

**THE
ASTRONOMICAL
SOCIETY**

**OF
SOUTH AFRICA**

**HANDBOOK FOR
1955**

ASTRONOMICAL SOCIETY OF SOUTH AFRICA

1954—1955

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The Astronomical Society of South Africa was formed in July, 1922, by the amalgamation of the Cape and Johannesburg Astronomical Associations which had been in active existence for several years. The declared objects of the Society are:—

- (1) The encouragement and stimulation of the study of Astronomy in South Africa;
- (2) The association of observers and their organisation in the work of astronomical observation and research;
- (3) The dissemination throughout South Africa of such current astronomical information as may be helpful to observers;
- (4) The publication from time to time of the results of the work accomplished by the Society.

Membership is open to all who are interested in Astronomy. The Society issues a series of duplicated notes monthly and distributes to each member a copy of *Sky and Telescope*, an illustrated monthly astronomical magazine published in America. There are also a number of autonomous local centres which hold regular meetings. Details of these will be found on inside back cover.

All communications about the Society should be addressed to The Hon. Secretary, c/o The Royal Observatory, Observatory, Cape.

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PREFACE

The arrangement of the Handbook follows closely that of the past few years. A few minor omissions have been made to avoid the needless repetition of data. This handbook is meant to cater for the naked eye observer, rather than for the possessor of a telescope. It is felt that the latter should make every effort to acquire access to such excellent handbooks as those published by the British Astronomical Association and the Royal Astronomical Society of Canada.

Mr. S. C. Venter has contributed the Meteor Calendar and Dr. K. G. Fuhr calculated and drew the planetary diagram.

TIME

All the times given in this booklet are South African Standard Time, that is, mean solar time for a meridian 30° (or two hours) east of Greenwich.

To get the local mean time at other places in the Union the longitude difference shown in Table I must be applied to the ordinary S.A.S.T.

TABLE I
Correction for Longitude

Bloemfontein ..	-15 m.	Grahamstown ..	-14 m.
Cape Town ..	-46 "	Johannesburg ..	-08 "
Durban ..	+04 "	Port Elizabeth ..	-18 "
East London ..	-08 "	Pretoria ..	-07 "

Conversely, to get the S.A.S.T. from the local mean time these longitude corrections must be applied with the sign reversed. Thus, the S.A.S.T. of local mean noon (i.e., 12 h. 00 m. local mean time) at Port Elizabeth is 12 h. 18 m.

Owing to the fact that the earth does not go round the sun with uniform circular motion in the plane of the earth's equator, the local apparent solar time (i.e., the time shown by a sundial) differs from the local mean solar time by a quantity which is usually referred to as the "Equation of Time". The Equation of Time must be added to the mean solar time to give the apparent solar time. Its effect is shown in the third column of Table II which gives the S.A.S.T. of noon, that is, of the Sun's transit over the meridian.

Example: Find the S.A.S.T. of apparent noon at Port Elizabeth on November 1.

S.A.S.T. of noon at 30° E...	..	hr.	min.
		11	44
Correction for longitude		18
S.A.S.T. of noon at Port Elizabeth	12	02

For many purposes *sidereal time*, that is, local time as measured by the stars, is extremely useful. The sidereal time can be found by applying the S.A.S.T. (on a 24-hour basis) to the corresponding "Sidereal Time at 0 hours S.A.S.T." which is given in the fourth column of Table II and correcting for longitude by means of Table I. A further small correction is needed to allow for the four-minute difference in length between the solar and sidereal day. This correction is given below.

For times between S.A.S.T.:—

03.00	and	09.00	add	1	minutes
09.00	"	15.00	"	2	"
15.00	"	21.00	"	3	"
21.00	"	23.59	"	4	"

Example: Find the sidereal time at 8.15 p.m. on October 4 at Port Elizabeth.

	hr. min.
Sid. time at 00.00 S.A.S.T. on October 4	00 47
S.A.S. Time	20 15
	21 02
Correction for longitude	- 18
Interval Correction	+ 3
	20 47

For recording the time of variable star observations, the *Julian Day* calendar is usually used. This numbers the days consecutively from the beginning of the Julian Era in 4713 B.C. The Julian Day begins at Greenwich mean noon, that is, at 14.00 (2 p.m.) S.A.S.T.

The position of a star in the sky is fixed by its *right ascension* and *declination*, much as the position of a point on the earth is fixed by its longitude and latitude. In fact the right ascension and declination of any star is the longitude and latitude of the point on the earth directly beneath it at zero hours sidereal time at Greenwich. Latitude and declination are always measured in degrees north or south of the equator. Longitude and right ascension are measured either in degrees or in time, 360° being equal to 24 hours (1° equals 4 minutes; 15' equals 1 minute). Right ascension is always measured eastwards from the zero celestial meridian, and so is the equivalent of the longitude measured eastwards from the Greenwich meridian.

For considering the motions of the Sun, Moon and Planets, the system of co-ordinates known as *celestial latitude* and *longitude* is very convenient. These co-ordinates define the position of a celestial body with reference to the Ecliptic in exactly the same way as right ascension and declination define its position with reference to the Celestial Equator. The (celestial) latitude is the angular distance of the body north or south of the ecliptic, while the longitude is the distance from the Vernal Equinox as measured eastwards along the Ecliptic. Celestial latitude and longitude are usually measured in degrees.

The Ecliptic is defined by the apparent path of the sun about the earth. The latitude of the sun is therefore always (approximately) zero, whilst its longitude increases by approximately 1° per day.

TABLE II

Date	Julian Date at 14 hours	S.A.S.T. of Sun's Transit			Sidereal Time				
		<i>h.</i>	<i>m.</i>	<i>s.</i>	at 0 hrs.		at 18 hrs.		
January	1	2,435,109.0	12	03	20	06	39	00	42
"	11	119	12	07	44	07	19	01	22
"	21	129	12	11	13	07	58	02	01
February	1	140	12	13	36	08	41	02	44
"	11	150	12	14	19	09	21	03	24
"	21	160	12	13	47	10	00	04	03
March	1	168	12	12	33	10	32	04	35
"	11	178	12	10	17	11	11	05	14
"	21	188	12	07	28	11	51	05	54
April	1	2,435,199.0	12	04	09	12	34	06	37
"	11	209	12	01	16	13	13	07	16
"	21	219	11	58	51	13	53	07	56
May	1	229	11	57	09	14	32	08	35
"	11	239	11	56	19	15	12	09	15
"	21	249	11	56	27	15	51	09	54
June	1	260	11	57	36	16	34	10	37
"	11	270	11	59	21	17	14	11	17
"	21	280	12	01	28	17	53	11	56
July	1	2,435,290.0	12	03	35	18	33	12	36
"	11	300	12	05	16	19	12	13	15
"	21	310	12	06	16	19	52	13	55
August	1	321	12	06	16	20	35	14	38
"	11	331	12	05	14	21	14	15	17
"	21	341	12	03	16	21	54	15	57
September	1	352	12	00	12	22	37	16	40
"	11	362	11	56	52	23	17	17	20
"	21	372	11	53	20	23	56	17	59
October	1	2,435,382.0	11	49	55	00	35	18	38
"	11	392	11	46	57	01	15	19	18
"	21	402	11	44	48	01	54	19	57
November	1	413	11	43	39	02	38	20	41
"	11	423	11	43	59	03	17	21	20
"	21	433	11	45	45	03	57	22	00
December	1	443	11	48	48	04	36	22	39
"	11	453	11	52	58	05	15	23	18
"	21	2,435,463.0	11	57	48	05	55	23	58

ECLIPSES

There will be three eclipses during 1955, two of the Sun and one of the Moon. These are as follows:

- I June 20 Total eclipse of the Sun, visible from the Indian Ocean and South East Asia, but not from South Africa.
- II November 29 .. Partial eclipse of the Moon, the final phases of which will be visible from South Africa but which will not be of much interest.
- III December 14 .. Annular eclipse of the Sun, visible from North West Africa and Asia, but not from South Africa.

The circumstances of the partial lunar eclipse are as follows:—

	<i>d.</i>	<i>h.</i>	<i>m.</i>
Moon enters penumbra	November 29	16	51.1
Moon enters umbra		18	21.4
Middle of the eclipse		18	59.4
Moon leaves umbra		19	37.4
Moon leaves penumbra		21	07.7
Position Angle of First Contact			155°
Position Angle of Last Contact			197°
Magnitude of eclipse (Moon's diameter = 1.0)			0.125

Time of Sunset, which is also the time of Moonrise:

Durban 18.41, Johannesburg 18.45, Port Elizabeth 19.12, Cape Town 19.40.

PHASES OF THE MOON

First Quarter	Full Moon	Last Quarter	New Moon
<i>d. h. m.</i>	<i>d. h. m.</i>	<i>d. h. m.</i>	<i>d. h. m.</i>
Jan. 1 22 29	Jan. 8 14 44	Jan. 16 00 13	Jan. 24 03 06
Jan. 31 07 05	Feb. 7 03 43	Feb. 14 21 40	Feb. 22 17 54
Mar. 1 14 40	Mar. 8 17 41	Mar. 16 18 36	Mar. 24 05 42
Mar. 30 22 10	Apr. 7 08 35	Apr. 15 13 00	Apr. 22 15 06
Apr. 29 06 23	May 7 00 14	May 15 03 42	May 21 22 58
May 28 16 01	June 5 16 08	June 13 14 37	June 20 06 12
June 27 03 44	July 5 07 28	July 12 22 31	July 19 13 34
July 26 17 59	Aug. 3 21 30	Aug. 11 04 33	Aug. 17 21 58
Aug. 25 10 51	Sep. 2 09 59	Sep. 9 09 59	Sep. 16 08 19
Sep. 24 05 40	Oct. 1 21 17	Oct. 8 16 04	Oct. 15 21 32
Oct. 24 01 04	Oct. 31 08 04	Nov. 6 23 56	Nov. 14 14 01
Nov. 22 19 29	Nov. 29 18 50	Dec. 6 10 35	Dec. 14 09 07
Dec. 22 11 39	Dec. 29 05 44		

OCCULTATIONS VISIBLE AT CAPE TOWN AND JOHANNESBURG

Date	N.Z.C.	Mag.	Phase	Cape Town			Johannesburg		
				Time h. m.	P.A.	Time h. m.	P.A.		
January 10	1409	5.1	R	23 23.5	239	23 37.1	267		
13	1623	5.4	R	No Occn.		02 07.1	267		
February 1	598	5.7	D	No Occn.		21 50.0	147		
3	936	5.9	D	21 23.5	123	21 40.1	102		
17	2523	4.9	R	04 32.2	280	04 22.8	319		
26	266	5.7	D	19 54.3	54	Low			
28	556	5.5	D	No Occn.		21 04.8	124		
March 2	882	5.0	D	Sun		18 43.0	132		
20	3015	5.3	R	03 58.6	290	No Occn.			
April 11	2290	2.5	D	01 31.0	88	Graze			
11	2290	2.5	R	02 59.8	303	Graze			
27	1113	5.2	D	No Occn.		21 27.9	139		
30	1468	4.9	D	19 08.0	130	19 21.4	95		
June 7	2746	5.8	R	23 52.8	237	24 14.8	268		
8	2759	3.6	D	01 08.7	80	01 39.5	56		
8	2759	3.6	R	02 44.5	251	03 16.0	264		
17	399	5.7	R	06 27.8	240	Sun			
July 1	2290	2.5	D	20 31.5	102	20 58.6	62		
1	2290	2.5	R	22 07.2	286	22 18.5	321		
9	3229	5.6	R	04 29.0	227	04 59.8	228		
August 11	435	5.8	R	03 15.8	238	03 27.0	244		
27	2595	5.7	D	19 53.1	91	20 24.1	68		
28	2746	5.8	D	Graze		20 31.3	116		
28	2757	5.1	D	22 59.6	30	23 32.9	20		
Sept. 11	1047	5.2	R	No Occn.		04 29.3	214		
24	2704	5.8	D	22 14.6	105	22 34.3	98		
24	2708	5.9	D	23 02.5	44	23 22.1	37		
27	3093	4.5	D	23 48.2	39	24 14.6	37		
October 4	486	5.2	R	23 44.6	185	24 00.1	198		
7	839	5.3	R	04 48.5	333	No Occn.			
18	2228	5.9	D	Sun		18 52.8	29		
21	2635	5.7	D	Sun		19 16.5	25		
Nov. 3	929	5.8	R	Low		23 50.3	340		
18	2734	5.4	D	Sun		19 31.3	50		
29	664	5.4	R	Low		20 09.5	234		
Dec. 2	1047	5.2	R	02 00.8	315	02 00.1	348		
25	435	5.8	D	22 35.0	49	23 10.1	30		
26	582	5.8	D	Sun		20 18.3	119		

THE PLANETS

The chart shows the S.A.S.T. of the rising and setting of the Sun and Planets at a place whose latitude and longitude are 30° S, 30° E. The approximate times for other places can be found by applying the longitude differences shown in Table I with the sign reversed, e.g., for Cape Town add 46 minutes to the times given by the chart, for Durban subtract 4 minutes. The correction for latitude will in general be sufficiently small to be ignored and in no case will it exceed 15 minutes.

Mercury will be visible in the western evening sky near the times of its greatest eastern elongations, which in 1955 occur on January 28, May 22 and September 18, and in the eastern morning sky near the times of its greatest western elongations which in 1955 occur on March 11, July 9 and October 29. Mercury varies in brightness between $+3^m.2$ and $-1^m.7$; near the times of maximum elongation its brightness is usually about $0^m.0$.

Venus will be visible as a conspicuous morning star until July and as an evening star during November and December. It is at its maximum brightness of $-4^m.3$ at the beginning of the year and gradually fades to $-3^m.4$, staying at approximately that brightness from April to December.

Mars will be visible in the western sky after sunset during the first five months of the year and in the eastern sky before sunrise during November and December, but it will not be the conspicuous object it was during 1954. Its brightness fades from $+0^m.9$ on January 1 to $+1^m.7$ on March 31 and brightens from $+2^m.0$ on November 1 to $+1^m.7$ on December 31.

Jupiter is in Opposition on January 15 and is a conspicuous golden object (magnitude -2.2) in the evening sky at the beginning of the year. It leaves the evening sky in July, but it will not be prominent as a morning object until September.

Saturn will be a fairly conspicuous object in the evening sky from April to September. At Opposition on May 9 its magnitude is $+0.3$. The northern face of the ring system is presented towards the Earth, the angle of presentation varying between a minimum of $20^{\circ}.6$ in July to $24^{\circ}.3$ in December.

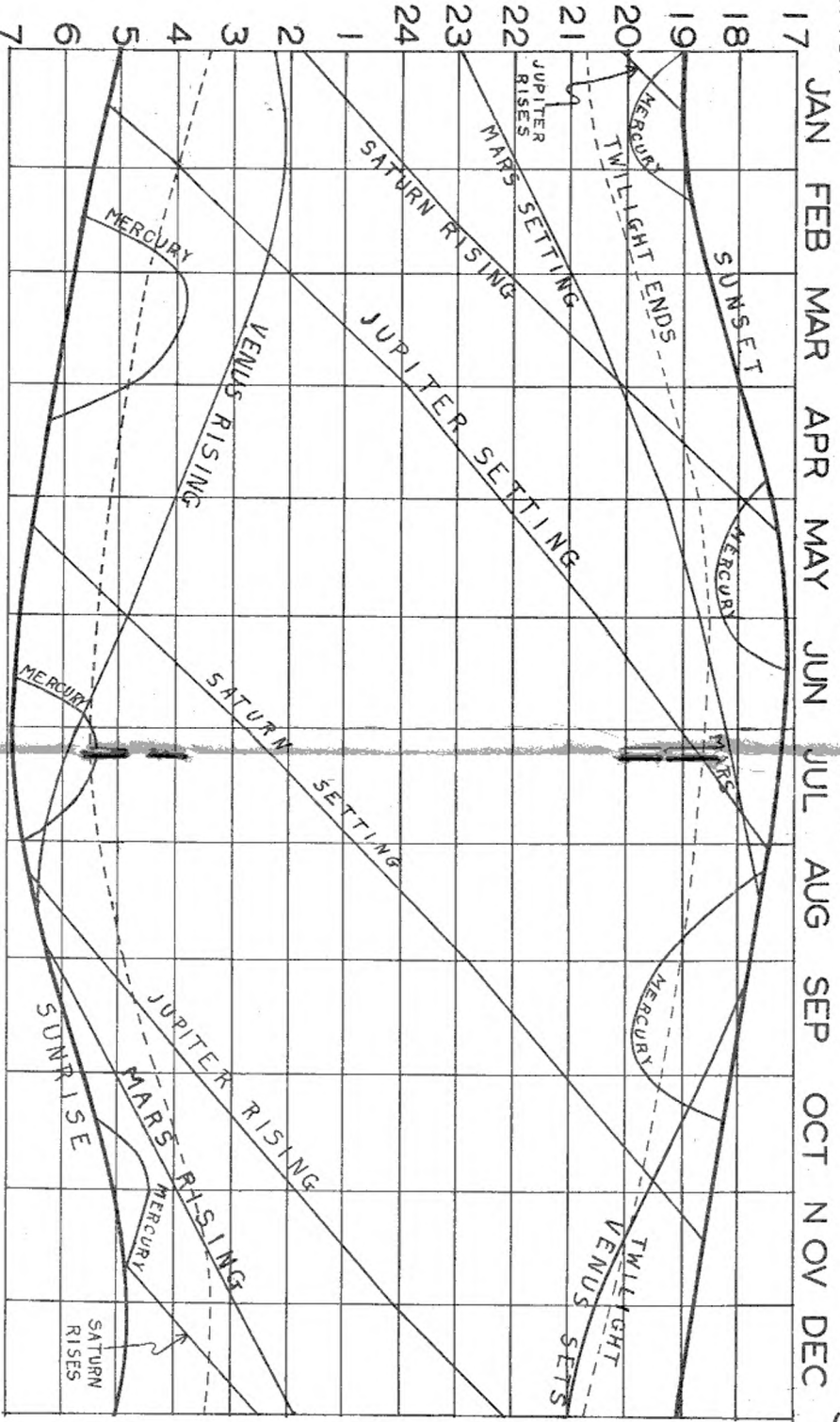
Neither **Uranus** (magnitude 5.7) nor **Neptune** (magnitude 7.7) is readily visible to the naked eye, but both are easy telescopic objects. Uranus, which is passing from Gemini into Cancer, is in Opposition on January 16 and will be most easily visible at the beginning of the year. There are two close conjunctions with Jupiter, on January 6 and on May 10. The minimum separation in the first case is $9'$ and in the second only $1'$. Neptune is in Virgo and is in Opposition on April 17.

THE PLANETS AS SEEN FROM SOUTH AFRICA

SAST

1955

SAST



LATITUDE 30° SOUTH.

LONGITUDE 30° EAST.

METEOR CALENDAR, 1955

Date	Shower	Radiant		Maximum			Nature of Current
				Date	Rate per hour	Transit of Radiant	
		R.A.	Dec.				
Jan. 3 ..	Quadrantids	227°	+ 46°	Jan. 3	40	h. 08·5	Unknown.
Mar. 12— April 25	Hydrads	184°	- 27°	Mar. 25	?	00·0	Unknown.
March 1 May 10	Virginids ..	200°	- 6°	April 3	?	00·0	Ecliptical.
April 12-24	Lyrids ..	273°	+ 35°	April 2	12	04·0	Cometary: Comet 1861 I
April 29— May 21	Eta Aquarids	338°	- 1°	May 5	10	07·6	Cometary: Halley.
April 20— July 30	Sco-Sgr. System	270°	- 30°	June 14	?	00·5	Ecliptical.
July 25— Aug. 10	Delta Aquarids	343°	- 17°	July 28	20	02·0	Ecliptical.
July 20— Aug. 19	Perseids	43°	+ 56°	Aug. 11	50	05·6	Cometary: Comet 1862 III
July 25— Sept. 8	Cygnids ..	324°	+ 51°	Aug. 16	?	00·0	Unknown.
Aug. 16— Oct. 8	Piscids ..	0°	+ 4°	Sept. 12	?	00·5	Ecliptical.
Oct. 11-30	Orionids* ..	94°	+ 16°	Oct. 22	20	04·4	Cometary: Halley.
Sept. 24— Dec. 10	Taurids ..	58°	+ 21°	Nov. 13	6	00·6	Ecliptical.
Nov. 16	Leonids ..	151°	+ 21°	Nov. 16	6	06·5	Cometary: Comet 1866 I
Dec. 5-12	Geminids ..	113°	+ 30°	Dec. 12	30	02·0	Ecliptical.
Dec. 5— Jan. 7	Velids ..	149°	- 51°	Dec. 29	?	03·5	Unknown.

* According to Prentice (Director of the Meteor Section of the B.A.A.), this shower has a probable period of 16 years with an expected return during 1951-1955.

Much of the above information is derived from Hoffmeister's "Meteorstrom" (Meteoric Streams) published in 1948. The orbits of the Cometary Currents are closely related to the orbits of the comets indicated, and those of the Ecliptical Currents to the orbits of certain minor planets.

For the moon during the above periods see the Astronomical Diary.

ASTRONOMICAL DIARY

JANUARY 1955

First Quarter 1d. 22h. 29m. Full Moon 8d. 14h. 44m.

Last Quarter 16d. 00h. 13m. New Moon 24d. 03h. 06m.

First Quarter 31d. 07h. 05m.

Venus will be visible for three hours before sunrise. Mars is in Pisces and will be visible, though not conspicuous, for two or three hours after sunset. Jupiter is in Gemini and, as it rises about sunset, will be visible throughout the night. Saturn is in Libra and will be visible during the second half of the night.

	<i>d.</i>	<i>h.</i>	
Jan.	2	22	Venus at Perihelion.
	4	14	Earth at Perihelion, distance 0.983 astronomical units.
	6	20	Jupiter and Uranus in conjunction, Jupiter 9' S.
	9	06	Jupiter in conjunction with the Moon, Jupiter 2° N.
	15	22	Jupiter in Opposition.
	16	16	Uranus in Opposition.
	18	05	Saturn in conjunction with the Moon, Saturn 6° N.
	20	02	Venus in conjunction with the Moon, Venus 6° N.
	25	17	Venus in greatest elongation, 46° 57' W.
	25	18	Mercury in conjunction with the Moon, Mercury 5° S.
	28	10	Mercury in greatest elongation, 18° 26' E.
	29	07	Mars in conjunction with the Moon, Mars 6° S.

FEBRUARY 1955

Full Moon 7d. 03h. 43m. Last Quarter 14d. 21h. 40m.

New Moon 22d. 17h. 54m.

Venus will be visible for three hours before sunrise. Mars is in Pisces and sets about three hours after the Sun. Jupiter is in Gemini and visible for most of the night. Saturn is in Libra and rises before midnight.

	<i>d.</i>	<i>h.</i>	
Feb.	1	14	Mercury at Perihelion.
	3	09	Mercury at a stationary point.
	5	09	Jupiter in conjunction with the Moon, Jupiter 2° N.
	12	21	Mercury in inferior conjunction with the Sun.
	14	16	Saturn in conjunction with the Moon, Saturn 6° N.
	18	23	Venus in conjunction with the Moon, Venus 1° N.
	21	10	Mercury in conjunction with the Moon, Mercury 0°.5 S.
	24	22	Mercury at a stationary point.
	26	22	Mars in conjunction with the Moon, Mars 4° S.

MARCH 1955

First Quarter 1d. 14h. 40m. Full Moon 8d. 17h. 41m.

Last Quarter 16d. 18h. 36m. New Moon 24d. 05h. 42m.

First Quarter 30d. 22h. 10m.

Mercury will be visible from about an hour and a half before sunrise. Venus will be visible for three hours before sunrise. Mars is in Aries and sets about two hours after the Sun. Jupiter is in Gemini and is visible for the first half of the night. Saturn is in Libra and rises in the late evening.

	<i>d.</i>	<i>h.</i>	
Mar.	1	21	Saturn at a stationary Point.
	4	12	Jupiter in conjunction with the Moon, Jupiter 2° N.
	11	02	Mercury at greatest elongation, 27° 27' W.
	14	00	Saturn in conjunction with the Moon, Saturn 6° N.
	16	22	Jupiter at a stationary point.
	17	13	Mercury at Aphelion.
	21	04	Venus in conjunction with the Moon, Venus 4° S.
	21	12	Equinox.
	22	13	Mercury in conjunction with the Moon, Mercury 7° S.
	27	13	Mars in conjunction with the Moon, Mars 3° S.
	31	18	Jupiter in conjunction with the Moon, Jupiter 2° N.

APRIL 1955

Full Moon 7d. 08h. 35m. Last Quarter 15d. 13h. 00m.

New Moon 22d. 15h. 06m. First Quarter 29d. 06h. 23m.

Venus will be visible for two hours before sunrise. Mars is in Taurus and sets about two hours after the Sun. Jupiter is in Gemini and is visible during the early evening. Saturn is in Libra and rises soon after sunset.

	<i>d.</i>	<i>h.</i>	
Apr.	10	06	Saturn in conjunction with the Moon, Saturn 6° N.
	17	18	Neptune in Opposition.
	20	07	Venus in conjunction with the Moon, Venus 7° S.
	23	06	Mercury in superior conjunction with the Sun.
	25	04	Mars in conjunction with the Moon, Mars 45' S.
	25	06	Venus at Aphelion.
	28	04	Jupiter in conjunction with the Moon, Jupiter 3° N.
	30	13	Mercury at Perihelion.

MAY 1955

Full Moon 7d. 00h. 14m. Last Quarter 15d. 03h. 42m.

New Moon 21d. 22h. 58m. First Quarter 28d. 16h. 01m.

Mercury may be glimpsed towards the end of the month in the western sky soon after sunset. Venus will be visible for about two hours before sunrise. Mars is in Taurus and sets about two hours after the Sun. Jupiter is in Gemini and is visible for about three hours after sunset. Saturn is in Libra and is visible throughout the night.

	<i>d.</i>	<i>h.</i>	
May	7	08	Saturn in conjunction with the Moon, Saturn 6° N.
	9	08	Saturn in Opposition.
	10	23	Jupiter and Uranus in conjunction, Uranus 1' S.
	20	03	Venus in conjunction with the Moon, Venus 6° S.

<i>d.</i>	<i>h.</i>	
22	00	Mercury at greatest elongation, 22° 25' E.
23	12	Mercury in conjunction with the Moon, Mercury 2° N.
23	20	Mars in conjunction with the Moon, Mars 1° N.
25	19	Jupiter in conjunction with the Moon, Jupiter 3° N.

JUNE 1955

Full Moon 5d. 16h. 08m. Last Quarter 13d. 14h. 37m.

New Moon 20d. 06h. 12m. First Quarter 27d. 03h. 44m.

Venus will be visible for about one and a half hours before sunrise. Mars is in Gemini and sets during the evening twilight. Jupiter is in Cancer and will be visible for about two hours after sunset. Saturn is in Libra and will be visible for most of the night.

	<i>d.</i>	<i>h.</i>	
June	3	11	Saturn in conjunction with the Moon, Saturn 6° N.
	4	02	Mercury at a stationary point.
	13	13	Mercury at Aphelion.
	16	08	Mercury in inferior conjunction with the Sun.
	18	21	Venus in conjunction with the Moon, Venus 3° S.
	19	22	Mercury in conjunction with the Moon, Mercury 5° S.
	20		Total eclipse of the Sun.
	21	13	Mars in conjunction with the Moon, Mars 3° N.
	22	07	Solstice.
	22	14	Jupiter in conjunction with the Moon, Jupiter 4° N.
	28	02	Mercury at a stationary point.
	30	10	Mercury and Venus in conjunction, Mercury 4° S.
	30	14	Saturn in conjunction with the Moon, Saturn 6° N.

JULY 1955

Full Moon 5d. 07h. 28m. Last Quarter 12d. 22h. 31m.

New Moon 19d. 13h. 34m. First Quarter 26d. 17h. 59m.

Mercury may be glimpsed during the first two weeks of the month in the eastern sky during the dawn twilight; at the time of maximum elongation it is in Taurus and of apparent magnitude +0.5. Venus rises during the morning twilight and will be visible before sunrise. Mars and Jupiter set during the evening twilight. Saturn is in Libra and will be visible for the first half of the night.

	<i>d.</i>	<i>h.</i>	
July	5	00	Earth at Aphelion, distance 1.017 astronomical units.
	9	13	Mercury at greatest elongation, 21° 10' W.
	18	06	Mercury in conjunction with the Moon, Mercury 5' S.
	18	17	Venus in conjunction with the Moon, Venus 2° N.
	20	05	Saturn at a stationary point.
	20	07	Mars in conjunction with the Moon, Mars 5° N.
	20	11	Jupiter in conjunction with the Moon, Jupiter 4° N.
	25	00	Mars and Jupiter in conjunction, Mars 37' N.
	27	12	Mercury at Perihelion.
	27	21	Jupiter in conjunction with the Moon, Jupiter 6° N.
	28	03	Mercury and Venus in conjunction, Mercury 20' N.

AUGUST 1955

Full Moon 3d. 21h. 30m. Last Quarter 11d. 04h. 33m.

New Moon 17d. 21h. 58m. First Quarter 25d. 10h. 51m.

Mercury is in Leo and may be glimpsed during the last week of the month in the western evening sky. Saturn is in Libra and will be visible throughout the evening but sets about midnight.

	<i>d.</i>	<i>h.</i>	
Aug.	4	8	Jupiter in conjunction with the Sun.
	5	1	Jupiter and Mercury in conjunction, Mercury 1° N.
	5	19	Mercury in superior conjunction with the Sun.
	8	6	Mercury and Mars in conjunction, Mercury 39' N.
	11	19	Venus and Jupiter in conjunction, Venus 30' N.
	15	14	Venus at Perihelion.
	17	05	Mars in conjunction with the Sun.
	17	07	Jupiter in conjunction with the Moon, Jupiter 5° N.
	17	18	Venus in conjunction with the Moon, Venus 6° N.
	19	02	Mercury in conjunction with the Moon, Mercury 7° N.
	24	01	Mars and Venus in conjunction, Mars 11' N.
	24	06	Saturn in conjunction with the Moon, Saturn 5° N.

SEPTEMBER 1955

Full Moon 2d. 09h. 59m. Last Quarter 9d. 09h. 59m.

New Moon 16d. 08h. 19m. First Quarter 24d. 05h. 40m.

Mercury is in Virgo and will be visible throughout the month in the western evening sky during and after twilight. Jupiter is in Leo and rises about two hours before the Sun. Saturn is in Libra and will be visible during the early evening but sets about three hours after the Sun.

	<i>d.</i>	<i>h.</i>	
Sept.	1	09	Venus in superior conjunction with the Sun.
	9	12	Mercury at Aphelion.
	14	02	Jupiter in conjunction with the Moon, Jupiter 5° N.
	15	18	Mars in conjunction with the Moon, Mars 7° N.
	16	22	Venus in conjunction with the Moon, Venus 7° N.
	18	14	Mercury in conjunction with the Moon, Mercury 2° N.
	18	18	Mercury at greatest elongation, 26° 33' E.
	20	18	Saturn in conjunction with the Moon, Saturn 5° N.
	23	22	Equinox.

OCTOBER 1955

Full Moon 1d. 21h. 17m. Last Quarter 8d. 16h. 04m.

New Moon 15d. 21h. 32m. First Quarter 24d. 01h. 04m.

Full Moon 31d. 08h. 04m.

Mercury is in Libra and may be glimpsed during the first few days of the month in the western sky during the evening twilight. Venus sets during the evening twilight, but it may be seen towards the end of the month low down in the west. Jupiter, which is in Leo, rises two hours before the Sun. Saturn is in Libra and will be visible in the western evening sky but sets soon after dark.

	<i>d.</i>	<i>h.</i>	
Oct.	1	16	Mercury at a stationary point.
	8	11	Mercury and Venus in conjunction, Mercury 4° S.
	11	18	Jupiter in conjunction with the Moon, Jupiter 6° N.
	13	23	Mercury in inferior conjunction with the Sun.
	14	11	Mars in conjunction with the Moon, Mars 6° N.
	15	17	Mercury in conjunction with the Moon, Mercury 4° N.
	17	02	Venus in conjunction with the Moon, Venus 4° N.
	18	07	Saturn in conjunction with the Moon, Saturn 4° N.
	22	08	Mercury at a stationary point.
	23	12	Mercury at Perihelion.
	29	13	Mercury at greatest elongation, 18° 33' W.
	31	00	Venus and Saturn in conjunction, Venus 2° S.

NOVEMBER 1955

Last Quarter 6d. 23h. 56m. New Moon 14d. 14h. 01m.

First Quarter 22d. 19h. 29m. Full Moon 29d. 18h. 50m.

Venus will be visible for about an hour and a half after sunset. Jupiter is in Leo and will be visible for about three hours before sunrise.

	<i>d.</i>	<i>h.</i>	
Nov.	8	07	Jupiter in conjunction with the Moon, Jupiter 6° N.
	12	03	Mars in conjunction with the Moon, Mars 6° N.
	13	15	Mercury in conjunction with the Moon, Mercury 5° N.
	14	20	Saturn in conjunction with the Moon, Saturn 4° N.
	16	09	Venus in conjunction with the Moon, Venus 12' S.
	17	01	Saturn in conjunction with the Sun.
	24	04	Mercury and Saturn in conjunction, Mercury 2° S.
	29		Partial eclipse of the Moon.

DECEMBER 1955

Last Quarter 6d. 10h. 35m. New Moon 14d. 09h. 07m.

First Quarter 22d. 11h. 39m. Full Moon 29d. 05h. 44m.

Venus will be visible for about two hours after sunset. Mars is in Libra and rises over two hours before the Sun; it will be seen as a rather inconspicuous object in the eastern sky before dawn. Jupiter is in Leo and rises before midnight; it is thus a conspicuous object in the northern sky during the second half of the night.

	<i>d.</i>	<i>h.</i>	
Dec.	4	16	Mercury in superior conjunction with the Sun.
	5	17	Jupiter in conjunction with the Moon, Jupiter 6° N.
	5	22	Venus at Aphelion.
	6	11	Mercury at Aphelion.
	10	20	Mars in conjunction with the Moon, Mars 4° N.
	12	09	Saturn in conjunction with the Moon, Saturn 4° N.
	14		Annular eclipse of the Sun.
	14	22	Mercury in conjunction with the Moon, Mercury 3° S.
	16	22	Venus in conjunction with the Moon, Venus 5° S.
	18	19	Jupiter at a stationary point.
	22	17	Solstice.

SPECIAL ARTICLES IN PREVIOUS HANDBOOKS

- | | |
|---------------|--|
| 1949, page 11 | Celestial Objects of Interest to the Owners of Small Telescopes. |
| 1949, page 16 | Principal Elements of the Solar System. |
| 1950, page 13 | Jupiter's Satellites. |
| 1950, page 15 | Saturn's Satellites. |
| 1950, page 17 | Eclipses. |
| 1951, page 12 | The Constellations. |
| 1951, page 14 | The Stars in Summer, Autumn, Winter and Spring. |
| 1951, page 16 | The South African Observatories. |
| 1952, page 18 | The Calendar. |
| 1953, page 19 | Transits of Mercury and Venus. |
| 1954, page 16 | The Satellites of the Solar System. |

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A number of observing sections has been formed to encourage amateurs to undertake useful research. Enquiries about these observing sections should be addressed to the Directors whose names and addresses are given below:—

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Mr. S. C. VENTER, P.O. Box 1416, Pretoria, Transvaal.

Computing and Occultation Section

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For details apply to Mr. D. D. Robertson, No. 35, 45th Avenue, Sherwood, Durban.

CALENDAR FOR 1955

JANUARY							FEBRUARY							MARCH						
S	M	T	W	Th	F	S	S	M	T	W	Th	F	S	S	M	T	W	Th	F	S
30	31	-	-	-	-	1	-	-	1	2	3	4	5	-	-	1	2	3	4	5
2	3	4	5	6	7	8	6	7	8	9	10	11	12	6	7	8	9	10	11	12
9	10	11	12	13	14	15	13	14	15	16	17	18	19	13	14	15	16	17	18	19
16	17	18	19	20	21	22	20	21	22	23	24	25	26	20	21	22	23	24	25	26
23	24	25	26	27	28	29	27	28	-	-	-	-	-	27	28	29	30	31	-	-
APRIL							MAY							JUNE						
S	M	T	W	Th	F	S	S	M	T	W	Th	F	S	S	M	T	W	Th	F	S
-	-	-	-	-	1	2	1	2	3	4	5	6	7	-	-	-	1	2	3	4
3	4	5	6	7	8	9	8	9	10	11	12	13	14	5	6	7	8	9	10	11
10	11	12	13	14	15	16	15	16	17	18	19	20	21	12	13	14	15	16	17	18
17	18	19	20	21	22	23	22	23	24	25	26	27	28	19	20	21	22	23	24	25
24	25	26	27	28	29	30	29	30	31	-	-	-	-	26	27	28	29	30	-	-
JULY							AUGUST							SEPTEMBER						
S	M	T	W	Th	F	S	S	M	T	W	Th	F	S	S	M	T	W	Th	F	S
31	-	-	-	-	1	2	-	1	2	3	4	5	6	-	-	-	-	1	2	3
3	4	5	6	7	8	9	7	8	9	10	11	12	13	4	5	6	7	8	9	10
10	11	12	13	14	15	16	14	15	16	17	18	19	20	11	12	13	14	15	16	17
17	18	19	20	21	22	23	21	22	23	24	25	26	27	18	19	20	21	22	23	24
24	25	26	27	28	29	30	28	29	30	31	-	-	-	25	26	27	28	29	30	-
OCTOBER							NOVEMBER							DECEMBER						
S	M	T	W	Th	F	S	S	M	T	W	Th	F	S	S	M	T	W	Th	F	S
30	31	-	-	-	-	1	-	-	1	2	3	4	5	-	-	-	-	1	2	3
2	3	4	5	6	7	8	6	7	8	9	10	11	12	4	5	6	7	8	9	10
9	10	11	12	13	14	15	13	14	15	16	17	18	19	11	12	13	14	15	16	17
16	17	18	19	20	21	22	20	21	22	23	24	25	26	18	19	20	21	22	23	24
23	24	25	26	27	28	29	27	28	29	30	-	-	-	25	26	27	28	29	30	31