Sky Calendar – January 2020

1. Moon at apogee (farthest from Earth) at 1h UT (distance 404,580 km; angular size 29.5°).
2. First Quarter Moon at 4:46 UT.
3. Quadrantid Meteor Shower peaks at 8h UT. Active between December 28 and January 12. Produces up to 120 meteors per hour. Radiant in northern Boötes.
4. Earth at Perihelion (closest to Sun) at 8h UT. The Sun-Earth distance is 0.983244 a.u. or 147.1 million kilometers.
5. Moon at apogee (40° from Sun, evening sky) at 11h UT. Mag. –4.1.
6. Moon near Venus (21° from Sun, morning sky) at 3h UT. Mag. –4.1 and 7.9.
7. Moon near the Pleiades (evening sky) at 4h UT.
8. Moon near Aldebaran (evening sky) at 21h UT.
9. Mercury at superior conjunction with the Sun at 15h UT. The elusive planet passes into the evening sky.
10. Full Moon at 19:22 UT.
12. Moon near Beehive cluster M44 (morning sky) at 2h UT.
13. Moon near Regulus (morning sky) at 15h UT.
14. Moon at perigee (closest to Earth) at 20:23 UT (distance 365,958 km; angular size 32.7°).
15. Moon near Spica (morning sky) at 9h UT.
16. Last Quarter Moon at 12:59 UT.
17. Mars 4.7° N of Antares (morning sky) at 9h UT. Mags. 1.5 and 1.0.
18. Moon near Antares (morning sky) at 18h UT.
19. Moon near Mars (morning sky) at 21h UT. Mag. 1.5.
20. Moon near Jupiter (21° from Sun, morning sky) at 3h UT. Mag. –1.9.
22. Venus 0.07° SE of Neptune (40° from Sun, evening sky) at 21h UT. Neptune appears like a pale blue dot. Mags. –4.1 and 7.9.
23. Moon near Venus (40° from Sun, evening sky) at 11h UT. Mag. –4.1.
24. Moon at apogee (farthest from Earth) at 21h UT (distance 405,393 km; angular size 29.5°).

More sky events and links at http://Skymaps.com/skycalendar/

All times in Universal Time (UT). (USA Eastern Standard Time = UT – 5 hours.)

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Star Magnitudes

Galaxy ♦
Double Star +
Variable Star ▲
Diffuse Nebula □
Planetary Nebula +
Open Star Cluster ○
Globular Star Cluster ✫

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About the Celestial Objects
Listed on this page are several of the brighter, more interesting celestial objects visible in the evening sky this month (refer to the monthly sky map). The objects are grouped into three categories. Those that can be easily seen with the naked eye (that is, without optical aid), those easily seen with binoculars, and those requiring a telescope to be appreciated. Note, all of the objects (except single stars) will appear more impressive when viewed through a telescope or very large binoculars. They are grouped in this way to highlight objects that can be seen using the optical equipment that may be available to the star gazer.

Tips for Observing the Night Sky
When observing the night sky, and in particular deep-sky objects such as star clusters, nebulae, and galaxies, it’s always best to observe from a dark location. Avoid direct light from street lights and other sources. If possible observe from a dark location away from the light pollution that surrounds many of today’s large cities.

You will see more stars after your eyes adapt to the darkness—usually about 10 to 20 minutes after you go outside. Also, if you need to use a torch to view the sky map, cover the light bulb with red cellophane. This will preserve your dark vision.

Finally, even though the Moon is one of the most stunning objects to view through a telescope, its light is so bright that it brightens the sky and makes many of the fainter objects very difficult to see. So try to observe the evening sky on moonless nights around either New Moon or Last Quarter.

Astronomical Glossary
Conjunction – An alignment of two celestial bodies such that they present the least angular separation as viewed from Earth.
Constellation – A defined area of the sky containing a star pattern.
Diffuse Nebula – A cloud of gas illuminated by nearby stars.
Double Star – Two stars that appear close to each other in the sky; either linked by gravity so that they orbit each other (binary star) or lying at different distances from Earth (optical double). Apparent separation of stars is given in seconds of arc (").
Ecliptic – The path of the Sun’s center on the celestial sphere as seen from Earth.
Elongation – The angular separation of two celestial bodies. For Mercury and Venus the greatest elongation occurs when they are at their most angular distance from the Sun as viewed from Earth.
Galaxy – A mass of up to several billion stars held together by gravity.
Globular Star Cluster – A ball-shaped group of several thousand old stars.
Light Year (ly) – The distance a beam of light travels at 300,000 km/sec in one year.
Magnitude – The brightness of a celestial object as it appears in the sky.
Open Star Cluster – A group of tens or hundreds of relatively young stars.
Opposition – When a celestial body is opposite the Sun in the sky.
Planetary Nebula – The remains of a shell of gas blown off by a star.
Universal Time (UT) – A time system used by astronomers. Also known as Greenwich Mean Time. USA Eastern Standard Time (for example, New York) is 5 hours behind UT.
Variable Star – A star that changes brightness over a period of time.

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