

MAY 2008 ASTRONOMY CALENDAR BY DAVE MITSKY

All times, unless otherwise noted, are UT (subtract four hours and, when appropriate, one calendar day for EDT)

- 5/1 May Day or Beltane, a cross-quarter day; Uranus is 3 degrees south of the Moon at 23:00
- 5/2 Mercury is 2 degrees south of the bright open cluster M45 (the Pleiades or Praesepe) in Taurus at 13:00
- 5/3 Saturn is stationary, with prograde (eastern) motion to commence, at 13:00
- 5/4 Mercury is its greatest heliocentric latitude north today
- 5/5 New (Dark) Moon (lunation 1056) occurs at 12:18; the peak of the Eta Aquarid meteor shower (10/hour for northern hemisphere observers) occurs at 18:00
- 5/6 The Moon is at perigee, subtending 33'24" from a distance of 357,771 km (222,308 miles) at 3:18 (large tides will result); the Moon is 0.9 degree north of M45 at 12:00; Mercury is 3 degrees south of the Moon at 22:00
- 5/9 Jupiter is stationary, with retrograde (western) motion to commence, at 15:00
- 5/10 Mercury is 8 degrees north of the first magnitude star Aldebaran (Alpha Tauri) at 6:00; Mars is 0.2 degree south of the Moon, with an occultation taking place in southern Asia, northern Africa, and most of Europe, at 14:00
- 5/11 The Moon is 0.2 degree south of the bright open cluster M44 (the Beehive Cluster or Praesepe) in Cancer at 2:00
- 5/12 First Quarter Moon occurs at 3:47; the Moon is 1.2 degrees south of the first magnitude star Regulus (Alpha Leonis), with an occultation taking place in southern South America and a portion of Antarctica, at 19:00
- 5/13 Mars is at aphelion at 2:00; Saturn is 3 degrees north of the Moon at 0:00
- 5/14 Mercury (magnitude 0.3) is at greatest eastern elongation (22 degrees) at 4:00
- 5/20 Full Moon, known as the Milk or Planting Moon and the smallest one of the year, occurs at 2:11; the Moon is at apogee, subtending 29'24" from a distance of 406,403 km (252,527 miles), at 14:27; the Moon is 0.2 degree south of the first magnitude star Antares (Alpha Scorpii), with an occultation taking place in southern Africa and eastern South America, at 23:00
- 5/23 Mars is 0.01 degree north of M44 at 6:00
- 5/24 Jupiter is 2 degrees north of the Moon at 11:00
- 5/26 Mercury is stationary at 21:00; Neptune is stationary at 22:00
- 5/27 Neptune is 0.6 degree south of the Moon, with an occultation taking place in western Asia, southeastern Europe, and northern Africa, at 3:00
- 5/28 Mercury is at the descending node today; Last Quarter Moon occurs at 2:57; the Curtiss Cross, an X-shaped illumination effect located between the craters Parry and Gambart, is predicted to occur at 15:35
- 5/29 Uranus is 4 degrees south of the Moon at 9:00

The Eta Aquarid meteor shower is predicted to be more active than usual for the next few years. The lunar phase is very favorable this year but the radiant rises too close to dawn for northern hemisphere observers to present an optimum view of the shower.

The Moon is located in Aquarius and is 24.8 days old on May 1 at 0:00 UT. The Moon is at its greatest northern declination on May 8 (+28 degree) and its greatest southern declination on May 22 (-28 degrees). Longitudinal libration is at maximum (7 degrees) on May 12 and at minimum (-8 degrees) on May 28. Latitudinal libration is at maximum (7 degrees) on May 19 and at minimum (-7 degrees) on May 6. Times and dates for the lunar light rays predicted to occur in May are available at <http://www.lunar-occultations.com/rlo/rays/rays.htm>

The Sun is located in Aries on May 1.

Brightness, apparent size, illumination, distance from the Earth in astronomical units, and

location data for the planets and Pluto on May 1: Mercury (-0.9 magnitude, 5.9", 75% illuminated, 1.13 a.u., Taurus), Venus (-3.9 magnitude, 9.9", 98% illuminated, 1.69 a.u., Pisces), Mars (1.2 magnitude, 5.8", 91% illuminated, 1.63 a.u., Gemini), Jupiter (-2.4 magnitude, 41.1", 99% illuminated, 4.79 a.u., Sagittarius), Saturn (0.5 magnitude, 18.7", 100% illuminated, 8.89 a.u., Leo), Uranus (5.9 magnitude, 3.4", 100% illuminated, 20.53 a.u., Aquarius), Neptune (7.9 magnitude, 2.3", 100% illuminated, 30.00 a.u., Capricornus), and Pluto (13.9 magnitude, 0.1", 100% illuminated, 30.63 a.u., Sagittarius).

During May, Mercury is situated in the northwest, Mars in the west, and Saturn in the southwest in the evening; Mars and Saturn are located in the west at midnight; Jupiter can be found in the south and Uranus in the east at dawn.

Mercury's best evening northern hemisphere apparition of the year takes place during the first half of the month. From May 6 to May 18, the Messenger of the Gods is at least 10 degrees above the horizon in the west-northwest at our latitude of 40 degrees north. When it reaches greatest elongation on May 14, Mercury sets two hours after the Sun. As Mercury grows in apparent size but is illuminated increasingly less during the course of the month, the planet's brightness fades dramatically by more than four magnitudes.

Venus is very difficult to observe this month as it approaches superior conjunction in June.

Mars is five degrees south of the first magnitude star Pollux on the night of May 5. The Red Planet travels westward through Gemini at the rate of 0.5 degree/day and enters Cancer on May 5. It is less than 3 arc minutes northeast of Eta Cancri (magnitude 5.3) from 8:00 to 9:30 p.m. DST on the night of May 19. Mars traverses through the northern half of the naked-eye open cluster M44 between May 21 and May 23. It passes less than one arc minute south of 39 Cancri (magnitude 6.4) at approximately 11:30 p.m. DST. By the end of the month, Mars subtends only 4.9 arc seconds and shines at magnitude 1.5.

Jupiter rises shortly after midnight in early May. On May 9, the giant planet begins its retrograde loop and heads back towards the Teapot of Sagittarius. Jupiter increases in brightness by -0.2 in magnitude during the month. Click on http://skyandtelescope.com/observing/objects/planets/article_107_1.asp to determine transit times of the central meridian by the Great Red Spot. Data on the Galilean satellites is available at <http://skytonight.com/observing/objects/javascript/3307071.html>

Saturn's disk subtends 18 arc minutes this month. Its rings span 41 arc minutes and are inclined at an angle of 10 degrees. On the nights of May 12 and May 28, Titan (magnitude 8.3) is just north of Saturn. It is south of the planet on May 4 and May 20. Rhea, Dione, Tethys, and Enceladus shine respectively at magnitudes 9.6, 10.3, 10.2, and 11.7. Iapetus is west of Saturn by the listed separations on the following dates: May 2 (10"), May 8 (26"), May 12 (32"), May 16 (36"), May 20 (35"), May 26 (28"), and May 30 (20"). For further information on Saturn's satellites, browse <http://skytonight.com/observing/objects/javascript/3308506.html>

At the end of May, Uranus can be seen before dawn just south of the Circlet of Pisces. It lies about 5 degrees to the east of the fourth magnitude star Phi Aquarii.

Neptune is 2.4 degrees north of Delta Capricorni in the morning sky.

The dwarf planet Pluto is a month away from opposition. It can be found in northwestern Sagittarius well after midnight.

Comet C/2006 Q1 (McNaught) passes northeastward through Hydra during May. It is located about 20 arc minutes south of NGC 3091, an eleventh magnitude elliptical galaxy, on the night of May 16.

Asteroid 7 Iris fades in brightness from magnitude 9.9 to 10.5 as it glides through Virgo on a northwestward course this month. From May 5 to May 7, the minor planet passes very close to the edge-on spiral galaxy M104.

Asteroid 5 Astraea, which reached opposition last month, is less than five arc seconds south of the sixth magnitude star 37 Virginis on the nights of May 8 and May 9. It shines at approximately tenth magnitude.

The slightly brighter asteroid 41 Daphne also travels through north central Virgo this month.

Eighty binary and multiple stars for May: 1 Bootis, Struve 1782, Tau Bootis, Struve 1785, Struve 1812 (Bootes); 2 Canum Venaticorum, Struve 1624, Struve 1632, Struve 1642, Struve 1645, 7 Canum Venaticorum, Alpha Canum Venaticorum (Cor Caroli), h2639, Struve 1723, 17 Canum Venaticorum, Otto Struve 261, Struve 1730, Struve 1555, h1234, 25 Canum Venaticorum, Struve 1769, Struve 1783, h1244 (Canes Venatici); 2 Comae Berenices, Struve 1615, Otto Struve 245, Struve 1633, 12 Comae Berenices, Struve 1639, 24 Comae Berenices, Otto Struve 253, Struve 1678, 30 Comae Berenices, Struve 1684, Struve 1685, 35 Comae Berenices, Burnham 112, h220, Struve 1722, Beta Comae Berenices, Burnham 800, Otto Struve 266, Struve 1748 (Coma Berenices); h4481, h4489, Struve 1604, Delta Corvi, Burnham 28, h1218, Struve 1669 (Corvus); H N 69, h4556 (Hydra); Otto Struve 244, Struve 1600, Struve 1695, Zeta Ursae Majoris (Mizar), Struve 1770, Struve 1795, Struve 1831 (Ursa Major); Struve 1616, Struve 1627, 17 Virginis, Struve 1648, Struve 1658, Struve 1677, Struve 1682, Struve 1689, Struve 1690, 44 Virginis, Struve 1719, Theta Virginis, 54 Virginis, Struve 1738, Struve 1740, Struve 1751, 81 Virginis, Struve 1764, Struve 1775, 84 Virginis, Struve 1788 (Virgo)

Challenge binary star for May: 48 Virginis

Notable variable star for May: R Hydrae (Hydra)

Notable carbon star for May: SS Virginis

One hundred and sixty-five deep-sky objects for May: NGC 5248 (Bootes); M3, M51, M63, M94, M106, NGC 4111, NGC 4138, NGC 4143, NGC 4151, NGC 4214, NGC 4217, NGC 4244, NGC 4346, NGC 4369, NGC 4449, NGC 4485, NGC 4490, NGC 4618, NGC 4631, NGC 4656, NGC 4868, NGC 5005, NGC 5033, NGC 5297, NGC 5353, NGC 5354, Up 1 (Canes Venatici); Mel 111, M53, M64, M85, M88, M91, M98, M99, M100, NGC 4064, NGC 4150, NGC 4203, NGC 4212, NGC 4251, NGC 4274, NGC 4278, NGC 4293, NGC 4298, NGC 4302, NGC 4314, NGC 4350, NGC 4414, NGC 4419, NGC 4448, NGC 4450, NGC 4459, NGC 4473, NGC 4474, NGC 4494, NGC 4559, NGC 4565, NGC 4651, NGC 4689, NGC 4710, NGC 4725, NGC 4874, NGC 5053 (Coma Berenices); NGC 4027, NGC 4038-9, NGC 4361 (Corvus); M68, M83, NGC 4105, NGC 4106, NGC 5061, NGC 5101, NGC 5135 (Hydra); M40, NGC 4036, NGC 4041, NGC 4051, NGC 4062, NGC 4085, NGC 4088, NGC 4096, NGC 4100, NGC 4144, NGC 4157, NGC 4605, NGC 5308, NGC 5322 (Ursa Major); M49, M58, M59, M60, M61, M84, M86, M87, M89, M90, M104, NGC 4030, NGC 4073, NGC 4168, NGC 4179, NGC 4206, NGC 4215, NGC 4216, NGC 4224, NGC 4235, NGC 4260, NGC 4261, NGC 4267, NGC 4281, NGC 4339, NGC 4343, NGC 4365, NGC 4371, NGC 4378, NGC 4380, NGC 4387, NGC 4388, NGC 4402, NGC 4429, NGC 4435, NGC 4438, NGC 4517, NGC 4526, NGC 4535, NGC 4536, NGC 4546, NGC 4550, NGC 4551, NGC 4567, NGC 4568, NGC 4570, NGC 4593, NGC 4596, NGC 4636, NGC 4638, NGC 4639, NGC 4643, NGC 4654, NGC 4666, NGC 4697, NGC 4698, NGC 4699, NGC 4753, NGC 4754, NGC 4760, NGC 4762, NGC 4866, NGC 4900, NGC 4958, NGC 5044, NGC 5054, NGC 5068, NGC 5077, NGC 5084, NGC 5087, NGC 5147, NGC 5170, NGC 5247, NGC 5363, NGC 5364 (Virgo)

Top ten deep-sky objects for May: M3, M51, M63, M64, M83, M87, M104, M106, NGC 4449, NGC 4565

Top ten deep-sky binocular objects for May: M3, M51, M63, M64, M84, M86, M87, M104, M106, Mel 111

Challenge deep-sky object for May: 3C 273 (Virgo)

The objects listed above are located between 12:00 and 14:00 hours of right ascension.