

ASTRONOMICAL SOCIETY OF FRANKSTON INC.NEWSLETTER - JUNE 1985Meeting, Wednesday July 24th

The Society's meeting for the month of July will be held on Wednesday, July 24th commencing at 8 p.m. The meeting will be in Room F6 of the Upper School, Peninsula School, Mt. Eliza. The map enclosed in the March Newsletter gives the location of this room. The speaker will be Peter Norman who will use slides to illustrate recent theories linking possible collisions of the Earth with comets, and the extinction of dinosaurs and other major life forms at regular intervals since life began.

Meeting, Wednesday August 28th

Jim Park of the Astronomical Society of Victoria will give an illustrated talk about the Crab Nebula, including its structure and history as a supergiant star prior to exploding as a supernova hundreds of years ago, resulting in an expanding shell of gas and a central pulsar.

Observing Nights for July and August

The next observing night in the grounds of the Peninsula School will be held on Saturday, July 20th, or, if clouded, on Sunday, 21st commencing at 7 p.m. These nights will be between New Moon and First Quarter and Jupiter should be well placed for observation.

An observing night will also be held either on Saturday, August 17th or Sunday, 18th, depending on the weather.

Society News

The talk at the May meeting was given by Bruce Tregaskis who showed a variety of slides of observations and astronomical objects taken by French amateur astronomers from

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locations in the Pyrenees Mountains. Bruce also showed some slides of Southern stars and constellations he had recently taken to send to the astronomers. Peter Norman showed some slides of observations and places of astronomical interest in Europe taken several years ago whilst on holidays.

At present several members of the Society are on extended holidays. Ken Bryant is touring Europe and the U.K. for several months of well-earned long service leave with his wife. Steve and June Malone are travelling around Australia for six months and recently they sent greetings to all members of the Society from Carnarvon. Keith Ward is presently exploring the length and breadth of Alaska and should return with some good photos and traveller's tales.

Unfortunately Peter Brown is having an enforced "holiday" in hospital following extensive surgery for a growth in his throat. He has made a good recovery and is learning to speak again. Society members contributed towards a gift of a book about Halley's Comet, which will keep his thoughts on higher things.

Halley's Comet. Recently Bruce Tregaskis and Peter Norman met with an advance party of four Japanese amateur astronomers who are planning accommodation and meetings with fellow Australian astronomers for hundreds of Japanese amateurs during March and April 1986. We realized that they are planning carefully for the visit of Halley's Comet and we should do likewise! Fortunately the observatory is progressing well as the result of several recent working bees, but more needs to be done.

Alan Fraser recently copied the following extract from CHAMBERS ENCYCLOPAEDIA published in 1868 and has entitled it:

A FEW NOTES ABOUT HALLEY PUBLISHED 136 YEARS AGO

Halley (Edmund)

A celebrated astronomer and mathematician, son of a London soap boiler, born at Haggerston, near London in 1656, educated at St. Paul's School and afterwards at

Queen's College, Oxford which he entered in 1673. He early became an experimenter in physics - before leaving school he made observations on the variations of the compass needle. In 1676 he published a paper (Philosophical Transactions) on the orbits of the principal planets; also "Observations on a spot on the Sun", from which he inferred its rotation round its axis. In November of the same year he went to St. Helena, where, for two years he applied himself to the formation of a catalogue of the stars in the Southern Hemisphere which he published in 1679 (Catalogus Stellarum Australium). On his return he was chosen a Fellow of the Royal Society and deputed by that body to go to Danzig to settle a controversy between Hooke and Helvetius respecting the proper glasses for astronomical observations.

In 1680 he made the tour of Europe, during which he made observations with Cassini at Paris on the great comet which goes by his name and the return of which he predicted. His observations on this comet formed part of the foundation of Newton's calculation of a comet's orbit.

Halley returned to England in 1681 and in 1683 published (Philosophical Transactions) his "Theory of the Variation of the Magnet".

The next year he made the acquaintance of Newton - the occasion being his desire for a test of a conjecture which he had made that the "Centripetal" force in the solar system was one varying inversely as the square of the distance. He found that Newton had anticipated him, both in conjecturing and in demonstrating this fact.

In 1686 Halley published an account of the "Trade" winds and monsoons on seas near and between the tropics, which he followed by some other chemico-meteorological papers. In 1692 he published his hypothesis relative to the change in the VARIATIONS OF THE NEEDLE, to test the truth of which, by obtaining measures of the variations in different parts of the world, he was sent in 1698 in command of a ship to the Western ocean; but his crew mutinied and he was obliged to return. The next year, however, he sailed again on the same expedition, and the

result of his observations was given to the world in a General Chart, for which he was rewarded by the rank of Captain in the Navy with half-pay for life. Soon after he made a chart of the tides in the Channel and surveyed the coast of Dalmatia for the Emperor of Austria.

On the death of Dr. Wallis in 1703, he was appointed Savillian Professor of Geometry at Oxford. In 1705 he published his researches on the ORBITS OF THE COMETS. In 1713, on the death of Sir Hans Sloane, he became Secretary of the Royal Society; in 1716 he made valuable experiments with the Diving Bell, which were afterwards published, and in 1720, after the death of Flamsteed, he became "Astronomer Royal, and continued without assistance to continue the operations at the Observatory with unremitting energy. In this office, and engaged especially in studying the Moon's motions, he passed the rest of his life. In 1729 he was chosen a Foreign Member of the Academy of Sciences, Paris. He died at Greenwich, 14th January, 1742, 86 years old.

Halley had married, in 1686, a daughter of Mr. Tooke, Auditor of Exchequer, by whom he had several children. Besides the writings mentioned, Halley wrote many others. His "Tabulae Astronomicae" did not appear till 1749. Among his principal discoveries may be mentioned that of the Long Inequality of Jupiter and Saturn and that of the slow acceleration of the Moon's mean motion. He has the honour of having been the first who predicted the return of a comet and also of having recommended the observation of the transits of Venus with a view to determining the Sun's parallax - a method of ascertaining the parallax, first suggested by James Gregory.

Sky Notes

Constellations. When facing south on a July evening, the Milky Way stretches from the horizon slightly north of east, up to the zenith, and down to the horizon in the south west. Some of the very best parts of the Milky Way are accessible, including Crux, the Southern Cross, followed by the two bright pointers, Alpha and Beta Centauri, which are close to upper culmination high in the south. Both of these bright stars are doubles, Alpha being easily resolved whilst Beta is a very close and difficult pair.

In a dense part of the Milky Way between Crux and the False Cross, further west, is the beautiful bright and complex gaseous "Keyhole" nebula surrounding the unusual nebular variable star, Eta Carinae. This remarkable star was second magnitude in 1603 (Bayer), fourth magnitude in 1677 (Halley), second magnitude in 1685 (Noël) and 1751 (Lacaille) and fourth magnitude in 1811. It gradually brightened until in 1843 it reached magnitude -0.8, and was outshone only by Sirius. Later, it faded to about eighth magnitude, but is currently fluctuating around magnitude 6. The star itself is surrounded by a small, expanding nebulous shell and may brighten again in the future. It is being kept under regular observation by amateur variable star observers.

Immediately following the Southern Cross, i.e. on the side nearer the pointers, is the "Coal Sack", a large, naked-eye dark nebula which measures about $7^{\circ} \times 5^{\circ}$. At the recent May meeting, a slide of this area taken by Bruce Tregaskis in February 1985 was shown. An unknown very red star of about tenth mag. was visible in the Coal Sack. This red star had been discovered at between eighth and ninth magnitude by the ASV Astrophotographic Section on one of their photographs taken in May 1985. Various charts and most photographs did not show the star, or if so, only as a much fainter object. Also, it was apparent-

It not listed as a known variable star. However, the latest advice from Mati Morel of NSW and Frank Bateson of New Zealand suggests that it may be the extremely red variable star RX Crucis, a carbon star with a photographic magnitude varying from 15.0 to 16.0. Because of its faintness it is not shown on the charts, but other information found by Mati Morel gives its magnitude as 15 in the blue, 9.5 in the visual range and 5.5 in the infra red. Visually, it can reach ninth magnitude or brighter.

Beside Beta Crucis, on the edge of the Coal Sack, is the beautiful, brilliant, 10' diameter NGC 4755, an open cluster commonly known as the Jewel Box. It surrounds the star Kappa Crucis.

Further to the east is the well-known winter constellation of Scorpius, the scorpion. It is one of the few constellations in the sky which really looks like its name, being shaped something like a long mirror image of a question mark. Its brightest star is the red giant Antares, which has a green companion of magnitude 6.5, 3".0 away, only visible in a telescope under good conditions. Near the tail of the scorpion are two easy open clusters, M6 and M7, faintly visible to the naked eye.

The "Teapot" of Sagittarius is east of the scorpion's tail. Some of the most beautiful telescopic objects in this area are M8, the Lagoon nebula, M17, the Omega or Horseshoe nebula and M22, a 15' diameter bright globular cluster.

High in the sky north west of the zenith, is Spica, the brightest star in Virgo, the virgin. Arcturus, or Alpha Boötis, is lower down towards the northern horizon.

Leo, the lion, is setting in the west early in the evening. From about the middle of July, a relatively bright comet may be seen with the naked eye, binoculars or a telescope in this constellation immediately after dusk. It will be travelling east away

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from the sun and will be higher in the sky, but fainter each night. Comet Macholz, 1983e, was discovered by Don Macholz on 27 May 1985, as a magnitude 9 object while it was still heading towards the sun. It was seen locally by Bruce Tregaskis, early in the morning of 2 June 1985, in his 150 mm reflector, as a tenth magnitude, 2' diameter, round diffuse object with no tail. An ephemeris indicated the comet would reach magnitude -1.0 on 28 June 1985, but unfortunately, it will be too close to the sun for observation. By the middle of July it is expected to have faded to about magnitude 6. Part of the ephemeris is as follows:

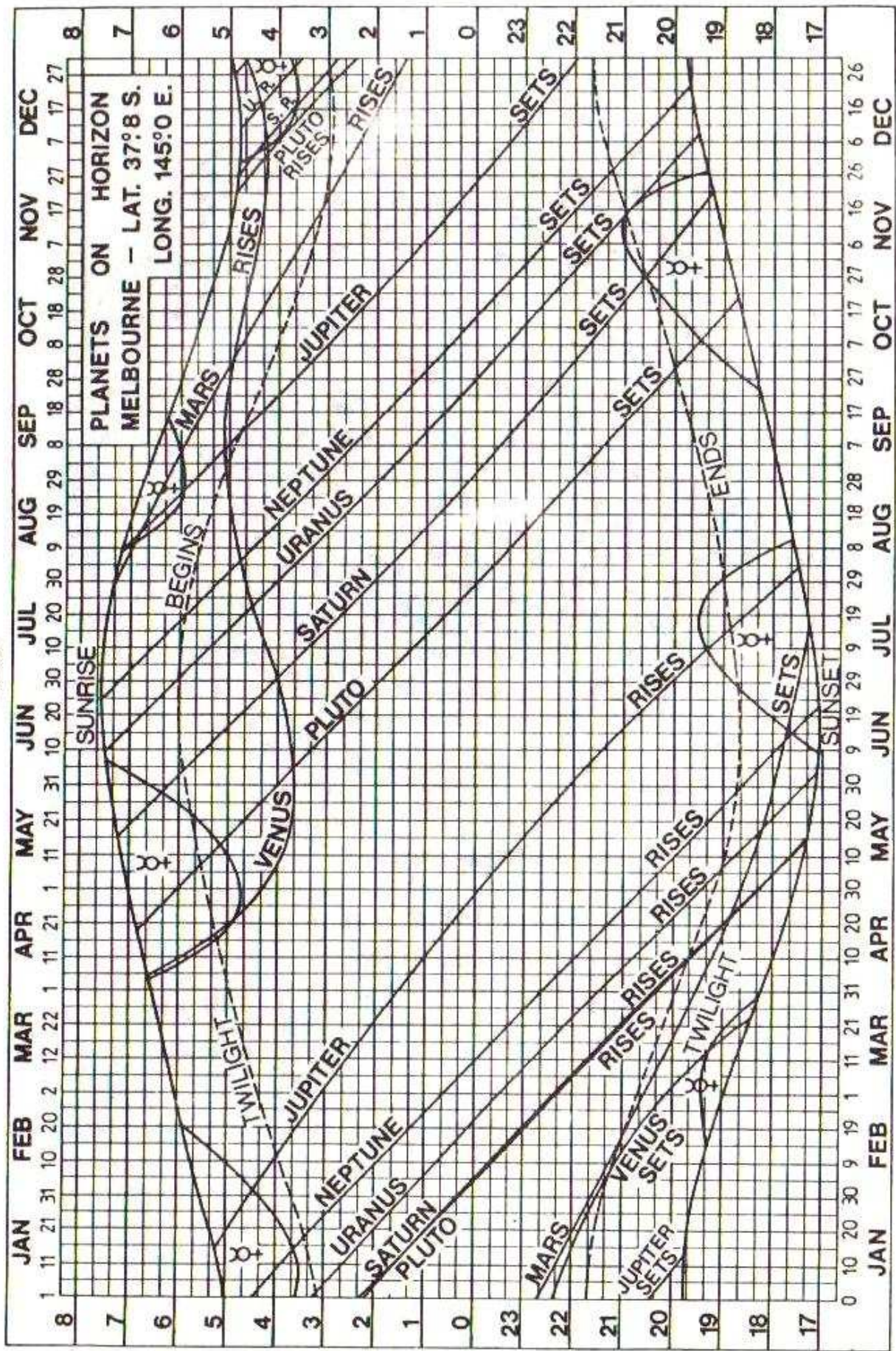
Date	RA (1950.0)	Dec	Dist.	Dist.	Elongation	Mag.
Oh UT	h m	'	from Earth	from Sun	from Sun	
Jul 6	8 21.3	+22 05	0.920	0.337	19	+3.3
12	9 37.7	+21 10	0.836	0.529	31	+5.1
20	11 12.4	+17 07	0.837	0.752	47	+6.6

Planets. Mercury, at about magnitude +0.7, should be visible in the NW in Cancer and Leo soon after sunset. Venus, at mag. -3.7, is a bright morning object in Taurus. Mars is too close to the sun for observation. Jupiter, with its four bright and many fainter moons, is at mag. -2.3 and is rising in the east in Capricornus early in the evening. The ringed planet, Saturn, with its retinue of moons, is well placed in the east in the evening, in Libra, at around mag. +0.6. Uranus, mag. 5.8, in Ophiuchus, and Neptune, mag. 7.7, in Sagittarius, are both well placed in the east in the evening. Pluto, mag. 14, is high in the NW sky in the early evening in Virgo, but requires a telescope of about 250 mm aperture or more. Further details of the planets may be obtained from the planetgraph on page 9

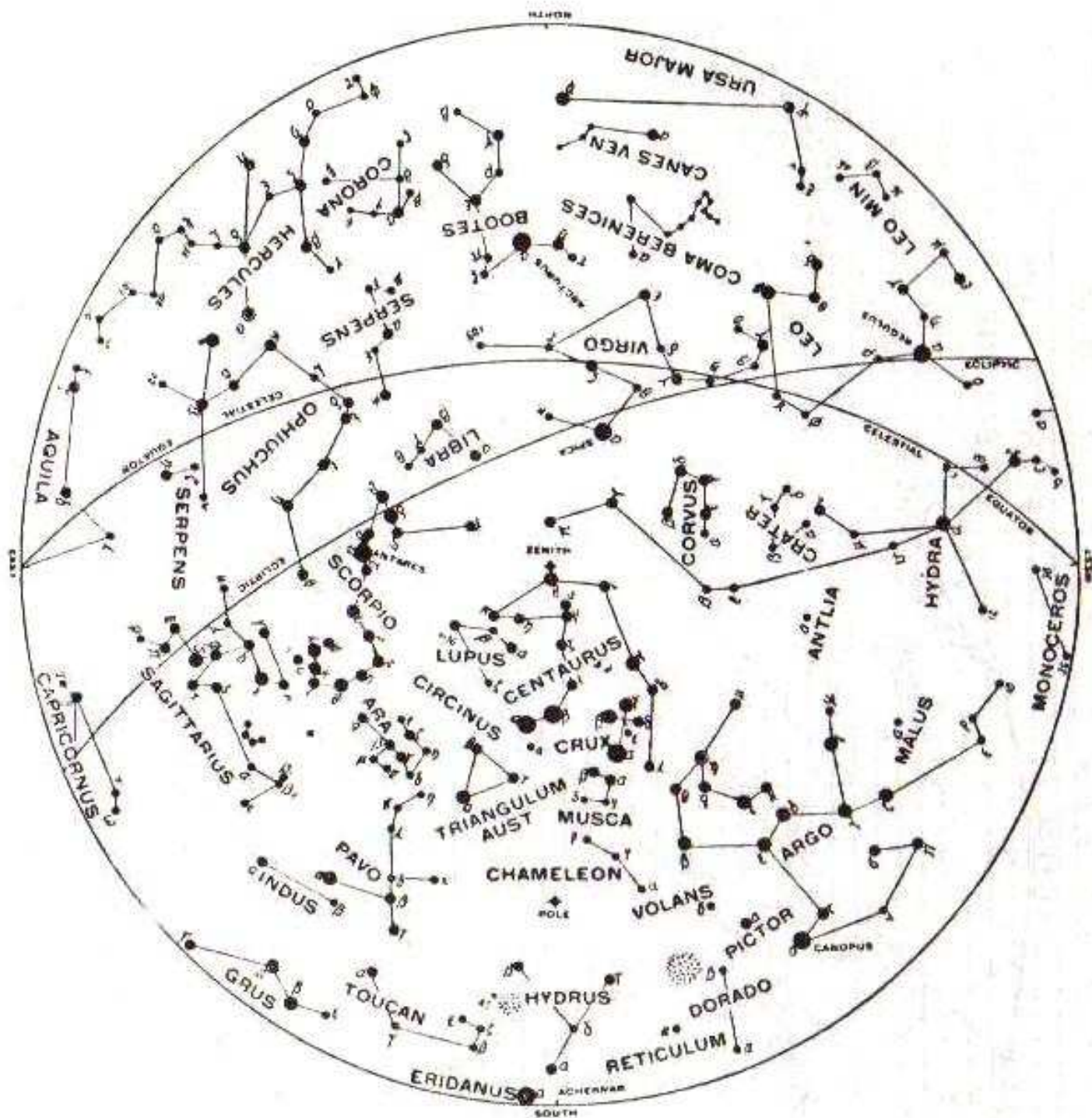
The Moon

New Moon	July 18	Aug 16
First Quarter	July 25	Aug 23
Full Moon	July 2	Aug 1
Last Quarter	July 10	Aug 9

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Star Groups for June and July



MAP 4

JUNE AND JULY

June	1	9·22	p.m.
	11	8·43	
	21	8·03	
	30	7·28	

July	1	7·24	p.m.
	11	6·44	
	21	6·05	
	31	5·26	