

PLANET FINDER 2021 – 2027



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.

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dates around the edge of the planisphere are used as a convenient reference pointer to the planets and for our purpose no longer represent a true date.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 2021 to 2027. 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 15 February 2027. From the main table the reference point given for Mars is *Aug 26*. Rotate the inner disc until this point is near the top of the planisphere (see diagram). This will ensure the position for Mars is visible in the main window. Draw an imaginary line from *August 26* towards the centre of the disc. The planet is close to where this line crosses the ecliptic (the dashed line), in Leo, near to Regulus. Rotate the disc until this point, near Regulus, just touches the eastern horizon. You will see that February 15 is now located a little before the 7 pm mark. This tells you that Mars will rise around that time and will be visible for

	Venus	Mars	Jupiter	Saturn
2025	January Mar 4	Jul 20	May 31	Mar 8
	February Mar 25	Jul 10	May 31	Mar 11
	March Mar 23	Jul 12	Jun 2	Mar 15
	April Mar 14	Jul 22	Jun 7	Mar 18
	May Mar 31	Aug 5	Jun 14	Mar 21
	June Apr 28	Aug 21	Jun 21	Mar 23
	July Jun 1	Sep 7	Jun 29	Mar 23
	August Jul 10	Sep 24	Jul 6	Mar 23
	September Aug 17	Oct 13	Jul 12	Mar 21
	October Sep 22	Nov 2	Jul 16	Mar 19
	November Oct 28	Nov 25	Jul 17	Mar 17
	December Dec 6	Dec 19	Jul 15	Mar 17
2026	January Jan 17	Jan 14	Jul 11	Mar 19
	February Feb 25	Feb 8	Jul 8	Mar 22
	March Apr 2	Mar 3	Jul 7	Mar 25
	April May 8	Mar 26	Jul 9	Mar 28
	May Jun 16	Apr 16	Jul 13	Apr 1
	June Jul 26	May 9	Jul 19	Apr 3
	July Aug 29	May 31	Jul 26	Apr 4
	August Sep 27	Jun 23	Aug 2	Apr 4
	September Oct 18	Jul 14	Aug 9	Apr 3
	October Oct 20	Aug 2	Aug 14	Mar 31
	November Oct 10	Aug 18	Aug 18	Mar 30
	December Oct 27	Aug 29	Aug 19	Mar 29
2027	January Nov 26	Sep 2	Aug 18	Mar 30
	February Jan 2	Aug 26	Aug 14	Apr 1
	March Feb 9	Aug 16	Aug 10	Apr 4
	April Mar 17	Aug 15	Aug 9	Apr 8
	May Apr 21	Aug 23	Aug 11	Apr 12
	June May 28	Sep 5	Aug 15	Apr 14
	July Jul 8	Sep 20	Aug 20	Apr 16
	August Aug 17	Oct 7	Aug 26	Apr 17
	September Sep 21	Oct 26	Sep 2	Apr 16
	October Oct 27	Nov 17	Sep 8	Apr 14
	November Dec 5	Dec 11	Sep 13	Apr 12
	December Jan 16	Jan 5	Sep 16	Apr 10

Mercury – Dates to View in the Morning and Evening Sky

Year	Morning Sky					Evening Sky				
2021	Mar 6	Jul 5	Oct 25			Jan 24	May 17	Sep 14		
2022	Feb 17	Jun 17	Oct 9			Jan 7	Apr 29	Aug 28	Dec 22	
2023	Jan 30	May 29	Sep 22			Apr 12	Aug 10	Dec 5		
2024	Jan 13	May 10	Sep 5	Dec 25		Mar 25	Jul 22	Nov 16		
2025	Apr 22	Aug 19	Dec 8			Mar 8	Jul 4	Oct 30		
2026	Apr 4	Aug 2	Nov 21			Feb 20	Jun 16	Oct 12		
2027	Mar 17	Jul 16	Nov 4			Feb 3	May 28	Sep 25		



*Position of Mars on
15 February 2027*

Also, on this date, the Jupiter reference point is rising about 45 minutes before Mars. If you wish to look at Saturn, again, checking the table, the reference point for Saturn is *Apr 1*. When this point is on the eastern horizon, it does not show the time for Feb 15 as it is in daylight. If you move the point to the western side, it will show the setting time of about 9 pm.

When rotating the planets here to the reference point (as per table) you may need to turn the planets here over to find the eclipse.

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 planets here. 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 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 planets here or our astronomy yearbooks, please contact: Quasar Publishing, PO Box 85, Georges Hall NSW 2198
www.quasarastronomy.com.au

January	Dec 28	Apr 21	May 7	Jan 25	Feb 1	Feb 3	Feb 4	Feb 25	Jan 28	Jan 25	Saturn
February	Feb 6	Mar 15	May 28	Jun 15	Jul 5	Jul 17	Feb 21	Feb 22	Feb 19	Feb 18	Jan 28
March	Mar 15	May 26	Jun 15	Jul 5	Jul 17	Feb 21	Feb 22	Feb 19	Feb 18	Feb 15	Jan 30
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