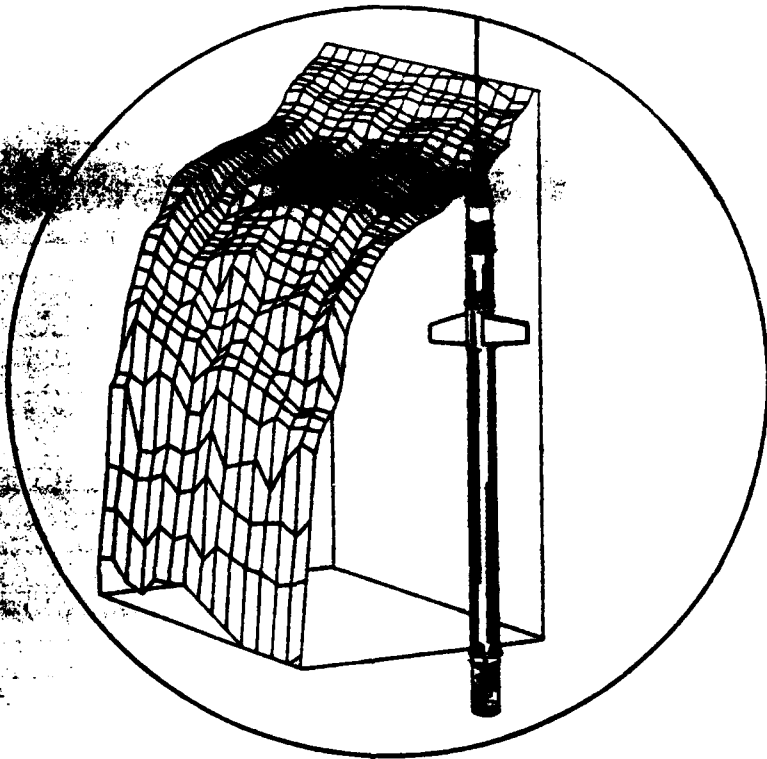


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**The Rapid Sampling
Vertical Profiler
MILDIX
OCTOBER-NOVEMBER 1983**

by

**Priscilla A. Newberger
Hervé H. Dannelongue
Douglas R. Caldwell**

College of Oceanography
Oregon State University

Reference 84-4
March 1984
DATA REPORT 107

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CRUISE REPORT

The MILDEX cruise of October - November 1983 was a multiship (including FLIP) experiment involving intensive sampling of the ocean by a variety of instruments. The RV Wecoma operated by Oregon State University College of Oceanography sailed from Newport, Oregon on October 21 and returned to San Diego, California on November 16.

A principle part of the Wecoma's plan was to have been repeated sampling by the Rapid Sampling Vertical Profiler (RSVP) developed at OSU (Newberger et al, 1984). This instrument is deployed from a ship moving at up to 6 knots and measures the conductivity and temperature of the upper 200 meters. These profiles can be repeated every 6 to 8 minutes. When used in conjunction with an acoustic doppler log (Lloyd Regier, SIO) and thermistor chain (Clayton Paulson, OSU), these data provide a detailed picture of the upper ocean.

The RSVP unit and associated on board electronics and recording instruments functioned well throughout the cruise. The cables used to retrieve the instrument and which contain the data links between the instrument and the ship did not function as well as expected from previous experience. These lines lasted an average of only 25 deployments instead of the more than 100 expected. Since the lines were used for the RSVP and the WAZP (Tom Dillon, OSU) and since data under a variety of sampling conditions were required, it was necessary to limit the number of RSVP profiles attempted. Thus although the quality of data collected by the RSVP is excellent, the quantity is far below our expectations.

A modified RSVP, the FAST Microstructure Profiler (FAMP), was used for the first time on this cruise. This instrument consists of RSVP electronics embedded in epoxy to provide protection from the pressure found at depths greater than 200 meters. The unit functioned well on several profiles to 1000 meters and two series of profiles to 400 meters were obtained. Again deployment of this instrument was limited by the short useful life time of the cables.

Figures 1 through 5 summarize the navigation information (from satellite) and weather (from the bridge log). The remainder of the report consists of plots of the data recorded by the FAMP and RSVP. There are two data presentations used. One comprises three plots each with five profiles, the first plot temperature, the second salinity and the last sigma-t. The other is temperature, salinity and sigma-t for one deployment of the five on an expanded scale. It is hoped that this presentation will show the changes in each variable and the relationship between features seen in the various types of measurement.

REFERENCE:

Newberger, P. A., H. H. Dannelongue, D. R. Caldwell, J. L. Cantey and S. D. Wilcox (1984) The rapid sampling vertical profiler (RSVP). Ref. 84-5, College of Oceanography, Oregon State University, Corvallis, OR 97331.

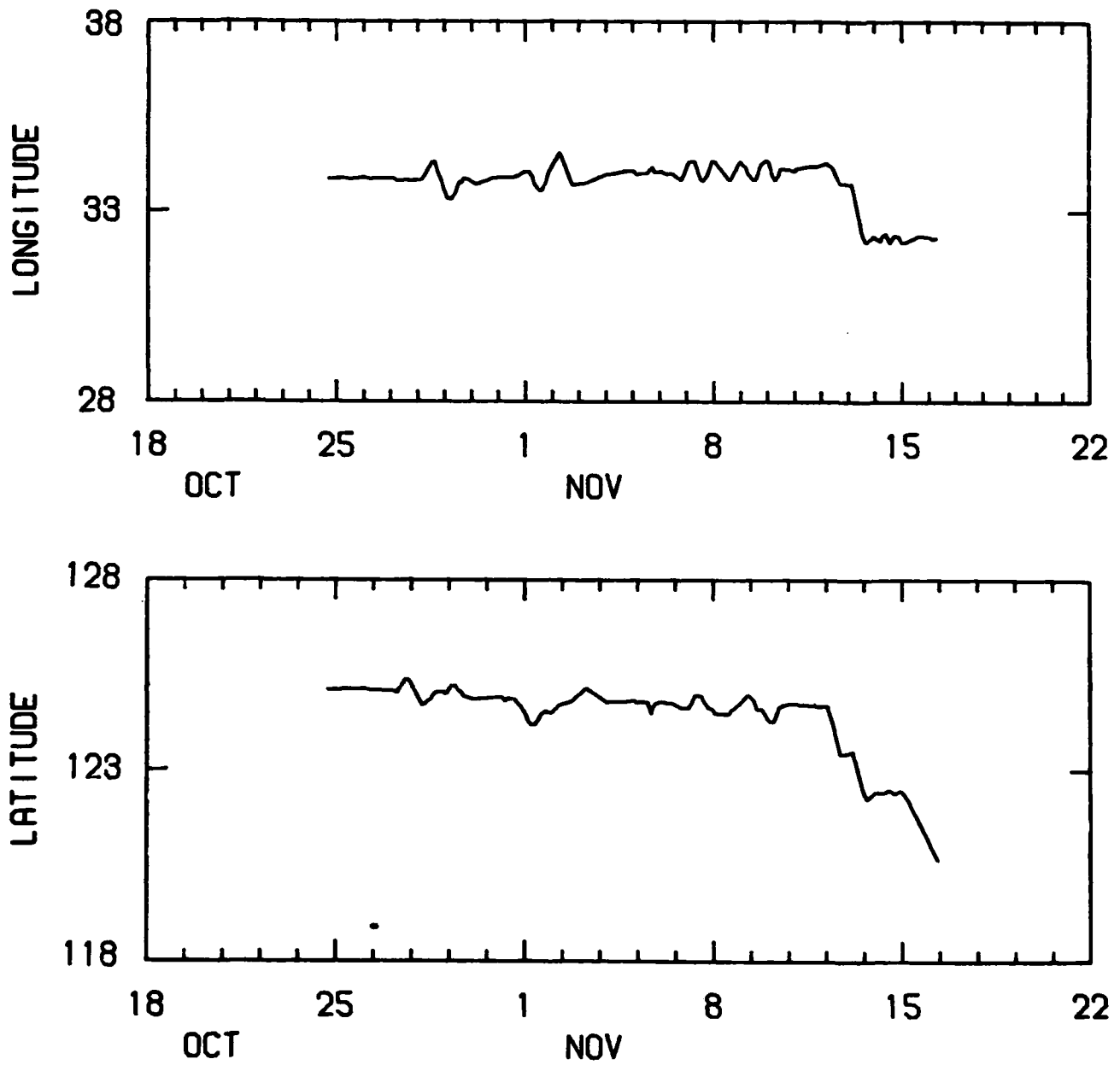


FIGURE 1. SATELLITE NAVIGATION FOR THE RV WECOMA, MILDEX 1983

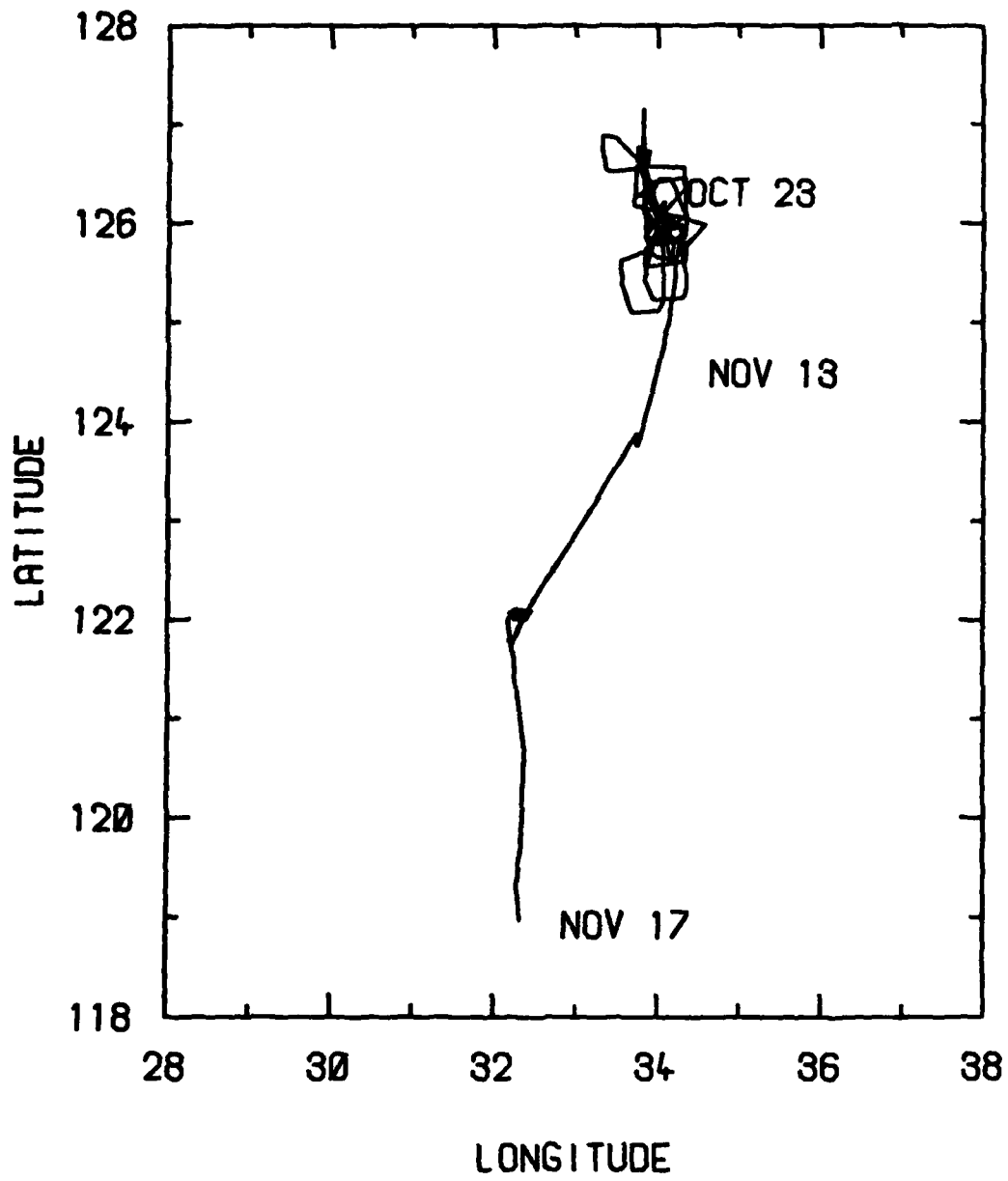


FIGURE 2. CRUISE TRACK RV WECOMA, MILDEX 1983

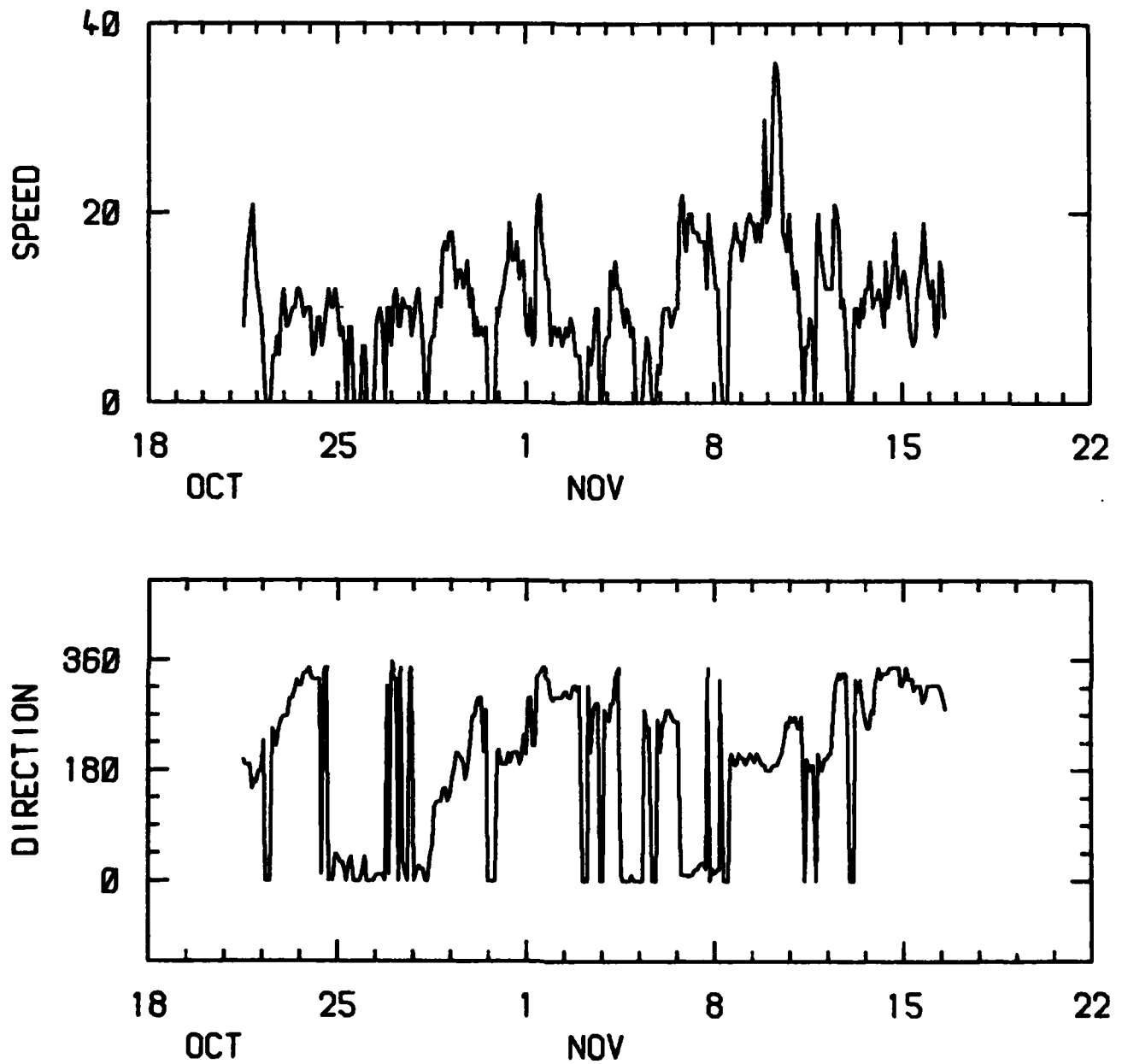


FIGURE 3. WIND SPEED (KNOTS) AND DIRECTION

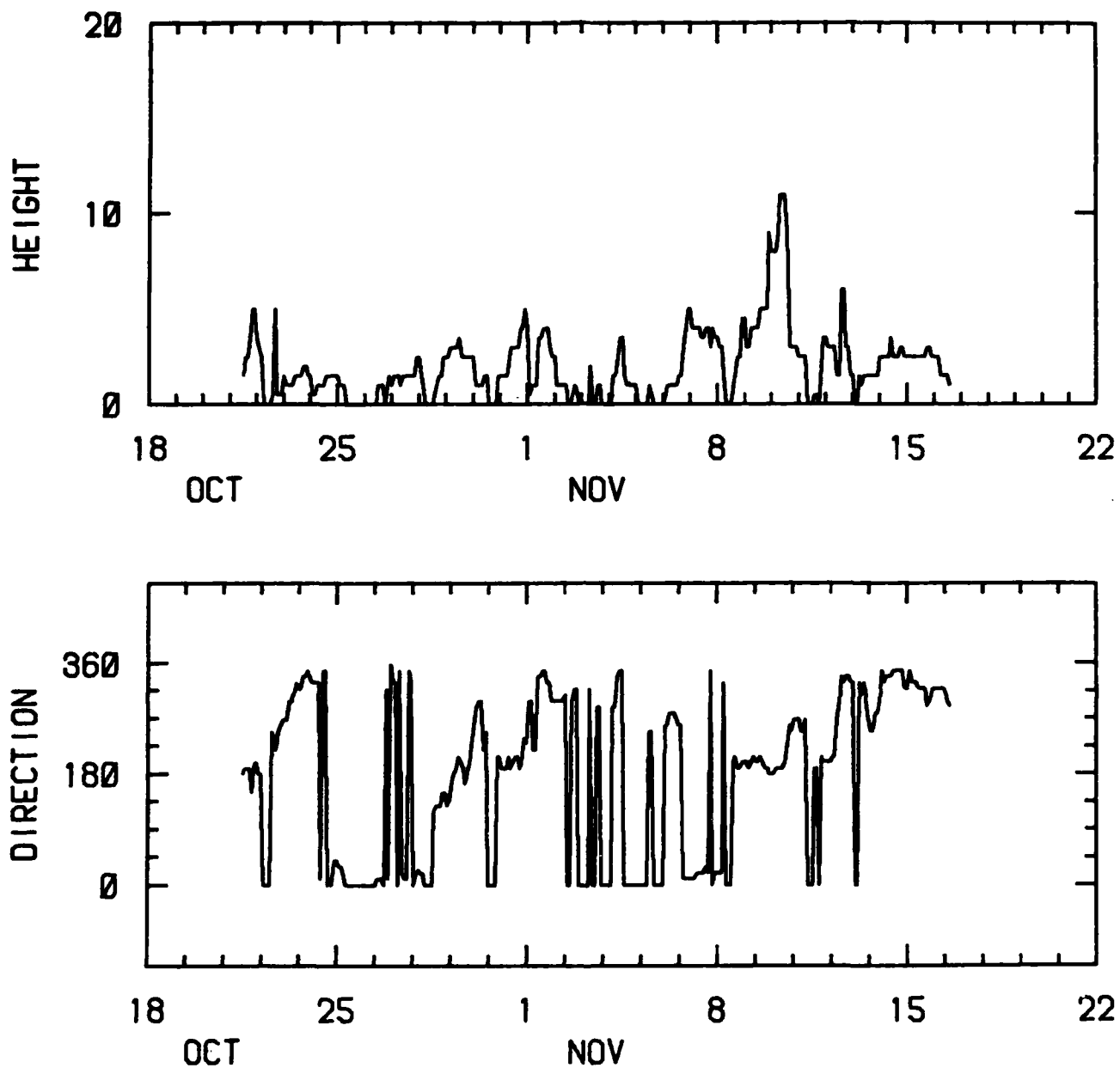


FIGURE 4. SEA HEIGHT (FEET) AND DIRECTION

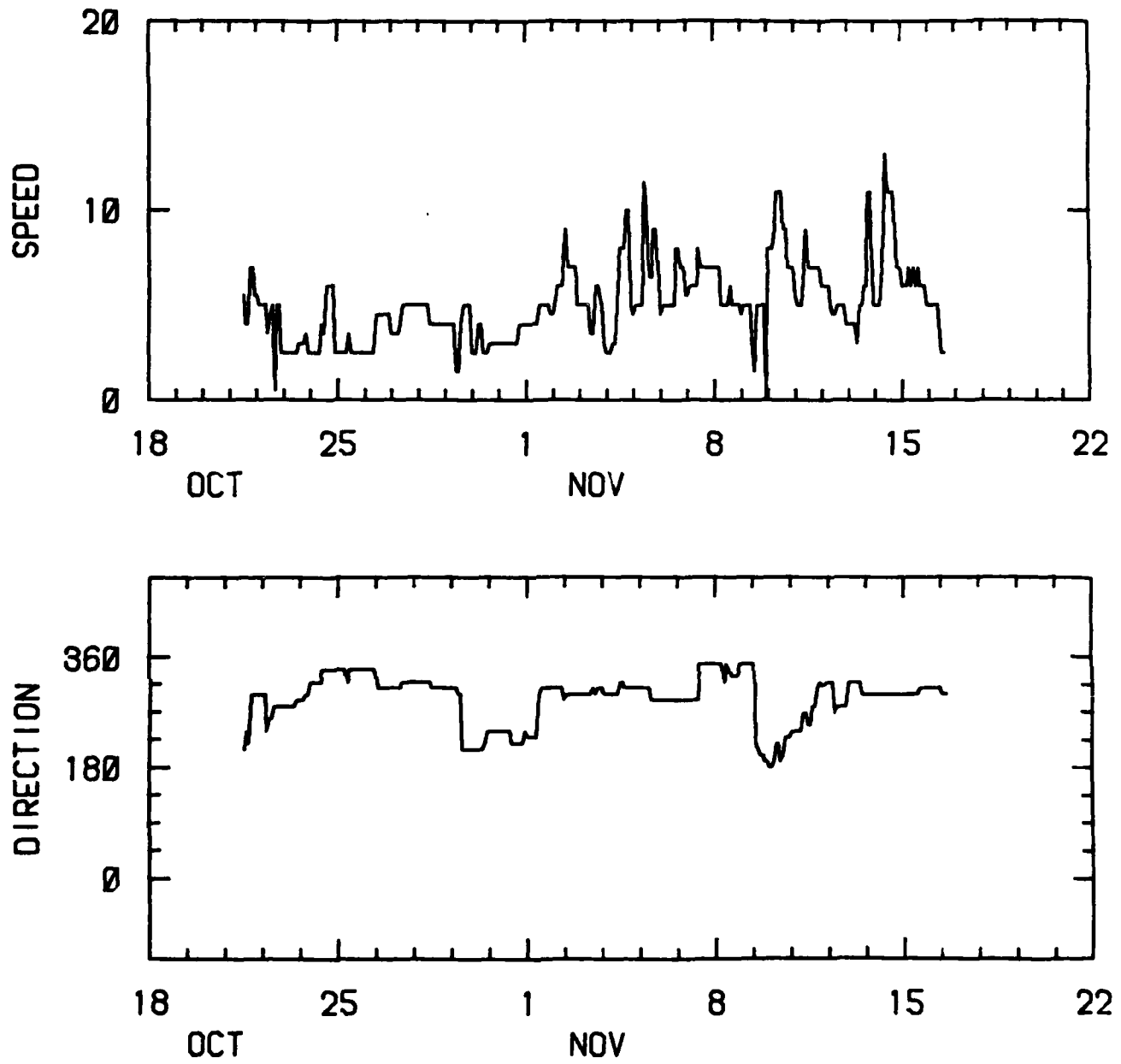
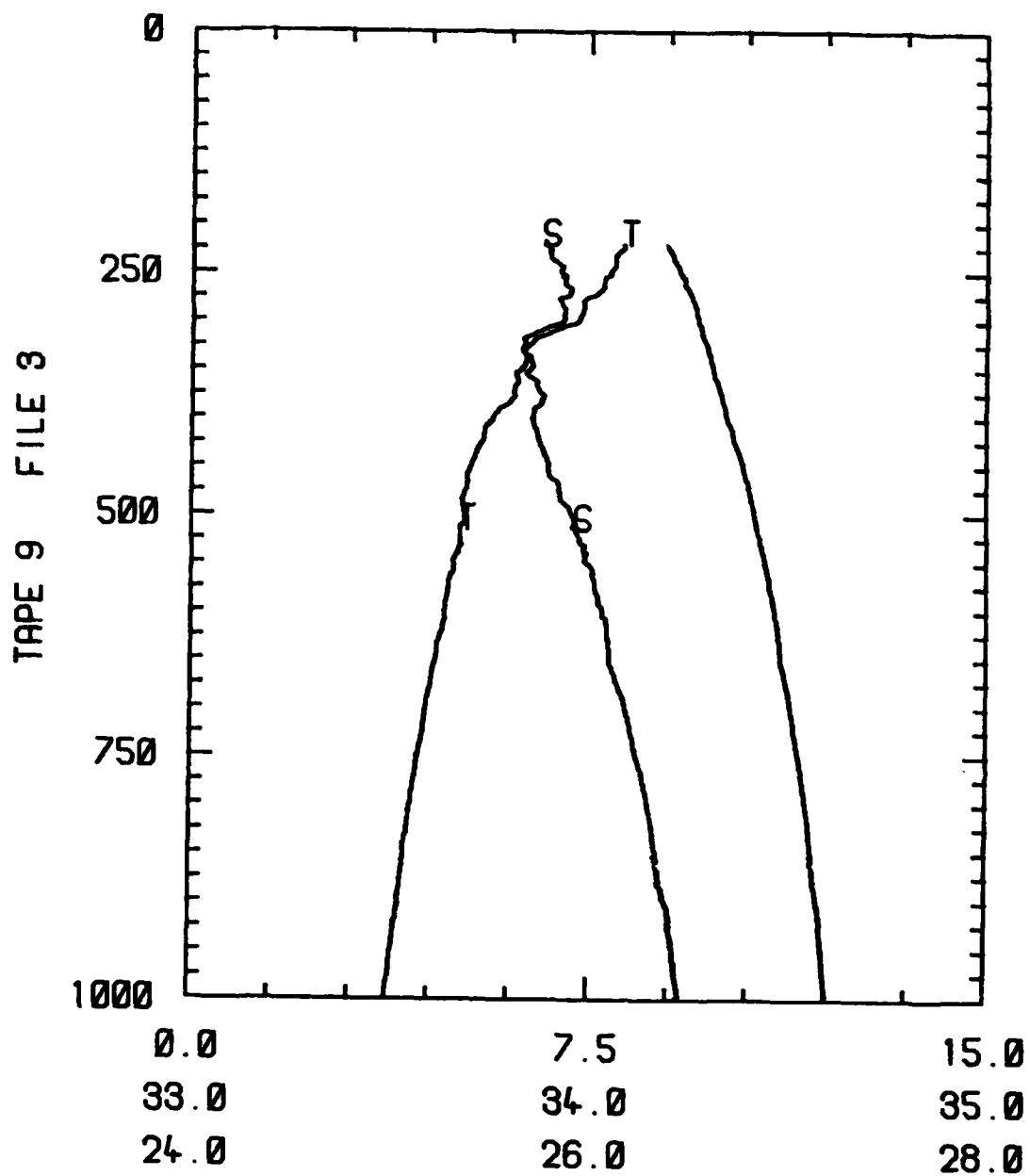


FIGURE 5. SWELL HEIGHT (FEET) AND DIRECTION

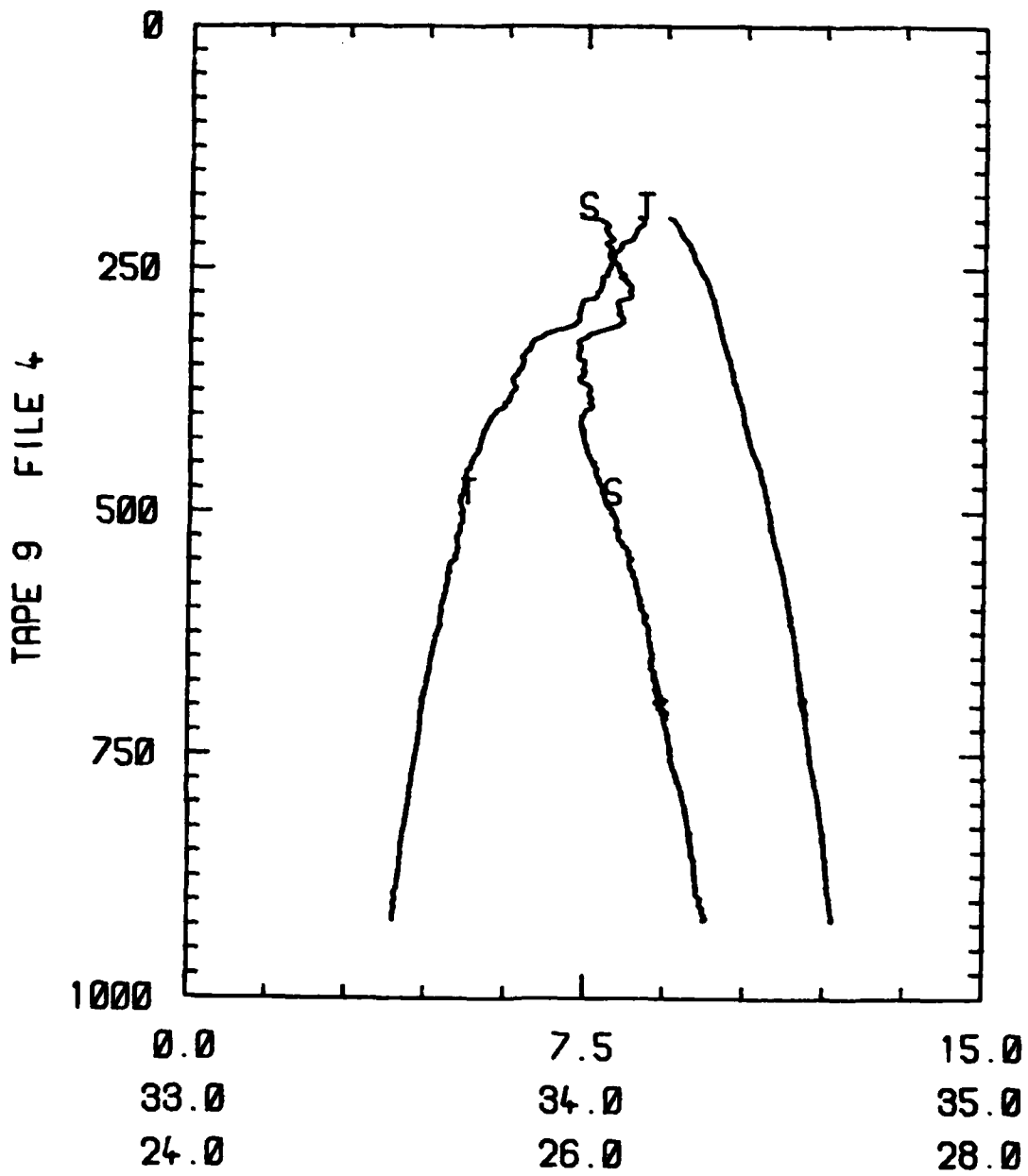
FAMP AND RSVP PROFILES



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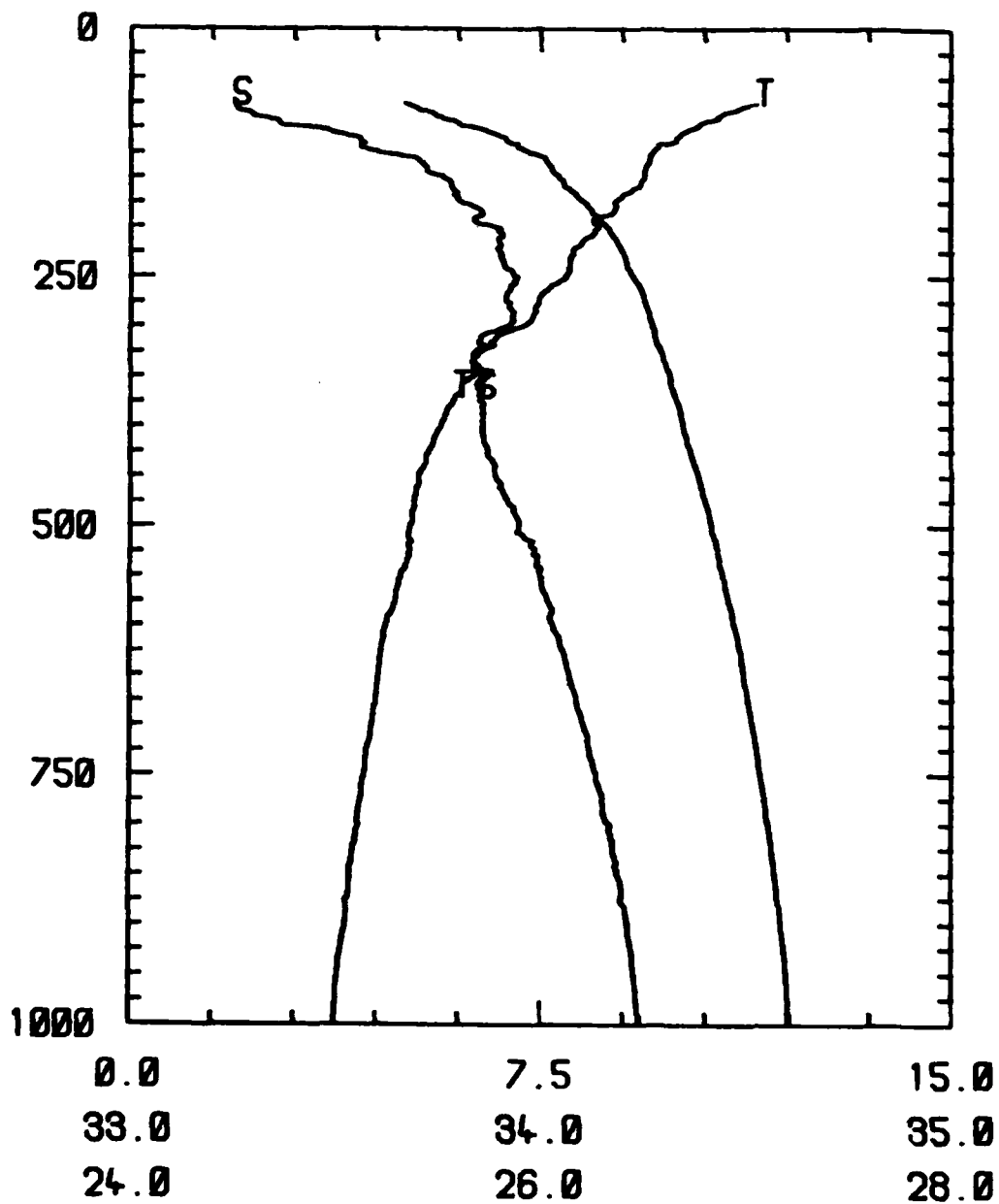


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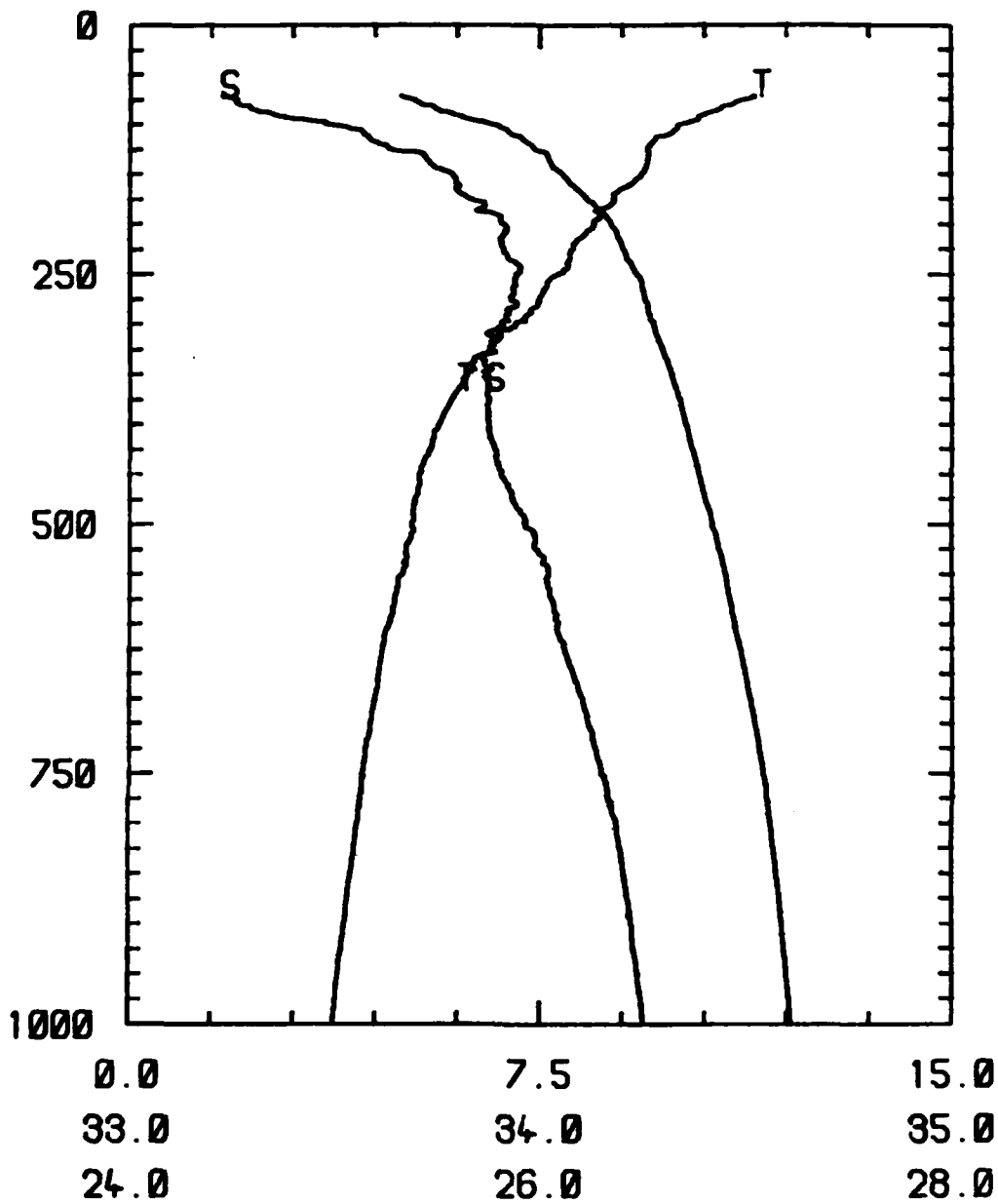


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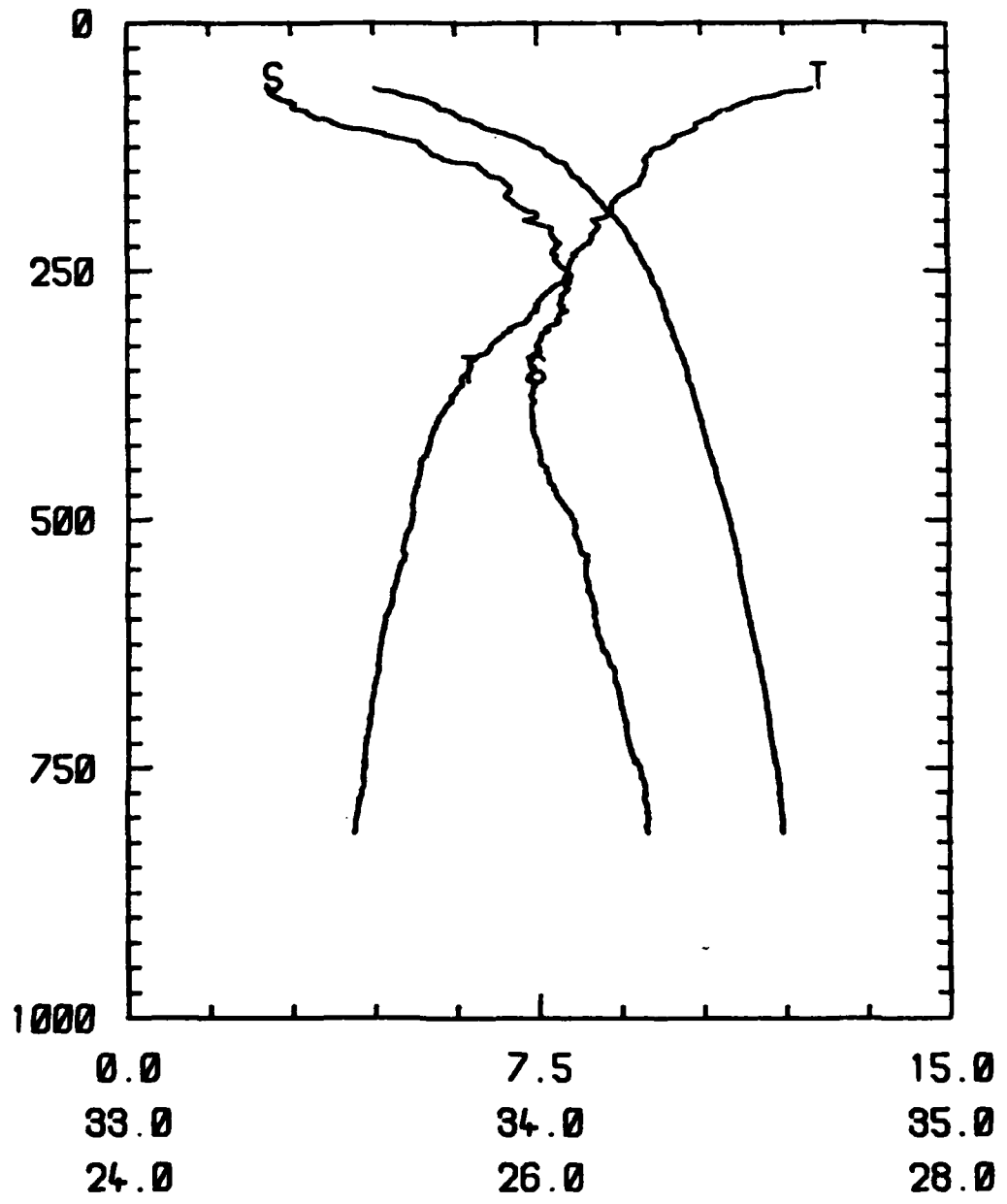


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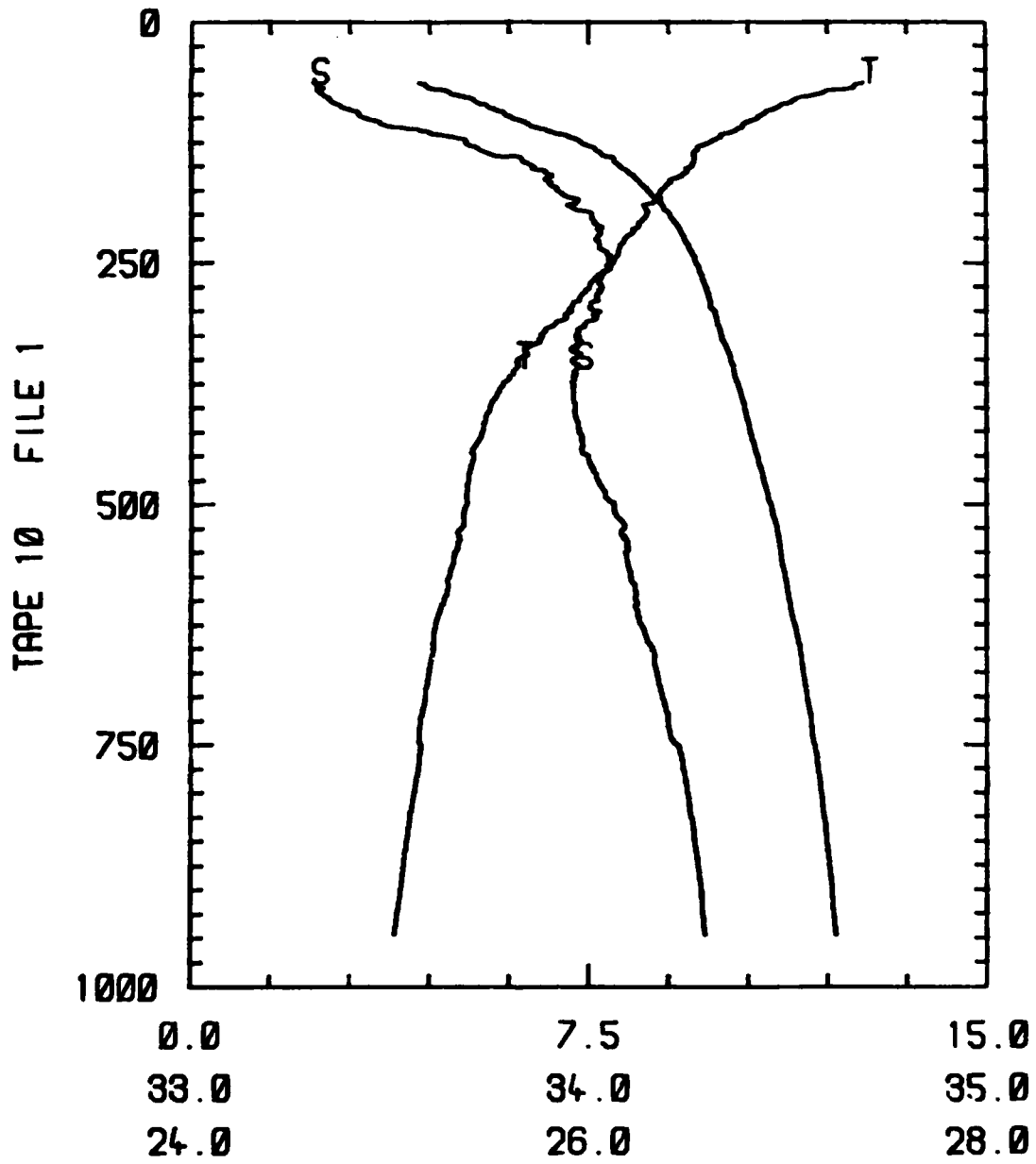
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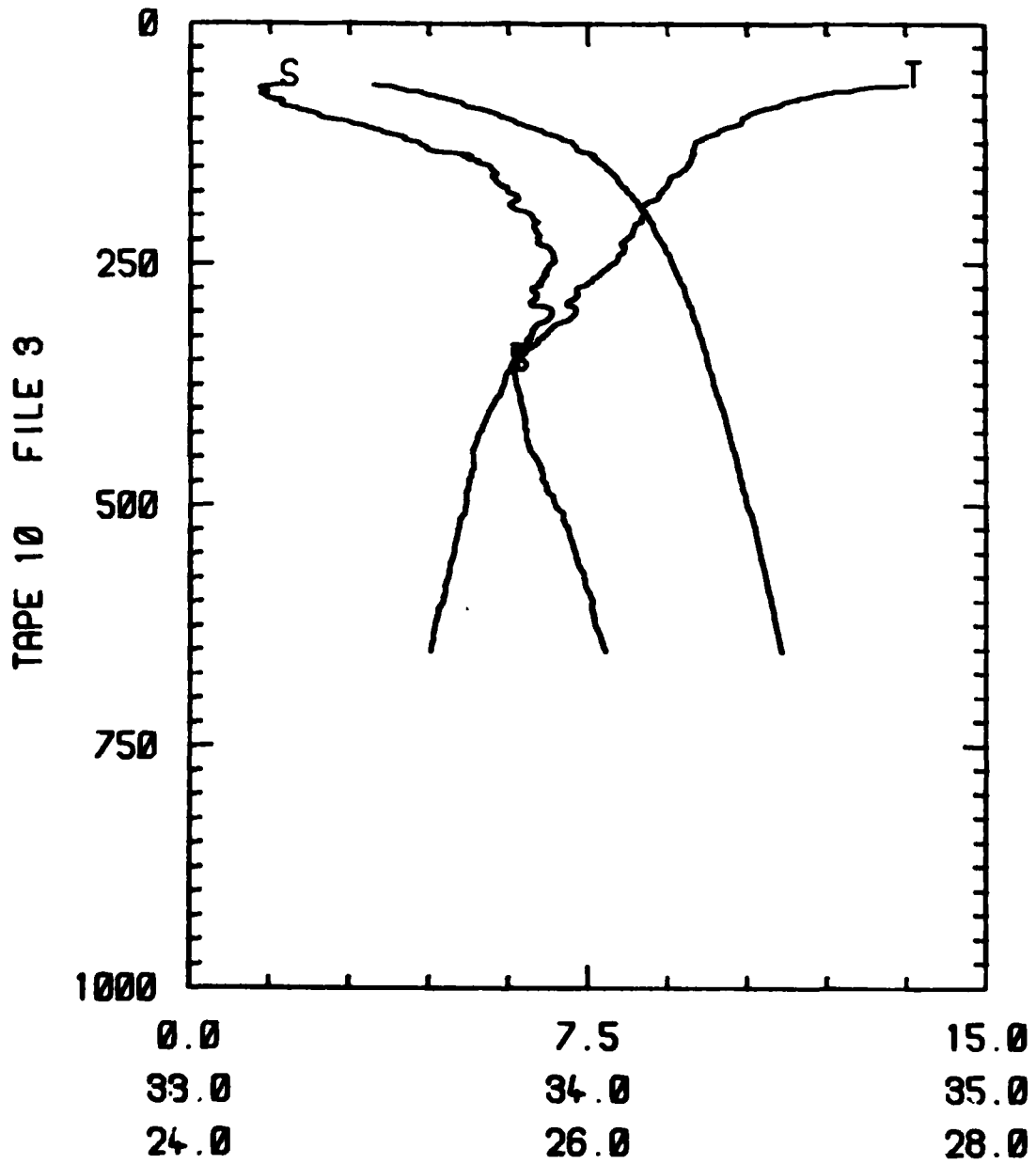
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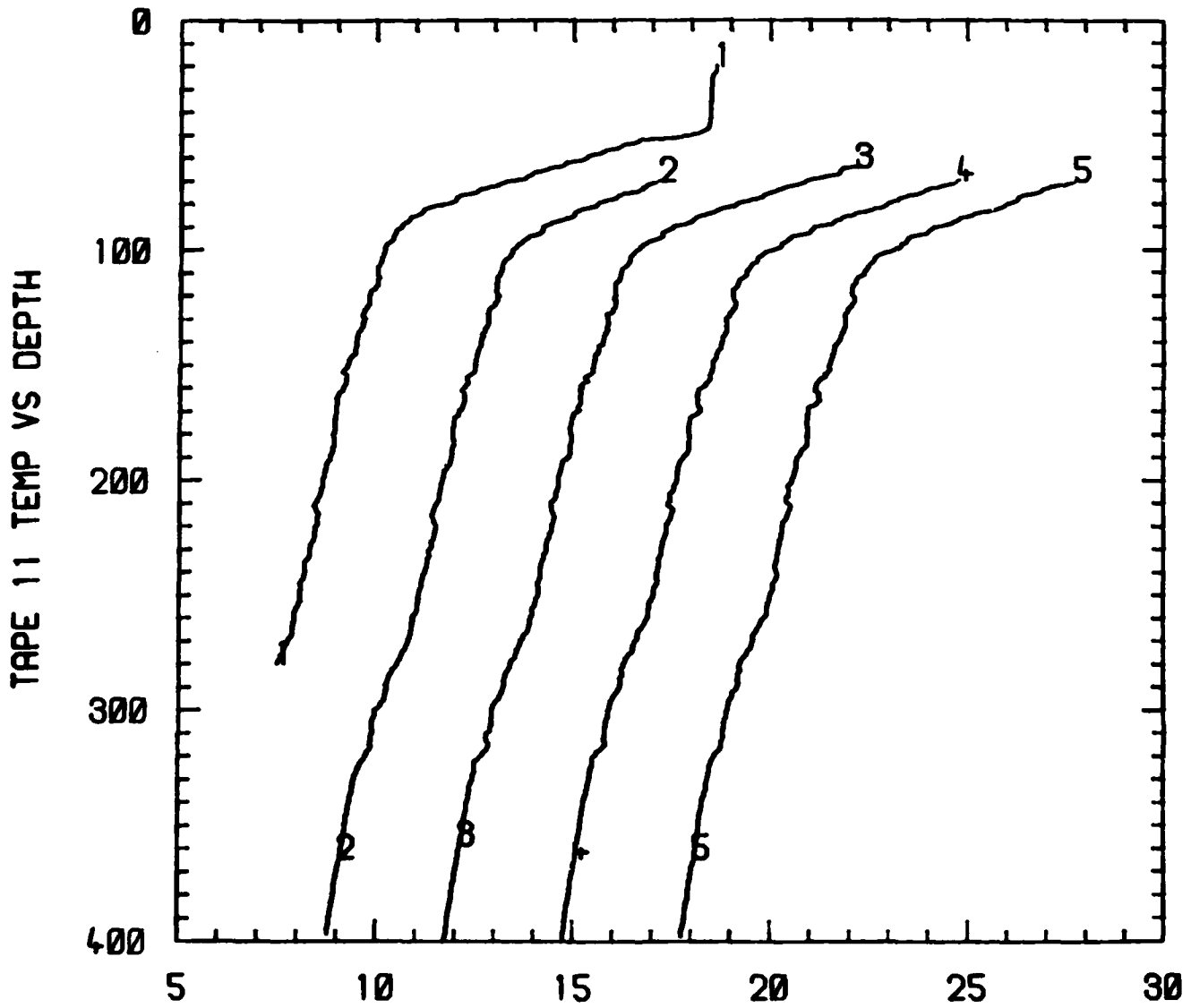
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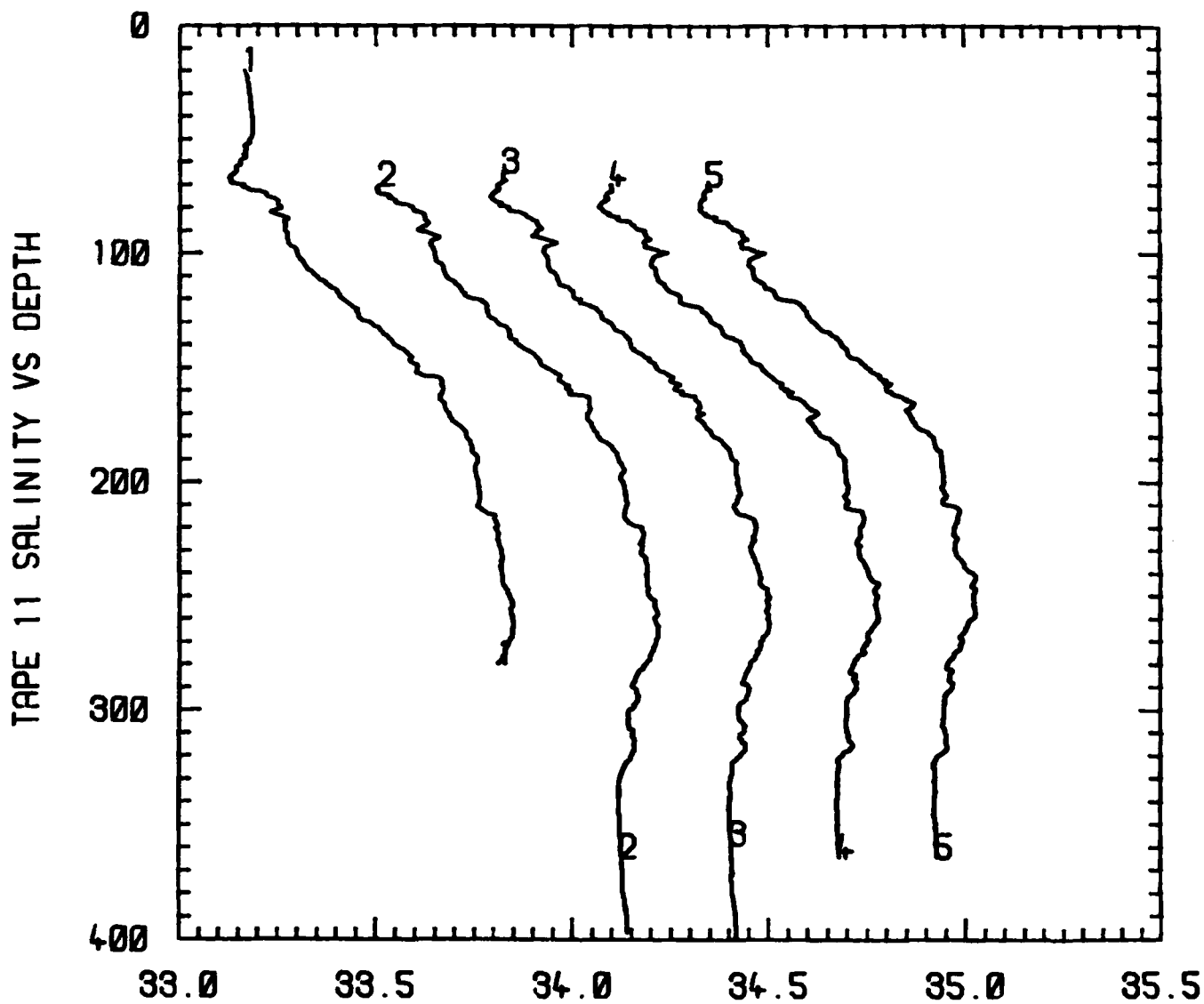


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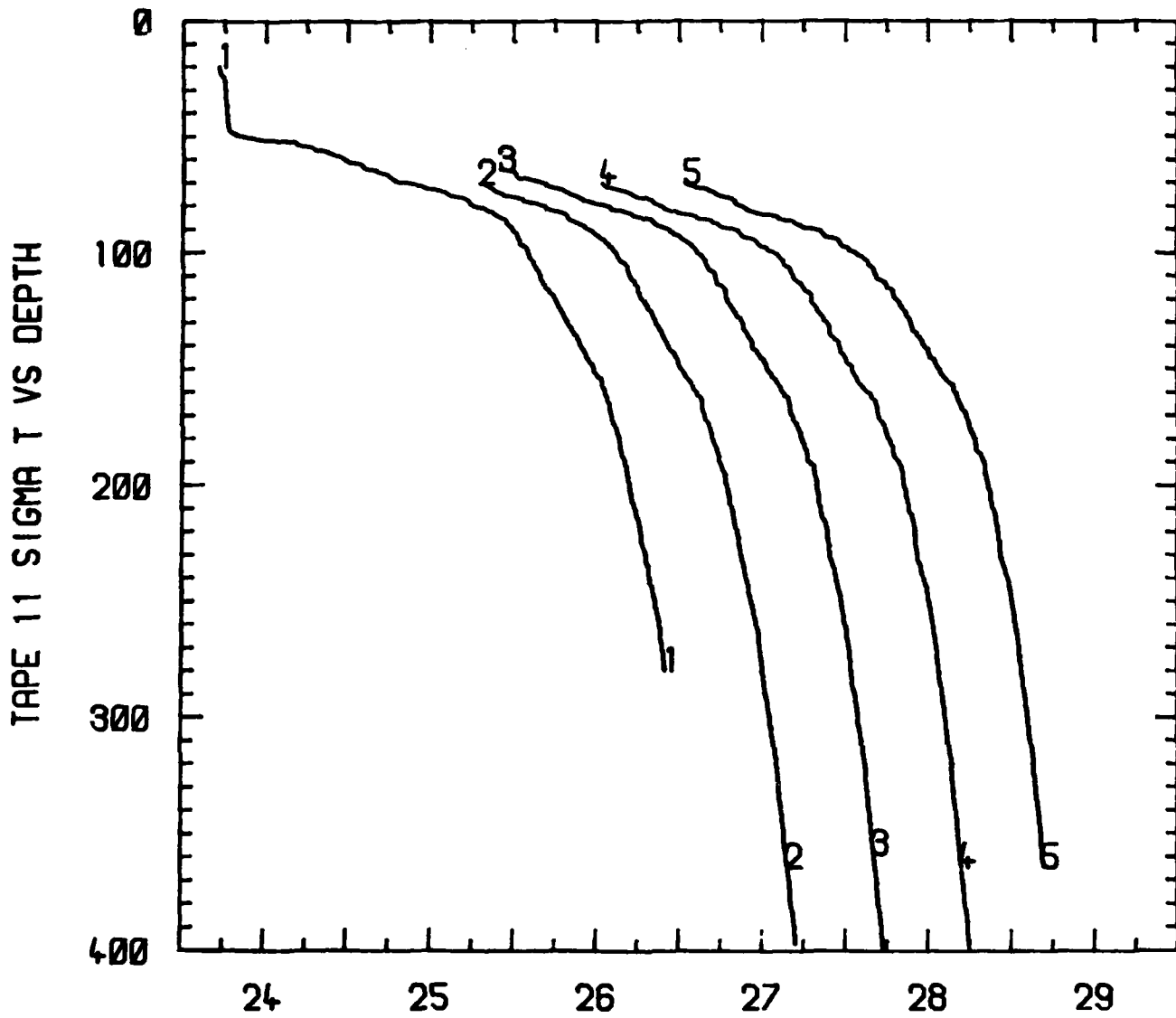


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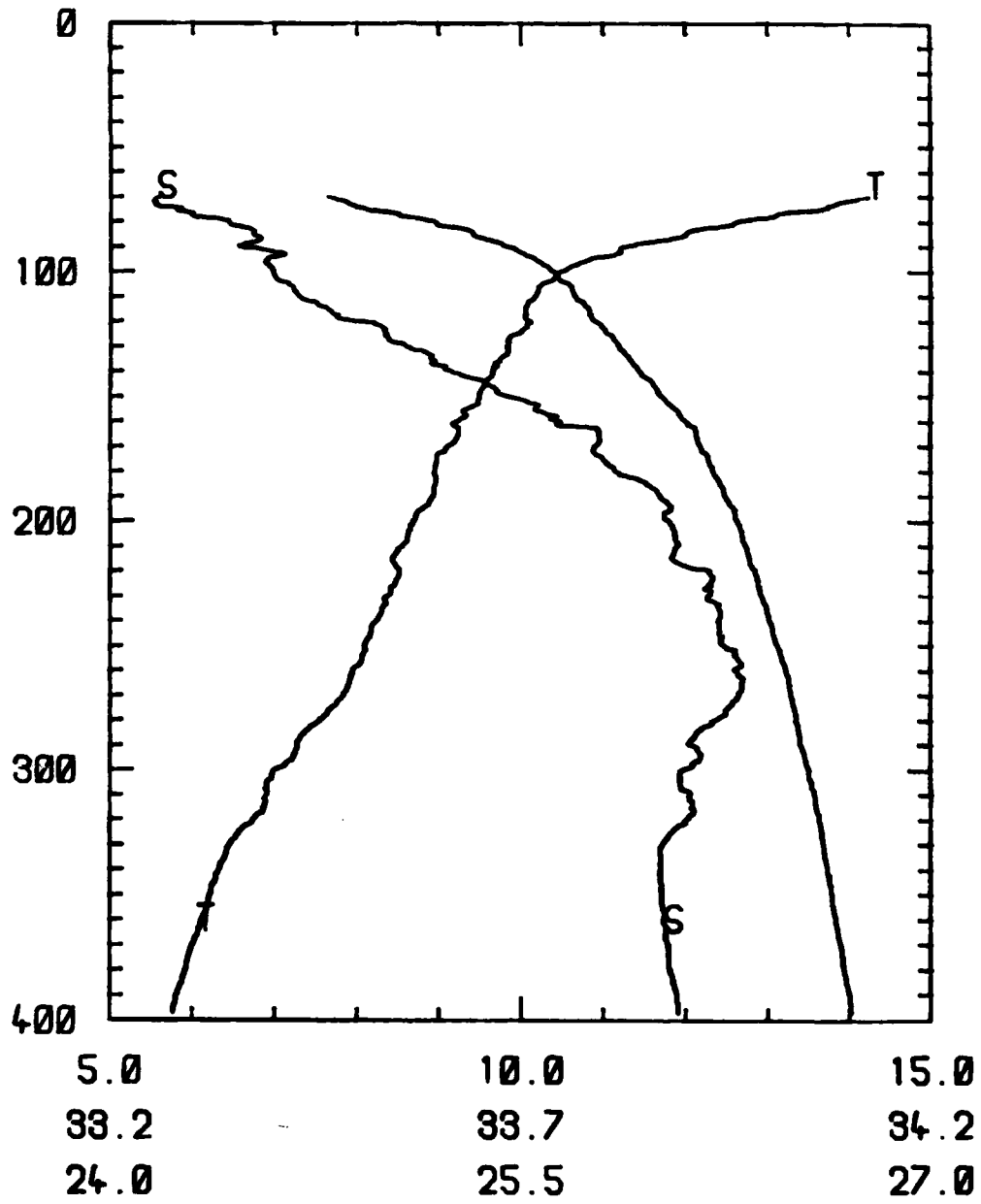
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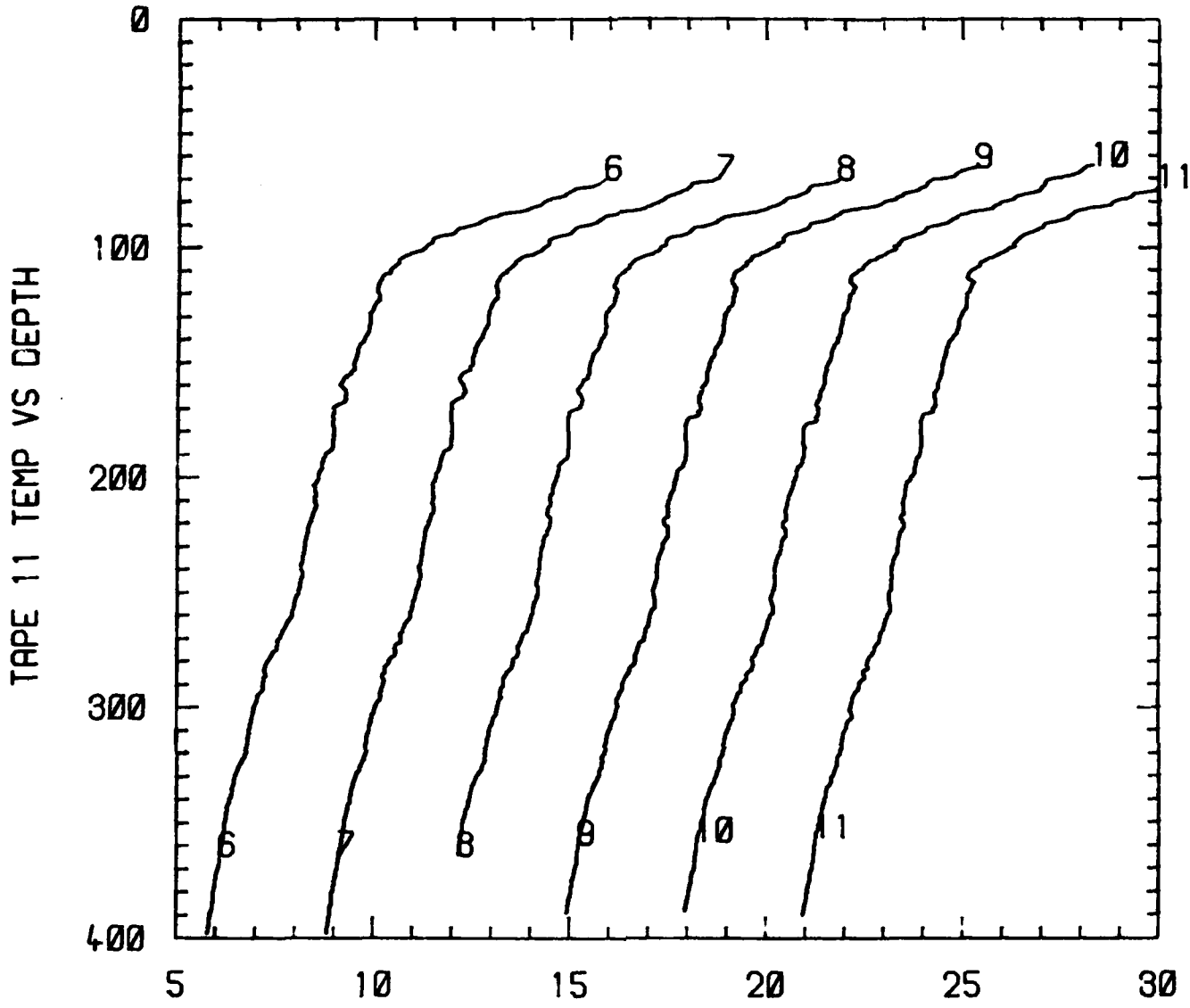
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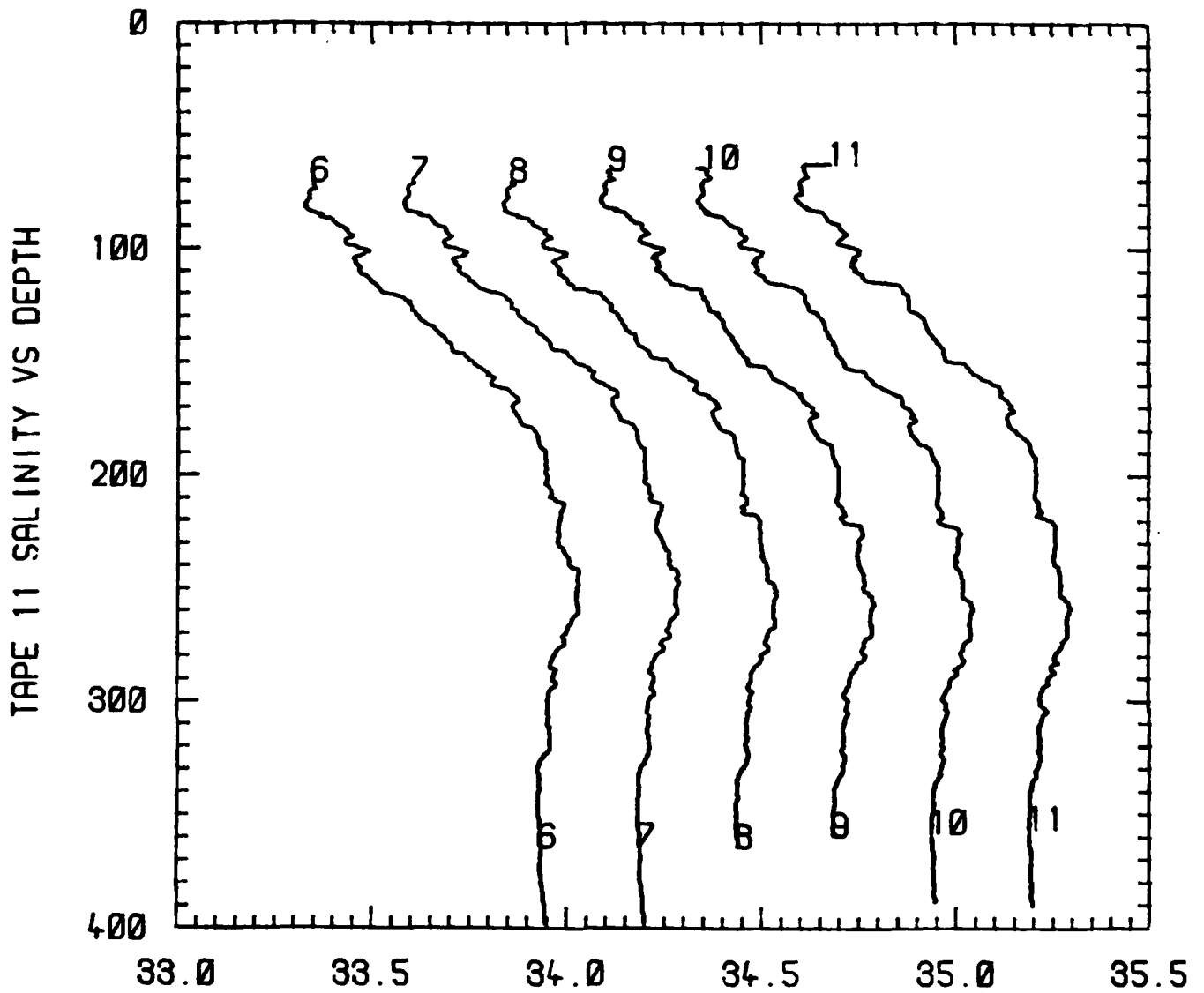


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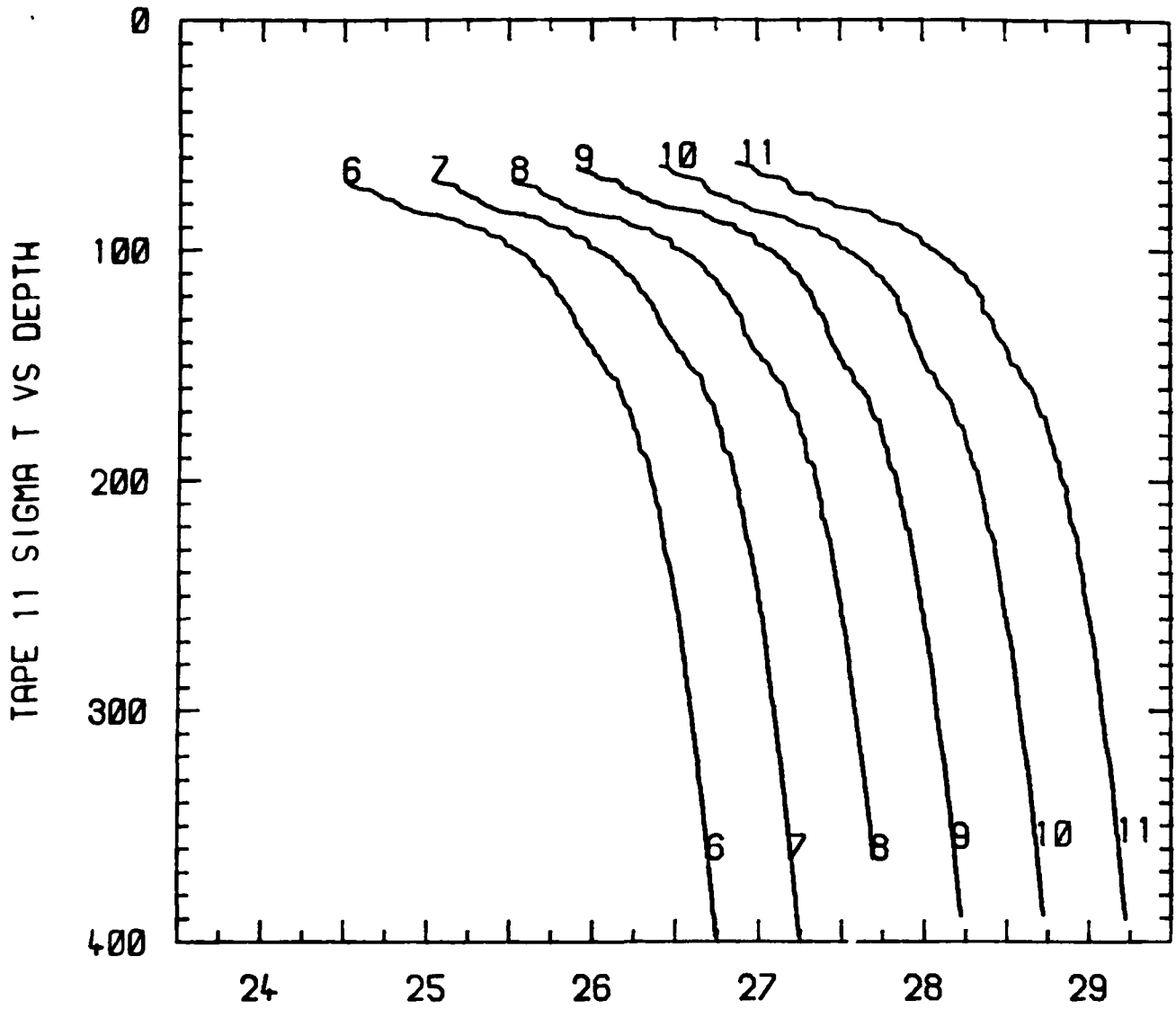


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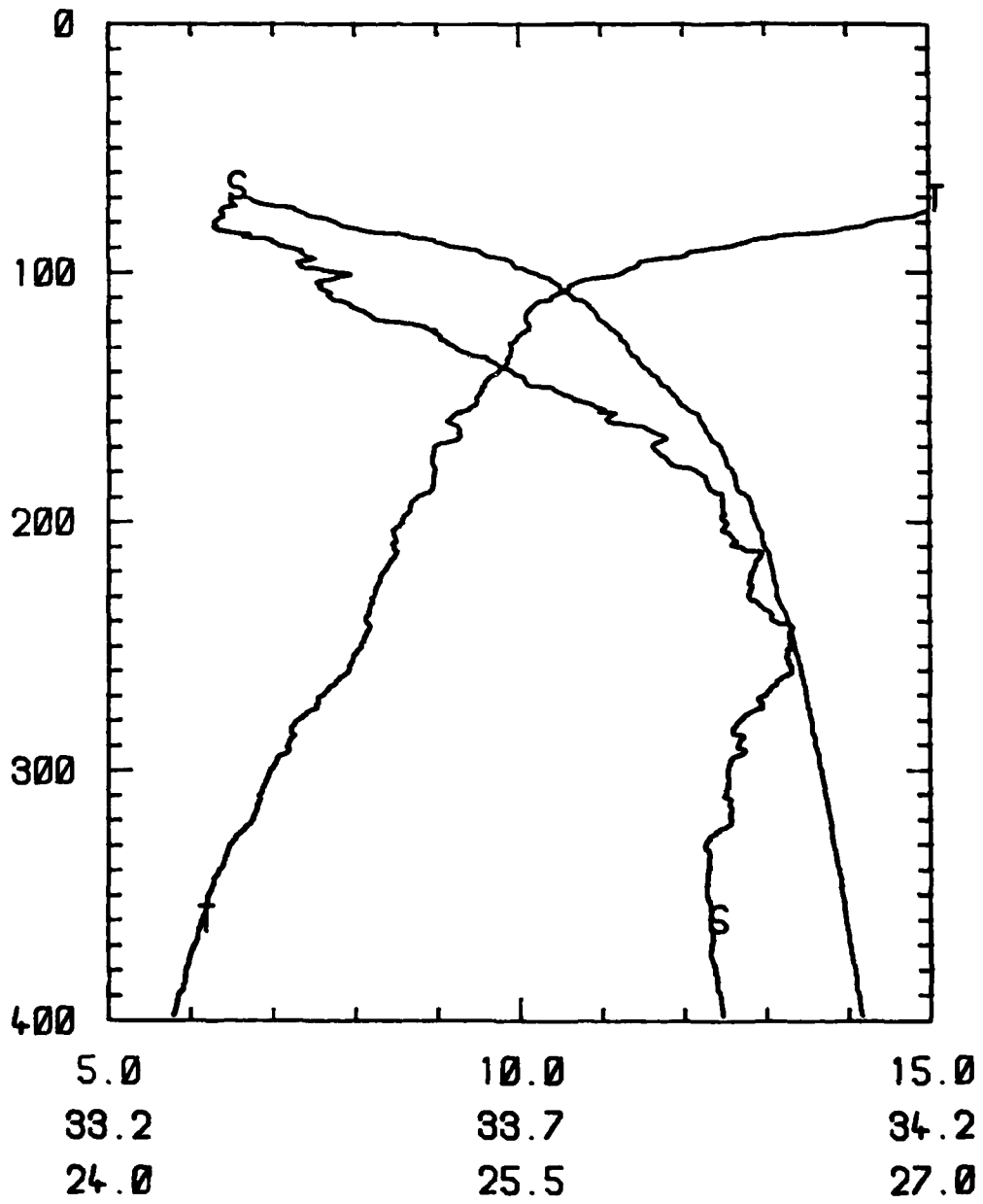
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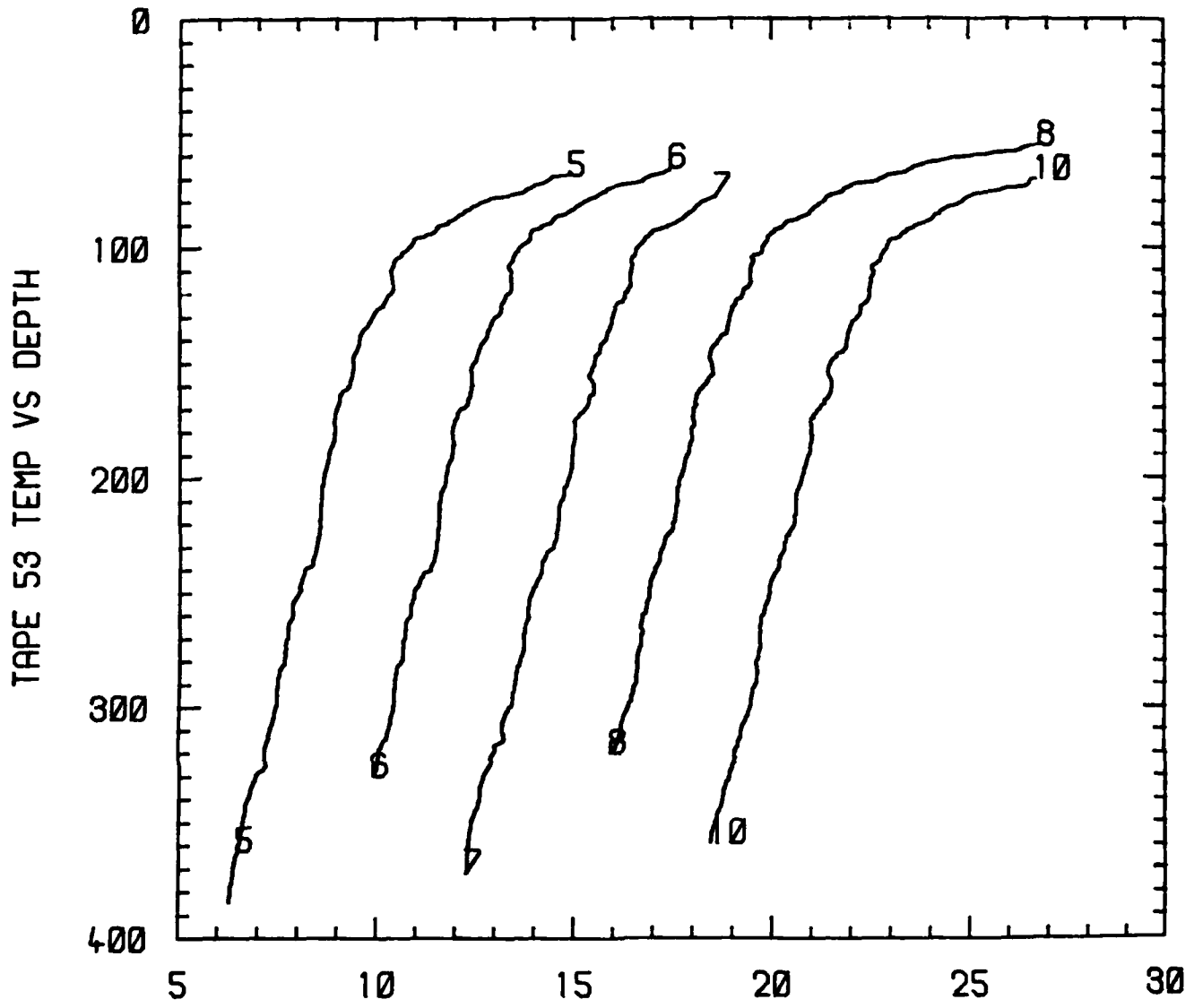
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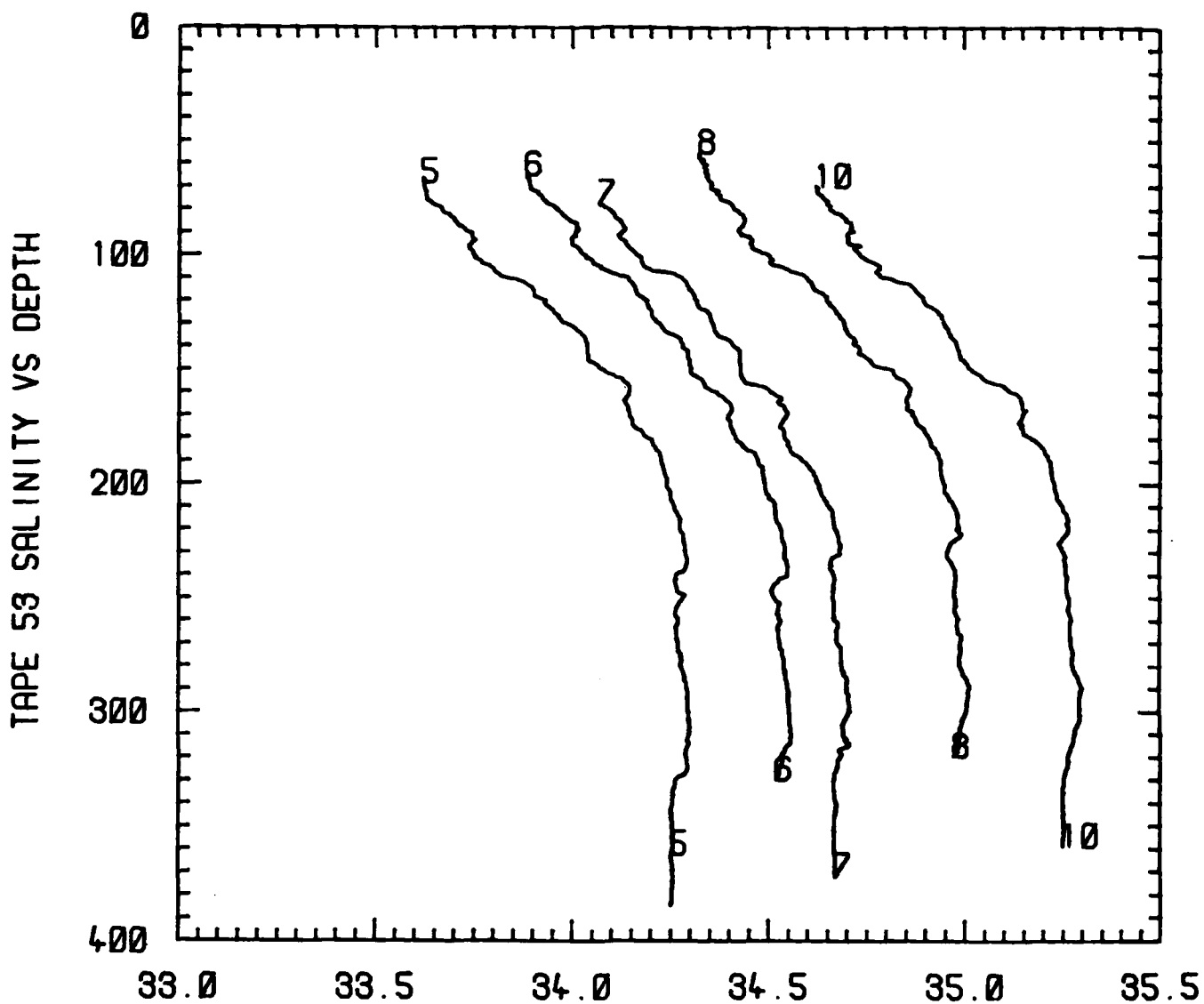


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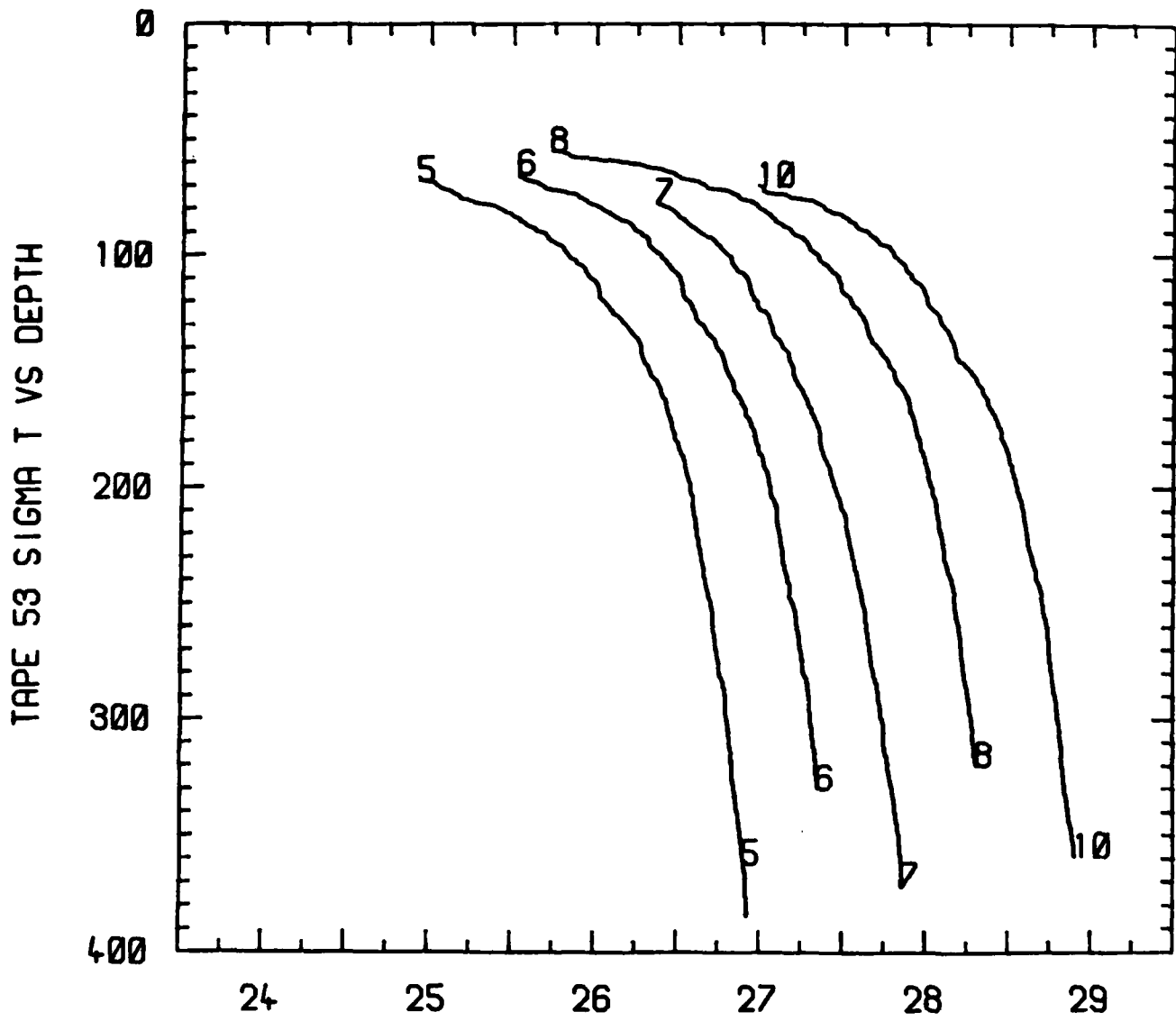


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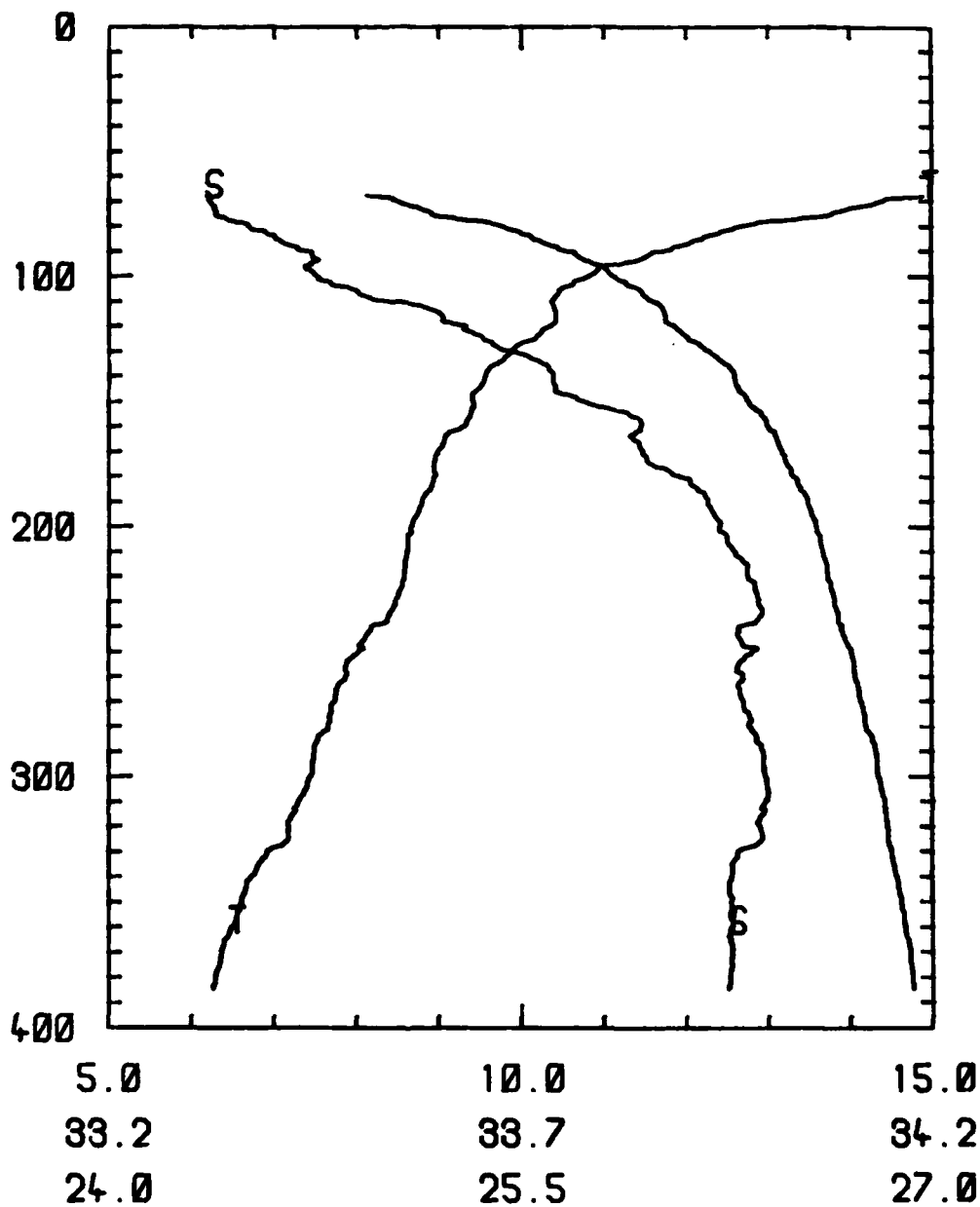
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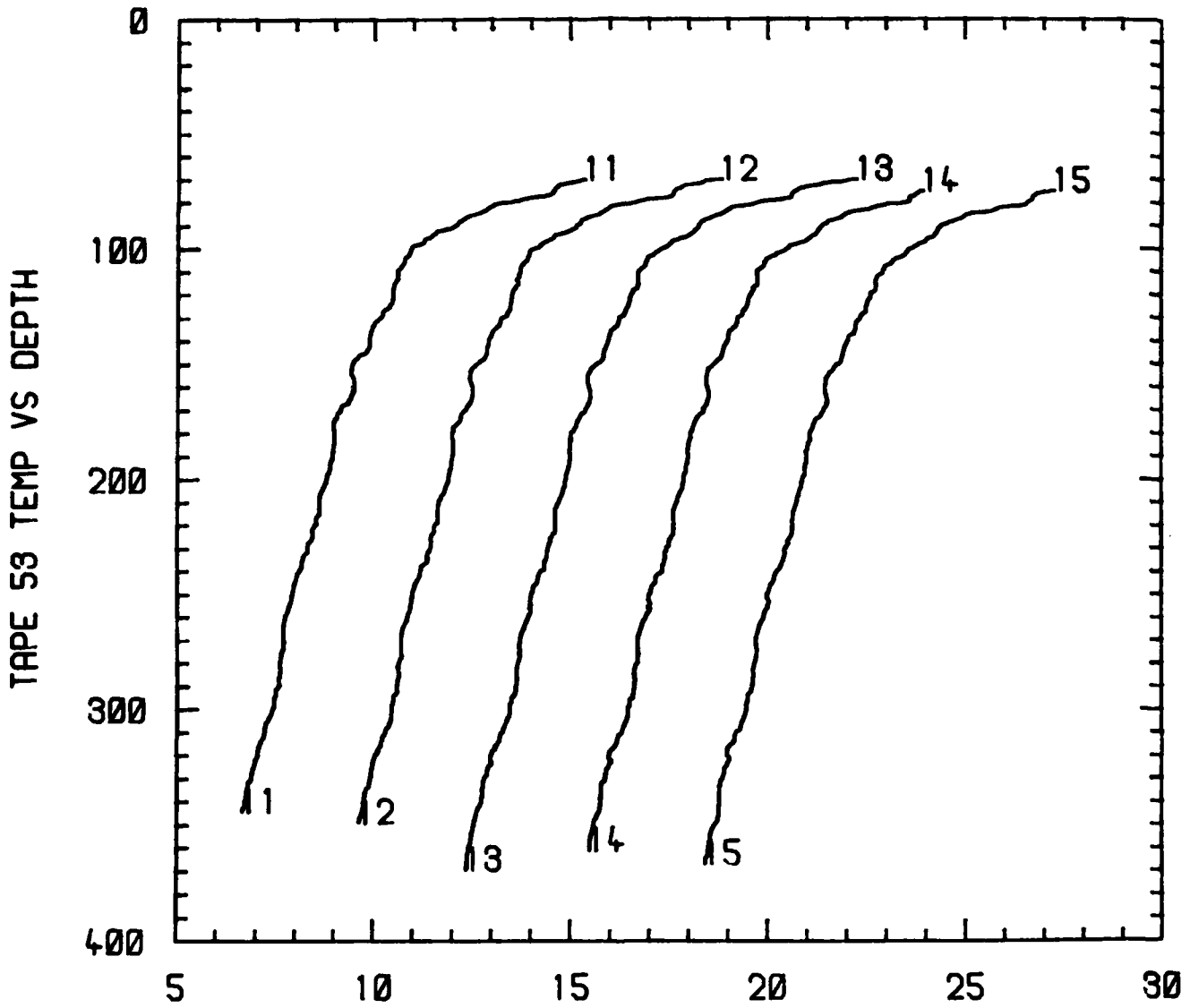
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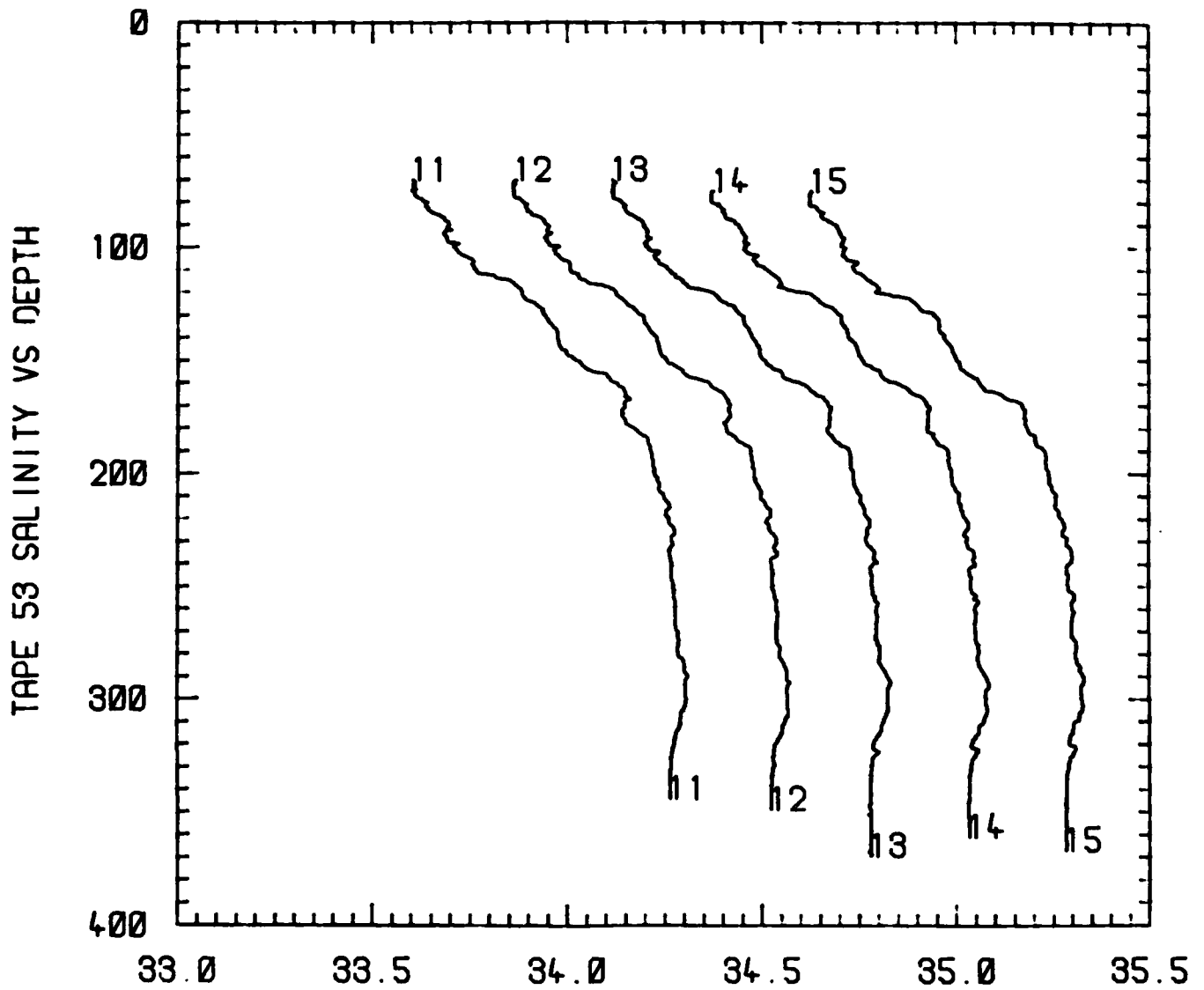


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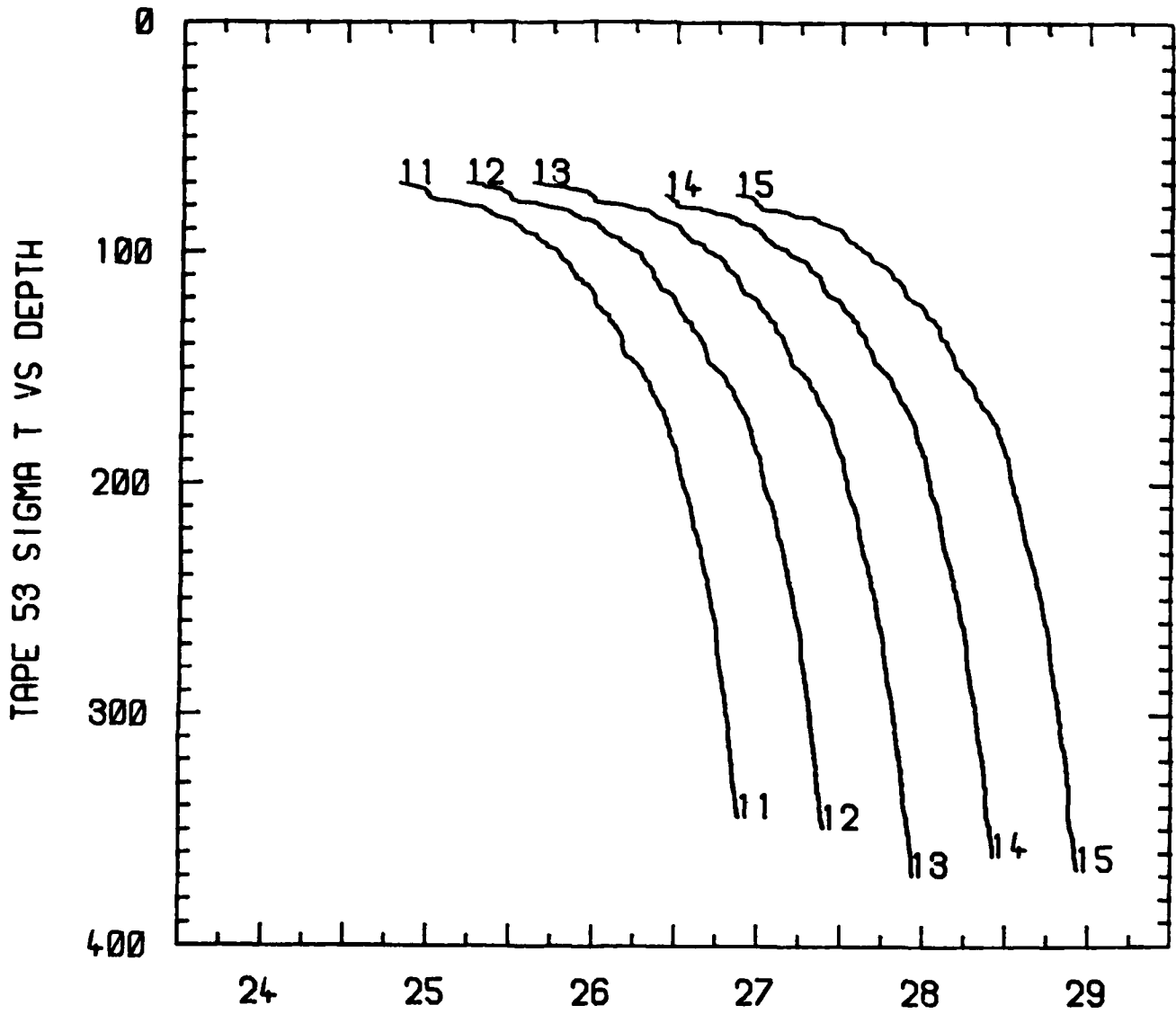


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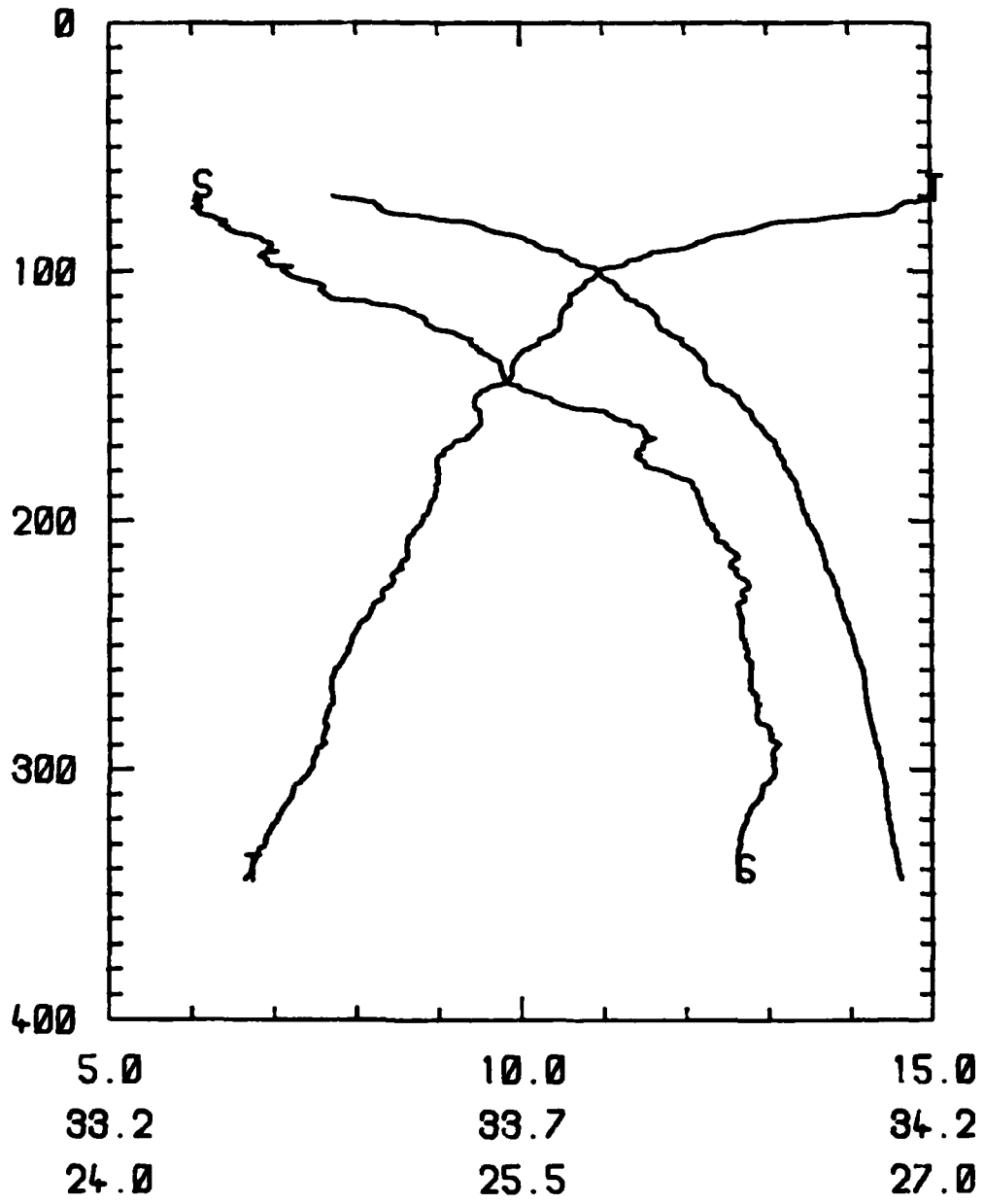
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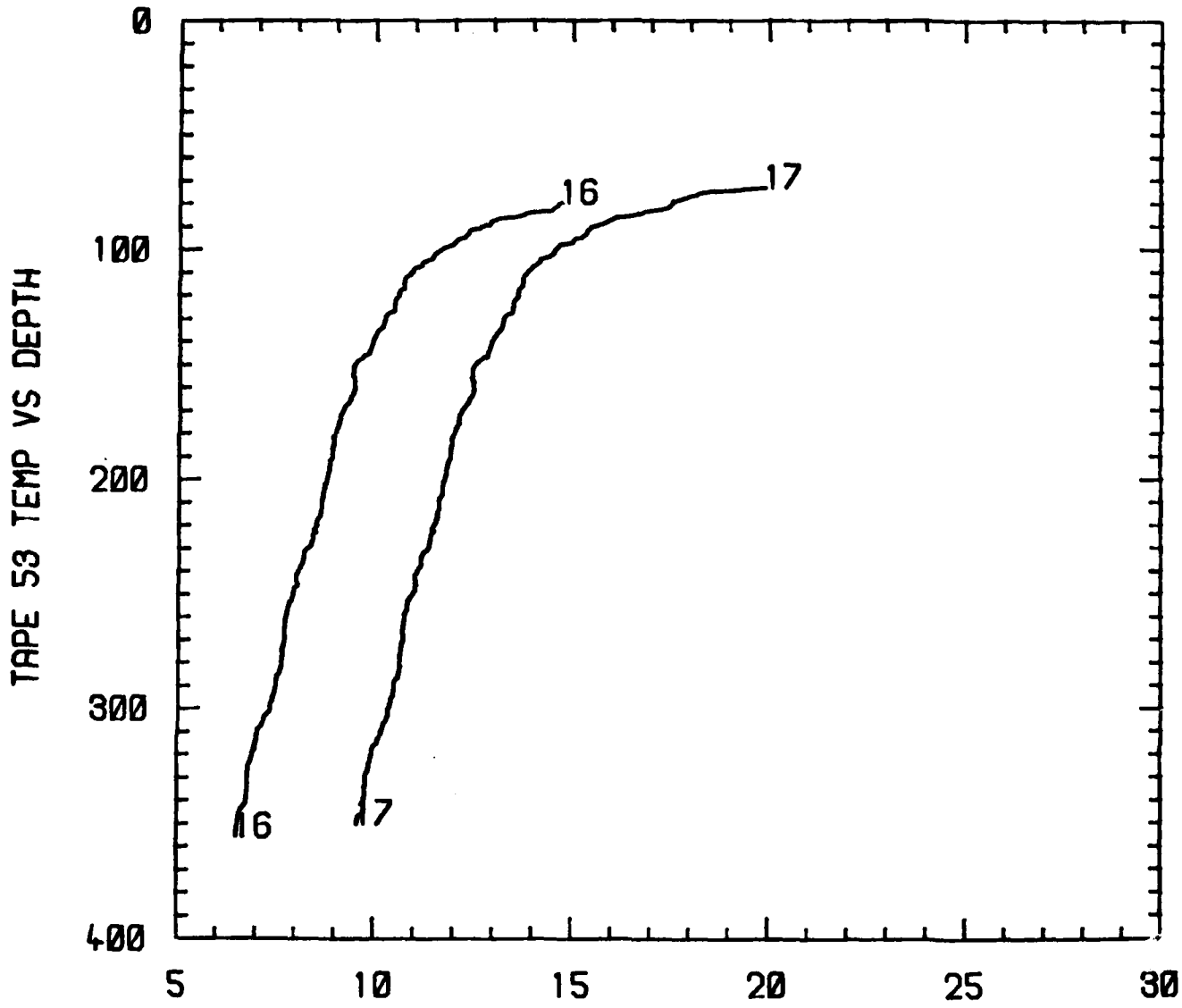
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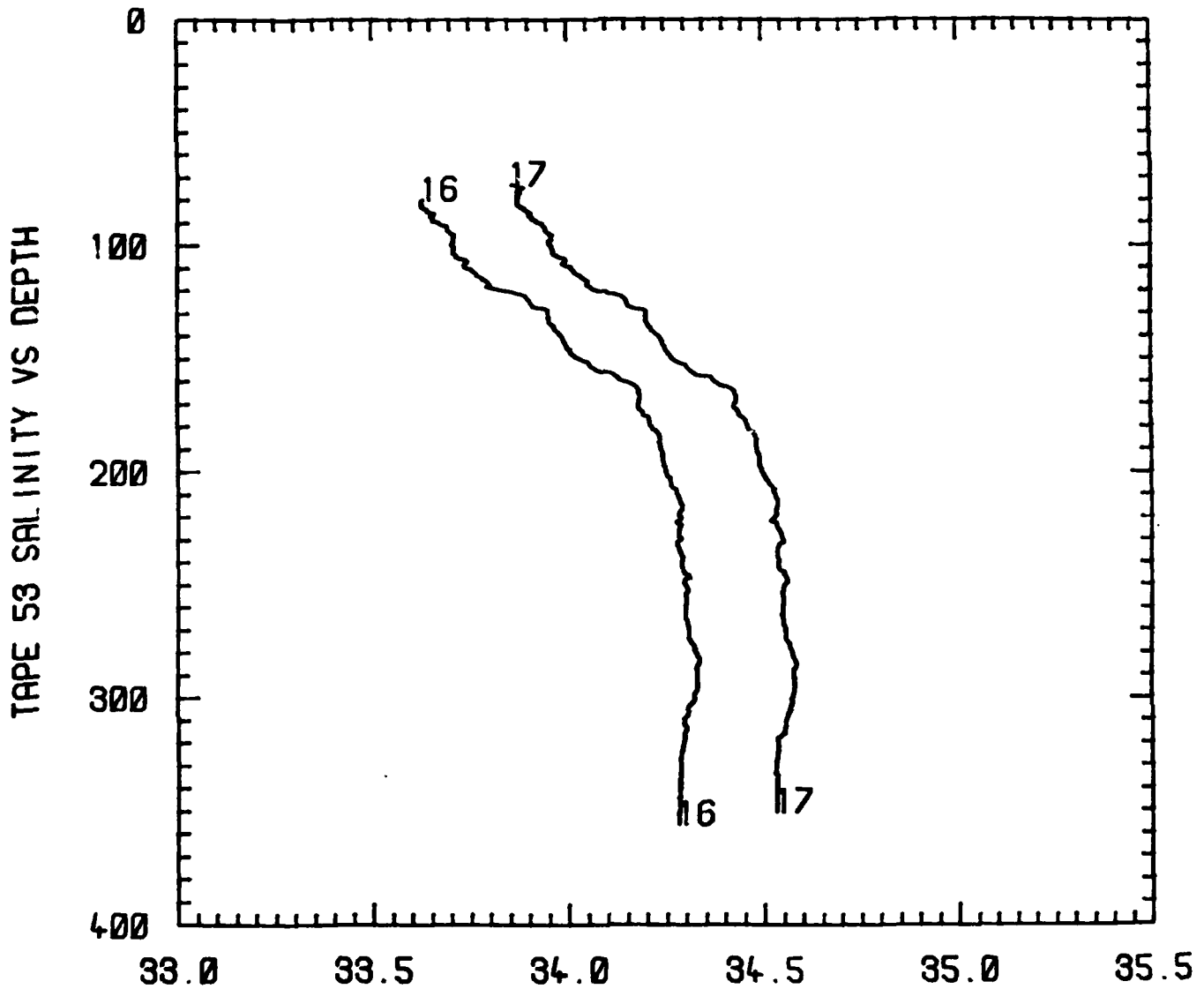


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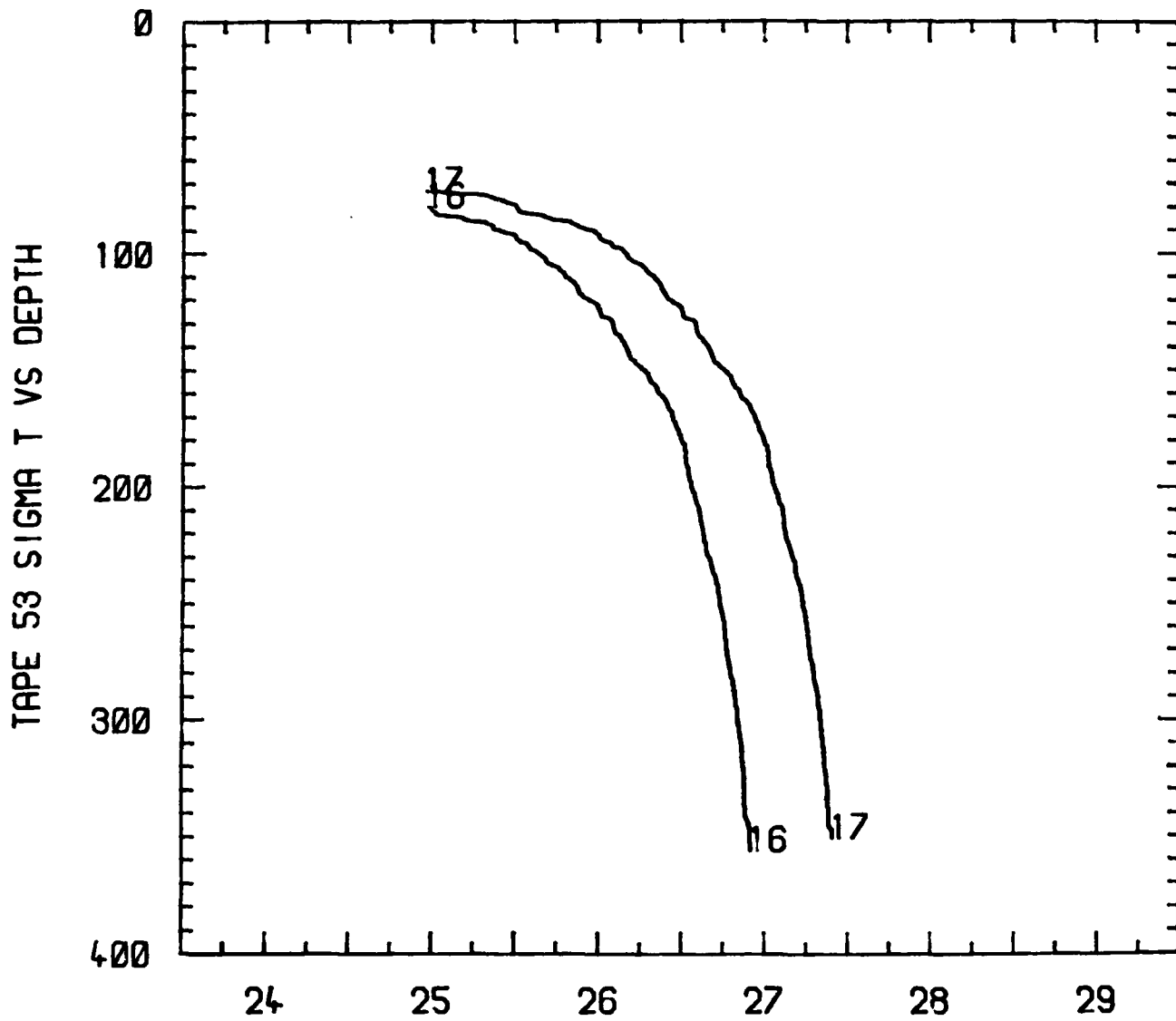


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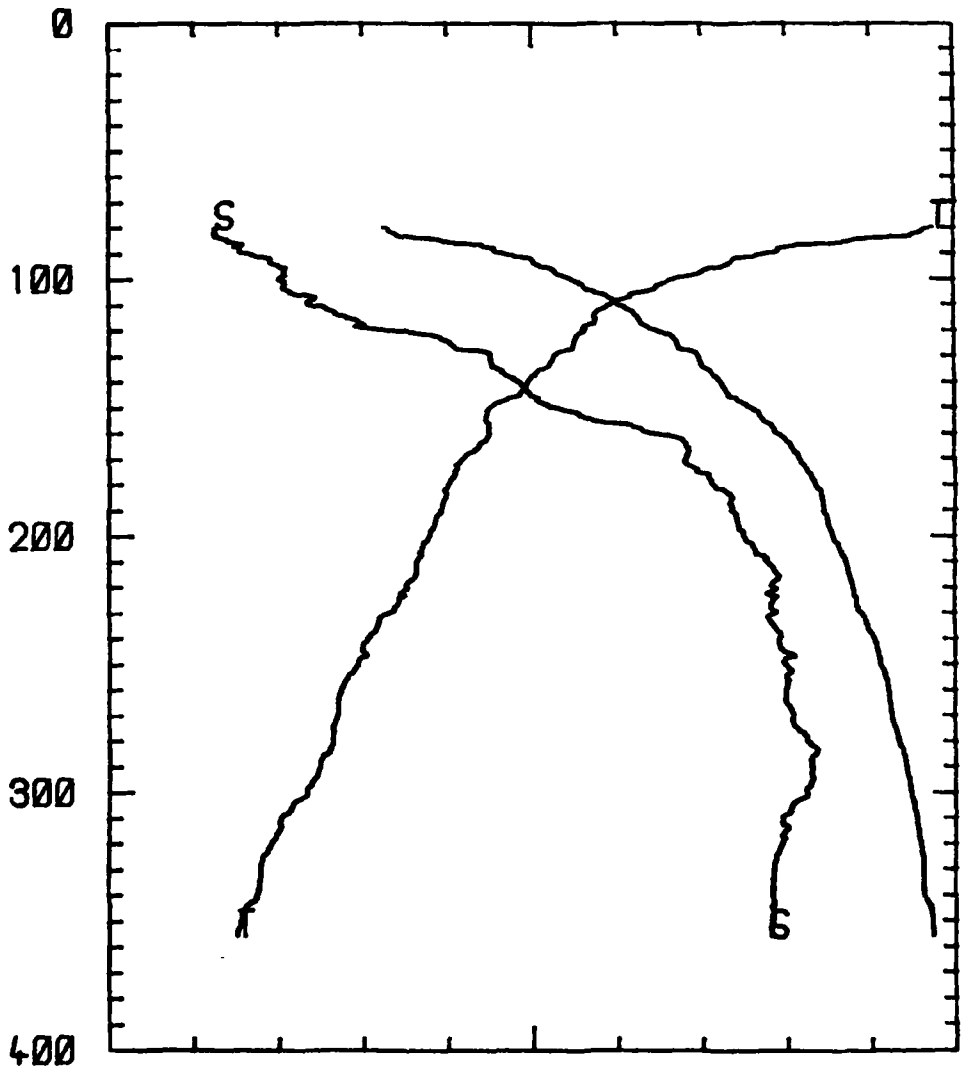
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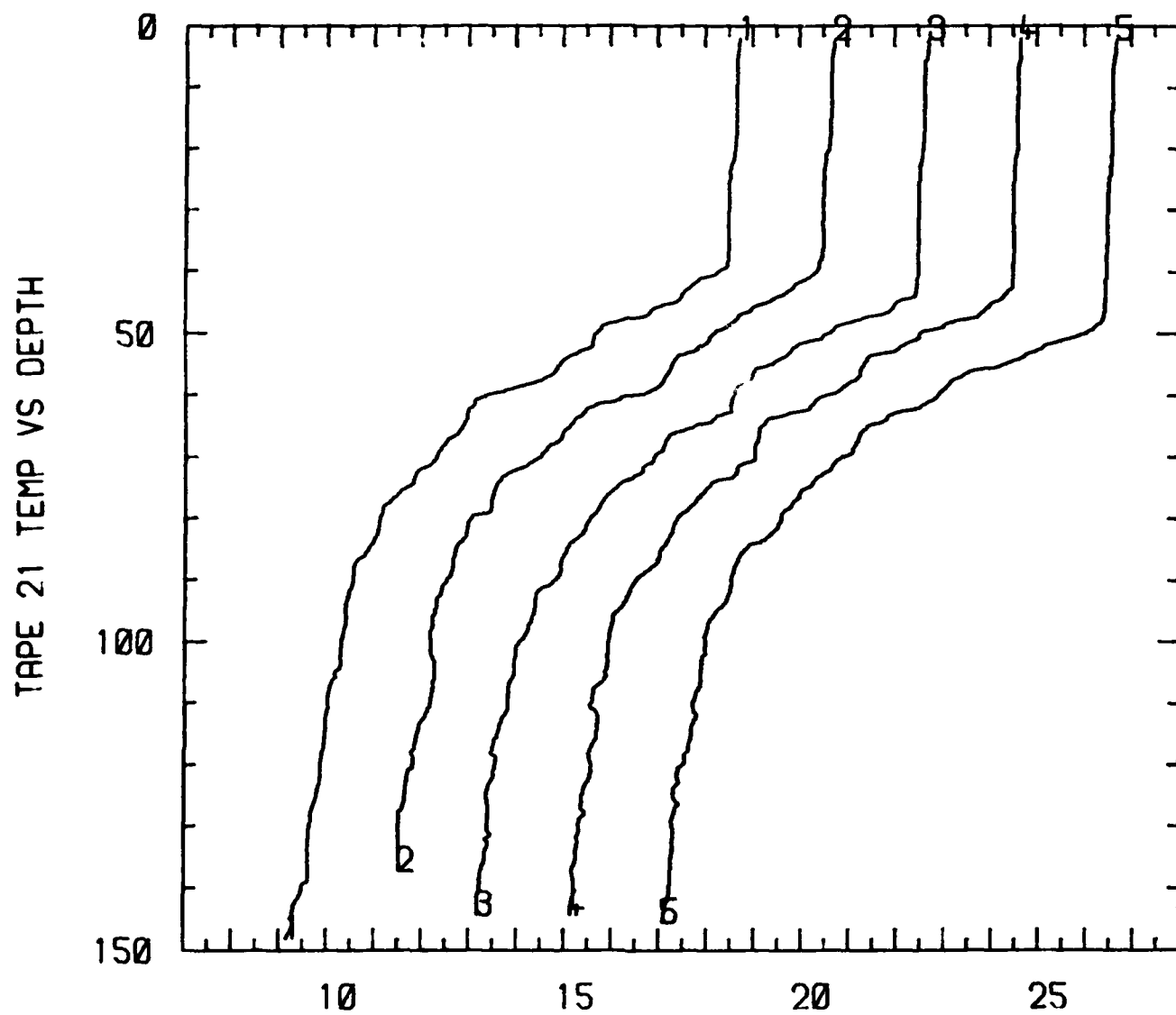


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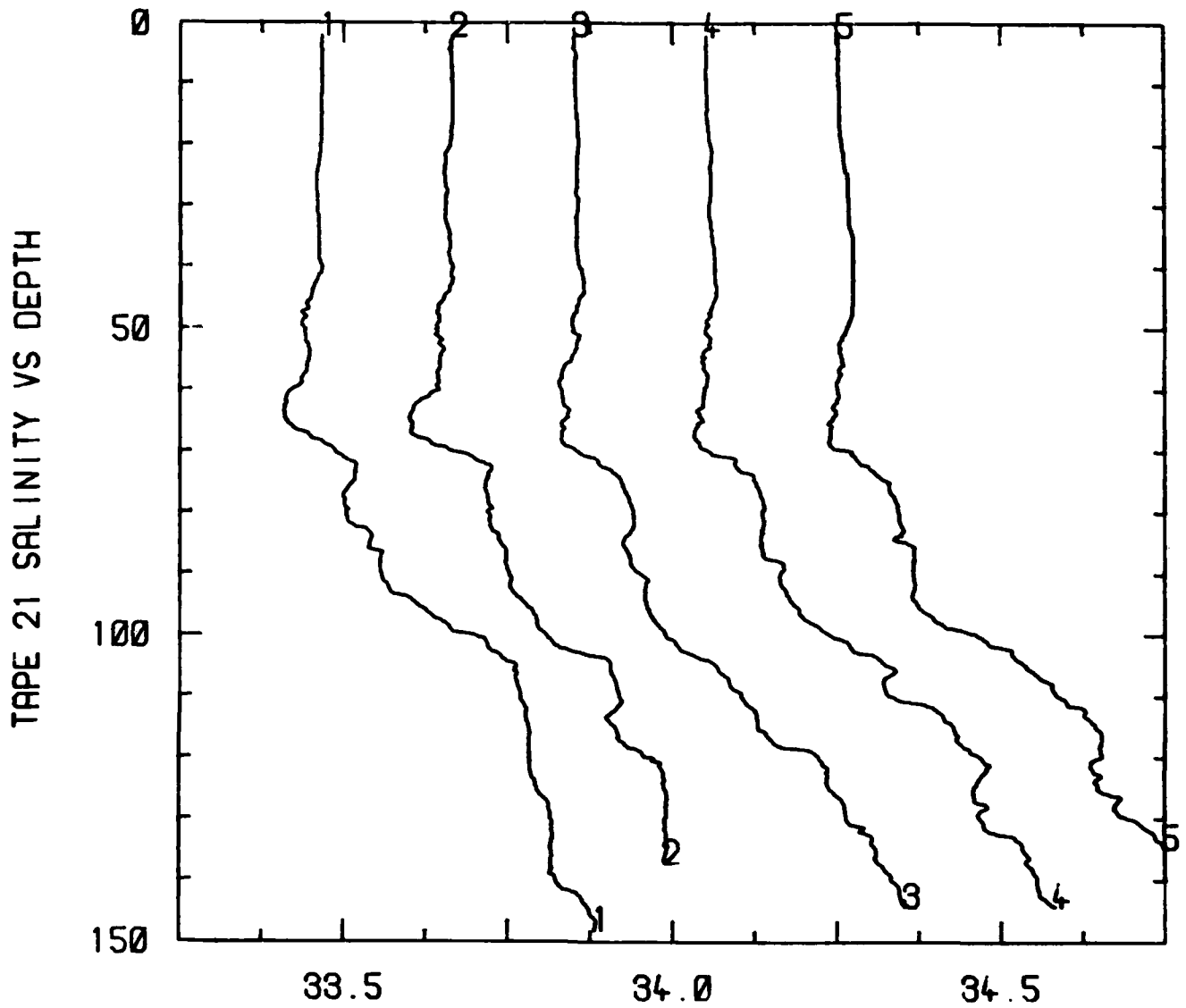
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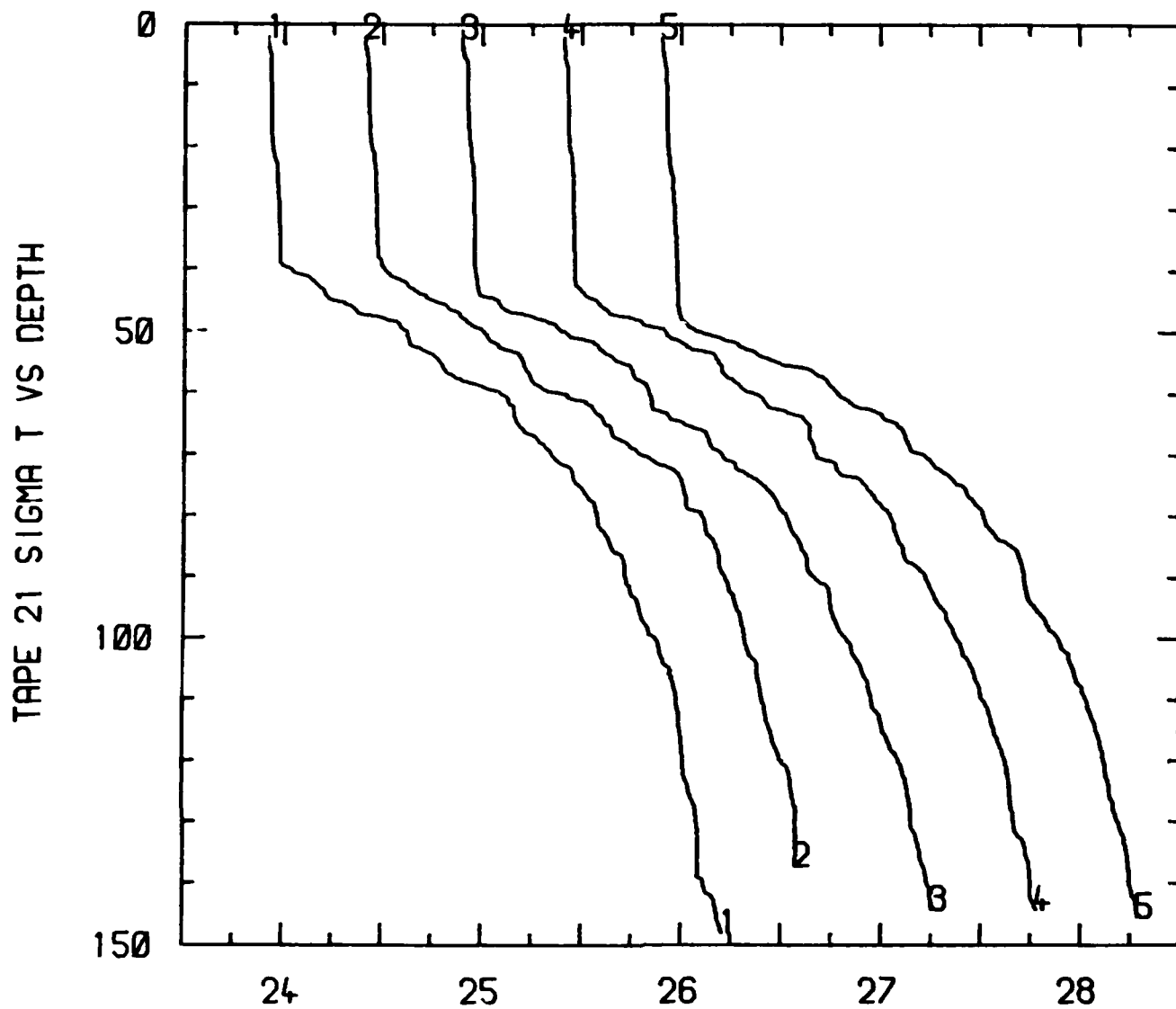
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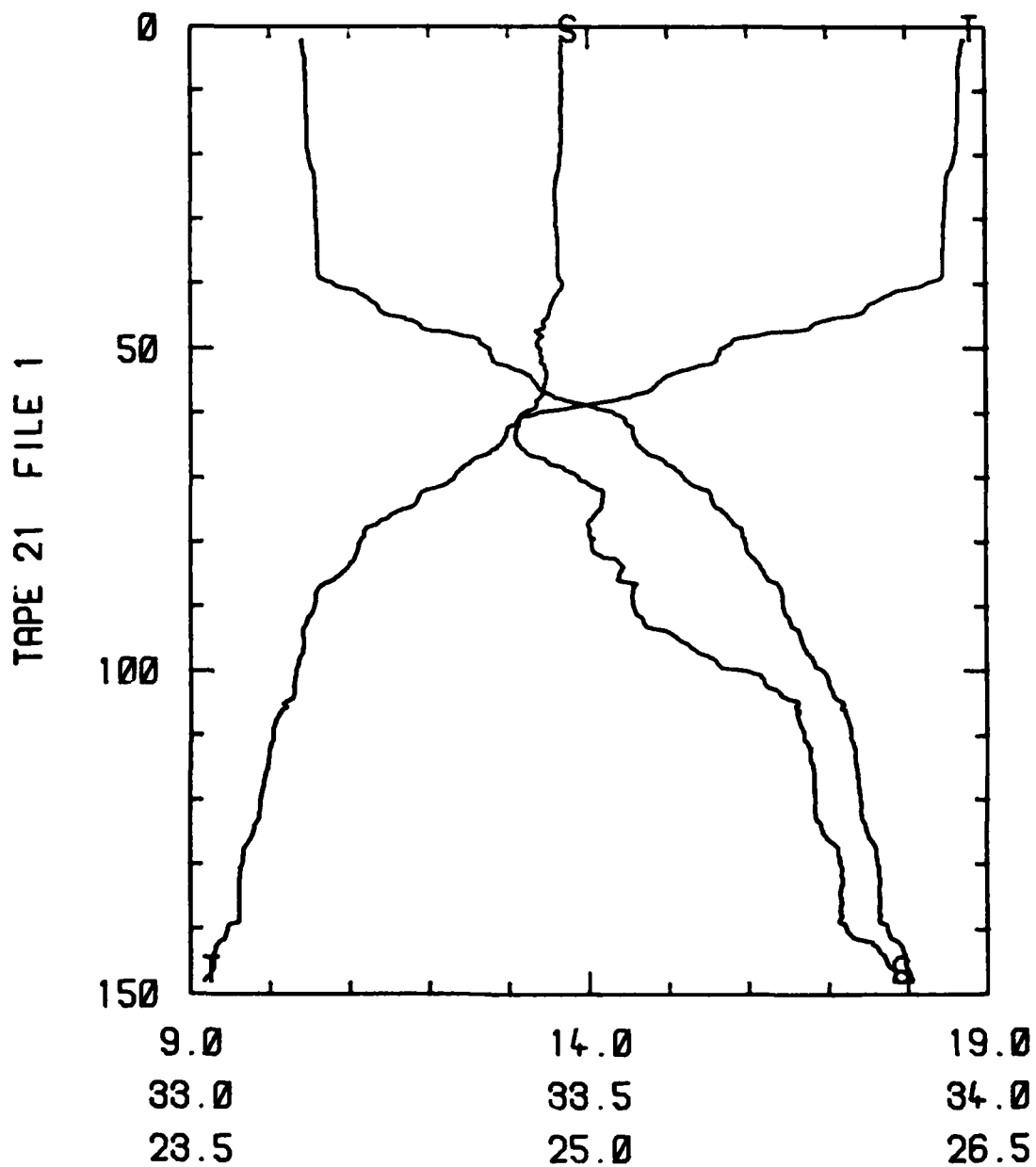
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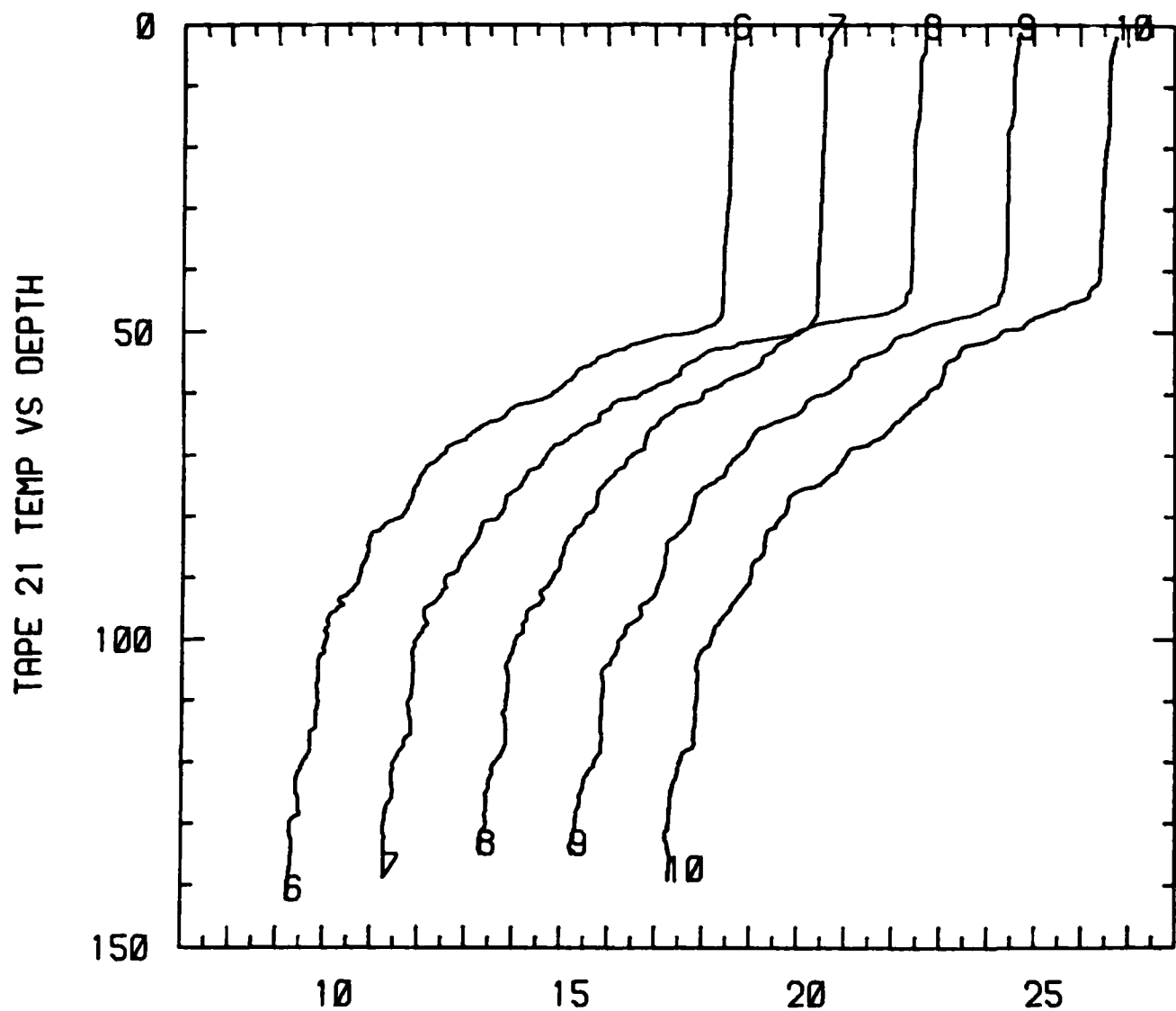
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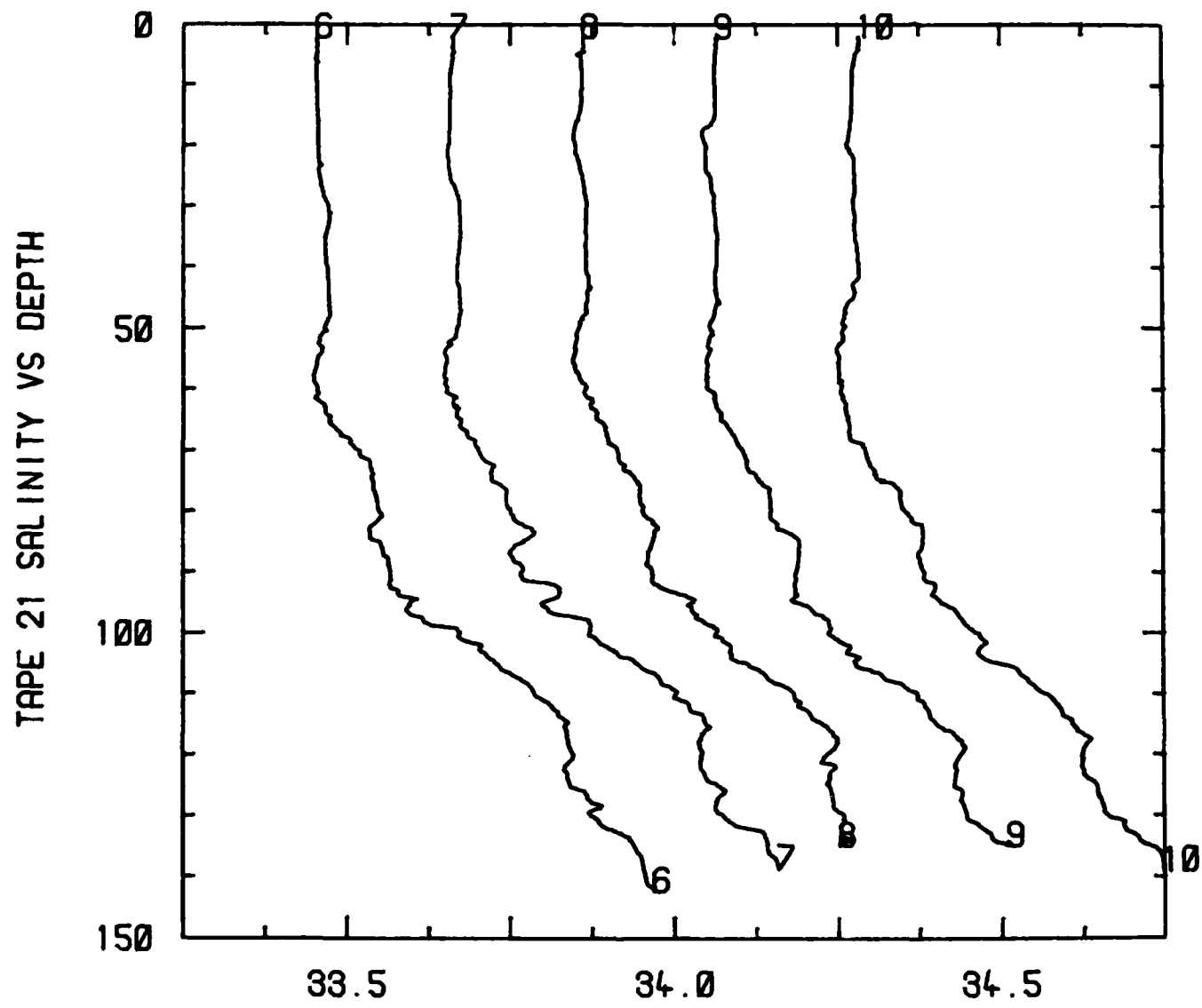
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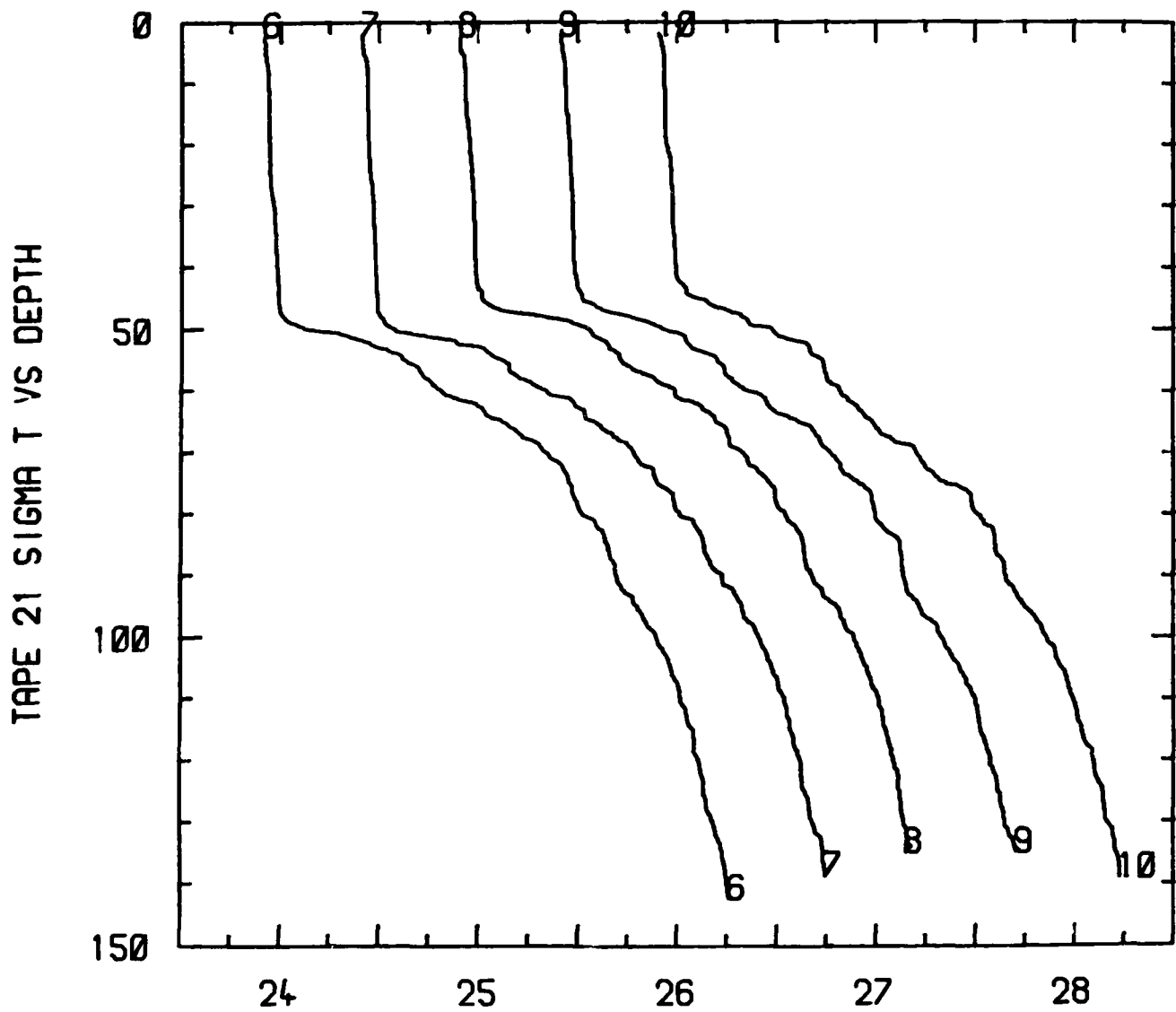
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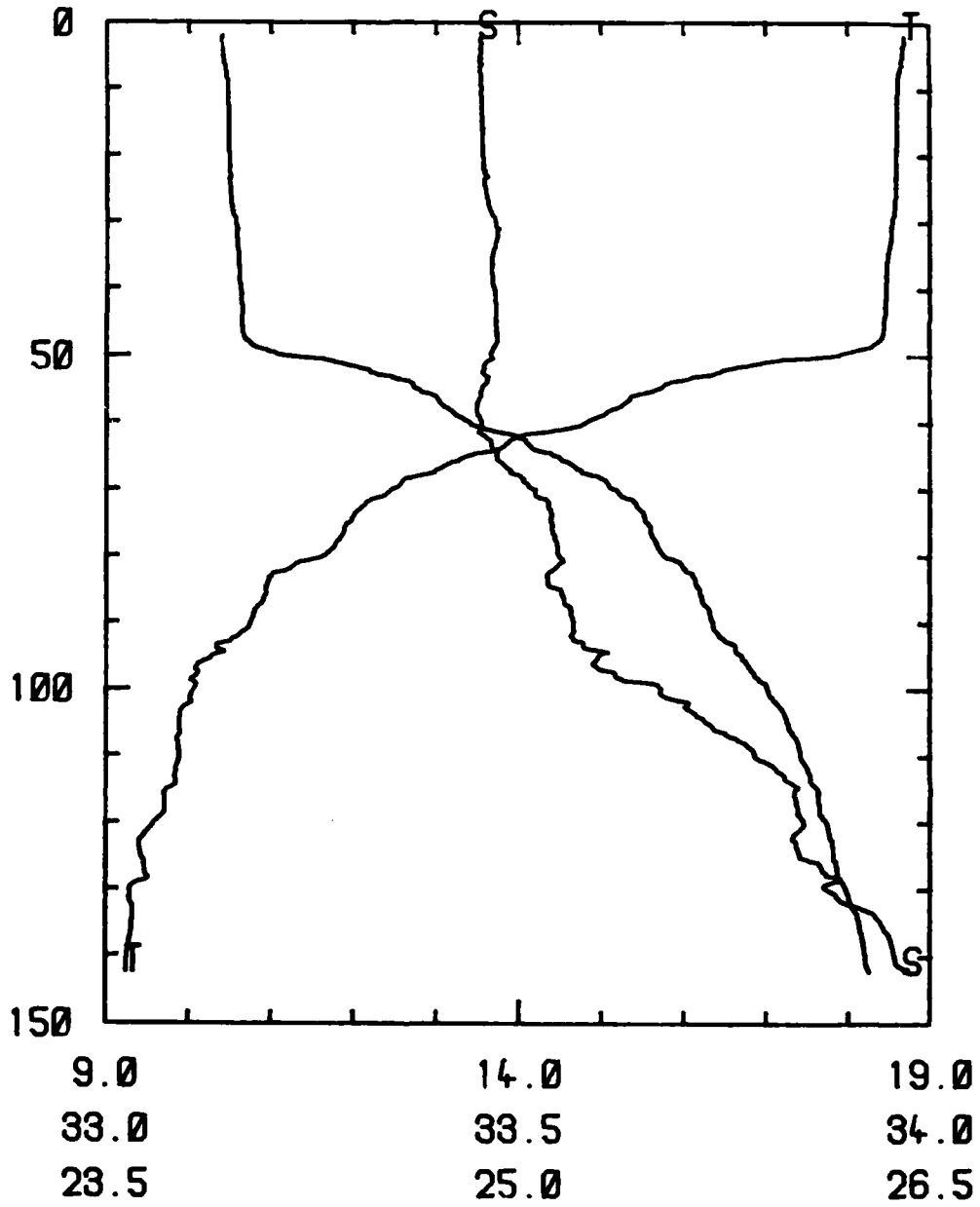
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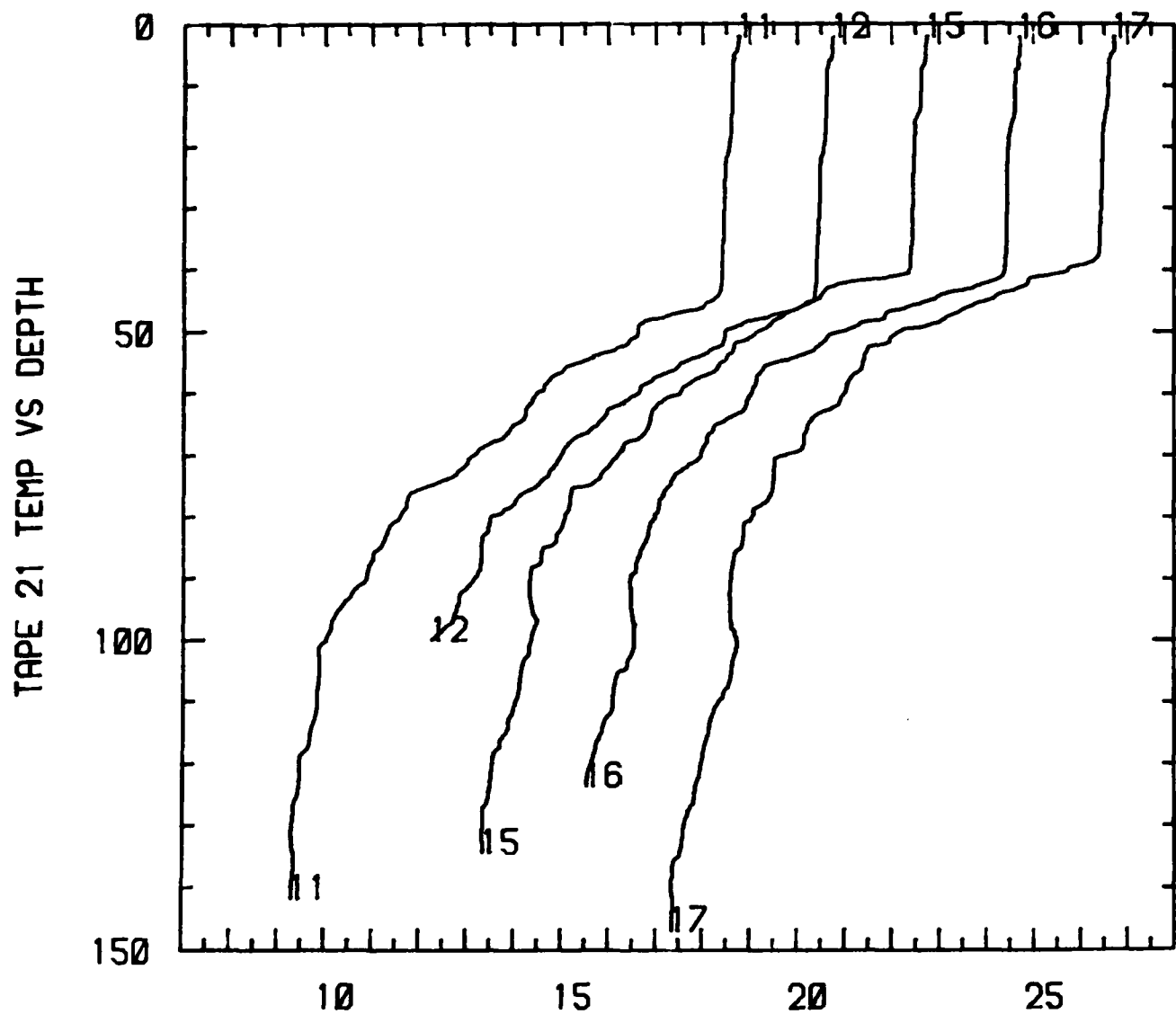
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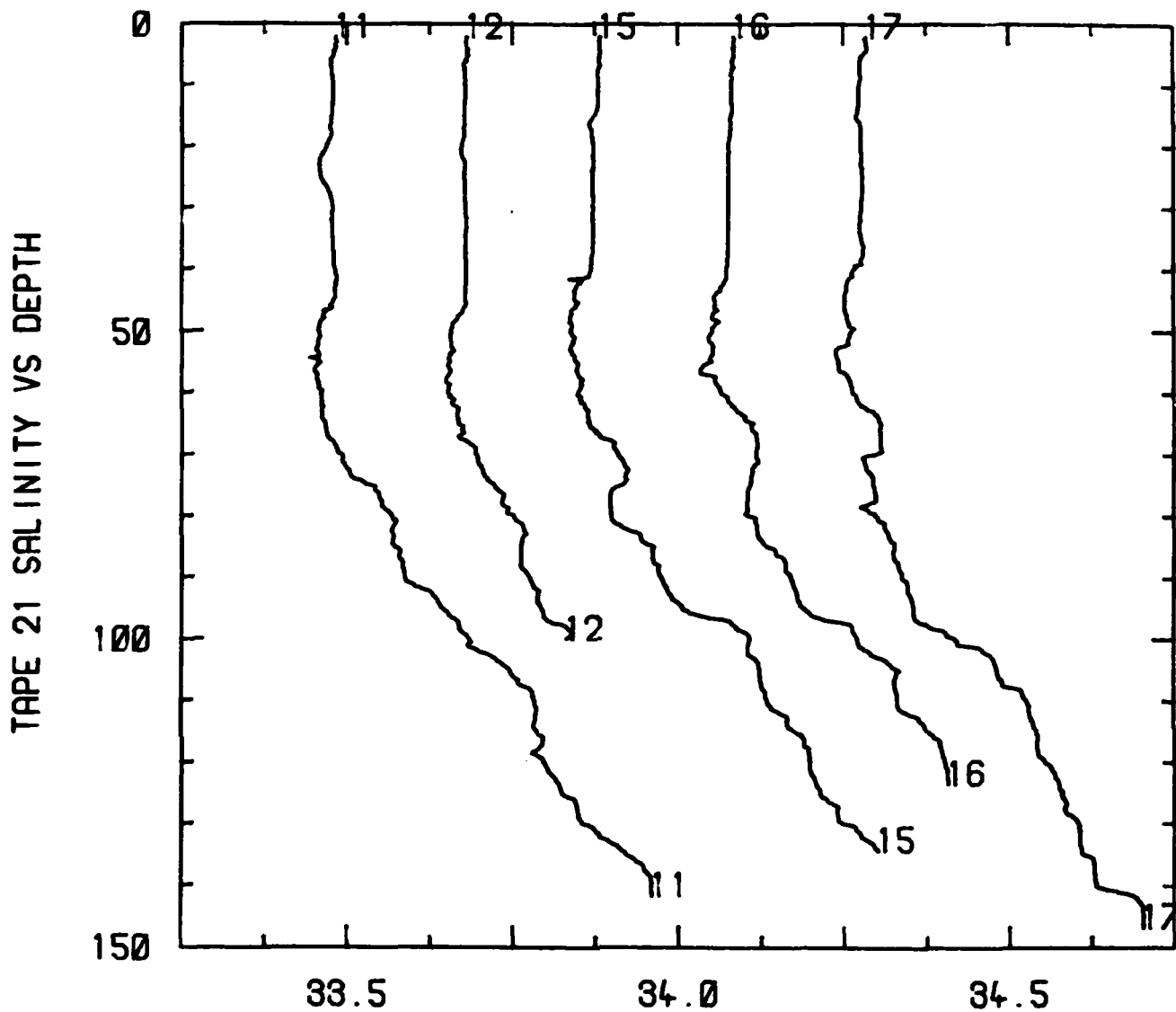
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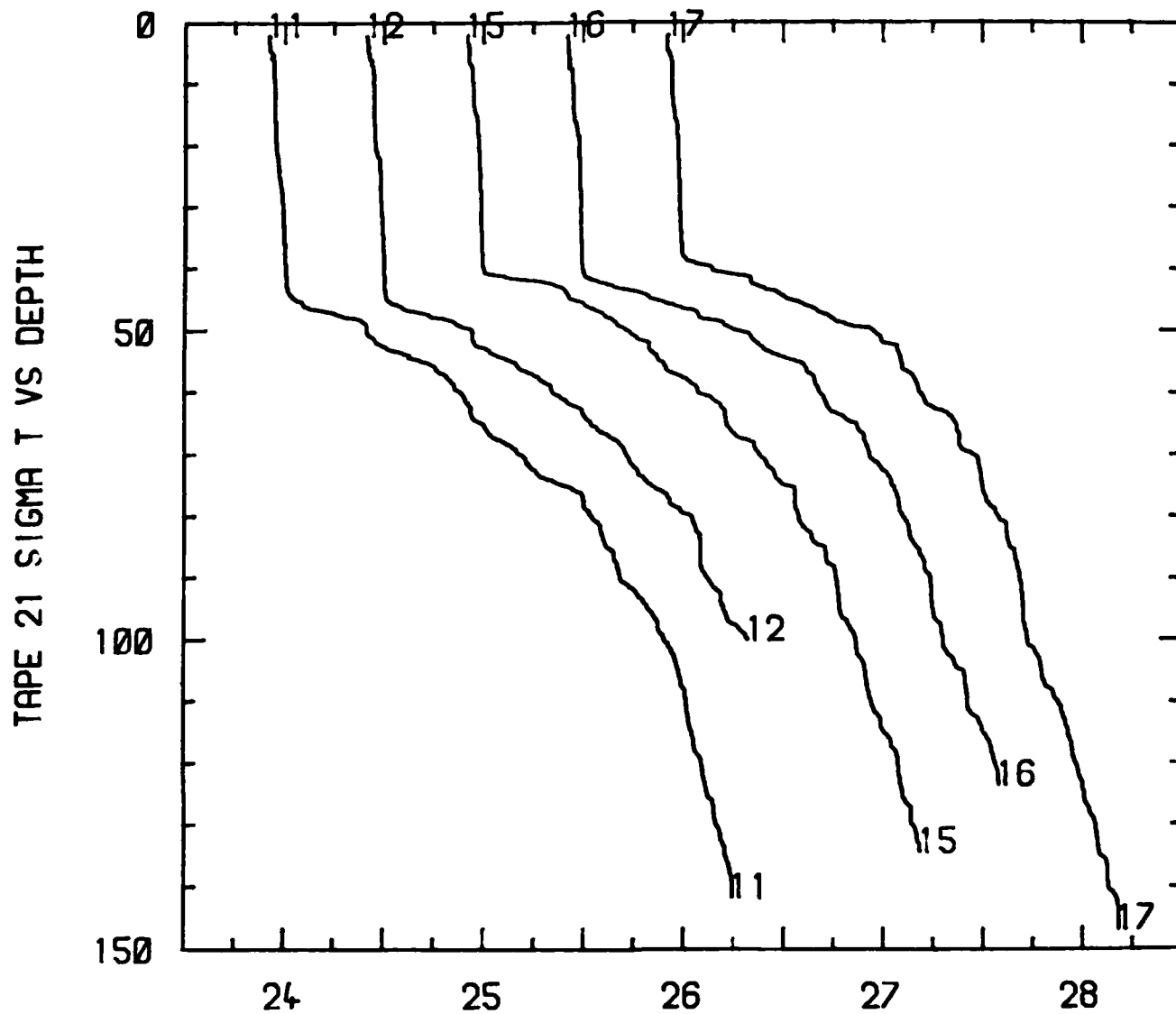
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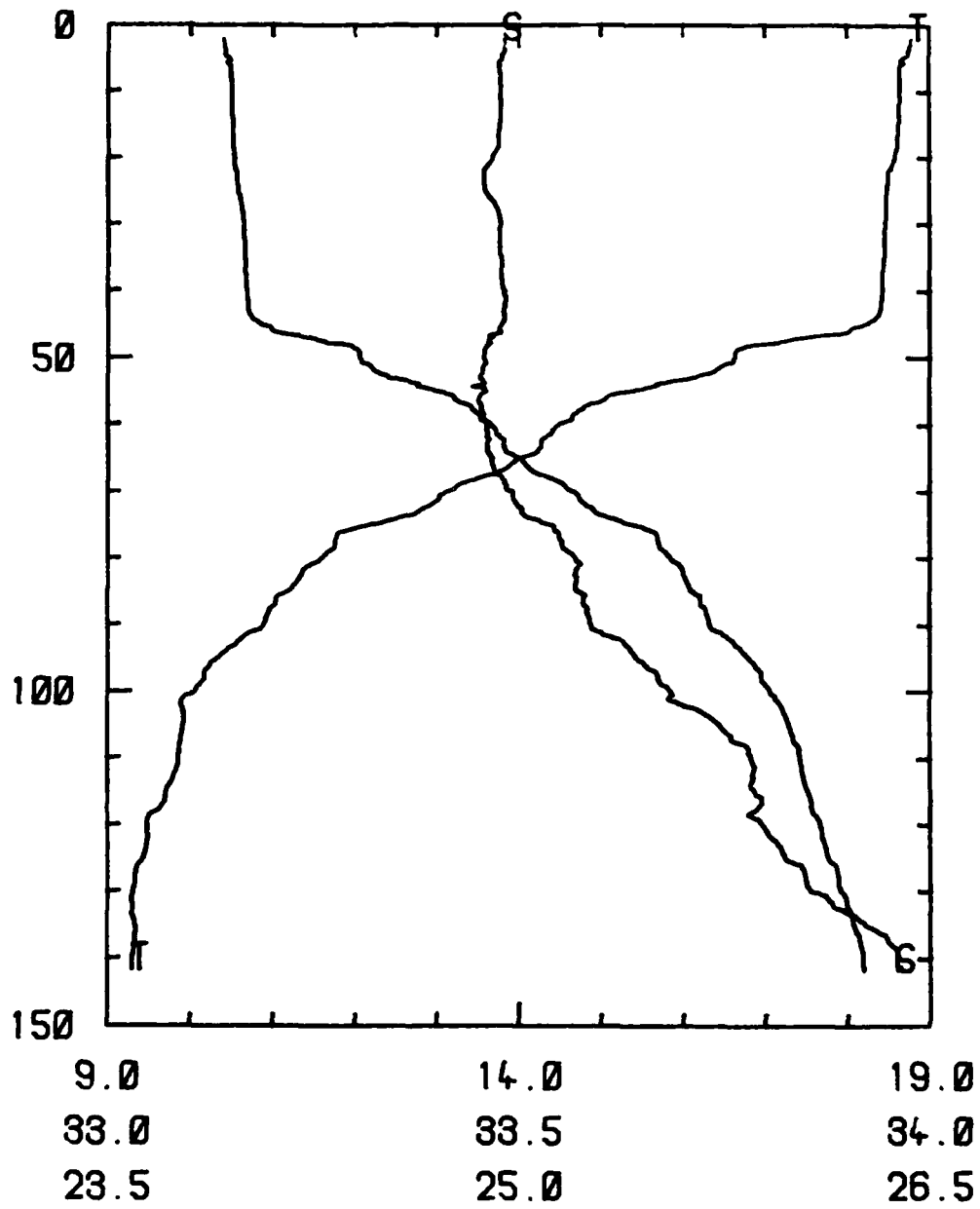
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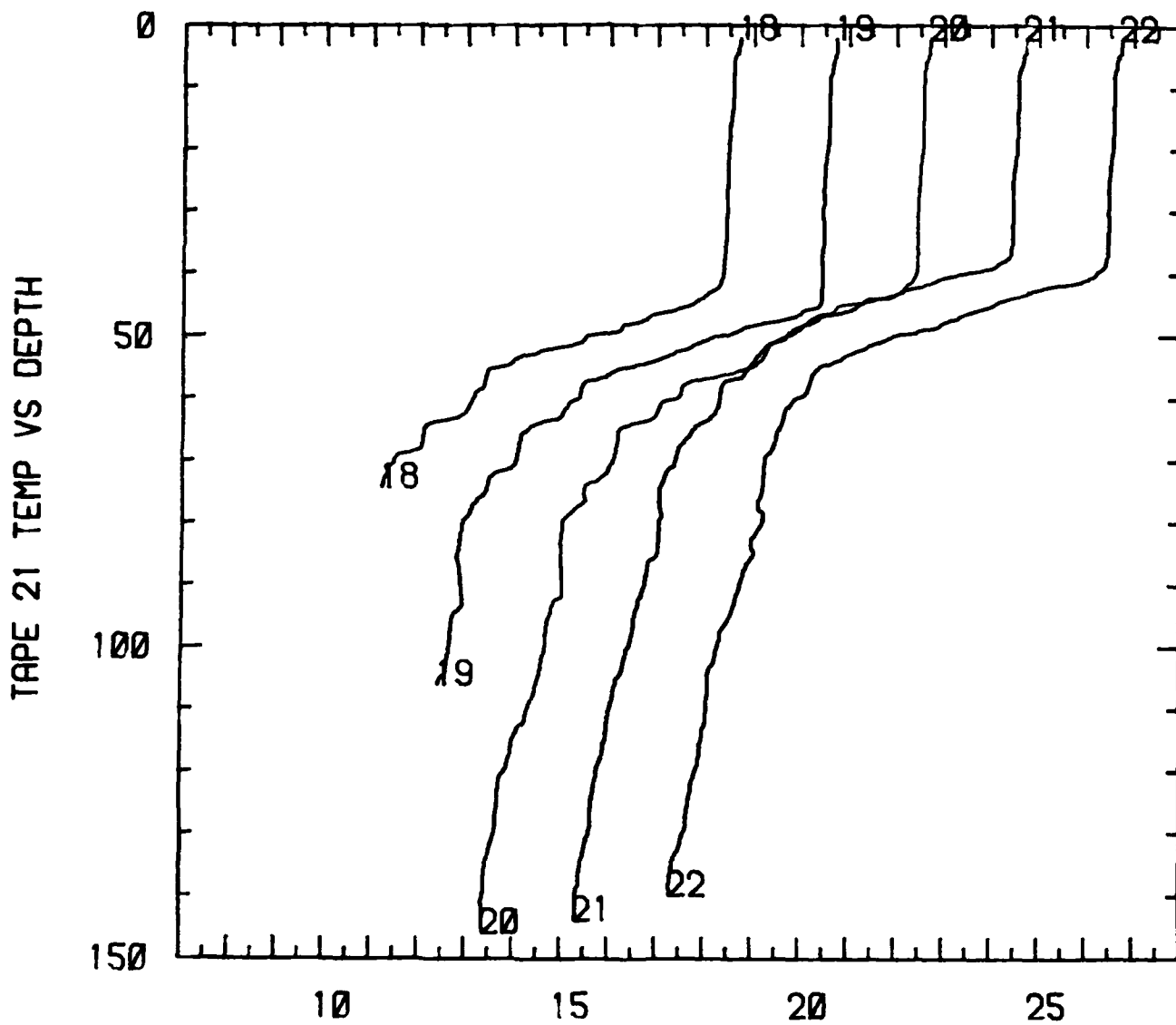
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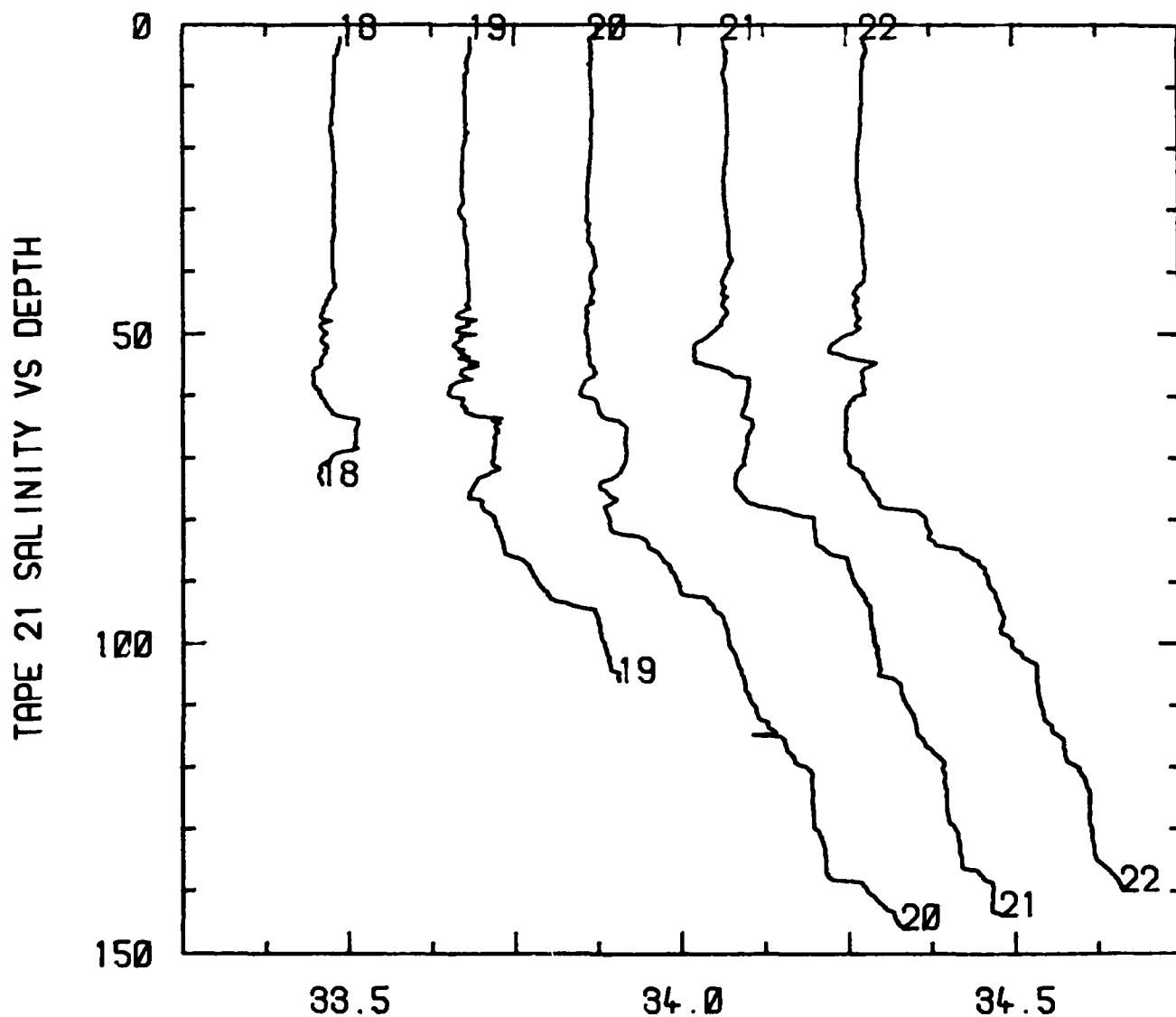
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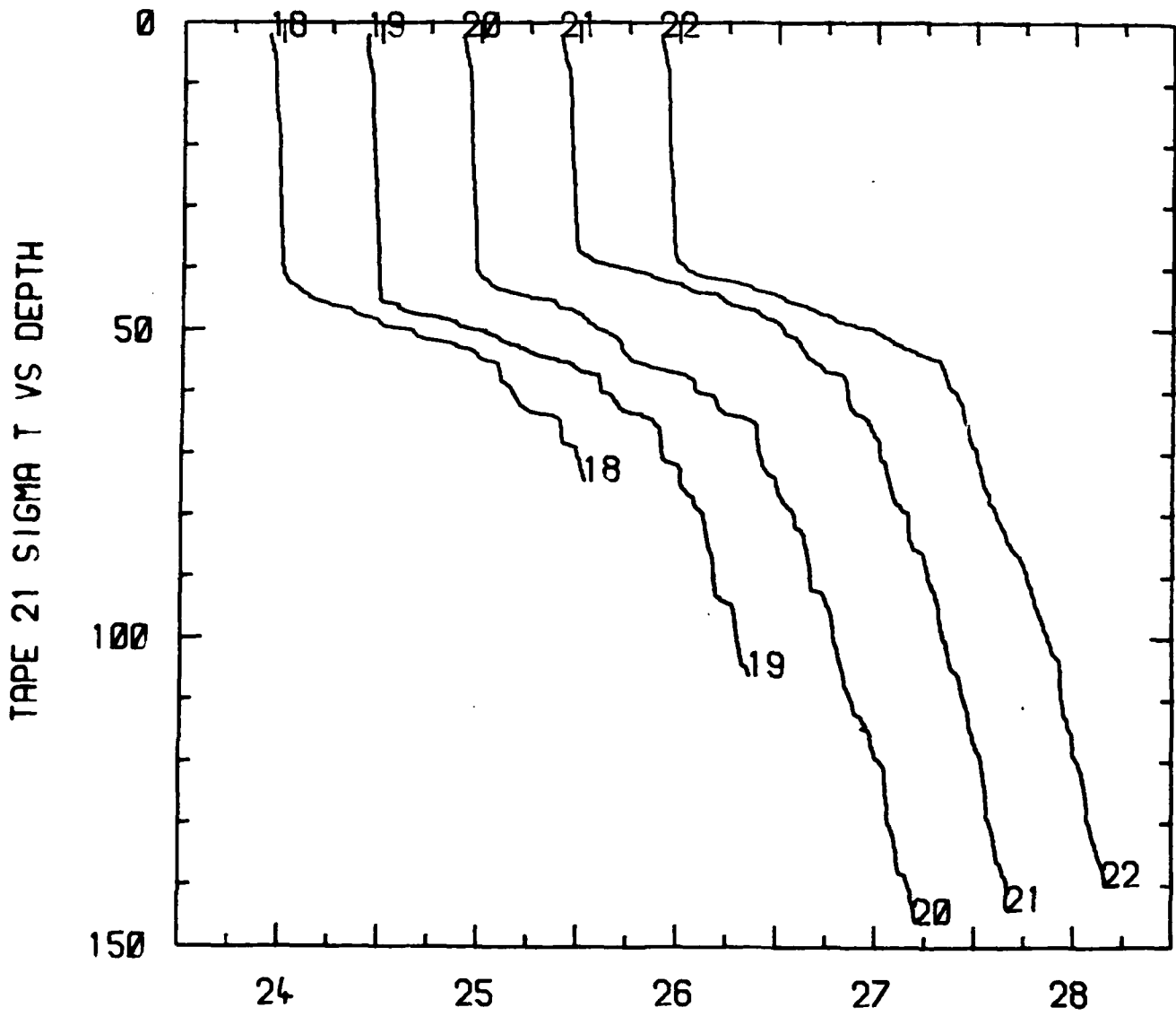
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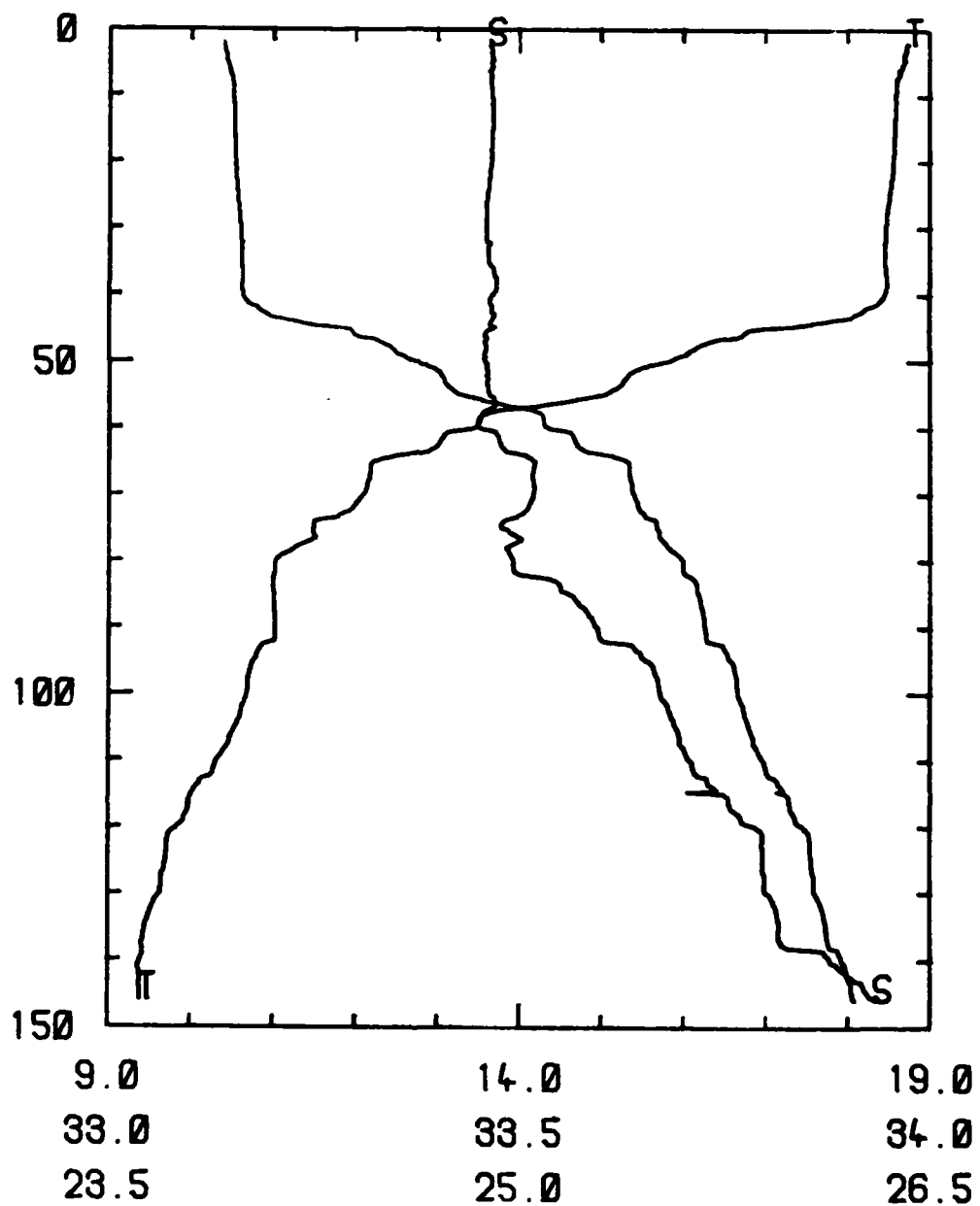
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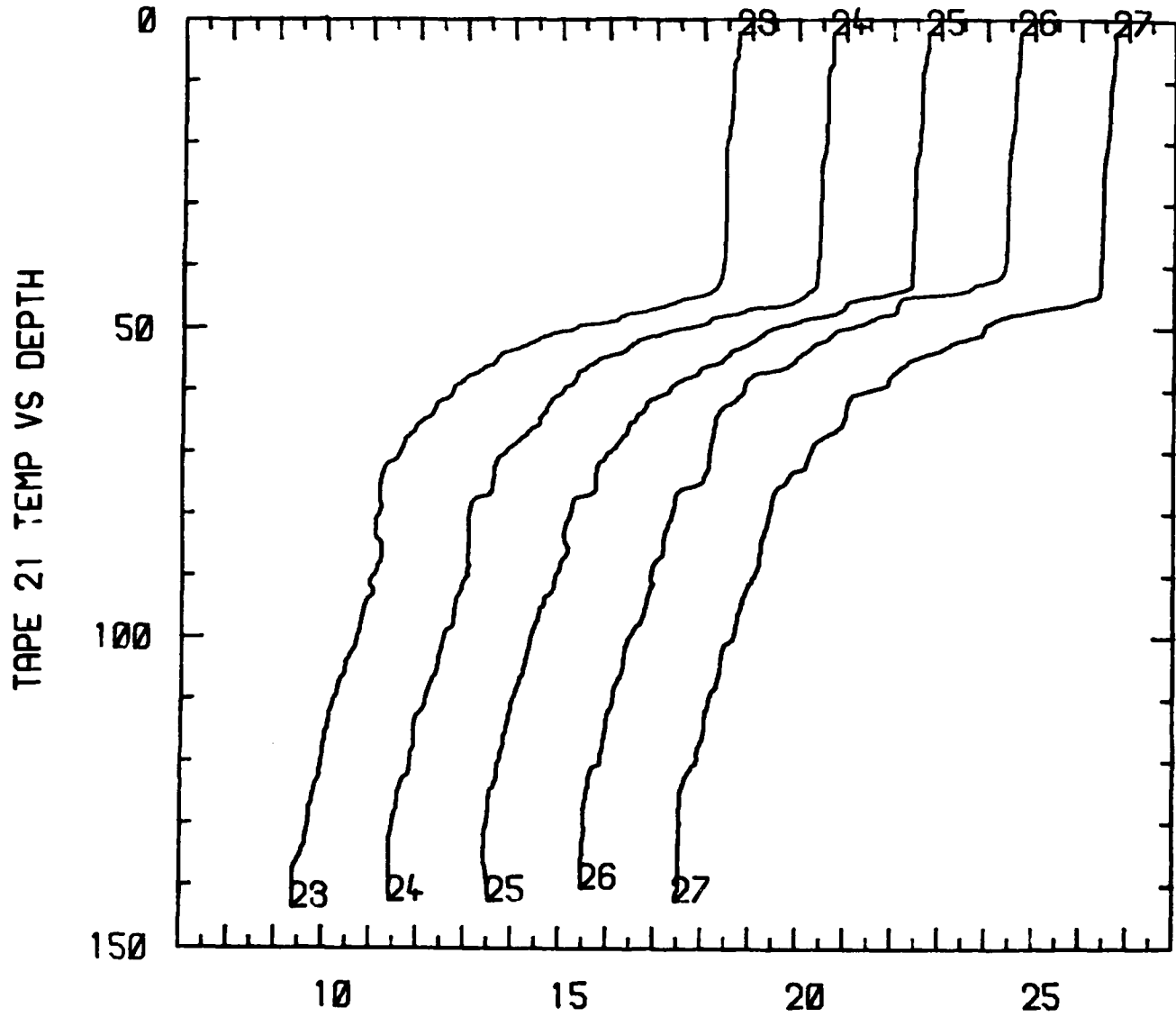
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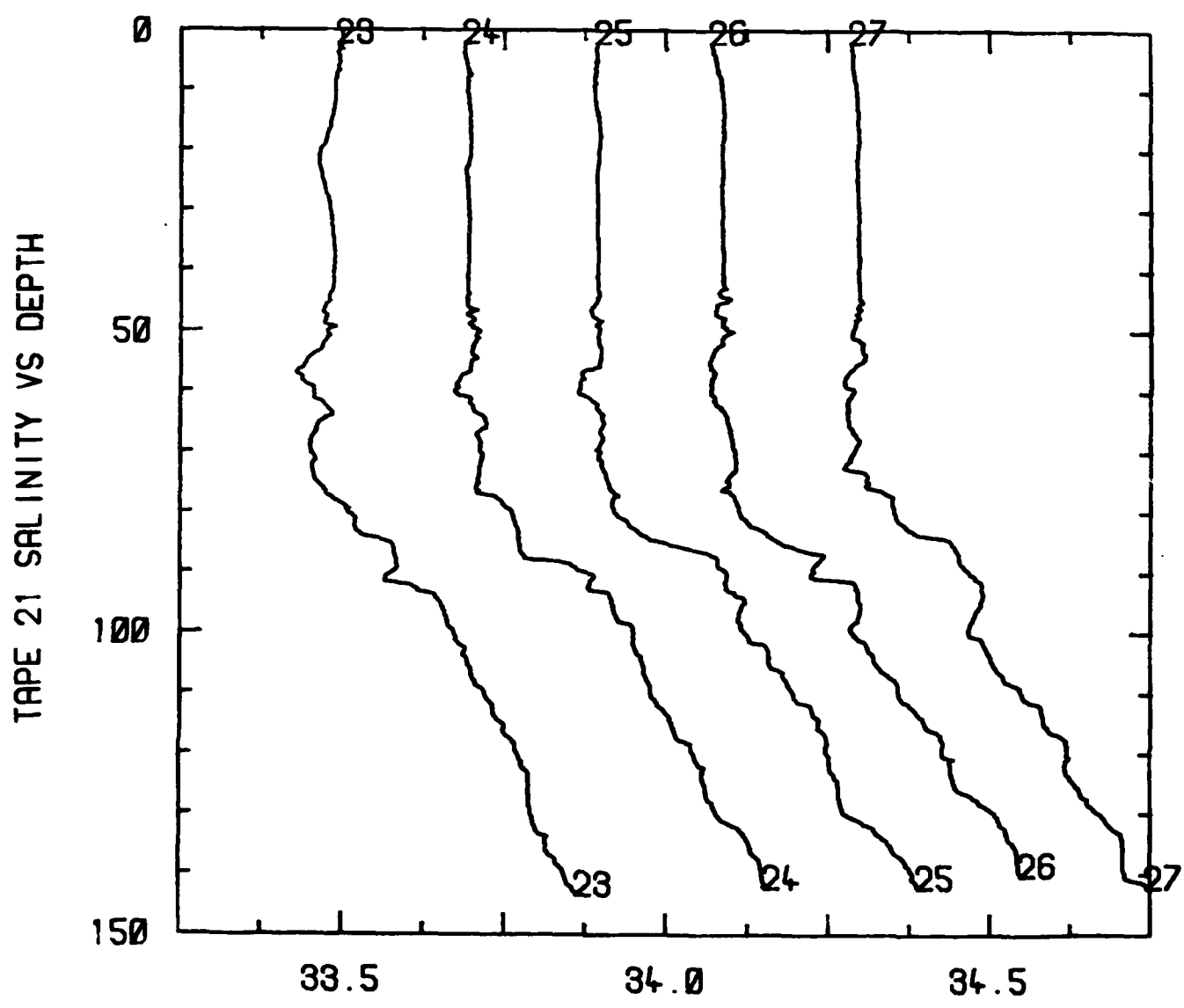
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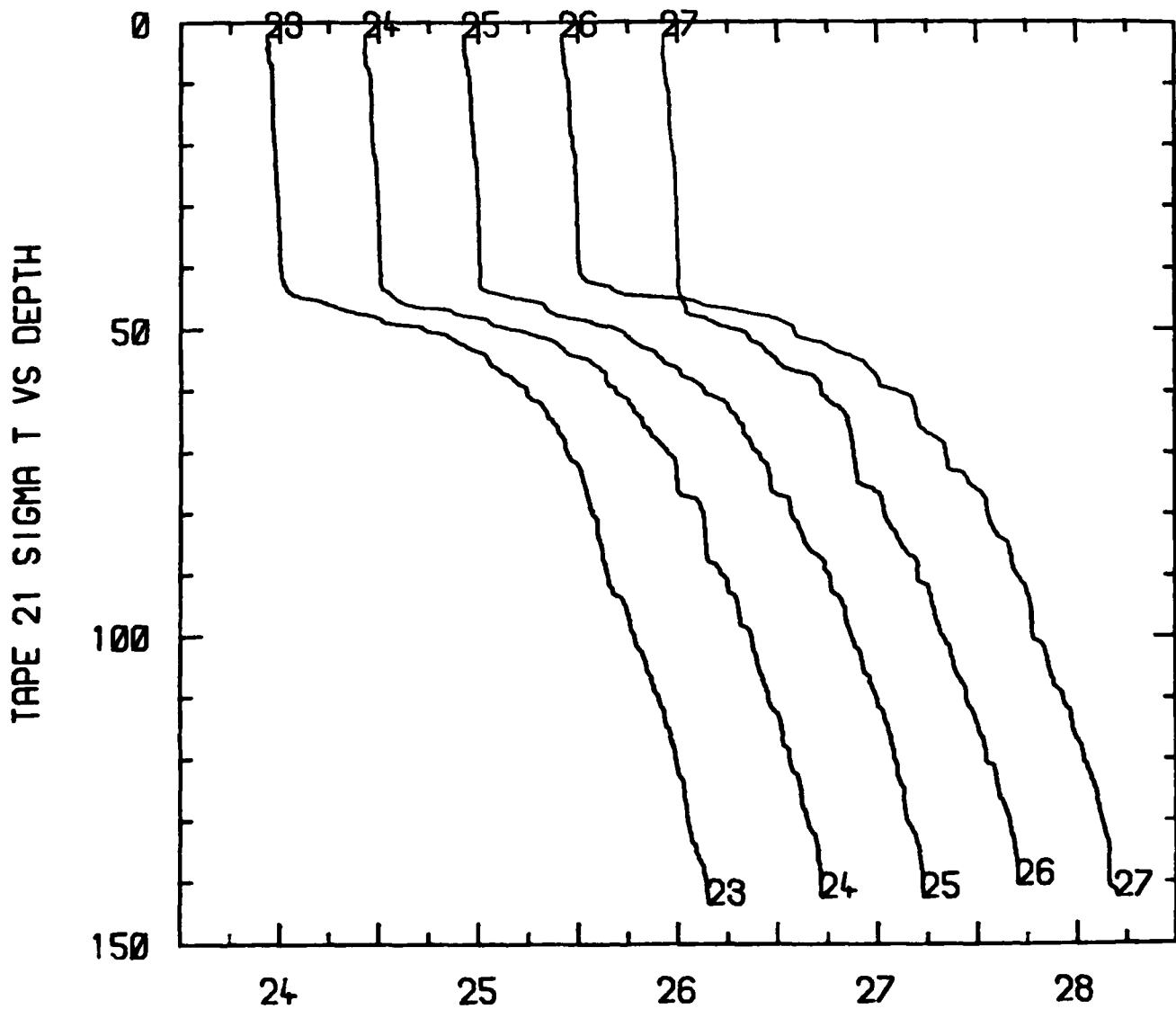
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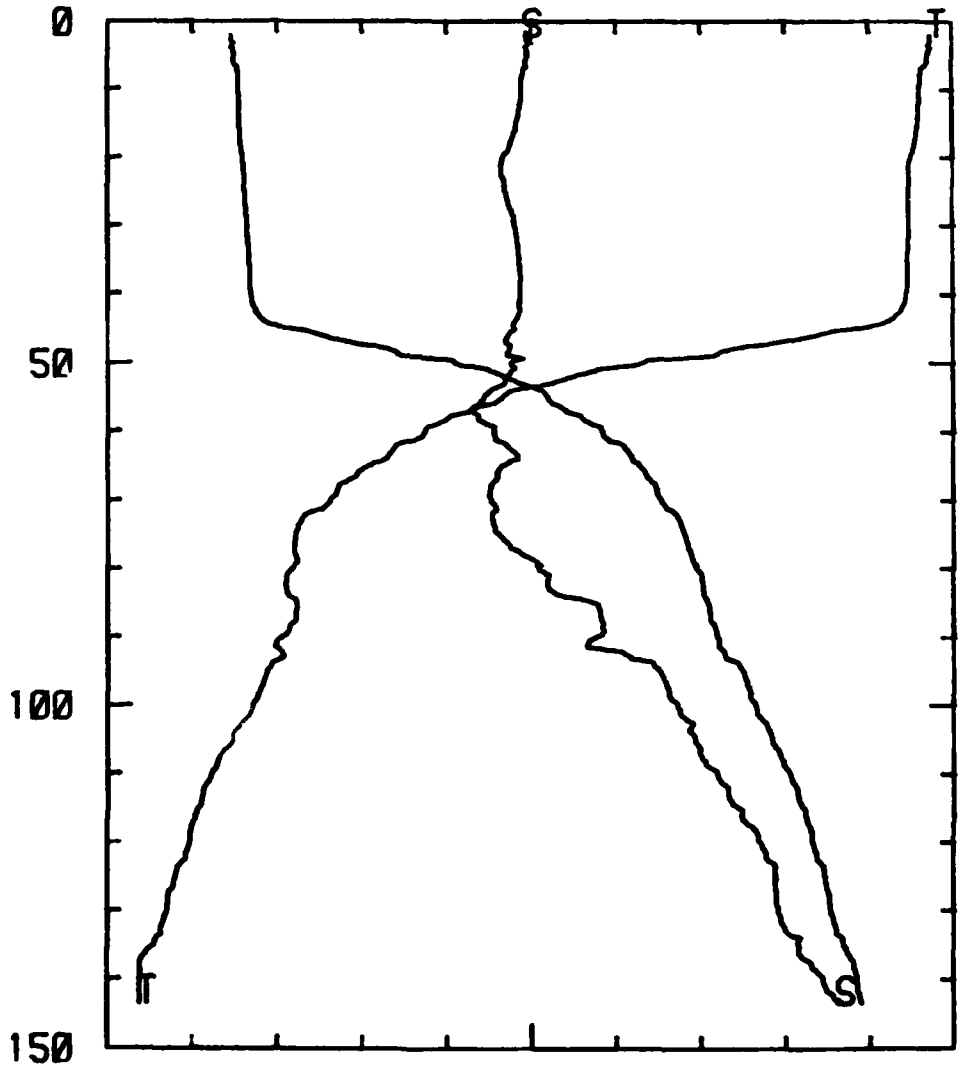
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SHIP'S SPEED 5.2-5.7 KNOTS

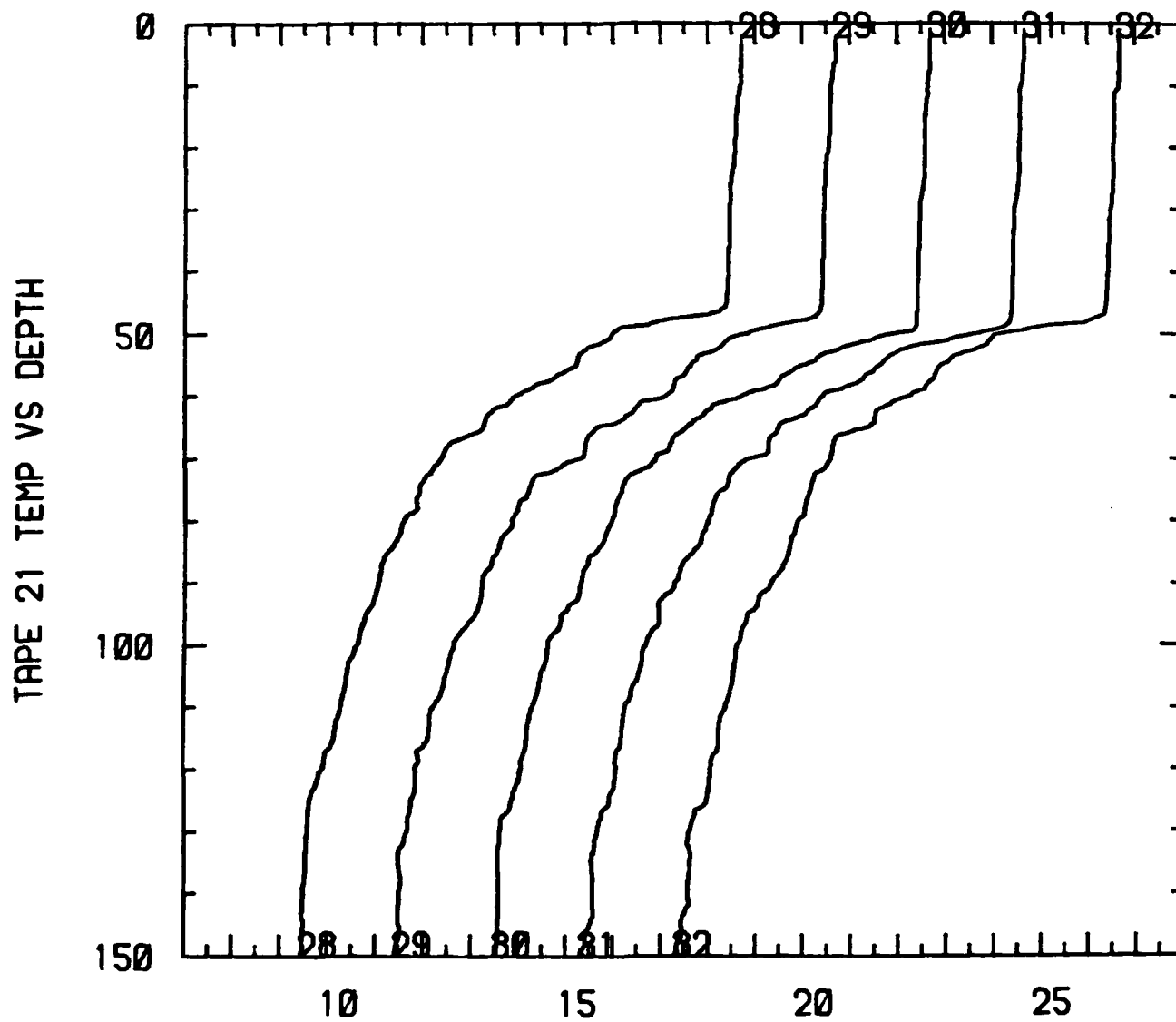
TAPE 21 FILE 28



RSVP: UNIT 4

OCTOBER 27, 1983

2312 GMT



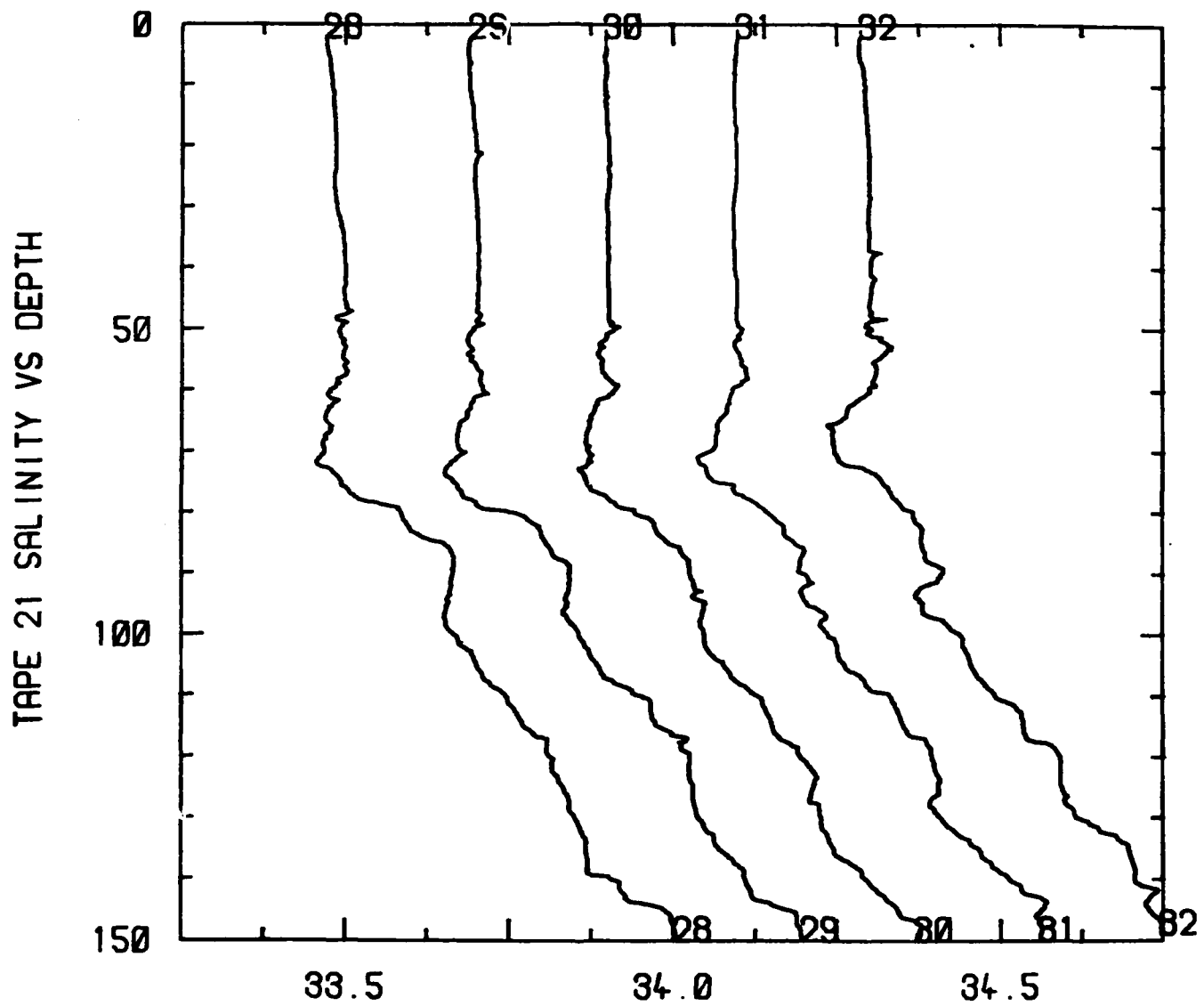
RSVP: UNIT 4

OCTOBER 27, 1983

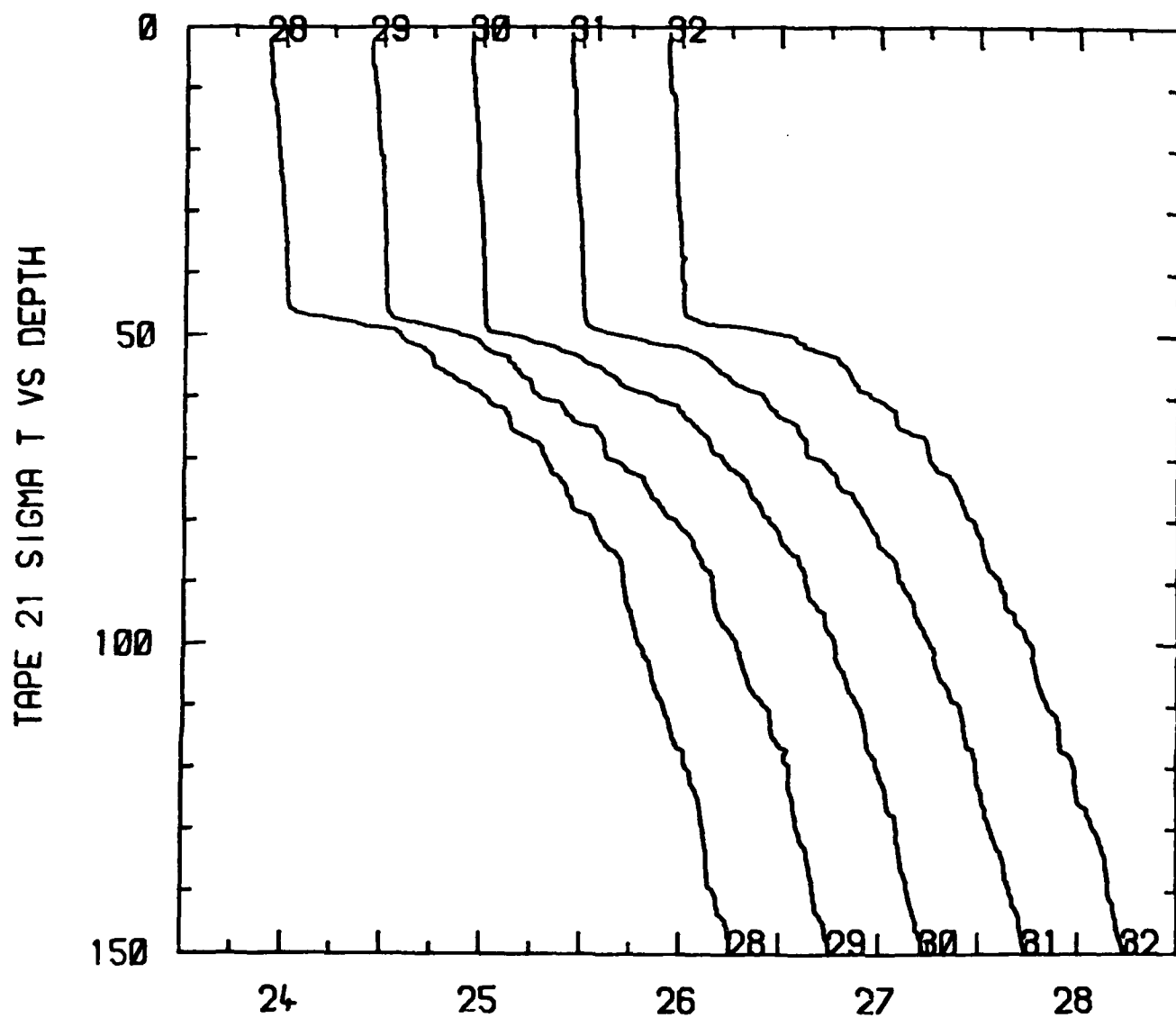
2356-0034 GMT

OFFSET BETWEEN PROFILES: 2.0 DEGREES

SHIP'S SPEED 5.3 KNOTS



RSVP: UNIT 4 OCTOBER 27, 1983 2356-0034 GMT
OFFSET BETWEEN PROFILES: 0.2 PARTS PER THOUSAND
SHIP'S SPEED 5.3 KNOTS



RSVP: UNIT 4

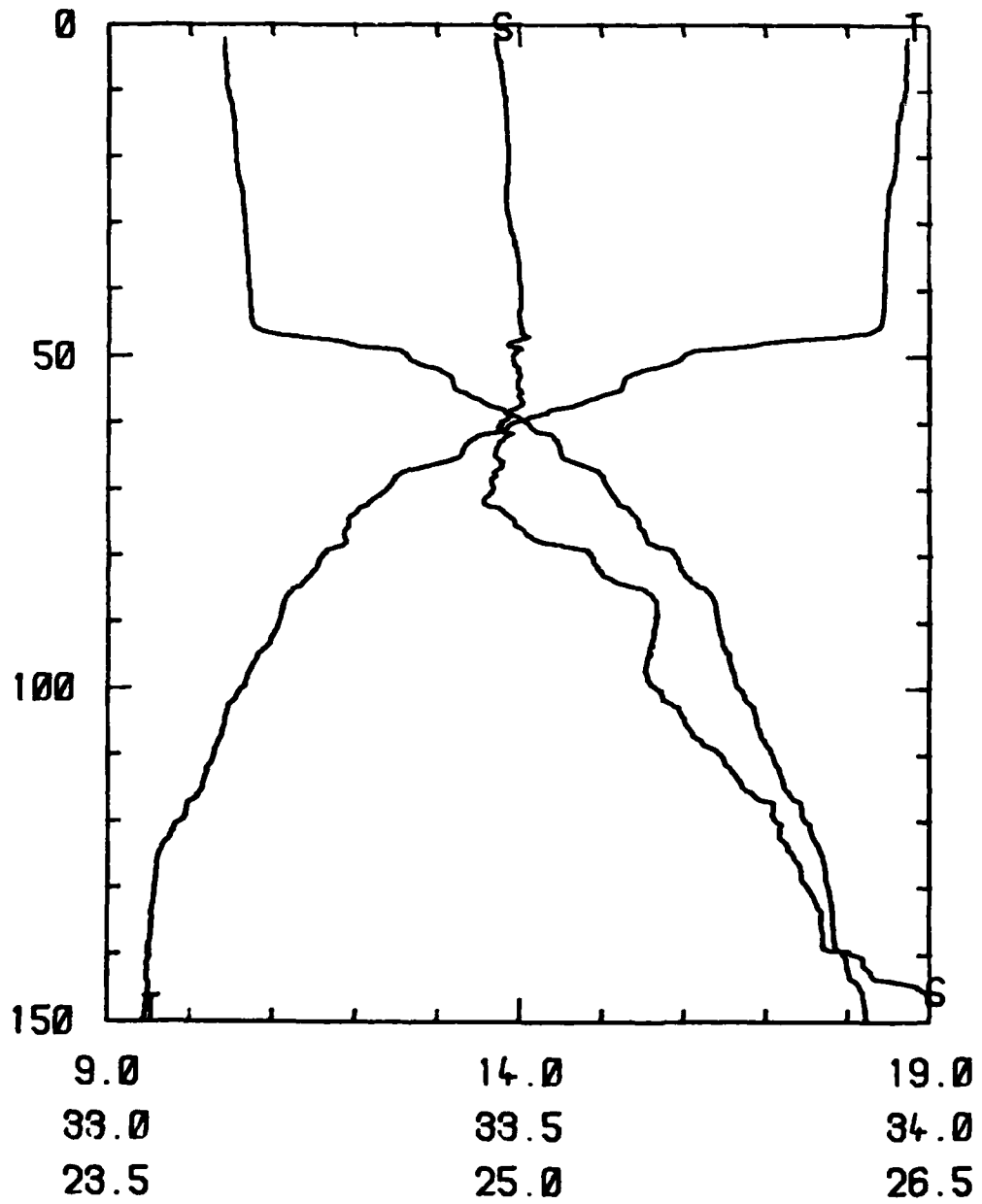
OCTOBER 27, 1983

2356-0034 GMT

OFFSET BETWEEN PROFILES: 0.5 SIGMA T UNITS

SHIP'S SPEED 5.3 KNOTS

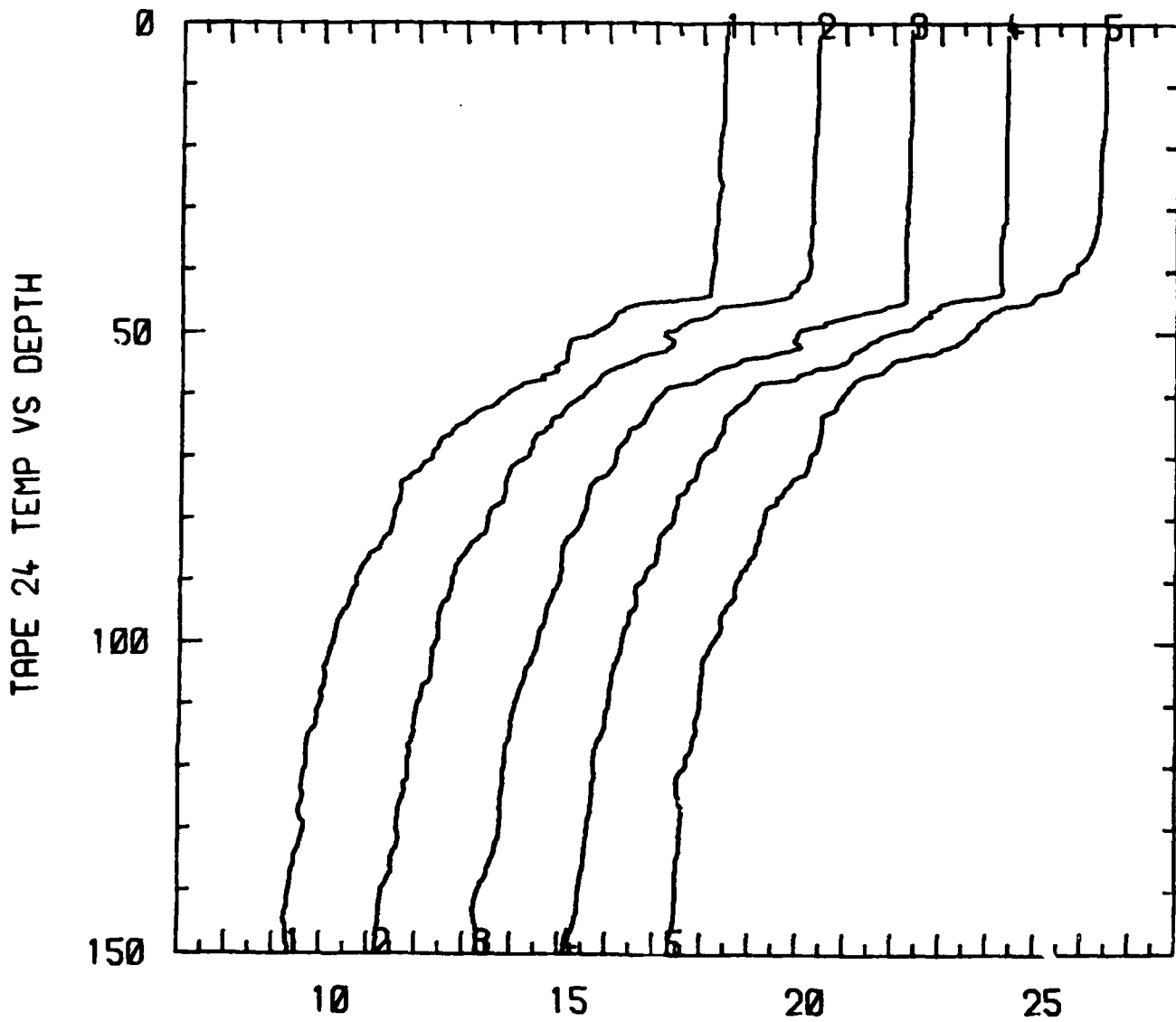
TAPE 21 FILE 28



RSVP: UNIT 4

OCTOBER 27, 1983

2356 GMT



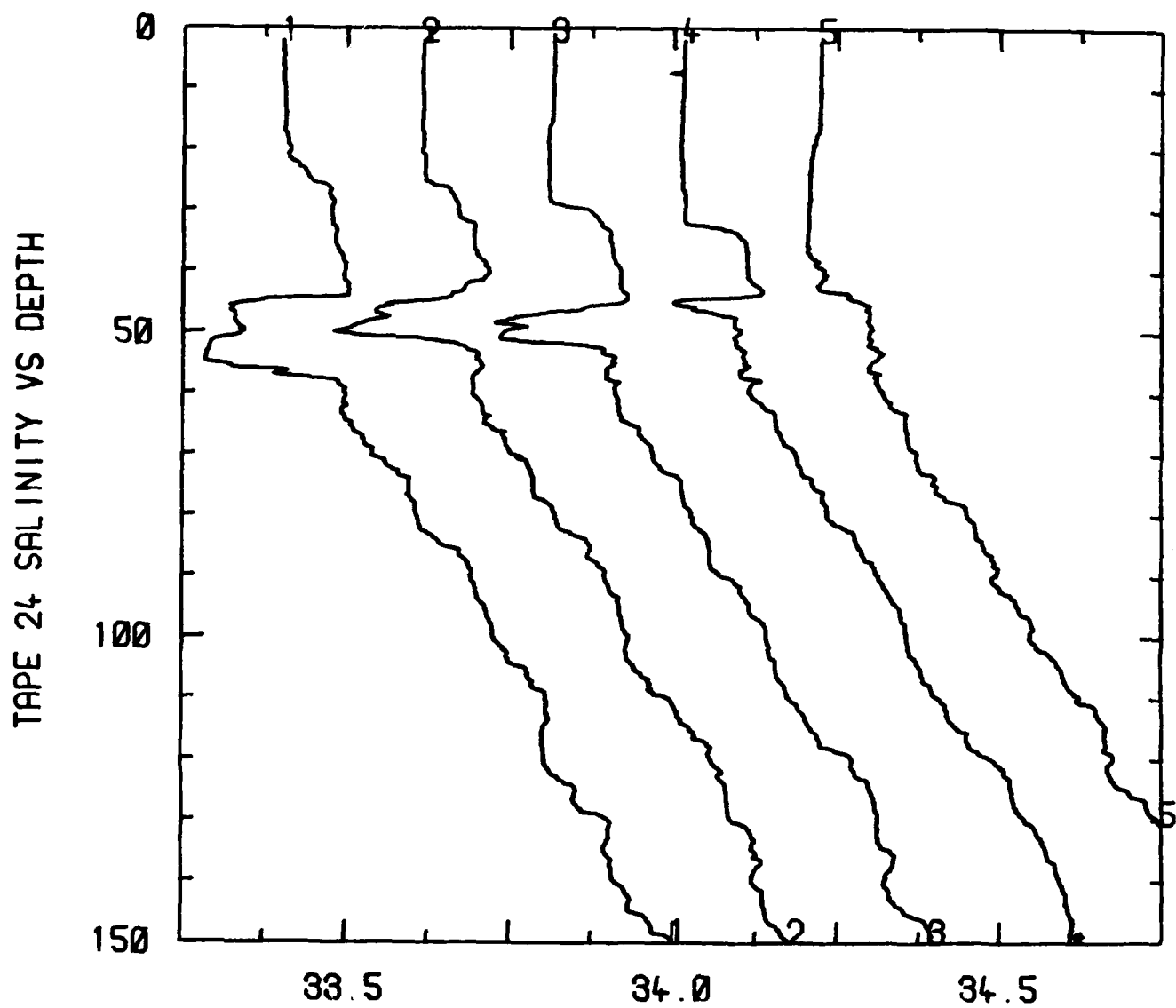
RSVP: UNIT 4

OCTOBER 28, 1983

1736-1814 GMT

OFFSET BETWEEN PROFILES: 2.0 DEGREES

SHIP'S SPEED 4.6 KNOTS



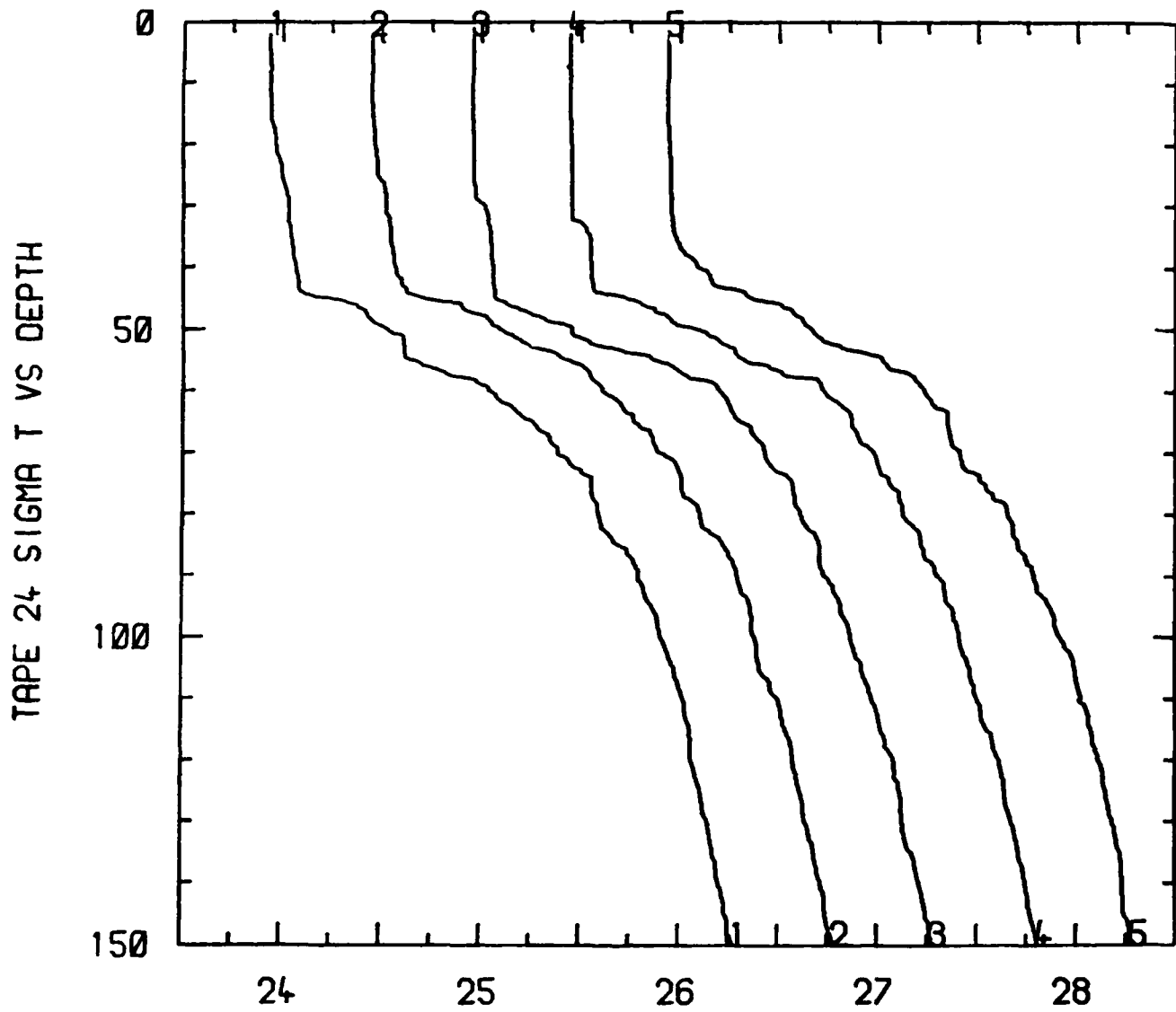
RSVP: UNIT 4

OCTOBER 28, 1983

1736-1814 GMT

OFFSET BETWEEN PROFILES: 0.2 PARTS PER THOUSAND

SHIP'S SPEED 4.6 KNOTS



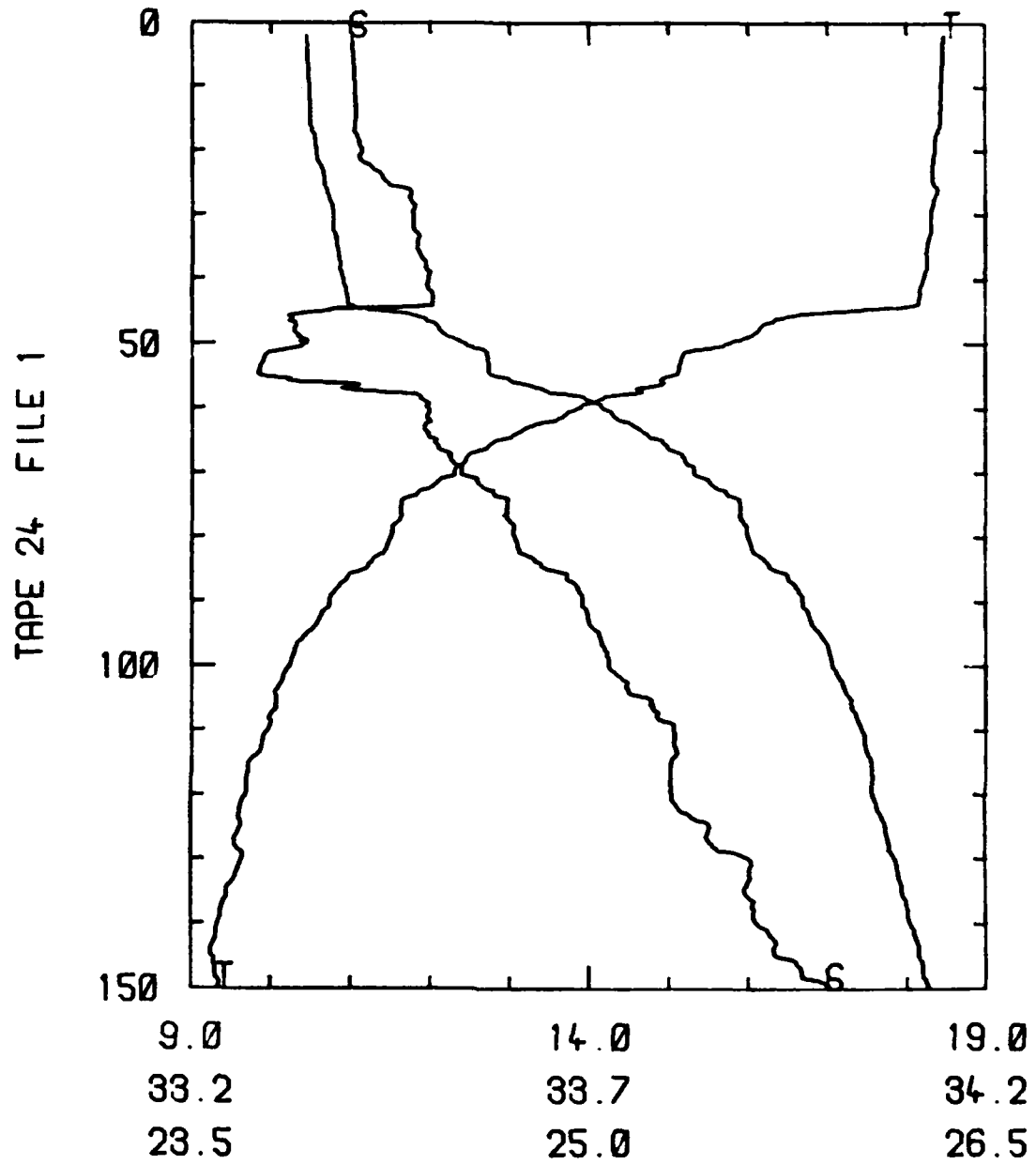
RSVP: UNIT 4

OCTOBER 28, 1983

1736-1814 GMT

OFFSET BETWEEN PROFILES: 0.5 SIGMA T UNITS

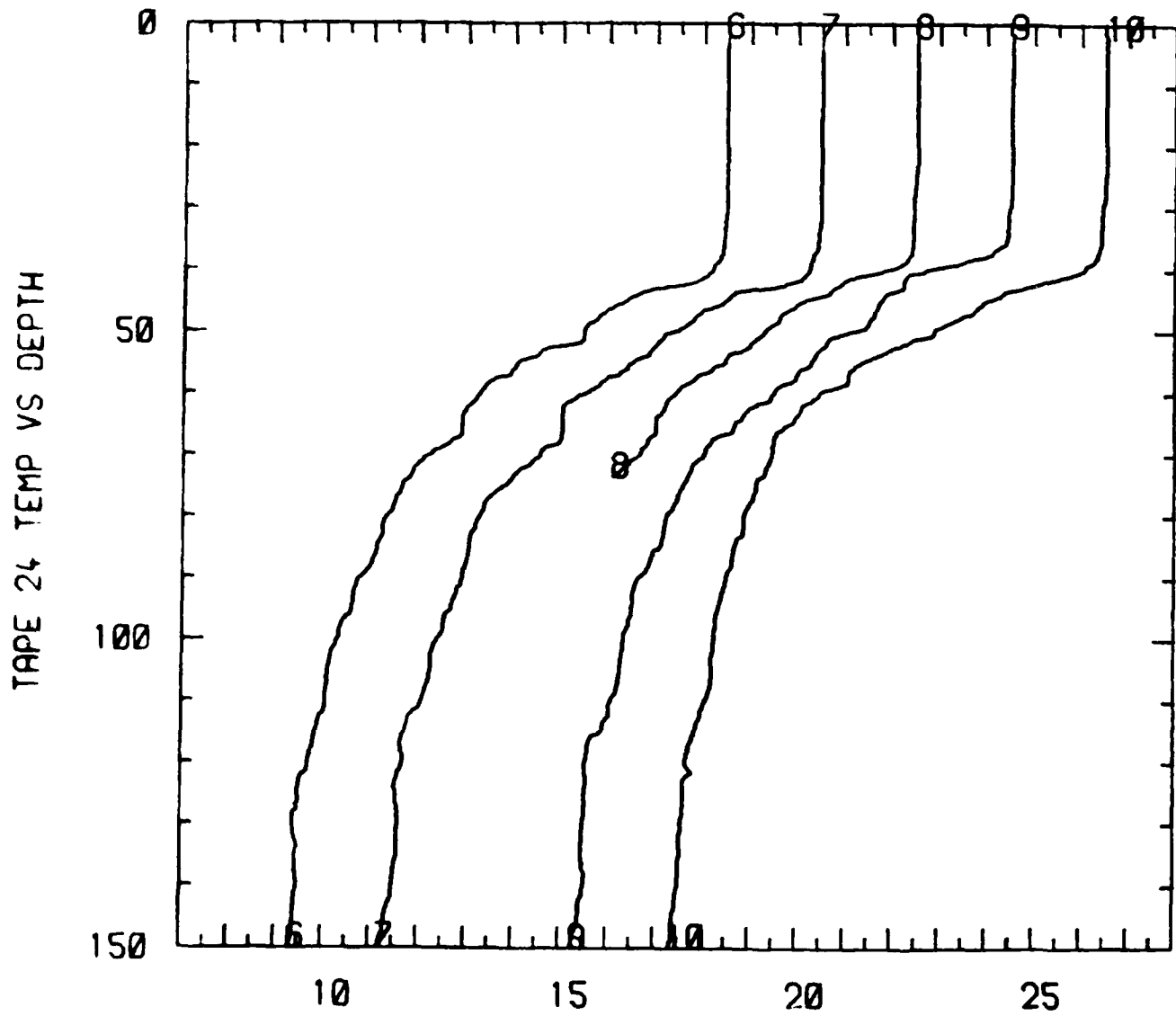
SHIP'S SPEED 4.6 KNOTS



RSVP: UNIT 4

OCTOBER 28, 1983

1736 GMT



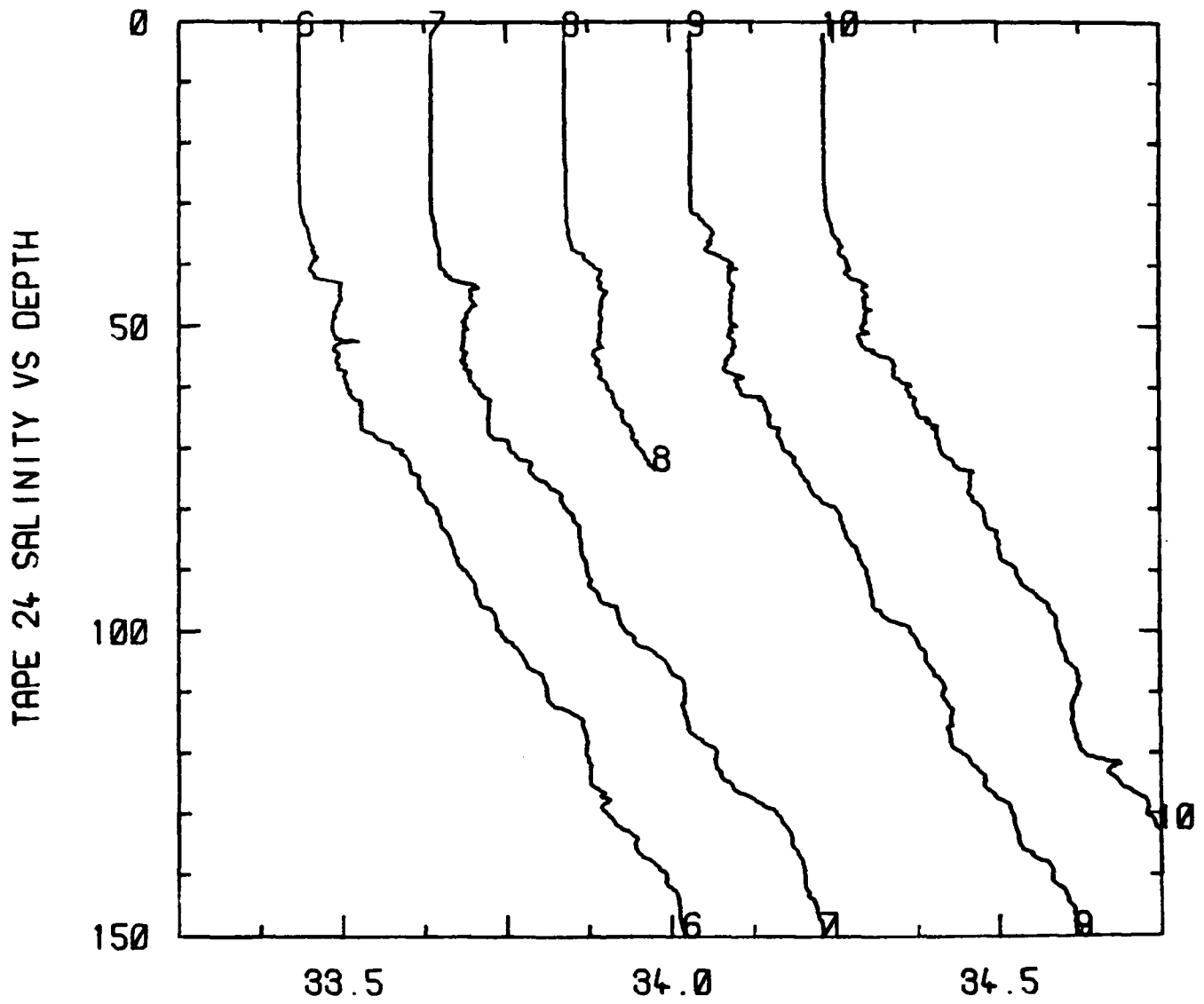
RSVP. UNIT 4

OCTOBER 28, 1983

1816-1854 GMT

OFFSET BETWEEN PROFILES: 2.0 DEGREES

SHIP'S SPEED 4.6 KNOTS



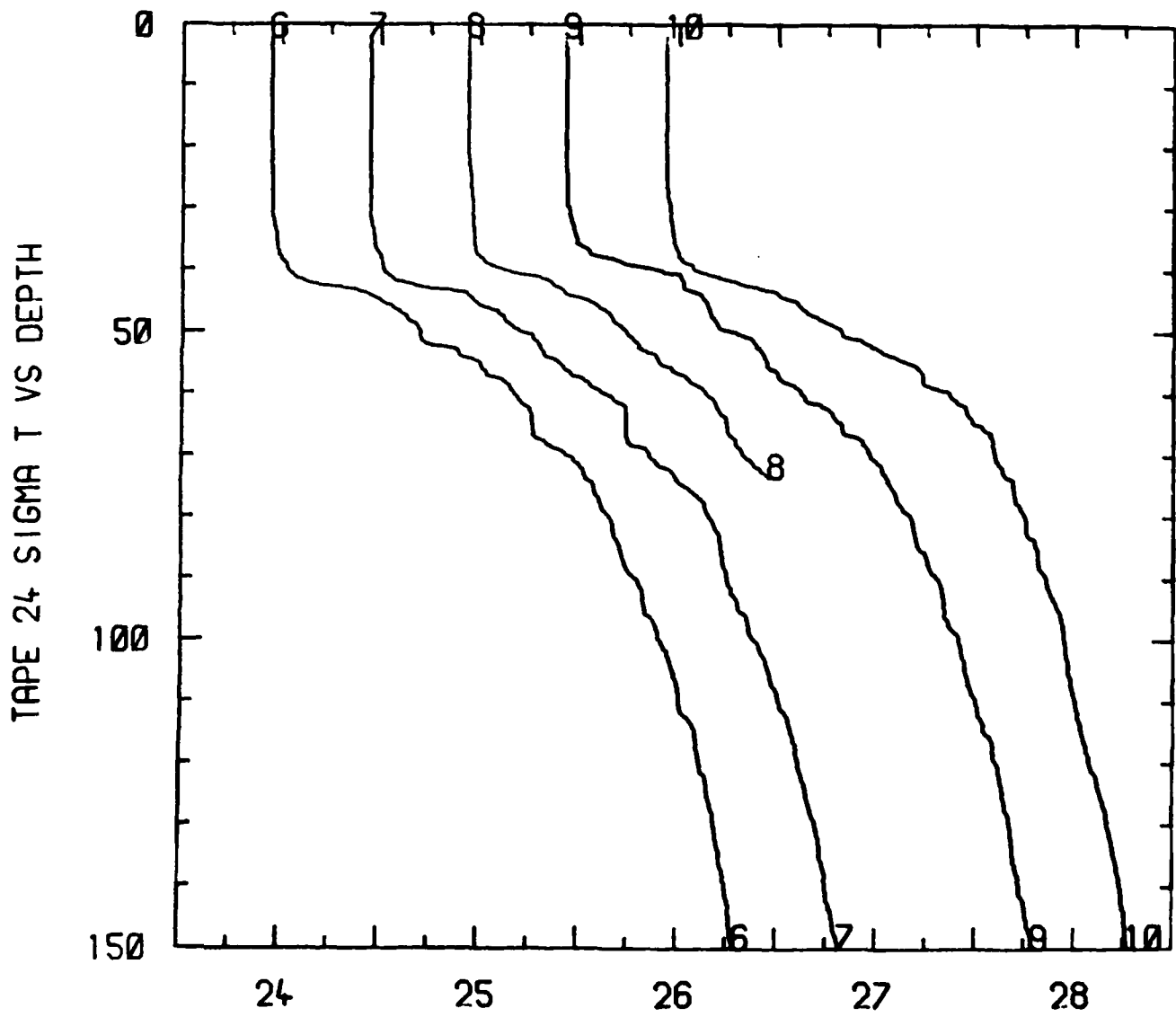
RSVP: UNIT 4

OCTOBER 28, 1983

1816-1854 GMT

OFFSET BETWEEN PROFILES: 0.2 PARTS PER THOUSAND

SHIP'S SPEED 4.6 KNOTS



RSVP: UNIT 4

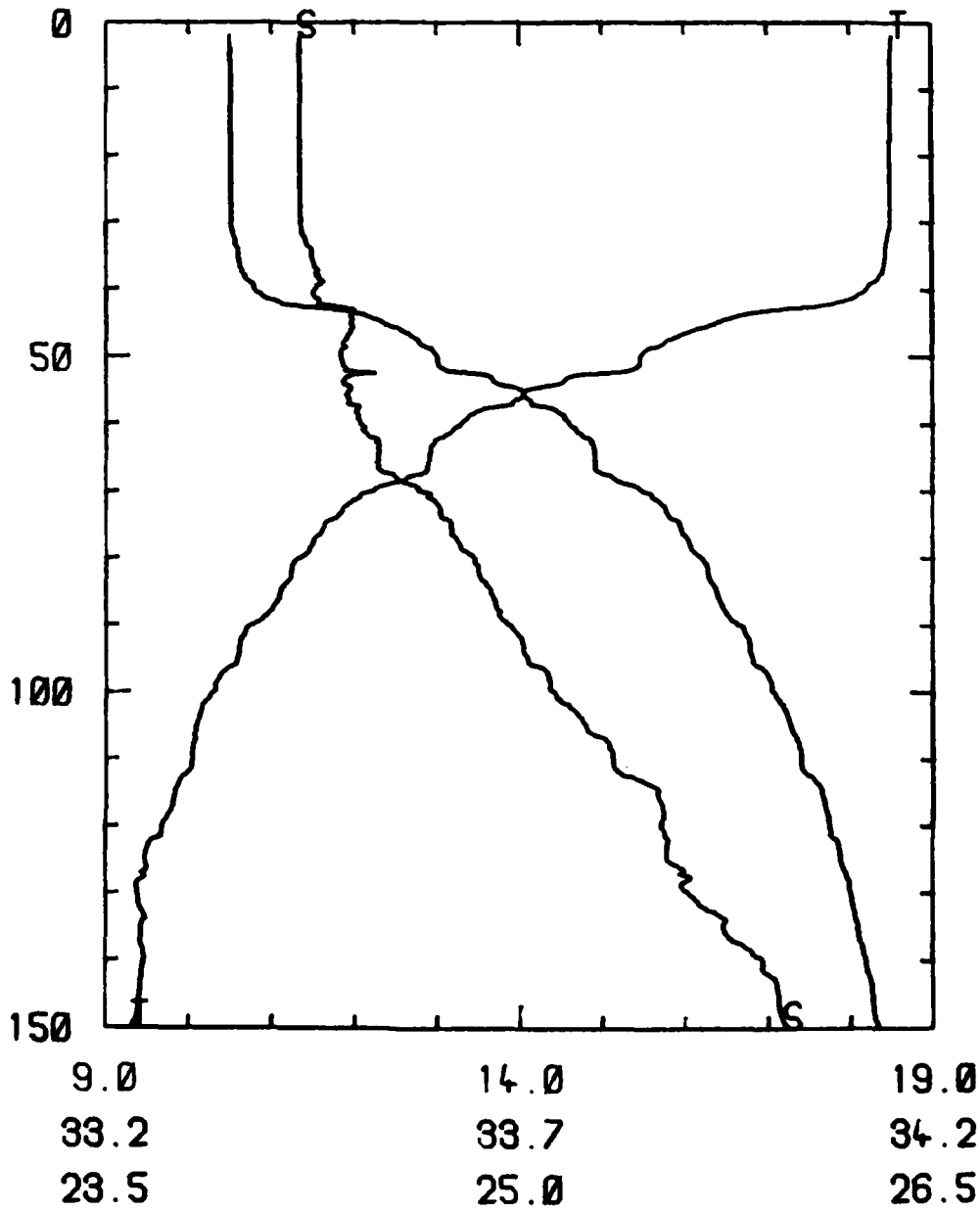
OCTOBER 28, 1983

1816-1854 GMT

OFFSET BETWEEN PROFILES: 0.5 SIGMA T UNITS

SHIP'S SPEED 4.6 KNOTS

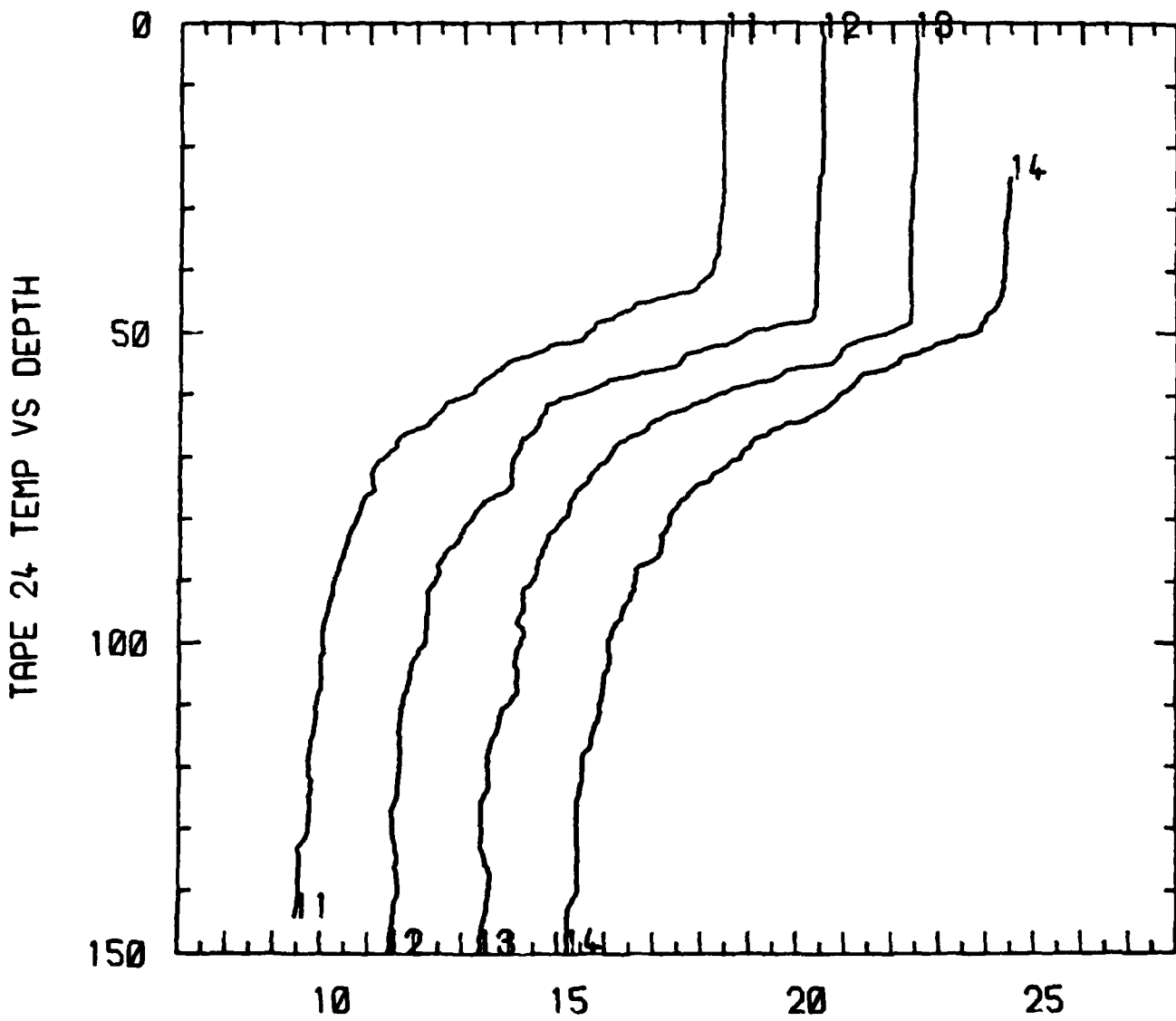
TAPE 24 FILE 6



RSVP: UNIT 4

OCTOBER 28, 1983

1816 GMT



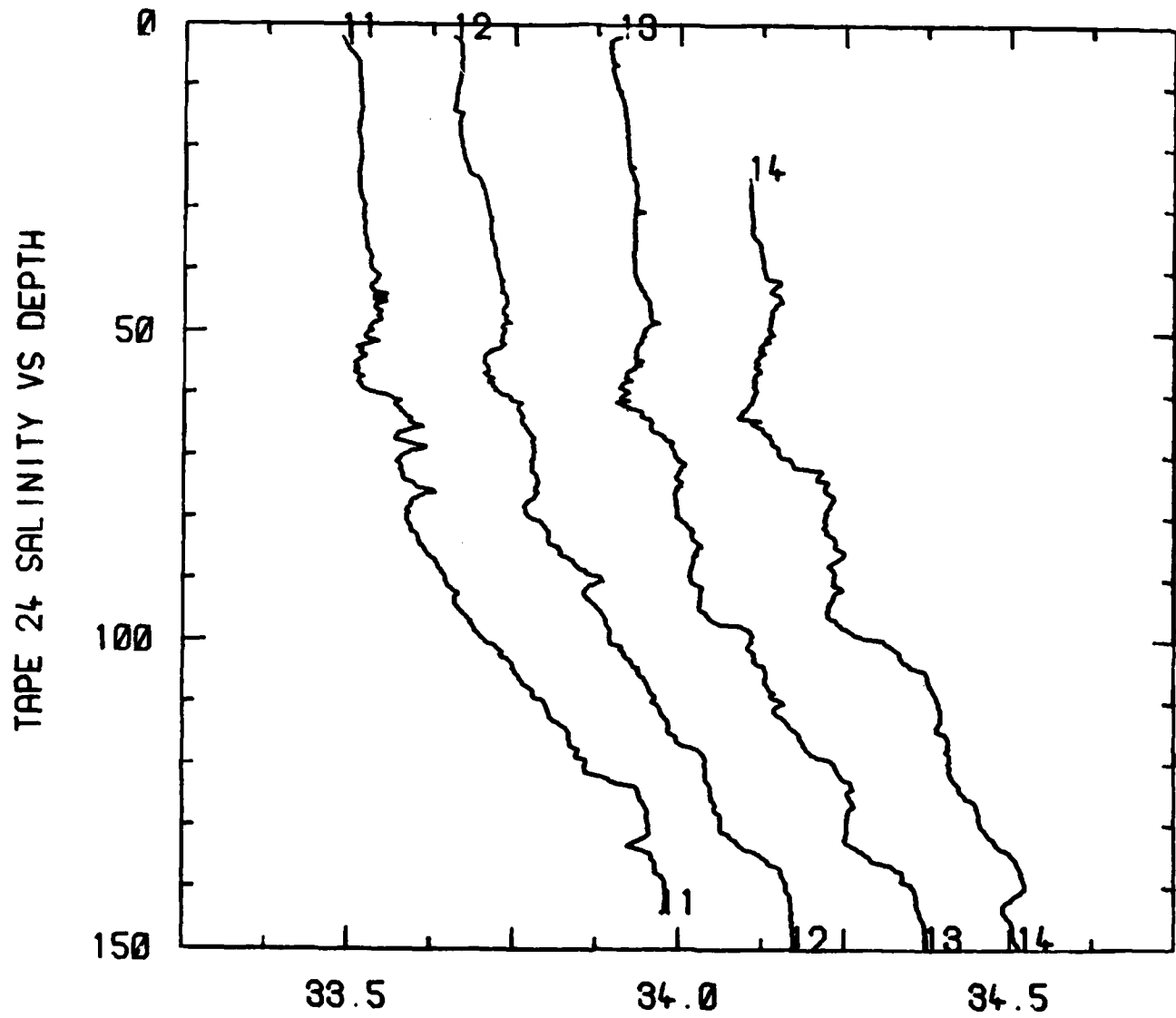
RSVP: UNIT 4

OCTOBER 28, 1983

1856-1926 GMT

OFFSET BETWEEN PROFILES: 2.0 DEGREES

SHIP'S SPEED 4.9 KNOTS



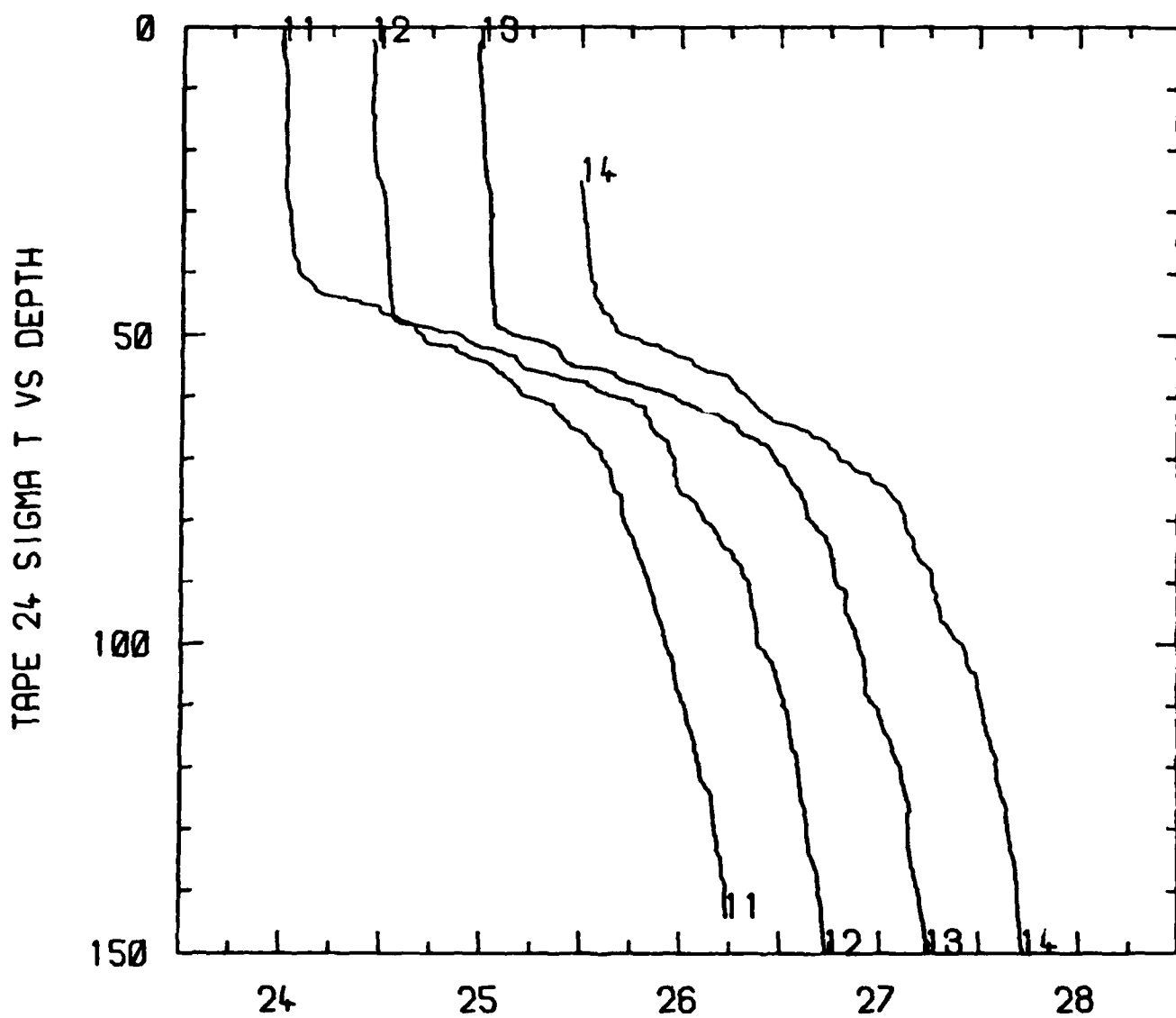
RSVP: UNIT 4

OCTOBER 28, 1983

1856-1926 GMT

OFFSET BETWEEN PROFILES: 0.2 PARTS PER THOUSAND

SHIP'S SPEED 4.9 KNOTS



RSVP: UNIT 4

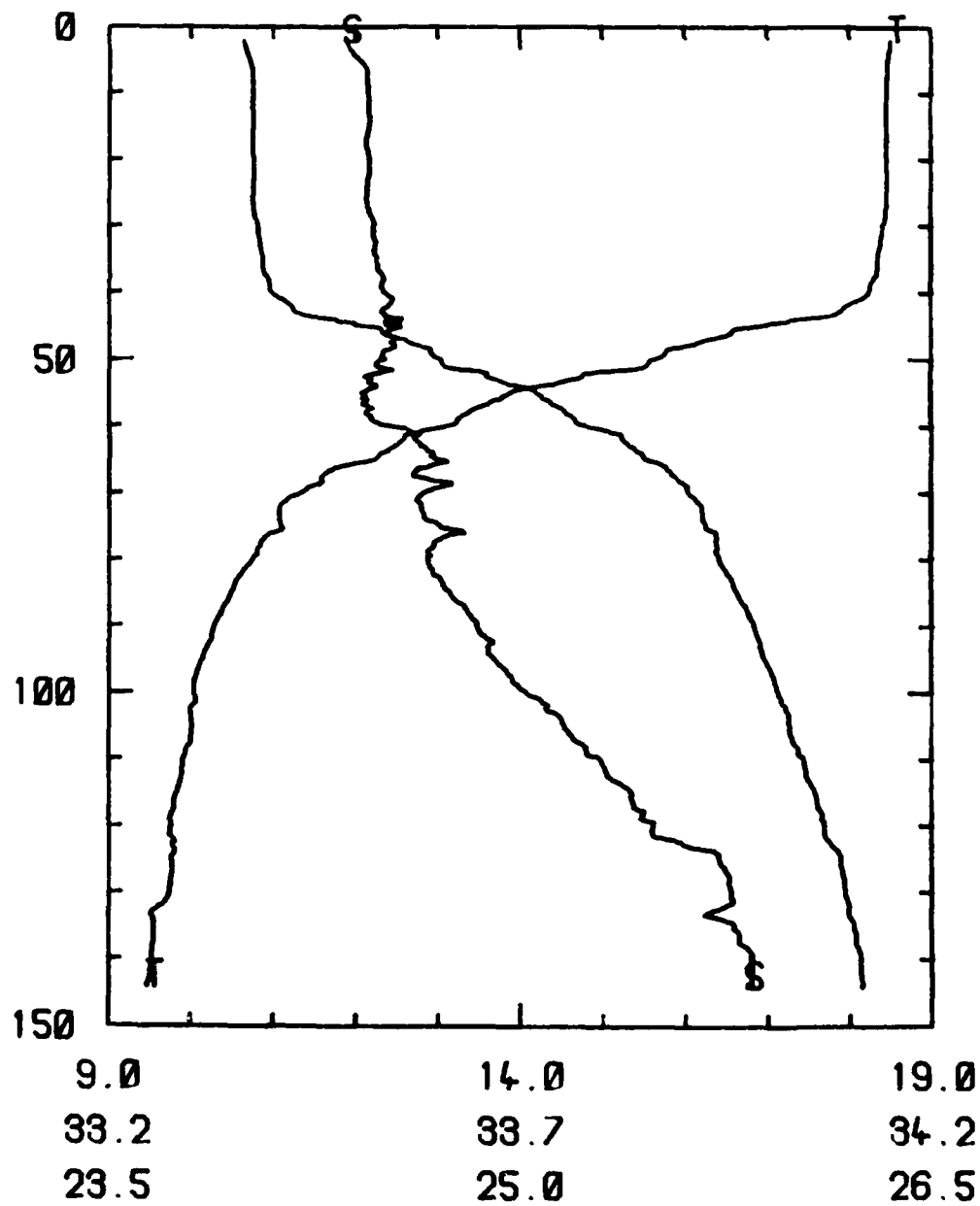
OCTOBER 28, 1983

1856-1926 GMT

OFFSET BETWEEN PROFILES: 0.5 SIGMA T UNITS

SHIP'S SPEED 4.9 KNOTS

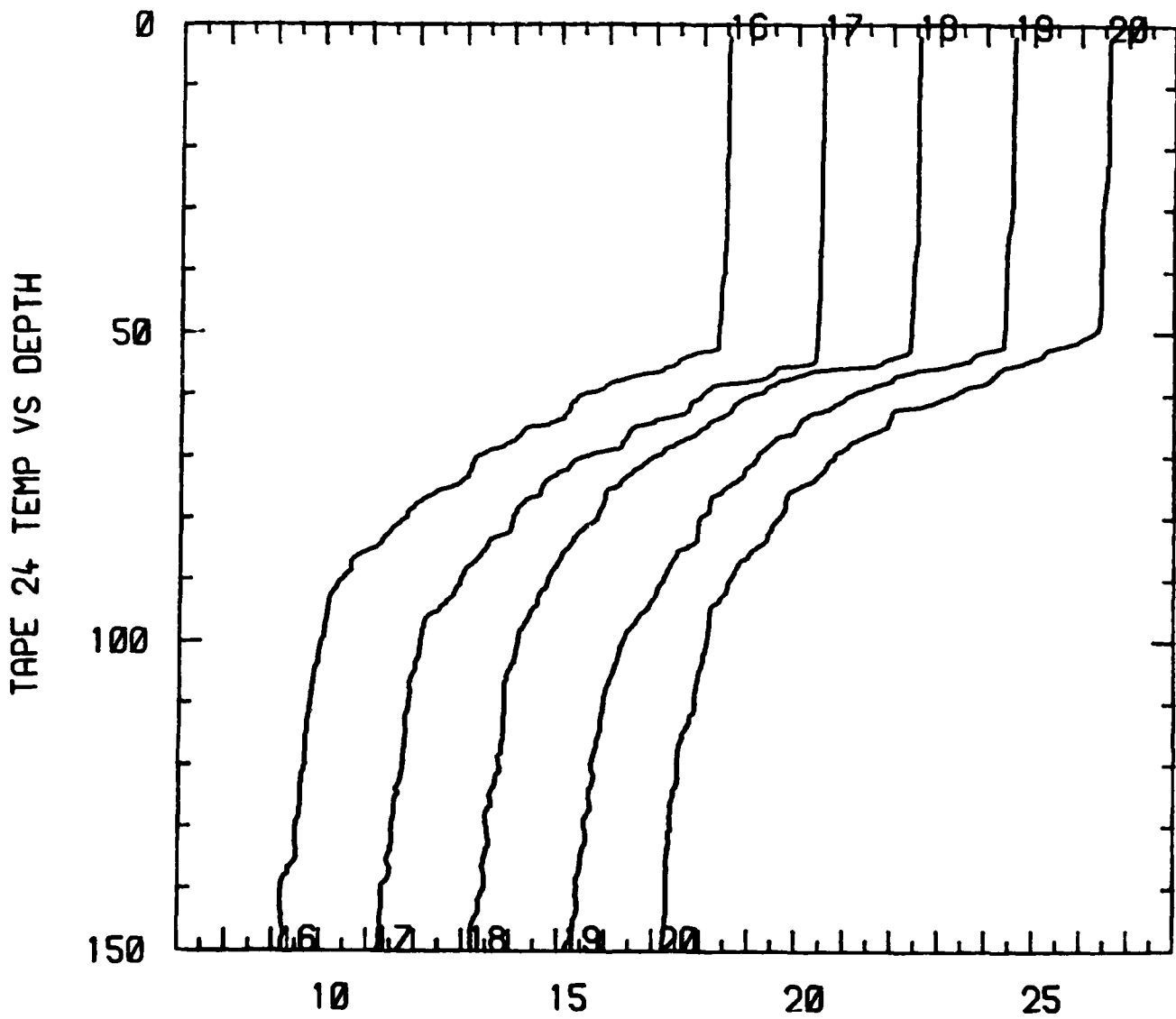
TAPE 24 FILE 11



RSVP: UNIT 4

OCTOBER 28, 1983

1856 GMT



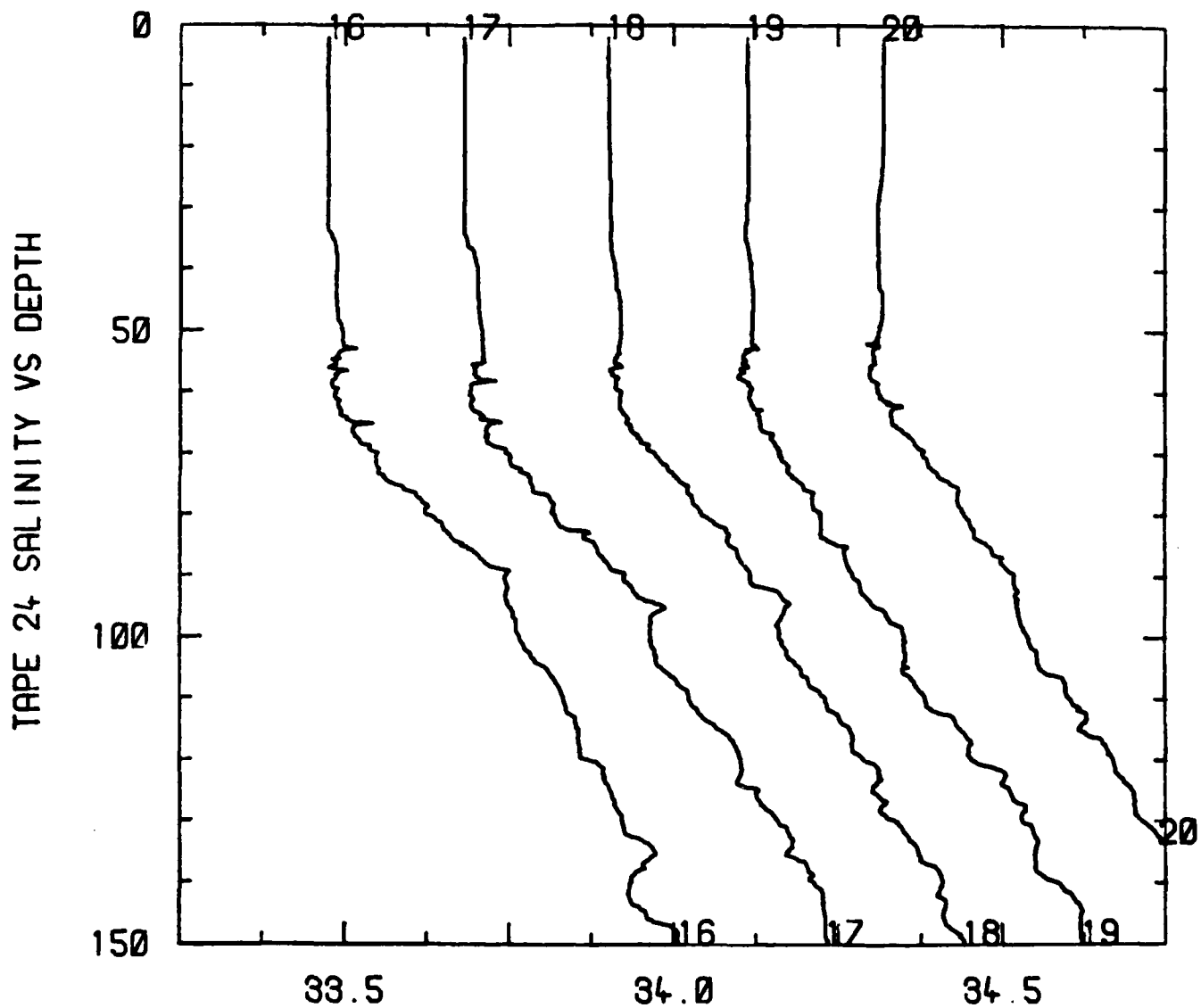
RSVP: UNIT 4

OCTOBER 28, 1983

2000-2038 GMT

OFFSET BETWEEN PROFILES: 2.0 DEGREES

SHIP'S SPEED 4.9 KNOTS



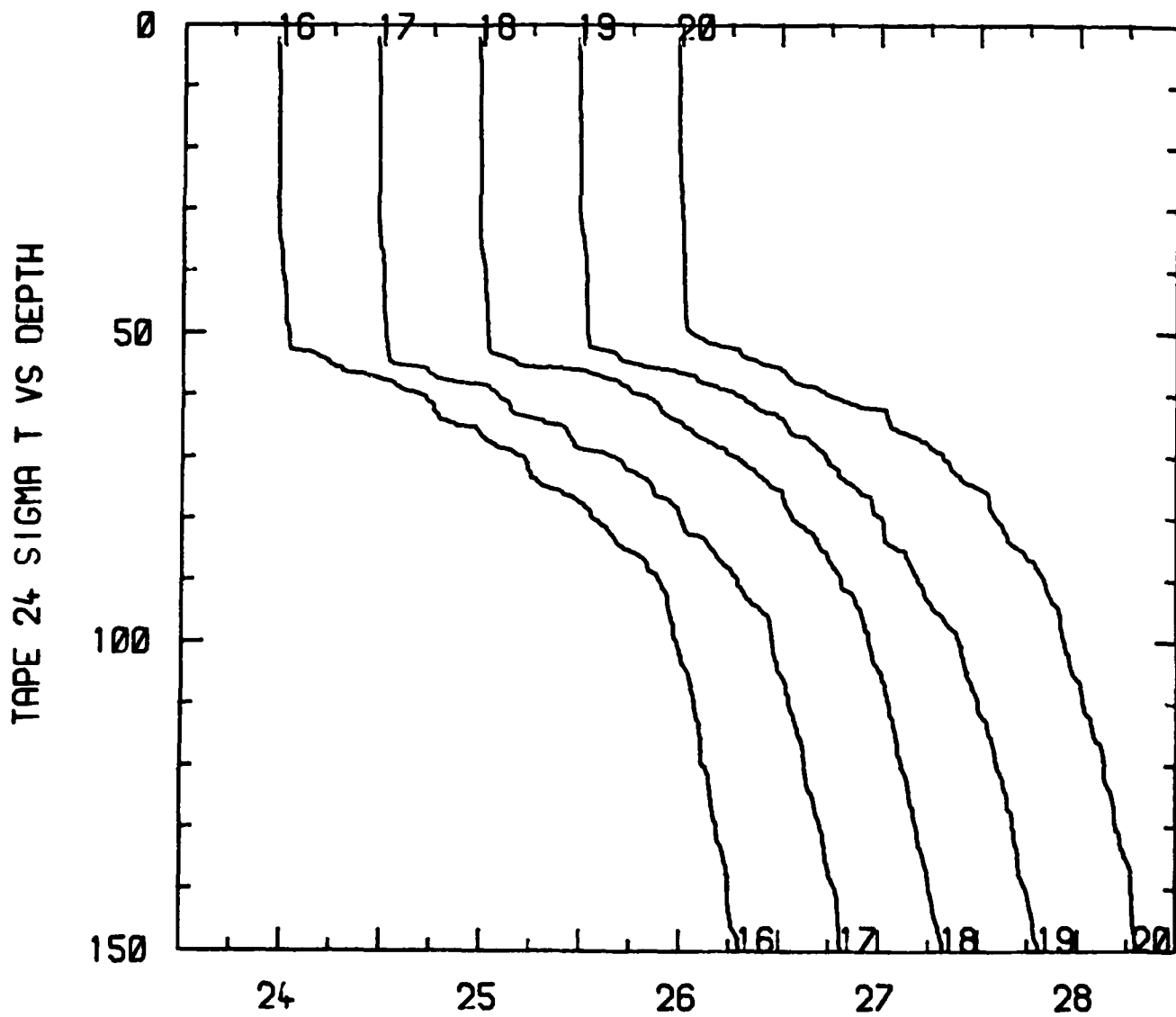
RSVP: UNIT 4

OCTOBER 28, 1983

2000-2038 GMT

OFFSET BETWEEN PROFILES: 0.2 PARTS PER THOUSAND

SHIP'S SPEED 4.9 KNOTS



RSVP: UNIT 4

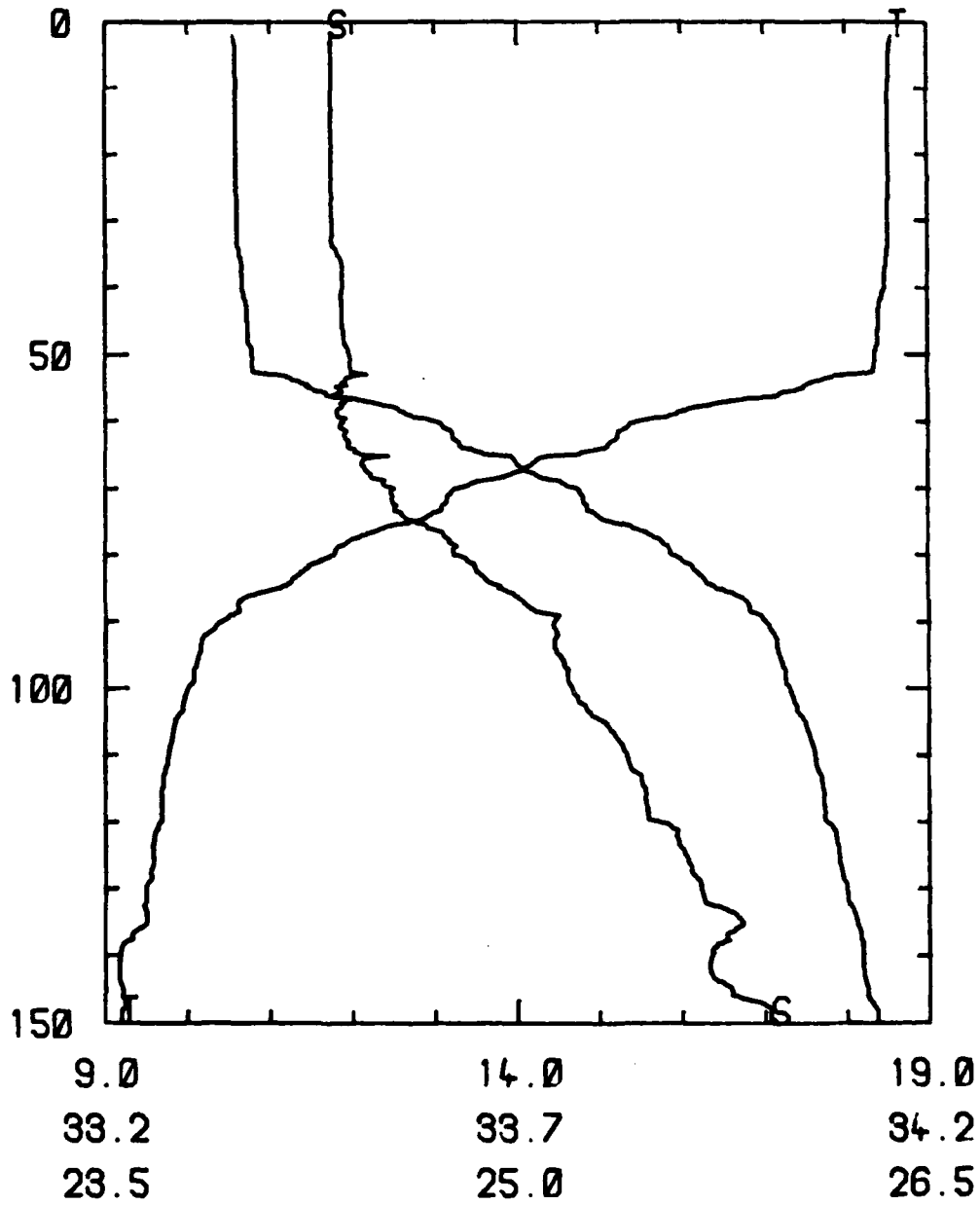
OCTOBER 28, 1983

2000-2038 GMT

OFFSET BETWEEN PROFILES: 0.5 SIGMA T UNITS

SHIP'S SPEED 4.9 KNOTS

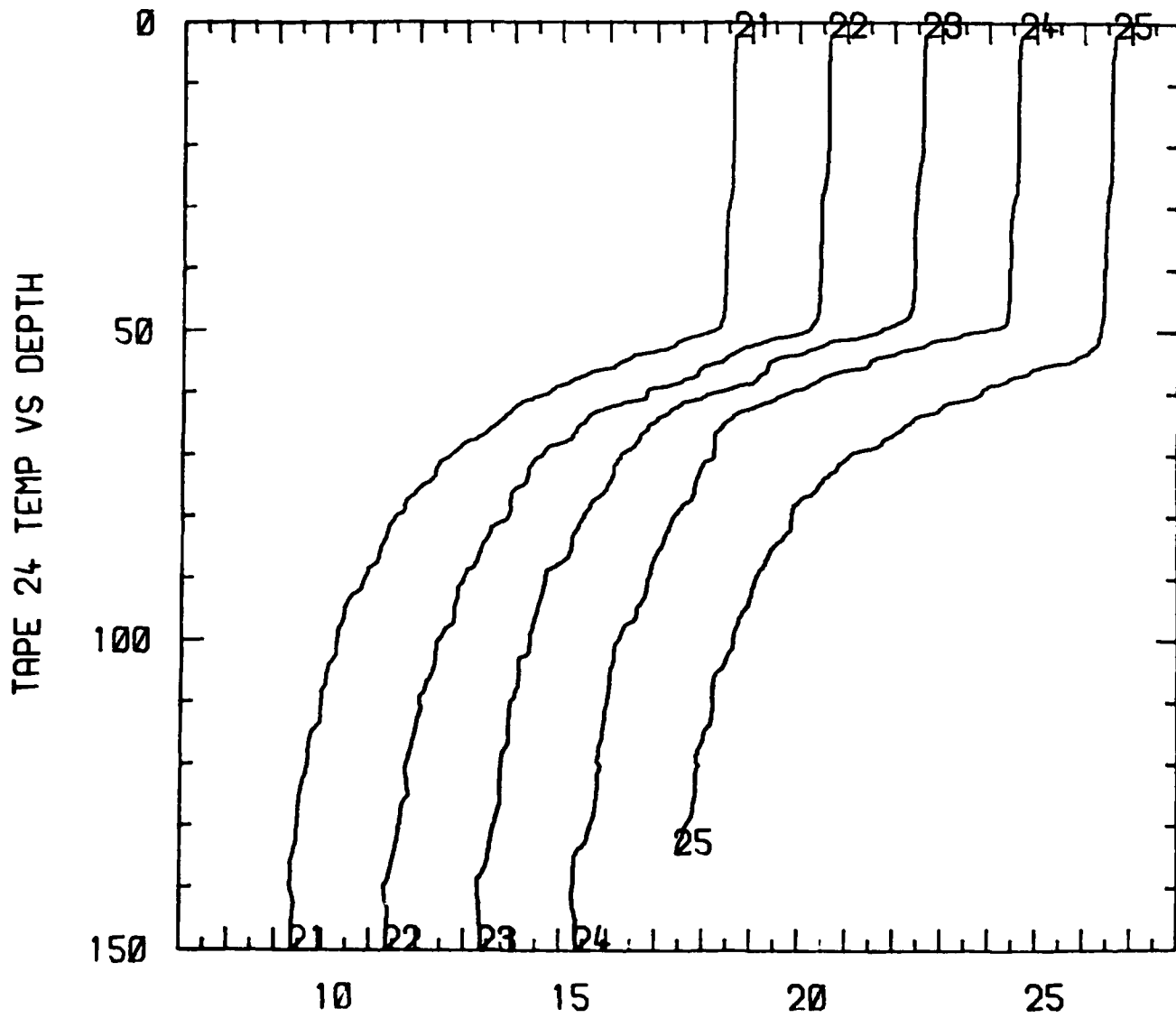
TAPE 24 FILE 16



RSVP: UNIT 4

OCTOBER 28, 1983

2004 GMT



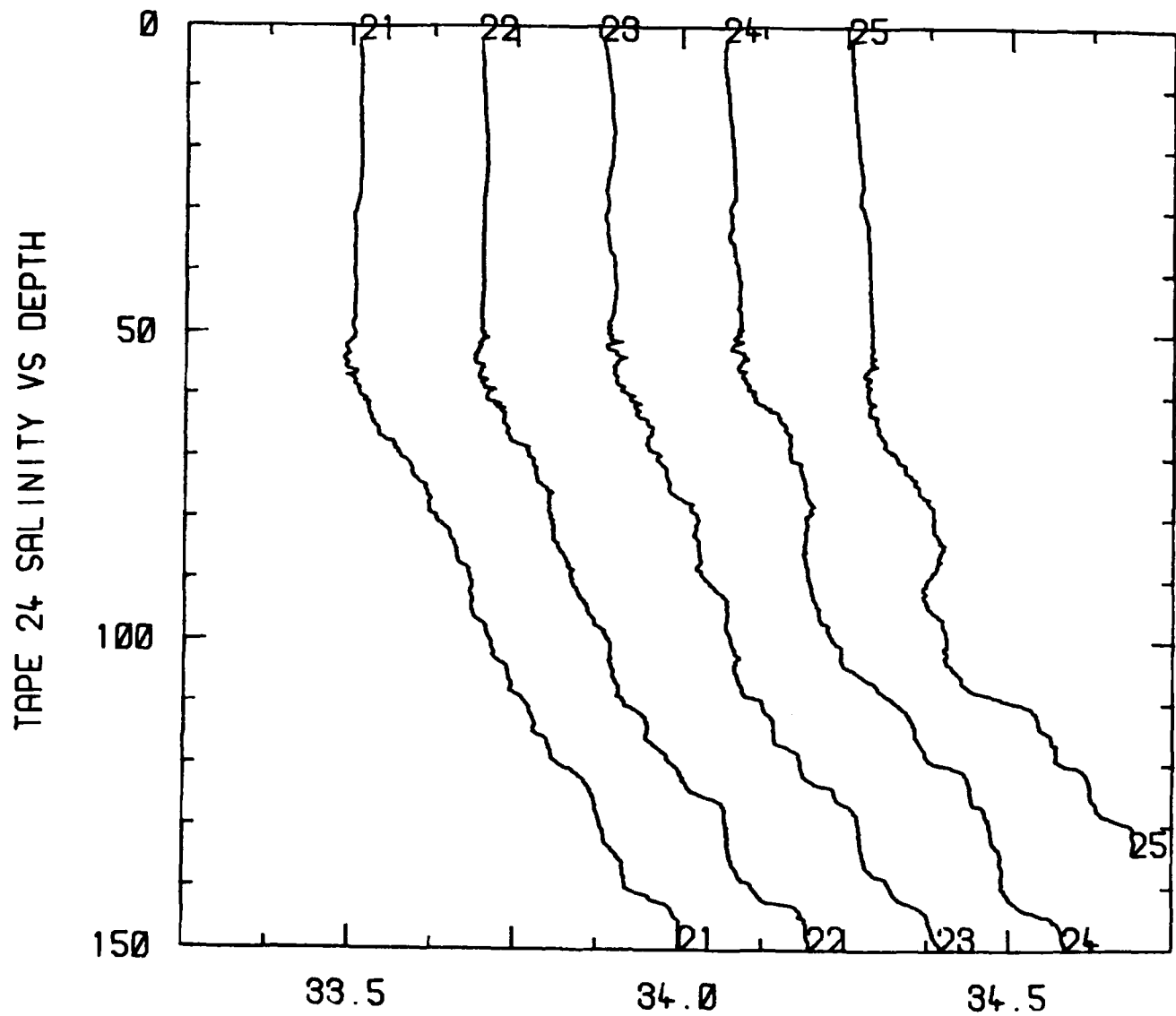
RSVP: UNIT 4

OCTOBER 28, 1983

2040-2116 GMT

OFFSET BETWEEN PROFILES: 2.0 DEGREES

SHIP'S SPEED 4.6-4.8 KNOTS



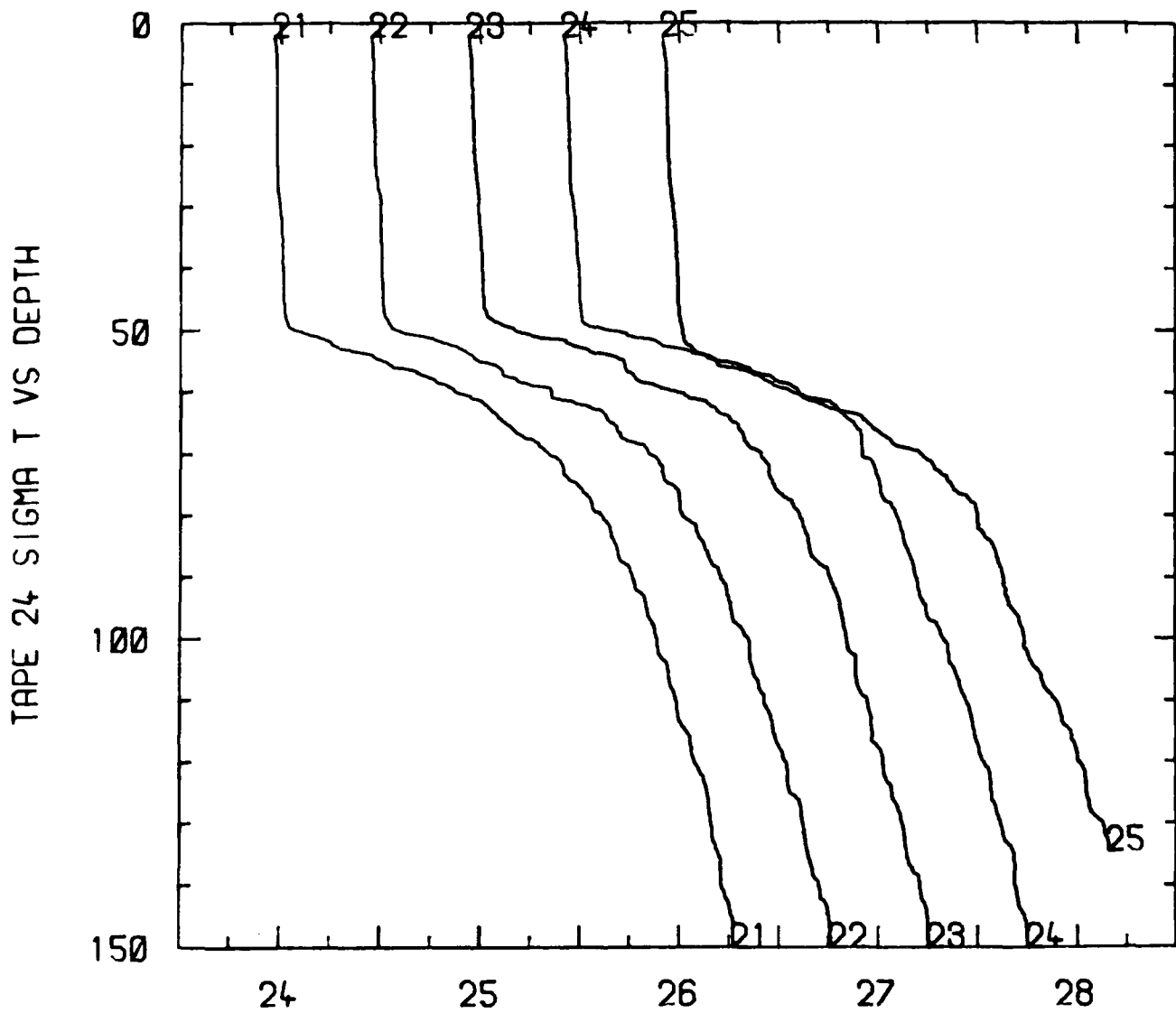
RSVP: UNIT 4

OCTOBER 28, 1983

2040-2116 GMT

OFFSET BETWEEN PROFILES: 0.2 PARTS PER THOUSAND

SHIP'S SPEED 4.6-4.8 KNOTS



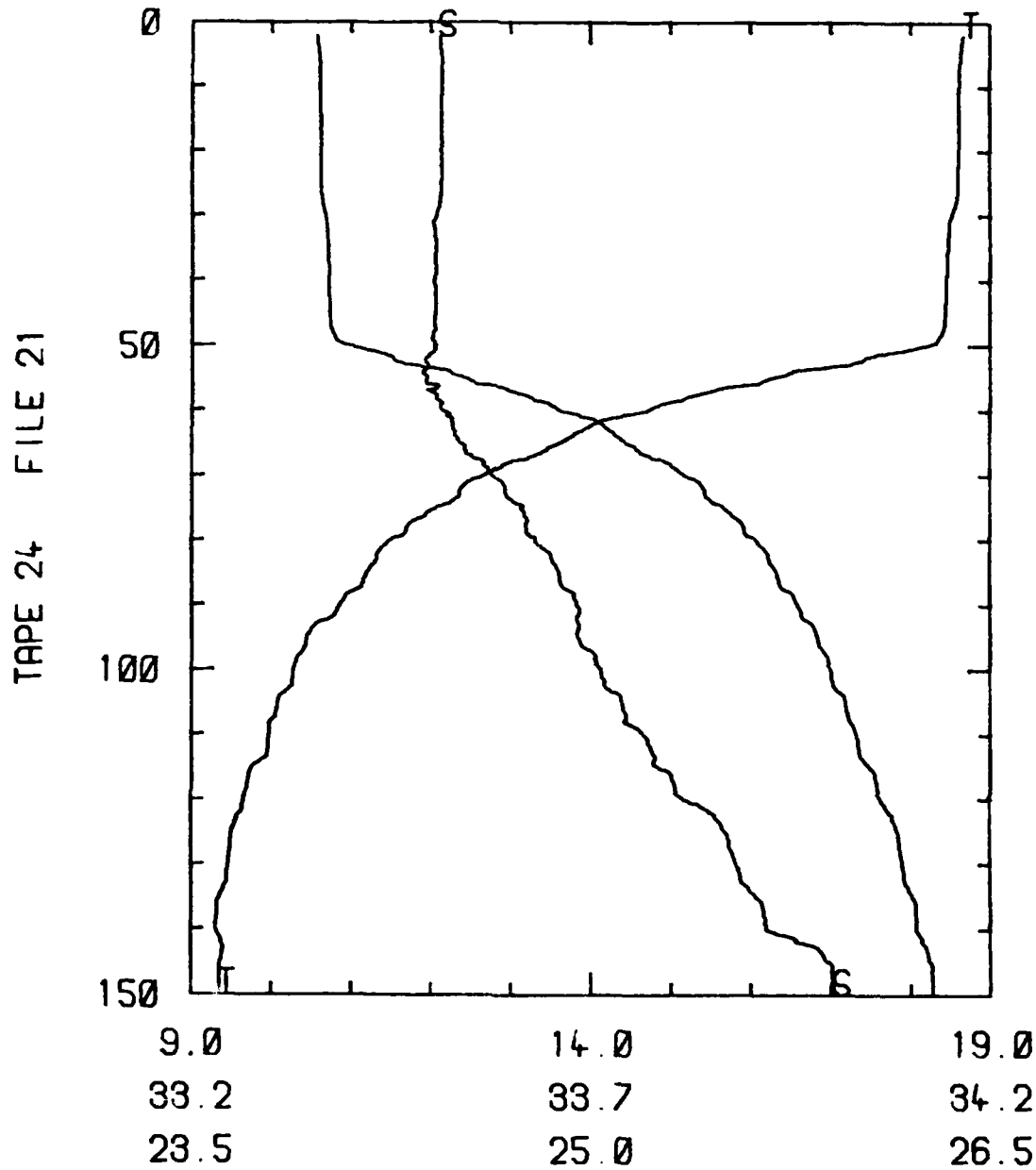
RSVP: UNIT 4

OCTOBER 28, 1983

2040-2116 GMT

OFFSET BETWEEN PROFILES: 0.5 SIGMA T UNITS

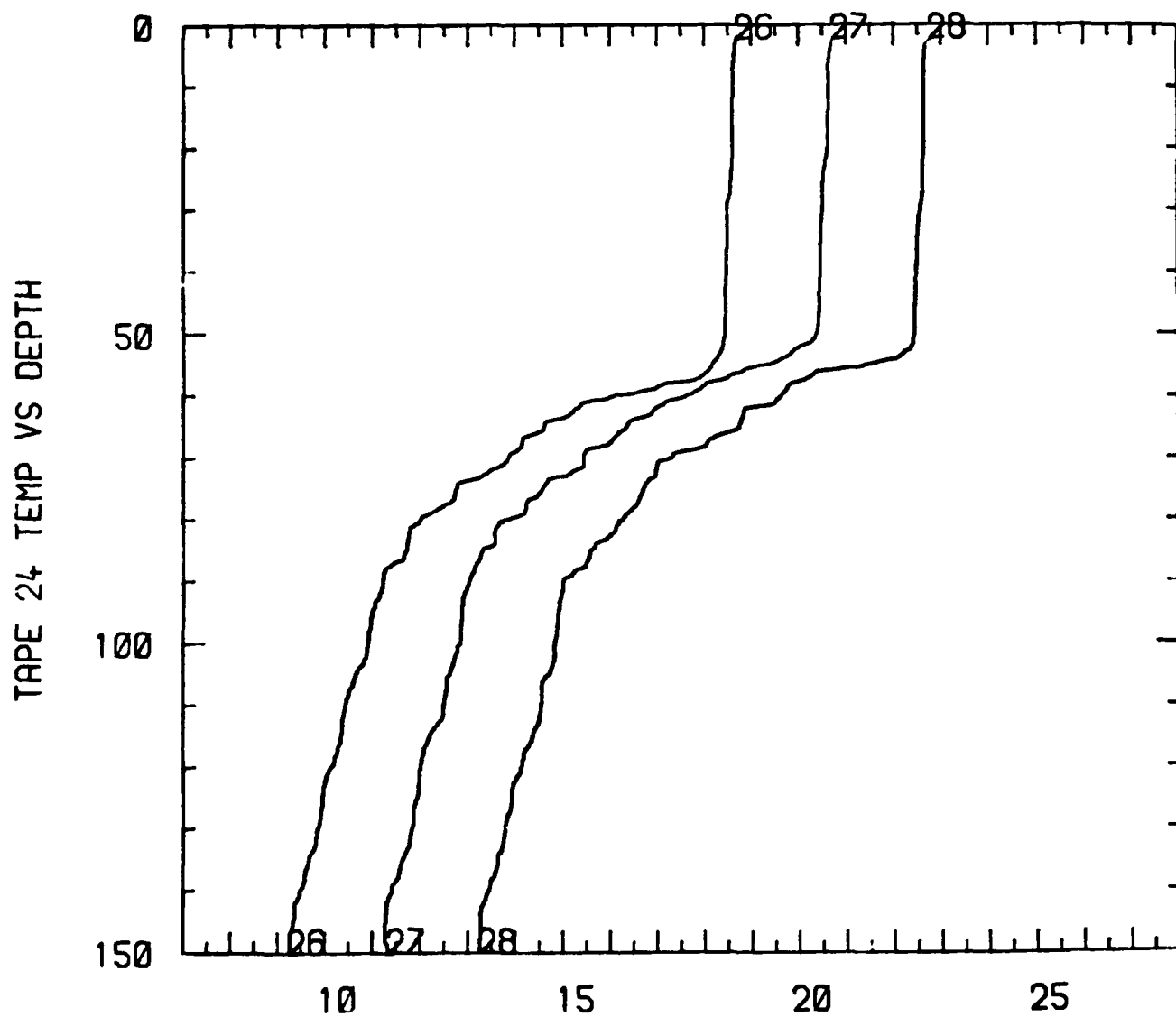
SHIP'S SPEED 4.6-4.8 KNOTS



RSVP. UNIT 4

OCTOBER 28, 1983

2040 GMT



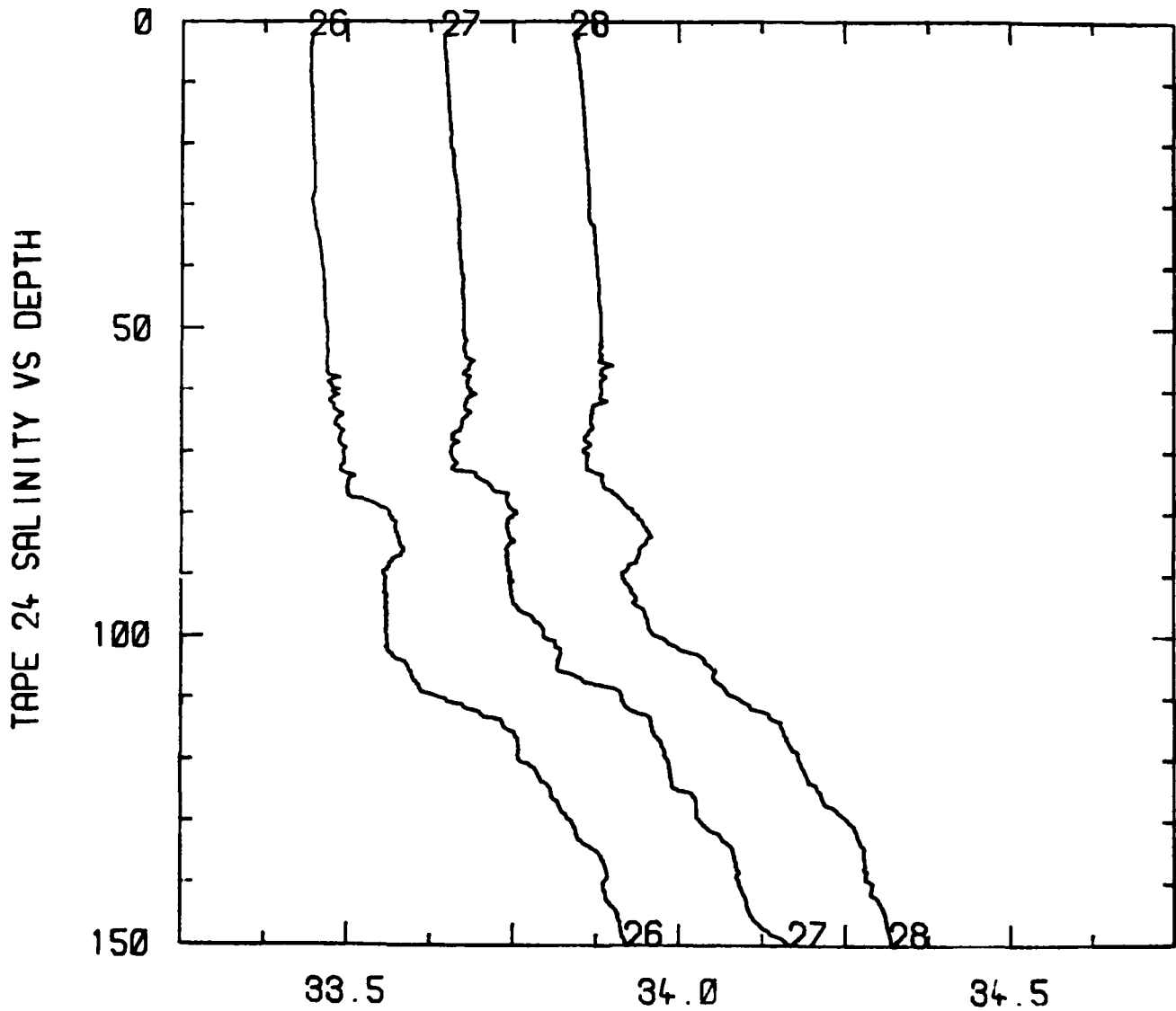
RSVP: UNIT 4

OCTOBER 28, 1983

2120-2142 GMT

OFFSET BETWEEN PROFILES: 2.0 DEGREES

SHIP'S SPEED 4.7 KNOTS



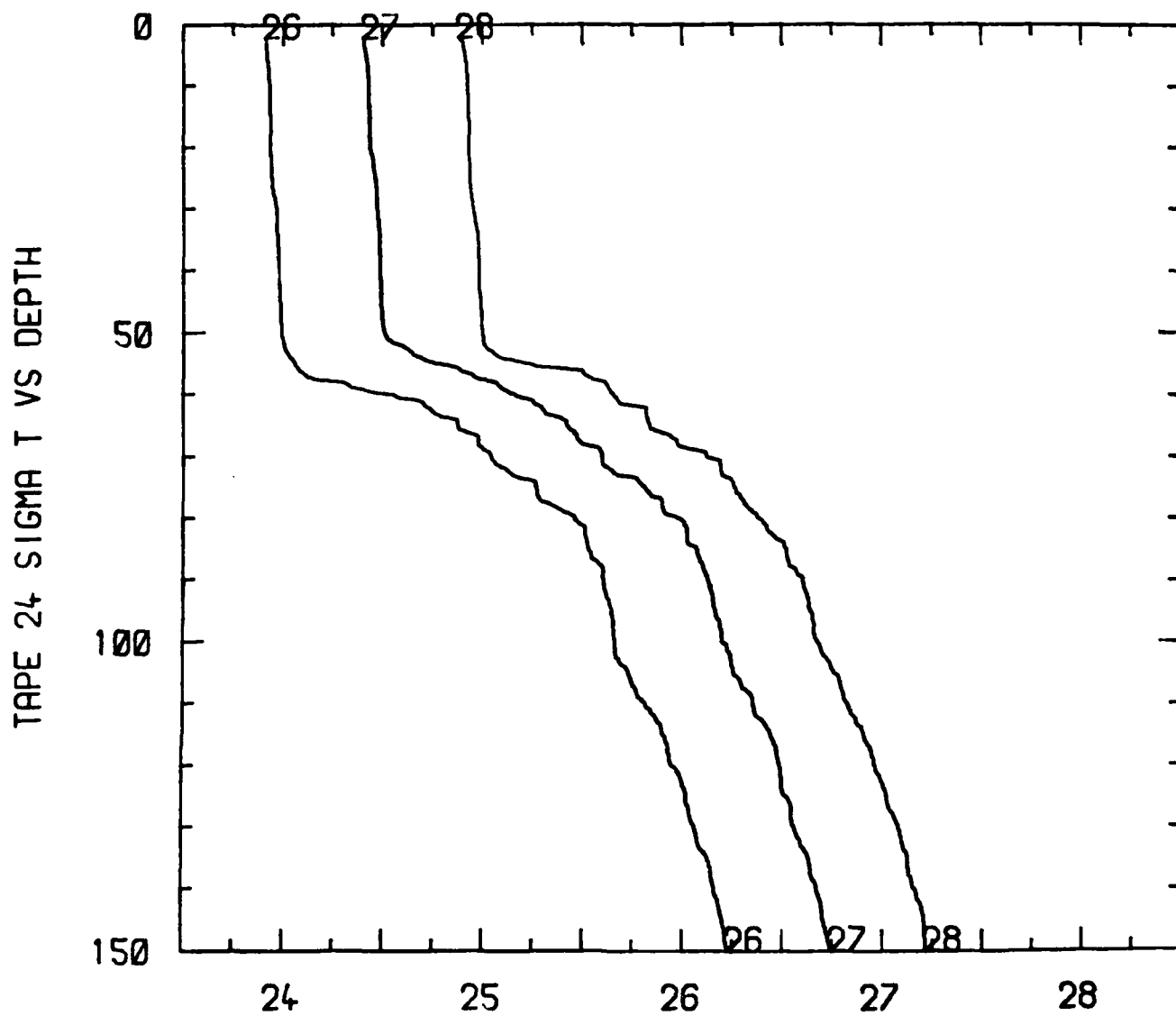
RSVP: UNIT 4

OCTOBER 28, 1983

2120-2142 GMT

OFFSET BETWEEN PROFILES: 0.2 PARTS PER THOUSAND

SHIP'S SPEED 4.7 KNOTS



RSVP: UNIT 4

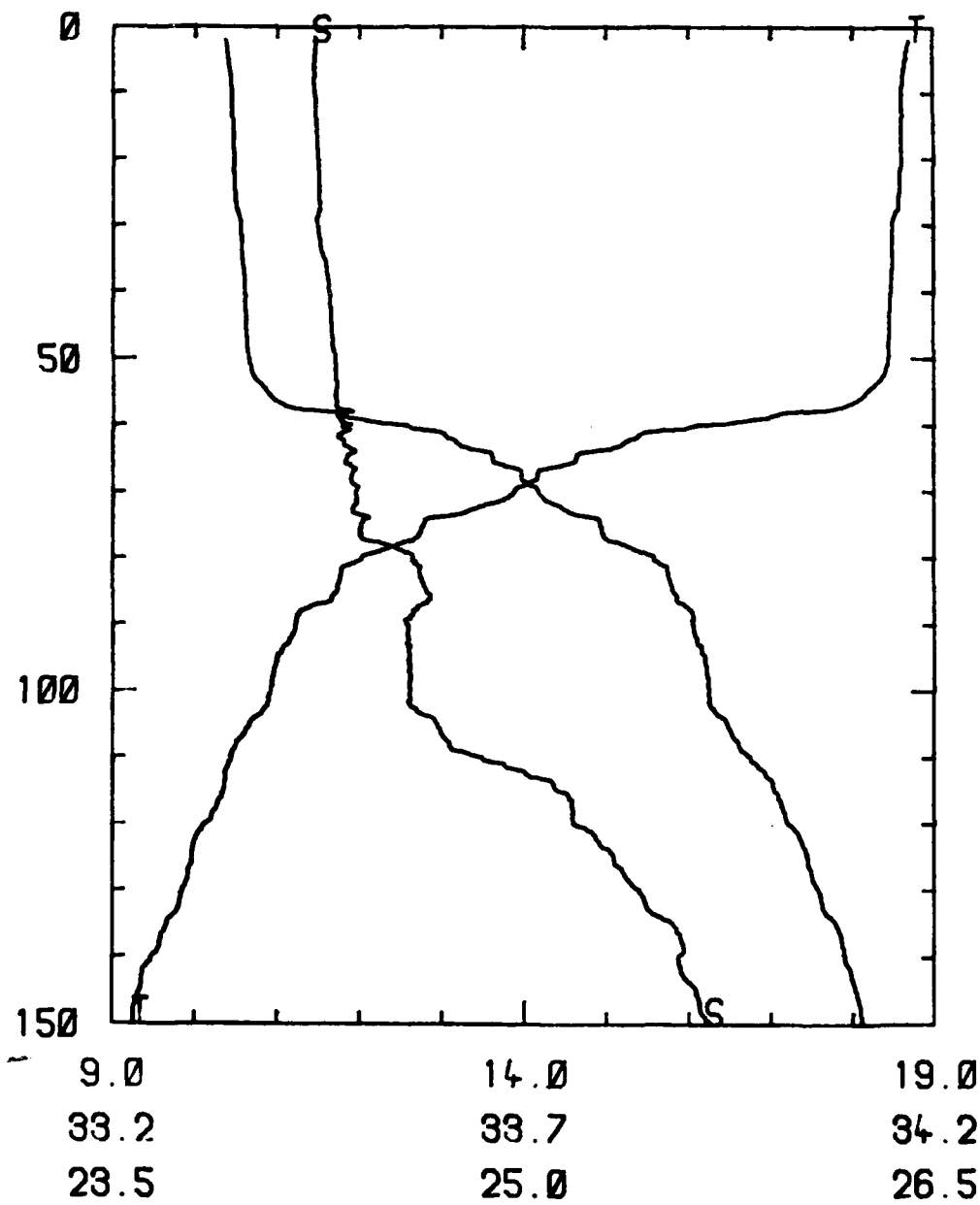
OCTOBER 28, 1983

2120-2142 GMT

OFFSET BETWEEN PROFILES: 0.5 SIGMA T UNITS

SHIP'S SPEED 4.7 KNOTS

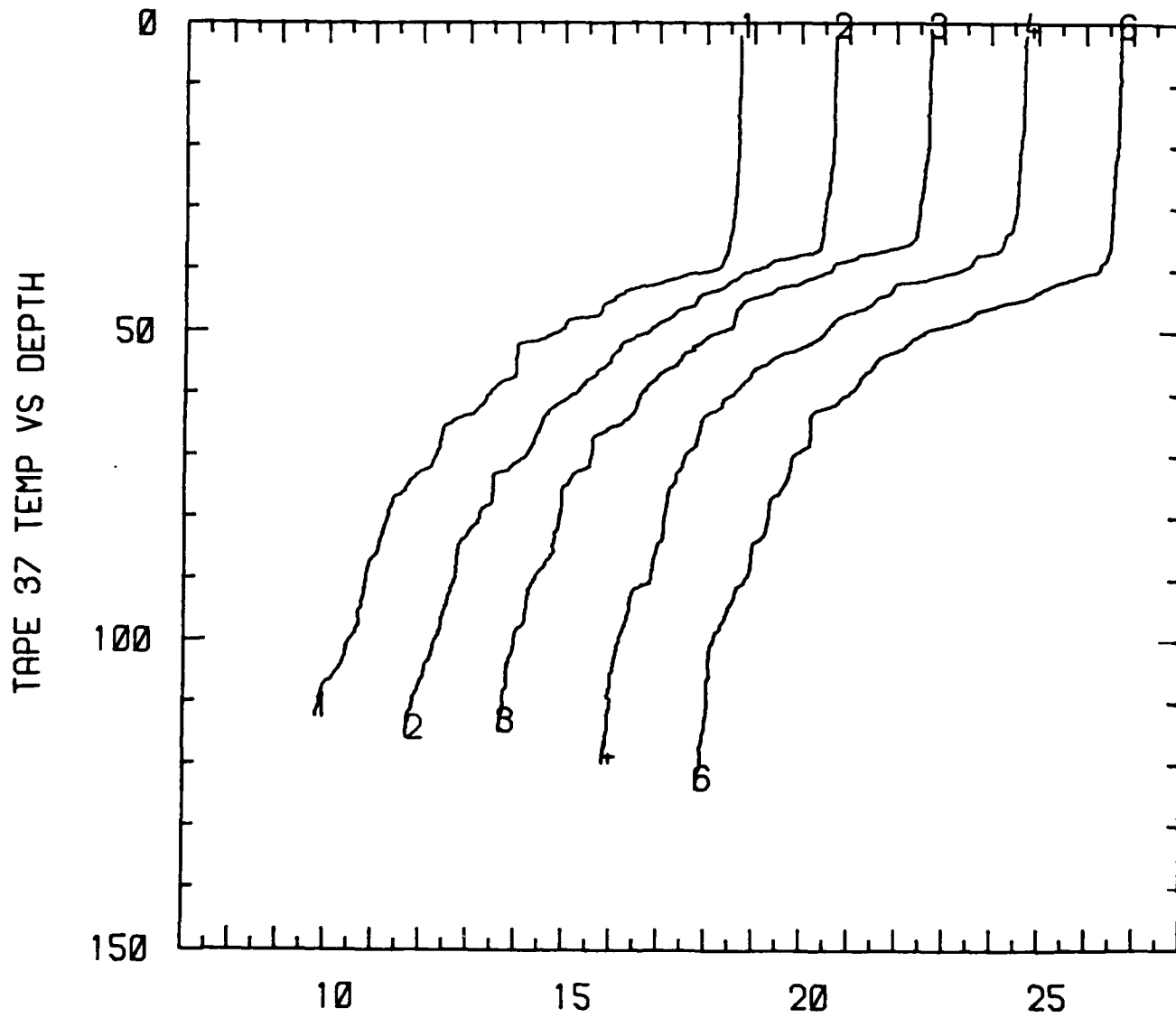
TAPE 24 FILE 26



RSVP: UNIT 4

OCTOBER 28, 1983

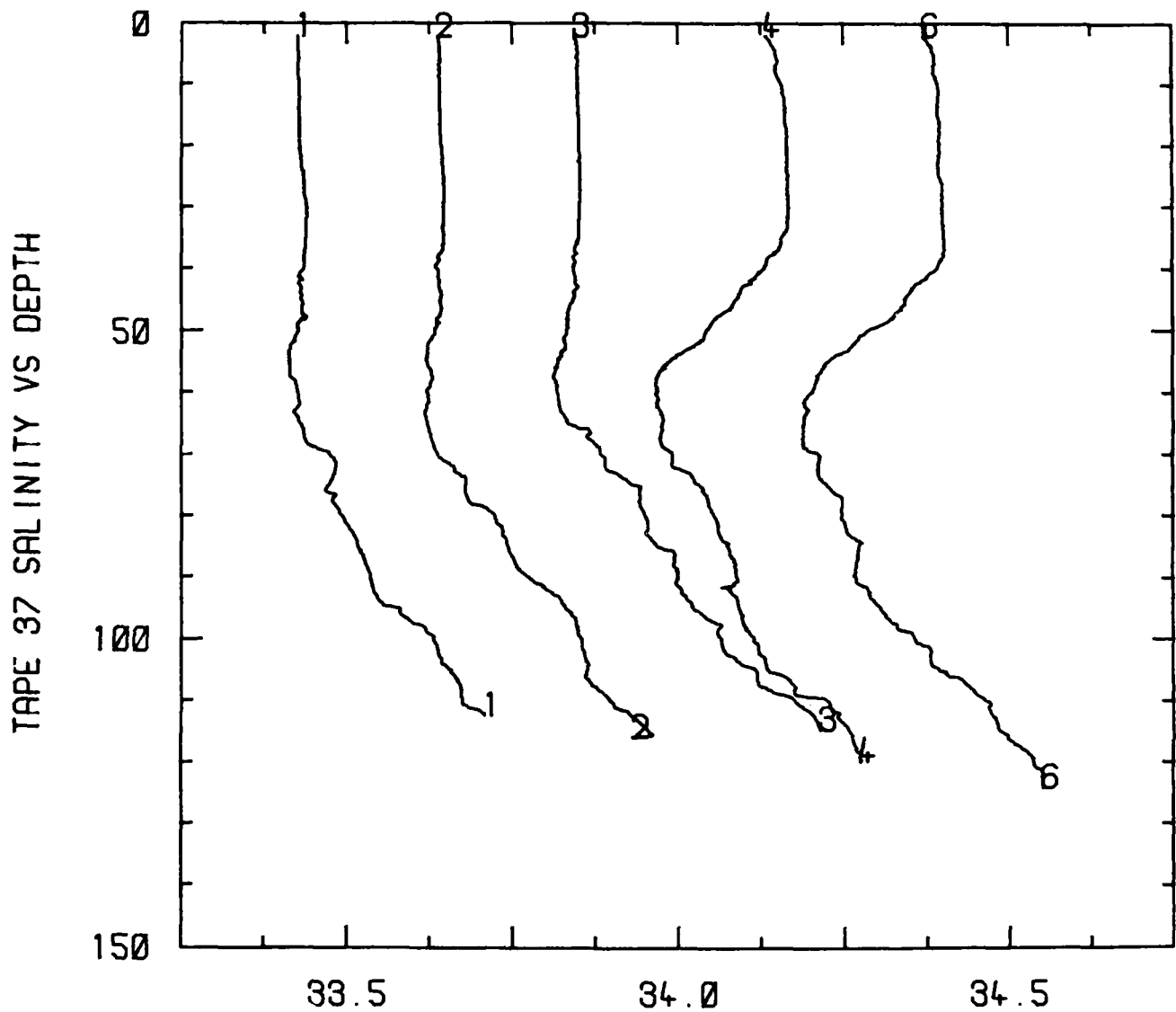
2120 GMT



RSVP: UNITS 5 (1-3) AND 6 OCTOBER 31, 1983 2010-2109 GMT

OFFSET BETWEEN PROFILES: 2.0 DEGREES

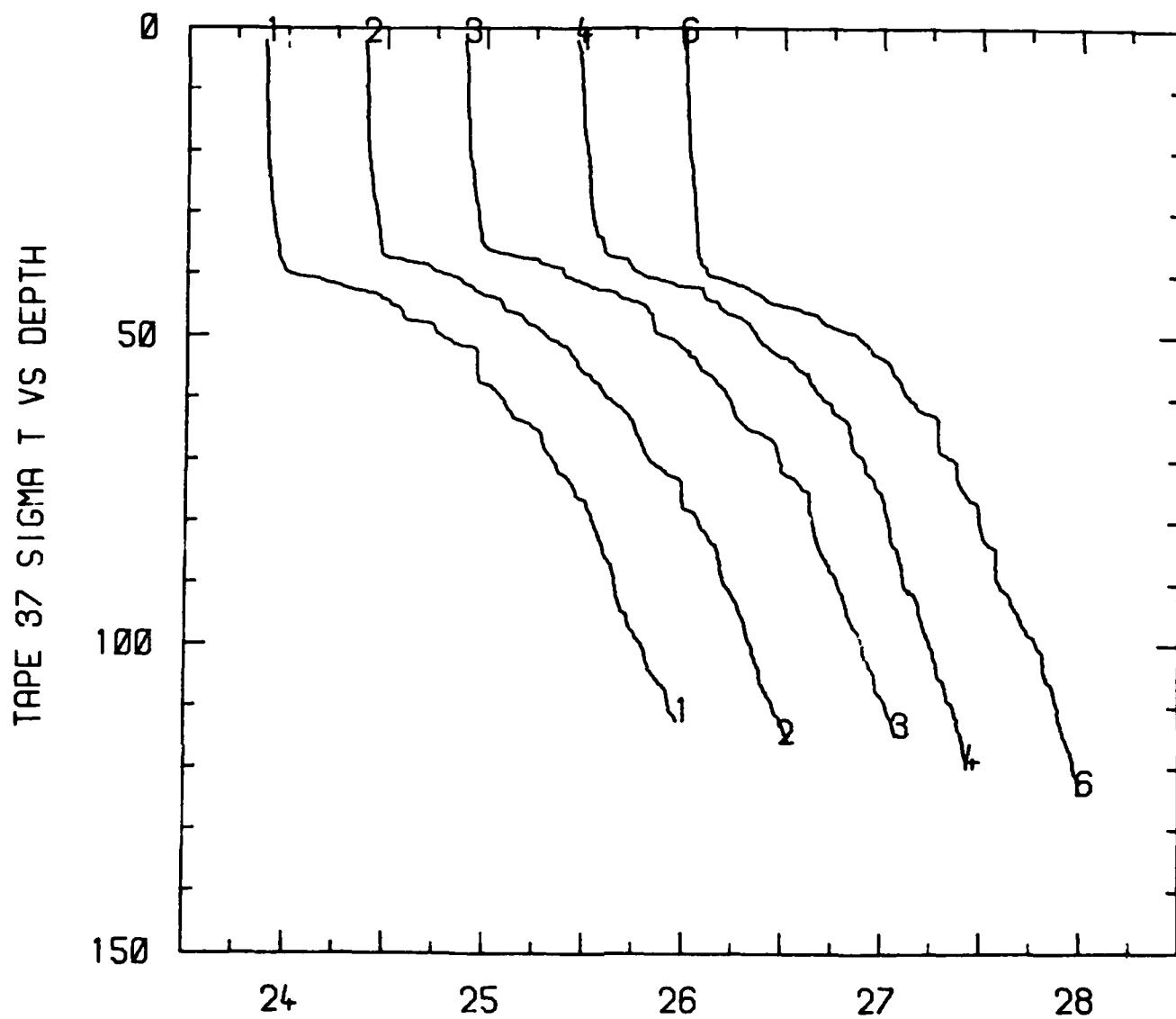
SHIP'S SPEED 5.2 KNOTS



RSVP: UNITS 5 (1-3) AND 6 OCTOBER 31, 1983 2010-2109 GMT

OFFSET BETWEEN PROFILES: 0.2 PARTS PER THOUSAND

SHIP'S SPEED 5.2 KNOTS

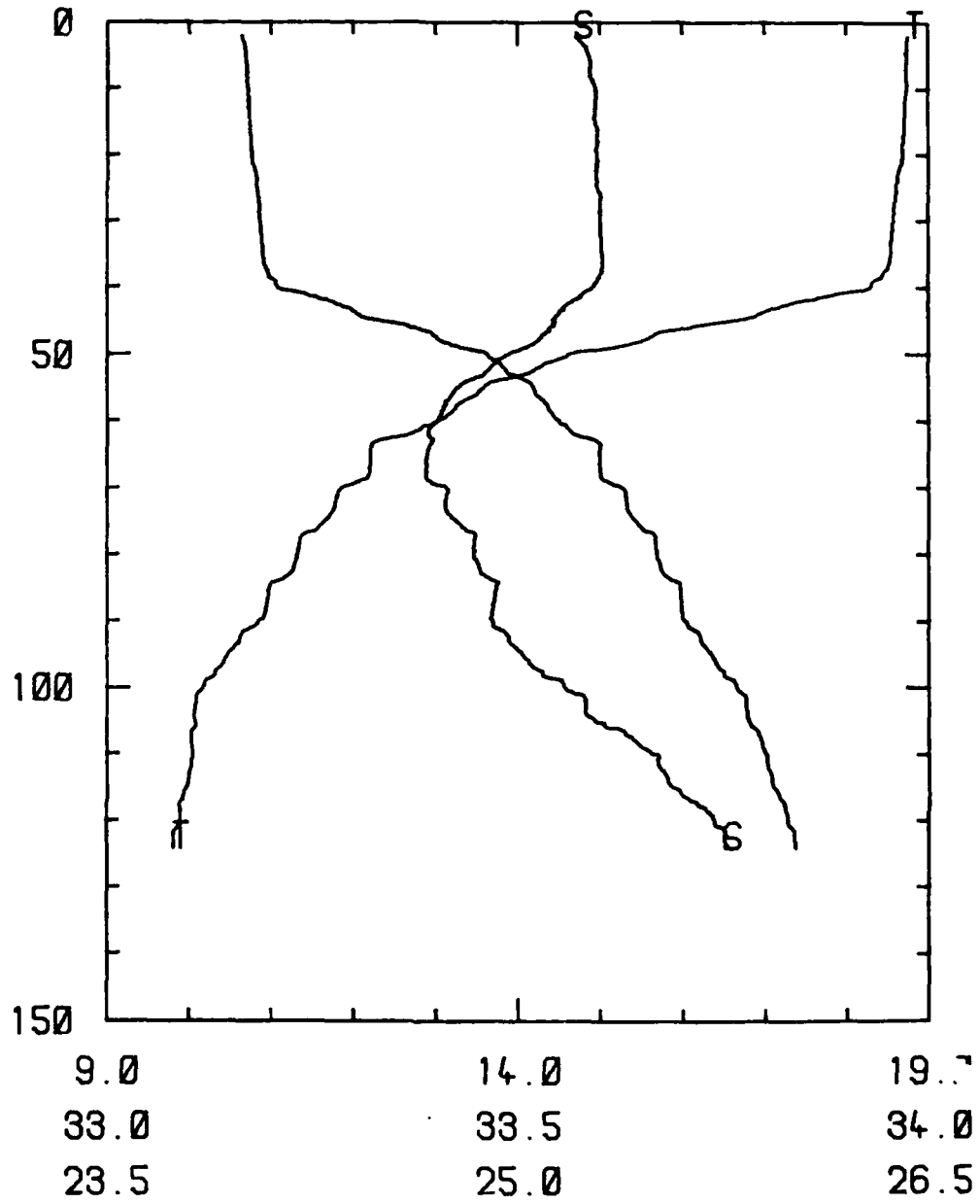


RSVP: UNITS 5 (1-3) AND 6 OCTOBER 31, 1983 2010-2109 GMT

OFFSET BETWEEN PROFILES: 0.5 SIGMA T UNITS

SHIP'S SPEED 5.2 KNOTS

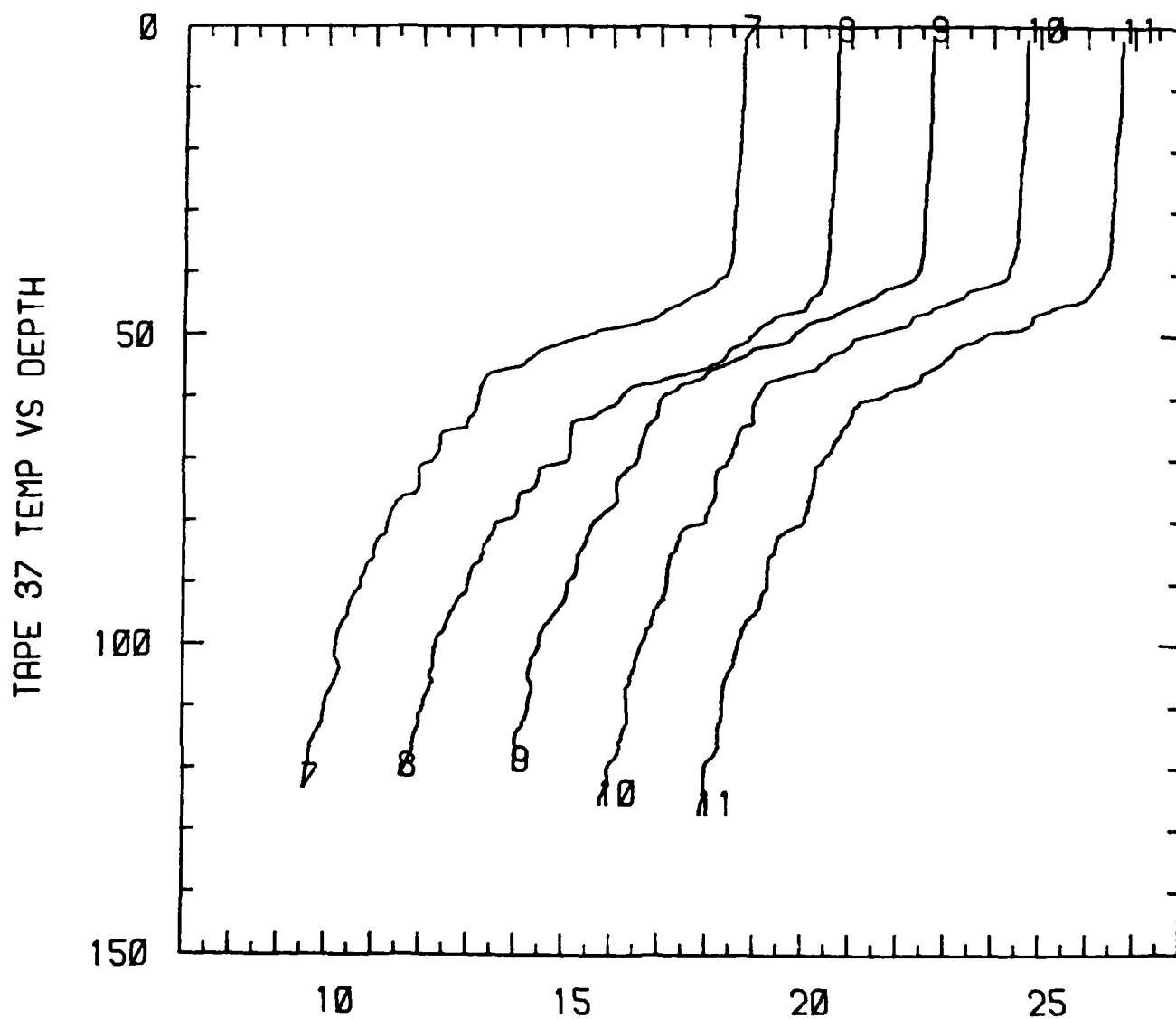
TAPE 37 FILE 6



RSVP: UNIT 6

OCTOBER 31, 1983

2104 GMT



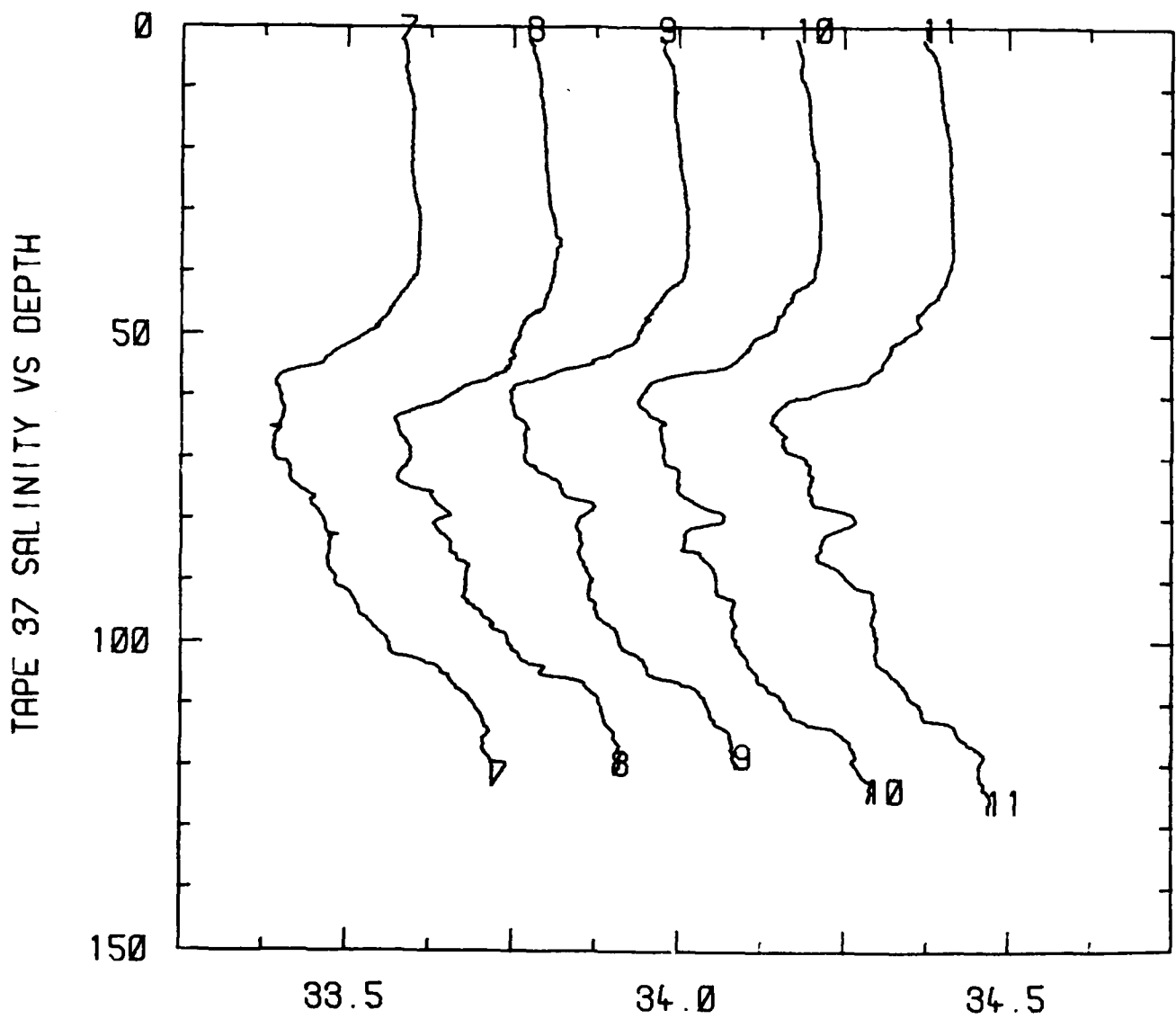
RSVP: UNIT 6

OCTOBER 31, 1983

2111-2152 GMT

OFFSET BETWEEN PROFILES: 2.0 DEGREES

SHIP'S SPEED 5.2 KNOTS



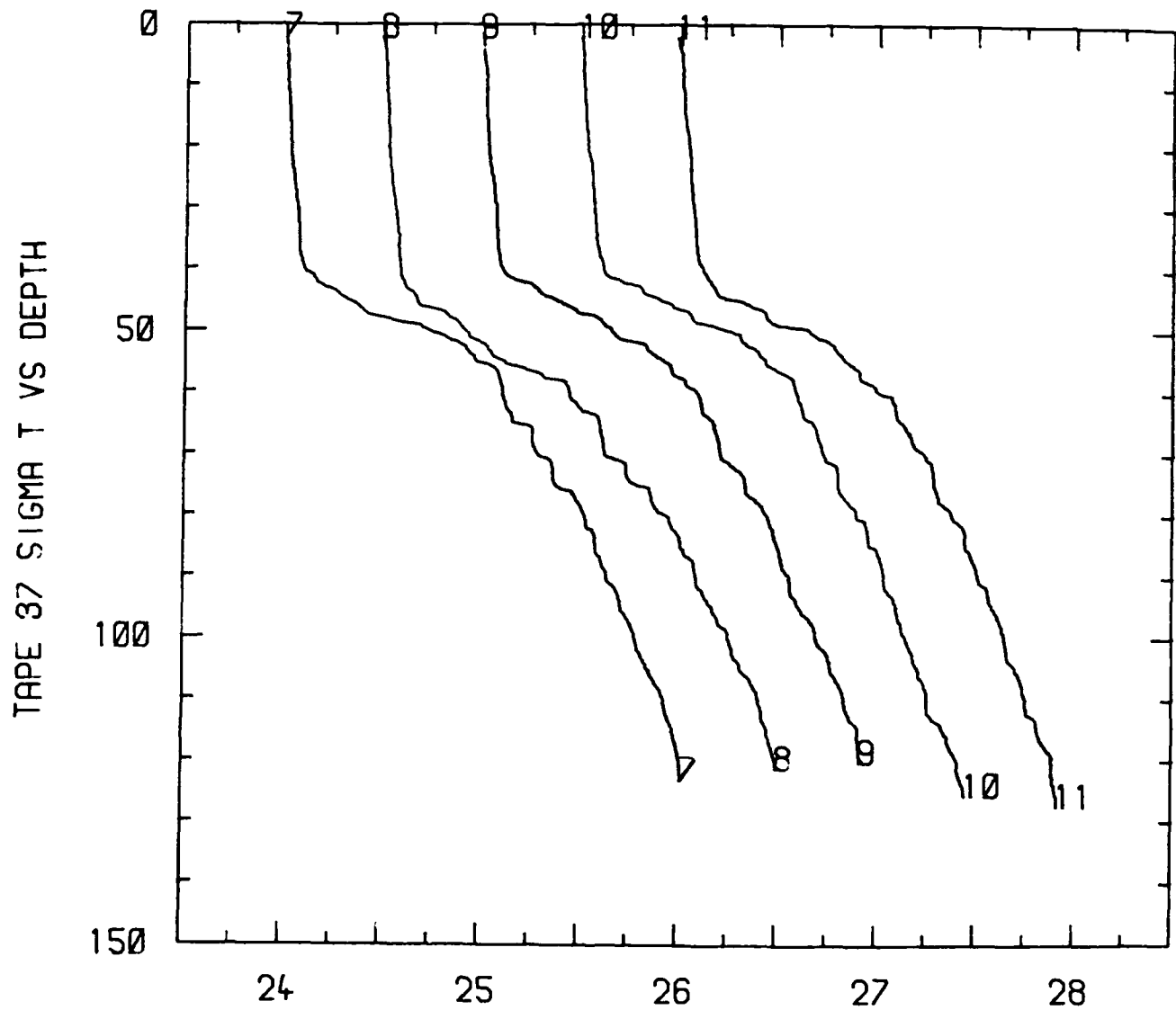
RSVP: UNIT 6

OCTOBER 31, 1983

2111-2152 GMT

OFFSET BETWEEN PROFILES: 0.2 PARTS PER THOUSAND

SHIP'S SPEED 5.2 KNOTS



RSVP: UNIT 6

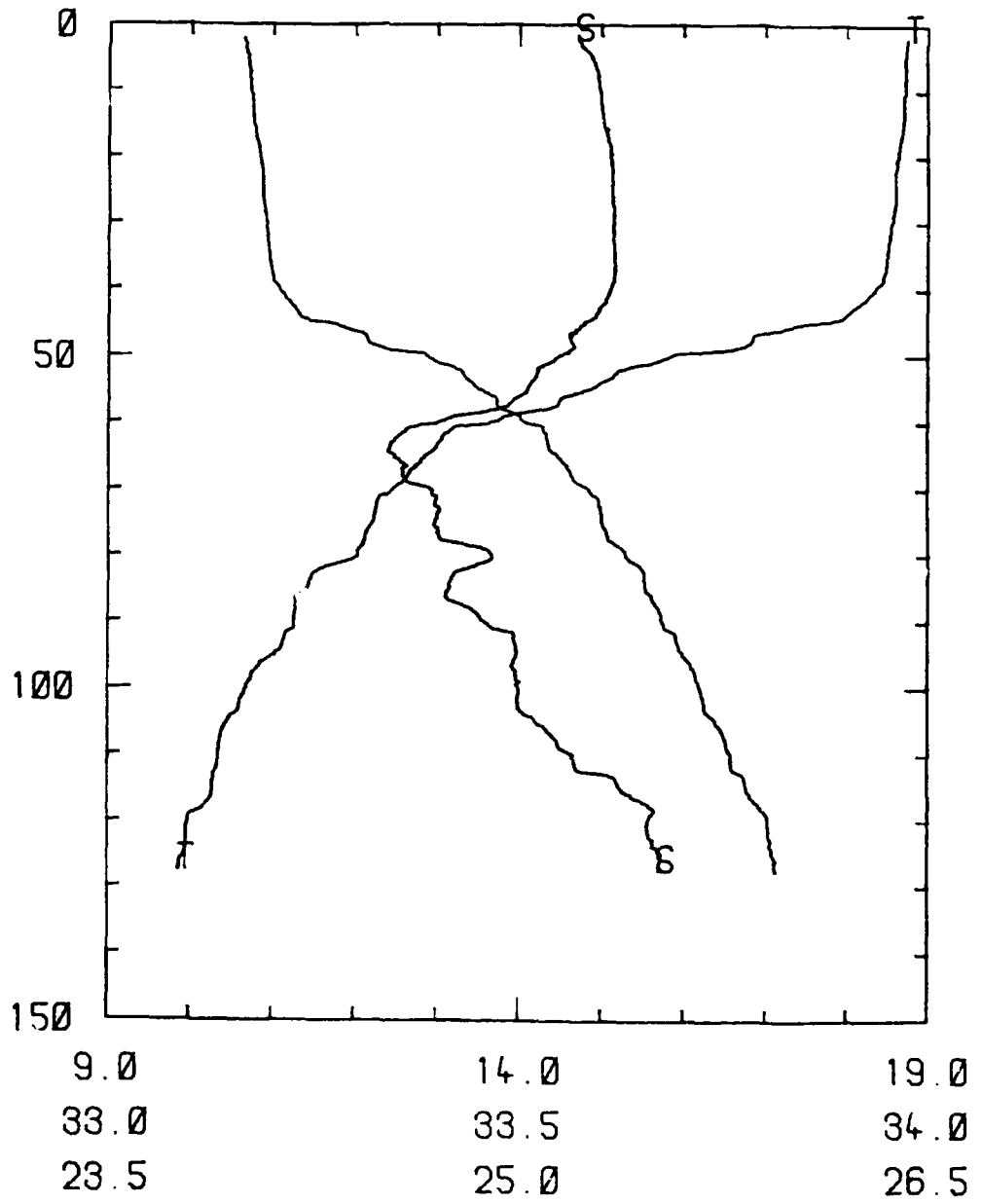
OCTOBER 31, 1983

2111-2152 GMT

OFFSET BETWEEN PROFILES: 0.5 SIGMA T UNITS

SHIP'S SPEED 5.2 KNOTS

TAPE 37 FILE 16



RSVP: UNIT 6

OCTOBER 31, 1983

2144 GMT

AD-A140 965

THE RAPID SAMPLING VERTICAL PROFILER MILDEX
OCTOBER-NOVEMBER 1983(U) OREGON STATE UNIV CORVALLIS
SCHOOL OF OCEANOGRAPHY P A NEWBERGER ET AL. MAR 84

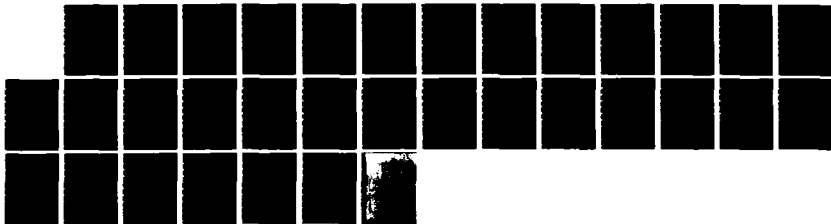
2/2

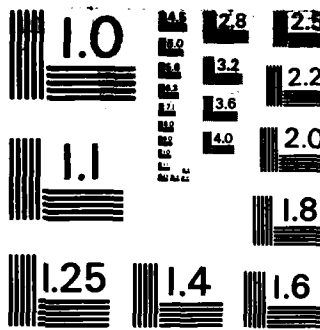
UNCLASSIFIED

DATA-107 N00014-79-C-0004

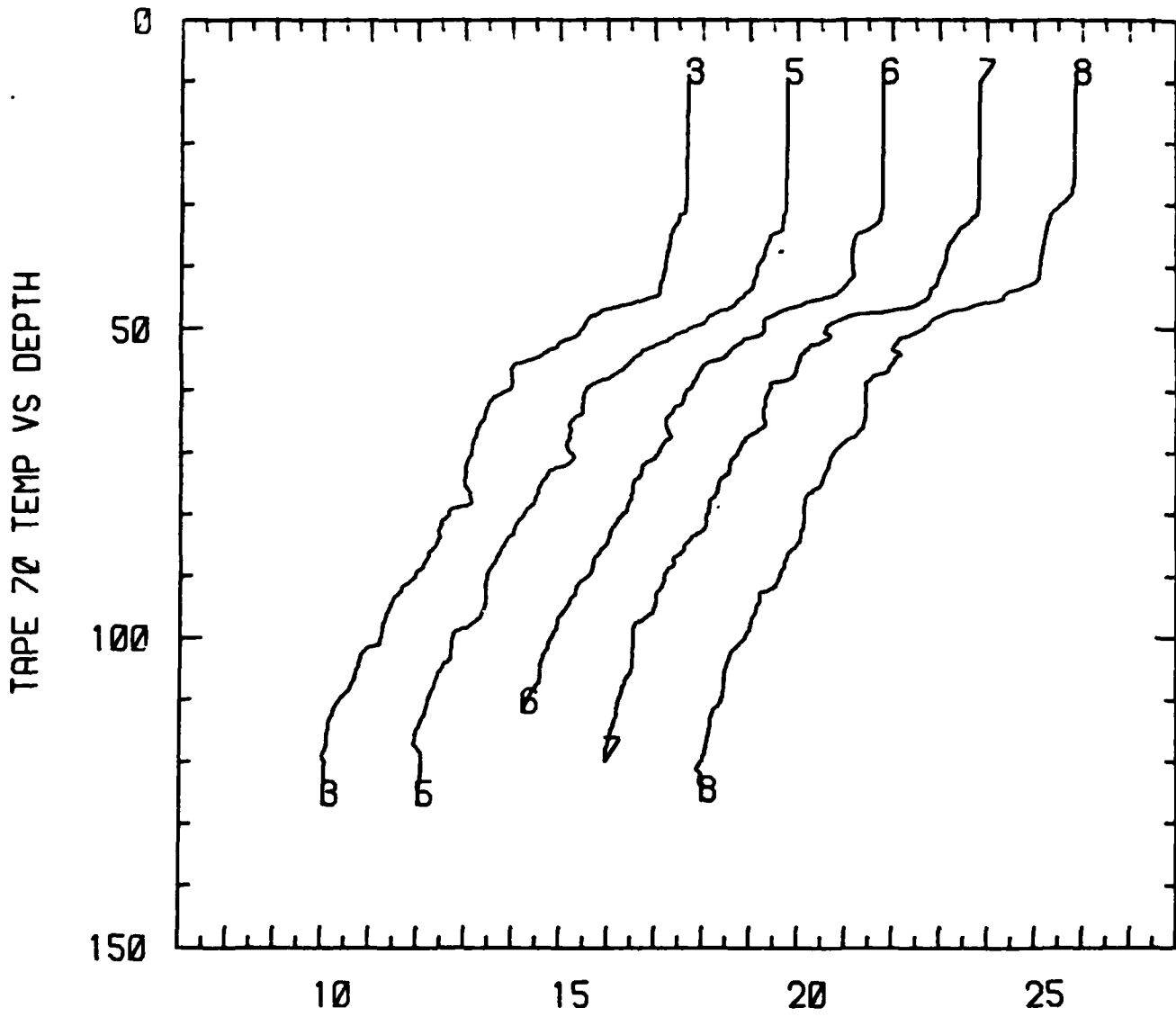
F/G 8/10

NL





MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS-1963-A



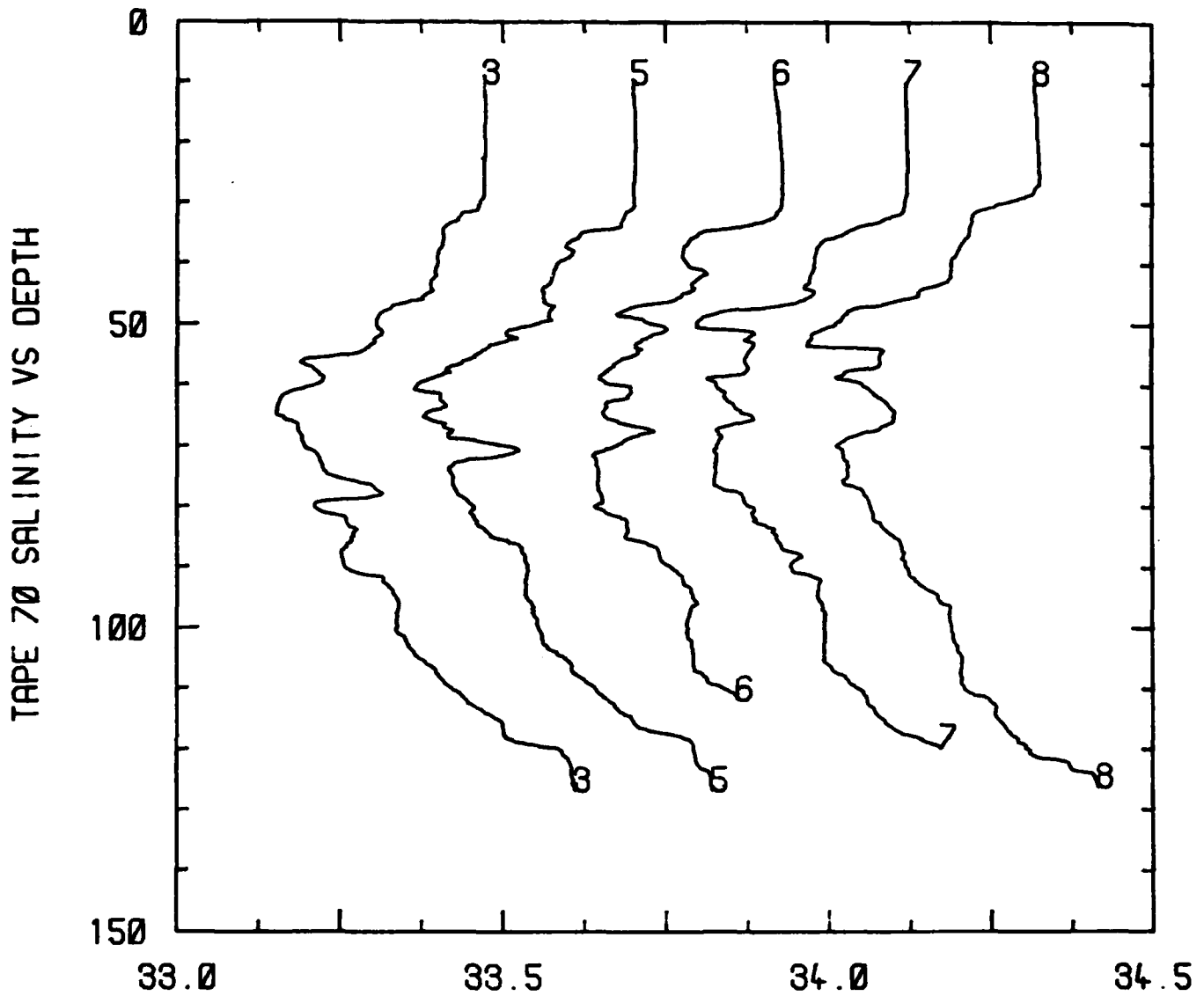
RSVP: UNIT 5

NOVEMBER 14, 1983

2029-2058 GMT

OFFSET BETWEEN PROFILES: 2.0 DEGREES

SHIP'S SPEED 5.4 KNOTS



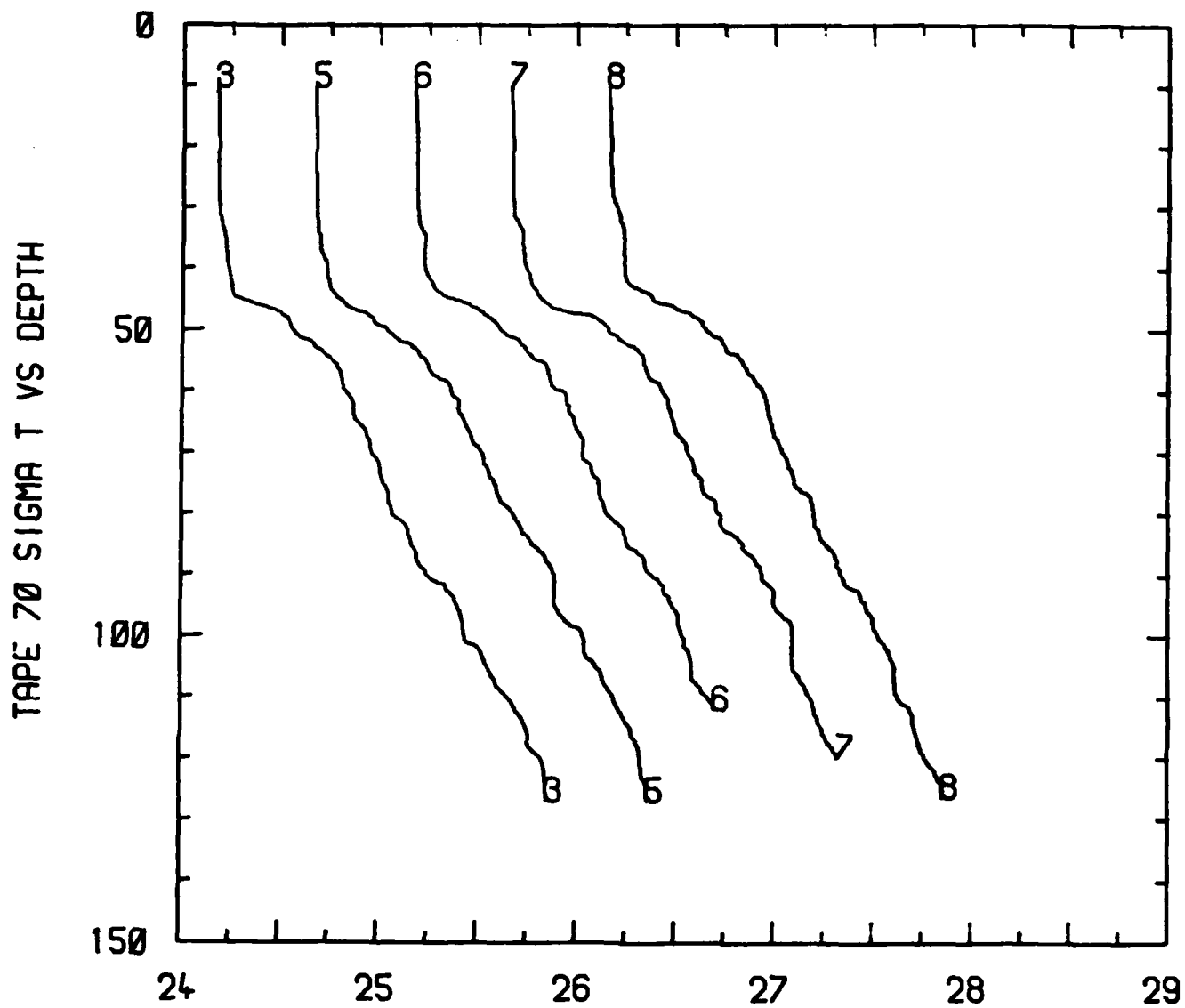
RSVP: UNIT 5

NOVEMBER 14, 1983

2029-2058 GM1

OFFSET BETWEEN PROFILES: 0.2 PARTS PER THOUSAND

SHIP'S SPEED 5.4 KNOTS



RSVP: UNIT 5

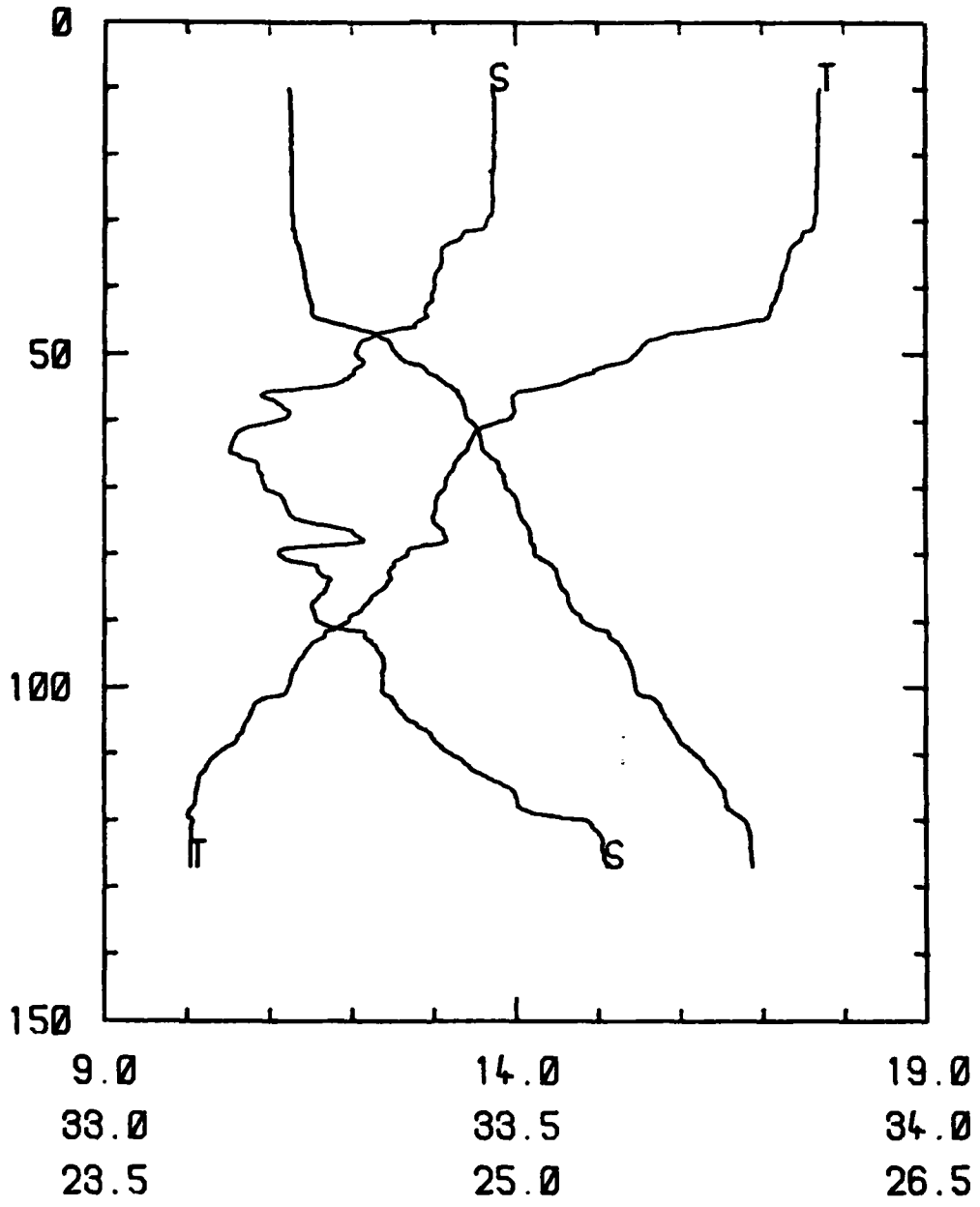
NOVEMBER 14, 1983

2029-2058 GMT

OFFSET BETWEEN PROFILES: 0.5 SIGMA T UNITS

SHIP'S SPEED 5.4 KNOTS

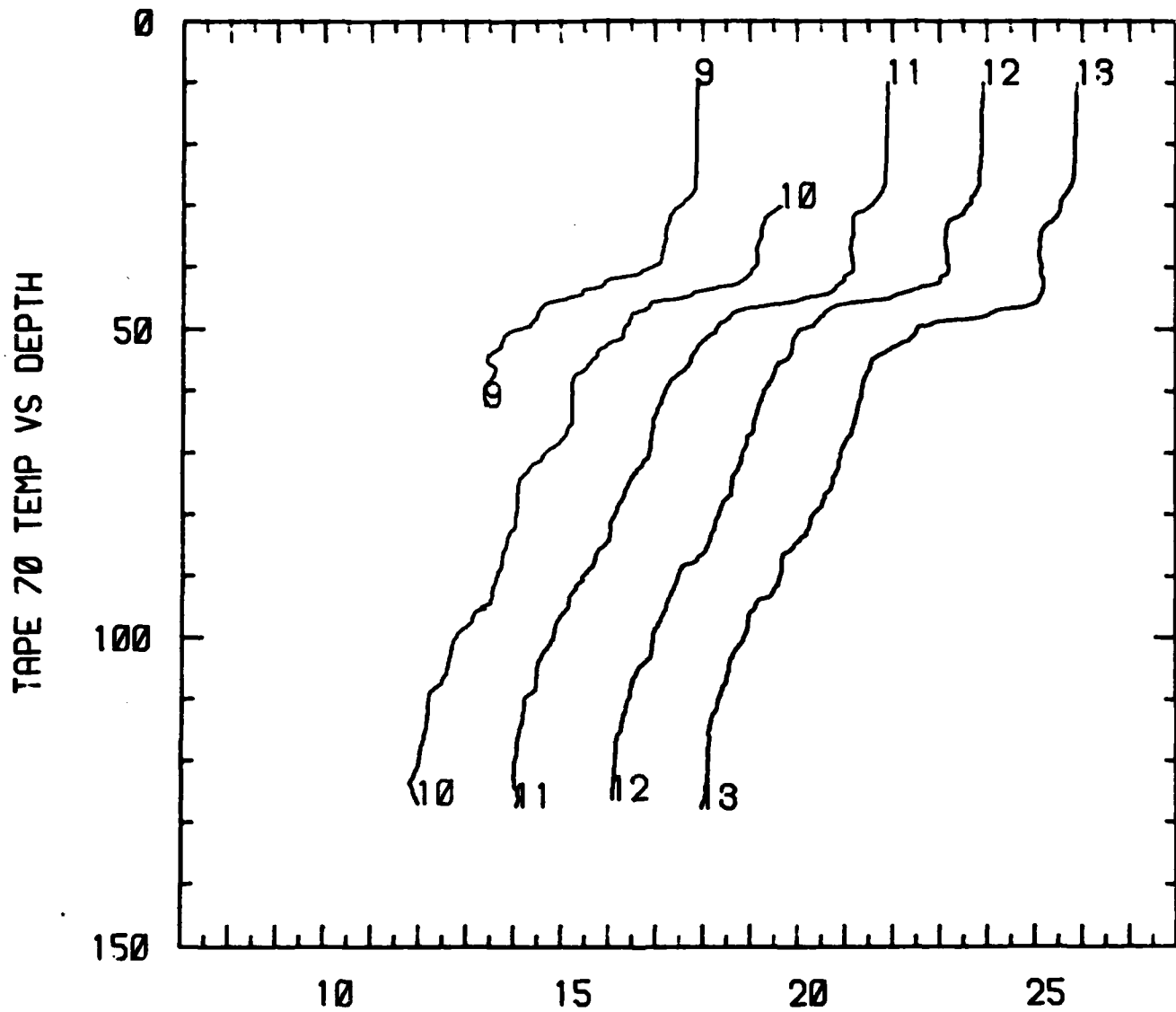
TAPE 70 FILE 3



RSVP: UNIT 5

NOVEMBER 14, 1983

2029 GMT



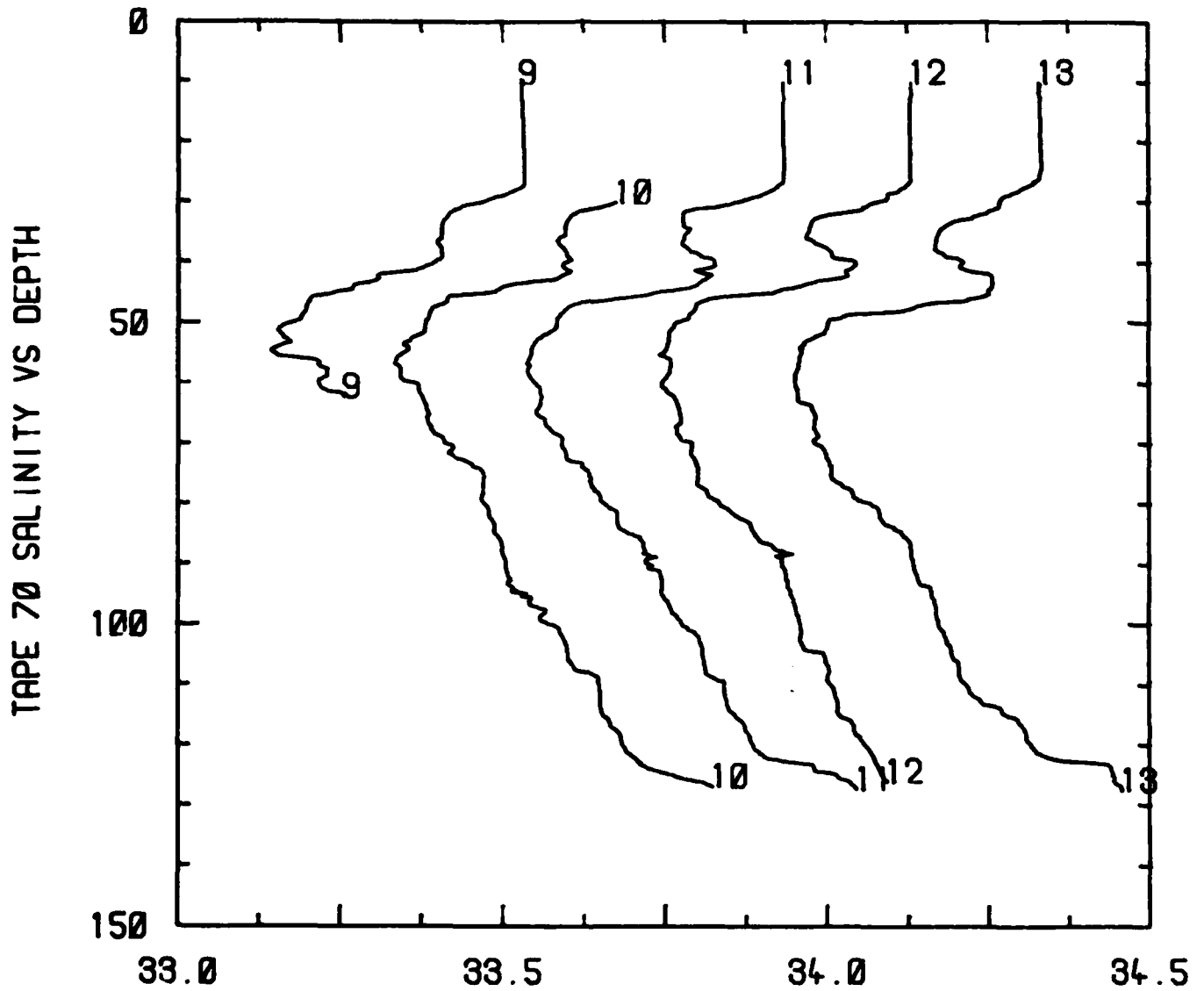
RSVP: UNIT 5

NOVEMBER 14, 1983

2100-2128 GMT

OFFSET BETWEEN PROFILES: 2.0 DEGREES

SHIP'S SPEED 5.4 KNOTS



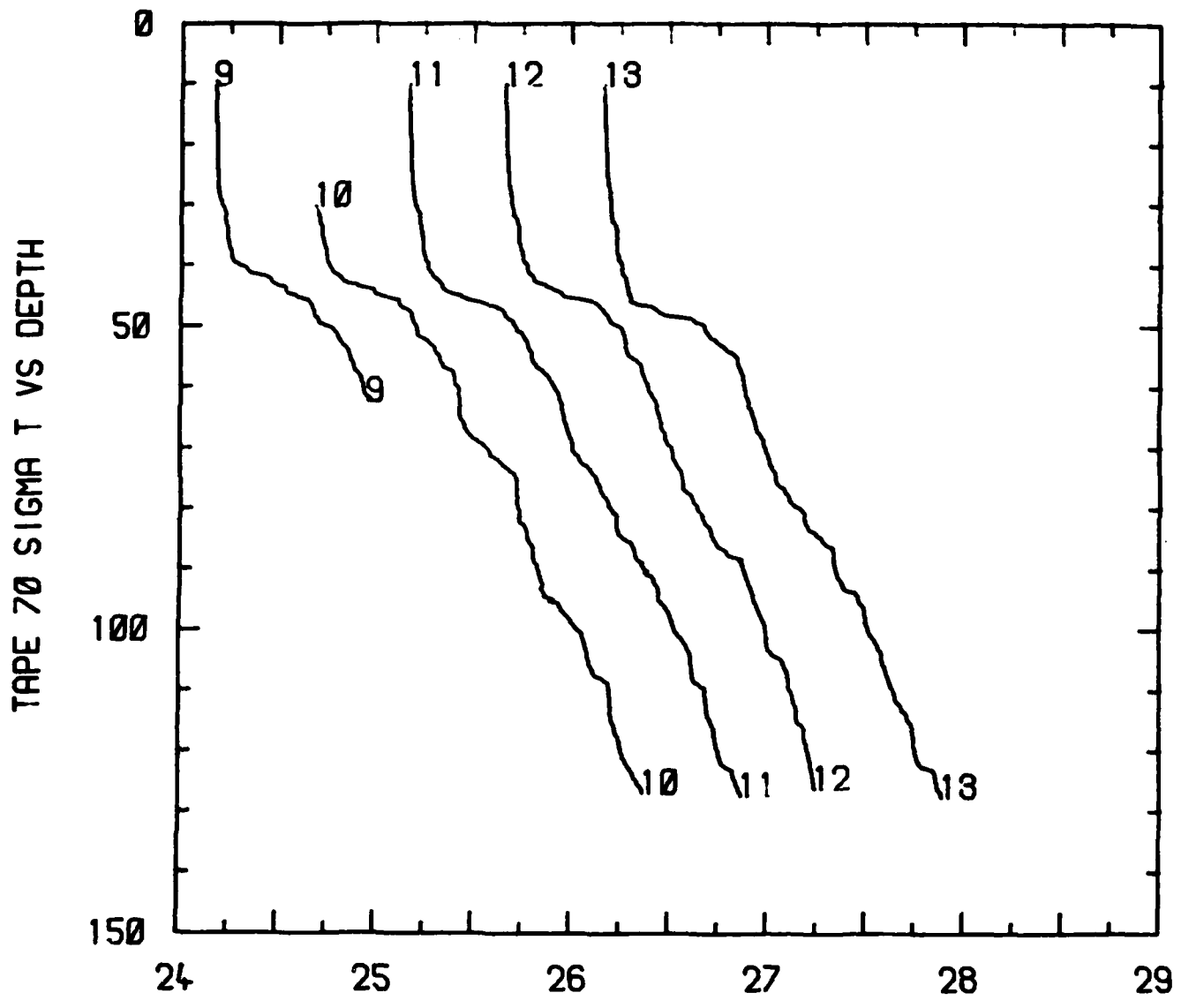
RSVP: UNIT 5

NOVEMBER 14, 1983

2100-2128 GMT

OFFSET BETWEEN PROFILES: 0.2 PARTS PER THOUSAND

SHIP'S SPEED 5.4 KNOTS



RSVP: UNIT 5

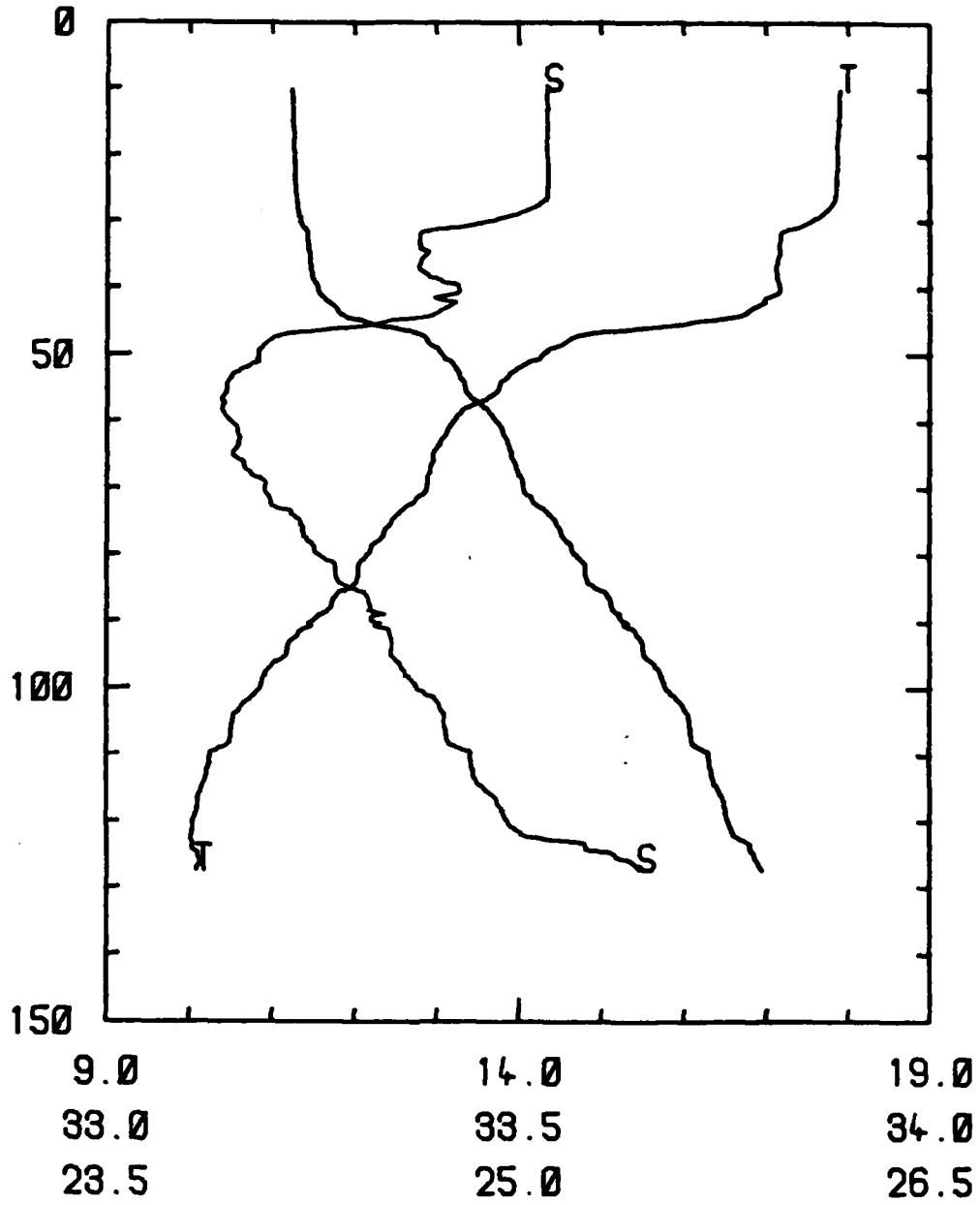
NOVEMBER 14, 1983

2100-2128 GMT

OFFSET BETWEEN PROFILES: 0.5 SIGMA T UNITS

SHIP'S SPEED 5.4 KNOTS

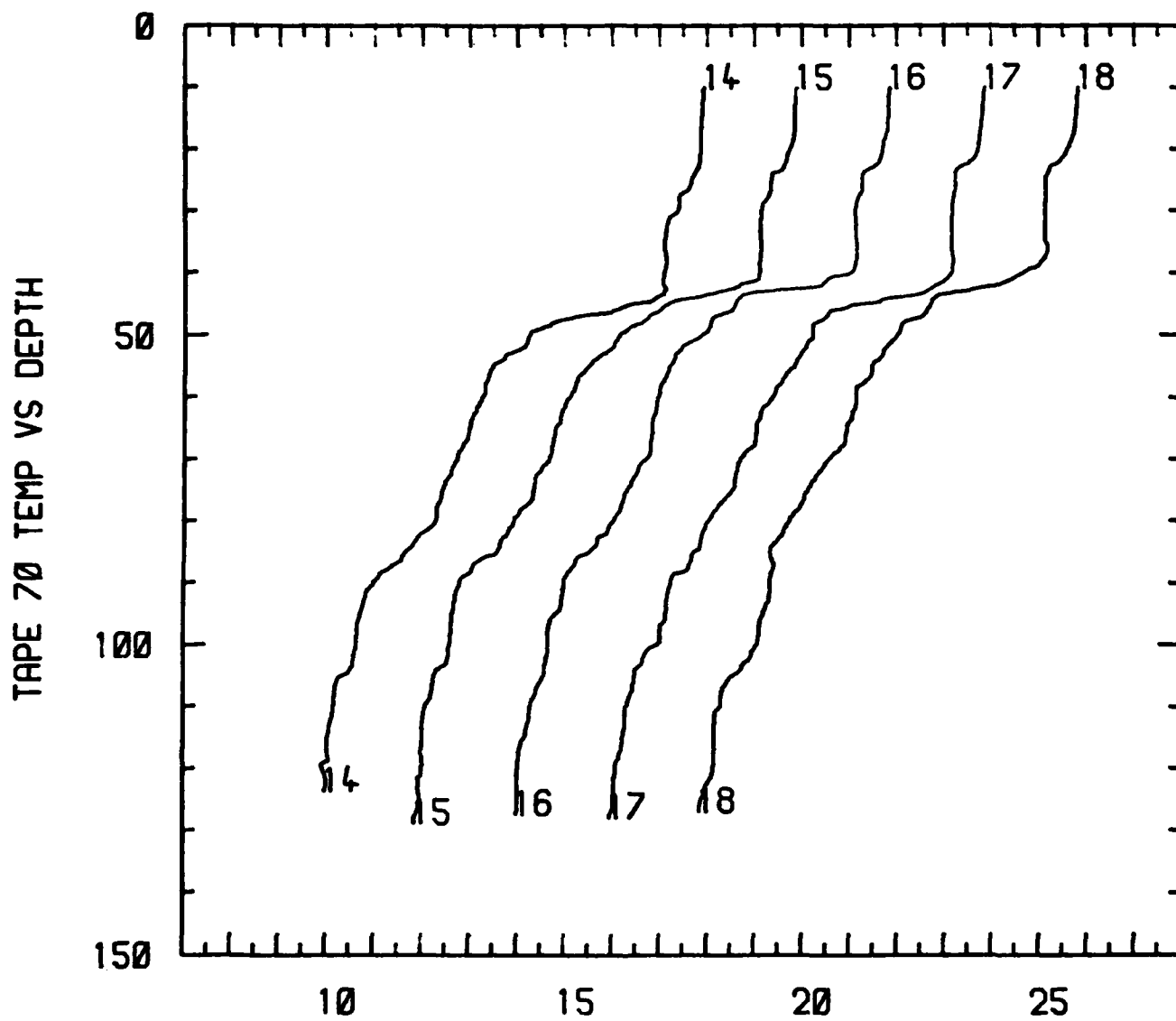
TAPE 70 FILE 11



RSVP: UNIT 5

NOVEMBER 14, 1983

2110 GMT



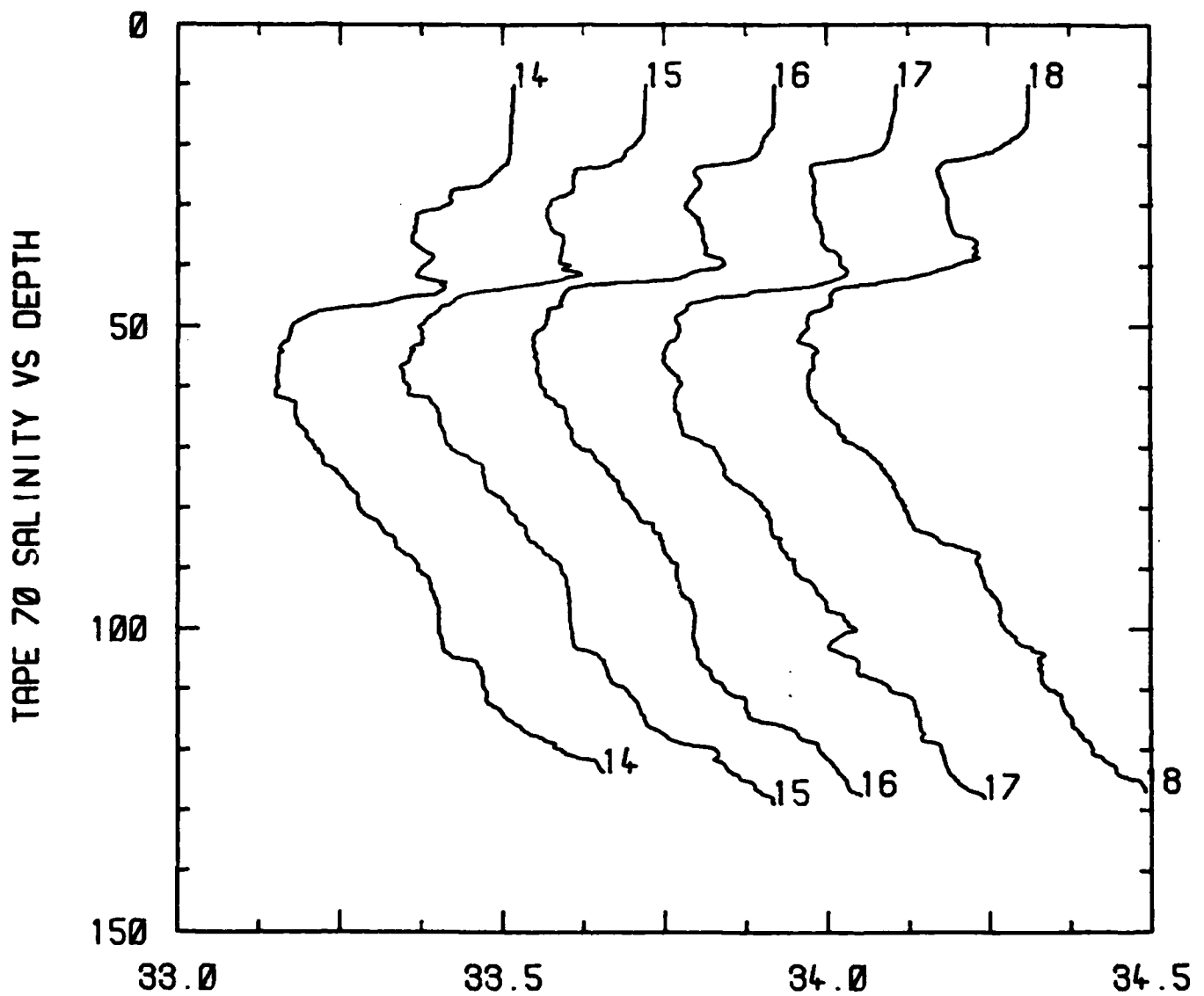
RSVP: UNIT 5

NOVEMBER 14, 1983

2130-2201 GMT

OFFSET BETWEEN PROFILES: 2.0 DEGREES

SHIP'S SPEED 5.4 KNOTS



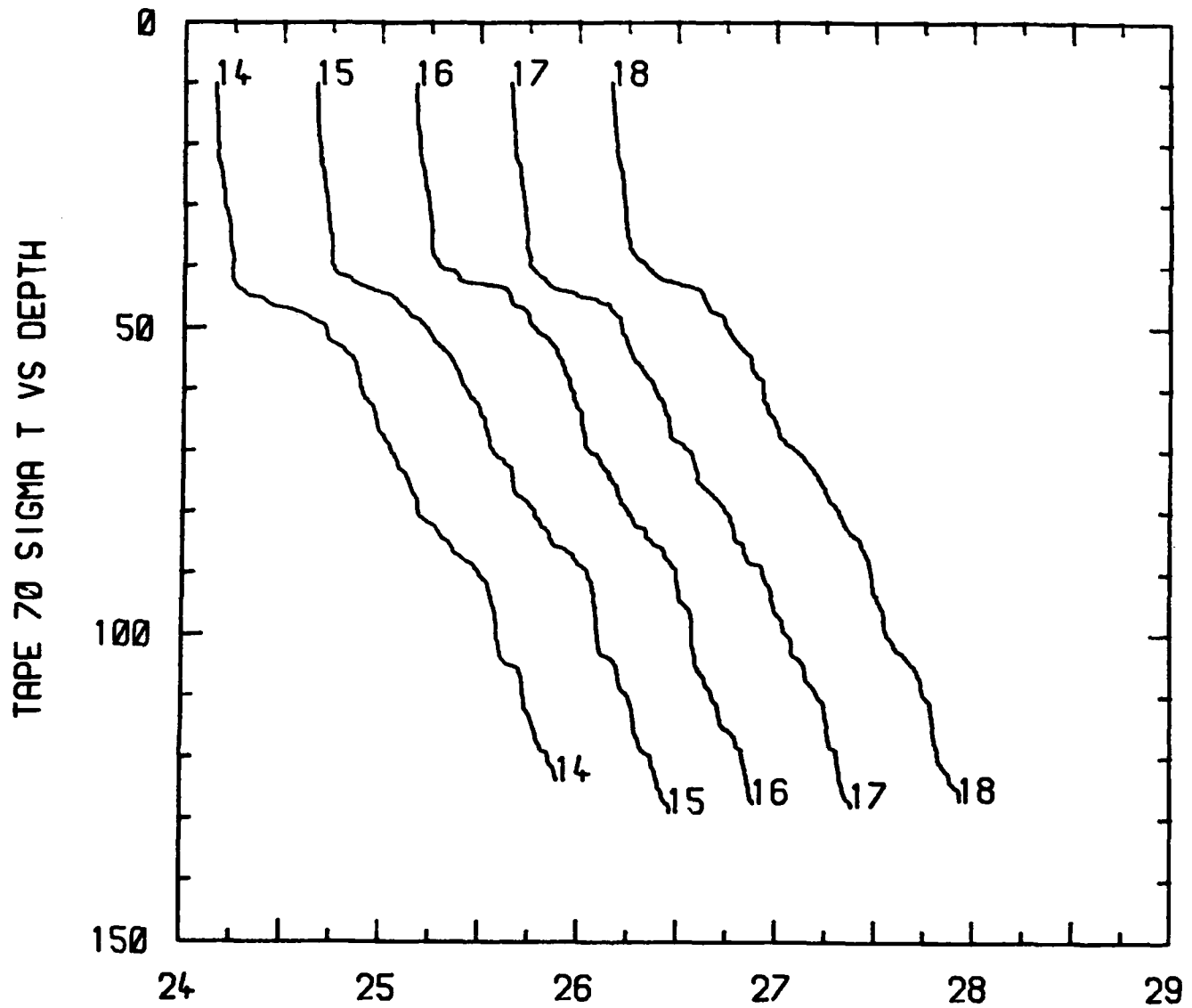
RSVP: UNIT 5

NOVEMBER 14, 1983

2130-2201 GMT

OFFSET BETWEEN PROFILES: 0.2 PARTS PER THOUSAND

SHIP'S SPEED 5.4 KNOTS



RSVP: UNIT 5

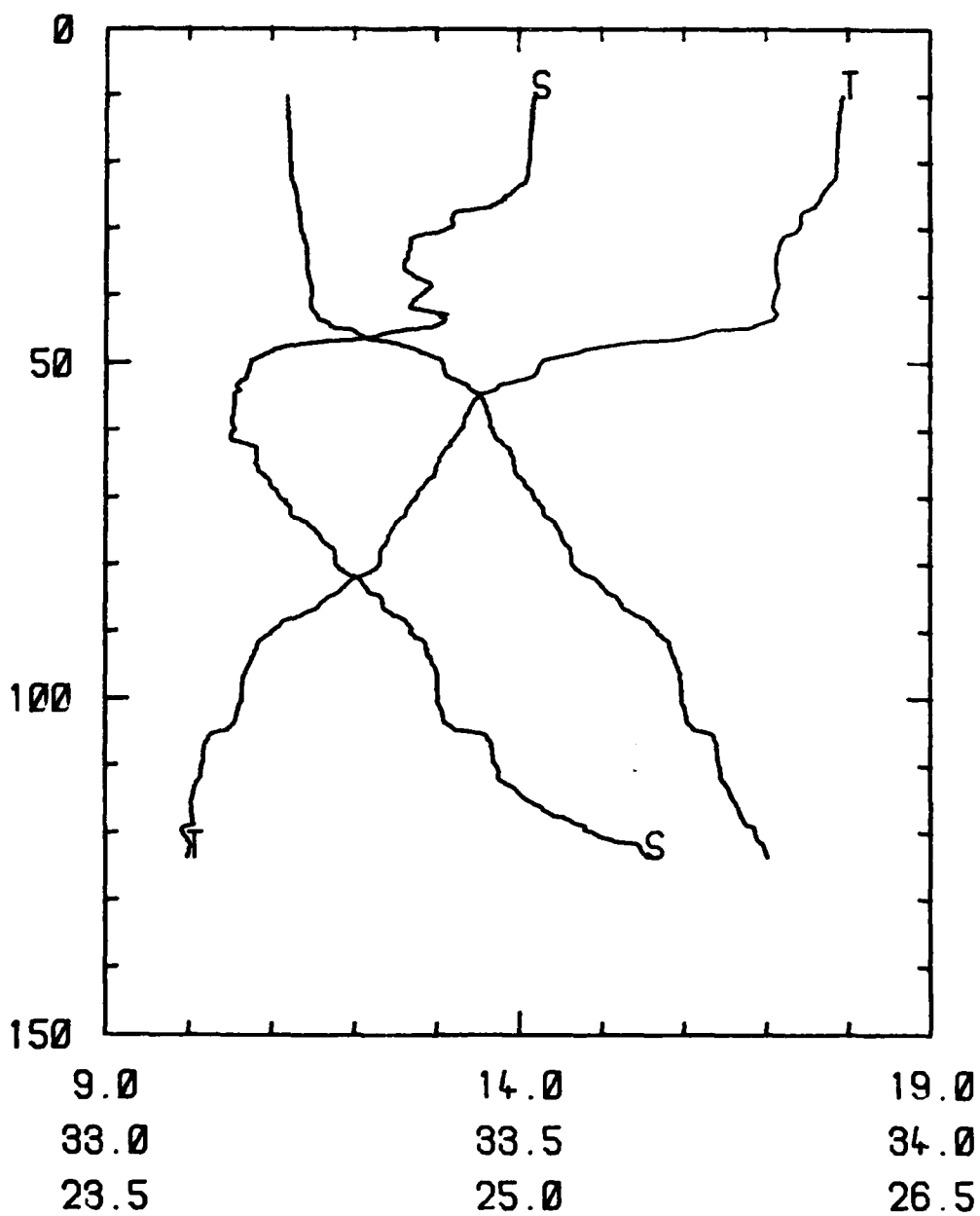
NOVEMBER 14, 1983

2130-2201 GMT

OFFSET BETWEEN PROFILES: 0.5 SIGMA T UNITS

SHIP'S SPEED 5.4 KNOTS

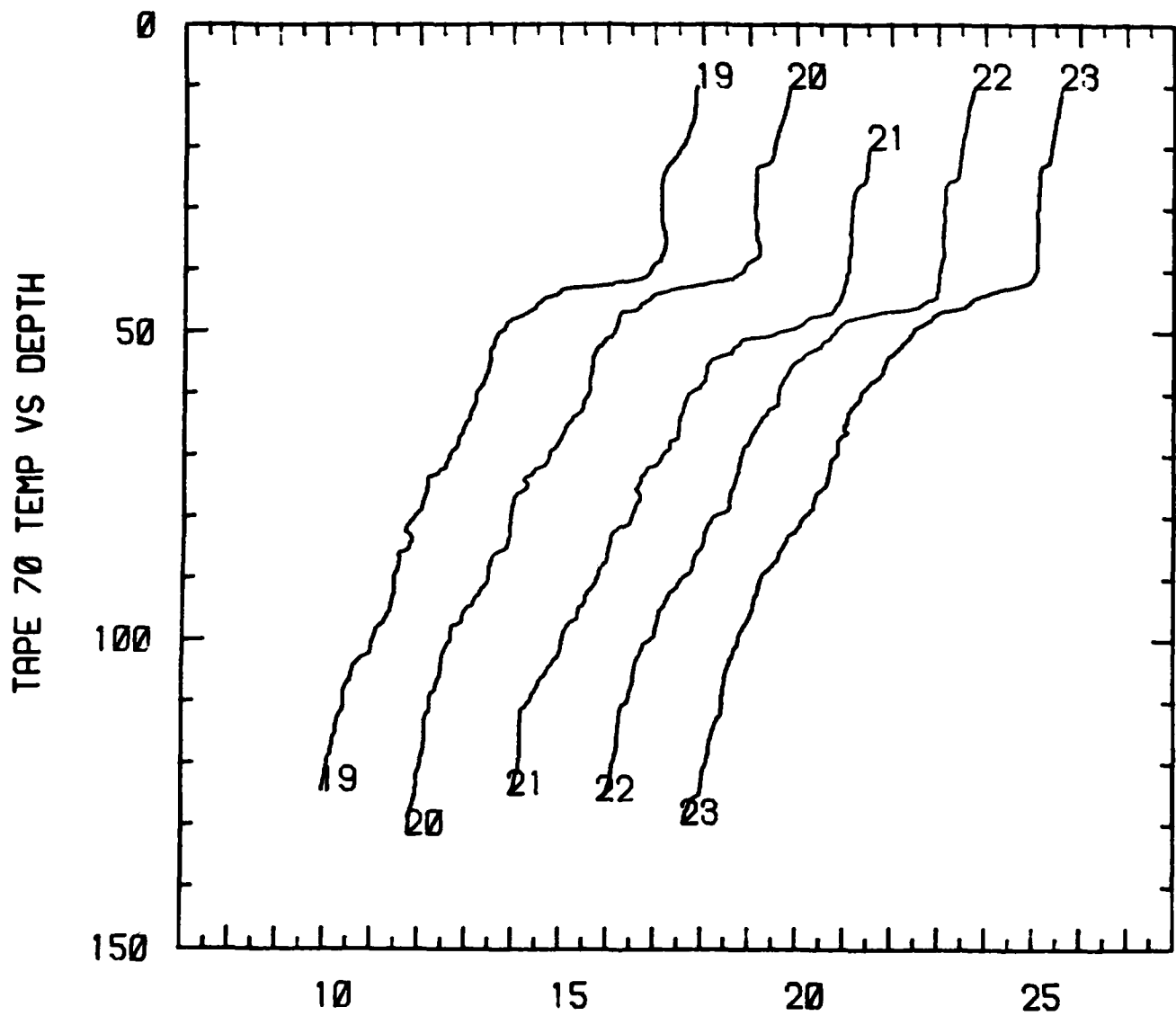
TAPE 70 FILE 14



RSVP: UNIT 5

NOVEMBER 14, 1983

2130 GMT



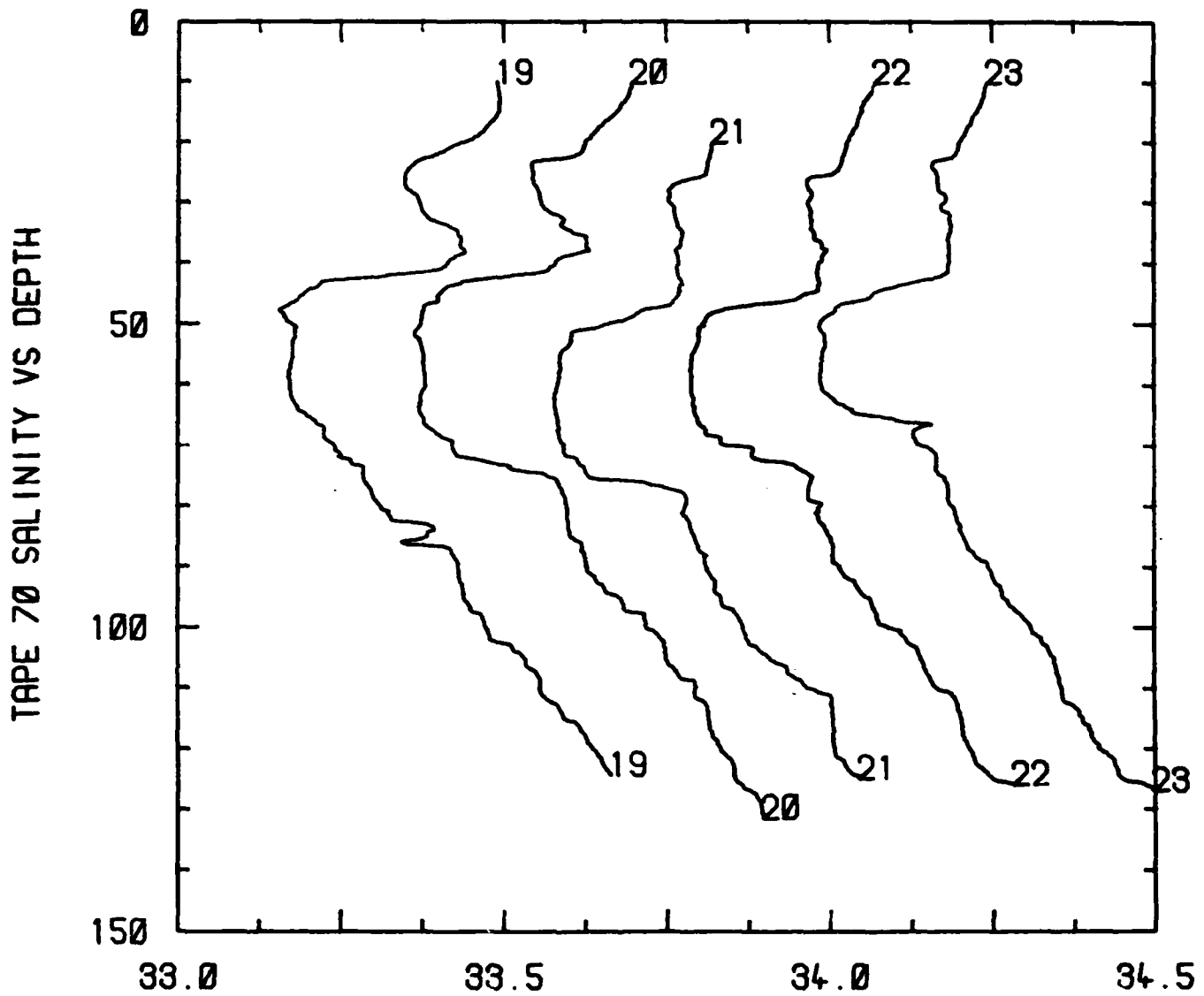
RSVP: UNIT 5

NOVEMBER 14, 1983

2203-2233 GMT

OFFSET BETWEEN PROFILES: 2.0 DEGREES

SHIP'S SPEED 5.4 KNOTS



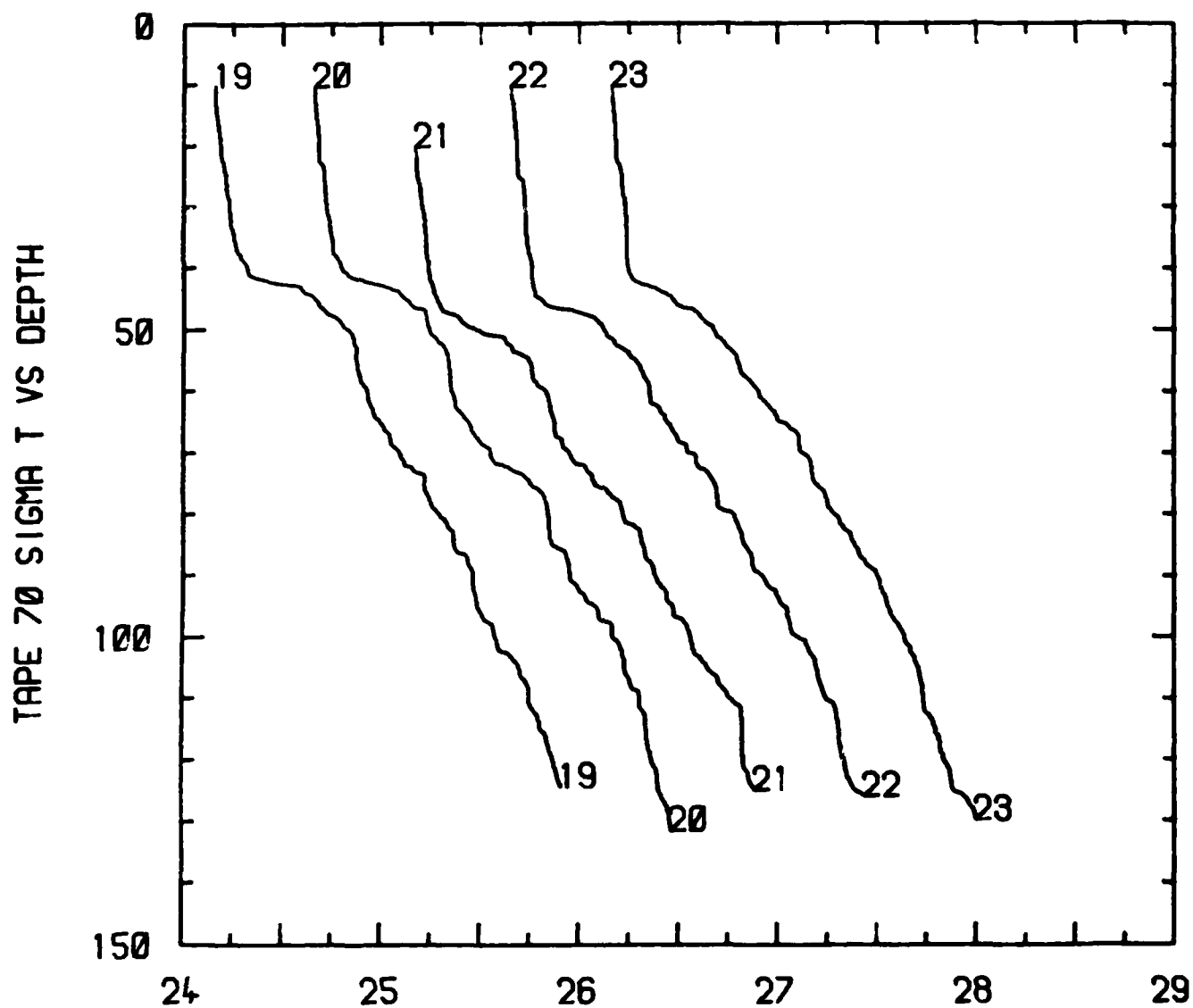
RSVP: UNIT 5

NOVEMBER 14, 1983

2203-2233 GMT

OFFSET BETWEEN PROFILES: 0.2 PARTS PER THOUSAND

SHIP'S SPEED 5.4 KNOTS



RSVP: UNIT 5

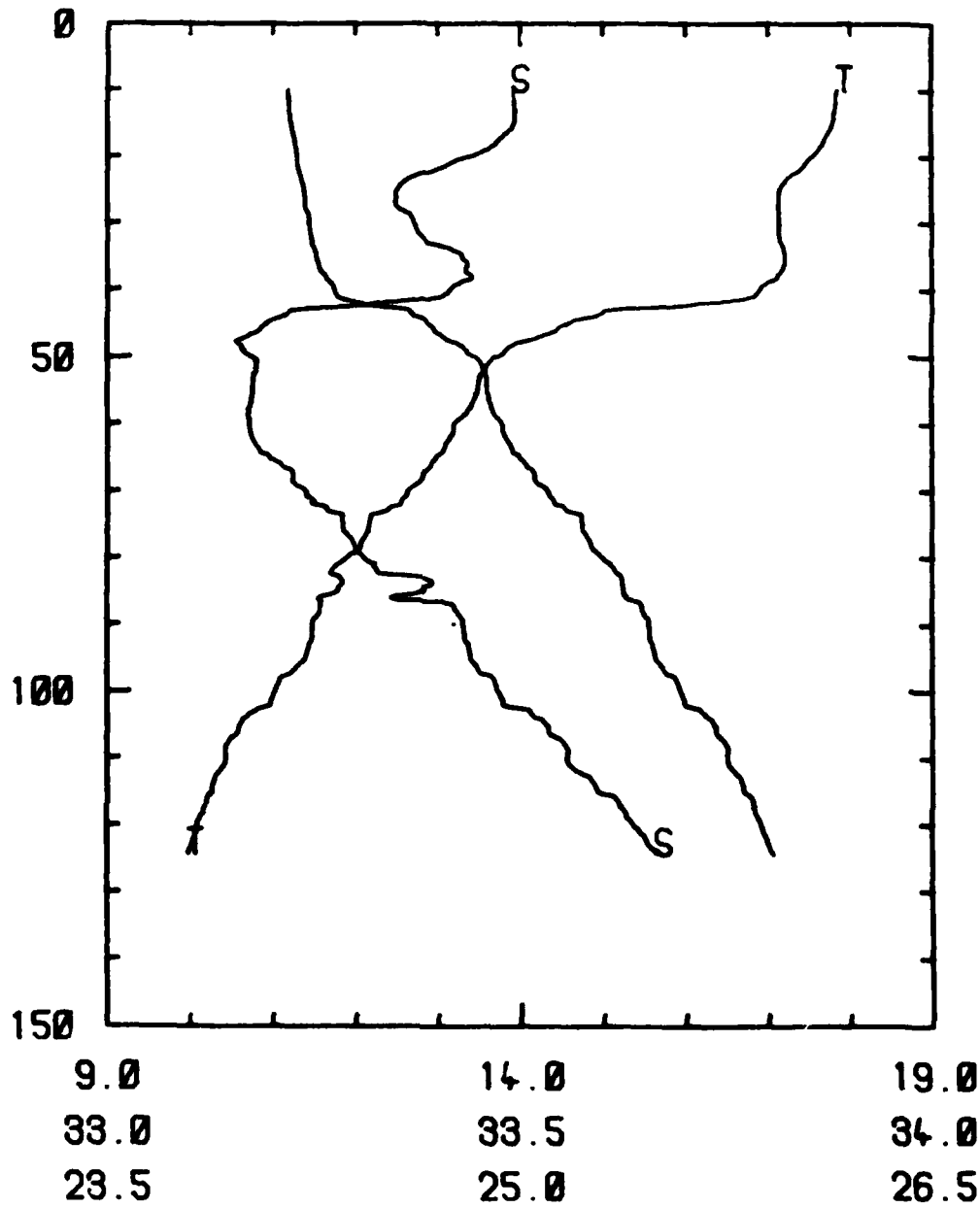
NOVEMBER 14, 1983

2203-2233 GMT

OFFSET BETWEEN PROFILES: 0.5 SIGMA T UNITS

SHIP'S SPEED 5.4 KNOTS

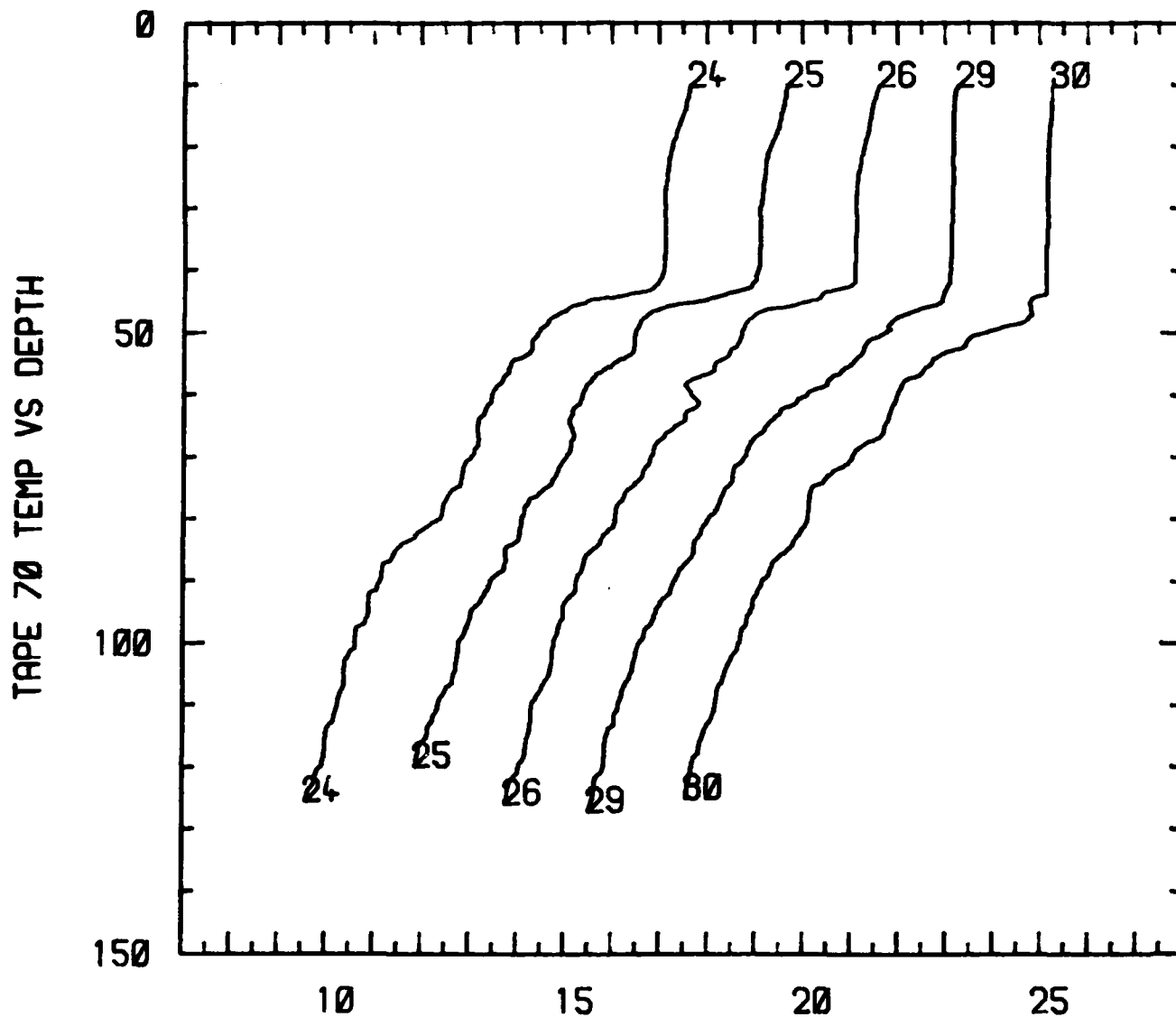
TAPE 70 FILE 19



RSVP: UNIT 5

NOVEMBER 14, 1983

2203 GMT



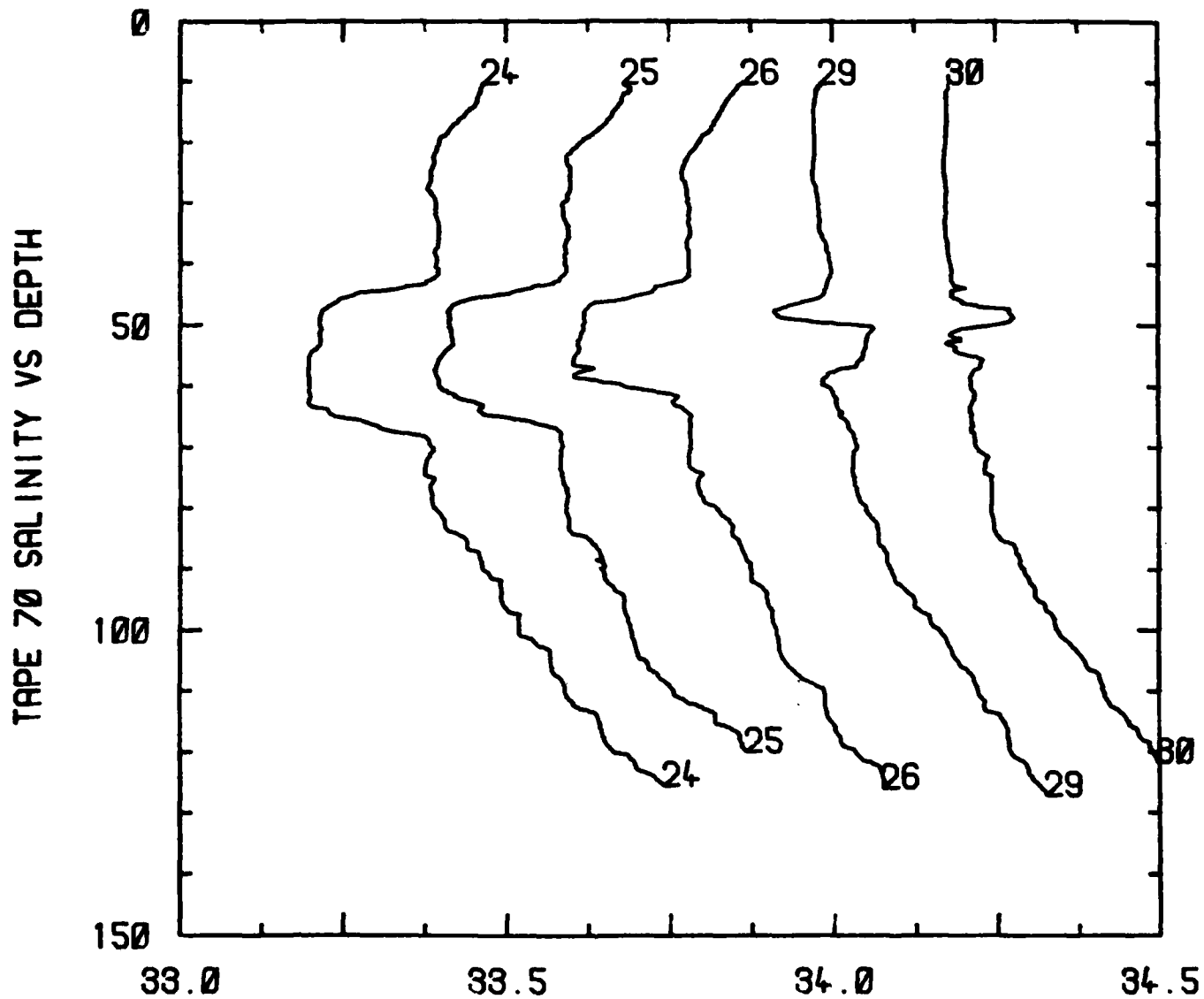
RSVP: UNIT 5

NOVEMBER 14, 1983

2235-2322 GMT

OFFSET BETWEEN PROFILES: 2.0 DEGREES

SHIP'S SPEED 5.4 KNOTS



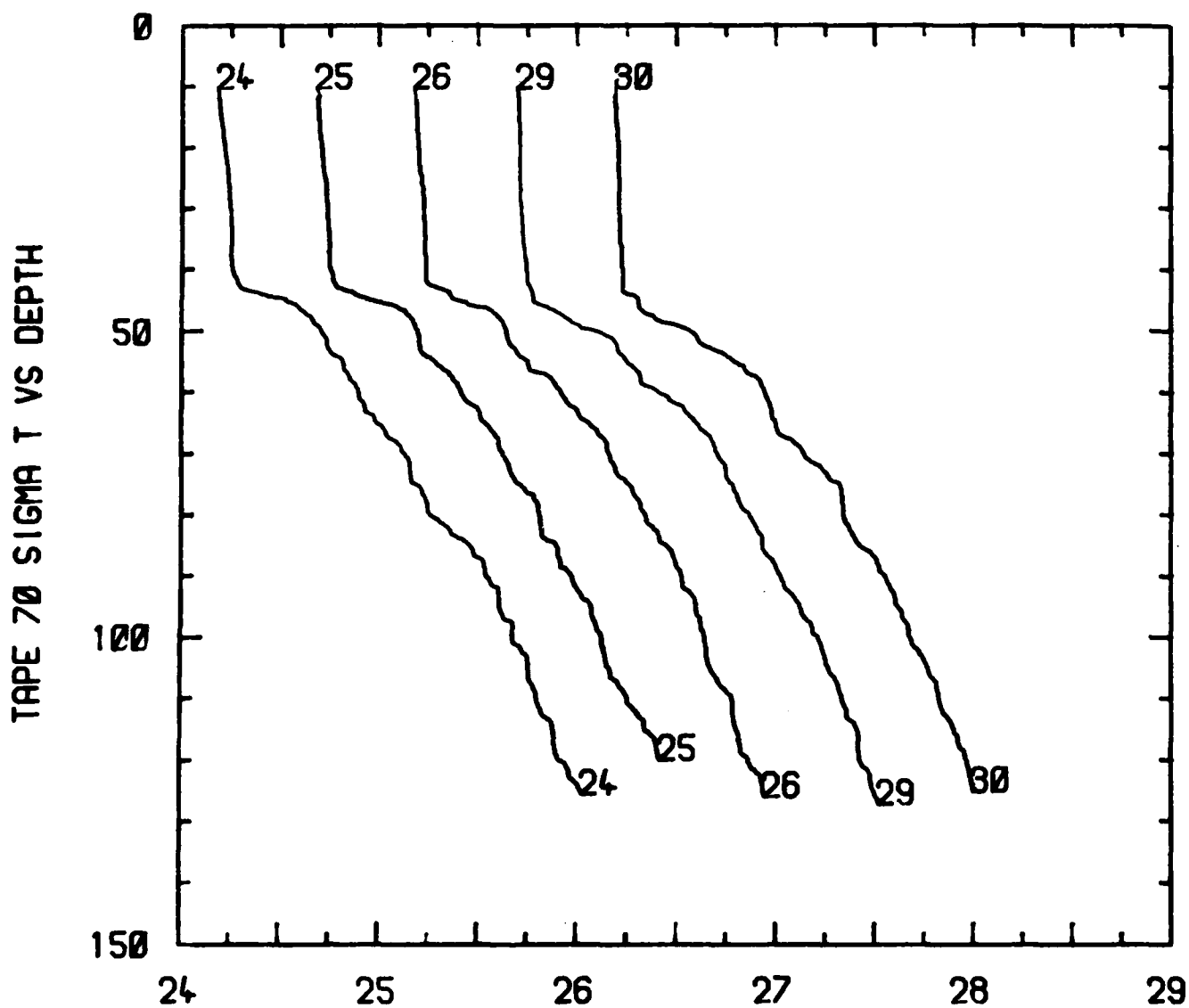
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NOVEMBER 14, 1983

2235-2322 GMT

OFFSET BETWEEN PROFILES: 0.2 PARTS PER THOUSAND

SHIP'S SPEED 5.4 KNOTS



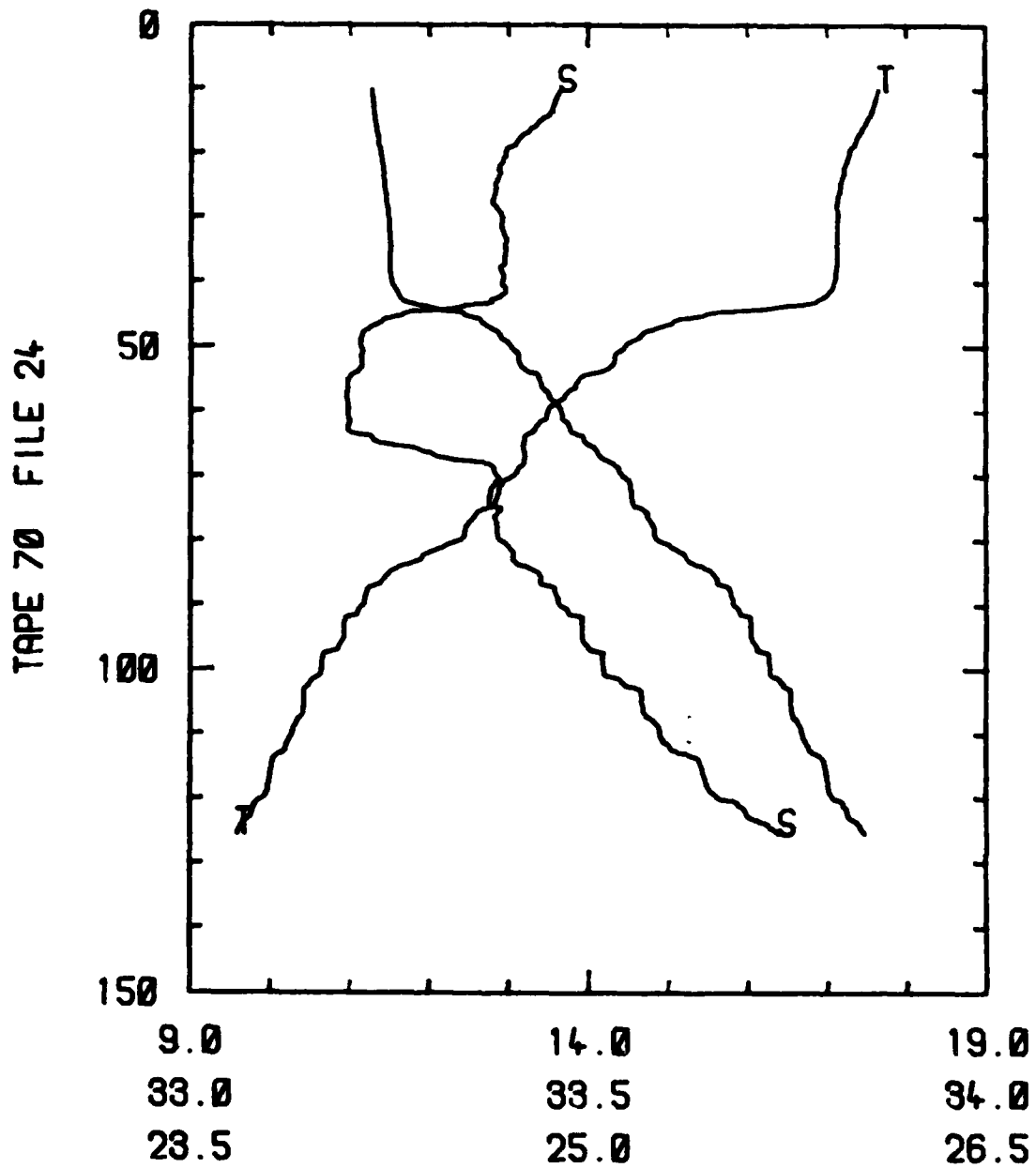
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NOVEMBER 14, 1983

2235-2322 GMT

OFFSET BETWEEN PROFILES: 0.5 SIGMA T UNITS

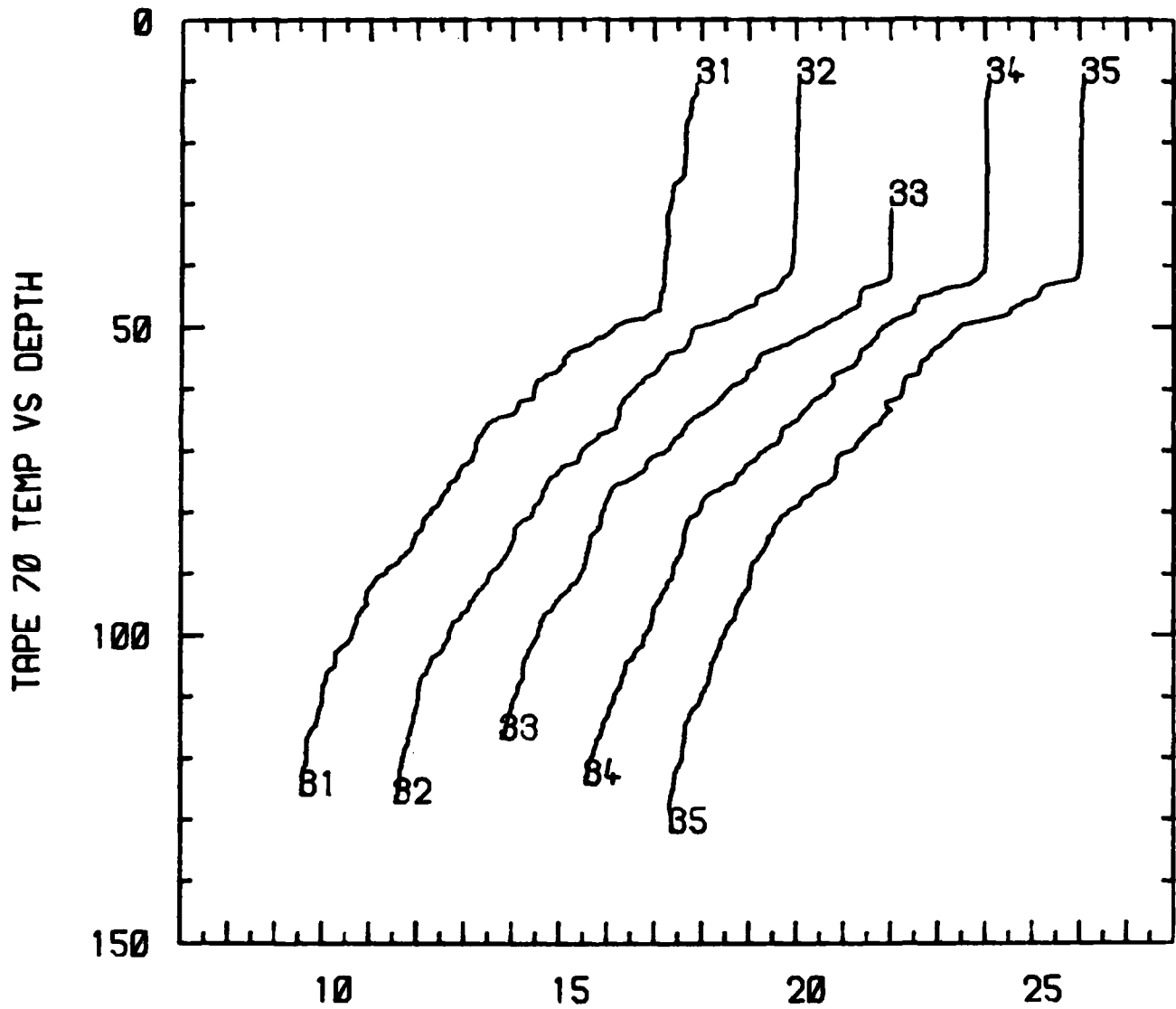
SHIP'S SPEED 5.4 KNOTS



RSVP: UNIT 5

NOVEMBER 14, 1983

2235 GMT



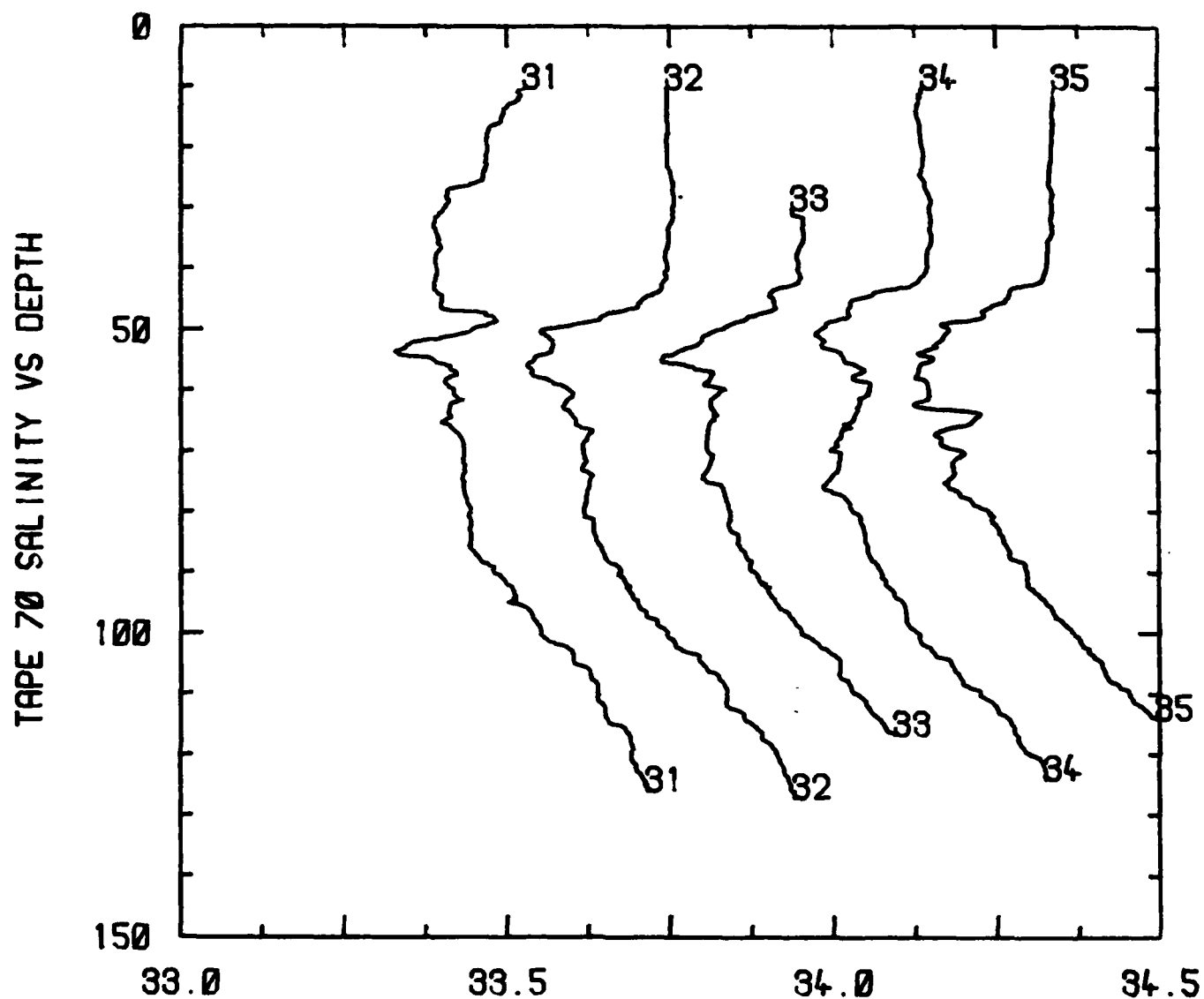
RSVP: UNIT 5

NOVEMBER 14, 1983

2324-2355 GMT

OFFSET BETWEEN PROFILES: 2.0 DEGREES

SHIP'S SPEED 5.4 KNOTS



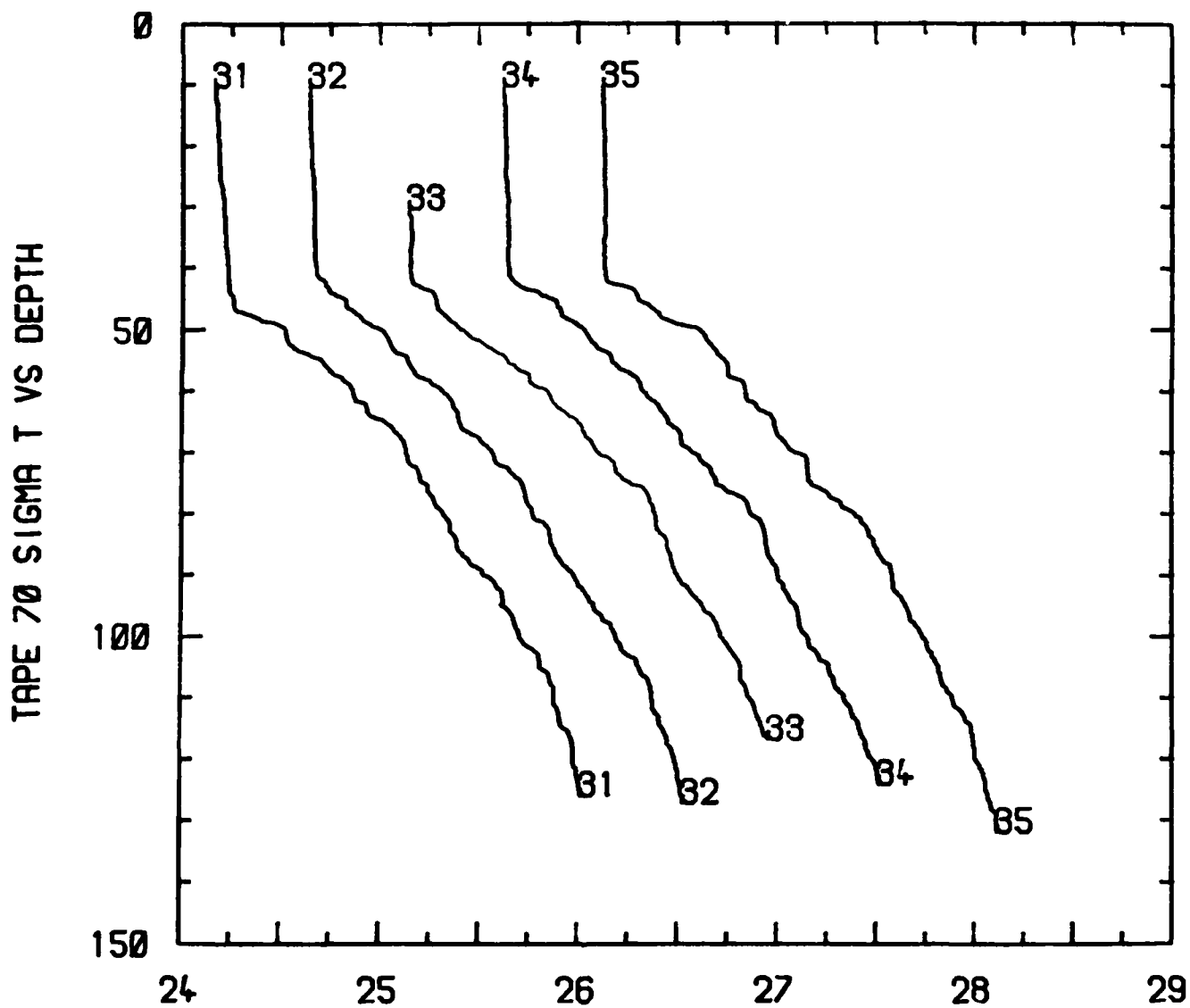
RSVP: UNIT 5

NOVEMBER 14, 1983

2324-2355 GMT

OFFSET BETWEEN PROFILES: 0.2 PARTS PER THOUSAND

SHIP'S SPEED 5.4 KNOTS



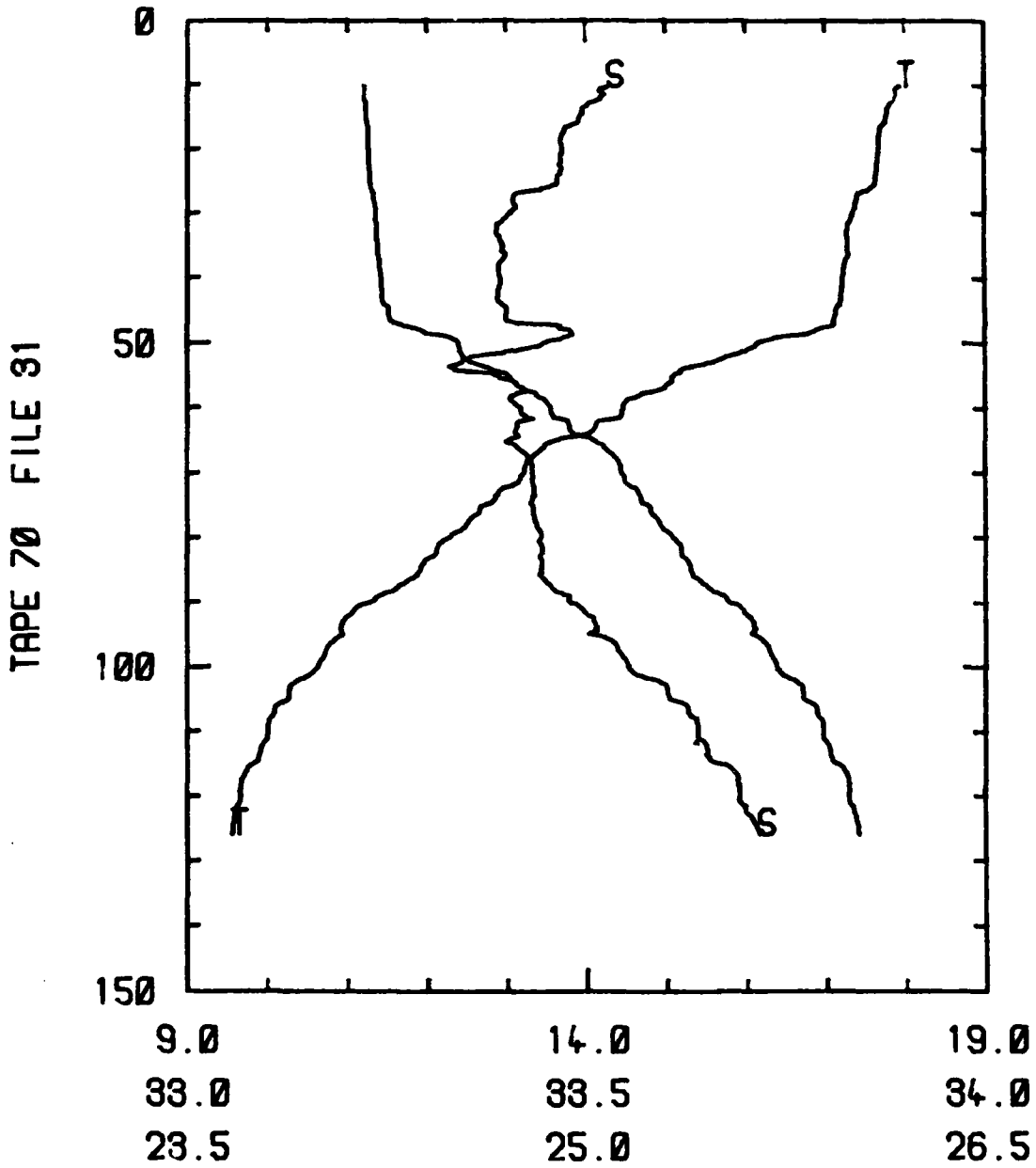
RSVP: UNIT 5

NOVEMBER 14, 1983

2324-2355 GMT

OFFSET BETWEEN PROFILES: 0.5 SIGMA T UNITS

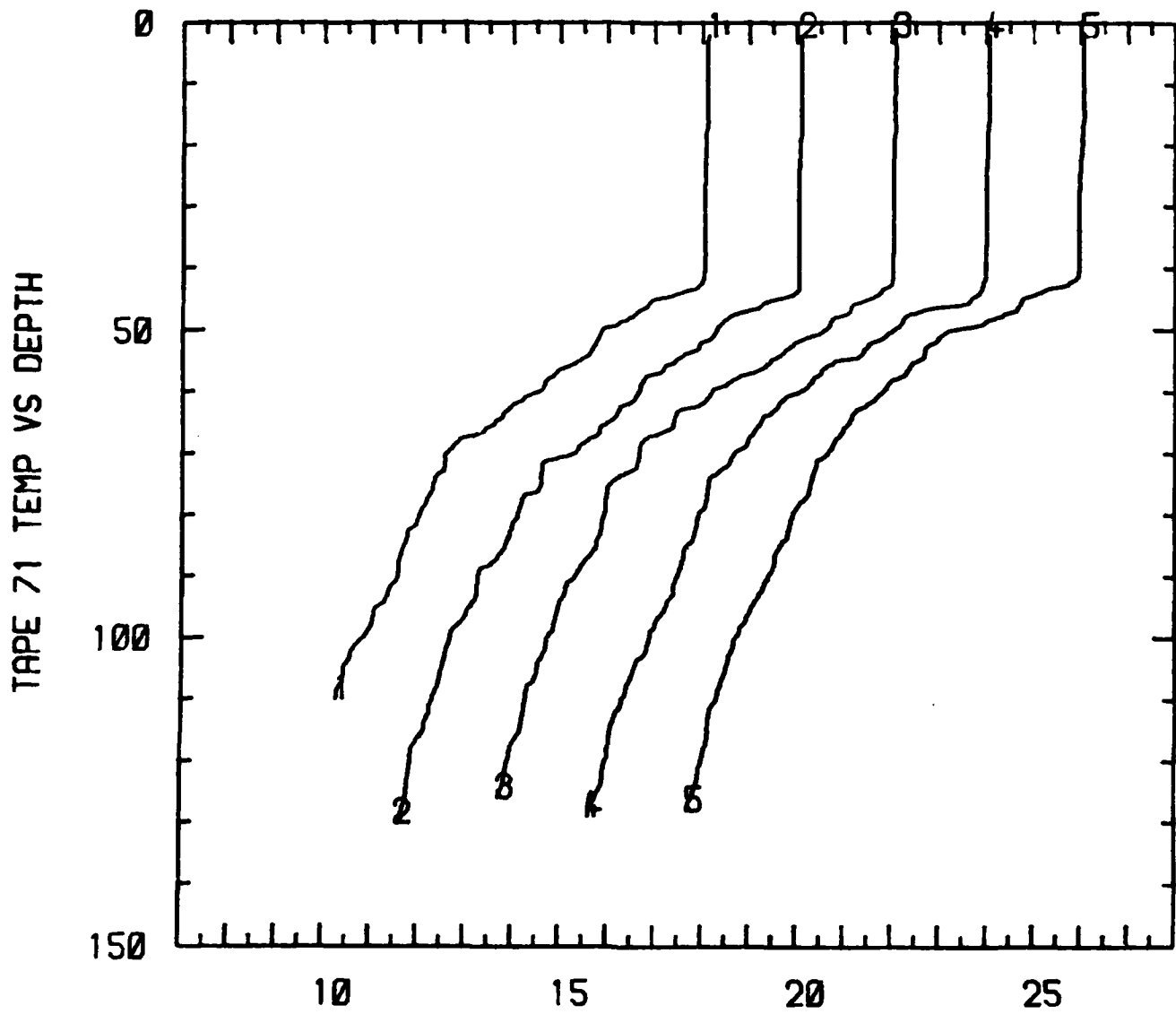
SHIP'S SPEED 5.4 KNOTS



RSVP: UNIT 5

NOVEMBER 14, 1983

2324 GMT



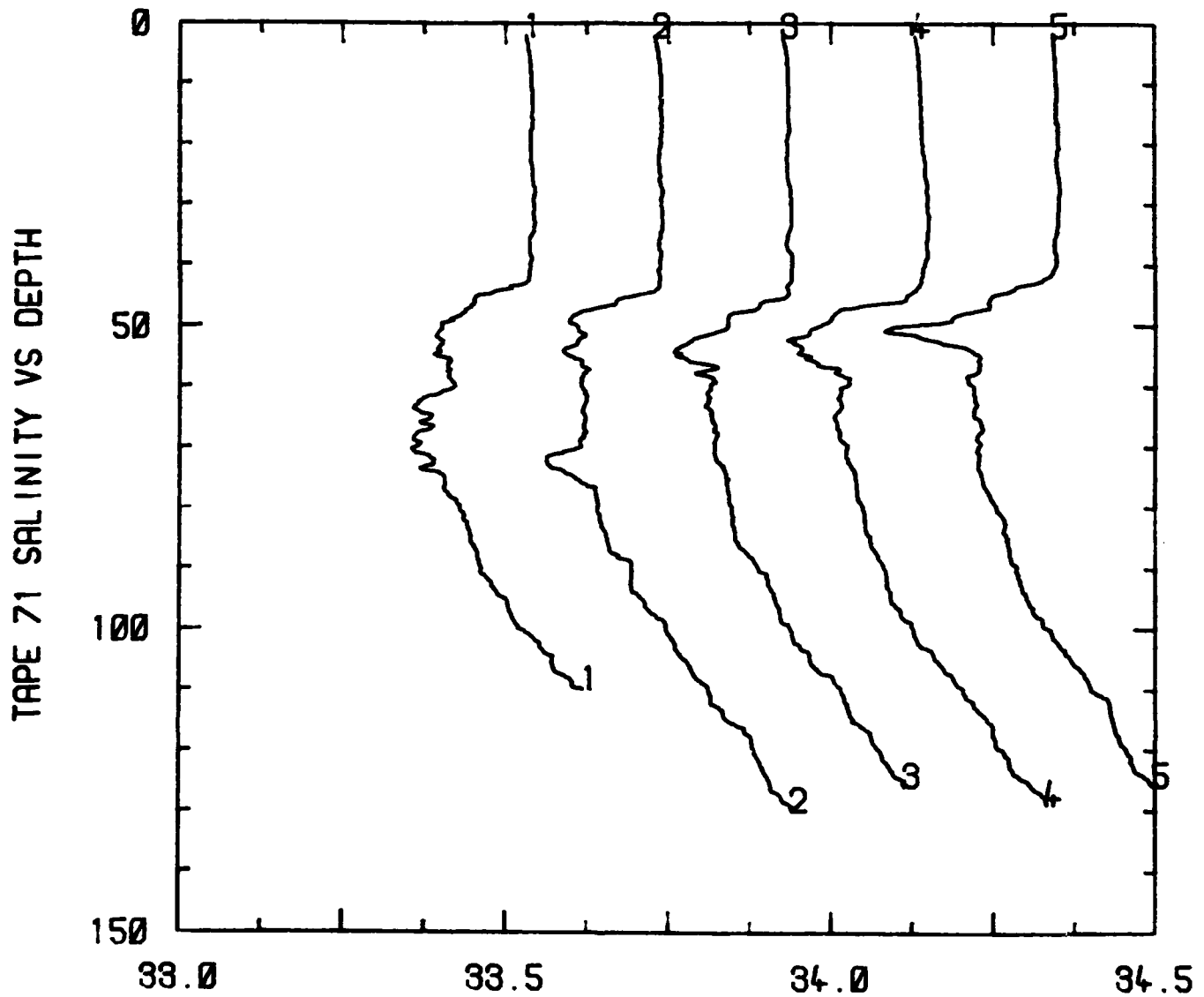
RSVP: UNIT 5

NOVEMBER 15, 1983

0011-0049 GMT

OFFSET BETWEEN PROFILES: 2.0 DEGREES

SHIP'S SPEED 5.4 KNOTS



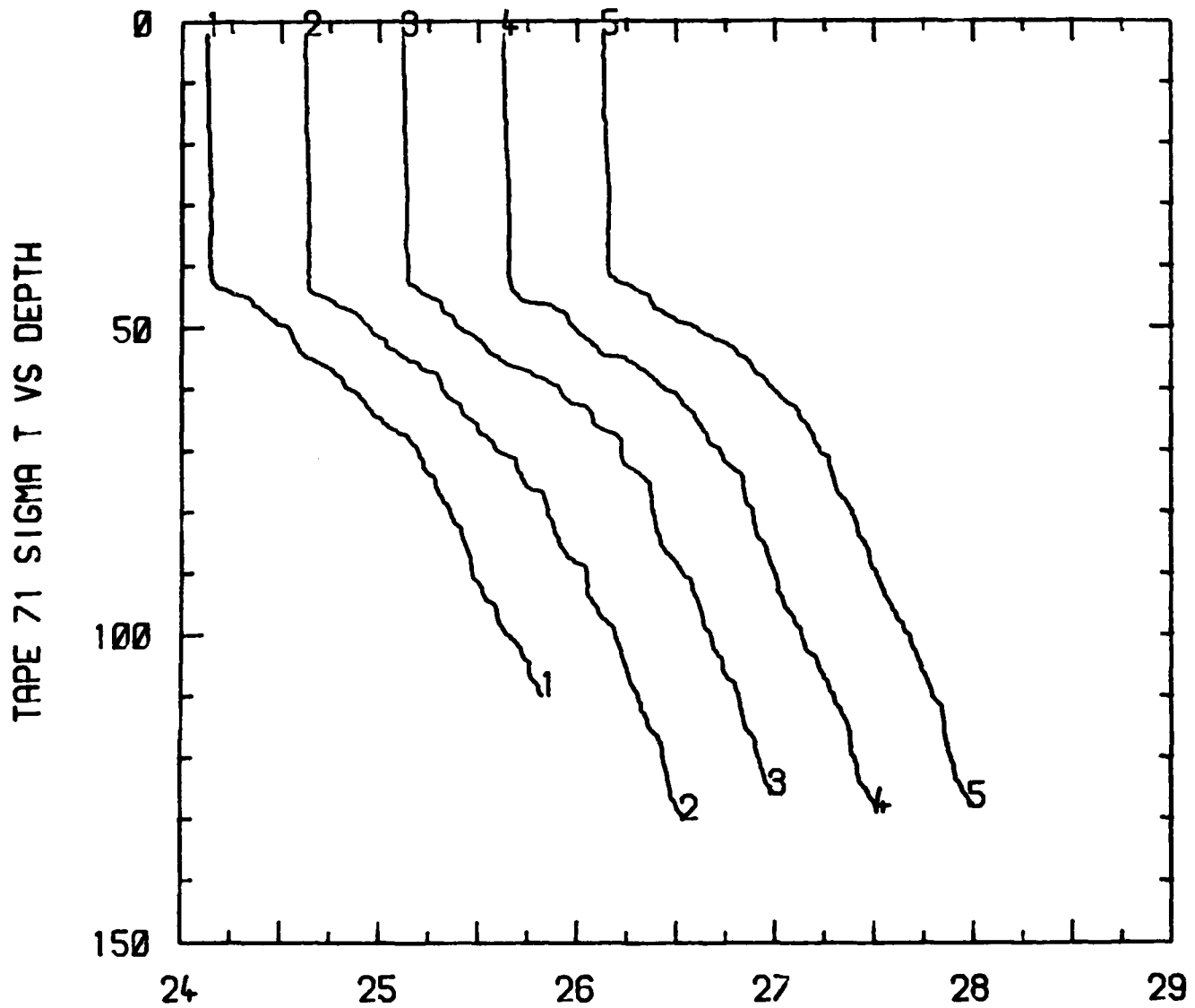
RSVP: UNIT 5

NOVEMBER 15, 1983

0011-0049 GMT

OFFSET BETWEEN PROFILES: 0.2 PARTS PER THOUSAND

SHIP'S SPEED 5.4 KNOTS



RSVP: UNIT 5

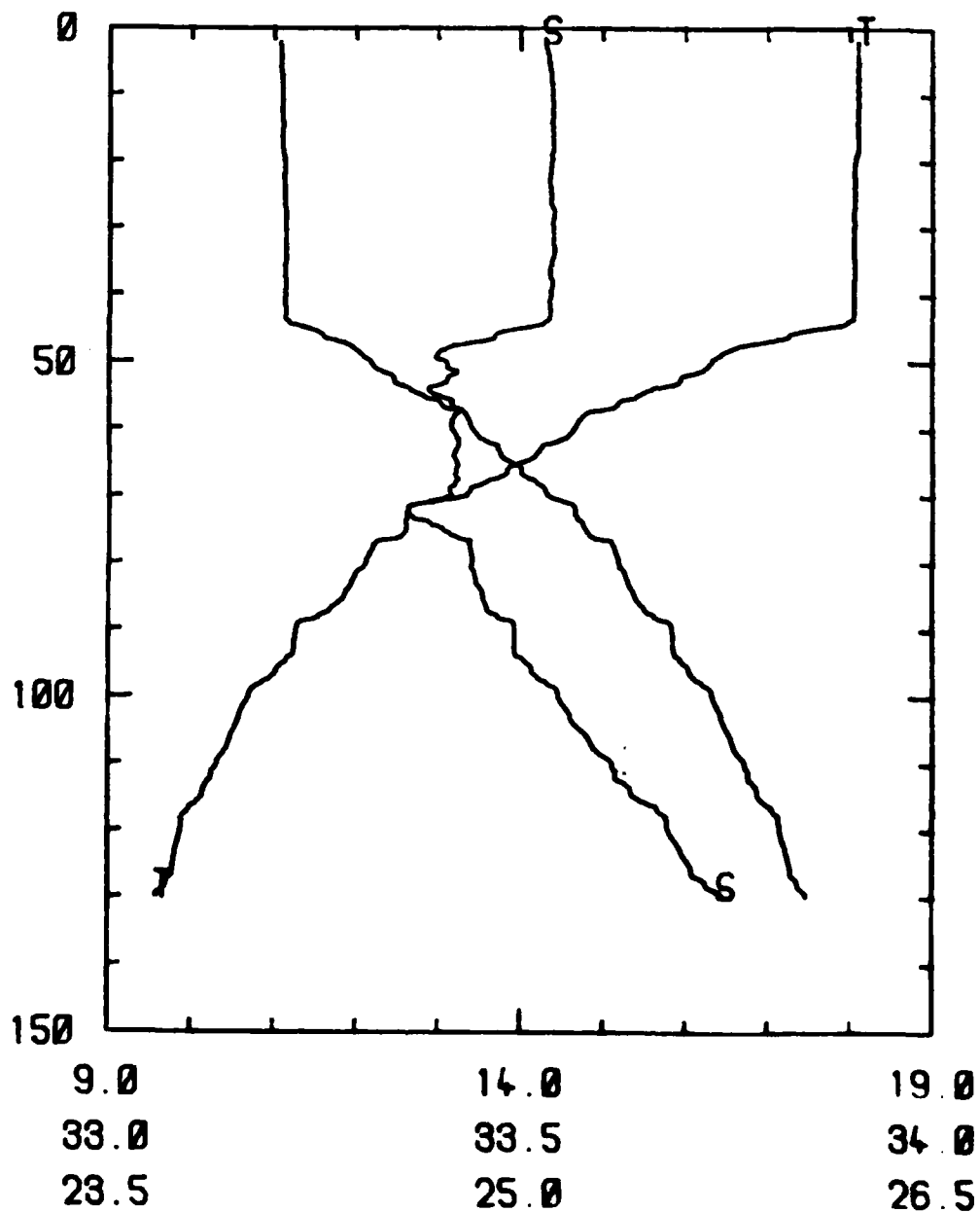
NOVEMBER 15, 1983

0011-0049 GMT

OFFSET BETWEEN PROFILES: 0.5 SIGMA T UNITS

SHIP'S SPEED 5.4 KNOTS

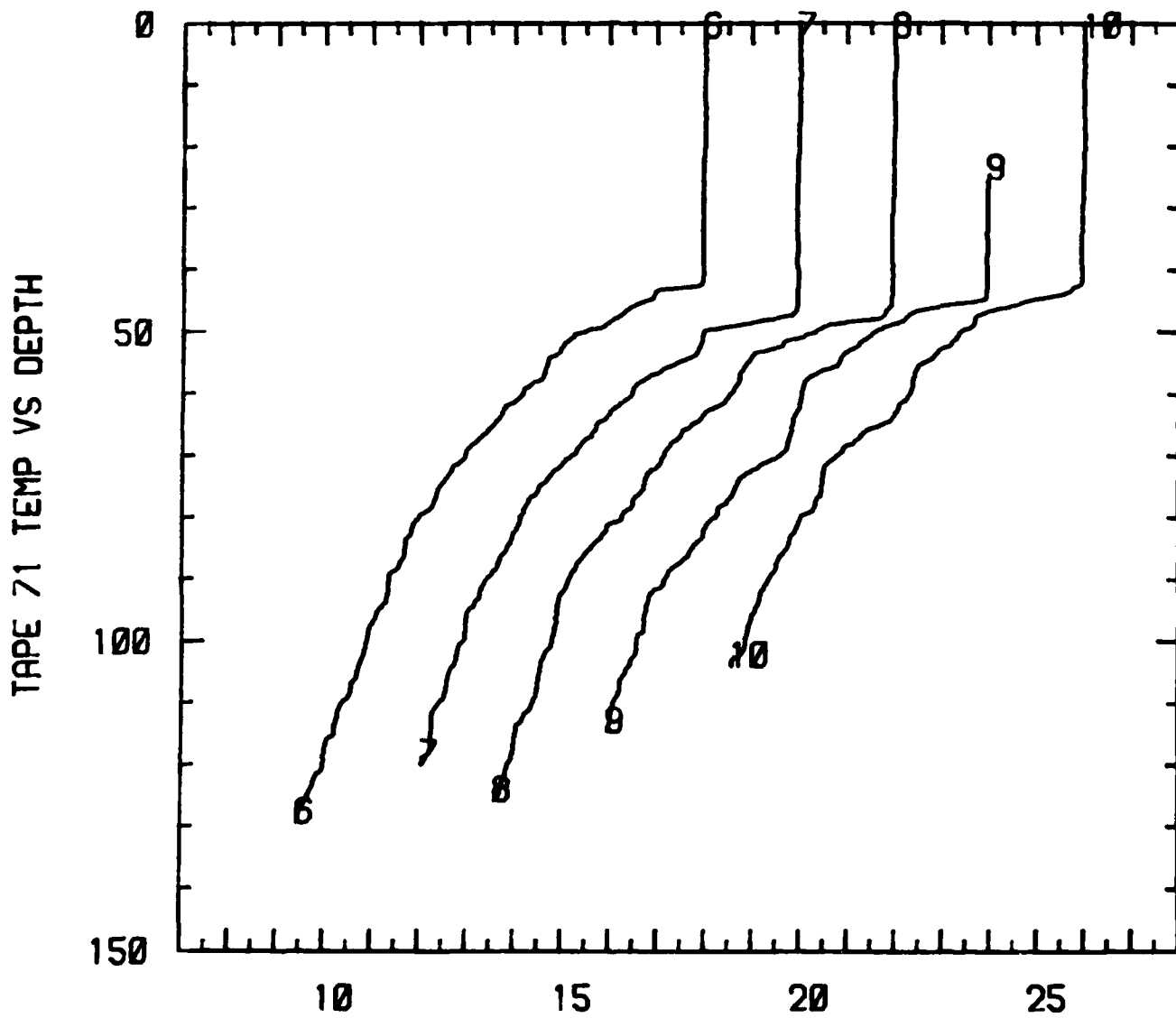
TAPE 71 FILE 2



RSVP: UNIT 5

NOVEMBER 15, 1983

0022 GMT



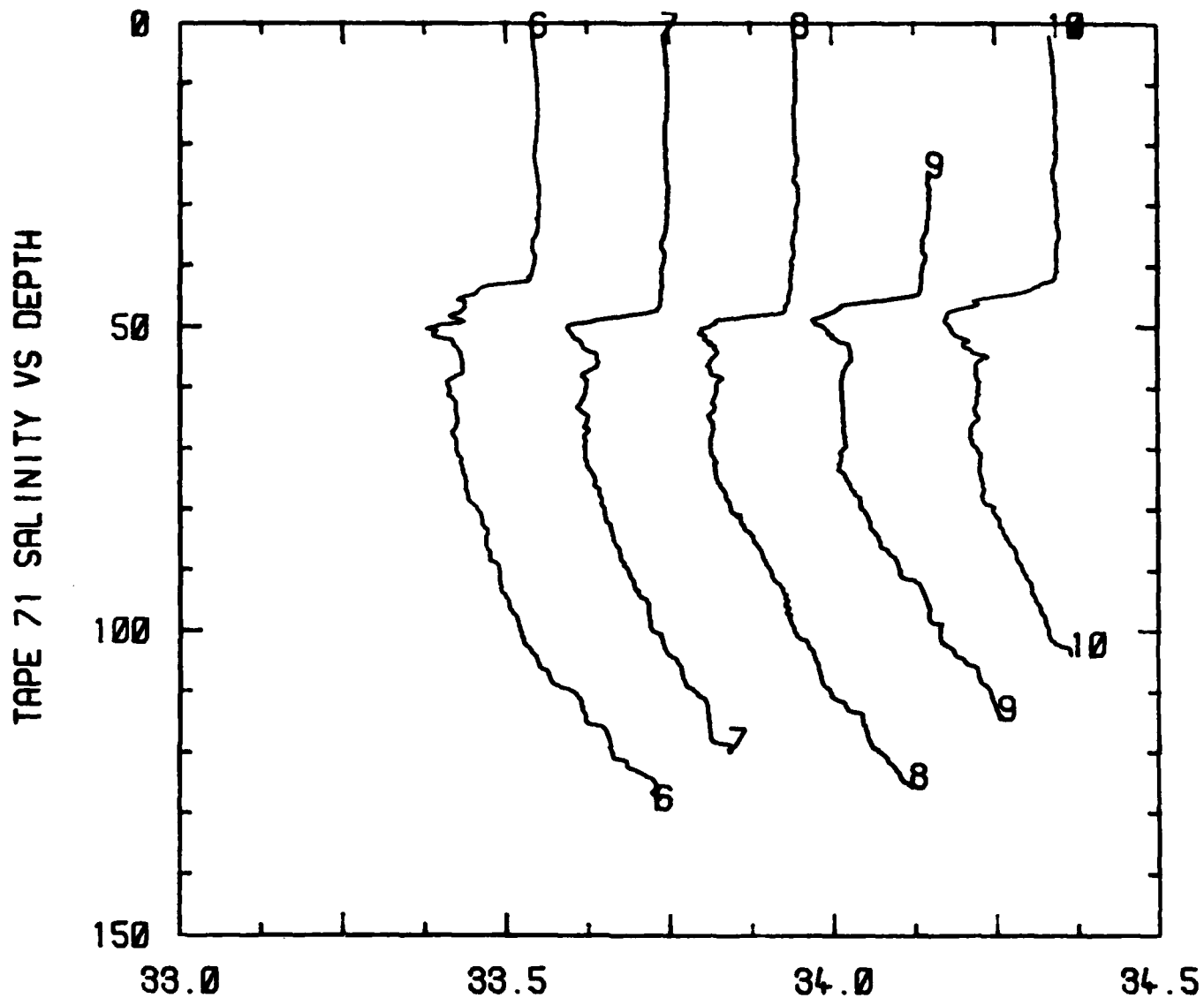
RSVP: UNIT 5

NOVEMBER 15, 1983

0051-0126 GMT

OFFSET BETWEEN PROFILES: 2.0 DEGREES

SHIP'S SPEED 5.4 KNOTS



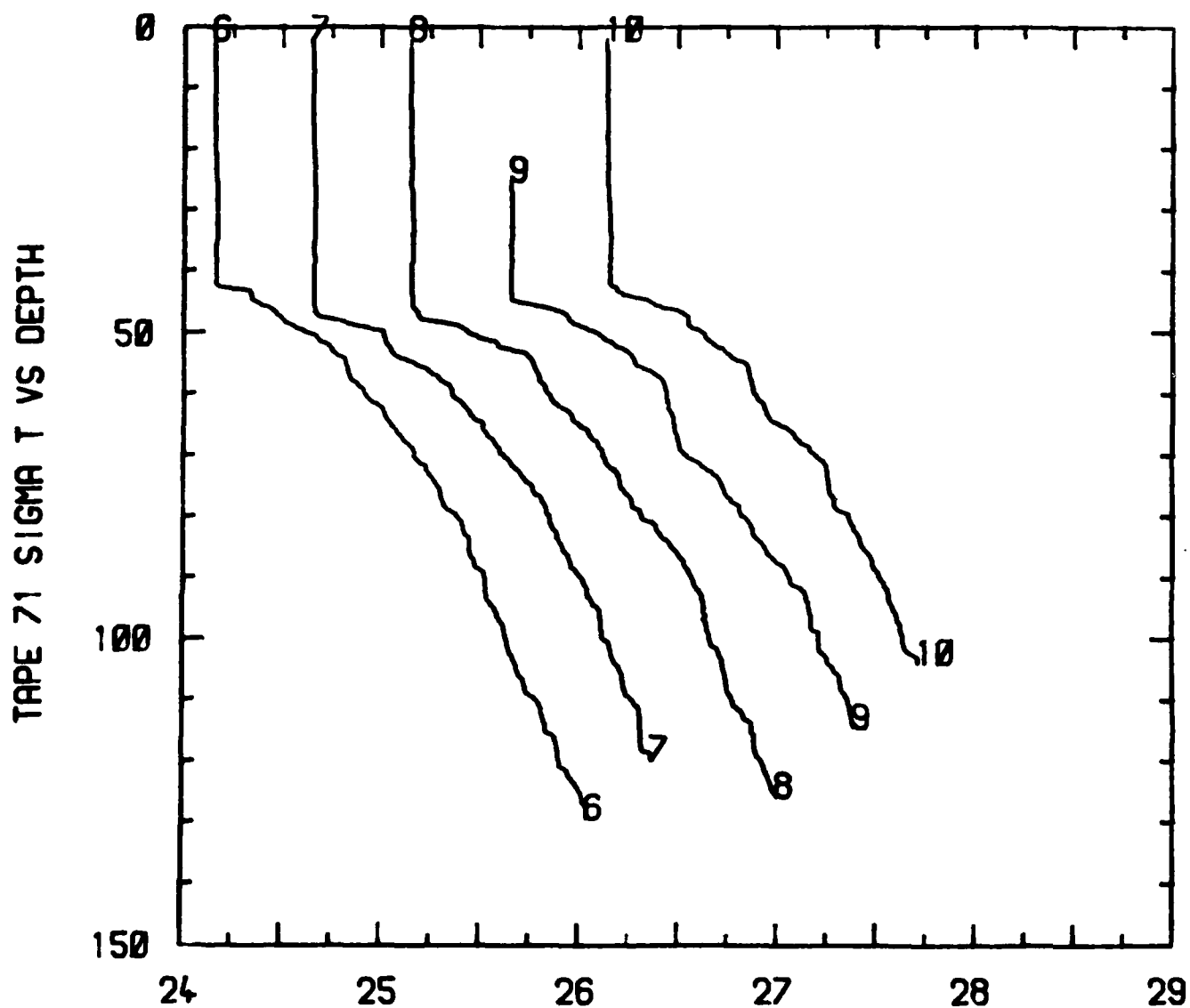
RSVP: UNIT 5

NOVEMBER 15, 1983

0051-0126 GMT

OFFSET BETWEEN PROFILES: 0.2 PARTS PER THOUSAND

SHIP'S SPEED 5.4 KNOTS



RSVP: UNIT 5

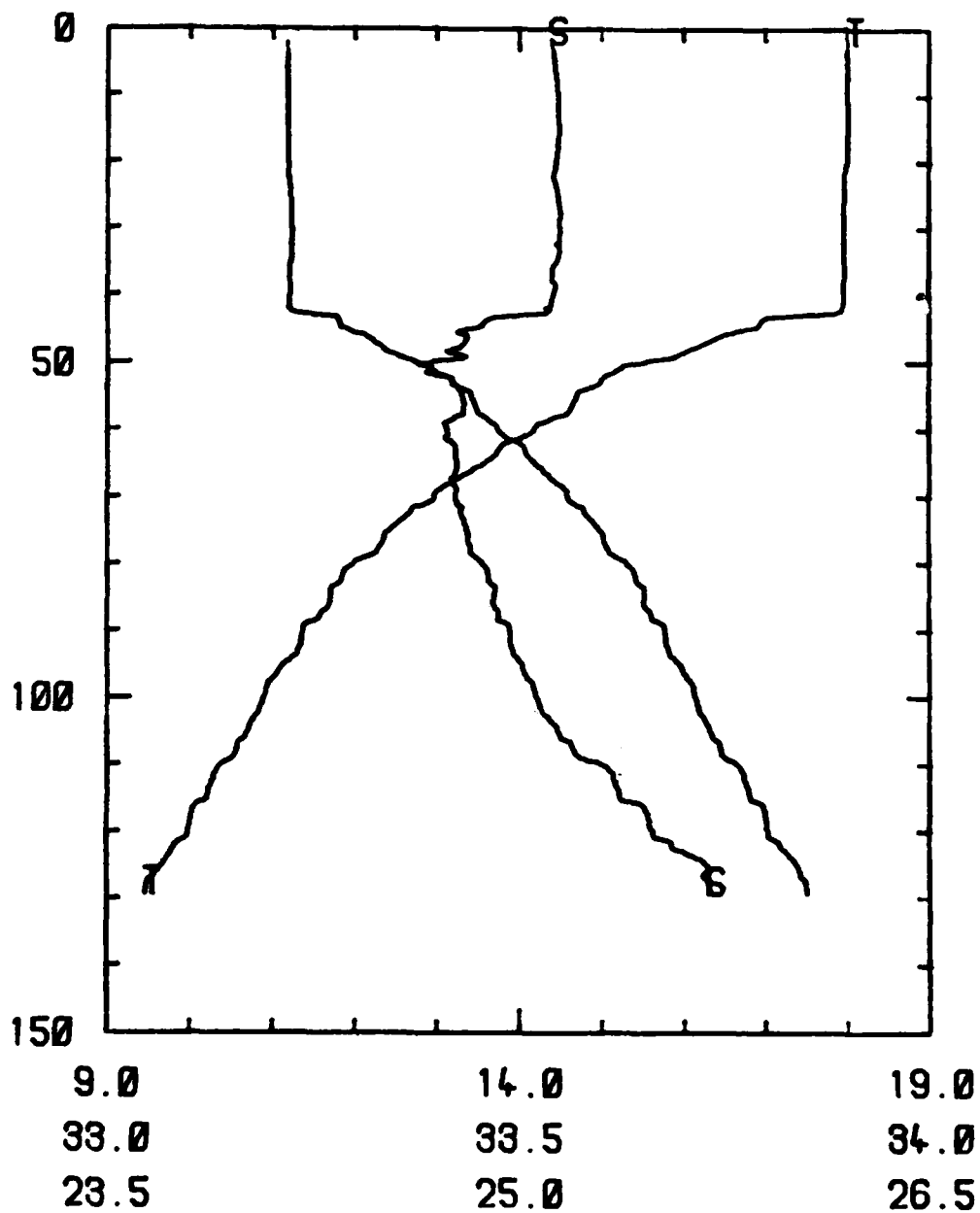
NOVEMBER 15, 1983

0051-0126 GMT

OFFSET BETWEEN PROFILES: 0.5 SIGMA T UNITS

SHIP'S SPEED 5.4 KNOTS

TAPE 71 FILE 6



RSVP: UNIT 5

NOVEMBER 15, 1983

0051 GMT

END

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