

**The Distribution of Temperature,  
Salinity and Density on Flemish Cap  
(47° 00'N, 45° 00'W) in March, April and  
May 1979**

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Canadian Data Report of  
Fisheries and Aquatic Sciences 269

April 1981

THE DISTRIBUTION OF TEMPERATURE, SALINITY AND DENSITY  
ON FLEMISH CAP (47°00'N, 45°00'W) IN MARCH, APRIL  
AND MAY 1979

by

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## ABSTRACT

Kendaris, T. A. 1981. The distribution of temperature, salinity and density on Flemish Cap (47°00'N, 45°00'W) in March, April and May 1979. Can. Data Rep. Fish. Aquat. Sci. 269: iv + 127 p. (9)

Three oceanographic research cruises to the Flemish Cap were carried out in March, April and May 1979. Vertical CTD profiles were obtained from 'Flemish Cap Plankton Grid' stations. Fully calibrated and processed data were interpolated to standard hydrographic depths and tabulated in Appendices. Computer generated contour diagrams from each horizontal distribution of temperature, salinity and density have been provided.

Key words: temperature, salinity, density, oceanographic data, contours, Flemish Cap, Northwest Atlantic

## RÉSUMÉ

Kendaris, T. A. 1981. The distribution of temperature, salinity and density on Flemish Cap (47°00'N, 45°00'W) in March, April and May 1979. Can. Data Rep. Fish. Aquat. Sci. 269: iv + 127 p.

Trois expéditions de recherche océanographique ont été menées sur le Bonnet flamand en mars, avril et mai 1979. On a obtenu des profils verticaux CTD des stations de l'étude systématique du plancton sur le Bonnet flamand. Les données entièrement étalonnées et traitées ont été interpolées dans les profondeurs hydrographiques normalisées et figurent dans les tableaux en annexe. Des contours réalisés par ordinateur sont fournis pour chaque distribution horizontale de la température, de la salinité et de la densité.

## INTRODUCTION

During 1979, three oceanographic research cruises to the Flemish Cap were completed by the Northwest Atlantic Fisheries Centre. This report provides a tabulation of physical oceanographic data collected from stations along the 'Flemish Cap Plankton Grid', as established by the ICNAF Environmental Subcommittee (ICNAF 1977). Temperature, salinity and density contour diagrams at standard hydrographic depths are presented.

## METHODS AND RESULTS

During the spring of 1979, the R/V "Gadus Atlantica" undertook three oceanographic surveys of the Flemish Cap Bank (Fig. 1), from 19-25 March, 23-28 April and 05-09 May. Among the stations occupied were those of the 'Flemish Cap Plankton Grid' (ICNAF 1977). This rectangular grid consisted of seven east-west transects (from 48°20'N to 46°20'N) separated by 20' of latitude, with six equally spaced (30' longitude) sampling locations between 46°30'W and 44°00'W.

Profiles of conductivity and temperature with depth were obtained from a Guildline Mark IV (model 8701) CTD system. Water samples were collected by a General Oceanics rosette sampler for salinity calibrations. Based on a minimum of 300 points per cast, the analog record was reduced to a number of data points adequate to reproduce the vertical profile. Temperature, salinity and sigma-t values were then interpolated at standard depths (to a maximum of 300 m). Data from each cruise have been tabulated in Appendices 1 through 3.

Temperature, salinity and density contours were computer generated using the surface fitting techniques described in Taylor et al. (1971). Spline interpolation predominated over Laplacian, which resulted in a balance between increased smoothing and the avoidance of sharp peaks. Contour intervals (0.5°C, 0.1‰, 0.1 sigma-t units) have been identified on each horizontal distribution. Bottom topography has been included, with 100, 200, 300, 400 and 1000 m isobaths outlined. Diagrams from March, April and May are presented in Fig. 2-25, 26-61 and 62-97, respectively.

A descriptive analysis of the physical oceanography of Flemish Cap in spring 1979 will subsequently be published elsewhere by the author. A list of all comparable information from the Flemish Cap region was compiled by Anderson and Chumakov (1980). Although real-time radio transmission of temperature and salinity values were made via IGOSS (Integrated Global Ocean Station System) in March and May 1979 (Gagnon 1980), the data at that time was uncorrected for instrument bias. Relevant reversing thermometer observations collected by the U.S.S.R. are now available from the data banks of the Marine Environmental Data Service. The fully calibrated and processed data of this report have been submitted to the MEDS data preservation archive (Jones 1976).

## ACKNOWLEDGMENTS

I would like to take this opportunity to express my appreciation to those individuals who aided in the preparation of this report. Gary Somerton devoted considerable time in modifying the existing computer graphics programs. Gill Campbell provided her excellent drafting skills in adding the bathymetric contours. My wife Benedikta helped in the painstaking task of blanking out data isolines from unsampled areas. Cathy Wilson was responsible for the photoreduction of all figures. Finally, Vern Pepper and Joe Kiceniuk offered helpful comments on the rough draft.

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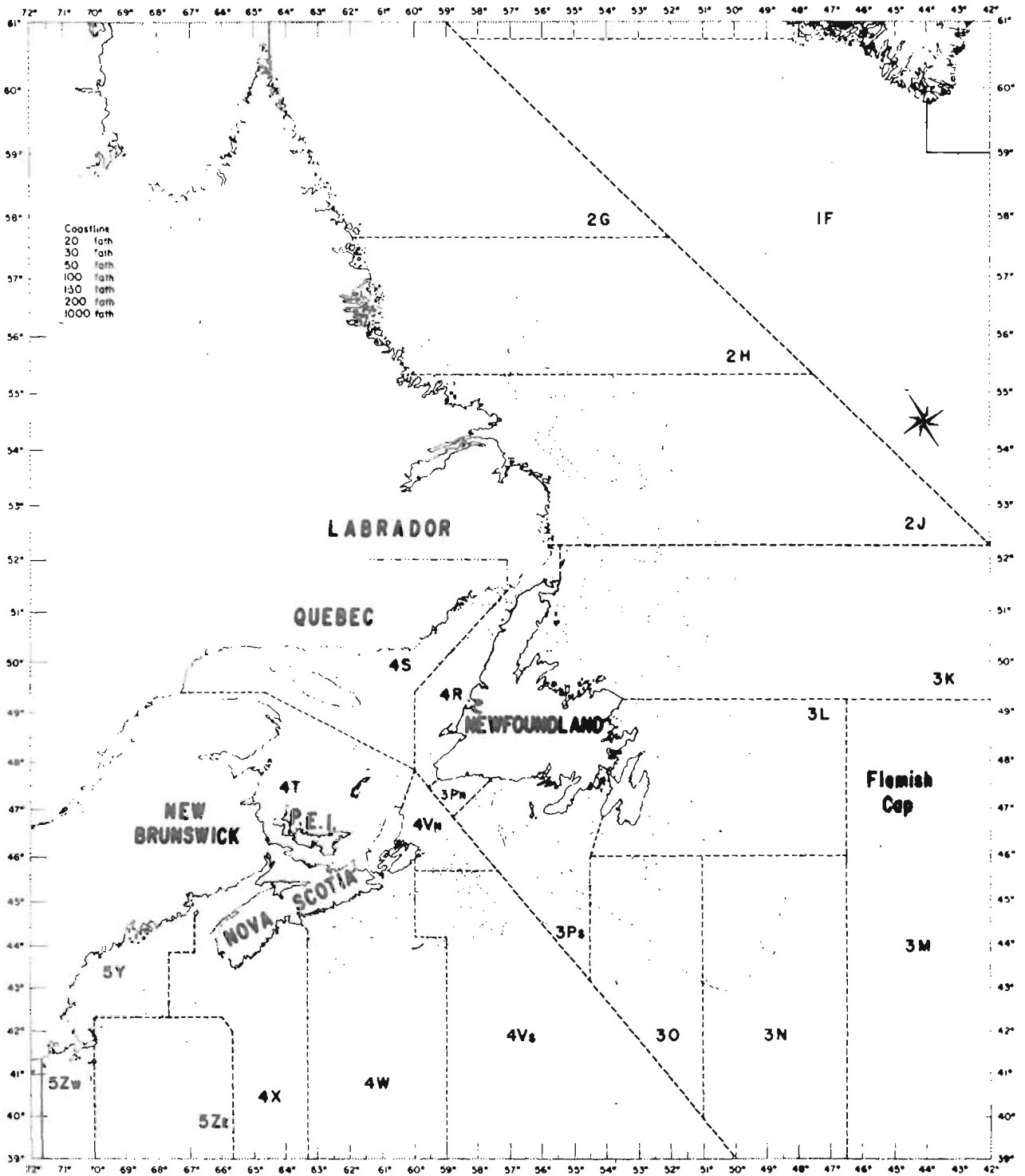


Fig. 1. Location of Flemish Cap Bank.

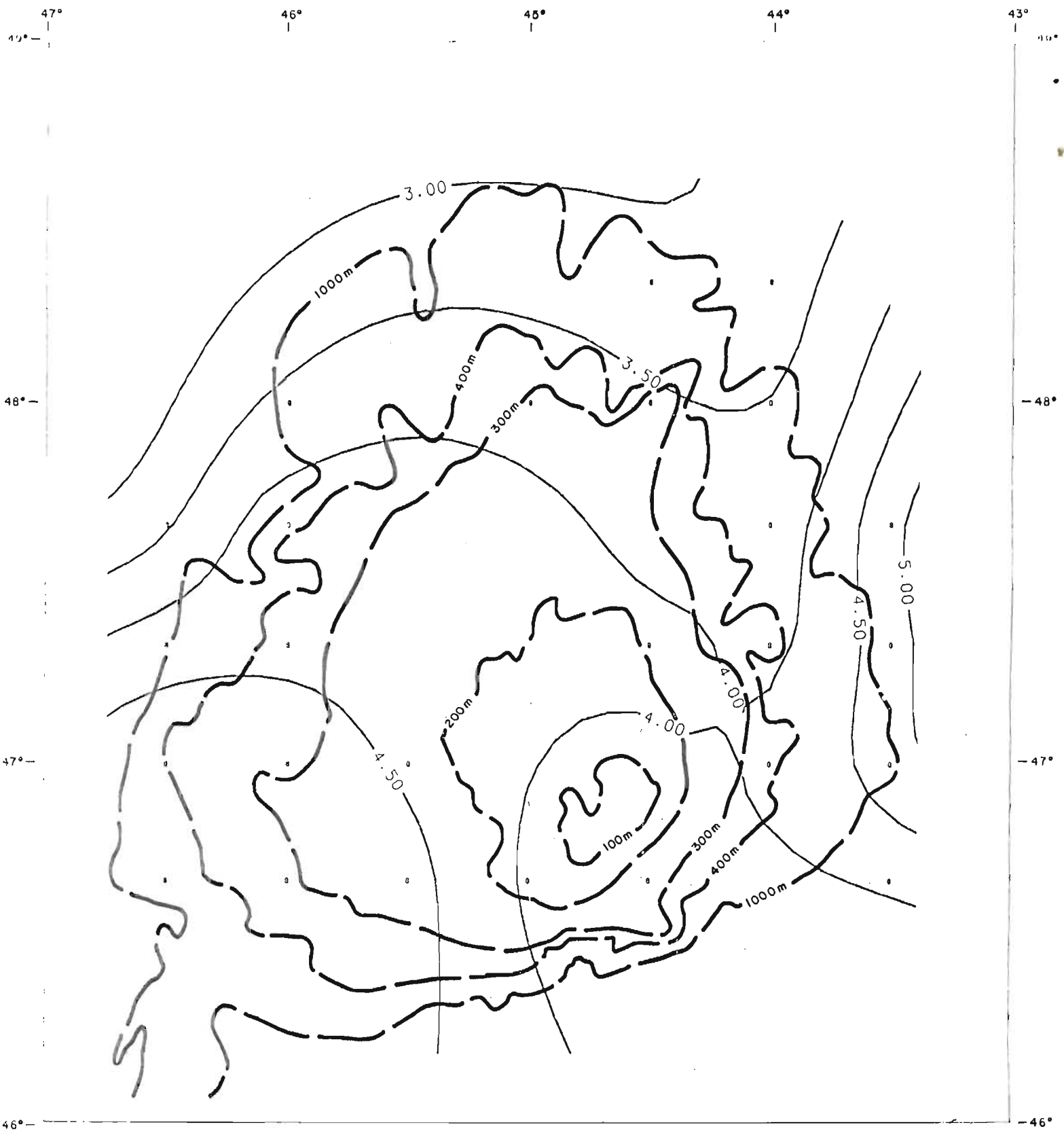


Fig. 2. Temperature contours at 000 meters - GADUS 19 (March 1979).

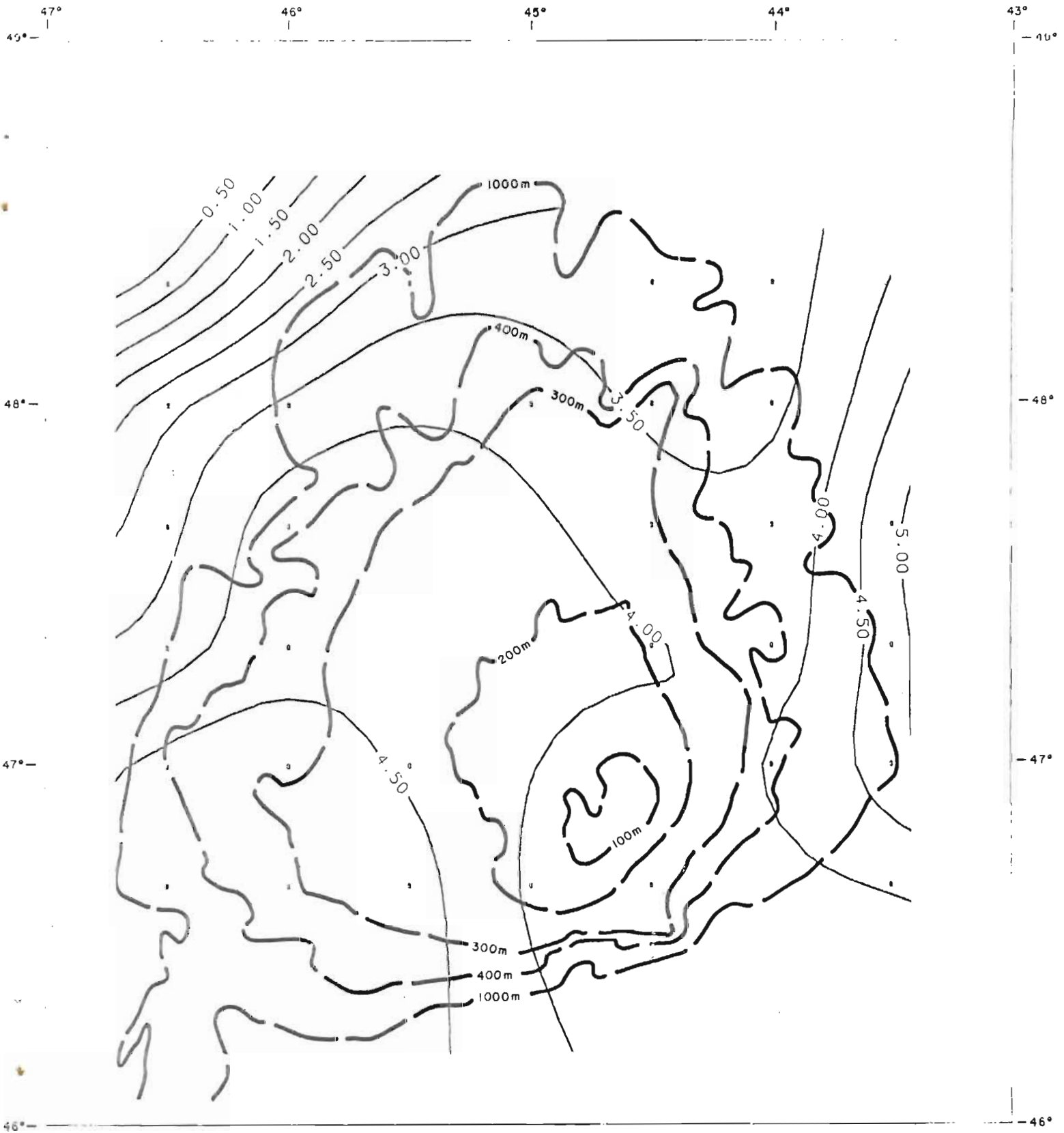


Fig. 3. Temperature contours at 010 meters - GADUS 19 (March 1979).

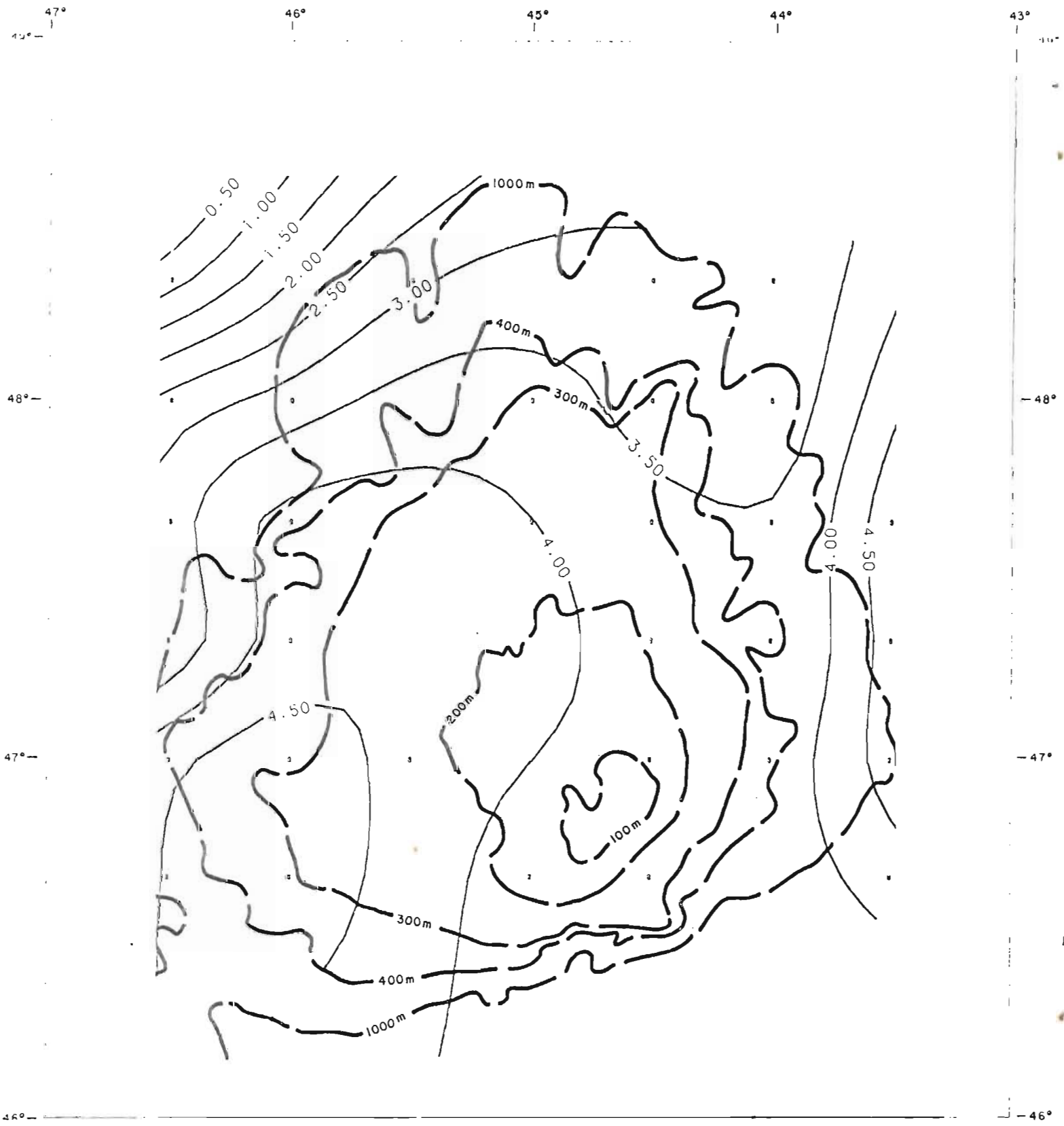


Fig. 4. Temperature contours at 020 meters - GADUS 19 (March 1979).

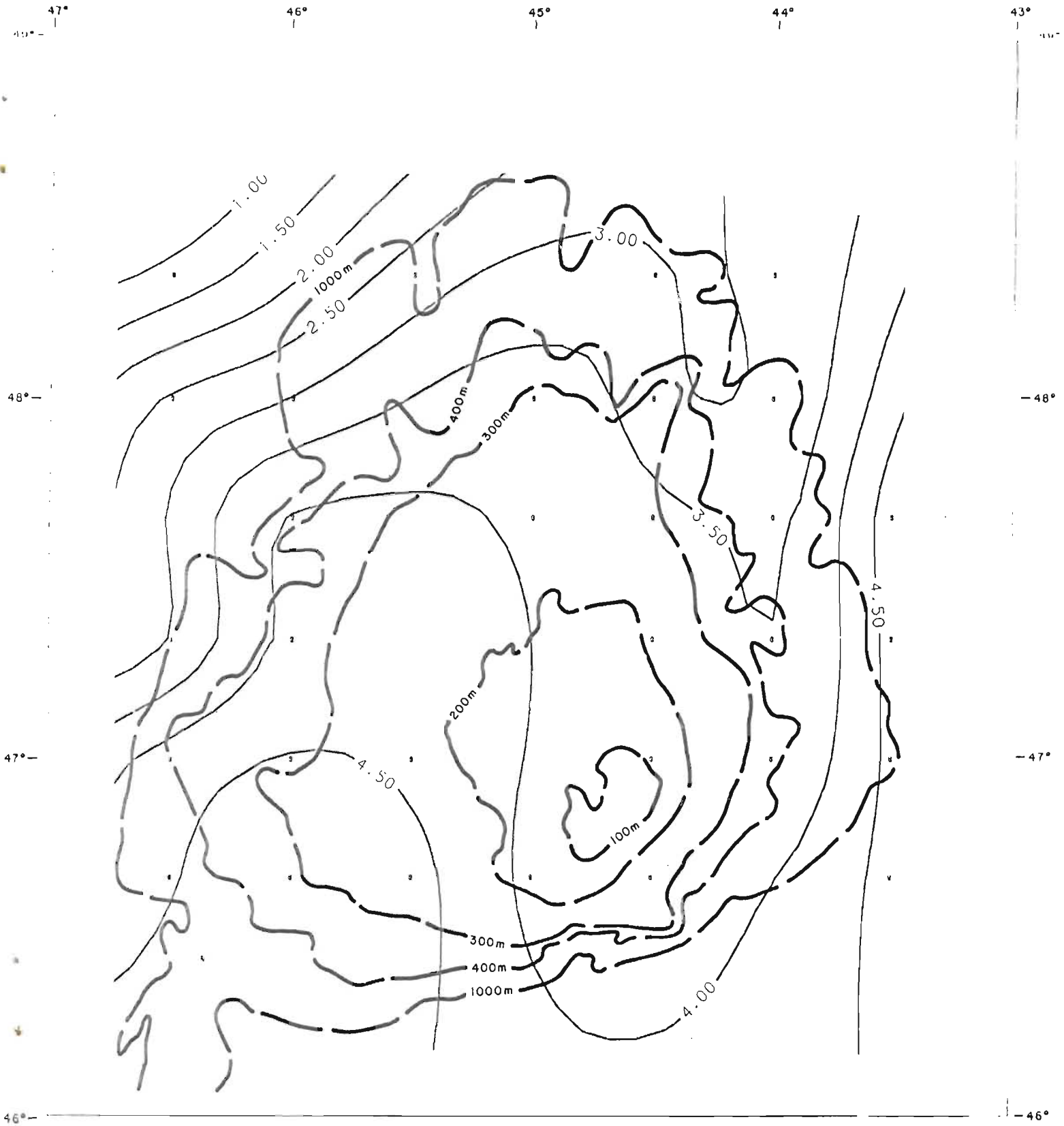


Fig. 5. Temperature contours at 030 meters - GADUS 19 (March 1979).

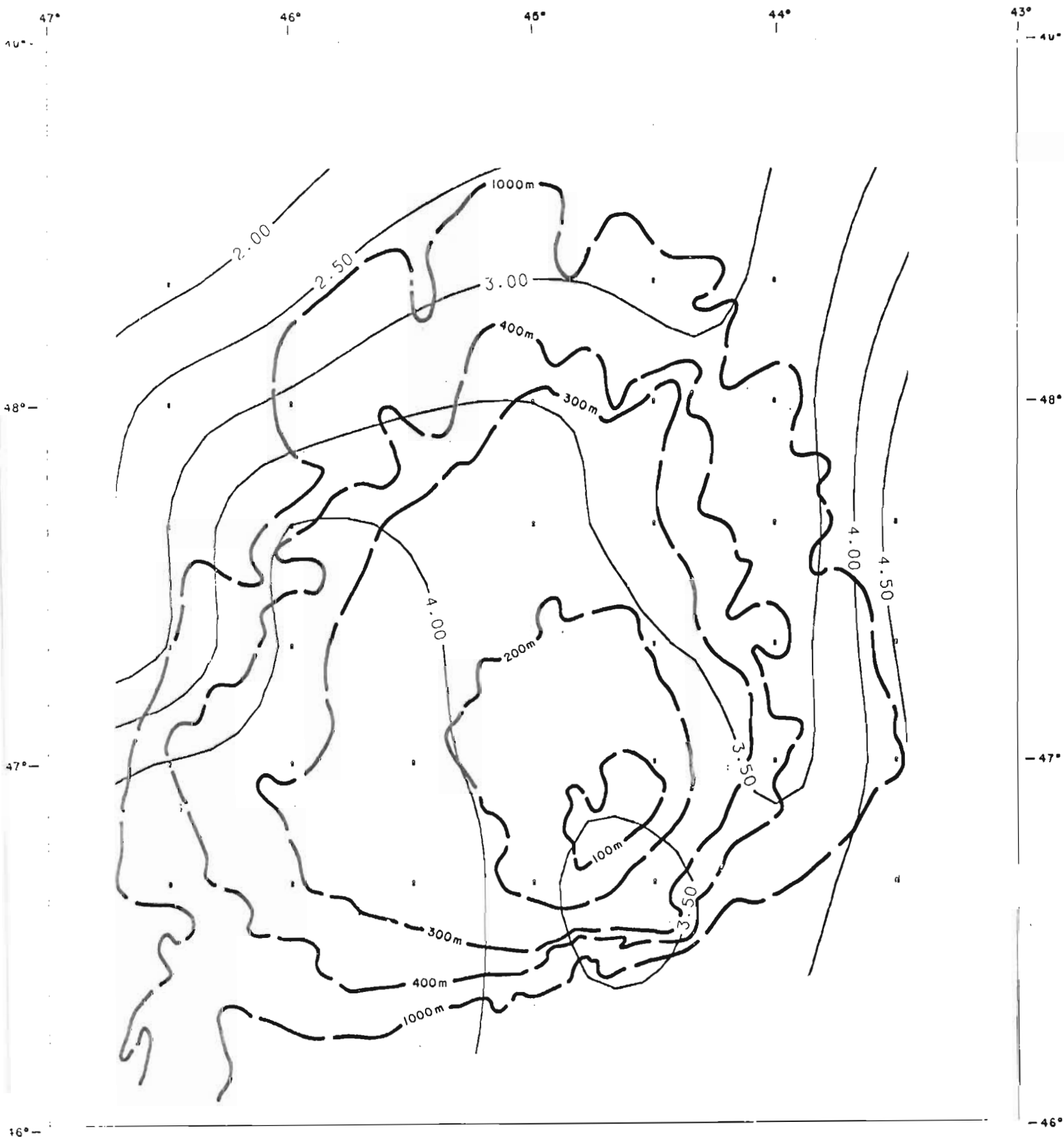


Fig. 6. Temperature contours at 050 meters - GADUS 19 (March 1979).

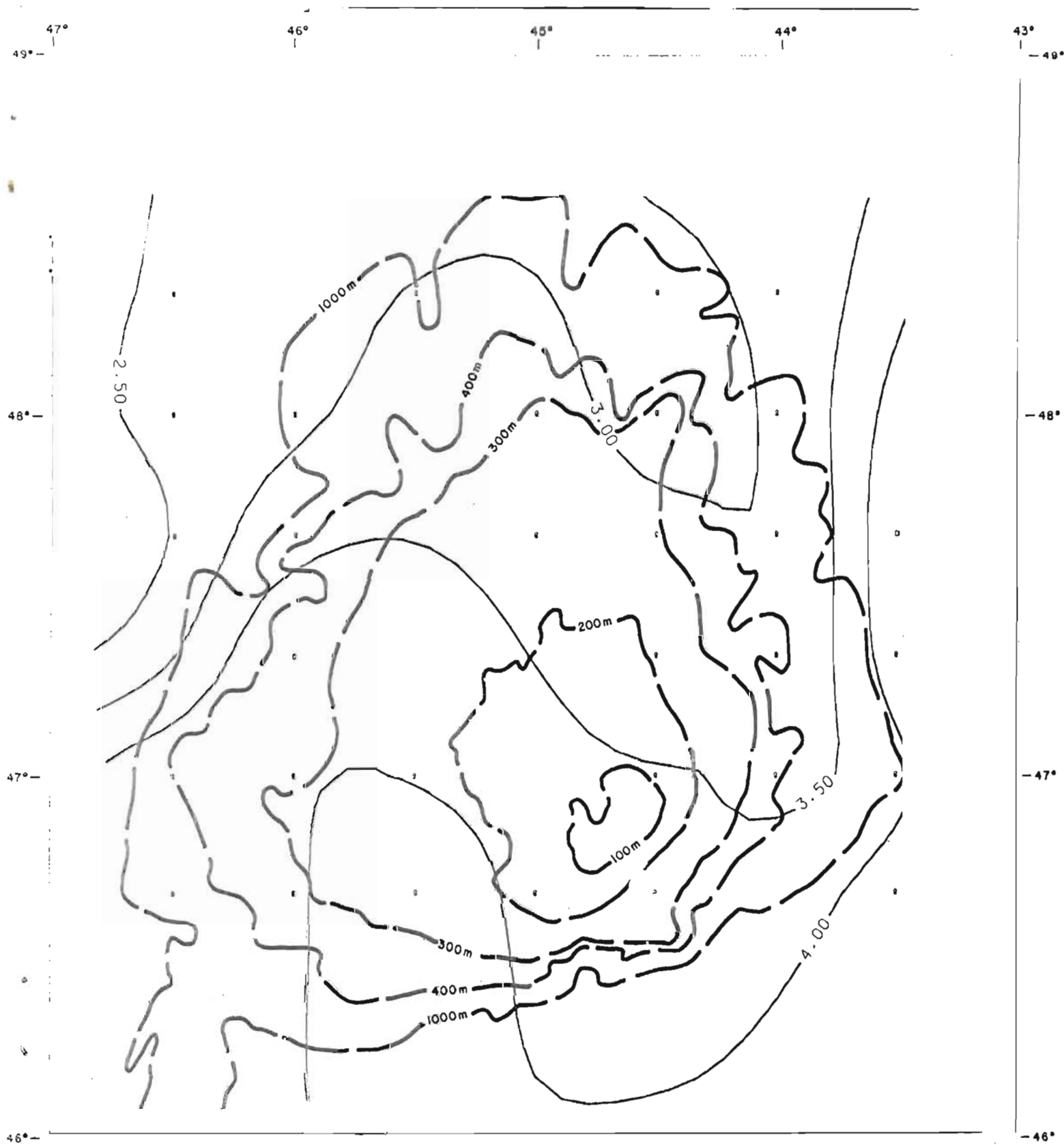


Fig. 7. Temperature contours at 075 meters - GADUS 19 (March 1979).

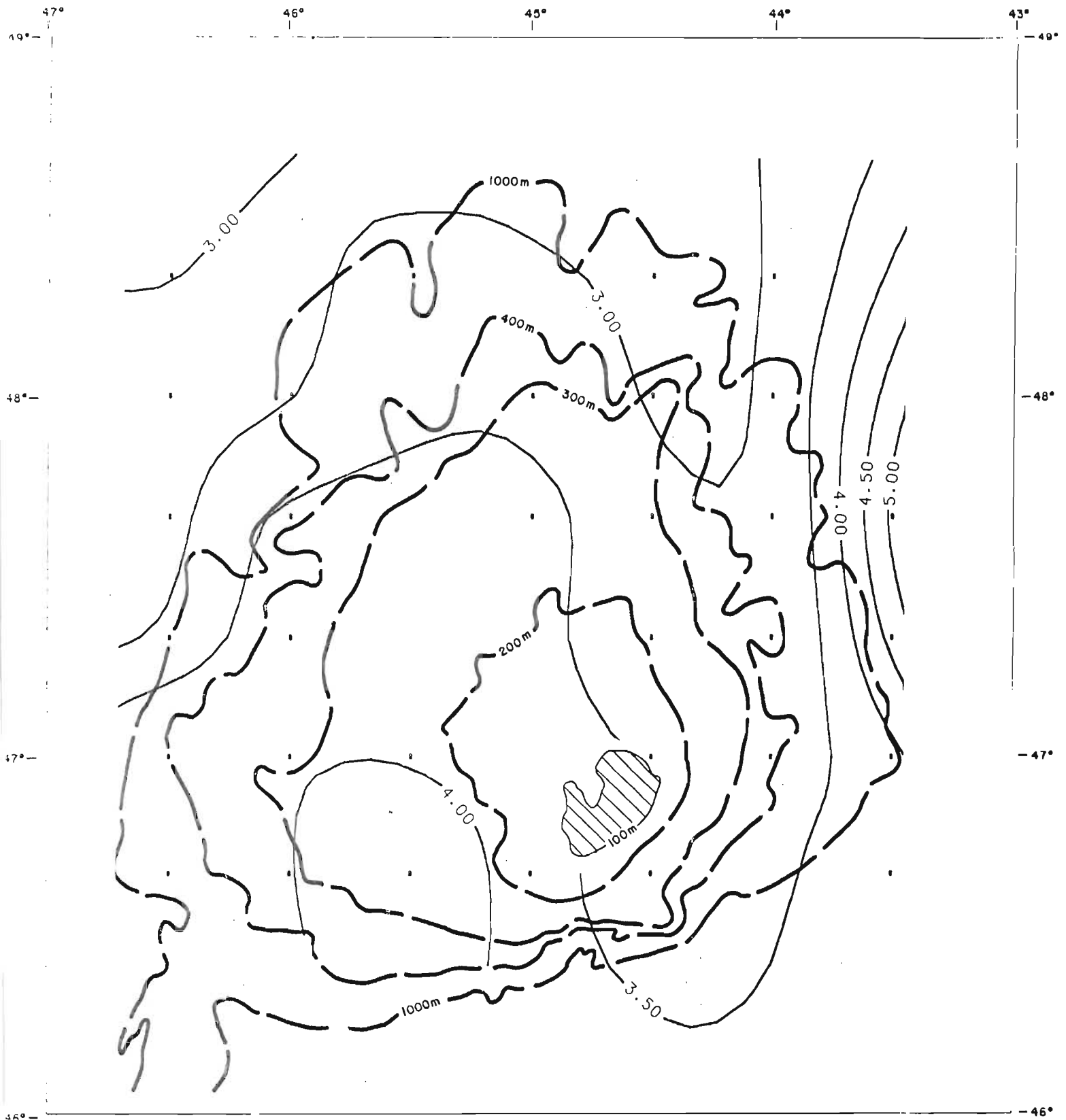


Fig. 8. Temperature contours at 100 meters - GADUS 19 (March 1979).



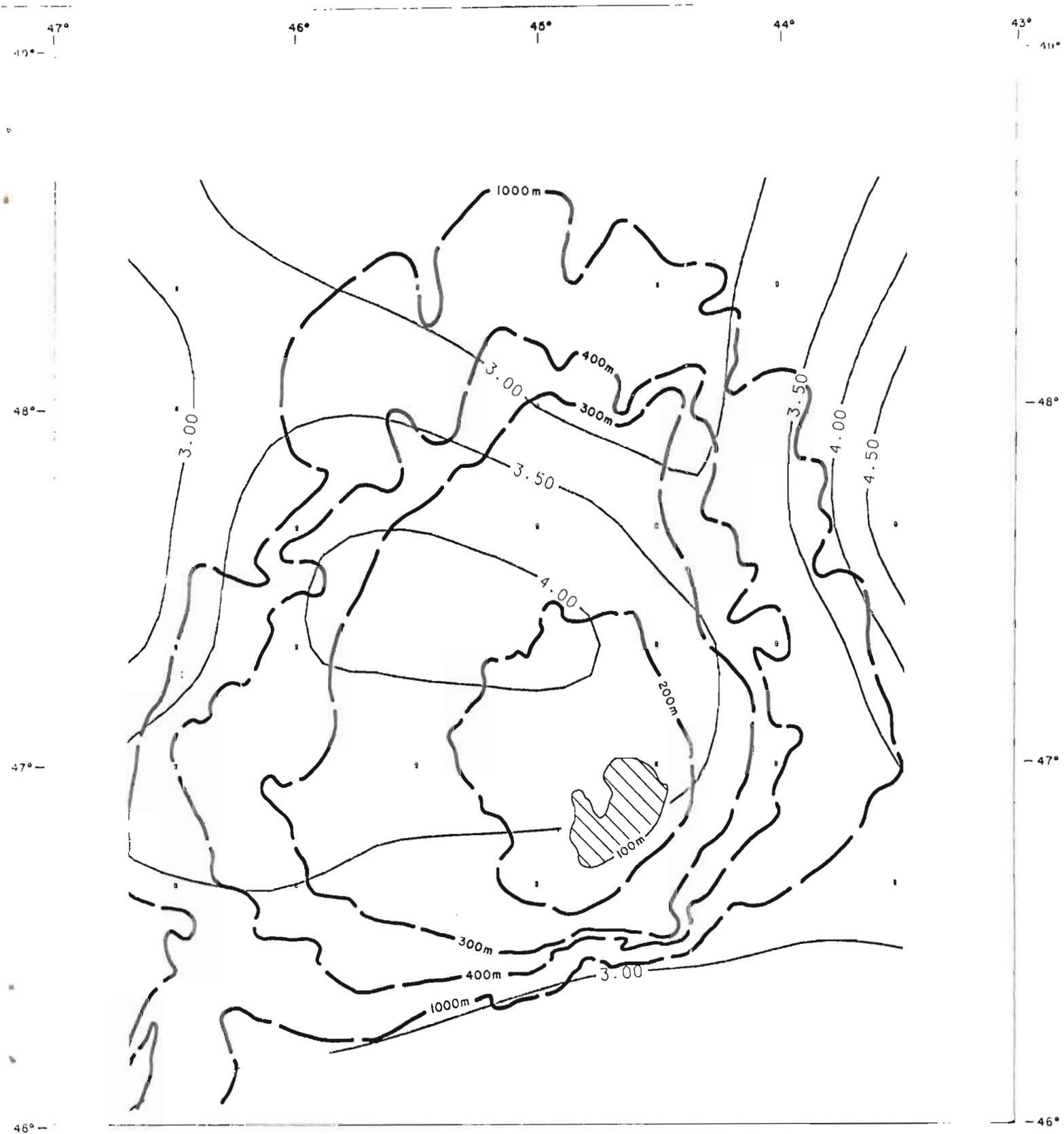


Fig. 9. Temperature contours at 125 meters - GADUS 19 (March 1979).

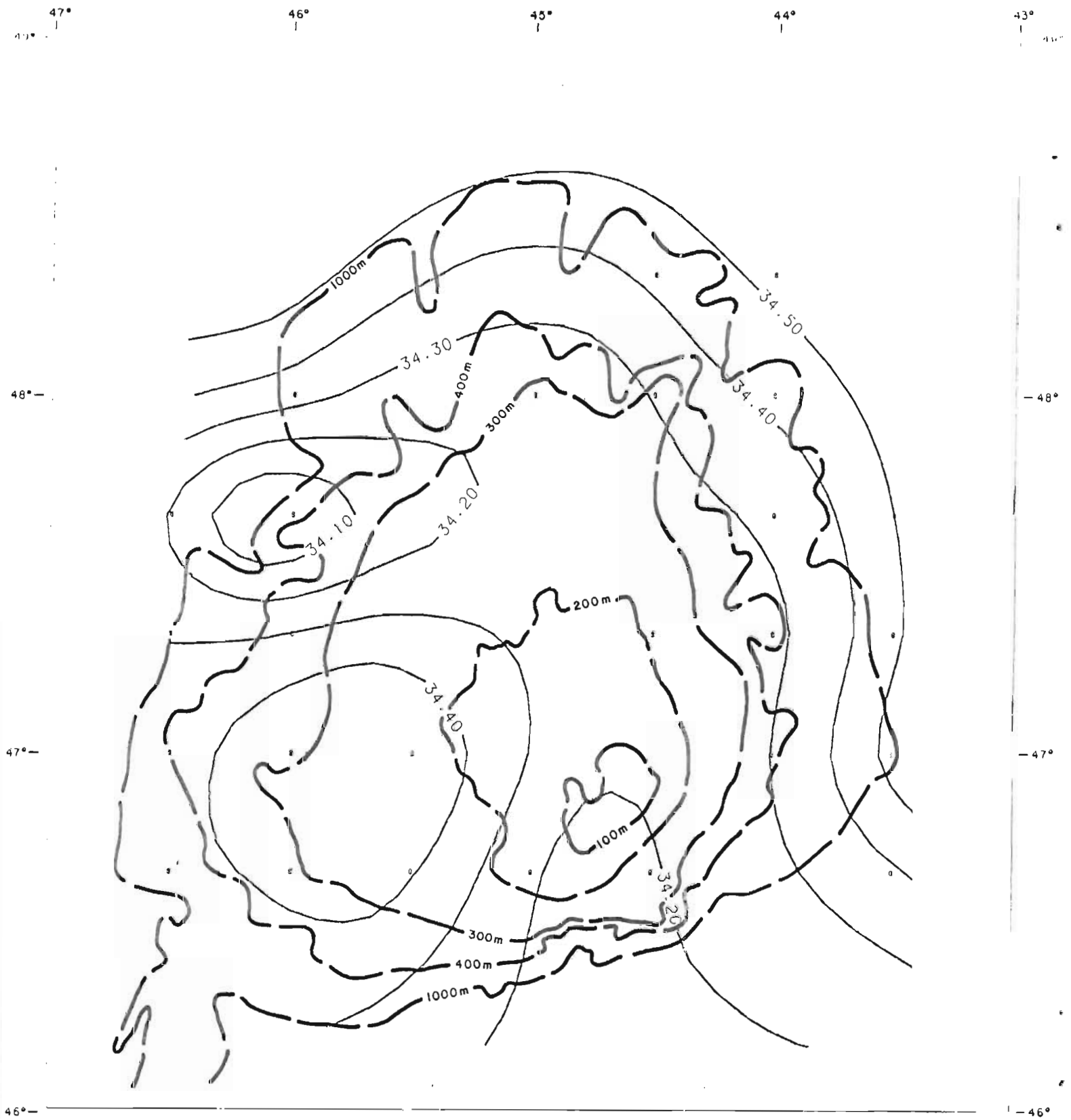


Fig. 10. Salinity contours at 000 meters - GADUS 19 (March 1979).

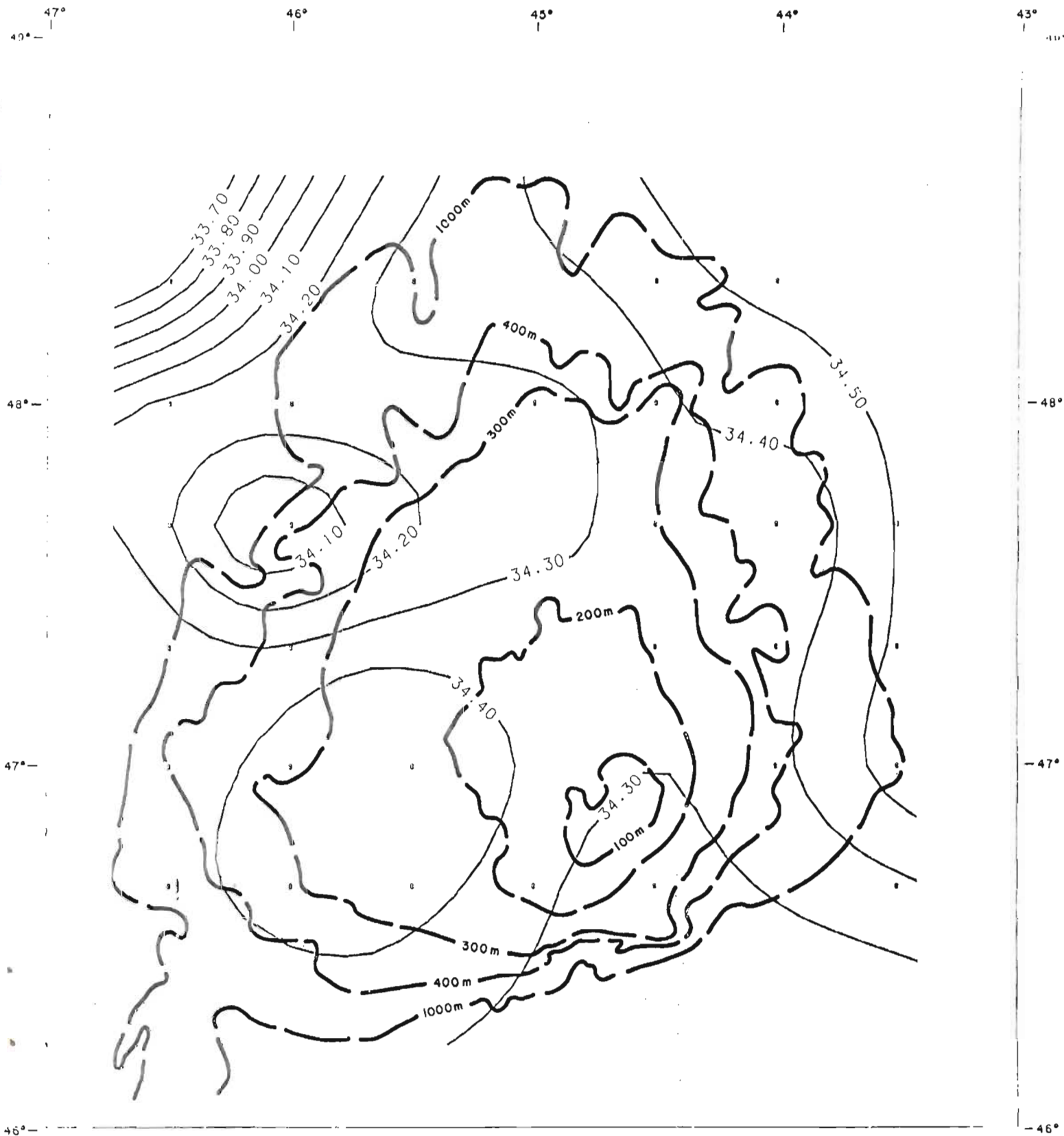


Fig. 11. Salinity contours at 010 meters - GADUS 19 (March 1979).

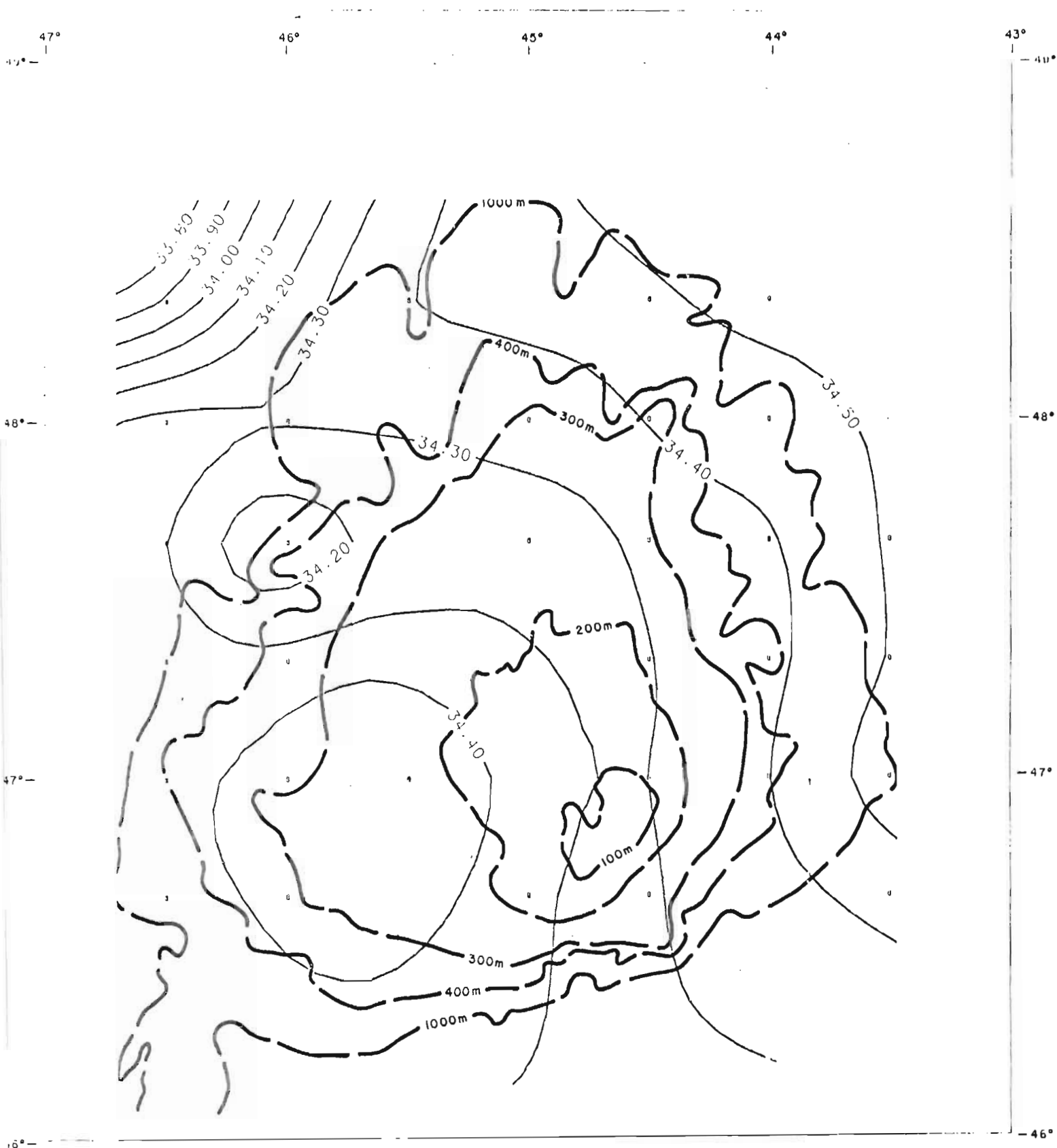


Fig. 12. Salinity contours at 020 meters - GADUS 19 (March 1979).

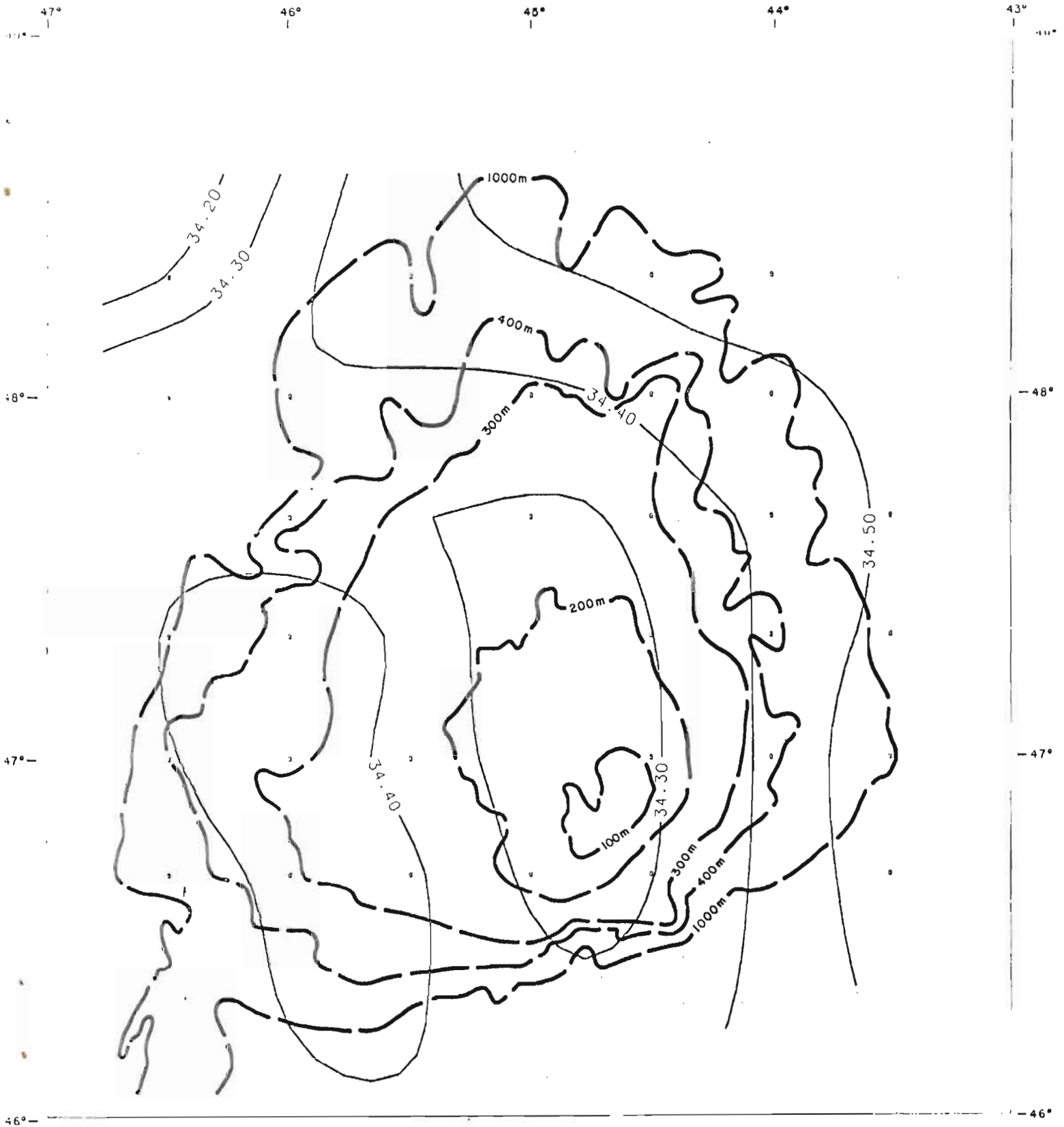


Fig. 13. Salinity contours at 030 meters - GADUS 19 (March 1979).



Fig. 14. Salinity contours at 050 meters - GADUS 19 (March 1979).

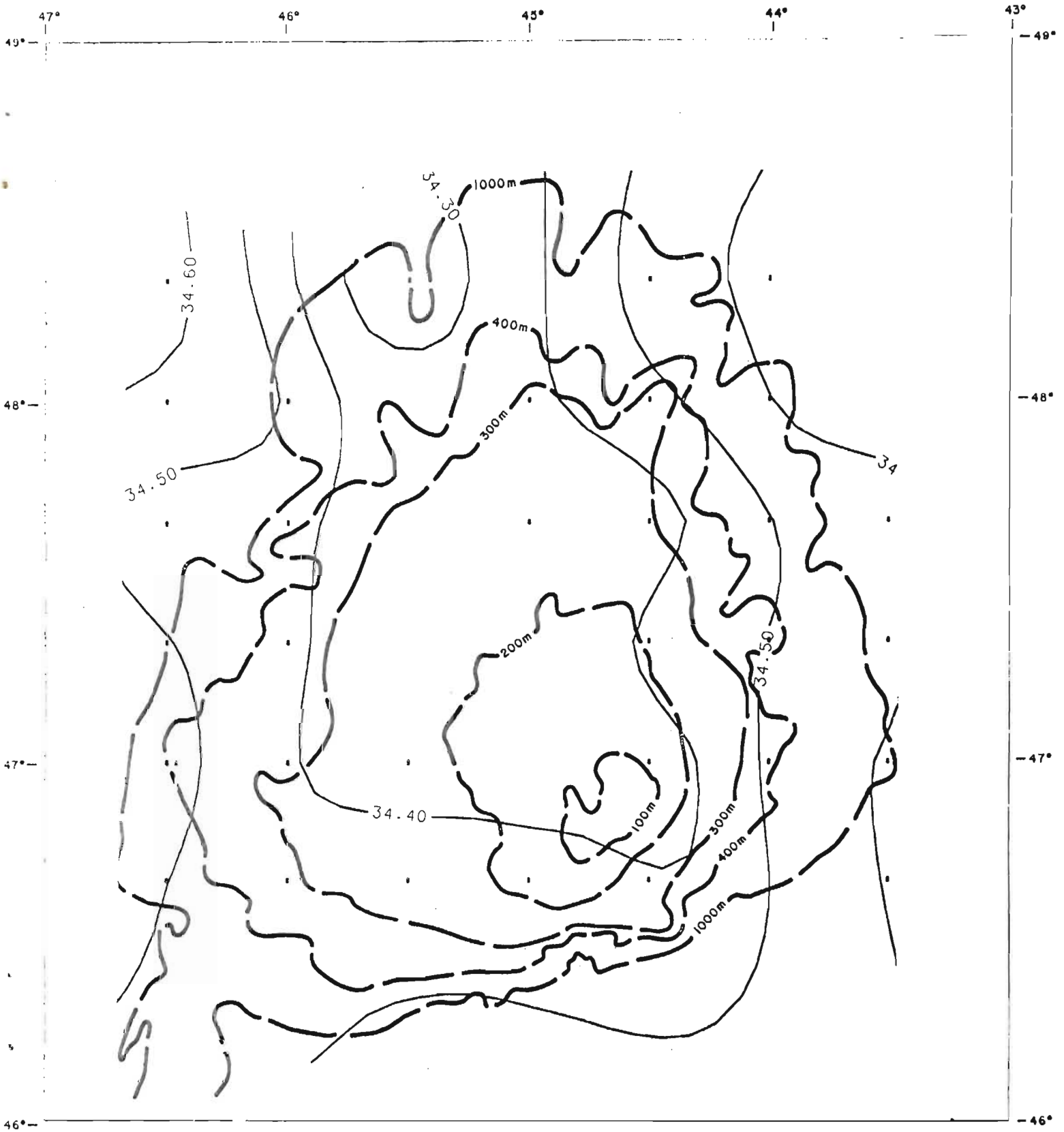


Fig. 15. Salinity contours at 075 meters - GADUS 19 (March 1979).



Fig. 16. Salinity contours at 100 meters - GADUS 19 (March 1979).





Fig. 17. Salinity contours at 125 meters - GADUS 19 (March 1979).

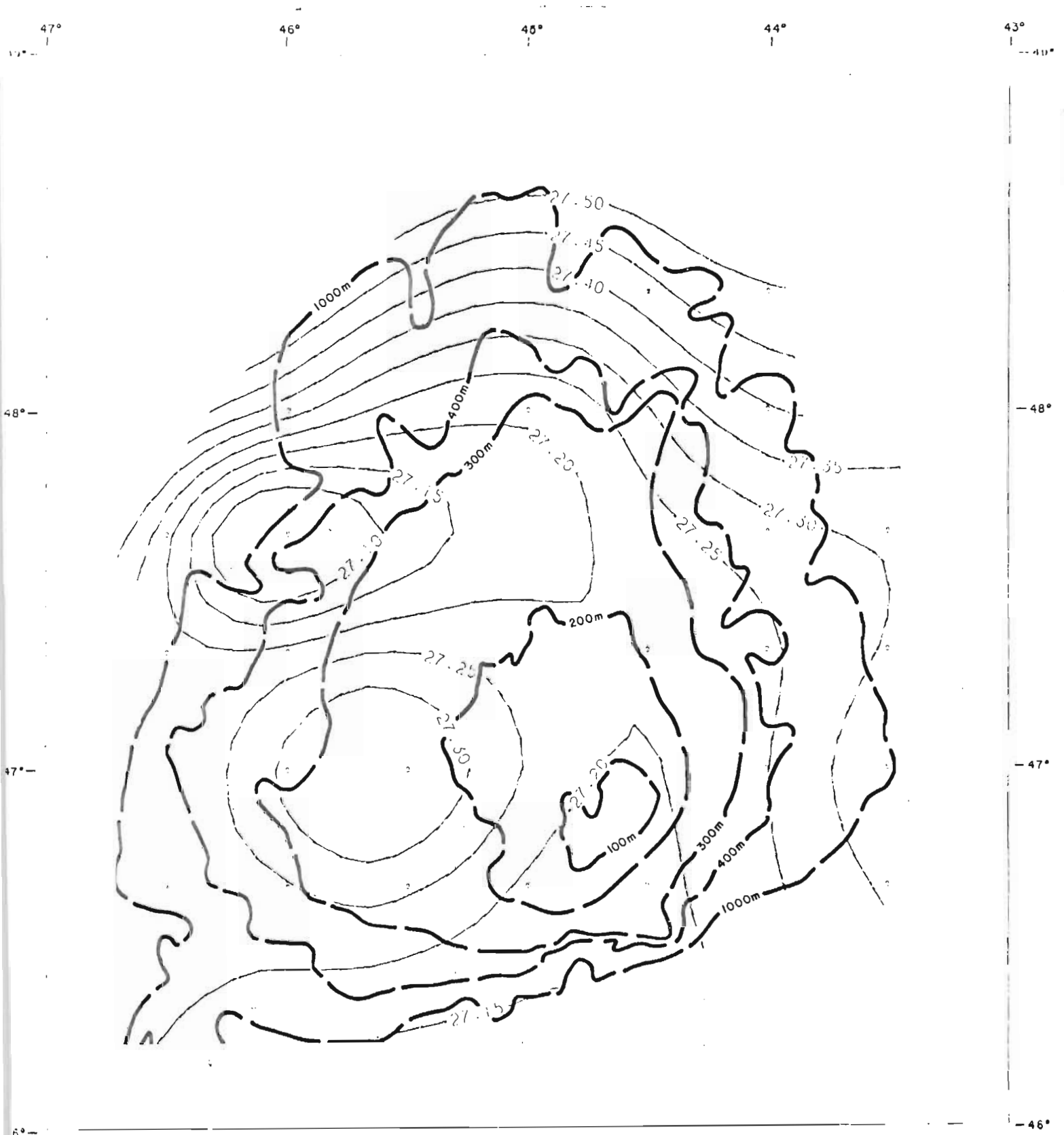


Fig. 18. Density contours at 000 meters - GADUS 19 (March 1979).

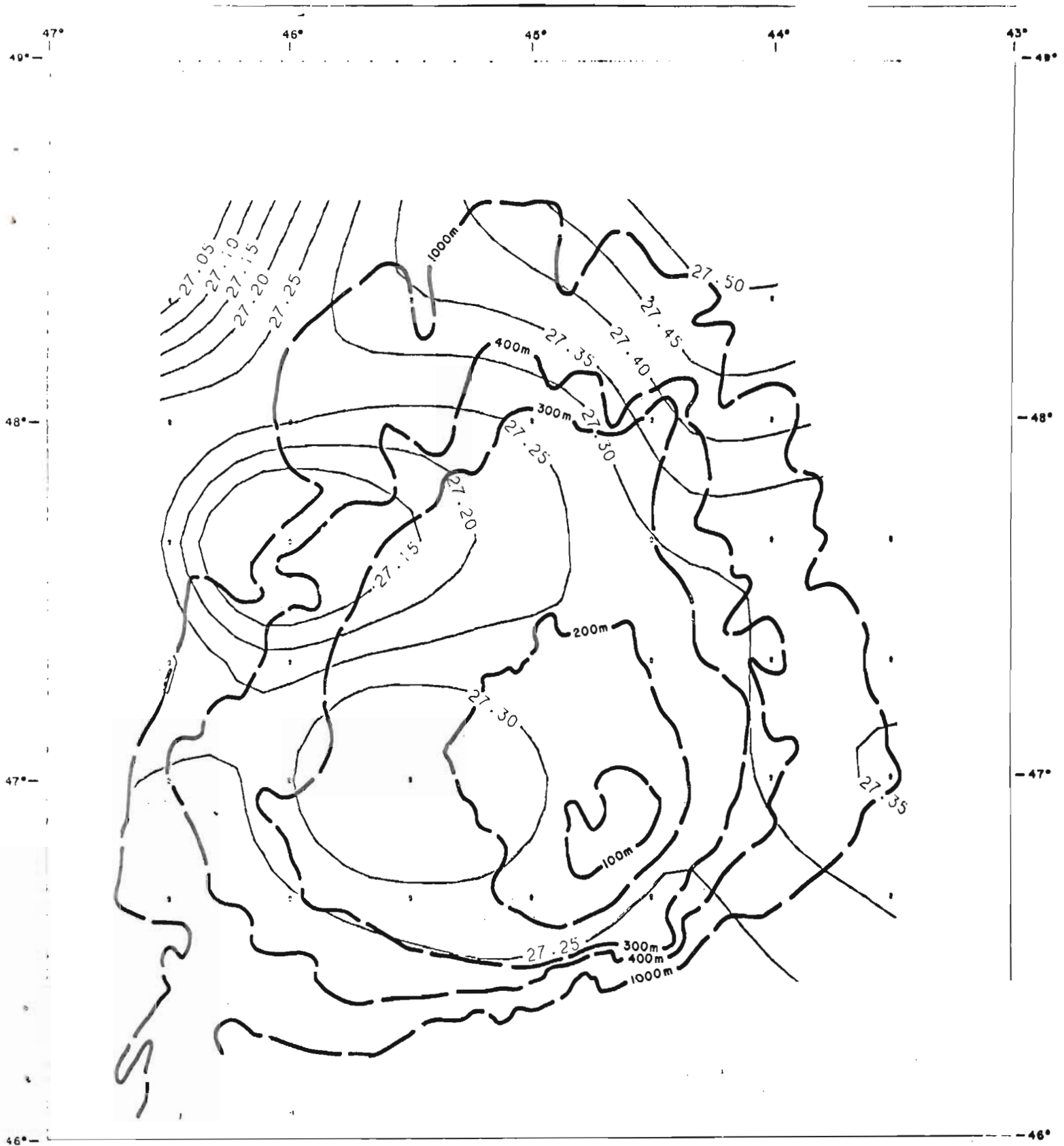


Fig. 19. Density contours at 010 meters - GADUS 19 (March 1979).

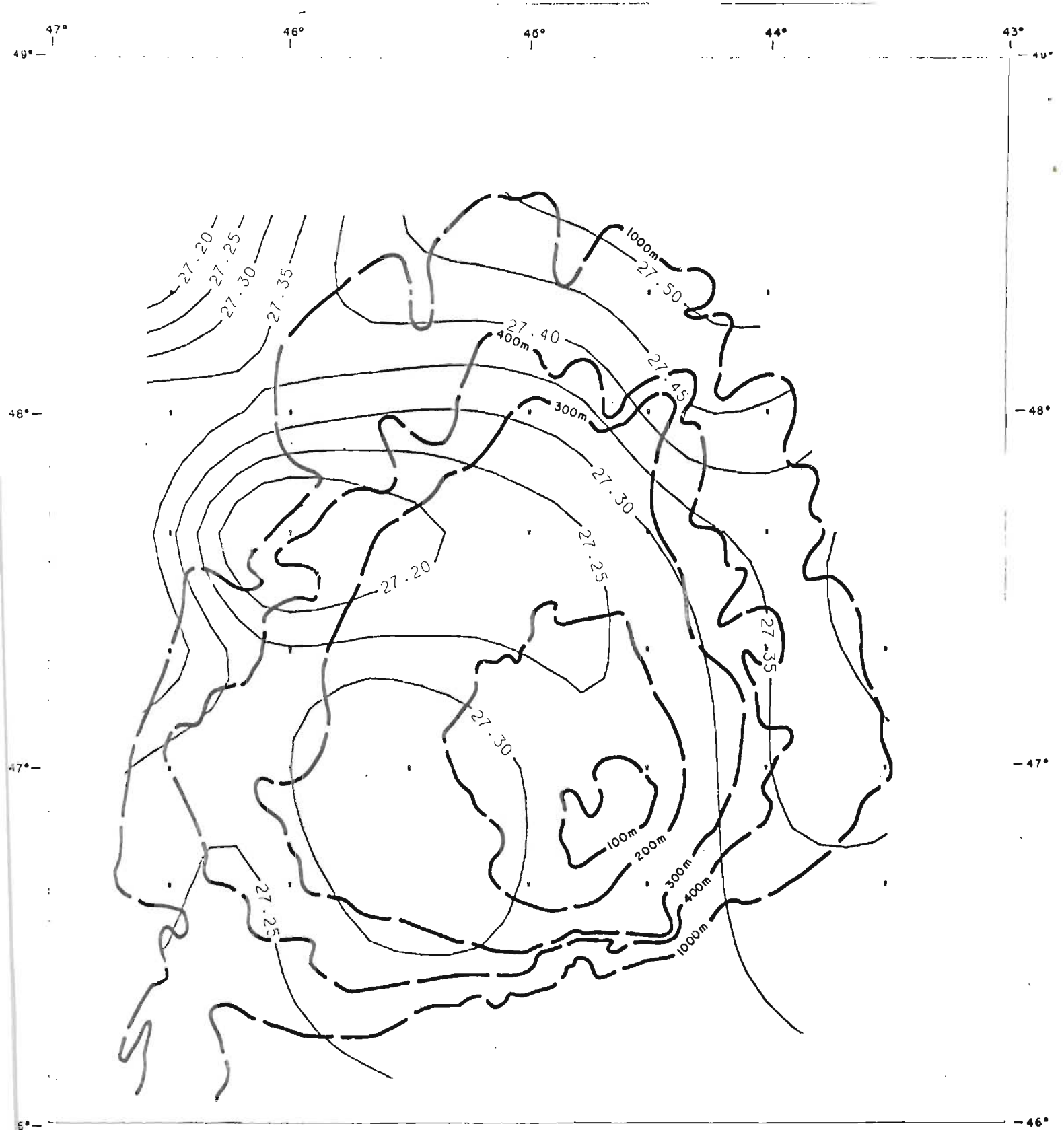


Fig. 20. Density contours at 020 meters - GADUS 19 (March 1979).

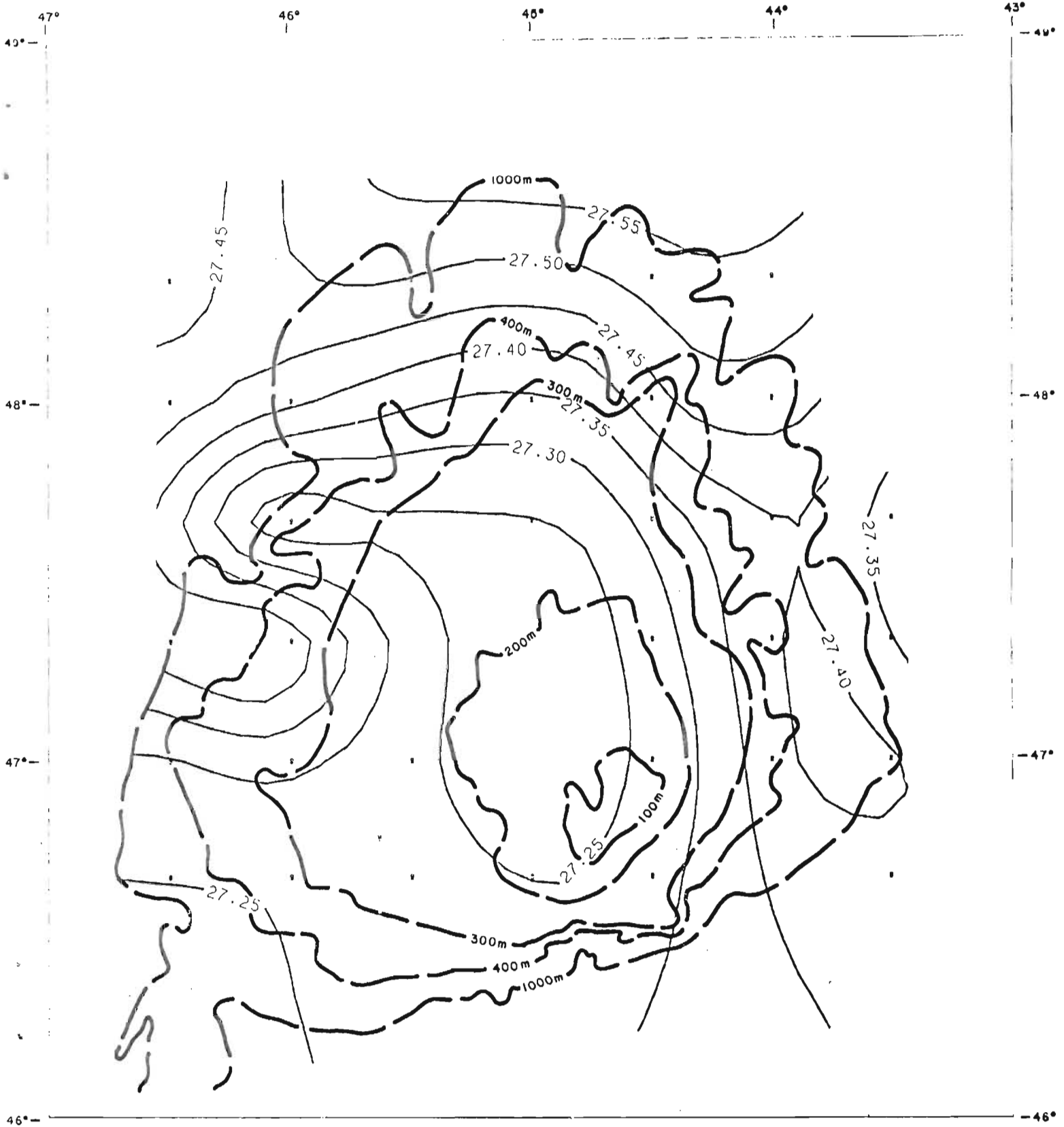


Fig. 21. Density contours at 030 meters - GADUS 19 (March 1979).

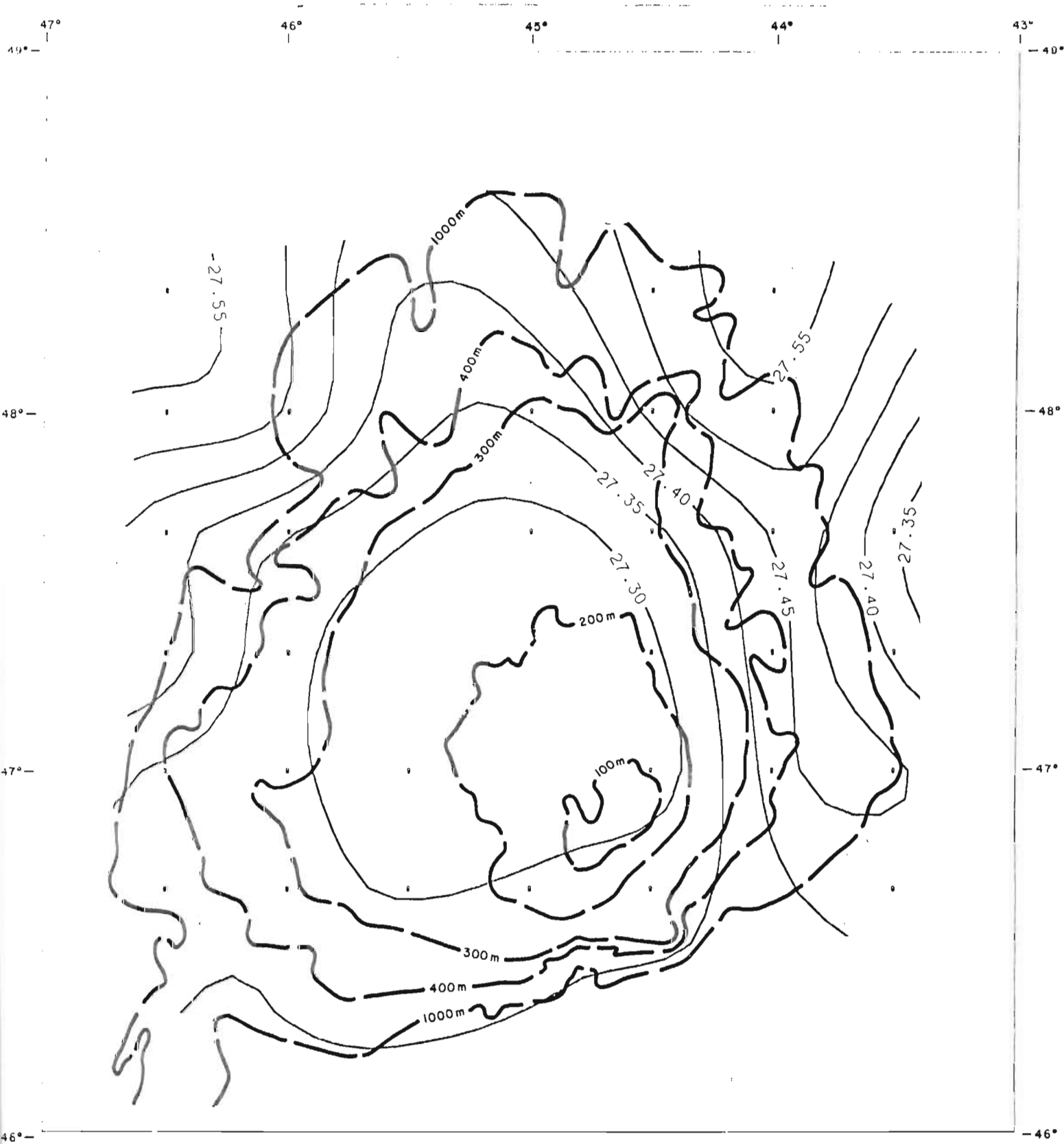


Fig. 22. Density contours at 050 meters - GADUS 19 (March 1979).

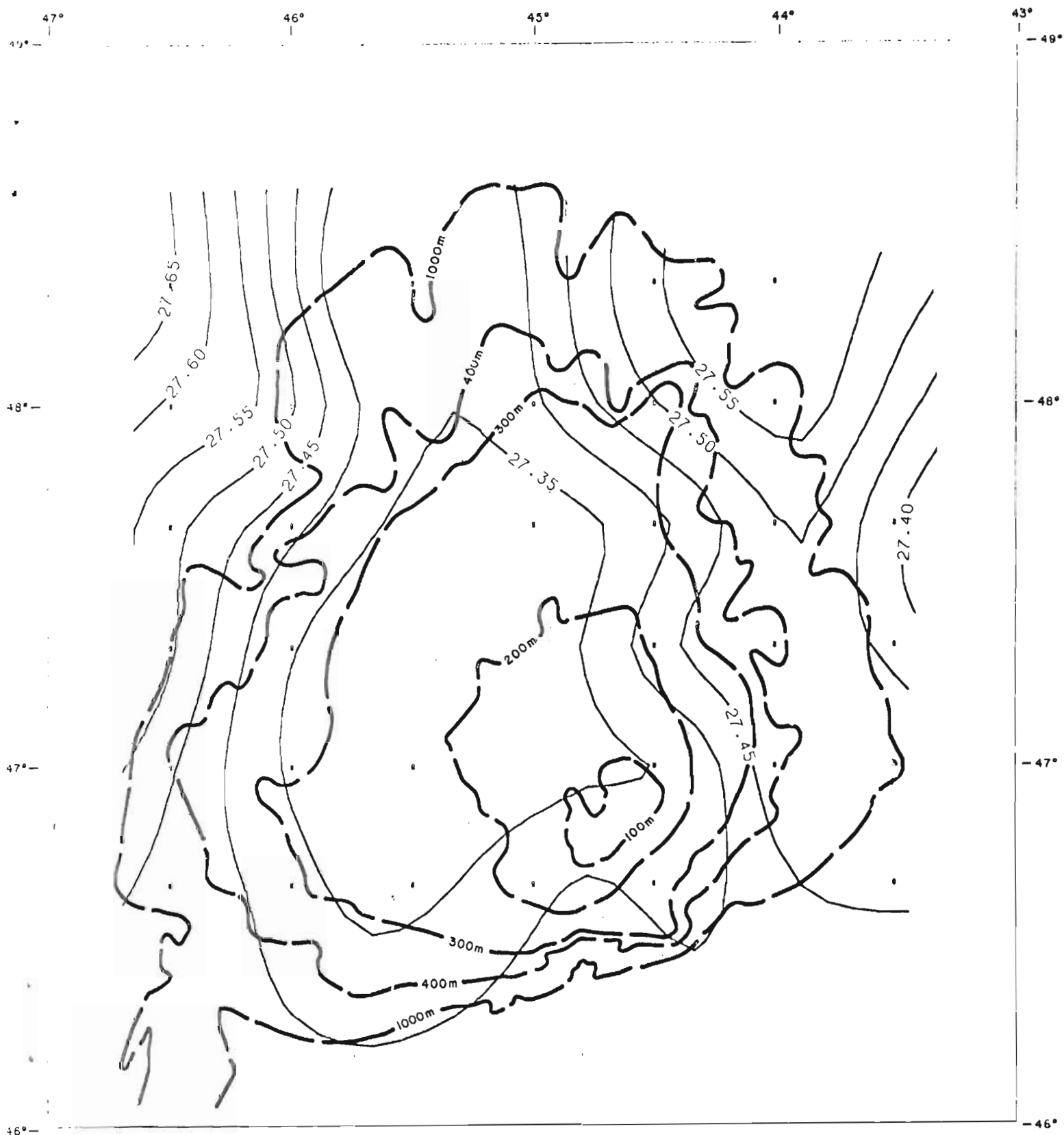


Fig. 23. Density contours at 075 meters - GADUS 19 (March 1979).

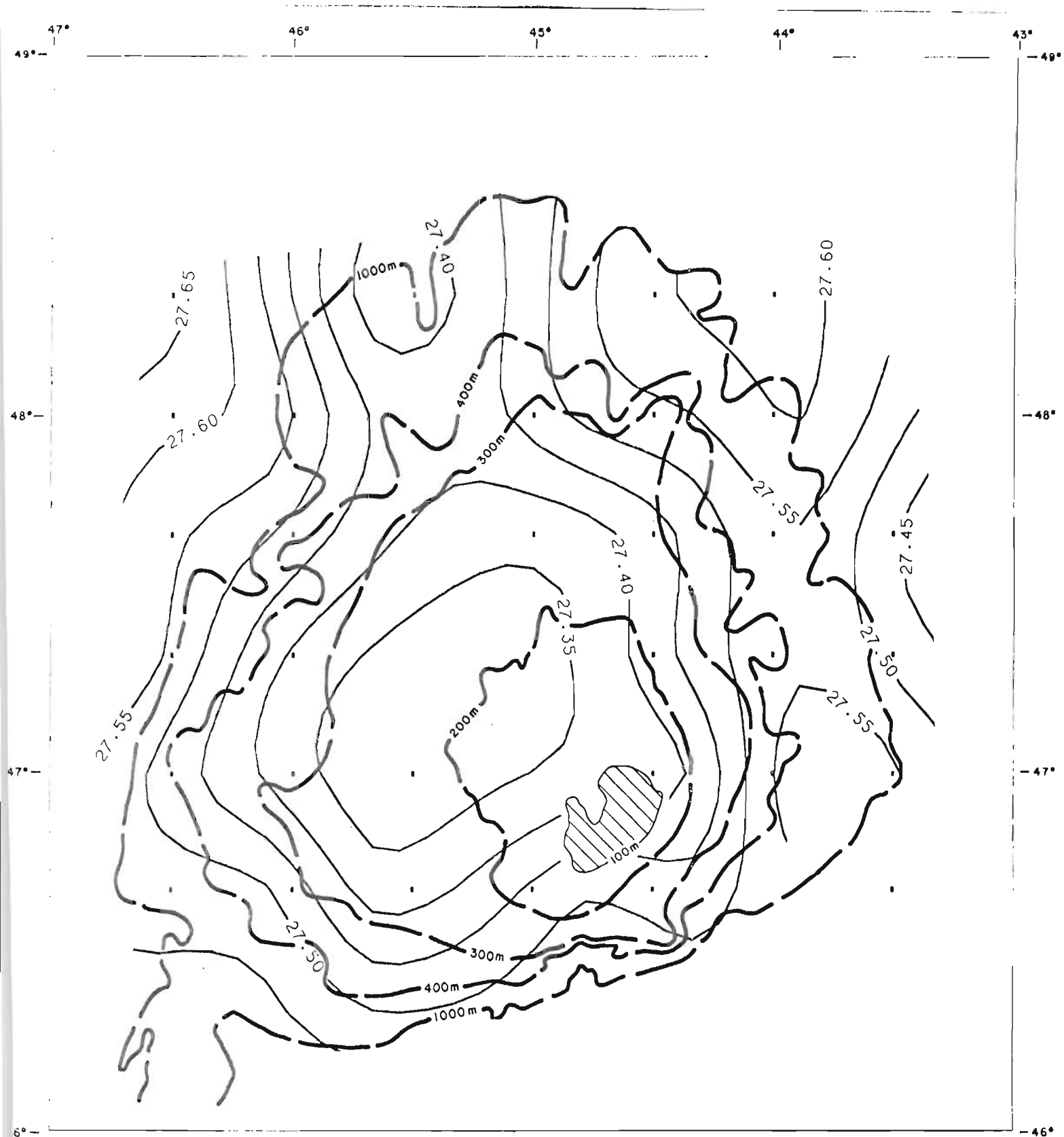


Fig. 24. Density contours at 100 meters - GADUS 19 (March 1979).



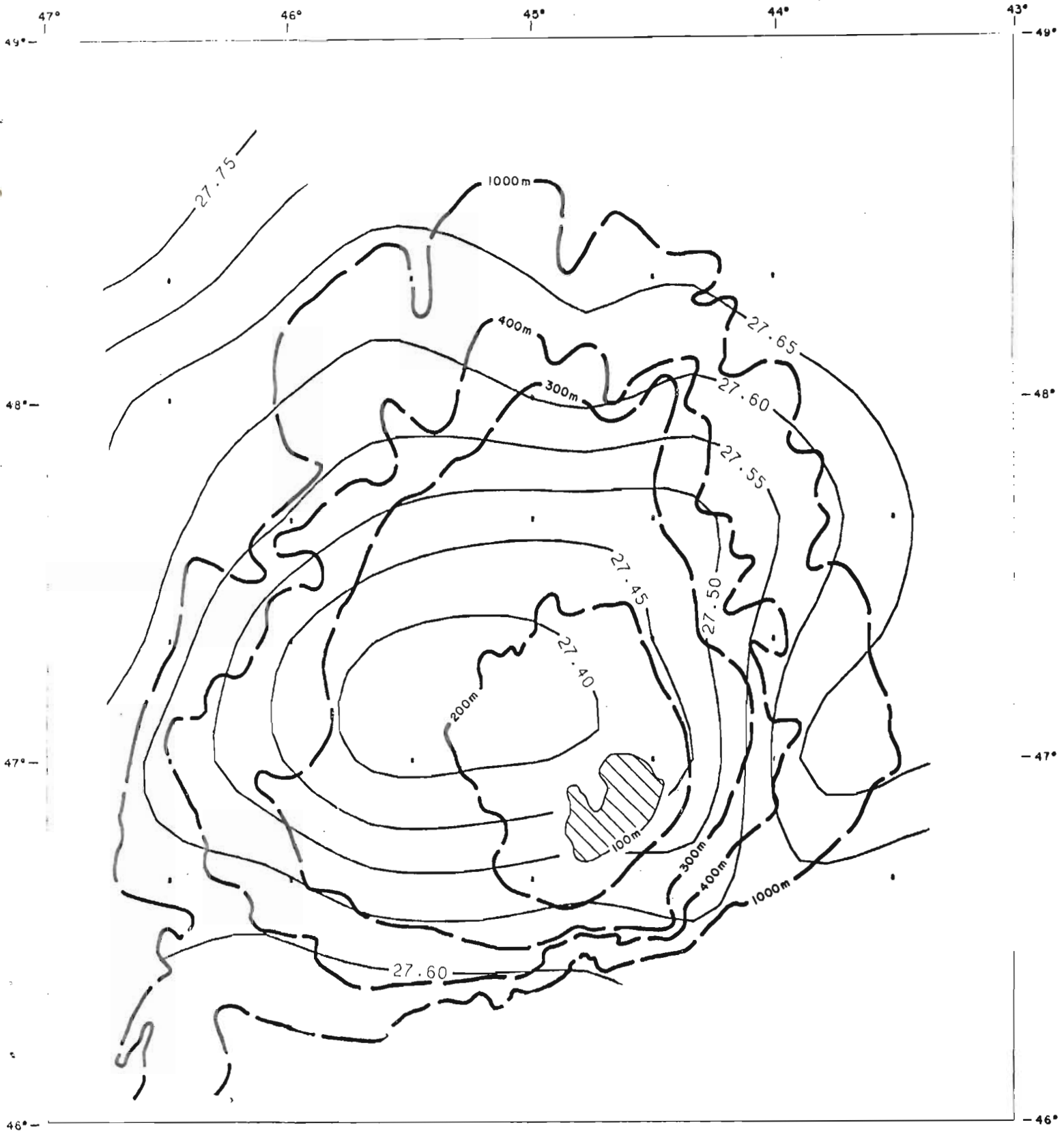


Fig. 25. Density contours at 125 meters - GADUS 19 (March 1979).

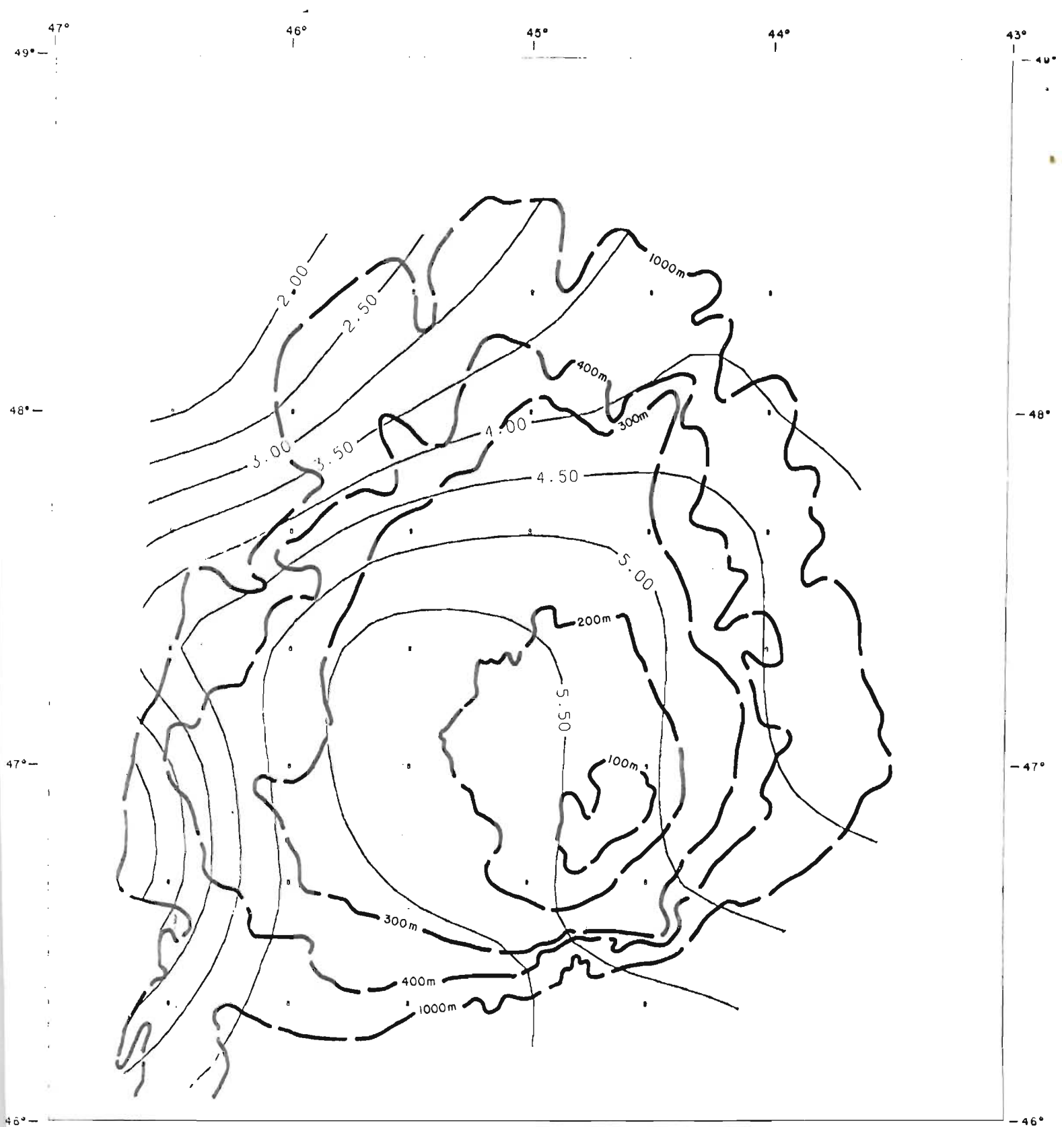


Fig. 26. Temperature contours at 000 meters - GADUS 20A (April 1979).

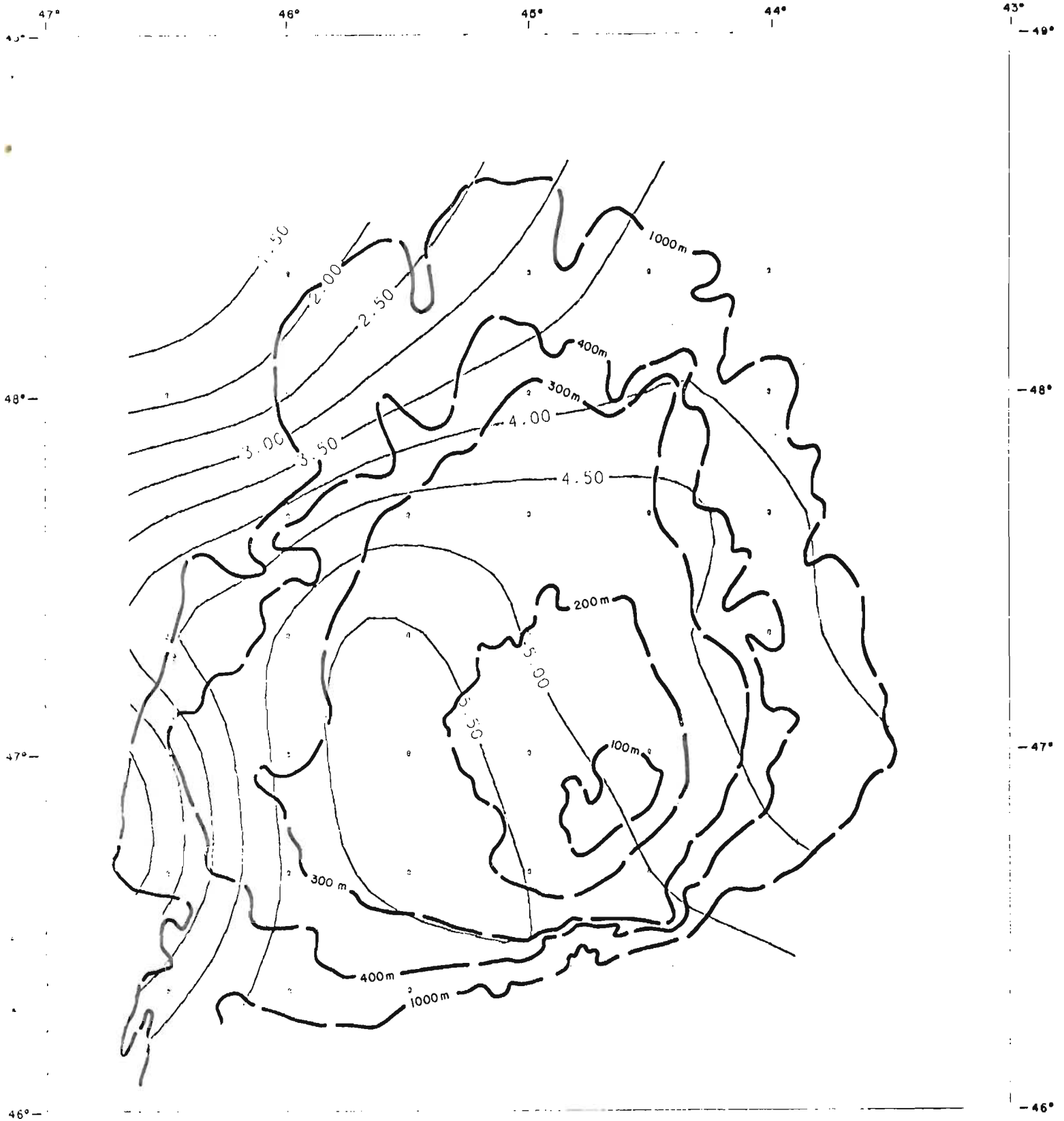


Fig. 27. Temperature contours at 010 meters - GADUS 20A (April 1979).



Fig. 28. Temperature contours at 020 meters - GADUS 20A (April 1979).

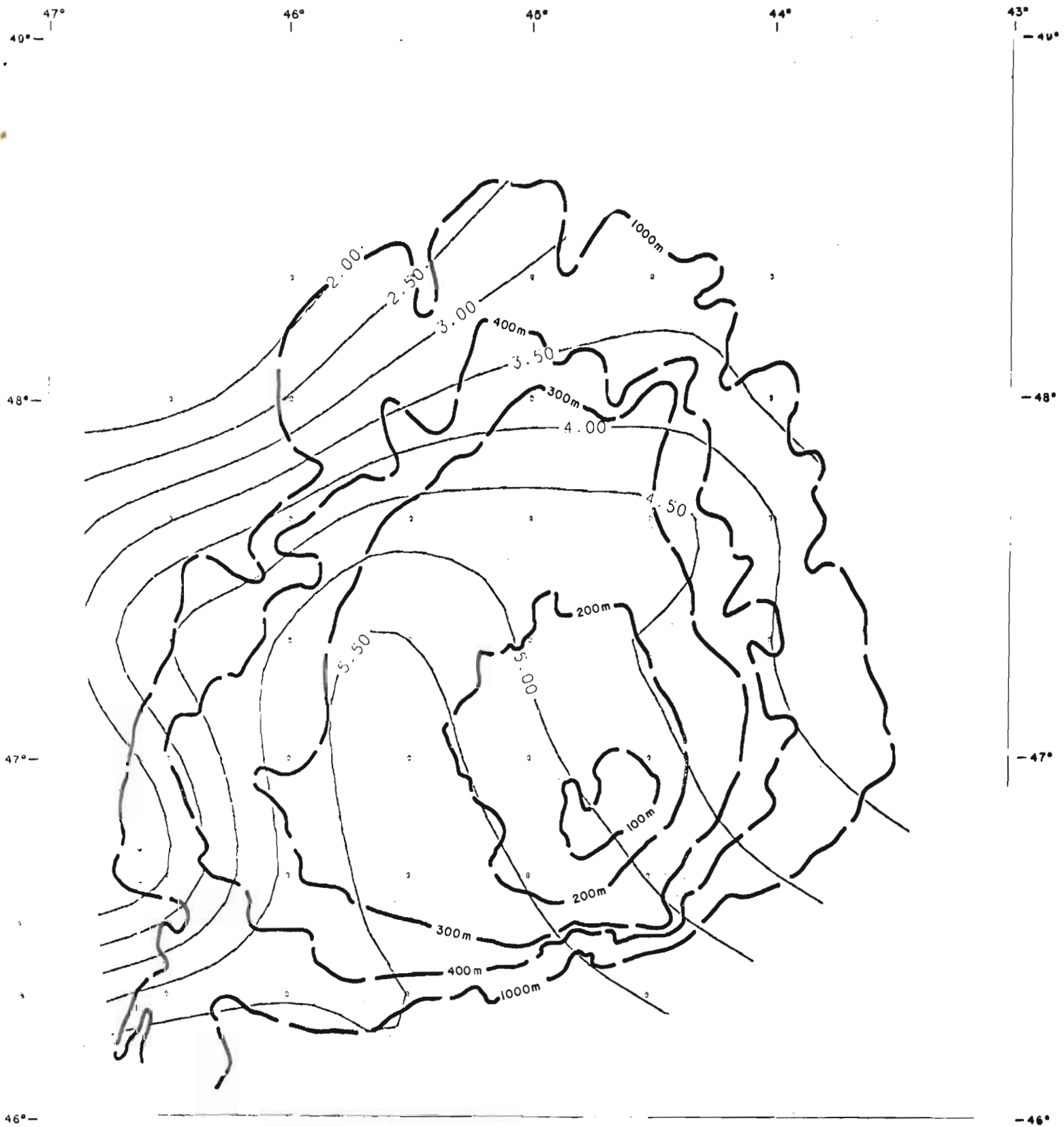


Fig. 29. Temperature contours at 030 meters - GADUS 20A (April 1979).

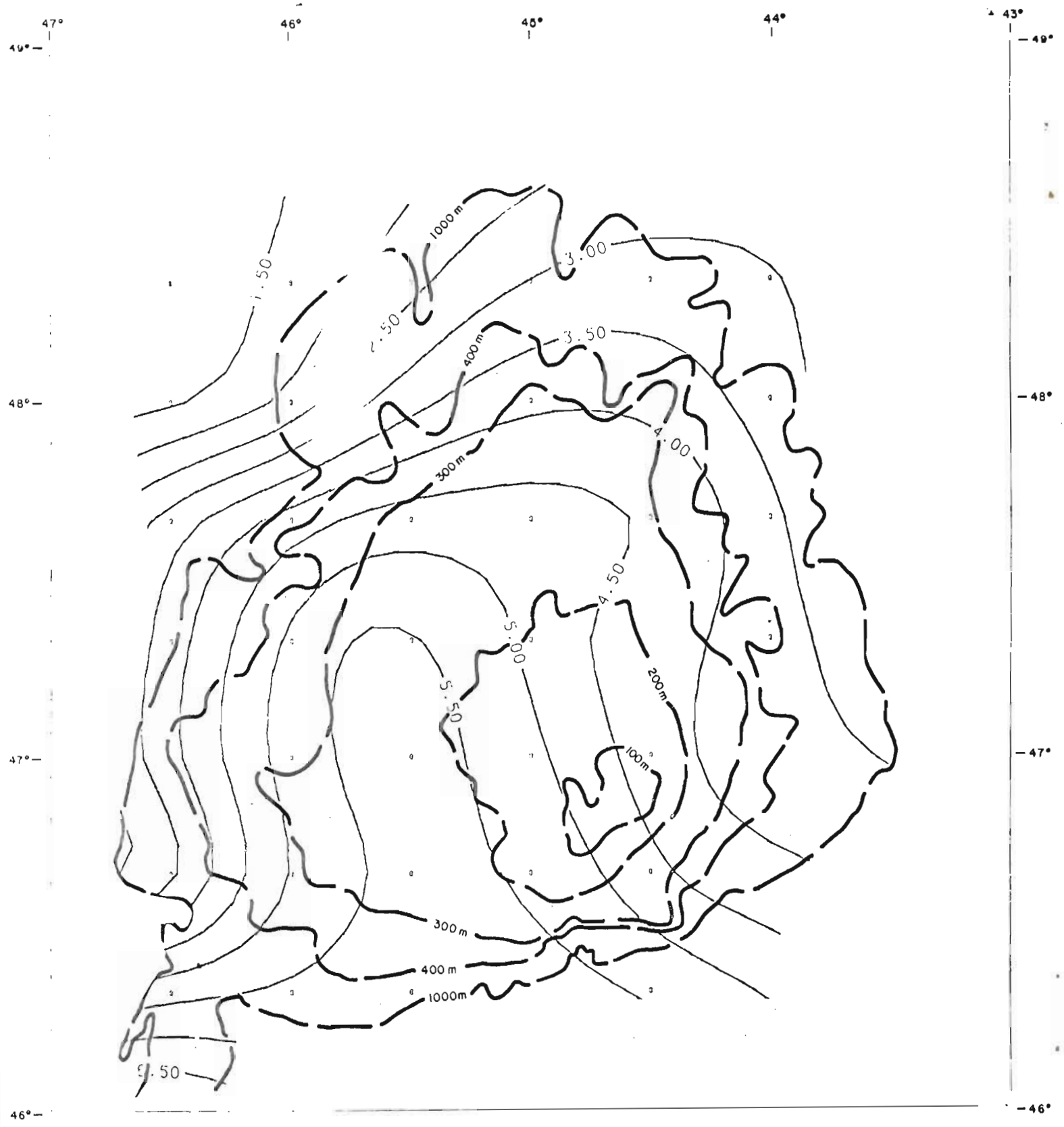


Fig. 30. Temperature contours at 050 meters - GADUS 20A (April 1979).

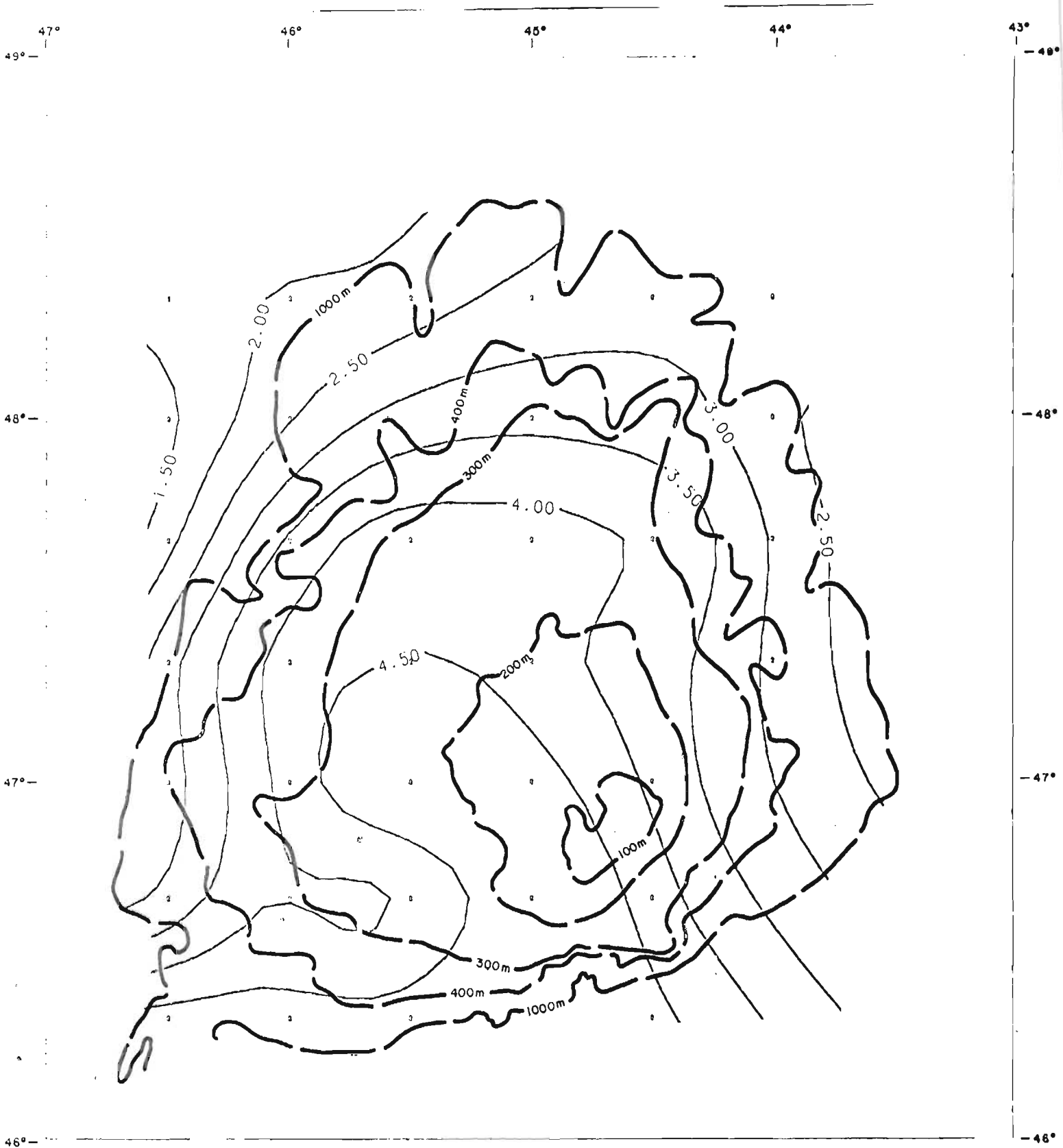


Fig. 31. Temperature contours at 075 meters - GADUS 20A (April 1979).

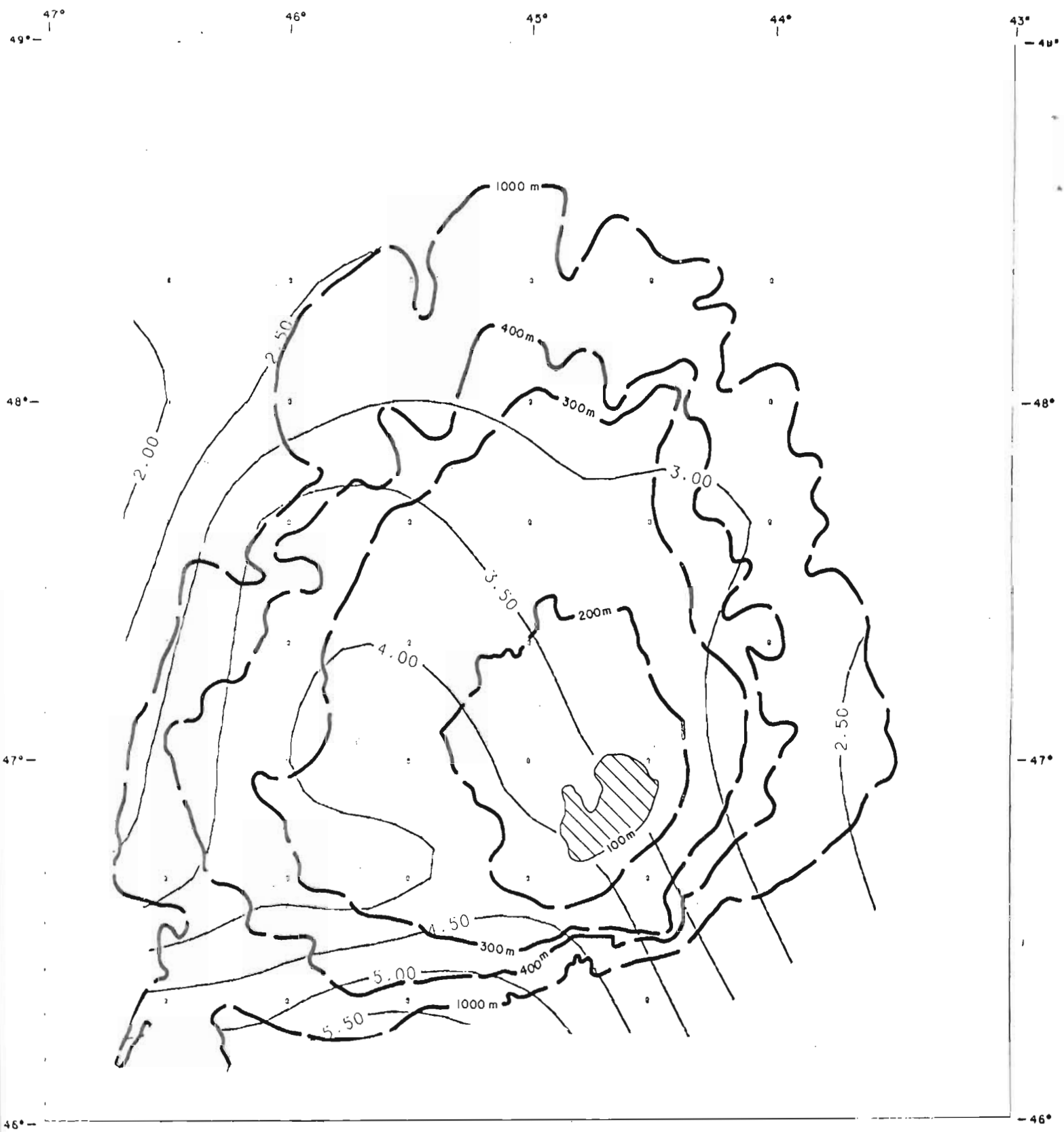


Fig. 32. Temperature contours at 100 meters - GADUS 20A (April 1979).



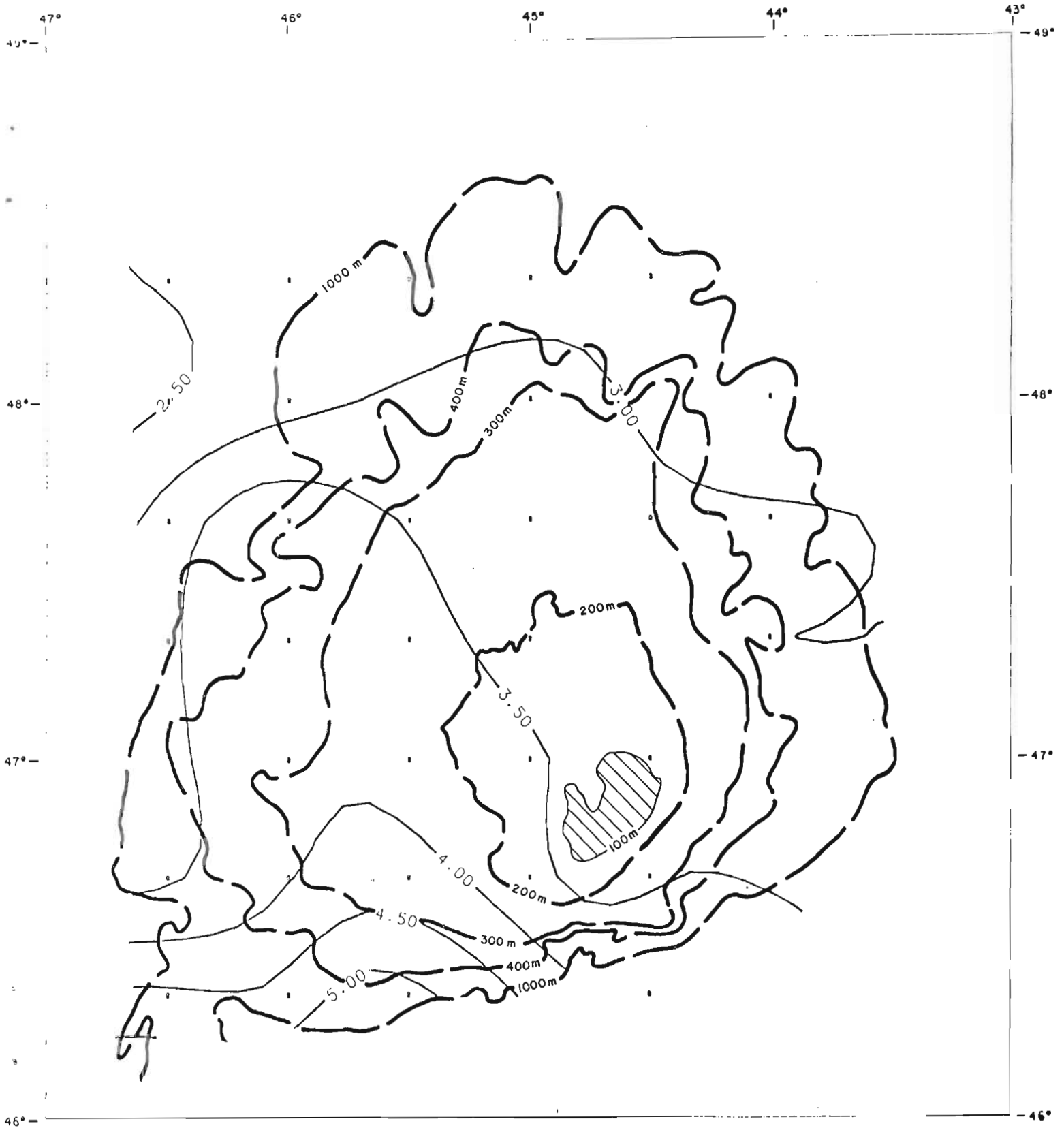


Fig. 33. Temperature contours at 125 meters - GADUS 20A (April 1979).

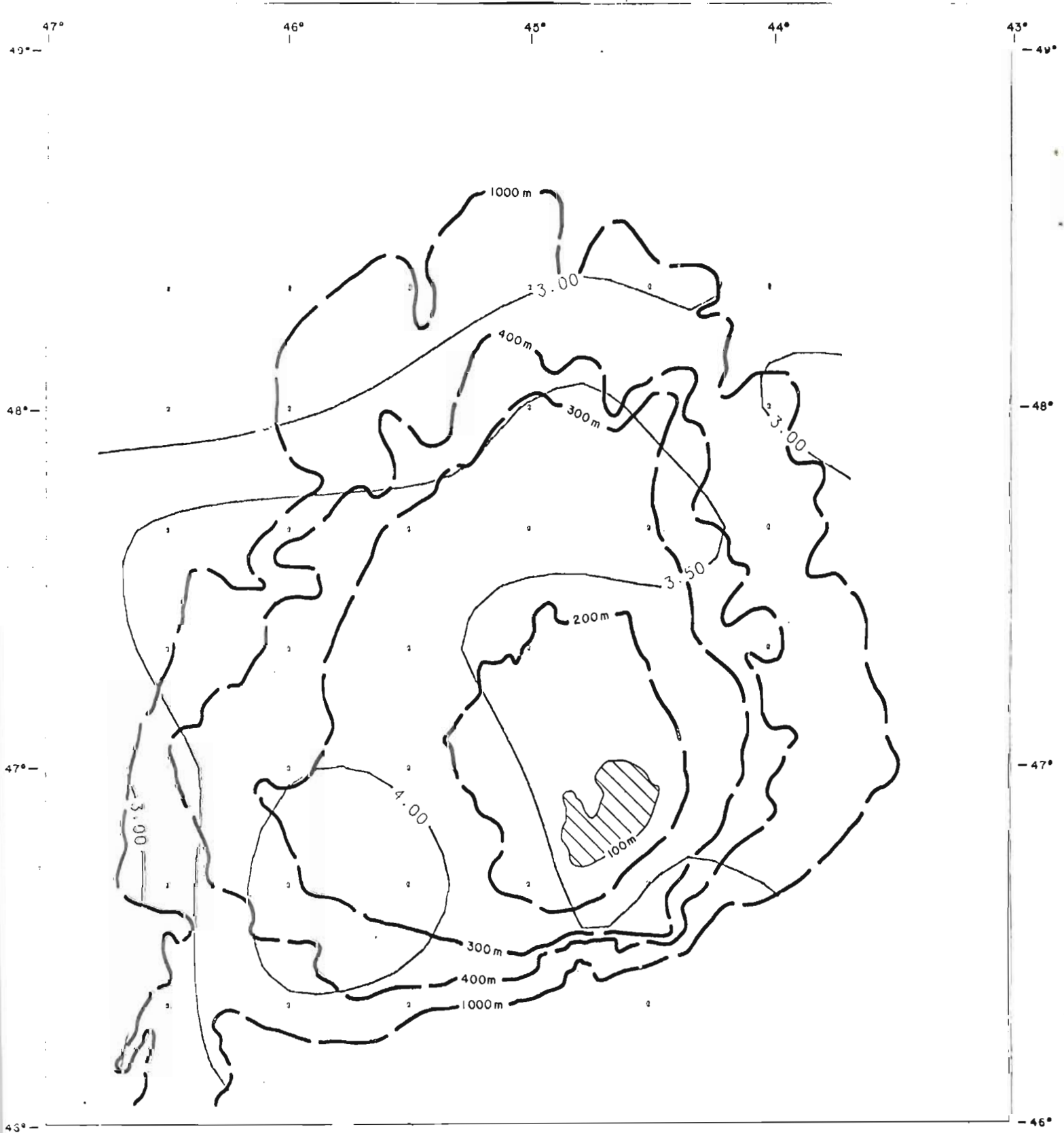


Fig. 34. Temperature contours at 150 meters - GADUS 20A (April 1979).

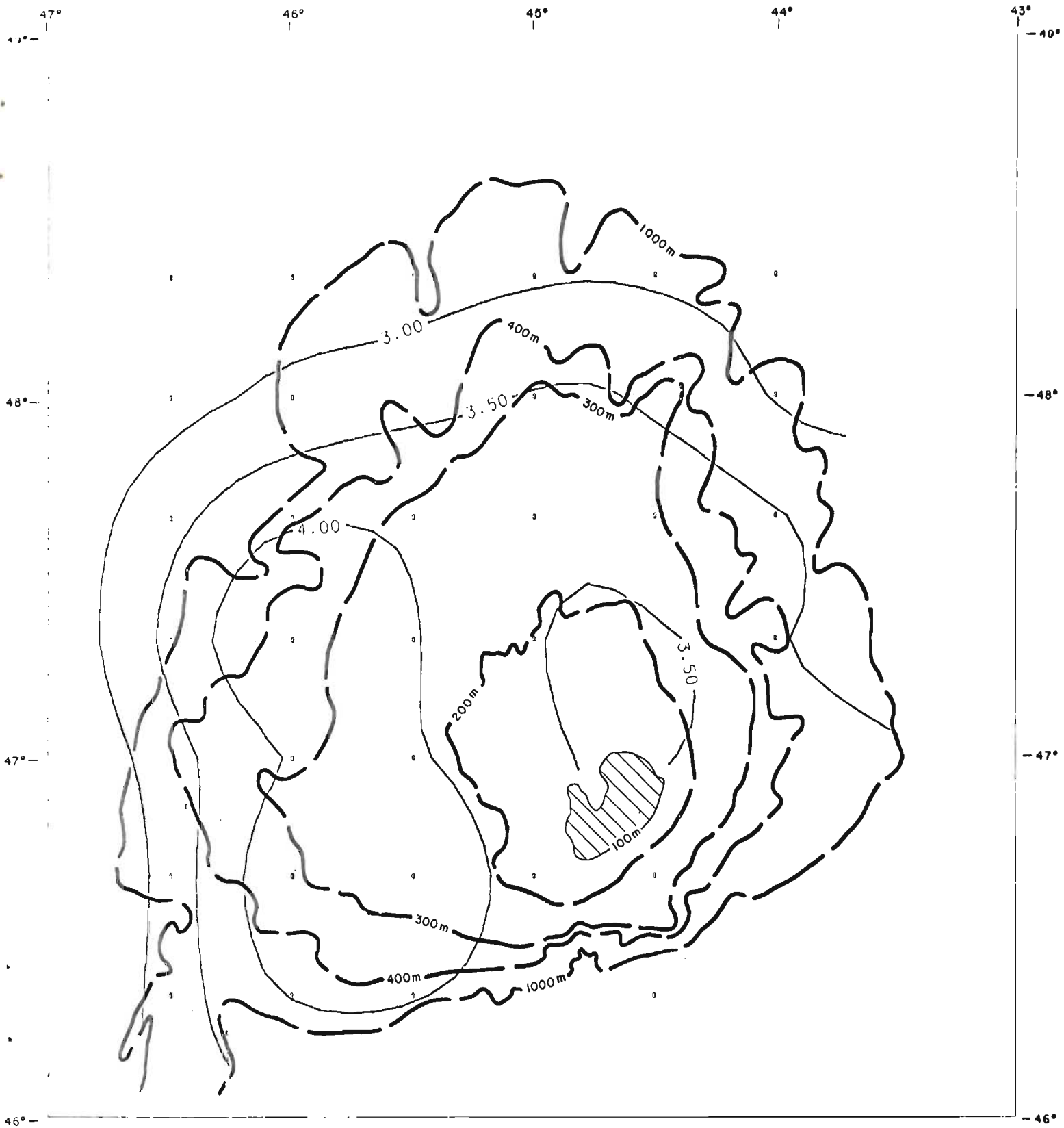


Fig. 35. Temperature contours at 175 meters - GADUS 20A (April 1979).



Fig. 36. Temperature contours at 200 meters - GADUS 20A (April 1979).

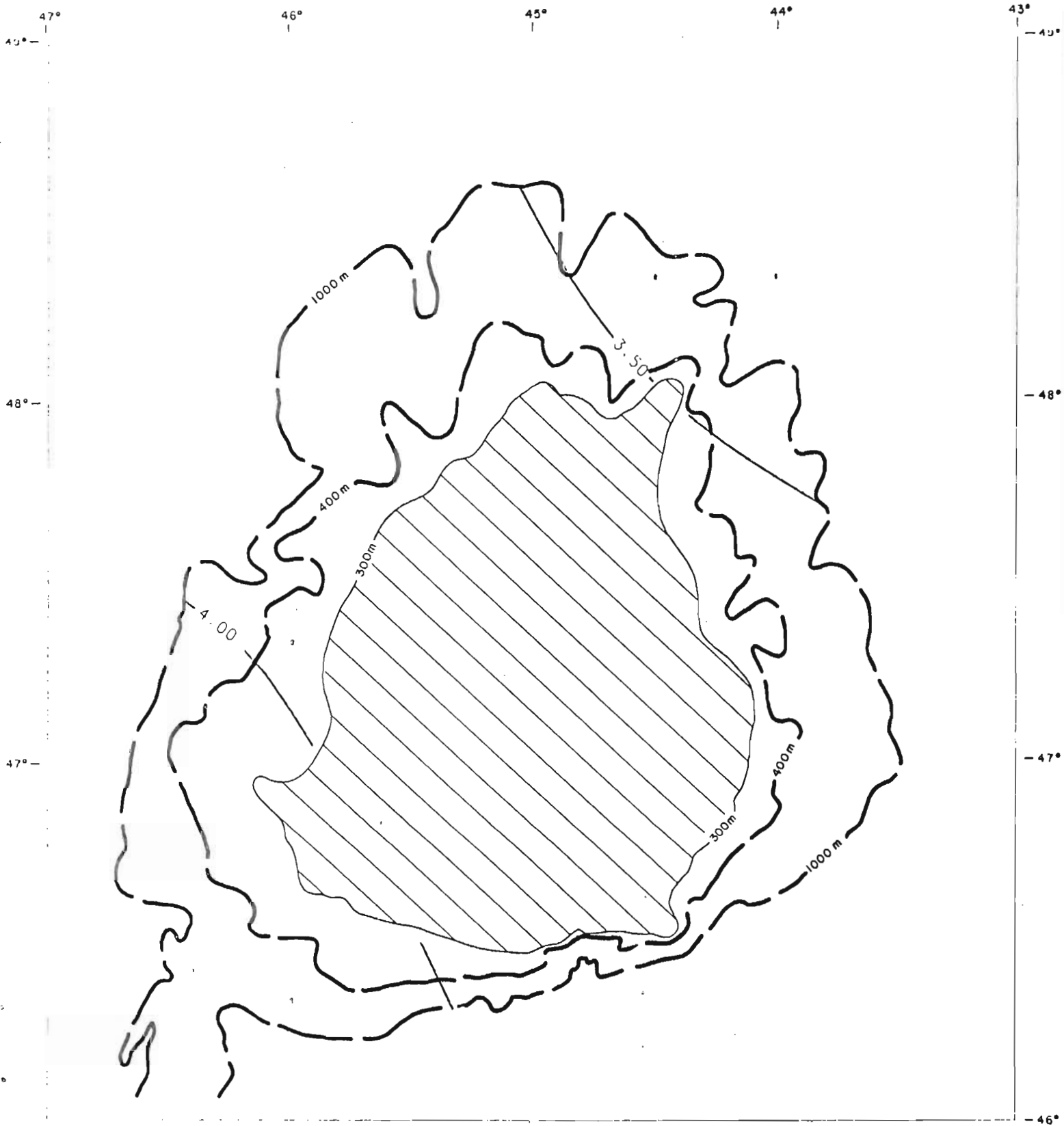


Fig. 37. Temperature contours at 300 meters - GADUS 20A (April 1979).

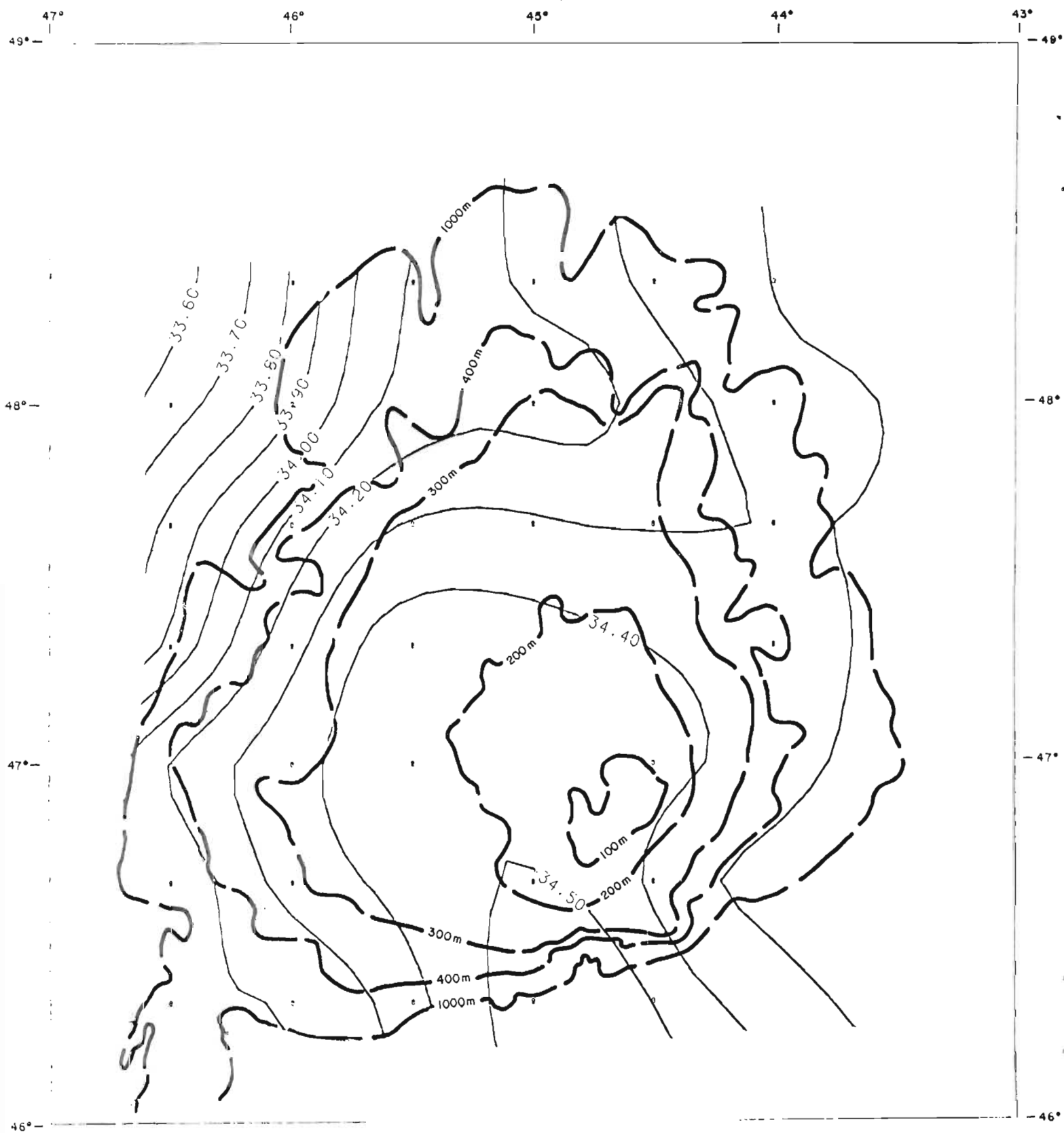


Fig. 38. Salinity contours at 000 meters - GADUS 20A (April 1979).

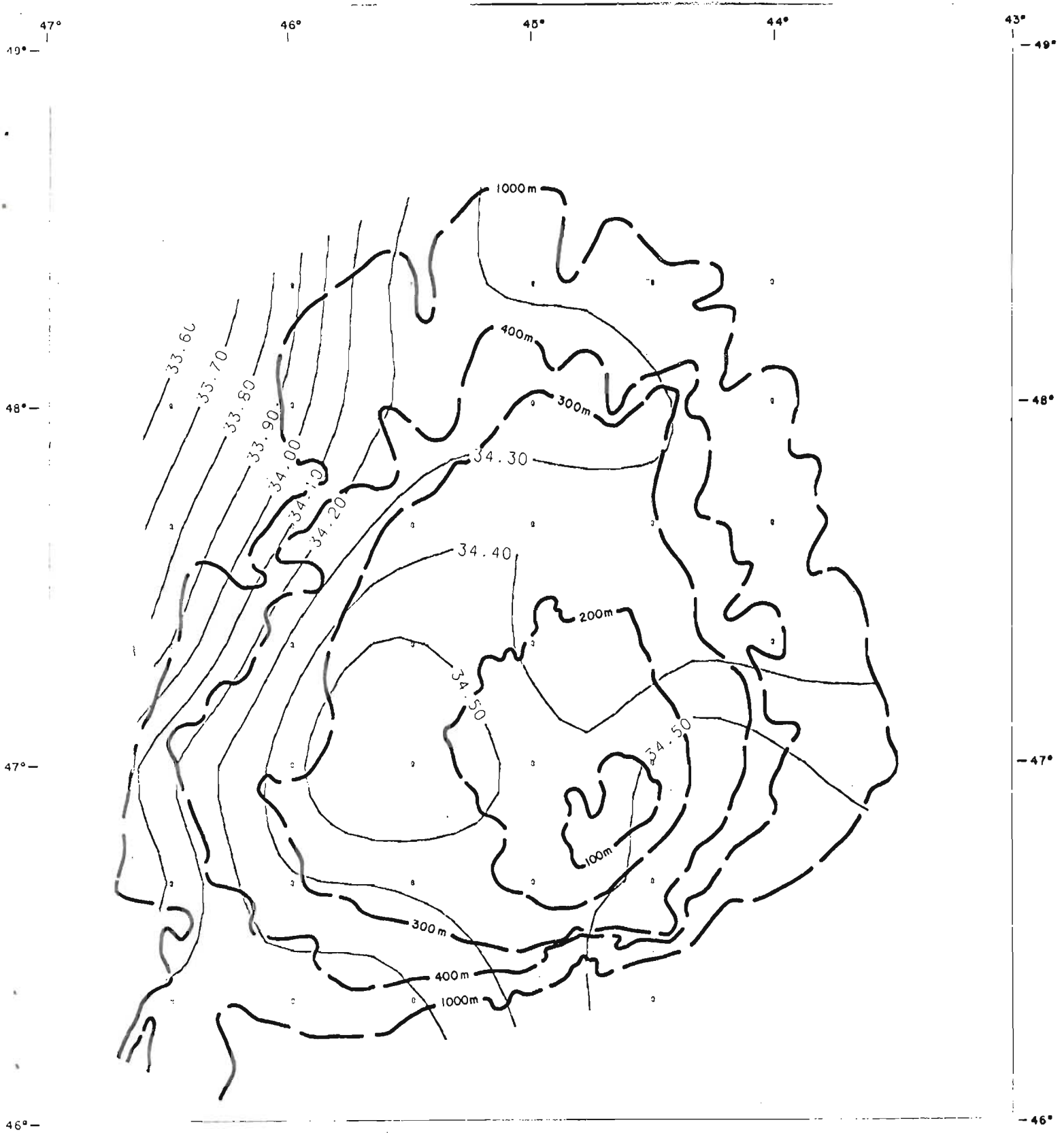


Fig. 39. Salinity contours at 010 meters - GADUS 20A (April 1979).



Fig. 40. Salinity contours at 020 meters - GADUS 20A (April 1979).



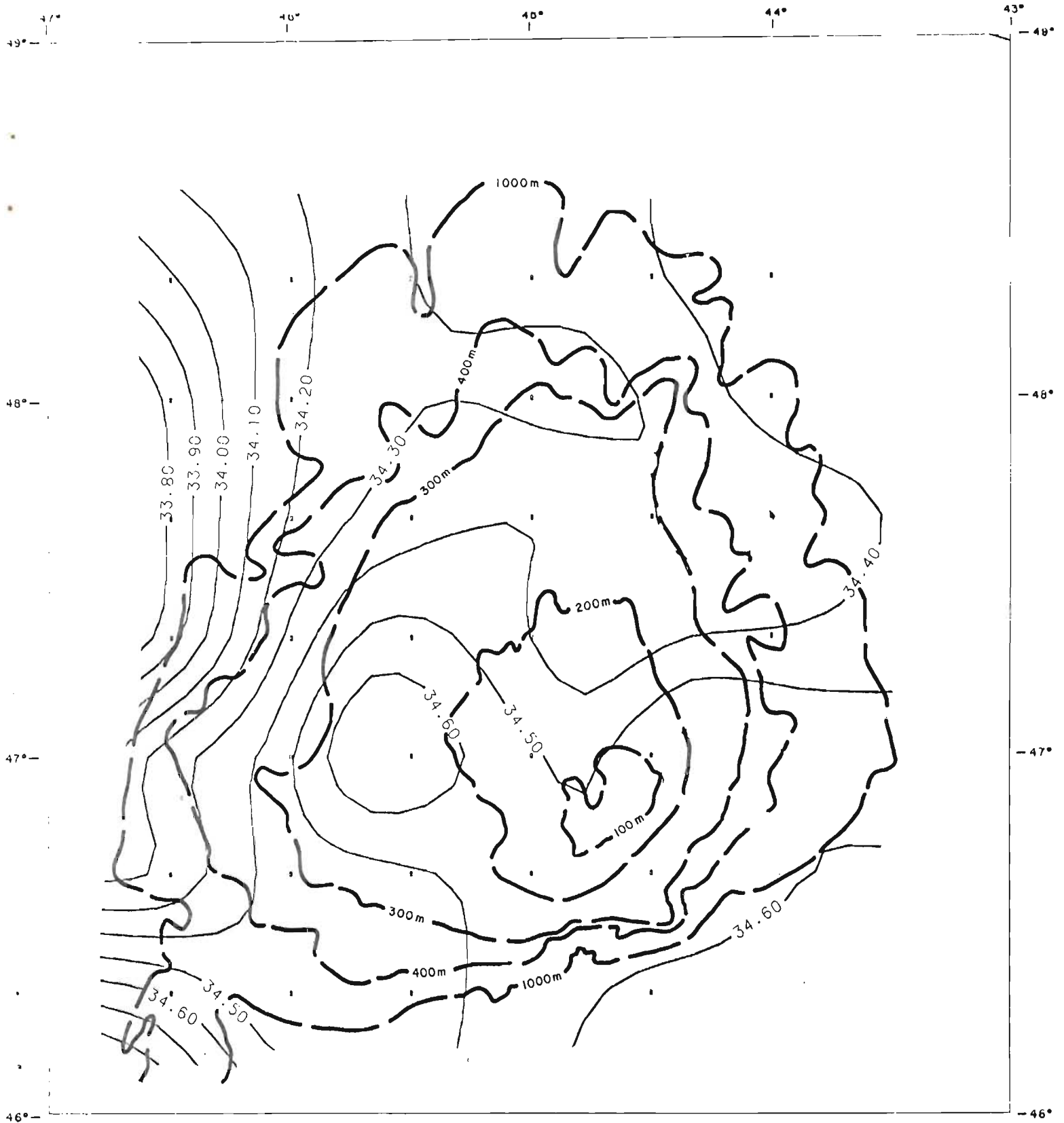


Fig. 41. Salinity contours at 030 meters - GADUS 20A (April 1979).

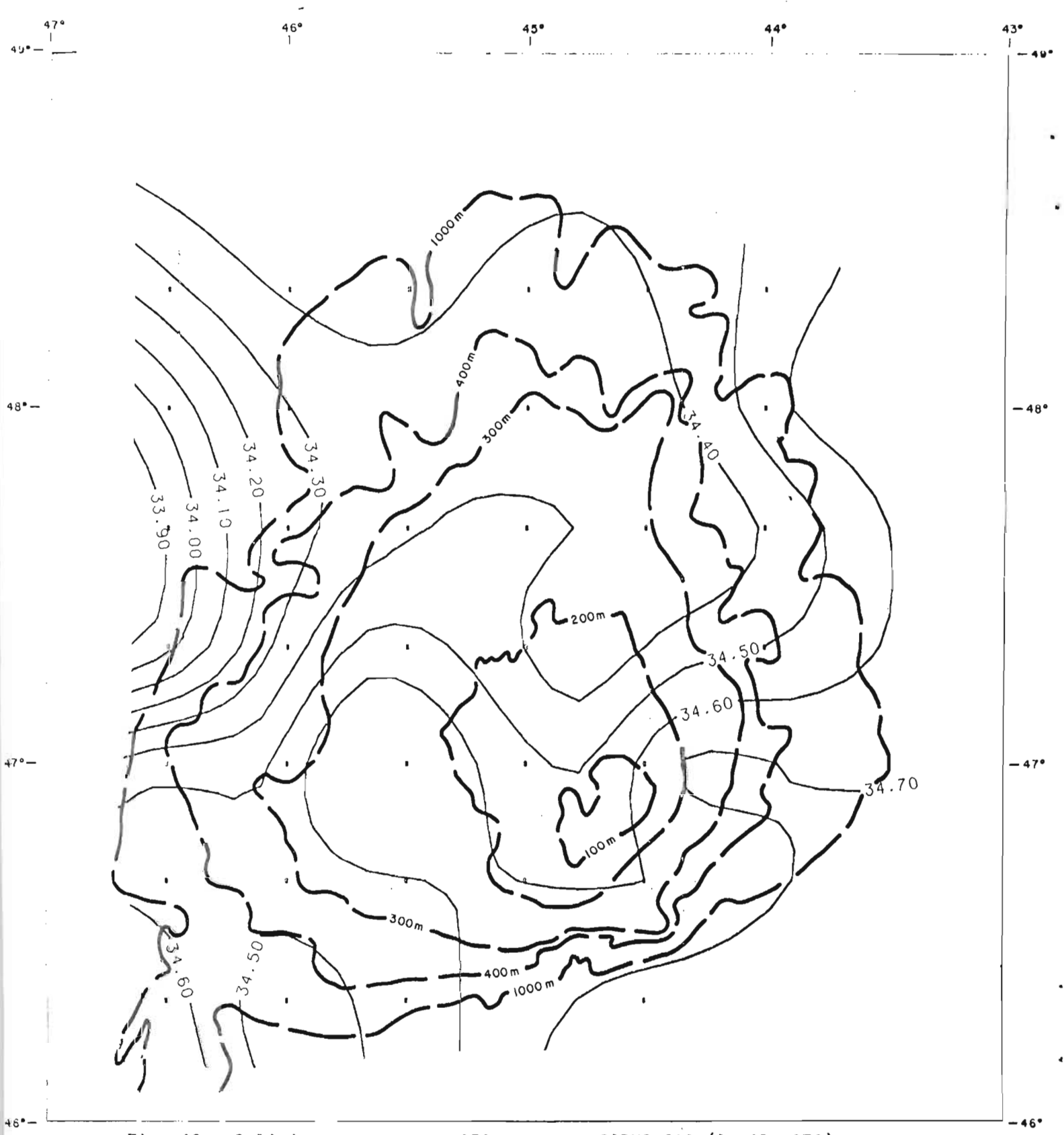


Fig. 42. Salinity contours at 050 meters - GADUS 20A (April 1979).

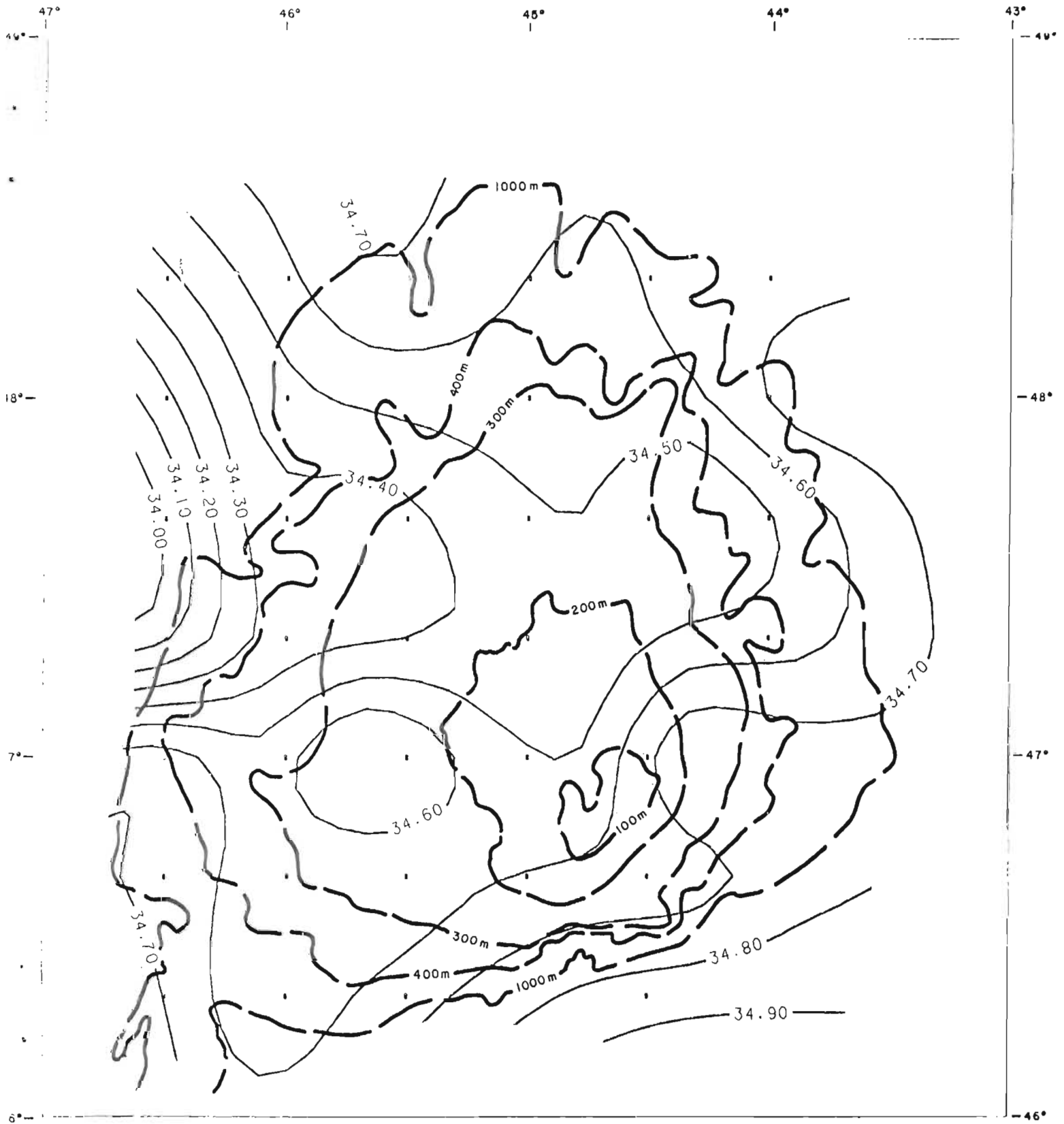


Fig. 43. Salinity contours at 075 meters - GADUS 20A (April 1979).

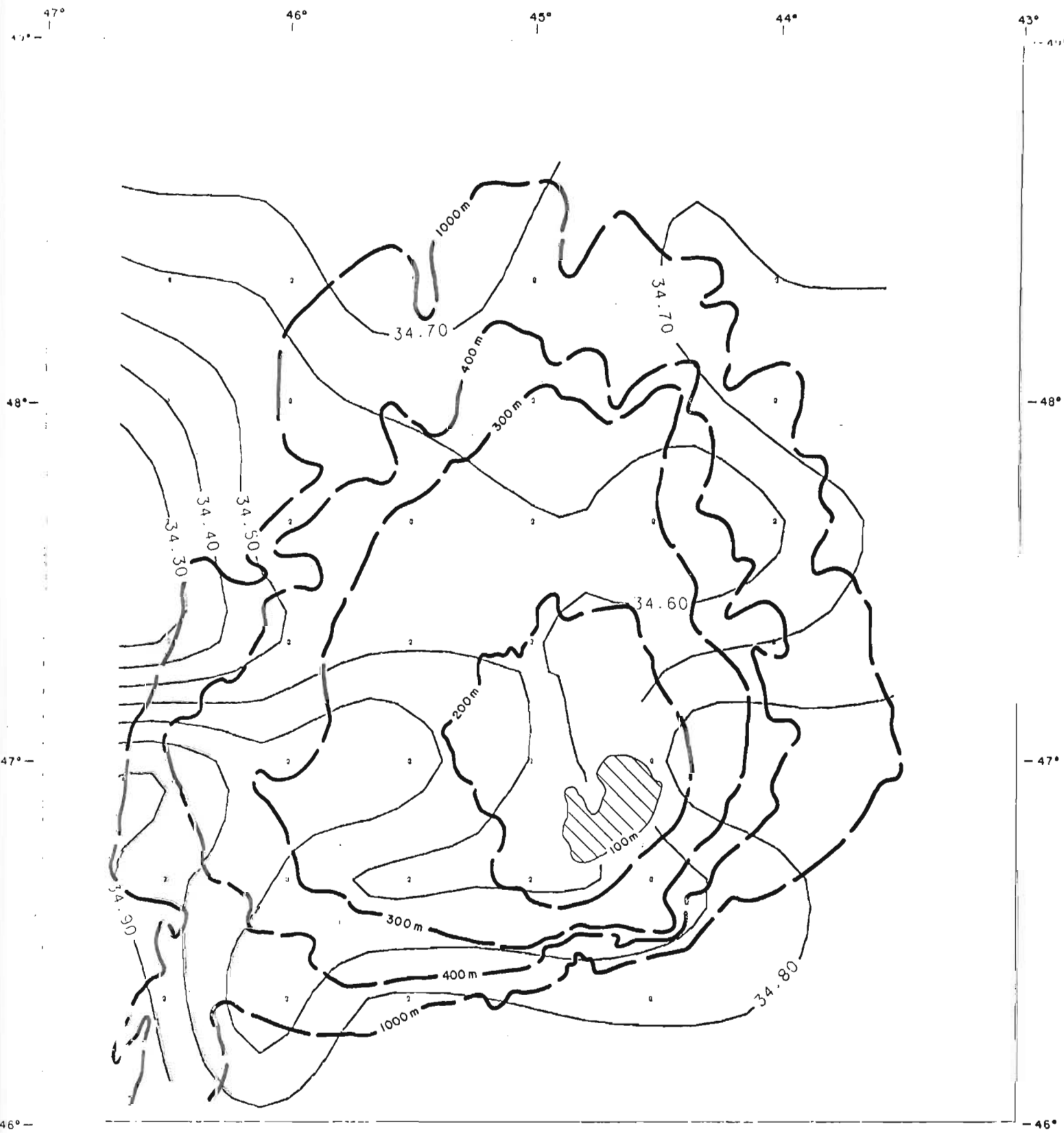


Fig. 44. Salinity contours at 100 meters - GADUS 20A (April 1979).

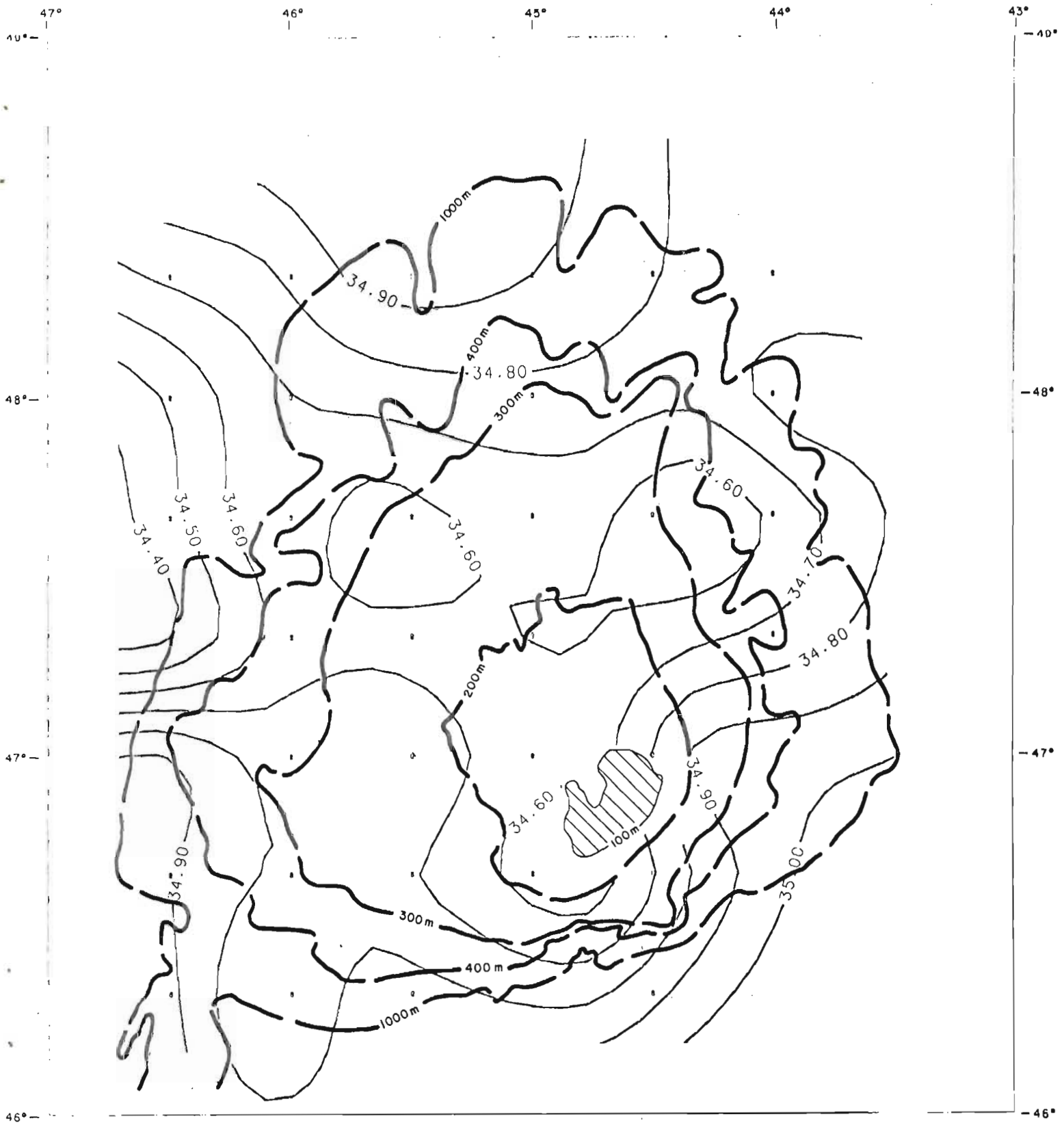


Fig. 45. Salinity contours at 125 meters - GADUS 20A (April 1979).

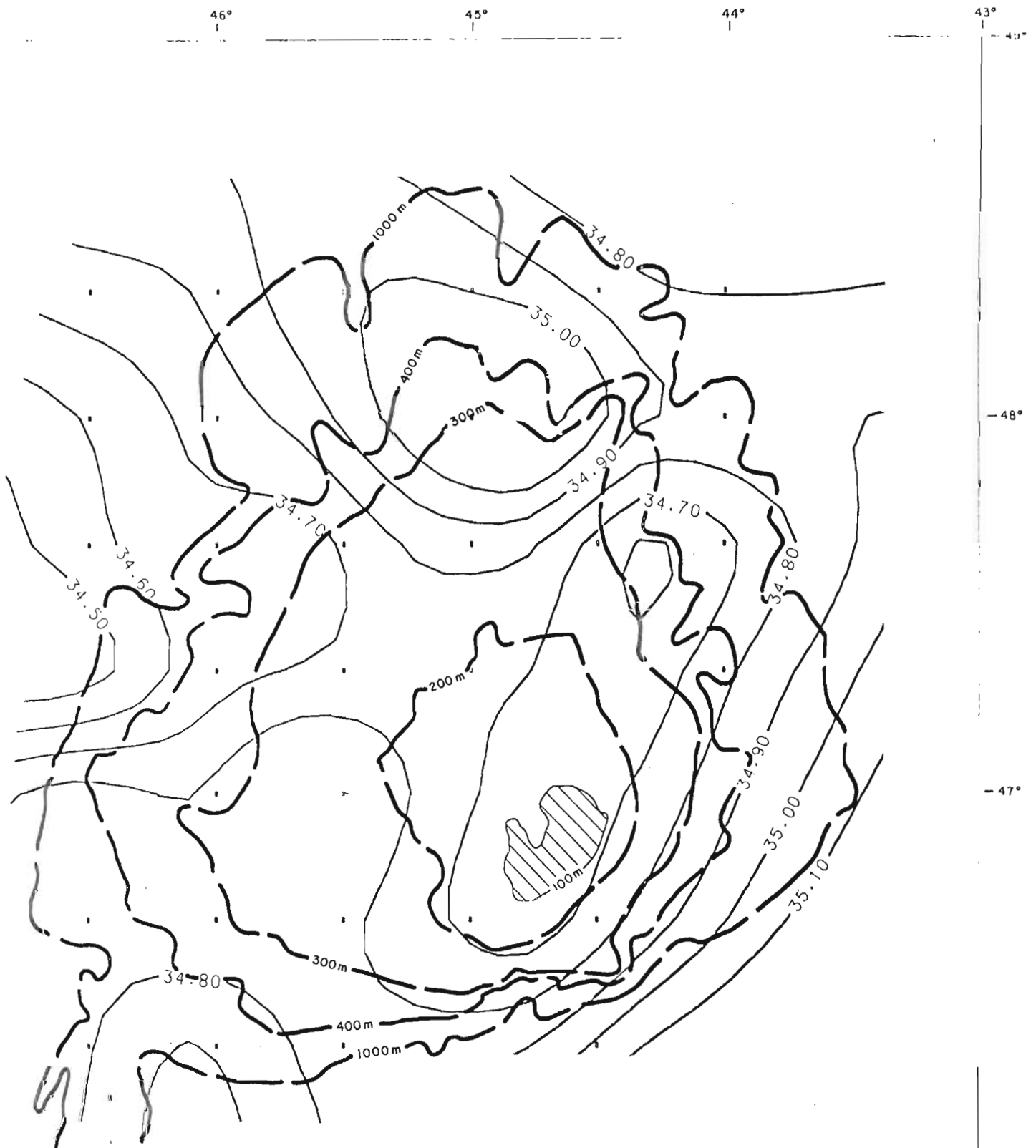


Fig. 46. Salinity contours at 150 meters - GADUS 20A (April 1979).

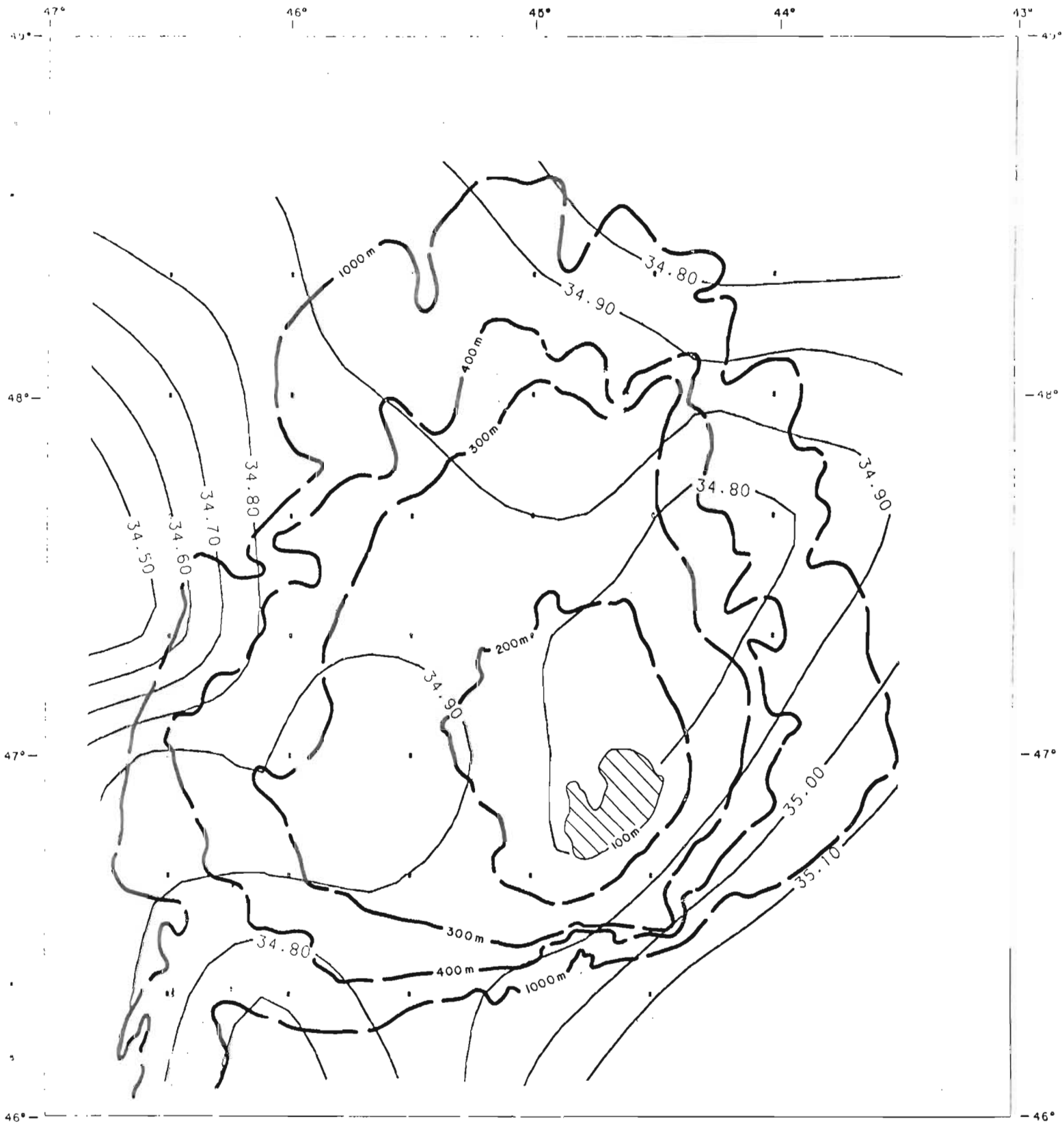


Fig. 47. Salinity contours at 175 meters - GADUS 20A (April 1979).

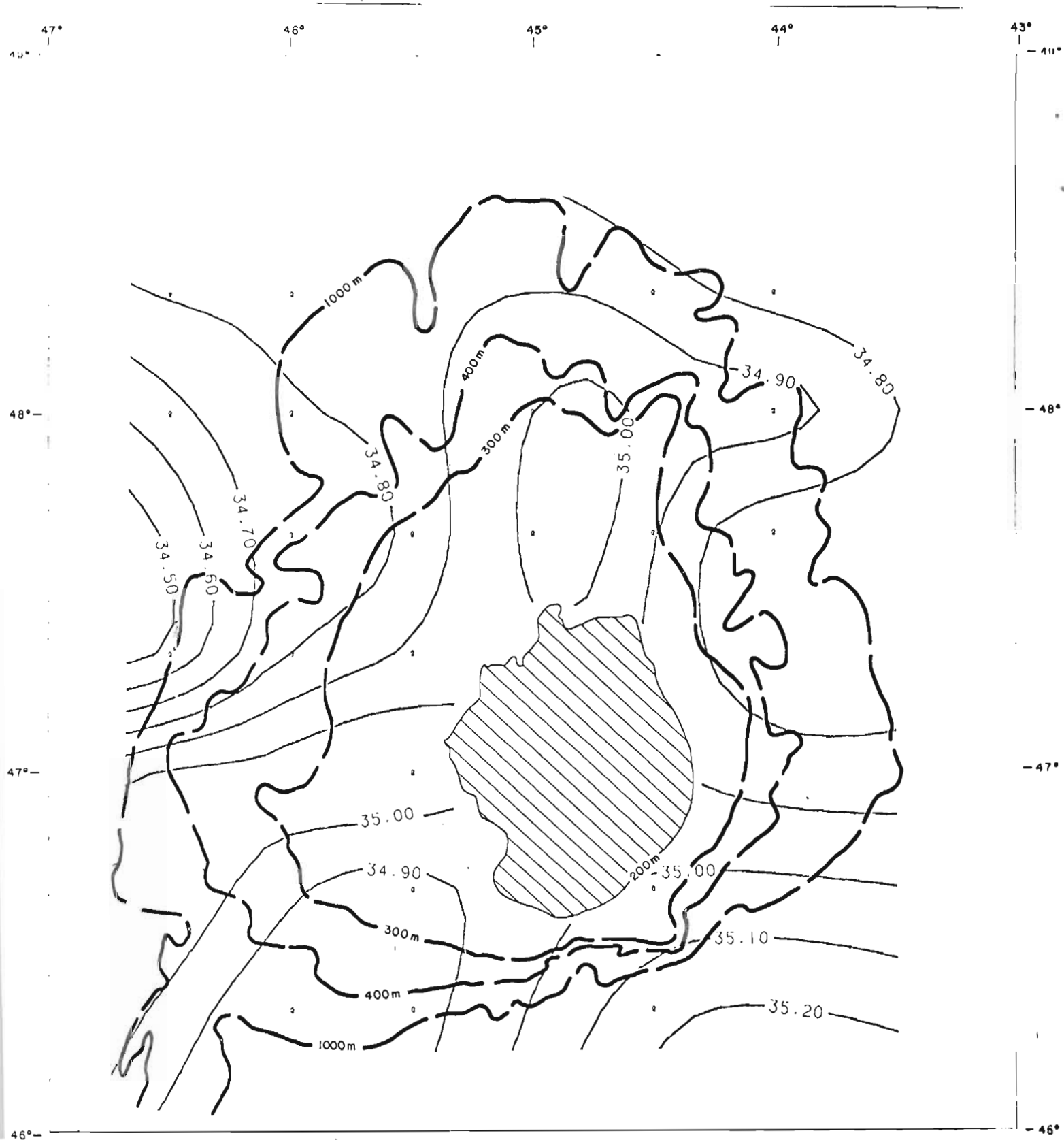


Fig. 48. Salinity contours at 200 meters - GADUS 20A (April 1979).



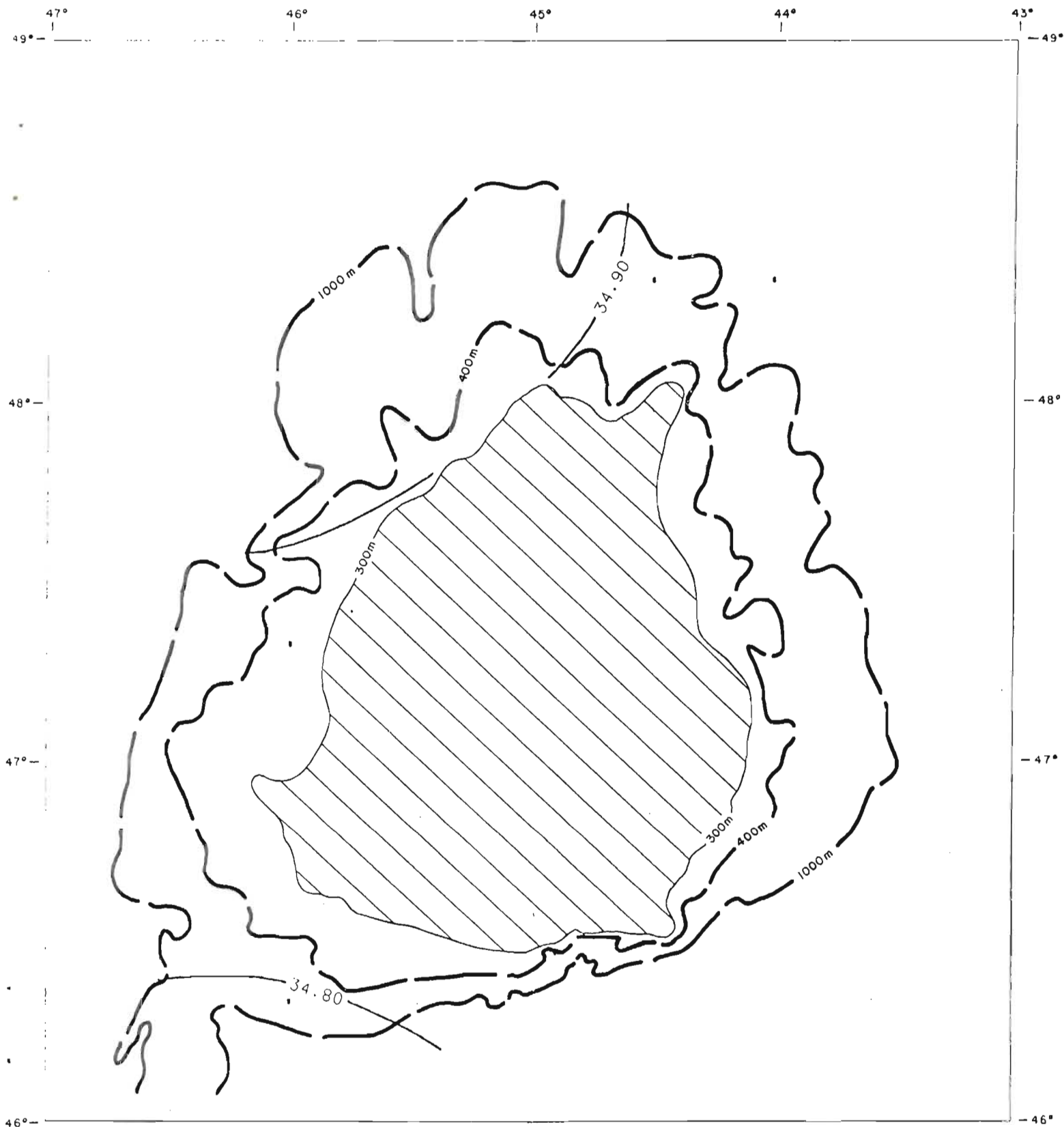


Fig. 49. Salinity contours at 300 meters - GADUS 20A (April 1979).

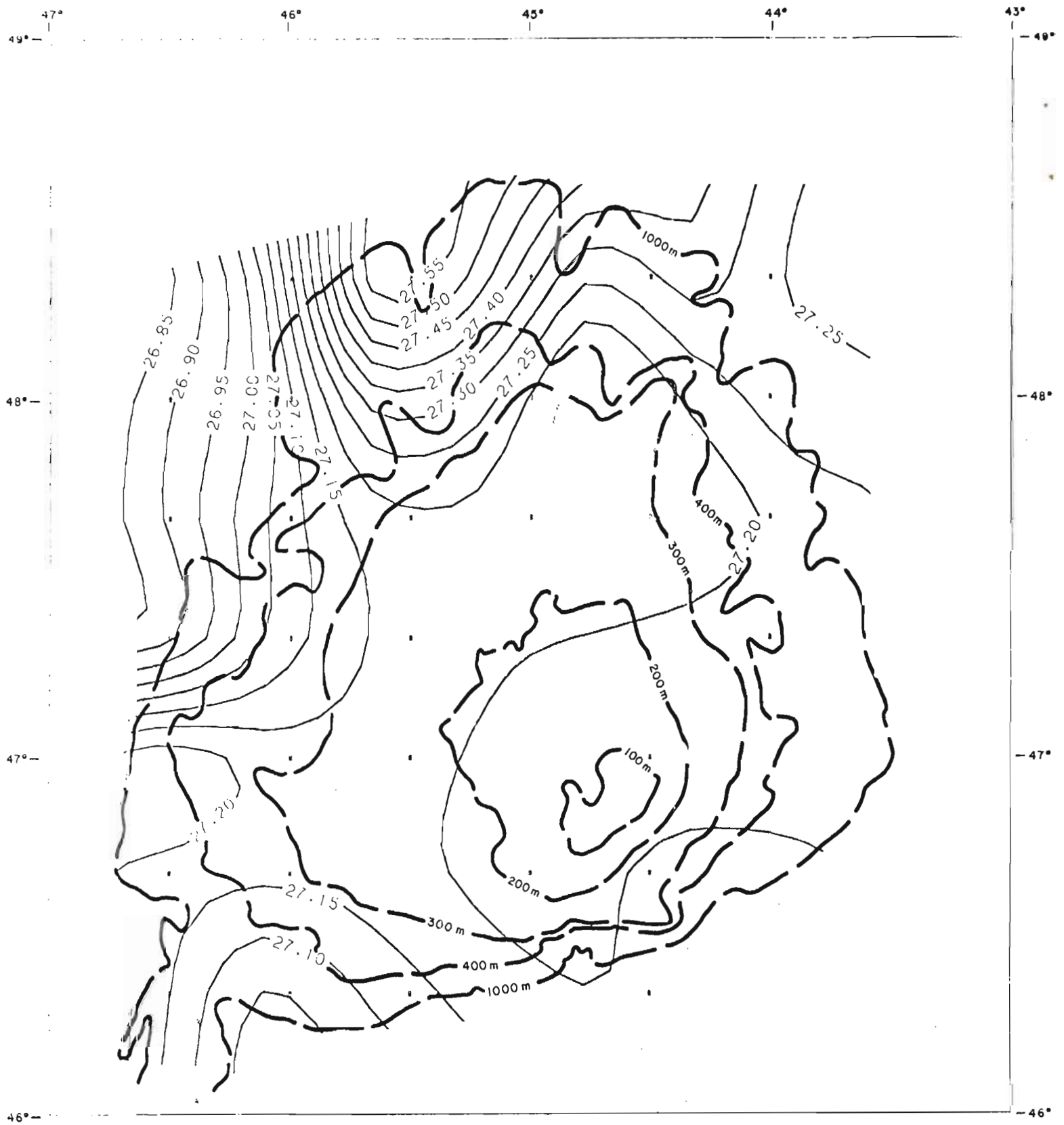


Fig. 50. Density contours at 000 meters - GADUS 20A (April 1979).

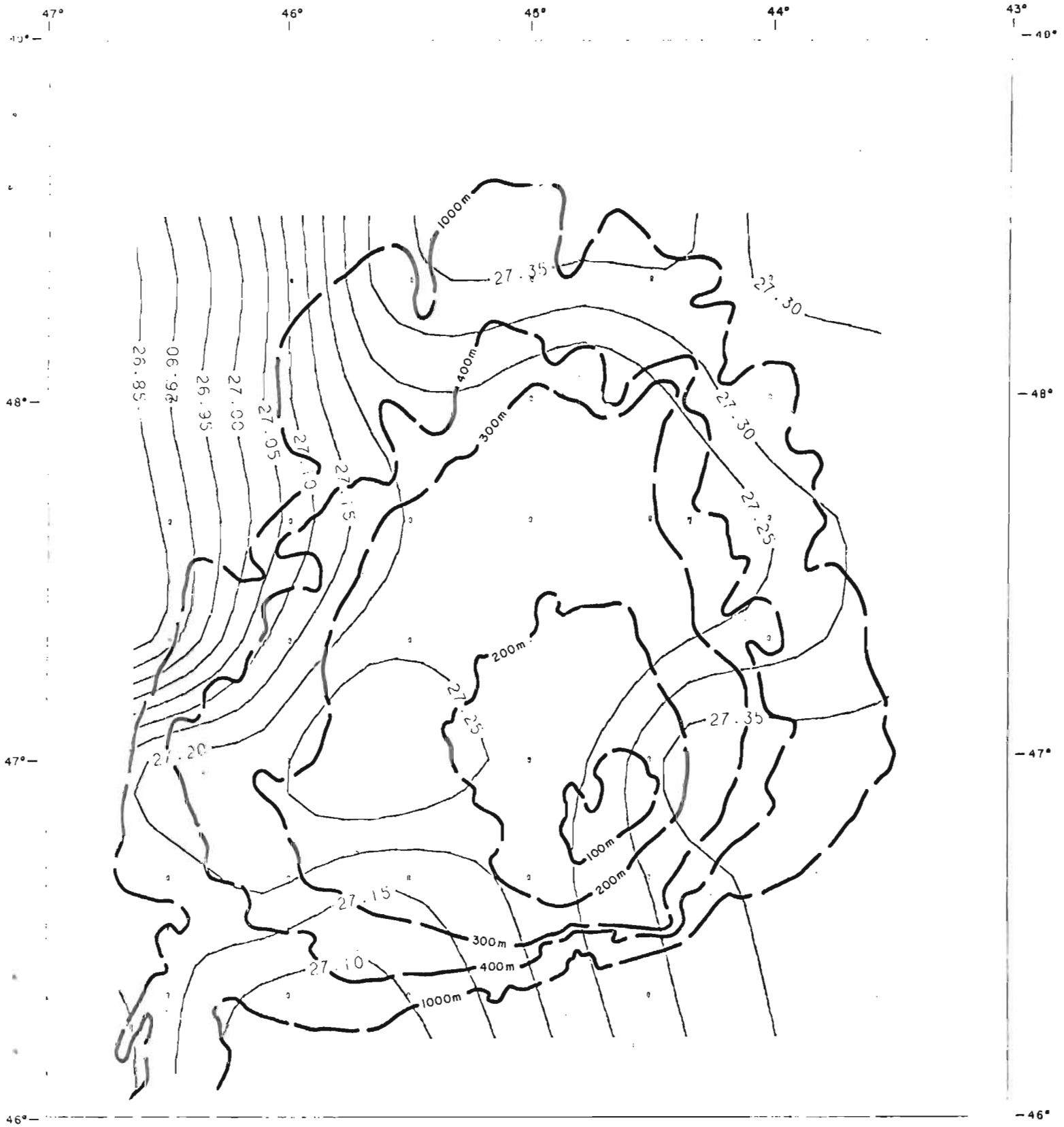


Fig. 51. Density contours at 010 meters - GADUS 20A (April 1979).

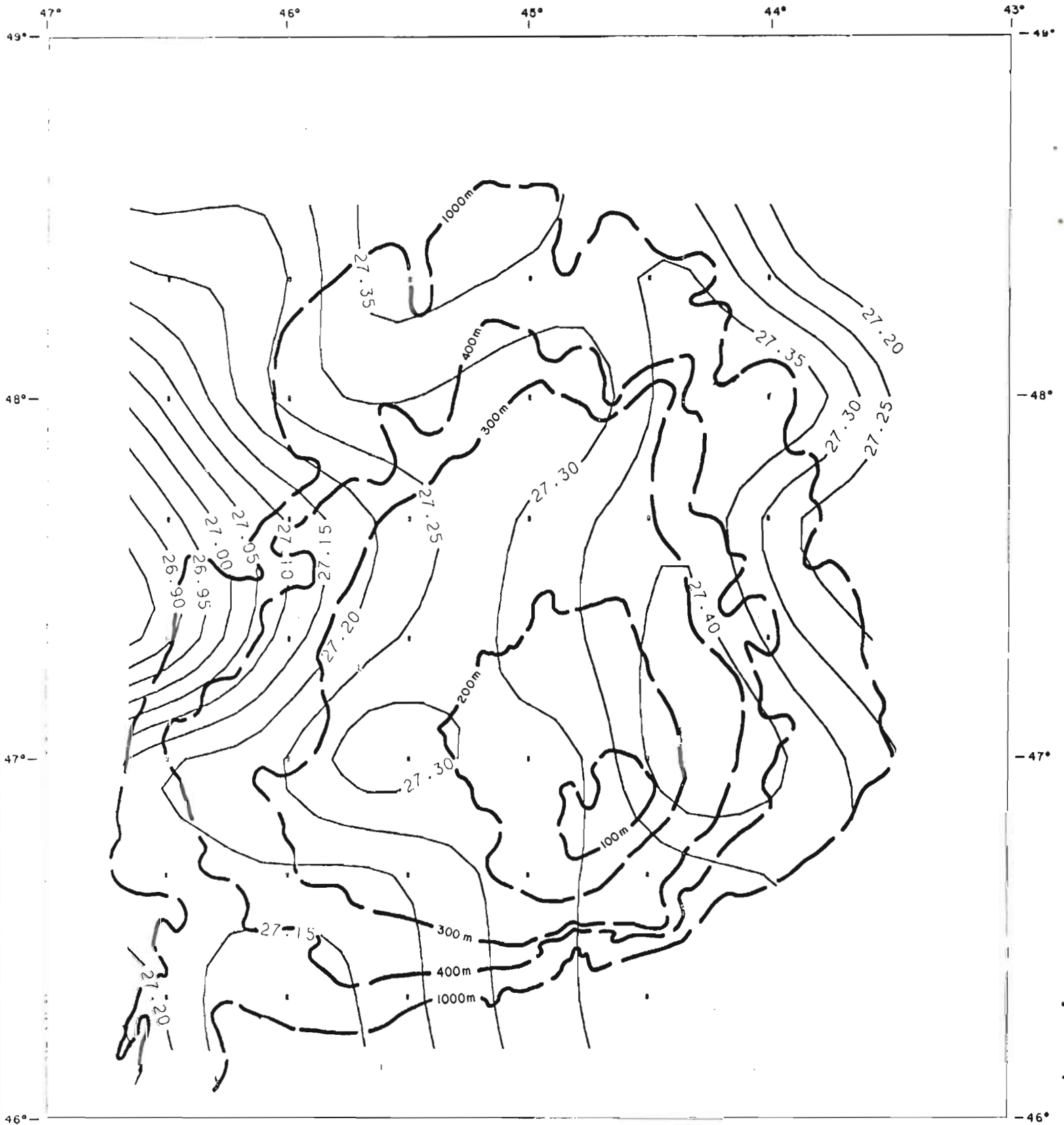


Fig. 52. Density contours at 020 meters - GADUS 20A (April 1979).

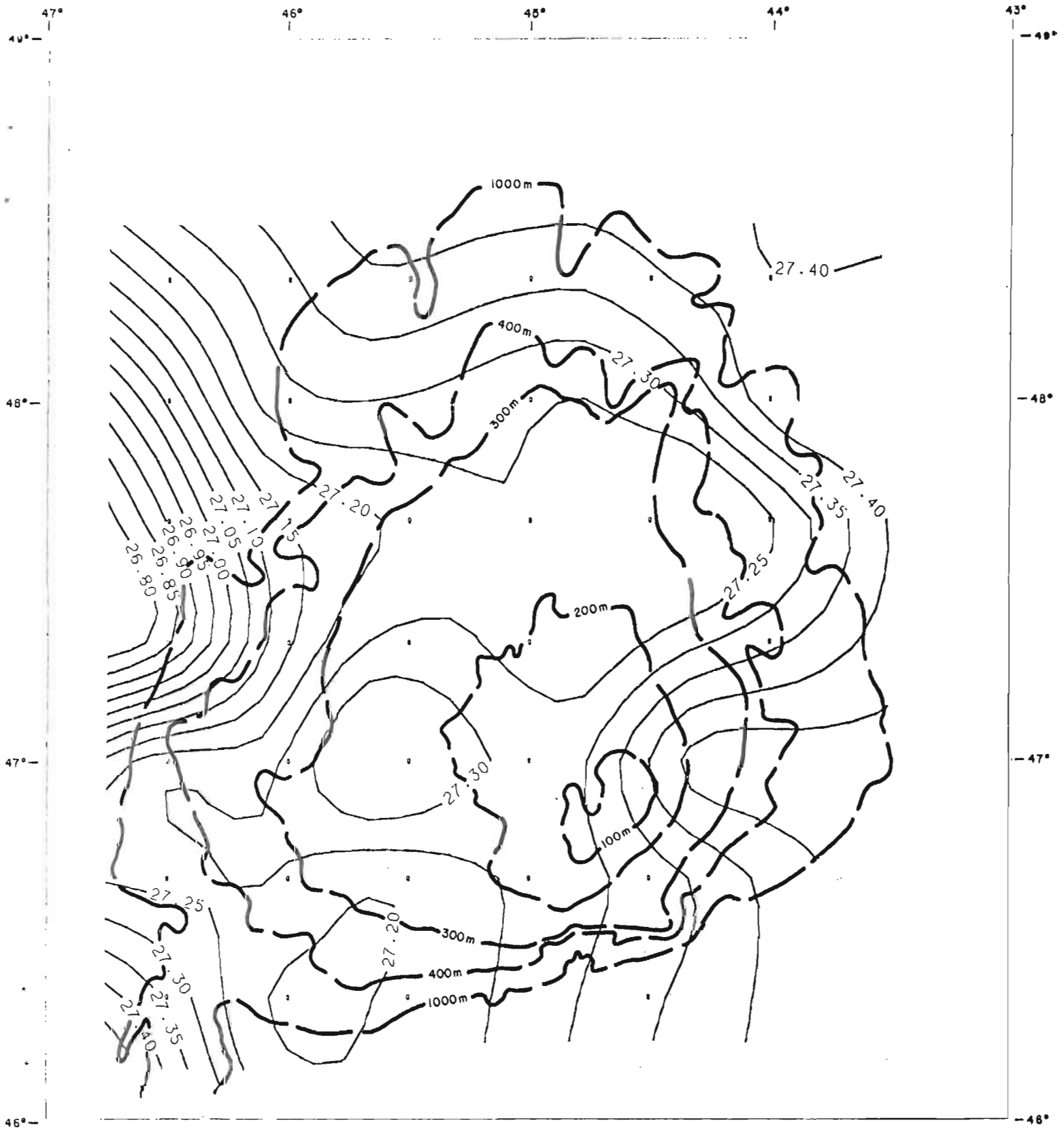


Fig. 53. Density contours at 030 meters - GADUS 20A (April 1979).

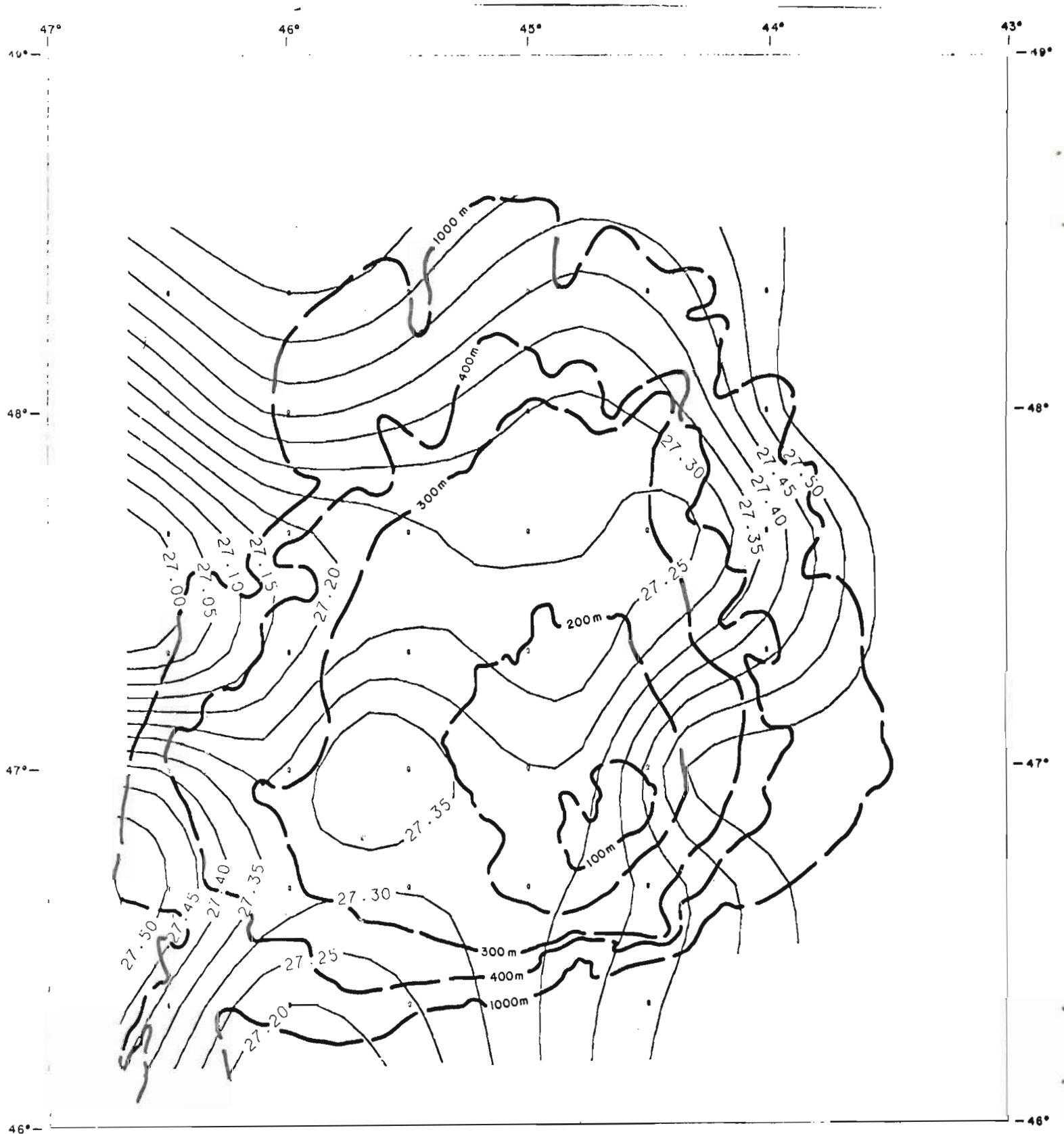


Fig. 54. Density contours at 050 meters - GADUS 20A (April 1979).

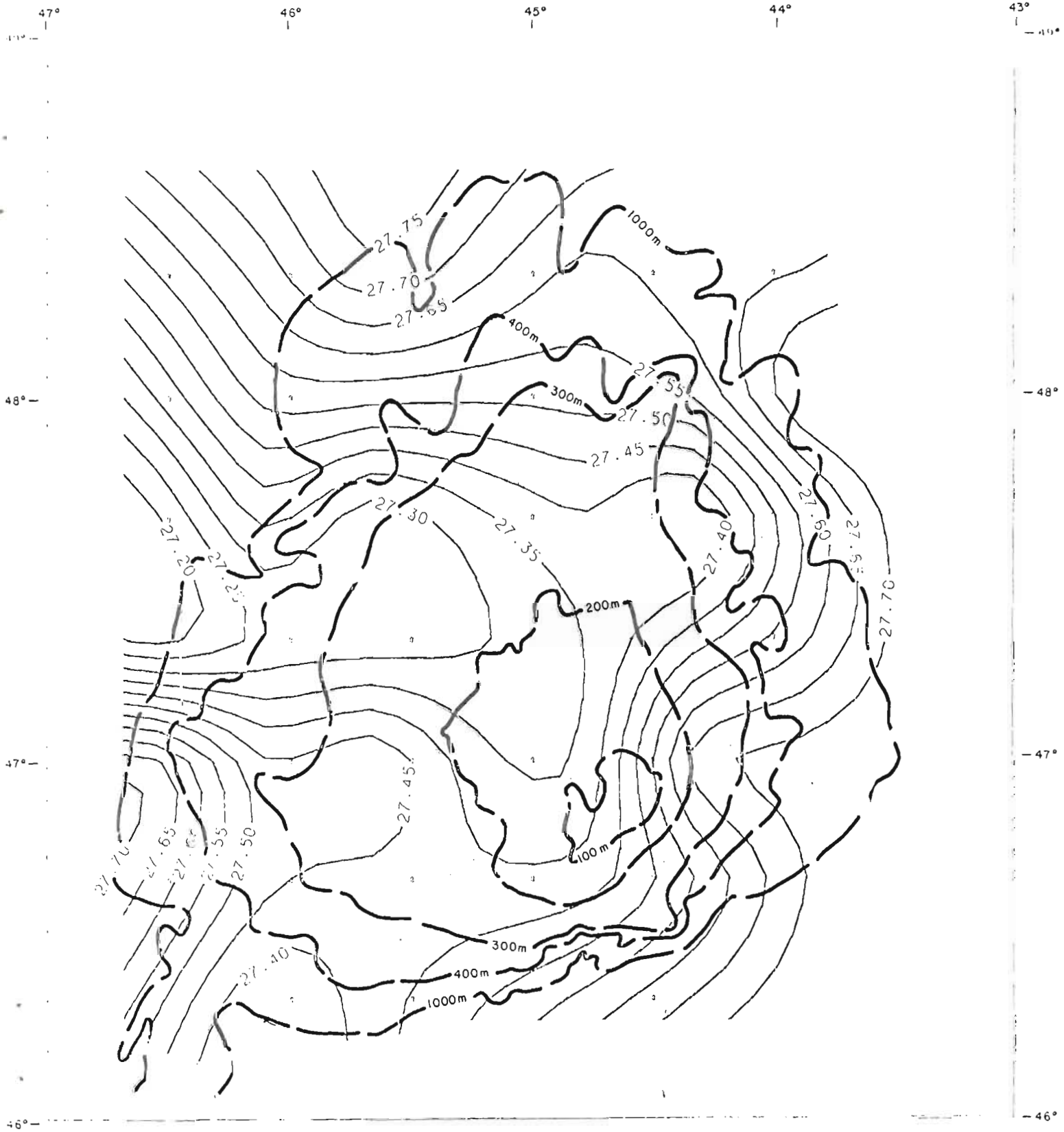


Fig. 55. Density contours at 075 meters - GADUS 20A (April 1979).

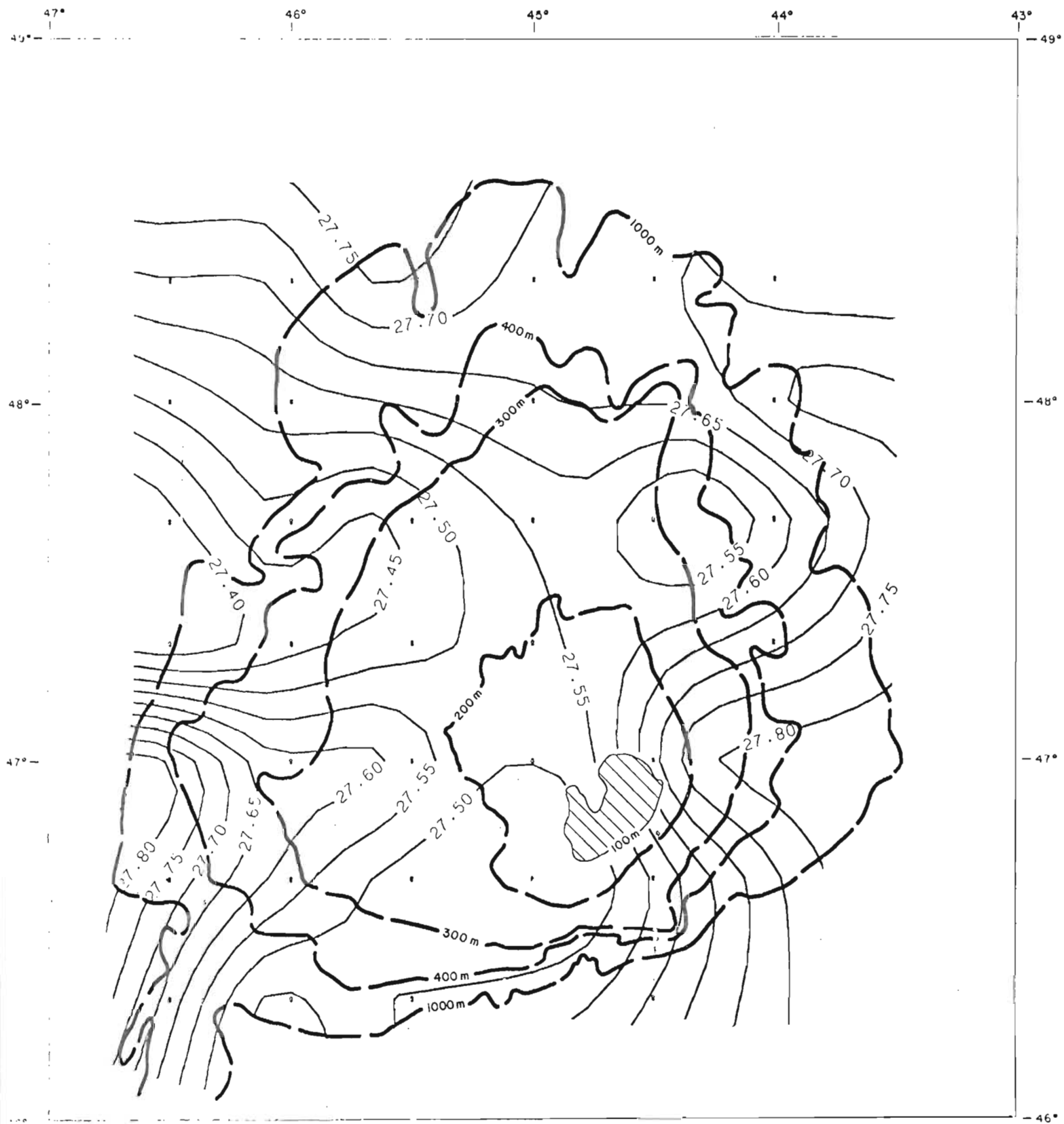


Fig. 56. Density contours at 100 meters - GADUS 20A (April 1979).



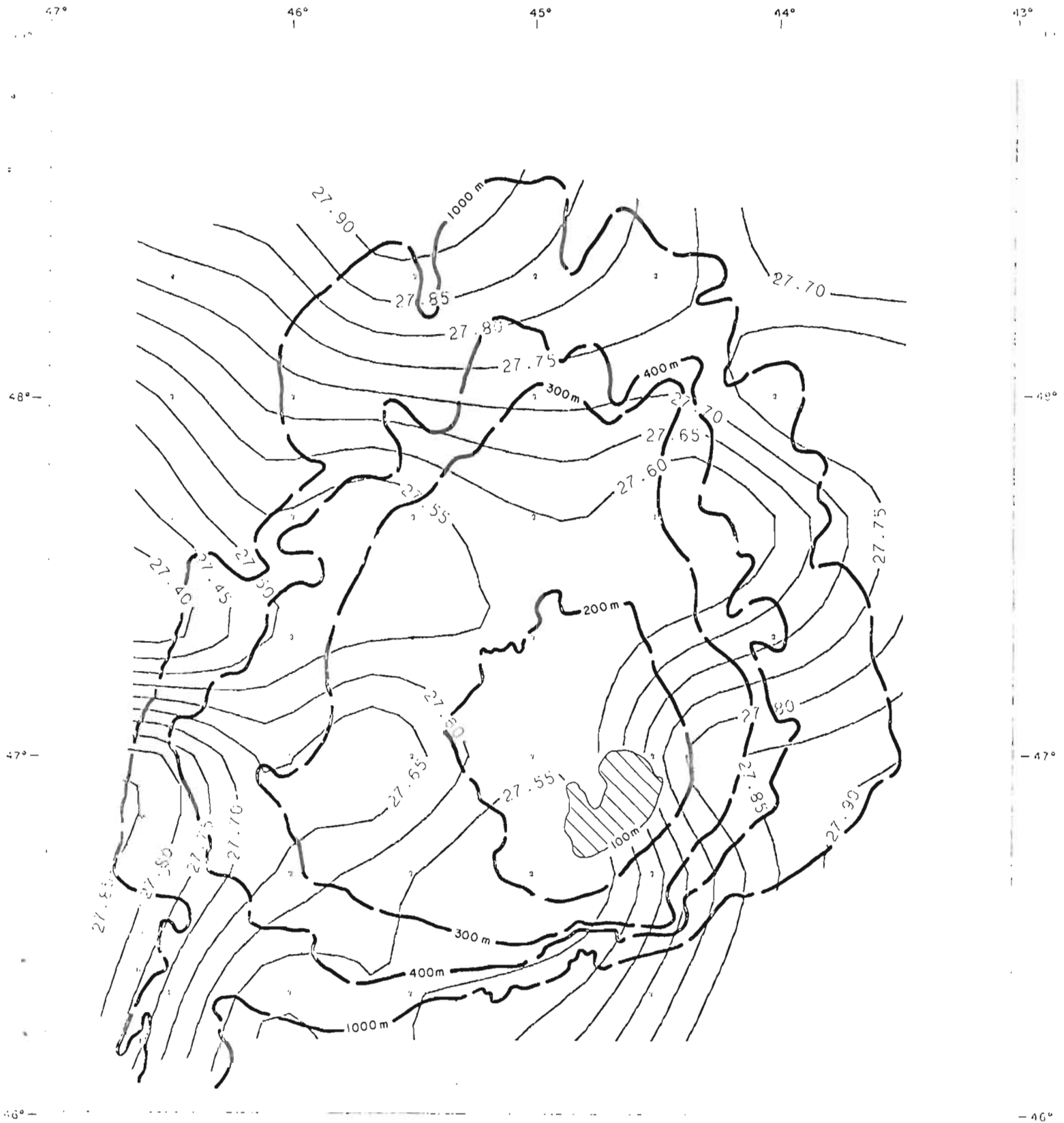


Fig. 57. Density contours at 125 meters - GADUS 20A (April 1979).

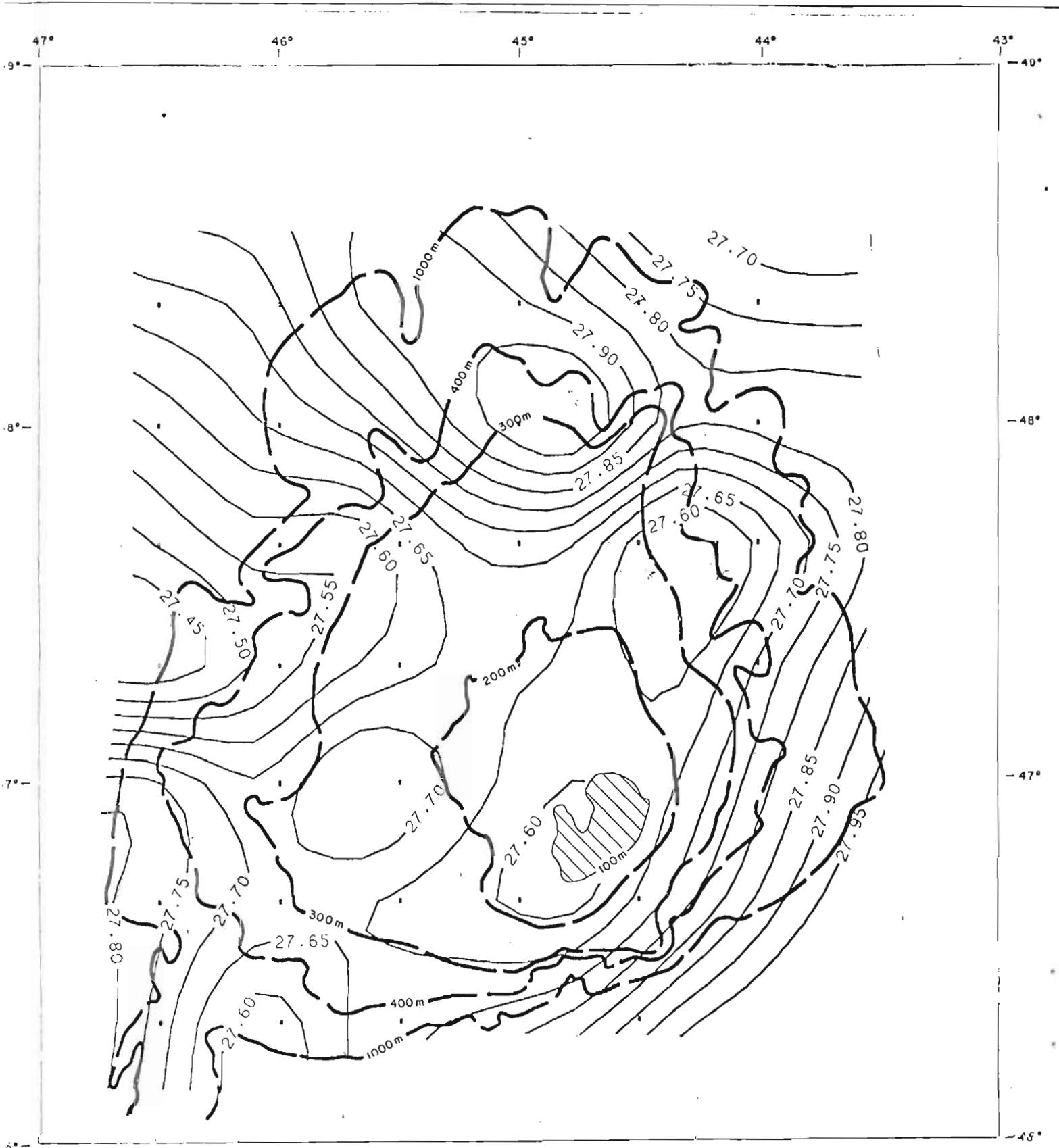


Fig. 58. Density contours at 150 meters - GADUS 20A (April 1979).

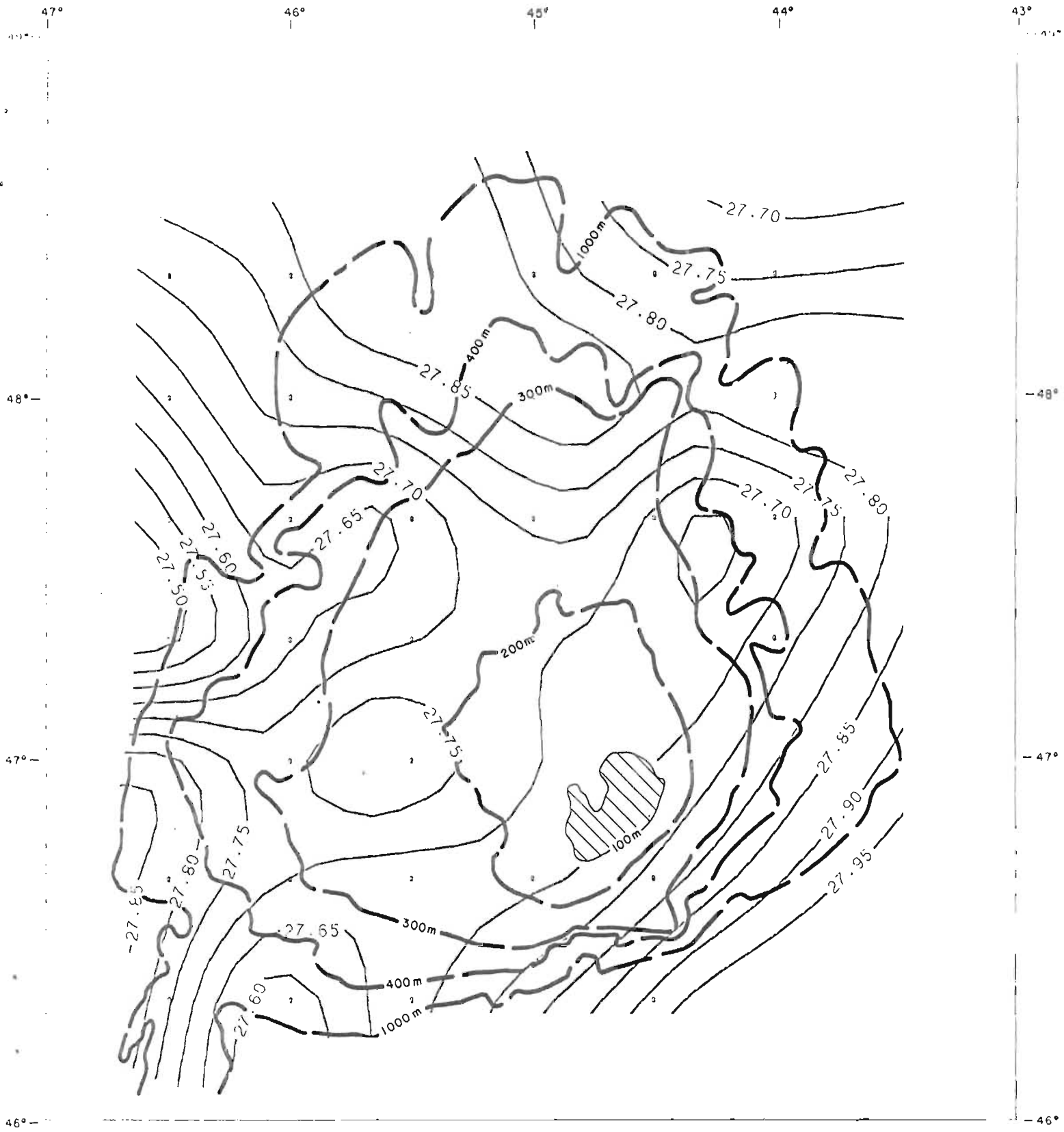


Fig. 59. Density contours at 175 meters - GADUS 20A (April 1979).

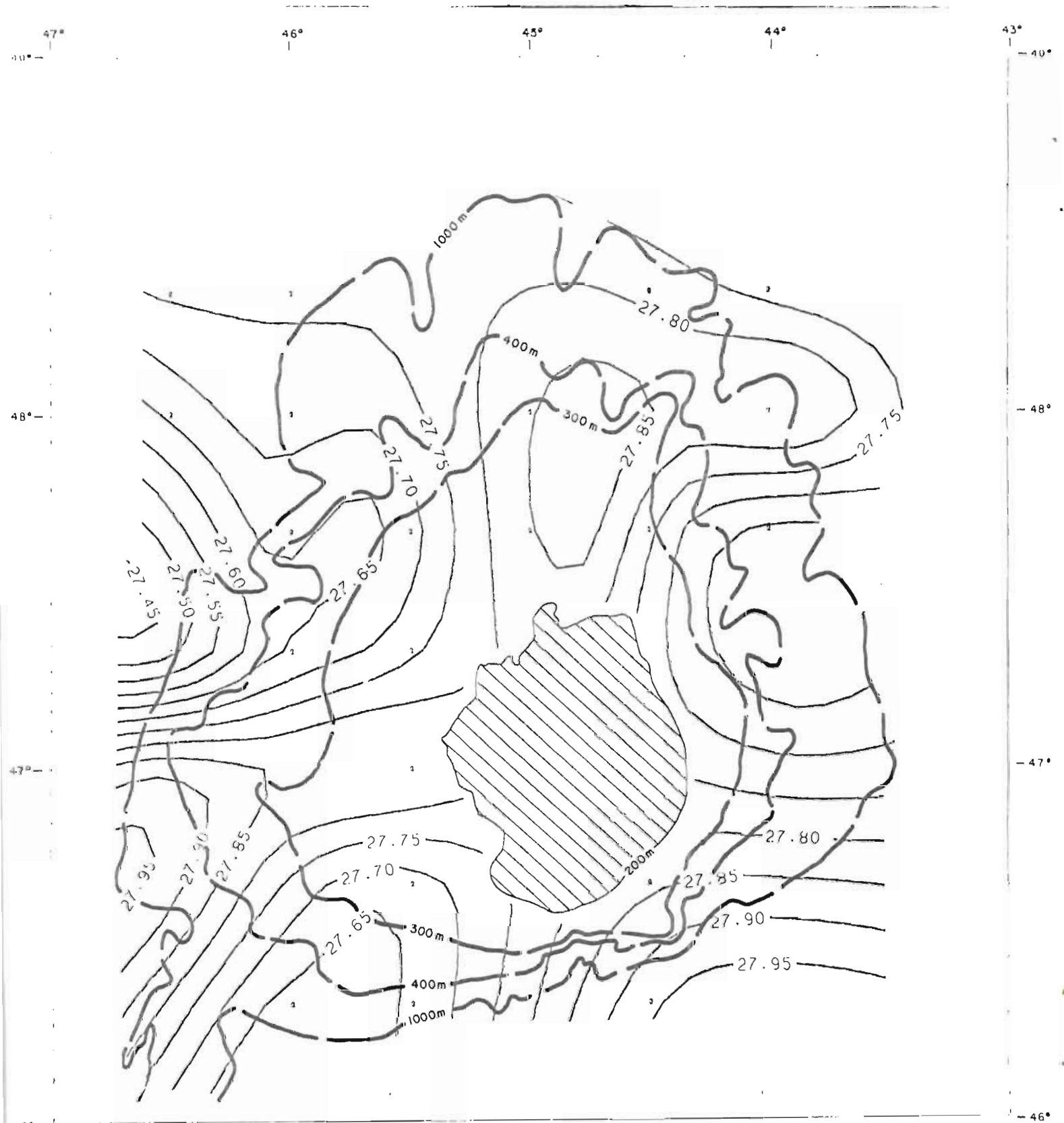


Fig. 60. Density contours at 200 meters - GADUS 20A (April 1979).

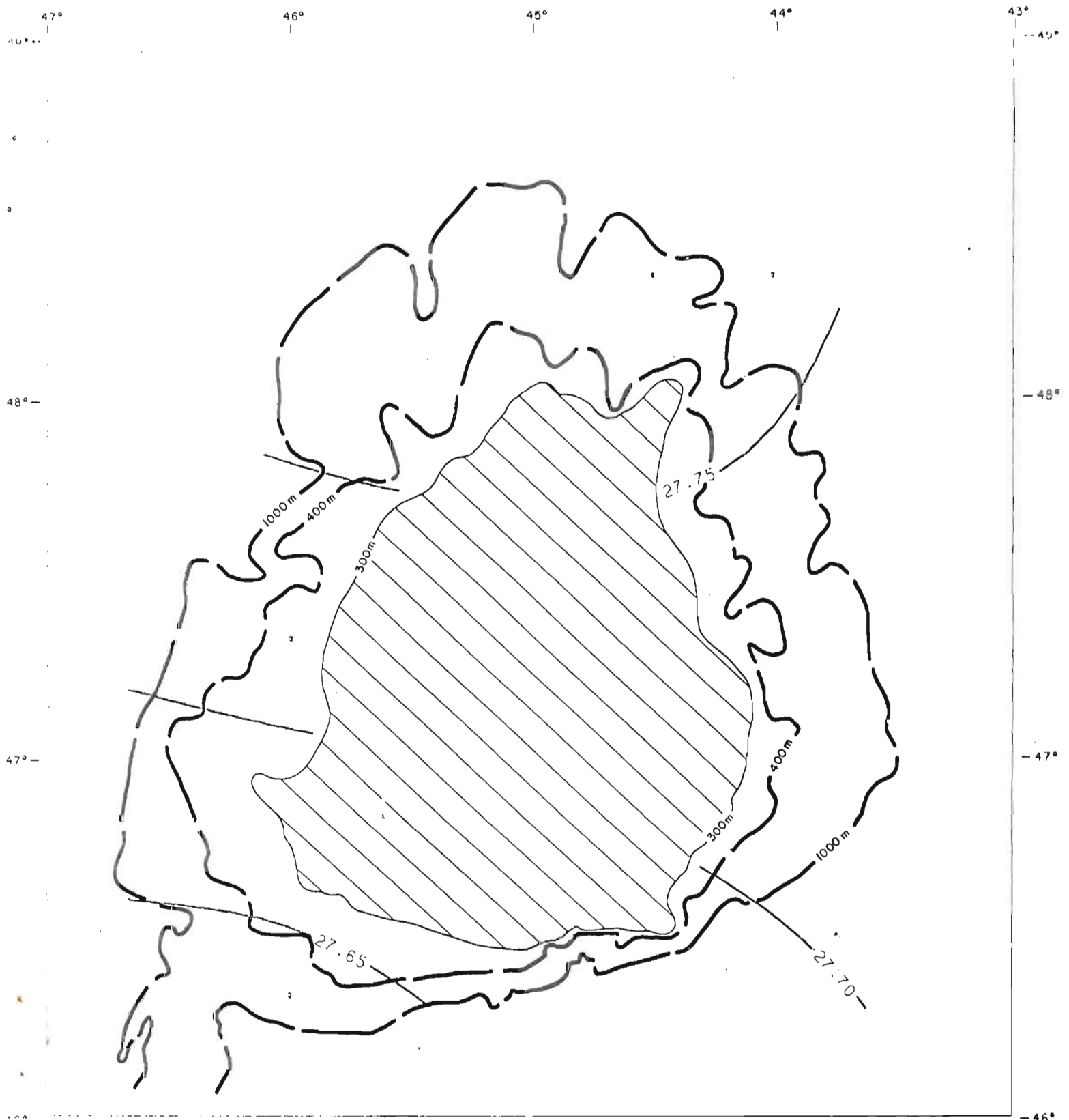


Fig. 61. Density contours at 300 meters - GADUS 20A (April 1979).

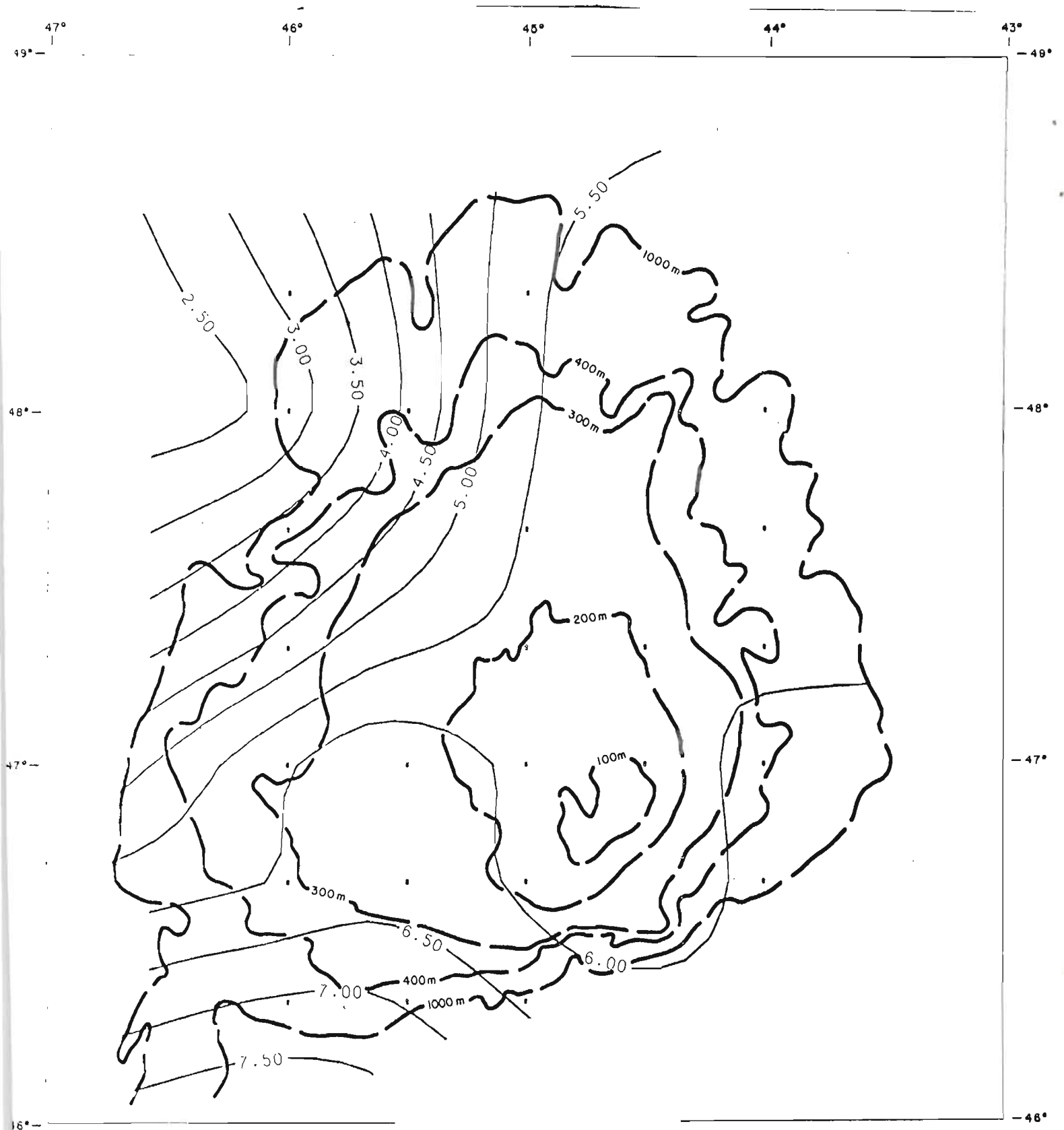


Fig. 62. Temperature contours at 000 meters - GADUS 20B (May 1979).

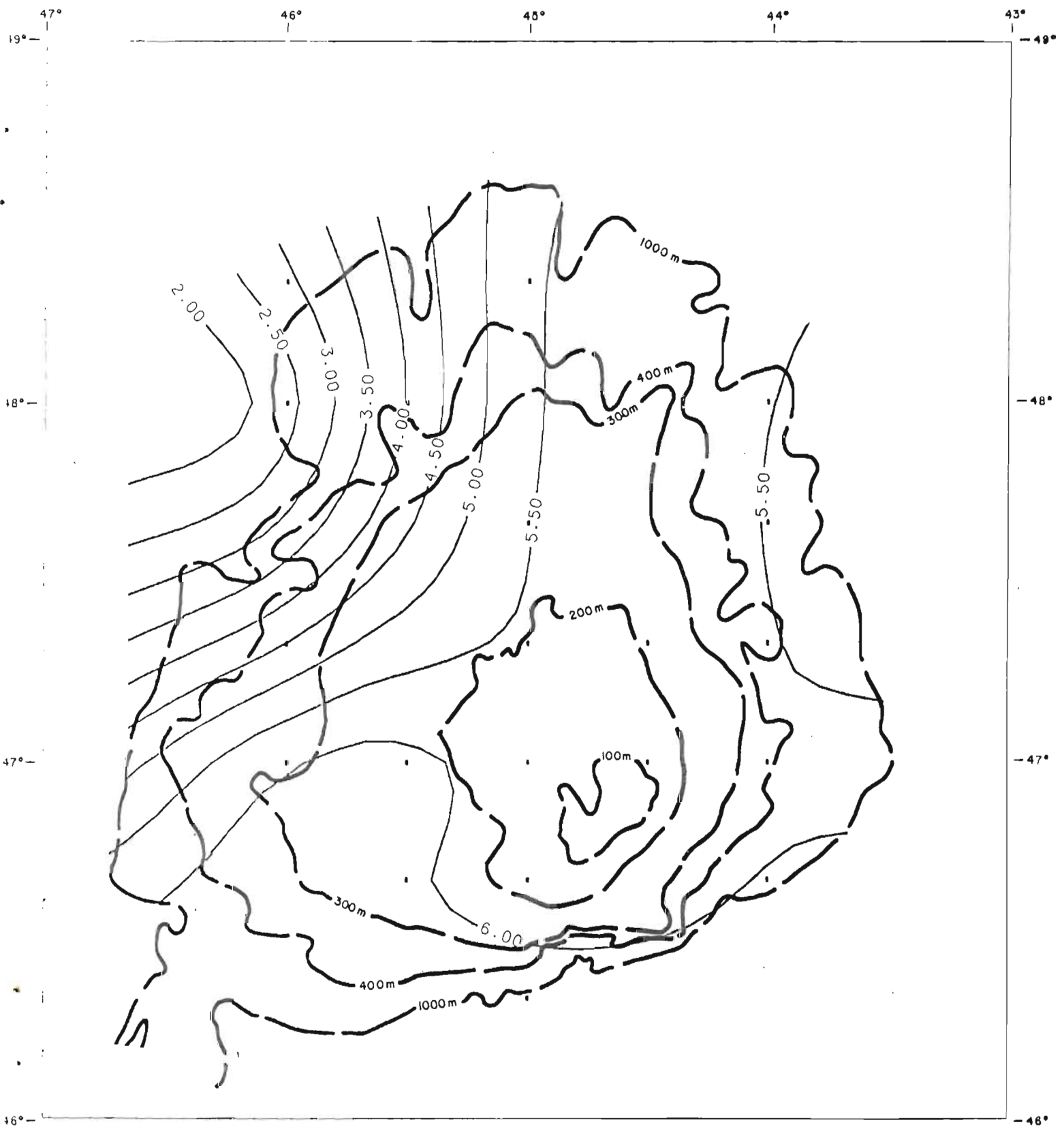


Fig. 63. Temperature contours at 010 meters - GADUS 20B (May 1979).

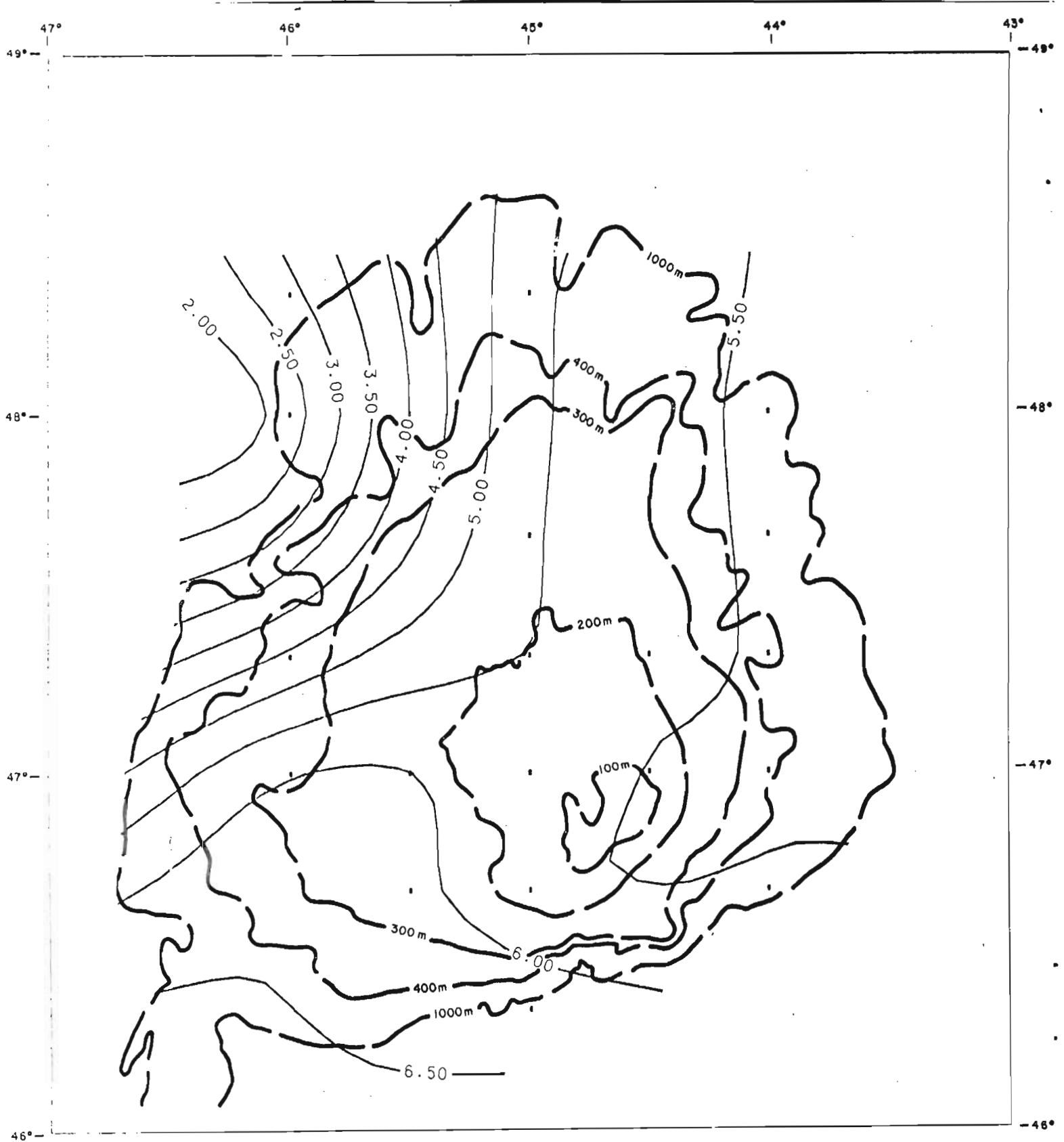


Fig. 64. Temperature contours at 020 meters - GADUS 20B (May 1979).



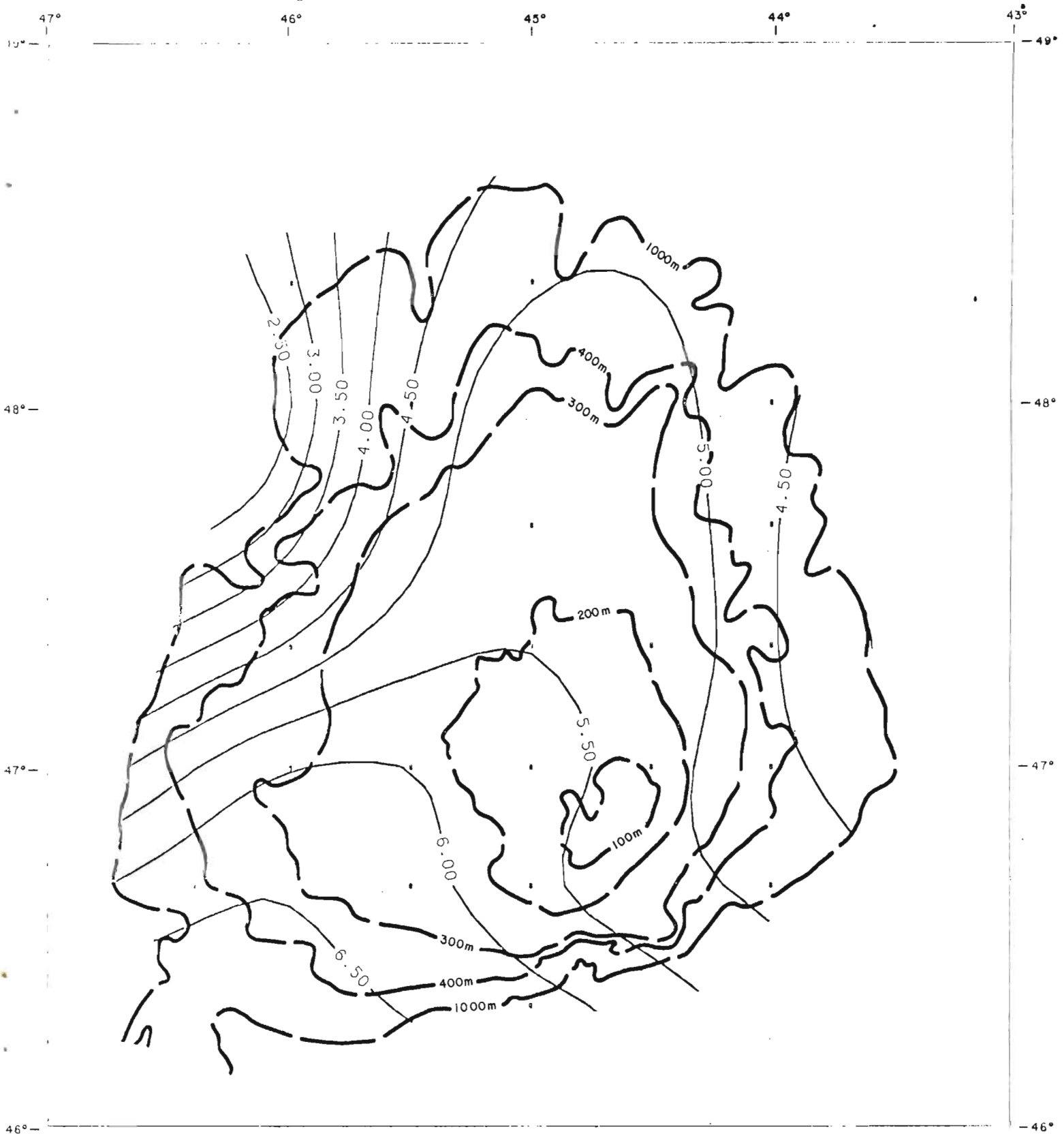


Fig. 65. Temperature contours at 030 meters - GADUS 20B (May 1979).

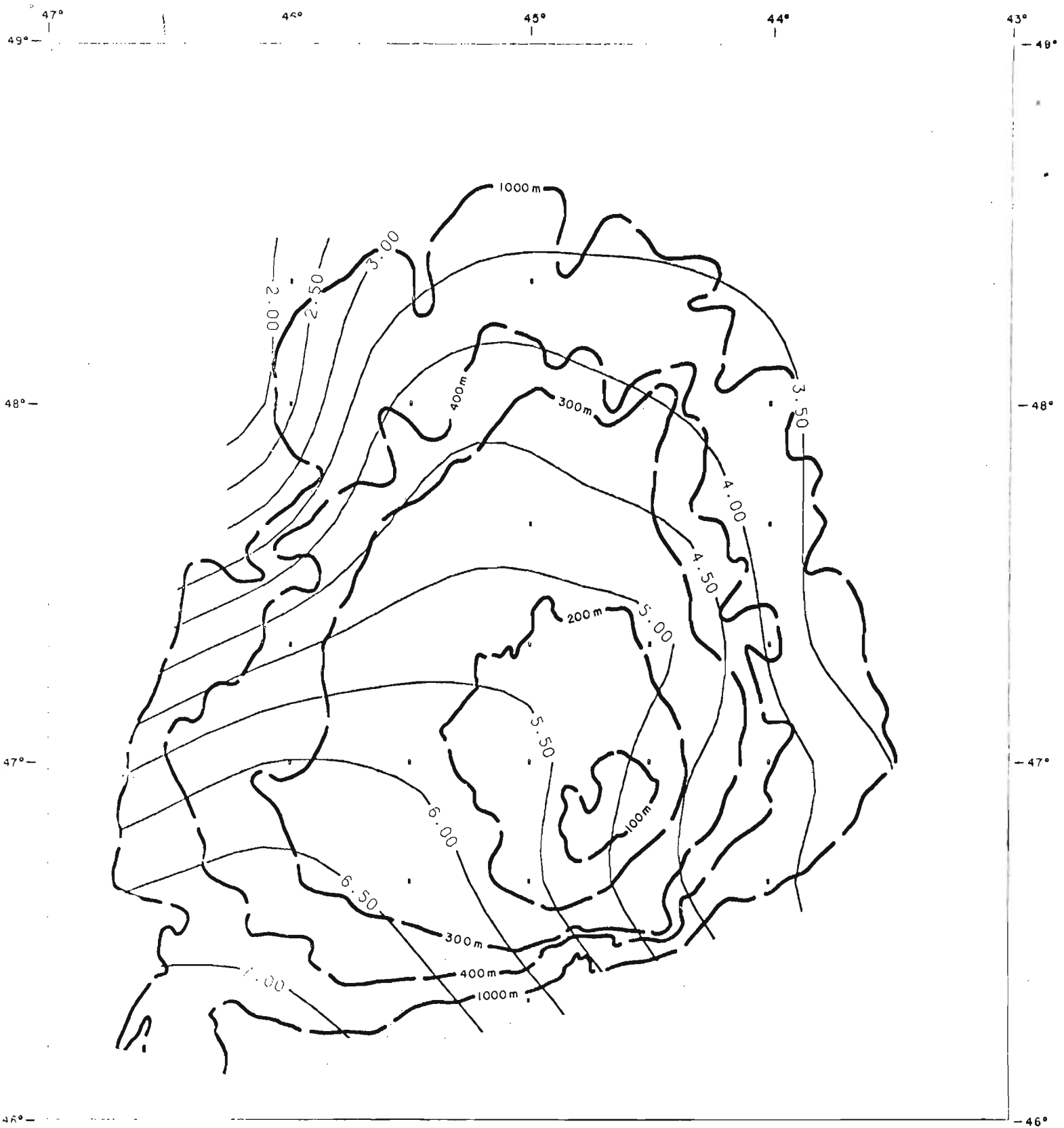


Fig. 66, Temperature contours at 050 meters - GADUS 20B (May 1979).

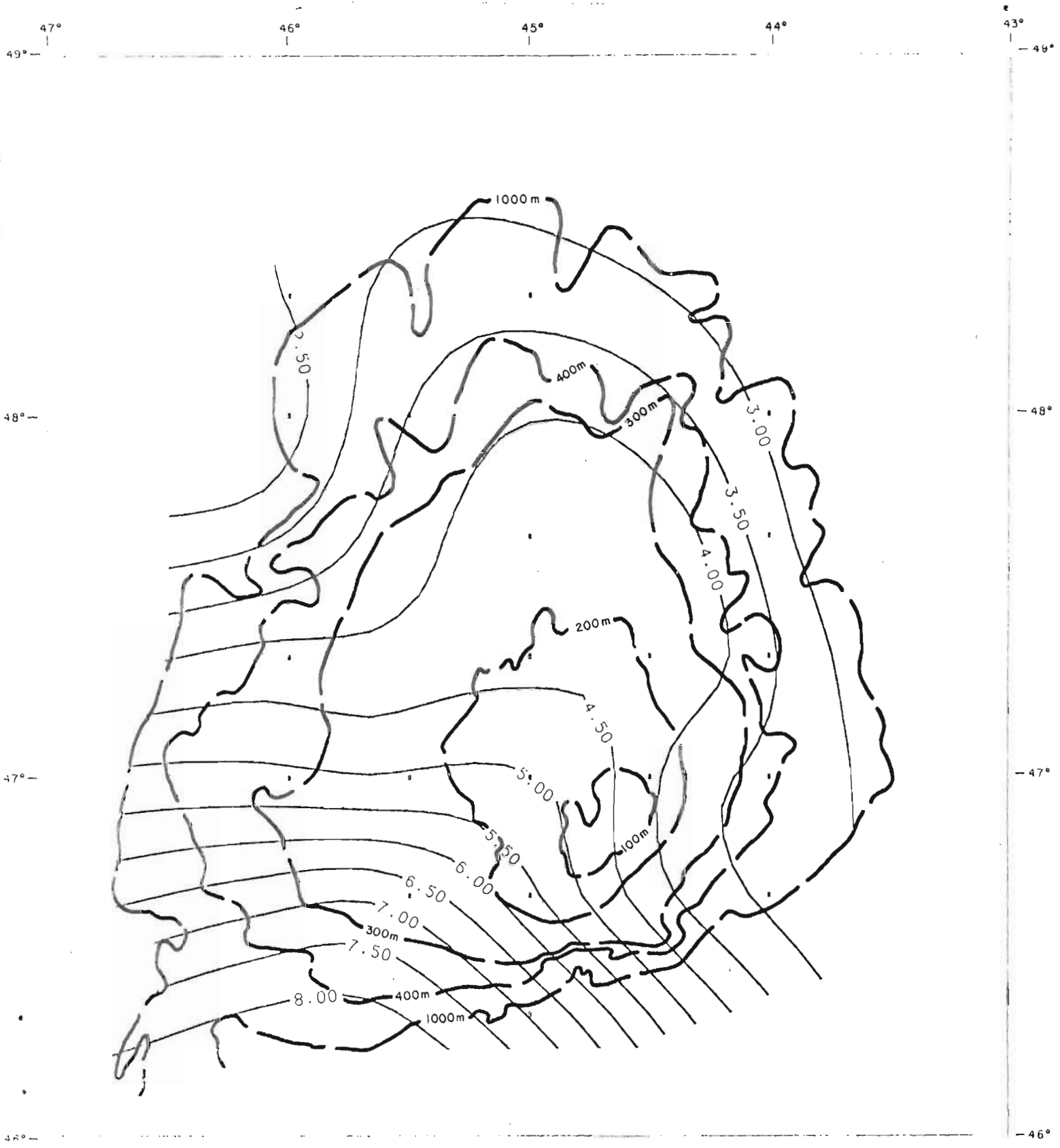


Fig. 67. Temperature contours at 075 meters - GADUS 20B (May 1979).

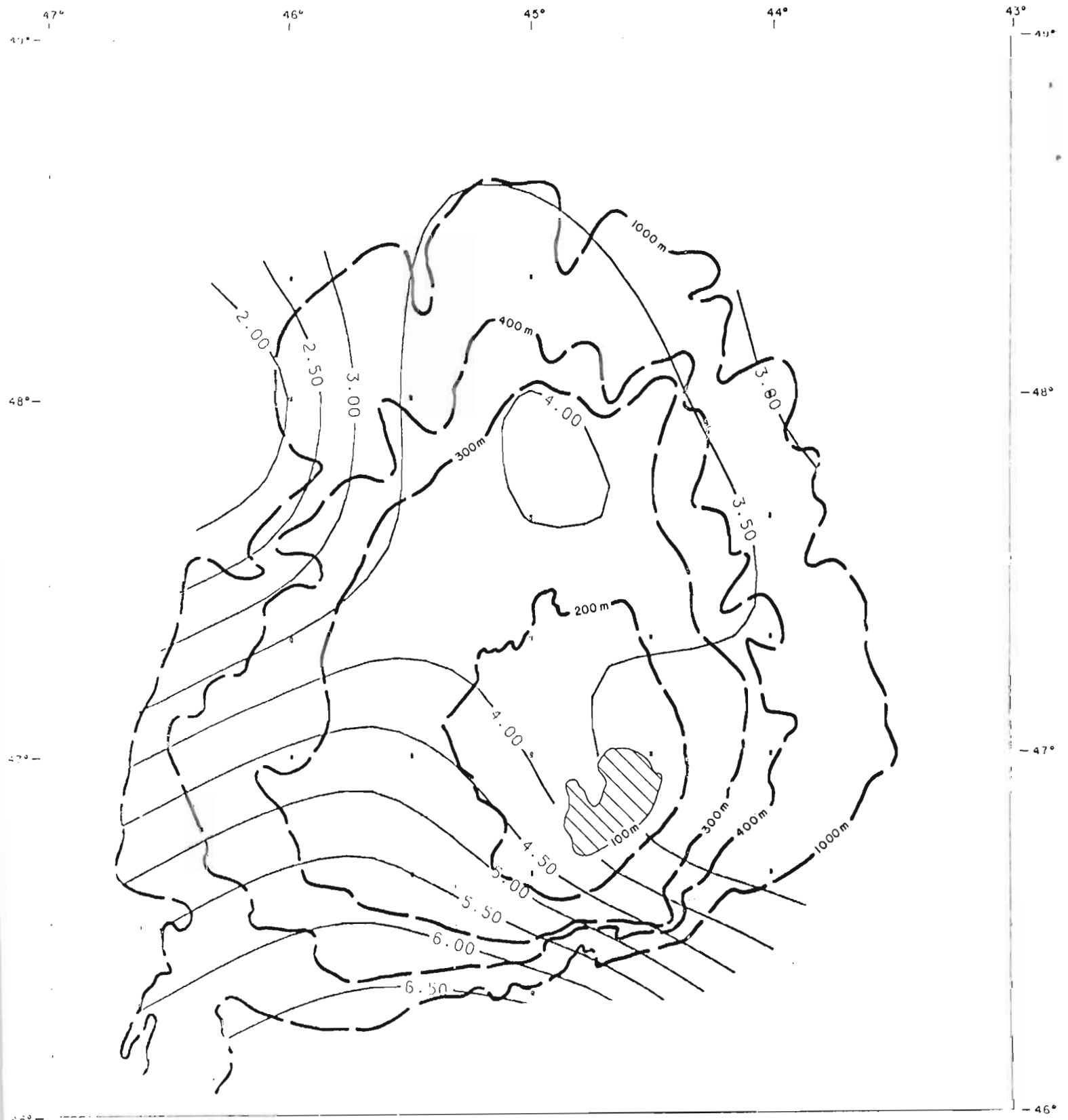


Fig. 68. Temperature contours at 100 meters - GADUS 20B (May 1979).

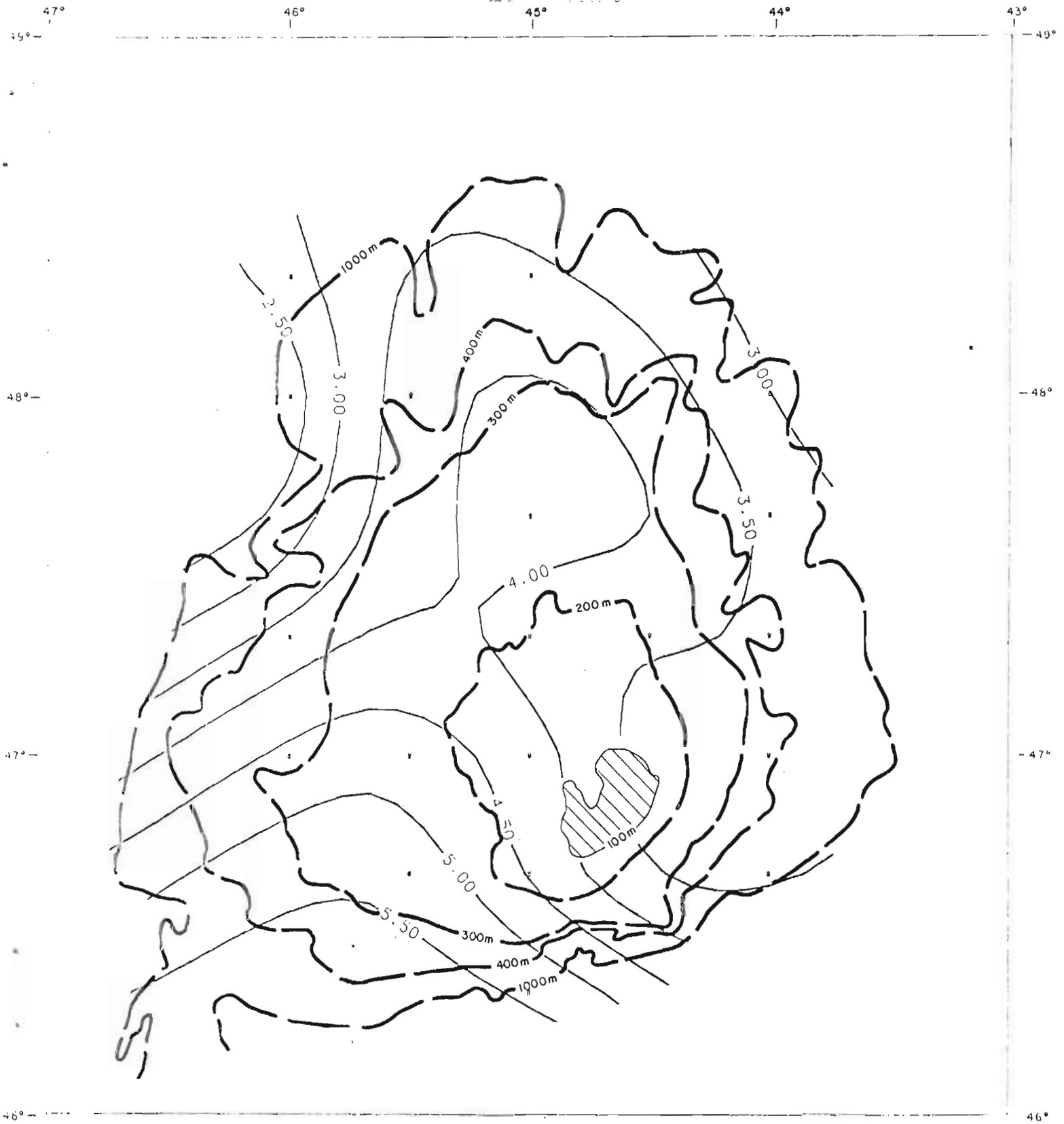


Fig. 69. Temperature contours at 125 meters - GADUS 20B (May 1979).

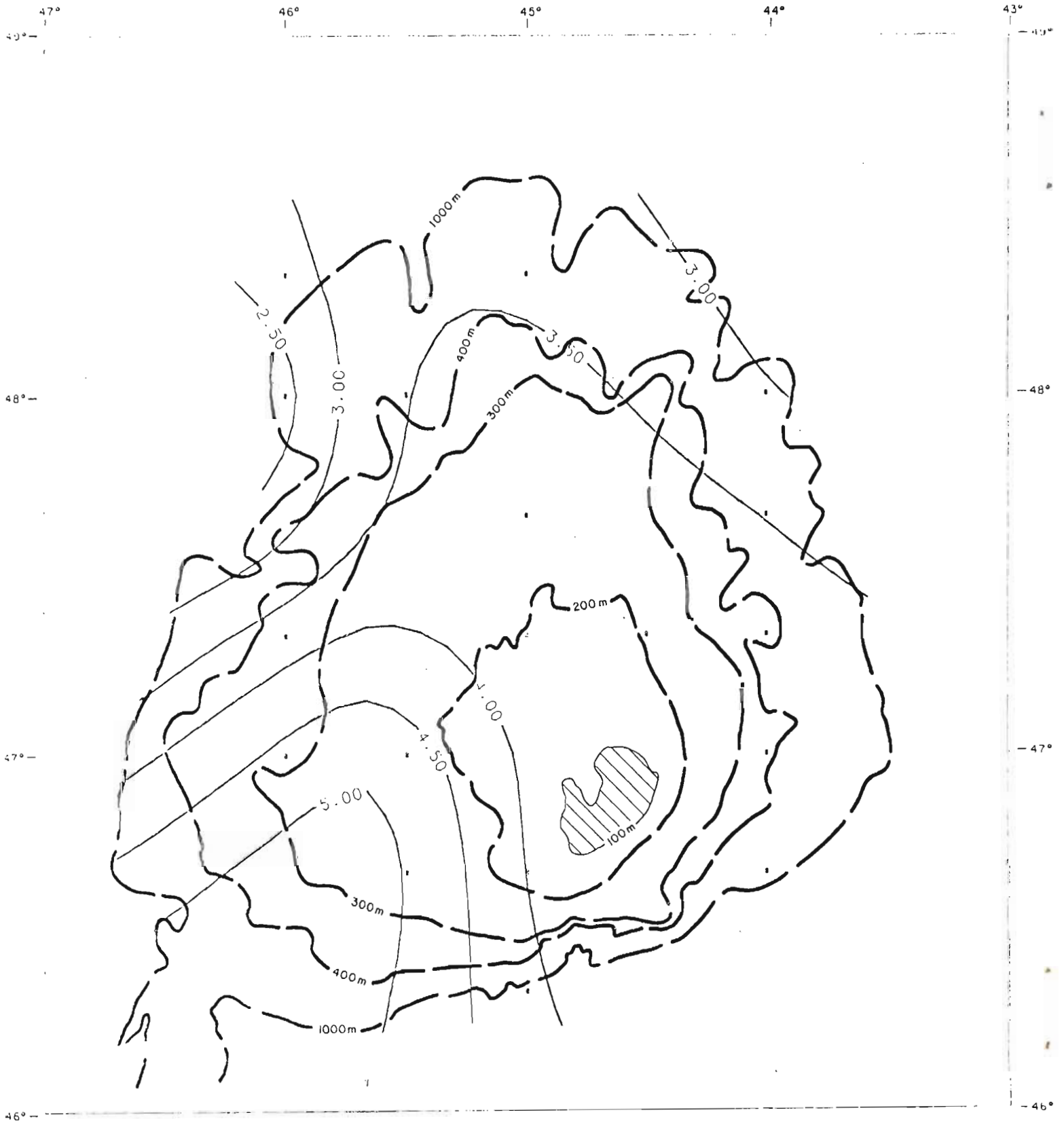


Fig. 70. Temperature contours at 150 meters - GADUS 20B (May 1979).

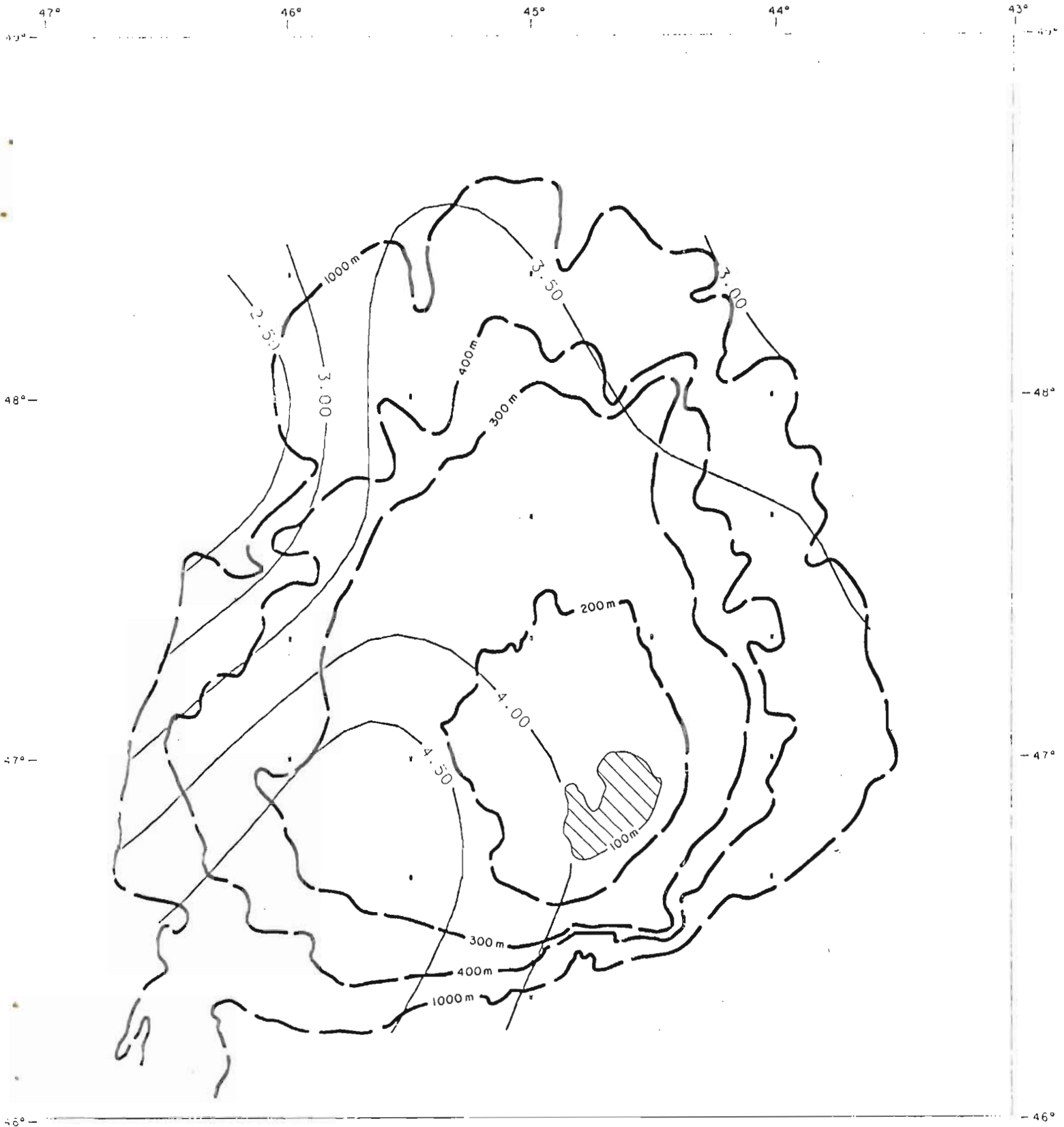


Fig. 71. Temperature contours at 175 meters - GADUS 20B (May 1979).

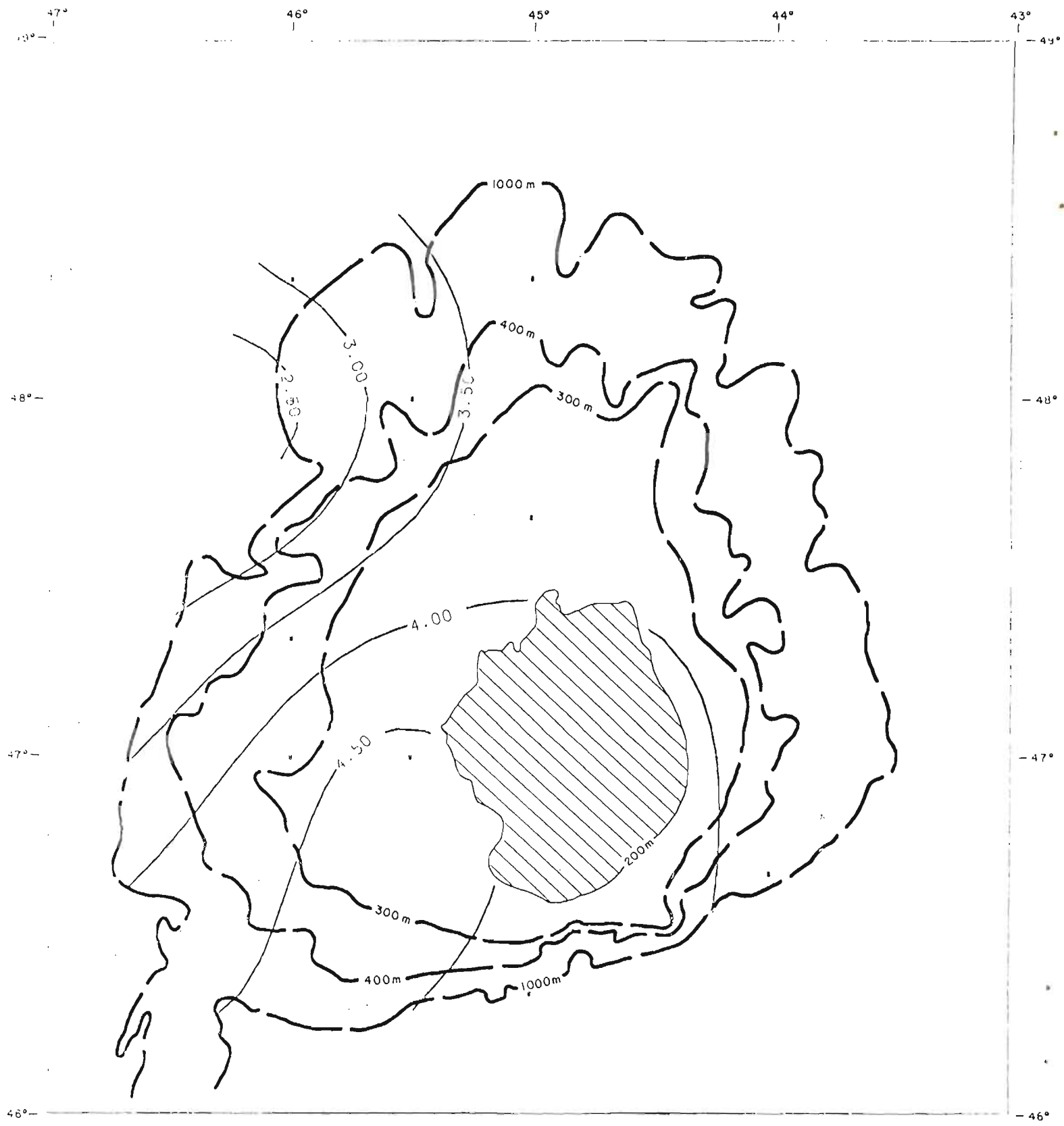


Fig. 72. Temperature contours at 200 meters - GADUS 20B (May 1979).



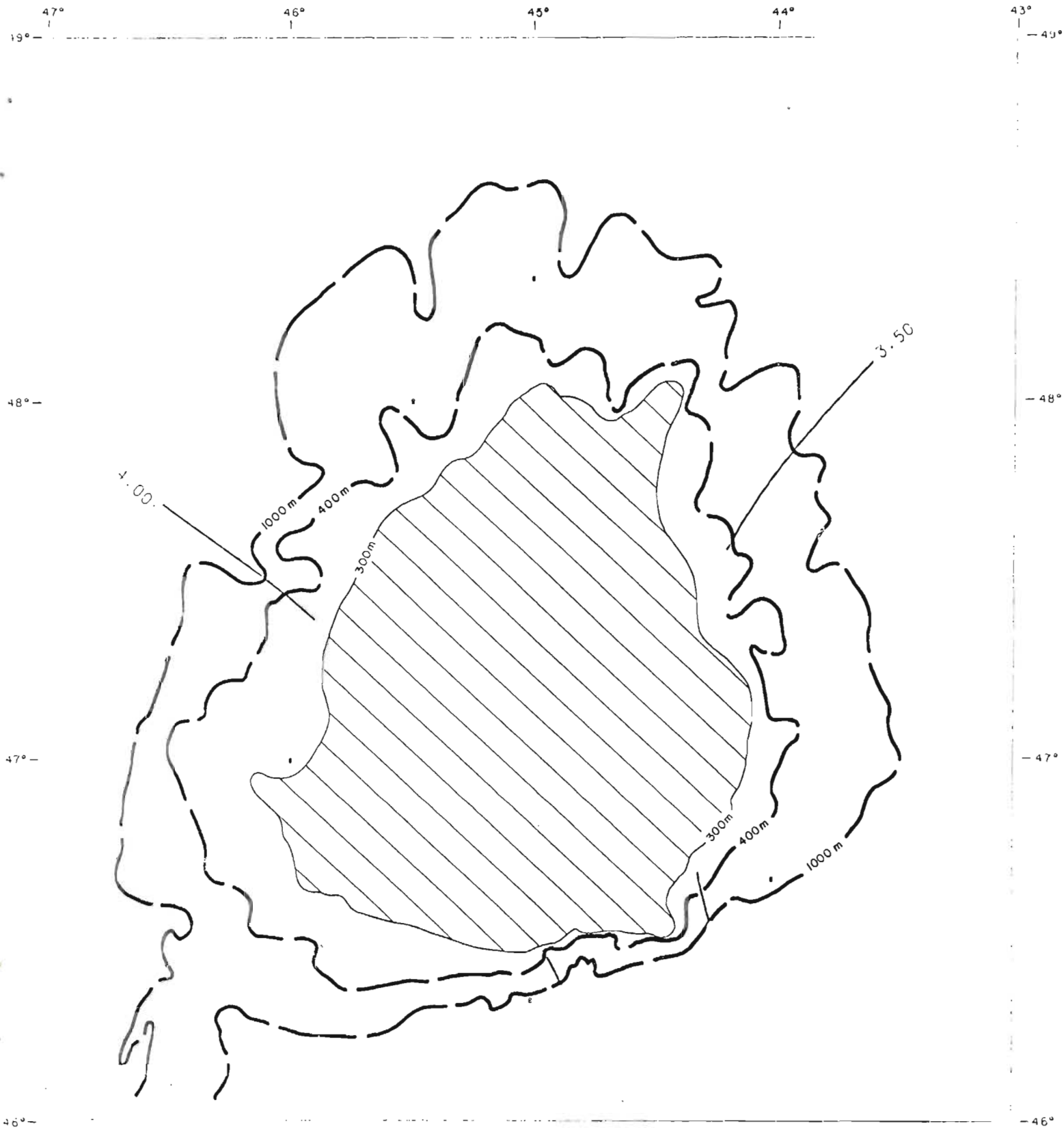


Fig. 73. Temperature contours at 300 meters - GADUS 20B (May 1979).

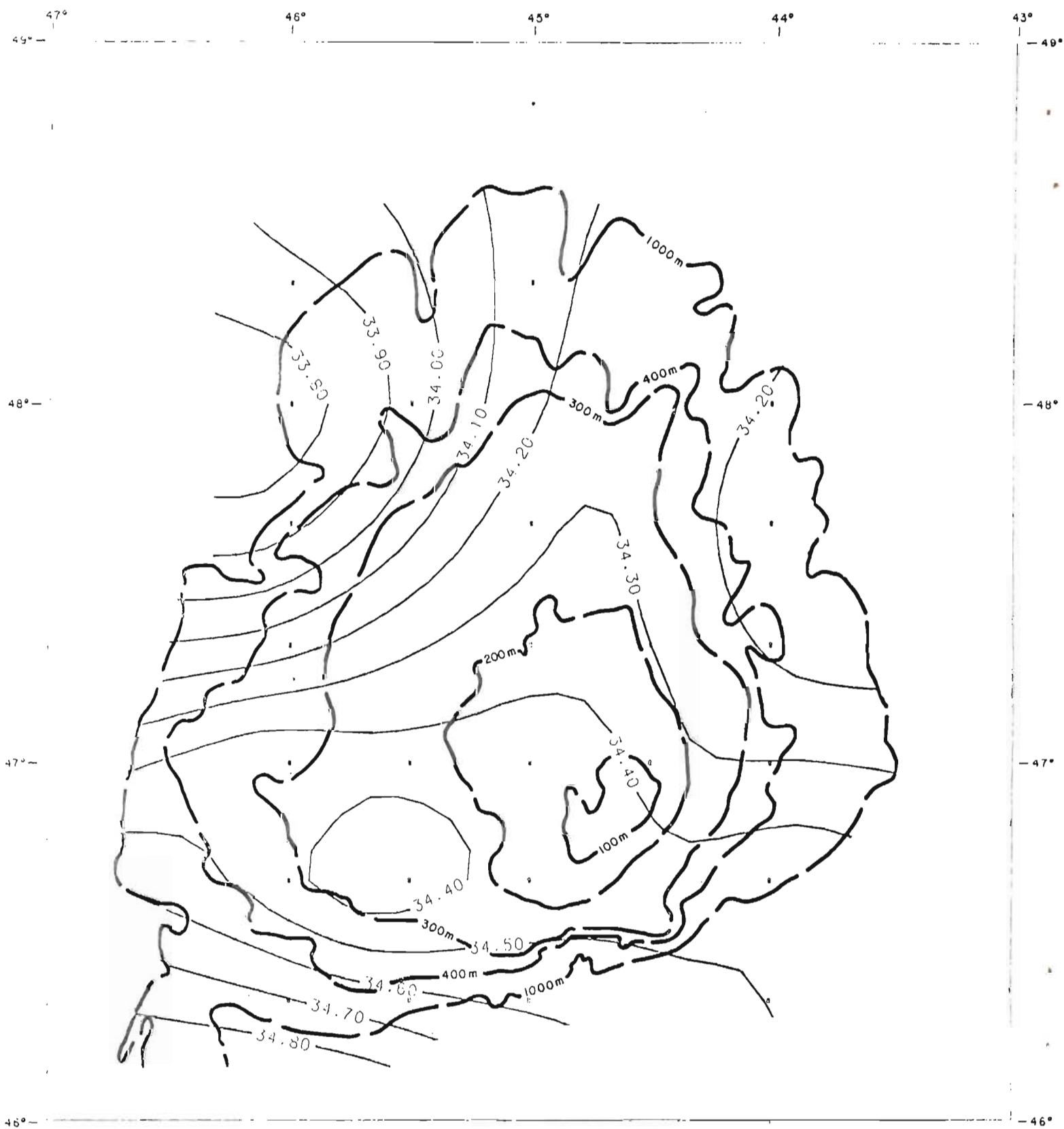


Fig. 74. Salinity contours at 000 meters - GADUS 20B (May 1979).

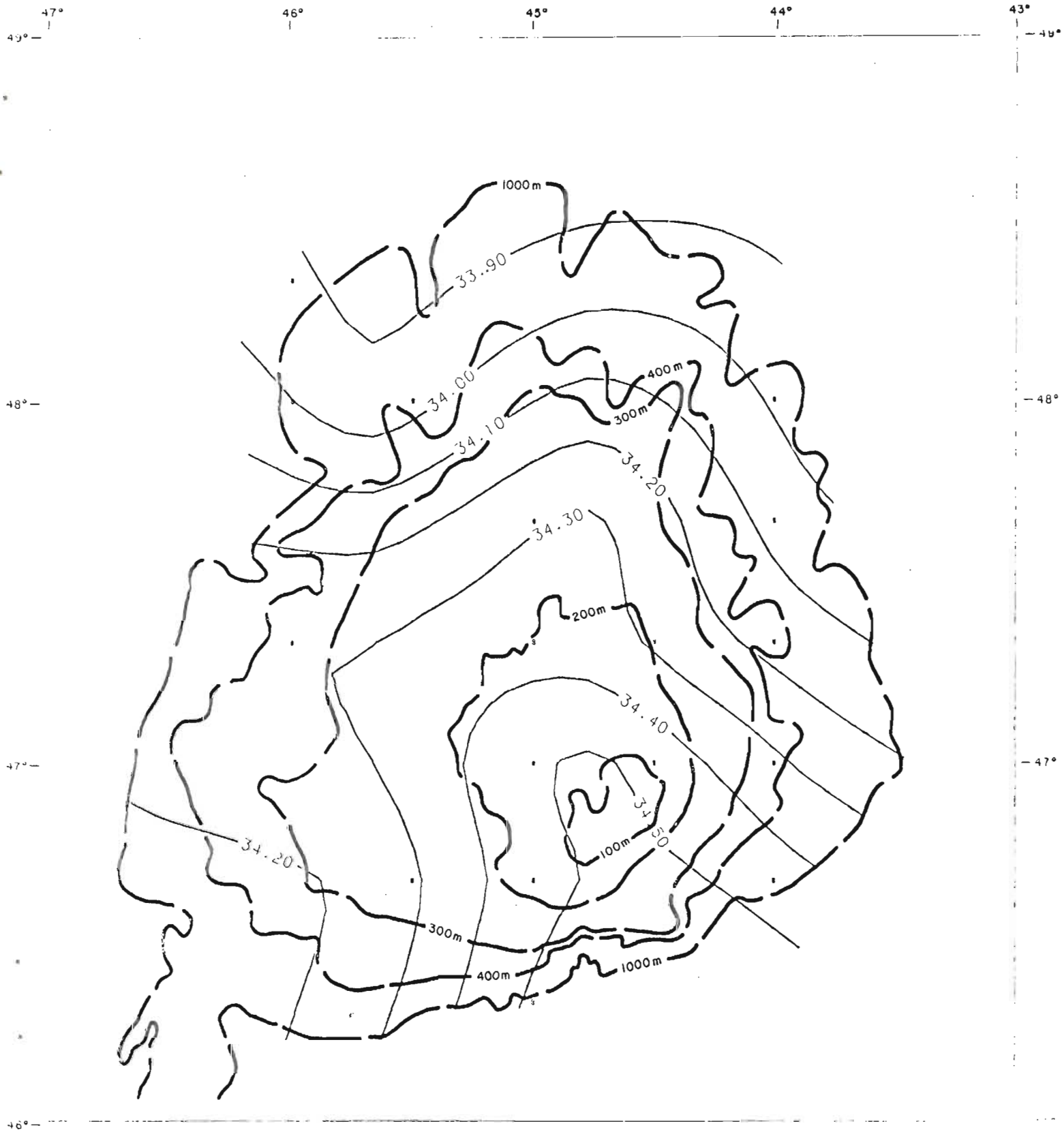


Fig. 75. Salinity contours at 010 meters - GADUS 20B (May 1979).



Fig. 76. Salinity contours at 020 meters - GADUS 20B (May 1979).

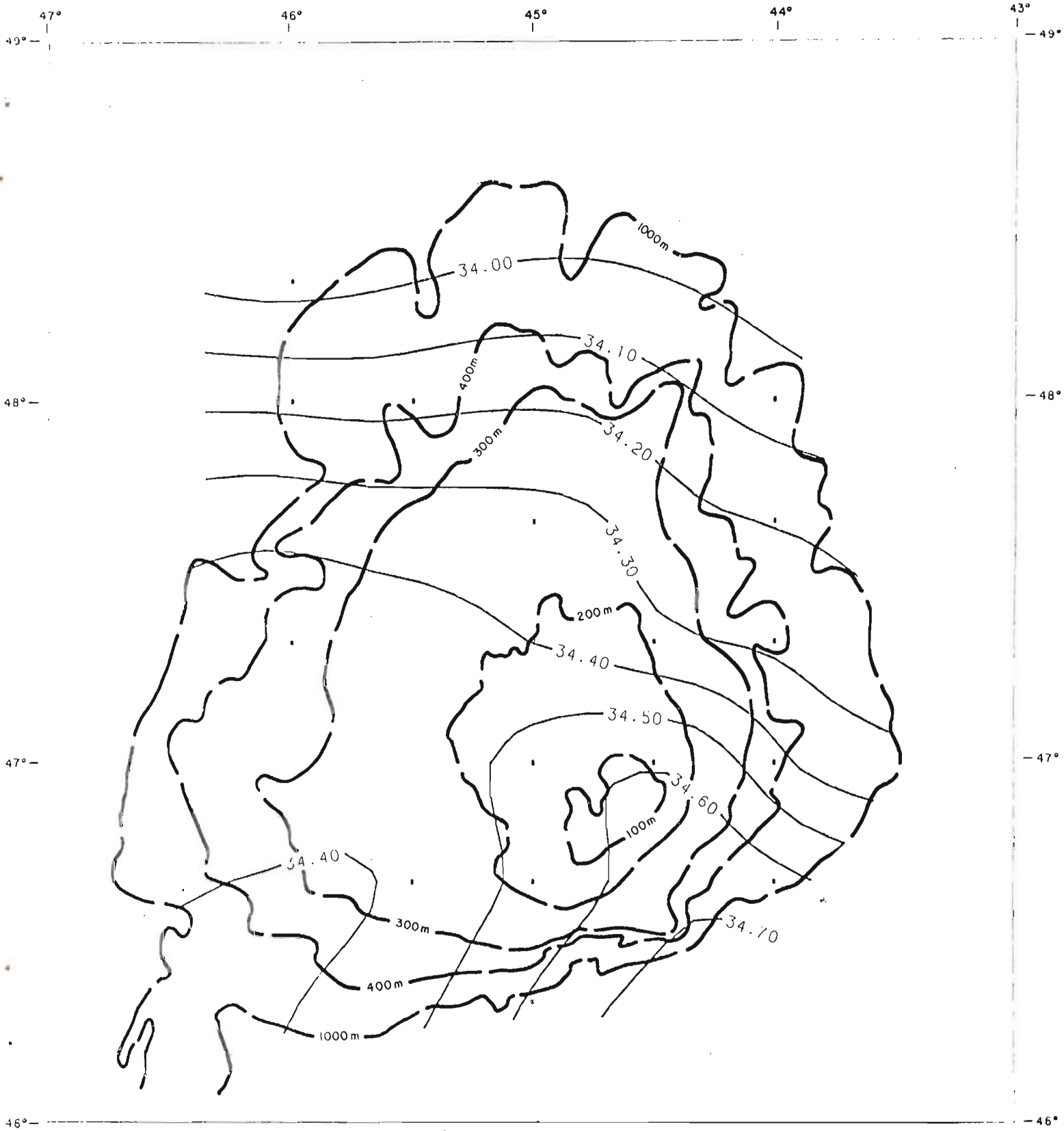


Fig. 77. Salinity contours at 030 meters - GADUS 20B (May 1979).

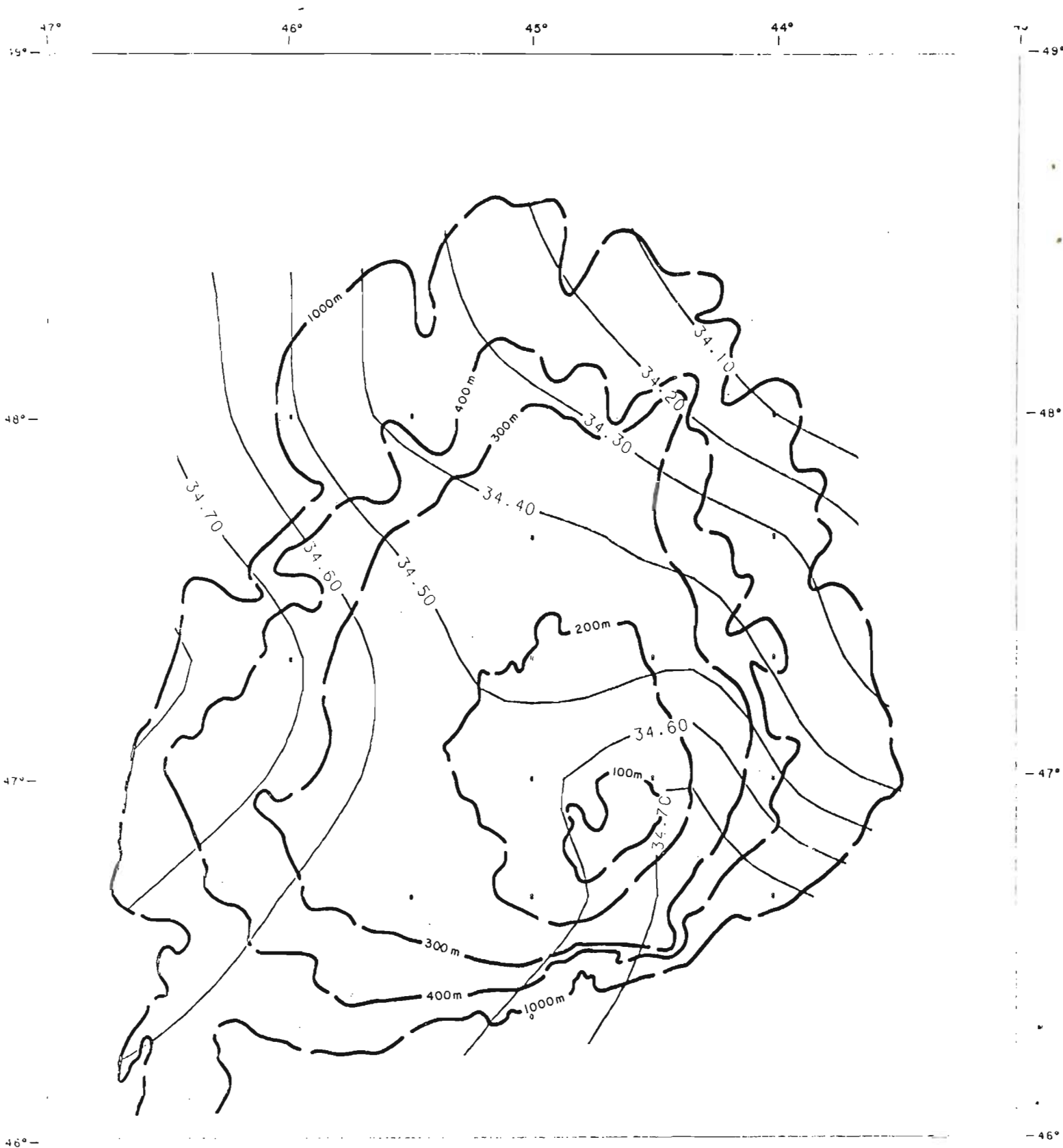


Fig. 78. Salinity contours at 050 meters - GADUS 20B (May 1979).



Fig. 79. Salinity contours at 075 meters - GADUS 20B (May 1979).

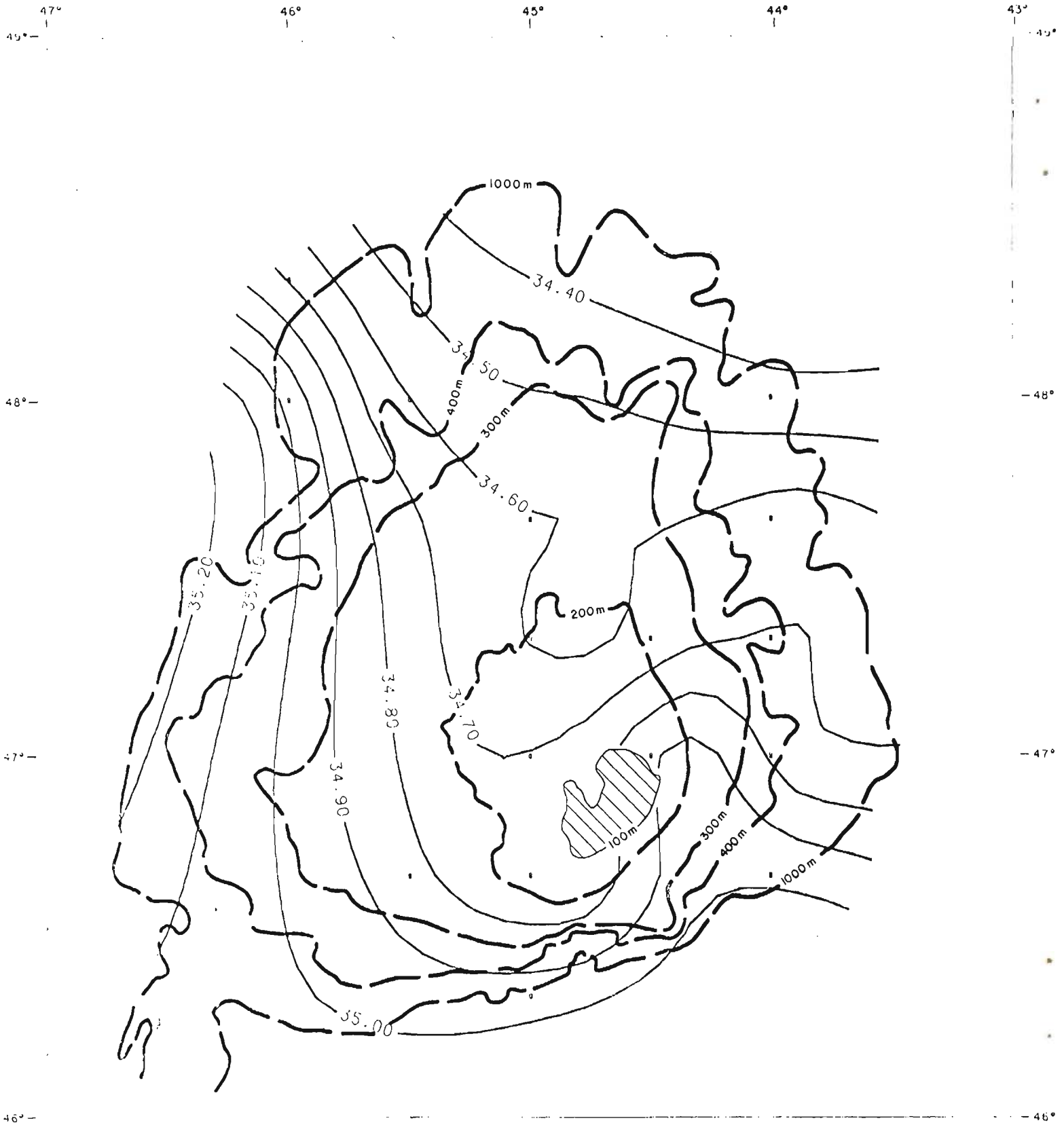


Fig. 80. Salinity contours at 100 meters - GADUS 20B (May 1979).



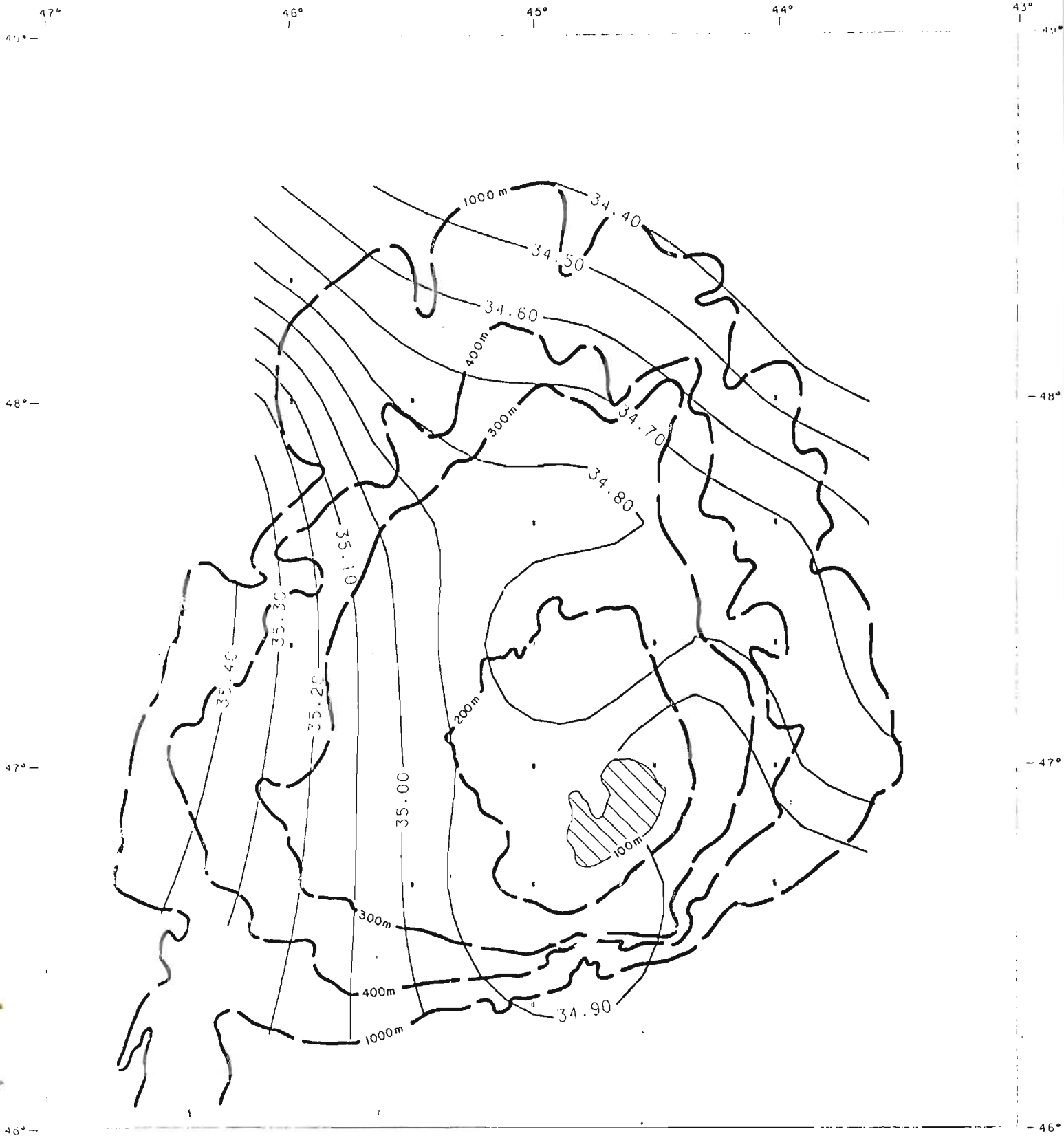


Fig. 81. Salinity contours at 125 meters - GADUS 20B (May 1979).

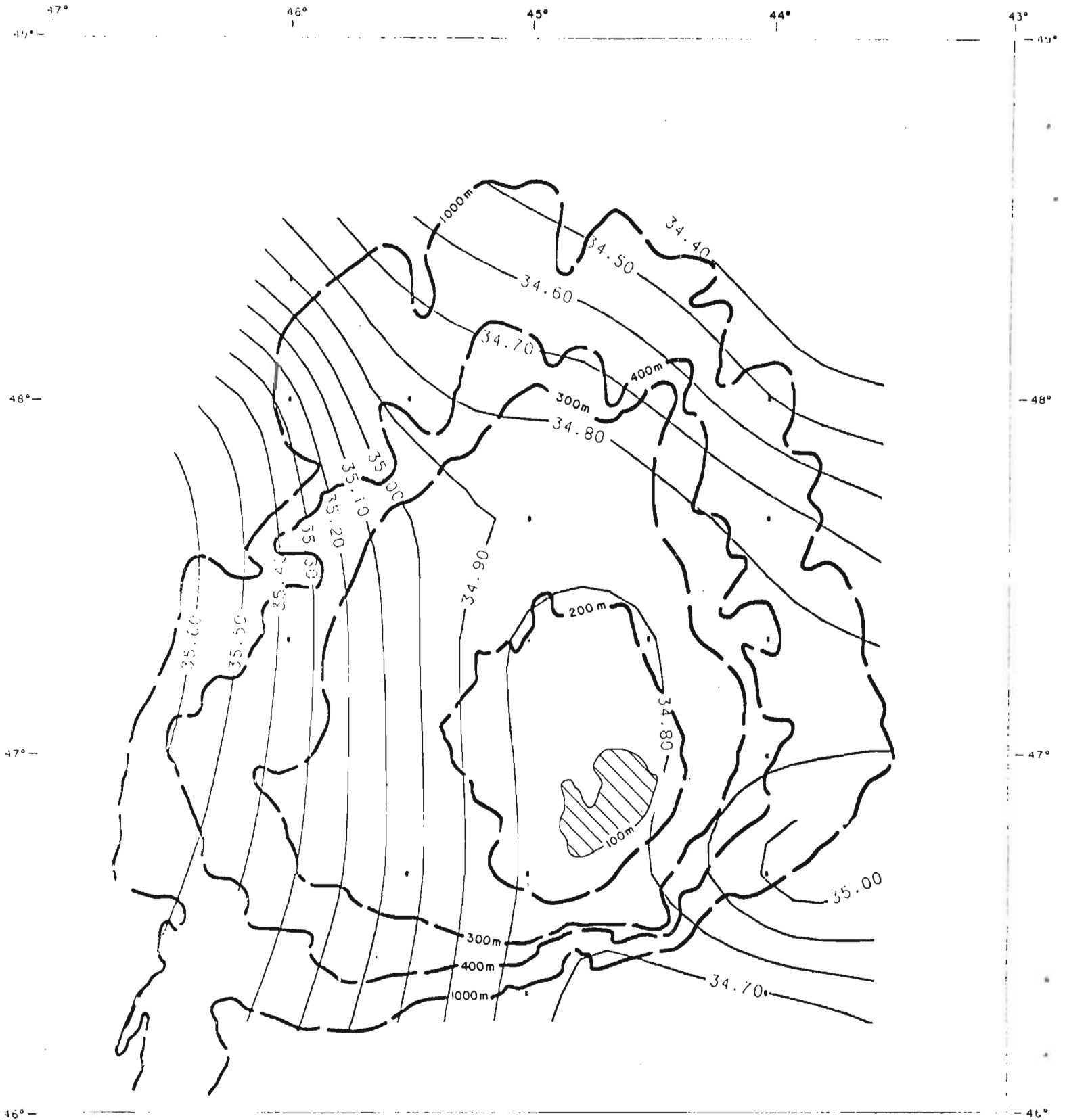


Fig. 82. Salinity contours at 150 meters - GADUS 20B (May 1979).

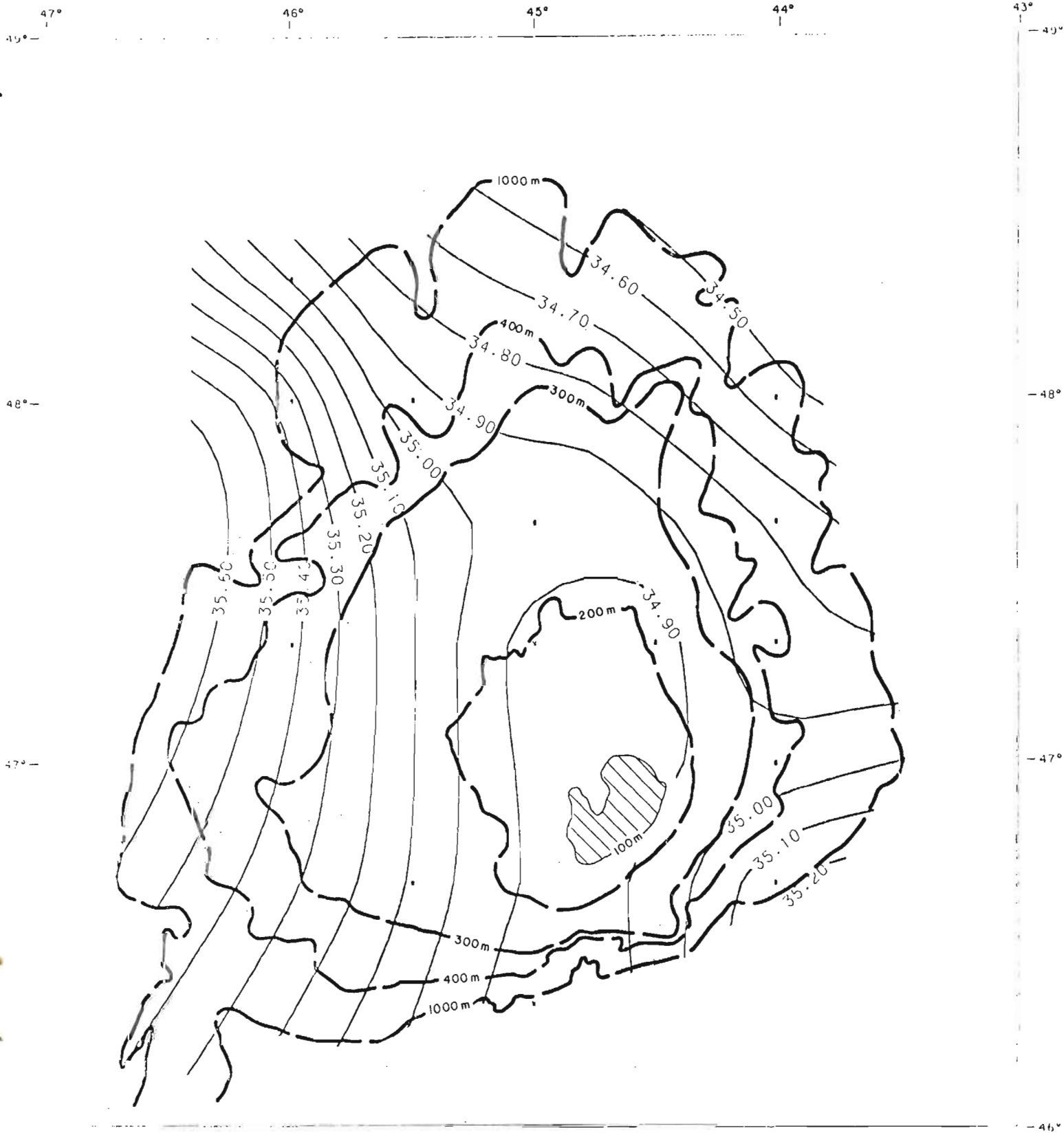


Fig. 83. Salinity contours at 175 meters - GADUS 20B (May 1979).

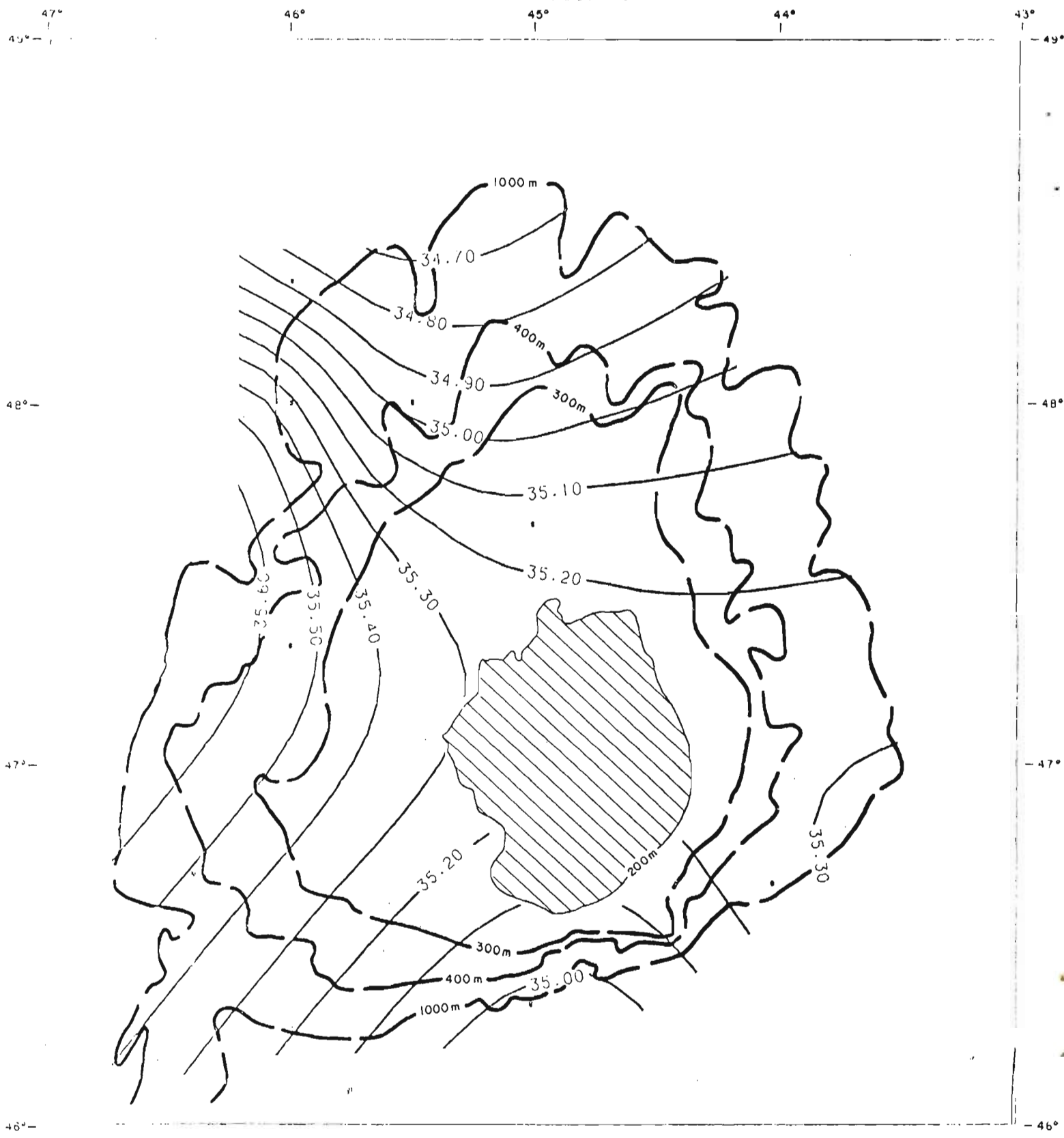


Fig. 84. Salinity contours at 200 meters - GADUS 20B (May 1979).

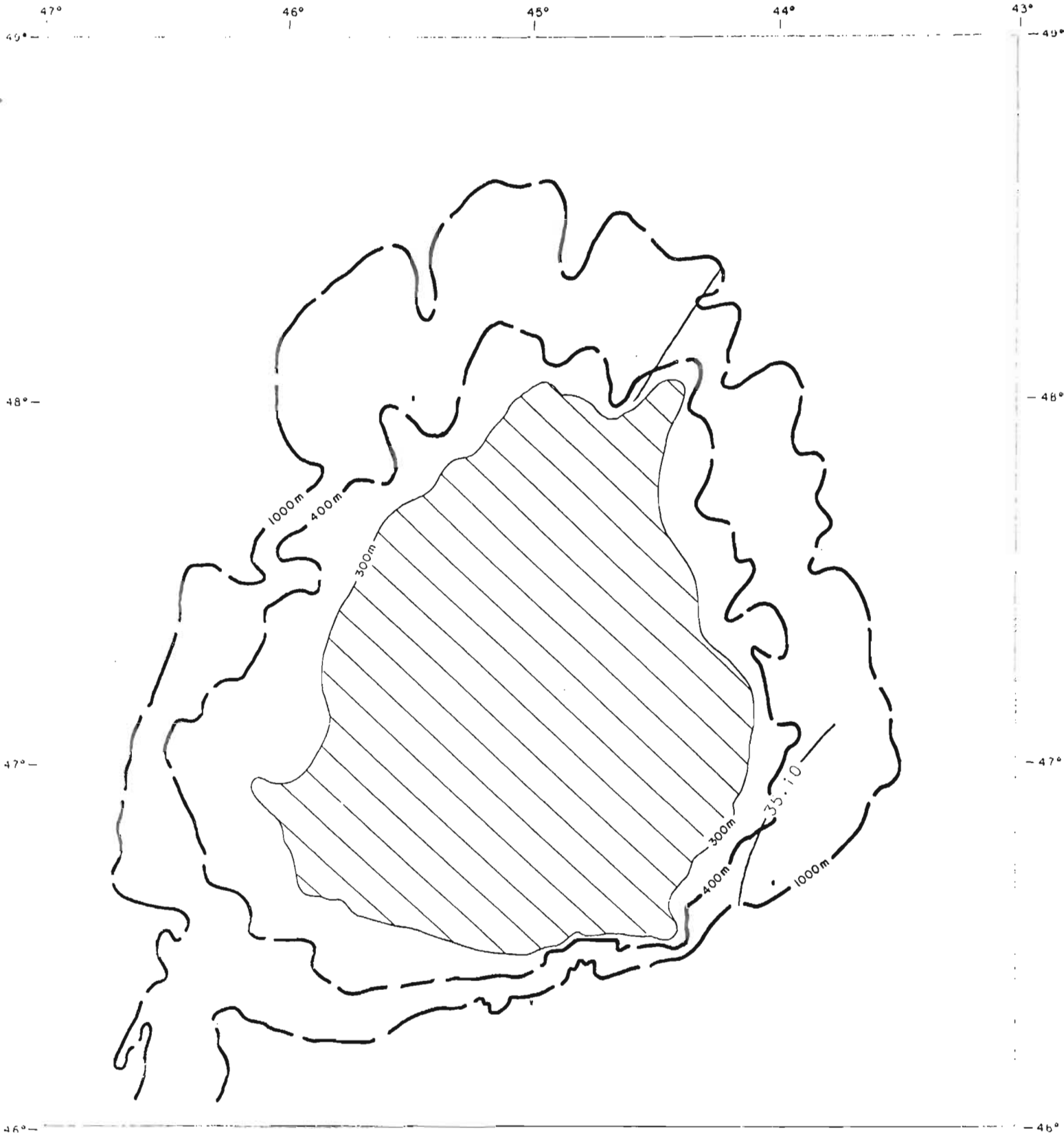


Fig. 85. Salinity contours at 300 meters - GADUS 20B (May 1979).

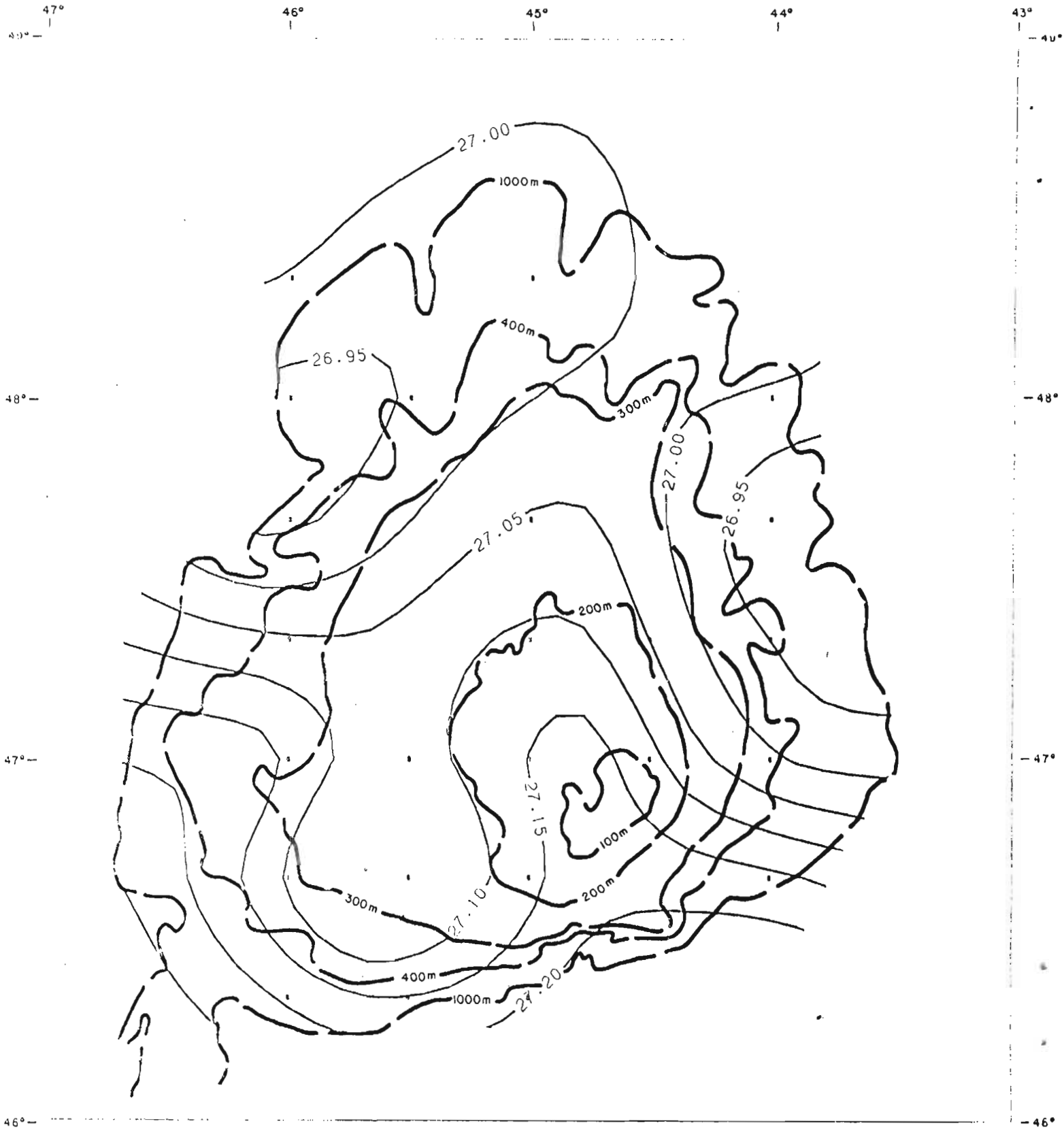


Fig. 86. Density contours at 000 meters - GADUS 20B (May 1979).

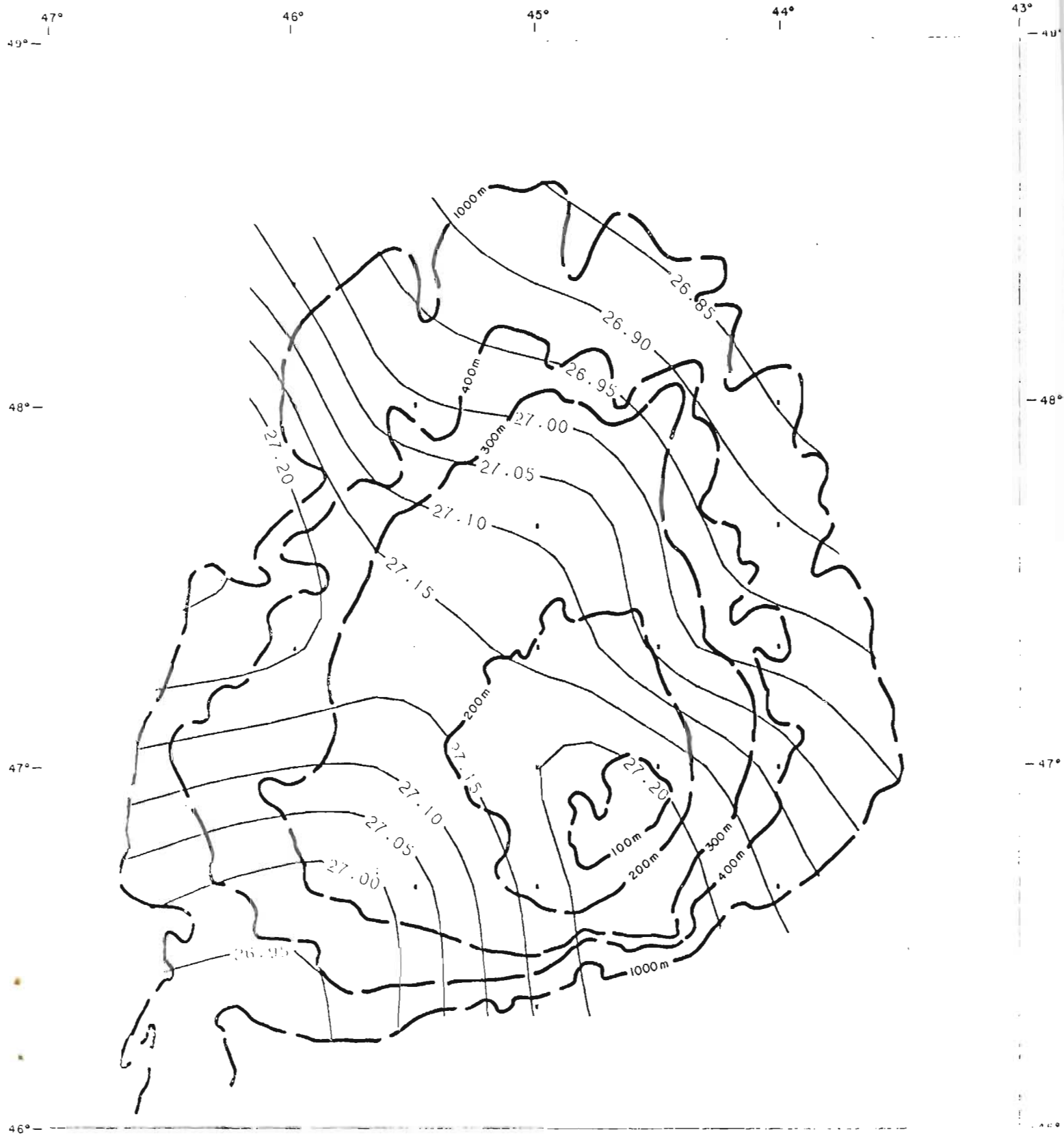


Fig. 87. Density contours at 010 meters - GADUŠ 20B (May 1979).

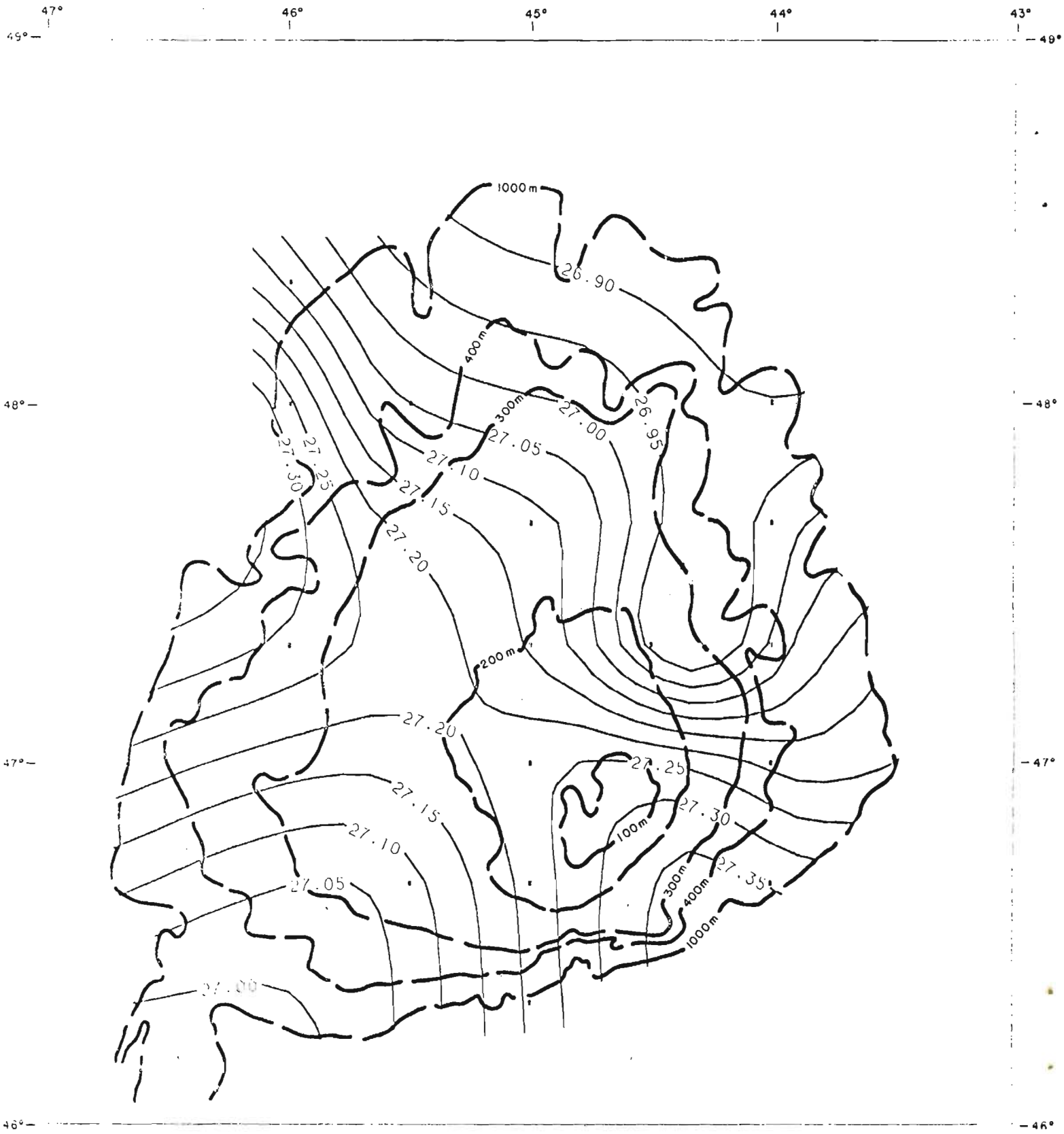


Fig. 88. Density contours at 020 meters - GADUS 20B (May 1979).



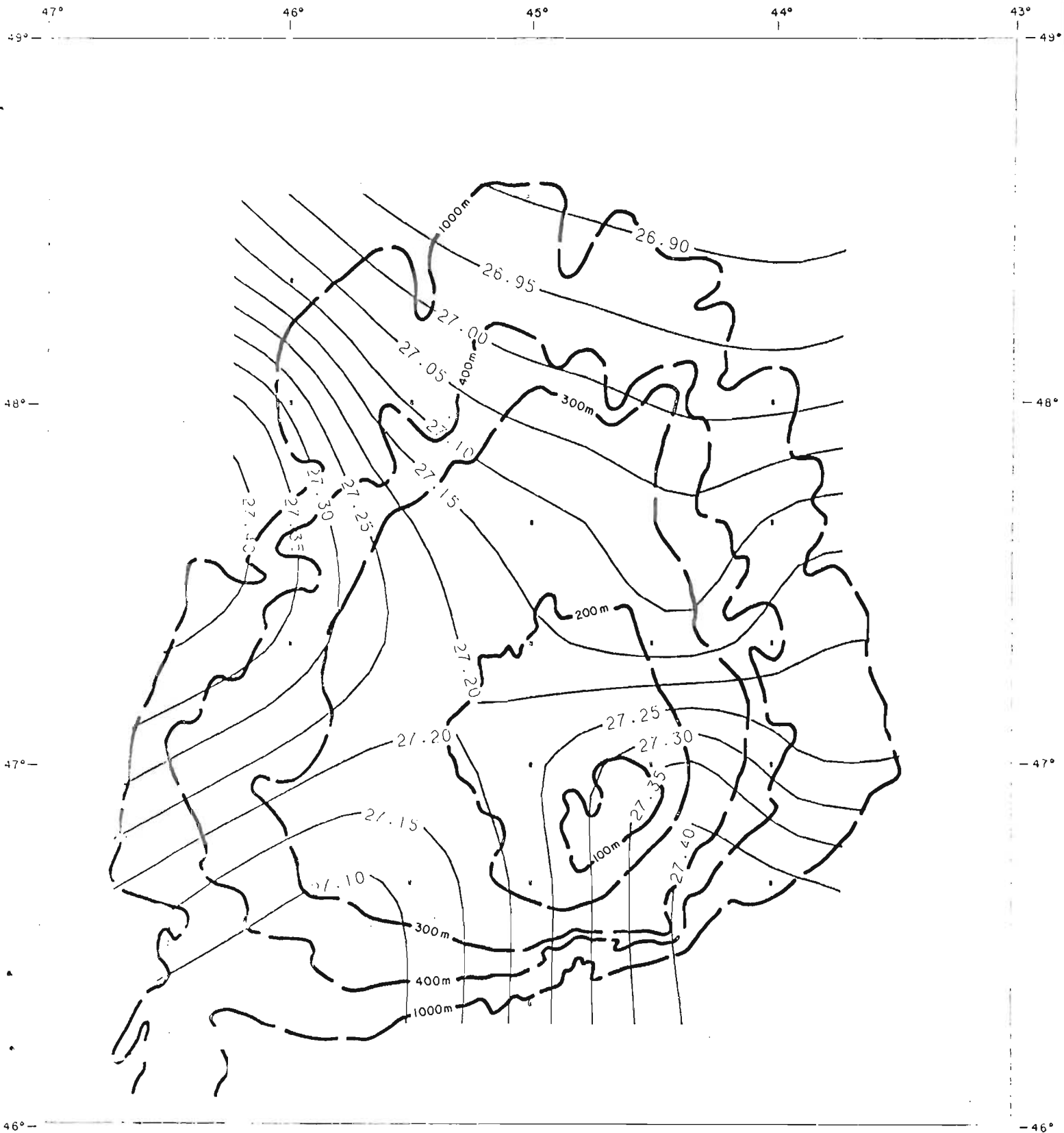


Fig. 89. Density contours at 030 meters - GADUS 20B (May 1979).

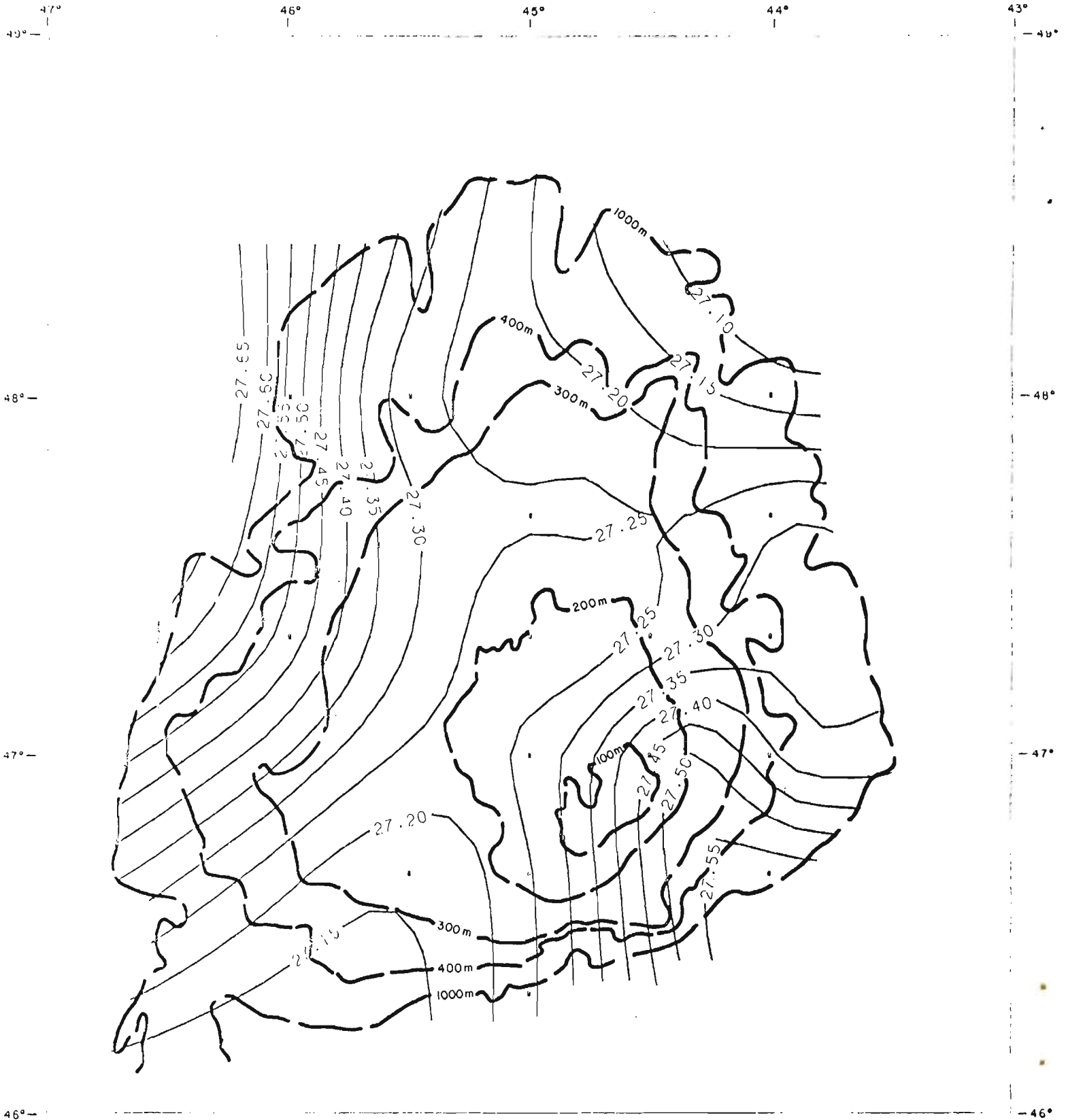


Fig. 90. Density contours at 050 meters - GADUS 20B (May 1979).

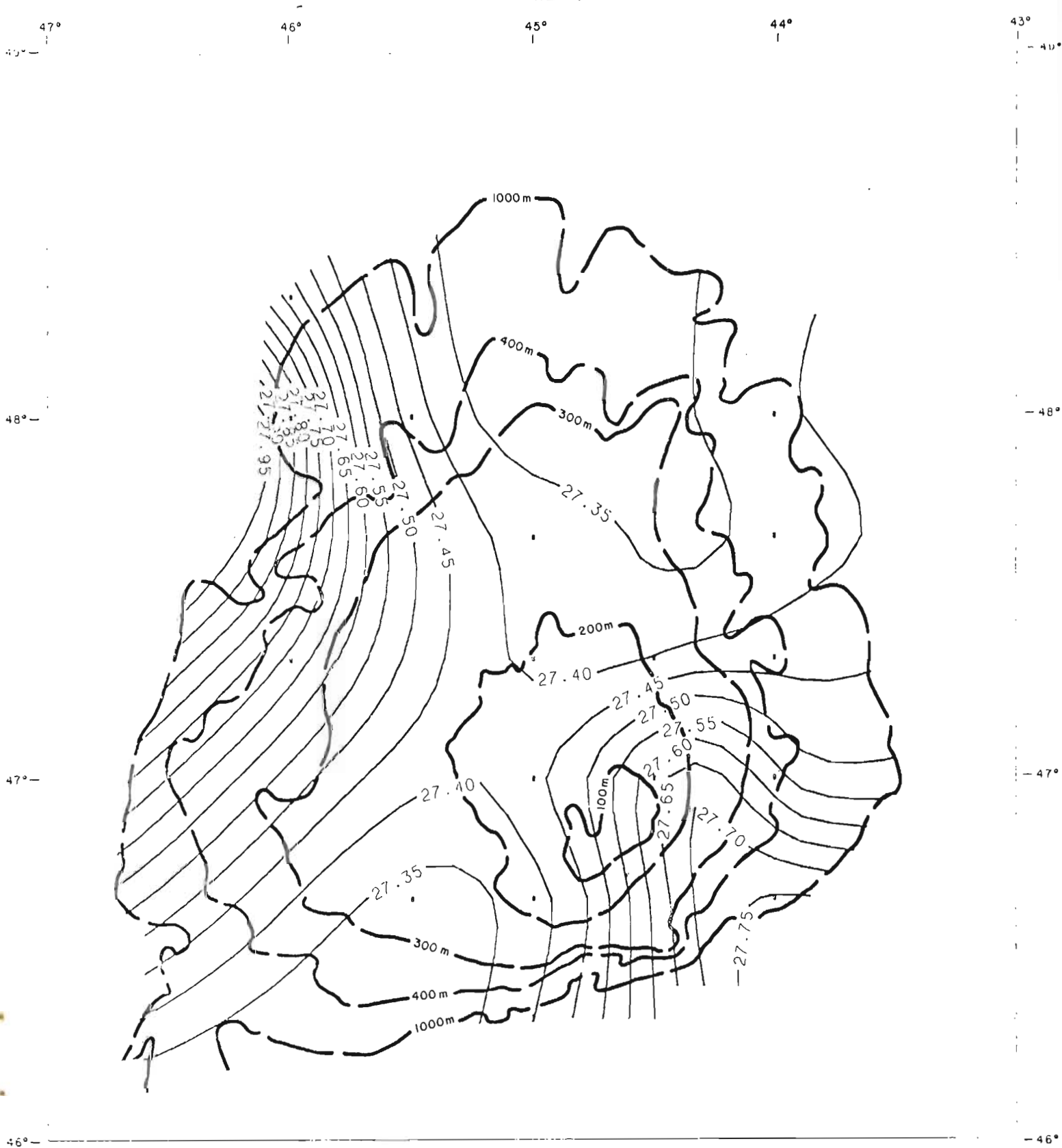


Fig. 91. Density contours at 075 meters - GADUS 20B (May 1979).

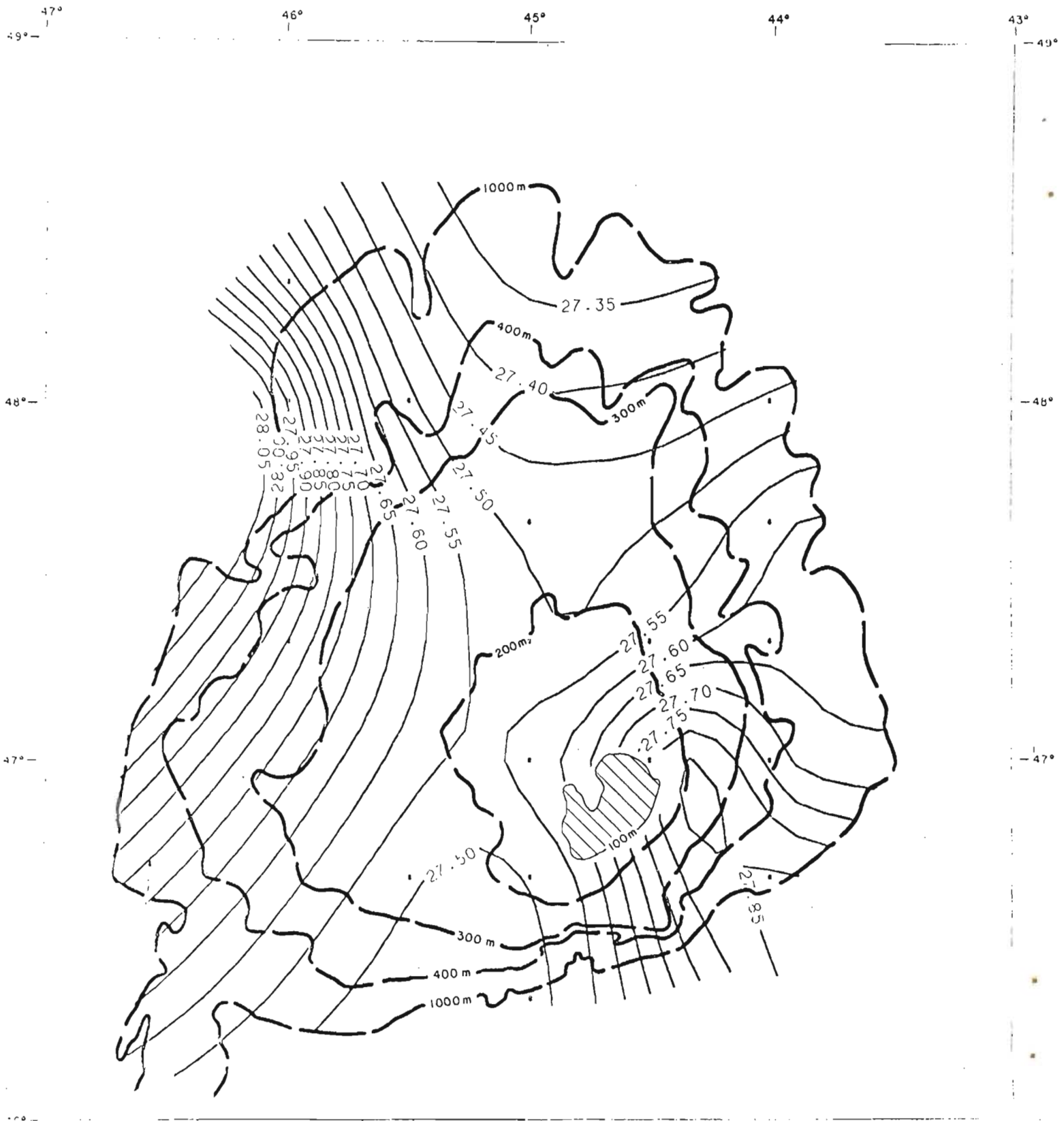


Fig. 92. Density contours at 100 meters - GADUS 20B (May 1979).

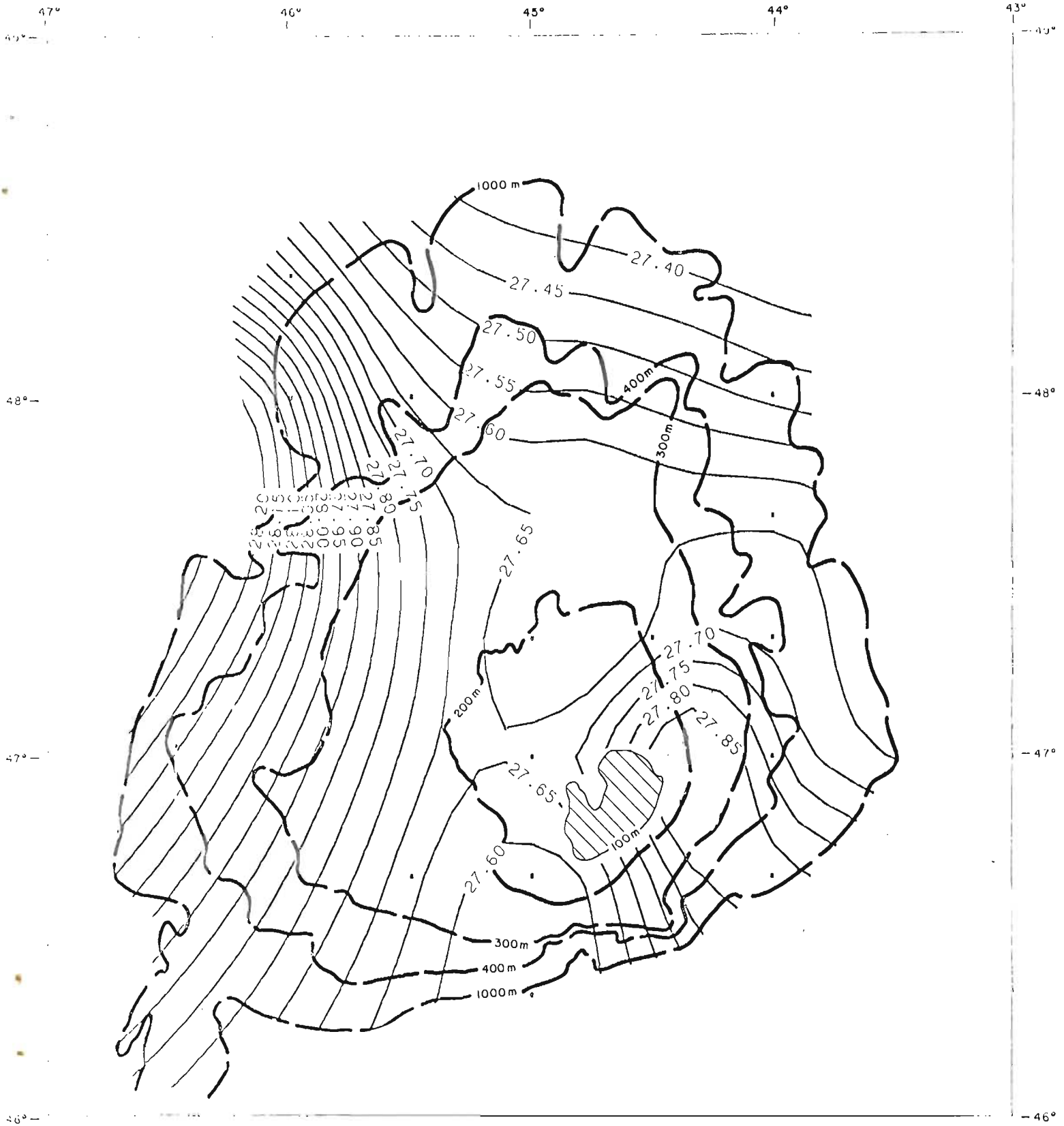


Fig. 93. Density contours at 125 meters - GADUS 20B (May 1979).

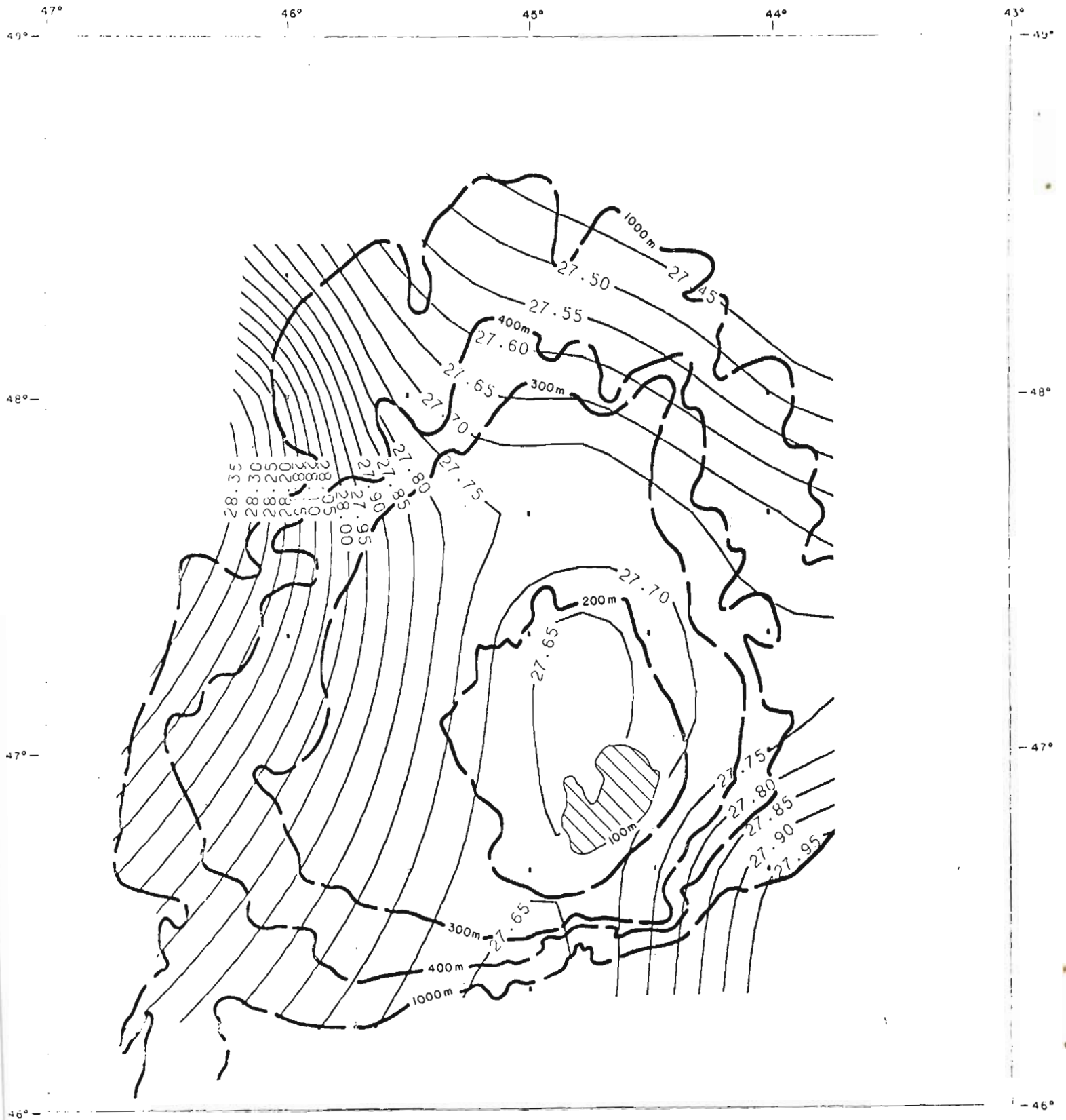


Fig. 94. Density contours at 150 meters - GADUS 20B (May 1979).

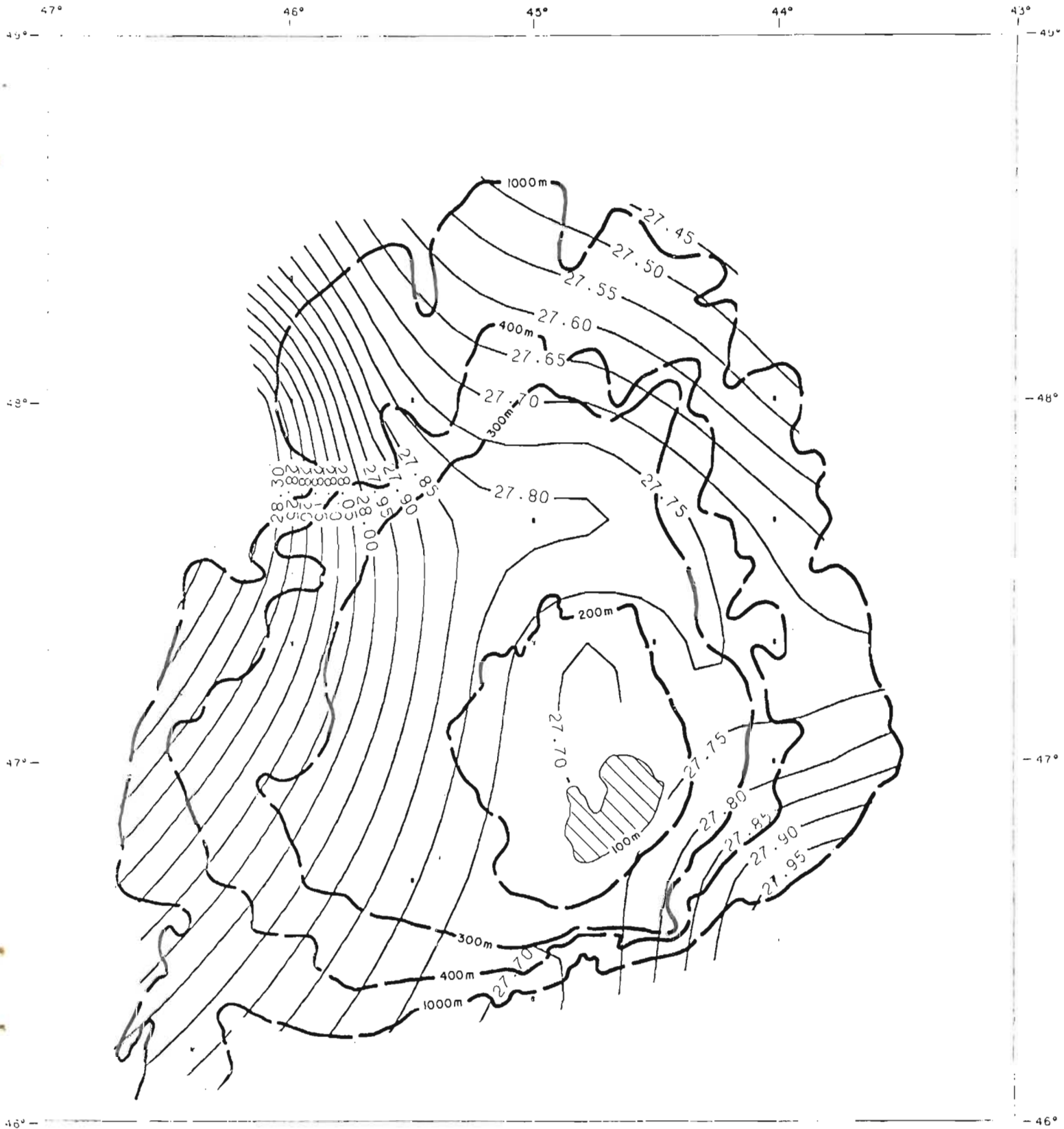


Fig. 95. Density contours at 175 meters - GADUS 20B (May 1979).

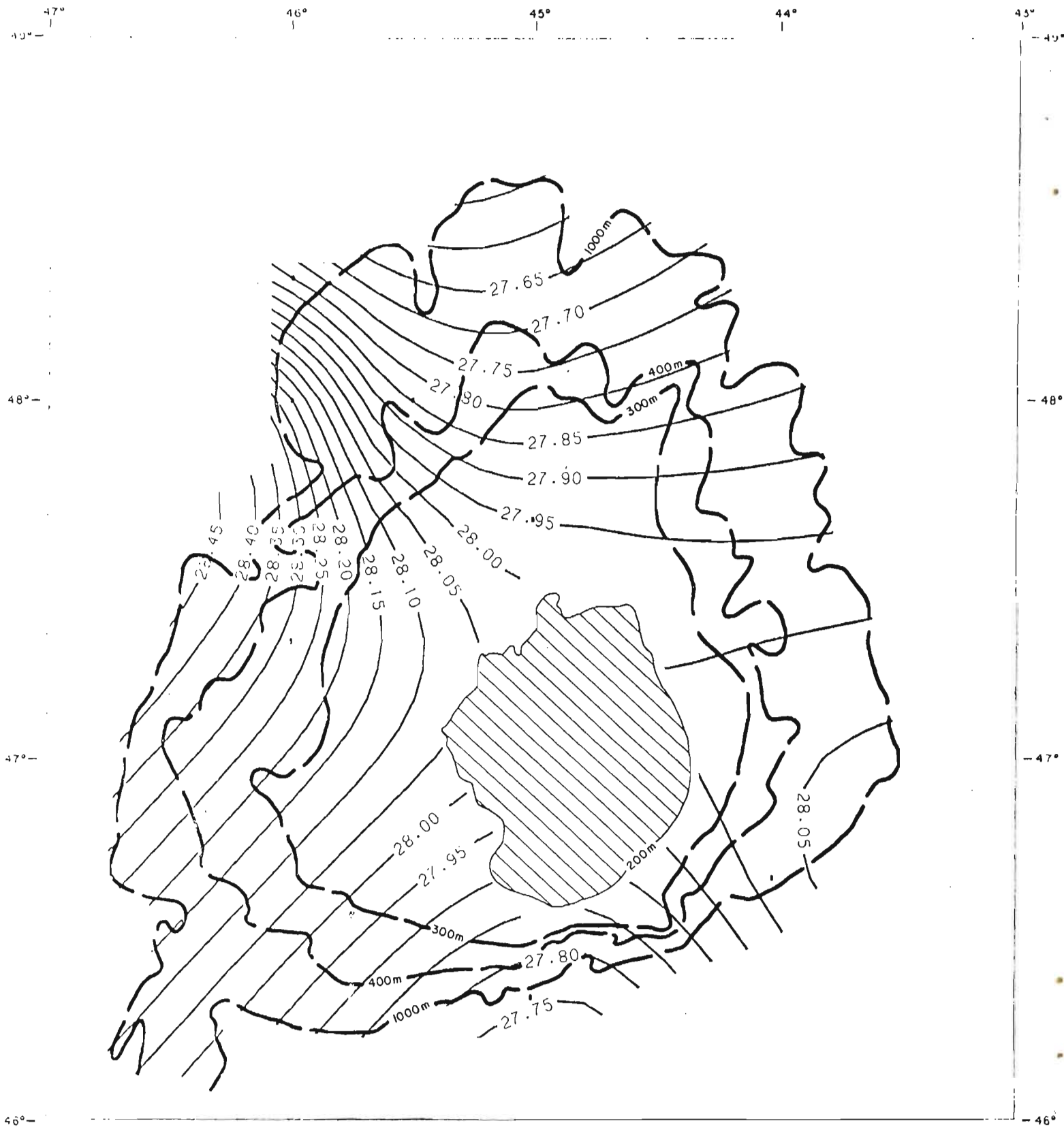


Fig. 96. Density contours at 200 meters - GADUS 20B (May 1979).



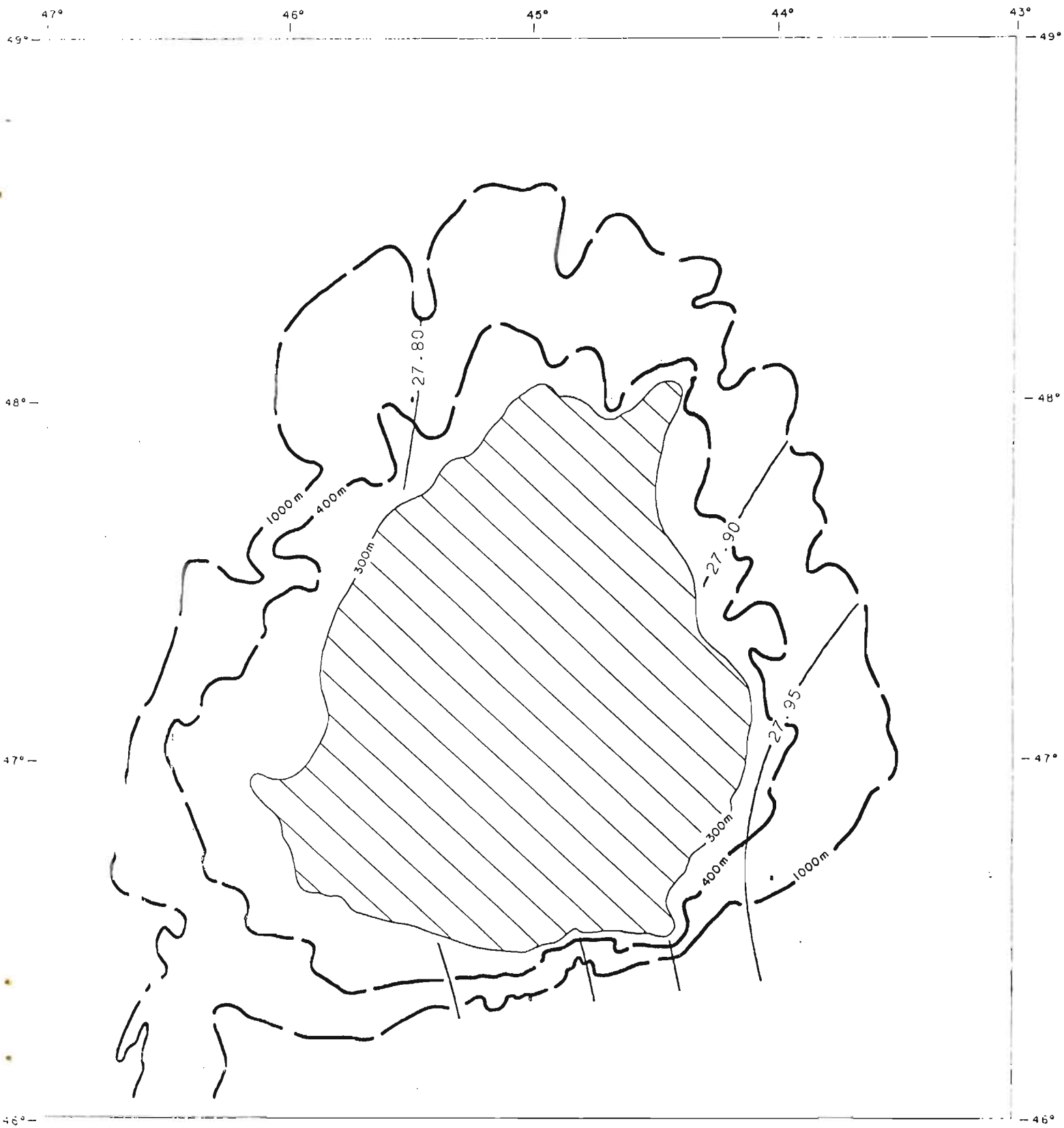


Fig. 97. Density contours at 300 meters - GADUS 20B (May 1979).

APPENDIX 1: OCEANOGRAPHIC DATA FROM 'FLEMISH CAP  
 PLANKTON GRID' STATIONS OCCUPIED DURING 19-25 MARCH 1979

CRUISE: GADUS 19  
 DATES : 19-25 MARCH 1979

| <u>LATITUDE</u> | <u>LONGITUDE</u> | <u>DEPTH</u> | <u>TEMPERATURE</u> | <u>SALINITY</u> | <u>DENSITY</u> |
|-----------------|------------------|--------------|--------------------|-----------------|----------------|
| 4820N           | 4630W            | 10           | 0.30               | 33.54           | 26.9           |
|                 |                  | 20           | 0.43               | 33.78           | 27.1           |
|                 |                  | 30           | 0.91               | 34.13           | 27.4           |
|                 |                  | 50           | 1.77               | 34.47           | 27.6           |
|                 |                  | 75           | 2.54               | 34.70           | 27.7           |
|                 |                  | 100          | 3.08               | 34.78           | 27.7           |
|                 |                  | 125          | 3.14               | 34.82           | 27.8           |
| 4820N           | 4430W            | 1            | 2.98               | 34.43           | 27.5           |
|                 |                  | 10           | 2.97               | 34.47           | 27.5           |
|                 |                  | 20           | 3.01               | 34.48           | 27.5           |
|                 |                  | 30           | 2.95               | 34.54           | 27.5           |
|                 |                  | 50           | 2.71               | 34.52           | 27.5           |
|                 |                  | 75           | 2.87               | 34.58           | 27.6           |
|                 |                  | 100          | 2.70               | 34.62           | 27.6           |
| 125             | 2.83             | 34.64        | 27.6               |                 |                |
| 4820N           | 4400W            | 1            | 3.25               | 34.54           | 27.5           |
|                 |                  | 10           | 3.19               | 34.53           | 27.5           |
|                 |                  | 20           | 3.01               | 34.55           | 27.5           |
|                 |                  | 30           | 3.00               | 34.56           | 27.6           |
|                 |                  | 50           | 3.02               | 34.61           | 27.6           |
|                 |                  | 75           | 3.03               | 34.63           | 27.6           |
|                 |                  | 100          | 2.90               | 34.64           | 27.6           |
| 125             | 2.95             | 34.75        | 27.7               |                 |                |
| 4800N           | 4630W            | 10           | 3.54               | 34.45           | 27.4           |
|                 |                  | 20           | 3.28               | 34.53           | 27.5           |
|                 |                  | 30           | 3.05               | 34.54           | 27.5           |
|                 |                  | 50           | 2.96               | 34.56           | 27.6           |
|                 |                  | 75           | 2.89               | 34.57           | 27.6           |
|                 |                  | 100          | 2.81               | 34.57           | 27.6           |
|                 |                  | 125          | 2.78               | 34.58           | 27.6           |
| 140             | 2.83             | 34.61        | 27.6               |                 |                |

CRUISE: GADUS 19  
 DATES : 19-25 MARCH 1979

| LATITUDE | LONGITUDE | DEPTH | TEMPERATURE | SALINITY | DENSITY |
|----------|-----------|-------|-------------|----------|---------|
| 4800N    | 4600W     | 1     | 3.65        | 34.41    | 27.4    |
|          |           | 10    | 3.69        | 34.40    | 27.4    |
|          |           | 20    | 3.22        | 34.37    | 27.4    |
|          |           | 30    | 2.91        | 34.43    | 27.5    |
|          |           | 50    | 2.98        | 34.59    | 27.6    |
|          |           | 75    | 2.72        | 34.59    | 27.6    |
|          |           | 100   | 2.69        | 34.62    | 27.6    |
|          | 120       | 2.80  | 34.65       | 27.6     |         |
| 4800N    | 4500W     | 1     | 3.94        | 34.16    | 27.1    |
|          |           | 10    | 3.90        | 34.22    | 27.2    |
|          |           | 20    | 3.89        | 34.31    | 27.3    |
|          |           | 30    | 4.11        | 34.37    | 27.3    |
|          |           | 50    | 3.71        | 34.37    | 27.3    |
|          |           | 75    | 3.16        | 34.41    | 27.4    |
|          |           | 100   | 3.58        | 34.59    | 27.5    |
|          | 125       | 2.72  | 34.65       | 27.6     |         |
| 4800N    | 4430W     | 1     | 3.59        | 34.30    | 27.3    |
|          |           | 10    | 3.22        | 34.40    | 27.4    |
|          |           | 20    | 2.94        | 34.44    | 27.5    |
|          |           | 30    | 2.83        | 34.44    | 27.5    |
|          |           | 50    | 3.19        | 34.56    | 27.5    |
|          |           | 75    | 2.56        | 34.47    | 27.5    |
|          |           | 100   | 2.60        | 34.48    | 27.5    |
| 4800N    | 4400W     | 1     | 3.24        | 34.42    | 27.4    |
|          |           | 10    | 3.15        | 34.42    | 27.4    |
|          |           | 20    | 2.91        | 34.42    | 27.5    |
|          |           | 30    | 2.80        | 34.47    | 27.5    |
|          |           | 50    | 3.06        | 34.62    | 27.6    |
|          |           | 75    | 3.06        | 34.66    | 27.6    |
|          |           | 100   | 3.08        | 34.69    | 27.7    |
|          | 120       | 3.38  | 34.76       | 27.7     |         |

CRUISE: GADUS 19  
 DATES : 19-25 MARCH 1979

| <u>LATITUDE</u> | <u>LONGITUDE</u> | <u>DEPTH</u> | <u>TEMPERATURE</u> | <u>SALINITY</u> | <u>DENSITY</u> |
|-----------------|------------------|--------------|--------------------|-----------------|----------------|
| 4740N           | 4630W            | 1            | 3.13               | 34.15           | 27.2           |
|                 |                  | 10           | 3.23               | 34.21           | 27.3           |
|                 |                  | 20           | 3.48               | 34.31           | 27.3           |
|                 |                  | 50           | 2.94               | 34.32           | 27.4           |
|                 |                  | 75           | 2.17               | 34.39           | 27.5           |
|                 |                  | 100          | 2.60               | 34.50           | 27.5           |
|                 |                  | 120          | 2.53               | 34.51           | 27.6           |
| 4740N           | 4600W            | 1            | 4.59               | 33.71           | 26.7           |
|                 |                  | 10           | 4.59               | 33.71           | 26.7           |
|                 |                  | 20           | 4.59               | 33.93           | 26.9           |
|                 |                  | 30           | 4.59               | 34.08           | 27.0           |
|                 |                  | 50           | 4.59               | 34.46           | 27.3           |
|                 |                  | 75           | 3.48               | 34.41           | 27.4           |
|                 |                  | 100          | 3.93               | 34.60           | 27.5           |
|                 |                  | 125          | 4.20               | 34.72           | 27.6           |
| 4740N           | 4500W            | 20           | 4.03               | 34.23           | 27.2           |
|                 |                  | 30           | 3.88               | 34.24           | 27.2           |
|                 |                  | 50           | 3.54               | 34.26           | 27.3           |
|                 |                  | 75           | 3.25               | 34.25           | 27.3           |
|                 |                  | 100          | 3.67               | 34.34           | 27.3           |
|                 |                  | 125          | 4.20               | 34.57           | 27.4           |
| 4740N           | 4430W            | 10           | 3.75               | 34.35           | 27.3           |
|                 |                  | 20           | 3.85               | 34.32           | 27.3           |
|                 |                  | 30           | 3.80               | 34.34           | 27.3           |
|                 |                  | 50           | 3.55               | 34.31           | 27.3           |
|                 |                  | 75           | 3.31               | 34.30           | 27.3           |
|                 |                  | 100          | 3.30               | 34.29           | 27.4           |
|                 |                  | 125          | 2.90               | 34.38           | 27.4           |

CRUISE: GADUS 19  
 DATES : 19-25 MARCH 1979

| LATITUDE | LONGITUDE | DEPTH | TEMPERATURE | SALINITY | DENSITY |
|----------|-----------|-------|-------------|----------|---------|
| 4740N    | 4400W     | 1     | 3.61        | 34.28    | 27.3    |
|          |           | 10    | 3.40        | 34.24    | 27.3    |
|          |           | 20    | 3.22        | 34.37    | 27.4    |
|          |           | 30    | 3.04        | 34.39    | 27.4    |
|          |           | 50    | 2.45        | 34.44    | 27.5    |
|          |           | 75    | 2.48        | 34.49    | 27.5    |
|          |           | 100   | 2.56        | 34.55    | 27.6    |
|          |           | 120   | 3.57        | 34.75    | 27.7    |
| 4740N    | 4330W     | 1     | 5.22        | 34.50    | 27.3    |
|          |           | 10    | 5.22        | 34.51    | 27.3    |
|          |           | 20    | 5.22        | 34.52    | 27.3    |
|          |           | 30    | 5.18        | 34.52    | 27.3    |
|          |           | 50    | 5.28        | 34.54    | 27.3    |
|          |           | 75    | 4.89        | 34.55    | 27.4    |
|          |           | 100   | 5.80        | 34.76    | 27.4    |
|          |           | 125   | 5.54        | 34.99    | 27.6    |
| 4720N    | 4630W     | 1     | 4.43        | 34.30    | 27.2    |
|          |           | 10    | 3.56        | 34.37    | 27.4    |
|          |           | 20    | 2.36        | 34.35    | 27.4    |
|          |           | 30    | 2.32        | 34.37    | 27.5    |
|          |           | 50    | 2.36        | 34.41    | 27.5    |
|          |           | 75    | 2.57        | 34.51    | 27.6    |
|          |           | 100   | 2.76        | 34.58    | 27.6    |
|          |           | 125   | 2.87        | 34.61    | 27.6    |
| 4720N    | 4600N     | 1     | 4.27        | 34.35    | 27.3    |
|          |           | 10    | 4.27        | 34.36    | 27.3    |
|          |           | 20    | 4.27        | 34.36    | 27.3    |
| 4720N    | 4600W     | 30    | 4.18        | 34.39    | 27.3    |

CRUISE: GADUS 19  
 DATES : 19-25 MARCH 1979

| <u>LATITUDE</u> | <u>LONGITUDE</u> | <u>DEPTH</u> | <u>TEMPERATURE</u> | <u>SALINITY</u> | <u>DENSITY</u> |
|-----------------|------------------|--------------|--------------------|-----------------|----------------|
| 4720N           | 4600W            | 50           | 4.31               | 34.40           | 27.3           |
|                 |                  | 75           | 4.33               | 34.43           | 27.3           |
|                 |                  | 100          | 3.96               | 34.43           | 27.4           |
|                 |                  | 125          | 4.23               | 34.53           | 27.4           |
| 4720N           | 4430W            | 1            | 4.21               | 34.25           | 27.2           |
|                 |                  | 10           | 4.19               | 34.28           | 27.2           |
|                 |                  | 20           | 3.86               | 34.27           | 27.2           |
|                 |                  | 30           | 3.71               | 34.27           | 27.3           |
|                 |                  | 50           | 3.51               | 34.28           | 27.3           |
|                 |                  | 75           | 2.97               | 34.51           | 27.5           |
|                 |                  | 100          | 2.95               | 34.47           | 27.5           |
|                 |                  | 125          | 4.09               | 34.59           | 27.5           |
| 4720N           | 4400W            | 1            | 3.70               | 34.23           | 27.2           |
|                 |                  | 10           | 3.59               | 34.37           | 27.3           |
|                 |                  | 20           | 3.25               | 34.37           | 27.4           |
|                 |                  | 30           | 3.11               | 34.44           | 27.5           |
|                 |                  | 50           | 3.04               | 34.50           | 27.5           |
|                 |                  | 75           | 2.76               | 34.48           | 27.5           |
|                 |                  | 100          | 2.63               | 34.50           | 27.5           |
|                 |                  | 125          | 2.66               | 34.57           | 27.6           |
| 4720N           | 4330W            | 1            | 4.79               | 34.46           | 27.3           |
|                 |                  | 10           | 4.74               | 34.49           | 27.3           |
|                 |                  | 20           | 4.69               | 34.48           | 27.3           |
|                 |                  | 30           | 4.71               | 34.50           | 27.3           |
|                 |                  | 50           | 4.60               | 34.53           | 27.4           |
|                 |                  | 75           | 4.64               | 34.59           | 27.4           |
|                 |                  | 100          | 4.99               | 34.73           | 27.5           |
|                 |                  | 120          | 4.89               | 34.80           | 27.5           |

CRUISE: GADUS 19  
 DATES : 19-25 MARCH 1979

| <u>LATITUDE</u> | <u>LONGITUDE</u> | <u>DEPTH</u> | <u>TEMPERATURE</u> | <u>SALINITY</u> | <u>DENSITY</u> |
|-----------------|------------------|--------------|--------------------|-----------------|----------------|
| 4700N           | 4630W            | 1            | 5.11               | 34.33           | 27.2           |
|                 |                  | 10           | 4.97               | 34.34           | 27.2           |
|                 |                  | 20           | 4.89               | 34.37           | 27.2           |
|                 |                  | 30           | 4.73               | 34.40           | 27.3           |
|                 |                  | 50           | 4.48               | 34.42           | 27.3           |
|                 |                  | 75           | 4.33               | 34.60           | 27.5           |
|                 |                  | 100          | 4.75               | 34.64           | 27.4           |
|                 |                  | 125          | 4.29               | 34.66           | 27.5           |
|                 |                  | 130          | 4.25               | 34.67           | 27.5           |
| 4700N           | 4600W            | 1            | 4.98               | 34.44           | 27.3           |
|                 |                  | 10           | 5.00               | 34.46           | 27.3           |
|                 |                  | 20           | 5.00               | 34.46           | 27.3           |
|                 |                  | 30           | 4.62               | 34.44           | 27.3           |
|                 |                  | 50           | 4.12               | 34.40           | 27.3           |
|                 |                  | 75           | 3.94               | 34.38           | 27.3           |
|                 |                  | 100          | 3.86               | 34.38           | 27.3           |
|                 |                  | 120          | 3.90               | 34.41           | 27.3           |
| 4700N           | 4530W            | 1            | 4.34               |                 |                |
|                 |                  | 10           | 4.32               |                 |                |
|                 |                  | 20           | 4.34               |                 |                |
|                 |                  | 30           | 4.34               | 34.35           | 27.3           |
|                 |                  | 50           | 4.03               | 34.30           | 27.3           |
|                 |                  | 75           | 3.91               | 34.33           | 27.3           |
|                 |                  | 100          | 3.87               | 34.32           | 27.3           |
|                 |                  | 125          | 3.59               | 34.35           | 27.3           |
| 4700N           | 4430W            | 20           | 4.08               | 34.27           | 27.2           |
|                 |                  | 30           | 3.99               | 34.28           | 27.2           |
|                 |                  | 50           | 3.96               | 34.27           | 27.2           |
|                 |                  | 75           | 3.78               | 34.27           | 27.3           |
|                 |                  | 100          | 3.72               | 34.28           | 27.3           |
|                 |                  | 125          | 3.79               | 34.36           | 27.3           |

CRUISE: GADUS 19  
 DATES : 19-25 MARCH 1979

| <u>LATITUDE</u> | <u>LONGITUDE</u> | <u>DEPTH</u> | <u>TEMPERATURE</u> | <u>SALINITY</u> | <u>DENSITY</u> |
|-----------------|------------------|--------------|--------------------|-----------------|----------------|
| 4700N           | 4400W            | 1            | 3.90               | 34.27           | 27.2           |
|                 |                  | 10           | 3.85               | 34.38           | 27.3           |
|                 |                  | 20           | 3.53               | 34.41           | 27.4           |
|                 |                  | 30           | 3.36               | 34.42           | 27.4           |
|                 |                  | 50           | 2.97               | 34.46           | 27.5           |
|                 |                  | 75           | 3.25               | 34.60           | 27.6           |
|                 |                  | 100          | 3.31               | 34.74           | 27.7           |
|                 |                  | 125          | 3.06               | 34.79           | 27.7           |
| 4700N           | 4330W            | 1            | 5.17               | 34.64           | 27.4           |
|                 |                  | 10           | 5.17               | 34.64           | 27.4           |
|                 |                  | 20           | 5.05               | 34.62           | 27.4           |
|                 |                  | 30           | 4.64               | 34.63           | 27.4           |
|                 |                  | 50           | 4.28               | 34.67           | 27.5           |
|                 |                  | 75           | 3.39               | 34.61           | 27.6           |
|                 |                  | 100          | 3.45               | 34.66           | 27.6           |
|                 |                  | 115          | 3.31               | 34.67           | 27.6           |
| 4640N           | 4630W            | 1            | 4.75               | 34.38           | 27.2           |
|                 |                  | 10           | 4.75               | 34.40           | 27.2           |
|                 |                  | 20           | 4.52               | 34.38           | 27.3           |
|                 |                  | 30           | 4.43               | 34.36           | 27.3           |
|                 |                  | 50           | 4.32               | 34.46           | 27.3           |
|                 |                  | 75           | 3.78               | 34.49           | 27.4           |
|                 |                  | 100          | 3.31               | 34.56           | 27.5           |
|                 |                  | 125          | 3.41               | 34.62           | 27.6           |
| 4640N           | 4600W            | 1            | 5.06               | 34.42           | 27.2           |
|                 |                  | 10           | 5.06               | 34.42           | 27.2           |
|                 |                  | 20           | 5.05               | 34.42           | 27.2           |
|                 |                  | 30           | 4.92               | 34.42           | 27.2           |
|                 |                  | 50           | 3.66               | 34.38           | 27.3           |
|                 |                  | 75           | 3.45               | 34.40           | 27.4           |
|                 |                  | 100          | 3.76               | 34.65           | 27.6           |
|                 |                  | 125          | 3.56               | 34.66           | 27.6           |



CRUISE: GADUS 19  
 DATES : 19-25 MARCH 1979

| LATITUDE | LONGITUDE | DEPTH | TEMPERATURE | SALINITY | DENSITY |
|----------|-----------|-------|-------------|----------|---------|
| 4640N    | 4530W     | 1     | 5.06        | 34.47    | 27.3    |
|          |           | 10    | 5.06        | 34.47    | 27.3    |
|          |           | 30    | 5.04        | 34.49    | 27.3    |
|          |           | 50    | 5.08        | 34.48    | 27.3    |
|          |           | 75    | 4.92        | 34.48    | 27.3    |
|          |           | 100   | 4.92        | 34.49    | 27.3    |
| 4640N    | 4500W     | 1     | 3.60        | 34.13    | 27.2    |
|          |           | 10    | 3.60        | 34.29    | 27.3    |
|          |           | 20    | 3.53        | 34.28    | 27.3    |
|          |           | 30    | 3.57        | 34.27    | 27.3    |
|          |           | 50    | 3.27        | 34.30    | 27.3    |
|          |           | 75    | 3.58        | 34.46    | 27.4    |
|          |           | 100   | 3.58        | 34.54    | 27.5    |
|          |           | 125   | 3.24        | 34.57    | 27.5    |
| 4640N    | 4430W     | 1     | 3.88        | 34.19    | 27.2    |
|          |           | 10    | 3.85        | 34.26    | 27.2    |
|          |           | 20    | 3.73        | 34.29    | 27.3    |
|          |           | 30    | 3.60        | 34.29    | 27.3    |
|          |           | 50    | 3.26        | 34.30    | 27.3    |
|          |           | 75    | 3.30        | 34.36    | 27.4    |
|          |           | 100   | 3.10        | 34.46    | 27.5    |
| 4640N    | 4330W     | 1     | 3.91        | 34.36    | 27.3    |
|          |           | 10    | 3.87        | 34.35    | 27.3    |
|          |           | 20    | 4.08        | 34.42    | 27.3    |
|          |           | 30    | 4.69        | 34.57    | 27.4    |
|          |           | 50    | 4.59        | 34.59    | 27.4    |
|          |           | 75    | 4.44        | 34.62    | 27.5    |
|          |           | 100   | 3.94        | 34.64    | 27.5    |
|          |           | 125   | 3.10        | 34.57    | 27.6    |

APPENDIX 2: OCEANOGRAPHIC DATA FROM 'FLEMISH CAP  
PLANKTON GRID' STATIONS OCCUPIED DURING 23-28 APRIL 1979

CRUISE: GADUS 20A  
DATES : 23-28 APRIL 1979

| <u>LATITUDE</u> | <u>LONGITUDE</u> | <u>DEPTH</u> | <u>TEMPERATURE</u> | <u>SALINITY</u> | <u>DENSITY</u> |
|-----------------|------------------|--------------|--------------------|-----------------|----------------|
| 4820N           | 4630W            | 20           | 1.34               | 33.99           | 27.2           |
|                 |                  | 30           | 1.31               | 34.03           | 27.3           |
|                 |                  | 50           | 1.22               | 34.31           | 27.5           |
|                 |                  | 75           | 1.92               | 34.41           | 27.5           |
|                 |                  | 100          | 2.31               | 34.63           | 27.7           |
|                 |                  | 125          | 2.56               | 34.75           | 27.7           |
|                 |                  | 150          | 2.81               | 34.78           | 27.8           |
|                 |                  | 175          | 2.93               | 34.83           | 27.8           |
|                 |                  | 200          | 3.00               | 34.84           | 27.8           |
| 4820N           | 4600W            | 1            | 2.03               | 33.72           | 27.0           |
|                 |                  | 10           | 1.60               | 33.74           | 27.0           |
|                 |                  | 20           | 1.42               | 33.91           | 27.2           |
|                 |                  | 30           | 1.51               | 34.13           | 27.3           |
|                 |                  | 50           | 1.52               | 34.44           | 27.6           |
|                 |                  | 75           | 2.02               | 34.56           | 27.6           |
|                 |                  | 100          | 2.46               | 34.59           | 27.6           |
|                 |                  | 125          | 2.61               | 34.76           | 27.8           |
|                 |                  | 150          | 2.84               | 34.79           | 27.8           |
|                 |                  | 175          | 2.87               | 34.85           | 27.8           |
| 4820N           | 4530W            | 1            | 2.59               | 34.18           | 27.3           |
|                 |                  | 10           | 2.41               | 34.35           | 27.4           |
|                 |                  | 20           | 2.38               | 34.36           | 27.4           |
|                 |                  | 30           | 2.39               | 34.34           | 27.4           |
|                 |                  | 50           | 2.23               | 34.46           | 27.5           |
|                 |                  | 75           | 2.01               | 34.79           | 27.8           |
|                 |                  | 100          | 2.51               | 34.86           | 27.8           |
|                 |                  | 125          | 2.67               | 35.04           | 28.0           |
|                 |                  | 150          | 2.42               | 35.06           | 28.0           |
|                 |                  | 175          | 2.57               | 35.07           | 28.0           |
| 4820N           | 4500W            | 1            | 3.27               | 34.21           | 27.3           |
|                 |                  | 10           | 3.15               | 34.32           | 27.3           |

CRUISE: GADUS 20A  
 DATES : 23-28 APRIL 1979

| <u>LATITUDE</u> | <u>LONGITUDE</u> | <u>DEPTH</u> | <u>TEMPERATURE</u> | <u>SALINITY</u> | <u>DENSITY</u> |
|-----------------|------------------|--------------|--------------------|-----------------|----------------|
| 4820N           | 4500W            | 20           | 3.14               | 34.30           | 27.3           |
|                 |                  | 30           | 3.14               | 34.31           | 27.3           |
|                 |                  | 50           | 3.08               | 34.33           | 27.4           |
|                 |                  | 75           | 2.66               | 34.54           | 27.6           |
|                 |                  | 100          | 2.68               | 34.61           | 27.6           |
|                 |                  | 125          | 2.94               | 34.92           | 27.8           |
|                 |                  | 150          | 3.03               | 35.00           | 27.9           |
|                 |                  | 175          | 2.94               | 34.98           | 27.9           |
|                 |                  | 195          | 3.04               | 35.05           | 27.9           |
| 4820N           | 4430W            | 1            | 3.86               | 34.42           | 27.4           |
|                 |                  | 10           | 3.83               | 34.48           | 27.4           |
|                 |                  | 20           | 3.70               | 34.48           | 27.4           |
|                 |                  | 30           | 3.30               | 34.45           | 27.4           |
|                 |                  | 50           | 3.21               | 34.38           | 27.4           |
|                 |                  | 75           | 2.77               | 34.64           | 27.6           |
|                 |                  | 100          | 2.65               | 34.76           | 27.7           |
|                 |                  | 125          | 2.59               | 34.83           | 27.8           |
|                 |                  | 150          | 2.76               | 34.82           | 27.8           |
|                 |                  | 175          | 2.85               | 34.79           | 27.8           |
|                 |                  | 200          | 2.87               | 34.85           | 27.8           |
|                 |                  | 300          | 3.41               | 34.90           | 27.8           |
| 400             | 3.65             | 35.29        | 28.1               |                 |                |
| 4820N           | 4400W            | 1            | 3.95               | 34.26           | 27.2           |
|                 |                  | 10           | 3.95               | 34.27           | 27.2           |
|                 |                  | 20           | 4.00               | 34.24           | 27.2           |
|                 |                  | 30           | 3.42               | 34.38           | 27.4           |
|                 |                  | 50           | 3.07               | 34.54           | 27.5           |
|                 |                  | 75           | 3.03               | 34.64           | 27.6           |
|                 |                  | 100          | 3.02               | 34.66           | 27.6           |
|                 |                  | 125          | 2.95               | 34.65           | 27.6           |
|                 |                  | 150          | 3.27               | 34.73           | 27.7           |
|                 |                  | 175          | 2.95               | 34.76           | 27.7           |
|                 |                  | 200          | 2.84               | 34.73           | 27.7           |
|                 |                  | 300          | 3.37               | 34.86           | 27.8           |
| 400             | 3.50             | 34.87        | 27.8               |                 |                |
| 500             | 3.32             | 35.02        | 27.9               |                 |                |

CRUISE: GADUS 20A  
 DATES : 23-28 APRIL 1979

| <u>LATITUDE</u> | <u>LONGITUDE</u> | <u>DEPTH</u> | <u>TEMPERATURE</u> | <u>SALINITY</u> | <u>DENSITY</u> |
|-----------------|------------------|--------------|--------------------|-----------------|----------------|
| 4800N           | 4630W            | 1            | 1.54               | 33.63           | 26.9           |
|                 |                  | 10           | 1.54               | 33.61           | 26.9           |
|                 |                  | 20           | 1.09               | 33.72           | 27.0           |
|                 |                  | 30           | 1.20               | 33.72           | 27.0           |
|                 |                  | 50           | 0.81               | 33.98           | 27.3           |
|                 |                  | 75           | 1.10               | 34.15           | 27.4           |
|                 |                  | 100          | 1.76               | 34.38           | 27.5           |
|                 |                  | 125          | 2.19               | 34.44           | 27.5           |
|                 |                  | 150          | 2.41               | 34.56           | 27.6           |
|                 |                  | 175          | 2.67               | 34.67           | 27.7           |
|                 | 200              | 2.63         | 34.68              | 27.7            |                |
| 4800N           | 4600W            | 1            | 2.22               | 33.79           | 27.0           |
|                 |                  | 10           | 1.99               | 33.89           | 27.1           |
|                 |                  | 20           | 1.81               | 34.23           | 27.4           |
|                 |                  | 30           | 2.22               | 34.26           | 27.4           |
|                 |                  | 50           | 1.51               | 34.33           | 27.5           |
|                 |                  | 75           | 2.23               | 34.51           | 27.6           |
|                 |                  | 100          | 2.54               | 34.56           | 27.6           |
|                 |                  | 125          | 2.62               | 34.72           | 27.7           |
|                 |                  | 150          | 2.68               | 34.75           | 27.7           |
|                 |                  | 175          | 2.94               | 34.87           | 27.8           |
|                 | 200              | 3.10         | 34.82              | 27.8            |                |
| 4800N           | 4500W            | 1            | 3.75               | 34.07           | 27.1           |
|                 |                  | 10           | 3.68               | 34.08           | 27.1           |
|                 |                  | 20           | 3.66               | 34.15           | 27.2           |
|                 |                  | 30           | 3.65               | 34.19           | 27.2           |
|                 |                  | 50           | 3.98               | 34.30           | 27.3           |
|                 |                  | 75           | 3.35               | 34.56           | 27.5           |
|                 |                  | 100          | 2.85               | 34.69           | 27.7           |
|                 |                  | 125          | 3.23               | 34.79           | 27.7           |
|                 |                  | 150          | 3.82               |                 |                |
|                 |                  | 175          | 3.78               | 35.17           | 28.0           |
|                 | 200              | 3.66         | 35.22              | 28.0            |                |

CRUISE: GADUS 20A  
 DATES : 23-28 APRIL 1979

| LATITUDE | LONGITUDE | DEPTH | TEMPERATURE | SALINITY | DENSITY |
|----------|-----------|-------|-------------|----------|---------|
| 4800N    | 4400W     | 1     | 3.88        | 34.38    | 27.3    |
|          |           | 10    | 3.53        | 34.50    | 27.5    |
|          |           | 20    | 3.15        | 34.58    | 27.6    |
|          |           | 30    | 3.12        | 34.59    | 27.6    |
|          |           | 50    | 3.08        | 34.66    | 27.6    |
|          |           | 75    | 2.37        | 34.85    | 27.8    |
|          |           | 100   | 2.46        | 34.88    | 27.9    |
|          |           | 125   | 2.48        | 35.00    | 28.0    |
|          |           | 150   | 2.63        | 35.02    | 28.0    |
|          |           | 175   | 2.63        | 35.05    | 28.0    |
|          |           | 200   | 2.60        | 35.09    | 28.0    |
| 4740N    | 4630W     | 1     | 3.69        | 33.85    | 26.9    |
|          |           | 10    | 3.70        | 33.77    | 26.9    |
|          |           | 20    | 3.62        | 33.83    | 26.9    |
|          |           | 30    | 3.70        | 33.79    | 26.9    |
|          |           | 50    | 3.67        | 33.84    | 26.9    |
|          |           | 75    | 1.40        | 33.88    | 27.1    |
|          |           | 100   | 2.29        | 34.20    | 27.3    |
|          |           | 125   | 3.37        | 34.50    | 27.5    |
|          |           | 150   | 3.97        | 34.62    | 27.5    |
|          |           | 175   | 3.35        | 34.55    | 27.5    |
|          |           | 195   | 3.08        | 34.50    | 27.5    |
| 4740N    | 4600W     | 1     | 4.31        | 34.05    | 27.0    |
|          |           | 10    | 4.41        | 34.07    | 27.0    |
|          |           | 20    | 4.37        | 34.09    | 27.0    |
|          |           | 30    | 4.35        | 34.24    | 27.2    |
|          |           | 50    | 4.69        | 34.28    | 27.2    |
|          |           | 75    | 3.80        | 34.50    | 27.4    |
|          |           | 100   | 4.27        | 34.71    | 27.5    |
|          |           | 125   | 4.36        | 34.75    | 27.6    |
|          |           | 150   | 3.86        | 34.71    | 27.6    |
|          |           | 175   | 4.18        | 34.93    | 27.7    |
|          |           | 200   | 3.19        | 34.79    | 27.7    |

CRUISE: GADUS 20A  
 DATES : 23-28 APRIL 1979

| <u>LATITUDE</u> | <u>LONGITUDE</u> | <u>DEPTH</u> | <u>TEMPERATURE</u> | <u>SALINITY</u> | <u>DENSITY</u> |
|-----------------|------------------|--------------|--------------------|-----------------|----------------|
| 4740N           | 4530W            | 1            | 5.11               | 34.28           | 27.1           |
|                 |                  | 10           | 5.08               | 34.32           | 27.1           |
|                 |                  | 20           | 5.02               | 34.32           | 27.2           |
|                 |                  | 30           | 5.03               | 34.33           | 27.2           |
|                 |                  | 50           | 4.96               | 34.36           | 27.2           |
|                 |                  | 75           | 4.68               | 34.32           | 27.2           |
|                 |                  | 100          | 3.79               | 34.41           | 27.4           |
|                 |                  | 125          | 3.48               | 34.43           | 27.4           |
|                 |                  | 150          | 3.76               | 34.57           | 27.5           |
|                 |                  | 175          | 4.07               | 34.68           | 27.5           |
|                 |                  | 200          | 4.19               | 34.73           | 27.6           |
|                 | 270              | 3.86         | 34.88              | 27.7            |                |
| 4740N           | 4500W            | 1            | 5.15               | 34.32           | 27.1           |
|                 |                  | 10           | 4.97               | 34.51           | 27.3           |
|                 |                  | 20           | 4.94               | 34.52           | 27.3           |
|                 |                  | 30           | 4.94               | 34.52           | 27.3           |
|                 |                  | 50           | 4.92               | 34.51           | 27.3           |
|                 |                  | 75           | 4.46               | 34.58           | 27.4           |
|                 |                  | 100          | 3.09               | 34.64           | 27.6           |
|                 |                  | 125          | 3.15               | 34.69           | 27.6           |
|                 |                  | 150          | 3.62               | 34.86           | 27.7           |
|                 |                  | 175          | 3.63               | 34.95           | 27.8           |
|                 |                  | 200          | 3.60               | 35.13           | 28.0           |
| 4740N           | 4430W            | 1            | 5.09               | 34.27           | 27.1           |
|                 |                  | 10           | 5.02               | 34.32           | 27.1           |
|                 |                  | 20           | 5.05               | 34.31           | 27.1           |
|                 |                  | 30           | 5.07               | 34.24           | 27.1           |
|                 |                  | 50           | 4.83               | 34.25           | 27.1           |
|                 |                  | 75           | 4.37               | 34.26           | 27.2           |
|                 |                  | 100          | 3.29               | 34.37           | 27.4           |
|                 |                  | 125          | 3.08               | 34.38           | 27.4           |
|                 |                  | 150          | 3.88               | 34.44           | 27.4           |
|                 |                  | 175          | 3.88               | 34.70           | 27.6           |
|                 |                  | 200          | 3.95               | 34.81           | 27.7           |
|                 | 255              | 3.84         | 34.87              | 27.7            |                |

CRUISE: GADUS 20A  
 DATES : 23-28 APRIL 1979

| LATITUDE | LONGITUDE | DEPTH | TEMPERATURE | SALINITY | DENSITY |
|----------|-----------|-------|-------------|----------|---------|
| 4740N    | 4400W     | 1     | 4.55        | 34.29    | 27.2    |
|          |           | 10    | 4.30        | 34.29    | 27.2    |
|          |           | 20    | 4.20        | 34.24    | 27.2    |
|          |           | 30    | 4.21        | 34.28    | 27.2    |
|          |           | 50    | 3.57        | 34.32    | 27.3    |
|          |           | 75    | 2.89        | 34.42    | 27.5    |
|          |           | 100   | 3.13        | 34.49    | 27.5    |
|          |           | 125   | 3.20        | 34.52    | 27.5    |
|          |           | 150   | 3.53        | 34.57    | 27.5    |
|          |           | 175   | 3.77        | 34.68    | 27.6    |
|          |           | 200   | 3.81        | 34.64    | 27.6    |
| 4720N    | 4630W     | 1     | 5.38        | 33.78    | 26.7    |
|          |           | 10    | 5.38        | 33.77    | 26.7    |
|          |           | 20    | 5.34        | 33.78    | 26.7    |
|          |           | 30    | 5.34        | 33.75    | 26.7    |
|          |           | 50    | 3.78        | 33.74    | 26.8    |
|          |           | 75    | 3.19        | 33.84    | 27.0    |
|          |           | 100   | 2.98        | 34.04    | 27.1    |
|          |           | 125   | 3.47        | 34.08    | 27.1    |
|          |           | 150   | 3.79        | 34.19    | 27.2    |
|          |           | 175   | 3.74        | 34.30    | 27.3    |
|          |           | 200   | 3.63        | 34.28    | 27.3    |
| 4720N    | 4600W     | 1     | 5.14        | 34.27    | 27.1    |
|          |           | 10    | 5.06        | 34.31    | 27.1    |
|          |           | 20    | 5.09        | 34.29    | 27.1    |
|          |           | 30    | 5.09        | 34.31    | 27.1    |
|          |           | 50    | 5.30        | 34.31    | 27.2    |
|          |           | 75    | 4.60        | 34.37    | 27.2    |
|          |           | 100   | 3.95        | 34.46    | 27.4    |
|          |           | 125   | 4.20        | 34.67    | 27.5    |
|          |           | 150   | 4.52        | 34.69    | 27.5    |
|          |           | 175   | 4.81        | 34.88    | 27.6    |
|          |           | 200   | 4.11        | 34.79    | 27.6    |
|          |           | 300   | 3.98        | 34.89    | 27.7    |
|          |           | 335   | 3.74        | 34.84    | 27.7    |

CRUISE: GADUS 20A  
 DATES : 23-28 APRIL 1979

| <u>LATITUDE</u> | <u>LONGITUDE</u> | <u>DEPTH</u> | <u>TEMPERATURE</u> | <u>SALINITY</u> | <u>DENSITY</u> |
|-----------------|------------------|--------------|--------------------|-----------------|----------------|
| 4720N           | 4530W            | 1            | 6.17               | 34.53           | 27.2           |
|                 |                  | 10           | 6.07               | 34.60           | 27.2           |
|                 |                  | 20           | 6.01               | 34.60           | 27.3           |
|                 |                  | 30           | 5.98               | 34.64           | 27.3           |
|                 |                  | 50           | 6.02               | 34.61           | 27.3           |
|                 |                  | 75           | 4.40               |                 |                |
|                 |                  | 100          | 3.96               | 34.57           | 27.5           |
|                 |                  | 125          | 3.60               | 34.60           | 27.5           |
|                 |                  | 150          | 3.40               | 34.68           | 27.6           |
|                 |                  | 175          | 4.14               | 34.87           | 27.7           |
|                 |                  | 200          | 4.06               | 34.90           | 27.7           |
| 4720N           | 4500W            | 10           | 4.74               | 34.23           | 27.1           |
|                 |                  | 30           | 4.69               | 34.23           | 27.1           |
|                 |                  | 50           | 4.72               | 34.27           | 27.1           |
|                 |                  | 75           | 4.08               | 34.35           | 27.3           |
|                 |                  | 100          | 3.51               | 34.59           | 27.5           |
|                 |                  | 125          | 3.32               | 34.55           | 27.5           |
|                 |                  | 150          | 3.21               | 34.74           | 27.7           |
|                 |                  | 175          | 3.32               | 34.78           | 27.7           |
| 190             | 3.38             | 34.80        | 27.7               |                 |                |
| 4720N           | 4400W            | 1            | 4.40               | 34.34           | 27.2           |
|                 |                  | 10           | 4.10               | 34.31           | 27.3           |
|                 |                  | 20           | 3.94               | 34.39           | 27.3           |
|                 |                  | 30           | 3.90               | 34.39           | 27.3           |
|                 |                  | 50           | 3.70               | 34.47           | 27.4           |
|                 |                  | 75           | 2.80               | 34.49           | 27.5           |
|                 |                  | 100          | 2.66               | 34.68           | 27.7           |
|                 |                  | 125          | 2.92               | 34.68           | 27.7           |
|                 |                  | 150          | 3.06               | 34.80           | 27.7           |
| 175             | 3.49             | 34.84        | 27.7               |                 |                |
| 4700N           | 4630W            | 1            | 2.76               | 34.40           | 27.4           |
|                 |                  | 10           | 2.77               | 34.38           | 27.4           |
|                 |                  | 20           | 2.92               | 34.32           | 27.4           |



CRUISE: GADUS 20A  
 DATES : 23-28 APRIL 1979

| LATITUDE | LONGITUDE | DEPTH | TEMPERATURE | SALINITY | DENSITY |
|----------|-----------|-------|-------------|----------|---------|
| 4700N    | 4630W     | 30    | 3.51        | 34.50    | 27.5    |
|          |           | 50    | 4.11        | 34.70    | 27.6    |
|          |           | 75    | 2.57        | 34.96    | 27.9    |
|          |           | 100   | 3.19        | 35.21    | 28.0    |
|          |           | 125   | 3.31        | 35.21    | 28.0    |
|          |           | 150   | 3.10        | 35.07    | 28.0    |
|          |           | 175   | 3.22        | 35.15    | 28.0    |
|          |           | 200   | 3.10        | 35.22    | 28.1    |
| 4700N    | 4600W     | 1     | 5.50        | 34.39    | 27.2    |
|          |           | 10    | 5.41        | 34.45    | 27.2    |
|          |           | 20    | 5.39        | 34.48    | 27.2    |
|          |           | 30    | 5.46        | 34.43    | 27.2    |
|          |           | 50    | 5.39        | 34.44    | 27.2    |
|          |           | 75    | 3.98        | 34.46    | 27.4    |
|          |           | 100   | 3.91        | 34.70    | 27.6    |
|          |           | 125   | 4.07        | 34.69    | 27.6    |
|          |           | 150   | 3.93        | 34.73    | 27.6    |
|          |           | 175   | 3.89        | 34.83    | 27.7    |
| 195      | 4.14      | 34.85 | 27.7        |          |         |
| 4700N    | 4530W     | 1     | 5.94        | 34.48    | 27.2    |
|          |           | 10    | 5.98        | 34.83    | 27.4    |
|          |           | 20    | 5.92        | 34.82    | 27.4    |
|          |           | 30    | 5.85        | 34.93    | 27.5    |
|          |           | 50    | 5.90        | 34.98    | 27.6    |
|          |           | 75    | 5.77        | 35.01    | 27.6    |
|          |           | 100   | 5.66        | 35.01    | 27.7    |
|          |           | 125   | 3.88        | 35.03    | 27.8    |
|          |           | 150   | 3.98        | 35.13    | 27.9    |
|          |           | 175   | 4.01        | 35.15    | 27.9    |
| 200      | 4.11      | 35.23 | 28.0        |          |         |
| 4700N    | 4500W     | 10    | 5.25        | 34.39    | 27.2    |
|          |           | 20    | 5.22        | 34.40    | 27.2    |
|          |           | 30    | 5.11        | 34.43    | 27.2    |

CRUISE: GADUS 20A  
 DATES : 23-28 APRIL 1979

| <u>LATITUDE</u> | <u>LONGITUDE</u> | <u>DEPTH</u> | <u>TEMPERATURE</u> | <u>SALINITY</u> | <u>DENSITY</u> |
|-----------------|------------------|--------------|--------------------|-----------------|----------------|
| 4700N           | 4500W            | 50           | 5.16               | 34.41           | 27.2           |
|                 |                  | 75           | 4.90               | 34.35           | 27.2           |
|                 |                  | 100          | 3.73               | 34.47           | 27.4           |
|                 |                  | 125          | 3.65               | 34.55           | 27.5           |
|                 |                  | 145          | 3.61               | 34.63           | 27.6           |
| 4700N           | 4430W            | 1            | 5.00               | 34.49           | 27.3           |
|                 |                  | 10           | 4.86               | 34.65           | 27.4           |
|                 |                  | 20           | 4.74               | 34.75           | 27.5           |
|                 |                  | 30           | 4.60               | 34.77           | 27.6           |
|                 |                  | 50           | 4.08               | 34.84           | 27.7           |
|                 |                  | 75           | 3.74               | 34.96           | 27.8           |
|                 |                  | 100          | 3.21               | 35.00           | 27.9           |
|                 |                  | 125          | 3.18               | 35.04           | 27.9           |
| 4640N           | 4630W            | 1            | 2.51               | 33.96           | 27.1           |
|                 |                  | 10           | 2.57               | 33.94           | 27.1           |
|                 |                  | 20           | 2.54               | 33.93           | 27.1           |
|                 |                  | 30           | 2.41               | 33.98           | 27.1           |
|                 |                  | 50           | 2.13               | 34.49           | 27.6           |
|                 |                  | 75           | 2.62               | 34.59           | 27.6           |
|                 |                  | 100          | 2.83               | 34.73           | 27.7           |
|                 |                  | 125          | 2.96               | 34.73           | 27.7           |
|                 |                  | 150          | 2.99               | 34.78           | 27.7           |
|                 |                  | 175          | 2.97               | 34.87           | 27.8           |
|                 |                  | 195          | 3.22               | 34.87           | 27.8           |
| 4640N           | 4600W            | 1            | 5.26               | 34.41           | 27.2           |
|                 |                  | 10           | 5.16               | 34.52           | 27.3           |
|                 |                  | 20           | 5.19               | 34.55           | 27.3           |
|                 |                  | 30           | 5.11               | 34.54           | 27.3           |
|                 |                  | 50           | 5.04               | 34.57           | 27.4           |
|                 |                  | 75           | 4.21               | 34.58           | 27.5           |
|                 |                  | 100          | 3.97               | 34.76           | 27.6           |
|                 |                  | 125          | 3.86               | 34.83           | 27.7           |
|                 |                  | 150          | 4.55               | 34.99           | 27.7           |

CRUISE: GADUS 20A  
 DATES : 23-28 APRIL 1979

| LATITUDE | LONGITUDE | DEPTH | TEMPERATURE | SALINITY | DENSITY |
|----------|-----------|-------|-------------|----------|---------|
| 4640N    | 4600W     | 175   | 4.66        | 34.99    | 27.7    |
|          |           | 190   | 4.59        | 34.99    | 27.7    |
| 4640N    | 4530W     | 10    | 5.88        | 34.35    | 27.1    |
|          |           | 20    | 5.79        | 34.40    | 27.1    |
|          |           | 30    | 5.85        | 34.39    | 27.1    |
|          |           | 50    | 5.70        | 34.54    | 27.3    |
|          |           | 75    | 3.20        | 34.36    | 27.4    |
|          |           | 100   | 2.81        | 34.33    | 27.4    |
|          |           | 125   | 4.21        | 34.63    | 27.5    |
|          |           | 150   | 4.70        | 34.79    | 27.6    |
|          |           | 175   | 5.06        | 34.88    | 27.6    |
|          |           | 200   | 4.27        | 34.73    | 27.6    |
|          |           | 238   | 4.52        | 34.76    | 27.6    |
| 4640N    | 4500W     | 1     | 5.66        | 34.53    | 27.2    |
|          |           | 10    | 5.64        | 34.51    | 27.2    |
|          |           | 20    | 5.57        | 34.59    | 27.3    |
|          |           | 30    | 5.62        | 34.55    | 27.3    |
|          |           | 50    | 5.48        | 34.63    | 27.3    |
|          |           | 75    | 5.10        | 34.63    | 27.4    |
|          |           | 100   | 4.48        | 34.53    | 27.4    |
|          |           | 125   | 3.20        | 34.38    | 27.4    |
|          |           | 150   | 3.46        | 34.53    | 27.5    |
|          |           | 175   | 3.58        | 34.74    | 27.6    |
|          |           | 185   | 3.48        |          |         |
| 4640N    | 4430W     | 1     | 4.94        | 34.29    | 27.1    |
|          |           | 10    | 4.79        | 34.46    | 27.3    |
|          |           | 20    | 4.84        | 34.44    | 27.3    |
|          |           | 30    | 4.85        | 34.43    | 27.3    |
|          |           | 50    | 4.41        | 34.49    | 27.4    |
|          |           | 75    | 4.10        | 34.51    | 27.4    |
|          |           | 100   | 3.51        | 34.53    | 27.5    |
|          |           | 125   | 3.48        | 34.66    | 27.6    |
|          |           | 150   | 3.59        | 34.70    | 27.6    |

CRUISE: GADUS 20A  
 DATES : 23-28 APRIL 1979

| <u>LATITUDE</u> | <u>LONGITUDE</u> | <u>DEPTH</u> | <u>TEMPERATURE</u> | <u>SALINITY</u> | <u>DENSITY</u> |
|-----------------|------------------|--------------|--------------------|-----------------|----------------|
| 4640N           | 4430W            | 175          | 3.65               | 34.87           | 27.7           |
|                 |                  | 200          | 3.73               | 35.01           | 27.8           |
| 4620N           | 4630W            | 1            | 4.41               | 34.25           | 27.2           |
|                 |                  | 10           | 4.42               | 34.28           | 27.2           |
|                 |                  | 20           | 4.33               | 34.31           | 27.2           |
|                 |                  | 30           | 5.48               | 34.68           | 27.4           |
|                 |                  | 50           | 5.69               | 34.71           | 27.4           |
|                 |                  | 75           | 4.94               | 34.73           | 27.5           |
|                 |                  | 100          | 4.78               | 34.92           | 27.7           |
|                 |                  | 125          | 4.73               | 34.98           | 27.7           |
|                 |                  | 150          | 3.23               | 34.84           | 27.8           |
|                 |                  | 175          | 3.15               | 34.88           | 27.8           |
| 195             | 3.45             | 34.94        | 27.8               |                 |                |
| 4620N           | 4600W            | 1            | 5.46               | 34.13           | 27.0           |
|                 |                  | 10           | 5.43               | 34.20           | 27.0           |
|                 |                  | 20           | 5.51               | 34.21           | 27.0           |
|                 |                  | 30           | 5.48               | 34.31           | 27.1           |
|                 |                  | 50           | 5.45               | 34.33           | 27.1           |
|                 |                  | 75           | 4.62               | 34.39           | 27.3           |
|                 |                  | 100          | 4.51               | 34.43           | 27.3           |
|                 |                  | 125          | 4.28               | 34.52           | 27.4           |
|                 |                  | 150          | 4.21               | 34.56           | 27.4           |
|                 |                  | 175          | 4.26               | 34.56           | 27.4           |
|                 |                  | 200          | 4.40               | 34.75           | 27.6           |
|                 |                  | 300          | 4.11               | 34.79           | 27.6           |
| 400             | 3.73             | 34.83        | 27.7               |                 |                |
| 500             | 3.56             | 34.90        | 27.8               |                 |                |
| 4620N           | 4530W            | 1            | 5.00               | 34.22           | 27.1           |
|                 |                  | 10           | 5.06               | 34.24           | 27.1           |
|                 |                  | 20           | 5.27               | 34.42           | 27.2           |
|                 |                  | 30           | 5.34               | 34.45           | 27.2           |
|                 |                  | 50           | 5.78               | 34.54           | 27.2           |
|                 |                  | 75           | 4.72               | 34.69           | 27.5           |

CRUISE: GADUS 20A  
 DATES : 23-28 APRIL 1979

| LATITUDE | LONGITUDE | DEPTH | TEMPERATURE | SALINITY | DENSITY |
|----------|-----------|-------|-------------|----------|---------|
| -----    | -----     | ----- | -----       | -----    | -----   |
| 4620N    | 4530W     | 100   | 5.90        | 34.97    | 27.6    |
|          |           | 125   | 5.67        | 34.97    | 27.6    |
|          |           | 150   | 3.78        | 34.89    | 27.7    |
|          |           | 175   | 4.02        | 34.89    | 27.7    |
|          |           | 200   | 4.44        | 34.86    | 27.7    |
| 4620N    | 4500W     | 1     |             | 34.66    |         |
| 4620N    | 4430W     | 1     | 5.75        | 34.49    | 27.2    |
|          |           | 10    | 5.62        | 34.58    | 27.3    |
|          |           | 20    | 5.58        | 34.62    | 27.3    |
|          |           | 30    | 5.60        | 34.65    | 27.3    |
|          |           | 50    | 5.55        | 34.77    | 27.4    |
|          |           | 75    | 4.73        | 34.88    | 27.6    |
|          |           | 100   | 4.07        | 34.76    | 27.6    |
|          |           | 125   | 3.84        | 34.88    | 27.7    |
|          |           | 150   | 3.62        | 35.05    | 27.9    |
|          |           | 175   | 3.67        | 35.13    | 27.9    |
|          |           | 200   | 3.94        | 35.21    | 28.0    |

APPENDIX 3: OCEANOGRAPHIC DATA FROM 'FLEMISH CAP  
PLANKTON GRID' STATIONS OCCUPIED DURING 05-09 May 1979

CRUISE: GADUS 20B  
DATES : 05-09 MAY 1979

| LATITUDE | LONGITUDE | DEPTH | TEMPERATURE | SALINITY | DENSITY |
|----------|-----------|-------|-------------|----------|---------|
| -----    | -----     | ----- | -----       | -----    | -----   |
| 4820N    | 4600W     | 1     | 3.08        | 33.89    | 27.0    |
|          |           | 10    | 2.88        | 33.91    | 27.0    |
|          |           | 20    | 2.85        | 33.93    | 27.1    |
|          |           | 30    | 2.85        | 33.93    | 27.1    |
|          |           | 50    | 2.11        | 34.52    | 27.6    |
|          |           | 75    | 2.62        | 34.60    | 27.6    |
|          |           | 100   | 2.77        | 34.67    | 27.7    |
|          |           | 125   | 2.93        | 34.72    | 27.7    |
|          |           | 150   | 2.92        | 34.87    | 27.8    |
|          |           | 175   | 3.00        | 34.95    | 27.9    |
|          |           | 200   | 3.16        |          |         |
| 4820N    | 4500W     | 1     | 5.20        | 34.05    | 26.9    |
|          |           | 10    | 5.20        |          |         |
|          |           | 20    | 5.10        |          |         |
|          |           | 30    | 4.20        |          |         |
|          |           | 50    | 3.40        |          |         |
|          |           | 75    | 3.40        |          |         |
|          |           | 100   | 3.30        |          |         |
|          |           | 125   | 3.45        |          |         |
|          |           | 150   | 3.60        |          |         |
|          |           | 175   | 3.50        |          |         |
|          |           | 200   | 3.40        |          |         |
| 300      | 3.50      |       |             |          |         |
| 400      | 3.70      |       |             |          |         |
| 500      | 3.90      |       |             |          |         |
| 4800N    | 4600W     | 1     | 2.15        | 33.66    | 26.9    |
|          |           | 10    | 1.56        | 33.99    | 27.2    |
|          |           | 20    | 1.39        | 34.18    | 27.4    |
|          |           | 30    | 1.38        | 34.19    | 27.4    |
|          |           | 50    | 1.44        | 34.49    | 27.6    |
|          |           | 75    | 1.58        | 35.11    | 28.1    |
|          |           | 100   | 1.15        | 35.18    | 28.2    |
|          |           | 125   | 1.39        | 35.32    | 28.3    |
|          |           | 150   | 1.65        | 35.47    | 28.4    |
|          |           | 175   | 1.66        | 35.56    | 28.5    |
|          |           | 200   | 1.86        | 35.57    | 28.5    |

CRUISE: GADUS 20B  
 DATES : 05-09 MAY 1979

| LATITUDE | LONGITUDE | DEPTH | TEMPERATURE | SALINITY | DENSITY |
|----------|-----------|-------|-------------|----------|---------|
| 4800N    | 4530W     | 1     | 3.68        | 33.85    | 26.9    |
|          |           | 10    | 3.64        | 33.87    | 26.9    |
|          |           | 20    | 3.63        | 33.90    | 27.0    |
|          |           | 30    | 4.69        | 34.16    | 27.1    |
|          |           | 50    | 4.64        | 34.32    | 27.2    |
|          |           | 75    | 3.76        | 34.42    | 27.4    |
|          |           | 100   | 3.86        | 34.55    | 27.5    |
|          |           | 125   | 3.94        | 34.69    | 27.6    |
|          |           | 150   | 3.72        | 34.75    | 27.6    |
|          |           | 175   | 4.16        | 34.86    | 27.7    |
|          |           | 200   | 3.20        | 34.88    | 27.8    |
|          |           | 300   | 3.73        | 34.95    | 27.8    |
| 4800N    | 4500W     | 1     | 6.00        | 34.29    | 27.0    |
|          |           | 10    | 6.00        |          |         |
|          |           | 20    | 6.00        |          |         |
|          |           | 30    | 5.90        |          |         |
|          |           | 50    | 3.90        |          |         |
|          |           | 75    | 3.20        |          |         |
|          |           | 100   | 4.30        |          |         |
|          |           | 125   | 3.75        |          |         |
|          |           | 150   | 3.20        |          |         |
|          |           | 175   | 3.60        |          |         |
|          |           | 200   | 4.00        |          |         |
|          |           | 300   | 4.00        |          |         |
| 4800N    | 4400W     | 1     | 5.35        | 34.20    | 27.0    |
|          |           | 10    | 5.47        | 33.97    | 26.8    |
|          |           | 20    | 5.21        | 33.99    | 26.9    |
|          |           | 30    | 4.62        | 34.02    | 27.0    |
|          |           | 50    | 3.67        | 34.05    | 27.1    |
|          |           | 75    | 2.82        | 34.35    | 27.4    |
|          |           | 100   | 2.81        | 34.40    | 27.4    |
|          |           | 125   | 2.87        | 34.42    | 27.5    |
|          |           | 150   | 2.92        | 34.44    | 27.5    |
|          |           | 175   | 2.99        | 34.49    | 27.5    |
|          |           | 195   | 3.12        | 34.49    | 27.5    |

CRUISE: GADUS 208  
 DATES : 05-09 MAY 1979

| LATITUDE | LONGITUDE | DEPTH | TEMPERATURE | SALINITY | DENSITY |
|----------|-----------|-------|-------------|----------|---------|
| 4740N    | 4600W     | 1     | 3.70        | 33.79    | 26.9    |
| 4740N    | 4500W     | 1     | 5.69        | 34.33    | 27.1    |
|          |           | 10    | 5.63        | 34.39    | 27.1    |
|          |           | 20    | 5.59        | 34.44    | 27.2    |
|          |           | 30    | 5.60        | 34.48    | 27.2    |
|          |           | 50    | 4.73        | 34.45    | 27.3    |
|          |           | 75    | 4.69        | 34.57    | 27.4    |
|          |           | 100   | 4.21        | 34.64    | 27.5    |
|          |           | 125   | 4.46        | 34.93    | 27.7    |
|          |           | 150   | 3.84        | 34.99    | 27.8    |
|          |           | 175   | 3.65        | 35.05    | 27.9    |
|          |           | 200   | 3.76        | 35.17    | 28.0    |
| 4740N    | 4400W     | 1     | 5.90        | 34.05    | 26.8    |
|          |           | 10    | 5.35        | 34.04    | 26.9    |
|          |           | 20    | 5.26        | 34.14    | 27.0    |
|          |           | 30    | 4.46        | 34.22    | 27.1    |
|          |           | 50    | 3.68        | 34.33    | 27.3    |
|          |           | 75    | 3.06        | 34.29    | 27.3    |
|          |           | 100   | 3.46        | 34.72    | 27.6    |
|          |           | 125   | 3.47        | 34.80    | 27.7    |
|          |           | 150   | 3.53        | 34.79    | 27.7    |
|          |           | 175   | 3.70        | 34.82    | 27.7    |
|          |           | 195   | 3.80        | 34.87    | 27.7    |
| 4720N    | 4600W     | 1     | 4.58        | 34.13    | 27.1    |
|          |           | 10    | 4.45        | 34.34    | 27.2    |
|          |           | 20    | 4.63        | 34.45    | 27.3    |
|          |           | 30    | 4.57        | 34.52    | 27.4    |
|          |           | 50    | 5.03        | 34.79    | 27.5    |
|          |           | 75    | 4.36        | 34.90    | 27.7    |
|          |           | 100   | 3.60        | 35.02    | 27.9    |
|          |           | 125   | 3.77        | 35.32    | 28.1    |
|          |           | 150   | 3.85        | 35.42    | 28.2    |
|          |           | 175   | 3.65        | 35.46    | 28.2    |



CRUISE: GADUS 208  
 DATES : 05-09 MAY 1979

| LATITUDE | LONGITUDE | DEPTH | TEMPERATURE | SALINITY | DENSITY |
|----------|-----------|-------|-------------|----------|---------|
| 4720N    | 4600W     | 200   | 3.78        | 35.58    | 28.3    |
| 4720N    | 4500W     | 1     | 5.45        | 34.36    | 27.1    |
|          |           | 10    | 5.42        | 34.35    | 27.1    |
|          |           | 20    | 5.39        | 34.34    | 27.1    |
|          |           | 30    | 5.40        | 34.37    | 27.2    |
|          |           | 50    | 5.37        | 34.38    | 27.2    |
|          |           | 75    | 4.00        | 34.43    | 27.4    |
|          |           | 100   | 3.45        | 34.50    | 27.5    |
|          |           | 125   | 3.42        | 34.53    | 27.5    |
|          |           | 150   | 3.43        | 34.62    | 27.6    |
|          |           | 175   | 3.41        | 34.72    | 27.6    |
| 4720N    | 4430W     | 1     | 6.03        | 34.20    | 26.9    |
|          |           | 10    | 6.10        | 34.23    | 27.0    |
|          |           | 20    | 5.91        |          |         |
|          |           | 30    | 5.58        | 34.25    | 27.0    |
|          |           | 50    | 5.81        | 34.48    | 27.2    |
|          |           | 75    | 4.95        | 34.53    | 27.3    |
|          |           | 100   | 3.72        | 34.58    | 27.5    |
|          |           | 125   | 3.75        | 34.74    | 27.6    |
|          |           | 150   | 3.86        | 34.83    | 27.7    |
|          |           | 175   | 3.97        | 34.93    | 27.8    |
| 4720N    | 4400W     | 1     | 5.71        | 34.16    | 26.9    |
|          |           | 10    | 5.45        | 34.16    | 27.0    |
|          |           | 20    | 5.33        | 34.25    | 27.1    |
|          |           | 30    | 4.39        | 34.28    | 27.2    |
|          |           | 50    | 3.40        | 34.35    | 27.4    |
|          |           | 75    | 3.57        | 34.48    | 27.4    |
|          |           | 100   | 3.59        | 34.73    | 27.6    |
|          |           | 125   | 3.30        | 34.76    | 27.7    |
|          |           | 150   | 3.78        | 34.85    | 27.7    |
|          |           | 175   | 3.61        | 34.85    | 27.7    |
|          |           | 195   | 3.78        | 34.90    | 27.8    |

CRUISE: GADUS 208  
 DATES : 05-09 MAY 1979

| LATITUDE | LONGITUDE | DEPTH | TEMPERATURE | SALINITY | DENSITY |
|----------|-----------|-------|-------------|----------|---------|
| 4700N    | 4600W     | 1     | 6.40        | 34.62    | 27.2    |
|          |           | 10    | 6.40        |          |         |
|          |           | 20    | 6.40        |          |         |
|          |           | 30    | 6.40        |          |         |
|          |           | 50    | 6.30        |          |         |
|          |           | 75    | 4.90        |          |         |
|          |           | 100   | 4.70        |          |         |
|          |           | 125   | 4.70        |          |         |
|          |           | 150   | 4.70        |          |         |
|          |           | 175   | 4.50        |          |         |
|          |           | 200   | 4.30        |          |         |
|          |           | 300   | 4.20        |          |         |
| 4700N    | 4530W     | 1     | 6.70        | 34.47    | 27.1    |
|          |           | 10    | 6.50        |          |         |
|          |           | 20    | 6.30        |          |         |
|          |           | 30    | 6.20        |          |         |
|          |           | 50    | 6.00        |          |         |
|          |           | 75    | 4.70        |          |         |
|          |           | 100   | 4.80        |          |         |
|          |           | 125   | 4.95        |          |         |
|          |           | 150   | 5.10        |          |         |
|          |           | 175   | 5.00        |          |         |
|          |           | 200   | 4.90        |          |         |
|          |           | 240   | 4.40        |          |         |
| 4700N    | 4500W     | 1     | 5.99        | 34.55    | 27.2    |
|          |           | 10    | 5.95        |          |         |
|          |           | 20    | 5.91        |          |         |
|          |           | 30    | 5.91        |          |         |
|          |           | 50    | 5.88        |          |         |
|          |           | 75    | 5.52        |          |         |
|          |           | 100   | 3.93        |          |         |
|          |           | 125   | 4.44        |          |         |
|          |           |       |             |          |         |

CRUISE: GADUS 208  
 DATES : 05-09 MAY 1979

| <u>LATITUDE</u> | <u>LONGITUDE</u> | <u>DEPTH</u> | <u>TEMPERATURE</u> | <u>SALINITY</u> | <u>DENSITY</u> |
|-----------------|------------------|--------------|--------------------|-----------------|----------------|
| 4700N           | 4430W            | 1            | 5.64               | 34.31           | 27.1           |
|                 |                  | 10           | 5.46               | 34.49           | 27.2           |
|                 |                  | 20           | 5.32               | 34.64           | 27.4           |
|                 |                  | 30           | 5.14               | 34.74           | 27.5           |
|                 |                  | 50           | 4.49               | 34.86           | 27.6           |
|                 |                  | 75           | 3.50               | 34.98           | 27.8           |
|                 |                  | 100          | 2.64               | 35.13           | 28.0           |
|                 |                  | 125          | 2.59               | 35.24           | 28.1           |
| 4700N           | 4400W            | 1            | 6.43               | 34.29           | 27.0           |
|                 |                  | 10           | 5.69               | 34.31           | 27.1           |
|                 |                  | 20           | 5.27               | 34.35           | 27.1           |
|                 |                  | 30           | 4.61               | 34.33           | 27.2           |
|                 |                  | 50           | 4.52               | 34.40           | 27.3           |
|                 |                  | 75           | 3.40               | 34.47           | 27.4           |
|                 |                  | 100          | 2.84               | 34.62           | 27.6           |
|                 |                  | 125          | 3.31               | 34.72           | 27.7           |
|                 |                  | 150          | 3.86               | 34.82           | 27.7           |
|                 |                  | 175          | 3.98               | 34.87           | 27.7           |
| 195             | 3.97             | 34.89        | 27.7               |                 |                |
| 4640N           | 4600W            | 1            | 5.70               | 34.34           | 27.1           |
| 4640N           | 4530W            | 1            | 6.17               | 34.17           | 26.9           |
|                 |                  | 10           | 5.95               | 34.21           | 27.0           |
|                 |                  | 20           | 6.01               | 34.32           | 27.0           |
|                 |                  | 30           | 6.11               | 34.38           | 27.1           |
|                 |                  | 50           | 6.34               | 34.49           | 27.1           |
|                 |                  | 75           | 7.22               | 34.87           | 27.3           |
|                 |                  | 100          | 5.63               | 34.84           | 27.5           |
|                 |                  | 125          | 5.42               | 35.03           | 27.7           |
|                 |                  | 150          | 5.29               | 35.11           | 27.7           |
|                 |                  | 175          | 4.97               | 35.13           | 27.8           |
| 190             | 4.51             | 35.10        | 27.8               |                 |                |

CRUISE: GADUS 20B  
 DATES : 05-09 MAY 1979

| LATITUDE | LONGITUDE | DEPTH | TEMPERATURE | SALINITY | DENSITY |
|----------|-----------|-------|-------------|----------|---------|
| -----    | -----     | ----- | -----       | -----    | -----   |
| 4640N    | 4500W     | 1     | 5.59        | 34.40    | 27.2    |
|          |           | 10    | 5.50        | 34.45    | 27.2    |
|          |           | 20    | 5.44        | 34.47    | 27.2    |
|          |           | 30    | 5.40        | 34.48    | 27.2    |
|          |           | 50    | 5.38        | 34.48    | 27.2    |
|          |           | 75    | 5.00        | 34.50    | 27.3    |
|          |           | 100   | 4.27        | 34.56    | 27.4    |
|          |           | 125   | 4.00        | 34.58    | 27.5    |
|          |           | 150   | 3.68        | 34.73    | 27.6    |
| 4640N    | 4400W     | 1     | 6.17        | 34.54    | 27.2    |
|          |           | 10    | 6.13        | 34.56    | 27.2    |
|          |           | 20    | 5.63        | 34.68    | 27.4    |
|          |           | 30    | 4.87        | 34.67    | 27.5    |
|          |           | 50    | 3.95        | 34.79    | 27.6    |
|          |           | 75    | 3.17        | 34.93    | 27.8    |
|          |           | 100   | 3.11        | 35.04    | 27.9    |
|          |           | 125   | 3.31        | 35.08    | 27.9    |
|          |           | 150   | 3.81        | 35.25    | 28.0    |
|          |           | 175   | 3.92        | 35.29    | 28.0    |
|          |           | 200   | 3.91        | 35.30    | 28.1    |
|          |           | 300   | 3.19        | 35.32    | 28.1    |
| 400      | 3.46      | 35.33 | 28.1        |          |         |
| 500      | 3.34      | 35.35 | 28.2        |          |         |
| 4620N    | 4600W     | 1     | 7.20        | 34.72    | 27.2    |
| 4620N    | 4530W     | 1     | 7.10        | 34.64    | 27.1    |
| 4620N    | 4500W     | 1     | 6.35        | 34.58    | 27.2    |
|          |           | 10    | 6.28        | 34.57    | 27.2    |
|          |           | 20    | 6.30        | 34.60    | 27.2    |
|          |           | 30    | 6.27        | 34.63    | 27.2    |

CRUISE: GADUS 20B  
 DATES : 05-09 MAY 1979

| <u>LATITUDE</u> | <u>LONGITUDE</u> | <u>DEPTH</u> | <u>TEMPERATURE</u> | <u>SALINITY</u> | <u>DENSITY</u> |
|-----------------|------------------|--------------|--------------------|-----------------|----------------|
| 4620N           | 4500W            | 50           | 6.27               | 34.63           | 27.3           |
|                 |                  | 75           | 7.05               | 34.93           | 27.4           |
|                 |                  | 100          | 6.68               | 34.95           | 27.4           |
|                 |                  | 125          | 5.55               | 34.86           | 27.5           |
|                 |                  | 150          | 4.02               | 34.71           | 27.6           |
|                 |                  | 175          | 3.82               | 34.77           | 27.6           |
|                 |                  | 200          | 4.29               | 34.92           | 27.7           |
|                 |                  | 300          | 4.11               | 35.03           | 27.8           |
|                 |                  | 400          | 3.79               | 35.07           | 27.9           |
|                 |                  | 500          | 3.87               | 35.11           | 27.9           |
| 4620N           | 4400W            | 1            |                    | 34.49           |                |
|                 |                  | 20           |                    | 34.71           |                |
|                 |                  | 75           |                    | 34.58           |                |
|                 |                  | 150          |                    | 34.65           |                |
|                 |                  | 500          |                    | 34.79           |                |

