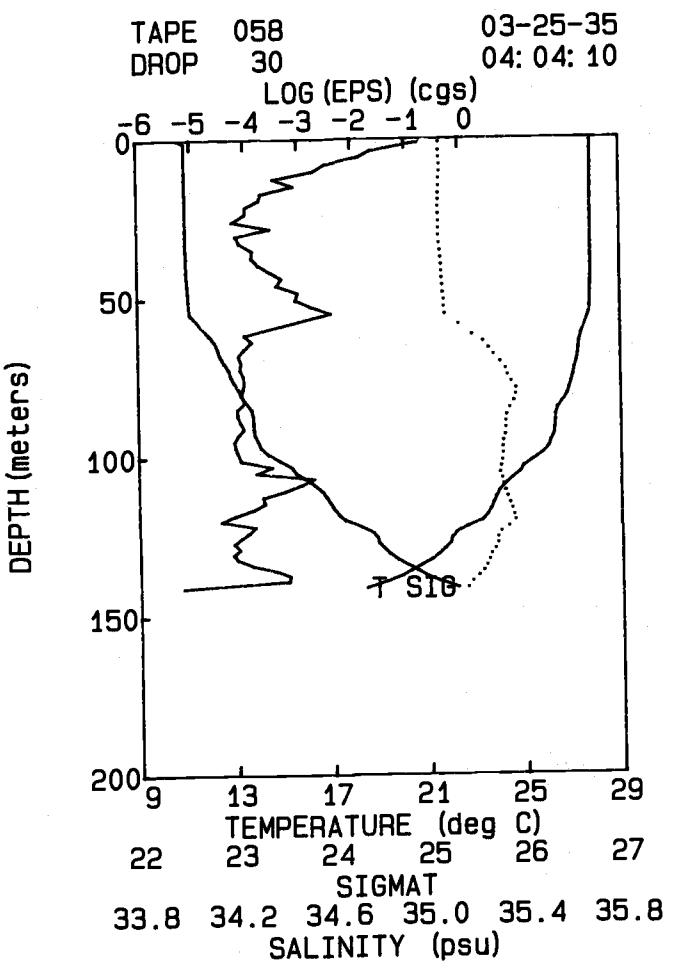
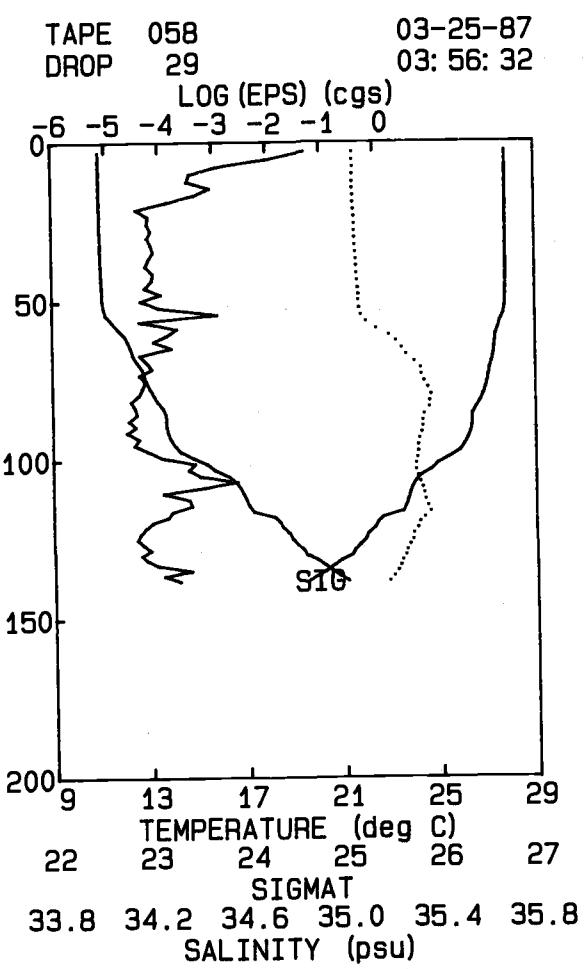
TAPE 058
DROP 14 03-25-87
00: 21: 06

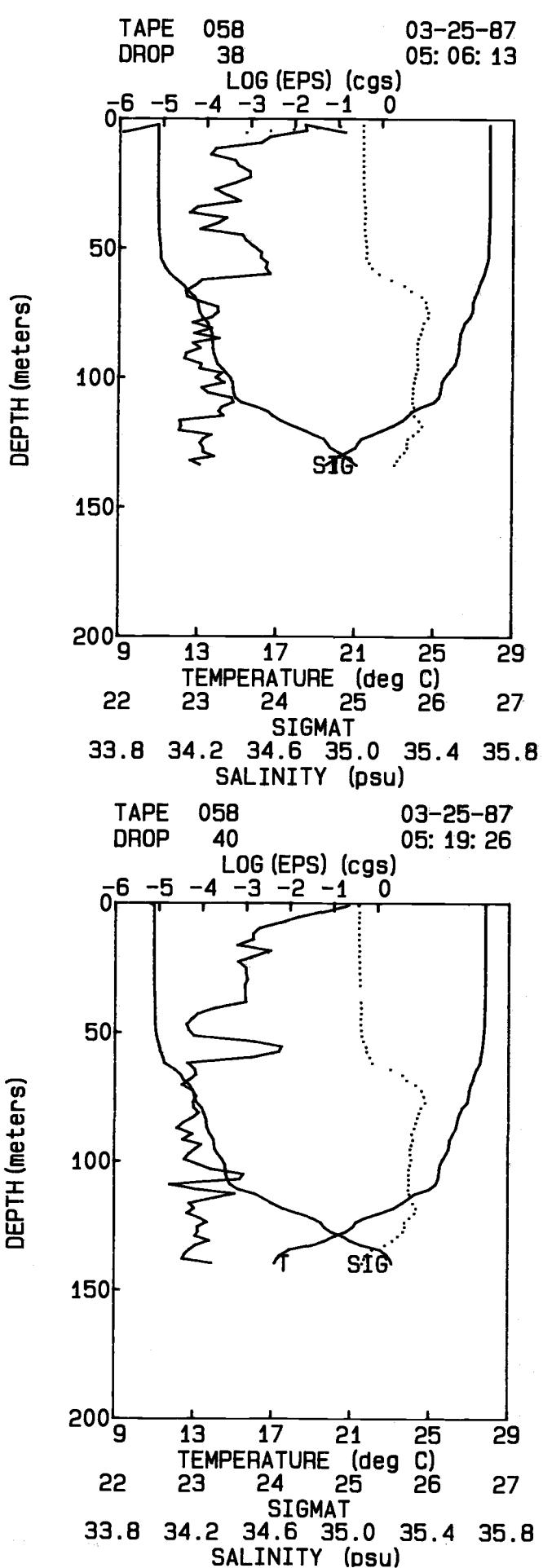
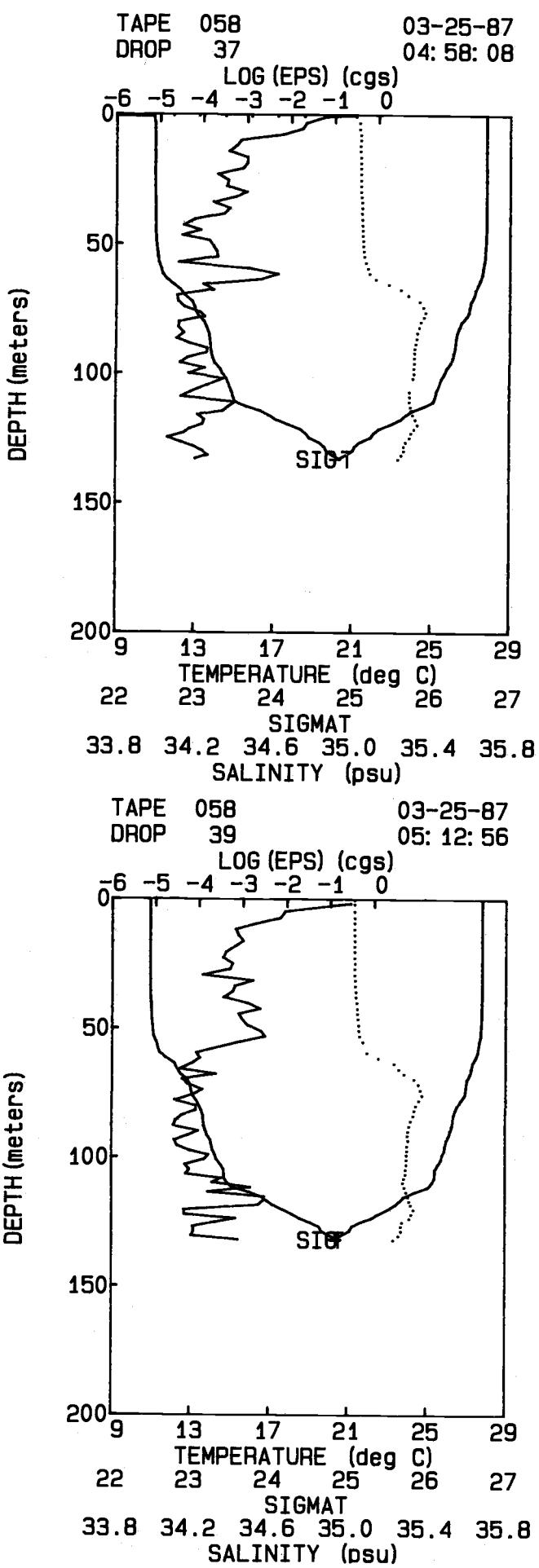


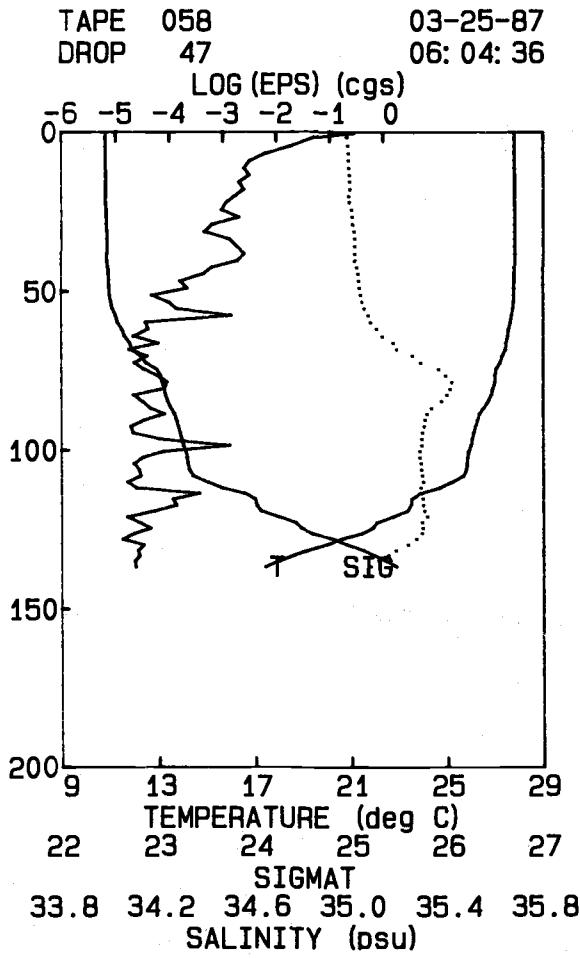
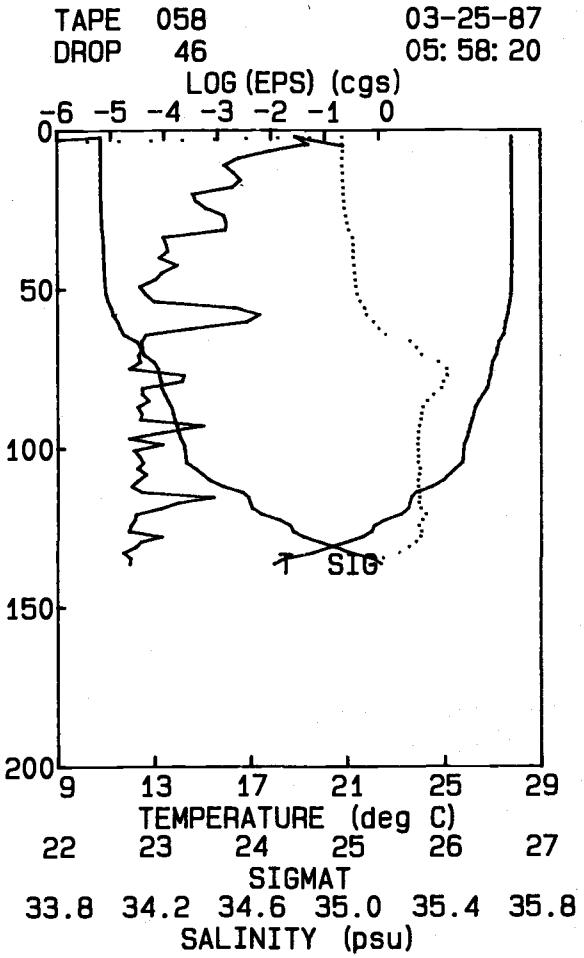
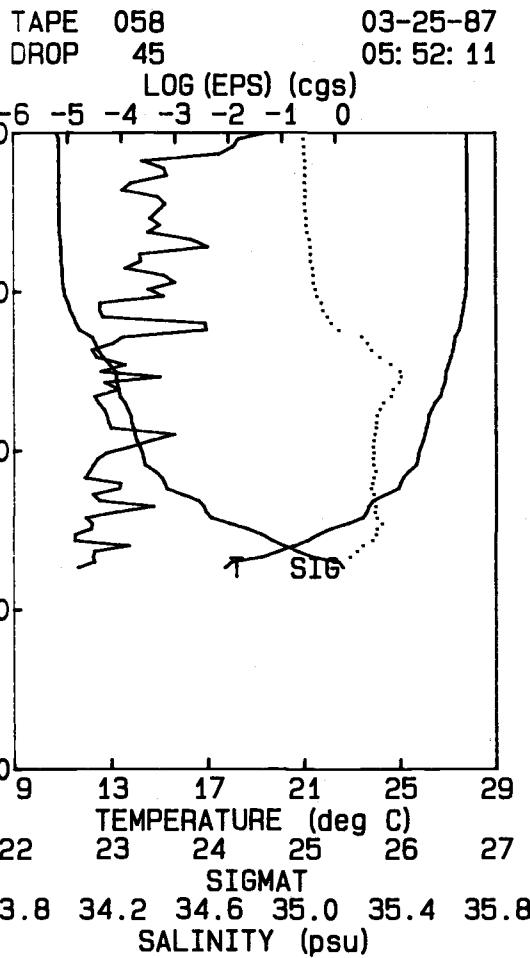
TAPE 058 03-25-87
DROP 16 01: 15: 13







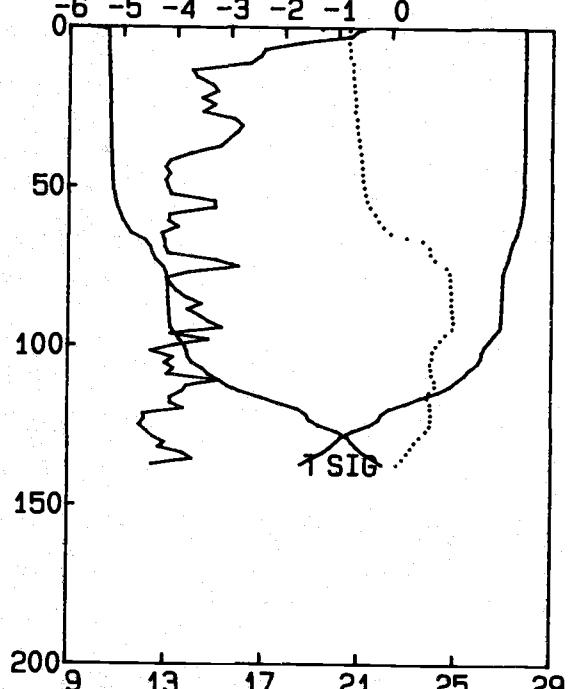




TAPE 058 03-25-87
 DROP 57 07: 32: 32

LOG (EPS) (cgs)

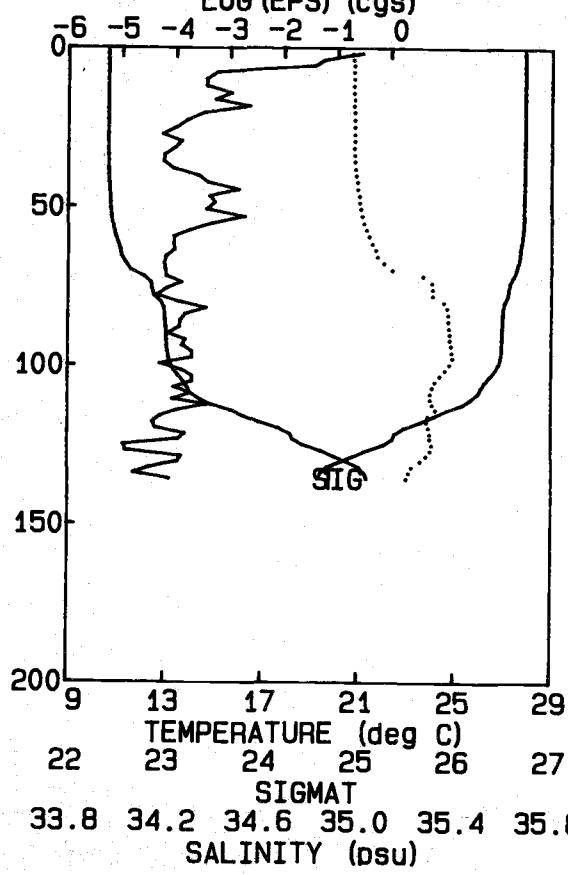
DEPTH (meters)



TAPE 058 03-25-87
 DROP 59 07: 47: 44

LOG (EPS) (cgs)

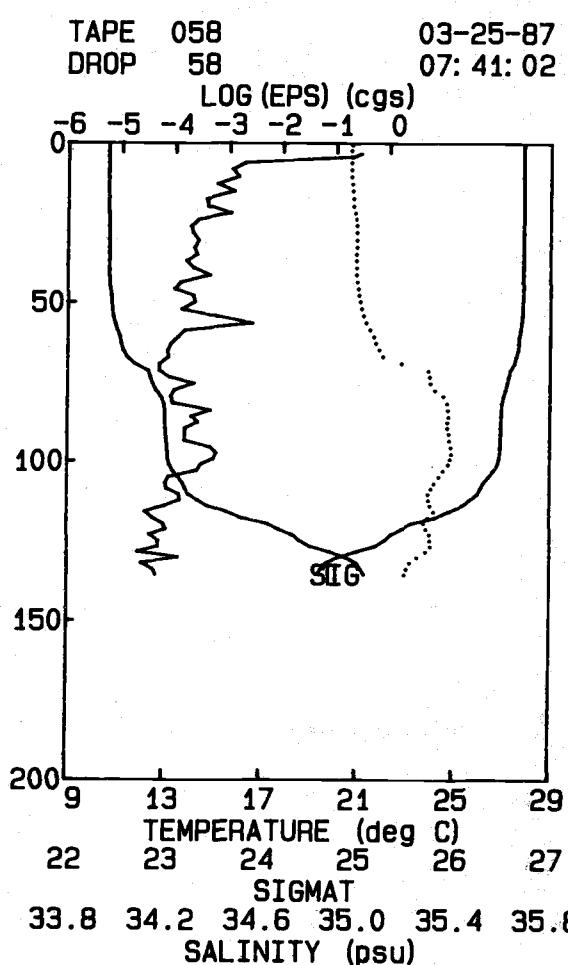
DEPTH (meters)



TAPE 058 03-25-87
 DROP 58 07: 41: 02

LOG (EPS) (cgs)

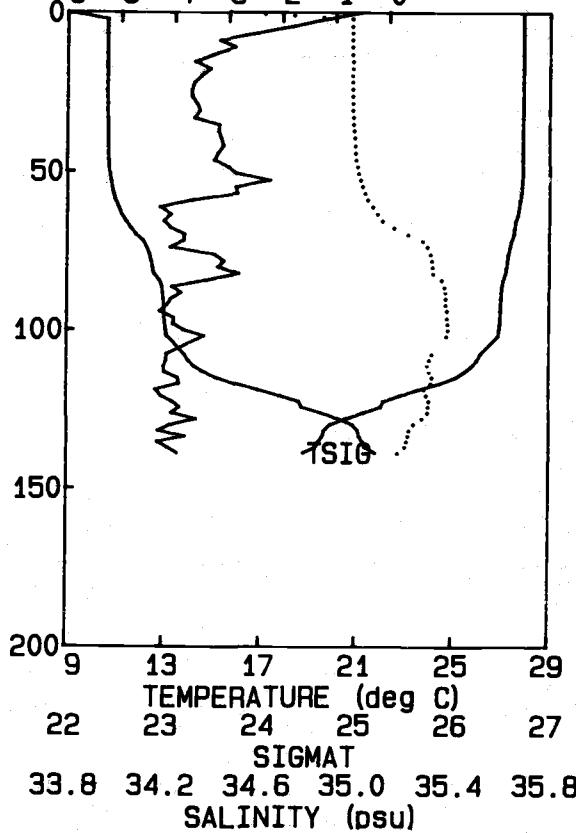
DEPTH (meters)

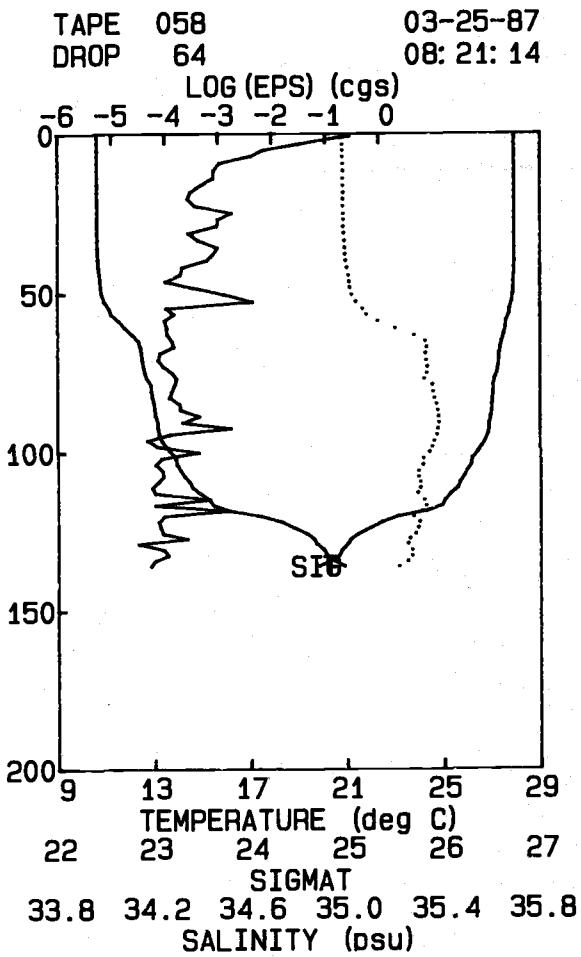
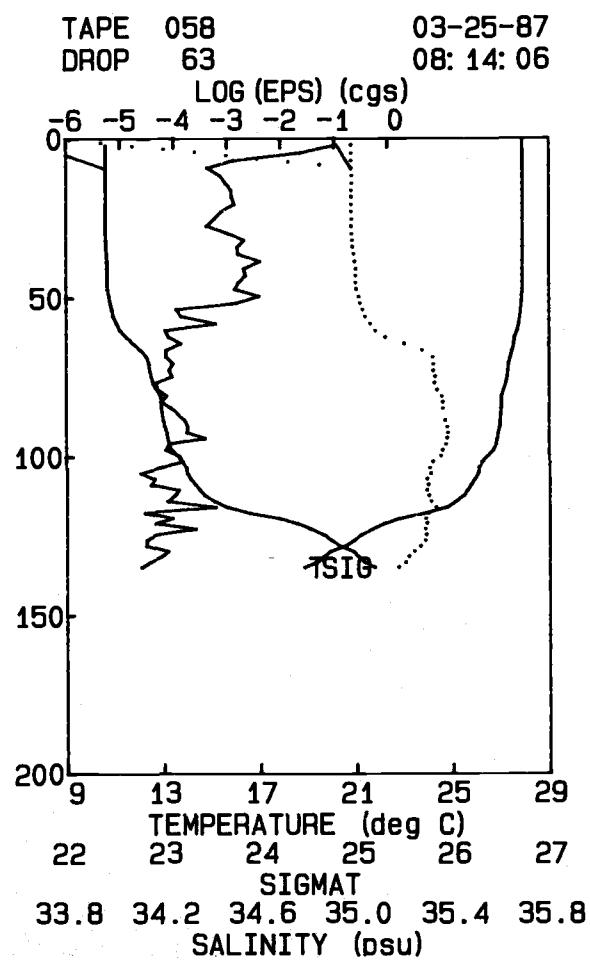
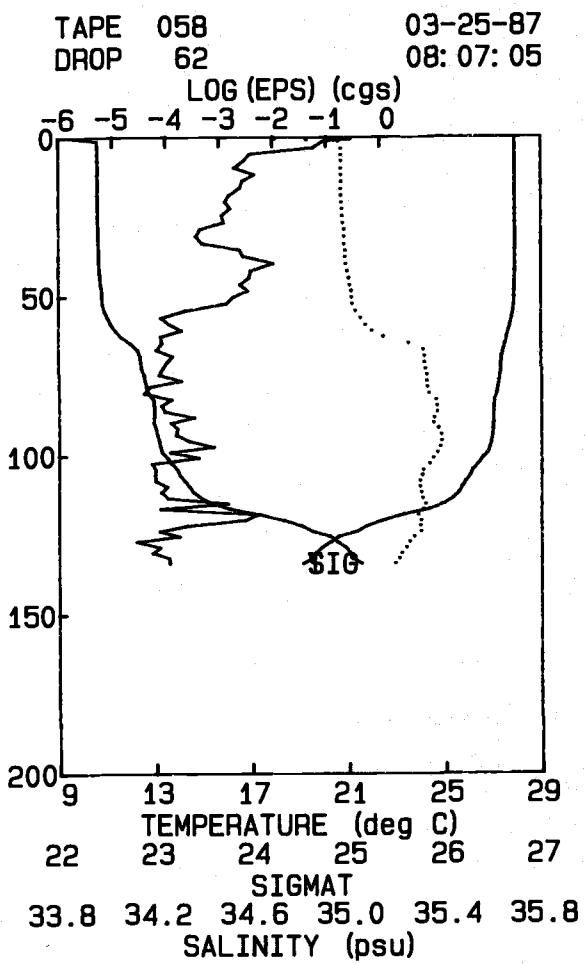
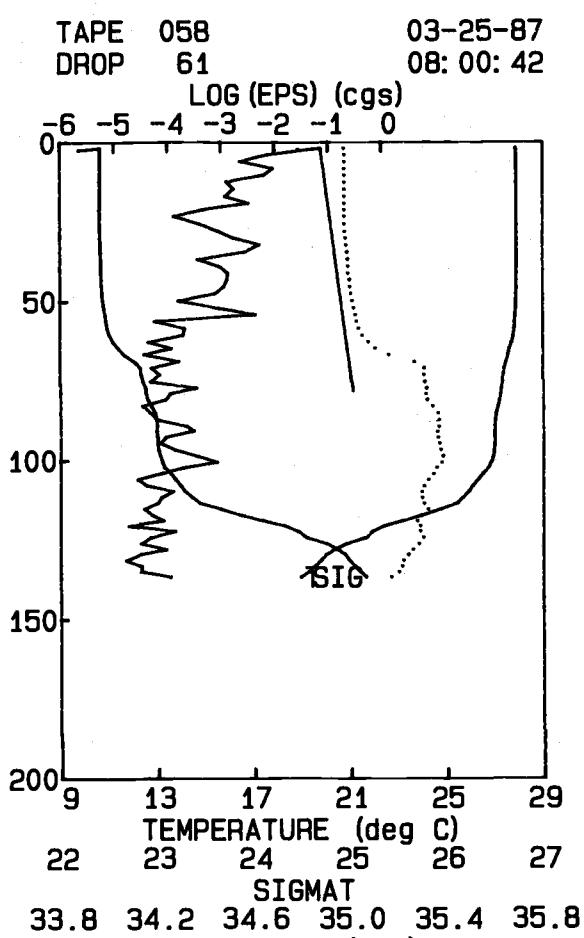


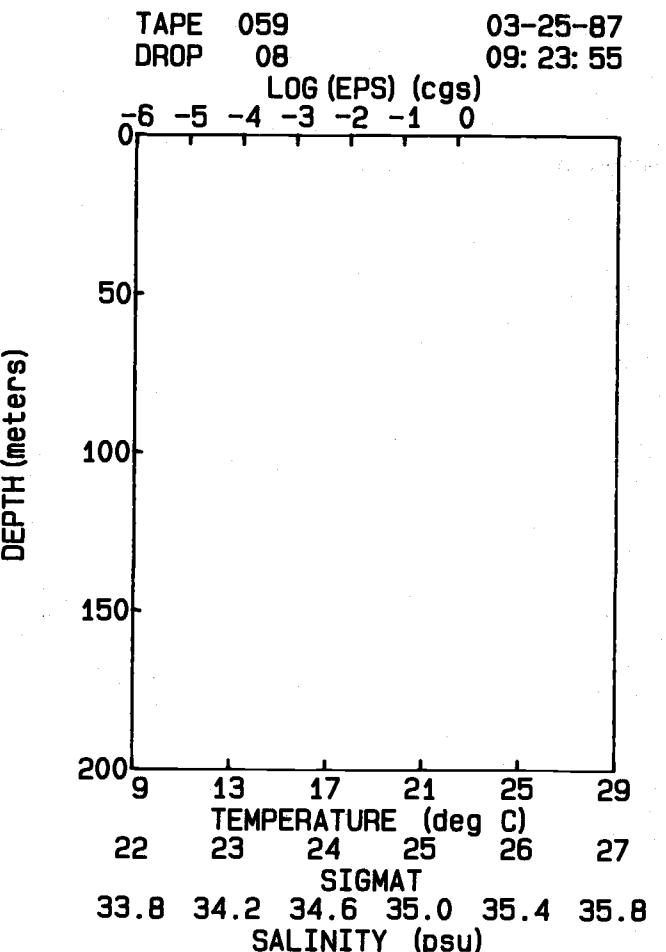
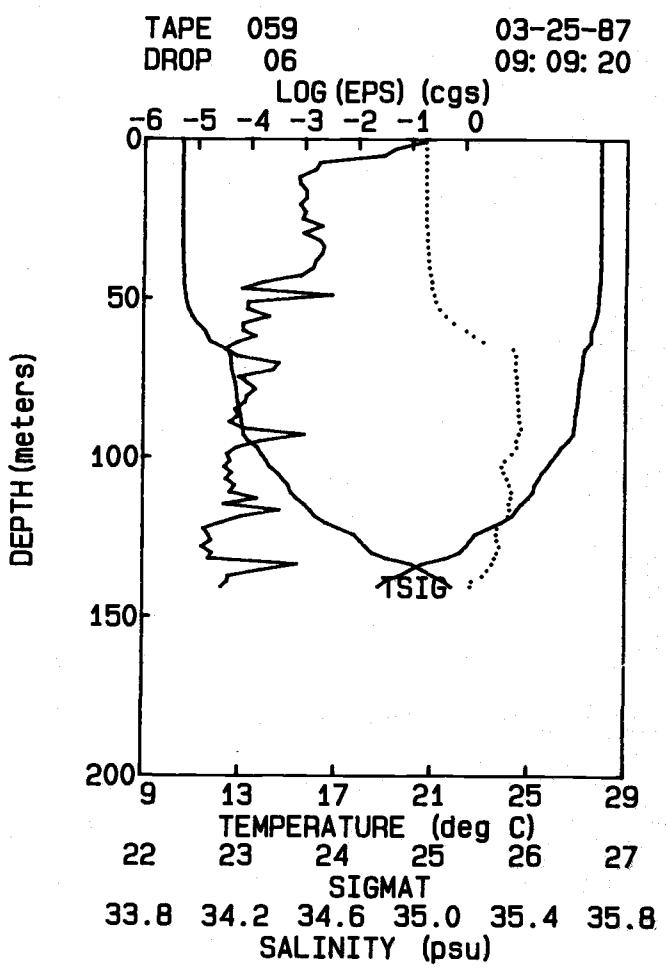
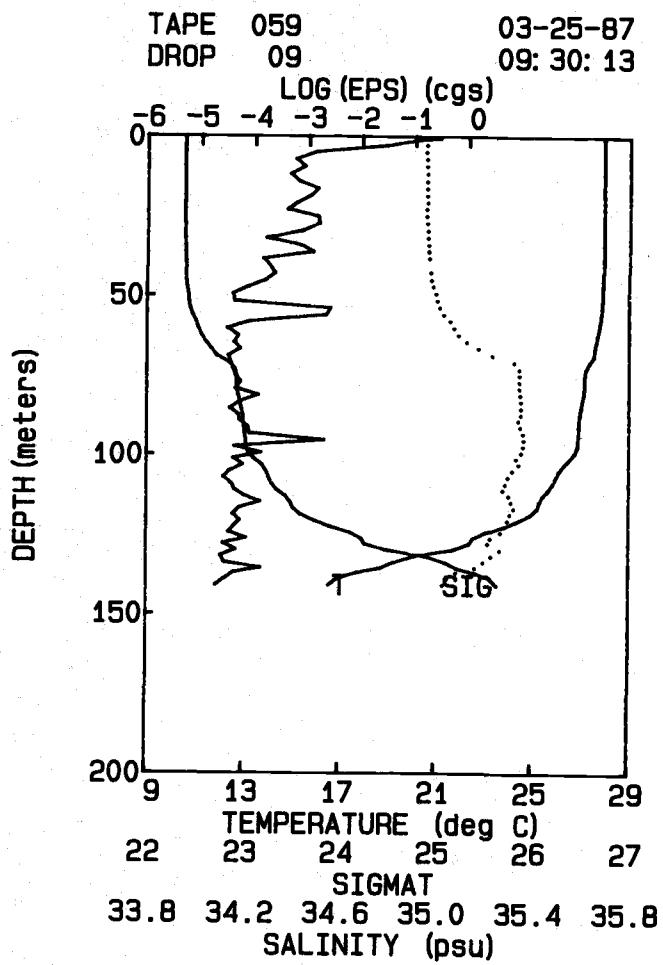
TAPE 058 03-25-87
 DROP 60 07: 54: 17

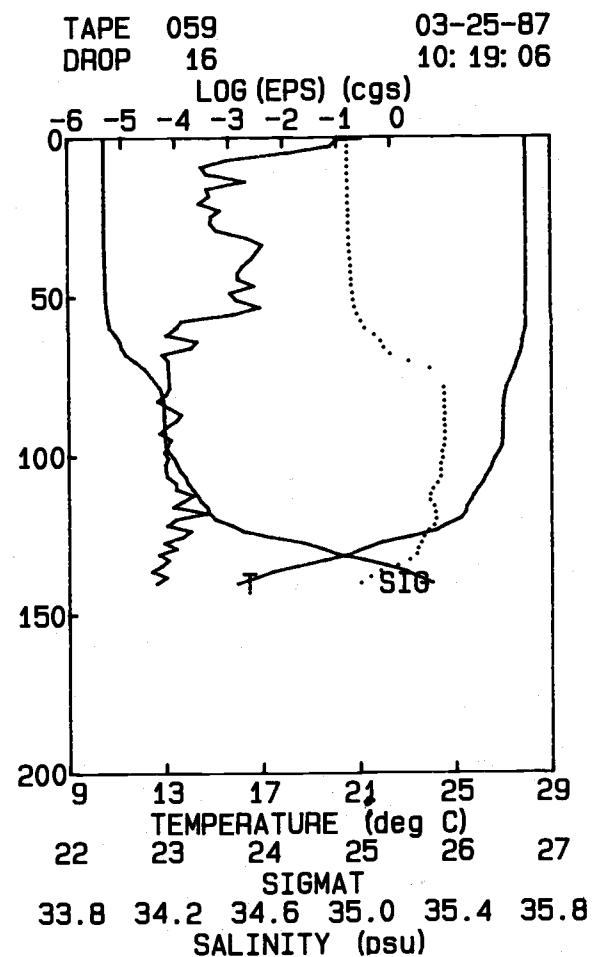
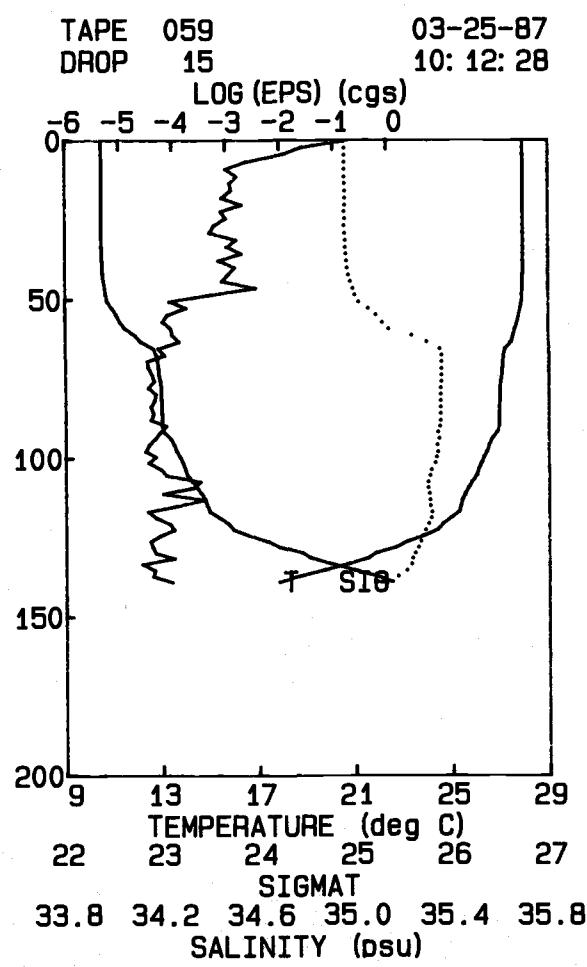
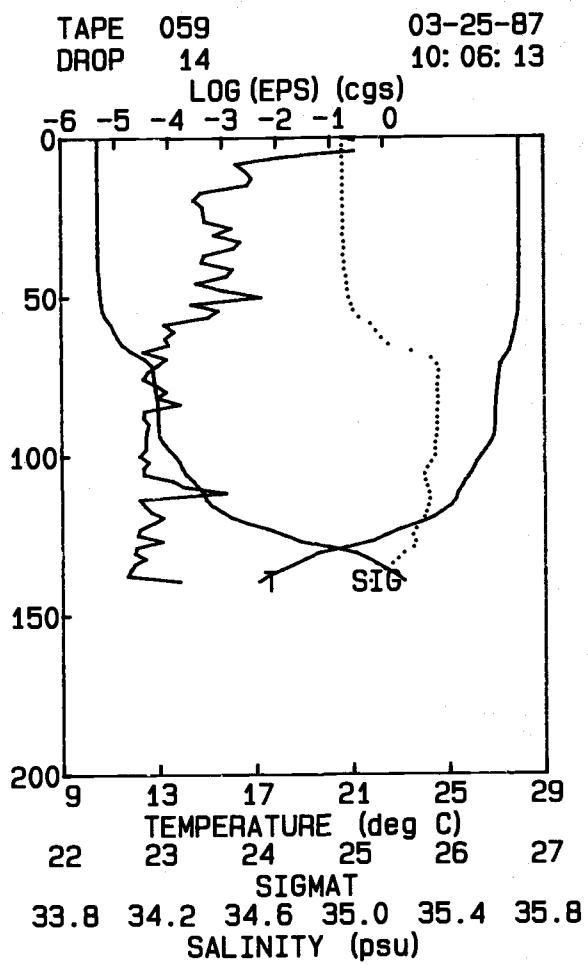
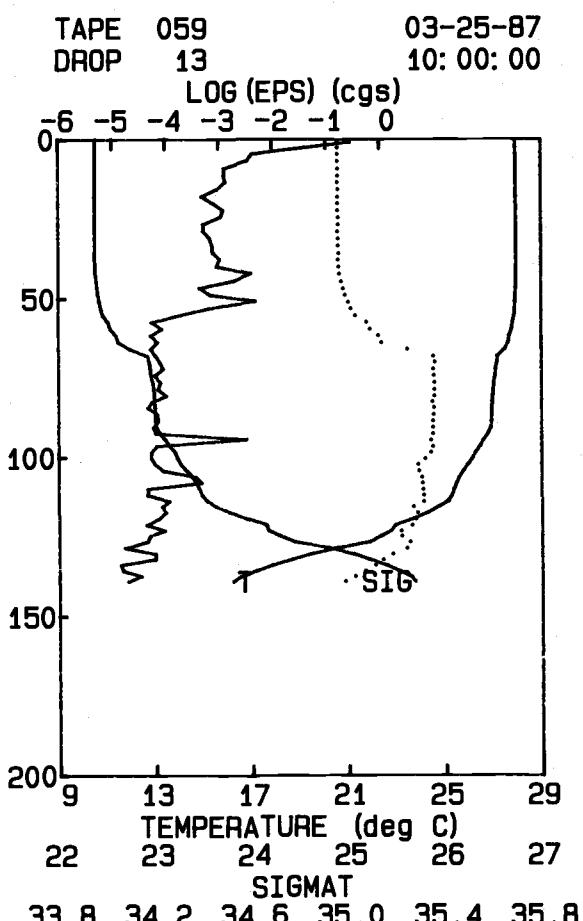
LOG (EPS) (cgs)

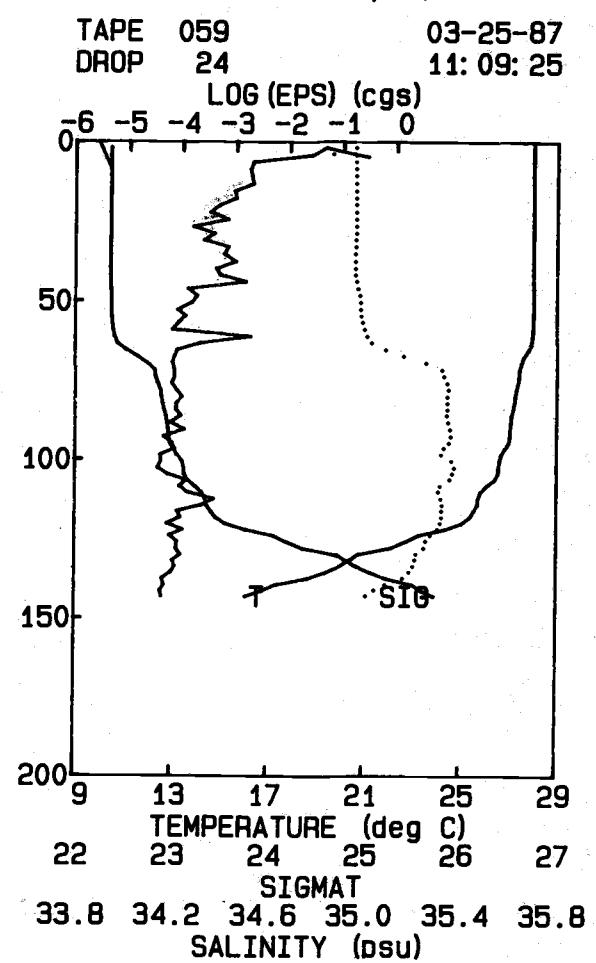
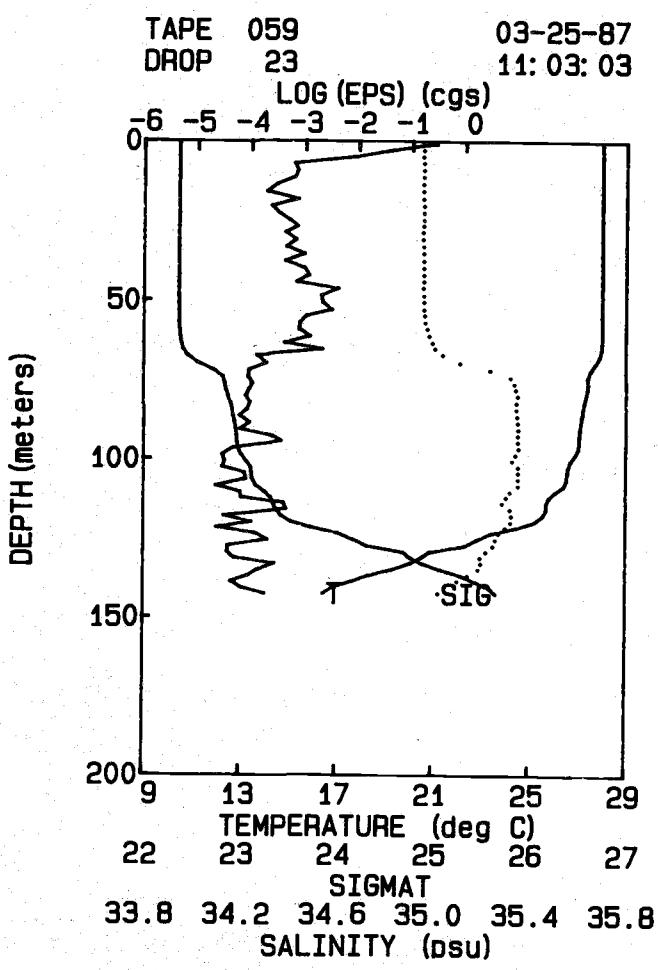
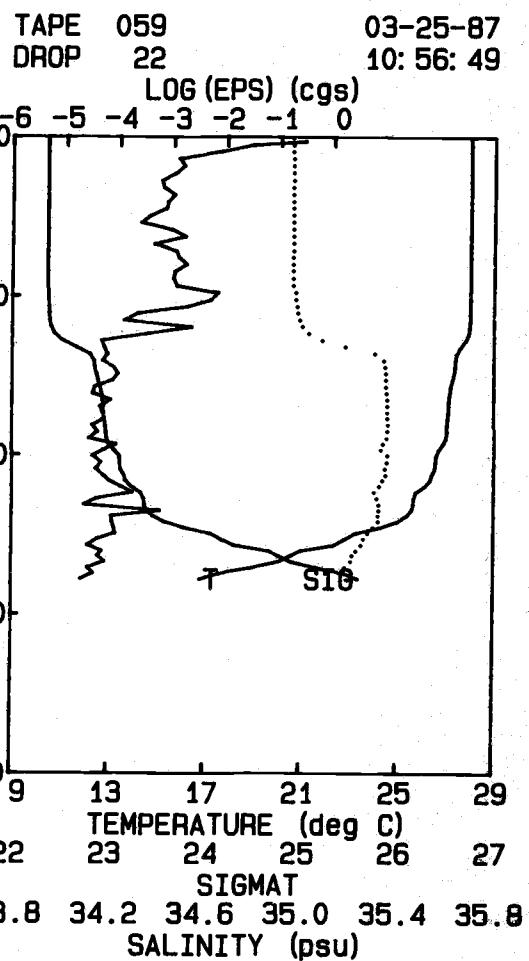
DEPTH (meters)

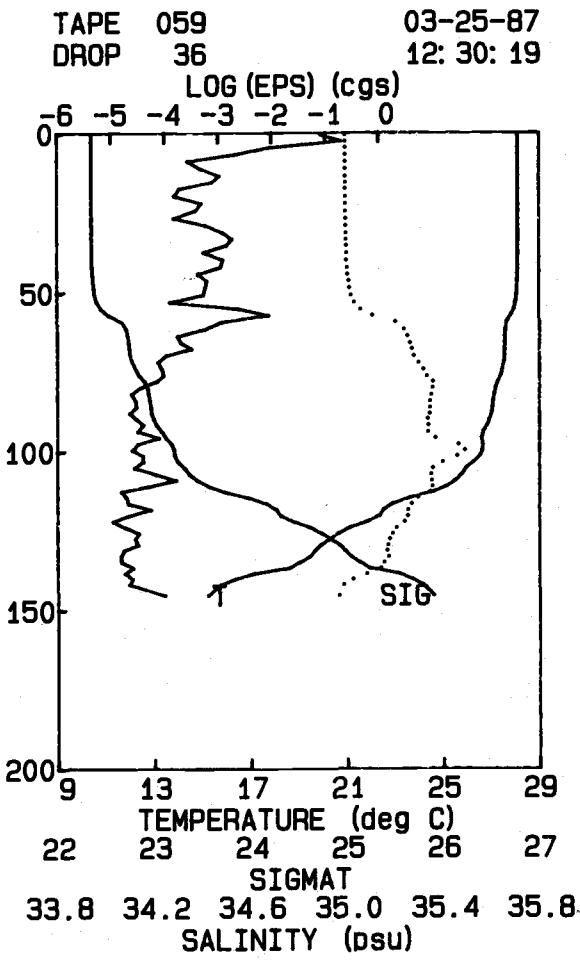
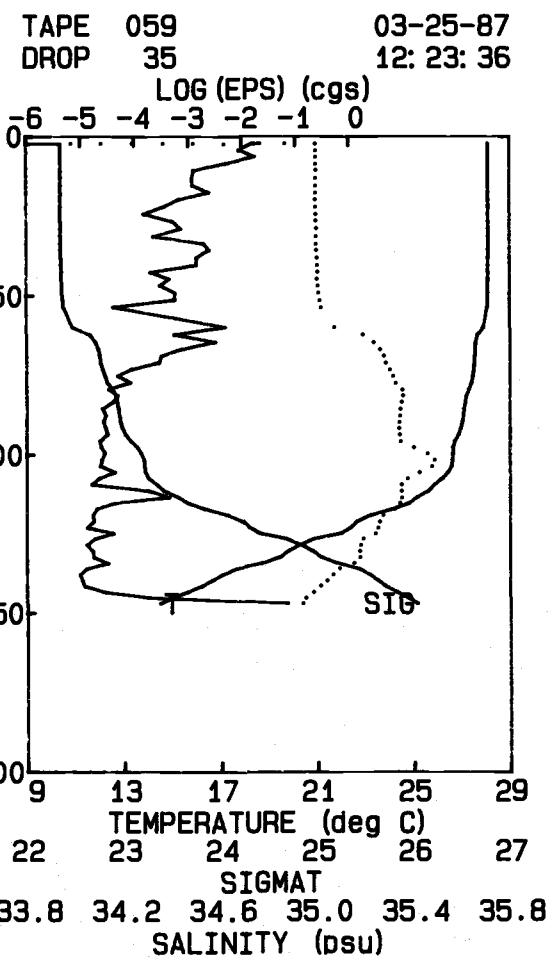
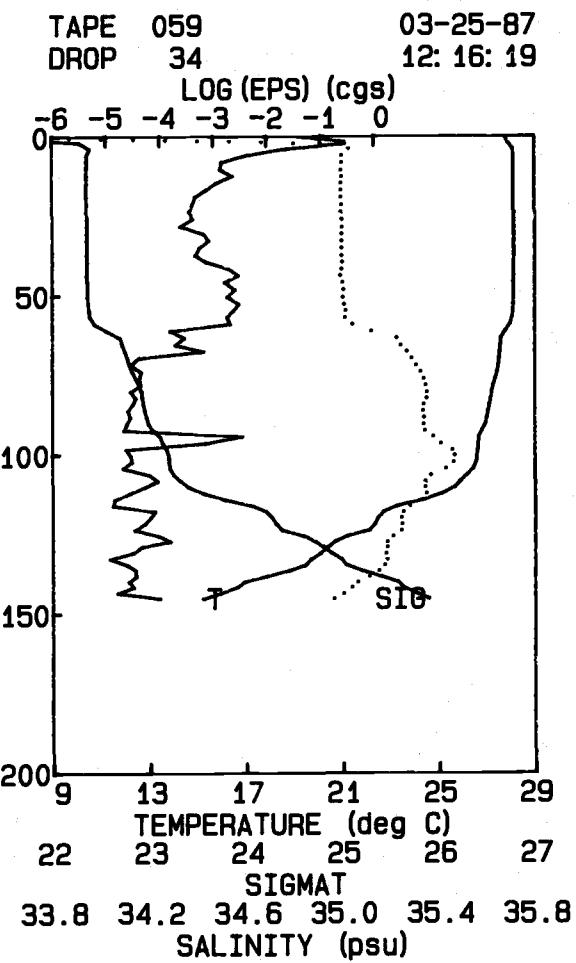
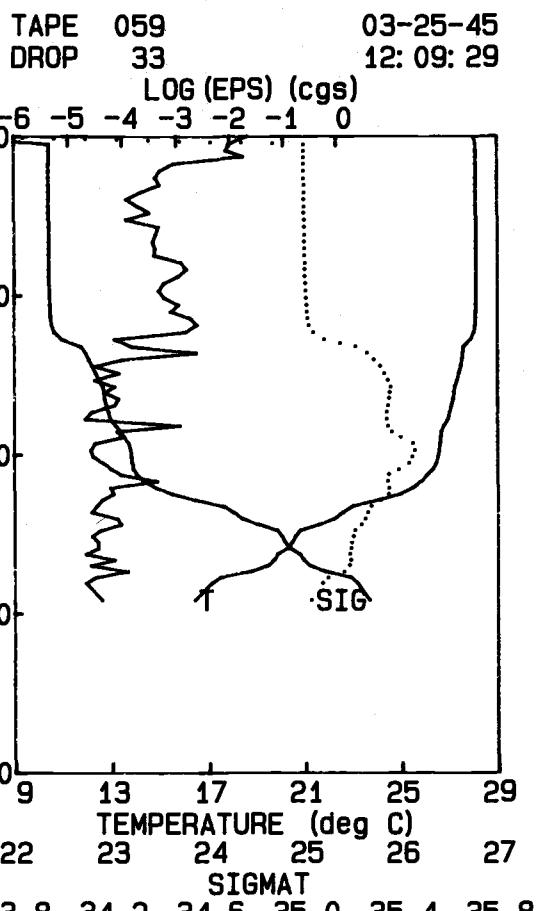


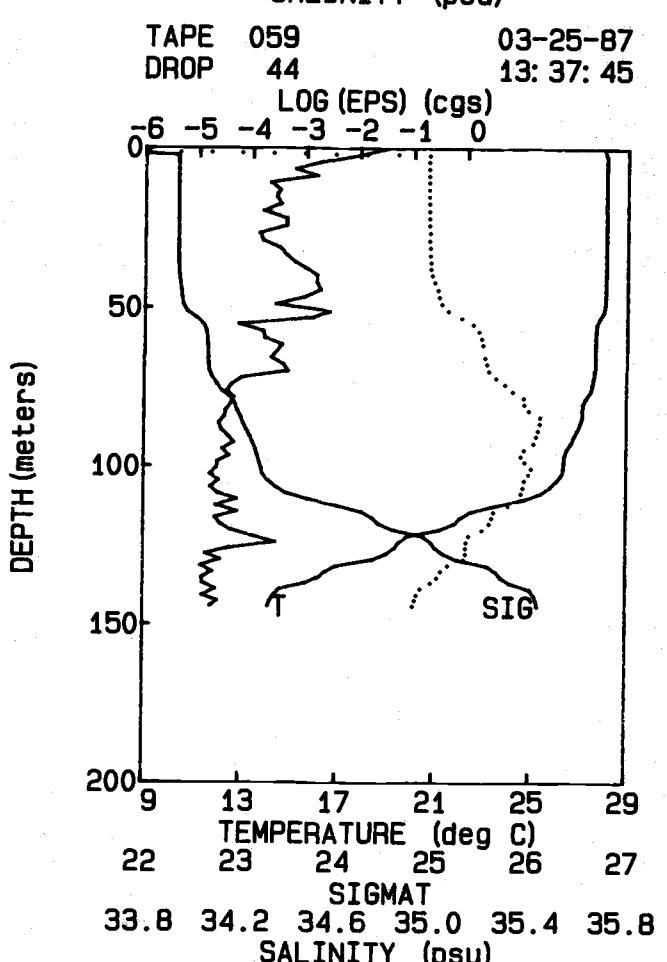
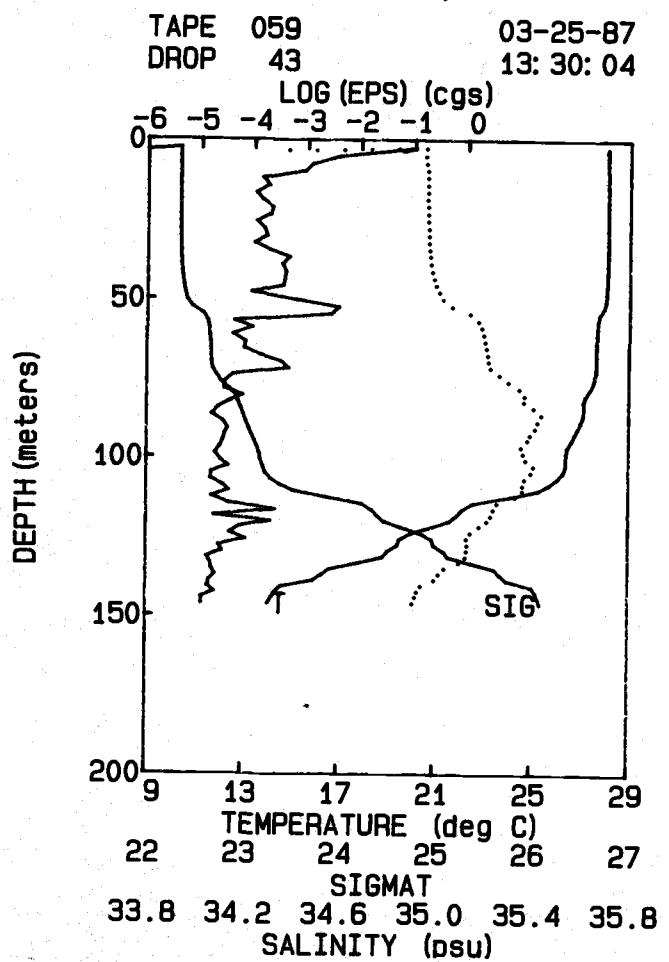
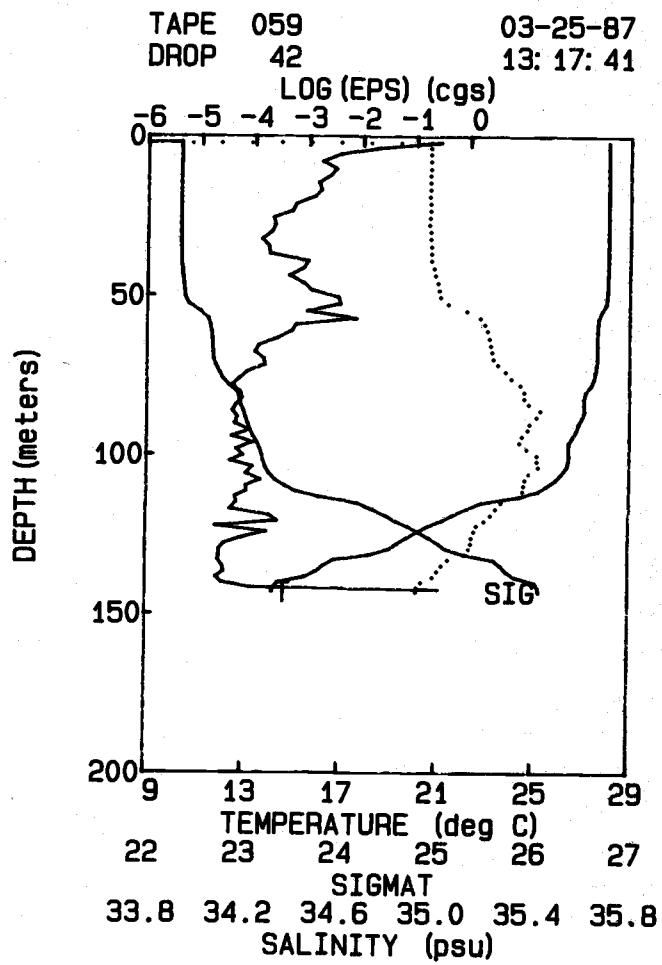
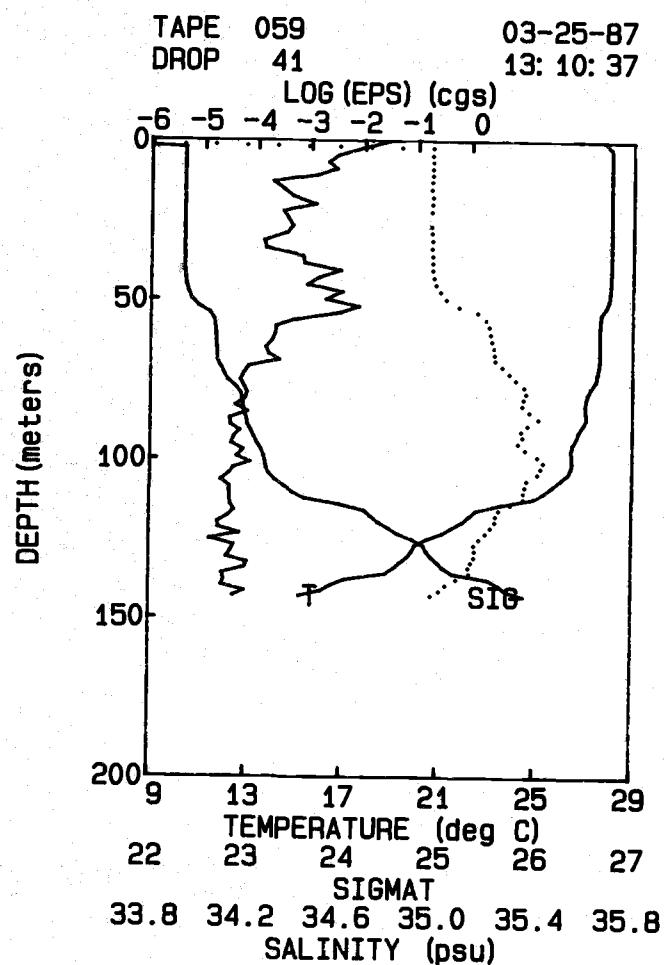


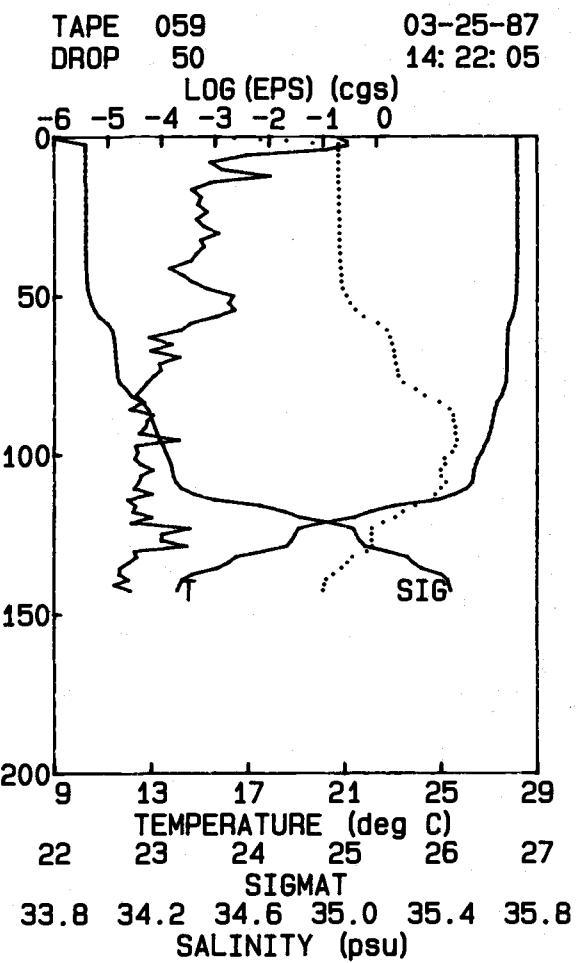
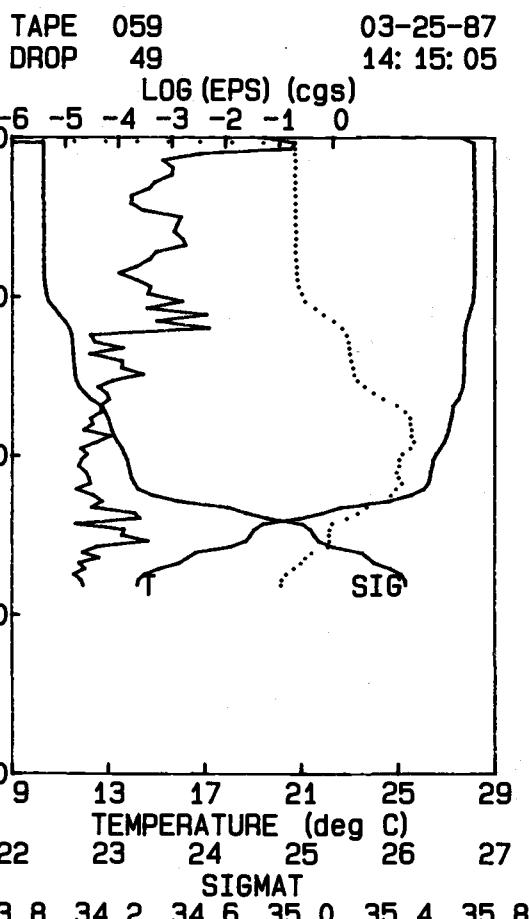




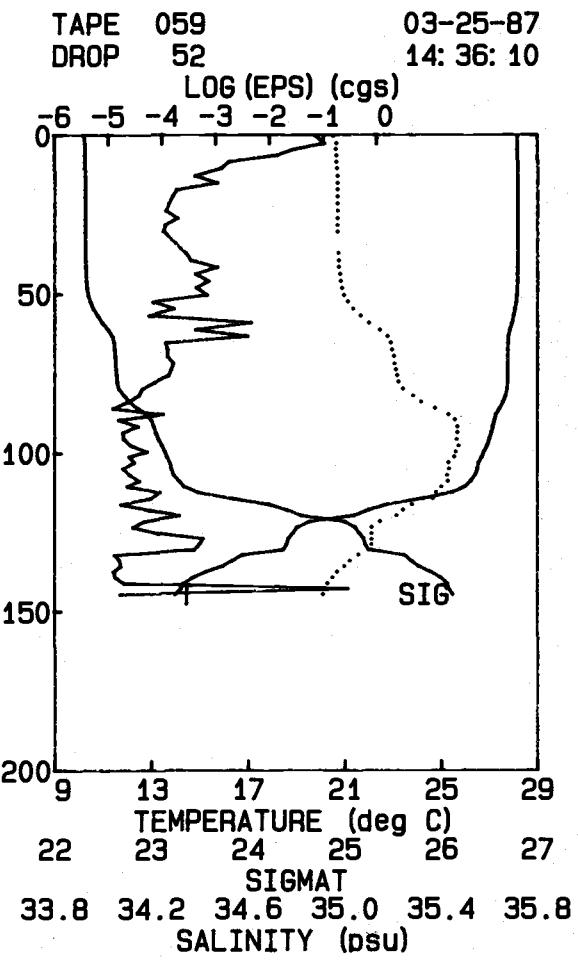
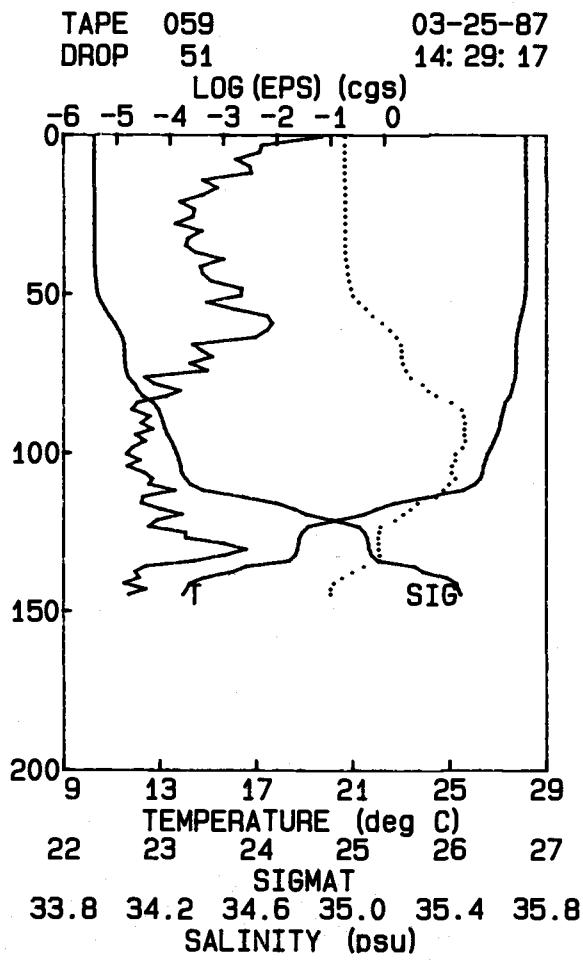


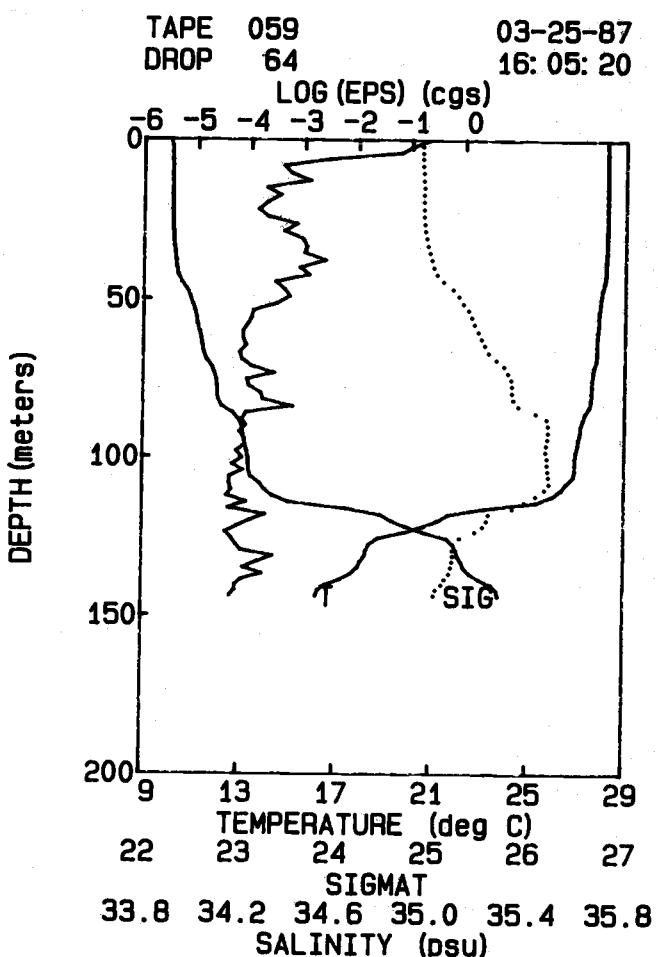
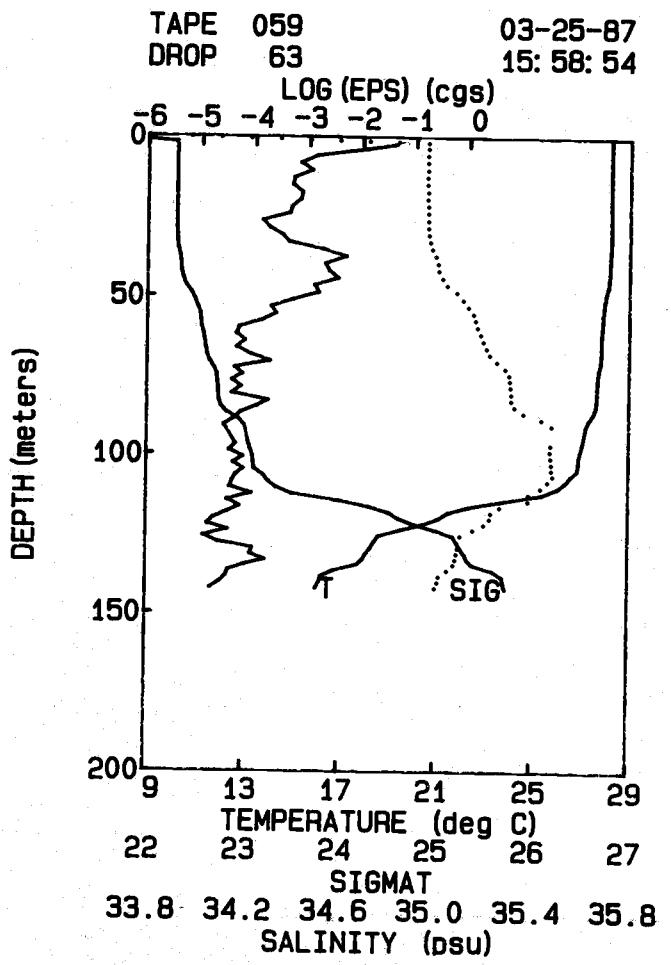
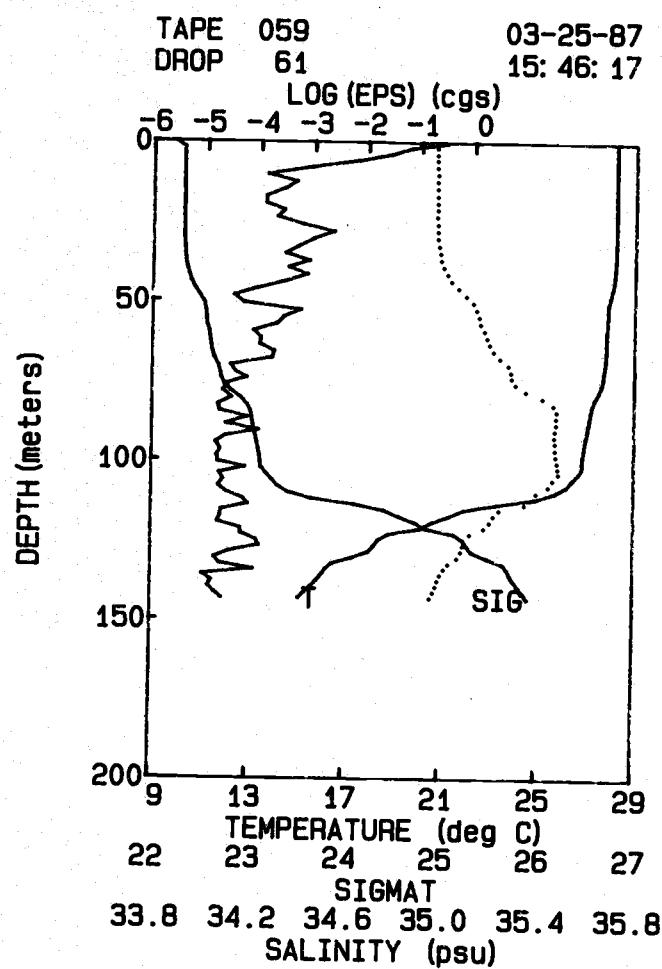


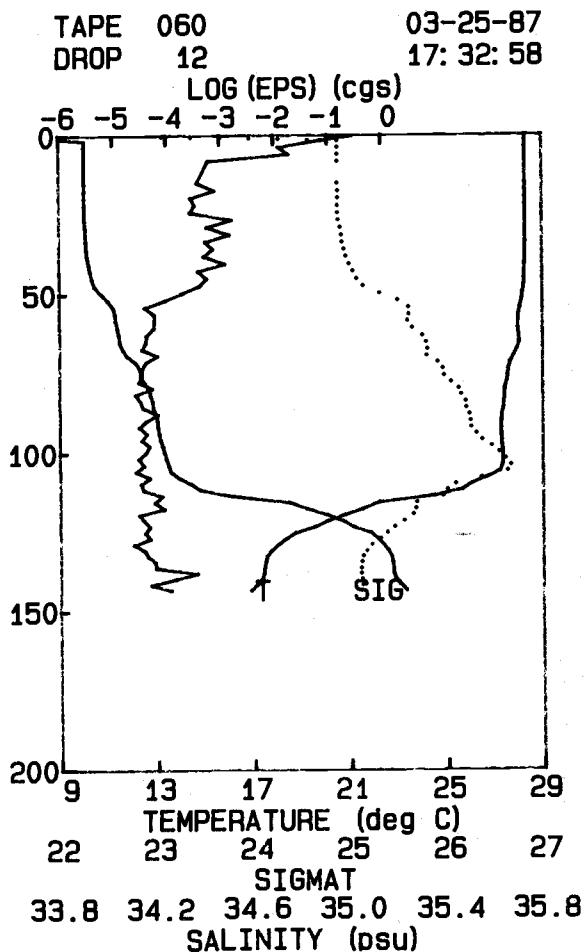
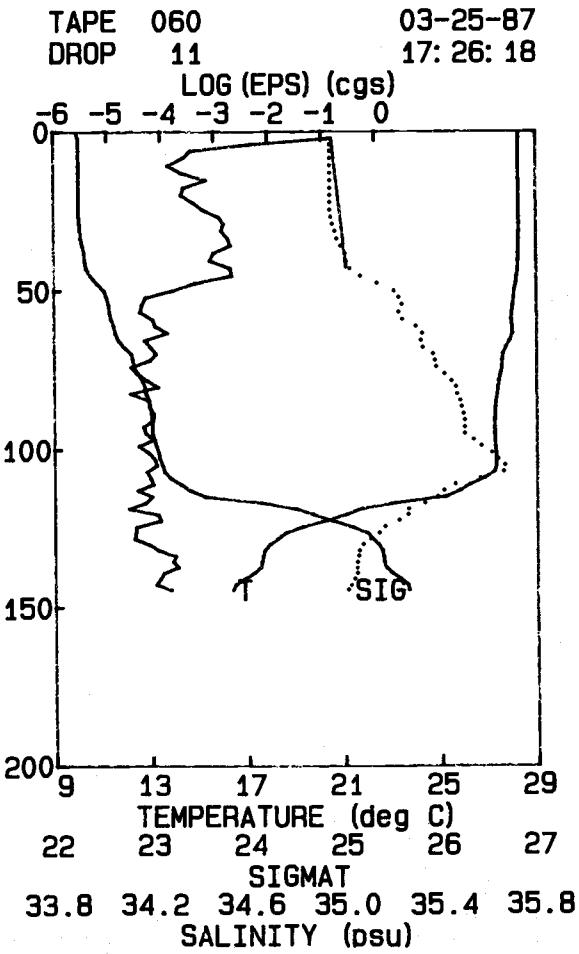
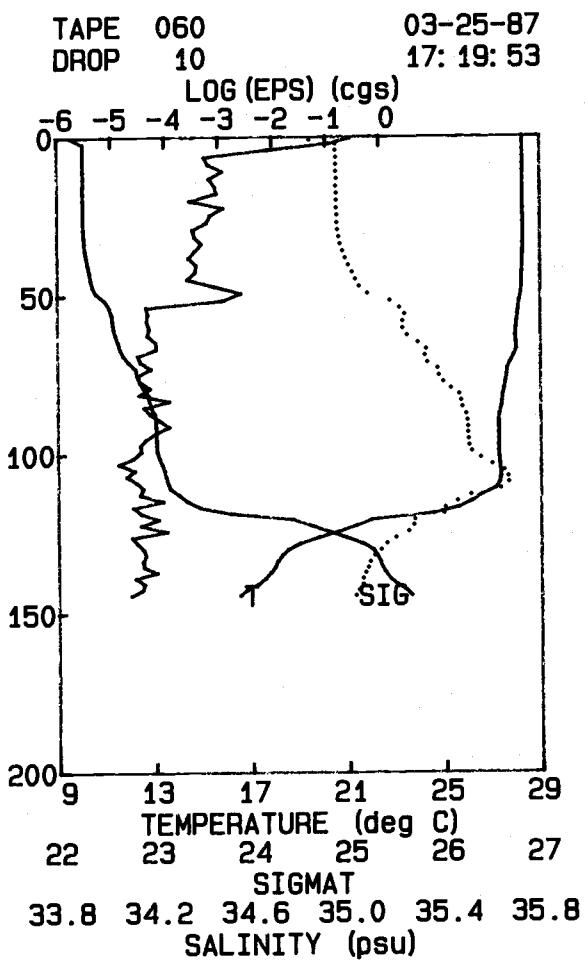
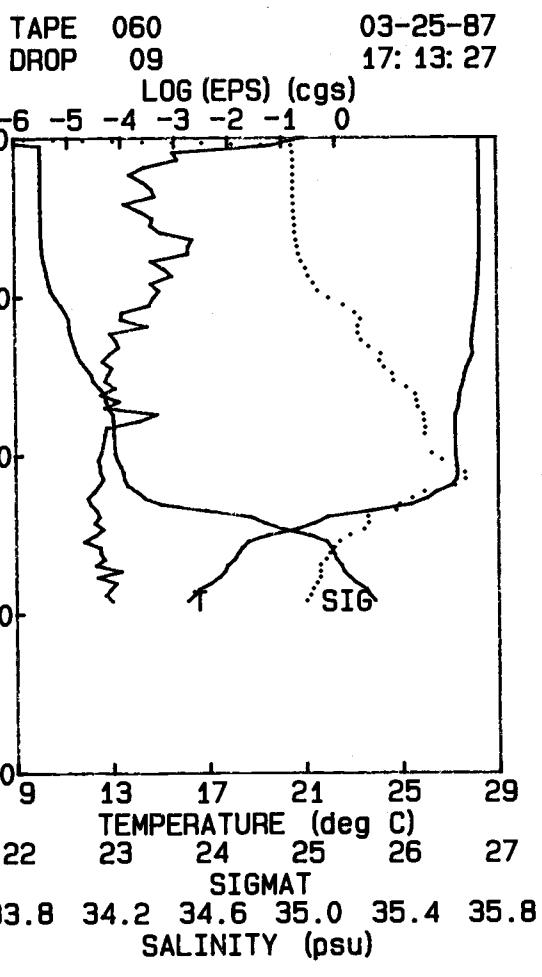


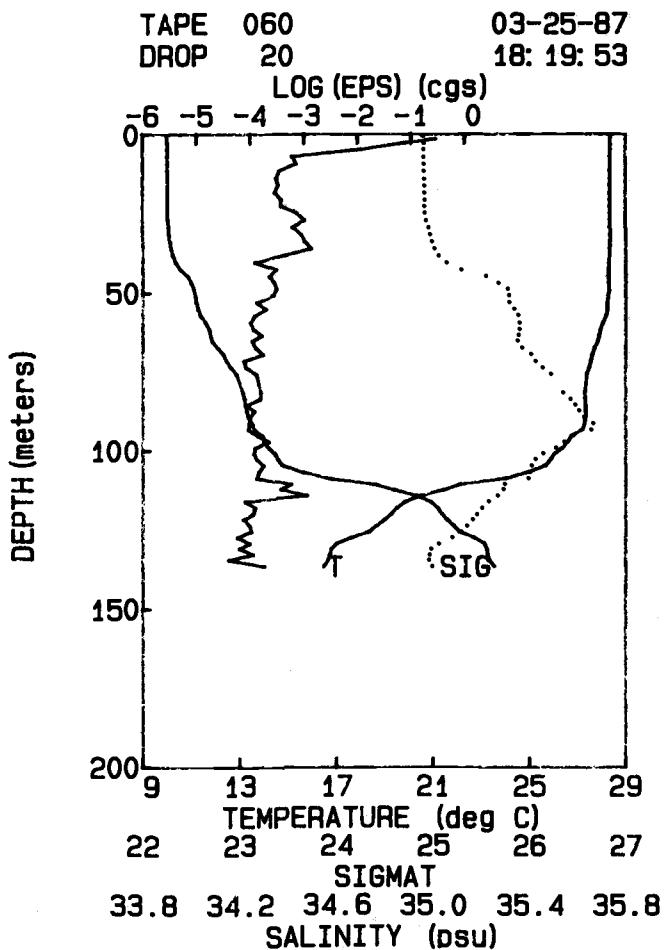
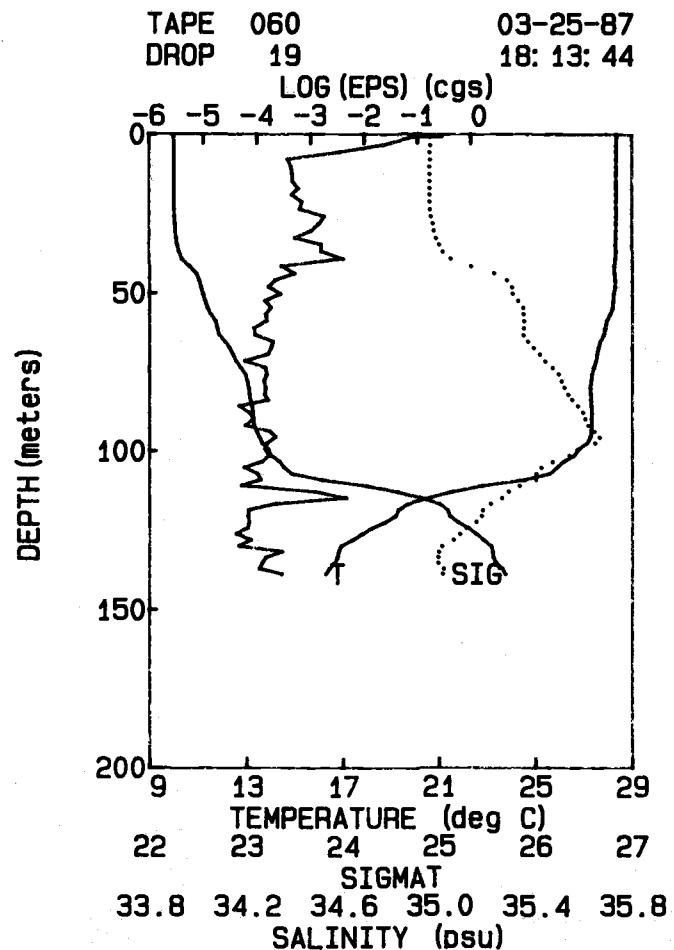
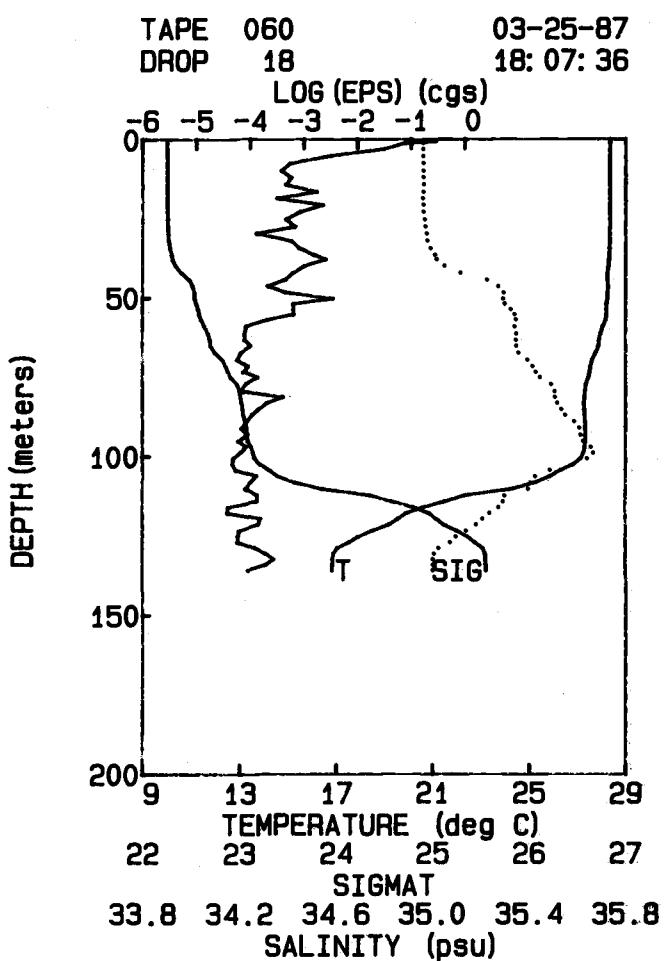
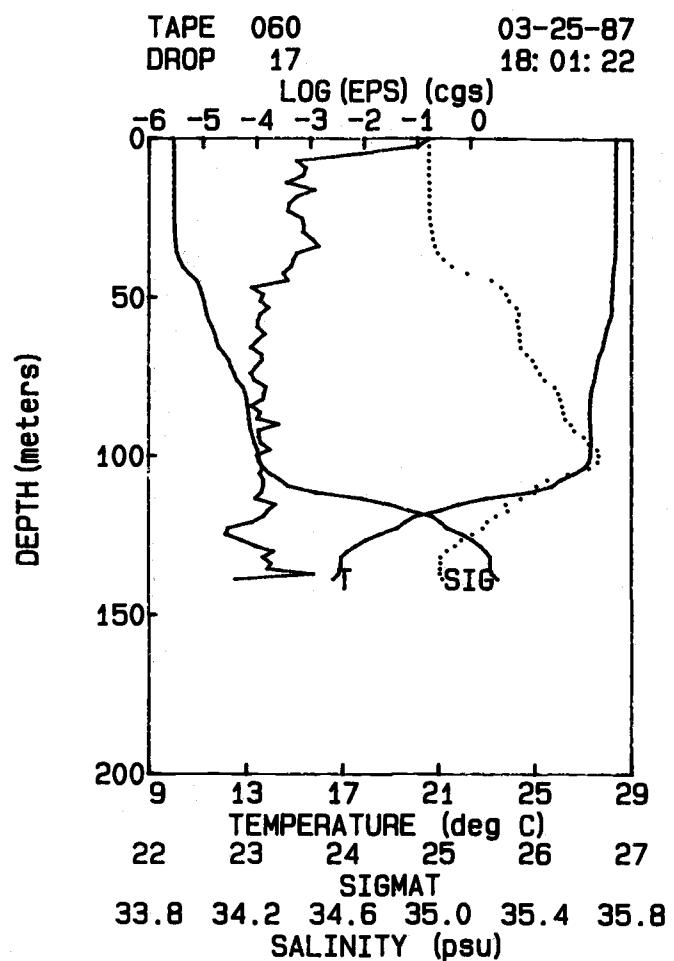


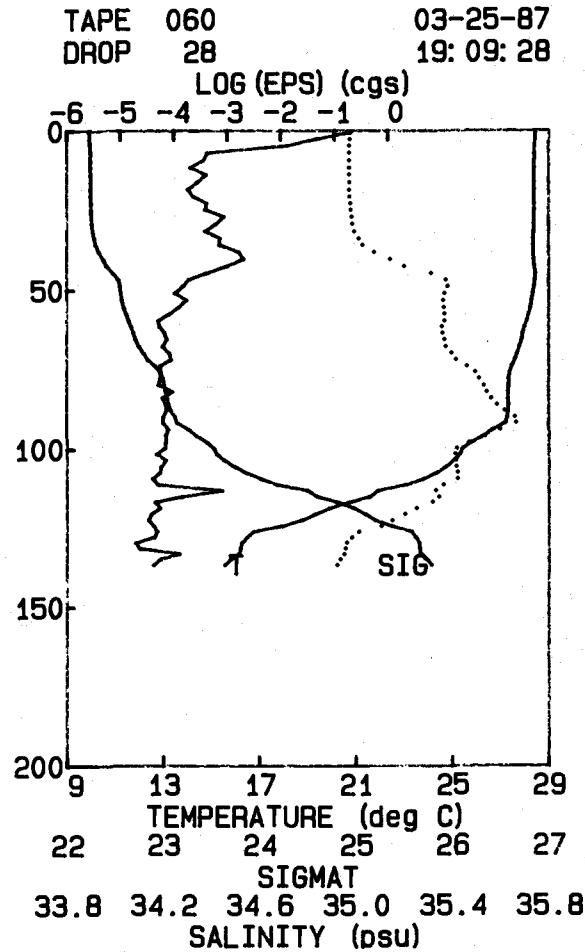
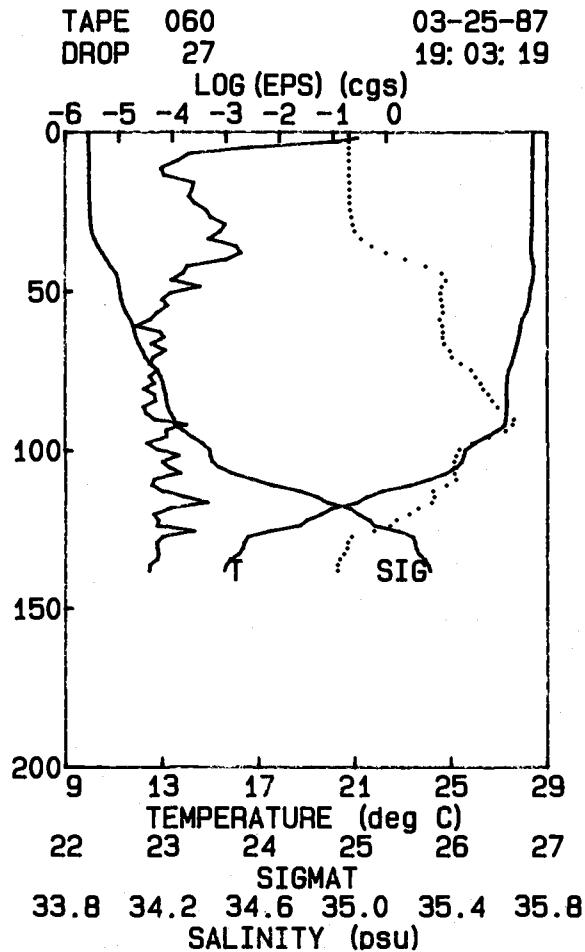
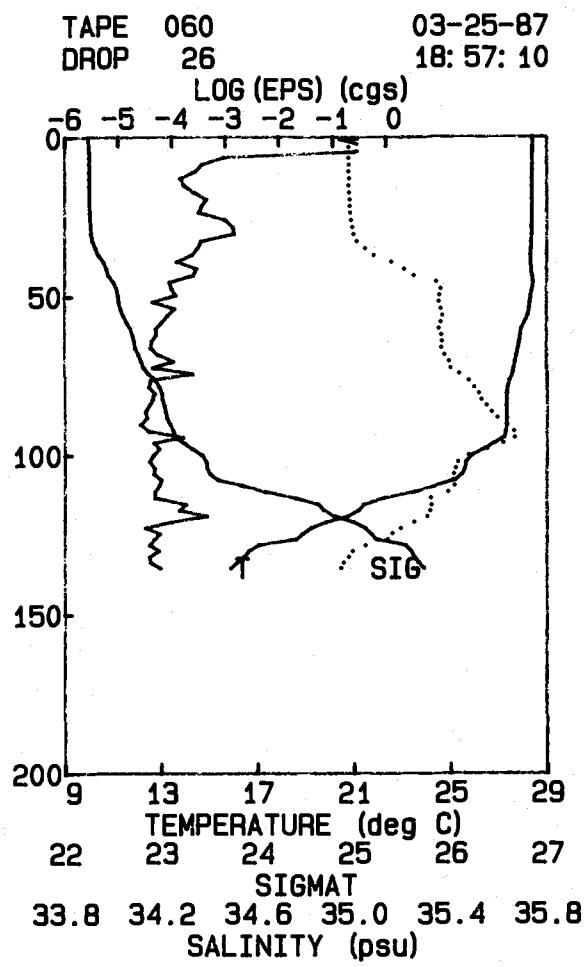
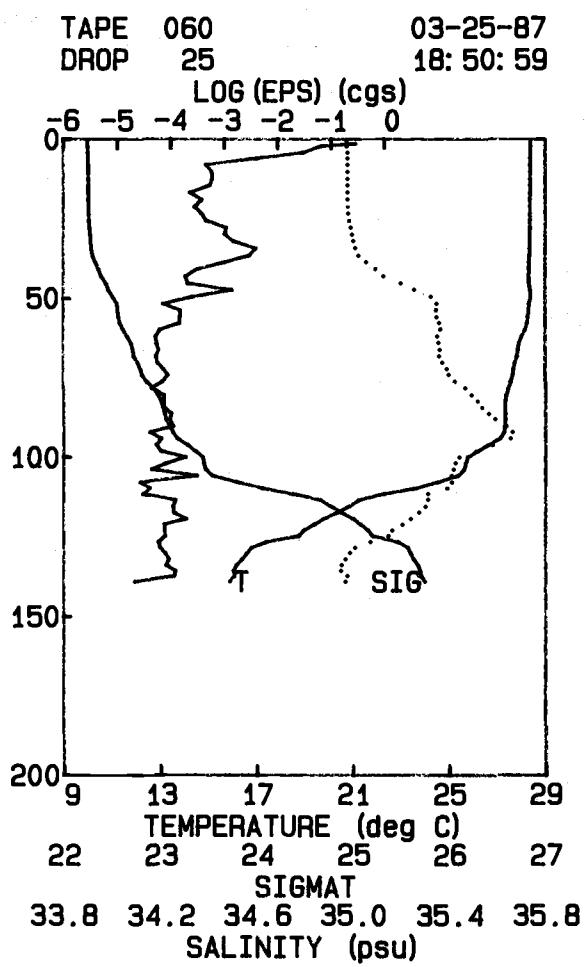
DEPTH (meters)

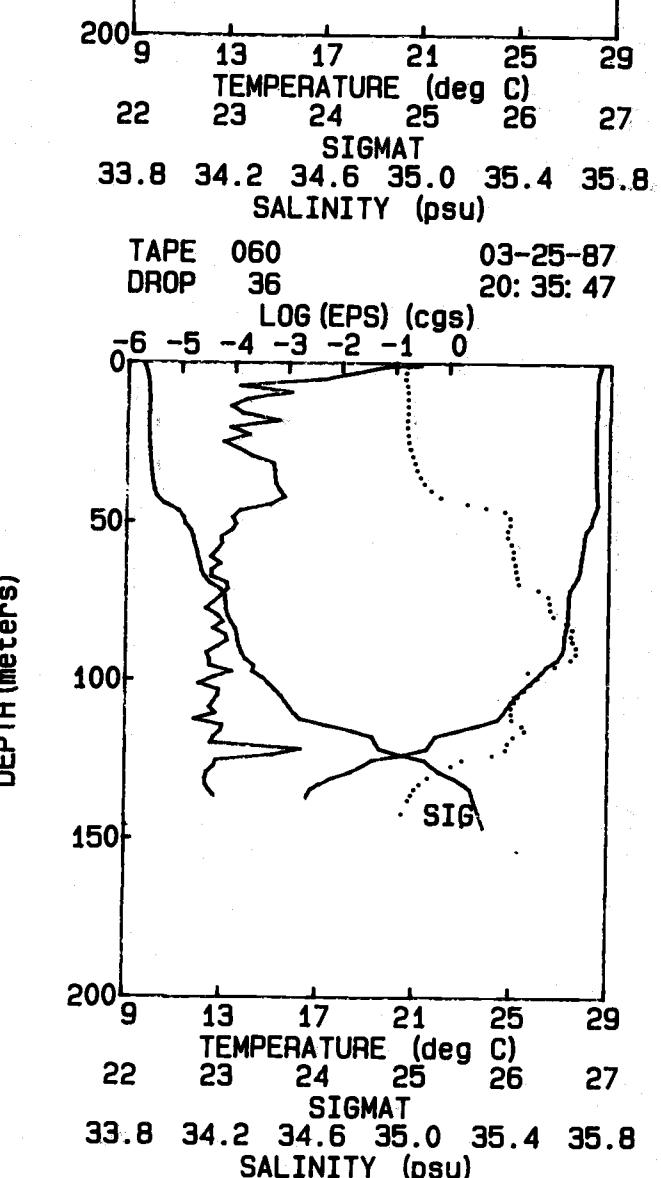
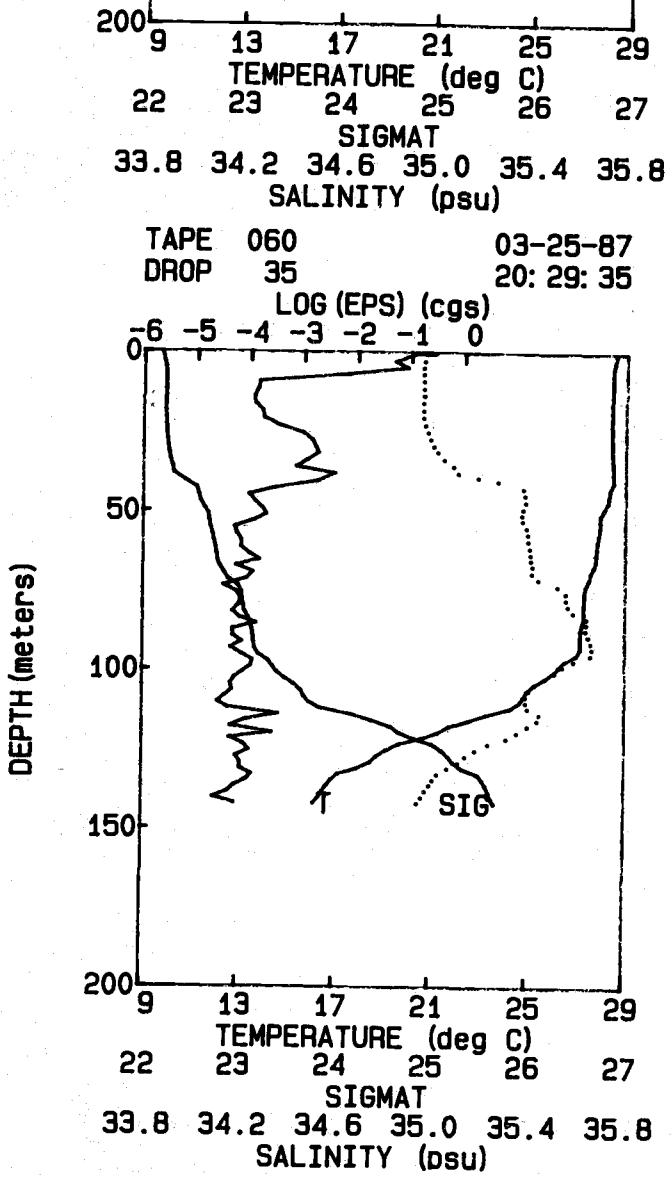
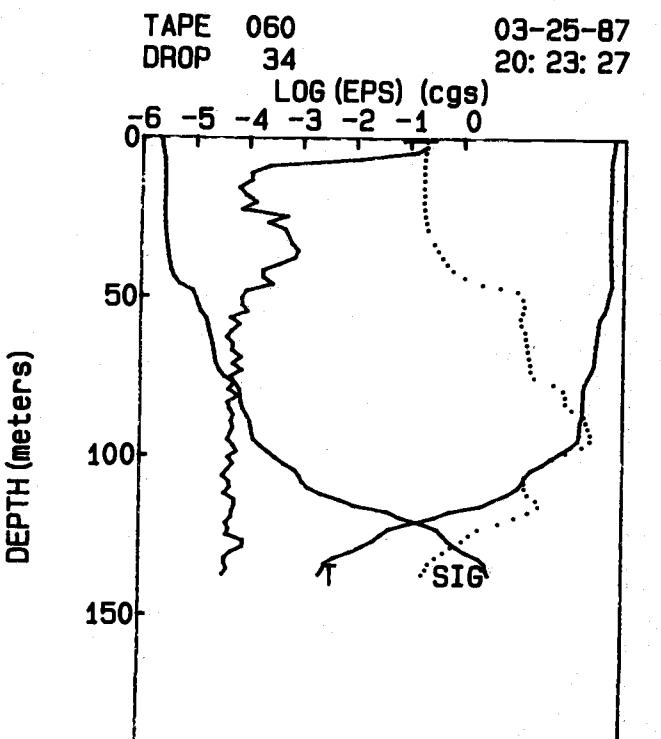
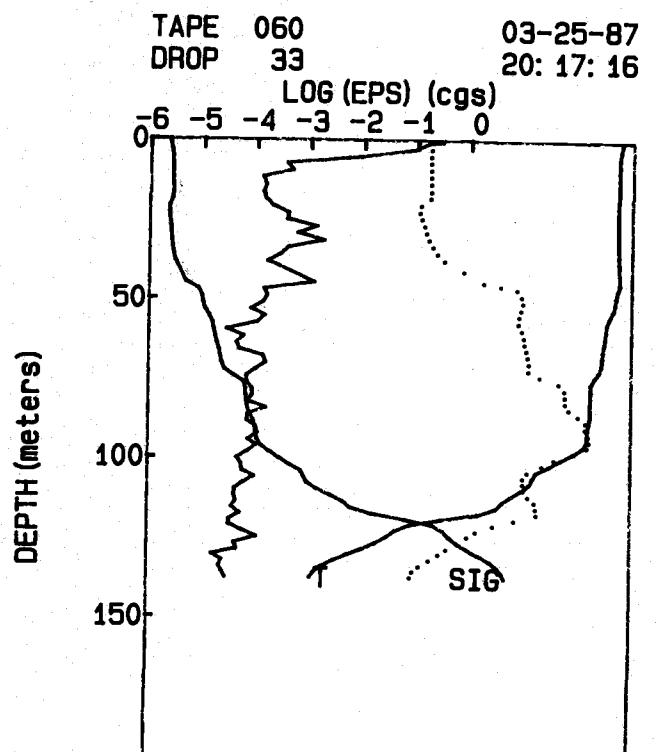


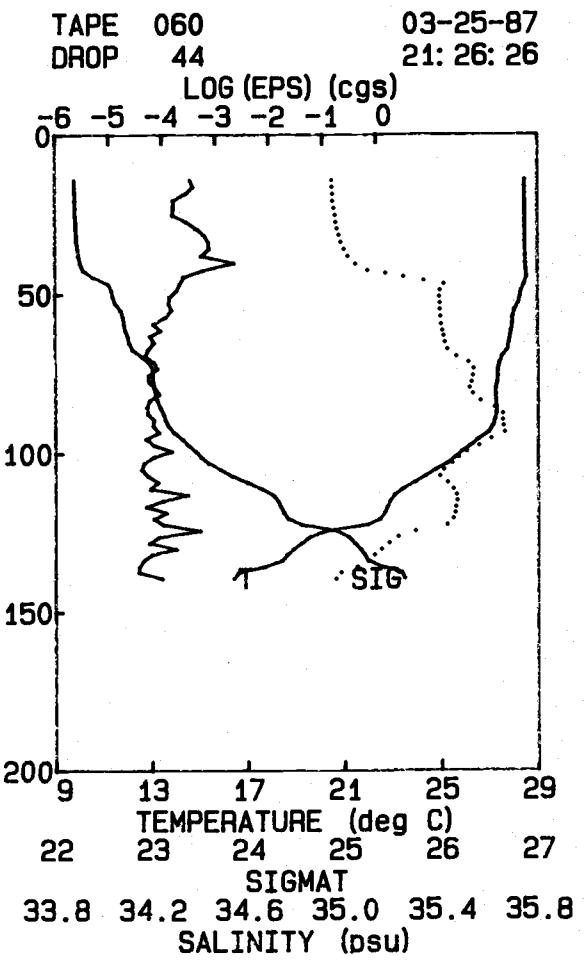
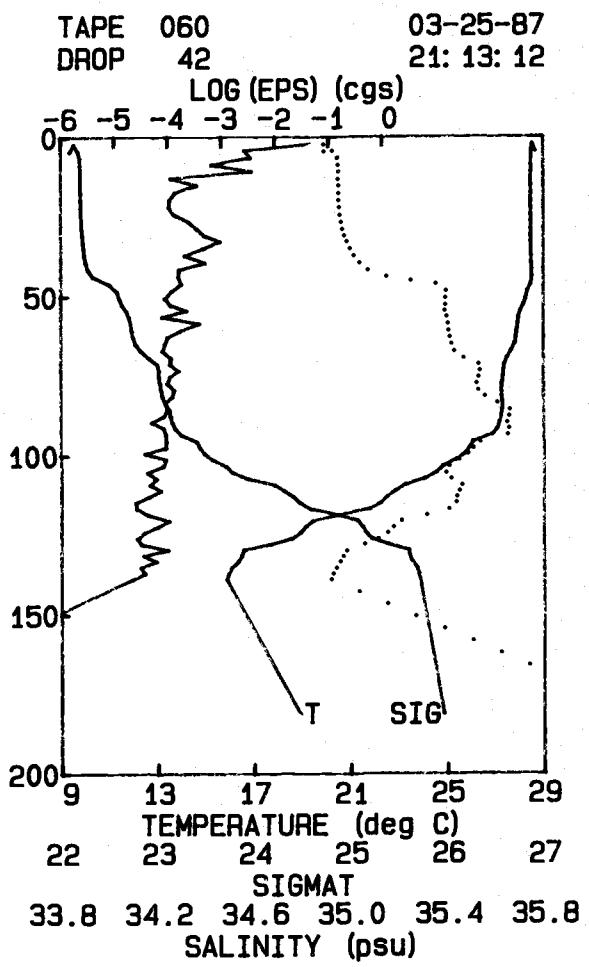
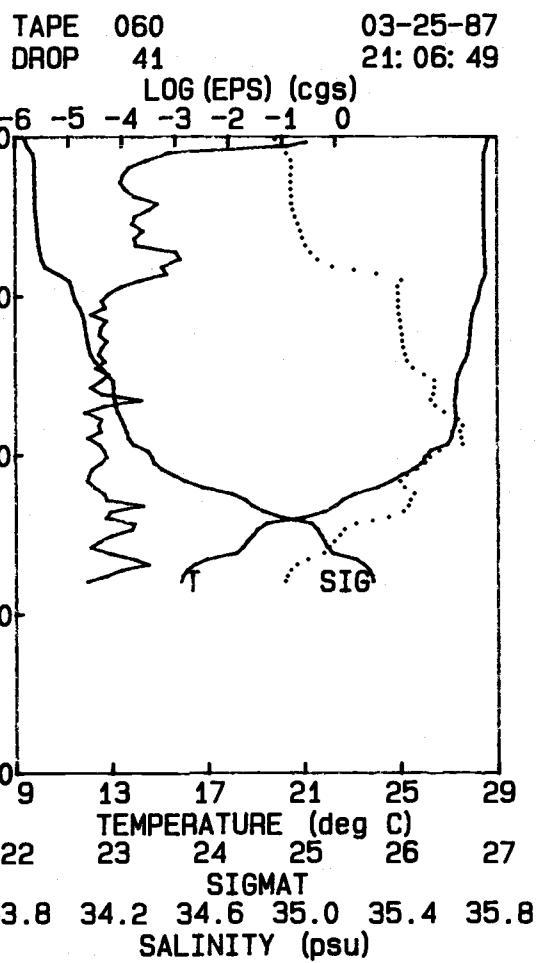






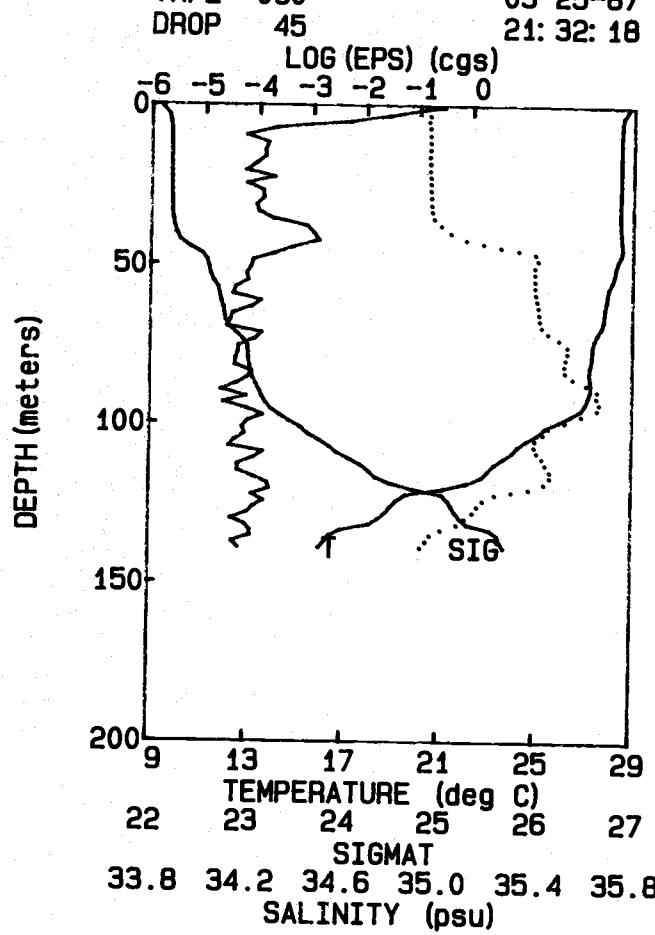




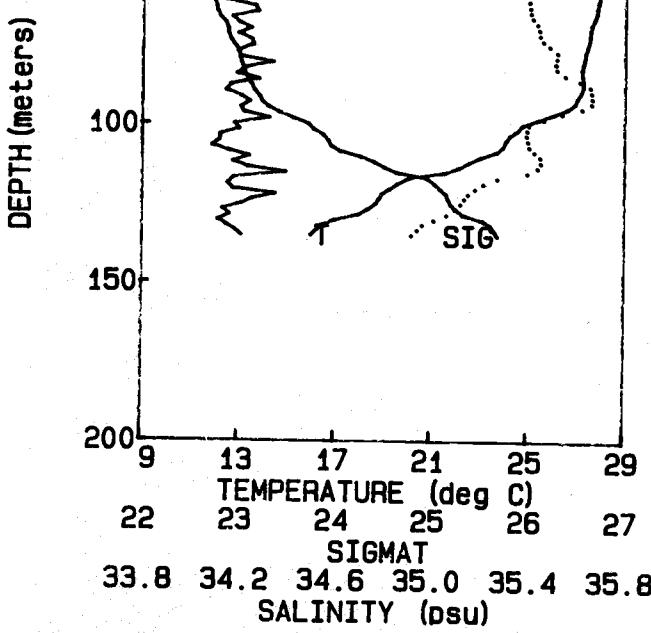


346

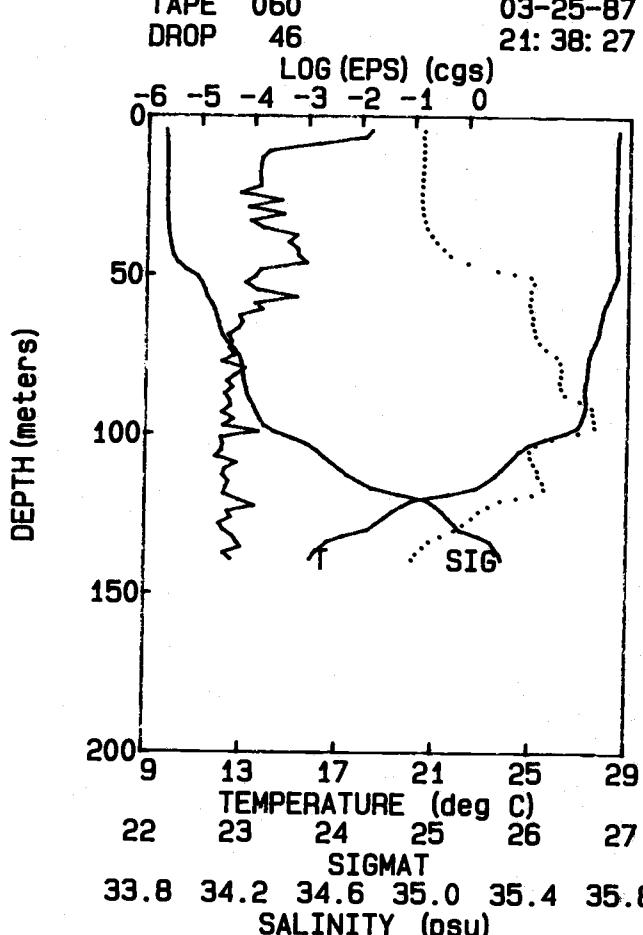
TAPE 060 03-25-87
 DROP 45 21: 32: 18



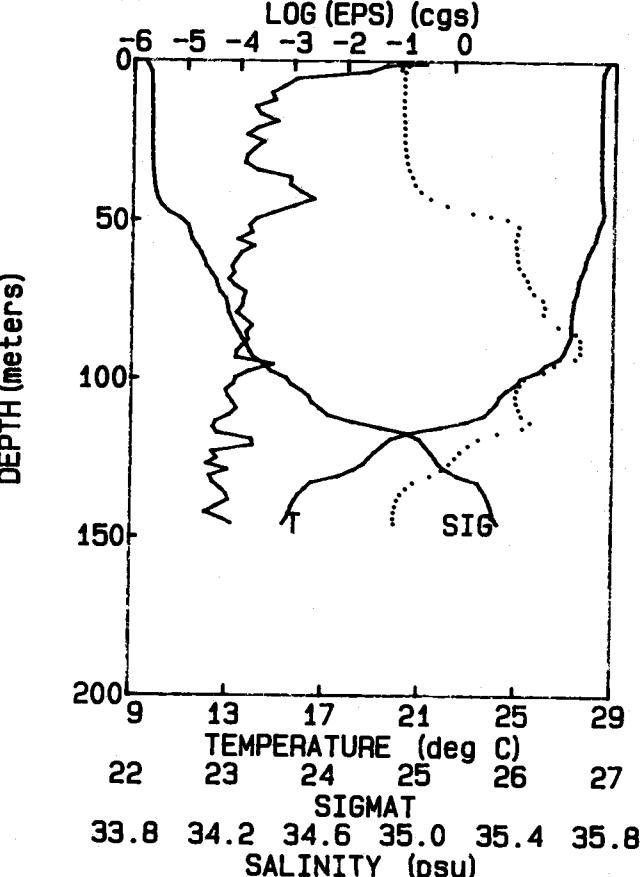
TAPE 060 03-25-87
 DROP 47 21: 49: 31



TAPE 060 03-25-87
 DROP 46 21: 38: 27

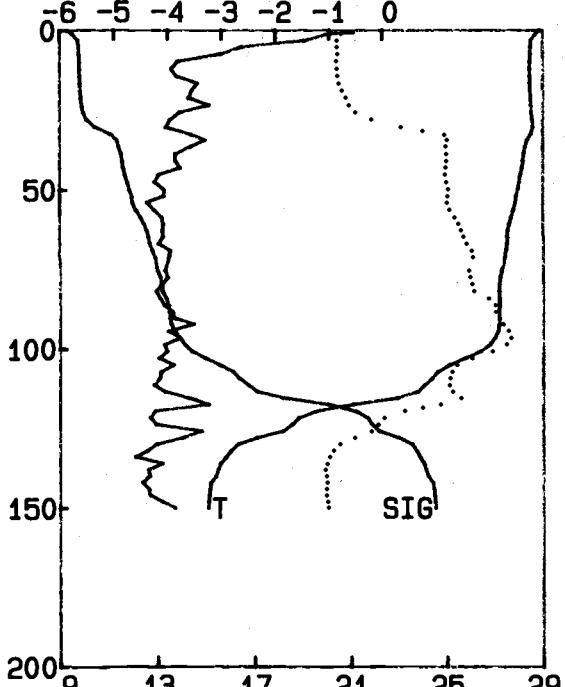


TAPE 060 03-25-87
 DROP 48 21: 55: 55



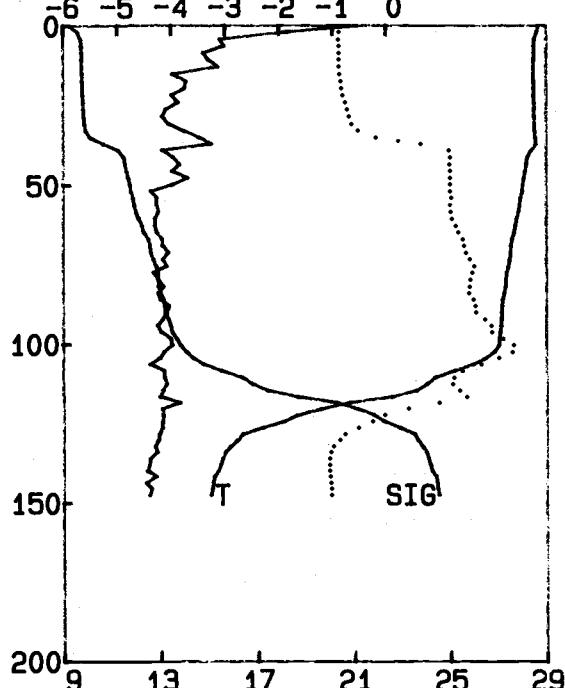
TAPE 060 03-25-87
DROP 53 22: 27: 38

LOG (EPS) (cgs)



TAPE 060 03-25-87
DROP 55 22: 40: 10

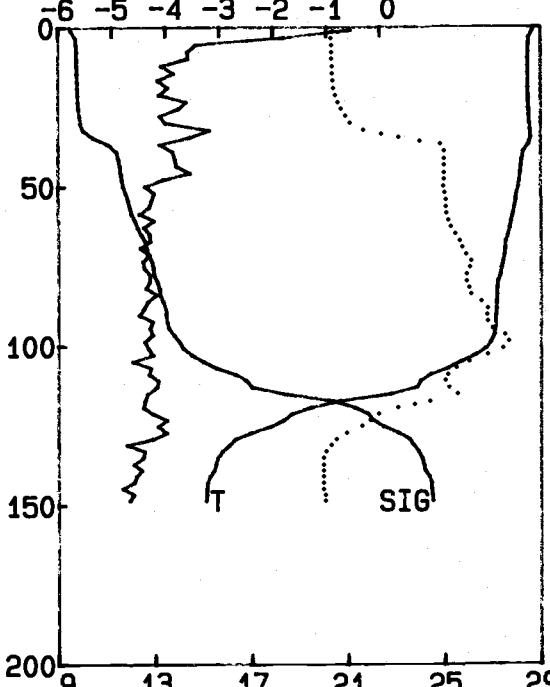
LOG (EPS) (cgs)



33.8 34.2 34.6 35.0 35.4 35.8
SALINITY (psu)

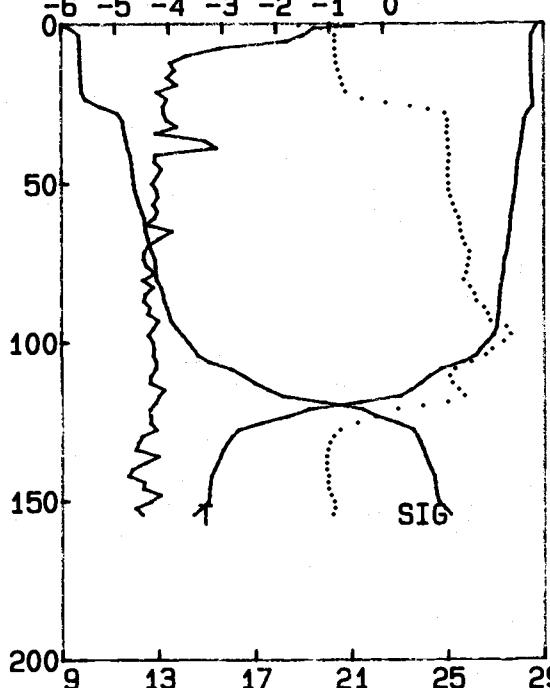
TAPE 060 03-25-87
DROP 54 22: 33: 51

LOG (EPS) (cgs)

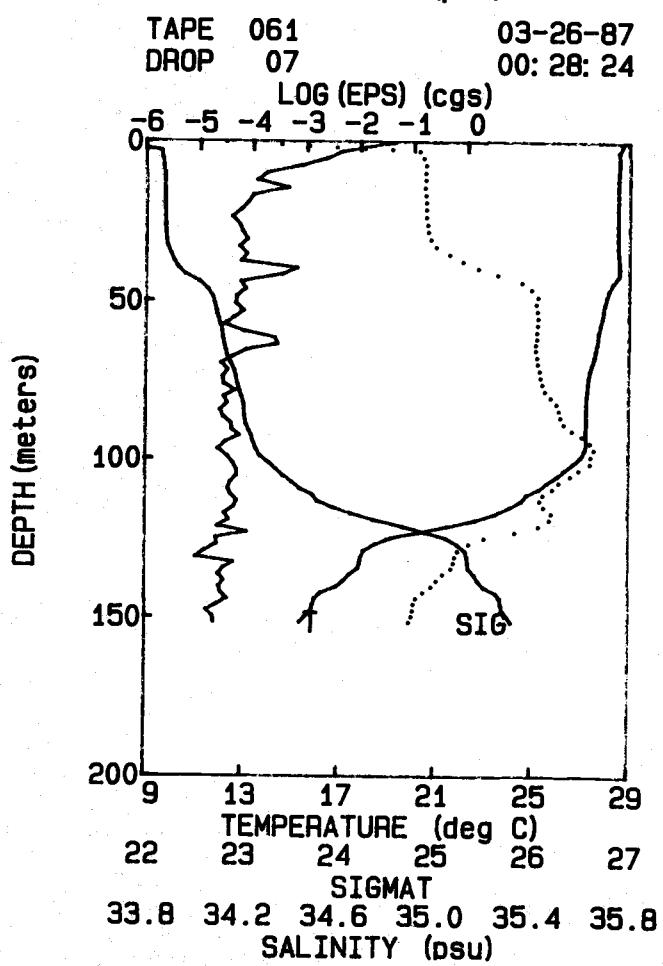
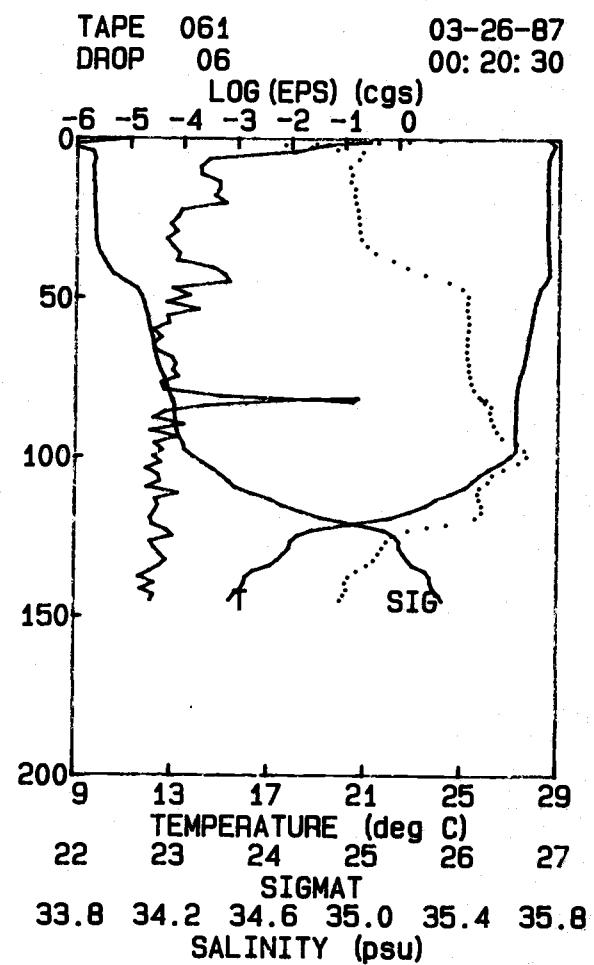
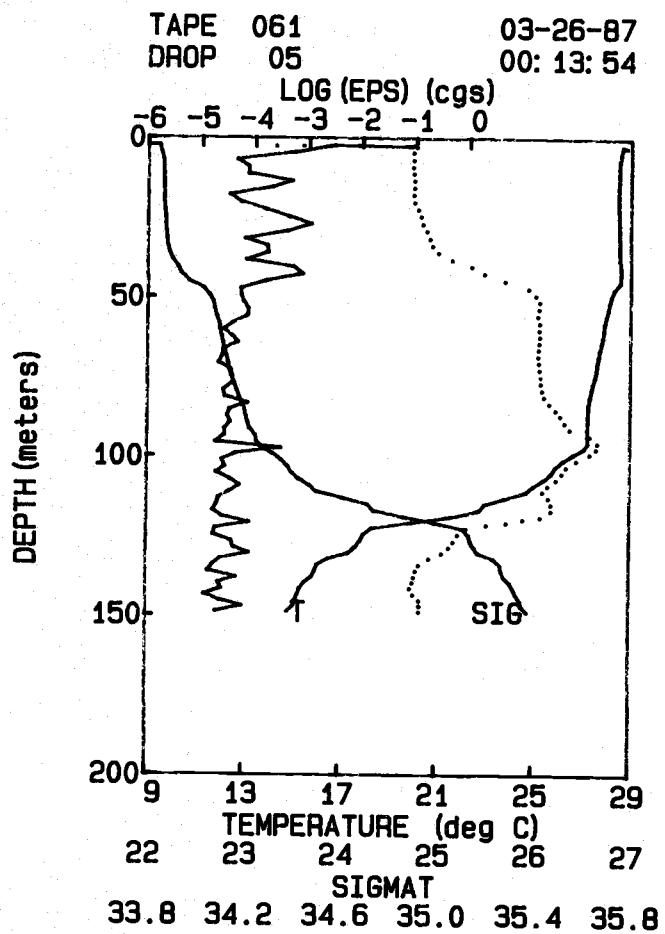


TAPE 060 03-25-87
DROP 56 22: 46: 25

LOG (EPS) (cgs)



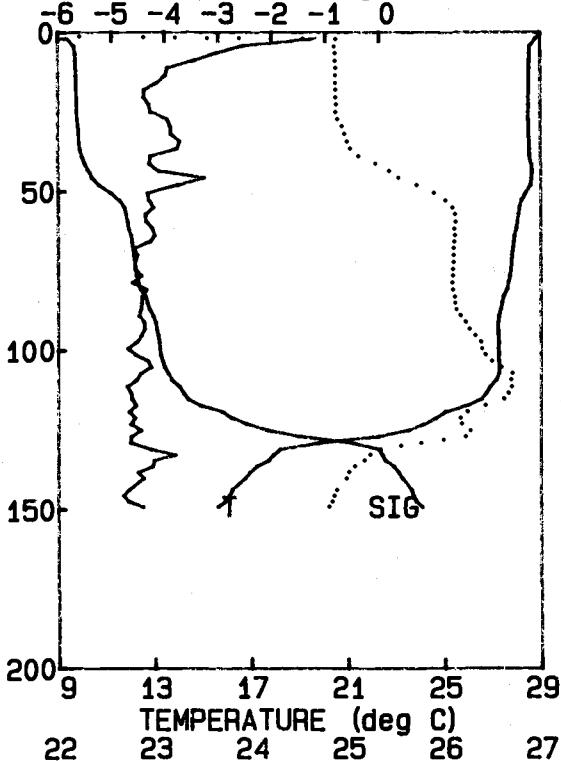
33.8 34.2 34.6 35.0 35.4 35.8
SALINITY (psu)



TAPE 061
DROP 13

03-26-87
01: 08: 03

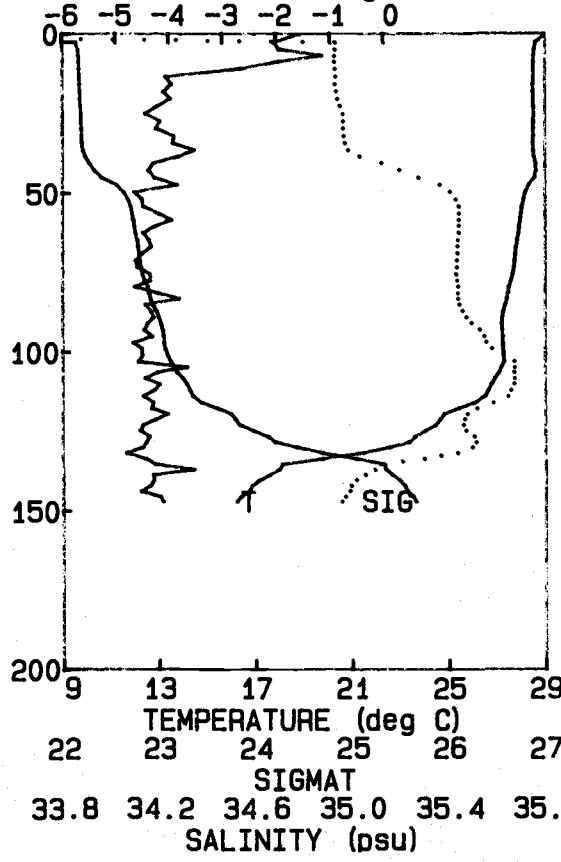
LOG (EPS) (cgs)



TAPE 061
DROP 15

03-26-87
01: 21: 03

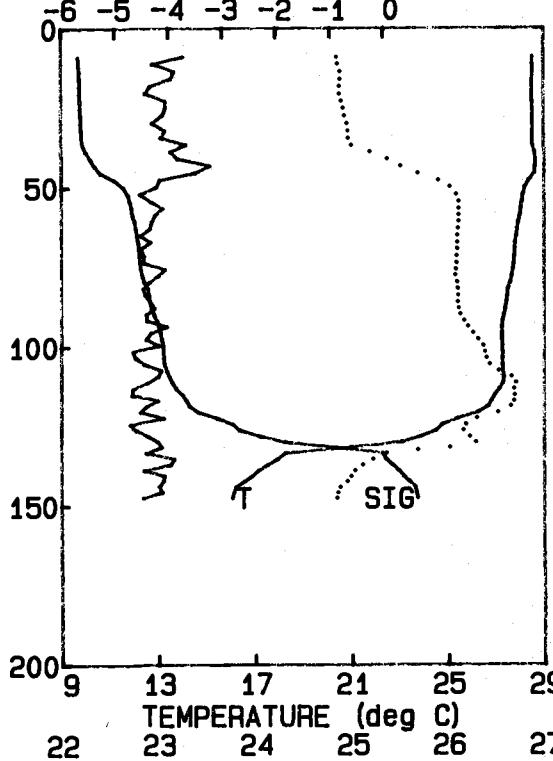
LOG (EPS) (cgs)



TAPE 061
DROP 14

03-26-87
01: 14: 42

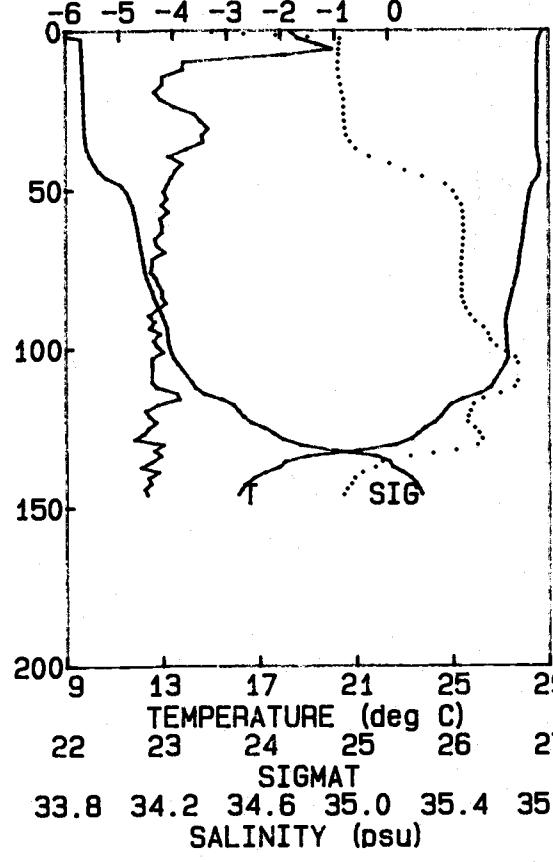
LOG (EPS) (cgs)

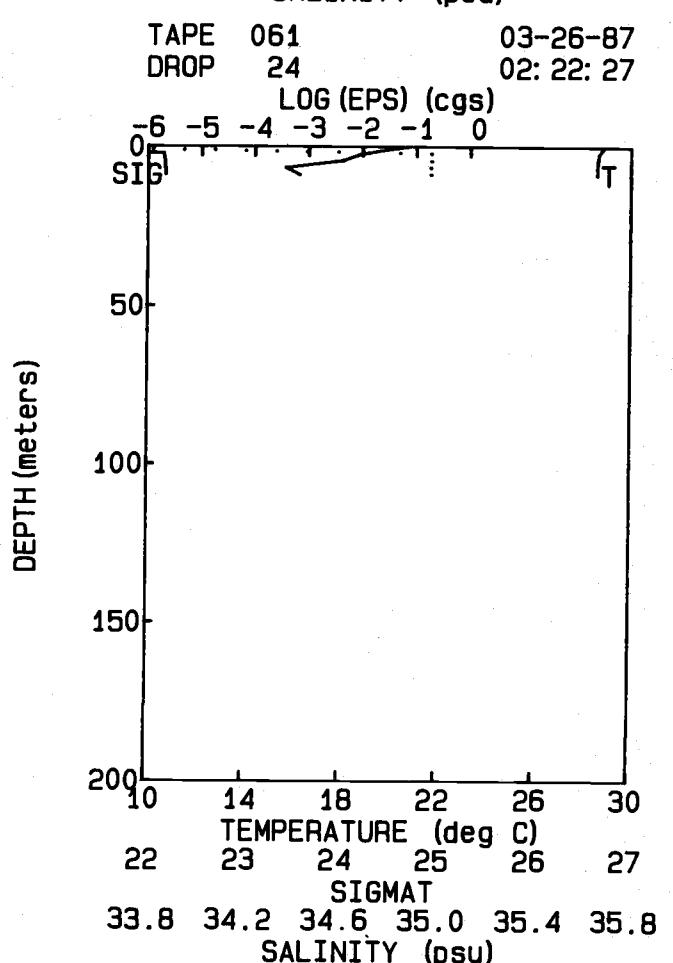
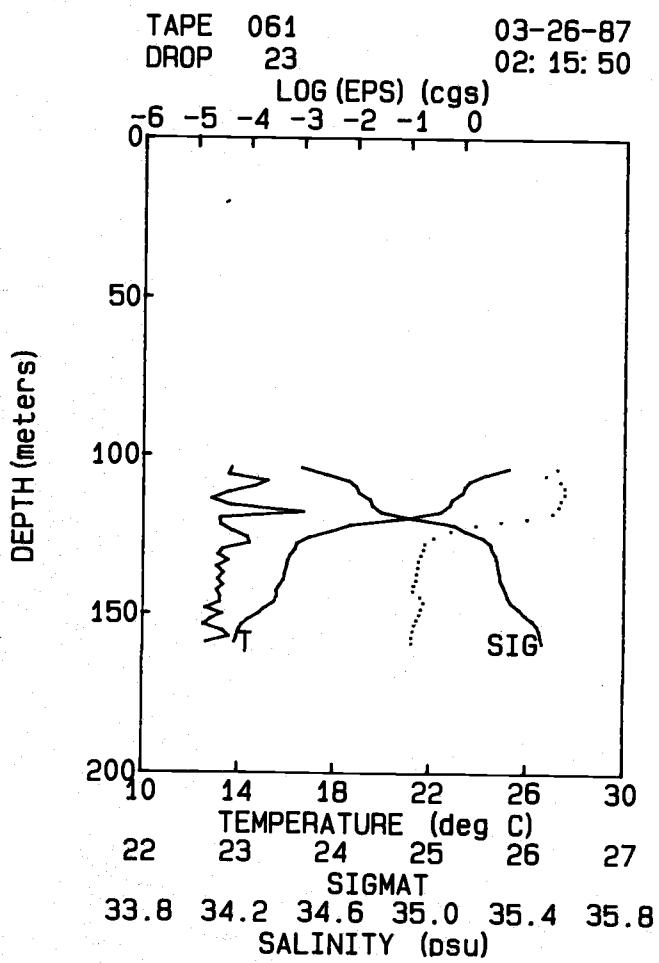
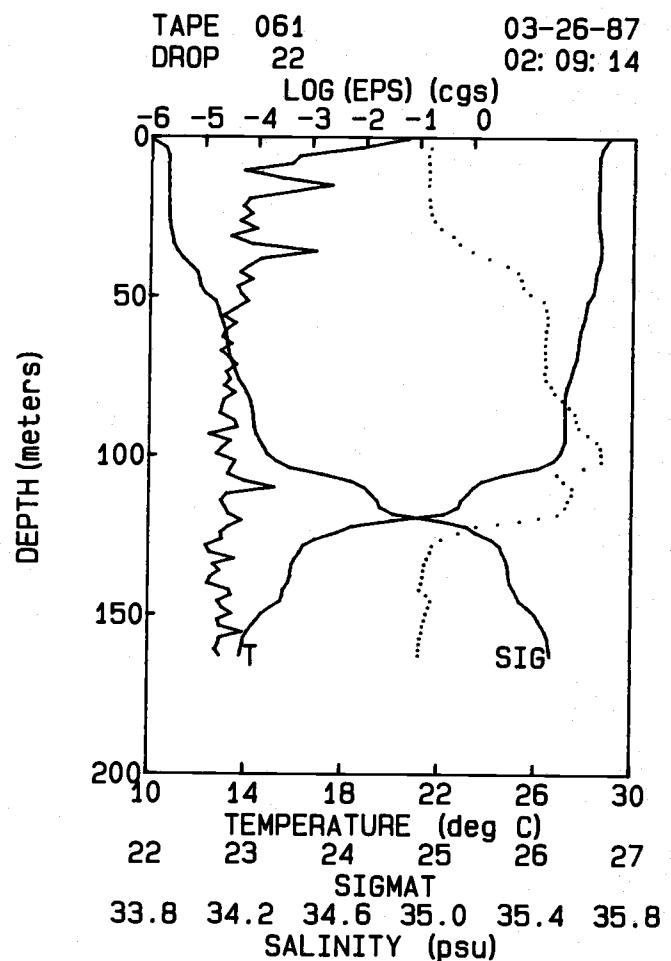
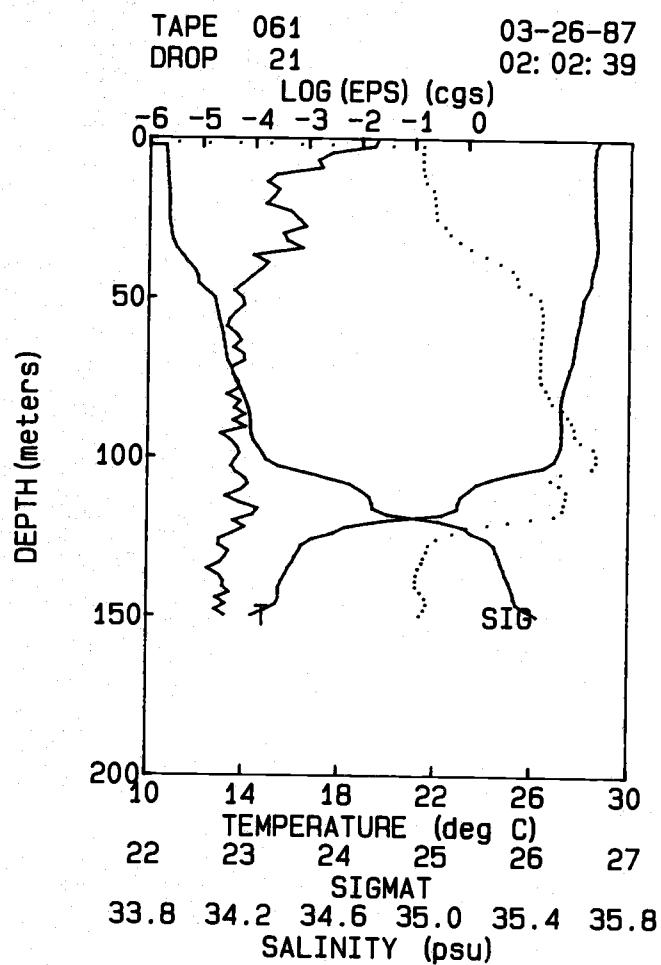


TAPE 061
DROP 16

03-26-87
01: 27: 26

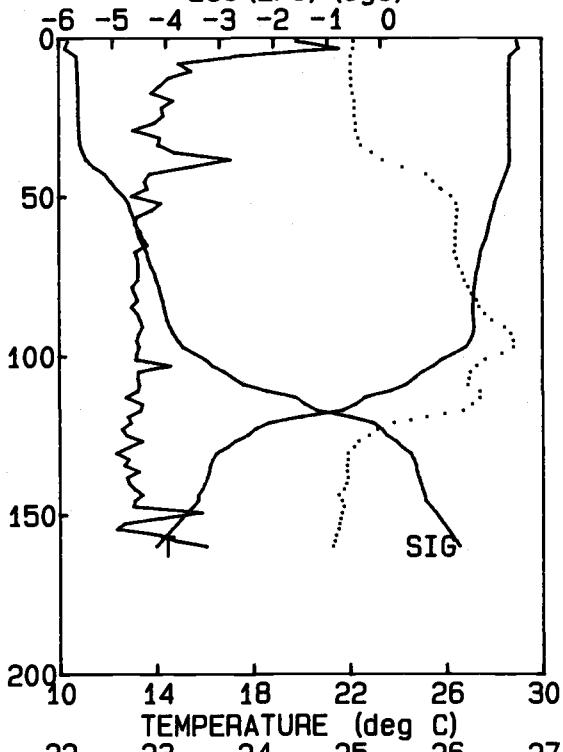
LOG (EPS) (cgs)





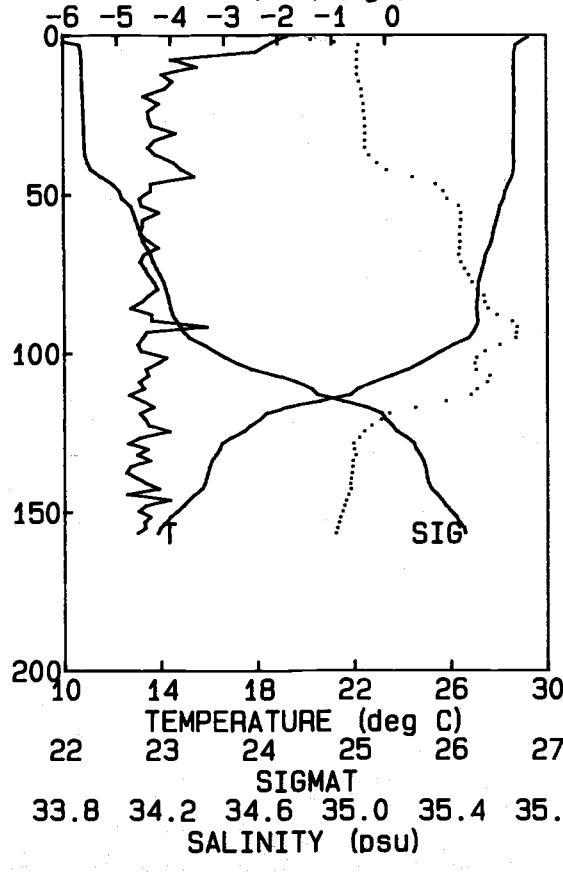
TAPE 061 03-26-87
DROP 29 02: 49: 46

LOG (EPS) (cgs)



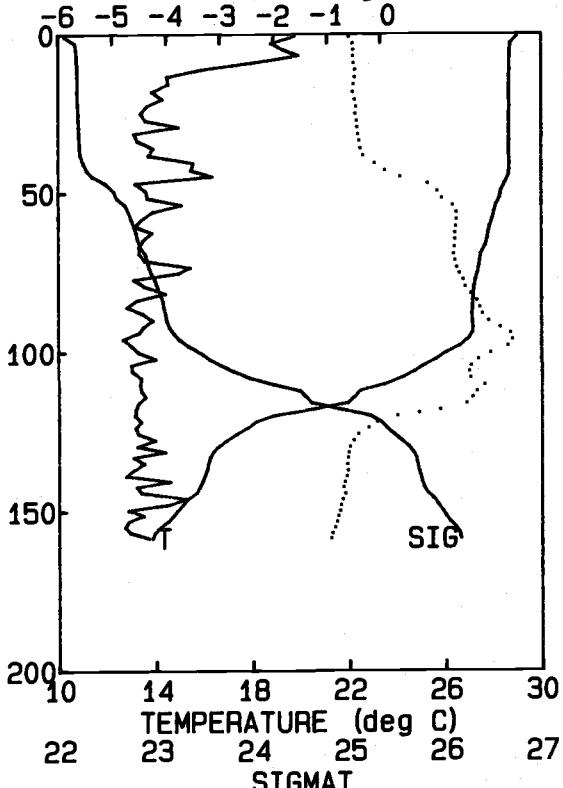
TAPE 061 03-26-87
DROP 31 03: 03: 28

LOG (EPS) (cgs)



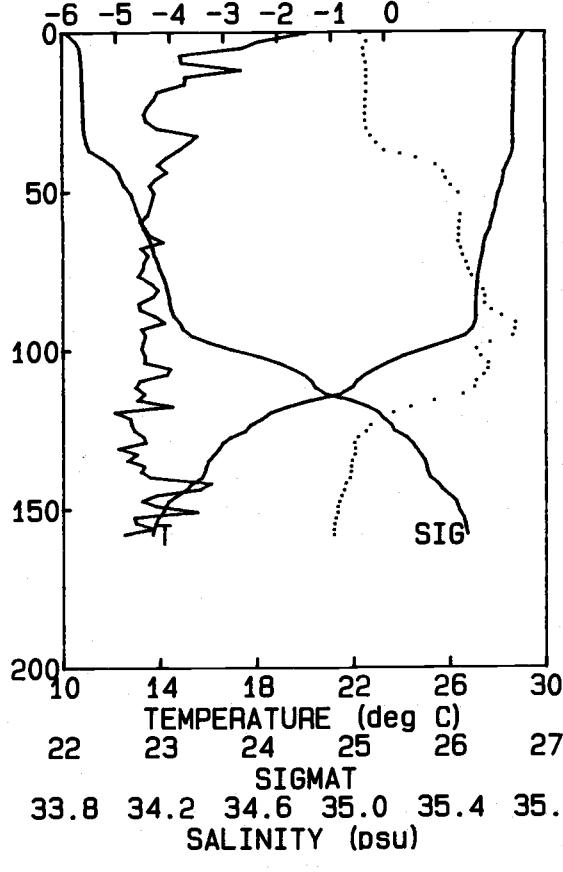
TAPE 061 03-26-87
DROP 30 02: 56: 20

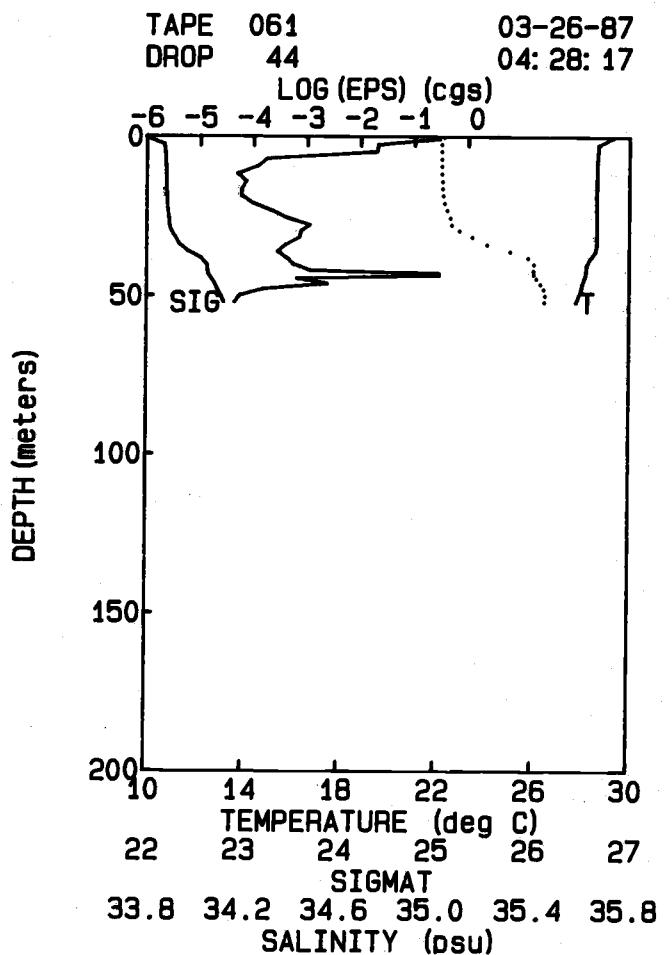
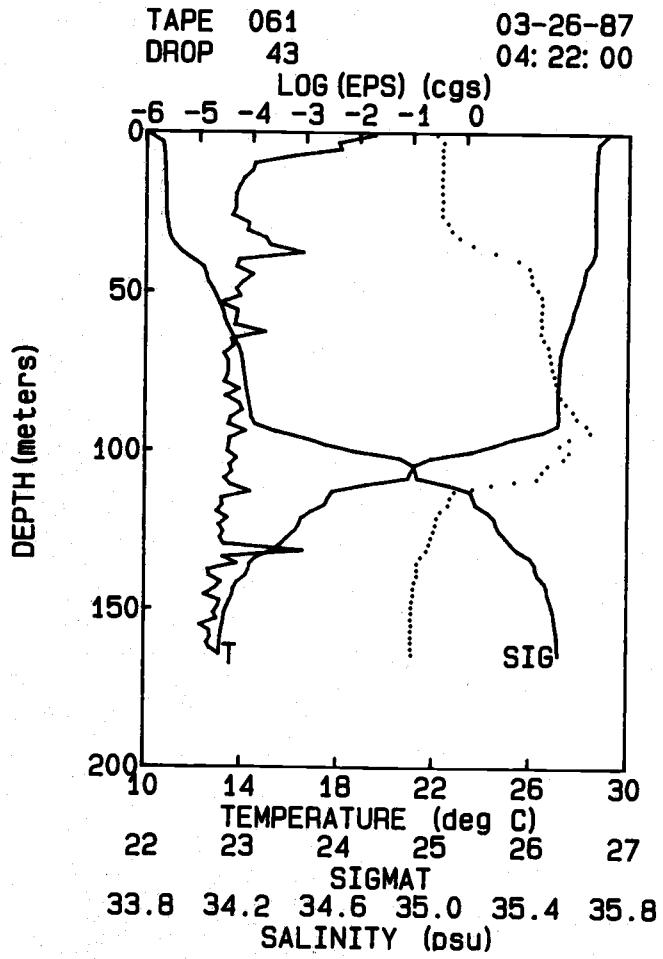
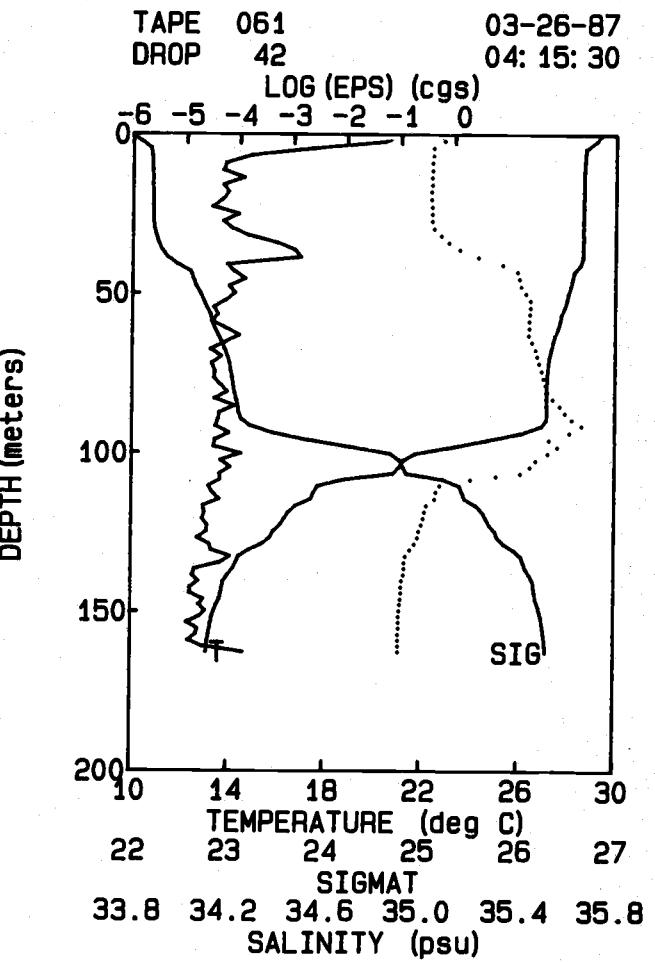
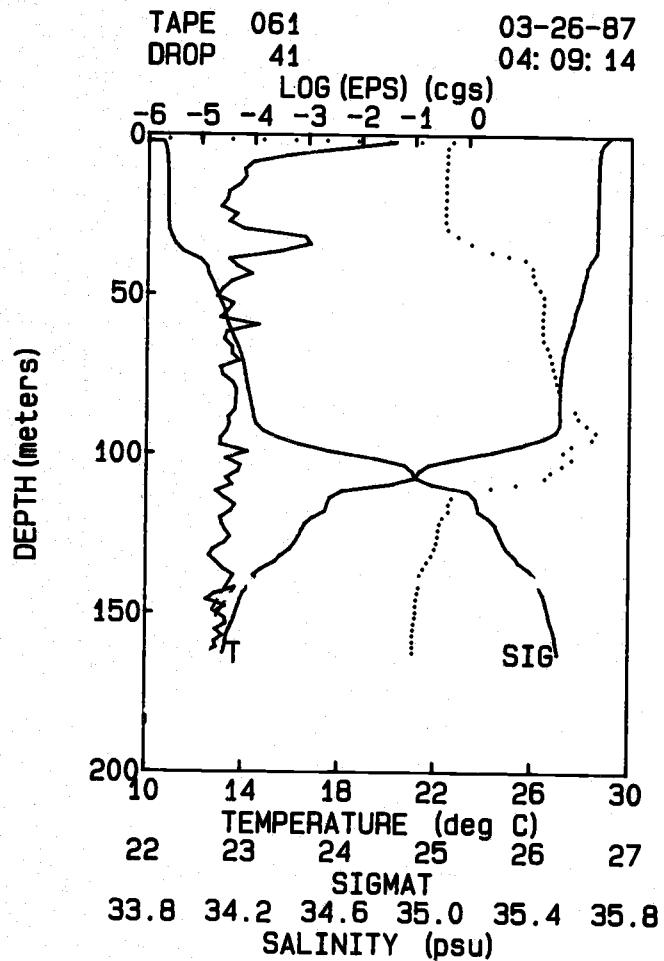
LOG (EPS) (cgs)



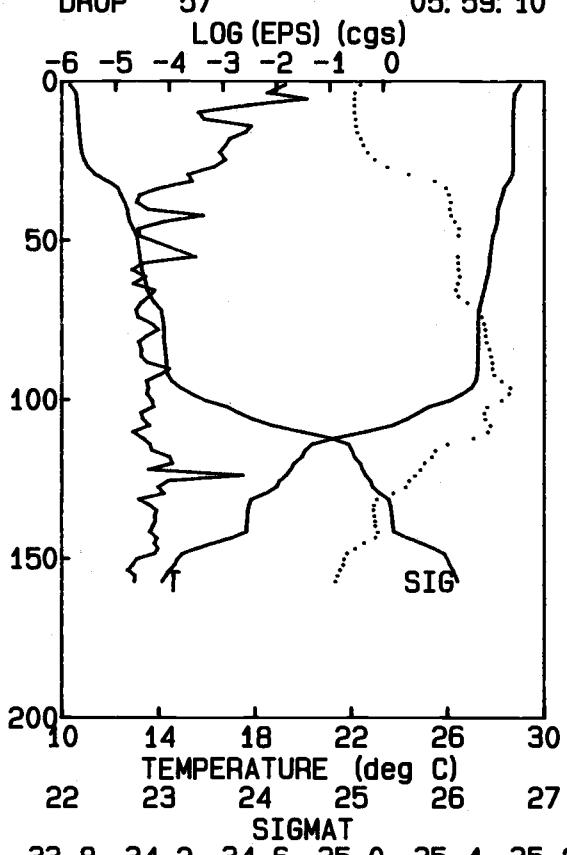
TAPE 061 03-26-87
DROP 32 03: 09: 57

LOG (EPS) (cgs)

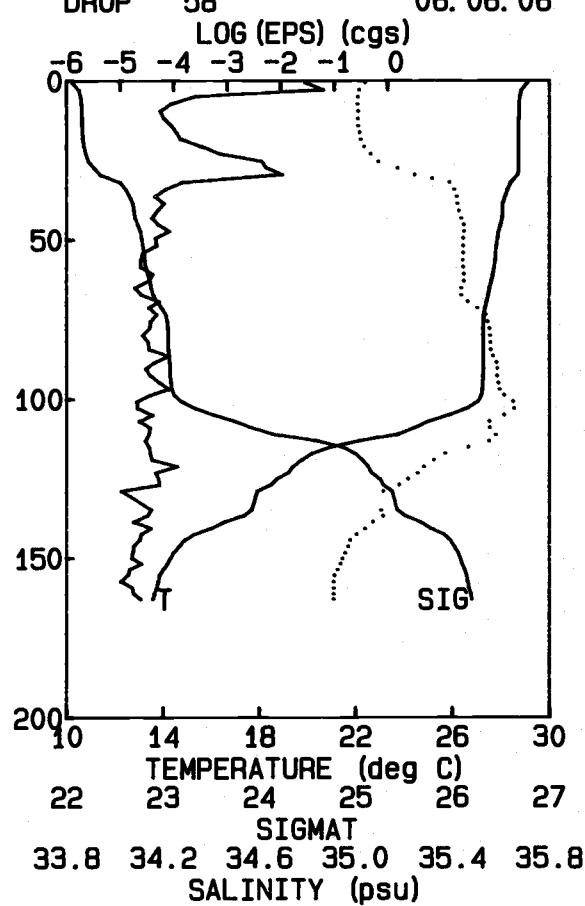




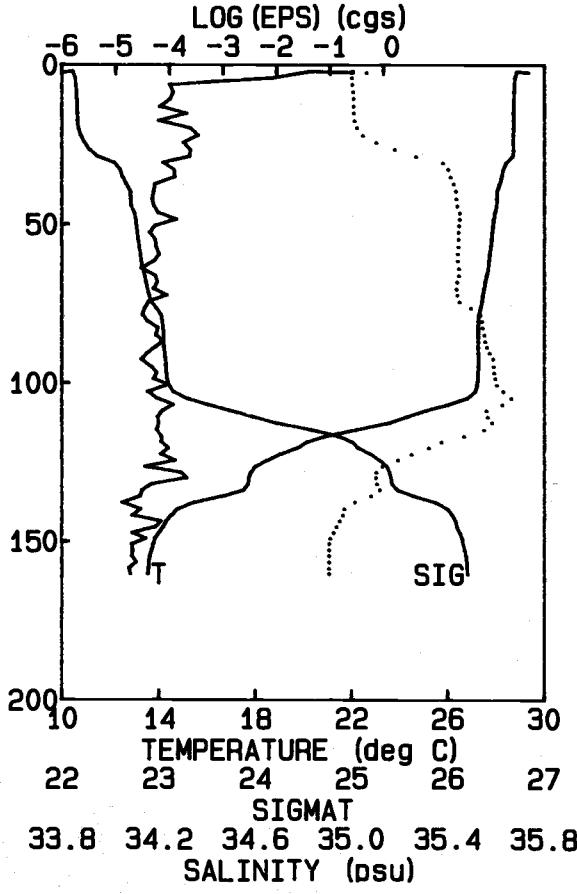
TAPE 061 03-26-87
DROP 57 05: 59: 10



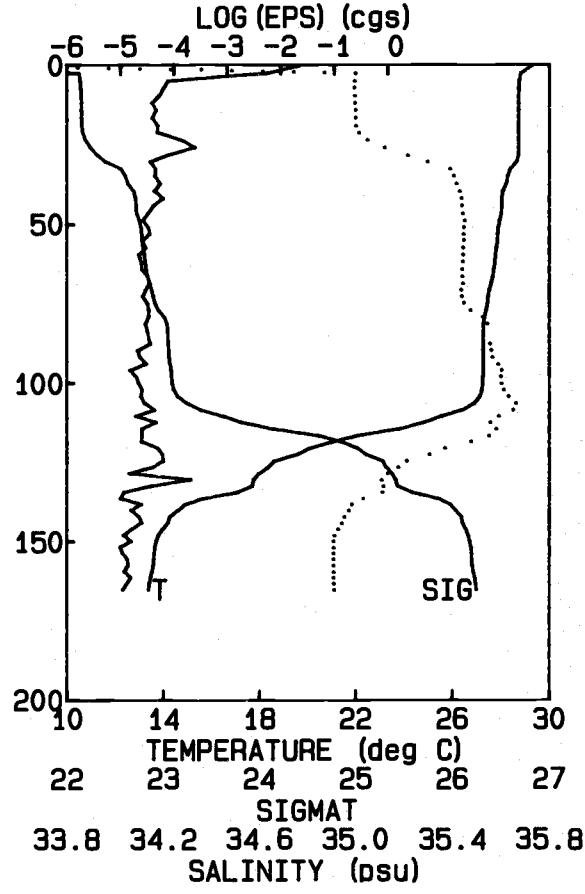
TAPE 061 03-26-87
DROP 58 06: 06: 06

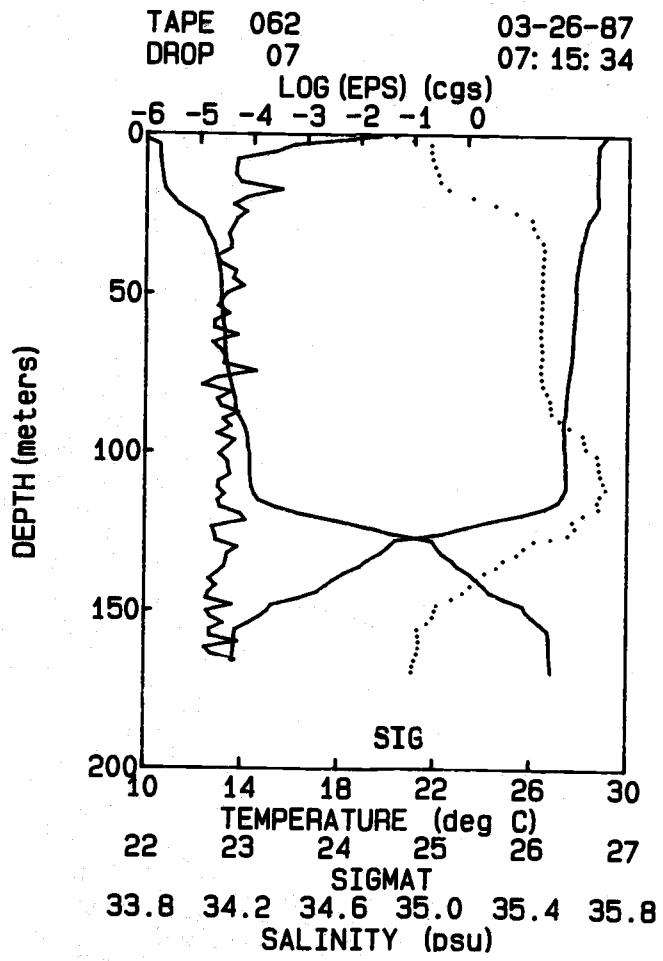
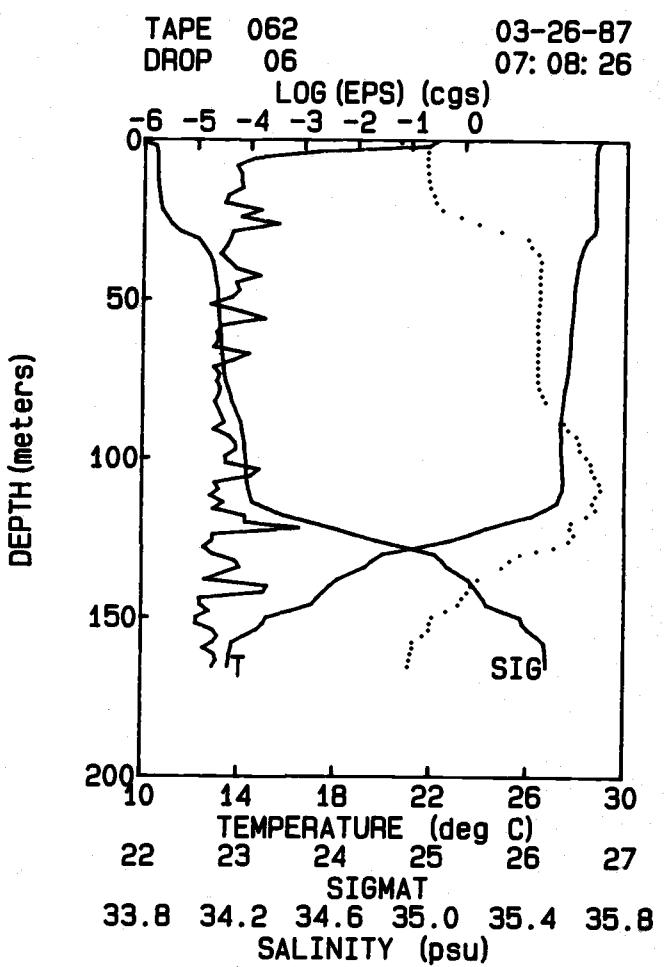
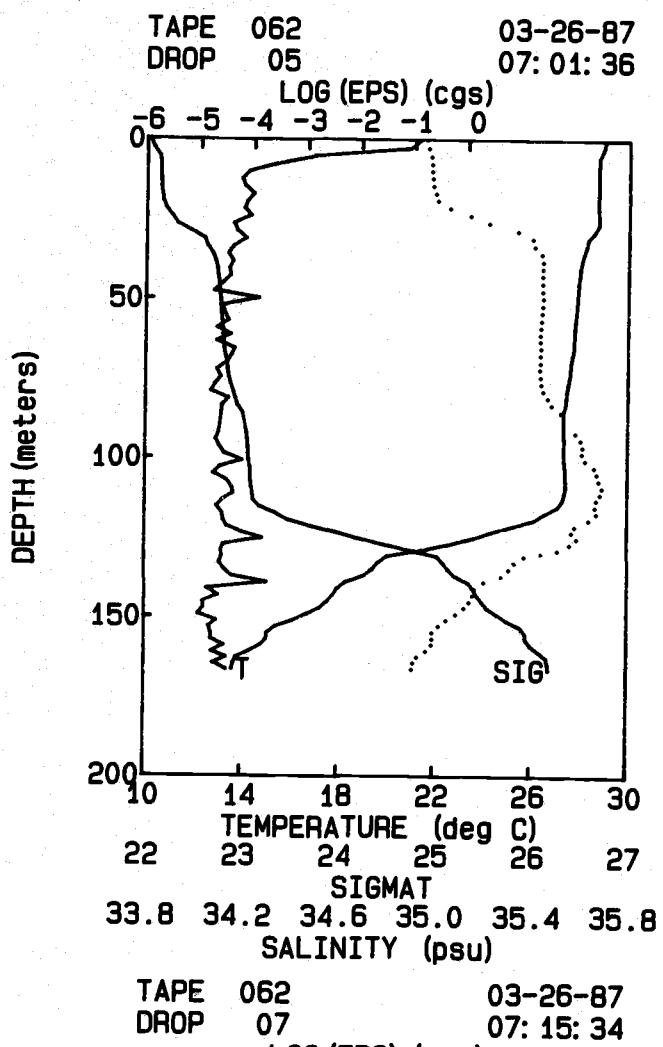


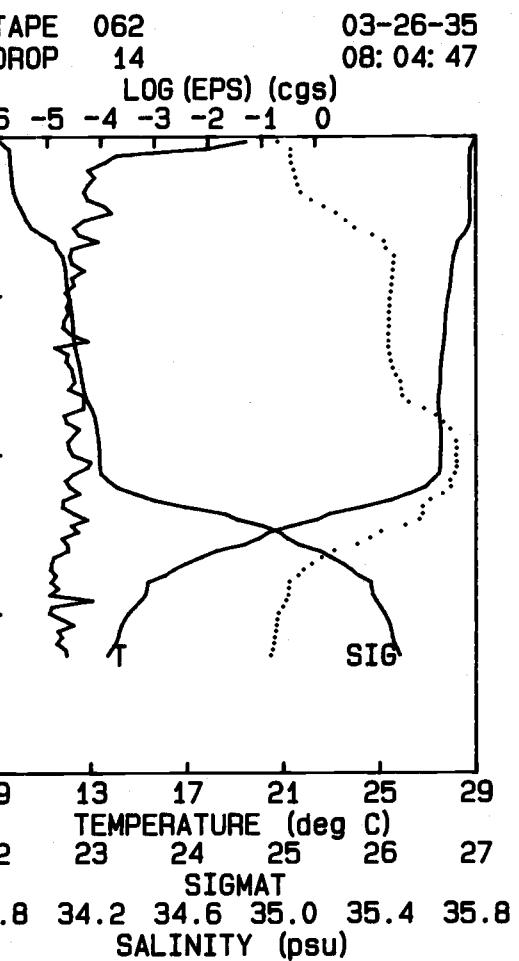
TAPE 061 03-26-87
DROP 59 06: 12: 55



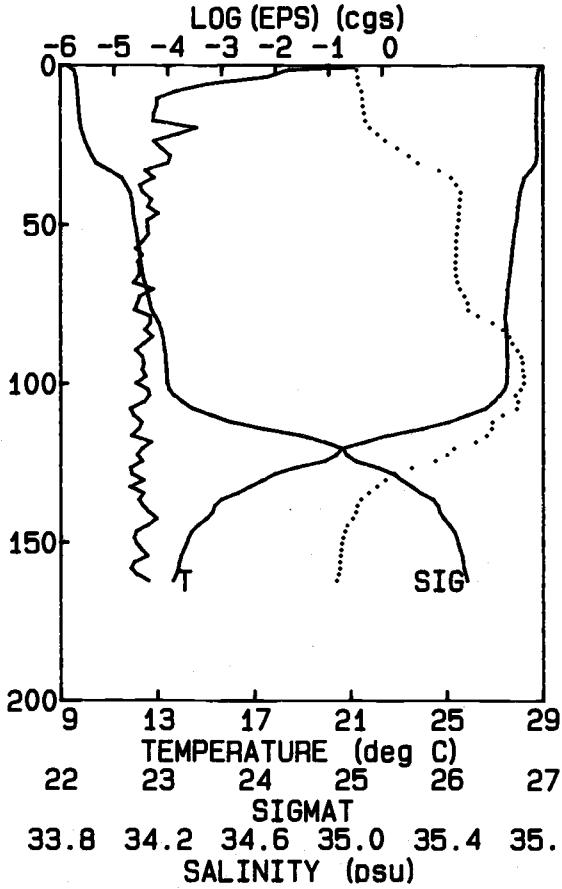
TAPE 061 03-26-87
DROP 60 06: 19: 29



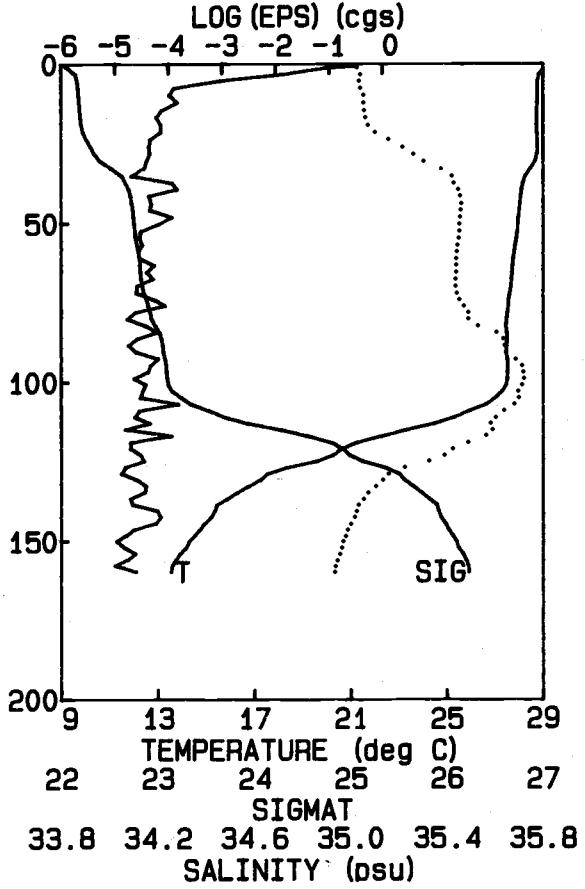


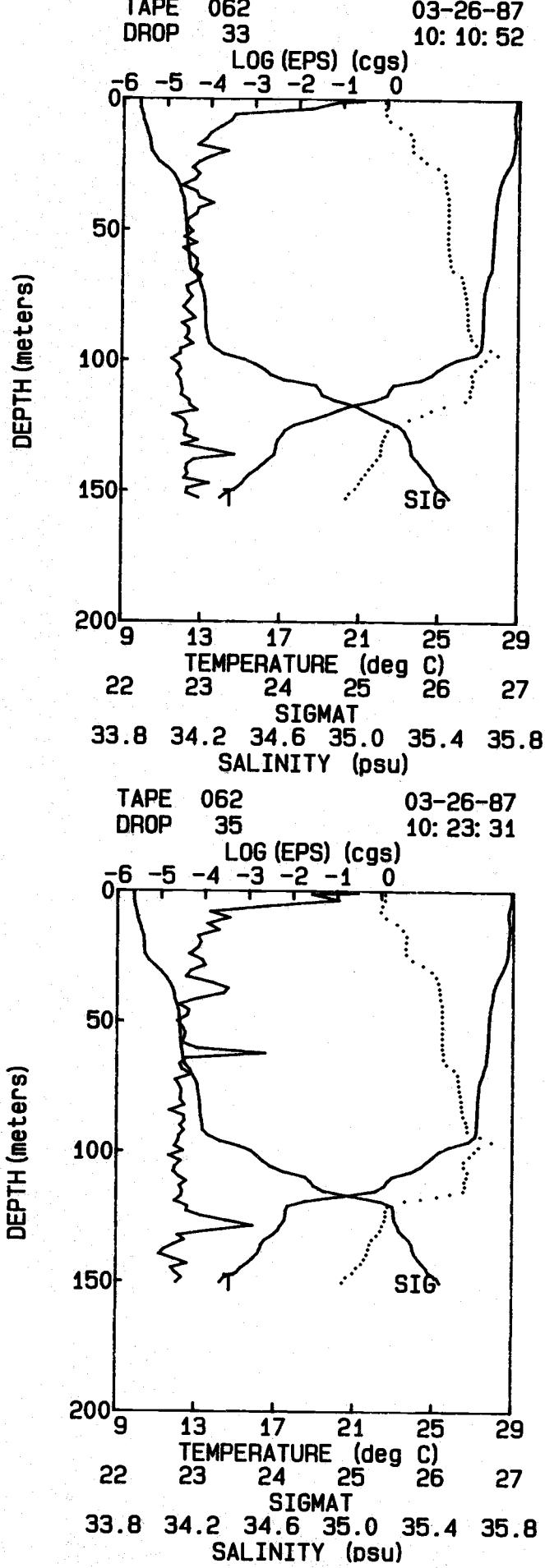
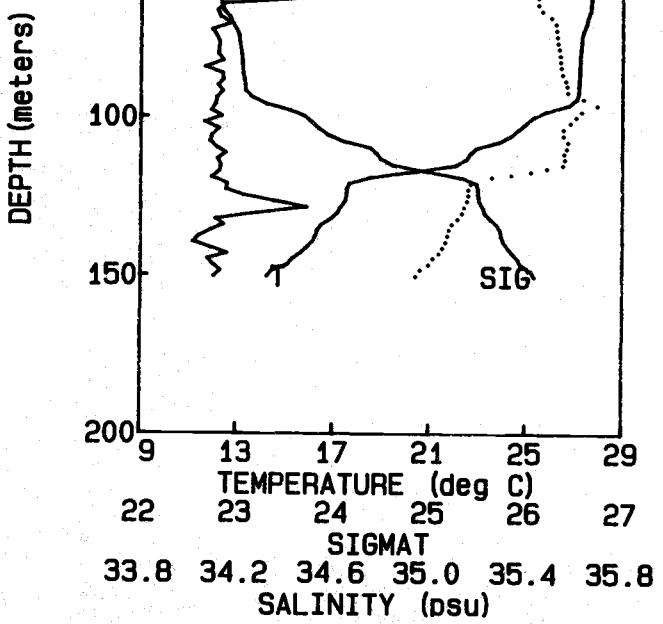
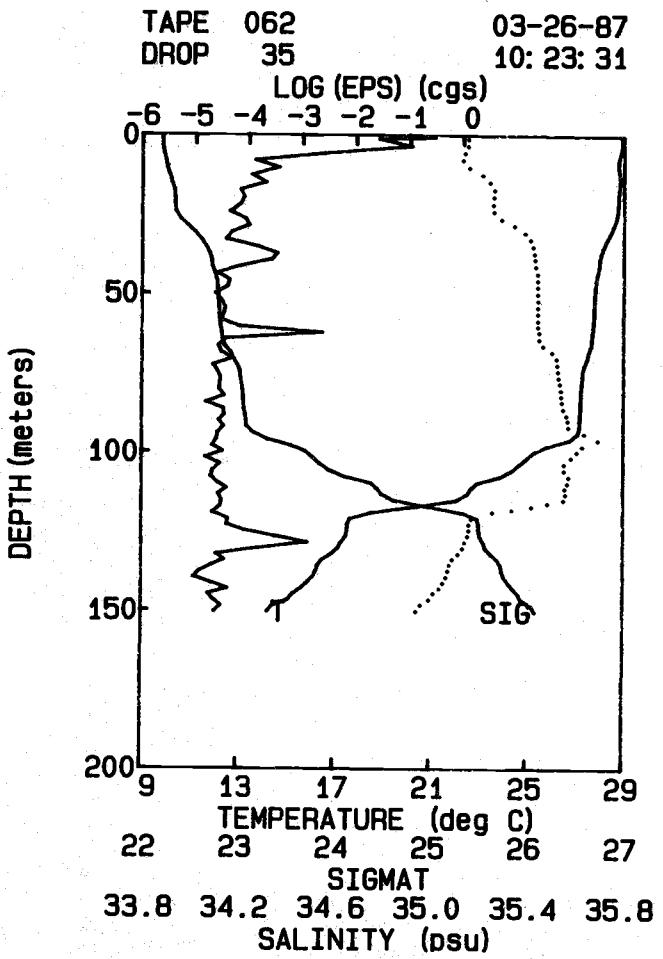
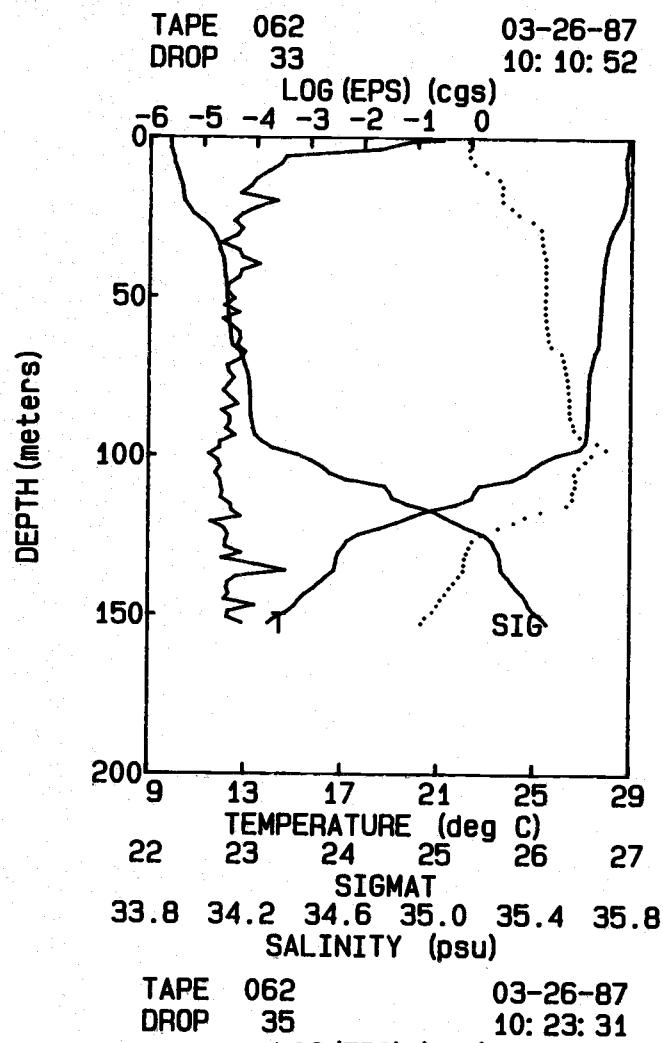


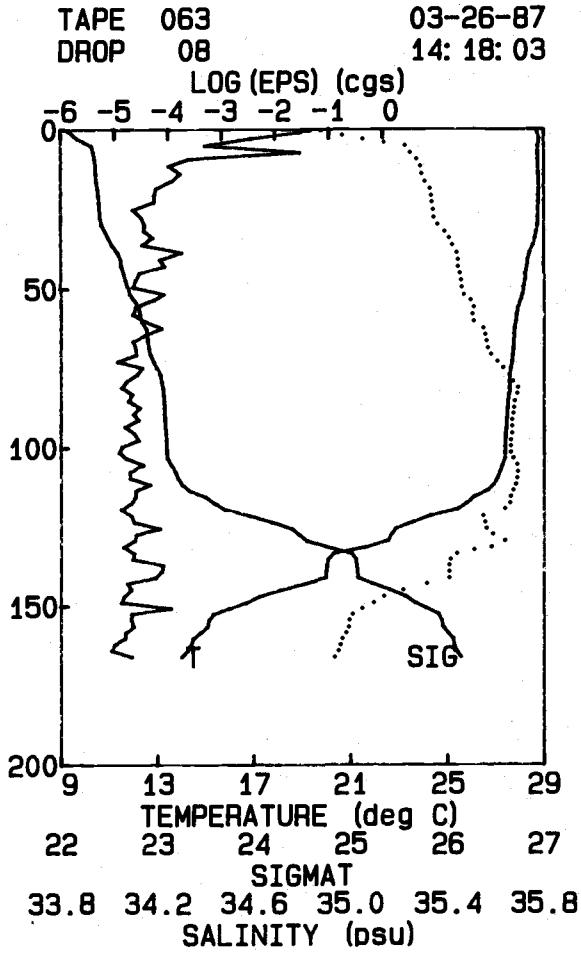
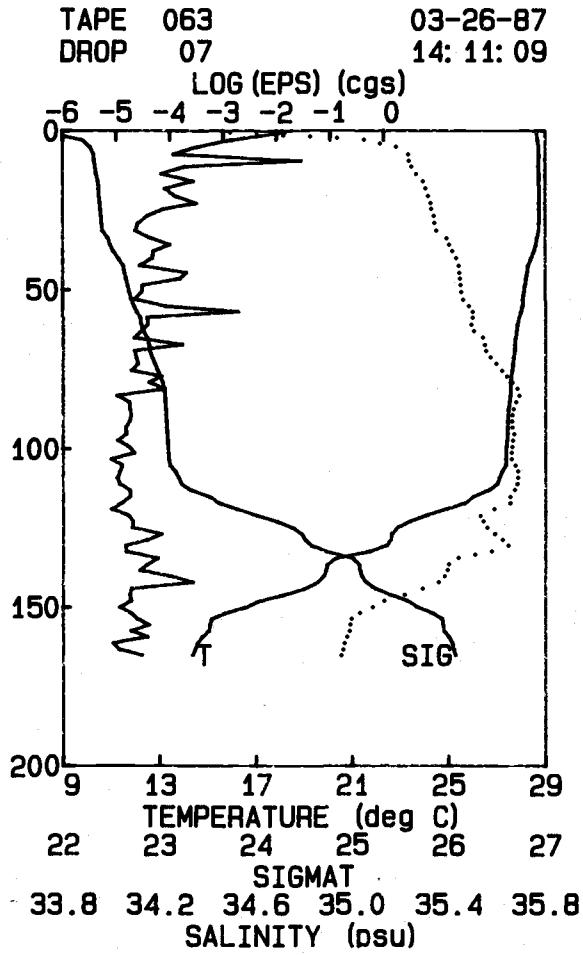
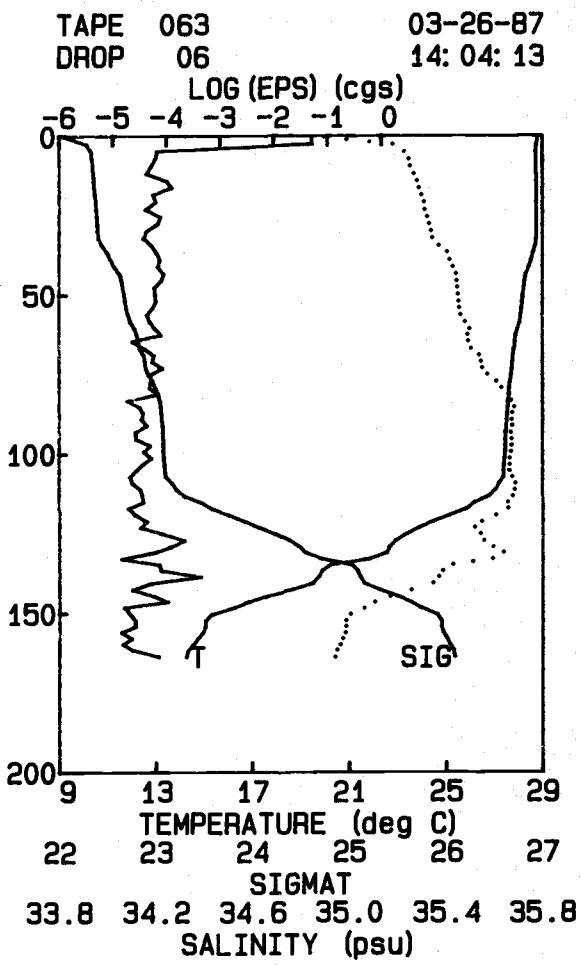
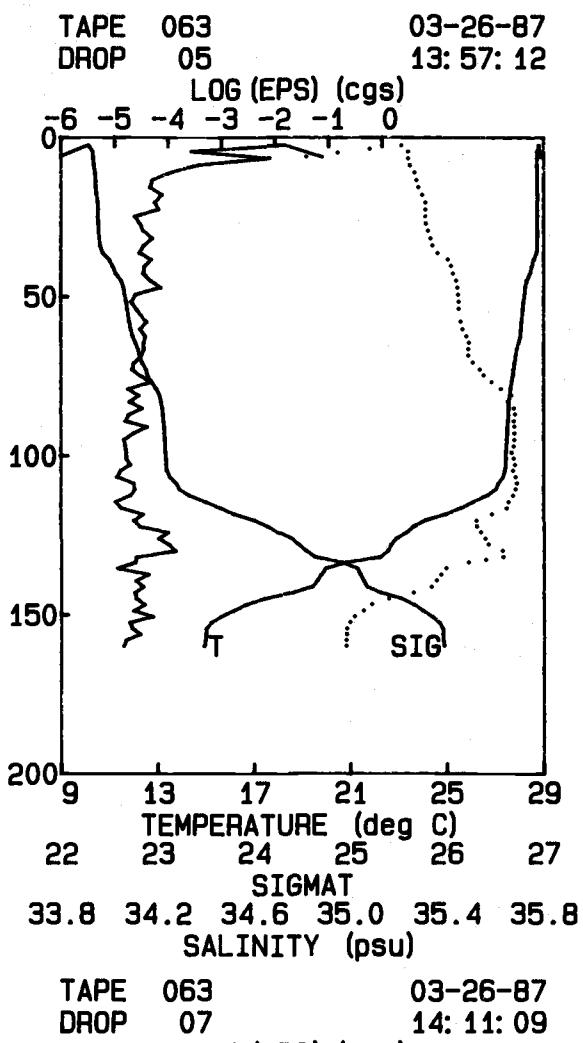
TAPE 062 03-26-87
 DROP 15 08: 11: 16

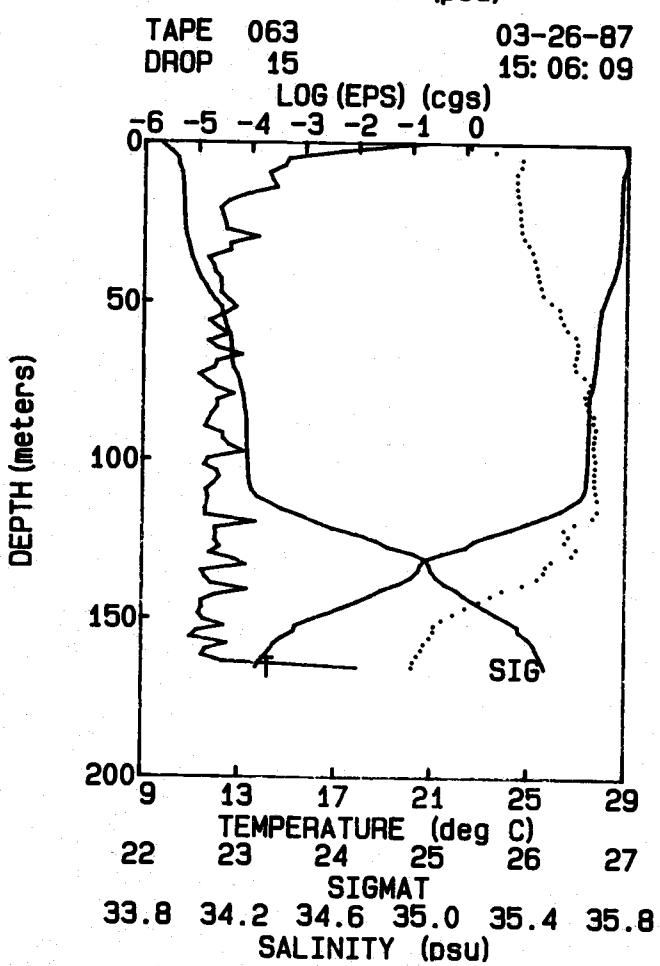
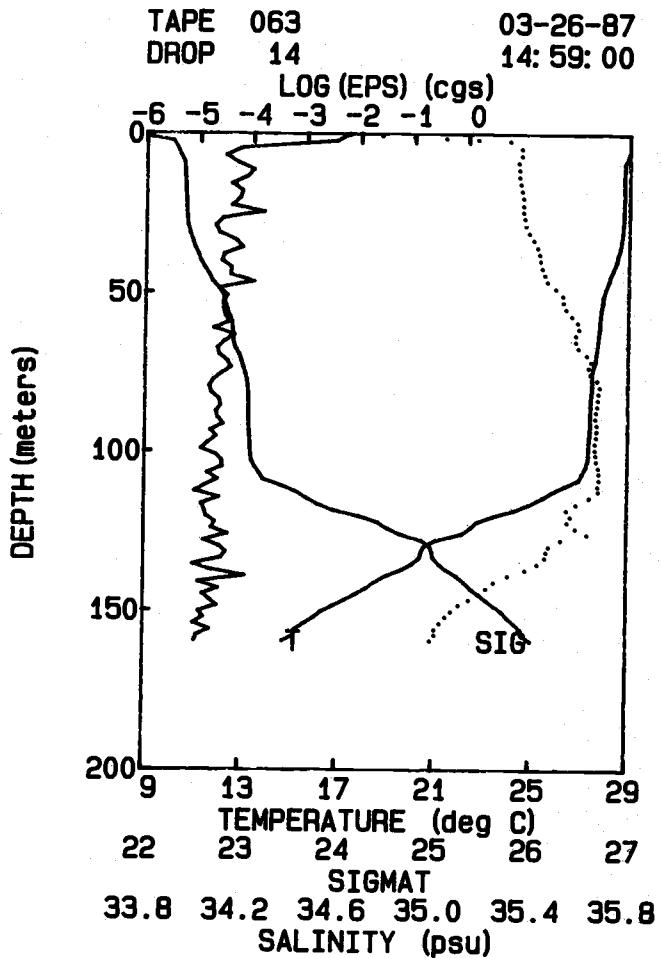
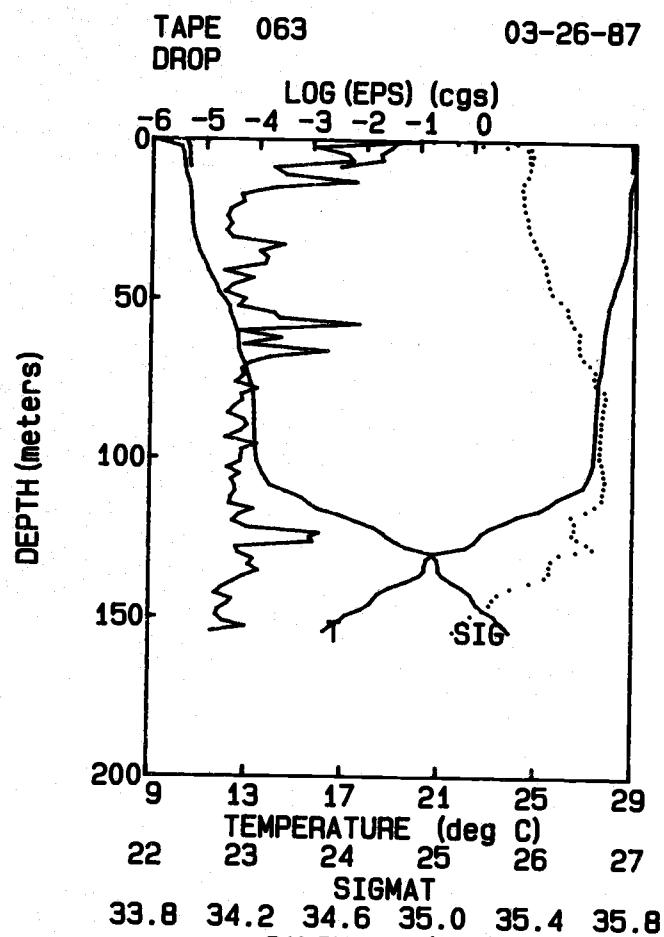


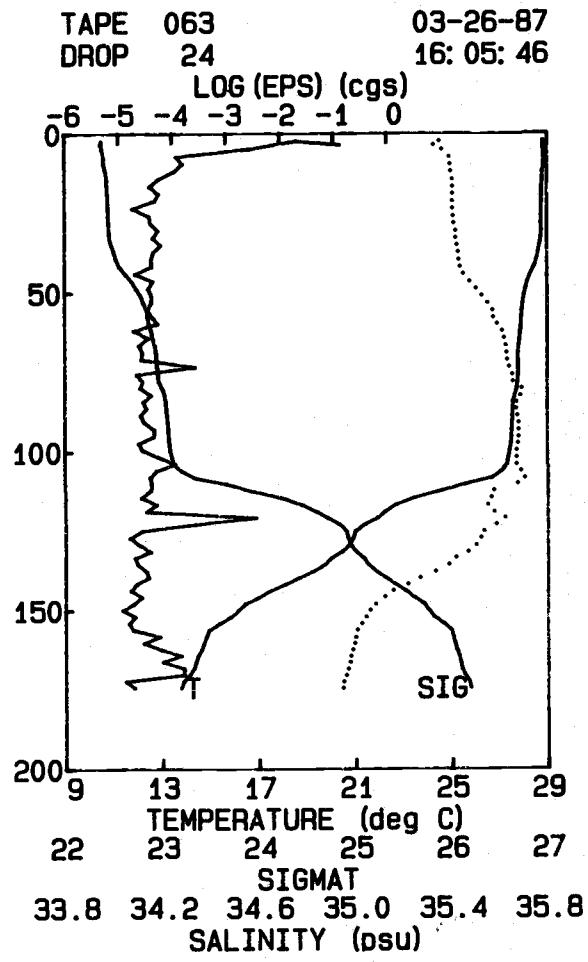
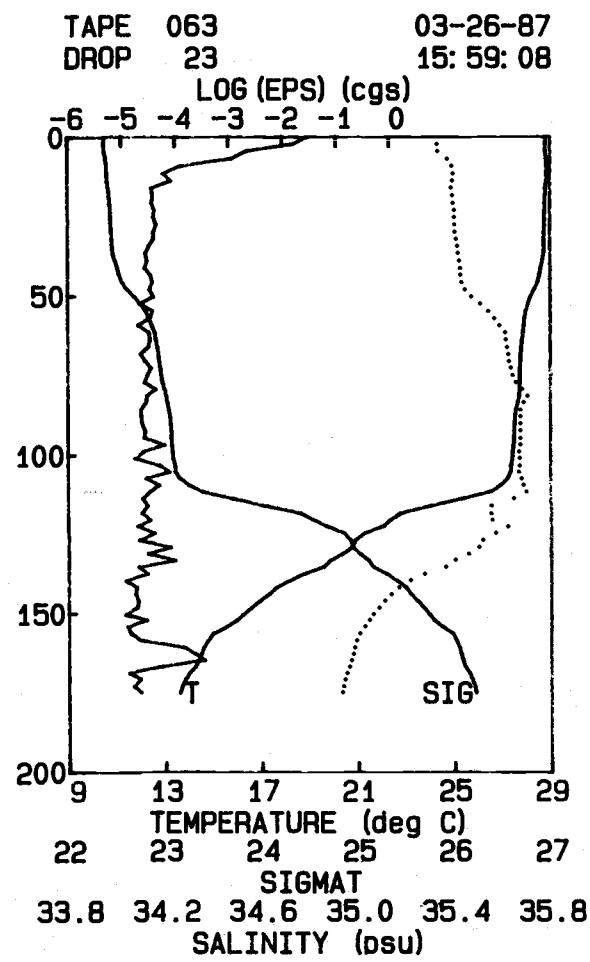
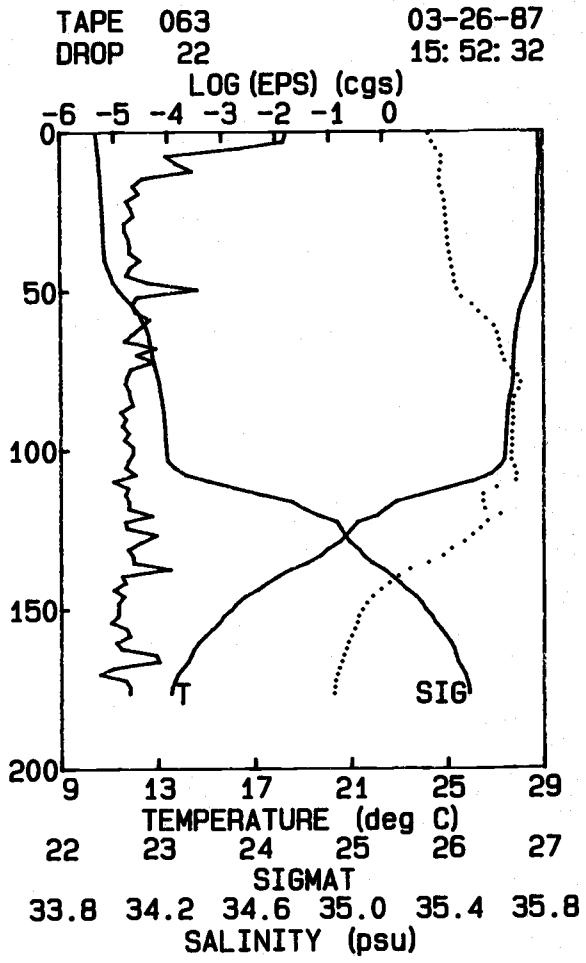
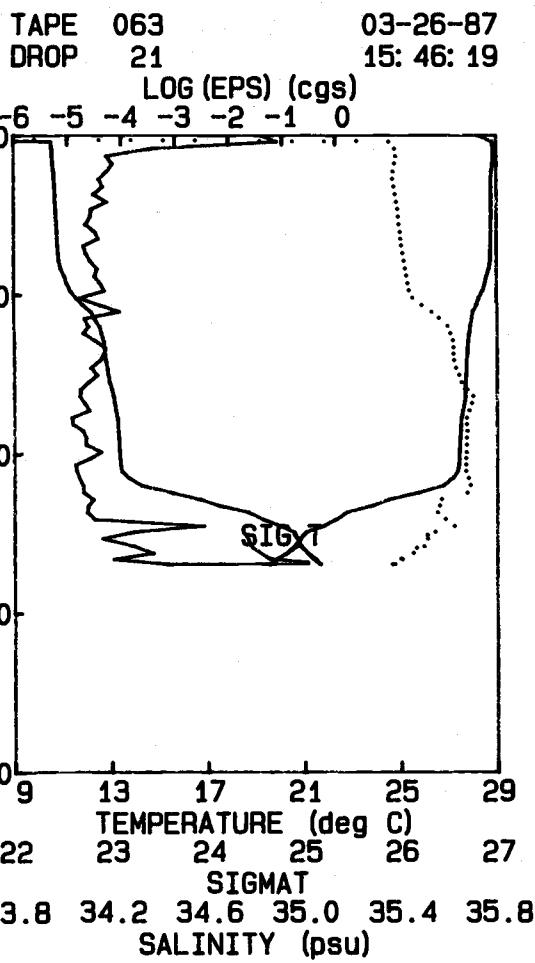
TAPE 062 03-26-87
 DROP 16 08: 18: 16

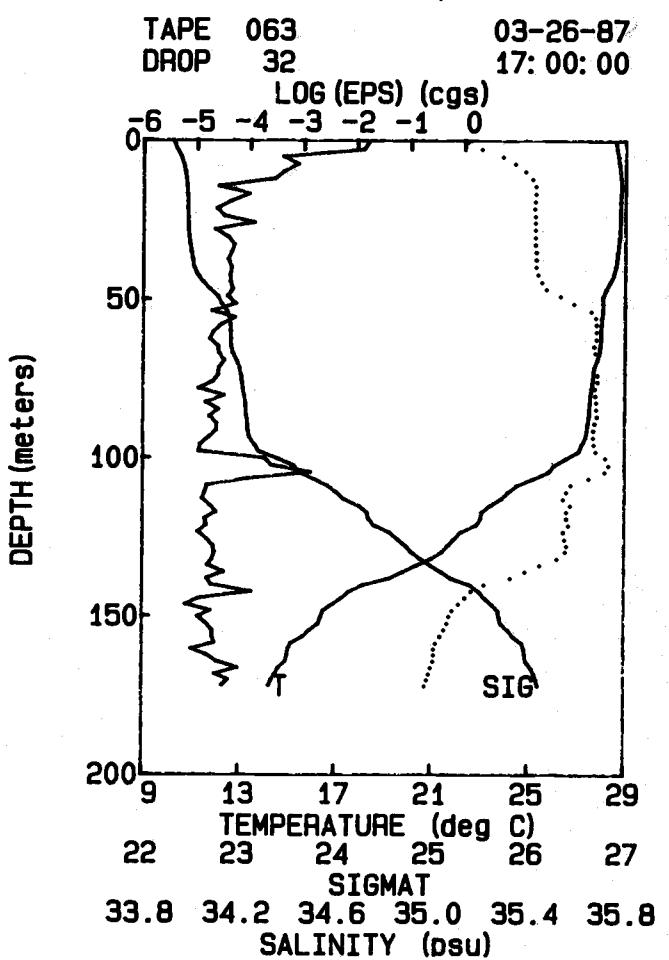
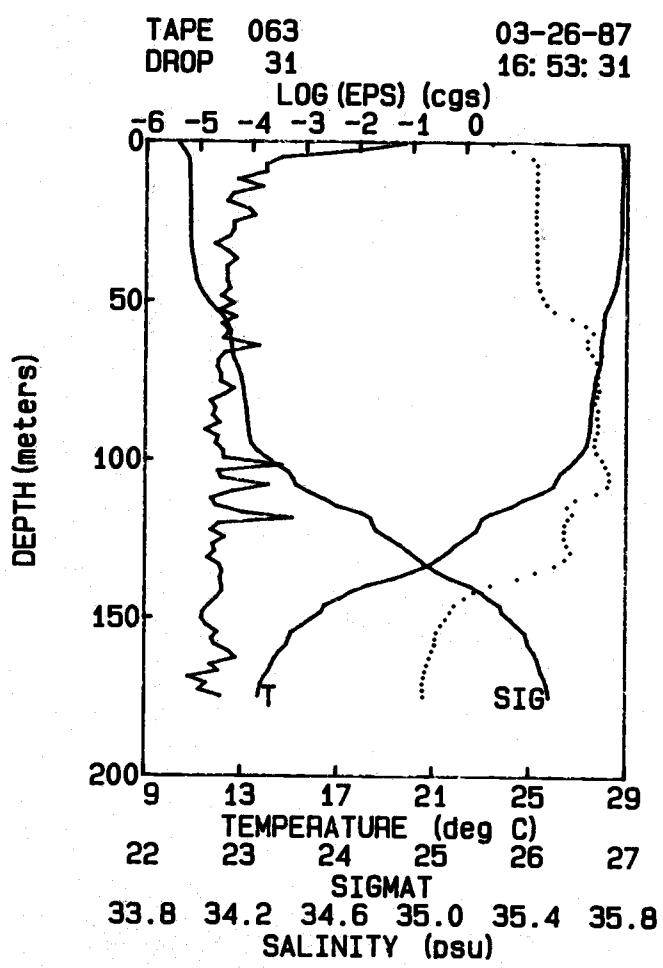
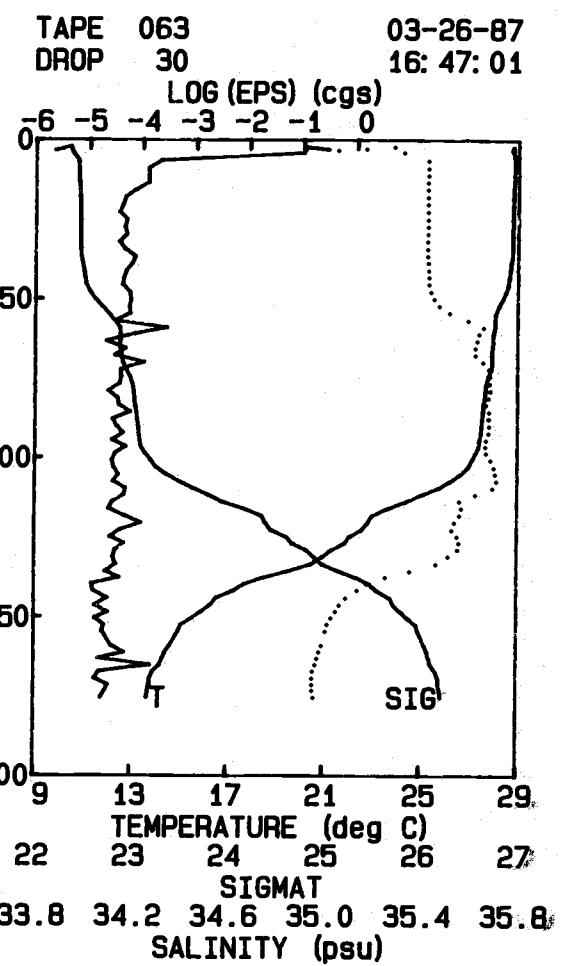


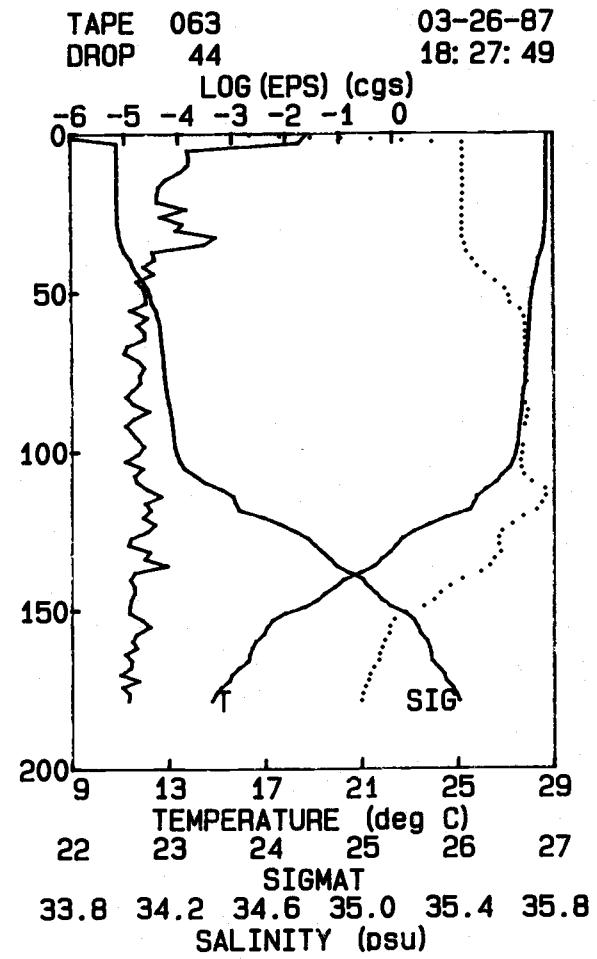
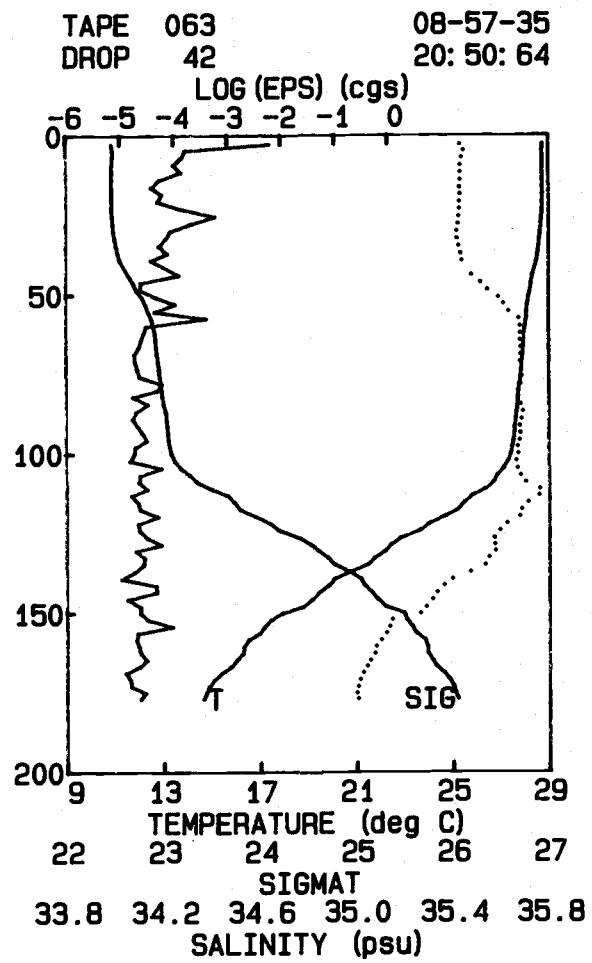
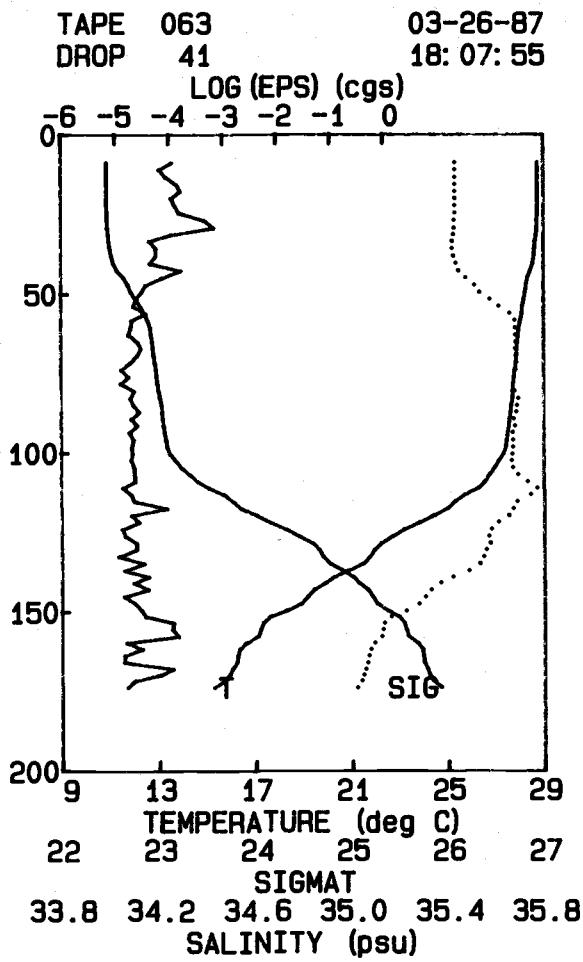


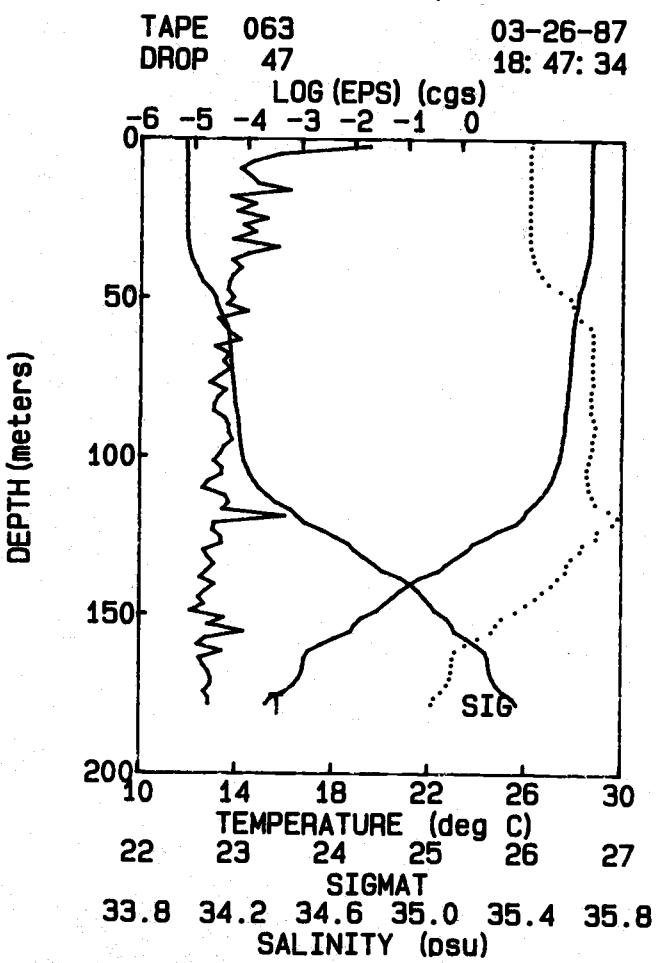
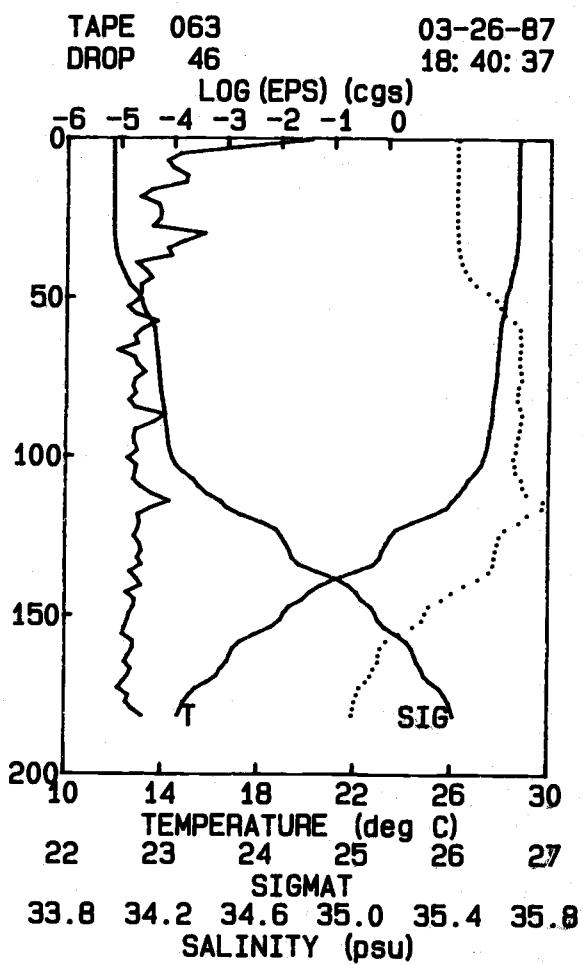
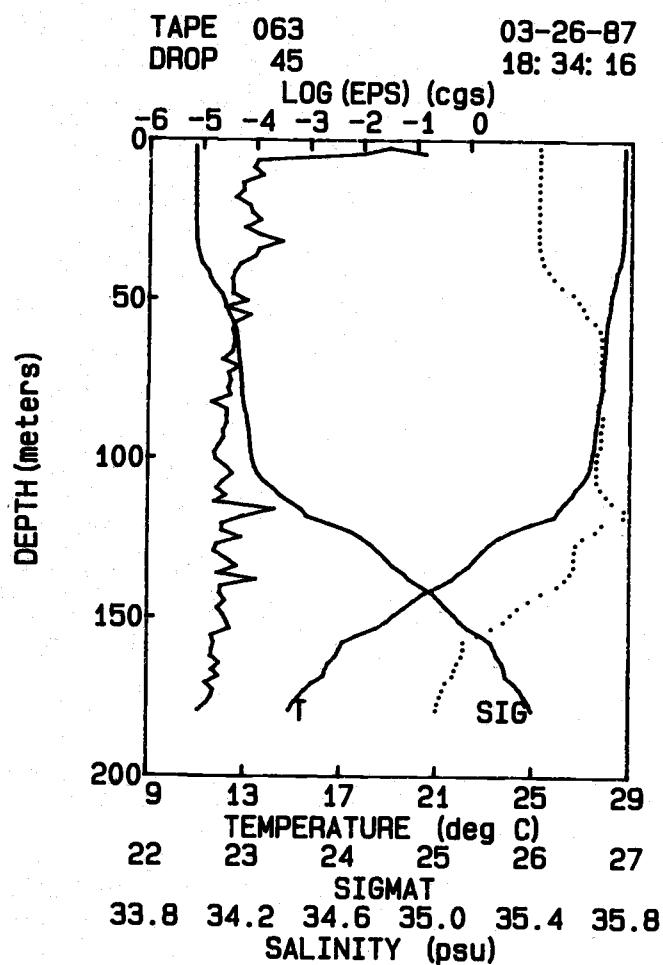






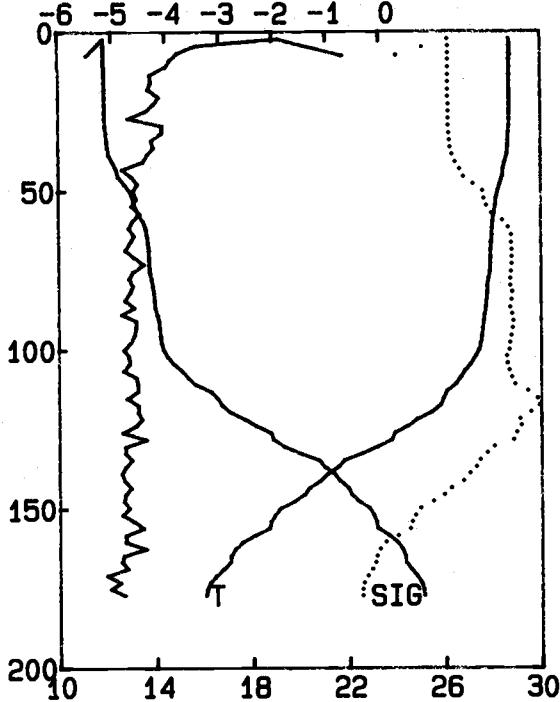






TAPE 063 03-26-87
DROP 49 19: 00: 40

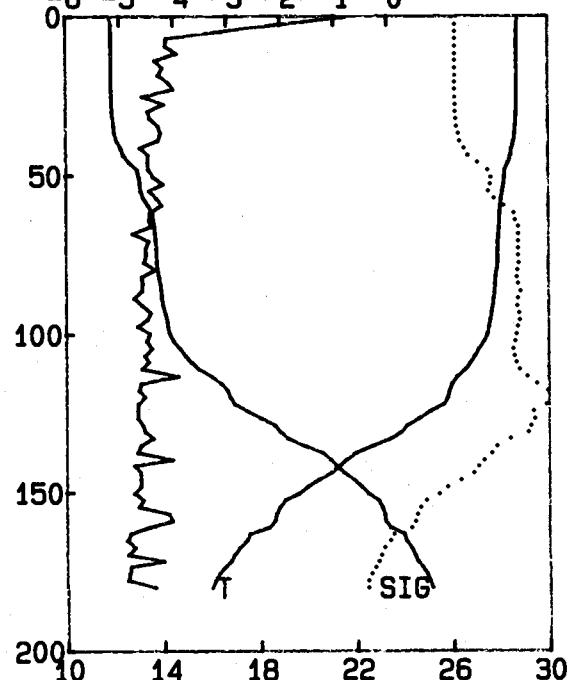
LOG (EPS) (cgs)



22 23 24 25 26 27
SIGMAT
33.8 34.2 34.6 35.0 35.4 35.8
SALINITY (psu)

TAPE 063 03-26-87
DROP 51 19: 13: 47

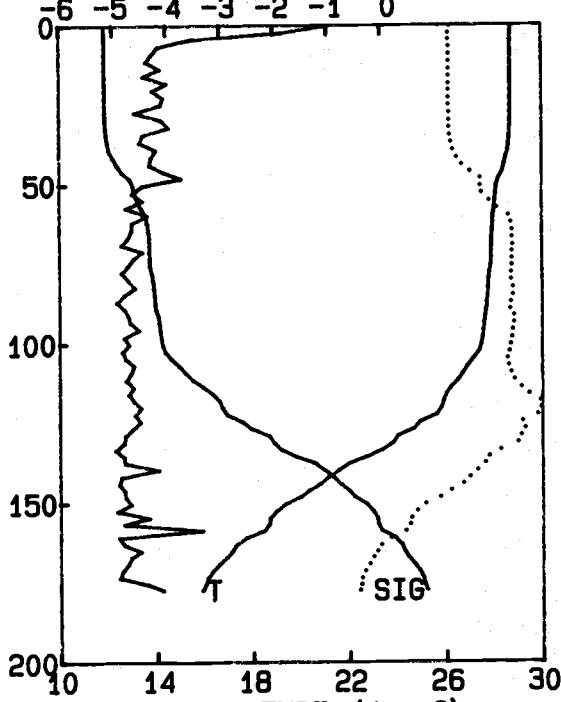
LOG (EPS) (cgs)



22 23 24 25 26 27
SIGMAT
33.8 34.2 34.6 35.0 35.4 35.8
SALINITY (psu)

TAPE 063 03-26-87
DROP 50 19: 07: 12

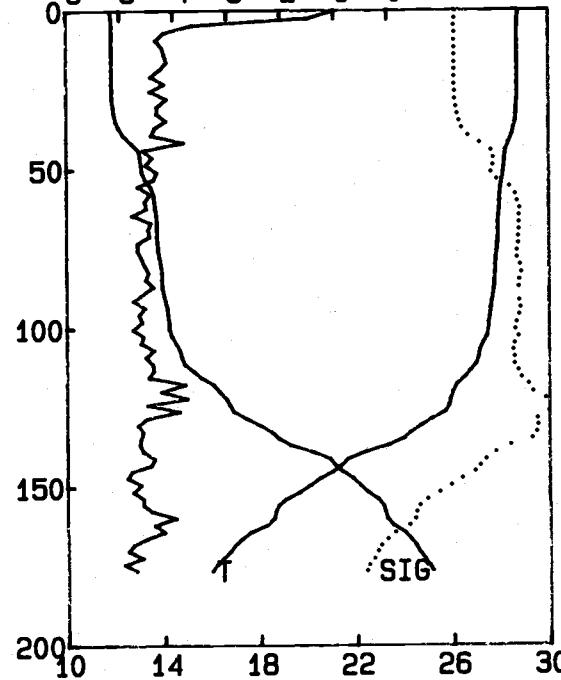
LOG (EPS) (cgs)



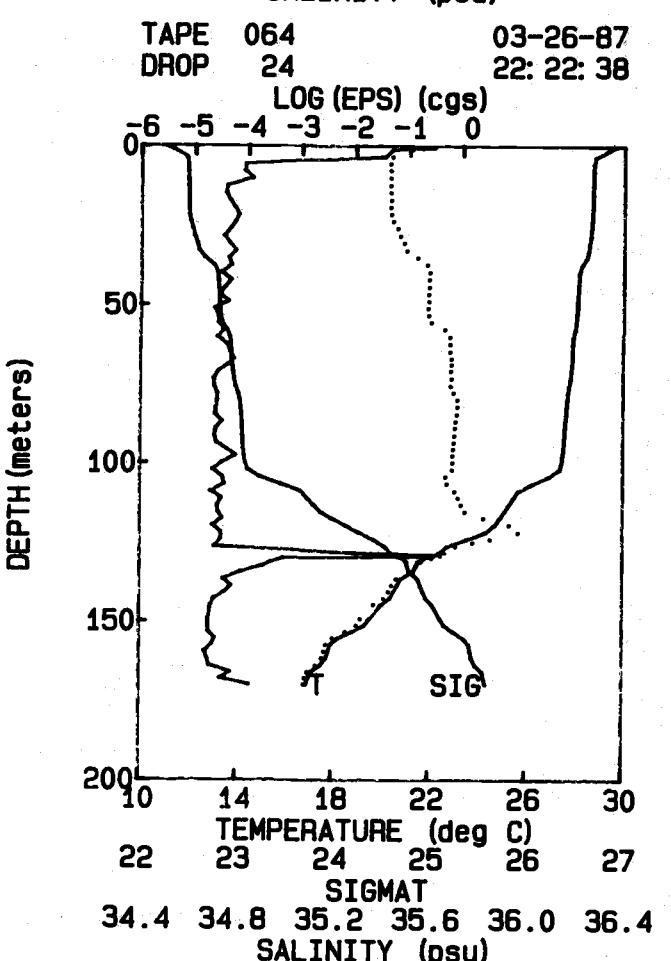
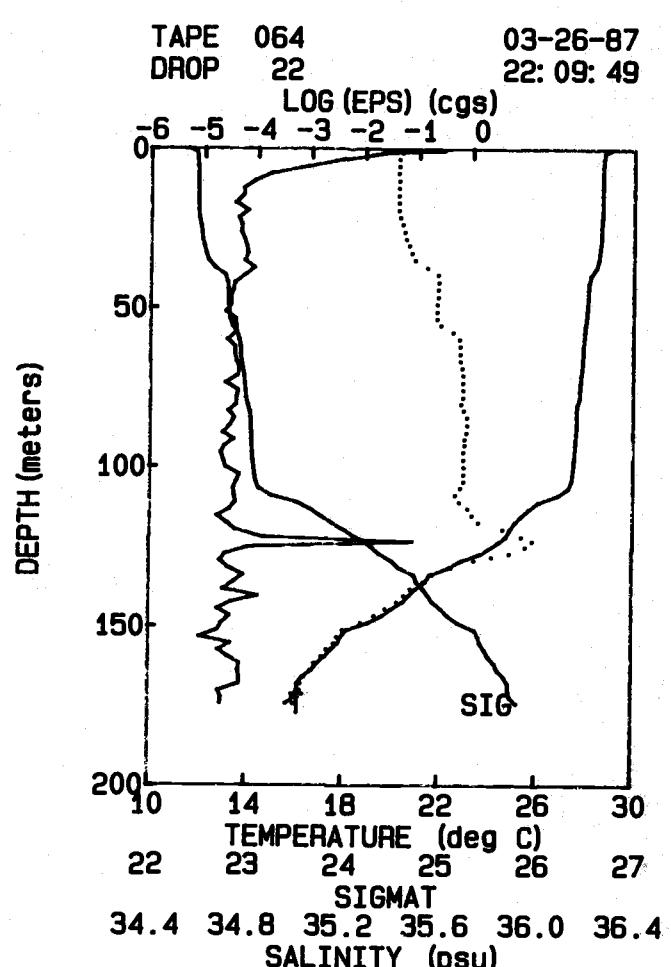
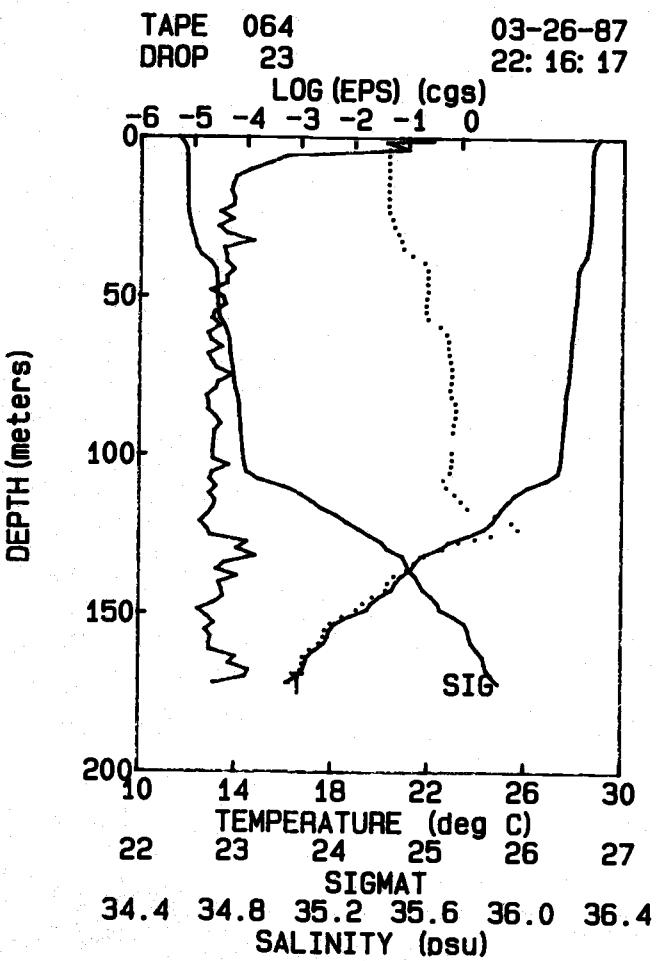
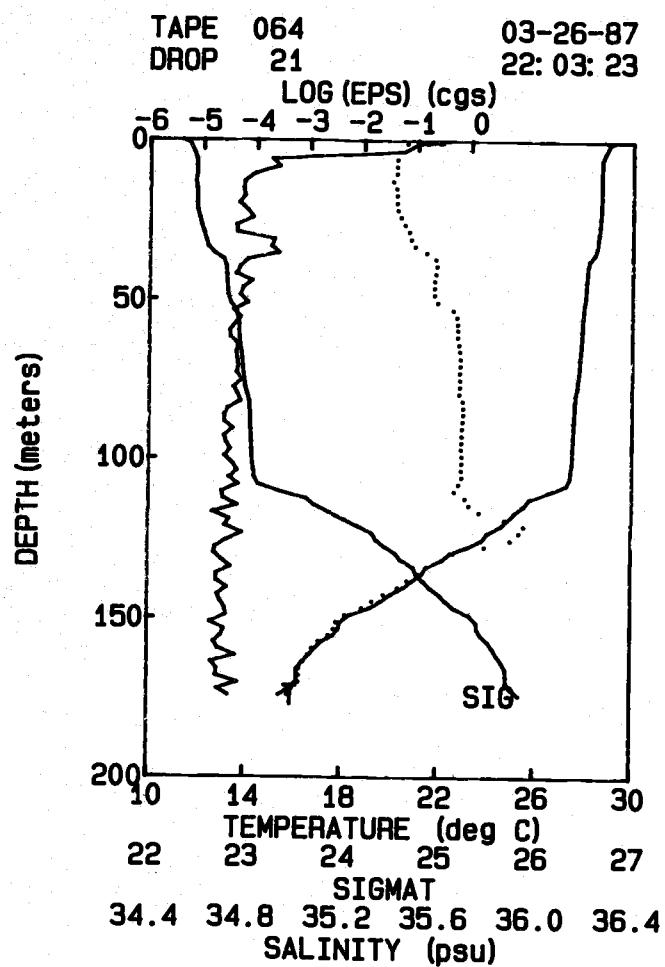
22 23 24 25 26 27
SIGMAT
33.8 34.2 34.6 35.0 35.4 35.8
SALINITY (psu)

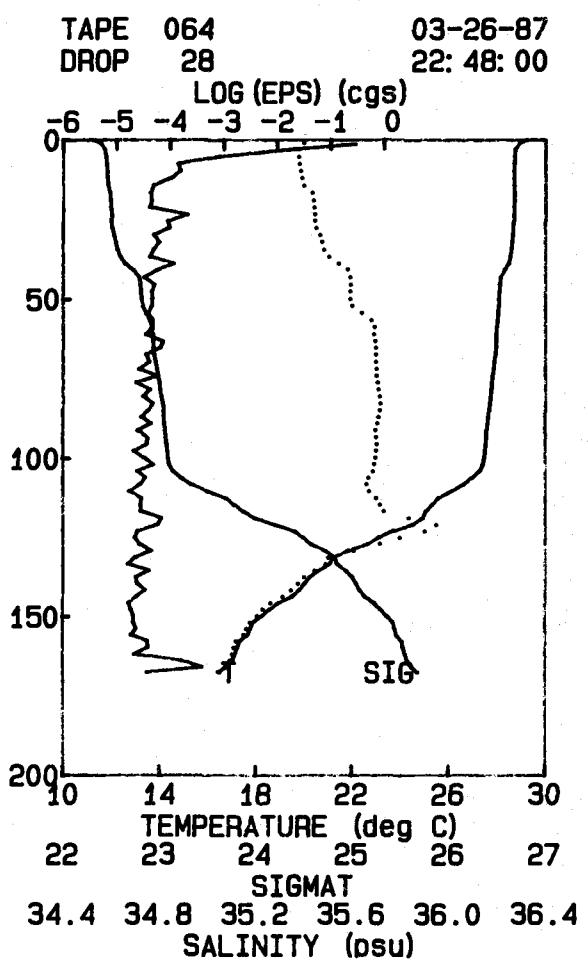
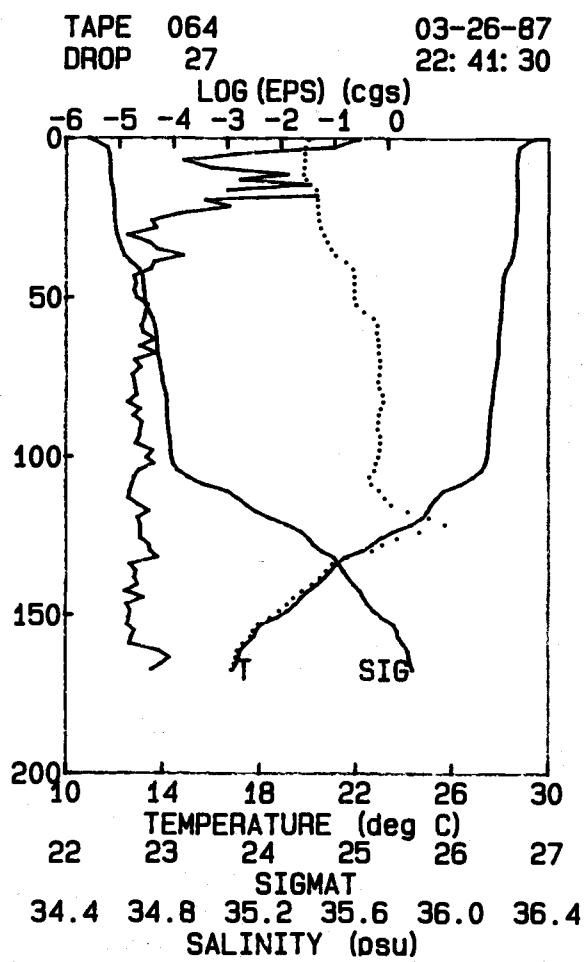
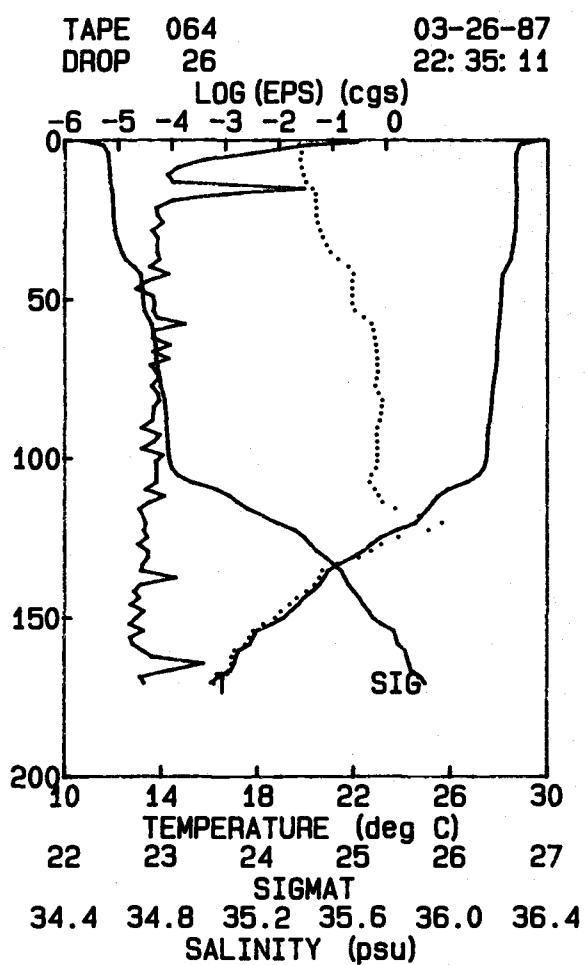
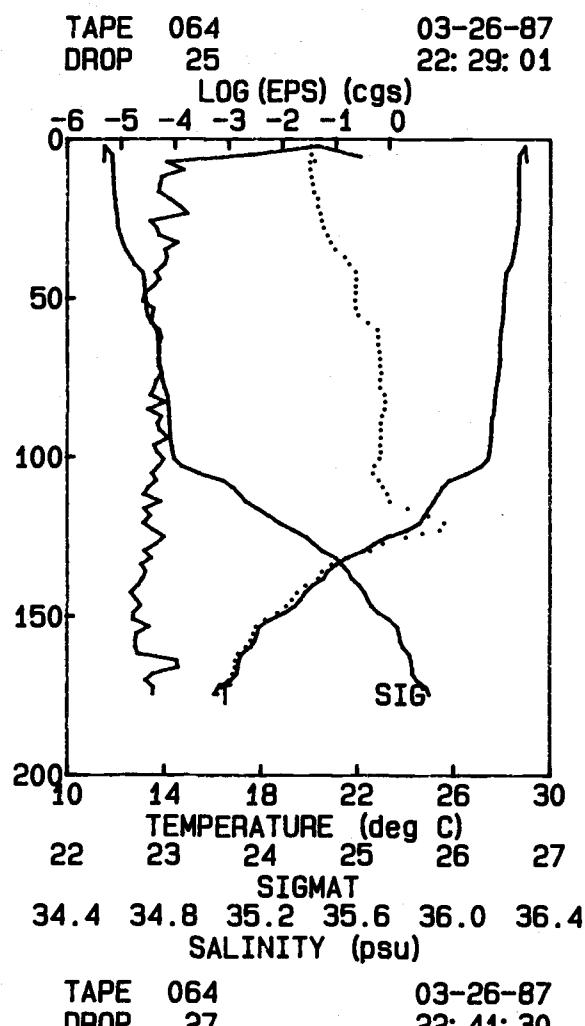
TAPE 063 03-26-87
DROP 52 19: 20: 19

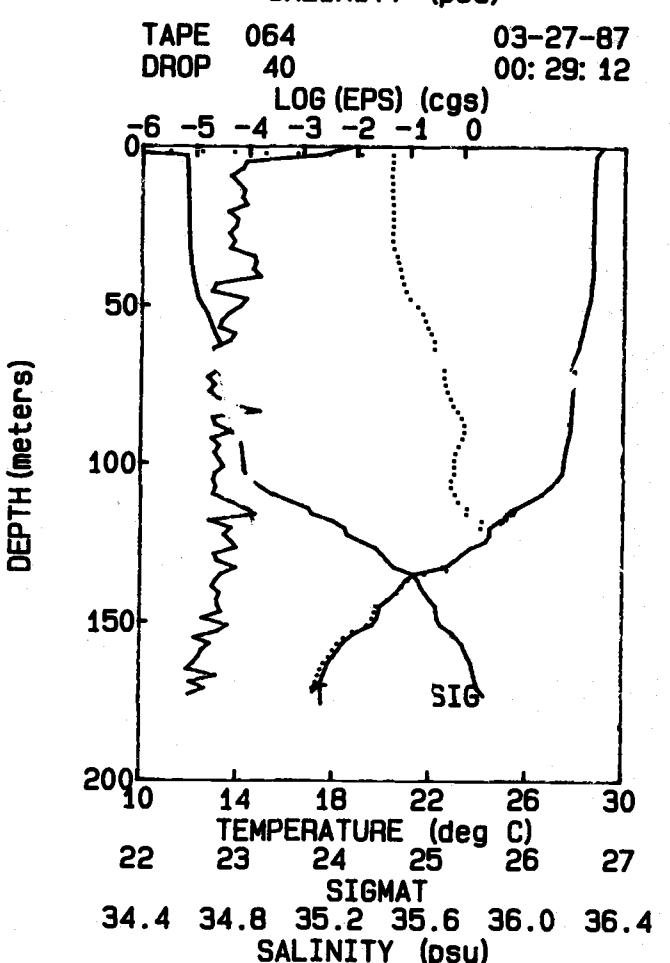
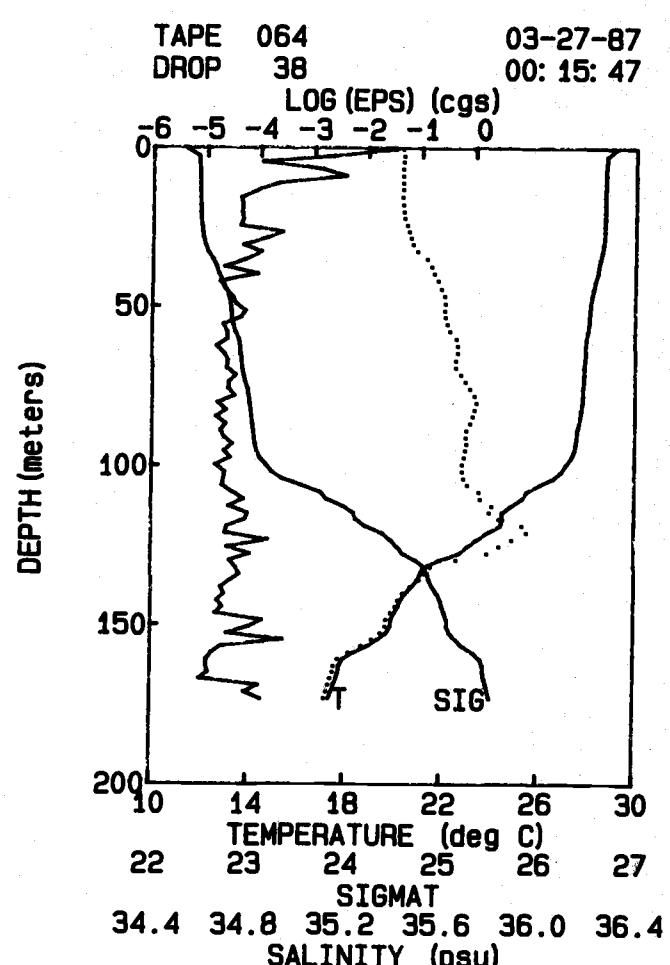
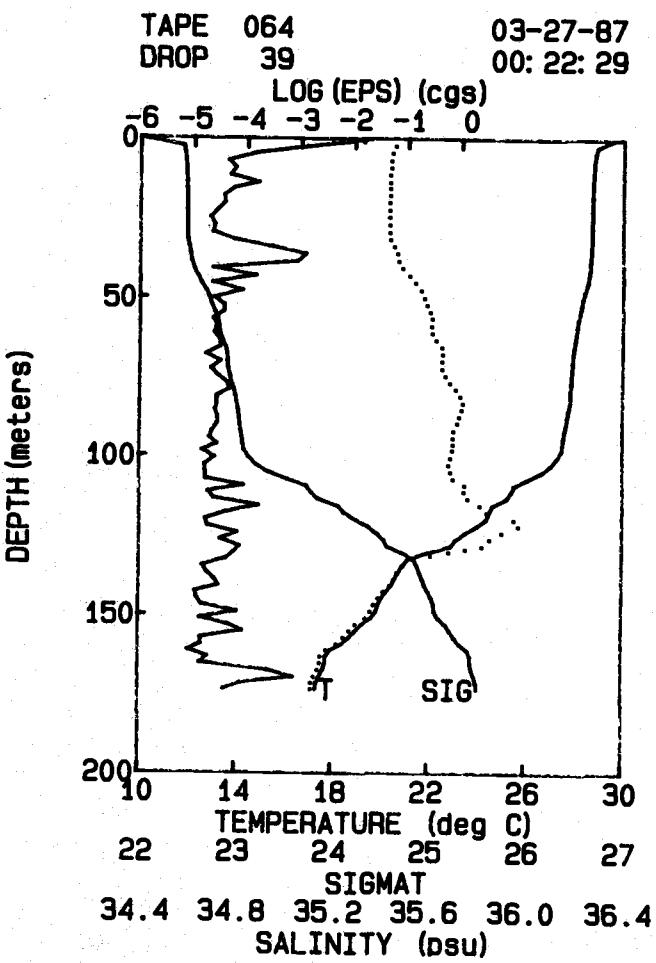
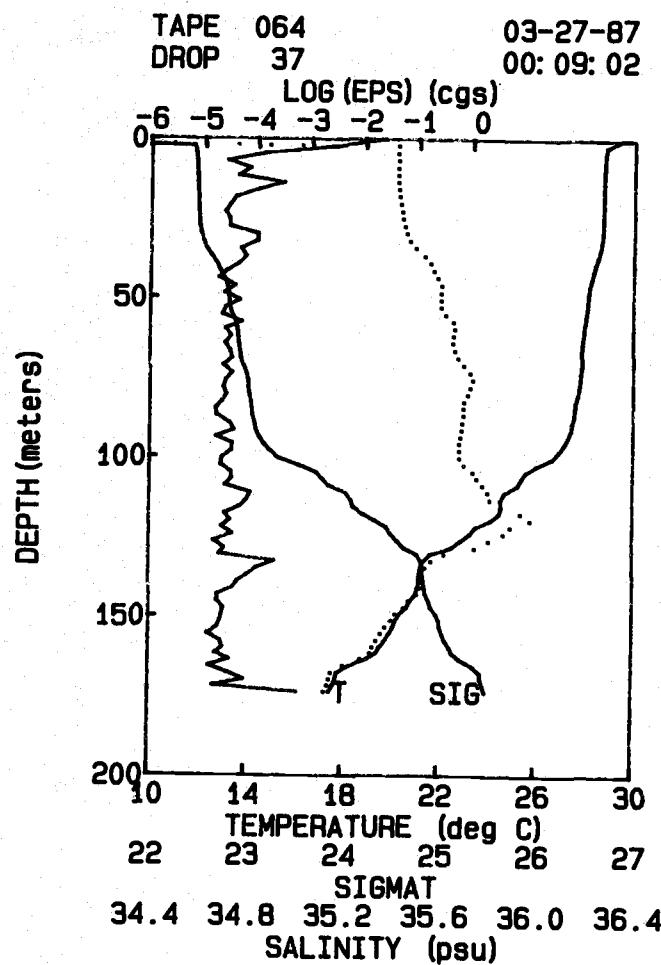
LOG (EPS) (cgs)



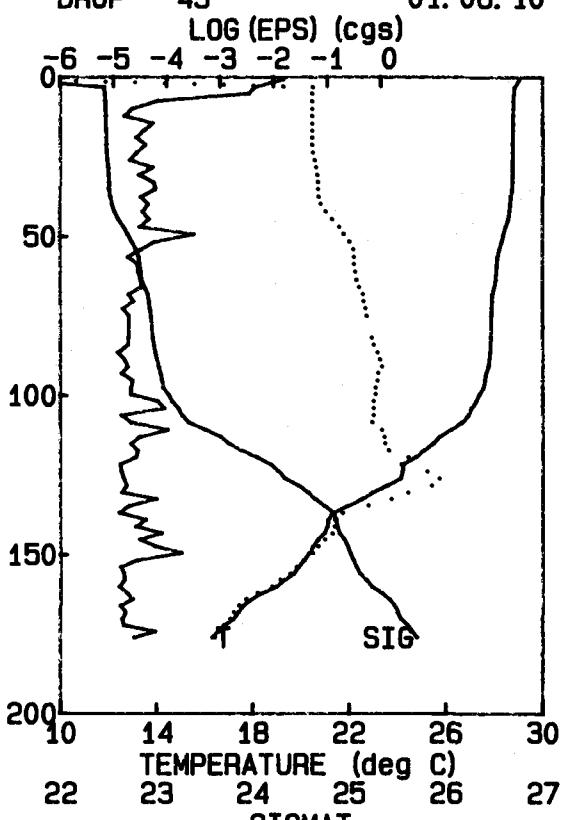
22 23 24 25 26 27
SIGMAT
33.8 34.2 34.6 35.0 35.4 35.8
SALINITY (psu)



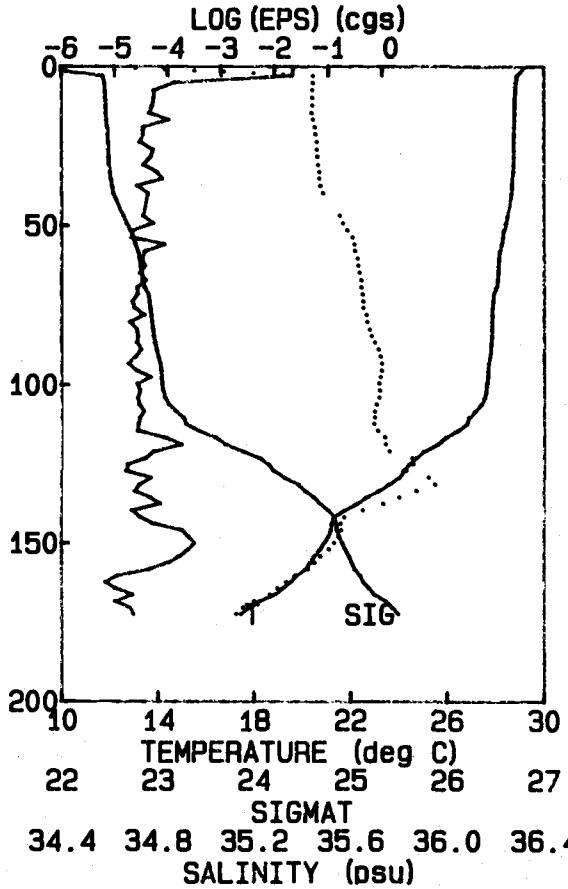




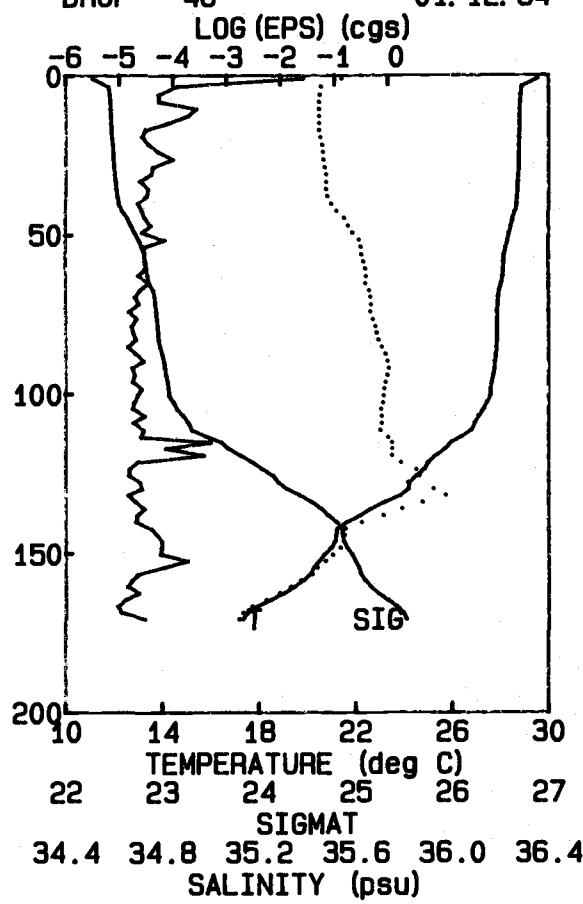
TAPE 064 03-27-87
DROP 45 01: 06: 10



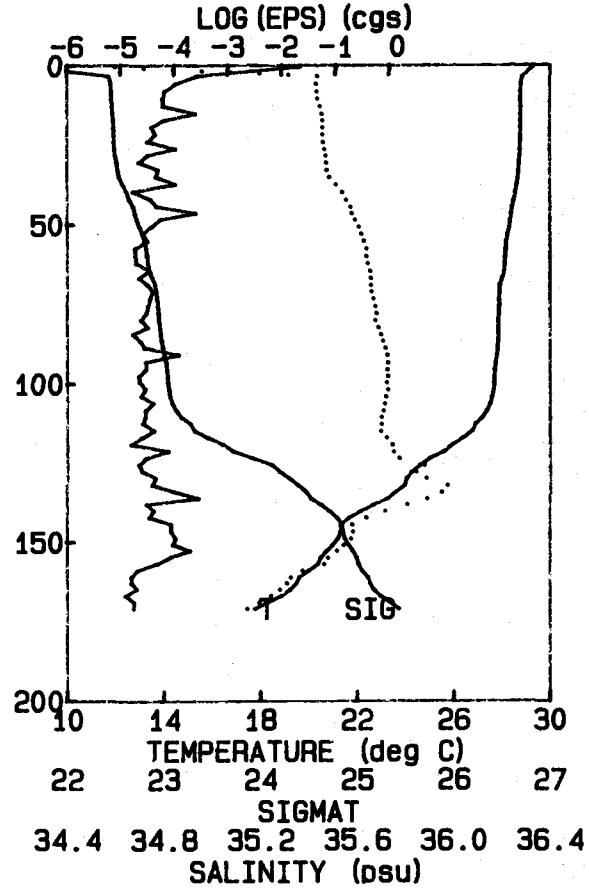
TAPE 064 03-27-87
DROP 47 01: 19: 48

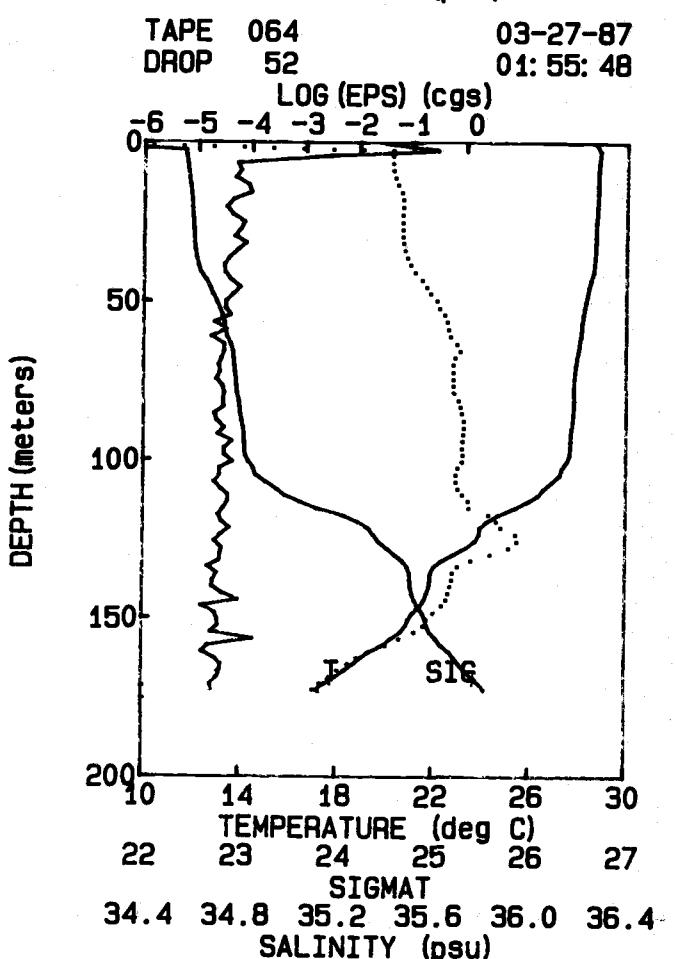
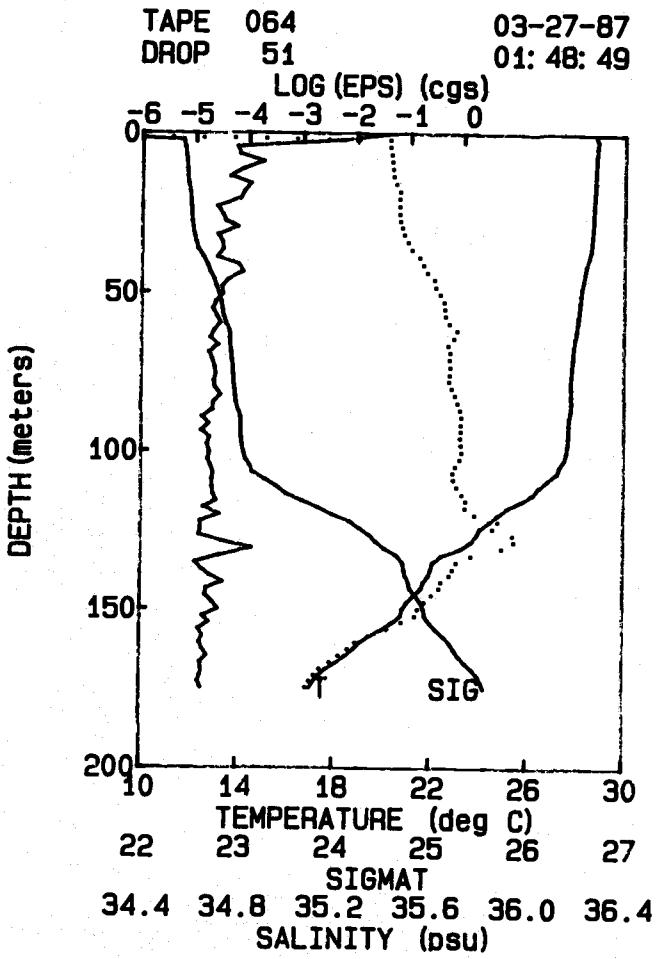
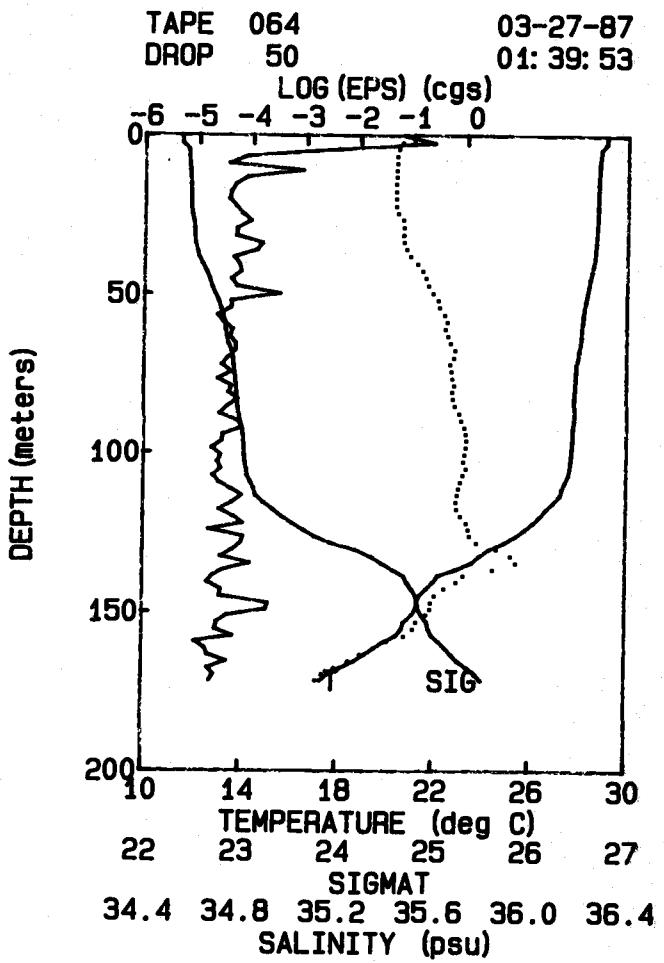
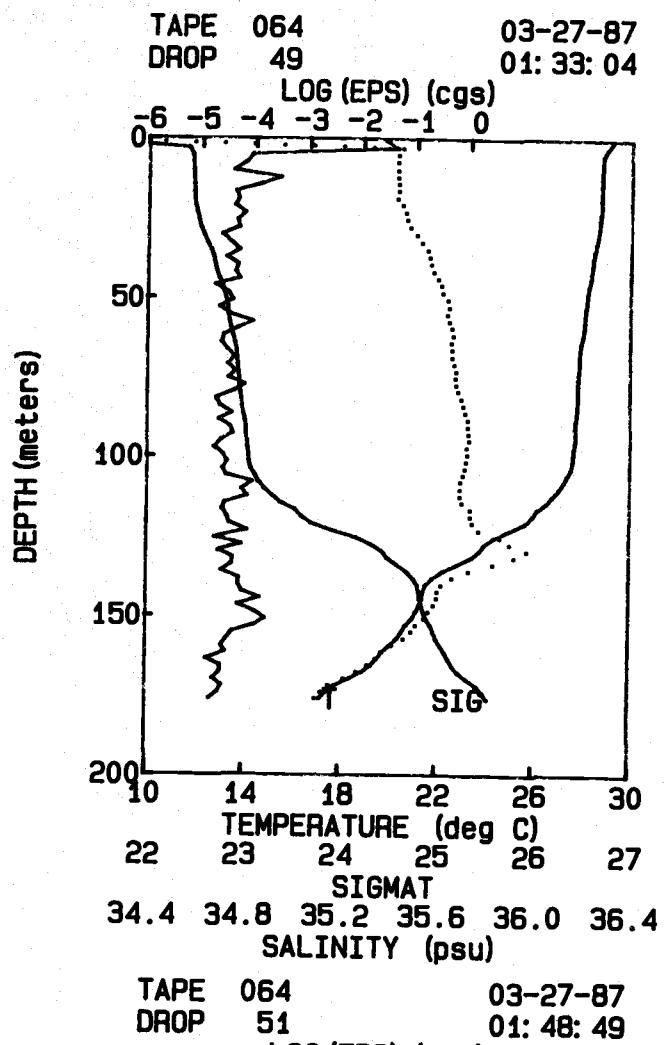


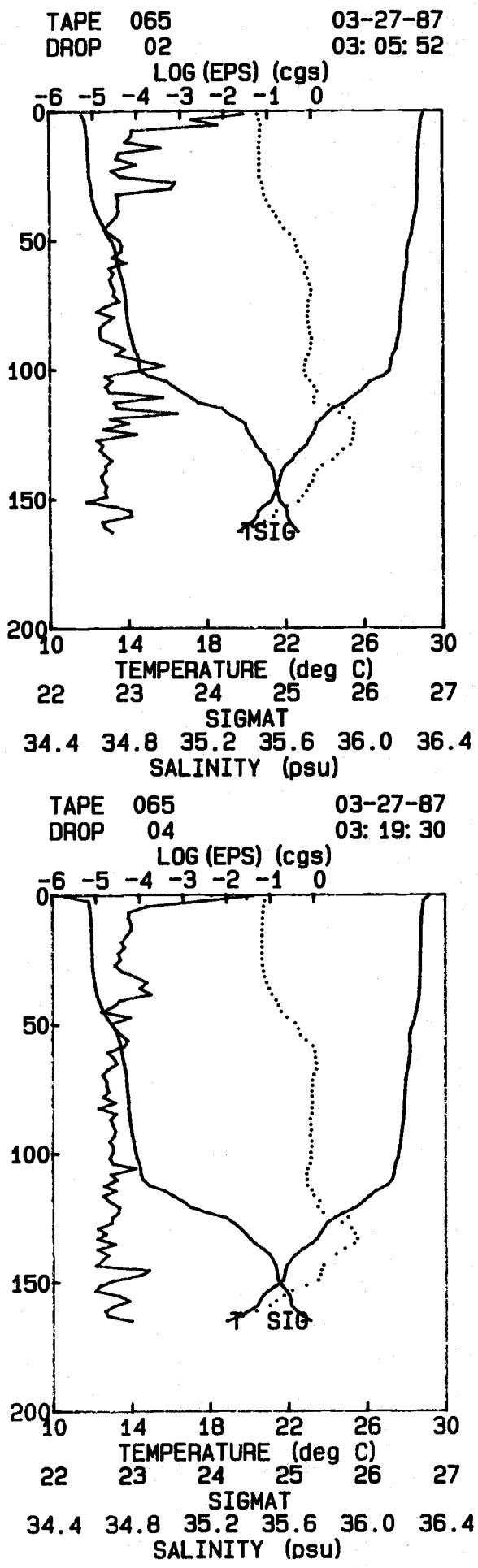
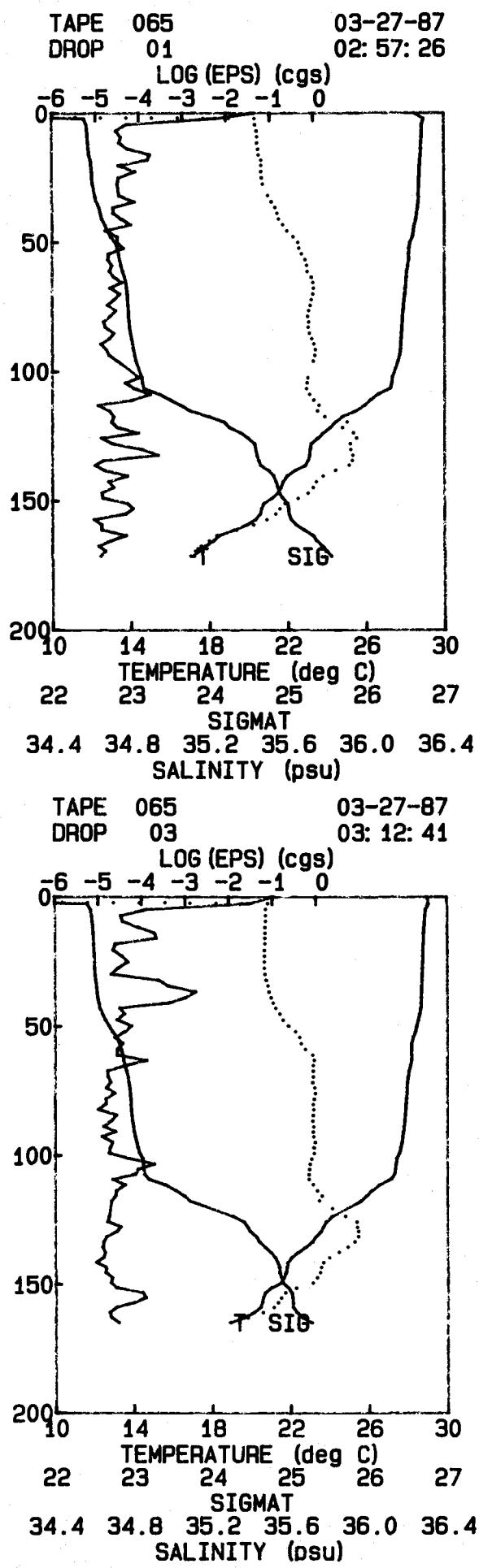
TAPE 064 03-27-87
DROP 46 01: 12: 54

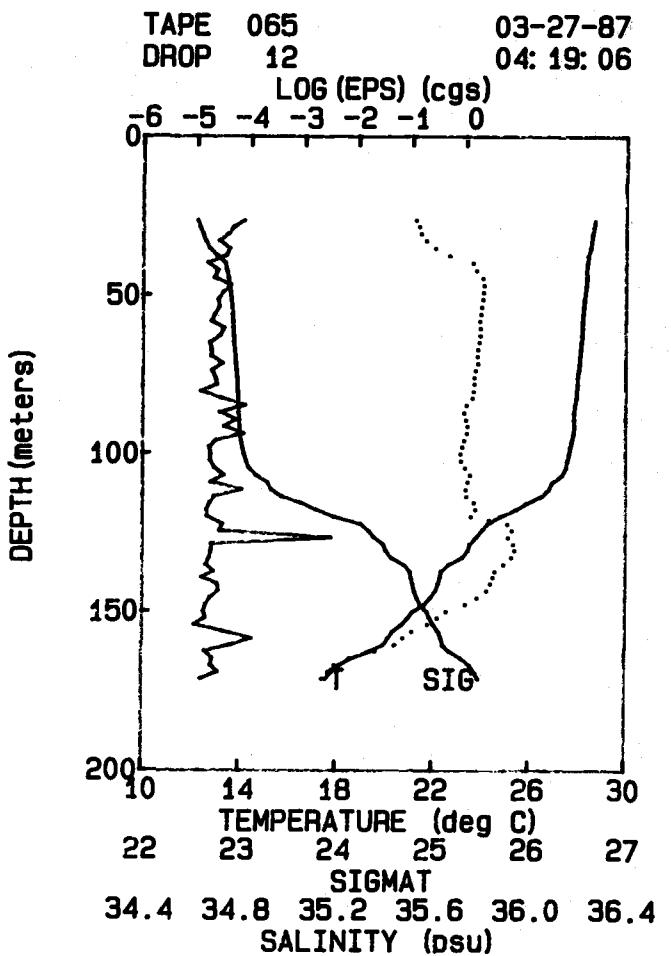
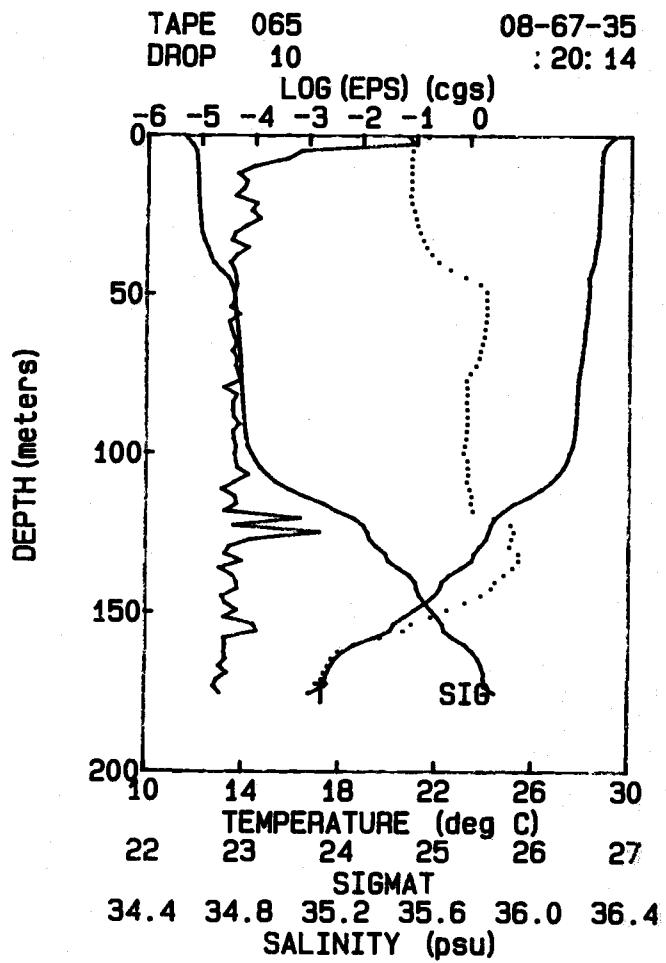
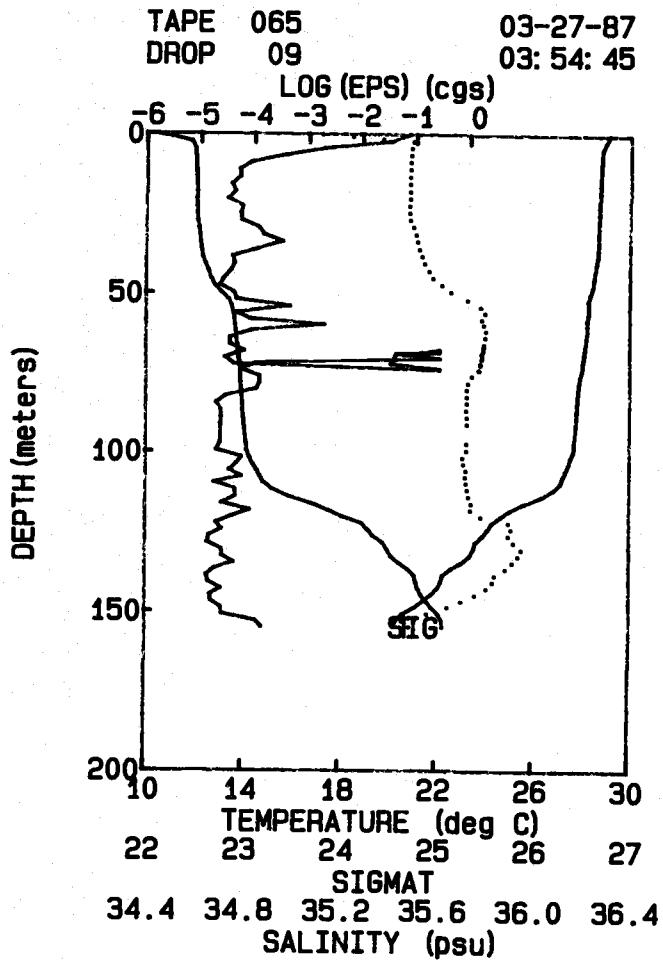


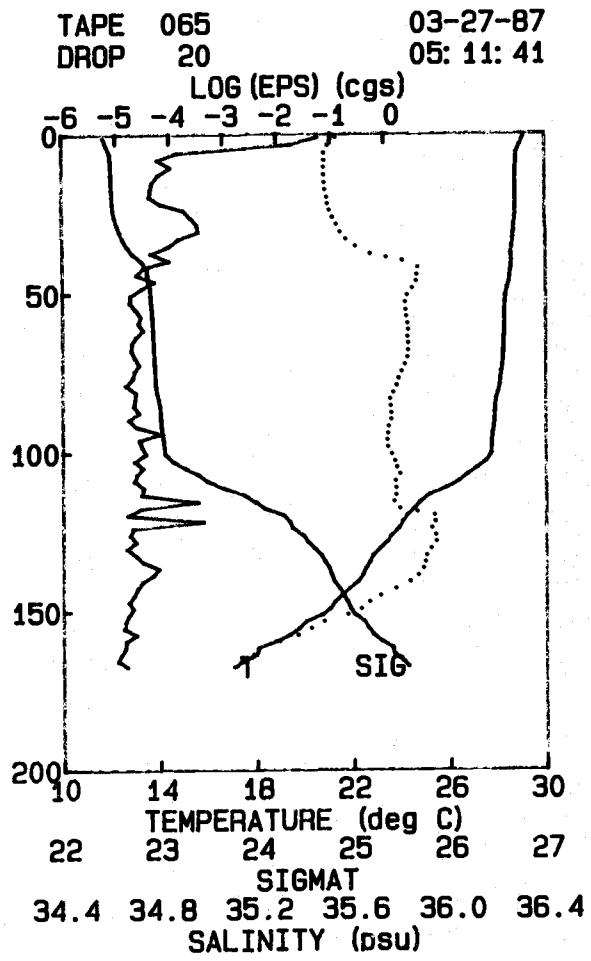
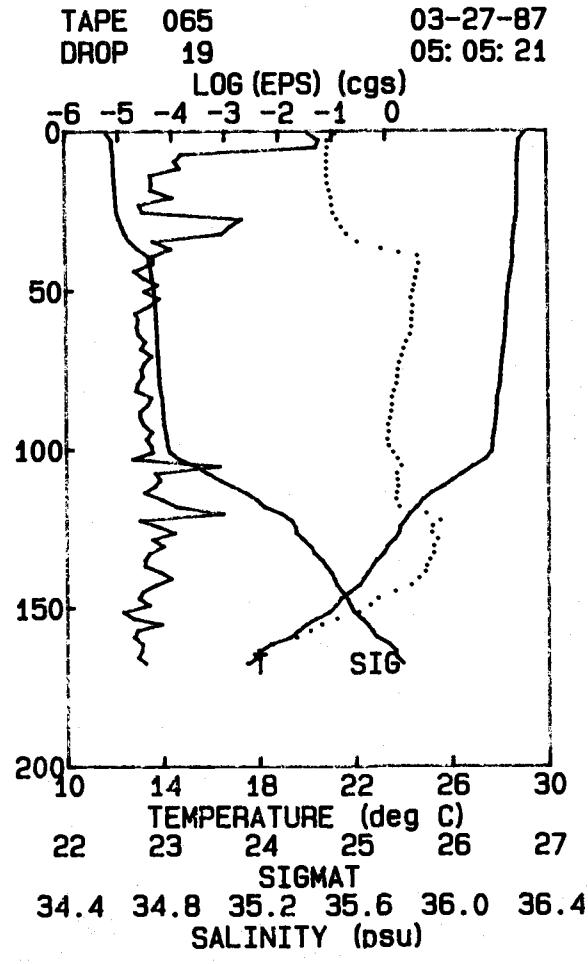
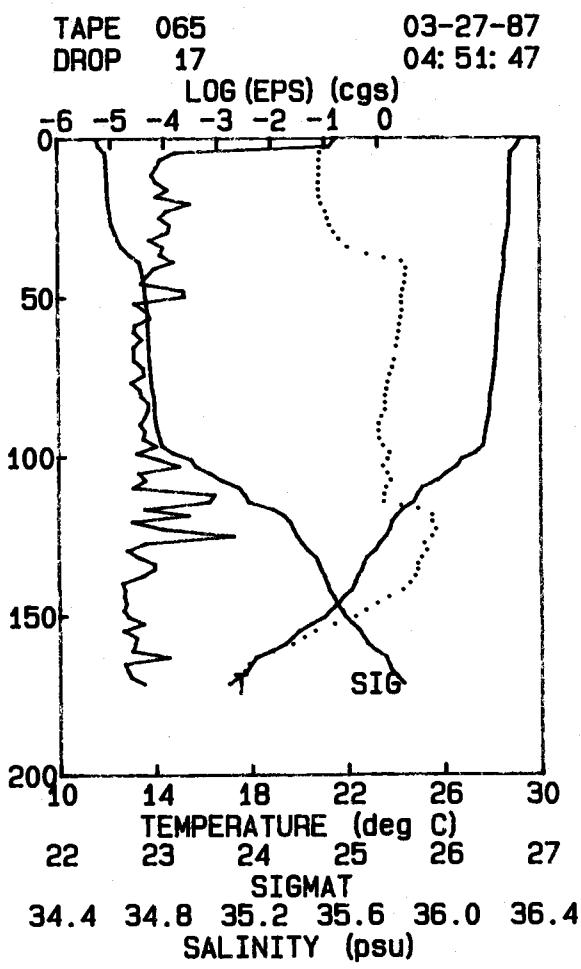
TAPE 064 05-27-85
DROP 48 01: 26: 30

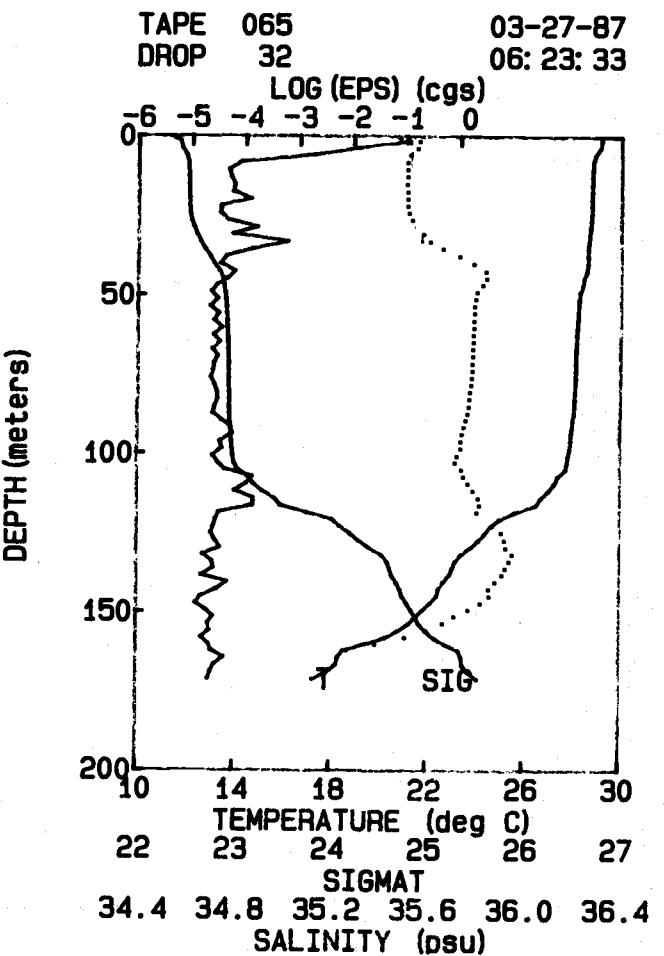
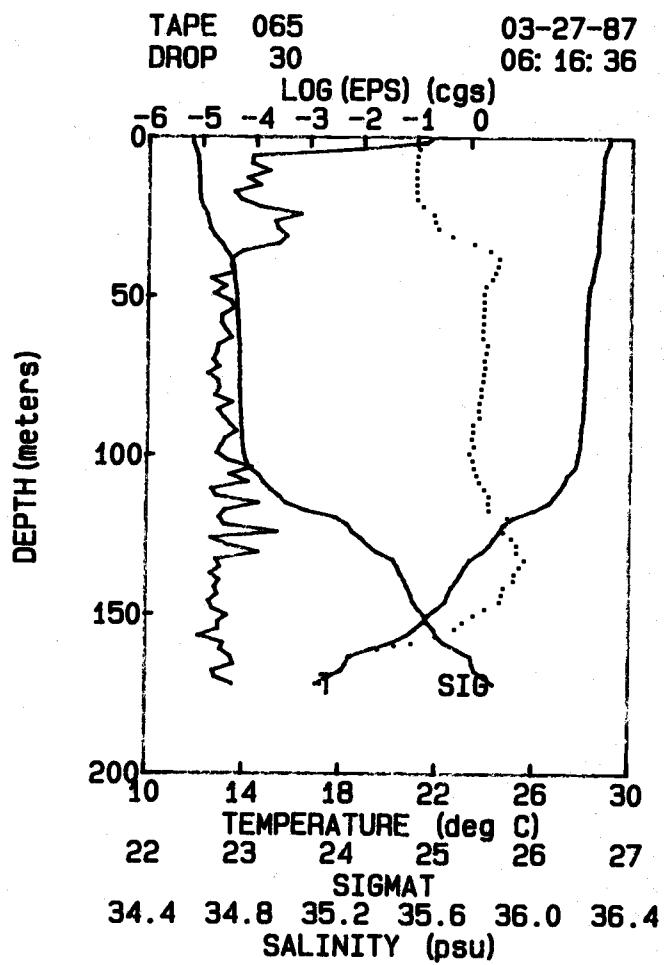
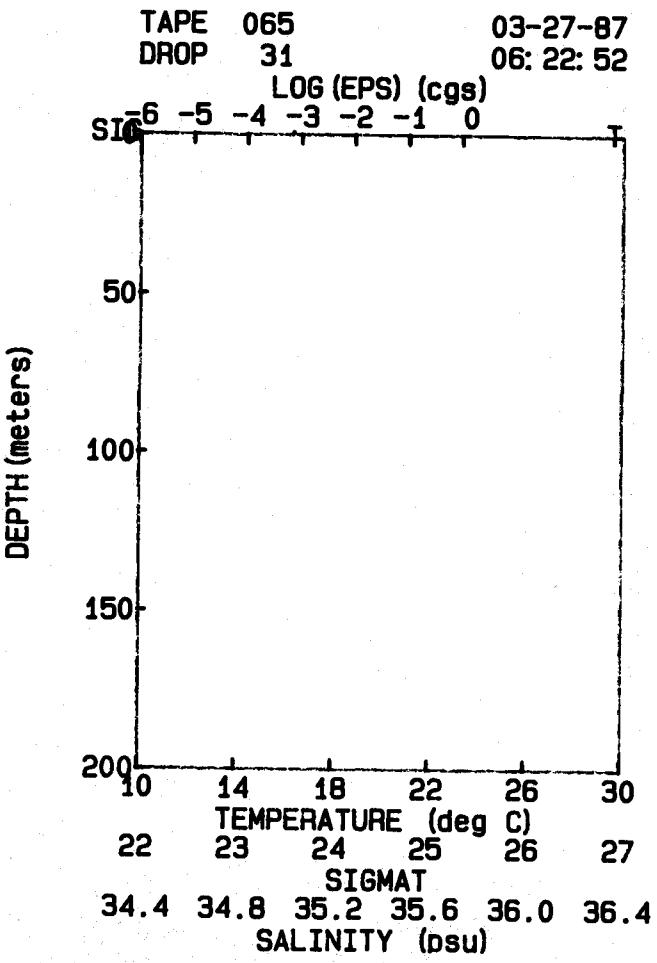
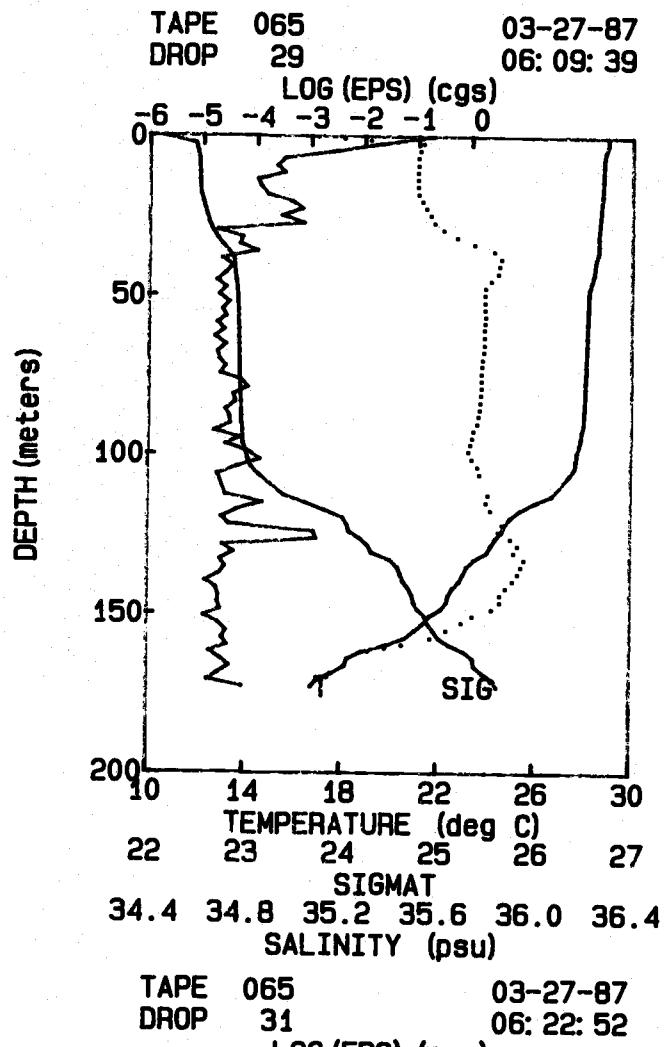


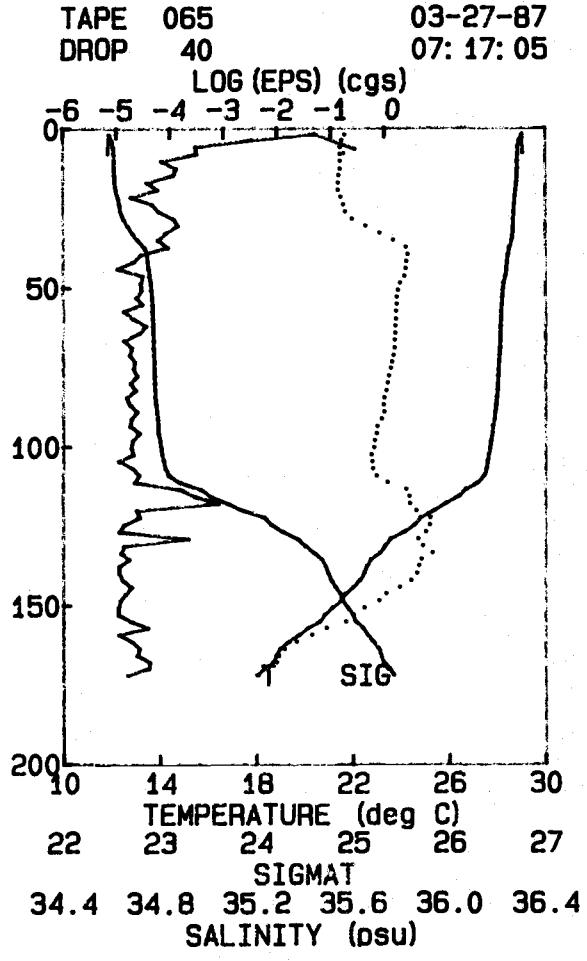
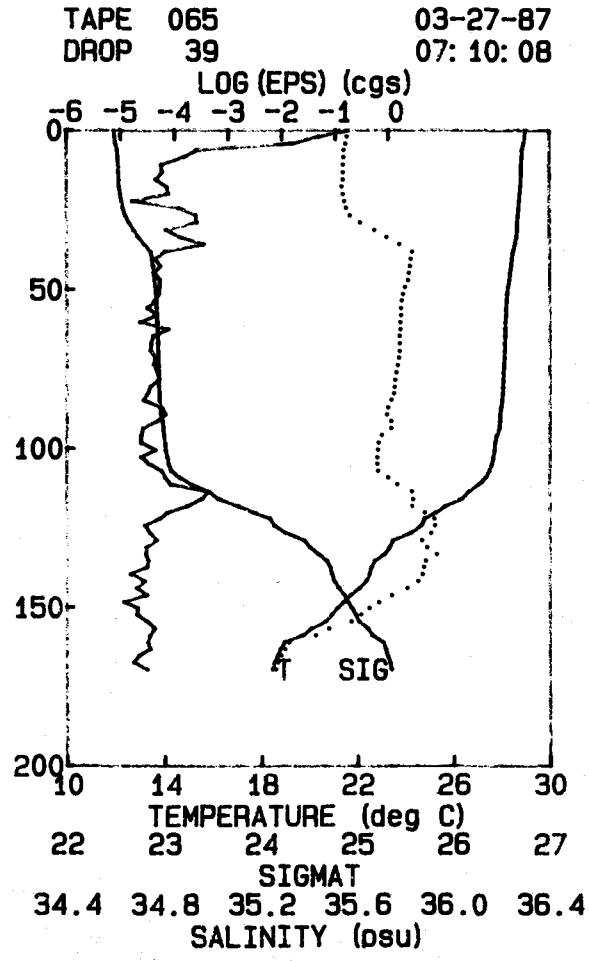
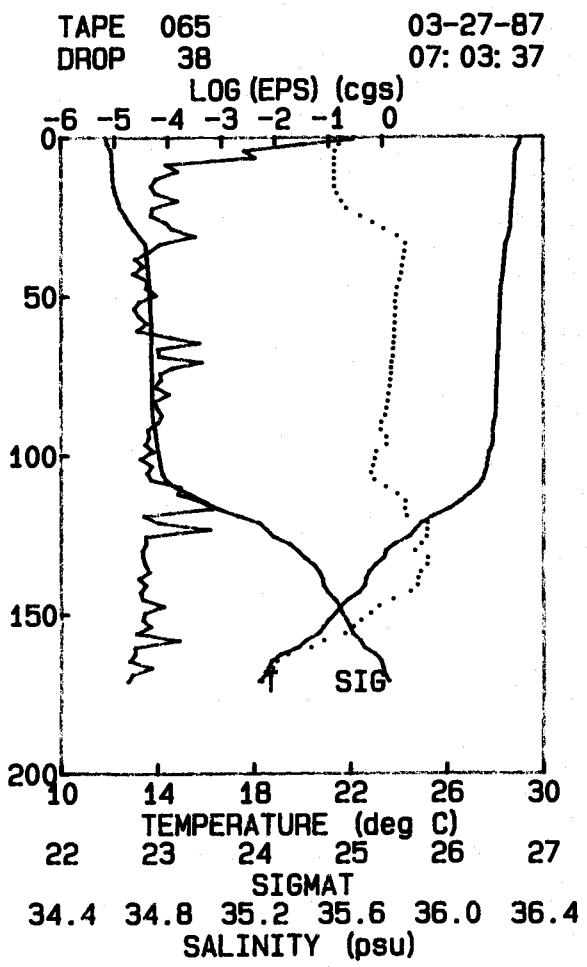
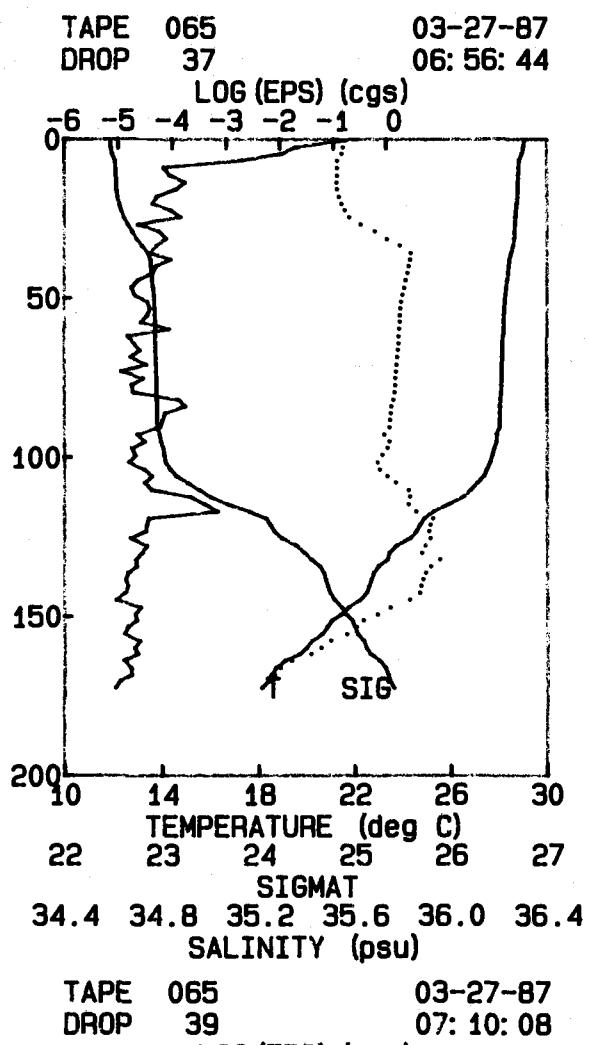


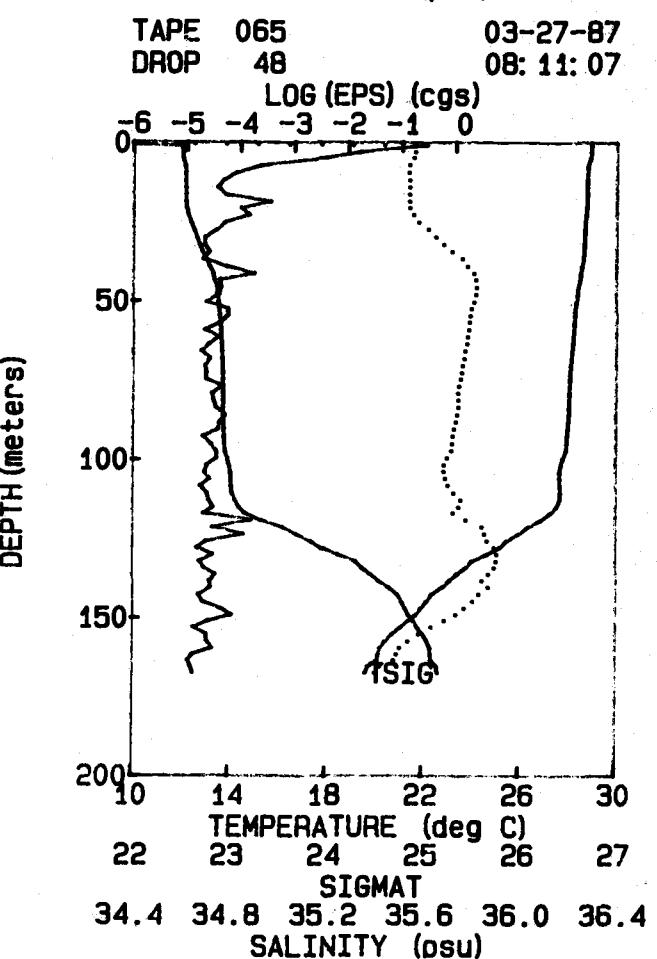
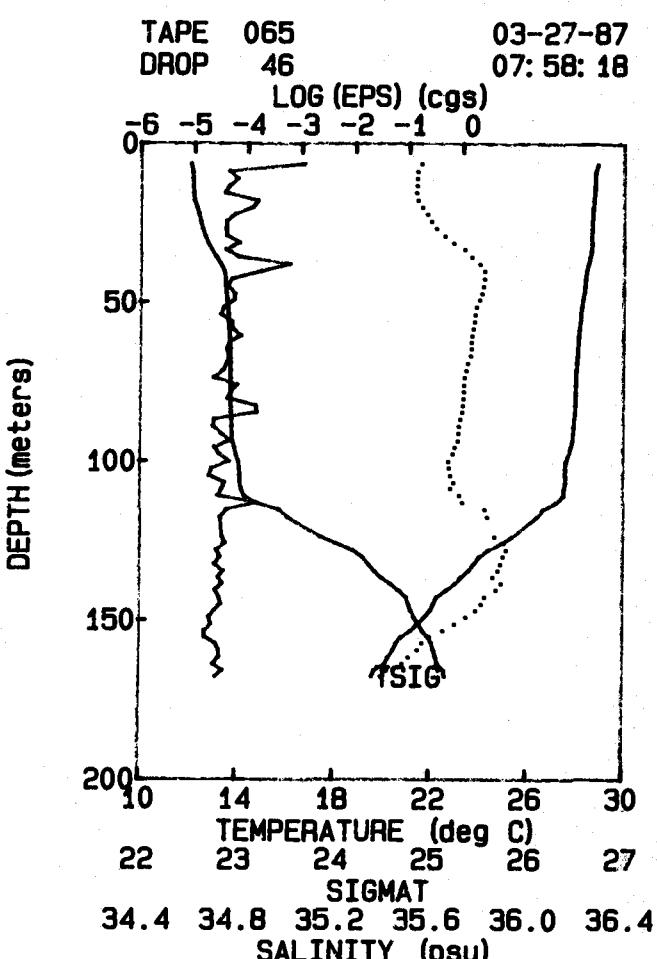
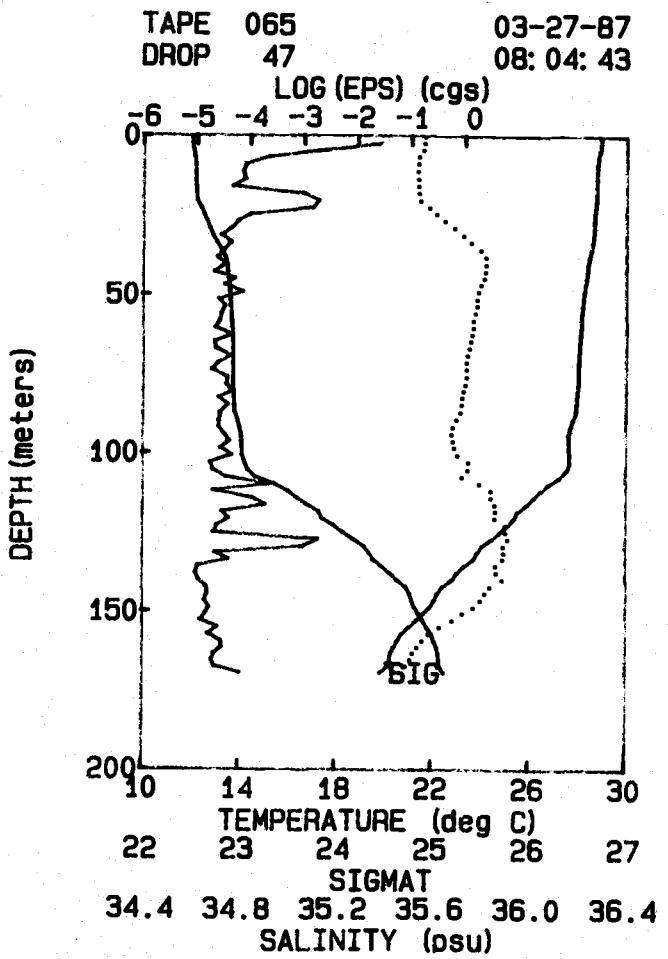
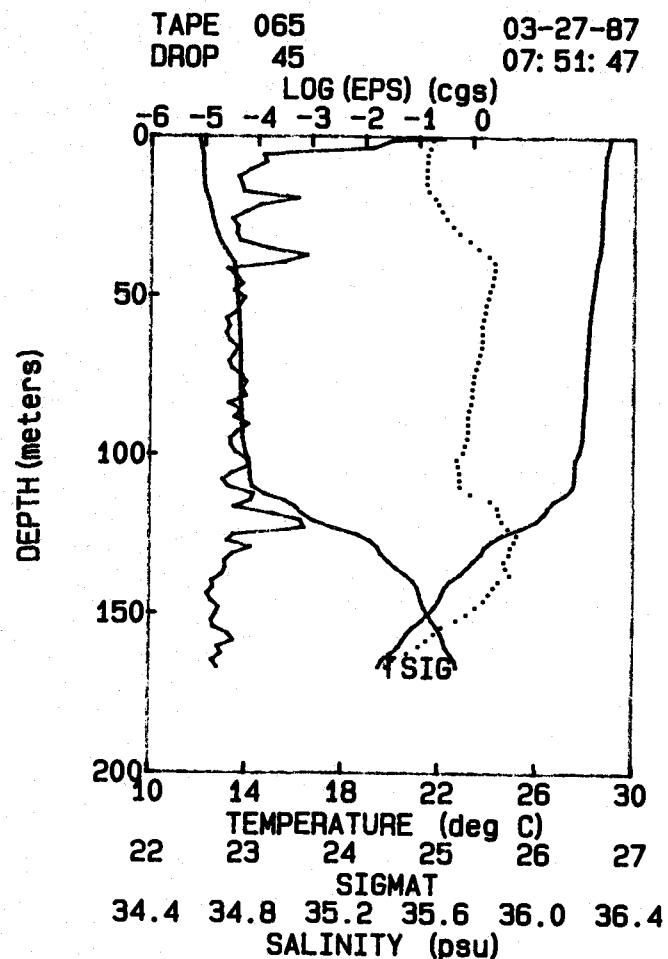






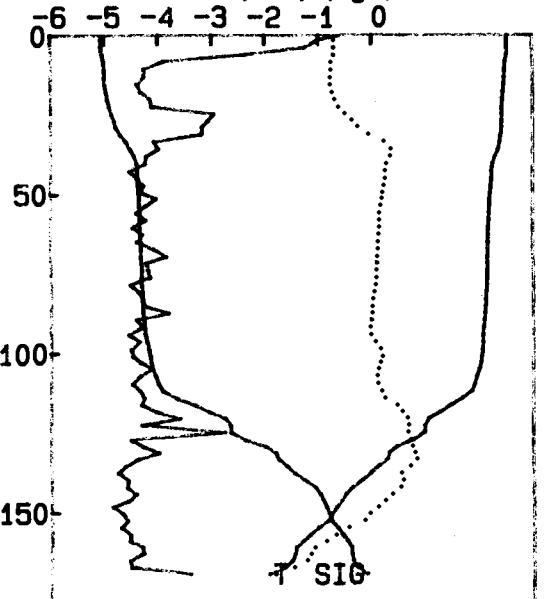






TAPE 065 03-27-87
DROP 53 08: 44: 00

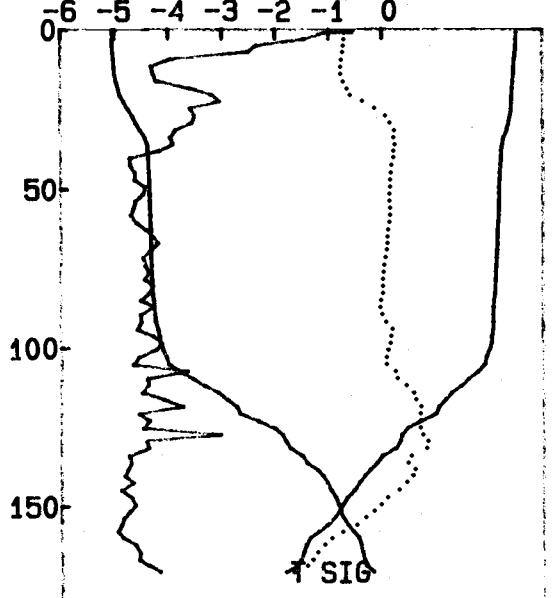
LOG (EPS) (cgs)



200 10 14 18 22 26 30
TEMPERATURE (deg C)
22 23 24 25 26 27
SIGMAT
34.4 34.8 35.2 35.6 36.0 36.4
SALINITY (psu)

TAPE 065 03-27-87
DROP 55 08: 57: 16

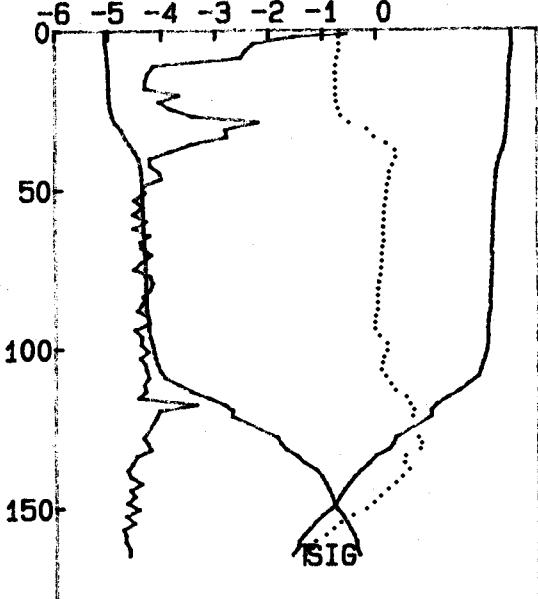
LOG (EPS) (cgs)



200 10 14 18 22 26 30
TEMPERATURE (deg C)
22 23 24 25 26 27
SIGMAT
34.4 34.8 35.2 35.6 36.0 36.4
SALINITY (psu)

TAPE 065 03-27-87
DROP 54 08: 50: 30

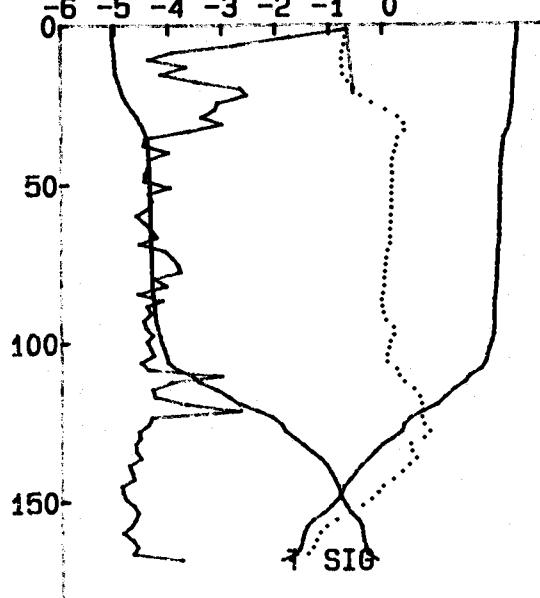
LOG (EPS) (cgs)



200 10 14 18 22 26 30
TEMPERATURE (deg C)
22 23 24 25 26 27
SIGMAT
34.4 34.8 35.2 35.6 36.0 36.4
SALINITY (psu)

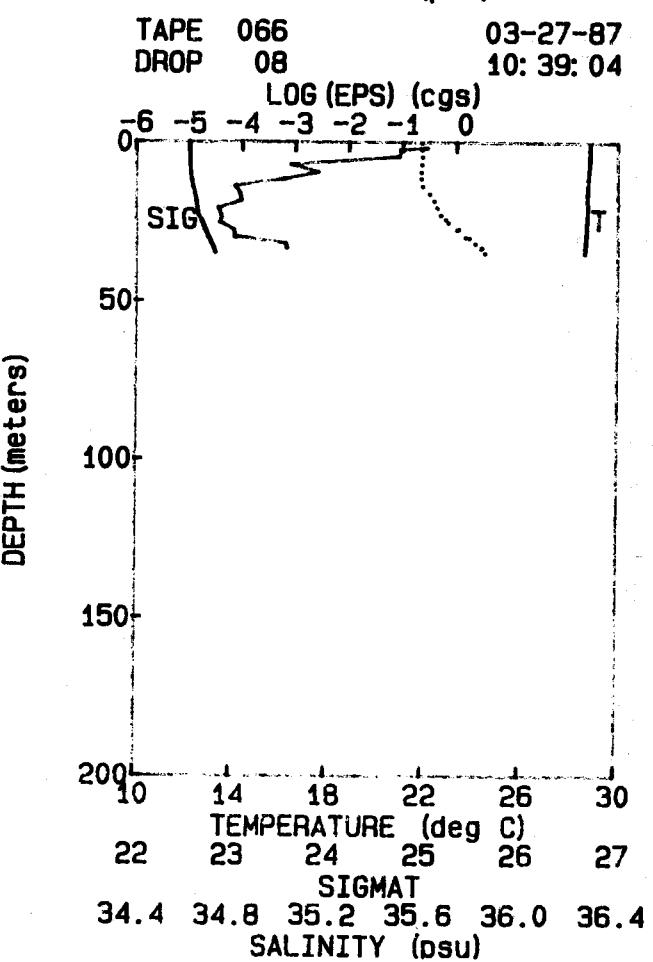
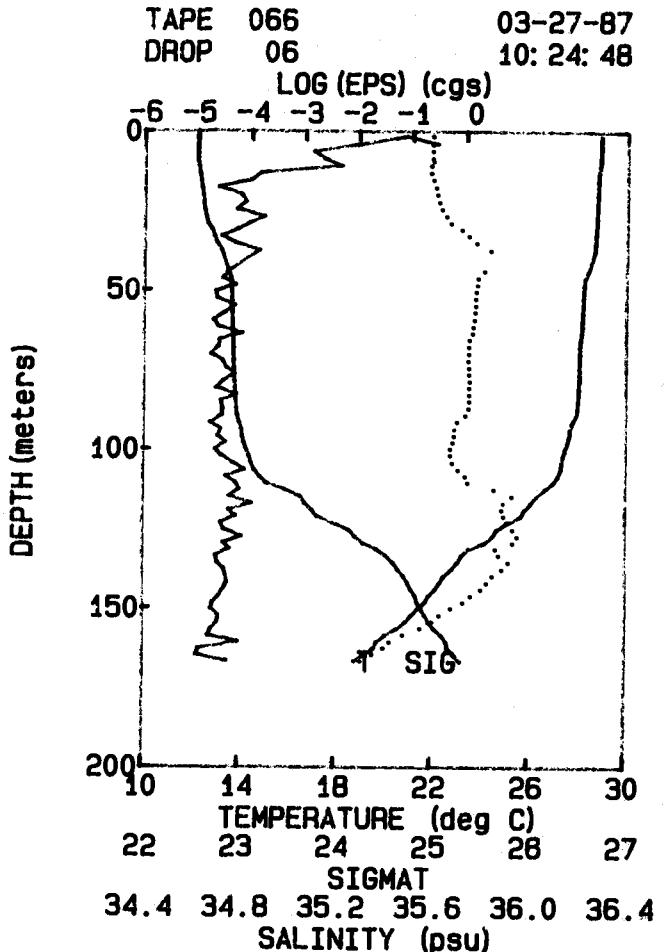
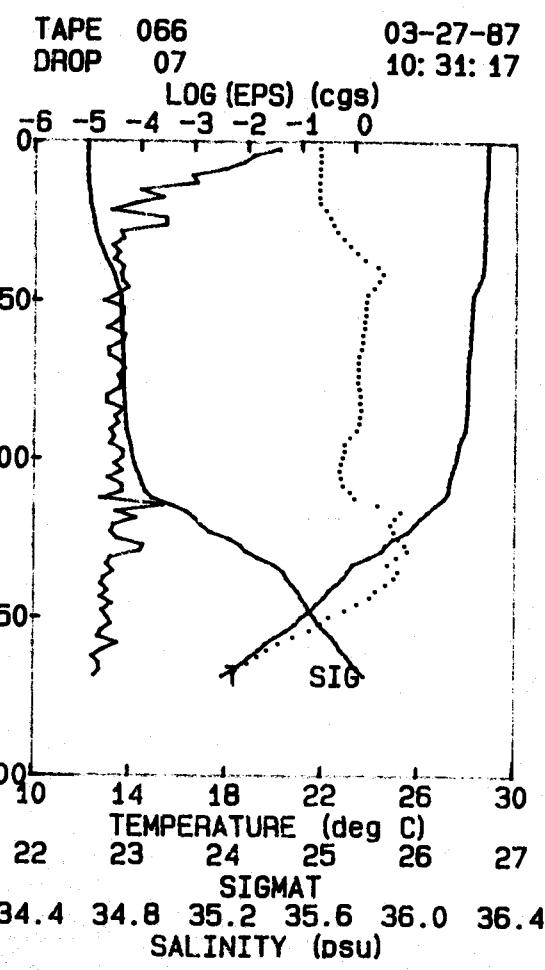
TAPE 065 03-27-87
DROP 56 09: 03: 45

LOG (EPS) (cgs)

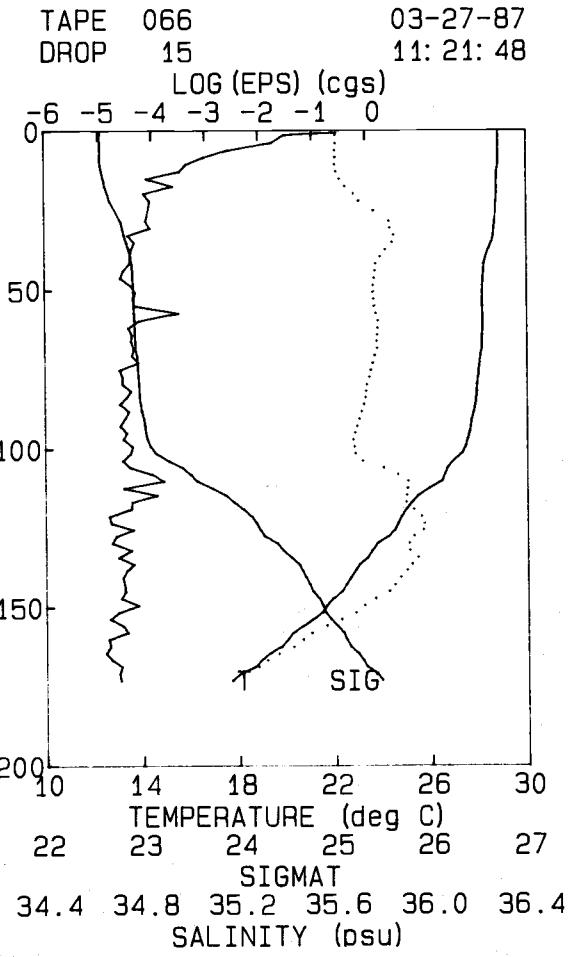


200 10 14 18 22 26 30
TEMPERATURE (deg C)
22 23 24 25 26 27
SIGMAT
34.4 34.8 35.2 35.6 36.0 36.4
SALINITY (psu)

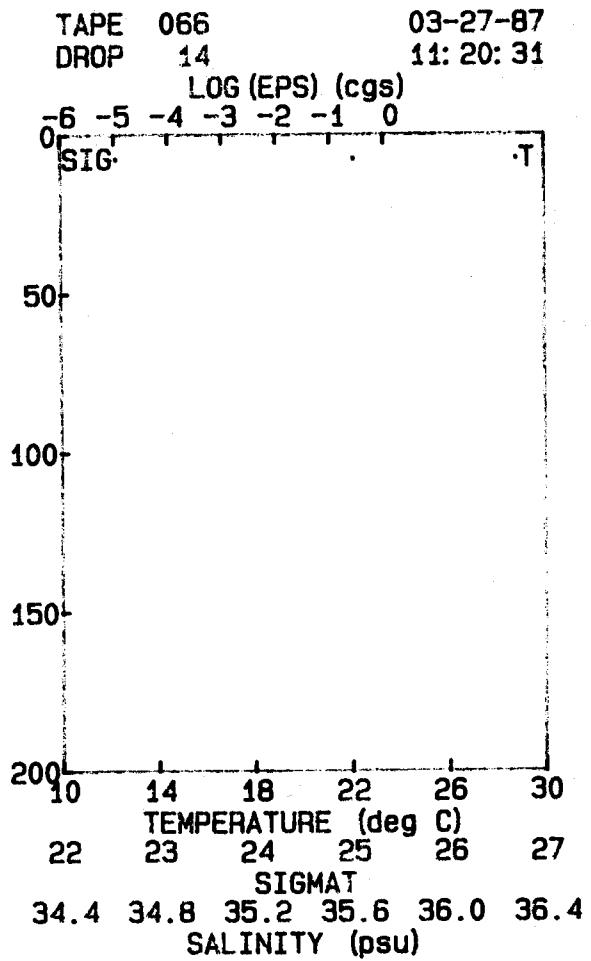
DEPTH (meters)



DEPTH (meters)



DEPTH (meters)



DEPTH (meters)

