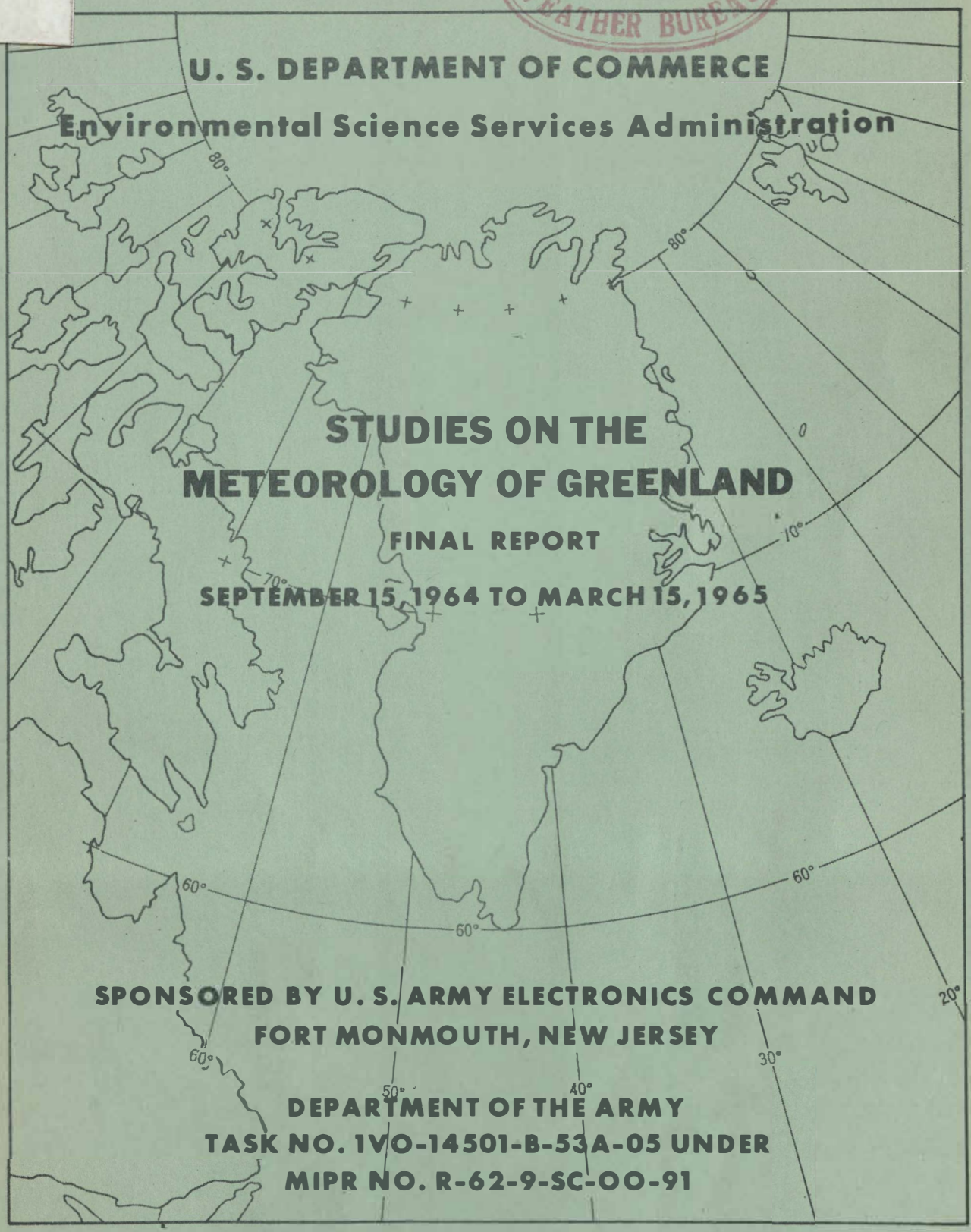

U. S. DEPARTMENT OF COMMERCE

Environmental Science Services Administration

STUDIES ON THE METEOROLOGY OF GREENLAND

FINAL REPORT

SEPTEMBER 15, 1964 TO MARCH 15, 1965

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DEPARTMENT OF THE ARMY
TASK NO. 1VO-14501-B-53A-05 UNDER
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SOME CLIMATIC FEATURES OF THE NORTHWESTERN SLOPE OF THE GREENLAND ICE CAP (EAST OF THULE)

Final Report
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Department of the Army Task No. 1VO-14501-B-53A-05
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TABLE OF CONTENTS

TABLE OF CONTENTS (Continued)

PURPOSE

The study covers a basic research investigation leading to knowledge of meso-scale weather systems and of fronts, air masses, and larger-scale flow patterns over and near Greenland.

The primary objective is to advance knowledge and understanding of Arctic meteorology and to enhance the scientific capability of predicting meteorological conditions in the Arctic.

The investigation covers a program of synoptic climatological and theoretical research on the meteorology of Greenland, with a view toward developing an understanding of and a capability to predict the most frequent, important, unusual, or severe weather conditions.

ABSTRACT

The climatic observations at three stations along the slope and at one station at the edge of the ice cap, east from Thule, were evaluated.

The following elements were analyzed.

Temperature: Annual and diurnal course of temperature, extreme temperatures, aperiodic fluctuation of temperature (also a case of strong warming along the slope was investigated), temperature lapse rates along the NW and SW slopes of the Greenland ice cap.

Wind regime: Frequencies of wind directions, mean wind speed, maximum wind speed.

Cloudiness: Annual and diurnal variation of cloudiness, frequencies of clear and overcast sky, diurnal range of cloudiness; a case of sudden extreme change of cloudiness was analyzed.

SOME CLIMATIC FEATURES OF THE NORTHWESTERN SLOPE OF THE GREENLAND ICE CAP (EAST OF THULE)

STATION LOCATIONS

This study of climatic conditions on the northwestern slope of the Greenland ice plateau is based upon the original observations of five stations.

The highest station, Camp Century, is located on the edge of the ice plateau at an altitude of 1923 m. Three stations are located on the slope at heights of: 801 m (Tuto East); 489 m (Tuto I); and 250 m (Tuto West). The lowest station of this meteorological profile, Thule, is located in the coastal zone at a height of only 3 m, at a distance of 12 miles from the sea.

The slope under study is located between the meridians of 67°55'W and 68°40'W, near the latitude 76°30'N.

The difference in altitude between the lowest and the highest station of the profile is 1912 m. Measured from the map (Figure 1), the approximate straight line distance between the lowest and the highest station of the profile is 130 mi. The distance between the upper station of the slope (Tuto East 801 m) and the lowest station (Thule 3 m) is about 18 miles.

The topographic maps of the slope area are not sufficiently detailed to determine the actual slope profile at each station or between them. Therefore, only a very schematic draft of the slope profile could be made in a larger scale from the map shown on Figure 1. This draft is presented in Figure 2.

THERMAL REGIME

Annual course of mean monthly temperature

The characteristics of air temperatures presented in this study were obtained from five stations located at various heights of the meteorological profile that is shown on Figures 1 and 2.

A comparative analysis of monthly temperatures obtained during the year 1962 revealed the following pattern of temperature distribution over the profile:

In winter the lowest monthly temperatures were observed in the month of February. On the plateau, at Camp Century, the mean temperature of this

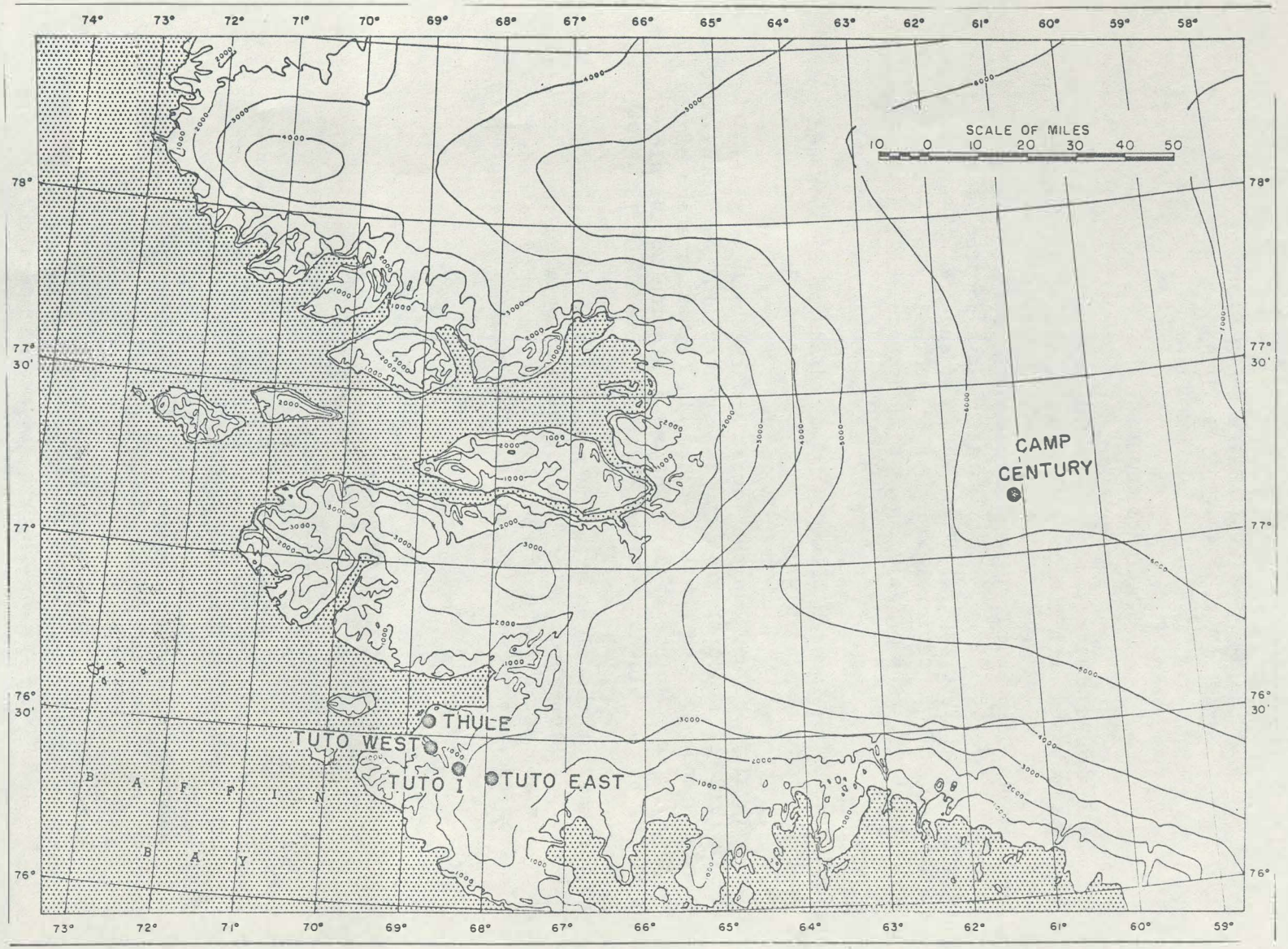


Figure 1. Map of stations on the meteorological profile
Tuto East (801 m) Tuto I (489 m) Tuto West (250 m)

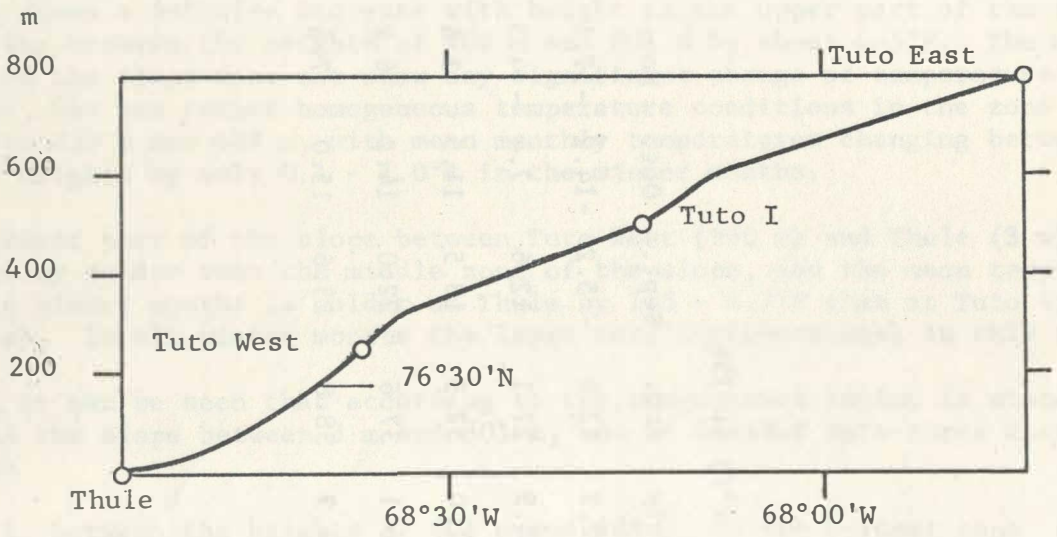


Fig. 2. Schematic profile of the NW slope

month was -39.1°F. Down the slope the temperatures increased with decreasing height. Tuto East (801 m) had the mean monthly for February of -19.1°F, Tuto I (489 m) had -15.1°F, and Tuto West (250 m) had -14.7°F. The lowest station on the profile, Thule (3 m), which is located under the slope, in a rather flat coastal zone, had a colder temperature than the stations on the lower part of the slope. Its mean monthly temperature for February was -16.3°F (Table 1).

The differences in mean monthly temperatures observed between the station on the ice cap and the stations on the slope indicated that the slope was 20 - 25°F warmer than the plateau in all winter months (December-March).

On the slope the monthly temperatures of the winter months increased with height from the coastal zone (Thule 3 m) up to the height of 489 m (Tuto I), and then began to decrease with height from that level up.

Thus, in winter months, the warmest zone of the profile was somewhere between heights of 250 m and 489 m on the slope. In February and December the warmest zone of the slope was lower. Tuto West located at 250 m showed the warmest temperatures, while in January and March the warmest zone was at height of 489 m (Tuto I).

In general, the data of the year 1962 have indicated that the upper part of the slope, between the heights of 801 m and 489 m is colder than the

Table 1: Mean monthly temperatures (°F) in 1962

		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Camp Century	1923m	-28.3	-39.1	-22.1	-15.8	1.2	14.9	22.2	13.9	- 5.2	-14.2	-17.1	-25.6
Tuto East	801m	- 7.1	-19.2	- 1.0	1.0	13.3	29.7	34.9	27.1	12.6	7.4	- 4.3	- 5.9
Tuto I	489m	- 2.4	-15.1	3.2	5.5	17.7	35.8	41.0	32.5	18.5	11.5	3.6	- 2.1
Tuto West	250m	- 3.2	-14.7	2.4	6.2	21.9	39.3	46.1	37.6	22.0	14.2	6.2	- 2.0
Thule	3m	- 5.0	-16.3	- 2.3	2.2	21.7	35.0	41.9	38.8	23.6	15.0	7.6	- 3.5

middle part of it between the heights of 489 m and 250 m, while the temperature shows a definite decrease with height in the upper part of the slope, changing between the heights of 489 m and 801 m by about 4-5°F. The middle part of the slope does not show any significant change of temperature with height, but has rather homogeneous temperature conditions in the zone between 250 m and 489 m, with mean monthly temperatures changing between these heights by only 0.1 - 1.0°F in the winter months.

The lowest part of the slope between Tuto West (250 m) and Thule (3 m), is generally colder than the middle zone of the slope, and the mean temperature of the winter months is colder at Thule by 1.5 - 4.7°F than at Tuto West (250 m). In all winter months the lapse rate is inversional in this zone.

Thus, it can be seen that according to the temperature regime in winter months the slope between 3 m and 801 m, can be divided into three thermal zones:

Zone 1, between the heights of 801 m and 489 m, is the coldest zone of the slope. In this zone the temperature decreases with height.

Zone 2, between the heights of 489 m and 250 m, is the warmest zone of the slope. In this zone the temperature does not change much with height, it is rather homogeneous.

Zone 3, between the heights of 250 m and 3 m, is somewhat colder than the middle zone of the slope. In this zone the temperature rises with height; it is a zone with steady inversions.

To represent better the annual course of the mean monthly temperatures, the data of Table 1 were plotted on a graph, on which the annual course is shown by curves for the three stations on the slope and one on the ice plateau (Figure 3).

As this graph shows, the winter of 1961/62 had the lowest mean monthly temperature in February. This well expressed minimum was observed by all stations of the meteorological profile on the ice cap, on the slope, and on the sea coast as well. (The coastal station data was not plotted on the graph to avoid overloading and interlacing of curves).

However, we do not know yet how frequently that type of winter regime can be observed and how representative the February minimum is for the general climatological aspect. In a rough approximation an answer to this question can be found by a comparative analysis of observations made at Camp Century, during the winters of 1960/61 and 1962/63 (Figure 4).

This graph demonstrates three different types of temperature regimes in winter and shows also the fact that the mean monthly temperatures of the winter months can fluctuate over a very wide range.

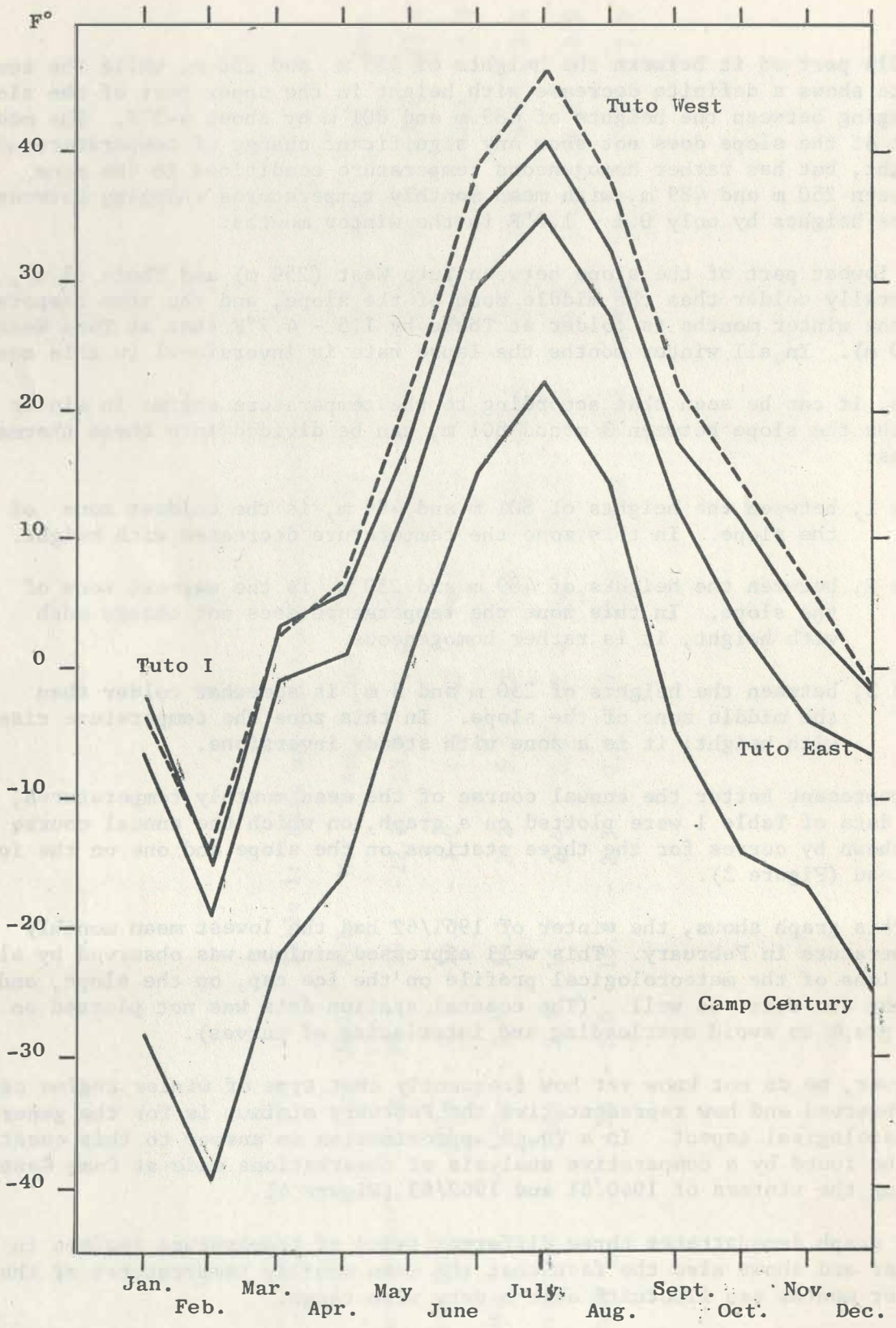


Fig. 3. Annual variations of monthly temperatures in 1962.

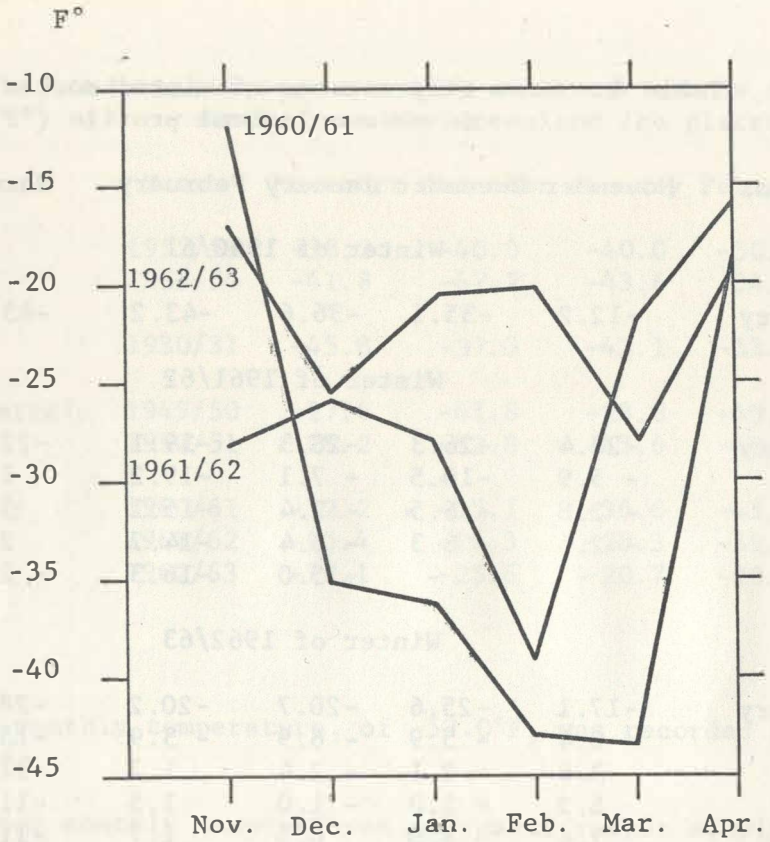


Fig. 4. Mean monthly temperatures in winter at Camp Century (1923 m)

So far it can be noted that the month of march had the lowest mean monthly temperature observed in the analyzed three winters. It was the coldest month in a severe winter of 1960/61 and in a mild winter of 1962/63. In the winter of 1961/62 the coldest month was February. In all three winters the months of January and December have steadily shown a much higher temperature than that of March or February.

The largest fluctuations were observed in the coldest months. For example, in February the mean monthly temperature varied from -20.2°F in 1963 to -45.5°F in 1961, and thus the range exceeded 25°F. In March, which has so far shown the lowest mean monthly temperature and might be considered as the coldest month in the year, the mean monthly values varied from -22.1°F in 1962 to -43.5°F, showing a range of 21.4°F.

The winter of 1962/63 was the mildest of all three. It belonged to the type of the so called "Kernlose" winters, in which no single month has much lower temperature than the others. In this winter we can see that two marginal months (December and March) had lower temperature than the two central months. All in all this winter was mild and the lowest monthly temperature, which was observed in March, was only -28.5°F (Table 2).

Table 2: Mean temperatures of winter months on meteorological profile (°F)

Stations	November	December	January	February	March	April
			Winter of 1960/61			
Camp Century	-12.2	-35.1	-36.6	-43.2	-43.5	-17.6
			Winter of 1961/62			
Camp Century	-28.4	-26.3	-28.3	-39.1	-22.1	-15.8
Tuto East	- 5.9	-10.5	- 7.1	-19.2	- 1.0	1.0
Tuto I	- 2.8	- 6.5	- 2.4	-15.1	3.2	5.5
Tuto West	- 2.6	- 6.3	- 3.4	-14.7	2.4	6.2
Thule	-	-	- 5.0	-16.3	- 2.6	2.2
			Winter of 1962/63			
Camp Century	-17.1	-25.6	-20.7	-20.2	-28.2	-18.1
Tuto East	- 0.4	- 5.9	- 6.9	- 3.9	-15.4	- 3.2
Tuto I	3.6	- 2.1	- 2.4	1.7	-11.3	1.9
Tuto West	6.2	- 2.0	- 1.0	1.5	-11.2	2.8
Thule	7.6	- 3.5	0.5	1.7	-11.7	2.2

The winter of 1961/62 had a definite cold "Core" in February, which showed a rather low monthly mean of -39.1°F at Camp Century. All the other months in this winter were much warmer.

The winter of 1960/61 was the coldest of all three with a rather large cold "Core" that lasted for two months, February and March, with the lowest mean monthly temperature of -43.5°F observed in March, which differed very little from that in February, -43.2°F.

It was interesting to compare the winter temperatures obtained at Camp Century with other stations on the ice plateau, which operated however, in other years. In Table 3 the data on temperature are summarized for the following stations: Northice (78°N, 39°W, H - 2345 m), for Eismitte (70°54'N, 40°42'W, H - 3030 m) and for Station Centrale (70°55'N, 40°38'W, H - 2993 m) and Camp Century.

In November and December the mean temperatures at Camp Century were mostly warmer than at the other stations of the plateau. In January, February and March, Camp Century had temperatures similar to the other stations only in the severe winter of 1960/61. In the other winters the temperatures in these months were mostly warmer. The reason could be that Camp Century is located nearer to the edge of the plateau and at a lower height, or it could be caused by certain circulation processes different from those that prevailed in the other regions of the plateau in other years.

Table 3: Mean temperatures (°F) of winter months for the stations on the Greenland ice plateau

Stations	Years	November	December	January	February	March
Northice	1952/53	-38.2	-40.0	-40.0	-50.8	-47.2
	1953/54	-41.8	-47.2	-43.6	-34.6	-41.8
Eismitte	1930/31	-45.8	-37.3	-43.1	-53.0	-38.9
Station Centrale	1949/50	-27.4	-41.8	-23.8	-40.0	-31.0
	1950/51	-29.2	-32.8	-43.6	-40.0	-41.8
Camp Century	1960/61	-12.2	-35.1	-36.6	-43.2	-43.5
	1961/62	-28.4	-26.3	-28.3	-39.1	-22.1
	1962/63	-17.1	-25.6	-20.7	-20.2	-28.2

The lowest mean monthly temperature, of -53.0°F, was recorded in February 1931 at Eismitte.

In spring the mean monthly temperatures increased rather slowly at the beginning of the season. The April temperatures differed little from those in March, ordinarily a winter month, and oftentimes, the coldest month of the year. However in 1962, March was the first month with generally rising temperature while February was the coldest month. Still, March showed a winter pattern of temperature distribution on the profile, with the warmest zone at 489 m. The same was observed in January, while in February the difference in mean temperatures between the heights of 250 m and 489 m was too small to be counted.

April, however, is a typical summer month in respect to the pattern of temperature distribution on the profile. It shows the warmest zone at a height of 250 m (Tuto West), and this pattern continues up to August when it changes for an autumn type.

From April to May the temperature increased rapidly at all stations. At Camp Century the mean temperature rose from April to May by 17.0°F. This was the greatest increase of temperature from one month to another observed in the course of the year.

The same pattern was observed on the coastal zone. At Thule the rise of mean temperature from April to May was also the greatest in the year. The temperature increased at this station by 19.5°F.

On the slope, however, the greatest rise of temperature was observed later, at the very end of the season. All three stations on the slope observed

the most rapid rise of temperature between May and June, when the mean temperatures increased by 16.4°F at Tuto East, by 18.1°F at Tuto I, and by 17.4°F at Tuto West.

In summer, we can see from Figure 3, that the mean monthly temperatures remain much below the freezing point on the ice plateau: June 14.9°F, July 22.2°F and August 13.9°F. At the upper station on the slope (801 m), the mean temperature was above the freezing point only in July while all the others, located below it, have all three summer months with mean temperature above the freezing point.

July is the warmest month at all five stations of the profile. The distribution of the monthly mean temperatures along the slope shows, more or less, the same pattern observed in the coldest month, February. Again, the station on the plateau shows the coldest temperature (22.2°F), and following the same course, the temperature rises down the slope, reaching the highest value of 46.1°F at Tuto West (250 m). From this point it begins to decrease with decreasing height, so that the station on the coast (Thule 3 m) is colder than that at 250 m by 4.2°F, and has a mean monthly temperature of 41.9°F for July.

However, the difference in temperatures between the ice plateau and the upper station of the slope is much smaller in July than in February, but the differences between the stations on the slope are larger.

The general course of temperature in summer months shows a rather symmetrical distribution, with the peak in July. There is only a slight difference between the mean monthly temperatures of June and that of August, the latter being a little colder.

In August, the first month with generally decreasing temperature, we can notice also a change in distribution of the gradients on the profile directed one way, and temperature decreasing more or less regularly with height, from the coastal zone up the slope to the ice cap station. In this month, the warmest temperature was observed at the coast (Thule 38.8°F) and the lowest on the plateau (Camp Century 13.9°F). The inversion of temperature on the slope, that was steadily observed from January through July, was absent this month.

In fall the distribution of temperatures on the profile show more or less the same pattern which was established in August. The temperature decreased with height, and Thule, at the coast was the warmest station during September, October and November. The slope inversion was absent.

In December, the winter type distribution of temperature along the profile shows up again, with the station on the slope at 250 m showing the warmest temperatures, while Thule (3 m) is colder by some 1.5°F and the inversion on the slope appears again.

As it follows from the analysis of temperature distribution over the slope, the zone of the warmest temperatures, changes its location with seasons

and months. Its highest location was observed in winter months, when the inversions are most intense. In the months December - March the warmest zone was approximately between the heights of 250 - 500 m. During the months August - November, the warmest zone was found in the lowest places, in the coastal region.

Figure 5 shows schematically the slope and the location of four stations on the slope in respect to meridians and latitude. At the right side of this graph, the variations in height of the warmest zone are shown for each month of the year 1962. The location of the warmest zone was computed as the average value between two stations showing the warmest temperatures on the slope, when the difference in their temperatures was not more than 0.5°F. In other cases the location of the warmest zone was shown directly at the height of the station with warmest temperature.

Extreme temperatures

The data available was insufficient for determining the extreme maximum and minimum values of temperature for the stations on the meteorological profile.

Nevertheless, an approximate characteristic of the distribution of extreme temperatures over the profile, in various seasons, could be obtained even from these short series of one year, and it will be of certain value for the region where the observations are so scarce.

All available data on the extreme temperatures are presented in Tables 4 and 5, and 21, 22, in the Supplement.

Comparative analysis could be done only on data for the year 1962, which are presented in Tables 4 and 5. The absolute maximum was derived from hourly observations (24 hrs).

The absolute maximum temperature was above 0°F at all stations of the profile in all months of the year 1962.

The highest maxima were observed in July by all stations except Thule. Due to the moderating influence of the water this station had the absolute maximum in August.

In the summer months the highest maxima were observed at the 250 m level, at Tuto West. From this height the maximum temperatures tended to diminish with height with the lowest values observed at Camp Century, at the highest station on the ice cap.

Tuto West (250 m) recorded 60°F in July, the highest maximum observed on the profile this year.

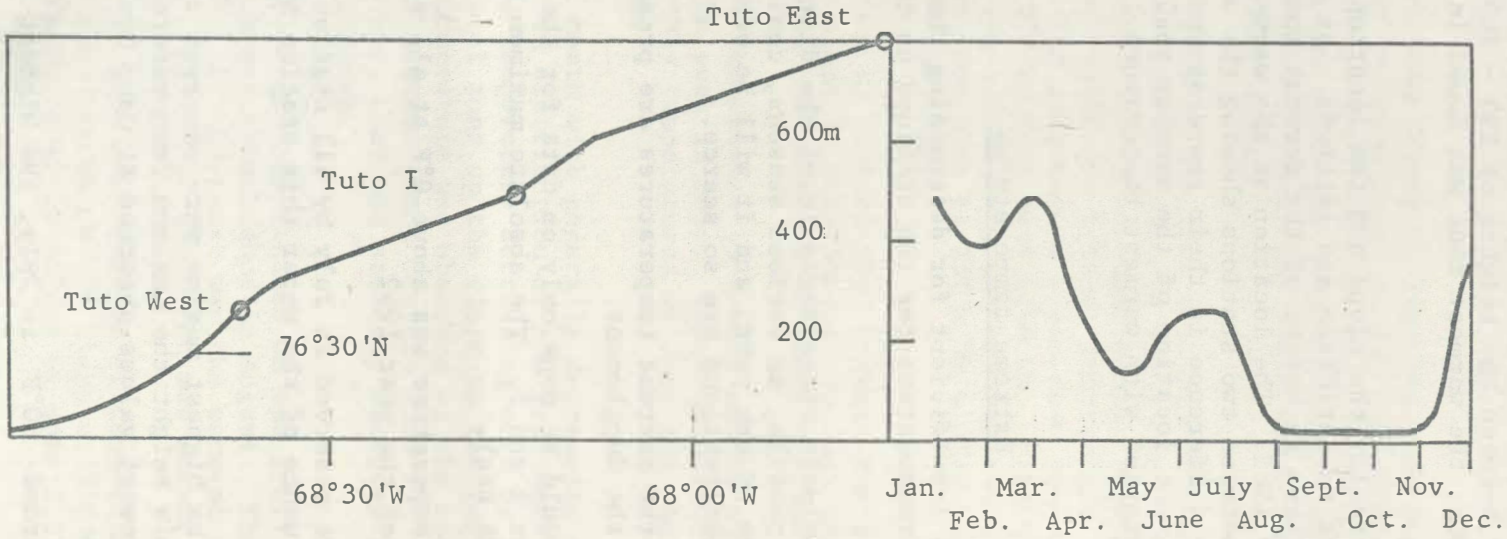


Fig. 5. The slope of the ice cap and the variations in altitude of the location of the warmest zone (1962).

Table 4. Highest temperatures by months for the year 1962 (°F)

Stations	Height	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Camp Century	1923m	0	3	14	20	23	24	32	28	21	13	17	16
Tuto East	801m	16	4	24	27	39	41	47	40	33	21	15	22
Tuto I	489m	24	10	26	33	42	46	52	50	37	22	20	26
Tuto West	250m	28	5	31	37	45	53	60	58	45	23	22	35
Thule	3m	24	8	31	38	42	52	55	56	49	26	26	36

In summer the maximum temperatures at Thule were slightly lower than at 250 m, which is probably due to the cooling effect of the water surface.

In the months September - December, the highest maxima were observed on the coast at Thule, the water being warmer than the air at that time. With the increase of height on the profile, the maxima diminished, reaching the lowest values on the plateau.

Generally it could be said that in all months the absolute maximum temperature decreased with height either from the coast or from the level of 250 m. In all months the lowest maxima were observed at Camp Century, the highest station on the plateau.

It is interesting to note that the data on maximum temperatures in January and February indicate that the warmest zone of the slope is observed between the heights of 250 m and 489 m; as it was also found from mean monthly temperature data. The highest maxima for these months are found in this zone also. In January the highest maximum of 28°F is found at the height of 250 m and in February the highest maximum of 10°F is found at the elevation of 489 m (Table 4).

The distribution of the absolute minimum temperatures among the stations in various months of 1962 is shown in Table 5.

Table 5. Lowest temperatures by months for the year 1962 (°F)

Stations	Height	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Camp Century	1923m	-50	-61	-42	-44	-22	- 4	6	-21	-33	-41	-47	-47
Tuto East	801m	-30	-38	-22	-21	- 5	15	17	5	-10	- 5	-23	-25
Tuto I	489m	-27	-34	-14	-14	1	21	29	14	0	0	-16	-20
Tuto West	250m	-25	-31	-13	-13	5	25	32	19	2	2	-13	-18
Thule	3m	-25	-35	-20	-19	1	23	29	23	0	- 3	-17	-25

This table shows, that the lowest absolute minimum temperature of -61° was observed in February at Camp Century.

The highest minimum, 32°F, was observed in July at Tuto West. Thus, one can see that at all stations, in all months of the year temperatures below freezing may occur.

Generally, the absolute minimum temperatures decrease with height from the level of 250 m (Tuto West). At this level the minimum temperatures show the highest values in all months of the year except August, suggesting that the zone at this level is the warmest on the profile.

The lowest station, Thule, (3 m), has lower minima than those observed at the 250 m level, and in the majority of the months, even lower than at Tuto I, (489 m), probably due to radiational cooling of the stagnated air at the foot of the slope.

Only in August the station on the coast (Thule), shows the highest minima on the profile, which possibly is due to the maritime effect, as the waters around Thule are usually ice free in that month.

Aperiodic fluctuations of temperature

The interdiurnal changes of temperature, i.e., the difference between two successive calendar days were studied in order to present the characteristics of the aperiodic fluctuations of temperature on the meteorological profile.

The largest fluctuations of the mean daily temperatures from one day to the next were observed on the ice plateau at Camp Century. The stations on the slope showed much smaller fluctuations than Thule, the station on the coast. The data of the mean daily temperatures are presented by months in Table 6.

Table 6. Mean monthly values of the day to day changes in mean daily temperatures in 1962 (°F)

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Camp Century	7.0	8.0	5.8	4.7	4.5	1.6	2.2	3.4	5.3	8.1	9.6	7.3
Tuto East	5.9	4.8	4.5	2.6	4.3	1.8	1.9	1.8	3.4	2.7	5.3	5.5
Tuto I	6.1	4.1	4.1	2.1	4.6	2.1	1.8	1.6	2.7	2.7	5.1	5.5
Tuto West	7.3	4.2	4.1	2.8	4.2	2.8	2.5	2.0	3.0	3.1	4.9	4.9
Thule	6.8	5.6	4.8	4.0	4.1	3.4	3.2	2.1	3.8	3.8	5.6	5.9

The greatest day to day changes on the profile were observed in winter months, December - March 1962, except at Camp Century on the ice cap. Here the largest fluctuations were 9.6°F in November and 8.1°F in October. All the other stations recorded the largest fluctuations in January.

In all stations, the thermal conditions were most stable in summer. At Camp Century and Tuto East the smallest day to day changes were recorded in June, while the other three stations had the minimum fluctuations in August. In all stations the smallest mean monthly day to day changes of mean daily temperature were between 1.6° - 2.2°F.

On the plateau, the interdiurnal changes for a warmer temperature have the tendency to be larger in their extreme values, than the changes for a colder temperature. To illustrate this the largest values of the changes of mean daily temperature with positive sign (warming) and negative (cooling), have been computed separately. These data are presented in Table 7.

Conventionally, the magnitude of the day to day changes in temperature is considered to be an indication of the rate of atmospheric exchange in a given region. As can be seen from Table 6, the station on the ice plateau, Camp Century, shows the largest fluctuations of the mean daily temperatures as compared with other stations on the meteorological profile. The highest value of the day to day change of mean daily temperature, 32°F, was observed in Camp Century in February 1962.

Table 7. The largest day to day changes of mean daily temperatures in 1962 (°F).

		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Camp Century	+	21	32	20	14	12	3	9	16	18	26	25	18
	-	18	26	14	10	9	6	6	12	12	15	18	16
Tuto East	+	19	19	19	10	10	4	5	4	12	7	14	16
	-	16	14	10	10	11	6	6	6	8	6	20	15
Tuto I	+	18	12	20	8	14	5	6	4	8	9	13	17
	-	15	13	9	11	12	7	5	6	6	7	21	10
Tuto West	+	25	9	22	9	13	10	6	4	10	9	12	24
	-	19	10	10	12	11	5	6	6	7	7	20	11
Thule	+	24	10	18	8	13	14	9	5	12	11	13	31
	-	26	11	12	10	11	10	7	10	10	9	20	16

It has been found that the mean monthly wind speed is also higher on the plateau than at other stations of the profile, which indicates a stronger atmospheric exchange in this region.

To analyse the fluctuations of the mean daily temperatures in winter months a table was computed showing the highest mean daily temperatures, the lowest mean daily values and the difference between them, i.e., the range of mean daily temperatures for the months December, January and February, for two winters - 1961/62 and 1962/63 (Table 8).

This table shows that the largest range of mean daily temperatures is observed on the ice plateau, where it reached 58°F in February 1963 and 60°F in December 1961, as recorded by the station at Camp Century.

Table 8. The range of mean daily temperature variations by months (°F)

Stations	Years	December			January			February		
		Highest Mean	Lowest Mean	Range	Highest Mean	Lowest Mean	Range	Highest Mean	Lowest Mean	Range
Camp Century	1961/62	6	-54	60	-10	-47	37	- 9	-56	45
	1962/63	5	-42	47	5	-46	51	10	-48	58
Tuto East	1961/62	15	-13	46	11	-27	38	- 6	-34	28
	1962/63	15	-23	38	18	-29	47	19	-21	40
Tuto I	1961/62	19	-27	46	17	-20	37	1	-28	29
	1962/63	20	-17	37	22	-21	43	24	-15	39
Tuto West	1961/62	21	-27	48	17	-19	36	2	-27	29
	1962/63	26	-14	40	24	-19	43	13	-14	27
Thule	1961/62	-	-	-	9	-20	29	1	-31	32
	1962/63	29	-19	48	22	-20	42	30	-16	46

Averaging the mean daily changes of the mean daily temperatures for the whole winter season for Camp Century, the obtained mean values may be compared with those obtained from other stations on the plateau, using the data given in an earlier report (7). The data are averaged over December-March. The following mean day to day changes are given for the stations on the plateau:

Camp Century	(1923 m)	for 1962	7.0°F
Northice	(2345 m)	for 1952/54	7.0°F
Eismitte	(3000 m)	for 1930/31	8.6°F
Station Centrale	(2993 m)	for 1949/50	9.9°F

In an earlier report (4) the interdiurnal changes of temperature were computed for Station Centrale and Northice. However, these changes were computed for certain hours of the day (00Z-00Z), but not for the changes of mean daily temperature.

Warm advections

Warm advections occur rather frequently in the region under study, and it would be of interest to obtain some knowledge of their characteristics.

A case of strong advection of warm air into the northwestern regions of Greenland was selected from the synoptic maps and analysed.

On February 25, 1962, the surface map showed an elongated high pressure area spreading over the northern half of Greenland and over the adjacent regions of Baffin Bay and Atlantic Ocean. This high pressure area had two small centers, one over the region of the studied slope in the northwestern section of Greenland, the other over Iceland. Both centers had the pressure of 1045 mb (Figure 6).

At that time, on February 25, very cold temperatures were observed by all stations on the studied profile, with the coldest on the ice plateau, in Camp Century, reaching -52°F.

However, the high pressure area was a rather shallow atmospheric formation, since there was no trace of it on the 500 mb contour map.

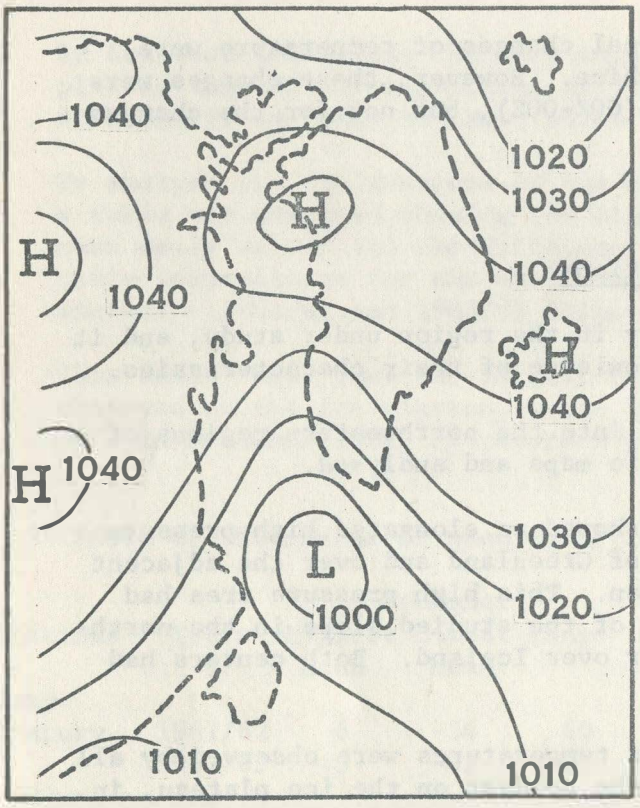
During the next 24 hours a very considerable warming occurred in the region under study. This was caused by the advection of warm air that arrived in the warm sector of a low, the center of which moved from 56°N to about 63°N during the preceding 24 hours.

On the surface map for 00Z, 26 February (Figure 6), a well developed cyclonic pressure field was shown covering a large portion of Greenland, replacing the high pressure area that was seen on the surface map 24 hours earlier.

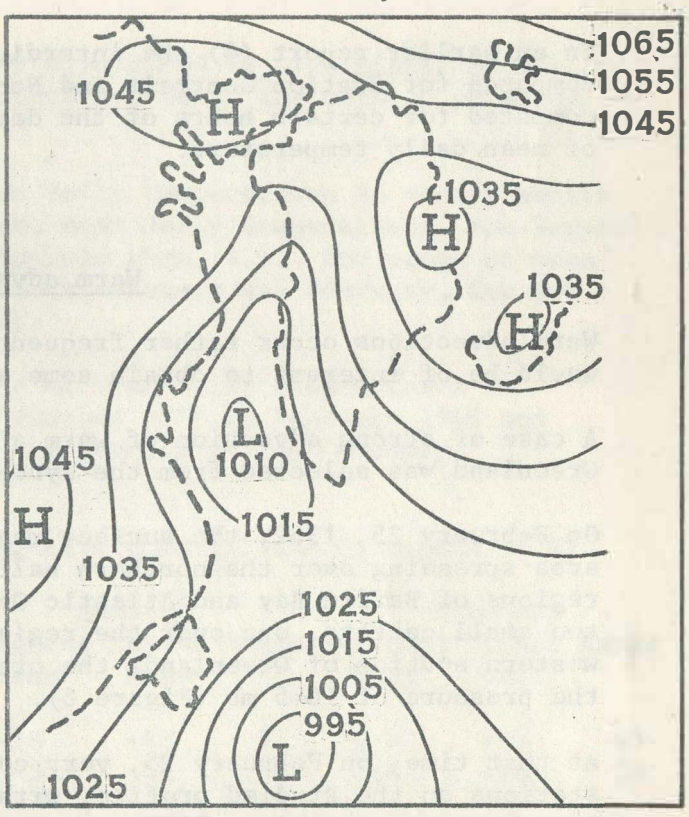
Analysing the changes in temperature brought about by this process we computed the mean daily temperatures and the difference between them for the day of advection and the previous day. These data are given in Table 9.

It is remarkable that the magnitude of the change in mean daily temperatures (warming) increased with height in a more or less regular way. The greatest change in temperature was experienced by the station on the ice cap, which warmed up, on the average, by 32°F and became warmer than the lowest station on the coast (Thule), which showed the least change in mean temperature.

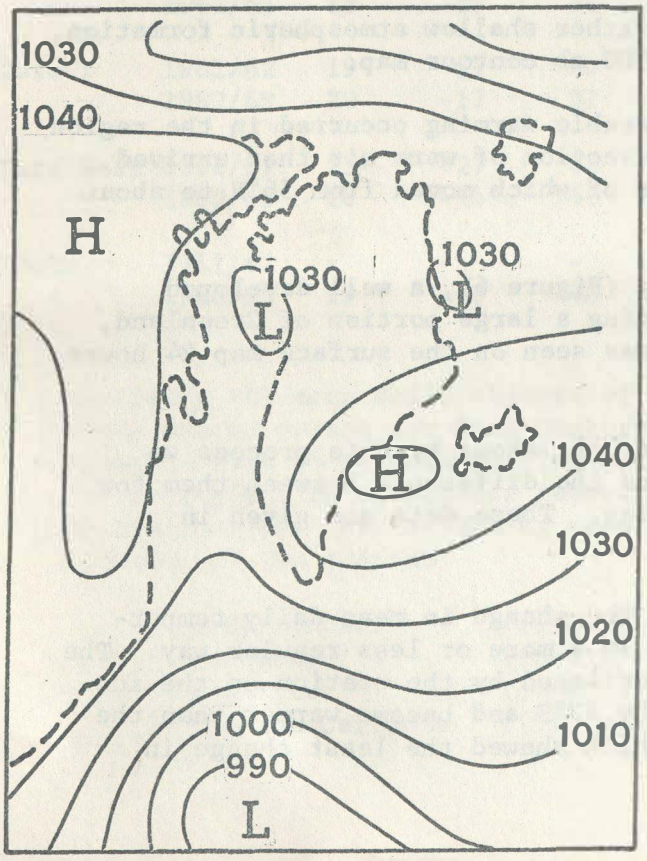
00Z 25 February 1962



00Z 26 February 1962



00Z 27 February 1962



00Z 28 February 1962

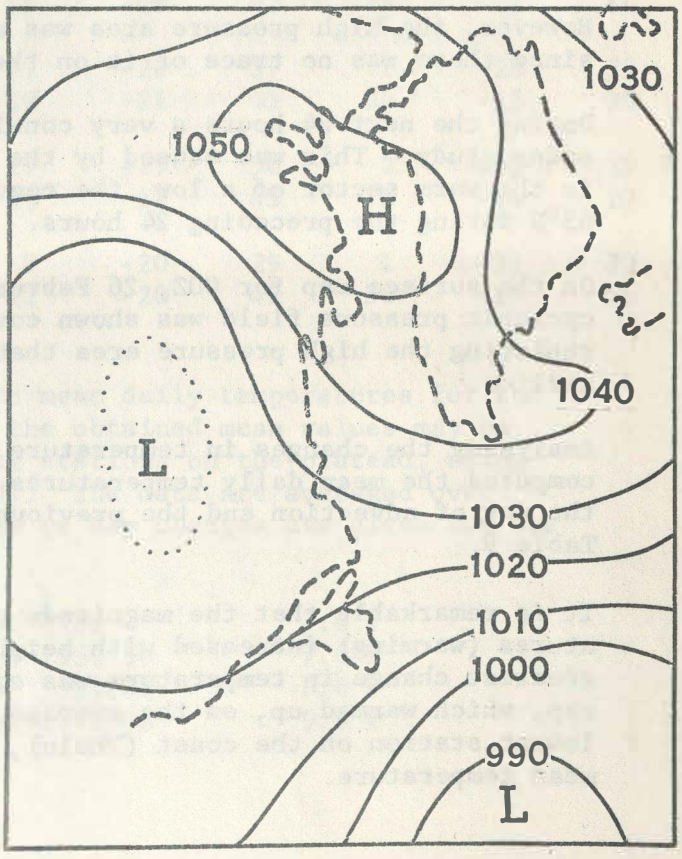


Fig. 6. Synoptic situations in days of warm advection and days before and after it.

Table 9. Changes of mean daily temperatures between 25th and 26th of February 1962 (°F)

Stations	Height	February 25 mean daily temperatures	February 26 mean daily temperatures	Difference between 25th and 26th
Camp Century	1923 m	-52	-20	32
Tuto East	801	-25	- 6	19
Tuto I	489	-28	-16	12
Tuto West	250	-27	-19	8
Thule	3	-31	-25	6

The advection of the warm air continued during the next day (February 27) also, but it was much weaker, and the changes in temperature were smaller and more evenly distributed over the studied profile. These changes are shown in Table 10.

Table 10. Temperature changes between February 26 and 27 (mean daily)

Stations	Height	Mean daily °t 26th	27th	Difference
Camp Century	1923 m	-20	-15	5
Tuto East	801	- 6	- 7	-1
Tuto I	489	-16	-10	6
Tuto West	250	-19	-15	4
Thule	3	-25	-19	6

On the surface map for 00Z February 27 (Figure 6) we can see only a weak trough along the western coast of Greenland.

It is apparent, from this map, that the low, shown on the previous day, was gradually filling up. Its weak center migrated further north to about 73°N latitude, and it is possible that a portion of the air in the warm sector crossed the ice cap,(a small center can be seen on the eastern coast).

The advection of the warm air continued through this day, but it was much weaker. It brought about a moderate warming to most of the stations on the slope, with mean daily values rising by 4 - 6°F. Only the upper station of the slope, Tuto East, showed a slight cooling (-1°). If we summarize

the effect of the advection that took place during the two days, we can see that the mean daily temperatures rose by 37°F on the ice cap; by 18°F at Tuto East; by 18°F at Tuto I; by 12°F at Tuto West and by 12°F on the coast of Thule.

Thus, the stations located at higher altitudes experienced greater warming than those in lower places which indicates that the flow of warm air, which invaded the area under study, carried the warmest air masses to the upper strata.

This was verified to some extent by radiosonde observations taken by the station on the coast, Thule (Table 11).

This table shows that the RAOBs at 00Z and 12Z on the 26th and at 00Z on the 27th, recorded an inversional stratification of the invading warm air.

The temperatures in the free air were consistently higher than those at the surface stations of corresponding heights, except that Tuto East (801 m) was warmer by 2 to 6°F than the free air at the same height during the last two observations, at 12Z February 26th and 00Z February 27th.

The values of hourly temperatures and wind speeds (Figures 7a and 7b) showed the following course:

At Camp Century a strong warming started in the early morning of February 25th and continued until the early morning of February 27th. This warming occurred with persistent northwesterly winds about 5 - 6 m/sec.

Starting from the early morning of the 27th, the temperatures dropped (and with some interruptions in the evening of the 27th and at noon of the 28th) and were decreasing until the afternoon of the 28th. This decrease was associated generally with southeasterly and easterly winds of slightly lower speeds as compared with those of the preceding days.

At Tuto East a pronounced warming started in the morning of the 25th and continued until the late evening of the 26th. This warming was accompanied by NNE and NE winds of 7 - 9 m/sec. From the evening of February 26th until the morning of the 28th there occurred a cooling of the air, which was interrupted by a warming from morning until the evening of the 27th. A warming again took place late in the morning of the 28th.

These temperature changes, from the start of the cooling, were recorded with predominately easterly winds (3 - 4 m/sec).

At Tuto I (not shown on the graphs) the warming started in the evening of the 25th and continued with small fluctuations through the evening of the 28th. This warming occurred with NNE to ENE winds of 2 - 3 m/sec.

Table 11. Comparison of station temperatures with radiosonde observations in Thule (°F).

Stations	Height in m.	00Z 25 Feb. 1962 Station	RAOB	12Z 25 Feb. 1962 Station	RAOB	00Z 26 Feb. 1962 Station	RAOB	12Z 26 Feb. 1962 Station	RAOB	00Z 27 Feb. 1962 Station	RAOB
Camp Century	1923	-54°F	-39°F	-54	-26	-48	-13	-30	- 4	-11	- 4
Tuto East	801	-38	-34	-30	-23	-18	-14	- 6	- 8	1	- 5
Tuto I	489	-31	-29	-32	-24	-25	-17	-16	-11	-12	- 9
Tuto West	250	-28	-	-30	-	-29	-19	-19	-13	-17	-11
Thule	3	-23	-	-35	-	-30	-	-27	-	-23	-

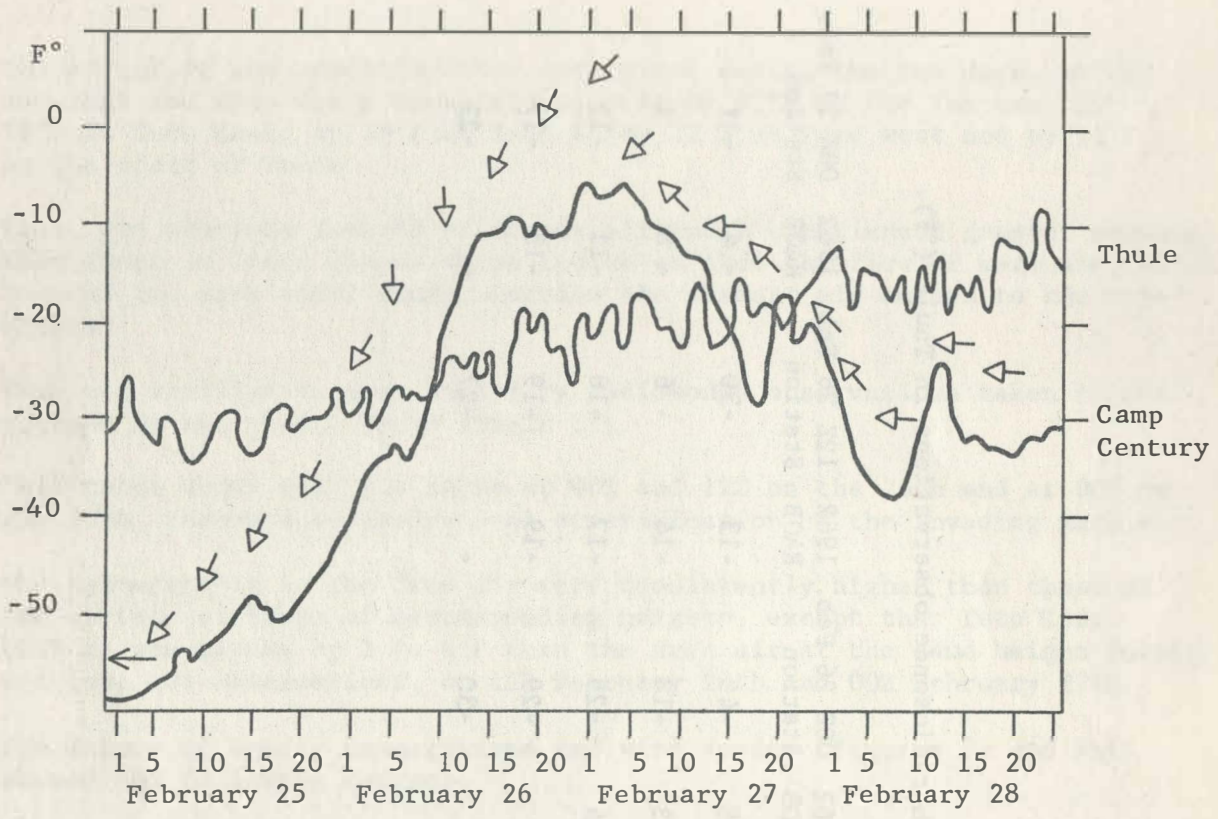


Fig. 7a. Temperature and wind variations during warm advection at stations camp Century and Thule

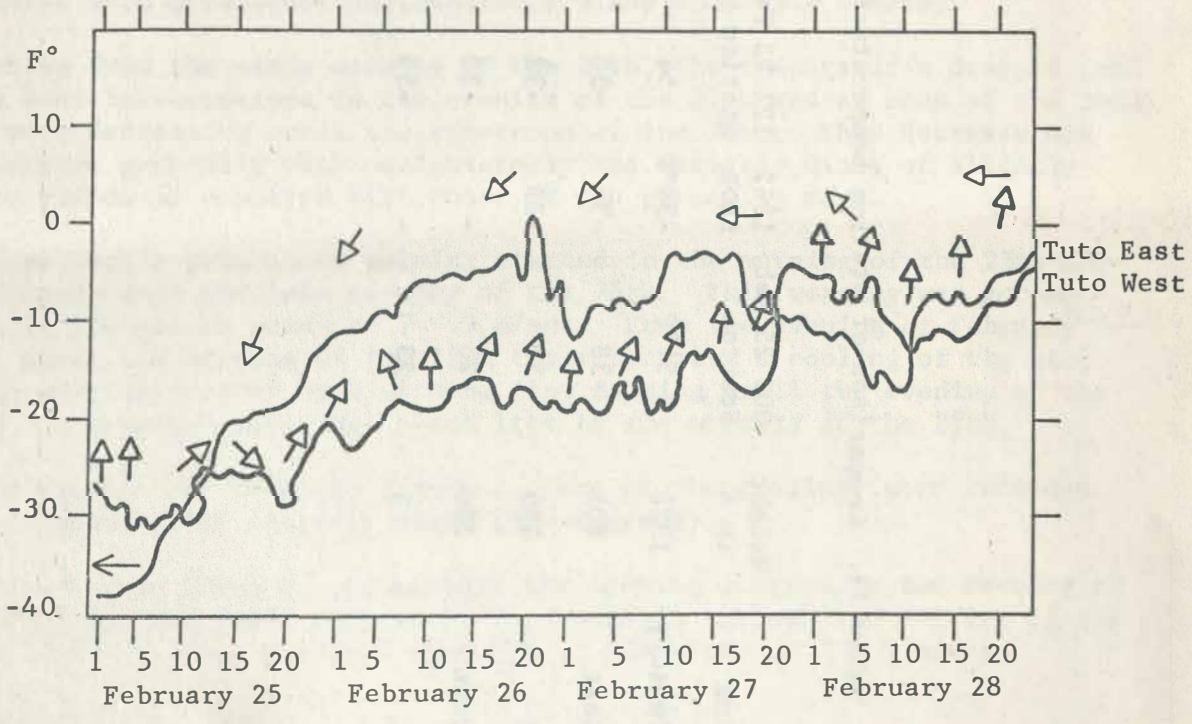


Fig. 7b. Temperature and wind variations during warm advection at stations Tuto East and Tuto West on the slope.

At Tuto West a more pronounced upward temperature trend started on the evening of the 25th and continued through the 28th, although with more or less pronounced fluctuations. Very light (1 - 2 m/sec) south-southwesterly and southerly winds were generally associated with this temperature rise.

At Thule the temperature started to rise in the early morning of the 26th, and with some fluctuations, the temperature continued generally to increase through February 28th.

How much the katabatic flow influenced the temperature changes could be indicated by the relationship between the changes of relative humidity and of temperature.

At Camp Century the increase of temperature generally occurred with a slight decrease of relative humidity, while the decrease of temperature was accompanied by an increase of relative humidity. However, this reverse relationship was not strongly pronounced.

At Tuto East the reverse correlation between temperature and relative humidity changes was more pronounced, especially in the later hours of February 28th. At Tuto I the warming started in the late evening of February 25th; this occurred with a 20% drop of relative humidity. During the whole period of warming, through February 28th, the values of relative humidity were 50-65%. At Tuto West the values of relative humidity were 30-60% during the whole period from February 25th to the 28th, and there was apparently no relationship between the changes of temperatures and relative humidity.

The weather development during February 25th - 28th over the Thule area was as follows:

The 700 mb level at 00Z, February 25th, had generally a southerly flow, influenced by a low centered over Canada, northwest from Hudson Bay, but by 12Z the air flow was influenced by a high centered southeast from Greenland. This high pressure influence remained through February 28th. At this level the temperature rose on February 25, 00Z, from -38°F to -11°F on February 26th at 12Z. During February 27th and 28th the temperature dropped slightly, and ranged from -15 to -20°F. This air was quite dry, the relative humidity having decreased from approximately 40% on February 25th to 17-19% on February 26th and 27th at 00Z. The relative humidity increased to 30% on February 27th at 12Z and to 60% on February 28th at 12Z.

At the 850 mb level the area was generally under the influence of a southerly flow, although Thule recorded light NW and N winds on the 25th and 26th of February. During February 25th and 26th the Thule area was influenced by a low centered over the Davis Strait, and on the 27th by a weak trough. On the 28th a high, centered on the previous day southeast from Greenland, moved in a northwesterly direction, influencing the Thule area. The temperature rose from -38°F on February 25th at 00Z to 0°F on the 26th at 12Z, and then dropped to -4, on February 27th and to -6°F on the 28th. The relative humidity decreased from 60% on February 25th at 00Z, to 15-20% on February 26th - 28th. After 00Z, February 28th, the relative humidity increased again slightly to 35% at 12Z.

This upper air analysis showed that the warming, due to southerly advection, started on the 25th at both levels, 850 and 700 mb, and was especially pronounced on the 26th of February.

The warming practically ceased on the 27th and showed even a small recession on the 27th and 28th. Only the two higher stations (Camp Century on the edge of the ice plateau, and Tuto East, at 801 m on the slope), showed a similar course of temperature. The lower stations, Tuto I and Tuto West as well as Thule, on the coast, experienced the warming somewhat later, starting in the late hours of the 25th or early hours of the 26th. The warming there was not so strongly pronounced as at the higher stations.

The process of warming on the slope of the ice cap apparently occurred in removing of the cooled by radiation and partly stagnated air along the slope as "lakes of cold air" in small valleys. This cold air was removed primarily by the dynamic influence of a surface low moving northward along the Davis Strait and penetrating the cold air of a shallow high pressure system with a center southeast from Thule (see Fig. 6, surface weather map of 25th February, 00Z). Also downslope winds of more or less pronounced northeasterly directions participated in this cold air removal. This was most pronounced at Camp Century and Tuto East, and also at Tuto I (489 m), although with much lower wind speed. There apparently occurred a mixing of warm air with the cold air on the ice cap and along the slope. The presence of northeasterly winds at the higher stations on the slope indicates that adiabatic warming also contributed to this increase of temperature. However, as the air over the Thule area was exceptionally dry during the warm advection, The decrease of relative humidity, associated with an increase of temperature along the slope, could not be absolute proof of adiabatic warming due to the katabatic process. At Tuto East, in the afternoon and evening hours of February 28th, when the temperature rose with easterly winds and a marked decrease of relative humidity, there appeared to be a contribution of adiabatically descending air in the warming, although this does not account entirely for the increase in temperature.

This case of warm advection during February 25th - 28th, 1962, when the warming started at higher elevations on the slope of the ice cap and then penetrated downward, could hardly be regarded as unique. Another typical case of warming apparently occurs when a strong advection of warm air from the south along the Davis Strait and Baffin Bay takes place and when the air aloft and at the higher elevations of the slope does not experience such warming, due perhaps to the presence of a northerly flow.

In this case a strong instability occurs which can result in an intensive vertical circulation with consequent warming of the slope and the edge of the ice cap by ascending air from the lower levels, in spite of adiabatic cooling. In this case the warming occurs, of course, only when very warm air moves northward along the coast.

Temperature lapse rates along the slope of the ice cap

From temperature observations at Tuto West (250 m) and Camp Century (1923 m) were computed the temperature lapse rates for October 1962, January, April and July 1963 for the hours 03, 09, 15 and 21. These hours were taken because Sondre Strom Fjord (67°01'N; 50°48'W, H = 53 m) and Dye 2 (66°29'N; 46°20'W; H = 2330 m) had observations only at these hours and it was interesting to compare the lapse rates along the NW slope with those observed along the SW slope of the ice cap at the same hours, months and years.

Table 12 shows these values. January and April 1963 showed almost the same values of lapse rates for both slopes, NW and SW, although the daily course (from 4 observations per day) is a little different. July 1963 recorded lower values of lapse rate along the SW slope. But the lapse rates for October 1962 shows quite different values: .46 along the SW slope as compared with .94 along the NW slope of the ice cap. This difference is so striking that this month was more carefully scrutinized.

October 1962 was apparently an exceptional month with regard to atmospheric circulation patterns. The west coast of Greenland was almost persistently influenced by a southerly flow, mostly due to a more or less pronounced trough stretched over Davis Strait and Baffin Bay, or due to a low centered south or southwest from Greenland; sometimes also a high centered over the Canadian Archipelago will transport cooler air over Baffin Bay and cause relative high temperatures along the west coast (warming by warmer water). The temperatures on the west coast during this month were also very evenly distributed, usually with a small gradient toward north. These temperatures were also much higher than the temperatures at the east coast of Greenland, especially in the northern part of Greenland. To mention only two cases: on the 28th, Thule, on the west coast, had 19°; Nord, and Danmarkshavn, on the east coast, -15° and -9°F respectively; on the 30th, Thule, 19°, Nord, -31°, Danmarkshavn, -17°. However, it is necessary to mention that the mean summer (June through August) temperatures in the northern part of Greenland are a little higher on the west coast in comparison with the east coast: Thule, 39°, Danmarkshavn, 35°, Egedesminde, on the west coast, 41°, Kap Tobin, on the east coast, 37°. In winter (December through March), however, the mean temperatures are the same on both coasts in the northern part of Greenland (5). Notwithstanding, the temperatures on the west coast were generally high during October 1962.

Another factor that contributed to the high values of temperature lapse rates in the northwestern part of Greenland is the distribution of temperatures aloft. Almost during the whole month the Thule area was influenced by cold air aloft, according to the 500 mb contour maps, and the 500/1000 mb thickness maps. Over the Thule area, or close to it, was usually located a center of cold air, or a tongue of cold air stretched from the north, or a center of low circulation, which supplied cold air from the north over the Thule area. Only when there was a deviation from this temperature distribution (exceptionally warm on the coast; relatively cold aloft) does the

Table 12. Temperature lapse-rate (C°/100m) along the slopes of Greenland ice cap

	October 1962					January 1963					April 1963					July 1963				
Hours	03	09	15	21	Mean	03	09	15	21	Mean	03	09	15	21	Mean	03	09	15	21	Mean
NW Slope	.93	.92	.99	.92	.94	.68	.70	.65	.66	.68	.76	.65	.60	.77	.70	.76	.70	.58	.71	.69
					50/124					14/99					33/120					18/124
SW Slope	.49	.41	.45	.48	.46	.60	.59	.64	.65	.62	.71	.71	.60	.73	.68	.53	.62	.56	.61	.58
					1/121					3/124					4/120					0/124

$$\frac{a}{b} = \frac{\text{No. of cases with adiabatic or super-adiabatic lapse rate}}{\text{No. of cases}}$$

temperature lapse rates show smaller values. So, for instance, on October 13, 14 and 15th a trough from south was covering Davis Strait and Baffin Bay. The 500 mb contour maps showed a warm ridge stretching from the south. On all these days the temperature lapse rates were relatively small along the NW slope of the ice cap. On October 18th a strong trough dominated Baffin Bay. The 500 mb contour map and the 500/1000 mb thickness map showed a cold center of circulation off the southwest Thule area. This cold air, near the Thule area, apparently did not affect the southwest slope as the temperature lapse rates showed superadiabatic values along the NW slope the whole day 03, 09, 15, 21^h but inversion was recorded between Sondre Strom Fjord and Dye 2.

This, probably exceptional temperature distribution over the Thule area caused also very frequent adiabatic and superadiabatic temperature lapse rates: from 124 observations (4 times per day) 50 cases or 40% of all observations were recorded with adiabatic or superadiabatic lapse rates. Along the SW slope of the ice cap, however, only one case out of 121 was observed with superadiabatic lapse rates, and four cases with inversions. This leads, of course, to the assumption of a very strongly pronounced vertical air displacement over the Thule area in October 1962.

From Table 12 we obtain only a vague indication that the temperature lapse rates along the SW slope of the ice cap are possibly smaller than those along the NW slope. As some other years were also available, the mean lapse rates were computed for those two slopes for the same months (Table 13 and 14).

The values of lapse rates along the NW slope (Table 13) show that in October 1960 the lapse rates were markedly lower than in October 1962: mean for the month .73°/100 m against .94°/100 m, and so we can regard October 1962 as a year with exceptional conditions. January and April 1961 and 1963 show practically the same mean values $\sim$.68° and $\sim$.71°; only July 1963 had a smaller value of lapse rate ($\sim$.7°) in comparison to 1961 and 1962 ($\sim$.8°).

The lapse rates along the SW slope show almost the same values for both Julies (1962 and 1963), and both Octobers (1962 and 1963), but smaller values for January and April 1962 in comparison to the year 1963.

As the climatic regime is different in the southern and northern part of Greenland, we could also expect different values of temperature lapse rates along the northern and southern part of the slope; however, this is not a necessary conclusion derived from different climatic conditions, as the lapse rates may not vary in the areas with different climatic conditions. The diversity in lapse rates is mostly dependent on different circulation patterns. We saw it from the example of October 1962. This month showed the most strongly pronounced diversity of air circulation over the NW and SW parts of the slope, but also generally we can expect different lapse rates at both slopes provided that there does exist a diversity in the prevailing circulation patterns. A more intensive vertical circulation will produce a steeper lapse rate, and this apparently happens along the northern part of

Table 13. Temperature lapse-rate (C°/100 m). NW slope of Greenland ice cap

	October					January					April					July				
Hours	03	09	15	21	Mean	03	09	15	21	Mean	03	09	15	21	Mean	03	09	15	21	Mean
	1962					1963					1963					1963				
	.93	.92	.99	.92	.94	.68	.70	.65	.66	.68	.76	.65	.60	.77	.70	.76	.70	.58	.71	.69
	1960					1961					1961					1961				
	.70	.71	.75	.76	.73	.63	.67	.71	.68	.67	.79	.70	.61	.75	.72	.84	.78	.72	.80	.79
																1962				
																.85	.81	.72	.80	.80

Table 14 Temperature lapse-rate (C°/100 m). SW slope of Greenland ice cap

	October					January					April					July				
Hours	03	09	15	21	Mean	03	09	15	21	Mean	03	09	15	21	Mean	03	09	15	21	Mean
			1962					1962					1962					1962		
	.49	.41	.45	.48	.46	.46	.38	.42	.46	.43	.51	.53	.56	.58	.55	.52	.62	.65	.60	.60
			1963					1963					1963					1963		
	.49	.54	.54	.50	.51	.60	.59	.64	.65	.62	.71	.71	.60	.73	.68	.53	.62	.56	.61	.58

the west coast of Greenland. Generally this difference in lapse rates should be quite persistent, although it could be pronounced more or less. So, for instance, July showed for the NW slope .80°/100 m and .69°/100 m in 1962 and 1963, but the SW slope showed .60°/100 m and .58°/100 m. The mean lapse rates computed from 2 - 3 year observations, for both slopes, have the following values:

	January	April	July	October	
NW slope	.68	.71	.76	.76*	C°/100 m
SW slope	.52	.62	.59	.48	

*) October 1962 is disregarded.

The data showed that for these four months the temperature lapse rates are persistently (more or less!) larger along the NW slope in comparison to the SW slope, and we can suppose that such differences very possibly exist in other months. Roughly we may assume that the lapse rates along the NW slope are about .7°/100 m, and .50- .60°/100 m along the SW slope of the Greenland ice cap.

For one year, September 1962 - August 1963, the temperature lapse rates along the NW slope of the ice cap were computed from the mean monthly temperatures at Tuto West and Camp Century (Table 15). The monthly temperatures were derived from hourly observations.

Table 15. Temperature lapse rates along the NW slope of Greenland ice cap (C°/100 m)

1962				1963								
Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Year
.90	.94	.77	.78	.66	.56	.56	.69	.65	.65	.68	.67	.71

It is necessary to mention that Hogue (2) found much smaller lapse rates for the NW slope of the Greenland ice cap. He computed the lapse rates from the observations at Site 1 ($\sim$ 78°N; H = 670 m) and Site 2 ($\sim$ 77°N; = 2140 m), for the period, July 1953 - October 1956, from the mean monthly temperatures. The lapse rates obtained for January, April, July and October are .35, .42, .46 and .60°/100 m respectively (annual mean = .42°/100 m). The mean monthly temperatures for these two stations were computed from mean monthly extremes; besides, some months were incomplete, and also the dates of the month with observations were different. But this technique in computing the mean lapse rates cannot, of course, account for these large differences.

One of the possibilities that could cause the relative small lapse rates between 700 and 2100 m, for instance, is a relatively low temperature at 700 m or a relatively high temperature at 2000 m on the slope, and in such cases these conditions should be more or less "normal"; this should be reflected also in other years, not only in the period 1953-1956. To check it, mean monthly lapse rates were computed for the distance Tuto East (800 m) and Camp Century (1920 m) for October 1962 and January, April and July 1963: 1.07, .67, .74 and .51°/100 m respectively. January and April show almost the same mean lapse rates as those computed for Tuto West and Camp Century (Table 2). October shows the same magnitude; only in July is there a discrepancy. However, these values generally do not contradict our previous findings. In other words, by taking approximately the same sites as in Hogue's computations, we nevertheless obtained lapse rates comparable to those derived from the data at stations Tuto West and Camp Century. As the years 1960 and 1961 showed values of lapse rates similar to those obtained for 1962-63 (Table 3), we may assume that the stability conditions along the NW slope of the ice cap, represented by the values of lapse rates, are close to the normal ones, except October 1962. Besides, these values generally do not differ from values derived by Diamond (1), and are also close to the values of lapse rates computed by Loewe (3) for Umanak at the coast and Weststation (950 m) of Wegener's Expedition (both stations at approximately 70°N).

The strong discrepancies with Hogue's results could be explained by the circumstance that the years 1953-56 were "abnormal." That, however, is very unlikely, and what is more plausible, by an unfortunate exposure of the thermometer shelter, which resulted in recording temperatures not quite representing the conditions on the slope of the ice cap at one discrete elevation.

Diurnal variations of temperature

In order to determine the characteristics of diurnal variations of temperature, the mean monthly values have been computed for each hour for all stations on the meteorological profile for the central months of each of the four seasons. Tables of hourly data for January, April, July and October are given in the Supplement (Tables 1 - 20).

In addition, four graphs were constructed for each station of the profile showing the average course of diurnal temperatures for the same four months (Figures 11-15).

In January the diurnal variations of temperature are very moderate at all five stations of the profile. The amplitude is small; it varies between 1.4°F (Camp Century and Tuto I) and 2.6°F (Tuto East).

As expected, in this dark season of the polar night, with the sun under the horizon at all times, the variations of temperature within the 24 hour cycle

are very slight. However, unexpectedly, the graphs for the stations on the slope show a pronounced reverse course of diurnal variations of temperature.

The phenomenon of a reverse course of diurnal temperature variations has been noticed before by earlier explorers of climatic conditions in other regions of the Arctic.

The observations on the Greenland plateau made by the Station Centrale (70°55'N, 40°38'W, H = 2993 m) in January 1950 (8) indicated also a reverse type of diurnal variations of temperature, with minimum at 9 - 15 hours (Figure 8).

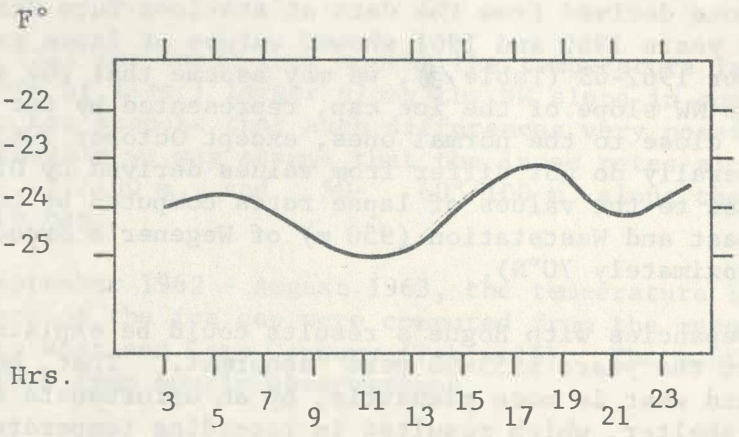


Fig. 8. Diurnal variations of temperature, Station Centrale, January 1950

The Russian drifting station "North Pole - 8" (9), which drifted in the winter of 1961 in the Arctic Ocean (average coordinates 83°39'N, 151°31'E), showed also a reverse type of diurnal temperature variations in the months of January and March. The curves of diurnal variations were constructed for this station on the basis of observations taken every three hours (Figure 9). They show that the lowest temperatures were observed in the period of 1 - 8 p.m. in both months. In February the monthly curve of diurnal variations was very flat, the hourly values varying only 0.5°F.

To investigate the relationship of the reverse type of diurnal variations of temperature with other meteorological factors, we have computed the curves of diurnal variations of wind speed and air pressure and compared it with the curve of temperature for Camp Century, January 1961 (Figure 10).

As may be seen, all curves show a reverse type of diurnal course. The wind speed curve shows the minimum speed at noon and in the afternoon and the maximum at night. This ties in well with the reverse course of temperature, since in the very cold regions of the Greenland plateau the relationship between the wind speed and temperature is such that the lower wind speeds are connected with the lower temperatures, while stronger winds usually bring higher temperatures.

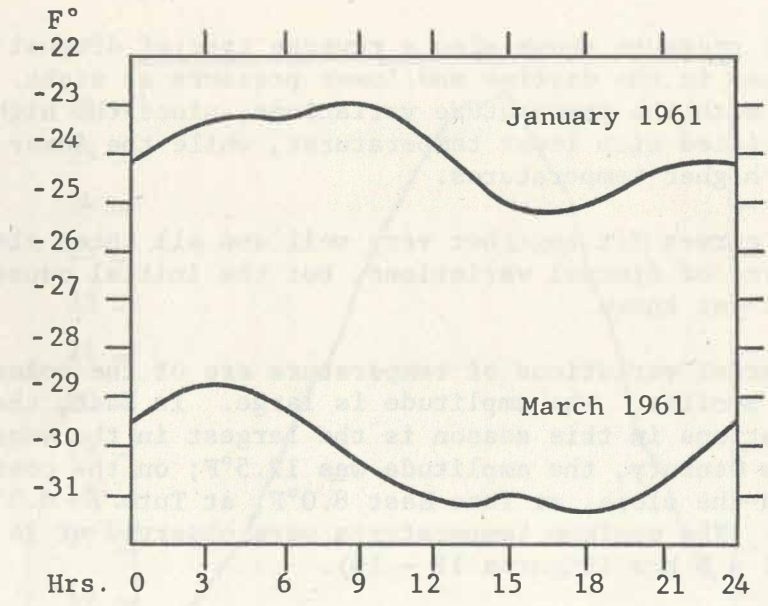


Fig. 9. Diurnal variations of temperature at "North Pole - 8".

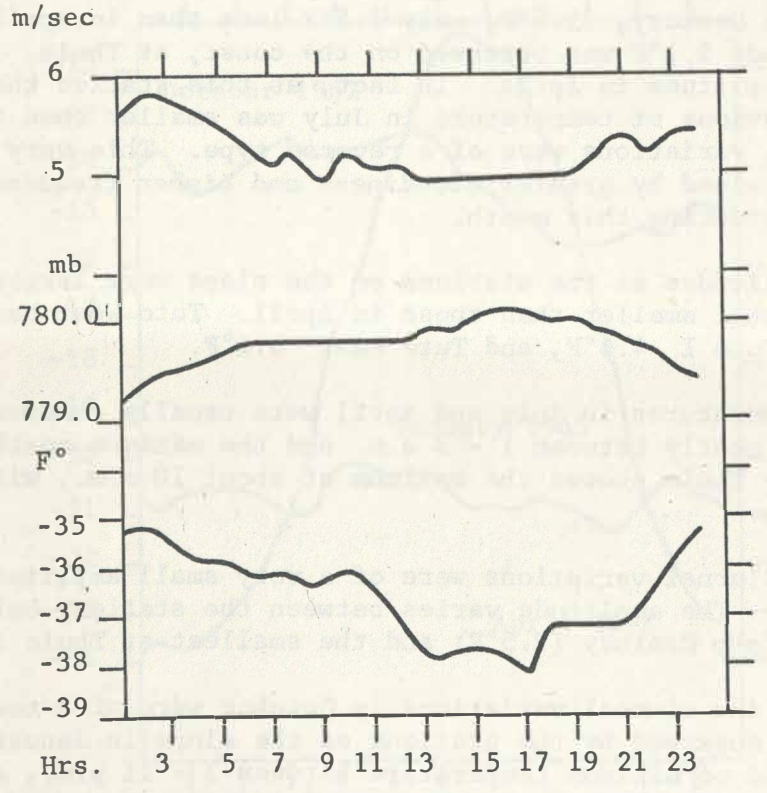


Fig. 10. Diurnal variations of wind speed, pressure and temperature at Camp Century in January 1961.

The curve of air pressure shows also a reverse type of diurnal variation, with higher values in the daytime and lower pressure at night. This also is in agreement with the temperature variations, since the higher pressure is usually associated with lower temperatures, while the lower pressure accompanies the higher temperatures.

Thus, all three curves fit together very well and all three elements show the reverse course of diurnal variations, but the initial cause of these phenomena is not yet known.

In April the diurnal variations of temperature are of the solar type in all stations of the profile. The amplitude is large. In fact, the amplitude of diurnal variations in this season is the largest in the year. On the plateau, at Camp Century, the amplitude was 12.5°F; on the coast, at Thule, it was 8.4°F; on the slope, at Tuto East 8.0°F; at Tuto I 8.3°F, and at Tuto West 7.6°F. The maximum temperatures were observed at 14 - 16 hrs and the minimum at 1 - 3 hrs (Figures 11 - 15).

In July the diurnal variations were also well expressed at all stations except Thule, which showed an irregular diurnal curve of a wavy nature and a much smaller amplitude than that of the other stations on the profile. In general, the curves for July were similar to those in April, but of a somewhat smaller amplitude. The largest amplitude was observed on the plateau, at Camp Century, 11.0°F, only 1.5°F less than in April. The smallest amplitude 2.1°F was observed on the coast, at Thule. This was one fourth of the amplitude in April. In fact, at this station the amplitude o of diurnal variations of temperature in July was smaller than in January, when the diurnal variations were of a reverse type. This very small amplitude may be explained by greater cloudiness and higher frequency of fog in the coastal zone during this month.

In July the amplitudes at the stations on the slope were larger than on the coast, but somewhat smaller than those in April. Tuto West had the amplitude of 5.2°F, Tuto I 4.4°F, and Tuto East 4.1°F.

The minimum temperatures in July and April were usually observed shortly after midnight, mostly between 1 - 3 a.m. and the maximum mostly between 2 - 4 p.m. Only Thule showed the maximum at about 10 a.m., with a secondary maximum at 4 p.m.

In October the diurnal variations were of a very small amplitude, similar to that in January. The amplitude varies between the stations only by 1°F, with the largest at Camp Century (2.5°F) and the smallest at Thule (1.5°F).

At Camp Century the diurnal variations in October were of a reverse type, similar to that observed by the stations on the slope in January. There is a definite period of minimum temperature between 3 - 11 p.m., and a period of maximum temperature between 7 a.m. and 1 p.m.

The stations on the slope show undulating curves of diurnal variations, which follow, in general, the solar type, with higher temperatures in the daytime and lower at night.

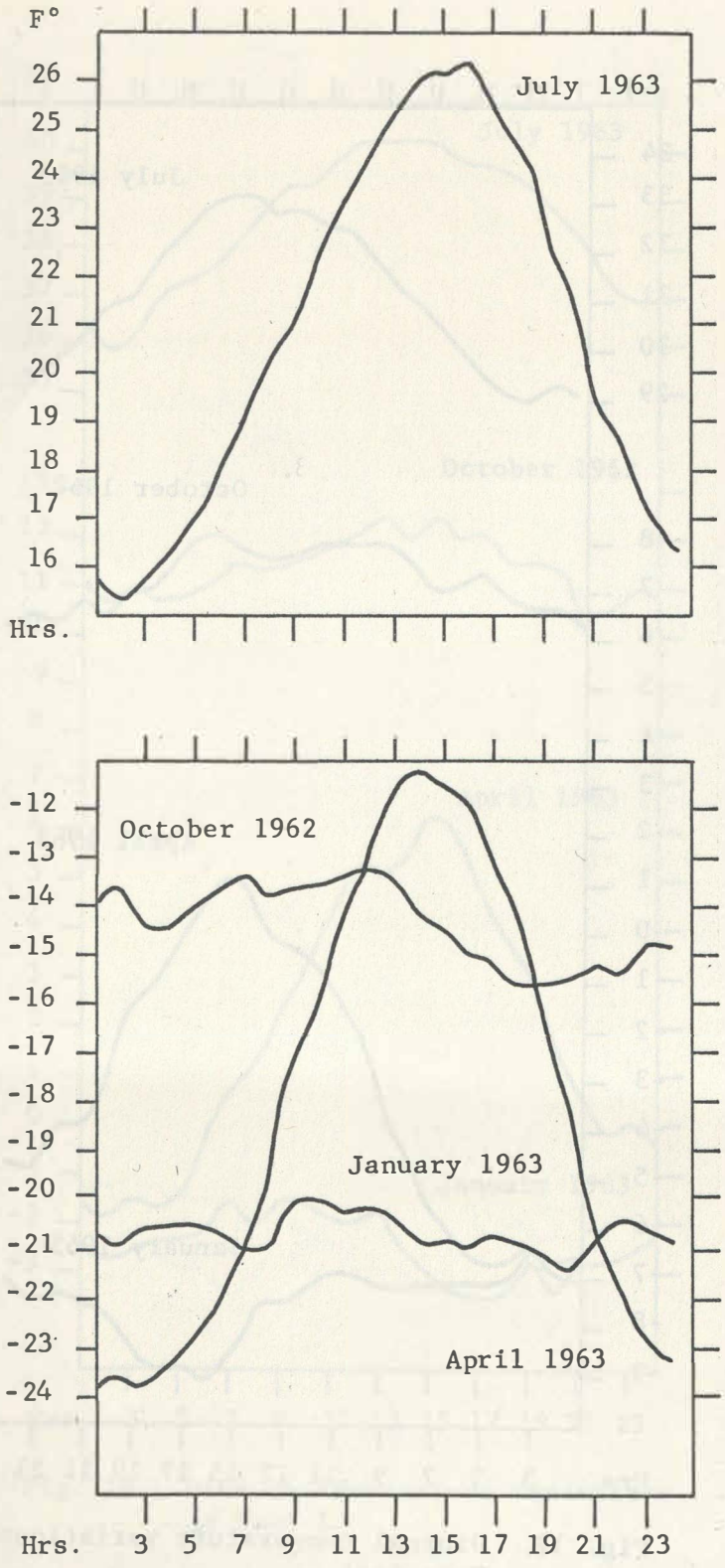


Fig. 11. Diurnal variations of temperature at Camp Century.

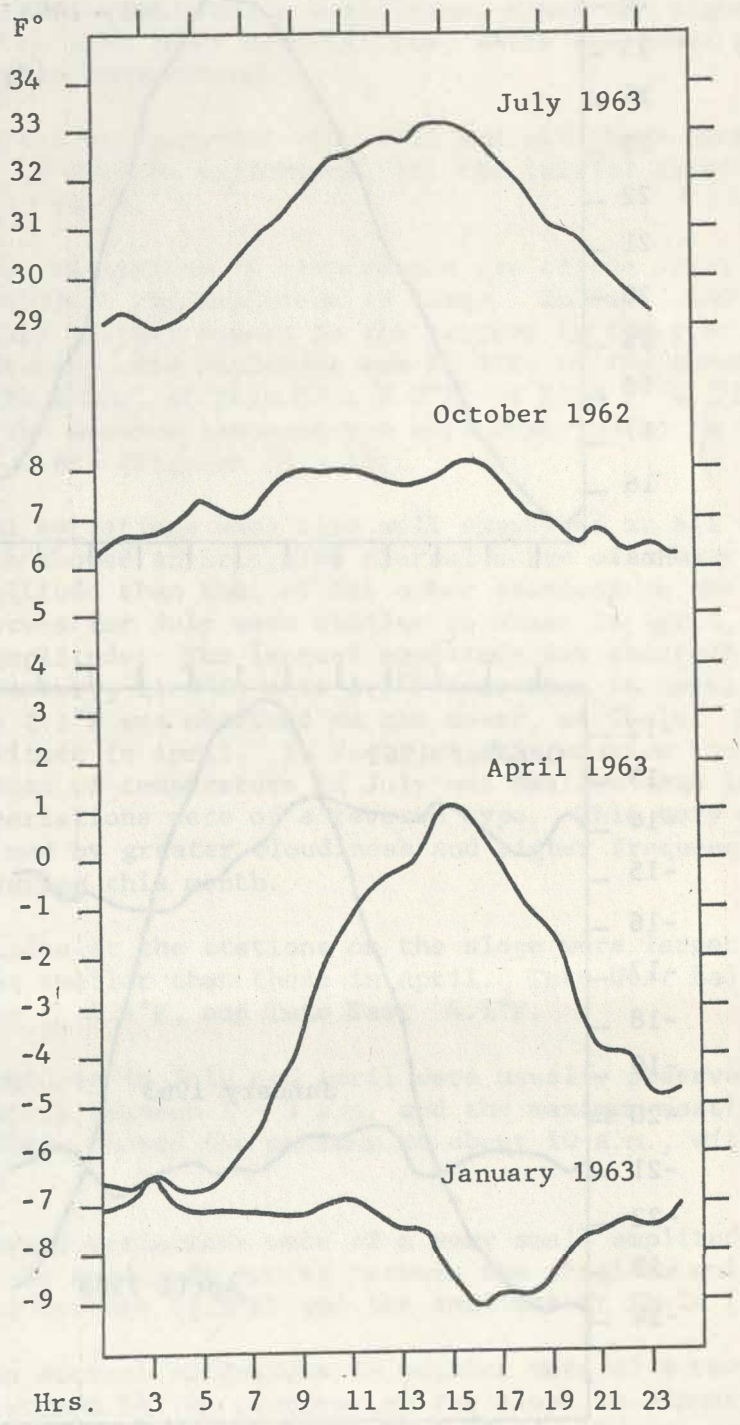


Fig. 12. Diurnal temperature variations at Tuto East.

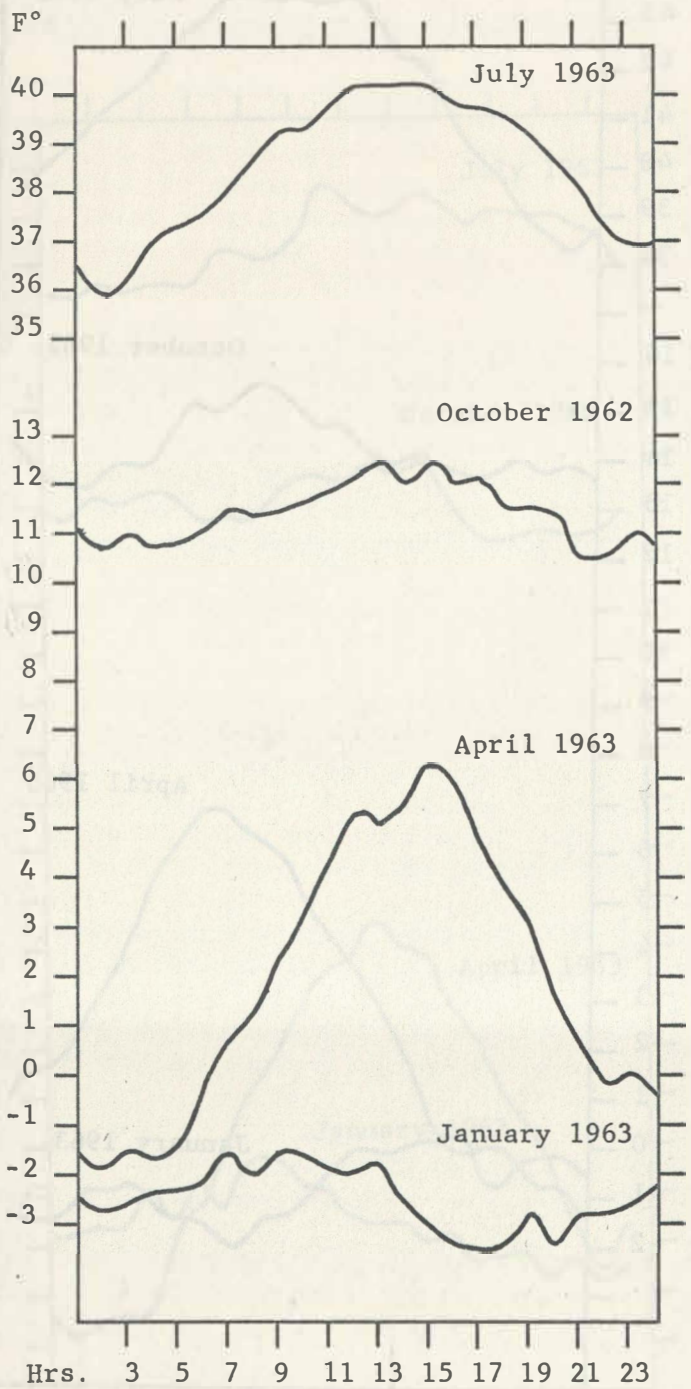


Fig. 13. Diurnal temperature variations at Tuto I.

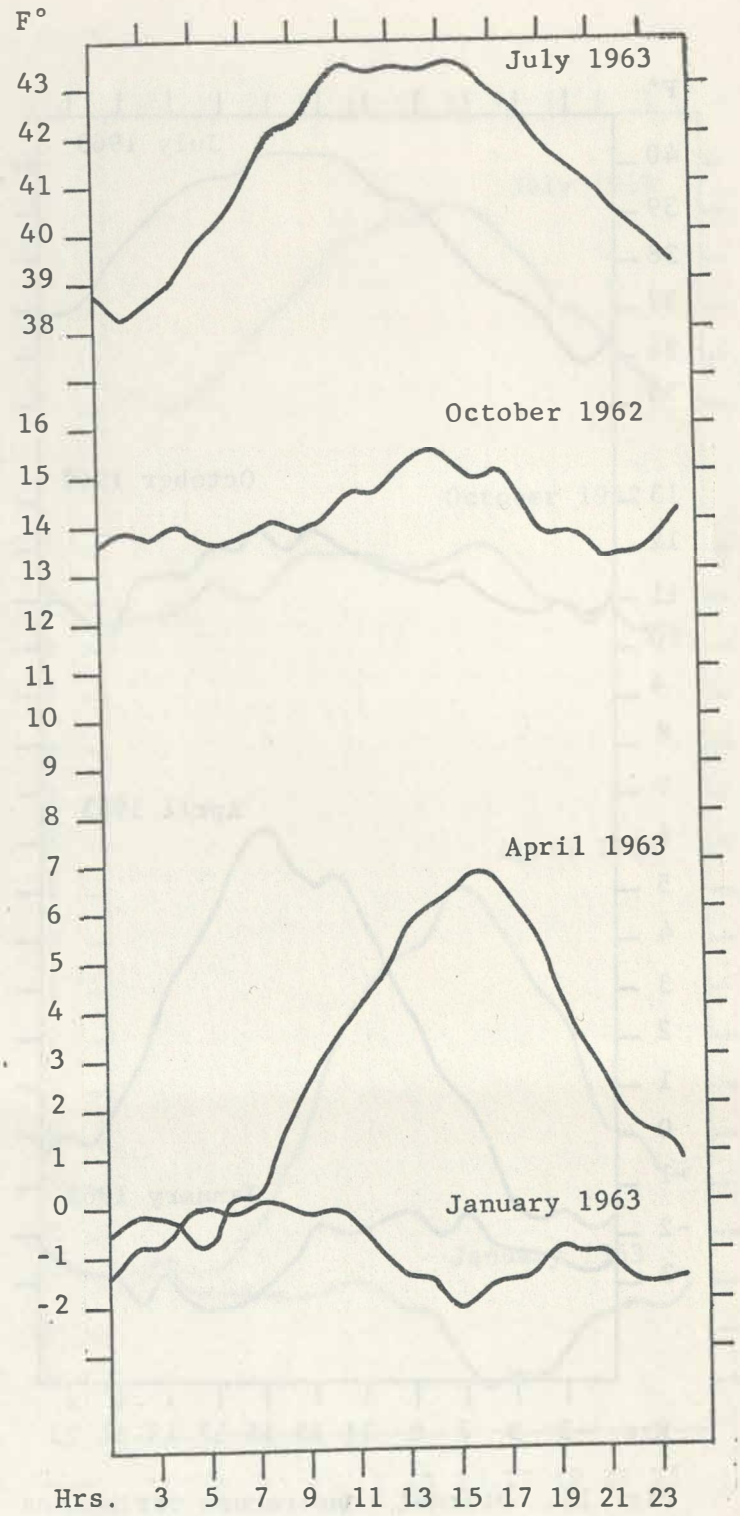


Fig. 14. Diurnal temperature variations at Tuto West.

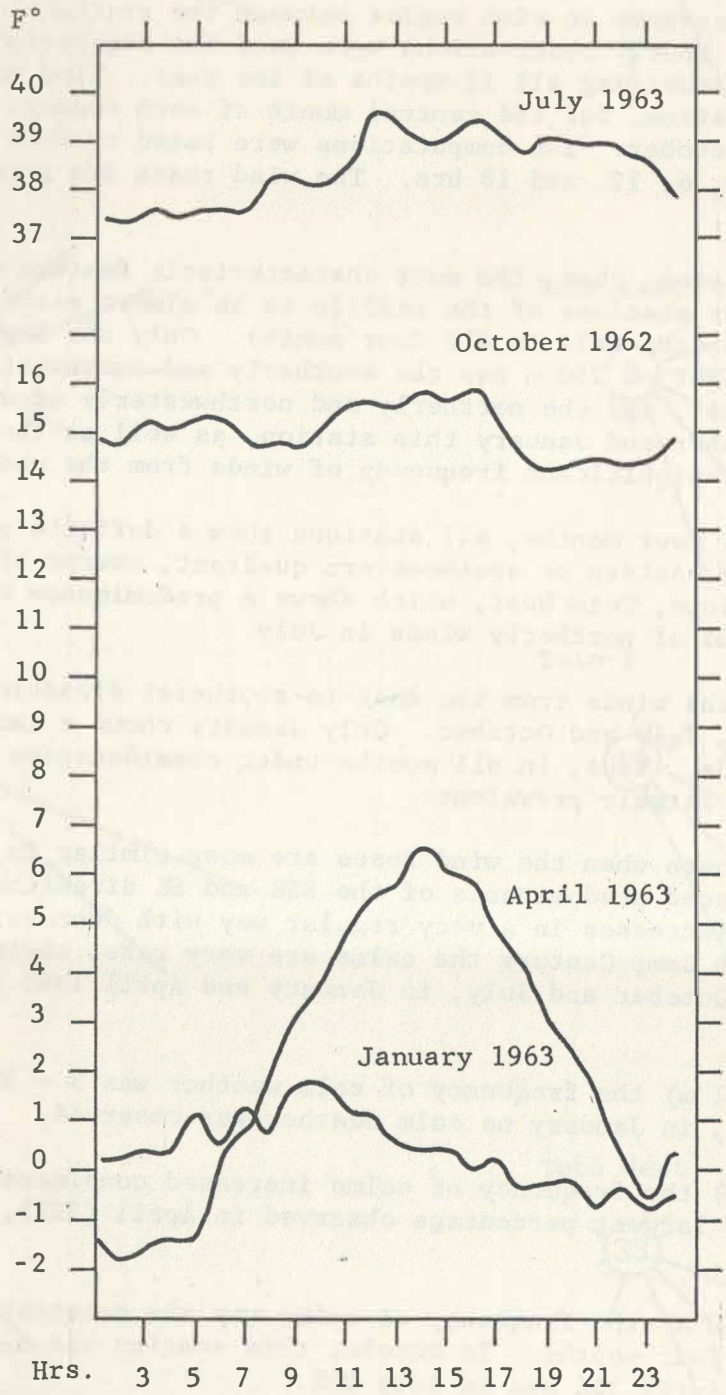


Fig. 15. Diurnal temperature variations at Thule.

WIND REGIME

Frequency of various winds and calms

To study the differences in wind regime between the stations on the meteorological profile, hourly observations were used for the period September 1962-August 1963, covering all 12 months of the year. Wind roses were computed for each station, for the central month of each season: January, April, July and October. The computations were based on four observations daily, taken at 0, 6, 12, and 18 hrs. The wind roses are presented on Figures 16 and 17.

It can easily be seen, that, the most characteristic feature of wind regime at the three upper stations of the profile is an almost entire absence of winds from the western half in all four months. Only the lowest station, Tuto West, at height of 250 m has the southerly and southwesterly winds prevailing in April, and the northerly and northwesterly winds prevailing in July. In October and January this station, as well as the upper three, shows merely an insignificant frequency of winds from the western half.

Generally, in all four months, all stations show a definite predominance of winds from the eastern or southeastern quadrant, except the lowest station on the slope, Tuto West, which shows a predominance of southerly winds in April and of northerly winds in July.

In Camp Century the winds from the east-to-southeast directions prevail largely in April, July and October. Only January shows a large predominance of SSE winds. Thus, in all months under consideration the winds from SE quadrant were largely prevalent.

January is the month when the wind roses are most similar in all stations, with well pronounced predominance of the SSE and SE directions. The frequency of calms increases in a very regular way with decreasing altitude of the stations. In Camp Century the calms are very rare, their frequency was less than 1% in October and July, in January and April 1963 the calms were entirely absent.

In Tuto East (801 m) the frequency of calm weather was 3 - 5% in April, July and October, in January no calm weather was observed.

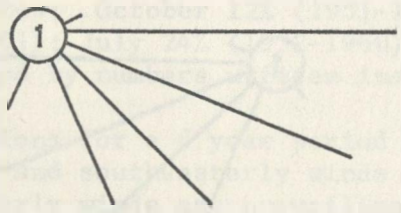
In Tuto I (489 m) the frequency of calms increased considerably in all four months, with the largest percentage observed in April (23%), the smallest in January (13%).

In Tuto West (250 m) the frequency of calms was the greatest among all stations in all four months. In October this station has 31% of calms, in January 33%, in April 32% and in July 23%.

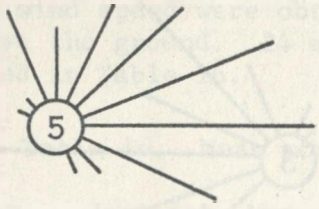
Unfortunately, we have not had the wind data of this period for the coastal station Thule (3 m). However, summarizations over 9 - 10 years were

October 1962

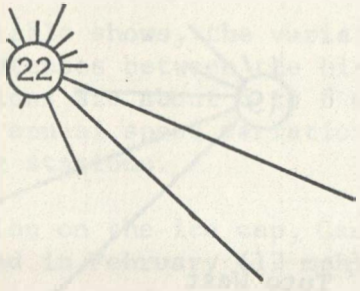
Camp Century



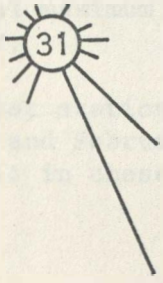
Tuto East



Tuto I

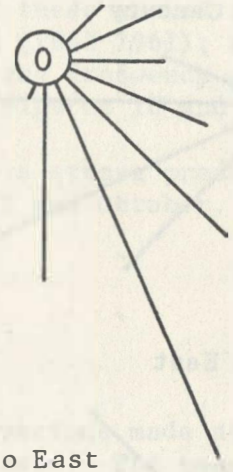


Tuto West

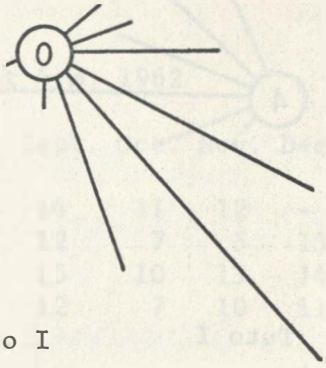


January 1963

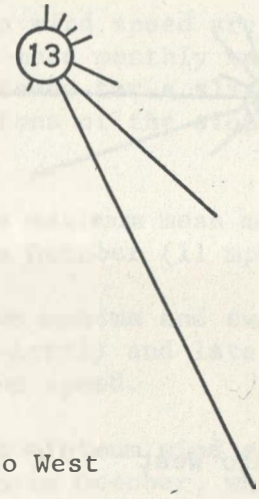
Camp Century



Tuto East



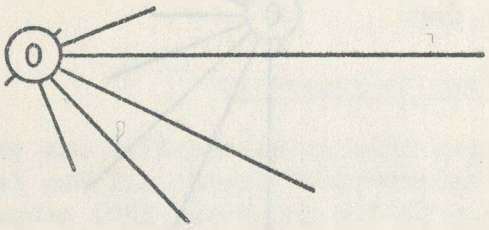
Tuto I



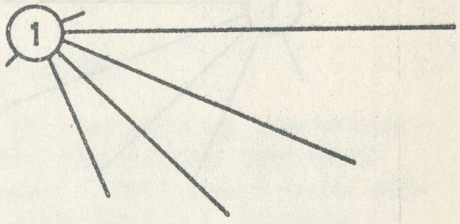
Tuto West

Fig. 16. Wind roses for October 1962 and January 1963.

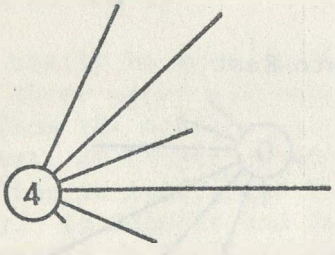
April 1963
Camp Century



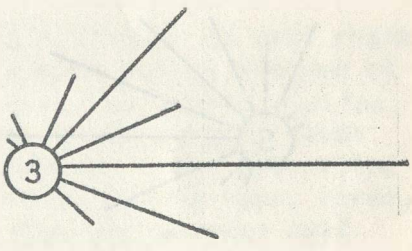
July 1963
Camp Century



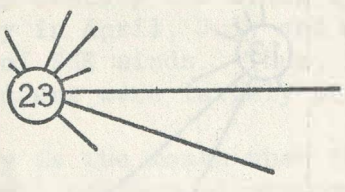
Tuto East



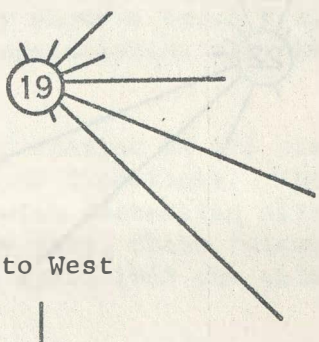
Tuto East



Tuto I



Tuto I



Tuto West

Tuto West

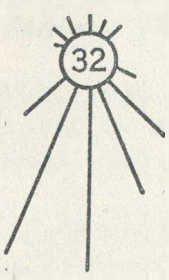


Fig. 17. Wind roses for April and July 1963.

available for this station in the SMAR tables, and these showed the following figures: October 12% (1951-1960); January 14% (1952-1961); April 31% (1952-1961); July 24% (1952-1960). On wind roses the frequency of calms is designated by numbers written inside the circles (Figures 16 and 17).

Observations for a 6 year period at Thule (1) show a strong predominance of easterly and southeasterly winds for January, April and October. In July the westerly winds are prevailing.

Mean monthly wind speed

Data on wind speed were obtained from hourly observations made at height of 4 m above the ground. 24 observations daily were used. The results are presented in Table 16.

Table 16. Mean monthly wind speed (mph) at 4 m, 1962

Stations	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Year
Camp Century	16	17	16	14	16	14	12	16	14	11	12	-	-
Tuto East	14	14	9	9	13	11	11	11	12	7	6	13	10.8
Tuto I	12	14	7	9	13	10	13	15	15	10	13	14	12.1
Tuto West	7	9	4	4	9	7	11	12	12	7	10	11	8.6

As this table shows, the variations in monthly mean wind speed are not great. The differences between the highest and the lowest mean monthly values for all stations are about 6 to 8 mph. There is a tendency for a slightly larger range of annual speed variations in the lower stations of the slope, than at the upper stations.

The station on the ice cap, Camp Century, shows the maximum mean monthly wind speed in February (17 mph), and the minimum in October (11 mph).

The stations on the upper part of the slope show two maxima and two minima in winter and in summer, while early spring (March-April) and late fall (October - November) show the minima in monthly wind speed.

The lowest station on the slope, Tuto West, has the minimum wind speed primarily in March-April, and the secondary minimum in October, while the principal maximum is observed in August-September and the secondary in December.

The lowest station shows much lower monthly wind speed in the months of January and February than that at the highest station, the wind speed at Tuto West in these months being only half of that at Camp Century.

Maximum wind speed

The data on maximum wind speed were obtained from 24 hourly observations daily, made at height of 4 m above the ground. Table 17 shows the highest speed for each month of the year 1962, at four stations on the profile.

Table 17. Maximum wind speed by months (mph) 1962

Stations	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Year
Camp Century	31	39	34	30	43	33	27	37	50	22	54	-	54
Tuto East	35	47	32	30	47	31	44	44	35	28	46	54	54
Tuto I	44	54	43	36	51	39	58	56	61	34	56	63	63
Tuto West	53	67	40	34	69	36	64	55	54	37	59	72	72

As this table shows, the highest wind speed of 72 mph was observed in December on the slope at Tuto West (250 m), the lowest station. Very strong wind gusts occur in Thule; eleven years of record (12) show the highest gust was observed in March (89 mph), and gusts between 73 and 76 mph were recorded in January, August, September and October.

Generally, the two lower stations on the slope show higher maximum wind speed than the two upper ones, including the station on the ice cap, and this holds for every month of the year investigated.

It is interesting to note that the higher maxima of wind speeds are observed at those stations on the profile which also have the highest frequency of calms. This indicates that in the lower zone of the slope the variability of wind speed is higher, while the upper stations (at 801 m and 1923 m) are characterized by more steady wind conditions, but with somewhat higher average speeds, and with lesser extremes and very rare calms (6).

CLOUDS

Annual variations of cloudiness

Hourly observations of cloud amounts were computed for a complete annual cycle, from September 1962 to August 1963, for four stations on the meteorological profile. The mean monthly values are given in Table 18.

The mean annual values of cloud amounts are very similar at the three upper stations of the profile, averaging about 6.1.

The annual range of mean monthly cloud amount fluctuations is of a considerable magnitude. The highest values are about 8.1 - 8.7, observed by the majority of stations in August. The three stations on the slope had a secondary maximum observed in November.

The minimum of cloud amounts was observed in spring, in May on the ice cap, in April on the slope. The minimum values were between 3.7 and 4.3. The annual range of the mean monthly cloud amounts was about 4 - 5 tenths of sky coverage.

Table 18 . Mean monthly cloud amounts in tenths of sky coverage

Station	1962 Sept.	Oct.	Nov.	Dec.	1963 Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Year
Camp Century	7.3	6.7	6.3	4.6	6.6	5.4	4.8	4.6	4.3	6.4	6.3	8.6	6.0
Tuto East	6.9	7.8	8.2	5.6	7.5	5.3	4.9	3.7	5.3	5.5	5.5	7.8	6.2
Tuto I	6.5	7.6	7.9	5.0	6.8	4.9	5.0	4.1	5.8	5.9	5.6	8.1	6.1
Tuto West	6.7	7.7	8.0	4.9	-	-	5.3	4.3	6.0	5.8	6.3	8.7	-

More details in the annual variations of cloudiness are shown on the graph (Figure 18), which also show a similarity in the annual course of cloudiness between the stations.

The regime of cloudiness on the slope differs from that on the ice cap only in the late fall, with considerably more clouds in October and especially in November, so that the cloud curves of the stations on the slope are rising from September to November, while the station on the ice cap shows a falling curve in these months. On the slope a secondary maximum of cloudiness is observed in November.

To what extent this pattern of annual variation of monthly cloud amounts is typical for the NW slope of Greenland ice cap is difficult to tell from observations of one year. Wegener's expedition West Station (70°N), on the ice slope showed in observations for one year the maximum of total cloud amounts in August with a secondary maximum in December-January, and a minimum in June-July, with a secondary minimum in November. However, it should be noted that the monthly cloud amounts, in this case, were derived from only 3 observations per day (8, 14 and 21 hrs LT), (3).

The highest frequency of clear days in observed in the middle section of the slope, at Tuto I (489 m). The lowest number of the clear days was recorded on the ice cap, Camp Century (1923 m), and the second lowest at

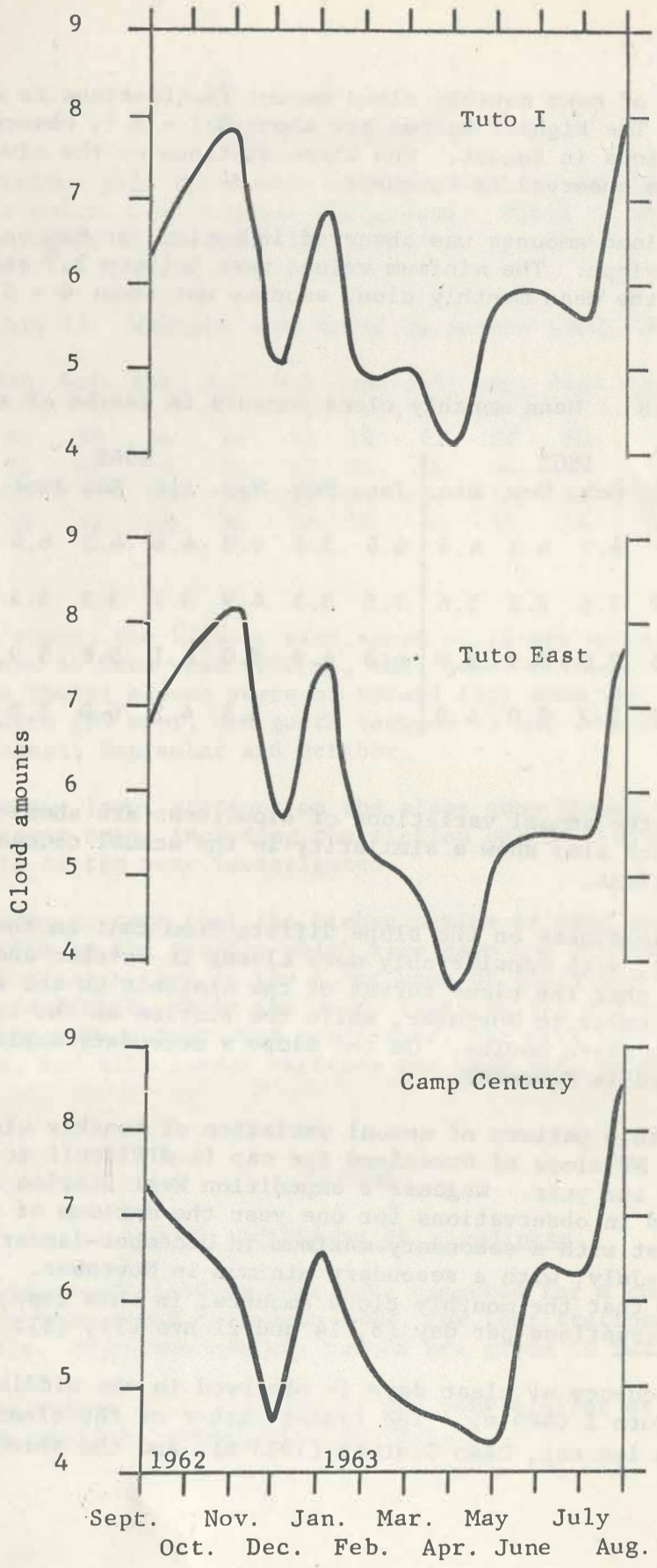


Fig. 18. Annual variations of cloud amounts (in tenths of sky coverage).

Tuto West (250 m), the lowest station of the slope. All stations show two maxima of the frequency of clear days in April and December. The minimum of clear days was observed in August at all stations. (Tuto East recorded the minimum in November and August.) August is the month of the maximum cloudiness for the majority of stations, and only one station, Tuto East, had the maximum cloudiness in November.

Table 19. Frequency of clear sky days (0-2).

Station	1962 Sept.	Oct.	Nov.	Dec.	1963 Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Year
Camp Century	2	4	3	11	5	7	9	10	6	2	3	0	62
Tuto East	3	3	0	9	3	6	8	13	4	8	9	1	67
Tuto I	4	2	3	12	5	9	6	13	4	7	9	1	75
Tuto West	4	2	2	12	-	-	6	12	4	7	3	0	-

The distribution of the frequency of days with overcast sky is shown in Table 20.

Table 20. Frequency of overcast sky days (8 - 10)

Station	1962 Sept.	Oct.	Nov.	Dec.	1963 Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Year
Camp Century	18	17	13	10	17	10	10	9	7	14	16	24	165
Tuto East	16	24	24	15	21	9	11	7	11	12	14	22	186
Tuto I	14	24	23	11	19	9	9	8	11	14	14	23	179
Tuto West	17	24	21	14	-	-	10	10	14	13	15	26	-

The lowest annual amount of days with overcast sky was recorded at Camp Century, the station on the ice cap, which had about 14-21 days less than the slope stations.

During the year, the greatest number of the overcast days was observed in August by the station on the ice cap and by the lowest station of the slope. The two higher stations of the slope, Tuto East and Tuto I, had the greatest amounts of overcast sky days in October and November.

At Camp Century the minimum frequency of overcast sky days was in May. The minimum for the stations on the slope was observed in April.

Diurnal variations of cloudiness

Experience has shown that in the Arctic regions, where the cloud cover is mostly thin (Cs), the accuracy of cloud observations depends to a considerable degree upon the general illumination.

The thin clouds, which could be clearly seen in the daylight hours remain, oftentime, unnoticed by the observer in the darkness of the night period. Therefore, the observations of cloud cover made during the night hours tend to show a smaller amount than were actually there.

This inaccuracy of cloud observations must be kept in mind when we analyse the diurnal variations. When the curve of diurnal cloud amounts sinks in the night hours and rises again at daylight, one should be aware of the fact that such fluctuations could be the result of observation deficiencies.

However, this is true only for the months with distinct day and night interchange within 24 hours. In those months when, in the region under study, we have a polar night period, the conditions of general illumination do not change with the hour, and the accuracy of observations is quite comparable for all the hours.

The dark period of the polar night, at the latitude of the meteorological profile (about 76°30'N), extends from November 1 to February 11. The period of the polar day extends from April 23 to August 16th as determined from data of the average altitudes of the sun and allowing for the refraction as given in the Astronomical Ephemeris.

The diurnal range of cloud amounts was computed for each month of the year from hourly observations. The results are given in Table 21.

Table 21. Diurnal range of cloud amount

		1962				1963							
Station	Height	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.
Camp Century	1923 m	2.1	1.3	2.0	0.8	1.6	1.9	2.4	1.3	1.6	1.2	1.4	0.9
Tuto East	801 m	2.0	2.1	1.5	1.3	1.8	2.3	1.9	1.4	0.7	0.9	1.4	1.1
Tuto I	489 m	2.2	1.7	1.1	2.5	1.0	1.8	2.3	1.7	1.4	1.0	1.0	1.3
Tuto West	250 m	1.9	1.9	0.8	1.4	-	-	1.2	1.2	1.1	0.8	1.1	1.1

In general, the ranges of diurnal variations were not large. At the upper stations, Camp Century and Tuto East, the months of February and March showed the largest mean diurnal ranges of cloudiness, 2.4 - 2.3, with the second maximum in fall, September - October, of an order of 2.1 - 2.2.

The third station, Tuto I (489 m), which is situated in the middle of the slope, observed the largest diurnal range in December, 2.5, with the secondary maximum in March, 2.3.

The lowest station on the slope, Tuto West (250 m) had, in the majority of the months, the lowest diurnal ranges among all stations, with maxima in September and October. However, this station had no data for January and February, and therefore, there is no certainty concerning the time and the magnitude of the maximum in diurnal ranges.

The smallest ranges were observed in December, 0.8, and August, 0.9, at the highest station on the ice cap, Camp Century. At Tuto East (801 m), the lowest range of 0.7 was observed in May. At Tuto I the lowest range of 1.0 was recorded in January, June and July. The lowest station on the slope, Tuto West, had the lowest range of 0.8 in November and June.

The curves of diurnal variations of cloud amounts were drawn on the basis of hourly observations, averaged for each hour for the months of January, April, July, August and October (Figures 19 - 22).

In general, the curves do not show much in regard to certain regularity or specific features, which should be expected however, since the period of one single month is not long enough to establish the pattern of diurnal variations. Nevertheless some interesting features may be noted. In January, for example, three upper stations of the profile show an expressed maximum of cloudiness at noon and the neighbouring hours.

Another interesting detail is found in the curves for April, the month of minimum cloudiness: the diurnal curve shows a minimum in the afternoon, between 14 and 18 hrs for all four stations.

August shows an irregular curve of diurnal variations at the two upper stations (Camp Century and Tuto East), while the lower two stations show a well expressed minimum at 15 - 17 hours, and maximum at 5 - 8 hours.

More details may be obtained from the hourly tables of cloud observations for the four stations (30 - 43), included in the Supplement to this work.

One interesting detail which was found by analysing the hourly observations at Camp Century is the very abrupt way in which the cloudiness can change; in one hour the overcast sky could change to a completely clear one, and vice versa. This is apparently typical for a slope of the ice cap in polar regions, and was mentioned by F. Loewe (3), who attributed it to the foehn influence. Loewe's statement is very logical, but could not be supported due to the absence of more detailed observations along the slope of the ice cap. One such case is here presented.

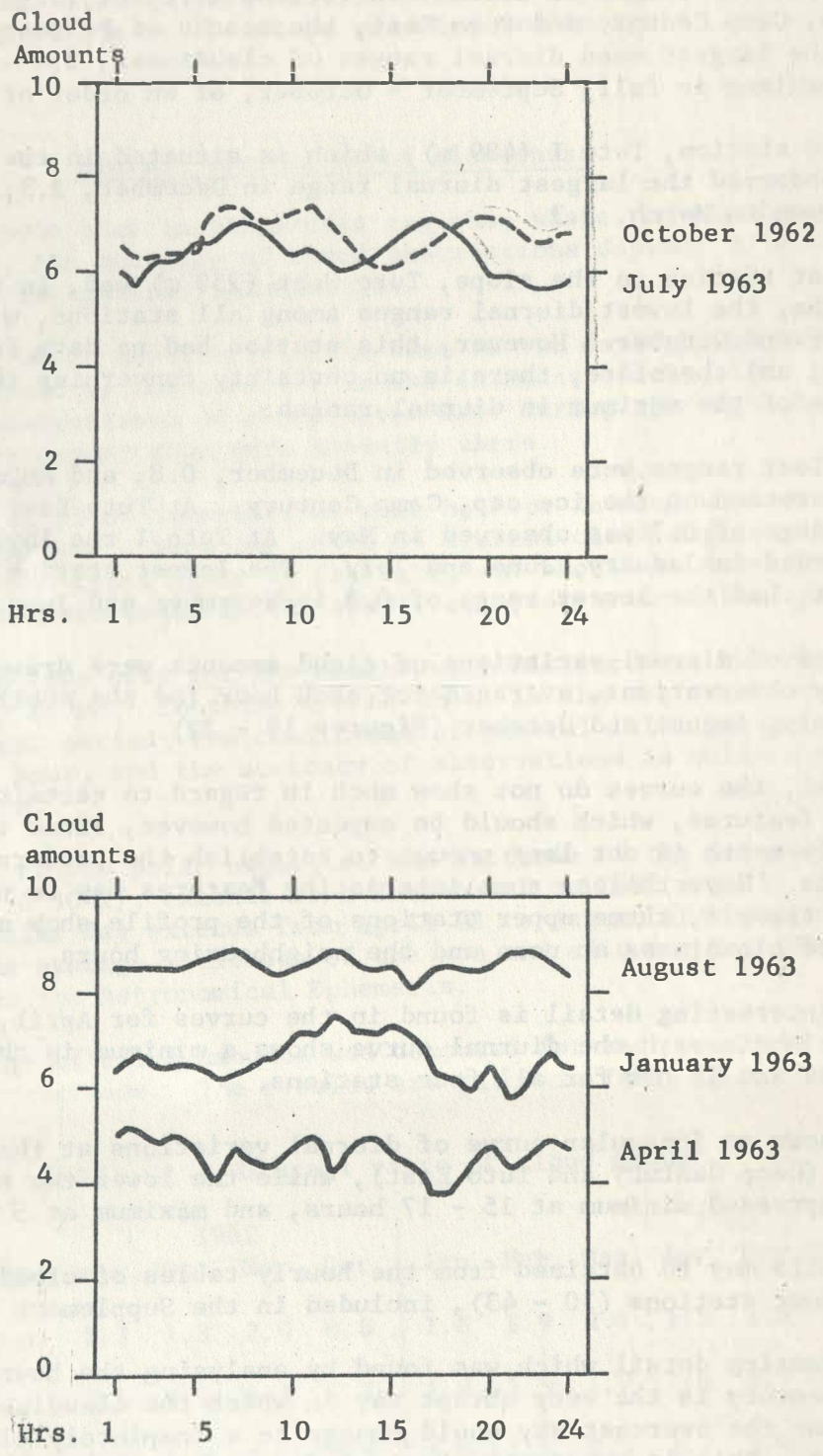


Fig. 19. Diurnal variations of cloud amounts in Camp Century

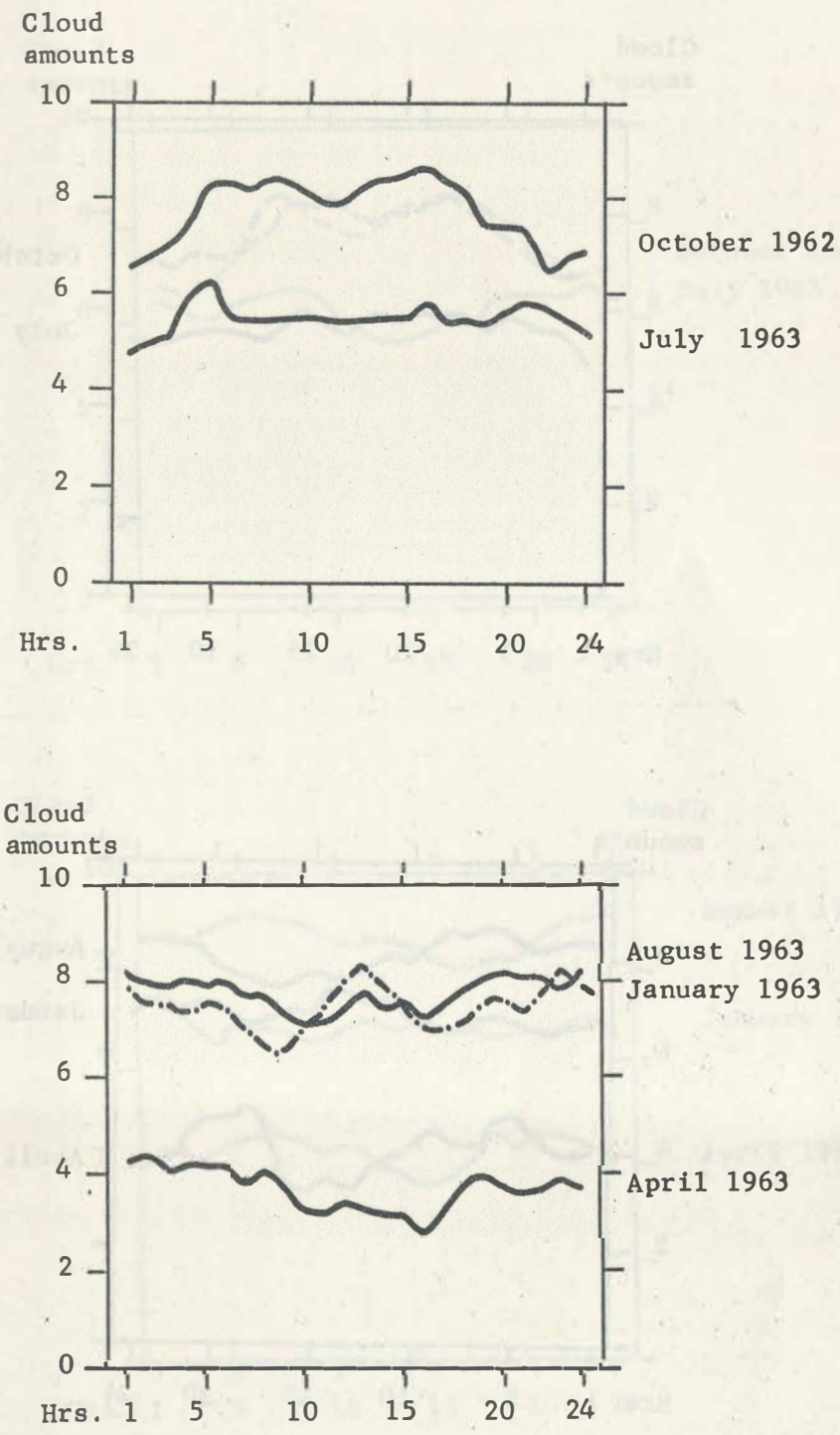


Fig. 20. Diurnal variations of cloud amounts in Tuto East.

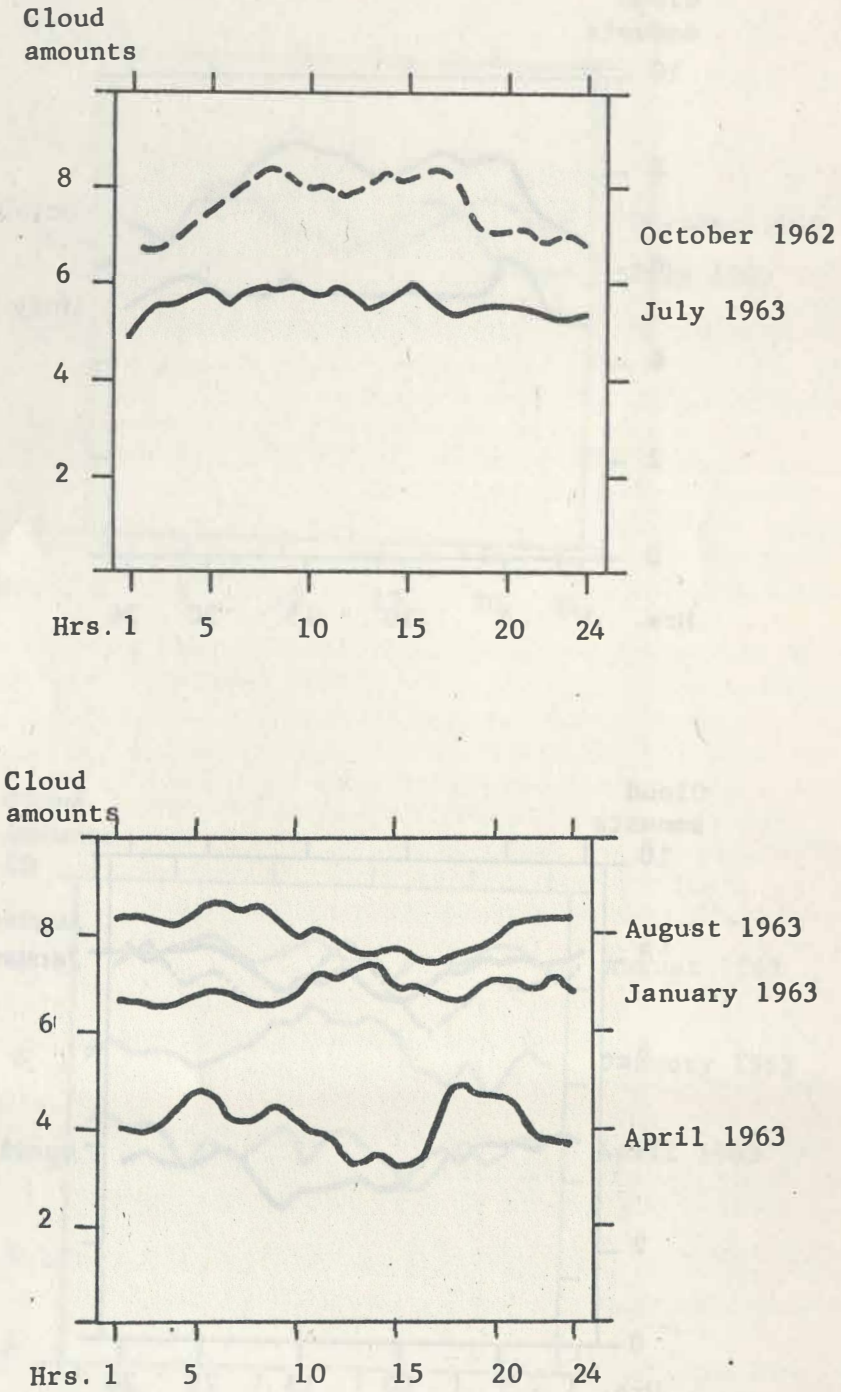


Fig. 21. Diurnal variations of cloud amounts at Tuto I.

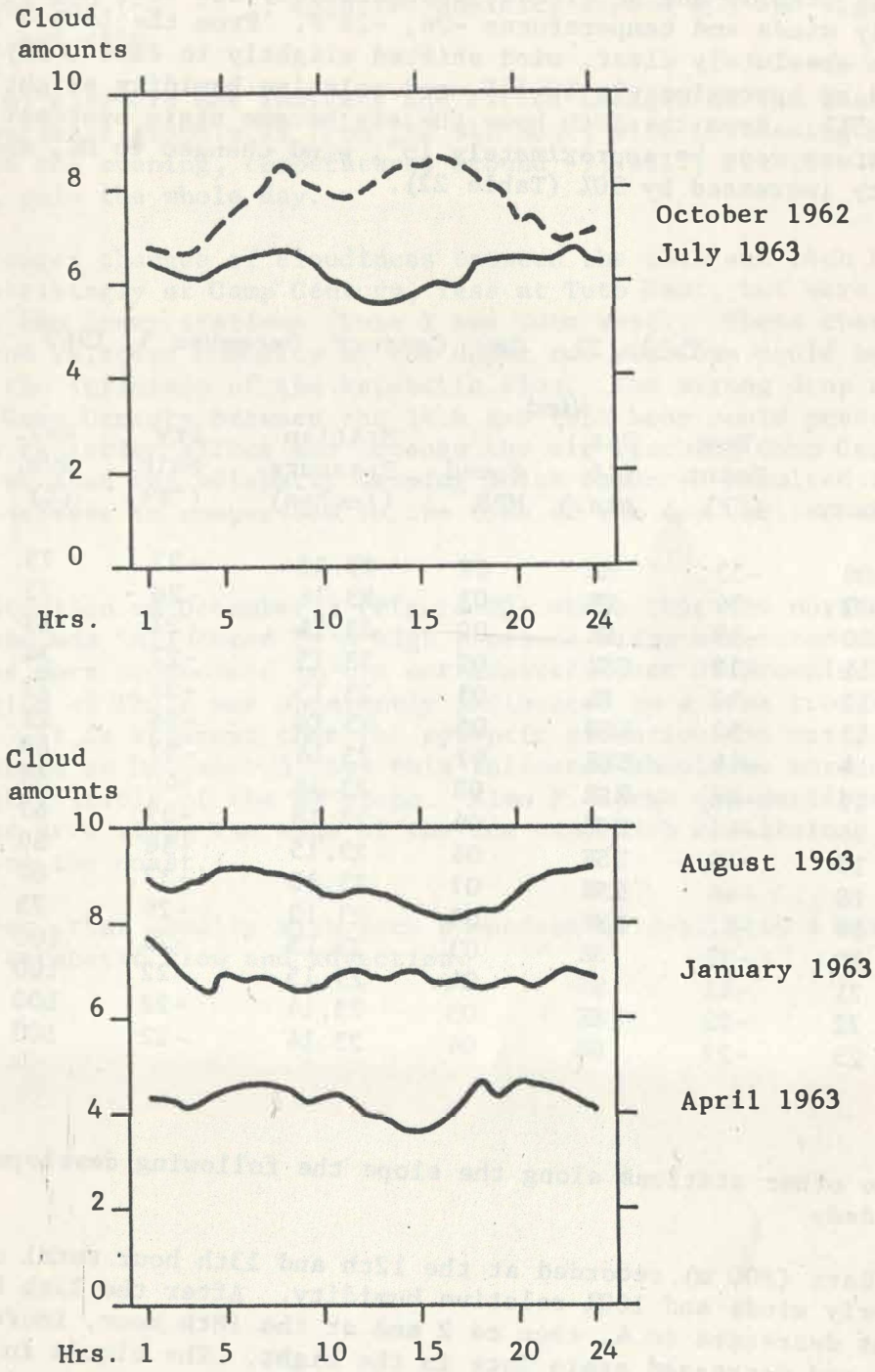


Fig. 22. Diurnal variations of cloud amounts in Tuto West

On December 5, 1962 Camp Century recorded from the 8th - 13th hour total overcast with Cu and Sc clouds, approximately 800 feet high, with south-easterly winds and temperatures -26, -28°F. From the 14th - 18 hour the sky was absolutely clear, wind shifted slightly to east (ESE), temperature dropped by approximately 10-11°, and relative humidity slightly decreased (by ca 5%). From the 19th hour the sky became again overcast (Cu, Sc), temperature rose by approximately 15°, wind changed to SE, and relative humidity increased by 30% (Table 22).

Table 22. Camp Century, December 5, 1962

Hours	Dew Point (°F)	Wind Dir. (16 pts.)	Speed MPH	Station Pressure (inches)	Dry Bulb (°F)	Rel. Hum. (%)	Total Sky Cover
08	-33	SE	02	23.15	-27	73	10
09	-34	SE	03	23.14	-28	72	10
10	-33	SE	02	23.14	-27	73	10
11	-32	SSE	02	23.15	-27	74	10
12	-32	SE	03	23.15	-26	73	10
13	-32	ESE	05	23.14	-26	73	10
14	-44	ESE	07	23.14	-37	68	0
15	-46	ESE	08	23.14	-40	69	0
16	-46	ESE	06	23.15	-39	67	0
17	-44	ESE	06	23.15	-38	69	0
18	-44	ESE	07	23.15	-37	67	0
19	-32	ESE	05	23.15	-26	73	10
20	-23	SE	03	23.15	-23	100	10
21	-22	SE	04	23.15	-22	100	10
22	-22	SE	05	23.14	-22	100	10
23	-22	SE	04	23.14	-22	100	10

At the other stations along the slope the following development was recorded:

Tuto East (800 m) recorded at the 12th and 13th hour total overcast (Cu,Sc), easterly winds and 100% relative humidity. After the 13th hour the cloud amount decreased to 4, then to 2 and at the 18th hour, increased slightly to 6, and decreased again late in the night. The clouds in the afternoon were vertically developed cumulus. After the 13th hour, wind changed to ENE without a significant change of temperature; dew point, however dropped and relative humidity decreased by 20%. This situation prevailed during the remainder of the day.

Tuto I (490 m) recorded variable cloudiness, with increasing heights of clouds in the afternoon. The temperature was constant from the 8th hour to the end of the day (-6, -8°); relative humidity around 80% and light easterly winds, and calm.

Tuto West (250 m) also did not indicate any marked changes in the weather development: variable cloudiness from the 9th hour, with increasing height of clouds toward the evening, temperatures around -9, -11°, relative humidity around 80%, calm the whole day.

We see that stronger changes of cloudiness between the 13th and 14th hour occurred most strikingly at Camp Century, less at Tuto East, but were not observed at the two lower stations (Tuto I and Tuto West). These changes of cloudiness and relative humidity at the upper two stations could be interpreted as the influence of the katabatic flow. The strong drop of temperature at Camp Century between the 14th and 18th hour could possibly be explained by radiation effect and because the air reaching Camp Century was very cold, so that the adiabatic warming which occurred resulted in a temperature decrease in comparison to the time of the day earlier than the 14th hour.

The synoptic situation on December 5 (Figure 23) shows that the northern part of Greenland was influenced by a high pressure ridge stretched from north. This was more pronounced in the northeastern part of Greenland. The coastal region of Thule was apparently influenced by a weak trough from the south. It is apparent that the synoptic situation did not preclude the foehn influence on December 5, but this influence should be more evident at the higher levels of the NW slope. Also F. Loewe (3) mentioned a clearing of an area along the edge of the ice cap, with a sustained cloud cover along the coast.

It seems, however, that usually with such phenomena we deal with a mixed process, e.g., katabatic flow and advection.

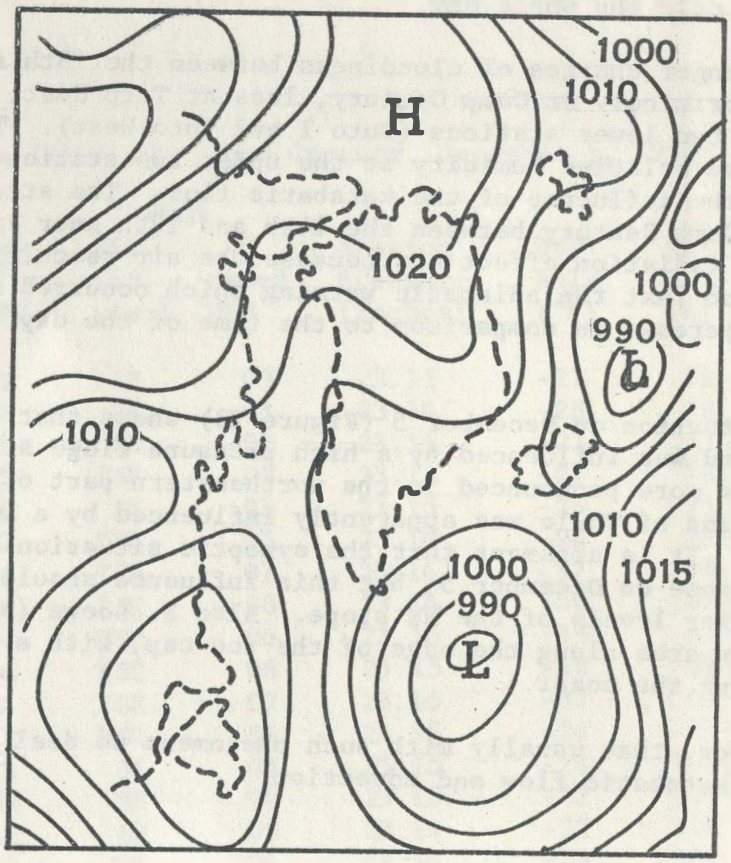


Fig. 23. Synoptic chart at 20 hrs (LST) December 5, 1962 (00Z December 6, 1962)

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S U P P L E M E N T

Camp Century

Table 1: Hourly temperatures (°F) - October 1962

Time (LST)

Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	-19	-18	-20	-19	-17	-17	-15	-15	-14	-11	- 9	- 7	- 5	- 7	- 6	- 8	- 9	-10	-10	-11	-11	-12	-12	-13
2	-13	-13	-13	-10	- 8	- 5	- 3	- 6	- 3	- 6	0	0	- 1	- 5	- 3	- 5	- 8	-10	-13	-14	-15	-14	- 6	- 2
3	- 3	- 3	- 4	- 4	- 5	- 8	- 5	- 5	- 6	- 6	- 7	-10	-15	-17	-13	-15	-14	-17	-18	-18	-18	-17	-17	-16
4	-16	-15	-14	-13	-14	-15	-15	-14	-12	-11	-10	-10	-10	-10	- 9	- 9	-10	-12	- 9	-10	-11	-13	-11	-12
5	-12	- 9	-10	-11	-11	-12	-12	-12	-12	-10	- 9	- 9	-10	-10	-10	-13	-15	-17	-15	-15	-17	-18	-18	-18
6	-18	-18	-18	-19	-19	-19	-18	-19	-19	-18	-17	-16	-16	-17	-18	-18	-20	-21	-20	-19	-19	-20	-20	-20
7	-20	-20	-20	-20	-19	-18	-18	-17	-17	-15	-13	-13	-13	-13	-14	-15	-16	-16	-17	-16	-14	-13	-10	-10
8	-11	- 7	- 8	-10	-11	- 7	- 5	- 5	- 5	- 5	- 9	- 8	- 7	-13	-14	-14	-14	-12	-12	-11	-12	-13	-16	-18
9	-20	-17	-18	-18	-18	-17	-18	-20	-18	-13	-12	-10	-10	-10	-10	-11	-12	-12	-12	-13	-10	- 9	- 9	- 9
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11	- 1	- 2	- 2	- 2	- 3	- 5	-17	-22	-21	-23	-20	-21	-17	-16	-13	-12	-12	-13	-17	-21	-27	-31	-33	-31
12	-28	-32	-29	-27	-27	-27	-24	-23	-21	-20	-18	-18	-17	-17	-17	-16	-14	-13	-10	- 9	- 6	- 5	- 2	- 5
13	- 1	0	1	2	3	6	7	8	10	10	12	12	12	13	12	12	11	11	10	10	11	11	10	10
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17	-14	-19	-21	-22	-22	-21	-21	-21	-24	-22	-20	-22	-22	-21	-25	-27	-26	-25	-30	-32	-30	-31	-31	-31
18	-33	-34	-38	-39	-40	-38	-37	-37	-36	-36	-36	-35	-35	-35	-35	-37	-38	-38	-38	-32	-34	-34	-30	-29
19	-24	-20	-19	-17	-16	-16	-11	-10	- 9	- 9	-13	-12	-13	-15	-15	-16	-16	-17	-20	-21	-18	-18	-16	-19
20	-22	-24	-25	-22	-18	-16	-10	-10	-11	-11	- 9	-11	-14	-15	-15	-15	-15	-16	-18	-27	-28	-29	-33	-34
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23	-13	-12	-13	-14	-13	-14	-13	-13	-15	-17	-19	-20	-21	-19	-21	-22	-25	-28	-27	-23	-20	-19	-17	-18
24	-17	-16	-16	-25	-27	-27	-27	-32	-34	-34	-34	-34	-33	-33	-34	-35	-38	-40	-18	-16	-14	-13	-13	-13
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31	- 7	- 8	-11	-10	- 9	-11	-10	-11	-12	-19	-22	-23	-24	-24	-25	-25	-26	-27	-30	-31	-32	-27	-22	-18
Mean	-13.7	-13.6	-14.4	-14.4	-14.0	-13.6	-13.3	-13.8	-13.7	-13.6	-13.3	-13.2	-13.5	-14.2	-14.5	-15.0	-15.2	-15.7	-14.6	-14.5	-14.2	-14.4	-13.7	-13.8

Camp Century

Table 2: Hourly temperatures (°F) - January 1963

Time (LST)

Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	-12	-14	-15	-16	-18	-19	-21	-21	-22	-24	-25	-25	-26	-26	-28	-28	-28	-24	-23	-23	-22	-22	-22	-24
2	-27	-31	-28	-29	-28	-29	-34	-35	-35	-40	-41	-42	-41	-41	-41	-40	-40	-40	-41	-41	-41	-40	-38	-38
3	-37	-33	-31	-33	-34	-34	-35	-33	-30	-28	-25	-25	-23	-22	-21	-20	-20	-20	-19	-17	-16	-15	-15	-13
4	-12	-11	-11	- 9	- 9	- 9	- 5	- 6	- 3	- 5	- 7	- 8	-11	-13	-16	-19	-21	-25	-28	-29	-33	-33	-35	-36
5	-38	-38	-38	-39	-41	-41	-42	-43	-45	-46	-48	-46	-48	-50	-50	-49	-50	-51	-50	-50	-49	-50	-50	-49
6	-48	-47	-47	-47	-46	-46	-46	-46	-45	-45	-44	-43	-41	-39	-37	-34	-31	-30	-29	-30	-30	-25	-23	-23
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10	-14	-14	-13	-13	-13	-13	-12	-14	-14	-13	-12	-11	- 9	- 7	- 6	- 5	- 3	- 2	- 2	- 1	1	1	- 1	- 1
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26	-19	-20	-20	-20	-21	-21	-24	-23	-23	-21	-18	-17	-17	-17	-15	-14	-13	-13	-12	-12	-10	-10	-10	- 9
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28	-27	-28	-28	-26	-28	-28	-25	-24	-21	-21	-20	-20	-20	-24	-26	-27	-30	-33	-31	-32	-31	-30	-30	-30
29	-31	-31	-30	-30	-31	-30	-28	-29	-29	-28	-28	-29	-29	-30	-32	-33	-30	-28	-31	-32	-31	-23	-19	-12
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31	- 9	- 8	- 8	- 7	- 7	- 9	- 8	- 7	- 7	- 7	- 7	- 7	- 9	-12	-14	-14	-14	-15	-14	-15	-15	-16	-15	-17
Mean	-20.7	-20.9	-20.5	-20.5	-20.5	-20.7	-21.0	-20.9	-20.1	-20.0	-20.2	-20.1	-20.4	-20.8	-20.8	-20.9	-20.7	-20.9	-21.1	-21.4	-20.8	-20.4	-20.5	-20.8

Camp Century

Table 3: Hourly temperatures (°F) - April 1963

Day	Time (LST)																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	-29	-27	-24	-25	-26	-26	-26	-27	-26	-25	-26	-28	-29	-30	-33	-34	-36	-37	-39	-43	-43	-42	-43	-43
2	-42	-42	-40	-40	-37	-37	-35	-33	-30	-28	-25	-25	-23	-23	-22	-21	-21	-22	-24	-24	-25	-22	-17	-11
3	- 8	- 7	- 7	- 6	- 5	- 4	- 3	- 3	- 4	- 4	- 3	- 2	- 2	- 1	0	- 1	- 2	- 5	- 1	- 1	- 9	-10	-13	-14
4	-14	-14	-14	-19	-20	-20	-20	-22	-15	-15	-14	-14	-13	-12	-12	-13	-11	-13	-14	-14	-14	-15	-15	-17
5	-16	-18	-19	-18	-19	-22	-22	-17	-15	-16	-14	-10	- 9	- 8	- 8	- 8	- 9	-10	-12	-17	-17	-20	-20	-20
6	-20	-20	-20	-19	-19	-19	-18	-18	-17	-16	-12	-11	-11	-10	-10	- 9	- 9	- 9	-10	-11	-12	-12	-13	-14
7	-16	-17	-17	-17	-18	-18	-18	-19	-19	-18	-17	-16	-15	-16	-17	-17	-18	-20	-18	-18	-18	-20	-20	-19
8	-19	-19	-20	-20	-21	-22	-23	-24	-25	-27	-27	-27	-27	-27	-28	-30	-32	-36	-39	-40	-40	-40	-39	-39
9	-40	-40	-39	-38	-38	-36	-34	-30	-29	-26	-21	-21	-19	-18	-17	-16	-15	-15	-16	-15	-19	-24	-20	-20
10	-20	-22	-22	-21	-20	-19	-18	-12	-13	-11	-11	-11	-12	-13	-12	-12	-11	- 8	-14	-15	-17	-18	-19	-20
11	-20	-21	-22	-22	-21	-20	-20	-17	-15	-13	-11	-10	- 9	- 8	- 8	- 9	-12	-11	-11	-11	-12	-13	-15	-15
12	-14	-12	-10	-11	-11	-12	-10	- 8	- 5	- 3	- 2	- 1	0	0	- 1	0	- 1	- 4	- 5	- 8	-10	-11	-14	-14
13	-16	-16	-19	-18	-19	-18	-16	-14	-11	- 9	- 7	- 7	- 7	- 6	- 6	- 6	- 7	- 8	- 9	-10	-13	-13	-14	-14
14	-13	-15	-16	-16	-16	-15	-14	-12	-10	- 8	- 7	- 6	- 5	- 3	- 4	- 4	- 5	- 6	- 7	-10	-13	-13	-15	-16
15	-15	-15	-17	-15	-16	-14	-13	-12	- 8	- 7	- 6	- 5	- 3	- 2	- 5	- 6	- 7	- 9	-10	-15	-17	-18	-19	-20
16	-20	-20	-20	-20	-19	-18	-15	-13	-11	- 9	- 7	- 4	- 3	- 4	- 5	- 7	- 9	-11	-14	-16	-20	-22	-22	-22
17	-22	-21	-20	-17	-15	-14	-12	-13	-14	-13	-12	-12	-11	-12	-13	-14	-16	-18	-21	-20	-21	-24	-24	-26
18	-24	-23	-24	-21	-21	-20	-21	-19	-17	-16	-14	-13	-13	-14	-13	-14	-17	-16	-19	-21	-24	-25	-25	-25
19	-25	-25	-25	-25	-26	-26	-24	-23	-23	-21	-20	-18	-17	-16	-17	-20	-21	-22	-24	-26	-28	-30	-32	-34
20	-37	-35	-35	-35	-33	-33	-31	-30	-27	-24	-22	-20	-19	-20	-18	-19	-20	-22	-26	-30	-33	-36	-39	-40
21	-42	-42	-42	-41	-39	-37	-35	-33	-30	-28	-25	-24	-22	-21	-22	-21	-22	-23	-25	-26	-28	-29	-30	-29
22	-29	-29	-29	-29	-28	-26	-25	-23	-21	-19	-17	-15	-14	-14	-12	-13	-14	-16	-19	-20	-23	-25	-28	-30
23	-30	-31	-32	-30	-29	-29	-27	-25	-23	-21	-19	-17	-15	-15	-14	-14	-15	-16	-18	-20	-23	-25	-26	-28
24	-28	-28	-27	-28	-27	-25	-23	-22	-14	-11	-10	- 7	- 6	- 5	- 5	- 5	- 9	-10	-12	-15	-17	-19	-20	-20
25	-21	-22	-22	-21	-20	-19	-17	-15	-13	-10	- 7	- 7	- 4	- 4	- 5	- 5	- 5	- 9	-10	-15	-18	-19	-19	-20
26	-20	-19	-19	-18	-18	-16	-16	-13	-11	-10	- 9	- 4	- 4	- 3	- 5	- 2	- 5	- 8	-14	-13	-21	-23	-26	-30
27	-31	-31	-31	-31	-31	-29	-27	-25	-22	-21	-20	-18	-13	-13	-15	-14	-17	-17	-19	-22	-24	-26	-29	-30
28	-31	-31	-31	-30	-29	-27	-24	-20	-18	-16	-13	-11	- 9	- 8	- 7	- 7	- 9	-13	-15	-18	-20	-21	-23	-24
29	-24	-23	-24	-23	-22	-20	-19	-17	-14	-13	-10	- 9	- 8	- 7	- 8	- 8	-11	-13	-15	-15	-18	-21	-22	-24
30	-24	-24	-23	-24	-21	-20	-18	-17	-15	-13	-11	- 9	- 7	- 4	- 2	- 4	- 5	- 6	- 9	-12	-15	-16	-20	-19
Mean	-23.7	-23.6	23.7	-23.3	-22.8	-22.0	-20.8	-19.2	-17.2	-15.7	-14.0	-12.7	-11.6	-11.2	-11.5	-11.8	-13.0	-14.4	-16.3	-18.0	-20.4	-21.7	-22.7	-23.2

Camp Century

Table 4: Hourly temperatures (F°) - July 1963

	Time (LST)																							
Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	9	10	11	12	10	9	10	10	11	13	16	18	20	21	24	24	25	26	22	20	18	14	16	16
2	10	10	11	11	11	12	16	18	17	18	16	17	17	17	16	21	19	16	14	12	10	8	8	7
3	7	9	10	13	15	17	17	22	19	23	21	21	21	19	20	19	18	18	18	18	17	16	16	17
4	18	19	19	17	18	18	19	19	19	18	18	19	18	19	22	25	20	27	22	18	9	10	8	3
5	4	6	9	12	10	13	17	17	17	20	26	29	30	31	30	29	29	29	29	29	29	29	27	27
6	28	22	22	22	24	27	26	29	31	32	34	35	36	35	32	32	29	30	29	30	25	24	23	23
7	23	22	22	22	22	23	23	23	23	24	24	22	20	20	21	21	20	20	17	15	14	13	13	14
8	14	14	15	16	16	18	18	20	21	21	23	23	23	21	23	23	22	21	21	20	20	19	20	19
9	19	20	21	20	21	22	22	22	22	23	24	24	24	24	24	25	25	25	25	25	24	23	23	23
10	23	24	25	25	25	26	27	28	27	28	29	29	29	30	28	27	27	26	25	26	26	26	26	24
11	26	23	21	22	23	22	27	27	29	31	31	30	31	33	32	33	32	30	32	32	31	28	24	20
12	20	20	21	21	22	22	20	20	20	22	24	25	26	26	26	26	26	28	25	25	23	23	22	20
13	19	19	17	20	21	21	22	23	23	24	24	25	25	27	29	30	30	29	26	26	22	21	19	18
14	18	19	19	19	18	20	21	23	23	24	25	25	26	26	26	26	25	24	23	21	19	18	16	14
15	13	12	11	11	13	17	19	22	22	22	20	23	23	25	26	26	26	24	23	20	18	18	16	15
16	14	14	14	14	15	16	17	18	19	20	22	23	24	25	26	27	27	26	24	22	20	19	17	18
17	16	15	15	13	16	16	17	17	22	21	22	25	29	31	29	29	26	23	22	19	17	16	16	15
18	14	12	10	11	14	15	19	21	24	26	27	29	30	30	28	28	26	24	24	23	21	20	19	18
19	18	17	18	19	19	23	20	22	23	24	25	27	29	30	31	30	29	29	24	22	19	17	12	12
20	13	13	16	16	15	17	18	19	19	23	25	26	27	27	28	28	24	22	21	19	15	13	13	11
21	10	10	11	12	14	15	17	18	20	22	24	27	28	29	28	27	26	25	24	22	20	19	17	16
22	18	15	16	19	20	22	24	20	21	22	24	26	29	29	27	29	28	26	24	22	20	18	12	12
23	13	12	14	15	15	16	14	16	18	20	21	22	24	23	23	23	24	24	22	20	19	17	16	14
24	13	14	14	15	15	16	17	18	20	23	25	26	28	28	29	28	27	26	25	22	21	19	18	17
25	16	15	16	17	18	19	21	21	21	23	24	26	28	29	30	29	27	25	21	19	17	16	15	14
26	12	11	10	12	15	17	19	20	21	22	22	24	24	27	28	27	25	22	20	17	16	15	14	15
27	15	11	12	12	15	15	17	19	19	21	23	24	25	26	26	25	24	23	20	19	15	15	12	10
28	10	10	11	12	11	12	14	15	17	18	20	20	21	23	23	25	23	24	23	20	19	17	14	16
29	16	15	15	14	14	19	22	25	26	26	27	27	28	28	28	26	26	23	21	21	21	21	21	21
30	20	20	20	20	21	20	22	23	23	26	27	27	25	26	26	27	26	25	24	23	23	23	23	21
31	22	23	24	24	23	23	23	24	24	24	24	23	24	24	24	23	23	22	22	21	21	21	21	21
Mean	15.8	15.4	15.8	16.4	17.1	18.3	19.5	20.6	21.3	22.7	23.8	24.7	25.5	26.1	26.2	26.4	25.3	24.6	23.0	21.5	19.6	18.6	17.3	16.5

Tuto East

Table 5: Hourly temperatures (°F) - October 1962

Time (LST)

Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	14	10	4	3	0	3	0	8	9	10	10	10	6	6	10	11	11	8	8	4	2	1	1	2
2	4	8	11	11	12	11	12	12	13	14	14	15	15	15	15	15	15	15	15	14	13	14	14	14
3	14	14	14	14	14	14	13	13	14	14	14	14	14	14	13	13	13	12	13	10	11	9	9	7
4	8	10	9	10	10	10	10	10	9	9	9	7	6	5	5	5	5	4	4	4	3	4	5	4
5	4	5	4	4	4	4	4	5	4	4	5	5	5	5	6	5	5	3	5	5	7	8	3	4
6	7	7	7	7	7	6	7	8	9	7	9	7	7	6	6	6	5	3	3	5	3	3	2	3
7	2	2	6	5	8	2	- 3	5	3	3	1	5	1	2	2	4	6	6	4	3	2	2	2	4
8	6	4	4	4	2	2	5	6	7	7	8	8	7	9	9	8	8	6	4	4	1	3	6	9
9	7	6	8	8	9	9	8	7	8	6	4	4	6	8	10	11	10	8	9	9	8	8	8	8
10	6	5	7	7	8	8	7	8	9	9	10	9	9	10	10	11	9	6	9	10	9	6	6	9
11	9	9	10	9	10	8	9	7	6	6	6	5	5	5	5	5	5	4	2	- 4	4	- 1	- 3	- 4
12	1	1	1	1	- 1	3	2	3	3	10	9	11	13	16	19	19	19	18	20	17	21	17	16	15
13	10	10	10	10	10	12	15	13	14	13	13	12	14	15	19	18	19	14	15	16	16	15	16	16
14	17	16	16	16	15	14	14	15	16	14	10	10	9	7	10	12	7	6	7	10	9	6	8	7
15	4	5	2	1	8	9	9	10	11	12	12	12	13	12	12	12	12	12	12	11	12	12	12	12
16	12	11	10	10	9	9	8	10	10	10	9	9	10	9	9	9	11	11	10	10	11	10	10	10
17	10	10	11	11	9	9	9	9	10	9	8	8	7	5	3	1	5	2	2	7	7	2	3	0
18	3	7	3	3	7	8	8	8	8	9	8	8	7	7	7	6	6	5	5	4	3	3	3	2
19	1	1	2	3	3	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	5	5	5	5
20	5	4	4	4	4	4	4	3	4	3	4	3	3	5	4	5	5	5	5	5	6	6	6	6
21	4	5	4	2	1	1	- 1	- 2	- 3	- 4	- 1	- 1	3	3	3	4	1	1	2	4	5	5	6	6
22	6	6	6	7	7	7	8	8	9	8	9	8	8	9	8	9	9	8	5	4	7	7	7	7
23	5	8	8	8	9	9	10	11	10	10	10	11	10	10	10	10	10	10	10	10	10	10	10	10
24	10	10	10	10	10	10	10	9	10	10	9	9	10	9	9	10	10	8	7	7	7	7	6	5
25	5	5	6	7	6	5	6	6	7	4	5	4	5	6	6	4	- 1	1	- 1	- 2	2	0	0	0
26	1	0	0	1	5	- 2	- 2	- 2	0	2	4	4	3	4	3	4	4	4	5	1	- 3	- 3	- 4	- 4
27	- 4	- 5	- 5	4	7	8	9	10	11	11	11	11	11	11	11	11	11	11	11	11	11	12	11	10
28	9	7	6	6	7	6	4	4	3	3	4	4	4	3	3	3	4	4	4	5	5	5	5	5
29	5	5	5	5	5	5	5	6	6	6	6	7	7	6	6	6	7	7	8	8	8	9	10	10
30	10	11	11	11	11	11	12	13	13	13	14	14	14	13	13	13	10	8	6	5	4	4	6	2
31	8	11	13	14	16	15	15	15	13	13	12	8	2	- 1	- 2	0	- 2	5	4	0	3	10	11	11
Mean	6.5	6.7	6.7	7.0	7.5	7.2	7.1	7.8	8.1	8.0	8.1	7.9	7.7	7.7	8.0	8.2	7.8	7.1	7.0	6.5	6.8	6.4	6.5	6.3

Tuto East

Table 6: Hourly temperatures (°F) - January 1963

Time (LST)

Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	- 6	-10	-11	-12	-11	-11	-11	-11	-11	-12	-14	-16	-15	-14	-13	-12	-12	-12	-11	-11	-12	-12	-14	-16
2	-16	-15	-16	-16	-18	-19	-19	-20	-21	-22	-21	-21	-22	-20	-22	-20	-21	-20	-21	-19	-18	-15	-14	-14
3	-16	-16	-17	-16	-16	-15	-13	-12	-12	-12	-13	-14	-14	-14	-12	-11	- 9	- 9	- 7	- 5	- 3	- 5	- 3	2
4	3	- 1	- 1	6	6	6	6	2	- 1	- 4	- 8	-10	-11	-14	-19	-20	-21	-22	-22	-24	-24	-24	-23	-23
5	-24	-25	-25	-26	-27	-28	-29	-31	-31	-31	-31	-31	-31	-31	-32	-34	-32	-35	-31	-29	-28	-28	-27	-28
6	-27	-24	-21	-22	-22	-19	-21	-23	-22	-22	-19	-18	-16	-16	-13	-13	-12	-11	-11	-11	-10	-10	-10	-10
7	-10	- 9	-10	-11	- 9	- 7	- 7	- 4	- 3	- 1	1	3	4	4	4	4	4	3	3	4	5	5	5	6
8	6	6	8	11	11	13	15	16	8	13	12	12	12	12	11	10	9	9	8	9	8	4	6	4
9	4	6	5	6	8	9	12	14	16	17	17	7	3	0	- 5	- 7	-10	-11	-12	7	9	12	- 5	-13
10	-13	-13	-12	-12	-12	-11	-11	-10	- 8	- 8	- 8	- 6	- 6	- 5	- 6	- 5	- 5	- 3	- 2	1	- 1	- 2	- 1	3
11	4	8	2	1	- 4	- 2	0	4	5	5	6	6	6	6	5	5	6	6	8	8	8	10	12	15
12	16	17	17	17	17	19	19	20	20	20	19	19	20	20	20	19	20	19	19	17	17	14	12	13
13	10	15	15	15	14	14	16	17	21	21	21	16	15	15	16	17	22	20	18	13	8	3	2	- 1
14	10	9	5	-11	-12	-12	-13	- 9	-12	-14	- 6	- 7	- 4	- 2	- 2	- 2	- 2	- 2	4	5	4	5	5	6
15	5	2	0	0	- 2	- 4	- 2	- 2	- 1	- 2	4	10	5	2	- 4	- 9	-10	- 6	- 8	- 8	- 4	- 3	- 2	- 2
16	- 9	-11	-10	-11	- 9	-11	-12	-13	-15	-14	-15	-15	-15	-15	-16	-17	-18	-18	-17	-17	-17	-18	-18	-20
17	-20	-23	-22	-22	-22	-23	-23	-24	-24	-23	-25	-27	-26	-24	-25	-22	-21	-22	-21	-20	-17	-16	-13	-11
18	- 8	- 8	- 9	-10	-13	-15	-18	-20	-22	-23	-23	-24	-24	-25	-24	-26	-29	-31	-29	-24	-26	-21	-21	-19
19	-19	-20	-18	-23	-22	-20	-22	-24	-24	-22	-24	-21	-22	-24	-26	-25	-25	-26	-25	-27	-24	-24	-26	-26
20	-24	-23	-18	-22	-14	-14	-12	-12	- 6	- 4	- 5	- 4	- 4	- 4	- 4	- 6	- 3	- 4	- 4	- 3	- 3	- 2	- 6	- 1
21	- 3	- 1	- 1	- 1	- 1	- 2	- 4	- 4	- 3	- 4	- 2	1	- 4	- 4	- 6	- 8	- 7	- 6	- 8	-10	-10	- 9	- 9	- 9
22	- 9	-10	-11	- 7	- 6	- 4	- 4	- 3	- 2	0	0	1	- 2	- 2	1	1	2	2	3	4	3	2	0	0
23	- 2	- 2	9	0	0	- 3	- 3	- 1	- 1	0	- 2	2	- 3	3	- 2	- 5	- 4	- 5	- 6	- 2	0	- 5	- 1	- 1
24	- 1	- 1	1	5	2	- 1	- 5	- 5	- 6	- 7	- 6	- 7	- 8	- 9	-10	-14	-18	-20	-18	-15	-15	-15	-12	-11
25	-11	- 9	- 9	- 9	-12	-14	-12	-14	-13	-14	-14	-15	-12	-14	-15	-15	-14	-16	-17	-12	-11	- 9	- 6	- 6
26	- 7	-11	- 9	-10	-10	-10	-10	-12	-11	-11	-10	- 9	-12	-11	-12	-12	-10	-11	-14	- 9	- 7	- 3	- 1	- 1
27	- 1	- 2	- 2	- 2	- 3	- 3	- 7	- 9	- 9	-10	-10	-12	-10	- 8	- 7	- 7	- 5	- 5	- 3	- 5	- 6	- 6	- 5	- 8
28	-13	-14	-13	-14	-15	-17	-19	-17	-17	-17	-16	-17	-19	-18	-18	-19	-19	-19	-16	-22	-21	-20	-22	-22
29	-23	-23	-24	-24	-24	-24	-24	-25	-25	-24	-25	-25	-23	-24	-24	-24	-25	-21	-18	-13	-15	-11	- 9	- 6
30	- 3	- 1	3	7	9	11	14	15	14	14	12	13	13	13	11	9	7	5	- 2	-14	-16	-16	-15	-11
31	- 9	- 6	- 6	- 5	- 4	- 3	- 3	- 5	- 6	- 7	- 9	-10	- 8	- 9	-12	-12	-12	-10	- 8	- 7	- 7	- 6	- 9	-10
Mean	-7.0	-6.9	-6.4	-7.0	-7.1	-7.1	-7.2	-7.2	-7.2	-7.0	-6.9	-7.1	-7.5	-7.5	-8.4	-9.0	-8.9	-8.9	-8.6	-7.7	-7.5	-7.3	-7.4	-7.1

Tuto East

Table 7 : Hourly temperatures (°F) - April 1963

Time (LST)

Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	-30	-30	-30	-33	-33	-31	-33	-32	-33	-31	-31	-30	-31	-31	-30	-32	-33	-35	-36	-37	-37	-38	-38	-34
2	-37	-35	-32	-39	-41	-41	-41	-39	-35	-32	-30	-30	-30	-24	-24	-24	-24	-20	-22	-19	-18	-22	-20	-21
3	-25	-21	-23	-21	-21	-17	-14	-14	-13	-15	-12	-12	-12	-11	-10	-10	-12	-14	-15	-14	-16	-15	-18	-21
4	-23	-23	-23	-23	-20	-21	-21	-19	-18	-17	-15	-15	-13	-12	-11	-11	-11	-11	-11	-12	-12	-13	-14	-16
5	-16	-18	-16	-17	-17	-17	-13	-12	-11	-10	-10	- 9	- 8	- 9	- 9	-10	-10	-12	-12	-15	-17	-18	-19	-19
6	-21	-17	-16	-15	-15	-14	-14	-12	-11	-11	- 9	- 9	- 8	- 7	- 7	- 6	- 8	- 9	-10	- 9	-11	-13	-13	-13
7	-16	-18	-17	-12	-15	-15	-12	-10	-11	-12	-12	-11	-11	-11	-11	-12	-14	-13	-15	-16	-16	-14	-13	-13
8	-13	-14	-14	-14	-15	-17	-15	-15	-14	-12	-15	-15	-15	-14	-14	-12	-13	-13	-15	-15	-15	-12	-12	-12
9	-12	-12	-14	-10	-11	-12	-11	-12	- 5	- 3	- 3	0	0	1	5	3	5	3	1	- 2	- 2	1	2	4
10	2	2	3	4	4	5	6	8	8	14	13	15	15	17	18	18	11	12	10	10	9	7	10	10
11	7	5	5	4	5	12	8	10	13	13	14	16	15	17	17	22	23	18	13	13	12	16	16	16
12	13	15	11	11	18	15	14	12	12	15	16	13	12	13	21	22	21	21	28	23	21	23	15	14
13	11	13	13	15	15	12	13	14	15	17	19	17	16	16	17	19	15	15	17	11	10	12	10	12
14	11	8	12	10	10	9	11	12	12	14	14	15	17	17	18	15	15	14	11	10	10	12	8	10
15	9	9	9	7	8	8	10	10	11	12	13	15	13	14	14	13	11	11	10	8	8	10	8	9
16	7	3	7	6	6	7	8	7	8	9	10	11	12	12	12	12	12	12	11	5	3	4	4	2
17	1	- 3	4	- 3	- 3	- 3	- 2	- 2	0	2	3	4	4	7	8	6	4	3	6	3	2	2	0	1
18	0	1	1	0	1	3	3	5	5	4	6	5	8	7	6	7	7	7	7	3	2	1	1	1
19	0	- 2	- 2	- 2	0	0	0	0	2	2	2	2	2	2	6	6	4	4	4	1	- 1	- 2	- 2	- 3
20	- 3	- 4	- 4	- 4	- 3	- 2	- 2	- 1	0	2	2	4	4	5	6	2	0	- 1	- 1	- 2	- 2	- 4	- 4	- 5
21	- 7	- 7	-10	- 8	-10	-10	-10	- 8	- 5	- 4	- 4	- 4	- 5	- 4	- 4	- 5	- 6	- 6	- 6	- 6	- 6	- 6	- 7	- 7
22	- 7	- 7	- 7	- 7	- 7	- 7	- 7	- 7	- 4	- 5	- 4	- 3	- 2	- 2	- 2	- 2	- 1	- 1	- 2	- 5	- 5	- 5	- 5	- 6
23	- 4	- 3	- 5	- 5	- 9	- 9	- 9	- 8	- 7	- 6	- 5	- 4	- 3	- 3	- 2	- 2	- 1	- 2	- 4	- 4	- 4	- 4	- 4	- 4
24	- 4	- 2	- 1	- 7	- 7	- 6	- 6	- 3	- 2	- 2	- 1	0	1	1	1	1	- 1	- 1	- 1	- 3	- 6	- 7	- 7	- 8
25	- 8	- 8	- 9	- 8	- 9	- 8	- 6	- 3	- 2	- 2	0	1	1	1	1	0	- 1	- 2	- 2	- 3	- 5	- 5	- 5	- 5
26	- 5	- 7	- 9	- 9	-11	-10	- 8	- 8	- 7	- 5	- 4	- 4	- 4	- 4	- 4	- 3	- 5	- 6	- 8	- 8	- 8	- 8	-11	-11
27	-11	-12	-12	-12	-12	- 9	- 9	- 8	- 7	- 6	- 5	- 4	- 5	- 4	- 4	- 4	- 5	- 6	- 8	- 7	- 9	-10	-11	-11
28	- 5	- 7	- 2	- 2	- 5	- 5	- 7	- 5	- 5	- 3	- 2	- 2	- 2	- 2	0	- 2	- 2	- 2	- 4	- 5	- 6	- 7	-10	- 8
29	- 8	- 9	- 9	- 8	- 8	- 6	- 6	- 4	- 2	0	1	2	3	4	4	3	3	2	2	0	- 1	- 2	- 3	- 3
30	- 2	- 2	- 1	1	3	2	6	8	9	12	16	20	19	20	13	12	9	8	6	5	3	3	1	0
Mean	-6.5	-6.8	-6.4	-6.7	-6.7	-6.2	-5.6	-4.5	-3.2	-2.0	-1.1	-0.4	-0.2	0.5	1.2	0.9	-0.2	-0.8	-1.5	-3.0	-3.9	-3.8	-4.7	-4.7

Tuto East

Table 8 : Hourly temperatures (°F) - July 1963

Time (LST)

Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	19	23	21	21	20	21	23	25	25	26	26	27	28	28	28	27	27	27	26	23	21	20	20	18
2	19	18	17	17	18	19	20	23	25	27	29	31	30	34	34	32	30	31	31	29	28	27	27	27
3	27	26	26	26	27	25	26	26	27	27	24	24	20	20	21	22	22	21	21	21	23	23	23	25
4	24	24	25	25	26	26	26	27	26	26	26	27	27	27	27	27	27	27	26	26	26	25	24	23
5	24	23	23	23	24	26	27	27	28	30	31	32	33	34	34	34	34	33	32	32	32	32	32	32
6	33	33	32	32	32	32	32	32	32	33	33	32	32	32	32	32	32	32	33	29	29	29	27	26
7	27	27	27	27	27	27	27	26	26	26	26	26	25	25	25	25	25	24	25	25	24	24	24	24
8	24	24	24	24	24	25	25	25	25	26	26	26	26	26	26	25	25	26	25	25	25	25	25	25
9	26	26	26	26	26	26	26	27	27	27	27	27	27	29	30	30	29	29	29	29	29	29	28	28
10	28	28	28	28	26	26	26	27	27	29	29	29	30	31	31	29	29	29	29	30	30	29	29	30
11	30	31	32	32	32	32	32	33	34	33	33	33	34	34	34	34	35	36	36	38	37	35	36	36
12	36	36	37	36	37	38	40	37	39	39	39	39	39	39	39	40	40	40	40	38	38	37	36	35
13	35	35	35	35	35	36	36	37	37	37	37	38	37	37	36	36	34	35	34	35	34	34	35	34
14	33	35	36	37	36	35	35	35	35	35	35	36	36	37	38	37	37	36	35	34	34	33	32	32
15	30	29	28	31	31	32	32	33	34	35	35	35	35	35	35	35	38	35	36	37	35	34	32	32
16	32	31	31	31	31	31	31	32	34	34	35	35	35	35	35	35	34	33	33	32	31	31	30	30
17	30	30	30	30	31	32	32	33	33	34	36	36	37	36	37	39	39	36	34	33	33	32	32	31
18	33	36	32	34	34	35	38	36	35	37	35	37	35	35	36	36	36	37	36	34	34	33	33	33
19	32	32	32	32	32	33	33	34	34	35	35	35	35	35	34	33	34	33	32	31	29	27	27	29
20	30	31	29	30	30	30	31	31	31	30	31	32	32	32	32	32	31	31	31	30	31	30	31	31
21	29	30	30	28	32	32	31	32	33	34	35	36	37	37	35	35	34	32	32	31	31	30	31	30
22	30	30	30	30	30	31	32	32	34	35	36	36	36	36	37	35	36	35	35	31	32	31	31	30
23	30	29	29	30	31	32	32	33	34	35	35	36	36	35	36	37	38	36	37	36	38	38	35	32
24	32	32	33	33	33	34	36	37	38	39	39	39	38	41	39	40	39	39	39	37	37	36	34	33
25	32	35	33	31	32	33	34	35	36	36	38	38	37	38	37	36	36	36	33	33	33	32	32	32
26	32	31	31	32	34	37	37	36	37	35	35	36	36	38	39	37	37	35	35	34	33	32	31	30
27	29	29	29	30	31	30	33	34	35	36	36	36	37	37	36	37	35	37	34	34	34	33	32	30
28	32	30	31	30	31	31	32	32	32	32	32	33	34	33	34	33	33	32	32	30	30	30	29	27
29	27	27	27	29	29	30	31	31	32	33	33	32	33	32	31	28	28	28	28	27	27	26	26	26
30	26	26	26	26	26	26	27	29	31	31	32	31	31	32	31	31	31	31	30	29	29	30	30	31
31	31	30	30	30	30	30	31	31	30	31	30	30	30	30	30	30	30	30	30	30	30	31	30	30
Mean	29.1	29.3	29.0	29.2	29.6	30.1	30.8	31.2	31.8	32.4	32.6	32.9	32.8	33.2	33.2	32.9	32.7	32.3	31.9	31.1	30.9	30.3	29.8	29.4

Table 9: Hourly temperatures (°F) - October 1962

	Time (LST)																							
Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	14	13	15	11	11	8	8	10	12	13	14	14	14	12	14	13	11	10	10	10	9	10	12	12
2	12	13	15	16	15	16	17	16	17	18	19	17	19	19	19	19	19	19	19	18	18	18	18	19
3	20	18	19	18	17	18	18	18	18	19	19	20	20	21	20	18	19	18	17	16	17	16	15	15
4	15	15	13	13	12	13	12	13	14	14	10	12	13	12	11	9	8	8	8	8	7	7	8	7
5	6	4	4	5	5	5	6	4	6	8	7	8	8	10	11	10	11	7	15	7	6	4	4	3
6	1	1	0	2	2	3	5	9	8	10	12	13	12	10	12	8	10	8	7	11	7	7	11	7
7	7	7	10	10	8	7	6	6	8	10	12	13	11	10	9	7	8	9	8	9	9	6	6	8
8	10	11	10	11	8	9	11	12	12	12	13	13	12	13	13	13	13	12	9	5	5	8	11	12
9	12	11	11	12	12	12	12	12	12	11	10	10	11	12	13	16	14	13	13	13	11	11	11	12
10	11	10	11	12	12	10	11	12	13	13	14	14	14	14	14	14	12	10	9	11	10	11	13	13
11	14	13	13	14	13	12	11	10	10	10	10	10	10	10	10	10	10	9	9	7	1	5	6	7
12	7	6	5	2	2	2	6	5	8	7	6	5	10	12	14	11	13	13	15	14	16	17	15	15
13	13	14	15	12	15	17	18	17	16	15	15	16	17	19	22	22	22	20	20	20	20.	20	21	20
14	18	18	19	18	17	19	16	16	12	14	14	16	15	16	17	17	16	16	16	16	16	15	14	14
15	13	14	14	11	11	12	13	13	12	12	12	11	13	13	13	14	14	14	13	13	14	14	14	15
16	15	16	15	14	13	13	13	14	14	14	13	13	14	13	12	14	15	14	13	13	15	13	13	13
17	13	13	14	13	12	11	11	11	11	10	14	14	13	11	11	9	10	9	10	10	11	8	8	6
18	9	10	10	9	12	12	13	13	12	12	14	14	12	12	12	11	10	7	9	11	1	3	4	3
19	7	6	9	8	9	9	10	9	9	9	7	7	8	8	8	8	9	9	9	9	9	10	10	9
20	10	9	8	8	9	8	9	8	8	8	8	8	9	9	9	10	10	10	10	11	11	10	9	9
21	9	8	8	8	7	7	6	5	5	5	7	7	7	6	6	4	6	8	9	10	10	10	11	10
22	11	11	11	11	11	11	12	13	12	12	12	13	13	13	14	14	12	9	10	10	10	10	9	10
23	12	12	13	11	13	13	12	15	15	14	15	15	14	12	10	10	13	12	13	13	14	14	13	13
24	14	14	14	14	14	14	15	14	14	15	15	15	15	15	15	14	14	14	13	11	11	11	11	10
25	11	11	11	11	10	11	12	12	12	13	11	11	12	12	11	10	10	13	7	8	7	6	6	6
26	4	5	5	6	11	6	5	3	4	3	2	4	4	2	9	9	11	9	13	15	8	5	5	4
27	5	3	3	5	8	11	13	14	14	15	15	15	15	14	15	14	14	14	15	16	15	15	15	14
28	14	11	10	11	11	10	9	8	6	6	7	7	7	6	6	6	7	7	8	8	8	8	,9	9
29	10	9	10	9	10	11	11	10	10	10	10	11	11	10	10	10	10	11	11	11	12	13	13	12
30	13	13	14	15	15	16	16	15	17	17	16	17	17	17	17	16	16	16	13	16	11	10	12	13
31	13	12	12	15	14	18	18	17	16	15	16	16	16	10	10	11	9	7	7	6	6	15	15	15
Mean	11.1	10.7	11.0	10.8	10.9	11.1	11.5	11.4	11.5	11.7	11.9	12.2	12.5	12.0	12.5	12.0	12.1	11.5	11.5	11.5	10.5	10.6	11.0	10.8

Table 10: Hourly temperatures (°F) - January 1963

	Time (LST)																						
Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	- 1	- 6	- 7	- 6	- 6	- 6	- 6	- 6	- 6	- 8	- 8	- 9	- 9	- 9	- 8	- 8	- 7	- 7	- 6	- 6	- 6	- 5	- 5	- 7
2	- 9	-11	-14	-11	-12	-14	-12	-11	-12	-11	-15	-14	-19	-18	-19	-14	-14	-13	-12	-12	-11	- 9	- 5	- 4
3	- 9	-12	-10	- 8	- 8	- 7	- 6	- 6	- 6	- 7	- 8	- 8	- 8	- 7	- 7	- 6	- 5	- 3	- 2	- 1	1	2	4	6
4	7	8	8	10	10	9	9	4	2	- 1	- 4	- 6	- 8	-10	-12	-15	-15	-15	-15	-16	-15	-17	-17	-17
5	-18	-20	-20	-20	-21	-22	-22	-24	-24	-25	-24	-25	-26	-25	-25	-24	-24	-23	-22	-20	-17	-17	-22	-22
6	-20	-22	-22	-22	-24	-23	-19	-18	-18	-15	-14	-11	- 9	- 9	- 7	- 5	- 5	- 4	- 3	- 4	- 3	- 4	- 4	- 4
7	- 4	- 4	- 4	- 5	- 4	- 2	0	1	2	3	5	6	8	9	7	9	8	7	8	8	9	10	11	10
8	10	11	12	14	16	16	17	17	16	17	16	18	17	16	15	14	13	13	15	14	14	15	14	12
9	10	11	9	10	12	13	15	16	19	20	19	13	9	4	- 2	- 5	- 7	- 8	- 8	- 8	- 9	-10	- 9	- 9
10	- 8	- 8	- 8	- 9	- 6	- 6	- 5	- 5	- 5	- 4	- 3	- 2	0	2	1	- 2	0	1	4	6	8	8	8	8
11	8	7	6	5	6	6	7	8	10	10	11	11	5	5	6	3	4	4	4	3	7	15	17	19
12	19	19	20	21	21	22	22	22	23	23	23	22	23	24	23	24	23	22	23	22	21	21	19	17
13	18	19	19	19	19	19	23	25	29	28	26	24	23	25	25	25	25	24	23	18	13	8	- 2	- 5
14	- 6	- 6	- 6	- 8	- 8	- 7	- 6	- 5	- 3	- 3	- 2	0	1	1	0	- 1	- 1	1	2	1	1	0	1	6
15	10	7	6	6	4	4	4	4	2	2	5	4	9	9	4	3	4	2	2	1	0	- 3	- 3	- 3
16	- 4	- 6	- 6	- 6	- 3	- 4	- 6	- 8	- 8	- 7	-10	-10	-10	-10	-10	-12	-12	-12	-12	-12	-12	-13	-13	-14
17	-14	-16	-15	-15	-15	-16	-13	-16	-17	-18	-18	-18	-18	-18	-17	-17	-16	-15	-12	-11	-10	- 9	- 7	-13
18	- 9	- 4	- 4	- 5	- 6	- 9	-10	-12	-12	-15	-15	-15	-15	-16	-16	-17	-19	-21	-20	-17	-16	-15	-15	-18
19	-18	-19	-15	-16	-14	-14	-14	-18	-18	-15	-18	-17	-19	-16	-19	-19	-18	-18	-20	-17	-17	-19	-17	-17
20	-18	-14	-13	-17	-16	-15	-18	-16	-10	- 9	- 5	3	4	6	6	5	5	7	6	7	2	4	4	7
21	9	7	7	9	7	10	9	6	7	5	5	3	1	- 1	3	0	0	2	0	0	1	0	0	1
22	1	- 3	- 1	- 3	- 5	- 3	- 3	2	- 3	- 4	- 4	- 6	- 8	- 3	2	9	8	9	10	- 3	- 1	0	0	1
23	- 3	0	- 5	- 2	- 1	5	5	8	9	11	10	11	7	2	2	4	4	4	6	5	2	- 2	0	5
24	9	8	9	8	9	3	3	- 2	- 3	- 3	- 3	- 4	- 4	- 6	- 6	- 8	- 9	- 9	- 9	- 9	- 9	- 8	- 7	- 6
25	- 6	- 5	- 5	- 6	- 7	- 7	- 6	- 8	- 4	- 5	- 5	- 8	- 9	-10	- 8	-11	-14	-11	-12	- 7	- 6	- 6	- 3	0
26	- 4	- 6	- 6	- 6	- 6	- 6	- 6	- 7	- 8	- 8	- 8	- 8	9	- 8	- 8	3	- 3	- 3	- 4	- 4	- 2	0	3	5
27	4	3	2	2	1	- 1	- 2	- 3	- 4	- 4	- 4	- 4	- 3	- 3	- 2	- 3	- 1	- 1	0	- 1	- 1	- 2	- 4	- 5
28	- 7	- 7	- 8	- 8	- 9	-11	-12	-11	-11	-11	-11	-12	-12	-14	-14	-17	-18	-17	-17	-16	-16	-15	-15	-16
29	-17	-17	-19	-18	-18	-18	-18	-18	-18	-19	-19	-18	-16	-17	-17	-15	-13	-12	-11	-10	- 9	- 6	- 3	0
30	2	5	9	12	14	16	18	19	21	21	24	25	25	20	15	7	2	- 3	- 3	- 8	- 9	- 9	- 8	- 5
31	- 3	- 2	- 1	0	0	1	2	0	0	- 2	- 4	- 4	- 2	- 4	- 6	- 6	- 6	- 5	- 3	- 2	- 1	0	- 3	- 3
Mean	-2.3	-2.7	-2.6	-2.4	-2.3	-2.2	-1.6	-2.0	-1.6	-1.7	-1.9	-1.9	-1.7	-2.6	-3.0	-3.4	-3.6	-3.4	-2.8	-3.2	-2.9	-2.8	-2.6	-2.3

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Table 11: Hourly temperatures (°F) - April 1963

Day	Time (LST)																						
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	-25	-25	-25	-28	-26	-28	-28	-27	-27	-27	-26	-26	-26	-26	-26	-26	-27	-28	-27	-27	-29	-28	-29	-31
2	-29	-30	-29	-32	-30	-30	-30	-29	-27	-24	-22	-22	-21	-21	-21	-21	-22	-23	-23	-25	-28	-30	-27	-25
3	-26	-27	-25	-27	-27	-25	-24	-23	-21	-20	-19	-19	-19	-18	-19	-18	-18	-19	-20	-21	-21	-23	-23	-25
4	-23	-22	-16	-15	-14	-15	-13	-13	-12	-10	-10	- 9	- 9	- 6	- 6	- 6	- 6	- 7	- 7	- 7	- 7	- 7	- 8	- 9
5	-10	-11	-10	-10	-10	- 7	- 7	- 6	- 7	- 9	- 8	- 8	- 5	- 5	- 1	- 2	- 3	- 5	- 6	- 8	-10	-11	-12	-12
6	-14	-11	-11	-12	-12	-12	-10	- 8	- 6	- 6	- 4	- 4	- 5	- 2	- 2	- 2	- 2	- 4	- 4	- 8	- 4	- 8	- 9	- 9
7	- 9	-11	-12	-12	-12	-11	-11	-10	- 9	- 9	- 9	- 6	- 5	- 5	- 5	- 5	- 6	- 5	- 7	- 8	- 7	- 5	- 5	- 5
8	- 5	- 7	- 7	- 8	- 9	- 9	- 9	- 8	- 5	- 5	- 7	- 7	- 6	- 5	- 6	- 6	- 6	- 9	-10	- 9	- 9	- 9	- 7	- 7
9	- 3	- 3	- 5	- 7	- 6	- 6	- 4	- 5	- 3	- 4	- 3	- 2	- 1	- 1	0	0	1	- 2	- 3	- 3	- 1	- 3	- 1	- 5
10	- 4	- 4	1	- 1	- 4	10	8	10	12	11	16	17	17	18	19	17	16	15	16	14	12	13	15	15
11	13	12	11	13	11	14	14	13	16	21	22	20	19	20	23	23	21	21	17	13	13	15	11	13
12	14	13	14	13	12	13	16	16	19	19	20	20	21	23	25	23	21	17	17	17	17	17	25	24
13	20	16	16	19	17	17	18	22	22	24	22	22	22	22	23	23	19	17	17	16	14	11	12	14
14	13	13	11	17	19	19	21	18	18	20	23	25	23	25	28	25	19	19	17	17	16	21	20	25
15	17	23	24	24	24	21	24	22	19	19	20	22	20	20	25	24	23	21	22	18	16	15	17	14
16	16	14	14	13	12	12	12	14	16	19	21	22	19	19	23	21	17	15	14	12	11	10	10	10
17	11	9	8	6	5	5	8	6	8	9	10	12	11	11	11	9	8	11	10	9	9	9	9	8
18	10	7	9	8	10	12	12	13	11	12	12	16	14	14	14	13	12	13	11	10	9	7	7	7
19	5	3	5	5	2	2	3	4	6	6	8	8	9	10	9	10	10	9	8	7	6	5	6	5
20	5	5	4	4	6	4	6	4	5	8	9	11	9	8	8	7	6	5	5	2	0	- 1	- 2	- 3
21	- 2	- 1	- 4	- 2	- 1	0	1	3	4	4	3	3	3	3	2	2	1	0	0	0	0	0	0	0
22	- 1	0	- 1	- 1	- 1	0	0	0	1	2	3	4	4	4	5	5	6	6	5	1	- 1	- 1	- 1	0
23	3	5	3	1	- 1	0	- 1	- 1	0	1	3	4	4	6	7	6	5	4	3	3	2	1	- 3	- 3
24	- 3	- 2	- 1	- 1	- 1	2	2	4	4	5	6	7	7	7	8	8	7	7	6	4	1	0	2	0
25	1	- 3	- 2	- 2	0	0	1	4	4	7	7	8	8	8	7	8	7	5	4	4	0	- 1	0	- 1
26	- 2	- 1	- 2	- 3	- 3	0	1	1	1	1	2	2	3	3	3	3	1	1	1	0	1	- 7	- 8	- 9
27	- 7	- 5	- 3	- 3	- 2	- 2	- 2	0	1	1	2	4	4	5	5	5	4	4	2	- 1	- 2	- 3	- 3	- 5
28	- 6	- 8	- 7	- 6	- 5	- 2	2	3	5	5	4	6	5	5	5	5	5	5	4	4	- 1	- 4	- 6	- 4
29	- 5	- 7	- 4	- 3	- 3	- 3	2	4	6	8	9	10	9	10	9	9	10	8	7	6	4	2	2	2
30	- 1	0	- 2	- 1	3	4	7	6	11	12	14	18	18	17	18	18	16	15	13	12	10	9	8	7
Mean	-1.6	-1.9	-1.5	-1.7	-1.5	-0.5	0.6	1.2	2.4	3.3	4.3	5.3	5.1	5.6	6.4	5.9	4.8	3.9	3.1	1.7	0.7	-0.2	0	-0.3

Table 12: Hourly temperatures (°F) - July 1963

Time (LST)

Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	30	30	30	30	30	31	31	32	32	32	33	34	34	34	36	36	35	34	36	34	34	33	33	32
2	32	30	31	31	31	32	33	34	34	34	35	36	36	37	36	37	37	37	35	33	35	34	32	35
3	35	34	33	35	32	35	33	34	34	34	32	30	26	27	26	28	28	28	28	28	29	29	30	30
4	31	30	31	31	32	32	33	34	35	35	34	35	34	34	34	34	33	33	33	32	31	32	34	32
5	30	29	30	33	34	35	37	36	36	37	39	39	38	39	39	39	39	38	38	37	37	37	37	38
6	37	37	37	37	37	37	36	36	38	38	38	38	38	38	37	38	37	37	36	35	35	34	34	33
7	33	33	33	33	32	33	34	32	31	30	31	30	30	30	31	31	30	30	30	30	29	29	29	29
8	29	29	29	29	29	29	29	30	30	31	31	31	31	30	30	30	32	31	31	30	30	30	30	30
9	31	31	32	32	32	31	31	34	33	32	34	35	36	36	36	36	36	36	36	36	35	35	34	34
10	34	34	34	33	32	32	32	32	33	34	35	36	36	36	36	35	35	34	34	34	34	34	34	35
11	35	36	37	37	38	38	39	40	40	39	40	41	40	40	41	42	43	42	45	43	43	41	41	41
12	42	41	45	48	46	44	44	45	45	47	48	47	47	47	47	46	47	47	46	46	46	43	42	41
13	42	41	42	42	41	41	42	42	43	44	44	43	44	44	44	43	42	40	40	41	41	41	41	41
14	43	43	44	44	42	42	42	42	43	43	43	44	43	43	43	43	44	45	43	44	42	40	39	40
15	38	38	37	38	38	38	40	40	40	40	40	40	40	41	42	42	42	42	42	40	41	40	39	40
16	38	38	39	39	39	39	39	40	41	41	41	42	43	43	43	44	43	43	42	41	40	41	41	40
17	40	40	40	41	42	41	41	41	43	43	44	45	46	45	45	46	44	44	43	43	42	41	40	40
18	40	39	39	40	42	43	45	44	43	44	46	45	44	43	44	44	43	44	43	42	42	43	41	40
19	39	37	37	41	41	38	41	41	43	42	44	46	45	45	45	42	44	44	41	40	39	36	38	39
20	39	39	39	39	39	40	40	39	39	38	39	39	39	39	40	40	38	39	38	41	40	40	41	39
21	39	39	41	41	41	41	39	41	39	40	41	42	43	45	44	43	42	43	40	40	37	37	36	38
22	36	35	37	38	39	42	39	40	42	44	44	44	44	44	43	42	43	42	44	42	41	40	40	38
23	38	36	36	37	39	38	40	43	45	43	44	46	45	46	46	45	45	45	44	41	42	41	40	41
24	41	41	42	41	40	41	42	44	45	46	46	49	50	48	47	46	48	48	48	49	45	44	42	41
25	40	40	39	39	43	43	46	46	46	46	46	45	45	45	44	42	45	44	42	42	41	40	40	38
26	37	37	32	40	38	40	42	43	45	46	46	43	46	45	45	44	46	43	44	44	42	38	37	37
27	36	35	38	38	39	40	40	41	44	45	44	45	46	48	45	45	43	46	43	42	41	39	38	39
28	39	37	37	39	40	41	42	41	42	40	41	41	42	42	42	42	41	40	40	41	39	38	37	37
29	36	36	37	37	38	41	40	39	39	40	40	41	41	41	40	37	35	34	34	34	32	32	32	33
30	31	32	32	32	33	33	34	36	37	37	38	38	38	38	38	37	37	38	37	37	37	37	37	37
31	37	36	36	36	36	36	37	37	37	37	36	36	36	36	37	35	35	35	35	35	35	35	35	36
Mean	36.4	35.9	36.3	37.1	37.3	37.6	38.2	38.7	39.3	39.4	39.9	40.2	40.2	40.3	40.2	39.8	39.7	39.5	39.1	38.6	38.0	37.2	36.9	36.9

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Table 13: Hourly temperatures (°F) - October 1962

Time (LST)

Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	13	12	11	11	11	11	10	10	11	12	14	14	16	17	16	16	14	13	12	11	11	11	12	14
2	15	15	17	17	19	20	19	21	20	20	21	21	23	22	23	23	23	22	22	22	22	22	21	21
3	22	22	23	23	22	22	22	22	22	22	22	23	23	23	22	23	21	22	22	22	22	20	20	21
4	20	20	18	17	15	18	17	17	16	17	17	15	15	16	15	13	12	12	9	11	10	10	10	10
5	10	10	10	10	10	8	8	9	10	10	11	11	12	14	14	14	14	13	11	10	8	8	7	8
6	7	7	7	7	8	9	6	7	9	9	9	11	11	13	13	12	12	10	12	14	13	11	11	11
7	11	10	10	11	10	10	9	9	10	12	14	15	16	16	16	12	13	13	11	13	10	10	11	12
8	14	13	13	12	12	12	12	14	15	16	17	17	17	17	16	16	15	14	10	9	10	10	12	14
9	13	14	13	13	14	11	12	15	11	10	10	11	11	13	14	15	21	17	15	15	13	15	15	19
10	19	16	19	19	19	17	18	15	17	17	18	18	18	18	18	16	14	12	10	14	13	15	16	15
11	16	15	15	17	17	16	15	14	14	14	14	15	15	15	14	13	13	13	12	8	4	5	8	8
12	5	9	8	7	5	5	8	8	7	9	10	11	12	14	14	12	13	14	12	12	15	12	12	12
13	13	13	12	12	13	13	14	15	14	14	14	13	16	18	19	18	19	20	20	18	19	20	20	21
14	20	21	19	20	20	19	19	16	14	11	12	12	13	18	19	20	19	20	19	19	19	19	18	18
15	17	17	17	17	17	17	16	17	16	16	16	14	16	16	17	16	16	17	17	17	16	16	16	17
16	17	17	17	17	18	18	17	16	18	18	18	18	18	19	15	19	19	18	17	15	17	17	17	17
17	18	18	17	16	15	15	14	17	16	16	20	17	17	16	16	17	12	11	12	14	14	10	11	11
18	12	13	13	14	15	15	15	16	15	14	17	15	15	13	12	12	12	9	7	3	6	3	3	4
19	9	10	11	11	11	12	12	12	12	12	11	11	11	11	11	11	11	10	11	10	10	12	13	12
20	12	12	12	12	11	11	12	11	13	13	14	13	13	14	14	14	14	15	15	16	15	15	15	15
21	15	15	15	14	12	13	13	13	10	10	11	10	10	11	10	7	11	13	13	14	14	14	15	16
22	16	16	17	17	15	16	16	16	16	16	16	17	17	18	17	16	16	15	13	11	11	11	12	13
23	12	12	12	12	12	12	13	13	13	13	13	14	13	12	13	13	15	15	16	18	16	17	17	18
24	18	18	19	19	18	16	17	17	17	16	16	16	16	16	15	16	16	17	16	16	15	16	16	16
25	16	17	17	16	15	15	14	14	15	17	16	13	14	13	13	13	13	12	8	9	6	7	6	6
26	2	2	4	4	4	3	4	5	3	4	5	9	7	8	7	10	9	9	10	11	11	7	6	5
27	6	8	5	10	9	10	11	13	14	14	17	18	19	18	19	18	18	18	17	17	16	18	17	18
28	16	16	14	13	12	12	12	11	10	11	11	11	10	10	10	10	10	10	12	12	12	12	13	14
29	13	14	13	14	15	16	16	15	16	15	15	15	15	15	15	14	15	11	18	18	17	19	19	19
30	17	16	16	18	17	17	18	18	19	18	18	20	21	21	23	22	22	20	17	17	14	13	13	13
31	12	14	13	15	14	14	18	20	19	20	18	18	18	17	15	12	12	12	10	10	14	18	18	18
Mean	13.7	13.9	13.8	14.0	13.7	13.6	13.8	14.1	13.9	14.1	14.7	14.7	15.1	15.5	15.3	14.9	15.0	14.4	13.7	13.7	13.3	13.3	13.5	14.1

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Table 14: Hourly temperatures (°F) - January 1963

Day	Time (LST)																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	4	- 1	- 3	- 2	- 2	- 2	- 2	- 2	- 2	- 3	- 4	- 2	- 4	- 2	- 2	- 2	- 2	- 2	- 2	- 3	- 3	- 2	- 4	- 6
2	- 9	-11	-14	-11	-12	-14	-12	-11	-12	-11	-15	-14	-19	-18	-19	-14	-13	-13	-12	-12	-11	- 9	- 5	- 4
3	- 7	- 9	-10	-11	-11	-10	- 7	- 4	- 4	- 4	- 4	- 3	- 3	- 3	- 3	- 2	- 1	1	2	3	5	6	7	8
4	11	11	12	13	12	12	11	7	5	3	1	- 3	- 7	- 8	-11	-12	-12	-12	-12	-12	-13	-13	-12	-12
5	-18	-20	-20	-20	-21	-22	-22	-24	-24	-25	-24	-25	-26	-25	-25	-24	-24	-23	-22	-20	-17	-17	-22	-22
6	-17	-17	-18	-18	-17	-18	-18	-18	-17	-17	-17	-12	-11	- 6	- 6	- 5	- 3	- 6	- 3	- 2	- 3	- 3	1	0
7	- 1	- 3	0	1	- 1	4	3	3	4	0	0	0	2	2	3	4	10	10	11	11	12	13	13	13
8	15	17	18	18	19	20	21	21	20	20	20	21	21	20	19	19	18	18	18	18	17	17	16	19
9	18	19	17	16	16	17	17	20	22	23	22	17	12	7	2	0	- 2	- 4	- 4	- 5	- 6	- 6	- 6	- 6
10	- 5	- 4	- 3	- 3	- 3	- 2	0	- 3	- 5	- 5	- 4	- 4	- 3	- 3	- 4	- 2	- 3	- 5	- 3	- 3	- 1	- 1	2	6
11	9	11	11	10	11	10	11	13	12	12	9	8	7	7	5	4	3	2	2	2	2	3	3	3
12	5	24	24	25	25	26	26	26	26	26	25	25	27	27	26	27	26	26	26	24	24	24	23	22
13	23	22	22	23	24	28	27	32	27	33	32	27	27	28	27	30	28	27	25	21	18	12	5	- 2
14	- 2	- 2	- 3	- 4	- 4	- 3	- 2	- 1	1	2	5	5	4	3	2	- 1	2	2	4	4	4	4	3	4
15	6	6	7	7	11	11	8	7	6	3	4	6	6	12	7	6	7	7	6	5	4	1	1	1
16	- 2	- 2	- 2	- 2	- 1	- 2	- 3	- 4	- 5	- 5	- 6	- 7	- 7	- 7	- 7	- 8	- 9	- 8	- 8	- 8	- 8	- 9	- 9	-10
17	-12	-12	-13	-13	-13	-13	-12	-12	-12	-13	-14	-17	-14	-14	-14	-12	-10	-11	-11	-11	-12	-12	-12	-11
18	-11	-10	- 9	- 9	- 5	- 6	- 6	- 7	- 8	- 9	- 9	- 9	- 8	-13	-13	-15	-16	-17	-16	-18	-17	-18	-18	-17
19	-18	-18	-20	-14	-16	-17	-14	-18	-19	-20	-19	-19	-20	-21	-21	-22	-21	-20	-20	-22	-20	-20	-19	-16
20	-17	-16	-17	-17	-18	-22	-17	-16	-14	-12	- 7	- 5	- 7	- 8	- 5	0	0	2	2	3	2	3	4	4
21	2	4	3	3	3	- 1	- 2	1	4	3	5	0	- 1	- 1	- 3	- 4	- 5	- 3	4	4	4	2	0	0
22	0	- 1	- 1	- 2	- 1	0	0	0	- 1	- 1	- 2	- 2	- 1	- 2	- 2	- 3	- 3	- 3	- 1	- 1	- 2	- 4	- 4	- 3
23	- 5	- 6	- 7	- 7	- 8	- 7	- 7	- 7	- 7	2	- 4	- 3	- 3	0	- 3	- 1	1	- 1	- 2	2	3	- 2	- 2	- 3
24	0	2	6	12	12	7	6	1	1	0	0	- 1	- 1	- 4	- 4	- 5	- 5	- 4	- 5	- 5	- 6	- 4	- 4	- 4
25	- 3	- 4	- 1	- 1	0	0	- 3	- 4	- 4	- 5	- 5	- 7	- 8	- 8	- 5	- 6	- 6							
26																								
27																								
28																								
29																								
30																								
31																								
Mean	-1.4	-0.8	-0.8	-0.2	0	-0.2	0.1	0	-0.2	-0.1	-0.4	-1.0	-1.5	-1.5	-2.2	-1.9	-1.6	-1.5	-0.9	-1.0	-1.0	-1.5	-1.6	-1.5

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Table 15: Hourly temperatures (°F) - April 1963

Day	Time (LST)																						
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	-22	-22	-23	-25	-25	-28	-29	-26	-25	-23	-23	-23	-22	-22	-23	-23	-22	-23	-25	-24	-26	-27	-27	-27
2	-28	-28	-29	-30	-30	-29	-28	-27	-26	-25	-24	-23	-21	-20	-20	-19	-20	-21	-23	-25	-26	-26	-25	-24
3	-24	-24	-24	-23	-23	-22	-23	-23	-20	-20	-20	-18	-18	-17	-18	-18	-18	-17	-18	-18	-20	-19	-19	-20
4	-23	-18	-18	-20	-17	-17	-14	-12	-10	-12	-11	- 5	- 4	- 6	- 8	- 9	-10	-10	-10	- 7	- 6	- 6	- 6	- 6
5	- 7	- 7	- 7	- 6	- 4	- 8	- 7	- 7	- 9	-10	-10	-10	- 9	- 9	- 9	-10	-10	- 7	- 6	- 4	- 6	- 9	- 6	- 8
6	-10	- 9	- 6	- 6	- 6	- 5	- 6	- 5	- 4	- 2	- 1	0	1	2	2	3	3	0	1	- 4	- 3	- 5	- 6	- 8
7	-12	-11	-10	-11	-12	- 9	-13	-13	-11	- 9	- 9	- 6	- 7	- 4	- 5	- 6	- 3	- 5	- 5	- 6	- 6	- 7	- 5	- 5
8	- 3	- 4	- 4	- 5	- 6	- 6	- 6	- 6	- 6	- 5	- 2	- 2	- 2	- 3	- 3	- 3	- 4	- 4	- 4	- 7	- 7	- 7	- 8	- 7
9	- 6	- 6	- 7	- 4	- 5	- 3	- 4	- 4	- 3	- 2	- 2	- 1	1	1	1	1	1	1	2	3	- 2	- 3	- 4	- 4
10	- 4	- 4	- 4	- 5	- 7	- 6	- 5	- 3	- 1	0	2	- 1	4	10	10	11	12	10	5	5	3	3	5	8
11	12	11	12	10	9	14	15	16	16	18	15	18	19	18	18	18	16	14	13	13	13	13	14	14
12	14	13	15	13	13	16	15	18	18	18	19	19	22	24	23	23	25	24	19	18	19	17	21	20
13	19	21	20	20	18	18	17	20	24	20	23	22	22	23	23	22	22	21	18	18	16	14	14	14
14	13	15	14	14	14	15	15	20	20	21	22	22	22	25	23	24	22	20	17	17	18	13	14	15
15	18	19	19	20	17	17	16	22	18	21	18	20	20	21	26	22	24	22	19	14	15	13	12	13
16	12	14	15	14	11	11	12	15	14	16	17	18	18	17	21	21	20	15	14	12	11	10	12	11
17	11	10	10	10	6	5	6	7	6	6	6	8	9	7	9	12	11	10	11	9	11	9	9	8
18	8	8	9	8	9	7	9	10	12	13	13	14	15	15	16	15	15	16	13	11	8	12	12	11
19	10	8	7	7	7	9	7	8	9	11	11	12	13	14	15	14	13	15	13	13	12	10	11	10
20	7	8	8	7	7	8	6	5	6	7	8	8	9	8	8	7	6	6	6	5	4	2	1	1
21	0	0	- 1	- 1	0	2	3	3	5	5	8	8	8	9	8	8	6	5	5	5	5	5	6	4
22	4	5	4	4	4	4	5	6	6	7	8	7	8	7	7	8	8	8	7	5	7	2	1	1
23	2	3	3	4	4	6	6	4	5	5	5	6	6	6	6	5	6	6	6	6	4	2	0	1
24	- 1	- 1	- 2	1	2	3	4	5	5	7	8	8	9	9	8	8	7	7	6	4	2	2	2	1
25	1	1	0	- 1	- 1	0	1	4	5	5	6	6	7	7	7	8	6	6	6	5	4	3	3	2
26	2	2	0	- 1	- 2	0	2	3	3	3	2	2	4	3	3	3	7	5	5	5	3	5	- 2	- 4
27	- 5	- 3	- 3	- 3	- 1	2	2	3	3	5	5	5	7	8	8	11	10	10	5	2	0	2	- 2	- 3
28	- 4	- 4	- 3	- 4	- 3	- 2	- 2	0	4	4	6	5	9	9	10	10	8	9	6	6	4	0	0	- 3
29	- 2	- 3	- 4	- 2	- 4	- 3	- 2	0	2	6	8	7	7	8	13	12	13	11	11	8	6	5	3	0
30	0	1	2	3	2	5	5	7	9	11	13	15	16	16	17	19	19	17	15	14	18	16	15	13
Mean	-0.6	-0.2	-0.2	-0.4	-0.8	0.1	0.2	1.7	2.5	3.3	4.0	4.7	5.8	6.2	6.5	6.8	6.4	5.7	4.4	3.4	2.7	1.6	1.5	0.9

Tuto West

Table 16: Hourly temperatures (°F) - July 1963

	Time (LST)																							
Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	34	32	32	33	35	34	34	34	34	34	36	38	39	39	39	39	40	39	39	38	38	38	38	37
2	37	34	34	34	35	35	34	34	34	34	36	36	36	35	35	34	34	34	32	32	31	31	32	31
3	31	30	35	37	39	43	42	44	44	45	45	40	34	34	34	33	34	33	32	33	33	33	34	34
4	34	34	34	34	35	35	35	35	34	36	38	39	40	37	38	39	36	35	37	36	36	34	32	31
5	31	30	31	31	32	33	35	35	39	39	41	42	42	42	42	42	43	43	42	42	42	43	44	42
6	40	38	36	36	36	38	38	40	41	40	38	38	38	38	40	38	38	38	38	37	38	39	39	39
7	38	37	37	37	37	37	37	37	36	37	36	36	37	37	37	36	36	35	35	35	35	34	34	34
8	34	34	34	34	34	34	35	35	35	35	36	36	37	37	36	35	35	35	36	37	35	35	36	35
9	35	36	35	34	34	34	34	34	33	33	32	34	34	35	39	37	37	38	38	38	39	37	36	36
10	36	35	36	36	38	37	37	37	37	39	41	40	41	41	43	43	40	38	39	39	38	38	37	38
11	39	40	40	41	41	41	42	41	42	43	43	44	45	44	45	45	45	48	48	46	46	45	44	44
12	46	42	44	46	49	50	51	53	53	53	53	54	54	52	52	52	52	54	54	54	53	53	52	50
13	50	51	52	51	50	49	51	52	52	53	54	53	53	54	54	54	54	54	54	51	49	49	49	48
14	47	48	49	46	45	47	48	48	51	51	51	51	51	51	51	51	48	48	47	46	45	44	44	44
15	43	43	41	41	34	34	34	34	34	34	36	38	39	40	40	40	41	40	38	38	36	34	34	37
16	38	38	42	43	44	45	41	44	44	48	45	42	44	44	43	43	43	42	42	43	40	40	42	41
17	40	37	38	40	39	41	43	44	42	41	45	44	43	43	43	45	45	44	43	43	43	42	41	40
18	41	41	33	34	40	42	41	42	42	43	40	38	39	38	38	39	39	38	38	37	38	37	35	34
19	34	34	38	42	40	35	35	38	39	40	43	42	45	46	45	45	42	41	37	35	34	31	31	31
20	31	30	31	32	31	32	36	37	33	32	33	35	35	37	37	37	34	33	33	32	31	31	30	30
21	30	30	31	32	36	38	40	42	43	44	43	43	44	44	43	44	44	45	44	43	42	42	41	40
22	41	41	41	42	42	45	45	46	43	47	47	47	46	46	43	44	45	43	40	41	42	40	42	38
23	33	33	33	32	33	35	38	41	44	47	46	46	44	44	44	43	44	44	39	38	38	38	38	39
24	40	38	39	42	45	46	49	51	54	53	55	55	55	54	54	54	54	52	53	51	52	52	49	48
25	46	47	47	48	50	50	51	52	52	50	51	51	51	52	53	52	50	50	50	49	49	48	47	47
26	45	44	44	45	47	47	49	50	51	52	52	51	51	52	52	51	50	50	48	48	48	47	46	45
27	44	44	44	44	46	46	48	49	49	50	50	51	49	48	49	50	49	50	51	50	49	49	49	46
28	47	45	48	45	45	46	47	45	47	48	49	48	48	48	48	49	48	48	46	46	45	44	43	41
29	41	42	42	43	44	44	45	46	46	47	47	47	46	48	48	45	43	42	40	42	41	38	37	37
30	36	36	36	36	37	38	40	41	43	43	45	45	46	45	43	46	46	43	44	44	46	45	44	45
31	43	42	42	42	43	42	42	44	44	44	43	42	42	41	40	40	41	40	40	39	40	40	38	39
Mean	38.9	38.3	38.7	39.1	39.9	40.4	41.2	42.1	42.4	43.1	43.5	43.4	43.5	43.4	43.5	43.4	42.9	42.5	41.8	41.4	41.0	40.4	39.9	39.4

Thule

Table 17: Hourly temperatures (°F) - October 1962

Day	Time (LST)																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	17	16	15	9	8	11	12	10	11	13	15	15	17	16	15	15	13	9	10	10	12	17	15	15
2	11	12	16	19	18	21	23	22	23	23	25	25	26	26	26	26	24	24	23	24	25	24	24	24
3	25	24	25	25	24	24	24	23	23	25	25	25	25	24	24	24	24	22	22	25	26	25	25	25
4	24	21	21	22	22	21	20	15	15	18	16	17	16	16	16	14	15	9	13	9	8	10	8	9
5	9	8	8	7	7	6	6	6	8	10	11	11	11	12	13	12	11	10	11	9	6	7	7	5
6	7	6	6	5	9	7	9	6	7	9	10	12	11	12	14	11	10	11	8	9	10	10	10	13
7	11	11	13	12	8	11	12	9	11	11	12	13	14	14	13	12	11	14	11	10	9	10	11	12
8	13	15	14	14	12	14	15	16	16	19	19	20	20	19	18	19	16	13	13	15	12	15	15	15
9	18	18	18	15	15	15	14	15	8	15	12	12	12	18	18	21	21	17	14	16	17	19	18	19
10	19	17	19	18	20	19	19	20	20	19	20	21	21	20	20	18	17	16	13	15	17	18	17	18
11	19	18	20	20	19	18	17	17	17	17	17	18	18	11	16	16	15	14	13	5	4	7	5	3
12	5	6	7	8	6	6	7	4	6	6	6	9	9	10	8	10	10	9	11	9	10	10	6	10
13	6	7	10	7	15	13	8	12	9	12	13	10	10	13	14	17	17	18	16	20	16	17	17	19
14	20	19	19	20	19	18	13	13	15	13	14	17	15	19	21	20	20	21	21	20	20	19	20	20
15	19	19	19	19	20	19	19	19	17	17	17	17	17	18	18	18	17	17	17	17	17	17	18	17
16	17	18	19	19	21	18	18	19	21	20	20	20	19	21	20	21	22	18	17	19	20	18	20	23
17	21	21	20	19	18	14	18	19	18	18	19	18	17	17	14	16	14	12	14	14	14	12	13	14
18	14	14	14	17	17	17	16	13	14	15	15	14	14	14	13	10	9	7	5	6	6	3	7	9
19	14	14	15	16	16	16	16	15	15	14	14	14	14	13	13	14	12	12	13	12	13	14	15	17
20	16	15	16	14	14	15	14	15	16	16	17	17	16	17	17	18	18	18	19	18	18	17	17	19
21	19	19	17	15	14	15	15	13	10	11	11	13	11	10	7	11	13	13	14	16	15	15	16	17
22	18	18	18	19	18	15	16	18	16	15	16	17	18	20	19	20	17	17	16	15	14	15	14	13
23	15	14	14	14	14	14	13	13	14	13	14	14	14	14	15	15	14	17	15	16	16	18	19	19
24	19	17	18	16	16	17	17	15	16	15	17	15	17	17	17	15	15	15	15	19	18	17	18	18
25	17	17	17	17	17	18	14	15	16	17	16	14	13	8	12	10	9	11	10	10	13	2	- 1	- 3
26	- 2	0	- 1	6	6	8	7	12	1	- 2	2	0	- 2	3	0	3	4	3	6	9	7	6	10	4
27	2	6	4	8	12	13	11	14	14	13	16	15	18	21	21	21	20	20	20	21	21	21	20	19
28	18	18	17	16	17	17	14	14	15	15	16	15	15	16	15	15	16	15	15	16	17	16	17	17
29	17	16	17	17	17	17	16	17	18	18	19	18	19	17	18	19	19	19	20	20	20	19	22	20
30	20	21	21	20	21	21	21	22	22	23	21	20	21	22	23	22	20	19	18	12	15	12	11	12
31	13	13	14	14	15	16	15	18	23	22	20	19	13	12	10	9	9	11	9	10	14	15	16	16
Mean	14.9	14.8	15.2	15.1	15.3	15.3	14.8	14.8	14.7	15.2	15.6	15.6	15.5	15.8	15.7	15.9	15.2	14.5	14.3	14.4	14.5	14.4	14.5	14.8

Thule

Table 18: Hourly temperatures (°F) - January 1963

Time (LST)

Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	5	3	2	2	2	3	2	2	1	1	2	0	1	2	2	2	3	3	3	3	2	2	- 1	- 5
2	- 6	- 5	- 8	- 8	- 6	- 7	- 5	- 5	- 6	- 7	- 4	- 4	- 8	- 6	- 5	- 6	- 6	- 9	- 8	- 9	- 7	- 8	- 7	- 7
3	-11	- 9	-12	-12	- 9	- 7	- 6	- 6	0	1	2	2	3	3	3	4	5	6	7	8	10	11	13	14
4	15	16	17	17	17	12	11	8	6	4	3	0	- 2	- 3	- 6	- 6	- 7	- 7	- 8	- 9	- 9	- 9	- 8	- 9
5	-10	-10	-11	-12	-12	-13	-12	-13	-14	-14	-15	-14	-15	-14	-15	-16	-16	-18	-18	-16	-19	-17	-16	-18
6	-19	-21	-21	-21	-19	-20	-22	-22	-20	-24	-19	-13	-13	-13	-13	-12	-10	-11	- 9	- 9	- 6	- 4	- 3	- 5
7	- 3	- 2	- 1	- 1	- 1	1	2	2	2	3	4	4	4	4	5	6	8	6	12	12	19	17	18	18
8	19	21	22	20	22	24	24	23	23	23	23	23	23	22	23	21	22	22	24	23	23	25	23	22
9	23	19	20	19	20	19	24	24	25	25	22	18	13	6	4	2	1	0	- 1	- 1	- 1	- 1	- 1	0
10	1	2	2	2	2	1	0	- 1	0	0	0	0	0	- 1	- 1	0	- 3	0	- 2	0	1	2	2	4
11	7	6	8	9	12	14	15	16	12	10	11	11	10	8	7	5	5	4	4	4	3	4	4	5
12	5	6	9	29	30	30	30	30	30	29	30	30	30	30	31	30	30	31	30	30	31	31	29	27
13	26	28	27	26	27	25	29	27	31	36	31	30	32	31	36	35	31	29	26	22	16	8	2	2
14	2	1	1	1	1	1	3	5	8	10	9	8	7	5	3	2	3	5	5	5	5	5	6	6
15	7	4	8	4	3	5	4	0	4	6	5	7	9	11	11	13	12	10	10	10	5	5	4	3
16	3	3	3	3	3	1	1	- 1	- 1	- 1	- 2	- 3	- 3	- 3	- 3	- 4	- 4	- 3	- 3	- 3	- 4	- 4	- 5	- 6
17	- 6	- 7	- 7	- 8	- 8	- 8	- 8	- 8	- 8	- 9	-10	-10	- 9	- 9	- 7	- 7	- 7	- 8	- 8	- 8	- 7	-10	-10	- 9
18	- 7	- 8	- 7	- 8	- 2	- 3	- 4	- 5	- 5	- 6	- 8	- 8	-10	-14	-12	-16	-16	-20	-19	-16	-19	-15	-20	-19
19	-15	-18	-18	-18	-18	-18	-19	-20	-20	-20	-20	-18	-21	-20	-21	-22	-23	-21	-22	-20	-23	-25	-24	-20
20	-17	-19	-19	-20	-18	-24	-21	-20	-15	- 9	-20	-19	-20	-13	-13	-14	- 8	- 8	- 6	- 4	- 9	- 5	- 5	5
21	2	6	8	6	5	- 4	- 9	- 3	2	- 3	- 3	- 1	- 2	- 5	6	4	2	3	4	- 5	- 8	- 3	- 3	1
22	- 7	- 7	-10	-10	- 9	- 8	- 8	-11	- 9	- 7	- 9	-14	-11	-12	-12	-10	-10	-10	-17	-11	-17	- 8	-13	- 8
23	-11	-12	-11	-13	-10	-15	-12	-16	-10	- 9	-14	-12	- 9	0	- 4	- 7	2	- 7	- 5	- 6	-10	-10	-13	- 1
24	4	5	8	13	10	9	6	5	4	4	6	3	1	1	2	2	3	2	2	2	2	2	3	3
25	4	3	2	- 2	- 2	- 3	- 4	- 4	1	- 8	- 5	- 4	- 4	- 9	- 7	- 1	- 1	1	- 1	- 3	3	2	5	7
26	3	1	4	2	0	2	1	- 1	- 1	0	2	- 1	- 4	- 1	- 1	0	2	3	4	4	5	4	4	6
27	9	10	11	10	11	10	10	6	4	3	3	3	4	6	7	6	2	4	6	7	5	4	4	3
28	2	1	1	0	- 1	- 1	- 1	- 3	- 5	- 5	- 4	- 5	- 6	- 6	- 8	- 8	- 8	- 9	- 8	- 7	- 6	- 7	- 8	- 8
29	- 9	- 9	- 9	-10	- 9	- 9	-11	- 9	-10	- 7	- 8	-10	- 9	-10	-14	-15	-11	-15	-17	-18	-15	-14	- 8	- 9
30	- 9	- 4	- 5	- 4	- 1	0	25	27	30	30	31	32	26	23	15	9	5	3	3	0	0	0	- 1	1
31	3	4	- 1	- 3	- 3	- 3	- 6	- 3	- 2	- 1	- 3	- 1	3	3	1	3	3	6	6	8	8	8	8	8
Mean	.3	.3	.4	.4	1.2	.5	1.3	.8	1.8	1.8	1.3	1.1	.6	.5	.5	0	.3	-.3	-.2	-.2	-.7	-.3	-.7	.4

Thule

Table 19: Hourly temperatures (°F) - April 1963

Time (LST)

Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	-19	-20	-20	-21	-20	-23	-23	-21	-20	-19	-18	-19	-18	-18	-18	-19	-19	-20	-20	-21	-22	-20	-19	-24
2	-28	-29	-29	-29	-30	-29	-29	-24	-26	-23	-22	-20	-19	-18	-20	-20	-22	-22	-23	-24	-26	-25	-26	-25
3	-24	-25	-27	-26	-28	-24	-25	-24	-22	-19	-17	-16	-15	-15	-15	-16	-20	-19	-18	-16	-20	-21	-22	-25
4	-21	-23	-21	-18	-19	-17	-14	-12	-10	- 9	-10	- 7	- 5	- 5	- 5	- 6	- 7	- 7	- 7	- 8	- 8	- 7	- 9	- 8
5	- 4	- 3	- 5	- 3	- 4	- 3	- 5	- 6	- 8	- 8	- 9	- 8	-10	- 6	-12	- 9	-13	-12	- 9	- 8	- 3	- 3	- 3	- 5
6	0	- 2	- 2	- 2	- 2	- 1	0	0	1	3	4	5	5	5	6	5	5	1	0	- 1	- 4	- 4	- 5	- 6
7	- 9	-14	-12	-14	-16	-15	-11	- 9	- 9	- 8	- 7	- 7	- 6	- 5	- 4	- 5	- 4	- 3	- 4	- 1	1	0	0	1
8	0	0	- 1	- 2	- 1	0	0	- 1	0	0	- 1	- 2	- 1	- 4	- 6	- 6	- 5	- 7	- 6	- 5	- 8	- 8	- 7	- 6
9	- 5	- 5	- 6	- 5	- 6	- 4	- 2	- 2	- 1	- 2	- 2	- 1	- 1	- 2	0	0	2	4	5	- 2	- 1	- 5	- 7	- 6
10	- 4	- 6	- 5	- 9	- 7	- 5	- 3	- 5	- 1	- 2	1	2	2	2	2	2	0	0	- 1	- 1	- 3	- 2	- 7	- 5
11	- 5	0	2	- 3	0	4	1	5	4	6	5	7	9	10	8	10	8	8	7	7	5	6	5	5
12	4	6	8	8	6	10	14	10	16	16	19	18	16	18	14	18	15	14	10	10	14	10	10	15
13	25	26	12	24	19	15	12	16	19	14	21	18	21	22	21	20	19	13	10	9	14	11	10	12
14	14	6	12	10	11	13	16	15	18	16	19	20	20	22	22	21	18	17	14	14	14	16	12	17
15	13	12	11	11	9	15	14	18	15	14	20	19	18	22	18	18	16	16	10	15	13	10	10	10
16	8	8	9	10	8	8	10	8	9	10	17	15	14	13	15	13	12	9	11	11	8	10	7	7
17	2	6	5	1	0	0	5	5	5	6	5	5	5	6	6	7	6	5	4	3	2	- 1	- 4	1
18	3	- 2	- 4	- 1	2	3	8	14	15	18	17	20	20	22	22	17	16	20	17	17	16	12	12	12
19	10	13	11	12	11	13	16	15	16	16	17	18	19	19	19	19	19	17	16	16	15	12	13	11
20	13	11	8	13	11	13	6	7	8	13	11	12	12	12	13	13	12	10	8	5	4	1	1	0
21	1	- 1	2	2	2	3	5	9	10	10	9	10	11	11	11	10	10	10	11	10	10	10	8	9
22	9	8	9	9	9	9	9	10	11	11	11	11	11	13	12	12	10	8	7	5	4	5	2	2
23	2	2	5	6	5	7	5	5	8	10	10	10	10	10	10	10	10	10	8	5	0	2	- 1	- 1
24	- 1	- 5	0	- 1	3	5	8	9	8	9	10	11	10	11	11	11	10	10	10	6	4	3	2	- 1
25	2	- 1	- 2	- 2	1	2	4	5	6	7	9	10	10	10	11	10	10	9	9	8	5	4	4	4
26	4	2	3	- 2	- 1	2	3	3	1	3	4	4	5	6	6	6	4	5	5	6	4	- 1	- 3	- 4
27	- 6	- 6	0	4	4	4	4	2	4	4	5	7	6	7	7	7	7	4	2	0	- 3	- 5	- 4	- 6
28	- 8	- 7	- 7	- 7	- 5	- 3	- 2	3	3	4	4	6	7	7	8	9	9	8	6	3	0	- 2	- 3	- 5
29	- 6	- 3	- 7	- 6	- 5	- 2	- 2	1	4	5	6	6	6	9	8	8	8	8	5	3	3	0	- 2	2
30	- 5	- 3	2	0	0	1	2	6	6	9	10	12	13	15	13	13	14	13	10	10	11	7	5	4
Mean	-1.2	-1.8	-1.6	-1.4	-1.4	.03	.9	2.1	3.0	3.8	4.9	5.5	5.8	6.6	6.1	5.9	5.0	4.3	3.2	2.5	1.6	.5	-.7	-.5

Thule

Table 20: Hourly temperature (°F) - July 1963

Time (LST)

Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	32	32	33	34	33	34	34	34	34	33	34	32	34	36	36	36	36	35	35	34	35	35	36	36
2	34	31	34	33	32	31	31	32	32	31	32	32	31	31	31	31	30	30	31	31	30	30	31	31
3	30	30	30	33	34	31	37	45	34	39	40	40	38	38	38	39	37	37	37	37	38	37	35	34
4	35	35	34	34	34	34	35	35	36	37	37	39	35	36	35	34	34	34	33	32	33	33	32	32
5	33	33	33	33	32	31	31	30	31	30	31	32	34	34	35	39	38	38	39	40	37	36	36	35
6	36	37	37	38	38	38	37	38	37	37	37	38	38	38	38	38	38	39	41	39	40	41	41	39
7	41	40	40	40	41	40	41	40	40	40	39	41	40	39	39	39	39	39	38	38	38	38	38	38
8	37	38	39	40	40	40	38	39	40	40	40	41	41	40	40	35	35	36	37	36	36	36	38	38
9	37	36	34	33	33	34	34	34	33	33	35	35	35	35	35	35	36	37	38	37	38	36	36	36
10	36	37	37	37	37	38	38	39	40	41	41	43	45	44	44	43	43	42	42	41	41	41	43	43
11	43	44	44	43	43	39	39	41	44	40	47	47	47	47	47	47	42	42	42	46	43	44	45	44
12	44	45	46	47	43	46	47	47	47	48	49	46	48	50	49	49	51	50	52	53	52	52	46	45
13	45	46	46	46	47	45	43	46	48	48	46	47	46	47	49	56	57	54	50	51	52	52	51	49
14	52	50	49	49	49	49	49	49	49	49	49	49	47	45	43	43	42	42	42	41	41	39	39	38
15	34	33	32	31	32	32	32	33	33	32	33	34	35	35	34	34	34	34	34	34	34	34	35	30
16	35	35	34	33	33	32	32	30	31	31	31	33	33	33	33	34	32	31	32	30	31	32	30	30
17	29	30	32	30	30	31	30	31	31	32	33	33	35	34	34	35	34	34	34	34	34	33	33	33
18	32	32	31	32	33	33	32	32	32	33	33	32	32	32	32	32	32	33	33	33	34	34	33	33
19	33	33	34	33	32	32	31	32	33	31	32	34	33	33	33	32	32	31	30	30	31	31	31	31
20	31	31	32	32	31	32	32	31	30	31	30	30	31	31	31	31	31	30	30	31	31	32	31	31
21	31	31	31	31	31	32	31	31	32	31	32	33	35	35	35	34	35	33	33	33	33	32	31	31
22	31	31	32	32	32	32	31	31	33	34	33	33	33	33	33	33	32	33	32	33	33	34	33	32
23	32	32	32	32	33	33	34	34	33	33	32	32	34	33	32	34	33	32	33	33	34	34	34	34
24	33	33	34	32	32	33	32	38	36	38	41	43	42	42	46	46	48	45	46	49	47	45	47	46
25	46	46	48	45	47	47	45	45	46	47	47	49	50	49	48	47	47	48	49	49	48	48	48	46
26	45	45	46	45	46	47	47	47	49	47	47	47	46	46	48	47	47	46	47	45	46	46	47	45
27	45	44	45	46	44	46	45	44	44	44	44	46	47	44	48	48	47	46	48	45	46	47	45	46
28	44	43	42	43	44	42	43	44	43	44	45	45	44	43	44	44	44	45	44	44	43	43	43	42
29	43	42	41	42	43	44	43	45	41	40	40	39	38	38	35	37	38	38	39	40	40	39	39	39
30	39	39	38	38	39	40	42	43	43	43	45	49	49	47	49	48	46	48	46	47	47	46	47	46
31	44	45	45	45	46	47	48	48	49	47	46	46	42	42	42	44	43	42	44	42	41	42	43	42
Mean	37.5	37.4	37.6	37.5	37.6	37.6	37.6	38.3	38.2	38.2	38.7	39.4	39.3	39.0	39.2	39.5	39.1	38.8	39.1	39.0	39.0	38.8	38.6	37.9

Table 21: Maximum temperatures (°F)

Station	Height (meters)	Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Camp Century	1923	1961				12	18	29	31	31	22	15	5	12
		1962	0	3	14	20	23	24	32	28	21	13	17	16
		1963	15	13	5	0	20	40	36	32				
Tuto East	801	1961							45	42	30	22	13	23
		1962	16	4	24	27	39	41	47	40	33	21	15	22
		1963	22	23	18	28	34	49	41	38				
Tuto I	489	1961					29	45	53	50	35	26	23	27
		1962	24	10	26	33	42	46	52	50	37	22	20	26
		1963	29	27	23	28	34	47	50	45	38			
Tuto West	250	1961				35	32	50	57	58	39	31	25	29
		1962	28	5	31	37	45	53	60	58	45	23	22	35
		1963			26	26	37	50	55	52				
Thule	3	1962	24	8	31	38	42	52	55	56	49	26	26	36
		1963	36	32	31	26	33	45	57	55	41	32	35	27

Table 22: Minimum temperatures (°F)

Station	Height (meters)	Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Camp Century	1923	1961				-45	-29	-10	5	-10	-30	-46	-57	-56
		1962	-50	-61	-42	-44	-22	- 4	6	-21	-33	-41	-47	-47
		1963	-51	-50	-57	-43	-24	- 7	3	- 7				
Tuto East	801	1961							24	10	- 3	-15	-29	-36
		1962	-30	-38	-22	-21	- 5	15	17	5	-10	- 5	-23	-25
		1963	-35	-25	-43	-41	- 3	12	17	16				
Tuto I	489	1961					- 5	15	29	20	5	- 8	-22	-32
		1962	-27	-34	-14	-14	1	21	29	14	0	0	-16	-20
		1963	-26	-20	-33	-32	2	22	26	25	9			
Tuto West	250	1961				-26	- 5	19	33	25	9	- 7	-22	-31
		1962	-25	-31	-13	-13	5	25	32	19	2	2	-13	-18
		1963			-32	-30	3	25	30	29				
Thule	3	1962	-25	-35	-20	-19	1	23	29	23	0	- 3	-17	-25
		1963	-25	-21	-34	-30	0	25	29	31	13	-10	-28	-21

Camp Century

Table 23 : Maximum Wind Speed (mph), 1962

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	28	-	14	17	16	11	11	22	24	20	12	13
2	31	38	14	15	15	14	14	17	14	22	16	16
3	24	33	17	16	23	11	16	21	11	15	14	19
4	23	19	22	15	26	16	19	25	31	17	9	15
5	11	22	24	16	20	26	27	30	50	18	8	8
6	11	23	24	17	23	22	26	27	31	15	19	6
7	11	39	20	17	34	15	18	30	23	18	13	5
8	8	27	27	12	43	10	18	19	22	17	8	7
9	10	22	24	13	39	16	14	15	18	20	12	6
10	12	24	15	10	16	19	19	17	16	22	12	18
11	18	24	20	10	32	16	13	12	25	13	9	22
12	28	18	25	10	31	17	15	14	16	16	10	22
13	26	20	23	12	11	31	16	16	15	18	10	16
14	22	29	20	14	17	26	14	15	12	17	7	11
15	28	21	11	12	21	25	16	16	16	8	8	13
16	28	24	10	13	21	18	21	26	14	7	11	15
17	17	25	8	14	16	16	21	34	13	8	13	17
18	20	18	14	15	22	17	13	36	18	10	38	16
19	22	18	20	19	25	21	12	27	20	11	38	21
20	15	24	34	23	19	21	16	17	16	12	27	17
21	17	17	31	23	24	19	16	14	12	10	18	10
22	19	17	23	16	26	16	15	19	12	11	21	10
23	23	12	16	23	17	13	15	16	12	9	22	12
24	23	20	21	19	11	17	12	16	12	11	24	28
25	29	14	23	21	30	26	14	16	12	12	21	-
26	24	14	23	21	30	19	10	23	17	14	31	-
27	21	19	18	30	18	33	12	24	18	14	54	-
28	18	15	17	22	13	24	18	17	16	14	45	-
29	30		16	23	16	19	16	27	20	8	20	-
30	27		14	14	16	14	16	29	21	9	14	-
31	-		15		12		26	37		12		
Max.	31	39	34	30	43	33	27	37	50	22	54	

Tuto East

Table 24: Maximum Wind Speed (mph), 1962

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	25	36	13	14	11	21	12	44	22	14	7	13
2	27	47	14	14	14	15	13	10	26	16	7	11
3	31	45	10	12	18	10	13	11	18	14	10	12
4	12	15	12	8	16	21	26	-	26	17	5	8
5	18	-	11	6	20	21	44	-	35	14	7	6
6	18	15	19	10	15	19	39	-	17	8	11	6
7	13	36	18	11	18	9	16	-	8	5	15	13
8	11	38	17	9	29	11	7	-	10	9	13	17
9	9	12	15	23	-	25	9	18	11	15	5	19
10	-	15	15	19	13	30	12	23	19	13	8	29
11	16	21	23	8	38	22	23	14	8	-	10	31
12	20	22	21	10	28	11	11	14	-	-	10	24
13	27	23	24	21	20	15	12	9	25	11	8	16
14	15	32	-	17	35	20	13	16	17	14	10	19
15	21	21	19	10	47	30	18	13	11	-	8	10
16	30	20	15	15	24	14	19	20	12	-	31	8
17	21	13	10	7	35	13	13	25	-	-	39	7
18	29	15	10	14	14	11	10	17	-	4	15	11
19	33	12	18	8	35	12	16	8	-	4	12	23
20	14	20	28	20	31	9	26	13	-	16	15	17
21	24	29	32	20	15	18	12	13	-	-	15	9
22	31	16	20	11	20	12	10	11	-	-	24	17
23	24	23	10	20	11	11	10	9	11	8	25	25
24	24	29	13	17	14	14	9	8	8	5	17	40
25	22	21	7	14	19	31	16	8	9	17	20	22
26	24	26	8	24	17	26	15	17	18	28	-	25
27	15	13	8	30	14	29	14	22	18	13	46	52
28	19	13	9	19	8	26	18	15	30	15	14	43
29	33		5	23	19	20	16	19	14	11	20	54
30	31		6	-	20	10	22	23	22	13	10	35
31	35		5		20		44	23		12		25
Max.	35	47	32	30	47	31	44	44	35	28	46	54

Tuto I

Table 25: Maximum Wind Speed (mph), 1962

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	24	29	5	15	7	14	16	46	42	19	23	13
2	24	54	7	24	15	15	17	16	43	19	16	10
3	28	50	7	14	17	11	11	11	35	14	17	15
4	7	20	9	12	20	13	34	10	51	10	10	3
5	30	-	16	4	24	17	52	38	61	7	12	11
6	11	14	25	13	16	20	58	39	34	12	15	5
7	11	53	30	4	33	9	28	26	24	8	8	7
8	12	48	24	6	51	9	6	25	31	22	8	7
9	10	13	17	25	38	20	15	27	32	23	4	8
10	15	17	21	24	7	25	15	23	32	23	10	35
11	6	24	12	10	44	26	20	14	16	15	22	42
12	24	30	33	16	36	11	8	8	9	15	19	31
13	28	14	33	7	22	29	6	15	17	16	13	19
14	14	18	6	11	34	33	5	21	12	6	24	30
15	12	26	6	9	50	28	7	11	11	6	28	13
16	39	26	6	12	31	6	-	27	11	23	45	19
17	21	21	17	6	42	7	17	31	14	24	46	17
18	44	25	5	5	8	7	9	19	20	13	8	9
19	39	10	27	7	36	17	10	14	27	13	8	18
20	23	31	43	27	35	7	20	6	21	29	25	21
21	32	38	43	23	17	17	9	16	9	24	29	19
22	41	-	33	10	20	19	5	7	17	18	39	25
23	35	30	5	25	14	18	11	13	21	19	42	38
24	27	39	11	12	7	18	5	13	20	17	23	33
25	33	14	6	23	11	39	19	12	5	18	30	31
26	26	9	12	30	19	34	22	24	16	20	56	44
27	5	24	10	36	16	35	20	24	30	14	55	63
28	8	24	10	29	6	33	32	29	41	34	7	50
29	30		8	35	8	17	29	52	23	27	24	60
30	44		7	15	10	10	39	53	7	24	14	48
31	39		5		8		49	56		23		32
Max.	44	54	43	36	51	39	58	56	61	34	56	63

Tuto West

Table 26: Maximum Wind Speed (mph), 1962

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	-	13	7	6	7	9	17	36	47	11	24	10
2	12	57	7	13	18	19	14	7	34	13	15	7
3	10	59	7	7	11	8	9	7	31	12	9	4
4	9	19	6	10	12	15	35	8	39	14	7	7
5	34	22	10	5	17	18	55	42	54	4	9	5
6	4	9	10	6	15	17	64	40	31	10	5	5
7	8	67	7	4	23	8	16	21	21	7	10	5
8	10	65	13	5	58	12	6	10	34	19	9	6
9	7	7	5	11	-	7	6	10	28	13	6	6
10	7	5	7	12	-	14	9	12	31	19	11	40
11	7	15	4	10	69	12	13	12	18	14	16	42
12	6	28	10	8	50	15	16	5	6	6	16	36
13	13	6	6	4	9	15	8	15	7	7	18	6
14	11	8	2	16	42	12	8	11	6	6	24	32
15	9	18	6	7	38	19	9	14	7	9	15	15
16	45	12	7	17	34	8	13	37	8	19	44	-
17	4	16	17	7	39	8	9	42	10	19	43	-
18	53	26	6	5	11	6	8	25	19	14	6	-
19	29	8	9	6	32	18	5	14	26	14	9	-
20	6	16	32	14	30	6	7	5	15	30	22	-
21	34	49	40	4	17	9	13	11	9	25	30	-
22	15	9	29	6	22	6	6	7	11	16	30	-
23	16	34	5	10	15	16	10	12	15	9	49	29
24	7	36	8	3	7	6	7	10	21	15	11	24
25	13	9	8	20	12	36	13	14	7	10	28	12
26	9	4	8	18	19	16	9	18	7	13	59	38
27	11	14	8	27	15	33	7	17	14	16	57	72
28	10	15	6	34	4	21	38	25	35	37	-	64
29	7		7	21	5	9	34	54	24	25	-	62
30	17		4	13	8	20	47	51	7	10	6	55
31	20		5		7		48	55		19		22
Max.	53	67	40	34	69	36	64	55	54	37	59	72

Camp Century

Table 27: Hourly Cloud Amounts - October 1962

Time (LST)

Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Mean
1	0	0	1	1	6	10	8	6	6	8	8	6	6	6	5	3	3	3	2	2	4	7	6	5	4.7
2	5	3	3	3	10	10	10	10	10	10	10	10	10	6	2	2	3	3	8	9	7	5	8	10	7.0
3	10	10	10	5	3	10	10	10	10	10	10	1	0	0	3	1	1	1	3	2	2	3	2	1	4.9
4	1	0	0	0	1	3	2	4	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.6
5	0	0	0	0	0	1	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2
6	0	0	0	0	0	2	1	1	1	1	1	0	0	1	1	1	1	1	2	2	2	1	1	1	0.9
7	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	1	2	3	10	10	10	10	10	10	3.0
8	10	10	10	10	10	10	10	10	10	9	10	10	10	5	10	10	10	10	10	10	10	8	3	3	9.1
9	4	4	4	2	6	8	10	3	8	10	10	10	7	8	9	10	10	10	10	10	10	10	9	9	8.0
10	10	5	4	7	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	9.4
11	10	10	10	10	10	10	6	1	7	9	9	9	10	10	10	10	10	8	5	5	5	0	0	0	7.2
12	2	2	2	1	1	1	1	1	4	9	9	9	10	10	10	10	10	10	10	10	10	9	9	8	6.6
13	8	8	8	9	10	10	10	10	10	9	10	10	10	10	10	10	10	10	10	10	10	10	10	10	9.7
14	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10.0
15	10	10	10	10	10	10	10	10	10	9	9	9	10	10	10	10	10	10	10	10	10	8	9	8	9.7
16	9	10	8	8	9	10	10	10	10	10	10	10	9	10	3	10	10	10	10	10	10	10	10	10	9.4
17	9	7	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	9.8
18	10	10	10	10	1	1	6	4	1	1	4	5	1	0	3	3	3	4	3	10	10	10	10	10	5.4
19	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	5	6	6	6	7	7	9.0
20	5	5	5	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	0	0	1	1	1	7.4
21	1	1	1	1	1	1	4	4	4	4	5	4	0	0	0	6	10	10	10	10	10	10	9	9	4.8
22	9	9	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	9	9	10	10	9.8
23	10	10	10	10	10	10	10	10	10	10	10	8	8	7	9	7	8	8	5	5	8	8	10	10	8.8
24	10	10	10	4	3	3	4	1	1	1	1	1	2	1	1	1	1	1	10	10	10	7	7	7	4.5
25	10	10	10	10	10	10	10	10	10	10	10	10	10	4	1	1	1	1	7	7	7	2	2	2	6.9
26	2	2	2	1	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	7	5	10	1.7
27	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10.0
28	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	9	9	6	9.8
29	3	3	2	2	6	8	8	7	7	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	8.2
30	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	7	8	10	7	7	9	9	9.5
31	10	5	3	4	4	8	8	8	7	7	2	2	1	1	0	0	0	0	0	0	0	1	2	4	3.2
Mean	6.7	6.3	6.3	6.4	6.5	7.3	7.4	7.1	7.1	7.3	7.4	6.9	6.6	6.1	6.1	6.4	6.6	6.5	7.1	7.1	7.0	6.7	6.7	6.8	6.7

Camp Century

Table 28: Hourly Cloud Amounts - January 1963

Time (LST)

Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Mean
1	10	10	10	10	10	6	3	6	6	7	3	8	7	7	6	5	4	5	6	8	6	6	8	6	6.8
2	3	3	7	7	5	4	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1.2
3	0	4	4	1	0	0	0	0	7	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	6.9
4	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	7	8	8	8	10	10	10	10	10	9.6
5	10	10	10	10	8	8	9	5	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3.0
6	1	1	1	1	2	2	2	2	3	4	4	6	10	10	10	10	10	10	10	9	9	10	10	10	6.1
7	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10.0
8	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	7	6	4	6	5	7	8	10	8.9
9	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10.0
10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10.0
11	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10.0
12	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	4	8	6	10	10	10	10	10	9.5
13	10	9	3	2	2	2	3	10	10	10	10	10	10	8	10	10	10	10	10	10	10	10	10	10	8.3
14	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10.0
15	8	10	10	10	10	9	9	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	9.8
16	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	7	10	10	3	3	2	9.0
17	0	0	0	2	10	10	10	10	10	10	10	10	10	10	10	9	1	1	1	4	5	8	10	10	6.7
18	10	10	10	10	10	10	10	10	10	10	10	10	3	2	1	1	1	1	0	0	0	0	0	0	5.4
19	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2	1	1	0	0	0	0	0	0	0.5
20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
21	0	0	0	0	0	0	0	0	0	0	5	7	7	7	10	10	10	10	10	10	0	0	1	0	3.6
22	0	0	0	0	0	0	0	0	0	5	4	4	2	1	0	0	0	0	0	0	0	0	0	0	0.7
23	0	1	1	1	0	0	0	0	0	1	7	6	2	0	0	0	0	0	0	1	1	1	7	8	1.5
24	8	10	10	10	10	10	10	10	10	10	10	10	10	10	10	6	4	0	1	0	0	0	0	0	6.6
25	0	0	0	0	0	0	0	0	0	1	1	4	7	8	10	8	10	10	10	10	2	8	9	8	4.4
26	10	10	10	10	10	10	4	5	4	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	9.3
27	10	10	10	10	10	10	10	10	10	10	4	2	1	4	8	10	8	2	0	0	0	1	1	1	5.9
28	2	2	2	2	2	2	9	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	6	7.8
29	6	7	6	4	3	4	5	2	3	2	2	3	3	2	1	1	1	1	1	0	0	2	10	10	3.3
30	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10.0
31	10	10	7	10	10	5	9	10	10	8	10	10	10	10	9	10	10	10	10	10	10	10	10	8	9.4
Mean	6.4	6.7	6.5	6.5	6.5	6.2	6.3	6.5	6.6	7.1	7.1	7.5	7.2	7.1	7.3	7.1	6.4	6.2	5.9	6.4	5.7	6.0	6.7	6.4	6.6

Camp Century

Table 29: Hourly Cloud Amounts - April 1963

Time (LST)

Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Mean
1	3	3	3	3	3	3	10	4	6	10	10	5	8	10	4	3	2	2	0	0	0	2	2	2	4.1
2	2	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	3	3	3	9	10	1.5
3	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	8	6	10	10	8	9.7
4	10	10	10	10	10	10	10	10	10	10	10	6	10	10	10	10	10	10	10	10	10	10	10	10	9.8
5	10	10	10	10	10	4	8	10	10	10	10	10	10	10	10	10	10	10	6	10	5	9	10	10	9.2
6	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10.0
7	10	10	10	10	10	10	10	6	5	5	5	3	4	4	4	4	4	6	10	10	9	9	10	10	7.4
8	10	10	10	10	10	10	10	10	10	10	10	10	8	2	0	1	1	1	2	10	10	6	7	7	7.3
9	4	6	7	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	8	8	10	10	9.3
10	10	10	10	10	10	9	10	10	10	2	2	1	3	10	10	3	2	0	7	8	6	8	9	7	7.0
11	6	6	6	3	2	0	0	0	0	3	1	1	4	10	10	7	10	10	10	10	10	10	6	6	5.5
12	8	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	5	1	1	2	0	1	3	2	7.2
13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
17	7	5	4	4	7	7	8	8	8	7	6	2	0	0	0	0	0	0	0	0	0	0	0	0	3.0
18	0	0	0	1	1	1	1	0	1	1	1	1	1	1	0	1	0	1	1	1	1	1	3	3	0.9
19	3	3	3	2	2	2	3	5	3	5	5	6	6	5	3	3	2	3	2	2	1	1	1	1	3.0
20	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2
21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	6	6	7	7	7	1.5
22	7	7	5	7	6	4	2	1	0	10	10	10	7	6	2	0	0	2	3	5	2	0	0	0	4.0
23	1	2	3	6	2	0	0	0	0	4	3	0	6	10	10	10	5	2	2	2	2	2	2	2	3.2
24	3	5	3	2	2	2	2	2	2	0	10	3	3	2	0	10	10	10	10	10	10	10	10	10	5.5
25	10	10	10	10	2	0	3	3	3	4	3	5	6	8	8	8	5	5	10	10	10	10	10	10	6.8
26	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	9	9	8	7	5	9.5
27	5	3	1	1	1	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.6
28	0	0	0	0	2	1	2	2	1	1	4	4	5	5	7	9	8	9	10	7	10	10	9	10	4.8
29	10	10	5	10	10	4	10	10	10	10	10	10	10	7	10	3	1	1	0	0	0	0	0	0	5.9
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0.1
Mean	5.0	5.1	4.8	5.0	4.7	4.0	4.7	4.4	4.3	4.7	5.0	4.2	4.7	5.0	4.6	4.4	3.8	3.8	4.3	4.8	4.3	4.5	4.9	4.7	4.6

Camp Century

Table 30: Hourly Cloud Amounts - July 1963

Time (LST)

Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Mean
1	10	10	10	10	4	3	2	2	0	0	0	0	0	0	0	2	6	9	10	10	10	7	8	9	5.1
2	10	10	7	10	10	10	10	10	10	0	0	0	1	1	2	3	2	1	1	1	0	0	0	0	4.1
3	0	0	0	1	2	8	10	10	9	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	7.9
4	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	9	8	4	7	10	7	10	2	3	8.7
5	7	1	10	10	2	2	3	3	5	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	8.0
6	10	10	10	10	10	9	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10.0
7	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10.0
8	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10.0
9	10	10	10	10	10	10	10	10	10	10	10	9	9	10	10	10	10	10	10	10	10	10	10	10	9.9
10	10	10	10	10	10	10	10	10	9	10	10	10	10	10	10	10	10	10	10	10	10	10	10	7	9.8
11	10	8	8	2	10	6	5	10	10	10	10	10	10	10	10	10	10	10	10	10	10	1	1	2	8.0
12	3	2	3	3	3	3	2	3	1	0	0	0	0	0	0	0	0	0	1	2	3	4	6	5	1.8
13	7	7	8	8	8	8	9	10	10	10	10	10	10	10	8	9	8	7	3	1	1	1	0	0	6.8
14	0	0	0	1	1	1	2	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0.3
15	0	0	0	0	6	10	10	10	10	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2.2
16	0	0	0	0	0	0	1	2	2	6	7	3	3	5	7	8	8	7	7	7	6	7	8	6	4.2
17	1	1	1	0	0	0	0	2	2	2	2	6	10	10	10	10	10	10	1	3	1	0	0	1	3.5
18	0	2	6	6	6	4	9	10	2	6	8	2	2	1	1	2	2	2	1	1	1	1	1	1	3.2
19	1	1	1	1	1	4	8	4	2	1	1	0	0	0	0	0	8	10	10	2	3	4	7	9	3.2
20	9	9	10	10	8	5	5	4	3	2	2	3	2	2	6	7	7	3	1	1	1	1	5	4	4.6
21	5	4	2	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	0	0	0	0	0.8
22	0	0	0	2	3	3	6	4	8	7	10	10	10	10	10	10	8	8	8	2	1	1	1	4	5.2
23	8	8	10	10	10	8	10	10	5	3	3	2	1	1	1	0	0	0	0	0	0	0	0	0	3.8
24	0	0	0	0	2	3	2	2	9	8	8	7	7	7	7	8	6	6	4	3	1	1	0	0	3.8
25	0	1	1	6	8	10	2	2	1	0	0	0	0	0	0	2	6	6	6	10	10	8	8	8	4.0
26	5	5	10	10	10	10	10	10	10	8	10	10	3	7	10	10	10	10	10	10	10	10	10	10	9.1
27	9	9	10	10	10	10	10	10	10	7	7	10	10	10	10	10	10	10	10	10	10	10	10	10	9.7
28	10	10	10	10	10	10	10	10	10	10	9	8	10	10	10	10	10	10	9	9	8	10	10	10	9.7
29	10	10	5	2	10	10	10	9	9	9	10	10	10	10	10	10	10	10	10	10	10	10	10	10	9.3
30	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10.0
31	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10.0
Mean	6.0	5.7	6.2	6.2	6.6	6.6	7.0	7.0	6.7	6.3	6.4	6.1	6.1	6.3	6.6	6.8	7.1	6.9	6.5	5.9	5.9	5.7	5.7	5.8	6.3

Tuto West

Table 31: Hourly Cloud Amounts - October 1962

Time (LST)

Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Mean
1	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1
2	0	0	0	7	10	10	10	10	10	10	9	8	9	9	9	9	9	9	10	10	10	10	10	10	8.2
3	10	8	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	9.9
4	10	10	8	8	9	9	9	9	9	8	2	2	1	1	1	1	1	1	1	1	0	0	0	0	4.2
5	0	0	0	0	0	1	1	3	3	2	2	4	6	9	9	9	9	9	8	1	0	0	0	0	3.2
6	0	0	0	0	0	0	0	0	0	2	4	3	7	7	8	9	8	8	10	6	3	3	3	2	3.5
7	2	2	2	2	4	4	4	10	10	10	10	10	10	10	10	10	10	10	10	10	10	3	6	10	7.5
8	10	10	10	8	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	8	9	10	10	10	9.8
9	10	9	8	5	6	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	9	10	10	9.5
10	10	10	10	9	8	8	9	8	9	10	10	10	10	10	9	6	3	3	7	5	4	3	9	10	7.9
11	9	6	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	9	1	1	0	0	0	7.8
12	0	0	1	2	2	5	8	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	7.8
13	5	5	3	2	2	2	6	8	7	5	4	4	8	10	10	10	10	10	10	10	10	10	10	10	7.1
14	10	10	10	10	10	10	8	10	9	3	3	3	3	10	10	10	10	10	10	10	10	10	10	10	8.7
15	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10.0
16	10	10	10	10	10	10	10	10	10	10	10	10	10	9	8	10	10	7	6	4	6	5	4	7	8.6
17	8	9	5	3	4	4	6	10	8	8	8	10	10	10	10	10	10	10	10	10	10	10	9	8	8.3
18	10	10	9	10	10	10	10	10	10	10	10	10	10	10	10	10	9	8	5	5	8	3	3	2	8.4
19	8	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	9.9
20	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	7	7	9.7
21	7	9	7	7	7	8	5	5	1	1	1	1	2	3	4	4	9	10	10	10	10	10	10	10	6.3
22	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10.0
23	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	8	10	10	10	10	10	9.9
24	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10.0
25	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	8	4	3	2	0	0	0	0	0	7.0
26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
27	0	1	1	2	7	8	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	8.3
28	10	10	10	10	10	10	10	10	7	10	9	10	10	10	10	10	10	10	9	9	9	10	10	10	9.7
29	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10.0
30	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	7	7	8	4	4	9.2
31	3	3	3	5	8	10	10	10	10	10	10	9	9	5	4	10	10	4	2	7	10	10	10	10	7.6
Mean	6.8	6.8	6.7	6.8	7.4	7.7	8.0	8.5	8.2	8.0	7.8	7.9	8.2	8.5	8.5	8.6	8.5	8.1	8.0	7.2	7.3	6.9	6.9	7.1	7.7

Tuto West

Table 32: Hourly Cloud Amounts - January 1963

Time (LST)

Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Mean
1	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	8	9.9
2	8	7	5	5	5	3	0	0	0	0	0	1	1	1	1	2	2	2	2	2	2	7	8	7	3.0
3	7	5	5	5	6	6	8	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	8.8
4	10	10	10	10	10	10	10	10	10	10	10	10	10	10	7	6	8	8	10	10	10	10	10	10	9.5
5	10	10	10	10	10	10	8	9	9	9	9	6	4	3	2	2	2	2	2	1	1	1	1	4	5.6
6	7	8	9	6	7	7	8	4	4	4	4	4	4	9	10	10	10	10	10	10	10	10	10	10	7.7
7	10	10	10	10	10	10	10	10	10	10	10	9	10	10	10	10	10	10	10	10	10	10	10	10	10.0
8	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10.0
9	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10.0
10	10	10	8	5	6	6	9	9	9	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	9.2
11	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10.0
12	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	9	10.0
13	9	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10.0
14	10	10	10	10	10	10	10	10	8	10	10	10	10	10	10	6	9	10	10	10	9	10	10	10	9.7
15	10	10	10	4	3	2	2	0	0	4	8	9	10	10	10	10	10	10	10	10	10	10	10	10	7.6
16	10	10	10	10	10	10	10	10	10	10	10	9	9	10	9	10	10	10	10	10	10	10	10	10	9.9
17	10	10	7	8	10	8	10	10	10	8	8	6	6	7	7	8	8	7	8	9	8	8	9	10	8.3
18	10	10	10	10	10	10	10	7	4	3	3	4	1	0	0	0	0	0	0	0	0	0	0	0	3.8
19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
20	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	1	1	0	0	0	0	0	0	0	0.2
21	0	1	1	0	0	0	0	0	0	2	2	3	4	4	4	4	2	0	0	0	0	0	0	0	1.1
22	0	0	0	0	0	0	0	0	1	1	2	2	2	2	2	1	0	0	0	0	0	1	1	1	0.7
23	1	1	1	1	1	1	1	1	1	2	2	2	2	2	2	0	0	0	0	0	0	0	0	0	0.9
24	0	0	0	1	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	6	8.2
25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
29	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
31	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Mean	7.1	7.2	6.9	6.5	7.0	6.8	6.9	6.7	6.5	6.8	7.1	6.9	6.8	7.0	6.9	6.7	6.8	6.6	6.8	6.8	6.7	7.0	7.0	6.9	6.8

Tuto West

Table 33: Hourly Cloud Amounts - April 1963

Time (LST)

Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Mean
1	10	9	8	10	10	5	4	4	4	2	4	6	9	10	0	1	4	4	5	3	3	2	1	0	4.9
2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
3	0	0	0	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	1	5	2	1	0	0	0.7
4	0	0	2	7	10	10	10	10	10	10	10	10	10	9	10	10	10	10	10	10	10	10	10	10	8.7
5	10	10	10	10	10	8	7	8	3	8	4	3	1	1	1	0		7	7	5	7	8	8	7	6.0
6	7	8	10	10	10	10	10	10	10	10	10	10	10	8	9	7	6	7	7	8	8	6	6	6	8.5
7	3	2	2	2	0	0	0	0	0	0	0	0	0	2	2	7	9	9	3	7	9	10	10	10	3.6
8	10	10	10	10	8	10	10	10	10	10	6	0	1	2	6	8	10	10	10	10	10	10	10	10	8.4
9	10	8	8	7	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	7	9.6
10	7	10	10	10	8	7	6	3	2	8	9	6	1	0	0	0	0	3	3	3	4	3	0	0	4.3
11	0	0	0	0	0	0	1	0	0	0	0	1	1	4	4	3	3	3	2	3	3	3	3	5	1.6
12	7	8	8	8	8	9	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	9.5
13	3	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2
14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	2	1	1	1	1	0	0	0.4
15	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1
16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0.2
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	0.2
19	2	2	3	2	2	0	0	0	0	0	4	4	5	5	6	5	5	5	4	3	3	3	4	3	2.9
20	3	3	2	2	2	2	2	2	2	2	2	2	2	2	2	2	5	6	9	9	4	4	2	1	3.1
21	1	0	0	2	2	2	2	1	9	5	10	9	8	5	8	10	10	10	10	10	10	10	10	10	6.4
22	10	10	10	10	10	10	10	10	10	10	10	10	10	5	8	8	8	8	5	8	8	10	10	10	9.1
23	10	10	10	10	10	10	10	10	5	5	10	10	10	10	10	10	7	7	6	6	5	4	4	2	8.0
24	2	2	1	1	6	10	10	10	10	10	9	8	8	8	8	8	8	8	8	8	9	9	9	9	7.5
25	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10.0
26	10	10	10	10	8	10	10	10	10	10	5	5	5	3	0	0	4	10	10	10	8	7	7	2	7.2
27	7	9	9	9	9	10	10	10	10	10	8	5	5	5	5	5	4	5	1	1	0	0	0	2	5.8
28	2	2	1	0	0	0	1	5	4	1	0	0	0	0	0	0	0	0	0	0	3	4	3	3	1.2
29	3	2	0	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.4
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
Mean	4.3	4.3	4.1	4.4	4.5	4.5	4.5	4.5	4.3	4.4	4.4	4.0	3.9	3.6	3.6	3.8	4.2	4.8	4.4	4.7	4.6	4.5	4.3	4.0	4.3

Tuto West

Table 34: Hourly Cloud Amounts - July 1963

Time (LST)

Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Mean
1	8	8	8	8	8	9	9	9	8	6	6	6	8	9	10	10	8	8	8	8	2	0	0	0	6.8
2	0	0	0	0	0	0	1	1	3	3	3	3	3	3	5	8	8	8	10	10	10	10	10	10	4.5
3	8	4	6	6	7	8	9	10	10	10	10	10	10	10	10	10	10	10	10	10	10	9	9	9	9.0
4	10	10	10	10	10	10	10	10	10	9	10	10	10	9	10	10	10	10	10	10	9	10	10	10	9.9
5	10	10	10	10	9	4	6	6	6	6	7	7	9	9	10	10	10	10	10	10	10	10	10	10	8.7
6	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10.0
7	10	10	10	10	10	10	9	10	10	9	9	8	6	6	6	9	10	10	10	10	10	10	10	10	9.2
8	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	9	10	9	9	10	10	10	10	9.9
9	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10.0
10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	9	10	10	10	10	10	10.0
11	10	10	10	10	10	10	10	10	9	9	9	8	9	9	9	9	9	7	7	10	10	10	9	9	9.3
12	8	7	7	7	7	6	5	4	0	0	0	0	0	2	4	5	8	8	9	6	2	2	6	6	4.5
13	5	5	6	6	6	8	9	9	10	9	8	7	10	10	10	10	10	10	10	10	10	10	10	10	8.7
14	8	6	3	4	6	8	7	5	3	1	3	3	2	2	2	2	2	2	2	1	4	4	4	4	3.7
15	4	4	5	4	6	8	10	10	10	9	6	3	0	0	0	0	0	0	0	0	6	9	9	1	4.3
16	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	3	3	7	8	5	6	2	1.6
17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
18	0	1	3	2	3	7	10	10	9	4	4	4	3	3	3	1	0	1	4	2	2	1	5	5	3.6
19	5	5	5	5	4	4	7	4	1	0	0	0	0	1	4	2	3	3	1	2	1	10	10	10	3.6
20	10	10	10	10	10	10	6	4	10	10	9	10	8	5	3	3	2	6	10	10	10	10	9	10	8.1
21	9	9	7	1	1	2	2	3	2	1	1	2	3	2	1	2	1	3	2	2	2	3	3	4	2.8
22	3	3	3	3	3	3	3	6	9	9	8	7	6	4	3	3	6	5	3	6	5	2	2	2	4.5
23	10	10	5	10	10	8	6	6	7	7	7	7	7	7	6	6	5	5	5	1	1	1	0	0	5.7
24	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
25	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	6	2	5	9	10	10	6	9	8	2.8
26	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	9	9	9	9	9.8
27	10	10	10	10	10	10	10	10	10	10	10	8	7	9	10	8	9	10	8	6	6	6	5	4	8.6
28	4	4	4	6	6	6	7	7	7	8	4	3	2	2	2	1	0	1	1	1	4	4	3	3	3.8
29	7	8	7	5	8	5	2	2	2	1	1	1	1	1	1	1	1	2	2	2	2	2	1	2	2.8
30	2	1	2	3	4	5	6	10	10	10	10	10	10	10	10	10	10	10	9	9	9	9	9	9	7.8
31	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10.0
Mean	6.5	6.3	6.2	6.1	6.4	6.5	6.6	6.7	6.6	6.2	6.0	5.7	5.6	5.6	5.8	6.0	5.9	6.4	6.5	6.5	6.5	6.5	6.7	6.4	6.3

Table 35: Hourly Cloud Amounts - October 1962

Time (LST)

Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Mean
1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
2	0	0	3	10	9	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	8.8
3	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	5	4	9.5
4	9	10	8	10	10	10	10	10	10	8	0	2	0	0	0	0	1	1	1	0	0	0	0	0	4.2
5	0	0	0	0	0	1	0	8	4	0	1	1	1	10	10	10	10	4	2	0	0	0	0	0	2.6
6	0	0	0	0	0	0	0	0	0	0	5	4	6	10	10	10	10	10	10	10	5	5	10	0	4.8
7	4	2	5	6	5	3	10	10	10	10	10	10	10	9	10	10	10	10	10	10	10	9	2	5	7.9
8	10	10	10	10	7	10	10	10	10	10	10	10	10	10	10	10	10	10	6	6	6	3	10	10	9.1
9	10	7	8	7	10	8	10	10	7	8	7	4	5	6	9	10	10	10	10	9	4	5	10	10	8.1
10	10	4	9	6	6	7	4	4	5	9	9	9	10	10	9	9	3	4	4	6	5	9	10	10	7.1
11	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	9	0	0	0	0	0	7.9
12	0	1	1	1	2	7	8	9	9	8	10	10	10	10	10	10	10	8	9	9	9	9	10	4	7.3
13	2	3	3	3	4	10	10	9	8	6	5	3	7	9	10	10	10	10	10	10	10	10	10	10	7.6
14	10	10	10	10	10	10	9	9	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	9.9
15	10	10	10	10	10	10	10	10	10	10	10	9	10	10	10	10	10	10	10	10	10	10	10	10	10.0
16	10	10	10	10	10	10	10	10	10	10	10	10	10	8	5	10	10	8	4	4	6	3	3	6	8.2
17	6	5	5	5	6	5	5	7	9	9	9	9	9	10	10	10	10	9	5	9	10	10	10	5	7.8
18	7	8	8	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	6	7	3	3	0	1	8.0
19	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10.0
20	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	9	10	10	10	9	10	9.9
21	8	8	0	7	3	4	5	3	2	2	2	3	3	3	3	5	10	10	10	10	10	10	10	10	5.9
22	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	9	7	6	5	10	8	10	10	9.4
23	6	10	10	10	10	10	10	10	10	10	10	10	9	8	7	7	6	6	7	8	10	10	10	10	8.9
24	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10.0
25	10	10	10	10	10	10	10	10	10	10	10	10	10	9	9	7	1	0	1	1	1	1	1	1	6.8
26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
27	0	0	0	1	10	8	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	8.3
28	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10.0
29	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	5	7	9.7
30	10	10	10	10	10	10	9	10	10	10	10	10	10	10	10	10	10	10	7	10	10	10	10	8	9.8
31	10	10	10	10	10	10	10	10	9	9	10	10	7	4	2	0	8	0	0	7	10	10	10	10	7.8
Mean	6.8	6.7	6.8	7.3	7.5	7.8	8.1	8.4	8.2	8.0	8.0	7.9	8.0	8.3	8.2	8.3	8.3	7.6	7.0	7.1	7.1	6.9	6.9	7.8	7.6

Table 36: Hourly Cloud Amounts - January 1963

Day	Time (LST) 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Mean
1	10	10	10	10	10	10	10	10	10	9	5	5	7	8	8	8	8	8	10	10	10	8	3	2	8.3
2	2	0	0	2	2	2	2	0	0	0	0	2	7	7	5	5	5	5	5	5	9	10	10	6	3.8
3	3	3	3	4	4	6	9	9	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	8.4
4	10	10	10	10	10	10	10	10	10	10	6	6	6	6	2	3	6	8	8	9	9	8	10	10	8.2
5	10	10	9	9	5	7	5	6	7	7	9	6	5	5	5	4	3	0	0	0	0	3	3	5	5.1
6	6	8	9	9	9	8	8	4	4	5	7	8	10	10	10	10	10	10	10	10	10	10	10	10	8.5
7	10	10	10	10	10	10	10	10	10	10	10	9	10	10	10	10	10	10	10	10	10	10	10	10	10.0
8	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10.0
9	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10.0
10	10	10	10	8	7	7	7	10	10	10	10	10	10	10	10	9	10	10	10	10	10	10	10	10	9.5
11	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10.0
12	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	8	9.9
13	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10.0
14	10	10	10	10	10	10	9	10	9	8	10	10	10	10	10	9	6	10	10	10	10	10	10	10	9.6
15	10	6	2	1	0	0	0	0	1	3	9	10	10	10	10	10	10	10	10	10	10	10	10	10	6.8
16	10	10	10	10	10	10	10	10	10	10	10	9	9	9	10	10	10	10	10	10	10	7	8	9	9.6
17	5	5	7	9	9	9	9	9	4	5	7	7	7	7	7	7	7	5	7	5	1	2	7	10	6.5
18	9	10	10	9	9	9	7	2	1	2	4	4	1	1	0	0	0	0	0	0	0	0	0	0	3.3
19	0	0	0	0	0	0	0	0	0	1	2	2	2	2	2	2	1	1	0	0	0	0	0	0	0.6
20	0	0	0	0	0	0	0	0	0	0	1	1	1	2	3	3	2	0	0	0	0	0	0	0	0.5
21	0	0	0	0	0	0	0	0	0	0	1	3	4	10	5	3	2	2	0	0	0	0	0	0	1.2
22	0	0	0	0	0	0	0	0	0	1	2	2	2	2	2	2	1	1	0	0	0	2	2	2	0.9
23	2	1	0	0	0	0	0	0	0	0	2	1	2	2	0	0	0	0	0	0	0	0	0	0	0.4
24	0	0	0	0	9	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	9	9	8	8.1
25	5	6	6	5	4	2	0	0	0	0	1	1	1	1	0	0	0	0	0	9	8	2	1	0	2.2
26	1	1	5	8	10	10	9	9	9	9	9	9	8	9	5	8	8	8	10	10	10	10	10	10	8.1
27	10	10	10	10	10	10	10	10	10	10	10	10	10	10	9	10	9	10	10	10	10	10	10	10	9.9
28	9	9	9	10	10	9	9	9	9	9	10	10	10	10	10	10	10	10	10	10	10	10	10	10	9.7
29	10	10	10	10	10	9	9	9	10	9	10	5	3	1	1	0	1	0	0	4	0	3	10	10	6.0
30	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	6	6	2	9.3
31	5	5	1	1	1	3	7	6	8	8	8	10	10	10	10	10	10	10	9	9	9	10	10	10	7.5
Mean	6.7	6.6	6.5	6.6	6.7	6.8	6.8	6.5	6.5	6.6	7.2	7.1	7.3	7.5	6.9	6.9	6.7	6.7	6.7	7.1	7.0	6.8	7.1	6.8	6.8

Table 37: Hourly Cloud Amounts - April 1963

Day	Time (LST)																								
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Mean
1	10	10	4	8	10	5	4	3	1	1	1	1	2	3	1	1	1	6	6	1	1	1	0	0	3.4
2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
3	0	0	0	0	1	1	1	1	1	1	1	0	0	1	0	0	1	1	3	3	4	1	1	0	0.9
4	0	1	4	7	10	10	10	8	8	7	9	10	8	10	9	9	10	10	10	10	10	10	10	7	8.2
5	10	9	8	8	10	7	6	6	6	6	2	3	2	2	1	0	0	2	7	6	6	6	4	4	5.0
6	4	4	7	10	10	10	10	10	10	10	10	10	10	10	7	4	5	5	5	7	5	1	7	9	7.5
7	8	1	1	1	0	0	0	0	0	0	0	0	2	2	1	5	8	9	3	7	10	10	10	10	3.7
8	10	10	10	10	9	9	10	10	10	10	2	1	2	9	7	9	10	10	10	10	10	10	10	10	8.7
9	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	8	10	10	10	10	10	10	9.9
10	10	10	10	10	10	10	3	3	7	8	10	10	2	0	0	0	0	0	2	2	0	0	0	0	4.5
11	0	0	1	1	3	2	3	1	1	1	2	1	3	5	2	2	1	7	2	0	2	3	3	3	2.0
12	4	6	8	8	9	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	8	4	4	8.8
13	3	3	3	0	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	0	2	2	0.9
14	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	4	4	6	6	3	1	0	1.2
15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0.1
18	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0.2
19	1	1	3	1	0	0	0	0	0	1	2	6	6	6	4	2	2	2	1	1	1	2	3	2	2.0
20	2	2	2	2	1	1	1	2	2	3	2	2	3	2	2	3	7	9	9	10	3	3	1	1	3.1
21	2	0	0	1	1	1	1	5	10	8	8	5	5	5	7	6	6	10	10	10	10	10	10	10	5.9
22	10	10	10	10	10	10	10	10	10	10	10	10	2	1	3	3	8	10	8	8	9	10	10	10	8.4
23	10	10	10	10	10	10	10	10	9	10	10	10	10	10	10	10	10	10	5	4	4	3	2	3	8.3
24	2	3	2	7	10	8	7	7	8	6	6	6	7	7	7	7	7	8	10	10	8	7	8	8	6.9
25	8	8	7	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	9.7
26	10	10	10	10	10	10	10	10	10	5	3	3	2	0	0	1	2	10	10	10	10	4	2	3	6.5
27	5	5	8	8	10	10	10	10	10	7	6	3	3	3	3	3	2	2	3	0	0	0	0	0	4.6
28	0	2	2	1	0	0	0	0	0	0	0	0	1	0	1	1	4	4	4	4	2	1	0	0	1.3
29	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
Mean	4.1	3.9	4.0	4.4	4.9	4.6	4.2	4.2	4.5	4.1	3.8	3.7	3.3	3.5	3.2	3.2	3.8	4.9	4.7	4.7	4.5	3.8	3.7	3.6	4.1

Table 38: Hourly Cloud Amounts - July 1963

	Time (LST)																								
Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Mean
1	10	10	10	8	8	7	9	9	9	8	9	9	8	8	9	9	6	7	7	7	2	0	0	0	7.0
2	0	0	0	0	0	0	0	0	0	1	1	1	2	6	6	6	5	3	2	1	1	0	0	0	1.5
3	0	6	6	6	6	5	7	9	10	10	10	10	10	10	10	10	10	10	10	10	10	9	10	10	8.5
4	10	10	10	10	9	10	10	10	9	9	9	10	7	7	10	9	9	10	10	8	6	5	4	10	8.8
5	8	8	5	3	6	3	2	6	9	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	8.3
6	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10.0
7	10	10	10	10	10	10	10	10	10	9	9	7	7	8	9	9	10	10	10	10	10	10	10	10	9.5
8	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	8	9	10	10	10	10	10	10	9.9
9	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10.0
10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10.0
11	10	10	10	10	10	10	10	10	10	9	10	10	10	10	10	8	7	6	5	5	9	10	7	7	8.9
12	5	3	3	5	8	5	3	0	0	1	2	2	1	3	3	5	5	5	7	8	8	9	9	9	4.5
13	9	10	10	10	10	10	10	9	8	4	4	6	5	5	10	9	10	10	10	10	10	10	10	8	8.6
14	7	4	3	4	6	7	7	2	4	4	4	6	3	2	2	1	0	0	0	0	1	2	1	1	3.0
15	1	1	2	6	7	3	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1.0
16	0	0	0	0	0	0	0	0	1	1	1	0	1	1	1	1	1	2	2	3	4	4	4	3	1.2
17	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	1	0	1	1	0.2
18	1	2	2	2	2	3	10	10	7	5	4	4	3	2	2	1	0	0	0	0	0	0	1	2	2.6
19	2	2	5	4	4	2	2	1	1	1	1	0	0	1	1	1	1	2	1	1	1	1	1	1	1.5
20	1	1	1	1	1	1	2	4	5	5	6	6	5	5	5	2	2	3	3	4	3	3	3	3	3.1
21	3	3	3	3	3	3	3	3	2	2	2	1	1	1	1	1	1	1	2	2	2	2	1	2	2.0
22	2	5	6	4	3	4	4	5	6	6	6	7	5	5	5	3	3	4	4	4	2	1	1	1	4.0
23	2	4	5	7	7	5	6	6	7	8	8	10	10	7	6	5	4	3	2	2	2	2	2	2	5.1
24	2	2	3	2	2	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.6
25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	2	4	8	10	6	4	4	1.7
26	4	8	10	10	9	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	9	10	10	9.6
27	10	10	10	10	10	10	10	10	10	10	10	8	7	10	10	10	10	10	8	4	7	8	8	7	9.0
28	3	4	3	8	8	7	6	8	8	6	6	5	5	4	4	4	2	3	2	1	3	5	4	4	4.7
29	2	4	4	4	3	2	1	1	1	0	0	0	0	0	0	1	2	2	3	3	3	3	4	2	1.9
30	3	3	3	3	3	4	8	9	10	10	10	10	10	10	10	10	9	8	9	9	7	4	10	10	7.6
31	10	10	10	9	9	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	9.9
Mean	5.0	5.5	5.6	5.8	5.9	5.6	5.9	5.9	6.0	5.8	5.9	5.9	5.5	5.7	6.0	5.7	5.4	5.5	5.5	5.5	5.5	5.3	5.3	5.4	5.6

Tuto East

Table 39: Hourly Cloud Amounts - October 1962

Time (LST)

Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Mean
1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
2	3	8	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	9.6
3	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	3	1	0	8.9
4	0	0	0	10	10	9	9	10	10	10	2	2	1	2	2	2	5	7	2	2	2	0	0	0	4.0
5	0	0	0	0	0	0	2	3	3	3	2	2	2	3	5	4	4	2	3	1	1	0	0	0	1.7
6	0	0	0	0	0	0	0	0	0	0	1	4	4	5	6	10	6	8	8	10	2	0	10	10	3.5
7	0	0	0	0	10	6	2	9	10	10	10	10	10	10	10	10	10	10	10	8	5	3	3	6	6.7
8	10	9	10	10	8	10	10	10	10	10	10	10	10	10	10	10	10	10	9	8	10	10	10	10	9.7
9	10	10	10	10	10	10	10	10	10	10	10	8	9	10	10	10	10	10	10	10	10	10	10	10	9.9
10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	5	8	10	9.7
11	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	7	0	0	0	0	0	7.8
12	0	0	0	0	3	6	8	9	9	9	9	10	10	10	10	10	10	10	10	10	10	10	8	8	7.5
13	8	7	6	6	6	10	8	8	2	1	1	1	8	10	10	10	10	10	10	10	10	10	10	10	7.6
14	10	10	10	10	10	10	10	10	10	6	8	6	5	9	9	10	7	5	3	10	4	1	0	0	7.2
15	0	0	3	0	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	8.5
16	10	10	10	10	10	10	10	10	10	10	10	10	10	8	9	10	10	10	10	10	10	10	10	10	9.9
17	10	10	10	10	10	10	10	10	10	10	10	10	10	10	8	10	10	8	8	10	10	10	9	10	9.7
18	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10.0
19	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10.0
20	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10.0
21	10	10	10	10	10	8	6	1	2	2	3	7	10	10	10	10	10	10	10	10	10	10	10	10	8.3
22	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	8	10	10	10	10	10	9.9
23	10	10	10	10	10	10	10	10	10	10	10	9	10	10	9	10	10	10	10	10	10	10	10	10	9.9
24	10	10	10	10	9	9	10	10	10	10	10	10	10	9	9	9	10	10	10	10	10	10	10	10	9.8
25	10	10	10	10	10	10	10	10	10	9	10	10	10	10	10	8	3	1	0	0	0	0	0	0	6.7
26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
27	0	0	0	8	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	8.7
28	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10.0
29	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10.0
30	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	0	1	1	1	1	1	7.7
31	8	10	10	10	10	10	10	10	10	10	10	10	8	5	5	5	5	0	0	0	10	10	10	10	7.7
Mean	6.7	6.9	7.1	7.5	8.3	8.3	8.2	8.4	8.3	8.1	7.9	8.0	8.3	8.4	8.5	8.6	8.4	8.1	7.4	7.4	7.3	6.5	6.8	6.9	7.8

Tuto East

Table 40: Hourly Cloud Amounts - January 1963

Time (LST)

Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Mean
1	10	10	10	10	10	10	10	10	10	8	2	3	4	5	6	6	10	10	10	10	10	10	10	10	8.5
2	10	10	10	10	7	2	2	0	1	1	1	1	4	4	5	5	4	3	6	2	5	8	10	10	5.0
3	1	0	0	0	0	0	0	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	7.1
4	10	10	10	10	10	10	10	10	10	10	10	10	10	10	5	2	3	2	10	10	10	10	10	10	8.8
5	10	10	10	10	10	9	6	4	2	5	6	5	5	5	3	1	0	0	5	10	10	10	10	10	6.5
6	10	10	10	10	10	10	10	3	2	2	6	9	10	10	10	10	10	10	10	10	10	10	10	10	8.8
7	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10.0
8	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10.0
9	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10.0
10	10	10	10	10	10	10	8	10	10	10	10	10	10	10	10	10	9	10	9	10	10	10	10	10	9.8
11	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10.0
12	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	9	10.0
13	10	10	10	10	10	8	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	9.9
14	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	6	9	10	10	9.8
15	10	8	7	1	0	10	0	0	5	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	8.0
16	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	7	8	7	9.7
17	4	1	8	7	10	9	9	7	9	10	10	10	10	10	10	10	10	4	4	5	3	7	9	8	7.7
18	10	10	10	10	10	10	10	10	6	10	10	10	10	10	4	0	0	0	0	0	0	0	10	7	6.5
19	6	5	4	2	3	5	3	2	0	0	0	10	8	1	1	1	1	2	0	0	0	0	0	0	2.2
20	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	2	0	0	0	0.5
21	0	0	0	0	0	0	0	0	0	4	10	10	10	10	10	8	6	6	3	2	0	0	0	0	3.3
22	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	0	0	0	0	0	8	10	10	10	1.8
23	7	3	0	0	3	0	0	0	0	1	1	2	2	1	1	0	0	0	0	0	0	0	0	0	0.9
24	0	0	0	2	9	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	8	9	9	8	8.1
25	9	10	10	8	7	0	0	0	0	0	1	2	5	4	4	3	3	9	9	8	7	2	0	0	4.2
26	10	8	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	9.9
27	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10.0
28	10	10	10	10	10	8	8	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	9.8
29	10	10	10	10	10	10	10	3	3	3	3	3	7	2	5	1	1	3	6	10	1	6	10	9	6.1
30	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	8	7	10	9	10	9.7
31	10	10	8	8	7	10	10	8	3	5	6	10	10	10	10	10	10	10	10	9	10	10	10	10	8.9
Mean	8.0	7.6	7.6	7.4	7.6	7.5	7.0	6.7	6.5	7.1	7.4	8.0	8.3	7.9	7.6	7.0	7.0	7.1	7.5	7.6	7.3	7.7	8.2	8.0	7.5

Tuto East

Table 41: Hourly Cloud Amounts - April 1963

Time (LST)

Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Mean
1	10	8	7	5	7	10	5	0	0	0	0	4	10	8	6	0	0	10	1	0	0	0	0	0	3.8
2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
3	0	0	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2
4	3	3	10	10	10	10	10	10	7	6	5	6	6	8	8	10	10	10	10	10	10	10	10	10	8.4
5	10	10	10	7	7	6	3	5	2	1	1	6	6	2	2	0	0	4	5	3	5	5	5	6	4.6
6	9	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	4	7	7	5	4	5	2	8.5
7	2	3	1	1	0	0	0	0	0	0	4	3	5	4	4	1	10	10	1	3	5	10	10	10	3.6
8	10	10	10	10	10	10	10	10	10	10	0	0	1	6	10	9	5	2	10	10	10	10	10	10	8.0
9	10	9	10	10	10	10	10	10	10	10	10	10	10	10	10	5	7	10	10	10	8	10	10	10	9.5
10	10	10	10	10	10	10	10	6	6	6	8	6	1	0	0	0	0	1	6	2	0	0	0	0	4.7
11	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	3	2	3	0.4
12	3	3	4	4	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	8.9
13	10	10	10	10	10	10	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2.5
14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2	1	1	0.4
15	1	1	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2
16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3	0.2
18	2	2	2	2	2	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0.6
19	1	1	0	0	0	0	0	0	0	0	1	2	5	5	5	5	5	5	5	1	1	1	1	1	1.9
20	0	0	0	0	0	0	0	1	1	1	1	1	0	0	1	1	1	2	7	6	6	6	3	2	1.7
21	2	2	2	2	2	2	2	9	10	7	10	4	5	7	7	10	10	10	10	10	10	10	10	10	6.8
22	10	10	10	10	10	10	10	10	10	10	10	10	0	0	0	0	0	1	1	1	2	6	10	10	6.3
23	10	10	10	10	10	10	10	10	10	10	10	10	10	7	7	7	7	10	10	10	10	1	1	1	8.4
24	1	1	0	0	0	0	0	10	10	3	3	10	10	10	10	10	10	10	10	10	10	10	10	10	6.6
25	10	10	10	10	10	10	10	8	6	6	10	9	9	10	6	5	4	10	10	10	10	10	10	10	8.9
26	10	10	10	9	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3	2	2	2	2.2
27	3	8	3	3	3	4	10	10	9	4	1	1	1	0	0	0	1	2	2	4	0	0	0	0	2.9
28	0	0	0	0	0	0	0	1	1	1	1	0	0	0	1	1	4	2	3	3	3	3	3	2	1.2
29	2	2	1	1	3	1	2	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.7
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
Mean	4.3	4.4	4.1	4.2	4.2	4.2	3.8	4.1	3.8	3.2	3.2	3.4	3.3	3.2	3.2	2.8	3.2	3.8	4.0	3.8	3.7	3.8	3.9	3.8	3.7

Tuto East

Table 42: Hourly Cloud Amounts - July 1963

Time (LST)

Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Mean
1	4	4	2	7	5	3	2	3	4	5	8	9	9	9	9	10	2	1	1	0	0	0	0	0	4.1
2	0	0	0	0	0	0	0	0	0	2	0	0	1	2	1	1	2	2	1	1	1	0	0	0	0.6
3	2	7	8	9	10	4	5	7	8	8	10	10	10	10	10	10	10	10	10	10	10	10	10	10	8.7
4	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	1	0	9.2
5	1	1	1	1	1	1	2	4	7	9	9	10	10	10	10	10	10	10	10	10	10	10	10	10	7.0
6	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10.0
7	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10.0
8	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10.0
9	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10.0
10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10.0
11	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	7	6	4	8	10	10	9	4	9.1
12	3	2	3	5	5	4	3	1	1	1	1	1	1	1	1	2	3	8	10	10	9	9	9	10	4.3
13	10	10	10	10	10	10	10	10	10	10	7	7	6	7	8	9	10	10	10	10	10	10	10	10	9.3
14	4	0	0	7	8	8	5	1	1	0	0	0	0	0	0	0	0	0	0	0	0	3	4	3	1.8
15	2	1	2	7	7	4	3	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1.2
16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	3	3	3	3	2	1	0.8
17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0.1
18	1	1	0	0	1	3	8	9	6	2	1	1	1	1	1	0	0	0	0	0	0	0	0	0	1.5
19	1	2	5	5	4	3	1	0	0	0	0	0	1	1	1	2	1	1	1	0	0	0	0	0	1.2
20	0	0	1	0	1	1	2	2	3	3	3	5	5	4	4	3	2	2	2	2	2	2	2	2	2.2
21	2	2	2	2	2	2	2	2	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	2	1.3
22	2	4	4	4	4	3	3	6	7	7	8	7	6	6	6	6	6	4	2	6	4	1	1	0	4.5
23	1	2	2	6	8	4	3	3	3	3	4	4	5	5	3	3	3	3	3	1	1	1	1	1	3.0
24	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2
25	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	3	10	10	7	10	10	2.3
26	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	9	10	10	10.0
27	10	10	10	10	10	10	10	10	10	10	10	8	9	9	10	10	10	9	10	10	7	7	6	5	9.2
28	3	3	3	8	10	10	10	10	9	9	9	8	4	3	3	1	1	1	1	1	4	4	4	4	5.1
29	4	5	3	5	7	4	2	1	1	1	0	0	0	0	0	10	10	10	10	10	10	10	10	10	5.1
30	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	5	5	8	10	10	9	9.5
31	10	10	10	10	10	7	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	9.9
Mean	4.9	5.0	5.1	6.0	6.3	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.8	5.5	5.5	5.4	5.7	5.8	5.7	5.5	5.2	5.5

Table 43: Mean Hourly Cloud Amounts

Camp Century

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Mean
1962																									
Sept.	6.3	6.2	6.5	6.9	7.2	7.2	8.0	8.1	8.3	8.2	8.2	8.0	8.0	7.6	7.2	7.5	7.6	7.5	7.5	7.3	6.4	6.4	6.5	6.6	7.3
Oct.	6.7	6.3	6.3	6.4	6.5	7.3	7.4	7.1	7.1	7.3	7.4	6.9	6.6	6.1	6.1	6.4	6.6	6.5	7.1	7.1	7.0	6.7	6.7	6.8	6.7
Nov.	6.1	6.2	5.7	6.1	6.2	6.2	6.0	6.4	7.0	7.4	7.6	7.4	7.1	7.0	6.0	6.2	6.1	5.7	5.8	5.8	6.2	6.0	6.0	5.6	6.3
Dec.	4.4	4.5	4.5	4.7	4.9	4.9	4.9	4.7	4.8	5.0	4.8	4.9	4.8	4.5	4.7	5.0	4.8	4.7	4.3	4.2	4.4	4.2	4.3	4.5	4.6
1963																									
Jan.	6.4	6.7	6.5	6.5	6.5	6.2	6.3	6.5	6.6	7.1	7.1	7.5	7.2	7.1	7.3	7.1	6.4	6.2	5.9	6.4	5.7	6.0	6.7	6.4	6.6
Feb.	5.4	5.7	4.9	4.8	4.6	4.5	5.0	4.9	5.3	5.4	5.3	6.3	6.1	6.0	6.2	6.3	6.4	6.0	5.5	5.0	5.0	5.3	5.4	5.2	5.4
Mar.	3.9	4.1	3.9	3.5	3.9	4.0	4.5	4.8	4.7	4.8	5.4	5.4	5.8	5.9	5.7	5.5	5.5	5.1	5.1	5.4	5.8	4.9	4.5	4.1	4.8
Apr.	5.0	5.1	4.8	5.0	4.7	4.0	4.7	4.4	4.3	4.7	5.0	4.2	4.7	5.0	4.6	4.4	3.8	3.8	4.3	4.8	4.3	4.5	4.9	4.7	4.6
May	4.2	4.1	4.4	4.6	4.9	4.8	4.6	4.9	5.0	4.8	4.8	3.8	4.4	3.7	4.2	4.1	3.8	3.8	4.1	4.1	4.2	4.0	4.0	3.4	4.3
June	6.1	6.8	6.6	6.1	6.7	6.8	6.6	6.4	6.5	6.3	6.6	6.1	6.3	6.6	6.3	6.1	5.8	5.7	6.3	6.9	6.7	6.2	6.4	6.6	6.4
July	6.0	5.7	6.2	6.2	6.6	6.6	7.0	7.0	6.7	6.3	6.4	6.1	6.1	6.3	6.6	6.8	7.1	6.9	6.5	5.9	5.9	5.7	5.7	5.8	6.3
Aug.	8.5	8.5	8.5	8.5	8.7	8.8	8.9	8.5	8.3	8.4	8.6	8.9	8.6	8.4	8.5	8.0	8.5	8.5	8.4	8.5	8.8	8.8	8.6	8.3	8.6

Tuto East

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Mean
1962																									
Sept.	7.0	6.3	6.6	6.8	7.4	7.8	8.1	7.9	7.9	7.0	7.1	6.8	6.9	6.8	6.8	6.7	6.8	6.4	6.5	6.7	6.1	6.2	6.1	6.3	6.9
Oct.	6.7	6.9	7.1	7.5	8.3	8.3	8.2	8.4	8.3	8.1	7.9	8.0	8.3	8.4	8.5	8.6	8.4	8.1	7.4	7.4	7.3	6.5	6.8	6.9	7.8
Nov.	8.5	8.6	8.1	8.3	8.1	8.2	8.0	7.9	7.4	7.8	8.0	8.5	8.9	8.9	8.5	8.2	8.0	8.0	8.2	8.1	8.3	8.1	8.1	8.1	8.2
Dec.	5.2	5.3	5.3	5.2	5.1	5.7	5.9	6.0	6.2	6.1	6.4	6.1	6.2	6.2	5.8	5.4	5.3	5.2	5.1	4.9	5.2	4.9	5.1	5.4	5.6
1963																									
Jan.	8.0	7.6	7.6	7.4	7.6	7.5	7.0	6.7	6.5	7.1	7.4	8.0	8.3	7.9	7.6	7.0	7.0	7.1	7.5	7.6	7.3	7.7	8.2	8.0	7.5
Feb.	6.1	6.1	6.0	5.5	5.7	4.8	3.8	4.2	4.1	4.7	5.3	5.6	5.3	5.5	5.9	5.6	5.9	5.4	5.1	4.8	5.0	5.5	5.5	5.4	5.3
Mar.	4.8	4.7	4.8	4.8	5.3	5.3	5.1	5.4	4.8	4.8	4.0	4.3	4.6	4.6	5.0	5.2	5.6	5.9	5.1	4.7	4.4	4.3	4.3	5.2	4.9
Apr.	4.3	4.4	4.1	4.2	4.2	4.2	3.8	4.1	3.8	3.2	3.2	3.4	3.3	3.2	3.2	2.8	3.2	3.8	4.0	3.8	3.7	3.8	3.9	3.8	3.7
May	5.0	5.3	5.4	5.6	5.5	5.6	5.2	5.6	5.3	5.7	5.1	5.2	5.2	5.2	5.0	5.0	5.2	5.3	5.4	5.3	5.3	5.4	5.5	5.4	5.3
June	5.0	5.6	5.7	5.8	5.9	6.0	5.8	5.7	5.6	5.4	4.9	4.9	5.3	5.3	5.2	5.4	5.3	5.6	5.6	5.6	5.7	5.6	5.3	5.6	5.5
July	4.9	5.0	5.1	6.0	6.3	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.8	5.5	5.5	5.4	5.7	5.8	5.7	5.5	5.2	5.5
Aug.	8.2	8.0	7.9	8.0	7.9	8.0	7.7	7.7	7.4	7.1	7.2	7.4	7.8	7.4	7.6	7.2	7.5	7.8	8.0	8.2	8.1	8.1	7.8	8.2	7.8

Table 43: Mean Hourly Cloud Amounts (Continued)

Tuto I

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Mean
1962																									
Sept.	6.2	5.9	6.0	6.3	7.0	7.4	7.7	7.8	7.4	6.9	7.1	6.8	6.8	6.8	6.7	6.5	6.0	5.6	5.7	6.0	5.8	5.8	5.7	5.9	6.5
Oct.	6.8	6.7	6.8	7.3	7.5	7.8	8.1	8.4	8.2	8.0	8.0	7.9	8.0	8.3	8.2	8.3	8.3	7.6	7.0	7.1	7.1	6.9	6.9	6.8	7.6
Nov.	7.7	7.3	7.8	7.8	7.5	7.9	7.6	8.2	7.9	8.1	7.8	8.1	8.4	8.3	8.4	8.1	7.6	7.3	7.5	7.7	8.0	8.0	8.2	7.7	7.9
Dec.	4.1	4.0	4.1	4.3	4.0	3.7	3.9	4.4	4.8	5.1	5.8	5.9	6.2	6.1	6.0	5.5	5.4	5.2	5.4	5.3	5.0	5.3	5.0	4.6	5.0
1963																									
Jan.	6.7	6.6	6.5	6.6	6.7	6.8	6.8	6.5	6.5	6.6	7.2	7.1	7.3	7.5	6.9	6.9	6.7	6.7	6.7	7.1	7.0	6.8	7.1	6.8	6.8
Feb.	5.2	4.6	4.8	4.9	4.5	4.1	4.1	4.0	4.5	4.9	5.7	5.8	5.8	5.6	5.5	5.5	5.6	5.7	5.3	4.6	4.4	4.4	4.5	4.1	4.9
Mar.	4.5	4.1	4.1	4.4	4.5	4.9	5.3	5.7	5.5	5.1	5.0	5.2	5.2	5.2	5.4	6.1	6.2	5.9	5.4	4.6	4.1	3.9	4.2	4.2	5.0
Apr.	4.1	3.9	4.0	4.4	4.9	4.6	4.2	4.2	4.5	4.1	3.8	3.7	3.3	3.5	3.2	3.2	3.8	4.9	4.7	4.7	4.5	3.8	3.7	3.6	4.1
May	5.8	6.6	6.4	5.6	5.4	5.5	5.5	5.5	5.2	5.5	6.2	6.0	5.7	5.5	5.4	5.9	5.5	5.7	5.9	6.3	6.4	6.0	6.0	5.9	5.8
June	5.8	5.6	5.9	6.1	6.3	6.3	6.1	5.9	5.7	5.3	5.5	5.7	5.9	6.0	5.9	5.7	6.1	6.1	6.2	6.2	5.8	5.7	5.8	5.8	5.9
July	5.0	5.5	5.6	5.8	5.9	5.6	5.9	5.9	6.0	5.8	5.9	5.9	5.5	5.7	6.0	5.7	5.4	5.5	5.5	5.5	5.5	5.3	5.3	5.4	5.6
Aug.	8.3	8.4	8.3	8.2	8.4	8.7	8.5	8.6	8.3	7.9	8.1	7.8	7.7	7.6	7.7	7.5	7.4	7.6	7.7	8.0	8.2	8.2	8.3	8.3	8.1

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1962																									
Sept.	6.5	6.5	6.6	6.9	7.1	7.5	7.6	7.6	7.3	7.0	7.1	7.1	7.1	6.7	6.6	6.3	5.9	5.7	6.1	6.6	6.3	6.5	6.3	6.5	6.7
Oct.	6.8	6.8	6.7	6.8	7.4	7.7	8.0	8.5	8.2	8.0	7.8	7.9	8.2	8.5	8.5	8.6	8.5	8.1	8.0	7.2	7.3	6.9	6.9	7.1	7.7
Nov.	8.3	8.4	8.4	8.2	7.9	7.7	7.7	7.6	7.7	7.8	7.7	7.9	8.2	8.2	8.4	8.2	8.0	7.8	7.7	7.8	7.7	7.9	7.7	7.8	8.0
Dec.	4.7	4.4	4.5	4.5	4.3	4.2	4.3	4.4	4.4	4.2	4.7	4.9	5.0	5.2	5.2	5.0	5.1	5.3	5.4	5.5	5.5	5.1	5.6	5.2	4.9
1963																									
Jan.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Feb.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Mar.	4.6	4.5	4.5	4.4	4.8	5.3	5.2	5.5	5.4	5.1	4.9	5.2	5.5	5.5	5.7	6.5	6.2	6.6	6.3	5.9	5.2	4.7	4.9	5.1	5.3
Apr.	4.3	4.3	4.1	4.4	4.5	4.5	4.5	4.5	4.3	4.4	4.4	4.0	3.9	3.6	3.6	3.8	4.2	4.8	4.4	4.7	4.6	4.5	4.3	4.0	4.3
May	5.9	6.1	6.0	5.8	5.8	6.0	6.0	6.1	5.6	5.8	6.1	6.2	6.0	5.5	5.8	6.0	5.9	5.7	5.9	6.4	7.0	6.7	6.5	6.3	6.0
June	5.5	5.7	5.9	6.0	6.0	6.2	6.0	6.2	6.1	5.9	5.8	5.9	5.9	6.1	5.8	5.6	5.8	5.8	5.6	5.7	5.7	5.4	5.6	5.7	5.8
July	6.5	6.3	6.2	6.1	6.4	6.5	6.6	6.7	6.6	6.2	6.0	5.7	5.6	5.6	5.8	6.0	5.9	6.4	6.5	6.5	6.5	6.5	6.7	6.4	6.3
Aug.	8.9	8.7	8.8	9.0	9.2	9.2	9.1	9.1	8.9	8.7	8.6	8.7	8.6	8.5	8.3	8.2	8.1	8.3	8.3	8.6	8.9	9.1	9.1	9.2	8.7

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The climatic observations at three stations along the slope and at one station at the edge of the ice cap, east from Thule, were evaluated.

The following elements were analyzed.

Temperature: Annual and diurnal course of temperature, extreme temperatures, aperiodic fluctuation of temperature (also a case of strong warming along the slope was investigated), temperature lapse rates along the NW and SW slopes of the Greenland ice cap.

Wind regime: Frequencies of wind directions, mean wind speed, maximum wind speed.

Cloudiness: Annual and diurnal variation of cloudiness, frequencies of clear and overcast sky, diurnal range of cloudiness; a case of sudden extreme change of cloudiness was analyzed.

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