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NATIONAL INTELLIGENCE SURVEY

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South Africa

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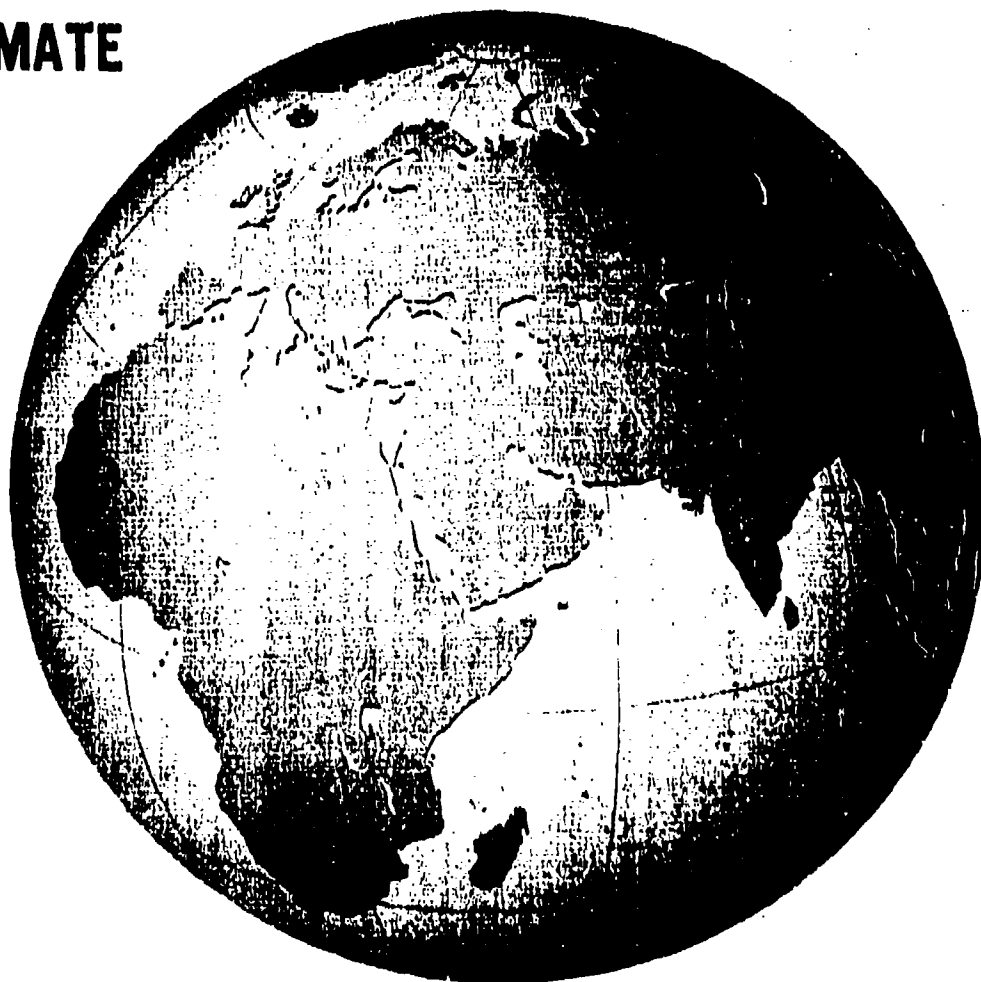
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WEATHER and CLIMATE

Section 23

JANUARY 1972



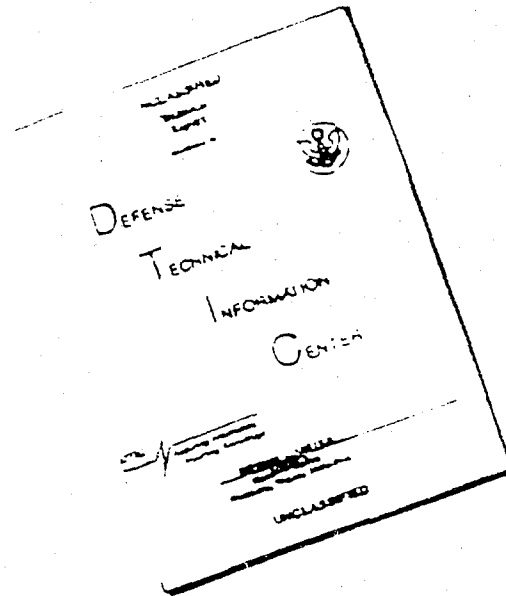
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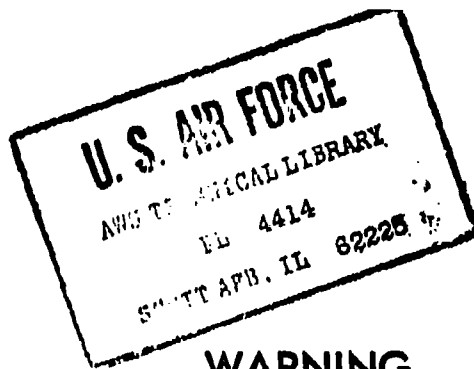


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*This section was prepared for the NIS by the
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Weather and Climate¹

A. General weather and climate

The climate of South Africa² is predominantly tropical and subtropical but is tempered by generally high elevation. Arid conditions prevail on the west coast, but precipitation increases to substantial amounts in the east. Distinct wet and dry periods are experienced throughout most of South Africa. The climate is controlled principally by the general circulation that results from the interaction between year-round high pressure over the adjoining oceans and seasonally changing pressure over the southern part of Africa. During summer (December through February) mean pressure is relatively low over land, and the influx of moist air is frequent. This is the season of maximum precipitation and cloudiness except in the extreme west and southwest, where the prevailing influence of high pressure centered over the Atlantic Ocean brings fine weather. In winter (June through August) mean pressure is relatively high over land, and the weather is usually pleasant and dry in most sections. However, surges of polar air from the cold ocean areas to the south regularly affect the extreme southwest and south coastal sections during winter and bring cold, damp, cloudy, and occasionally stormy weather.

Temperatures are moderate along most of the coastline throughout the year, ranging from mean daily maximums mostly in the 70's (°F.) during summer to mean daily minimums in the 40's and 50's during winter. In the interior, seasonal temperature extremes are more commonplace; mean daily maximums are over 90°F. on much of the plateau in summer, and mean daily minimums are in the 20's at high elevations in the east in winter. Relative humidity is consistently high along the coasts all year. It decreases toward the interior, where it is highest in summer and lowest in winter. Mean annual precipitation ranges from less than 5 inches on the west coast to 40 inches or more in the east, where mean monthly amounts in summer exceed 6 inches on the high slopes that are well exposed to the moist flow. Precipitation falls mostly as rain, but snow occasionally falls during winter at high elevations in the south and southeast. Skies are usually cloudy or partly cloudy in portions of the north and east during summer, but elsewhere sunshine is abundant. Clear skies prevail everywhere in winter except in southwest coastal areas.

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²In this section the term "South Africa" refers to the entire SISA Area, which includes Botswana, Lesotho, the Republic of South Africa, South-West Africa, and Swaziland.

Low ceilings are most frequent in coastal sections and inland in the east to the top of the Drakensberg range. Throughout the year along the west coast, low stratus and fog frequently drift inland from over the cool ocean during the night, but it normally dissipates by afternoon. Visibility is generally good all year. It is most restricted at times along the west coast and in the eastern highlands by fog. Also, low clouds sometimes obstruct visibility on mountain slopes in the extreme southwest and south and in the east, particularly along the Drakensberg range. Thunderstorms are rare along the west and southwest coasts but occur frequently in the eastern highlands and in northern portions of the plateau, where they occur on more than 75 days annually and reach a maximum during summer. Although rare, tornadoes have been known to accompany thunderstorms, mostly in the eastern highlands. Surface winds are mostly light and variable in the interior but are stronger along the coasts, where they occasionally reach gale force (> 27 knots).

South Africa, roughly triangular in shape, occupies the southernmost portion of the African continent, extending from about 17°S. to 35°S., with the easternmost point near 33°E. on the Indian Ocean coastline and the westernmost point near 12°E. on the Atlantic Ocean coastline. The main physical feature of South Africa is an interior plateau. It consists of an extensive high plain that culminates in rugged hills and mountains along the eastern, southern, and western perimeters. The plain generally ranges between 3,000 and 4,000 feet above sea level, and a few mountain peaks are over 10,000 feet in the southeast. There is a more or less abrupt fall from the mountains to the coast, some places in the form of terraces. A narrow belt of low plains parallels the west coast, and discontinuous plains follow the remaining coastline; plain elevations are generally less than 500 feet on the west coast and less than 1,000 feet on the south and east coasts. The following seasonal breakdown is used throughout this section: summer (December through February), autumn (March through May), winter (June through August), and spring (September through November).

B. Climatic controls

The primary factors determining the climate of South Africa are the semipermanent pressure systems that produce the large-scale atmospheric airflow patterns, a variety of air masses, migratory pressure systems and fronts, the topography of South Africa, and the nearby oceans.

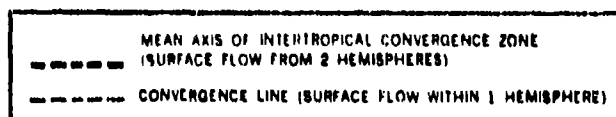
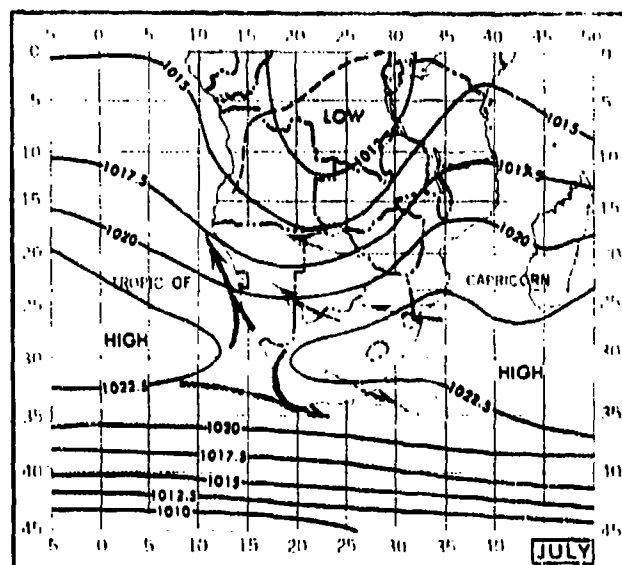
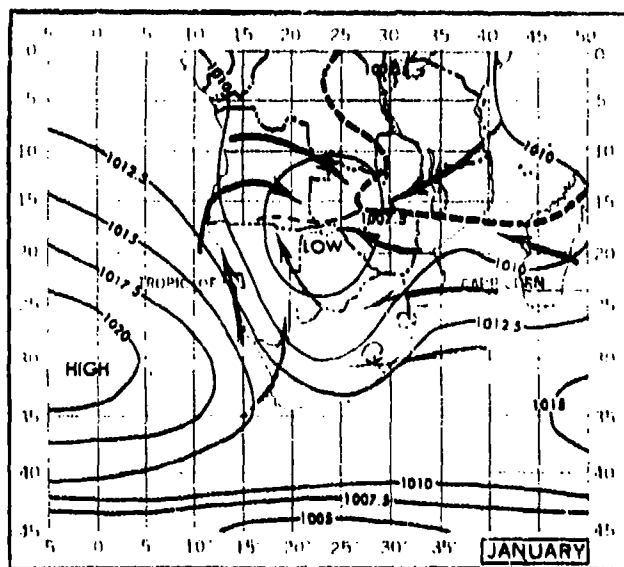


FIGURE 1. Mean sea-level pressure (millibars) and generalized surface airflow, January and July

I. General circulation and air masses

a. MAJOR SEMI-PERMANENT PRESSURE SYSTEMS—

Mean charts show high-pressure centers in the South Atlantic and Indian Oceans throughout the year (Figure 1). Mean pressure over land, however, is more subject to seasonal alterations because of the seasonal movement of thermal low pressure over the southern part of Africa.

During summer the thermal low is furthest south and is centered over the northern border of South Africa, with a trough extending to the southern coast of Africa. The Indian Ocean high is quite removed from the east coast, but the South Atlantic high extends to the west coast. Both highs are weakest and located farthest south in summer, with a weak ridge of high pressure extending between them along the south coast. Mean pressure decreases rapidly toward the subpolar ocean areas, where cyclonic activity is frequent. In response to this mean pressure distribution of summer, moist tropical and subtropical air from the ocean highs flows toward the interior of southern Africa. The flow from the relatively warm Indian Ocean has a long overwater trajectory around the northern periphery of the high and reaches South Africa as moist, unstable air. This airflow produces cloudiness and rain over much of the Area, but in decreasing amounts from east to west across the plateau. The moist airflow from the South Atlantic high recurves inland and reaches South Africa by way of land areas to the north. Initially, it is quite stable along the west coast of South Africa because of strong subsidence aloft and a relatively short trajectory over cool coastal waters. For this reason very little rainfall occurs over west coastal sections of South Africa. However, as the air continues

northward before turning inland it is gradually warmed over warmer waters, subsidence decreases, and the moisture content increases. As a result it produces considerable cloudiness and rain after turning inland. This circulation is normally confined to the area north of South Africa and is bounded by a hemispheric convergence zone separating it from a drier circulation over the interior of South Africa. However, occasionally during summer the convergence zone moves southward, and the moist, unstable air reaches northern sections of the South African plateau.

By winter the thermal low moves to its northernmost position and is replaced across South Africa by a ridge of high pressure that extends between the South Atlantic and Indian Ocean highs. The two high-pressure cells are at maximum intensity and displaced slightly northward of their mean summer positions. The Indian Ocean high is centered much closer to South Africa during winter, but the South Atlantic high varies very little from its summer position relative to the coastline. The steep pressure gradient that has remained south of the continent in summer is displaced northward in harmony with the northward movement of the two ocean highs. As a consequence, the winter circulations are predominantly anticyclonic, and cloud and precipitation amounts reach a minimum in most of the Area. Over the plateau the airflows originate within areas of relatively high pressure and are quite dry. Circulation from the Indian Ocean is more stable than during summer and causes appreciable precipitation only in some extreme eastern sections. The airflow from the South Atlantic high affecting the west coastal sections continues into winter as a stable, rain-

inhibiting flow. Low-pressure systems embedded in the westerly circulation to the south of the continent pass nearer to South Africa during winter. As a result, relatively cold, damp airflows from the higher latitudes regularly affect extreme southwestern and southern positions, and these regions experience greater winter cloud amounts than the rest of South Africa and a winter maximum of precipitation.

b. AIR MASSES—Tropical maritime air masses from the Indian Ocean are a major contributor to the summer rains in much of South Africa. This air has accumulated a deep layer of moisture and is convectively unstable upon reaching South Africa. Orographic lifting over the eastern highlands and convection caused by surface heating effectively release this instability. Cloud and precipitation amounts are substantial in the east, and summer showers and thunderstorms are frequent. The moist air from the Indian Ocean sometimes penetrates to western portions of the plateau during the warmer months of the year, but it is considerably modified. Attendant rainfall, cloud cover, and humidity decrease significantly westward across the plateau. During winter air masses from the Indian Ocean are more stable because of the generally greater proximity and intensity of the high-pressure area. As a rule, moisture is distributed through a more shallow layer during winter; rain occasionally falls in east coastal sections and along the eastern slopes of the Drakensberg range, but sufficient moisture for precipitation seldom penetrates further inland. Tropical maritime air originating in the South Atlantic high influences the west coast throughout the year. Although this air mass is moist near the surface, the stabilizing influences of higher level subsidence and cool coastal waters tend to suppress convection and rainmaking processes and foster the formation of fog and low stratus along the immediate coast. Also, temperatures along the coast are quite low for the latitude, particularly during summer. This stable air prevails over extreme southwest portions of South Africa during summer.

During summer warm and humid equatorial air occasionally moves south over northern portions of the plateau and is mainly responsible for a summer maximum of humidity, cloudiness, precipitation, and thunderstorms in this region of South Africa.

Continental air masses form over the plateau during winter under predominantly anticyclonic conditions. This very dry and stable air is quite persistent on the plateau but is less frequent in the coastal areas. Virtually clear but hazy skies permit bright sunshine with pleasant afternoon temperatures, but after sunset terrestrial radiation causes nighttime temperatures to drop significantly. At high elevations across the more southern latitudes, temperatures are frequently below freezing by morning. Although dry continental air is most dominant during winter, it is not limited to this time of year but also occurs on the plateau during summer between intrusions of humid maritime or equatorial air. In the southwest portion of the plateau, it is the most frequent type of air mass even in summer and contributes to the very hot and dry summers of this region.

Polar maritime air masses from the vast ocean areas to the south regularly move into South Africa during winter. These cold outbursts have a long over-water passage and are generally quite moist and unstable. They bring precipitation, cloudiness, and occasionally strong southwest winds mostly to coastal sections of the extreme southwestern and southern parts of South Africa and are responsible for a winter maximum of precipitation in those areas. Orographic precipitation associated with these air masses is frequent and heavy in the coastal mountains of the extreme southwest. Occasionally, when the polar air is sufficiently cold, snow may fall at high elevations in the southern and southeastern sections. Sometimes the cold air is deep enough to advance onto the plateau, bringing abnormally low temperatures and some cloudiness, but most of the precipitation falls over the coastal mountains and along the southern escarpment. Incursions of polar maritime air are less frequent during summer and are generally confined to coastal sections of the southwest and south, where they occasionally interrupt the otherwise fine summer weather.

2. Migratory pressure systems and fronts

During winter the northern limit of cyclonic activity is near South Africa; low-pressure systems are embedded in the westerly circulation that prevails over the oceans south of the continent, and they move in a general west-to-east direction. Their attendant cold fronts mark the leading edge of the southwest flow of cold, moist air that is drawn northward by the circulation of the cyclonic systems. The extreme southwest and south coastal sections are regularly subject to cold fronts. The importance of frontal activity as a source of precipitation in these parts is reflected by the distinct winter maximum at many places. Stormy weather associated with the cyclonic activity of winter sometimes occurs along the southwestern and southern coasts. Cold fronts pass with decreasing frequency as the distance increases northward and are rarely experienced over the extreme north. During summer, cyclonic activity generally occurs at more southern latitudes than during winter. Consequently, summer frontal activity in South Africa is generally confined to infrequent occurrences along the southwest and south coasts.

Each cold frontal passage is usually followed by an anticyclone, which generally moves from west to east. With the advent of high pressure, temperatures may remain colder than normal, and a moist onshore circulation may linger mostly near the coasts. However, with the passage of a high there is usually a gradual return to warmer and drier weather.

3. Topography

The extensive plateau and its peripheral mountain ranges exert a significant influence on the climate of South Africa. The influences of moist air originating over the surrounding oceans are minimized by these mountain ranges. The orographic lift provided increases precipitation amounts considerably along the southern

and eastern ranges, particularly on the seaward-facing slopes. As a result the air arriving over the interior of the plateau is much drier. Although most of South Africa is located within the tropics and subtropics, the highlands, which mark the perimeter of the plateau, cause temperatures to be lower than normally expected at those latitudes. In fact, the variety of relief, elevation, and exposure to airflows in the mountainous areas results in many local variations to the general regional climates. The extensive areas of rather barren plains on the plateau are conducive to intense daytime heating and nocturnal radiation in the somewhat rarefied atmosphere, particularly during winter when the air is dry and cloud amounts are minimal. Thus, winter afternoons may be warm, but after sunset the air cools rapidly.

4. Oceans

In all the coastal lowland areas, diurnal and annual temperature ranges are fairly small because of the tempering influence of the oceans, and humidity is consistently high. An important effect of the vast ocean areas to the south of the continent is to moderate air masses originating in the polar regions. For example, the coastal lowlands of the southwest and south are fairly often exposed directly to polar air masses during winter, but freezing temperatures rarely occur. The desert conditions along the west coast are partially caused by the stabilizing influence of the cool *Benguela Current* on air passing over it. Extensive layers of low stratus clouds and fog form along the coast, but almost no rain falls. The Benguela Current originates in coastal upwelling of relatively cold water and flows northward along the entire length of the west coast. Temperatures along the immediate coast are much lower than would be expected for the latitude, particularly during summer. The large temperature differential between the cool offshore waters and the hot desert air further inland leads to the development of very pronounced and strong daytime sea breezes during the warmer part of the year. The east coast is influenced by the warm southward-flowing *Agulhas Current*, and temperatures there are in marked contrast to those along the west coast. Also, unlike the Benguela Current, the warm Agulhas Current enhances or at least sustains, the general instability of Indian Ocean air masses, thereby contributing to the relatively substantial precipitation amounts in eastern portions of South Africa.

C. Weather elements and climatic conditions

1. Temperature

a. SURFACE.—Summer and winter temperatures are not so much in contrast in the coastal lowlands as they are on the plateau (Figures 2, 25, and 26). Along the coasts, where temperature is most conservative because of the moderating influence of the oceans, the annual ranges of both mean daily maximum temperatures and mean daily minimum temperatures are small, generally 15 Fahrenheit degrees or less. On the plateau, however, where the continental influence is greatest, the annual range of mean daily maximum temperature and mean

daily minimum temperature is larger, generally 15 to 30 degrees. Also, extremes of temperature are not as commonplace along the coasts as on the plateau. Throughout the year the diurnal range of temperature at any particular location in South Africa is comparable to or greater than the annual ranges of both mean daily maximum temperatures and mean daily minimum temperatures. Along the coasts mean daily maximum temperatures are mostly 10 to 25 degrees higher in all months than mean daily minimum temperatures. On the plateau the diurnal range is much larger, 20 to 40 degrees, with the largest values generally experienced during the dry, relatively cloud-free winter months.

Summer afternoons are hot except along the coasts and at high elevations, particularly in the east where relatively large amounts of cloud reduce insolation. In January, the midmonth of summer, mean daily maximum temperatures are mostly in the 80's and 90's except along the coasts and in parts of the eastern highlands, where they are usually in the 70's (Figure 3). Although the highest mean daily maximum temperatures occur in summer in most of South Africa, there is a pronounced exception. At tropical latitudes across most of the plateau average afternoon temperatures are highest in midspring, when the sun is almost directly overhead and afternoon cloud amounts are still relatively small. Unlike the afternoons, early morning temperatures are highest in summer everywhere. Mean daily minimum temperatures in January are in the 60's, but along the west coast and at high elevations in the south and east they are mostly in the 50's.

Winter mornings are fairly cold at some places, but afternoons are usually mild or even warm almost everywhere. Mean daily minimum temperatures in July, the midmonth of winter, are in the 30's and 40's except in portions of the eastern highlands, where they are in the 20's, and along the northwest coast and in the eastern lowlands, where they are in the 50's. Mean daily maximum temperatures in July are in the 60's and 70's except at high elevations in the south and east, where they are mostly in the 50's.

Extreme temperatures range from 118°F. at Goodhouse in the western Orange River valley to 9°F. at Standerton and Wepener in the eastern highlands (Figures 27 and 28). Temperatures in the 100's have been recorded everywhere in summer except at some high elevations and at a few locations on the coasts. Abnormally high temperatures along the coasts are often attributed to hot, dry *berg winds* blowing off the plateau. They sometimes produce the highest temperatures of the year in winter along the normally cool west and southwest coasts. Absolute minimum temperatures between 10°F. and 20°F. have been registered in much of the eastern and southern highlands and on most of the plateau south of about the 21st parallel, increasing to the 20's and 30's northward and toward the coasts. Temperatures as low as 32°F. have occurred in summer at Qachas Nek, 6,470 feet high in the mountains of Lesotho, and at Middelburg, 4,167 feet high in the southern highlands. It is likely,

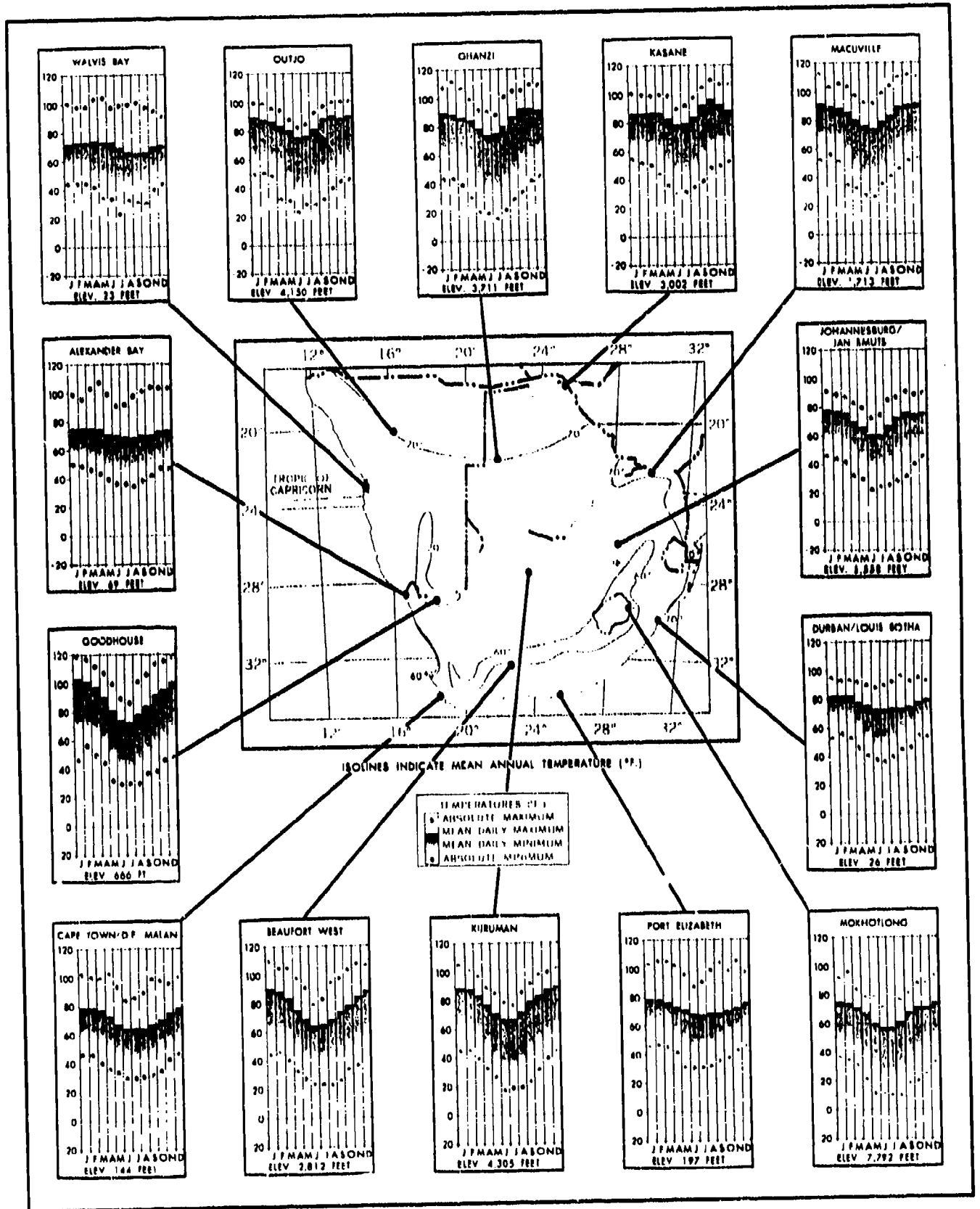


FIGURE 2. Temperatures (°F.). (For tabular data see Figures 25 and 26.)

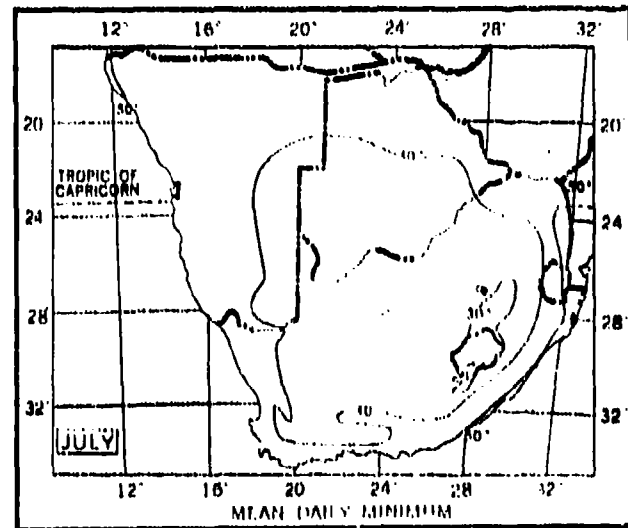
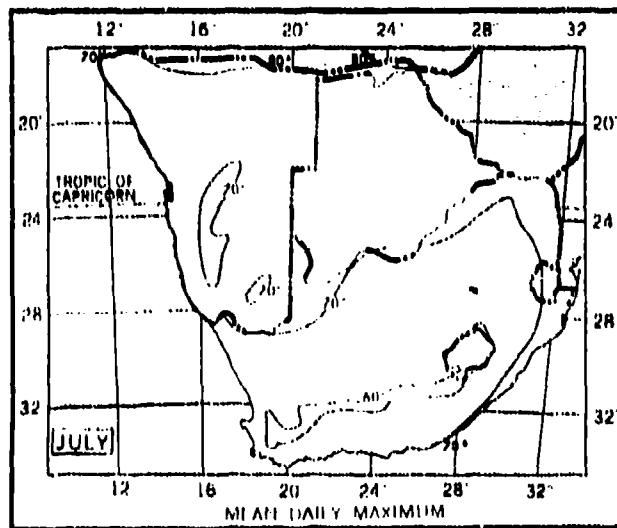
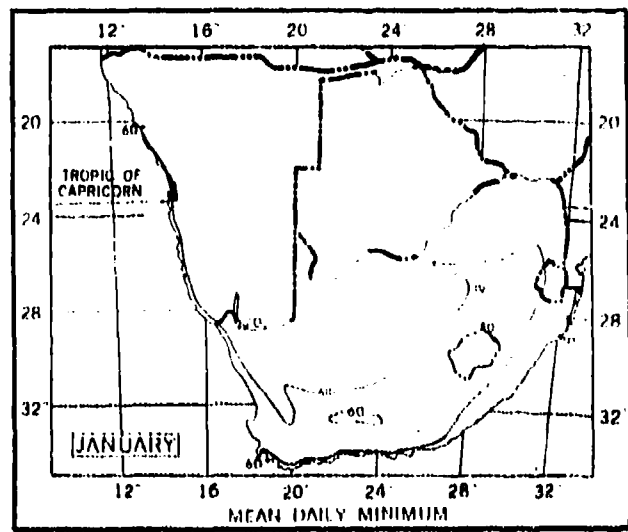
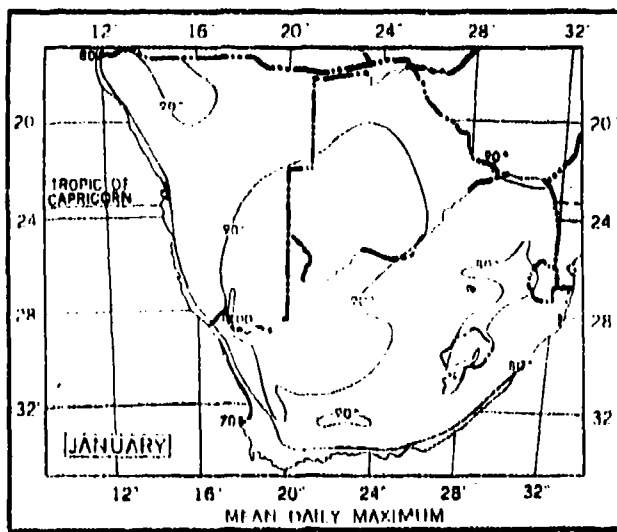


FIGURE 3. Mean daily maximum and minimum temperature ($^{\circ}\text{F}$.), January and July

therefore, that frosts may occur at other highland locations of comparable elevation and latitude throughout the year, particularly in the mountain valleys.

Days with a maximum temperature of 90°F . or higher are most frequent on the plateau and in the lowlands bordering Mozambique (Figures 4 and 29). They occur in these areas on 100 to 150 days annually, mostly between midspring and early autumn, and normally on 10 to 30 days per month. Days this hot are less frequent in the remainder of the Area, particularly in the eastern highlands and along the coasts, where occurrences are rare. Days with a minimum temperature of 32°F . or lower are most numerous, more than 50 per year, in the eastern and southern highlands (Figures 5 and 30), where freezing temperatures can generally be expected on 10 to 25 days per month during winter. However, they are infrequent in the coastal lowlands and at northernmost inland locations. In fact, many locations on the immediate coastline and in the lowlands bordering Mozambique have never recorded a freezing temperature.

b. UPPER AIR.—The mean upper-air temperature pattern is fairly uniform over South Africa during summer (Figures 6 and 7). During winter, however, southern portions are frequently subject to polar influences in the westerlies aloft, so that mean upper-air temperatures show a significant latitudinal contrast.

In summer mean upper-air temperatures generally decrease nearly 10 Celsius degrees per 5,000 feet up to the tropical tropopause, which has a mean height of approximately 55,000 feet over all of South Africa. Above this level temperatures increase slowly with altitude. Thus, in summer the lowest mean temperatures aloft, about -70°C . to -75°C ., occur at about 55,000 feet over all sections of South Africa. In fact, at this level it is colder in summer than in winter. The winter situation is very similar to that of summer over the tropical latitudes. Southward, however, winter temperatures become increasingly colder than summer temperatures at levels below approximately 40,000 feet. Over the south the mean temperature lapse rate decreases sufficiently near 40,000 feet to define the polar tropopause near this level. Above the polar tropopause in the south, winter

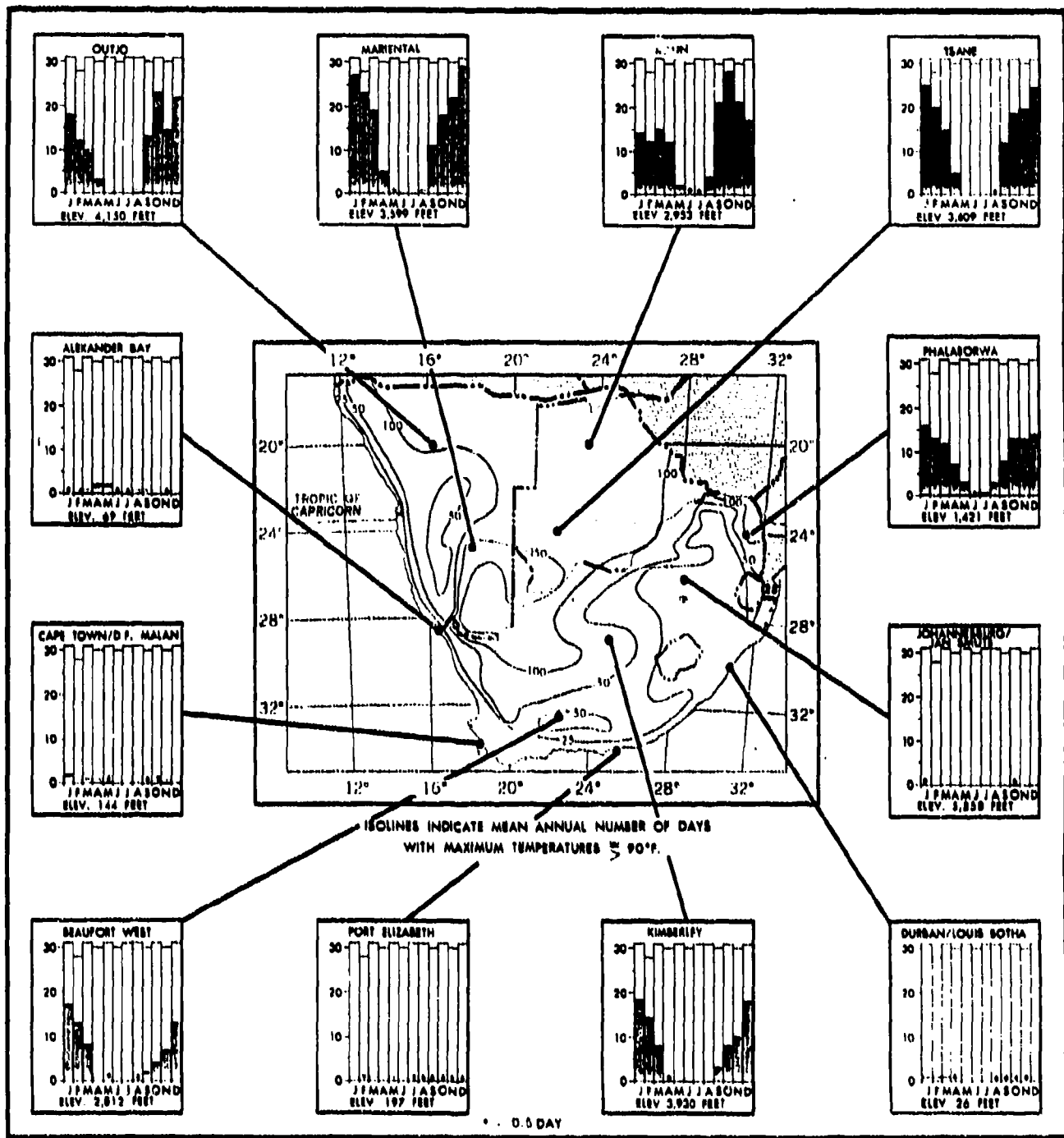


FIGURE 4. Mean number of days with maximum temperature $\geq 90^{\circ}\text{F}$. (For tabular data see Figure 29.)

temperatures are nearly isothermal, and the tropical tropopause is absent.

Along the west coast upper-air temperatures are greatly influenced at the lowest levels by the cool coastal waters and at higher levels by warming due to subsidence. As a result, temperatures near the surface are typically lower than at levels immediately above, and these inversions are frequently strong. To a lesser extent and mostly during winter inversions also occur over the plateau, where intense terrestrial radiation at night reduces temperatures at the surface more rapidly than at higher

levels. Subsidence over the plateau in winter also contributes to the formation of temperature inversions, which trap suspended dust and pollutants.

In summer the mean height of the freezing level is about 16,000 feet except in the extreme south, where it is 1,000 to 2,000 feet lower. In winter it ranges from about 15,000 feet in the north to 10,000 feet in the south.

2. Humidity

Relative humidity is consistently high along the coasts, exceeding 50% at all times of the day in all seasons

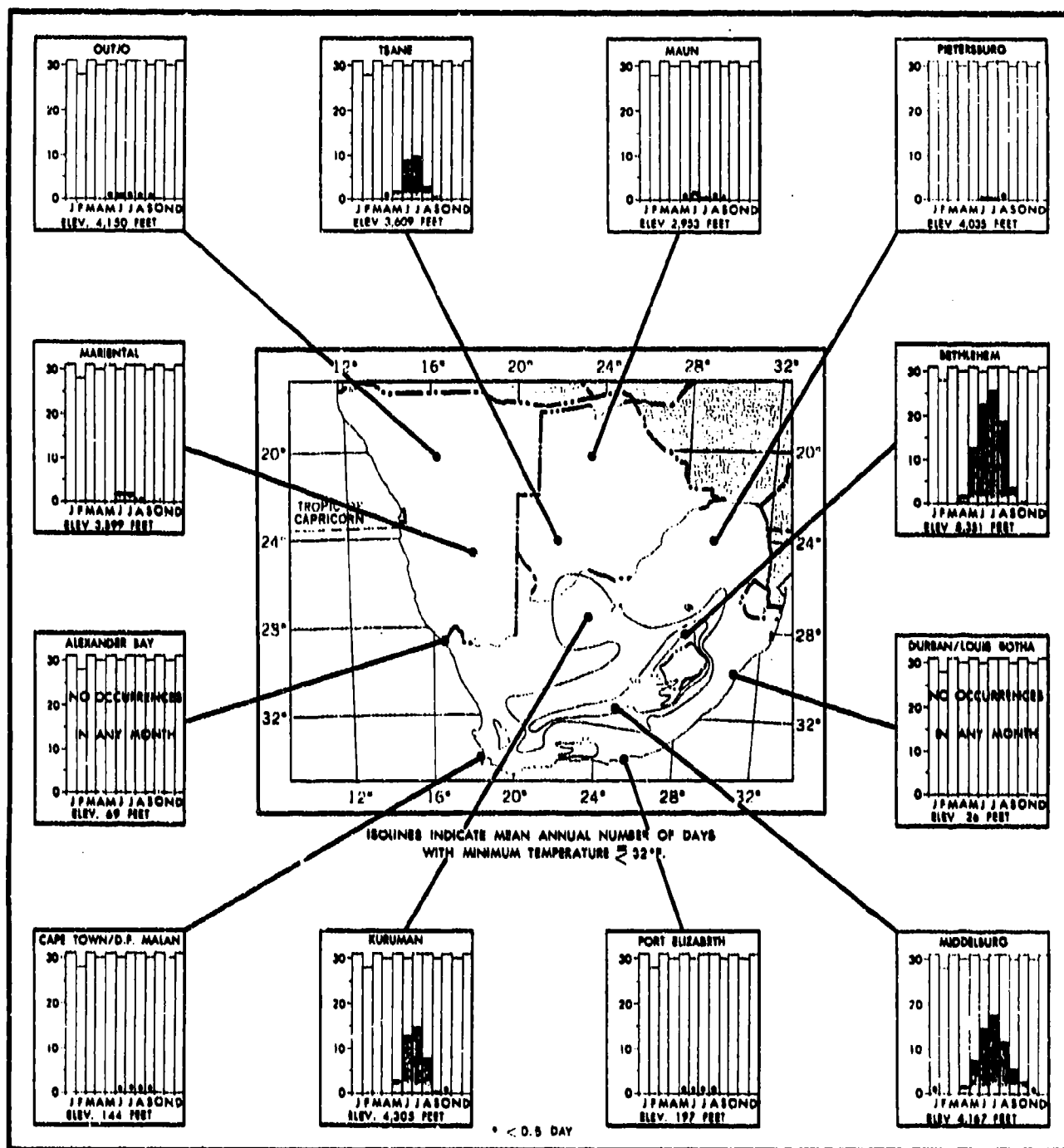


FIGURE 5. Mean number of days with minimum temperature $\geq 32^{\circ}\text{F}$. (For tabular data see Figure 30.)

(Figures 8 and 31). It decreases inland and reaches a minimum in the western interior, where the influx of moisture is meager throughout the year. There, several places experience relative humidity less than 30% all year in the afternoon.

Relative humidity varies directly with the moisture content of the air but inversely with temperature. Diurnal and annual variations of relative humidity are generally small along the coasts, where temperature and moisture are most conservative. Inland, the diurnal and annual ranges are greater because of more pronounced variations

of both temperature and moisture. The diurnal cycle of relative humidity is similar everywhere in South Africa, with the highest values occurring near dawn, the coolest time of day, and the lowest in midafternoon, the warmest time of day. Temperature plays a less important part in determining the annual march of relative humidity because seasonal changes of moisture are generally larger than those of temperature. In almost all of South Africa except the extreme southwestern and southern portions, the influences of annual moisture and temperature patterns on relative humidity are opposing. Conse-

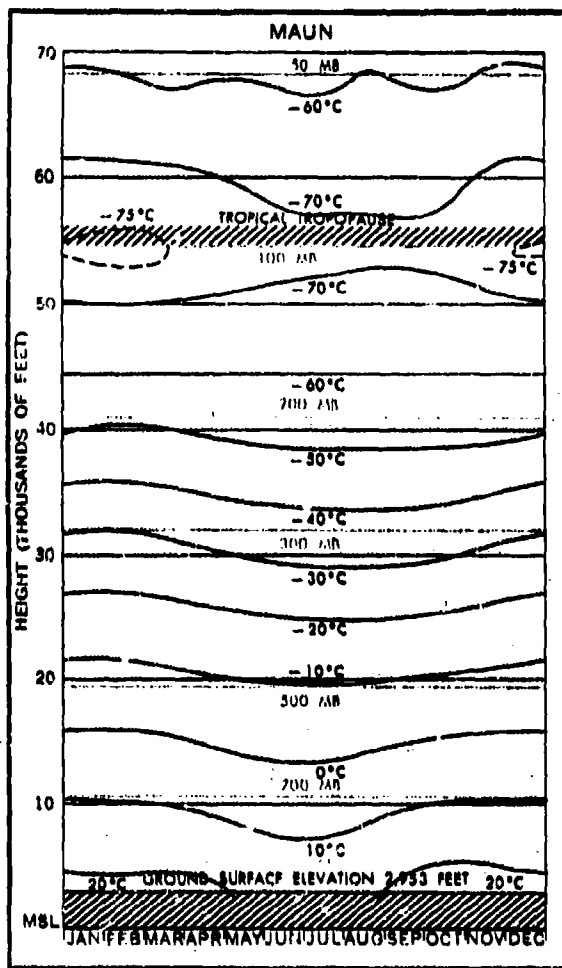


FIGURE 6. Mean monthly upper-air temperature and pressure at Maun, Botswana

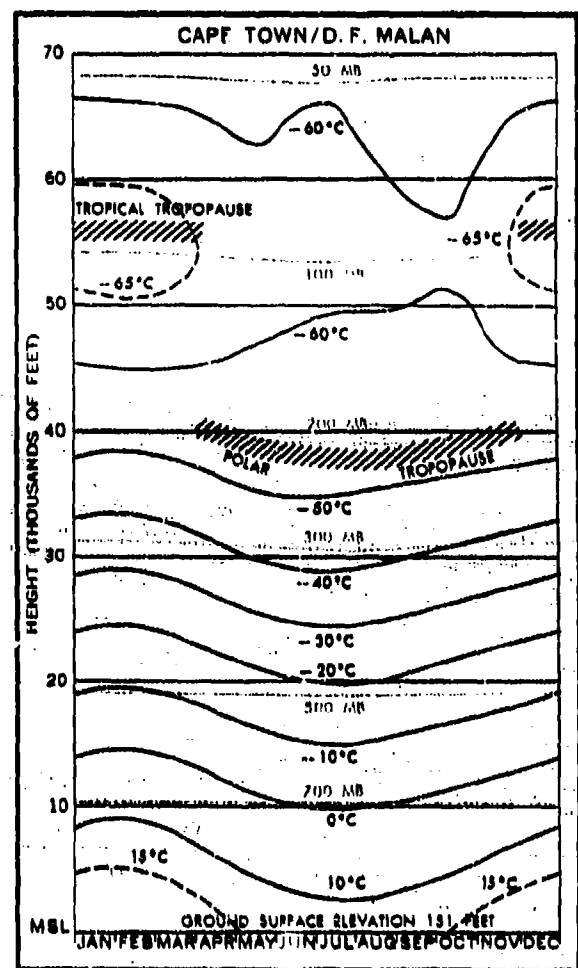


FIGURE 7. Mean monthly upper-air temperature and pressure at Cape Town/D. F. Malan, Republic of South Africa

quently, relative humidity reaches a maximum during the summer-autumn period and a minimum during the winter-spring period. In the extreme southwest and south the effects of seasonal regimes of moisture and temperature are additive, resulting in maximum relative humidity during the autumn-winter period and a minimum during the spring-summer period.

High relative humidity in summer contributes to the discomfort experienced during hot afternoons in many areas. Conditions are particularly oppressive near the swampy sections of the northern plateau and in the hot, humid lowlands bordering Mozambique. Although summer daytime temperatures are highest in western portions of the plateau, low humidity mitigates the discomforting effects of the heat.

3. Precipitation

Precipitation in South Africa occurs mostly as rain. Its distribution is characterized by a fairly regular decrease from east to west and by the marked effect of orographic features (Figures 9 and 32). Over the greater part of South Africa precipitation is concentrated in the summer months, with meager amounts in winter. However, southwestern sections and much of the south coast experience a winter maximum and a summer minimum.

The orographic influence on precipitation is most pronounced in the extreme southwest because of the juxtaposition of mountains, valleys, basins, and coastal lowlands. Mean annual precipitation at places on the coastal plain and in the sheltered valleys is near 10 inches but increases to well over 100 inches on some of the nearby mountain ridges that are exposed to the moist winds. Along the Drakensberg range the increase of precipitation with elevation is not quite as pronounced, but substantial amounts are much more widespread than in the extreme southwest. Most of the eastern highlands and all of the east coastal areas receive an average of about 30 inches or more of precipitation per year, but it varies greatly according to exposure. The greatest amounts fall along the upper slopes of the Drakensberg, with over 70 inches per year at some isolated locations. Mean annual precipitation decreases westward across the plateau to less than 1 inch along the desert coast of South-West Africa.

The summer maximum and winter minimum precipitation regime that characterizes most of South Africa is most accentuated in northern sections of the plateau. There, more than 60% of the annual total is

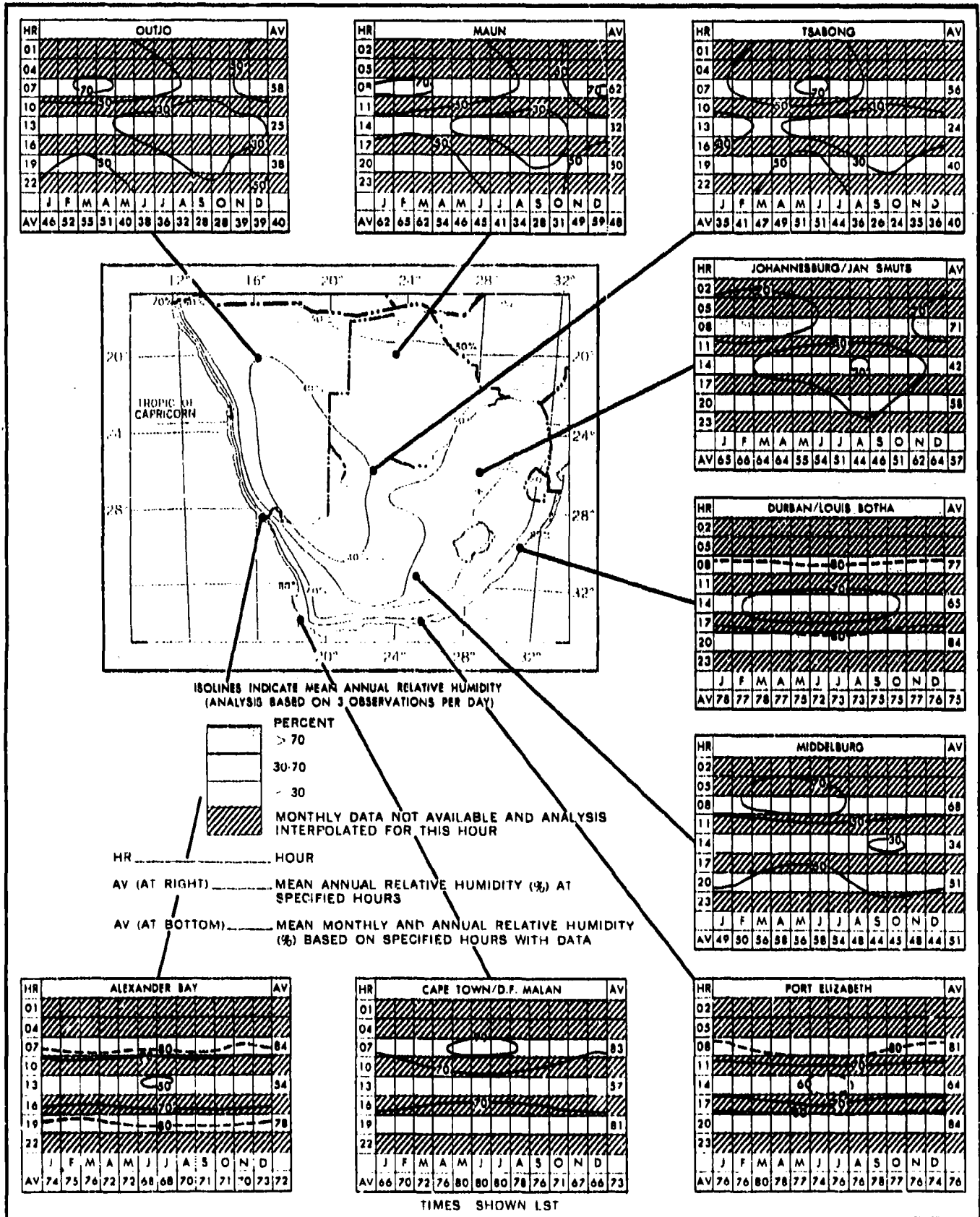


FIGURE B. Mean relative humidity (%). (For tabular data see Figure 31.)

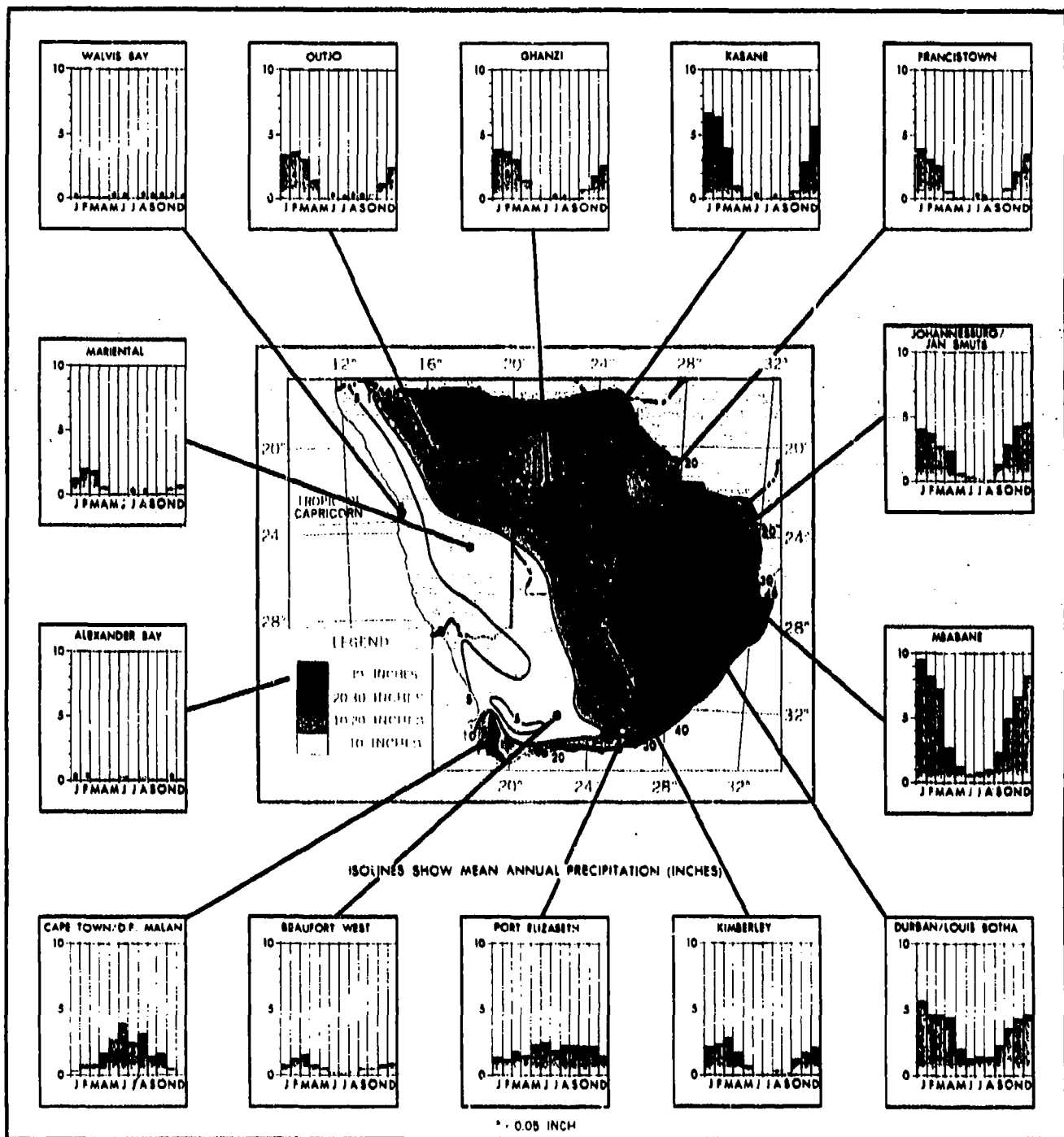


FIGURE 9. Mean precipitation (inches). (For tabular data see Figure 32.)

received during the summer months, and almost no rain falls during winter. Summer rainfall amounts are greatest in the extreme north and in the east (Figure 10). Total summer precipitation in each of these sections averages more than 15 inches, with mean monthly amounts reaching a maximum of 5 to 10 inches. Summer rainfall decreases westward to insignificant amounts along the arid Atlantic coast. The proportion of annual precipitation that falls during summer gradually decreases to the southwest. In the extreme southwest, less than 10% of the mean annual total falls

during summer, whereas more than 40% is received during winter. Winter precipitation is greatest in the coastal mountains of this region. For example, at Jonkershoek total winter precipitation averages 63.5 inches, with mean monthly precipitation for June, July, and August about 20 inches for each month. Much lesser amounts are received along the south and east coasts and at sheltered locations and lower elevations in the extreme southwest.

In general, the frequency of days with measurable precipitation (≥ 0.004 inch) closely conforms to the

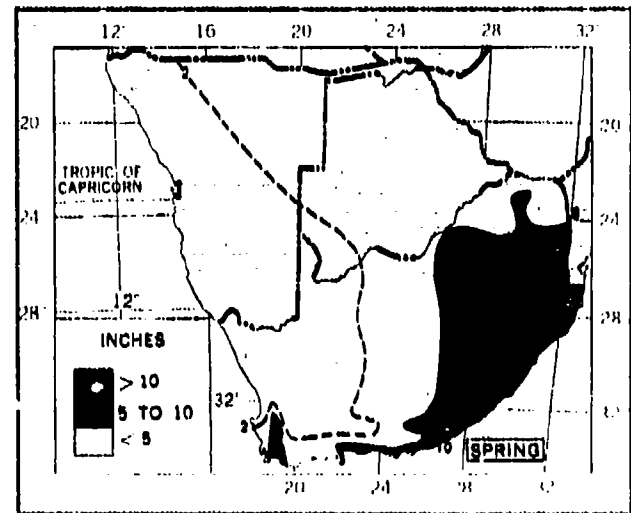
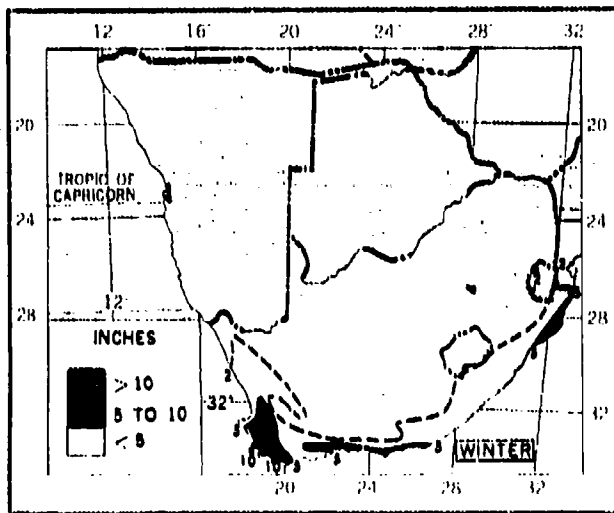
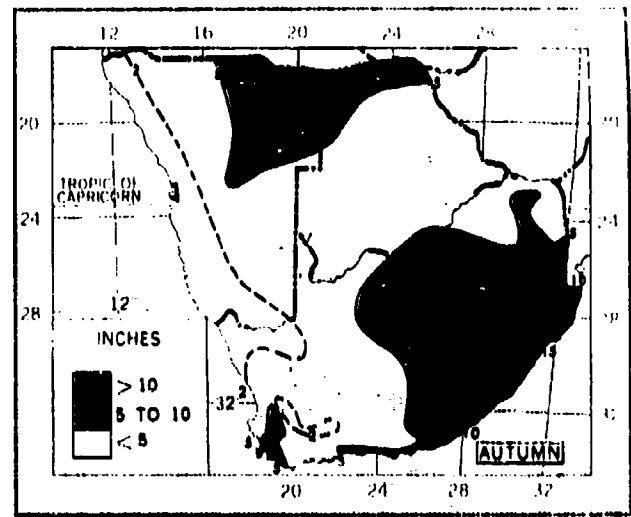
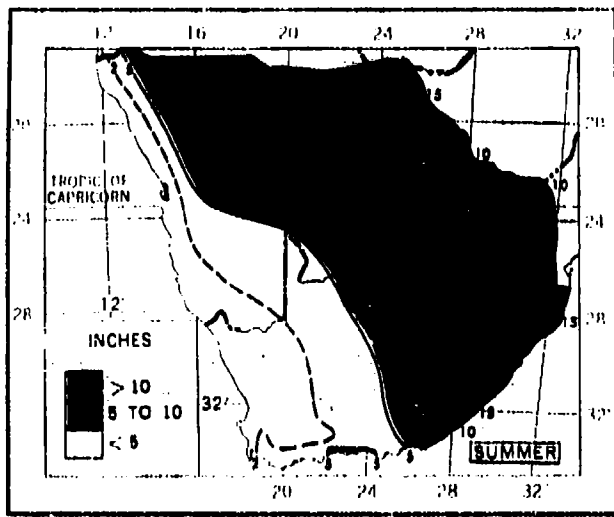


FIGURE 10. Mean seasonal precipitation (inches)

distribution of mean precipitation. On the average, precipitation occurs on more than 100 days per year along much of the south coast and in the east, but the frequency drops to only a few days per year on the west coast (Figures 11 and 33). Along the south and east coasts precipitation falls on an average of about 5 to 15 days per month in all seasons. Along the Drakensberg range, most places average 10 to 20 rainy days per month during summer but in winter precipitation generally falls on 5 days or less per month. In northern sections of the plateau the frequency of summer rains is comparable to that in the east, but winter days with precipitation are rare. Precipitation is probably quite frequent in some of the coastal mountains of the southwest, particularly in the colder months.

The bulk of the summer rainfall in most of the Area comes from brief showers that may be rather heavy at times. In the drier portions of South Africa, abnormally heavy rain may accumulate rather large 24-hour amounts as compared to mean monthly totals (Figures 32 and 34). In the extreme southwest and in the south coastal

sections, precipitation is usually of lesser intensity but more prolonged because of its cyclonic origin. Against the seaward-facing slopes of the Drakensberg range, light orographic precipitation in the form of drizzle is quite frequent when there is an onshore flow from the Indian Ocean. This phenomenon also occurs on the higher ridges of the southwest and south coastal ranges when there is a strong onshore circulation.

In general, the Drakensberg and the east and south coastal sections have experienced the greatest ranges of precipitation amounts (Figure 35). Everywhere, however, any month can be quite dry. From time to time South Africa is susceptible to severe drought conditions, aside from the part of the year that is normally dry. Rainless periods are much more prolonged in the interior and toward the Atlantic coast than along the south and east coasts and in the Drakensberg. Intense evaporation, which is common to most of South Africa, makes any deficiency of rainfall desiccating, even during droughts of short duration. Flash flooding is a possibility during the warmer months in most of South Africa because of

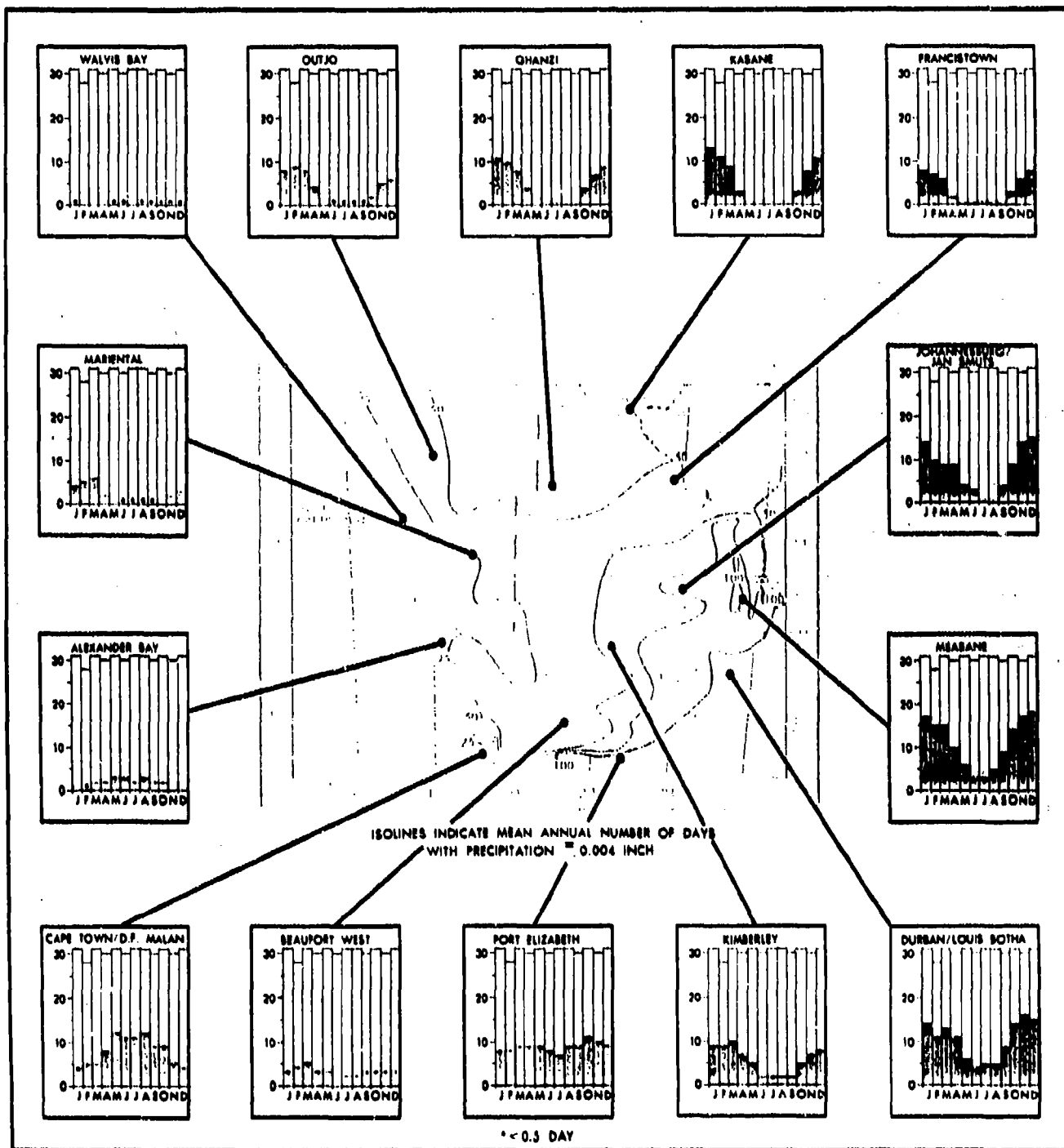


FIGURE 11. Mean number of days with precipitation ≥ 0.004 inch. (For tabular data see Figure 33.)

intense, short-period convective showers. More extensive flooding may occur in the flat, low-lying portions of the wettest sections when long periods of heavy precipitation occur. Marsh and swamp areas along the northeast coast normally experience relatively extensive flooding during the wet summers. Moderate summer rainfall and interior drainage cause parts of the northern plateau to be periodically inundated by shallow sheets of water. Snow occurs occasionally, mainly on the higher mountain ranges in the south and southeast; usually, it falls on

fewer than 10 days per year and mostly during winter. Snow may fall infrequently in other sections, but it melts rather quickly.

4. Cloudiness

Summer is distinctly the season of maximum cloudiness and winter the season of minimum cloudiness except in the southwest, where seasonal contrasts are small (Figures 12 and 36). Sunshine is abundant in most sections, even in the cloudiest months.

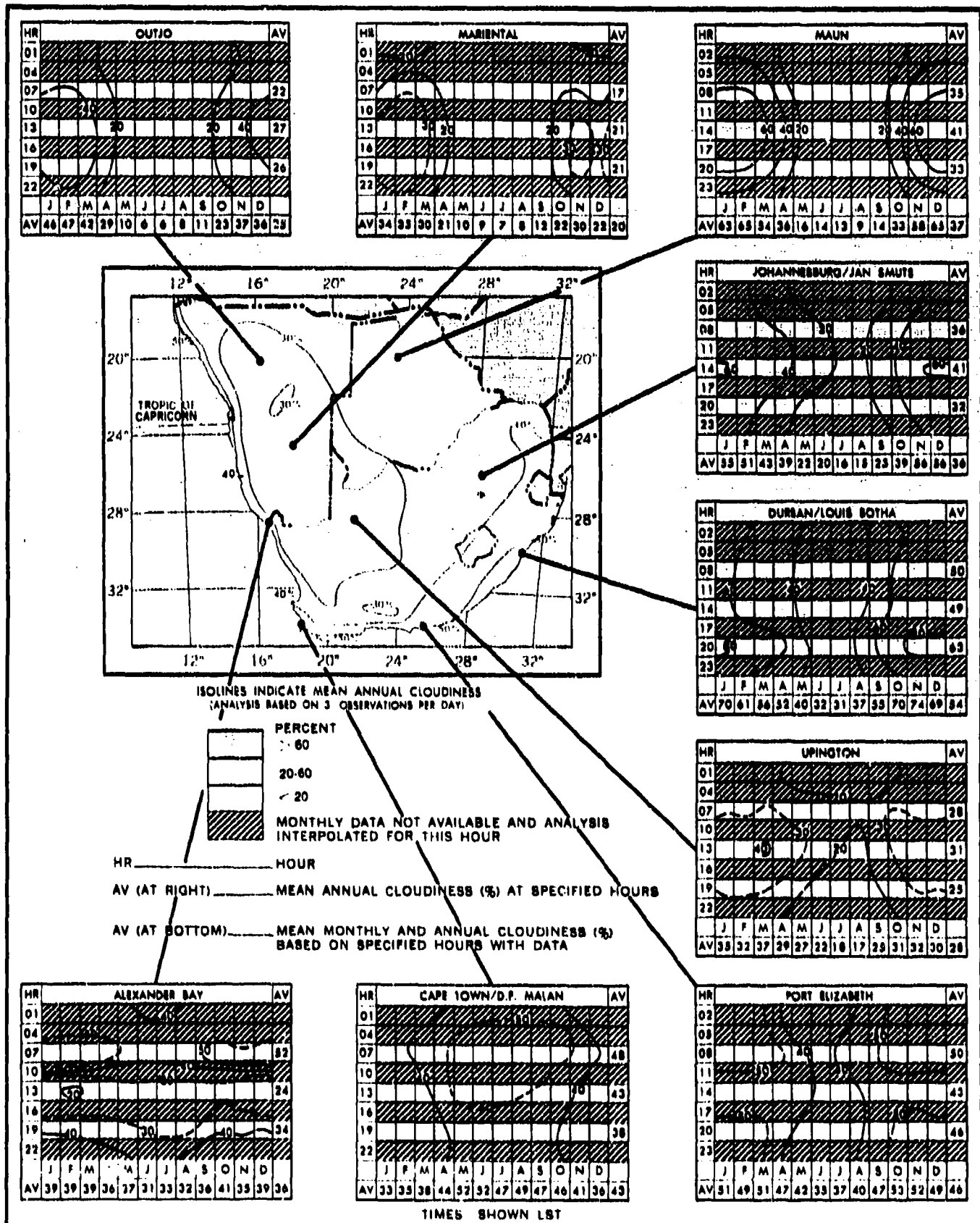


FIGURE 12. Mean cloudiness (%). (For tabular data see Figures 36 and 37.)

The differences of cloudiness between seasons is most pronounced in northern parts of the plateau, where mean monthly cloudiness in summer is about 50 to 60 percent greater than in winter. The annual range of cloudiness decreases most toward the west and south, reaching a minimum of less than 10 percent in the extreme southwest. The greatest summer cloudiness is experienced in parts of the east and the north, where mean monthly cloudiness is about 60% to 70% throughout summer. Minimum summer cloudiness occurs in the southwestern interior, where mean monthly cloud amounts range from 15% to 25%. In winter cloud amounts are small in most of South Africa, especially on the plateau, where mean monthly cloudiness is mostly less than 30%; in interior portions of South-West Africa it drops to less than 10%. The greatest winter cloudiness occurs in the southwest, where mean monthly cloud cover ranges mostly from 40% to 55% along and near the coast. Although cloud data are lacking for the coastal mountains of this region, the precipitation data indicate that winter cloud amounts probably exceed those near the coast.

The diurnal variation of cloudiness is largest along some portions of the west coast, and it significantly exceeds the annual variation of mean monthly cloud cover (Figures 12 and 37). The cool coastal waters cause extensive low stratus and fog, which frequently drift inland during the night. The fog and stratus generally dissipate during the day. For example, at Alexander Bay cloud cover throughout the year averages about 40% to 60% at 0700 LST as compared to only about 20% to 30% at 1800 LST. This diurnal range reaches a maximum in late spring through early autumn of 30 to 40 percent as compared to an 8 percent annual range of mean monthly cloud cover. Along parts of the immediate coast, however, the fog and stratus may persist throughout the day. In other coastal areas the diurnal variation generally is not as pronounced, but there also is a tendency for maximum cloud cover to occur near sunrise. Inland the diurnal range of mean cloudiness is small except in summer, when moist air masses are relatively frequent and daytime cumulus and cumulonimbus development characteristically culminates in maximum cloud cover during afternoon and early evening.

Sunny days and clear nights (cloud cover 2/8 or less) are typical of winter almost everywhere except in southwest coastal sections, where cloudy days and nights (cloud cover 6/8 or more) are common (Figures 38 and 39). Practically the entire plateau experiences 20 or more days with clear skies at all observation hours throughout winter. At many places these conditions extend into spring and autumn. Although clear skies are least frequent during summer in most of South Africa, they are still common except in northern and eastern sections. However, even in these sections skies are frequently only partly cloudy (cloud cover 3/8 to 5/8), and the sun usually appears before and after relatively brief afternoon showers.

Low ceilings are most frequent in coastal sections and inland in the east to the top of the Drakensberg range.

Ceilings below 3,300 feet have been observed as much as 30% to 55% of the time in these sections, but probably occur even more often on slopes that are well exposed to the moist flow in the coastal mountains of the southwest and south and along the Drakensberg range (Figures 13 and 40). The frequency of low ceilings decreases to a minimum in western and southern portions of the plateau, where ceilings of any height are unusual because of meager cloud amounts throughout the year. In general, low ceilings occur most often in late spring through early autumn except in southwest portions, where they can occur equally or more often in winter. Ceilings less than 1,000 feet are mainly a morning phenomenon associated with stratiform clouds and fog (Figures 14 and 41). Frequent stratus and fog along the west coast result in the greatest incidence of ceilings below 1,000 feet found anywhere in South Africa. For example, at 0700 LST Alexander Bay has ceilings below 1,000 feet on as much as 36% of the observations and below 650 feet as often as 30% of the observations (Figure 42). Because the stratus and fog usually dissipate during the day, very low ceilings at Alexander Bay rarely persist until the afternoon, but at Walvis Bay and some other locations on the west coast it appears that the stratiform cloud cover and fog more often persist through the afternoon. Along the other coasts and in the eastern highlands ceilings less than 1,000 feet occur occasionally but are, in general, less frequent than along the west coast. However, some locations in the coastal mountains of the southwest and south and in the Drakensberg that are well exposed to the moist flow probably often experience clouds that shroud the slopes.

5. Aircraft Icing

In general, the conditions favorable for icing are supercooled clouds or liquid precipitation present above the freezing level. In summer these conditions occur in towering cumulus and cumulonimbus clouds, which are most frequent in northern and eastern parts of South Africa. In the extreme west and southwest clouds rarely build to above the freezing level in summer. In winter, cloud conditions are generally not favorable for icing in most of South Africa except on occasions when frontal-cloud buildups associated with the leading edge of cold, moist air masses sweep into the interior from southern ocean areas. The greatest icing hazard in winter occurs over the extreme southwest and south, where the deep cloud systems of migratory lows and fronts usually occur simultaneously with low freezing levels.

6. Visibility

Visibility is most frequently restricted in coastal areas and in the eastern highlands. Lowest visibilities are mostly confined to the morning hours. At some places along the coasts and in the eastern highlands visibility is less than 6 miles as much as 40% to 60% of the time in the early mornings (Figures 15 and 43). Visibility is usually good to excellent on the remainder of the plateau, where it is 6 miles or more at least 90% of the time at all

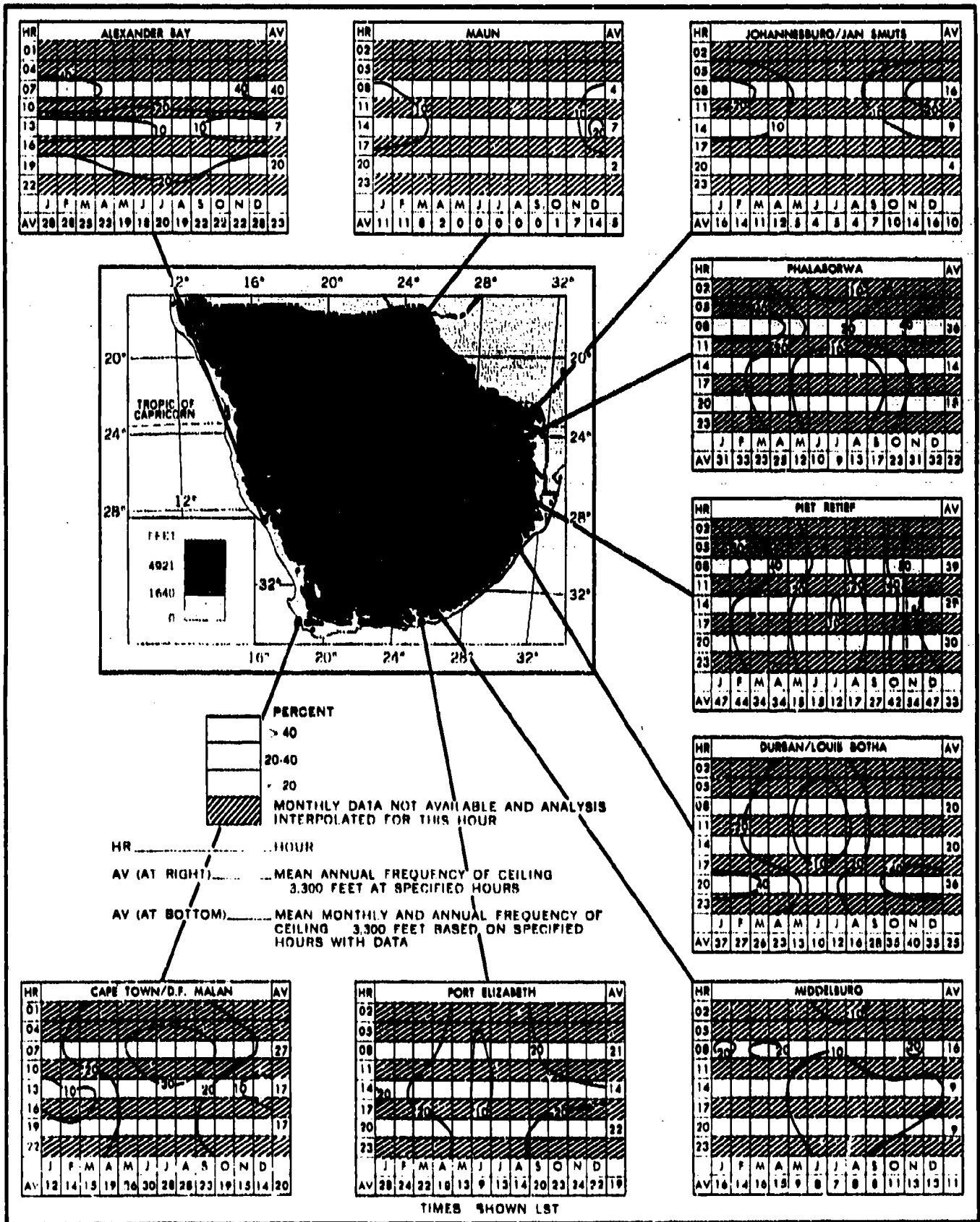


FIGURE 13. Percentage frequency of calling < 3,300 feet. (For tabular data see Figure 40.)

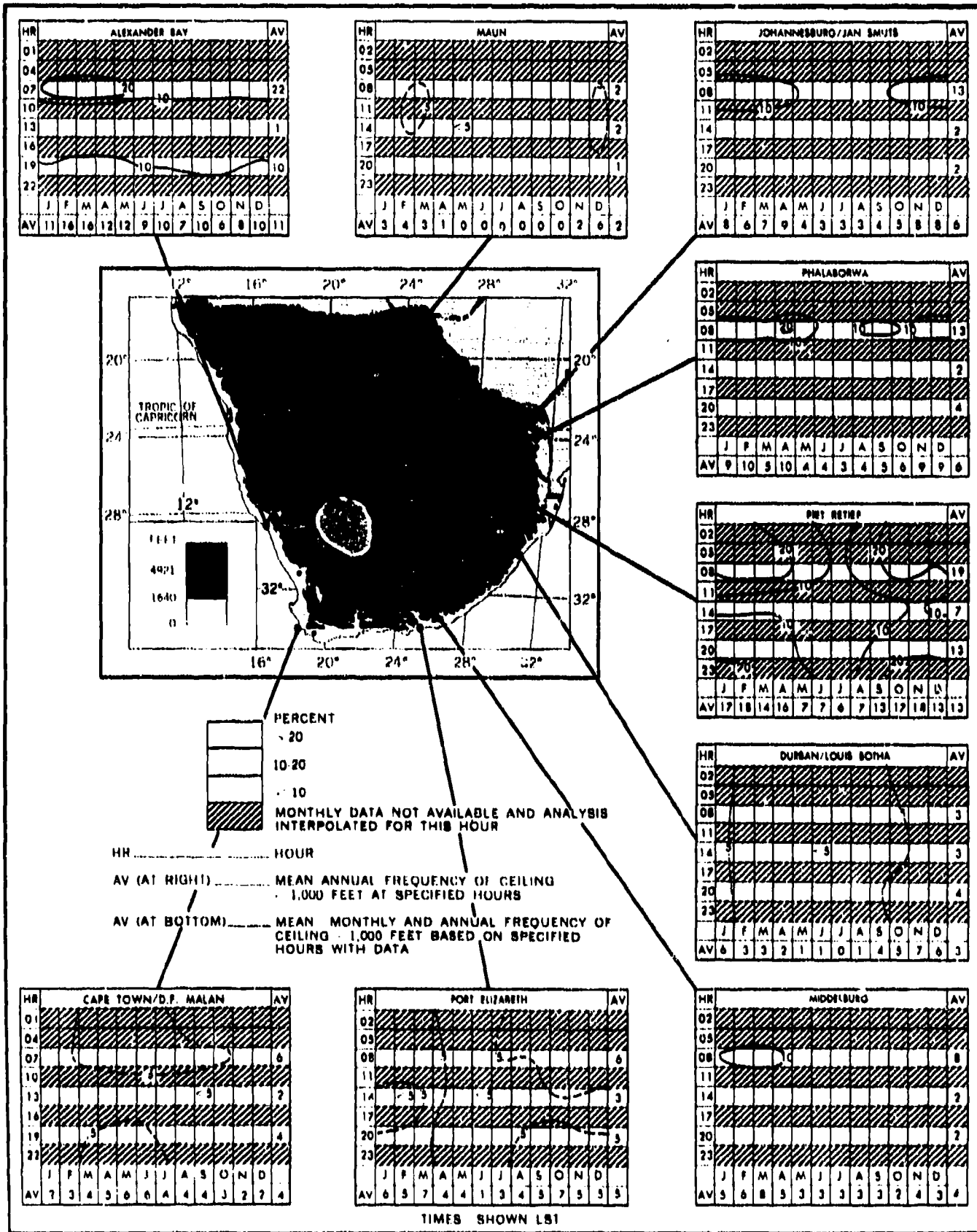
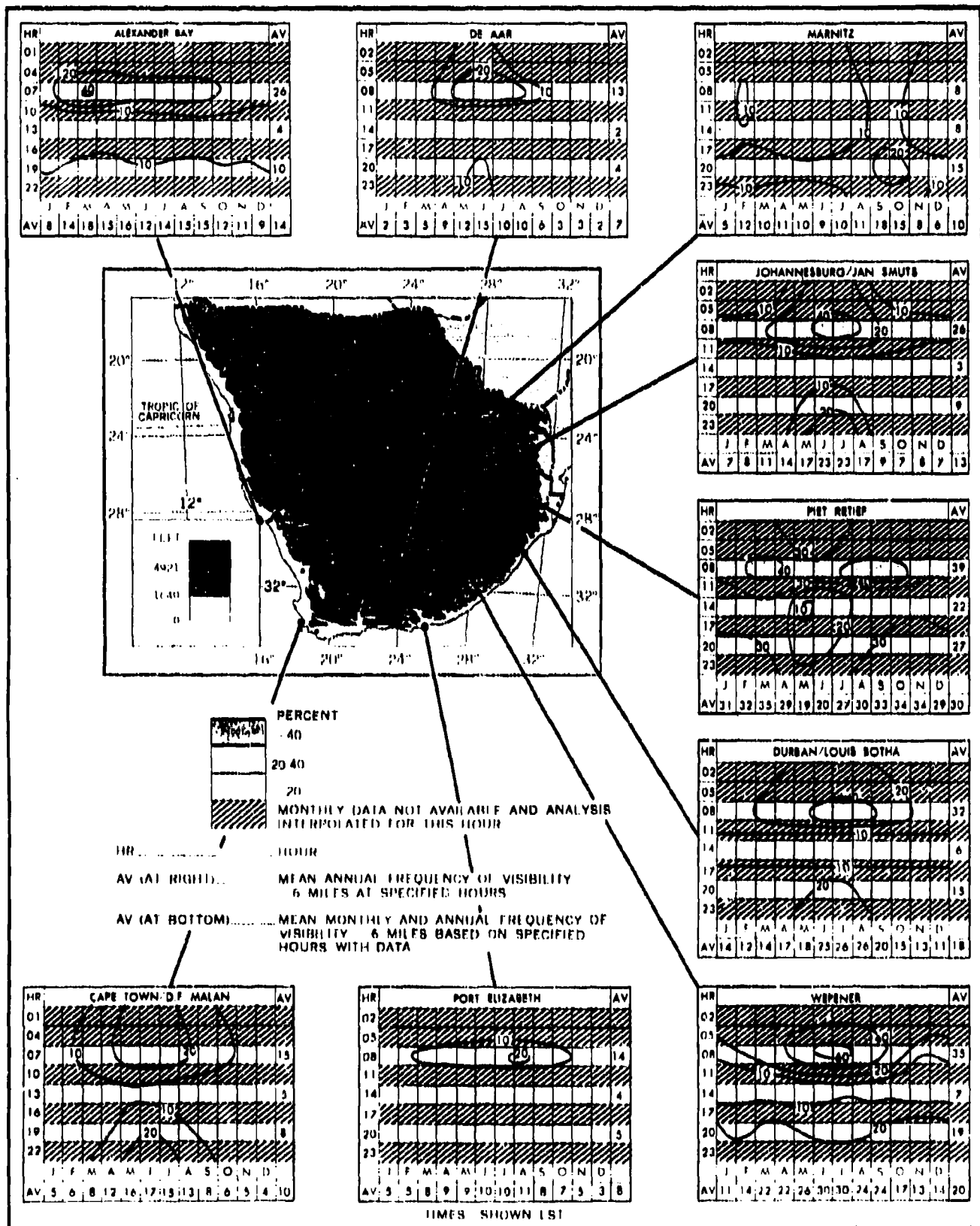


FIGURE 14. Percentage frequency of ceiling <1,000 feet. (For tabular data see Figure 41.)



observation hours throughout the year. Visibility is less than $2\frac{1}{2}$ miles on as much as 10% to 30% of the observations near sunrise along the west and southwest coasts and in the eastern highlands (Figures 16 and 44).

The most effective restrictions to visibility are usually radiation fog in the valleys of the eastern highlands and sea fog along most of the west and southwest coasts (Figure 45). Radiation fog reaches its greatest density during the morning but usually dissipates by noon from the warmth of the sun. It is somewhat more likely to occur in autumn and winter, but it can occur in all seasons at some places. Sea fog, which frequently drifts inland along the west coast and to a lesser degree along the southwest coast during the night, normally dissipates over the land during the day but along parts of the immediate coast may persist throughout the day. It is not unusual for this fog to lower visibility to less than $5/8$ mile along the coast. Fog is most frequent during autumn and winter in most of the west and southwest coastal areas. Low clouds sometimes obstruct visibility on mountain slopes in the extreme southwest and south and in the east, particularly along the Drakensberg range. In summer, visibility can be greatly reduced for short periods by brief but intense showers, particularly in the wettest sections. A hazy and smoky atmosphere caused by suspended dust, industrial pollutants, and smoke from brush fires is common in winter and early spring (Figure 46). During this time dry, stagnant continental air predominates in most of South Africa, particularly on the plateau. Along the coasts, salt haze from the oceans sometimes occurs. Haze and/or smoke normally do not severely reduce visibility. In urban and industrial centers and in areas that are dry throughout the year, haze and/or smoke may be frequent in all seasons. Blowing sand and dust is fairly common along the southern part of the west coast, and occasionally visibility is severely restricted. Blowing sand and dust is less frequent elsewhere but does occur over dry, barren ground when surface winds are sufficiently strong.

7. Winds

u. SURFACE.—Most of South Africa is influenced by day-to-day changes in the distribution of surface pressure, so that surface winds from all directions are common. There are, however, favored directions that are generally common to certain regions.

Between surface winds on the plateau and those along the coasts there is a general discontinuity, particularly in the southern half of South Africa. Surface winds along the coasts show a tendency to parallel the coastline (Figures 17 through 20 and 47). Along the east coast they frequently blow from the southwest and northeast quadrants throughout the year. Along the south coast winds are predominantly from the east and west quadrants during summer, but by winter the easterlies give way to more frequent westerlies. Along the west coast the summer pressure gradients are almost always conducive to southerly winds in the south and to southwesterlies in the north. Along southern portions of

the west coast southerly winds are much less frequent during winter, and westerlies and offshore winds are fairly common; southwesterlies continue during winter in the north. In all coastal sections throughout the year there is a greater frequency of winds with an onshore component during the afternoon, when sea breezes occur. Along the southwest and west coasts the afternoon temperature difference between the cool coastal waters and the nearby land areas is very large during the warmer months. This results in strong sea breezes which quite markedly reinforce the prevailing southerly flow. Light offshore winds, or land breezes, and calms occur in most coastal areas during the night and early morning hours; land breezes are much more frequent in winter than in summer.

Across northern portions of the plateau surface winds in summer are mostly from the east and northeast quadrants, and in the southern portions they are mostly from the north and northwest sectors. In winter prevailing surface winds on most of the plateau are more pronounced than in summer, but the directions remain essentially unchanged. In many central and southern portions of the plateau the west component of the surface wind is prominent during the afternoon because the plateau surface lies near the boundary of westerlies aloft, and afternoon convection transfers momentum from these westerlies downward to the surface. In the north, easterly winds tend to prevail at all times of the day because of the greater depth of the easterlies. Throughout the plateau winds are generally lightest and calms are frequent during the night and early morning, particularly in winter.

In general, surface wind speeds increase southward. In the northern half of South Africa mean speeds are around 10 knots or less throughout the year, and actual speeds exceeding 16 knots are infrequent. In the southern half mean speeds are mostly 10 to 15 knots in the interior and 10 to 20 knots along the coasts. Gale-force winds (> 27 knots) are confined almost exclusively to the coasts and to inland sections of the extreme south (Figure 48). Along the east, south, and extreme southwest coasts gales are normally associated with the occasional strong pressure gradients which often accompany migratory low-pressure systems and fronts. Along much of the southern half of the west coast gale-force winds occur mostly during the warmer months and are attributed mainly to the reinforcement of the persistent southerly flow by intense afternoon sea breezes. At Alexander Bay, for example, southerlies reach gale force on more than 10% of the observations at 1300 LST in November and December. The afternoon winds over the desert areas along the southern half of the west coast are at times strong enough to cause blowing sand and dust. An afternoon increase of wind speeds also occurs along the other coasts, but it is not as pronounced as along the southern half of the west coast. The strongest winds experienced at most interior locations normally occur in conjunction with thunderstorms and frontal passages and may stir up sand and dust in the dry, barren regions. Violent winds are normally associated with rare occurrences of tornadoes.

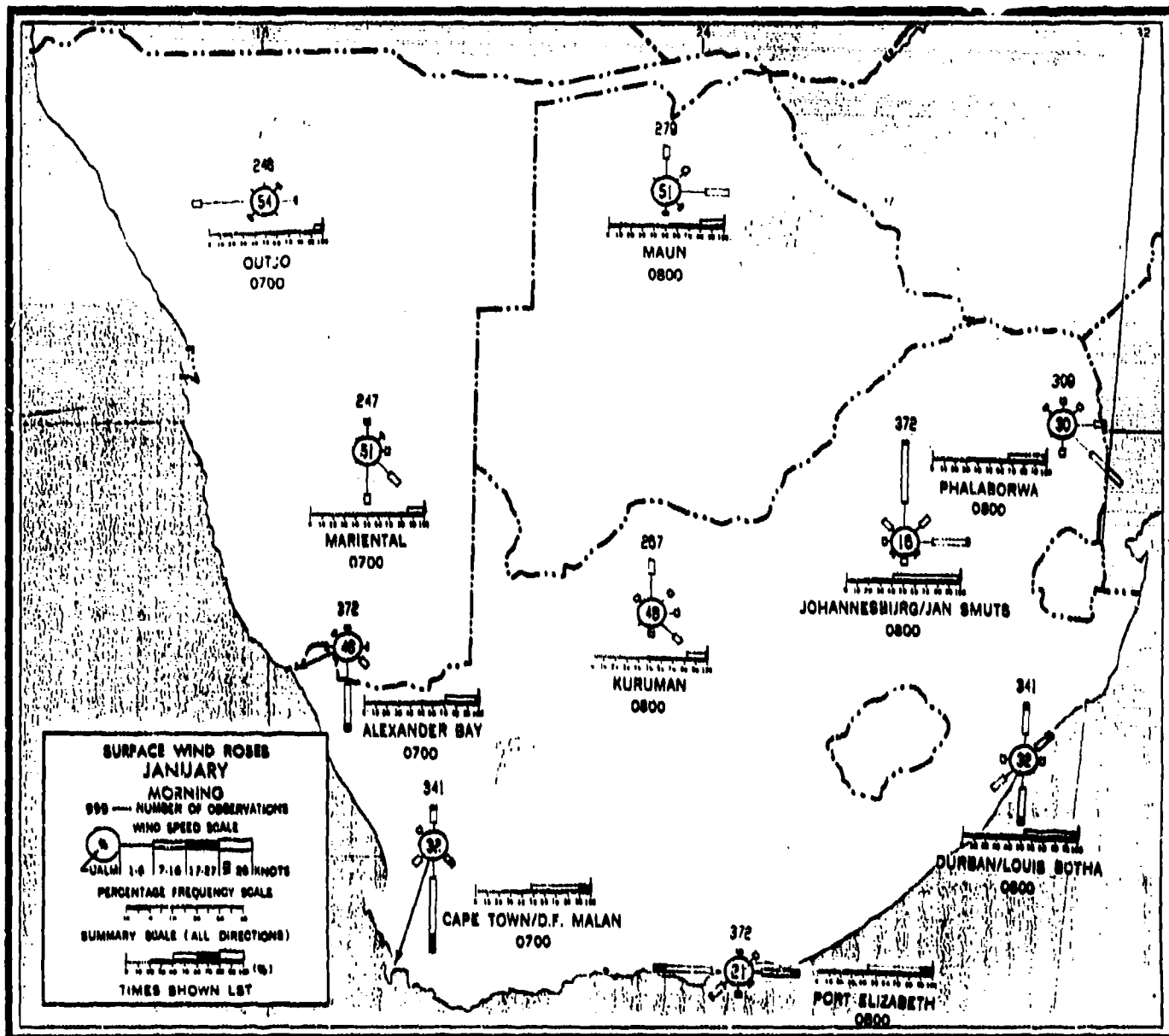


FIGURE 17. Surface wind roses in morning, January

Hot, dry, and unpleasant berg winds occasionally blow across the coastal lowlands from the plateau. These surface winds develop when low pressure lies off the coast and high pressure is over the plateau, a pressure distribution that is most frequent in winter. Berg winds occur about 50 times a year on the west coast and decrease in frequency toward the east coast, where they are uncommon. They may blow for only a few hours or continue for 2 or 3 days in succession. Sometimes, cool sea breezes interrupt the berg winds during the afternoon, so that the highest temperature is often recorded before noon. Whirlwinds or dust devils are common phenomenon over sandy or dusty ground during hot summer days and are caused by strong convection.

In the mountainous areas along the perimeter of the plateau, wind directions are influenced by the configuration of the topography. In many mountain

valleys, local mountain and valley breezes are experienced. The mountain breeze descends the slopes at night and blows down valley, and the valley breeze blows up valley during the day and ascends the valley walls.

b. UPPER AIR.—Westerly winds prevail aloft over southern sections of South Africa throughout the year (Figures 21 through 23). Over northern sections easterly winds dominate the lower levels, particularly in summer, but westerlies prevail at the higher levels, particularly in winter. The strongest speeds occur in the westerlies over the south during winter.

In summer the westerlies over extreme northern portions of South Africa are weak and are confined mostly to levels between 30,000 and 50,000 feet. Light easterlies prevail above and below these westerlies. Southward, westerly winds become increasingly stronger and progressively dominate more levels. Over most of the

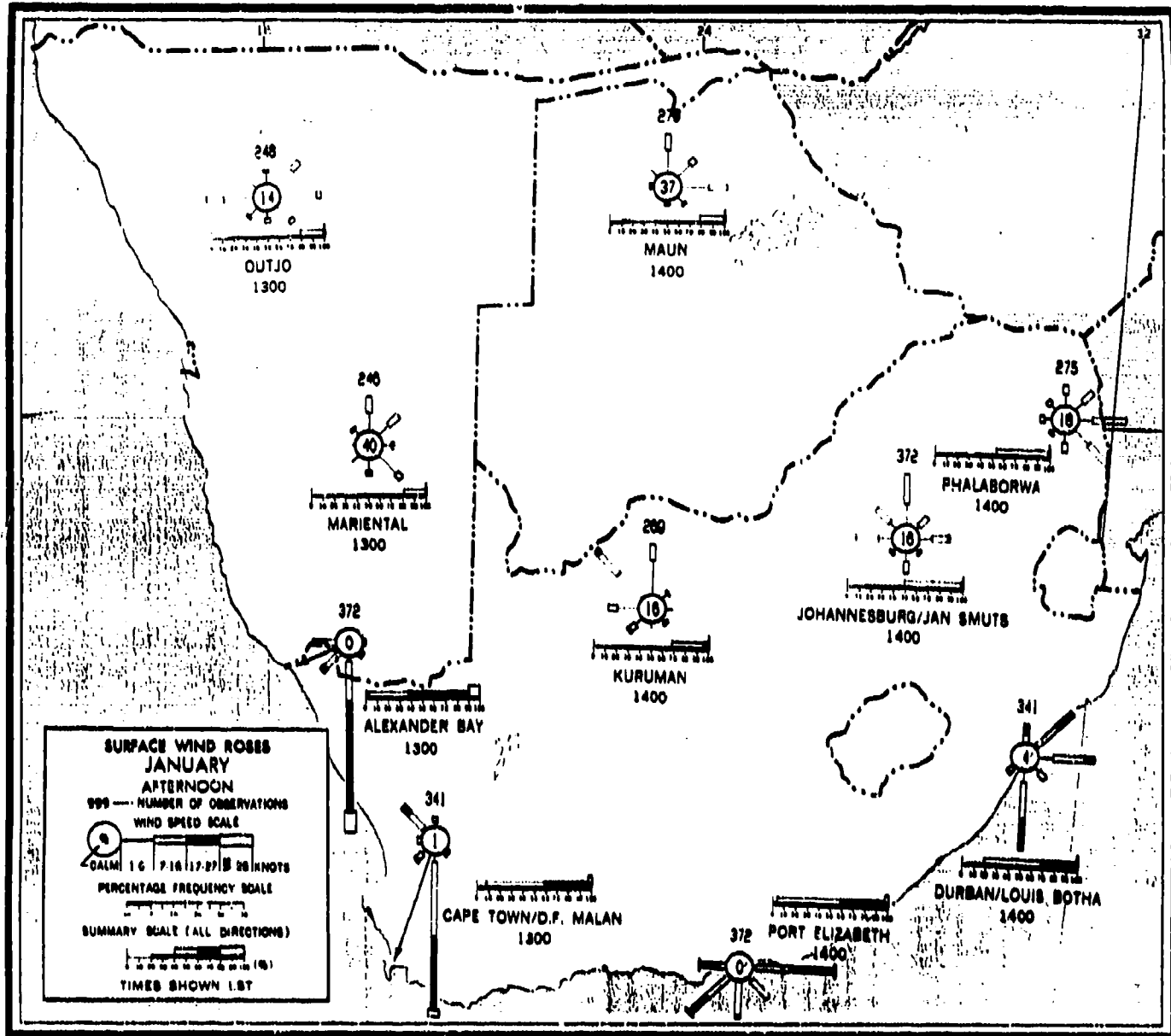


FIGURE 18. Surface wind roses in afternoon, January

southern half of South Africa westerlies prevail during summer at all levels to over 60,000 feet and are strongest in the extreme south. As winter approaches, the low-level easterlies recede northward and become quite shallow. During winter they predominate only over the extreme north up to about 15,000 feet. The high-level easterlies are absent over the north in winter, and westerlies prevail up to at least 55,000 feet. Over the remainder of South Africa westerlies prevail at all levels in winter.

The westerlies over South Africa are strongest in the south between about 30,000 and 50,000 feet. Over Cape Town/D.F. Malan they are frequently greater than 50 knots within this layer throughout the year. In winter, when the westerlies are strongest, speeds are 50 knots or more on about 80% and 75 knots or more on nearly 50% of all observations near 45,000 feet over this station; however, they rarely exceed 150 knots. The westerlies

generally decrease in speed northward, and over Maun they are strongest in autumn through spring, when speeds are frequently 50 to 75 knots between about 30,000 and 45,000 feet.

8. Thunderstorms

Thunderstorms are essentially warm weather phenomena in South Africa (Figures 24 and 49). In general, they increase in frequency from the coasts toward northern portions of the plateau and toward the eastern highlands. Thunderstorm days range from but a few per year along the west and southwest coasts to more than 100 in the eastern highlands. During summer, when most places experience maximum thunderstorm activity, the northern parts of the plateau and the eastern highlands have an average of 10 to 20 thunderstorm days per month. Rainless thunderstorms are common in the

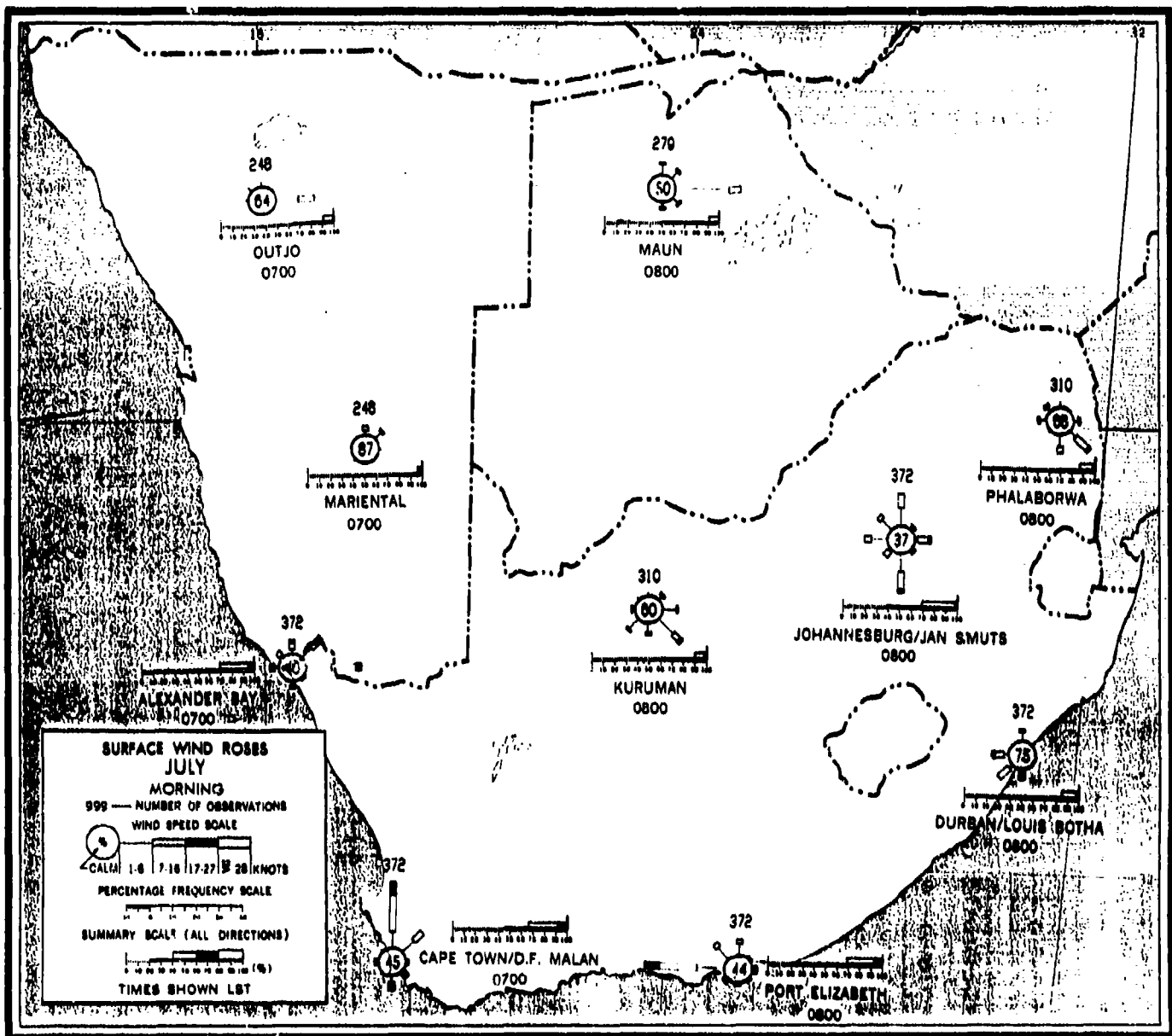


FIGURE 19. Surface wind roses in morning, July

western interior because very hot and dry surface air evaporates the rain before it reaches the ground. Hail may occur in various parts of South Africa but is most often observed in the eastern highlands, where thunderstorms are most frequent and elevations are high. In the rugged mountains near Lesotho, hail occurs on roughly 5% to 10% of the days with thunder. Hailstorms occur most frequently in late spring, when the temperature lapse rate is steepest. Although rare, tornadoes have been known to accompany thunderstorms, mostly in the eastern highlands.

9. Turbulence

During summer the plateau warms rapidly during the day, setting up a turbulent exchange between the hot air near the surface and the cooler air above. By afternoon this convective overturning shows up visually as towering

cumulus clouds. If the cumulus development reaches the thunderstorm stage, the associated turbulence is usually severe and may extend to the tropopause. Turbulence is also likely when strong winds blow across mountain ranges. This is particularly noticeable over the mountains in the south and east. Clear-air turbulence is likely over the extreme south during the colder months because of the strong shearing forces near the levels of the strongest westerly winds. Turbulent conditions are usually associated with cold-front passages, which are most frequent in the south during winter.

D. Climatic data tables

This subsection contains selected climatic data in tabular form. Data for the primary weather elements and many of their parameters are included (Figures 25 through 49). A few tables contain data on specific

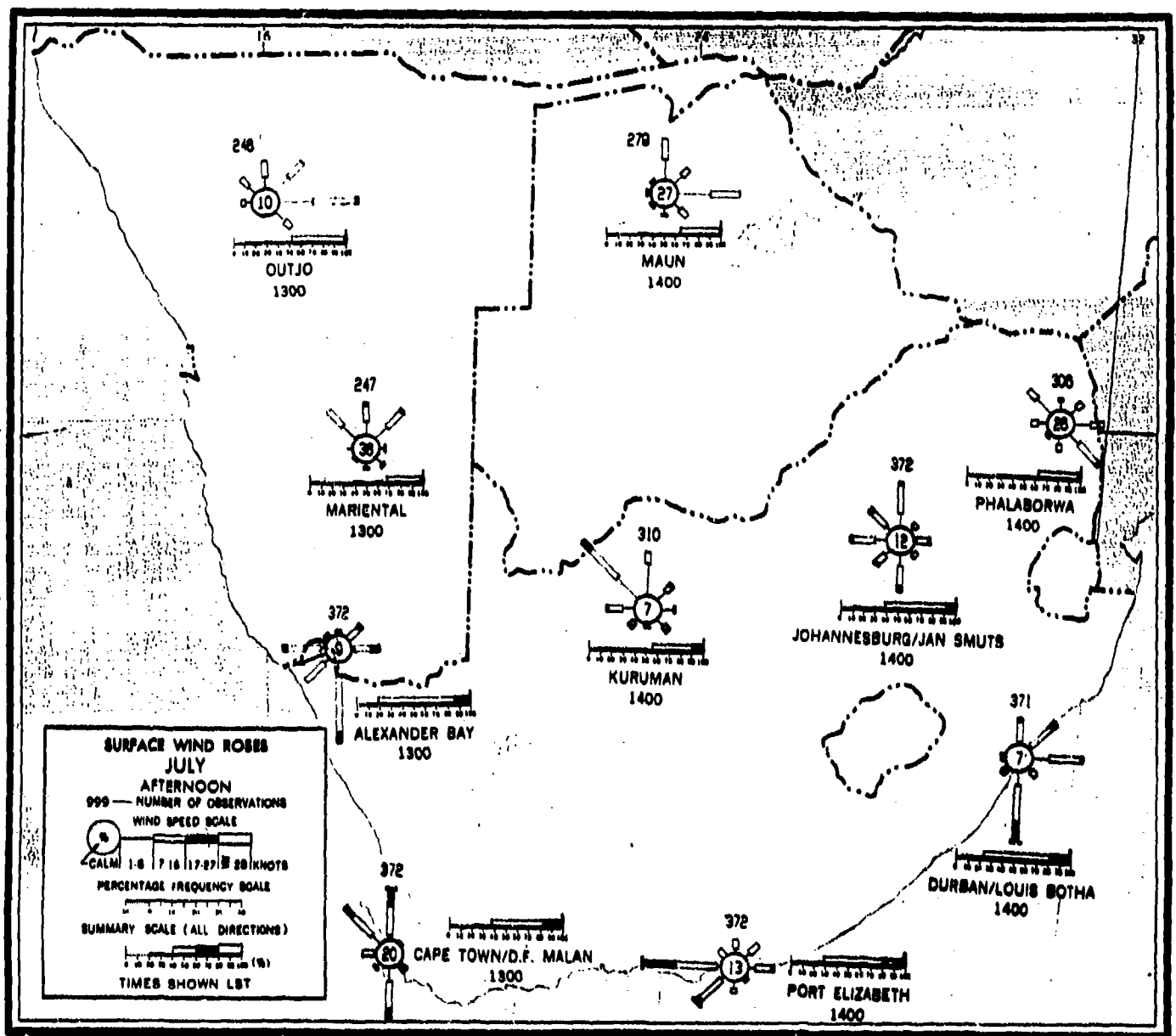


FIGURE 20. Surface wind roses in afternoon, July

weather conditions or combinations of weather elements that occur simultaneously (Figures 50 through 54). Generally, the data base is adequate for most elements, but certain limitations are evident. The density of meteorological stations is somewhat less than satisfactory in much of Botswana and South-West Africa. This is particularly true along the coast and in the highlands of South-West Africa. The length of data records is good for most stations, especially those in the Republic of South Africa, but nighttime observations are virtually absent in all the countries. Most tabular data of surface and upper-air conditions are taken from summaries compiled by electronic data processing. The surface-data summaries are based on observations during various periods from 1956 through 1967, and the upper-air summaries date from 1949 through 1967. Additional data for precipitation, temperature, and thunderstorms were

taken from various published sources. The tables represent a collection of data carefully selected to best portray the climate of South Africa, but in the textual presentations, all available data were considered. The annual values in some tables may differ slightly from the sums or means of the monthly values because of the rounding of fractions.

In order to provide as much information as possible about the tabular data base, three notations concerning the years of record are used throughout Subsection D. On those machine-processed tables which, for every station except one, were derived from 6-hourly observations averaged over a number of years, the notations POR (period of record) and CYR (composite years of record) appear under the Data Base Information column. The POR is the time span, expressed in years, during which

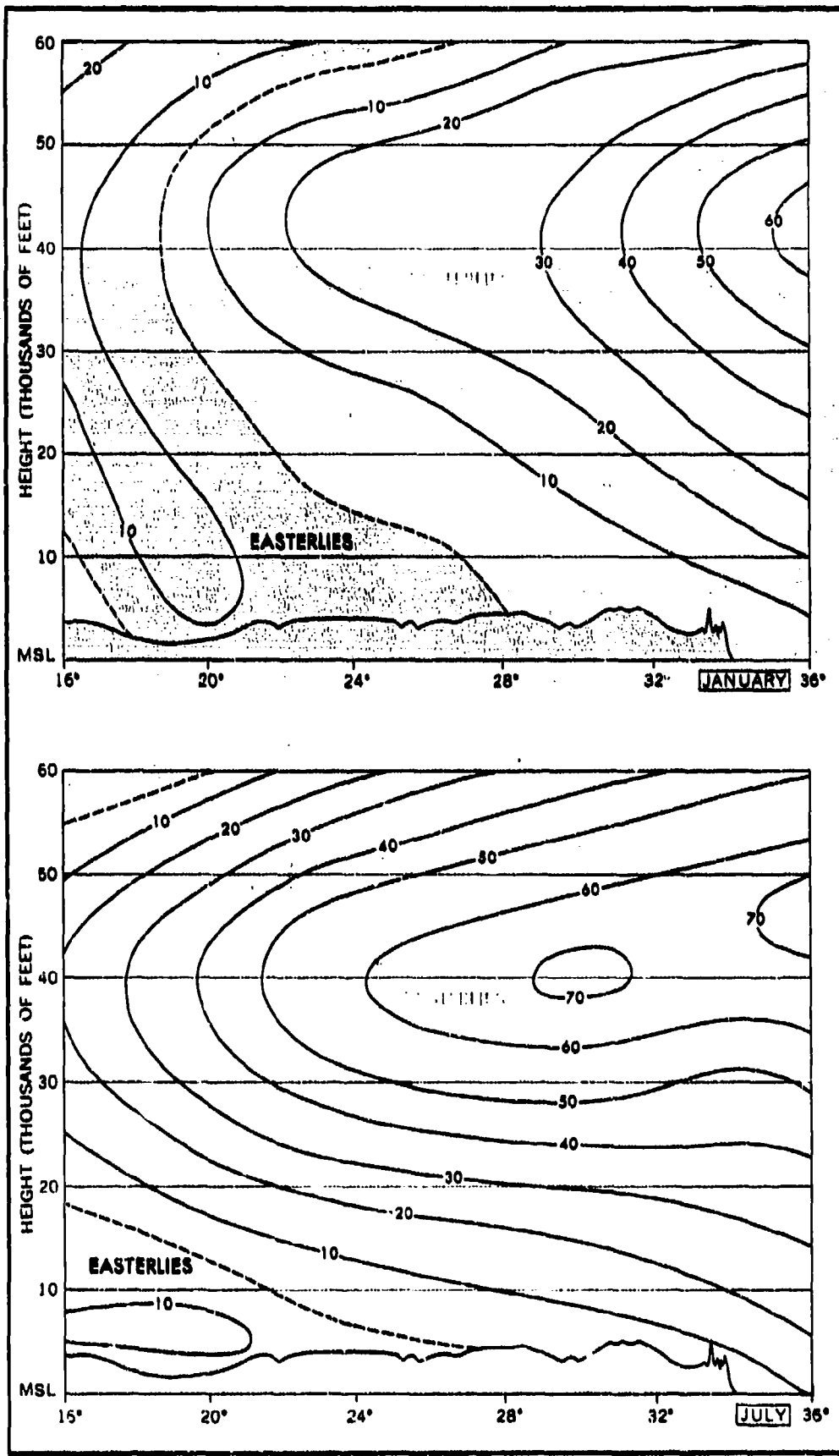
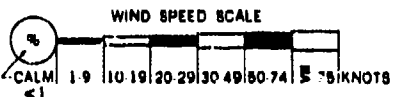
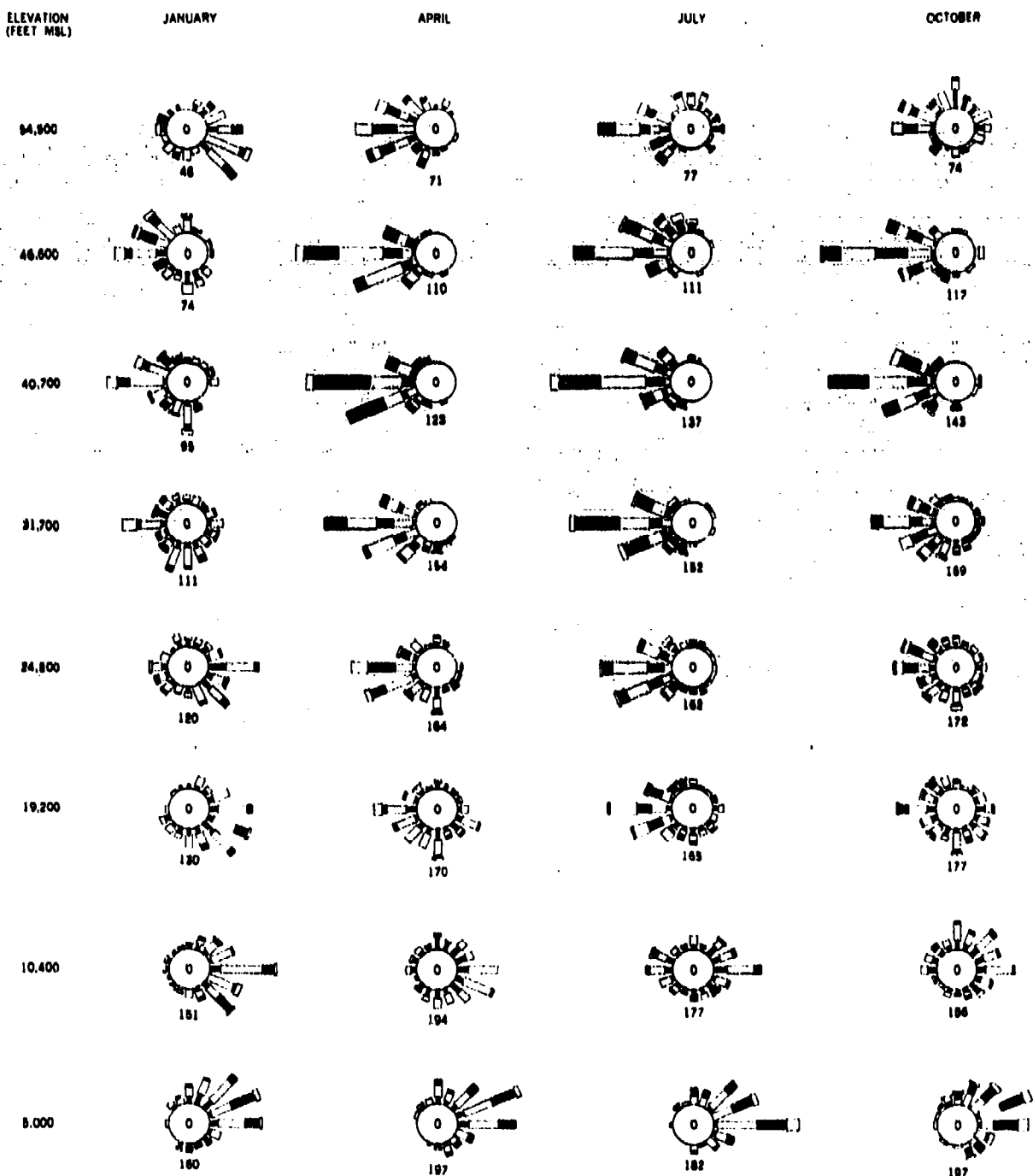


FIGURE 21. Cross section of resultant upper-air wind direction and speed (knots) along the 23rd meridian, January and July

UPPER-AIR WIND ROSES

MAUN



NUMBER OF OBSERVATIONS
INDICATED BELOW EACH ROSE

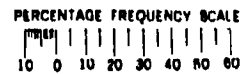
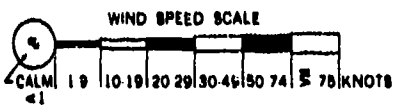
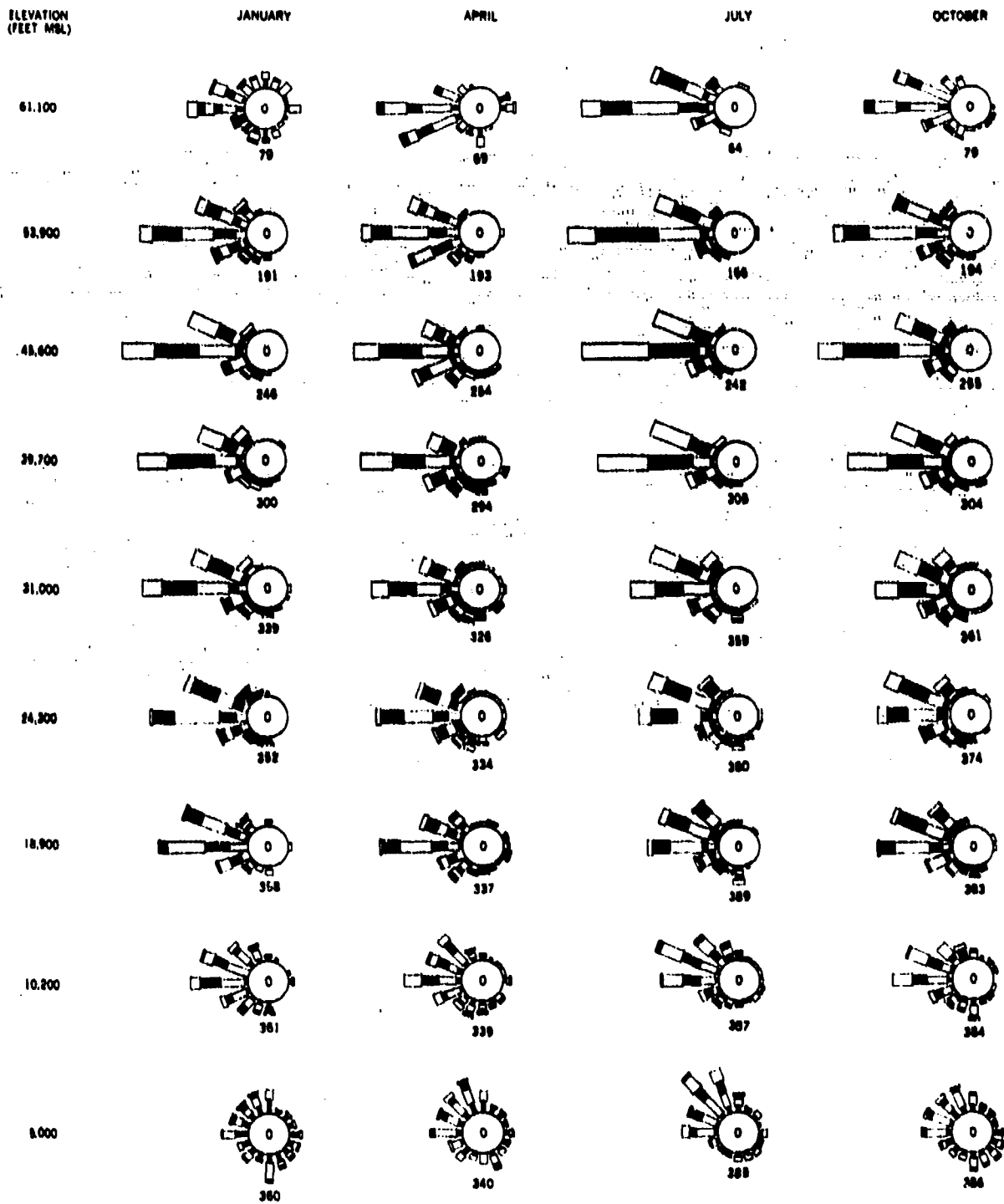


FIGURE 22. Upper-air wind roses, Maun, Botswana

UPPER-AIR WIND ROSES
CAPE TOWN/D. F. MALAN



NUMBER OF OBSERVATIONS
INDICATED BELOW EACH ROSE

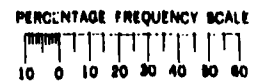


FIGURE 23. Upper-air wind roses, Cape Town/D. F. Malan, Republic of South Africa

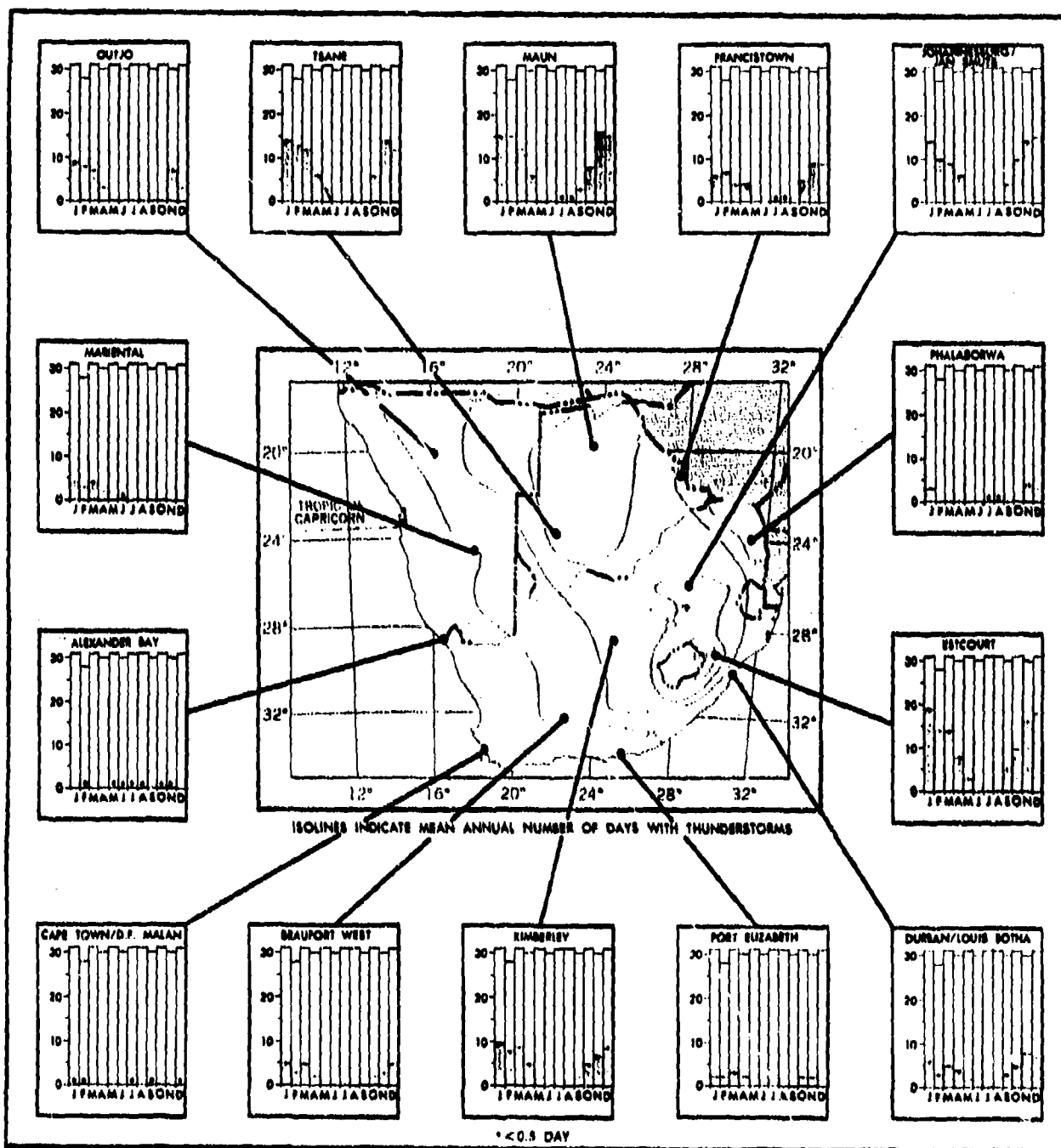


FIGURE 24. Mean number of days with thunderstorms. (For tabular data see Figure 49.)

the observations were taken and represents the total number of years considered in the data base. The CYR is obtained by totalling the observations taken at sporadic intervals during the POR and converting this total to the number of years it would have covered if the period of record had been unbroken. However, almost all of the data base for South Africa represents virtually an unbroken record, so that the POR and CYR for the

majority of the observations are identical or almost identical. On those tables consisting of data obtained from several sources, only the notation YRS REC (years of record) is used because the POR and CYR usually could not be accurately determined.

A map of station locations (Figure 55), with a list giving latitude, longitude, and elevation of meteorological stations, appears at the end of this section.

FIGURE 25. MEAN DAILY MAXIMUM TEMPERATURE (°F.)

COUNTRY AND STATION	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN	YRS REC
Botswana:														
Francistown.....	88	86	86	83	79	74	74	79	86	90	89	88	83	26
Gaberonea.....	91	89	86	83	77	72	72	78	84	89	89	90	83	26
Ghanai.....	90	89	86	84	79	74	75	80	87	92	92	91	85	26
Kaane.....	87	87	87	87	83	79	80	84	92	96	92	88	87	16
Maun.....	90	89	88	87	82	77	77	83	91	95	93	90	87	29
Serowe.....	86	85	83	81	77	71	71	76	83	88	87	86	81	30
Shakawe.....	88	88	88	86	81	77	77	83	91	96	90	89	86	5
Teahong.....	94	93	89	83	76	71	71	77	84	89	92	94	84	16-17
Tsane.....	93	92	89	83	76	71	71	76	86	91	91	93	84	6
Lesotho:														
Maseru.....	82	81	77	71	65	60	60	66	72	76	78	82	78	20
Mokhotlong.....	75	74	71	67	60	57	57	61	67	71	71	74	67	20
Quthus Nek.....	78	76	72	68	62	57	56	62	67	71	73	76	68	48
Republic of South Africa:														
Alexander Bay.....	75	75	75	74	71	70	69	68	70	70	73	74	72	12
Beaufort West.....	90	88	83	75	69	64	65	68	74	78	84	88	77	11-12
Bethlehem.....	79	79	77	69	65	60	61	66	73	75	76	80	72	10-11
Bloemfontein.....	86	83	79	73	66	62	62	67	73	78	82	85	75	14
Calvinia.....	89	88	84	76	69	63	63	66	71	77	82	87	76	22-23
Cape Agulhas.....	74	74	72	69	66	64	62	63	63	66	69	72	68	31-32
Cape Columbine.....	69	70	69	66	64	62	60	62	63	65	67	69	65	26
Cape Saint Lucia.....	82	82	81	78	75	72	71	72	73	75	78	80	77	19
Cape Town/D.F. Malan.....	79	79	77	73	67	64	64	64	67	70	75	78	71	11-12
De Aar.....	89	88	83	74	67	61	62	67	74	79	84	88	77	19-20
Durban/Louis Botha.....	82	82	82	78	76	73	73	74	74	75	78	80	77	11-12
East London.....	78	78	77	74	72	70	70	70	70	71	73	76	73	23
Entenour.....	81	80	75	73	70	66	66	71	75	78	79	81	75	31
George.....	76	76	75	72	70	67	66	67	66	68	71	73	71	10
Goodhouse.....	103	101	97	90	81	74	73	78	84	91	95	100	89	21
Johannesburg/Jan Smuts.....	78	77	76	70	66	61	61	67	73	76	75	76	71	12
Kimberley.....	91	88	84	77	70	65	65	71	77	83	85	89	79	31
Kuruman.....	88	87	83	76	70	66	66	71	78	82	86	88	79	15-16
Louis Trichardt.....	81	80	79	78	74	70	70	73	78	81	81	82	77	20
Lydenburg.....	78	78	77	71	69	64	64	70	75	75	75	77	73	5-6
Macuville.....	92	90	89	86	81	77	75	80	84	90	91	92	85	20-21
Mafeking.....	87	84	82	78	72	68	67	73	80	85	85	86	79	29-30
Marnitz.....	85	86	85	82	77	73	73	78	84	87	88	89	82	15-19
Matroosberg.....	82	82	78	71	64	59	57	60	64	70	75	80	70	29-30
Middelburg.....	85	84	79	72	66	61	60	66	71	75	80	85	74	31
Newcastle.....	83	82	80	77	73	68	68	74	78	81	82	84	77	20
Okiep.....	87	87	84	77	70	64	63	66	70	75	80	85	76	32-33
Phalaborwa.....	80	88	88	84	82	77	77	80	84	87	87	88	84	9-10
Pieteraburg.....	82	82	80	76	73	68	68	72	78	81	81	80	77	11-12
Pilot Relief.....	78	78	77	74	71	67	66	70	74	76	76	78	73	31-32
Port Elisabeth.....	78	78	76	73	71	68	67	68	68	70	72	75	72	26
Port Saint Johns.....	77	78	76	75	74	72	71	70	71	72	73	76	74	31-32
Pretoria.....	81	81	78	75	70	66	66	71	77	80	80	82	76	13
Queenstown.....	85	84	82	75	70	66	64	69	74	78	80	84	76	24-25
Rheepun.....	79	79	78	71	69	63	64	69	74	74	75	80	73	5-6
Somerset East.....	85	84	81	77	71	67	66	70	73	76	79	83	76	20
Standerton.....	83	81	80	75	70	65	65	70	75	79	80	82	75	37
Uppington.....	96	94	90	81	74	69	70	74	81	85	91	95	83	12
Vanwykville.....	94	93	87	79	72	66	65	71	74	83	87	92	80	20
Walvis Bay.....	73	74	74	75	74	74	70	67	68	67	71	72	71	35
Wepener.....	85	83	80	73	66	62	62	67	74	78	80	84	74	32-33
Willowmore.....	87	86	81	74	67	62	61	66	70	75	80	84	75	40-41
South-West Africa:														
Gobabis.....	90	87	84	81	76	72	72	77	84	88	89	91	83	38
Keetmanshoop.....	95	93	90	82	76	69	71	76	83	86	92	95	84	9-10
Mariental.....	95	93	90	84	78	71	73	78	86	89	92	96	85	8
Ondangua.....	90	88	87	88	84	79	80	85	91	94	92	90	87	7
Outjo.....	90	88	87	84	81	76	77	82	89	91	89	91	85	7-8
Tauneh.....	88	86	85	83	80	76	76	81	89	92	90	89	85	37
Windhoek.....	85	83	80	76	72	68	68	74	80	84	84	87	78	39-40
Swaziland:														
Mbabane.....	77	76	75	74	70	66	67	70	73	75	76	77	73	20
Ntlegi.....	81	81	78	77	74	70	70	73	76	78	79	80	76	14

FIGURE 26. MEAN DAILY MINIMUM TEMPERATURE (°F.)

COUNTRY AND STATION	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN	YRS REC
Botswana:														
Francistown	65	64	61	56	48	41	41	46	54	61	64	65	65	26
Gaberone	64	64	61	53	43	36	36	40	49	58	62	63	62	26
Ghanzi	64	64	61	55	45	39	38	44	51	59	63	64	64	26
Kaasane	65	65	64	51	54	48	47	51	59	65	67	65	59	16
Maun	66	66	64	58	49	42	43	47	56	65	66	66	57	29
Serowe	63	62	60	53	45	39	38	42	50	58	62	64	53	30
Shakawe	67	66	65	60	49	42	42	47	54	63	65	66	57	5
Teahong	65	65	61	51	41	34	34	39	46	54	60	64	51	16-17
Tsane	65	66	63	54	42	37	37	42	51	58	63	65	53	6
Lesotho:														
Maseru	58	57	54	47	38	32	32	36	43	49	53	56	46	20
Mokhotlong	49	48	45	39	31	25	24	29	36	42	45	47	38	20
Quthas Nek	53	53	51	46	40	34	34	38	43	47	49	52	45	48
Republic of South Africa:														
Alexander Bay	59	59	57	54	50	50	48	48	50	53	55	58	53	12
Beaufort West	61	60	58	51	45	42	42	45	46	50	55	59	51	11-12
Bethlehem	56	55	52	44	36	28	27	31	41	46	52	54	43	10-11
Bloemfontein	60	59	55	47	39	33	33	35	43	50	54	58	47	14
Calvinia	57	55	53	47	42	39	38	39	42	45	50	54	47	22-23
Cape Agulhas	63	64	62	58	55	52	50	51	53	55	58	61	57	32
Cape Columbine	56	56	56	54	53	51	50	50	50	53	54	55	55	25-26
Cape Saint Lucia	70	70	69	66	61	57	57	59	62	61	66	68	64	18-19
Cape Town/D.F. Malan	60	59	57	52	48	45	44	45	47	50	55	59	52	11-12
De Aar	61	59	56	47	39	34	32	37	42	48	54	58	47	19-20
Durban/Louis Botha	69	69	68	62	55	49	49	53	58	62	65	67	61	11-12
East London	64	65	64	59	55	51	50	52	55	58	60	62	58	11
Estcourt	59	59	57	51	43	37	37	41	47	52	55	58	49	31
George	59	59	58	53	51	47	46	47	48	51	54	55	52	10
Goodhouse	71	71	68	62	52	45	43	47	54	60	64	69	59	21
Johannesburg/Jan Smuts	57	58	55	51	45	40	40	43	49	52	55	56	50	12
Kimberley	64	63	59	52	44	37	37	41	48	54	58	62	51	31
Kuruman	61	60	57	49	40	35	34	37	45	51	56	60	49	15-16
Louis Trichardt	63	62	60	56	49	43	44	47	53	58	60	62	55	20
Lydenburg	59	58	54	50	42	37	36	40	47	51	56	57	49	5-6
Macoville	69	67	67	59	50	44	44	48	55	62	65	66	58	20-21
Mafeking	62	61	58	52	43	37	37	42	49	56	59	61	51	28-30
Marnitz	66	66	63	58	49	43	43	47	55	62	65	65	57	18-19
Matroosberg	53	54	51	46	42	38	37	38	40	44	48	51	45	29-30
Middelburg	55	54	51	44	38	32	31	34	39	44	49	52	43	31
Newcastle	50	50	56	49	40	35	35	41	47	53	56	58	49	20
Okiep	60	61	58	54	49	45	43	44	46	50	55	57	52	31-33
Phalaborwa	69	68	66	63	55	50	50	54	59	64	67	68	61	9-10
Pietersburg	62	62	59	54	46	41	40	43	50	56	60	61	53	11-12
Plet Retief	59	58	56	51	45	39	39	43	48	53	56	58	50	31-32
Port Elizabeth	62	62	61	56	50	46	46	48	51	54	57	60	54	26
Port Saint Johns	67	68	67	64	61	57	56	57	59	61	63	65	62	32
Pretoria	60	60	57	50	42	37	37	42	49	55	57	60	50	13
Queenstown	58	58	56	49	43	37	37	40	45	49	53	56	49	25-27
Sheeprun	58	57	55	47	39	33	33	35	46	50	53	56	47	5-6
Somerant East	58	59	57	53	48	43	43	44	47	50	54	56	51	20
Standerton	55	54	51	43	34	28	26	31	39	47	51	55	43	37
Uppington	68	66	64	54	45	39	39	42	49	54	62	66	54	12
Vanwykavlei	64	63	59	50	42	36	34	37	43	50	56	60	49	20
Walvis Bay	59	60	59	55	52	48	47	46	48	51	54	57	53	35
Wepener	58	58	53	46	37	30	30	34	41	48	52	56	45	32-33
Willowmore	56	57	54	48	40	35	34	37	42	47	51	55	46	40-41
South-West Africa:														
Gobabis	63	62	59	52	43	37	36	41	48	56	59	62	51	38
Keetmanshoop	65	65	63	56	50	44	44	47	52	55	61	64	55	9-10
Mariental	69	69	65	56	48	42	41	45	53	59	65	68	57	8
Ondangua	67	66	65	62	55	45	43	47	55	61	64	66	58	7
Outjo	63	63	62	57	48	42	43	46	52	57	61	63	55	7-8
Tsumeb	66	65	63	59	52	47	47	51	60	66	66	66	59	37
Windhoek	63	62	60	55	48	44	43	47	54	58	60	62	55	39-40
Swaziland:														
Mbabane	59	59	57	53	47	42	42	45	49	54	56	58	52	20
Hhregl	62	63	61	59	55	51	50	52	53	56	58	61	57	14

FIGURE 27. ABSOLUTE MAXIMUM TEMPERATURE (°F.)

COUNTRY AND STATION	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN	YRS REC
Botswana:														
Francistown	104	103	100	96	94	88	89	95	100	105	107	108	107	36
Gaborone	107	103	99	96	92	85	85	92	100	105	105	111	111	26
Ghanai	107	111	106	98	91	90	88	100	104	104	108	108	111	26
Kasane	100	99	98	99	98	89	91	96	103	108	108	108	108	26
Maun	104	103	102	99	96	92	90	97	101	109	110	108	110	39
Serowe	104	102	99	96	91	88	89	92	100	103	104	104	104	30
Shakawe	100	100	98	97	89	86	86	94	100	103	100	100	103	8
Tsabong	107	106	101	96	88	86	84	91	98	103	105	106	107	16-17
Tsane	105	104	99	95	87	83	80	91	96	101	104	105	105	6
Lesotho:														
Maseru	98	96	92	87	81	74	71	80	88	94	94	95	98	20
Mokhotlong	91	95	83	78	78	71	73	76	80	87	87	92	95	20
Quehas Nek	93	93	92	89	79	75	76	81	88	91	92	93	95	48
Republic of South Africa:														
Alexander Bay	98	98	102	106	98	90	91	96	100	103	102	102	106	12
Beaufort West	108	103	103	96	90	78	82	93	96	102	106	105	108	11-12
Bethlehem	93	92	88	84	79	72	72	80	94	93	91	94	94	10-11
Bloemfontein	100	96	93	88	81	78	73	80	90	94	94	98	100	14
Calvinia	106	105	104	95	88	78	83	89	98	105	102	104	106	22-23
Cape Agulhas	85	97	95	96	93	86	85	89	90	79	87	87	97	41-42
Cape Columbine	92	94	98	97	88	82	80	82	88	92	98	91	98	26
Cape Saint Lucia	99	96	95	94	87	87	87	93	92	101	95	102	102	41
Cape Town/D.F. Malan	101	99	98	101	92	83	84	88	97	96	94	99	101	11-12
De Aar	105	101	98	91	81	81	77	83	93	99	100	105	108	19-20
Durban/Louis Botha	94	92	92	91	89	87	89	91	95	91	94	92	98	11-12
East London	96	99	94	97	96	89	92	100	106	103	98	97	106	23
Eastcourt	102	95	95	91	86	81	80	86	95	100	100	99	102	41
George	106	99	106	102	91	87	86	89	94	100	92	102	106	10
Goodhouse	118	115	111	107	99	89	86	100	108	112	114	117	118	21
Johannesburg/Jan Smuts	91	88	86	82	79	72	74	84	86	90	88	89	91	12
Kimberley	103	101	97	93	86	82	79	88	94	100	102	103	103	31
Kuruman	104	100	96	88	84	78	76	85	91	97	99	101	104	15-16
Louis Trichardt	100	98	99	94	90	86	86	91	99	102	104	107	107	30
Lydensburg	86	89	87	84	79	74	76	82	88	91	85	89	91	5-6
Macquillie	112	103	105	103	97	92	91	98	103	109	111	109	112	20-21
Mafeking	102	99	96	91	87	83	81	87	96	100	103	101	103	34-35
Marnitz	102	103	101	96	92	85	88	93	99	103	104	103	104	18-19
Matroosberg	99	100	98	90	83	73	73	84	87	98	93	100	100	29-30
Middelburg	102	101	96	94	82	78	78	87	99	97	103	101	103	41
Newcastle	102	100	96	90	90	82	83	89	97	100	103	103	103	30
Okiep	103	103	101	98	90	83	78	88	95	102	100	101	103	42-43
Phalaborwa	100	105	104	100	99	91	87	98	105	113	113	106	113	9-10
Pietersburg	92	95	91	88	87	80	79	89	93	98	97	94	98	11-12
Piet Retief	94	96	94	91	87	81	84	91	96	97	97	97	97	31-32
Port Elizabeth	102	104	104	101	95	87	90	98	103	97	104	96	104	26
Port Saint Johns	89	91	92	94	94	91	93	97	103	104	100	92	104	40-42
Pretoria	95	91	91	83	80	78	75	83	89	92	95	95	96	13
Queenstown	105	100	99	93	88	79	79	88	95	100	100	104	105	34-35
Sheeprun	101	98	94	85	86	78	78	87	91	95	102	98	102	5-6
Somershet East	107	109	101	100	91	82	84	93	95	102	103	107	109	30
Standerton	99	94	90	89	86	77	79	86	94	94	94	99	99	37
Uppington	108	106	102	97	91	81	85	92	99	105	108	107	108	12
Vanwykville	107	107	101	95	88	81	80	88	97	101	105	107	107	25
Walvis Bay	100	97	97	103	104	97	98	99	100	97	95	91	104	35
Weponer	101	98	95	89	81	80	77	82	89	94	96	99	101	39-40
Willowmore	108	108	106	96	88	78	85	87	97	101	103	106	108	40-41
South-West Africa:														
Gobabis	102	99	97	93	88	82	82	92	96	99	100	101	102	38
Keetmanshoop	106	103	101	98	90	82	83	93	98	104	106	106	106	9-10
Mariental	105	103	100	97	91	82	84	92	96	102	104	105	105	8
Ondangua	101	99	99	98	96	86	86	93	99	100	102	101	102	7
Outjo	99	98	95	94	87	82	84	92	96	99	100	100	100	7-8
Tauneh	96	94	91	89	86	81	82	88	95	98	97	96	98	35
Windhoek	97	94	94	87	89	79	77	85	91	93	96	97	97	39-40
Nwaniland:														
Mbabane	92	95	92	92	85	85	91	89	99	95	96	97	99	20
Stegli	100	97	93	93	91	83	86	95	95	98	100	98	100	14

FIGURE 28. ABSOLUTE MINIMUM TEMPERATURE (°F.)

COUNTRY AND STATION	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN	TRE REC
Botswana:														
Francistown	48	48	48	31	28	24	27	27	31	41	44	50	24	36
Gaborone	47	48	44	28	25	22	20	24	24	32	41	42	20	33
Ghanzi	44	44	40	31	21	20	16	22	29	34	42	45	18	26
Kasane	55	52	50	44	37	31	32	35	39	48	49	52	31	25
Maun	48	48	50	38	29	22	25	24	31	43	49	52	22	39
Serowe	45	46	40	33	28	19	24	22	30	40	41	41	19	30
Shakawe	56	54	54	45	33	28	31	30	40	51	51	57	28	5
Taobong	44	47	42	24	20	16	15	17	21	27	39	42	15	10-17
Tsano	48	54	44	32	26	23	20	24	30	38	47	53	20	6
Lesotho:														
Maseru	49	40	35	28	17	14	18	19	25	28	34	38	14	20
Mokhotlong	36	34	31	21	11	11	10	10	18	20	25	32	10	20
Qochas Nek	32	32	33	20	21	15	14	18	15	17	26	35	14	48
Republic of South Africa:														
Alexander Bay	50	49	47	44	40	37	37	35	39	42	47	47	35	12
Beaufort West	44	46	40	33	28	24	24	23	27	34	37	43	23	11-12
Bethlehem	39	41	33	28	22	18	12	18	21	27	37	42	12	10-11
Bloemfontein	43	39	37	28	22	16	17	16	21	28	36	37	16	14
Calvinia	37	33	35	29	26	21	19	21	22	26	33	34	19	22-23
Cape Agulhas	47	48	49	40	40	40	39	40	40	41	41	41	39	42
Cape Columbine	43	47	41	43	40	39	40	40	40	38	39	41	38	28-28
Cape Saint Lucia	54	55	55	53	48	45	42	44	47	50	52	57	42	40-41
Cape Town/D.F. Malan	46	46	40	36	34	30	30	31	32	34	42	45	30	11-12
De Aar	42	39	38	26	23	18	14	19	18	28	37	39	14	19-20
Durban/Louis Botha	53	56	55	47	41	38	37	40	45	46	55	54	37	11-12
East London	48	52	51	45	40	37	37	38	41	44	49	48	37	23
Estcourt	43	45	44	33	29	23	30	23	28	34	38	40	20	41
George	48	47	47	41	39	38	34	36	38	39	43	40	34	10
Goodhouse	47	57	50	45	33	30	31	31	38	40	48	49	30	21
Johannesburg/Jan Smuts	46	44	42	33	31	23	28	26	29	32	40	45	23	12
Kimberley	42	44	37	30	23	20	20	20	26	31	36	43	20	31
Kuruman	45	45	40	33	27	18	20	20	24	32	40	44	18	15-16
Louis Trichardt	50	50	47	39	33	29	29	30	37	41	45	41	29	30
Lydenburg	46	44	40	34	31	21	24	27	34	37	42	46	21	5-6
Macouville	53	56	51	35	33	28	26	35	40	45	52	54	36	20-21
Mafeking	45	44	41	30	22	15	15	22	25	34	40	45	15	33-35
Marnitz	52	54	47	41	29	25	26	29	35	45	50	55	26	18-19
Matronsberg	36	37	35	28	25	25	24	25	25	25	32	35	24	29-30
Middelburg	31	34	33	25	17	14	13	13	15	22	29	33	13	41
Newcastle	41	43	40	30	21	17	14	20	23	32	31	39	14	30
Okiep	43	43	39	35	31	30	27	28	31	32	35	34	27	41-43
Phalaborwa	55	54	53	49	43	35	36	43	44	49	55	51	35	9-10
Pietersburg	52	51	47	41	35	28	30	31	36	42	45	50	26	11-12
Piet Retief	44	45	38	30	29	22	24	25	29	34	37	43	22	31-32
Port Elizabeth	45	45	45	41	31	31	31	32	35	37	42	44	31	25
Port Saint Johns	54	52	52	52	45	42	44	43	44	45	45	53	42	42
Pretoria	49	49	43	33	26	24	24	25	30	37	41	43	24	13
Queenstown	39	40	35	31	26	19	21	23	25	29	35	37	19	35-37
Sheeprun	49	39	37	31	27	19	20	22	30	32	35	41	19	5-6
Somerset East	35	41	42	37	31	30	29	29	32	34	38	40	29	10
Standerton	38	38	33	22	13	9	9	11	18	25	30	38	9	37
Uppington	47	49	44	35	27	18	22	20	25	35	45	50	15	12
Vanwykavlei	41	41	35	31	21	20	12	20	23	27	31	33	12	25
Walvis Bay	45	45	45	43	35	35	25	34	32	32	41	45	25	35
Wepener	35	35	34	25	19	13	9	13	15	25	31	35	9	39-40
Willowmore	39	37	38	31	26	22	20	22	24	28	37	41	20	40-41
South-West Africa:														
Gobabis	48	45	41	31	21	15	15	17	22	34	38	47	15	38
Keetmanshoop	46	51	45	34	26	27	29	27	31	34	43	47	27	9-10
Mariental	51	55	53	40	35	29	23	30	34	42	49	53	23	8
Ondangua	54	53	45	47	32	30	30	31	39	47	52	54	30	7
Outjo	50	51	49	33	32	24	29	29	31	40	45	45	24	7-8
Taunab	59	59	55	51	42	39	38	42	49	55	58	59	38	35
Windhoek	46	44	39	36	29	25	27	25	31	35	33	38	28	39-40
Nwaaland:														
Mhabane	49	47	45	35	31	25	28	23	25	38	40	45	23	20
Hlegl	51	52	52	46	41	38	39	42	41	41	45	43	38	14

FIGURE 29. MEAN NUMBER OF DAYS WITH MAXIMUM TEMPERATURE 90° F. OR HIGHER

COUNTRY AND STATION	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN	DATA BASE INFO	
														FOR	CTR
Botswana:															
Francistown	12	9	10	4	*	0	0	1	9	20	14	11	89	6	6
Gaborone	18	15	18	4	*	0	0	1	8	17	14	14	106	7	7
Ghanzi	20	17	15	7	*	*	0	1	16	23	20	21	139	8	6
Maun	14	12	15	12	2	*	*	4	21	26	21	17	146	9	9
Shakawe	14	11	11	7	0	0	0	4	21	28	18	18	130	8	8
Teabong	27	23	18	8	0	0	0	*	11	18	21	26	161	6-7	6-7
Teane	26	20	15	5	0	0	0	*	12	19	20	25	140	6	6
Republic of South Africa:															
Alexander Bay	*	*	1	2	2	*	*	1	1	1	*	1	11	12	12
Beaufort West	17	13	8	1	0	0	0	*	2	4	7	13	66	11-12	11-12
Bethlehem	1	*	0	0	0	0	0	0	*	*	*	1	3	10-11	10-11
Calvinia	15	12	8	1	0	0	0	0	1	2	7	13	60	11-12	11-12
Cape Agulhas	0	*	*	*	*	0	0	0	*	0	0	0	*	11-12	11-12
Cape Columbine	*	0	*	*	0	0	0	0	0	0	0	0	1	12	12
Cape Saint Lucia	1	*	*	*	0	0	0	*	*	*	*	*	2	11	11
Cape Town/D.F. Malan	2	1	1	1	*	0	0	0	*	*	1	1	8	11-12	11-12
De Aar	16	13	8	*	0	0	0	0	1	4	8	15	68	10-11	10-11
Durban/Louis Botha	1	1	1	*	0	0	0	*	*	*	*	1	4	11-12	11-12
East London	1	1	1	1	1	0	*	1	1	*	*	1	8	12	12
Eateourt	2	2	2	*	0	0	0	0	1	4	3	3	18	11	11
Johannesburg/Jan Smuts	*	0	0	0	0	0	0	0	0	0	0	0	*	12	12
Kimberley	15	14	8	*	0	0	0	0	3	8	10	15	78	12	12
Kuruman	14	10	4	0	0	0	0	0	*	8	8	14	56	10-11	10-11
Lydenburg	0	0	0	0	0	0	0	0	0	1	0	0	1	5-6	5-6
Macouville	22	14	11	7	1	1	*	1	8	15	18	21	117	2-3	2-3
Mafeking	10	7	5	1	0	0	0	0	2	10	8	11	53	9-10	9-10
Marnitz	13	10	7	4	1	0	0	1	6	14	13	12	81	11-12	11-12
Matroosberg	5	4	2	*	0	0	0	0	0	*	1	4	16	10-11	10-11
Middelburg	10	7	4	*	0	0	0	0	*	2	4	9	37	11	11
Okiep	12	10	7	1	*	0	0	0	*	2	5	10	47	12-13	12-13
Phalaborwa	16	13	12	7	3	1	1	3	8	13	13	14	104	9-10	9-10
Pietersburg	1	2	1	0	0	0	0	0	1	4	3	2	14	11-12	11-12
Piet Retief	1	1	1	*	0	0	0	*	1	3	2	2	11	11-12	11-12
Port Elizabeth	1	*	1	1	1	0	*	*	*	*	*	*	4	12	12
Port Saint Johns	0	*	*	*	*	*	*	*	*	*	*	*	1	11-12	10-12
Queenstown	10	8	6	*	0	0	0	0	*	4	5	10	43	8-9	8-9
Sheeprun	3	3	3	0	0	0	0	0	*	2	2	5	20	5-6	5-6
Upington	26	21	19	3	*	0	0	*	5	11	19	25	129	12	12
Wepener	9	5	2	0	0	0	0	0	0	2	2	7	25	12-13	12-13
Willowmore	10	9	5	*	0	0	0	0	1	2	4	8	39	8-9	8-9
South-West Africa:															
Gobabis	18	9	6	1	0	0	0	*	4	17	12	20	86	8	8
Keetmanshoop	27	22	19	3	*	0	0	1	7	12	20	26	137	9-10	9-10
Mariental	27	23	19	5	*	0	0	1	11	15	22	29	154	8	8
Outjo	18	12	10	3	0	0	0	1	13	23	15	22	117	7-8	7-8
Windhoek	10	3	*	0	0	0	0	0	*	4	5	12	36	9-10	9-10

* < 0.6 day.

FIGURE 30. MEAN NUMBER OF DAYS WITH MINIMUM TEMPERATURE 32°F. OR LOWER

COUNTRY AND STATION	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN	DATA BASE INFO	
														FOR	CYR
Botswana:															
Francistown	0	0	0	*	*	2	*	*	*	0	0	0	2	6	6
Gaborone	0	0	0	*	*	3	2	*	*	*	0	0	6	7	7
Ghanzi	0	0	0	*	1	4	3	2	*	0	0	0	11	6	6
Maun	0	0	0	0	*	2	1	*	*	0	0	0	3	9	9
Shakawe	0	0	0	0	0	2	1	*	0	0	0	0	3	5	5
Tsabong	0	0	0	*	2	12	13	8	1	*	0	0	36	6-7	6-7
Tsano	0	0	0	*	2	9	10	3	1	0	0	0	23	6	6
Republic of South Africa:															
Alexander Bay	0	0	0	0	0	0	0	0	0	0	0	0	0	12	12
Beaufort West	0	0	0	0	1	6	6	5	1	0	0	0	18	11-12	11-12
Bethlehem	0	0	0	2	13	23	26	19	4	1	0	0	88	10-11	10-11
Calvinia	0	0	0	1	4	6	6	6	3	1	0	0	26	11-12	11-12
Cape Agulhas	0	0	0	0	0	0	0	0	0	0	0	0	0	12	12
Cape Columbine	0	0	0	0	0	0	0	0	0	0	0	0	0	11-12	11-12
Cape Saint Lucia	0	0	0	0	0	0	0	0	0	0	0	0	0	11	10-11
Cape Town/D.F. Malan	0	0	0	0	0	*	*	*	*	0	0	0	1	11-12	11-12
De Aar	0	0	0	*	4	14	18	9	2	*	0	0	48	10-11	10-11
Durban/Louis Botha	0	0	0	0	0	0	0	0	0	0	0	0	0	11-12	11-12
East London	0	0	0	0	0	0	0	0	0	0	0	0	0	12	12
Katcourt	0	0	0	0	*	4	3	1	*	0	0	0	9	11	11
Johannesburg/Jan Smuts	0	0	0	0	*	3	2	2	*	*	0	0	8	12	12
Kimberley	0	0	0	*	1	6	7	5	1	*	0	0	20	12	12
Kuruman	0	0	0	0	3	13	15	8	1	*	0	0	41	10-11	10-11
Lydenburg	0	0	0	0	1	0	6	2	0	0	0	0	15	8-9	8-9
Macoville	0	0	0	0	0	*	*	0	0	0	0	0	*	2-3	2-3
Mafeking	0	0	0	*	1	4	4	2	*	0	0	0	11	8-10	8-10
Marnitz	0	0	0	0	*	1	1	*	0	0	0	0	3	11-12	11-12
Matroosberg	0	0	0	*	2	5	5	7	3	1	*	0	23	10-11	10-11
Middelburg	*	0	0	2	8	15	18	12	6	3	*	0	64	11	11
Okiep	0	0	0	0	*	1	1	*	*	0	0	0	1	12-13	11-13
Phalaborwa	0	0	0	0	0	0	0	0	0	0	0	0	0	9-10	9-10
Pietersburg	0	0	0	0	0	1	1	*	0	0	0	0	2	11-12	11-12
Piet Retief	0	0	0	*	2	2	1	*	0	0	0	0	5	11-12	11-12
Port Elizabeth	0	0	0	0	*	*	*	*	0	0	0	0	*	12	12
Port Saint Johns	0	0	0	0	0	0	0	0	0	0	0	0	0	12	12
Queenstown	0	0	0	*	3	8	7	5	1	*	0	0	24	9-11	9-11
Shoepan	0	0	0	*	4	13	17	7	1	*	0	0	44	8-9	8-9
Uppington	0	0	0	0	1	6	8	5	*	0	0	0	19	12	12
Wepener	0	0	0	2	11	19	22	17	6	2	*	0	79	12-13	12-13
Willowmore	0	0	0	*	3	8	10	5	*	*	0	0	27	8-9	8-9
South-West Africa:															
Gobabis	0	0	0	*	1	5	8	3	*	0	0	0	17	8	8
Keetmanshoop	0	0	0	0	0	1	1	*	*	0	0	0	2	9-10	9-10
Mariental	0	0	0	0	0	2	2	1	0	0	0	0	4	8	8
Outjo	0	0	0	0	0	1	*	*	*	0	0	0	2	7-8	7-8
Windhoek	0	0	0	0	*	1	1	*	*	0	0	0	1	9-10	9-10

* < 0.5 day.

FIGURE 31. MEAN RELATIVE HUMIDITY (Continued)

COUNTRY AND STATION	HOUR (LST)													DATA BASE INFO		
		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN	PER	CYR
Republic of South Africa (Continued):																
East London.....	1400	71	71	73	67	60	53	55	59	67	71	71	70	66	12	12
Katcourt.....	1400	55	55	52	50	41	37	36	32	37	42	52	51	45	11	11
Johannesburg/Jan Smuts.....	1400	30	32	48	48	38	36	34	28	32	37	49	51	42	12	12
Kimberley.....	1400	32	33	36	36	36	37	33	27	23	24	29	28	31	12	12
Kuruman.....	1400	33	39	30	39	35	36	32	28	24	25	30	32	33	9-11	9-11
Lydenburg.....	1400	54	52	45	48	35	35	32	30	30	40	55	59	43	5-6	5-6
Macuville.....	1400	45	56	40	45	42	42	50	48	43	45	43	39	46	2-3	2-3
Mafeking.....	1400	40	43	39	40	34	31	28	25	23	25	35	38	33	9-10	9-10
Marnitz.....	1400	45	46	42	42	34	34	33	31	30	32	38	43	38	11-12	11-12
Matroosberg.....	1300	29	29	35	41	44	45	45	43	39	35	30	27	37	10-11	10-11
Middelburg.....	1400	32	33	39	41	35	40	33	32	29	29	31	27	34	10-11	10-11
Okiep.....	1300	32	30	33	37	41	45	41	40	34	34	32	31	36	12-13	12-13
Phalaborwa.....	1400	49	51	45	46	35	37	36	36	36	40	45	45	42	9-10	9-10
Pietersburg.....	1400	50	51	47	45	36	35	35	32	33	37	45	51	42	12	12
Plet Retief.....	1400	55	57	51	50	37	35	35	32	40	51	60	58	47	11-12	11-12
Port Elizabeth.....	1400	65	65	65	65	61	57	55	60	65	65	65	64	64	12	12
Port Saint Johns.....	1400	50	50	51	76	71	64	67	71	75	78	81	80	76	12	12
Queenstown.....	1400	42	41	43	43	37	35	32	29	32	34	39	37	37	9-11	9-11
Sheeprun.....	1400	51	57	55	59	43	42	38	35	39	51	55	54	49	5-6	5-6
Uptington.....	1300	21	22	25	25	25	21	27	23	19	20	20	19	24	12	12
Walvis Bay.....	1300	51	50	54	55	79	73	76	53	52	51	53	52	51	7-8	5-6
Wepener.....	1400	34	35	39	40	35	35	32	25	22	25	33	32	32	12-13	12-13
Willowmore.....	1400	35	37	43	49	45	47	44	41	35	37	35	32	41	5-9	5-9
South-West Africa:																
Grahamstown.....	1300	30	32	33	32	24	24	22	15	15	15	25	23	24	5	5
Keetmanshoop.....	1300	15	20	23	25	22	25	22	15	15	15	14	19	19	9-10	9-10
Mariental.....	1300	25	27	29	29	25	30	25	22	15	15	20	20	24	5	5
Outjo.....	1300	31	37	37	32	22	21	21	17	15	15	25	27	25	5	5
Windhoek.....	1300	25	32	34	31	22	21	19	14	12	13	22	22	23	9-10	9-10

FIGURE 32. MEAN PRECIPITATION (INCHES)

COUNTRY AND STATION	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN	TRE ASD	
Botswana:															
Francistown.....	4.0	3.2	2.7	0.7	0.2	0.1	*	*	0.1	0.9	2.2	3.5	17.7	36	
Gaborone.....	3.5	3.5	3.4	1.4	0.5	0.2	0.2	0.5	1.5	2.5	3.5	31.3	40		
Ghanzi.....	3.9	3.7	3.1	1.5	0.3	0.1	*	*	0.1	0.5	1.5	2.5	17.9	34	
Kasane.....	5.7	5.4	4.0	1.1	0.2	*	0.0	*	0.1	0.7	2.9	5.7	27.5	38	
Maun.....	4.1	3.7	3.2	1.0	0.2	*	0.0	0.0	*	0.7	1.7	3.2	17.5	37	
Moree.....	3.7	3.4	3.1	0.9	0.4	0.1	0.1	0.1	0.2	1.0	2.2	3.5	15.4	35	
Palapye.....	4.5	4.5	2.8	1.5	0.2	0.0	*	*	*	0.2	3.4	3.3	20.7	5	
Tlokweng.....	1.5	2.0	1.8	1.3	0.5	0.4	0.1	*	0.3	0.5	1.0	1.5	11.1	24	
Tlokweng.....	2.2	1.7	2.3	0.9	0.3	0.2	0.2	*	*	0.5	1.5	1.1	11.2	6	
Lesotho:															
Maseru.....	3.9	3.7	3.7	2.2	1.0	0.5	0.5	0.0	0.8	2.2	3.1	3.2	25.4	55	
Mokhotlong.....	3.5	3.3	2.5	1.4	0.9	0.2	0.4	0.5	0.9	2.3	3.1	3.4	22.5	30	
Quthus Nek.....	0.4	5.2	4.9	2.0	1.1	0.5	0.4	0.8	1.7	2.7	4.1	5.5	35.5	52	
Republic of South Africa:															
Alexander Bay.....	*	*	0.2	0.1	0.2	0.4	0.1	0.3	0.1	0.1	*	0.1	1.7	12	
Beaufort West.....	0.5	1.3	1.5	0.5	0.5	0.3	0.3	0.4	0.5	0.5	0.5	0.9	5.9	53	
Bethlehem.....	5.5	3.5	2.5	2.5	1.2	0.5	0.3	0.4	1.0	2.7	3.7	3.3	25.2	10-11	
Bloemfontein.....	3.3	3.2	3.0	2.1	0.9	0.3	0.4	0.7	0.8	2.0	2.5	2.7	22.1	24	
Calvinia.....	0.3	0.5	0.7	0.5	1.1	1.1	1.0	0.9	0.5	0.4	0.5	0.3	5.3	73	
Cape Agulhas.....	0.5	0.7	1.2	1.5	2.1	2.4	2.2	2.1	1.0	1.5	1.1	0.7	17.9	79	
Cape Columbine.....	0.1	0.3	0.3	1.0	1.5	1.7	1.5	1.3	0.5	0.5	0.3	0.3	9.5	24	
Cape Saint Lucia.....	4.9	5.7	7.2	4.7	3.9	3.7	2.9	2.4	2.7	3.7	4.4	4.7	50.5	42	
Cape Town/D.F. Malan.....	0.4	0.5	0.5	1.7	2.7	3.9	2.5	3.1	1.4	1.5	0.5	0.4	19.5	11-12	
De Aar.....	1.2	2.1	2.2	1.3	0.7	0.4	0.2	0.2	0.5	0.7	1.0	0.5	11.3	51	
Durban/Louis Botha.....	5.7	4.7	4.7	4.5	2.1	1.4	1.5	1.5	2.4	3.7	4.4	4.7	41.3	11-12	
East London.....	3.0	3.1	3.9	2.7	1.9	1.4	1.1	1.5	3.5	4.4	3.7	3.4	34.0	21	
Katcourt.....	4.1	4.5	4.2	2.1	0.9	0.2	0.4	0.7	1.3	2.7	3.9	5.1	30.2	20	

Footnote at end of table.

FIGURE 32. MEAN PRECIPITATION (Continued)

COUNTRY AND STATION	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN	YRS REC
Republic of South Africa (Continued):														
George	3.2	2.3	3.1	2.5	2.4	1.5	1.8	2.3	2.8	3.4	2.9	2.4	30.5	20
Goodhouse	0.1	0.3	0.6	0.2	0.1	0.2	0.2	0.1	0.1	0.1	0.1	0.2	2.3	20
Johannesburg-Jan Smuts	4.1	3.8	2.8	2.4	0.7	0.5	0.4	0.2	1.3	2.9	4.4	4.6	28.1	12
Jonkershoek	3.0	3.7	5.1	14.6	18.6	19.4	21.1	23.0	13.5	7.6	6.2	3.6	139.3	15
Kimberley	2.2	2.4	2.9	1.8	0.8	0.4	0.2	0.5	0.4	1.3	1.8	2.2	16.8	28
Kuruman	2.8	3.4	2.9	2.0	0.8	0.5	0.2	0.3	0.3	1.0	1.2	2.3	17.6	29
Louis Trichardt	6.4	5.0	3.8	1.5	0.8	0.5	0.6	0.3	0.5	1.9	3.4	4.6	29.3	51
Lydenburg	3.9	3.3	2.3	2.2	0.7	0.3	0.2	0.3	1.0	2.4	4.8	4.8	26.2	14-15
Macuville	3.6	2.4	1.7	0.7	0.2	0.2	0.1	*	0.2	0.8	1.9	2.4	14.2	31
Mafeking	4.0	3.3	3.4	1.6	0.6	0.2	0.2	0.2	0.7	1.6	2.5	3.9	22.3	59
Marnitz	3.5	3.5	2.0	1.0	0.3	0.2	*	*	0.2	1.1	2.0	3.0	16.9	14
Matroosberg	0.3	0.5	0.5	0.8	1.1	1.6	1.2	1.4	0.7	0.6	0.5	0.4	9.6	54
Middelburg	1.7	2.3	2.6	1.2	0.7	0.3	0.4	0.3	0.7	0.9	1.5	1.5	14.2	44
Newcastle	6.3	5.6	5.0	1.8	1.0	0.4	0.7	0.5	1.4	3.1	5.1	5.3	36.2	40
Okiep	0.2	0.3	0.4	0.5	1.0	1.0	0.8	0.9	0.6	0.3	0.2	0.2	6.4	72
Phalaborwa	4.7	3.4	1.4	1.8	0.3	0.5	0.4	0.2	0.5	1.0	2.5	3.5	20.2	9-10
Pietersburg	3.3	2.3	1.3	1.0	0.3	0.4	0.1	0.1	0.6	1.2	2.8	4.2	17.4	11-12
Piet Retief	5.7	4.8	4.0	2.2	0.9	0.4	0.5	0.7	1.8	3.7	5.1	6.3	35.9	54
Port Elizabeth	1.4	1.3	1.9	1.6	2.5	2.5	2.0	2.4	2.4	2.3	2.3	1.6	24.2	24
Port Saint Johns	5.0	5.2	5.8	3.3	2.6	1.4	1.7	1.9	3.5	4.9	4.7	5.1	45.2	70
Pretoria	5.1	4.1	3.6	1.7	1.0	0.5	0.4	0.2	0.9	2.4	4.9	5.1	30.0	22
Queenstown	3.2	3.5	3.2	1.6	0.9	0.5	0.5	0.6	1.1	1.6	2.4	2.9	22.0	87
Sheeprun	6.7	4.4	4.4	2.5	0.9	1.8	0.5	1.0	0.8	2.9	3.9	3.9	33.5	5-6
Somerset East	2.5	2.9	3.5	2.1	1.4	0.9	0.8	1.0	1.9	2.2	2.6	2.7	24.4	53
Standerton	4.8	4.7	3.4	1.6	0.8	0.3	0.4	0.4	0.8	2.9	4.1	4.1	28.3	36
Uplington	0.7	0.9	1.1	1.0	0.5	0.2	*	0.1	0.2	0.4	0.5	0.6	6.2	12
Vanwykavlei	0.6	1.1	1.5	0.8	0.4	0.2	0.2	0.2	0.2	0.4	0.5	0.5	6.6	75
Walvis Bay	*	0.1	0.1	0.1	*	*	0.0	*	*	*	*	*	0.4	46-49
Wepener	4.1	3.4	4.1	1.9	1.1	0.5	0.4	0.6	0.8	1.9	2.9	3.0	24.8	41
Willomore	0.9	1.0	1.5	0.9	0.9	0.5	0.4	0.5	0.5	0.7	0.7	0.9	9.3	66
South-West Africa:														
Gobabis	3.2	3.2	2.7	1.2	0.3	0.1	*	*	0.2	0.6	1.2	1.6	14.3	60-62
Keetmanshoop	0.7	1.6	1.9	0.5	0.1	0.1	*	*	*	0.2	0.5	0.7	6.4	12-13
Mariental	1.2	2.0	1.8	0.6	0.1	0.1	*	*	0.1	0.2	0.5	0.7	7.3	29-30
Ondangwa	4.0	4.8	3.4	1.3	0.1	*	*	*	0.1	0.5	1.7	3.4	19.5	48-54
Outjo	3.5	3.7	3.1	1.5	0.2	*	*	*	*	0.4	1.2	2.5	16.1	58-63
Taureb	4.6	5.1	3.2	1.7	0.3	*	*	*	0.1	0.7	2.1	3.4	21.2	49-50
Windhoek	3.0	3.0	3.2	1.6	0.3	*	*	*	0.1	0.4	1.0	1.8	14.5	69-70
Swaziland:														
Mbabane	9.6	8.3	7.4	2.8	1.3	0.7	0.9	1.1	2.4	5.0	6.7	8.4	54.6	53
Stegi	5.5	5.0	4.6	2.3	1.1	0.7	0.6	0.7	1.7	3.9	4.1	4.9	34.1	55

* < 0.05 inch.

FIGURE 33. MEAN NUMBER OF DAYS WITH PRECIPITATION ≥ 0.004 INCH

COUNTRY AND STATION	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN	YRS REC
Botswana:														
Francistown	8	7	6	2	1	1	1	1	1	3	0	8	45	36
Gaberons	9	8	8	5	2	1	1	1	2	6	8	10	61	40
Ghanai	11	10	8	4	2	1	1	1	1	4	7	9	59	34
Kasane	13	11	9	3	1	1	0	1	1	3	8	11	62	38
Maun	12	11	9	4	1	1	0	0	:	3	7	10	59	37
Serowe	8	7	7	3	1	1	1	1	1	4	6	7	47	35
Shakawe	13	14	11	5	1	0	*	*	*	3	10	10	67	5
Tsabong	5	5	6	4	2	1	1	1	1	2	3	5	36	24
Tsane	7	7	7	4	1	1	1	*	*	4	7	6	46	6
Lesotho:														
Maseru	10	10	10	7	5	2	2	2	3	7	8	9	75	58
Mokhotlong	14	14	11	7	4	1	2	2	3	9	12	13	92	30
Qachas Nek	15	14	12	7	4	2	2	3	5	9	11	13	97	62
Republic of South Africa:														
Alexander Bay	1	*	2	2	3	3	2	3	2	2	1	1	22	12
Beaufort West	3	4	5	3	3	2	2	2	3	3	3	3	36	53
Bethlehem	12	10	10	7	5	1	2	1	4	9	12	14	87	11

Footnote at end of table.

FIGURE 33. DAYS WITH PRECIPITATION ≥ 0.04 INCH (Continued)

COUNTRY AND STATION	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN	YRS RNC
Republic of South Africa (Continued):														
Bloemfontein	11	11	11	8	5	2	2	2	3	7	8	9	79	24
Calvinia	1	2	2	4	5	5	5	5	3	3	2	2	39	73
Cape Agulhas	5	6	8	8	10	10	11	10	9	9	7	6	99	79
Cape Columbine	2	2	3	6	9	9	10	9	7	6	3	2	68	24
Cape Saint Lucia	10	10	12	9	7	7	6	6	9	11	11	12	110	42
Cape Town/D.F. Malan	4	5	5	8	12	11	11	12	9	9	5	4	94	11-14
De Aar	4	5	6	4	3	2	1	1	2	2	3	3	36	61
Durban/Louis Botha	14	11	13	11	6	4	5	5	9	14	16	15	124	11-12
East London	13	11	12	9	7	5	4	6	9	13	11	13	113	21
Estcourt	14	13	12	7	4	1	2	3	6	11	14	16	103	20
George	12	12	12	11	10	8	8	10	11	14	12	11	131	20
Goodhouse	2	3	3	3	2	3	2	2	1	2	2	2	27	20
Johannesburg/Jan Smuts	14	10	9	9	4	3	1	1	4	9	14	15	92	12
Kimberley	9	9	10	7	5	2	2	2	2	5	7	8	68	28
Kuruman	7	8	7	4	3	1	1	1	1	3	4	6	46	29
Louis Trichardt	12	11	11	6	4	3	3	2	3	6	9	11	81	51
Lydenburg	13	10	7	7	4	2	1	1	3	8	14	14	84	14-15
Macaville	6	6	4	2	1	1	1	1	1	2	5	6	36	31
Mafeking	9	8	8	4	2	1	1	1	2	5	7	8	56	59
Marnitz	8	7	5	3	2	1	1	1	1	5	6	9	49	14
Matroosberg	1	2	3	3	5	5	6	5	4	3	3	1	41	54
Middelburg	6	7	8	5	4	2	3	3	3	4	5	5	55	44
Newcastle	13	11	11	6	3	1	2	2	5	11	13	14	92	40
Okiep	1	2	3	3	4	5	4	5	4	3	2	2	38	72
Phalaborwa	10	9	6	6	2	3	2	1	3	5	9	10	65	9-10
Pietersburg	10	7	6	6	2	2	1	1	2	5	9	12	62	11-12
Pict Retief	13	12	11	7	4	2	3	3	6	12	14	15	102	54
Port Elizabeth	8	8	9	9	9	8	7	9	6	11	10	9	106	24
Port Saint Johns	14	12	12	8	5	3	4	6	9	13	14	14	114	70
Pretoria	14	12	11	7	4	2	2	1	4	9	13	14	93	22
Queenstown	11	11	11	7	5	3	3	4	5	7	9	10	86	87
Sheeprun	20	15	16	11	5	5	4	4	6	16	16	15	134	5-6
Somerset East	8	9	9	6	5	3	3	4	5	7	8	7	74	83
Standerton	12	9	8	5	3	1	1	1	3	8	10	10	71	36
Uppington	3	4	6	3	3	2	1	1	1	2	3	3	32	12
Vanwykavlei	2	3	4	3	2	2	2	2	1	2	2	2	27	75
Walvis Bay	*	1	1	1	*	*	0	*	*	*	*	*	4	46-49
Wepener	12	11	11	11	7	5	2	3	3	4	7	8	93	41
Willomore	3	3	5	4	4	3	3	3	2	3	3	3	39	66
South-West Africa:														
Gobabis	9	8	8	4	1	*	*	*	1	3	5	6	47	60-62
Keetmanshoop	4	7	6	3	2	1	*	*	*	2	2	3	30	12-13
Mariental	4	5	6	2	1	*	*	*	*	1	2	3	24	29-30
Ondangwa	9	10	9	4	1	*	*	*	*	2	5	8	49	48-54
Outjo	8	9	8	4	1	*	*	*	*	2	5	6	43	59-63
Tsumeb	15	14	12	6	2	*	*	*	1	5	9	13	75	49-50
Windhoek	10	10	10	5	2	*	*	*	1	3	5	8	55	69-76
Swaziland:														
Mbabane	17	15	15	10	6	3	3	5	9	14	17	18	132	53
Stegl	11	10	10	7	4	3	3	3	5	9	10	11	86	58

* < 0.5 day.

FIGURE 34. MAXIMUM 24-HOUR PRECIPITATION (INCHES)

COUNTRY AND STATION	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN	YRS REC
Botswana:														
Francistown	2.8	3.2	4.6	1.5	0.7	1.3	0.1	0.4	0.4	1.4	2.4	2.7	1.6	25
Gaborone	3.2	2.6	6.7	2.7	1.0	1.4	0.7	0.7	2.8	2.8	2.0	4.3	6.7	26
Ghanzi	5.1	2.0	2.4	2.0	1.3	0.2	0.3	0.1	0.4	3.3	1.7	2.4	5.1	23
Kasane	3.0	4.6	3.9	1.8	1.0	0.3	0.0	*	0.8	1.5	2.4	2.8	4.6	19
Maun	3.5	4.1	4.7	2.4	1.0	0.4	0.1	0.1	0.3	1.3	2.2	2.8	4.7	28
Shakawe	3.0	2.2	2.2	1.2	0.5	0.0	0.1	0.1	*	0.3	2.2	2.3	3.0	5
Taobong	1.9	1.7	2.2	1.9	1.1	1.7	0.3	0.4	1.5	1.2	1.3	3.0	3.0	23-24
Tlokweng	2.4	1.7	2.1	1.1	0.8	0.9	0.5	0.1	0.1	0.6	1.7	1.0	2.4	6
Lesotho:														
Maseru	3.9	1.8	2.4	1.9	1.4	0.7	0.9	1.6	1.3	2.2	2.6	3.4	3.9	19
Mokhotlong	1.3	1.8	1.3	1.2	1.3	0.6	0.9	0.9	1.5	3.0	1.8	1.2	3.0	19
Republic of South Africa:														
Alexander Bay	0.3	0.1	0.7	0.2	0.5	0.8	0.2	0.8	0.3	0.1	0.1	0.5	0.5	12
Beaufort West	1.2	1.1	2.3	2.2	3.0	0.7	1.0	0.9	1.7	1.1	0.9	0.7	3.0	11-12
Bethlehem	3.0	3.0	1.7	1.9	1.7	1.4	0.5	1.0	2.1	1.7	3.8	1.8	3.8	10-11
Bloemfontein	2.5	1.7	2.2	1.9	1.3	0.7	0.7	1.6	4.3	1.9	2.4	1.3	4.3	14
Calvinia	0.8	1.7	3.1	2.2	1.8	1.4	2.1	1.2	1.3	0.9	2.0	1.1	3.1	30-31
Cape Agulhas	4.6	5.0	2.3	1.6	1.8	2.4	1.7	4.0	2.6	4.8	2.4	3.7	5.0	31
Cape Clumbine	0.3	0.8	0.6	1.2	2.0	1.3	0.8	1.4	1.3	0.7	0.7	1.3	2.0	26
Cape Saint Lucia	5.4	5.4	6.3	7.3	8.5	9.0	4.8	5.1	2.4	3.9	4.5	4.9	9.0	30
Cape Town/D.F. Malan	0.5	1.3	0.7	1.8	1.2	1.9	1.1	1.4	1.4	1.6	1.0	0.6	1.9	11-12
De Aar	3.1	2.4	2.2	1.6	1.1	1.2	1.5	1.0	1.2	1.2	1.3	1.3	3.1	20-31
Durban/Louis Botha	4.3	3.4	3.2	5.6	3.1	4.3	4.0	2.5	2.4	3.4	2.1	6.4	6.4	11-12
East London	2.2	4.8	4.2	4.6	3.5	4.0	4.8	1.9	3.4	4.0	6.0	5.0	6.0	31
Eatcourt	4.1	3.2	2.0	2.3	2.0	1.1	1.5	2.0	3.3	1.9	3.0	2.6	4.1	30
George	2.4	2.1	3.3	3.1	4.4	1.1	3.3	3.1	2.6	2.3	3.5	3.6	4.4	19
Goodhouse	0.4	1.2	1.4	0.9	0.1	0.6	0.4	0.2	0.3	0.6	0.6	0.2	1.4	11
Johannesburg/Jan Smuts	1.7	1.8	3.0	1.9	1.2	1.2	1.2	1.0	1.4	2.8	2.6	3.5	3.6	12
Kimberley	2.4	2.2	2.6	2.0	2.2	2.7	0.9	2.4	1.2	2.3	2.5	2.5	2.7	31
Kuruman	3.3	3.2	2.9	4.1	2.2	1.3	0.8	1.6	1.3	3.0	2.7	2.8	4.1	29-30
Louis Trichardt	4.1	2.5	3.0	2.0	2.8	2.6	1.1	0.5	1.2	2.8	3.4	3.7	4.1	15
Lydenburg	2.1	1.7	1.3	1.9	0.3	0.9	0.8	0.3	1.0	1.6	1.7	2.5	2.5	5-6
Mafeking	3.1	3.5	4.5	2.5	1.4	2.6	0.5	0.9	2.2	3.2	2.3	4.0	4.5	23-24
Marnitz	4.8	2.7	3.0	1.9	0.6	0.8	0.5	0.2	1.0	1.8	2.0	2.5	4.8	15-19
Matroosberg	1.0	0.8	1.0	1.7	1.1	1.2	1.4	1.8	1.3	2.0	1.6	1.7	2.0	29-30
Middelburg	2.1	2.8	2.4	2.1	1.6	1.1	1.4	1.3	1.7	1.5	1.5	2.2	2.8	30
Newcastle	3.5	4.7	2.6	2.4	3.5	1.4	2.0	1.1	2.0	1.6	2.6	3.3	4.7	19
Okiep	0.4	1.7	1.2	2.1	1.3	3.4	0.7	0.7	1.3	0.4	2.0	0.7	3.4	30-31
Phalaborwa	3.0	3.2	1.4	1.7	0.8	0.8	0.7	0.8	1.1	1.3	2.1	2.4	3.9	9-10
Pieterburg	3.1	1.6	1.7	1.4	0.5	1.0	0.3	0.3	1.1	1.7	1.8	3.4	3.4	11-12
Piet Retief	3.6	3.4	3.0	2.0	1.8	2.5	2.4	1.9	2.4	3.2	4.2	3.4	4.2	28-29
Port Elizabeth	1.6	4.8	3.3	4.2	3.0	2.8	2.3	2.4	2.9	2.2	4.1	3.8	4.8	43
Port Saint Johns	2.6	6.1	5.4	4.3	3.1	3.7	2.1	4.0	5.4	2.0	7.1	3.2	7.1	19
Protoria	2.4	2.8	3.0	2.0	1.8	2.8	1.3	0.4	1.3	1.4	3.9	3.7	3.9	12
Queenstown	2.9	1.9	1.8	1.9	2.3	1.1	1.2	0.7	1.6	1.1	2.0	2.2	2.9	19
Rheoprun	3.8	3.7	1.5	1.4	0.9	2.7	0.5	1.5	1.0	0.9	2.0	2.0	3.8	5-6
Romerset East	2.0	2.4	2.4	5.5	3.0	0.9	2.5	1.2	2.3	5.0	1.9	2.6	5.5	19
Uppington	1.0	1.4	1.3	1.7	1.3	0.4	0.1	0.3	0.8	0.6	1.5	0.8	1.7	12
Vanwyksvlei	2.1	2.5	1.3	1.4	0.6	0.7	1.7	0.7	1.1	1.3	1.3	1.5	2.5	19
Wepener	4.2	4.8	2.0	1.5	1.8	1.8	1.0	1.3	1.9	3.7	2.4	2.7	4.8	31-33
Willowmore	2.4	1.0	1.8	0.7	1.7	0.6	0.8	0.5	0.7	0.7	1.5	1.7	2.4	8-9
South-West Africa:														
Gobabis	3.0	3.2	3.3	2.1	0.9	0.8	0.3	0.8	1.2	1.3	1.8	2.1	3.3	40
Keetmanshoop	1.1	2.4	1.6	1.1	1.0	0.1	*	0.1	0.5	0.3	0.7	3.9	3.9	9-10
Mariental	1.0	1.4	1.6	0.9	0.4	0.3	0.2	0.3	0.3	0.4	0.9	1.4	1.0	8
Ondangua	5.0	3.2	3.2	3.7	0.9	na	0.4	0.1	0.3	1.3	2.2	3.3	5.0	38
Outjo	1.8	2.8	1.0	1.7	0.3	*	*	0.6	0.4	1.0	2.0	2.2	2.8	7-8
Tsumeb	2.3	4.8	3.1	4.8	0.9	0.3	0.1	*	0.0	1.1	2.7	3.2	4.8	40
Windhoek	3.4	3.3	3.3	3.0	2.3	0.5	0.4	0.4	1.7	1.0	2.4	1.7	3.4	47-48
Swaziland:														
Mbabane	3.7	7.2	4.6	3.0	2.4	3.8	2.0	2.0	2.7	3.1	2.4	3.4	7.2	19
Stegi	4.5	6.2	3.3	2.6	3.3	5.9	2.6	2.3	1.7	2.1	2.8	3.5	6.2	19

na Data not available.

* < 0.05 inch.

FIGURE 38. GREATEST AND LEAST PRECIPITATION (Continued)

COUNTRY AND STATION	GREATEST		PRECIPITATION												ANN	YRS REC
	LEAST		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC		
Republic of South Africa (Continued):																
Marrits	G		9.2	7.6	5.6	2.6	0.8	0.8	0.6	0.2	1.4	3.1	4.3	6.1	24.3	18-19
	L		0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.1	7.7	12-18
Matroosberg	G		1.7	1.5	2.2	1.9	3.3	3.7	2.6	3.1	2.5	2.4	2.5	2.5	13.7	30-31
	L		0.0	0.0	0.0	0.0	0.1	0.1	*	*	0.0	*	0.0	0.0	3.0	27-31
Middelburg	G		7.0	7.2	8.4	4.2	2.7	2.3	3.0	2.6	4.0	3.3	5.9	4.3	24.5	46
	L		0.0	0.1	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	*	0.0	7.4	42-46
Newcastle	G		14.9	10.9	12.6	9.7	6.0	3.4	4.2	3.4	4.2	8.5	12.6	10.9	52.1	30
	L		2.0	1.1	0.4	0.0	0.0	0.0	0.0	0.0	*	0.6	0.6	0.9	19.5	30
Okiep	G		1.5	2.5	2.1	2.7	3.6	5.5	4.4	3.7	2.9	2.3	2.6	1.7	12.9	22-23
	L		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.9	77-83
Phalaborwa	G		13.2	8.8	3.6	4.1	0.9	2.0	1.0	0.8	1.5	2.8	5.3	5.3	27.4	9-10
	L		4.5	0.7	0.1	0.5	0.0	0.0	0.0	0.0	*	0.2	0.5	0.6	na	3-10
Pietersburg	G		6.3	7.8	8.3	8.2	2.8	2.6	0.4	0.3	2.2	4.0	3.8	9.9	26.1	17
	L		0.8	0.1	0.2	*	0.0	0.0	0.0	0.0	0.0	0.8	0.8	1.8	13.4	13-17
Piet Retief	G		15.0	10.7	9.9	8.0	3.4	4.1	3.3	3.6	6.8	9.1	11.6	11.5	50.3	55-56
	L		0.9	0.7	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.6	1.8	2.2	23.2	81-86
Port Elizabeth	G		5.3	5.5	10.7	5.8	9.3	7.2	6.2	6.7	11.6	7.9	9.6	6.3	34.1	101
	L		0.0	0.2	0.2	0.1	*	0.0	0.0	0.2	0.3	0.0	*	0.2	10.4	99-101
Port Saint Johns	G		16.1	15.7	20.0	13.6	22.8	19.1	20.9	9.3	19.8	16.7	13.3	13.2	79.5	72-73
	L		1.4	1.1	1.0	0.1	0.1	0.0	0.0	0.0	0.4	1.6	0.3	1.2	23.7	66-70
Pretoria	G		8.7	10.7	9.0	6.6	4.6	4.1	4.3	1.3	4.6	5.5	10.0	9.2	43.1	22
	L		1.6	1.7	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.7	0.6	35.3	22
Queenstown	G		9.0	8.7	7.6	4.2	4.1	3.1	3.7	2.8	6.1	6.2	9.0	11.1	43.2	27-29
	L		0.3	0.3	0.4	0.2	0.0	0.0	0.0	0.0	0.0	*	0.1	*	11.0	23-28
Sheeprun	G		9.2	7.7	7.8	4.1	1.8	4.6	1.0	2.2	1.7	4.3	3.9	6.3	39.4	5-6
	L		3.8	1.9	0.6	1.3	0.1	0.1	0.0	*	0.1	0.9	1.0	1.7	27.3	4-5
Somerset East	G		9.4	7.5	9.6	8.3	6.3	3.5	3.4	3.0	8.3	7.4	7.8	8.3	35.3	63
	L		0.2	0.6	0.5	0.2	0.1	0.0	0.0	0.0	0.1	0.2	0.2	0.2	10.6	63
Uppington	G		5.6	4.8	4.9	4.4	1.7	0.7	1.1	0.5	0.8	1.3	1.9	1.9	11.9	16-17
	L		0.6	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.4	14-17
Vanwyksvlei	G		3.7	6.3	5.6	3.8	2.0	1.5	1.9	2.4	2.7	1.6	3.8	1.7	14.4	65
	L		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	65
Wepener	G		10.7	9.0	9.8	6.7	4.2	3.2	2.8	3.1	4.9	7.0	6.0	6.9	41.3	48-49
	L		0.6	0.9	0.4	0.0	0.0	0.0	0.0	0.0	0.0	*	0.2	0.2	16.0	46-48
Willowmore	G		3.4	2.5	4.1	2.4	2.9	1.2	1.2	1.7	1.4	1.0	3.9	1.9	13.1	8-9
	L		0.1	0.1	0.5	0.4	*	0.1	*	0.1	*	0.2	0.2	*	7.1	5-8
South-West Africa:																
Gobabis	G		9.7	9.7	10.6	5.0	1.7	1.2	0.4	0.8	3.0	3.0	6.2	5.2	30.6	60
	L		0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	*	5.2	57-60	
Keetmanshoop	G		3.4	4.5	7.2	3.4	1.4	1.2	0.3	0.4	1.8	0.5	2.2	4.5	13.5	45-46
	L		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.7	42-46
Mariental	G		5.5	4.0	3.4	2.0	0.5	0.4	0.2	0.3	0.4	0.6	2.0	1.6	13.9	8
	L		*	*	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	na	3-8
Ondangua	G		17.9	11.7	9.8	6.7	1.3	0.7	0.4	0.1	2.2	2.7	8.2	10.5	10.9	44
	L		0.3	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	*	0.0	7.9	44
Outjo	G		7.8	6.8	4.8	3.3	0.6	*	*	1.2	0.7	1.6	7.6	9.4	30.7	7-8
	L		0.2	1.7	0.6	0.2	0.0	0.0	0.0	0.0	0.0	*	0.4	0.5	11.7	5-8
Tauneh	G		14.6	14.6	8.4	7.3	2.3	0.3	0.3	*	0.7	3.2	6.6	8.2	35.2	40
	L		1.1	0.4	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	9.2	40
Windhoek	G		12.2	11.9	12.3	6.8	1.9	0.7	1.2	1.5	2.1	1.7	5.9	6.3	30.7	79
	L		0.1	0.0	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.6	74-78
Swaziland:																
Mbabane	G		23.4	24.8	33.9	13.3	5.6	4.9	4.5	3.1	6.1	14.1	13.0	14.3	81.9	46
	L		3.7	2.2	2.2	0.4	0.0	0.0	0.0	0.0	0.7	0.9	2.4	4.4	35.4	46
Stet	G		19.7	17.3	20.7	10.0	5.0	5.9	4.7	4.3	4.9	8.7	10.0	12.5	59.7	59
	L		1.0	0.8	0.4	0.1	0.0	0.0	0.0	0.0	0.0	0.2	0.6	0.7	14.4	59

na Data not available.

* < 0.05 inch.

FIGURE 36. MEAN CLOUDINESS (%)
(Based on 3 observations per day)

COUNTRY AND STATION	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN	DATA BASE INFO	
														PDR	CYR
Botswana:															
Francistown	50	50	46	42	19	21	23	15	14	34	57	63	37	6	6
Gaborone	57	51	47	41	22	20	18	14	19	38	54	54	36	7	6-7
Ghanzi	63	57	54	43	16	15	15	9	9	37	60	60	36	6	6
Mau	63	65	54	36	16	14	13	9	14	33	58	65	37	9	9
Shakawe	66	67	55	40	16	13	13	10	10	35	64	62	38	8	8
Tsabong	42	37	42	29	19	18	16	9	14	25	41	37	27	6-7	6-7
Tsano	52	48	47	35	13	17	15	9	11	30	47	44	31	6	6
Republic of South Africa:															
Alexander Bay	39	39	39	36	37	31	35	32	36	41	35	39	36	12	11-12
Beaufort West	39	34	42	41	40	33	30	31	26	41	41	37	37	11-12	11-12
Bethlehem	57	49	48	41	27	23	16	17	30	44	55	53	38	10-11	10-11
Calvinia	30	30	23	30	34	30	26	28	28	32	25	20	26	12	9-10
Cape Agulhas	54	56	59	56	56	51	51	49	53	55	54	51	54	12	12
Cape Columbine	30	33	37	43	49	47	42	43	43	43	38	32	40	12	12
Cape Saint Lucia	61	53	45	46	33	30	29	34	48	61	69	60	47	11	11
Cape Town/D.F. Malan	33	35	38	44	52	52	47	49	47	46	41	36	43	11-12	11-12
De Aar	36	31	35	35	29	25	20	19	28	35	35	32	30	10-11	10-11
Durban/Louis Botha	70	61	56	52	40	32	31	37	55	70	74	69	54	11-12	11-12
East London	65	58	60	50	44	34	34	39	51	61	62	60	51	12	11-12
Katecourt	50	54	47	42	28	22	18	22	37	52	62	59	42	11	11
Johannesburg/Jan Smuts	55	51	43	39	22	20	16	15	25	39	56	55	36	12	12
Kimberley	47	41	46	37	31	25	21	20	29	38	44	42	35	12	12
Kuruman	42	39	39	28	20	18	12	10	19	27	37	35	27	9-11	9-11
Lydenburg	61	51	43	48	20	21	15	18	22	42	64	55	38	5-6	5-6
Macoville	61	64	42	44	19	31	20	24	25	37	49	43	38	2-3	2-3
Mafeking	57	51	46	41	22	21	15	12	22	35	55	52	36	9-10	9-10
Marnitz	51	48	36	35	19	22	18	14	20	34	50	52	33	11-12	10-12
Matroosberg	31	26	34	39	39	35	33	33	35	41	35	28	34	10-11	10-11
Middelburg	43	37	43	41	36	29	26	25	33	41	40	35	36	11	10-11
Okiep	17	19	23	25	28	27	24	24	24	29	22	15	23	12-13	12-13
Phalaborwa	57	54	44	44	23	22	22	26	30	43	59	59	40	10	9-10
Pieterburg	56	55	44	43	23	24	20	19	25	41	59	58	39	12	12
Piet Retief	61	50	47	45	24	21	19	23	35	54	66	62	43	11-12	11-12
Port Elizabeth	51	49	51	47	42	35	37	40	47	53	52	49	40	12	12
Port Saint Johns	69	61	57	49	40	30	32	37	54	65	66	65	52	12	12
Queenstown	57	52	52	45	38	29	29	29	39	53	54	48	44	9-11	8-10
Sheepston	70	59	55	51	35	31	28	25	42	60	64	60	49	5-6	5-6
Uppington	35	32	37	29	27	22	18	17	25	31	32	30	28	12	12
Wepener	52	47	47	39	32	25	23	21	29	41	45	45	35	12-13	12-13
Willowmore	28	27	36	33	29	22	24	25	29	34	31	24	29	8-9	8-9
South-West Africa:															
Gobabis	39	36	33	23	8	6	4	4	10	21	36	31	21	8	8
Kentmanshoop	32	32	31	24	21	16	13	14	21	27	28	27	24	9-10	7-8
Mariental	34	35	30	21	10	9	7	8	12	22	30	22	20	8	8
Outjo	46	47	42	29	10	6	6	8	11	23	37	35	25	8	8
Windhoek	54	50	56	34	22	11	8	12	20	30	45	50	33	9-10	7-8

FIGURE 37. MEAN CLOUDINESS (%) AT SPECIFIED HOURS

COUNTRY AND STATION	HOUR (LST)	HOUR												DATA BASE INFO		
		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN	PER	CYR
Botswana:																
Francistown.....	0800	51	58	47	45	31	27	26	19	17	34	57	54	39	6	6
Gaberones.....	0800	55	50	45	44	21	21	20	15	23	38	55	57	37	7	7
Ghanai.....	0700	55	52	52	43	16	18	16	12	9	35	53	51	34	6	6
Maun.....	0800	51	54	51	31	15	15	15	9	15	32	55	52	35	9	9
Rhakawe.....	0700	53	55	53	40	15	15	15	11	10	33	53	50	37	5	5
Tsabong.....	0700	38	33	41	31	21	20	19	11	14	27	37	31	27	6-7	6-7
Tsane.....	0700	45	40	47	35	13	18	18	12	12	28	41	39	29	6	6
Republic of South Africa:																
Alexander Bay.....	0700	59	58	50	51	49	41	43	45	51	55	50	57	52	12	12
Beaufort West.....	0800	39	37	48	47	43	37	35	35	43	45	43	35	41	11-12	11-12
Bethlehem.....	0800	54	50	49	44	30	27	20	20	31	42	52	47	39	10-11	10-11
Calvinia.....	0700	30	22	25	35	40	37	35	34	37	37	27	19	31	12	12
Cape Agulhas.....	0700	51	55	55	55	51	55	55	57	54	53	55	50	51	12	12
Cape Columbine.....	0700	37	42	45	51	55	52	50	49	53	52	47	41	45	12	12
Cape Saint Lucia.....	0800	55	57	53	51	39	31	31	39	55	55	73	55	52	11	11
Cape Town/D.F. Malan.....	0700	37	40	44	49	55	55	51	53	55	54	48	40	45	11-12	11-12
De Aar.....	0800	37	24	30	35	32	29	23	23	30	35	29	24	28	10-11	10-11
Durban/Louis Botha.....	0800	57	55	50	48	35	31	29	35	51	55	70	51	50	11-12	11-12
East London.....	0800	54	59	50	51	45	38	38	44	52	51	50	53	53	12	12
Estcourt.....	0800	55	55	51	49	33	27	23	27	49	54	52	55	45	11	11
Johannesburg/Jan Smuts.....	0800	58	48	41	40	24	20	20	17	25	35	54	53	35	12	12
Kimberley.....	0800	37	35	39	33	29	28	22	21	28	34	37	31	31	12	12
Kuruman.....	0800	34	35	35	29	20	22	13	12	21	27	33	30	25	9-11	9-11
Lydenburg.....	0800	57	47	40	44	19	19	14	15	22	27	37	32	35	5-5	5-5
Macuville.....	0800	58	71	45	50	22	20	21	29	28	48	52	49	42	2-3	2-3
Mafeking.....	0800	50	45	42	39	20	22	15	12	22	34	50	45	33	9-10	9-10
Marnitz.....	0800	50	48	34	34	18	20	17	14	21	55	55	54	33	11-12	10-12
Matroosberg.....	0700	32	32	39	45	45	39	39	40	45	47	39	27	39	10-11	10-11
Middelburg.....	0800	41	38	44	45	37	39	31	31	38	44	41	38	38	11	10-11
Okiep.....	0700	20	19	25	35	32	29	27	29	28	35	24	19	25	12-13	12-13
Phalaborwa.....	0800	59	54	55	54	31	25	25	34	41	54	71	59	49	10	10
Pietersburg.....	0800	52	52	50	48	25	25	23	23	31	45	55	53	43	12	12
Piet Retief.....	0800	52	52	53	49	28	24	22	25	38	53	55	53	45	11-12	11-12
Port Elizabeth.....	0800	55	53	55	33	43	35	42	43	50	55	55	53	50	12	12
Port Saint Johns.....	0800	57	51	57	30	40	31	33	38	55	54	53	51	52	12	12
Queenstown.....	0800	55	53	55	51	43	34	35	34	45	55	54	45	47	9-11	9-11
Sheepun.....	0800	54	57	55	55	35	35	35	30	45	59	50	33	49	5-5	5-5
Uppington.....	0700	30	28	34	28	28	25	22	21	25	33	28	25	28	12	12
Wepener.....	0800	39	38	40	38	33	32	24	23	30	41	42	34	35	12-13	12-13
Willowmore.....	0800	35	35	43	43	34	27	28	31	40	41	34	27	35	5-5	5-5
South-West Africa:																
Gobabis.....	0700	30	28	27	20	7	8	5	9	15	27	20	17	8	8	8
Ketmanshoop.....	0700	25	28	25	23	23	18	15	15	22	25	23	19	22	9-10	9-10
Mariental.....	0700	27	30	25	19	11	11	9	9	12	20	22	13	17	8	8
Outjo.....	0700	40	42	35	25	9	5	7	9	10	20	30	29	22	8	8
Windhoek.....	0700	45	45	45	28	15	11	8	12	17	25	35	33	27	9-10	9-10
Botswana:																
Francistown.....	1400	55	55	59	52	25	27	29	15	40	55	71	45	6	6	6
Gaberones.....	1400	53	58	50	50	27	25	23	19	21	41	59	55	41	5-7	5-7
Ghanai.....	1300	71	60	57	53	20	18	17	11	11	41	58	71	43	6	6
Maun.....	1400	59	59	55	45	20	15	14	11	14	37	57	72	41	9	9
Rhakawe.....	1300	72	73	65	52	23	15	14	13	14	43	73	71	44	5	5
Tsabong.....	1300	45	42	48	34	22	20	15	11	14	27	45	42	31	5-7	5-7
Tsane.....	1300	55	58	55	41	15	21	18	10	11	34	54	52	35	6	6
Republic of South Africa:																
Alexander Bay.....	1300	22	19	21	24	29	25	25	25	23	28	20	20	24	12	12
Beaufort West.....	1400	40	34	44	45	44	37	34	34	40	45	43	39	40	11-12	11-12
Bethlehem.....	1400	51	54	53	47	31	27	18	20	35	51	51	50	43	10-11	10-11
Calvinia.....	1300	21	21	25	35	35	35	28	29	31	33	29	22	29	12	11-12
Cape Agulhas.....	1300	44	47	54	54	55	55	52	50	52	41	45	41	50	12	12
Cape Columbine.....	1300	25	29	33	45	51	50	44	45	41	42	35	28	39	12	12
Cape Saint Lucia.....	1400	54	40	42	44	34	33	31	35	45	55	52	50	45	11	10-11
Cape Town/Malan.....	1300	30	33	35	45	55	54	51	51	49	45	35	34	43	11-12	11-12
De Aar.....	1400	43	38	44	44	35	31	25	22	33	44	41	41	37	10-11	10-11

FIGURE 37. MEAN CLOUDINESS (Continued)

COUNTRY AND STATION	HOUR (LST)													DATA BASE INFO		
		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN	PER	CYR
Republic of South Africa (Continued):																
Durban/Louis Botha.....	1400	61	53	46	47	38	31	28	34	52	65	67	62	49	11-12	11-12
East London.....	1400	60	54	57	52	49	37	38	42	51	61	61	57	52	12	12
Estcourt.....	1400	50	43	39	39	28	22	18	21	34	47	55	50	37	11	11
Johannesburg/Jan Smuts.....	1400	61	58	51	47	26	23	18	25	42	50	60	41	12	12	
Kimberley.....	1400	54	47	53	44	38	29	24	22	32	44	50	50	40	12	12
Kuruman.....	1400	48	44	47	36	27	23	16	14	23	34	44	44	33	9-11	9-11
Lydenburg.....	1400	65	56	52	56	27	29	20	24	29	49	69	62	45	5-6	5-6
Macouville.....	1400	68	76	56	56	30	40	27	27	31	38	59	52	47	2-3	2-3
Mafeking.....	1400	65	61	59	51	30	26	18	17	27	46	67	60	44	9-10	9-10
Marnita.....	1400	61	59	50	46	62	28	23	18	24	37	58	59	41	11-12	10-12
Matroosberg.....	1300	31	25	33	41	44	39	36	35	35	42	37	30	36	10-11	10-11
Middelburg.....	1400	46	41	48	45	40	32	31	28	36	47	46	43	40	11	10-11
Okiep.....	1300	17	20	23	27	32	32	25	25	25	28	28	18	25	12-13	12-13
Phalaborwa.....	1400	60	59	51	51	29	28	28	30	33	45	61	62	45	9-10	9-10
Pieterburg.....	1400	63	63	55	52	31	31	24	24	30	44	65	62	45	12	12
Piet Retief.....	1400	62	55	48	50	27	24	21	24	37	55	65	62	44	11-12	11-12
Port Elizabeth.....	1400	44	42	48	47	45	38	38	39	47	48	46	43	43	12	12
Port Saint Johns.....	1400	60	53	51	48	42	31	33	35	50	63	61	59	49	12	12
Queenstown.....	1400	55	48	50	46	40	32	30	29	39	54	53	49	44	9-11	9-11
Rhenprin.....	1400	68	53	38	51	35	33	29	30	42	60	63	59	49	5-6	5-6
Upington.....	1300	40	36	41	36	32	24	20	18	25	38	37	34	31	12	12
Walvis Bay.....	1300	52	58	58	42	44	30	30	48	51	51	47	56	47	7-8	5-6
Wepener.....	1400	64	59	58	48	41	34	28	25	35	50	59	57	47	12-13	12-13
Willowmore.....	1400	34	23	32	39	31	24	24	25	25	32	32	22	27	5-9	7-9
South-West Africa:																
Cloabla.....	1300	43	42	41	28	11	7	4	4	11	24	42	38	25	8	8
Keetmanshoop.....	1300	33	33	38	27	23	19	15	15	20	28	31	29	25	9-10	9-10
Mariental.....	1300	35	35	33	22	12	9	7	7	11	22	35	26	21	8	8
(Outjo.....	1300	47	47	47	34	12	7	6	8	11	25	40	40	37	8	8
Windhoek.....	1300	60	59	59	43	21	12	10	12	22	37	55	55	37	9-10	9-10
Botswana:																
Francistown.....	2000	49	41	32	30	10	11	12	8	9	27	48	53	28	6	6
Gaberones.....	2000	52	44	39	30	17	15	12	8	12	35	49	47	30	6-7	6-7
Ghanai.....	1900	62	50	43	33	11	10	12	8	6	35	58	58	32	5-6	5-6
Maun.....	2000	60	61	47	30	12	11	9	7	13	30	54	61	33	9	8-9
Mmakawe.....	1900	63	61	43	30	11	8	8	8	6	27	55	55	31	8	8
Tsohong.....	1900	41	34	38	21	15	14	14	6	13	21	40	37	24	6-7	6-7
Ts'oetse.....	1900	52	47	35	28	11	12	10	6	9	28	45	41	27	8	6
Republic of South Africa:																
Alexander Bay.....	1900	37	39	37	33	33	28	29	25	34	40	36	41	34	10-11	10-11
Beaufort West.....	2000	39	29	35	30	31	27	22	23	25	32	37	37	31	11-12	10-12
Bethlehem.....	2000	55	44	41	31	19	16	9	10	24	39	50	52	32	10-11	10-11
Calvinia.....	1900	16	18	20	23	25	25	19	22	19	25	22	20	21	11-12	10-12
Cape Agulhas.....	1900	55	56	57	47	45	42	44	40	45	50	52	52	49	12	11-12
Cape Columbine.....	1900	25	29	32	34	40	40	32	35	34	35	31	27	33	12	12
Cape Saint Lucia.....	2000	63	51	42	42	25	24	26	27	43	61	71	65	45	11	10-11
Cape Town/D.F. Malan.....	1900	31	32	35	38	46	47	41	42	39	40	38	34	38	11-12	11-12
De Aar.....	2000	40	30	31	24	20	16	10	11	20	25	33	33	24	10-11	10-11
Durban/Louis Botha.....	2000	52	74	71	61	44	34	35	43	62	79	55	53	63	11-12	11-12
East London.....	2000	71	60	63	45	38	28	27	32	50	61	65	63	50	11-12	10-12
Estcourt.....	2000	71	60	52	39	24	17	14	18	35	55	65	70	44	11	11
Johannesburg/Jan Smuts.....	2000	52	48	55	31	15	15	12	10	22	39	53	55	32	12	12
Kimberley.....	2000	50	42	44	35	26	19	17	15	25	37	44	45	34	12	12
Kuruman.....	2000	43	38	34	18	13	10	8	6	12	21	35	39	23	9-11	9-11
Lydenburg.....	2000	59	50	35	43	15	17	13	14	15	40	65	54	35	5-6	5-6
Macouville.....	2000	51	47	25	27	6	22	13	15	15	25	36	30	25	2-3	2-3
Mafeking.....	2000	55	49	35	33	15	15	10	8	15	33	49	51	31	9-10	9-10
Marnita.....	2000	43	37	24	25	12	17	12	10	15	29	40	44	25	11-12	10-12
Matroosberg.....	1900	25	22	27	30	28	28	24	24	25	32	30	27	27	10-11	10-11
Middelburg.....	2000	41	32	35	34	30	21	15	15	24	31	34	35	30	10-11	10-11
Okiep.....	1900	15	17	20	15	21	22	19	20	17	24	18	16	15	12-13	12-13
Phalaborwa.....	2000	42	35	25	29	10	12	12	13	17	30	45	45	27	9-10	9-10
Pieterburg.....	2000	42	39	27	28	13	15	12	10	15	33	49	45	27	12	12
Piet Retief.....	2000	60	50	39	35	15	15	15	17	31	52	65	61	38	11-12	11-12

FIGURE 37. MEAN CLOUDINESS (Continued)

COUNTRY AND STATION	HOUR (LST)													DATA BASE INFO		
		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN	FOR	CYR
Republic of South Africa (Continued):																
Port Elisabeth	2000	85	81	83	43	30	30	32	38	45	53	57	59	46	12	12
Port Saint Johns	2000	79	70	64	49	37	28	30	37	55	67	73	74	55	12	11-12
Queenstown	2000	60	54	52	39	30	22	21	22	31	49	50	51	41	8-9	8-9
Rheerun	2000	78	67	58	48	29	24	23	24	35	60	68	69	49	5-6	5-6
Uppington	1900	36	32	34	22	21	16	13	12	21	27	32	30	25	12	12
Wepener	2000	53	43	43	31	20	19	16	13	21	33	43	46	32	12-13	12-13
Willowmore	2000	26	22	32	25	22	16	19	18	22	29	27	21	23	8-9	7-9
South-West Africa:																
Gobabis	1900	44	38	32	22	7	5	3	4	9	21	38	30	21	8	8
Keetmanshoop	1900	39	35	39	28	16	12	10	10	21	28	31	33	24	9-10	9-10
Mariental	1900	39	39	32	21	8	7	7	6	13	23	33	28	21	8	8
Outjo	1900	53	51	43	38	8	6	5	5	11	23	39	38	26	8	8
Windhoek	1900	61	61	57	37	16	10	9	13	21	31	48	51	35	8	8

FIGURE 38. MEAN NUMBER OF DAYS WITH TOTAL CLOUD COVER 1/2 OR LESS AT SPECIFIED HOURS

COUNTRY AND STATION	HOUR (LST)													DATA BASE INFO		
		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN	FOR	CYR
Botswana:																
Francistown	0800	8	9	14	14	23	21	21	25	24	18	9	8	191	6	6
Gaborone	0800	9	10	12	14	23	22	24	25	21	16	9	9	194	7	7
Ghanzi	0700	8	10	11	13	24	24	26	26	27	17	9	10	204	6	6
Maun	0800	8	6	13	19	26	25	28	28	25	18	9	8	211	9	9
Rhakawe	0700	6	5	5	14	25	24	24	26	25	17	5	6	185	5	5
Tsabong	0700	18	19	16	19	24	24	24	27	26	22	17	20	224	6-7	6-7
Tsane	0700	12	13	13	17	26	24	24	20	25	21	14	15	230	6	6
Republic of South Africa:																
Alexander Bay	0700	12	11	11	14	15	17	17	18	14	12	14	12	164	12	12
Beaufort West	0800	17	16	14	14	14	17	18	17	14	14	14	18	185	11-12	11-12
Bethlehem	0800	10	11	13	15	21	20	24	24	19	15	11	12	196	10-11	10-11
Calvinia	0700	24	21	21	18	17	18	20	19	17	17	21	24	230	12	12
Cape Agulhas	0700	7	6	6	6	8	10	10	10	7	7	7	8	91	12	12
Cape Columbine	0700	18	14	15	12	11	12	13	13	11	13	14	17	164	12	12
Cape Saint Lucia	0800	6	5	11	12	16	19	20	17	10	7	4	6	135	11	11
Cape Town/D.F. Malan	0700	19	16	16	13	11	10	12	13	11	12	14	18	165	11-12	11-12
De Aar	0800	22	20	21	18	19	20	23	23	20	18	21	23	246	10-11	10-11
Durban/Louis Botha	0800	7	10	14	14	17	20	21	19	13	8	7	10	159	11-12	11-12
East London	0800	8	9	10	13	15	17	17	15	12	9	9	10	143	12	12
Eatecourt	0800	10	9	13	13	10	21	23	21	17	12	9	11	178	11	11
Johannesburg/Jan Smuts	0800	11	13	17	17	23	24	24	25	22	18	11	11	216	12	12
Kimberley	0800	18	17	17	15	21	20	23	24	20	19	17	20	234	12	12
Kuruman	0800	19	17	18	20	23	22	26	27	22	21	18	20	252	9-11	9-11
Lydenburg	0800	8	12	16	14	24	24	26	27	23	18	9	11	212	8-9	8-9
Macville	0800	9	4	15	11	23	19	24	21	21	14	12	12	183	2-3	2-3
Mafeking	0800	11	12	15	16	23	22	26	27	22	18	11	12	216	9-10	9-10
Marnitz	0800	12	11	19	18	25	23	26	26	22	17	11	11	221	11-12	10-12
Matrusberg	0700	19	18	17	14	14	15	16	17	14	14	16	20	194	10-11	10-11
Middelburg	0800	17	16	16	15	18	19	20	20	18	16	16	19	211	11	10-11
Okiep	0700	24	22	21	21	20	21	21	21	20	19	21	24	257	12-13	12-13
Phalaborwa	0800	6	7	10	11	20	21	22	19	16	12	8	6	155	10	10
Pieterburg	0800	8	7	12	14	22	22	22	23	20	14	7	8	180	12	12
Piet Retief	0800	10	8	12	14	22	23	24	22	18	13	8	9	181	11-12	11-12
Port Elisabeth	0800	12	11	12	12	15	15	15	15	12	10	10	11	153	12	12
Port Saint Johns	0800	7	8	11	11	15	15	16	16	10	8	8	8	139	12	12
Queenstown	0800	12	11	12	12	16	18	18	18	14	11	12	15	171	9-11	9-11
Rheerun	0800	8	10	10	11	17	17	19	21	13	10	9	13	159	8-9	8-9
Uppington	0700	20	19	18	21	21	21	24	23	20	19	20	22	249	12	12
Wepener	0800	17	15	16	16	19	18	22	23	19	17	15	19	216	12-13	12-13
Willowmore	0800	19	17	17	16	19	22	21	21	17	17	19	22	227	8-9	8-9

Footnote at end of table

FIGURE 38. DAYS WITH TOTAL CLOUD COVER $\frac{1}{8}$ OR LESS (Continued)

COUNTRY AND STATION	HOUR (LST)													DATA BASE INFO			
		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN	FOR	CTR	
South-West Africa:																	
Gobabis.....	0700	20	18	20	22	28	27	28	29	26	24	20	24	285	8	8	
Keetmanshoop.....	0700	21	17	21	22	22	23	25	24	21	20	22	24	262	9-10	9-10	
Marietal.....	0700	21	18	22	24	27	26	28	28	26	24	22	27	291	8	8	
Outjo.....	0700	14	13	18	21	28	28	28	29	26	23	18	19	200	8	8	
Windhoek.....	0700	14	11	13	19	25	26	28	27	24	20	17	18	241	9-10	9-10	
Botswana:																	
Francistown.....	1400	3	4	6	9	19	19	19	23	23	13	2	3	144	6	6	
Gaberones.....	1400	3	4	7	8	19	20	21	23	21	14	4	5	149	6-7	6-7	
Ghanai.....	1300	2	2	3	8	23	23	25	27	26	13	3	3	158	6	6	
Maun.....	1400	2	2	3	10	23	24	25	27	25	16	3	2	164	9	9	
Shakawe.....	1300	*	1	1	6	19	22	24	25	24	11	1	1	187	5	5	
Tsabong.....	1300	10	12	11	17	23	23	25	27	25	20	10	12	214	6-7	6-7	
Tsane.....	1300	8	8	8	13	25	22	24	27	25	17	7	7	192	6	6	
Republic of South Africa:																	
Alexander Bay.....	1300	24	23	23	22	21	22	22	22	23	21	24	25	274	12	12	
Benauart West.....	1400	18	17	13	13	13	16	18	17	18	13	14	18	178	11-12	11-12	
Bethlehem.....	1400	8	6	7	11	18	19	23	23	17	11	5	4	132	10-11	10-11	
Calvinia.....	1300	24	21	21	17	17	17	21	19	18	18	19	23	235	12	11-12	
Cape Agulhas.....	1300	13	12	10	10	8	9	11	11	11	11	13	18	135	12	12	
Cape Columbine.....	1300	22	18	19	13	12	11	14	14	18	10	17	22	192	12	12	
Cape Saint Lucia.....	1400	10	11	14	13	17	17	19	18	14	10	7	12	162	11	10-11	
Cape Town/D.F. Malan.....	1300	21	18	18	14	10	10	12	12	12	15	17	20	179	11-12	11-12	
De Aar.....	1400	14	15	13	13	18	19	22	22	18	14	15	18	198	10-11	10-11	
Durban/Louis Botha.....	1400	9	11	14	14	18	20	21	20	13	8	7	8	162	11-12	11-12	
East London.....	1400	10	11	10	12	13	17	18	18	12	9	9	9	144	12	12	
Katcourt.....	1400	11	13	16	17	22	23	25	24	19	14	10	11	206	11	11	
Johannesburg/Jan Smuts.....	1400	8	5	7	10	21	22	24	25	20	16	6	5	164	12	12	
Kimberley.....	1400	9	10	9	13	16	20	22	23	18	14	11	10	174	12	12	
Kuruman.....	1400	10	11	11	16	20	21	25	26	21	17	13	12	203	9-11	9-11	
Lydenburg.....	1400	2	6	8	8	20	18	24	22	19	12	5	5	146	5-6	5-6	
Maouville.....	1400	3	1	7	8	17	14	19	20	18	17	7	10	140	2-3	2-3	
Mafeking.....	1400	4	4	5	9	19	20	23	26	19	12	4	5	148	9-10	9-10	
Marnitz.....	1400	3	4	7	10	20	19	21	23	21	16	6	6	186	11-12	10-12	
Matroosberg.....	1300	18	19	17	14	15	15	17	17	16	14	16	19	196	10-11	10-11	
Middelburg.....	1400	12	14	12	13	16	19	20	21	18	12	13	14	184	11	10-11	
Okiep.....	1300	25	21	22	21	19	19	22	22	21	20	22	25	258	12-13	12-13	
Phalaborwa.....	1400	6	6	9	10	19	18	20	19	18	14	6	6	182	9-10	9-10	
Pieterburg.....	1400	5	4	7	9	18	18	22	22	19	14	6	6	147	12	12	
Piet Retief.....	1400	6	8	12	12	21	21	23	22	17	11	6	6	163	11-12	11-12	
Port Elizabeth.....	1400	15	14	14	13	15	16	17	16	13	13	13	15	175	12	12	
Port Saint John.....	1400	8	10	11	12	14	18	18	17	12	8	8	9	143	12	12	
Queenstown.....	1400	11	11	12	13	16	19	20	20	17	10	11	12	172	9-11	9-11	
Sheepun.....	1400	4	9	8	10	15	17	20	19	14	8	6	8	139	5-6	5-6	
Uplington.....	1300	16	16	15	17	18	22	23	24	21	19	16	18	224	12	12	
Walvis Bay.....	1300	13	9	12	16	17	20	21	14	13	14	14	11	173	7-8	5-6	
Wepener.....	1400	8	7	7	12	15	18	21	21	17	12	8	7	180	12-13	12-13	
Willowmore.....	1400	22	21	20	19	19	22	22	21	21	19	18	23	247	8-9	7-9	
South-West Africa:																	
Gobabis.....	1300	11	11	11	19	27	28	29	29	26	21	11	12	234	8	8	
Keetmanshoop.....	1300	17	15	16	19	22	23	25	24	22	19	18	18	238	9-10	9-10	
Marietal.....	1300	16	14	17	21	26	27	28	29	26	23	16	20	264	8	8	
Outjo.....	1300	9	9	9	14	26	28	28	28	26	20	11	11	219	8	8	
Windhoek.....	1300	7	6	6	12	22	25	28	27	22	15	9	8	187	9-10	9-10	
Botswana:																	
Francistown.....	2000	15	15	10	18	27	27	26	27	27	21	13	11	245	6	6	
Gaberones.....	2000	10	12	15	17	24	24	26	27	25	15	10	12	217	6-7	6-7	
Ghanai.....	1900	7	10	14	17	27	27	27	29	27	18	9	7	216	5-6	5-6	
Maun.....	2000	8	6	14	19	27	26	28	28	25	19	10	8	219	6	8-9	
Shakawe.....	1900	6	7	14	18	26	27	27	27	28	18	6	9	214	5	5	
Tsabong.....	1900	16	15	17	24	26	25	27	29	26	23	16	17	203	6-7	6-7	
Tsane.....	1900	10	12	16	19	27	26	27	28	27	20	14	14	237	6	6	

Footnote at end of table.

FIGURE 38. DAYS WITH TOTAL CLOUD COVER $\frac{1}{2}$ OR LESS (Continued)

COUNTRY AND STATION	HOUR (LST)													DATA BASE INFO		
		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN	FOR	CYR
Republic of South Africa:																
Alexander Bay	1900	19	17	19	20	21	21	21	23	19	17	18	17	230	10-11	10-11
Beaufort West	2000	15	18	18	19	19	21	22	23	20	19	17	17	227	11-12	10-12
Bethlehem	2000	9	14	18	15	24	24	27	28	21	16	12	10	219	10-11	10-11
Calvinia	1900	26	22	23	22	22	22	24	23	23	22	22	24	276	11-12	10-12
Cape Agulhas	1900	9	8	3	13	14	15	15	16	14	13	10	10	146	12	11-12
Cape Columbine	1900	22	10	20	18	16	16	19	19	18	18	19	21	224	12	12
Cape Saint Lucia	2000	8	11	18	14	21	21	21	21	18	8	6	7	169	11	10-11
Cape Town/D.F. Malan	1900	21	18	20	18	18	14	16	16	17	16	17	20	208	11-12	11-12
De Aar	2000	17	18	20	21	24	28	27	28	23	22	19	20	263	10-11	10-11
Durban/Louis Botha	2000	3	6	6	9	15	17	19	18	9	4	3	3	109	11-12	11-12
East London	2000	6	8	9	14	17	20	22	20	18	9	7	8	135	11-12	10-12
Estcourt	2000	6	9	13	17	23	24	27	28	19	12	8	7	190	11	11
Johannesburg/Jan Smuts	2000	11	12	18	20	25	24	27	28	22	16	10	10	224	12	12
Kimberley	2000	12	14	18	18	21	23	26	28	21	18	14	14	220	12	12
Kuruman	2000	18	5	17	24	27	27	28	29	26	24	17	18	203	9-11	9-11
Lydenburg	2000	8	11	17	14	26	24	28	26	25	18	8	11	210	8-9	8-9
Macouville	2000	14	12	21	21	29	22	27	26	28	22	18	20	227	2-3	2-3
Maifeking	2000	9	11	17	18	25	24	27	28	25	18	12	11	225	9-10	9-10
Marnis	2000	14	15	23	22	26	24	28	27	25	20	17	18	255	11-12	10-12
Matroosberg	1900	20	21	21	20	21	20	22	23	21	19	19	21	248	10-11	10-11
Middelburg	2000	17	18	18	18	21	23	20	26	22	20	19	17	244	10-11	10-11
Okiep	1900	25	23	24	24	24	23	24	24	25	23	24	25	289	12-13	12-13
Phalaborwa	2000	16	16	22	20	27	26	26	26	24	20	14	14	251	9-10	9-10
Pieterburg	2000	18	18	21	20	27	25	27	28	25	20	12	18	247	12	12
Piet Kotief	2000	10	12	17	19	25	25	26	28	21	14	9	10	213	11-12	11-12
Port Elizabeth	2000	11	11	12	15	16	18	18	16	14	12	10	12	165	12	12
Port Saint John	2000	4	6	8	12	17	20	20	17	11	8	6	5	132	12	11-12
Queenstown	2000	10	11	15	16	20	23	24	23	20	13	11	12	195	8-9	8-9
Sheepun	2000	3	7	10	14	20	22	23	22	18	10	8	7	164	8-9	8-9
Upington	1900	18	17	19	23	24	25	26	27	23	21	18	20	239	12	12
Wepener	2000	12	14	16	19	24	24	25	26	22	19	18	14	230	12-13	12-13
Willowmore	2000	23	21	20	23	24	26	26	25	23	21	22	25	278	8-9	7-9
South-West Africa:																
Gobabis	1900	14	15	18	22	28	28	30	30	26	22	18	17	265	8	8
Keetmanshoop	1900	10	15	18	22	25	25	27	27	22	20	18	18	252	9-10	9-10
Mariental	1900	17	14	19	23	29	27	28	28	25	22	18	20	270	8	8
Outjo	1900	9	9	10	19	28	28	29	28	25	21	13	13	234	8	8
Windhoek	1900	8	6	9	17	25	26	28	26	22	19	12	10	208	8	8

* < 0.5 day.

FIGURE 39. MEAN NUMBER OF DAYS WITH TOTAL CLOUD COVER $\frac{1}{2}$ OR MORE AT SPECIFIED HOURS

COUNTRY AND STATION	HOUR (LST)													DATA BASE INFO		
		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN	FOR	CYR
Botswana:																
Francistown	0800	16	14	12	11	4	6	6	5	3	8	14	17	118	6	6
Gaborone	0800	13	10	10	10	5	4	5	3	4	9	13	14	100	7	7
Ghanzi	0700	13	11	12	10	8	4	3	2	2	8	12	12	91	6	6
Maun	0800	17	15	13	6	3	3	4	2	3	7	13	17	102	9	9
Mhakawe	0700	15	17	11	7	3	3	4	2	2	6	15	14	99	8	8
Tlokweng	0700	7	6	8	6	4	4	4	2	2	6	8	8	61	6-7	6-7
Tlokweng	0700	9	6	11	7	2	3	4	2	2	6	9	8	60	6	6
Republic of South Africa:																
Alexander Bay	0700	17	15	18	14	14	11	12	13	14	15	13	16	172	12	12
Beaufort West	0800	9	8	12	12	11	9	8	9	11	12	9	8	118	11-12	11-12
Bethlehem	0800	13	11	12	11	7	6	5	6	7	9	12	10	106	10-11	10-11
Calvinia	0700	4	5	7	8	11	10	9	10	10	10	6	4	92	12	12
Cape Agulhas	0700	15	16	18	17	10	13	14	15	17	17	16	18	180	12	12
Cape Columbine	0700	10	10	12	13	14	13	13	13	14	14	11	10	146	12	12

Footnote at end of table.

FIGURE 39. DAYS WITH TOTAL CLOUD COVER % OR MORE (Continued)

COUNTRY AND STATION	HOUR (LST)													DATA BASE INFO		
		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN	FOR	CYR
Republic of South Africa (Continued):																
Cape Saint Lucia.....	0500	18	12	13	12	9	6	7	9	14	18	20	17	184	11	11
Cape Town/D.F. Malan.....	0700	8	9	11	12	18	14	14	18	18	19	9	149	11-12	11-12	
De Aar.....	0800	8	4	7	9	8	7	6	6	7	9	0	8	77	10-11	10-11
Durban/Louis Botha.....	0800	20	14	14	13	10	8	8	9	14	19	19	17	166	11-12	11-12
East London.....	0800	18	15	17	14	12	9	10	11	14	17	16	16	169	12	12
Estcourt.....	0800	16	15	14	13	8	6	6	7	11	15	17	16	142	11	11
Johannesburg/Jan Smuts.....	0800	14	11	10	10	8	4	8	4	6	9	13	14	103	12	12
Kimberley.....	0800	8	7	9	6	6	6	8	6	7	8	6	79	12	12	
Kuruman.....	0800	9	7	9	7	4	6	4	3	4	6	7	7	73	9-11	9-11
Lydenburg.....	0800	14	10	8	10	4	5	3	8	5	8	14	19	96	8-9	8-9
Macoville.....	0800	17	18	10	11	6	9	8	9	7	12	12	11	125	2-3	2-3
Mafeking.....	0800	11	9	8	8	4	5	8	9	4	7	11	10	83	9-10	9-10
Marritsa.....	0800	11	9	7	7	3	4	4	3	5	8	12	12	85	11-12	10-12
Matroosberg.....	0700	6	6	9	10	10	8	9	9	10	12	8	8	103	10-11	10-11
Middelburg.....	0800	10	8	11	11	8	7	8	8	9	11	9	7	107	11	10-11
Okiep.....	0700	8	4	8	6	8	7	7	8	7	9	8	4	73	12-13	12-13
Phalaborwa.....	0800	20	16	16	14	8	7	7	9	11	16	19	20	162	10	10
Pietersburg.....	0800	17	15	13	12	6	6	6	8	8	12	18	17	135	12	12
Piet Retief.....	0800	18	16	14	13	6	6	6	8	10	18	18	17	180	11-12	11-12
Port Elizabeth.....	0800	18	13	15	14	11	9	11	11	12	16	14	13	155	12	12
Port Saint Johns.....	0800	18	18	16	12	10	7	7	9	14	18	17	16	188	12	12
Queenstown.....	0800	14	12	15	15	12	9	10	9	12	14	18	11	146	9-11	9-11
Sheepun.....	0800	17	14	16	18	10	8	8	7	10	17	18	14	182	8-9	8-9
Uplington.....	0700	6	8	8	6	6	6	8	7	8	8	8	8	73	12	12
Wepener.....	0800	9	9	10	9	8	8	6	6	7	10	10	8	100	12-13	12-13
Willowmore.....	0800	8	8	10	11	7	6	6	7	9	10	7	8	96	8-9	8-9
South-West Africa:																
Onbabis.....	0700	6	8	8	3	2	1	1	1	3	4	3	34	8	8	
Keetmanshoop.....	0700	4	8	4	3	4	3	3	3	4	8	4	3	47	9-10	9-10
Mariental.....	0700	6	6	8	4	2	2	2	1	2	4	4	2	38	8	8
Outjo.....	0700	6	7	6	3	2	1	1	2	2	2	4	3	38	8	8
Windhoek.....	0700	10	8	10	8	3	2	2	2	4	6	8	8	63	9-10	9-10
Botswana:																
Francistown.....	1400	17	17	14	11	4	8	6	4	2	7	16	18	120	6	6
Gaberones.....	1400	13	10	11	9	4	5	4	3	9	12	10	94	6-7	6-7	
Ghanai.....	1300	21	19	18	14	4	8	8	1	1	9	19	22	135	6	6
Maun.....	1400	18	17	18	7	2	2	2	2	6	16	21	110	9	9	
Bhakawe.....	1300	18	19	17	9	2	2	2	1	1	7	12	19	116	8	8
Taabong.....	1300	8	6	8	4	2	3	3	1	2	4	7	6	54	6-7	6-7
Tsane.....	1300	12	12	12	7	2	3	3	1	1	6	11	10	81	6	6
Republic of South Africa:																
Alexander Bay.....	1300	3	2	2	4	6	8	8	6	4	8	3	3	48	12	12
Beaufort West.....	1400	7	6	10	11	11	8	7	7	10	10	9	7	102	11-12	11-12
Bethlehem.....	1400	13	9	10	10	8	8	2	4	7	12	13	12	101	10-11	10-11
Calvinia.....	1300	3	3	6	7	9	10	7	8	7	8	8	3	78	12	11-12
Cape Agulhas.....	1300	9	9	13	13	15	14	13	12	12	13	11	8	141	12	12
Cape Columbine.....	1300	8	8	8	10	12	12	10	11	9	9	7	6	103	12	12
Cape Saint Lucia.....	1400	12	10	8	9	6	7	6	8	10	14	18	12	117	11	10-11
Cape Town/D.F. Malan.....	1300	8	6	7	10	15	13	13	13	11	10	8	6	118	11-12	11-12
De Aar.....	1400	8	7	9	10	8	7	6	4	7	10	9	8	95	10-11	10-11
Durban/Louis Botha.....	1400	16	12	11	12	10	7	6	8	14	18	18	17	148	11-12	11-12
East London.....	1400	16	12	18	13	13	9	10	10	13	17	16	15	158	12	12
Estcourt.....	1400	10	7	6	8	6	4	3	4	6	10	13	11	89	11	11
Johannesburg/Jan Smuts.....	1400	14	10	8	8	4	3	3	3	5	8	13	13	93	12	12
Kimberley.....	1400	13	9	11	8	7	6	5	4	5	10	11	10	99	12	12
Kuruman.....	1400	11	8	9	8	6	5	3	3	4	7	10	8	81	9-11	9-11
Lydenburg.....	1400	18	11	9	13	3	5	4	3	4	11	16	15	108	8-9	8-9
Macoville.....	1400	19	20	15	12	5	10	8	6	6	9	12	11	128	2-3	2-3
Mafeking.....	1400	16	12	12	10	8	4	3	3	4	9	17	13	110	9-10	9-10
Marritsa.....	1400	12	10	8	8	3	4	4	2	4	7	11	12	84	11-12	10-12
Matroosberg.....	1300	4	3	6	8	9	8	7	7	7	9	6	5	78	10-11	10-11
Middelburg.....	1400	9	7	11	9	9	7	7	6	8	11	10	9	102	11	10-11

Footnote at end of table.

FIGURE 30. DAYS WITH TOTAL CLOUD COVER %, OR MORE (Continued)

COUNTRY AND STATION	HOUR (LST)													DATA BASE INFO		
		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN	FOR	CYR
Republic of South Africa (Continued):																
Okiep.....	1500	2	3	5	5	8	8	6	6	6	6	5	3	63	12-13	12-13
Phalaborwa.....	1400	14	12	11	11	5	6	7	7	9	12	15	15	124	9-10	9-10
Pietersburg.....	1400	16	15	11	11	5	6	4	4	5	9	17	16	116	12	12
Piet Retief.....	1400	16	12	11	11	5	5	4	5	8	14	17	16	123	11-12	11-12
Port Elizabeth.....	1400	10	9	10	11	11	8	10	9	12	12	10	10	121	12	12
Port St. Johns.....	1400	15	12	13	11	10	6	7	9	12	18	16	15	143	12	12
Queenstown.....	1400	15	10	11	10	10	7	7	6	9	13	13	11	120	9-11	9-11
Sheeprun.....	1400	17	10	14	12	8	9	6	6	8	15	14	14	120	8-6	6-6
Uptington.....	1300	5	7	9	7	8	5	4	5	7	8	6	6	78	12	12
Walvis Bay.....	1300	13	15	15	11	12	7	8	13	14	14	12	15	147	7-8	8-6
Wepener.....	1400	15	14	14	12	10	6	7	6	8	13	15	13	157	12-13	12-13
Willowmore.....	1400	3	3	5	5	5	4	4	5	4	5	5	3	51	8-9	7-9
South-West Africa:																
Gobabis.....	1300	7	6	5	4	1	1	1	1	2	3	3	3	41	8	8
Koetmanshoop.....	1300	6	6	4	4	4	3	3	2	3	5	5	5	50	9-10	9-10
Mariental.....	1300	6	5	5	4	1	2	1	1	2	4	7	3	40	8	8
Outjo.....	1300	7	7	7	4	1	1	1	1	1	2	5	3	38	8	8
Windhoek.....	1300	15	14	15	5	3	2	1	2	4	7	14	14	100	9-10	9-10
Botswana:																
Francistown.....	3000	12	8	7	6	1	2	2	1	2	5	11	13	69	6	6
Gaborone.....	3000	13	8	8	5	5	3	3	1	2	7	10	10	72	6-7	6-7
Ghanzi.....	1900	15	10	3	7	2	2	3	1	1	7	14	12	50	5-6	5-6
Maur.....	2000	14	14	11	6	1	2	2	1	2	6	12	16	66	9	8-9
Shakawe.....	1900	15	13	9	5	2	1	1	1	1	4	11	12	77	5	5
Tsabong.....	1900	8	6	7	2	2	3	3	1	2	8	8	7	55	6-7	6-7
Tsane.....	1900	12	8	7	5	2	2	2	1	1	5	10	7	61	6	6
Republic of South Africa:																
Alexander Bay.....	1900	8	9	8	7	5	6	7	5	8	9	7	10	92	10-11	10-11
Beaufort West.....	2000	8	5	5	7	7	6	4	5	6	6	8	7	77	11-12	10-12
Bethlehem.....	2000	13	8	9	5	3	3	1	1	4	8	11	11	77	10-11	10-11
Calvinia.....	1900	2	3	4	5	6	6	4	5	4	6	4	3	53	11-12	10-12
Cape Agulhas.....	1900	13	13	10	11	12	10	11	10	11	12	12	13	141	12	11-12
Cape Columbine.....	1900	5	6	8	7	10	10	8	9	7	8	6	6	59	12	12
Cape Saint Lucia.....	2000	16	11	9	9	5	5	5	6	11	16	19	17	129	11	10-11
Cape Town/D.F. Malan.....	1900	5	5	7	5	11	11	10	11	5	9	7	7	97	11-12	11-12
Fr. Aer.....	2000	9	6	7	5	5	4	2	2	5	6	8	7	64	10-11	10-11
Durban/Louis Botha.....	2000	24	19	21	16	11	8	9	12	17	23	25	25	209	11-12	11-12
East London.....	2000	21	14	15	12	10	7	7	8	12	17	18	17	160	11-12	10-12
Edenburg.....	2000	20	15	14	10	6	4	3	4	9	15	18	20	138	11	11
Johannesburg/Jan Smuts.....	2000	13	9	8	6	2	3	3	2	5	9	12	13	84	12	12
Kimberley.....	2000	13	8	10	7	5	4	3	2	5	8	10	10	84	12	12
Kuruman.....	2000	11	7	7	4	3	3	2	1	2	4	8	10	60	9-11	9-11
Lydenburg.....	2000	14	11	7	9	3	4	2	3	3	10	17	13	95	8-6	6-6
Macouville.....	2000	12	10	8	6	2	5	4	4	4	7	8	6	79	9-3	8-3
Mafeking.....	2000	12	10	7	7	3	3	2	1	2	7	10	11	74	9-10	9-10
Marnitz.....	2000	8	6	4	5	2	3	2	1	3	6	7	9	55	11-12	10-12
Matroosberg.....	1900	4	2	5	5	5	6	5	4	4	7	5	3	55	10-11	10-11
Middelburg.....	2000	9	5	9	7	7	5	4	3	5	6	7	8	76	10-11	10-11
Okiep.....	1900	2	3	4	3	5	5	5	5	4	5	3	3	47	12-13	12-13
Phalaborwa.....	2000	10	8	6	7	2	3	3	3	4	8	11	12	77	9-10	9-10
Pietersburg.....	2000	9	7	5	5	2	3	2	2	3	8	11	11	68	12	12
Piet Retief.....	2000	15	12	10	9	4	4	4	4	9	15	19	17	124	11-12	11-12
Port Elizabeth.....	2000	15	12	14	11	9	6	7	9	11	14	15	14	135	12	12
Port Saint Johns.....	2000	22	18	18	11	8	6	7	9	14	19	21	22	174	12	11-12
Queenstown.....	2000	15	14	14	9	7	5	5	5	7	12	14	13	122	8-9	8-9
Sheeprun.....	2000	20	17	15	13	7	6	6	5	10	17	19	20	155	8-6	5-6
Uptington.....	1900	5	6	7	4	5	3	2	2	4	5	7	6	58	12	12
Wepener.....	2000	14	10	11	8	4	4	4	3	4	8	11	11	93	12-13	12-13
Willowmore.....	2000	5	3	7	5	4	3	4	3	5	6	5	4	54	8-9	7-9

Footnote at end of table.

FIGURE 39. DAYS WITH TOTAL CLOUD COVER $\frac{1}{2}$ OR MORE (Continued)

COUNTRY AND STATION	HOUR (LST)	MONTHS												DATA BASE INFO		
		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN	FOR	CYR
South-West Africa:																
Gobabis.....	1900.	9	7	6	5	2	1	*	1	1	3	8	6	48	8	8
Keetmanshoop.....	1900	9	7	6	4	2	2	2	1	3	6	6	0	53	9-10	9-10
Mariental.....	1900	9	8	7	4	1	2	1	1	2	5	7	5	50	8	8
Outjo.....	1900	11	9	7	4	*	*	1	1	1	2	7	5	47	8	8
Windhoek.....	1900	17	13	15	8	3	2	2	2	4	6	12	12	95	8	8

* < 0.5 day.

FIGURE 40. PERCENTAGE FREQUENCY OF CEILING < 3,000 FEET AT SPECIFIED HOUR
(Ceiling defined as $\frac{1}{2}$ or more cloud cover)

COUNTRY AND STATION	HOUR (LST)	MONTHS												DATA BASE INFO		
		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN	FOR	CYR
Botswana:																
Francistown.....	0800	24	29	19	19	9	11	6	9	8	15	14	26	15	6	6
Gaborone.....	0800	14	15	8	13	4	2	1	1	6	11	13	13	8	7	6-7
Ghamsi.....	0700	10	11	11	7	2	3	1	0	0	4	9	14	6	6	6
Maun.....	0800	11	9	7	1	0	*	0	0	0	*	6	13	4	9	9
Shakawe.....	0700	4	9	4	5	1	0	0	0	0	1	7	15	4	5	5
Tsabong.....	0700	4	8	3	4	3	1	1	1	1	1	4	4	2	6-7	6-7
Tsane.....	0700	6	6	6	8	2	4	3	1	0	3	6	8	4	6	6
Republic of South Africa:																
Alexander Bay.....	0700	50	52	52	30	32	28	34	32	40	38	40	48	40	12	12
Beaufort West.....	0800	21	20	26	20	12	9	8	10	18	20	19	13	16	11-12	11-12
Bethlehem.....	0800	22	25	23	23	15	12	11	10	12	13	22	17	17	10-11	10-11
Calvinia.....	0700	5	9	10	16	21	21	15	20	16	16	9	4	14	12	12
Cape Agulhas.....	0700	43	49	52	49	33	31	35	37	41	44	41	41	41	12	12
Cape Colony.....	0700	29	33	34	34	37	37	33	34	37	33	30	29	33	12	12
Cape Saint Lucia.....	0800	23	30	25	22	15	14	13	18	22	31	38	31	25	11	11
Cape Town/D.F. Malan.....	0700	18	22	23	24	31	35	30	32	32	29	28	19	27	11-12	11-12
De Aar.....	0800	1	1	1	5	5	8	4	4	2	4	2	1	3	10-11	10-11
Durban/Louis Botha.....	0530	21	21	19	18	8	9	9	11	23	27	33	29	20	11-12	11-12
East London.....	0800	39	33	34	25	16	10	15	20	26	28	35	35	26	12	12
Estcourt.....	0800	26	30	24	23	12	6	8	12	15	23	27	30	20	11	11
Johannesburg/Jan Smuts.....	0800	26	23	19	20	9	6	9	2	13	15	23	25	16	12	12
Kimberley.....	0800	4	2	4	4	4	5	2	4	3	2	4	2	3	12	12
Kuruman.....	0800	9	7	11	10	4	5	5	4	5	9	6	6	7	9-11	9-11
Lydenburg.....	0800	35	29	23	23	12	11	9	10	13	15	31	27	20	5-6	5-6
Macoville.....	0800	47	46	31	28	11	15	15	20	15	35	31	29	22	2-3	2-3
Mafeking.....	0800	0	11	8	10	3	3	1	1	2	7	9	10	6	9-10	9-10
Marrisa.....	0800	23	20	12	17	8	12	10	8	11	15	20	23	15	11-12	10-12
Matroosberg.....	0700	15	16	24	20	19	15	15	21	20	24	17	11	15	10-11	10-11
Middelburg.....	0800	24	19	22	21	12	10	10	11	15	16	21	14	16	11	10-11
Okiep.....	0700	7	5	9	11	15	17	15	19	14	16	8	7	12	12-13	12-13
Phalaborwa.....	0800	52	50	42	42	23	17	15	24	33	37	47	45	36	9-10	9-10
Pietersburg.....	0800	38	42	34	31	13	15	13	14	20	25	35	33	26	12	12
Piet Retief.....	0800	52	55	45	40	23	20	15	22	32	45	55	54	39	10-12	10-12
Port Elizabeth.....	0800	30	26	27	19	13	8	15	13	20	27	27	27	21	12	12
Port Saint John.....	0800	35	35	28	22	12	12	14	17	29	35	32	29	25	12	12
Queenstown.....	0800	30	35	37	29	19	13	11	15	24	29	31	24	25	9-11	9-11
Sheeprun.....	0800	40	44	39	37	17	19	15	20	29	43	43	35	32	5-6	5-6
Uppington.....	0700	1	1	2	3	5	7	5	5	2	4	2	2	3	12	12
Wopener.....	0800	4	7	7	8	8	5	3	2	2	3	6	4	5	12-13	12-13
Willowmore.....	0800	20	25	29	29	10	14	13	18	24	27	21	13	21	8-9	8-9
South-West Africa:																
Gobabis.....	0700	4	4	7	5	1	1	*	0	0	1	0	3	3	8	8
Keetmanshoop.....	0700	1	0	1	2	3	3	1	3	2	*	1	*	1	9-10	9-10
Mariental.....	0700	0	1	*	1	1	*	0	0	0	*	*	0	*	8	8
Outjo.....	0700	3	4	2	*	*	0	1	0	1	*	0	*	1	8	8
Windhoek.....	0700	4	4	4	3	1	1	1	*	1	0	1	1	2	9-10	9-10

Footnote at end of table.

FIGURE 40. FREQUENCY OF CEILING <3,300 FEET (Continued)

COUNTRY AND STATION	HOUR (LST)													DATA BASE INFO		
		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN	FOR	CYR
Botswana:																
Francistown	1400	26	34	27	26	8	7	7	5	2	11	23	35	18	6	6
Gaberones	1400	16	10	14	11	3	3	4	2	3	10	13	15	9	6-7	5-7
Ghanzi	1300	27	29	31	13	4	3	5	1	1	11	20	43	16	6	6
Maun	1400	19	20	12	5	*	0	*	0	0	1	8	21	7	9	8-9
Shakawe	1300	6	9	8	4	1	1	0	0	1	0	3	14	4	5	5
Tsabong	1300	8	8	7	0	4	2	2	*	0	1	4	8	4	6-7	6-7
Tsane	1300	11	11	11	7	3	5	1	1	0	3	8	5	6	6	6
Republic of South Africa:																
Alexander Bay	1300	8	4	3	7	6	9	10	13	8	7	4	7	7	12	12
Beaufort West	1400	7	4	7	8	8	8	6	7	7	8	8	4	7	11-12	11-12
Bethlehem	1400	9	12	7	11	5	4	3	2	9	11	13	14	8	10-11	10-11
Calvinia	1300	1	4	3	10	13	15	11	12	6	7	4	2	7	12	11-12
Cape Agulhas	1300	18	25	30	28	27	29	20	29	25	27	22	16	25	12	12
Cape Columbine	1300	12	10	17	24	26	31	29	28	21	21	15	12	21	12	12
Cape Saint Lucia	1400	23	20	18	15	12	13	12	14	21	25	27	17	18	11	10-11
Cape Town/D.F. Malan	1300	7	11	9	10	24	26	30	29	21	12	9	10	17	11-12	11-12
De Aar	1400	2	1	2	2	3	5	3	4	3	4	3	4	3	10-11	10-11
Durban/Louis Botha	1400	30	21	16	16	9	7	7	12	24	30	34	28	20	11-12	11-12
East London	1400	35	31	27	21	12	7	9	15	25	31	34	30	23	12	12
Eatecourt	1400	11	10	4	7	2	3	2	3	8	16	10	7	6	11	11
Johannesburg/Jan Smuts	1400	15	16	11	11	4	4	3	3	6	9	13	17	9	12	12
Kimberley	1400	2	4	5	6	5	5	3	3	2	1	5	1	3	12	12
Kuruman	1400	7	6	9	8	4	4	3	1	2	9	10	8	6	9-11	9-11
Lydenburg	1400	46	35	34	41	10	14	12	8	11	24	45	36	26	5-6	5-6
Macoville	1400	45	32	37	28	10	25	16	15	26	21	36	26	26	2-3	2-3
Mafeking	1400	20	20	16	16	6	6	2	3	3	8	16	17	11	9-10	9-10
Marnitz	1400	18	16	10	13	6	10	9	5	8	9	11	14	11	11-12	10-11
Matroosberg	1300	4	4	8	10	16	12	11	11	8	9	5	4	9	10-11	10-11
Middelburg	1400	11	11	12	11	8	8	7	9	5	9	9	7	9	11	10-11
Okiep	1300	5	5	7	9	14	21	15	15	11	10	6	3	10	12-13	12-13
Phalaborwa	1400	20	24	12	16	8	7	6	9	10	17	21	21	14	9-10	9-10
Pieterburg	1400	28	30	21	22	10	11	7	9	9	11	24	24	17	12	12
Piet Retief	1400	44	38	27	31	12	14	9	17	22	38	52	39	29	10-11	9-11
Port Elisabeth	1400	20	20	14	14	11	9	11	9	14	16	13	13	14	12	12
Port Saint Johns	1400	30	28	26	22	14	8	11	14	27	35	31	30	23	12	12
Queenstown	1400	15	10	14	14	9	6	4	3	7	10	13	9	10	9-11	8-11
Sheepston	1400	29	26	32	23	12	17	10	12	14	34	38	30	23	5-6	5-6
Uppington	1300	*	1	1	3	4	5	2	2	3	1	1	*	2	12	12
Walvis Bay	1300	41	43	44	31	42	24	21	41	44	40	35	45	38	7-8	5-6
Wepener	1400	2	4	4	3	2	1	1	1	1	1	4	1	2	12-13	12-13
Willowmore	1400	6	6	9	14	9	8	8	11	7	10	8	2	8	8-9	7-9
South-West Africa:																
Gobabis	1300	4	2	2	3	*	*	0	*	*	0	4	2	2	8	8
Keetmanshoop	1300	0	1	1	1	2	5	2	1	1	1	0	*	1	9-10	9-10
Mariental	1300	1	*	1	2	*	0	0	*	0	0	0	0	*	8	7-8
Outjo	1300	2	4	4	2	0	0	0	0	0	0	*	*	1	8	8
Windhoek	1300	6	4	5	7	2	1	*	0	0	1	2	1	2	9-10	9-10
Botswana:																
Francistown	2000	11	11	9	6	1	3	1	2	2	7	13	13	7	6	6
Gaberones	2000	7	7	5	4	0	2	1	0	2	8	6	6	4	6-7	6-7
Ghanzi	1900	20	13	14	9	3	2	2	0	1	9	24	23	10	5-6	5-6
Maun	2000	4	4	5	1	0	0	0	0	0	*	5	8	2	9	8-9
Shakawe	1900	6	11	2	4	1	0	0	0	1	1	2	6	3	5	5
Tsabong	1900	5	4	6	*	2	*	1	0	0	0	4	7	2	6-7	6-7
Tsane	1300	8	5	7	4	1	1	2	1	0	4	12	4	4	6	6
Republic of South Africa:																
Alexander Bay	1900	25	27	21	10	17	15	16	12	18	21	22	30	20	10-11	10-11
Beaufort West	2000	6	3	9	5	6	6	4	5	5	7	7	6	5	11-12	10-12
Bethlehem	2000	6	9	7	7	3	3	2	1	4	7	9	8	6	10-11	10-11
Calvinia	1900	*	2	2	8	11	12	7	11	5	7	3	1	6	11-12	10-12
Cape Agulhas	1900	35	39	42	30	20	24	28	25	31	32	31	32	31	12	11-12
Cape Columbine	1900	10	17	19	19	26	27	20	22	20	18	11	12	19	12	11-12

Footnote at end of table.

FIGURE 40. FREQUENCY OF CEILING <3,300 FEET (Continued)

COUNTRY AND STATION	HOUR (LST)	HOUR												DATA BASE INFO		
		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN	FOR	CYR
Republic of South Africa (Continued):																
Cape Saint Lucia.....	2000	29	28	22	24	11	11	11	15	25	36	42	34	24	11	10-11
Cape Town/D.F. Malan.....	1900	11	10	14	15	24	27	23	23	17	15	12	12	17	11-12	11-12
De Aar.....	2000	3	2	2	1	1	2	1	1	1	1	2	3	2	10-11	10-11
Durban/Louis Botha.....	2000	50	40	42	34	21	13	20	24	37	45	53	48	36	11-12	11-12
East London.....	2000	51	39	39	23	13	11	10	14	26	34	38	40	28	11-12	10-12
Estcourt.....	2000	16	15	13	11	4	2	2	5	11	19	21	20	12	11	11
Johannesburg/Jan Smuts.....	2000	5	3	3	6	1	2	1	1	4	6	6	6	4	12	12
Kimberley.....	2000	1	2	2	3	2	3	1	*	1	1	4	1	2	12	12
Kuruman.....	2000	7	5	8	4	3	2	1	1	2	6	9	12	5	9-11	9-11
Lydenburg.....	2000	38	34	19	25	8	7	8	8	8	23	39	32	21	5-6	5-6
Macouville.....	2000	16	21	11	13	0	10	10	8	10	16	18	11	12	2-3	2-3
Mafeking.....	2000	11	9	5	5	2	1	*	0	2	6	8	8	5	9-10	9-10
Marnitz.....	2000	11	9	3	9	4	8	6	4	7	8	7	12	7	11-12	10-12
Matroosberg.....	1900	7	3	9	8	9	11	7	6	6	11	5	6	7	10-11	10-11
Middelburg.....	2000	14	12	13	12	8	0	5	4	4	7	10	11	9	10-11	10-11
Okiep.....	1900	3	4	5	7	10	13	12	14	8	10	5	3	8	12-13	12-13
Phalaborwa.....	2000	22	20	14	16	5	6	6	6	9	16	24	28	15	9-10	9-10
Pieterburg.....	2000	8	9	9	7	3	5	2	3	3	11	12	13	7	12	11-12
Piet Retief.....	2000	44	39	29	30	11	12	11	12	20	43	55	48	30	10-12	10-11
Port Elizabeth.....	2000	32	26	25	21	14	11	12	17	25	27	31	25	22	12	12
Port Saint Johns.....	2000	51	49	43	30	16	11	14	21	37	45	45	47	34	12	10-12
Queenstown.....	2000	30	32	25	15	10	4	5	3	10	20	29	21	17	5-9	5-9
Sheeprun.....	2000	53	49	36	35	15	17	17	14	27	45	53	51	35	5-6	5-6
Uppington.....	1900	*	*	*	1	1	1	1	0	*	*	*	*	*	12	12
Wepener.....	2000	3	5	4	4	1	2	1	1	1	2	5	3	3	12-13	12-13
Willowmore.....	2000	9	6	14	10	8	6	7	7	6	11	9	6	8	8-9	7-9
South-West Africa:																
Gobabis.....	1900	8	7	8	8	*	1	*	1	1	3	10	2	4	8	8
Ketmanshoop.....	1900	*	2	1	1	1	*	1	1	*	1	1	*	1	9-10	9-10
Mariental.....	1900	3	1	3	3	*	0	0	0	*	1	3	1	1	8	7-8
Outjo.....	1900	3	4	2	*	0	0	0	0	0	0	1	1	1	8	8
Windhoek.....	1900	3	4	1	3	*	0	0	0	0	*	1	0	1	8	8

* <0.5%.

FIGURE 41. PERCENTAGE FREQUENCY OF CEILING <1,000 FEET AT SPECIFIED HOURS
(Ceiling defined as 5/8 or more cloud cover)

COUNTRY AND STATION	HOUR (LST)	HOUR												DATA BASE INFO		
		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN	FOR	CYR
Botswana:																
Francistown.....	0800	2	8	2	4	3	2	1	3	2	3	2	5	3	6	0
Gaborone.....	0800	*	1	2	3	*	0	0	0	0	0	*	0	1	7	6-7
Ghanzi.....	0700	0	0	0	0	0	0	0	0	0	0	1	1	*	6	6
Maun.....	0800	4	5	5	1	0	*	0	0	0	0	3	6	2	9	9
Shakawe.....	0700	0	0	0	0	0	0	0	0	0	0	0	1	*	5	5
Tsabong.....	0700	1	0	1	1	*	0	0	0	1	0	0	0	*	6-7	6-7
Tsane.....	0700	1	0	0	0	1	0	0	0	0	0	0	0	*	0	6
Republic of South Africa:																
Alexander Bay.....	0700	22	31	36	25	22	16	20	17	23	13	16	18	22	12	12
Beaufort West.....	0800	1	1	6	6	3	2	3	3	3	2	2	1	3	11-12	11-12
Bethlehem.....	0800	13	17	18	17	12	10	10	6	6	6	12	7	11	10-11	10-11
Calvinia.....	0700	0	3	3	4	4	5	4	3	4	2	1	*	3	12	12
Cape Agulhas.....	0700	4	7	7	11	9	8	7	8	7	11	9	5	8	12	12
Cape Columbine.....	0700	18	20	24	19	21	16	16	14	18	17	16	17	18	12	12
Cape Saint Lucia.....	0800	13	14	10	12	6	9	7	11	17	18	22	13	13	11	11
Cape Town/D.F. Malan.....	0700	4	5	7	8	7	10	7	6	6	6	4	2	6	11-12	11-12
De Aar.....	0800	1	*	*	3	3	4	2	1	0	1	*	0	1	10-11	10-11
Durban/Louis Botha.....	0800	6	2	3	2	0	1	0	*	3	5	5	6	3	11-12	11-12
East London.....	0800	12	10	11	5	5	1	3	2	6	10	14	11	3	12	12

Footnote at end of table.

FIGURE 41. FREQUENCY OF CEILING <1,000 FEET (Continued)

COUNTRY AND STATION	HOUR (LST)													DATA BASE INFO		
		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN	FOR	CVN
Republic of South Africa (Continued):																
Estcourt	0800	1	3	1	2	1	0	*	*	*	2	2	1	1	11	11
Johannesburg/Jan Smuts	0800	20	10	17	18	9	6	8	7	9	12	16	19	13	12	12
Kimberley	0800	2	1	2	2	2	1	1	1	1	1	1	1	1	12	12
Kuruman	0800	1	2	2	2	1	1	0	*	*	1	2	0	1	9-11	9-11
Lydenburg	0800	22	11	13	13	8	2	3	4	4	6	16	9	9	5-6	5-6
Macuville	0800	0	2	0	0	0	0	0	0	0	0	0	1	*	2-3	2-3
Mafeking	0800	*	0	0	2	*	0	0	0	*	*	*	0	*	9-10	9-10
Marnits	0800	0	0	0	0	*	*	0	0	0	0	0	0	*	11-12	10-12
Matroosberg	0700	10	10	15	16	18	12	14	17	16	16	9	6	13	10-11	10-11
Middelburg	0800	11	12	16	11	8	6	6	7	7	5	9	5	8	11	10-11
Okiep	0700	2	2	2	4	7	10	8	14	9	5	3	2	6	12-13	12-13
Phalaborwa	0800	17	20	12	21	12	9	7	11	12	9	16	14	13	9-10	9-10
Pietersburg	0800	8	9	7	12	6	7	6	5	7	9	6	10	8	12	12
Piet Retief	0800	25	28	22	24	14	11	9	12	19	24	23	17	19	10-12	10-12
Port Elizabeth	0800	8	6	10	8	3	1	5	4	5	9	7	6	6	12	12
Port Saint Johns	0800	4	3	1	3	1	*	1	*	3	4	2	8	2	12	12
Queenstown	0800	18	18	23	17	12	8	8	7	13	12	12	6	13	9-11	9-11
Sheeprun	0800	8	9	17	13	8	5	5	5	9	14	10	5	9	5-6	5-6
Uppington	0700	0	*	*	1	0	1	1	*	0	*	0	0	*	12	12
Wepener	0800	1	3	2	5	2	2	3	1	*	1	2	1	2	12-18	12-18
Willowmore	0800	4	7	10	10	9	6	8	7	10	5	3	2	7	8-9	8-9
South-West Africa:																
Gobabis	0700	0	0	*	1	*	*	0	0	0	0	0	2	*	8	8
Keetmanshoop	0700	0	0	*	0	*	1	0	1	0	*	0	0	*	9-10	9-10
Mariental	0700	0	0	0	1	1	0	0	0	0	0	0	0	*	8	8
Outjo	0700	2	1	1	*	*	0	1	0	*	0	0	0	1	8	8
Windhoek	0700	1	2	2	1	0	0	*	0	*	0	1	1	1	9-10	9-10
Botswana:																
Francistown	1400	5	7	3	3	1	1	0	1	0	2	4	8	3	6	6
Gaberones	1400	*	0	1	2	2	0	0	0	0	*	1	1	1	6-7	6-7
Ghanzi	1300	0	0	0	1	0	0	0	0	0	0	0	0	*	6	6
Maun	1400	3	6	4	1	*	0	*	0	0	1	3	7	2	9	8-9
Shakawe	1300	0	0	0	0	0	0	0	0	0	0	0	0	0	5	5
Teabong	1300	1	0	1	*	0	*	0	0	0	0	0	0	*	6-7	6-7
Tsane	1300	0	0	0	0	0	0	0	0	0	0	0	0	0	6	6
Republic of South Africa:																
Alexander Bay	1300	1	*	1	1	2	2	1	*	1	1	*	1	1	12	12
Beaufort West	1400	0	1	*	*	*	0	0	0	0	1	1	0	*	11-12	11-12
Bethlehem	1400	3	3	1	4	2	1	1	1	3	3	2	1	2	10-11	10-11
Calvinia	1300	0	*	1	2	1	1	1	0	*	1	0	*	1	12	11-12
Cape Agulhas	1300	2	0	5	4	0	4	3	0	8	5	4	2	4	12	12
Cape Columbine	1300	6	9	9	11	11	13	11	10	8	9	9	6	9	12	12
Cape Saint Lucia	1400	9	10	6	9	5	6	9	5	12	12	15	6	9	11	10-11
Cape Town/D.F. Malan	1300	*	1	1	2	3	3	2	3	3	1	1	*	2	11-12	11-12
De Aar	1400	0	0	0	0	1	2	0	*	1	0	0	0	*	10-11	10-11
Durban/Louis Botha	1400	5	3	3	3	1	1	*	1	3	3	7	5	3	11-12	11-12
East London	1400	9	9	11	6	4	1	2	2	8	10	10	7	6	12	12
Estcourt	1400	0	0	0	*	0	*	*	0	0	1	0	0	*	11	11
Johannesburg/Jan Smuts	1400	1	1	2	4	1	1	1	1	1	1	3	3	2	12	12
Kimberley	1400	1	1	1	1	1	1	0	0	1	*	1	0	*	12	12
Kuruman	1400	*	1	*	1	*	*	0	0	0	0	1	*	*	9-11	9-11
Lydenburg	1400	5	4	1	5	1	1	0	0	0	1	7	4	2	5-6	5-6
Macuville	1400	0	0	0	0	0	0	0	0	0	0	0	0	0	2-3	2-3
Mafeking	1400	*	0	0	*	0	0	0	0	*	*	1	0	*	9-10	9-10
Marnits	1400	0	0	0	0	0	0	0	0	0	0	0	0	0	11-12	10-11
Matroosberg	1300	*	1	2	2	8	5	3	4	3	4	1	2	3	10-11	10-11
Middelburg	1400	1	3	4	2	3	2	3	1	1	1	1	1	2	11	10-11
Okiep	1300	*	*	1	1	4	6	5	5	3	3	1	1	3	12-13	12-13
Phalaborwa	1400	3	4	1	3	*	*	1	1	1	3	4	5	2	9-10	9-10
Pietersburg	1400	1	*	0	1	*	1	*	*	1	*	1	2	1	12	12
Piet Retief	1400	8	9	8	9	3	3	3	3	7	9	11	7	7	10-11	9-11
Port Elizabeth	1400	4	2	5	5	4	2	3	3	3	5	4	4	3	12	12

Footnote at end of table.

FIGURE 41. FREQUENCY OF CRILING <1,000 FEET (Continued)

COUNTRY AND STATION	HOUR (LST)	DATA BASE INFO												FOR	CYR	
		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC			ANN
Republic of South Africa (Continued):																
Port Saint Johns	1400	2	2	3	1	1	0	*	*	1	4	3	1	1	12	12
Queenstown	1400	3	2	4	4	1	2	1	1	3	3	3	1	2	9-11	8-11
Sheeprun	1400	1	1	2	1	1	0	1	0	0	2	2	2	1	5-6	5-6
Uppington	1300	0	0	0	0	0	0	0	0	0	0	0	0	0	12	12
Walvis Bay	1300	10	13	14	18	25	13	13	23	18	19	10	13	10	7-8	5-6
Wepener	1400	1	1	2	*	*	*	*	0	0	0	*	0	*	12-13	12-13
Willowmore	1400	*	1	3	4	1	1	2	1	2	*	1	0	1	5-9	7-9
South-West Africa:																
Gobabis	1300	0	0	0	0	0	0	0	0	0	0	*	0	*	8	8
Keetmanshoop	1300	0	0	0	0	0	*	0	0	0	0	0	0	*	9-10	9-10
Mariental	1300	0	0	0	0	0	0	0	0	0	0	0	0	0	8	7-8
Outjo	1300	0	*	0	0	0	0	0	0	0	0	0	0	*	8	8
Windhoek	1300	1	0	0	0	0	0	0	0	0	*	*	*	*	9-10	9-10
Botswana:																
Francistown	2000	5	3	0	0	1	0	0	0	0	1	4	4	1	6	6
Gaborone	2000	1	0	1	1	0	0	0	0	0	1	0	0	*	6-7	6-7
Ghanzi	1900	0	0	1	1	0	0	0	0	0	0	0	2	*	5-6	5-6
Maun	2000	2	2	1	0	0	0	0	0	0	*	1	4	1	9	8-9
Shakawe	1900	0	0	0	0	0	0	0	0	0	0	0	0	0	5	5
Tsabong	1900	0	0	1	0	0	*	0	0	0	0	1	*	*	6-7	6-7
Tsane	1900	1	0	0	0	0	0	0	0	0	0	0	0	*	6	0
Republic of South Africa:																
Alexander Bay	1900	9	16	12	11	13	9	10	5	7	4	8	11	10	10-11	10-11
Beaufort West	2000	*	1	1	0	1	*	1	0	*	2	1	0	*	11-12	10-12
Bathlehem	2000	3	3	2	3	*	*	1	*	3	2	2	1	2	10-11	10-11
Calvinia	1900	0	0	1	2	1	1	1	*	*	1	1	*	1	11-12	10-12
Cape Agulhas	1900	5	7	5	5	6	4	4	4	4	7	4	5	3	12	11-12
Cape Columbine	1900	8	10	14	11	15	13	6	8	8	8	6	7	9	12	11-12
Cape Saint Lucia	2000	11	11	6	9	4	5	6	8	13	16	20	13	10	11	10-11
Cape Town/D.F. Malan	1900	3	4	5	6	8	6	3	3	3	2	3	4	4	11-12	11-12
De Aar	2000	0	0	0	*	0	1	0	0	0	0	0	0	*	10-11	10-11
Durban/Louis Botha	2000	6	3	4	1	1	0	1	1	5	8	8	8	4	11-12	11-12
East London	2000	13	9	13	8	3	3	2	4	5	12	11	11	8	11-12	10-12
Katoot	2000	*	0	0	0	0	0	0	0	0	*	*	*	*	11	11
Johannesburg/Jan Smuts	2000	2	2	1	5	1	1	1	1	3	1	4	2	2	12	12
Kimberley	2000	0	*	1	1	1	1	1	*	0	0	1	0	*	12	12
Kuruman	2000	1	*	1	0	*	0	0	0	0	0	1	0	*	9-11	9-11
Lydenburg	2000	9	3	3	4	1	1	0	1	1	2	4	4	3	5-6	5-6
Macuville	2000	0	0	0	0	0	0	0	0	0	0	1	0	*	2-3	2-3
Mankeng	2000	1	0	0	*	0	0	0	0	0	1	1	*	*	9-10	9-10
Marnitz	2000	0	0	0	0	0	0	0	0	0	0	0	0	0	11-12	10-12
Matroosberg	1900	2	*	4	3	3	3	3	3	2	5	2	3	3	10-11	10-11
Middelburg	2000	2	4	5	2	1	1	1	1	1	1	2	1	2	10-11	10-11
Okiep	1900	*	*	1	3	2	7	5	7	3	4	2	*	3	12-13	12-13
Phalaborwa	2000	6	5	2	7	1	3	2	1	1	5	6	8	4	9-10	9-10
Pieteraburg	2000	*	*	*	1	0	0	0	*	1	1	1	1	*	12	11-12
Plet Retief	2000	19	17	12	16	4	6	6	7	13	19	19	16	13	10-12	10-11
Port Elizabeth	1900	6	6	7	3	4	1	1	5	6	6	5	5	5	12	12
Port Saint Johns	2000	3	3	3	1	*	*	*	1	3	5	2	2	2	12	10-12
Queenstown	2000	11	7	11	5	4	1	1	*	5	7	14	6	6	5-9	5-9
Sheeprun	2000	12	4	5	4	1	0	1	0	1	7	3	6	4	5-6	5-6
Uppington	1900	0	0	0	0	0	0	0	0	0	0	0	0	0	12	12
Wepener	2000	*	1	1	1	*	*	*	0	*	0	1	0	*	12-13	12-13
Willowmore	2000	1	*	3	2	2	1	3	2	1	1	*	*	1	5-9	7-9
South-West Africa:																
Gobabis	1900	0	0	0	*	0	0	0	0	0	0	*	0	*	8	8
Keetmanshoop	1900	0	*	0	0	0	0	0	0	0	0	0	0	*	9-10	9-10
Mariental	1900	*	0	1	1	*	0	0	0	0	0	1	0	*	8	7-8
Outjo	1900	0	*	0	0	0	0	0	0	0	0	0	0	*	8	8
Windhoek	1900	1	1	0	0	0	0	0	0	0	0	*	0	*	8	8

* < 0.5%.

FIGURE 42. PERCENTAGE FREQUENCY OF CEILING <650 FEET AT SPECIFIED HOURS
(Ceiling defined as 1/8 or more cloud cover)

COUNTRY AND STATION	HOUR (LST)													DATA BASE INFO		
		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN	PER	CYR
Botswana:																
Francistown	0800	0	0	0	0	0	0	0	1	1	1	1	2	*	6	6
Gaborone	0800	0	0	0	1	0	0	0	0	0	0	0	0	*	7	6-7
Ghausi	0700	0	0	0	0	0	0	0	0	0	0	0	0	0	6	6
Maun	0800	1	1	2	0	0	0	0	0	0	0	1	1	1	9	9
Shakawe	0700	0	0	0	0	0	0	0	0	0	0	0	0	0	5	5
Tsabong	0700	0	0	1	*	0	0	0	0	0	0	0	0	*	6-7	6-7
Tsane	0700	1	0	0	0	0	0	0	0	0	0	0	0	*	6	6
Republic of South Africa:																
Alexander Bay	0700	11	21	30	20	19	14	17	13	17	6	7	11	10	12	12
Beaufort West	0800	*	1	5	5	3	2	3	3	2	1	2	1	2	11-12	11-12
Bothlehem	0800	3	5	6	8	8	7	6	4	1	2	4	3	5	10-11	10-11
Calvinia	0700	0	3	2	4	3	4	3	2	3	2	*	0	2	12	12
Cape Agulhas	0700	1	3	2	4	3	2	2	1	2	2	3	1	2	12	12
Cape Columbine	0700	13	17	22	16	15	9	9	8	8	9	11	12	12	12	12
Cape Saint Lucia	0800	1	2	1	*	1	1	1	1	3	2	1	1	1	11	11
Cape Town/D.F. Malan	0700	1	5	6	8	4	6	4	3	3	3	3	1	4	11-12	11-12
De Aar	0800	0	0	*	1	*	2	*	1	0	*	0	0	*	10-11	10-11
Durban/Louis Botha	0800	1	*	*	*	0	0	0	0	1	1	1	2	1	11-12	11-12
East London	0800	6	6	6	3	1	*	1	3	7	8	7	4	4	12	12
Estcourt	0800	1	2	1	1	1	0	*	*	0	1	1	*	1	11	11
Johannesburg/Jan Smuts	0800	11	8	11	13	8	6	5	6	8	6	7	9	8	12	12
Kimberley	0800	1	1	1	0	2	1	1	*	0	0	*	0	*	12	12
Kuruman	0800	0	*	0	*	*	*	0	0	0	0	0	0	*	9-11	9-11
Lydenburg	0800	3	0	0	0	0	0	0	0	0	0	3	1	*	5-6	5-6
Macoville	0800	0	0	0	0	0	0	0	0	0	0	0	0	0	2-3	2-3
Mafeking	0800	0	0	0	1	0	0	0	0	0	*	0	0	*	9-10	9-10
Marnitz	0800	0	0	0	0	*	*	0	0	0	0	0	*	*	11-12	10-12
Matroosburg	0700	4	1	3	5	5	4	3	3	4	4	2	2	3	10-11	10-11
Middelburg	0800	4	6	9	9	2	4	4	2	3	1	2	1	4	11	10-11
Okiep	0700	1	*	1	1	2	4	2	3	2	2	*	0	1	12-13	12-13
Phalaborwa	0800	7	10	6	9	4	5	3	4	5	4	7	7	6	9-10	9-10
Pietersburg	0800	*	2	1	3	3	5	4	2	1	3	2	1	2	12	12
Plet Retief	0800	10	10	9	10	7	6	4	7	8	10	10	6	8	10-12	10-12
Port Elizabeth	0800	4	4	5	3	2	*	2	2	3	5	5	4	3	12	12
Port Saint Johns	0800	1	*	1	0	*	0	0	0	1	1	0	1	*	12	12
Queenstown	0800	5	7	5	7	7	5	7	3	7	2	4	2	5	9-11	9-11
Sheeprun	0800	2	3	10	8	3	5	4	4	5	6	6	2	5	5-6	5-6
Uppington	0700	0	0	0	*	0	1	1	*	0	*	0	0	*	12	12
Wepener	0800	1	2	1	4	2	2	2	1	*	1	1	0	1	12-13	12-13
Willemsmoer	0800	1	2	4	6	5	3	3	3	4	2	1	*	3	8-9	8-9
South-West Africa:																
Gobabis	0700	0	0	0	*	*	0	0	0	0	0	0	0	*	8	8
Keetmanshoop	0700	0	0	0	0	0	1	0	1	0	*	0	0	*	9-10	9-10
Mariental	0700	0	0	0	*	1	0	0	0	0	0	0	0	*	8	8
Outjo	0700	0	*	*	*	0	0	1	0	*	0	0	0	*	8	8
Windhoek	0700	1	1	2	1	0	0	*	0	*	0	1	*	1	9-10	9-10

* < 0.5%.

FIGURE 13. PERCENTAGE FREQUENCY OF VISIBILITY <6 MILES AT SPECIFIED HOURS

COUNTRY AND STATION	HOUR (LMT)	DATA BASE INFO												POB	CYR	
		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC			ANN
Botswana:																
Francistown.....	0800	1	0	1	0	0	1	0	1	0	1	1	1	*	6	6
Gaboronea.....	0800	*	2	*	*	0	0	0	0	0	1	1	2	1	7	6-7
Ghanzi.....	0700	0	0	0	0	1	0	0	0	1	0	1	0	*	6	6
Maun.....	0800	1	*	1	1	1	1	11	16	23	20	3	2	7	9	9
Shakawe.....	0700	0	0	0	0	0	0	0	0	0	0	0	0	0	5	5
Tsabong.....	0700	0	0	0	1	0	*	1	0	0	0	0	0	*	6-7	6-7
Tsane.....	0700	1	0	0	0	0	2	0	0	0	0	0	0	*	6	6
Republic of South Africa:																
Alexander Bay.....	0700	16	30	41	31	33	23	27	27	28	20	16	16	26	12	12
Beaufort West.....	0800	1	2	5	6	5	5	6	7	6	4	3	2	4	11-12	11-12
Bethlehem.....	0800	14	22	46	52	55	49	55	61	55	15	13	40	10-11	10-11	
Calvinia.....	0700	*	10	7	5	5	7	5	4	4	2	*	*	4	12	12
Cape Agulhas.....	0700	7	9	10	12	12	16	13	9	8	11	9	6	11	12	12
Cape Columbine.....	0700	21	24	22	24	23	16	17	12	13	10	15	19	19	12	12
Cape Saint Lucia.....	0800	5	6	5	5	4	5	5	4	5	7	7	5	6	11	11
Cape Town/D.F. Malan.....	0700	8	10	14	20	23	24	23	22	14	11	9	7	15	11-12	11-12
De Aar.....	0800	3	3	7	12	22	32	25	25	9	4	2	1	12	10-11	10-11
Durban/Louis Botha.....	0800	19	19	26	34	35	47	48	52	3	25	17	15	32	11-12	11-12
East London.....	0800	14	12	15	9	4	2	3	3		12	13	11	9	12	12
Estcourt.....	0800	11	18	22	22	25	34	27	30	2	15	10	10	21	11	11
Johannesburg/Jan Smuts.....	0800	12	12	22	22	25	47	46	40	20	14	14	12	25	12	12
Kimberley.....	0800	2	4	7	9	12	20	20	21	6	2	2	1	9	12	12
Kuruman.....	0800	1	1	1	1	*	*	1	1	5	3	2	1	1	9-11	9-11
Lydenburg.....	0800	1	0	0	2	1	1	0	2	2	1	5	3	2	5-6	5-6
Macouville.....	0800	0	2	0	0	0	0	0	0	0	0	0	0	*	2-3	2-3
Mafeking.....	0800	1	2	2	1	1	1	2	9	9	7	4	1	3	9-10	9-10
Marnitz.....	0800	1	11	9	10	9	9	9	9	12	12	2	4	5	11-12	10-12
Matroosberg.....	0700	6	6	7	10	13	9	7	9	8	6	5	4	8	10-11	10-11
Middelburg.....	0800	2	2	5	6	4	3	5	3	4	3	2	1	3	11	10-11
(Klep.....	0700	1	*	2	3	4	6	7	10	5	3	*	0	3	12-13	12-13
Phalaborwa.....	0800	3	3	5	3	1	2	*	2	1	1	4	2	2	9-10	9-10
Pietersburg.....	0800	2	3	1	6	20	30	28	28	14	6	2	3	12	12	12
Piet Retief.....	0800	37	40	45	40	35	33	42	42	43	41	39	31	39	10-12	10-12
Port Elizabeth.....	0800	8	9	12	17	17	19	19	22	15	12	8	6	14	12	12
Port Saint Johns.....	0800	17	15	12	6	3	3	4	6	9	11	12	11	9	12	12
Queenstown.....	0800	12	20	24	25	25	25	24	24	16	11	8	21	9-11	9-11	
Shesprun.....	0800	13	9	14	12	5	8	7	7	7	17	12	6	10	5-6	5-6
Uppington.....	0700	*	*	*	1	1	5	1	1	1	*	1	*	1	12	12
Wepener.....	0800	11	20	32	35	35	35	34	47	40	21	9	14	35	12-13	12-13
Willowmore.....	0800	0	2	5	7	7	3	4	5	4	2	0	0	2	8-9	8-9
South-West Africa:																
Gobabis.....	0700	0	0	3	0	*	0	0	0	0	0	0	0	*	8	8
Keetmanshoop.....	0700	*	0	*	*	*	1	0	*	0	1	0	0	*	9-10	9-10
Mariental.....	0700	*	0	0	*	1	*	0	0	0	*	0	0	*	8	8
Outjo.....	0700	1	3	*	*	0	0	*	0	1	0	*	0	1	8	8
Windhoek.....	0700	2	4	2	3	0	0	*	0	*	1	1	*	1	9-10	9-10
Botswana:																
Francistown.....	1400	0	2	0	0	0	0	0	0	0	2	1	1	*	6	6
Gaboronea.....	1400	1	2	0	1	0	0	0	*	0	3	1	1	1	6-7	6-7
Ghanzi.....	1300	1	1	0	0	0	0	0	1	1	1	0	0	*	6	6
Maun.....	1400	1	*	1	0	1	3	17	23	31	28	4	4	9	9	8-9
Shakawe.....	1300	0	0	0	0	0	0	0	0	0	0	0	0	0	5	5
Tsabong.....	1300	0	0	0	0	0	0	0	0	0	0	0	0	0	6-7	6-7
Tsane.....	1300	0	0	0	0	0	0	0	0	0	0	0	0	0	6	6
Republic of South Africa:																
Alexander Bay.....	1300	2	2	1	3	5	5	5	7	6	7	6	3	4	12	12
Beaufort West.....	1400	1	1	1	2	2	1	2	3	4	2	2	2	2	11-12	11-12
Bethlehem.....	1400	4	5	9	8	4	4	4	8	9	13	5	3	6	10-11	10-11
Calvinia.....	1300	0	7	4	1	3	3	1	*	*	1	0	*	2	12	11-12
Cape Agulhas.....	1300	4	4	5	9	7	8	9	7	4	7	4	4	6	12	12
Cape Columbine.....	1300	7	10	15	15	12	9	9	7	4	6	8	6	9	12	12
Cape Saint Lucia.....	1400	5	4	4	5	1	4	7	3	9	6	4	6	5	11	10-11
Cape Town/D.F. Malan.....	1300	2	3	1	6	10	8	7	8	5	4	2	2	5	11-12	11-12

Footnote at end of table.

FIGURE 43. FREQUENCY OF VISIBILITY <6 MILES (Continued)

COUNTRY AND STATION	HOUR (LST)	MONTHS												DATA BASE INFO		
		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN	FOR	CYR
Republic of South Africa (Continued):																
De Aar.....	1400	2	2	3	3	1	*	1	1	3	2	2	2	2	10-11	10-11
Durban/Louis Botha.....	1400	5	5	4	4	3	3	3	3	5	6	5	7	6	11-12	11-12
East London.....	1400	8	7	10	7	5	3	6	4	9	12	8	6	7	12	12
Estcourt.....	1400	4	4	1	3	1	1	1	1	2	3	4	4	2	11	11
Johannesburg/Jan Smuts.....	1400	2	4	3	3	2	4	5	2	2	3	4	3	3	12	12
Kimberley.....	1400	2	1	1	2	1	1	1	1	1	2	2	1	1	12	12
Kuruman.....	1400	1	1	1	2	0	1	1	1	2	2	1	1	1	9-11	9-11
Lydenburg.....	1400	1	1	1	1	1	0	0	1	0	1	4	3	1	5-6	5-6
Macouville.....	1400	0	0	0	0	0	0	0	0	2	0	0	0	*	2-3	2-3
Mafeking.....	1400	1	*	2	0	*	1	1	2	6	7	5	1	2	9-10	9-10
Marnitz.....	1400	1	10	9	9	9	7	8	8	16	11	8	1	8	11-12	10-11
Matroosberg.....	1300	1	2	3	3	3	3	2	4	3	2	2	2	3	10-11	10-11
Middelburg.....	1400	1	3	3	2	1	2	1	1	2	3	4	1	2	11	10-11
Okiep.....	1300	0	0	*	1	3	1	2	2	1	1	0	0	1	12-13	12-13
Phalaborwa.....	1400	2	0	1	1	*	0	*	1	0	2	1	2	1	9-10	9-10
Pietersburg.....	1400	1	1	1	*	0	*	1	1	4	2	*	2	1	12	12
Piet Retief.....	1400	23	26	20	22	9	11	18	22	25	27	28	24	22	10-11	9-11
Port Elizabeth.....	1400	3	2	5	5	6	4	4	4	4	2	2	4	4	12	12
Port Saint Johns.....	1400	12	9	9	5	2	1	2	4	6	9	10	6	6	12	12
Queenstown.....	1400	2	4	4	6	4	5	3	3	4	3	4	3	4	9-11	9-11
Sheeprun.....	1400	6	2	3	3	1	3	1	3	0	6	4	2	3	5-6	5-6
Uptington.....	1300	0	1	*	*	*	*	1	1	1	2	*	*	1	12	12
Walvis Bay.....	1300	2	3	7	16	24	14	16	17	12	9	5	4	10	7-8	5-6
Wepener.....	1400	4	6	9	5	5	5	10	7	10	7	6	6	7	12-13	12-13
Willowmore.....	1400	0	0	0	1	2	0	*	0	*	0	0	0	*	5-9	7-9
South-West Africa:																
Jobabie.....	1300	0	0	0	0	0	0	0	0	0	0	0	0	0	8	8
Keetmanshoop.....	1300	0	0	0	0	*	0	1	1	1	1	*	*	*	9-10	9-10
Mariental.....	1300	0	*	0	0	0	2	1	1	*	1	*	0	*	8	7-8
Outjo.....	1300	0	1	0	0	0	0	0	0	0	0	0	*	*	8	8
Windhoek.....	1300	3	2	2	*	*	0	1	0	0	*	1	1	1	9-10	9-10
Botswana:																
Francistown.....	2000	1	2	0	1	0	0	0	0	0	1	1	2	1	6	6
Gaberone.....	2000	1	1	1	1	0	0	0	0	0	1	2	2	1	6-7	6-7
Ghanzi.....	1900	0	0	0	0	0	0	0	0	0	0	0	0	0	5-6	5-6
Maun.....	2000	1	0	0	0	1	3	12	21	29	24	5	4	8	9	8-9
Mhakawe.....	1900	0	0	0	0	0	0	0	0	0	0	0	0	0	5	5
Tlokgeng.....	1900	0	0	0	0	0	0	0	0	0	0	0	*	*	6-7	6-7
Tlokweng.....	1900	1	0	0	0	0	0	1	0	0	0	0	0	*	6	6
Republic of South Africa:																
Alexander Bay.....	1900	6	11	13	12	10	9	11	11	11	9	12	8	10	10-11	10-11
Beaufort West.....	2000	3	1	1	1	3	1	1	3	4	3	2	1	2	11-12	10-12
Bethlehem.....	2000	5	7	11	11	12	15	10	5	5	12	6	6	9	10-11	10-11
Calvinia.....	1900	1	3	1	1	2	1	1	1	*	1	1	*	1	11-12	10-12
Cape Agulhas.....	1900	4	3	5	11	7	9	8	10	5	6	4	4	6	12	11-12
Cape Columbine.....	1900	7	10	15	12	12	13	5	5	4	4	5	7	8	12	11-12
Cape Saint Lucia.....	2000	5	4	4	7	1	5	7	3	7	10	6	5	5	11	10-11
Cape Town/D.F. Malan.....	1900	4	4	7	9	14	20	15	11	6	4	4	3	8	11-12	11-12
De Aar.....	2000	2	3	5	6	8	12	4	2	2	2	4	3	4	10-11	10-11
Durban/Louis Botha.....	2000	15	12	12	12	14	22	24	17	13	15	15	11	15	11-12	11-12
East London.....	2000	12	5	14	7	4	3	3	5	10	13	10	10	5	11-12	10-12
Estcourt.....	2000	14	16	11	6	3	6	4	4	6	11	13	16	9	11	11
Johannesburg/Jan Smuts.....	2000	6	7	6	6	11	19	19	9	5	5	5	5	9	12	12
Kimberley.....	2000	3	1	2	2	3	4	10	4	1	2	4	2	3	12	12
Kuruman.....	2000	3	3	1	1	*	*	*	0	1	2	2	2	1	9-11	9-11
Lydenburg.....	2000	4	1	1	1	1	1	0	4	2	3	4	2	2	5-6	5-6
Macouville.....	2000	0	0	0	0	0	0	0	0	0	1	0	*	*	2-3	2-3
Mafeking.....	2000	4	4	2	2	0	*	1	3	6	7	4	3	3	9-10	9-10
Marnitz.....	2000	13	16	13	14	10	12	12	16	23	22	18	13	15	11-12	10-12
Matroosberg.....	1900	4	2	5	6	5	6	5	7	3	3	3	3	4	10-11	10-11
Middelburg.....	2000	2	2	4	2	1	1	1	1	1	1	2	2	2	10-11	10-11
Okiep.....	1900	*	0	0	1	1	3	2	3	1	1	1	*	1	12-13	12-13
Phalaborwa.....	2000	2	*	0	*	0	0	*	*	0	0	1	0	*	9-10	9-10

Footnote at end of table.

FIGURE 43. FREQUENCY OF VISIBILITY < 6 MILES (Continued)

COUNTRY AND STATION	HOUR (LST)													DATA BASE INFO		
		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN	FOR	CVR
Republic of South Africa (Continued):																
Pietersburg.....	2000	1	2	0	1	*	3	1	*	1	3	1	3	1	12	11-12
Plet Retief.....	2000	33	31	30	25	12	15	21	25	31	33	36	33	27	10-12	10-11
Port Elizabeth.....	2000	5	4	5	4	4	6	5	7	5	5	5	3	5	12	12
Port Saint Johns.....	2000	23	24	21	12	6	4	4	9	16	18	20	19	15	12	10-12
Queenstown.....	2000	9	4	8	7	4	6	5	4	5	7	9	4	6	8-9	8-9
Sheeprun.....	2000	22	18	14	11	3	2	2	4	3	16	16	11	10	5-9	5-6
Uppington.....	1900	2	1	1	*	0	2	1	1	1	1	2	3	1	12	12
Wepener.....	2000	17	17	24	22	16	15	15	15	21	22	23	23	19	12-13	12-13
Willowmore.....	2000	0	0	*	0	*	0	1	0	*	1	*	0	*	5-9	7-9
South-West Africa:																
Globabis.....	1900	0	0	0	0	0	0	0	0	0	0	0	0	0	8	8
Keetmanshoop.....	1900	1	*	1	*	0	0	0	*	0	1	1	*	*	9-10	9-10
Mariental.....	1900	3	2	2	2	*	*	0	0	0	*	1	2	1	8	7-8
Outjo.....	1900	2	2	0	1	0	0	0	0	0	0	2	2	1	8	8
Windhoek.....	1900	5	6	4	1	0	0	0	1	1	*	1	0	2	8	8

* < 0.5%.

FIGURE 44. PERCENTAGE FREQUENCY OF VISIBILITY <2/3 MILES AT SPECIFIED HOURS

COUNTRY AND STATION	HOUR (LST)	DATA												BASE INFO		
		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN	FOR	CYR
Botswana:																
Francistown	0800	0	0	1	0	0	1	0	1	0	0	1	1	*	6	6
Gaborone	0800	0	0	0	0	0	0	0	0	0	0	*	0	*	7	6-7
Ghanzi	0700	0	0	0	0	1	0	0	0	1	0	0	0	*	6	6
Maun	0800	0	0	1	0	*	0	0	0	1	4	3	1	1	9	9
Shakawe	0700	0	0	0	0	0	0	0	0	0	0	0	0	0	5	5
Tsabong	0700	0	0	0	1	0	*	1	0	0	0	0	0	*	6-7	6-7
Tsane	0700	1	0	0	0	0	2	0	0	0	0	0	0	*	6	6
Republic of South Africa:																
Alexander Bay	0700	4	11	20	18	24	18	17	16	16	4	2	2	12	12	12
Beaufort West	0800	0	2	3	4	3	4	4	3	3	1	2	0	2	11-12	11-12
Bethlehem	0800	2	3	11	14	17	14	16	16	13	3	5	2	10	10-11	10-11
Calviula	0700	*	3	3	4	2	4	4	3	4	2	*	0	2	12	12
Cape Agulhas	0700	1	3	5	5	4	3	3	3	2	2	3	2	3	12	12
Cape Columbine	0700	19	19	27	20	18	13	11	6	8	9	13	16	15	12	12
Cape Saint Lucia	0800	2	4	3	5	2	3	6	2	5	5	3	2	4	11	11
Cape Town/D.F. Malan	0700	2	5	7	10	11	13	10	5	4	5	5	1	7	11-12	11-12
De Aar	0800	*	1	4	9	15	21	17	15	5	1	0	1	8	10-11	10-11
Durban/Louis Botha	0800	3	2	2	3	3	7	9	9	6	3	3	5	5	11-12	11-12
East London	0800	7	6	7	8	2	1	1	1	5	6	6	6	4	12	12
Katsoort	0800	1	3	3	4	5	4	3	4	2	1	3	1	3	11	11
Johannesburg/Jan Smuts	0800	4	3	4	10	12	11	10	9	4	4	3	4	7	12	12
Kimberley	0800	*	*	2	2	3	4	2	5	1	0	1	*	2	12	12
Kuruman	0800	0	*	0	0	0	0	0	0	0	0	*	0	*	9-11	9-11
Lydensburg	0800	1	0	0	1	1	1	0	0	0	1	2	0	*	5-6	5-6
Macoville	0800	0	0	0	0	0	0	0	0	0	0	0	0	0	2-3	2-3
Mafeking	0800	*	1	1	1	1	*	1	3	3	4	1	*	2	9-10	9-10
Marrits	0800	0	5	1	2	2	6	5	2	3	1	*	1	2	11-12	10-12
Matroosberg	0700	*	1	1	4	3	2	3	4	3	1	*	*	2	10-11	10-11
Middelburg	0800	0	1	1	2	1	2	1	1	*	*	*	*	1	11	10-11
Okiep	0700	*	0	1	1	2	3	2	5	2	1	*	0	1	12-13	12-13
Phalaborwa	0800	1	2	0	1	*	1	*	1	0	*	2	0	1	9-10	9-10
Pietersburg	0800	0	*	*	1	4	8	4	3	1	1	0	*	2	12	12
Piet Retief	0800	14	15	23	20	12	14	19	21	24	20	19	14	15	10-12	10-12
Port Elizabeth	0800	3	3	6	5	0	0	7	8	0	4	3	1	5	12	12
Port Saint Johns	0800	3	4	1	2	1	1	1	1	2	3	4	4	2	12	12
Queenstown	0800	5	9	9	14	13	15	16	13	10	5	4	3	10	9-11	9-11
Rheerun	0800	5	4	5	8	3	7	6	6	0	5	7	2	5	5-6	5-6
Uplington	0700	0	0	0	*	0	*	1	*	1	0	*	0	*	12	12
Wepener	0800	*	3	1	5	5	25	20	10	2	*	1	*	7	12-13	12-13
Willowmore	0800	0	1	4	4	5	1	3	3	1	*	0	0	2	8-9	8-9
South-West Africa:																
Globaba	0700	0	0	0	0	*	0	0	0	0	0	0	0	*	8	8
Knetmanshoop	0700	0	0	0	0	*	1	0	*	0	*	0	0	*	9-10	9-10
Mariental	0700	0	0	0	*	1	0	0	0	0	*	0	0	*	8	8
Outjo	0700	*	1	*	0	0	0	*	0	*	0	*	0	*	8	8
Windhoek	0700	0	1	1	0	0	0	*	0	0	0	0	0	*	9-10	9-10

* < 0.5%.

FIGURE 45. MEAN NUMBER OF DAYS WITH FOG (VISIBILITY < 2 1/2 MILES) AT SPECIFIED HOURS

COUNTRY AND STATION	HOUR (LST)													DATA BASE INFO		
		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN	FOR	CV 1
Botswana:																
Francistown	0800	0	0	0	0	0	*	0	*	0	0	0	0	*	6	0
Gaborone	0800	0	0	0	0	0	0	0	0	0	0	0	0	0	7	7
Ghanzi	0700	0	0	0	0	*	0	0	0	0	0	0	0	*	6	6
Maun	0800	0	0	*	0	0	0	0	0	0	0	0	0	*	9	9
Slukhwa	0700	0	0	0	0	0	0	0	0	0	0	0	0	0	5	5
Tsabong	0700	0	0	0	*	0	*	*	0	0	0	0	0	1	6-7	6-7
Tsane	0700	*	0	0	0	0	1	0	0	0	0	0	0	1	6	6
Republic of South Africa:																
Alexander Bay	0700	*	2	5	4	6	4	4	3	3	*	*	*	33	12	12
Beaufort West	0800	0	*	1	1	1	1	1	1	1	*	*	0	7	11-12	11-12
Bethlehem	0800	0	*	1	3	4	3	3	2	*	0	*	0	17	10-11	10-11
Calvinia	0700	*	1	1	1	1	1	1	1	1	1	*	0	7	12	12
Cape Agulhas	0700	*	*	1	1	1	1	1	1	1	*	1	*	7	12	12
Cape Columbine	0700	6	8	8	6	5	3	3	2	2	3	4	5	50	12	12
Cape Saint Lucia	0800	0	0	0	*	*	*	*	*	*	*	0	0	1	11	11
Cape Town/D.F. Malan	0700	*	1	2	2	3	3	3	1	1	1	*	*	16	11-12	11-12
De Aar	0800	0	0	*	*	*	1	*	*	0	*	0	0	2	10-11	10-11
Durban/Louis Botha	0800	0	0	0	0	0	*	0	0	*	0	0	0	*	11-12	11-12
East London	0800	*	*	*	*	*	*	*	*	*	*	*	*	2	12	12
Estcourt	0800	0	*	*	1	1	1	1	*	*	*	*	*	5	11	11
Johannesburg/Jan Smuts	0800	1	*	1	2	2	2	1	1	1	*	*	*	11	12	12
Kimberley	0800	0	0	*	*	*	*	*	*	0	0	0	0	1	12	12
Kuruman	0800	0	0	0	0	0	0	0	0	0	0	0	0	0	9-11	9-11
Lydenburg	0800	0	0	0	*	*	0	0	0	0	*	*	0	1	5-5	5-5
Macouville	0800	0	0	0	0	0	0	0	0	0	0	0	0	0	2-3	2-3
Mafeking	0800	0	0	0	*	*	*	0	0	0	*	0	0	*	9-10	9-10
Marnitz	0800	0	0	0	0	*	0	*	0	0	0	0	0	*	11-12	10-12
Matroosberg	0700	0	*	*	1	1	1	1	1	*	*	*	0	5	10-11	10-11
Middelburg	0300	0	*	0	*	*	1	*	*	*	*	0	0	2	11	10-11
()klep	0700	*	0	*	*	*	1	*	1	1	*	*	0	3	12-13	12-13
Phalaborwa	0800	0	0	0	*	*	*	*	0	0	0	*	0	1	10	10
Pieteraburg	0800	0	0	0	*	1	1	1	1	*	0	0	0	4	12	12
Piet Retief	0800	1	1	2	2	2	1	1	2	2	2	2	1	15	11-12	10-12
Port Elizabeth	0800	*	*	1	1	*	*	1	1	*	*	*	*	5	12	12
Port Saint Johns	0800	0	0	*	0	0	0	0	0	*	*	0	*	*	12	12
Queenstown	0800	*	1	1	2	2	2	1	1	1	*	*	*	10	9-11	9-11
Sheepun	0800	*	1	1	2	1	1	2	1	1	1	1	*	10	5-5	5-5
Uppington	0700	0	0	0	*	0	*	*	*	0	0	0	0	*	12	11-12
Wepener	0800	*	*	*	1	2	4	3	2	*	*	*	0	13	12-13	12-13
Willowmore	0800	0	*	1	1	1	1	1	1	*	*	0	0	6	5-9	5-9
South-West Africa:																
Gobabis	0700	0	0	0	0	*	0	0	0	0	0	0	0	*	5	5
Keetmanshoop	0700	0	0	0	0	*	*	0	*	0	*	0	0	1	9-10	9-10
Mariental	0700	0	0	0	*	0	0	0	0	0	0	0	0	*	5	5
Outjo	0700	0	*	0	0	0	0	0	0	*	0	0	0	*	5	5
Windhoek	0700	0	*	*	0	0	0	0	0	0	0	0	0	*	9-10	9-10

* < 0.5 day.

FIGURE 46. MEAN NUMBER OF DAYS WITH HAZE AND/OR SMOKE
(Based on days with 3 observations)

COUNTRY AND STATION	DATA												FOR	CYR	
	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC			ANN
Botswana:															
Francistown	*	0	0	1	1	4	5	5	6	3	*	0	39	6	6
Gaborone	1	*	*	*	3	5	7	5	5	2	*	0	27	6-7	6-7
Ghanzi	*	0	0	0	*	2	1	4	2	*	*	*	9	5-6	5-6
Maun	1	1	2	3	10	16	17	18	21	17	4	1	110	9	9-9
Bhaketwe	1	*	0	1	2	5	5	5	5	2	0	0	34	5	5
Tsabong	*	2	2	2	2	3	1	2	3	2	*	1	21	6-7	6-7
Tsane	*	0	*	*	*	1	1	2	1	1	0	*	6	6	6
Republic of South Africa:															
Alexander Bay	17	12	13	12	10	9	10	15	15	16	14	14	156	10-11	10-11
Beaufort West	4	4	1	2	4	5	9	9	5	5	4	3	57	11-12	10-12
Bethlehem	6	6	10	8	9	9	11	14	12	11	7	6	111	10-11	10-11
Calvinia	2	*	*	*	*	1	2	2	2	1	1	1	12	11-12	10-12
Cape Agulhas	1	1	1	2	2	1	2	1	1	1	*	1	12	12	11-12
Cape Columbine	3	4	3	2	1	1	2	2	1	1	2	2	24	12	12
Cape Saint Louis	1	1	1	1	1	2	3	3	4	3	1	*	19	11	10-11
Cape Town/D.F. Malan	20	17	15	14	14	16	15	16	16	16	18	20	201	11-12	11-12
De Aar	2	3	6	10	17	19	20	18	10	4	2	1	111	10-11	10-11
Durban/Louis Botha	15	17	21	22	25	25	25	25	22	18	13	12	240	11-12	11-12
East London	10	8	11	10	11	12	15	15	13	13	9	9	137	11-12	10-12
Estcourt	16	17	24	23	25	25	29	29	25	20	15	15	270	11	11
Johannesburg/Jan Smuts	20	22	25	25	29	29	30	30	27	25	21	21	303	12	12
Kimberley	8	9	12	14	22	22	25	25	22	14	8	6	155	12	12
Kuruman	*	*	*	1	1	3	3	4	4	3	*	*	20	9-11	9-11
Lydenburg	1	2	1	0	0	0	1	2	1	0	0	0	7	5-6	5-6
Macouville	0	0	0	0	0	1	0	0	0	0	0	0	1	2-3	2-3
Mafeking	4	4	8	8	16	16	20	19	15	9	3	3	125	9-10	9-10
Marnitz	*	*	1	1	4	5	5	10	9	4	*	*	43	11-12	10-11
Matroosberg	1	1	*	*	*	*	1	3	1	*	*	1	5	10-11	10-11
Middelburg	2	2	2	1	1	1	2	3	5	3	1	3	26	10-11	10-11
Okiep	1	*	0	*	*	1	1	2	1	1	*	1	7	12-13	11-13
Phalaborwa	1	1	3	2	3	7	6	5	7	6	3	1	44	9-10	9-10
Pietersburg	1	3	7	11	20	21	24	23	19	11	6	5	149	12	12
Piet Retief	*	1	3	*	*	*	*	1	1	1	*	*	7	11-12	10-12
Port Elizabeth	8	6	7	8	10	12	14	13	11	9	7	6	111	12	12
Port Saint John	6	5	7	5	4	4	7	5	7	6	5	4	68	12	11-12
Queenstown	4	6	7	9	10	11	11	12	11	7	5	4	98	8-9	8-9
Sheeprun	1	*	2	1	0	*	3	5	2	3	*	*	17	5-6	5-6
Uppington	3	4	4	5	9	11	10	12	13	6	4	4	50	12	11-12
Wepener	*	0	1	0	0	0	1	*	*	*	*	2	5	12-13	11-13
Willowmore	1	*	1	0	0	0	0	1	*	*	*	*	3	8-9	7-9
North-West Africa:															
Globabie	0	0	0	0	0	0	*	0	0	0	0	*	*	8	8
Keetmanshoop	21	18	21	16	15	15	21	23	19	21	22	25	240	9-10	9-10
Mariental	4	2	2	3	2	4	5	9	7	3	0	2	40	8	8
Outjo	*	*	*	*	0	1	1	4	3	*	*	*	10	8	8
Windhoek	3	2	3	4	4	7	11	14	11	5	3	4	70	8	8

* < 0.5 day.

FIGURE 47. DIRECTION, MEAN SPEED (KNOTS) AND PERCENTAGE FREQUENCY OF PREVAILING SURFACE WIND AT SPECIFIED HOURS
 (Prevailing wind is the wind that occurs most often. Calm indicates wind speed < 1 knot.)

COUNTRY AND STATIONS	MOON (LST)	DATA BASE INFO															
		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	FOR	CYE		
Botswana Francistown	0000	E/10	E/10	E/10	E/9	calm	calm	calm	calm	E/12	E/12	E/12	E/11	E/11	E/11	6	9
	1400	E/10	E/11	E/10	E/11	E/9	E/10	E/11	E/12	E/12	E/12	E/11	E/10	E/10	E/10	6	6
	2000	calm	calm	calm	calm	calm	calm	calm	calm	calm	calm	calm	E/9	E/9	calm	6	6
	0000	NE/7	NE/8	NE/7	calm	calm	calm	calm	calm	calm	calm	calm	NE/8	NE/8	NE/8	7	7
Gaborone	1000	SE/7	NE/7	N/6	N/6	calm	N/6	NE/8	NE/9	NE/9	NE/9	NE/9	NE/8	NE/8	NE/7	6-7	6-7
	2000	calm	calm	calm	calm	calm	calm	calm	calm	calm	calm	calm	calm	calm	calm	6-7	6-7
	0700	calm	calm	E/8	calm	calm	calm	calm	calm	calm	calm	calm	calm	calm	calm	6	6
	1300	E/11	E/11	E/10	E/10	E/10	E/9	E/10	E/10	E/11	E/11	E/11	E/9	E/9	E/9	6	6
Masa	1000	calm	calm	calm	calm	calm	calm	calm	calm	calm	calm	calm	calm	calm	calm	5-6	5-6
	0800	calm	calm	calm	calm	calm	calm	calm	calm	calm	calm	calm	calm	calm	calm	9	9
	1400	calm	calm	calm	calm	calm	calm	calm	calm	calm	calm	calm	calm	calm	calm	9	9
	2000	calm	calm	calm	calm	calm	calm	calm	calm	calm	calm	calm	calm	calm	calm	9	9-9
Shakawe	0700	calm	calm	calm	calm	calm	calm	calm	calm	calm	calm	calm	calm	calm	calm	5	5
	1300	E/7	E/7	E/7	E/6	E/7	E/6	E/8	E/8	E/8	E/8	E/8	N/7	E/8	E/8	5	5
	1900	calm	calm	calm	calm	calm	calm	calm	calm	calm	calm	calm	calm	calm	calm	5	5
	0700	calm	calm	calm	calm	calm	calm	calm	calm	calm	calm	calm	calm	calm	calm	5	5
Tlokoeng	0700	N/7	N/7	N/5	calm	calm	calm	calm	calm	calm	calm	calm	calm	calm	N/10	6-7	6-7
	1300	N/7	N/6	N/7	N/7	N/7	N/7	N/8	N/8	N/8	N/8	N/8	N/8	N/8	N/8	6-7	6-7
	1900	calm	calm	calm	calm	calm	calm	calm	calm	calm	calm	calm	calm	calm	calm	6-7	6-7
	0700	N/6	NE/9	calm	calm	calm	calm	calm	calm	calm	calm	calm	calm	calm	calm	6	6
Tlokoeng	1300	N/8	NE/7	N/7	N/7	N/8	N/8	N/8	N/8	N/8	N/8	N/8	N/8	N/8	N/8	6	6
	1900	calm	calm	calm	calm	calm	calm	calm	calm	calm	calm	calm	calm	calm	calm	6	6
	0700	calm	calm	calm	calm	calm	calm	calm	calm	calm	calm	calm	calm	calm	calm	6	6
	1300	calm	calm	calm	calm	calm	calm	calm	calm	calm	calm	calm	calm	calm	calm	6	6

Republic of South Africa:

Alexander Bay.....	0700	calm	46	S/21	76	S/16	71	calm	43	SW/12	21	19	53	S/19	61	calm	53	calm	47	calm	54	calm	45	calm	48	calm	12	12
	1300	S/21	76	S/16	71	calm	43	SW/12	21	19	53	S/19	61	calm	53	calm	47	calm	54	calm	45	calm	48	calm	48	S/20	12	12
	1900	S/17	74	calm	43	SW/12	21	19	53	S/19	61	calm	53	calm	47	calm	54	calm	45	calm	48	calm	48	calm	48	S/20	12	12
	0000	calm	43	SW/12	21	19	53	S/19	61	calm	53	calm	47	calm	54	calm	45	calm	48	calm	48	calm	48	calm	48	S/20	12	12
	0600	calm	43	SW/12	21	19	53	S/19	61	calm	53	calm	47	calm	54	calm	45	calm	48	calm	48	calm	48	calm	48	S/20	12	12
	1400	SW/14	19	E/14	29	calm	44	W/8	37	W/8	37	33	35	calm	38	calm	34	calm	34	calm	34	calm	34	calm	34	E/14	11-12	11-12
	2000	E/14	29	calm	44	W/8	37	W/8	37	W/8	37	33	35	calm	38	calm	34	calm	34	calm	34	calm	34	calm	34	E/14	11-12	11-12
	0000	E/9	36	calm	44	W/8	37	W/8	37	W/8	37	33	35	calm	38	calm	34	calm	34	calm	34	calm	34	calm	34	E/9	10-11	10-11
	1400	W/8	34	calm	44	W/8	37	W/8	37	W/8	37	33	35	calm	38	calm	34	calm	34	calm	34	calm	34	calm	34	W/9	10-11	10-11
	2000	calm	34	calm	44	W/8	37	W/8	37	W/8	37	33	35	calm	38	calm	34	calm	34	calm	34	calm	34	calm	34	E/10	10-11	10-11
	0700	calm	47	SW/7	36	calm	44	W/8	37	W/8	37	33	35	calm	38	calm	34	calm	34	calm	34	calm	34	calm	34	calm	12	11-12
	1300	W/9	44	SW/7	36	calm	44	W/8	37	W/8	37	33	35	calm	38	calm	34	calm	34	calm	34	calm	34	calm	34	W/9	12	11-12
	1900	SW/7	36	calm	44	W/8	37	W/8	37	W/8	37	33	35	calm	38	calm	34	calm	34	calm	34	calm	34	calm	34	SW/7	11-12	10-12
	0700	E/14	36	E/15	30	calm	44	W/8	37	W/8	37	33	35	calm	38	calm	34	calm	34	calm	34	calm	34	calm	34	E/14	12	12
	1300	E/15	30	calm	44	W/8	37	W/8	37	W/8	37	33	35	calm	38	calm	34	calm	34	calm	34	calm	34	calm	34	E/15	12	12
	1900	E/16	29	calm	44	W/8	37	W/8	37	W/8	37	33	35	calm	38	calm	34	calm	34	calm	34	calm	34	calm	34	E/17	12	12
	0700	E/16	32	calm	44	W/8	37	W/8	37	W/8	37	33	35	calm	38	calm	34	calm	34	calm	34	calm	34	calm	34	E/16	12	11-12
	1300	S/13	62	calm	44	W/8	37	W/8	37	W/8	37	33	35	calm	38	calm	34	calm	34	calm	34	calm	34	calm	34	S/15	12	12
	1900	S/19	70	calm	44	W/8	37	W/8	37	W/8	37	33	35	calm	38	calm	34	calm	34	calm	34	calm	34	calm	34	S/26	12	12
	0000	S/19	85	calm	44	W/8	37	W/8	37	W/8	37	33	35	calm	38	calm	34	calm	34	calm	34	calm	34	calm	34	S/20	12	12
	0600	N/12	25	calm	44	W/8	37	W/8	37	W/8	37	33	35	calm	38	calm	34	calm	34	calm	34	calm	34	calm	34	N/14	11	11
	1400	NE/15	36	calm	44	W/8	37	W/8	37	W/8	37	33	35	calm	38	calm	34	calm	34	calm	34	calm	34	calm	34	NE/14	11	10-11
	2000	NE/14	33	calm	44	W/8	37	W/8	37	W/8	37	33	35	calm	38	calm	34	calm	34	calm	34	calm	34	calm	34	NE/13	11	10-11
	0700	S/11	45	calm	44	W/8	37	W/8	37	W/8	37	33	35	calm	38	calm	34	calm	34	calm	34	calm	34	calm	34	S/12	11-12	11-12
	1300	S/16	60	calm	44	W/8	37	W/8	37	W/8	37	33	35	calm	38	calm	34	calm	34	calm	34	calm	34	calm	34	S/16	11-12	11-12
	1900	S/13	65	calm	44	W/8	37	W/8	37	W/8	37	33	35	calm	38	calm	34	calm	34	calm	34	calm	34	calm	34	S/14	11-12	11-12

FIGURE 47. DIRECTION, MEAN SPEED AND FREQUENCY OF PREVAILING SURFACE WIND (Continued)

COUNTRY AND REGION	MOOR (MM)	DATA BASE INFO															
		JAN	FEB	MAR	APR	MAY	JUN	AUG	SEP	OCT	NOV	DEC	POS	CYR			
Republic of South Africa (Continued):																	
1° Afr.....	0000	SE/9 32	SE/7 25	S/7 26	calm 32	calm 32	calm 32	calm 32	calm 32	calm 32	calm 32	calm 32	calm 32	calm 32	SE/9 26	SE/10 29	10-11 10-11
	1000	W/10 24	NW/11 31	NW/10 31	NW/10 30	NW/10 30	NW/10 30	NW/10 30	NW/10 30	NW/10 30	NW/10 30	NW/10 30	NW/10 30	NW/10 30	NW/11 31	NW/10 27	10-11 10-11
	2000	W/8 21	calm 23	calm 20	calm 44	calm 44	calm 44	calm 44	calm 44	calm 44	calm 44	calm 44	calm 44	calm 44	W/8 26	S/10 22	10-11 10-11
Durban/Louis Baha.....	0000	calm 22	calm 27	calm 35	calm 00	calm 00	calm 00	calm 00	calm 00	calm 00	calm 00	calm 00	calm 00	calm 00	S/11 25	calm 25	11-12 11-12
	1000	S/14 33	S/13 34	S/13 31	S/14 32	S/14 32	S/14 32	S/14 32	S/14 32	S/14 32	S/14 32	S/14 32	S/14 32	S/14 32	S/13 36	S/15 37	11-12 11-12
	2000	calm 22	calm 31	calm 37	calm 47	calm 47	calm 47	calm 47	calm 47	calm 47	calm 47	calm 47	calm 47	calm 47	calm 38	calm 38	11-12 11-12
East London.....	0000	W/11 27	W/11 34	W/10 35	W/11 44	W/11 44	W/11 44	W/11 44	W/11 44	W/11 44	W/11 44	W/11 44	W/11 44	W/11 44	W/12 20	W/12 20	12 12
	1000	E/17 45	E/17 41	E/14 41	S/11 32	S/11 32	S/11 32	S/11 32	S/11 32	S/11 32	S/11 32	S/11 32	S/11 32	S/11 32	E/16 42	E/16 42	12 12
	2000	E/11 31	E/11 22	W/9 23	W/11 34	W/11 34	W/11 34	W/11 34	W/11 34	W/11 34	W/11 34	W/11 34	W/11 34	W/11 34	W/11 24	E/11 24	11-12 10-12
Encourt.....	0000	calm 77	calm 82	calm 80	calm 77	calm 77	calm 77	calm 77	calm 77	calm 77	calm 77	calm 77	calm 77	calm 77	calm 70	calm 73	11 11
	1000	calm 25	calm 25	calm 24	calm 29	calm 29	calm 29	calm 29	calm 29	calm 29	calm 29	calm 29	calm 29	calm 29	calm 24	calm 25	11 11
	2000	calm 43	calm 48	calm 50	calm 00	calm 00	calm 00	calm 00	calm 00	calm 00	calm 00	calm 00	calm 00	calm 00	calm 42	calm 36	11 11
Johannesburg, Jac. Smuts.....	0000	N/8 37	N/8 32	N/8 32	calm 3	calm 3	calm 3	calm 3	calm 3	calm 3	calm 3	calm 3	calm 3	calm 3	N/10 49	N/9 43	12 12
	1000	N/8 23	N/8 18	N/8 19	W/10 24	W/10 24	W/10 24	W/10 24	W/10 24	W/10 24	W/10 24	W/10 24	W/10 24	W/10 24	N/11 31	N/9 25	12 12
	2000	calm 47	calm 53	calm 43	calm 44	calm 44	calm 44	calm 44	calm 44	calm 44	calm 44	calm 44	calm 44	calm 44	calm 32	calm 40	12 12
Kimberley.....	0000	N/12 44	N/11 41	N/9 47	N/9 41	N/9 41	N/9 41	N/9 41	N/9 41	N/9 41	N/9 41	N/9 41	N/9 41	N/9 41	N/12 44	N/13 47	12 12
	1000	W/12 23	W/10 31	N/10 30	N/10 30	N/10 30	N/10 30	N/10 30	N/10 30	N/10 30	N/10 30	N/10 30	N/10 30	N/10 30	W/12 34	W/12 34	12 12
	2000	N/10 21	calm 24	N/8 24	calm 30	calm 30	calm 30	calm 30	calm 30	calm 30	calm 30	calm 30	calm 30	calm 30	calm 21	N/10 22	12 12
Kuruman.....	0000	calm 48	calm 50	calm 48	calm 02	calm 02	calm 02	calm 02	calm 02	calm 02	calm 02	calm 02	calm 02	calm 02	calm 23	calm 33	9-11 9-11
	1000	W/8 29	NW/7 27	NW/9 28	NW/9 28	NW/9 28	NW/9 28	NW/9 28	NW/9 28	NW/9 28	NW/9 28	NW/9 28	NW/9 28	NW/9 28	NW/9 28	NW/7 33	9-11 9-11
	2000	calm 57	calm 66	calm 68	calm 80	calm 80	calm 80	calm 80	calm 80	calm 80	calm 80	calm 80	calm 80	calm 80	calm 61	calm 54	9-11 9-11

Lydenburg	0800	calm	50	SE/7	calm	62	SE/7	calm	77	calm	85	calm	75	calm	81	calm	79	calm	73	calm	63	calm	51	calm	59	5-6	
	1400	SE/7	25	calm	NW/6	27	calm	NW/6	23	calm	25	N/8	33	N/8	28	NW/6	26	N/8	33	N/8	30	NW/6	23	calm	32	5-6	
	2000	calm	39	calm	calm	43	calm	calm	53	calm	73	calm	73	calm	65	calm	64	calm	49	calm	45	calm	43	calm	47	5-6	
Masoville	0800	E/10	52	E/11	calm	45	calm	calm	48	calm	84	calm	83	calm	84	calm	69	calm	42	E/12	E/12	E/11	E/10	E/9	54	2-3	
	1400	E/11	49	E/11	calm	37	calm	calm	33	calm	39	calm	48	calm	48	calm	35	calm	44	E/12	E/12	E/12	E/10	E/9	42	2-3	
	2000	E/10	46	calm	calm	59	calm	calm	77	calm	92	calm	91	calm	90	calm	84	calm	77	calm	50	calm	47	E/9	51	2-3	
Mafeking	0800	NE/10	42	NZ/9	NE/8	43	NE/8	NE/8	31	E/5	34	E/5	46	E/5	49	E/6	35	NE/11	41	NE/11	36	NE/13	NE/12	NE/11	40	9-10	
	1400	N/9	31	N/8	N/9	28	N/9	N/8	29	N/9	25	N/8	19	N/9	21	N/10	25	N/11	30	N/11	34	N/11	N/9	N/8	35	9-10	
	2000	calm	42	calm	calm	51	calm	calm	52	calm	50	calm	50	calm	44	calm	45	calm	39	calm	34	calm	calm	calm	31	9-10	
Marritz	0800	E/9	81	E/9	E/9	85	E/9	E/9	74	E/7	70	E/7	62	E/7	69	E/8	81	calm	85	E/11	E/12	E/12	E/11	E/11	78	10-12	
	1400	E/8	57	E/8	calm	61	E/8	E/8	47	E/8	40	E/8	37	E/8	49	E/9	52	calm	57	E/11	E/11	E/10	E/10	E/9	53	10-12	
	2000	E/9	46	calm	calm	52	calm	calm	54	calm	72	calm	73	calm	67	calm	58	calm	49	E/9	E/10	E/10	E/9	E/9	46	10-12	
Matroosberg	0700	E/8	30	W/12	calm	35	calm	calm	49	calm	52	calm	45	calm	48	calm	45	calm	32	calm	23	calm	34	E/9	29	10-11	
	1300	W/13	28	W/12	W/11	28	W/12	N/11	22	N/11	23	N/11	29	N/11	26	N/11	21	calm	22	W/12	W/13	W/13	W/13	W/12	31	10-11	
	1900	S/12	37	S/11	S/10	25	calm	calm	31	calm	47	calm	45	calm	46	calm	43	calm	31	calm	SW/9	S/11	S/11	S/12	35	10-11	
Middeburg	0800	calm	32	calm	calm	49	calm	calm	40	N/6	38	N/6	47	N/6	49	N/6	41	calm	30	calm	calm	calm	calm	calm	calm	11	10-11
	1400	W/13	29	W/13	W/12	25	W/12	N/5	27	NW/13	33	NW/15	32	NW/15	36	NW/15	31	NW/15	28	NW/15	31	W/15	W/14	W/14	32	10-11	
	2000	SE/9	27	SE/8	calm	27	calm	calm	31	N/6	32	N/5	45	N/5	40	N/5	39	calm	22	N/6	SE/8	SE/8	SE/9	SE/9	40	10-11	
Okiep	0700	calm	34	calm	calm	38	calm	calm	44	calm	44	calm	37	calm	40	calm	44	calm	43	calm	27	calm	calm	calm	29	11-13	
	1300	SW/8	39	SW/8	SW/7	26	N/9	NW/8	18	NE/11	27	NW/8	33	NE/11	27	NW/8	23	NW/8	18	NW/8	22	SW/8	SW/8	SW/8	45	11-13	
	1900	SW/9	62	SW/8	SW/7	37	calm	calm	32	calm	38	calm	41	calm	46	calm	38	calm	33	calm	S/6	SW/8	SW/8	SW/9	56	11-13	
Phalaborwa	0800	SE/8	31	calm	calm	39	calm	calm	50	calm	72	calm	72	calm	65	calm	49	calm	31	calm	33	SE/9	SE/8	SE/9	33	10	
	1400	SE/8	22	SE/9	SE/8	28	calm	calm	24	calm	32	calm	25	calm	26	SE/9	25	SE/9	21	SE/10	E/8	E/8	SE/9	E/8	24	9-10	
	2000	calm	43	calm	calm	52	calm	calm	48	calm	54	calm	49	calm	49	calm	43	calm	40	calm	33	calm	calm	calm	44	9-10	

FIGURE 47. DIRECTION, MEAN SPEED AND FREQUENCY OF PREVAILING SURFACE WIND (Continued)

COUNTRY AND STATION	HOUR (LST)	DATA BASE INFO													
		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	FOR	CYR
Republic of South Africa (Continued):	Pietersburg.....	0800 E/9 38	calm	calm	calm	calm	calm	calm	calm	calm	calm	E/10 34	E/9 36	12	12
	1400 E/10 29	E/9 27	calm	calm	calm	calm	calm	calm	calm	calm	calm	NE/10 32	NE/9 22	12	12
	2000 E/9 59	E/9 61	E/7 46	NW/3 36	E/6 45	calm	E/7 44	E/7 48	E/9 54	E/10 59	E/10 56	E/10 54	E/10 54	12	12
Piet Retief.....	0600 calm	NW/3 25	NW/2 27	NW/3 36	NW/3 39	NW/4 29	NW/3 38	NW/4 33	NW/4 30	NW/3 25	NW/4 26	calm	calm	11-12	11-12
	1400 SE/5 26	SE/4 26	SE/4 22	SE/4 22	calm	NW/5 21	NW/6 21	SE/5 18	SE/6 21	NE/4 19	NE/5 18	SE/5 23	SE/5 23	11-12	11-12
	2000 SE/4 28	SE/3 26	SE/4 26	calm	calm	calm	calm	calm	calm	calm	calm	calm	SE/4 28	SE/4 28	11-12
Port Elizabeth.....	0800 W/12 31	W/12 41	calm	calm	calm	calm	calm	calm	calm	calm	calm	W/13 45	W/13 37	12	12
	1400 E/17 36	SW/17 32	E/13 34	E/10 33	W/15 36	W/14 42	W/16 35	W/17 31	W/20 29	E/16 30	E/17 30	W/16 30	W/16 30	12	12
	2000 E/13 32	W/11 27	calm	W/12 38	calm	W/10 43	W/10 41	W/12 36	W/11 37	W/12 36	W/11 36	E/12 32	E/12 32	12	11-12
Port Saint Johns.....	0600 SW/8 29	SW/7 30	SW/6 25	NW/7 33	NW/8 48	NW/9 58	NW/8 57	NW/8 41	SW/10 28	SW/8 31	SW/9 34	SW/9 36	SW/9 36	12	12
	1400 NE/17 45	NE/18 40	NE/14 38	NE/15 41	NE/11 41	NE/10 35	NE/11 43	NE/16 43	NE/19 40	NE/21 38	NE/19 42	NE/17 43	NE/17 43	12	12
	2000 NE/16 38	NE/14 39	NE/14 37	NE/12 27	SW/8 25	NW/6 35	NW/6 30	SW/8 30	SW/8 25	SW/8 30	NE/14 37	NE/14 38	NE/14 38	12	11-12
Queenstown.....	0600 calm	calm	calm	calm	calm	calm	calm	calm	calm	calm	calm	calm	calm	9-11	9-11
	1400 SE/7 21	calm	calm	calm	calm	calm	NW/11 32	NW/12 37	NW/12 26	calm	calm	calm	calm	9-11	9-11
	2000 E/8 34	calm	calm	calm	calm	calm	calm	calm	calm	calm	calm	calm	SE/7 35	8-9	8-9
Shepparton.....	0600 calm	calm	calm	calm	calm	calm	calm	calm	calm	calm	calm	calm	calm	5-6	5-6
	1400 calm	SE/6 35	calm	calm	calm	calm	calm	calm	calm	calm	calm	SE/6 34	SE/6 36	5-6	5-6
	2000 calm	calm	calm	calm	calm	calm	calm	calm	calm	calm	calm	calm	calm	5-6	5-6
Uppington.....	0700 calm	calm	calm	calm	calm	calm	calm	calm	calm	calm	calm	calm	calm	12	11-12
	1300 N/12 25	N/12 36	N/13 36	N/14 49	N/14 56	N/14 55	N/17 50	N/17 46	N/19 38	S/9 25	S/7 22	S/7 22	S/7 22	12	11-12
	1900 SW/9 21	SW/9 22	calm	calm	calm	calm	N/9 41	N/9 45	calm	SW/9 24	calm	SW/9 21	SW/9 21	12	11-12
														12	12

Walvis Bay.....	1300	SW/10	SW/8	SW/9	SW/10	SW/7	SW/7	SW/8	SW/9	SW/10	SW/11	SW/10	SW/9	SW/9	SW/9	7-8	5-6
		37	42	48	42	48	39	44	51	50	62	50	56	56	56		
		calm	calm	calm	calm	calm	calm	calm	calm	calm	calm	calm	calm	calm	calm	12-13	12-13
Wepener.....	0800	33	48	53	61	68	75	75	59	48	35	48	31	29	31	12-13	12-13
		NW/10	NW/9	NW/10	NW/10	NW/10	NW/9	NW/10	NW/11	NW/12	NW/12	NW/12	NW/11	N/12	NW/11		
		45	40	42	44	40	44	46	39	43	46	43	38	46	38	12-13	12-13
		calm	calm	calm	calm	calm	calm	calm	calm	calm	calm	calm	calm	calm	calm	12-13	12-13
Wifowmore.....	0800	E/7	calm	54	69	71	78	75	72	57	52	57	46	47	46	8-9	8-9
		30	36	44	57	73	79	68	60	39	34	39	25	29	25		
		SW/11	SW/10	E/8	SW/11	W/10	W/10	W/10	SW/10	SW/11	SW/12	SW/12	SW/11	SW/12	SW/11	8-9	7-9
		24	25	19	24	27	31	29	28	26	28	26	32	30	32	8-9	7-9
		E/10	E/10	E/9	calm	calm	calm	calm	calm	calm	E/9	calm	E/10	E/9	E/10	8-9	7-9
		36	36	36	46	64	65	57	47	31	34	31	30	41	30		
South-West Africa:																	
Gobabis.....	0700	calm	calm	calm	calm	calm	calm	calm	calm	calm	calm	calm	calm	calm	calm	8	8
		25	31	30	29	40	42	41	38	35	19	35	27	24	27	8	8
		NE/8	NE/9	NE/9	NE/9	NE/9	NE/9	NE/10	NE/10	NE/10	NE/8	NE/10	NE/7	NE/7	NE/7	8	8
		28	27	26	30	28	27	34	23	24	24	24	25	25	25	8	8
		calm	calm	calm	calm	calm	calm	calm	calm	calm	calm	calm	calm	calm	calm	8	8
		26	25	22	27	36	32	33	35	32	25	32	25	25	34	8	8
		calm	calm	calm	calm	calm	calm	N/13	N/13	calm	calm	calm	calm	calm	calm	9-10	9-10
		37	45	43	33	41	47	49	44	31	34	31	30	31	30	9-10	9-10
		calm	N/9	N/11	N/12	N/12	N/12	N/15	N/14	N/14	N/13	N/14	S/9	N/11	S/9	9-10	9-10
		23	24	27	34	42	43	46	43	28	22	28	18	16	18	9-10	9-10
		S/15	S/12	S/10	S/9	N/8	N/9	NE/9	S/19	S/11	S/14	S/11	S/15	S/15	S/15	9-10	9-10
		53	45	32	27	26	26	27	24	36	40	36	54	54	54	9-10	9-10
		calm	calm	calm	calm	calm	calm	calm	calm	calm	calm	calm	calm	calm	calm	8	8
		51	62	75	85	85	85	87	87	81	81	81	44	55	44	8	8
		calm	calm	calm	calm	calm	calm	calm	calm	calm	calm	calm	calm	calm	calm	8	8
		49	39	36	34	41	38	38	33	34	33	34	46	31	46	8	8
		calm	calm	calm	calm	calm	calm	calm	calm	calm	calm	calm	calm	calm	calm	8	8
		40	50	60	64	83	76	77	73	82	59	82	49	43	49	8	8
		calm	calm	calm	calm	calm	calm	calm	calm	calm	calm	calm	calm	calm	calm	8	8
		54	54	66	68	59	58	64	60	61	55	61	48	49	48	8	8
		W/7	E/7	E/6	calm	E/6	E/7	E/8	E/7	E/6	W/7	E/6	W/6	W/6	W/6	8	8
		21	24	24	23	39	25	35	29	19	28	19	21	22	21	8	8
		W/9	calm	calm	calm	calm	calm	calm	calm	calm	W/9	calm	W/9	W/9	W/9	8	8
		39	38	59	63	71	58	73	67	51	53	51	40	40	42	9-10	9-10
		calm	calm	calm	calm	calm	E/5	E/5	E/6	E/6	calm	calm	calm	calm	calm	9-10	9-10
		57	62	66	52	55	60	61	57	49	58	49	59	59	58	9-10	9-10
		calm	E/8	N/7	NW/9	N/7	NW/7	N/8	NW/8	N/6	W/10	N/6	calm	calm	calm	9-10	9-10
		25	30	24	24	25	22	23	21	25	28	25	33	36	33	9-10	9-10
		calm	calm	calm	calm	calm	calm	calm	calm	calm	calm	calm	calm	calm	calm	8	8
		40	41	55	59	60	53	59	51	49	34	49	28	30	28	8	8

FIGURE 48. MEAN NUMBER OF DAYS WITH SURFACE WIND SPEED >27 KNOTS
(Based on days with 8 observations)

COUNTRY AND STATION													DATA BASE INFO		
	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN	FOR	CYR
Botswana:															
Francistown	0	0	0	0	0	0	0	0	0	1	*	*	1	0	0
Gaborone	0	0	0	*	0	0	0	0	*	*	0	0	1	0-7	0-7
Ghanzi	1	*	0	*	*	*	1	1	1	2	0	*	7	8-8	8-8
Maun	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Shakawe	*	0	0	0	0	0	0	0	0	0	0	0	*	8	8
Tlokgeng	0	0	0	0	*	0	0	*	0	0	0	0	*	6-7	6-7
Tsane	0	*	0	0	0	0	0	0	*	0	0	0	*	0	0
Republic of South Africa:															
Alexander Bay	5	4	3	1	1	*	*	1	3	4	6	6	35	10-11	10-11
Beaufort West	2	1	1	1	2	3	2	3	2	2	1	1	19	11-12	10-12
Bathlehem	0	0	0	0	0	0	0	0	0	0	0	0	1	10-11	10-11
Calvinia	0	0	0	0	0	*	0	0	0	0	0	0	*	11-12	10-12
Cape Agulhas	3	2	2	2	2	2	2	4	4	4	2	2	30	12	11-12
Cape Columbine	5	2	2	1	1	2	2	3	2	2	5	5	30	12	12
Cape Saint Lucia	1	2	2	2	2	1	3	5	5	4	2	3	39	11	10-11
Cape Town/D.F. Malan	1	*	*	*	0	0	*	1	1	*	1	1	6	11-12	11-12
De Aar	*	*	*	0	0	0	*	*	*	0	*	0	1	10-11	10-11
Durban/Louis Botha	*	*	1	1	*	*	1	1	1	1	1	1	7	11-12	11-12
East London	1	1	1	1	1	1	1	1	1	2	2	2	14	11-12	11-12
Estcourt	*	*	*	*	0	0	0	0	*	*	*	*	1	11	11
Johannesburg/Jan Smuts	*	0	0	*	0	*	*	*	*	1	*	*	2	12	12
Kimberley	*	*	*	*	*	*	*	*	1	1	*	1	4	12	12
Kuruman	0	0	*	0	0	0	0	0	0	*	0	0	*	9-11	9-11
Lydenburg	0	0	0	0	0	0	0	0	0	0	0	0	0	8-8	8-8
Macville	0	0	0	0	0	0	0	0	0	0	0	0	0	2-8	2-3
Mafeking	0	0	0	*	0	0	0	0	0	*	*	*	1	9-10	9-10
Marrits	0	0	0	0	0	0	0	*	*	*	*	*	1	11-12	10-11
Matroosberg	*	*	0	*	0	*	*	*	*	0	*	*	1	10-11	10-11
Middelburg	*	*	*	*	*	*	*	1	1	*	*	*	3	10-11	10-11
Okiep	*	0	*	*	0	*	*	*	*	*	0	*	1	12-13	11-13
Phalaborwa	0	0	0	0	0	0	0	0	0	0	0	0	*	9-10	9-10
Pietersburg	*	0	0	0	0	0	0	0	0	*	0	0	*	12	12
Piet Retief	0	0	0	0	0	0	0	0	0	0	0	0	0	11-12	11-12
Port Elizabeth	1	1	*	1	*	*	1	1	1	3	2	1	11	12	11-12
Port Saint Johns	2	2	2	1	1	*	1	2	3	5	4	2	24	12	11-12
Queenstown	0	0	0	0	0	0	*	0	0	0	0	0	*	8-9	8-9
Sheepun	0	*	0	0	0	1	0	*	*	0	0	0	1	8-8	8-8
Uppington	*	*	*	*	*	*	1	1	1	1	1	1	6	12	12
Wepener	0	0	0	0	0	0	0	*	0	0	0	0	*	12-13	11-13
Willowmore	0	0	0	0	0	0	0	*	0	0	0	0	*	8-9	7-9
South-West Africa:															
Gobabis	0	0	0	0	0	0	0	0	0	0	0	0	0	8	8
Keetmanshoop	1	*	*	*	*	*	*	1	*	1	1	1	6	9-10	9-10
Mariental	0	*	0	0	0	0	0	0	*	*	0	0	1	8	8
Outjo	0	0	0	0	0	0	0	0	0	0	*	0	*	8	8
Windhoek	0	0	0	0	0	*	0	0	*	0	0	0	*	8	8

* < 0.5 day.

FIGURE 49. MEAN NUMBER OF DAYS WITH THUNDERSTORMS

COUNTRY AND STATION	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN	YRS REC
Botswana:														
Francistown	6	7	4	4	1	1	*	*	1	5	9	9	46	6
Gaberones	11	7	7	6	2	*	1	*	3	8	11	11	68	6-7
Ghanzi	20	14	11	9	1	1	*	*	*	9	17	18	100	5-6
Maun	15	16	12	6	1	1	*	*	3	8	16	15	91	8-9
Shakawe	15	11	8	6	1	*	0	*	1	4	12	12	71	5
Tasbong	12	8	10	5	1	1	1	1	1	3	10	11	63	6-7
Teane	14	13	12	6	3	1	1	1	1	6	14	12	82	6
Republic of South Africa:														
Alexander Bay	1	*	1	1	*	*	*	*	1	*	*	1	7	10-11
Beaufort West	5	3	5	2	1	0	1	1	1	2	3	5	28	11-12
Bethlehem	15	10	9	6	3	1	*	1	6	10	14	16	92	10-11
Bloomfontein	10	9	14	4	3	*	1	2	2	6	7	8	66	10
Calvinia	1	1	2	2	1	*	*	*	1	1	1	1	12	15-17
Cape Agulhas	*	*	*	1	*	*	*	*	*	*	*	*	3	31-32
Cape Columbine	0	*	*	*	*	*	*	*	*	*	*	*	1	26
Cape Saint Lucia	4	3	3	4	3	2	1	1	3	6	5	5	39	10-11
Cape Town/D.F. Malan	*	*	1	1	1	1	*	1	*	1	1	*	6	11-12
De Aar	4	2	5	3	1	*	1	1	2	2	4	4	29	10-11
Durban/Louis Botha	6	3	5	4	2	1	1	1	3	5	8	7	45	11-12
East London	4	4	4	2	2	*	1	1	1	3	3	3	27	22-23
Estcourt	19	14	14	8	3	1	1	1	5	10	16	18	109	23
George	1	1	2	1	1	1	*	*	1	1	1	*	8	10
Goodhouse	3	4	3	2	1	1	1	*	*	1	1	2	18	12
Johannesburg/Jan Smuts	14	10	9	6	2	1	1	1	4	10	14	15	86	12
Kimberley	10	8	9	5	2	1	1	1	2	5	7	9	61	27
Kuruman	9	7	7	3	2	1	*	1	2	4	7	9	51	9-11
Louisa-Triehardt	4	2	2	1	1	*	*	1	1	2	5	3	21	8
Lydenburg	11	8	7	4	1	2	*	2	1	6	13	10	65	6-6
Macuville	5	1	2	2	1	0	1	0	0	1	3	2	15	2-3
Mafeking	15	9	7	5	2	1	*	1	3	6	10	11	68	14-15
Marnitz	12	8	5	6	2	1	*	1	3	6	10	10	64	15-16
Matroosberg	1	1	2	2	1	*	*	*	1	1	1	1	10	29-30
Middelburg	12	7	9	6	2	1	1	2	2	4	7	10	61	10-11
Newcastle	11	8	7	3	1	0	1	1	4	8	10	12	65	10
Okiep	1	1	1	1	*	*	*	*	1	*	1	*	7	23-25
Phalaborwa	3	2	1	1	1	1	*	*	1	2	4	3	15	9-10
Pietersburg	8	7	5	5	2	1	1	*	3	6	10	10	56	12
Piet Retief	7	5	6	4	2	*	1	1	5	8	9	10	57	10-12
Port Elizabeth	2	2	3	2	1	1	1	1	2	2	2	2	16	26
Port Saint Johns	4	4	5	4	2	*	1	1	2	3	3	5	35	12
Pretoria	14	10	9	4	2	1	1	1	3	8	12	11	75	13
Queenstown	7	7	6	3	1	*	*	1	1	4	6	6	44	24-25
Shepperton	16	13	12	5	2	1	*	2	3	10	12	14	90	5-6
Somerset East	3	4	4	1	1	*	*	*	1	2	3	3	24	20
Upington	6	5	6	4	2	1	1	1	1	1	3	5	35	11-12
Vanwykville	4	5	6	3	1	1	1	1	2	3	2	2	30	12
Wepener	14	10	10	6	3	1	1	2	2	7	10	12	78	21-23
Willowmore	2	2	2	1	*	*	0	*	1	1	2	1	14	7-9
South-West Africa:														
Gobabis	7	6	4	3	1	*	*	*	1	3	4	7	36	41
Keetmanshoop	5	4	5	3	1	*	*	*	1	2	4	4	31	9-10
Mariental	4	3	4	2	1	*	0	1	1	1	2	2	21	5
Outjo	9	8	7	3	1	0	0	1	1	3	7	3	43	8
Tsumeb	11	9	7	3	1	*	*	*	1	5	7	11	55	35
Windhoek	8	7	7	3	1	*	*	*	1	4	5	7	45	50

* < 0.5 day.

FIGURE 80. MEAN NUMBER OF DAYS WITH TOTAL CLOUD COVER $\frac{1}{2}$ OR LESS AND VISIBILITY $\frac{2}{3}$ MILES OR GREATER AT SPECIFIED HOURS

COUNTRY AND STATION	HOUR (LST)													DATA BASE INFO		
		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN	FOR	CTR
Botswana:																
Francistown	0800	8	9	14	14	23	21	21	24	24	18	9	8	191	6	6
Gaberones	0800	9	10	12	14	23	22	24	28	21	16	9	9	194	7	7
Ghansi	0700	8	10	11	13	24	24	26	26	27	17	9	10	203	6	6
Maun	0800	8	6	12	19	26	25	25	28	24	18	9	8	209	9	9
Shakawe	0700	6	5	8	14	25	24	24	26	25	17	5	6	186	5	5
Taobong	0700	17	18	14	19	24	23	24	27	20	22	17	20	251	6-7	6-7
Tsane	0700	12	13	13	17	26	23	24	26	25	21	14	16	230	6	6
Republic of South Africa:																
Alexander Bay	0700	12	10	11	13	13	16	16	14	13	12	14	12	155	12	12
Beaufort West	0800	17	16	13	14	14	17	18	17	14	14	14	18	185	11-12	11-12
Bethlehem	0800	10	11	12	14	15	19	22	21	17	15	11	12	182	10-11	10-11
Calvinia	0700	24	21	21	18	17	18	20	19	17	17	21	24	256	12	12
Cape Agulhas	0700	7	6	6	6	8	10	10	9	7	7	7	8	90	12	12
Cape Columbine	0700	18	14	14	12	10	11	13	13	11	13	14	17	159	12	12
Cape Saint Lucia	0800	6	8	11	11	16	19	20	17	10	7	4	6	135	11	11
Cape Town/D.F. Malan	0700	10	16	16	13	9	9	11	12	11	12	14	18	188	11-12	11-12
De Aar	0800	22	19	20	17	16	15	19	19	19	18	21	23	227	10-11	10-11
Durban/Louis Botha	0800	7	10	14	13	16	18	19	17	12	8	7	10	151	11-12	11-12
East London	0800	8	9	10	13	15	17	17	15	12	9	9	10	143	10	12
Katcourt	0800	10	9	13	13	19	20	22	21	17	12	9	11	175	11	11
Johannesburg/Jan Smuts	0800	11	12	17	17	21	22	22	24	22	17	11	11	207	12	12
Kimberley	0800	18	17	17	18	20	19	23	23	20	19	17	20	230	12	12
Kuruman	0800	19	16	18	20	23	22	26	27	22	21	18	20	252	9-11	9-11
Lydenburg	0800	8	12	15	14	24	24	26	27	23	18	9	11	212	5-6	5-6
Macoville	0800	9	4	15	11	23	19	24	21	21	14	12	12	183	2-3	2-3
Mafeking	0800	11	12	15	16	23	22	25	25	22	17	11	12	213	9-10	9-10
Marnitz	0800	12	11	19	18	25	22	24	26	22	17	11	11	217	11-12	10-12
Matroosberg	0700	19	18	17	14	14	15	16	17	14	14	16	20	194	10-11	10-11
Middelburg	0800	17	16	16	18	18	19	20	20	18	16	16	19	211	11	10-11
Okiep	0700	24	22	21	21	20	21	21	21	20	19	21	24	255	12-13	12-13
Phalaborwa	0800	6	7	10	11	20	21	22	19	16	18	8	6	164	10	10
Pietersburg	0800	8	7	12	14	21	21	22	23	20	14	7	8	178	12	12
Piet Retief	0800	10	8	10	12	20	21	20	18	16	13	8	9	164	11-12	10-12
Port Elizabeth	0800	12	11	12	12	15	16	18	14	12	10	10	11	145	12	12
Port Saint Johns	0800	7	8	11	11	18	18	18	16	10	8	8	8	139	12	12
Queenstown	0800	12	10	11	11	14	16	17	16	13	10	12	15	187	9-11	9-11
Sheeprun	0800	8	10	10	11	17	17	19	20	13	10	9	13	155	5-6	5-6
Uplington	0700	20	19	18	20	21	21	24	23	20	19	20	22	245	12	12
Wepener	0800	17	15	16	16	18	14	16	21	19	17	15	19	202	12-13	12-13
Willowmore	0800	19	17	16	16	19	22	21	21	17	17	19	22	226	8-9	8-9
South-West Africa:																
Gobabis	0700	20	18	20	22	28	27	28	29	26	24	20	24	255	8	8
Keetmanshoop	0700	21	17	21	22	22	23	25	24	21	20	22	24	262	9-10	9-10
Mariental	0700	21	18	22	24	27	26	28	28	26	24	22	27	291	8	8
Outjo	0700	14	13	15	21	28	28	28	29	26	23	18	19	260	8	8
Windhoek	0700	14	11	13	19	25	26	28	27	24	20	17	18	241	9-10	9-10
Botswana:																
Francistown	1400	3	4	6	9	19	19	19	23	23	13	2	3	141	6	6
Gaberones	1400	3	4	7	8	19	20	21	23	22	14	4	5	149	6-7	6-7
Ghansi	1300	2	2	3	8	23	23	26	27	26	13	3	3	158	6	6
Maun	1400	2	2	5	10	23	24	25	27	22	14	2	2	160	9	9
Shakawe	1300	*	1	1	0	19	22	24	25	24	11	1	1	137	5	5
Taobong	1300	10	12	11	17	23	23	25	27	26	20	10	12	214	6-7	6-7
Tsane	1300	5	5	5	13	20	22	24	27	26	17	7	7	152	0	0
Republic of South Africa:																
Alexander Bay	1300	24	23	25	22	21	21	22	21	23	21	24	25	272	12	12
Beaufort West	1400	15	17	13	13	13	16	18	17	15	13	14	15	175	11-12	11-12
Bethlehem	1400	5	6	7	11	18	19	23	23	17	11	5	4	152	10-11	10-11
Calvinia	1300	24	21	21	17	17	17	21	19	18	18	19	22	235	12	11-12
Cape Agulhas	1300	13	12	10	10	8	9	11	11	11	11	13	15	134	12	12
Cape Columbine	1300	22	18	19	13	11	11	13	13	15	16	17	21	188	12	12
Cape Saint Lucia	1400	10	11	14	13	17	17	19	18	14	10	7	12	162	11	10-11

Footnote at end of table.

FIGURE 50. DAYS WITH TOTAL CLOUD COVER $\frac{3}{8}$ OR LESS AND VISIBILITY $\frac{3}{8}$ MILES OR GREATER (Continued)

COUNTRY AND STATION	HOUR (LST)													DATA BASE INFO		
		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN	PER	CTR
Republic of South Africa (Continued):																
Cape Town/D.F. Malan.....	1300	21	18	18	14	10	10	12	12	12	18	17	20	179	11-12	11-12
De Aar.....	1400	14	15	13	13	18	19	22	22	18	14	15	18	198	10-11	10-11
Durban/Louis Botha.....	1400	9	11	14	14	18	20	21	20	13	8	7	8	102	11-12	11-12
East London.....	1400	10	11	10	12	13	17	18	15	12	9	9	9	144	12	12
Estcourt.....	1400	11	13	16	17	22	23	25	24	19	14	10	11	206	11	11
Johannesburg/Jan Smuts.....	1400	5	5	7	10	21	22	24	25	20	15	6	5	168	12	12
Kimberley.....	1400	9	10	9	13	16	20	22	23	18	13	11	10	174	12	12
Kuruman.....	1400	10	11	11	15	20	21	25	26	21	17	13	12	203	9-11	9-11
Lydenburg.....	1400	2	6	8	8	20	18	24	22	19	12	3	5	146	5-6	5-6
Macuville.....	1400	3	1	7	8	17	14	19	20	18	17	7	10	140	2-3	2-3
Mafeking.....	1400	4	4	5	9	19	20	23	25	19	11	4	6	147	9-10	9-10
Marnitz.....	1400	3	4	7	10	20	19	21	23	21	16	6	5	155	11-12	10-12
Matroosberg.....	1300	15	19	17	14	13	15	17	17	16	14	16	19	196	10-11	10-11
Middelburg.....	1400	12	14	12	13	16	19	20	21	18	12	13	14	184	11	10-11
Okiep.....	1300	25	21	22	21	19	19	22	22	21	20	22	23	258	12-13	12-13
Phalaborwa.....	1400	6	6	9	10	19	18	20	19	18	14	6	6	152	9-10	9-10
Pietersburg.....	1400	3	4	7	9	18	18	22	22	19	14	5	6	147	12	12
Piet Retief.....	1400	6	8	10	11	20	21	23	21	16	10	5	6	167	11-12	10-11
Port Elizabeth.....	1400	15	14	14	13	15	16	17	16	13	13	13	15	175	12	12
Port Saint Johns.....	1400	8	10	11	12	14	15	15	17	12	8	8	9	143	12	12
Queenstown.....	1400	11	11	12	13	16	19	20	20	17	10	11	12	172	9-11	9-11
Sheeprun.....	1400	4	9	8	10	15	17	20	19	14	8	6	5	139	5-6	5-6
Uppington.....	1300	16	16	15	17	18	22	23	24	21	18	16	18	224	12	12
Walvis Bay.....	1300	12	9	12	15	17	20	21	14	13	14	14	11	173	7-8	5-6
Wepener.....	1400	5	7	7	12	15	18	21	21	17	12	8	7	150	12-13	12-13
Willowmore.....	1400	22	21	20	19	19	22	22	21	21	19	18	23	247	8-9	7-9
South-West Africa:																
Gobabis.....	1300	11	11	11	19	27	28	29	29	26	21	11	12	234	8	8
Kestmannhoop.....	1300	17	15	16	19	22	23	25	24	22	19	18	18	238	9-10	9-10
Mariental.....	1300	16	14	17	21	26	27	28	29	26	23	16	20	263	8	8
Outjo.....	1300	9	9	9	14	25	25	28	28	26	20	11	11	219	8	8
Windhoek.....	1300	7	6	6	12	22	25	28	27	22	15	9	8	187	9-10	9-10
Botswana:																
Francistown.....	2000	13	15	19	18	27	27	26	27	27	21	13	11	245	6	6
Gaborone.....	2000	10	12	15	17	24	24	26	27	25	18	10	12	217	6-7	6-7
Ghanzi.....	1900	7	10	14	17	27	27	27	29	27	16	9	7	216	5-6	5-6
Maun.....	2000	8	6	14	19	27	26	28	28	24	18	10	8	216	9	8-9
Shakawe.....	1900	6	7	14	18	26	27	27	27	28	18	6	9	214	5	5
Tlokgeng.....	1900	15	17	16	24	26	25	27	29	26	23	16	17	260	6-7	6-7
Tsane.....	1900	10	12	16	19	27	26	27	28	27	20	14	14	237	6	6
Republic of South Africa:																
Alexander Bay.....	1900	19	17	19	20	21	21	21	22	19	17	15	17	228	10-11	10-11
Beaufort West.....	2000	15	15	15	19	19	21	22	23	20	19	17	17	227	11-12	10-12
Bethlehem.....	2000	9	13	16	18	24	24	27	27	21	16	12	10	218	10-11	10-11
Calvinia.....	1900	26	22	23	22	22	22	24	23	23	22	22	24	276	11-12	10-12
Cape Agulhas.....	1900	9	8	9	12	14	15	15	16	14	12	10	10	145	12	11-12
Cape Columbine.....	1900	22	19	19	18	16	16	19	19	18	18	19	21	223	12	12
Cape Saint Lucia.....	2000	8	11	15	14	21	21	21	21	15	8	6	7	168	11	10-11
Cape Town/D.F. Malan.....	1900	21	18	20	18	14	13	15	16	17	16	17	20	208	11-12	11-12
De Aar.....	2000	17	18	20	21	23	23	27	27	23	22	19	20	258	10-11	10-11
Durban/Louis Botha.....	2000	3	5	6	9	14	17	18	16	9	4	3	3	107	11-12	11-12
East London.....	2000	6	8	9	14	17	20	22	20	13	9	7	8	155	11-12	10-12
Estcourt.....	2000	6	9	13	17	23	24	27	25	19	12	8	7	190	11	11
Johannesburg/Jan Smuts.....	2000	11	12	18	19	20	24	27	28	22	10	10	10	224	12	12
Kimberley.....	2000	12	14	15	18	21	23	25	25	21	18	14	14	219	12	12
Kuruman.....	2000	15	15	18	24	27	27	28	29	26	24	17	16	263	9-11	9-11
Lydenburg.....	2000	5	11	17	14	20	24	25	26	25	18	8	11	210	5-6	5-6
Macuville.....	2000	14	12	21	21	30	22	27	26	26	22	18	20	258	2-3	2-3
Mafeking.....	2000	9	11	17	18	25	24	27	28	23	18	12	11	225	9-10	9-10
Marnitz.....	2000	14	15	22	21	24	22	24	25	23	20	16	15	241	11-12	10-12
Matroosberg.....	1900	20	21	21	20	21	20	22	23	21	19	19	21	245	10-11	10-11
Middelburg.....	2000	17	18	18	18	21	23	26	26	22	20	19	17	244	10-11	10-11

Footnote at end of table.

FIGURE 80. DAYS WITH TOTAL CLOUD COVER $\frac{1}{2}$ OR LESS AND VISIBILITY $\frac{3}{4}$ MILES OR GREATER (Continued)

COUNTRY AND STATION	HOUR (LST)													DATA BASE INFO		
		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN	FOR	CYR
Republic of South Africa (Continued):																
Okiep.....	1900	25	23	24	24	24	23	24	24	25	23	24	25	259	12-13	12-13
Phalaborwa.....	2000	16	16	22	20	27	26	26	26	24	20	14	14	251	9-10	9-10
Pietersburg.....	2000	15	15	21	20	27	24	27	28	25	20	13	13	247	12	12
Piet Retief.....	2000	11	12	16	18	25	24	26	24	20	13	9	10	208	11-12	10-11
Port Elizabeth.....	2000	11	11	12	15	16	18	18	16	14	12	10	12	164	12	12
Port Saint Johns.....	2000	4	6	8	12	17	20	20	17	11	8	6	5	132	12	11-12
Queenstown.....	2000	10	11	13	16	20	22	23	23	20	13	11	12	194	8-9	8-9
Sheeprun.....	2000	3	7	10	14	20	22	23	22	18	10	8	7	164	5-6	5-6
Uppington.....	1900	18	17	19	23	24	25	26	27	23	21	18	20	259	12	12
Wepener.....	2000	12	14	16	19	24	24	25	26	22	19	15	14	239	12-13	12-13
Willowmore.....	2000	23	21	20	23	24	25	25	25	23	21	22	25	275	8-9	7-9
South-West Africa:																
Gobabis.....	1900	14	15	18	22	28	28	30	30	26	22	15	17	255	8	8
Keetmanshoop.....	1900	16	15	18	22	25	25	27	27	22	20	18	18	252	9-10	9-10
Mariental.....	1900	16	14	19	23	29	27	28	28	25	22	18	20	270	8	8
Outjo.....	1900	9	9	10	19	25	25	29	28	25	21	13	13	234	8	8
Windhoek.....	1900	8	8	9	17	25	25	28	26	22	19	12	10	205	8	8

* < 0.5 day.

FIGURE 51. PERCENTAGE FREQUENCY OF SPECIFIED CEILING AND VISIBILITY COMBINATIONS AT SPECIFIED HOURS
(Ceiling defined as 1/2 or more cloud cover)

COUNTRY AND STATIONS	MOON'S (LAT)	DATA BASE INFO																		
		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	APR	FOR	CTR				
Botswana:																				
Francistown.....	0800 A	95	92	97	95	97	95	97	95	97	95	97	95	97	95	97	6	6		
	B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	--	--		
Gaborone.....	0800 A	100	99	98	97	100	100	100	100	100	100	100	100	100	100	100	99	7	6-7	
	B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	--	--		
Ghanzi.....	0700 A	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	6	6	
	B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Masun.....	0800 A	95	95	95	99	100	100	100	100	100	100	100	100	100	100	100	97	94	97	9
	B	1	1	2	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1
Shaakwe.....	0700 A	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	99	100	5
	B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Tloboeng.....	0700 A	99	100	99	95	100	100	100	100	100	100	100	100	100	100	100	100	100	100	6-7
	B	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	--
Tloane.....	0700 A	99	100	100	100	99	100	100	100	100	100	100	100	100	100	100	100	100	100	6
	B	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	--
Republic of South Africa:																				
Alexander Bay.....	0700 A	78	67	62	71	71	80	75	76	76	75	86	84	81	75	84	12	12	12	
	B	12	22	32	24	27	18	22	19	20	20	7	7	12	18	7	11-12	11-12	11-12	
Bonafort West.....	0800 A	99	96	94	94	97	96	95	97	95	96	96	97	99	96	97	11-12	11-12	11-12	
	B	--	1	5	5	4	3	4	3	4	4	2	2	3	2	2	11-12	11-12	11-12	
Beitlichem.....	0800 A	87	82	75	77	78	85	88	83	83	83	91	85	91	83	85	10-11	10-11	10-11	
	B	3	6	8	12	12	10	10	7	7	2	2	3	3	7	5	10-11	10-11	10-11	
Calvinia.....	0700 A	100	96	96	95	95	95	96	97	96	96	96	99	100	97	99	12	12	12	
	B	--	3	3	4	3	4	4	2	2	2	2	2	0	2	2	12	12	12	
Cape Agulhas.....	0700 A	95	91	90	88	91	91	92	91	92	93	89	91	94	91	91	12	12	12	
	B	1	4	5	4	3	3	3	2	2	2	2	3	2	3	3	12	12	12	
Cape Columbine.....	0700 A	77	77	76	77	77	81	82	85	85	81	82	82	80	79	80	12	12	12	
	B	19	20	27	20	18	18	11	7	10	10	10	14	16	15	14	12	12	12	
Cape Saint Lucia.....	0800 A	85	84	87	85	93	90	88	88	88	88	78	78	85	85	85	11	11	11	
	B	2	4	2	4	2	3	5	2	2	5	4	2	2	3	2	11	11	11	
Cape Town/D.F. Malan.....	0700 A	96	94	91	83	85	83	87	90	93	93	83	85	96	91	91	11-12	11-12	11-12	
	B	1	5	7	10	9	11	10	6	4	4	3	3	1	6	6	11-12	11-12	11-12	
De Aar.....	0800 A	99	95	95	99	99	99	99	99	99	99	99	99	99	99	99	12	12	12	
	B	0	1	3	5	14	16	14	11	11	10	10	10	99	99	99	12	12	12	
Durban/Lewis Botha.....	0800 A	94	95	95	96	97	93	91	90	92	94	94	94	92	94	92	11-12	11-12	11-12	
	B	1	1	1	--	1	--	2	2	1	2	2	2	2	2	2	11-12	11-12	11-12	
East London.....	0800 A	86	85	87	92	95	89	97	97	97	92	85	84	86	91	86	12	12	12	
	B	8	7	7	5	1	--	1	1	1	4	4	9	7	5	5	12	12	12	
Edenburg.....	0800 A	93	95	95	95	95	95	97	96	97	97	97	96	99	96	96	11	11	11	
	B	1	2	1	2	2	2	1	1	1	--	--	1	1	1	1	11	11	11	
Johannesburg/Jan Smuts.....	0800 A	79	82	81	78	84	86	85	87	89	86	85	82	79	83	82	12	12	12	
	B	11	9	11	14	10	9	8	7	8	7	7	7	10	9	7	12	12	12	

Footnotes at end of table.

FIGURE 51. FREQUENCY OF SPECIFIED CEILING AND VISIBILITY COMBINATIONS (Continued)

COUNTRY AND STATION	HEIGHT (FEET)	MONTH												DATA BASE INFO		
		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC		JAN	FEB
Republic of South Africa (Continued):																
Kimberley	6000 A	95	99	95	97	95	95	96	94	95	99	99	99	96	12	12
	B	1	1	1	1	3	1	1	1	**	**	**	0	1		
Karmanas	6000 A	99	95	95	95	99	99	100	100	100	99	98	100	99	9-11	9-11
	B	0	1	0	**	**	**	0	0	0	0	0	0	**		
Lycaburg	6500 A	77	89	83	84	91	97	97	95	95	94	84	84	90	5-6	5-6
	B	3	0	0	0	1	1	0	0	0	1	2	1	1		
Macville	6000 A	106	95	100	100	100	100	100	100	100	100	100	100	100	2-3	2-3
	B	0	0	0	0	0	0	0	0	0	0	0	0	0		
Mafeking	6000 A	98	99	99	98	99	100	100	95	95	95	99	130	95	9-10	9-10
	B	0	**	0	1	0	**	0	2	2	2	1	0	1		
Mermitz	6000 A	100	95	99	95	96	94	95	95	97	99	100	99	93	11-12	10-12
	B	0	1	**	**	**	**	1	2	0	0	0	1	**		
Matroosburg	6700 A	90	90	85	84	84	88	85	82	83	84	91	94	87	10-11	10-11
	B	4	1	3	6	7	4	4	4	4	4	2	2	4		
Middelburg	6000 A	89	88	84	89	85	94	83	83	82	85	91	85	92	11	10-11
	B	4	6	9	5	3	4	2	2	4	1	2	1	4		
Oniep	6700 A	98	98	95	95	92	89	91	85	91	92	87	98	94	12-13	12-13
	B	1	**	1	1	2	5	3	4	2	2	**	0	2		
Phalaborwa	6000 A	83	89	86	79	85	91	92	89	88	91	84	86	87	9-10	9-10
	B	7	11	6	9	5	5	3	4	5	4	7	7	6		
Pieterburg	6000 A	92	91	93	85	91	88	92	94	93	91	82	90	91	12	12
	B	**	2	1	3	4	8	4	3	1	3	2	1	3		
Port Elizabeth	6000 A	72	65	64	69	61	61	77	75	70	71	71	77	73	10-12	10-12
	B	12	12	12	11	8	8	7	11	13	13	13	8	11		
Port Elizabeth	6000 A	82	94	85	85	94	93	90	90	91	91	82	94	92	12	12
	B	5	4	7	5	2	2	5	4	4	6	5	4	4		
Port Saint Johns	6000 A	94	95	95	95	95	99	98	98	97	94	95	95	97	12	12
	B	2	2	1	**	**	**	1	1	1	2	1	2	1		
Queenstown	6000 A	82	73	74	76	81	82	82	83	83	85	87	94	82	9-11	9-11
	B	5	8	8	10	10	13	13	10	10	10	4	2	8		
Sheepvan	6000 A	90	91	83	85	85	83	83	82	80	84	89	94	95	5-6	5-6
	B	3	4	10	9	2	5	6	5	7	7	6	2	6		
Uppington	6700 A	100	100	100	99	100	99	100	100	100	100	100	100	100	12	12
	B	0	0	0	1	0	1	1	**	**	**	0	0	**		
Wepener	6000 A	99	95	95	93	91	75	71	80	95	90	97	99	92	12-13	12-13
	B	1	2	1	4	2	5	7	4	**	1	1	0	2		
Witwaters	6000 A	95	92	87	89	99	95	92	92	99	95	97	95	95	5-9	5-9
	B	1	3	5	6	6	3	3	3	4	2	1	**	3		
South-West Africa:																
Coblenz	6700 A	100	100	100	100	100	100	100	100	100	100	100	100	100	8	8
	B	0	0	0	**	**	0	0	0	0	0	0	0	**		
Kockmanshoop	6700 A	100	100	100	100	100	100	100	100	100	100	100	100	100	9-10	9-10
	B	0	0	0	0	**	1	0	1	0	**	**	0	**		

Mariental	6700 A	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	8	8
	B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	8
Outjo	6700 A	95	90	90	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	8	8
	B	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	8
Windhoek	6700 A	90	90	90	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	9-10	9-10
	B	1	1	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9-10	9-10

Recessant:

Francistown	1400 A	95	92	97	97	99	99	100	100	100	100	100	100	100	100	100	100	100	100	100	6	6
	B	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	6
Gabergamas	1400 A	100	90	90	90	95	100	100	100	100	100	100	100	100	100	100	100	100	100	100	6-7	6-7
	B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6-7	6-7
Ghanzi	1300 A	100	90	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	6	6
	B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	6
Mama	1400 A	90	94	90	90	100	100	100	100	90	90	91	90	90	90	90	90	90	90	90	8-9	8-9
	B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8-9	8-9
Shakawe	1300 A	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	5	5
	B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	5
Tsahong	1300 A	90	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	6-7	6-7
	B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6-7	6-7
Tsane	1300 A	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	6	6
	B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	6

Republic of South Africa:

Alexander Bay	1300 A	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	12	12
	B	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12	12
Bonafant West	1400 A	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	11-12	11-12
	B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11-12	11-12
Bethlehem	1400 A	90	97	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	10-11	10-11
	B	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10-11	10-11
Calvinia	1300 A	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	12	11-12
	B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12	11-12
Cape Agulhas	1200 A	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	12	12
	B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12	12
Cape Columbine	1300 A	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	12	12
	B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12	12
Cape Saint Lucia	1400 A	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	11	10-11
	B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11	10-11
Cape Town/D.F. Malan	1300 A	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	12	12
	B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12	12
De Aar	1400 A	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	10-11	10-11
	B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10-11	10-11
Durban/Louis Botha	1400 A	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	11-12	11-12
	B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11-12	11-12
East London	1400 A	91	91	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	12	12
	B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12	12
Estcourt	1400 A	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	11	11
	B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11	11
Johannesburg/Jas Searls	1400 A	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	12	12
	B	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	12	12

Footnotes at end of table.

FIGURE 51. FREQUENCY OF SPECIFIED CEILING AND VISIBILITY COMBINATIONS (Continued)

COUNTRY AND STATIONS	MOON ^a (LMT)	DATA BASE INFO															
		JUL	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	POB	CYR
Republic of South Africa (Continued):																	
Johannesburg Jan Sunnis	2000 A	97	95	93	92	91	90	89	88	87	86	85	84	83	82	81	80
	B	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Kimberley	2000 A	100	99	98	97	96	95	94	93	92	91	90	89	88	87	86	85
	B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Karuman	2000 A	99	98	97	96	95	94	93	92	91	90	89	88	87	86	85	84
	B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lydenburg	2000 A	99	97	95	93	91	89	87	85	83	81	79	77	75	73	71	69
	B	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Macanville	2600 A	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
	B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mafeking	2000 A	97	95	93	91	89	87	85	83	81	79	77	75	73	71	69	67
	B	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Marritz	2000 A	99	94	89	84	79	74	69	64	59	54	49	44	39	34	29	24
	B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Matrusburg	1900 A	98	96	94	92	90	88	86	84	82	80	78	76	74	72	70	68
	B	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Middelburg	2000 A	98	95	92	89	86	83	80	77	74	71	68	65	62	59	56	53
	B	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Onkap	1500 A	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
	B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Phalaborwa	2000 A	94	92	90	88	86	84	82	80	78	76	74	72	70	68	66	64
	B	4	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Pieterburg	2000 A	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
	B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Piet Reuf	2000 A	75	73	71	69	67	65	63	61	59	57	55	53	51	49	47	45
	B	11	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Port Elizabeth	2000 A	93	91	89	87	85	83	81	79	77	75	73	71	69	67	65	63
	B	4	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Port Saint Johns	2000 A	95	93	91	89	87	85	83	81	79	77	75	73	71	69	67	65
	B	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Queenstown	2000 A	87	85	83	81	79	77	75	73	71	69	67	65	63	61	59	57
	B	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Sheepsva	2000 A	85	83	81	79	77	75	73	71	69	67	65	63	61	59	57	55
	B	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
Uppingham	1300 A	99	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
	B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Wepener	2000 A	96	94	92	90	88	86	84	82	80	78	76	74	72	70	68	66
	B	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Witwaters	2000 A	99	97	95	93	91	89	87	85	83	81	79	77	75	73	71	69
	B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
South-West Africa:																	
Coblenz	1900 A	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
	B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

FIGURE 52. MEAN NUMBER OF DAYS WITH LOW CLOUD AMOUNT 0 TO 4/10 OR CEILING 1,000 FEET OR GREATER, VISIBILITY 2 1/2 MILES OR GREATER, AND SURFACE WIND SPEED 10 KNOTS OR LESS, AT SPECIFIED HOURS

(Ceiling defined as 3/10 or more cloud cover)

COUNTRY AND STATION	HOUR (GMT)													DATA BASE INFO		
		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN	FOR	CYR
Botswana:																
Francistown	0800	23	19	23	25	28	28	28	24	20	17	21	20	274	6	6
Gaborone	0800	27	20	28	27	31	30	31	30	25	24	25	29	333	7	6-7
Ghanzi	0700	25	24	27	26	29	29	30	28	22	18	21	24	303	6	6
Maun	0800	29	26	29	30	31	29	31	30	25	23	25	27	333	9	9
Shakawe	0700	30	27	29	27	29	29	31	30	29	29	27	29	346	5	5
Tsabong	0700	24	24	29	28	30	29	30	29	24	22	24	21	313	6-7	6-7
Tsane	0700	26	25	27	28	30	29	30	28	25	24	23	24	317	6	6
Republic of South Africa:																
Alexander Bay	0700	21	17	18	20	19	19	19	21	20	23	21	21	239	12	12
Beaufort West	0800	25	24	25	24	24	20	23	23	23	23	24	26	283	11-12	11-12
Bethlehem	0800	23	21	21	22	24	24	24	25	22	24	22	24	276	10-11	10-11
Calvinia	0700	30	29	29	27	28	24	27	20	27	28	27	28	329	12	12
Cape Agulhas	0700	18	14	15	15	18	17	17	18	13	13	12	14	162	12	12
Cape Columbine	0700	13	14	14	16	17	15	17	14	15	13	11	11	175	12	12
Cape Saint Lucia	0800	16	15	16	13	12	10	9	10	10	12	13	16	151	11	11
Cape Town/D.F. Malan	0700	21	20	23	23	20	20	22	22	22	22	18	19	252	11-12	11-12
De Aar	0800	24	23	26	25	24	22	25	24	25	24	24	24	291	10-11	10-11
Durban/Louis Botha	0900	22	21	25	26	29	26	27	24	20	19	19	10	276	11-12	11-12
East London	0800	15	14	19	18	18	17	17	16	13	14	15	15	192	12	12
Eastcourt	0800	30	27	29	28	29	28	29	28	28	29	28	29	343	11	11
Johannesburg/Jan Smuts	0800	19	18	22	21	24	23	24	23	17	15	17	17	241	12	12
Kimberley	0800	17	20	23	23	26	24	23	20	19	16	16	15	240	12	12
Kuruman	0800	30	27	30	29	30	29	30	30	29	20	23	30	349	9-11	9-11
Lydenburg	0800	24	24	27	25	28	29	30	30	29	28	25	28	325	5-6	5-6
Macouville	0800	23	21	27	25	31	30	30	27	24	20	20	23	299	2-3	2-3
Mafeking	0800	22	22	24	25	28	29	29	25	19	16	18	21	277	9-10	9-10
Narmitz	0800	24	22	24	24	27	26	27	25	17	14	17	21	269	11-12	10-12
Matroosberg	0700	23	22	24	24	24	24	24	23	22	20	22	24	276	10-11	10-11
Middelburg	0800	25	23	24	25	27	25	26	24	24	25	24	27	299	11	10-11
Okiep	0700	29	26	28	26	27	23	26	24	24	25	25	26	310	12-13	11-13
Phalaborwa	0800	24	20	26	22	27	26	28	25	23	25	22	24	292	10	9-10
Pietersburg	0800	25	24	27	25	27	25	27	28	24	22	22	23	290	12	12
Piet Reuf	0800	22	18	20	21	25	23	24	23	21	22	21	23	262	11-12	10-12
Port Elizabeth	0800	20	18	22	22	25	25	24	22	19	17	16	18	246	12	12
Port Saint Johns	0800	23	22	27	26	26	24	25	25	24	22	22	23	290	12	12
Queenstown	0800	25	22	22	21	23	22	22	22	22	24	25	28	279	9-11	9-11
Sheeprun	0800	28	25	26	25	29	27	28	28	26	25	27	29	323	5-6	5-6
Uppington	0700	23	24	27	26	28	25	25	25	24	22	20	22	290	12	12
Wepener	0800	22	22	24	23	24	19	19	24	22	22	21	23	265	12-13	12-13
Willowmore	0800	27	23	25	25	27	27	27	27	24	24	25	26	305	8-9	8-9
South-West Africa:																
Gobabis	0700	30	27	30	28	31	29	30	29	28	28	28	28	345	8	8
Keetmanshoop	0700	26	25	25	22	20	16	16	17	22	21	21	24	255	9-10	9-10
Mariental	0700	30	27	31	30	30	30	31	31	29	29	28	29	354	8	8
Outjo	0700	30	28	30	30	31	30	30	31	30	30	29	31	360	8	8
Windhoek	0700	28	26	30	29	30	29	29	29	28	28	27	29	340	9-10	9-10

Botswana:																
Francistown	1400	21	16	22	23	24	24	21	20	18	21	22	20	252	6	6
Gaborone	1400	27	26	26	28	27	28	27	24	23	23	25	27	310	6-7	5-7
Ghanzi	1300	24	18	23	22	24	23	23	23	20	18	24	23	263	6	6
Maun	1400	29	24	28	29	29	28	29	27	24	25	26	26	326	9	8-9
Shakawe	1300	28	25	29	27	29	27	27	26	22	26	27	27	321	5	5
Tsabong	1300	25	25	26	24	25	24	23	20	20	23	25	25	285	6-7	6-7
Tsane	1300	27	23	25	26	25	25	25	23	21	25	25	26	294	6	6
Republic of South Africa:																
Alexander Bay	1300	3	4	6	10	14	16	15	12	7	4	4	3	97	12	12
Beaufort West	1400	18	18	20	18	18	17	18	16	15	17	19	19	210	11-12	11-12
Bethlehem	1400	24	22	25	20	22	20	23	19	16	19	21	23	255	10-11	10-11
Calvinia	1300	24	23	26	25	26	23	25	24	22	23	23	24	288	12	11-12
Cape Agulhas	1300	9	8	10	10	12	14	11	11	8	8	7	9	117	12	12
Cape Columbine	1300	6	7	9	13	14	13	15	13	10	8	6	5	119	12	12
Cape Saint Lucia	1400	12	11	12	13	15	17	13	10	9	9	9	12	142	11	10-11
Cape Town/D.F. Malan	1300	9	10	14	17	18	17	17	16	14	12	8	8	158	11-12	11-12

FIGURE 52. DAYS WITH LOW CLOUD AMOUNT 0 TO 1/4 OR CEILING 1,000 FEET OR GREATER, VISIBILITY 2/3 MILES OR GREATER, AND SURFACE WIND SPEED 10 KNOTS OR LESS (Continued)

COUNTRY AND STATION	HOUR (LST)													DATA BASE INFO		
		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN	FOR	CYR
Republic of South Africa (Continued):																
De Aar.....	1400	22	21	23	21	22	21	22	18	18	19	21	23	251	10-11	10-11
Durban/Louis Botha.....	1400	13	11	11	12	17	18	16	11	9	11	11	11	182	11-12	11-12
East London.....	1400	7	8	9	12	16	16	17	14	10	7	7	9	132	12	12
Estcourt.....	1400	29	26	30	29	29	28	28	27	25	25	26	28	328	11	11
Johannesburg/Jan Smuts.....	1400	25	23	26	22	21	19	21	18	16	15	20	22	247	12	12
Kimberley.....	1400	20	19	20	19	21	20	17	14	14	14	17	209	12	12	
Kuruman.....	1400	29	27	28	28	26	25	26	23	25	24	26	28	313	9-11	9-11
Lydenburg.....	1400	28	26	28	27	31	27	29	26	25	23	25	28	322	5-6	5-6
Macuville.....	1400	24	20	22	23	29	25	26	21	20	20	20	23	271	2-3	2-3
Mafeking.....	1400	26	24	26	24	25	24	24	23	19	17	22	25	281	9-10	9-10
Marnits.....	1400	27	25	27	26	27	26	25	25	20	21	24	26	298	11-12	10-11
Matroosberg.....	1300	14	13	15	17	16	17	15	17	15	14	15	15	191	10-11	10-11
Middelburg.....	1400	19	18	18	20	17	16	14	14	14	15	17	18	200	11	10-11
Okiep.....	1800	28	25	27	25	24	21	21	22	24	26	26	26	255	12-13	11-13
Phalaborwa.....	1400	28	24	29	28	30	28	27	26	25	25	26	26	321	9-10	9-10
Pietersburg.....	1400	25	24	27	26	26	25	25	25	21	19	21	25	290	12	12
Piet Retief.....	1400	27	25	26	26	29	27	26	27	25	26	24	25	317	11-12	9-11
Port Elizabeth.....	1400	7	7	11	12	17	17	17	13	8	7	6	6	127	12	12
Port Saint Johns.....	1400	15	14	17	17	19	23	21	16	13	14	14	16	200	12	12
Queenstown.....	1400	27	24	25	25	25	22	22	21	21	23	24	27	285	9-11	8-11
Sheeprun.....	1400	29	27	30	29	30	28	29	28	27	28	28	30	341	5-6	5-6
Uptington.....	1300	22	21	21	18	19	17	15	14	17	15	19	22	223	12	12
Waivis Bay.....	1300	22	21	20	19	18	18	20	16	16	15	18	21	224	7-8	5-6
Wepener.....	1400	24	22	22	22	22	24	23	22	17	17	18	22	258	12-13	12-13
Willowmore.....	1400	22	20	23	21	22	19	22	19	20	19	20	20	246	8-9	7-9
South-West Africa:																
Gobabis.....	1300	27	24	27	25	27	23	24	24	24	26	27	28	306	8	8
Keetmanshoop.....	1300	24	22	23	18	17	13	12	13	17	17	20	23	219	9-10	9-10
Mariental.....	1300	30	27	29	27	29	26	27	26	27	27	30	331	8	7-8	
Outjo.....	1300	30	27	30	28	29	27	28	26	28	29	30	345	8	8	
Windhoek.....	1300	28	26	28	25	27	24	25	25	24	24	25	29	311	9-10	9-10
Botswana:																
Francistown.....	2000	27	24	28	27	30	29	30	28	25	24	28	28	320	6	6
Gaberones.....	2000	29	27	29	29	31	30	31	30	28	28	28	29	349	6-7	6-7
Ghanai.....	1900	28	26	29	29	31	30	31	30	29	28	28	29	359	5-6	5-6
Maun.....	2000	30	27	30	30	31	30	31	30	28	29	28	29	353	9	8-9
Shakawe.....	1900	30	27	31	30	31	30	31	31	30	30	28	30	355	8	8
Tsabong.....	1900	27	27	28	29	30	30	31	30	29	28	26	26	340	6-7	6-7
Tsane.....	1900	28	27	30	29	31	30	30	30	29	29	27	28	346	6	6
Republic of South Africa:																
Alexander Bay.....	1900	12	12	16	19	22	24	24	21	18	18	15	13	213	10-11	10-11
Beaufort West.....	2000	12	14	19	24	24	22	24	23	21	18	15	13	228	11-12	10-12
Bethlehem.....	2000	25	24	28	27	30	28	30	28	26	23	24	24	318	10-11	10-11
Calvinia.....	1900	27	26	29	28	29	27	29	28	28	29	28	28	335	11-12	10-12
Cape Agulhas.....	1900	11	11	16	15	18	18	18	16	14	13	13	12	174	12	11-12
Cape Columbine.....	1900	7	7	9	12	16	16	18	15	12	10	8	6	135	12	11-12
Cape Saint Lucia.....	2000	12	14	14	13	17	17	13	12	11	10	11	15	158	11	10-11
Cape Town/D.F. Malan.....	1900	14	15	18	23	23	23	23	22	21	21	15	13	230	11-12	11-12
De Aar.....	2000	25	24	27	27	28	27	29	28	27	26	24	24	316	10-11	10-11
Durban/Louis Botha.....	2000	21	21	22	25	28	27	26	22	20	19	21	19	270	11-12	11-12
East London.....	2000	16	16	17	16	20	19	20	20	17	14	16	17	207	11-12	10-12
Estcourt.....	2000	26	24	28	27	30	29	29	28	26	25	26	26	324	11	11
Johannesburg/Jan Smuts.....	2000	27	25	29	27	30	27	28	28	25	24	24	26	319	12	12
Kimberley.....	2000	23	22	26	26	28	26	28	24	25	21	20	20	287	12	12
Kuruman.....	2000	30	27	30	29	30	29	31	30	30	29	30	30	354	9-11	9-11
Lydenburg.....	2000	24	23	27	26	29	29	30	29	27	27	25	27	324	5-6	5-6
Macuville.....	2000	22	24	26	28	31	29	29	29	28	28	26	26	326	2-3	2-3
Mafeking.....	2000	28	26	29	28	30	29	30	28	27	26	27	27	330	9-10	9-10
Marnits.....	2000	27	25	27	26	27	27	27	27	23	22	24	26	309	11-12	10-12
Matroosberg.....	1900	13	16	21	25	27	25	27	26	25	23	19	15	202	10-11	10-11
Middelburg.....	2000	23	24	25	26	28	25	28	26	25	25	23	22	301	10-11	10-11
Okiep.....	1900	25	23	28	27	29	25	29	27	25	27	26	25	318	12-13	11-13
Phalaborwa.....	2000	26	24	27	26	29	28	29	28	25	24	25	25	318	9-10	9-10
Pietersburg.....	2000	27	25	29	29	31	29	30	29	25	22	24	23	321	12	11-12

FIGURE 52. DAYS WITH LOW CLOUD AMOUNT 0 TO 1/4 OR CEILING 1,000 FEET OR GREATER, VISIBILITY 2 1/2 MILES OR GREATER, AND SURFACE WIND SPEED 10 KNOTS OR LESS (Continued)

COUNTRY AND STATION	HOUR (LST)													DATA BASE INFO		
		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN	FOR	CYR
Republic of South Africa (Continued):																
Piet Retief.....	2000	23	22	24	24	26	27	29	27	25	22	22	24	298	11-12	10-11
Port Elisabeth.....	2000	18	18	20	20	23	23	23	21	18	17	17	20	237	12	11-12
Port Saint Johns.....	2000	18	18	20	23	27	27	20	24	19	18	19	21	259	12	10-12
Queenstown.....	2000	24	24	26	27	29	27	28	29	28	27	24	27	319	8-9	8-9
Sheeprun.....	2000	25	25	28	27	30	29	30	30	29	27	27	27	334	8-6	8-6
Uptington.....	1900	23	22	26	27	29	28	27	27	26	24	23	307	12	12	
Wepener.....	2000	25	23	26	27	29	28	29	30	27	26	24	28	318	12-13	12-13
Willowmore.....	2000	21	19	24	27	29	27	28	26	25	21	21	20	289	8-9	7-9
South-West Africa:																
Gobabis.....	1900	29	27	30	28	31	30	31	30	29	29	27	28	351	8	8
Koekmanshoop.....	1900	14	17	22	24	27	23	23	21	19	18	12	231	9-10	9-10	
Mariental.....	1900	28	26	30	29	30	30	31	30	29	28	27	347	8	7-8	
Outjo.....	1900	26	25	30	30	31	30	31	31	27	25	25	24	336	8	8
Windhoek.....	1900	25	26	30	29	31	29	30	30	29	28	25	25	335	8	8

FIGURE 53. MEAN NUMBER OF DAYS WITH SURFACE WIND SPEED > 16 KNOTS AND NO PRECIPITATION, AT SPECIFIED HOURS

COUNTRY AND STATION	HOUR (LST)													DATA BASE INFO		
		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN	FOR	CYR
Botswana:																
Francistown.....	0800	2	1	2	1	*	0	1	2	4	3	1	2	20	6	6
Taberonea.....	0800	*	*	0	0	*	0	0	1	1	2	*	*	5	7	7
Ghanzi.....	0700	2	1	1	1	*	*	*	1	3	5	3	2	19	6	6
Maun.....	0800	*	0	0	0	0	0	0	*	*	1	*	0	1	9	9
Rhakuwe.....	0700	0	0	*	*	*	0	0	0	0	*	1	*	2	5	5
Tsebung.....	0700	1	1	0	*	*	*	0	*	2	2	2	1	10	6-7	6-7
Tsane.....	0700	1	1	1	*	0	0	*	1	2	1	1	2	9	6	6
Republic of South Africa:																
Alexander Bay.....	0700	1	*	*	*	1	1	1	1	1	1	1	1	10	12	12
Beaufort West.....	0800	2	1	1	2	4	5	4	4	4	3	1	2	31	11-12	11-12
Bethlehem.....	0800	1	*	*	*	0	0	0	*	1	2	1	1	6	10-11	10-11
Calvinia.....	0700	*	0	*	*	*	1	1	1	1	*	1	*	5	12	12
Cape Agulhas.....	0700	8	6	7	6	8	8	6	4	9	9	8	8	81	12	12
Cape Columbine.....	0700	6	4	4	3	4	4	3	5	5	4	7	8	57	12	12
Cape Saint Lucia.....	0800	4	5	6	6	8	7	9	9	8	7	5	4	78	11	11
Cape Town/D.F. Malan.....	0700	3	2	2	1	2	1	2	2	2	3	4	4	28	11-12	11-12
De Aar.....	0800	1	1	*	*	*	*	*	*	1	1	1	2	8	10-11	10-11
Durban/Louis Botha.....	0800	1	1	1	1	*	*	1	2	2	3	3	2	17	11-12	11-12
East London.....	0800	4	3	2	2	2	3	3	4	4	6	5	5	42	12	12
Estcourt.....	0800	0	*	*	*	*	*	0	*	*	*	*	*	2	11	11
Johannesburg/Jan Smuts.....	0800	1	1	*	*	*	1	1	1	3	3	2	2	14	12	12
Kimberley.....	0800	3	2	1	1	1	1	1	3	4	4	5	5	30	12	12
Kuruman.....	0800	*	*	*	*	0	1	1	1	*	1	1	1	5	9-11	9-11
Lydenburg.....	0800	*	0	0	0	0	0	0	0	0	*	*	0	1	5-6	5-6
Mauville.....	0800	1	0	1	1	0	0	0	1	3	3	0	0	0	2-3	2-3
Mafeking.....	0800	1	1	1	1	*	0	1	1	4	5	4	2	19	9-10	9-10
Marnitsa.....	0800	1	1	*	1	1	*	*	1	3	5	4	2	19	11-12	10-12
Matroosberg.....	0700	1	1	1	*	*	1	1	1	1	1	1	1	8	10-11	10-11
Middelburg.....	0800	1	*	*	*	1	1	1	2	1	1	1	1	9	11	10-11
Okiep.....	0700	1	1	1	1	*	1	1	1	2	1	1	1	10	12-13	11-13
Phalaborwa.....	0800	*	0	0	*	*	*	*	*	1	1	*	1	4	10	10
Pietersburg.....	0800	*	*	*	0	*	*	*	*	1	2	1	*	5	12	12
Piet Retief.....	0800	0	0	0	0	*	0	0	0	0	0	0	*	*	11-12	11-12
Port Elisabeth.....	0800	3	3	2	2	1	1	1	2	3	5	5	4	32	12	12
Port Saint Johns.....	0800	2	1	1	1	1	1	1	1	1	4	3	3	19	12	12
Queenstown.....	0800	*	0	*	*	1	1	1	1	*	*	*	*	6	9-11	9-11
Sheeprun.....	0800	0	0	0	0	0	0	0	*	*	0	0	0	1	5-6	5-6
Uptington.....	0700	2	1	1	1	1	2	3	4	3	3	4	3	29	12	11-12

Footnote at end of table.

FIGURE 53. DAYS WITH SURFACE WIND SPEED >16 KNOTS AND NO PRECIPITATION (Continued)

COUNTRY AND STATION	HOUR (LST)													DATA BASE INFO		
		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN	FOR	CYR
Republic of South Africa (Continued):																
Wepener	0800	2	1	2	1	1	1	1	1	3	3	2	1	20	12-13	12-13
Willowmore	0800	0	0	*	*	*	*	*	*	*	1	1	1	4	8-9	8-9
South-West Africa:																
Gobabis	0700	0	0	0	0	0	0	*	*	*	*	*	*	1	8	8
Keetmanshoop	0700	1	1	1	1	2	3	4	3	1	3	2	2	24	9-10	9-10
Mariental	0700	*	*	*	0	*	0	0	0	*	*	*	1	1	8	8
Outjo	0700	0	0	0	0	0	0	*	0	*	1	*	0	1	8	8
Windhoek	0700	*	0	*	*	*	*	*	1	*	1	1	*	4	9-10	9-10
Botswana:																
Francistown	1400	2	2	1	2	1	2	3	3	4	2	2	1	23	6	6
Gaberones	1400	*	*	*	*	*	*	*	1	2	2	*	1	5	6-7	6-7
Ghanzi	1300	2	2	2	2	3	2	3	4	4	6	2	2	31	6	6
Maun	1400	*	0	0	0	*	*	0	*	*	*	0	*	1	9	9
Shakawe	1300	*	*	*	*	0	0	*	*	*	*	1	*	3	5	5
Teabong	1300	2	*	1	2	2	1	1	4	3	2	1	1	20	6-7	6-7
Tsano	1300	1	*	1	1	1	1	2	2	2	2	1	1	13	6	6
Republic of South Africa:																
Alexander Bay	1300	19	15	13	8	6	8	4	8	12	17	18	19	144	12	12
Beaufort West	1400	5	5	4	5	6	8	8	9	8	6	5	5	75	11-12	11-12
Bethlehem	1400	1	1	*	1	1	2	2	2	3	2	1	1	19	10-11	10-11
Calvinia	1300	1	1	*	1	1	1	2	2	2	1	1	1	13	12	11-12
Cape Agulhas	1300	12	12	11	11	9	8	12	11	14	15	13	13	141	12	12
Cape Columbine	1300	15	10	10	6	5	6	6	8	10	12	14	16	117	12	12
Cape Saint Lucia	1400	9	7	8	7	6	5	7	11	12	11	10	9	102	11	10-11
Cape Town/D.F. Malan	1300	12	9	8	6	5	5	5	6	8	9	12	13	98	11-12	11-12
De Aar	1400	3	2	1	1	1	2	2	3	4	3	2	2	28	10-11	10-11
Durban/Louis Botha	1400	9	7	9	7	4	4	5	10	11	10	8	9	95	11-12	11-12
East London	1400	11	11	8	8	6	6	6	9	10	13	11	11	109	12	12
Estcourt	1400	*	*	*	*	1	1	1	2	2	3	*	1	11	11	11
Johannesburg/Jan Smuts	1400	*	*	*	1	1	3	2	5	4	5	2	1	26	12	12
Kimberley	1400	2	1	3	2	3	3	4	6	6	6	5	4	44	12	12
Kuruman	1400	1	*	1	*	1	3	3	4	2	3	2	*	20	9-11	9-11
Lydenburg	1400	0	0	0	*	0	*	*	*	*	*	*	*	2	5-6	5-6
Macouville	1400	1	1	1	1	0	1	1	1	1	1	2	*	9	2-3	2-3
Mafeking	1400	1	*	*	1	1	1	2	2	4	3	1	1	17	9-10	9-10
Marnitz	1400	*	1	*	*	*	1	1	2	2	2	1	1	12	11-12	10-12
Matroosberg	1300	6	5	3	4	3	4	5	4	4	5	6	4	51	10-11	10-11
Middelburg	1400	4	3	3	3	3	4	5	7	7	6	4	4	51	11	10-11
Okiep	1300	*	*	1	1	1	2	2	2	1	*	1	*	11	12-13	11-13
Phalaborwa	1400	*	*	*	*	*	*	1	1	1	1	1	1	5	9-10	9-10
Pietersburg	1400	*	*	*	*	*	*	*	1	2	3	2	*	10	12	12
Piet Retief	1400	0	0	*	0	*	*	*	*	*	*	*	*	2	11-12	11-12
Port Elizabeth	1400	13	11	10	8	5	5	5	8	13	14	15	14	122	12	12
Port Saint Johns	1400	8	8	8	7	4	3	4	9	10	10	9	8	89	12	12
Queenstown	1400	*	*	1	*	1	2	2	3	2	3	1	*	16	9-11	9-11
Rheerun	1400	0	0	0	0	*	*	*	1	1	0	*	*	4	5-6	5-6
Uppington	1300	2	1	3	5	4	6	9	9	6	4	3	2	54	12	11-12
Walvis Bay	1300	1	1	1	2	1	2	3	4	4	5	4	2	29	7-8	5-6
Wepener	1400	1	*	1	1	1	1	1	2	3	3	2	1	17	12-13	12-13
Willowmore	1400	1	1	1	1	1	2	2	3	2	2	2	2	20	8-9	7-9
South-West Africa:																
Gobabis	1300	*	0	0	*	*	1	1	1	1	1	*	*	4	8	8
Keetmanshoop	1300	1	1	2	3	3	7	8	7	5	5	2	2	45	9-10	9-10
Mariental	1300	0	*	*	*	*	1	1	2	1	1	1	0	6	8	8
Outjo	1300	0	*	0	*	0	1	*	*	*	*	*	0	2	8	8
Windhoek	1300	1	*	*	1	1	2	2	2	1	2	1	*	13	9-10	9-10
Botswana:																
Francistown	2000	*	1	1	1	0	*	*	*	1	3	1	1	10	6	6
Gaberones	2000	*	*	*	*	0	*	0	0	1	1	1	*	4	6-7	6-7
Ghanzi	1900	1	1	*	*	0	0	0	0	0	2	2	3	10	5-6	5-6
Maun	2000	0	0	0	0	0	0	0	0	0	0	0	0	*	9	8-9
Shakawe	1900	0	0	0	0	0	0	0	0	0	0	1	*	1	5	5

Footnote at end of table.

FIGURE 53. DAYS WITH SURFACE WIND SPEED >16 KNOTS AND NO PRECIPITATION (Continued)

COUNTRY AND STATION	HOUR (LST)													DATA BASE INFO		
		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN	FOR	CYR
Botswana (Continued):																
Tsabong.....	1900	1	1	1	*	*	*	*	*	*	0	1	1	6	6-7	6-7
Tsane.....	1900	1	*	*	0	0	0	*	*	*	1	*	1	3	6	6
Republic of South Africa:																
Alexander Bay.....	1900	9	7	8	5	2	2	2	5	7	8	9	9	73	10-11	10-11
Beaufort West.....	2000	10	7	4	2	2	4	3	3	3	5	9	10	63	11-12	10-12
Bethlehem.....	2000	2	1	*	*	0	0	*	1	3	1	1	9	10-11	10-11	
Calvinia.....	1900	*	*	*	*	*	1	*	1	1	*	*	*	4	11-12	10-12
Cape Agulhas.....	1900	11	8	8	8	5	5	5	7	8	9	7	9	89	12	11-12
Cape Columbine.....	1900	16	11	12	6	4	4	5	7	9	12	15	18	117	12	12
Cape Saint Lucia.....	2000	7	5	6	6	6	5	8	10	9	10	7	7	89	11	10-11
Cape Town/D.F. Malan.....	1900	7	5	3	2	1	1	1	2	3	4	6	8	43	11-12	11-12
De Aar.....	2000	2	1	1	*	0	*	*	1	1	1	2	1	10	10-11	10-11
Durban/Louis Botha.....	2000	2	1	2	1	1	1	1	3	3	3	2	2	23	11-12	11-12
East London.....	2000	5	4	3	2	1	1	2	2	4	6	4	4	38	11-12	10-12
Estcourt.....	2000	1	1	*	*	*	*	*	1	1	1	1	*	7	11	11
Johannesburg/Jan Smuts.....	2000	1	*	*	*	0	1	*	1	1	2	1	1	8	12	12
Kimberley.....	2000	1	1	1	1	*	*	*	1	1	3	3	3	15	12	12
Kuruman.....	2000	*	0	1	*	*	1	*	*	*	1	*	*	5	9-11	9-11
Lydenburg.....	2000	*	0	*	*	*	*	0	*	1	*	0	*	3	5-6	5-6
Macouville.....	2000	1	0	1	1	0	0	0	1	1	1	1	1	6	2-3	2-3
Mafeking.....	2000	*	*	1	*	*	*	*	*	1	1	1	1	6	9-10	9-10
Marnitz.....	2000	1	*	*	1	0	*	*	1	1	2	1	1	8	11-12	10-12
Matroosberg.....	1900	3	3	1	1	1	1	1	1	1	1	2	4	19	10-11	10-11
Middelburg.....	2000	1	*	1	*	*	1	1	1	1	1	*	*	7	10-11	10-11
Okiep.....	1900	1	1	*	*	*	1	*	1	1	*	*	1	6	12-13	11-13
Phalaborwa.....	2000	1	*	*	*	0	*	*	1	1	2	1	1	8	9-10	9-10
Pietersburg.....	2000	1	*	*	*	0	0	*	1	1	1	1	1	0	12	12
Piet Retief.....	2000	*	0	*	0	0	*	0	0	0	*	*	*	1	11-12	11-12
Port Elizabeth.....	2000	5	4	3	3	2	2	2	5	4	5	4	3	41	12	11-12
Port Saint Johns.....	2000	6	5	5	3	1	1	1	3	4	6	5	5	45	12	11-12
Queenstown.....	2000	*	*	*	*	0	*	*	1	*	*	*	*	3	5-9	5-9
Sheeprun.....	2000	0	*	*	0	0	*	*	0	*	*	*	*	2	5-6	5-6
Uppington.....	1900	2	1	1	1	*	*	*	1	1	2	2	3	14	12	11-12
Wepener.....	2000	2	1	1	*	*	*	*	0	1	1	2	2	10	12-13	12-13
Willowmore.....	2000	1	1	1	1	*	1	*	1	1	1	1	1	10	8-9	7-9
South-West Africa:																
Gobabis.....	1900	*	0	0	0	0	0	0	0	0	0	0	*	1	8	8
Keetmanshoop.....	1900	9	5	3	1	1	1	*	3	3	8	11	9	54	9-10	9-10
Mariental.....	1900	1	1	0	*	0	0	0	0	*	*	1	1	4	8	8
Outjo.....	1900	1	*	*	0	0	0	0	*	*	2	1	2	6	8	8
Windhoek.....	1900	1	*	0	0	0	*	*	1	*	1	1	1	5	8	8

* < 0.5 day.

FIGURE 54. MEAN NUMBER OF DAYS WITH SURFACE WIND SPEED 4 TO 10 KNOTS, TEMPERATURE >32°F. BUT <90°F., AND NO PRECIPITATION, AT SPECIFIED HOURS

COUNTRY AND STATION	HOUR (LST)													DATA BASE INFO		
		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN	FOR	CYR
Botswana:																
Francistown.....	0800	14	12	14	14	13	10	10	8	11	13	14	14	144	6	6
Gaborone.....	0800	16	15	16	12	8	7	7	11	11	18	16	18	155	7	7
Ghanai.....	0700	14	13	16	15	13	10	9	14	14	12	13	17	160	6	6
Maun.....	0800	11	10	11	10	10	7	11	15	14	14	10	12	133	9	9
Shakawe.....	0700	10	8	10	9	7	6	6	7	8	15	12	13	111	5	5
Tsabong.....	0700	15	12	13	7	4	3	6	9	9	11	15	13	116	6-7	6-7
Tsane.....	0700	15	16	13	12	10	5	7	11	14	16	18	17	152	6	6
Republic of South Africa:																
Alexander Bay.....	0700	10	8	7	7	7	9	9	8	8	9	7	9	98	12	12
Beaufort West.....	0800	12	10	11	10	10	9	10	11	10	11	11	13	129	11-12	11-12
Bethlehem.....	0800	10	8	6	5	3	2	2	3	5	8	9	9	70	10-11	10-11
Calvinia.....	0700	12	10	10	9	9	9	10	10	11	13	13	13	131	12	12
Cape Agulhas.....	0700	11	12	11	12	14	13	13	14	10	10	11	11	140	12	12

FIGURE 54. DAYS WITH SURFACE WIND SPEED 4 TO 10 KNOTS, TEMPERATURE >32°F. BUT <90°F., AND NO PRECIPITATION (Continued)

COUNTRY AND STATION	HOUR (LST)													DATA BASE INFO		
		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN	FOR	CYR
Republic of South Africa (Continued):																
Cape Columbine	0700	13	11	14	13	14	13	15	11	12	12	11	9	148	12	12
Cape Saint Lucia	0800	11	9	10	10	9	10	9	9	8	9	9	9	112	11	11
Cape Town/D.F. Malan	0700	10	8	9	8	7	8	9	7	8	9	10	10	103	11-12	11-12
De Aar	0800	18	16	18	16	16	14	14	15	17	17	19	20	201	10-11	10-11
Durban/Louis Botha	0800	10	9	12	8	4	4	5	6	8	11	9	10	94	11-12	11-12
East London	0800	11	10	14	13	14	15	15	14	13	9	10	10	147	12	12
Estcourt	0800	4	2	3	3	4	3	3	3	3	4	4	40	11	11	
Johannesburg/Jan Smuts	0800	15	13	17	12	13	12	13	14	12	14	13	13	160	12	12
Kimberley	0800	10	12	14	12	13	12	11	12	11	11	12	140	12	12	
Kuruman	0800	15	13	14	10	11	8	9	12	14	19	19	17	160	9-11	9-11
Lydenburg	0800	13	10	9	4	4	4	5	5	7	8	11	10	88	5-6	5-6
Macuville	0800	15	7	13	11	5	5	4	5	11	12	14	17	115	2-3	2-3
Mafeking	0800	15	14	15	14	14	14	16	15	12	13	13	16	171	9-10	9-10
Marnitz	0800	21	15	21	18	18	15	17	19	16	12	15	17	205	11-12	10-12
Matroosberg	0700	15	16	16	12	11	11	12	12	15	15	19	18	175	10-11	10-11
Middelburg	0800	11	8	8	11	12	9	9	11	11	11	11	13	125	11	10-11
Okiep	0700	17	15	16	12	13	13	13	11	11	15	16	17	169	12-13	11-13
Phalaborwa	0800	16	13	13	10	6	5	6	10	14	18	15	15	142	10	10
Pietersburg	0800	14	12	12	8	8	8	7	7	8	11	13	12	121	12	12
Plet Retief	0800	5	5	4	4	6	5	7	9	9	7	8	6	76	11-12	11-12
Port Elizabeth	0800	12	10	10	9	9	10	10	10	10	10	10	10	118	12	12
Port Saint Johns	0800	11	11	14	16	19	17	17	16	14	12	13	12	171	12	12
Queenstown	0800	5	4	4	3	3	4	3	4	5	6	5	6	54	9-11	9-11
Sheeprun	0800	3	3	3	2	3	2	3	3	4	4	5	5	40	5-6	5-6
Uppington	0700	14	12	12	10	8	7	8	9	10	13	13	14	125	12	11-12
Wepener	0800	10	8	8	5	4	3	3	6	6	9	10	11	80	12-13	12-13
Willowmore	0800	14	12	11	8	6	5	6	7	11	11	14	15	120	8-9	8-9
South-West Africa:																
Gobabis	0700	17	15	15	14	13	9	11	12	12	17	15	15	159	8	8
Keetmanshoop	0700	14	11	10	12	10	9	11	10	11	10	11	13	131	9-10	9-10
Mariental	0700	14	10	7	4	4	4	3	4	5	10	11	14	58	8	8
Outjo	0700	10	9	7	7	10	9	9	11	10	11	12	13	116	8	8
Windhoek	0700	7	7	8	8	11	10	11	9	8	6	6	8	99	9-10	9-10
Botswana:																
Francistown	1400	13	10	13	15	20	20	16	16	11	6	9	11	159	6	6
Gaborone	1400	10	10	12	15	14	19	17	17	13	10	12	12	161	6-7	6-7
Ghanzi	1300	8	8	12	13	17	18	17	18	10	4	9	7	141	6	6
Maun	1400	10	10	11	8	13	15	18	16	8	4	5	8	125	9	9
Shakawe	1300	11	10	13	14	17	16	20	16	7	3	11	11	147	5	5
Tsabong	1300	6	5	10	12	14	15	17	16	10	8	9	5	128	6-7	6-7
Tsane	1300	7	7	11	16	17	17	17	17	10	9	10	8	145	6	6
Republic of South Africa:																
Alexander Bay	1300	3	4	5	8	12	13	12	10	6	4	4	3	83	12	12
Beaufort West	1400	9	10	11	10	11	9	9	9	11	12	11	12	122	11-12	11-12
Bethlehem	1400	15	13	16	14	11	10	15	12	12	13	13	16	159	10-11	10-11
Calvinia	1300	12	12	17	17	18	18	17	18	17	18	17	15	194	12	11-12
Cape Agulhas	1300	9	8	8	9	9	11	9	10	7	7	7	9	101	12	12
Cape Columbine	1300	7	9	10	13	13	11	14	11	9	9	7	6	118	12	12
Cape Saint Lucia	1400	9	8	9	9	10	10	8	8	6	8	8	10	103	11	10-11
Cape Town/D.F. Malan	1300	7	8	11	11	11	8	9	11	11	10	7	7	111	11-12	11-12
De Aar	1400	12	13	16	16	15	18	18	16	16	14	15	13	187	10-11	10-11
Durban/Louis Botha	1400	10	8	9	10	13	14	12	10	7	10	9	9	122	11-12	11-12
East London	1400	7	8	9	10	12	12	14	11	8	7	7	8	112	12	12
Estcourt	1400	12	10	13	10	8	8	12	13	13	14	12	12	139	11	11
Johannesburg/Jan Smuts	1400	16	16	17	17	16	14	16	14	12	11	14	15	178	12	12
Kimberley	1400	8	10	13	16	17	17	13	12	12	10	10	8	146	12	12
Kuruman	1400	16	15	22	21	23	23	23	21	22	19	18	15	239	9-11	9-11
Lydenburg	1400	21	19	22	21	24	22	22	21	21	17	19	17	245	5-6	5-6
Macuville	1400	8	9	11	14	17	11	11	9	12	10	6	8	124	2-3	2-3
Mafeking	1400	14	14	16	17	17	18	18	17	14	10	14	15	185	9-10	9-10
Marnitz	1400	15	13	17	19	19	19	18	19	15	10	12	17	194	11-12	10-12
Matroosberg	1300	12	11	16	16	16	15	17	15	15	15	13	13	172	10-11	10-11
Middelburg	1400	13	13	13	14	14	11	11	11	12	12	13	13	149	11	10-11
Okiep	1300	18	17	21	22	22	19	18	20	21	22	21	19	240	12-13	11-13

FIGURE 54. DAYS WITH SURFACE WIND SPEED 4 TO 10 KNOTS, TEMPERATURE >32°F. BUT <90°F., AND NO PRECIPITATION (Continued)

COUNTRY AND STATION	HOUR (LST)													DATA BASE INFO		
		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN	FOR	CYR
Republic of South Africa (Continued):																
Phalaborwa.....	1400	12	12	15	14	15	19	17	18	15	13	11	12	173	9-10	9-10
Pietersburg.....	1400	14	14	16	15	17	13	15	15	12	11	13	14	170	12	12
Piet Retief.....	1400	12	8	9	9	10	12	13	15	14	13	11	12	137	11-12	11-12
Port Elizabeth.....	1400	7	6	10	10	11	11	11	10	7	6	6	6	100	12	12
Port Saint Johns.....	1400	11	9	11	10	13	14	14	12	10	9	11	13	130	12	12
Queenstown.....	1400	14	12	12	12	13	12	12	12	12	13	14	150	9-11	9-11	
Sheeprun.....	1400	15	18	15	15	15	12	11	17	18	19	15	17	186	5-6	5-6
Uppington.....	1300	5	8	9	11	11	10	10	11	11	11	8	6	109	12	11-12
Walvis Bay.....	1300	22	19	21	17	19	16	17	16	17	18	19	219	7-8	8-6	
Wepener.....	1400	17	15	16	15	17	15	19	17	15	14	14	16	195	12-13	12-13
Willowmore.....	1400	13	12	17	14	16	14	14	14	14	14	15	12	170	8-9	7-9
South-West Africa:																
Gobabis.....	1300	16	16	20	21	23	21	20	21	20	16	16	13	223	5	8
Keetmanshoop.....	1300	6	8	9	18	14	10	9	10	13	11	8	7	118	9-10	9-10
Mariental.....	1300	4	5	10	15	16	14	15	16	19	10	7	8	127	8	8
Outjo.....	1300	13	15	17	18	23	22	24	24	16	10	14	12	207	8	8
Windhoek.....	1300	14	14	18	17	17	15	15	14	14	14	11	12	176	9-10	9-10
Botswana:																
Francistown.....	2000	11	11	10	8	12	9	13	11	13	13	11	11	133	6	6
Gaborone.....	2000	6	6	5	4	2	2	2	4	5	8	7	7	57	6-7	6-7
Ghanzi.....	1900	8	6	10	4	4	5	10	8	6	6	6	6	81	5-6	5-6
Maun.....	2000	2	2	2	2	2	2	3	4	4	4	4	4	37	9	8-9
Shakawe.....	1900	4	3	5	4	1	2	2	4	4	0	5	6	46	5	5
Tsabong.....	1900	9	8	8	3	4	3	4	7	7	9	9	9	79	6-7	6-7
Tsane.....	1900	11	8	8	7	5	5	4	9	7	10	11	14	100	6	6
Republic of South Africa:																
Alexander Bay.....	1900	11	13	13	12	13	9	12	12	12	13	13	12	145	10-11	10-11
Beaufort West.....	2000	10	11	14	15	14	11	12	15	13	14	11	10	147	11-12	10-12
Bethlehem.....	2000	8	6	8	7	5	3	5	5	5	7	7	8	73	10-11	10-11
Calvinia.....	1900	21	17	13	7	7	7	8	9	8	12	15	20	144	11-12	10-12
Cape Agulhas.....	1900	11	9	13	11	12	11	12	10	10	10	10	10	129	12	11-12
Cape Columbine.....	1900	7	7	10	10	13	13	14	11	10	9	7	6	114	12	12
Cape Saint Lucia.....	2000	8	8	9	9	10	10	7	8	8	8	8	10	102	11	10-11
Cape Town/D.F. Malan.....	1900	10	10	11	10	10	10	8	10	11	12	10	10	121	11-12	11-12
De Aar.....	2000	16	15	16	13	11	8	10	13	17	17	17	16	170	10-11	10-11
Durban/Louis Botha.....	2000	8	10	8	7	6	5	7	6	8	8	8	8	89	11-12	11-12
East London.....	2000	10	10	11	12	16	17	17	15	13	9	9	11	152	11-12	10-12
Estcourt.....	2000	9	7	8	7	4	4	5	5	7	9	10	11	85	11	11
Johannesburg/Jan Smuts.....	2000	10	7	12	11	16	18	18	19	17	14	11	10	162	12	12
Kimberley.....	2000	13	13	10	15	16	18	19	18	15	13	13	13	180	12	12
Kuruman.....	2000	12	7	8	5	7	8	9	9	9	11	11	12	108	9-11	9-11
Lydenburg.....	2000	12	11	14	7	4	4	6	6	11	12	11	12	109	5-6	5-6
Macville.....	2000	10	7	8	5	2	2	1	3	5	12	9	11	73	2-3	2-3
Mafeking.....	2000	10	9	8	9	10	9	12	11	12	12	11	14	129	9-10	9-10
Mamits.....	2000	11	9	10	8	6	5	6	9	11	13	12	11	111	11-12	10-12
Matroosberg.....	1900	12	13	17	15	12	11	13	12	15	18	17	13	167	10-11	10-11
Middelburg.....	2000	16	16	14	12	15	15	16	17	15	17	15	16	184	10-11	10-11
Okliep.....	1900	23	22	24	17	14	13	14	15	17	23	23	23	229	12-13	11-13
Phalaborwa.....	2000	13	10	11	12	13	13	13	14	12	14	11	11	146	9-10	9-10
Pietersburg.....	2000	18	14	19	15	15	13	15	17	18	15	15	14	194	12	12
Piet Retief.....	2000	7	5	5	3	3	3	5	5	8	6	7	7	64	11-12	10-11
Port Elizabeth.....	2000	11	9	9	9	9	10	10	9	8	10	9	11	113	12	11-12
Port Saint Johns.....	2000	9	9	10	12	16	17	14	15	13	10	10	11	142	12	11-12
Queenstown.....	2000	15	13	11	8	6	6	6	7	10	14	15	16	126	8-9	8-9
Sheeprun.....	2000	10	8	7	4	3	3	3	7	8	8	10	11	84	5-6	5-6
Uppington.....	1900	7	9	12	12	13	13	16	16	13	16	13	9	147	12	11-12
Wepener.....	2000	10	7	7	5	5	3	5	6	8	8	8	8	80	12-13	12-13
Willowmore.....	2000	18	17	15	11	7	5	7	9	12	14	17	17	150	8-9	7-9
South-West Africa:																
Gobabis.....	1900	16	14	15	15	14	16	16	15	15	15	13	13	181	8	8
Keetmanshoop.....	1900	5	8	13	17	21	18	19	18	16	12	8	4	159	9-10	9-10
Mariental.....	1900	8	8	10	9	4	6	7	7	10	12	11	8	99	8	8
Outjo.....	1900	14	10	9	9	8	10	8	9	11	16	14	15	132	8	8
Windhoek.....	1900	10	10	9	8	7	8	7	8	10	17	11	14	117	8	8

E. Bibliography

Summaries of climatological data, prepared from discrete 6-hourly observations in nearly all cases, for individual stations in South Africa were furnished by the Environmental Technical Applications Center (ETAC), Air Weather Service. All tabular data by specified hours and all surface wind, upper-air wind, and upper-air temperature data were taken from these machine summaries. They also provided some means, extremes, and summary-of-the-day data. The remainder of the tabular data for temperature, precipitation, and thunderstorms were taken from *Sources 13, 15, and 17*. *Sources 1 through 12 and 14* provided background information on the climate of South Africa. *Source 18* provided rainfall maps, and *Source 16* provided synoptic maps indicating the characteristic weather conditions affecting South Africa during the different seasons.

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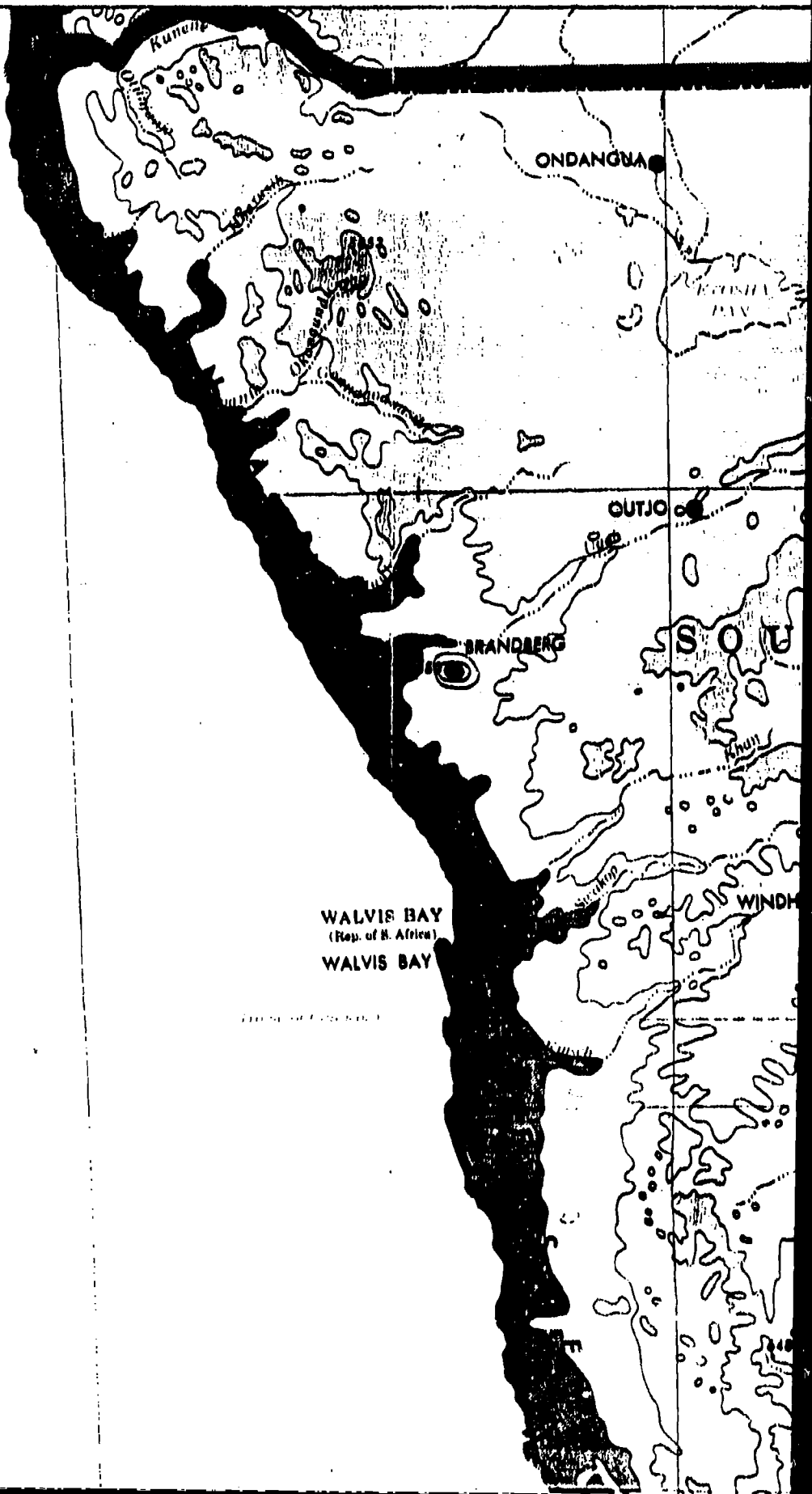
LIST OF STATIONS

COUNTRY AND STATION	COORDINATES*		ELEVA-TION	COUNTRY AND STATION	COORDINATES*		ELEVA-TION
	'S.	'E.	Feet		'S.	'E.	Feet
Botswana:				Republic of South Africa (Con.):			
Francistown	21 18	27 30	3,284	Lydenburg	28 04	30 28	4,721
Gaborone	24 40	28 58	3,228	Masoville	22 18	29 54	1,718
Ghanzi	21 42	21 39	3,711	Mafeking	28 51	28 58	4,200
Kasane	17 49	28 09	3,002	Mamits	23 10	28 13	3,058
Maun	19 59	23 32	2,953	Matroosberg	33 26	19 49	3,143
Serowe	22 23	26 43	3,311	Middelburg	31 29	28 02	4,167
Shakawe	18 22	21 51	3,353	Newcastle	27 45	29 55	3,924
Tsabong	26 03	22 27	3,150	Okiep	26 38	17 52	3,012
Tsane	24 01	21 53	3,609	Phalaborwa	23 55	31 09	1,421
Lesotho:				Pietersburg	23 52	29 27	4,035
Maseru	29 19	27 29	5,003	Piet Retief	27 00	30 48	4,101
Mokhotlong	29 17	29 05	7,792	Port Elizabeth	33 59	25 36	197
Quthus Nek	30 07	28 42	6,470	Port Saint Johns	31 38	29 33	184
Republic of South Africa:				Pretoria	28 45	28 14	4,491
Alexander Bay	28 34	16 32	69	Queenstown	31 53	26 53	3,563
Beaufort West	32 21	22 35	2,812	Sheeprun	30 59	28 23	3,980
Bothlehem	28 10	28 18	5,351	Somerset East	32 43	28 35	2,513
Bloemfontein	29 07	26 11	4,665	Standerton	26 57	29 18	5,036
Calvinia	31 28	19 46	3,215	Uppington	28 26	31 16	2,671
Cape Agulhas	34 50	20 01	20	Vanwykavlei	30 21	31 49	3,148
Cape Columbine	32 50	17 51	197	Walvis Bay	22 53	14 26	23
Cape Saint Lucia	28 30	32 24	351	Wepener	29 44	27 02	4,685
Cape Town/D.F. Malan	33 53	18 36	144	Willowmore	33 17	23 30	2,723
De Aar	30 39	24 01	4,072	South-West Africa:			
Durban/Louis Botha	29 58	30 57	26	Gobabis	22 28	18 58	4,731
East London	33 02	27 50	410	Keetmanshoop	26 34	18 07	3,497
Estcourt	29 01	29 52	3,875	Mariental	24 37	17 58	3,599
George	33 59	22 25	725	Ondangua	17 56	18 59	3,593
Goodhouse	28 54	18 14	666	Outjo	20 07	16 09	4,150
Johannesburg/Jan Smuts	26 05	28 14	5,558	Tsumeb	19 14	17 43	4,301
Jonkershoek	34 00	19 01	3,999	Windhoek	22 34	17 08	5,669
Kimberley	28 48	24 46	3,030	Swaziland:			
Kuruman	27 28	23 26	4,305	Mbabane	26 19	31 05	3,766
Louis Trichardt	23 03	29 54	3,153	Stegi	26 27	31 57	2,142

*Coordinates give locations of weather stations and do not correspond necessarily to those for populated places.

1

SOUTH
ATLANTIC
OCEAN



Scale of 1:500,000

2

ANGOLA
(Port.)

ZAM

Okavango Omuramba

Okavango

Lower Omuramba

Omaraka Omuramba

Chondun

Omuramba

Chadun Omuramba

Makurumani
springs

TSUMEB

SHAKAWE

OKOVANGGO SWAMP

MAUN

TH-WEST AFRICA

(International Territory)

LAKE
NGAMI

Gravel
Loosle

GHANZI

Epokira

Lalagau

BOTSWANA

GOBABIS

KALAHARI

DEK 1180

White

TSANE

MARIENTAL

Highland

Nuvu

3432

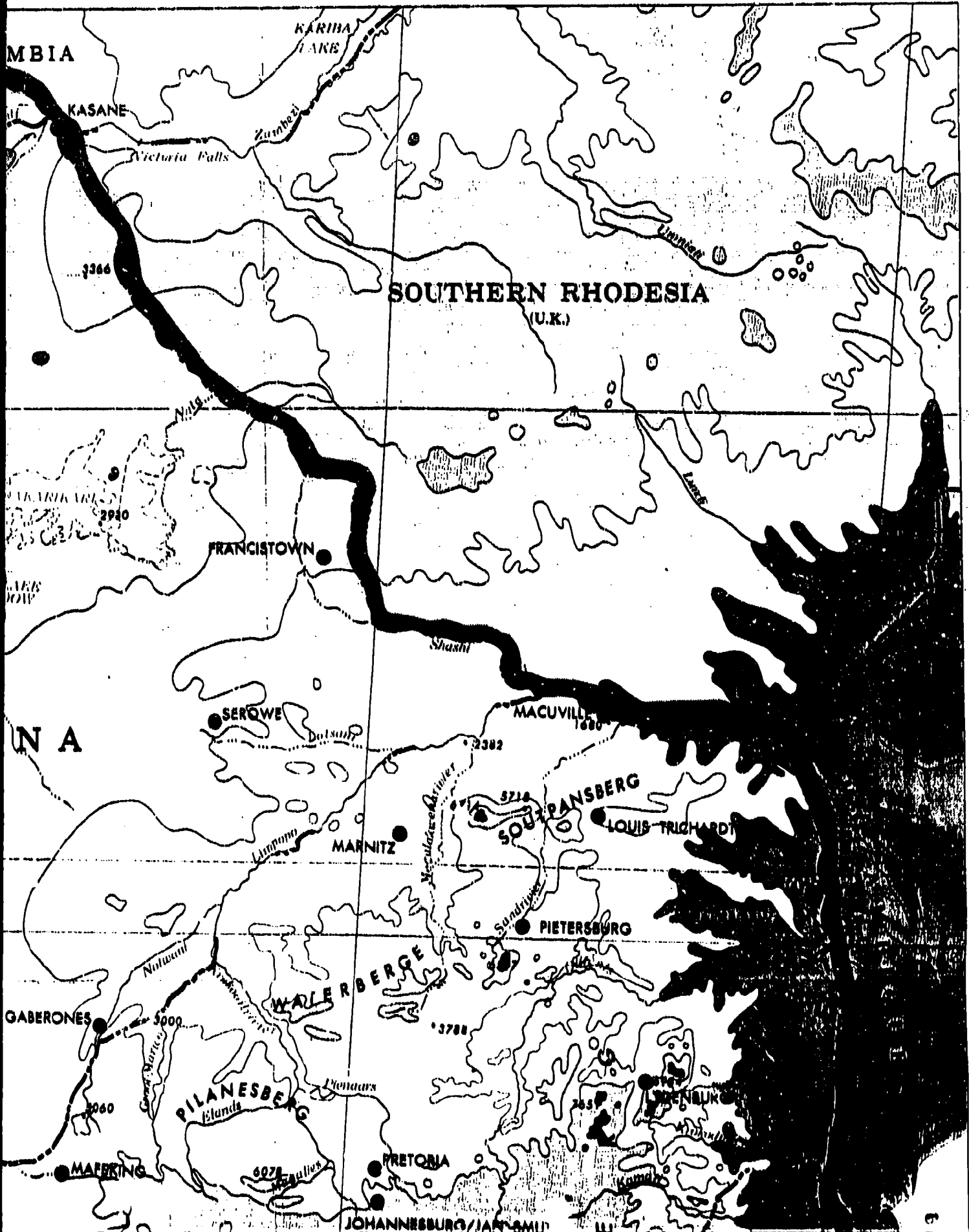
TSABONG

4310

4016

GA

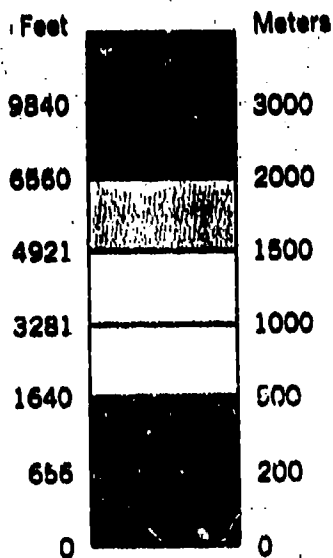
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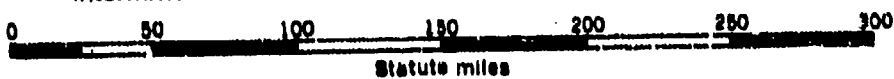
SOUTH AFRICA STATION LOCATIONS

● METEOROLOGICAL STATION

Locations are shown only for stations for which data are presented in text or tables.

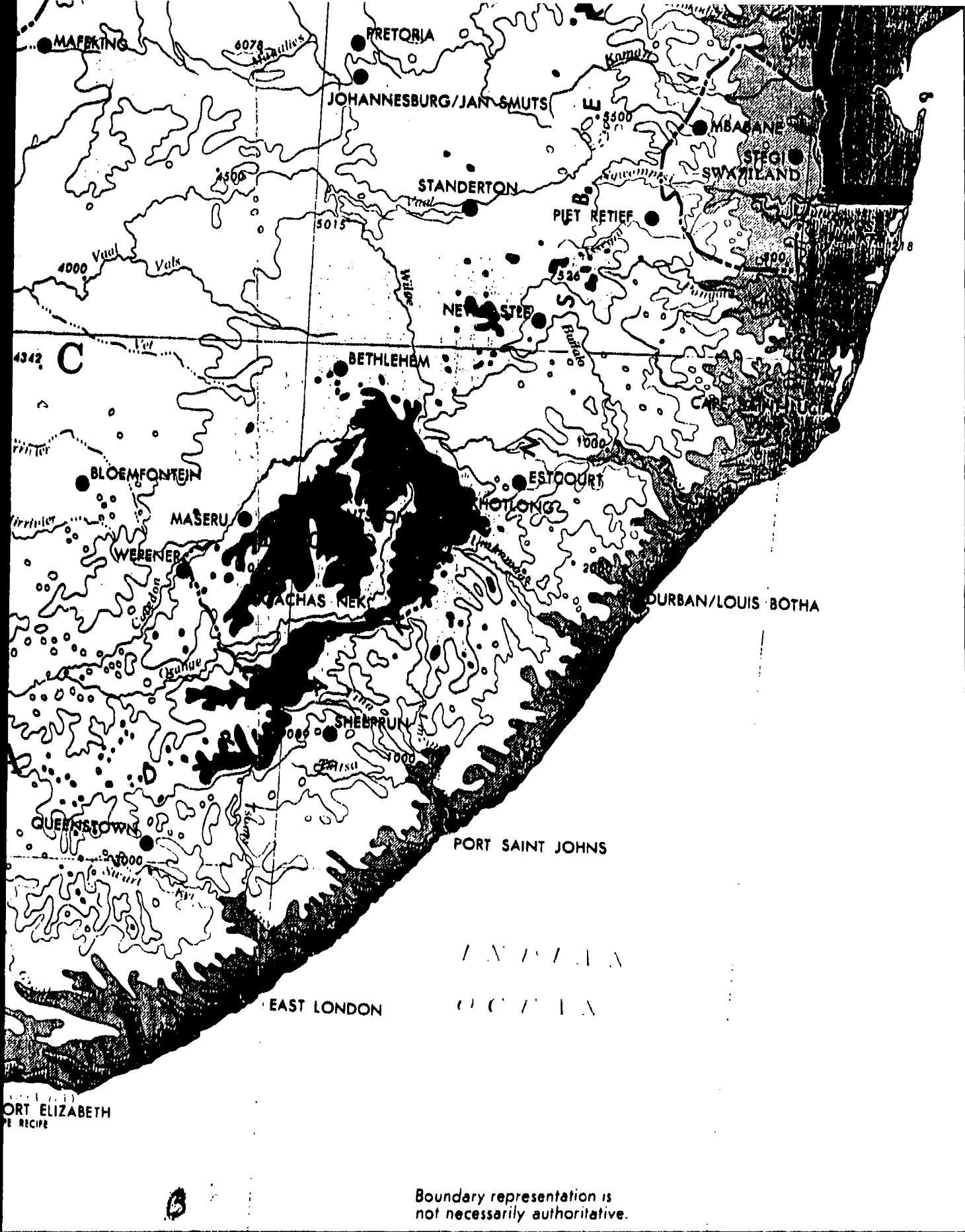


- | | |
|--|---|
| <ul style="list-style-type: none"> ■ NIS boundary --- International boundary • Spot elevation (feet) ▬ Perennial stream ▬ Intermittent stream | <ul style="list-style-type: none"> () Lake or reservoir () Intermittent lake () Pan, vlei, or vloer ▭ Marsh or swamp |
|--|---|



4





Station Locations Figure 55



Declassification Instructions For This National Intelligence Survey Volume

Country:

Report Title:

NIS Series Number:

Publication Date:

Chapter Number:

Total Pages:

Section Number:

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