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ORIGINAL CONTAINS COLOR PLATES: ALL DDC REPRODUCTIONS WILL BE IN BLACK AND WHITE. ORIGINAL MAY BE SEEN IN DDC HEADQUARTERS.

A CLIMATOLOGY OF WIND AND TEMPERATURES IN THE TROPICAL STRATOSPHERE BETWEEN 100 MB. AND 10 MB.

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FOREWORD

This publication was prepared under Task 26, "Upper Atmospheric Analysis and Forecasting", and is intended to introduce the navy meteorologist to the recent discovery of the 26-month oscillation of zonal winds and temperatures in the tropical stratosphere.

The climatological information contained in this report compares the annual and 26-month variation of winds and temperatures in the area from 100 mb. to 10 mb. over the equatorial regions of the earth, and is the most current and extensive climatology available on this subject.

Dr. Richard J. Reed, Professor in the Department of Atmospheric Sciences at the University of Washington, Seattle, Washington, and a Consultant for the Navy Weather Research Facility, planned and wrote this climatological report for NWRF. Mr. John M. Mercer performed the final edit for the Navy Weather Research Facility with contributions from Mr. René V. Cormier.

This publication has been reviewed and approved on 7 May 1964 by the undersigned.

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Commander, U. S. Navy
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1. INTRODUCTION

The recent discovery [1, 2] of a large, quasi-periodic oscillation of the zonal wind component in the equatorial stratosphere, with average period close to 26 months, has aroused new interest in the circulation of that portion of the atmosphere and has created a need for climatological information which recognizes the existence of both the annual and longer-period variations of wind and temperature. In the present work, data from selected tropical stations for the period 1951 through 1961 are used to characterize the annual and 26-month variations in the zone between 25° N. and 25° S. and in the layer between 100 mb. (16.6 km.) and 10 mb. (31.0 km.). Information is also presented on the long-term (10 year) mean zonal wind and temperature fields and on the short-period (intramonthly) variability of the zonal and meridional wind components.

The characterization of the long-period variation poses a new and unique problem in climatology. The procedure adopted here has been to separate the annual and 26-month component oscillations and to present separate statistics on each. The choice of a 26-month time scale for the longer-period cycle was dictated by the results of autocorrelation analyses of zonal wind components (with annual cycle removed) for a large number of tropical stations. These analyses yielded an average figure of 25.8 months for the main peak in the autocorrelation function. It is important to note, however, that the cycle is by no means a perfect sinusoid of fixed period and amplitude. An idea of the irregularity of the oscillation may be gained from figure 1.1 which gives a time-height cross section of zonal winds at Canton Island for the period 1953 through 1963. From the diagram it is apparent that the length of cycle varies between 22 and 28 months.

The mode of presentation adopted here makes it possible by simple addition of the two component variations to reconstruct, approximately, the total variations of wind and temperature during the period 1951 through 1961 and to project the variations somewhat into the future. For the purpose of superimposing the cycles, as well as for other reasons, it is necessary to construct a 26-month calendar and establish its relationship to the 12-month calendar. The designations 0, 1, 2, . . . 25 will be used to denote the months on the 26-month time scale with the month "0" corresponding to January 1951, March 1953, May 1955, July 1957, September 1959 and November 1961. The following table (1.1) will be helpful in determining the phase of the 26-month cycle which corresponds to a particular month on the ordinary calendar.

Table 1.1. *Comparison of the 12-Month Calendar and the Corresponding Month of the 26-Month Cycle (January 1951 through December 1963).*

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1951	0	1	2	3	4	5	6	7	8	9	10	11
1952	12	13	14	15	16	17	18	19	20	21	22	23
1953	24	25	0	1	2	3	4	5	6	7	8	9
1954	10	11	12	13	14	15	16	17	18	19	20	21
1955	22	23	24	25	0	1	2	3	4	5	6	7
1956	8	9	10	11	12	13	14	15	16	17	18	19
1957	20	21	22	23	24	25	0	1	2	3	4	5
1958	6	7	8	9	10	11	12	13	14	15	16	17
1959	18	19	20	21	22	23	24	25	0	1	2	3
1960	4	5	6	7	8	9	10	11	12	13	14	15
1961	16	17	18	19	20	21	22	23	24	25	0	1
1962	2	3	4	5	6	7	8	9	10	11	12	13
1963	14	15	16	17	18	19	20	21	22	23	24	25

2. DATA

With the exception of the data for Nandi, Fiji Islands, which were taken from a publication of the New Zealand Meteorological Service [3], all data used in this atlas were obtained from the National Weather Records Center, Asheville, North Carolina. Data were requested for the years 1951 through 1960 inclusive and, in certain cases, for the additional year 1961. Both 0000 GCT (Greenwich civil time) and 1200 GCT observations were included.

The stations employed and the period of record at various heights are given in appendices A and B for wind and temperature, respectively. Only those Northern Hemisphere stations were selected which had comparatively long records extending to the higher levels, though less complete data were available from many other stations. In view of the small longitudinal differences that exist above 50 mb., it was felt that more representative results could be obtained from a limited number of high quality records than from a larger selection of shorter records. No attempt was made to correct the results for inhomogeneities due to differences in record lengths between stations or between elevations at the same station.

The results for the Southern Hemisphere are necessarily based on considerably shorter records. Although some differences in the circulations of the two hemispheres must undoubtedly exist, little significance can be attached to asymmetrical features appearing on the various charts, since these may be almost entirely a consequence of differences in length of record. Mathematical analysis of the meager temperature data from the Southern Hemisphere was not undertaken. The long-term mean temperatures depicted on chart 4.13 south of the Equator were obtained indirectly from the wind field by use of the thermal wind relationship.

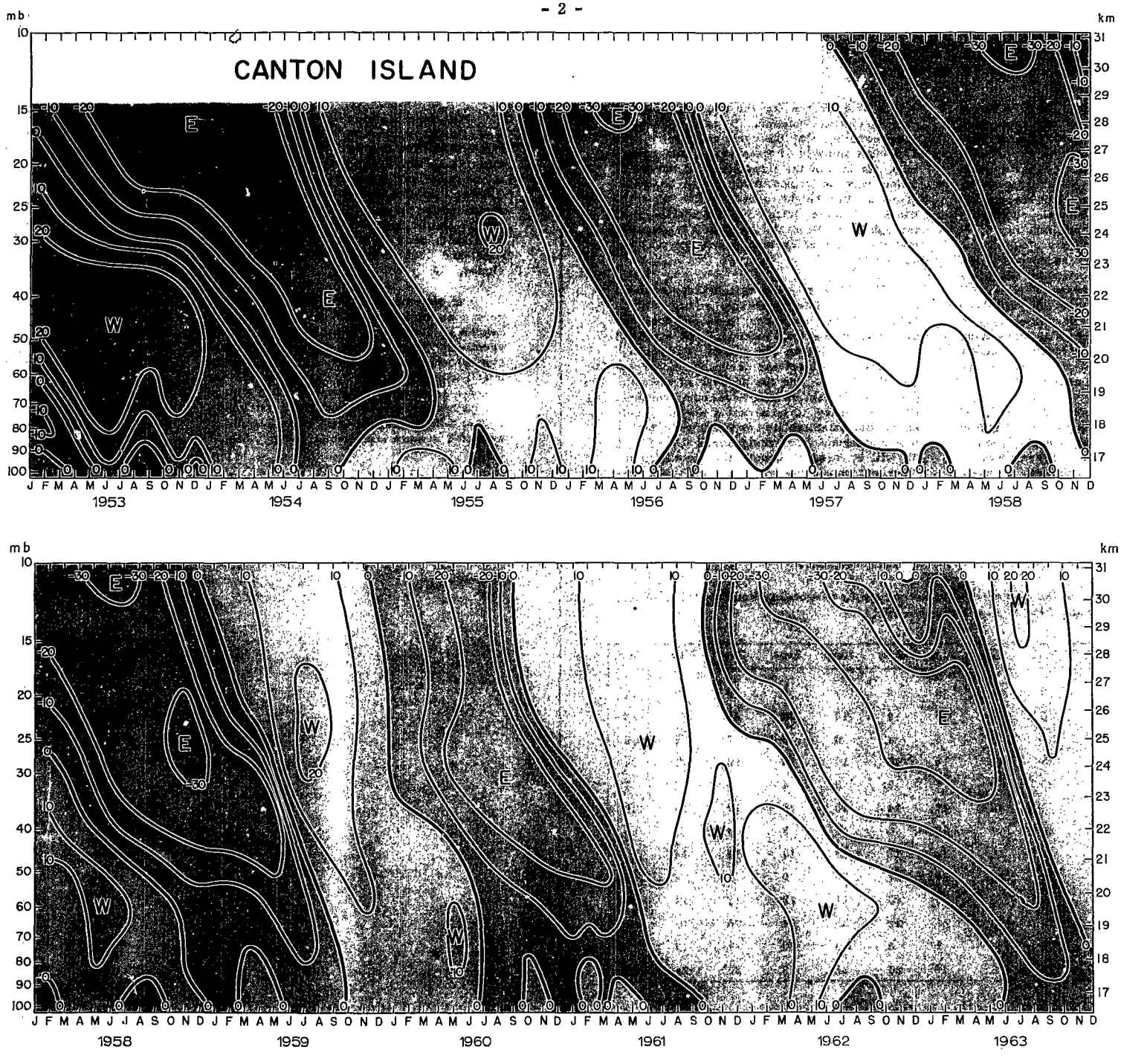

Figure 1.1. *Time-Height Cross Section of Zonal Winds at Canton Island, 1953 through 1963.*

3. PROCEDURES

The steps in the data analysis were as follows:

(1) The averages for the various calendar months were obtained by averaging odd and even years separately and determining the combined averages. The separate treatment of odd and even years was necessitated by the presence of the approximately biennial cycle which can produce a distorted estimate if the average is taken in the ordinary way when the period of record is short and encompasses an odd number of years.

(2) The long-term (approximately 10 year) averages were found by averaging the monthly means obtained in step (1).

(3) Deviations of the monthly means from the record-means of the calendar months were obtained by subtracting the averages computed in step (1) from the means for individual months. For instance the deviation for July 1957 was found by subtracting the mean for that month from the long-term mean for July.

(4) The deviations of step (3) were arranged in sequences of 26, and these sequences were averaged to obtain the shape of the 26-month cycle.

(5) Harmonic analyses[1] were made of the annual and 26-month cycles in order to obtain an objective characterization of their phases and amplitudes.

---

[1] *Given an arbitrary sequence of data points which are periodic, it is possible to determine a finite number of sine (or cosine) curves which when summed will pass through every point; that is, fit the data exactly. The method of finding the required set of sine waves is called harmonic analysis. The analysis technique yields the amplitude (departure of the maximum from the mean value) and phase (time of occurrence of the maximum) of each component wave. The period of the first harmonic is equal to the fundamental or chosen period. The second harmonic has a period one-half that of the fundamental period, the third harmonic one-third that of the fundamental period, etc. In the present work only the first two harmonics are shown, since in most instances they approximate the data with sufficient accuracy.*

4. PREPARATION OF CHARTS AND TABLES

4.1 Chart 4.1 and Table 4.1

The long-term mean zonal wind speeds determined in step (2) of chapter 3 were plotted on the meridional cross section and isopleths drawn subjectively at intervals of 2.5 meters per second. At 100 mb. the values in the Northern Hemisphere exhibited a strong dependence on longitude. For the purpose of obtaining more representative results at this level, zonal wind speeds were extracted at intervals of 5 degrees of latitude from meridional cross sections appearing in *U. S. Weather Bureau Technical Paper No. 41*, "Meridional Cross-Sections, Upper Winds Over the Northern Hemisphere," and average values for the latitude circles were determined. The analysis near 100 mb. is based largely on these supplementary data.

The tabulated values of mean zonal wind were obtained by interpolation from the analyzed chart.

4.2 Chart 4.2 and Tables 4.2 and 4.3

The phases and amplitudes of the annual cycle of the zonal wind component determined in step (5) of chapter 3 were plotted on the meridional cross section and subjectively analyzed. Near the Equator the phase was too erratic to be analyzed reliably. The dates next to the isopleths of phase represent the times at which the annual cycle reaches its maximum westerly (west to east) value.

Tabulated values of amplitude and phase were obtained from the analyses by interpolation.

4.3 Chart 4.3 and Tables 4.4 and 4.5

The phases and amplitudes of the 26-month cycle of the zonal wind component determined in step (5) of chapter 3 for the individual stations were plotted on the meridional cross section and subjectively analyzed. The phase indicates the date at which the 26-month cycle reaches its maximum westerly (west to east) value.

Tabulated values of amplitude and phase were obtained from the analyses by interpolation.

4.4 Charts 4.4 through 4.7

The mean zonal winds for January, April, July, and October determined in step (1) of chapter 3 were plotted on the meridional cross sections and subjectively analyzed. For the purpose of achieving smoother and more representative analyses near 100 mb., use was made of supplementary data extracted from the cross sections in *U. S. Weather Bureau Technical Paper No. 41*.

4.5 Chart 4.8

Cross sections of mean zonal wind, based on the results of step (1) of chapter 3, were analyzed for each month. Values were extracted from the monthly charts by interpolation for various levels at intervals of 5 degrees of latitude. The monthly values for particular levels and latitudes were then plotted and smooth curves drawn by eye.

4.6 Chart 4.9

The deviations obtained in step (3) of chapter 3 were arranged in sequences of 26 months and averaged. The averages for every second month of the 26-month calendar were plotted on meridional cross sections and isopleths were drawn. Values for the various levels were extracted from the bimonthly charts at intervals of 5 degrees of latitude by interpolation. The values for particular levels and latitudes were then plotted on the 26-month time scale and smooth curves drawn by eye.

4.7 Charts 4.10 and 4.11, and Tables 4.6 and 4.7

Standard deviations of the zonal and meridional wind components about their monthly means were computed for all months from the station data. The averages of these deviations at the various levels for the period of record were plotted on cross sections and analyzed subjectively.

Tabulated values of the standard deviations were obtained from the analyses by interpolation.

4.8 Chart 4.12 and Table 4.8

Mean temperatures determined from the night soundings were plotted on the meridional

cross section. Analyses were based partly on these data and partly on temperatures computed from the zonal wind data by use of the thermal wind relationship. The latter temperatures were computed for every 5 degrees of latitude using the observed temperatures at 10° N. (mean of Balboa and Eniwetok temperatures) as a base.

Tabulated temperatures were obtained from the analysis by interpolation.

4.9 Chart 4.13 and Tables 4.9 and 4.10

The phases and amplitudes of the annual temperature cycle determined in step (5) of chapter 3 were plotted on the meridional cross section and subjectively analyzed. Phases indicate times of maximum temperature. The thermal wind relationship was used to ensure that the temperature analysis was consistent with the wind analysis of chart 4.2.

The tabulations of amplitudes and phases were obtained by interpolation from the analyzed chart.

4.10 Chart 4.14 and Tables 4.11 and 4.12

The phases and amplitudes of the 26-month temperature cycle determined in step (5) of chapter 3 were plotted on the meridional cross section and subjectively analyzed. Phases indicate times of maximum temperature. The thermal wind relationship was used to ensure that the temperature analysis was consistent with the zonal wind analysis of chart 4.3.

The tabulations of amplitudes and phases were obtained by interpolation from the analyzed chart.

Table 4.1. *Mean Zonal Wind (m./sec.).*

Pressure (mb.)	25° N.	20° N.	15° N.	10° N.	5° N.	0°	5° S.	10° S.	15° S.	20° S.	25° S.	Height (km.)
100	8.0	3.0	-0.5	-2.5	-1.0	3.0	1.5	2.0	4.5	8.0	12.0	16.6
80	4.0	-2.0	-5.0	-6.0	-3.5	2.5	0	-2.5	-0.5	2.5	6.0	17.9
60	-1.5	-6.0	-8.0	-6.0	-2.5	1.0	-2.0	-6.0	-6.0	-3.0	0	19.6
50	-4.0	-8.0	-9.0	-8.0	-3.5	0	-3.5	-7.5	-8.5	-6.0	-2.5	20.7
40	-6.5	-9.0	-10.0	-9.0	-5.0	-2.5	-5.5	-10.0	-10.5	-8.0	-4.0	22.0
30	-7.5	-10.0	-11.5	-10.5	-6.5	-4.0	-7.0	-11.0	-12.0	-9.0	-6.0	23.8
20	-8.0	-11.0	-12.5	-11.5	-8.0	-6.5	-8.0	-12.0	-12.5	-9.0	-6.0	26.4
15	-8.0	-11.0	-13.0	-11.5	-9.0	-7.5	-9.0	-12.0	-12.5	-9.0	-6.0	28.3
10	-7.5	-11.0	-13.0	-12.5	-10.5	-9.0	-10.0	-12.5	-12.5	-9.0	-5.5	31.0

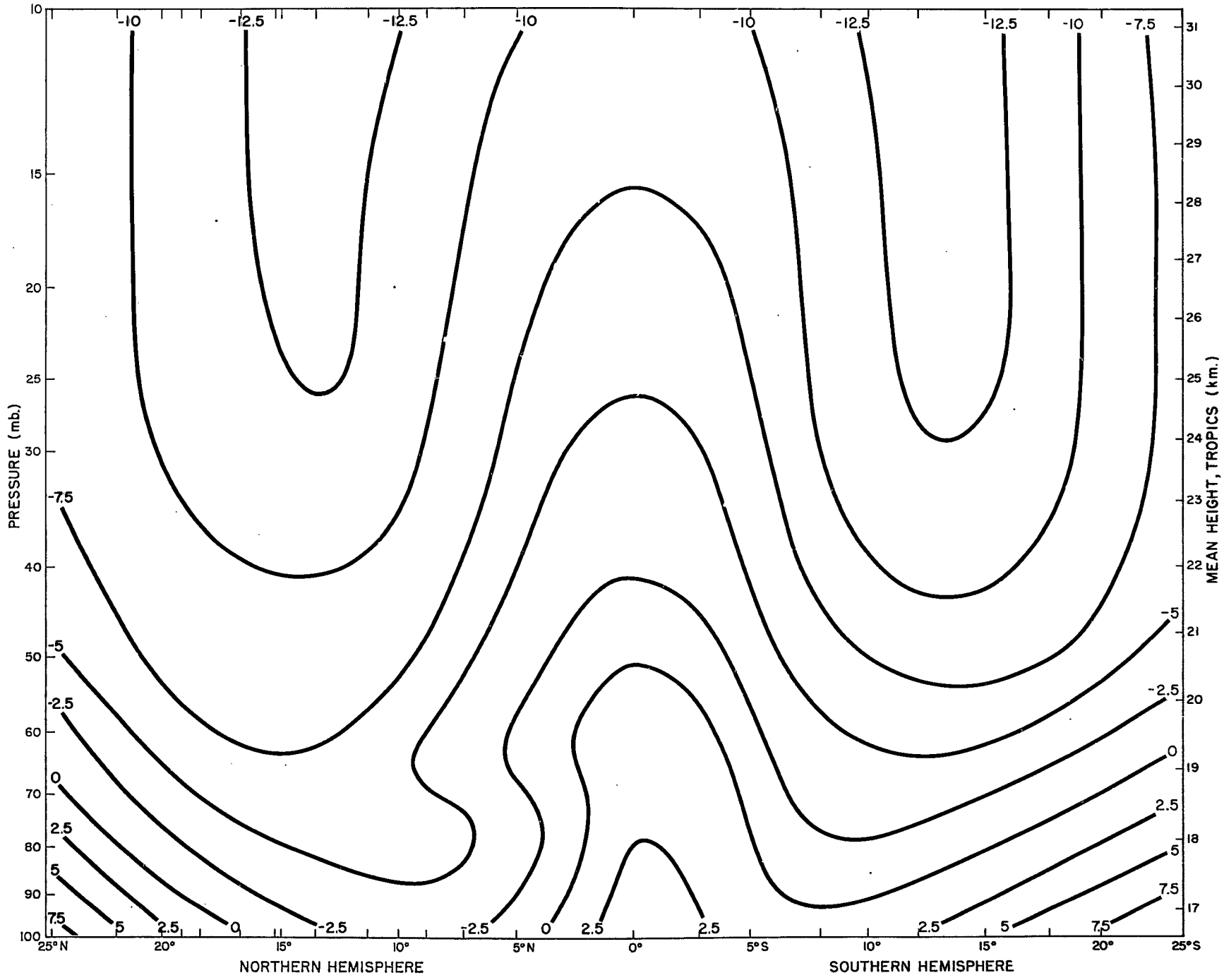

CHART 4.1. MEAN ZONAL WIND (m./sec.).

Table 4.2. *Amplitude of the Annual Cycle of the Zonal Wind Component (m./sec.).*

Pressure (mb.)	25° N.	20° N.	15° N.	10° N.	5° N.	0°	5° S.	10° S.	15° S.	20° S.	25° S.	Height (km.)
100	11.0	10.0	8.5	6.0	4.0	-	2.5	3.0	4.5	5.5	7.0	16.6
80	10.5	9.5	8.0	5.5	2.5	-	1.5	3.0	4.5	6.0	7.5	17.9
60	10.5	9.0	7.5	5.5	3.0	-	2.5	4.0	5.5	6.5	8.0	19.6
50	10.0	9.0	7.5	6.0	3.0	-	3.0	5.0	6.5	7.5	9.0	20.7
40	10.5	9.0	8.0	6.5	3.0	-	3.0	6.0	7.5	9.0	10.0	22.0
30	11.0	10.0	9.0	7.5	3.0	-	2.5	7.0	10.0	11.0	12.0	23.8
20	12.0	11.0	10.5	8.5	3.0	-	2.5	8.5	12.0	13.5	14.5	26.4
15	12.5	12.5	12.0	9.5	3.0	-	2.5	8.5	13.0	15.0	16.0	28.3
10	17.0	16.5	14.0	10.0	3.0	-	2.5	8.5	13.5	17.0	18.0	31.0

Table 4.3. *Phase of the Annual Cycle of the Zonal Wind Component.*

Pressure (mb.)	25° N.	20° N.	15° N.	10° N.	5° N.	0°	5° S.	10° S.	15° S.	20° S.	25° S.	Height (km.)
100	Feb. 15	Feb. 15	Mar. 1	Mar. 15	Apr. 1	-	Aug. 1	Aug. 1	Aug. 1	Aug. 1	Aug. 1	16.6
80	Feb. 15	Feb. 15	Feb. 15	Mar. 1	Mar. 1	-	Aug. 1	Aug. 1	Aug. 1	Aug. 1	Aug. 1	17.9
60	Feb. 15	Feb. 15	Feb. 15	Feb. 15	Feb. 1	-	Aug. 1	Aug. 15	Aug. 1	Aug. 1	Aug. 1	19.6
50	Feb. 15	Feb. 1	Feb. 15	Feb. 15	Jan. 15	-	Aug. 15	Aug. 15	Aug. 1	Aug. 1	Aug. 1	20.7
40	Feb. 1	Feb. 1	Feb. 1	Feb. 1	Jan. 15	-	Aug. 1	Aug. 15	Aug. 1	Aug. 1	Aug. 1	22.0
30	Feb. 1	Feb. 1	Feb. 1	Feb. 1	Jan. 15	-	Aug. 1	Aug. 15	Aug. 1	Aug. 1	Aug. 1	23.8
20	Feb. 1	Feb. 1	Feb. 1	Feb. 1	Jan. 15	-	Aug. 1	Aug. 1	Aug. 1	Aug. 1	Aug. 1	26.4
15	Feb. 1	Feb. 1	Feb. 1	Jan. 15	Jan. 15	-	Aug. 1	Aug. 1	Aug. 1	Aug. 1	Aug. 1	28.3
10	Feb. 1	Feb. 1	Jan. 15	Jan. 15	Jan. 15	-	July 15	July 15	Aug. 1	Aug. 1	Aug. 1	31.0

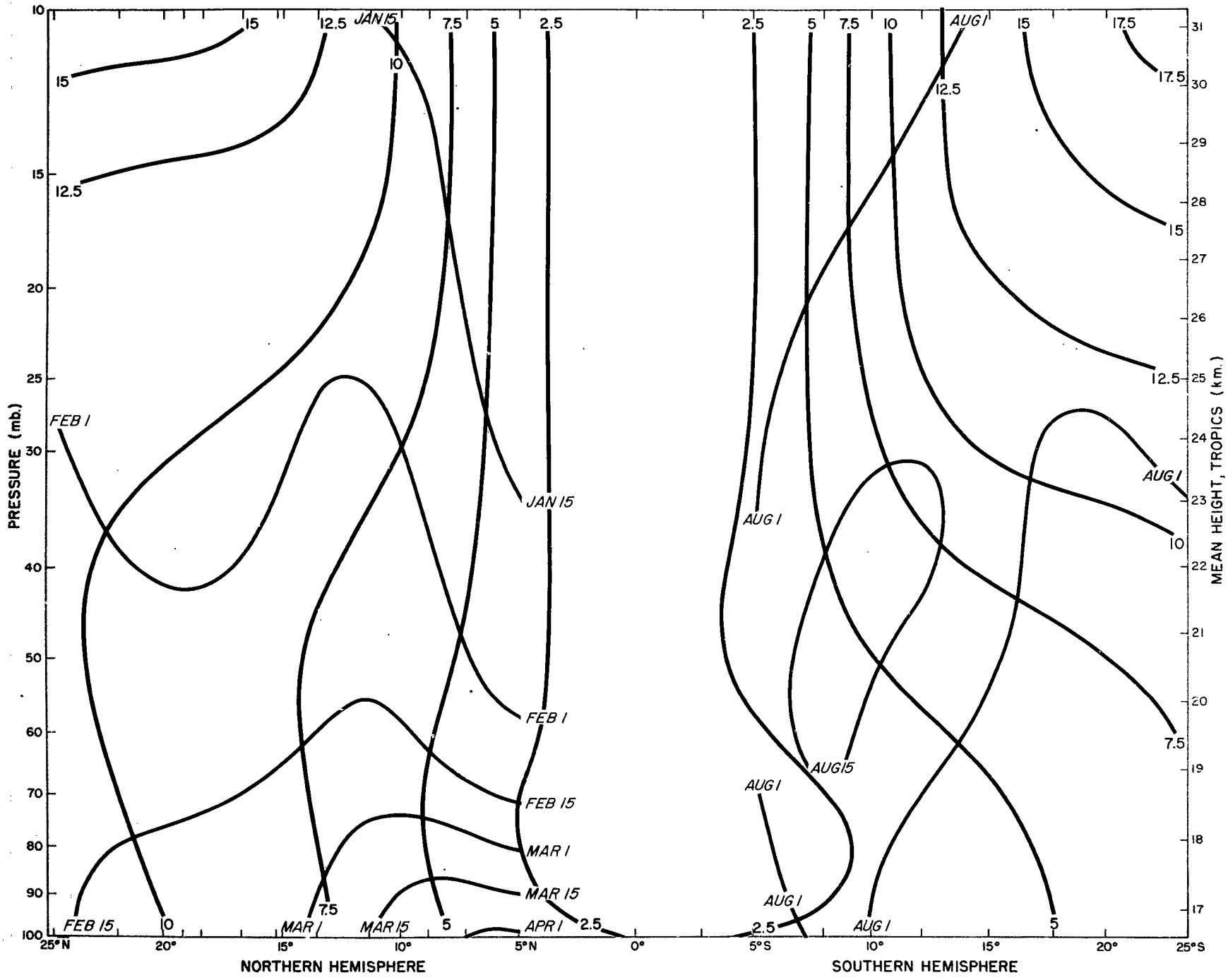

CHART 4.2. PHASE AND AMPLITUDE OF THE ANNUAL CYCLE OF ZONAL WIND (m./sec.).

Table 4.4. *Amplitude of the 26-Month Cycle of the Zonal Wind Component (m./sec.).*

Pressure (mb.)	25° N.	20° N.	15° N.	10° N.	5° N.	0°	5° S.	10° S.	15° S.	20° S.	25° S.	Height (km.)
100	2.0	1.5	1.0	1.5	2.0	2.0	2.0	1.5	1.0	1.0	1.0	16.6
80	2.0	1.5	2.0	3.5	5.0	6.0	4.0	2.5	2.0	1.0	0.5	17.9
60	2.0	2.0	4.0	7.0	10.0	12.0	10.0	5.0	3.0	1.5	0.5	19.6
50	1.5	2.0	5.0	9.0	13.5	16.0	13.5	7.5	4.0	2.5	1.0	20.7
40	1.0	2.5	6.0	11.0	16.5	19.0	17.0	11.5	5.0	3.0	2.0	22.0
30	0.5	3.0	6.5	11.5	17.0	21.0	18.5	14.5	8.0	4.0	2.5	23.8
20	1.0	3.5	7.5	11.5	15.5	18.5	16.5	13.5	9.0	4.5	3.5	26.4
15	2.0	4.5	9.0	12.0	15.5	18.0	16.0	12.0	8.5	5.0	4.0	28.3
10	3.0	7.5	11.0	14.0	17.0	18.5	17.0	12.5	8.5	6.0	4.5	31.0

Table 4.5. *Phase of the 26-Month Cycle of the Zonal Wind Component.*

Pressure (mb.)	25° N.	20° N.	15° N.	10° N.	5° N.	0°	5° S.	10° S.	15° S.	20° S.	25° S.	Height (km.)
100	Feb. 58	Feb. 58	Mar. 58	Mar. 58	Mar. 58	Mar. 58	Mar. 58	Mar. 58	Mar. 58	Mar. 58	Mar. 58	16.6
80	Jan. 58	Dec. 57	Jan. 58	Feb. 58	Feb. 58	Feb. 58	Feb. 58	Feb. 58	Feb. 58	Feb. 58	Feb. 58	17.9
60	Nov. 57	Oct. 57	Dec. 57	Dec. 57	Dec. 57	Dec. 57	Dec. 57	Dec. 57	Dec. 57	Dec. 57	Dec. 57	19.6
50	Oct. 57	Sept. 57	Nov. 57	Nov. 57	Nov. 57	Nov. 57	Nov. 57	Nov. 57	Nov. 57	Nov. 57	Nov. 57	20.7
40	Sept. 57	Aug. 57	Oct. 57	Oct. 57	Oct. 57	Oct. 57	Oct. 57	Oct. 57	Oct. 57	Oct. 57	Oct. 57	22.0
30	July 57	June 57	Aug. 57	Aug. 57	July 57	July 57	July 57	July 57	July 57	July 57	July 57	23.8
20	May 57	Apr. 57	May 57	May 57	May 57	May 57	May 57	May 57	May 57	May 57	May 57	26.4
15	Mar. 57	Mar. 57	Apr. 57	Apr. 57	Apr. 57	Apr. 57	Apr. 57	Apr. 57	Mar. 57	Mar. 57	Mar. 57	28.3
10	Jan. 57	Jan. 57	Feb. 57	Feb. 57	Feb. 57	Feb. 57	Feb. 57	Jan. 57	Jan. 57	Jan. 57	Jan. 57	31.0

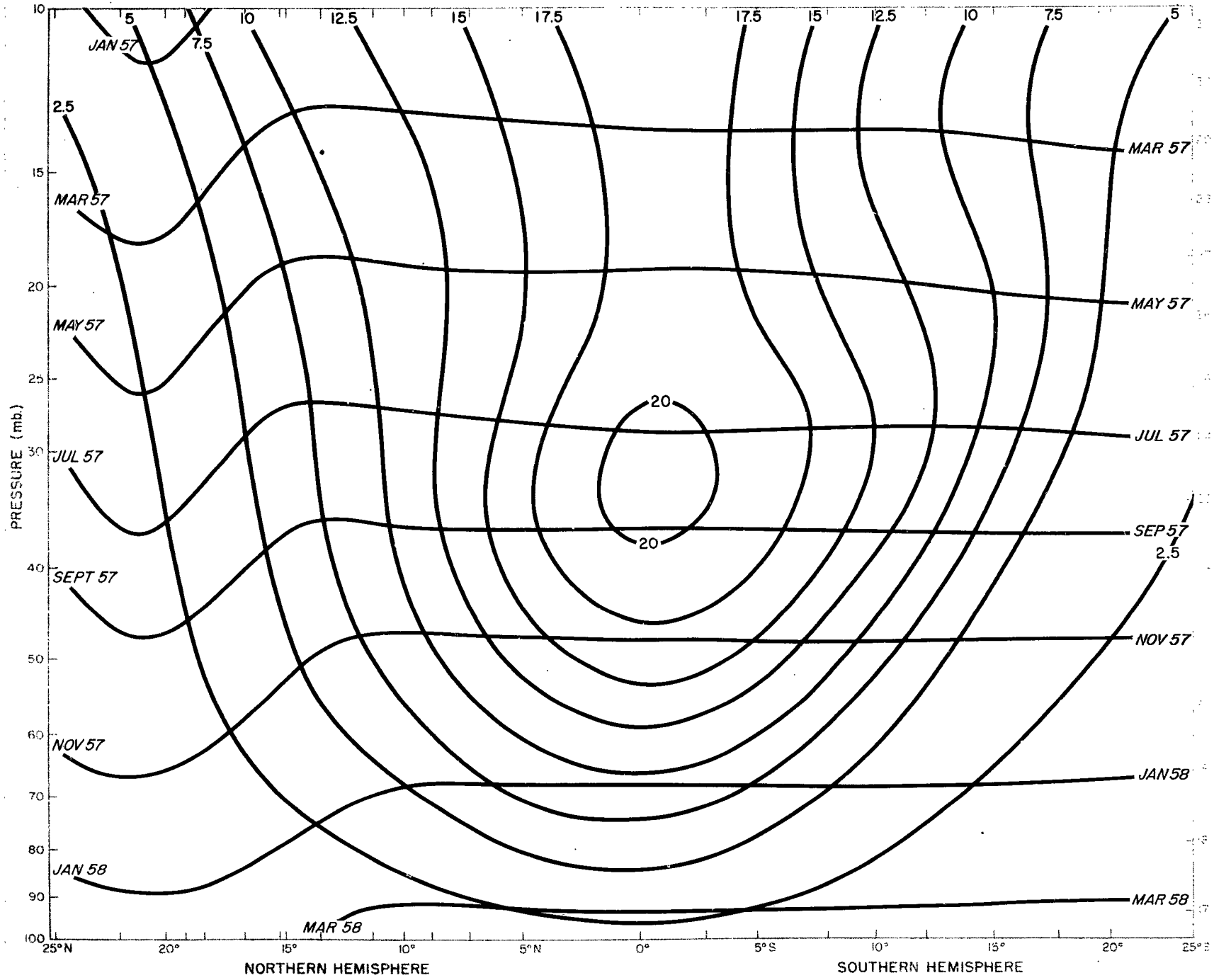

CHART 4.3. PHASE AND AMPLITUDE OF THE 26-MONTH CYCLE OF ZONAL WIND (m./sec.).

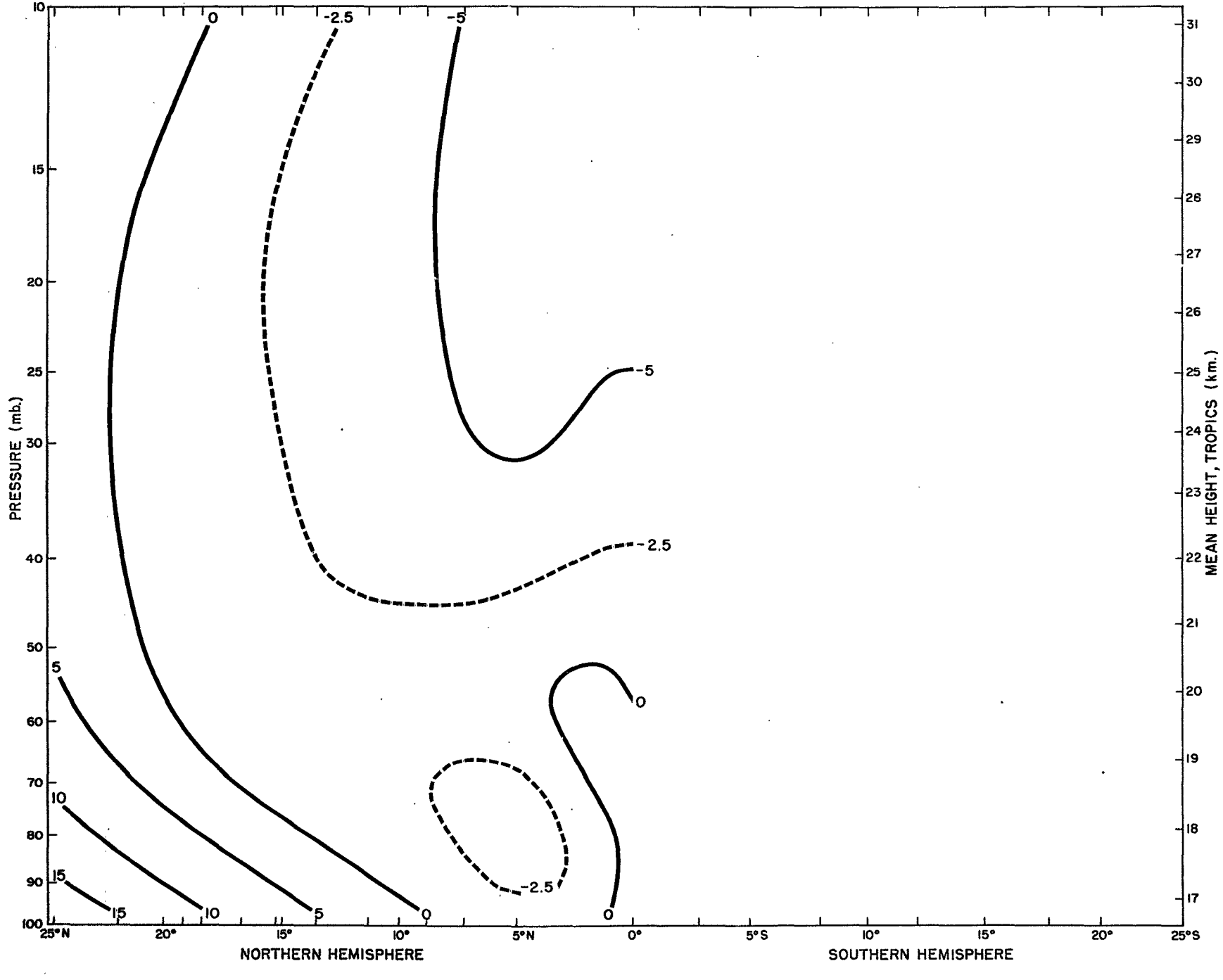

CHART 4.4. MEAN ZONAL WIND, JANUARY (m./sec.).

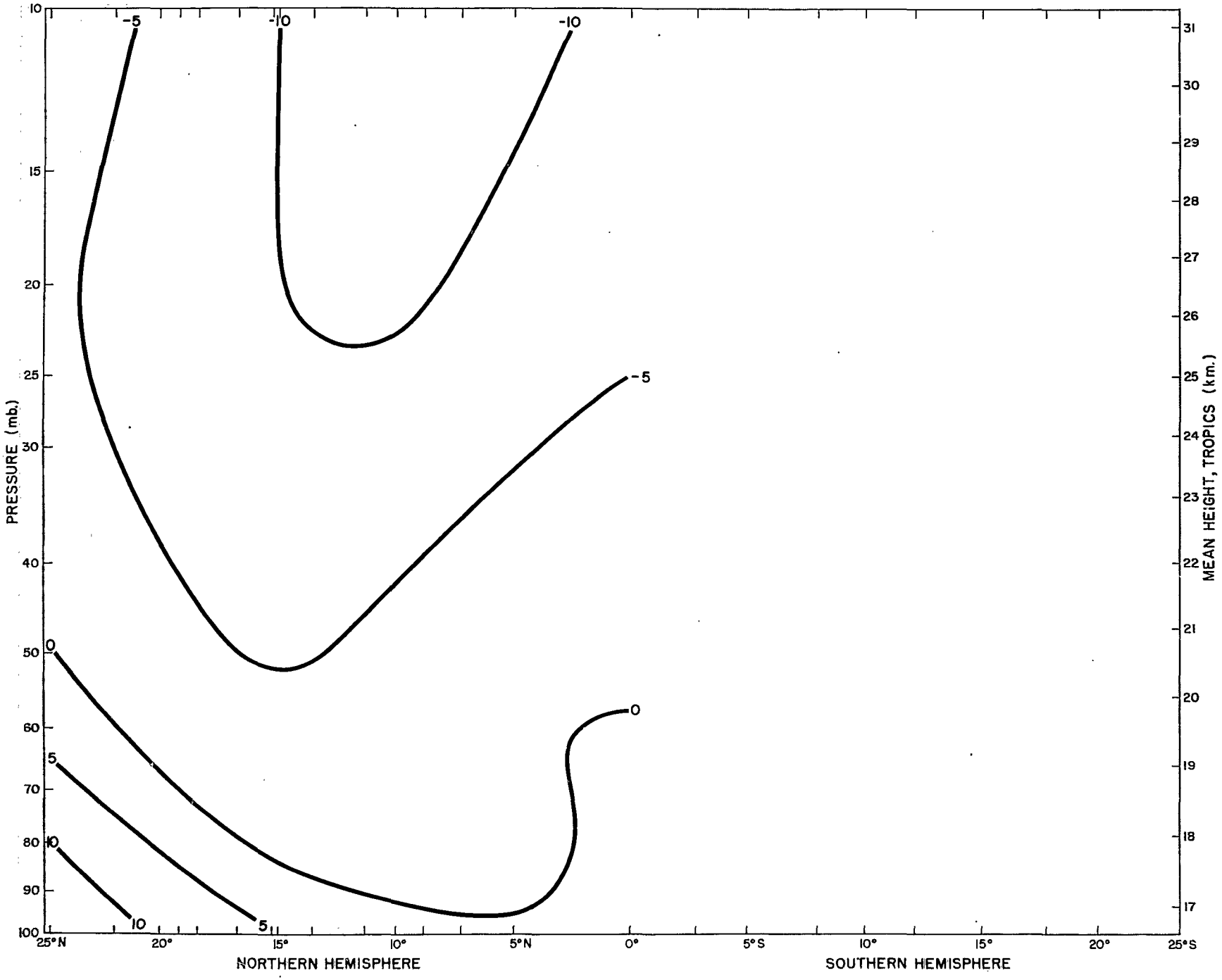

CHART 4.5. MEAN ZONAL WIND, APRIL (m./sec.).

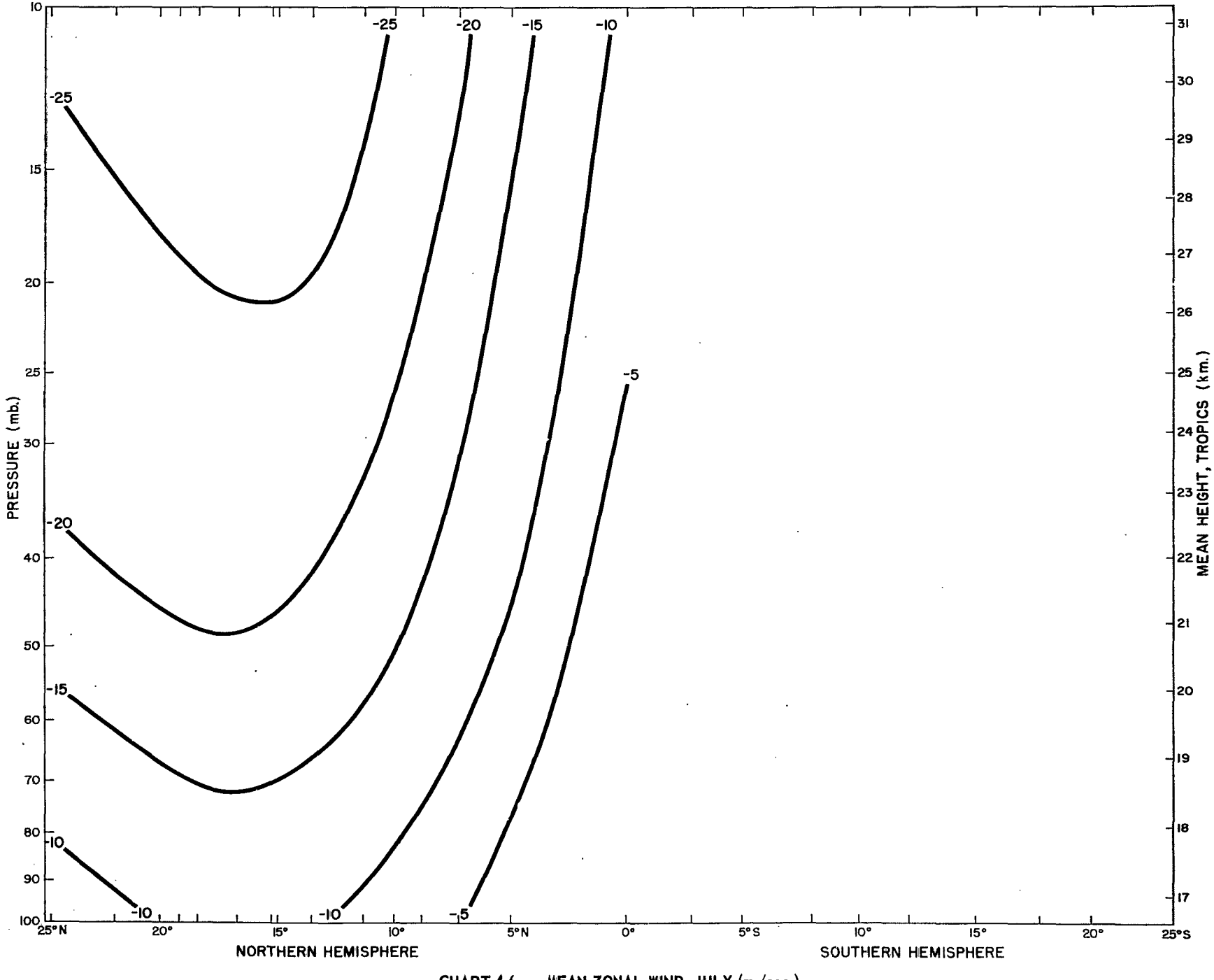

CHART 4.6. MEAN ZONAL WIND, JULY (m./sec.).

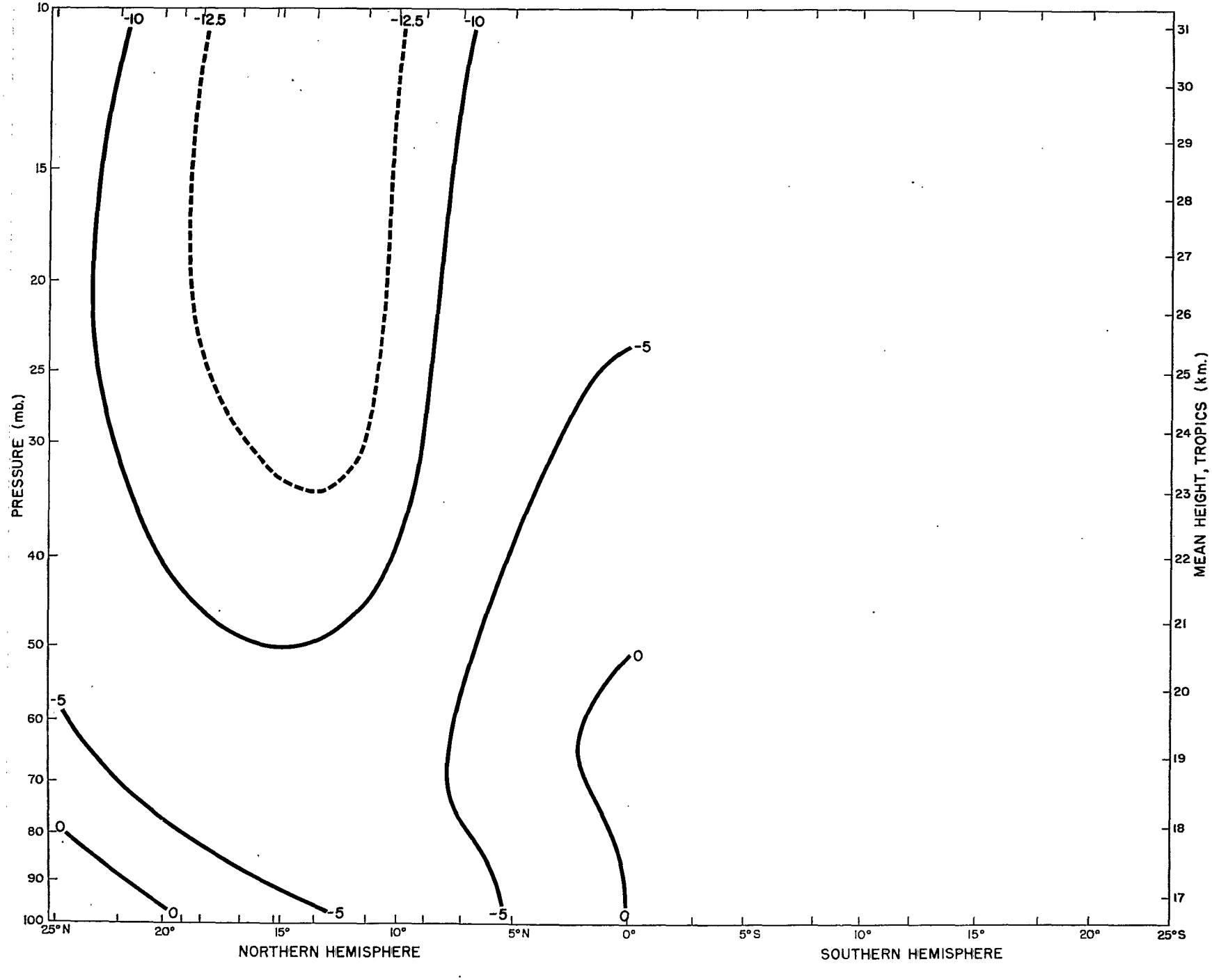

CHART 4.7. MEAN ZONAL WIND, OCTOBER (m./sec.).

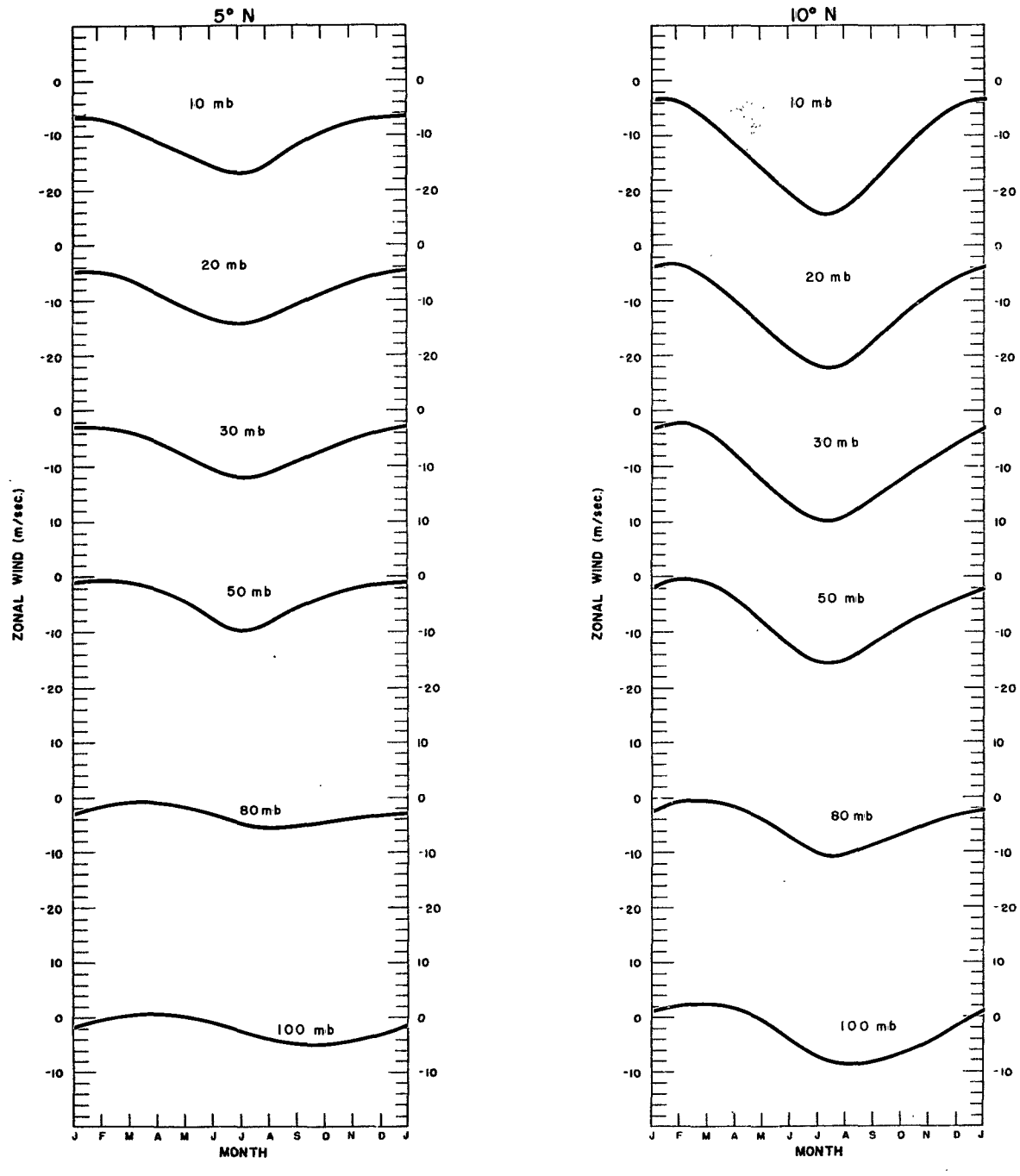

CHART 4.8. ANNUAL WIND CYCLE.

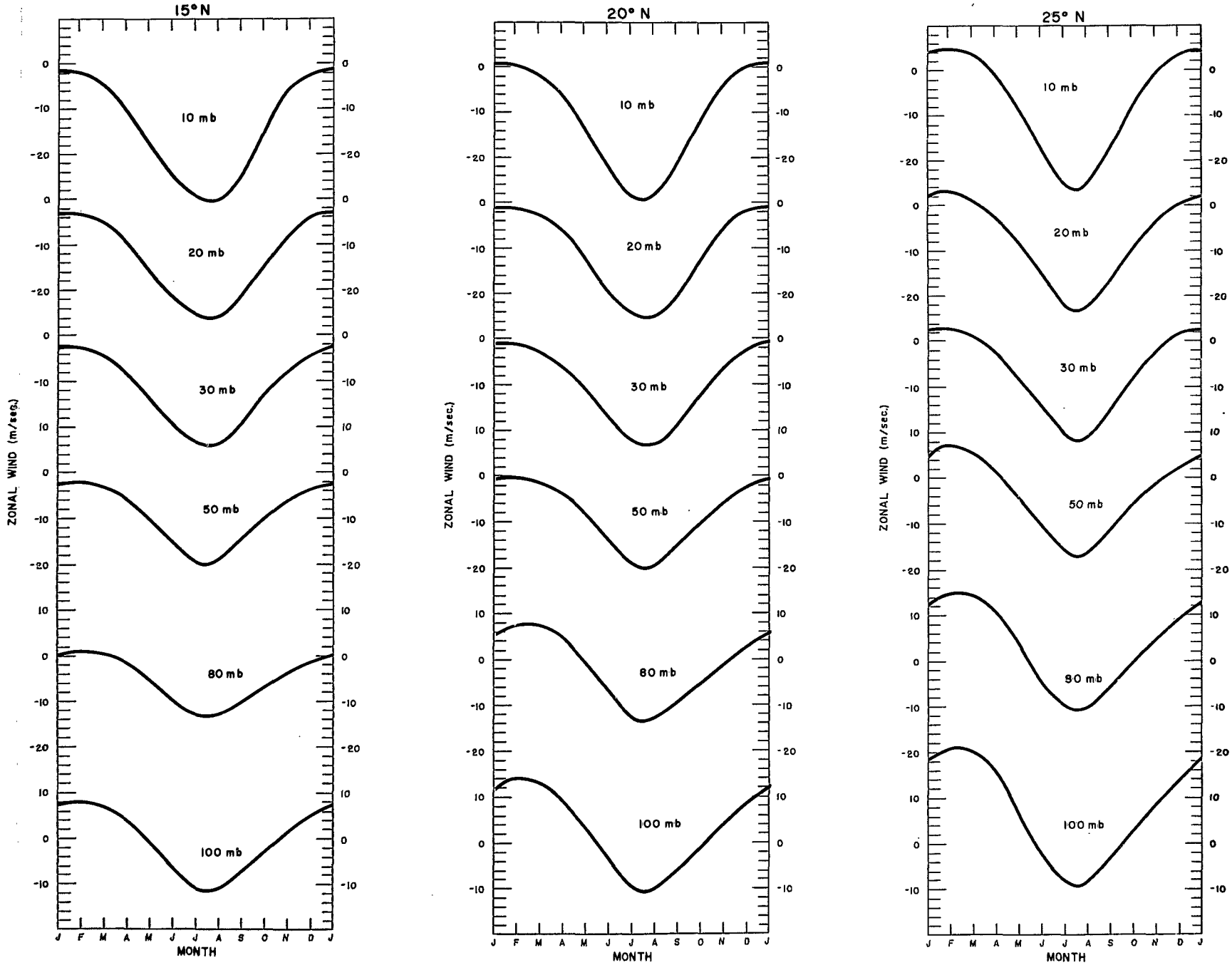

CHART 4.8. ANNUAL WIND CYCLE.

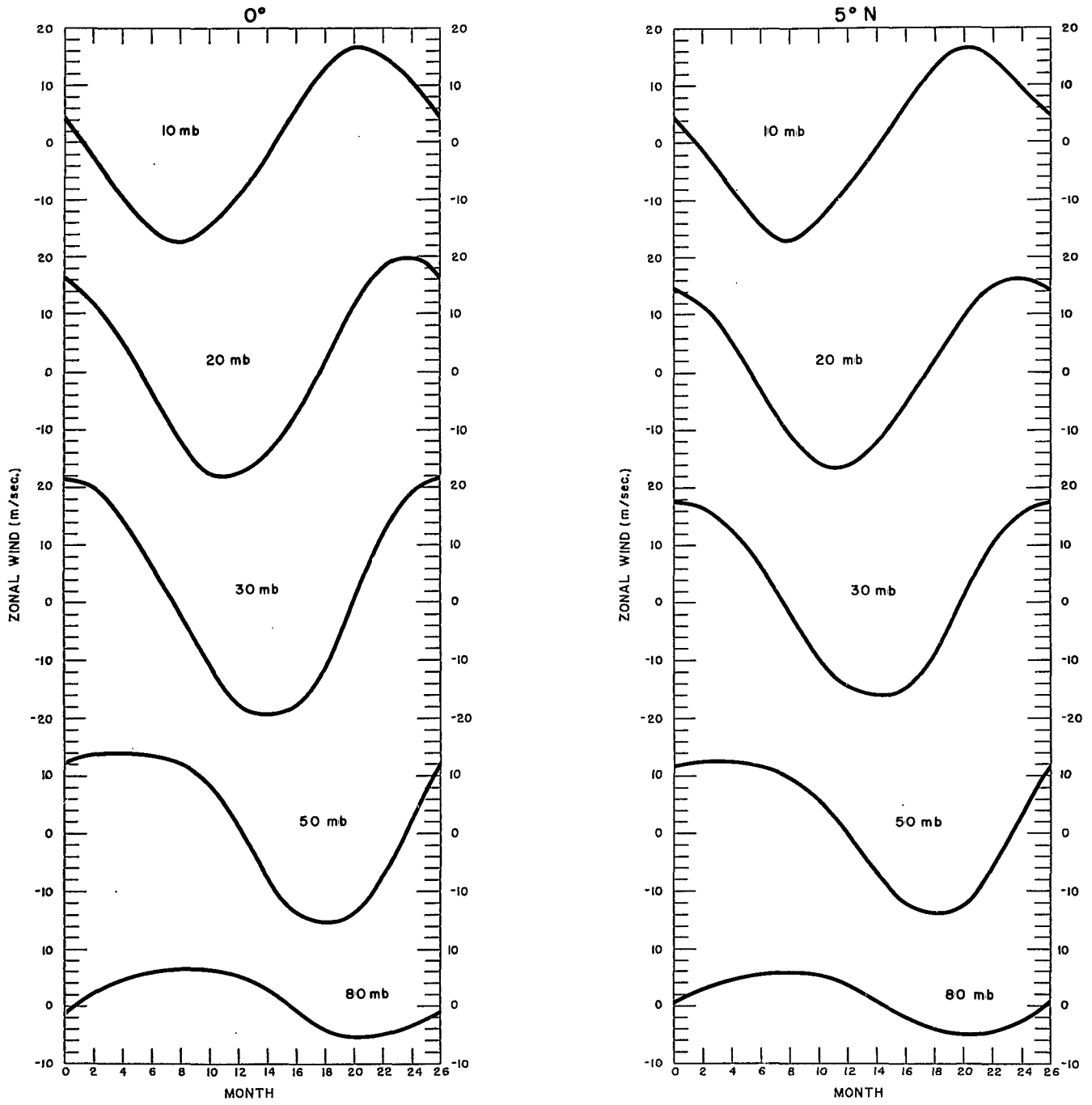

CHART 4.9. THE 26-MONTH WIND CYCLE.

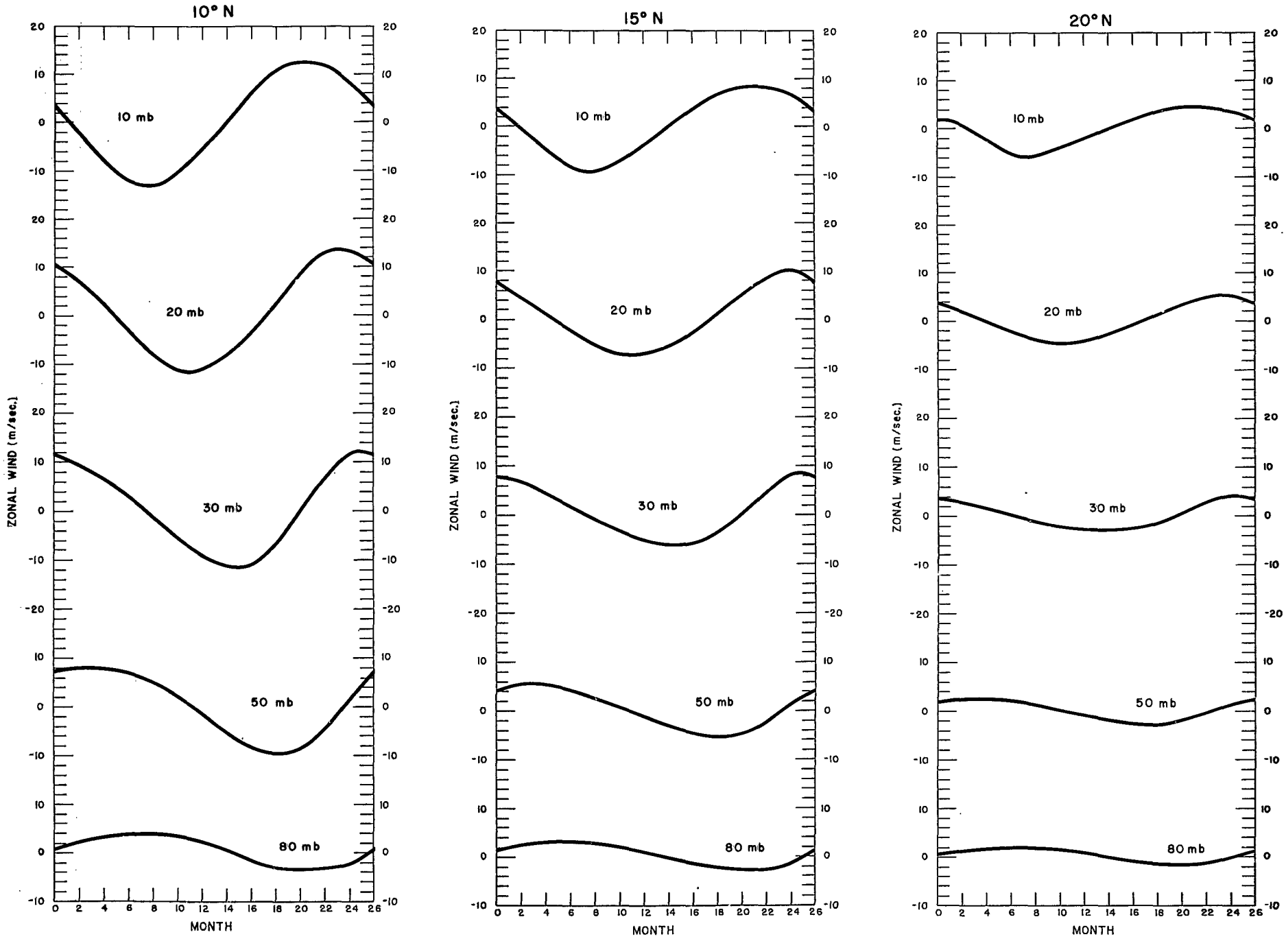

CHART 4.9. THE 26-MONTH WIND CYCLE.

Table 4.6. *Standard Deviation of the Zonal Wind about Monthly Means (m./sec.).*

Pressure (mb.)	25° N.	20° N.	15° N.	10° N.	5° N.	0°	5° S.	10° S.	15° S.	20° S.	25° S.	Height (km.)
100	7.0	6.5	6.0	6.0	6.5	6.5	6.0	6.0	6.0	6.5	7.0	16.6
80	6.0	5.5	5.0	5.5	6.0	6.0	5.5	5.0	5.0	5.5	6.0	17.9
60	5.5	4.5	4.5	5.0	5.5	5.5	5.0	4.5	4.5	5.0	5.5	19.6
50	5.0	4.5	4.5	5.0	5.5	5.5	5.0	4.5	4.5	4.5	5.5	20.7
40	5.0	4.5	4.5	5.0	6.0	6.0	5.5	5.0	5.0	5.0	5.5	22.0
30	5.5	5.0	5.0	6.0	6.5	6.5	6.0	6.0	5.5	5.5	5.5	23.8
20	6.0	6.0	6.0	6.5	7.0	7.0	7.0	6.5	6.5	6.0	6.0	26.4
15	6.5	6.5	7.0	7.5	7.5	7.5	7.5	7.0	7.0	7.0	7.0	28.3
10	7.5	8.0	8.5	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	31.0

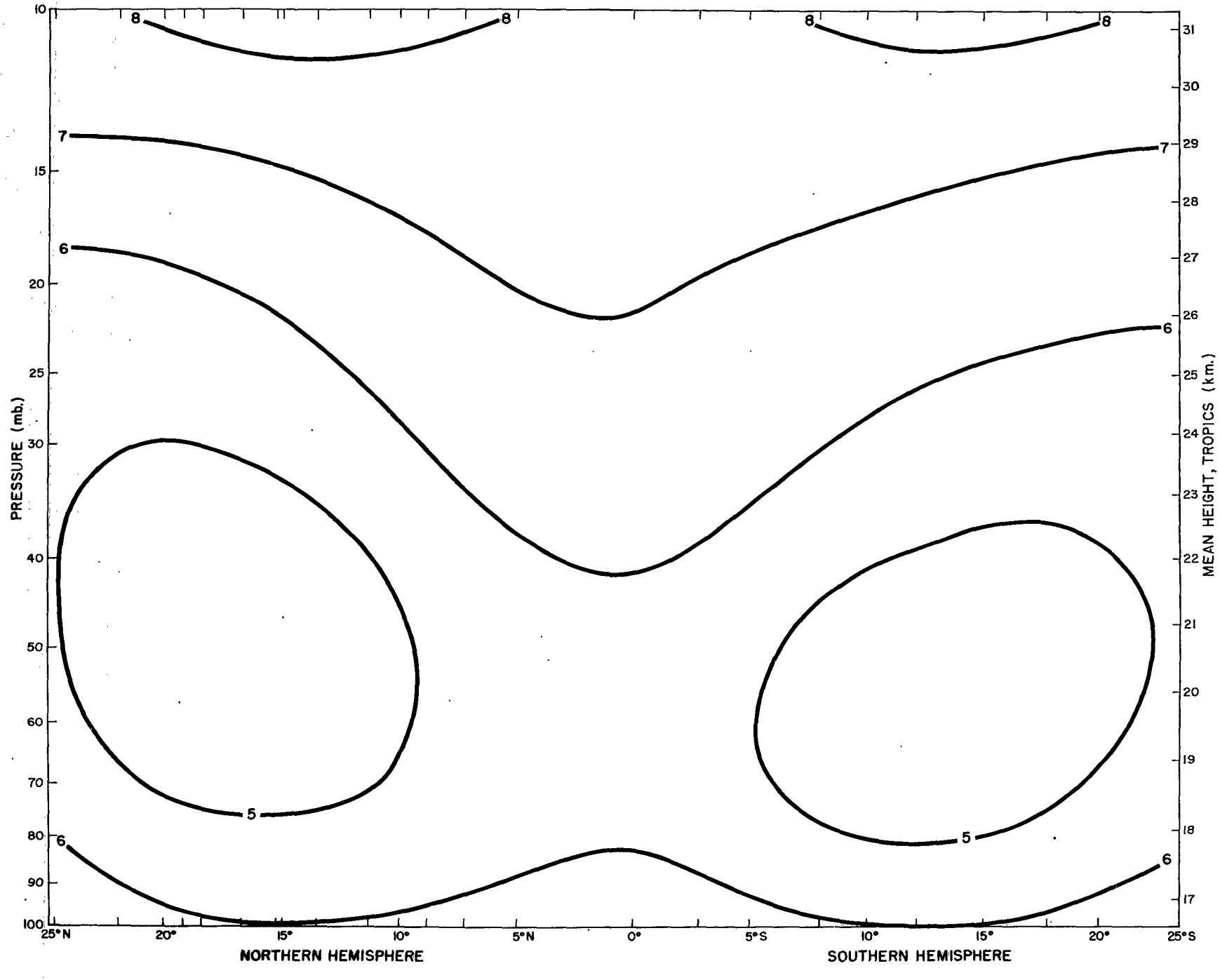

CHART 4.10. STANDARD DEVIATION OF THE ZONAL WIND ABOUT MONTHLY MEANS (m./sec.).

Table 4.7. *Standard Deviation of the Meridional Wind about Monthly Means (m./sec.).*

Pressure (mb.)	25° N.	20° N.	15° N.	10° N.	5° N.	0°	5° S.	10° S.	15° S.	20° S.	25° S.	Height (km.)
100	6.0	5.5	5.0	5.0	4.5	4.5	4.5	5.0	5.0	5.5	6.0	16.6
80	5.0	4.5	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.5	5.0	17.9
60	4.0	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	4.0	19.6
50	4.0	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	4.0	20.7
40	3.5	3.5	3.5	3.5	4.0	4.0	4.0	3.5	3.5	3.5	3.5	22.0
30	3.5	3.5	3.5	4.0	4.0	4.0	4.0	4.0	3.5	3.5	3.5	23.8
20	4.0	4.0	4.0	4.5	4.5	4.5	4.5	4.5	4.0	4.0	4.0	26.4
15	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	28.3
10	5.0	5.0	5.5	5.0	5.0	4.5	5.0	5.0	5.0	5.0	5.0	31.0

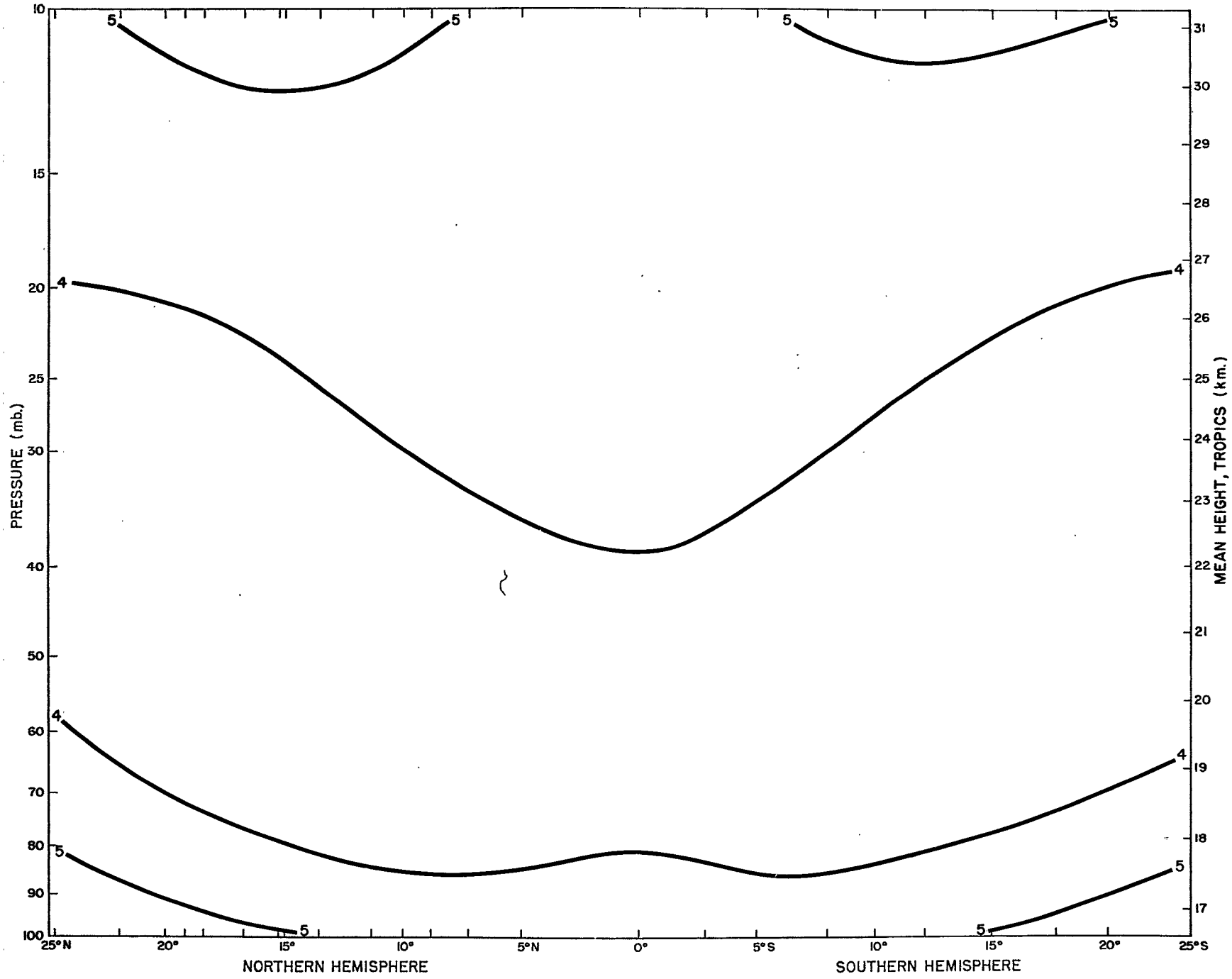

CHART 4.11. STANDARD DEVIATION OF THE MERIDIONAL WIND ABOUT MONTHLY MEANS (m./sec.).

Table 4.8. *Mean Temperature (°C.).*

Pressure (mb.)	25° N.	20° N.	15° N.	10° N.	5° N.	0°	5° S.	10° S.	15° S.	20° S.	25° S.	Height (km.)
100	-74.5	-76.5	-79.5	-79.5	-80.0	-80.5	-80.0	-79.5	-77.5	-75.5	-72.5	16.6
80	-73.0	-75.0	-77.0	-77.0	-77.0	-77.5	-77.0	-77.0	-75.5	-73.5	-72.5	17.9
60	-66.0	-67.5	-68.5	-69.0	-69.0	-69.5	-69.0	-69.0	-68.0	-67.0	-65.5	19.6
50	-62.5	-63.5	-64.0	-64.5	-64.5	-64.5	-64.5	-64.0	-63.5	-62.5	-61.0	20.7
40	-59.0	-60.0	-60.0	-60.5	-60.5	-60.5	-60.5	-60.0	-59.5	-59.0	-58.0	22.0
30	-54.5	-55.0	-55.5	-55.5	-55.5	-56.0	-55.5	-55.5	-55.5	-55.0	-54.5	23.8
20	-49.5	-49.5	-49.5	-50.0	-50.0	-50.0	-50.0	-50.0	-50.0	-50.0	-50.0	26.4
15	-46.5	-46.5	-46.5	-46.5	-46.5	-46.5	-46.5	-46.5	-46.5	-46.5	-46.5	28.3
10	-43.5	-43.5	-43.5	-43.5	-43.5	-43.5	-43.5	-43.5	-43.5	-43.5	-43.5	31.0

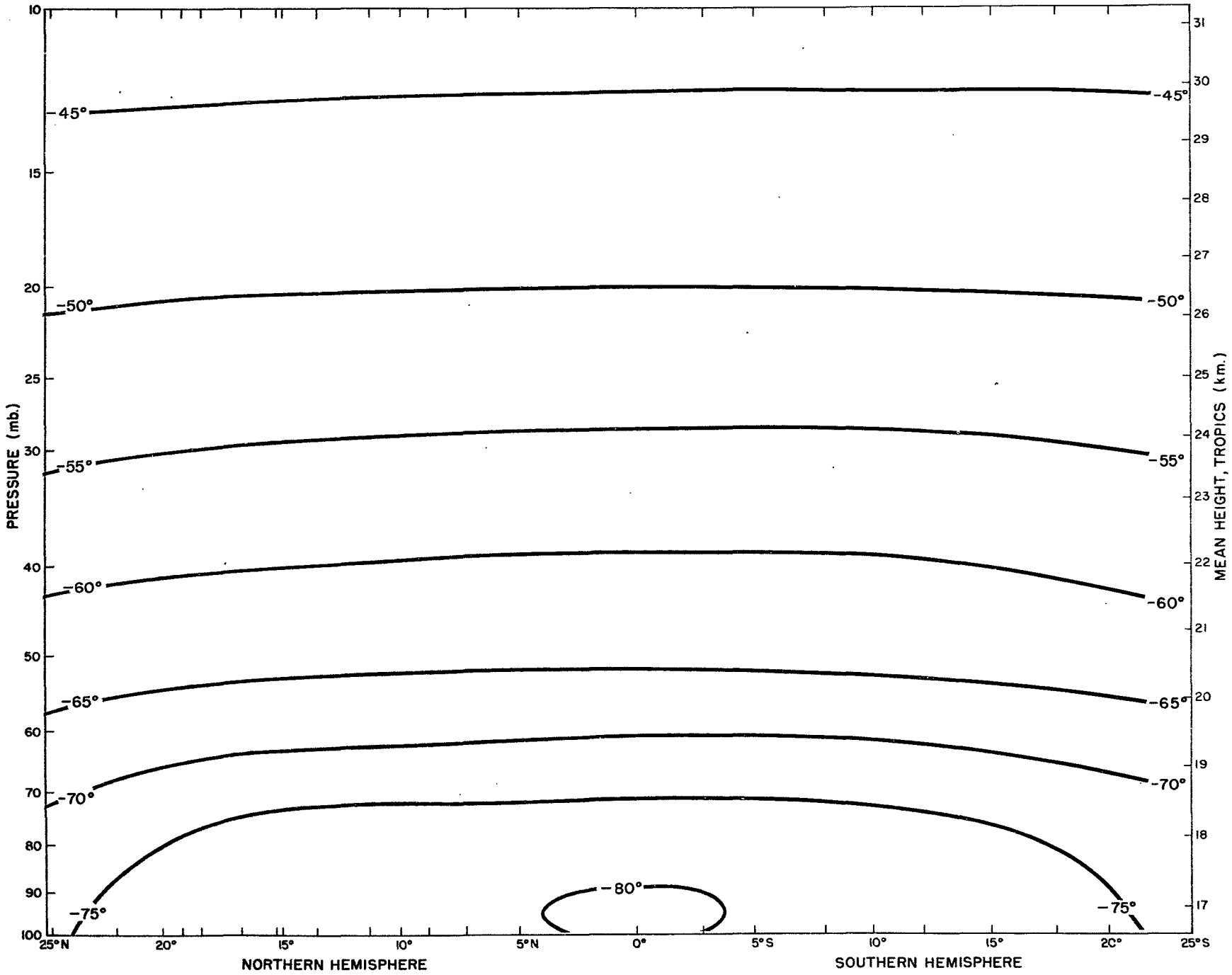

CHART 4.12. MEAN TEMPERATURE (°C.).

Table 4.9. *Amplitude of the Annual Temperature Cycle (°C.).*

Pressure (mb.)	25° N.	20° N.	15° N.	10° N.	5° N.	0°	Height (km.)
100	2.0	2.1	2.1	2.1	2.1	2.2	16.6
80	3.8	4.2	4.6	5.1	5.2	5.2	17.9
60	2.9	2.9	3.0	3.0	3.0	3.0	19.6
50	2.2	2.6	2.5	2.3	2.2	2.2	20.7
40	2.2	2.2	2.0	1.9	1.8	1.8	22.0
30	2.2	2.0	1.7	1.5	1.4	1.4	23.8
20	2.2	1.9	1.5	1.1	0.9	0.9	26.4
15	2.2	1.9	1.3	0.9	0.8	0.7	28.3
10	2.2	1.9	1.2	0.8	0.7	0.6	31.0

Table 4.10. *Phase of the Annual Temperature Cycle.*

Pressure (mb.)	25° N.	20° N.	15° N.	10° N.	5° N.	0°	Height (km.)
100	Aug. 1	Aug. 1	Aug. 1	Aug. 1	Aug. 1	Aug. 1	16.6
80	Aug. 1	Aug. 1	Aug. 1	Aug. 1	Aug. 1	Aug. 1	17.9
60	Aug. 1	Aug. 1	Aug. 1	Aug. 15	Aug. 15	Aug. 15	19.6
50	Aug. 1	Aug. 1	Aug. 15	Aug. 15	Aug. 15	Aug. 15	20.7
40	Aug. 1	Aug. 1	Aug. 1	Aug. 15	Aug. 15	Aug. 15	22.0
30	Aug. 1	Aug. 1	Aug. 1	Aug. 1	Aug. 15	Aug. 15	23.8
20	July 15	July 15	Aug. 1	Aug. 1	Aug. 1	Aug. 1	26.4
15	July 15	July 15	July 15	July 15	Aug. 1	Aug. 1	28.3
10	July 15	July 15	July 15	July 15	July 15	July 15	31.0

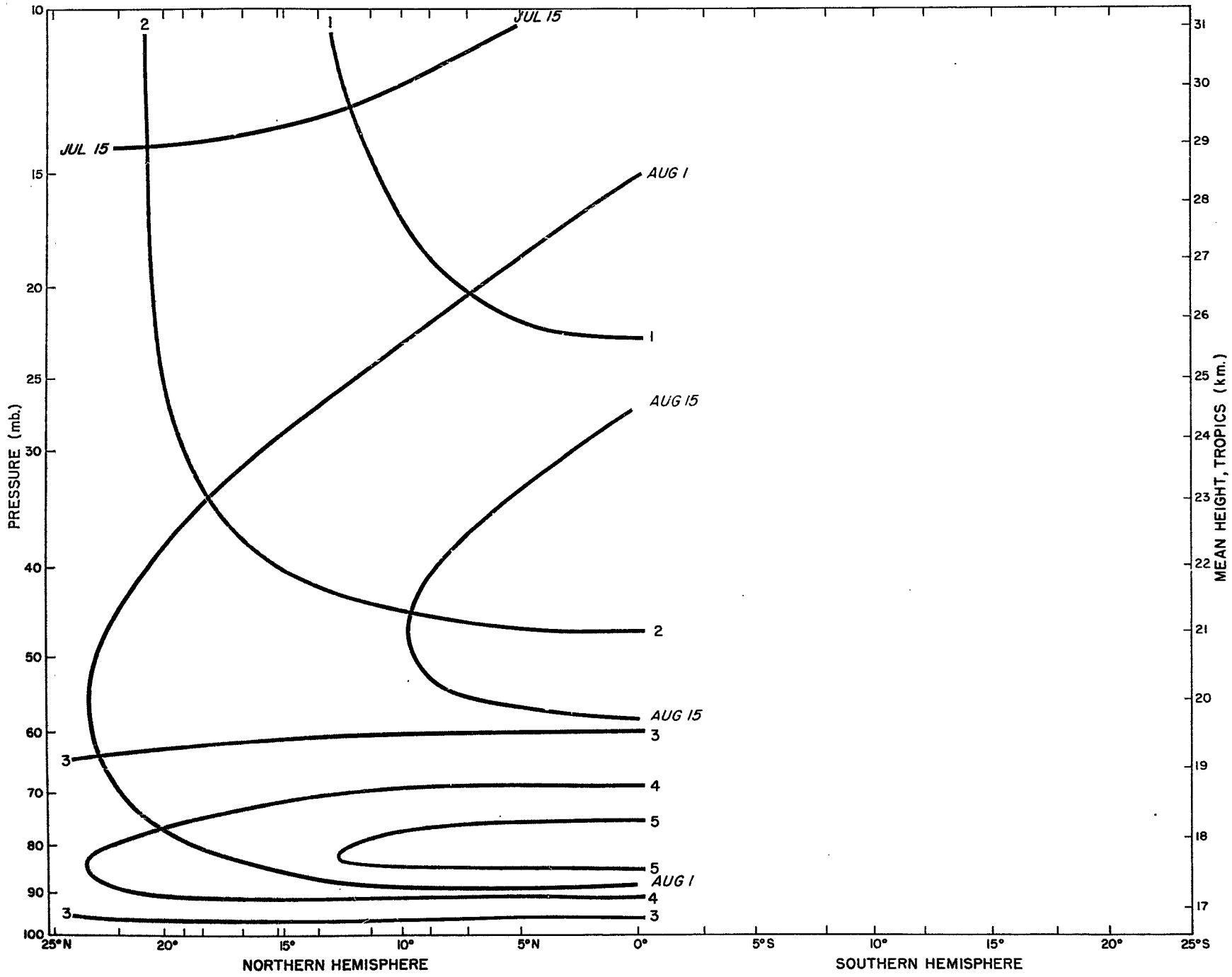

CHART 4.13. PHASE AND AMPLITUDE OF THE ANNUAL TEMPERATURE CYCLE (°C.).

Table 4.11. *Amplitude of the 26-Month Temperature Cycle (°C.).*

Pressure (mb.)	25° N.	20° N.	15° N.	10° N.	5° N.	0°	Height (km.)
100	0.2	0.2	-	0.4	0.7	0.9	16.6
80	0.3	0.2	-	0.6	1.1	1.5	17.9
60	0.4	0.3	-	0.7	1.3	1.7	19.6
50	0.6	0.4	-	0.8	1.5	1.8	20.7
40	0.7	0.4	-	0.8	1.5	1.9	22.0
30	1.0	0.5	-	0.9	1.6	2.0	23.8
20	1.2	0.6	-	0.9	1.7	2.1	26.4
15	1.3	0.7	-	1.0	1.8	2.2	28.3
10	1.3	0.7	-	1.0	1.8	2.2	31.0

Table 4.12. *Phase of the 26-Month Temperature Cycle.*

Pressure (mb.)	25° N.	20° N.	15° N.	10° N.	5° N.	0°	Height (km.)
100	Dec. 58	Nov. 58	-	Jan. 58	Feb. 58	Feb. 58	16.6
80	Oct. 58	Sept. 58	-	Jan. 58	Jan. 58	Jan. 58	17.9
60	July 58	July 58	-	Sept. 57	Nov. 57	Nov. 57	19.6
50	June 58	June 58	-	July 57	Aug. 57	Sept. 57	20.7
40	Apr. 58	Apr. 58	-	June 57	June 57	June 57	22.0
30	Feb. 58	Feb. 58	-	Apr. 57	Mar. 57	Mar. 57	23.8
20	Dec. 57	Dec. 57	-	Feb. 57	Dec. 56	Dec. 57	26.4
15	Nov. 57	Oct. 57	-	Dec. 56	Oct. 56	Oct. 56	28.3
10	Sept. 57	Aug. 57	-	Sept. 56	Aug. 56	Aug. 56	31.0

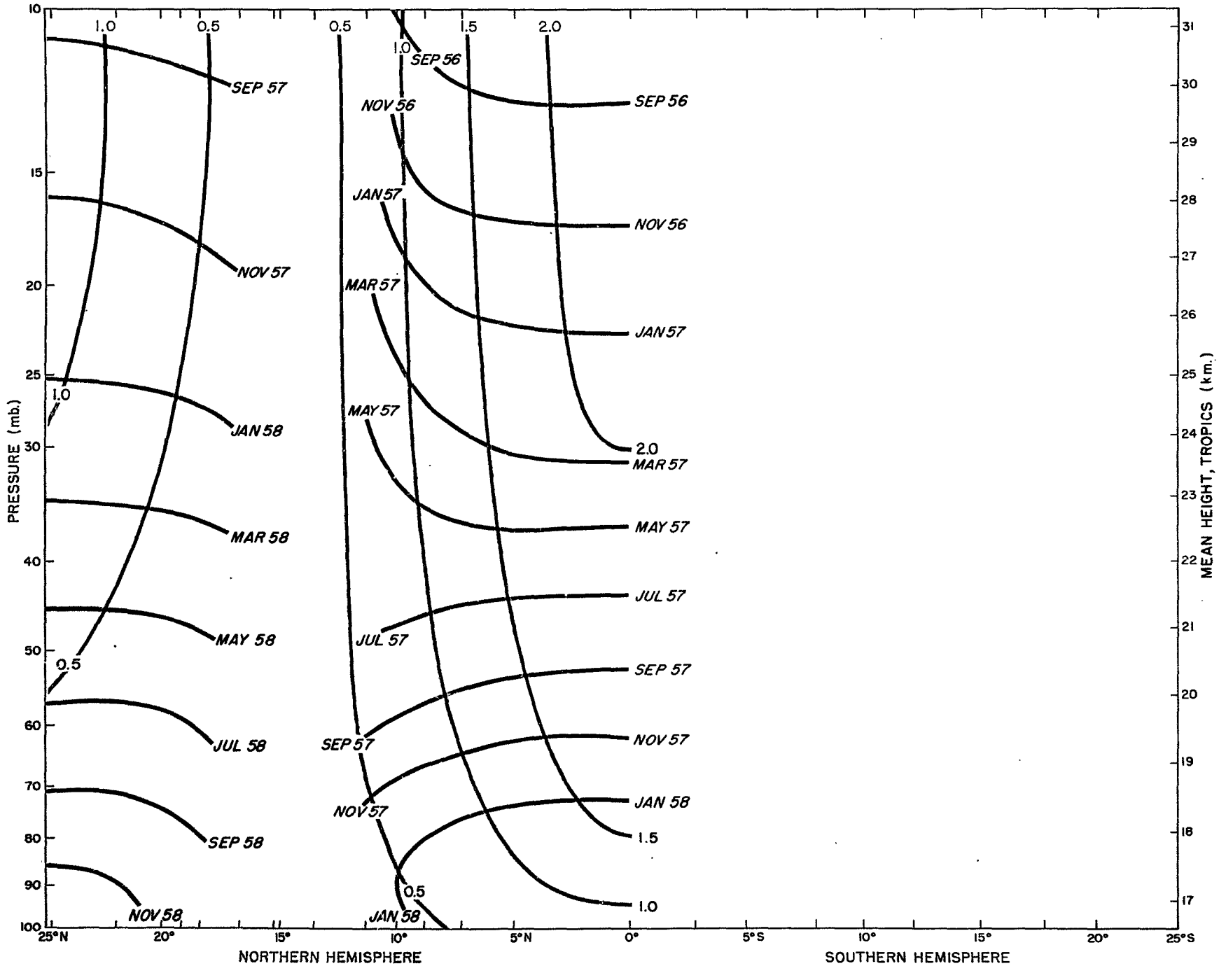

CHART 4.14. PHASE AND AMPLITUDE OF THE 26-MONTH TEMPERATURE CYCLE (°C.).

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3. FARKAS, E., *"Stratospheric Wind Reversals over the Equatorial and Tropical Southwest Pacific."* Technical Note No. 149. New Zealand Meteorological Service. 1962.

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3. FARKAS, E., "*Stratospheric Wind Reversals over the Equatorial and Tropical Southwest Pacific.*" *Technical Note No.* 149. New Zealand Meteorological Service. 1962.

APPENDIX A

Wind Statistics for Individual Stations

These data are based on 0000 GCT and 1200 GCT reports. The period of record and the number of ıonths of missing data are given at the top of the table. As few as four reports were used in obtaining the ıonthly averages. Values are in meter per second. Phases of the annual cycle give times of occurrence f maximum west wind to the nearest tenth of a month. (For instance, 4.3 indicates three-tenths of the way ırough the fourth month, or April 9.) Phases of the 26-month cycle give times of occurrence of maximum est wind to the nearest tenth of a month on the 26-month calendar (see Introduction). Whole numbers efer to middle of months; thus, 0.0 corresponds to July 15, 1957.

Iwo Jima

24°47′N., 141°20′E.

Level (mb.)	100	80	60	50	40	30	20	15	10
Period of Record	4/51-12/60	4/51-12/60	4/51-12/60	8/51-12/60	8/51-12/60	8/51-12/60	8/51-12/60	8/51-12/60	5/54-12/60
Months Missing	14	19	19	22	23	23	27	39	54
				Annual Cycle					
January	29.0	22.4	12.4	9.0	4.6	2.1	1.4	-0.5	0.1
February	30.2	22.8	16.1	10.4	6.3	3.0	2.7	3.8	6.2
March	27.6	20.2	10.5	6.7	3.6	1.4	-0.3	1.8	3.2
April	18.6	13.3	7.0	0.6	-2.1	-3.0	-2.6	-1.1	0.8
May	7.2	2.9	-3.1	-4.8	-6.7	-8.9	-9.3	-10.0	-9.2
June	-3.7	-6.2	-9.3	-11.9	-13.8	-16.0	-17.1	-17.9	-18.2
July	-12.4	-13.8	-15.8	-17.7	-19.4	-21.5	-23.5	-24.4	-26.1
August	-11.9	-13.0	-15.3	-17.3	-19.0	-20.5	-22.1	-23.4	-25.5
September	-9.3	-11.1	-11.4	-13.5	-15.2	-16.2	-17.7	-17.7	-19.5
October	1.5	-1.8	-4.8	-6.8	-7.3	-7.9	-8.6	-7.2	-5.7
November	11.9	6.2	-0.1	-1.9	-3.0	-2.4	-0.4	2.1	5.5
December	22.1	15.2	6.3	3.4	0.8	-1.2	-0.7	-0.6	0.4
Mean	9.3	4.9	-0.6	-3.6	-5.9	-7.6	-8.2	-7.9	-7.2
1st Harmonic Amplitude	20.6	17.7	15.3	12.8	11.6	11.3	11.9	12.5	14.2
1st Harmonic Phase	2.3	2.3	2.3	2.3	2.2	2.1	2.0	2.0	2.1
2nd Harmonic Amplitude	0.4	0.2	0.4	0.5	0.9	1.6	2.1	3.2	4.1
2nd Harmonic Phase	4.7	4.0	3.9	3.8	4.5	4.7	4.9	4.7	4.8

Level (mb.)	100	80	60	50	40	30	20	15	10
Period of Record	4/51-12/60	4/51-12/60	4/51-12/60	8/51-12/60	8/51-12/60	8/51-12/60	8/51-12/60	8/51-12/60	5/54-12/60
Months Missing	14	19	19	22	23	23	27	39	54
Months				26 - Month Cycle					
0	1.6	0.2	0.5	0.1	-0.4	1.2	2.1	2.7	1.4
2	0.2	0.3	1.2	1.2	0.8	0.4	0.6	-0.1	1.4
4	-0.8	1.0	0.2	1.3	-0.9	-1.5	-2.0	-1.9	-1.3
6	-0.9	2.0	3.6	1.8	0.6	0.0	-1.5	-2.4	-1.5
8	1.4	2.6	5.3	3.1	2.9	2.3	2.0	2.5	1.5
10	2.3	-1.3	-1.8	-2.1	-2.6	-1.6	-0.8	-1.0	-2.5
12	1.4	-0.4	-2.3	-2.7	-1.5	-0.6	-0.6	-0.9	-2.1
14	-0.2	0.5	0.1	0.7	1.1	0.0	0.6	-0.4	-0.4
16	-0.7	-0.2	-1.0	-0.6	0.0	0.3	-0.2	0.8	-0.2
18	-1.5	-1.6	-0.4	-1.0	-0.5	-0.8	0.2	2.1	0.1
20	-2.6	-3.6	-3.4	-2.7	-2.2	-2.2	-3.4	-6.3	-6.7
22	1.0	2.0	0.4	1.2	0.8	-0.5	1.8	3.4	6.0
24	-4.8	-1.8	-2.4	0.1	2.1	0.8	0.8	2.6	2.9
1st Harmonic Amplitude	1.6	2.0	2.6	1.7	0.8	0.6	0.8	0.9	1.8
1st Harmonic Phase	6.5	5.0	3.9	4.3	2.7	0.7	24.1	25.3	0.1
2nd Harmonic Amplitude	0.5	0.6	1.4	0.5	0.2	0.5	0.9	0.8	1.6
2nd Harmonic Phase	10.9	4.7	5.0	-5.1	8.5	10.2	11.0	11.9	10.6

Lihue, Kauai, Hawaiian Islands

21°59'N., 159°21'W.

Level (mb.)	100	80	60	50	40	30	20	15	10
Period of Record	1/51-12/61	1/51-12/61	1/51-12/61	1/51-12/61	1/51-12/61	1/51-12/61	1/51-12/61	1/51-12/61	
Months Missing	1	1	1	1	2	4	37	87	
				Annual Cycle					
January	10.9	4.7	-1.2	-2.0	-2.9	-1.8	-1.2	2.3	
February	12.7	6.5	0.8	0.1	-1.2	-2.0	-2.7	-7.9	
March	13.6	7.8	1.4	-1.0	-2.2	-2.6	-1.5	-0.2	
April	11.4	5.9	0.2	-2.4	-4.0	-5.4	-2.7	-1.3	
May	8.6	2.7	-3.9	-7.7	-10.0	-11.8	-12.1	-10.2	
June	0.4	-5.4	-11.0	-13.6	-15.9	-17.8	-19.2	-18.0	
July	-2.5	-9.4	-15.2	-18.0	-20.5	-22.2	-23.5	-25.9	
August	-1.2	-9.0	-15.0	-17.2	-19.5	-21.7	-23.9	-25.2	
September	0.0	-6.6	-11.6	-13.6	-15.3	-17.2	-19.3	-20.2	
October	2.5	-2.1	-6.5	-7.8	-9.2	-10.4	-11.1	-7.7	
November	4.5	0.3	-2.8	-3.3	-2.3	-1.0	0.5	3.0	
December	8.5	2.8	-2.3	-2.5	-2.7	-1.6	0.6	4.4	
Mean	5.8	-0.2	-5.6	-7.3	-8.8	-9.7	-9.7	-9.0	
1st Harmonic Amplitude	7.1	7.5	7.3	8.0	8.8	10.1	11.5	12.7	
1st Harmonic Phase	2.7	2.6	2.4	2.1	2.0	1.8	1.8	1.5	
2nd Harmonic Amplitude	1.1	1.7	2.0	1.9	2.1	2.1	3.0	5.1	
2nd Harmonic Phase	4.2	4.6	4.7	4.7	4.8	5.1	5.2	5.5	

Level (mb.)	100	80	60	50	40	30	20	15	10
Period of Record	1/51-12/61	1/51-12/61	1/51-12/61	1/51-12/61	1/51-12/61	1/51-12/61	1/51-12/61	1/51-12/61	
Months Missing	1	1	1	1	2	4	37	87	
Months				26 - Month Cycle					
0	-0.7	-0.3	0.0	0.6	0.6	1.4	0.7	1.8	
2	0.4	2.5	1.6	0.8	1.9	2.1	-0.2	0.0	
4	0.4	1.1	1.3	1.0	0.9	0.7	-0.7	-0.7	
6	1.2	1.1	1.5	0.6	-0.2	-2.0	-2.4	-7.8	
8	1.3	1.2	1.3	0.8	-0.4	-1.0	-0.8	-2.5	
10	1.7	1.5	0.3	0.0	0.1	-0.6	-4.5	-4.5	
12	-1.1	-2.4	-2.0	-0.8	-2.1	-2.2	-2.8	2.0	
14	0.4	0.7	0.2	0.0	-0.5	-1.2	0.4	-1.1	
16	-0.4	0.0	-0.3	-1.0	-0.5	-0.5	0.2	2.5	
18	-0.8	-0.7	-2.0	-1.3	-1.4	-1.2	1.3	4.3	
20	-1.0	-1.3	-2.9	-2.2	-0.3	-2.1	0.9	5.0	
22	0.0	0.4	0.2	0.4	1.8	4.0	4.2	6.2	
24	-2.0	-0.2	0.9	1.6	1.6	3.2	3.7	5.9	
1st Harmonic Amplitude	0.6	0.7	1.4	1.2	1.6	2.2	2.9	5.1	
1st Harmonic Phase	8.6	4.5	3.9	3.1	0.0	24.6	22.1	20.8	
2nd Harmonic Amplitude	0.5	0.6	0.4	0.4	0.3	0.9	0.6	0.3	
2nd Harmonic Phase	4.3	2.7	1.5	0.2	1.9	11.7	11.9	12.2	

Wake Island

19°17'N., 166°39'E.

Level (mb.)	100	80	60	50	40	30	20	15
Period of Record	1/51-12/61	1/51-12/61	1/51-12/61	1/51-12/61	1/51-12/61	3/51-12/61	6/51-12/61	12/51-12/61
Months Missing	1	1	2	2	2	5	35	64
			Annual Cycle					
January	5.8	1.2	-1.6	-1.7	-1.7	-1.1	-2.4	1.5
February	9.2	4.4	-0.4	-0.9	-2.0	-2.0	-2.9	-4.0
March	10.5	4.1	-0.7	-1.3	-2.3	-2.1	-2.1	-1.0
April	7.5	2.2	-2.5	-4.1	-5.4	-6.7	-6.0	-6.3
May	4.5	-0.6	-5.7	-8.1	-10.4	-12.2	-13.5	-13.7
June	-4.9	-8.2	-12.4	-14.9	-16.9	-18.6	-21.4	-21.6
July	-4.5	-10.6	-16.2	-18.5	-20.7	-22.8	-25.2	-25.3
August	-5.2	-11.1	-15.8	-17.9	-19.9	-21.9	-25.7	-24.8
September	-6.0	-9.8	-13.4	-15.0	-16.5	-17.9	-19.8	-20.8
October	-5.6	-7.7	-8.8	-9.7	-10.4	-11.2	-14.0	-13.3
November	-3.2	-5.9	-6.2	-6.2	-5.7	-4.5	-5.1	-1.8
December	2.9	-1.5	-4.2	-4.0	-3.8	-2.3	-1.3	-0.6
Mean	0.8	-3.6	-7.3	-8.5	-9.7	-10.3	-11.7	-11.2
1st Harmonic Amplitude	7.7	7.3	7.3	8.2	9.0	10.3	11.5	12.7
1st Harmonic Phase	3.1	2.9	2.4	2.2	2.0	1.9	1.9	1.7
2nd Harmonic Amplitude	1.0	1.0	1.2	1.2	1.3	1.4	2.1	2.0
2nd Harmonic Phase	3.4	4.0	4.6	4.7	4.8	5.0	5.1	5.5

Level (mb.)	100	80	60	50	40	30	20	15
Period of Record	1/51-12/61	1/51-12/61	1/51-12/61	1/51-12/61	1/51-12/61	3/51-12/61	6/51-12/61	12/51-12/61
Months Missing	1	1	2	2	2	5	35	64
Months			26 - Month Cycle					
0	-1.1	0.0	2.1	2.3	2.6	1.7	3.7	0.8
2	-1.8	0.2	2.8	2.6	4.0	3.9	2.7	-3.4
4	0.4	0.9	1.3	2.1	2.0	1.3	1.4	-1.8
6	2.6	2.8	0.8	1.5	0.8	-0.5	0.0	-5.5
8	0.7	0.5	-0.2	0.3	-0.6	-1.2	-4.2	-5.2
10	0.7	0.9	-0.4	-0.7	-1.2	-1.8	-4.0	-5.2
12	0.2	-0.9	-1.5	-0.4	-1.6	-2.7	-4.1	-4.4
14	1.2	0.5	-1.4	-1.3	-1.8	-3.1	-1.9	-0.1
16	-1.6	-1.5	-1.2	-1.6	-1.6	-2.0	0.4	0.7
18	-0.9	-1.2	-2.1	-1.9	-2.0	-1.8	2.8	3.2
20	0.8	-1.0	-2.8	-2.7	-2.2	-1.6	0.7	6.4
22	-0.1	-0.2	-0.1	-0.7	0.6	3.6	4.7	6.7
24	-1.4	-1.2	1.8	1.1	2.3	4.4	5.2	5.6
1st Harmonic Amplitude	0.7	1.3	2.2	2.2	2.5	3.3	4.7	5.4
1st Harmonic Phase	9.2	5.8	1.8	2.7	0.7	25.4	23.3	21.6
2nd Harmonic Amplitude	0.6	0.4	0.6	0.6	0.6	0.8	0.2	0.4
2nd Harmonic Phase	6.8	5.2	0.6	1.0	0.4	10.5	1.8	7.2

San Juan, Puerto Rico

18°28′N., 66°07′W.

Level (mb.)	100	80	60	50	40	30	20	15
Period of Record	1/51-12/61	1/51-12/61	1/51-12/61	1/51-12/61	2/51-12/61	5/51-12/61	7/51-12/61	12/51-12/61
Months Missing	0	0	0	0	1	4	33	70
	Annual Cycle							
January	9.0	3.5	-0.8	-0.2	-1.1	-1.5	-1.2	-4.7
February	7.9	3.2	0.2	-0.2	-0.4	-1.1	-0.8	-1.6
March	8.6	3.8	0.2	0.0	-0.8	-2.8	-3.7	-1.8
April	11.3	4.0	-1.8	-3.4	-5.2	-6.6	-6.2	-6.2
May	8.3	1.4	-5.8	-8.5	-11.0	-12.7	-13.6	-13.1
June	-0.1	-6.1	-11.8	-14.8	-17.0	-18.8	-20.1	-17.3
July	-7.4	-12.7	-17.0	-18.7	-20.8	-22.6	-25.1	-25.3
August	-8.0	-12.8	-16.4	-18.1	-19.8	-21.5	-24.0	-23.1
September	-5.2	-9.4	-12.9	-14.3	-16.0	-18.1	-19.9	-18.3
October	0.1	-3.2	-7.2	-8.9	-11.0	-12.9	-14.7	-12.5
November	6.3	1.4	-1.3	-2.4	-4.1	-5.6	-5.8	-4.5
December	8.3	1.7	-1.2	-1.5	-1.5	-2.5	-3.4	-3.9
Mean	3.3	-2.1	-6.3	-7.6	-9.1	-10.6	-11.5	-10.9
1st Harmonic Amplitude	8.0	7.7	8.0	9.0	9.7	10.2	11.4	10.1
1st Harmonic Phase	2.6	2.4	2.1	2.0	1.9	1.9	2.0	2.0
2nd Harmonic Amplitude	2.9	2.4	1.9	1.5	1.3	1.0	1.1	2.2
2nd Harmonic Phase	5.2	5.1	5.0	4.9	4.8	4.8	4.8	4.8

Level (mb.)	100	80	60	50	40	30	20	15
Period of Record	1/51-12/61	1/51-12/61	1/51-12/61	1/51-12/61	2/51-12/61	5/51-12/61	7/51-12/61	12/51-12/61
Months Missing	0	0	0	0	1	4	33	70
Months	26 - Month Cycle							
0	1.6	1.6	2.2	4.5	4.7	5.5	6.4	3.2
2	0.7	1.8	2.6	3.4	4.1	3.6	2.5	1.3
4	0.1	0.8	1.6	1.2	1.9	1.0	-4.1	-5.3
6	1.3	1.8	1.8	1.1	0.3	-1.0	-4.7	-7.6
8	2.7	2.1	0.7	0.4	-0.5	-1.1	-2.6	-7.5
10	0.3	1.0	0.9	0.4	-0.5	-1.6	-5.4	-8.0
12	0.8	0.4	-0.3	-1.1	-2.2	-3.9	-5.6	-4.0
14	-0.2	0.2	-0.2	-1.3	-2.3	-3.6	-4.1	-2.9
16	-1.8	-1.3	-2.2	-2.7	-3.1	-3.7	-3.4	1.4
18	-1.0	-2.7	-3.7	-3.8	-3.6	-2.5	-2.7	3.7
20	-2.7	-3.4	-3.5	-3.0	-2.3	-0.5	7.0	8.4
22	-1.0	-2.4	0.0	0.3	1.4	4.4	7.7	8.8
24	-1.4	-1.5	0.2	1.8	3.8	5.4	7.6	11.3
1st Harmonic Amplitude	1.4	1.9	2.3	2.8	3.4	4.2	6.1	7.2
1st Harmonic Phase	6.5	5.9	4.2	2.7	1.8	25.9	23.6	21.8
2nd Harmonic Amplitude	0.6	0.6	1.0	1.3	1.6	1.7	2.3	1.2
2nd Harmonic Phase	0.0	0.4	12.7	12.6	12.3	11.2	10.3	9.5

Nandi, Fiji Islands

17°45′S., 122°27′E.

Level (mb.)	100	70	50	30	20	15
Period of Record	1/56-7/62	1/56-7/62	1/51-7/62	6/52-7/62	3/57-7/62	3/57-7/62
Months Missing	0	0	4	5	2	2
	Annual Cycle					
January	2.7	-7.5	-15.3	-18.6	-22.6	-22.8
February	1.9	-7.3	-16.1	-21.2	-24.7	-27.5
March	3.2	-6.7	-15.6	-20.2	-23.9	-23.1
April	9.6	-0.7	-10.0	-14.0	-15.9	-14.4
May	13.8	3.1	-4.6	-6.3	-5.3	-2.8
June	11.1	3.7	-1.4	-0.8	1.2	-3.5
July	12.7	6.6	1.4	-0.4	3.0	-4.8
August	12.5	5.4	-0.6	-4.6	-1.9	0.0
September	11.7	3.4	-3.6	-7.8	-7.2	-5.6
October	10.3	0.2	-7.1	-10.4	-8.6	-6.1
November	10.2	-2.3	-9.3	-13.1	-11.6	-9.4
December	10.0	-2.7	-12.1	-14.7	-15.0	-16.0
Mean	9.1	-0.3	-7.8	-11.0	-11.0	-10.0
1st Harmonic Amplitude	4.9	6.4	7.8	8.7	11.8	13.1
1st Harmonic Phase	8.4	8.0	8.0	7.9	8.1	8.1
2nd Harmonic Amplitude	2.3	0.9	1.1	2.5	3.3	3.8
2nd Harmonic Phase	5.5	5.9	6.5	6.4	6.3	6.1

Level (mb.)	100	70	50	30	20	15
Period of Record	1/56-7/62	1/56-7/62	1/51-7/62	6/52-7/62	3/57-7/62	3/57-7/62
Months Missing	0	0	4	5	2	2
Months	26 - Month Cycle					
0	0.2	0.8	2.8	4.8	4.0	6.7
2	1.6	1.4	2.7	2.7	1.6	-2.0
4	1.4	2.3	2.2	2.9	1.3	-1.7
6	-1.9	-0.3	1.9	2.2	-0.8	-0.3
8	-0.7	-0.6	1.4	-0.1	-3.8	-6.3
10	-0.2	-0.1	2.0	0.1	-4.5	-6.5
12	-0.6	-1.3	-1.1	-3.3	-4.3	-5.9
14	1.2	0.0	-1.3	-5.4	-4.6	-2.6
16	0.3	-0.4	-3.4	-5.2	-4.8	0.1
18	-1.9	-3.0	-3.6	-1.5	-0.3	1.6
20	1.6	0.1	-3.4	-1.8	2.0	1.8
22	-0.2	0.9	-3.0	-0.3	3.6	5.0
24	-0.9	0.0	1.2	4.4	8.7	8.9
1st Harmonic Amplitude	0.1	1.6	3.2	3.9	5.3	6.3
1st Harmonic Phase	1.0	3.9	4.3	1.8	23.7	22.2
2nd Harmonic Amplitude	0.3	0.3	0.8	0.6	0.9	1.4
2nd Harmonic Phase	0.8	3.2	0.2	11.3	9.2	10.5

Johnston Island

16°44'N., 169°31'W.

Level (mb.)	100	80	60	50	40	30	20	15	10
Period of Record	1/51-12/61	2/51-12/61	3/51-12/61	5/51-12/61	5/51-12/61	5/51-12/61	5/51-12/61	11/51-12/61	11/51-4/60
Months Missing	1	3	6	8	8	8	15	40	44
				Annual Cycle					
January	7.3	2.5	-1.0	-1.5	-1.1	-1.0	0.1	0.7	3.4
February	9.4	3.9	0.4	-0.2	-1.3	-1.6	-0.3	2.2	5.1
March	14.0	6.3	1.2	-0.6	-1.4	-2.7	-1.2	2.2	1.5
April	15.2	7.0	0.4	-2.0	-4.7	-6.4	-6.7	-8.1	-9.1
May	12.3	3.7	-4.5	-7.3	-10.8	-11.8	-12.8	-12.9	-12.2
June	2.5	-5.3	-11.5	-13.9	-15.8	-17.8	-20.2	-22.8	-25.3
July	0.4	-7.5	-14.0	-16.6	-17.9	-20.6	-23.1	-25.2	-29.8
August	-1.3	-9.4	-14.0	-16.1	-17.9	-19.4	-22.1	-25.4	-31.3
September	-0.9	-7.0	-11.7	-12.9	-14.0	-16.4	-19.6	-22.4	-28.6
October	3.4	-2.5	-7.0	-8.6	-10.4	-11.5	-12.8	-13.8	-12.6
November	2.0	-1.8	-4.3	-5.4	-5.9	-6.5	-6.4	-4.8	-1.5
December	4.6	-0.4	-2.8	-3.4	-2.8	-2.5	-0.8	0.8	1.8
Mean	5.7	-1.0	-5.7	-7.4	-8.7	-9.9	-10.5	-10.9	-11.7
1st Harmonic Amplitude	6.6	6.6	7.0	7.6	8.2	9.2	11.3	13.7	17.3
1st Harmonic Phase	3.5	3.0	2.5	2.3	2.0	1.9	1.9	1.9	2.0
2nd Harmonic Amplitude	2.1	1.9	1.6	1.4	0.8	0.7	0.8	1.1	2.0
2nd Harmonic Phase	4.6	4.6	4.6	4.4	4.5	4.8	5.1	5.0	5.4

Level (mb.)	100	80	60	50	40	30	20	15	10
Period of Record	1/51-12/61	2/51-12/61	3/51-12/61	5/51-12/61	5/51-12/61	5/51-12/61	5/51-12/61	11/51-12/61	11/51-4/60
Months Missing	1	3	6	8	8	8	15	40	44
Months				26 - Month Cycle					
0	-0.1	0.1	1.8	2.8	4.2	5.5	8.1	3.9	4.1
2	-0.2	1.2	2.1	3.9	5.2	6.0	4.3	4.2	10.1
4	-0.2	1.2	3.2	3.3	4.0	3.4	0.1	-1.7	-3.7
6	1.5	3.0	2.8	2.9	2.2	1.3	-1.6	-3.5	-9.3
8	2.8	3.1	2.5	1.8	0.8	-0.5	-4.8	-7.5	-10.5
10	1.9	2.7	1.3	0.5	0.4	-1.6	-3.7	-4.9	-6.5
12	-0.9	-1.4	-1.5	-2.0	-3.2	-4.2	-6.0	-7.2	-11.1
14	0.1	-1.2	-1.1	-2.0	-3.0	-5.6	-5.4	-6.2	-4.8
16	0.2	-0.3	-1.5	-2.0	-4.2	-4.3	-2.5	0.3	1.4
18	-1.3	-1.8	-2.8	-3.2	-3.4	-3.4	-1.0	2.0	11.5
20	-1.7	-2.7	-3.3	-3.0	-2.1	-0.6	3.8	9.5	12.8
22	-1.8	-2.7	-2.1	-1.7	-0.3	1.4	5.5	8.4	11.2
24	-0.5	-0.9	-0.5	1.1	2.0	5.1	7.9	9.8	6.2
1st Harmonic Amplitude	1.3	2.2	3.2	3.5	4.4	5.5	6.8	8.3	9.4
1st Harmonic Phase	7.5	5.9	4.7	3.7	2.7	0.9	24.7	22.8	22.2
2nd Harmonic Amplitude	0.5	0.6	0.6	0.8	0.8	0.5	0.6	1.1	2.3
2nd Harmonic Phase	3.9	4.6	2.6	1.5	0.9	11.0	10.5	8.1	3.9

Clark AFB, Philippines

15°16′N., 121°28′E.

Level (mb.)	100	80	60	50	40	30	20	15	10
Period of Record	1/51-12/61	1/51-12/61	1/51-12/61	1/51-12/61	1/51-12/61	1/51-12/61	1/51-12/61	1/51-12/61	1/51-12/61
Months Missing	1	0	0	0	0	0	1	15	44
				Annual Cycle					
January	1.1	0.3	0.7	0.0	-1.3	-2.0	-2.8	-2.4	-3.5
February	1.4	0.3	1.7	1.1	-0.9	-2.4	-3.3	-3.4	-3.2
March	2.4	0.0	0.4	0.0	-1.1	-2.6	-2.8	-4.2	-3.9
April	-0.9	-3.5	-3.2	-3.7	-5.2	-6.5	-8.1	-7.8	-8.9
May	-9.1	-10.4	-10.0	-10.4	-11.6	-13.8	-16.9	-17.6	-18.2
June	-16.5	-15.7	-15.0	-16.5	-17.7	-19.5	-21.7	-22.8	-28.0
July	-19.2	-18.6	-19.8	-20.5	-21.8	-23.7	-25.7	-26.9	-32.4
August	-18.6	-18.7	-18.8	-20.0	-21.4	-23.0	-26.1	-29.5	-32.0
September	-17.1	-15.7	-15.1	-16.1	-17.1	-18.8	-21.6	-21.1	-22.7
October	-9.4	-9.1	-9.4	-10.4	-11.5	-13.1	-14.2	-15.8	-15.4
November	-7.2	-7.2	-5.8	-6.6	-8.2	-8.8	-8.6	-7.8	-7.8
December	-1.3	-2.8	-2.2	-2.8	-4.1	-4.7	-3.0	-3.7	-1.8
Mean	-7.7	-8.4	-8.0	-8.8	-10.2	-11.6	-12.9	-13.6	-14.8
1st Harmonic Amplitude	10.3	9.3	9.8	10.0	9.8	10.3	11.4	12.3	14.1
1st Harmonic Phase	2.2	2.1	2.1	2.2	2.1	2.0	1.9	1.9	1.7
2nd Harmonic Amplitude	1.2	0.9	1.1	1.1	1.2	1.1	1.2	1.5	2.6
2nd Harmonic Phase	4.4	4.3	4.3	4.3	4.4	4.5	5.0	5.0	4.8

Level (mb.)	100	80	60	50	40	30	20	15	10
Period of Record	1/51-12/61	1/51-12/61	1/51-12/61	1/51-12/61	1/51-12/61	1/51-12/61	1/51-12/61	1/51-12/61	1/51-12/61
Months Missing	1	0	0	0	0	0	1	15	44
Months				26 - Month Cycle					
0	2.2	2.1	2.8	4.0	5.3	7.3	6.2	5.4	4.9
2	1.6	1.8	3.6	5.4	6.7	7.7	6.4	4.3	1.3
4	-0.2	1.5	3.9	5.2	5.7	4.1	-0.3	-2.2	-3.6
6	3.2	3.3	3.2	4.0	3.9	0.6	-2.1	-2.3	-8.2
8	-0.4	0.7	2.6	2.4	2.1	-0.2	-5.2	-4.9	-7.5
10	0.5	1.1	1.7	0.6	-0.8	-2.7	-6.8	-7.7	-12.8
12	0.8	0.3	-0.7	-1.0	-2.5	-4.5	-3.7	-4.8	-3.5
14	-3.7	-3.2	-3.6	-4.4	-6.2	-8.0	-9.0	-8.9	-9.5
16	-0.9	-1.0	-2.9	-3.9	-6.0	-6.3	-4.2	-1.6	3.6
18	0.4	-1.1	-4.2	-5.1	-6.7	-5.9	-2.4	2.4	6.4
20	-0.7	-2.6	-3.8	-4.7	-4.1	-0.9	4.6	6.1	4.7
22	-1.0	-1.2	-1.9	-2.0	-0.1	3.4	8.8	10.5	13.6
24	-1.3	-0.8	-0.1	0.8	4.0	7.6	11.1	10.4	9.3
1st Harmonic Amplitude	1.4	2.3	4.2	5.1	6.2	7.0	7.9	8.6	11.0
1st Harmonic Phase	5.8	5.5	4.5	3.8	2.7	0.8	24.4	23.1	21.7
2nd Harmonic Amplitude	0.7	0.6	0.4	0.4	0.6	1.2	1.8	1.2	1.0
2nd Harmonic Phase	4.4	3.6	2.1	0.1	11.7	10.7	10.3	9.0	9.1

Guam

13°33′N., 144°50′E.

Level (mb.)	100	80	60	50	40	30	20	15	10
Period of Record	1/51-12/61	1/51-12/61	1/51-12/61	1/51-12/61	1/51-12/61	1/51-12/61	1/51-12/61	1/51-12/61	
Months Missing	0	3	4	2	4	4	15	32	
				Annual Cycle					
January	-5.7	-5.4	-2.7	-2.2	-3.1	-3.6	-4.8	-4.6	
February	-4.4	-4.9	-2.6	-2.3	-3.8	-3.9	-5.9	-6.2	
March	-1.4	-3.6	-2.2	-2.4	-3.7	-4.6	-4.7	-6.9	
April	-1.7	-4.9	-3.9	-4.2	-5.3	-7.6	-10.1	-10.6	
May	-1.0	-5.4	-7.0	-8.3	-10.4	-12.8	-16.5	-17.9	
June	-6.7	-10.3	-12.9	-15.0	-16.8	-19.8	-23.0	-22.1	
July	-9.7	-13.3	-16.5	-18.2	-20.1	-22.4	-25.2	-27.5	
August	-9.9	-13.7	-15.9	-17.1	-19.1	-20.6	-25.6	-27.6	
September	-11.0	-12.8	-14.5	-15.2	-15.6	-18.3	-22.4	-24.1	
October	-8.1	-9.8	-9.1	-9.7	-11.6	-14.0	-15.4	-15.9	
November	-10.6	-10.9	-7.5	-6.8	-7.4	-8.8	-9.6	-8.1	
December	-7.0	-7.9	-5.4	-4.9	-6.3	-5.9	-4.7	-4.5	
Mean	-5.8	-8.6	-8.3	-8.9	-10.3	-11.9	-14.0	-14.6	
1st Harmonic Amplitude	5.5	4.4	6.7	7.6	7.9	8.8	10.4	11.1	
1st Harmonic Phase	2.9	3.0	3.4	2.2	2.2	2.1	1.8	1.8	
2nd Harmonic Amplitude	1.4	0.7	1.1	1.1	1.2	0.9	1.2	1.8	
2nd Harmonic Phase	1.3	4.6	4.7	4.7	4.6	4.5	5.2	5.5	

Level (mb.)	100	80	60	50	40	30	20	15	10
Period of Record	1/51-12/61	1/51-12/61	1/51-12/61	1/51-12/61	1/51-12/61	1/51-12/61	1/51-12/61	1/51-12/61	
Months Missing	0	3	4	2	4	4	15	32	
Months				26 - Month Cycle					
0	0.2	1.3	3.7	5.4	7.0	8.9	7.5	5.6	
2	1.0	1.4	4.8	6.3	7.6	8.5	5.9	1.6	
4	-0.7	0.9	3.7	4.9	5.6	5.2	2.8	-0.2	
6	2.6	3.9	4.6	4.9	4.3	2.5	-0.9	-3.4	
8	-0.3	1.0	3.1	3.7	3.0	0.0	-3.0	-7.4	
10	1.4	1.3	1.6	1.4	-0.5	-3.4	-7.6	-9.5	
12	1.0	0.2	-0.8	-1.8	-3.7	-6.0	-7.9	-7.6	
14	0.2	0.0	-1.8	-3.4	-4.9	-7.1	-5.6	-3.3	
16	-0.9	-2.3	-4.3	-4.3	-6.3	-6.6	-1.7	2.8	
18	-1.5	-2.0	-4.6	-7.2	-8.7	-7.7	-1.3	5.4	
20	-2.5	-3.0	-5.4	-5.7	-5.2	-2.5	4.8	7.0	
22	0.0	-1.1	-3.2	-2.8	-0.4	3.8	8.2	12.2	
24	-0.8	-1.3	-0.5	0.6	4.0	7.5	11.2	10.9	
1st Harmonic Amplitude	1.2	2.2	4.8	6.0	7.2	7.9	8.6	9.5	
1st Harmonic Phase	8.3	6.2	5.0	4.2	3.0	0.8	24.2	22.6	
2nd Harmonic Amplitude	0.5	0.4	0.9	1.0	1.0	1.4	1.0	0.7	
2nd Harmonic Phase	3.1	2.9	1.9	1.2	12.8	11.0	9.3	6.0	

Lima, Peru

12°06′S., 77°02′W.

Level (mb.)	100	80	60	50	40	30	20	15	10
Period of Record	10/57-12/60	10/57-12/60	10/57-12/60	10/57-12/60	10/57-12/60	10/57-12/60	10/57-12/60		
Months Missing	0	0	0	0	0	1	3		
				Annual Cycle					
January	-2.8	-8.4	-10.4	-13.0	-15.4	-18.6	-23.7		
February	-6.2	-7.8	-10.8	-13.0	-17.7	-21.5	-27.3		
March	-5.0	-7.7	-10.7	-14.5	-19.0	-22.6	-23.7		
April	3.8	-1.2	-6.1	-10.2	-14.0	-18.6	-18.5		
May	11.0	6.0	-3.2	-6.9	-11.6	-13.6	-10.9		
June	8.5	5.6	-1.1	-4.8	-7.4	-6.5	-3.1		
July	6.0	1.6	-1.1	-3.1	-2.6	-1.9	1.1		
August	6.3	1.6	0.1	-1.1	-2.2	-1.1	-1.2		
September	4.3	1.0	-1.2	-3.2	-5.6	-7.0	-6.4		
October	1.3	-2.6	-3.8	-6.6	-8.3	-11.6	-12.0		
November	2.7	-2.5	-5.2	-8.0	-11.2	-12.0	-14.0		
December	-0.1	-5.6	-9.3	-10.9	-12.9	-15.1	-22.0		
Mean	2.4	-1.7	-5.2	-7.9	-10.6	-12.5	-13.7		
1st Harmonic Amplitude	5.5	5.8	5.1	5.5	6.9	8.8	11.8		
1st Harmonic Phase	7.6	7.4	8.0	8.3	8.6	8.5	8.1		
2nd Harmonic Amplitude	2.7	1.9	0.4	0.2	1.0	2.0	1.6		
2nd Harmonic Phase	5.8	5.7	5.4	7.2	7.3	7.2	6.9		

Level (mb.)	100	80	60	50	40	30	20	15	10
Period of Record	10/57-12/60	10/57-12/60	10/57-12/60	10/57-12/60	10/57-12/60	10/57-12/60	10/57-12/60		
Months Missing	0	0	0	0	0	1	3		
Months				26 - Month Cycle					
0	-1.4	0.9	3.2	5.6	8.1	10.4	9.9		
2	-1.6	-0.7	3.7	5.3	6.3	7.3	3.2		
4	-2.5	-0.1	2.2	3.8	5.7	5.8	1.6		
6	0.7	2.5	6.2	5.7	4.0	0.0	-6.3		
8	0.0	0.4	1.2	-0.9	-5.2	-8.9	-12.7		
10	1.3	1.2	-0.6	-5.4	-8.0	-16.0	-16.6		
12	1.0	-0.9	-4.7	-7.2	-9.7	-9.6	-10.6		
14	3.4	0.8	-2.8	-3.8	-8.3	-11.7	-8.0		
16	0.3	-0.8	-3.7	-4.5	-5.8	-6.5	-0.7		
18	1.2	-0.8	-2.9	-4.0	-5.1	-5.1	0.7		
20	1.1	-1.3	-5.9	-4.9	-0.6	6.1	11.7		
22	-0.8	-1.0	1.0	5.3	10.1	13.5	16.6		
24	-1.6	0.4	3.5	6.6	8.6	12.6	11.4		
1st Harmonic Amplitude	2.1	2.7	4.9	6.5	9.1	12.2	12.9		
1st Harmonic Phase	10.8	7.0	3.8	1.8	0.1	24.9	23.5		
2nd Harmonic Amplitude	0.4	0.5	0.4	0.4	0.0	0.2	1.0		
2nd Harmonic Phase	1.9	2.9	2.6	2.2	12.7	10.0	4.8		

Eniwetok Atoll

11°20′N., 162°20′E.

Level (mb.)	100	80	60	50	40	30	20	15	10
Period of Record	1/51-12/61	2/51-12/61	2/51-12/61	2/51-12/61	2/51-12/61	2/51-12/61	2/51-12/61	2/51-12/61	4/51-12/61
Months Missing	1	7	9	6	10	12	13	17	36
				Annual Cycle					
January	-7.5	-8.1	-3.4	-2.9	-3.6	-3.1	-0.9	-0.6	-1.0
February	-4.6	-5.6	-1.4	-1.3	-2.4	-2.6	-2.9	-4.4	-5.9
March	-1.5	-2.9	-1.0	-0.8	-2.4	-3.1	-3.7	-4.2	-4.5
April	2.0	-1.4	-1.8	-3.2	-5.8	-7.6	-9.3	-10.3	-13.9
May	5.7	-0.3	-6.0	-8.7	-9.6	-12.7	-14.7	-15.6	-17.0
June	-1.5	-7.3	-11.6	-14.5	-16.6	-18.0	-19.7	-20.5	-21.5
July	-2.4	-10.1	-14.7	-16.4	-18.2	-20.1	-22.3	-24.5	-25.8
August	-4.8	-11.1	-14.1	-16.0	-18.9	-20.8	-23.0	-24.2	-25.1
September	-5.7	-9.8	-11.6	-13.9	-14.6	-15.9	-17.0	-18.4	-22.2
October	-4.6	-7.0	-8.0	-9.6	-12.3	-14.6	-14.6	-14.7	-14.5
November	-7.0	-9.2	-6.8	-6.7	-9.0	-10.4	-10.1	-10.9	-5.7
December	-6.6	-9.7	-6.2	-9.4	-8.0	-8.6	-5.7	-2.0	-0.5
Mean	-3.3	-6.9	-7.2	-8.7	-10.3	-11.7	-12.2	-12.6	-13.3
1st Harmonic Amplitude	4.2	3.8	6.0	7.4	7.6	8.5	9.8	10.5	11.7
1st Harmonic Phase	5.6	4.2	2.6	2.6	2.4	2.3	2.0	1.7	1.5
2nd Harmonic Amplitude	1.8	2.0	1.6	1.7	1.2	1.1	0.4	0.7	1.9
2nd Harmonic Phase	5.0	4.6	4.7	3.8	3.9	3.4	3.2	5.9	6.1

Level (mb.)	100	80	60	50	40	30	20	15	10
Period of Record	1/51-12/61	2/51-12/61	2/51-12/61	2/51-12/61	2/51-12/61	2/51-12/61	2/51-12/61	2/51-12/61	4/51-12/61
Months Missing	1	7	9	6	10	12	13	17	36
Months				26 - Month Cycle					
0	0.0	1.8	4.3	6.7	8.3	9.5	8.8	7.0	1.0
2	-2.6	0.1	5.6	8.4	9.9	10.2	7.0	5.4	-3.0
4	-1.8	0.4	4.9	7.1	8.0	6.3	1.8	-1.2	-10.8
6	2.6	4.1	5.2	5.8	6.5	4.0	-2.3	-3.2	-9.2
8	0.8	1.8	3.0	3.1	3.8	-0.8	-8.1	-10.4	-15.3
10	2.1	2.1	3.4	2.0	-0.4	-5.0	-9.0	-10.0	-12.7
12	2.4	1.2	-0.3	-1.5	-5.0	-8.6	-11.1	-11.6	-17.6
14	1.7	0.6	-2.0	-2.8	-6.6	-9.8	-10.7	-9.0	-5.2
16	0.3	-1.3	-4.8	-7.2	-6.8	-8.6	-4.8	-3.2	3.0
18	-2.1	-3.4	-6.8	-9.4	-11.1	-9.5	-2.9	3.7	7.1
20	-2.8	-3.2	-6.3	-8.0	-7.6	-0.9	8.4	11.6	14.0
22	0.1	-1.1	-3.4	-4.1	-3.2	1.8	10.1	10.8	14.3
24	-1.8	-2.2	-1.1	1.7	5.2	9.7	12.2	11.6	8.6
1st Harmonic Amplitude	1.3	2.5	6.0	7.9	9.4	10.1	11.3	12.8	14.6
1st Harmonic Phase	9.3	6.6	5.0	4.1	3.2	1.2	24.2	22.7	21.3
2nd Harmonic Amplitude	0.1	0.3	1.2	1.9	1.8	1.1	1.2	1.9	2.0
2nd Harmonic Phase	11.1	0.2	0.7	0.3	0.1	12.1	8.6	7.7	7.2

Balboa, Panama

8°58′N., 79°35′W.

Level (mb.)	100	80	60	50	40	30	20	15	10
Period of Record	1/51-12/61	1/51-12/61	1/51-12/61	1/51-12/61	1/51-12/61	1/51-12/61	1/51-12/61	1/51-12/61	1/51-12/61
Months Missing	0	0	0	0	2	3	8	21	59
				Annual Cycle					
January	0.2	-4.0	0.9	0.5	-0.9	-2.1	-2.8	-2.8	-6.2
February	-1.3	-4.2	1.1	1.5	-1.0	-2.1	-3.1	-4.9	-6.0
March	-1.5	-5.1	-0.1	0.3	-0.4	-2.8	-4.2	-3.7	-8.6
April	0.4	-2.7	-0.9	-1.9	-4.1	-7.6	-11.4	-11.8	-11.5
May	2.2	-1.0	-4.0	-7.4	-10.4	-12.5	-15.1	-15.6	-14.6
June	-0.7	-6.0	-9.3	-11.7	-14.1	-16.7	-19.0	-17.7	-25.8
July	-6.7	-11.5	-14.0	-15.1	-16.2	-17.9	-18.9	-23.4	-23.2
August	-8.6	-11.9	-12.9	-14.8	-16.8	-18.7	-19.9	-19.5	-20.0
September	-4.5	-7.8	-8.7	-10.4	-13.2	-15.3	-15.8	-13.6	-15.9
October	-0.3	-3.1	-5.0	-7.0	-9.4	-11.0	-12.0	-11.2	-11.2
November	0.9	-1.0	-1.8	-4.2	-7.0	-8.8	-7.6	-6.0	-5.4
December	0.6	-4.4	-1.1	-2.3	-3.8	-5.2	-6.6	-8.6	-8.0
Mean	-1.6	-5.3	-4.7	-6.0	-8.1	-10.1	-11.6	-11.8	-13.3
1st Harmonic Amplitude	2.6	3.0	6.6	7.4	7.6	7.9	8.2	8.3	8.3
1st Harmonic Phase	2.3	2.3	2.1	2.2	2.1	2.0	1.8	1.7	1.5
2nd Harmonic Amplitude	2.5	2.5	1.4	1.1	0.8	0.6	0.7	1.2	1.8
2nd Harmonic Phase	5.5	5.2	4.8	4.2	4.0	3.6	3.0	3.7	4.2

Level (mb.)	100	80	60	50	40	30	20	15	10
Period of Record	1/51-12/61	1/51-12/61	1/51-12/61	1/51-12/61	1/51-12/61	1/51-12/61	1/51-12/61	1/51-12/61	1/51-12/61
Months Missing	0	0	0	0	2	3	8	21	59
Months				26 - Month Cycle					
0	1.2	2.8	6.2	9.4	12.2	14.3	13.3	10.2	2.8
2	-0.3	3.4	7.7	9.5	12.3	12.7	8.9	0.7	-0.6
4	-0.8	0.9	5.3	8.8	9.6	6.9	-0.4	-5.8	-7.4
6	0	1.7	4.4	6.6	6.8	4.0	-5.9	-9.5	-12.6
8	-0.3	2.5	6.0	6.2	3.9	-1.3	-9.4	-14.6	-16.5
10	0.6	2.5	3.9	2.6	-2.1	-9.7	-12.6	-14.4	-11.2
12	3.7	2.6	1.0	-1.5	-6.7	-16.6	-15.1	-7.2	-1.4
14	0.1	-0.5	-3.2	-6.4	-10.9	-13.3	-11.2	-13.5	-1.5
16	-0.2	-1.3	-6.3	-9.4	-12.2	-11.2	-8.1	-2.6	9.5
18	0.4	-4.0	-9.0	-11.8	-12.8	-7.5	1.8	6.5	17.2
20	-2.7	-5.6	-8.2	-9.9	-8.5	0.2	9.2	11.9	14.0
22	-0.1	-2.2	-5.3	-4.6	0.4	7.7	15.6	19.1	15.5
24	-2.1	-3.0	-1.9	2.2	9.0	14.5	15.6	14.4	8.8
1st Harmonic Amplitude	1.1	3.4	7.4	10.3	12.6	14.4	14.8	15.2	16.1
1st Harmonic Phase	7.6	6.2	5.1	4.2	2.5	0.5	24.0	22.5	20.6
2nd Harmonic Amplitude	0.8	1.3	1.8	2.2	2.0	1.4	2.0	2.0	0.9
2nd Harmonic Phase	0.7	0.7	12.8	12.5	11.4	9.6	9.5	8.8	9.7

Kwajalein Atoll

8°43'N., 117°44'E.

Level (mb.)	100	80	60	50	40	30	20	15	10
Period of Record	1/51-12/61	1/51-12/61	2/51-12/61	2/51-12/61	2/51-12/61	2/51-12/61	2/51-12/61		
Months Missing	7	10	13	17	20	25	51		
				Annual Cycle					
January	-8.2	-6.6	-1.6	-1.8	-1.9	1.4	3.5		
February	-5.7	-7.4	-1.1	1.2	-1.1	-1.3	-2.3		
March	-2.7	-3.6	0.8	-0.3	-0.9	-0.8	-3.2		
April	4.5	0.6	0.5	-1.9	-4.2	-7.1	-7.8		
May	6.2	0.9	-4.4	-6.6	-9.1	-11.9	-14.4		
June	0.9	-5.4	-8.8	-10.8	-11.8	-14.9	-15.9		
July	-2.3	-8.8	-10.7	-11.5	-15.2	-17.6	-23.4		
August	-4.5	-10.0	-11.5	-13.1	-16.6	-18.1	-18.2		
September	-4.9	-7.3	-8.8	-10.9	-14.6	-16.4	-15.6		
October	-1.6	-4.1	-5.5	-7.5	-8.1	-9.0	-3.0		
November	-5.0	-7.6	-5.3	-5.5	-7.1	-10.4	-5.7		
December	-6.5	-8.0	-3.6	-4.3	-4.5	-1.2	2.5		
Mean	-2.4	-5.6	-5.0	-6.0	-7.8	-8.8	-8.2		
1st Harmonic Amplitude	4.3	2.6	5.0	6.2	7.0	8.7	10.7		
1st Harmonic Phase	5.9	4.4	2.6	2.5	2.3	1.9	1.3		
2nd Harmonic Amplitude	2.8	2.4	1.3	0.9	0.7	0.4	1.2		
2nd Harmonic Phase	5.0	4.9	4.4	3.7	4.6	1.1	5.5		

Level (mb.)	100	80	60	50	40	30	20	15	10
Period of Record	1/51-12/61	1/51-12/61	2/51-12/61	2/51-12/61	2/51-12/61	2/51-12/61	2/51-12/61		
Months Missing	7	10	13	17	20	25	51		
Months				26 - Month Cycle					
0	-1.9	2.2	6.2	9.3	12.8	12.5	1.3		
2	-0.5	0.5	5.8	9.7	11.3	12.7	9.5		
4	-1.8	1.0	5.6	8.4	10.1	7.7	2.3		
6	3.1	4.7	6.1	7.7	8.1	4.6	-2.1		
8	2.1	3.9	5.4	5.4	2.7	-3.9	-11.5		
10	1.2	3.4	5.5	3.3	-1.8	-11.9	-13.9		
12	1.5	1.8	0.4	-2.8	-6.4	-11.9	-12.4		
14	1.8	-0.1	-3.4	-6.0	-10.9	-11.2	-6.2		
16	0.0	-4.3	-7.2	-9.8	-11.4	-12.5	-1.4		
18	0.7	-3.7	-9.4	-13.9	-12.6	-4.4	7.5		
20	-1.8	-4.0	-9.2	-12.2	-10.3	0.3	15.3		
22	-0.8	-5.2	-6.1	-6.2	-0.8	9.0	15.8		
24	-3.8	-3.7	-1.0	3.5	9.0	14.2	10.4		
1st Harmonic Amplitude	1.2	3.6	8.0	10.5	12.4	13.0	12.7		
1st Harmonic Phase	9.8	7.0	5.2	4.1	2.5	0.1	22.8		
2nd Harmonic Amplitude	0.6	0.4	1.5	2.5	2.3	0.8	2.3		
2nd Harmonic Phase	5.1	1.0	12.7	12.4	12.0	11.0	6.1		

Koror, Palau Islands

7°21′N., 134°29′E.

Level (mb.)	100	80	60	50	40	30	20	15	10
Period of Record	5/52-12/61	5/52-12/61	5/52-12/61	5/52-12/61	10/52-12/61	3/54-12/61	4/56-12/61		
Months Missing	10	10	15	16	28	36	65		
				Annual Cycle					
January	-12.3	-6.8	-2.1	-0.8	0.5	0.0	-6.2		
February	-8.4	-4.8	-0.4	-1.2	-3.5	-4.0	-13.5		
March	-7.3	-4.2	-1.7	-1.4	-2.5	-4.2	2.7		
April	-6.7	-5.6	-2.6	-2.4	-6.2	-11.0	-11.0		
May	-4.7	-5.4	-5.7	-8.0	-9.8	-12.2	-13.5		
June	-7.5	-10.4	-10.6	-11.6	-13.0	-16.2	-15.3		
July	-9.8	-10.7	-11.7	-11.9	-14.5	-17.0	-18.1		
August	-12.6	-10.0	-11.2	-11.5	-14.0	-15.1	-16.5		
September	-11.2	-9.1	-7.7	-9.6	-11.4	-12.8	-12.6		
October	-8.3	-7.5	-5.6	-6.4	-9.3	-9.3	-10.1		
November	-11.0	-8.7	-3.9	-4.3	-7.3	-7.6	-1.2		
December	-11.9	-8.0	-3.0	-3.3	-3.7	-2.2	-3.6		
Mean	-9.3	-7.6	-5.5	-6.0	-8.0	-9.4	-10.5		
1st Harmonic Amplitude	2.6	2.5	4.8	5.5	6.3	7.3	6.8		
1st Harmonic Phase	5.0	4.0	2.1	2.0	1.8	1.4	0.9		
2nd Harmonic Amplitude	1.5	1.1	1.2	0.8	0.3	0.5	2.2		
2nd Harmonic Phase	4.6	4.0	4.3	4.0	1.8	1.5	5.3		

Level (mb.)	100	80	60	50	40	30	20	15	10
Period of Record	5/52-12/61	5/52-12/61	5/52-12/61	5/52-12/61	10/52-12/61	3/54-12/61	4/56-12/61		
Months Missing	10	10	15	16	28	36	65		
Months				26 - Month Cycle					
0	0.4	1.0	5.0	9.8	11.6	12.2	6.3		
2	1.3	2.6	6.6	9.6	12.8	13.5	6.0		
4	0.9	2.9	6.3	9.0	10.3	10.4	-6.0		
6	5.0	3.4	5.2	7.2	8.0	3.1	-2.9		
8	1.2	3.2	5.7	6.0	9.9	3.7	-9.8		
10	2.3	3.6	4.6	3.6	0.0	-9.7	-16.7		
12	1.1	2.5	1.6	-2.1	-7.6	-12.7	-5.5		
14	-1.8	-2.0	-2.3	-5.7	-9.5	-12.0	-6.3		
16	-1.0	-1.4	-6.4	-10.4	-16.7	-11.5	21.2		
18	-1.7	-3.4	-6.6	-12.5	-12.8	-8.9	-2.8		
20	-5.2	-5.1	-9.2	-10.6	-8.8	0.7	18.8		
22	-0.2	-3.1	-7.3	-6.2	-1.3	6.0	11.9		
24	-1.5	-3.6	-0.9	3.2	8.5	14.6	11.5		
1st Harmonic Amplitude	2.0	3.8	7.8	10.5	13.3	13.1	11.8		
1st Harmonic Phase	6.5	6.4	5.4	3.2	2.9	0.7	22.8		
2nd Harmonic Amplitude	0.2	0.4	1.6	2.3	2.3	1.7	0.2		
2nd Harmonic Phase	1.2	1.4	0.2	12.3	10.6	8.6	8.7		

Majuro Atoll

7°06'N., 171°24'E.

Level (mb.)	100	80	60	50	40	30	20	15	10
Period of Record	10/52-12/60	10/52-12/60	10/52-12/60	10/52-12/60	10/52-12/60	10/52-12/60	10/52-12/60		
Months Missing	26	28	29	29	30	33	44		
				Annual Cycle					
January	-7.2	-7.0	-1.0	-3.1	-8.1	-12.4	-14.9		
February	-6.0	-3.8	0.0	-0.7	-3.5	-4.8	-9.9		
March	-2.3	-0.7	1.8	1.5	-1.5	-5.4	-9.7		
April	7.1	4.3	0.3	-2.1	-6.0	-7.7	-10.5		
May	8.5	2.2	-4.3	-6.6	-8.8	-11.0	-13.3		
June	2.0	-4.2	-9.1	-10.4	-11.8	-14.2	-15.4		
July	-3.4	-7.2	-8.9	-10.1	-12.2	-15.1	-18.5		
August	-5.5	-7.5	-8.0	-9.6	-13.2	-16.1	-20.4		
September	-6.0	-4.9	-5.2	-7.4	-11.4	-15.3	-16.9		
October	0.5	-2.7	-3.4	-4.7	-6.0	-8.6	-5.8		
November	-3.6	-4.3	-1.8	-1.1	-3.3	-2.9	-2.8		
December	-4.0	-5.9	-1.6	-2.6	-5.2	-6.0	-6.0		
Mean	-1.4	-3.4	-3.5	-4.8	-7.6	-9.8	-11.8		
1st Harmonic Amplitude	3.9	3.0	4.3	4.5	3.9	4.0	4.2		
1st Harmonic Phase	5.7	4.5	2.1	1.9	2.0	2.0	1.0		
2nd Harmonic Amplitude	4.0	3.0	1.5	1.6	1.8	2.4	3.9		
2nd Harmonic Phase	5.2	4.7	4.1	4.2	4.5	4.8	5.1		

Level (mb.)	100	80	60	50	40	30	20	15	10
Period of Record	10/52-12/60	10/52-12/60	10/52-12/60	10/52-12/60	10/52-12/60	10/52-12/60	10/52-12/60		
Months Missing	26	28	29	29	30	33	44		
Months				26 - Month Cycle					
0	1.1	0.5	2.8	8.4	12.9	15.6	17.8		
2	1.0	2.2	7.4	9.3	12.2	13.9	8.6		
4	-0.6	0.4	5.8	8.8	11.8	12.9	7.6		
6	2.2	4.1	7.3	8.3	9.2	7.3	2.3		
8	-1.8	5.0	7.9	10.0	10.6	4.9	3.1		
10	3.8	5.9	9.2	8.0	2.4	-4.1	-8.7		
12	2.9	2.1	1.8	-1.8	-7.8	-12.5	-14.6		
14	1.2	0.4	-3.2	-8.3	-12.4	-14.4	-9.4		
16	0.8	-3.4	-5.6	-8.8	-15.9	-19.8	-15.4		
18	-0.4	-1.3	-7.7	-10.3	-10.7	-8.3	-5.8		
20	-2.4	-4.2	-8.7	-13.8	-15.4	-17.7	6.4		
22	-3.8	-6.3	-9.4	-6.2	-2.3	4.5	9.3		
24	-4.1	-5.5	-6.5	-1.1	6.8	15.0	14.7		
1st Harmonic Amplitude	1.3	4.0	9.4	12.3	14.3	16.7	13.7		
1st Harmonic Phase	12.1	7.6	6.4	4.2	3.5	2.0	25.7		
2nd Harmonic Amplitude	0.8	0.2	1.0	1.8	2.8	3.3	2.5		
2nd Harmonic Phase	12.0	1.2	0.3	12.0	10.8	10.7	9.5		

Canton Island

2°46'S., 171°43'W.

Level (mb.)	100	80	60	50	40	30	20	15
Period of Record	2/53-12/61	2/53-12/61	2/53-12/61	6/53-12/61	7/53-12/61	10/53-12/61	5/54-12/61	12/55-12/61
Months Missing	3	5	6	7	8	10	27	69
	Annual Cycle							
January	1.8	0.2	-1.9	-3.9	-5.5	-4.1	-7.4	-14.1
February	3.6	0.7	-1.5	-4.7	-5.0	-3.4	-3.6	-8.3
March	6.2	2.1	-2.0	-3.2	-3.2	-4.5	-5.4	-6.6
April	8.4	5.1	0.7	-1.2	-0.9	-4.7	-3.7	-7.1
May	6.2	5.2	2.2	-0.4	-2.8	-5.4	-4.4	-5.2
June	2.8	3.7	4.3	1.4	-2.5	-3.6	-4.8	-9.1
July	-2.4	0.0	2.0	-0.3	-3.2	-3.4	-3.9	-13.8
August	-3.5	-1.4	0.6	-1.3	-4.2	-4.7	-1.8	-4.5
September	-3.6	-1.1	0.6	-2.3	-6.2	-4.9	-4.4	-12.3
October	1.6	1.6	0.0	-3.1	-7.0	-7.4	-1.8	-15.6
November	5.2	3.4	1.1	-3.1	-5.8	-4.5	-4.7	-4.6
December	4.7	1.8	-1.3	-4.4	-5.9	-3.1	-4.0	-4.9
Mean	2.7	1.8	0.4	-2.2	-4.3	-4.5	-3.9	-8.6
1st Harmonic Amplitude	3.6	1.4	2.0	2.1	2.1	0.4	1.2	1.0
1st Harmonic Phase	3.1	4.3	7.1	6.9	5.4	3.8	8.3	4.7
2nd Harmonic Amplitude	2.7	2.0	0.8	0.6	0.2	0.8	0.9	1.5
2nd Harmonic Phase	5.3	5.4	5.9	6.2	5.7	1.4	4.1	5.2

Level (mb.)	100	80	60	50	40	30	20	15
Period of Record	2/53-12/61	2/53-12/61	2/53-12/61	6/53-12/61	7/53-12/61	10/53-12/61	5/54-12/61	12/55-12/61
Months Missing	3	5	6	7	8	10	27	69
Months	26 - Month Cycle							
0	0.8	-0.6	4.7	12.4	18.8	20.7	11.2	1.4
2	-0.9	2.0	7.3	12.6	17.2	19.1	15.4	11.3
4	-1.0	3.6	14.2	13.1	14.9	13.3	12.7	14.4
6	1.4	4.9	8.6	12.5	12.8	5.7	-3.0	-5.9
8	1.2	4.4	8.6	10.0	7.0	-1.6	-9.8	-9.9
10	3.3	5.2	7.7	7.3	0.1	-13.7	-19.4	-20.1
12	2.0	4.1	5.6	0.5	-9.2	-18.7	-15.8	-9.7
14	0.0	2.0	-2.6	-9.9	-18.9	-19.5	-10.2	-14.3
16	-1.3	-4.3	-9.3	-14.9	-18.4	-17.6	-11.1	-1.3
18	-3.2	-4.8	-10.2	-16.0	-17.1	-12.4	-6.6	8.2
20	-0.7	-5.1	-9.5	-10.6	-16.5	3.1	14.2	17.2
22	-1.0	-4.2	-7.9	-7.8	-0.3	12.7	16.3	16.7
24	-0.9	-5.4	-7.5	1.5	11.6	17.9	16.7	17.0
1st Harmonic Amplitude	0.9	5.0	10.7	14.7	18.7	20.3	17.6	17.8
1st Harmonic Phase	8.2	7.6	6.1	4.5	2.8	0.5	24.3	22.5
2nd Harmonic Amplitude	0.8	0.6	1.4	2.2	2.4	1.2	1.6	3.7
2nd Harmonic Phase	11.5	0.5	0.6	11.8	11.5	9.1	6.2	6.3

Ascension Island

7°55′S., 14°25′W.

Level (mb.)	100	80	60	50	40	30	20	15	10
Period of Record	9/57-8/60	9/57-8/60	9/57-8/60	9/57-8/60	9/57-8/60	9/57-8/60	9/57-8/60	9/57-8/60	9/57-6/60
Months Missing	0	0	0	0	0	0	0	0	0
	Annual Cycle								
January	2.3	-4.3	-6.4	-8.8	-13.8	-19.7	-21.4	-19.4	-23.0
February	-4.3	-5.2	-7.4	-10.6	-16.0	-22.2	-22.9	-21.4	-26.2
March	-3.1	-4.6	-6.6	-10.8	-16.2	-21.2	-18.9	-18.4	-24.0
April	-0.1	-2.6	-5.0	-9.1	-14.2	-18.2	-15.2	-13.4	-15.9
May	2.6	-1.8	-5.3	-8.0	-12.5	-13.6	-8.8	-7.0	-5.2
June	1.4	-3.4	-5.2	-7.9	-9.6	-8.8	-6.0	-4.2	-4.3
July	-2.5	-3.4	-4.3	-4.2	-6.1	-8.6	-7.6	-7.3	-15.5
August	-1.5	-4.4	-2.5	-3.0	-6.1	-8.0	-8.1	-8.3	-16.7
September	2.4	0.2	2.1	0.0	-6.1	-9.1	-11.0	-13.8	-18.4
October	5.3	1.0	0.6	-3.0	-8.4	-11.5	-13.2	-14.8	-14.0
November	0.9	-4.0	-3.4	-5.6	-9.2	-11.7	-16.0	-16.1	-12.4
December	2.9	-6.1	-6.0	-7.8	-11.9	-16.4	-19.8	-16.7	-16.2
Mean	0.6	-3.3	-4.2	-6.7	-10.9	-14.1	-14.1	-13.3	-15.8
1st Harmonic Amplitude	2.5	1.2	3.0	4.1	4.7	6.5	7.1	6.4	5.1
1st Harmonic Phase	10.7	8.5	9.5	9.3	9.0	8.6	7.7	7.4	7.7
2nd Harmonic Amplitude	2.1	1.2	1.4	0.6	0.5	1.2	1.2	2.2	5.6
2nd Harmonic Phase	5.7	4.3	4.1	3.6	1.2	6.2	5.9	6.2	5.8

Level (mb.)	100	80	60	50	40	30	20	15	10
Period of Record	9/57-8/60	9/57-8/60	9/57-8/60	9/57-8/60	9/57-8/60	9/57-8/60	9/57-8/60	9/57-8/60	9/57-6/60
Months Missing	0	0	0	0	0	0	0	0	0
Months	26 - Month Cycle								
0	-2.0	0.4	2.3	6.6	12.5	15.6	14.8	9.0	1.1
2	0.0	1.3	4.9	8.2	13.1	16.2	13.0	5.0	-4.6
4	1.0	0.1	3.7	7.4	11.3	12.6	5.2	-1.9	-7.5
6	-1.2	1.6	6.1	8.2	9.2	5.2	-4.6	-9.7	-12.1
8	3.9	3.7	6.6	5.3	-0.1	-7.2	-14.1	-13.7	-23.0
10	5.4	5.8	9.9	6.4	-5.6	-13.1	-15.6	-16.7	-11.8
12	3.1	2.0	3.8	-4.7	-12.7	-16.3	-15.0	-12.7	-9.8
14	-0.6	-1.2	-4.5	-8.6	-13.5	-17.4	-16.3	-8.3	5.1
16	0.6	-1.4	-6.0	-9.2	-12.2	-13.8	-9.0	0.3	7.4
18	0.1	0.2	-2.6	-6.2	-10.6	-11.9	-0.8	5.9	9.1
20	-2.8	-2.9	-7.8	-9.8	-7.5	2.6	12.2	14.7	17.7
22	-2.7	-5.1	-7.6	-2.7	7.5	13.3	14.8	12.6	11.8
24	-4.3	-3.1	0.1	4.3	12.0	15.3	14.9	14.3	11.2
1st Harmonic Amplitude	3.8	3.3	6.6	9.5	14.7	18.4	17.4	15.5	15.9
1st Harmonic Phase	10.5	8.7	5.8	3.7	1.5	0.1	24.3	22.5	20.4
2nd Harmonic Amplitude	0.4	0.4	0.6	0.9	0.7	0.7	0.5	1.0	1.8
2nd Harmonic Phase	12.7	11.2	10.6	10.8	10.3	9.1	6.9	5.6	3.0

Recife, Brazil

8°01'S., 34°51'W.

Level (mb.)	100	80	60	50	40	30	20	15	10
Period of Record	7/52-12/60	8/55-12/60	8/55-12/60	8/55-12/60	8/55-12/60	8/55-12/60	9/55-12/60		
Months Missing	45	50	51	52	54	59	63		
	Annual Cycle								
January	2.2	-3.6	-9.3	-11.8	-14.8	-18.5	-17.5		
February	-0.3	-6.7	-10.3	-12.7	-12.8	-18.3	-21.4		
March	-0.4	-4.2	-6.8	-9.8	-13.4	-9.9	-11.8		
April	1.2	-2.7	-5.2	-7.8	-11.3	-11.0	-11.8		
May	5.5	-1.0	-3.3	-5.4	-8.2	-10.4	-3.6		
June	4.8	-0.2	-4.0	-5.7	-7.5	-7.1	-3.7		
July	2.8	-0.4	0.2	0.0	-4.1	-8.2	-6.4		
August	-0.5	-2.0	-0.5	-0.9	-4.7	-7.6	-10.1		
September	-0.3	-0.9	-1.3	-0.9	-4.6	-6.7	-9.3		
October	2.0	-1.8	-2.8	-6.5	-8.4	-9.4	-7.0		
November	3.6	-2.9	-4.3	-7.7	-11.3	-13.0	-8.6		
December	0.6	-5.3	-7.9	-10.1	-13.1	-15.1	-10.3		
Mean	1.6	-2.8	-4.8	-6.8	-9.6	-11.3	-10.3		
1st Harmonic Amplitude	0.9	2.0	4.1	5.2	4.7	4.8	5.2		
1st Harmonic Phase	6.0	7.9	8.3	8.2	8.0	8.0	8.4		
2nd Harmonic Amplitude	1.7	0.5	0.5	0.4	0.6	1.3	3.8		
2nd Harmonic Phase	6.1	6.0	4.5	3.0	3.1	4.5	5.7		

Level (mb.)	100	80	60	50	40	30	20	15	10
Period of Record	7/52-12/60	8/55-12/60	8/55-12/60	8/55-12/60	8/55-12/60	8/55-12/60	9/55-12/60		
Months Missing	45	50	51	52	54	59	63		
Months	26 - Month Cycle								
0	0.3	0.8	-3.7	-8.7	-13.2	-19.0	-13.1		
2	-3.1	-8.1	-11.0	-13.2	-13.4	-3.8	10.8		
4	-1.1	-1.8	-4.8	-7.5	-7.8	1.1	6.9		
6	-0.2	-3.2	-6.0	-1.3	8.1	17.4	14.1		
8	1.0	-0.2	2.3	4.9	11.0	12.5	11.4		
10	1.0	1.6	4.1	7.1	11.7	14.8	9.6		
12	1.0	2.1	6.2	10.2	14.0	15.1	9.2		
14	2.5	1.8	5.7	8.7	10.9	5.9	-1.6		
16	-4.1	4.7	5.4	4.3	0.3	-7.3	-11.5		
18	-1.8	0.0	0.3	-0.7	-11.7	-12.2	-8.0		
20	2.6	0.7	3.6	-2.6	-6.0	-13.9	-14.2		
22	0.8	1.0	-6.3	-10.9	-14.0	-16.0	-7.2		
24	-3.9	-0.2	-7.3	-6.7	-10.8	-12.9	1.0		
1st Harmonic Amplitude	1.8	2.7	6.6	10.0	13.8	17.3	12.1		
1st Harmonic Phase	10.2	8.4	5.9	4.5	3.0	1.5	25.0		
2nd Harmonic Amplitude	1.4	1.0	1.0	1.6	2.1	2.6	2.6		
2nd Harmonic Phase	9.1	10.3	10.7	10.7	9.5	9.3	8.7		

Antofagasta, Chile

23°26'S., 70°28'W.

Level (mb.)	100	80	60	50	40	30	20	15	10
Period of Record	7/57-12/60	7/57-12/60	7/57-12/60	7/57-12/60	7/57-12/60	7/57-12/60	7/57-12/60		
Months Missing	0	0	0	0	1	0	4		
	Annual Cycle								
January	2.4	-3.6	-9.2	-12.8	-15.4	-17.5	-20.5		
February	0.0	-5.6	-11.2	-14.5	-17.0	-20.7	-25.6		
March	5.2	-1.3	-8.3	-11.9	-14.9	-17.9	-20.4		
April	15.0	6.1	-1.3	-4.8	-8.2	-10.6	-13.1		
May	15.8	9.7	3.4	0.3	-1.3	-2.7	-1.8		
June	16.8	9.7	7.3	6.3	-6.3	7.0	10.0		
July	15.6	11.1	6.1	6.7	-7.3	9.5	12.9		
August	15.6	11.0	6.2	4.2	3.6	3.0	8.8		
September	13.3	7.9	2.6	0.8	-0.5	-1.0	4.7		
October	10.3	2.5	-2.4	-4.1	-5.1	-4.2	-1.2		
November	9.4	2.5	-3.6	-5.7	-7.5	-8.3	-6.7		
December	4.9	-0.4	-5.9	-8.7	-10.9	-12.7	-12.2		
Mean	10.4	4.1	-1.3	-3.7	-7.5	-6.3	-5.5		
1st Harmonic Amplitude	6.7	7.1	7.9	9.2	7.1	12.2	16.5		
1st Harmonic Phase	7.6	7.7	7.8	7.9	8.4	8.0	8.3		
2nd Harmonic Amplitude	2.0	1.3	1.5	1.8	1.7	2.7	3.1		
2nd Harmonic Phase	5.4	5.8	6.2	6.3	4.8	6.5	6.4		

Level (mb.)	100	80	60	50	40	30	20	15	10
Period of Record	7/57-12/60	7/57-12/60	7/57-12/60	7/57-12/60	7/57-12/60	7/57-12/60	7/57-12/60		
Months Missing	0	0	0	0	1	0	4		
Months	26 - Month Cycle								
0	-2.0	-0.9	-0.6	2.8	5.2	5.2	6.6		
2	-1.2	-0.8	-0.9	-0.5	-0.5	-0.6	-0.5		
4	0.1	0.2	0.0	0.1	0.9	0.2	0.4		
6	-2.2	-2.0	-2.5	-1.0	-1.4	-0.6	-1.1		
8	1.4	-0.4	-0.4	0.1	0.7	-0.1	0.4		
10	2.7	2.0	1.3	-1.0	0.2	-1.0	-4.5		
12	2.4	0.8	0.2	-1.4	-2.7	-4.5	-8.1		
14	-2.3	-1.4	-0.2	-1.0	-1.8	-2.9	-4.2		
16	0.5	1.1	-0.4	-1.4	-1.5	-1.1	-0.6		
18	2.4	1.1	1.1	0.3	-0.2	0.3	0.4		
20	-0.6	0.6	0.9	0.5	0.8	1.5	1.3		
22	-0.3	1.1	1.8	1.8	1.0	1.5	1.6		
24	-1.1	-1.8	-1.0	-0.5	1.2	3.0	7.8		
1st Harmonic Amplitude	1.3	0.4	0.7	1.5	2.4	3.8	4.3		
1st Harmonic Phase	10.9	12.7	10.8	23.4	23.8	23.3	23.8		
2nd Harmonic Amplitude	0.5	0.4	0.4	0.5	1.0	1.7	1.9		
2nd Harmonic Phase	6.3	6.4	8.4	10.0	10.2	9.8	10.1		

APPENDIX B

Temperature Statistics for Individual Stations

Data for the annual cycle are based on nighttime observations only. Data for the 26-month cycle are based on both 0000 GCT and 1200 GCT observations, treated separately. Period of record is given at the top of the table. Continuous records exist at all stations except Lihue, Hawaiian Islands where some months are missing, especially at 20 mb. Values are in degrees Celsius. Phases of the annual cycle give times of occurrence of maximum temperature to the nearest tenth of a month. (For instance, 4.3 indicates three-tenths of the way through the fourth month, or April 9.) Phases of the 26-month cycle give times of occurrence of maximum temperature to the nearest tenth of a month on the 26-month calendar (see Introduction). Whole numbers refer to middle of months; thus, 0.0 corresponds to July 15, 1957.

Lihue, Kauai, Hawaiian Islands

21°59′N., 159°21′W.

Level (mb.)	100	80	50	30	20	15	10
Period of Record	1/51 -12/60	1/51 -12/60	1/51 -12/60	4/51 -12/60	4/51 -12/60		
			Annual Cycle				
January	-76.2	-77.2	-65.5	-57.5	-53.7		
February	-74.5	-75.8	-65.5	-58.6	-53.2		
March	-72.4	-72.6	-64.0	-55.9	-50.7		
April	-72.4	-71.8	-62.4	-53.4	-48.4		
May	-71.0	-69.4	-60.3	-51.4	-46.4		
June	-70.1	-68.3	-59.6	-51.7	-47.6		
July	-69.8	-67.4	-59.4	-51.8	-47.1		
August	-70.0	-67.3	-59.6	-52.6	-48.1		
September	-71.4	-68.8	-60.5	-52.9	-48.3		
October	-73.0	-71.0	-61.8	-54.9	-50.2		
November	-74.9	-73.8	-63.4	-55.5	-50.2		
December	-75.3	-75.4	-64.5	-56.0	-50.2		
Mean	-72.6	-71.7	-62.2	-54.3	-49.7		
1st Harmonic Amplitude	2.8	4.3	2.9	2.7	2.8		
1st Harmonic Phase	7.2	7.6	7.7	7.6	7.3		
2nd Harmonic Amplitude	0.3	0.5	0.3	0.8	0.8		
2nd Harmonic Phase	3.5	4.1	5.5	5.6	5.1		

Level (mb.)	100	80	50	30	20	15	10
Period of Record	1/51 -12/60	1/51 -12/60	1/51 -12/60	4/51 -12/60	4/51 -12/60		
Months			26 - Month Cycle				
0	0.2	-0.1	-0.1	0.4	1.0		
2	-0.7	-0.4	0.0	0.7	1.1		
4	-1.3	-0.5	0.1	0.8	1.1		
6	-0.3	-0.4	-0.1	0.7	1.0		
8	0.2	-0.2	0.1	0.6	1.0		
10	-0.5	-0.1	0.1	0.3	0.8		
12	0.5	0.3	0.2	-0.2	-0.1		
14	0.7	0.4	0.2	-0.4	-0.9		
16	1.3	0.5	0.4	-0.3	-1.4		
18	0.8	0.6	0.5	-0.4	-1.5		
20	-0.3	0.1	-0.3	-1.2	-1.7		
22	0.4	0.1	-0.9	-1.4	-0.9		
24	0.0	-0.1	-0.8	-0.4	0.0		
1st Harmonic Amplitude	0.4	0.5	0.3	0.8	1.4		
1st Harmonic Phase	16.3	16.9	11.6	5.9	4.9		
2nd Harmonic Amplitude	0.3	0.1	0.3	0.3	0.3		
2nd Harmonic Phase	1.7	0.8	3.2	2.7	12.1		

Wake Island

19°17'N., 166°39'E.

Level (mb.)	100	80	50	30	20	15	10
Period of Record	5/52 -12/60	5/52 -12/60	5/52 -12/60	7/59 -12/60	9/56 -12/60		
			Annual Cycle				
January	-81.2	-82.1	-66.4	-57.5	-53.6		
February	-80.7	-81.9	-66.9	-58.0	-54.1		
March	-79.5	-80.0	-65.4	-56.6	-51.3		
April	-77.2	-77.5	-63.8	-55.2	-50.0		
May	-75.6	-74.2	-62.4	-54.4	-49.5		
June	-75.5	-72.5	-61.5	-53.8	-48.9		
July	-70.8	-68.4	-60.5	-53.9	-49.0		
August	-71.3	-68.3	-60.5	-53.8	-49.1		
September	-73.8	-70.6	-61.2	-54.1	-49.1		
October	-76.9	-74.3	-62.4	-55.1	-49.7		
November	-79.5	-79.7	-64.2	-55.5	-50.3		
December	-80.2	-81.5	-65.5	-56.2	-51.3		
Mean	-76.8	-75.9	-63.4	-55.3	-50.5		
1st Harmonic Amplitude	4.0	6.4	2.8	1.5	1.4		
1st Harmonic Phase	7.7	7.9	8.2	8.1	9.4		
2nd Harmonic Amplitude	0.6	0.8	0.1	0.5	0.8		
2nd Harmonic Phase	3.0	2.9	5.2	5.3	5.0		

Level (mb.)	100	80	50	30	20	15	10
Period of Record	5/52 -12/60	5/52 -12/60	5/52 -12/60	7/59 -12/60	9/56 -12/60		
Months			26 - Month Cycle				
0	-0.2	0.0	0.3	0.6	-0.2		
2	-0.4	-0.2	0.3	1.0	-0.1		
4	0.0	-1.1	-1.1	-0.6	0.5		
6	0.5	0.7	0.4	0.9	0.9		
8	0.0	-0.3	-0.4	0.7	1.6		
10	0.4	0.0	-0.4	-0.1	0.8		
12	0.7	0.6	0.6	0.8	1.3		
14	-0.1	0.2	0.2	0.2	0.1		
16	0.5	0.6	0.2	-0.2	-1.0		
18	-0.1	0.1	0.8	-0.2	-0.8		
20	-0.1	0.8	0.5	-1.3	-1.7		
22	-0.4	-0.9	-0.9	-1.7	-0.8		
24	-0.8	-0.5	-0.6	-0.2	-0.5		
1st Harmonic Amplitude	0.4	0.4	0.4	0.7	1.1		
1st Harmonic Phase	13.2	14.1	17.0	7.2	6.9		
2nd Harmonic Amplitude	0.1	0.1	0.4	0.5	0.1		
2nd Harmonic Phase	9.2	4.0	2.4	1.4	9.7		

Johnston Island

16°44′N., 169°31′W.

Level (mb.)	100	80	50	30	20	15	10
Period of Record	5/52 -12/60	7/54 -12/60	7/54 -12/60	7/54 -12/60	9/56 -12/60	12/56 -1/59	11/56 -12/58
			Annual Cycle				
January	-78.6	-79.7	-65.9	-57.0	-53.5	-50.2	-45.6
February	-78.4	-79.8	-66.8	-58.1	-54.5	-51.1	-48.0
March	-77.9	-78.0	-65.7	-57.2	-51.4	-45.7	-41.7
April	-75.6	-75.0	-64.5	-55.9	-50.2	-44.6	-41.2
May	-75.1	-72.9	-63.3	-54.7	-49.1	-45.0	-41.4
June	-73.4	-71.4	-62.4	-54.2	-49.2	-47.2	-43.9
July	-72.8	-69.4	-61.2	-53.8	-48.5	-46.3	-43.1
August	-73.0	-69.3	-60.8	-54.0	-49.2	-47.6	-45.1
September	-73.9	-70.5	-61.3	-54.7	-49.7	-46.5	-43.4
October	-74.8	-72.1	-62.3	-54.9	-49.6	-46.7	-43.8
November	-76.9	-76.0	-63.5	-55.3	-50.0	-47.2	-43.8
December	-77.8	-79.0	-64.6	-55.9	-51.2	-48.3	-45.6
Mean	-76.0	-74.4	-63.5	-55.5	-50.5	-47.2	-43.9
1st Harmonic Amplitude	3.8	4.7	1.3	1.5	1.6	1.4	1.0
1st Harmonic Phase	7.9	8.0	8.4	7.9	7.6	8.1	5.9
2nd Harmonic Amplitude	0.1	0.4	0.1	0.4	0.8	1.2	1.1
2nd Harmonic Phase	3.9	3.9	5.3	5.9	5.2	4.8	4.9

Level (mb.)	100	80	50	30	20	15	10
Period of Record	5/52 -12/60	7/54 -12/60	7/54 -12/60	7/54 -12/60	9/56 -12/60	12/56 -1/59	11/56 -12/58
Months			26 - Month Cycle				
0	1.1	1.0	0.3	0.3	0.2	0.0	-0.7
2	-0.6	-0.4	0.0	0.2	0.1	-0.1	-1.9
4	-0.8	-1.5	-1.1	-0.8	-0.9	0.0	-0.5
6	-0.2	0.4	-0.4	0.8	0.9	0.7	-0.5
8	0.5	0.3	-0.3	0.7	0.2	-0.9	-0.7
10	0.0	-0.4	0.5	0.4	0.0	-1.6	-1.0
12	-0.1	0.2	0.2	0.2	-0.7	0.7	0.7
14	-0.1	0.2	0.1	0.0	0.8	0.5	2.0
16	0.7	0.3	-0.3	0.0	-0.5	-1.0	-0.8
18	0.4	0.7	1.1	0.5	-0.4	0.1	1.8
20	-0.4	0.4	0.9	-1.0	-0.7	-0.2	0.5
22	0.1	-1.2	-1.0	-1.6	-0.1	0.5	0.7
24	-0.5	0.1	0.0	0.3	1.1	1.8	1.0
1st Harmonic Amplitude	0.0	0.2	0.4	0.5	0.2	0.4	0.6
1st Harmonic Phase	9.4	18.5	17.5	7.5	4.5	0.1	17.0
2nd Harmonic Amplitude	0.2	0.1	0.0	0.1	0.2	0.2	0.1
2nd Harmonic Phase	0.0	12.1	2.7	0.7	11.5	0.1	9.8

Clark AFB, Philippines

15°16'N., 121°28'E.

Level (mb.)	100	80	50	30	20	15	10
Period of Record	7/54 -12/60	7/54 -12/60	7/54 -12/60	9/56 -12/60	9/56 -12/60	9/56 -12/60	9/56 -12/60
	Annual Cycle						
January	-80.2	-79.8	-65.1	-57.4	-50.9	-46.9	-41.8
February	-80.3	-80.1	-66.9	-59.1	-52.1	-48.3	-43.3
March	-79.3	-79.3	-67.3	-56.4	-50.2	-46.5	-39.4
April	-79.9	-79.4	-66.3	-55.2	-49.1	-45.0	-39.6
May	-79.1	-78.6	-63.3	-53.6	-46.6	-43.7	-37.3
June	-78.8	-75.8	-63.0	-54.6	-48.8	-45.3	-40.0
July	-77.8	-71.2	-62.1	-53.6	-48.4	-46.8	-40.8
August	-78.3	-71.4	-61.7	-53.9	-49.1	-47.4	-41.1
September	-78.3	-73.4	-62.3	-54.8	-49.1	-46.6	-41.4
October	-79.8	-75.5	-62.7	-54.4	-48.5	-45.6	-38.9
November	-80.9	-79.5	-64.2	-55.6	-49.7	-46.5	-40.9
December	-81.3	-81.1	-64.8	-56.6	-50.5	-46.1	-41.5
Mean	-79.5	-77.1	-64.1	-55.4	-49.4	-46.2	-40.5
1st Harmonic Amplitude	1.2	3.9	2.0	1.5	1.3	1.0	0.7
1st Harmonic Phase	7.4	8.3	8.8	9.3	7.7	7.5	7.0
2nd Harmonic Amplitude	0.5	1.4	0.4	0.2	0.9	1.0	1.2
2nd Harmonic Phase	2.4	2.7	0.5	2.3	5.6	5.4	5.2

Level (mb.)	100	80	50	30	20	15	10
Period of Record	7/54 -12/60	7/54 -12/60	7/54 -12/60	9/56 -12/60	9/56 -12/60	9/56 -12/60	9/56 -12/60
Months	26 - Month Cycle						
0	0.3	-0.3	0.6	0.7	0.5	0.3	-0.4
2	0.6	-0.3	0.1	0.1	-0.3	0.1	-1.2
4	1.1	-0.2	-1.2	-0.7	-0.4	0.2	-0.4
6	0.1	0.4	-0.8	0.4	-0.6	-2.1	-3.0
8	0.4	0.4	-0.7	0.4	0.1	-0.1	-0.3
10	0.3	0.5	0.2	-0.3	0.0	-0.1	-0.7
12	0.6	0.2	0.0	-0.1	-0.4	-0.1	0.7
14	-0.6	-0.3	-0.6	-1.0	-1.1	-0.8	0.2
16	-0.7	0.2	-0.7	-0.4	-0.2	-1.1	-0.7
18	-0.4	-0.2	0.5	0.2	-0.4	-0.3	0.7
20	-1.4	0.2	1.2	-0.9	0.6	1.3	2.3
22	-0.4	-0.5	0.4	0.7	1.3	2.1	2.5
24	0.0	-0.1	0.4	0.8	0.8	0.4	0.5
1st Harmonic Amplitude	0.7	0.5	0.5	0.4	0.5	0.8	1.0
1st Harmonic Phase	5.7	7.4	22.1	1.3	23.2	21.2	19.3
2nd Harmonic Amplitude	0.4	0.2	0.3	0.2	0.5	0.5	0.5
2nd Harmonic Phase	2.0	4.5	10.8	10.4	9.9	9.8	9.7

Eniwetok Atoll

11°20′N., 162°20′E.

Level (mb.)	100	80	50	30	20	15	10
Period of Record	5/52 -12/60	5/52 -12/60	5/52 -12/60	7/54 -12/60	7/54 -12/60	7/54 -12/60	7/55 -10/59
			Annual Cycle				
January	-82.1	-82.0	-66.9	-57.2	-51.7	-49.0	-45.1
February	-81.9	-81.5	-67.2	-57.6	-52.6	-49.0	-45.5
March	-81.4	-80.0	-66.9	-56.5	-50.5	-46.8	-43.1
April	-79.8	-79.0	-65.2	-54.9	-49.4	-46.0	-42.9
May	-78.5	-76.7	-64.5	-54.8	-49.2	-45.8	-42.8
June	-76.9	-73.7	-63.4	-53.9	-49.0	-45.8	-43.0
July	-74.7	-70.5	-61.4	-54.1	-49.3	-46.4	-42.8
August	-76.2	-71.0	-61.5	-54.4	-49.6	-46.8	-43.5
September	-77.0	-72.8	-62.8	-55.2	-50.6	-47.5	-43.7
October	-78.7	-75.1	-63.5	-55.9	-50.8	-46.6	-43.0
November	-80.3	-79.1	-65.0	-55.5	-50.0	-46.5	-43.6
December	-81.7	-82.2	-65.9	-55.7	-49.7	-45.9	-43.6
Mean	-79.1	-77.0	-64.5	-55.5	-50.2	-46.8	-43.6
1st Harmonic Amplitude	3.0	5.1	2.3	1.4	1.3	1.2	0.9
1st Harmonic Phase	7.9	7.9	8.3	8.0	7.9	7.8	8.1
2nd Harmonic Amplitude	0.3	0.8	0.1	0.4	0.8	1.0	0.9
2nd Harmonic Phase	2.1	2.7	1.3	5.9	5.6	5.4	5.1

Level (mb.)	100	80	50	30	20	15	10
Period of Record	5/52 -12/60	5/52 -12/60	5/52 -12/60	7/54 -12/60	7/54 -12/60	7/54 -12/60	7/55 -10/59
Months			26 - Month Cycle				
0	-0.2	0.8	1.5	1.4	0.8	0.5	-0.1
2	1.0	0.7	1.3	0.3	-0.5	-1.2	-0.8
4	1.1	0.5	-0.3	-1.6	-1.6	-1.5	-2.0
6	-0.1	0.8	0.2	0.0	0.1	-0.7	0.0
8	0.7	0.2	-0.9	-0.2	-0.3	-0.5	-1.5
10	0.0	-0.3	-0.3	0.1	-0.6	-0.8	-1.2
12	-0.7	-0.1	-0.2	-0.5	-1.1	-0.6	-0.2
14	-0.3	0.0	-0.8	-0.9	-0.8	-0.4	0.0
16	0.8	0.1	-0.2	-0.7	-0.1	0.3	-0.4
18	-0.5	-0.8	-0.3	0.2	1.0	1.3	1.9
20	-0.4	0.1	0.3	0.3	0.9	1.3	1.9
22	-0.8	-1.2	-0.5	-0.4	0.8	0.7	0.4
24	-0.7	-0.8	0.2	1.9	1.4	1.5	1.7
1st Harmonic Amplitude	0.3	1.0	0.7	0.7	0.9	0.9	1.3
1st Harmonic Phase	5.4	5.8	25.9	24.9	22.3	20.9	20.7
2nd Harmonic Amplitude	0.2	0.4	0.3	0.5	0.5	0.5	0.4
2nd Harmonic Phase	4.2	2.9	0.5	10.6	9.0	8.7	8.3

Balboa, Panama

8°58′N., 79°35′W.

Level (mb.)	100	80	50	30	20	15	10
Period of Record	7/54 -12/60	9/56 -12/60	9/56 -12/60	9/56 -12/60	9/56 -12/60	9/56 -12/60	11/58 -12/60
			Annual Cycle				
January	-79.7	-80.3	-66.8	-57.8	-51.8	-48.7	-46.1
February	-79.7	-80.2	-68.8	-59.8	-53.4	-49.1	-43.6
March	-79.6	-79.6	-67.7	-57.4	-50.2	-46.0	-40.5
April	-79.8	-79.5	-66.2	-55.8	-48.3	-44.6	-40.1
May	-78.7	-78.6	-64.9	-54.3	-47.4	-44.5	-37.5
June	-76.8	-74.7	-64.2	-53.4	-48.4	-45.6	-36.1
July	-75.8	-73.0	-62.3	-52.7	-48.2	-45.5	-38.8
August	-75.6	-71.9	-62.5	-53.2	-49.2	-47.5	-39.8
September	-76.0	-73.2	-63.7	-55.0	-50.4	-47.5	-41.2
October	-78.2	-74.2	-64.0	-55.6	-49.8	-46.2	-40.2
November	-79.8	-78.1	-65.4	-56.4	-50.4	-46.1	-40.0
December	-79.6	-80.3	-65.7	-56.4	-49.9	-46.0	-42.2
Mean	-79.5	-77.1	-64.2	-55.7	-49.4	-46.2	-40.5
1st Harmonic Amplitude	2.1	4.0	2.2	1.6	1.4	1.2	2.8
1st Harmonic Phase	8.3	8.4	8.6	8.0	7.9	7.9	7.2
2nd Harmonic Amplitude	0.7	0.8	0.4	0.6	1.1	1.3	1.4
2nd Harmonic Phase	2.1	2.6	0.5	0.2	5.7	5.5	5.3

Level (mb.)	100	80	50	30	20	15	10
Period of Record	7/54 -12/60	9/56 -12/60	9/56 -12/60	9/56 -12/60	9/56 -12/60	9/56 -12/60	11/58 -12/60
Months			26 - Month Cycle				
0	0.1	-0.4	1.7	1.0	0.0	-0.7	-1.2
2	0.4	0.8	1.0	-0.2	-1.5	-1.5	-3.9
4	-0.6	-0.9	-1.0	-2.2	-3.3	-2.6	-2.3
6	0.0	1.5	0.8	0.0	-0.4	-0.9	0.4
8	0.3	0.4	-0.3	-1.2	-1.0	-1.1	-1.3
10	0.4	0.9	-0.3	-1.0	-0.4	-0.2	0.6
12	0.2	0.7	-0.6	-1.0	-0.1	0.4	1.2
14	-0.2	0.3	-0.6	0.2	1.1	1.3	2.8
16	0.1	-1.1	-1.4	-1.4	-0.4	-0.1	1.2
18	0.0	-0.6	-0.5	0.6	1.5	1.2	2.3
20	-0.3	0.2	0.2	1.5	1.7	1.9	-0.4
22	0.1	-0.6	-0.4	1.3	1.3	1.1	1.3
24	-0.7	-1.4	1.4	2.4	1.6	1.1	-0.6
1st Harmonic Amplitude	0.3	0.9	0.9	1.3	1.4	1.3	2.1
1st Harmonic Phase	6.9	7.7	0.9	22.2	18.9	17.7	15.0
2nd Harmonic Amplitude	0.1	0.1	0.3	0.6	0.6	0.5	0.3
2nd Harmonic Phase	2.0	7.7	11.5	10.1	9.7	9.5	8.8

Canton Island

2°46′S., 171°43′W.

Level (mb.)	100	80	50	30	20	15	10
Period of Record	5/52 -12/60	5/52 -12/60	7/54 -12/60	7/54 -12/60	9/56 -12/60		
			Annual Cycle				
January	-83.3	-82.4	-66.5	-57.0	-52.7		
February	-83.1	-81.8	-67.4	-57.8	-52.8		
March	-82.6	-80.4	-66.8	-56.5	-50.2		
April	-81.9	-79.3	-66.0	-55.5	-49.4		
May	-81.1	-78.2	-64.4	-54.6	-49.6		
June	-80.1	-75.3	-63.1	-54.4	-49.6		
July	-79.0	-72.4	-62.6	-55.0	-50.0		
August	-79.5	-71.8	-62.6	-55.1	-50.4		
September	-79.0	-72.6	-63.1	-55.0	-49.7		
October	-81.0	-75.4	-63.9	-55.3	-49.6		
November	-82.4	-79.6	-65.1	-55.1	-48.8		
December	-83.0	-83.0	-65.3	-54.8	-49.5		
Mean	-81.3	-77.6	-64.7	-55.7	-50.5		
1st Harmonic Amplitude	2.1	4.7	2.2	1.2	1.0		
1st Harmonic Phase	8.0	8.2	8.6	8.7	8.4		
2nd Harmonic Amplitude	0.3	1.1	0.2	0.7	1.4		
2nd Harmonic Phase	3.0	3.0	0.7	5.7	5.6		

Level (mb.)	100	80	50	30	20	15	10
Period of Record	5/52 -12/60	5/52 -12/60	7/54 -12/60	7/54 -12/60	9/56 -12/60		
Months			26 - Month Cycle				
0	0.1	1.4	2.3	1.4	0.6		
2	0.9	2.1	2.4	-0.1	-0.6		
4	0.6	1.1	0.4	-1.7	-2.3		
6	0.9	1.6	1.0	-1.8	-2.1		
8	0.9	1.0	0.0	-1.8	-2.0		
10	0.0	1.1	-0.6	-1.2	-1.0		
12	-0.3	0.1	-1.0	-1.1	-0.2		
14	-0.2	0.1	-1.5	-0.4	-0.4		
16	0.0	-1.3	-1.9	-1.2	0.6		
18	-0.9	-1.9	-2.0	1.2	3.5		
20	-0.8	-1.2	-1.0	2.0	1.8		
22	-0.6	-2.9	-0.7	2.6	1.5		
24	-0.6	-1.4	2.7	2.1	0.7		
1st Harmonic Amplitude	0.7	1.9	1.9	2.0	2.1		
1st Harmonic Phase	5.7	6.0	1.8	21.9	19.7		
2nd Harmonic Amplitude	0.1	0.5	0.7	0.5	0.1		
2nd Harmonic Phase	3.8	1.8	11.9	10.2	8.1		

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