NASA TECHNICAL MEMORANDUM NASA TM 75107

# DATA ON CONDUCTING THE SAMEX-76 EXPERIMENT

Academy of Sciences USSR

(NASA-TM-75107) DATA ON CONDUCTING THE SAMEX-76 EXPERIMENT (National Aeronautics and Space Administration) 175 p HC A08/MF A01 CSCL 01C N78-24115 Unclas G3/05 21211

Translation of "Dannyye o provedenii eksperimenta SAMEKS-76,"
Academy of Sciences USSR, Moscow,
Report, 1978, pp. 1-106 and 114-153

JUN 1978
RECEIVED
NASA STI FACILITY

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
WASHINGTON, D.C. 20546 JUNE 1978

STANDARD TITLE PAGE

| | | |
|---|---|---|
| 1. Report No. NASA TM-75107 | 2. Government Accession No. | 3. Recipient's Catalog No. |
| 4. Title and Subtitle<br>Data on Conducting the Samex-76 Experiment | | 5. Report Date<br>June 1978<br>6. Performing Organization Code |
| 7. Author(s)<br>Academy of Sciences USSR | | 8. Performing Organization Report No.<br>10. Work Unit No. |
| 9. Performing Organization Name and Address<br>Transemantics, Inc.<br>1901 Pennsylvania Avenue, NW<br>Washington, DC 20006 | | 11. Contract or Grant No.<br>NASW-2792<br>13. Type of Report and Period Covered<br>Translation |
| 12. Sponsoring Agency Name and Address<br>National Aeronautics and Space Administration<br>Washington, DC 20545 | | 14. Sponsoring Agency Code |

15. Supplementary Notes

Translation of "Dannyye o provedenii eksperimenta SAMEKS-76," Academy of Sciences USSR, Moscow, Report, 1978, pp. 1-106 and 114-153.

16. Abstract

This report is about the compilation of data on conducting the SAMEX-76 experiment. This report includes many tables and graphs of the aircraft's flights and its measurements. Also given is the operation time of this equipment and the many observations that have been made by the Scientific Research Ship "Akademik Korolev"

| | | | |
|---|---|---|---|
| 17. Key Words (Selected by Author(s)) | 18. Distribution Statement<br>Unclassified-Unlimited | | |
| 19. Security Classif. (of this report)<br>Unclassified | 20. Security Classif. (of this page)<br>Unclassified | 21. No. of Pages<br>172 | 22. |

NASA-HQ

DATA ON CONDUCTING THE SAMEX-76 EXPERIMENT

Table of Contents


Page

II. Data on Conducting the SAMEX-76 Experiment

1. Table II.1. Route and Time Graphs of the Aircraft's Flights (SAMEX-76) 2
2. Table II.2. Time of Operation of the Scientific Equipment (GMT) 12
3. Table II.3. Table of Observations from the Scientific Research Ship "Akademik Korolev" (GMT) 13
4. Table II.4. Weather Conditions in the Region of the Ship 14
5. Table II.5. Days of Operation Suggested by the Soviet Side for Analysis and Comparison 16

III-1. Data on the Flight Measurements

1. Table III.1.1. Data on Microwave Measurements $\lambda = 2.4$ cm (October 13, 25, 30) 19
2. Table III.1.2. Table of Radiation Temperatures on the Ocean Surface 34
3. Table III.1.3. Data on Aircraft Sounding of the Atmosphere 49

III-2. Data on Observations from on Board the Scientific Research Ship "Akademik Korolev" 94

1. Table III.2.1. Aerosynoptic Characteristics of the Atmospheric Processes over the Northern Region of the Pacific Ocean (August-November 1976) 95
2. Table III.2.2. Ground Weather Maps for September 10, 11, 13 and October 13, 25, 30, 1976. missing
3. Table III.2.3. Table of Standard Hydrometeorological Observations at 15-Minute Intervals 125
4. Table III.2.4. Table of Data on the Sea Surface 129
5. Table III.2.5. Table of the Probing Results 133
6. Table III.2.6. Characteristics of the Waves Taken from Data from the "Akademik Korolev" Ship 141
7. Table III.2.7. Evaluation of the Amount of Foam on the Ocean Surface 147
8. Table III.2.8. Temperature and Salinity of the Surface Layer of the Water 164
9. Table III.2.9. Table of Data on Measurements of the Atmospheric Precipitation 166

Table II.I. /1.

Routes and Time Graphs of the Aircraft's Flights (Samexs-76)

| No. of the Run | Beginning of the Run (GMT) | End of the Run (GMT) | Course | Distance from the Ship in km or Coordinates of the Turn Points: Start of the Run | Distance from the Ship in km or Coordinates of the Turn Points: End of the Run | Altitude in meters | Remarks |
|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| | | | | **Northern Test Site** | | | |
| | | | | **August 26-27, 1976** | | | |
| | | | | **Ship Coordinates: $\varphi = 46^0 12'$ $\lambda = 171^0 21'$** | | | |
| I | 22.30.00 | 22.37.00 | I32 | $\varphi = 52^0 40'$, $\lambda = 159^0 20'$ | $\lambda = 159° 50'$ | 500 | |
| | 22.37.40 | 22.48.00 | 92 | | $\varphi = 52^0 22'$ | 500 | |
| 2 | 22.49.00 | 23.00.00 | 52 | $\varphi = 52^0 28'$, $\lambda = 160^0 58'$ | $\varphi = 53^0 00'$, $\lambda = 161^0 20'$ | 500 | |
| 3 | 23.05.00 | 23.20.00 | I80 | $\varphi = 53^0 00'$, $\lambda = 161^0 40'$ | $\varphi = 52^0 10^0$, $\lambda = 161^0 30'$ | 2000 | |
| 4 | 23.27.00 | 23.42.00 | I35 | $\varphi = 51^0 55'$, $\lambda = 161^0 45'$ | $\varphi = 51^0 30'$, $\lambda = 162^0 50'$ | 2000 | |
| 5 | 23.51.00 | 0.06.00 | 295 | $\varphi = 51^0 30'$, $\lambda = 162^0 32'$ | $\varphi = 51^0 35'$, $\lambda = 161^0 40'$ | 4000 | |
| 6 | 0.16.00 | 0.47.00 | I35 | $\varphi = 51^0 30'$, $\lambda = 162^0 00'$ | $\varphi = 50^0 20'$, $\lambda = 164^0 20'$ | 6000 | |
| 7 | 0.55.00 | I.10.00 | 315 | $\varphi = 50^0 15'$, $\lambda = 164^0 10'$ | $\varphi = 50^0 55'$, $\lambda = 163^0 10'$ | 4000 | |
| 8 | I.17.00 | I.32.00 | 315 | $\varphi = 51^0 10'$, $\lambda = 163^0 00'$ | $\varphi = 51^0 30'$, $\lambda = 162^0 00'$ | 2000 | |
| 9 | I.39.00 | I.57.00 | 315 | $\varphi = 51^0 33'$, $\lambda = 161^0 45'$ | $\varphi = 52^0 00'$, $\lambda = 161^0 00'$ | 500 | |
| I0 | I.58.00 | 2.03.00 | I35 | $\varphi = 52^0 00'$, $\lambda = 161^0 00'$ | $\varphi = 51^0 50'$, $\lambda = 161^0 20'$ | 200 | |
| II | 2.06.00 | 2.26.00 | 290 | $\varphi = 51^0 50'$, $\lambda = 161^0 20'$ | $\varphi = 52^0 10'$, $\lambda = 160^0 20'$ | 500 | |

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|

August 30, 1976

Ship Coordinates: $\varphi = 49^0 46'$ $\lambda = 161^0 30'$

| | | | | | | |
|---|---|---|---|---|---|---|
| I | 0.00.I0 | 0.I0.I0 | I0 | 35 | 35 | 6000 |
| 2 | 0.I6.I0 | 0.26.I0 | I90 | 50 | 26 | 6000 |
| 3 | 0.42.I0 | 0.57.I0 | I0 | 60 | 5I | 5000 |
| 4 | I.05.00 | I.2I.00 | I90 | 62 | 47 | 4000 |
| 5 | I.28.00 | I.43.00 | I0 | 50 | 56 | 3000 |
| 6 | I.49.00 | 2.04.00 | I90 | 62 | 38 | 2000 |
| 7 | 2.09.00 | 2.24.00 | I0 | 45 | 40 | I500 |
| 8 | 2.28.I5 | 2.43.I5 | I90 | 53 | 32 | I000 |
| 9 | 2.50.00 | 3.00.00 | 360 | 30 | 28 | 500 |
| I0 | 3.06.00 | 3.I6.00 | I90 | 23 | 33 | 500 |
| II | 3.23.00 | 3.33.00 | 05 | 33 | 25 | 200 |

September 1, 1976

Ship Coordinates: $\varphi = 49^0 15'$ $\lambda = 162^0 46'$

| | | | | | | |
|---|---|---|---|---|---|---|
| I | 0.44.00 | 0.54.00 | 70 | 45 | 30 | 6000 |
| 2 | 0.53.I5 | I.08.I5 | 250 | 48 | 30 | 6000 |
| 3 | I.I6.30 | I.3I.30 | 70 | 43 | 56 | 5000 |
| 4 | I.43.00 | I.58.00 | 255 | 60 | 42 | 4000 |
| 5 | 2.03.00 | 2.I8.00 | 70 | 40 | 60 | 3000 |
| 6 | 2.24.00 | 2.39.00 | 250 | 80 | I9 | 2000 |
| 7 | 2.48.00 | 3.03.00 | 65 | 48 | 45 | I000 |
| 8 | 3.I0.00 | 3.30.00 | 250 | 70 | 50 | 500 |
| 9 | 3.3I.45 | 3.35.00 | 330 | 60 | | 200 |

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|

September 3, 1976

Ship Coordinates: $\varphi = 49^0 11'$ $\lambda = 161^0 46'$

| | | | | | | |
|---|---|---|---|---|---|---|
| I | 0.2I.00 | 0.36.00 | I45 | 50 | 70 | 6000 |
| 2 | 0.44.00 | 0.59.00 | 320 | 62 | 53 | 5000 |
| 3 | I.03.30 | I.I8.30 | I40 | 52 | 63 | 4000 |
| 4 | I.22.00 | I.37.00 | 320 | 52 | 47 | 3000 |
| 5 | I.4I.00 | I.56.00 | I40 | 60 | 46 | 2000 |
| 6 | I.59.30 | 2.I4.30 | 320 | 42 | 43 | I500 |
| 7 | 2.I9.00 | 2.34.00 | I35 | 52 | 33 | I000 |
| 8 | 2.39.00 | 2.54.00 | 320 | 4I | 45 | 500 |
| 9 | 2.59.00 | 3.I4.00 | I40 | 50 | 39 | 200 |
| I0 | 3.I8.00 | 3.30.00 | 320 | 39 | 30 | I000 |
| II | 3.36.00 | 3.46.I5 | I40 | 55 | I6 | 3000 |
| I2 | 4.0I.00 | 4.II.00 | 320 | 33 | 37 | 6000 |

September 6, 1976

Ship Coordinates: $\varphi = 49^0 04'$ $\lambda = 162^0 15'$

| | | | | | | |
|---|---|---|---|---|---|---|
| I | 0.00.00 | 0.I5.00 | 275 | 65 | 58 | 6000 |
| 2. | 0.2I.00 | 0.36.00 | 95 | 67 | 53 | 6000 |
| 3. | 0.4I.00 | 0.56.00 | 275 | 67 | 53 | 6000 |
| 4. | I.00.30 | I.I5.30 | 98 | 60 | 60 | 6000 |
| 5 | I.20.00 | I.35.00 | 275 | 67 | 53 | 6000 |
| 6 | I.44.00 | I.59.00 | 95 | 60 | 46 | 4000 |
| 7 | 2.03.00 | 2.I8.00 | 275 | 46 | 50 | 3000 |
| 8 | 2.23.00 | 2.38.00 | 95 | 65 | 30 | 2000 |
| 9 | 2.45.00 | 3.00.00 | 275 | 42 | 46 | I000 |
| I0 | 3.04.00 | 3.I9.00 | 95 | 55 | 33 | 500 |
| II | 3.23.30 | 3.33.30 | 265 | 33 | 52 | I50 |
| I2 | 3.35.00 | 3.40.00 | 320 | 60 | | 350 |

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|

September 7-8, 1976

Ship Coordinates: $\varphi = 49^0 04'$ $\lambda = 162^0 04'$

| | | | | | | |
|---|---|---|---|---|---|---|
| I | 23.I9.00 | 23.34.00 | I90 | 49 | 56 | 8000 |
| 2 | 23.45.00 | 0.00.00 | I0 | 50 | 65 | 6000 |
| 3 | 0.I0.00 | 0.25.00 | I90 | 57 | 45 | 6000 |
| 4 | 0.30.30 | 0.45.30 | I0 | 48 | 77 | 6000 |
| 5 | 0.53.00 | I.08.00 | I90 | 69 | 36 | 6000 |
| 6 | I.I5.00 | I.30.00 | I0 | 57 | 63 | 4000 |
| 7 | I.36.00 | I.5I.00 | I90 | 62 | 36 | 4000 |
| 8 | I.57.30 | 2.I2.30 | I0 | 36 | 56 | 3000 |
| 9 | 2.20.00 | 2.35.00 | I90 | 65 | 23 | 2000 |
| I0 | 2.40.00 | 2.55.00 | I0 | 40 | 48 | I000 |
| II | 3.03.00 | 3.I8.00 | I90 | 52 | 36 | 550 |
| I2 | 4.23.00 | 4.38.00 | I0 | 30 | 56 | I50 |

September 9-10, 1976

Ship Coordinates: $\varphi = 49^0 43'$ $\lambda = 161^0 48'$

| | | | | | | |
|---|---|---|---|---|---|---|
| I | 23.43.00 | 0.00.00 | 20 | 40 | 65 | 6000 |
| 2 | 0.I0.00 | 0.25.00 | 200 | 70 | 45 | 6000 |
| 3 | 0.35.30 | 0.5I.30 | 20 | 40 | 70 | 6000 |
| 4 | I.04.00 | I.I9.00 | 200 | 64 | 5I | 6000 |
| 5 | I.28.00 | I.43.00 | 20 | 45 | 67 | 6000 |
| 6 | I.54.00 | 2.09.00 | 200 | 65 | 33 | 4000 |
| 7 | 2.I4.45 | 2.29.45 | 20 | 42 | 64 | 3000 |
| 8 | 2.37.30 | 2.52.30 | 200 | 60 | 30 | 2000 |
| 9 | 2.57.00 | 3.I2.00 | 20 | 40 | 45 | I000 |
| I0 | 3.I6.00 | 3.3I.00 | 200 | 60 | 28 | 500 |
| II | 3.35.30 | 3.50.30 | I0 | 30 | 56 | 200 |

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|
| | | | September 10-11, 1976 | | | | |
| | | Ship Coordinates: | | $\varphi = 49^0 50'$ | $\lambda = 162^0 03'$ | | |
| I | 22.45.00 | 23.22.00 | 140 | from the shore to 110 km from the ship | | 4000 | |
| 2 | 23.22.00 | 23.36.00 | 175 | 110 km from the ship to the flight run | | 4000 | |
| 3 | Revolving to the left $\gamma = 15^0$ | | 270 | Distance removed from the rotation center: | | 4000 | |
| | 23.43.10 | 23.47.22 | | 12 km to the left of the ship | | | |
| | 23.47.22 | 23.51.35 | | 5 km " | | | |
| | 23.51.35 | 23.56.00 | | 2 km to the right of the ship | | | |
| | 23.56.00 | 00.00.30 | | 9 km " | | | |
| | 0.00.00 | 0.04.34 | | 16 km to the right of the ship | | | |
| 4 | 0.05.00 | 0.08.30 | 260 | with S = 30 km to the ship | | | |
| 5 | Revolving to the left $\gamma = 30^o$ | | 270 | Distance removed from the rotation center of the ship: | | 4000 | |
| | 0.11.25 | 0.14.08 | | 2 km to the left | | | |
| | 0.14.08 | 0.16.47 | | 2 km to the right | | | |
| 6. | 0.18.00 | 0.20.30 | | with S = 30 km to the ship | | | |
| | 0.21.30 | 0.22.30 | | 8 km from the ship | | | |
| 7. | Revolving to the left $\gamma = 30^o$ | | 270 | Distance removed from the rotation center of the ship: | | 4000 | |
| | 0.22.51 | 0.25.35 | | 2 km to the left | | | |
| | 0.25.35 | 0.28.23 | | 2 km to the right | | | |
| 8. | 0.42.00 | 0.52.00 | 70 | 32 | 45 | 4000 | |
| 9. | 1.00.00 | 1.10.00 | 250 | 39 | 20 | | |
| 10. | 1.22.00 | 1.32.00 | 70 | 35 | 50 | 6000 | |
| 11. | 1.46.00 | 2.01.00 | 250 | 40 | 50 | 6000 | |
| 12. | 2.17.30 | 2.27.30 | 70 | 43 | 53 | 6000 | |
| 13. | 3.13.15 | 3.23.15 | 250/270 | 31 | 25 | 500 | |
| 14 | 3.37.00 | 4.15.00 | 320 | 100 km from the ship | 60 km from the shore | 4000 | |
| | | | September 12-13, 1976 | | | | |
| | Ship Coordinates: | | | $\varphi = 50^o 18'$ | $\lambda = 166^o 00'$ | | |
| 1 | 23.37.00 | 0.01.00 | | 20 km from the shore | | 4000 | |
| 2 | 0.02.00 | 1.05.00 | | | | 4000 | |
| 3 | Revolving to the left $\gamma = 15^o$ | | 360 | Rotation center: | | 4000 | |

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|
| | 1.06.05 | 1.10.12 | | Above the ship | | | |
| | 1.10.12 | 1.14.50 | | 3 km to the east | | | |
| | 1.14.50 | 1.19.30 | | 6 km to the east | | | |
| | Revolving to the left $\gamma = 15^{o}$ | | 270 | | | | |
| | 1.29.04 | 1.32.22 | | above the ship | | | |
| | 1.33.22 | 1.37.49 | | 3 km to the east | | | |
| 4 | 1.39.00 | 1.41.00 | 330 | 12 km to the ship | | 4000 | |
| 5 | Revolving to the left $\gamma = 30^{o}$ | | 270 | | | | |
| | 1.54.24 | 1.43.45 | | 2 km to the west | | | |
| | 1.43.45 | 1.46.02 | | above the ship | | | |
| 6 | Revolving to the left $\gamma = 30^{o}$ | | 360 | | | | |
| | 1.54.24 | 1.57.00 | | above the ship | | | |
| | 1.57.00 | 1.59.25 | | 2 km to the east | | | |
| 7 | 2.23.00 | 2.23.00 | 10 | 36 | 16 | 400 | |
| 8 | 2.42.00 | 2.52.00 | 190 | 36 | 30 | 400 | |
| 9 | 3.16.00 | 3.26.00 | 190 | 31 | 45 | 2000 | |
| 10 | 3.40.00 | 3.50.00 | 10 | 42 | 20 | 4000 | |
| 11 | 3.57.00 | 5.34.00 | 190 | 30 | 56 | 6000 | |
| 12 | 4.15.00 | 5.34.00 | 310 | 110 km from the ship | | 4000 | |

Southern Test Site

October 13, 1976

Ship Coordinates: $\varphi = 43^{o}28'$ $\lambda = 151^{o}08'$

| | | | | | | |
|---|---|---|---|---|---|---|
| I | 0.35.00 | 0.50.00 | I60 | $\varphi = 42^{o}45'$ $\lambda = I5I^{o}43'$ | $\varphi = 42^{o}07'$ $\lambda = I52^{o}30'$ | 6000 |
| 2 | 0.54.00 | I.09.00 | 340 | $\varphi = 42^{o}I7'$ $\lambda = I53^{o}05'$ | $\varphi = 43^{o}02'$ $\lambda = I52^{o}I0'$ | 6000 |
| 3 | I.I0.00 | I.25.00 | 340 | $\varphi = 43^{o}02'$ $\lambda = I52^{o}I0'$ | $\varphi = 43^{o}50'$ $\lambda = I5I^{o}I2'$ | 6000 |
| 4 | I.28.00 | I.43.00 | I60 | $\varphi = 43^{o}40'$ $\lambda = I49^{o}55'$ | $\varphi = 42^{o}55'$ $\lambda = I49^{o}50'$ | 6000 |
| 5 | I.57.00 | 2.I2.00 | 0 | $\varphi = 43^{o}20'$ $\lambda = I5I^{o}I0'$ | $\varphi = 44^{o}I0'$ $\lambda = I5I^{o}00'$ | 3000 |

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|
| 6 | 2.20.30 | 2.35.30 | I80 | φ= 43°30', λ= I50°50' | φ= 42°55', λ= I50°50' | I000 | |
| 7 | 2.39.00 | 2.54.00 | 340 | φ= 42°56', λ= I5I°I0' | φ= 43°35', λ= I50°40' | 500 | |
| 8 | 2.58.I5 | 3.I3.I5 | 290 | φ= 43°35', λ= I50°40' | φ= 44°I0', λ= I49°50' | 200 | |

October 19, 1976

Ship Coordinates: φ = 44°17' λ = 149°05'

| | | | | | | |
|---|---|---|---|---|---|---|
| I | 0.I7.00 | 0.32.00 | 200 | 70 | 40 | 6000 |
| 2 | 0.38.00 | 0.53.00 | 20 | 53 | 62 | 6000 |
| 3 | 0.59.00 | I.I4.00 | 200 | 64 | 36 | 6000 |
| 4 | I.I9.45 | I.34.45 | 20 | 29 | 73 | 6000 |
| 5 | I.44.00 | I.59.00 | 200 | 57 | 40 | 4000 |
| 6 | 2.04.00 | 2.I9.00 | 20 | 72 | 32 | 4000 |
| 7 | 2.25.00 | 2.40.00 | 200 | 62 | 26 | 3000 |
| 8 | 2.45.30 | 3.00.30 | 30 | 20 | 60 | 2000 |
| 9 | 3.I0.00 | 3.25.00 | 200 | 4I | 42 | I000 |
| I0 | 3.28.30 | 3.43.30 | 20 | 4I | 46 | 530 |
| II | 3.48.00 | 4.03.00 | 200 | 55 | 28 | 200 |

October 24, 1976

Ship Coordinates: φ = 44°07' λ = 149°44'

| | | | | | | |
|---|---|---|---|---|---|---|
| I | 4.16.00 | | 140 | to the ship | | 4000 |
| 2 | Revolving to the left γ= 15° | | 280 | ship in the center | | |
| | 5.05.00 | 5.10.20 | | | | |
| | 5.10.20 | 5.15.25 | | | | |
| | 5.21.05 | 5.25.30 | 90 | ship in the center of rotation | | |
| | 5.25.30 | 5.30.25 | | | | |
| 3 | Revolving to the left γ = 30° | | 30 | | | |
| | 5.34.22 | 5.36.45 | ) | | | |
| | 5.36.45 | 5.39.15 | ) | | | |
| | 5.39.15 | 5.41.50 | 10) | rotation center 44°15'/149°55' | | |
| | 5.41.50 | 5.44.15 | ) | | | |
| | 5.44.15 | 5.46.41 | ) | | | |
| | 5.59.00 | 6.14.00 | 215 | 30 | 58 | 200 |

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|
| 5 | 6.19.00 | 6.34.00 | 30 | 30 | 60 | 1000 | |
| 6 | 6.48.05 | 7.10.00 | | | | 5500 | |

October 25, 1976

| | | | | | | |
|---|---|---|---|---|---|---|
| | Ship Coordinates: | | | $\varphi = 44^{\circ}14'$ | $\lambda = 148^{\circ}46'$ | |
| I | 2.50.00 | | I35 | | | 7I00 |
| 2 | 2.55.00 | | I75 | | | 7I00 |
| 3 | 3.39.00 | 3.54.00 | 265 | 30 | 82 | 7300 |
| 4 | 3.57.30 | 4.I2.30 | 90 | 80 | 60 | 7300 |
| 5 | 4.I6.00 | 4.3I.00 | 265 | 30 | 80 | 7300 |
| 6 | 4.38.00 | 4.53.00 | 90 | 75 | 65 | 8200 |
| 7 | 4.58.00 | 5.I3.00 | 265/245 | 70 | 45 | 8200 |
| 8 | 5.27.00 | 5.42.00 | 320 | $\varphi = 43^{\circ}37'$, $\lambda = I48^{\circ}30'$ | $\varphi = 44^{\circ}30'$, $\lambda = I47^{\circ}40'$ | 5000 |
| 9 | 5.44.30 | 5.59.30 | I40 | Average distance from the ship 60 km | | 5000 |
| I0 | 6.I5.I5 | 6.30.I5 | 320 | $\varphi = 43^{\circ}54'$, $\lambda = I48^{\circ}I2'$ | $\varphi = 44^{\circ}30'$, $\lambda = I47^{\circ}40'$ | 350 |

October 26, 1976

| | | | | | | |
|---|---|---|---|---|---|---|
| | Ship Coordinates | | | $\varphi = 44^{\circ}00'$ | $\lambda = 149^{\circ}36'$ | |
| I | 2.35.00 | 3.05.00 | I50 | | $\varphi = 43^{\circ}30'$, $\lambda = I50^{\circ}00'$ | 6000 |
| 2 | 3.I9.00 | 3.34.00 | 270 | $\varphi = 43^{\circ}46'$, $\lambda = I50^{\circ}08'$ | $\varphi = 43^{\circ}40'$, $\lambda = I48^{\circ}58'$ | 6000 |
| 3 | 3.4I.30 | 3.56.30 | 90 | 40 | I00 | 6000 |
| 4 | 4.06.00 | 4.2I.00 | 270 | 87 | I0 | 4000 |
| 5 | 4.22.00 | 4.37.00 | 265 | from the ship to S = 77 km | | 4000 |
| 6 | 4.40.30 | 4.50.30 | 90 | 58 | I8 | 4000 |

Revolving to the left

| | | | | | |
|---|---|---|---|---|---|
| | | | 275 | | |
| $\gamma = I5^{\circ}$ | | | | | |
| 5.00.45 | 5.05.30 | | | | |
| 5.05.30 | 5.I0.00 | | | above the ship | 4000 |
| 5.I3.30 | 5.I8.00 | 275 | | | |
| 5.I8.00 | 5.22.30 | | | | |

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|
| | Revolving to the left | | | | | | |
| | $\gamma = 30^{\circ}$ | | | | | | |
| | 5.26.30 | 5.28.35 | 270 | | | | |
| | 5.28.35 | 5.30.45 | | | | | |
| | 5.30.45 | 5.33.00 | | above the ship | | | 4000 |
| | 5.33.00 | 5.35.I5 | | | | | |
| | 5.35.I5 | 5.37.30 | | | | | |
| 7 | 6.0I.00 | 6.I6.00 | 270 | 42 | 35 | | 900 |

October 28, 1976

| | Ship Coordinates: | | | $\varphi = 42^{\circ}56'$ | $\lambda = 148^{\circ}10'$ | |
|---|---|---|---|---|---|---|
| I | 2.22.30 | 2.37.30 | 80 | 36 | 94 | 6000 |
| 2 | 2.53.00 | 3.08.00 | 260 | 55 | 25 | 6000 |
| 3 | 3.2I.00 | 3.36.00 | I80 | 60 | 55 | 6000 |
| 4 | 3.44.I5 | 3.59.I5 | 360 | 46 | 58 | 4000 |
| 5 | 4.04.00 | 4.I9.00 | I80 | 70 | 34 | 4000 |
| 6 | 4.25.00 | 4.40.00 | 360 | 50 | 44 | 3000 |
| 7 | 4.45.00 | 5.00.00 | I80 | 60 | 30 | 2000 |
| 8 | 5.04.30 | 5.I9.00 | 355 | 32 | 43 | I000 |

October 29, 1976

| | Ship Coordinates: | | | $\varphi = 42^{\circ}49'$ | $\lambda = 148^{\circ}08'$ | |
|---|---|---|---|---|---|---|
| I | 2.20.00 | 2.47.00 | I80 | | | 6000 |
| 2 | 2.53.00 | 3.08.00 | II0 | I6 | 94 | 6000 |
| 3 | 3.I8.00 | 3.32.00 | 290 | 68 | 42 | 6000 |
| 4 | 3.40.30 | 3.55.30 | II0 | 39 | 6I | 4000 |
| 5 | 4.23.00 | 4.33.00 | 240 | II0 | 50 | 4000 |

| | | | | |
|---|---|---|---|---|
| | Revolving to the left | | | |
| | $\gamma = 28^{\circ}$ | | | |
| | 4.36.00 | 4.39.00 | 2I0 | above the ship |
| | 4.39.00 | 4.4I.50 | 2I0 | center shifted 7 km to the east |
| | 4.42.55 | 4.45.50 | 280 | above the ship |
| | 4.45.50 | 4.48.50 | 280 | center shifted 7 km to the east |
| | 4.48.50 | 4.5I.45 | 280 | center shifted 14 km to the east of the ship |

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|
| | Revolving to the left $\gamma = 15^{\circ}$ | | | | | | |
| | 4.52.05 | 4.57.25 | 250 | center shifted 15 km to the east | | | |
| | 4.57.25 | 5.02.45 | 250 | center shifted 7 km to the east | | | |
| 6 | 5.08.30 | 5.32.00 | 360 | | | 6000 | |

October 30, 1976

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | Ship Coordinates: | | | $\varphi = 42^{\circ}49'$ | $\lambda = 148^{\circ}08'$ | | |
| 1 | 2.20.00 | 2.43.00 | 175 | | 65 | 6000 | |
| 2 | 2.44.30 | 2.59.00 | 80 | 65 | 45 | 6000 | |
| 3 | 3.03.00 | 3.19.00 | 250 | 50 | 50 | 6000 | |
| 4 | 3.27.00 | 3.42.00 | 70 | 54 | 56 | 4000 | |
| 5 | 3.57.00 | 4.12.00 | 250 | 55 | 28 | 4000 | |
| | Revolving to the left $\gamma = 15^{\circ}$ | | | | | | |
| 6 | 4.17.15 | 4.22.00 | 60 | above the ship 5 km to the east | | | |
| | 4.22.00 | 4.26.30 | | | | | |
| 7 | 4.31.62 | 4.36.45 | 260 | above the ship 5 km to the east | | | |
| | 4.36.15 | 4.40.38 | | | | | |
| | Revolving to the left $\gamma = 28^{\circ}$ | | | | | | |
| 8 | 4.44.20 | 4.46.50 | 270 | 12 km to the west | | | |
| | 4.46.50 | 4.49.10 | | 6 km to the west | | | |
| | 4.49.40 | 4.52.10 | 260 | above the ship | | | |
| | 4.52.10 | 4.55.50 | | 6 km to the east | | | |
| | 4.55.50 | 4.57.40 | | 12 km to the east | | | |
| 9 | 5.10.30 | 5.25.30 | 70 | 40 | 50 | 500 | |
| 10 | 5.39.00 | 6.16.00 | 340 | | | 6000 | |

REPRODUCIBILITY OF THE ORIGINAL PAGE IS POOR

Table II-2



Time of Operation of the Scientific Equipment (GMT)

| Date | Hours of operation (GMT) | Microwave Radiometers λ = 0.8 cm | λ = 1.35 cm | λ = 1.6 cm | λ = 3.0 cm | λ = 2.4 cm | λ = 8.5 cm | Infra-red radio-meter | Thermo-hygro-meter | Gage of the water content of the clouds | Aerial photo equip-ment | Varia-tions of the flight program |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 |
| | | | | | Northern Test Site | | | | | | | |
| August 26-27 | 22.30.00<br>2.26.00 | + | − | + | | − | − | + | + | + | + | A,B |
| August 30 | 0.00.10<br>3.33.00 | + | + | + | − | − | + | + | + | + | + | A,B |
| Sept. 1 | 0.44.00<br>3.35.00 | − | + | + | + | − | + | + | + | + | + | A,B |
| Sept. 3 | 0.21.00<br>4.11.00 | + | + | + | + | − | + | + | + | + | + | A |
| Sept. 6 | 0.00.00<br>3.40.00 | − | + | + | + | − | + | + | + | + | + | A |
| Sept. 7-8 | 23.10.00<br>4.38.00 | − | + | + | + | − | + | + | + | + | + | A,B |
| Sept. 9-10 | 23.45.00<br>3.50.30 | + | + | + | + | − | + | + | + | + | + | A,B |
| Sept. 10-11 | 22.45.00<br>4.15.00 | + | + | + | + | − | + | + | + | + | + | C |
| Sept. 12-13 | 23.37.00<br>5.34.00 | + | + | + | + | − | + | + | + | + | + | C |
| | | | | | Southern Test Site | | | | | | | |
| Oct. 13 | 0.35.00<br>3.13.15 | + | + | + | + | + | + | + | + | − | + | A |
| Oct. 19 | 0.17.00<br>4.03.00 | + | + | + | + | + | + | + | + | + | + | A,B |
| Oct. 24 | 4.16.00<br>7.10.00 | + | + | + | + | + | + | + | + | + | + | B,C |
| Oct. 25 | 2.50.00<br>6.30.15 | + | + | + | + | + | + | + | + | + | + | A,B |
| Oct. 26 | 2.35.00<br>6.16.00 | + | + | + | + | + | + | + | + | + | + | C |
| Oct. 28 | 2.22.30<br>5.19.00 | + | + | + | + | + | + | + | + | + | + | A,B |
| Oct. 29 | 2.20.00<br>5.32.00 | + | + | + | + | + | + | + | + | − | + | C |
| Oct. 30 | 2.20.00<br>6.16.00 | + | + | + | + | + | + | + | + | − | + | C |

Table II-3

Table of Observations from the Scientific Research Craft "AkademicKorolev" (GMT)

/10.

| Число 1 | Время работы 2 | | Микроволновая радиометрия 5 | | | | | метеорологический комплекс 6 | радиозондирование 7 | гидрология 8 | волнографные измерения 9 | измерения проекций углонов морской поверхности 10 | ИК-радиометрия 11 | Фотосъемка состояния поверхности океана 12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | самолёт 3 | корабль 4 | 0.8см | I,35 см | I,6 см | 3,2 см | 8,5 см | | | | | | | |
| 26-27/УШ | 22.30.00-02.26.00 | 22.55-00.06 | + | + | + | - | + | + | + | + | + | + | + | + |
| 29-30/УШ | 00.00.I0-03.33.00 | 2I.56-02.40 | + | + | + | - | + | + | + | + | + | + | + | + |
| 3I/УШ-I/IX | 00.44.00-03.35.00 | 22.55-03.25 | + | + | + | - | + | + | + | + | + | + | + | + |
| 2-3/IX | 00.2I.00-04.II.00 | 23.05-02.40 | + | + | + | - | + | + | + | + | + | + | + | + |
| 6/IX | 00.00.00-03.40.00 | 00.00-03.42 | + | + | - | + | + | + | + | + | + | + | + | + |
| 7-8/IX | 23.I0.00-04.38.00 | 00.II-03.03 | + | + | - | + | + | + | + | + | + | + | + | + |
| 9-I0/IX | 23.45.00-03.50.30 | 00.08-04.50 | + | + | + | + | + | + | + | + | + | + | + | + |
| I0-II/IX | 22.45.00-04.I5.00 | 22.07-02.23 | + | + | + | + | + | + | + | + | + | + | + | + |
| I2-I3/IX | 23.37.00-05.34.00 | 23.59-06.5I | + | + | + | + | + | + | + | + | + | + | + | + |
| I2-I3/X | 00.35.00-03.I3.I5 | 23.59-03.50 | + | + | - | + | + | + | + | + | + | + | + | + |
| I9/X | 00.I7.00-04.03.00 | 00.04-02.55 | + | + | + | + | + | + | + | + | + | + | + | + |
| 24/X | 04.I6.00-07.I0.00 | 02.00-05.0I | + | + | + | + | + | + | + | + | + | + | + | + |
| 25/X | 02.50.00-06.30.I5 | 02.I6-04.36 | + | + | + | + | + | + | + | + | + | + | + | + |
| 26/X | 02.35.00-06.I6.00 | 02.05-04.42 | + | + | + | + | + | + | + | + | + | + | + | + |
| 28/X | 02.22.30-05.I9.00 | 0I.47-03.47 | + | + | + | + | + | + | + | + | + | + | + | + |
| 29/X | 02.20.00-05.32.00 | 0I.53-03.40 | + | + | + | + | + | + | + | + | + | + | + | + |
| 30/X | 02.20.00-06.I6.00 | 02.I8-05.50 | + | + | + | + | + | + | + | + | + | + | + | + |

Key: 1 - date; 2 - time of operation; 3 - aircraft; 4 - ship; 5 - microwave radiometer; 6 - meteorological complex; 7 - radio sounding; 8 - hydrology; 9 - wave recordings; 10 - measuring the slope projections of the marine surface; 11- infra-red radiometry; 12 - photographing the state of the ocean's surface

The dates are as follows: 8/26-27; 8/29-30; 8/31; 9/1; 9/2-3; 9/2-6; 9/7-8; 9/9-10; 9/10-11; 9/12-13; 10/12-13; 10/19; 10/24; 10/25; 10/26; 10/28; 10/29; 10/30.

ORIGINAL PAGE IS POOR

REPRODUCIBILITY

Table II-4 Weather Conditions in the Region of the Craft /11.

Key:
1. Date
2. Purpose
3. H-(m) of the wind and waves
4. H-(m) of the swell
5. water temperature °C
6. air temperature °C
7. cloudiness 8. precipitation 9. actual wind 10. total amount
11. form 12. type 13. time 14. direction (degrees) 15. speed m/sec
16. August 26-27 Measuring the temperature of the sea surface
17. August 30 Measuring the content of water vapor
18. September 1 " " " " " "
19. September 3 " " " " " "
20. September 6 Measuring the water reserve in the clouds and the content of water vapor
21. September 7-8 - " -
22. September 9-10 Measuring the water reserve in the clouds and the intensity of liquid precipitation
23. September 10-11 Swell and foam on the sea surface
24. September 12-13 - " -
25. October 13 Measuring the temperature of the sea surface, content of water vapor
26. October 19 Measuring the water reserve of the clouds and the intensity of liquid precipitation
27. October 24 Measuring the swell, foam on the sea surface, intensity of liquid precipitation
28. October 25 Measuring the water reserve of the clouds, intensity of liquid precipitation
29. October 26 Measuring the swell, foam on the sea surface
30. October 28 Measuring the water vapor content
31. October 29 Measuring the swell, foam on the sea surface
32. October 30 -"-
33. northern test site (9 flights)
34. southern test site (8 flights)

| Дата 1 | Цель 2 | H(м) ветр. волн. 3 | H(м) зыби 4 | T воды °C 5 | T возд. °C 6 | Облачность 7: Общее колич. 10 | Облачность 7: Форма 11 | Осадки 8: Вид 12 | Осадки 8: Время 13 | Истинный ветер 9: Напр. (град.) 14 | Истинный ветер 9: Скорость м/сек 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 33 Северный полигон (9 полетов) | | | | | | | | | | |
| 16 26-27 августа | Измерение температуры поверхности моря | 8.0 | I.5 | 9.5 | 9.9 | 9 | + | ≡² | $22^{30}$-$0I^{00}$ | 250 | 4.0 |
| 17 30 августа | Измерения содержания водяного пара | 0.5 | I.5 | 9.0 | 9.4 | 8 | Sc op | ≡ | $0I^{06}$-$0I^{28}$ | 330 | 3.0 |
| 18 I сентября | -"- -"- -"- -"- | I.5 | 2.0 | I0.3 | I0.2 | 7 | Sc, St, Cu | | | 250 | 8.0 |
| 19 3 сентября | -"- -"- -"- -"- | 0.5 | 2.0 | 9.9 | 8.4 | 8 | Sc, St | | | I30 | 4.0 |
| 20 6 сентября | Измерения водозапаса облачности, содержания водяного пара | I,0 | I,5 | I0.I | 9,0 | 8 | Sc, St neb | | | 240 | 5.0 |
| 21 7-8 сентября | -"- | I.0 | I.0 | I0.I | 9.3 | 8 | Sc, St, cb, Ac | ∴ | $00^{25}$-$0I^{I5}$ | 200 | 6.0 |
| 22 9-I0 сентября | Измерения водозапаса облачности, интенсивности жидких осадков | 3.5 | | I0.3 | II.2 | 9 | St neb | ≡ | $2I^{0I}$-$03^{45}$ | 2I0 | I3.0 |
| 23 I0-II сентября | Волнение, пена на поверхности моря | 3.5 | | II.2 | II.6 | 6 | Ac, Ci | | | 250 | I2.0 |
| 24 I2-I3 сентября | -"- | 5.5 | | 6.9 | 7.3 | 8 | Cu, St, Cs | • | $23^{45}$-$00^{00}$ | 0I0 | 20.0 |
| | 34 Южный полигон (8 полетов) | | | | | | | | | | |
| 25 I3 октября | Измерения температуры поверхности моря, содержания водяного пара | I.5 | 2.0 | 6.9 | 8.0 | 7 | St, Sc, Ac, As | | | 200 | 7.0 |
| 26 I9 октября | Измерения водозапаса облачности, интенсивности жидких осадков | I.0 | I.5 | 8.9 | I0.0 | 4 | St neb | ≡² | $0I^{I5}$-$04^{00}$ | I70 | 6.0 |
| 27 24 октября | Измерения волнения, пены на поверхности моря, интенсивности жидких осадков | I.0 | 0.0 | 9.3 | 7.9 | 7 | Ac, As | | | I00 | 4.0 |
| 28 25 октября | Измерения водозапаса облаков, интенсивности жидких осадков | I.0 | 2.0 | 7.4 | I0.0 | 8 | Cs, Fr nb | • | $02^{50}$-$06^{30}$ | 2I0 | 5.0 |
| 29 26 октября | Измерения волнения, пены на поверхности моря | 3.0 | | 8.0 | 6.6 | 6 | Cu, Ac | | | 280 | II.0 |
| 30 28 октября | Измерения содержания водяного пара | I.5 | 2.5 | I2.3 | 8.8 | 5 | Cu, Ac, Ci | | | 240 | 7.0 |
| 31 29 октября | Измерения волнения, пены на поверхности моря | I.5 | 4.5 | II.0 | I0.9 | 8 | Cu, Ac | | | I30 | 9.0 |
| 32 30 октября | -"- -"- | 3.5 | 4.0 | 6.6 | 7.0 | 6 | Cu, Ac | | | 270 | I6.0 |

IV. Days of Operation Suggested by the Soviet Side for Analysis and Comparison /12.

1. September 9-20, 1976 (northern testing site)
2. September 10-11, 1976 (northern testing site)
3. September 12-13, 1976 (northern testing site)
4. October 13, 1976 (southern testing site)
5. October 25, 1976 (southern testing site)
6. October 30, 1976 (southern testing site)

III-1. Data on the Aircraft Measurements /13.

TABLES

of the Radio Brightness Temperature, Averaged over 10-second Intervals (Manual Processing)

Radiometer $\lambda = 2.4$ cm

October 13, 1976

| Command No. | Time (Moscow) | $T_aK$ |
|---|---|---|
| I | 2 | 3 |
| I | 3-35 | II6 |
| | | II8 |
| | | II6 |
| | | II8 |
| | 3-37 | I23 |
| | | I20 |
| | | II7 |
| | | I20 |
| | | I20 |
| | | II8 |
| | | II8 |
| | | II8 |
| | 3-38 | II9 |
| | | II9 |
| | | II8 |
| | | II8 |
| | | I20 |
| | | II9 |
| | | II9 |
| | 3-39 | I20 |
| | | II8 |
| | | II9 |
| | | II9 |
| | | I20 |
| | | II8 |
| | | II9 |
| | 3-40 | II7 |
| | | II7 |
| | | II9 |
| | | II8 |
| | | II8 |
| | | II7 |

| Command No. | Time (Moscow) | $T_aK$ |
|---|---|---|
| I | 2 | 3 |
| | 3-40 | II8 |
| | | II9 |
| | 3-4I | II8 |
| | | II8 |
| | 3-44 | I26 |
| | 3-45 | I26 |
| | | I24 |
| | | I24 |
| | | I25 |
| | | I25 |
| | | I26 |
| | | I24 |
| | 3-46 | I26 |
| | | I25 |
| | | I25 |
| | | I25 |
| | | I24 |
| | | I24 |
| | | I24 |
| | 3-47 | I26 |
| | | I26 |
| | | I27 |
| | | I25 |
| | | I28 |
| | | I30 |
| | | I29 |
| | | I3I |
| | 3-48 | I30 |
| | | I29 |
| | | I27 |
| | | I26 |
| | | I28 |

| Command No. | Time (Moscow) | $T_aK$ |
|---|---|---|
| I | 2 | 3 |
| I | 3-48 | I27 |
| | | I29 |
| | 3-49 | I27 |
| | | I28 |
| I | | I30 |
| 2 | 3-54 | I25 |
| | | I24 |
| | | I25 |
| | | I26 |
| | | I30 |
| | | I25 |
| | | I29 |
| | 3-55 | I28 |
| | | I27 |
| | | I27 |
| | | I29 |
| | | I32 |
| | | I30 |
| | 3-56 | I28 |
| | | I26 |
| | | I24 |
| | | I25 |
| | | I23 |
| | | I22 |
| | 3-57 | I2I |
| | | I22 |
| | | I2I |
| | | I2I |
| | | I2I |
| | | I20 |
| | | I23 |

| Command No. | Time (Moscow) | $T_aK$ |
|---|---|---|
| I | 2 | 3 |
| 2 | 3-58 | I22 |
| | | I2I |
| | | I2I |
| | | I2I |
| | | I20 |
| | | I20 |
| | 3-59 | I2I |
| | | II8 |
| | | II9 |
| | | I20 |
| | | II8 |
| | | I20 |
| | 4-00 | II8 |
| | | II8 |
| | | I20 |
| | | II9 |
| | | II8 |
| | | II9 |
| | | I20 |
| | 4-0I | II9 |
| | | I20 |
| | | II8 |
| | | I20 |
| | | I20 |
| | | I20 |
| | | I20 |
| | 4-02 | I20 |
| | | I20 |
| | | I20 |
| | | I20 |
| | | I20 |
| | | I2I |

| I | 2 | 3 |
|---|---|---|
| 2 | 4-03 | I20 |
| | | I2I |
| | | II9 |
| | | I2I |
| | | I20 |
| | | I20 |
| | | II9 |
| | | II8 |
| | | I20 |
| | 4-04 | II9 |
| | | II8 |
| | | II8 |
| | | I2I |
| | | I20 |
| | | II9 |
| | | II9 |
| | 4-05 | I20 |
| | | II8 |
| | | II9 |
| | | II8 |
| | | II8 |
| | | II9 |
| | | I20 |
| | | I20 |
| | 4-06 | I20 |
| | | I20 |
| | | II9 |
| | | I22 |
| | | I20 |
| | | II8 |
| | | II9 |
| | 4-07 | II7 |
| | | II9 |
| | | I20 |
| | | I20 |
| | | II9 |

| I | 2 | 3 |
|---|---|---|
| | 4-07 | II8 |
| | | II8 |
| | 4-08 | II9 |
| | | II9 |
| | | II9 |
| | | II2 |
| | | I22 |
| | | I2I |
| | | II7 |
| | | I2I |
| | | II8 |
| | 4-09 | I2I |
| 2 | | I20 |
| 3 | 4-I0 | I24 |
| | | I25 |
| | | I24 |
| | 4-II | I25 |
| | | I26 |
| | 4-I3 | I22 |
| | | I24 |
| | | I24 |
| | | I22 |
| | | I25 |
| | | I24 |
| | 4-I4 | I25 |
| | | I2I |
| | | I25 |
| | | I25 |
| | | I25 |
| | | I24 |
| | | I24 |
| | 4-I5 | I24 |
| | | I25 |
| | | I24 |
| | | I24 |
| | | I23 |
| | | I25 |
| | | I24 |

| I | 2 | 3 |
|---|---|---|
| 3 | 4-I6 | I23 |
| | | I25 |
| | | I24 |
| | | I26 |
| | 4-I8 | II2 |
| | | II4 |
| | | II4 |
| | | II3 |
| | 4-20 | II3 |
| | | II2 |
| | | II0 |
| | | III |
| | 4-2I | III |
| | | II3 |
| | | II0 |
| | | II0 |
| | | I09 |
| | | III |
| | | II0 |
| | | I09 |
| | 4-22 | I09 |
| | | II2 |
| | | I09 |
| | | I08 |
| | | I09 |
| | | II0 |
| | | I09 |
| | 4-23 | III |
| | | I09 |
| | | II0 |
| | | II2 |
| | | I09 |
| | | II0 |
| | | III |
| | 4-24 | II0 |
| | | III |
| | | I08 |

| I | 2 | 3 |
|---|---|---|
| 3 | 4-24 | I09 |
| | | I08 |
| | | II0 |
| 4 | 4-28 | II3 |
| | | II3 |
| | | III |
| | | II4 |
| | | II3 |
| | | II3 |
| | | II3 |
| | 4-29 | II4 |
| | | III |
| | | II2 |
| | | II3 |
| | | II4 |
| | | II6 |
| | | II5 |
| | 4-30 | II4 |
| | | II3 |
| | | II5 |
| | | II4 |
| | | II3 |
| | | II5 |
| | | II4 |
| | 4-3I | II4 |
| | | II5 |
| | | II3 |
| | | II4 |
| | | II3 |
| | | II5 |
| | | II4 |
| | 4-32 | II5 |
| | | II4 |
| | | II4 |
| | | II4 |
| | | II3 |
| | | II5 |

| I | 2 | 3 |
|---|---|---|
| 4 | 4-33 | II4 |
| | | II4 |
| | | II5 |
| | | II4 |
| | | II4 |
| | | II5 |
| | | II4 |
| | | II4 |
| | | II4 |
| | | II3 |
| | | II4 |
| | | II4 |
| | | II4 |
| | | II4 |
| | | II5 |
| | 4-35 | II4 |
| | | II5 |
| | | II5 |
| | | II4 |
| | | II5 |
| | | II5 |
| | 4-36 | II4 |
| | | II4 |
| | | II5 |
| | | II4 |
| | | II6 |
| | | II4 |
| | | II4 |
| | 4-37 | II5 |
| | | II4 |
| | | II6 |
| | | II7 |
| | | II5 |
| | | II4 |
| | | II6 |
| | | II5 |
| | 4-38 | II5 |
| | | II6 |

| 4 | 5 | 6 |
|---|---|---|
| 4 | 4-38 | II7 |
| | | II7 |
| | | II6 |
| | | II4 |
| | | II5 |
| | | II6 |
| | | II7 |
| | | II6 |
| | | II6 |
| | | II7 |
| | | II5 |
| | | II4 |
| | | II5 |
| | | II4 |
| | 4-40 | II6 |
| | | II8 |
| | | II6 |
| | | II5 |
| | | II5 |
| | | II5 |
| | | II6 |
| | | II5 |
| | 4-4I | II5 |
| | | II6 |
| | | II5 |
| | | II6 |
| | | II5 |
| | | II6 |
| | | II6 |
| | | II5 |
| | 4-42 | II5 |
| | | II7 |
| | | II6 |
| | | II6 |
| | | II6 |
| | | II5 |
| | | II5 |
| | | II5 |
| | | II5 |

| I | 2 | 3 |
|---|---|---|
| 5 | 5-00 | II9 |
| | | II6 |
| | | II7 |
| | 5-0I | II7 |
| | | II6 |
| | | II8 |
| | | II8 |
| | | II6 |
| | | II5 |
| | 5-02 | II7 |
| | | II5 |
| | | II7 |
| | | II6 |
| | | II7 |
| | | II6 |
| | | II6 |
| | | II8 |
| | | II7 |
| | | II5 |
| | 5-03 | II6 |
| | | II5 |
| | | II7 |
| | | II8 |
| | | II7 |
| | | II7 |
| | | II6 |
| | | II7 |
| | 5-04 | II6 |
| | | II7 |
| | | II7 |
| | | II9 |
| | | II9 |
| | | II8 |
| | | II7 |
| | | II9 |

| I | 2 | 3 |
|---|---|---|
| 5 | 5-05 | II7 |
| | | II6 |
| | | II8 |
| | | II6 |
| | | II9 |
| | | II7 |
| | | II8 |
| | | II6 |
| | | II5 |
| | | II9 |
| | | II9 |
| | | II8 |
| | | II9 |
| | | II8 |
| | 5-07 | II9 |
| | | II9 |
| | | II9 |
| | | II7 |
| | | II8 |
| | | II7 |
| | | II9 |
| | | II7 |
| | 5-08 | II9 |
| | | II8 |
| | | II7 |
| | | II9 |
| | | II9 |
| | | II7 |
| | | II8 |
| | | II8 |
| | 5-09 | II9 |
| | | II9 |
| | | II8 |
| | | II9 |
| | | II8 |
| | | II9 |

| I | 2 | 3 |
|---|---|---|
| 5 | 5-I0 | II9 |
| | | II8 |
| | | II9 |
| | | II9 |
| | | II8 |
| | | II8 |
| | | II9 |
| | | II8 |
| | 5-II | II9 |
| | | II8 |
| | | II9 |
| | | II9 |
| | | II9 |
| | | II8 |
| 5 | | II9 |
| 6 | 5-20 | I20 |
| | | II9 |
| | | I20 |
| | | I20 |
| | | II9 |
| | | II8 |
| | | II9 |
| | | I2I |
| | 5-2I | II8 |
| | | II8 |
| | | II9 |
| | | I20 |
| | | I20 |
| | | I2I |
| | | I20 |
| | 5-22 | I2I |
| | | I20 |
| | | I2I |
| | | I20 |
| | | I20 |
| | | I2I |

| I | 2 | 3 |
|---|---|---|
| 6 | 5-22 | I22 |
| | 5-23 | I2I |
| | | I2I |
| | | I2I |
| | | I2I |
| | | I22 |
| | | I22 |
| | | I2I |
| | 5-24 | I22 |
| | | I23 |
| | | I23 |
| | | I22 |
| | | I22 |
| | | I23 |
| | | I25 |
| | 5-25 | I24 |
| | | I25 |
| | | I22 |
| | | I23 |
| | | I2I |
| | | I23 |
| | | I23 |
| | 5-26 | I23 |
| | | I25 |
| | | I23 |
| | | I23 |
| | | I25 |
| | | I24 |
| | | I24 |
| | 5-27 | I23 |
| | | I25 |
| | | I25 |
| | | I25 |
| | | I25 |
| | | I26 |
| | | I24 |

| I | 2 | 3 |
|---|---|---|
| 6 | 5-28 | I25 |
| | | I25 |
| | | I25 |
| | | I26 |
| | | I24 |
| | | I26 |
| | | I26 |
| | 5-29 | I27 |
| | | I26 |
| | | I26 |
| | | I26 |
| | | I27 |
| | | I26 |
| | | I27 |
| | 5-30 | I26 |
| | | I27 |
| | | I28 |
| | | I26 |
| | | I27 |
| | | I26 |
| | | I26 |
| | 5-3I | I26 |
| | | I27 |
| | | I27 |
| | | I26 |
| | | I27 |
| | | I26 |
| | | I27 |
| | 5-32 | I27 |
| | | I27 |
| | | I28 |
| | | I28 |
| | | I27 |
| | | I28 |
| | | I27 |

| I | 2 | 3 |
|---|---|---|
| 6 | 5-33 | I28 |
| | | I27 |
| | | I28 |
| | | I27 |
| | | I28 |
| | 5-34 | I27 |
| | | I29 |
| | | I28 |
| | | I28 |
| | | I27 |
| | | I27 |
| | | I29 |
| | | I28 |
| 6 | | I28 |
| 7 | 5-40 | I28 |
| | | I27 |
| | | I27 |
| | | I28 |
| | | I29 |
| | | I27 |
| | | I28 |
| | | I28 |
| | 5-4I | I28 |
| | | I29 |
| | | I29 |
| | | I29 |
| | | I29 |
| | | I3I |
| | | I30 |
| | | I30 |
| | 5-42 | I30 |
| | | I29 |
| | | I29 |
| | | I30 |
| | | I29 |
| | | I29 |
| | | I30 |

REPRODUCIBILITY OF THE ORIGINAL PAGE IS POOR

| I | 2 | 3 |
|---|---|---|
| 7 | 5-43 | I30 |
| | | I29 |
| | | I30 |
| | | I30 |
| | | I29 |
| | | I29 |
| | | I30 |
| | | I3I |
| | 5-44 | I29 |
| | | I29 |
| | | I29 |
| | | I29 |
| | | I30 |
| | | I29 |
| | | I29 |
| | 5-45 | I30 |
| | | I28 |
| | | I28 |
| | | I29 |
| | | I29 |
| | | I28 |
| | | I28 |
| | | I30 |
| | 5-46 | I29 |
| | | I28 |
| | | I3I |
| | | I32 |
| | | I3I |
| | | I3I |
| | | I3I |
| | 5-48 | I34 |
| | | I32 |
| | 5-49 | I32 |
| | | I32 |
| | | I33 |

| I | 2 | 3 |
|---|---|---|
| 7 | 5-49 | I32 |
| | | I32 |
| | | I33 |
| | | I3I |
| | 5-50 | I32 |
| | | I33 |
| | | I32 |
| | | I3I |
| | | I32 |
| | | I3I |
| | | I33 |
| | 5-5I | I32 |
| | | I3I |
| | | I32 |
| | | I3I |
| | | I33 |
| | | I33 |
| | | I3I |
| | | I33 |
| | 5-52 | I33 |
| | | I3I |
| | | I32 |
| | | I33 |
| | | I33 |
| | | I3I |
| | 5-53 | I33 |
| | | I33 |
| | | I33 |
| | | I33 |
| | | I33 |
| | | I33 |
| | | I33 |
| | | I33 |

REPRODUCIBILITY OF THE
ORIGINAL PAGE IS POOR

October 25, 1976

| Command No. | Time (ms) | $T_aK$ |
|---|---|---|
| I | 5-55 | I32 |
| | | I34 |
| | | I34 |
| | | I34 |
| | 5-56 | I34 |
| | | I36 |
| | | I36 |
| | | I35 |
| | 5-57 | I35 |
| | | I36 |
| | | I35 |
| | | I37 |
| | | I35 |
| | 5-58 | I37 |
| | | I33 |
| | | I37 |
| | | I38 |
| | | I39 |
| | | I37 |
| | 5-59 | I37 |
| | | I35 |
| | 6-00 | I36 |
| | | I36 |
| | 6-0I | I34 |
| | | I36 |
| | | I33 |
| | | I37 |
| | | I40 |
| | | I38 |
| | 6-02 | I36 |
| | | I37 |
| | | I37 |

| Command No. | Time (ms) | $T_aK$ |
|---|---|---|
| I | 6-02 | I34 |
| | | I34 |
| | 6-03 | I36 |
| | | I34 |
| | | I34 |
| | | I36 |
| | 6-04 | I39 |
| | | I37 |
| | | I37 |
| | 6-05 | I35 |
| | | I35 |
| | | I35 |
| | 6-07 | I32 |
| | 6-08 | I34 |
| | | I35 |
| | | I3I |
| | | I35 |
| | | I35 |
| | 6-39 | I33 |
| | | I33 |
| | | I33 |
| | | I3I |
| | 6-40 | I33 |
| | | I3I |
| | | I33 |
| | | I33 |
| | | I33 |
| | 6-4I | I35 |
| | | I38 |
| | | I36 |
| | | I35 |
| | | I37 |

| Command No. | Time (ms) | $T_aK$ |
|---|---|---|
| 2 | 6-42 | I35 |
| | | I33 |
| | | I3I |
| | | I35 |
| | | I33 |
| | | I32 |
| | | I32 |
| | 6-43 | I33 |
| | | I30 |
| | | I30 |
| | | I28 |
| | | I27 |
| | 6-44 | I26 |
| | | I25 |
| | | I27 |
| | | I25 |
| | 6-45 | I26 |
| | | I24 |
| | | I24 |
| | | I26 |
| | | I24 |
| | 6-46 | I24 |
| | | I25 |
| | | I24 |
| | | I24 |
| | | I24 |
| | | I25 |
| | 6-47 | I25 |
| | | I27 |
| | | I25 |
| | | I25 |
| | | I23 |
| | | I25 |
| | 6-48 | I22 |
| | | I22 |

| Command No. | Time (ms) | $T_aK$ |
|---|---|---|
| 2 | 6-48 | I23 |
| | | I23 |
| | 6-49 | I22 |
| | | I22 |
| | | II9 |
| | | II6 |
| | | I22 |
| | 6-50 | I2I |
| | | I22 |
| | | I22 |
| | | I2I |
| | | I23 |
| | | I24 |
| | 6-5I | I27 |
| | | I28 |
| | | I25 |
| | | I25 |
| | 6-52 | I24 |
| | | I22 |
| | | I23 |
| | | I22 |
| | | I23 |
| | | I24 |
| | 6-53 | I23 |
| | | I24 |
| | | I24 |
| | | I25 |
| | | I23 |
| 2 | | I23 |
| 3 | 6-57 | I28 |
| | | I26 |
| | | I27 |
| | | I25 |
| | | I23 |
| | | I26 |

| I | 2 | 3 |
|---|---|---|
| 3 | 6-58 | I27 |
| | | I26 |
| | | I27 |
| | | I27 |
| | | I25 |
| | 6-59 | I27 |
| | | I26 |
| | | I24 |
| | | I22 |
| | 7-00 | I24 |
| | | I22 |
| | | I24 |
| | | I27 |
| | | I23 |
| | 7-0I | I25 |
| | 7-02 | I25 |
| | | I27 |
| | | I25 |
| | | I26 |
| | 7-03 | I27 |
| | | I25 |
| | | I27 |
| | | I28 |
| | | I30 |
| | | I26 |
| | 7-04 | I25 |
| | | I27 |
| | | I27 |
| | | I29 |
| | | I3I |
| | | I30 |
| | | I32 |
| | 7-05 | I32 |
| | | I32 |
| | | I35 |
| | | I32 |
| | 7-06 | I33 |
| | | I35 |
| | | I36 |

| I | 2 | 3 |
|---|---|---|
| 3 | 7-07 | I34 |
| | | I35 |
| | | I34 |
| | | I34 |
| | 7-08 | I3I |
| | | I3I |
| | | I28 |
| | | I32 |
| | 7-09 | I34 |
| | | I30 |
| | | I3I |
| | | I30 |
| | 7-I0 | I29 |
| | | I26 |
| | | I27 |
| | | I25 |
| | 7-II | I29 |
| | | I27 |
| | | I28 |
| | | I28 |
| | | I27 |
| 3 | | I28 |
| 4 | 7-I6 | I30 |
| | | I3I |
| | | I29 |
| | | I27 |
| | 7-I7 | I27 |
| | | I26 |
| | | I29 |
| | | I27 |
| | | I30 |
| | 7-I8 | I27 |
| | | I29 |
| | | I32 |
| | | I29 |
| | | I29 |
| | | I32 |
| | | I30 |

| I | 2 | 3 |
|---|---|---|
| 4 | 7-I9 | I30 |
| | | I32 |
| | | I34 |
| | | I35 |
| | | I3I |
| | 7-20 | I3I |
| | | I33 |
| | | I30 |
| | | I33 |
| | 7-2I | I3I |
| | | I34 |
| | | I35 |
| | | I35 |
| | | I3I |
| | | I34 |
| | 7-22 | I34 |
| | | I35 |
| | | I32 |
| | | I3I |
| | | I35 |
| | 7-23 | I32 |
| | | I3I |
| | | I30 |
| | | I29 |
| | | I3I |
| | | I28 |
| | 7-24 | I32 |
| | | I33 |
| | | I3I |
| | | I33 |
| | | I3I |
| | | I30 |
| | 7-25 | I3I |
| | | I30 |
| | | I26 |
| | | I29 |
| | | I27 |
| | 7-26 | I26 |
| | | I26 |
| | | I25 |

| I | 2 | 3 |
|---|---|---|
| 4 | 7-26 | I28 |
| | | I30 |
| | 7-27 | I25 |
| | | I24 |
| | | I22 |
| | | I20 |
| | 7-28 | I2I |
| | | I23 |
| | | I24 |
| | | I26 |
| | | I25 |
| | | I26 |
| | 7-29 | I24 |
| | | I30 |
| | | I25 |
| | | I25 |
| | | I24 |
| | 7-30 | I25 |
| | | I24 |
| | | I24 |
| | | I24 |
| 4 | | I24 |
| 5 | 7-38 | I28 |
| | | I26 |
| | | I28 |
| | | I27 |
| | 7-40 | I26 |
| | | I28 |
| | | I26 |
| | | I28 |
| | | I30 |
| | | I34 |
| | | I4I |
| | 7-4I | I37 |
| | | I35 |
| | | I3I |
| | | I32 |
| | | I33 |
| | | I35 |
| | | I33 |

8

| I | 2 | 3 |
|---|---|---|
| 5 | 7-42 | I32 |
| | | I3I |
| | | I32 |
| | | I34 |
| | | I33 |
| | 7-43 | I32 |
| | | I3I |
| | | I33 |
| | | I3I |
| | | I33 |
| | | I30 |
| | 7-44 | I29 |
| | | I30 |
| | | I28 |
| | | I28 |
| | | I27 |
| | 7-45 | I27 |
| | | I27 |
| | | I38 |
| | | I27 |
| | 7-46 | I26 |
| | | I27 |
| | | I29 |
| | | I29 |
| | | I28 |
| | 7-47 | I28 |
| | | I29 |
| | | I3I |
| | | I29 |
| | | I30 |
| | | I3I |
| | 7-48 | I3I |
| | | I33 |
| | | I34 |
| | | I35 |
| | | I33 |

| I | 2 | 3 |
|---|---|---|
| 5 | 7-49 | I30 |
| | | I27 |
| | | I30 |
| | | I32 |
| | | I30 |
| | 7-50 | I32 |
| | | I30 |
| | | I3I |
| | | I3I |
| | | I30 |
| | | I27 |
| | | I30 |
| | 7-5I | I30 |
| | | I30 |
| | | I3I |
| | | I29 |
| | | I32 |
| | | I30 |
| | 7-52 | I28 |
| | | I3I |
| | | I29 |
| | | I30 |
| | | I33 |
| | | I30 |
| 5 | | I34 |
| 6 | 7-58 | I26 |
| | | I33 |
| | | I22 |
| | | I2I |
| | | I24 |
| | | I33 |
| | 7-59 | I28 |
| | | I27 |
| | | I32 |

| I | 2 | 3 |
|---|---|---|
| 6 | 7-59 | I35 |
| | | I37 |
| | | I39 |
| | | I47 |
| | | I45 |
| | | I42 |
| | 8-00 | I40 |
| | | I36 |
| | | I35 |
| | | I37 |
| | | I35 |
| | | I35 |
| | | I34 |
| | | I32 |
| | 8-0I | I33 |
| | | I30 |
| | | I32 |
| | | I32 |
| | | I33 |
| | | I30 |
| | 8-02 | I30 |
| | | I29 |
| | | I29 |
| | | I30 |
| | | I3I |
| | | I29 |
| | 8-03 | I30 |
| | | I30 |
| | | I29 |
| | | I28 |
| | | I28 |
| | 8-04 | I28 |
| | | I30 |
| | | I32 |
| | | I29 |
| | | I32 |
| | | I28 |
| | 8-05 | I28 |

| I | 2 | 3 |
|---|---|---|
| 6 | 8-05 | I27 |
| | | I28 |
| | | I27 |
| | 8-06 | I27 |
| | | I29 |
| | | I28 |
| | | I29 |
| | | I28 |
| | | I28 |
| | | I3I |
| | 8-07 | I29 |
| | | I32 |
| | | I34 |
| | | I32 |
| | 8-08 | I36 |
| | | I32 |
| | | I35 |
| | | I32 |
| | | I29 |
| | | I29 |
| | 8-09 | I28 |
| | | I3I |
| | | I32 |
| | | I30 |
| | | I32 |
| | | I34 |
| | | I3I |
| | 8-I0 | I32 |
| | | I34 |
| | | I33 |
| | | I35 |
| | | I32 |
| | 8-II | I34 |
| | | I34 |
| | | I35 |
| | | I37 |
| | | I34 |
| | | I32 |
| | | I30 |

| I | 2 | 3 |
|---|---|---|
| 6 | 8-II | I32 |
| | | I29 |
| | 8-I2 | I30 |
| | | I27 |
| | | I30 |
| | | I28 |
| | | I27 |
| 6 | | I26 |
| 7 | 8-27 | I25 |
| | | I23 |
| | | I25 |
| | | I22 |
| | | I23 |
| | | I2I |
| | 8-28 | I23 |
| | | I22 |
| | | I22 |
| | | I23 |
| | | I2I |
| | | I25 |
| | 8-29 | I2I |
| | | I20 |
| | 8-30 | I23 |
| | | I22 |
| | | I24 |
| | | I22 |
| | | I23 |
| | | I22 |
| | 8-3I | I26 |
| | | I24 |
| | | I26 |
| | | I24 |
| | | I27 |
| | | I24 |
| | | I24 |
| | 8-32 | I27 |
| | | I25 |

| I | 2 | 3 |
|---|---|---|
| 7 | 8-32 | I27 |
| | | I25 |
| | | I24 |
| | 8-33 | I27 |
| | | I28 |
| | | I26 |
| | | I27 |
| | 8-34 | I28 |
| | | I32 |
| | | I27 |
| | | I28 |
| | | I30 |
| | | I32 |
| | 8-35 | I29 |
| | | I29 |
| | | I30 |
| | | I28 |
| | | I3I |
| | | I27 |
| | 8-36 | I30 |
| | | I30 |
| | | I27 |
| | | I28 |
| | 8-37 | I3I |
| | | I33 |
| | | I3I |
| | | I29 |
| | | I28 |
| | 8-38 | I26 |
| | | I26 |
| | | I27 |
| | | I26 |
| | | I30 |
| | | I28 |
| | 8-39 | I25 |
| | | I27 |
| | | I29 |
| | | I27 |

| I | 2 | 3 |
|---|---|---|
| 7 | 8-40 | I30 |
| | | I3I |
| | | I28 |
| | | I3I |
| | | I28 |
| | 8-4I | I30 |
| | | I29 |
| | | I27 |
| | | I29 |
| 7 | | I30 |
| 8 | 8-44 | I29 |
| | | I30 |
| | | I33 |
| | | I3I |
| | | I32 |
| | | I30 |
| | | I3I |
| | 8-45 | I33 |
| | | I30 |
| | | I32 |
| | | I32 |
| | | I30 |
| | 8-46 | I30 |
| | | I3I |
| | | I30 |
| | | I3I |
| | 8-47 | I29 |
| | | I32 |
| | | I32 |
| | | I30 |
| | | I29 |
| | | I3I |
| | | I29 |
| | 8-48 | I32 |
| | | I39 |
| | | I29 |
| | | I30 |
| | | I29 |
| | | I33 |

| I | 2 | 3 |
|---|---|---|
| 8 | 8-49 | I28 |
| | | I3I |
| | | I28 |
| | | I30 |
| | | I33 |
| | 8-50 | I3I |
| | | I3I |
| | | I32 |
| | | I3I |
| | | I30 |
| | | I28 |
| | 8-5I | I30 |
| | | I29 |
| | | I33 |
| | | I3I |
| | | I32 |
| | 8-52 | I3I |
| | | I30 |
| | | I29 |
| | | I29 |
| | 8-53 | I28 |
| | | I30 |
| | | I26 |
| | | I27 |
| | 8-54 | I30 |
| | | I27 |
| | | I32 |
| | | I30 |
| | 8-55 | I29 |
| | | I3I |
| | | I29 |
| | | I28 |
| | | I27 |
| | | I29 |
| | 8-56 | I30 |
| | | I28 |
| | | I3I |
| | | I30 |

| I | 2 | 3 |
|---|---|---|
| 8 | 8-56 | I30 |
| | | I27 |
| | | I30 |
| | | I27 |
| | 8-57 | I27 |
| | | I30 |
| | | I28 |
| | | I29 |
| | | I28 |
| | | I26 |
| | | I3I |
| | 8-58 | I29 |
| | | I3I |
| | | I30 |
| | | I32 |
| | | I30 |
| | | I3I |
| | | I30 |

| I | 2 | 3 |
|---|---|---|
| 9 | 9-20 | I32 |
| | | I3I |
| | | I32 |
| | | I32 |
| | 9-27 | I3I |
| | | I34 |
| | | I3I |
| | | I34 |
| | | I35 |
| | 9-28 | I33 |
| | | I33 |
| | | I32 |
| | | I36 |
| | | I33 |
| | 9-29 | I33 |
| | | I37 |
| | | I35 |
| | | I33 |
| | 9-30 | I33 |
| | | I32 |
| | | I35 |
| | | I34 |
| | | I33 |

October 30, 1976

| I | 2 | 3 |
|---|---|---|
| I | 5-20 | I30 |
| | | I32 |
| | | I3I |
| | | I29 |
| | 5-2I | I27 |
| | | I27 |
| | | I29 |
| | | I3I |
| | | I30 |
| | 5-22 | I32 |
| | | I29 |
| | 5-25 | I25 |
| | | I28 |
| | | I26 |
| | | I28 |
| | | I29 |
| | 5-26 | I27 |
| | | I27 |
| | | I26 |
| | | I27 |
| | 5-27 | I24 |
| | | I25 |
| | | I26 |
| | | I25 |
| | | I25 |
| | 5-28 | I29 |
| | | I25 |
| | | I23 |
| | | I25 |
| | | I25 |
| | 5-29 | I26 |
| | | I26 |
| | | I26 |
| | | I25 |
| | | I25 |

| I | 2 | 3 |
|---|---|---|
| I | 5-30 | I25 |
| | | I25 |
| | | I27 |
| | | I27 |
| | 5-3I | I29 |
| | | I25 |
| | | I28 |
| | | I25 |
| | | I28 |
| | 5-32 | I25 |
| | | I25 |
| | | I25 |
| | | I25 |
| | | I27 |
| | 5-33 | I25 |
| | | I25 |
| | | I26 |
| | | I26 |
| | | I26 |
| | 5-34 | I27 |
| | | I26 |
| | | I25 |
| | | I26 |
| | | I25 |
| | 5-35 | I24 |
| | | I25 |
| | | I24 |
| | | I25 |
| | 5-36 | I26 |
| | | I25 |
| | | I25 |
| | | I25 |
| | | I25 |

| I | 2 | 3 |
|---|---|---|
| I | 5-37 | I25 |
| | | I25 |
| | | I25 |
| | | I27 |
| | | I28 |
| | 5-38 | I26 |
| | | I28 |
| | | I29 |
| | | I28 |
| | | I28 |
| | 5-39 | I32 |
| | | I28 |
| | | I30 |
| | | I30 |
| | | I3I |
| | 5-40 | I3I |
| | | I3I |
| | | I29 |
| | | I29 |
| | 5-4I | I30 |
| | | I28 |
| | | I30 |
| I | | I30 |
| 2 | 5-44 | I27 |
| | | I28 |
| | | I30 |
| | | I29 |
| | | I27 |
| | 5-45 | I28 |
| | | I28 |
| | | I26 |
| | | I29 |
| | | I26 |

| I | 2 | 3 |
|---|---|---|
| 2 | 5-46 | I29 |
| | | I26 |
| | | I28 |
| | | I26 |
| | | I28 |
| | 5-47 | I29 |
| | | I30 |
| | | I26 |
| | | I27 |
| | 5-48 | I29 |
| | | I29 |
| | | I27 |
| | | I27 |
| | | I27 |
| | 5-49 | I27 |
| | | I27 |
| | | I28 |
| | | I27 |
| | | I26 |
| | 5-50 | I25 |
| | | I27 |
| | | I28 |
| | | I25 |
| | | I27 |
| | 5-5I | I26 |
| | | I27 |
| | | I27 |
| | | I25 |
| | | I25 |
| | 5-52 | I27 |
| | | I27 |
| | | I26 |
| | | I25 |
| | | I26 |

| I | 2 | 3 |
|---|---|---|
| 2 | 5-53 | I25 |
| | | I24 |
| | | I25 |
| | | I26 |
| | 5-54 | I25 |
| | | I24 |
| | | I25 |
| | | I25 |
| | | I23 |
| | 5-55 | I25 |
| | | I25 |
| | | I24 |
| | | I24 |
| | | I24 |
| | 5-56 | I25 |
| | | I25 |
| | | I23 |
| | | I26 |
| | | I26 |
| | 5-57 | I25 |
| | | I26 |
| | | I27 |
| | | I25 |
| | | I26 |
| | 5-58 | I24 |
| | | I24 |
| | | I26 |
| | | I25 |
| | | I25 |
| 2 | 5-59 | I24 |
| 3 | 6-03 | I20 |
| | | I20 |
| | | I2I |
| | | I2I |
| | | I20 |
| | | I2I |
| | | I2I |

| I | 2 | 3 |
|---|---|---|
| 3 | 6-04 | I22 |
| | | I2I |
| | | I20 |
| | 6-05 | I2I |
| | | II9 |
| | | I20 |
| | | II9 |
| | | I2I |
| | 6-06 | I20 |
| | | I2I |
| | | I2I |
| | | I20 |
| | 6-07 | I2I |
| | | I20 |
| | | I2I |
| | | I22 |
| | | I23 |
| | 6-08 | I25 |
| | | I27 |
| | | I23 |
| | | I24 |
| | | I23 |
| | 6-09 | I23 |
| | | I25 |
| | | I24 |
| | | I2I |
| | | I23 |
| | 6-I0 | I2I |
| | | I20 |
| | | I20 |
| | | II9 |
| | | I2I |
| | 6-II | I20 |
| | | I20 |
| | | I20 |
| | | I22 |
| | | II9 |

| I | 2 | 3 |
|---|---|---|
| 3 | 6-I2 | I20 |
| | | II7 |
| | | I20 |
| | | II9 |
| | 6-I3 | I2I |
| | | I20 |
| | | I20 |
| | | II9 |
| | | I20 |
| | 6-I4 | I2I |
| | | II9 |
| | | I20 |
| | | II9 |
| | | II9 |
| | 6-I5 | I2I |
| | | I20 |
| | | I22 |
| | | I2I |
| | | I22 |
| | 6-I6 | I2I |
| | | I2I |
| | | I22 |
| | | I20 |
| | 6-I7 | I2I |
| | | I2I |
| | | I2I |
| | | I2I |
| 3 | | I2I |
| 4 | 6-27 | I24 |
| | | I22 |
| | | I23 |
| | | I24 |
| | | I22 |
| | 6-28 | I22 |
| | | I23 |
| | | I22 |
| | | I22 |
| | | I23 |

| I | 2 | 3 |
|---|---|---|
| 4 | 6-29 | I24 |
| | | I23 |
| | | I23 |
| | | I24 |
| | | I23 |
| | 6-30 | I24 |
| | | I23 |
| | | I23 |
| | | I23 |
| | | I23 |
| | 6-3I | I22 |
| | | I24 |
| | | I24 |
| | | I24 |
| | 6-32 | I22 |
| | | I23 |
| | | I23 |
| | | I23 |
| | | I23 |
| | 6-33 | I22 |
| | | I23 |
| | | I22 |
| | | I23 |
| | | I25 |
| | 6-34 | I24 |
| | | I25 |
| | | I25 |
| | | I26 |
| | | I24 |
| | 6-35 | I25 |
| | | I25 |
| | | I25 |
| | | I26 |
| | | I26 |
| | 6-36 | I27 |
| | | I26 |
| | | I25 |
| | | I24 |
| | | I26 |

| I | 2 | 3 |
|---|---|---|
| 4 | 6-37 | I25 |
| | | I26 |
| | | I25 |
| | | I26 |
| | 6-38 | I28 |
| | | I26 |
| | | I26 |
| | | I27 |
| | | I25 |
| | 6-39 | I25 |
| | | I24 |
| | | I25 |
| | | I25 |
| | | I26 |
| | 6-40 | I26 |
| | | I25 |
| | | I26 |
| | | I24 |
| | | I24 |
| | 6-4I | I25 |
| | | I25 |
| | | I23 |
| | | I25 |
| 4 | | I25 |
| 5 | 6-56 | I22 |
| | | I24 |
| | | I24 |
| | | I26 |
| | | I26 |
| | 6-57 | I27 |
| | | I26 |
| | | I25 |
| | | I24 |
| | | I25 |
| | 6-58 | I24 |
| | | I23 |
| | | I22 |
| | | I22 |
| | | I22 |

| I | 2 | 3 |
|---|---|---|
| 5 | 6-59 | I24 |
| | | I24 |
| | | I25 |
| | | I24 |
| | | I24 |
| | 7-00 | I23 |
| | | I25 |
| | | I23 |
| | | I24 |
| | 7-0I | I22 |
| | | I24 |
| | | I22 |
| | | I23 |
| | | I22 |
| | 7-02 | I22 |
| | | I22 |
| | | I22 |
| | | I2I |
| | | I22 |
| | | I22 |
| | 7-03 | I24 |
| | | I2I |
| | | I22 |
| | | I22 |
| | | I22 |
| | 7-04 | I24 |
| | | I22 |
| | | I22 |
| | | I22 |
| | | I22 |
| | 7-05 | I2I |
| | | I2I |
| | | I2I |
| | | I2I |
| | 7-06 | I20 |
| | | I2I |
| | | I2I |
| | | I22 |
| | | I2I |

| I | 2 | 3 |
|---|---|---|
| 5 | 7-07 | II9 |
| | | I22 |
| | | I2I |
| | | I23 |
| | | I2I |
| | 7-08 | I22 |
| | | I2I |
| | | I2I |
| | | I2I |
| | | I2I |
| | 7-09 | I22 |
| | | I2I |
| | | I2I |
| | | I22 |
| | | I22 |
| | 7-I0 | I20 |
| | | I2I |
| | | I22 |
| | | I22 |
| | | I20 |
| 5 | 7-II | I20 |
| 6 | 7-I7 | II6 |
| | | II6 |
| | | II7 |
| | | II8 |
| | 7-I8 | II8 |
| | | I20 |
| | | II8 |
| | | II8 |
| | | II7 |
| | 7-I9 | II7 |
| | | II6 |
| | | II7 |
| | | II6 |
| | | II5 |
| | 7-20 | II5 |
| | | II6 |
| | | II6 |
| | | II8 |
| | | II6 |

| I | 2 | 3 |
|---|---|---|
| 6 | 7-2I | II7 |
| | | II6 |
| | | II7 |
| | | II7 |
| | | II8 |
| | 7-22 | II7 |
| | | II8 |
| | | II8 |
| | | II7 |
| | 7-23 | II9 |
| | | II9 |
| | | II8 |
| | | II8 |
| | | II8 |
| | 7-24 | II7 |
| | | II5 |
| | | II5 |
| | | II6 |
| | | II6 |
| | 7-25 | II6 |
| | | II6 |
| | | II7 |
| | | II6 |
| | | II7 |
| 6 | 7-26 | II6 |
| 7 | 7-3I | I09 |
| | | I08 |
| | | I09 |
| | | I09 |
| | | I08 |
| | 7-32 | I09 |
| | | II0 |
| | | II0 |
| | | I09 |
| | 7-33 | II0 |
| | | I09 |
| | | I09 |
| | | II0 |
| | | I09 |

| I | 2 | 3 |
|---|---|---|
| 7 | 7-34 | II0 |
| | | I09 |
| | | II0 |
| | | II0 |
| | | I09 |
| | 7-35 | III |
| | | II0 |
| | | II0 |
| | | I08 |
| | | I09 |
| | 7-36 | I07 |
| | | I08 |
| | | I08 |
| | | I09 |
| | | I08 |
| | 7-37 | I09 |
| | | II0 |
| | | II0 |
| | | II0 |
| | | I09 |
| | 7-38 | I08 |
| | | II0 |
| | | I09 |
| | | II0 |
| | 7-39 | I09 |
| | | I08 |
| | | II0 |
| 7 | | II0 |
| 8 | 7-44 | I02 |
| | | I02 |
| | | I04 |
| | | I02 |
| | 7-45 | I02 |
| | | I02 |
| | | I0I |
| | | I0I |
| | | I03 |
| | | I03 |
| | | I03 |

| I | 2 | 3 |
|---|---|---|
| 8 | 7-46 | I03 |
| | | I03 |
| | 7-47 | I0I |
| | | I03 |
| | | I02 |
| | | I0I |
| | | I0I |
| | 7-48 | 99 |
| | | I00 |
| | | 99 |
| | | I0I |
| | | II6 |
| | 7-49 | III |
| | | I02 |
| | | I02 |
| | | I02 |
| | 7-50 | I04 |
| | | I02 |
| | | I03 |
| | | I03 |
| | | I0I |
| | 7-5I | I02 |
| | | I03 |
| | | I03 |
| | 7-52 | I03 |
| | | I03 |
| | | I0I |
| | | I03 |
| | 7-53 | I04 |
| | | I03 |
| | | I02 |
| | | I03 |
| | 7-54 | I02 |
| | | I04 |
| | | I03 |
| | | I02 |
| | | I03 |

| I | 2 | 3 |
|---|---|---|
| 8 | 7-55 | I02 |
| | | I02 |
| | | I03 |
| | | I03 |
| | 7-56 | I03 |
| | | I03 |
| | | I03 |
| | | I0I |
| | | I03 |
| | 7-57 | I02 |
| | | I02 |
| | | I04 |
| 8 | | I0I |
| 9 | 8-II | I27 |
| | | I24 |
| | | I25 |
| | | I27 |
| | | I24 |
| | | I25 |
| | | I24 |
| | | I25 |
| | | I26 |
| | | I26 |
| | | I24 |
| | 8-I3 | I27 |
| | | I26 |
| | | I24 |
| | | I25 |
| | | I25 |
| | | I26 |
| | | I27 |
| | | I27 |
| | | I25 |
| | | I27 |
| | 8-I5 | I25 |
| | | I27 |
| | | I25 |
| | | I27 |
| | | I24 |
| | | I27 |

| I | 2 | 3 |
|---|---|---|
| 9 | 8-I5 | I26 |
| | | I26 |
| | | I28 |
| | | I26 |
| | 8-I7 | I26 |
| | | I27 |
| | | I28 |
| | | I26 |
| | 8-23 | I25 |
| | | I26 |
| | 8-24 | I25 |
| | | I27 |
| | | I27 |
| | | I26 |
| | | I27 |
| 9 | 8-26 | I27 |
| I0 | 8-39 | I25 |
| | | I24 |
| | | I25 |
| | | I26 |
| | | I25 |
| | 8-40 | I25 |
| | | I26 |
| | | I26 |
| | | I25 |
| | | I25 |
| | 8-4I | I24 |
| | | I23 |
| | | I24 |
| | | I23 |
| | | I24 |
| | 8-42 | I24 |
| | | I26 |
| | | I25 |
| | | I25 |
| | | I24 |

| I | 2 | 3 |
|---|---|---|
| I0 | 8-43 | I24 |
| | | I25 |
| | | I23 |
| | | I24 |
| | | I22 |
| | | I23 |
| | 8-44 | I24 |
| | | I25 |
| | | I24 |
| | | I25 |
| | 8-45 | I25 |
| | | I25 |
| | | I23 |
| | | I24 |
| | | I22 |
| | 8-46 | I24 |
| | | I23 |
| | | I24 |
| | | I23 |
| | | I24 |
| | 8-47 | I23 |
| | | I24 |
| | | I23 |
| | | I23 |
| | | I24 |
| | 8-48 | I24 |
| | | I23 |
| | | I24 |
| | | I24 |
| | | I22 |
| | 8-49 | I24 |
| | | I23 |
| | | I25 |
| | | I23 |
| | | I25 |
| | 8-50 | I24 |
| | | I25 |
| | | I24 |
| | | I24 |
| | | I23 |
| | | I25 |

| I | 2 | 3 |
|---|---|---|
| I0 | 8-50 | I23 |
| | | I25 |
| | | I24 |
| | | I24 |
| | | I23 |
| | 8-52 | I24 |
| | | I24 |
| | | I25 |
| | | I23 |
| | 8-53 | I24 |
| | | I23 |
| | | I22 |
| | | I23 |
| | | I22 |
| | 8-54 | I2I |
| | | I2I |
| | | I23 |
| | | I22 |
| | | I22 |
| | | I23 |
| | 8-55 | I24 |
| | | I23 |
| | | I22 |
| | | I2I |
| | | I22 |
| | 8-56 | I23 |
| | | I2I |
| | | I2I |
| | | I22 |
| | | I23 |
| | 8-57 | I28 |
| | | I24 |
| | | I25 |
| | | I24 |
| | 8-58 | I23 |
| | | I23 |
| | | I22 |
| | | I2I |
| | | I2I |

| I | 2 | 3 |
|---|---|---|
| I0 | 8-59 | I22 |
| | | I2I |
| | | I22 |
| | | I2I |
| | | I22 |
| | 9-00 | I22 |
| | | I23 |
| | | I22 |
| | | I23 |
| | | I24 |
| | 9-0I | I22 |
| | | I23 |
| | | I2I |
| | | I22 |
| | | I20 |
| | 9-02 | I2I |
| | | I20 |
| | | I2I |
| | | I22 |
| | | I23 |
| | 9-03 | I24 |
| | | I2I |
| | | I23 |
| | | I22 |
| | | I23 |
| | 9-04 | I23 |
| | | I25 |
| | | I26 |
| | | I28 |
| | | I26 |
| | 9-05 | I25 |
| | | I25 |
| | | I26 |
| | | I25 |
| | | I26 |
| | 9-06 | I24 |
| | | I26 |
| | | I25 |
| | | I26 |
| | | I28 |

| I | 2 | 3 |
|---|---|---|
| I0 | 9-07 | I26 |
| | | I26 |
| | | I24 |
| | | I25 |
| | | I26 |
| | 9-08 | I24 |
| | | I25 |
| | | I24 |
| | | I24 |
| | | I24 |
| | 9-09 | I24 |
| | | I24 |
| | | I24 |
| | | I24 |
| | | I24 |
| | 9-I0 | I26 |
| | | I24 |
| | | I25 |
| | | I26 |
| | | I25 |
| | 9-II | I27 |
| | | I27 |
| | | I25 |
| | | I27 |
| | | I29 |
| | 9-I2 | I27 |
| | | I28 |
| | | I27 |
| | | I25 |
| | | I27 |
| | 9-I3 | I27 |
| | | I28 |
| | | I28 |
| | | I3I |
| | | I32 |
| | 9-I4 | I34 |
| | | I34 |
| | | I35 |
| | | I36 |
| | | I35 |
| | | I37 |

| Time (Moscow) | Altitude (m) | Radiation Temperature (°C) | Time (Moscow) | Altitude (m) | Radiation Temperature (°C) |
|---|---|---|---|---|---|
| 1 | 2 | 3 | 1 | 2 | 3 |
| 2 48 00" | 6000 | I.2 | 2 55 30" | 6000 | 7.I |
| 2 48 I5 | | I.8 | 2 55 45 | | 9.2 |
| 2 48 30 | | 3.I | 2 56 00 | | 8.6 |
| 2 48 45 | | 4.3 | 2 56 I5 | | 8.9 |
| 2 49 00 | | 4.3 | 2 56 30 | | 8.6 |
| 2 49 I5 | | 4.0 | 2 56 45 | | I0.I |
| 2 49 30 | | 0.6 | 2 57 00 | | 9.5 |
| 2 49 45 | | 5.0 | 2 57 I5 | | 7.I |
| 2 50 00 | | 5.0 | 2 57 30 | | -6.2 |
| 2 50 I5 | | 5.0 | 2 58 00 | | 8.3 |
| 2 50 30 | | 4.I | 2 58 30 | | 6.8 |
| 2 50 45 | | 6.2 | 2 58 45 | | 9.5 |
| 2 5I 00 | | 4.4 | 2 59 00 | | 9.8 |
| 2 5I I5 | | 5.0 | 2 59 I5 | | 9.8 |
| 2 5I 30 | | 5.3 | 2 59 45 | | 9.8 |
| 2 5I 45 | | 5.0 | 3 00 00 | | II.0 |
| 2 52 00 | | 5.9 | 4 29 00 | | 6.7 |
| 2 52 I5 | | 6.2 | 4 29 I5 | | 7.5 |
| 2 52 30 | | 5.8 | 4 29 30 | | 8.8 |
| 2 52 45 | | 5.0 | 4 29 45 | | 8.4 |
| 2 53 00 | | 4.7 | 4 30 00 | | 8.0 |
| 2 53 I5 | | 4.4 | 4 30 I5 | | 7.I |
| 2 53 30 | | -2.6 | 4 30 30 | | 8.4 |
| 2 53 45 | | 3.4 | 4 30 45 | | 8.0 |
| 2 54 00 | | I.4 | 4 3I 00 | | 6.7 |
| 2 54 I5 | | -0.8 | 4 3I I5 | | 6.3 |
| 2 54 30 | | 2.3 | 4 3I 30 | | 6.7 |
| 2 54 45 | | 4.I | 4 3I 45 | | 9.6 |
| 2 55 00 | | 3.2 | 4 32 00 | | II.2 |
| 2 55 I5 | | 4.4 | 4 32 I5 | | I2.0 |

| I | 2 | 3 |
|---|---|---|
| 4 32 30" | 6000 | I2.0 |
| 4 32 45 | | II.6 |
| 4 33 00 | | II.2 |
| 4 33 I5 | | II.6 |
| 4 33 30 | | I2.8 |
| 4 33 45 | | II.6 |
| 4 34 00 | | II.6 |
| 4 34 I5 | | II.6 |
| 4 34 30 | | II.6 |
| 4 34 45 | | II.2 |
| 4 35 00 | | II.2 |
| 4 35 I5 | | 8.4 |
| 4 35 30 | | 9.2 |
| 4 35 45 | | 8.4 |
| 4 36 00 | | I0.0 |
| 4 36 I5 | | 9.6 |
| 4 36 30 | | 7.I |
| 4 36 45 | | I0.8 |
| 4 37 00 | | I0.4 |
| 4 37 I5 | | I0.4 |
| 4 37 30 | | I0.8 |

9/11/76 II.09.76 г.

| I | 2 | 3 |
|---|---|---|
| 6 42 00 | 4000 | 9.9 |
| 6 42 I5 | | 9.9 |
| 6 42 30 | | 9.8 |
| 6 42 45 | | 9.8 |
| 6 43 00 | | 9.7 |
| 6 43 I5 | | 9.7 |
| 6 43 30 | | 9.5 |
| 6 43 45 | | 9.4 |
| 6 44 00 | | 9.3 |
| 6 44 I5 | | 9.2 |
| 6 44 30 | | 9.3 |
| 6 44 45 | | 9.2 |
| 6 45 00 | | 8.9 |
| 6 45 I5 | | 9.0 |
| 6 45 30" | 4000 | 8.8 |
| 6 45 45 | | 8.7 |
| 6 46 00 | | 9.6 |
| 6 46 I5 | | 9.4 |
| 6 46 30 | | 9.4 |
| 6 46 45 | | 9.4 |
| 6 47 00 | | 9.2 |
| 6 47 I5 | | 9.I |
| 6 47 30 | | 9.0 |
| 6 47 45 | | 8.8 |
| 6 48 00 | | 8.8 |
| 6 48 I5 | | 8.8 |
| 6 48 30 | | 8.5 |
| 6 48 45 | | 8.5 |
| 6 49 00 | | 8.6 |
| 6 49 I5 | | 8.7 |
| 6 49 30 | | 8.8 |
| 6 49 45 | | 8.8 |
| 6 50 00 | | 8.8 |
| 6 50 I5 | | 8.9 |
| 6 50 30 | | 9.I |
| 6 50 45 | | 9.2 |
| 6 5I I5 | | 9.I |
| 6 5I 30 | | 9.0 |
| 6 5I 45 | | 9.5 |
| 6 52 00 | | 9.I |
| 6 52 I5 | | 9.4 |
| 6 52 30 | | 9.2 |
| 6 52 45 | | 9.2 |
| 6 53 00 | | 9.2 |
| 6 53 I5 | | I0.I |
| 6 53 30 | | 9.8 |
| 6 53 55 | | I0.0 |
| 6 54 00 | | I0.I |
| 6 54 I5 | | I0.I |
| 6 54 45 | | 9.8 |
| 6 55 00 | | 9.8 |

| I | 2 | 3 |
|---|---|---|
| 6 55 15" | 4000 | 9.6 |
| 6 55 30 | | 9.6 |
| 6 55 45 | | 9.8 |
| 6 56 00 | | 9.9 |
| 6 56 15 | | 10.0 |
| 6 56 30 | | 10.1 |
| 6 56 45 | | 10.1 |
| 6 57 00 | | 10.0 |
| 6 57 15 | | 9.8 |
| 6 57 30 | | 9.6 |
| 6 57 45 | | 9.5 |
| 6 58 00 | | 10.1 |
| 6 58 15 | | 9.7 |
| 6 58 30 | | 10.1 |
| 6 58 45 | | 9.7 |
| 6 59 00 | | 9.7 |
| 6 59 15 | | 9.9 |
| 6 59 30 | | 9.7 |
| 6 59 45 | | 9.9 |
| 7 00 00 | | 9.9 |
| 7 00 15 | | 10.0 |
| 7 00 30 | | 9.9 |
| 7 00 45 | | 10.1 |
| 7 01 00 | | 10.0 |
| 7 01 15 | | 10.0 |
| 7 01 30 | | 10.0 |
| 7 01 45 | | 12.6 |
| 7 02 00 | | 9.7 |
| 7 02 15 | | 9.7 |
| 7 02 30 | | 9.6 |
| 7 02 45 | | 9.4 |
| 7 03 00 | | 9.3 |
| 7 04 00 | | 7.7 |
| 7 04 30 | | 7.9 |
| 7 04 45 | | 8.3 |
| 7 05 00 | | 8.5 |
| 7 05 15 | | 9.0 |

| I | 2 | 3 |
|---|---|---|
| 7 05 30" | 4000 | 8.7 |
| 7 05 45 | | 8.5 |
| 7 06 00 | | 8.4 |
| 7 06 15 | | 8.5 |
| 7 06 30 | | 8.6 |
| 7 06 45 | | 8.6 |
| 7 07 00 | | 8.8 |
| 7 07 30 | | 8.3 |
| 7 07 45 | | 8.8 |
| 7 08 00 | | 9.3 |
| 7 08 15 | | 9.9 |
| 7 08 30 | | 9.8 |
| 7 08 45 | | 10.1 |
| 7 09 00 | | 10.5 |
| 7 09 15 | | 10.6 |
| 7 09 30 | | 8.8 |
| 7 09 45 | | 8.4 |
| 7 10 00 | | 8.8 |
| 7 10 15 | | 9.0 |
| 7 10 30 | | 9.3 |
| 7 10 45 | | 9.3 |
| 7 11 00 | | 9.4 |
| 7 11 15 | | 9.4 |
| 7 11 30 | | 9.1 |
| 7 11 45 | | 8.1 |
| 7 12 00 | | 8.0 |
| 7 12 15 | | 7.7 |
| 7 12 30 | | 7.7 |
| 7 12 45 | | 7.8 |
| 7 13 00 | | 8.0 |
| 7 13 15 | | 7.7 |
| 7 13 45 | | 5.2 |
| 7 14 00 | | 5.4 |
| 7 14 15 | | 5.5 |
| 7 14 30 | | 5.8 |
| 7 14 45 | | 5.9 |
| 7 15 00 | | 6.0 |

9/13/76 13.09.76 г.

| I | 2 | 3 |
|---|---|---|
| 2 43'00" | 4000 | 9.5 |
| 2 43 I5 | | 9.8 |
| 2 43 30 | | 9.8 |
| 2 43 45 | | 9.5 |
| 2 44 00 | | 9.2 |
| 2 44 I5 | | 8.I |
| 2 44 30 | | 7.9 |
| 2 44 45 | | 7.5 |
| 2 45 00 | | 7.2 |
| 2.45 I5 | | 7.3 |
| 2 45 30 | | 7.2 |
| 2 45 45 | | 6.9 |
| 2 46 00 | | 5.3 |
| 2 46 I5 | | 5.2 |
| 2 46 30 | | 5.7 |
| 2 46 45 | | 6.I |
| 2 47 00 | | 6.0 |
| 2 47 I5 | | 6.I |
| 2 47 30 | | 5.6 |
| 2 47 45 | | 5.3 |
| 2 48 00 | | 6.3 |
| 2 48 I5 | | 5.9 |
| 2.48 30 | | 5.4 |
| 2 48 45 | | 5.4 |
| 2 49 00 | | 5.8 |
| 2 49 I5 | | 6.0 |
| 2 49 30 | | 6.4 |
| 2 49 45 | | 6.I |
| 2 50 00 | | 6.6 |
| 2 50 I5 | | 7.0 |
| 2 50 30 | | 7.3 |
| 2 50 45 | | 7.8 |
| 2 5I 00 | | 7.8 |
| 2 5I I5 | | 7.7 |
| 2 5I 30 | | 7.7 |
| 2 5I'45" | 4000 | 7.6 |
| 2 52 00 | | 7.7 |
| 2 52 I5 | | 7.4 |
| 2 52 30 | | 7.I |
| 2 52 45 | | 7.7 |
| 2 53 00 | | 8.0 |
| 2 53 I5 | | 8.I |
| 2 53 30 | | 7.8 |
| 2 54 00 | | 7.7 |
| 2.54 I5 | | 8.6 |
| 2 54 30 | | 8.0 |
| 2 54 45 | | 7.6 |
| 2 55 00 | | 7.8 |
| 2 55 I5 | | 8.2 |
| 2 55 30 | | 8.4 |
| 2 55 45 | | 8.4 |
| 2 56 00 | | 8.2 |
| 2 56 I5 | | 8.6 |
| 2 56 30 | | 8.2 |
| 2 56 45 | | 8.4 |
| 2 57 00 | | 8.2 |
| 2 57 I5 | | 8.2 |
| 2 57 30 | | 8.I |
| 2 57 45 | | 8.7 |
| 2 58 00 | | 8.7 |
| 2 58 I5 | | 9.3 |
| 2 58 30 | | 9.3 |
| 2 58 45 | | 9.3 |
| 2 59 00 | | 9.5 |
| 2 59 I5 | | 9.2 |
| 2 59 30 | | 9.6 |
| 2 59 45 | | 9.8 |
| 3 00 00 | | I0.I |
| 3 00 I5 | | 9.9 |
| 3 00 30 | | I0.I |
| 3 00 45 | | I0.4 |
| 3 0I 00 | | I0.4 |

| I | 2 | 3 |
|---|---|---|
| 3 0I'I5" | 4000 | I0.4 |
| 3 0I 30 | | I0.7 |
| 3 0I 45 | | I0.4 |
| 3 02 I5 | | I0.I |
| 3 02 30 | | 9.6 |
| 3 02 45 | | 9.6 |
| 3 03 00 | | 9.8 |
| 3 03 I5 | | 9.8 |
| 3 03 30 | | 9.6 |
| 3 03 45 | | 9.8 |
| 3 04 00 | | 9.8 |
| 3.04 I5 | | 9.8 |
| 3 04 30 | | 9.6 |
| 3 04 45 | | I0.2 |
| 3 05 00 | | 9.9 |
| 3 05 I5 | | 9.8 |
| 3 05 30 | | 9.6 |
| 3 05 45 | | 9.5 |
| 3 06 00 | | 8.5 |
| 3 06 I5 | | 9.5 |
| 3 06 30 | | 9.4 |
| 3 06 45 | | 9.6 |
| 3 07 00 | | 8.9 |
| 3 07 I5 | | 8.2 |
| 3 07 30 | | 9.I |
| 3 07 45 | | 3.6 |
| 3 08 00 | | 7.3 |
| 3 08 30 | | 8.8 |
| 3 08 45 | | 0.7 |
| 3 09 00 | | 7.2 |
| 3 I6 I5 | | 9.5 |
| 3 I6 30 | | 9.8 |
| 3 I6 45 | | 9.8 |
| 3 I7 00 | | I0.I |
| 3 I7 I5 | | I0.I |
| 3 I7 30 | | 9.8 |
| 3 I7 45 | | I0.0 |

| I | 2 | 3 |
|---|---|---|
| 3 I8'00" | 4000 | I0.I |
| 3 I8 I5 | | 9.8 |
| 3 I8 30 | | I0.I |
| 3 I8 45 | | 9.8 |
| 3 I9 00 | | I0.0 |
| 3 I9 I5 | | I0.I |
| 3 I9 30 | | I0.8 |
| 3 I9 45 | | I0.8 |
| 3 20 00 | | II.0 |
| 3 20 I5 | | I0.4 |
| 3 20 30 | | I0.0 |
| 3 20 45 | | I.4 |
| 3 2I 00 | | -0.9 |
| 3 2I I5 | | -0.9 |
| 3 2I 30 | | - 0.8 |
| 3 2I 45 | | I.2 |
| 3 22 00 | | 3.0 |
| 3 22 I5 | | 8.8 |
| 3 22 30 | | I0.0 |
| 3 22 45 | | I0.0 |
| 3 23 00 | | I0.6 |
| 3 23 I5 | | I0.2 |
| 3 23 30 | | I0.I |
| 3 23 45 | | I0.6 |
| 3 24 00 | | -2.3 |
| 3 24 I5 | | 9.7 |
| 3 24 30 | | I0.4 |
| 3 24 45 | | I0.8 |
| 3 25 00 | | I0.8 |
| 3 25 I5 | | I0.8 |
| 3 25 30 | | I0.8 |
| 3 25 45 | | I0.4 |
| 3 26 00 | | I0.8 |
| 3 26 I5 | | I0.8 |
| 3 26 30 | | 9.9 |
| 3 26 45 | | 9.5 |
| 3 27 00 | | I0.I |

| I | 2 | 3 | I | 2 | 3 |
|---|---|---|---|---|---|
| 3 27' I5" | 4000 | 9.5 | 3 36' 45" | 4000 | I0.6 |
| 3 27 30 | | I0.I | 3 37 00 | | I0.2 |
| 3 27 45 | | 9.9 | 3 37 I5 | | 9.7 |
| 3 28 00 | | 9.3 | 3 37 30 | | 9.3 |
| 3 28 I5 | | I0.2 | 3 37 45 | | 9.7 |
| 3 28 30 | | I0.2 | 3 38 00 | | 9.7 |
| 3 28 45 | | I0.I | 3 38 I5 | | 9.5 |
| 3 29 00 | | I0.2 | 3 38 30 | | 9.9 |
| 3 29 I5 | | I0.I | 3 38 45 | | 9.5 |
| 3 29 30 | | I0.2 | 3 39 00 | | 8.9 |
| 3 29 45 | | 9.9 | 3 39 I5 | | 9.5 |
| 3 30 00 | | 9.5 | 3 39 30 | | 9.9 |
| 3 30 I5 | | I0.2 | 3 39 45 | | 9.I |
| 3 30 30 | | I0.I | 3 40 I5 | | 9.5 |
| 3 30 45 | | I0.2 | 3 40 30 | | 9.3 |
| 3 3I 00 | | 9.9 | 3 40 45 | | 9.9 |
| 3 3I I5 | | 9.6 | 3 4I 00 | | 9.3 |
| 3 3I 45 | | I0.4 | 3 4I I5 | | 9.3 |
| 3 32 00 | | 9.2 | 3 4I 30 | | 4.6 |
| 3 32 I5 | | I0.0 | 3 4I 45 | | 3.8 |
| 3.32 30 | | 9.8 | 3 42 00 | | 0.5 |
| 3 32 45 | | I0.0 | 5 23 I5 | 400 | 8.9 |
| 3 33 00 | | 9.6 | 5 23 30 | | 8.7 |
| 3 33 I5 | | 9.2 | 5 23 45 | | 8.7 |
| 3 33 30 | | I0.0 | 5 24 00 | | 8.3 |
| 3 33 45 | | I0.0 | 5 24 I5 | | 8.5 |
| 3 34 00 | | I0.0 | 5 24 30 | | 8.4 |
| 3 34 I5 | | I0.0 | 5 24 45 | | 8.9 |
| 3 34 30 | | I0.0 | 5 25 00 | | 8.3 |
| 3 34 45 | | I0.2 | 5 25 I5 | | 8.5 |
| 3 35 00 | | 9.8 | 5 25 45 | | 8.8 |
| 3 35 I5 | | I0.0 | 5 26 00 | | 8.5 |
| 3 35 30 | | I0.0 | 5 26 I5 | | 8.5 |
| 3 35 45 | | I0.0 | 5 26 30 | | 8.8 |
| 3 36 00 | | I0.6 | 5 26 45 | | 8.3 |
| 3 36 I5 | | I0.2 | 5 27 00 | | 8.4 |
| 3 36 30 | | I0.2 | 5 27 I5 | | 8.3 |

| I | 2 | 3 | I | 2 | 3 |
|---|---|---|---|---|---|
| 5 27'30" | 400 | 8.8 | 5 46'45" | 400 | 7.9 |
| 5 27 45 | | 9.0 | 5 47 00 | | 8.I |
| 5 28 00 | | 8.7 | 5 47 I5 | | 7.9 |
| 5 28 I5 | | 8.8 | 5 47 45 | | 8.5 |
| 5 28 30 | | 8.8 | 5 48 00 | | 8.7 |
| 5 28 45 | | 8.8 | 5 48 I5 | | 8.4 |
| 5 29 00 | | 8.8 | 5 48 30 | | 8.8 |
| 5 29 I5 | | 9.0 | 5 48 45 | | 8.5 |
| 5 29 30 | | 9.0 | 5 49 00 | | 8.7 |
| 5 29 45 | | 8.7 | 5 49 I5 | | 8.7 |
| 5 30 00 | | 8.7 | 5 49 45 | | 8.7 |
| 5 30 I5 | | 8.4 | 5 50 00 | | 9.0 |
| 5 30 30 | | 8.4 | 5 50 I5 | | 8.5 |
| 5 30 45 | | 8.3 | 5 50 30 | | 8.5 |
| 5 3I 00 | | 8.2 | 5 5I 00 | | 8.I |
| 5 3I I5 | | 8.2 | 5 5I I5 | | 8.I |
| 5 3I 45 | | 8.3 | 5 5I 30 | | 7.9 |
| 5 32 00 | | 8.3 | 7 26 00 | 4000 | I0.2 |
| 5 32 I5 | | 8.I | 7 26 I5 | | I0.7 |
| 5 32 30 | | 8.3 | 7 26 30 | | II.3 |
| 5 33 00 | | 8.4 | 7 27 00 | | I0.9 |
| 5 42 30 | | 7.9 | 7 27 I5 | | I0.9 |
| 5 42 45 | | 7.9 | 7 27 30 | | I0.9 |
| 5 43 00 | | 7.8 | 7 27 45 | | I0.7 |
| 5 43 I5 | | 7.8 | 7 28 00 | | 9.6 |
| 5 43 30 | | 7.8 | 7 28 I5 | | I0.4 |
| 5 43 45 | | 7.8 | 7 28 30 | | 9.8 |
| 5 44 00 | | 7.6 | 7 28 45 | | 6.8 |
| 5 44 I5 | | 7.6 | 7 29 00 | | 7.I |
| 5 44 30 | | 7.6 | 7 29 I5 | | I0.2 |
| 5 45 00 | | 7.9 | 7 29 30 | | I0.4 |
| 5 45 I5 | | 7.6 | 7 29 45 | | II.0 |
| 5 45 30 | | 7.8 | 7 30 00 | | I0.2 |
| 5 45 45 | | 7.8 | 7 30 I5 | | I0.9 |
| 5 46 00 | | 7.4 | 7 30 30 | | I0.9 |
| 5 46 I5 | | 7.8 | 7 30 45 | | 8.9 |
| 5 46 30 | | 7.9 | 7 3I 00 | | 8.5 |

| I | 2 | 3 |
|---|---|---|
| 7 3I'I5" | 4000 | 8.5 |
| 7 3I 30 | | 8.5 |
| 7 3I 45 | | 8.0 |
| 7 32 00 | | 8.0 |
| 7 32 I5 | | 8.6 |
| 7 32 30 | | 8.5 |
| 7 32 45 | | 8.8 |
| 7 33 00 | | 8.7 |
| 7 33 I5 | | 8.6 |
| 7 33 30 | | 8.2 |
| 7 33 45 | | 8.5 |
| 7 34 00 | | 7.6 |
| 7 34 I5 | | 8.I |
| 7 34 30 | | 7.I |
| 7 34 45 | | 8.4 |
| 7 35 00 | | 9.0 |
| 7 35 I5 | | 8.4 |
| 7 35 30 | | 8.8 |
| 7 35 45 | | 8.4 |
| 7 36 00 | | 8.5 |
| 7 36 I5 | | 8.6 |
| 7 36 45 | | 8.4 |
| 7 37 00 | | 8.4 |
| 7 37 I5 | | 8.7 |
| 7 37 30 | | 8.5 |
| 8 I0 00 | | 9.4 |
| 8 I0 I5 | | 9.6 |
| 8 I0 30 | | 9.7 |
| 8 I0 45 | | 9.7 |
| 8 II I5 | | I0.I |
| 8 II 30 | | 9.6 |
| 8 II 45 | | 9.4 |
| 8 I2 00 | | 9.3 |
| 8 I2 I5 | | 9.3 |
| 8 I2 30 | | 9.2 |
| 8 I2 45 | | 9.8 |
| 8 I3 00 | | 9.4 |

| I | 2 | 3 |
|---|---|---|
| 8 I3'I5" | 4000 | 9.6 |
| 8 I3 30 | | 9.7 |
| 8 I3 45 | | 6.8 |
| 8 I4 00 | | 6.4 |
| 8 I4 I5 | | 6.8 |
| 8 I4 30 | | 6.8 |
| 8 I4 45 | | 6.8 |
| 8 I5 00 | | 6.I |
| 8 I5 I5 | | 6.8 |
| 8 I5 30 | | 6.I |
| 8 I5 45 | | 6.4 |
| 8 I6 00 | | 6.8 |
| 8 I6 I5 | | 6.4 |
| 8 I6 30 | | 6.4 |
| 8 I6 45 | | 6.4 |
| 8 I7 00 | | 6.8 |
| 8 I7 I5 | | 6.I |
| 8 I7 30 | | 5.4 |
| 8 I7 45 | | 6.4 |
| 8 I8 00 | | 6.8 |
| 8 I8 I5 | | 6.8 |
| 8 I8 30 | | 7.I |
| 8 I8 45 | | 7.I |
| 8 I9 00 | | 7.4 |
| 8 I9 I5 | | 7.4 |
| 8 I9 30 | | 7.I |
| 8 I9 45 | | 7.8 |
| 8 20 00 | | 7.4 |
| 8 20 I5 | | 6.8 |
| 8 20 30 | | 7.I |
| 8 20 45 | | 7.I |
| 8 2I 00 | | 6.3 |
| 8 2I I5 | | 9.I |
| 8 2I 30 | | 7.4 |
| 8 2I 45 | | 7.I |
| 8 22 00 | | 7.I |
| 8 22 I5 | | 7.4 |

| I | 2 | 3 |
|---|---|---|
| 8 22 30" | 4000 | 7.I |
| 8 22 45 | | 7.8 |
| 8 23 00 | | 7.4 |
| 8 23 I5 | | 7.I |
| 8 23 30 | | 7.4 |
| 8 23 45 | | 8.8 |
| 8 24 00 | | 9.I |
| 8 24 I5 | | 9.8 |
| 8 24 30 | | 9.I |
| 8 24 45 | | 8.8 |
| 8 25 00 | | 8.4 |
| 8 25 I5 | | 8.I |
| 8 25 30 | | 7.I |
| 8 25 45 | | 6.8 |
| 8 26 00 | | 7.I |
| 8 26 I5 | | 7.8 |
| 8 26 30 | | 8.I |
| 8 26 45 | | 8.I |
| 8 27 00 | | 8.4 |
| 8 27 I5 | | 8.I |
| 8 27 30 | | 8.4 |
| 8 27 45 | | 7.4 |
| 8 28 00 | | 8.I |
| 8 28 I5 | | 7.8 |
| 8 28 30 | | 7.I |
| 8 28 45 | | 7.4 |
| 8 29 00 | | 7.I |
| 8 29 I5 | | 7.I |
| 8 29 30 | | 7.8 |
| 8 29 45 | | 7.8 |
| 8 30 00 | | 7.8 |
| 8 30 I5 | | 8.8 |
| 8 30 30 | | 7.4 |
| 8 30 45 | | 6.I |
| 8 3I 00 | | 5.8 |
| 8 3I I5 | | 6.4 |
| 8 3I 30 | | 5.8 |
| 8 3I 45 | | 5.4 |

| I | 2 | 3 |
|---|---|---|
| 8 32'00" | 4000 | 6.I |
| 8 32 I5 | | 6.I |
| 8 32 30 | | 5.4 |
| 8 32 45 | | 5.8 |
| 8 33 00 | | 5.4 |
| 8 33 I5 | | 5.4 |
| 8 33 30 | | 6.I |
| 8 33 45 | | 4.7 |
| 8 34 00 | | 6.I |

10/13/76 I3.I0.76 г.

| | | |
|---|---|---|
| 3 4I I5 | 6000 | II.0 |
| 3 4I 30 | | I3.2 |
| 3 4I 45 | | 9.5 |
| 3 42 I5 | | -8.I |
| 3 42 30 | | -II.I |
| 3 42 45 | | -9.3 |
| 3 43 00 | | -8.I |
| 3 43 I5 | | -6.2 |
| 3 43 30 | | -I0.8 |
| 3 43 45 | | -4.0 |
| 3 44 00 | | I3.8 |
| 3 44 I5 | | I3.2 |
| 3 44 30 | | -I0.8 |
| 3 44 45 | | -I2.4 |
| 3 45 00 | | -I2.4 |
| 3 45 I5 | | #II.I |
| 3 45 30 | | -5.3 |
| 3 45 45 | | -9.3 |
| 3 46 00 | | -8.4 |
| 3 46 I5 | | -7.8 |
| 3 46 30 | | -9.0 |
| 3 46 45 | | -I0.5 |
| 3 47 00 | | -9.6 |
| 3 47 I5 | | -8.7 |
| 3 47 30 | | -9.6 |
| 3 47 45 | | -9.9 |
| 3 48 00 | | -8.4 |

| I | 2 | 3 |
|---|---|---|
| 3 48 15" | 6000 | -9.0 |
| 3 48 30 | | -9.9 |
| 3 48 45 | | -8.1 |
| 3 49 00 | | -5.6 |
| 3 49 15 | | -7.8 |
| 3 49 30 | | -11.1 |
| 3 49 45 | | -8.4 |
| 3 50 00 | | -9.0 |
| 4 57 30 | 3000 | 14.0 |
| 4 57 45 | | 14.0 |
| 4 58 00 | | 13.2 |
| 4 58 15 | | 14.8 |
| 4 58 30 | | 14.6 |
| 4 58 45 | | 14.2 |
| 4 59 00 | | 14.2 |
| 4 59 30 | | 13.7 |
| 4 59 45 | | 13.3 |
| 5 00 00 | | 13.3 |
| 5 00 15 | | 12.9 |
| 5 00 30 | | 11.6 |
| 5 00 45 | | 12.0 |
| 5 01 00 | | 11.6 |
| 5 01 15 | | 10.7 |
| 5 01 30 | | 10.7 |
| 5 01 45 | | 12.0 |
| 5 02 00 | | 12.9 |
| 5 02 15 | | 10.8 |
| 5 02 30 | | 10.7 |
| 5 02 45 | | 11.6 |
| 5 03 00 | | 14.2 |
| 5 03 15 | | 10.3 |
| 5 03 30 | | 10.3 |
| 5 03 45 | | 10.3 |
| 5 04 00 | | 8.5 |
| 5 04 15 | | 9.8 |
| 5 04 30 | | 12.6 |
| 5 04 45 | | 9.8 |

| I | 2 | 3 |
|---|---|---|
| 5 05 00" | 3000 | 11.6 |
| 5 05 15 | | 10.4 |
| 5 05 30 | | 9.0 |
| 5 05 45 | | 9.4 |
| 5 06 00 | | 9.4 |
| 5 06 15 | | 9.8 |
| 5 06 30 | | 10.2 |
| 5 06 45 | | 11.1 |
| 5 07 00 | | 11.1 |
| 5 07 15 | | 10.2 |
| 5 07 30 | | 9.3 |
| 5 07 45 | | 8.5 |
| 5 08 00 | | 8.9 |
| 5 08 15 | | 6.3 |
| 5 08 30 | | 7.6 |
| 5 08 45 | | 7.2 |
| 5 09 00 | | 6.8 |
| 5 09 15 | | 9.8 |
| 5 09 30 | | 8.5 |
| 5 09 45 | | 10.2 |
| 5 10 15 | | 7.6 |
| 5 10 30 | | 8.0 |
| 5 10 45 | | 6.3 |
| 5 11 00 | | 8.0 |
| 5 11 15 | | 8.0 |
| 5 20 15 | 1000 | 9.7 |
| 5 20 30 | | 8.7 |
| 5 20 45 | | 8.7 |
| 5 21 00 | | 8.4 |
| 5 21 15 | | 9.0 |
| 5 21 30 | | 9.7 |
| 5 21 45 | | 8.7 |
| 5 22 00 | | 10.1 |
| 5 22 15 | | 9.7 |
| 5 22 30 | | 10.8 |
| 5 22 45 | | 10.8 |
| 5 23 00 | | 10.7 |

| I | 2 | 3 |
|---|---|---|
| 5 23'I5" | I000 | 9.7 |
| 5 23 30 | | 9.4 |
| 5 23 45 | | I0.8 |
| 5 24 00 | | I0.I |
| 5 24 I5 | | I0.4 |
| 5 24 30 | | I0.4 |
| 5 24 45 | | I0.8 |
| 5 25 00 | | I2.5 |
| 5 25 I5 | | I2.I |
| 5 25 30 | | I2.8 |
| 5 25 45 | | I3.2 |
| 5 26 I5 | | I3.5 |
| 5 26 30 | | I4.2 |
| 5 26 45 | | I3.2 |
| 5 27 00 | | I3.5 |
| 5 27 I5 | | I3.8 |
| 5 27 30 | | I4.2 |
| 5 27 45 | | I4.9 |
| 5 28 00 | | I4.2 |
| 5 28 I5 | | I4.8 |
| 5 28 30 | | I5.2 |
| 5 28 45 | | I5.2 |
| 5 29 00 | | I5.2 |
| 5 29 I5 | | I5.6 |
| 5 29 30 | | I5.2 |
| 5 29 45 | | I5.6 |
| 5 30 00 | | I4.5 |
| 5 30 I5 | | I5.2 |
| 5 30 30 | | I4.9 |
| 5 3I 00 | | I4.5 |
| 5 3I I5 | | I4.2 |
| 5 3I 30 | | I5.2 |
| 5 3I 45 | | I4.9 |
| 5 32 I5 | | I4.9 |
| 5 32 30 | | I5.9 |
| 5 32 45 | | I4.2 |
| 5 33 00 | | I5.6 |

| I | 2 | 3 |
|---|---|---|
| 5 33'I5" | I000 | I5.6 |
| 5 33 30 | | I5.9 |
| 5 33 45 | | I5.9 |
| 5 34 00 | | I5.6 |
| 5 34 I5 | | I5.2 |
| 5 34 30 | | I4.2 |
| 5 34 45 | | I4.5 |
| 5 35 00 | | I4.9 |
| 5 4I 00 | 500 | I4.4 |
| 5 42 00 | | I3.6 |
| 5 47 00 | | I2.7 |
| 5 47 I5 | | I3.3 |
| 5 47 30 | | I2.6 |
| 5 47 45 | | I2.4 |
| 5 48 00 | | II.5 |
| 5 48 I5 | | II.7 |
| 5 48 30 | | I0.8 |
| 5 48 45 | | I0.2 |
| 5 49 00 | | 9.9 |
| 5 49 I5 | | 9.6 |
| 5 49 30 | | 9.7 |
| 5 49 45 | | 9.I |
| 5 50 00 | | 9.6 |
| 5 50 I5 | | I0.0 |
| 5 50 30 | | I0.I |
| 5 50 45 | | I9.5 |
| 5 5I 00 | | 9.4 |
| 5 5I I5 | | 9.4 |
| 5 5I 30 | | 8.9 |
| 5 5I 45 | | 8.6 |
| 5 52 00 | | 8.3 |
| 5 52 I5 | | 8.I |
| 5 52 30 | | 8.3 |
| 5 52 45 | | 8.4 |
| 5 53 00 | | 8.3 |
| 5 53 I5 | | 8.4 |
| 5 53 30 | | 8.3 |

| I | 2 | 3 |
|---|---|---|
| 5 53'45" | 500 | 8.0 |
| 5 54 00 | | 8.0 |
| 5 58 00 | 200 | 8.9 |
| 5 58 I5 | | 8.9 |
| 5 58 30 | | 9.0 |
| 5 58 45 | | 7.5 |
| 5 59 00 | | 7.6 |
| 5 59 I5 | | 7.5 |
| 5 59 30 | | 7.3 |
| 5 59 45 | | 7.5 |
| 6 00 00 | | 7.3 |
| 6 00 I5 | | 7.6 |
| 6 00 30 | | 7.4 |
| 6 00 45 | | 6.9 |
| 6 0I 00 | | 7.I |
| 6 0I I5 | | 7.4 |
| 6 0I 30 | | 6.9 |
| 6 0I 45 | | 6.6 |
| 6 02 00 | | 7.I |
| 6 02 30 | | 6.7 |
| 6 02 45 | | 6.6 |
| 6 03 00 | | 6.4 |
| 6 03 I5 | | 6.4 |
| 6 03 30 | | 6.6 |
| 6 03 45 | | 6.6 |
| 6 04 00 | | 6.0 |
| 6 04 I5 | | 6.6 |
| 6 04 30 | | 6.2 |
| 6 04 45 | | 6.4 |
| 6 05 00 | | 6.2 |
| 6 05 I5 | | 6.2 |
| 6 05 30 | | 6.0 |
| 6 05 45 | | 6.9 |
| 6 06 00 | | 7.0 |
| 6 06 I5 | | 6.9 |
| 6 06 30 | | 6.7 |
| 6 06 45 | | 6.7 |

| I | 2 | 3 |
|---|---|---|
| 6 07'00" | 200 | 6.5 |
| 6 07 I5 | | 6.7 |
| 6 07 30 | | 6.5 |
| 6 07 45 | | 6.5 |
| 6 08 00 | | 7.4 |
| 6 08 30 | | 7.0 |
| 6 08 45 | | 7.I |
| 6 09 00 | | 7.I |
| 6 09 I5 | | 7.0 |
| 6 09 30 | | 7.0 |
| 6 09 45 | | 7.I |
| 6 I0 00 | | 6.8 |
| 6 I0 I5 | | 7.I |
| 6 I0 30 | | 7.0 |
| 6 I0 45 | | 7.I |
| 6 II 00 | | 7.0 |
| 6 II I5 | | 6.8 |
| 6 II 30 | | 6.8 |
| 6 II 45 | | 6.6 |
| 6 I2 00 | | 7.4 |
| 6 I2 I5 | | 7.4 |
| 6 I2 30 | | 6.9 |
| 6 I2 45 | | 6.9 |
| 6 I3 00 | | 6.8 |

10/25/76

25.I0.76 г.

| | | |
|---|---|---|
| 9 I7 I5 | 500 | 7.7 |
| 9 I7 30 | | 7.4 |
| 9 I7 45 | | 7.4 |
| 9 I8 00 | | 7.3 |
| 9 I8 30 | | 7.0 |
| 9 I8 45 | | 6.7 |
| 9 I9 00 | | 6.7 |
| 9 I9 I5 | | 6.7 |
| 9 I9 30 | | 6.6 |
| 9 I9 45 | | 6.3 |

| I | 2 | 3 |
|---|---|---|
| 9 20'00" | 500 | 6.9 |
| 9 20 30 | | 7.0 |
| 9 20 45 | | 6.4 |
| 9 2I 00 | | 6.6 |
| 9 2I I5 | | 6.6 |
| 9 2I 45 | | 7.0 |
| 9 22 00 | | 7.0 |
| 9 22 I5 | | 6.9 |
| 9 22 30 | | 6.8 |
| 9 23 00 | | 7.I |
| 9 23 I5 | | 7.I |
| 9 23 30 | | 7.0 |
| 9 23 45 | | 7.0 |
| 9 24 00 | | 7.0 |
| 9 24 I5 | | 6.8 |
| 9 24 30 | | 6.4 |
| 9 24 45 | | 5.9 |
| 9 25 00 | | 5.3 |
| 9 25 I5 | | 5.4 |
| 9 25 30 | | 5.4 |
| 9 25 45 | | 5.4 |
| 9 26 00 | | 5.6 |
| 9 26 I5 | | 6.I |
| 9 26 30 | | 6.7 |
| 9 26 45 | | 7.I |
| 9 27 00 | | 7.4 |
| 9 27 I5 | | 7.7 |
| 9 27 30 | | 7.6 |
| 9 27 45 | | 7.7 |
| 9 28 00 | | 7.7 |
| 9 28 I5 | | 7.4 |
| 9 28 30 | | 7.4 |
| 9 29 00 | | 7.3 |
| 9 29 I5 | | 7.I |
| 9 29 30 | | 6.8 |
| 9 29 45 | | 7.0 |
| 9 30 00 | | 7.0 |

| I | 2 | 3 |
|---|---|---|
| 9 30'I5" | 500 | 7.I |
| 9 30 30 | | 7.3 |
| 9 30 45 | | 7.3 |
| 9 3I 00 | | 7.0 |
| 10/30.76 | 30.I0.76 г. | |
| 5 50 00 | 6000 | -9.2 |
| 5 50 I5 | | -9.0 |
| 5 50 30 | | -9.7 |
| 5 50 45 | | -8.7 |
| 5 5I 00 | | -8.8 |
| 5 5I I5 | | -8.2 |
| 5 5I 30 | | -9.0 |
| 5 5I 45 | | -7.9 |
| 5 52 00 | | -5.6 |
| 5 52 I5 | | -5.2 |
| 5 52 30 | | -4.4 |
| 5 52 45 | | -4.0 |
| 5 53 00 | | -3.6 |
| 5 53 I5 | | -2.7 |
| 5 53 30 | | -2.7 |
| 5 53 45 | | -2.2 |
| 5 54 00 | | -2.5 |
| 5 54 I5 | | -2.5 |
| 5 54 30 | | -2.2 |
| 8 I2 00 | 500 | 7.2 |
| 8 I2 I5 | | 6.4 |
| 8 I2 30 | | 6.I |
| 8 I2 45 | | 5.3 |
| 8 I3 00 | | 5.3 |
| 8 I3 I5 | | 5.I |
| 8 I3 30 | | 5.6 |
| 8 I4 00 | | 6.3 |
| 8 I4 I5 | | 5.6 |
| 8 I4 30 | | 5.2 |
| 8 I4 45 | | 5.0 |

REPRODUCIBILITY OF THE ORIGINAL PAGE IS POOR

| I | 2 | 3 |
|---|---|---|
| 8 I5 I5 | 500 | 5.0 |
| 8 I5 30 | | 4.8 |
| 8 I5 45 | | 4.5 |
| 8 I6 00 | | 4.8 |
| 8 I6 30 | | 5.0 |
| 8 I6 45 | | 4.7 |
| 8 I7 00 | | 4.7 |
| 8 I7 I5 | | 4.5 |
| 8 I7 30 | | 4.7 |
| 8 I7 45 | | 5.5 |
| 8 I8 00 | | 5.5 |
| 8 I8 I5 | | 5.3 |
| 8 I8 30 | | 4.8 |
| 8 I8 45 | | 5.2 |
| 8 I9 00 | | 5.6 |
| 8 I9 I5 | | 5.6 |
| 8 I9 30 | | 6.0 |
| 8 I9 45 | | 6.3 |
| 8 20 00 | | 6.3 |
| 8 20 I5 | | 6.5 |
| 8 20 30 | | 6.3 |
| 8 20 45 | | 6.3 |
| 8 2I 00 | | 7.0 |
| 8 2I I5 | | 7.0 |
| 8.2I.30 | | 6.8 |
| 8.2I.45 | | 6.5 |
| 8.22.00 | | 7.0 |
| 8 22 I5 | | 6.7 |
| 8 22 30 | | 6.7 |
| 8 22 45 | | 6.7 |
| 8 23 00 | | 6.5 |
| 8 23 I5 | | 6.5 |
| 8 23 30 | | 6.7 |
| 8.23.45 | | 6.7 |
| 8.24.00 | | 6.4 |
| 8 24 I5 | | 6.4 |
| 8 24 30 | | 6.2 |

| I | 2 | 3 |
|---|---|---|
| 8 24 45 | 500 | 6.2 |
| 8 25 00 | | 6.2 |
| 8 25 I5 | | 6.4 |
| 8 25 30 | | 6.2 |
| 8 26 00 | | 6.5 |
| 8 40 00 | 6000 | 3.8 |
| 8 40 I5 | | 4.0 |
| 8 40 30 | | 4.5 |
| 8 40 45 | | 4.8 |
| 8 4I 00 | | 4.6 |
| 8 4I I5 | | 4.6 |
| 8 4I 30 | | 4.8 |
| 8 4I 45 | | 5.0 |
| 8 42 00 | | 5.0 |
| 8 42 I5 | | 5.6 |
| 8 42 30 | | 5.3 |
| 8 42 45 | | 5.5 |
| 8 43 00 | | 5.5 |
| 8 43 I5 | | 5.6 |
| 8 43 30 | | 5.6 |
| 8 43 45 | | 5.3 |
| 8 44 00 | | 5.5 |
| 8 44 I5 | | -0.8 |
| 8 44 30 | | 4.8 |
| 8 44 45 | | 5.5 |
| 8 45 00 | | 5.8 |
| 8 45 I5 | | 6.0 |
| 8 45 30 | | 6.3 |
| 8 45 45 | | 6.0 |
| 8 46 00 | | 5.6 |
| 8 46 I5 | | 5.5 |
| 8 46 30 | | 5.3 |
| 8 46 45 | | -7.4 |
| 8 47 I5 | | -2.5 |
| 8 47 30 | | -5.I |
| 8 47 45 | | 3.5 |
| 8 48 00 | | 2.9 |

| I | 2 | 3 |
|---|---|---|
| 8 48'45" | 6000 | -7.2 |
| 8 49 00 | | -9.7 |
| 8 49 I5 | | -II.4 |
| 8 49 30 | | -II.8 |
| 8 49 45 | | -8.I |
| 8 50 00 | | 4.4 |
| 8 50 I5 | | 4.7 |
| 8 50 30 | | 4.7 |
| 8 50 45 | | 4.6 |
| 8 5I 00 | | 4.8 |
| 8 5I I5 | | 4.8 |
| 8 5I 30 | | 4.8 |
| 8 5I 45 | | 5.0 |
| 8.52 00 | | 4.7 |
| 8 52 I5 | | 4.8 |
| 8 52 30 | | 5.0 |
| 8 52 45 | | 5.0 |
| 8 53 00 | | 5.3 |
| 8 53 I5 | | 5.4 |
| 8 53 30 | | 5.3 |

| I | 2 | 3 |
|---|---|---|
| 8 53'45" | 6000 | 5.9 |
| 8 54 00 | | 5.9 |
| 8 54 I5 | | 5.6 |
| 8 54 30 | | 5.4 |
| 8 54 45 | | 5.6 |
| 8 55 00 | | 5.7 |
| 8 55 I5 | | 5.2 |
| 8 55 45 | | 3.8 |
| 8 56 00 | | 3.8 |
| 8 56 I5 | | 4.2 |
| 8 56 30 | | 4.3 |
| 8 56 45 | | 4.6 |
| 8 57 30 | | 2.0 |
| 8 57 45 | | 2.4 |
| 8 58 00 | | 2.4 |
| 8 58 I5 | | 2.6 |
| 8 58 30 | | 2.8 |
| 8 58 45 | | 3.I |
| 8 59 00 | | 3.6 |

REPRODUCIBILITY OF THE
ORIGINAL PAGE IS POOR

Key to page 50

Table III-1-3 /45.
Data on Aircraft Sounding of the Atmosphere (Moscow Time)
September 10, 1976, Petropavlovsk- Kamchatka

1. time
2. H, km
3. P, mm
4. Visual observations
5. higher than 2 Stfr. Lower than 10Sc
6. higher than 10 As. Lower than 8 Sc.
7. Ocean 1 B (bel)
8. Higher than 10 As. Lower than 2 Sc.
9. Ocean 1 B
10. Higher than 10 As. Lower than 2 Sc.
11. Higher than 10 As. Lower than 9 St.
12. Higher than 10 Cs neb. Lower than 10 Sc .
13. Higher than Cc floc. Lower than 10 Ac, Sc.
14. Higher than 10 Cc, Lower than 10 AcSc
15. Higher than 9 Cc, Lower than 10 Ac, Sc
16. Went into the clouds
17. Higher than 10 Cc, lower than 10 Ac, Sc
18. Higher than 10 Csneb, lower than 9 Ac, Sc.

Key to page 51 /46.
1. Higher than 10 Cs, lower than 10 AcSc
2. Higher than 9 Cs, lower than 10 AcSc
3. Higher than 8 Cs, lower than 10 AcSc
4. Went into the clouds
5. Came out of the clouds
6. Higher than 10 Cs, lower than 10 AcSc
7. Higher than 10 Cc floc, lower than 10 AcScb

Key to page 52 /47.
1. Higher than 10 CcCs, lower than 10 Ac,Sc,b
2. Higher than 10 Cc, lower than 10 Ac, Sc, b
3. Higher than 10 Cs, lower than 10 Ac, Sc, b
4. Higher than 10 Cc, lower than 10 Ac, Sc, b
5. Higher than 10 Cc, lower than 10 Sc
6. Foam in the form of caps - 12%
7. Higher than 10 Cc, lower than 10 Sc.

Key to page 59 /48.
1. Higher than 10 Cc, lower than 10 Sc
2. Higher than 10 Cc, lower than 10 Sc, Ac
3. Higher than 10 Cc, lower than 10 Ac, Sc (Br, Ac)
4. Higher than 10 Cs, lower than 10 Sc
5. Higher than 10 Cs, lower than 10 Sc
6. Higher than 10 Ci int, lower than 10 Sc

Таблица III-1-3

Данные самолётного зондирования атмосферы /45.
(время московское)

Петропавловск-Камчатский

REPRODUCIBILITY OF THE ORIGINAL PAGE IS POOR

10 сентября 1976 г.

| Время | Н км | Р мм | $t_b$ °C | $T_{тр}$ °C | U % | $t_{вс}$ °C | Визуальные наблюдения |
|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| 01.38 | 0 | 997.2 | 11.0 | - 7.2 | 98 | | |
| 40 | 0.54 | 934 | 4.1 | (4.2 | 101) | | 5 Выше 2 St fr. Ниже 10 |
| 41.5 | 1.03 | 879 | 3.5 | 2.3 | 92 | | Выше 2 St fr. Ниже 10 |
| 43.5 | 1.58 | 821 | 0.1 | (1.0 | 107) | | Hr Sc |
| 44 | 1.84 | 795 | -1.4 | (-0.9 | 104) | | Br Sc |
| 45.5 | 2.20 | 760 | 0.4 | -6.8 | 58 | | 6 Выше 10 As. Ниже 8 S |
| | | | | | | | 7 Океан 1 б. |
| 49 | 3.01 | 687 | 1.1 | | | | 8 Выше 10 As, ниже 2 |
| | | | | | | | 9 Океан 1 б. |
| 01.54 | 4.05 | 602 | -6.8 | -22.5 | 28 | | 10 Выше 10 As, ниже 2S |
| 02.00 | 5.08 | 5.27 | -12.9 | | | | 11 Выше 10 As, ниже 9S |
| 11 | 6.14 | 458 | -20.0 | | | | 12 Выше 10 Cs neb, ниже 10 Sc |
| 37 | 6.14 | 458 | -15.9 | -32.1 | 24 | | 13 Выше 10 Cc flocc., ниже 10 Ac, Sc |
| 45 | 6.14 | 458 | -16.3 | -31.5 | 26 | | 14 Выше 10 Cc, ниже 10 Ac Sc |
| 46 | 6.14 | 458 | -15.4 | -30.6 | 26 | | |
| 47 | 6.14 | 458 | -15.1 | -28.8 | 30 | | |
| 48 | 6.14 | 458 | -15.1 | | | | |
| 49 | 6.14 | 458 | -15.9 | | | | |
| 50 | 6.14 | 458 | -16.1 | | | | |
| 51 | 6.14 | 458 | -16.5 | -31.8 | 26 | | |
| 52 | 6.14 | 458 | -17.0 | -32.5 | 25 | | 15 Выше 9 Cc, ниже 10 Ac Sc |
| 53 | 6.14 | 458 | -17.4 | -31.4 | 29 | | |
| 54 | 6.14 | 458 | -16.8 | -33.6 | 22 | | |
| 55 | 6.14 | 458 | -16.9 | -33.2 | 23 | | |
| 56 | 6.14 | 458 | -17.0 | | | | |
| 57 | 6.14 | 458 | -17.8 | | | | 16 Вошли в облако |
| 58 | 6.14 | 458 | -19.0 | | | | |
| 02.59 | 6.14 | 458 | -17.9 | | | | 17 Выше 10 Cc, ниже 10 Ac, Sc |
| 03.00 | 6.14 | 458 | -17.9 | | | | 18 Выше 10 Cs neb, ниже 9 As Sc |
| 10 | 6.14 | 458 | -18.5 | | | | |
| 11 | 6.14 | 458 | -18.5 | | | | |

REPRODUCIBILITY OF THE ORIGINAL PAGE IS POOR

| I | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|
| 03.I2 | 6.I4 | 458 | -I7.9 | | | | |
| I3 | 6.I4 | 458 | -I7.6 | | | | |
| I4 | 6.I4 | 458 | -I7.6 | -22.5 | 66 | | |
| I5 | 6.I4 | 458 | -I8.6 | -2I.6 | 77 | | |
| I6 | 6.I4 | 458 | -I8.4 | -22.2 | 72 | | |
| I7 | 6.I4 | 458 | -I8.3 | -29.2 | 7I | | |
| I8 | 6.I4 | 458 | -I7.8 | -24.5 | 56 | | |
| I9 | 6.I4 | 458 | -I6.8 | -25.0 | 49 | | |
| 20 | 6.I4 | 458 | -I6.2 | -30.0 | 29 | | Выше IO Cs ,ниже IO |
| 2I | 6.I4 | 458 | -I6.0 | -3I.3 | 26 | | |
| 22 | 6.I4 | 458 | -I5.9 | -29.0 | 32 | | |
| 23 | 6.I4 | 458 | -I5.9 | -28.3 | 34 | | |
| 24 | 6.I4 | 458 | -I5.8 | -29.5 | 30 | | |
| 25 | 6.I4 | 458 | -I5.3 | -30.0 | 27 | 2 | Выше 9 Cs , ниже IO A |
| 35.5 | 6.I4 | 458 | -I5.8 | -2I.5 | 6I | 3 | Выше 8 Cs, ниже IO A |
| 36.5 | 6.I4 | 458 | -I6.3 | -25.I | 47 | | |
| 37.5 | 6.I4 | 458 | -I7.3 | -26.4 | 45 | | |
| 38.5 | 6.I4 | 458 | -I7.6 | -2I.0 | 75 | | |
| 39.5 | 6.I4 | 458 | -I6.4 | -28.6 | 35 | 4 | Вошли в облако |
| 40.5 | 6.I4 | 458 | -I6.6 | -I8.0 | 89 | | |
| 4I | 6.I4 | 458 | -I6.6 | -I8.0 | 89 | 5 | Вышли из облака |
| 4I.5 | 6.I4 | 458 | -I6.6 | -I9.I | 8I | | |
| 42.5 | 6.I4 | 458 | -I6.8 | -25.6 | 46 | | |
| 43.5 | 6.I4 | 458 | -I6.8 | -30.2 | 30 | | |
| 44.5 | 6.I4 | 458 | -I7.4 | | | | |
| 45.5 | 6.I4 | 458 | -I8.9 | | | | |
| 03.46.5 | 6.I4 | 458 | -I9.5 | | | | |
| 47.5 | 6.I4 | 458 | -I9.6 | | | | |
| 48.5 | 6.I4 | 458 | -I9.6 | | | | |
| 49.5 | 6.I4 | 458 | -I9.6 | | | | |
| 50.5 | 6.I4 | 458 | -I9.2 | | | | |
| 5I.5 | 6.I4 | 458 | -I9.2 | | | | |
| 03.52 | 6.I4 | 458 | -I9.2 | | | 6 | Выше IO Cs ,ниже I |
| 04.04 | 6.I4 | 458 | -I9.6 | | | 7 | Выше IO Cs flo, ниже I |
| 05 | 6.I4 | 458 | -I9.6 | | | | |
| 06 | 6.I4 | 458 | -I9.6 | | | | |
| 07. | 6.I4 | 458 | -I9.6 | | | | |
| 04.08 | 6.I4 | 458 | -I9.7 | | | | |

| I | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|
| 04.09. | 6.I4 | 458 | -I8.8 | -27.I | 52 | | /47. |
| I0 | 6.I4 | 458 | -I7.7 | -23.0 | 63 | | |
| II | 6.I4 | 458 | -I7.5 | -2I.4 | 72 | | |
| I2 | 6.I4 | 458 | -I7.5 | -2I.3 | 72 | | |
| I3 | 6.I4 | 458 | -I7.5 | -20.I | 80 | | Выше I0 CcCs, Ниже I0 Ac Sc б |
| I4 | 6.I4 | 458 | -I7.0 | -2I.8 | 66 | | |
| I5 | 6.I4 | 458 | -I7.9 | -2I.6 | 73 | | |
| I6 | 6.I4 | 458 | -I7.8 | -2I.8 | 7I | | |
| I7 | 6.I4 | 458 | -I7.4 | -20.9 | 74 | | |
| I8 | 6.I4 | 458 | -I7.I | -2I.5 | 69 | | |
| I9.5 | 6.I4 | 458 | -I6.7 | -20.4 | 73 | | Выше I0 Cc, ниже I0 Ac Sc, б |
| 28 | 6.I4 | 458 | -I7.8 | -22.9 | 64 | | -"- |
| 29 | 6.I4 | 458 | -I7.4 | -22.4 | 65 | | |
| 30 | 6.I4 | 458 | -I7.4 | -2I.6 | 70 | | |
| 04.3I | 6.I4 | 458 | -22.2 | -22.2 | 66 | | |
| 32 | 6.I4 | 458 | -I7.7 | -22.2 | 68 | | |
| 33 | 6.I4 | 458 | -I8.0 | -23.2 | 64 | | |
| 34 | 6.I4 | 458 | -I8.0 | -23.7 | 6I | | Выше I0 Cs, ниже I0 Ac Sc б |
| 35 | 6.I4 | 458 | -I8.4 | -25.0 | 56 | | |
| 36 | 6.I4 | 458 | -I8.I | | | | |
| 37 | 6.I4 | 458 | -I8.I | | | | |
| 38 | 6.I4 | 458 | -I8.5 | | | -I7.7 | |
| 39 | 6.I4 | 458 | -I8.5 | | | | |
| 40 | 6.I4 | 458 | -I8.8 | | | | |
| 4I | 6.I4 | 458 | -I9.4 | | | | |
| 42 | 6.I4 | 458 | -I9.4 | | | | |
| к 43 | 6.I4 | 458 | -20.2 | | | | Выше I0 Cc, ниже I0 Ac Sc б |
| 47 | 5.07 | 528 | -I4.0 | | | | Выше I0 Cc, ниже I0 Sc<br>Пена в виде шапки |
| н 54 | 3.93 | 6I2 | -4.5 | | | | Выше I0 Cc, ниже I0 Sc |
| 55 | 3.93 | 6I2 | -5.3 | | | | |
| 56 | 3.93 | 6I2 | -5.3 | | | | |
| 57 | 3.93 | 6I2 | -5.3 | | | | |
| 58 | 3.93 | 6I2 | -5.2 | | | | |
| 04.59 | 3.93 | 6I2 | -5.2 | | | | |
| 05.00 | 3.93 | 6I2 | -5.I | | | | |
| 0I | 3.93 | 6I2 | -5.I | | | | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 05.02 | 3.93 | 6I2 | -5.I | | | | |
| 03 | 3.93 | 6I2 | -5.3 | | | | |
| 04 | 3.93 | 6I2 | -5.3 | | | | Выше IO Cc, ниже IO Sc |
| 05 | 3.93 | 6I2 | -5.2 | | | | |
| 06 | 3.93 | 6I2 | -5.I | | | | |
| 07 | 3.93 | 6I2 | -5.I | | | | |
| 08 | 3.93 | 6I2 | -4.7 | | | | |
| к 09 | 3.93 | 6I2 | -4.7 | | | | 2 Выше IO Cc, ниже IO Sc |
| н I4.45 | 2.88 | 698 | -0.4 | | | | 3 Выше IO Cc, ниже IO Sc (Br, Ac) |
| I5 | 2.88 | 698 | -0.4 | | | | |
| I6 | 2.88 | 698 | 0.0 | | | | |
| I7 | 2.88 | 6.98 | 0.7 | | | | |
| I8 | 2.88 | 698 | 0.7 | | | | |
| I9 | 2.88 | 698 | 0.7 | | | | |
| 20 | 2.88 | 698 | 0.2 | | | | |
| 2I | 2.88 | 698 | -0.2 | | | | 4 Выше IO Cs, ниже IO Sc |
| 22 | 2.88 | 698 | -0.4 | | | | |
| 23 | 2.88 | 698 | -0.7 | | | | |
| 24 | 2.88 | 698 | -0.6 | | | | |
| 25 | 2.88 | 698 | -0.8 | | | -0.2 | |
| 26 | 2.88 | 698 | -0.8 | | | | |
| 27 | 2.88 | 698 | -0.6 | | | | |
| 28 | 2.88 | 698 | -066 | | | | |
| 29 | 2.88 | 698 | -0.6 | | | | |
| к 30.5 | 2.88 | 698 | -0.6 | | | | 5 Выше IO Cs, ниже IO Sc |
| н 38 | I.90 | 789 | 3.7 | -0.I | 76 | | 6 Выше IO Ci int. Ниже IO Sc |
| 39 | I.90 | 789 | 2.9 | (3.4 | I04) | | |
| 40 | I.90 | 789 | 2.9 | (3.9 | I07) | | |
| 4I | I.90 | 789 | 2.9 | (4.0 | I08) | | |
| 42 | I.90 | 789 | 2.7 | (4.0 | II0) | | |
| 43 | I.90 | 789 | 2.7 | (4.4 | II3) | | |
| 44 | I.90 | 789 | 2.7 | (4.4 | II3) | | |
| 45 | I.90 | 789 | 2.7 | (4.0 | II0) | | |
| 46 | I.90 | 789 | 2.7 | (5.0 | II8) | | |
| 05.47 | I.90 | 789 | 2.6 | (3.8 | I09) | | |
| 48 | I.90 | 789 | 2.6 | (5.0 | II8) | | |
| 49 | I.90 | 789 | 2.6 | (5.0 | II8) | | |
| 50 | I.90 | 789 | 2.6 | (4.8 | II7) | | |
| 05.5I | I.90 | 789 | 2.5 | (4.0 | III) | 2.7 | |

REPRODUCIBILITY OF THE ORIGINAL PAGE IS POOR

Key to text page 55 /49.

1. Higher than 10 Cc As, Lower than 10 St Bst Br Sc
2. Higher than 10 Ac, lower than 10 St
3. Higher than 10 Cc, lower than 10 St
4. Higher than 10 Cc, lower than 10 St.

Key to text page 56 /50.

1. Note: 5:38-6.52 - the operation of the thermohygrometer was unsatisfactory.

Key to text page 57 /51.

1. Table III-13
2. Data on Aircraft Sounding of the Atmosphere (Moscow Time) Petropavolvsk-Kamchatskiy - September 11, 1976
3. Time
4. H, km
5. P, mm
6. visual observations
7. higher than 8 Sc (cold front)
8. higher than 8 Sc
9. HrSc lower than 5 Ac
10. HrSc Foam 8%
11. Higher than 6 Ac Br Sc
12. Higher than 5 Ac Lower than 10 Sc
13. Higher than 8 Ac Lower than 7 Sc. Dry
14. Higher than 8 Ac Lower than 7 Sc
15. Ocean 7 B
16. Higher than 7 Ci, lower than 3 Ac
17. Ocean - 8 B Turbulence

Key to text page 58 /52.

1. higher than 4 Ci floc. Lower than 1-2 Cu
2. ocean - 8 B.
3. Higher clear, in the direction of Ci,
4. Lower than 1 Cu, Ocean - 8 B.
5. Higher than 8 As, lower clear
6. ocean - 7 B
7. Higher than 7 As, Ac. Lower clear
8. Ocean - 7 B.

Key to page 59 /53.

1. Higher than 5 Ac, lower clear
2. ocean - 7 B.
3. Higher than 6 Ac, lower clear,
4. Ocean - 7 B.
5. Higher than 6 Ac, lower clear
6. ocean - 7 B.
7. Higher than 7 Ac, lower clear
8. ocean - 2 B.
9. Higher than 7 Ac. Lower clear
10. Ocean 8 B
11. Higher than 9 Ac, lower clear
12. ocean - 8 B.

| I | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|
| 05.52 | I.90 | 789 | 2.I | (4.0 | II4) | | /49. |
| к 53 | I.90 | 789 | 2.I | (4.0 | II0) | | 1 Выше IO Cc As .Ниже IO St |
| | | | | | | | BSt Br Sc |
| н 57 | 0.92 | 890 | 5.9 | (I2.6 | I57) | | |
| 58 | 0.92 | 890 | 5.9 | (II.5 | I46) | | |
| 05.59 | 0.92 | 890 | 6.7 | (II.0 | I34) | | |
| 06.00 | 0.92 | 890 | 5.9 | (II.6 | I47) | | |
| 06.0I | 0.92 | 890 | 5.9 | (II.6 | I47) | | |
| 02 | 0.92 | 890 | 7.4 | (I0.9 | I27) | | 2 Выше IO Ac ,ниже IO St |
| 03 | 0.92 | 890 | 7.2 | (I0.8 | I28) | | |
| 04 | 0.92 | 890 | 7.2 | (I0.5 | I25) | | 3 Выше IO Cc ,ниже IO St |
| 05 | 0.92 | 890 | 7.3 | (I0.0 | I20) | 7.2 | |
| 06 | 0.92 | 890 | 7.3 | (9.6 | II7) | | |
| 07 | 0.92 | 890 | 8.0 | (9.6 | III) | | |
| 08 | 0.92 | 890 | 8.2 | (9.I | I06) | | |
| 09 | 0.92 | 890 | 8.7 | 8.2 | 97 | | |
| I0 | 0.92 | 890 | 8.0 | 7.4 | 96 | | |
| II | 0.92 | 890 | 8.0 | 7.I | 94 | | |
| к I2 | 0.92 | 890 | 7.6 | 7.0 | 96 | | 4 Выше IO Cc ,ниже IO St |
| I3.5 | 0.67 | 9I7 | 6.8 | (II.0 | I33) | | BSt St |
| | | | | | | | BSt |
| н I6 | 0.4I | 947 | 3.5 | (I0.I | I57) | | |
| I7 | 0.4I | 947 | 3.5 | (I0.I | I57) | | |
| I8 | 0.4I | 947 | 3.6 | (9.7 | I52) | | |
| I9 | 0.4I | 947 | 3.6 | (I0.3 | I59) | | |
| 20 | 0.4I | 947 | 3.6 | (I0.3 | I59) | | |
| 2I | 0.4I | 947 | 3.I | (I0.3 | I64) | | |
| 22 | 0.4I | 947 | 3.6 | (I0.3 | I59) | | |
| 23 | 0.4I | 947 | 3.6 | (I0.3 | I58) | | |
| 24 | 0.4I | 947 | 2.9 | (9.2 | I55) | | |
| 25 | 0.4I | 947 | 3.0 | (I0.5 | I68) | | |
| 26 | 0.4I | 947 | 2.4 | (9.7 | I66) | | BSt |
| 27 | 0.4I | 947 | 2.3 | (9.3 | I62) | | |
| 28 | 0.4I | 947 | 2.3 | (8.0 | I49) | | |
| 29 | 0.4I | 947 | 2.3 | (9.I | I60) | 3.I | |
| 30 | 0.4I | 947 | 3.I | (9.2 | I52) | | |
| к 3I | 0.4I | 947 | 3.8 | (9.5 | I48) | | BSt |
| н 35.5 | 0.I2 | 982 | 2.6 | (I9.6 | I74) | | BSt |
| 36.5 | 0.I2 | 982 | 2.6 | (I0.7 | I75) | | |
| 06.37.5 | 0.I2 | 982 | 2.6 | (I0.6 | I74) | | |

| I | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|
| 06.38.5 | 0.I2 | 982 | 2.4 | (I0.I | I70) | | |
| 39.5 | 0.I2 | 982 | 2.5 | (I0.0 | I68) | | |
| 40 | 0.I2 | 982 | 2.5 | (I0.0 | I68) | | Bst |
| 40.5 | 0.I2 | 982 | 2.5 | (I0.0 | I68) | | |
| 4I.5 | 0.I2 | 982 | 2.5 | (I0.4 | I72) | 2.5 | |
| 42.5 | 0.I2 | 982 | 2.5 | (I0.2 | I70) | | |
| 43.5 | 0.I2 | 982 | 2.5 | (I0.6 | I75) | | |
| 44.5 | 0.I2 | 982 | 2.5 | (I0.2 | I70) | | |
| 45.5 | 0.I2 | 982 | 2.5 | (I0.2 | I70) | | |
| 46.5 | 0.I2 | 982 | 2.5 | (I0.2 | I70) | | |
| 47.5 | 0.I2 | 982 | 2.5 | (I0.2 | I70) | | |
| 48.5 | 0.I2 | 982 | 2.5 | ( 9.8 | I66) | | |
| 49.5 | 0.I2 | 982 | 2.5 | (I0.I | I69) | | |
| к 50.5 | 0.I2 | 982 | 2.5 | ( 9.9 | I67) | | Bst |
| 06.5I.5 | 0.47 | 940 | 3.9 | (II.I | I64) | | Br St |

Примечание: 5.38–6.52 – работа термогигрометра неудовлетворительная.

2 Данные самолётного зондирования атмосферы
(время московское)
Петропавловск-Камчатский
II сентября 1976 г.

| 3 Время | 4 Н км | 5 Р мм | $t_в$ °C | $T_{тр}$ °C | U % | $t_{ср.в}$ °C | 6 Визуальные наблюдени |
|---|---|---|---|---|---|---|---|
| I | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| 0I.I5 | 0 | 998.6 | I4.6 | | 68 | | |
| I7.5 | 0.54 | 936 | 5.3 | -0.3 | 67 | | 7 Выше 8 Sc (холодн.фро |
| 20 | I.20 | 862 | -I.0 | -2.5 | 89 | | 8 Выше 8 Sc |
| 20.5 | I.43 | 837 | -2.4 | -2.5 | 99 | | 9 Hr Sc Ниже 5 Ac |
| 22 | I.99 | 780 | -5.6 | -5.8 | 98 | | 10 Hr Sc Пена 8% |
| 23.5 | 2.39 | 74I | -8.9 | -8.3 | | | 11 Выше 6 Ac. Cr Sc |
| 25 | 2.99 | 686 | -8.9 | | | | 12 Выше 5 Ac .Ниже IO Sc |
| 30 | 3.85 | 6I3 | -I3.4 | -23.6 | 42 | | 13 Выше 8 Ac. Ниже 7 Sc .C |
| и 45 | 3.85 | 6I3 | -I4.5 | -24.3 | 43 | | 14 Выше 8 Ac, ниже 7 Sc .<br>15 Океан 7 б. |
| 46 | 3.85 | 6I3 | -I4.5 | -25.0 | 40 | | |
| 47 | 3.85 | 6I3 | -I4.6 | -26.I | 37 | | |
| 48 | 3.85 | 6I3 | -I5.0 | | | | |
| 49 | 3.85 | 6I3 | -I3.9 | | | | |
| 50 | 3.85 | 6I3 | -I3.9 | | | | |
| 5I | 3.85 | 6I3 | -I4.7 | | | | |
| 52 | 3.85 | 6I3 | -I4.2 | | | | |
| 53 | 3.85 | 6I3 | -I4.8 | | | | |
| 54 | 3.85 | 6I3 | -I5.2 | | | | |
| 55 | 3.85 | 6I3 | -I4.2 | | | | |
| 56 | 3.85 | 6I3 | -I3.4 | | | | |
| 57 | 3.85 | 6I3 | -I4.4 | | | | |
| 58 | 3.85 | 6I3 | -I3.0 | | | | |
| 0I.59 | 3.85 | 6I3 | -I2.I | | | | |
| 02.00 | 3.85 | 6I3 | -I3.2 | | | | 16 Выше 7 Ci ,ниже 3 Ac .<br>17 океан - 8 б. болт. |
| 0I | 3.85 | 6I3 | -I2.8 | | | | |
| 02 | 3.85 | 6I3 | -II.9 | | | | |
| 03 | 3.85 | 6I3 | -I0.8 | | | | |
| 04 | 3.85 | 6I3 | -I2.3 | | | | |
| 05 | 3.85 | 6I3 | -9.2 | | | | |
| 02.06 | 3.85 | 6I3 | -9.2 | | | | |

| I | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|
| 02.07 | 3.85 | 6I3 | -I0.8 | | | | |
| 08 | 3.85 | 6I3 | -I0.0 | | | | |
| 09 | 3.85 | 6I3 | -I0.0 | | | | |
| I0 | 3.85 | 6I3 | -I0.0 | | | | |
| II | 3.85 | 6I3 | -9.9 | | | | |
| I2 | 3.85 | 6I3 | -9.7 | | | | |
| I3 | 3.85 | 6I3 | -9.0 | | | | |
| I4 | 3.85 | 6I3 | -8.7 | | | | |
| I5 | 3.85 | 6I3 | -9.2 | | | | |
| I6 | 3.85 | 6I3 | -9.2 | | | | |
| I7 | 3.85 | 6I3 | -9.2 | | | | |
| I8 | 3.85 | 6I3 | -8.6 | | | | |
| I9 | 3.85 | 6I3 | -8.2 | | | | |
| 20 | 3.85 | 6I3 | -7.7 | | | | |
| 2I | 3.85 | 6I3 | -8.I | | | | |
| 22 | 3.85 | 6I3 | -8.4 | | | | |
| 23 | 3.85 | 6I3 | -8.4 | | | | |
| 24 | 3.85 | 6I3 | -8.9 | | | | |
| 25 | 3.85 | 6I3 | -8.8 | | | | |
| 26 | 3.85 | 6I3 | -9.2 | | | | |
| 27 | 3.85 | 6I3 | -9.2 | | | | |
| 28 | 3.85 | 6I3 | -8.7 | | | | |
| 29 | 3.85 | 6I3 | -9.I | | | | |
| 30 | 3.85 | 6I3 | -8.7 | | | | |
| 3I | 3.85 | 6I3 | -8.7 | | | | |
| 32 | 3.85 | 6I3 | -8.9 | | | | |
| 33 | 3.85 | 6I3 | -9.I | | | | |
| 34 | 3.85 | 6I3 | -8.9 | | | | |
| 35 | 3.85 | 6I3 | -8.6 | | | | |
| 36 | 3.85 | 6I3 | - 8.6 | | | | |
| 36.5 | 3.85 | 6I3 | -8.6 | | | | |
| 43 | 3.85 | 6I3 | -8.I | | | | |
| 44 | 3.85 | 6I3 | -8.7 | | | | |
| 45 | 3.85 | 6I3 | -8.5 | | | | |
| 46 | 3.85 | 6I3 | -8.5 | | | | |
| 02.47 | 3.85 | 6I3 | -9.I | | | | |

1 Выше 4 Ci floc. Ниже I-2 Cv
2 океан – 8 б.

3 Выше ясно, в стор. Ci
4 ниже I Cu, океан –

5 Выше 8 As, ниже ясн
6 океан – 7 б.

–"–

7 Выше 7 As, Ac. Ниже яс
8 океан – 7 б.

| I | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|
| 02.48 | 3.85 | 6I3 | -9.I | | | | |
| 49 | 3.85 | 6I3 | -9.3 | | | | |
| 50 | 3.85 | 6I3 | -8.9 | | | | |
| 5I | 3.85 | 6I3 | -8.5 | | | | |
| 52 | 3.85 | 6I3 | -8.4 | | | | |
| 53 | 3.85 | 6I3 | -8.8 | | | | |
| 54 | 3.85 | 6I3 | -8.3 | | | | |
| 55 | 3.85 | 6I3 | -8.3 | | | | |
| 56 | 3.85 | 6I3 | -8.2 | | | | |
| 57 | 3.85 | 6I3 | -7.7 | | | | |
| 58 | 3.85 | 6I3 | -7.7 | | | | |
| 02.59 | 3.85 | 6I3 | -7.8 | | | | |
| 03.00 | 3.85 | 6I3 | -7.8 | | | | |
| 0I | 3.85 | 6I3 | -8.3 | | | | |
| 02 | 3.85 | 6I3 | -8.3 | | | | |
| 03 | 3.85 | 6I3 | -8.5 | | | | |
| 04 | 3.85 | 6I3 | -8.6 | | | | |
| 05 | 3.85 | 6I3 | -8.6 | | | | 1 Выше 5 Ac ,ниже ясн 2 океан – 7 б. |
| I2 | 3.85 | 6I3 | -8.9 | | | | 3 Выше 6 Ac ,ниже ясн 4 океан – 7 б. |
| I3 | 3.85 | 6I3 | -9.I | | | | |
| I4 | 3.85 | 6I3 | -9.I | | | | |
| I5 | 3.85 | 6I3 | -9.8 | | | | |
| I6 | 3.85 | 6I3 | -I0.2 | | | | |
| I7 | 3.85 | 6I3 | -9.7 | | | | |
| I7.5 | 3.85 | 6I3 | -9.7 | | | | 5 Выше 6 Ac ,ниже ясн 6 океан – 7 б. |
| 23 | 3.85 | 6I3 | -8.4 | | | | 7 Выше 7 Ac, ниже ясн 8 океан 2 б. |
| 24 | 3.85 | 6I3 | -9.5 | | | | |
| 25 | 3.85 | 6I3 | -9.0 | | | | |
| 26 | 3.85 | 6I3 | -9.2 | | | | |
| 27 | 3.85 | 6I3 | -9.2 | | | | |
| 28 | 3.85 | 6I3 | -8.7 | | | | |
| 29 | 3.85 | 6I3 | -8.7 | | | | 9 Выше 7 Ac, ниже ясн 10 океан – 8 б. |
| 42 | 3.85 | 6I3 | -8.6 | | | | 11 Выше 9 Ac, ниже ясн 12 океан – 8 б. |
| 03.43 | 3.85 | 6I3 | -8.8 | | | | |

Key to page 61 /54.

1. Higher than 9-10 Ac. Lower clear, ocean - 8 B.
2. Higher than 10 Ac, lower clear, ocean - 7 B.
3. Higher than 8 Ac, lower clear, ocean - 8 B.
4. Higher than 8 Ac, lower clear, ocean - 8 B.
5. Higher than 4 Ac, lower clear, ocean - 8 B.
6. Higher than 2 Ac, lower clear.
7. Higher than 1 Ac, lower clear
8. Higher than 1 Ac, lower than 1 Sc.

Key to page 62 /55.

1. Higher than 10 Ac,Cc
2. Higher than 10 Ac, lower clear.
3. Higher than 10 Ac, lower than 10 Atrans.
4. Higher than 10 As, lower than 2 As.
5. Higher than 10 Ac., lower clear.
6. Higher than 6 Ac, lower than 1 Sc.
7. Higher than 8 As, lower than 1 Sc.
8. Higher than 8 As, lower clear
9. Higher than 8 As, lower clear, ocean - 8 B.
10. Higher than 8 As, lower clear, ocean - 8 B.

Key to page 63 /56.

1. Higher than 7 AsAc. Lower clear, ocean - 8 B.
2. Higher than 6 Ac, lower clear, ocean 8 B.
3. Higher than 8 Ac, lower clear, Ocean - 8 B, turbulent.
4. Higher than 7 Ac, lower clear, ocean 8 B.
5. Higher than 8 Ac, lower clear, ocean 8 B.
6. Higher than 8 Ac,As. Lower clear. Ocean - 8 B.
7. Higher than 9 Ac, As. Lower clear. Ocean - 8 B.

Key to page 64 /57.

1. Higher than 10 As, lower clear, ocean - 8 B.
2. Higher than 10 As, lower clear, ocean 6 - B.
3. Higher than 10 As, lower than 2 Sc, ocean - 5 B.
4. Higher than 10 As, lower than 2 Sc, Ocean swell of 5 B.

Key to page 65, Table III-1-3 /58.

1. Data on Aircraft Sounding of the Atmosphere. (Moscow Time) September 13, 1076 Petropavlovsk
2. Time
3. H, km
4. P, mm
5. visual observations
6. table III-1-3
7. Higher clear
8. higher clear, lower dry land
9. higher clear
10. higher lear, lower clear, hilly surface
11. higher clear, lower clear.
12. higher clear, lower clear, hilly dry land.
13. higher clear, lower clear, bay
14. higher clear, lower clear, ocean 1-2 B.
15. higher than 5 Ci, lower clear, ocean, - 2 B.

| I | 2 | 3 | 4 | 5 | 6 | 7 | 8 /54. |
|---|---|---|---|---|---|---|---|
| 03.44 | 3.85 | 6I3 | -8.8 | | | | |
| 45 | 3.85 | 6I3 | -8.7 | | | | |
| 46 | 3.85 | 6I3 | -8.8 | -30.I | I6 | | 1 Выше 9-I0 Ac. Ниже ясн океан - 8 б. |
| 47 | 3.85 | 6I3 | -8.8 | -30.I | I6 | | |
| 48 | 3.85 | 6I3 | -8.8 | | | | |
| 49 | 3.85 | 6I3 | -8.7 | | | | |
| 50 | 3.85 | 6I3 | -8.4 | | | | |
| 5I | 3.85 | 6I3 | -8.3 | | | | |
| 03.52 | 3.85 | 6I3 | -8.3 | | | | 2 Выше $\boxed{I0}$ Ac, ниже ясно океан - 7 б. |
| 04.00 | 3.85 | 6I3 | -8.6 | | | | 3 Выше 8 Ac, ниже ясно, океан - 8 б. |
| 0I | 3.85 | 6I3 | -9.0 | | | | |
| 02 | 3.85 | 6I3 | -9.0 | | | | |
| 03 | 3.85 | 6I3 | -9.2 | | | | |
| 04 | 3.85 | 6I3 | -8.8 | | | | |
| 05 | 3.85 | 6I3 | -8.4 | | | | |
| 06 | 3.85 | 6I3 | -8.4 | | | -9.7 | |
| 07 | 3.85 | 6I3 | -8.4 | | | | |
| 08 | 3.85 | 6I3 | -7.6 | | | | |
| 09 | 3.85 | 6I3 | -8.3 | | | | |
| к I0.5 | 3.85 | 6I3 | -8.8 | | | | 4 Выше 8 Ac, ниже ясно. океан - 8 б. |
| I5 | 5.0I | 527 | -I5.I | -20.2 | 65 | | 5 Выше 4 Ac, ниже ясн океан - 8 б. |
| н 23 | 5.95 | 465 | -I9.7 | -24.9 | 63 | | -"- |
| 24 | 5.95 | 465 | -I9.8 | -24.2 | 68 | | |
| 25 | 5.95 | 465 | -I9.2 | -24.8 | 6I | | |
| 26 | 5.95 | 465 | -I9.7 | -23.9 | 69 | | 6 Выше 2 Ac, ниже ясн |
| 27 | 5.95 | 465 | -20.3 | -23.9 | 73 | | |
| 28 | 5.95 | 465 | -20.7 | -24.6 | 70 | | |
| 29 | 5.95 | 465 | -20.6 | -24.6 | 70 | | |
| 30 | 5.95 | 465 | -20.6 | -22.9 | 8I | | |
| 3I | 5.95 | 465 | -20.6 | -25.3 | 65 | | |
| 32 | 5.95 | 465 | -20.6 | -24.4 | 7I | | 7 Выше I Ac, ниже ясно |
| 46 | 5.95 | 465 | -20.I | -23.7 | 72 | | 8 Выше I Ac, ниже I Sc |
| 47 | 5.95 | 465 | -20.8 | -26.0 | 63 | | |
| 04.48 | 5.95 | 465 | -20.8 | -25.I | 68 | | |

| I | 2 | 3 | 4 | 5 | 6 | 7 | 8 /55. |
|---|---|---|---|---|---|---|---|
| 04.49 | 5.95 | 465 | -20.6 | -24.3 | 72 | | |
| 50 | 5.95 | 465 | -20.7 | -25.2 | 67 | | |
| 5I | 5.95 | 465 | -20.7 | -22.9 | 82 | | |
| 52 | 5.95 | 465 | -20.6 | -22.9 | 8I | | |
| 53 | 5.95 | 465 | -20.6 | -22.4 | 85 | | |
| 54 | 5.95 | 465 | -20.4 | -2I.I | 93 | | |
| 55 | 5.95 | 465 | -20.2 | -2I.0 | 93 | 1 | Выше IO As,Cc |
| 56 | 5.95 | 465 | -I9.9 | -22.3 | 8I | | |
| 57 | 5.95 | 465 | -I9.4 | -22.9 | 73 | | |
| 58 | 5.95 | 465 | -I9.5 | -22.6 | 76 | | |
| 04.59 | 5.95 | 465 | -I9.5 | -22.I | 79 | | |
| 05.00 | 5.95 | 465 | -I9.4 | -2I.3 | 85 | 2 | Выше IO Ac ,ниже ясн |
| 0I | 5.95 | 465 | -I9.8 | -2I.9 | 83 | | |
| 02 | 5.95 | 465 | -I9.8 | -2I.9 | 83 | | |
| I8 | 5.95 | 465 | -20.3 | -I9.9 | I00 | 3 | Выше IO Ac,ниже IOAs. |
| I9 | 5.95 | 465 | -I9.9 | -I9.9 | I00 | | |
| 20 | 5.95 | 465 | -I9.7 | -I9.9 | 98 | | |
| 2I | 5.95 | 465 | -I9.7 | -20.2 | 96 | | |
| 22 | 5.95 | 465 | -I9.6 | -22.I | 80 | 4 | Выше IO As, ниже 2 A |
| 23 | 5.95 | 465 | -I9.9 | -20.9 | 92 | | |
| 24 | 5.95 | 465 | -I9.6 | -20.9 | 90 | | |
| 25 | 5.95 | 465 | -I9.6 | -2I.4 | 86 | | |
| 26 | 5.95 | 465 | -I9.7 | -2I.4 | 87 | | |
| 27 | 5.95 | 465 | -I9.7 | -2I.9 | 83 | | |
| к 27.5 | 5.95 | 465 | -I9.6 | -23.9 | 69 | 5 | Выше $\boxed{\text{IO}}$ Ac .Ниже ясн |
| 34.5 | 4.35 | 575 | -I3.7 | -3I.4 | 2I | 6 | Выше 6 Ac, ниже IS |
| 36 | 3.98 | 604 | -II.3 | | | 7 | Выше 8As, ниже I Sc |
| 40 | 2.96 | 688 | -4.5 | | | 8 | Выше 8 As , ниже ясн |
| н 54.5 | I.87 | 790 | -2.I | | | 9 | Выше 8 As, ниже ясно океан - 8 б. |
| 55.5 | I.87 | 790 | -I.9 | | | | |
| 56.5 | I.87 | 790 | -I.5 | | | | |
| 57.5 | I.87 | 790 | -I.6 | | | | |
| 58.5 | I.87 | 790 | -I.4 | | | | |
| 05.59.5 | I.87 | 790 | -I.8 | | | | |
| 06.00.5 | I.87 | 790 | -I.9 | | | 10 | Выше 8 As, ниже ясн океан- 8 б. |
| 0I.5 | I.87 | 790 | -2.8 | -I6.2 | 35 | | |
| 06.02.5 | I.87 | 790 | -2.5 | -I6.6 | 33 | -2.0 | |

| | I | 2 | 3 | 4 | 5 | 6 | 7 | 8 /56. |
|---|---|---|---|---|---|---|---|---|
| | 06.03.5 | I.87 | 790 | -2.2 | | | | |
| к | 04.5 | I.87 | 790 | -I.9 | | | | |
| | 08 | 0.93 | 888 | 2.5 | -I0.6 | 37 | | 1 Выше 7As Ac. Ниже ясн океан – 8 б. |
| н | I4 | 0.4I | 948 | I.8 | (2.7 | I05) | | 2 Выше 6 Ac, ниже ясно океан – 8 б. |
| | I5 | 0.4I | 948 | I.4 | (2.I | I04) | | |
| | I6 | 0.4I | 948 | I.8 | I.5 | 97 | | |
| | I7 | 0.4I | 948 | 2.4 | 0.5 | 87 | | |
| | I8 | 0.4I | 948 | I.9 | I.7 | 98 | | |
| | I9 | 0.4I | 948 | I.5 | I.6 | I00 | | |
| | 20 | 0.4I | 948 | I.2 | (3.3 | II6) | | |
| | 2I | 0.4I | 948 | I.9 | (2.3 | I03) | 2.0 | |
| | 22 | 0.4I | 948 | 2.4 | 0.5 | 87 | | |
| | 23 | 0.4I | 948 | 2.8 | -I.0 | 76 | | |
| к | 24 | 0.4I | 948 | 2.7 | -0.8 | 78 | | 3 Выше 8 Ac. Ниже ясно Океан – 8 б. Болтан |
| | 26 | 0.87 | 895 | 3.I | -6.2 | 50 | | 4 Выше 7 Ac, ниже ясно океан 8 б. |
| | 29.5 | I.87 | 790 | -I.I | | | | 5 Выше 8 Ac, ниже ясно океан 8 б. |
| | 33 | 2.83 | 700 | -4.5 | | | | 6 Выше 8 Ac, As. Ниже яс Океан – 8 б. |
| н | 37.5 | 3.89 | 6II | -I0.6 | -25.5 | 28 | | 7 Выше 9 Ac, As. Ниже я океан – 8 б. |
| | 38 | 3.89 | 6II | -II.3 | | | | |
| | 39 | 3.89 | 6II | - II.5 | -24.8 | 32 | | |
| | 40 | 3.89 | 6II | -II.5 | -28.2 | 24 | | |
| | 4I | 3.89 | 6II | -I2.3 | -28.6 | 24 | | |
| | 42 | 3.89 | 6II | -II.6 | | | | |
| | 43 | 3.89 | 6II | -I2.I | | | | |
| | 44 | 3.89 | 6II | -II.6 | | | | |
| | 45 | 3.89 | 6II | -I0.8 | | | | |
| | 46 | 3.89 | 6II | -I0.8 | | | | |
| | 47 | 3.89 | 6II | -I0.5 | | | | |
| | 48 | 3.89 | 6II | -I0.4 | | | | |
| | 49 | 3.89 | 6II | -I0.5 | | | | |
| | 50 | 3.89 | 6II | -I0.0 | | | | |
| | 5I | 3.89 | 6II | -II.I | | | | |
| | 06.52 | 3.89 | 6II | -I0.9 | | | | |

| I | 2 | 3 | 4 | 5 | 6 | 7 | 8 /57. |
|---|---|---|---|---|---|---|---|
| 06.53 | 3.89 | 6II | -I0.6 | | | | |
| 54 | 3.89 | 6II | -II.4 | | | | |
| 55 | 3.89 | 6II | -II.8 | | | | 1 Выше [I0] As ,ниже ясн Океан - 8 б. |
| 56 | 3.89 | 6II | -II.6 | -32.2 | I7 | | |
| 57 | 3.89 | 6II | -II.6 | | | | |
| 58 | 3.89 | 6II | -II.9 | -3I.4 | I8 | | |
| 06.59 | 3.89 | 6II | -II.4 | -32.4 | I7 | | |
| 07.00 | 3.89 | 6II | -II.4 | -3I.5 | I7 | | |
| 0I | 3.89 | 6II | -II.5 | -3I.I | I8 | -I2.2 | |
| 02 | 3.89 | 6II | -I0.7 | -3I.8 | I6 | | |
| 03 | 3.89 | 6II | -II.0 | -30.7 | I8 | | |
| 04 | 3.89 | 6II | -I2.5 | -29.6 | 23 | | |
| 05 | 3.89 | 6II | -II.0 | -29.5 | 20 | | |
| 06 | 3.89 | 6II | -II.4 | -28.0 | 24 | | |
| 07 | 3.89 | 6II | -I3.9 | -27.4 | 3I | | |
| 08 | 3.89 | 6II | -I3.9 | -25.0 | 38 | | |
| 09 | 3.89 | 6II | -I4.9 | | | | |
| I0 | 3.89 | 6II | -I3.9 | | | | 2 Выше I0 As ,ниже я океан - 6 б. |
| I2 | 3.89 | 6II | -I6.5 | -27.2 | 39 | | |
| I3 | 3.89 | 6II | -I6.6 | -25.8 | 45 | | |
| I4 | 3.89 | 6II | -I6.3 | -26.9 | 40 | | |
| I5 | 3.89 | 6II | -I6.I | -26.3 | 4I | | 3 Выше I0 As,ниже 2S Океан - 5 б. |
| к 07.I6.5 | 3.89 | 6II | -I7.2 | -22.3 | 64 | | 4 Выше I0 As,ниже 2S Океан - волнение |

# Данные самолётного зондирования в атмосфере
(время московское)

13 сентября 1976 г.
Петропавловск

| Время | H км | P мм | $t_в$ °C | $T_{тр.}$ °C | U % | $\bar{t}_{в\,ср}$ °C | Визуальные наблюден |
|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| 2-05 | 0 | 1003.1 | 6.6 | | 84 | | Выше ясно. |
| 2-06.5 | 0.41 | 954 | 3.6 | 3.2 | 97 | | Выше ясно,ниже суш |
| 2-08 | 0.90 | 898 | 1.2 | -11.7 | 37 | | Выше ясно. |
| 2-10 | 1.43 | 840 | -2.1 | -16.5 | 32 | | Выше ясно,ниже ясн холм.поверхность. |
| 2-11.5 | 1.98 | 783 | -7.0 | -17.8 | 42 | | Выше ясно,ниже ясн |
| 2-14 | 2.83 | 702 | -10.6 | -24.2 | 31 | | -"- -"- |
| 2-17.5 | 3.87 | 612 | -17.7 | -29.7 | 34 | | Выше ясно,ниже ясн холм.суша. |
| 2-25.5 | 3.90 | 610 | -18.4 | -31.0 | 32 | | Выше ясно,ниже ясн Бухта. |
| 2-37 | 3.90 | 610 | -17.6 | -33.9 | 23 | | Выше ясно,ниже ясн Океан 1-2 б. |
| 2-38 | 3.90 | 610 | -17.6 | -35.3 | 20 | | |
| 2-39 | 3.90 | 610 | -17.6 | -35.3 | 20 | | |
| 2-40 | 3.90 | 610 | -18.1 | | | | |
| 2-41 | 3.90 | 610 | -18.1 | -35.3 | 21 | | |
| 2-42 | 3.90 | 610 | -18.3 | -30.9 | 32 | | |
| 2-43 | 3.90 | 610 | -18.0 | -34.5 | 22 | | |
| 2-44 | 3.90 | 610 | -18.0 | -31.4 | 30 | | |
| 2-45 | 3.90 | 610 | -18.3 | -31.3 | 31 | | |
| 2-46 | 3.90 | 610 | -18.5 | -31.8 | 30 | | |
| 2-47 | 3.90 | 610 | -18.4 | -34.0 | 24 | | |
| 2-48 | 3.90 | 610 | -18.4 | -33.7 | 25 | | |
| 2-49 | 3.90 | 610 | -18.4 | -34.0 | 24 | | |
| 2-50 | 3.90 | 610 | -18.4 | -33.7 | 25 | | Выше 5Ci .Ниже ясн Океан - 2 б. |
| 2-51 | 3.90 | 610 | -18.4 | -33.3 | 26 | | |
| 2-52 | 3.90 | 610 | -18.8 | -31.6 | 32 | | |
| 2-53 | 3.90 | 610 | -18.9 | -32.1 | 30 | | |
| 2-54 | 3.90 | 610 | -19.0 | -32.1 | 31 | | |
| 2-55 | 3.90 | 610 | -19.0 | -32.4 | 30 | | |
| 2-56 | 3.90 | 610 | -19.0 | -31.9 | 31 | | |

Key to text page 67 /59.

1. higher than 5 Ci ing, lower clear.
2. Cu ahead. Ocean 3-5 B.
3. Higher than 4 Ci fil. Lower than 6-7 Cu hum. Ocean 6 B.
4. Higher clear, lower 4 Sc, Cu. Ocean 7 B.

Key to text page 68 /60.

1. Higher than 3 Cifil. Lower than 5 Sc, Cu. Ocean - 8 B.
2. Higher than 10 As. Lower than 10 Sc, Cu.
3. Higher than 6 Cifil. Lower than 10 Sc, Cu.
4. Higher than 6 Cifil. Lower than 10 Sc, Cu. Ocean 8-9 B.
5. Higher than 3 Ci, lower than 10 Astrans.

Key to text page 69 /61.

1. Higher than 3 Cc, lower than 9 As, Sc.
2. higher than 6 Cc. Lower than 8 AcAsSc Ocean - 9B.
3. Higher than 4 Cc. Lower than 7 Ac, As Sc.
4. Higher than 4 Cc. Lower than 7 Ac Sc
5. Higher than 4 Cc. Lower than 7 Sc.
6. HrSc. Lower than 2 FrSt
7. Higher than 8 Sc, Cb. Light rain.
8. Higher than 8 Sc, Cb. End of the rain.
9. Higher than 8 Sc, Cb. Beginning of the rain.
10. Higher than 8 Sc. Ocean, turbulent - 9 B.
11. Higher than 8 Sc, Ocean - turbulent 9 B.
12. Higher than 8 Sc, Cb. Oceam 9 B.
13. Higher than 6 Sc. Ocean 8 B.
14. Higher than 8 Sc, Cb. Ocean 9 B.
15. Higher than 8 Sc, Cb. Ocean 9 B. Strong swell.
16. Higher than 6 Sc. Over the ship.
17. Higher than 2 Ci. Lower than 6 Sc.

Key to text page 70 /62.

1. In Cb strong turbulence
2. Higher than 3 Ci. Lower than 8 Cu Cb.
3. Higher than 3 Cc Ciunc. Lower than 6 Cu.
4. Higher than 7 Cc Ci unc . Lower than 4 Cu. Ocean - 8 B.
5. Higher than 6 Cc Ci. Lower than 5 Cu, Ocean 8 B
6. Higher than 1 Ci. Lower than 4 Cu. Ocean 8 B.
7. Higher than 1 Ci. Lower than 4 Cu. Ocean - 8B .
8. Higher clear, lower than 3 Cu, Ocean 8 B.
9. Higher clear. Lower 2 Cu, Ocean - 8 B.

Key to text page 71 /63.

1. Higher 7 Ci unc. Lower 4 Cu. Ocean - 8 B.
2. Higher 4 Ci unc, lower 3 Cu. Ocean, swell - 8B.
3. Higher 1 Ci. Lower 4 Cu. Ocean 8 B.
4. Higher clear. Lower 3 Cu. Ocean - 8 B.
5. Higher clear, Lower 3 Cu, Ocean - 8 B.

Key to text page 72 /64.

1. Higher clear, lower 4 Cu, Ocean - 8 B.
2. Higher clear, lower 2 Cu. Ocean - 5 B.
3. Higher and lower clear. Ocean swell - 3 B.

| I | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|
| 2-57 | 3.90 | 6I0 | -I9.I | -3I.9 | 3I | | |
| 2.58 | 3.90 | 6I0 | -I8.8 | -32.5 | 29 | | |
| 2-59 | 3.90 | 6I0 | -I8.8 | -32.6 | 29 | | |
| 3-00 | 3.90 | 6I0 | -I8.9 | -3I.9 | 3I | | |
| 3-0I | 3.90 | 6I0 | -I8.8 | -36.0 | 2I | | 1 Выше 5 Ciing .Ниже яс<br>2 Впереди Cu .Океан 3- |
| 3-02 | 3.90 | 6I0 | -I8.8 | | | | |
| 3-03 | 3.90 | 6I0 | -I9.3 | -37.9 | I8 | | |
| 3-04 | 3.90 | 6I0 | -I9.3 | -38.6 | I7 | | |
| 3-05 | 3.90 | 6I0 | -I9.3 | -38.3 | I7 | | |
| 3-06 | 3.90 | 6I0 | -I9.3 | -38.2 | I7 | | |
| 3-07 | 3.90 | 6I0 | -I9.3 | | | | 3 Выше 4 Ci fil.Ниже 6-7<br>Cu hum.Океан 6 б. |
| 3-08 | 3.90 | 6I0 | -I9.3 | | | | |
| 3-09 | 3.90 | 6I0 | -I9.3 | | | | |
| 3-I0 | 3.90 | 6I0 | -I9.3 | -39.I | I6 | | |
| 3-II | 3.90 | 6I0 | -I9.2 | | | | |
| 3-I2 | 3.90 | 6I0 | -I9.3 | -39.I | I6 | | |
| 3-I3 | 3.90 | 6I0 | -I9.3 | | | | |
| 3-I4 | 3.90 | 6I0 | -I9.4 | -39.0 | I6 | | |
| 3-I5 | 3.90 | 6I0 | -I9.3 | -39.0 | I6 | | |
| 3-I6 | 3.90 | 6I0 | -I9.3 | | | | |
| 3-I7 | 3.90 | 6I0 | -I9.2 | | | | |
| 3-I8 | 3.90 | 6I0 | -I9.2 | | | | |
| 3-I9 | 3.90 | 6I0 | -I9.2 | | | | |
| 3-20 | 3.90 | 6I0 | -I9.I | -38.9 | I6 | | |
| 3-2I | 3.90 | 6I0 | -I9.I | -39.6 | I5 | | |
| 3-22 | 3.90 | 6I0 | -I9.I | | | | |
| 3-23 | 3.90 | 6I0 | -I9.0 | | | | |
| 3-24 | 3.90 | 6I0 | -I9.0 | | | | |
| 3-25 | 3.90 | 6I0 | -I9.0 | | | | 4 Выше ясно,ниже<br>4 Sc ,Cu . Океан 7 |
| 3-26 | 3.90 | 6I0 | -I9.I | | | | |
| 3-27 | 3.90 | 6I0 | -I9.I | | | | |
| 3-28 | 3.90 | 6I0 | -I9.I | | | | |
| 3-29 | 3.90 | 6I0 | -I9.I | | | | |
| 3.30 | 3.90 | 6I0 | -I9.2 | | | | |
| 3-3I | 3.90 | 6I0 | -I9.2 | | | | |

| I | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|
| 3-32 | 3.90 | 6I0 | -I9.2 | | | | |
| 3-33 | 3.90 | 6I0 | -I9.6 | | | | |
| 3-34 | 3.90 | 6I0 | -I9.I | | | | |
| 3-35 | 3.90 | 6I0 | -I9.I | -28.5 | 43 | | |
| 3-36 | 3.90 | 6I0 | -I9.3 | -27.I | 50 | | |
| 3-37 | 3.90 | 6I0 | -I9.3 | -24.3 | 65 | | |
| 3-38 | 3.90 | 6I0 | -I9.0 | -28.2 | 44 | | 1 Выше 3 Cifil. Ниже 5 Cu. Океан 8 б. |
| 3-39 | 3.90 | 6I0 | -I8.8 | -3I.7 | 3I | | |
| 3-40 | 3.90 | 6I0 | -I9.0 | -35.6 | 22 | | |
| 3-4I | 3.90 | 6I0 | -I8.8 | -34.I | 25 | | |
| 3-42 | 3.90 | 6I0 | -I8.5 | -34.3 | 24 | | 2 Выше [I0] As. Ниже I0 |
| 3-43 | 3.90 | 6I0 | -I8.4 | -28.0 | 43 | | |
| 3-44 | 3.90 | 6I0 | -I8.5 | -29.9 | 36 | | |
| 3-45 | 3.90 | 6I0 | -I8.4 | -25.I | 56 | | |
| 3-46 | 3.90 | 6I0 | -I8.2 | -23.4 | 64 | | |
| 3-47 | 3.90 | 6I0 | -I8.2 | -23.0 | 66 | | |
| 3-48 | 3.90 | 6I0 | -I8.2 | -22.3 | 68 | | |
| 3-49 | 3.90 | 6I0 | -I7.6 | -22.5 | 66 | | |
| 3-50 | 3.90 | 6I0 | -I7.6 | -22.5 | 66 | | |
| 3-5I | 3.90 | 6I0 | -I7.6 | -2I.8 | 69 | | |
| 3-52 | 3.90 | 6I0 | -I7.7 | -22.5 | 66 | | |
| 3-53 | 3.90 | 6I0 | -I8.0 | -2I.6 | 74 | | |
| 3-54 | 3.90 | 6I0 | -I8.2 | -20.4 | 83 | | |
| 3-55 | 3.90 | 6I0 | -I8.2 | -20.7 | 8I | | 3 Выше 6 Cifil. Ниже I0 |
| 3-56 | 3.90 | 6I0 | -I8.2 | -20.7 | 8I | | |
| 3-57 | 3.90 | 6I0 | -I7.6 | -2I.3 | 73 | | |
| 3-58 | 3.90 | 6I0 | -I7.5 | -20.4 | 78 | | 4 Выше 6 Cifil. Ниже [I0] Sc, Cu. Океан 8- |
| 3-59 | 3.90 | 6I0 | -I7.5 | -20.5 | 77 | | |
| 4-00 | 3.90 | 6I0 | -I7.3 | -I9.3 | 84 | -I8.5 | |
| 4-0I | 3.90 | 6I0 | -I7.2 | -20.0 | 79 | | |
| 4-02 | 3.90 | 6I0 | -I7.2 | -I9.7 | 8I | | |
| 4-03 | 3.90 | 6I0 | -I7.2 | -2I.0 | 73 | | |
| 4-04 | 3.90 | 6I0 | -I7.0 | -2I.3 | 70 | | |
| 4-05 | 3.90 | 6I0 | -I7.0 | -20.I | 77 | | 5 Выше 3 Ci, ниже [I0] As trans |
| 4-06 | 3.90 | 6I0 | -I6.6 | -I9.I | 8I | | -"- |

| | I | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| | 4-I9.5 | 3.90 | 6I0 | -I6.7 | -I9.8 | 77 | | 1 Выше 3 Cc, ниже 9 As |
| | 4-40,5 | 3.90 | 6I0 | -I7.9 | -I9.4 | 88 | | 2 Выше 6 Cc. Ниже 8 Ac As. Океан - 9 б. |
| К | | | | | | | | |
| | 4-54.5 | 3.8I | 6I7 | -I7.5 | -20.I | 80 | | 3 Выше 4 Cc. Ниже 7 Ac, As |
| | 5-03.5 | 2.93 | 693 | -I4.I | -I7.4 | 76 | | 4 Выше 4 Cc. Ниже 7 Ac Sc |
| | 5-07 | 2.00 | 782 | -I0.4 | -II.8 | 90 | | 5 Выше 4 Cc. Ниже 7 Sc |
| | 5-08 | I.79 | 804 | -I0.4 | (-8.I | I20) | | Br Sc |
| | 5-I0.5 | I.04 | 885 | -7.2 | 0.3 | | | 6 Hr Sc. Ниже 2 Fr St |
| | 5-I8 | 0.48 | 950 | -I.I | 2.8 | | | 7 Выше 8 Sc, Cb. Слабы дождь. |
| Н | 5-I9 | 0.48 | 950 | -I.8 | 3.6 | | | 8 Выше 8 Sc, Cb. Конец дождя. |
| | 5-20 | 0.48 | 950 | -I.5 | 3.8 | | | 9 Выше 8 Sc, Cb. Начал дождя. |
| | 5-23 | 0.48 | 950 | -I.I | I.5 | | | 10 Выше 8 Sc. Океан, во нение 9 б. |
| | 5-24 | 0.48 | 950 | -I.3 | I.6 | | | |
| | 5-25 | 0.48 | 950 | -I.3 | 2.6 | | | |
| | 5-26 | 0.48 | 950 | -I.4 | 3.3 | | | |
| | 5-27 | 0.48 | 950 | -I.I | I.2 | | | |
| | 5-28 | 0.48 | 950 | -I.I | 0.9 | | | |
| | 5-29 | 0.48 | 950 | -0.8 | 0.4 | | | |
| | 5-30 | 0.48 | 950 | -I.2 | I.5 | | | 11 Выше 8 Sc. Океан - волнение 9 б. |
| | 5-3I | 0.48 | 950 | -0.8 | I.I | | | |
| | 5.32 | 0.48 | 950 | -I.5 | 2.6 | | | 12 Выше 8 Sc, Cb. Океан |
| | 5-42 | 0.48 | 950 | -0.5 | 0.I | | | 13 Выше 6 Sc. Океан 8 б |
| | 5-43 | 0.48 | 950 | -0.5 | I.0 | | | |
| | 5-44 | 0.48 | 950 | -0.5 | -0.I | | | |
| | 5-45 | 0.48 | 950 | -0.6 | -0.4 | | -0.9 | |
| | 5-46 | 0.48 | 950 | -0.8 | I.0 | | | 14 Выше 8 Sc, Cb. Океан |
| | 5-47 | 0.48 | 950 | -0.7 | 0.2 | | | |
| | 5-48 | 0.48 | 950 | -0.7 | 0.6 | | | |
| | 5.49 | 0.48 | 950 | -0.7 | 0.6 | | | |
| | 5-50 | 0.48 | 950 | -0.5 | 0.2 | | | |
| | 5-5I | 0.48 | 950 | -0.6 | 0.6 | | | |
| К | 5-52 | 0.48 | 950 | -0.6 | 0.6 | | | 15 Выше 8 Sc, Cb. Океа 9 б. Сильн. болт. |
| | 6-06 | 0.79 | 9I4 | -I.9 | -3.7 | 87 | | 16 Выше 6 Sc. Над судно |
| | 6-07 | I.29 | 858 | -5.2 | -7.0 | 87 | | 17 Выше 2 Ci. Ниже 6 Sc |

| | I | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| | 6-09 | I.67 | 8I8 | -7.9 | -6.I | | 1 | В Cb Сильная болта |
| н | 6-I6 | 2.I2 | 772 | -I0.0 | | | 2 | Выше 3 Ci .Ниже 8 Cu C |
| | 6-I7 | 2.I2 | 772 | -I0.I | | | | |
| | 6-I8 | 2.I2 | 772 | -I0.3 | | | | |
| | 6.I9 | 2.I2 | 772 | -I0.7 | | | | |
| | 6-20 | 2.I2 | 772 | -I0.7 | | | | |
| | 6-2I | 2.I2 | 772 | -I0.6 | | | | |
| | 6-22 | 2.I2 | 772 | -I0.7 | | | | |
| | 6-23 | 2.I2 | 772 | -I0.7 | | | | |
| | 6-24 | 2.I2 | 772 | -II.0 | | | | |
| | 6-25 | 2.I2 | 772 | -II.I | | | -I0.6 | |
| к | 6-26 | 2.I2 | 772 | -I0.6 | | | 3 | Выше 3 Cc Ci unc Ниже |
| | 6.29.5 | 2.88 | 699 | -I2.9 | | | 4 | Выше 7 Cc Ci unc .Ниже Океан - 8 б. |
| н | 6-34.5 | 3.89 | 6I4 | -I7.6 | | | 5 | Выше 6 Cc Ci .Ниже 5 Океан- 8 б. |
| | 6-40 | 3.89 | 6I4 | -I7.0 | | | 6 | Выше I Ci. Ниже 4 Cu Океан 8 б. |
| | 6-4I | 3.89 | 6I4 | -I6.6 | | | | |
| | 6-42 | 3.89 | 6I4 | -I7.5 | | | | |
| | 6-43 | 3.89 | 6I4 | -I7.8 | | | | |
| | 6.44 | 3.89 | 6I4 | -I8.2 | -I7.8 | | | |
| | 6-45 | 3.89 | 6I4 | -I8.0 | | | | |
| | 6-46 | 3.89 | 6I4 | -I8.3 | | | | |
| | 6-47 | 3.89 | 6I4 | -I8.3 | | | | |
| | 6-48 | 3.89 | 6I4 | -I8.3 | | | | |
| | 6-49 | 3.89 | 6I4 | -I8.2 | | | | |
| к | 6-50 | 3.89 | 6I4 | -I8.3 | | | 7 | Выше I Ci . Ниже 4 C Океан - 8 б. |
| | 6-53 | 4.89 | 537 | -23.I | | | 8 | Выше ясно,ниже 3 Cu Океан - 8 б. |
| н | 6-57 | 5.85 | 470 | -32.7 | | | 9 | Выше ясно. Ниже 2 C Океан - 8 б. |
| | 6-58 | 5.85 | 470 | -33.I | | | | |
| | 6-59 | 5.85 | 470 | -33.3 | | | | |
| | 7-00 | 5.85 | 470 | -33.3 | | | | |
| | 7-0I | 5.85 | 470 | -33.8 | | | | |
| | 7-02 | 5.85 | 470 | -33.2 | | | | |
| | 7-03 | 5.85 | 470 | -32.9 | | | -32.8 | |
| | 7-04 | 5.85 | 470 | -3I.9 | | | | |

| I | 2 | 3 | 4 | 5 | 6 | 7 | 8 /63. |
|---|---|---|---|---|---|---|---|
| 7-05 | 5.85 | 470 | -3I.9 | | | | |
| 7-06 | 5.85 | 470 | -32.3 | | | | |
| к 7-07 | 5.85 | 470 | -32.3 | | | 1 | Выше 7 Ci инс .Ниже 4 Океан - 8 б. |
| 7-I0.5 | 5.02 | 528 | -26.5 | | | 2 | Выше 4 Ci инс Ниже 3 Cu . Океан, волнен.8 б. |
| н 7-I5 | 3.92 | 6I3 | -I8.3 | | | 3 | Выше I Ci .Ниже 4 Cu Океан 8 б. |
| 7-I6 | 3.92 | 6I3 | -I8.5 | | | | |
| 7-I7 | 3.92 | 6I3 | -I9.0 | | | | |
| 7-I8 | 3.92 | 6I3 | -I9.0 | | | | |
| 7-I9 | 3.92 | 6I3 | -I9.0 | | | | |
| 7-20 | 3.92 | 6I3 | -I9.0 | | | | |
| 7-2I | 3.92 | 6I3 | -I8.8 | | | | |
| 7-22 | 3.92 | 6I3 | -I8.9 | | | | |
| 7-23 | 3.92 | 6I3 | -I8.9 | | | | |
| 7-24 | 3.92 | 6I3 | -I8.7 | | | | |
| 7-24.5 | 3.92 | 6I3 | -I8.7 | | | 4 | Выше ясно. Ниже 3 Cu Океан - 8 б. |
| 7-25 | 3.92 | 6I3 | -I8.7 | | | | |
| 7-26 | 3.92 | 6I3 | -I8.7 | | | | |
| 7-27 | 3.92 | 6I3 | -I8.7 | | | | |
| 7-28 | 3.92 | 6I3 | -I8.7 | | | | |
| 7-29 | 3.92 | 6I3 | -I8.7 | | | | |
| 7-30 | 3.92 | 6I3 | -I8.7 | | | | |
| 7-3I | 3.92 | 6I3 | -I8.7 | | | | |
| 7-32 | 3.92 | 6I3 | -I8.8 | | | | |
| 7-33 | 3.92 | 6I3 | -I8.8 | | | | |
| 7-34 | 3.92 | 6I3 | -I8.8 | | | 5 | Выше ясно, ниже 3 Cu Океан - 8 б. |
| 7-35 | 3.92 | 6I3 | -I8.8 | | | | |
| 7-36 | 3.92 | 6I3 | -I8.8 | | | | |
| 7-37 | 3.92 | 6I3 | -I9.2 | | | | |
| 7-38 | 3.92 | 6I3 | -I8.8 | | | | |
| 7-39 | 3.92 | 6I3 | -I8.8 | | | | |
| 7-40 | 3.92 | 6I3 | -I8.8 | | | | |
| 7-4I | 3.92 | 6I3 | -I8.9 | | | | |
| 7-42 | 3.92 | 6I3 | -I9.3 | | | | |
| 7-43 | 3.92 | 6I3 | -I9.3 | | | | |
| 7-44 | 3.92 | 6I3 | -I9.3 | | | | |

| I | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|
| 7-45 | 3.92 | 6I3 | -I9.7 | | | | Выше ясно, ниже 4 Cu Океан - 8 б. |
| 7-47 | 3.92 | 6I3 | -I9.7 | | | | |
| 7-48 | 3.92 | 6I3 | -I9.I | | | | |
| 7-49 | 3.92 | 6I3 | -I9.0 | | | | |
| 7-50 | 3.92 | 6I3 | -I9.0 | | | | |
| 7-5I | 3.92 | 6I3 | -I9.0 | | | | |
| 7-52 | 3.92 | 6I3 | -I9.I | | | | |
| 7-53 | 3.92 | 6I3 | -I8.6 | | | | |
| 7-54 | 3.92 | 6I3 | -I8.6 | | | | |
| 7-55 | 3.92 | 6I3 | -I8.6 | | | | |
| 7-56 | 3.92 | 6I3 | -I8.4 | | | | |
| 7-57 | 3.92 | 6I3 | -I8.4 | | | | |
| 7-58 | 3.92 | 6I3 | -I8.6 | | | | |
| 7-59 | 3.92 | 6I3 | -I8.7 | | | | |
| 8-00 | 3.92 | 6I3 | -I8.7 | | | | |
| 8-0I | 3.92 | 6I3 | -I8.6 | | | | Выше ясно, ниже 2 C Океан - 5 б. |
| 8-06 | 3.92 | 6I3 | -I8.8 | -33.6 | 26 | | |
| 8-07 | 3.92 | 6I3 | -I8.8 | -34.2 | 25 | | |
| 8-08 | 3.92 | 6I3 | -I8.8 | -32.0 | 30 | | |
| 8-09 | 3.92 | 6I3 | -I8.8 | -32.7 | 28 | | |
| 8-I0 | 3.92 | 6I3 | -I9.2 | -32.6 | 30 | | Выше и ниже ясно. Океан, волн. 3 б. |
| 8-II | 3.92 | 6I3 | -I8.9 | -32.2 | 30 | | |
| 8-I2 | 3.92 | 6I3 | -I9.I | -32.2 | 30 | | |
| 8-I3 | 3.92 | 6I3 | -I9.3 | -33.7 | 27 | | |
| 8-I4 | 3.92 | 6I3 | -I9.3 | -32.0 | 3I | | |
| 8-I5 | 3.92 | 6I3 | -I9.5 | -30.9 | 36 | | |
| 8-I6 | 3.92 | 6I3 | -I9.5 | -30.9 | 36 | | |
| 8-I7 | 3.92 | 6I3 | -I9.5 | -30.9 | 36 | | |
| 8-I8 | 3.92 | 6I3 | -I9.3 | -30.9 | 35 | | |
| 8-I9 | 3.92 | 6I3 | -I9.3 | -3I.4 | 34 | | |
| 8-20 | 3.92 | 6I3 | -I9.8 | -30.3 | 39 | | |
| 8-2I | 3.92 | 6I3 | -I9.8 | -33.4 | 29 | | |
| 8-22 | 3.92 | 6I3 | -I9.8 | -32.I | 33 | | |
| 8-23 | 3.92 | 6I3 | -I9.8 | -3I.3 | 35 | | |
| 8-24 | 3.92 | 6I3 | -I9.7 | -3I.3 | 35 | -I9.I | |
| 8-25 | 3.92 | 6I3 | -I9.7 | -3I.3 | 35 | | |
| 8-26 | 3.92 | 6I3 | -I9.7 | -30.6 | 37 | | |

Key to text page 74 /65.

1. Clear. Ocean swell - 2 B.

Key to text page 75 /66.

1. Table III-1-3
2. Data on Aircraft of the Atmosphere (Moscow Time)
   Yuzhno-Sakhalinsk October 13, 1976
3. Time
4. H, km
5. P, mm
6. visual observations.
7. ravine
8. Lower St. Thick haze.
9. higher clear, lower 10 St.
10. Higher clear, lower 10 St Sc 5 Ac.
11. Higher clear, lower 10 Ac.
12. Higher clear, lower 8 Ac., 10 St, Sc.
13. Higher clear, lower 10 As.
14. Higher clear, lower 10 As.
15. Higher clear, lower 10 As (weak)
16. Higher clear, lower 3 Sc, haze.
17. Higher clear, lower 10 Sc.
18. Higher clear. Ocean, haze.
19. Higher clear, lower 5 Ac. Entered the clouds.

Key to text page 76 /67.

1. Higher clear, lower 10 Ac
2. Higher clear, lower 5 Ac. Border of cloudiness
3. Higher clear; ocean, lower - haze.
4. higher and lower clear. Ocean.

Key to text page 77 /68.

1. Clear
2. Higher clear, lower 5 Ac, Ocean
3. Lower clear, on the Ac side.
4. Higher clear, lower 2 Ac.
5. Lower clear. Ocean, thick haze.
6. Higher 2 Ac, lower clear, Br, thick haze.

Key to text page 78 /69.

1. Higher 2 Ac, lower clear. Surface in thick haze.
2. Clear, lower thick haze.
3. Clear, ocean - 3 B, thick haze, Aer. layer.
4. Clear, ocean - 4 B., haze, turbulence.
5. Clear, ocean 3-4 B.

Key to text page 79 /70.

1. Clear, Ocean - 3 B.
2. Higher 5 Ac, lower clear. Ocean 3-4 B. Gray fog.
3. Higher 5 As, St, lower clear. Ocean, swell - 4 B.

| I | 2 | 3 | 4 | 5 | 6 | 7 | 8 /65: |
|---|---|---|---|---|---|---|---|
| 8-27 | 3.92 | 6I3 | -I9.7 | -3I.4 | 35 | | |
| 8-28 | 3.92 | 6I3 | -I9.7 | -3I.2 | 36 | | |
| 8-29 | 3.92 | 6I3 | -I9.7 | -32.2 | 32 | | |
| 8-30 | 3.92 | 6I3 | -I9.7 | -3I.6 | 35 | | |
| 8-3I | 3.92 | 6I3 | -I9.7 | -29.6 | 4I | | |
| 8-32 | 3.92 | 6I3 | -I9.7 | -30.4 | 38 | | |
| 8-33 | 3.92 | 6I3 | -I9.7 | -28.6 | 45 | | |
| к 8-34 | 3.92 | 6I3 | -I9.7 | -30.2 | 39 | | Ясно. Океан - волн. |

Table III-1-3 /66.

2 Данные самолётного зондирования атмосферы (время московское)

Южно-Сахалинск

I3 октября I976 г.

| 3 Время | 4 Hкм | 5 Pмм | $t_в$ °C | $T_{т.р}$ °C | U % | $\bar{t}_{в.ср.}$ °C | 6 Визуальные наблюдени |
|---|---|---|---|---|---|---|---|
| I | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| 0I.5I | 0 | – | I.I | -0.6 | 88 | 7 | Ложбина |
| 54 | 0.49 | (94I) | 3.8 | -5.6 | 50 | | |
| 56 | 0.90 | 894 | 2.I | -8.9 | 44 | 8 | Ниже St. Густая дымка |
| 57.5 | I.40 | 840 | -I.4 | -8.5 | 58 | | B St. B r St = 2.2 |
| 0I.58,5 | I.89 | 790 | -4.4 | -I4.2 | 46 | | |
| 02.00 | 2.37 | 743 | -8.6 | -I6.7 | 52 | 9 | Выше ясно, ниже I0 S |
| 02 | 2.8I | 70I | -I2.9 | -I9.7 | 56 | | -"- |
| 05.5 | 3.8I | 6I4 | -I9.3 | -28.7 | 43 | 10 | Выше ясно, ниже I0 St |
| 09 | 4.76 | 540 | -24.I | -43.5 | I5 | 11 | Выше ясно, ниже I0 Ac |
| I4 | 5.87 | 463 | -29.2 | -47.5 | I5 | 12 | Выше ясно, ниже 8 Ac, St, Sc |
| I8 | 6.44 | 428 | -33.4 | -50.6 | I6 | 13 | Выше ясно, ниже I0 As |
| 30 | 6.44 | 428 | -32.7 | -46.6 | 23 | 14 | Выше ясно, ниже I0 As |
| 02.45 | 6.44 | 428 | -32.2 | -48.8 | I9 | 15 | Выше ясно, ниже I0 As (о.слабые) |
| 03.00 | 6.44 | 428 | -3I.2 | | | 3I.8 16 | Выше ясно, ниже 3 Sc дымка |
| I0 | 6.44 | 428 | -3I.I | | | 17 | Выше ясно, ниже $\boxed{I0}$ S |
| 20 | 6.44 | 428 | -30.4 | | | | -"- |
| 27 | 5.80 | 468 | -26.3 | -42.5 | 20 | 18 | Выше ясно. Океан, дым |
| 35 | 5.80 | 468 | -26.0 | -42.I | 20 | | -"- |
| 36 | 5.80 | 468 | -26.0 | -42.7 | I9 | | |
| 37 | 5.80 | 468 | -25,5 | -44.3 | I5 | | |
| 38 | 5.80 | 468 | -25.7 | -45.6 | I4 | | |
| 39 | 5.80 | 468 | -26.2 | -45.6 | I4 | | |
| 40 | 5.80 | 468 | -26.I | -44.9 | I5 | | |
| 4I | 5.80 | 468 | -25.7 | | | | |
| 42 | 5.80 | 468 | -25.8 | | | 19 | Выше ясно, ниже 5 Ac Вошли в обл. |
| 03.43 | 5.80 | 468 | -25.6 | | | | |
| 44 | 5.80 | 468 | -25.3 | | | | |
| 45 | 5.80 | 468 | -25.2 | | | | |

| I | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|
| | | | | | | | /67. |
| 03.46 | 5.80 | 468 | -24.9 | | | | |
| 47 | 5.80 | 468 | -24.9 | | | | |
| 48 | 5.80 | 468 | -24.9 | | | | |
| 49 | 5.80 | 468 | -24.9 | | | | |
| к 50 | 5.80 | 468 | -24.9 | | | / | Выше ясно, ниже I0 / |
| н 54 | 5.80 | 468 | -25.I | | | | -"- |
| 55 | 5.80 | 468 | -24.8 | | | | |
| 56 | 5.80 | 468 | -24.3 | | | | |
| 57 | 5.80 | 468 | -24.3 | | | | |
| 58 | 5.80 | 468 | -24.9 | | | | |
| 03.59 | 5.80 | 468 | -24.9 | | | | |
| 04.00 | 5.80 | 468 | -25.3 | | | | |
| 0I | 5.80 | 468 | -25.4 | | | 2 | Выше ясно,ниже 5 Ac. Граница облачн. |
| 02 | 5.80 | 468 | -25.7 | | | | |
| 03 | 5.80 | 468 | -26.0 | | | | |
| 04 | 5.80 | 468 | -26.0 | | | | |
| 05 | 5.80 | 468 | -26.5 | | | | |
| 06 | 5.80 | 468 | -27.I | -45.2 | I6 | | |
| 07 | 5.80 | 468 | -26.8 | -45.2 | I6 | | |
| 08 | 5.80 | 468 | -26.3 | -44.I | I7 | | |
| 09 | 5.80 | 468 | -26.2 | -44.I | I7 | | |
| к I0 | 5.80 | 468 | -25.9 | -44.I | I6 | 3 | Выше ясно;Океан, Ниже дымка |
| н I0.5 | 5.80 | 468 | -26.2 | -44.3 | I6 | 4 | Выше и ниже ясно.Оке |
| II | 5.80 | 468 | -26.3 | -44.I | I7 | | -"- |
| I2 | 5.80 | 468 | -25.9 | -42.7 | I9 | | |
| I3 | 5.80 | 468 | -26.I | -42.5 | 20 | | |
| I4 | 5.80 | 468 | -25.9 | -45.5 | I4 | | |
| I5 | 5.80 | 468 | -26.I | -44.8 | I5 | | |
| I6 | 5.80 | 468 | -26.4 | -45.6 | I5 | | |
| I7 | 5.80 | 468 | -26.I | -45.8 | I4 | | |
| I8 | 5.80 | 468 | -26.I | | | | |
| I9 | 5.80 | 468 | -26.2 | -44.3 | I6 | | |
| 20 | 5.80 | 468 | -26.2 | -44.3 | I6 | | |
| 2I | 5.80 | 468 | -26.7 | -44.3 | I7 | | |
| 22 | 5.80 | 468 | -26.7 | -42.9 | 20 | | |
| 04.23 | 5.80 | 468 | -26.7 | -43.5 | I9 | | |

| I | 2 | 3 | 4 | 5 | 6 | 7 | 8 /68. |
|---|---|---|---|---|---|---|---|
| 04.24 | 5.80 | 468 | -26.7 | -4I.7 | 23 | | |
| к 25 | 5.80 | 468 | -26.7 | -42.I | 22 | | |
| н 28 | 5.80 | 468 | -26.8 | -4I.3 | 24 | / | Ясно |
| 29 | 5.80 | 468 | -26.8 | -39.6 | 29 | | |
| 30 | 5.80 | 468 | -26.9 | -40.7 | 26 | -25.9 | |
| 3I | 5.80 | 468 | -26.7 | -4I.4 | 23 | | |
| 32 | 5.80 | 468 | -26.7 | -43.2 | I9 | | |
| 33 | 5.80 | 468 | -26.7 | -40.I | 27 | | |
| 34 | 5.80 | 468 | -26.3 | -42.8 | 20 | | |
| 35 | 5.80 | 468 | -26.0 | -43.5 | I8 | | |
| 36 | 5.80 | 468 | -26.0 | -42.9 | I9 | | |
| 37 | 5.80 | 468 | -26.0 | -44.9 | I5 | | |
| 38 | 5.80 | 468 | -26.0 | -43.3 | I8 | | |
| 39 | 5.80 | 468 | -26.0 | -43.0 | I9 | | |
| 40 | 5.80 | 468 | -25.8 | -44.2 | I6 | | |
| 4I | 5.80 | 468 | -25.8 | -44.7 | I5 | | |
| 42 | 5.80 | 468 | -25.8 | -42.9 | I8 | | |
| к 43 | 5.80 | 468 | -25.8 | -42.9 | I8 | | 2 Выше ясно, ниже 5 Ac Океан. |
| 48 | 4.77 | 538 | -I9.2 | -36.6 | 20 | | 3 Ниже ясно, в сторо Ac |
| 52 | 3.8I | 6II | -I2.8 | -24.8 | 36 | | 4 Выше ясно, ниже 2 Ac |
| н 57 | 2.79 | 698 | - 9.2 | -24.3 | 28 | | 5 Ниже ясно. Океан, черная дымка. |
| 58 | 2.79 | 698 | -9.I | -24.5 | 27 | | |
| 04.59 | 2.79 | 698 | -9.9 | -26.3 | 25 | | |
| 05.00 | 2.79 | 698 | -I0.4 | -24.2 | 3I | | |
| 0I | 2.79 | 698 | -I0.9 | -23.6 | 34 | | |
| 02 | 2.79 | 698 | -I0.8 | -24.0 | 33 | | |
| 03 | 2.79 | 698 | -I2.I | -22.8 | 40 | | |
| 04 | 2.79 | 698 | -I2.8 | -2I.5 | 48 | | |
| 05 | 2.79 | 698 | -I3.0 | -2I.4 | 49 | | |
| 06 | 2.79 | 698 | -I3.I | -I9.4 | 59 | | |
| 07 | 2.79 | 698 | -I2.6 | -I9.2 | 58 | -II.8 | |
| 08 | 2.79 | 698 | -I2.6 | -I9.6 | 56 | | |
| 09 | 2.79 | 698 | -I2.6 | -I8.I | 63 | | |
| I0 | 2.79 | 698 | -I2.9 | -I9.8 | 56 | | |
| II | 2.79 | 698 | -I3.I | -I8.7 | 63 | | |
| к I2 | 2.79 | 698 | -I3.I | -I8.9 | 6I | | 6 Выше 2 Ac, ниже я Bz. черн. дымка |

| I | 2 | 3 | 4 | 5 | 6 | 7 | 8 /69. |
|---|---|---|---|---|---|---|---|
| 05.I6 | I.83 | 790 | -5.8 | -9.3 | 76 | | Выше 2 Ac ,ниже ясно Пов-сть в чер.дымко |
| 20 | 0.87 | 892 | +I.3 | -5.7 | 60 | | Ясно, ниже черн.дым |
| н 20.5 | 0.84 | 895 | 2.2 | -5.4 | 57 | | Ясно,океан - 3 б., черн.дымка,Аэр.слой |
| 2I.5 | 0.84 | 895 | 2.I | -6.6 | 52 | | |
| 22.5 | 0.84 | 895 | 2.I | -6.6 | 52 | | |
| 23.5 | 0.84 | 895 | 2.I | -6.6 | 52 | | |
| 24.5 | 0.84 | 895 | 2.2 | -7.0 | 50 | | |
| 25.5 | 0.84 | 895 | 2.3 | -8.0 | 46 | | |
| 26.5 | 0.84 | 895 | 2.2 | -7.I | 50 | | |
| 27.5 | 0.84 | 895 | 2.5 | -8.4 | 44 | | |
| 28.5 | 0.84 | 895 | 2.7 | -II.0 | 36 | | |
| 29.5 | 0.84 | 895 | 2.6 | -I0.9 | 36 | | |
| 30.5 | 0.84 | 895 | 2.6 | -II.2 | 35 | | |
| 3I.5 | 0.84 | 895 | 2.6 | -8.0 | 45 | | |
| 32.5 | 0.84 | 895 | 2.5 | -4.4 | 59 | | |
| 33.5 | 0.84 | 895 | 2.5 | -8.6 | 44 | 2.4 | |
| 34.5 | 0.84 | 895 | 2.8 | -7.9 | 45 | | |
| к 35.5 | 0.84 | 895 | 2.7 | -3.9 | 62 | | Ясно, океан - 4 б, дымка, болтанка |
| н 39 | 0.3I | 956 | 7.6 | -2.3 | 49 | | |
| 40 | 0.3I | 956 | 7.6 | 0.2 | 59 | | |
| 4I | 0.3I | 956 | 7.6 | 0.2 | 59 | | |
| 42 | 0.3I | 956 | 7.6 | 0.2 | 59 | | |
| 43 | 0.3I | 956 | 7.6 | -0.I | 58 | | |
| 44 | 0.3I | 956 | 7.6 | -I.6 | 52 | | |
| 45 | 0.3I | 956 | 7.5 | -2.3 | 50 | | |
| 46 | 0.3I | 956 | 7.2 | -I.0 | 56 | | |
| 47 | 0.3I | 956 | 7.0 | -6.0 | 39 | 7.I | |
| 48 | 0.3I | 956 | 7.0 | -4.8 | 43 | | |
| 49 | 0.3I | 956 | 6.9 | -6.8 | 37 | | |
| 50 | 0.3I | 956 | 6.9 | -6.I | 39 | | |
| 5I | 0.3I | 956 | 6.6 | -5.8 | 4I | | |
| 52 | 0.3I | 956 | 6.5 | -5.I | 43 | | |
| 53 | 0.3I | 956 | 6.5 | -5.2 | 43 | | |
| к 05.54 | 0.3I | 956 | 6.5 | -5.2 | 43 | | Ясно, океан 3-4, |

| I | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|
| 05.58.I5 | 0.04 | 988 | 7.2 | 2.0 | 69 | | / Ясно, океан – 3 б. |
| 05.59 | 0.04 | 988 | 7.2 | I.7 | 68 | | |
| 06.00 | 0.04 | 988 | 7.3 | I.3 | 66 | | |
| 06.0I | 0.04 | 988 | 7.3 | 2.7 | 73 | | |
| 02 | 0.04 | 988 | 7.3 | 0.0 | 60 | | |
| 03 | 0.04 | 988 | 7.I | 0.0 | 6I | | |
| 04 | 0.04 | 988 | 6.5 | –0.6 | 60 | | |
| 05 | 0.04 | 988 | 7.4 | 0.4 | 6I | | |
| 06 | 0.04 | 988 | 7.2 | –I.2 | 55 | | |
| 07 | 0.04 | 988 | 7.6 | –2.0 | 50 | 7.6 | |
| 08 | 0.04 | 988 | 8.2 | –7.9 | 3I | | |
| 09 | 0.04 | 988 | 8.3 | –6.3 | 35 | | 2 Выше 5 Ac ,ниже ясно Океан 3–4 б.Серая дн |
| I0 | 0.04 | 988 | 8.2 | –9.2 | 28 | | |
| II | 0.04 | 988 | 8.4 | –I0.0 | 26 | | |
| I2 | 0.04 | 988 | 8.4 | –I0.8 | 24 | | |
| 06.I3.I5 | 0.04 | 988 | 8.4 | –8.2 | 30 | | 3 Выше 5 As , St , ниже ясно. Океан,волнение |

к

Key to text page 81 /71.

1. Table III-1-3
2. Data on Aircraft Probing of the Atmosphere (Moscow Time)
   Yuzhno-Sakhalinsk October 25, 1976
3. Time
4. H,km
5. P,mm
6. visual observations
7. higher 10 Sc Hr Sc
8. in the clouds
9. in the clouds Br 1.8
10. higher clear, lower 10 Sc
11. Higher clear, lower Sc, turbulence
12. higher clear, lower 10 Sc
13. higher clear, lower 3 Sc. Ocean
14. Higher clear, lower 10 Sc, turbulence
15. higher 2 Cs, lower 10 As, Ac, b
16. higher 1 Cs, lower 10 Ac, Ac. Strong turbulence
17. higher 9 Cs, lower 10 As, turbulence
18. higher 10 Cs, lower 10 As.

Key to text page 82 /72.

1. higher clear, lower 10 As
2. higher 9Cs, 10 As, haze.
3. higher clear, lower 10 Sc
4. higher 8 Cs, lower 10 Ac,As

Key to text page 83 /73.

1. higher 5 Cs, lower 10 Ac.
2. higher 5 Cs, lower 10 Ac
3. higher 7 Cs, lower 10 Ac.
4. higher 5 Ci, lower 10 Ac, Cb.
5. higher clear, lower 10 Sc.
6. higher clear, lower 10 Sc.
7. higher clear, lower 10 Ac.

Key to text page 84 /74.

1. higher clear, lower 10 As
2. higher clear. lower 10 Ac, Cu, cong. Cb-By 8.1
3. higher clear, lower 10 Ac, Cb.
4. higher clear, lower 10 Ac.
5. higher clear, lower 10 As.

Key to text page 85 /75.

1. higher clear, lower 10 As
2. higher clear, lower 10 As.
3. in clouds
4. in clouds Ns.
5. higher 10 Ns. Ocean - 8 B. Violent turbulence.

Key to text page 86 /76.

1. higher 10 Ns. Ocean - 8 B, strong turbulence
2. higher 10 St, haze. Ocean - 8B.
3. In the clouds. Hr cloudiness.

2 Данные самолётного зондирования атмосферы
(время московское)

Южно-Сахалинск

25 октября 1976 г.

| 3 Время | 4 Н км | 5 Р мм | $t_в$ °С | $T_{т.р}$ °С | U % | $t_{в\,ср.}$ °С | 6 Визуальные наблюдени |
|---|---|---|---|---|---|---|---|
| 04.31 | 0. | 997.2 | 3.2 | 3.0 | 83 | 7 | Выше 10 Sc Hr Sc |
| 33.5 | 0.46 | 942 | 0.0 | -1.0 | 93 | | |
| 35 | 1.06 | 873 | -4.4 | -6.6 | 84 | 8 | В облаках. |
| 36.5 | 1.55 | 820 | -7.0 | -11.0 | 73 | 9 | В облаках. Br 1,8 |
| 39 | 2.48 | 728 | -7.0 | | | 10 | Выше ясно, ниже 10 Sc |
| 40 | 2.87 | 693 | -8.2 | | | 11 | Выше ясно, ниже 10 Sc болтанка. |
| 43 | 3.91 | 605 | -10.9 | | | 12 | Выше ясно, ниже 10 Sc |
| 48 | 4.85 | 535 | -16.8 | | | | -"- |
| 51 | 5.88 | 465 | -25.1 | | | | -"- |
| 04.54 | 6.53 | 425 | -30.9 | -46.2 | 21 | | -"- |
| 05.10 | 6.53 | 425 | -28.0 | | | 13 | Выше ясно, ниже 3 Sc Океан. |
| 25 | 6.53 | 425 | -26.7 | -38.6 | 32 | 14 | Выше ясно, ниже 10 Sc болтанка. |
| 37 | 6.67 | 417 | -24.9 | -40.5 | 22 | 15 | Выше 2 Cs, ниже 10 As, Ac |
| 41.5 | 6.94 | 402 | -26.4 | -40.9 | 24 | 16 | Выше 1 Cs, ниже 10 Ac, Сильная болтанка. |
| 49.5 | 7.03 | 397 | -35.2 | | | 17 | Выше 9 Cs, ниже 10 As. Болтанка. |
| 50 | 7.03 | 397 | -25.2 | | | | |
| 51 | 7.03 | 397 | -24.2 | -44.4 | 14 | | |
| 52 | 7.03 | 397 | -23.8 | -44.5 | 13 | | |
| 53 | 7.03 | 397 | -23.8 | | | | |
| 54 | 7.03 | 397 | -23.9 | -34.5 | 37 | | |
| 55 | 7.03 | 397 | -24.3 | -35.3 | 36 | 18 | Выше 10 Cs, ниже 10 As |
| 56 | 7.03 | 397 | -24.7 | -37.2 | 31 | | |
| 57 | 7.03 | 397 | -24.9 | -31.9 | 52 | | |
| 58 | 7.03 | 397 | -24.5 | -30.8 | 56 | | |
| 05.59 | 7.03 | 397 | -24.8 | -36.8 | 54 | | |
| 06.00 | 7.03 | 397 | -24.8 | -36.3 | 34 | | |

| | I | 2 | 3 | 4 | 5 | 6 | 7 | 8 /72. |
|---|---|---|---|---|---|---|---|---|
| | 06.0I | 7.03 | 397 | -25.3 | -33.8 | 45 | | |
| | 02 | 7.03 | 397 | -25.2 | -34.6 | 42 | | |
| | 03 | 7.03 | 397 | -25.2 | | | | |
| | 04 | 7.03 | 397 | -34.2 | | | | |
| | 05 | 7.03 | 397 | -23.8 | | | | |
| | 06 | 7.03 | 397 | -23.2 | | | -24.8 | |
| | 07 | 7.03 | 397 | -23.I | | | | |
| | 08 | 7.03 | 397 | -22.9 | -4I.2 | I7 | | |
| к | 09 | 7.03 | 397 | -23.0 | -40.9 | I8 | | Выше ясно, ниже IO Д |
| н | 39 | 7.3I | 382 | -26.3 | | | | Выше 9 Cs, ниже IO Д дымка |
| | 40 | 7.3I | 382 | -26.2 | | | | |
| | 4I | 7.3I | 382 | -26.4 | | | | |
| | 42 | 7.3I | 382 | -25.8 | | | | |
| | 43 | 7.3I | 382 | -25.7 | -4I.2 | 22 | | |
| | 44 | 7.3I | 382 | -25.8 | -39.8 | 26 | | |
| | 45 | 7.3I | 382 | -26.4 | -4I.3 | 23 | | |
| | 46 | 7.3I | 382 | -26.6 | | | | |
| | 47 | 7.3I | 382 | -26.6 | | | | |
| | 48 | 7.3I | 382 | -26.3 | -42.3 | 2I | | |
| | 49 | 7.3I | 382 | -26.4 | -44.0 | I7 | | |
| | 50 | 7.3I | 382 | -26.I | -44.0 | I7 | | |
| | 5I | 7.3I | 382 | -27.I | | | | |
| | 52 | 7.3I | 382 | -27.4 | | | | |
| | 53 | 7.3I | 382 | -27.0 | | | | |
| к | 54 | 7.3I | 382 | -28.0 | | | | Выше ясно, ниже I |
| н | 57 | 7.3I | 382 | -28.8 | | | | — " — |
| | 58 | 7.3I | 382 | -26.9 | | | | |
| | 06.59 | 7.3I | 382 | -27.5 | | | | |
| | 07.00 | 7.3I | 382 | -27.0 | | | | |
| | 0I | 7.3I | 382 | -27.3 | | | | |
| | 02 | 7.3I | 382 | -27.7 | | | | Выше 8 Cs, ниже IO Д |
| | 03 | 7.3I | 382 | -27.8 | | | | |
| | 04 | 7.3I | 382 | -27.8 | | | | |
| | 05 | 7.3I | 382 | -27.8 | | | | |
| | 06 | 7.3I | 382 | -27.3 | | | | |
| | 07.07 | 7.3I | 382 | -27.5 | | | | |

| I | 2 | 3 | 4 | 5 | 6 | 7 | 8 /73. |
|---|---|---|---|---|---|---|---|
| 07.08 | 7.3I | 382 | -27.3 | -4I.2 | 25 | | Выше 5 Cs ,ниже IO Ac |
| 09 | 7.3I | 382 | -27.3 | -39.7 | 30 | | |
| IO | 7.3I | 382 | -26.4 | -42.6 | 20 | | |
| II | 7.3I | 382 | -25.6 | -42.4 | I9 | | |
| к I2 | 7.3I | 382 | -25.6 | -42.0 | 20 | | Выше 5 Cs,ниже IO Ac |
| н I6 | 7.3I | 382 | -26.I | -42.3 | 20 | | Выше 7 Cs ,ниже IO Ac |
| I7 | 7.3I | 382 | -26.I | -42.2 | 20 | | |
| I8 | 7.3I | 382 | -25.7 | -46.3 | I2 | | |
| I9 | 7.3I | 382 | -25.7 | | | | |
| 20 | 7.3I | 382 | -25.3 | | | -26.9 | |
| 2I | 7.3I | 382 | -25.3 | | | | Выше 5 Ci .Ниже IO Ac, |
| 22 | 7.3I | 382 | -26.2 | | | | |
| 23 | 7.3I | 382 | -27.8 | | | | |
| 24 | 7.3I | 382 | -28.I | -4I.7 | 26 | | |
| 25 | 7.3I | 382 | -28.6 | | | | |
| 26 | 7.3I | 382 | -28.0 | | | | |
| 27 | 7.3I | 382 | -28.0 | | | | |
| 28 | 7.3I | 382 | -28.0 | | | | |
| 29 | 7.3I | 382 | -28.0 | | | | |
| 30 | 7.3I | 382 | -28.I | | | | |
| к 3I.5 | 7.3I | 382 | -28.6 | | | | Выше ясно,ниже IO Sc By= 7,I |
| н 38 | 8.08 | 343 | -37.4 | | | | Выше ясно, ниже IO S |
| 39 | 8.08 | 343 | -32.5 | | | | |
| 40 | 8.I8 | 338 | -33.4 | | | | |
| 4I | 8.I8 | 338 | -33.4 | | | | |
| 42 | 8.I8 | 338 | -32.7 | | | | |
| 43 | 8.I8 | 338 | -32.7 | | | | |
| 44 | 8.I8 | 338 | -32.9 | | | | |
| 45 | 8.I8 | 338 | -33.0 | | | | |
| 46 | 8.I8 | 338 | -33.0 | | | | |
| 46.5 | 8.I8 | 338 | -32.9 | -46.8 | 23 | | Выше ясно, ниже IO A |
| 47 | 8.I8 | 338 | -32.9 | -46.8 | 23 | | |
| 48 | 8.I8 | 338 | -33.0 | -45.3 | 28 | | |
| 49 | 8.I8 | 338 | -33.0 | -46.4 | 24 | | |
| 50 | 8.I8 | 338 | -32.5 | -45.5 | 26 | | |
| 5I | 8.I8 | 338 | -32.9 | -47.0 | 23 | | |
| 07.52 | 8.I8 | 338 | -32.9 | -45.3 | 27 | | |

| | I | 2 | 3 | 4 | 5 | 6 | 7 | 8 /74. |
|---|---|---|---|---|---|---|---|---|
| к | 07.53 | 8.I8 | 338 | -32.9 | -47.6 | 2I | | Выше ясно, ниже IO As |
| н | 58 | 8.I8 | 338 | -33.5 | -46.9 | 24 | | |
| | 07.59 | 8.I8 | 338 | -34.I | -42.8 | 4I | | |
| | 08.00 | 8.I8 | 338 | -34.I | -45.0 | 32 | | |
| | 0I | 8.I8 | 338 | -33.8 | -45.0 | 3I | | |
| | 02 | 8.I8 | 338 | -33.8 | -46.2 | 27 | | |
| | 03 | 8.I8 | 338 | -33.8 | -47.4 | 24 | | |
| | 04 | 8.I8 | 338 | -34.0 | -46.5 | 27 | | |
| | 05 | 8.I8 | 338 | -34.0 | -46.3 | 27 | | |
| | 06 | 8.I8 | 338 | -34.0 | -46.4 | 27 | | |
| | 07 | 8.I8 | 338 | -34.0 | -47.6 | 24 | | |
| | 08 | 8.I8 | 338 | -34.0 | -49.2 | 2I | | Выше ясно. Ниже IO Ac cong. Cb-By 8,I |
| | 09 | 8.I8 | 338 | -34.0 | | | | |
| | I0 | 8.I8 | 338 | -33.8 | | | | |
| | II | 8.I8 | 338 | -34.I | | | | |
| | I2 | 8.I8 | 338 | -34.8 | | | -33.5 | |
| к | I3 | 8.I8 | 338 | -34.8 | | | | Выше ясно, ниже IO Ac |
| | I7 | 7.I7 | 390 | -29.I | | | | Выше ясно, ниже IO Ac |
| | I9 | 6.03 | 456 | -23.6 | -39.3 | 23 | | -"- |
| | 23 | 5.02 | 522 | -I3.5 | -30.2 | 23 | | -"- |
| н | 27 | 4.82 | 536 | -I2.2 | -36.6 | II | | -"- |
| | 28 | 4.82 | 536 | -I2.6 | | | | |
| | 29 | 4.82 | 536 | -I3.3 | | | | |
| | 30 | 4.82 | 536 | -I3.3 | -36.8 | I2 | | |
| | 3I | 4.82 | 536 | -I3.3 | -34.8 | I5 | | |
| | 32 | 4.82 | 536 | -I3.0 | | | | |
| | 33 | 4.82 | 536 | -I3.0 | | | | |
| | 34 | 4.82 | 536 | -I3.0 | | | | |
| | 35 | 4.82 | 536 | -I3.3 | | | | |
| | 36 | 4.82 | 536 | -I3.3 | | | | |
| | 37 | 4.82 | 536 | -I3.8 | | | | |
| | 38 | 4.82 | 536 | -I3.7 | | | | |
| | 39 | 4.82 | 536 | -I3.9 | | | | |
| | 40 | 4.82 | 536 | -I3.9 | | | | |
| | 4I | 4.82 | 536 | -I3.5 | | | | |
| к | 08.42 | 4.82 | 536 | -I3.6 | | | | Выше ясно, ниже IO |

| | I | 2 | 3 | 4 | 5 | 6 | 7 | 8 /75. |
|---|---|---|---|---|---|---|---|---|
| н | 08.44.5 | 4.82 | 536 | -I3.6 | | | | Выше ясно, ниже IO |
| | 45.5 | 4.82 | 536 | -I3.I | | | | |
| | 46.5 | 4.82 | 536 | -I3.2 | | | | |
| | 47.5 | 4.82 | 536 | -I2.9 | | | | |
| | 48.5 | 4.82 | 536 | -I2.9 | | | | |
| | 49.5 | 4.82 | 536 | -I2.9 | | | | |
| | 50.5 | 4.82 | 536 | -I2.9 | | | | |
| | 5I.5 | 4.82 | 536 | -I2.9 | | | | |
| | 52.5 | 4.82 | 536 | -I2.4 | | | | |
| | 53.5 | 4.82 | 536 | -I2.4 | | | -I3.0 | |
| | 54.5 | 4.82 | 536 | -I2.3 | | | | |
| | 55.5 | 4.82 | 536 | -I2.3 | | | | |
| | 56.5 | 4.82 | 536 | -I2.3 | | | | |
| | 57.5 | 4.82 | 536 | -I2.3 | | | | |
| | 58.5 | 4.82 | 536 | -I2.2 | | | | |
| к | 08.59.5 | 4.82 | 536 | -I2.I | | | | Выше ясно, ниже IO |
| | 09.02 | 4.I3 | 586 | -7.I | -32.9 | II | | В облачн. |
| | 06 | 2.93 | 683 | -4.0 | -5.2 | 9I | | -"- |
| | 09 | I.98 | 770 | 0.5 | 0.4 | 99 | | В облаках Nз |
| | I2 | 0.98 | 872 | 0.I | -I.I | 92 | | -"- |
| н | I6.5 | 0.3I | 948 | 2.I | (2.8 | I05) | | Выше IO Nз . Океан 8 б.Сильная болтан |
| | I7 | 0.3I | 948 | 2.9 | I.8 | 92 | | |
| | I8 | 0.3I | 948 | 2.9 | I.8 | 92 | | |
| | I9 | 0.3I | 948 | 3.I | I.4 | 88 | | |
| | 20 | 0.3I | 948 | 3.I | 0.2 | 8I | | |
| | 2I | 0.3I | 948 | 3.4 | 0.4 | 8I | | |
| | 22 | 0.3I | 948 | 3.3 | 0.4 | 8I | | |
| | 23 | 0.3I | 948 | 3.3 | -0.5 | 76 | | |
| | 24 | 0.3I | 948 | 3.3 | -0.5 | 76 | | |
| | 25 | 0.3I | 948 | 3.3 | -0.6 | 76 | | |
| | 26 | 0.3I | 948 | 3.7 | -0.7 | 73 | | |
| | 27 | 0.3I | 948 | 3.7 | -I.6 | 68 | | |
| | 28 | 0.3I | 948 | 3.7 | -5.7 | 50 | | |
| | 29 | 0.3I | 948 | 3.7 | -5.9 | 49 | | |
| | 09.30 | 0.3I | 948 | 3.5 | -5.9 | 50 | | |

| I | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|
| 09.3I | 0.3I | 948 | 3.3 | -6.4 | 49 | 3.2 | |
| 32 | 0.3I | 948 | 2.8 | -5.I | 56 | | Выше IO Ns. Океан – сильно болтает |
| 33.5 | I.3I | 837 | 0.8 | -8.5 | 50 | | Выше IO St, дымка. Океан – 8 б. |
| 35 | I.86 | 782 | -0.4 | -0.9 | 96 | | В облаках. Hr облачности |
| 09.38 | 2.94 | 682 | -5.3 | (-4.3 | I08) | | Br Ns |

Key to text page 88 /77.

1. Table III-1-3 Data on Aircraft Probing of the Atmosphere (Moscow Time) Yuzhno-Sakhalinsk October 30, 1976
3. time
4. H,km
5. P,mm
6. visual observations
7. clear
8. Clear. Shore
9. Clear. Sea
10. Clear. Lower the sea.
11. higher 3 Cs. Clear.
12. Higher 1 Cs, lower 1 Cu.
13. Higher clear. Lower 2 Cu. The Sea.
14. Higher 1 Cs. Lower 3 Cu.
15. Higher 6 Cs. Lower 4 Cu. The sea.
16. Higher 10 Cs. Lower 4 Cu the sea.
17. Higher 10 Cs. Lower 4 Cu the sea.
18. (Crystal)
19. Higher clear, lower Sc cuf
20. Higher 1 Cs, lower 8 Sc, Ac.

Key to text page 89 /78.

1. Higher 3 Cs. Lower 7 Sc.
2. Higher clear. Lower 8 Sc.
3. Higher clear. Lower 10 Ac, As.
4. Higher clear. Lower 10 Sc.
5. Higher clear. Lower 10 Ac.
6. Higher clear, lower 10 As.

Key to text page 90 /79.

1. higher clear, lower 7 Ac.
2. Higher clear, lower 7 Ac.
3. Higher clear, lower 3 Ac, ocean.
4. Higher clear, lower 6 As.
5. Higher clear, lower 10 As.
6. Higher clear. Lower 10 As.
7. Higher clear. Lower 3 Sc.

Key to text page 91

1. Clear
2. Higher clear. Lower 2 Cu sea.
3. Higher clear. Lower 7 Cu sea.
4. Higher clear. Lower 1 Cu sea.
5. Higher clear. Lower 1 Cu sea.
6. Higher clear. Lower 1 Cu sea.
7. Higher clear. Lower 1 Cu.
8. Higher clear. Lower 1 Cu
9. Higher clear. Upper level cloudiness. Lower 1 Cu.
10. Higher 2 Cu. Lower sea - 7-8 B.
11. Higher 2 Cu. Lower 2 Cu, lower sea - 8 B.
12. Higher 2 Cu. Lower clear.
13. Higher 5 Cu. Lower clear. Ocean - 8 B.
14. Lower limit 5 Cu, Sc, Ac.
15. Higher limit cloudiness. 16. Higher clear. Lower 5 Cu Sc
16. Higher clear. Lower 4 Cu.

Таблица III-1-3

/77.

Данные самолетного зондирования атмосферы
(время московское)

Южно-Сахалинск

30 октября 1976 г.

| Время | Нкм | Рмм | $t_в$°С | $T_{т.р.}$°С | U% | $t_{в.ср.}$°С | Визуальные наблюде |
|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| 04.07 | 0 | 989.2 | 7.8 | -4.4 | 72 | | |
| 10 | 0.48 | 941 | 1.9 | -10.5 | 39 | 7 | Ясно |
| 11.5 | 0.96 | 887 | -2.6 | -12.5 | 46 | 8 | Ясно. Берег. |
| 14 | 1.92 | 787 | -9.7 | -18.8 | 47 | 9 | Ясно. Море. |
| 17 | 2.91 | 695 | -13.6 | | | 10 | Ясно. Ниже море. |
| 20 | 3.97 | 609 | -13.7 | | | 11 | Выше 3 Cs. Ясно |
| 24 | 4.94 | 539 | -20.9 | | | 12 | Выше 1 Cs. Ниже 1 Cu |
| 28.5 | 5.89 | 479 | -29.5 | -43.3 | 25 | 13 | Выше ясно. Ниже 2 Cu Море. |
| 35 | 6.36 | 451 | -34.2 | -51.6 | 15 | 14 | Выше 1 Cs. Ниже 3 Cu |
| 04.50 | 6.36 | 451 | -33.8 | -54.7 | 10 | 15 | Выше 6 Cs. Ниже 4 Cu Море. |
| 05.05 | 6.36 | 451 | -34.0 | -50.8 | 16 | 16 | Выше 10 Cs. Ниже 4 Cu море |
| 10 | 6.36 | 451 | -33.7 | -41.4 | 45 | 17 | Выше 10 Cs. Ниже 4 Cu море |
| 18.5 | 5.82 | 483 | -33.3 | -37.7 | 66 | | h Cb |
| 20 | 5.79 | 485 | -30.1 | -38.9 | 42 | | h Cb 18 (кристал. |
| 21 | 5.79 | 485 | -29.4 | -40.4 | 33 | | |
| 22 | 5.79 | 485 | -29.4 | -42.0 | 28 | | |
| 23 | 5.79 | 485 | -29.1 | -43.5 | 23 | 19 | Выше ясно, ниже Sc cu |
| 24 | 5.79 | 485 | -29.6 | -42.4 | 28 | | |
| 25 | 5.79 | 485 | -29.5 | -42.6 | 27 | | |
| 26 | 5.79 | 485 | -29.6 | -43.0 | 26 | | |
| 27 | 5.79 | 485 | -29.1 | | | | |
| 28 | 5.79 | 485 | -28.9 | | | | |
| 29 | 5.79 | 485 | -28.9 | -46.1 | 17 | | |
| 30 | 5.79 | 485 | -28.8 | | | | |
| 31 | 5.79 | 485 | -28.3 | -49.4 | 11 | 20 | Выше 1 Cs, ниже 8 Sc, |
| 32 | 5.79 | 485 | -28.3 | | | | |
| 05.33 | 5.79 | 485 | -27.9 | | | | |

| I | 2 | 3 | 4 | 5 | 6 | 7 | 8 /78. |
|---|---|---|---|---|---|---|---|
| 05.34 | 5.79 | 485 | -27.9 | | | | |
| 35 | 5.79 | 485 | -27.9 | | | | |
| 36 | 5.79 | 485 | -27.8 | | | | |
| 37 | 5.79 | 485 | -27.6 | | | | |
| 38 | 5.79 | 485 | -27.7 | | | | |
| 39 | 5.79 | 485 | -27.7 | -47.0 | I4 | | |
| 40 | 5.79 | 485 | -28.I | -47.2 | I4 | | |
| 4I | 5.79 | 485 | -28.5 | | | | |
| к 42 | 5.79 | 485 | -28.7 | | | | /Выше 3Cs. Ниже 7Sc |
| н 44.5 | 5.76 | 487 | -29.2 | -4I.7 | 28 | | 2 Выше ясно.Ниже 8Sc |
| 45.5 | 5.76 | 487 | -29.2 | -44.8 | 20 | | |
| 46.5 | 5.76 | 487 | -30.8 | -43.I | 28 | | |
| 47.5 | 5.76 | 487 | -30.4 | | | | |
| 48.5 | 5.76 | 487 | -30.8 | -47.6 | I7 | | |
| 49.5 | 5.76 | 487 | -30.8 | | | | |
| 50.5 | 5.76 | 487 | -30.8 | | | | |
| 5I | 5.76 | 487 | -3I.2 | | | | 3 Выше ясно.Ниже [IO] |
| 5I.5 | 5.76 | 487 | -3I.2 | | | | |
| 52.5 | 5.76 | 487 | -3I.0 | | | | |
| 53.5 | 5.76 | 487 | -30.5 | | | | |
| 54.5 | 5.76 | 487 | -30.4 | | | | |
| 55.5 | 5.76 | 487 | -30.4 | -48.2 | I6 | | |
| 56.5 | 5.76 | 487 | -30.4 | -49.I | I5 | | |
| 57.5 | 5.76 | 487 | -3I.0 | -47.0 | I9 | | |
| 58.5 | 5.76 | 487 | -3I.4 | -45.I | 24 | | 4 |
| к 05.59.5 | 5.76 | 487 | -3I.I | -46.4 | 20 | | Выше ясно.Ниже [IO] |
| н 06.03 | 5.76 | 487 | -3I.6 | -44.I | 28 | | 5 Выше ясно.Ниже IO |
| 04 | 5.76 | 487 | -3I.3 | -48.6 | I7 | | |
| 05 | 5.76 | 487 | -3I.I | -49.4 | I5 | | |
| 07 | 5.76 | 487 | -3I.0 | -5I.I | I2 | | |
| 08 | 5.76 | 487 | -30.7 | | | | |
| 09 | 5.76 | 487 | -30.6 | | | | |
| IO | 5.76 | 487 | -30.8 | -50.2 | I3 | | |
| II | 5.76 | 487 | -30.8 | | | | 6 Выше ясно,ниже IO |
| I2 | 5.76 | 487 | -29.9 | -45.5 | 20 | | |
| 06.I3 | 5.76 | 487 | -29.8 | -45.I | 2I | | |

| I | 2 | 3 | 4 | 5 | 6 | 7 | 8 /79. |
|---|---|---|---|---|---|---|---|
| 06.I4 | 5.76 | 487 | -29.3 | -45.I | 20 | | |
| I5 | 5.76 | 487 | -29.4 | -45.5 | I9 | -29.7 | |
| I6 | 5.76 | 487 | -28.8 | | | | |
| I7 | 5.76 | 487 | -28.5 | -49.0 | I3 | | |
| к I8 | 5.76 | 487 | -28.5 | -48.8 | I3 | | 1 Выше ясно,ниже 7А |
| н 22 | 4.93 | 540 | -2I.5 | -40.6 | I6 | | 2 Выше ясно,ниже 7А |
| 27 | 3.86 | 6I7 | -I3.3 | -I0.9 | 2I | | Выше ясно,ниже 3 |
| | | | | | | | 3 океан |
| 28 | 3.86 | 6I7 | -I3.5 | -3I.8 | 20 | | |
| 29 | 3.86 | 6I7 | -I3.5 | -34.7 | I5 | | |
| 30 | 3.86 | 6I7 | -I3.6 | -32.6 | I9 | | |
| 3I | 3.86 | 6I7 | -I5.0 | -3I.4 | 23 | | |
| 32 | 3.86 | 6I7 | -I5.0 | -33.5 | I9 | | |
| 33 | 3.86 | 6I7 | -I5.0 | -32.4 | 2I | | |
| 34 | 3.86 | 6I7 | -I4.5 | -33.2 | I9 | | |
| 35 | 3.86 | 6I7 | -I3.2 | | | | 4 Выше ясно. Ниже 6 |
| 36 | 3.86 | 6I7 | -I2.6 | | | | |
| 37 | 3.86 | 6I7 | -I2.6 | | | | |
| 38 | 3.86 | 6I7 | -I2.8 | | | | |
| 39 | 3.86 | 6I7 | -I3.2 | | | | |
| 40 | 3.86 | 6I7 | -I3.4 | | | | |
| 4I | 3.86 | 6I7 | -I4.0 | | | | |
| к 42 | 3.86 | 6I7 | -I4.0 | -32.3 | 20 | | 5 Выше ясно,ниже II |
| н 06.56 | 3.86 | 6I7 | -I3.4 | | | | 6 Выше ясно.Ниже II |
| 57 | 3.86 | 6I7 | -I3.4 | | | | |
| 58 | 3.86 | 6I7 | -I3.I | | | | |
| 06.59 | 3.86 | 6I7 | -I3.8 | -30.8 | 22 | | |
| 07.00 | 3.86 | 6I7 | -I4.2 | -29.9 | 25 | | |
| 0I | 3.86 | 6I7 | -I4.2 | -3I.2 | 22 | | |
| 02 | 3.86 | 6I7 | -I4.2 | -30.3 | 24 | | |
| 03 | 3.86 | 6I7 | -I4.2 | -30.2 | 24 | | |
| 04 | 3.86 | 6I7 | -I3.6 | -3I.7 | 20 | | |
| 05 | 3.86 | 6I7 | -I3.6 | -3I.I | 2I | | |
| 06 | 3.86 | 6I7 | -I3.5 | -3I.0 | 2I | | |
| 07 | 3.86 | 6I7 | -I3.I | -3I.6 | 20 | 7 | |
| 07.5 | 3.86 | 6I7 | -I3.4 | -30.2 | 23 | -I3.6 | Выше ясно. Ниже 3 |
| 07.08 | 3.86 | 6I7 | -I3.4 | -30.2 | 23 | | |

| I | 2 | 3 | 4 | 5 | 6 | 7 | 8 /80. |
|---|---|---|---|---|---|---|---|
| 07.09 | 3.86 | 6I7 | -I3.4 | -29.5 | 24 | | |
| I0 | 3.86 | 6I7 | -I3.4 | -29.6 | 24 | | |
| к II | 3.86 | 6I7 | -I4.0 | -29.9 | 25 | | 1 Ясно. |
| I7.5 | 3.85 | 6I7 | -I4.I | -33.5 | I8 | | 2 Выше ясно. Ниже 2 Cu море |
| 27 | 3.84 | 6I7 | -I5.3 | -30.7 | 26 | | 3 Выше ясно. Ниже 7 Cu море |
| 32 | 3.85 | 6I7 | -I3.9 | -34.2 | I6 | | 4 Выше ясно. Ниже I Cu море |
| 4I | 3.87 | 6I7 | -I2.6 | -3I.6 | I9 | | 5 Выше ясно. Ниже I Cu море |
| 44.5 | 3.86 | 6I7 | -I3.I | -30.2 | 22 | | 6 Выше ясно. Ниже I Cu море |
| 07.47 | 3.87 | 6I7 | -I3.0 | -30.2 | 22 | | 7 Выше ясно. Ниже I Cu |
| 08.02 | 2.95 | 692 | -9.5 | -20.6 | 40 | | 8 Выше ясно. Ниже I Cu |
| 05 | I.95 | 784 | -8.9 | -I5.9 | 57 | | 9 Выше ясно. ВУ обл. Ниже I Cu |
| 08 | 0.99 | 884 | -4.5 | -5.9 | 89 | | 10 Выше 2 Cu. Ниже море 7-8 б. |
| н II | 0.39 | 953 | 3.2 | -4.4 | 57 | | 11 Выше 2 Cu. Ниже море |
| I2 | 0.39 | 953 | 2.4 | -2.6 | 70 | | |
| I3 | 0.39 | 953 | 2.4 | -3.5 | 65 | | |
| I4 | 0.39 | 953 | 2.4 | -4.3 | 6I | | |
| I5 | 0.39 | 953 | 3.0 | -4.2 | 59 | | |
| I6 | 0.39 | 953 | 3.0 | -3.5 | 62 | | |
| I7 | 0.39 | 953 | 3.0 | -3.I | 64 | | 12 Выше 2 Cu. Ниже ясно |
| I8 | 0.39 | 953 | 2.6 | -2.0 | 72 | | |
| I9 | 0.39 | 953 | 2.5 | -I.I | 77 | | |
| 20 | 0.39 | 953 | 2.6 | -0.4 | 80 | | |
| 2I | 0.39 | 953 | 2.6 | -I.2 | 76 | 2.7 | |
| 22 | 0.39 | 953 | 2.6 | -0.4 | 80 | | |
| 23 | 0.39 | 953 | 2.6 | -0.2 | 82 | | |
| 24 | 0.39 | 953 | 2.6 | 0.6 | 87 | | |
| 25 | 0.39 | 953 | 2.6 | I.6 | 93 | | |
| к 26 | 0.39 | 953 | 3.2 | -0.I | 79 | | 13 Выше 5 Cu. Ниже ясно Океан 8 б. |
| 27 | 0.68 | 9I9 | I.4 | -I.2 | 83 | | 14 НГ обл. 5 Cu, Sc, Ac |
| 29 | I.35 | 844 | -2.9 | -8.0 | 68 | | 15 ВГ обл. |
| 30.5 | I.94 | 785 | -6.7 | -I4.4 | 54 | | 16 Выше ясно. Ниже 5 Cu |
| 08.32.5 | 2.97 | 690 | -7.2 | -22.0 | 29 | | 17 Выше ясно. Ниже 4 C |

Key to text page 93 /81.

1. clear
2. Clear. Lower ocean.
3. Clear. Lower 2 Cu. Ocean
4. Clear. Lower 7 Sc. Ocean.
5. Higher clear. Lower 10 Sc.

| I | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|
| 08.35 | 3.99 | 607 | -II.8 | -29.4 | 22 | | 1 Ясно |
| 37 | 4.97 | 538 | -I9.3 | | | | 2 Ясно. Ниже океан |
| н 39.5 | 5.80 | 485 | -27.6 | | | | 3 Ясно. Ниже 2Cu.Ок |
| 40.5 | 5.80 | 485 | -27.7 | | | | |
| 4I.5 | 5.80 | 485 | -28.2 | | | | |
| 42.5 | 5.80 | 485 | -28.8 | | | | |
| 43.5 | 5.80 | 485 | -27.0 | | | | |
| 44.5 | 5.80 | 485 | -26.8 | | | | |
| 55.5 | 5.80 | 485 | -28.3 | -40.3 | 30 | | |
| 56.5 | 5.80 | 485 | -28.I | -43.I | 22 | | |
| 57.5 | 5.80 | 485 | -28.7 | -43.3 | 23 | | |
| 58.5 | 5.80 | 485 | -29.I | -42.2 | 27 | | |
| 08.59.5 | 5.80 | 485 | -29.I | | | | |
| 09.00 | 5.80 | 485 | -29.I | | | | 4 Ясно.Ниже 7Sc .Оке |
| 00.5 | 5.80 | 485 | -28.5 | | | | |
| 0I.5 | 5.80 | 485 | -29.I | -49.5 | I2 | | |
| 02.5 | 5.80 | 485 | -28.7 | -46.9 | I5 | | |
| 03.5 | 5.80 | 485 | -28.7 | -50.3 | I0 | | |
| 04.5 | 5.80 | 485 | -29.I | -50.2 | II | | |
| 05.5 | 5.80 | 485 | -29.4 | -49.3 | I3 | | |
| 06.5 | 5.80 | 485 | -29.4 | -48.7 | I4 | -28.9 | |
| 07.5 | 5.80 | 485 | -29.I | -39.5 | 36 | | |
| 08.5 | 5.80 | 485 | -28.8 | | | | |
| 09.5 | 5.80 | 485 | -28.8 | | | | |
| I0.5 | 5.80 | 485 | -29.0 | | | | |
| II.5 | 5.80 | 485 | -29.9 | | | | |
| I2.5 | 5.80 | 485 | -30.4 | | | | |
| I3.5 | 5.80 | 485 | -3I.I | | | | |
| I4.5 | 5.80 | 485 | -28.9 | | | | |
| I5.5 | 5.80 | 485 | -29.8 | | | | |
| к 09.I6.5 | 5.80 | 485 | -28.9 | | | | 5 Выше ясно. Ниже I |

## III-2 Data on Observations from On Board the Scientific Research Ship "Akademik Korolev" /82.

## Chapter III. Observations from On Board the Scientific Research Ship "Akademik Korolev" /83.

### III.2.1. Aerosynoptic Characteristics of the Atmospheric processes over the Northern Region of the Pacific Ocean. (August-November 1976).

This period was characterized by the autumnal restructuring of the thermobaric field at the earth's surface and at altitudes: the northern Pacific Ocean anticyclone, weakening somewhat, shifted to the east, the Aleutian depression began to form which, by the end of the period, occupied its normal position with a pressure at the center of 998 mbar. In August and September at a level of 500 mbar a quick shift took place of the high ravines and crests in an easterly direction, but the thermobaric pressure was already determined in October, characteristic of winter: the ravines over the Far East and the Aleutian Islands, separated by crevices, were facing Kamchatka.

An analysis of the meteorological conditions and atmospheric processes was conducted for each month. Most attnetion was given to the operations in the north (49° north latitutde, 162° east longitude) and the south (43° north latitude, 148° east longitude) test sites.

In August the synoptic processes over the Far Eastern territory adjacent to the seas and the northern section of the Pacific Ocean were typical for this time of the year. The basic factor determining the weather in this region of the globe is the northern Pacific Ocean anticyclone. It occupied almost the entire northern section of the ocean. Its center with a pressure of 1025 mbar was located at approximately 35° north latitude, 145° west longitude, and its wedge extended far to the west (figure 1).

The structure of the high thermobaric field was characterized by quick shifting to the est of poorly developed ravines and wedges. The

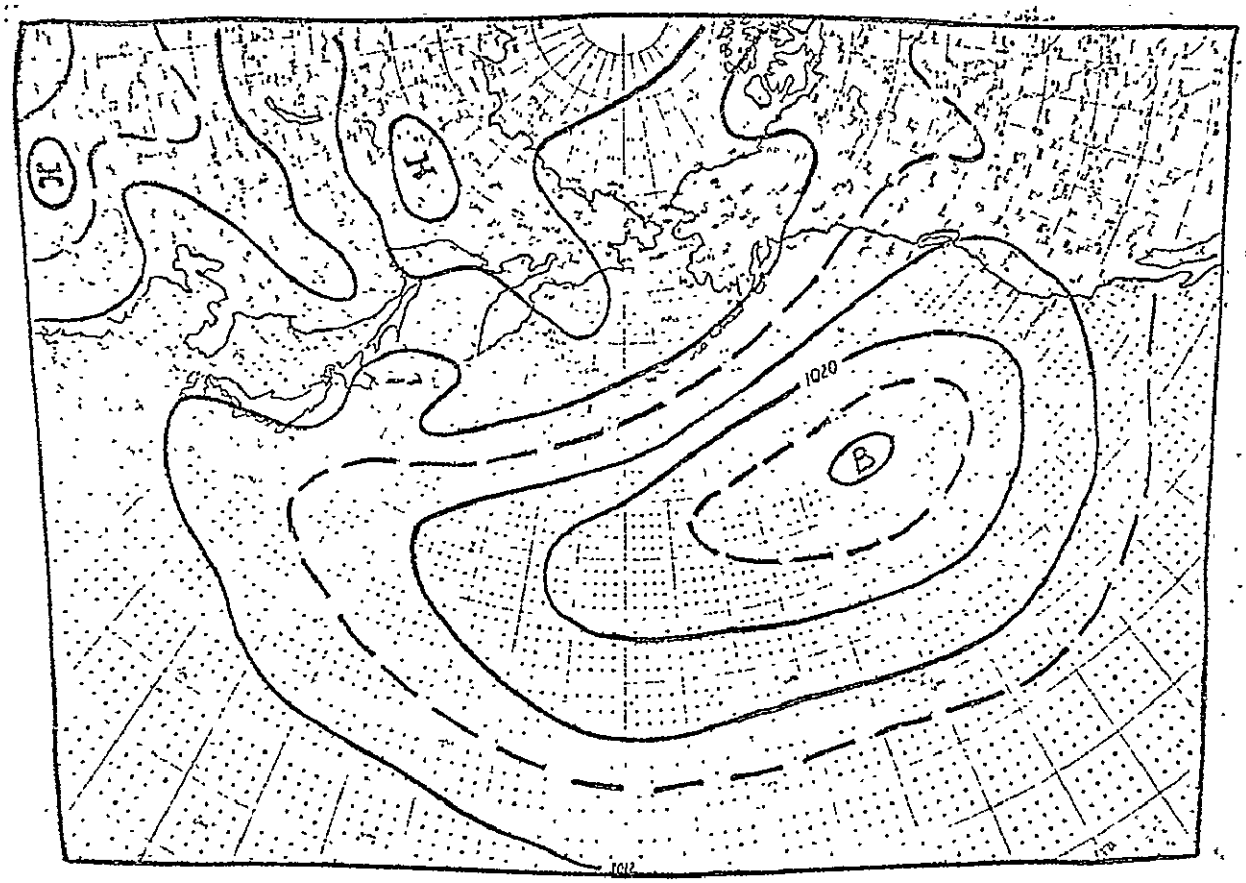



Figure 1. Map of the average monthly ground pressure, August /84.

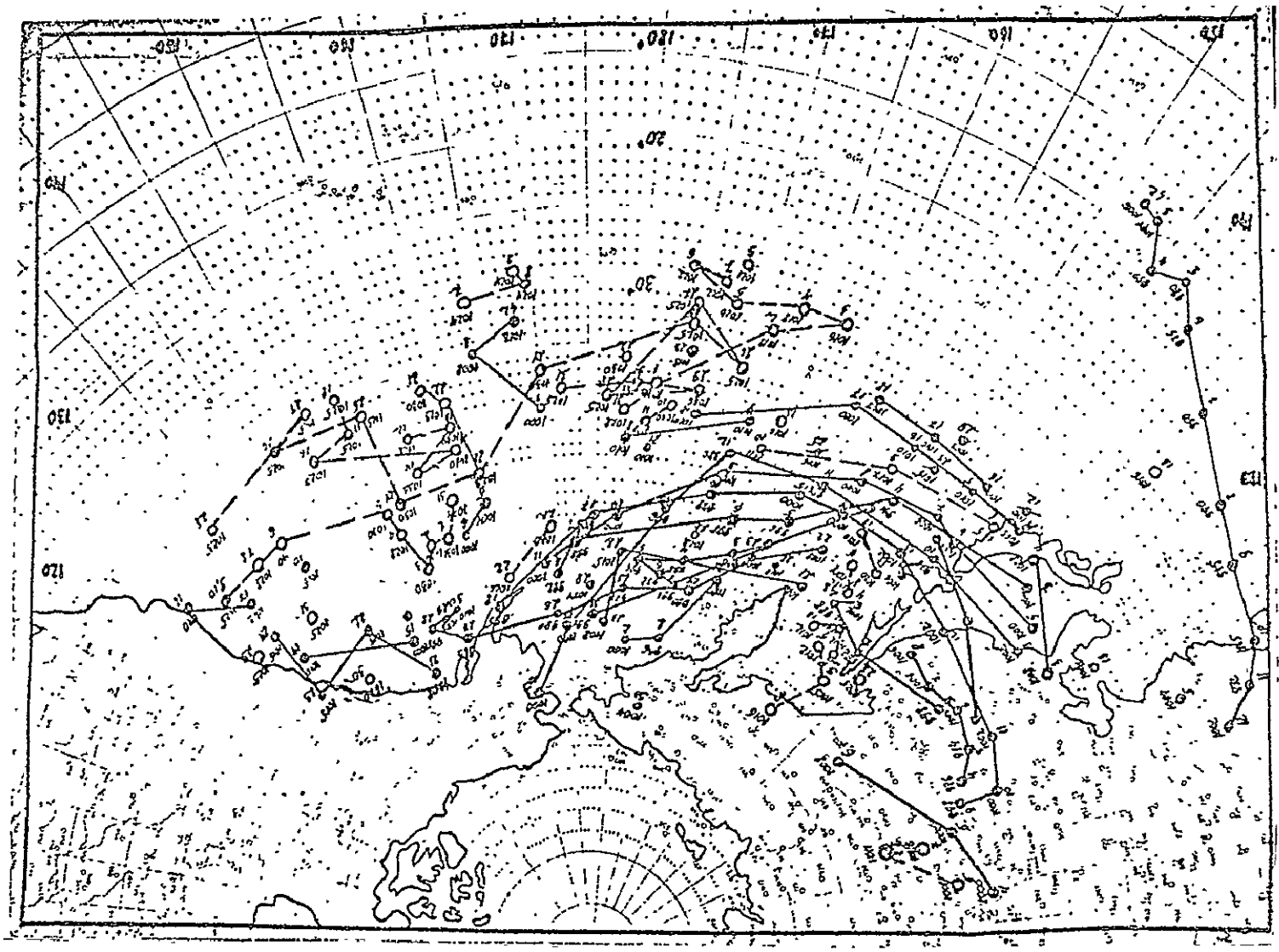


Figure 2. Compiled cinematographic map of the cyclones and anti-cyclones, August. /85.

REPRODUCIBILITY OF THE
ORIGINAL PAGE IS POOR

occurrence and further depression of these cyclones took place on the polar front (figure 2), the geographic location of which changed significantly, however did not exceed the limits 30-50° north latitude. The location of the polar front adjusted well to the high frontal zone which was expressed clearly enough on the baric topography maps 500 and 300 mbar, in the form of thickening of the isohypse and regions of maximum wind velocities. /86.

In accordance with this condition, the ship from August 4-19, while cutting across along the 20° north latitude, was located on the southeastern periphery of the northern Pacific Ocean anticyclone. There was clear, sunny weather, with weak easterly winds. Brief deterioration of the weather conditions at the beginning of this period was connected with the presence of typhoon Billy in the operation area (figure 3.).

July 31 in the region of 8° north latitude, 154° west longitude a tropical depression formed, outlined with one isobar with a pressure at the center of 1004 mbar. During the following days this depression shifted to the northwest and began to intensify significantly, developing into a cyclone called Billy. August 6 the center of the typhoon passed over the southern region of the operation area, intensifying the northeasterly wind to 21 m/sec. and yielding significant precipitqtion. The typhoon reached its maximum development on August 8, after the ship had exited the area where it raged. The pressure at its center decreased to 920 mbar, and the wind speed increased to 50 m/sec. During the following days the typhoon began to fill up, and continued to shift to the northwest, it filled up over the southeastern regions of China.

In the troposphere, weak (5-15 m/sec) variable winds were observed and only in the lower stratosphere was there a constant easterly transfer with wind speeds to 20-30 m/sec. At altitudes of 1-3 km weak inversions were noted sometimes. The tropical tropopause was located at an altitude of 15-16 km, the air temperature at this level decreased to -80° (figure 4).

On August 20-29, during the transfer from the port of Honolulu to the northern testing site, the ship crossed a polar front which was located at that time at 42° north latitude (figure 5). The wind speed at an altitude of 10-11 km reached 50-60 m/sec. At the ground layer, when crossing the front, one observed an intensification of the winds, strong stratus-cumulus clouds, strong rain.

In September the zonal processes were prevalent, and we observed frequent shifting of the western anticyclones in the 30-50° north latitude zone. Activizarion of the cyclonic activity took place during periods when the high wedge was located over Kamchatka, and the high ravine was shifting from the Western Siberian regions to Yakutia and the Amur Basin. If this ravine penetrated far into the south (30-35° north latitude), then deep cyclones would pass through the Okhotsk Sea and the Sea of Japan into the Bering Sea (figure 6).

As a result of activization of the cyclonic activity, a depression /91. began to form over the Aleutian Isalnds. On the average monthly map the pressure at the center of the Aleutian depression was already 1000 mbar, which is 8 mbar lower than the average value for several years (figure 7).

The period of operations in the northern testing site area (August 29 - September 13) can be divided into three time sections according to the structure of the baric field: August 28-31, September 1-9,

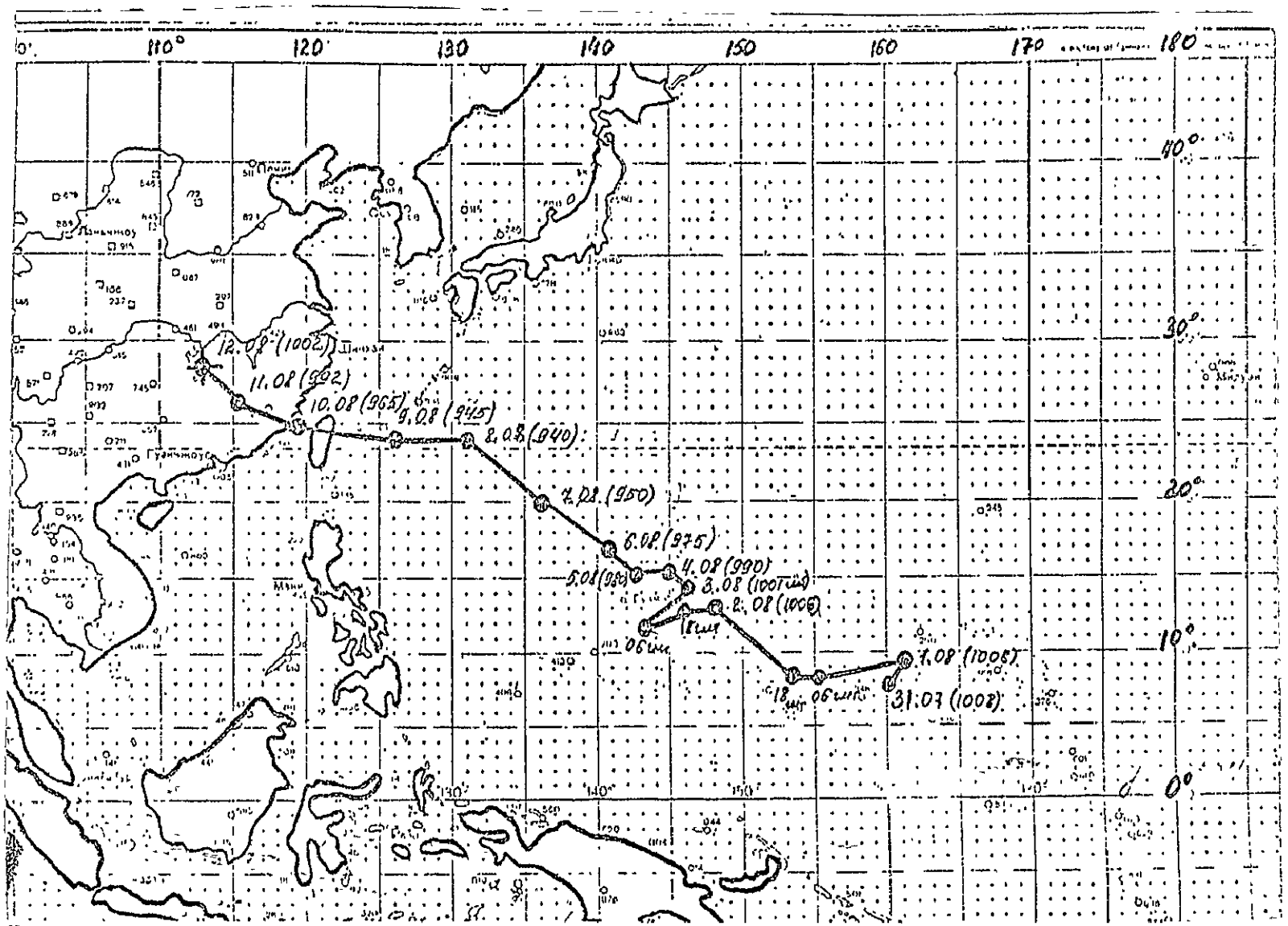



Figure 3. Movement of Typhoon Billy.

/87.

REPRODUCIBILITY OF THE ORIGINAL PAGE IS POOR

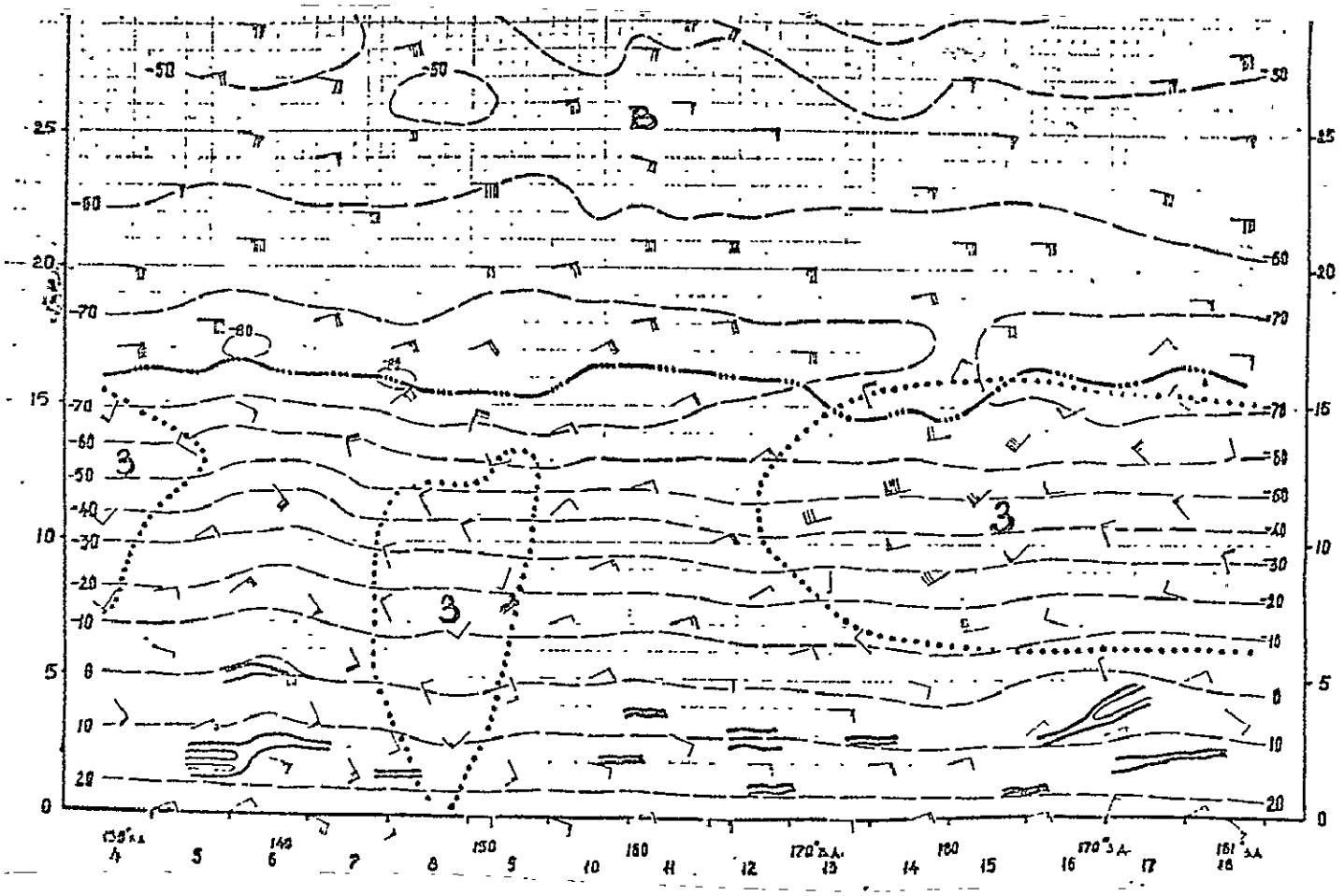


Figure 4. Three-dimensional cross-section of the atmosphere along the 20° north latitude. Pacific Ocean. Conventional signs. /88.

1 - isotherm; 2 - tropopause; 3 - border of the frontal zones and the inhibiting layers; 4 - border between the westerly and easterly winds; 5 - easterly wind 5 m/sec; 6 - westerly wind 25 m/sec

REPRODUCIBILITY OF THE ORIGINAL PAGE IS POOR

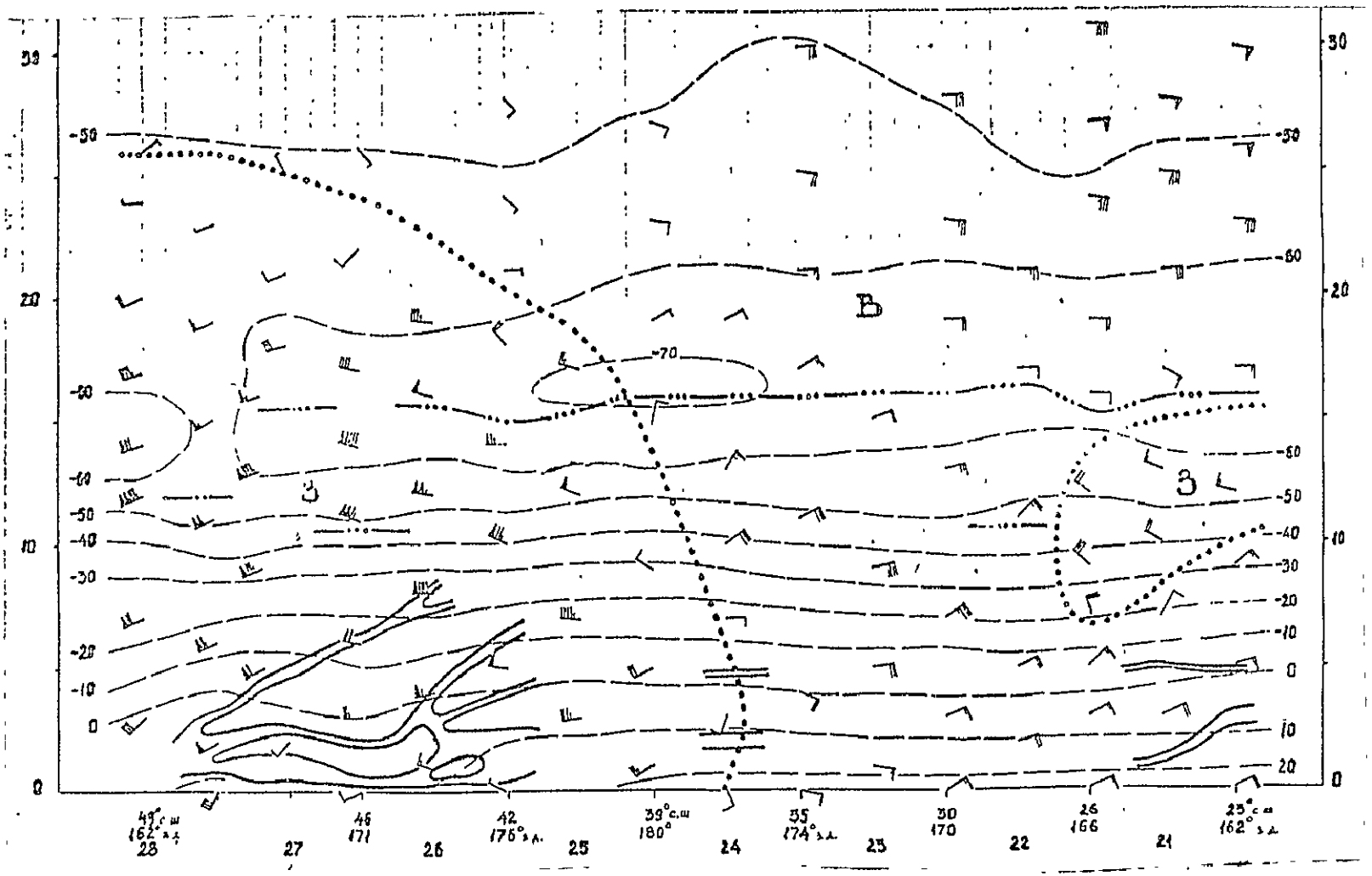



Figure 5. Three-dimensional cross-section of the atmosphere from the port of Honolulu to the northern testing site. Pacific Ocean. /89.

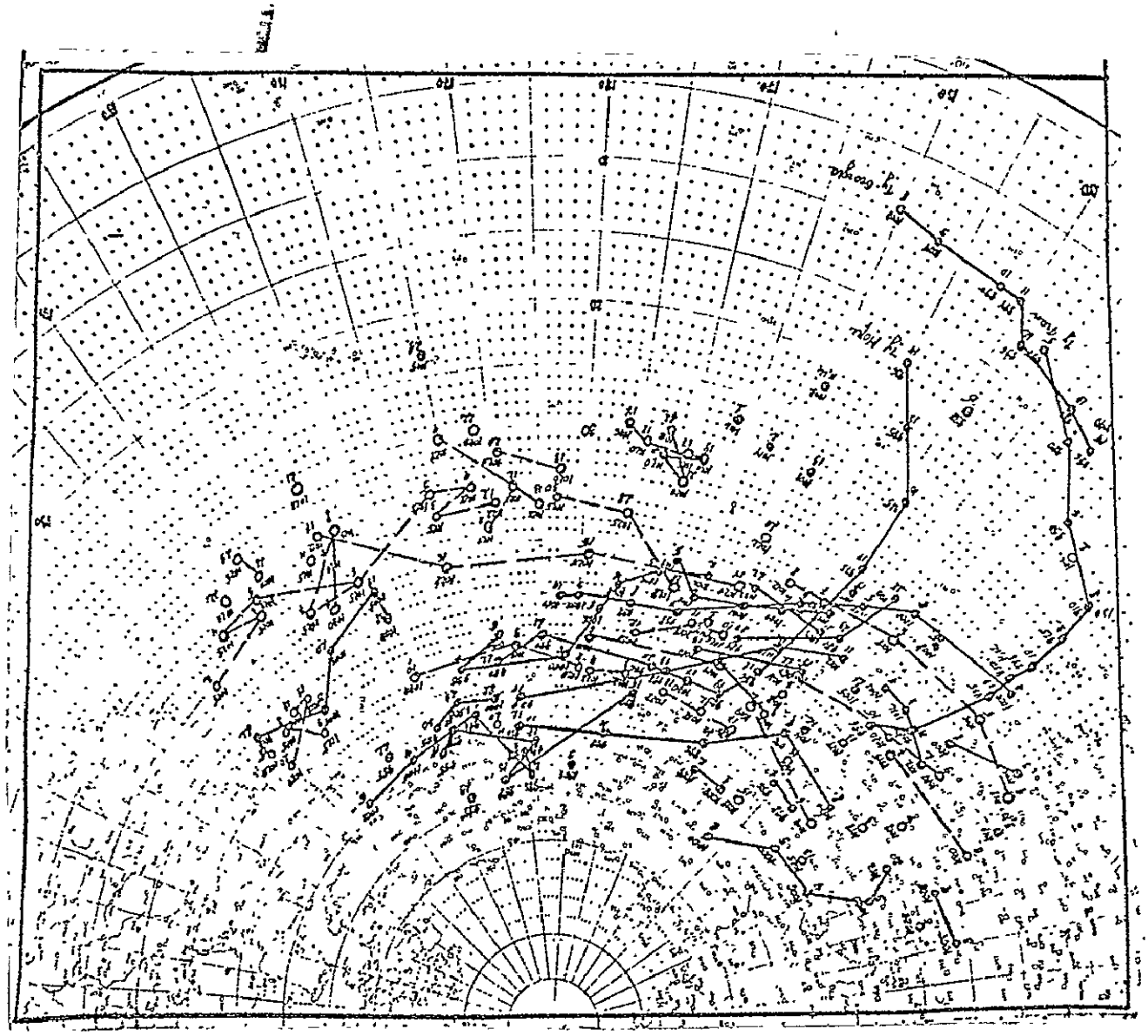


Figure 6. Composite cinematographic map of the centers of the the cyclones and the anticyclones. September. /90.

REPRODUCIBILITY OF THE
ORIGINAL PAGE IS POOR

September 10-13.

August 28-31 the high wedge was located over the Amur Region and over the Khabarovsk Krai (administrative region). The cyclone was stationary over Kamchatka, and its ravine extended far to the south. The cyclones shifted along two paths: to the north of the testing site along the 65° north latitude and to the south - from the Japan Isalnds to the Bering Sea.

This structure of the high baric field corresponded to the following synoptic situation. August 29-30 to the north of the testing site passed the cyclone with a pressure at its center of 1000 mbar, connected with the polar front. This cyclone did not cause an intensification of the winds, the winds only shifted from a southerly direction in the forward section of the cyclone to a westerly direction, and then to a northwesterly direction in the rear section. There was fog with the southerly and northerly winds. As the polar front passed there was precipitation (figure 8).

The vertical structure of the field of the temperature was was characterized by the presence of superadiabatic gradients in the lower three-hundred-meter layer (from 1.10 to 1.50 degrees per 100 meters) and by an inversion in the adjacent layer with a thickness from 200 to 1000 meters (figure 9).

In the troposphere the westerly and southwesterly winds prevailed resulting from the southeastern periphery of the cyclone. At an altitude of 9-10 km the wind speed reached 60 m/sec.

In connection with the flow of the air masses from the south, the temperature rose significantly at all levels of the troposphere. The relative humidity was increased (70-90%) only up to an altitude of 2-3 km.

The entire middle and upper troposphere was an area with humidity (20-30%) and only in the forward part of the cyclone did the humid air extend to the tropopause (11-12 km).

From September 1-9 there was a restructuring of the baric field. The cyclone from Kamchatka shifted to the northeast, and the wedge, weakening, shifted from the Amur Region to Kamchatka. The flows became wider. The cyclones from the regions of China and Japan passed to the south of the testing sites to the eastern part of the Bering Sea, and the high pressure nuclei passed from the mainland to the Sea of Okhotsk and to the northwestern part of the Pacific Ocean.

During this period the operations were conducted under a high pressure area. Weak south and southwesterly winds prevailed.

In the troposphere we also observed variable weak /95.
winds. The presence of inversions at the water level (200-500 meters) with southwesterly winds created favorable conditions for fog and drizzle formation. Above the inhibiting layer, the relative air humidity decreased sharply to 20-30%.

During the period from September 10-13, the high thermobaric field was characterized by the presence of a high ravine, moving from Chukotka to Kamchatka and the Amur Region.

On September, moving in the front part of this ravine, a cyclone emerged from the northern operations area with a pressure at the center of 996 mbar. This caused an acute rise in the air temperature in the troposhpere on the average of 10°, an increase in the level of the troposphere from 12-15 km and

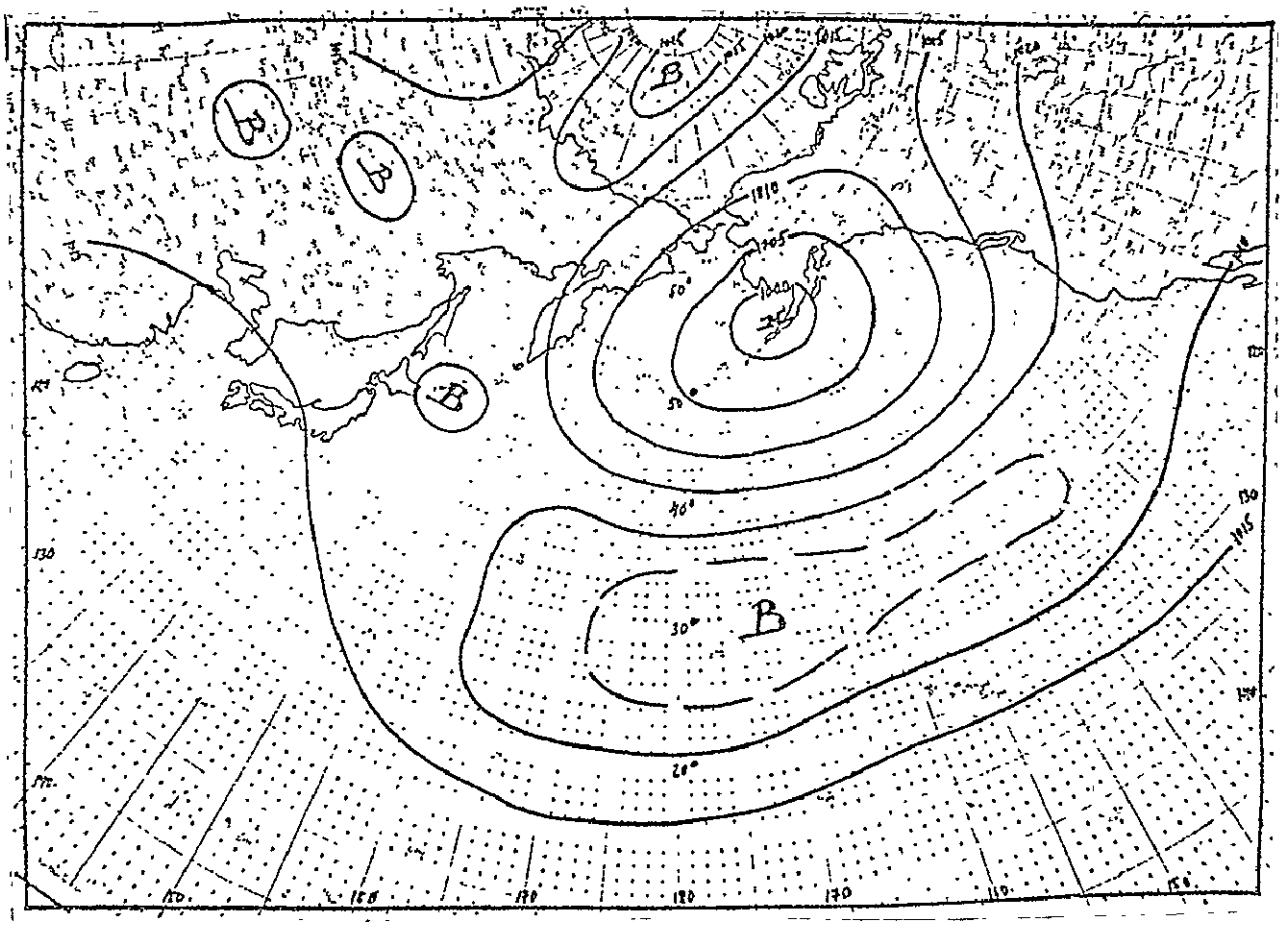



Figure 7. Map of the average monthly ground pressure. September. /92.

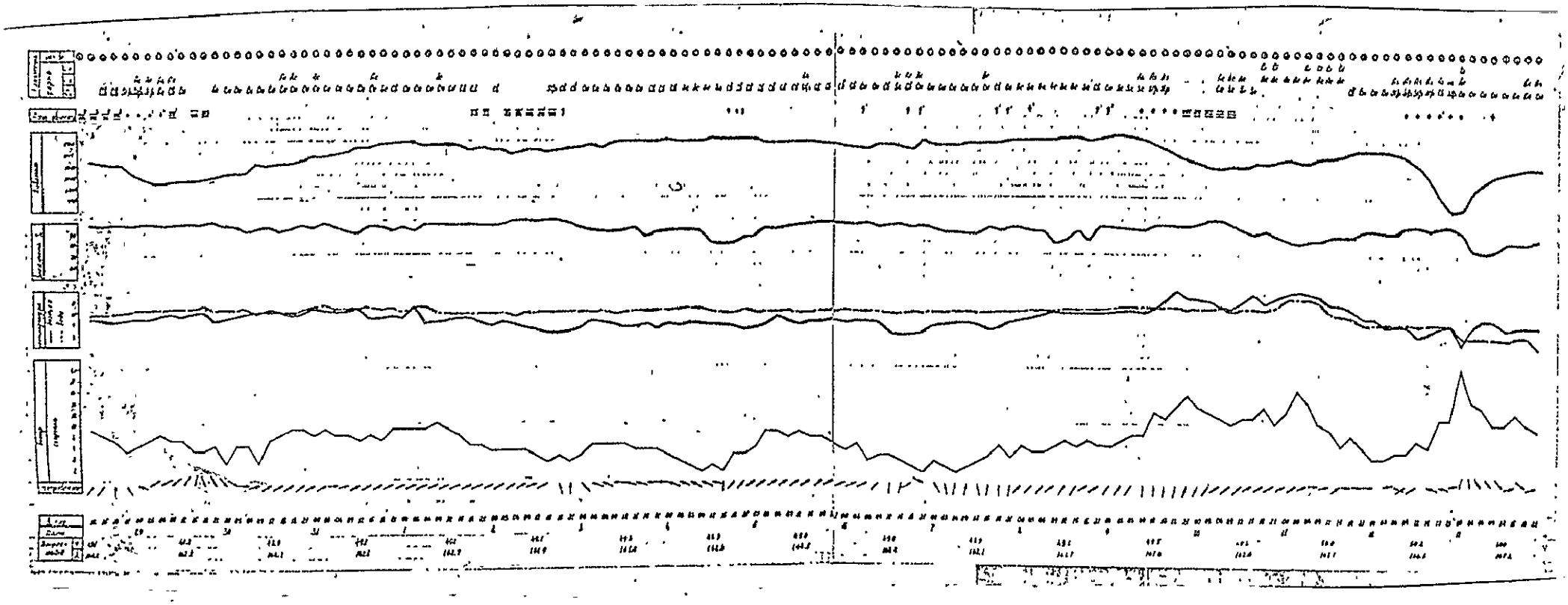


Figure 8. Movement of the meteorological elements from August 29 to September 13. /93.

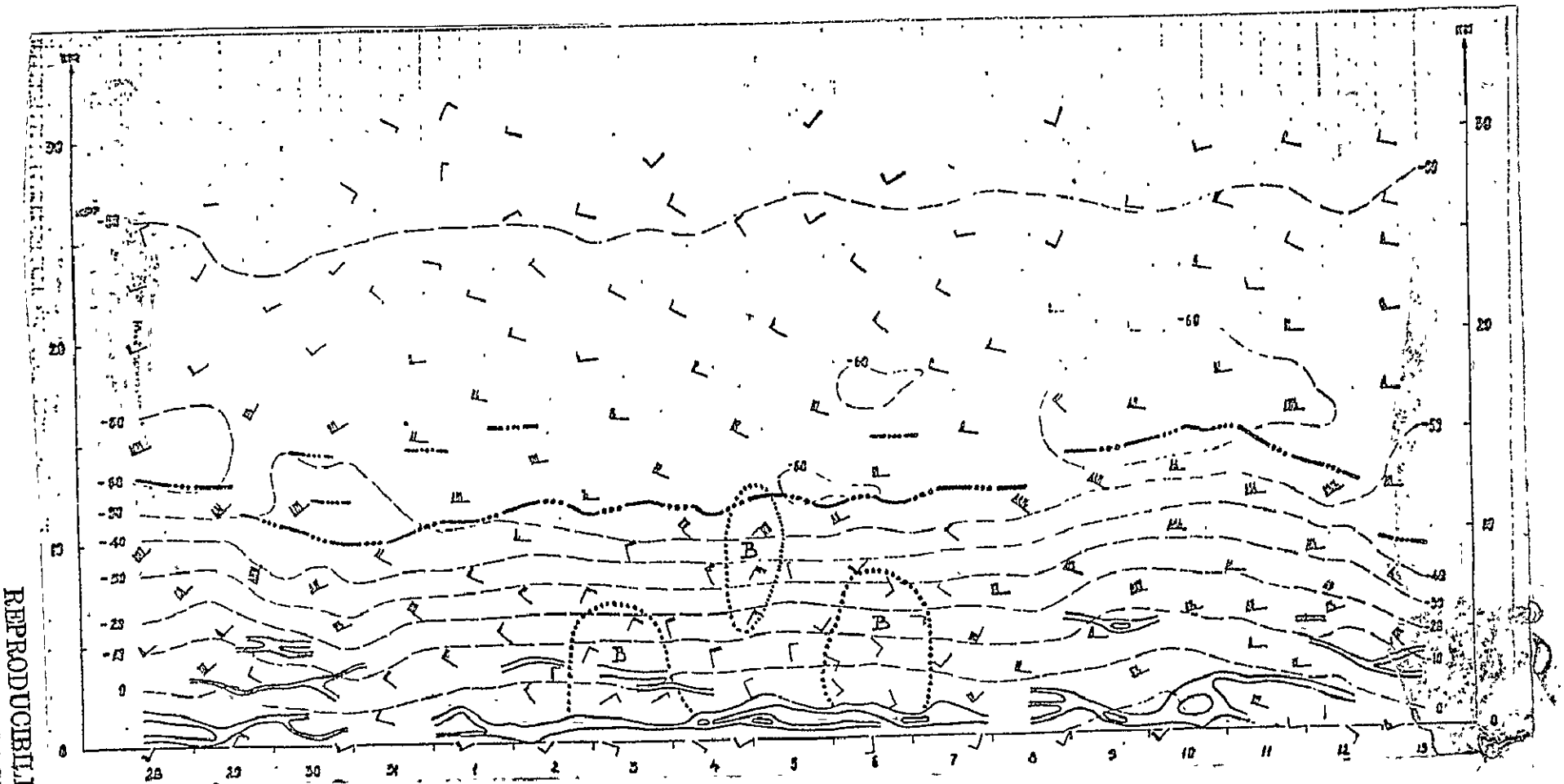


Figure 9. Time cross-section of the atmosphere. Northern testing site (49° north latitude, 162° east longitude). Pacific Ocean. /94.

REPRODUCIBILITY OF THE ORIGINAL PAGE IS POOR

and an intensification of the western stream of air up to 75 m/sec.

Still another cyclone emerged and entered the operation area on September 12-13. Its center passed through the test site. At ground level the wind shifted from easterly to northerly, and then to westerly. The wind in this cyclone increased to 20 m/sec, there was severe swell, rain and fog. At the rear of this cyclone the air temperature in the troposphere decreased to 20°, the level of the troposphere decreased at the same time from 15 to 9 km. The air temperatyre in the tropopause increased to -50°.

Along the 50° north latitude cross-section (September 13-21) the weather conditions were determined by the southern periphery of the Aleutian depression which was constantly filled out by the frontal cyclones and regenerated. It was easily traced at altitudes. Along the path of the ship westerly winds prevailed from 10-12 m/sec. A frontal cyclone passed through the path of the ship on September 20 which caused a brief increase in the wind speed to 21 m/sec and caused plentiful precipitation.

With the emergence of this cyclone, in the troposphere we observed southeasterly winds with a speed of 45 m/sec and a severe increase in temperature on the average of 10-15°. On the remaining journey the westeasterly transfer was maintained with speeds of 25-60 m/sec (figure 10).

September 16-17, crossing the polar front, the level of the

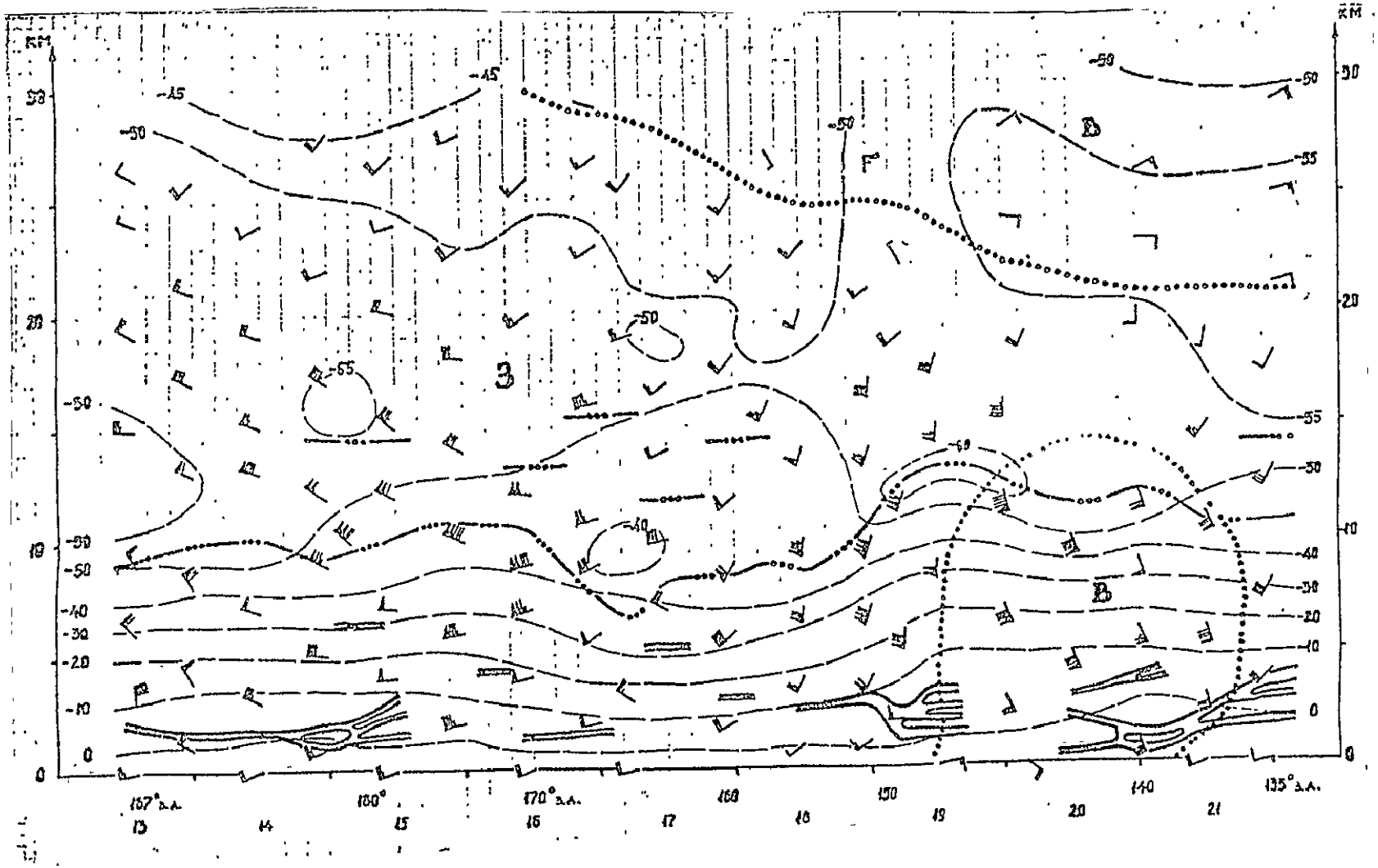
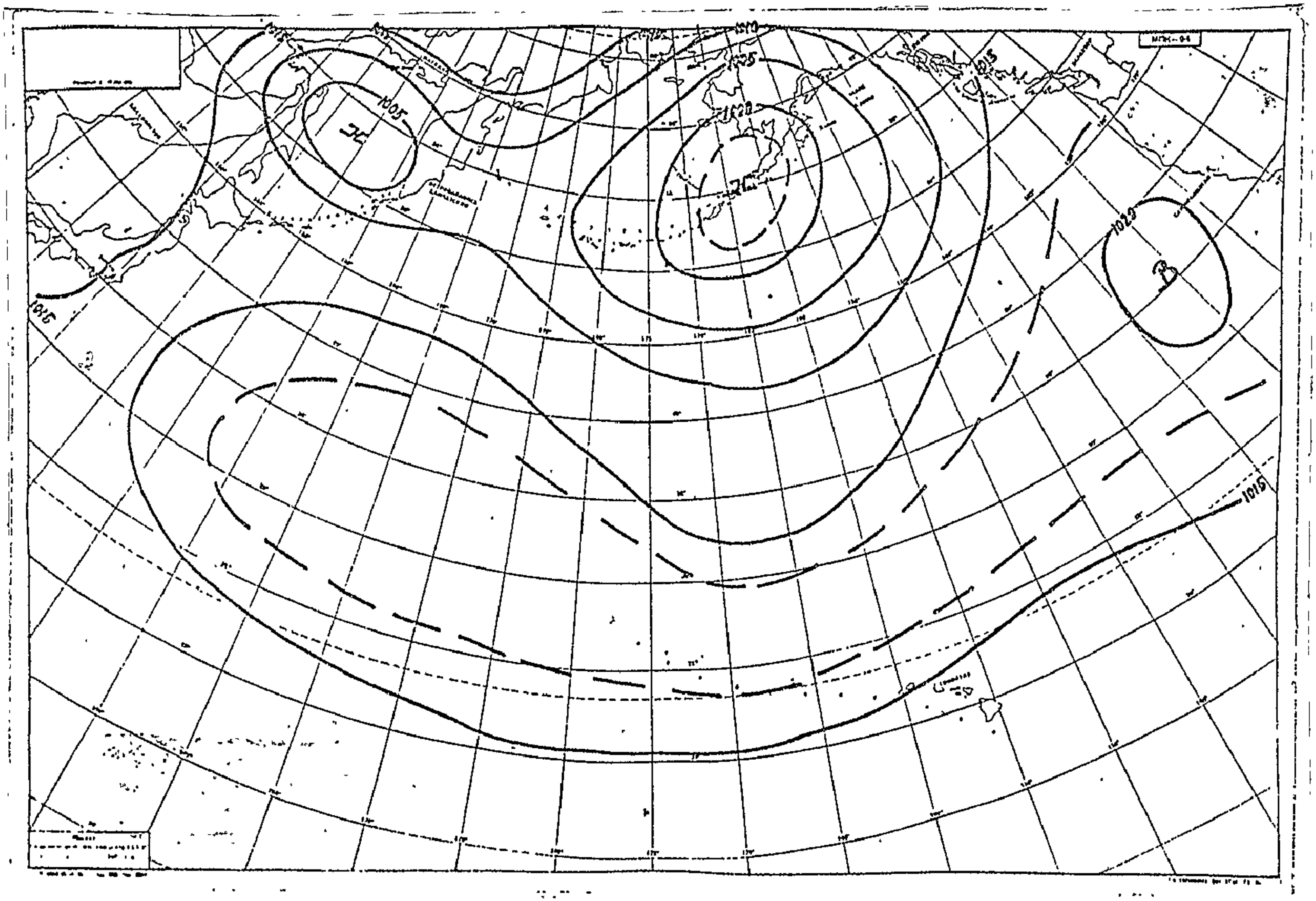



Figure 10. Three-dimensional time cross-section of the atmosphere along the 50° north latitude. Pacific Ocean. /96.

tropopause was at its lowest point (7 km) for the entire period. The temperature at the level of the tropopause increase to -40°.

The characteristics of the synoptic processes over the northern section of the Pacific Ocean in October were significnatly different from the average processes for a many year period. A particularity of these synoptic processes for this region is the exceptionally active cyclonic activity in the arctic and polar fronts, the irregular distribution and intensity of the /97. main centers of activity of the atmosphere: of the northern Pacific Ocean and Siberian anticylcones and of the Aleutian depression. On the average monthly pressure map (figure 11) one sees that the Sea of Okhotsk and the Bering Sea are affected by two of the central low pressure areas. One center is located over the Aleutian islands and the other is over the Sea of Okhotsk. The pressure irregularities were as follows in these centers: -2 and -4 mbar, respectively. The center of the Aleutian depression was located at 10° to the west of its usual location. The Siberian anticyclone occupied its usual position, but was weakly developed, pressure irregularity at its center was -4 mbar, and its wedge extended in a northeasterly direction into the Chukotka region where the pressure orregularity was +10 mbar. The location of the northern Pacific Ocean anticyclone remained unchanged, but the pressure at its center was 2 mbar higher than the average monthly pressure.

The trip from the port of Vancouver to the southern testing




REPRODUCIBILITY OF THE ORIGINAL PAGE IS POOR

Figure 11. Map of the average monthly ground pressure. October. /98.

site (September 27-October 13) was characterized by a high cyclone over the Aleutian islands and a ravine over Kamchatka. The movement of baric formations passed along the southern periphery of the Aleutian depression, i.e. along 40-45° north latitude to the east. At the end of the period the cyclones and the anticyclones shifted to the frontal section of the Far eastern high ravine (figure 12). On the latitude cross-section along the 40° north latitude, the ship moved westward, and the baric formations moved in an easterly direction, therefore the ground field of pressure was very variable, which frequently changed the weather conditions. Thus, the wind speed during the trip changed from 3 m/sec in the anticyclone to 22 m/sec in the cyclone. The rain and fog zones were replaced by clear skies.

In the entire troposphere and lower stratosphere there was a stable westeasterly air mass transfer. Depending on the strengthening or weakening of the high ravine over the Aleutian Islands, the wind speed changed from 30 to 75 m/sec at an altitude of 9-10 km (figure 13).

The synoptic condition in the region of the southern testing site (October 13 - November 1) was characterized by the presence of two centers of cyclonic activity which were periodically divided by a high pressure wedge. The direction of the cyclones' movement and their steady-state regions were determined by a high baric field. The presence of a high [illegible] Pacific Ocean wedge in the middle troposphere, moving from the northern Pacific Ocean anticyclone to Chukotka and dividing

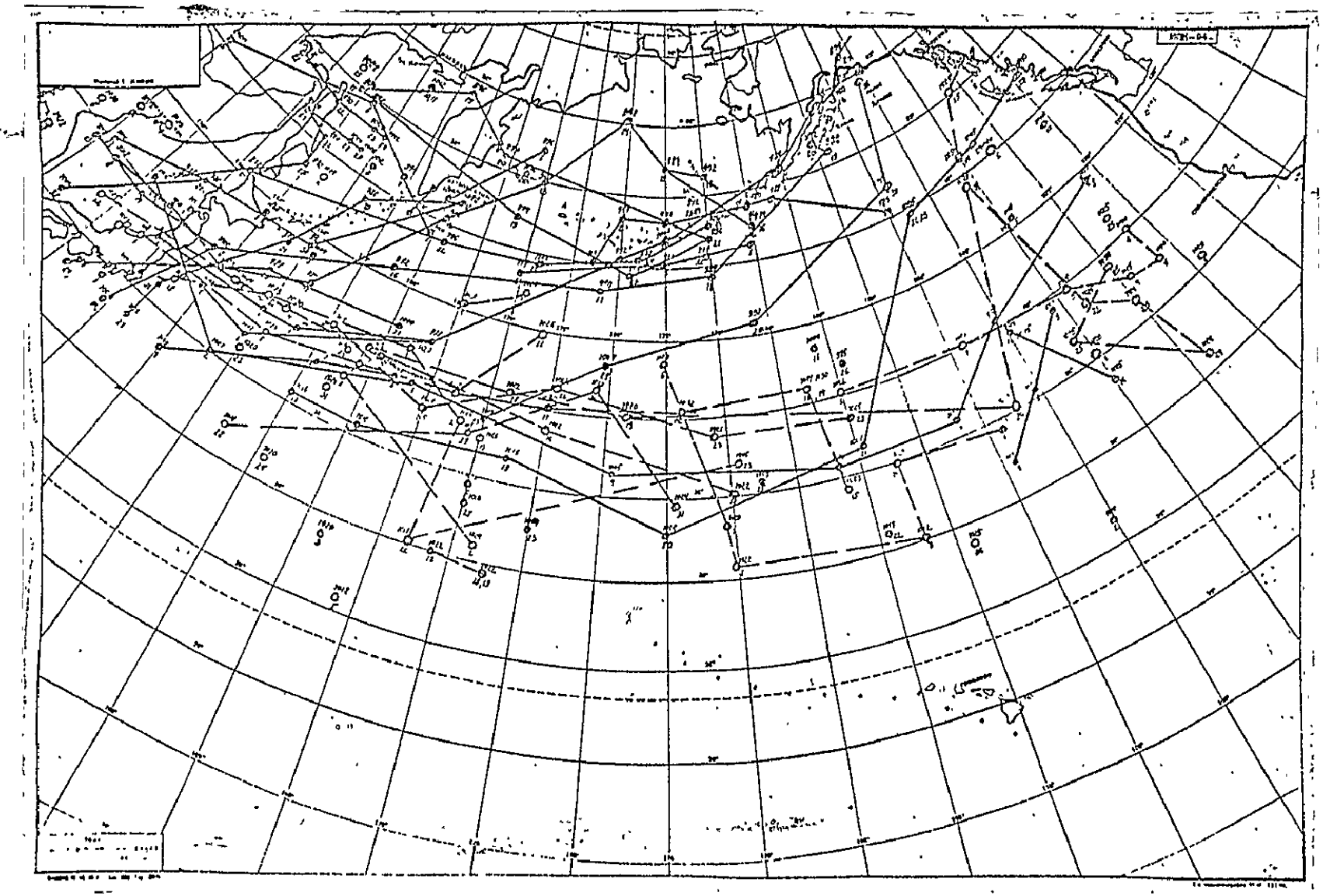
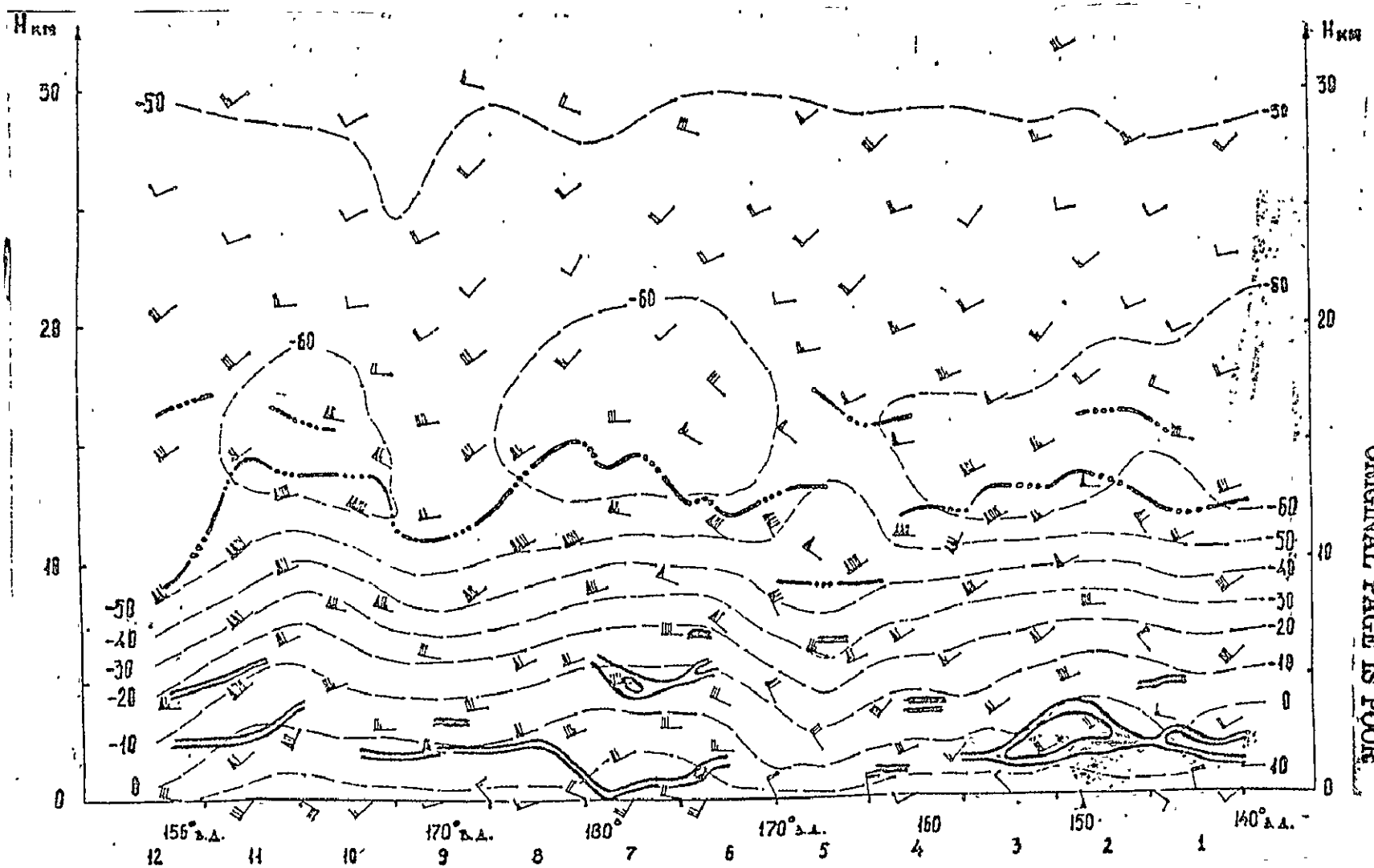


Figure 12. Composite cinematographic map of the centers of the cyclones and anti-cyclones. October. /99.

ORIGINAL PAGE IS
OF POOR QUALITY




REPRODUCIBILITY OF THE ORIGINAL PAGE IS POOR

Figure 13. Three-dimensional time cross-section of the atmosphere along 40° north latitude. Pacific Ocean. /100.

the aforementioned regions of cyclone origination, it also successfully hindered the passing of the southern cyclones into the Sea of Okhotsk. As the blocking wedge weakened, the cyclones shifted to the Aleutian Islands along two paths: /101. in the 55-60° north latitude and 35-40° north latitude zones. In the first type of processes, the southern cyclones from the Japanese Islands passed through the southern testing site. In the second type, the testing site was either on the southern periphery of the northern cyclones or on the northern periphery of the southern ones.

Actually, the synoptic situation and weather conditions at the southern testing site can be described as follows. Two wave cyclones entered the Sea of Japan on October 14. They joined together over the Japanese Islands and formed one cyclone which began to shift to the northeast to the region of the Aleutian Islands at a speed of 25 knots. And the cyclone intensified. On October 15, with a pressure of 1000 mbar at its center, it passed to the south of the testing site. In the operation area, we observed a brief intensification of the southeasterly, easterly wind to 15 m/sec, steady rain (figure 14). As this cyclone moved along, the air temperature rose at altitudes and the tropopause level increased from 10 to 13 km. In the lower 5-kilometer level frontal sections were clearly traced. The humid air (70-80%) extended to the tropopause level. As the cyclone passed, the impairment of the basic west-easterly transfer was observed only in the lower three-kilometer layer, i.e. the cyclone was a low baric formation (figure 15).

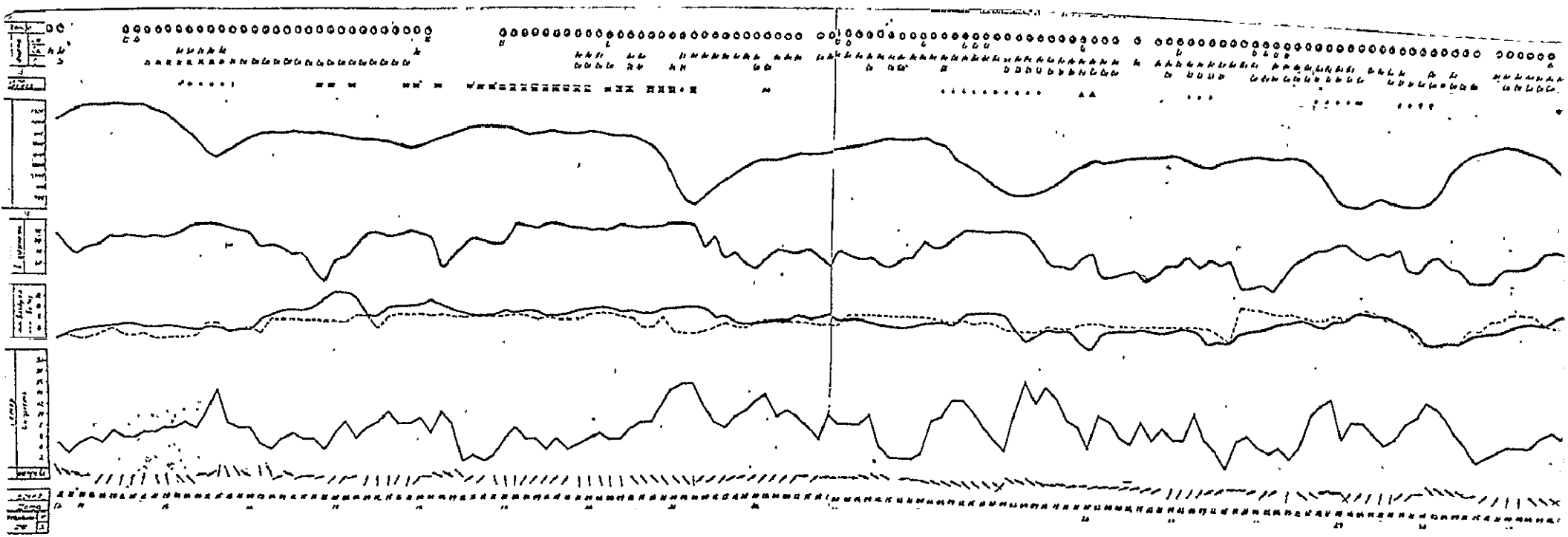


Figure 14. Path of the meteorological elements from October 13 to November 1.

REPRODUCIBILITY OF THE ORIGINAL PAGE IS POOR

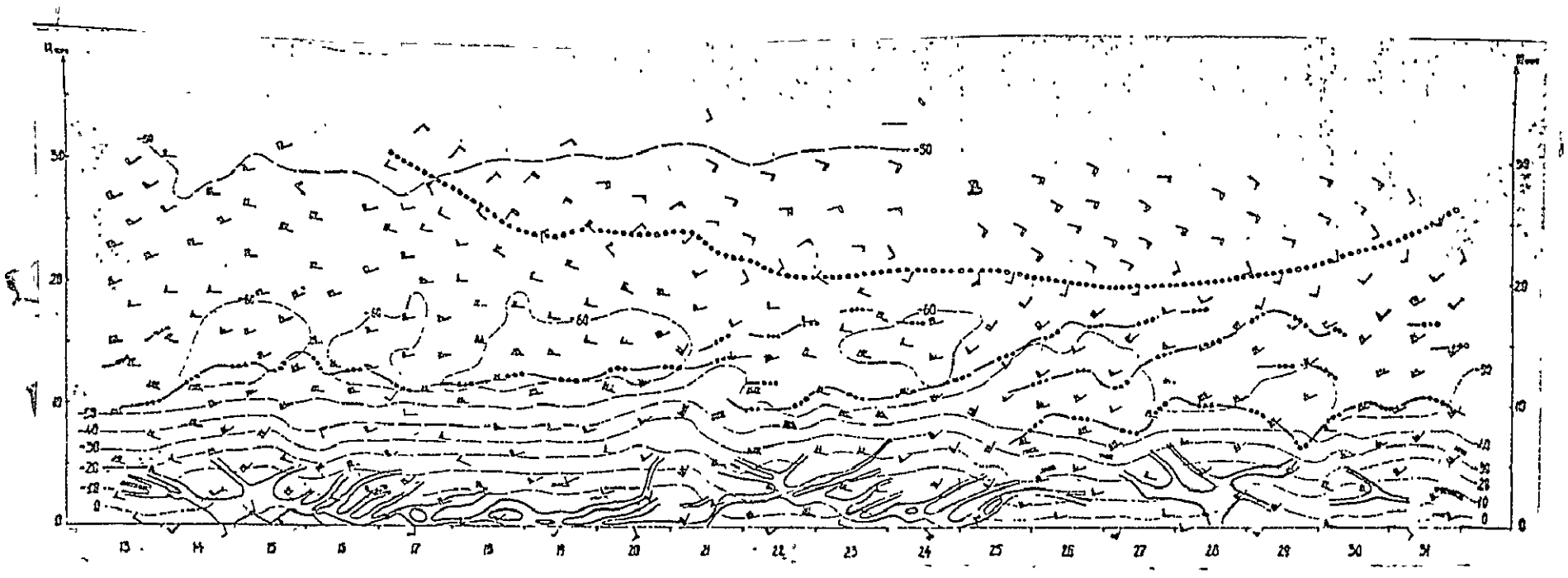
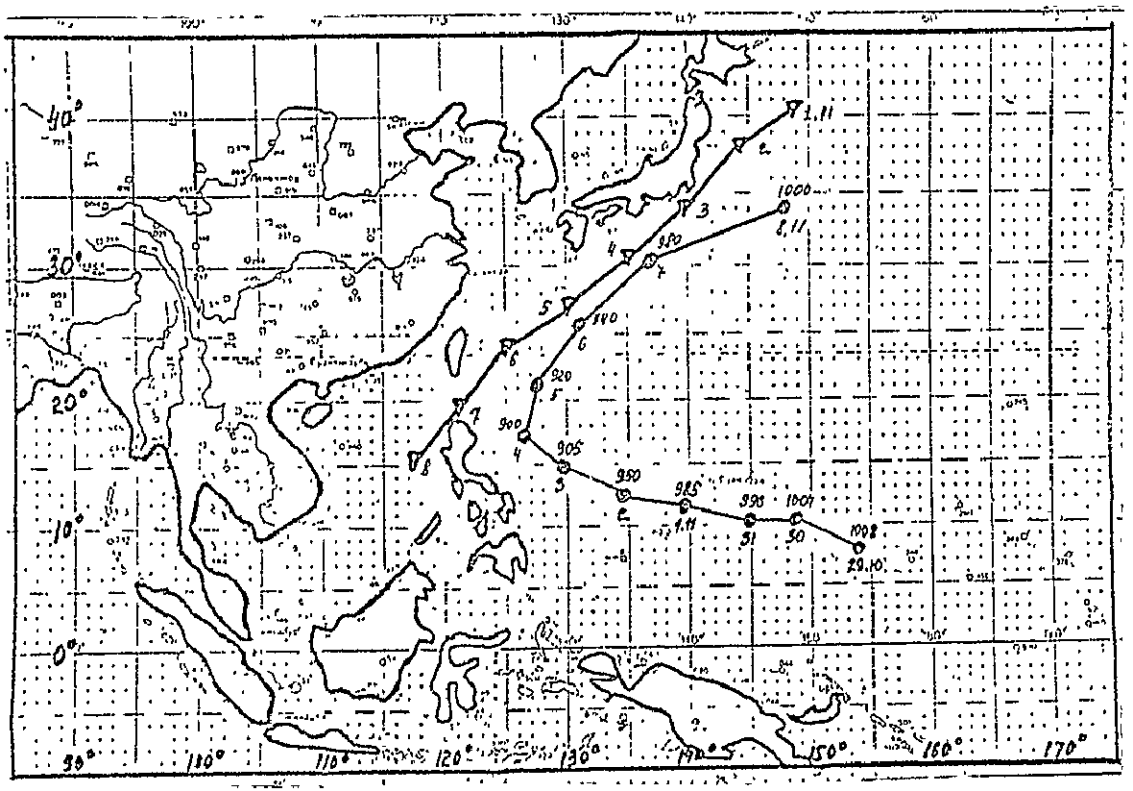


Figure 15. Time cross-section of the atmosphere. Southern testing site. (44° north latitude, 149° east longitude). Pacific Ocean. /103.

From October 16-20 in the 50-60° north latitude zone several cyclones shifted from the Baikal region to the Aleutian Islands. As a rule, before they exit into the Sea of Okhotsk, the cyclones intensify. However, they do not have a large effect on the weather conditions in the operation area, because the centers of these cyclones pass far to the north of the testing site. We noticed an increase in the wind speed up to 11 m/sec only when fronts passed that were connected with these cyclones. With southern winds we oberved some fog or haze, which reduced visibility to 1 kilometer. Strong inhibiting layers in the two-kilometer layer did not enhance the exit of this humid air into higher levels.

By October 20, a restructuring of the baric field took place. There was an intensification of the Pacific Ocean blocking wedge and a worsening of the Far Eastern ravine which successfully impede the passage of the southern cyclones into the Sea of Okhotsk, where they remained stationary, forming a deep depression. The meteorological conditions in the water layer in the operation area were determined either by the southern periphery of the Okhotsk depression, or by the cyclones passing through the testing site and feeding this depression. The exit of these southern cyclones into the operations region continued until the end of the experiment. Their passing through the testing site was accompanied by a brief intensification of the wind speed up to 16-20 m/sec. The wind direction was determined by the location of the centers /104.




REPRODUCIBILITY OF THE ORIGINAL PAGE IS POOR

Figure 16. Path of the typhoon (Louisa).
∇ - movement of the scientific research ship "Akademik Korolev"
· - movement of the typhoon (Louisa)

/105.

of the cyclones relative to the testing sites. The Okhotsk depression was constantly being filled by these cyclones, regenerated, which caused an intensification of the baric gradients and, as a result, an intensification of the winds of the western compass points in the operations area up to 16 m/sec. As the front connected with the cyclones passed, there was a thick stratus-cumulus cloud cover and steady rain. With southern winds the visibility decreased to 500 meters because of the fog and haze.

The circulation scheme in the middle and upper troposphere during operations at the testing site was caused by the region of low pressure over the Sea of Okhotsk and by a slow moving northern Pacific Ocean anticyclone. The movement of warm air into the northwestern periphery of the high wedge and of the cold air mass into the southwestern periphery of the high ravine from the Asian mainland caused a worsening of the high frontal zone and, as a result, an intensification of the western flows at an altitude of 9-10 km up to 60-70 m/sec.

As the southern cyclones came out, the time contrasts in temperature at altitudes reached 8-10° daily. With southwesterly flows, there was frequent wearing away of the polar tropopause and a tropical tropopause appeared. In the lower two-meter layer, the relative humidity of the air varied from 70-90%, increasing with southwesterly flows and decreasing with westerly ones. Higher than this level, the atmosphere had moderate humidity (30-50%) and only with the passing through of the frontal sections and the intrusion of warm air masses from

the southwest did the humidity increase to 70-80%.

Operations at the southern testing site were completed on November 1. The first three days of movement (southern testing site is Singapore) the ship was located in the region of an anticyclone which was moving quickly in an easterly direction. Still during the operations at the test site on October 29 at 8° north latitude, 154° east longitude, a tropical depression formed with a pressure at the center of 1008 mbar. During the ensuing days, intensifying, it moved to the west-northwest. October 31 the tropical depression formed into typhoon Luiza. November 3, deepening to 900 mbar, the typhoon began to fill up and shift to the north, then shifted in a more easterly direction. November 8 it went out to a polar front and continued to shift in the direction of the Aleutian depression (figure 16). November 4 the ship entered the active zone of the typhoon, the rain and wind intensified. The ship and the typhoon were moving in opposite directions. The were closest together on November 5. At this time the easterly winds were registered at 20 m/sec. During the following days, the effect of the typhoon began to weakening.

After exiting into the South China Sea the ship was /106. located in a low gradient zone. The entire route to Singapore had slight northeasterly winds and clear sunny weather.

The trip from Singapore to Vladivostok was characterized by the fact that the scientific research vessel "Akademik Korolev" was located on the southeastern periphery of the Siberian

anticyclone. At the end of November it was located over China, i.e. occupies an extreme southern location. The pressure at the center of the anticyclone on certain days was higher than 1050 mbar. Because of this, between the low-pressure area near the equator and theSiberian anticyclone, a high gradient pressure zone formed. During the sailing time in the South China Sea, we observed a northeasterly wind up to 21 m/sec.

A high pressure nucleus emerged and passed through in an easterly direction through the East China Sea and Sea of Japan. The scientific research craft "Akademik Korolev" was located on the periphery of the small nucleus from November 30 to December 2. There was clear weather during these days with northeasterly winds up to 5 m/sec.

The high frontal zone during this period was located to the north of the 50° north latitude. There were weak flows over the sailing area. Intensification of the wind at an altitude took place as the ship moved to the north.
Thus, November 30, on the map with a 500 mbar surface, the wind was 30 m/sec.

Key to text page 125 /114.

1. Appendix II-2.
2. Table of Standard Hydrometeorological Observations at 15 minute intervals.
3. Date
4. Greenwich Mean Time (hours, minutes).
5. Coordinates
6. latitude (degrees, north)
7. longitude (degrees, west)
8. total amount of cloudiness
9. actual wind
10. direction (degrees)
11. speed (m/sec)
12. visibility (number)
13. hydrometeorological phenomena (beginning, end)
14. adjusted atmospheric pressure above sea level (mm)
15. air temperature °C
16. cloudiness
17. amount of middle and lower
18. type of lower
19. altitude of lower or middle
20. type of middle
21. type of upper
22. humidity
23. temperature of the dew point
24. absolute (mbar)
25. relative (%)
26. (exchange A)

Key to text page 126 /115.

1. Exchange B.
2. Exchange B.

Key to text page 127 /118.

1. Appendix III
2. Table of Data on the Temperature of the Sea Surface
3. GMT time
4. Temperature ($T_p$) (°C)
5. Temperature ($T_k$) (°C)
6. September 10, 1976 Coordinates 50°00' north latitude, 162°12' east longitude
7. September 10, 1976 Coordinates 50°00' north latitude, 162°24' east longitude
8. September 11, 1976 Coordinates 50°00' north longitude, 162°36' east longitude.

## ТАБЛИЦА СТАНДАРТНЫХ ГИДРОМЕТЕОРОЛОГИЧЕСКИХ НАБЛЮДЕНИЙ ЗА 15-МИНУТНЫЕ ИНТЕРВАЛЫ

| Дата | Время гринвическое (час., мин.) | Координаты: Широта (град. сев.) | Координаты: Долгота (град. зап.) | Количество общей облачности | Истинный ветер: направление (град) | Истинный ветер: Скорость м/с | Видимость (балл) | Гидрометеорологические явления (начало, конец) | Исправленное атм. давление над ур. моря (мм) | Температура воздуха °С | Облачность: К-во нижней или средней | Облачность: Форма нижней | Облачность: Высота нижней или средней | Облачность: Форма средней | Облачность: Форма верхней | Влажность: Температура точки росы °С | Влажность: Абсолютная (мб) | Влажность: Относительная (%) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| I | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | I0 | II | I2 | I3 | I4 | I5 | I6 | I7 | I8 | I9 |
| 9.09.76 | 23.30 | 49.8 | I6I.8 | - | 2I0 | I3.3 | 2 | ≡ | 757.9 | II.2 | - | | - | - | - | I0.9 | I3.0 | 98 |
| 26 " | 23.45 | " | " | I0 | 2I0 | I2.6 | 3 | ≡° | 757.9 | II.2 | I0 | St neb | 200 | + | + | I0.6 | I2.8 | 96 |
| 10.09.76 (общен 'А) | 00.00 | 49.8 | I62.0 | I0 | 2I0 | I2.9 | 7 | | 757.9 | II.2 | I0 | St neb | 200 | + | + | I0.6 | I2.8 | 96 |
| " | 00.I5 | " | " | I0 | 2I0 | I3.6 | 7 | | 756.3 | II.4 | I0 | St neb | 200 | + | + | I0.9 | I3.0 | 96 |
| " | 00.30 | " | " | I0 | 2I0 | I4.0 | 7 | | 756.3 | II.3 | I0 | St neb | 200 | + | + | I0.7 | I2.9 | 96 |
| " | 00.45 | " | " | I0 | 2I0 | I3.9 | 7 | | 756.3 | II.3 | I0 | St neb | 200 | + | + | I0.7 | I2.9 | 96 |
| " | 0I.00 | " | " | I0 | 2I0 | I3.9 | 7 | | 756.I | II.3 | I0 | St neb | 200 | + | + | I0.7 | I2.9 | 96 |
| " | 0I.I5 | " | " | I0 | 2I0 | I3.0 | 7 | | 756.0 | II.0 | I0 | St neb | 200 | + | + | I0.9 | I3.0 | 99 |
| " | 0I.30 | " | " | - | 220 | I3.I | 3 | ≡° | 755.8 | II.I | - | | - | - | - | I0.9 | I3.0 | 98 |
| " | 0I.45 | 49.9 | I62.0 | - | 220 | I3.3 | 3 | ≡° | 756.0 | II.I | - | | - | - | - | I0.9 | I3.0 | 98 |
| " | 02.00 | " | " | - | - | - | 2 | ≡ | 756.0 | II.I | - | | - | - | - | I0.9 | I3.0 | 98 |
| " | 02.I5 | " | " | - | 220 | II.9 | 2 | ≡² | 756.I | II.I | - | | - | - | - | II.I | I3.2 | I00 |
| " | 02.30 | " | " | - | 230 | I2.2 | 2 | ≡² | 755.9 | II.0 | - | | - | - | - | II.0 | I3.I | I00 |
| " | 02.45 | " | " | - | 230 | I2.I | 2 | ≡² | 756.0 | II.0 | - | | - | - | - | II.0 | I3.I | I00 |
| " | 03.00 | " | " | - | 220 | I0.7 | 2 | ≡² | 756.I | I0.9 | - | | - | - | - | I0.9 | I3.0 | I00 |
| " | 03.I5 | " | " | - | 230 | I0.6 | 2 | ≡² | 756.I | I0.9 | - | | - | - | - | I0.9 | I3.0 | I00 |
| " | 03.30 | " | " | - | 230 | I0.6 | 2 | ≡² | 756.0 | I0.8 | - | | - | - | - | I0.8 | I2.9 | I00 |
| " | 03.45 | " | " | - | 230 | I0.2 | 2 | ≡² | 756.0 | I0.8 | - | | - | - | - | I0.8 | I2.9 | I00 |
| " | 04.00 | " | " | - | 230 | I0.0 | 2 | ≡² | 756.0 | I0.7 | - | | - | - | - | I0.7 | I2.9 | I00 |
| " | 2I.30 | 50.0 | I62.3 | 6 | 240 | I2.4 | 8 | | 758.2 | II.3 | 2 | | >2500 | Ac tr | Ci und | 8.9 | II.4 | 85 |
| " | 2I.45 | " | " | 7 | 240 | I3.8 | 8 | | 757.9 | II.3 | 2 | | >2500 | Ac tr | Ci und Ci | 8.9 | II.4 | 85 |
| " | 22.00 | 50.0 | I62.4 | 8 | 250 | I3.8 | 8 | | 757.9 | II.4 | 2 | | >2500 | Ac tr | Ci und Ci | 8.5 | II.I | 82 |
| " | 22.I5 | " | " | 9 | 250 | II.9 | 8 | | 758.I | II.4 | 6 | | >2500 | Ac und tr | Ci und Ci | 8.8 | II.3 | 84 |
| " | 22.30 | " | " | 9 | 250 | I0.6 | 8 | | 758.3 | II.5 | 8 | | 2500 | Ac und tr | Ci | 8.6 | II.2 | 82 |
| " | 22.45 | " | " | 9 | 250 | I2.6 | 8 | | 758.0 | II.5 | 8 | | 2500 | Ac und tr | Ci | 8.9 | II.4 | 84 |
| " | 23.00 | " | " | 8 | 250 | I3.2 | 8 | | 758.I | II.5 | 6 | | 2000 | Ac und tr | Ci | 8.6 | II.2 | 82 |
| " | 23.I5 | " | " | 7 | 250 | I3.2 | 8 | | 758.3 | II.5 | 5 | | 2000 | Ac und tr | Ci und | 8.6 | II.2 | 82 |
| " | 23.30 | 50.0 | I62.6 | 8 | 250 | I2.5 | 8 | | 758.8 | II.6 | 4 | | > 2500 | Ac und tr | Ci und | 8.8 | II.3 | 82 |
| 10.09.76 | 23.45 | 50.0 | I62.6 | 8 | 260 | I3.I | 8 | | 758,5 | II.5 | 6 | | 2500 | Ac und tr | Ci und | 8.6 | II.2 | 82 |

REPRODUCIBILITY OF THE ORIGINAL PAGE IS POOR

| I | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | I0 | II | I2 | I3 | I4 | I5 | I6 | I7 | I8 | I9 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| II.09.76 | 00.00 | 50.0 c | I62.6 в | 7 | – | – | 8 | | 758.8 | II.6 | 6 | – | 2500 | Acundtr | Ci | 8.8 | II.3 | 82 |
| (обмен Б) | 00.I5 | " | " | 7 | 260 | I3.8 | 8 | | 758.8 | II.5 | 6 | – | 2500 | Acundtr | Ci | 8.9 | II.4 | 84 |
| " | 00.30 | " | " | 7 | 260 | I3.5 | 8 | | 758.4 | II.5 | 6 | – | 2500 | Acundtr | Ci | 8.6 | II.2 | 82 |
| " | 00.45 | " | " | 5 | 270 | I2.5 | 8 | | 758.5 | II.5 | 4 | – | 2500 | Acundtr | Ci | 8.6 | II.2 | 82 |
| " | 0I.00 | " | " | 5 | 270 | I3.3 | 8 | | 758.6 | II.5 | 4 | – | 2500 | Acundtr | Ci | 8.6 | II.2 | 82 |
| " | 0I.I5 | " | " | 5 | 270 | I4.8 | 8 | | 758.4 | II.7 | 4 | – | 2500 | Acundtr | Ci | 8.9 | II.4 | 83 |
| " | 0I.30 | " | " | 5 | 260 | I4.4 | 8 | | 758.8 | II.7 | 4 | – | 2500 | Acundtr | Ci | 8.9 | II.4 | 83 |
| " | 0I.45 | " | " | 5 | 250 | I6.I | 8 | | 758.7 | II.7 | 4 | – | 2500 | Acundtr | Ci | 8.9 | II.4 | 83 |
| " | 02.00 | " | " | 5 | 250 | I5.8 | 8 | | 758.9 | II.7 | 4 | – | 2500 | Acundtr | Ci | 8.9 | II.4 | 83 |
| " | 02.I5 | " | " | 7 | 260 | I5.6 | 8 | | 758.9 | I2.I | 7 | – | 2500 | Actr | – | 8.2 | I0.9 | 77 |
| " | 02.30 | " | " | 7 | 270 | I5.I | 8 | | 758.7 | I2.2 | 7 | – | 2500 | Actr | – | 8.4 | II.0 | 77 |
| " | 02.45 | " | " | 8 | 250 | I6.2 | 8 | | 758.2 | II.8 | 8 | – | 2500 | Actr | – | 8.4 | II.0 | 80 |
| " | 03.00 | " | " | 8 | 240 | I5.3 | 8 | | 758.I | II.8 | 8 | – | 2500 | Actr | – | 8.4 | II.0 | 80 |
| " | 03.I5 | " | " | 5 | 250 | I5.5 | 8 | | 758.I | II.7 | 5 | – | 2500 | Actr | – | 8.2 | I0.9 | 80 |
| " | 03.30 | " | " | 7 | 260 | I4.8 | 8 | | 758.5 | II.8 | 7 | – | 2500 | Actr | – | 9.0 | II.5 | 83 |
| I2.09.76 | 23.30 | 50.3 | I66.0 | I0 | 20 | 2I.0 | 6 | | 742.6 | 7.3 | I0 | Fr nb Ns | 200 | – | – | 5.9 | 9.3 | 9I |
| " | 23.45 | " | " | I0 | I0 | 20.5 | 7 | | 743.3 | 7.3 | I0 | Fr nb Ns | 300 | – | – | 5.9 | 9.3 | 9I |
| I3.09.76 | 00.00 | 50.3 | I66.0 | $\boxed{I0}$ | I0 | I9.6 | 7 | | 743.5 | 7.4 | $\boxed{I0}$ | Fr nb Ns | 300 | – | – | 6.I | 9.4 | 9I |
| (обмен Б) | 00.I5 | " | " | I0 | I0 | I8.8 | 7 | | 744.8 | 7.7 | I0 | Fr nb Ns | 300 | – | – | 5.9 | 9.3 | 89 |
| " | 00.30 | " | " | $\boxed{I0}$ | I0 | I8.9 | 8 | | 744.6 | 8.0 | 8 | St fr | 300 | Acop | – | 5.8 | 9.2 | 86 |
| " | 00.45 | " | " | I0 | I0 | I9.2 | 8 | | 745.2 | 7.8 | 8 | St Sc Cu | 600 | Ac | – | 5.6 | 9.I | 86 |
| " | 0I.00 | " | " | $\boxed{I0}$ | I0 | I9.2 | 8 | | 745.7 | 8.0 | 5 | Cu St | 600 | Actr | – | 5.I | 8.8 | 82 |
| " | 0I.I5 | " | " | 6 | I0 | I9.2 | 8 | | 746.5 | 8.0 | 5 | Cu St | 600 | Actr | – | 4.I | 8.2 | 77 |
| " | 0I.30 | " | " | $\boxed{I0}$ | I0 | I6.9 | 8 | | 747.I | 8.0 | 8 | Cu Cb | 600 | Ac | – | 4.I | 8.2 | 77 |
| " | 0I.45 | " | " | $\boxed{I0}$ | I0 | I5.9 | 8 | | 747.4 | 8.4 | 8 | Cu St | 600 | Actr | – | 4.8 | 4.6 | 78 |
| " | 02.00 | " | " | 8 | – | – | 8 | | 748.0 | 8.8 | 6 | Cu | 600 | Actr | – | 4.8 | 8.6 | 76 |
| " | 02.I5 | " | " | 5 | 350 | I5.5 | 8 | | 748.3 | 8.8 | 3 | Cu | 600 | Actr | – | 4.3 | 8.3 | 73 |
| " | 02.30 | " | " | 5 | 350 | I3.6 | 8 | | 749.I | 8.8 | 2 | Cu | 600 | Actr | Ci | 4.8 | 8.6 | 76 |
| " | 02.45 | " | " | 8 | 350 | I5.I | 7 | | 749.3 | 8.7 | 5 | Cu Cb | 600 | Ac | – | 5.0 | 8.7 | 78 |
| " | 03.00 | " | " | 4 | 330 | I6.6 | 8 | | 750.0 | 8.7 | I | Cu | 600 | Actr | Ci sp | 5.0 | 8.7 | 78 |
| " | 03.I5 | " | " | 4 | – | – | 8 | | 750.I | 9.0 | I | Cu | 600 | Actr | Ci sp | 5.3 | 8.9 | 77 |
| " | 03.30 | " | " | 3 | 330 | I5.0 | 8 | | 750.I | 9.5 | I | Cu | 600 | Actr | Ci sp | 4.8 | 8.6 | 72 |
| " | 03.45 | " | " | 5 | 340 | I3.9 | 8 | | 750.4 | 9.5 | 2 | Cu | 600 | Actr | Ci sp | 4.3 | 8.3 | 70 |
| " | 04.00 | " | " | 4 | 330 | I4.I | 8 | | 750.6 | 9.7 | I | Cu | 600 | Actr | Ci sp | 4.8 | 8.6 | 72 |
| " | 04.I5 | " | " | 3 | 320 | I3.2 | 8 | | 75I.I | 9.4 | I | Cu | 600 | – | Ci sp | 4.5 | 8.4 | 7I |
| " | 04.30 | 50.I | " | 3 | – | – | 8 | | 75I.2 | 9.4 | I | Cu | 600 | – | Ci sp | 4.5 | 8.4 | 7I |
| " | 04.45 | " | " | 3 | – | – | 8 | | 75I.9 | 9.4 | I | Cu | 600 | – | Ci sp | 4.0 | 8.I | 69 |
| I3.09.76 | 05.00 | 50.I | I66.0 | 3 | 320 | I2.8 | 8 | | 752.I | 9.4 | I | Cu | 600 | – | Ci sp | 4.0 | 8.I | 69 |

REPRODUCIBILITY OF THE ORIGINAL PAGE IS POOR

| I | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | I0 | II | I2 | I3 | I4 | I5 | I6 | I7 | I8 | I9 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| I3.I0.76 | 0I.I5 | 43.5 c | I5I.0B | $\boxed{10}$ | 200 | 8.8 | 8 | | 763.2 | 7.9 | 4 | St fr | 500 | Actr | – | 5.6 | 9.I | 86 |
| " | 0I.30 | " | " | 8 | 200 | 9.4 | 8 | | 763.0 | 7.9 | 3 | Sc tr | 600 | Actr | – | 5.5 | 9.0 | 85 |
| " | 0I.45 | " | " | $\boxed{10}$ | 200 | 9.4 | 8 | | 763.0 | 7.9 | 7 | Sc tr | 600 | Actr | – | 5.5 | 9.0 | 85 |
| " | 02.00 | " | " | I0 | 220 | 9.I | 7 | | 763.I | 8.0 | 5 | St fr | 400 | Ac op | – | 5.I | 8.8 | 82 |
| " | 02.I5 | " | " | I0 | 230 | 8.4 | 7 | | 763.2 | 8.I | I0 | Fr nl Ns | 400 | – | – | 5.0 | 8.7 | 8I |
| " | 02.30 | " | " | $\boxed{10}$ | 2I0 | 8.7 | 7 | | 763.0 | 8.2 | $\boxed{10}$ | Sc | 400 | – | – | 5.I | 8.8 | 8I |
| " | 02.45 | " | " | 6 | 230 | II.I | 7 | | 762.9 | 8.2 | 4 | St fr | 400 | Ac | – | 5.3 | 8.9 | 82 |
| " | 03.00 | " | " | 6 | 230 | II.0 | 7 | | 762.9 | 8.2 | 4 | St fr | 400 | Ac | – | 5.3 | 8.9 | 82 |
| " | 03.I5 | " | " | 0 | – | – | 7 | | 762.5 | 8.4 | 0 | – | – | – | – | 5.5 | 9.0 | 82 |
| " | 03.30 | " | " | 0 | – | – | 7 | | 762.9 | 9.3 | 0 | – | – | – | – | 6.I | 9.4 | 80 |
| " | 03.45 | " | " | 0 | 230 | – | 7 | | 762.9 | 9.4 | 0 | – | – | – | – | 5.9 | 9.3 | 79 |
| I3.I0.76 | 04.00 | " | " | 0 | 250 | – | 6 | | 762.8 | 9.2 | 0 | – | – | – | – | 5.9 | 9.3 | 80 |
| 25.I0.76 | 02.00 | 44.2 | I48.8 | I0 | 290 | 7.7 | 6 | • | 743.0 | 8.0 | I0 | Fr nl Ns | 400 | – | – | 7.I | I0.I | 94 |
| " | 02.I5 | " | " | I0 | 3I0 | 7.8 | 6 | • | 743.9 | 8.0 | I0 | Fr nl Ns | 400 | – | – | 7.I | I0.I | 94 |
| " | 02.30 | " | " | I0 | 320 | 7.6 | 6 | • | 743.0 | 8.0 | I0 | Fr nl Ns | 400 | – | – | 7.I | I0.I | 94 |
| " | 02.45 | " | " | I0 | 320 | 8.7 | 6 | • | 742.5 | 7.2 | I0 | Fr nl Ns | 600 | – | – | 6.8 | 9.9 | 97 |
| " | 03.00 | " | " | I0 | 320 | I2.2 | 6 | • | 742.5 | 7.2 | I0 | Fr nl Ns | 600 | – | – | 6.8 | 9.9 | 97 |
| " | 03.I5 | " | " | I0 | 330 | II.0 | 6 | • | 742.0 | 7.2 | I0 | Fr nl Ns | 600 | – | – | 7.0 | I0.0 | 98 |
| " | 03.30 | " | " | I0 | 330 | I2.4 | 6 | • | 742.0 | 7.2 | I0 | Fr nl Ns | 600 | – | – | 7.0 | I0.0 | 98 |
| " | 03.45 | " | " | I0 | 330 | II.0 | 6 | • | 742.0 | 6.8 | I0 | Fr nl Ns | 600 | – | – | 6.8 | 9.88 | I00 |
| " | 04.00 | " | " | I0 | 330 | II.2 | 6 | • | 742.0 | 6.8 | I0 | Fr nl Ns | 600 | – | – | 6.8 | 9.88 | I00 |
| " | 04.I5 | " | " | I0 | 300 | I4.0 | 7 | • | 742.9 | 6.2 | I0 | Fr nl Ns | 600 | – | – | 5.3 | 8.90 | 94 |
| " | 04.30 | " | " | I0 | 3I0 | I4.4 | 7 | • | 743.0 | 5.4 | I0 | Fr nl Ns | 600 | – | – | 4.9 | 8.68 | 97 |
| " | 04.45 | " | " | I0 | 3I0 | I4.9 | 6 | • | 743.0 | 5.4 | I0 | Fr nl Ns | 600 | – | – | 4.9 | 8.68 | 97 |
| " | 05.00 | " | " | I0 | 3I0 | I3.9 | 6 | • | 743.0 | 5.6 | I0 | Fr nl Ns | 600 | – | – | 5.I | 8.80 | 97 |
| " | 05.I5 | " | " | I0 | 3I0 | I3.2 | 6 | • | 744.0 | 6.0 | I0 | Fr nl Ns | 400 | – | – | 5.I | 8.77 | 94 |
| " | 05.30 | " | " | I0 | 3I0 | I6.4 | 6 | • | 735.8 | 5.4 | I0 | Fr nl Ns | 400 | – | – | 4.7 | 8.54 | 95 |
| " | 05.45 | " | " | I0 | 3I0 | I8.2 | 6 | • | 743.I | 5.4 | I0 | Fr nl Ns | 400 | – | – | 4.5 | 8.40 | 94 |
| " | 06.00 | " | " | I0 | 3I0 | I7.7 | 6 | • | 743.I | 5.4 | I0 | Fr nl Ns | 400 | – | – | 4.5 | 8.40 | 94 |
| " | 06.I5 | " | " | I0 | 3I0 | I5.3 | 6 | • | 743.I | 5.4 | I0 | Fr nl Ns | 400 | – | – | 4.5 | 8.40 | 94 |
| " | 06.30 | " | " | I0 | 3I0 | I5.2 | 6 | • | 743.I | 5.2 | I0 | Fr nl Ns | 400 | – | – | 4.3 | 8.28 | 94 |
| " | 06.45 | 44.2 | I49.0 | I0 | 3I0 | I5.I | 6 | • | 743.2 | 5.0 | I0 | Fr nl Ns | 400 | – | – | 4.I | 8.I6 | 94 |

| I | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | I0 | II | I2 | I3 | I4 | I5 | I6 | I7 | I8 | I9 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 30.I0.76 г | 02.00 | 42.9 | I48.4 | 8 | 300 | I6.9 | 8 | | 747.9 | 6.6 | 8 | Cu Sc | 600 | – | – | 4.5 | 8.43 | 87 |
| " | 02.I5 | " | " | 9 | 300 | I3.6 | 8 | | 749.0 | 6.6 | 9 | Cu Sc | 600 | – | – | 5.0 | 8.72 | 90 |
| " | 02.30 | " | " | 9 | 300 | I3.3 | 8 | | 749.3 | 6.8 | 9 | Cu Sc | 600 | – | – | 4.7 | 8.56 | 87 |
| " | 02.45 | " | " | 9 | 300 | I4.9 | 8 | | 750.0 | 6.8 | 9 | Cu Sc | 600 | – | – | 4.2 | 8.27 | 84 |
| " | 03.00 | " | " | I0 | 300 | I6.5 | 8 | | 750.3 | 6.8 | I0 | Cu Sc | 600 | – | – | 3.5 | 7.84 | 79 |
| " | 03.I5 | " | " | 9 | 300 | I5.7 | 8 | | 75I.8 | 6.8 | 9 | Cu Sc | 600 | – | – | 3.8 | 7.99 | 8I |
| " | 03.30 | " | " | 9 | – | – | 8 | | 752.0 | 7.0 | 8 | Cu Sc | 600 | Actr | – | 4.0 | 8.II | 8I |
| " | 03.45 | " | " | 5 | – | – | 8 | | 752.5 | 6.8 | 3 | Cu Sc | 600 | Actr | – | 4.2 | 8.27 | 84 |
| " | 04.00 | 43.0 | I49.I | 4 | 290 | I4.5 | 8 | | 752.8 | 6.8 | 2 | Cu Sc | 600 | Actr | Cu | 4.2 | 8.27 | 84 |
| " | 04.I5 | " | " | 6 | 290 | I3.0 | 8 | | 753.I | 6.8 | 5 | Cu Sc | 600 | Actr | – | 4.2 | 8.27 | 84 |
| " | 04.30 | " | " | 4 | 290 | I3.0 | 8 | | 753.5 | 6.8 | 3 | Cu Sc | 600 | Actr | – | 4.2 | 8.27 | 84 |
| " | 04.45 | " | " | 2 | 290 | I2.8 | 8 | | 754.0 | 7.0 | I | Cu Sc | 600 | Actr | – | 3.8 | 8.0 | 80 |
| " | 05.00 | " | " | 5 | 290 | I2.I | 8 | | 755.0 | 7.0 | 4 | Cu Sc | 600 | Actr | – | 3.8 | 8.0 | 80 |
| " | 05.I5 | " | " | 4 | 290 | I2.8 | 8 | | 756.0 | 7.6 | 3 | Cu | 600 | Actr | – | 3.4 | 7.8 | 75 |
| " | 05.30 | " | " | 2 | 290 | I2.9 | 8 | | 756.5 | 7.6 | 2 | Cu | 600 | – | – | 3.4 | 7.8 | 75 |
| " | 05.45 | " | " | 2 | 290 | I3.0 | 8 | | 756.5 | 7.2 | I | Cu | 600 | Actr | – | 3.2 | 7.7 | 75 |
| 30.I0.76 г. | 06.00 | 43,0 с | I49.I в | I | 290 | I3.2 | 8 | | 756.5 | 7.2 | I | Cu | 600 | – | – | 3.2 | 7.7 | 75 |

## 2 Таблицы данных о температуре морской поверхности III-2-4

| 3 Время ГМТ | 4 $T_п$ (°С) | 5 $T_к$ (°С) |
|---|---|---|
| I | 2 | 3 |
| 10.09.76 г. | | |
| 6 Координаты 50°00', с.ш. 162°12' в.д. | | |
| 12.40 | 10.6 | 10.7 |
| 45 | 10.6 | 10.7 |
| 50 | 10.5 | 10.7 |
| 55 | 10.5 | 10.7 |
| 13.00 | 10.6 | 10.7 |
| 05 | 10.4 | 10.7 |
| 10 | 10.1 | 10.6 |
| 15 | 10.2 | 10.7 |
| 20 | 10.2 | 10.7 |
| 25 | 10.2 | 10.7 |
| 30 | 10.4 | 10.7 |
| 35 | 10.6 | 10.6 |
| 40 | 10.6 | 10.6 |
| 45 | 11.3 | 10.6 |
| 50 | 11.0 | 10.6 |
| 55 | 11.2 | 10.6 |
| 14.00 | 11.3 | 10.6 |
| 10.09.76 г. | | |
| 7 Координаты 50°00', с.ш. 162°24' в.д. | | |
| 21.30 | 11.4 | 10.7 |
| 35 | 11.4 | 10.6 |
| 40 | 11.3 | 10.6 |
| 45 | 11.2 | 10.7 |
| 55 | 11.0 | 10.6 |
| 22.00 | 11.0 | 10.6 |
| 05 | 11.1 | 10.7 |
| 10 | 10.9 | 10.6 |

| 3 Время ГМТ | 4 $T_п$ (°С) | 5 $T_к$ (°С) |
|---|---|---|
| I | 2 | 3 |
| 22.15 | 10.8 | 10.6 |
| 25 | 10.7 | 10.7 |
| 30 | 10.6 | 10.6 |
| 35 | 10.8 | 10.6 |
| 40 | 10.9 | 10.6 |
| 45 | 10.9 | 10.7 |
| 50 | 11.1 | 10.7 |
| 55 | 11.2 | 10.7 |
| 23.00 | 11.1 | 10.7 |
| 05 | 11.0 | 10.7 |
| 10 | 11.1 | 10.7 |
| 15 | 11.1 | 10.8 |
| 20 | 11.1 | 10.7 |
| 25 | 11.1 | 10.7 |
| 30 | 11.3 | 10.7 |
| 11.09.76 г. | | |
| 8 Координаты 50°00' с.ш. 162°36' в.д. | | |
| 00.00 | – | 11.0 |
| 05 | – | 11.0 |
| 10 | – | 11.0 |
| 15 | – | 11.0 |
| 20 | – | 11.0 |
| 25 | – | 11.0 |
| 30 | – | 11.0 |
| 35 | – | 11.0 |
| 40 | – | 11.1 |
| 45 | – | 11.1 |
| 50 | – | 11.1 |
| 55 | – | 11.1 |

Key to text page 131 /119.

1. September 13, 1976 Coordinates 50°18' north latitude 166°00' east longitude
2. September 13, 1976 Coordinates 50°00' north latitude, 167°12' east longitude
3. October 13, 1976 Coordinates 43°30' north latitude, 151°00' east longitude

Key to text page 132 /120.

1. October 13, 1976 Coordinates 45°00' north latitude, 149°30' east longitude
2. October 25, 1976 Coordinates 44°12' north latitude, 148°48' east longitude

Key to text page 133 /121.

1. October 25, 1976 Coordinates 44°12' north latitude, 149°00' east longitude.

Key to text page 134 /122.

1. Table of Probing Results
2. Coordinates $\varphi$ = 49.8 north latitude $\lambda$ = 161.8 west longitude
3. September 9, 1976 Time 22:30 GMT Cloudy 10/10
4. H, km
5. P, mbar
6. D° 7. V, m/sec.

Key to text page 135 /123.

1. Table of Probing Results
2. Coordinates $\varphi$ = 50.8 north latitude, $\lambda$ = 162.3 west longitude
3. September 10, 1976 Time 22:00 GMT Cloudy 08/00 Ci, Ac
4. H, km
5. P, mbar
6. D° 7, V, m/sec

Key to text page 136 /124.

1. Table of Probing Results
2. Coordinates $\varphi$ = 43.5 north latitude, $\lambda$ = 151.0 east longitude
3. October 12, 1976 Time 22.00 GMT Cloudiness 0/0
4. H, km
5. P, mbar
6. D° 7. V, m/sec

Key to text page 137 /125.

1. Table of Probing Results
2. Coordinates $\varphi \doteq$ 50.3 north latitude, $\lambda \doteq \lambda$66.0 west longitude
3. September 13, 1976 Time 03:00 GMT Cloudiness 03/03 Cu, Sc
4. H, km 5, p, mbar 6. D° 7. V, m/sec

| I | 2 | 3 |
|---|---|---|
| 01.00 | – | 11.1 |
| 05 | – | 11.1 |
| 10 | – | 11.2 |
| 15 | – | 11.2 |
| 20 | – | 11.2 |
| 25 | – | 11.0 |
| 30 | – | 11.0 |
| 13.09.76 г. | | |
| Координаты | 50°18'с.ш. 166°00'в.д. | |
| 00.00 | – | 8.9 |
| 05 | – | 8.9 |
| 10 | – | 8.8 |
| 15 | – | 8.8 |
| 20 | – | 8.7 |
| 25 | – | 8.7 |
| 30 | – | 8.8 |
| 35 | – | 8.7 |
| 40 | – | 8.8 |
| 45 | – | 8.8 |
| 50 | – | 8.8 |
| 55 | – | 8.8 |
| 01.00 | – | 8.8 |
| 05 | – | 8.9 |
| 10 | – | 8.8 |
| 15 | – | 8.8 |
| 20 | – | 8.7 |
| 25 | – | 8.8 |
| 30 | – | 8.9 |
| 02.00 | – | 8.8 |
| 05 | – | 8.9 |
| 10 | – | 8.9 |
| 15 | – | 8.8 |
| 20 | – | 8.8 |
| 25 | – | 8.8 |
| 30 | – | 8.7 |
| 35 | – | 8.8 |
| 40 | – | 8.9 |

| I | 2 | 3 |
|---|---|---|
| 02.50 | – | 8.9 |
| 55 | – | 8.9 |
| 2 13.09.76 г. | | |
| Координаты | 50°00'с.ш. 167°12'в.д. | |
| 12.20 | – | 8.8 |
| 25 | – | 8.7 |
| 30 | – | 8.7 |
| 35 | – | 8.7 |
| 40 | – | 8.7 |
| 45 | – | 8.6 |
| 50 | – | 8.7 |
| 55 | – | 8.7 |
| 13.00 | – | 8.7 |
| 05 | – | 8.7 |
| 10 | – | 8.6 |
| 15 | – | 8.6 |
| 20 | – | 8.6 |
| 25 | – | 8.6 |
| 30 | – | 8.6 |
| 35 | – | 8.6 |
| 40 | – | 8.6 |
| 45 | – | 8.6 |
| 50 | – | 8.6 |
| 3 13.10.76 г. | | |
| Координаты | 43°30'с.ш. 151°00'в.д. | |
| 00.00 | 6.8 | – |
| 05 | 6.9 | – |
| 10 | 6.8 | – |
| 15 | 7.0 | – |
| 20 | 7.1 | – |
| 25 | 7.1 | – |
| 30 | 7.0 | 7.0 |
| 35 | 7.0 | 6.9 |
| 40 | 7.1 | 6.9 |
| 45 | 7.1 | 6.8 |
| 50 | 7.1 | 6.9 |

| I | 2 | 3 |
|---|---|---|
| 00.55 | 7.3 | 6.9 |
| 01.00 | 7.2 | 6.9 |
| 05 | 7.2 | 6.8 |
| 10 | 7.2 | 6.9 |
| 15 | 7.3 | 6.8 |
| 20 | 7.3 | 6.9 |
| 25 | 7.5 | – |
| 30 | 7.8 | – |
| 35 | 7.0 | – |
| 40 | 6.8 | – |
| 45 | 6.9 | – |
| 50 | 7.0 | 6.9 |
| 55 | 7.3 | 6.9 |
| 02.00 | 7.3 | 6.8 |
| 05 | 7.1 | 6.9 |
| 10 | 7.0 | 6.9 |
| 15 | 7.3 | 7.0 |
| 20 | 7.5 | 7.0 |
| 25 | 7.5 | 7.0 |
| 30 | 7.4 | 7.0 |
| 35 | 7.5 | 7.0 |
| 40 | 6.9 | 6.9 |
| 45 | 6.6 | 7.0 |
| 50 | 6.7 | 7.0 |
| 55 | 6.7 | 7.1 |
| 03.00 | 6.8 | 7.1 |
| 05 | 6.7 | – |
| 10 | 6.8 | – |
| 13.10.76 г. | | |
| Координаты | 45°00'с.ш. 149°30'в.д. | |
| 21.00 | 3.8 | – |
| 05 | 3.9 | – |
| 10 | 3.5 | – |
| 15 | 3.6 | – |
| 20 | 3.9 | – |
| 25 | 3.8 | – |
| 30 | 3.8 | 4.2 |

| I | 2 | 3 |
|---|---|---|
| 21.35 | 4.1 | 4.2 |
| 40 | 4.0 | 4.2 |
| 45 | 4.1 | 4.3 |
| 50 | 4.1 | 4.3 |
| 55 | 4.2 | 4.4 |
| 22.00 | 4.4 | 4.4 |
| 05 | 4.7 | – |
| 10 | 4.2 | – |
| 15 | 4.2 | – |
| 20 | 3.9 | – |
| 25 | 3.4 | – |
| 30 | 4.0 | – |
| 35 | 4.2 | – |
| 40 | 4.2 | – |
| 45 | 4.2 | – |
| 50 | 4.8 | – |
| 55 | 4.4 | – |
| 23.00 | 5.0 | – |
| 05 | 4.6 | – |
| 25.10.76 г. | | |
| Координаты | 44°12'с.ш. 148°48'в.д. | |
| 01.30 | 7.6 | 7.4 |
| 35 | 7.5 | 7.5 |
| 40 | 7.1 | 7.2 |
| 45 | 7.4 | 7.3 |
| 50 | 7.2 | 7.4 |
| 55 | 7.1 | 7.5 |
| 02.00 | 7.3 | 7.4 |
| 05 | 7.0 | 7.6 |
| 10 | 7.2 | 7.5 |
| 15 | 7.3 | 7.5 |
| 20 | 7.3 | 7.6 |
| 25 | 7.3 | 7.6 |
| 30 | 7.4 | 7.5 |
| 35 | 7.2 | 7.5 |
| 40 | 7.2 | 7.3 |

| I | 2 | 3 |
|---|---|---|
| 02.45 | 7.0 | 7.4 |
| 50 | 7.I | 7.5 |
| 55 | 7.4 | 7.5 |
| 03.00 | 7.I | 7.4 |
| 05 | 7.5 | 7.5 |
| I0 | 7.2 | 7.5 |
| I5 | 7.I | 7.5 |
| 20 | 7.4 | 7.4 |
| 25 | 7.5 | 7.4 |
| 30 | 7.4 | 7.3 |
| 35 | 7.6 | 7.3 |
| 40 | 7.7 | 7.5 |
| 45 | 7.4 | 7.4 |
| 50 | 7.4 | 7.3 |
| 55 | 7.4 | 7.5 |
| 04.00 | 7.3 | 7.4 |
| 05 | 7.2 | 7.4 |
| I0 | 7.3 | 7.4 |
| I5 | 7.5 | 7.5 |
| 20 | 7.6 | 7.5 |
| 25 | 7.4 | 7.5 |
| 30 | 7.5 | 7.6 |
| 35 | 7.4 | 7.5 |
| 40 | 7.3 | – |
| 45 | 7.6 | – |
| 50 | 7.5 | – |
| 55 | 7.4 | – |
| 05.00 | 7.5 | – |
| 05 | 7.7 | – |
| I0 | 7.5 | – |
| I5 | 7.6 | – |
| 20 | 7.7 | – |
| 25 | 7.8 | – |
| 30 | 7.5 | – |
| 35 | 7.6 | – |
| 40 | 7.4 | – |
| 45 | 7.5 | – |
| 50 | 7.7 | – |

| I | 2 | 3 |
|---|---|---|
| 05.55 | 7.6 | – |
| 06.00 | 7.4 | – |
| 25.I0.76 г. | | |
| Координаты | 44°I2'с.ш. I49°00'в.д. | |
| I9.00 | – | 8.4 |
| 05 | – | 8.5 |
| I0 | – | 8.4 |
| I5 | – | 8.5 |
| 20 | – | 8.4 |
| 25 | – | 8.6 |
| 30 | – | 8.3 |
| 35 | – | 8.I |
| 40 | – | 8.2 |
| 45 | – | 8.5 |
| 50 | – | 8.4 |
| 55 | – | 8.3 |
| 20.00 | – | 8.5 |

Таблица результатов зондирования III-2-5

2 Координаты φ = 49.8 с.ш.
λ = 161.8 з.д.

3 9 сентября 1976 г.
Время 22 ч.30 м. ГМТ
Облачность 10/10

| 4 H км | 5 P мб | T °C | U % | 6 Д ° | 7. V м/сек (V m/sec) |
|---|---|---|---|---|---|
| 0.01 | 1009 | 11.4 | 94 | 210 | 13 |
| 0.20 | 987 | 10.3 | 90 | 220 | 18 |
| 0.50 | 952 | 10.2 | 92 | 239 | 27 |
| 1.00 | 896 | 11.6 | 92 | 260 | 18 |
| 1.50 | 844 | 9.8 | 93 | 256 | 21 |
| 2.00 | 795 | 8.2 | 93 | 241 | 20 |
| 3.00 | 704 | 2.8 | 81 | 254 | 22 |
| 4.00 | 621 | 0.2 | 61 | 261 | 27 |
| 5.00 | 548 | -5.6 | 64 | 267 | 31 |
| 6.00 | 482 | -9.6 | 14 | 245 | 37 |
| 7.00 | 422 | -14.8 | 53 | 264 | 44 |
| 8.00 | 370 | -19.8 | 76 | 262 | 47 |
| 9.00 | 323 | -26.6 | 72 | 270 | 49 |
| 10.00 | 280 | -33.0 | 63 | 275 | 53 |
| 11.00 | 243 | -40.1 | 54 | 280 | 59 |
| 12.00 | 209 | -47.1 | 53 | 281 | 62 |
| 13.00 | 170 | -54.8 | 60 | 279 | 57 |
| 14.00 | 153 | -61.4 | 61 | 277 | 49 |
| 15.00 | 130 | -63.0 | 58 | 280 | 45 |
| 16.00 | 110 | -63.1 | 54 | 284 | 34 |
| 17.00 | 93.9 | -62.1 | 49 | 280 | 22 |
| 18.00 | 79.9 | -61.4 | 46 | 257 | 17 |
| 19.00 | 68.0 | -61.4 | 44 | 281 | 12 |
| 20.00 | 57.9 | -69.1 | 43 | 266 | 10 |
| 21.00 | 49.4 | -57.8 | 40 | 236 | 09 |
| 22.00 | 42.2 | -55.8 | 36 | 319 | 08 |
| 23.00 | 36.1 | -55.1 | 33 | 276 | 07 |
| 24.00 | 30.9 | -52.1 | 30 | 212 | 06 |
| 25.00 | 26.4 | -51.4 | 27 | 226 | 07 |
| 26.00 | 22.7 | -49.4 | 24 | 283 | 05 |
| 27.00 | 19.5 | -47.0 | 21 | 341 | 03 |
| 28.00 | 16.8 | -46.0 | | | |

Таблица результатов зондирования

2 Координаты φ = 50.8 с.ш.
λ = 162.4 з.д.

3 10 сентября 1976 г.
Время 22 ч.00 м. ГМТ
Облачность 08/00 Ci, Ac

| 1 4 | 5 | | | 6 | 7. |
|---|---|---|---|---|---|
| H км | P мб | T °C | U % | Д ° | V м/сек |
| 0.01 | 1009 | 11.0 | 85 | 250 | 10 |
| 0.20 | 986 | 9.1 | 84 | 260 | 13 |
| 0.50 | 951 | 7.7 | 81 | 276 | 23 |
| 1.00 | 895 | 7.0 | 57 | 282 | 23 |
| 1.50 | 842 | 6.8 | 33 | 277 | 23 |
| 2.00 | 792 | 5.2 | 24 | 272 | 25 |
| 3.00 | 700 | 2.3 | 21 | 271 | 31 |
| 4.00 | 618 | -2.7 | 18 | 267 | 33 |
| 5.00 | 544 | -8.8 | 24 | 263 | 35 |
| 6.77 | 477 | -16.3 | 68 | 262 | 39 |
| 7.00 | 418 | -17.6 | 66 | 268 | 47 |
| 8.00 | 365 | -23.4 | 65 | 270 | 55 |
| 9.00 | 318 | -26.4 | 52 | 265 | 59 |
| 10.00 | 276 | -32.9 | 45 | 266 | 62 |
| 11.00 | 240 | -37.5 | 41 | 272 | 63 |
| 12.00 | 207 | -45.8 | 42 | 272 | 60 |
| 13.00 | 177 | -53.6 | 46 | 254 | 62 |
| 14.00 | 151 | -60.4 | 52 | 253 | 62 |
| 15.00 | 129 | -67.0 | 54 | 256 | 55 |
| 16.00 | 109 | -61.2 | 51 | 264 | 43 |
| 17.00 | 93.1 | -59.9 | 26 | 265 | 30 |
| 18.00 | 79.3 | -59.6 | 42 | 266 | 20 |
| 19.00 | 67.5 | -63.0 | 38 | 270 | 17 |
| 20.00 | 57.4 | -61.2 | 36 | 259 | 18 |
| 21.00 | 48.9 | -56.5 | | 256 | 13 |

Таблица результатов зондирования

2. Координаты $\varphi = 43.5$ с. ш.
$\lambda = 151.0$ в. д.

3 12 октября 1976 г.
Время 22 ч.00 м. ГМТ
Облачность 0/0

| 4 | 5 | | | 6 | 7 |
|---|---|---|---|---|---|
| H км | P мб | T °C | U % | Д ° | V м/сек |
| 0.01 | 1018 | 7.6 | 75 | 290 | 09 |
| 0.20 | 994 | 6.1 | 71 | 252 | 04 |
| 0.50 | 959 | 3.8 | 75 | 237 | 06 |
| 1.00 | 901 | 1.4 | 50 | 265 | 14 |
| 1.50 | 846 | -2.0 | 64 | 262 | 15 |
| 2.00 | 794 | -5.8 | 74 | 256 | 16 |
| 3.00 | 698 | -12.8 | 73 | 276 | 18 |
| 4.00 | 612 | -16.1 | 59 | 269 | 28 |
| 5.00 | 535 | -20.4 | 55 | 264 | 32 |
| 6.00 | 467 | -26.9 | 52 | 266 | 36 |
| 7.00 | 405 | -34.8 | 52 | 262 | 39 |
| 8.00 | 350 | -42.1 | 52 | 264 | 41 |
| 9.00 | 301 | -50.3 | 48 | 259 | 43 |
| 10.00 | 258 | -56.0 | 46 | 258 | 48 |
| 11.00 | 221 | -54.2 | 45 | 256 | 51 |
| 12.00 | 189 | -52.5 | 45 | 254 | 49 |
| 13.00 | 162 | -54.4 | 42 | 254 | 48 |
| 14.00 | 138 | -54.1 | 43 | 259 | 46 |
| 15.00 | 118 | -55.2 | 43 | 257 | 36 |
| 16.00 | 101 | -54.8 | 42 | 248 | 29 |
| 17.00 | 86.4 | -54.6 | 39 | 246 | 28 |
| 18.00 | 73.9 | -56.0 | 38 | 250 | 28 |
| 19.00 | 63.2 | -53.8 | 39 | 254 | 28 |
| 20.00 | 54.0 | -56.0 | 34 | 228 | 22 |
| 21.00 | 46.2 | -54.0 | 36 | 266 | 15 |
| 22.00 | 39.5 | -53.1 | 38 | 253 | 15 |
| 23.00 | 33.9 | -50.3 | 38 | 238 | 15 |
| 24.00 | 29.0 | -52.6 | | 235 | 13 |
| 25.00 | 24.8 | -53.2 | | 217 | 15 |
| 26.00 | 21.3 | -52.8 | | 217 | 14 |
| 27.00 | 18.2 | -52.2 | | 244 | 08 |
| 28.00 | 15.6 | -50.0 | | 242 | 05 |
| 29.00 | 13.4 | -49.6 | | 225 | 05 |
| 30 | 11.5 | -49.2 | | 272 | 08 |

Таблица результатов зондирования

2. Координаты $\varphi = 50.3$ с.ш.
$\lambda = 166.0$ з.д.

3. 13 сентября 1976 г.
Время 03 ч.00 м. ГМТ
Облачность 03/03 Cu. Sc

| 4 | 5 | | | 6 | 7 |
|---|---|---|---|---|---|
| H км | P мб | T °C | U % | Д ° | V м/сек |
| 0.01 | 1004 | 9.2 | 78 | 250 | 13 |
| 0.20 | 982 | 7.5 | 81 | 322 | 13 |
| 0.50 | 946 | 4.8 | 84 | 322 | 12 |
| 1.00 | 890 | 0.6 | 78 | 334 | 14 |
| 1.50 | 836 | -2.5 | 67 | 338 | 16 |
| 2.0 | 784 | -5.4 | 82 | 323 | 18 |
| 3.00 | 690 | -8.4 | 28 | 326 | 20 |
| 4.00 | 605 | -13.6 | 38 | 322 | 22 |
| 5.00 | 530 | -19.3 | 44 | 314 | 23 |
| 6.00 | 462 | -26.9 | 48 | 310 | 26 |
| 7.00 | 402 | -34.3 | 47 | 305 | 28 |
| 8.00 | 347 | -42.2 | 46 | 302 | 26 |
| 9.00 | 299 | -49.8 | 45 | 295 | 27 |
| 10.00 | 256 | -46.8 | 41 | 270 | 32 |
| 11.00 | 221 | -43.9 | 35 | 272 | 34 |
| 12.00 | 190 | -45.4 | 31 | 268 | 35 |
| 13.00 | 163 | -47.3 | 29 | 272 | 33 |
| 14.00 | 140 | -49.0 | 28 | 270 | 29 |
| 15.00 | 120 | -50.0 | 28 | 265 | 27 |
| 16.00 | 103 | -50.8 | 28 | 262 | 26 |
| 18.00 | 75.9 | -52.4 | 27 | 276 | 18 |
| 19.00 | 65.0 | -52.4 | 27 | 286 | 14 |
| 20.00 | 55.7 | -54.0 | 27 | 275 | 12 |
| 21.00 | 47.6 | -54.4 | 26 | 258 | 12 |
| 22.00 | 40.8 | -52.6 | 26 | 323 | 11 |
| 23.00 | 34.9 | -52.8 | 26 | 296 | 06 |
| 24.00 | 29.9 | -52.1 | 26 | 283 | 07 |
| 25.00 | 25.6 | -52.6 | 26 | 287 | 07 |
| 26.00 | 22.0 | -51.6 | | 295 | 05 |
| 27.67 | 17.0 | -50.3 | | 273 | 08 |
| 28.48 | 15.0 | -47.8 | | 291 | 07 |
| 29.26 | 13.3 | -45.2 | | 297 | 07 |

Key text page 139

1. Table of Probing Results
2. Coordinates $\varphi$ = 44.2 north latitude, $\lambda$ = 149.0 east longitude.
3. October 25, 1976 Time 07:30 GMT Cloudiness 10/10 Ns, Frb
4. H, km
5. P, mbar
6. D°

Key to text page 140

1. Table of Probing Results
2. Coordinates $\varphi$ = 43.0 north latitude, $\lambda$ = 149.1 east longitude.
3. October 30, 1976 Time 06.00 GMT Cloudiness 01/01 Cu
4. H, km
5. P, mbar
6. D° 7. V, m/sec

Таблица результатов зондирования

Координаты: $\varphi = 44.2$ с.ш.
$\lambda = 149.0$ в.д.

25 октября 1976 г.
Время 07 ч.30 м. ГМТ
Облачность 10/10 $Sc$ $Fnb$

| 4 | 5 | | | 6 | 7 |
|---|---|---|---|---|---|
| H км | P мб | T °C | U % | Д ° | V м/сек |
| 0.01 | 992 | 5.4 | 97 | 310 | 18 |
| 0.20 | 969 | 3.5 | 98 | 323 | 15 |
| 0.50 | 934 | 1.0 | 100 | 324 | 16 |
| 1.00 | 878 | -0.0 | 100 | 329 | 16 |
| 1.50 | 824 | 0.5 | 100 | 354 | 07 |
| 2.00 | 775 | 1.4 | 100 | 228 | 04 |
| 3.00 | 684 | -3.3 | 100 | 250 | 07 |
| 4.00 | 602 | -7.7 | 100 | 217 | 09 |
| 5.00 | 528 | -19.3 | 71 | 212 | 14 |
| 6.00 | 461 | -25.2 | 57 | 208 | 17 |
| 7.00 | 401 | -30.4 | 47 | 205 | 21 |
| 8.00 | 348 | -34.7 | 43 | 199 | 23 |
| 9.00 | 301 | -42.2 | 41 | 198 | 29 |
| 10.00 | 259 | -45.3 | 41 | 202 | 35 |
| 11.00 | 223 | -48.4 | 40 | 208 | 36 |
| 12.00 | 191 | -53.0 | 40 | 203 | 30 |
| 13.00 | 163 | -57.3 | 41 | 206 | 34 |
| 14.00 | 140 | -56.6 | 41 | 221 | 32 |
| 15.00 | 119 | -52.9 | 41 | 224 | 25 |
| 16.00 | 102 | -57.8 | 41 | 220 | 15 |
| 17.00 | 86.8 | -62.6 | 41 | 211 | 13 |
| 18.00 | 74.0 | -57.4 | 42 | 205 | 11 |
| 19.00 | 63.1 | -58.1 | 43 | 212 | 09 |
| 20.00 | 53.9 | -57.6 | 44 | 204 | 08 |
| 21.00 | 46.1 | -52.9 | 44 | 177 | 08 |
| 22.00 | 39.4 | -58.2 | 44 | 161 | 07 |
| 23.00 | 33.6 | -55.5 | | 150 | 06 |

1 Таблица результатов зондирования

2 Координаты $\varphi = 43.0$ с.ш.
$\lambda = 149.1$ в.д.

3 30 октября 1976 г.
Время 06 ч.00 м. ГМТ
Облачность 01/01 Cu

| 4 | 5 | | | 6 | 7. |
|---|---|---|---|---|---|
| H км | P мб | T °C | U % | Д° | V м/сек |
| 0.01 | 1007 | 7.2 | 74 | 290 | 13 |
| 0.20 | 984 | 4.9 | 76 | 292 | 4 |
| 0.50 | 949 | 2.6 | 79 | 302 | 21 |
| 1.00 | 891 | -0.7 | 70 | 309 | 21 |
| 2.00 | 785 | -8.0 | 68 | 298 | 20 |
| 3.00 | 690 | -8.1 | 27 | 294 | 20 |
| 4.00 | 606 | -12.4 | 26 | 298 | 18 |
| 5.00 | 531 | -19.6 | 30 | 289 | 23 |
| 6.00 | 463 | -26.6 | 29 | 276 | 24 |
| 7.00 | 402 | -35.5 | 25 | 274 | 25 |
| 8.00 | 347 | -46.0 | 25 | 268 | 31 |
| 9.00 | 298 | -50.7 | 26 | 263 | 49 |
| 10.00 | 256 | -50.1 | 26 | 263 | 47 |
| 11.00 | 220 | -47.7 | 24 | 248 | 45 |
| 12.00 | 188 | -52.2 | 23 | 249 | 41 |
| 13.00 | 161 | -53.3 | 22 | 253 | 35 |
| 14.00 | 138 | -55.1 | 22 | 248 | 32 |
| 15.00 | 118 | -53.1 | 21 | 246 | 24 |
| 16.00 | 101 | -55.9 | 22 | 242 | 17 |
| 17.00 | 86.2 | -59.1 | 22 | 232 | 14 |
| 18.00 | 73.6 | -56.5 | 21 | 222 | 13 |
| 19.00 | 62.9 | -54.3 | 21 | 211 | 14 |
| 20.00 | 53.8 | -55.6 | 22 | 200 | 15 |
| 21.00 | 46.0 | -56.6 | 22 | 190 | 13 |
| 22.00 | 39.3 | -55.3 | 21 | 181 | 09 |
| 23.00 | 33.6 | -54.8 | | 174 | 06 |
| 24.00 | 28.8 | -53.9 | | 152 | 07 |
| 25.00 | 24.6 | -53.7 | | | |

## III.2.6. Characteristics of Waves Taken from Data from the Scientific Research Ship "Akademik Korolev". /128.

On the XVIII voyage of the scientific research ship "Akademik Korolev" wave measurements were taken simultaneously with microwaves for the purpose of interpreting the latter.

The particularities of these works consist of the fact that the wavegraph measurements (wavegraph GM-62) were conducted several meters from the stern of the ship, and the microwave measurements were taken at a distance of tens and hundreds of meters from on board the ship. And the duration of the microwave measurements was approximately 10 minutes.

In conjunction with the temporary and dimensional variability of the waves, similar statistical characteristics of the waves, determined for the same 10-minute interval at different points on the sea surface, can differ slightly. The report presents characteristics of the temporary variability of the waves for the following days: September 10, 11, 13 and October 13, 25, 30.

According to the wavegraphs for these days, the energy spectra were calculated, the inaccuracy of which along the frequency axis was evaluated according to the results of the measurements of the ship's drift speed.

Table III.2.6.a presents average values of the wave heights and periods which were calculated both for the entire program and for its separate parts. The wave heights are presented here with 15% provision of the wind component, measured with a wave-measuring attachment to the radar station. The height of the swell is presented also.

As we see from table III-2-6-a, for the waves which were realized in wavegraphs 18, 52, 59, the average values of the heights and periods of the waves increase, and in 33 of them they decrease.

In other wavegraphs we observe variations of the average height at a slightly average level.

In order to explain the reasons for this variability we conducted an analysis of the wave stages with which the wavegraphs coincided.

An analysis of materials for solving this task can be conducted by synoptic and statistical methods.

Unfortunately, the synoptic maps cannot give information on the temporal variability of the wind, comensurate with the duration of the wavegraph measurements.

In this report we used the statistical method for analyzing the wave stages. As we know, the developing (fading) wind /129. wave is considered the wind wave in which the wave heights increase (decrease) in time. Consequently, the criteria of the wave stage should be accepted as the average wave height of several subsequent wavegrams. And the processing method of the wavegrams should take into consideration the removal of the anchor.

In this experiment, the wavegraph measurements lasted approximately 30-40 minutes and included up to 400 waves, and it was believed that an uninterrupted recording of 150 waves was sufficient for computing the basic statistical parameters of the waves. Based on this, the wavegram was divided into

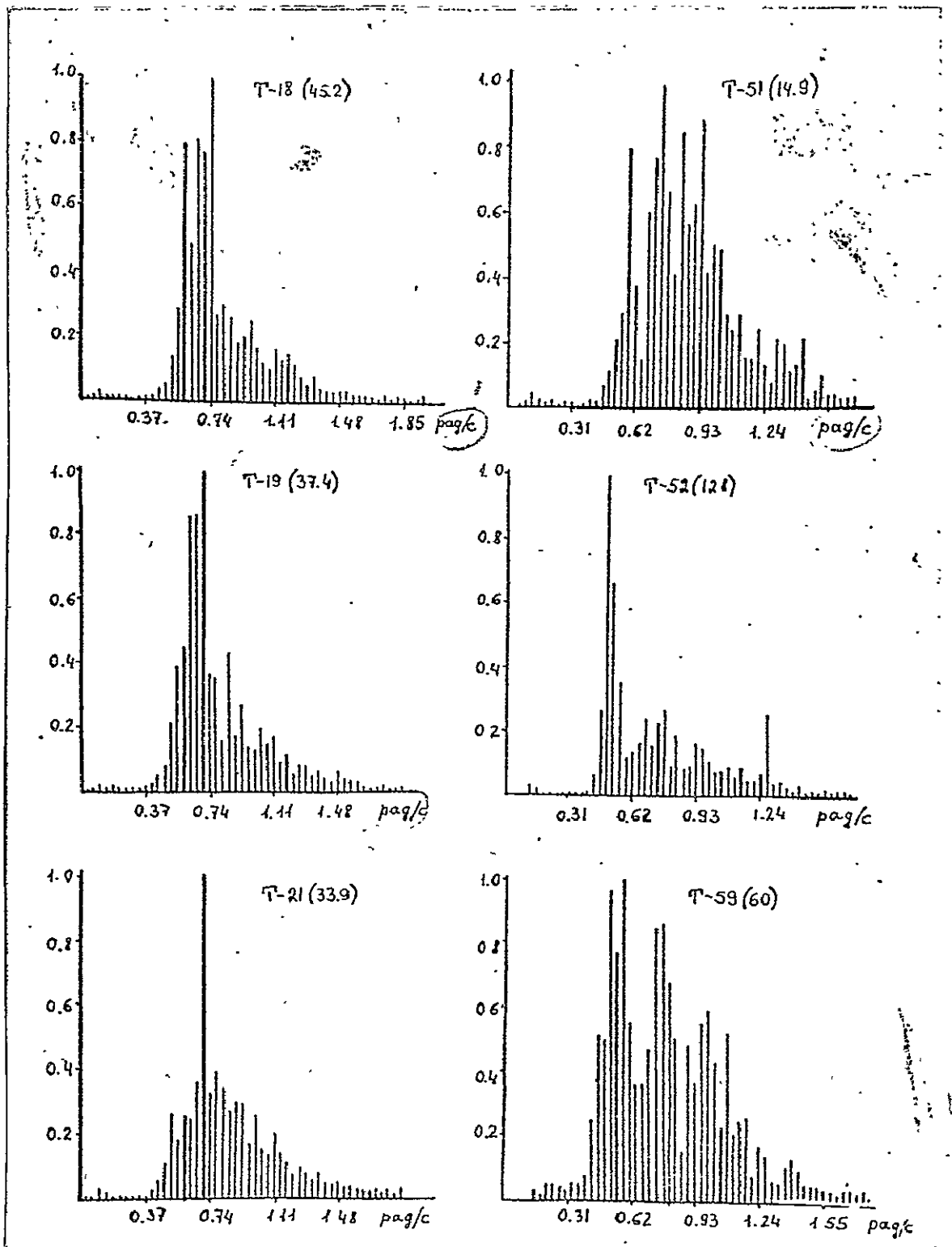



Рис.II.2-6. Энергетические спектры волнения.

Figure II.2-6. Energy spectra of the waves. /128a.

Key: 1 - rad/sec

REPRODUCIBILITY OF THE ORIGINAL PAGE IS POOR

equal sections, the average wave heights were determined for each section. In some cases the wave characteristics should not differ significantly, in others there should be noticeable differences in the average wave heights.

Thus, the computed average wave heights $\bar{h}_1$ and $\bar{h}_2$ were compares and their difference was determined $\Delta h$.

The difference obtained $\Delta h$ was compared with the confidence interval, computed according to the dispersion of the wave heights. In the case of exceeding the absolute value of the difference $\Delta h$ of the confidence interval, a conclusion was made that the wave was located in an undetermined sequence. With a decrease of the average wave height (difference with the negative sign) we can speak of the wave's decreasing during the wavegram measurement. With a positive difference we can talk about the development of the wave for the same period.

The results of this analysis are presented in table III-2-6b.

Conclusions on the stages of development of the wave must be considered approximate, because the value $\Delta h$ can be caused by the group structure of the wave also.

We computed the energy spectra of waves. In parens, after /130. the number of the wavegram, the value of the maximum ordinate in the spectrum is given ($m^2$).

The border between the frequencies of the variations of the sea's own surface (swell) and the frequencies of the forced variations (wind waves) crosses approximately at a frequency of 0.8 rad/sec.

The exact determination of this border is hindered by the inaccuracies in determining the wave periods, which occur during the wavegraph measurements as a result of wavegraph drift.

Table III-2-6b

| No. of the wavegrams | Δh | Confidence interval with confidence probability of 99% | Wave stage |
|---|---|---|---|
| I8 | +0,27 | 0,24 | development |
| 20 | -0,27 | 0,20 | fading |
| 2I | -0,I5 | 0,20 | |
| 22 | +0,05 | 0,20 | |
| 33 | +0,05 | 0,I4 | |
| 5I | +0,II | 0,I5 | |
| 52 | +0,58 | 0,25 | development |
| 59 | +0,25 | 0,24 | development |

Key to foreign text page 131. /131.

1. Table III-2-6a.
2. Time Variability of the Wave Characteristics
3. Number of the wavegram
4. Date, Time GMT
5. Wave characteristics for the entire wavegram.
6. $h_{av.}$ (M)
7. $T_{av.}$ (C)
8. number of waves
9. Time of the recording GMT
10. Wave characteristics for separate parts.
11. Duration of this section (minutes)
12. h of the winds was 15 % (M)
13. h of the swell was 15% (M)
14. Note: All of the wavegrams, except 3-16, were recorded on a wavegraph GM-62 (measurements near the ship). The wavegram 3-16 was recorded by a wavegraph GM-16 at a distance of 400-600 meters from the ship to the windward direction.

Таблица III-2-6а

Временная изменчивость характеристик волнения

| № волнограмм | Дата, время ГМТ | Характеристики волнения по всей волнограмме | | | | Характеристики волнения по отдельным отрезкам | | | | | | | | | | | | | | | | $h$ ветров. составл. 15% (м) | $h$ зыби 15% (м) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | I | | | | II | | | | III | | | | IУ | | | | | |
| | | $h_{ср.}$ (м) | $T_{ср.}$ (с) | число волн | Время записи ГМТ | $h_{ср.}$ (м) | $T_{ср.}$ (с) | число волн | продолж. отрезка (мин) | $h_{ср.}$ (м) | $T_{ср.}$ (с) | число волн | продолж. отрезка (мин) | $h_{ср.}$ (м) | $T_{ср.}$ (с) | число волн | продолж. отрезка (мин) | $h_{ср.}$ (м) | $T_{ср.}$ (с) | число волн | продолж. отрезка (мин) | | |
| I8 | I0 сент. 2-I0 | 2,I2 | 6,8 | 284 | 2-I0 2-42 | I,92 | 6,2 | I09 | II,2 | 2,22 | 7,38 | 9I | II,2 | 2,27 | 6,95 | 84 | 9,5 | | | | | | |
| I9 | I0 сент. 6-45 | I,82 | 6,9 | 284 | 6-45 7-I7 | I,92 | 7,I8 | 94 | II,2 | I,70 | 6,63 | I0I | II,2 | I,85 | 6,74 | 89 | I0 | | | | | I,48 | |
| 20 | I0 сент. I2-56 | I,47 | 6,3 | 290 | I2-56 I3-27 | I,57 | 6,63 | I0I | II,2 | I,32 | 6,02 | II2 | II,2 | I,74 | 6,43 | 77 | 8,3 | | | | | | |
| 2I | I0 сент. 22-00 | I,57 | 6,5 | 290 | 22-00 22-3I | I,60 | 6,56 | I03 | II,2 | I,45 | 6,I | III | II,2 | I,7I | 7,5 | 77 | 9,6 | | | | | I,47 | I,93 |
| 22 | II сент. 0-50 | I,53 | 5,9 | 227 | 0-50 I-I3 | I,5I | 5,83 | II6 | II,2 | I,56 | 6,06 | III | II,2 | | | | | | | | | I,59 | |
| 3-I6 | I3 сент. 2-30 | 2,85 | 7,5 | 50 | 2-30 2-36 | | | | | | | | | | | | | | | | | | |
| 33 | I3 сент. 2-0I | 0,93 | 5,6 | 270 | 2-02 2-26 | I,00 | 6,04 | 67 | 6,7 | 0,9I | 5,58 | 73 | 6,7 | 0,94 | 5,4I | 75 | 6,7 | 0,86 | 5,42 | 55 | 5 | | |
| 5I | 25 окт. 3-0I | I,II | 5,I4 | 256 | 3-0I 3-23 | 0,99 | 5,I7 | 79 | 6,7 | I,I6 | 5,32 | 76 | 6,7 | I,20 | 4,98 | 82 | 6,7 | I,0I | 5,0I | I9 | I,6 | I,I2 | I,57 |
| 52 | 25 окт. I9-59 | I,90 | 6,8 | 237 | I9-59 20-26 | I,63 | 6,24 | 64 | 6,7 | I,65 | 6,I4 | 65 | 6,7 | I,98 | 6,88 | 58 | 6,7 | 2,49 | 8,07 | 50 | 6,7 | I,3I | 2,65 |
| 59 | 29 окт. I9-40 | 2,33 | 7,0 | 230 | I9-40 20-07 | 2,I6 | 6,9 | 59 | 6,7 | 2,26 | 6,64 | 6I | 6,7 | 2,33 | 6,78 | 59 | 6,7 | 2,60 | 7,89 | 5I | 6,7 | 2,54 | 2,48 |

Примечание: Все волнограммы, кроме 3-I6, записаны волнографом ГМ-62 (измерение вблизи судна).
Волнограмма 3-I6 записана волнографом ГМ-I6 на расстоянии 400-600 м от судна с наветренной стороны.

REPRODUCIBILITY OF THE ORIGINAL PAGE IS POOR

## III.2.7. Evaluation of the Amount of Foam on the Sea Surface /132.

The reflective and radiating ability of sea foam, because it is full of air bubbles in the microwave area, is significantly different from the properties of the tranquil marine surface. This situation raised the problem of a quantitative and qualitative evaluation of the degree to which the ocean is covered with foam during microwave measurements with its various combinations and wind speeds.

The foam cover of the sea surface in the "SAMEX-76" experiment was determined with the help of ship and aircraft measurements using photographs taken with wide angle cameras. It was also determined visually from the crow's nest of the scientific research vessel "Akademik Korolev". With a complex storm situation, in order to reduce the subjective evaluation of the one observer, there were three observers to meaure the foam.

Ship measurements of the amount of foam were conducted with the help of perspective photography at an angle of 40-50° to the horizon. The picture taking was conducted using a camera with the following technical characteristics:

| | |
|---|---|
| - Aperture ratio of the camera | 1:6.3 |
| - angle of vision, deg | 102° |
| - focal distance of the objective, mm | 70 |
| - picture size, cm | 18x18 |
| - resolution of the objective | |
| in the center | 30 lin/mm |
| from the edge | 5 lin/mm |
| - shutter speed | 1/50-1/130 sec. |
| - operation cycle of the shutter | 2.7 sec. |

Methods of photogrammetry allow us to determine the wave elements and the amount of foam on the marine surface using a perspective photograph taken from a specific height and at a specific angle to the horizon.

The principal difficulty in processing the image is the complexity and man hours per job as a result of different scales of the image on the surface of the frame and the differing accuracy of the image in different parts of the object.

To simplify the processing of perspective pictures we computed a special photogrammetric network, taking into account the variation in the picture's scale, the slope of the optical axis of the aerial camera and the height of the photo.

The scale of the picture 1/M is determined based on the ratio of the focal distance of the objective f, the height at which the picture was taken H, the angle of the picture α and the distance y.

$$\frac{1}{M} = \frac{1}{H} \left(\cos \alpha - \frac{y}{f} \sin \alpha\right) \qquad (I)$$

In conjunction with the fact that with increasing the scale behind the main horizontal of the picture, the inaccuracy of determining the length of the waves and of other elements increases, the processing of perspective photos at a dsitance of more than 15 meters from the ship did not take place. A useful area of processed sections of the sea surface in this case had a value of approximately 100 $m^2$.

The method for processing the photos consisted of measuring the length of the waves and the amount of foam. Measuring the length of the waves in photos was done using a photogrammetric screen and a chart of the change in the scale depending on the change in the distance from the ship (y).

At the beginning of the measurements in the photo wave crests were isolated.

Analyzing the foam in the photos was done using a template consisting of several parallel straight lines, separated from each other by a distance of 1.5 mm. An example of the processing of the frame with the foam covering of the sea surface is given in figure 1.

During the analysis, the template was placed on the photo so that the drawn lines are parallel to the main horizontal line of the picture. Then with the help of a ruler, on each of the drawn lines there is a length of a section occupied by either foam or by water. Relating the resulting distances occupied by foam to the total length of all lines, we found the desired amount of foam in a percentile relationship to the entire area.

Data on the foam area covering the sea surface in the field of visibility of the object are presented in table III-2-7a, and visual data on the characteristics of the waves and the foam are presented in table III-2-7b.

From the table we see that an evaluation of the foam on the sea surface using visual data and photographic materials are

REPRODUCIBILITY OF THE
ORIGINAL PAGE IS POOR

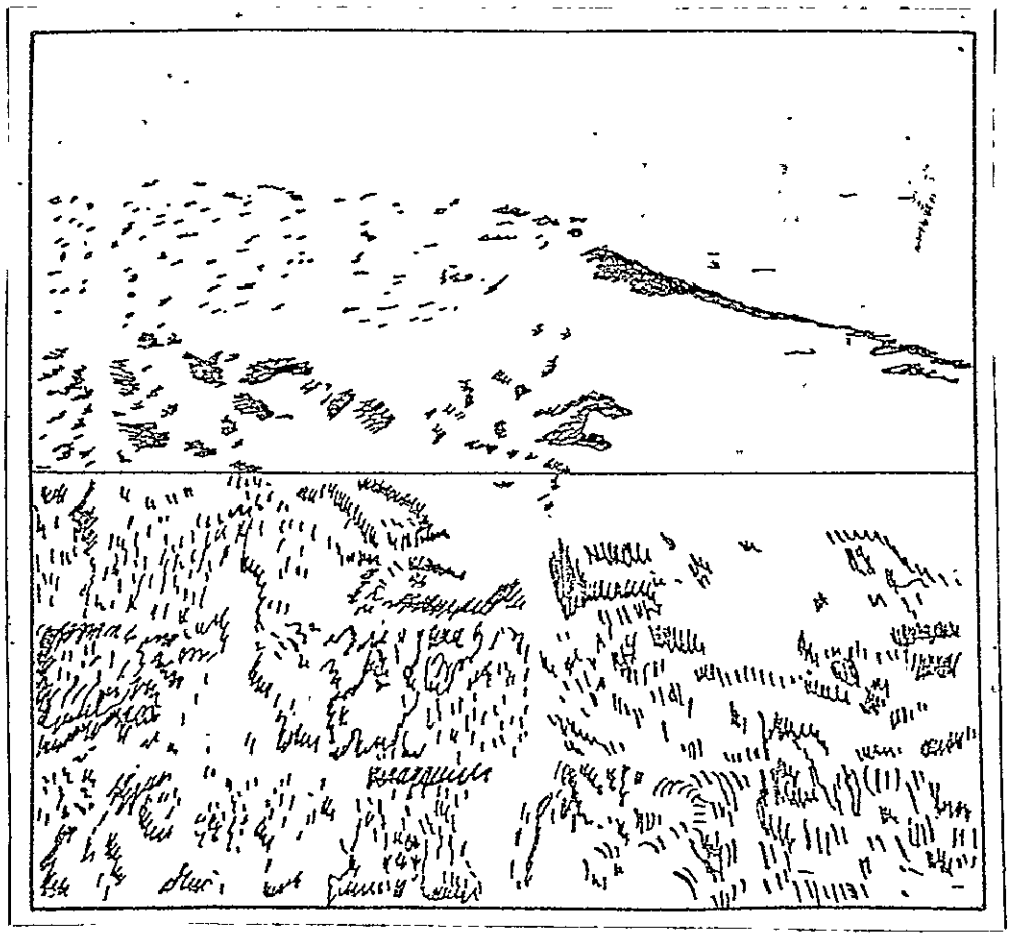


Figure 1. Foam of the crests of the sea's surface in the Pacific /134.
Ocean (50°06' north latitude, 166°00' east longitude) according to photographic data from the research vessel "Akademik Korolev". September 13, 1976.

(Frame No. 194, height - 15 meters, wind - 16 m/sec, foam covering - 38%).

significantly different from each other. Almost in all cases the visual evaluation of the foam is 2-4 times higher than that of instrumental evaluation.

Results of the Measurements. In ship conditions photographing the waves and foam takes place from the leeward side of the ship, where microwave radiometers are set up. Because of the significant dimensions of the ship (125 meters long), with /135. superstructures more than 15 meters, the latter significantly distorted the wave elements and the amount of foam. In addition, the boat itself was drifting, which further complicated the effects of the body on the waves. As the observations from the leeward side of the boat show, the smaller waves are completely distorted, smoothed out by the boat. The larger waves partially pass under the boat, are partially rebound off it and change their parameters (figure 3).

From the leeward side with weak and moderate winds and with waves, we observe a large quantity of small waves from 1-2 meters long.

With large agitation, from both the windward and the leeward sides, we observe a large amount of foam and a comparatively large quantity of small-scale waves, which form the radiothermal radiation of the water surface.

On the basis of analyses of 40 photos of the foam, one can conclude that the photos give a distorted picture of the waves around the ship's body, in relationship to both the length of the waves and the amount of foam (the height of the waves according to the photo data was not measured).

In figure 3 the results are presented of analyzing the length of the waves measured using aerial photography from the windward and leeward sides of the boat. The elements of the lengths of the waves around the ship do not exceed 3.2 meters, the most regular ones are 1-1.5 meters. The length of the waves from the leeward side are shorter.

In figure 4, one sees the results of an analysis of the amount of foam at a wind speed of 12-20 m/sec taken from meausrements on the windward and leeward sides on the boat. As the data on the observations show, the amount of foam on the leeward side because of screening by the boat is almost twice as less, and its maximum amount does not exceed 13-14%. A graphic picture of the wind and wave shadows is given by the aerialphoto of the ocean surface and of the boat taken from an IL-18.

Visual observations of the elements of the waves and of the amount of foam were conducted in an area of the sea undisturbed by the boat at sharp course angles of 30° to the left side - 0° -30° to the right side. As the observation data show, the amount of foam on the water surface increases from the wind speed in a quadratic function. As compared to the photos taken from on board the ship, the visual observations give a more objective evaluation of the amount of foam. At high wind speeds (more than 12-14 m/sec), when the sea surface is covered with readily discernible white peaks, the observers are prone to overestimate the amount of foam. This happens

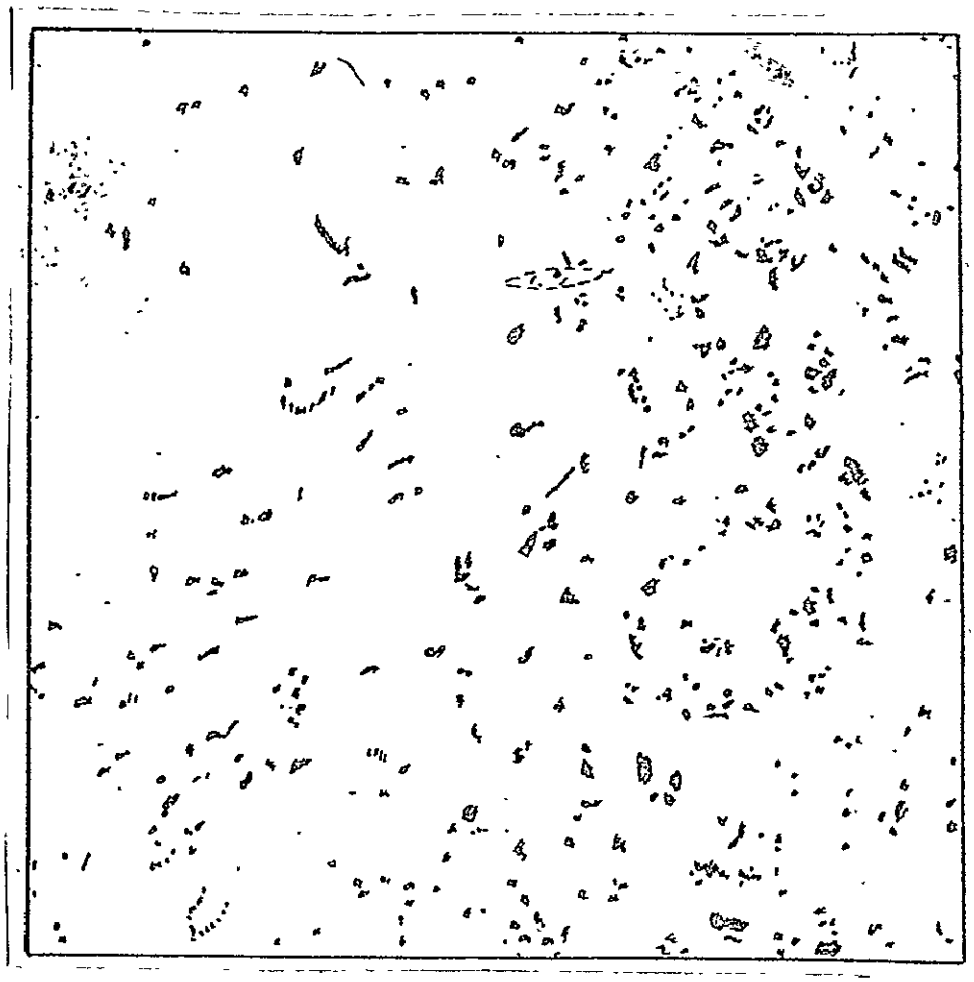


Figure 2. Foam of the crests of the sea's surface in the Pacific Ocean (50°06' north latitude, 166°00' east longitude) according to data from aerial photographs /136.

September 11, 1976.

(Frame No. 18288, plane - Il-18, height - 500 meters, Scale - 1:6000, wind - 14 m/sec, foam cover - 3.4%).

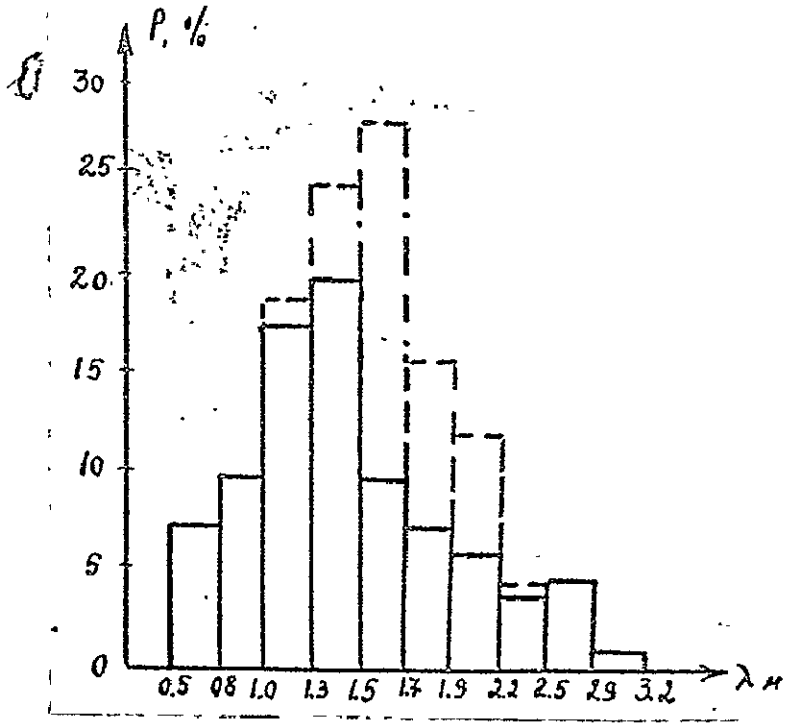



Figure 3. Distribution of the wind waves on the windward and leeward sides of the ship according to data from photos. (--- windward, ——— leeward). /137.

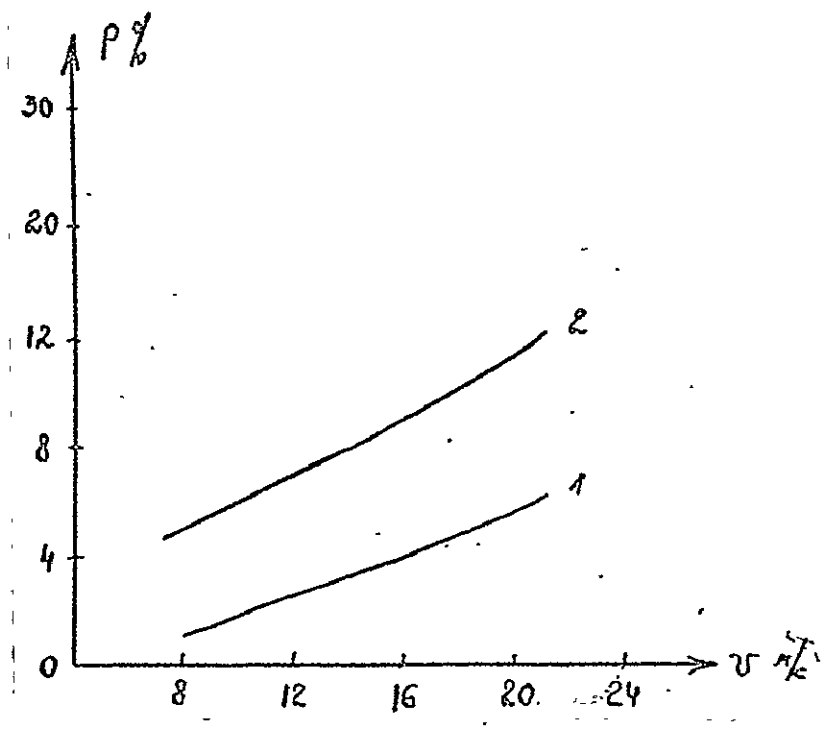



Figure 4. Dependence of the amount of foam on the wind speed on the windward (2) and the leeward sides (1).

Table III-2-7a

Data on the Sea Foam Obtained from the Photographic Materials of the Research Vessel "Akademik Korolev" in the Pacific Ocean, September 13, 1976.

| No. of the photo | Time of the photo, hour, minute, GMT | No. of the Frame | Area of the picture covered by foam, $mm^2$ | Area of the picture covered by foam % | Wind, m/sec |
|---|---|---|---|---|---|
| I. | 00-30 | I77 | 477 | 6,0 | I8,9 |
| 2. | | I78 | 327 | 4,I | I8,9 |
| 3. | 00-45 | I79 | I86 | 2,3 | I9,2 |
| 4. | | I80 | 254 | 3,2 | I9,2 |
| 5. | 0I-00 | I8I | I86 | 2,3 | I9,2 |
| 6. | | I82 | 330 | 4,2 | I9,2 |
| 7. | 02-I5 | I88 | 300 | 3,8 | I5,5 |
| 8. | 02-30 | I90 | I76 | 2,0 | I3,6 |
| 9. | 02-45 | I9I | 440 | 5,6 | I5,I |
| I0. | | I92 | 472 | 6,0 | I5,I |
| II. | 03-00 | I94 | 30I6 | 38,I | I6,6 |
| I2. | 05-00 | I95 | 3I26 | 39,6 | I2,8 |
| | | | Average | 9.7% | |

Table III-2-7b /139.

Visual Evaluation of the Sea Waves and Foam from the Research Vessel "Akademik Korolev" in the Pacific Ocean, September 13, 1976 During Photography of the Surface.

| No. of pic. | Time of photo, hour, min, GMT | No. of photos | Waves | | | | | | Foam (%) | | Wind (m/sec) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Type | h. (m) | t (sec) | λ (m) | D° | Balls | total Σ of the crest | strips | |
| I. | 00-00 | I73,I74 | BB | 5,0 | 8,0 | 70 | I5 | 7 | 35 | I5 | 20 | I9,6 |
| 2. | 00-I5 | I75,I76 | BB | 5,5 | 8,5 | 70 | I3 | 7 | 40 | I0 | 30 | I8,8 |
| 3. | 00-30 | I77,I78 | BB | 5,5 | 9,0 | 75 | I2 | 7 | 50 | I5 | 35 | I8,9 |
| 4. | 00-45 | I79,I80 | BB | 6,0 | 9,0 | 75 | I0 | 7 | 60 | 20 | 40 | I9,2 |
| 5. | 0I-00 | I8I,I82 | BB | 6,0 | 9,0 | 80 | I5 | 7 | 55 | 20 | 35 | I9,2 |
| 6. | 0I-I5 | I83,I84 | BB | 5,0 | 8,0 | 70 | 20 | 7 | 40 | I5 | 25 | I9,2 |
| 7. | 02-00 | I85,I86 | з/BB | 5,5/3,0 | 9/4 | 90/40 | I5/330 | 6 | 35 | I5 | 20 | I5,9 |
| 8. | 02-I5 | I87,I88 | з/BB | 5,5/3,0 | 9/5 | 90/40 | 20/350 | 5 | 30 | I2 | I8 | I5,5 |
| 9. | 02-30 | I89,I90 | з/BB | 5,5/3,0 | 9/5 | 90/40 | 20/350 | 5 | 30 | I2 | I8 | I3,6 |
| I0. | 02-45 | I9I,I92 | з/BB | 4,0/3,0 | 9/5 | 80/40 | 20/350 | 5 | 20 | 8 | I2 | I5,I |
| II. | 03-00 | I93,I94 | з/BB | 4,0/3,0 | 9/5 | 80/40 | 20/350 | 5 | 25 | I0 | I5 | I6,6 |
| I2. | 05-00 | I95,I96 | з/BB | 5,0/2,5 | 9/5 | 90/30 | 40/340 | 5 | I5 | I0 | 5 | I2,8 |

because of the effect of the perspective increase of the foam of the white caps of the waves toward the horizon. An approximate evaluation of such an overestimate is 10-15%. On the basis of the observations performed on the foam cover and on the wind speed, in figure 5 we present the dependence of the amount of foam on the wind speed. For comparison we also present the dependence of the amount of foam on the wind speed obtained in the "Bering" experiment for a small number of observations, and also the experimental data of D.B. Ross and V. Kardon (D.B. Ross, V. Kardon. Observations on the White Crests of the Waves and on the Wind in the Ocean. Geophysical Research Journal, v. 79, No. 3, 1974, USA, pp. 444-452). This dependency is approximated by the following equation:

$$P = 0.12\ V^2 \qquad (2)$$

where V is the wind speed in m/sec.

In connection with the fact that the airplane observations (aerial photographs) were conducted from high altitudes and allowed us to measure the foam only on the crests of the waves, these data do not give a complete picture of the total foam amount.

On the basis of simultaneous visual observations of the amount of foam on the crests and of its total amount, we obtain the dependence of the relationship of the foam on the crests to the total amount of foam on the wind speed. This

dependency helps us use the aerial photos from the Il-18 airplane to describe the characteristics of the total foam cover of the ocean (figure 6).

Airplane measurements were conducted from the Il-18 craft of the A.I. Voikov Main Geophysical Observatory. The operations for determining the amount of foam were conducted using mapping aerial photography. The photos were taken using a topographical camera having the following characteristics:

| | |
|---|---|
| aperture ratio of the camera | 1:6.8 |
| vision angle on the side of the photo | 100° |
| diagonally | 119° |
| focal distance of the objective, mm | 75 |
| size of the frame, cm | 18x18 |
| resolution of the objective in the center | 42 lin/mm |
| on the edge | 7 lin/mm |
| shutter speed | 1/75-1/750 |
| operation cycle | 2 sec. |

The airplane flights were conducted along specific routes coming out at the point where the research vessel "Akademik Korolev" was located.

Photographing the water surface was conducted at an altitude of 400 and 4000 meters. For processing and subsequent analysis we used materials from flights on September 11 and 13, 1976, taken at an altitude of 350-400 meters.

Photos from an altitude of 4000 meters, because of the small scale, turned out to be not so useful for measuring the foam cover and were not included in the analysis. It is important to point out that even the photos from an altitude of 400 meters do not help us obtain complete information on the foam cover on the slopes of the wind waves. A layer of water filled with air bubbles with a diameter of 0.2-0.5 to 2-3 mm is usually taken as a foam cover. And these have the most effect

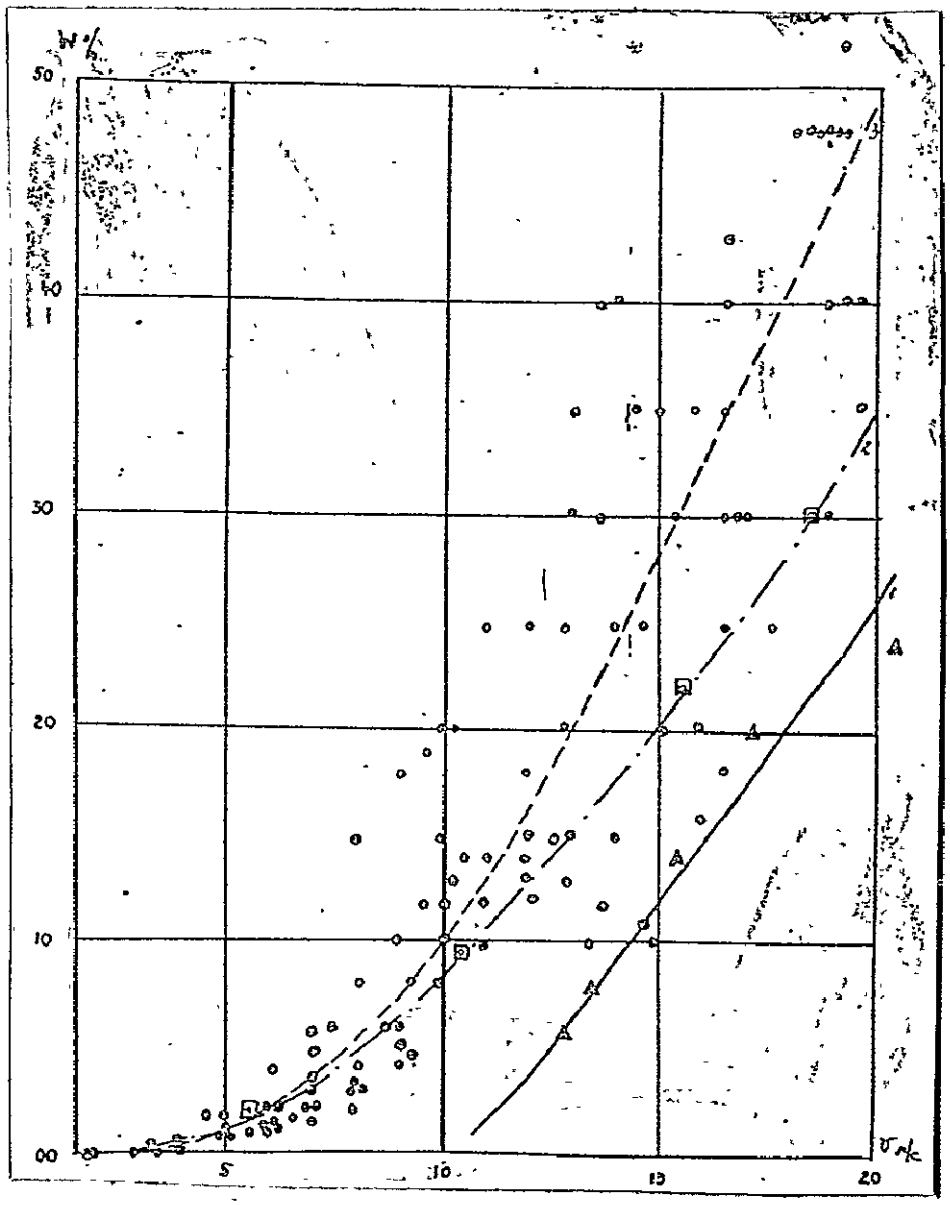



Figure 5. Dependence of the amount of foam (w%) on the wind speed (V, m/sec). Pacific Ocean, research vessel "Akademik Korolev", 1976. /141.

1. ▲ - data from the "Bering" experiment
2. ⊡ - data from D. Ross
3. • - visual observations from the research craft "Akademik Korolev"

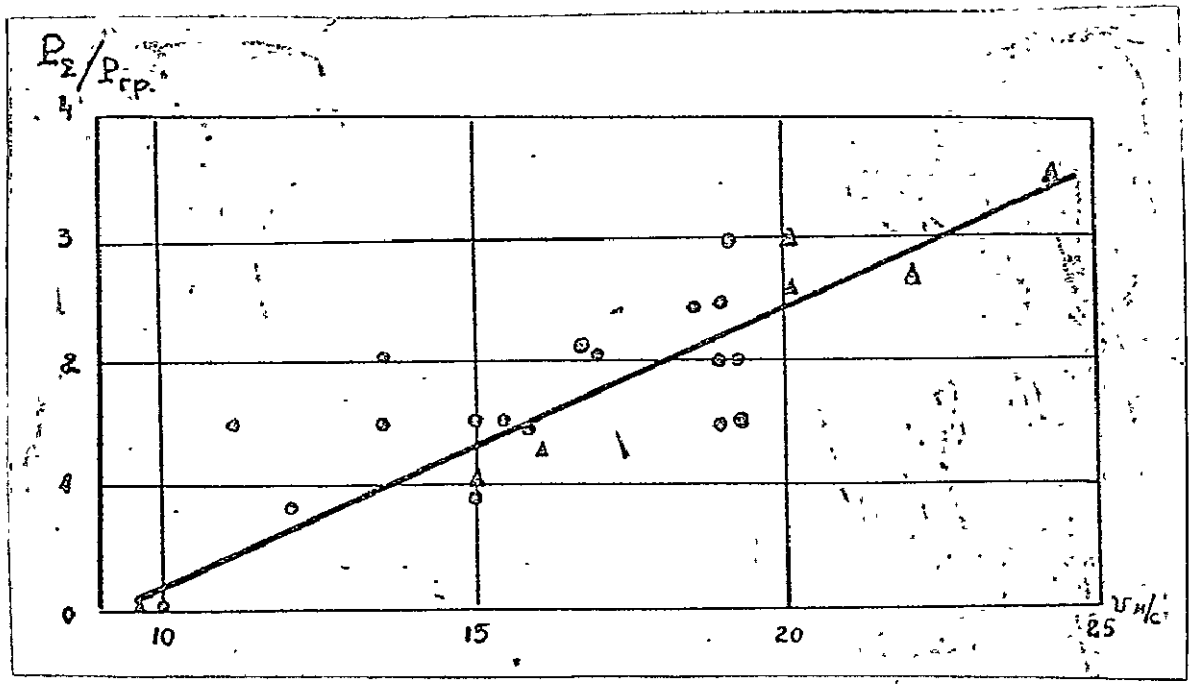



Figure 6. Relationship of the area of the foam strips of the crests ($P_1$) to the total area of the foam formations ($P_{total}$) at different wind speeds (V m/sec). /142.

I - the theoretical curve according to B. Ross and V. Kardon, 2 - the experimental data from B. Ross and V. Kardon, 3 - experimental data from the research vessel "Akademik Korolev, 1976.

— - 1
▲ - 2
• - 3

on the thermal radiowaves. To study such a foam cover it is advisable to use aerial photography equipment and choose a flight altitude which would help obtain the necessary resolution. As calculations show, the necessary scale of the picture for performing these measurements should be no less than 1:100, which is possible only on a boat, setting the camera on the bow at an altitude of 10 meters at a focal distance of 100 mm.

The aerial photos of the agitated surface taken from an Il-18 in a scale of 1:5000 give an advantageous perception of the foam on the crests of the waves and almost no information on the foam on the waves' slopes. And the basic mass of the foam with significant and strong agitation is on the waves' slopes and therefore to obtain the characteristics of the total foam content a coefficient should be introduced which depends on the relationship of the foam on the crest to the total /144. number of foam at different wind speeds. On the basis of the dependency presented in figure 6, obtained from the research vessel "Akademik Korolev", we can make corrections on the airplane's measurements to get a picture of the total area covered by foam during the experiments. Information on the are covered by foam in the Pacific Ocean according to photos taken from airplanes on September 11 and 13, 1976 can be obtained from table III-2-7b.

An analysis of the data in table III-2-7b, obtained on the basis of scheduled aerial photographs of the wave crests,

indicate a high degree of ocean foam cover, although the wind speed was 15/m/sec on September 11 and 20 m/sec on September 13. When introducing the coefficients according to the chart in figure 6, the total amount of foam increases to 5-11.2%.

Key to text page 163B /145.

1. Table III-2-7b.
2. Amount of Foam on the Crests of the Wind Waves and Its Total Amount According to Data from the Scheduled Aerial Photographs from an I1-18. September 11 and 13, 1976.
3. No. of the picture
4. No. of the frame.
5. % of foam on the crests.
6. Total amount of foam.
7. No. of the picture.
8. No. of the frame.
9. % of foam on the crests.
10. Total amount of foam.
11. No. of the picture
12. No. of the frame.
13. % of foam on the crests.
14. Total amount of foam.
15. September 11
16. Total
17. September 13
18. Total

Таблица III-2-7в

2 Количество пены на гребнях ветровых волн и суммарное ее количество по данным плановой аэрофотосъемки с самолёта ИЛ-I8 II и I3 сентября I976 г.

| 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| №№ п.п. | № кадра | % пены греб-ней | Сумм. к-во пены | №№ п.п. | № кадра | % пены греб-ней | Сумм. к-во пены | №№ п.п. | № кадра | % пены греб-ней | Сумм. к-во пены |
| | | | | | II сентября | | | | | | |
| I | I8284 | I.7 | 4.3 | 4 | I8287 | 3.I | 7.7 | 7 | I8290 | 4.5 | II.2 |
| 2 | I8285 | 3.2 | 8.0 | 5 | I8288 | 3.4 | 8.5 | 8 | I829I | 3.4 | 8.5 |
| 3 | I8286 | 2.8 | 7.0 | 6 | I8289 | 3.5 | 9.0 | 9 | I8292 | 3.7 | 9.2 |
| | | | | | | | | | Суммарн. | 3.2 | 8.2 |
| | | | | | I3 сентября | | | | | | |
| I | I8480 | 0.6 | 2.I | I6 | I8606 | I.6 | 5.6 | 3I | I8667 | 2.I | 7.4 |
| 2 | I8482 | 0.3 | I.0 | I7 | I8507 | 2.5 | 8.7 | 32 | I8560 | I.3 | 4.5 |
| 3 | I8484 | 0.6 | 2.I | I8 | I8508 | I.6 | 5.6 | 33 | I8569 | 0.7 | 2.4 |
| 4 | I8485 | 0.5 | I.7 | I9 | I85II | 3.0 | I0.5 | 34 | I8573 | I.4 | 5.9 |
| 5 | I8486 | I.4 | 4.9 | 20 | I85I2 | I.7 | 5.9 | 35 | I8576 | I.4 | 4.9 |
| 6 | I8487 | I.3 | 4.5 | 2I | I85I3 | 2.6 | 9.I | 36 | I8578 | 0.7 | 2.4 |
| 7 | I8489 | 0.8 | 2.8 | 22 | I8520 | 2.5 | 8.7 | 37 | I858I | 0.5 | I.7 |
| 8 | I8490 | 0.7 | 2.4 | 23 | I852I | I.7 | 5.9 | 38 | I8583 | I.0 | 3.5 |
| 9 | I8492 | 0.7 | 2.4 | 24 | I8534 | I.2 | 4.2 | 39 | I8587 | 0.6 | 2.I |
| I0 | I8496 | 0.4 | I.4 | 25 | I8554 | 3.4 | II.9 | 40 | I8588 | I.0 | 3.5 |
| II | I8499 | 0.7 | I.7 | 26 | I8555 | I.9 | 6.6 | 4I | I8589 | I.3 | 4.5 |
| I2 | I8500 | 0.4 | I.4 | 27 | I8557 | 0.4 | I.4 | 42 | I8593 | I.I | 3.8 |
| I3 | I850I | I.4 | 4.9 | 28 | I8559 | 0.7 | 2.4 | 43 | I8608 | 0.7 | 2.4 |
| I4 | I8504 | I.0 | 3.5 | 29 | I8560 | 0.3 | I.8 | 44 | I8644 | 0.9 | 3.I |
| I5 | I8505 | I.8 | 6.3 | 30 | I8562 | 0.8 | 2.8 | 45 | I8648 | I.I | 3.8 |
| | | | | | | | | | Суммарн. | I.2 | 4.2 |



REPRODUCIBILITY OF THE ORIGINAL PAGE IS POOR

Table III-2-8

Temperature and Salinity of the Surface Layer of the Water

| Date | Time | Temperature of the Surface Layer | Salinity of the Water Surface ‰ |
|---|---|---|---|
| I0.09.76 | 5.00 | I0.I6 | 32.973 |
| | 5.45 | I0.22 | 32.798 |
| | II.50 | I0.53 | 32.392 |
| | I8.00 | II.20 | 32.427 |
| II.09.76 | 0.30 | I0.94 | 32.903 |
| | 5.50 | I0.8I | 32.903 |
| | II.55 | 9.80 | 32.956 |
| | I7.45 | 9.30 | 32.903 |
| | 23.50 | 8.85 | 32.826 |
| I3.09.76 | 0.00 | 8.93 | 32.737 |
| | 5.I5 | 9.08 | 32.684 |
| | I2.25 | 8.70 | 32.843 |
| | I7.48 | 8.27 | 32.790 |
| 25.I0.76 | 5.54 | 7.68 | 32.6I6 |
| | II.53 | 8.43 | 32.723 |
| | I7.5I | 8.37 | 32.688 |
| | 23.52 | 9.I5 | 32.634 |
| 30.I0.76 | 0.09 | 7.08 | 33.732 |
| | 6.04 | 7.26 | 33.7I4 |
| | II.53 | 9.70 | 33.I53 |
| | I8.I0 | II.44 | 33.205 |
| | 23.49 | I2.93 | 33.328 |

REPRODUCIBILITY OF THE
ORIGINAL PAGE IS POOR

Key to text page 166 /147.

1. Date
2. Time
3. Intensity (mm/min)
4. Total amount (mm/min)
5. Time for collecting precipitation
6. Windspeed on M-92 (m/sec)
7. Wind direction (degrees)
8. avigraph
9. left
10. right
11. pluviograph "Akademik Korolev"
12. draft gage
13. Boat course (degrees)
14. Speed of the boat (knots)
15. Special marks
16. observed
17. actual
18. M-92 GGO
19. M-92 "Akademik Korolev"
20. KIV "Akademik Korolev"

Key to text page 172 /153.

1. Note: x - left side
   xx - pluviograph GGO (right), the water flowed above the hose
   xxx - very slight drizzle
   x) - salt in the draft gage
   xx) - October 13, 14, 15 the hoses of the pluviograph GGO were changed
   xxx) - from October 20 the left pluviograph does not work
   !) - on October 24 there is no tape on the ship's pluviograph, water got in the stylus, the ink is washed out
   !!) - November 4 after 9:50 there is no registering of rain on the tape of the ship's pluviograph, the drainage mechanism did not engage.

| 1 Дата | 2 Время | 3 Интенсивность (мм/мин) Плювиографы левый | 4 правый | 5 Суммарное к-во (мм/мин) ГГО левый | 6 правый | 7 Интенсивность (мм/мин) Плювиограф "Академик Королёв" | 8 Суммарное к-во (мм) | 9 Суммарное к-во (мм) Осадкомер "Академик Королёв" левый | 10 правый | 11 Время сбора осадков | 12 Скорость ветра по М-92 (м/сек) М-92 ГГО левый набл. | 13 ист. | 14 правый набл. | 15 ист. | 16 Скорость ветра по М-92 (м/сек) М-92 "Академик Королёв" левый набл. | 17 ист. | 18 правый набл. | 19 ист. | 20 Направление ветра (град) КЛВ "Академик Королёв" левый набл. | 21 ист. | 22 правый набл. | 23 ист. | 24 Курсограф Курс судна (град) | 25 Скорость судна (уз-лы) | 26 Особые отметки |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| I | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | I0 | II | I2 | I3 | I4 | I5 | I6 | I7 | I8 | I9 | 20 | 2I | 22 | 23 | 24 | 25 | 26 |
| I2/УШ | 03.I7-03.20 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0.I | 0.I | | - | - | - | - | I5.2 | - | I5.2 | - | 90 | - | 90 | - | 90 | I4.0 | |
| I3/УШ | I5.0I-I5.05 | 0 | 0 | 0 | 0 | 0 | 0 | 0.I | 0.I | | - | - | - | - | I5.6 | - | I5.6 | - | 80 | - | 90 | - | 90 | I4.0 | |
| I4/УШ | II.00-II.05 | 0.I0 | 0.I0 | 0.50 | 0.50 | 0.02 | 0.I0 | 0 | 0 | | I3.I | - | I2.8 | - | I2.0 | - | I3.0 | - | - | - | 70 | - | 90 | I4.0 | |
| | I5.02-I5.06 | 0 | 0.02 | 0 | 0.I0 | 0.07 | 0.28 | 0 | 0 | | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| | 2I.22-2I.30 | 0.20 | 0.25 | I.60 | 2.00 | 0.I5 | I.20 | I.30 | I.90 | | 9.5 | - | 9.4 | - | I7.0 | - | I7.0 | - | - | - | 90 | - | 90 | I4.0 | |
| | 22.I0-22.I5 | 0.02 | 0.02 | 0.I2 | 0.I2 | 0.02 | 0.I0 | 0 | 0 | | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| | 23.20-23.25 | 0.02 | 0.05 | 0.I2 | 0.25 | 0.03 | 0.I5 | 0.I0 | 0.I0 | | I5.0 | - | I5.2 | - | I7.0 | - | I7.0 | - | - | - | 90 | - | 90 | I4.0 | |
| I6/УШ | 22.20-22.25 | 0 | 0.25 | 0 | I.25 | 0.02 | 0.I0 | 0.I0 | 0.I0 | | - | I0.0 | - | I0.9 | - | I0.I | - | I0.4 | - | 70 | - | 70 | 0 | 0 | x |
| I7/УШ | 00.45-00.50 | 0 | 0.02 | 0 | 0.I2 | 0 | 0 | 0.I0 | 0.I0 | | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| | 04.45-04.50 | 0.07 | 0.05 | 0.37 | 0.25 | 0.03 | 0.I5 | 0 | 0 | | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| | 05.30-05.37 | 0.03 | 0.I4 | 0.25 | I.0 | 0.02 | 0.I8 | 0.I0 | 0.I0 | | - | I0.I | - | I0.4 | - | I0.7 | - | I0.9 | - | 70 | - | 70 | 0 | 0 | x |
| | 20.23-20.25 | 0 | 0 | 0 | 0 | 0 | 0 | 0.I0 | 0.I0 | | 9.6 | - | 9.6 | - | 9.7 | - | 9.3 | - | 60 | - | 60 | - | 90 | I5.0 | |
| | 22.55-23.0I | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | - | - | - | 9.9 | - | - | - | 9.0 | - | 60 | - | 60 | 0 | 0 | x |
| 20/УШ | I8.42-I8.45 | 0 | 0 | 0 | 0 | 0 | 0 | 0.I0 | 0.I0 | | 9.2 | - | 9.0 | - | 8.4 | - | 8.7 | - | 70 | - | 70 | - | 320 | I4.5 | |
| 22/УШ | 00.00-00.I0 | 0.37 | 0.30 | 3.75 | 3.00 | 0 | 0 | 3.00 | I.80 | | - | 4.0 | - | 7.0 | - | 7.0 | - | 7.7 | - | 70 | - | 70 | 0 | 0 | x |
| | 04.00-04.I0 | 0.I0 | 0.I0 | I.00 | I.00 | 0.04 | 0.40 | I.00 | I.00 | | I0.9 | - | I0.8 | - | 8.5 | - | 9.6 | - | 70 | - | 70 | - | 320 | I4.0 | |
| | 05.I8-05.25 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 9.8 | - | I0.5 | - | 8.I | - | 9.6 | - | 60 | - | 60 | - | 320 | I4.5 | |
| | 03.45-03.52 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 8.I | - | 8.3 | - | - | - | 7.8 | - | - | - | 70 | - | 320 | I4.5 | |
| | 09.20-09.28 | 0 | 0 | 0 | 0 | 0 | 0 | 0.I0 | 0.I0 | | 8.0 | - | 8.4 | - | - | - | 7.8 | - | - | - | 60 | - | 320 | I4.5 | |
| | 09.50-09.55 | 0.02 | 0.05 | 0.I2 | 0.25 | 0.02 | 0.I0 | 0.30 | 0.I0 | | 7.2 | - | 8.0 | - | - | - | 7.9 | - | - | - | 40 | - | 320 | I4.5 | |
| | I7.25-I7.27 | 0.25 | 0.I7 | 0.50 | 0.35 | 0.I0 | 0.20 | 0.I0 | 0.30 | | 7.9 | - | 7.9 | - | - | - | 6.6 | - | - | - | 60 | - | 320 | I4.5 | |
| 23/УШ | 04.30-04.32 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 7.9 | - | 7.2 | - | - | - | 6.6 | - | - | - | 50 | - | 320 | I4.5 | |
| | 07.58-08.03 | 0 | 0 | 0 | 0 | 0 | 0 | 0.I0 | 0.I0 | | 8.5 | - | 8.9 | - | - | - | 8.I | - | - | - | 70 | - | 320 | I4.5 | |
| 26/УШ | I0.30-I2.I5 | 0 | 0.0I | 0 | 0.50 | 0 | 0 | 0.20 | 0.30 | | - | 3.4 | - | 3.7 | - | 4.4 | - | 4.6 | - | 290 | - | 290 | 0 | 0 | x |
| 27/УШ | I5.00-I6.30 | 0.0I | - | 0.75 | - | 0.0I | 0.70 | - | - | | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| | I6.30-I7.35 | 0 | - | 0 | - | 0.0I | 0.I0 | - | - | | - | - | - | - | - | - | - | - | - | - | - | - | - | - | xx |
| | I7.35-I8.20 | 0.02 | - | 0.75 | - | 0.0I | 0.70 | - | - | | II.8 | - | II.I | - | I0.7 | - | - | - | I60 | - | - | - | - | - | |
| | I8.20-I8.50 | 0.08 | - | 2.50 | - | 0.I0 | 3.20 | - | - | | II.5 | - | II.8 | - | I0.5 | - | - | - | I60 | - | - | - | 290 | I5.0 | |

REPRODUCIBILITY OF THE ORIGINAL PAGE IS POOR

| I | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | I0 | II | I2 | I3 | I4 | I5 | I6 | I7 | I8 | I9 | 20 | 2I | 22 | 23 | 24 | 25 | 26 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 27/VII | I9.I5-20.I5 | 0.0I | - | 0.50 | - | 0.0I | 0.90 | - | - | | II.5 | - | II.7 | - | I0.8 | - | - | - | I60 | - | - | - | 290 | I5.0 | |
| | 20.I5-20.25 | 0.06 | - | 0.62 | - | 0.II | 0.I0 | - | - | | - | - | - | - | II.7 | - | - | - | I70 | - | - | - | 290 | I5.0 | |
| | 20.25-22.00 | 0.0 | - | 0.25 | - | 0.0I | 0.40 | 2.80 | 8.00 | I8.00-00.00 | II.8 | - | II.I | - | I0.2 | - | - | - | I70 | - | - | - | 290 | I5.0 | |
| | 22.00-22.40 | 0 | - | 0 | - | 0 | 0 | - | - | | I6.2 | - | I2.9 | - | I0.2 | - | - | - | 2I0 | - | - | - | 290 | I5.0 | |
| | 22.40-23.45 | 0 | - | 0 | - | 0.0I | 0.20 | - | - | | I6.5 | - | I5.0 | - | - | - | - | - | - | - | - | - | 290 | I5.00 | |
| 28/VII | 22.I0-22.50 | 0 | 0 | 0 | 0.30 | 0.0I | 0.I2 | - | - | | - | 8.0 | - | 5.2 | - | 7.4 | - | 7.I | - | I20 | - | I20 | 0 | 0 | x |
| | 22.50-00.00 | 0.02 | 0.0I | I.25 | I.00 | 0.0I | 0.80 | I.50 | 0.80 | 22.00-00.00 | - | 6.5 | - | 7.5 | - | 6.0 | - | 5.7 | - | II0 | - | II0 | 0 | 0 | x |
| 29/VII | 00.00-02.00 | 0.0I | 0.0I | I.00 | 0.90 | 0.0I | I.00 | - | - | | - | - | - | - | - | 5.3 | - | 5.6 | - | I00 | - | I00 | 0 | 0 | x |
| | 02.00-03.00 | 0.02 | 0.02 | I.00 | 0.70 | 0.0I | 0.6 | - | - | | - | - | - | - | - | - | - | - | - | - | - | - | 0 | 0 | x |
| | 03.00-03.30 | 0.02 | 0.02 | 0.75 | 0.50 | 0.02 | 0.75 | 3.I0 | 0.70 | 00.00-03.30 | - | - | - | - | - | - | - | - | - | - | - | - | 0 | 0 | x |
| | 03.30-05.00 | 0.03 | 0.03 | 3.00 | 2.00 | 0.02 | I.50 | - | - | | - | 8.9 | - | 8.5 | - | 7.4 | - | 7.9 | - | 60 | - | 60 | 0 | 0 | x |
| | 05.00-06.00 | 0.02 | 0.02 | I.25 | I.00 | 0.02 | 0 | - | - | | - | I0.7 | - | 8.3 | - | 8.0 | - | 7.9 | - | 60 | - | 60 | I50 | 0 | |
| | 06.00-06.40 | 0 | 0 | 0 | 0.30 | 0.0I | 0 | 0 | I.90 | 03.30-06.40 | - | I0.9 | - | 9.3 | - | 8.I | - | 7.0 | - | 60 | - | 60 | I50 | 0 | |
| 3I/VII | 0I.30-0I.50 | 0 | 0 | 0 | 0 | 0 | 0 | 0.I0 | 0.I0 | 0I.30-0I.50 | - | II.2 | - | 8.9 | - | 8.3 | - | 8.0 | - | 250 | - | 250 | I60 | 0 | |
| | 02.05-02.07 | 0 | 0 | 0 | 0 | 0 | 0 | 0.I0 | 0.I0 | 02.05-02.07 | - | II.I | - | 8.6 | - | 9.0 | - | 8.0 | - | 250 | - | 250 | I60 | 0 | |
| 2/IX | I6.30-I8.28 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.20 | I6.30-I8.28 | - | 4.0 | - | 4.3 | - | 3.8 | - | 4.2 | - | I70 | - | I70 | 260 | 0 | |
| 8/IX | 00.25-00.55 | 0 | 0 | 0 | 0 | 0 | 0 | - | - | | - | 6.I | - | 6.3 | - | 5.6 | - | 5.7 | - | 2I0 | - | 2I0 | 280 | 0 | |
| | 00.55-0I.I0 | 0 | 0.02 | 0 | 0.25 | 0.02 | 0.25 | 0.I0 | 0.30 | 00.25-0I.I0 | - | - | - | - | - | - | - | - | - | - | - | - | 280 | 0 | |
| 9/IX | 07.I5-07.40 | 0 | 0 | 0 | 0 | 0 | 0 | - | - | | - | I0.9 | - | 9.2 | - | 7.8 | - | 6.3 | - | 2I0 | - | 2I0 | 290 | 0 | |
| | 07.40-09.40 | 0.0I | 0.0I | 0 | 0.50 | 0.0I | 0.I0 | - | - | | - | I2.I | - | 9.4 | - | 8.8 | - | 8.0 | - | 270 | - | 270 | 270 | 0 | |
| | 09.40-I0.40 | 0.0I | 0.0I | 0.50 | 0.75 | 0.0I | 0.50 | - | - | | - | I2.3 | - | 9.8 | - | 9.5 | - | 8.2 | - | 270 | - | 270 | 270 | 0 | |
| | I0.40-I3.00 | 0.0I | 0.0I | 0.60 | I.25 | 0.0I | 0.90 | 0.I0 | 2.00 | 0.00-I2.00 | - | I4.0 | - | II.6 | - | I0.6 | - | 9.4 | - | 270 | - | 270 | 270 | 0 | |
| | I3.00-I4.40 | 0.0I | 0.02 | 0.75 | 2.00 | 0.0I | I.I0 | - | - | | - | I4.4 | - | II.3 | - | II.5 | - | 9.0 | - | 270 | - | 270 | 260 | 0 | |
| | I4.40-I5.I0 | 0.0I | 0.0I | 0 | 0.25 | 0.0I | 0.40 | - | - | | - | I3.I | - | II.4 | - | I0.9 | - | 6.4 | - | 270 | - | 270 | 280 | 0 | |
| | I5.I0-I8.40 | 0.0I | 0.0I | I.25 | 2.50 | 0.0I | 2.00 | 0.I0 | 7.50 | | - | I4.3 | - | I2.7 | - | II.9 | - | 6.3 | - | 270 | - | 270 | 280 | 0 | |
| | I8.40-2I.40 | 0.0I | 0.0I | 0.50 | 0.50 | 0.0I | I.40 | - | - | I2.00-2I.40 | - | I8.2 | - | I6.2 | - | I4.9 | - | I0.9 | - | 270 | - | 270 | 290 | 0 | |
| | 2I.40-23.00 | 0 | 0 | 0 | 0 | 0 | 0.40 | 0 | 0 | | - | I8.2 | - | 16.2 | - | I4.7 | - | I0.9 | - | 270 | - | 270 | 300 | 0 | |
| | 23.00-0I.40 | 0.0I | 0.0I | 0.25 | 0.50 | 0.0I | 0.60 | 0 | 0 | | - | I7.7 | - | I4.5 | - | I8.8 | - | 9.8 | - | 270 | - | 270 | 200 | 0 | |
| I0/IX | 0I.40-04.00 | 0 | 0 | 0 | 0 | 0.0I | 0.I0 | 0 | 0 | | - | | - | - | - | - | - | - | - | - | - | - | - | - | |
| I2/IX | 07.30-08.I0 | 0 | 0 | 0 | 0 | 0.0I | 0.20 | - | - | | - | 7.6 | - | 5.I | - | 4.8 | - | 5.0 | - | I40 | - | I40 | 250 | 0 | |
| | 08.I0-I0.35 | 0.0I | 0.0I | I.50 | I.50 | 0.0I | 2.I0 | - | - | - - | - | - | - | - | - | - | - | - | - | - | - | - | 250 | 0 | |
| | I0.35-II.00 | 0.03 | 0 | 0.75 | 0 | 0.02 | 0.50 | - | - | | - | 7.5 | - | 6.5 | - | 6.0 | - | 6.2 | - | I30 | - | - | 250 | 0 | |
| | II.00-I3.00 | 0.02 | 0.0I | 2.50 | I.25 | 0.03 | 3.20 | - | - | | - | 9.5 | - | 7.6 | - | 6.8 | - | 6.8 | - | I30 | - | - | 230 | - | |
| | I3.00-I4.00 | 0.02 | 0.02 | I.00 | I.50 | 0.02 | I.20 | - | - | | - | II.7 | - | I0.2 | - | 9.0 | - | 7.5 | - | II0 | - | - | I90 | 0 | |
| | I4.00-I5.00 | 0.0I | 0.02 | 0.88 | I.37 | 0.02 | I.20 | - | - | | - | I3.5 | - | II.I | - | II.7 | - | - | - | II0 | - | - | I90 | 0 | |
| | I5.00-I6.20 | 0.0I | 0.0I | 0.50 | 0.88 | 0.02 | I.20 | - | - | | - | I4.2 | - | I2.5 | - | II.6 | - | - | - | II0 | - | - | I90 | 0 | |
| | I6.20-I7.00 | 0.02 | 0.04 | 0.75 | I.60 | 0.03 | I.20 | - | - | | - | I2.0 | - | I0.7 | - | II.5 | - | 7.0 | - | II0 | - | - | I90 | 0 | |
| | I7.00-I9.30 | 0.0I | 0.0I | 0.50 | 0.80 | 0.0I | I.20 | 3.60 | 8.00 | I6.00-I8.00 | - | I2.4 | - | I0.9 | - | I0.4 | - | 7.4 | - | I00 | - | - | I90 | 0 | |

| I | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | I0 | II | I2 | I3 | I4 | I5 | I6 | I7 | I8 | I9 | 20 | 2I | 22 | 23 | 24 | 25 | 2 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| I2/IX | I9.30-22.30 | 0.0I | 0.0I | 0.75 | 0.75 | 0.0I | I.50 | - | - | | - | I8.7 | - | I5.2 | - | I4.0 | - | I2.8 | - | 60 | - | - | I50 | 0 | |
| | 22.30-00.00 | 0.0I | 0 | 0.25 | 0 | 0.0I | 0.90 | 0.20 | 2.50 | I8.00-20.00 | - | 26.8 | - | 2I.9 | - | 20.0 | - | I8.I | - | 20 | - | - | II0 | 0 | |
| I3/IX | 00.00-04.00 | 0 | 0.0I | 0 | 0.I2 | 0.0I | 0.35 | 6.00 | I4.00 | 20.00-00.00 | - | - | - | - | - | 20.0 | - | - | - | I0 | - | - | II0 | 0 | |
| I5/IX | 2I.I5-2I.45 | 0 | 0. | 0 | 0 | 0.0I | 0.35 | - | - | | 5.8 | - | 3.6 | - | 7.I | - | 5.8 | - | 200 | - | 200 | - | 90 | I4.0 | |
| | 2I.45-22.00 | 0 | 0.02 | 0 | 0.25 | 0 | 0 | 0.60 | 0.I0 | 2I.00-22.00 | - | - | - | - | - | - | - | - | - | - | - | - | 90 | I4.0 | |
| | 22.00-22.20 | 0 | 0 | 0 | 0. | 0.0I | 0.I0 | 0.I0 | 0.I0 | 22.00-22.30 | 5.9 | - | 4.I | - | 6.8 | - | 5.6 | - | - | - | I90 | - | 90 | I4.0 | |
| I6/IX | 22.20-02.00 | 0 | 0.0I | 0 | 0.50 | 0.0I | 0.I0 | - | - | | - | - | - | - | - | - | - | - | - | - | - | - | 90 | I4.0 | |
| | 04.50-05.00 | 0 | 0 | 0 | 0 | 0.02 | 0.20 | - | - | | - | I0.9 | - | 9.5 | - | 9.6 | - | 9.4 | - | 280 | - | - | I80 | 0 | |
| | 05.00-06.30 | 0.0I | 0.0I | I.I2 | 0.50 | 0.0I | I.30 | - | - | | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| | 06.30-06.50 | 0.02 | 0.03 | 0.37 | 0.05 | 0.0I | 0.20 | - | - | | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| | 06.50-07.I5 | 0.0I | 0.0I | 0.25 | 0.25 | 0.0I | 0.I5 | 2.I0 | I.70 | 04.50-07.20 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| | 07.I5-I0.I0 | 0 | 0 | 0 | 0 | 0.0I | 0.I5 | - | - | | I.2 | - | 2.9 | - | 3.6 | - | 3.8 | - | - | - | 250 | - | 90 | I4.5 | |
| I7/IX | 0I.55-02.30 | 0. | 0. | 0 | 0 | 0.0I | 0.20 | - | - | | 9.6 | - | 8.5 | - | 7.9 | - | 8.0 | - | 300 | - | - | - | 90 | I4.5 | |
| | 02.30-03.30 | 0.0I | 0.0I | 0.50 | 0.50 | 0.0I | 0.25 | 0.20 | 0.50 | 02.00-03.30 | - | - | - | - | 7.2 | - | - | - | 330 | - | - | - | 90 | I4.5 | |
| I9/IX | I0.20-I4.00 | 0.03 | 0.03 | 6.50 | 6.25 | 0.02 | 5.20 | 2.I0 | I.70 | I0.20-I2.00 | - | 5.0 | - | 4.9 | - | 4.8 | - | 4.6 | - | - | - | 70 | 330 | 0 | |
| | I4.00-I7.40 | 0.02 | 0.02 | 5.00 | 5.25 | 0.02 | 4.40 | - | - | | - | I2.I | - | I0.0 | - | I0.5 | - | 9.6 | - | - | - | 360 | 270 | 0 | |
| | I7.40-20.20 | 0 | 0 | 0 | 0 | 0.0I | 0.70 | 9.I0 | 5.50 | I2.00-2I.00 | - | I7.0 | - | I3.8 | - | I3.6 | - | 6.4 | - | 340 | - | - | 70 | 0 | |
| | 20.20-22.20 | 0.0I | 0 | 0.23 | 0 | 0.0I | I.I0 | - | - | | I8.6 | - | I4.3 | - | I4.9 | - | I2.8 | - | I0 | - | - | - | I00 | I4.0 | |
| | 22.20-00.50 | 0.02 | 0.02 | 3.00 | 3.50 | 0.03 | 4.00 | I.80 | 0.70 | 2I.00-23.30 | I0.4 | - | 9.8 | - | I0.4 | - | - | - | 20 | - | - | - | I00 | I2.0 | |
| 20/IX | 00.50-0I.35 | 0 | 0 | 0 | 0 | 0.0I | 0.60 | - | - | | - | I0.7 | - | 9.5 | - | - | - | - | - | - | - | - | 30 | 0 | |
| | 0I.35-03.00 | 0.I2 | 0.0I | I.38 | I.25 | 0.02 | I.I7 | 3.90 | I.20 | 23.30-00.00 | - | I2.7 | - | II.0 | - | - | - | I0.3 | - | - | - | I40 | 40 | 0 | |
| | 03.00-03.30 | 0 | 0 | 0 | 0 | 0.0I | 0.I5 | - | - | | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| | 03.30-04.00 | 0.04 | 0.04 | I,25 | I.25 | 0.05 | I.60 | - | - | | - | - | - | - | - | - | - | I0.6 | - | - | - | I30 | - | - | |
| 20/IX | 04.00-05.20 | 0.02 | 0.02 | I.50 | 2.00 | 0.04 | 3.60 | - | - | | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| | 05.20-06.I0 | 0.0I | 0 | 0.50 | 0 | 0.0I | 0.I0 | 6.60 | 2.90 | 00.00-07.40 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| | 06.I0-07.40 | 0 | 0.0I | 0 | 0.37 | 0 | 0 | - | - | | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| | 07.40.09.I0 | 0 | 0 | 0 | 0. | 0.0I | 0.30 | - | - | | - | - | - | - | - | - | 4.5 | - | - | - | I80 | - | 90 | I3.0 | |
| | 09.I0-II.00 | 0.0I | 0.0I | 0.25 | 0.25 | 0.0I | I.I5 | I.20 | I.70 | 07.40-I2.00 | - | 9.2 | - | 4.2 | - | 6.8 | - | - | - | 280 | - | - | 40 | 0 | |
| | II.00-I3.00 | 0.02 | 0.02 | 2.25 | 2.25 | 0.0I | I.25 | - | - | | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| | I3.00-I5.00 | 0.03 | 0.04 | 3.35 | 5.00 | 0.04 | 5.00 | - | - | | 4.I | - | 3.5 | - | 4.6 | - | 3.0 | - | 3I0 | - | - | - | 90 | I4.0 | |
| | I5.00-I6.00 | 0.02 | 0.02 | I.50 | I.50 | 0.0I | 0.60 | - | - | | 5.8 | - | 5.4 | - | 4.8 | - | - | - | 3I0 | - | - | - | 90 | I4.0 | |
| | I6.00-I6.50 | 0.02 | 0.0I | 0.75 | 0.37 | 0.02 | 0.90 | - | - | | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| | I6.50-I7.30 | 0.05 | 0.06 | 2.00 | 2.62 | 0.03 | I.30 | - | - | | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| | I7.30-I8.20 | 0.02 | 0 | 0.75 | 0 | 0.0I | 0.70 | - | - | | I4.9 | - | I6.I | - | I6.8 | - | I6.2 | - | 3I0 | - | - | - | 90 | I0.0 | |
| | I8.20-20.I0 | 0.0I | 0.0I | 0.40 | I.50 | 0.02 | 2.70 | I0.30 | 6.80 | I2.00-I9.00 | I9.8 | - | 20.4 | - | 2I.6 | - | 20.6 | - | - | - | I00 | - | 90 | I2.0 | |
| | 20.I0-2I.I0 | 0.0I | 0. | 0.20 | 0 | 0.0I | 0.I0 | 0.I0 | 0.I0 | I9.00-20.00 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| | 2I.I0-2I.55 | 0.0I | 0.0I | 0.37 | 0.50 | 0.02 | I.I0 | - | - | | - | - | - | - | 2I.7 | - | - | - | - | - | I00 | - | 90 | I2.0 | |

| I | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | I0 | II | I2 | I3 | I4 | I5 | I6 | I7 | I8 | I9 | 20 | 2I | 22 | 23 | 24 | 25 | 2 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2I/IX | 00.50-0I.I0 | 0.09 | 0.08 | I.75 | I.62 | 0 | 0 | - | - | | - | I2.4 | - | I3.0 | - | - | - | II.6 | - | - | - | II0 | 0 | 0 | x |
| | 0I.I0-0I.45 | 0.03 | 0.0I | I.00 | 0.50 | 0 | 0 | - | - | | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| | 0I.45-02.20 | 0.08 | 0.06 | 2.75 | 2.00 | 0 | 0 | - | - | | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| | 02.20-03.30 | 0.02 | 0.02 | I.25 | 1.12 | 0.04 | 3.00 | I0.0 | I.5 | 00.50-03.00 | - | I2.4 | - | I2.0 | - | - | - | II.4 | - | - | - | II0 | 0 | 0 | x |
| | 03.30-04.00 | 0.0I | 0.0I | 0.25 | 0.50 | 0.02 | 0.65 | - | - | | - | - | - | - | - | - | - | - | - | - | - | - | 240 | 0 | |
| | 04.00-05.00 | 0.0I | 0.0I | 0.25 | 0.40 | 0.02 | I.30 | - | - | | - | I4.0 | - | I2.9 | - | I2.8 | - | II.8 | - | I30 | - | - | 240 | 0 | |
| | 05.00-06.00 | 0.0I | 0.0I | 0.50 | 0.38 | 0.0I | 0.80 | - | - | | I6.3 | - | I6.4 | - | I8.9 | - | I8.0 | - | - | - | II0 | - | I00 | 9.0 | |
| | 06.00-07.00 | 0.02 | 0.03 | I.50 | I.60 | 0.04 | 2.50 | - | - | | I7.6 | - | I9.5 | - | I7.6 | - | I9.I | - | - | - | I20 | - | 90 | I3.0 | |
| | 07.00-08.00 | 0.0I | 0.0I | 0.25 | 0.25 | 0.0I | 0.30 | 2.0 | 0.6 | 03.00-08.00 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| 23/IX | 04.00-04.30 | 0 | 0 | 0 | 0 | 0.0I | 0.30 | 0 | 0 | | I5.5 | - | I6.9 | - | I7.8 | - | I6.8 | - | - | - | I20 | - | I00 | I4.0 | |
| | 04.30-05.30 | 0.0I | 0.0I | 0.50 | 0.50 | 0.0I | 0.50 | 0. | 0 | | I4.8 | - | I5.7 | - | I6.7 | - | I6.2 | - | - | - | I20 | - | I00 | I4.0 | |
| | 05.30-06.00 | 0.05 | 0.04 | I.38 | I.45 | 0.05 | I.40 | 2.I0 | 0.30 | 04.00-06.00 | I4.6 | - | I5.3 | - | I7.3 | - | I6.0 | - | - | - | II0 | - | I00 | I4.5 | |
| | 06.30-07.I0 | 0 | 0 | 0. | 0. | 0 | 0. | 0 | 0 | | I4.2 | - | I5,6 | - | I4.5 | - | I5.5 | - | - | - | II0 | - | I00 | I4.5 | x |
| | I0.50-I2.00 | 0.0I | 0.0I | 0.I0 | 0.25 | 0.0I | 0.30 | 0 | 0 | | - | - | - | - | - | - | - | - | - | - | - | - | I00 | I4.5 | |
| | I2.00-I2.30 | 0 | 0 | 0 | 0 | 0.0I | 0.I0 | 0. | 0. | 06.00-I2.30 | I3.4 | - | I5.0 | - | I3.8 | - | I4.6 | - | - | - | I20 | - | I00 | I4.5 | |
| 3/X | 02.I5-03.30 | 0.02 | 0.03 | I.50 | 2.60 | 0.02 | I.40 | 0.I0 | 3.20 | 02.I5-03.30 | I3.0 | - | I3.I | - | I2.2 | - | I2.8 | - | 2I0 | - | - | - | 260 | I5.0 | |
| | 05.50-06.50 | 0.0I | 0.0I | 0.25 | 0.62 | 0.0I | 0.30 | 0.30 | 0.70 | | 9.5 | - | 9.6 | - | II.0 | - | I0.6 | - | 240 | - | - | - | 230 | I4.0 | |
| | 06.50-09.00 | 0.0I | 0.0I | 2.00 | I.75 | 0.02 | 2.40 | 2.30 | I.20 | | 9.2 | - | 9.0 | - | I0.4 | - | I0.4 | - | 270 | - | 270 | - | 270 | I5.0 | |
| | 09.I0-09.20 | 0.05 | 0.05 | 0.50 | 0.50 | 0.02 | 0.20 | 0.I0 | 0.I0 | 06.00-09.00 | 7.8 | - | 6.5 | - | 7.3 | - | - | - | 260 | - | - | - | 270 | I5.0 | |
| 4/X | I7.00-I7.30 | 0.02 | 0.03 | 0.50 | 0.87 | 0.0I | 0.20 | - | - | | I2.4 | - | I2.8 | - | I3.5 | - | - | - | 240 | - | - | - | 270 | I2.0 | |
| | I7.30-I9.00 | 0.0I | 0.0I | 0.50 | 0.87 | 0.0I | 0.65 | 0.50 | I.00 | I7.00-I9.00 | 7.4 | - | 7.7 | - | 6.0 | - | - | - | 320 | - | - | - | 270 | I4.0 | |
| | I9.00-20.30 | 0.02 | 0.02 | I.50 | I.75 | 0.02 | I.45 | - | - | | 4.7 | - | 4.7 | - | 6.0 | - | - | - | 270 | - | 270 | - | 270 | I4.0 | |
| | 20.30-2I.I0 | 0 | 0 | 0 | 0 | 0.0I | 0.05 | 2.I0 | 2.I0 | I9.00-2I.00 | 6.0 | - | 5.9 | - | - | - | 5.5 | - | - | - | 290 | - | 270 | I4.0 | |
| | 2I.I0-2I.40 | 0.02 | 0.02 | 0.75 | 0.62 | 0.03 | 0.80 | - | - | | I0.0 | - | I0.8 | - | - | - | II.5 | - | - | - | 280 | - | 270 | I4.0 | |
| | 2I.40-22.30 | 0 | 0.0I | 0 | 0.I0 | 0.0I | 0.30 | I.40 | 0.I0 | 2I.00-22.30 | I2.6 | - | I2.0 | - | - | - | I2.2 | - | - | - | 300 | - | 270 | I4.0 | |
| 6/X | I6.30- I7.00 | 0 | 0 | 0 | 0 | 0.0I | 0.I0 | - | - | | I9.0 | - | I9.4 | - | I8.5 | - | - | - | 220 | - | - | - | 270 | I3.5 | |
| | I7.00-I9.00 | 0 | 0 | 0 | 0 | 0.0I | 0.40 | - | - | | 20.I | - | I7.0 | - | I7.2 | - | - | - | 220 | - | - | - | 270 | I3.5 | |
| | I9.30-2I.00 | 0 | 0 | 0 | 0 | 0.0I | 0.75 | 0.20 | 0.20 | I6.30-2I.00 | 20.2 | - | 20.I | - | 20.0 | - | - | - | 230 | - | - | - | 270 | I2.5 | x |
| I0/X | 22.40-23.I0 | 0 | 0 | 0 | 0 | 0.0I | 0.30 | - | - | | I7.0 | - | I3.3 | - | I3.8 | - | - | - | I80 | - | - | - | 260 | I4.0 | |
| II/X | 00.I0-0I.00 | 0 | 0 | 0 | 0 | 0.0I | 0.30 | 0.I0 | 0.I0 | 22.40-0I.00 | - | - | - | - | - | I7.2 | - | - | - | I40 | - | - | 250 | 0 | |
| | 0I.00-0I.50 | 0 | 0 | 0 | 0 | 0.02 | I.20 | - | - | | 20.3 | - | 9.3 | - | I5.3 | - | - | - | I70 | - | - | - | 270 | I3.5 | |
| | 0I.50-02.I0 | 0 | 0 | 0 | 0 | 0.0I | 0.20 | 0.I0 | I.70 | 0I.00-02.00 | 23.I | - | I0.0 | - | I7.6 | - | - | - | I70 | - | - | - | 270 | I3.5 | |
| | 02.35-02.55 | 0 | 0 | 0 | 0 | 0.04 | 0.80 | - | - | | 24.3 | - | I7.9 | - | 20.4 | - | - | - | I80 | - | - | - | 270 | I3.0 | |
| | 02.55-03.30 | 0 | 0 | 0 | 0 | 0.07 | 2.45 | 0.I0 | 2.30 | 02.00-03.00 | 23.5 | - | I6.4 | - | I9.4 | - | - | - | I80 | - | - | - | 270 | I3.0 | |
| | 04.20-04.40 | 0 | 0 | 0 | 0 | 0.02 | 0.40 | 0.20 | 0.30 | 03.00-04.40 | 24.6 | - | I9.5 | - | I9.4 | - | - | - | I90 | - | - | - | 290 | I2.0 | |
| | 05.20-05.30 | 0 | 0 | 0 | 0 | 0.03 | 0.30 | 0 | 0.20 | 04.40-05.30 | 20.3 | - | I7.6 | - | I7.6 | - | - | - | 2I0 | - | - | - | 290 | I2.0 | |

| ? | I | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | I0 | II | I2 | I3 | I4 | I5 | I6 | I7 | I8 | I9 | 20 | 2I | 22 | 23 | 24 | 25 | 26 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | I3/X | 09.50-I0.00 | - | - | - | - | 0.02 | 0.20 | 0. | 0. | 09.50-I0.00 | I5.5 | - | I5.8 | - | - | - | I8.0 | - | - | - | 340 | - | 340 | I4.0 | xx) |
| | | II.I0-II.30 | - | - | - | - | 0.06 | I.20 | I.50 | 9.6 | II.I0-II.30 | I2.8 | - | I2.6 | - | I3.6 | - | - | - | 320 | - | - | - | 340 | I4.0 | |
| | | I5.55-I6.0I | - | - | - | - | 0 | 0. | 0. | 0. | I5.55-I6.0I | - | I0.3 | - | 9.6 | - | 6.9 | - | - | - | 270 | - | - | 360 | 0 | |
| | I5/X | 03.50-05.20 | - | - | - | - | 0.02 | 2.00 | - | - | | - | I4.I | - | 9.9 | - | 9.6 | - | - | - | I35 | - | - | 240 | 0 | |
| | | 05.20-06.I0 | - | - | - | - | 0.02 | 0.80 | - | - | | - | II.8 | - | 8.8 | - | 8.8 | - | - | - | I20 | - | - | 250 | 0 | |
| 170. | | 06.I0-07.00 | - | - | - | - | 0.03 | I.30 | - | - | | - | II.2 | - | 8.4 | - | 8.3 | - | - | - | I05 | - | - | 235 | 0 | |
| | | 07.00-08.00 | - | - | - | - | 0.04 | 2.20 | - | - | | - | I0.2 | - | 8.4 | - | 8.3 | - | - | - | 90 | - | - | 235 | 0 | |
| | | 08.00-09.00 | - | - | - | - | 0.08 | 4.80 | - | - | | - | I0.7 | - | 8.I | - | 8.2 | - | - | - | 80 | - | - | 220 | 0 | |
| | | 09.00-09.25 | - | - | - | - | 0.06 | I.40 | - | - | | - | I2.0 | - | 9.8 | - | 9.5 | - | - | - | 80 | - | - | 220 | 0 | |
| | | 09.25-I0.00 | - | - | - | - | 0.03 | I.20 | - | - | | I4.9 | - | I3.6 | - | I3.8 | - | - | - | 80 | - | - | - | I30 | 8.0 | |
| | | I0.00-II.00 | - | - | - | - | 0.0I | 0.80 | - | - | | I5.7 | - | I4.I | - | I3.4 | - | - | - | 85 | - | - | - | I30 | 8.0 | |
| | | II.00-I2.00 | - | - | - | - | 0.02 | I.40 | 6.3 | I6.4 | 03.50-I2.00 | I4.I | - | - | - | I3.5 | - | - | - | 55 | - | - | - | I45 | 4.0 | |
| | | I2.00-I2.30 | - | - | - | - | 0.02 | 0.70 | - | - | | - | I6.4 | - | I3.3 | - | I2.I | - | - | - | 30 | - | - | I50 | 0 | |
| | | I2.30-I2.40 | - | - | - | - | 0.04 | 0.40 | - | - | | - | I6.4 | - | I3.2 | - | I2.I | - | - | - | 30 | - | - | I50 | 0 | |
| | | I2.40-I3.I0 | - | - | - | - | 0.04 | I.I0 | - | - | | - | I8.8 | - | I3.4 | - | I3.2 | - | - | - | 30 | - | - | I50 | 0 | |
| | | I3.I0-I3.35 | - | - | - | - | 0.02 | 0.40 | - | - | | - | I7.6 | - | I2.7 | - | I2.4 | - | - | - | 30 | - | - | I60 | 0 | |
| | | I4.30-I4.40 | - | - | - | - | 0.0I | 0.I0 | - | - | | - | 20.8 | - | - | - | I5.I | - | - | - | I0 | - | - | I20 | 0 | |
| | | I6.I0-I3.00 | - | - | - | - | 0.0I | 0.30 | - | - | | - | I4.2 | - | 9.8 | - | I0.0 | - | - | - | 340 | - | - | II0 | 0 | |
| | 20/X | 2I.00-22.00 | - | 0 | - | 0 | 0.0I | 0.20 | - | - | | - | I8.I | - | I5.0 | - | I3.8 | - | - | - | I30 | - | - | 225 | 0 | xxx |
| | | 22.00-22.50 | - | 0 | - | 0 | 0.02 | 0.80 | - | - | | - | I9.4 | - | I5.5 | - | I4.5 | - | - | - | I30 | - | - | 230 | 0 | |
| | | 22.50-23.30 | - | 0 | - | 0 | 0.0I | 0.20 | - | - | | - | 20.4 | - | I5.7 | - | I5.5 | - | - | - | I30 | - | - | 230 | 0 | |
| | | 23.30-24.00 | - | 0.02 | - | 0.50 | 0.03 | I.00 | 2.7 | 0.3 | 2I.00-00.00 | - | 20.7 | - | I6.2 | - | - | - | I5.I | - | - | - | I20 | 30 | 0 | |
| | 2I/X | 00.00-00.40 | - | 0.02 | - | I.00 | 0.06 | 2.60 | - | - | | - | 20.2 | - | I7.3 | - | - | - | I7.5 | - | - | - | I20 | 30 | 0 | |
| | | 00.40-0I.00 | - | 0.06 | - | I.25 | 0.07 | I.40 | - | - | | - | 22.0 | - | 20.5 | - | - | - | I8.I | - | - | - | I30 | 40 | 0 | |
| | | 0I.00-0I.40 | - | 0.02 | - | 0.75 | 0.03 | I.30 | - | - | | - | 22.I | - | I8.7 | - | - | - | I9.2 | - | - | - | I30 | 40 | 0 | |
| | | 0I.40-02.40 | - | 0 | - | 0 | 0.0I | 0.30 | - | - | | - | I9.9 | - | I7.2 | - | - | - | I7.2 | - | - | - | I40 | 50 | 0 | |
| | | 04.00-05.00 | - | 0 | - | 0 | 0.0I | 0.I0 | 6.2 | 0.3 | 00.00-05.00 | - | I6.7 | - | I4.0 | - | - | - | I4.3 | - | - | - | I40 | 50 | 0 | |
| | 24/X | 09.30-I0.00 | - | 0.0I | - | 0.I3 | - | - | - | - | | - | I9.9 | - | I6.0 | - | I5.0 | - | - | - | I30 | - | - | 220 | 0 | 1) |
| | | I0.00-II.00 | - | 0.0I | - | 0.50 | - | - | - | - | | - | 2I.0 | - | I6.9 | - | I6.0 | - | - | - | I30 | - | - | 220 | 0 | |
| | | II.00-I2.00 | - | 0.0I | - | 0.75 | - | - | 0.70 | 3.80 | 09.30-I2.00 | - | I6.4 | - | I3.I | - | I2.7 | - | - | - | I35 | - | - | 235 | 0 | |
| | | I2.00-I3.00 | - | 0.0I | - | 0.50 | - | - | - | - | | - | I7.5 | - | I3.5 | - | I3.2 | - | - | - | I40 | - | - | 235 | 0 | |
| | | I3.00-I4.00 | - | 0.0I | - | I.00 | - | - | - | - | | - | I5.5 | - | I3.5 | - | I5.5 | - | - | - | I40 | - | - | 220 | 0 | |
| | | I4.00-I5.00 | - | 0.0I | - | 0.50 | - | - | - | - | | - | I5.9 | - | I2.6 | - | I2.3 | - | - | - | I40 | - | - | 230 | 0 | |
| | | I5.00-I6.00 | - | 0.0I | - | 0.75 | - | - | I.00 | 5.00 | I2.00-I5.00 | - | I4.4 | - | II.6 | - | I0.9 | - | - | - | I35 | - | - | 230 | 0 | |
| | | I6.00-I7.00 | - | 0.02 | - | I.25 | - | - | - | - | | - | I3.7 | - | I0.9 | - | I0.4 | - | - | - | I30 | - | - | 225 | 0 | |
| | | I7.00-I8.00 | - | 0.03 | - | I.75 | - | - | - | - | | - | II.I | - | 9.0 | - | 8.7 | - | - | - | I40 | - | - | 230 | 0 | |
| | | I8.00-I8.30 | - | 0.03 | - | I.00 | - | - | I.90 | 9.80 | I5.00-I8.00 | - | II.3 | - | 9.4 | - | 8.9 | - | - | - | I50 | - | - | 240 | 0 | |

| I | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | I0 | II | I2 | I3 | I4 | I5 | I6 | I7 | I8 | I9 | 20 | 2I | 22 | 23 | 24 | 25 | 26 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 24/X | I8.30-I9.00 | - | 0.03 | - | I.75 | - | - | - | - | | - | II.5 | - | I0.0 | - | 9.5 | - | - | - | I50 | - | - | 230 | 0 | |
| | I9.00-20.00 | - | 0.07 | - | 4.25 | - | - | - | - | | - | 9.0 | - | 8.5 | - | 7.8 | - | - | - | I40 | - | - | 235 | 0 | |
| | 20.00-2I.00 | - | 0.04 | - | 2.25 | - | - | 4.2 | 9.5 | I8.00-2I.00 | - | 8.8 | - | 7.9 | - | 7.4 | - | - | - | I40 | - | - | 230 | 0 | |
| 27/X | 06.I5-06.30 | - | 0 | - | 0 | 0.02 | 0.30 | - | - | | I3.9 | - | I2.8 | - | I2.5 | - | - | - | 220 | - | - | - | 240 | I2.0 | |
| | 06.30-07.00 | - | 0.03 | - | I.00 | 0.0I | 0.40 | - | - | | I8.9 | - | I6.3 | - | I5.6 | - | - | - | 220 | - | - | - | 220 | I2.0 | |
| | 07.00-07.20 | - | 0.0I | - | 0.25 | 0.0I | 0.I0 | - | - | | I8.9 | - | I6.3 | - | I5.6 | - | - | - | 220 | - | - | - | 220 | I2.0 | |
| | 07.20-07.40 | - | 0.03 | - | 0.50 | 0.03 | 0.70 | - | - | | I8.7 | - | I6.4 | - | I5.7 | - | - | - | 220 | - | - | - | 220 | I2.0 | |
| | 07.40-08.30 | - | 0.0I | - | 0.0I | 0.0I | 0.I0 | 0.60 | I.30 | 06.I5-08.00 | I3.2 | - | I2.0 | - | I4.4 | - | - | - | 220 | - | - | - | 220 | I2.0 | |
| 28/X | I2.40-I3.I0 | - | - | - | - | 0.02 | 0.60 | - | - | | - | I2.8 | - | - | - | 8.8 | - | - | - | II0 | - | - | 220 | 0 | |
| | I3.I0-I4.30 | - | - | - | - | 0.0I | 0.30 | - | - | | - | I5.5 | - | - | - | II.3 | - | - | - | II0 | - | - | 2I0 | 0 | |
| | I4.30-I5.40 | - | - | - | - | 0.0I | 0.70 | 0.I0 | 0.90 | I2.40-I5.00 | - | I7.4 | - | - | - | I2.9 | - | - | - | II0 | - | - | 2I0 | 0 | |
| | I5.40-I6.40 | - | - | - | - | 0.0I | 0.20 | - | - | | - | I4.2 | - | - | - | I9.3 | - | - | - | II0 | - | - | 205 | 0 | |
| | I6.40-I8.00 | - | - | - | - | 0.0I | I.I0 | 0.I0 | I.90 | I5.00-I8.00 | - | I5.2 | - | - | - | 20.9 | - | - | - | 80 | - | - | I90 | 0 | |
| 29/X | I4.I5-I4.55 | - | 0.03 | - | I.00 | 0.03 | I.20 | - | - | | - | I0.3 | - | - | - | 9.I | - | - | - | I90 | - | - | 280 | 0 | |
| | I4.55-I6.00 | - | 0.0I | - | 0.25 | 0.0I | 0.20 | 0.I0 | I.30 | I4.I5-I6.00 | - | I2.I | - | - | - | 9.4 | - | - | - | 200 | - | - | 300 | 0 | |
| 3I/X | 08.35-08.40 | - | 0 | - | 0 | 0.04 | 0.20 | - | - | | I5.7 | - | - | - | I5.8 | - | - | - | I50 | - | - | - | I90 | I4.0 | |
| | 08.40-I0.00 | - | 0.03 | - | 2.25 | 0.03 | 2.30 | - | - | | I5.5 | - | - | - | I5.6 | - | - | - | I50 | - | - | - | I90 | I4.0 | |
| | I0.00-II.00 | - | 0.02 | - | I.00 | 0.02 | I.00 | - | - | | I5.7 | - | - | - | I6.0 | - | - | - | I50 | - | - | - | I90 | I4.0 | |
| | II.00-II.55 | - | 0 | - | 0 | 0 | 0 | - | - | | - | I5.2 | - | - | - | I0.6 | - | - | - | I60 | - | - | 260 | 0 | |
| | II.55-I2.20 | - | 0.04 | - | I.00 | 0.05 | I.20 | 0.I0 | I.90 | 08.35-I2.00 | - | I4.6 | - | - | - | 9.8 | - | - | - | I50 | - | - | 260 | 0 | |
| | I2.20-I2.50 | - | 0 | - | 0 | 0.03 | I.00 | - | - | | - | I0.8 | - | - | - | 7.7 | - | - | - | I40 | - | - | 250 | 0 | |
| | I2.50-I3.25 | - | 0.02 | - | 0.50 | 0.03 | I.00 | - | - | | - | I2.8 | - | - | - | 9.6 | - | - | - | I40 | - | - | 250 | 0 | |
| | I3.25-I3.40 | - | 0 | - | 0 | 0.02 | 0.30 | I.30 | 2.60 | I2.00-I3.40 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| 4/XI | 04.05-05.05 | - | 0 | - | 0 | 0.0I | 0.80 | - | - | | 7.0 | - | - | - | 6.5 | - | - | - | I90 | - | - | - | 230 | I5.0 | |
| | 05.05-05.20 | - | 0.02 | - | 0.38 | 0.0I | 0.I5 | I.80 | ~~0.80~~ | 04.05-05.00 | 7.2 | - | - | - | 8.3 | - | - | - | I90 | - | - | - | 230 | I5.0 | |
| | 05.20-06.30 | - | 0.0I | - | 0.50 | 0.0I | 0.I0 | - | - | | 7.5 | - | - | - | 7.9 | - | - | - | I45 | - | - | - | I80 | I4.0 | |
| | 06.30-07.20 | - | 0.0I | - | 0.I2 | 0.0I | 0.25 | 0.20 | 0.40 | 05.00-07.00 | 9.I | - | - | - | 8.8 | - | - | - | I40 | - | - | - | I80 | I4.5 | |
| | 07.20-08.00 | - | 0.0I | - | 0.50 | 0.0I | 0.30 | - | - | | 8.8 | - | - | - | 7.9 | - | - | - | I40 | - | - | - | I80 | I5.0 | |
| | 08.00-09.00 | - | 0.II | - | 6.50 | 0.08 | 4.60 | I.80 | 5.30 | 07.00-09.00 | 8.I | - | - | - | 7.6 | - | - | - | I40 | - | - | - | I80 | I4.0 | |
| | 09.00-09.30 | - | 0.02 | - | 0.62 | 0.03 | 0.80 | - | - | | I2.3 | - | - | - | I0.6 | - | - | - | I00 | - | - | - | I80 | I4.0 | |
| | 09.30-09.50 | - | 0.I4 | - | 2.87 | 0.04 | 0.80 | - | - | | II.3 | - | - | - | II.3 | - | - | - | I30 | - | - | - | I80 | I4.5 | |
| | 09.50-I0.50 | - | 0.07 | - | 4.25 | - | - | - | - | | II.9 | - | - | - | II.2 | - | - | - | I20 | - | - | - | I80 | I4.0 | |
| | I0.50-II.30 | - | 0.20 | - | 8.00 | - | - | - | - | | I2.4 | - | - | - | II.7 | - | - | - | II0 | - | - | - | I80 | I4.0 | !!) |
| | II.30-II.50 | - | 0.04 | - | 0.75 | - | - | - | - | | 6.4 | - | - | - | 5.3 | - | - | - | I60 | - | - | - | 240 | I4.5 | |
| | II.50-I2.20 | - | 0 | - | 0 | - | - | 5.40 | 20.6 | 09.00-I2.00 | 5.5 | - | - | - | 3.7 | - | - | - | I50 | - | - | - | 240 | I4.5 | |
| | I2.20-I3.00 | - | 0.03 | - | I.25 | - | - | - | - | | 9.3 | - | - | - | 7.I | - | - | - | I50 | - | - | - | 240 | I5.0 | |
| | I3.00-I3.30 | - | 0.02 | - | 0.50 | - | - | - | - | | 9.5 | - | - | - | 7.8 | - | - | - | I60 | - | - | - | 240 | I5.0 | |

| I | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | I0 | II | I2 | I4 | I5 | I6 | I7 | I8 | I9 | 20 | 2I | 22 | 23 | 24 | 25 | 26 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4/XI | I3.30-I4.00 | - | 0.07 | - | 2.00 | - | - | - | - | | I0.7 | - | - | - | II.7 | - | - | - | I80 | - | - | - | 240 | I5.0 |
| | I4.00-I4.30 | - | 0.05 | - | I.75 | - | - | - | - | | I0.8 | - | - | - | 9.9 | - | - | - | I60 | - | - | - | 240 | I5.0 |
| | I4.30-I4.40 | - | 0.27 | - | 2.75 | - | - | I.40 | I0.I | I2.00-I4.40 | 9.7 | - | - | - | 9.4 | - | - | - | 200 | - | - | - | 240 | I5.0 |
| | I8.25-I9.35 | - | 0.0I | - | 0.25 | - | - | - | - | | 3.2 | - | - | - | 3.6 | - | - | - | 270 | - | - | - | 270 | I5.0 |
| | I9.35-2I.00 | - | 0.0I | - | 0.37 | - | - | I.70 | 0.4 | I8.25-2I.00 | - | - | 5.3 | - | - | - | 4.9 | - | - | - | 360 | - | 270 | I5.0 |
| | 2I.00-23.00 | - | 0.0I | - | 0.20 | - | - | - | - | | - | - | II.5 | - | - | - | 9.7 | - | - | - | 360 | - | 270 | I5.0 |
| | 23.00-00.35 | - | 0.0I | - | 0.20 | - | - | 0.90 | 0.I | 2I.00-00.00 | - | - | I0.I | - | - | - | 8.2 | - | - | - | 360 | - | 270 | I5.0 |
| 5/XI | 00.35-02.00 | - | 0.0I | - | 0.83 | - | - | - | - | | - | - | 9.0 | - | - | - | 7.4 | - | - | - | 360 | - | 260 | I5.0 |
| | 02.00-03.00 | - | 0.0I | - | 0.50 | - | - | I.I0 | 0.4 | 00.00-03.00 | - | - | 9.8 | - | - | - | 8.2 | - | - | - | 355 | - | 250 | I5.0 |
| | 03.00-05.00 | - | 0.0I | - | 0.87 | - | - | 0.50 | 0.I | 03.00-04.00 | - | - | II.3 | - | - | - | 9.8 | - | - | - | 330 | - | 250 | I5.0 |
| | 05.00-06.00 | - | 0.0I | - | 0.25 | 0.0I | 0.I0 | - | - | | - | - | I4.3 | - | - | - | I4.0 | - | - | - | 350 | - | 270 | I3.0 |
| | 06.00-07.00 | - | 0.0I | - | 0.25 | 0.0I | 0.45 | I.00 | 0.0 | 04.00-07.00 | - | - | I5.0 | - | - | - | I4.5 | - | - | - | 345 | - | 270 | I3.0 |
| | 07.00-08.00 | - | 0.0I | - | 0.50 | 0.0I | 0.20 | - | - | | - | - | I5.3 | - | - | - | I2.7 | - | - | - | 340 | - | 240 | I3.0 |
| | 08.00-09.00 | - | 0.0I | - | 0.25 | 0.0I | 0.30 | 2.00 | 0.2 | 07.00-09.00 | - | - | I4.2 | - | - | - | I2.2 | - | - | - | 340 | - | 240 | I3.0 |
| | 09.00-I0.00 | - | 0 | - | 0 | - | 0.I0 | - | - | | - | - | I2.5 | - | - | - | II.4 | - | - | - | 340 | - | 240 | I3.0 |

ПРИМЕЧАНИЕ:
x – левый борт подветренный
xx – плювиограф ГГО (правый), затекала вода поверх шланга
xxx – очень слабая морось
x) – в осадкомере соль
xx) – I3,I4,I5/X заменялись шланги плювиографа ГГО
xxx) – с 20/x левый плювиограф не работает
!) – за 24/X ленты судового плювиографа нет, в перо попала вода, чернила размыты
!!) – 4/XI после 9 час.50 мин. нет записи дождя на ленте судового плювиографа, не сработал механизм слива.

REPRODUCIBILITY OF THE ORIGINAL PAGE IS POOR