I.O.S.

CTD DATA COLLECTED IN THE ROCKALL TROUGH
ON RRS SHACKLETON CRUISE 5c/78
DURING JASIN 1978

BY

D S COLLINS

REPORT NO 147

1982

**INSTITUTE OF
OCEANOGRAPHIC
SCIENCES**

NATURAL ENVIRONMENT RESEARCH COUNCIL

INSTITUTE OF OCEANOGRAPHIC SCIENCES

Wormley, Godalming,
Surrey, GU8 5UB.
(0428 - 79 - 4141)

(Director: Dr. A.S. Laughton FRS)

Bidston Observatory,
Birkenhead,
Merseyside, L43 7RA.
(051 - 653 - 8633)

(Assistant Director: Dr. D.E. Cartwright)

Crossway,
Taunton,
Somerset, TA1 2DW.
(0823 - 86211)

(Assistant Director: M.J. Tucker)

INSTITUTE OF OCEANOGRAPHIC SCIENCES

WORMLEY

CTD data collected in the Rockall Trough

on R.R.S. Shackleton Cruise 5c/78

during JASIN 1978

by

D.S. Collins

I.O.S. Report No. 147

1982

CONTENTS

3

ABSTRACT

This data report presents CTD
data trom Shackleton cruise
1978/5C, which formed part of
the JASIN experiment in 1978.
The data consists mostly of
deep CTD protiles, but in-
cludes shallow CTD yoyos made
during the first and second
multiship experiments. The
method of data processing,
using G-EXEC on the NERC
Honeywell computer, is
described in detail.

5
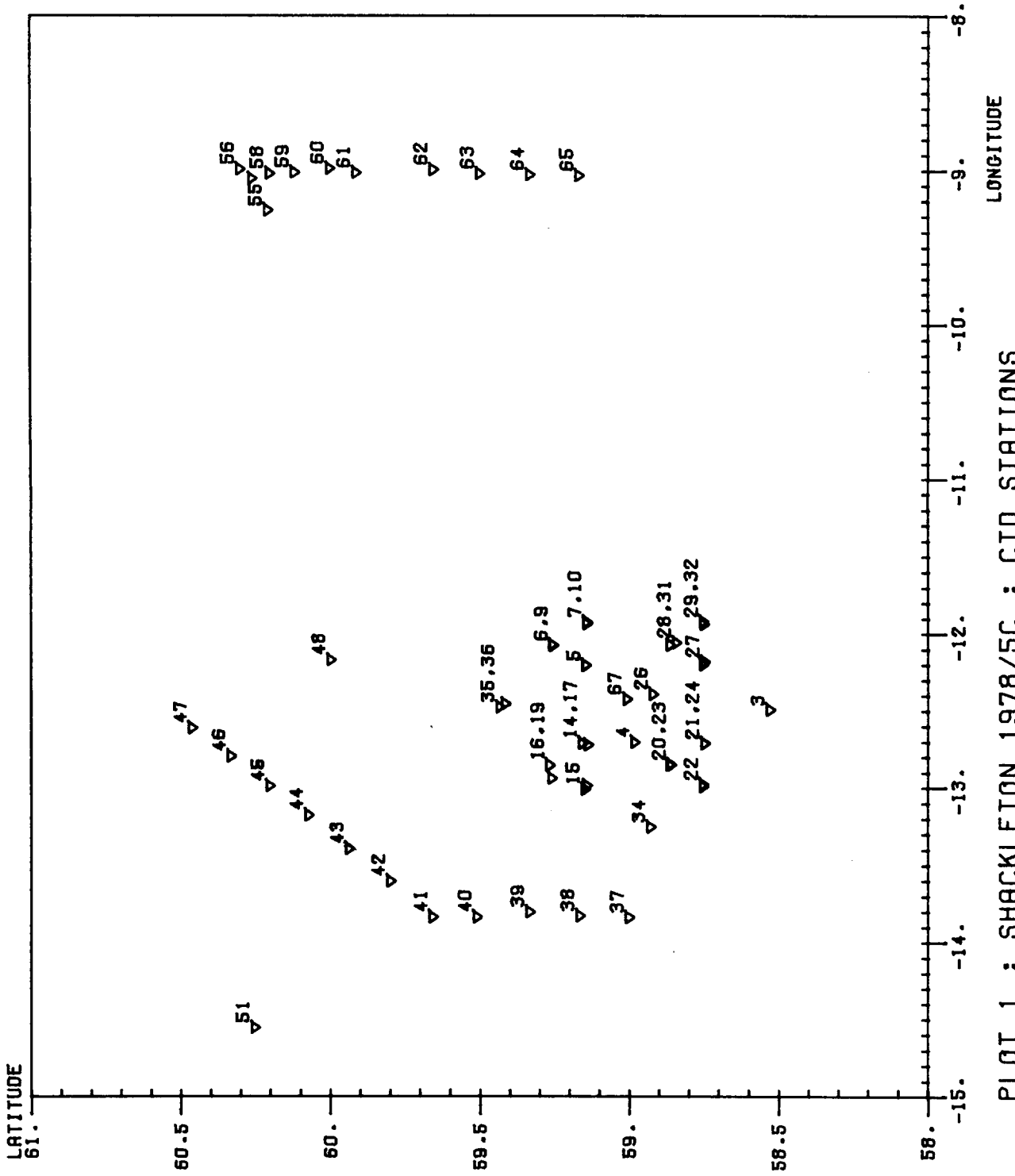
PLOT 1 : SHACKLETON 1978/5C : CTD STATIONS

COLLECTION AND CALIBRATION OF DATA

The distribution of stations is indicated in Plot 1.
These form various patterns. There are two sections
across parts of the Rockall Trough (i.e. stations 37
to 47 , and stations 56 to 65) and a series of
triangles, the corner of each triangle being
repeated (i.e. stations 5 to 32 excluding 26). In
addition there are stations before the laying of
moorings and two series of CTD yoyos to a depth of
approximately 120 metres. The centre of the JASIN
Fixed Intensive Array (FIA) is at 59.0 N, -12.5 W.
For positions of other moorings and measurements,
refer to the Royal Society document 'Air-Sea In-
teraction Experiment : Summary of 1978 Field Experi-
ment'.

Table 1 lists the CTD stations of the cruise and in-
cludes general information. In refering to Plot 1,
it should be noted that stations labelled 5,15,22
and 27 are repeated stations, the station pairs
being 5+8, 15+18, 22+25 and 27+30. The Reference
column in Table 1 (REF) gives a JASIN code for each
triangle, e.g. C3, a corner being N, E or W. Un-
labelled plotted stations may be identified with
reference to Table 1.

For the deep CTD dips, data are recorded on the des-
cent only, the lowering rate being approximately 1
m/sec. The start and stop times for a dip are the
times at the top and bottom of the dip respectively,
these refering to the start and stop of data
recording. The column 'DAY' is the day number in
the year 1978, day 237 being 25 August, day 244
being 1 September and day 251 being 8 September.

The latitude and longitude were obtained by satel-
lite fixes and LORANC/DECCA, mainly the last com-
bination. Water depth was from an echo sounder, a
correction having been applied for Carter area 9.
Where the water depth is not available, an approx-
imate value may be obtained from a chart. For sta-
tions where comments include 'OK', CTD data will be
found in this report. For stations with comments
'YOYO', data is also available but is not displayed
in this report because of the large number of
profiles obtained.

Calibration is by water bottle and reversing ther-
mometer. Most stations have calibration points and
the bulk of these are on the descent. Table 1 in-

7

dicates calibration groups A to D (column 'CAL').
For a summary of the calibration equations used,
refer to Table 2 and see Plots 2 to 9 for presenta-
tion of the calibration points. Comparison is made
between the reversing bottle temperatures and bottle
salinities, and the calculated values deduced from
the CTD monitor display recorded immediately before
and after the bottle was triggered. If these two
sets of values from the display differ, indicating a
gradient, the comparison is made with additional
care. Any points which are clearly in error are
eliminated (i.e. where the bottle and CTD seem to
have measured a different water sample).

The calibration procedure includes pressure, tem-
perature and salinity. Pressure, deduced from the
difference between protected and unprotected ther-
mometers, is compared with CTD monitor values and a
correction determined. A temperature correction is
likewise obtained. The CTD monitor provides pres-
sure, temperature and conductivity. Salinity is
calculated from corrected pressure and corrected
temperature and the displayed conductivity. The
salinity correction is generally considered as al-
most constant for all salinities but the correction
may drift in time and may suffer sudden changes ,
for instance by clogging of the cell with plankton.
In this report, a best linear fit was obtained for
the calibration points giving a varying calibration
with salinity. Such variation is not as easy to ex-
plain by cell blockage as is a constant correction,
but could be related to an imperfect pressure
calibration which is unusual in form for stations 3
to 55 and extremely large for stations 57 to 67.
The time behaviour of salinity could also be related
to electronic problems and subsequent repairs.
Where there has been a steady drift in calibration,
it has been necessary to choose reasonable but
somewhat arbitary times for a change of applied cor-
rection.

The final calibrated data was compared with the
calibration points to check the applied corrections.
For this the pressure was assumed correct and the
temperature and salinity from the bottle samples
were compared with the values in the final data
lists. Root mean square differences were very
similar, though slightly larger, to those calculated
from the plotted calibration points as used in
determining the calibration equations. Table 3 sum-
marizes the differences which are similar to those
on other IOS cruises using CTDs. For example the
difference for salinity is almost identical to that
on Discovery cruise 117, although the value for tem-

8

perature was twice as large in this report. The root mean square differences in this Table may be taken as an indication of the absolute accuracy of the final data.

There were occasional problems with the CTD electronics such that the data is not always of the highest quality. These problems were more severe in the previous cruise (Shackleton 1978/5B) which also formed part of the JASIN experiment. The CTD data presented here is considered to be the best CTD contribution from Shackleton.

CTD data was recorded on magnetic tape in digidata format. No pre-processing could be performed at sea, so the recorded data is raw and at a rate of 32 scans per second.

SUMMARY OF CTD STATIONS FOR SHACKLETON CRUISE 1978/5C
******* ** *** ******** *** ********** ****** *******

CTD STN	DAY	START TIME	END TIME	LATITUDE	LONGITUDE	WATER DEPTH	MAX CTD DEPTH	CAL	REF	COMMENTS
===	===	====	====	========	=========	=====	=====	===	===	========
		hhmm	hhmm			m	db			
3	237	2043	2113	58 31.9N	12 29.5W		1011	A		OK; NOTE (1)
4	238	0257	0353	58 59.0N	12 42.0W			A		ABANDON : SENSOR COVER LEFT ON
4/1	238	0422	0506	58 59.0N	12 42.0W	1522		A		NO DATA AVAILABLE
4/2	238	0548	0640	58 59.0N	12 42.0W	1522	1535	A		OK; NOTE (2)
4/3	238	0740	0828	58 59.8N	12 43.3W	1518	1529	A		OK; NOTE (2)
5	238	1618	1702	59 08.8N	12 12.1W	1615	1629	A	C3W	OK
6	238	1940	2016	59 15.4N	12 04.2W	1610	1635	A	C3N	OK
7	238	2236	2328	59 08.6N	11 55.2W	1742	1777	A	C3E	OK
8	239	0030	0151	59 08.9N	12 12.1W	1615	1639	A	C3W	OK
9	239	0300	0414	59 15.6N	12 04.0W	1612	1639	A	C3N	OK
10	239	0542	0627	59 08.6N	11 55.9W	1742	1765	B	C3E	OK
14	239	2015	2113	59 08.4N	12 43.1W	1466	1465	B	C4E	OK
15	239	2337	0013	59 09.0N	13 00.4W	1434	1429	B	C4W	OK
16	240	0100	0227	59 16.1N	12 51.0W	1399	1355	B	C4N	OK
17	240	0354	0430	59 09.5N	12 42.5W	1466	1473	B	C4E	OK
18	240	0613	0653	59 08.6N	12 58.9W	1436	1445	B	C4W	OK
19	240	0818	0911	59 15.7N	12 56.0W	1403	1407	B	C4N	OK
20	240	1246	1347	58 51.7N	12 50.8W	1545	1529	B	B4N	OK
21	240	2032	2120	58 45.0N	12 42.6W	1597	709	B	B4E	OK ABOVE 710M
22	240	2303	2350	58 45.2N	12 58.4W	1556	1555	B	B4W	OK
23	241	0115	0158	58 52.0N	12 50.8W	1550	1549	B	B4N	OK
24	241	0324	0408	58 44.9N	12 42.4W	1587	1603	B	B4E	OK
25	241	0542	0629	58 45.2N	12 59.3W	1559	1561	B	B4W	OK
26	241	1120	1148	58 55.3N	12 23.3W		201	C		OK ; TEST DIP NOTE (3)
26/1	241	1340	1505	58 55.3N	12 23.3W		115	C		YOYO SERIES
26/2	241	1640	1840	58 55.3N	12 23.3W		115	C		YOYO SERIES
26/3	241	2010	2235	58 55.3N	12 23.3W		115	C		YOYO SERIES
26/4	241	2315	0115	58 55.3N	12 23.3W		115	C		YOYO SERIES
27	242	0309	0348	58 44.9N	12 10.6W	1683	1691	C	B3W	OK
28	242	0518	0608	58 50.6N	12 03.2W	1729	1743	C	B3N	OK
29	242	0730	0822	58 45.2N	11 55.1W	1742	1747	C	B3E	OK
30	242	1135	1203	58 45.2N	12 11.8W	1686	1673	C	B3W	OK

Notes: (1) Intercomparison station. Vernadsky stationed 1.07 n.miles
===== on bearing 127.
(2) Near drifting buoy P2:
0.91 n.miles on bearing 345 at 0506 hrs
0.33 n.miles on bearing 109 at 0643 hrs
1.03 n.miles on bearing 257 at 0740 hrs
1.24 n.miles on bearing 268 at 0913 hrs
(3) 1st Multiship experiment, positioned nominally
0.7 n.miles SE of drifting buoy P2.

TABLE 1 (part 1)
******** ********

SUMMARY OF CTD STATIONS FOR SHACKLETON CRUISE 1978/5C
******* ** *** ******** *** ********** ****** *******

CTD STN	DAY	START TIME	END TIME	LATITUDE	LONGITUDE	WATER DEPTH	MAX CTD DEPTH	CAL	REF	COMMENTS
===	===	====	====	========	=========	=====	=====	===	===	========
		hhmm	hhmm			m	db			
31	242	1320	1403	58 51.9N	12 04.1W	1729	1731	C	B3N	OK
32	242	1526	1553	58 45.1N	11 56.1W		1635	C	B3E	OK
34	244	2112	2148	58 55.8N	13 15.1W		1603	C		OK; NOTE (4)
35	245	0908	0945	59 26.1N	12 28.3W	1419	1381	C		OK; NOTE (5)
36	245	0407	0449	59 25.0N	12 27.1W		102	C		YOYO TRIAL NOTE (6)
36/1	245	1100	1200	59 25.0N	12 27.1W		105	C		YOYO SERIES
36/2	245	1345	1545	59 25.0N	12 27.1W		105	C		YOYO SERIES
36/3	245	1715	1915	59 25.0N	12 27.1W		105	C		YOYO SERIES
36/4	245	2105	2152	59 25.0N	12 27.1W		105	C		YOYO SERIES
37	246	0316	0329	59 00.1N	13 50.1W	475	467	C		OK; NOTE (7)
38	246	0453	0511	59 10.0N	13 49.5W	751	747	C		OK
39	246	0651	0714	59 20.1N	13 48.0W	1020		C		BAD DATA
40	246	0900	0946	59 30.7N	13 49.9W		1087	C		OK
41	246	1238	1314	59 39.5N	13 50.0W		1277	C		OK
42	246	1455	1530	59 48.0N	13 36.0W		1163	C		OK
43	246	1710	1739	59 56.3N	13 23.5W		981	C		OK
44	246	2033	2054	60 04.5N	13 10.5W	753	743	C		OK
45	246	2214	2233	60 12.2N	12 59.0W	519	515	C		OK
46	246	2355	0021	60 20.0N	12 47.5W	258	249	C		OK
47	247	0138	0149	60 27.8N	12 36.5W		305	C		OK
48	247	0710	0738	60 00.0N	12 10.0W	1071	1047	C		OK; NOTE (8)
51	247	2307	2350	60 15.2N	14 33.0W		1007	C		CABLE PROBLEMS
55	249	1600	1650	60 12.4N	09 15.7W	1392	1417	C		OK; NOTE (9)
56	249	2202	2241	60 18.0N	08 59.2W		536	-		ELECTRONIC PROBLEMS
57	249	2316	0115	60 15.5N	09 03.0W	1188	1101	D		OK; NOTE (10)
58	250	0230	0248	60 12.0N	09 01.0W	609	567	D		OK
59	250	0408	0431	60 07.0N	09 00.5W	1198	1117	D		OK
60	250	0555	0616	60 00.0N	08 59.0W	1366	1305	D		OK
61	250	0800	0833	59 54.7N	09 00.7W		1371	D		OK
62	250	1137	1204	59 39.2N	08 59.5W		1397	D		OK
63	250	1345	1411	59 30.0N	09 01.0W		1435	D		OK
64	250	1616	1713	59 19.0N	09 01.5W		1443	D		OK
65	250	1758	1821	59 10.0N	09 01.8W		1567	D		OK
67	251	1835	1844	59 00.5N	12 25.2W		509	D		OK

Notes: (4) CTD station before laying JASIN mooring I3A at this location.
=====   (5) Near H2 ; H2 is 2.12 n.miles on bearing 216.
         (6) 2nd Multiship experiment,positioned nominally with H2
                    1.5 n.miles on bearing 270.
         (7) Stations 37 to 47 form a section from George Bligh Bank
                    to Bill Bailey Bank.
         (8) CTD station between recovering and relaying mooring I1.
         (9) CTD station between recovering and relaying mooring I2.
         (10) Stations 56 to 65 form a section along 9 W.

TABLE 1 (part 2)
******** ********

11

SUMMARY OF CTD CALIBRATIONS FOR SHACKLETON 1978/5C
******* ** *** ************ *** ********** *******

CALIBRATION GROUPS (column REF in TABLE 1)
============ ======
```
    A  :  stations    3  to    9
    B  :  stations   10  to   25
    C  :  stations   26  to   55
    D  :  stations   57  to   67
```

PRESSURE
========
STATIONS   3 - 55
```
           P  <  510db    P = 1.00083*P +   1.992
     510<  P  <1105db     P = 0.99211*P +   6.439
           P  >1105db     P = 1.02729*P -  32.430
```

STATIONS   57 - 67   P = .9294*P +4.647

TEMPERATURE
===========
STATIONS   3 - 55   T = T + 0.0185

STATIONS   57 - 67   T = T + 0.015

SALINITY
========
STATIONS   3 - 9   S = 0.922675*S + 2.7994

STATIONS   10 - 25   S = 1.046006*S - 1.5053

STATIONS   26 - 55   S = 0.997146*S + 0.2402

STATIONS   57 - 67   S = 0.984598*S + 0.6550

OTHER CALIBRATION CONSTANTS
===== =========== =========
Nominal CTD calibration constant of

$alpha = beta = gamma = p3 = p4 = 0.0$
$c(1) = 0.1$; $c(2) = c(3) = 0.0$; $c(4) = c(5) = 0.001$

before the above corrections

The temperature thermistor was corrected for time constant lag
by slowing the pressure and conductivity response. The time
constant assumed in this correction = 0.175 sec. This was
chosen so as to minimise consequent salinity spikes.

TABLE 2
****

SUMMARY OF CALIBRATIONS ERRORS FOR SHACKLETON 1978/5C
******* ** ************ ****** *** ********** *******

CALIBRATION GROUPS (column REF in TABLE 1)
============ ======
    A : stations   3 to   9
    B : stations 10 to   25
    C : stations 26 to   55
    D : stations 57 to   67

The following are root mean square differences for the
calibration points plotted in Plots 3 to 9 and used in
establishing the calibration equations. Each difference
is that between the correction of a CTD monitor value to
the bottle value and the mean correction for the calibration
group, at the appropriate pressure, salinity or temperature.
Root mean square differences calculated using the final data
set rather than the monitor values, are of similar value.
The differences below are an indication of the absolute
accuracy of the presented data.

PRESSURE
========
STATIONS   3 - 55   125 calibration points   2.06 db

STATIONS   57 - 67   20 calibration points   4.10 db

TEMPERATURE
===========
STATIONS   3 - 55   129 calibration points   0.0115 deg C

STATIONS   57 - 67   13 calibration points   0.0087 deg C

SALINITY
========
STATIONS   3 - 9   28 calibration points   0.0079 o/oo

STATIONS   10 - 25   36 calibration points   0.0085 o/oo

STATIONS   26 - 55   49 calibration points   0.0078 o/oo

STATIONS   57 - 67   19 calibration points   0.0090 o/oo

TABLE   3
****

13

CORRECTION FOR PRESSURE (STATIONS 1-55)
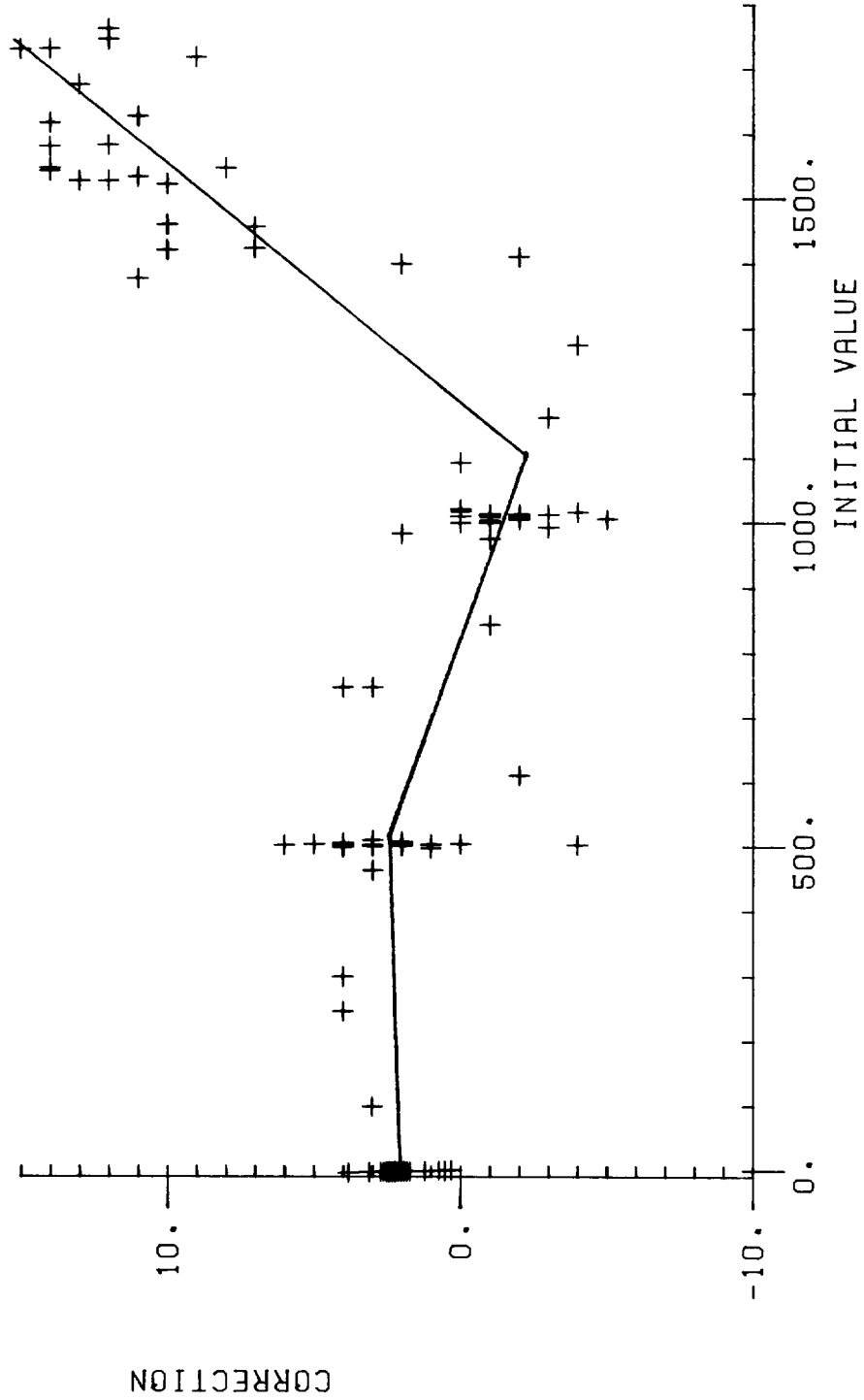
PLOT 2   SHACKLETON 1978/5C : CTD CORRECTIONS

14

CORRECTION FOR PRESSURE (STATIONS 57-68)

CORRECTION

INITIAL VALUE

0.   500.   1000.   1500.

0.

-50.

-100.
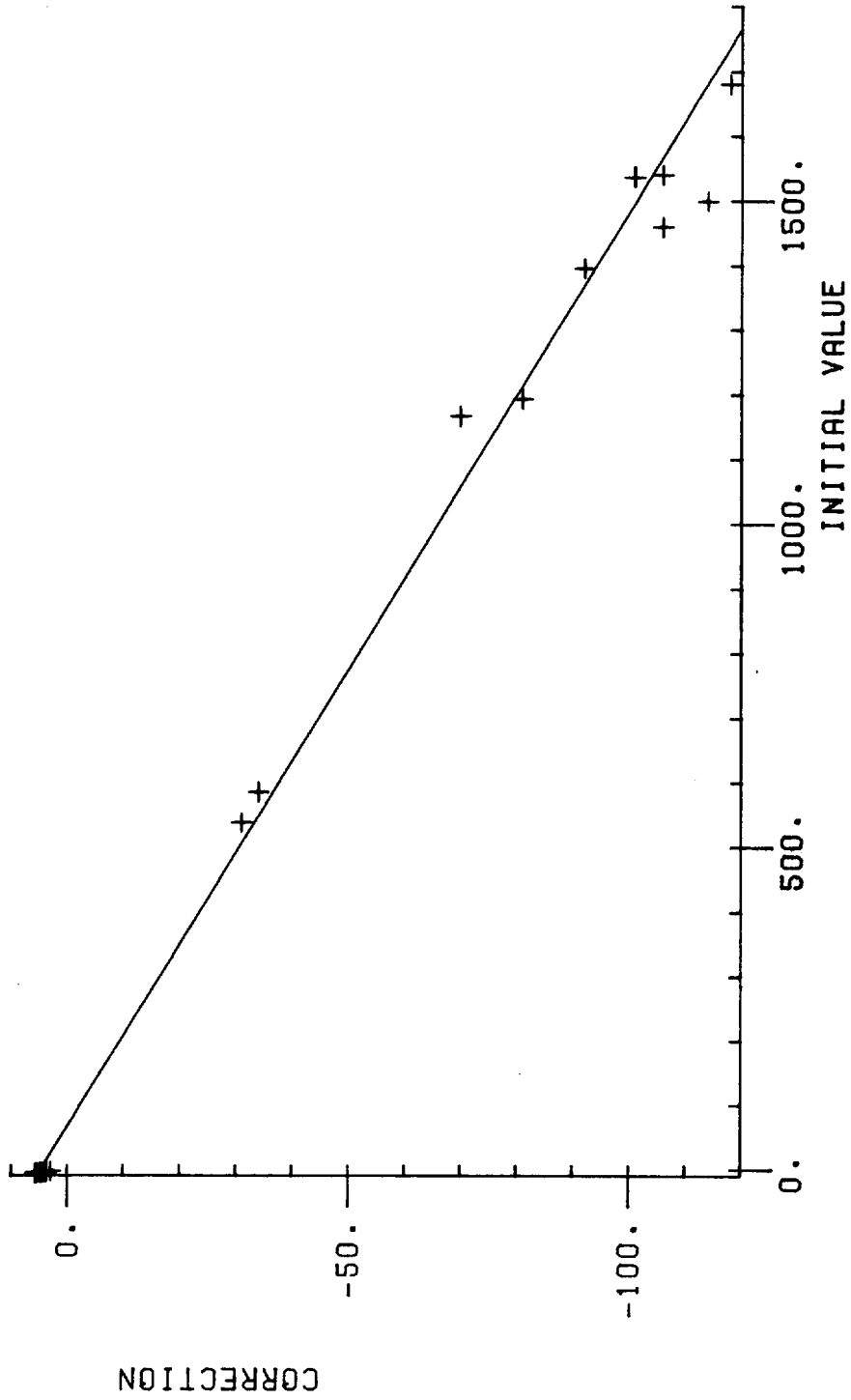
PLOT 3
******

SHACKLETON 1978/5C : CTD CORRECTIONS
=========== ======= === ==========

15

CORRECTION FOR TEMPERATURE (STATIONS 1-55)
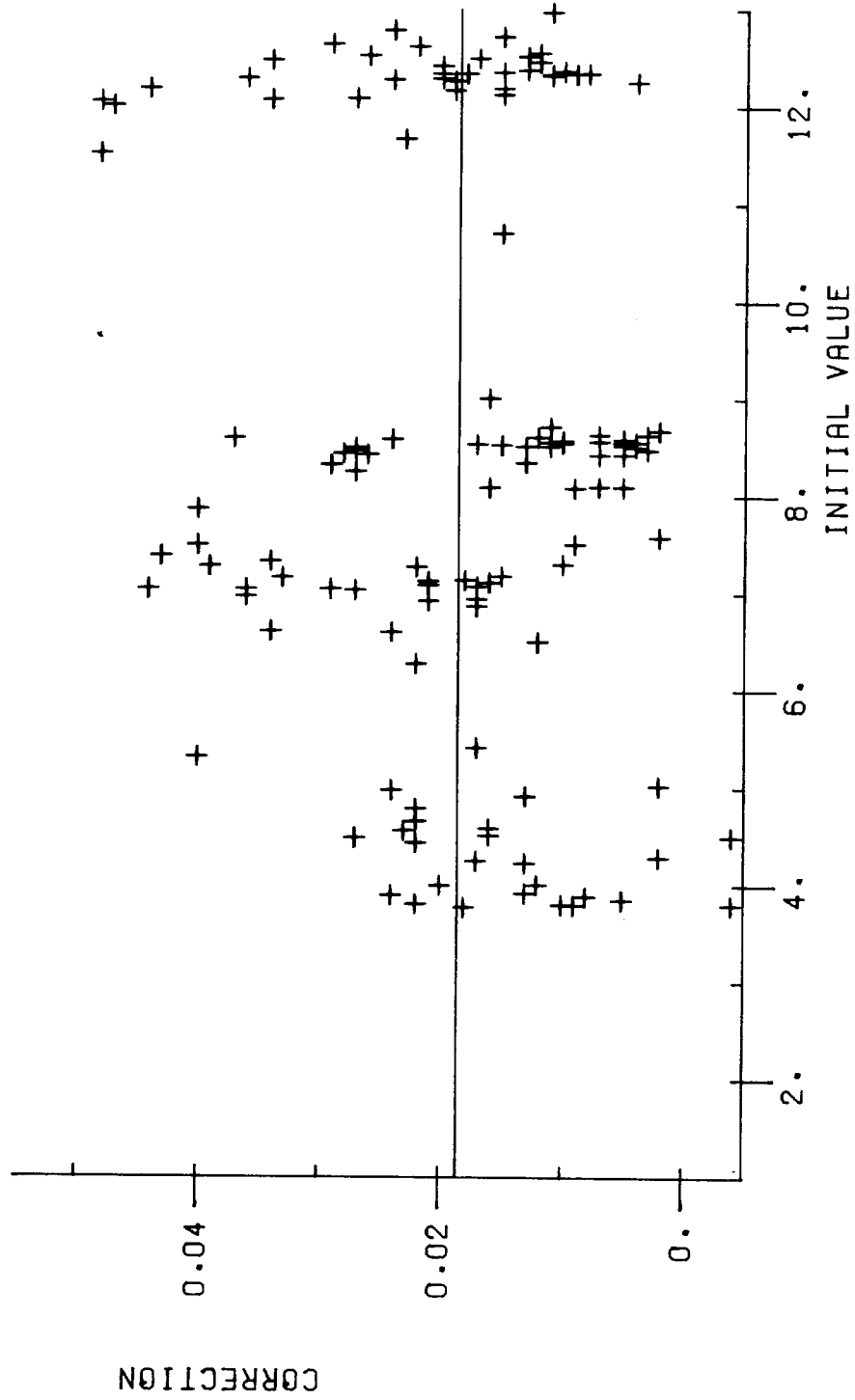
PLOT 4   SHACKLETON 1978/5C : CTD CORRECTIONS

CORRECTION FOR TEMPERATURE (STATIONS 57-68)
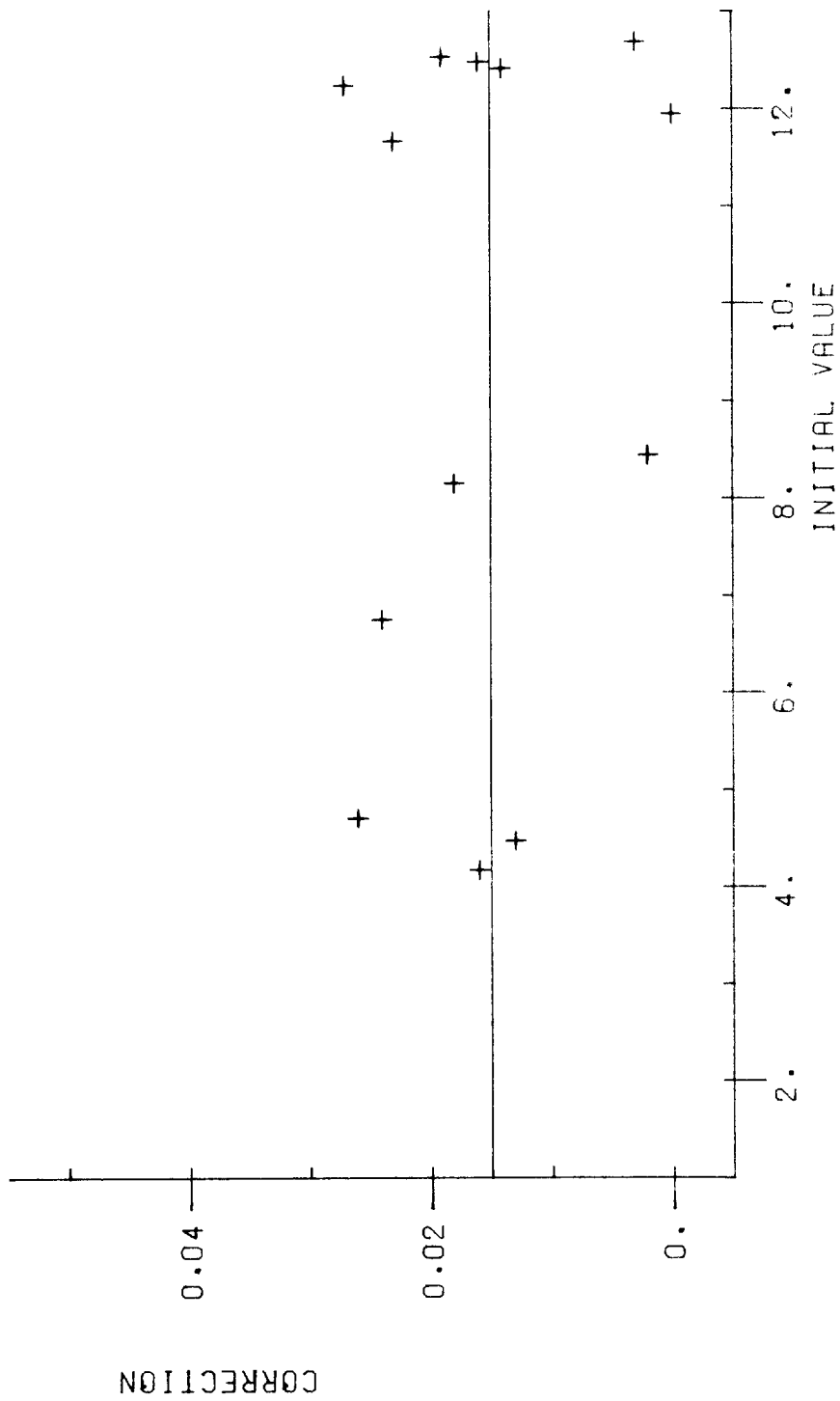
PLOT 5   SHACKLETON 1976/SC : CTD CORRECTIONS

17

CORRECTION FOR SALINITY (STATIONS 3-9)

CORRECTION

INITIAL VALUE

PLOT 6   SHACKLETON 1978/5C : CTD CORRECTIONS
********   ========= ======= === ===========

18

CORRECTION FOR SALINITY (STATIONS 10-25)
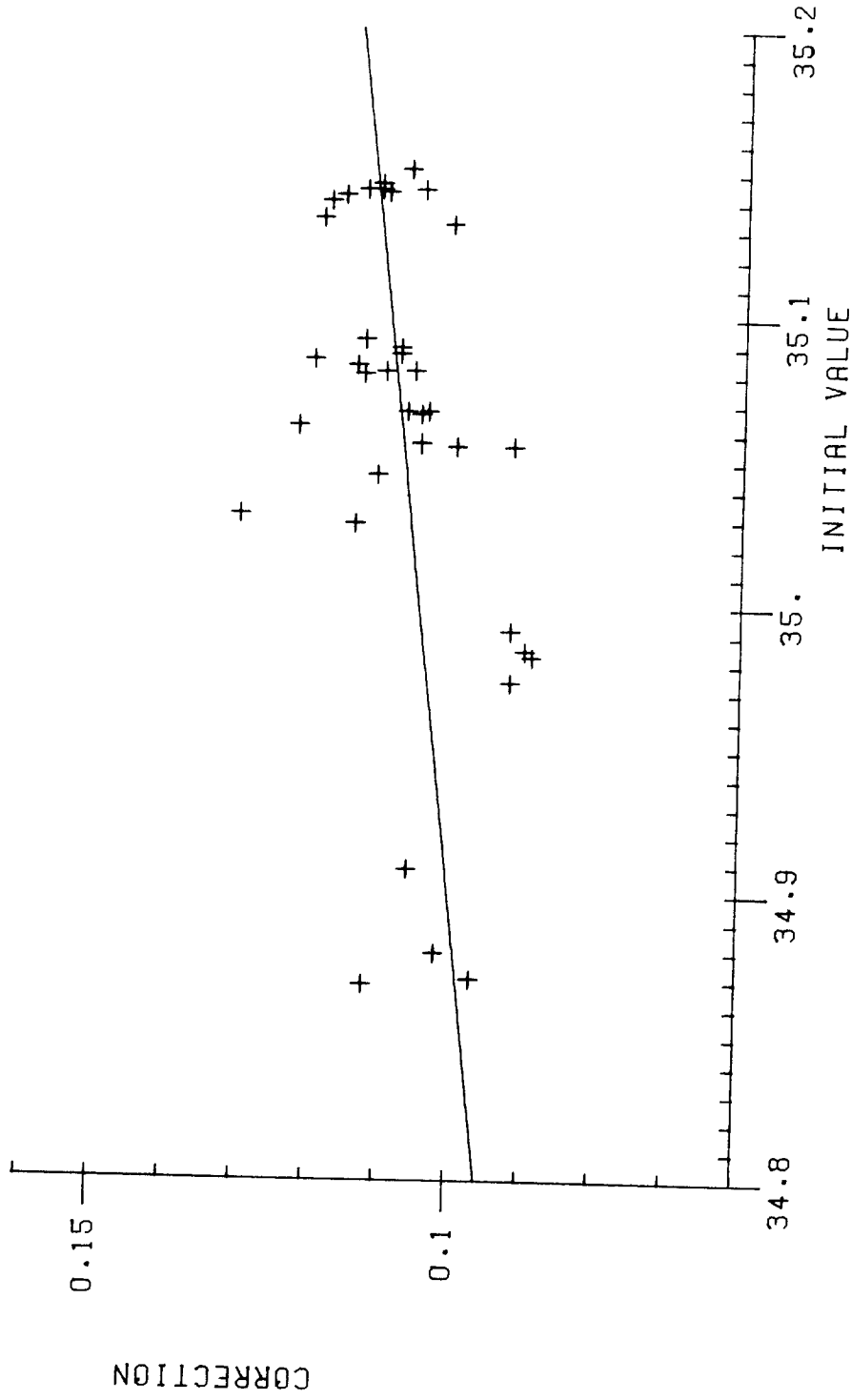
PLOT 7   SHACKLETON 1978/5C : CTD CORRECTIONS
********   ========= ======= ======= === ==========

CORRECTION FOR SALINITY (STATIONS 26-55)
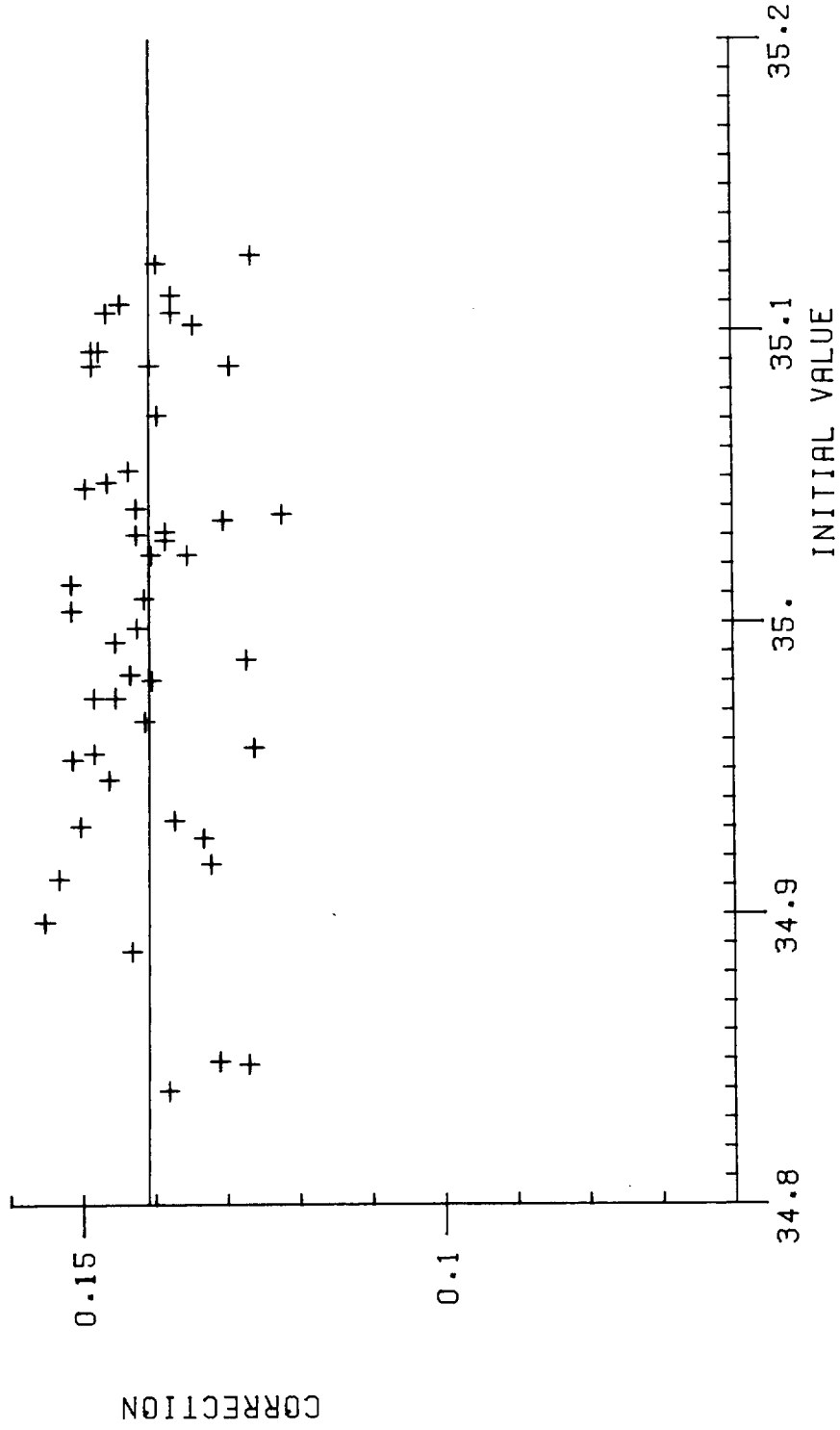
PLOT 8   SHACKLETON 1978/5C : CTD CORRECTIONS

20

CORRECTION FOR SALINITY (STATIONS 57-67)
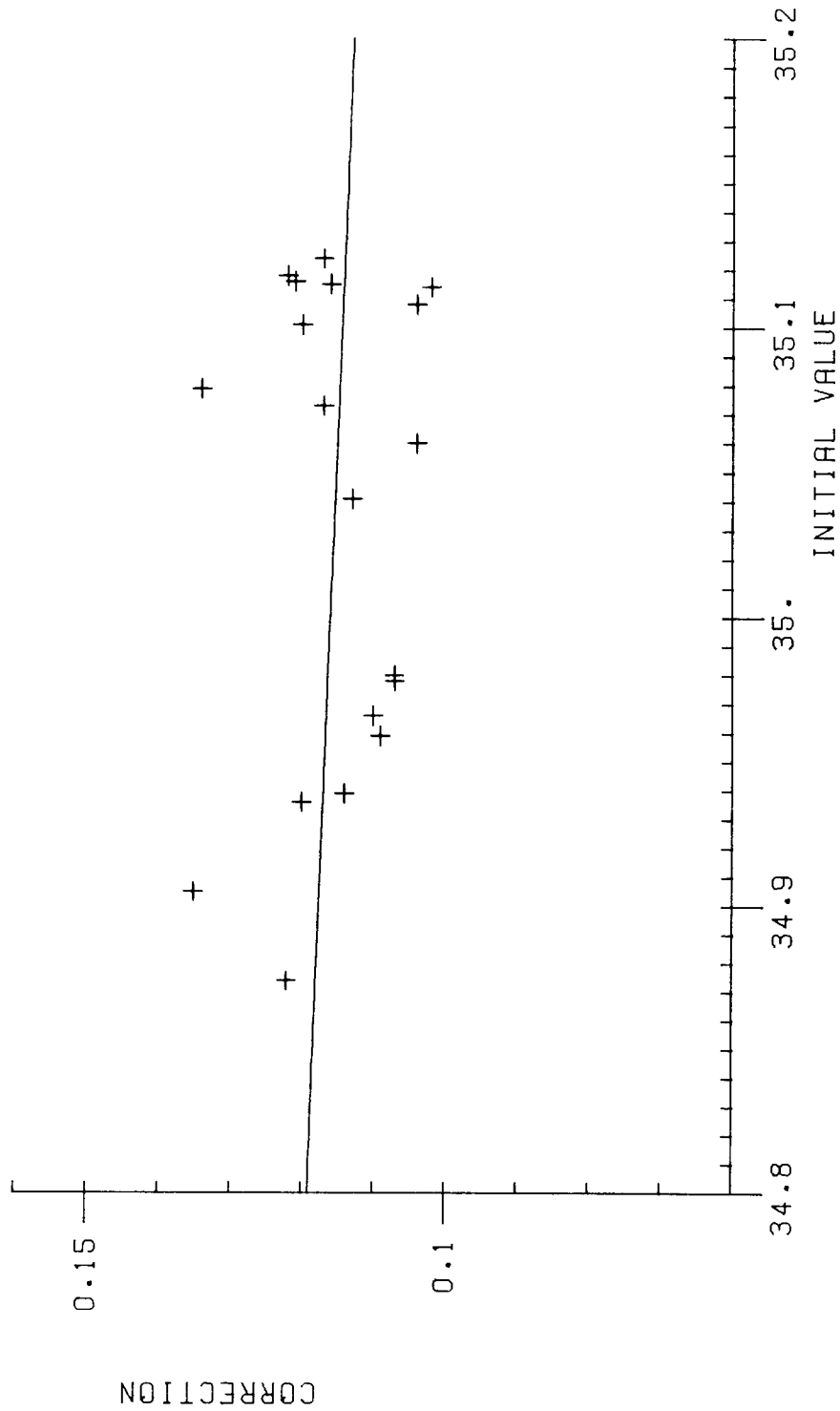
PLOT 9   SHACKLETON 1978/5C : CTD CORRECTIONS

21

SUMMARY OF JOB PROCESSING STAGES
******* ** *** ********** ******

The following jobs compose the total data processing
activities for the deep CTD stations. Yoyo stations
require a slightly different procedure which include
jobs 1 to 5 followed by job 10 then 11. Yoyo stations
include up and down profiles and must not be sorted
as is the deep CTD data in job 6.

All Stations
=============

Job	1	(Table 5)	Data Input (PDIGIN)
Job	2	(Table 6)	Pre-view of data
Job	3	(Table 7)	Initial editing
Job	4	(Table 8)	Final editing
Job	5	(Table 9)	Calibration

Deep CTD Stations
=================

Job	6	(Table 10)	Despiking and averaging of data
Job	7	(Table 11)	Extracting data at specified pressure levels
Job	8	(Table 12)	Listing selected data
Job	9		Archiving of data

CTD Yoyo Stations
=================

Job	10	(Table 13)	Despiking and averaging
Job	11		Archiving of data

NOTE: Job 11 is identical with job 9.

TABLE 4
****

PROCESSING OF CTD DATA

Data were processed using the G-EXEC software system
to assist file management and to reduce processing
time by a standardized approach. Approximately 20
stations were processed on the Rutherford implemen-
tation and the rest on the Bidston Honeywell, once
G-EXEC became available on this NERC computer. The
two implementations are closely similar and I will
provide details of the Bidston data processing in-
structions as these are for the majority of stations
and the information will be of greater use for fu-
ture processing.

Table 4 shows the various job stages and Tables 5 to
13 list the G-EXEC instructions for each job stage.
An instruction file is supplied when the G-EXEC con-
troller is run, and this job converts such instruc-
tions to a Fortran program which is automatically
submitted as a batch job. A description of the
processing follows.

(A) Input of data

Tape input from digidata tape (using PDIGIN) tends
to be more costly than other input. More recent CTD
data transfer (e.g. from the PDP 11/34 data acquisi-
tion system) provides data averaged to 1 second, so
greatly reducing data volume as well as replacing
character code by binary code. The Digidata tapes,
on this cruise, gave a considerable number of format
errors which has typically lead to the loss of 5 %
of the raw data. Fortunately this is not as serious
as it may seem, and there are few large gaps in the
data because of the fast data rate. Most large gaps
seem to have resulted from a stop to fire a water
bottle, during which time the CTD wire has
straightened so increasing the depth of the CTD.
Where the CTD was not raised to allow for this,
before sampling was restarted, a gap results. There
are also some gaps near the surface, data starting
at 20 m or so, after the first bottle station. This
only occurs on a few early stations.

Raw data includes Pressure, Temperature and Conduc-
tivity at 32 scans per second. Data input on Honey-
well is currently with the CRUN
                CRUN PEXEC/IOS/PDIG,R
outside of G-EXEC proper but using an identical in-
struction file. This will soon be a normal G-EXEC

23

job once the appropiate tape JCL can be generated by
the G-EXEC controller.

(B) Editing of data

The jobs in Tables 6, 7 and 8 are currently suf-
ficient to edit the data although occasionally the
job in Table 7 must be performed twice. The exact
form of the PRIGHT instructions in Table 7, whether
an automatic or a manual edit, is variable. The
editing stage is the most time consuming part in
that careful consideration is required before
deciding which part of a data series to replace.

Note: All instruction files have a 1 in column 79
of the first statement (i.e. the statement starting
with 'G-EXEC'). This reduces the volume of line
printer output.

(C) Calibration of data

The method of obtaining the calibration coefficients
has been described in a previous section. The ap-
plication of the formulae is quite standard apart
from the pressure calibration which is unusual. A
program did not already exist for this so one was
written as a user-supplied subroutine submitted with
program PUSRIO. The time constant correction was ob-
tained by trial, the objective being to reduce any
spikes generated in this process to a minimum. For
this data, the final correction was still not
totally satisfactory but was the best correction
that could be established.

This job also reduces the data series by a factor of
8. This is not possible before the time constant
correction but once done, reduces processing costs
considerably.

(D) Sub-sampling of the data series

Table 10 and 13 list jobs for sub-sampling
calibrated data series. The output data set consist
of averaged values every 2 db on the odd numbers
i.e. 1, 3, 5 db. This forms a much reduced data set
and is generally a sufficient description of the
water properties for the stations. I consider this
data set to be the objective of data processing.
Station plots are displays of these series. The
program which produces the plot is not described
here but it consists of a one-off GRAFIX program. A

24

copy of this plotting program is stored with the
G-EXEC output for Shackleton cruise 1978/5C at Worm-
ley.

However this data series is still too great for data
listing and Table 11 lists the job to extract values
at selected pressure levels. This series of levels
seems to have been adopted as a standard within the
Marine Physics Group at Wormley. Additional quan-
tities are calculated from the basic series using
the Equation of State 1980. It should be noted that
salinity is calculated from pressure, temperature
and conductivity using the equations that precede
the Salinity 1978 formula (i.e. the Fofonoff
subroutine). The salinities are then adjusted using
the appropiate corrections so the only significant
differences between the two calculations will be the
variation between the old and new salinity
estimates. The total variation between 35.0 and 35.3
at temperatures between 4 and 12 and at pressures
between 0 and 2000 db, is from .0003 to .0015 o/oo,
a range of slightly more than .001, which is con-
sidered small compared to the root mean square dif-
ferences in establishing the calibration equations.

(E) Archiving of data

Data at Rutherford is archived using the G-EXEC
program PTAPEP and the tape may be transfered to
Bidston for retrieval there. At bidston the archive
is to tape using a CRUN i.e.
                CRUN PEXEC/IOS/PARCH,R
to 6250 bpi tape. This data may be restored using
the similar CRUN on file PEXEC/IOS/PREST. Future ar-
chiving at Bidston will be within G-EXEC using an
improved procedure, but these archive files may
still be restored using this CRUN.

PDIGIN Data Input.

Typical G-EXEC instruction file, in this case used with

       CRUN PEXEC/IOS/PDIG,R

In the near future, this instruction file may be used with
the G-EXEC controller in the normal way. Then jobs 1 and 2
might be combined into a single job. Temporarily, however,
tapes cannot be handled within G-EXEC.

This job transfers raw data from a special format on tape
to a standard format(P-STAR) on disk.


```
G-EXEC P64,500,4
DSC,DSC,DSC INPUTING PDIGIN DATA
EXEC GSHFIL
11
MAKE WCTD1SUMMARY
MAKE WCTD1HISTORY
EXEC PDIGIN
0
NAMES,PRES,TEMP,COND,DUMMY
FILE,4,WPRSHJ5C26BW
TIME,780829,134000,0
POSI,58,55.3,-12,23.3,0,,
PLAT,CTD,SHACKLETON,78/5C,J.CREASE
REMA,CTD STATIONS
FIND WTAPE93147
MAKE WPRSHJ5C26BW
EXEC GSHFIL
22
MAKE WCTD1SUMMARY
MAKE WCTD1HISTORY
STOP
```

TABLE 5   26   JOB   1

Pre-view of data

Typical G-EXEC instruction file used to remove values
far out of range and to produce a time-histogram (THISTO)
of data for consideration before further editing. The
use of program PEDITA in this way is specific to PDIGIN
data as the very large data values are the result of
tape format errors. The use of PSKTCH is quite general.

MESS and DISK are special Bidston G-EXEC statements.


```
G-EXEC P64 ,200,10
DSC,DSC,DUNCAN PROCESSING SHACK 78/5C DATA
DISK WPRSHJ5C26BW,DSC/22/WSHJ5C26,320
COMM
COMM ************************************
COMM ***** 1ST JOB AFTER PDIGIN CRUN *****
COMM ************************************
COMM
MESS DSC USING IOS22
EXEC GSHFIL,,IOSW
11
MAKE WCTD1SUMMARY
MAKE WCTD1HISTORY
EXEC PEDITA
009
LIMIT,PRES,-1000,99999
LIMIT,TEMP,-1000,99999
LIMIT,COND,-1000,99999
FIND WPRSHJ5C26BW
MAKE WPRSHJ5C26BW
EXEC PSKTCH
009
GROUP,1000
VARS,1,2,3
FIND WPRSHJ5C26BW
EXEC GSHFIL
02
MAKE WCTD1HISTORY
STOP
```

TABLE 6   27   JOB   2

Initial Editing

Typical G-EXEC instruction file to perform the bulk of
editing on a CTD data file. The output from the previous
job is studied to establish finer limits, outside of which
data values are considered "bad" and the values are replaced
by absent data values. The file is also listed on a terminal
using time sharing program

CRUN PEXEC/IOS/THISTO,R

to find data cycles to retain. Data recorded while the CTD
was stationary is not of interest for obtaining profiles
and is not copied to the revised file. This can considerably
reduce the quantity of data to be processed.

Data is automatically edited of spikes (PCHECK/PRIGHT) and
information is obtained on remaining troublesome areas
using program PCHECK

MESS is a special Bidston G-EXEC statement.


```
G-EXEC P64 ,300,10
DSC,DSC,DUNCAN PROCESSING SHACK 78/5C DATA
COMM
COMM ************************************
COMM ***** 1st EDIT : PDIGIN  DATA   ****
COMM ************************************
COMM
MESS DSC USING IOS22
EXEC GSHFIL,,IOSW
11
MAKE WCTD1SUMMARY
MAKE WCTD1HISTORY
EXEC PCOPYA
0
VARS,1,2,3
COPY,1001,2000
COPY,8001,11000
COPY,17501,21000
COPY,27501,32600
FIND WPRSHJ5C26BW
MAKE PHYSFILE,,,3,66000
EXEC PEDITA
009
LIMIT,PRES,0,2500
LIMIT,TEMP,7960,14400
LIMIT,COND,36250,41750
FIND PHYSFILE
MAKE WPRSHJ5C26BW
EXEC PCHECK
019
```

TABLE   7   28   JOB   3

```
ERRA,0.00001,8.
VARS,1,2,3
FIND WPRSHJ5C26BW
MAKE WDSCEDITFILE
EXEC PRIGHT
019
ENTR,-
FIND WPRSHJ5C26BW
FIND WDSCEDITFILE
MAKE WPRSHJ5C26BW
EXEC PCHECK
019
ERRA,0.00001,8.
VARS,1,2,3
FIND WPRSHJ5C26BW
MAKE WDSCEDITFILE
EXEC PSKTCH
009
GROUP,1000
VARS,1,2,3
FIND WPRSHJ5C26BW
EXEC GSHFIL
02
MAKE WCTD1HISTORY
STOP
```

TABLE 7   29   JOB   3

Final Editing

Typical G-EXEC instruction file to perform final editing
of CTD data. The job may be changed to include both editing
from an instruction file and/or manual editing with program
PRIGHT. This job may be repeated several times but I have
found once is quite sufficient.

MESS statement is a Bidston G-EXEC special.

```
G-EXEC P64,200,10
DSC,DSC,DUNCAN PROCESSING SHACK 78/5C DATA
COMM
COMM *********************************
COMM *****  EDIT JOB : PDIGIN    *****
COMM *********************************
COMM
MESS DSC USING IOS22
EXEC GSHFIL,,IOSW
11
MAKE WCTD1SUMMARY
MAKE WCTD1HISTORY
EXEC PRIGHT
0090002
VARS,1
REPL,8874,-,8893,9787,-,9803,12089,12090
VARS,2
REPL,84,-,110,156,-,160,173,-,178,9787,-,9814
FIND WPRSHJ5C25BW
MAKE WPRSHJ5C25BW
EXEC PINTRP
009
LINE,-
FIND WPRSHJ5C25BW
MAKE WPRSHJ5C25BW
EXEC PCHECK
009
ERRA,0.00001,8.
VARS,1,2,3
FIND WPRSHJ5C25BW
EXEC PSKTCH
009
GROUP,1000
VARS,1,2,3
FIND WPRSHJ5C25BW
EXEC GSHFIL
02
MAKE WCTD1HISTORY
STOP
```

TABLE 8   30   JOB   4

Calibration.

Typical G-EXEC instruction file to calibrate CTD data.
Nominal calibration values are applied using PCTDCL, then
a time constant correction applied using program PDECIM.
Pressure,temperature and salinity are all adjusted in turn.
In this case, the pressure correction is complicated so
I have chosen to use program PUSRIO and my own subroutine.
I could more easily have used PCALIB in a similar fashion.
The time constant correction must be established beforehand
as well as the P,T and S corrections which are determined by
comparison of bottle data with CTD monitor values recorded
at sea. The data is reduced by 1/8 after the time constant
adjustment.

MESS statement is a Bidston G-EXEC special.


```
G-EXEC P64 ,300,10
DSC,DSC,DUNCAN PROCESSING SHACK 78/5C DATA
COMM
COMM ************************************
COMM ***** CALIBRATION FOR SH 78/5C  *****
COMM ************************************
COMM
MESS DSC USING IOS22
EXEC GSHFIL,,IOSW
11
MAKE WCTD1SUMMARY
MAKE WCTD1HISTORY
EXEC PCTDCL
0000001
CYCS,,
CTD1,0.,0.,0.,0.,0.,0.1,0.,0.,0.001,.001
VARS,1,2,3
FIND WPRSHJ5C25BW
MAKE PHYSFILE,,,3,60000
EXEC PDECIM
009
CYCS,,
DECI,8
COPY
VARS,1,2
SLOW,12,5.6
VARS,3
COPY
VARS,1
FIND PHYSFILE
MAKE WPRSHJ5C25BW
COMM                    ********
COMM THE FOLLOWING IS PRESSURE CALIB FOR STNS 1-55
COMM                    ********
EXEC PUSRIO
```

TABLE 9   31   JOB   5

```
009
OVARS,-
CYCS,,
SUBS
$$ SELECT(DSC/2/SHACK/PRESCAL)
FIND WPRSHJ5C25BW
MAKE WPRSHJ5C25BW
COMM                    **********
COMM THE FOLLOWING IS TEMPERATURE CALIB FOR STNS 1-55
COMM                    **********
EXEC PCALIB
009
COPY,PRES,PRES
LINE,TEMP,TEMP,1.0,0.0185
COPY,COND,COND
COPY,PRES,DUMMY
FIND WPRSHJ5C25BW
MAKE WPRSHJ5C25BW
EXEC POCEAN
009
COPY
VARS,1,2,3
SAL1
VARS,P,1,T,2,G,3
FIND WPRSHJ5C25BW
MAKE WPRSHJ5C25BW
COMM                    ********
COMM  THE FOLLOWING IS SALINITY CALIB FOR STNS 10-25
COMM                    ********
EXEC PCALIB
009
COPY,PRES,PRES
COPY,TEMP,TEMP
COPY,COND,COND
LINE,SAL.FOF.,SAL.FOF.,1.046006,-1.5053
FIND WPRSHJ5C25BW
MAKE WPRSHJ5C25BW
EXEC PSKTCH
009
GROUP,100
VARS,-
FIND WPRSHJ5C25BW
EXEC GSHFIL
02
MAKE WCTD1HISTORY
STOP
```

TABLE 9   32   JOB   5

<u>Calibration</u> – <u>User</u> <u>Subroutine</u> <u>used</u> (<u>DSC</u>/<u>2</u>/<u>SHACK</u>/<u>PRESCAL</u>)

This subroutine is used for the calibration of Pressure for
CTD stations 3 to 55.


```
      SUBROUTINE USERIO (INDISK,IODISK,INPOS,INVARS,IOFLDS,NSTART,
     & NSTOP,ICON,NIC,FCON,NFC,BUFA,BUFB,SUMMIN,SUMMIO,ABSIN,ABSIO,
     & INRECS,IORECS,INRECL,IORECL,NUMWRD,INFLDS,RETREC)
C.....
C.....  **********************************************
C.....  ** D S COLLINS   CALIB OF PRES FOR STNS 1-55**   SH 78/5C
C.....  **********************************************
C.....     09-MAR-82    IOS(W)
C.....
      DIMENSION INPOS(INVARS),ICON(19),FCON(19),BUFA(NUMWRD),
     & BUFB(NUMWRD),SUMMIN(NUMWRD),SUMMIO(NUMWRD),ABSIN(NUMWRD),
     & ABSIO(NUMWRD),RETREC(NUMWRD)
C.....
C..... DATA LOOP
C.....
      NVAR=1
      INVAR=1
      ABSENT=ABSIN(INVAR)
      NEXT=1
      IORECS=INRECS
      LEN=NUMWRD
      DO 20 J=NSTART,NSTOP,NUMWRD
      IF ((J+LEN-1).GT.NSTOP) LEN=NSTOP-J+1
      CALL INDATA (INDISK,INVAR,J,LEN,BUFA,
     & RETREC,NDUMMY,INFLDS,INRECS,INRECL)
      DO 5 I=1,LEN
      IF (BUFA(I).EQ.ABSENT)GO TO 5
      IF(BUFA(I)-510.0)2,4,4
    4 IF(BUFA(I)-1105.0)1,3,3
    2 BUFA(I)=1.00083*BUFA(I)+1.992
      GO TO 5
    1 BUFA(I)=0.99211*BUFA(I)+6.439
      GO TO 5
    3 BUFA(I)=1.02729*BUFA(I)-32.430
    5 CONTINUE
      CALL OTDATA (IODISK,NVAR,NEXT,LEN,BUFA,
     & RETREC,NDUMMY,IOFLDS,IORECS,IORECL)
   20 NEXT=NEXT+LEN
      RETURN
      END
```

Despiking and Averaging

Typical G-EXEC instruction file to sort the data into order
of increasing depth (program GSORT3), then to average every
2 db with averages centred on odd values. All input data is
for down profiles only. The output listing is re-compared
with the calibration points to check vailidity.

MESS and DISK are special Bidston G-EXEC statements.

```
G-EXEC P64 ,500,10
DSC,DSC,DUNCAN PROCESSING SHACK 78/5C DATA
DISK WPRSHJ5C25AV,DSC/22/WAVJ5C25,320
MESS DSC USING IOS22
COMM ******************************
COMM ** DESPIKING AND AVERAGING **
COMM ******************************
EXEC GSHFIL,,IOSW
11
MAKE WCTD1SUMMARY
MAKE WCTD1HISTORY
COMM
COMM In PUSRIO below ICON specifies the variables to be treated
COMM and FCON gives the corresponding maximum spike to be retained.
COMM This value is the difference between one value and the next.
COMM A spike is identified by taking 3 data points. If the
COMM difference between points 1 and 2 is greater than the limit
COMM but the difference between points 1 and 3 is less, then point
COMM 2 is a spike and is replaced by absent data. In this case the
COMM limit is .2 deg C and .02 o/oo.
COMM
EXEC PUSRIO
0
CYCS,,
OVARS,-
VARS,-
ICON,2,4
FCON,.2,.02
SUBS
$$ SELECT(DSC/2/SPUSUB)
FIND WPRSHJ5C25BW
MAKE WPRSHJ5C25BW
EXEC PINTRP
0
LINE,-
FIND WPRSHJ5C25BW
MAKE WPRSHJ5C25BW
COMM
COMM Use of GSHFIL here is unusual and results from an error in
COMM GSORT3 such that the filename in the DD is overwritten.
COMM This should be a temporary fault
COMM
```

TABLE 10   34   JOB   6

```
EXEC GSHFIL
20
MAKE WCTD1SUMMARY
EXEC PGFILE
0
FIND WPRSHJ5C25BW
MAKE TEMPFILE,,,4,8500
EXEC GSORT3
00000000000000002000PRES
FIND TEMPFILE
MAKE WORKFILE,,,4,8500
EXEC GPFILE
0
FIND WORKFILE
MAKE PHYSFILE,,,4,8500
EXEC PAVRGE
0
SCAN,1,0.,2.0
VARS,-
FIND PHYSFILE
MAKE WPRSHJ5C25AV
COMM
COMM Replace filename in DD by that on the MAKE statement (PCOPYA)
COMM
EXEC PCOPYA
0000001
VARS,-
COPY,,
FIND WPRSHJ5C25AV
MAKE WPRSHJ5C25AV
EXEC PLSTDC
0
CYCS,,
VARS,-
FIND WPRSHJ5C25AV
EXEC GSHFIL
02
MAKE WCTD1HISTORY
STOP
```

TABLE 10   35   JOB   6

Despiking – User Subroutine used (DSC/2/SPUSUB)

This subroutine is used for the despiking of Salinity after the time constant calibrartion has been applied. A perfect calibration should not result in additional spikes but for this data, the best time constant calibration did not achieve this perfection. Small spikes remaining in the edited data are also removed by this process.

N.B. Program PSPIKE now performs this function.


```
      SUBROUTINE USERIO (INDISK,IODISK,INPOS,INVARS,IOFLDS,NSTART,
     & NSTOP,ICON,NIC,FCON,NFC,BUFA,BUFB,SUMMIN,SUMMIO,ABSIN,ABSIO,
     & INRECS,IORECS,INRECL,IORECL,NUMWRD,INFLDS,RETREC)
C.....
C.....    *************************************
C.....    ** D S COLLINS   DE-SPIKE SUBROUTINE  **
C.....    *************************************
C.....       26-FEB-82    IOS(W)
C.....
      DIMENSION INPOS(INVARS),ICON(19),FCON(19),BUFA(NUMWRD),
     & BUFB(NUMWRD),SUMMIN(NUMWRD),SUMMIO(NUMWRD),ABSIN(NUMWRD),
     & ABSIO(NUMWRD),RETREC(NUMWRD)
C.....
C.....  DATA LOOP
C.....
      IPRINT=6
      DO 40 NVAR=1,INVARS
      INVAR=INPOS(NVAR)
      ABSENT=ABSIN(INVAR)
      NSPIKE=0
      DO 44 N=1,NIC
      IF (INVAR.EQ.ICON(N))NSPIKE=N
   44 CONTINUE
      IF (NSPIKE.GT.0)DEL=FCON(NSPIKE)
      IF (NSPIKE.GT.0) WRITE(IPRINT,101) INVAR
  101 FORMAT(/' VARIABLE',I4,'   DESPIKE')
      IF (NSPIKE.EQ.0) WRITE(IPRINT,102) INVAR
  102 FORMAT(/' VARIABLE',I4,'   COPY')
      NTOT=0
      IORECS=0
      LEN=NUMWRD+1
      DO 20 J=NSTART,NSTOP,NUMWRD
      NOUT=NUMWRD
      IF ((J+LEN-1).LT.NSTOP) GO TO 21
      LEN=NSTOP-J+1
      NOUT=LEN
   21 CALL INDATA (INDISK,INVAR,J,LEN,BUFA,
     & RETREC,NDUMMY,INFLDS,INRECS,INRECL)
      IF (NSPIKE.EQ.0)GO TO 22
      JJ=1
      IF (J.GT.NSTART)GO TO 23
```

```
      JJ=2
      BLAST=BUFA(1)
   23 LL=LEN-1
      DO 5 I=JJ,LL
      BNEXT=BUFA(I+1)
      IF (BUFA(I).EQ.ABSENT)GO TO 5
      IF (BLAST.EQ.ABSENT)  GO TO 5
      IF (BNEXT.EQ.ABSENT)  GO TO 5
      IF (ABS(BUFA(I)-BLAST).LE.DEL.OR.ABS(BNEXT-BLAST).GT.DEL)GO TO 5
      BUFA(I)=ABSENT
      NTOT=NTOT+1
    5 BLAST=BUFA(I)
   22 NEXT=IORECS+1
      IORECS=IORECS+NOUT
      CALL OTDATA (IODISK,NVAR,NEXT,NOUT,BUFA,
     & RETREC,NDUMMY,IOFLDS,IORECS,IORECL)
   20 CONTINUE
      IF (NSPIKE.GT.0) WRITE(IPRINT,103) NTOT
  103 FORMAT(' NO. OF DATA CYCLES DESPIKED =',I8)
   40 CONTINUE
      RETURN
      END
```

Extracting selected data

Typical G-EXEC instruction file to extract data at specified pressure levels, writing the subset to a smaller disk file.

MESS and DISK are special Bidston G-EXEC statements.

```
G-EXEC P64 ,200,10
DSC,DSC,DUNCAN PROCESSING SHACK 78/5C DATA
DISK WPRSHJ5C26LV,DSC/22/WLVJ5C26,320
EXEC GSHFIL,,IOSW
01
MAKE WCTD1HISTORY
EXEC PEOS80
0
POSI,58,55.3,-12,23.3,,
COPY
VARS,1,2,4
PTMP,0.0
VARS,P,1,T,2,S,4
SIGP,0.0
VARS,P,1,T,2,S,4
SIGP,1000.0
VARS,P,1,T,2,S,4
SIGP,2000.0
VARS,P,1,T,2,S,4
DYNHT,0.0
VARS,P,1,T,2,S,4
SNDV
VARS,P,1,T,2,S,4
DEPTH
VARS,P,1
FIND WPRSHJ5C26AV
MAKE PHYSFILE,,,10,1000
EXEC PFETCH
009
SEARCH,PRES
LEVS,10,20,30,40,50,75,100,125,150,175,200,250
LEVS,300,350,400,450,500,600,700,800,900,1000
LEVS,1100,1200,1300,1400,1500,1600,1700,1800,1900,2000
FIND PHYSFILE
MAKE WORKFILE,,,100,1000
EXEC PEOS80
0
COPY
VARS,1,-,8
SVAN
VARS,P,1,T,2,S,3
COPY
VARS,9
BVFR
VARS,P,1,T,2,S,3
```

TABLE 11   38   JOB   7

```
COPY
VARS,10
FIND WORKFILE
MAKE WPRSHJ5C26LV
EXEC GSHFIL
02
MAKE WCTD1HISTORY
STOP
```

TABLE 11   JOB   7

Listing selected data

Typical G-EXEC instruction file to list the selected data
obtained using Job 7. This produces the data lists as
published in this document.


```
G-EXEC P64,260,4
DSC,DSC,DUNCAN PROCESSING BATFISH DATA
EXEC PLSTDC,,JOUT
00900000000101
(1H1//35X,'SHACKLETON 1978/5C : CTD STATION 26'/
35X,'========== =======   === ======= =='////'   ...continued
                        ...P-DB   T-DEGC   S-0/OO   POTEMP
   SIGMA-0  SIGMA-1  SIGMA-2  DYN.HT.   SVANOM   ...continued
                        ...SNDV-M/S  BVFR-C/H  DEPTH'//)
(1X,F6.0,2F9.3,4F9.3,F9.3,E12.4,F9.1,F9.3,F7.0)
```


```
CYCS,,
VARS,1,-,12
FIND WPRSHJ5C26LV
STOP
```


Note : For the lines marked '...continued' the continuation
**** is on the following line. The first line of the pair
should have the characters starting with the 3 dots removed
and the second line should have the characters up to and
including the 3 dots removed.

TABLE 12   39   JOB   8

Despiking and Averaging of Yoyo data

Typical G-EXEC instruction file to despike and average yoyo
data. The subroutine used (dsc/2/spusub) is listed in Table 6A
This job may be followed by others to list ceratin values but
in this case no futher processing was performed.


```
G-EXEC P64 ,500,10
DSC,DSC,DUNCAN PROCESSING SHACK 78/5C DATA
COMM
COMM  *****************************************
COMM  ** DESPIKING AND AVERAGING OF YOYO DATA **
COMM  *****************************************
COMM
DISK WPRSHJ5264AV,DSC/22/WAVJ5264,320
MESS DSC USING IOS22
EXEC GSHFIL,,IOSW
11
MAKE WCTD1SUMMARY
MAKE WCTD1HISTORY
COMM
COMM Limit the range of salinity values (simple editing step)
COMM
EXEC PEDITA
0
LIMIT,SAL.FOF.,34.980,35.522
FIND WPRSHJ5264BW
MAKE WPRSHJ5264BW
COMM
COMM  Despike the salinity data (i.e.spikes greater than .02 o/oo)
COMM  See Table 10 for fuller details.
COMM
EXEC PUSRIO
0
CYCS,,
OVARS,-
VARS,-
ICON,4
FCON,.02
SUBS
$$ SELECT(DSC/2/SPUSUB)
FIND WPRSHJ5264BW
MAKE WPRSHJ5264BW
EXEC PINTRP
0
COPY,1,2,3
LINE,4
FIND WPRSHJ5264BW
MAKE WPRSHJ5264BW
EXEC PAVRGE
0
SCAN,1,0.,2.0
```

TABLE 13   40   JOB 10

```
VARS,-
FIND WPRSHJ5264BW
MAKE WPRSHJ5264AV
EXEC PCOPYA
0000001
VARS,-
COPY,,
FIND WPRSHJ5264AV
MAKE WPRSHJ5264AV
EXEC PSKTCH
009
GROUP,10
VARS,1,2,4
FIND WPRSHJ5264AV
EXEC GSHFIL
02
MAKE WCTD1HISTORY
STOP
```

TABLE 13   41   JOB   10

ACKNOWLEDGEMENTS

REFERENCES

GRIMM A.E. et al   G-EXEC Users Manual (Version 2)
                             (NERC Computing Service : doc 23)

R.T.POLLARD et al   Air-Sea Interaction Experiment :
                             Summary of the 1978 Field Experiment.
                             (The Royal Society 1979)

INFORMATION ON STATION PLOTS/LISTS
*********** ** ******* ***********

PLOTS
=====

These require little additional comment except that
each plot is of data from the 2 db averaged series
i.e. the final data set. Where the profile rapidly
goes off-scale, there is absence of data. In this
way data gaps are more noticeable than a break in
the profile.

LISTS
=====

Data is listed at a standard set of pressure levels.
Where data is not available, a negative value will
occur (either -999.0 or -9.99 depending on the number
of columns available in the data list). The quantities
listed are

P-DB	Pressure (decibars)
T-DEGC	Temperature (Celsius)
S-0/00	Salinity (parts per thousand) (calculated using the Fofonoff subroutine but adjusted to calibrated data points)

The following using Equation of State 1980.

POTEMP	Potential Temperature at the sea surface
SIGMA-0	Density (Sigma theta) calculated using Potential Temperature at the sea surface
SIGMA-1	Density (Sigma 1000) calculated using Potential Temperature at 1000 db
SIGMA-2	Density (Sigma 2000) calculated using Potential Temperature at 2000 db
DYN.HT.	Dynamic Height taking zero at the sea surface (units : $(m/s)**2$)
SVANOM	Specific Volume Anomaly (units : $m**3/kg$)
SNDV-M/S	Sound Velocity in metres/second
BVFR-C/H	Brunt-Vaisala frequency in cycles per hour calculated from surface downwards.
DEPTH	Depth in metres

TABLE 14   43

PRESSURE
DB

X TEMPERATURE
O SALINITY
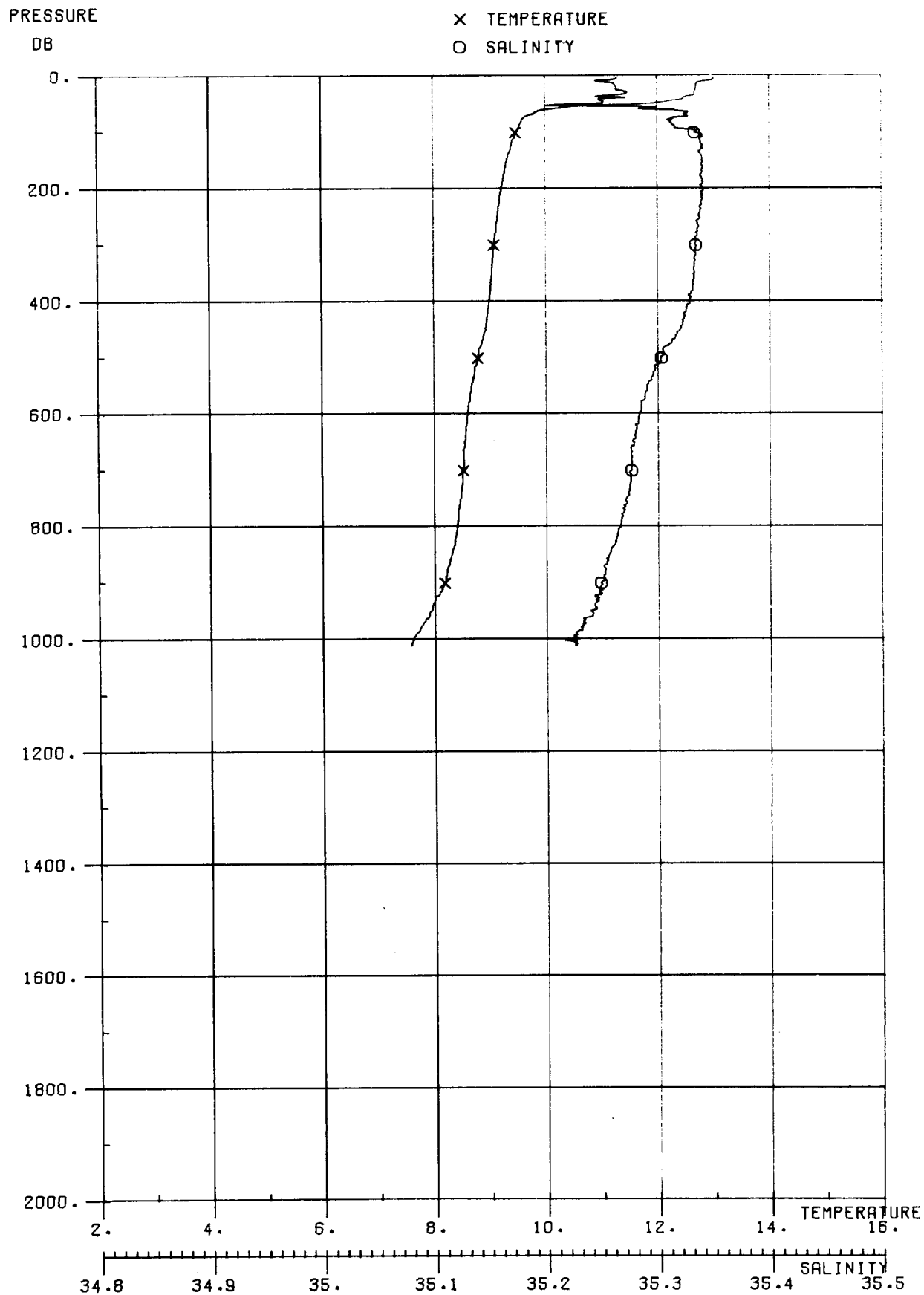
SHACKLETON 1978/5C : CTD STATION 03

44

P-DB	T-DEGC	S-0/00	POTEMP	SIGMA-0	SIGMA-1	SIGMA-2	DYN.HT.	SVANOM	SNDV-M/S	BVFR-C/H	DEPTH
10.	12.850	35.247	12.849	26.615	31.010	35.308	0.014	0.1416E-05	1500.1	-9.990	10.
20.	12.693	35.263	12.690	26.660	31.058	35.358	0.028	0.1376E-05	1499.8	3.744	20.
30.	12.669	35.273	12.665	26.672	31.070	35.371	0.042	0.1367E-05	1499.9	1.988	30.
40.	12.473	35.260	12.468	26.701	31.103	35.408	0.056	0.1343E-05	1499.4	3.033	40.
50.	11.796	35.232	11.790	26.810	31.226	35.544	0.069	0.1241E-05	1497.2	5.891	50.
75.	9.631	35.313	9.623	27.261	31.722	36.083	0.091	0.8180E-06	1490.1	7.569	74.
100.	9.482	35.334	9.471	27.303	31.767	36.131	0.112	0.7836E-06	1490.0	2.312	99.
125.	9.396	35.340	9.382	27.322	31.788	36.155	0.131	0.7706E-06	1490.1	1.582	124.
150.	9.324	35.340	9.308	27.335	31.802	36.170	0.150	0.7646E-06	1490.3	1.246	149.
175.	9.274	35.340	9.254	27.343	31.812	36.181	0.169	0.7619E-06	1490.5	1.054	173.
200.	9.220	35.340	9.198	27.353	31.823	36.193	0.188	0.7580E-06	1490.7	1.125	198.
250.	9.149	35.337	9.121	27.363	31.834	36.206	0.226	0.7593E-06	1491.3	0.810	248.
300.	9.085	35.334	9.051	27.372	31.845	36.218	0.264	0.7617E-06	1491.9	0.758	297.
350.	9.043	35.333	9.005	27.379	31.853	36.227	0.302	0.7655E-06	1492.5	0.691	346.
400.	8.995	35.328	8.951	27.383	31.859	36.234	0.341	0.7715E-06	1493.2	0.569	396.
450.	8.926	35.321	8.877	27.389	31.867	36.244	0.379	0.7759E-06	1493.7	0.653	445.
500.	8.792	35.303	8.737	27.398	31.878	36.259	0.418	0.7772E-06	1494.0	0.793	495.
600.	8.605	35.284	8.540	27.414	31.899	36.284	0.496	0.7806E-06	1495.0	0.765	594.
700.	8.523	35.276	8.446	27.423	31.910	36.297	0.575	0.7915E-06	1496.3	0.568	692.
800.	8.412	35.266	8.325	27.434	31.923	36.313	0.654	0.7995E-06	1497.5	0.642	791.
900.	8.188	35.249	8.091	27.456	31.951	36.346	0.734	0.7939E-06	1498.3	0.927	890.
1000.	7.623	35.228	7.519	27.524	32.033	36.441	0.811	0.7369E-06	1497.8	1.598	988.

PRESSURE   X TEMPERATURE
  DB   O SALINITY
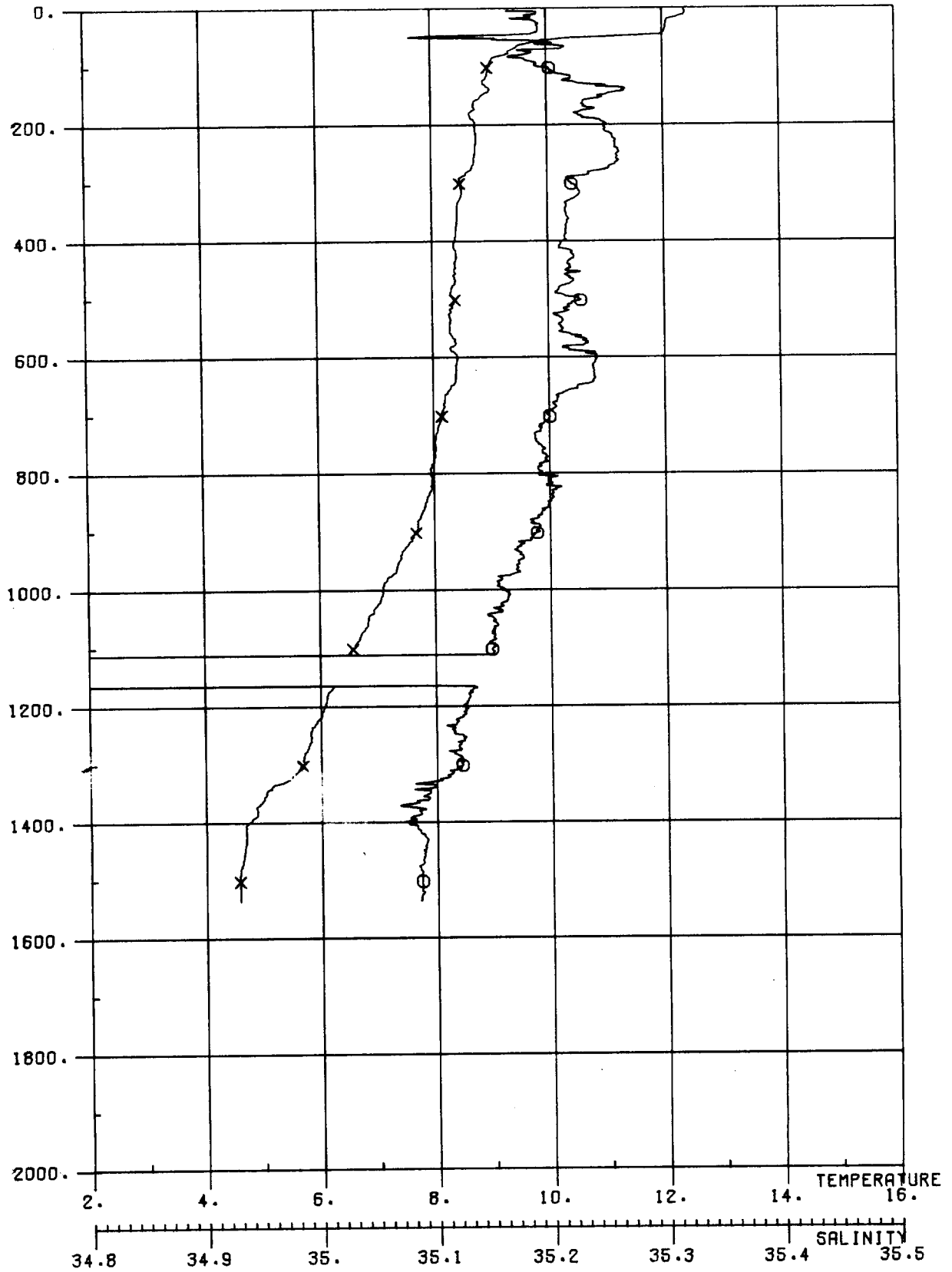
SHACKLETON 1978/5C : CTD STATION 4/2

SHACKLETON 1978/5C : CTD STATION 4/2

P-DB	T-DEGC	S-0/00	POTEMP	SIGMA-0	SIGMA-1	SIGMA-2	DYN.HT.	SVANOM	SNDV-M/S	BVFR-C/H	DEPTH
10.	12.377	35.186	12.375	26.662	31.066	35.373	0.014	0.1371E-05	1498.5	-9.990	10.
20.	12.079	35.188	12.076	26.721	31.132	35.445	0.027	0.1317E-05	1497.6	4.347	20.
30.	12.051	35.192	12.048	26.730	31.141	35.454	0.040	0.1312E-05	1497.7	1.642	30.
40.	12.030	35.191	12.025	26.733	31.145	35.458	0.053	0.1312E-05	1497.8	1.004	40.
50.	10.664	35.118	10.658	26.929	31.369	35.711	0.066	0.1127E-05	1493.1	7.909	50.
75.	9.348	35.188	9.340	27.210	31.678	36.047	0.089	0.8652E-06	1488.9	5.973	74.
100.	8.973	35.197	8.962	27.279	31.755	36.132	0.110	0.8048E-06	1488.0	2.965	99.
125.	8.898	35.224	8.885	27.313	31.790	36.168	0.130	0.7785E-06	1488.1	2.059	124.
150.	8.860	35.246	8.844	27.336	31.815	36.193	0.149	0.7615E-06	1488.4	1.729	149.
175.	8.721	35.230	8.702	27.346	31.828	36.210	0.168	0.7568E-06	1488.3	1.159	173.
200.	8.765	35.249	8.743	27.355	31.835	36.216	0.187	0.7543E-06	1488.9	1.017	198.
250.	8.747	35.260	8.720	27.367	31.848	36.229	0.224	0.7533E-06	1489.7	0.880	248.
300.	8.481	35.220	8.449	27.379	31.866	36.253	0.262	0.7510E-06	1489.5	0.922	297.
350.	8.432	35.215	8.395	27.383	31.871	36.260	0.300	0.7568E-06	1490.1	0.549	346.
400.	8.387	35.212	8.344	27.388	31.878	36.268	0.338	0.7615E-06	1490.8	0.604	396.
450.	8.376	35.215	8.328	27.393	31.883	36.273	0.376	0.7667E-06	1491.6	0.573	445.
500.	8.382	35.227	8.329	27.402	31.892	36.282	0.414	0.7685E-06	1492.4	0.746	495.
600.	8.416	35.240	8.351	27.409	31.899	36.288	0.492	0.7822E-06	1494.2	0.471	594.
700.	8.134	35.200	8.060	27.423	31.919	36.315	0.570	0.7855E-06	1494.8	0.747	692.
800.	7.942	35.191	7.858	27.446	31.947	36.347	0.649	0.7796E-06	1495.7	0.920	791.
900.	7.676	35.190	7.583	27.485	31.993	36.399	0.726	0.7564E-06	1496.3	1.188	890.
1000.	7.087	35.159	6.987	27.546	32.068	36.488	0.799	0.7041E-06	1495.7	1.536	988.
1100.	6.568	35.149	6.461	27.610	32.144	36.577	0.867	0.6484E-06	1495.3	1.561	1087.
1200.	6.061	35.125	5.949	27.658	32.205	36.650	0.931	0.6057E-06	1494.9	1.401	1185.
1300.	5.680	35.122	5.561	27.704	32.261	36.715	0.989	0.5655E-06	1495.1	1.358	1284.
1400.	4.736	35.074	4.617	27.778	32.359	36.836	1.041	0.4792E-06	1492.9	1.832	1382.
1500.	4.578	35.086	4.451	27.806	32.391	36.873	1.087	0.4590E-06	1493.9	1.040	1481.

47

SHACKLETON 1978/5C : CTD STATION 4/3

48

SHACKLETON 1978/5C : CTD STATION 4/3

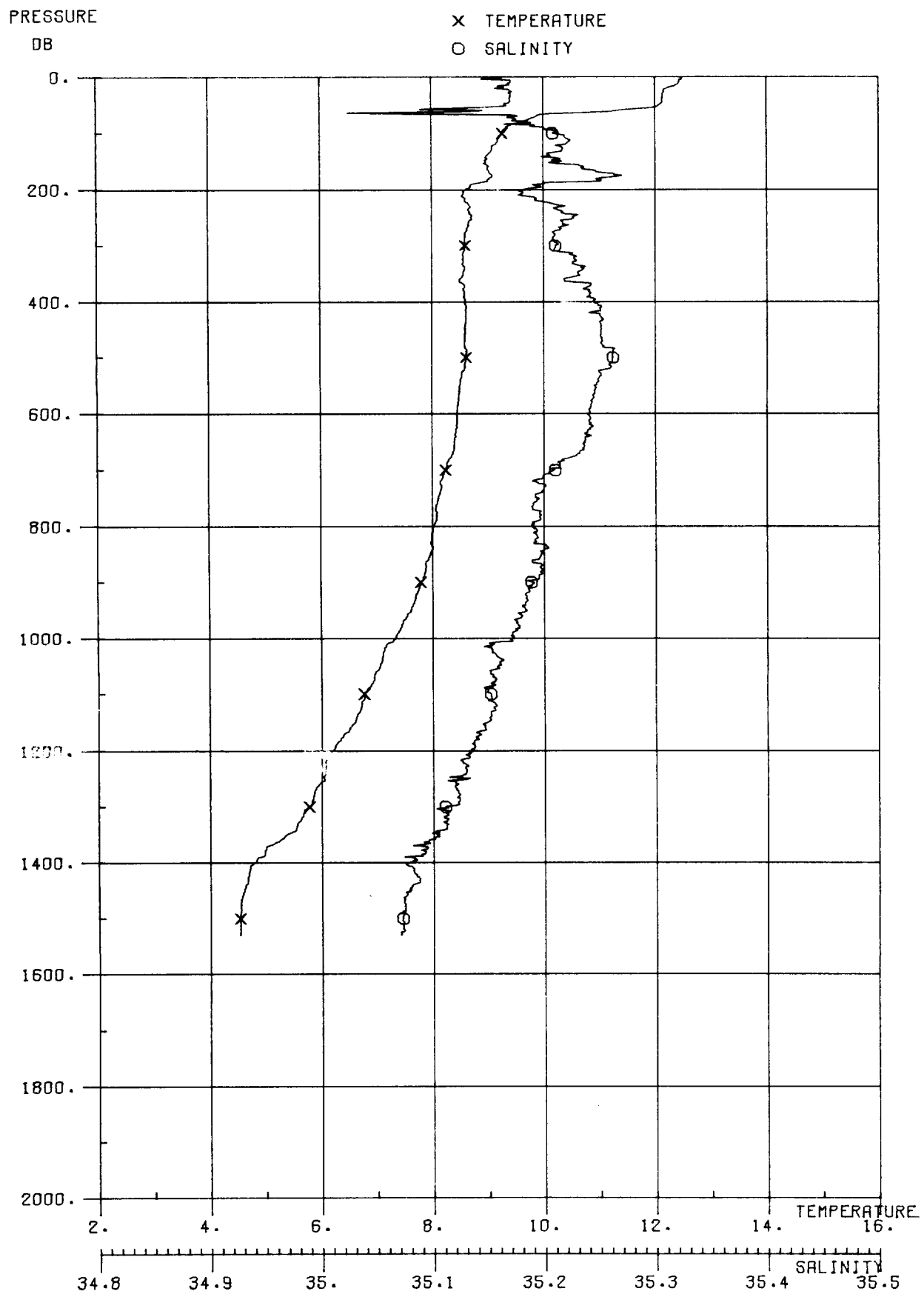| P-DB	T-DEGC	S-O/OO	POTEMP	SIGMA-0	SIGMA-1	SIGMA-2	DYN.HT.	SVANOM	SNDV-M/S	BVFR-C/H	DEPTH
10.	12.421	35.170	12.420	26.640	31.044	35.350	0.014	0.1392E-05	1498.6	-9.990	10.
20.	12.189	35.163	12.186	26.681	31.089	35.400	0.028	0.1356E-05	1498.0	3.587	20.
30.	12.135	35.171	12.131	26.697	31.106	35.418	0.041	0.1344E-05	1498.0	2.265	30.
40.	12.125	35.170	12.119	26.699	31.109	35.421	0.055	0.1344E-05	1498.1	0.830	40.
50.	12.066	35.166	12.060	26.707	31.119	35.432	0.068	0.1339E-05	1498.1	1.636	50.
75.	9.749	35.176	9.740	27.134	31.593	35.953	0.097	0.9381E-06	1490.4	7.369	74.
100.	9.257	35.211	9.246	27.244	31.714	36.084	0.119	0.8389E-06	1489.0	3.740	99.
125.	9.074	35.217	9.060	27.279	31.753	36.127	0.139	0.8106E-06	1488.8	2.124	124.
150.	8.969	35.211	8.952	27.292	31.768	36.144	0.160	0.8040E-06	1488.8	1.267	149.
175.	9.092	35.271	9.073	27.319	31.792	36.166	0.179	0.7839E-06	1489.7	1.848	173.
200.	8.612	35.181	8.591	27.325	31.810	36.194	0.199	0.7815E-06	1488.3	1.017	198.
250.	8.712	35.226	8.686	27.346	31.828	36.210	0.238	0.7726E-06	1489.5	1.138	248.
300.	8.591	35.211	8.560	27.354	31.839	36.224	0.276	0.7752E-06	1489.9	0.724	297.
350.	8.557	35.231	8.520	27.376	31.862	36.247	0.315	0.7643E-06	1490.6	1.194	346.
400.	8.594	35.246	8.551	27.382	31.867	36.252	0.353	0.7688E-06	1491.6	0.622	396.
450.	8.591	35.252	8.543	27.388	31.873	36.258	0.392	0.7735E-06	1492.4	0.620	445.
500.	8.610	35.262	8.556	27.394	31.879	36.264	0.430	0.7784E-06	1493.3	0.606	495.
600.	8.444	35.240	8.379	27.405	31.894	36.282	0.509	0.7867E-06	1494.3	0.638	594.
700.	8.232	35.209	8.157	27.415	31.909	36.302	0.588	0.7945E-06	1495.1	0.642	692.
800.	8.020	35.190	7.936	27.433	31.933	36.331	0.667	0.7926E-06	1496.0	0.847	791.
900.	7.785	35.190	7.691	27.470	31.974	36.379	0.746	0.7731E-06	1496.7	1.138	890.
1000.	7.327	35.171	7.225	27.522	32.038	36.453	0.821	0.7323E-06	1496.6	1.409	988.
1100.	6.766	35.152	6.658	27.586	32.115	36.544	0.892	0.6759E-06	1496.1	1.572	1087.
1200.	6.190	35.134	6.076	27.649	32.193	36.635	0.957	0.6173E-06	1495.5	1.585	1185.
1300.	5.762	35.112	5.642	27.687	32.241	36.694	1.017	0.5843E-06	1495.4	1.269	1284.
1400.	4.790	35.078	4.670	27.775	32.354	36.830	1.071	0.4840E-06	1493.1	1.958	1382.
1500.	4.530	35.072	4.404	27.800	32.386	36.869	1.117	0.4628E-06	1493.7	1.056	1481.
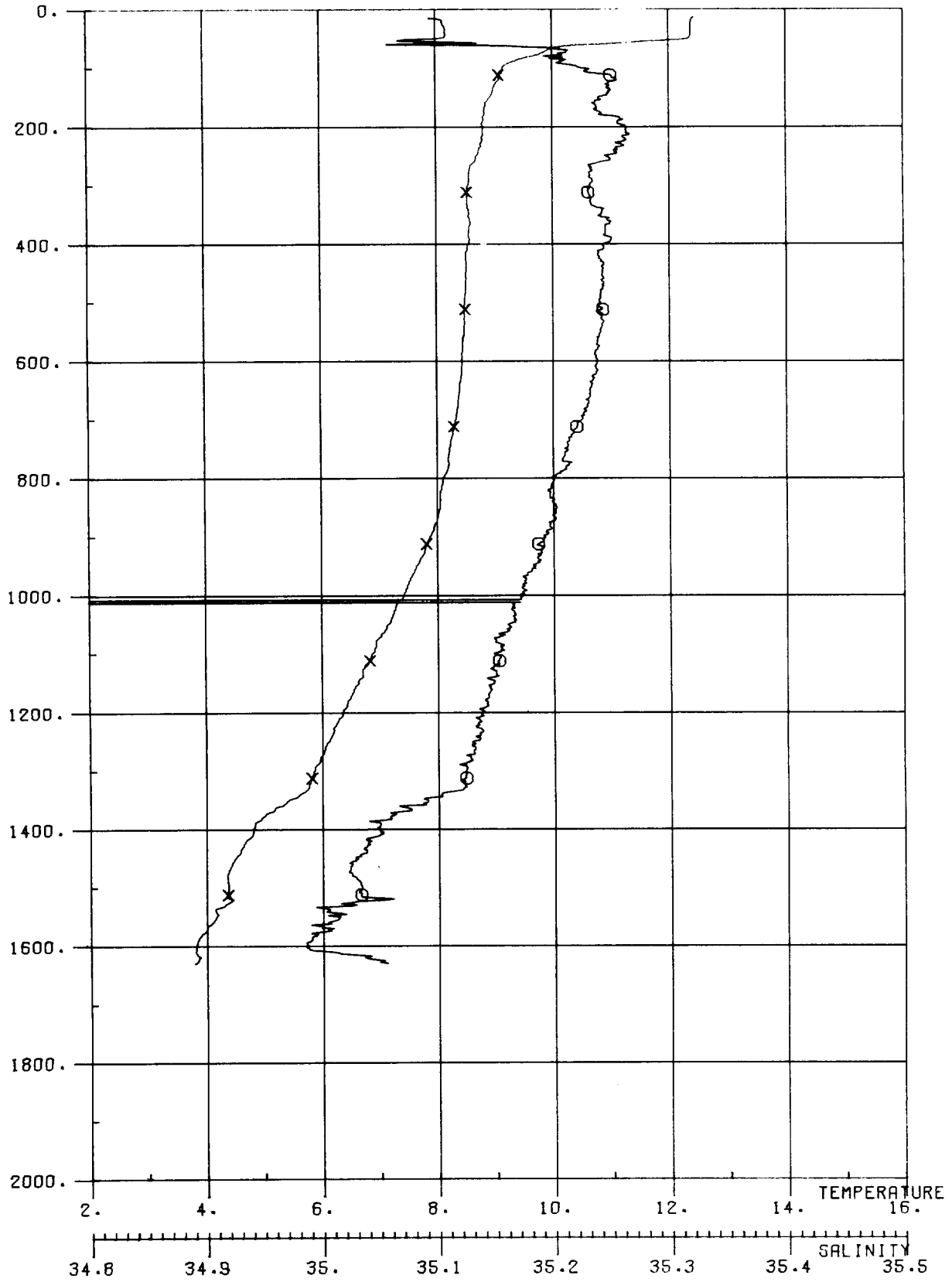
SHACKLETON 1978/5C : CTD STATION 05

SHACKLETON 1978/5C : CTD STATION 05

P-DB	T-DEGC	S-0/00	POTEMP	SIGMA-0	SIGMA-1	SIGMA-2	DYN.HT.	SVANOM	SNDV-M/S	BVFR-C/H	DEPTH
20.	12.374	35.106	12.372	26.600	31.005	35.313	0.029	0.1433E-05	1498.5	-9.990	20.
30.	12.367	35.109	12.363	26.604	31.009	35.317	0.043	0.1432E-05	1498.7	1.090	30.
40.	12.365	35.109	12.359	26.605	31.010	35.318	0.058	0.1434E-05	1498.8	0.557	40.
50.	12.281	35.087	12.274	26.605	31.012	35.321	0.072	0.1437E-05	1498.7	-0.251	50.
75.	9.792	35.205	9.784	27.149	31.607	35.966	0.099	0.9238E-06	1490.6	8.321	74.
100.	9.143	35.228	9.132	27.276	31.748	36.121	0.121	0.8082E-06	1488.6	4.022	99.
125.	9.036	35.248	9.022	27.310	31.784	36.159	0.141	0.7818E-06	1488.7	2.065	124.
150.	8.919	35.239	8.903	27.322	31.799	36.176	0.160	0.7753E-06	1488.7	1.262	149.
175.	8.830	35.242	8.811	27.339	31.818	36.197	0.179	0.7644E-06	1488.7	1.473	173.
200.	8.805	35.262	8.783	27.359	31.838	36.218	0.198	0.7505E-06	1489.1	1.604	198.
250.	8.690	35.246	8.664	27.365	31.847	36.230	0.236	0.7548E-06	1489.5	0.649	248.
300.	8.545	35.231	8.513	27.377	31.863	36.249	0.273	0.7528E-06	1489.7	0.911	297.
350.	8.558	35.240	8.520	27.383	31.869	36.254	0.311	0.7575E-06	1490.6	0.617	346.
400.	8.550	35.243	8.507	27.387	31.873	36.259	0.349	0.7637E-06	1491.4	0.520	396.
450.	8.508	35.242	8.460	27.394	31.881	36.268	0.387	0.7674E-06	1492.1	0.668	445.
500.	8.481	35.240	8.428	27.397	31.885	36.273	0.426	0.7742E-06	1492.8	0.482	495.
600.	8.433	35.237	8.368	27.404	31.894	36.282	0.504	0.7871E-06	1494.3	0.500	594.
700.	8.319	35.224	8.244	27.413	31.905	36.297	0.583	0.7974E-06	1495.5	0.575	692.
800.	8.098	35.199	8.013	27.428	31.926	36.323	0.663	0.7989E-06	1496.3	0.781	791.
900.	7.861	35.192	7.767	27.460	31.963	36.366	0.742	0.7836E-06	1497.0	1.076	890.
1000.	7.407	35.172	7.305	27.511	32.025	36.438	0.819	0.7441E-06	1496.9	1.395	988.
1100.	6.864	35.149	6.755	27.570	32.097	36.523	0.891	0.6932E-06	1496.5	1.515	1087.
1200.	6.354	35.138	6.239	27.631	32.171	36.609	0.957	0.6387E-06	1496.1	1.542	1185.
1300.	5.854	35.123	5.734	27.684	32.236	36.686	1.018	0.5896E-06	1495.8	1.471	1284.
1400.	4.801	35.050	4.682	27.751	32.330	36.807	1.074	0.5062E-06	1493.1	1.807	1382.
1500.	4.367	35.034	4.242	27.787	32.378	36.865	1.122	0.4688E-06	1493.0	1.287	1481.
1600.	3.808	34.986	3.681	27.808	32.413	36.915	1.168	0.4385E-06	1492.2	1.174	1579.

SHACKLETON 1978/5C : CTD STATION 06

52
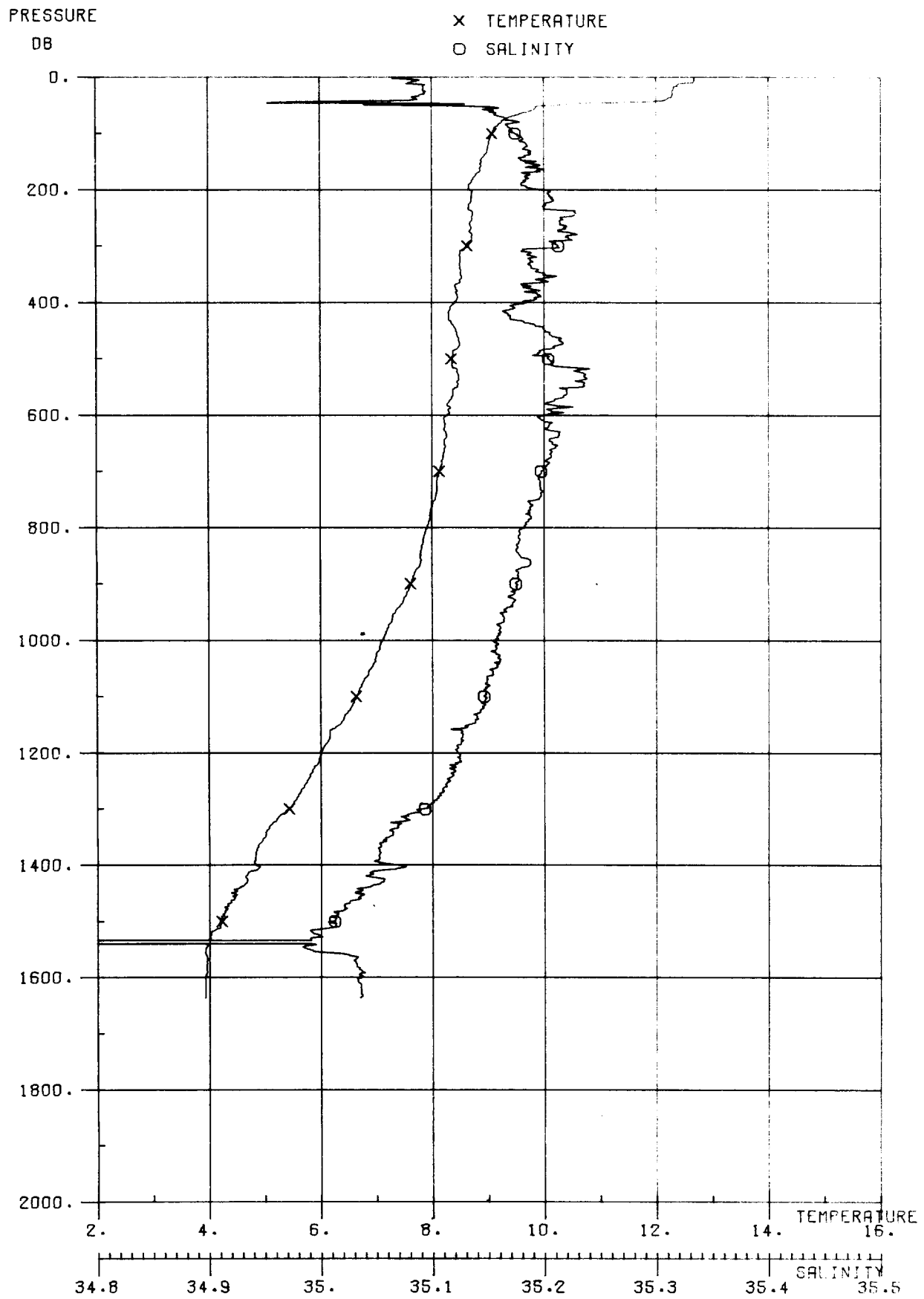
SHACKLETON 1978/5C : CTD STATION 06

P-DB	T-DEGC	S-0/00	POTEMP	SIGMA-0	SIGMA-1	SIGMA-2	DYN.HT.	SVANOM	SNDV-M/S	BVFR-C/H	DEPTH
10.	12.538	35.079	12.536	26.547	30.949	35.253	0.015	0.1481E-05	1498.9	-9.990	10.
20.	12.302	35.092	12.300	26.604	31.010	35.319	0.029	0.1429E-05	1498.3	4.238	20.
30.	12.286	35.091	12.282	26.606	31.013	35.323	0.044	0.1430E-05	1498.4	0.912	30.
40.	12.153	35.083	12.148	26.626	31.036	35.348	0.058	0.1414E-05	1498.1	2.501	40.
50.	10.060	35.085	10.054	27.009	31.462	35.816	0.071	0.1051E-05	1491.0	11.037	50.
75.	9.281	35.165	9.273	27.204	31.673	36.043	0.094	0.8714E-06	1488.7	4.968	74.
100.	9.068	35.176	9.057	27.247	31.721	36.096	0.115	0.8355E-06	1488.3	2.351	99.
125.	8.997	35.182	8.983	27.264	31.740	36.116	0.136	0.8247E-06	1488.5	1.472	124.
150.	8.878	35.189	8.862	27.288	31.767	36.145	0.156	0.8066E-06	1488.4	1.771	149.
175.	8.765	35.183	8.747	27.303	31.784	36.165	0.176	0.7982E-06	1488.4	1.354	173.
200.	8.684	35.202	8.663	27.331	31.814	36.196	0.196	0.7763E-06	1488.6	1.903	198.
250.	8.711	35.215	8.685	27.337	31.819	36.202	0.235	0.7810E-06	1489.5	0.625	248.
300.	8.626	35.212	8.594	27.349	31.833	36.218	0.274	0.7796E-06	1490.0	0.890	297.
350.	8.508	35.200	8.470	27.359	31.847	36.233	0.313	0.7794E-06	1490.4	0.841	346.
400.	8.394	35.184	8.351	27.365	31.855	36.244	0.352	0.7835E-06	1490.8	0.641	396.
450.	8.426	35.201	8.378	27.374	31.863	36.252	0.391	0.7853E-06	1491.7	0.747	445.
500.	8.346	35.204	8.293	27.390	31.881	36.272	0.430	0.7795E-06	1492.3	1.033	495.
600.	8.251	35.199	8.187	27.402	31.896	36.289	0.509	0.7865E-06	1493.5	0.660	594.
700.	8.125	35.197	8.051	27.421	31.918	36.314	0.587	0.7865E-06	1494.7	0.814	692.
800.	7.905	35.182	7.821	27.444	31.946	36.347	0.665	0.7810E-06	1495.5	0.912	791.
900.	7.601	35.175	7.508	27.485	31.994	36.403	0.742	0.7551E-06	1496.0	1.224	890.
1000.	7.097	35.155	6.997	27.542	32.063	36.483	0.816	0.7087E-06	1495.7	1.469	988.
1100.	6.629	35.147	6.522	27.600	32.133	36.565	0.884	0.6590E-06	1495.5	1.495	1087.
1200.	5.996	35.123	5.884	27.665	32.213	36.660	0.947	0.5971E-06	1494.7	1.616	1185.
1300.	5.418	35.089	5.301	27.710	32.273	36.734	1.004	0.5519E-06	1494.0	1.415	1284.
1400.	4.836	35.070	4.715	27.764	32.342	36.817	1.056	0.4956E-06	1493.3	1.528	1382.
1500.	4.197	35.009	4.074	27.786	32.380	36.872	1.104	0.4641E-06	1492.2	1.205	1481.
1600.	3.930	35.035	3.801	27.835	32.437	36.935	1.148	0.4186E-06	1492.8	1.375	1579.

SHACKLETON 1978/5C : CTD STATION 07

54
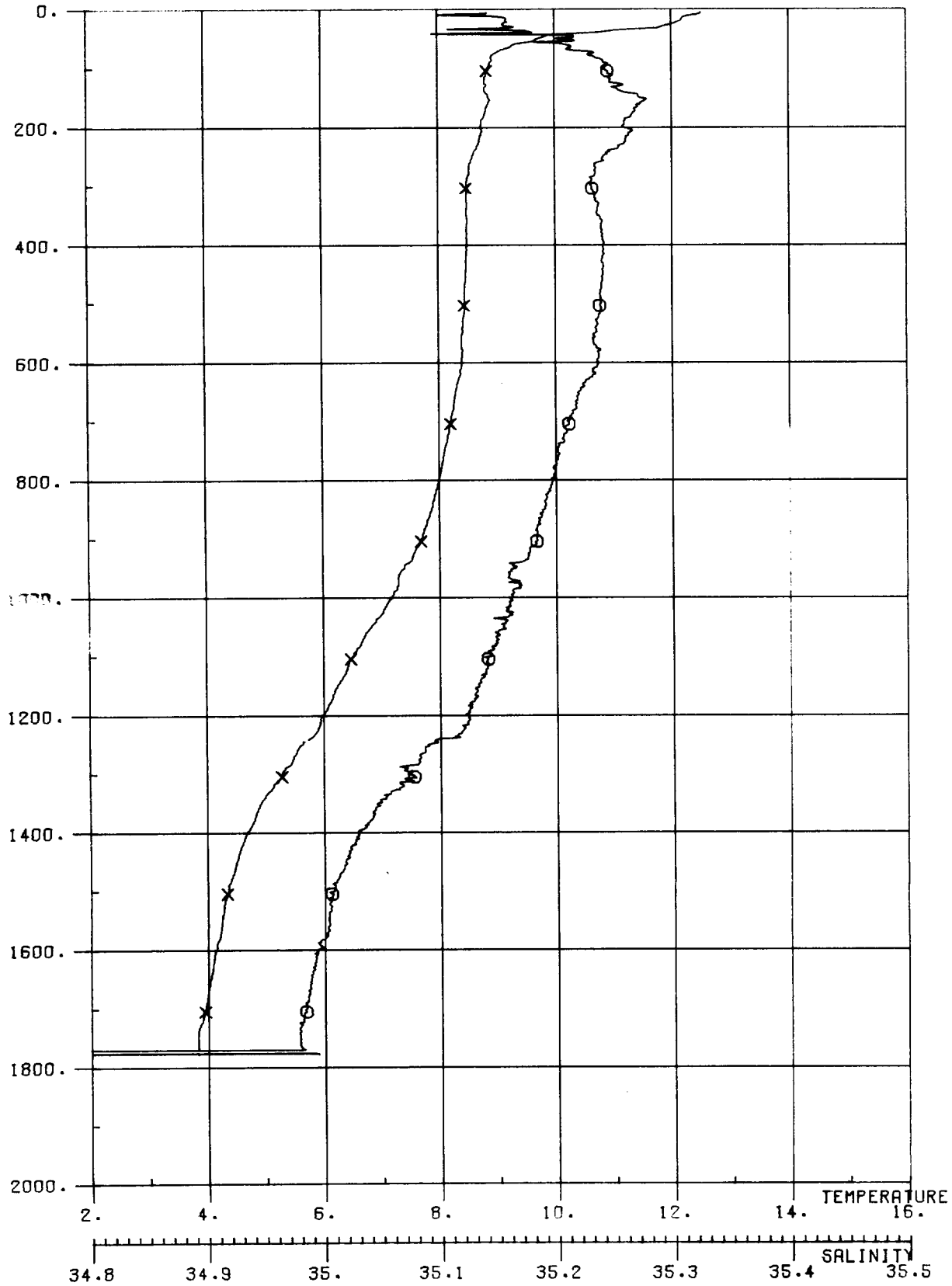
SHACKLETON 1978/5C : CTD STATION 07

P-DB	T-DEGC	S-0/00	POTEMP	SIGMA-0	SIGMA-1	SIGMA-2	DYN.HT.	SVANOM	SNDV-M/S	BVFR-C/H	DEPTH
10.	12.367	35.122	12.366	26.614	31.019	35.327	0.014	0.1417E-05	1498.4	-9.990	10.
20.	12.135	35.159	12.132	26.688	31.098	35.410	0.028	0.1349E-05	1497.8	4.838	20.
30.	11.799	35.161	11.796	26.754	31.170	35.488	0.041	0.1290E-05	1496.8	4.553	30.
40.	10.543	35.138	10.538	26.966	31.409	35.753	0.053	0.1089E-05	1492.6	8.223	40.
50.	9.706	35.209	9.700	27.167	31.626	35.987	0.062	0.9015E-06	1489.8	7.963	50.
75.	8.970	35.228	8.961	27.303	31.779	36.155	0.083	0.7765E-06	1487.6	4.176	74.
100.	8.848	35.242	8.837	27.334	31.813	36.191	0.102	0.7525E-06	1487.6	1.979	99.
125.	8.803	35.255	8.790	27.352	31.832	36.211	0.121	0.7408E-06	1487.8	1.510	124.
150.	8.876	35.276	8.860	27.357	31.835	36.213	0.140	0.7415E-06	1488.5	0.792	149.
175.	8.809	35.267	8.790	27.361	31.841	36.220	0.158	0.7427E-06	1488.7	0.744	173.
200.	8.732	35.260	8.711	27.369	31.850	36.231	0.177	0.7410E-06	1488.8	0.973	198.
250.	8.586	35.241	8.560	27.378	31.862	36.247	0.214	0.7423E-06	1489.1	0.782	248.
300.	8.484	35.231	8.452	27.387	31.874	36.261	0.251	0.7433E-06	1489.5	0.792	297.
350.	8.488	35.237	8.451	27.391	31.879	36.266	0.288	0.7491E-06	1490.4	0.545	346.
400.	8.493	35.242	8.451	27.395	31.882	36.269	0.326	0.7560E-06	1491.2	0.479	396.
450.	8.467	35.241	8.419	27.399	31.887	36.275	0.364	0.7623E-06	1491.9	0.518	445.
500.	8.447	35.239	8.393	27.402	31.890	36.279	0.402	0.7697E-06	1492.7	0.431	495.
600.	8.397	35.237	8.333	27.409	31.899	36.289	0.480	0.7820E-06	1494.1	0.517	594.
700.	8.197	35.210	8.122	27.421	31.916	36.310	0.558	0.7880E-06	1495.0	0.684	692.
800.	7.990	35.197	7.906	27.443	31.943	36.342	0.637	0.7832E-06	1495.9	0.901	791.
900.	7.695	35.183	7.602	27.477	31.984	36.391	0.715	0.7639E-06	1496.4	1.133	890.
1000.	7.174	35.161	7.073	27.536	32.055	36.474	0.789	0.7159E-06	1496.0	1.489	988.
1100.	6.498	35.141	6.392	27.613	32.149	36.583	0.856	0.6441E-06	1495.0	1.726	1087.
1200.	5.965	35.124	5.854	27.670	32.219	36.666	0.918	0.5921E-06	1494.6	1.506	1185.
1300.	5.288	35.075	5.172	27.715	32.281	36.745	0.976	0.5436E-06	1493.4	1.452	1284.
1400.	4.671	35.030	4.553	27.750	32.333	36.812	1.028	0.5027E-06	1492.5	1.343	1382.
1500.	4.346	35.006	4.222	27.768	32.359	36.847	1.077	0.4860E-06	1492.8	0.974	1481.
1600.	4.131	34.993	4.000	27.781	32.378	36.872	1.125	0.4760E-06	1493.6	0.838	1579.
1700.	3.949	34.983	3.811	27.793	32.395	36.893	1.172	0.4678E-06	1494.5	0.790	1677.

SHACKLETON 1978/5C : CTD STATION 08

56

SHACKLETON 1978/5C : CTD STATION 08
========== ======== === ========

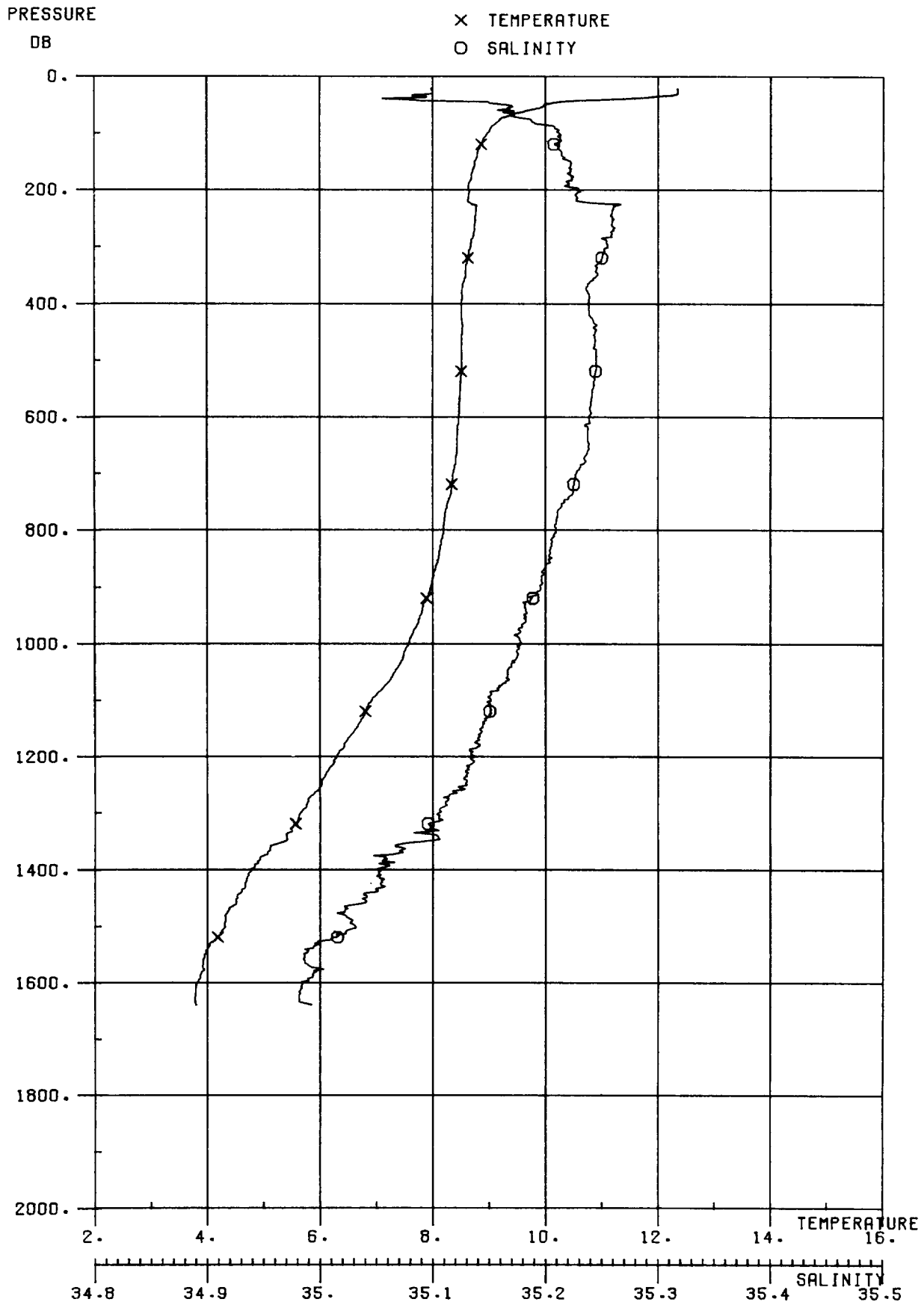| P-DB	T-DEGC	S-O/OO	POTEMP	SIGMA-O	SIGMA-1	SIGMA-2	DYN.HT.	SVANOM	SNDV-M/S	BVFR-C/H	DEPTH
30.	12.344	35.099	12.340	26.601	31.007	35.315	0.043	0.1434E-05	1498.6	-9.990	30.
40.	11.260	35.067	11.255	26.781	31.209	35.539	0.057	0.1266E-05	1495.0	7.558	40.
50.	9.986	35.165	9.980	27.084	31.538	35.893	0.068	0.9797E-06	1490.8	9.805	50.
75.	9.193	35.186	9.185	27.234	31.705	36.077	0.090	0.8424E-06	1488.4	4.367	74.
100.	8.965	35.212	8.955	27.292	31.768	36.144	0.111	0.7928E-06	1488.0	2.712	99.
125.	8.827	35.212	8.813	27.315	31.794	36.173	0.130	0.7764E-06	1487.9	1.704	124.
150.	8.746	35.222	8.730	27.336	31.817	36.198	0.150	0.7612E-06	1488.0	1.656	149.
175.	8.684	35.223	8.665	27.347	31.830	36.212	0.169	0.7558E-06	1488.2	1.196	173.
200.	8.645	35.229	8.623	27.358	31.841	36.225	0.187	0.7506E-06	1488.5	1.180	198.
250.	8.749	35.260	8.722	27.367	31.848	36.229	0.225	0.7536E-06	1489.7	0.711	248.
300.	8.670	35.255	8.638	27.376	31.859	36.242	0.263	0.7545E-06	1490.2	0.801	297.
350.	8.579	35.246	8.542	27.384	31.869	36.254	0.301	0.7571E-06	1490.7	0.728	346.
400.	8.506	35.238	8.464	27.390	31.877	36.264	0.338	0.7610E-06	1491.2	0.650	396.
450.	8.517	35.244	8.469	27.394	31.881	36.268	0.377	0.7673E-06	1492.1	0.518	445.
500.	8.510	35.245	8.457	27.397	31.884	36.271	0.415	0.7752E-06	1492.9	0.402	495.
600.	8.455	35.238	8.391	27.402	31.890	36.279	0.493	0.7901E-06	1494.4	0.431	594.
700.	8.354	35.227	8.279	27.410	31.901	36.292	0.573	0.8007E-06	1495.6	0.564	692.
800.	8.184	35.209	8.098	27.424	31.919	36.314	0.653	0.8048E-06	1496.6	0.729	791.
900.	7.955	35.195	7.860	27.449	31.950	36.350	0.734	0.7962E-06	1497.4	0.968	890.
1000.	7.563	35.177	7.459	27.493	32.003	36.413	0.812	0.7647E-06	1497.5	1.299	988.
1100.	6.905	35.151	6.796	27.567	32.093	36.518	0.886	0.6976E-06	1496.6	1.687	1087.
1200.	6.292	35.137	6.177	27.638	32.179	36.619	0.952	0.6306E-06	1495.9	1.673	1185.
1300.	5.648	35.105	5.529	27.696	32.253	36.708	1.013	0.5726E-06	1494.9	1.566	1284.
1400.	4.768	35.052	4.648	27.757	32.337	36.814	1.067	0.4997E-06	1493.0	1.704	1382.
1500.	4.301	35.031	4.178	27.792	32.384	36.873	1.115	0.4618E-06	1492.7	1.292	1481.
1600.	3.810	34.983	3.683	27.806	32.411	36.913	1.160	0.4406E-06	1492.2	1.033	1579.

57
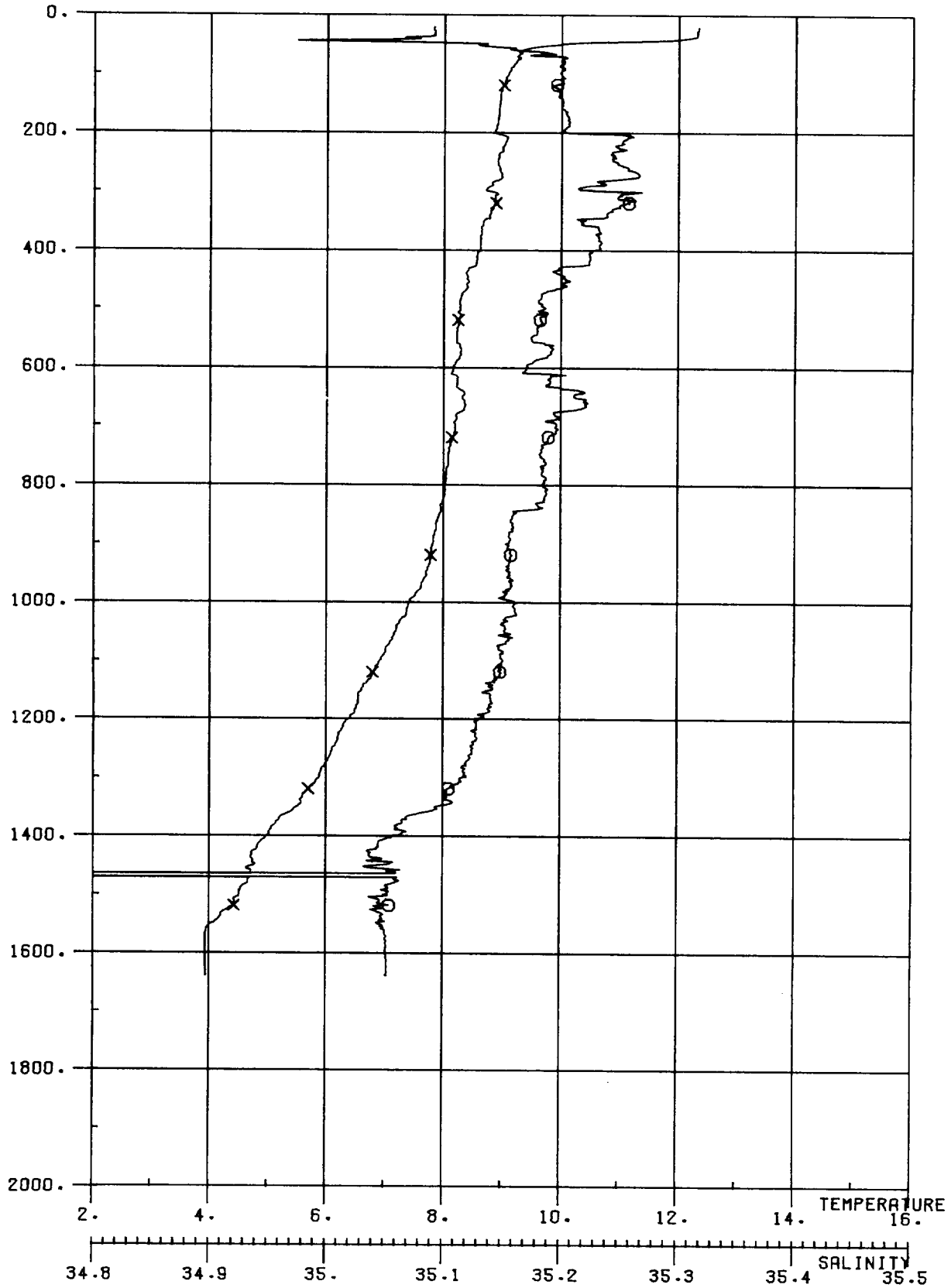
SHACKLETON 1978/5C : CTD STATION 09

58

SHACKLETON 1978/5C : CTD STATION 09

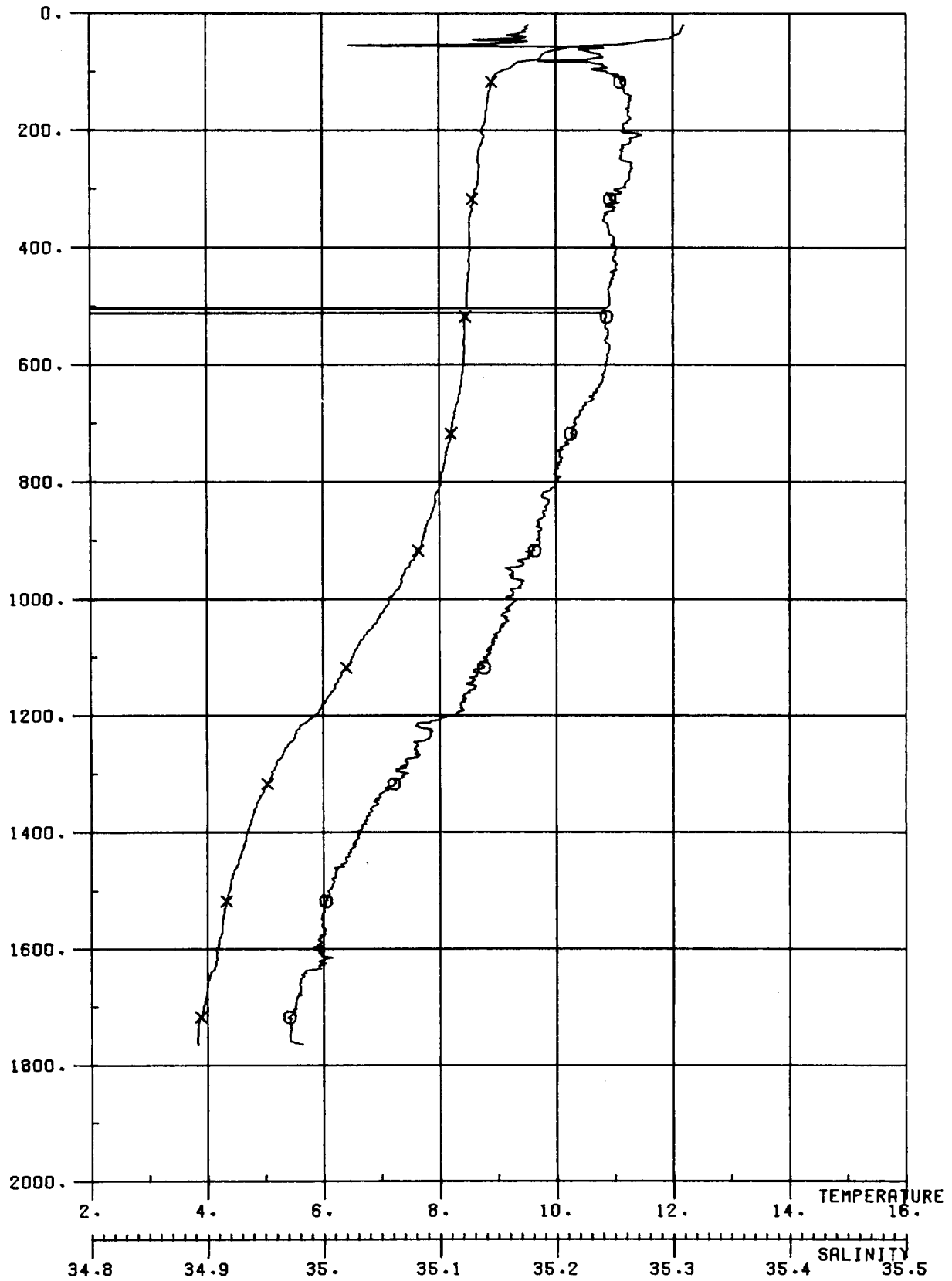| P-DB	T-DEGC	S-0/00	POTEMP	SIGMA-0	SIGMA-1	SIGMA-2	DYN.HT.	SVANOM	SNDV-M/S	BVFR-C/H	DEPTH
30.	12.302	35.091	12.298	26.603	31.010	35.319	0.043	0.1433E-05	1498.4	-9.990	30.
40.	12.127	35.072	12.122	26.622	31.033	35.345	0.057	0.1417E-05	1498.0	2.481	40.
50.	9.996	35.133	9.990	27.058	31.512	35.867	0.070	0.1005E-05	1490.8	11.753	50.
75.	9.272	35.201	9.264	27.233	31.702	36.072	0.092	0.8439E-06	1488.7	4.717	74.
100.	9.074	35.199	9.063	27.264	31.738	36.112	0.113	0.8192E-06	1488.4	2.008	99.
125.	8.964	35.197	8.951	27.281	31.757	36.134	0.133	0.8089E-06	1488.4	1.449	124.
150.	8.933	35.201	8.917	27.289	31.766	36.143	0.153	0.8062E-06	1488.7	1.038	149.
175.	8.910	35.206	8.891	27.298	31.775	36.153	0.173	0.8035E-06	1489.0	1.042	173.
200.	8.856	35.205	8.834	27.305	31.784	36.163	0.193	0.8011E-06	1489.2	1.016	198.
250.	8.902	35.247	8.875	27.332	31.810	36.188	0.233	0.7867E-06	1490.2	1.295	248.
300.	8.789	35.251	8.756	27.354	31.835	36.215	0.272	0.7758E-06	1490.7	1.203	297.
350.	8.655	35.218	8.617	27.350	31.834	36.218	0.312	0.7891E-06	1490.9	-0.434	346.
400.	8.599	35.228	8.556	27.368	31.853	36.238	0.351	0.7825E-06	1491.6	1.066	396.
450.	8.393	35.203	8.346	27.381	31.871	36.261	0.390	0.7782E-06	1491.6	0.987	445.
500.	8.271	35.186	8.219	27.387	31.880	36.272	0.429	0.7816E-06	1491.9	0.670	495.
600.	8.147	35.170	8.083	27.395	31.891	36.287	0.508	0.7918E-06	1493.1	0.565	594.
700.	8.180	35.196	8.106	27.412	31.907	36.302	0.587	0.7960E-06	1494.9	0.721	692.
800.	8.008	35.184	7.924	27.430	31.930	36.329	0.667	0.7952E-06	1495.9	0.825	791.
900.	7.808	35.154	7.714	27.438	31.942	36.346	0.747	0.8033E-06	1496.8	0.605	890.
1000.	7.416	35.161	7.313	27.501	32.015	36.428	0.826	0.7535E-06	1496.9	1.513	988.
1100.	6.899	35.150	6.790	27.567	32.093	36.518	0.899	0.6975E-06	1496.6	1.571	1087.
1200.	6.386	35.131	6.271	27.621	32.160	36.597	0.966	0.6492E-06	1496.2	1.474	1185.
1300.	5.869	35.117	5.748	27.677	32.229	36.679	1.028	0.5967E-06	1495.8	1.510	1284.
1400.	4.985	35.058	4.864	27.738	32.312	36.784	1.084	0.5252E-06	1493.9	1.693	1382.
1500.	4.506	35.051	4.380	27.786	32.373	36.857	1.134	0.4751E-06	1493.6	1.448	1481.
1600.	3.926	35.051	3.798	27.848	32.450	36.948	1.177	0.4066E-06	1492.8	1.638	1579.

SHACKLETON 1978/5C : CTD STATION 10

SHACKLETON 1978/5C : CTD STATION 10

P-DB	T-DEGC	S-O/OO	POTEMP	SIGMA-0	SIGMA-1	SIGMA-2	DYN.HT.	SVANOM	SNDV-M/S	BVFR-C/H	DEPTH
20.	12.177	35.176	12.174	26.693	31.101	35.412	0.027	0.1345E-05	1498.0	-9.990	20.
30.	12.125	35.172	12.121	26.700	31.110	35.422	0.040	0.1340E-05	1497.9	1.559	30.
40.	11.961	35.174	11.956	26.733	31.146	35.461	0.054	0.1312E-05	1497.6	3.221	40.
50.	11.332	35.164	11.326	26.844	31.270	35.598	0.066	0.1209E-05	1495.5	5.935	50.
75.	9.729	35.240	9.720	27.188	31.647	36.007	0.091	0.8872E-06	1490.4	6.611	74.
100.	9.028	35.244	9.017	27.307	31.781	36.156	0.112	0.7791E-06	1488.2	3.895	99.
125.	8.872	35.257	8.858	27.342	31.820	36.198	0.131	0.7503E-06	1488.1	2.137	124.
150.	8.323	35.263	8.806	27.355	31.334	36.214	0.149	0.7433E-06	1488.3	1.284	149.
175.	8.786	35.262	8.767	27.361	31.841	36.221	0.168	0.7429E-06	1488.6	0.873	173.
200.	8.723	35.257	8.701	27.368	31.849	36.231	0.187	0.7419E-06	1488.3	0.924	198.
250.	8.646	35.256	8.619	27.380	31.863	36.247	0.224	0.7403E-06	1489.3	0.900	243.
300.	8.615	35.251	8.583	27.381	31.865	36.250	0.261	0.7493E-06	1490.0	0.313	297.
350.	8.504	35.241	8.467	27.392	31.878	36.265	0.298	0.7491E-06	1490.4	0.341	346.
400.	8.515	35.252	8.473	27.400	31.886	36.273	0.336	0.7519E-06	1491.3	0.707	396.
450.	8.487	35.248	8.439	27.402	31.889	36.277	0.374	0.7596E-06	1492.0	0.421	445.
500.	8.455	35.244	8.401	27.405	31.893	36.281	0.412	0.7668E-06	1492.7	0.450	495.
600.	8.399	35.242	8.335	27.413	31.903	36.293	0.489	0.7785E-06	1494.1	0.535	594.
700.	8.207	35.216	8.132	27.424	31.918	36.312	0.567	0.7357E-06	1495.0	0.655	692.
800.	8.004	35.201	7.919	27.444	31.943	36.343	0.646	0.7826E-06	1495.9	0.872	791.
900.	7.688	35.184	7.595	27.479	31.986	36.392	0.724	0.7627E-06	1496.4	1.142	890.
1000.	7.109	35.163	7.009	27.547	32.068	36.487	0.798	0.7045E-06	1495.8	1.600	983.
1100.	6.483	35.138	6.377	27.613	32.149	36.584	0.865	0.6437E-06	1495.0	1.613	1037.
1200.	5.849	35.110	5.739	27.673	32.225	36.675	0.927	0.5859E-06	1494.1	1.569	1135.
1300.	5.115	35.071	5.002	27.731	32.302	36.770	0.981	0.5228E-06	1492.7	1.609	1284.
1400.	4.673	35.029	4.554	27.749	32.331	36.811	1.033	0.5038E-06	1492.5	1.028	1382.
1500.	4.368	35.004	4.244	27.763	32.354	36.841	1.082	0.4910E-06	1492.9	0.906	1481.
1600.	4.138	34.991	4.007	27.779	32.375	36.869	1.131	0.4785E-06	1493.6	0.886	1579.
1700.	3.927	34.975	3.790	27.788	32.391	36.890	1.178	0.4710E-06	1494.4	0.775	1677.
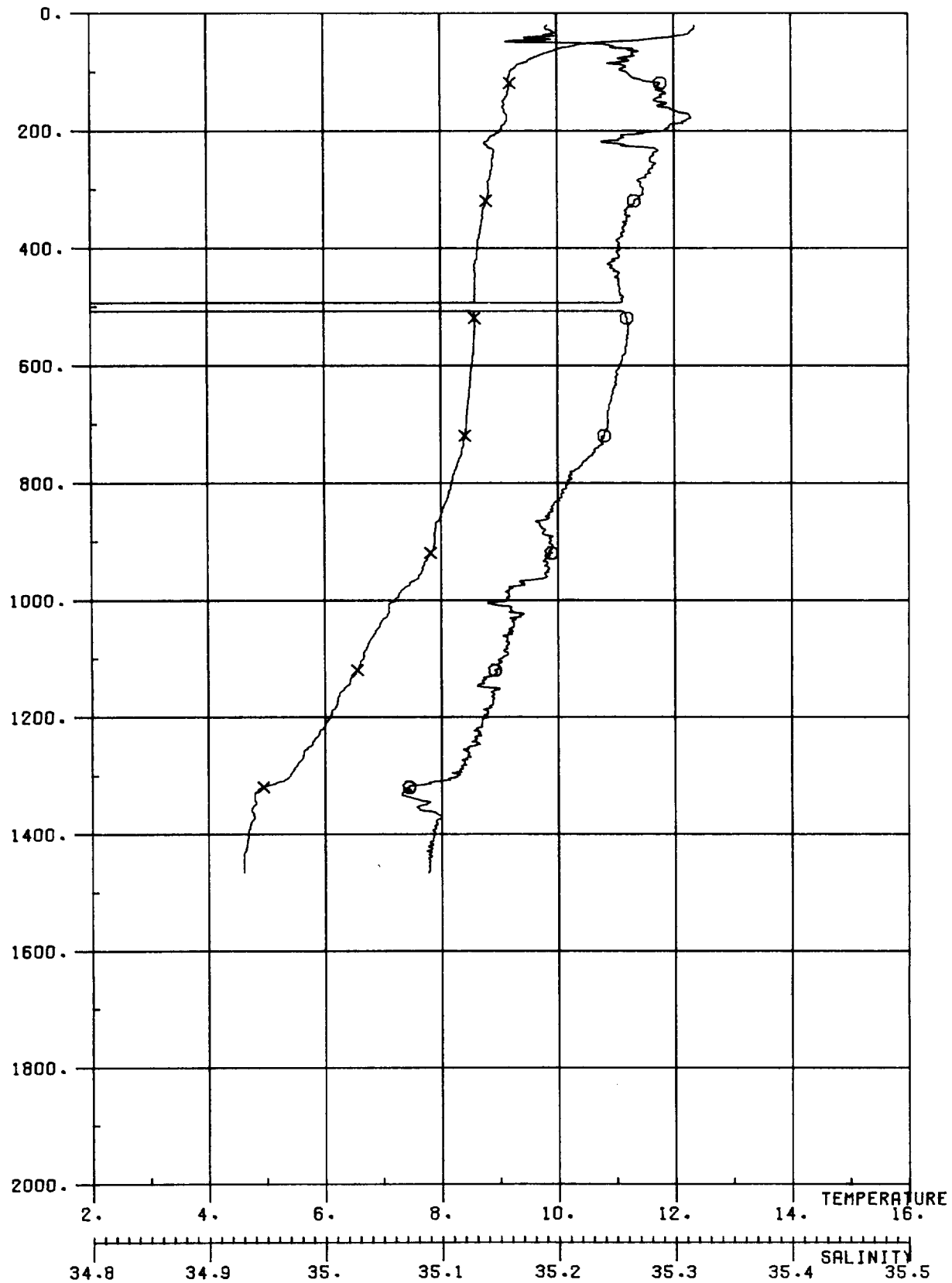
SHACKLETON 1978/5C : CTD STATION 14

SHACKLETON 1978/5C : CTD STATION 14
=========== === ========= ========= == ==

P-DB	T-DEGC	S-0/00	POTEMP	SIGMA-0	SIGMA-1	SIGMA-2	DYN.HT.	SVANOM	SNDV-M/S	BVFR-C/H	DEPTH
30.	12.293	35.195	12.289	26.686	31.092	35.400	0.041	0.1354E-05	1498.5	-9.990	30.
40.	11.967	35.185	11.962	26.741	31.154	35.469	0.054	0.1305E-05	1497.6	4.184	40.
50.	10.716	35.188	10.710	26.974	31.413	35.753	0.067	0.1085E-05	1493.4	8.614	50.
75.	9.629	35.258	9.620	27.218	31.680	36.042	0.090	0.8580E-06	1490.0	5.569	74.
100.	9.195	35.260	9.184	27.292	31.763	36.134	0.110	0.7932E-06	1488.9	3.063	99.
125.	9.180	35.284	9.166	27.314	31.785	36.156	0.130	0.7782E-06	1489.3	1.656	124.
150.	9.080	35.285	9.063	27.331	31.804	36.178	0.149	0.7669E-06	1489.3	1.498	149.
175.	9.145	35.314	9.126	27.344	31.816	36.188	0.163	0.7605E-06	1490.0	1.261	173.
200.	9.023	35.290	9.001	27.346	31.820	36.195	0.187	0.7639E-06	1489.9	0.532	198.
250.	8.887	35.279	8.860	27.360	31.838	36.216	0.225	0.7606E-06	1490.2	0.970	248.
300.	8.326	35.273	8.793	27.366	31.845	36.224	0.264	0.7654E-06	1490.8	0.623	297.
350.	8.715	35.260	8.677	27.373	31.855	36.238	0.302	0.7678E-06	1491.2	0.739	346.
400.	8.636	35.254	8.593	27.382	31.866	36.250	0.340	0.7696E-06	1491.7	0.764	396.
450.	8.586	35.251	8.538	27.388	31.874	36.259	0.379	0.7735E-06	1492.4	0.660	445.
500.	-999.000	-9.990	-9.990	-9.990	-9.990	-9.990	-9.990	-0.9990E 01	-10.0	-9.990	495.
600.	8.530	35.253	8.465	27.402	31.889	36.275	0.496	0.7909E-06	1494.6	0.543	594.
700.	8.437	35.243	8.361	27.410	31.899	36.288	0.576	0.8021E-06	1495.9	0.554	692.
800.	8.179	35.209	8.093	27.424	31.920	36.315	0.656	0.8039E-06	1496.5	0.781	791.
900.	7.885	35.193	7.790	27.457	31.960	36.362	0.736	0.7368E-06	1497.1	1.106	890.
1000.	7.208	35.156	7.107	27.527	32.046	36.463	0.812	0.7249E-06	1496.1	1.641	983.
1100.	6.655	35.150	6.548	27.599	32.132	36.562	0.880	0.6606E-06	1495.6	1.653	1087.
1200.	6.082	35.138	5.970	27.666	32.212	36.657	0.943	0.5986E-06	1495.0	1.618	1185.
1300.	5.391	35.114	5.275	27.733	32.297	36.758	1.000	0.5299E-06	1493.9	1.672	1284.
1400.	4.675	35.093	4.557	27.800	32.382	36.861	1.048	0.4569E-06	1492.6	1.702	1382.

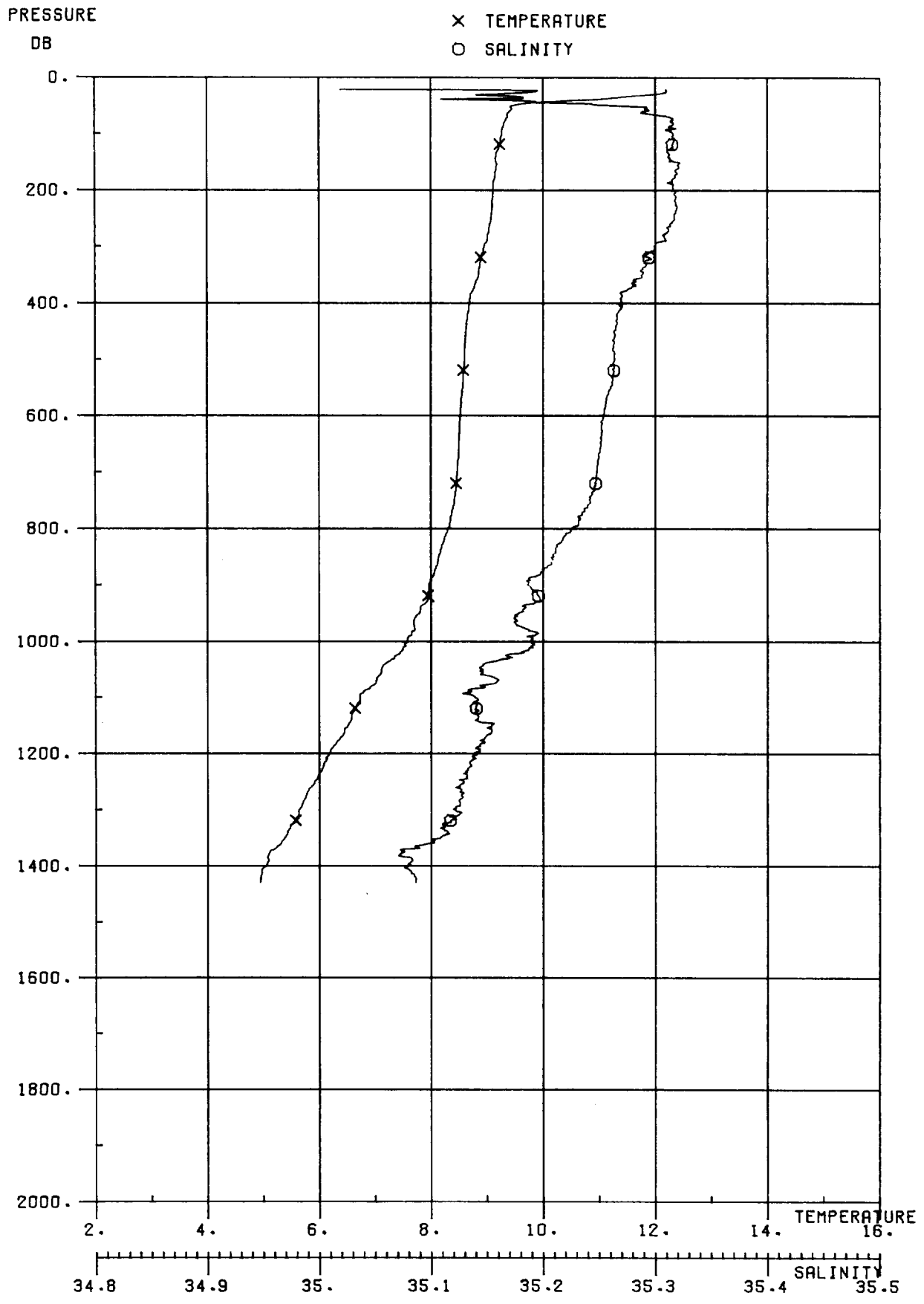SHACKLETON 1978/5C : CTD STATION 15

64

SHACKLETON 1978/5C : CTD STATION 15

P-DB	T-DEGC	S-0/00	POTEMP	SIGMA-0	SIGMA-1	SIGMA-2	DYN.HT.	SVANOM	SNDV-M/S	BVFR-C/H	DEPTH
30.	11.940	35.152	11.936	26.720	31.133	35.449	0.043	0.1322E-05	1497.3	-9.990	30.
40.	10.683	35.143	10.679	26.945	31.385	35.725	0.055	0.1110E-05	1493.1	8.463	40.
50.	9.456	35.257	9.451	27.246	31.711	36.076	0.064	0.8260E-06	1489.0	9.765	50.
75.	9.335	35.316	9.327	27.313	31.780	36.148	0.084	0.7681E-06	1489.0	2.910	74.
100.	9.259	35.316	9.248	27.326	31.795	36.164	0.103	0.7616E-06	1489.2	1.274	99.
125.	9.209	35.314	9.195	27.333	31.803	36.173	0.122	0.7603E-06	1489.4	0.956	124.
150.	9.156	35.318	9.139	27.345	31.816	36.188	0.141	0.7544E-06	1489.6	1.236	149.
175.	9.137	35.318	9.117	27.349	31.820	36.192	0.160	0.7562E-06	1490.0	0.705	173.
200.	9.102	35.317	9.080	27.354	31.826	36.199	0.179	0.7566E-06	1490.2	0.831	198.
250.	9.064	35.317	9.037	27.361	31.835	36.208	0.217	0.7605E-06	1490.9	0.686	248.
300.	8.939	35.299	8.906	27.368	31.845	36.221	0.255	0.7641E-06	1491.3	0.700	297.
350.	8.839	35.288	8.801	27.376	31.855	36.234	0.293	0.7662E-06	1491.7	0.759	346.
400.	8.684	35.270	8.641	27.388	31.870	36.253	0.332	0.7646E-06	1491.9	0.900	396.
450.	8.615	35.263	8.567	27.394	31.878	36.262	0.370	0.7688E-06	1492.5	0.648	445.
500.	8.592	35.264	8.538	27.399	31.884	36.269	0.408	0.7743E-06	1493.2	0.573	495.
600.	8.516	35.253	8.451	27.404	31.891	36.278	0.487	0.7885E-06	1494.6	0.461	594.
700.	8.460	35.248	8.384	27.410	31.899	36.287	0.566	0.8022E-06	1496.0	0.472	692.
800.	8.296	35.225	8.210	27.419	31.912	36.304	0.647	0.8110E-06	1497.0	0.616	791.
900.	7.959	35.187	7.863	27.441	31.942	36.343	0.728	0.8029E-06	1497.4	0.963	890.
1000.	7.561	35.191	7.458	27.504	32.015	36.424	0.806	0.7540E-06	1497.5	1.507	983.
1100.	6.717	35.139	6.610	27.582	32.113	36.542	0.878	0.6780E-06	1495.9	1.772	1087.
1200.	6.170	35.139	6.057	27.655	32.199	36.642	0.943	0.6111E-06	1495.4	1.670	1185.
1300.	5.630	35.120	5.512	27.709	32.267	36.723	1.001	0.5593E-06	1494.9	1.497	1284.
1400.	5.042	35.081	4.920	27.749	32.321	36.792	1.055	0.5169E-06	1494.1	1.371	1382.

SHACKLETON 1978/5C : CTD STATION 16

66
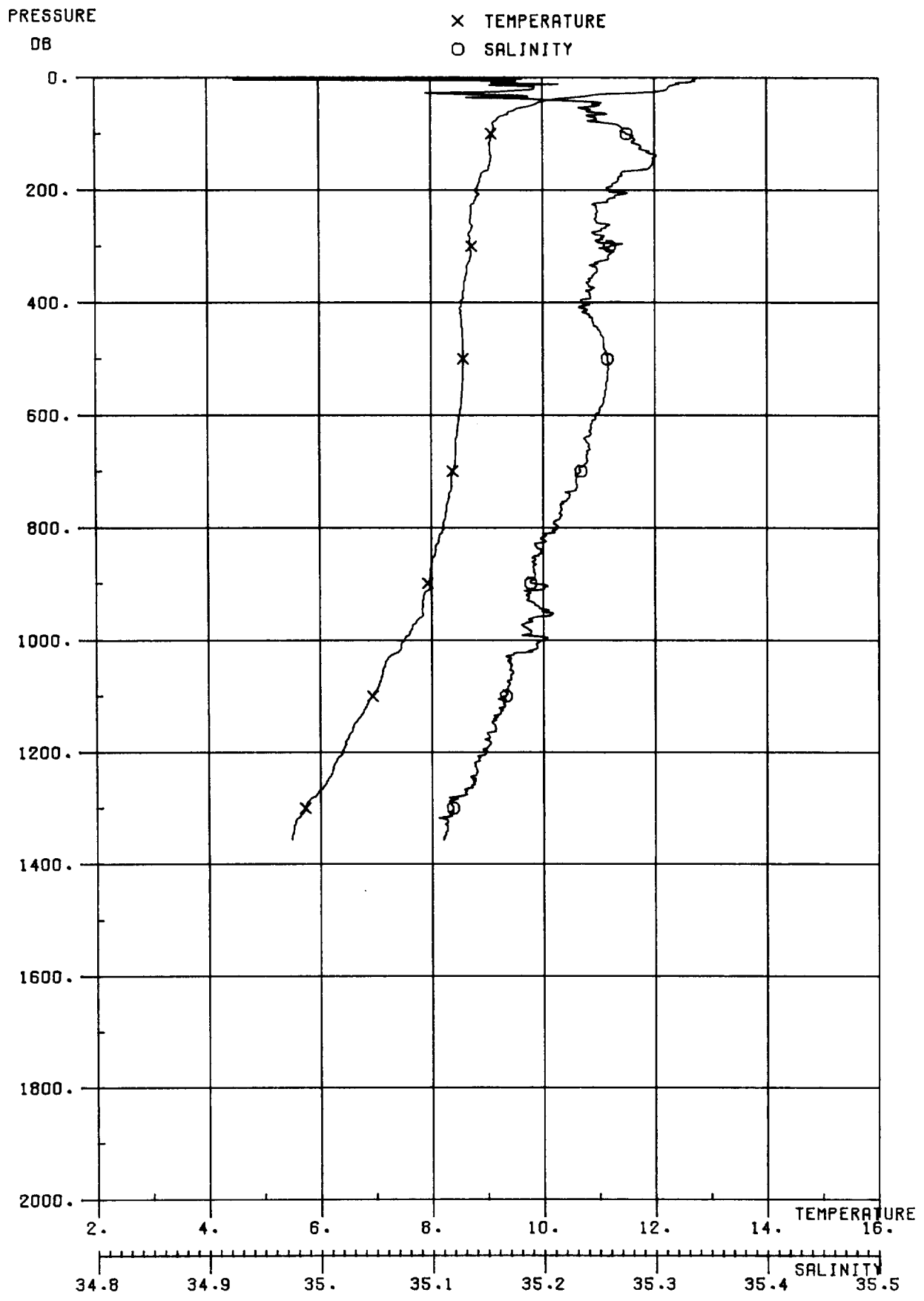
SHACKLETON 1978/5C : CTD STATION 16
=========== ======= === ======= ==

P-DB	T-DEGC	S-0/00	POTEMP	SIGMA-0	SIGMA-1	SIGMA-2	DYN.HT.	SVANOM	SNDV-M/S	BVFR-C/H	DEPTH
10.	12.404	35.184	12.403	26.655	31.059	35.365	0.015	0.1378E-05	1498.6	-9.990	10.
20.	12.214	35.190	12.211	26.697	31.105	35.415	0.028	0.1341E-05	1498.1	3.647	20.
30.	10.967	35.152	10.963	26.901	31.335	35.670	0.041	0.1149E-05	1493.9	8.048	30.
40.	10.100	35.215	10.095	27.104	31.555	35.907	0.052	0.9592E-06	1491.1	8.008	40.
50.	9.782	35.249	9.777	27.185	31.643	36.002	0.061	0.8841E-06	1490.2	5.081	50.
75.	9.164	35.249	9.156	27.288	31.760	36.131	0.082	0.7914E-06	1488.3	3.623	74.
100.	9.082	35.276	9.071	27.323	31.796	36.170	0.101	0.7635E-06	1488.5	2.110	99.
125.	9.051	35.286	9.037	27.337	31.811	36.185	0.120	0.7559E-06	1488.8	1.323	124.
150.	9.049	35.298	9.033	27.347	31.821	36.195	0.139	0.7519E-06	1489.2	1.123	149.
175.	8.885	35.270	8.866	27.352	31.830	36.207	0.158	0.7521E-06	1489.0	0.840	173.
200.	8.799	35.259	8.777	27.357	31.837	36.217	0.176	0.7519E-06	1489.1	0.360	198.
250.	8.697	35.247	8.670	27.364	31.847	36.229	0.214	0.7553E-06	1489.5	0.697	243.
300.	8.721	35.260	8.688	27.372	31.853	36.235	0.252	0.7591E-06	1490.4	0.670	297.
350.	8.620	35.245	8.583	27.377	31.861	36.245	0.290	0.7641E-06	1490.9	0.605	346.
400.	8.519	35.235	8.476	27.386	31.872	36.259	0.328	0.7650E-06	1491.3	0.795	396.
450.	8.550	35.251	8.501	27.394	31.880	36.266	0.366	0.7677E-06	1492.2	0.714	445.
500.	8.568	35.257	8.515	27.397	31.883	36.268	0.405	0.7753E-06	1493.1	0.429	495.
600.	8.491	35.246	8.427	27.402	31.890	36.278	0.483	0.7900E-06	1494.5	0.442	594.
700.	8.380	35.233	8.305	27.411	31.901	36.292	0.563	0.8003E-06	1495.7	0.576	692.
800.	8.208	35.213	8.122	27.423	31.918	36.312	0.643	0.8060E-06	1496.7	0.690	791.
900.	7.927	35.191	7.832	27.449	31.951	36.352	0.723	0.7948E-06	1497.3	1.013	890.
1000.	7.504	35.198	7.401	27.518	32.030	36.440	0.801	0.7401E-06	1497.3	1.570	988.
1100.	6.927	35.164	6.817	27.574	32.099	36.524	0.873	0.6913E-06	1496.7	1.493	1087.
1200.	6.387	35.149	6.272	27.635	32.174	36.611	0.939	0.6361E-06	1496.3	1.552	1185.
1300.	5.723	35.118	5.603	27.696	32.252	36.705	1.000	0.5742E-06	1495.2	1.609	1284.
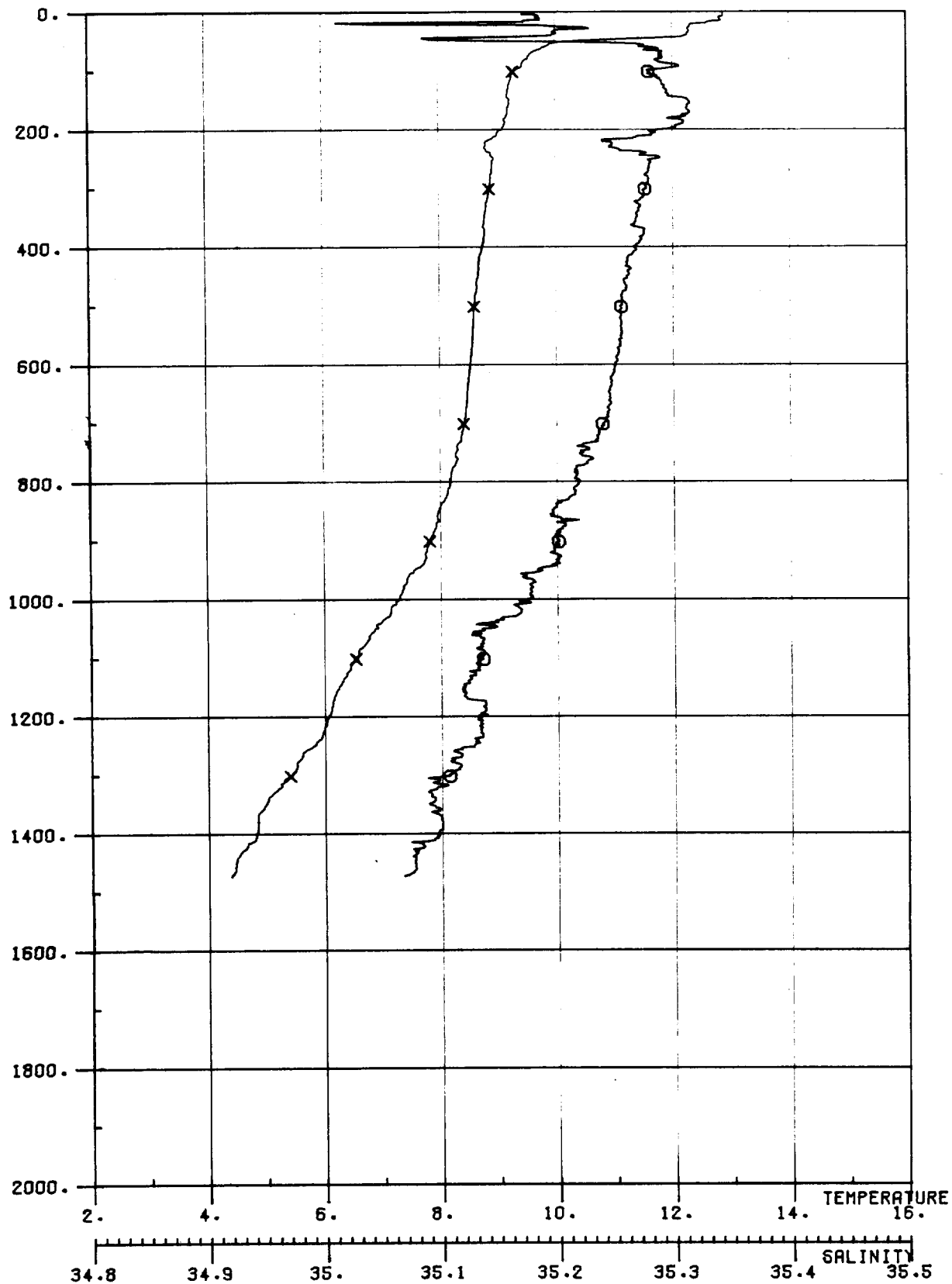
SHACKLETON 1978/5C : CTD STATION 17

SHACKLETON 1978/5C : CTD STATION 17
=========== ======= === ========= ==

P-DB	T-DEGC	S-0/00	POTEMP	SIGMA-0	SIGMA-1	SIGMA-2	DYN.HT.	SVANOM	SNDV-M/S	BVFR-C/H	DEPTH
10.	12.804	35.185	12.803	26.577	30.973	35.272	0.015	0.1452E-05	1499.9	-9.990	10.
20.	12.451	35.028	12.449	26.525	30.929	35.235	0.029	0.1504E-05	1498.7	-4.049	20.
30.	12.271	35.214	12.267	26.705	31.111	35.420	0.043	0.1336E-05	1498.5	7.542	30.
40.	12.226	35.197	12.220	26.700	31.108	35.417	0.056	0.1344E-05	1498.5	-1.215	40.
50.	10.249	35.171	10.243	27.043	31.492	35.842	0.069	0.1019E-05	1491.7	10.448	50.
75.	9.535	35.289	9.527	27.258	31.721	36.085	0.091	0.8203E-06	1489.7	5.218	74.
100.	9.282	35.279	9.271	27.293	31.762	36.131	0.111	0.7925E-06	1489.2	2.113	99.
125.	9.193	35.293	9.180	27.319	31.790	36.161	0.130	0.7733E-06	1489.3	1.818	124.
150.	9.202	35.314	9.185	27.334	31.805	36.175	0.149	0.7644E-06	1489.8	1.390	149.
175.	9.160	35.308	9.141	27.337	31.808	36.180	0.169	0.7674E-06	1490.0	0.579	173.
200.	9.068	35.290	9.046	27.338	31.812	36.185	0.188	0.7713E-06	1490.1	0.465	198.
250.	8.929	35.282	8.902	27.356	31.832	36.209	0.226	0.7649E-06	1490.4	1.075	248.
300.	8.855	35.276	8.822	27.364	31.842	36.221	0.264	0.7676E-06	1490.9	0.734	297.
350.	8.771	35.269	8.733	27.372	31.853	36.233	0.303	0.7698E-06	1491.4	0.751	346.
400.	8.723	35.267	8.679	27.379	31.861	36.243	0.341	0.7733E-06	1492.1	0.686	396.
450.	8.653	35.261	8.604	27.386	31.869	36.253	0.380	0.7766E-06	1492.6	0.691	445.
500.	8.584	35.255	8.530	27.393	31.878	36.264	0.419	0.7794E-06	1493.2	0.714	495.
600.	8.517	35.250	8.452	27.402	31.889	36.276	0.497	0.7909E-06	1494.6	0.550	594.
700.	8.405	35.240	8.330	27.412	31.902	36.292	0.577	0.7996E-06	1495.8	0.624	692.
800.	8.163	35.219	8.078	27.434	31.930	36.326	0.657	0.7944E-06	1496.5	0.918	791.
900.	7.808	35.201	7.714	27.475	31.979	36.383	0.735	0.7687E-06	1496.8	1.228	890.
1000.	7.272	35.173	7.171	27.532	32.049	36.465	0.810	0.7220E-06	1496.4	1.477	988.
1100.	6.529	35.133	6.423	27.603	32.138	36.572	0.879	0.6545E-06	1495.1	1.685	1087.
1200.	6.058	35.133	5.946	27.665	32.212	36.657	0.942	0.5990E-06	1494.9	1.546	1185.
1300.	5.407	35.106	5.291	27.725	32.288	36.749	0.999	0.5380E-06	1494.0	1.593	1284.
1400.	4.820	35.096	4.700	27.787	32.365	36.840	1.049	0.4744E-06	1493.2	1.607	1382.

PRESSURE
DB

X TEMPERATURE
O SALINITY
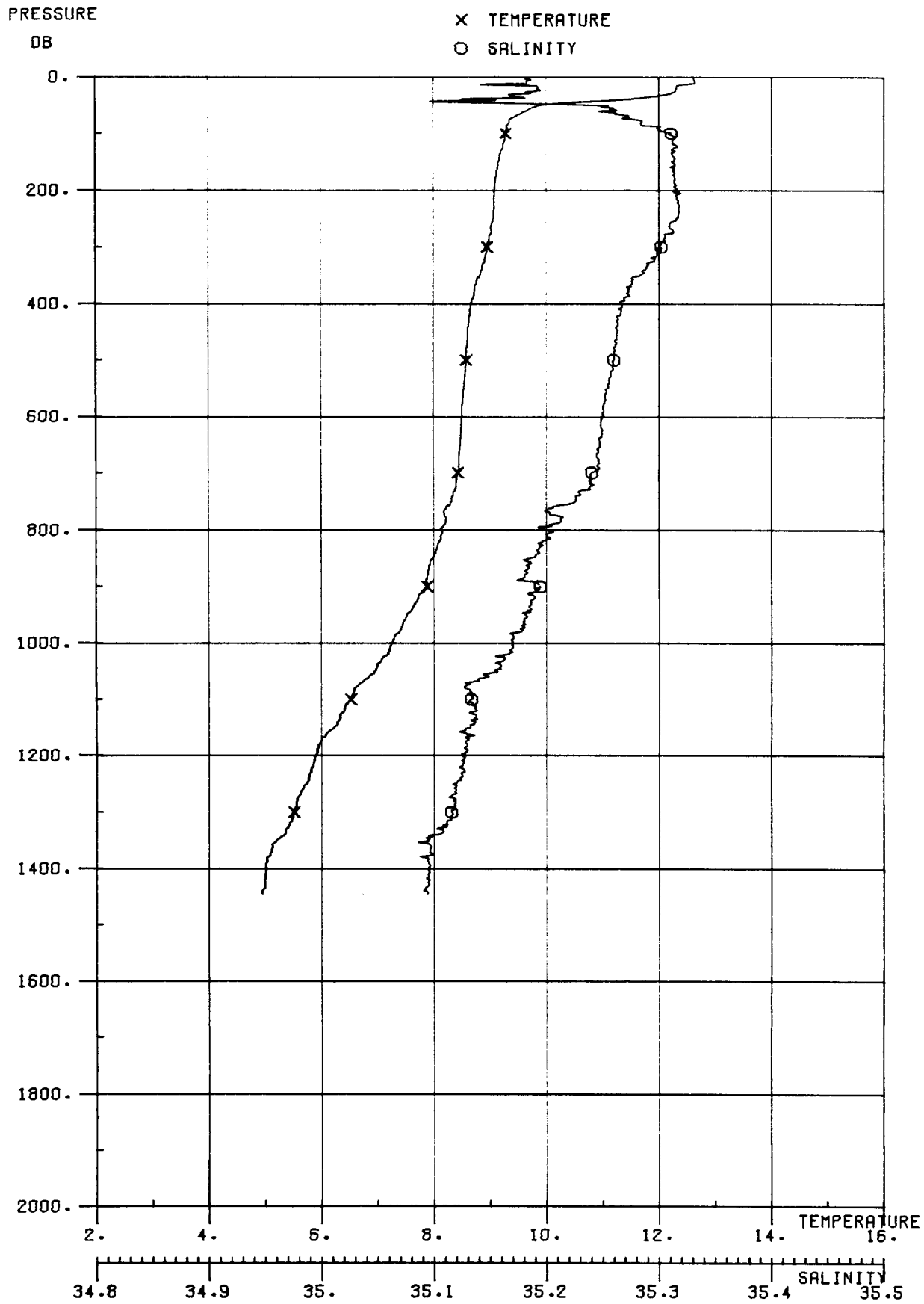
SHACKLETON 1978/5C : CTD STATION 18

70

SHACKLETON 1978/5C : CTD STATION 18

P-DB	T-DEGC	S-0/00	POTEMP	SIGMA-0	SIGMA-1	SIGMA-2	DYN.HT.	SVANOM	SNDV-M/S	BVFR-C/H	DEPTH
10.	12.641	35.182	12.640	26.607	31.006	35.308	0.014	0.1424E-05	1499.4	-9.990	10.
20.	12.307	35.192	12.304	26.680	31.086	35.395	0.028	0.1357E-05	1498.4	4.824	20.
30.	12.176	35.177	12.172	26.694	31.103	35.413	0.042	0.1347E-05	1498.1	2.073	30.
40.	11.343	35.140	11.338	26.823	31.249	35.577	0.054	0.1226E-05	1495.4	6.412	40.
50.	9.887	35.243	9.882	27.162	31.618	35.974	0.065	0.9059E-06	1490.5	10.367	50.
75.	9.347	35.278	9.339	27.281	31.748	36.116	0.086	0.7983E-06	1489.0	3.889	74.
100.	9.282	35.310	9.271	27.317	31.786	36.154	0.106	0.7698E-06	1489.2	2.136	99.
125.	9.228	35.314	9.214	27.330	31.799	36.169	0.125	0.7633E-06	1489.5	1.269	124.
150.	9.148	35.312	9.131	27.341	31.813	36.185	0.144	0.7574E-06	1489.6	1.236	149.
175.	9.107	35.314	9.088	27.350	31.823	36.195	0.163	0.7547E-06	1489.8	1.049	173.
200.	9.078	35.313	9.056	27.355	31.828	36.202	0.182	0.7554E-06	1490.2	0.803	198.
250.	9.055	35.315	9.028	27.361	31.835	36.209	0.220	0.7604E-06	1490.9	0.630	248.
300.	8.948	35.302	8.915	27.369	31.845	36.222	0.258	0.7635E-06	1491.3	0.719	297.
350.	8.821	35.284	8.783	27.376	31.855	36.235	0.296	0.7667E-06	1491.6	0.712	346.
400.	8.656	35.266	8.613	27.389	31.872	36.255	0.334	0.7635E-06	1491.8	0.958	396.
450.	8.606	35.263	8.558	27.395	31.880	36.264	0.373	0.7673E-06	1492.5	0.664	445.
500.	8.571	35.259	8.517	27.398	31.884	36.270	0.411	0.7741E-06	1493.2	0.490	495.
600.	8.496	35.249	8.431	27.404	31.892	36.279	0.489	0.7883E-06	1494.5	0.462	594.
700.	8.422	35.240	8.347	27.410	31.899	36.289	0.569	0.8022E-06	1495.9	0.463	692.
800.	8.127	35.199	8.042	27.424	31.921	36.318	0.649	0.8029E-06	1496.4	0.801	791.
900.	7.881	35.194	7.786	27.459	31.962	36.364	0.729	0.7851E-06	1497.1	1.116	890.
1000.	7.251	35.170	7.149	27.532	32.050	36.466	0.804	0.7213E-06	1496.3	1.661	988.
1100.	6.517	35.133	6.411	27.604	32.139	36.573	0.873	0.6529E-06	1495.1	1.693	1087.
1200.	5.896	35.125	5.785	27.679	32.230	36.679	0.934	0.5812E-06	1494.3	1.712	1185.
1300.	5.510	35.116	5.393	27.720	32.281	36.739	0.991	0.5455E-06	1494.4	1.298	1284.
1400.	5.016	35.095	4.894	27.764	32.337	36.807	1.043	0.5023E-06	1494.0	1.379	1382.

PRESSURE
DB

X TEMPERATURE
O SALINITY

TEMPERATURE

SALINITY
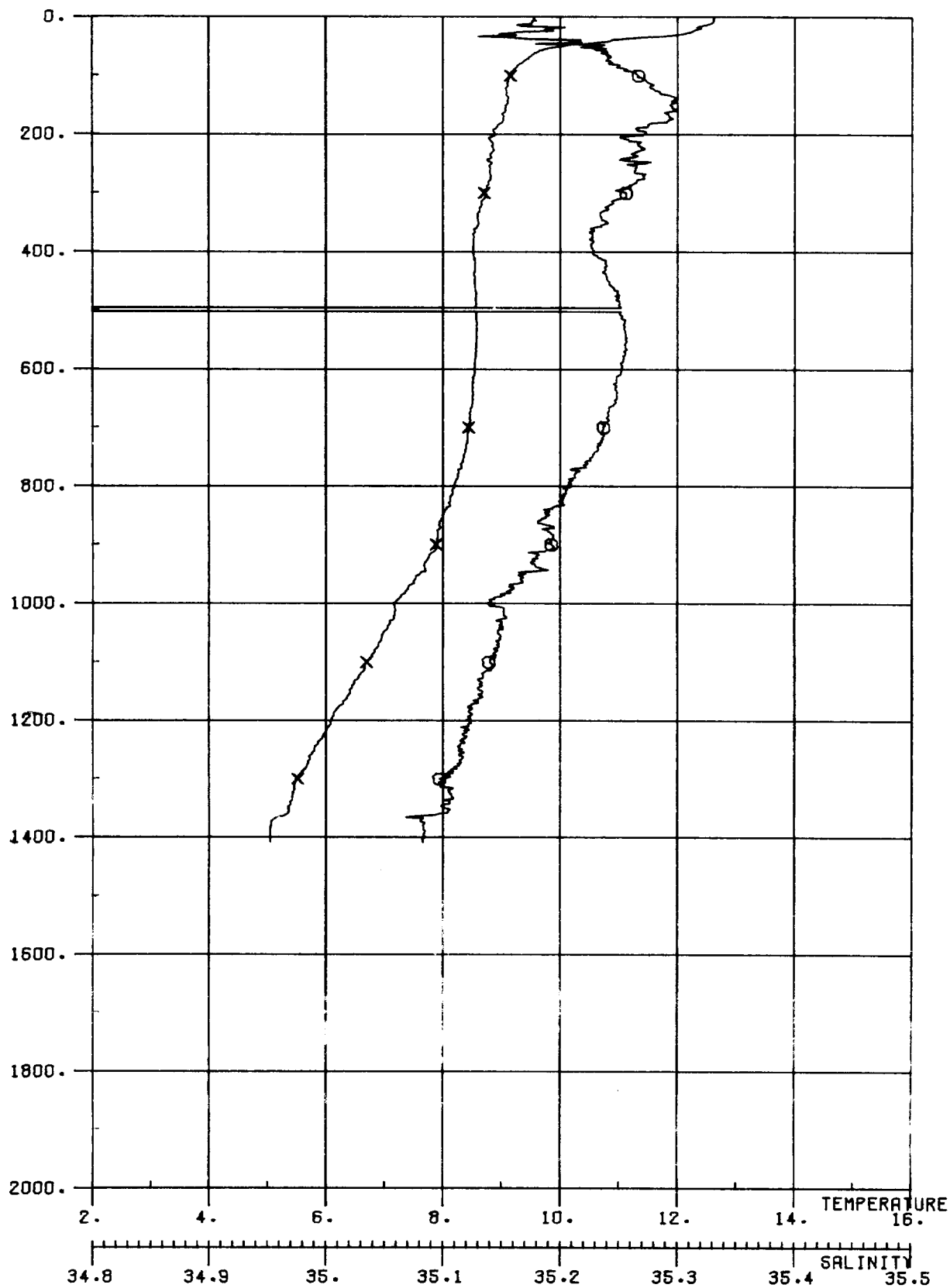
SHACKLETON 1978/5C : CTD STATION 19

SHACKLETON 1978/5C : CTD STATION 19
=========== ======= =======   === ======= ==

P-DB	T-DEGC	S-0/00	POTEMP	SIGMA-0	SIGMA-1	SIGMA-2	DYN.HT.	SVANOM	SNDV-M/S	BVFR-C/H	DEPTH
10.	12.575	35.175	12.574	26.614	31.014	35.318	0.014	0.1417E-05	1499.1	-9.990	10.
20.	12.353	35.188	12.350	26.668	31.073	35.380	0.028	0.1368E-05	1498.6	4.145	20.
30.	12.011	35.155	12.007	26.708	31.121	35.435	0.042	0.1332E-05	1497.5	3.587	30.
40.	10.845	35.213	10.840	26.971	31.407	35.744	0.054	0.1085E-05	1493.7	9.121	40.
50.	9.970	35.225	9.964	27.134	31.588	35.943	0.064	0.9325E-06	1490.8	7.199	50.
75.	9.363	35.243	9.355	27.251	31.718	36.086	0.085	0.8269E-06	1489.1	3.854	74.
100.	9.135	35.266	9.124	27.307	31.779	36.151	0.105	0.7794E-06	1488.7	2.660	99.
125.	9.070	35.281	9.056	27.330	31.803	36.177	0.125	0.7629E-06	1488.8	1.714	124.
150.	9.070	35.294	9.054	27.340	31.813	36.187	0.144	0.7585E-06	1489.3	1.148	149.
175.	9.025	35.293	9.006	27.347	31.821	36.196	0.163	0.7572E-06	1489.5	0.950	173.
200.	8.879	35.271	8.857	27.354	31.832	36.210	0.182	0.7554E-06	1489.4	0.983	198.
250.	8.823	35.265	8.796	27.359	31.838	36.217	0.219	0.7615E-06	1490.0	0.557	248.
300.	8.704	35.256	8.672	27.371	31.853	36.236	0.257	0.7594E-06	1490.4	0.921	297.
350.	8.600	35.240	8.562	27.376	31.861	36.246	0.296	0.7643E-06	1490.8	0.611	346.
400.	8.510	35.228	8.468	27.382	31.868	36.255	0.334	0.7689E-06	1491.2	0.618	396.
450.	8.534	35.241	8.486	27.389	31.875	36.262	0.372	0.7725E-06	1492.2	0.670	445.
500.	-999.000	-9.990	-9.990	-9.990	-9.990	-9.990	-9.990	-0.9990E 01	-10.0	-9.990	495.
600.	8.535	35.252	8.470	27.400	31.887	36.273	0.490	0.7926E-06	1494.7	0.489	594.
700.	8.433	35.237	8.357	27.405	31.895	36.284	0.570	0.8062E-06	1495.9	0.474	692.
800.	8.194	35.208	8.108	27.421	31.917	36.311	0.651	0.8070E-06	1496.6	0.801	791.
900.	7.882	35.193	7.787	27.458	31.960	36.362	0.731	0.7863E-06	1497.1	1.160	890.
1000.	7.156	35.138	7.055	27.520	32.040	36.459	0.807	0.7302E-06	1495.9	1.580	988.
1100.	6.683	35.140	6.575	27.588	32.119	36.549	0.877	0.6724E-06	1495.7	1.585	1087.
1200.	6.085	35.121	5.972	27.652	32.198	36.643	0.942	0.6116E-06	1495.0	1.605	1185.
1300.	5.499	35.099	5.382	27.708	32.269	36.728	1.000	0.5564E-06	1494.3	1.532	1284.
1400.	5.039	35.083	4.917	27.751	32.324	36.794	1.053	0.5144E-06	1494.1	1.365	1382.
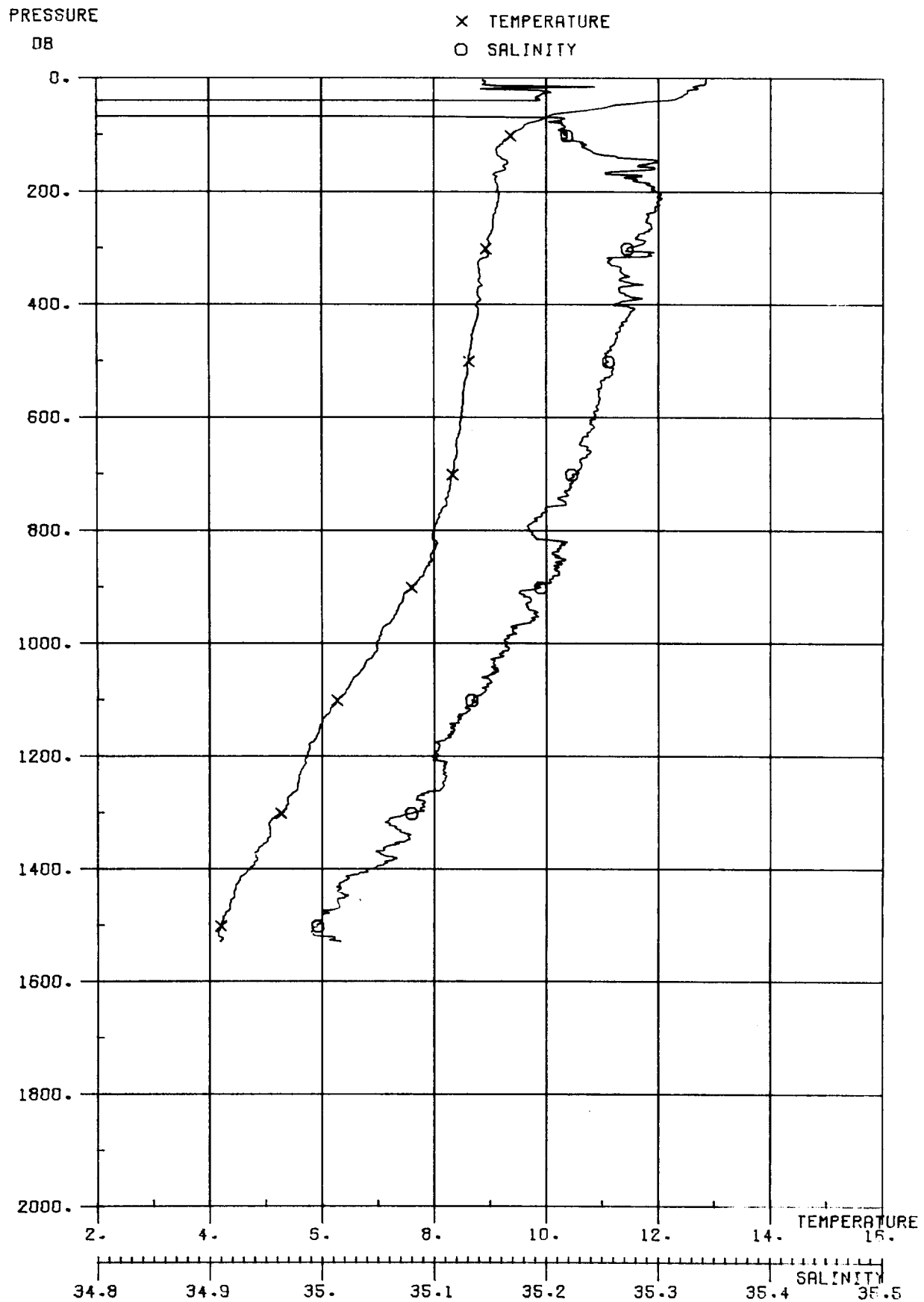
SHACKLETON 1973/5C : CTD STATION 20

74

SHACKLETON 1978/5C : CTD STATION 20
======== === ======= ==

P-DB	T-DEGC	S-O/OO	POTEMP	SIGMA-0	SIGMA-1	SIGMA-2	DYN.HT.	SVANOM	SNDV-M/S	BVFR-C/H	DEPTH
10.	12.824	35.144	12.823	26.541	30.937	35.235	0.015	0.1486E-05	1499.9	-9.990	10.
20.	12.616	35.166	12.614	26.599	30.999	35.302	0.029	0.1434E-05	1499.4	4.297	20.
30.	12.447	35.194	12.443	26.655	31.058	35.364	0.043	0.1384E-05	1499.1	4.195	30.
40.	12.028	-9.990	-9.990	-9.990	-9.990	-9.990	-9.990	-0.9990E 01	-10.0	-9.990	40.
50.	11.102	-9.990	-9.990	-9.990	-9.990	-9.990	-9.990	-0.9990E 01	-10.0	-9.990	50.
75.	9.867	35.214	9.859	27.143	31.600	35.957	0.096	0.9294E-06	1490.8	5.874	74.
100.	9.380	35.217	9.369	27.228	31.695	36.063	0.118	0.8541E-06	1489.5	3.290	99.
125.	9.118	35.237	9.104	27.287	31.760	36.133	0.138	0.8031E-06	1489.0	2.748	124.
150.	9.311	35.291	9.294	27.299	31.767	36.135	0.158	0.7983E-06	1490.2	1.172	149.
175.	9.109	35.269	9.090	27.315	31.788	36.161	0.178	0.7880E-06	1489.8	1.455	173.
200.	9.151	35.299	9.129	27.332	31.803	36.175	0.197	0.7777E-06	1490.4	1.453	198.
250.	9.057	35.290	9.030	27.341	31.815	36.189	0.236	0.7793E-06	1490.9	0.793	248.
300.	8.930	35.273	8.897	27.349	31.826	36.203	0.275	0.7820E-06	1491.2	0.739	297.
350.	8.822	35.274	8.784	27.368	31.848	36.227	0.314	0.7738E-06	1491.6	1.123	346.
400.	8.756	35.260	8.713	27.368	31.850	36.231	0.353	0.7835E-06	1492.2	0.255	396.
450.	8.693	35.263	8.644	27.381	31.864	36.247	0.392	0.7811E-06	1492.8	0.928	445.
500.	8.625	35.254	8.571	27.386	31.871	36.255	0.431	0.7862E-06	1493.4	0.596	495.
600.	8.492	35.242	8.427	27.399	31.887	36.274	0.510	0.7930E-06	1494.5	0.681	594.
700.	8.336	35.226	8.261	27.412	31.903	36.295	0.590	0.7988E-06	1495.5	0.694	692.
800.	7.994	35.184	7.910	27.433	31.933	36.332	0.669	0.7929E-06	1495.9	0.926	791.
900.	7.605	35.194	7.512	27.499	32.007	36.416	0.747	0.7424E-06	1496.1	1.525	890.
1000.	6.982	35.165	6.882	27.565	32.089	36.512	0.818	0.6842E-06	1495.3	1.598	988.
1100.	6.280	35.134	6.176	27.636	32.177	36.617	0.883	0.6168E-06	1494.2	1.678	1087.
1200.	5.740	35.102	5.631	27.680	32.235	36.688	0.942	0.5756E-06	1493.6	1.374	1185.
1300.	5.294	35.081	5.179	27.719	32.285	36.749	0.998	0.5402E-06	1493.5	1.288	1284.
1400.	4.720	35.043	4.601	27.755	32.336	36.815	1.049	0.4999E-06	1492.8	1.336	1382.
1500.	4.206	34.996	4.083	27.774	32.369	36.861	1.098	0.4747E-06	1492.2	1.111	1481.

SHACKLETON 1978/5C : CTD STATION 21

76
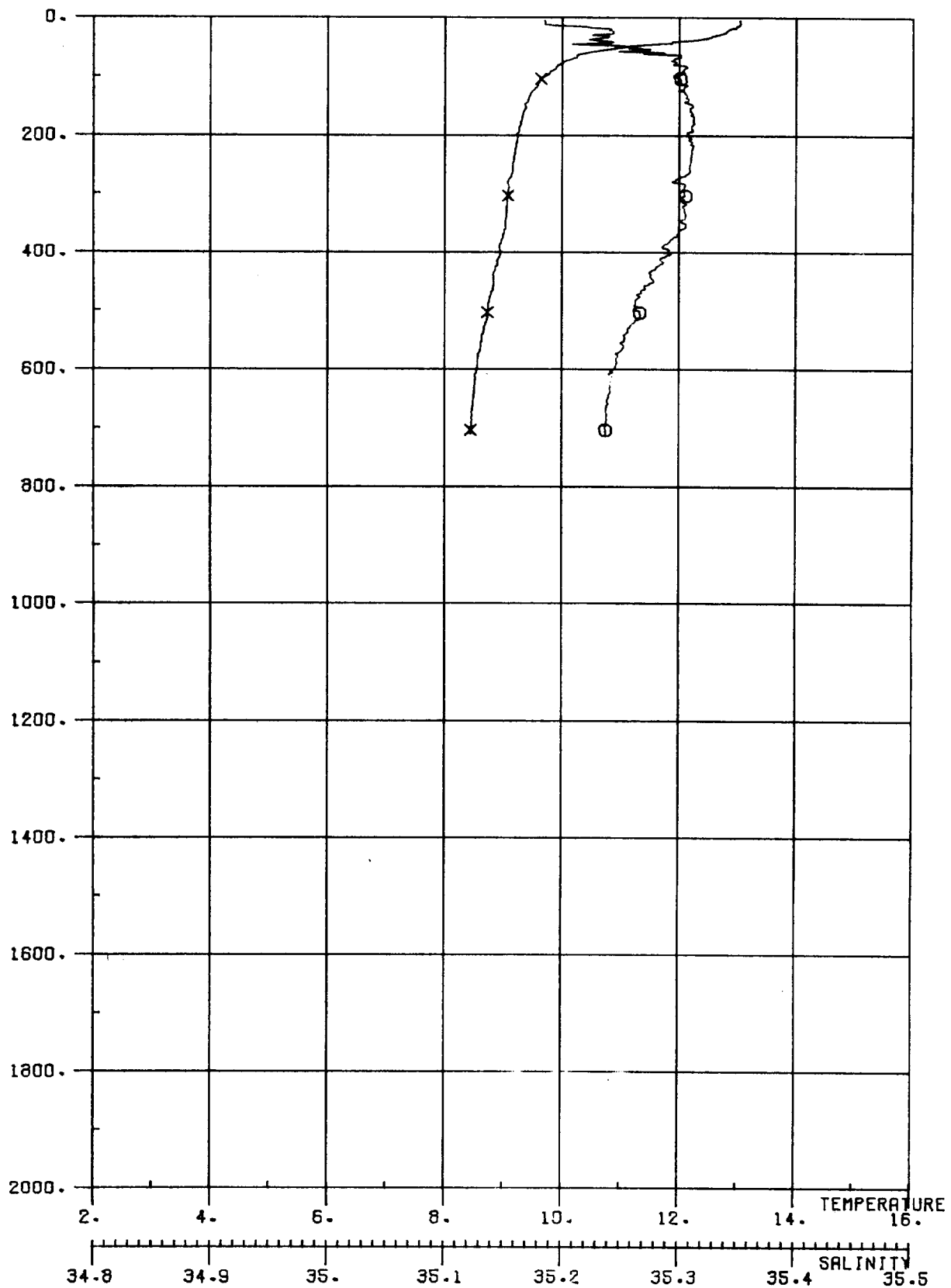
SHACKLETON 1978/5C : CTD STATION 21
========== ======= ==

P-DB	T-DEGC	S-0/00	POTEMP	SIGMA-0	SIGMA-1	SIGMA-2	DYN.HT.	SVANOM	SNDV-M/S	BVFR-C/H	DEPTH
10.	13.048	35.185	13.046	26.528	30.919	35.213	0.015	0.1499E-05	1500.7	-9.990	10.
20.	12.855	35.242	12.852	26.610	31.005	35.303	0.030	0.1423E-05	1500.3	5.116	20.
30.	12.627	35.233	12.623	26.649	31.048	35.350	0.044	0.1389E-05	1499.7	3.497	30.
40.	12.036	35.239	12.031	26.769	31.180	35.494	0.057	0.1278E-05	1497.9	6.174	40.
50.	11.022	35.257	11.016	26.973	31.405	35.738	0.069	0.1086E-05	1494.6	8.046	50.
75.	10.020	35.298	10.011	27.184	31.636	35.990	0.093	0.8916E-06	1491.5	5.173	74.
100.	9.688	35.297	9.677	27.239	31.699	36.059	0.115	0.8444E-06	1490.7	2.663	99.
125.	9.483	35.305	9.468	27.281	31.745	36.110	0.136	0.8103E-06	1490.4	2.306	124.
150.	9.377	35.312	9.360	27.304	31.770	36.137	0.156	0.7939E-06	1490.4	1.718	149.
175.	9.307	35.312	9.288	27.316	31.784	36.152	0.175	0.7878E-06	1490.6	1.248	173.
200.	9.238	35.309	9.216	27.325	31.795	36.165	0.195	0.7844E-06	1490.7	1.097	198.
250.	9.164	35.309	9.136	27.339	31.810	36.182	0.234	0.7823E-06	1491.3	0.938	248.
300.	9.079	35.305	9.046	27.350	31.823	36.197	0.273	0.7822E-06	1491.8	0.861	297.
350.	9.030	35.304	8.991	27.358	31.833	36.208	0.312	0.7849E-06	1492.4	0.743	346.
400.	8.944	35.292	8.900	27.363	31.840	36.217	0.352	0.7902E-06	1492.9	0.607	396.
450.	8.829	35.279	8.780	27.372	31.852	36.231	0.391	0.7912E-06	1493.3	0.803	445.
500.	8.732	35.264	8.678	27.377	31.859	36.241	0.431	0.7961E-06	1493.8	0.616	495.
600.	8.548	35.245	8.483	27.392	31.879	36.265	0.511	0.8000E-06	1494.7	0.750	594.
700.	8.448	35.237	8.372	27.403	31.892	36.281	0.591	0.8085E-06	1496.0	0.631	692.
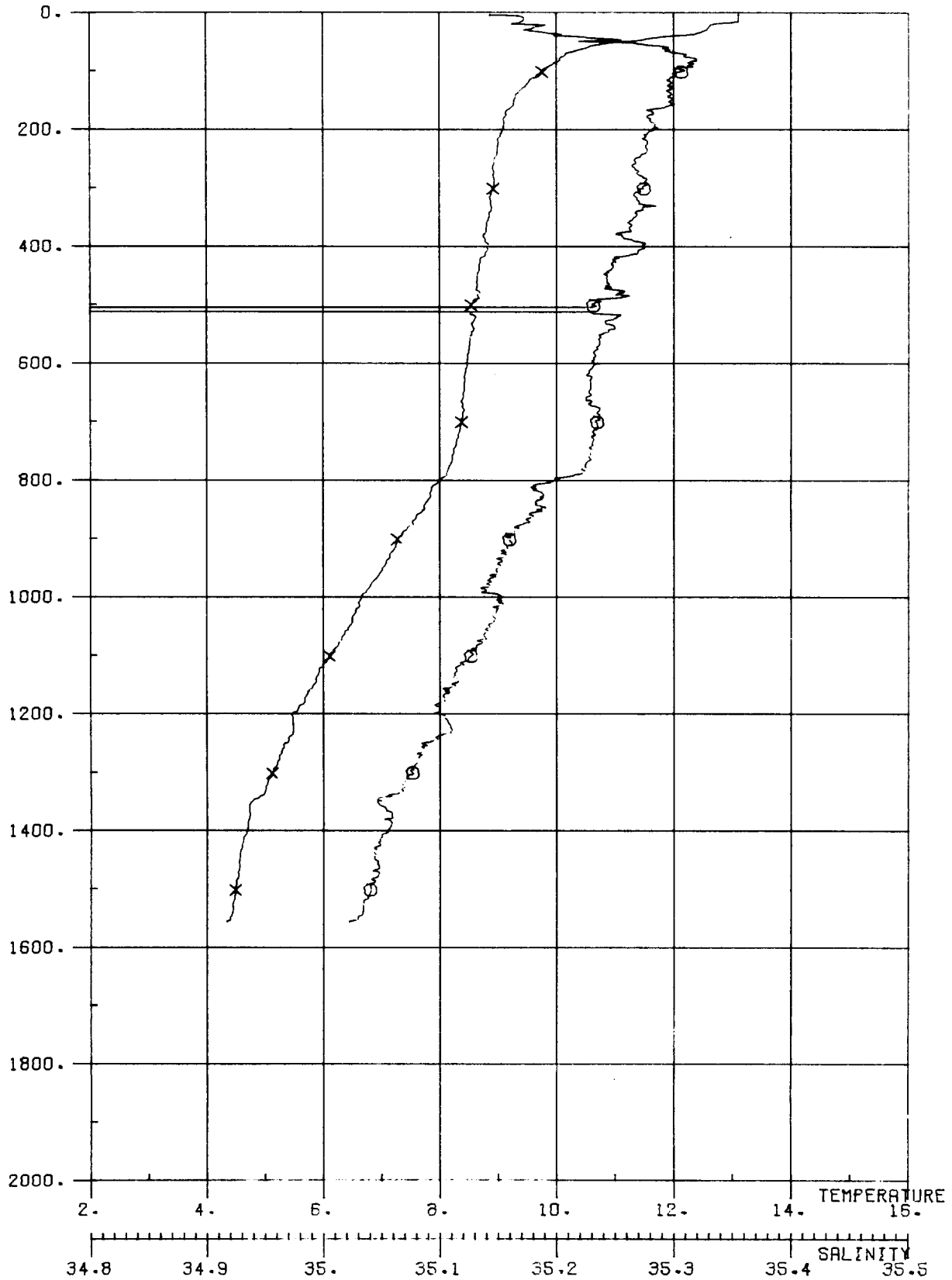
SHACKLETON 1976/5C : CTD STATION 22

78

SHACKLETON 1978/5C : CTD STATION 22

P-DB	T-DEGC	S-0/00	POTEMP	SIGMA-0	SIGMA-1	SIGMA-2	DYN.HT.	SVANOM	SNDV-M/S	BVFR-C/H	DEPTH
10.	13.106	35.171	13.104	26.505	30.896	35.189	0.015	0.1520E-05	1500.9	-9.990	10.
20.	12.686	35.176	12.684	26.593	30.992	35.293	0.030	0.1439E-05	1499.7	5.278	20.
30.	12.539	35.176	12.535	26.622	31.024	35.328	0.045	0.1415E-05	1499.3	3.035	30.
40.	11.995	35.210	11.990	26.754	31.166	35.481	0.058	0.1292E-05	1497.7	6.470	40.
50.	11.155	35.241	11.149	26.936	31.365	35.696	0.070	0.1121E-05	1495.0	7.597	50.
75.	10.109	35.310	10.100	27.177	31.628	35.979	0.094	0.8977E-06	1491.8	5.535	74.
100.	9.762	35.308	9.751	27.235	31.693	36.052	0.116	0.8481E-06	1491.0	2.724	99.
125.	9.470	35.296	9.456	27.276	31.740	36.105	0.137	0.8149E-06	1490.3	2.279	124.
150.	9.277	35.297	9.261	27.309	31.778	36.147	0.157	0.7885E-06	1490.0	2.069	149.
175.	9.135	35.280	9.115	27.319	31.791	36.164	0.177	0.7838E-06	1489.9	1.169	173.
200.	9.088	35.283	9.066	27.329	31.803	36.176	0.196	0.7796E-06	1490.2	1.140	198.
250.	8.945	35.268	8.918	27.341	31.818	36.195	0.235	0.7784E-06	1490.4	0.898	248.
300.	8.917	35.274	8.885	27.352	31.829	36.207	0.274	0.7789E-06	1491.2	0.828	297.
350.	8.841	35.267	8.803	27.359	31.838	36.218	0.313	0.7822E-06	1491.7	0.706	346.
400.	8.822	35.275	8.778	27.369	31.849	36.228	0.352	0.7834E-06	1492.5	0.797	396.
450.	8.642	35.242	8.593	27.373	31.857	36.241	0.391	0.7882E-06	1492.6	0.617	445.
500.	8.535	35.231	8.481	27.382	31.868	36.255	0.431	0.7895E-06	1493.0	0.776	495.
600.	8.466	35.235	8.402	27.397	31.885	36.274	0.510	0.7945E-06	1494.4	0.721	594.
700.	8.374	35.234	8.299	27.413	31.903	36.294	0.590	0.7986E-06	1495.7	0.735	692.
800.	7.996	35.200	7.912	27.445	31.944	36.344	0.669	0.7818E-06	1495.9	1.107	791.
900.	7.279	35.160	7.189	27.519	32.036	36.451	0.744	0.7169E-06	1494.8	1.674	890.
1000.	6.652	35.153	6.555	27.600	32.132	36.563	0.814	0.6437E-06	1494.0	1.742	988.
1100.	6.113	35.127	6.010	27.652	32.197	36.641	0.876	0.5977E-06	1493.5	1.441	1087.
1200.	5.466	35.098	5.359	27.711	32.272	36.732	0.933	0.5397E-06	1492.5	1.562	1185.
1300.	5.120	35.076	5.007	27.735	32.306	36.774	0.987	0.5194E-06	1492.8	1.064	1284.
1400.	4.684	35.056	4.566	27.769	32.351	36.830	1.037	0.4856E-06	1492.6	1.249	1382.
1500.	4.486	35.041	4.360	27.780	32.367	36.852	1.085	0.4798E-06	1493.5	0.765	1481.

SHACKLETON 1978/5C : CTD STATION 23

80
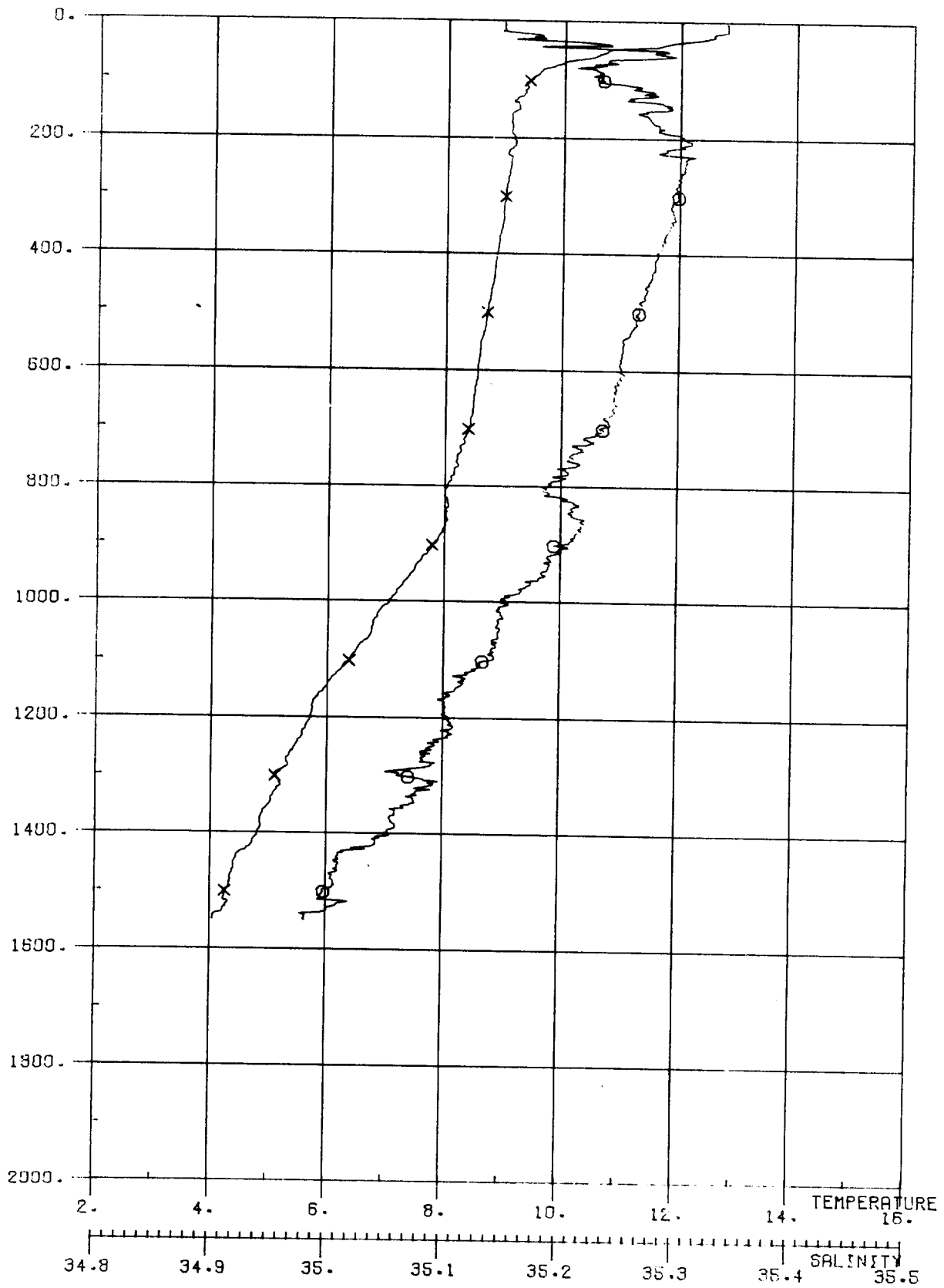
SHACKLETON 1978/5C : CTD STATION 23

P-DB	T-DEGC	S-O/OO	POTEMP	SIGMA-0	SIGMA-1	SIGMA-2	DYN.HT.	SVANOM	SNDV-M/S	BVFR-C/H	DEPTH
10.	12.802	35.148	12.801	26.548	30.944	35.243	0.015	0.1480E-05	1499.9	-9.990	10.
20.	12.650	35.160	12.647	26.588	30.987	35.289	0.030	0.1445E-05	1499.5	3.543	20.
30.	12.385	35.171	12.381	26.649	31.053	35.360	0.044	0.1390E-05	1498.8	4.394	30.
40.	11.698	35.240	11.693	26.834	31.252	35.572	0.057	0.1216E-05	1496.7	7.669	40.
50.	10.744	35.287	10.738	27.047	31.484	35.823	0.068	0.1016E-05	1493.6	8.215	50.
75.	9.835	35.236	9.826	27.166	31.623	35.981	0.092	0.9076E-06	1490.8	3.906	74.
100.	9.421	35.232	9.410	27.233	31.699	36.066	0.114	0.8495E-06	1489.7	2.919	99.
125.	9.294	35.281	9.280	27.293	31.761	36.130	0.135	0.7984E-06	1489.7	2.752	124.
150.	9.224	35.290	9.207	27.312	31.782	36.153	0.154	0.7853E-06	1489.8	1.578	149.
175.	9.096	35.278	9.076	27.324	31.797	36.170	0.174	0.7796E-06	1489.8	1.225	173.
200.	9.147	35.302	9.125	27.335	31.807	36.179	0.193	0.7744E-06	1490.4	1.199	198.
250.	9.074	35.304	9.047	27.349	31.822	36.196	0.232	0.7719E-06	1491.0	0.949	248.
300.	9.001	35.299	8.968	27.358	31.833	36.209	0.271	0.7741E-06	1491.5	0.765	297.
350.	8.947	35.293	8.908	27.363	31.839	36.216	0.310	0.7798E-06	1492.1	0.580	346.
400.	8.853	35.281	8.810	27.369	31.848	36.227	0.349	0.7835E-06	1492.6	0.687	396.
450.	8.791	35.274	8.741	27.374	31.855	36.235	0.388	0.7888E-06	1493.2	0.594	445.
500.	8.701	35.265	8.647	27.383	31.865	36.248	0.427	0.7903E-06	1493.7	0.777	495.
600.	8.543	35.250	8.478	27.397	31.883	36.270	0.507	0.7956E-06	1494.7	0.720	594.
700.	8.392	35.234	8.317	27.410	31.900	36.290	0.587	0.8018E-06	1495.8	0.688	692.
800.	8.039	35.187	7.955	27.428	31.927	36.325	0.667	0.7981E-06	1496.0	0.886	791.
900.	7.804	35.198	7.709	27.473	31.977	36.381	0.745	0.7704E-06	1496.8	1.254	890.
1000.	7.052	35.151	6.952	27.545	32.067	36.489	0.818	0.7047E-06	1495.5	1.677	988.
1100.	6.378	35.137	6.273	27.626	32.164	36.602	0.885	0.6292E-06	1494.5	1.759	1087.
1200.	5.702	35.103	5.593	27.686	32.241	36.695	0.944	0.5697E-06	1493.5	1.584	1185.
1300.	5.108	35.065	4.995	27.728	32.299	36.767	0.999	0.5258E-06	1492.7	1.391	1284.
1400.	4.802	35.052	4.682	27.753	32.332	36.808	1.050	0.5047E-06	1493.1	1.065	1382.
1500.											1481.

SHACKLETON 1978/5C : CTD STATION 24

82
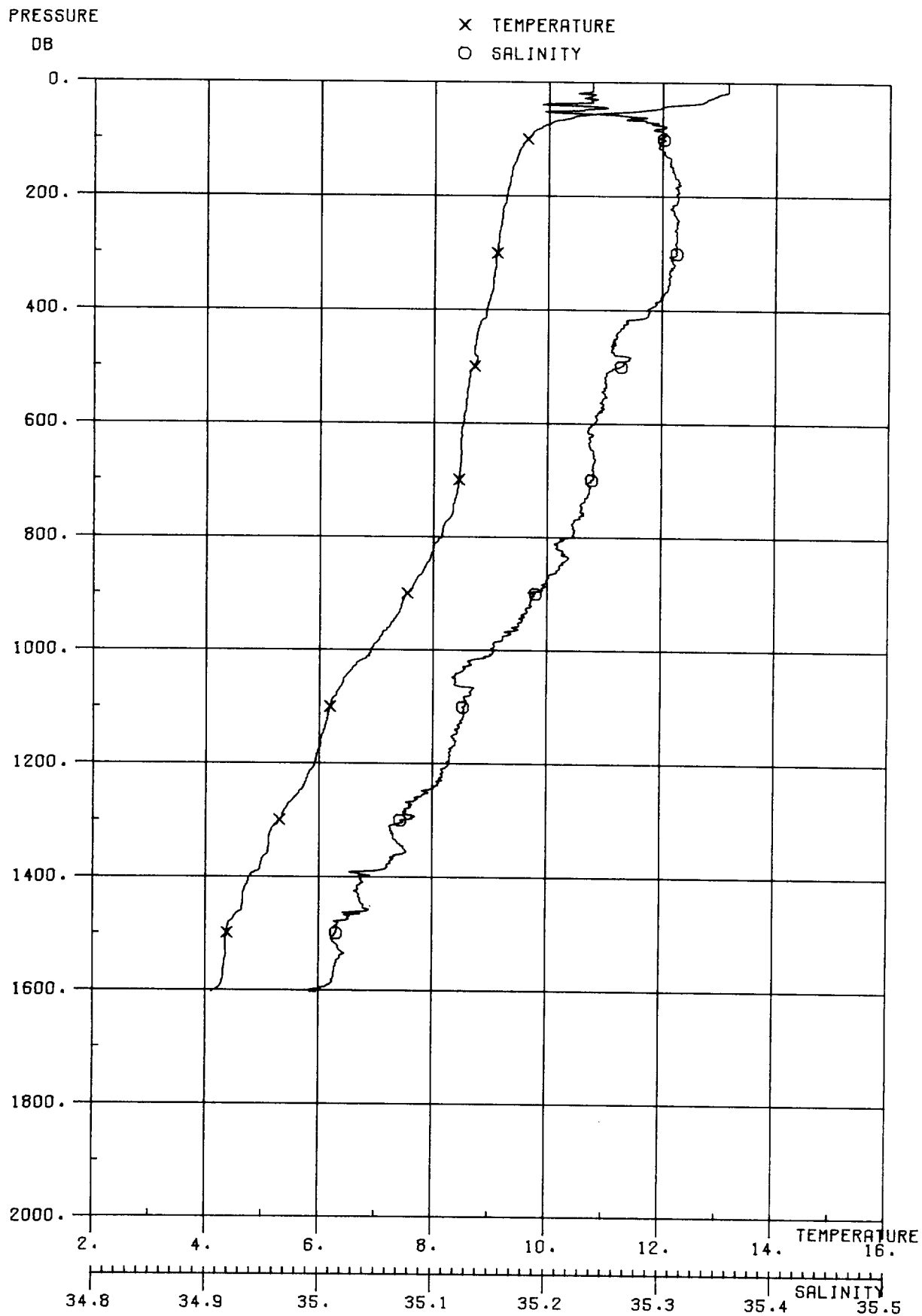
SHACKLETON 1978/5C : CTD STATION 24
=========== ======== === ======== ==

P-DB	T-DEGC	S-O/OO	POTEMP	SIGMA-0	SIGMA-1	SIGMA-2	DYN.HT.	SVANOM	SNDV-M/S	BVFR-C/H	DEPTH
10.	13.156	35.238	13.154	26.547	30.936	35.228	0.015	0.1480E-05	1501.1	-9.990	10.
20.	13.036	35.233	13.034	26.567	30.959	35.253	0.030	0.1464E-05	1500.9	2.540	20.
30.	12.782	35.240	12.778	26.624	31.020	35.319	0.044	0.1413E-05	1500.2	4.229	30.
40.	12.173	35.214	12.168	26.724	31.132	35.443	0.058	0.1321E-05	1498.3	5.622	40.
50.	11.595	35.213	11.589	26.833	31.254	35.576	0.070	0.1219E-05	1496.5	5.905	50.
75.	9.942	35.298	9.933	27.197	31.651	36.006	0.095	0.8792E-06	1491.2	6.796	74.
100.	9.621	35.302	9.609	27.255	31.716	36.078	0.117	0.8295E-06	1490.5	2.721	99.
125.	9.465	35.302	9.451	27.281	31.746	36.111	0.137	0.8099E-06	1490.3	1.839	124.
150.	9.361	35.309	9.345	27.304	31.771	36.139	0.157	0.7931E-06	1490.4	1.731	149.
175.	9.318	35.315	9.299	27.316	31.784	36.152	0.177	0.7875E-06	1490.6	1.226	173.
200.	9.258	35.314	9.236	27.326	31.795	36.165	0.197	0.7838E-06	1490.8	1.115	198.
250.	9.164	35.313	9.136	27.341	31.813	36.185	0.236	0.7796E-06	1491.3	1.011	248.
300.	9.098	35.313	9.065	27.353	31.826	36.199	0.275	0.7794E-06	1491.9	0.864	297.
350.	9.029	35.306	8.991	27.360	31.835	36.210	0.314	0.7830E-06	1492.4	0.702	346.
400.	8.907	35.288	8.863	27.366	31.844	36.222	0.353	0.7869E-06	1492.8	0.680	396.
450.	8.739	35.259	8.690	27.371	31.853	36.235	0.392	0.7911E-06	1493.0	0.653	445.
500.	8.706	35.263	8.652	27.380	31.863	36.245	0.432	0.7929E-06	1493.7	0.763	495.
600.	8.511	35.241	8.446	27.395	31.882	36.270	0.511	0.7970E-06	1494.6	0.744	594.
700.	8.438	35.238	8.362	27.406	31.895	36.284	0.591	0.8057E-06	1495.9	0.625	692.
800.	8.136	35.220	8.051	27.439	31.936	36.332	0.671	0.7892E-06	1496.4	1.105	791.
900.	7.532	35.189	7.440	27.505	32.016	36.426	0.748	0.7346E-06	1495.8	1.572	890.
1000.	6.897	35.153	6.798	27.567	32.093	36.518	0.819	0.6801E-06	1494.9	1.555	988.
1100.	6.179	35.126	6.075	27.643	32.187	36.629	0.883	0.6079E-06	1493.7	1.724	1087.
1200.	5.913	35.113	5.802	27.668	32.218	36.667	0.943	0.5924E-06	1494.3	1.013	1185.
1300.	5.289	35.072	5.174	27.712	32.278	36.743	1.000	0.5461E-06	1493.4	1.425	1284.
1400.	4.772	35.035	4.652	27.743	32.323	36.800	1.052	0.5126E-06	1493.0	1.247	1382.
1500.	4.372	35.014	4.247	27.771	32.362	36.849	1.102	0.4837E-06	1493.0	1.170	1481.
1600.	4.144	34.991	4.013	27.778	32.375	36.868	1.150	0.4792E-06	1493.6	0.719	1579.
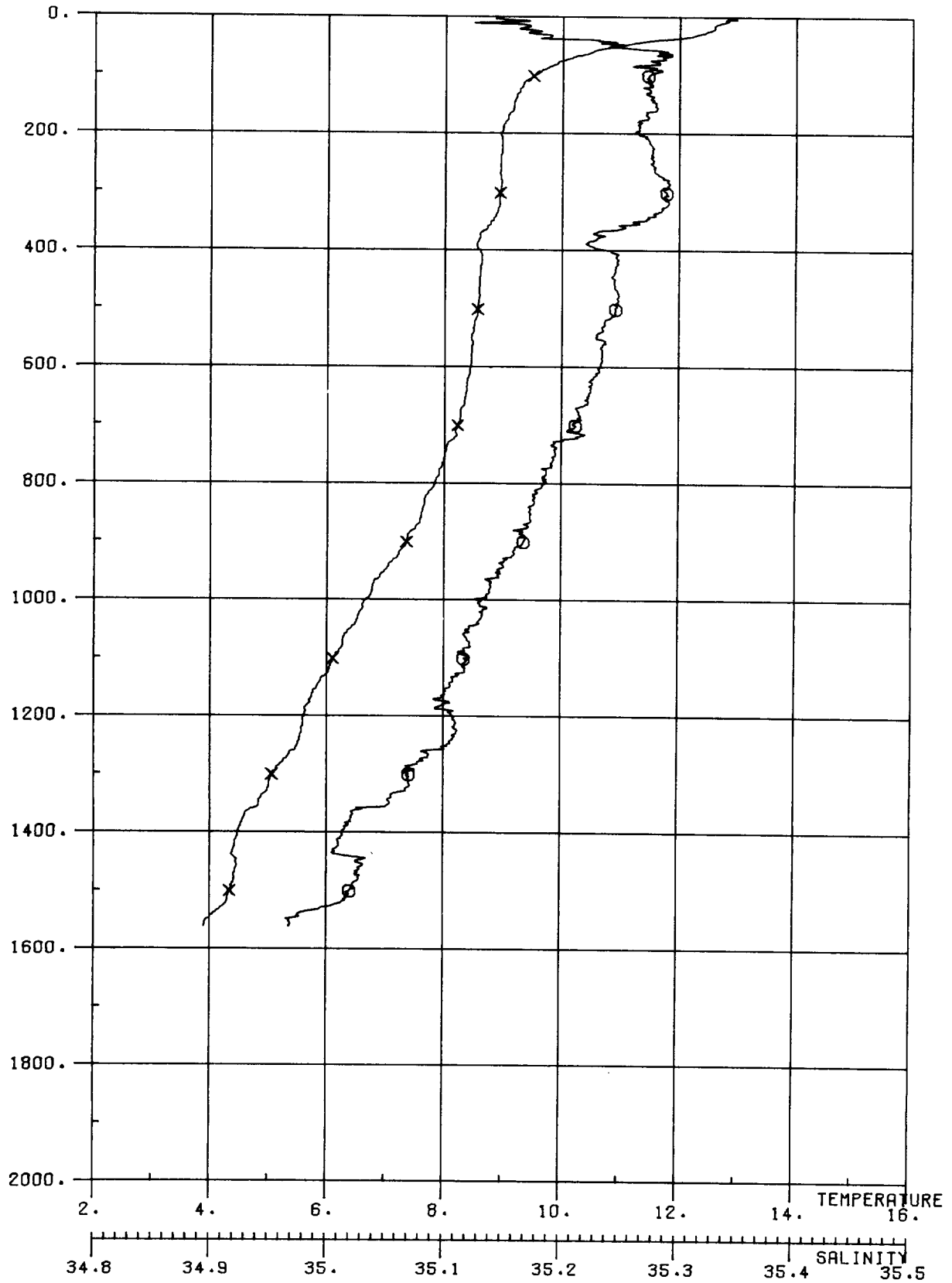
SHACKLETON 1978/5C : CTD STATION 25

SHACKLETON 1978/5C : CTD STATION 25

P-DB	T-DEGC	S-0/00	POTEMP	SIGMA-0	SIGMA-1	SIGMA-2	DYN.HT.	SVANOM	SNDV-M/S	BVFR-C/H	DEPTH
10.	12.732	35.141	12.731	26.557	30.955	35.255	0.015	0.1471E-05	1499.6	-9.990	10.
20.	12.592	35.164	12.589	26.603	31.003	35.306	0.029	0.1430E-05	1499.3	3.800	20.
30.	12.303	35.184	12.299	26.675	31.081	35.389	0.043	0.1365E-05	1498.6	4.785	30.
40.	11.531	35.231	11.526	26.859	31.280	35.603	0.056	0.1192E-05	1496.1	7.633	40.
50.	10.965	35.244	10.959	26.973	31.406	35.741	0.068	0.1086E-05	1494.4	6.028	50.
75.	10.013	35.274	10.004	27.166	31.619	35.973	0.092	0.9084E-06	1491.4	4.950	74.
100.	9.521	35.274	9.510	27.249	31.713	36.077	0.113	0.8343E-06	1490.1	3.265	99.
125.	9.268	35.275	9.254	27.293	31.762	36.131	0.134	0.7985E-06	1489.6	2.353	124.
150.	9.170	35.280	9.153	27.313	31.784	36.156	0.154	0.7845E-06	1489.6	1.616	149.
175.	9.063	35.273	9.044	27.325	31.799	36.173	0.173	0.7778E-06	1489.6	1.274	173.
200.	8.957	35.264	8.935	27.336	31.812	36.188	0.193	0.7732E-06	1489.6	1.159	198.
250.	8.944	35.277	8.917	27.349	31.825	36.202	0.231	0.7714E-06	1490.4	0.917	248.
300.	8.935	35.289	8.902	27.361	31.837	36.214	0.270	0.7710E-06	1491.2	0.866	297.
350.	8.805	35.266	8.767	27.364	31.844	36.224	0.308	0.7772E-06	1491.6	0.548	346.
400.	8.584	35.238	8.542	27.378	31.863	36.248	0.347	0.7728E-06	1491.5	0.999	396.
450.	8.588	35.245	8.540	27.384	31.869	36.254	0.386	0.7781E-06	1492.4	0.585	445.
500.	8.558	35.245	8.504	27.390	31.876	36.261	0.425	0.7823E-06	1493.1	0.639	495.
600.	8.440	35.233	8.376	27.400	31.888	36.277	0.504	0.7918E-06	1494.3	0.606	594.
700.	8.223	35.210	8.149	27.417	31.911	36.305	0.583	0.7921E-06	1495.1	0.814	692.
800.	7.844	35.186	7.761	27.456	31.959	36.362	0.661	0.7684E-06	1495.3	1.201	791.
900.	7.363	35.168	7.271	27.513	32.028	36.442	0.736	0.7240E-06	1495.1	1.453	890.
1000.	6.663	35.129	6.566	27.580	32.112	36.542	0.805	0.6626E-06	1494.0	1.624	988.
1100.	6.113	35.119	6.010	27.646	32.191	36.635	0.868	0.6034E-06	1493.5	1.588	1087.
1200.	5.600	35.108	5.492	27.702	32.260	36.716	0.927	0.5516E-06	1493.1	1.496	1185.
1300.	5.060	35.070	4.947	27.737	32.309	36.779	0.981	0.5157E-06	1492.5	1.288	1284.
1400.	4.470	35.014	4.354	27.759	32.347	36.832	1.031	0.4874E-06	1491.7	1.167	1382.
1500.	4.343	35.020	4.219	27.779	32.370	36.858	1.079	0.4757E-06	1492.8	0.880	1481.

SHACKLETON 1978/5C : CTD STATION 26

86
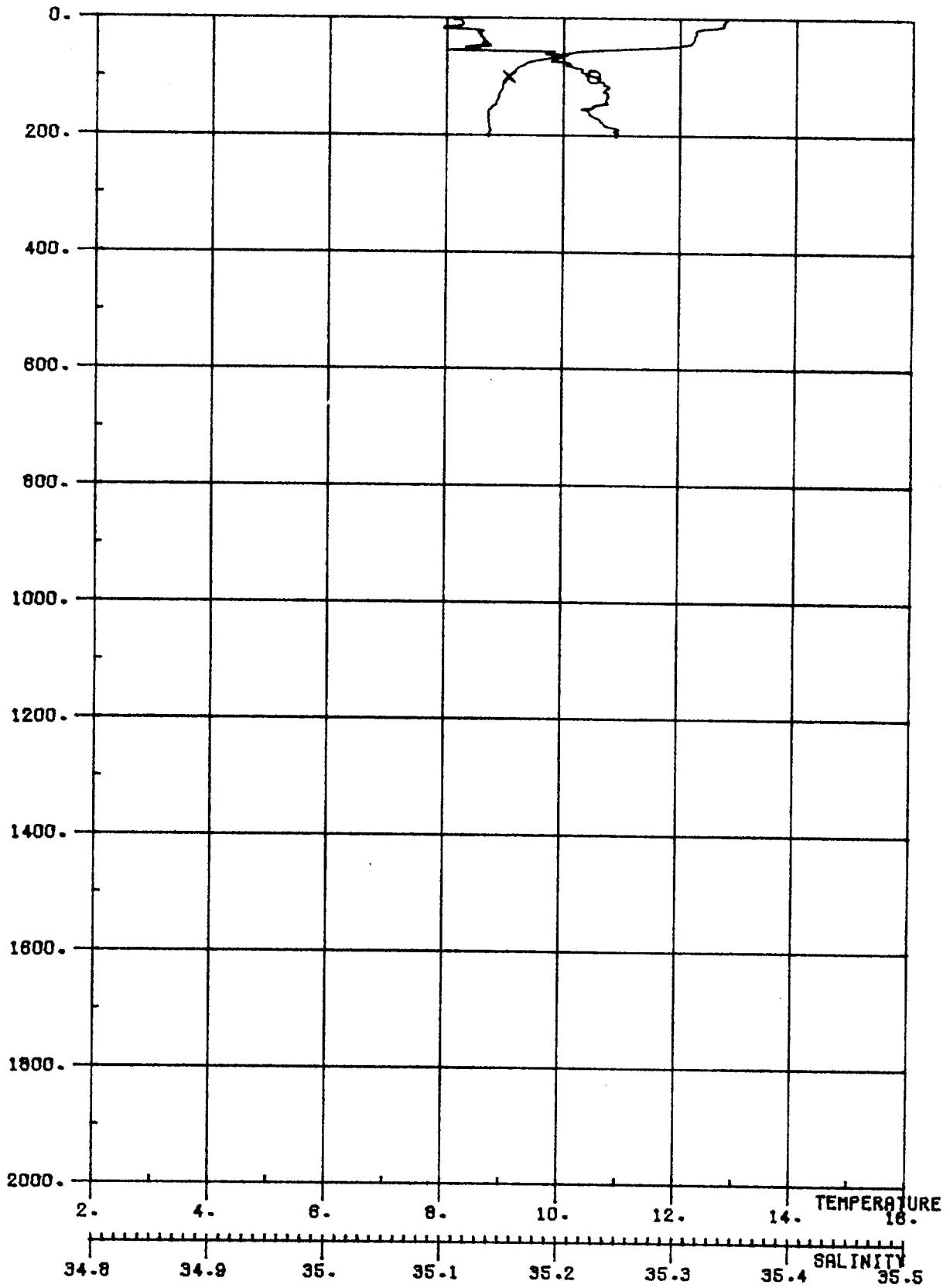
SHACKLETON 1978/5C : CTD STATION 26

P-DB	T-DEGC	S-0/00	POTEMP	SIGMA-0	SIGMA-1	SIGMA-2	DYN.HT.	SVANOM	SNDV-M/S	BVFR-C/H	DEPTH
10.	12.746	35.114	12.745	26.533	30.931	35.231	0.015	0.1494E-05	1499.6	-9.990	10.
20.	12.277	35.127	12.275	26.635	31.043	35.352	0.030	0.1399E-05	1498.2	5.699	20.
30.	12.256	35.129	12.252	26.641	31.049	35.359	0.044	0.1396E-05	1498.3	1.374	30.
40.	12.216	35.134	12.210	26.653	31.061	35.372	0.057	0.1388E-05	1498.4	1.910	40.
50.	11.516	35.118	11.509	26.774	31.196	35.520	0.071	0.1275E-05	1496.1	6.197	50.
75.	9.384	35.201	9.376	27.214	31.681	36.049	0.096	0.8615E-06	1489.1	7.484	74.
100.	9.053	35.227	9.042	27.290	31.764	36.139	0.117	0.7949E-06	1488.3	3.105	99.
125.	8.916	35.234	8.902	27.318	31.795	36.172	0.136	0.7738E-06	1488.2	1.881	124.
150.	8.783	35.226	8.767	27.333	31.813	36.193	0.155	0.7646E-06	1488.1	1.392	149.
175.	8.720	35.231	8.702	27.347	31.829	36.211	0.174	0.7557E-06	1488.3	1.377	173.
200.	8.726	35.245	8.705	27.358	31.839	36.221	0.193	0.7510E-06	1488.8	1.158	198.
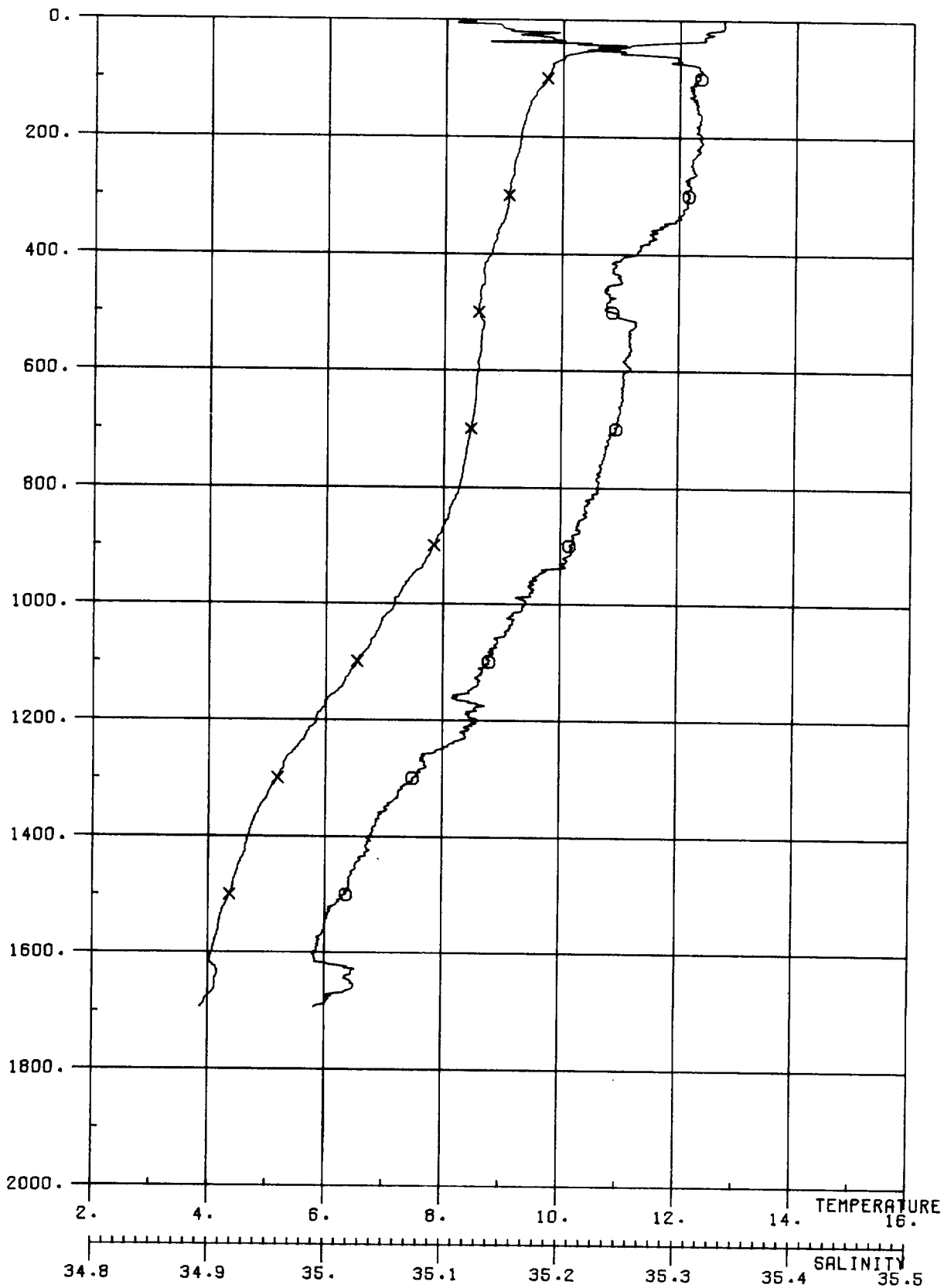
SHACKLETON 1978/5C : CTD STATION 27

SHACKLETON 1978/5C : CTD STATION 27

P-DB	T-DEGC	S-0/00	POTEMP	SIGMA-0	SIGMA-1	SIGMA-2	DYN.HT.	SVANOM	SNDV-M/S	BVFR-C/H	DEPTH
10.	12.755	35.148	12.754	26.557	30.955	35.255	0.015	0.1470E-05	1499.7	-9.990	10.
20.	12.458	35.176	12.455	26.638	31.042	35.347	0.029	0.1396E-05	1498.9	5.061	20.
30.	12.416	35.191	12.412	26.658	31.062	35.368	0.043	0.1380E-05	1499.0	2.511	30.
40.	11.530	35.218	11.525	26.849	31.271	35.594	0.057	0.1201E-05	1496.1	7.778	40.
50.	10.764	35.232	10.758	27.000	31.437	35.776	0.068	0.1060E-05	1493.6	6.924	50.
75.	9.824	35.305	9.816	27.222	31.679	36.036	0.091	0.8550E-06	1490.8	5.308	74.
100.	9.734	35.317	9.723	27.248	31.706	36.066	0.112	0.8365E-06	1490.9	1.806	99.
125.	9.540	35.312	9.526	27.276	31.739	36.103	0.133	0.8144E-06	1490.6	1.926	124.
150.	9.415	35.315	9.399	27.300	31.765	36.132	0.153	0.7977E-06	1490.6	1.732	149.
175.	9.343	35.319	9.323	27.315	31.782	36.150	0.173	0.7885E-06	1490.7	1.407	173.
200.	9.292	35.319	9.270	27.324	31.793	36.161	0.192	0.7855E-06	1490.9	1.071	198.
250.	9.174	35.311	9.146	27.339	31.810	36.181	0.232	0.7822E-06	1491.3	0.981	248.
300.	9.086	35.308	9.053	27.351	31.825	36.198	0.271	0.7806E-06	1491.8	0.916	297.
350.	8.955	35.289	8.917	27.359	31.835	36.212	0.310	0.7838E-06	1492.1	0.718	346.
400.	8.792	35.263	8.749	27.365	31.845	36.226	0.349	0.7869E-06	1492.3	0.712	396.
450.	8.681	35.251	8.632	27.374	31.857	36.240	0.388	0.7882E-06	1492.7	0.787	445.
500.	8.589	35.245	8.535	27.384	31.870	36.255	0.428	0.7876E-06	1493.2	0.854	495.
600.	8.588	35.257	8.523	27.396	31.881	36.267	0.507	0.7974E-06	1494.9	0.605	594.
700.	8.457	35.247	8.381	27.410	31.899	36.287	0.587	0.8025E-06	1496.0	0.715	692.
800.	8.260	35.231	8.174	27.430	31.923	36.316	0.668	0.8005E-06	1496.9	0.862	791.
900.	7.830	35.208	7.736	27.477	31.981	36.384	0.746	0.7671E-06	1496.9	1.330	890.
1000.	7.168	35.170	7.068	27.544	32.063	36.482	0.820	0.7083E-06	1496.0	1.608	988.
1100.	6.527	35.139	6.421	27.608	32.143	36.577	0.888	0.6497E-06	1495.1	1.593	1087.
1200.	5.841	35.127	5.731	27.688	32.240	36.690	0.950	0.5719E-06	1494.1	1.770	1185.
1300.	5.166	35.074	5.052	27.728	32.298	36.765	1.004	0.5274E-06	1492.9	1.402	1284.
1400.	4.672	35.037	4.554	27.756	32.338	36.817	1.055	0.4979E-06	1492.5	1.189	1382.
1500.	4.359	35.016	4.235	27.774	32.365	36.853	1.104	0.4804E-06	1492.9	0.988	1481.
1600.	4.051	34.990	3.921	27.787	32.386	36.882	1.152	0.4674E-06	1493.3	0.895	1579.

SHACKLETON 1978/5C : CTD STATION 28

90
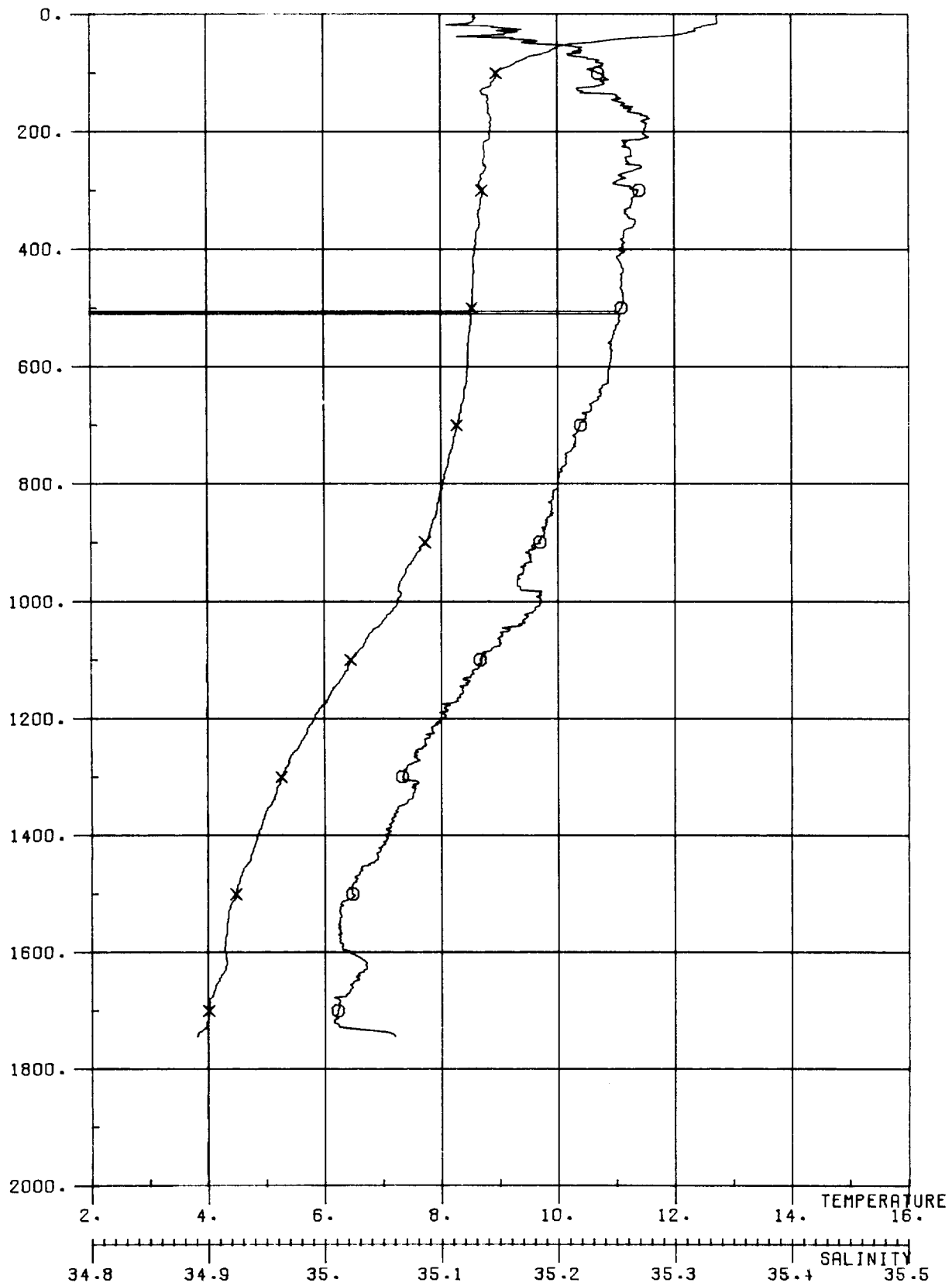
SHACKLETON 1978/5C : CTD STATION 28

P-DB	T-DEGC	S-O/OO	POTEMP	SIGMA-0	SIGMA-1	SIGMA-2	DYN.HT.	SVANOM	SNDV-M/S	BVFR-C/H	DEPTH
10.	12.731	35.128	12.730	26.547	30.945	35.246	0.015	0.1480E-05	1499.6	-9.990	10.
20.	12.469	35.145	12.466	26.612	31.015	35.321	0.029	0.1421E-05	1498.9	4.537	20.
30.	12.228	35.161	12.224	26.672	31.079	35.389	0.043	0.1368E-05	1498.3	4.341	30.
40.	11.196	35.161	11.191	26.867	31.296	35.626	0.056	0.1184E-05	1494.9	7.870	40.
50.	10.174	35.193	10.168	27.074	31.524	35.875	0.067	0.9893E-06	1491.5	8.115	50.
75.	9.443	35.226	9.434	27.224	31.690	36.056	0.090	0.8523E-06	1489.3	4.364	74.
100.	8.952	35.237	8.941	27.313	31.790	36.166	0.110	0.7724E-06	1488.0	3.376	99.
125.	8.760	35.217	8.747	27.329	31.810	36.190	0.130	0.7627E-06	1487.6	1.419	124.
150.	8.804	35.256	8.788	27.353	31.832	36.212	0.148	0.7454E-06	1488.3	1.739	149.
175.	8.869	35.277	8.850	27.359	31.837	36.216	0.167	0.7449E-06	1488.9	0.885	173.
200.	8.847	35.274	8.825	27.361	31.840	36.218	0.186	0.7487E-06	1489.3	0.465	198.
250.	8.728	35.259	8.701	27.370	31.851	36.233	0.223	0.7505E-06	1489.6	0.766	248.
300.	8.714	35.269	8.681	27.380	31.862	36.244	0.261	0.7509E-06	1490.4	0.824	297.
350.	8.662	35.267	8.625	27.387	31.870	36.254	0.298	0.7544E-06	1491.0	0.685	346.
400.	8.570	35.252	8.528	27.391	31.877	36.262	0.336	0.7601E-06	1491.5	0.560	396.
450.	8.552	35.255	8.504	27.397	31.883	36.268	0.374	0.7652E-06	1492.3	0.591	445.
500.	8.531	35.254	8.478	27.401	31.887	36.273	0.413	0.7717E-06	1493.0	0.506	495.
600.	8.454	35.244	8.389	27.406	31.895	36.283	0.491	0.7857E-06	1494.4	0.467	594.
700.	8.269	35.219	8.195	27.417	31.910	36.303	0.570	0.7932E-06	1495.3	0.649	692.
800.	8.024	35.200	7.939	27.440	31.939	36.338	0.649	0.7864E-06	1496.0	0.941	791.
900.	7.722	35.185	7.629	27.475	31.981	36.387	0.727	0.7672E-06	1496.5	1.132	890.
1000.	7.250	35.186	7.149	27.544	32.062	36.479	0.800	0.7096E-06	1496.3	1.595	988.
1100.	6.445	35.133	6.339	27.614	32.151	36.587	0.868	0.6416E-06	1494.8	1.690	1087.
1200.	5.820	35.101	5.710	27.669	32.222	36.673	0.930	0.5881E-06	1493.9	1.520	1185.
1300.	5.254	35.067	5.139	27.712	32.280	36.744	0.986	0.5449E-06	1493.3	1.387	1284.
1400.	4.840	35.052	4.719	27.749	32.327	36.802	1.038	0.5096E-06	1493.3	1.272	1382.
1500.	4.476	35.024	4.351	27.768	32.356	36.841	1.089	0.4905E-06	1493.4	1.022	1481.
1600.	4.296	35.022	4.163	27.787	32.379	36.869	1.137	0.4773E-06	1494.3	0.906	1579.
1700.	4.008	35.011	3.869	27.809	32.409	36.906	1.183	0.4556E-06	1494.8	1.044	1677.

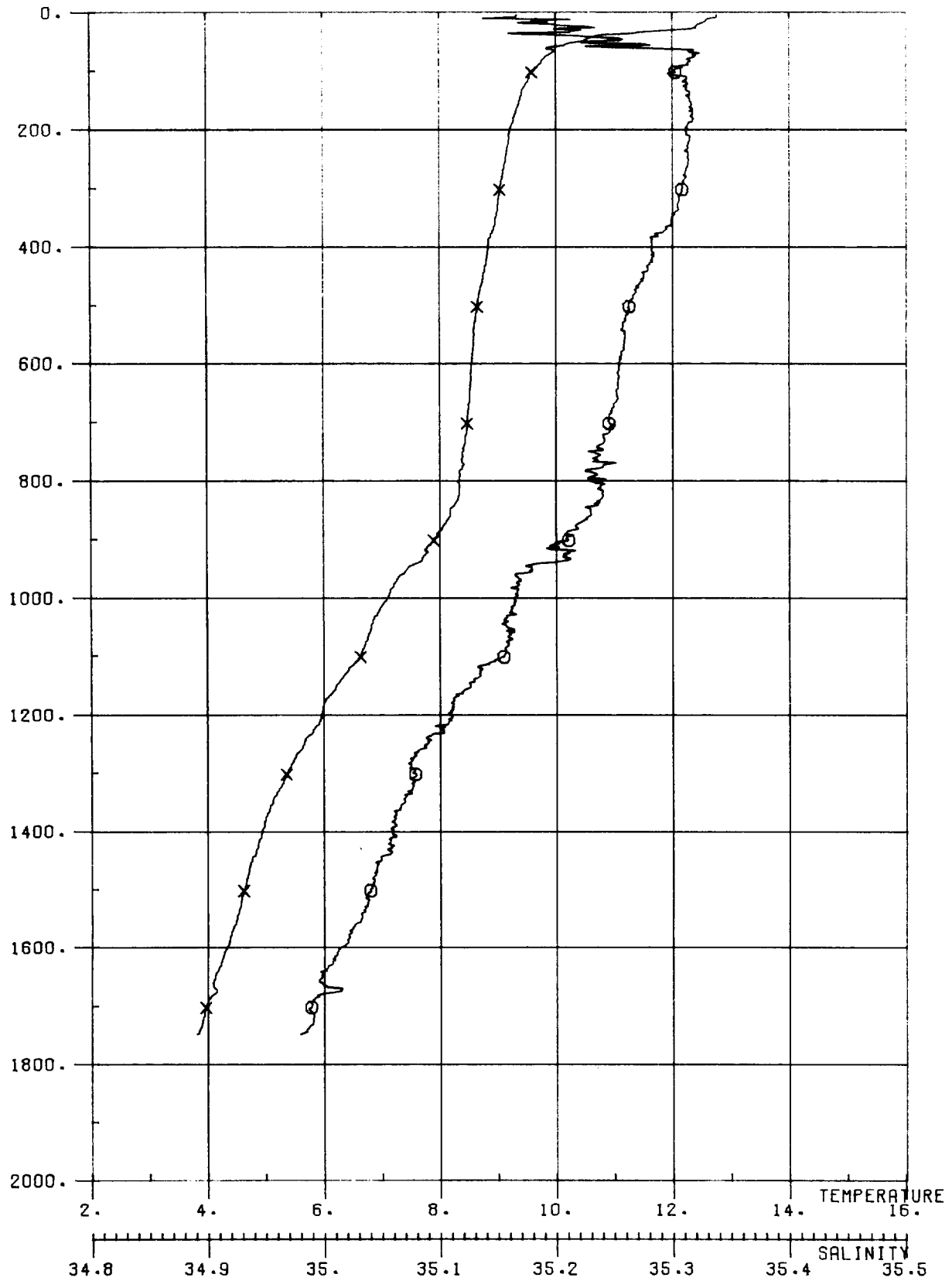SHACKLETON 1978/5C : CTD STATION 29

92

SHACKLETON 1978/5C : CTD STATION 29

P-DB	T-DEGC	S-0/00	POTEMP	SIGMA-0	SIGMA-1	SIGMA-2	DYN.HT.	SVANOM	SNDV-M/S	BVFR-C/H	DEPTH
10.	12.593	35.175	12.591	26.611	31.011	35.314	0.015	0.1420E-05	1499.2	-9.990	10.
20.	12.423	35.199	12.420	26.663	31.067	35.373	0.029	0.1373E-05	1498.8	4.060	20.
30.	11.805	35.218	11.801	26.797	31.213	35.531	0.042	0.1249E-05	1496.9	6.512	30.
40.	10.648	35.225	10.644	27.015	31.455	35.796	0.053	0.1043E-05	1493.1	8.322	40.
50.	10.318	35.224	10.312	27.073	31.520	35.867	0.063	0.9909E-06	1492.1	4.280	50.
75.	9.820	35.319	9.812	27.234	31.690	36.048	0.086	0.8438E-06	1490.8	4.519	74.
100.	9.590	35.301	9.578	27.259	31.721	36.084	0.107	0.8249E-06	1490.4	1.816	99.
125.	9.462	35.309	9.447	27.287	31.752	36.117	0.127	0.8041E-06	1490.3	1.882	124.
150.	9.375	35.315	9.358	27.307	31.773	36.140	0.147	0.7910E-06	1490.4	1.586	149.
175.	9.291	35.315	9.271	27.321	31.790	36.159	0.166	0.7826E-06	1490.5	1.366	173.
200.	9.212	35.312	9.190	27.332	31.802	36.173	0.186	0.7776E-06	1490.6	1.186	198.
250.	9.136	35.314	9.108	27.347	31.819	36.191	0.225	0.7746E-06	1491.2	0.970	248.
300.	9.040	35.308	9.007	27.359	31.833	36.208	0.263	0.7732E-06	1491.7	0.908	297.
350.	8.963	35.299	8.925	27.365	31.841	36.217	0.302	0.7779E-06	1492.2	0.643	346.
400.	8.834	35.282	8.790	27.373	31.852	36.232	0.341	0.7797E-06	1492.5	0.774	396.
450.	8.746	35.275	8.697	27.382	31.864	36.245	0.380	0.7806E-06	1493.0	0.804	445.
500.	8.638	35.262	8.584	27.390	31.874	36.258	0.419	0.7825E-06	1493.4	0.759	495.
600.	8.544	35.254	8.479	27.401	31.887	36.273	0.498	0.7922E-06	1494.7	0.605	594.
700.	8.468	35.245	8.392	27.407	31.895	36.284	0.578	0.8056E-06	1496.1	0.485	692.
800.	8.323	35.229	8.236	27.418	31.910	36.302	0.659	0.8126E-06	1497.2	0.663	791.
900.	7.895	35.209	7.800	27.469	31.971	36.373	0.739	0.7763E-06	1497.2	1.369	890.
1000.	7.089	35.164	6.989	27.550	32.071	36.492	0.812	0.7008E-06	1495.7	1.774	988.
1100.	6.636	35.155	6.529	27.606	32.138	36.569	0.880	0.6544E-06	1495.6	1.459	1087.
1200.	5.943	35.108	5.831	27.660	32.210	36.658	0.942	0.6003E-06	1494.4	1.531	1185.
1300.	5.357	35.077	5.241	27.708	32.273	36.735	1.000	0.5519E-06	1493.7	1.452	1284.
1400.	4.927	35.059	4.806	27.745	32.320	36.794	1.053	0.5167E-06	1493.6	1.273	1382.
1500.	4.617	35.040	4.489	27.765	32.349	36.830	1.104	0.4986E-06	1494.0	1.010	1481.
1600.	4.317	35.014	4.184	27.778	32.370	36.859	1.153	0.4863E-06	1494.4	0.892	1579.
1700.	3.963	34.989	3.824	27.796	32.397	36.896	1.201	0.4655E-06	1494.6	1.031	1677.

SHACKLETON 1978/5C : CTD STATION 30

94
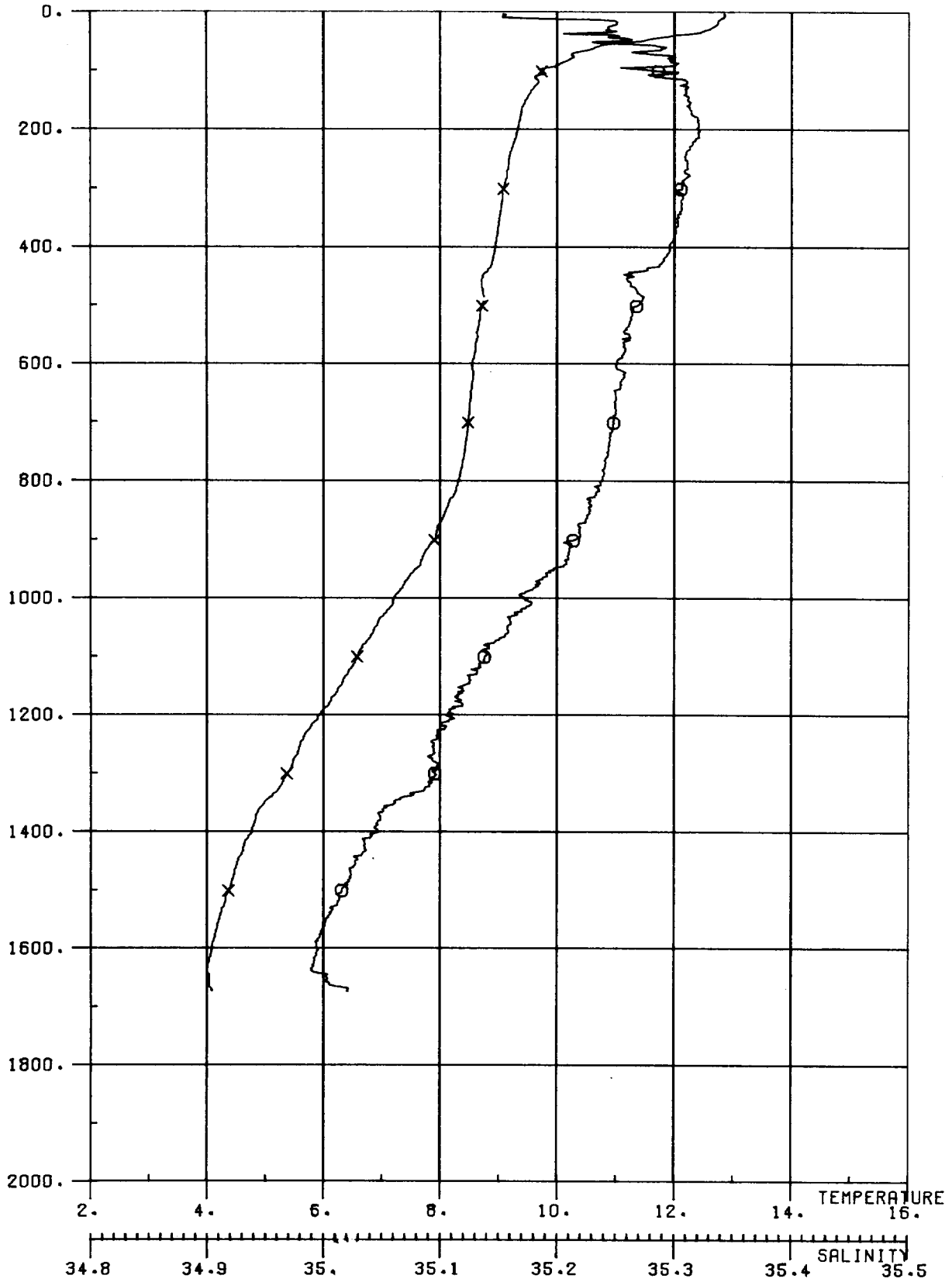
SHACKLETON 1978/5C : CTD STATION 30
=========== ======= === === ======= ==

P-DB	T-DEGC	S-0/00	POTEMP	SIGMA-0	SIGMA-1	SIGMA-2	DYN.HT.	SVANOM	SNDV-M/S	BVFR-C/H	DEPTH
10.	12.315	35.165	12.814	26.559	30.955	35.254	0.015	0.1469E-05	1499.9	-9.990	10.
20.	12.726	35.251	12.724	26.643	31.040	35.340	0.029	0.1392E-05	1499.9	5.163	20.
30.	12.559	35.243	12.555	26.670	31.071	35.374	0.043	0.1369E-05	1499.5	2.932	30.
40.	11.963	35.251	11.958	26.793	31.205	35.520	0.056	0.1255E-05	1497.7	6.231	40.
50.	11.358	35.242	11.352	26.900	31.325	35.651	0.068	0.1156E-05	1495.7	5.839	50.
75.	10.260	35.300	10.251	27.143	31.591	35.939	0.093	0.9303E-06	1492.4	5.560	74.
100.	9.723	35.282	9.711	27.222	31.681	36.041	0.116	0.8609E-06	1490.8	3.171	99.
125.	9.627	35.304	9.613	27.256	31.717	36.079	0.137	0.8342E-06	1490.9	2.082	124.
150.	9.449	35.312	9.433	27.292	31.757	36.122	0.157	0.8054E-06	1490.7	2.147	149.
175.	9.364	35.316	9.344	27.310	31.777	36.144	0.177	0.7936E-06	1490.8	1.526	173.
200.	9.310	35.320	9.287	27.323	31.791	36.159	0.197	0.7871E-06	1491.0	1.275	198.
250.	9.164	35.309	9.136	27.339	31.810	36.182	0.236	0.7822E-06	1491.3	1.035	248.
300.	9.078	35.306	9.045	27.351	31.824	36.198	0.275	0.7810E-06	1491.8	0.900	297.
350.	9.004	35.303	8.966	27.361	31.837	36.212	0.314	0.7815E-06	1492.3	0.835	346.
400.	8.925	35.296	8.881	27.370	31.847	36.224	0.354	0.7839E-06	1492.9	0.746	396.
450.	8.716	35.263	8.667	27.378	31.860	36.243	0.393	0.7844E-06	1492.9	0.822	445.
500.	8.712	35.268	8.658	27.383	31.866	36.248	0.432	0.7900E-06	1493.7	0.574	495.
600.	8.541	35.250	8.476	27.398	31.884	36.271	0.511	0.7948E-06	1494.7	0.731	594.
700.	8.469	35.248	8.393	27.409	31.897	36.285	0.591	0.8039E-06	1496.1	0.614	692.
800.	8.309	35.237	8.222	27.427	31.919	36.311	0.672	0.8041E-06	1497.1	0.818	791.
900.	7.901	35.215	7.807	27.472	31.974	36.375	0.751	0.7735E-06	1497.2	1.297	890.
1000.	7.207	35.172	7.106	27.540	32.058	36.476	0.825	0.7131E-06	1496.2	1.626	938.
1100.	6.574	35.138	6.468	27.601	32.135	36.567	0.893	0.6575E-06	1495.3	1.562	1087.
1200.	5.932	35.108	5.820	27.661	32.211	36.659	0.957	0.5992E-06	1494.4	1.575	1185.
1300.	5.372	35.095	5.256	27.720	32.284	36.746	1.013	0.5413E-06	1493.8	1.553	1284.
1400.	4.767	35.047	4.648	27.753	32.333	36.810	1.065	0.5033E-06	1493.0	1.309	1382.
1500.	4.369	35.015	4.245	27.773	32.363	36.851	1.115	0.4825E-06	1492.9	1.046	1481.
1600.	4.076	34.994	3.946	27.787	32.385	36.880	1.162	0.4684E-06	1493.4	0.915	1579.

SHACKLETON 1978/5C : CTD STATION 31

96
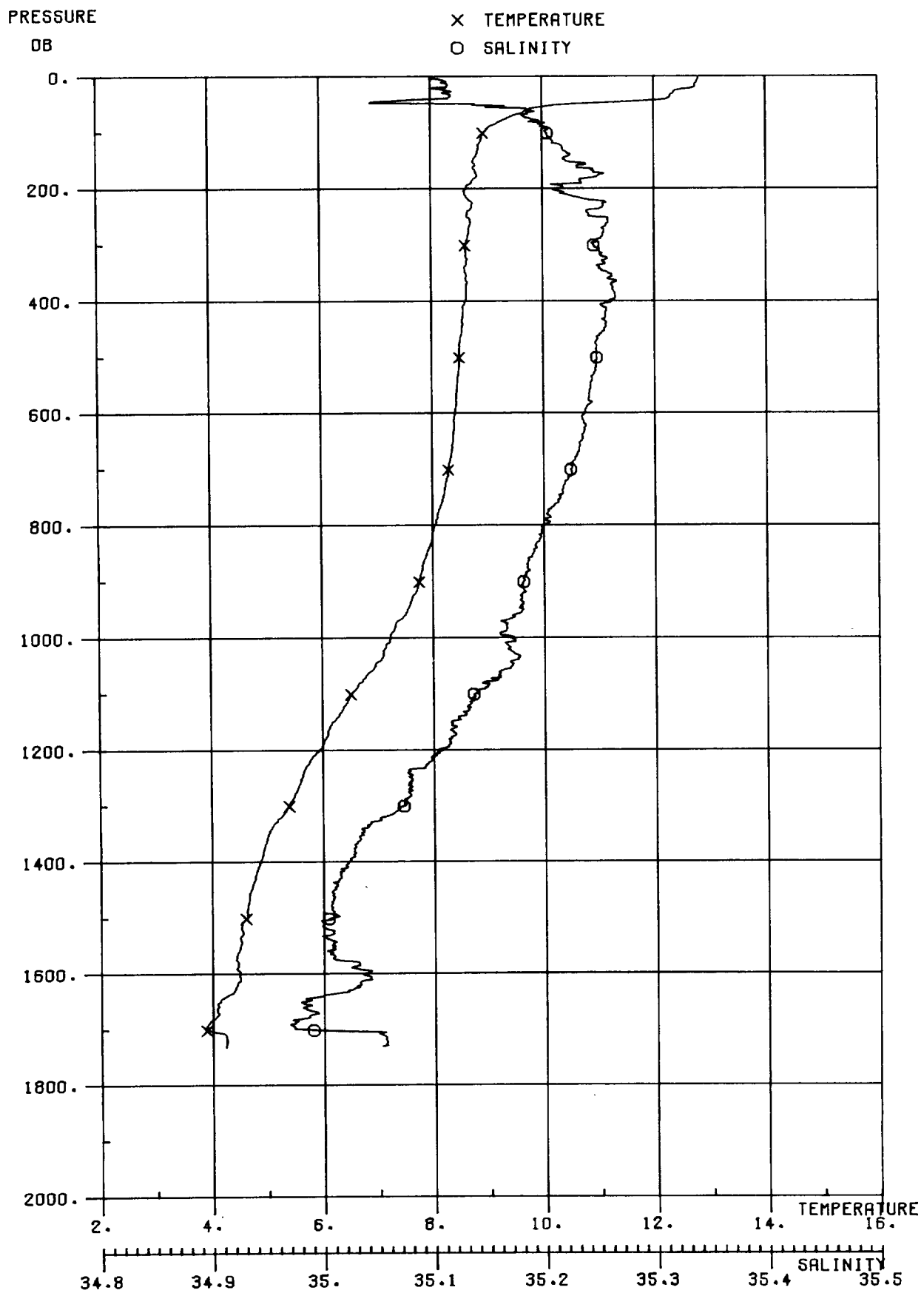
SHACKLETON 1978/5C : CTD STATION 31
=========== === ======== ==

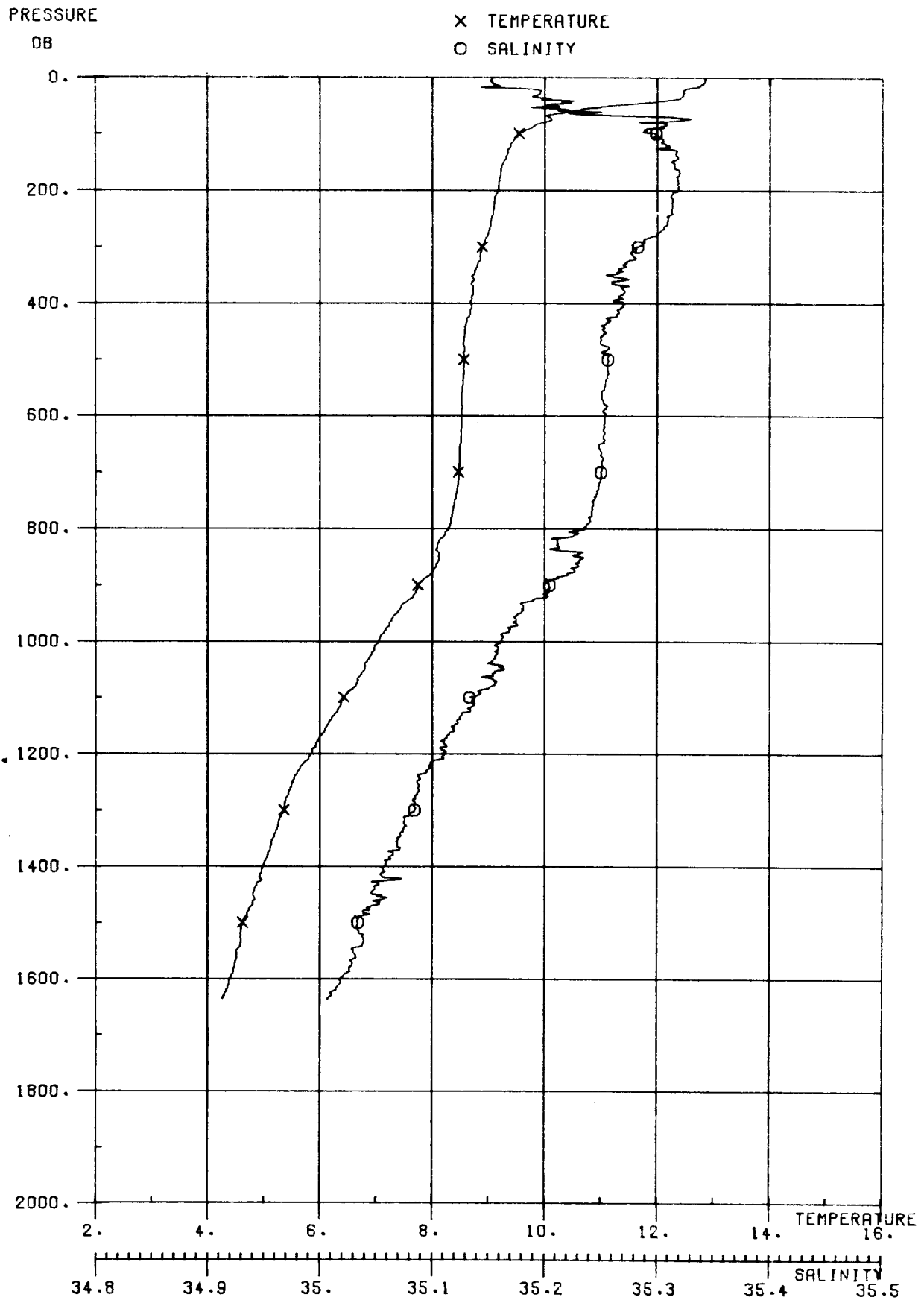| P-DB	T-DEGC	S-0/00	POTEMP	SIGMA-0	SIGMA-1	SIGMA-2	DYN.HT.	SVANOI	SNDV-M/S	BVFR-C/H	DEPTH
10.	12.761	35.112	12.760	26.529	30.926	35.226	0.015	0.1498E-05	1499.7	-9.990	10.
20.	12.703	35.107	12.700	26.536	30.935	35.236	0.030	0.1494E-05	1499.6	1.556	20.
30.	12.329	35.112	12.325	26.614	31.020	35.329	0.044	0.1422E-05	1498.6	4.966	30.
40.	12.223	35.100	12.218	26.626	31.034	35.345	0.059	0.1414E-05	1498.4	1.923	40.
50.	10.376	35.139	10.370	26.996	31.442	35.790	0.071	0.1063E-05	1492.2	10.849	50.
75.	9.366	35.189	9.357	27.208	31.676	36.044	0.095	0.8671E-06	1489.0	5.192	74.
100.	8.941	35.204	8.930	27.289	31.766	36.143	0.115	0.7953E-06	1487.9	3.212	99.
125.	8.849	35.218	8.836	27.316	31.795	36.174	0.135	0.7752E-06	1488.0	1.844	124.
150.	8.751	35.221	8.735	27.334	31.815	36.196	0.154	0.7630E-06	1488.0	1.532	149.
175.	8.832	35.252	8.813	27.346	31.825	36.204	0.173	0.7577E-06	1488.8	1.189	173.
200.	8.629	35.216	8.608	27.350	31.834	36.218	0.192	0.7582E-06	1488.4	0.303	198.
250.	8.643	35.244	8.616	27.371	31.854	36.238	0.230	0.7490E-06	1489.3	1.145	248.
300.	8.602	35.246	8.570	27.379	31.864	36.248	0.267	0.7510E-06	1490.0	0.751	297.
350.	8.609	35.258	8.572	27.389	31.873	36.258	0.305	0.7523E-06	1490.8	0.781	346.
400.	8.603	35.260	8.560	27.393	31.877	36.262	0.343	0.7594E-06	1491.6	0.474	396.
450.	8.541	35.255	8.493	27.399	31.885	36.271	0.381	0.7632E-06	1492.2	0.662	445.
500.	8.491	35.248	8.437	27.402	31.890	36.277	0.419	0.7698E-06	1492.8	0.495	495.
600.	8.408	35.237	8.344	27.408	31.898	36.287	0.497	0.7834E-06	1494.2	0.477	594.
700.	8.286	35.225	8.211	27.419	31.912	35.304	0.575	0.7914E-06	1495.4	0.635	692.
800.	8.045	35.200	7.960	27.437	31.936	36.334	0.655	0.7897E-06	1496.1	0.846	791.
900.	7.750	35.182	7.656	27.468	31.974	36.379	0.733	0.7738E-06	1496.6	1.082	890.
1000.	7.233	35.172	7.132	27.536	32.054	36.471	0.808	0.7173E-06	1496.3	1.584	938.
1100.	6.523	35.138	6.417	27.608	32.143	36.577	0.876	0.6498E-06	1495.1	1.684	1087.
1200.	5.938	35.107	5.826	27.659	32.209	36.657	0.939	0.6008E-06	1494.4	1.473	1185.
1300.	5.393	35.073	5.277	27.701	32.265	36.726	0.997	0.5599E-06	1493.9	1.362	1284.
1400.	4.865	35.023	4.745	27.723	32.301	36.776	1.051	0.5345E-06	1493.3	1.136	1382.
1500.	4.614	35.007	4.487	27.739	32.323	36.805	1.104	0.5223E-06	1493.9	0.903	1481.
1600.	4.497	35.037	4.361	27.777	32.365	36.849	1.154	0.4938E-06	1495.2	1.162	1579.
1700.	3.883	34.982	3.745	27.798	32.402	36.903	1.203	0.4597E-06	1494.2	1.232	1677.

SHACKLETON 1978/5C : CTD STATION 32

SHACKLETON 1978/5C : CTD STATION 32

P-DB	T-DEGC	S-O/OO	POTEMP	SIGMA-0	SIGMA-1	SIGMA-2	DYN.HT.	SVANOM	SNDV-M/S	BVFR-C/H	DEPTH
10.	12.820	35.154	12.818	26.549	30.945	35.244	0.015	0.1478E-05	1499.9	-9.990	10.
20.	12.499	35.185	12.496	26.637	31.039	35.344	0.029	0.1398E-05	1499.1	5.265	20.
30.	12.452	35.194	12.448	26.653	31.057	35.362	0.043	0.1385E-05	1499.1	2.286	30.
40.	12.173	35.211	12.167	26.722	31.130	35.441	0.057	0.1323E-05	1498.3	4.647	40.
50.	11.138	35.207	11.132	26.913	31.343	35.674	0.069	0.1143E-05	1494.9	7.805	50.
75.	10.120	35.322	10.111	27.185	31.635	35.986	0.094	0.8906E-06	1491.9	5.871	74.
100.	9.535	35.299	9.523	27.267	31.730	36.093	0.115	0.8181E-06	1490.2	3.234	99.
125.	9.355	35.297	9.341	27.296	31.763	36.130	0.135	0.7956E-06	1489.9	1.939	124.
150.	9.246	35.314	9.230	27.327	31.797	36.166	0.155	0.7712E-06	1489.9	2.001	149.
175.	9.200	35.317	9.181	27.338	31.808	36.179	0.174	0.7667E-06	1490.2	1.163	173.
200.	9.157	35.318	9.135	27.346	31.817	36.189	0.193	0.7643E-06	1490.4	1.029	198.
250.	9.036	35.310	9.008	27.360	31.834	36.209	0.231	0.7614E-06	1490.8	0.962	248.
300.	8.878	35.281	8.845	27.363	31.841	36.220	0.269	0.7681E-06	1491.0	0.525	297.
350.	8.711	35.256	8.673	27.371	31.854	36.236	0.308	0.7697E-06	1491.2	0.775	346.
400.	8.696	35.270	8.653	27.386	31.868	36.251	0.346	0.7667E-06	1492.0	0.952	396.
450.	8.572	35.253	8.524	27.393	31.878	36.264	0.385	0.7692E-06	1492.3	0.729	445.
500.	8.559	35.256	8.505	27.398	31.884	36.269	0.423	0.7746E-06	1493.1	0.575	495.
600.	8.518	35.253	8.453	27.404	31.891	36.278	0.501	0.7389E-06	1494.6	0.455	594.
700.	8.467	35.250	8.392	27.410	31.899	36.287	0.581	0.8021E-06	1496.1	0.493	692.
800.	8.282	35.235	8.196	27.429	31.922	36.315	0.661	0.8013E-06	1497.0	0.837	791.
900.	7.741	35.204	7.647	27.487	31.993	36.398	0.740	0.7560E-06	1496.6	1.472	890.
1000.	7.034	35.162	6.934	27.556	32.078	36.500	0.812	0.6943E-06	1495.5	1.636	983.
1100.	6.409	35.135	6.304	27.620	32.158	36.594	0.879	0.6355E-06	1494.7	1.591	1087.
1200.	5.828	35.109	5.718	27.675	32.228	36.678	0.940	0.5830E-06	1494.0	1.509	1185.
1300.	5.352	35.084	5.236	27.714	32.279	36.741	0.996	0.5465E-06	1493.7	1.304	1284.
1400.	4.977	35.057	4.856	27.737	32.312	36.784	1.049	0.5251E-06	1493.8	1.076	1382.
1500.	4.612	35.034	4.485	27.761	32.345	36.826	1.101	0.5023E-06	1494.0	1.085	1481.
1600.	4.376	35.017	4.242	27.774	32.365	36.852	1.151	0.4919E-06	1494.6	0.858	1579.

SHACKLETON 1978/5C : CTD STATION 34

102
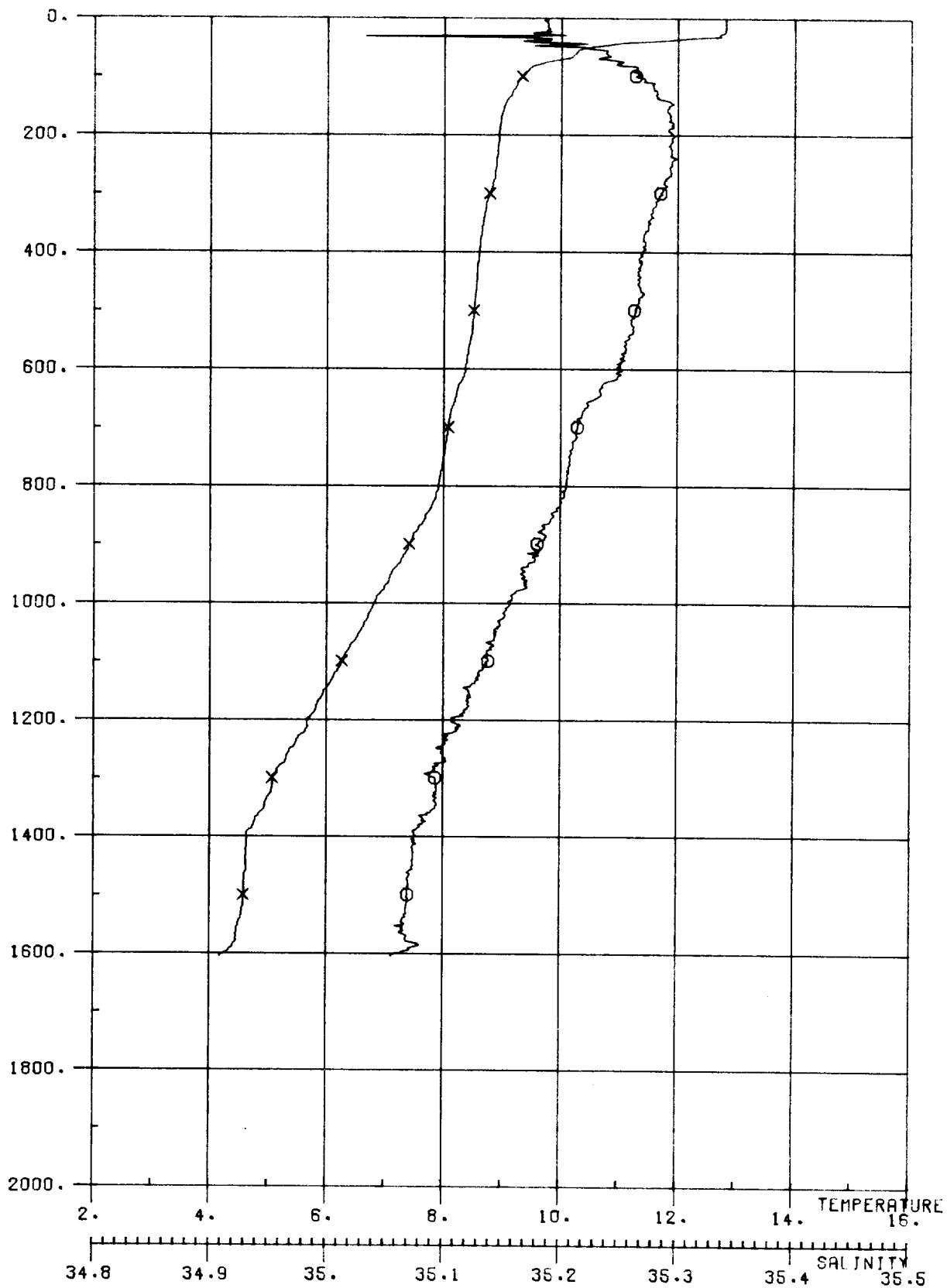
SHACKLETON 1978/5C : CTD STATION 34

P-DB	T-DEGC	S-0/00	POTEMP	SIGMA-0	SIGMA-1	SIGMA-2	DYN.HT.	SVANOM	SNDV-M/S	BVFR-C/H	DEPTH
10.	12.822	35.189	12.821	26.576	30.972	35.270	0.015	0.1453E-05	1500.0	-9.990	10.
20.	12.816	35.188	12.813	26.577	30.973	35.272	0.029	0.1455E-05	1500.1	0.605	20.
30.	12.734	35.118	12.730	26.539	30.937	35.238	0.044	0.1494E-05	1499.9	-3.461	30.
40.	11.289	35.174	11.285	26.859	31.286	35.614	0.057	0.1192E-05	1495.2	10.071	40.
50.	10.426	35.221	10.420	27.052	31.496	35.842	0.068	0.1011E-05	1492.4	7.819	50.
75.	9.733	35.254	9.724	27.198	31.657	36.017	0.092	0.8776E-06	1490.4	4.312	74.
100.	9.324	35.264	9.313	27.275	31.742	36.111	0.113	0.8101E-06	1489.3	3.125	99.
125.	9.163	35.283	9.149	27.316	31.787	36.159	0.132	0.7762E-06	1489.2	2.297	124.
150.	9.027	35.293	9.011	27.347	31.821	36.195	0.152	0.7523E-06	1489.1	1.981	149.
175.	8.967	35.293	8.948	27.356	31.832	36.208	0.170	0.7484E-06	1489.3	1.118	173.
200.	8.933	35.297	8.911	27.365	31.842	36.218	0.189	0.7452E-06	1489.6	1.073	198.
250.	8.891	35.295	8.864	27.371	31.849	36.227	0.226	0.7500E-06	1490.3	0.632	248.
300.	8.778	35.286	8.746	27.383	31.864	36.244	0.264	0.7484E-06	1490.7	0.907	297.
350.	8.668	35.276	8.630	27.394	31.877	36.260	0.301	0.7485E-06	1491.1	0.837	346.
400.	8.599	35.270	8.556	27.401	31.885	36.270	0.339	0.7517E-06	1491.6	0.693	396.
450.	8.557	35.267	8.508	27.406	31.892	36.278	0.376	0.7565E-06	1492.3	0.616	445.
500.	8.508	35.264	8.454	27.412	31.899	36.286	0.414	0.7609E-06	1492.9	0.627	495.
600.	8.364	35.251	8.300	27.426	31.916	36.306	0.491	0.7664E-06	1494.0	0.706	594.
700.	8.074	35.214	8.000	27.443	31.940	36.337	0.567	0.7658E-06	1494.5	0.828	692.
800.	7.912	35.205	7.828	27.461	31.962	36.364	0.644	0.7651E-06	1495.6	0.818	791.
900.	7.404	35.180	7.312	27.516	32.030	36.443	0.719	0.7216E-06	1495.3	1.443	890.
1000.	6.807	35.157	6.709	27.583	32.111	36.538	0.788	0.6637E-06	1494.6	1.591	983.
1100.	6.264	35.137	6.160	27.641	32.182	36.622	0.852	0.6120E-06	1494.1	1.510	1087.
1200.	5.667	35.109	5.558	27.695	32.252	36.706	0.911	0.5599E-06	1493.3	1.503	1185.
1300.	5.072	35.093	4.959	27.754	32.326	36.795	0.964	0.5002E-06	1492.6	1.571	1284.
1400.	4.636	35.076	4.517	27.791	32.374	36.854	1.013	0.4641E-06	1492.4	1.277	1382.
1500.	4.578	35.069	4.451	27.793	32.378	36.860	1.059	0.4714E-06	1493.9	0.384	1431.
1600.	4.222	35.060	4.090	27.825	32.419	36.910	1.106	0.4396E-06	1494.1	1.207	1579.
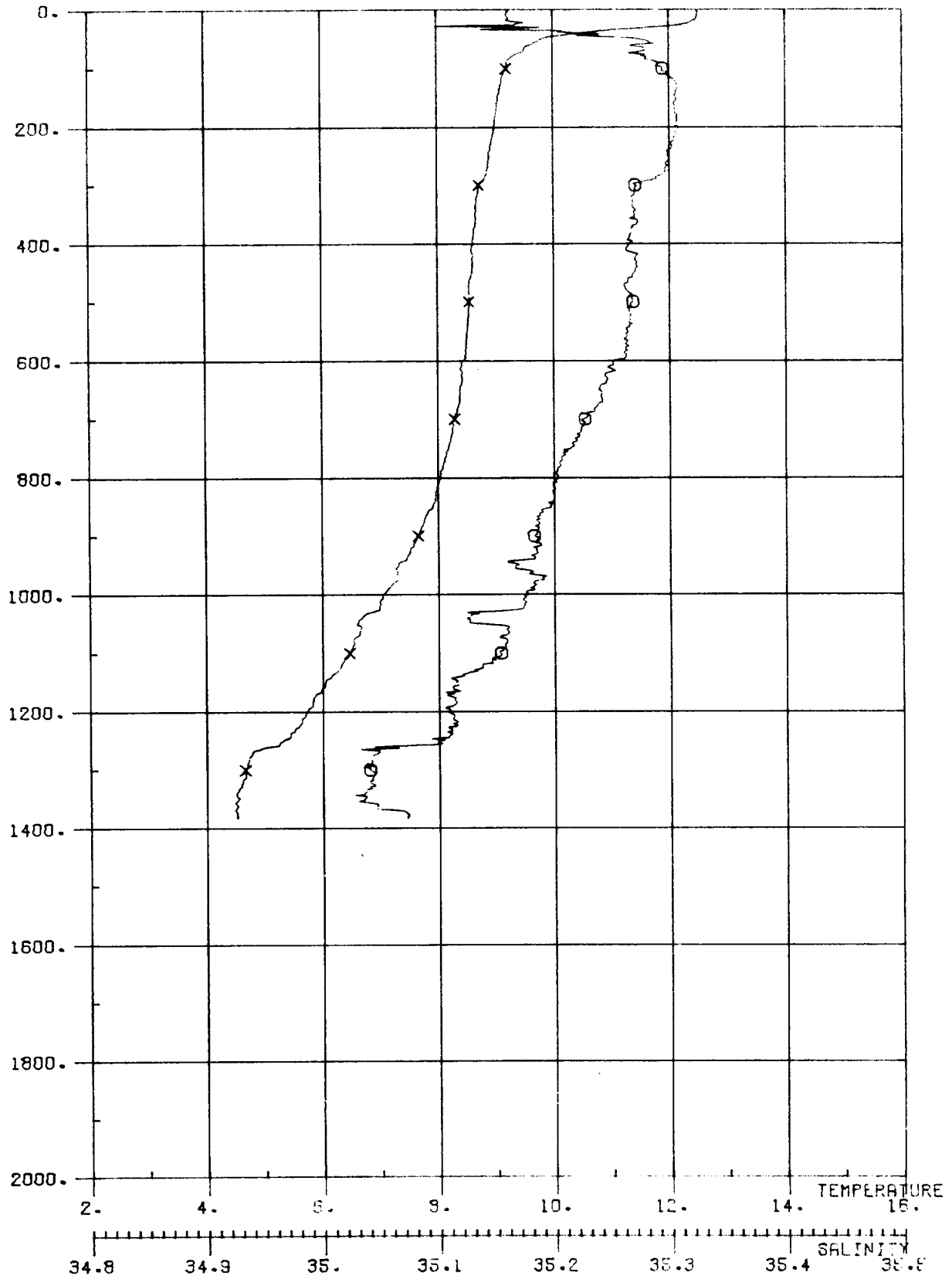
SHACKLETON 1973/SC : CTD STATION 35

102

SHACKLETON 1978/5C : CTD STATION 35

P-DB	T-DEGC	S-0/00	POTEMP	SIGMA-0	SIGMA-1	SIGMA-2	DYN.HT.	SVANOM	SNDV-M/S	BVFR-C/H	DEPTH
10.	12.482	35.161	12.481	26.621	31.024	35.329	0.014	0.1410E-05	1498.8	-9.990	10.
20.	12.372	35.170	12.369	26.650	31.055	35.362	0.028	0.1385E-05	1498.6	3.011	20.
30.	11.611	35.179	11.607	26.803	31.223	35.545	0.042	0.1243E-05	1496.2	6.959	30.
40.	10.433	35.232	10.428	27.059	31.503	35.848	0.053	0.1002E-05	1492.3	9.008	40.
50.	9.791	35.277	9.786	27.206	31.663	36.021	0.062	0.8646E-06	1490.2	6.821	50.
75.	9.356	35.279	9.347	27.280	31.747	36.115	0.083	0.7989E-06	1489.1	3.087	74.
100.	9.196	35.294	9.185	27.319	31.789	36.160	0.102	0.7680E-06	1488.9	2.208	99.
125.	9.109	35.306	9.095	27.343	31.816	36.188	0.121	0.7502E-06	1489.0	1.764	124.
150.	9.052	35.306	9.035	27.353	31.826	36.200	0.140	0.7467E-06	1489.2	1.098	149.
175.	9.024	35.304	9.004	27.356	31.831	36.205	0.159	0.7484E-06	1489.5	0.709	173.
200.	8.985	35.308	8.964	27.365	31.841	36.216	0.177	0.7451E-06	1489.8	1.079	198.
250.	8.898	35.300	8.871	27.374	31.851	36.229	0.215	0.7474E-06	1490.3	0.759	248.
300.	8.718	35.271	8.685	27.381	31.863	36.245	0.252	0.7500E-06	1490.4	0.731	297.
350.	8.660	35.270	8.622	27.390	31.873	36.256	0.290	0.7519E-06	1491.0	0.759	346.
400.	8.612	35.266	8.569	27.395	31.880	36.264	0.327	0.7569E-06	1491.7	0.609	396.
450.	8.591	35.269	8.543	27.402	31.887	36.272	0.365	0.7606E-06	1492.4	0.667	445.
500.	8.549	35.268	8.495	27.409	31.895	36.280	0.403	0.7644E-06	1493.1	0.662	495.
600.	8.440	35.252	8.375	27.414	31.903	36.292	0.480	0.7778E-06	1494.3	0.487	594.
700.	8.283	35.225	8.208	27.419	31.912	36.305	0.559	0.7910E-06	1495.3	0.483	692.
800.	8.035	35.203	7.951	27.441	31.940	36.338	0.638	0.7858E-06	1496.0	0.912	791.
900.	7.650	35.184	7.557	27.484	31.992	36.400	0.715	0.7566E-06	1496.2	1.271	890.
1000.	7.054	35.177	6.955	27.565	32.087	36.508	0.788	0.6864E-06	1495.6	1.721	988.
1100.	6.459	35.154	6.354	27.628	32.165	36.600	0.854	0.6289E-06	1494.9	1.579	1087.
1200.	5.729	35.109	5.620	27.687	32.242	36.695	0.914	0.5688E-06	1493.6	1.591	1185.
1300.	4.661	35.041	4.552	27.759	32.342	36.821	0.966	0.4827E-06	1490.8	1.829	1284.

PRESSURE
DB

× TEMPERATURE
○ SALINITY

TEMPERATURE

SALINITY
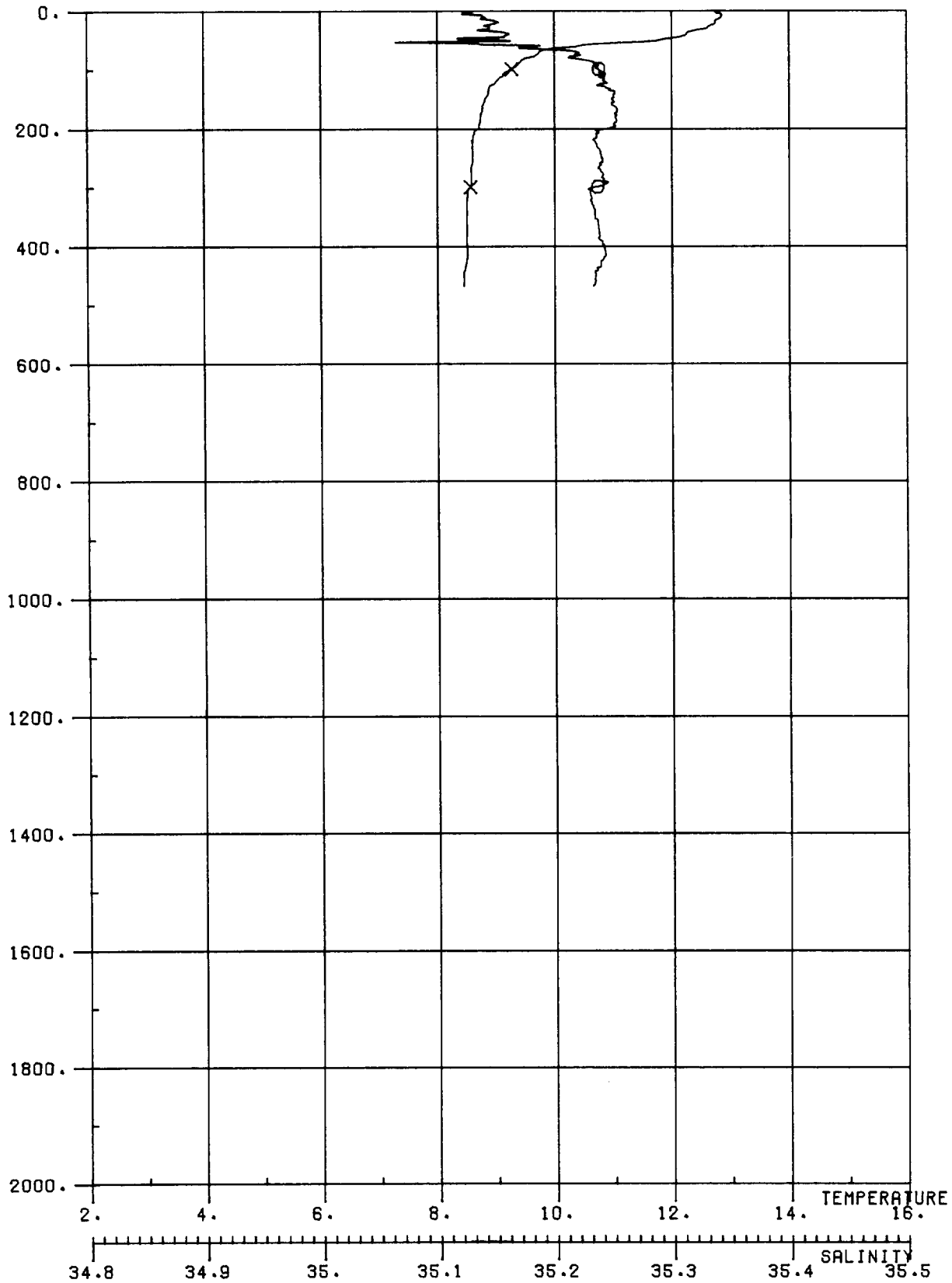
SHACKLETON 1978/5C · CTD STATION 37

SHACKLETON 1978/5C : CTD STATION 37
========== ======== === ======== ==

P-DB	T-DEGC	S-0/00	POTEMP	SIGMA-0	SIGMA-1	SIGMA-2	DYN.HT.	SVANOM	SNDV-M/S	BVFR-C/H	DEPTH
10.	12.845	35.134	12.844	26.529	30.925	35.223	0.015	0.1498E-05	1500.0	-9.990	10.
20.	12.736	35.145	12.734	26.559	30.957	35.258	0.030	0.1471E-05	1499.8	3.100	20.
30.	12.585	35.139	12.581	26.584	30.985	35.288	0.044	0.1451E-05	1499.5	2.826	30.
40.	12.248	35.155	12.243	26.664	31.071	35.381	0.059	0.1378E-05	1493.5	5.005	40.
50.	11.795	35.146	11.789	26.744	31.160	35.479	0.072	0.1305E-05	1497.1	5.044	50.
75.	9.685	35.217	9.676	27.177	31.637	35.998	0.098	0.8978E-06	1490.2	7.419	74.
100.	9.247	35.232	9.236	27.262	31.731	36.102	0.120	0.8221E-06	1489.0	3.288	99.
125.	8.964	35.233	8.950	27.309	31.785	36.161	0.139	0.7823E-06	1488.4	2.468	124.
150.	8.809	35.243	8.793	27.342	31.821	36.201	0.159	0.7560E-06	1488.3	2.049	149.
175.	8.742	35.245	8.723	27.355	31.836	36.217	0.177	0.7488E-06	1488.4	1.284	173.
200.	8.690	35.239	8.668	27.359	31.841	36.223	0.196	0.7504E-06	1488.6	0.727	198.
250.	8.592	35.234	8.566	27.371	31.856	36.240	0.233	0.7488E-06	1489.1	0.908	248.
300.	8.551	35.228	8.519	27.374	31.859	36.245	0.271	0.7565E-06	1489.7	0.414	297.
350.	8.493	35.228	8.456	27.384	31.871	36.258	0.309	0.7569E-06	1490.4	0.813	345.
400.	8.501	35.236	8.459	27.389	31.876	36.263	0.347	0.7618E-06	1491.2	0.535	396.
450.	8.442	35.229	8.394	27.394	31.882	36.271	0.385	0.7672E-06	1491.8	0.558	445.

PRESSURE
DB

X TEMPERATURE
O SALINITY

TEMPERATURE

SALINITY
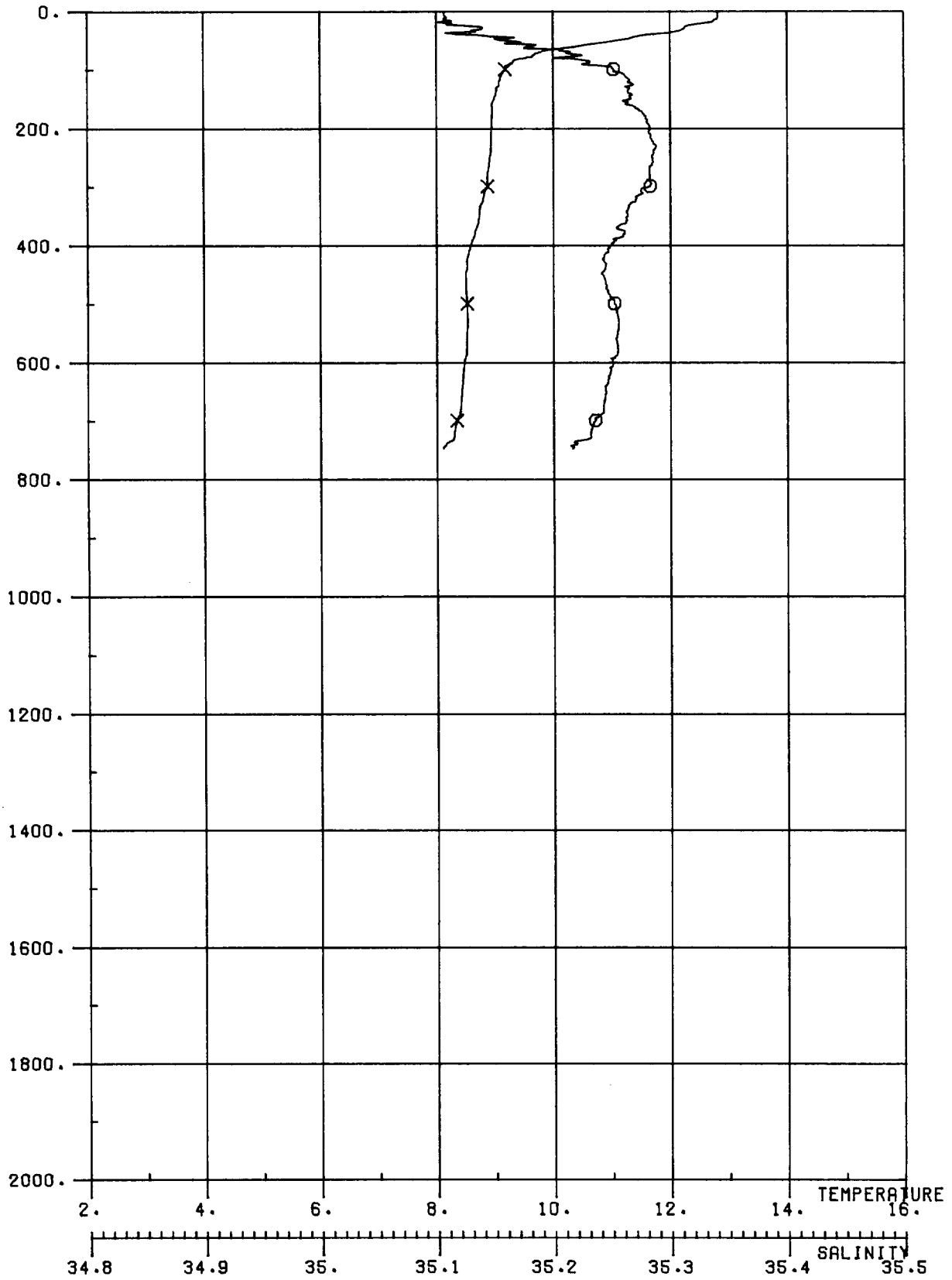
SHACKLETON 1978/5C : CTD STATION 38

SHACKLETON 1978/5C : CTD STATION 38
=============== === ======= ==

P-DB	T-DEGC	S-0/00	POTEMP	SIGMA-0	SIGMA-1	SIGMA-2	DYN.HT.	SVANOM	SNDV-M/S	BVFR-C/H	DEPTH
10.	12.811	35.103	12.810	26.511	30.908	35.207	0.015	0.1514E-05	1499.8	-9.990	10.
20.	12.635	35.102	12.632	26.546	30.946	35.249	0.030	0.1484E-05	1499.4	3.318	20.
30.	12.224	35.134	12.220	26.651	31.059	35.369	0.044	0.1388E-05	1493.2	5.768	30.
40.	11.633	35.122	11.628	26.755	31.175	35.497	0.058	0.1291E-05	1496.4	5.748	40.
50.	11.072	35.155	11.066	26.884	31.316	35.649	0.070	0.1170E-05	1494.6	6.400	50.
75.	9.650	35.219	9.642	27.185	31.646	36.007	0.096	0.8903E-06	1490.1	6.178	74.
100.	9.167	35.246	9.156	27.286	31.757	36.129	0.116	0.7993E-06	1488.8	3.595	99.
125.	9.066	35.263	9.053	27.316	31.790	36.163	0.136	0.7760E-06	1488.8	1.963	124.
150.	8.977	35.259	8.961	27.328	31.804	36.180	0.155	0.7697E-06	1488.9	1.234	149.
175.	8.946	35.271	8.927	27.343	31.819	36.196	0.175	0.7609E-06	1489.?	1.366	173.
200.	8.935	35.276	8.913	27.348	31.825	36.202	0.194	0.7611E-06	1489.6	0.846	198.
250.	8.903	35.278	8.875	27.357	31.834	36.212	0.232	0.7639E-06	1490.3	0.727	248.
300.	8.861	35.275	8.828	27.362	31.840	36.219	0.270	0.7695E-06	1491.0	0.585	297.
350.	8.720	35.258	8.683	27.371	31.853	36.235	0.308	0.7704E-06	1491.2	0.809	346.
400.	8.574	35.243	8.531	27.383	31.868	36.254	0.347	0.7683E-06	1491.5	0.917	396.
450.	8.487	35.236	8.439	27.392	31.880	36.267	0.385	0.7688E-06	1492.0	0.819	445.
500.	8.514	35.246	8.460	27.397	31.884	36.271	0.424	0.7749E-06	1492.9	0.530	495.
600.	8.461	35.245	8.396	27.406	31.894	36.282	0.502	0.7867E-06	1494.4	0.544	594.
700.	8.329	35.229	8.254	27.415	31.907	36.298	0.582	0.7958E-06	1495.5	0.599	692.
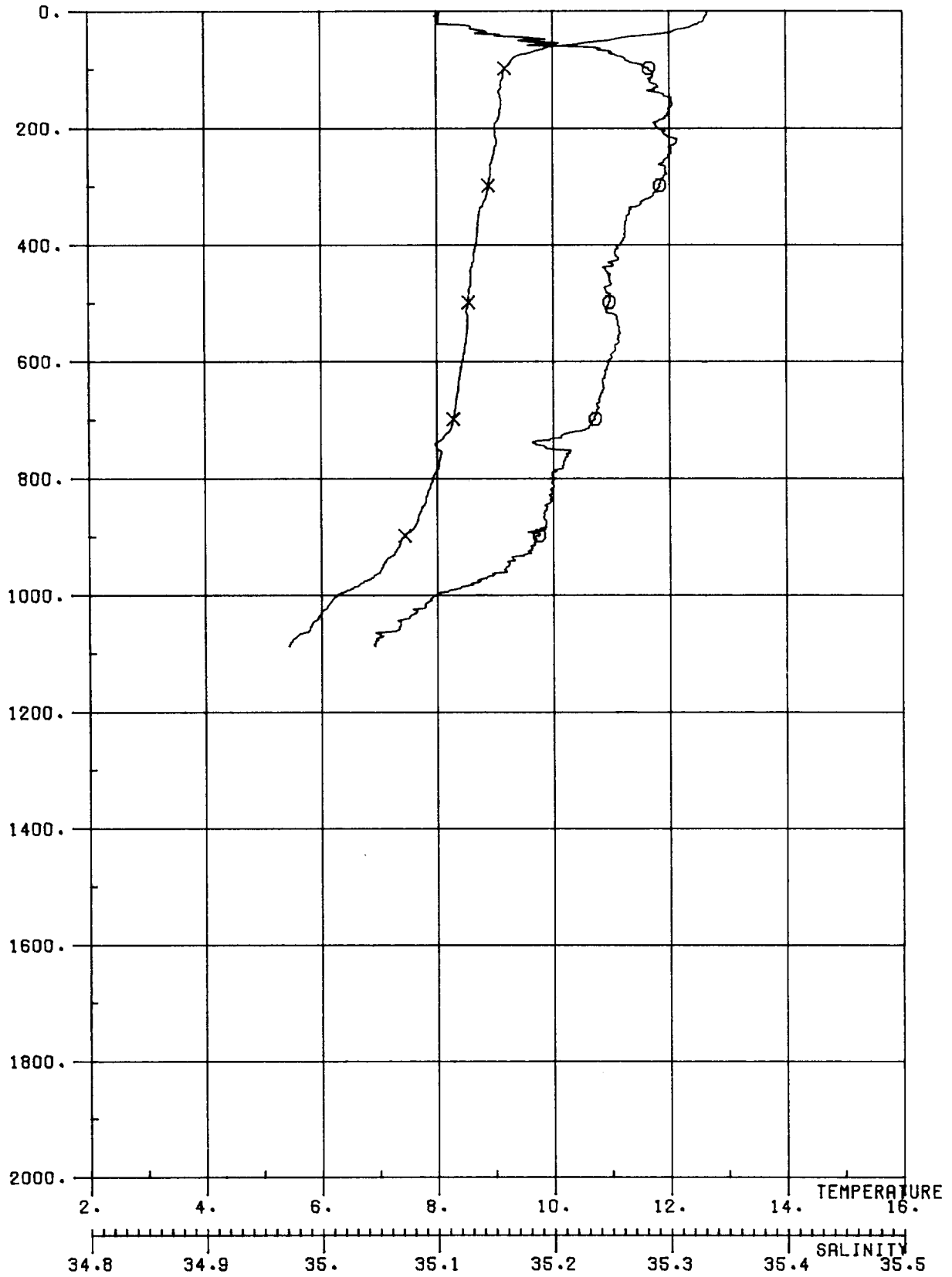
SHACKLETON 1978/5C : CTD STATION 40

SHACKLETON 1978/5C : CTD STATION 40
=========== === ======== ==

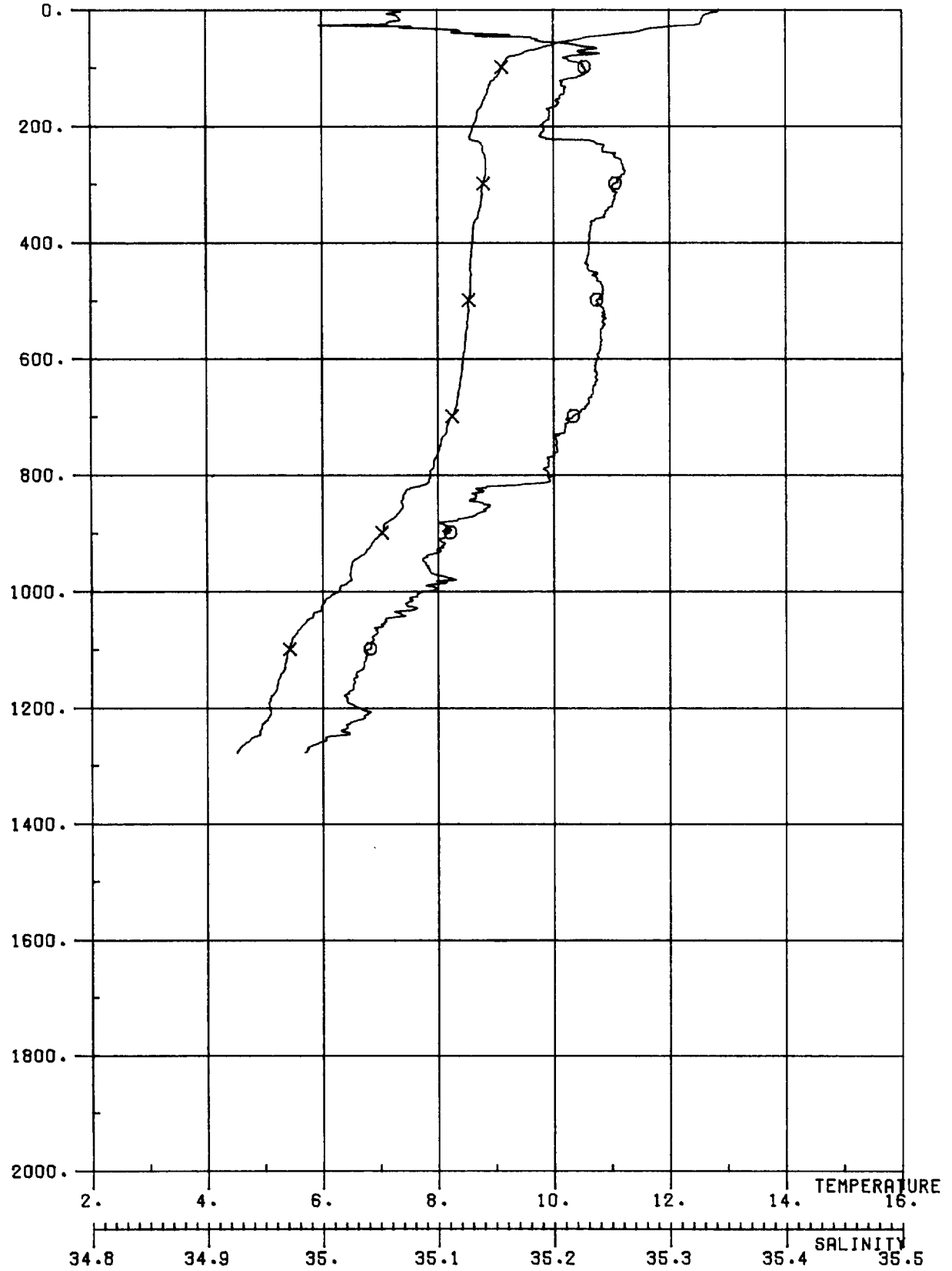| P-DB	T-DEGC	S-0/00	POTEMP	SIGMA-0	SIGMA-1	SIGMA-2	DYN.HT.	SVANOM	SNDV-M/S	BVFR-C/H	DEPTH
10.	12.611	35.095	12.609	26.545	30.945	35.248	0.015	0.1483E-05	1499.2	-9.990	10.
20.	12.533	35.095	12.530	26.561	30.963	35.267	0.030	0.1471E-05	1499.1	2.245	20.
30.	12.294	35.124	12.290	26.630	31.037	35.346	0.044	0.1407E-05	1498.5	4.693	30.
40.	11.816	35.138	11.811	26.733	31.150	35.468	0.058	0.1312E-05	1497.0	5.721	40.
50.	11.003	35.176	10.997	26.914	31.346	35.681	0.070	0.1142E-05	1494.4	7.567	50.
75.	9.421	35.248	9.413	27.245	31.711	36.077	0.094	0.8326E-06	1489.3	6.492	74.
100.	9.169	35.276	9.158	27.309	31.780	36.152	0.114	0.7772E-06	1488.8	2.853	99.
125.	9.098	35.280	9.085	27.324	31.737	36.170	0.133	0.7681E-06	1489.0	1.399	124.
150.	9.103	35.295	9.087	27.336	31.809	36.181	0.152	0.7628E-06	1489.4	1.222	149.
175.	9.082	35.292	9.063	27.337	31.810	36.184	0.171	0.7669E-06	1489.7	0.353	173.
200.	8.997	35.284	8.975	27.345	31.820	36.196	0.191	0.7646E-06	1489.8	1.043	198.
250.	8.967	35.293	8.939	27.358	31.834	36.210	0.229	0.7635E-06	1490.5	0.899	248.
300.	8.888	35.285	8.855	27.365	31.843	36.221	0.267	0.7665E-06	1491.1	0.717	297.
350.	8.723	35.258	8.685	27.371	31.853	36.235	0.305	0.7707E-06	1491.2	0.648	346.
400.	8.674	35.251	8.631	27.374	31.857	36.240	0.344	0.7777E-06	1491.9	0.483	396.
450.	8.581	35.242	8.532	27.382	31.868	36.253	0.383	0.7793E-06	1492.3	0.759	445.
500.	8.541	35.242	8.487	27.389	31.876	36.262	0.422	0.7828E-06	1493.0	0.695	495.
600.	8.437	35.241	8.372	27.406	31.895	36.284	0.500	0.7853E-06	1494.3	0.760	594.
700.	8.277	35.229	8.203	27.423	31.916	36.309	0.579	0.7874E-06	1495.3	0.780	692.
800.	7.923	35.194	7.840	27.451	31.952	36.353	0.657	0.7751E-06	1495.6	1.039	791.
900.	7.430	35.179	7.339	27.512	32.025	36.438	0.733	0.7264E-06	1495.4	1.501	890.
1000.	6.278	35.095	6.184	27.604	32.145	36.585	0.802	0.6319E-06	1492.4	1.935	988.

SHACKLETON 1978/5C : CTD STATION 41

SHACKLETON 1978/5C : CTD STATION 41

P-DB	T-DEGC	S-O/00	POTEMP	SIGMA-0	SIGMA-1	SIGMA-2	DYN.HT.	SVANOM	SNDV-M/S	BVFR-C/H	DEPTH
10.	12.587	35.059	12.585	26.522	30.923	35.227	0.015	0.1504E-05	1499.0	-9.990	10.
20.	12.538	35.057	12.535	26.530	30.933	35.238	0.030	0.1499E-05	1499.0	1.647	20.
30.	11.952	35.067	11.948	26.652	31.066	35.382	0.045	0.1387E-05	1497.2	6.195	30.
40.	11.267	35.117	11.262	26.819	31.247	35.576	0.058	0.1230E-05	1495.1	7.295	40.
50.	10.469	35.178	10.463	27.011	31.455	35.800	0.069	0.1050E-05	1492.5	7.800	50.
75.	9.467	35.234	9.459	27.227	31.692	36.057	0.093	0.8501E-06	1489.4	5.240	74.
100.	9.103	35.221	9.092	27.276	31.749	36.123	0.114	0.8082E-06	1488.5	2.524	99.
125.	8.912	35.202	8.898	27.293	31.771	36.148	0.134	0.7972E-06	1488.2	1.464	124.
150.	8.819	35.200	8.803	27.307	31.786	36.166	0.153	0.7898E-06	1488.2	1.331	149.
175.	8.686	35.191	8.667	27.321	31.804	36.186	0.173	0.7804E-06	1488.1	1.377	173.
200.	8.609	35.184	8.588	27.328	31.813	36.197	0.193	0.7788E-06	1488.3	0.966	198.
250.	8.814	35.246	8.787	27.345	31.825	36.205	0.231	0.7742E-06	1489.9	1.006	247.
300.	8.787	35.246	8.754	27.351	31.831	36.211	0.270	0.7795E-06	1490.6	0.585	297.
350.	8.700	35.239	8.662	27.359	31.842	36.224	0.309	0.7809E-06	1491.1	0.789	346.
400.	8.597	35.225	8.554	27.365	31.850	36.235	0.348	0.7851E-06	1491.6	0.672	396.
450.	8.561	35.226	8.513	27.373	31.859	36.245	0.388	0.7877E-06	1492.3	0.695	445.
500.	8.527	35.231	8.474	27.383	31.870	36.256	0.427	0.7886E-06	1493.0	0.800	495.
600.	8.437	35.232	8.373	27.399	31.888	36.277	0.506	0.7921E-06	1494.3	0.749	593.
700.	8.234	35.210	8.159	27.415	31.909	36.303	0.585	0.7944E-06	1495.1	0.730	692.
800.	7.867	35.189	7.784	27.455	31.958	36.360	0.664	0.7702E-06	1495.4	1.206	791.
900.	7.026	35.103	6.937	27.509	32.032	36.454	0.738	0.7208E-06	1493.7	1.504	890.
1000.	6.281	35.086	6.187	27.597	32.138	36.578	0.806	0.6387E-06	1492.4	1.822	988.
1100.	5.421	35.034	5.324	27.664	32.227	36.688	0.865	0.5686E-06	1490.6	1.685	1087.
1200.	5.081	35.026	4.978	27.699	32.270	36.739	0.921	0.5399E-06	1490.9	1.189	1185.
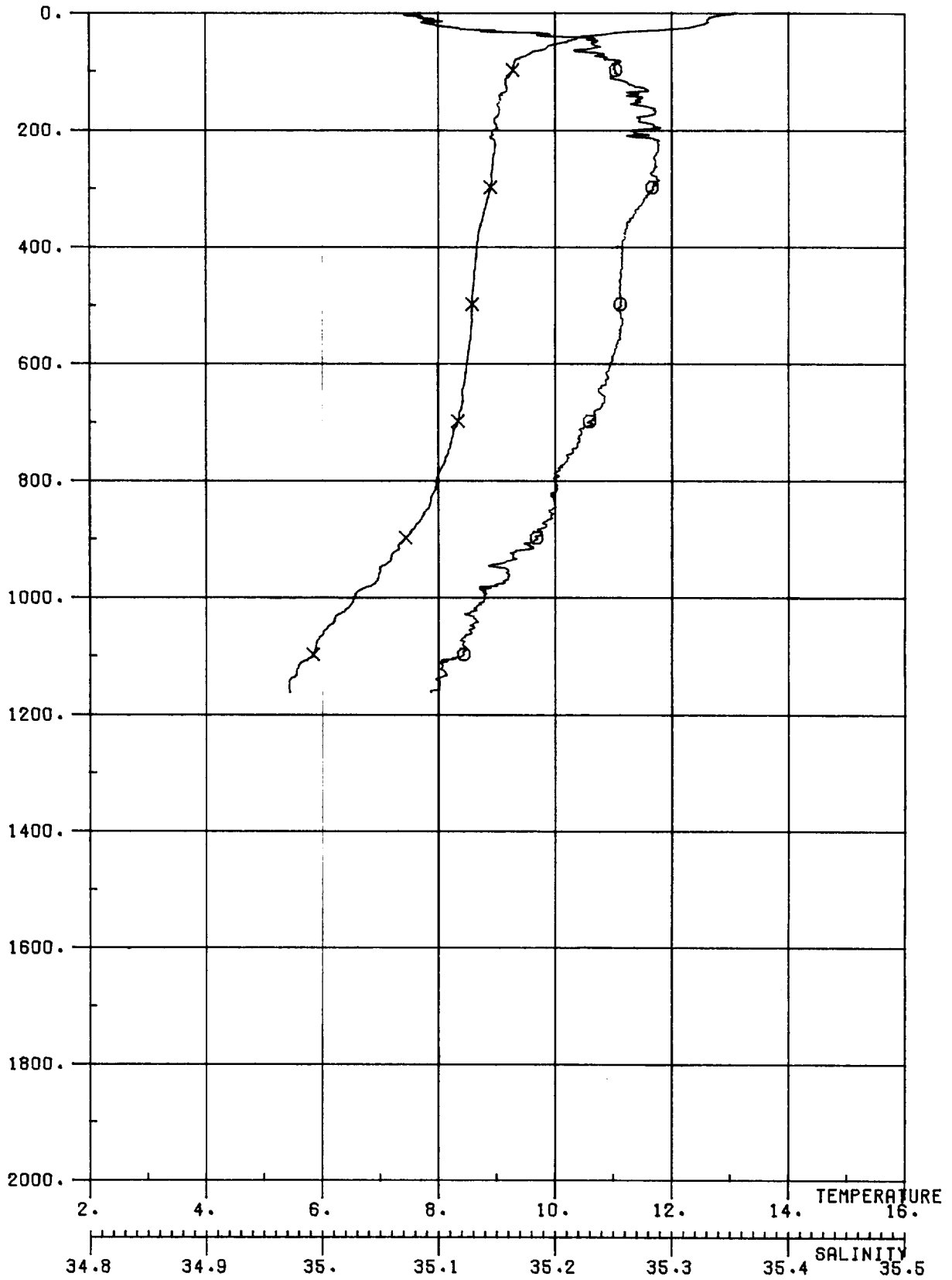
SHACKLETON 1978/5C : CTD STATION 42

112

SHACKLETON 1978/5C : CTD STATION 42

P-DB	T-DEGC	S-0/00	POTEMP	SIGMA-0	SIGMA-1	SIGMA-2	DYN.HT.	SVANOM	SNDV-M/S	BVFR-C/H	DEPTH
10.	12.627	35.084	12.626	26.533	30.933	35.236	0.015	0.1494E-05	1499.2	-9.990	10.
20.	12.555	35.087	12.553	26.550	30.952	35.256	0.030	0.1481E-05	1499.1	2.330	20.
30.	11.862	35.129	11.858	26.717	31.132	35.449	0.045	0.1325E-05	1497.0	7.262	30.
40.	10.633	35.182	10.628	26.985	31.425	35.767	0.056	0.1072E-05	1493.0	9.221	40.
50.	10.207	35.230	10.202	27.097	31.546	35.896	0.066	0.9681E-06	1491.7	5.956	50.
75.	9.490	35.228	9.481	27.218	31.682	36.047	0.089	0.8584E-06	1489.5	3.933	74.
100.	9.274	35.246	9.263	27.268	31.737	36.107	0.110	0.8163E-06	1489.1	2.530	99.
125.	9.156	35.261	9.142	27.300	31.772	36.144	0.130	0.7914E-06	1489.1	2.002	124.
150.	9.055	35.263	9.039	27.319	31.792	36.167	0.149	0.7788E-06	1489.2	1.557	149.
175.	9.029	35.277	9.010	27.334	31.808	36.183	0.169	0.7697E-06	1489.5	1.389	173.
200.	8.973	35.267	8.951	27.336	31.812	36.188	0.188	0.7735E-06	1489.7	0.499	198.
250.	8.929	35.279	8.902	27.353	31.829	36.206	0.226	0.7681E-06	1490.4	1.029	247.
300.	8.886	35.277	8.854	27.359	31.837	36.215	0.265	0.7721E-06	1491.1	0.660	297.
350.	8.757	35.261	8.719	27.368	31.849	36.230	0.303	0.7737E-06	1491.4	0.759	345.
400.	8.650	35.251	8.607	27.378	31.862	36.245	0.342	0.7739E-06	1491.8	0.847	396.
450.	8.609	35.250	8.561	27.385	31.869	36.254	0.381	0.7774E-06	1492.5	0.661	445.
500.	8.573	35.250	8.519	27.391	31.876	36.262	0.420	0.7816E-06	1493.2	0.561	495.
600.	8.482	35.241	8.417	27.400	31.888	36.276	0.498	0.7923E-06	1494.5	0.572	593.
700.	8.319	35.222	8.244	27.412	31.904	36.295	0.578	0.7991E-06	1495.5	0.673	692.
800.	7.952	35.195	7.868	27.447	31.948	36.348	0.657	0.7788E-06	1495.7	1.156	791.
900.	7.419	35.179	7.328	27.513	32.027	36.439	0.733	0.7248E-06	1495.3	1.562	890.
1000.	6.546	35.133	6.450	27.599	32.134	36.567	0.802	0.6424E-06	1493.5	1.831	988.
1100.	5.832	35.115	5.732	27.678	32.230	36.680	0.862	0.5665E-06	1492.4	1.749	1087.

PRESSURE
DB

X TEMPERATURE
O SALINITY
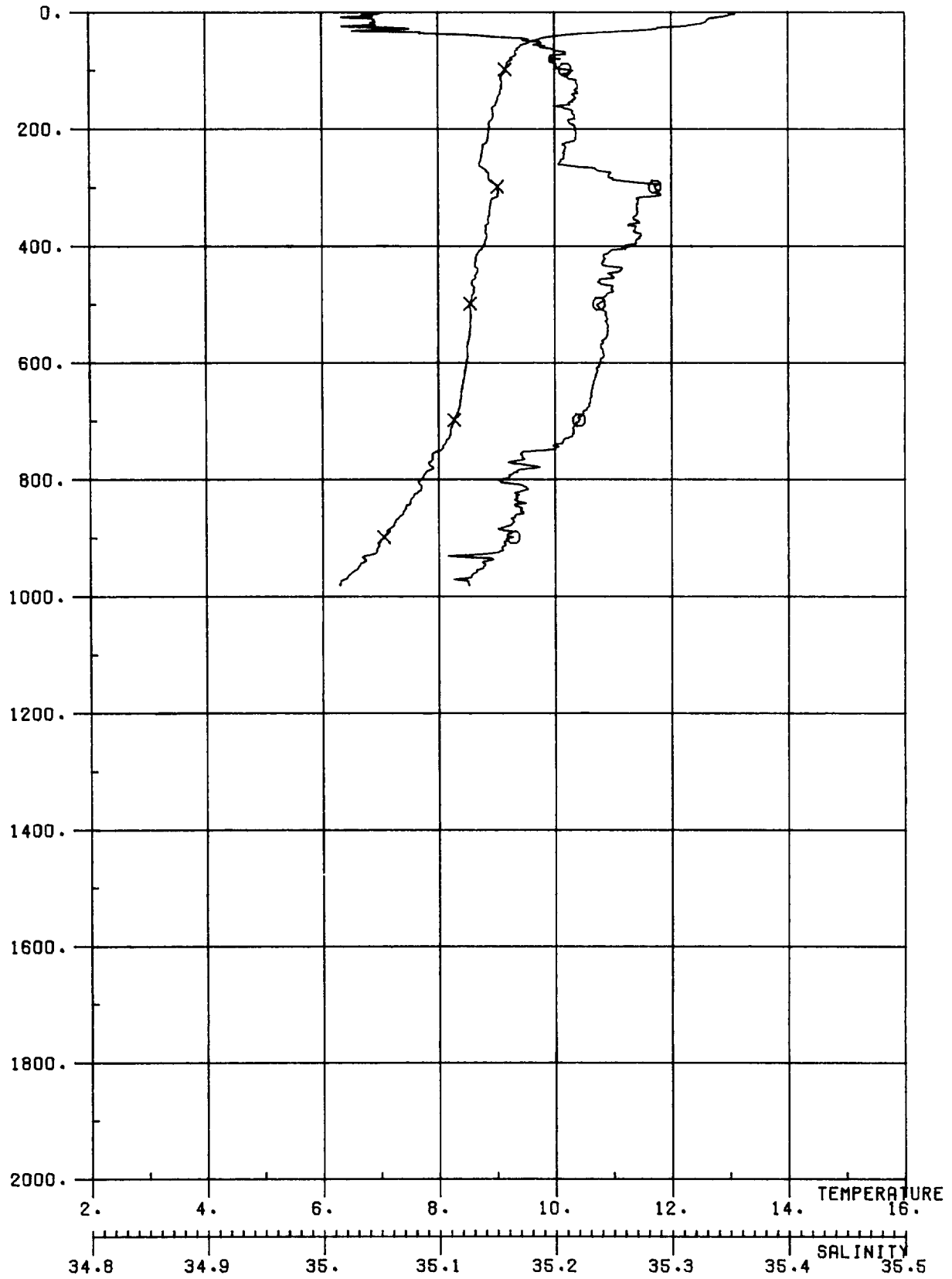
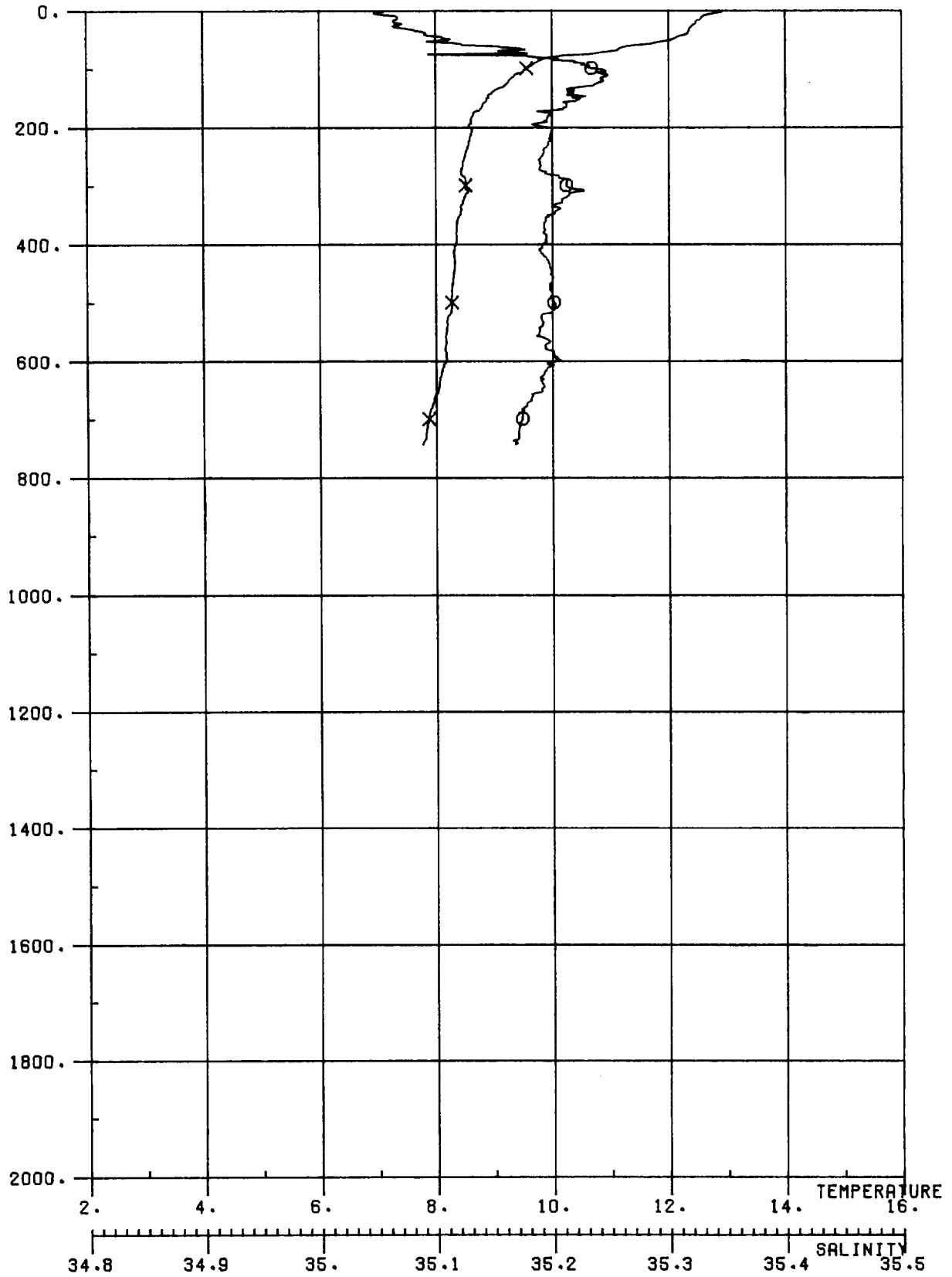SHACKLETON 1978/5C : CTD STATION 43

114

SHACKLETON 1978/5C : CTD STATION 43

P-DB	T-DEGC	S-0/00	POTEMP	SIGMA-0	SIGMA-1	SIGMA-2	DYN.HT.	SVANOM	SNDV-M/S	BVFR-C/H	DEPTH
10.	12.719	35.024	12.718	26.469	30.868	35.169	0.016	0.1555E-05	1499.4	-9.990	10.
20.	12.514	35.038	12.512	26.520	30.923	35.228	0.031	0.1509E-05	1498.9	4.015	20.
30.	11.656	35.059	11.653	26.701	31.121	35.443	0.045	0.1339E-05	1496.2	7.585	30.
40.	10.139	35.124	10.134	27.026	31.477	35.829	0.057	0.1033E-05	1491.1	10.143	40.
50.	9.608	35.174	9.602	27.155	31.618	35.980	0.067	0.9122E-06	1489.4	6.408	50.
75.	9.317	35.190	9.309	27.217	31.686	36.055	0.089	0.8587E-06	1488.8	2.809	74.
100.	9.154	35.206	9.143	27.257	31.729	36.101	0.110	0.8268E-06	1488.7	2.244	99.
125.	9.082	35.213	9.068	27.275	31.748	36.122	0.130	0.8149E-06	1488.8	1.506	124.
150.	9.014	35.210	8.998	27.284	31.759	36.134	0.151	0.8116E-06	1489.0	1.053	149.
175.	8.941	35.210	8.922	27.295	31.772	36.149	0.171	0.8056E-06	1489.1	1.247	173.
200.	8.868	35.212	8.847	27.309	31.787	36.166	0.191	0.7984E-06	1489.3	1.331	198.
250.	8.731	35.202	8.704	27.324	31.806	36.187	0.231	0.7940E-06	1489.6	1.006	247.
300.	9.013	35.279	8.980	27.341	31.816	36.191	0.270	0.7907E-06	1491.5	0.966	297.
350.	8.861	35.262	8.823	27.352	31.831	36.210	0.310	0.7891E-06	1491.8	0.908	346.
400.	8.768	35.257	8.724	27.364	31.844	36.226	0.349	0.7884E-06	1492.2	0.874	396.
450.	8.630	35.242	8.581	27.375	31.859	36.244	0.388	0.7867E-06	1492.5	0.909	445.
500.	8.539	35.231	8.486	27.381	31.867	36.254	0.428	0.7905E-06	1493.0	0.649	495.
600.	8.478	35.233	8.414	27.394	31.882	36.270	0.507	0.7979E-06	1494.4	0.667	593.
700.	8.261	35.214	8.186	27.414	31.908	36.301	0.587	0.7956E-06	1495.2	0.870	692.
800.	7.692	35.148	7.609	27.449	31.956	36.362	0.666	0.7730E-06	1494.7	1.186	791.
900.	7.041	35.155	6.952	27.548	32.070	36.492	0.739	0.6848E-06	1493.8	1.887	890.

SHACKLETON 1978/5C : CTD STATION 44

116

SHACKLETON 1978/5C : CTD STATION 44

P-DB	T-DEGC	S-0/00	POTEMP	SIGMA-0	SIGMA-1	SIGMA-2	DYN.HT.	SVANOM	SNDV-M/S	BVFR-C/H	DEPTH
10.	12.580	35.061	12.579	26.525	30.926	35.230	0.015	0.1502E-05	1499.0	-9.990	10.
20.	12.462	35.059	12.459	26.546	30.950	35.256	0.030	0.1484E-05	1498.8	2.627	20.
30.	12.355	35.065	12.351	26.572	30.978	35.287	0.045	0.1462E-05	1498.6	2.867	30.
40.	12.304	35.086	12.299	26.599	31.006	35.315	0.060	0.1440E-05	1498.6	2.894	40.
50.	12.039	35.105	12.032	26.665	31.077	35.391	0.074	0.1379E-05	1497.9	4.585	50.
75.	10.617	35.088	10.608	26.915	31.356	35.698	0.105	0.1148E-05	1493.4	5.638	74.
100.	9.535	35.232	9.524	27.215	31.678	36.042	0.128	0.8678E-06	1490.1	6.178	99.
125.	9.220	35.232	9.207	27.267	31.737	36.108	0.149	0.8231E-06	1489.3	2.585	124.
150.	8.893	35.215	8.877	27.307	31.784	36.162	0.169	0.7898E-06	1488.5	2.279	149.
175.	8.649	35.191	8.630	27.327	31.810	36.194	0.189	0.7749E-06	1488.0	1.635	173.
200.	8.583	35.190	8.562	27.337	31.822	36.207	0.208	0.7707E-06	1488.2	1.156	198.
250.	8.495	35.185	8.469	27.347	31.835	36.222	0.247	0.7704E-06	1488.7	0.846	247.
300.	8.506	35.206	8.474	27.363	31.850	36.237	0.285	0.7658E-06	1489.6	1.006	297.
350.	8.416	35.193	8.379	27.368	31.857	36.246	0.323	0.7709E-06	1490.0	0.585	346.
400.	8.341	35.186	8.298	27.375	31.866	36.256	0.362	0.7742E-06	1490.6	0.684	396.
450.	8.303	35.192	8.256	27.386	31.878	36.270	0.401	0.7725E-06	1491.3	0.883	445.
500.	8.268	35.196	8.215	27.395	31.888	36.281	0.439	0.7739E-06	1491.9	0.770	495.
600.	8.178	35.199	8.115	27.413	31.908	36.303	0.517	0.7758E-06	1493.3	0.770	593.
700.	7.866	35.168	7.794	27.437	31.939	36.342	0.594	0.7683E-06	1493.7	0.956	692.

SHACKLETON 1978/5C : CTD STATION 45

118
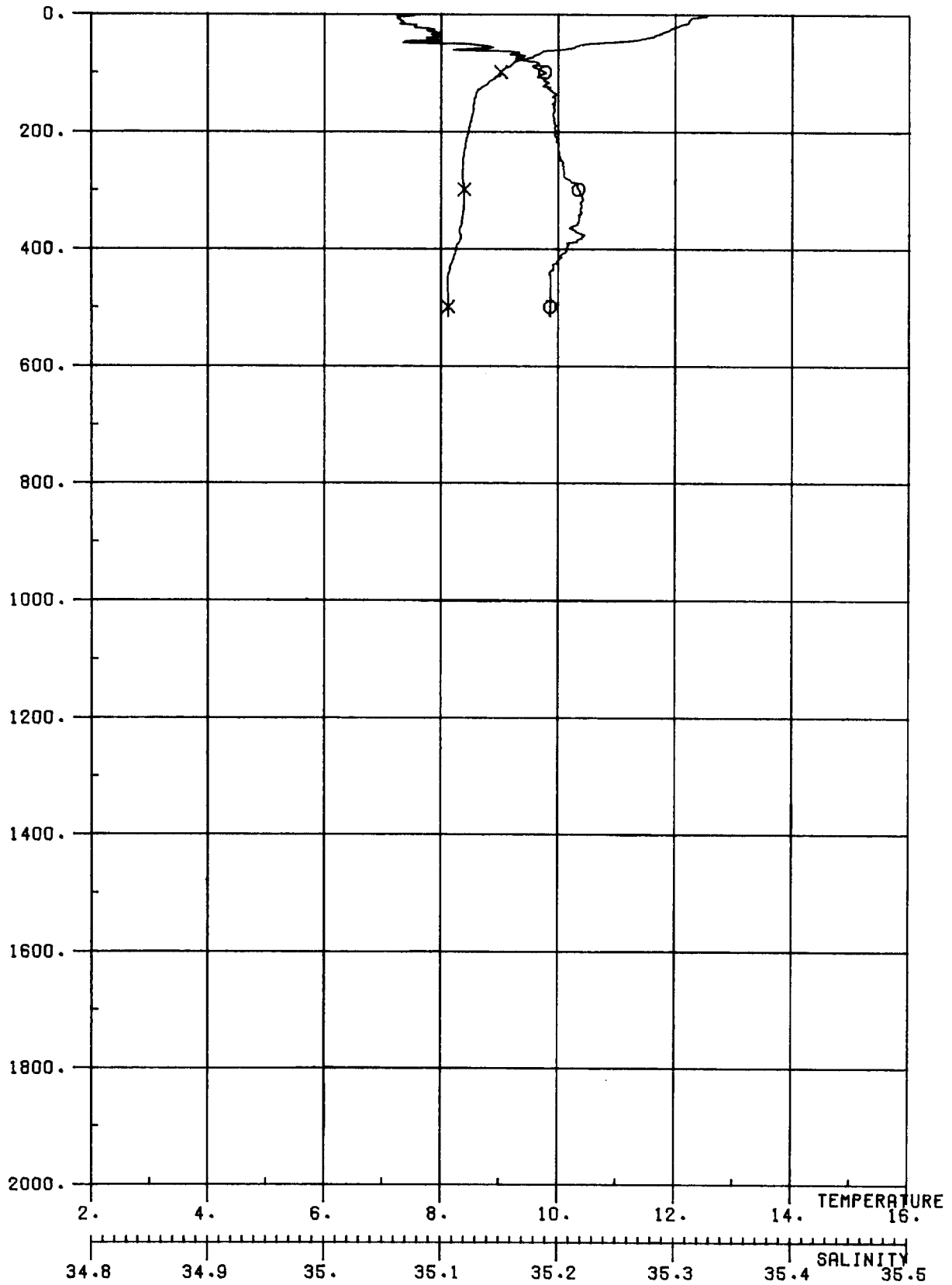
SHACKLETON 1978/5C : CTD STATION 45

P-DB	T-DEGC	S-O/00	POTEMP	SIGMA-0	SIGMA-1	SIGMA-2	DYN.HT.	SVANOM	SNDV-M/S	BVFR-C/H	DEPTH
10.	12.240	35.059	12.238	26.590	30.998	35.309	0.015	0.1440E-05	1497.9	-9.990	10.
20.	12.067	35.073	12.064	26.634	31.045	35.359	0.029	0.1401E-05	1497.5	3.736	20.
30.	11.838	35.085	11.834	26.688	31.104	35.422	0.043	0.1352E-05	1496.9	4.140	30.
40.	11.578	35.087	11.572	26.738	31.159	35.483	0.056	0.1307E-05	1496.1	3.983	40.
50.	10.653	35.089	10.647	26.909	31.349	35.691	0.069	0.1147E-05	1493.1	7.370	50.
75.	9.498	35.158	9.490	27.162	31.627	35.992	0.093	0.9115E-06	1489.4	5.672	74.
100.	9.013	35.183	9.002	27.262	31.737	36.113	0.115	0.8219E-06	1488.1	3.569	99.
125.	8.682	35.188	8.669	27.319	31.801	36.184	0.135	0.7723E-06	1487.3	2.703	124.
150.	8.558	35.191	8.543	27.341	31.826	36.212	0.154	0.7562E-06	1487.3	1.691	149.
175.	8.517	35.190	8.499	27.347	31.833	36.220	0.173	0.7558E-06	1487.5	0.882	173.
200.	8.457	35.192	8.436	27.358	31.846	36.234	0.191	0.7499E-06	1487.7	1.222	193.
250.	8.370	35.197	8.343	27.377	31.866	36.256	0.229	0.7423E-06	1488.2	1.095	247.
300.	8.387	35.212	8.355	27.386	31.876	36.265	0.266	0.7430E-06	1489.1	0.769	297.
350.	8.351	35.212	8.314	27.393	31.883	36.273	0.303	0.7469E-06	1489.8	0.648	346.
400.	8.246	35.200	8.204	27.401	31.894	36.286	0.341	0.7488E-06	1490.2	0.759	396.
450.	8.109	35.188	8.062	27.412	31.908	36.305	0.378	0.7465E-06	1490.5	0.900	445.
500.	8.113	35.187	8.061	27.412	31.908	36.305	0.416	0.7565E-06	1491.4	-0.125	495.
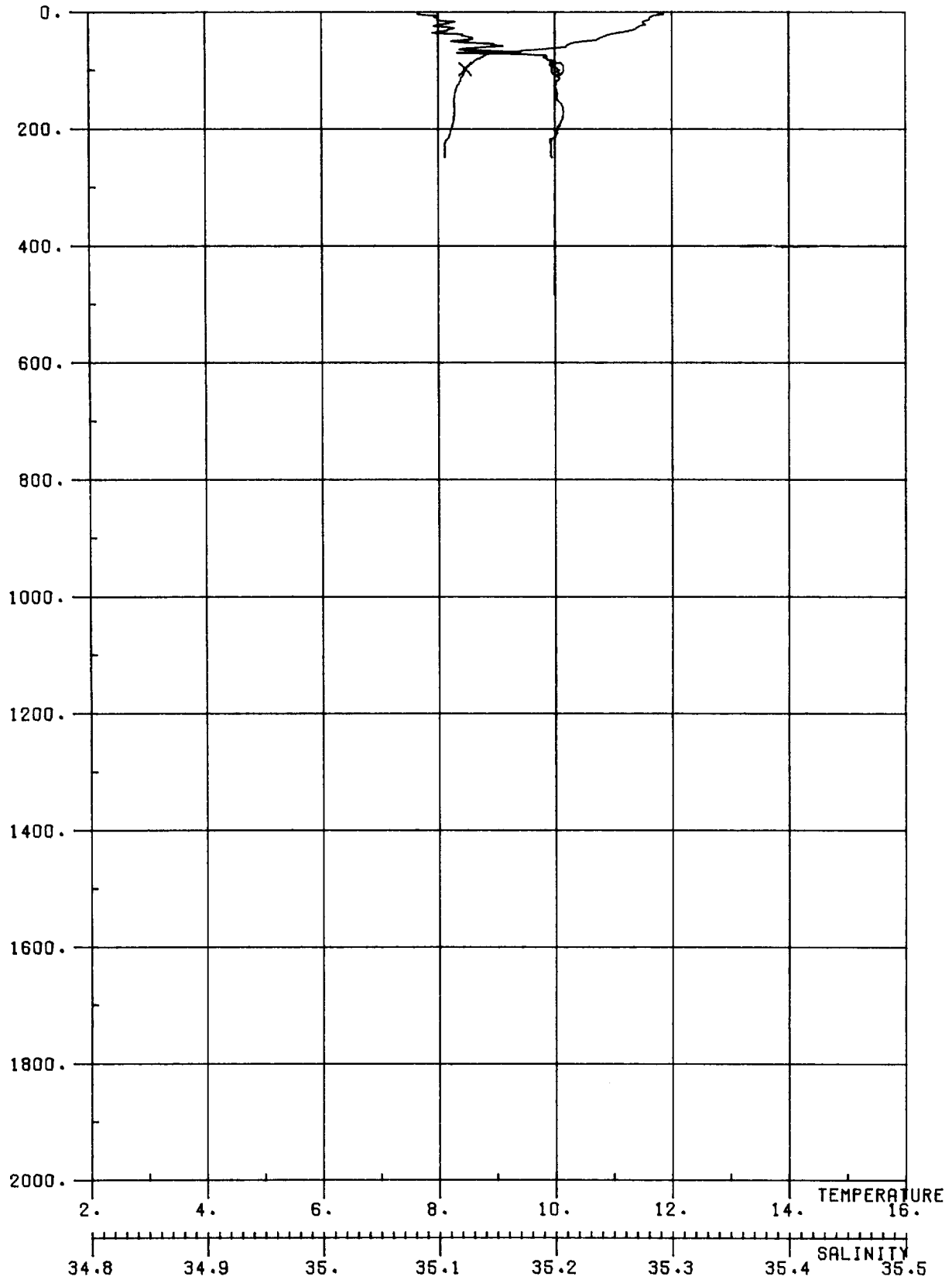
SHACKLETON 1978/5C : CTD STATION 46

SHACKLETON 1978/5C : CTD STATION 45

P-DB	T-DEGC	S-0/00	SIGMA-0	POTEMP	SIGMA-1	SIGMA-2	DYN.HT.	SVANOM	SNDV-M/S	BVFR-C/H	DEPTH
10.	11.622	35.093	26.733	11.621	31.154	35.476	0.013	0.1303E-05	1495.8	-9.990	10.
20.	11.511	35.103	26.763	11.509	31.185	35.510	0.026	0.1278E-05	1495.6	3.051	20.
30.	11.376	35.106	26.791	11.372	31.216	35.543	0.039	0.1255E-05	1495.3	2.961	30.
40.	10.928	35.115	26.880	10.923	31.314	35.650	0.051	0.1172E-05	1493.9	5.307	40.
50.	10.619	35.111	26.932	10.613	31.373	35.716	0.063	0.1125E-05	1493.0	4.085	50.
75.	8.794	35.186	27.299	8.786	31.779	36.159	0.087	0.7807E-06	1486.9	6.830	74.
100.	8.460	35.197	27.360	8.450	31.848	36.235	0.106	0.7271E-06	1486.1	2.804	99.
125.	8.341	35.195	27.377	8.328	31.868	36.258	0.124	0.7157E-06	1486.0	1.475	124.
150.	8.267	35.196	27.390	8.252	31.882	36.274	0.142	0.7090E-06	1486.2	1.284	149.
175.	8.277	35.201	27.393	8.259	31.885	36.276	0.159	0.7111E-06	1486.6	0.611	173.
200.	8.219	35.197	27.399	8.198	31.892	36.285	0.177	0.7106E-06	1486.8	0.864	198.

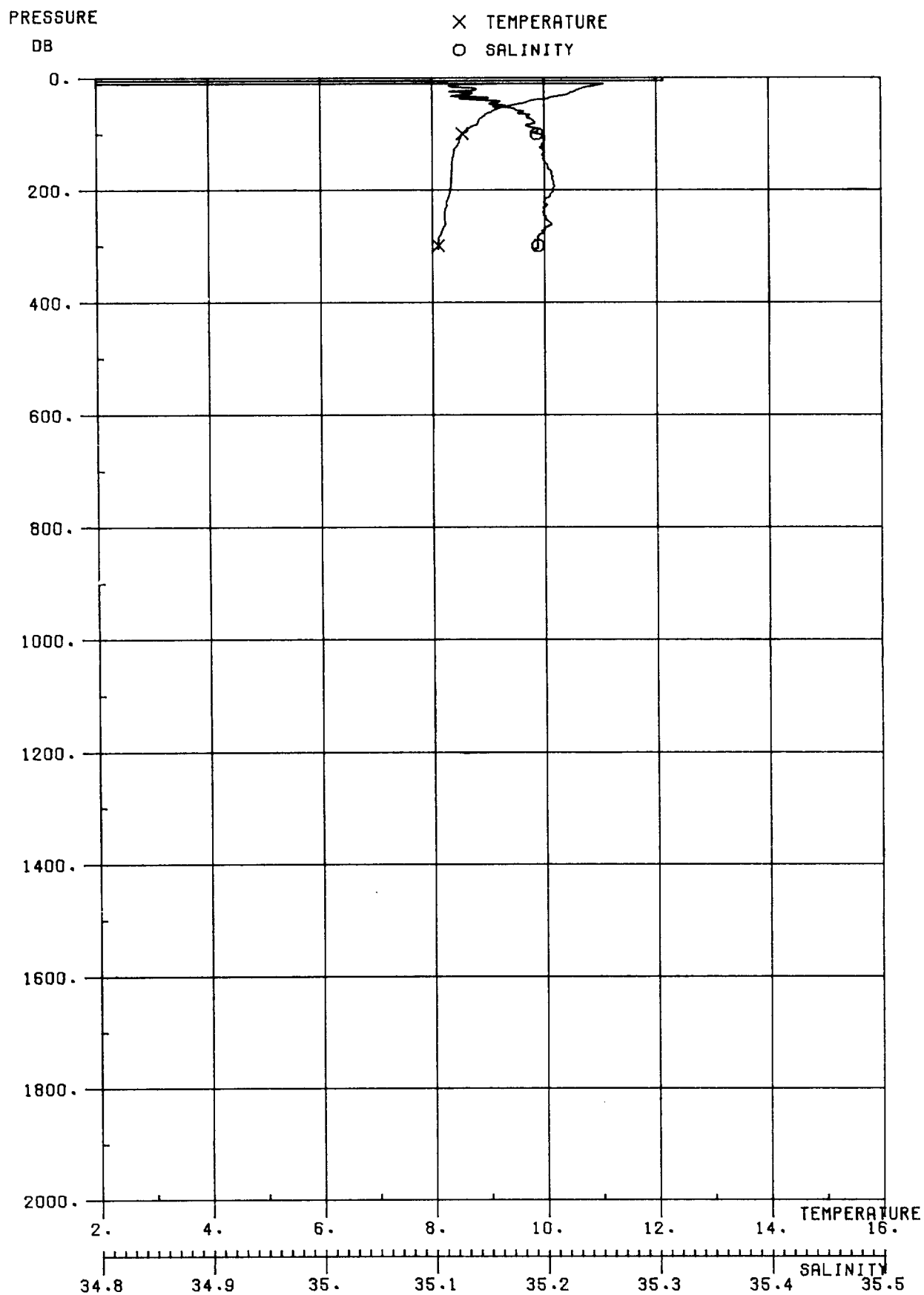PRESSURE
DB

X TEMPERATURE
O SALINITY

TEMPERATURE
SALINITY

SHACKLETON 1978/5C : CTD STATION 47

122

SHACKLETON 1978/5C : CTD STATION 47

P-DB	T-DEGC	S-O/OO	POTEMP	SIGMA-0	SIGMA-1	SIGMA-2	DYN.HT.	SVANOM	SNDV-M/S	BVFR-C/H	DEPTH
10.	-999.000	-9.990	-9.990	-9.990	-9.990	-9.990	-9.990	-0.9990E+01	-10.0	-9.990	10.
20.	10.629	35.134	10.626	26.947	31.388	35.730	0.025	0.1103E-05	1492.5	-9.990	20.
30.	10.381	35.125	10.377	26.984	31.430	35.777	0.036	0.1070E-05	1491.8	3.423	30.
40.	9.760	35.145	9.755	27.107	31.566	35.926	0.046	0.9558E-06	1489.8	6.229	40.
50.	9.360	35.154	9.354	27.182	31.649	36.018	0.055	0.8869E-06	1488.5	4.874	50.
75.	8.823	35.184	8.815	27.292	31.772	36.151	0.076	0.7870E-06	1487.0	3.755	74.
100.	8.525	35.190	8.515	27.344	31.830	36.216	0.095	0.7425E-06	1486.3	2.573	99.
125.	8.392	35.192	8.379	27.367	31.856	36.245	0.113	0.7260E-06	1486.2	1.700	124.
150.	8.348	35.195	8.333	27.377	31.867	36.257	0.132	0.7218E-06	1486.5	1.115	149.
175.	8.337	35.201	8.319	27.384	31.874	36.264	0.150	0.7199E-06	1486.9	0.950	173.
200.	8.312	35.201	8.291	27.388	31.879	36.270	0.168	0.7211E-06	1487.2	0.769	198.
250.	8.212	35.196	8.186	27.400	31.893	36.286	0.204	0.7194E-06	1487.6	0.882	247.
300.	8.100	35.188	8.069	27.411	31.908	36.304	0.240	0.7176E-06	1488.0	0.882	297.

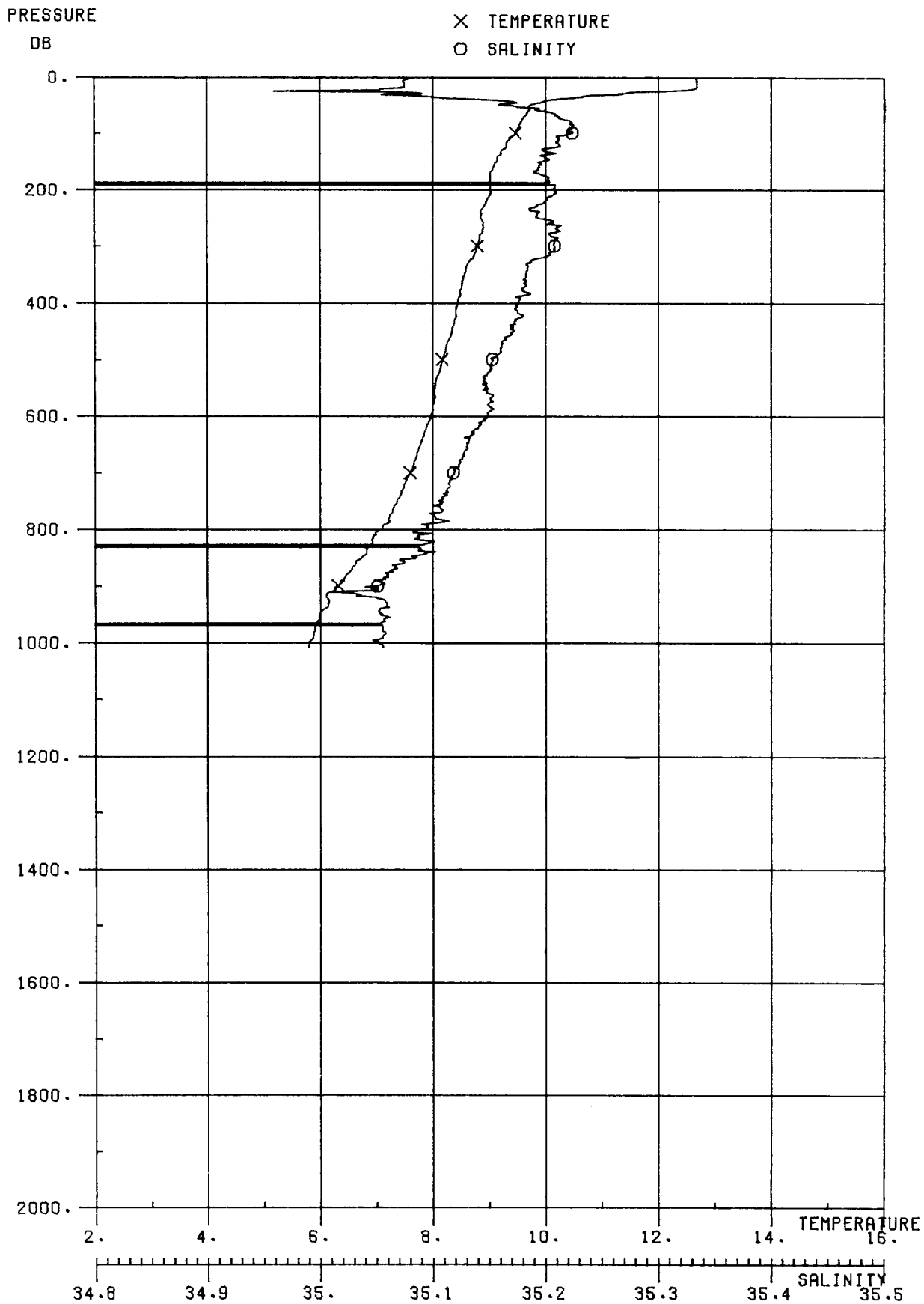SHACKLETON 1978/5C : CTD STATION 48

124
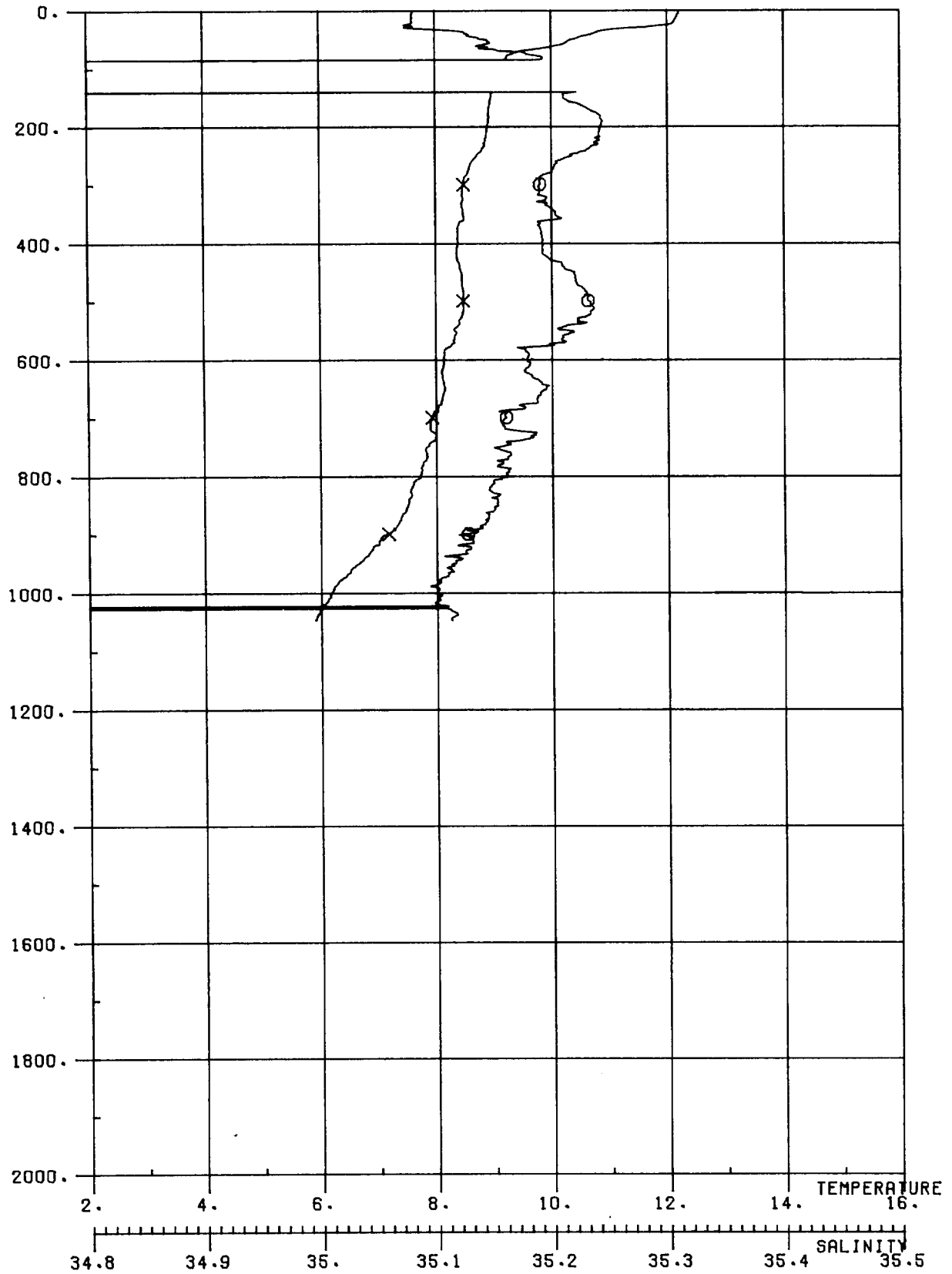
SHACKLETON 1978/5C : CTD STATION 48

P-DB	T-DEGC	S-0/00	POTEMP	SIGMA-0	SIGMA-1	SIGMA-2	DYN.HT.	SVANOM	SNDV-M/S	BVFR-C/H	DEPTH
10.	12.166	35.074	12.165	26.616	31.025	35.337	0.014	0.1415E-05	1497.6	-9.990	10.
20.	12.106	35.075	12.103	26.628	31.039	35.351	0.028	0.1407E-05	1497.6	1.949	20.
30.	11.417	35.073	11.413	26.757	31.181	35.508	0.042	0.1287E-05	1495.4	6.393	30.
40.	10.713	35.121	10.708	26.923	31.362	35.702	0.054	0.1131E-05	1493.2	7.258	40.
50.	10.365	35.135	10.359	26.996	31.442	35.789	0.065	0.1064E-05	1492.1	4.817	50.
75.	9.303	35.173	9.295	27.206	31.675	36.044	0.089	0.8692E-06	1488.7	5.174	74.
100.	-999.000	-9.990	-9.990	-9.990	-9.990	-9.990	-9.990	-0.9990E+01	-10.0	-9.990	99.
125.	-999.000	-9.990	-9.990	-9.990	-9.990	-9.990	-9.990	-0.9990E+01	-10.0	-9.990	124.
150.	8.957	35.205	8.940	27.288	31.765	36.142	0.151	0.8072E-06	1488.8	1.868	149.
175.	8.914	35.232	8.895	27.317	31.795	36.172	0.171	0.7846E-06	1489.0	1.924	173.
200.	8.896	35.235	8.874	27.323	31.801	36.179	0.191	0.7849E-06	1489.4	0.846	198.
250.	8.702	35.211	8.675	27.336	31.818	36.200	0.230	0.7830E-06	1489.5	0.908	247.
300.	8.478	35.184	8.446	27.350	31.838	36.225	0.269	0.7779E-06	1489.4	0.998	297.
350.	8.474	35.197	8.437	27.362	31.850	36.238	0.308	0.7765E-06	1490.2	0.874	346.
400.	8.378	35.186	8.336	27.369	31.859	36.249	0.347	0.7797E-06	1490.7	0.695	396.
450.	8.441	35.213	8.393	27.381	31.870	36.259	0.386	0.7788E-06	1491.8	0.856	445.
500.	8.469	35.226	8.416	27.388	31.876	36.264	0.425	0.7828E-06	1492.7	0.649	495.
600.	8.125	35.173	8.062	27.401	31.897	36.293	0.503	0.7867E-06	1493.0	0.734	593.
700.	7.922	35.154	7.849	27.417	31.919	36.320	0.582	0.7872E-06	1493.9	0.785	692.
800.	7.718	35.156	7.635	27.451	31.957	36.363	0.660	0.7714E-06	1494.8	1.083	791.
900.	7.129	35.117	7.039	27.506	32.026	36.446	0.735	0.7262E-06	1494.1	1.453	890.
1000.	6.171	35.095	6.078	27.618	32.162	36.604	0.802	0.6163E-06	1492.0	2.062	988.

SHACKLETON 1978/5C : CTD STATION 51

SHACKLETON 1978/5C : CTD STATION 51
=========== === =======

P-DB	T-DEGC	S-O/OO	POTEMP	SIGMA-0	SIGMA-1	SIGMA-2	DYN.HT.	SVANOM	SNDV-M/S	BVFR-C/H	DEPTH
10.	12.677	35.069	12.675	26.511	30.911	35.213	0.015	0.1514E-05	1499.4	-9.990	10.
20.	12.645	35.057	12.642	26.509	30.909	35.212	0.030	0.1519E-05	1499.4	-0.880	20.
30.	11.311	35.067	11.307	26.772	31.199	35.528	0.045	0.1272E-05	1495.0	9.130	30.
40.	10.119	35.145	10.114	27.046	31.497	35.850	0.056	0.1014E-05	1491.1	9.318	40.
50.	9.711	35.160	9.706	27.127	31.587	35.948	0.066	0.9385E-06	1489.8	5.092	50.
75.	9.573	35.210	9.565	27.191	31.653	36.017	0.088	0.8848E-06	1489.8	2.825	74.
100.	9.462	35.216	9.451	27.214	31.679	36.045	0.110	0.8682E-06	1489.8	1.727	99.
125.	9.283	35.201	9.269	27.232	31.701	36.071	0.132	0.8561E-06	1489.5	1.537	124.
150.	9.121	35.190	9.105	27.250	31.723	36.097	0.153	0.8438E-06	1489.3	1.537	149.
175.	9.013	35.193	8.994	27.271	31.746	36.122	0.174	0.8291E-06	1489.4	1.645	173.
200.	9.020	35.203	8.998	27.278	31.753	36.128	0.194	0.8284E-06	1489.8	0.882	198.
250.	8.847	35.188	8.820	27.295	31.774	36.154	0.236	0.8221E-06	1490.0	1.073	247.
300.	8.778	35.202	8.746	27.318	31.798	36.179	0.277	0.8107E-06	1490.6	1.210	297.
350.	8.553	35.176	8.515	27.334	31.820	36.206	0.317	0.8044E-06	1490.5	1.059	346.
400.	8.437	35.170	8.394	27.347	31.836	36.225	0.357	0.8005E-06	1490.9	0.983	396.
450.	8.337	35.166	8.290	27.361	31.852	36.243	0.397	0.7972E-06	1491.3	0.951	445.
500.	8.162	35.147	8.110	27.373	31.869	36.264	0.437	0.7933E-06	1491.5	0.967	495.
600.	7.960	35.142	7.898	27.401	31.902	36.302	0.516	0.7837E-06	1492.4	0.988	593.
700.	7.585	35.113	7.514	27.435	31.944	36.353	0.593	0.7653E-06	1492.6	1.118	692.
800.	7.068	35.082	6.990	27.485	32.008	36.429	0.668	0.7269E-06	1492.2	1.375	791.
900.	6.289	35.039	6.205	27.557	32.099	36.538	0.737	0.6601E-06	1490.8	1.671	890.
1000.	5.795	35.047	5.705	27.627	32.181	36.632	0.799	0.5986E-06	1490.5	1.600	988.

127

PRESSURE
DB

X TEMPERATURE
O SALINITY

SHACKLETON 1978/5C : CTD STATION 55

128
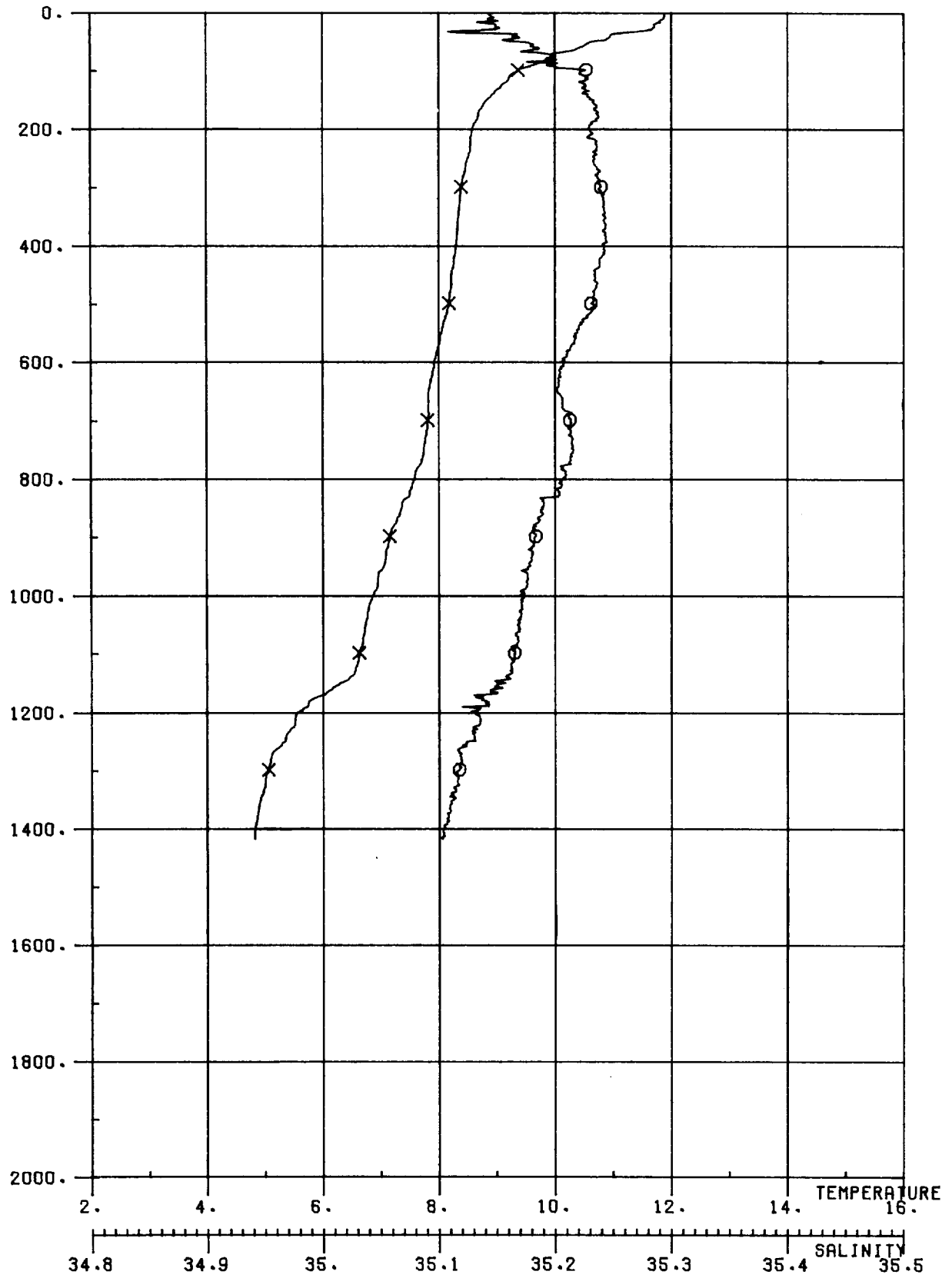
SHACKLETON 1978/5C : CTD STATION 55
=========== === ======= ==

P-DB	T-DEGC	S-0/00	POTEMP	SIGMA-0	SIGMA-1	SIGMA-2	DYN.HT.	SVANOM	SNDV-M/S	BVFR-C/H	DEPTH
10.	11.863	35.139	11.861	26.724	31.140	35.457	0.013	0.1312E-05	1496.7	-9.990	10.
20.	11.712	35.140	11.709	26.754	31.172	35.492	0.026	0.1287E-05	1496.3	3.051	20.
30.	11.612	35.136	11.608	26.770	31.190	35.512	0.039	0.1275E-05	1496.1	2.280	30.
40.	10.943	35.159	10.938	26.911	31.345	35.681	0.051	0.1142E-05	1494.0	6.696	40.
50.	10.614	35.162	10.608	26.973	31.414	35.756	0.062	0.1086E-05	1493.0	4.431	50.
75.	9.922	35.195	9.914	27.120	31.575	35.931	0.088	0.9520E-06	1491.0	4.316	74.
100.	9.350	35.218	9.339	27.234	31.702	36.070	0.111	0.8487E-06	1489.4	3.825	99.
125.	9.072	35.220	9.059	27.282	31.755	36.129	0.131	0.8084E-06	1488.8	2.468	124.
150.	8.827	35.226	8.810	27.326	31.805	36.184	0.151	0.7716E-06	1488.3	2.372	149.
175.	8.676	35.231	8.657	27.354	31.837	36.219	0.170	0.7490E-06	1488.2	1.924	173.
200.	8.575	35.223	8.553	27.365	31.850	36.235	0.189	0.7444E-06	1488.2	1.157	198.
250.	8.491	35.227	8.464	27.382	31.869	36.255	0.226	0.7383E-06	1488.7	1.051	247.
300.	8.383	35.233	8.352	27.403	31.893	36.282	0.263	0.7276E-06	1489.1	1.184	297.
350.	8.332	35.237	8.295	27.415	31.906	36.296	0.299	0.7257E-06	1489.8	0.882	346.
400.	8.288	35.236	8.246	27.422	31.914	36.306	0.335	0.7288E-06	1490.4	0.706	396.
450.	8.215	35.228	8.168	27.428	31.922	36.315	0.372	0.7327E-06	1491.0	0.637	445.
500.	8.169	35.226	8.116	27.434	31.929	36.324	0.409	0.7360E-06	1491.6	0.684	495.
600.	7.916	35.201	7.854	27.454	31.955	36.356	0.482	0.7341E-06	1492.3	0.847	593.
700.	7.802	35.207	7.730	27.477	31.981	36.384	0.555	0.7292E-06	1493.5	0.893	692.
800.	7.579	35.201	7.497	27.506	32.016	36.424	0.628	0.7167E-06	1494.3	1.023	791.
900.	7.148	35.176	7.058	27.550	32.070	36.488	0.698	0.6850E-06	1494.3	1.288	890.
1000.	6.855	35.165	6.757	27.582	32.109	36.535	0.766	0.6654E-06	1494.8	1.112	988.
1100.	6.615	35.159	6.508	27.612	32.145	36.576	0.831	0.6482E-06	1495.5	1.062	1037.
1200.	5.556	35.124	5.448	27.720	32.279	36.736	0.892	0.5336E-06	1492.9	2.089	1185.
1300.	5.052	35.111	4.939	27.771	32.342	36.812	0.943	0.4850E-06	1492.5	1.451	1284.
1400.	4.826	35.099	4.706	27.788	32.366	36.841	0.990	0.4733E-06	1493.3	0.900	1382.

SHACKLETON 1978/5C : CTD STATION 57

130
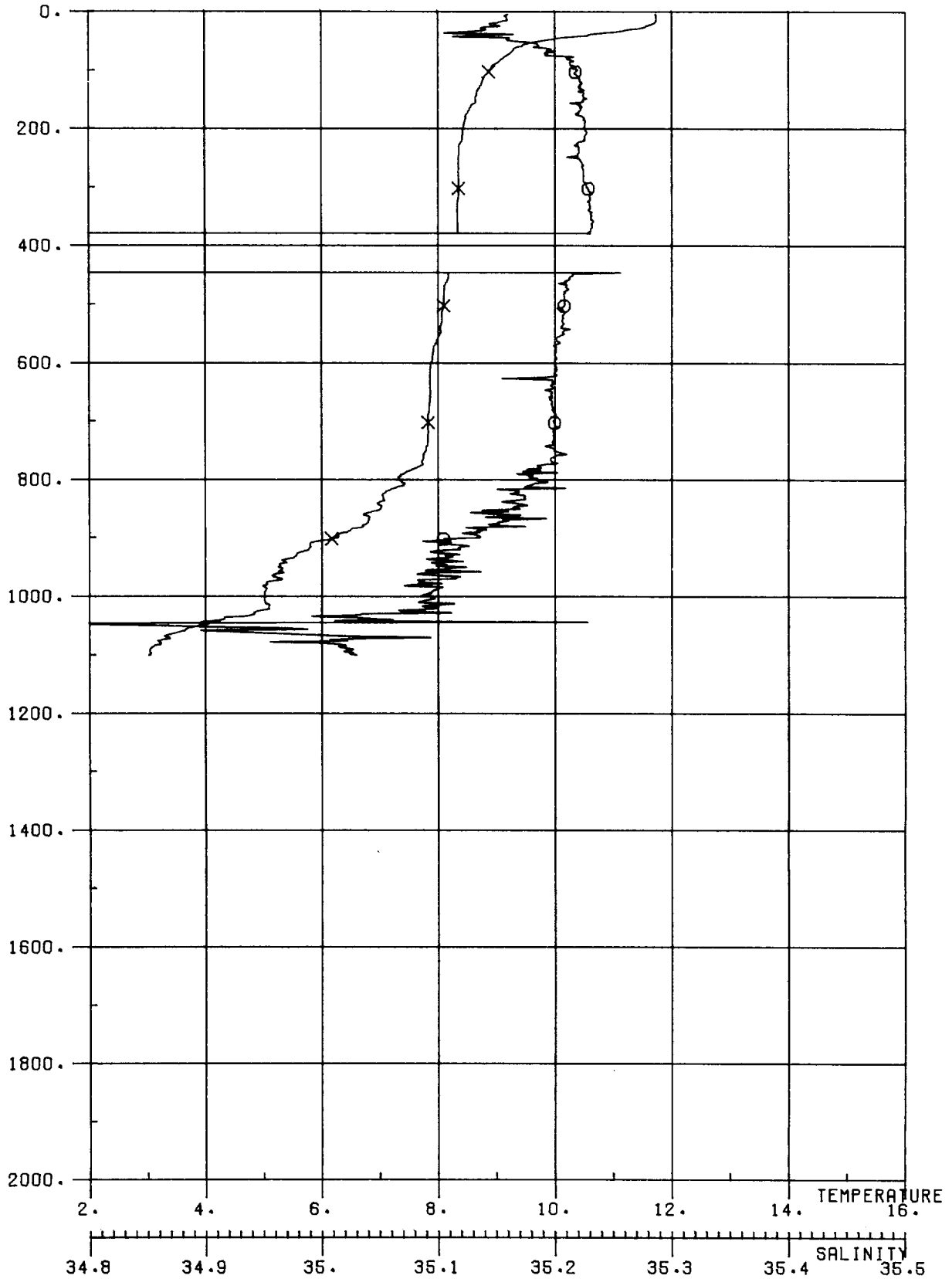
SHACKLETON 1978/5C : CTD STATION 57

P-DB	T-DEGC	S-0/00	SIGMA-0	POTEMP	SIGMA-1	SIGMA-2	DYN.HT.	SVANOM	SNDV-M/S	BVFR-C/H	DEPTH
10.	11.727	35.158	26.764	11.726	31.182	35.502	0.013	0.1274E-05	1496.2	-9.990	10.
20.	11.686	35.147	26.764	11.683	31.183	35.503	0.025	0.1277E-05	1496.2	-0.394	20.
30.	11.345	35.139	26.821	11.341	31.247	35.575	0.038	0.1225E-05	1495.2	4.269	30.
40.	10.571	35.151	26.972	10.567	31.414	35.757	0.050	0.1085E-05	1492.7	6.902	40.
50.	9.794	35.161	27.114	9.789	31.572	35.931	0.060	0.9516E-06	1490.1	6.715	50.
75.	9.166	35.190	27.242	9.158	31.714	36.086	0.082	0.8349E-06	1483.3	4.034	74.
100.	8.875	35.218	27.311	8.864	31.789	36.167	0.102	0.7746E-06	1487.6	2.965	99.
125.	8.740	35.219	27.334	8.727	31.815	36.196	0.121	0.7581E-06	1487.6	1.718	124.
150.	8.637	35.224	27.354	8.621	31.838	36.221	0.139	0.7439E-06	1487.6	1.606	149.
175.	8.485	35.216	27.372	8.466	31.859	36.246	0.158	0.7316E-06	1487.4	1.517	173.
200.	8.422	35.224	27.389	8.401	31.877	36.265	0.176	0.7211E-06	1487.6	1.465	198.
250.	8.343	35.214	27.394	8.317	31.884	36.274	0.212	0.7260E-06	1488.1	0.598	247.
300.	8.349	35.226	27.403	8.317	31.893	36.283	0.248	0.7274E-06	1489.0	0.749	297.
350.	8.327	35.229	27.410	8.290	31.901	36.292	0.285	0.7304E-06	1489.7	0.672	346.
400.	-999.000	-9.990	-9.990	-9.990	-9.990	-9.990	-9.990	-0.9990E+01	-10.0	-9.990	396.
450.	8.173	35.213	27.423	8.126	31.917	36.312	0.357	0.7371E-06	1490.3	0.672	445.
500.	8.090	35.207	27.431	8.038	31.928	36.324	0.394	0.7383E-06	1491.3	0.780	495.
600.	7.871	35.198	27.458	7.809	31.960	36.362	0.468	0.7295E-06	1492.1	0.972	593.
700.	7.824	35.197	27.466	7.752	31.969	36.372	0.541	0.7404E-06	1493.6	0.530	692.
800.	7.327	35.183	27.528	7.246	32.044	36.458	0.615	0.6915E-06	1493.3	1.500	791.
900.	6.270	35.135	27.636	6.186	32.177	36.616	0.680	0.5867E-06	1490.8	2.021	890.
1000.	5.012	35.092	27.757	4.927	32.329	36.799	0.730	0.4591E-06	1487.4	2.186	988.
1100.	3.040	35.028	27.911	2.963	32.535	37.055	0.769	0.2743E-06	1480.7	2.565	1087.
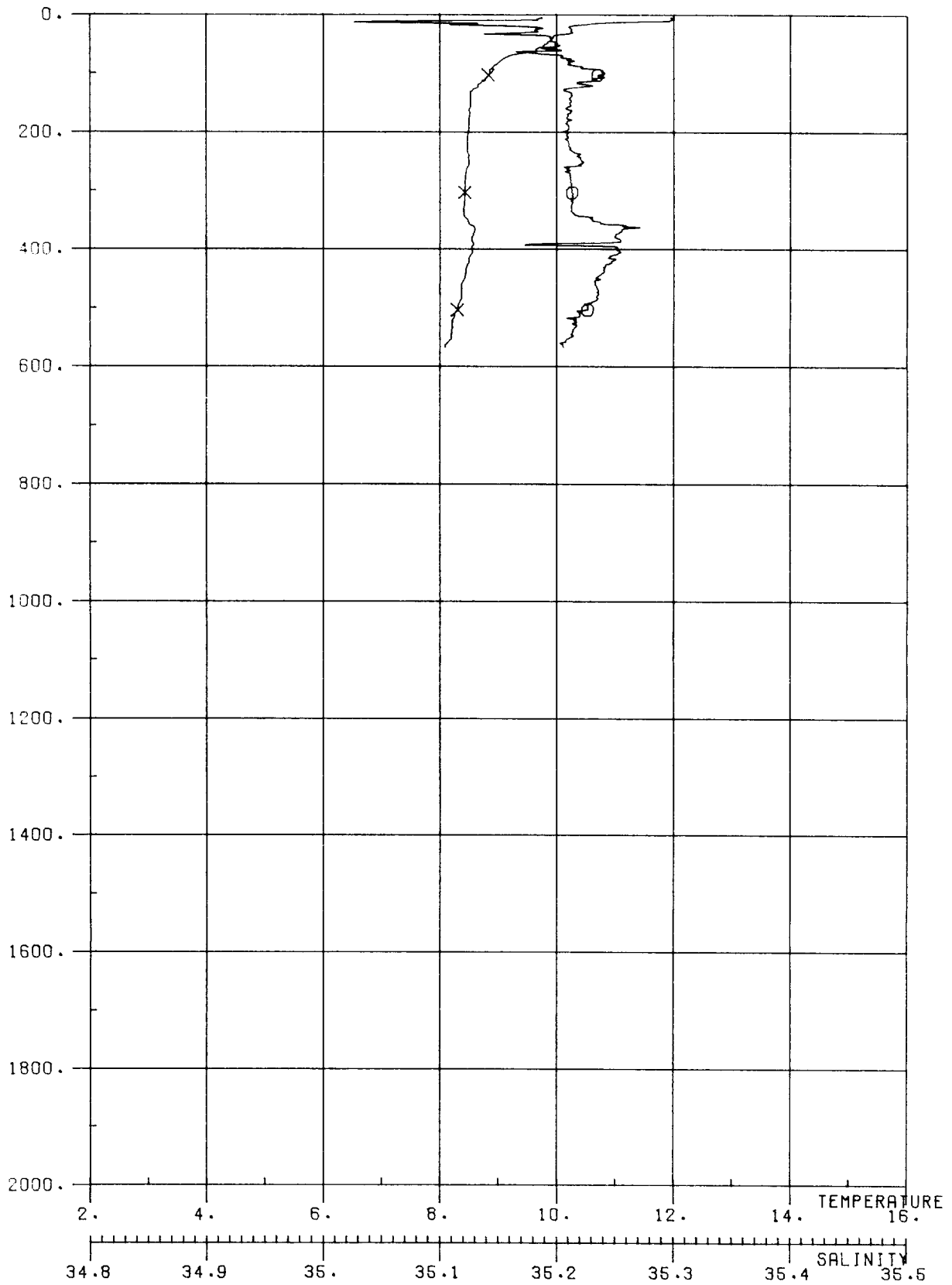
SHACKLETON 1978/5C : CTD STATION 58

SHACKLETON 1978/5C : CTD STATION 58

P-DB	T-DEGC	S-0/00	POTEMP	SIGMA-0	SIGMA-1	SIGMA-2	DYN.HT.	SVANOM	SNDV-M/S	BVFR-C/H	DEPTH
10.	11.934	35.124	11.932	26.699	31.113	35.429	0.013	0.1336E-05	1496.9	-9.990	10.
20.	10.228	35.167	10.226	27.044	31.492	35.842	0.025	0.1011E-05	1491.2	10.440	20.
30.	10.267	35.174	10.264	27.043	31.491	35.840	0.035	0.1015E-05	1491.5	-0.623	30.
40.	9.922	35.193	9.917	27.117	31.573	35.929	0.044	0.9462E-06	1490.4	4.866	40.
50.	9.807	35.198	9.802	27.141	31.598	35.957	0.054	0.9267E-06	1490.2	2.716	50.
75.	9.077	35.211	9.069	27.273	31.746	36.120	0.076	0.8061E-06	1488.0	4.103	74.
100.	8.842	35.239	8.832	27.332	31.811	36.190	0.095	0.7546E-06	1487.5	2.759	99.
125.	8.618	35.210	8.605	27.346	31.830	36.214	0.114	0.7462E-06	1487.1	1.343	124.
150.	8.514	35.209	8.498	27.362	31.848	36.235	0.133	0.7360E-06	1487.1	1.433	149.
175.	8.492	35.207	8.473	27.364	31.851	36.238	0.151	0.7392E-06	1487.4	0.467	173.
200.	8.476	35.206	8.455	27.366	31.854	36.241	0.169	0.7425E-06	1487.8	0.529	198.
250.	8.489	35.221	8.463	27.377	31.864	36.251	0.207	0.7430E-06	1488.7	0.799	247.
300.	8.420	35.211	8.389	27.381	31.870	36.258	0.244	0.7488E-06	1489.2	0.544	297.
350.	8.477	35.228	8.440	27.386	31.874	36.261	0.281	0.7541E-06	1490.3	0.558	346.
400.	8.542	35.249	8.499	27.393	31.879	36.265	0.319	0.7581E-06	1491.4	0.660	396.
450.	8.412	35.233	8.365	27.402	31.891	36.280	0.357	0.7590E-06	1491.7	0.790	445.
500.	8.295	35.224	8.242	27.414	31.906	36.298	0.395	0.7572E-06	1492.1	0.909	495.

PRESSURE
DB

X TEMPERATURE
O SALINITY

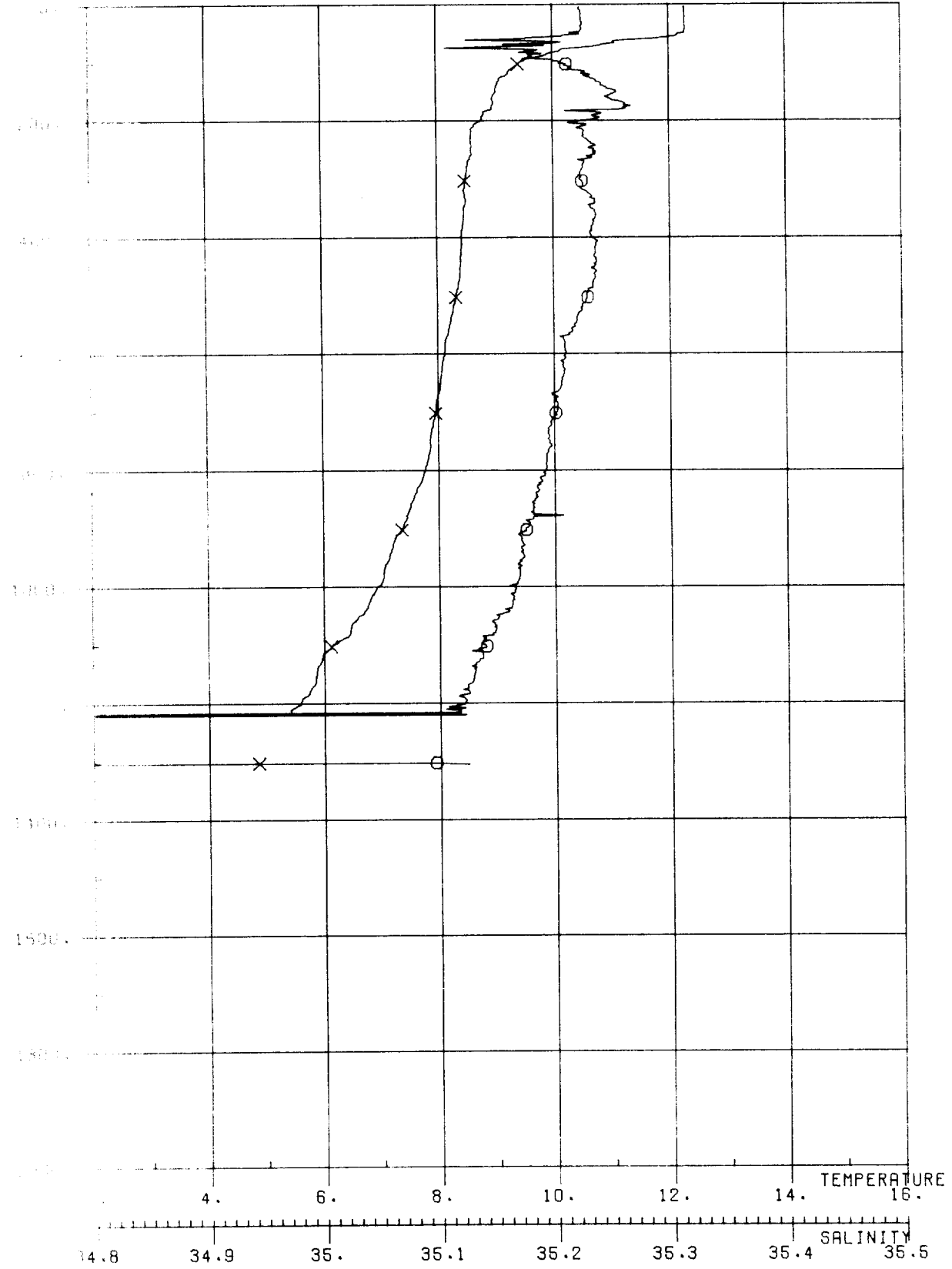SHACKLETON 1978/5C : CTD STATION 59

134
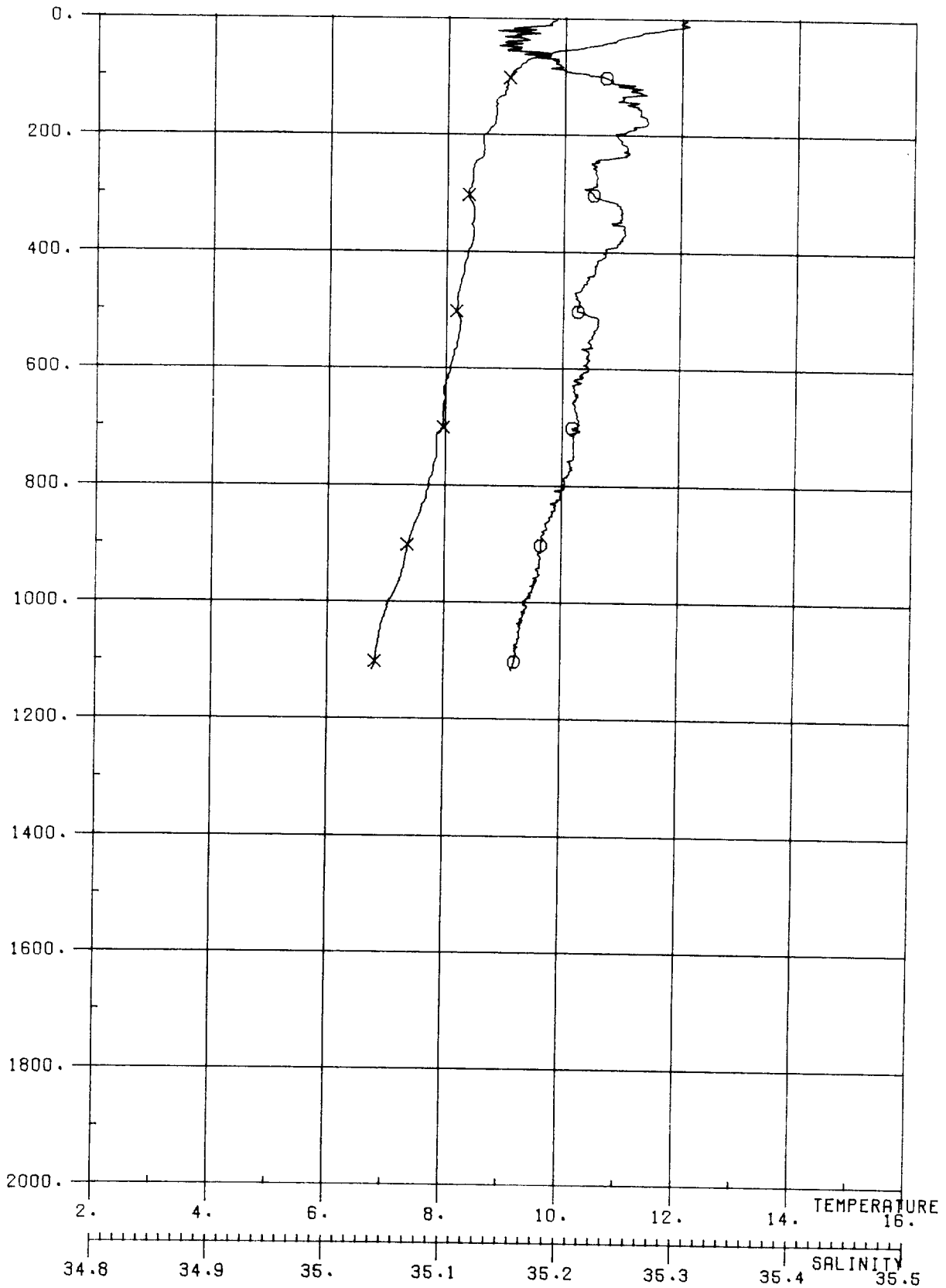
SHACKLETON 1978/5C : CTD STATION 59

P-DB	T-DEGC	S-O/OO	POTEMP	SIGMA-0	SIGMA-1	SIGMA-2	DYN.HT.	SVANOM	SNDV-M/S	BVFR-C/H	DEPTH
10.	12.004	35.186	12.003	26.733	31.145	35.459	0.013	0.1304E-05	1497.2	-9.990	10.
20.	11.694	35.164	11.692	26.776	31.194	35.514	0.026	0.1266E-05	1496.3	3.674	20.
30.	11.209	35.159	11.205	26.862	31.291	35.621	0.038	0.1187E-05	1494.8	5.240	30.
40.	10.857	35.159	10.853	26.927	31.363	35.700	0.050	0.1128E-05	1493.7	4.517	40.
50.	10.388	35.152	10.382	27.005	31.450	35.797	0.061	0.1056E-05	1492.2	4.983	50.
75.	9.324	35.193	9.316	27.219	31.687	36.056	0.084	0.8577E-06	1488.8	5.213	74.
100.	9.061	35.225	9.050	27.286	31.760	36.134	0.105	0.7988E-06	1488.3	2.939	99.
125.	8.971	35.253	8.957	27.324	31.800	36.176	0.125	0.7681E-06	1488.5	2.188	124.
150.	8.825	35.253	8.809	27.347	31.826	36.206	0.143	0.7511E-06	1488.3	1.728	149.
175.	8.812	35.268	8.793	27.361	31.841	36.220	0.162	0.7427E-06	1488.7	1.355	173.
200.	8.625	35.242	8.604	27.371	31.855	36.238	0.181	0.7388E-06	1488.4	1.143	198.
250.	8.458	35.222	8.431	27.382	31.870	36.258	0.217	0.7374E-06	1488.6	0.882	247.
300.	8.361	35.222	8.330	27.399	31.889	36.279	0.254	0.7316E-06	1489.0	1.036	297.
350.	8.443	35.243	8.406	27.403	31.891	36.279	0.291	0.7381E-06	1490.2	0.467	346.
400.	8.359	35.234	8.317	27.410	31.900	36.290	0.328	0.7411E-06	1490.7	0.695	396.
450.	8.248	35.218	8.201	27.415	31.908	36.301	0.365	0.7453E-06	1491.1	0.637	445.
500.	8.170	35.210	8.118	27.421	31.916	36.311	0.402	0.7481E-06	1491.6	0.684	495.
600.	8.067	35.220	8.005	27.446	31.944	36.341	0.477	0.7434E-06	1492.9	0.905	593.
700.	7.956	35.212	7.883	27.458	31.958	36.358	0.552	0.7499E-06	1494.1	0.667	692.
800.	7.712	35.200	7.629	27.487	31.993	36.398	0.626	0.7378E-06	1494.8	1.020	791.
900.	7.370	35.181	7.278	27.522	32.037	36.451	0.699	0.7157E-06	1495.1	1.167	890.
1000.	7.042	35.167	6.943	27.559	32.081	36.503	0.769	0.6917E-06	1495.5	1.177	988.
1100.	6.818	35.159	6.709	27.585	32.113	36.540	0.838	0.6787E-06	1496.3	1.002	1087.

SHACKLETON 1978/5C : CTD STATION 60

138

SHACKLETON 1978/5C : CTD STATION 60
============ ======== === ======== ==

P-DB	T-DEGC	S-0/00	POTEMP	SIGMA-0	SIGMA-1	SIGMA-2	DYN.HT.	SVANOM	SNDV-M/S	BVFR-C/H	DEPTH
10.	12.272	35.222	12.270	26.710	31.117	35.425	0.013	0.1326E-05	1498.2	-9.990	10.
20.	12.273	35.223	12.270	26.711	31.117	35.426	0.027	0.1328E-05	1498.3	0.394	20.
30.	12.275	35.223	12.271	26.711	31.117	35.426	0.040	0.1331E-05	1498.5	0.394	30.
40.	12.276	35.223	12.270	26.711	31.117	35.426	0.053	0.1334E-05	1498.7	-0.279	40.
50.	12.199	35.217	12.193	26.721	31.129	35.440	0.066	0.1326E-05	1498.6	1.826	50.
75.	10.427	35.107	10.418	26.963	31.409	35.755	0.097	0.1101E-05	1492.7	5.560	74.
100.	9.441	35.205	9.430	27.209	31.674	36.041	0.121	0.8729E-06	1489.7	5.584	99.
125.	9.113	35.229	9.099	27.282	31.755	36.128	0.142	0.8082E-06	1488.9	3.064	124.
150.	9.015	35.253	8.999	27.317	31.792	36.167	0.161	0.7807E-06	1489.0	2.108	149.
175.	8.955	35.265	8.936	27.337	31.813	36.189	0.181	0.7667E-06	1489.2	1.587	173.
200.	8.766	35.226	8.745	27.337	31.817	36.198	0.200	0.7716E-06	1488.9	0.249	198.
250.	8.588	35.233	8.562	27.371	31.855	36.240	0.238	0.7492E-06	1489.1	1.492	247.
300.	8.478	35.221	8.447	27.379	31.867	36.254	0.275	0.7502E-06	1489.5	0.769	297.
350.	8.454	35.231	8.417	27.392	31.880	36.268	0.313	0.7490E-06	1490.2	0.891	346.
400.	8.410	35.231	8.367	27.400	31.889	36.278	0.350	0.7509E-06	1490.9	0.738	396.
450.	8.390	35.233	8.343	27.405	31.895	36.284	0.388	0.7562E-06	1491.6	0.558	445.
500.	8.307	35.227	8.255	27.413	31.905	36.297	0.426	0.7574E-06	1492.1	0.760	495.
600.	8.110	35.208	8.047	27.431	31.927	36.323	0.501	0.7586E-06	1493.0	0.795	593.
700.	7.953	35.201	7.880	27.450	31.950	36.350	0.577	0.7574E-06	1494.1	0.834	692.
800.	7.758	35.191	7.676	27.472	31.978	36.382	0.653	0.7516E-06	1495.0	0.906	791.
900.	7.367	35.174	7.276	27.517	32.032	36.446	0.726	0.7201E-06	1495.1	1.291	890.
1000.	6.924	35.161	6.826	27.570	32.096	36.520	0.796	0.6785E-06	1495.0	1.413	988.
1100.	6.136	35.137	6.033	27.657	32.202	36.645	0.860	0.5937E-06	1493.6	1.840	1087.
1200.	5.574	35.122	5.466	27.716	32.275	36.732	0.917	0.5376E-06	1493.0	1.542	1185.
1300.	-999.000	-9.990	-9.990	-9.990	-9.990	-9.990	-9.990	-0.9990E+01	-10.0	-9.990	1284.
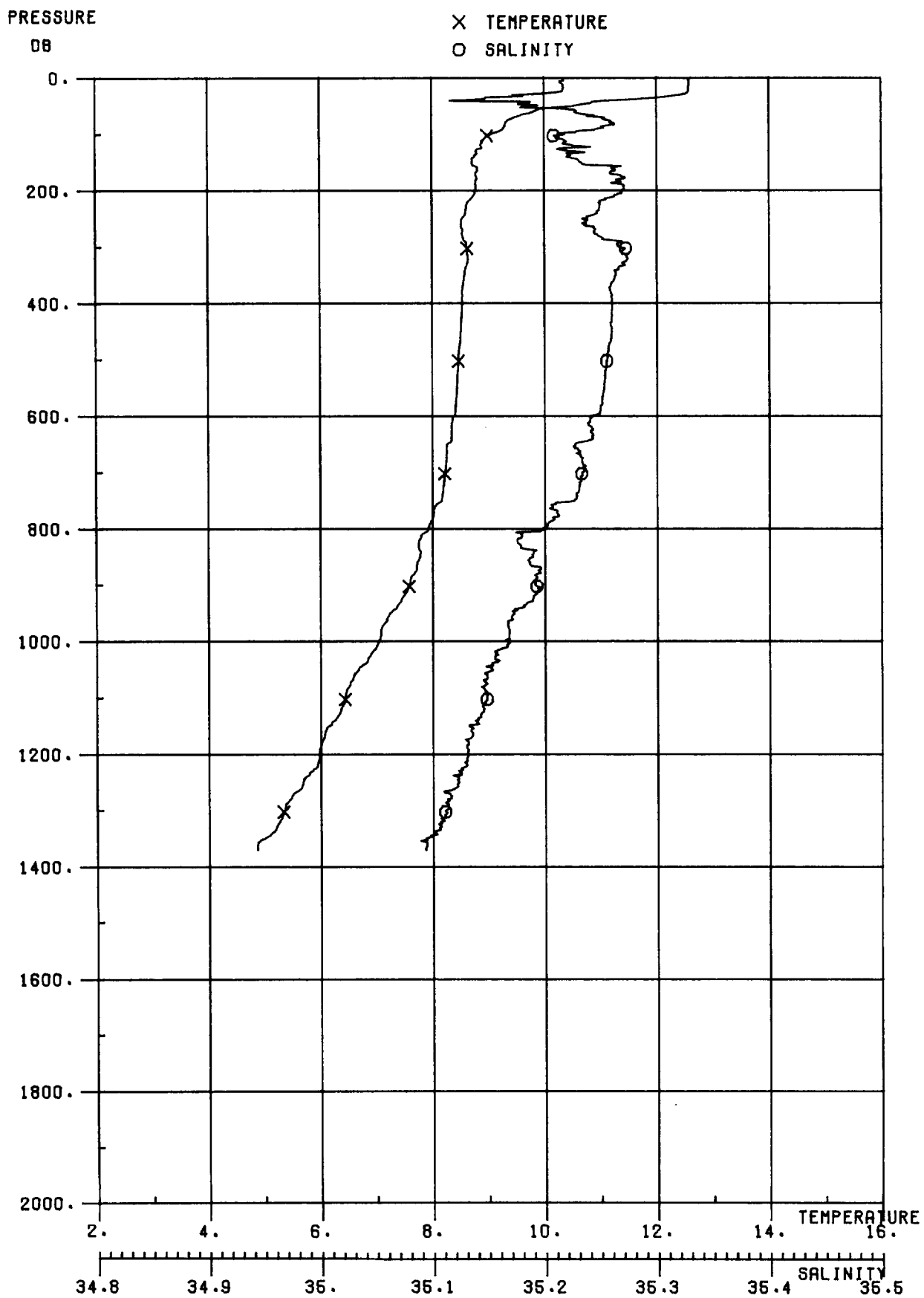
SHACKLETON 1978/5C : CTD STATION 61

138

SHACKLETON 1978/5C : CTD STATION 61

P-DB	T-DEGC	S-0/00	SIGMA-0	POTEMP	SIGMA-1	SIGMA-2	DYN.HT.	SVANOM	SNDV-M/S	BVFR-C/H	DEPTH
10.	12.568	35.213	26.645	12.566	31.046	35.349	0.014	0.1387E-05	1499.2	-9.999	10.
20.	12.562	35.215	26.648	12.559	31.049	35.352	0.023	0.1387E-05	1499.3	0.881	20.
30.	12.437	35.181	26.647	12.433	31.050	35.356	0.042	0.1392E-05	1499.0	-0.623	30.
40.	11.319	35.123	26.818	11.314	31.245	35.573	0.055	0.1231E-05	1495.3	7.379	40.
50.	10.511	35.190	27.013	10.505	31.456	35.800	0.066	0.1048E-05	1492.7	7.849	50.
75.	9.357	35.252	27.259	9.349	31.726	36.094	0.089	0.8198E-06	1489.0	5.592	74.
100.	9.049	35.213	27.279	9.038	31.754	36.128	0.109	0.8051E-06	1488.3	1.644	99.
125.	9.390	35.212	27.305	8.876	31.782	36.160	0.128	0.7865E-06	1483.1	1.798	124.
150.	8.710	35.230	27.348	8.694	31.829	36.211	0.147	0.7504E-06	1487.9	2.339	149.
175.	9.784	35.266	27.364	8.766	31.844	36.224	0.166	0.7399E-06	1488.6	1.433	173.
200.	8.769	35.267	27.368	8.748	31.848	36.229	0.185	0.7425E-06	1489.0	0.660	198.
250.	8.526	35.233	27.381	8.500	31.867	36.253	0.222	0.7392E-06	1483.8	0.958	247.
300.	8.610	35.264	27.392	8.573	31.877	36.261	0.259	0.7388E-06	1490.0	0.846	297.
350.	8.567	35.261	27.398	8.529	31.883	36.268	0.296	0.7437E-06	1490.7	0.624	346.
400.	8.529	35.257	27.402	8.486	31.888	36.274	0.333	0.7502E-06	1491.3	0.499	396.
450.	8.501	35.257	27.407	8.453	31.894	36.281	0.371	0.7558E-06	1492.1	0.572	445.
500.	8.459	35.253	27.411	8.405	31.899	36.287	0.409	0.7614E-06	1492.7	0.572	495.
600.	8.379	35.239	27.414	8.315	31.905	36.295	0.485	0.7774E-06	1494.1	0.375	593.
700.	8.219	35.232	27.434	8.145	31.928	36.322	0.563	0.7763E-06	1495.1	0.343	692.
800.	7.915	35.197	27.454	7.831	31.956	36.357	0.641	0.7714E-06	1495.6	0.897	791.
900.	7.580	35.189	27.499	7.488	32.008	36.417	0.717	0.7420E-06	1496.0	1.273	890.
1000.	7.026	35.165	27.560	6.926	32.083	36.504	0.788	0.6908E-06	1495.4	1.525	988.
1100.	6.426	35.147	27.627	6.321	32.165	36.601	0.854	0.6291E-06	1494.7	1.618	1087.
1200.	5.968	35.130	27.674	5.857	32.223	36.670	0.914	0.5881E-06	1494.6	1.381	1185.
1300.	5.346	35.111	27.736	5.230	32.301	36.763	0.970	0.5260E-06	1493.7	1.605	1284.

PRESSURE
DB
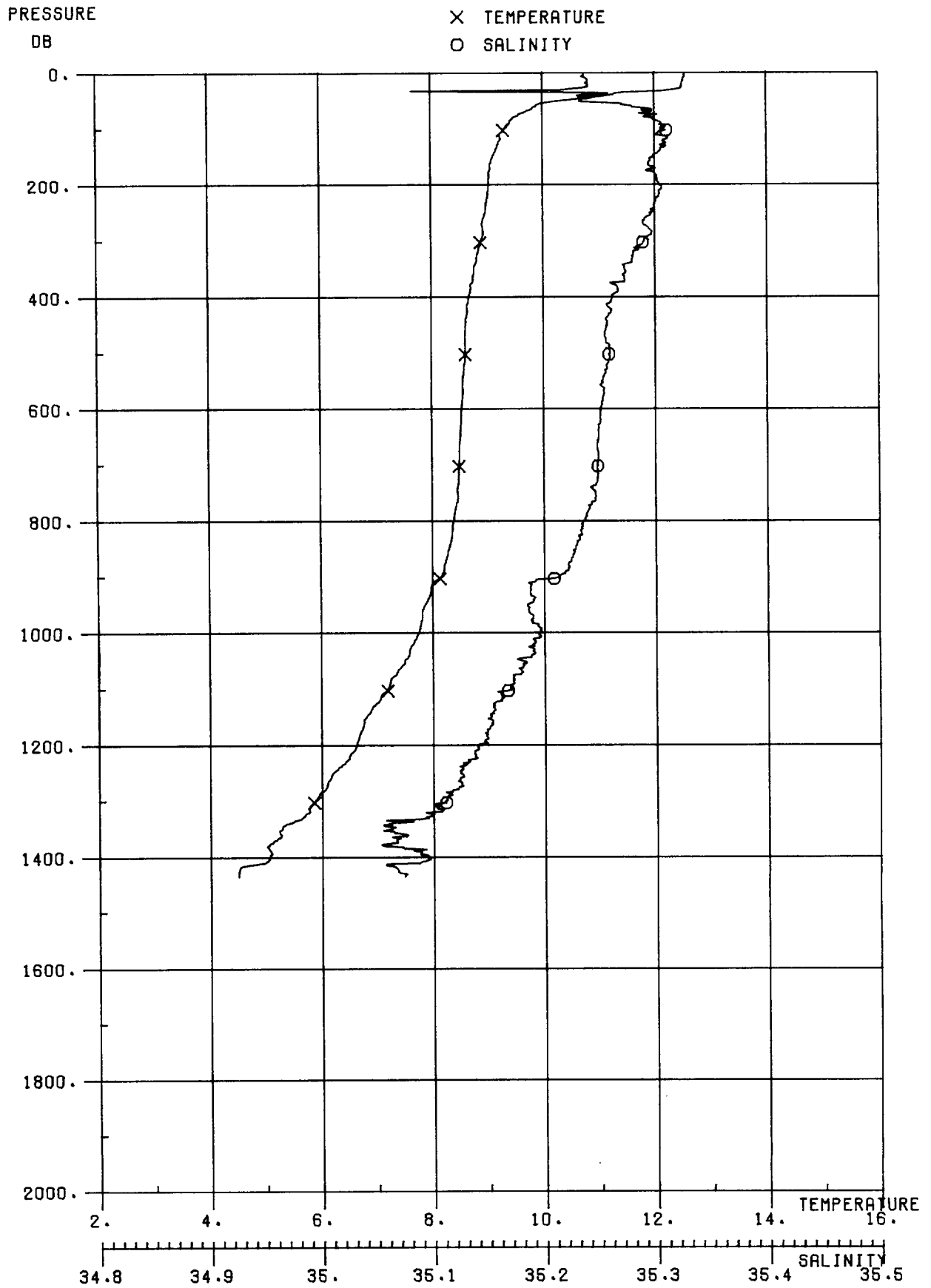
X TEMPERATURE
O SALINITY

SHACKLETON 1978/5C : CTD STATION 62

140
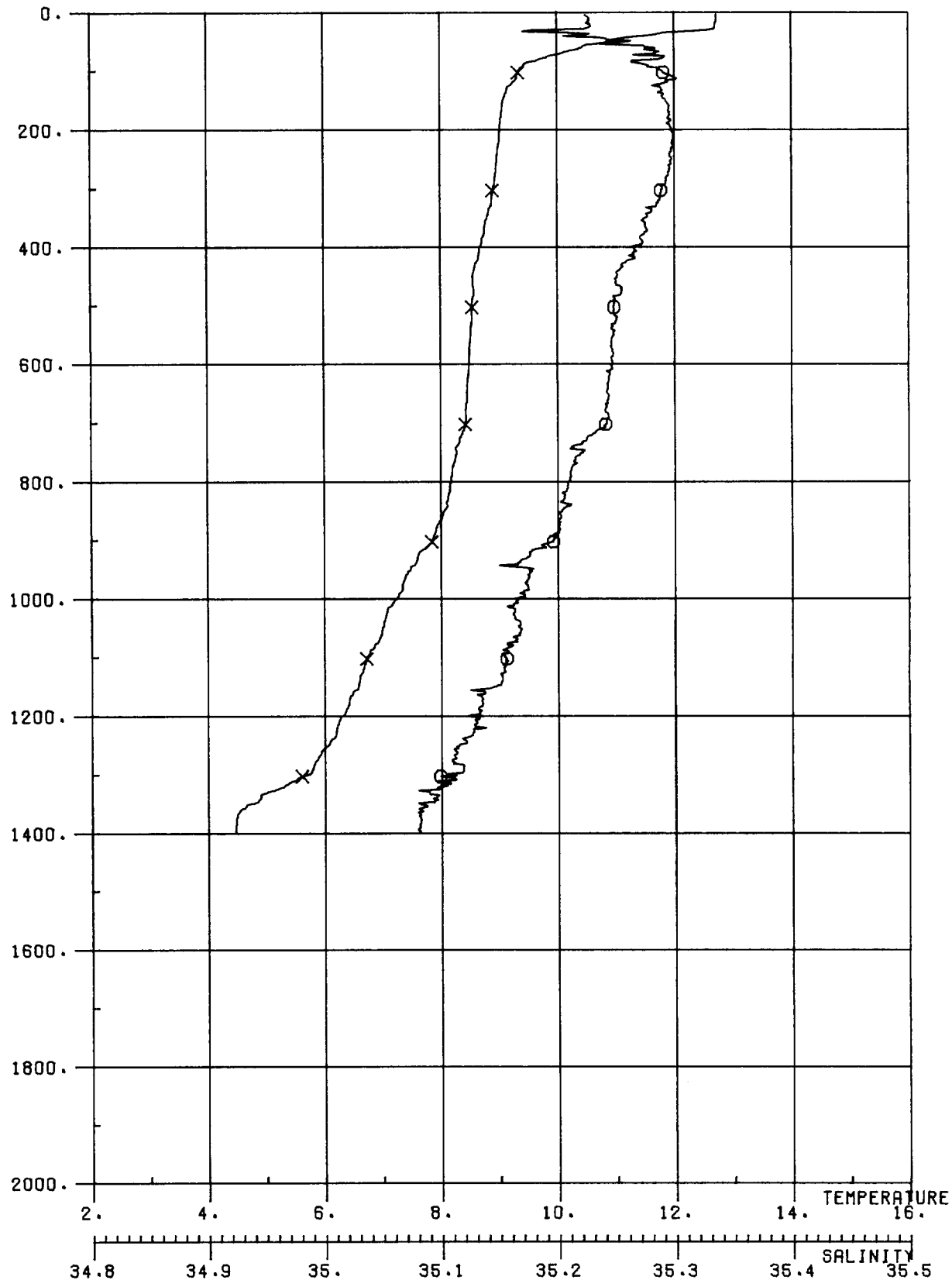
SHACKLETON 1978/5C : CTD STATION 62

P-DB	T-DEGC	S-0/00	POTEMP	SIGMA-0	SIGMA-1	SIGMA-2	DYN.HT.	SVANOM	SNDV-M/S	BVFR-C/H	DEPTH
10.	12.717	35.225	12.716	26.625	31.023	35.323	0.014	0.1407E-05	1499.7	-9.990	10.
20.	12.699	35.225	12.696	26.628	31.026	35.327	0.028	0.1406E-05	1499.3	1.042	20.
30.	12.617	35.200	12.613	26.625	31.025	35.327	0.042	0.1412E-05	1499.6	-0.965	30.
40.	11.540	35.210	11.535	26.841	31.262	35.585	0.055	0.1210E-05	1496.1	8.271	40.
50.	10.859	35.256	10.853	27.002	31.437	35.773	0.066	0.1059E-05	1494.0	7.151	50.
75.	9.839	35.290	9.830	27.208	31.664	36.022	0.090	0.9635E-06	1490.8	5.117	74.
100.	9.340	35.287	9.329	27.289	31.757	36.125	0.111	0.7963E-06	1489.4	3.231	99.
125.	9.181	35.278	9.167	27.309	31.780	36.152	0.131	0.7828E-06	1489.3	1.596	124.
150.	9.076	35.290	9.059	27.336	31.809	36.183	0.150	0.7629E-06	1489.3	1.841	149.
175.	9.043	35.293	9.024	27.344	31.818	36.192	0.169	0.7604E-06	1489.6	1.028	173.
200.	9.013	35.295	8.996	27.350	31.825	36.200	0.188	0.7600E-06	1489.9	0.832	198.
250.	8.962	35.295	8.935	27.360	31.836	36.212	0.226	0.7614E-06	1490.5	0.789	247.
300.	8.897	35.287	8.864	27.365	31.843	36.221	0.264	0.7667E-06	1491.1	0.535	297.
350.	8.789	35.273	8.751	27.372	31.852	36.232	0.303	0.7702E-06	1491.5	0.683	346.
400.	8.667	35.262	8.624	27.384	31.867	36.250	0.341	0.7686E-06	1491.9	0.909	396.
450.	8.542	35.248	8.494	27.394	31.880	36.266	0.380	0.7683E-06	1492.2	0.847	445.
500.	8.532	35.246	8.479	27.394	31.880	36.267	0.418	0.7781E-06	1493.0	0.125	495.
600.	8.483	35.245	8.418	27.403	31.890	36.278	0.497	0.7900E-06	1494.5	0.552	593.
700.	8.417	35.240	8.341	27.410	31.900	36.290	0.576	0.8021E-06	1495.9	0.523	692.
800.	8.166	35.207	8.080	27.425	31.921	36.316	0.657	0.8033E-06	1496.5	0.781	791.
900.	7.843	35.194	7.748	27.465	31.968	36.371	0.736	0.7793E-06	1497.0	1.203	890.
1000.	7.226	35.164	7.125	27.531	32.049	36.466	0.811	0.7220E-06	1496.2	1.593	983.
1100.	6.721	35.154	6.614	27.593	32.124	36.553	0.881	0.6685E-06	1495.9	1.541	1087.
1200.	6.298	35.124	6.183	27.627	32.168	36.608	0.946	0.6410E-06	1495.9	1.202	1135.
1300.	5.698	35.108	5.579	27.692	32.248	36.702	1.007	0.5781E-06	1495.1	1.617	1284.

SHACKLETON 1978/5C : CTD STATION 63

142

SHACKLETON 1978/5C : CTD STATION 63

P-DB	T-DEGC	S-0/00	POTEMP	SIGMA-0	SIGMA-1	SIGMA-2	DYN.HT.	SVANOM	SNDV-M/S	BVFR-C/H	DEPTH
10.	12.517	35.237	12.515	26.673	31.075	35.379	0.014	0.1361E-05	1499.0	-9.990	10.
20.	12.485	35.237	12.482	26.680	31.083	35.337	0.027	0.1357E-05	1499.1	1.500	20.
30.	12.365	35.218	12.361	26.689	31.094	35.401	0.041	0.1351E-05	1498.8	1.694	30.
40.	11.201	35.239	11.196	26.927	31.355	35.634	0.053	0.1128E-05	1495.0	8.670	40.
50.	10.304	35.231	10.298	27.081	31.528	35.876	0.064	0.9830E-06	1492.0	7.015	50.
75.	9.566	35.300	9.558	27.262	31.724	36.087	0.086	0.3175E-06	1489.9	4.783	74.
100.	9.313	35.303	9.302	27.306	31.774	36.142	0.106	0.7802E-06	1489.4	2.391	99.
125.	9.207	35.307	9.193	27.328	31.798	36.169	0.125	0.7651E-06	1489.4	1.663	124.
150.	9.102	35.295	9.085	27.336	31.809	36.182	0.144	0.7623E-06	1489.4	1.028	149.
175.	9.036	35.289	9.017	27.342	31.816	36.191	0.163	0.7621E-06	1489.6	0.399	173.
200.	9.025	35.301	9.003	27.354	31.828	36.203	0.182	0.7567E-06	1489.9	1.222	193.
250.	8.962	35.293	8.935	27.359	31.835	36.211	0.220	0.7623E-06	1490.5	0.572	248.
300.	8.887	35.287	8.854	27.367	31.845	36.223	0.258	0.7651E-06	1491.1	0.727	297.
350.	8.757	35.270	8.719	27.375	31.856	36.237	0.296	0.7669E-06	1491.4	0.769	346.
400.	8.660	35.259	8.617	27.383	31.866	36.249	0.335	0.7697E-06	1491.8	0.717	396.
450.	8.603	35.255	8.555	27.389	31.874	36.258	0.373	0.7732E-06	1492.4	0.661	445.
500.	8.598	35.257	8.544	27.392	31.877	36.262	0.412	0.7804E-06	1493.3	0.484	495.
600.	8.526	35.249	8.461	27.399	31.886	36.272	0.491	0.7942E-06	1494.6	0.484	594.
700.	8.481	35.246	8.405	27.405	31.893	36.281	0.571	0.8072E-06	1496.1	0.434	692.
800.	8.378	35.234	8.291	27.413	31.904	36.295	0.652	0.8182E-06	1497.4	0.559	791.
900.	8.144	35.211	8.047	27.433	31.929	36.325	0.734	0.8154E-06	1498.1	0.876	890.
1000.	7.746	35.195	7.641	27.481	31.987	36.392	0.814	0.7804E-06	1498.1	1.348	988.
1100.	7.186	35.169	7.074	27.542	32.061	36.479	0.890	0.7281E-06	1493.2	1.539	1087.
1200.	6.624	35.140	6.506	27.597	32.130	36.562	0.959	0.6782E-06	1497.2	1.495	1185.
1300.	5.873	35.111	5.752	27.672	32.223	36.673	1.023	0.6021E-06	1495.8	1.757	1284.
1400.	5.048	35.096	4.926	27.760	32.333	36.803	1.079	0.5064E-06	1494.2	1.920	1382.

SHACKLETON 1978/5C : CTD STATION 64
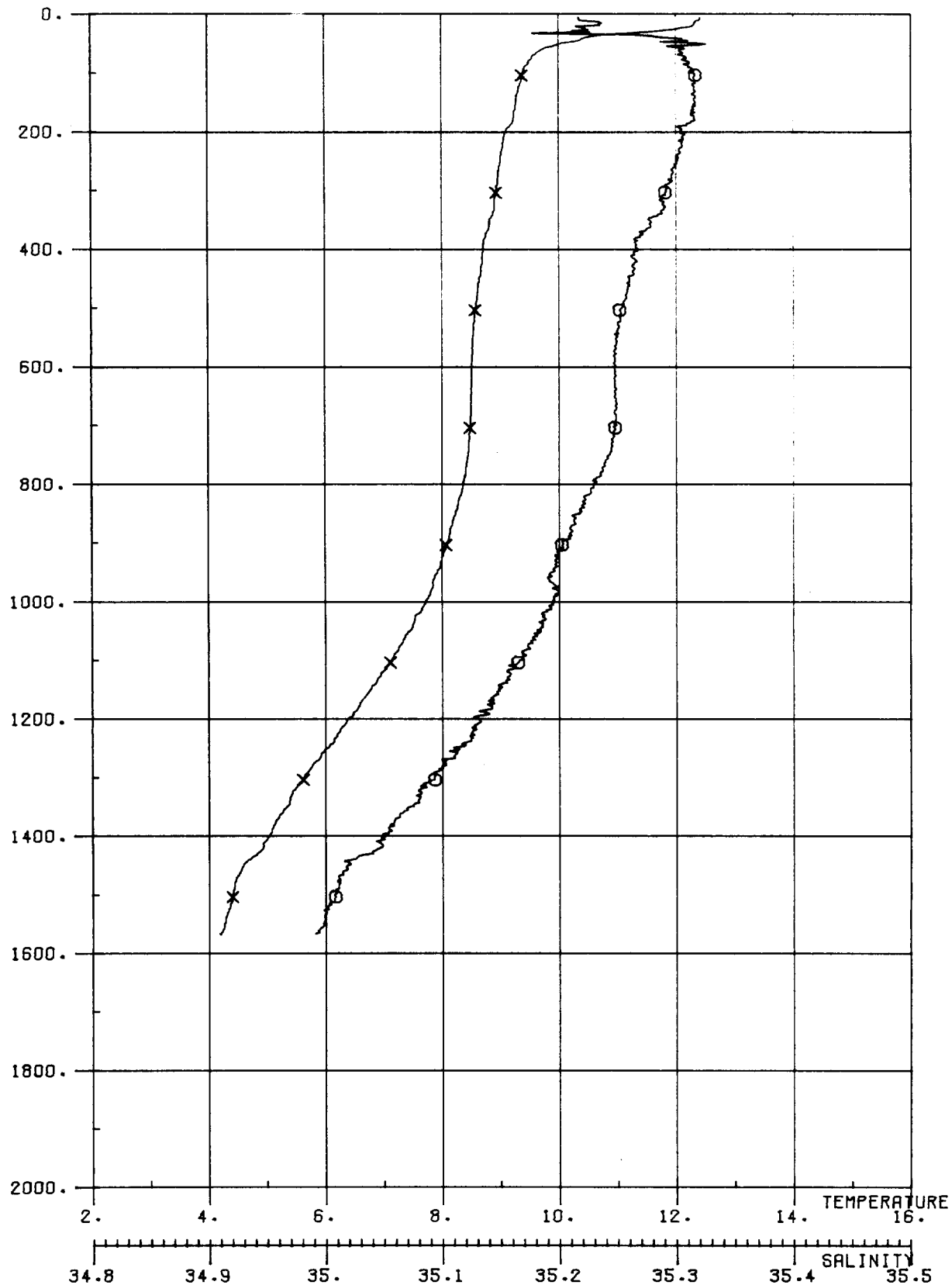
144
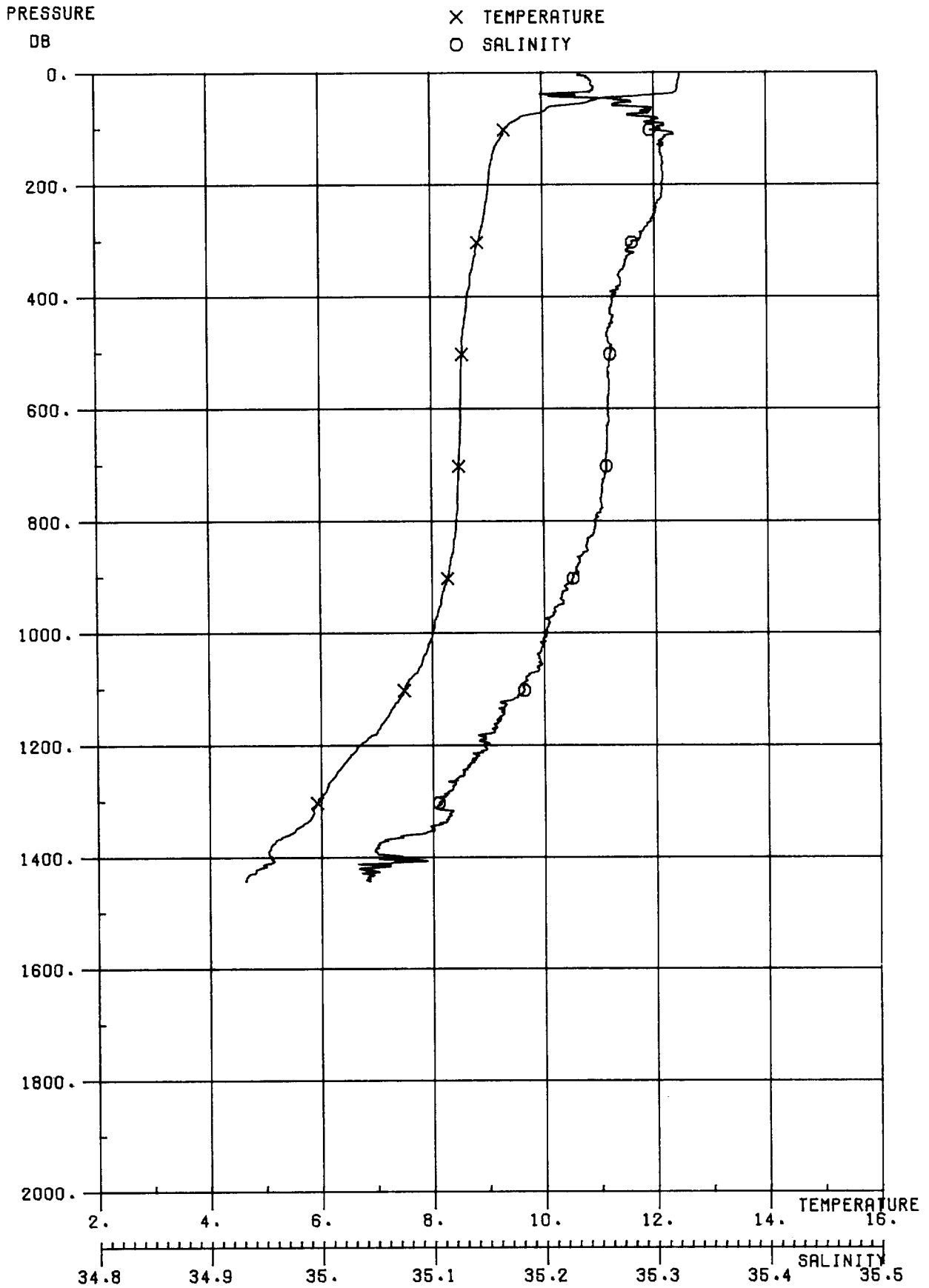
SHACKLETON 1978/5C : CTD STATION 64
=========== ======== == ======= ==

P-DB	T-DEGC	S-0/00	POTEMP	SIGMA-0	SIGMA-1	SIGMA-2	DYN.HT.	SVANOM	SNDV-M/S	BVFR-C/H	DEPTH
10.	12.448	35.239	12.447	26.689	31.091	35.397	0.014	0.1346E-05	1498.8	-9.990	10.
20.	12.426	35.241	12.423	26.695	31.098	35.404	0.027	0.1343E-05	1498.9	1.420	20.
30.	12.410	35.244	12.406	26.700	31.104	35.410	0.040	0.1341E-05	1499.0	1.214	30.
40.	11.985	35.212	11.980	26.758	31.171	35.485	0.054	0.1288E-05	1497.7	4.306	40.
50.	10.909	35.270	10.903	27.004	31.438	35.774	0.065	0.1057E-05	1494.2	8.831	50.
75.	9.825	35.274	9.816	27.198	31.655	36.012	0.089	0.8780E-06	1490.8	4.963	74.
100.	9.339	35.302	9.327	27.301	31.769	36.136	0.109	0.7849E-06	1489.4	3.634	99.
125.	9.196	35.304	9.183	27.327	31.797	36.168	0.129	0.7662E-06	1489.3	1.315	124.
150.	9.110	35.304	9.093	27.341	31.814	36.187	0.148	0.7576E-06	1489.4	1.377	149.
175.	9.057	35.304	9.037	27.351	31.824	36.198	0.167	0.7541E-06	1489.7	1.087	173.
200.	9.038	35.303	9.016	27.354	31.828	36.202	0.186	0.7565E-06	1490.0	0.636	198.
250.	8.967	35.297	8.940	27.361	31.837	36.213	0.223	0.7602E-06	1490.5	0.694	248.
300.	8.859	35.280	8.826	27.366	31.844	36.223	0.262	0.7655E-06	1491.0	0.572	297.
350.	8.740	35.269	8.702	27.377	31.859	36.240	0.300	0.7646E-06	1491.3	0.374	346.
400.	8.641	35.260	8.598	27.386	31.870	36.253	0.333	0.7662E-06	1491.8	0.779	396.
450.	8.587	35.257	8.539	27.393	31.878	36.263	0.376	0.7693E-06	1492.4	0.706	445.
500.	8.551	35.258	8.497	27.401	31.887	36.273	0.415	0.7721E-06	1493.1	0.706	495.
600.	8.516	35.255	8.451	27.406	31.893	36.280	0.493	0.7874E-06	1494.6	0.424	594.
700.	8.483	35.254	8.407	27.411	31.899	36.287	0.572	0.8021E-06	1495.1	0.442	692.
800.	8.431	35.243	8.344	27.413	31.902	36.292	0.654	0.8198E-06	1497.6	0.280	791.
900.	8.278	35.224	8.180	27.423	31.916	36.309	0.736	0.8270E-06	1498.6	0.644	890.
1000.	8.006	35.200	7.899	27.447	31.947	36.346	0.818	0.8184E-06	1499.2	0.977	988.
1100.	7.492	35.180	7.378	27.508	32.020	36.431	0.898	0.7674E-06	1498.9	1.526	1087.
1200.	6.689	35.145	6.571	27.592	32.124	36.554	0.972	0.6843E-06	1497.4	1.337	1185.
1300.	5.945	35.107	5.824	27.660	32.210	36.658	1.037	0.6147E-06	1496.1	1.695	1284.
1400.	5.124	35.073	5.001	27.733	32.304	36.772	1.094	0.5343E-05	1494.4	1.782	1382.

SHACKLETON 1978/5C : CTD STATION 65

146

SHACKLETON 1978/5C : CTD STATION 65
========== ======== === ======== ==

P-DB	T-DEGC	S-O/00	POTEMP	SIGMA-0	SIGMA-1	SIGMA-2	DYN.HT.	SVANOM	SNDV-M/S	BVFR-C/H	DEPTH
10.	12.380	35.218	12.379	26.686	31.090	35.397	0.014	0.1349E-05	1498.5	-9.990	10.
20.	12.272	35.225	12.270	26.712	31.119	35.427	0.027	0.1326E-05	1498.3	2.894	20.
30.	11.569	35.219	11.565	26.842	31.263	35.586	0.040	0.1205E-05	1496.1	6.427	30.
40.	10.429	35.296	10.424	27.110	31.553	35.898	0.050	0.9537E-06	1492.4	9.201	40.
50.	10.029	35.320	10.023	27.198	31.650	36.004	0.059	0.8718E-06	1491.1	5.304	50.
75.	9.530	35.308	9.522	27.274	31.737	36.101	0.080	0.8049E-06	1489.7	3.114	74.
100.	9.375	35.314	9.363	27.305	31.772	36.139	0.100	0.7812E-06	1489.6	1.983	99.
125.	9.305	35.315	9.291	27.318	31.786	36.154	0.120	0.7747E-06	1489.8	1.274	124.
150.	9.267	35.316	9.250	27.325	31.794	36.164	0.139	0.7730E-06	1490.0	0.982	149.
175.	9.227	35.315	9.208	27.332	31.801	36.172	0.158	0.7725E-06	1490.3	0.900	173.
200.	9.084	35.304	9.062	27.347	31.820	36.194	0.177	0.7629E-06	1490.2	1.423	198.
250.	8.997	35.301	8.970	27.359	31.834	36.210	0.215	0.7620E-06	1490.7	0.888	248.
300.	8.931	35.292	8.898	27.363	31.840	36.217	0.254	0.7683E-06	1491.2	0.550	297.
350.	8.810	35.277	8.772	27.372	31.851	36.231	0.292	0.7703E-06	1491.6	0.765	346.
400.	8.703	35.266	8.660	27.381	31.864	36.246	0.331	0.7707E-06	1492.0	0.822	396.
450.	8.634	35.259	8.586	27.388	31.872	36.256	0.369	0.7745E-06	1492.6	0.665	445.
500.	8.569	35.253	8.516	27.394	31.880	36.265	0.408	0.7784E-06	1493.1	0.661	495.
600.	8.502	35.247	8.437	27.402	31.889	36.276	0.487	0.7907E-06	1494.5	0.526	594.
700.	8.476	35.248	8.401	27.407	31.896	36.284	0.566	0.8051E-06	1496.1	0.446	692.
800.	8.354	35.230	8.268	27.414	31.905	36.296	0.648	0.8171E-06	1497.3	0.524	791.
900.	8.078	35.203	7.982	27.436	31.934	36.332	0.729	0.8101E-06	1497.9	0.945	890.
1000.	7.715	35.195	7.611	27.486	31.992	36.398	0.809	0.7751E-06	1498.1	1.347	988.
1100.	7.129	35.167	7.018	27.548	32.069	36.489	0.884	0.7205E-06	1497.5	1.562	1087.
1200.	6.376	35.131	6.261	27.622	32.162	36.599	0.952	0.6475E-06	1496.2	1.736	1185.
1300.	5.627	35.093	5.508	27.688	32.246	36.702	1.013	0.5786E-06	1494.8	1.680	1284.
1400.	5.022	35.050	4.900	27.727	32.301	36.771	1.069	0.5361E-06	1494.0	1.372	1382.
1500.	4.402	35.008	4.277	27.763	32.353	36.839	1.120	0.4926E-06	1493.1	1.368	1481.

SHACKLETON 1978/5C : CTD STATION 67

148