		Venus	Mars	Jupiter	Saturn
2018	January	Jan 17	Nov 9	Nov 6	Dec 23
	February	Feb 25	Nov 29	Nov 9	Dec 26
	March	Apr 1	Dec 19	Nov 10	Dec 29
	April	May 7	Jan 6	Nov 8	Dec 29
	May	Jun 16	Jan 22	Nov 4	Dec 29
	June	Jul 26	Jan 31	Nov 1	Dec 27
	July	Aug 29	Jan 30	Oct 31	Dec 24
	August	Sep 27	Jan 22	Nov 2	Dec 23
	September	Oct 20	Jan 23	Nov 6	Dec 22
	October	Oct 24	Feb 4	Nov 12	Dec 24
	November	Oct 12	Feb 21	Nov 19	Dec 26
	December	Oct 27	Mar 11	Nov 26	Dec 30
2019	January	Nov 26	Mar 29	Dec 3	Jan 3
	February	Jan 2	Apr 18	Dec 8	Jan 6
	March	Feb 9	May 8	Dec 12	Jan 9
	April	Mar 16	May 29	Dec 13	Jan 11
	May	Apr 20	Jun 20	Dec 11	Jan 11
	June	May 28	Jul 12	Dec 7	Jan 9
	July	Jul 8	Aug 2	Dec 4	Jan 7
	August	Aug 16	Aug 21	Dec 2	Jan 5
	September	Sep 21	Sep 8	Dec 4	Jan 4
	October	Oct 26	Sep 27	Dec 9	Jan 4
	November	Dec 5	Oct 15	Dec 15	Jan 7
	December	Jan 16	Nov 4	Dec 23	Jan 10
2020	January	Feb 23	Nov 25	Dec 30	Jan 14
	February	Mar 28	Dec 18	Jan 7	Jan 17
	March	Apr 29	Jan 10	Jan 13	Jan 21
	April	May 28	Feb 2	Jan 17	Jan 23
	May	Jun 10	Feb 23	Jan 18	Jan 23
	June	May 26	Mar 14	Jan 17	Jan 22
	July	Jun 1	Apr 1	Jan 13	Jan 20
	August	Jun 28	Apr 14	Jan 9	Jan 18
	September	Aug 1	Apr 18	Jan 8	Jan 16
	October	Sep 5	Apr 10	Jan 9	Jan 16
	November	Oct 10	Apr 4	Jan 14	Jan 18
	December	Nov 16	Apr 9	Jan 20	Jan 21

Mercury – Dates to View in the Morning and Evening Sky

Year	Morning Sky								Evening Sky							
2014	Mar	14	Jul	12	Nov	1			Jan	31	May	25	Sep	21		
2015	Feb	24	Jun	24	Oct	16			Jan	14	May	7	Sep	4	Dec	29
2016	Feb	7	Jun	5	Sep	28			Apr	18	Aug	16	Dec	11		
2017	Jan	19	May	17	Sep	12			Apr	1	Jul	30	Nov	24		
2018	Jan	1	Apr	29	Aug	26	Dec	15	Mar	15	Jul	12	Nov	6		
2019	Apr	11	Aug	9	Nov	28			Feb	27	Jun	23	Oct	20		
2020	Mar	24	Jul	22	Nov	10			Feb	10	Jun	4	Oct	1		

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PLANET FINDER 2014 – 2020

The Night Sky planisphere is excellent for identifying the constellations and bright stars for hundreds of years. To see the stars visible, as they are now, just set the time on the inner circle to the date on the outer circle - it's that simple!

The Sun, Moon and planets, cannot be included as they move across the sky at different speeds and their positions change with respect to the stars. The planisphere can nevertheless show you how to find the brighter planets, with the unaided eye, by the addition of a simple table.

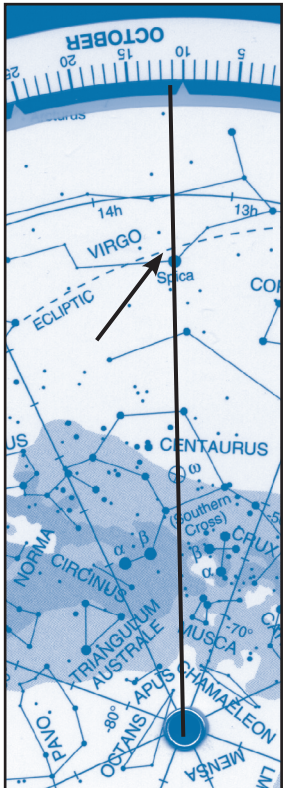
As the Earth revolves around the Sun, once a year, it appears to follow a path through the stars, called the ecliptic. It is only an apparent movement because the Sun is stationary and we are moving. The ecliptic is shown as a dashed line on the planisphere. During the year the Sun follows the ecliptic through the constellations of the Zodiac (and Ophiuchus). It is furthest South in the sky in December (in the constellation of Sagittarius) and furthest North in June. **Please note, during April to August you will need to locate the ecliptic on the other (north) side of the planisphere.** The south side can be used for the remainder of the year.

The Sun Which constellation is the Sun in today? Turn the inner disc until today's date is towards the top of the planisphere. Draw a line from this date towards the centre of the planisphere and the Sun is where you cross the ecliptic. For example, on August 22 the Sun lies in Leo very close to the bright star Regulus.

Finding the Planets It is fortunate for us that the solar system is very flat and the planets lie very close to the plane in which the Earth orbits the Sun. Like the Sun they follow the line of the ecliptic (within a few millimetres on the planisphere). To find the planets we use a similar method to that for the Sun. This time the dates around the edge of the planisphere are used as a convenient reference pointer to the planets and for our purpose no longer represent a true date.

The two tables allow you to find the five brightest planets during the years 2014 to 2020. The main table consists of five columns. The first column is the month and year you are observing. To the right there is one column for each planet giving reference points around the edge of the disc. These references have been calculated for the middle of each month. Mercury is covered in the second table, see over.

Example of finding the Planets You plan to observe on February 12, 2017. From the main table the reference point given for Jupiter is *Oct 11*. Rotate the inner disc until this point is near the top of the planisphere (see diagram). This will ensure the position for Jupiter is visible in the main window. Draw an imaginary line from *October 11* towards the centre of the disc. The planet is close to where this line crosses the ecliptic (the dashed line), in Virgo, near to Spica. Rotate the disc until this point, near Spica,



Position of Jupiter on February 12, 2017

just touches the eastern horizon. You will see that February 12 is now located a little before the 10 pm mark. This tells you that Jupiter will rise around that time and will be visible for the rest of the evening.

Also, on this date, the Mars reference point is *Apr 1*. The disc shows the planet, in Piscis, setting about half an hour before Jupiter rises. If you wish to stay up late you can have a look at Saturn. Again, checking the table, the reference point for Saturn is *Dec 15*. This location on the ecliptic is about 15 degrees east of Antares (Alpha Scorpii). When this point is on the eastern horizon, it is rising on February 13 about 1 am.

Finding Mercury The inner most world of our Solar System moves quickly and stays close to the Sun, most of the time visible only during twilight. Since Mercury is never greater than 28˚ from the Sun it is rarely seen in a truly dark sky. This makes finding Mercury more challenging. Near the horizon in the bright twilight sky there will be few stars visible that can be identified by the planisphere.

The Mercury table gives the dates when the planet is furthest from the Sun (in degrees) in the western evening twilight or eastern dawn sky. The maximum distance from the Sun varies and the time of the year can influence how high Mercury is for any particular return. In general, returns to the evening sky are best when they occur in September. Morning returns are most favourable in March. It is worthwhile looking for Mercury within one or two weeks of either side of the dates quoted, especially for the favourable returns. On our nominated dates you should view the sky about half an hour before sunrise (morning returns) or after sunset (evening returns).

Times used are local standard time. For daylight saving you must add 1 hour.

For further information regarding these planispheres or our astronomy yearbooks, please contact: Quasar Publishing, PO Box 85, Georges Hall NSW 2198
Fax (02) 8814 5331 or www.quasarastronomy.com.au

		Venus	Mars	Jupiter	Saturn
2014	January	Jan 9	Oct 6	Jul 6	Nov 9
	February	Jan 6	Oct 15	Jul 2	Nov 10
	March	Jan 30	Oct 15	Jul 2	Nov 10
	April	Mar 3	Oct 5	Jul 4	Nov 9
	May	Apr 5	Sep 28	Jul 9	Nov 7
	June	May 10	Oct 2	Jul 16	Nov 5
	July	Jun 17	Oct 13	Jul 23	Nov 4
	August	Jul 27	Oct 29	Jul 30	Nov 4
	September	Sep 3	Nov 18	Aug 5	Nov 6
	October	Oct 8	Dec 11	Aug 11	Nov 9
	November	Nov 15	Jan 5	Aug 14	Nov 13
	December	Dec 26	Jan 30	Aug 15	Nov 16
2015	January	Feb 5	Feb 23	Aug 13	Nov 20
	February	Mar 14	Mar 17	Aug 9	Nov 22
	March	Apr 17	Apr 8	Aug 6	Nov 23
	April	May 24	Apr 29	Aug 5	Nov 22
	May	Jul 1	May 22	Aug 7	Nov 20
	June	Aug 2	Jun 14	Aug 11	Nov 17
	July	Aug 21	Jul 6	Aug 17	Nov 16
	August	Aug 12	Jul 28	Aug 23	Nov 16
	September	Aug 6	Aug 17	Aug 30	Nov 17
	October	Aug 28	Sep 4	Sep 5	Nov 20
	November	Sep 27	Sep 21	Sep 9	Nov 23
	December	Oct 31	Oct 8	Sep 13	Nov 27
2016	January	Dec 8	Oct 24	Sep 13	Dec 1
	February	Jan 18	Nov 8	Sep 12	Dec 3
	March	Feb 25	Nov 21	Sep 8	Dec 5
	April	Apr 2	Nov 26	Sep 5	Dec 4
	May	May 8	Nov 21	Sep 4	Dec 3
	June	Jun 17	Nov 11	Sep 6	Nov 30
	July	Jul 28	Nov 11	Sep 10	Nov 28
	August	Sep 3	Nov 22	Sep 15	Nov 28
	September	Oct 7	Dec 11	Sep 21	Nov 28
	October	Nov 13	Jan 2	Sep 27	Dec 1
	November	Dec 23	Jan 26	Oct 3	Dec 4
	December	Jan 31	Feb 18	Oct 8	Dec 8
2017	January	Mar 4	Mar 11	Oct 11	Dec 12
	February	Mar 26	Apr 1	Oct 11	Dec 15
	March	Mar 27	Apr 22	Oct 10	Dec 17
	April	Mar 16	May 14	Oct 6	Dec 17
	May	Apr 1	Jun 6	Oct 3	Dec 16
	June	Apr 28	Jun 28	Oct 2	Dec 13
	July	Jun 1	Jul 20	Oct 4	Dec 11
	August	Jul 9	Aug 9	Oct 8	Dec 10
	September	Aug 16	Aug 28	Oct 13	Dec 10
	October	Sep 21	Sep 15	Oct 19	Dec 12
	November	Oct 27	Oct 3	Oct 25	Dec 15
	December	Dec 6	Oct 22	Nov 1	Dec 19