

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dates around the edge of the planisphere are used as a convenient reference pointer to the planets and for our purpose no longer represent a true date.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 the rest of the evening.

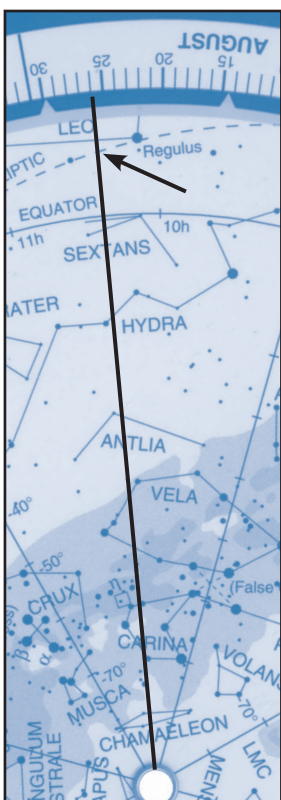
Also, on this date, the Jupiter reference point is *Aug 14*. The disc shows the planet nearby, in Leo, rising about 45 minutes before Mars. If you wish to look at Saturn, again, checking the table, the reference point for Saturn is *Apr 1*. When this point is on the eastern horizon, it does not show a 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 planisphere to the reference point (as per table) you may need to turn the planisphere over to find the ecliptic.

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).

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



Position of Mars on
15 February 2027

	Venus	Mars	Jupiter	Saturn
2021				
January	Dec 28	Apr 21	Jan 27	Jan 25
February	Feb 6	May 7	Feb 4	Jan 28
March	Mar 15	May 26	Feb 11	Feb 1
April	Apr 20	Jun 15	Feb 17	Feb 3
May	May 28	Jul 5	Feb 21	Feb 4
June	Jul 8	Jul 26	Feb 23	Feb 4
July	Aug 16	Aug 14	Feb 22	Feb 2
August	Sep 19	Sep 1	Feb 19	Jan 31
September	Oct 22	Sep 20	Feb 15	Jan 29
October	Nov 25	Oct 8	Feb 13	Jan 28
November	Dec 29	Oct 28	Feb 15	Jan 30
December	Jan 17	Nov 18	Feb 18	Feb 1
2022				
January	Jan 5	Dec 12	Feb 24	Feb 4
February	Jan 5	Jan 5	Mar 3	Feb 8
March	Jan 30	Jan 29	Mar 10	Feb 11
April	Mar 3	Feb 22	Mar 16	Feb 14
May	Apr 5	Mar 15	Mar 22	Feb 16
June	May 10	Apr 6	Mar 27	Feb 16
July	Jun 18	Apr 26	Mar 29	Feb 15
August	Jul 28	May 16	Mar 29	Feb 13
September	Sep 3	Jun 2	Mar 26	Feb 11
October	Oct 9	Jun 13	Mar 23	Feb 10
November	Nov 15	Jun 13	Mar 20	Feb 10
December	Dec 27	Jun 1	Mar 21	Feb 12
2023				
January	Feb 6	May 26	Mar 24	Feb 15
February	Mar 14	Jun 2	Mar 29	Feb 18
March	Apr 18	Jun 15	Apr 5	Feb 22
April	May 24	Jul 2	Apr 11	Feb 25
May	Jul 1	Jul 21	Apr 18	Feb 27
June	Aug 2	Aug 8	Apr 25	Feb 28
July	Aug 19	Aug 26	Apr 30	Feb 27
August	Aug 8	Sep 13	May 3	Feb 26
September	Aug 5	Oct 1	May 4	Feb 23
October	Aug 27	Oct 20	May 1	Feb 22
November	Sep 27	Nov 10	Apr 27	Feb 22
December	Oct 31	Dec 3	Apr 24	Feb 23
2024				
January	Dec 9	Dec 28	Apr 24	Feb 25
February	Jan 18	Jan 22	Apr 27	Mar 1
March	Feb 26	Feb 16	May 2	Mar 4
April	Apr 2	Mar 10	May 9	Mar 8
May	May 8	Apr 1	May 16	Mar 10
June	Jun 17	Apr 23	May 23	Mar 11
July	Jul 28	May 15	May 30	Mar 11
August	Sep 3	Jun 6	Jun 5	Mar 10
September	Oct 8	Jun 26	Jun 9	Mar 8
October	Nov 13	Jul 14	Jun 10	Mar 6
November	Dec 23	Jul 26	Jun 8	Mar 5
December	Jan 31	Jul 29	Jun 4	Mar 6
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
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
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

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