Астрономический календарь на 2017 год

по месяцам на каждый день для Москвы

(время московское)

Сгенерировано при помощи он-лайн календаря https://www.calsky.com/

ЯНВАРЬ

Москва, Россия Lon: +38d00m00.00s Lat: +56d00m00.00s Alt: 194m Geoid Alt: 179m

Sunday 1 January 2017Time (24-hour clock) Object (Link) Event

9h37m Mars Conjunction in Right Ascension with Neptune: only 1.2' separated from center of Neptune, position angle=360.00° N

9h53m Mars Conjunction with Neptune: only 1.1' separated from center of Neptune, position angle=337.82° N. Distance to earth: 1.642 AU

9h53m Mars (0.9 mag) Close to Neptune: only 1.13' separated from center of Neptune, brightness: 7.9 mag, position angle=336.50° NW; Sun elongation=58.69° East (evening)

18.1h Moon Close to 29 Cap, SAO 164263, 5.3mag, with Sun below horizon, Separation=2.30°, Limb separation=2.04° =3.98 lunar dia., Position angle=254.5° W, Azimuth az=224.7°, Altitude h=9.2°, RA=21h16.7m Dec=-15°06.0', Moon phase=10.9%, Sun altitude hsun=-15.0°

18.8h Moon Close to 18 Aqr, SAO 164364 (Double star, separation >10"), 5.5mag, Separation=1.64°, Limb separation=1.38° =2.69 lunar dia., Position angle=341.6° N, Azimuth az=234.2°, Altitude h=7.3°, RA=21h25.1m Dec=-12°48.3', Moon phase=11.1%, Sun altitude hsun=-21.3°

19.1h Moon Close to 42 Cap, SAO 164580 (Close double star), 5.2mag, with Sun below horizon, Separation=3.57°, Limb separation=3.32° =6.47 lunar dia., Position angle=84.1° E, Azimuth az=233.8°, Altitude h=6.1°, RA=21h42.4m Dec=-13°58.3', Moon phase=11.2%, Sun altitude hsun=-23.8°

Monday 2 January 2017Time (24-hour clock) Object (Link) Event

16.1h Moon Close to Venus, -4.4mag, with Sun below horizon, Separation=2.33°, Limb separation=2.08° =4.00 lunar dia., Position angle=229.8° SW, Azimuth az=185.2°, Altitude h=20.9°, RA=22h07.1m Dec=-13°01.3', Moon phase=17.5%, Sun altitude hsun=-0.2°

17.7h Moon Close to Mu Cap, SAO 164713, 5.1mag, with Sun below horizon, Separation=5.92°, Limb separation=5.66° =10.90 lunar dia., Position angle=248.9° W, Azimuth az=212.5°, Altitude h=15.6°, RA=21h54.2m Dec=-13°28.3', Moon phase=18.0%, Sun altitude hsun=-12.0°

18.1h Moon Close to 38 Aqr, SAO 164910, 5.4mag, with Sun below horizon, Separation=1.50°, Limb separation=1.24° =2.39 lunar dia., Position angle=259.2° W, Azimuth az=214.5°, Altitude h=17.0°, RA=22h11.5m Dec=-11°28.9', Moon phase=18.2%, Sun altitude hsun=-15.0°

20.3h Moon Close to Sig Aqr, SAO 165134, 4.8mag, with Sun below horizon, Separation=2.48°, Limb separation=2.22° =4.29 lunar dia., Position angle=84.6° E, Azimuth az=240.9°, Altitude h=6.1°, RA=22h31.5m Dec=-10°35.5', Moon phase=18.9%, Sun altitude hsun=-33.4°

Tuesday 3 January 2017Time (24-hour clock) Object (Link) Event

13h54.6m Moon Max. Libration West: Crater Grimaldi is tipped into view (Earth's selenographic longitude: -5.923°, latitude: +0.985°)

16.9h Moon Close to Mars, 0.9mag, with Sun below horizon, Separation=3.53°, Limb separation=3.28° =6.25 lunar dia., Position angle=262.4° W, Azimuth az=187.2°, Altitude h=25.8°, RA=22h52.9m Dec= -8°02.0', Moon phase=26.5%, Sun altitude hsun=-6.0°

17h Meteor Maximum Quadrantids (QUA) ZHR=130 Velocity=42.9km/s (rather rapid)

Radiant: RA=15.3h/230° Dec=49.6° (J2000) (in constellation Bootes/Boo)

Solar longitude=283.2° (J2000)

Stream active from 31. December to 6. January

17.3h Moon Close to Lam Aqr, SAO 146362, 3.7mag, with Sun below horizon, Separation=3.52°, Limb separation=3.26° =6.20 lunar dia., Position angle=270.0° W, Azimuth az=193.9°, Altitude h=25.7°, RA=22h53.5m Dec= -7°29.4', Moon phase=26.7%, Sun altitude hsun=-9.0°

22.1h Moon Close to Phi Aqr, SAO 146585, 4.2mag, Separation=0.69°, Limb separation=0.43° =0.82 lunar dia., Position angle=339.7° N, Azimuth az=257.8°, Altitude h=1.3°, RA=23h15.2m Dec= -5°57.5', Moon phase=28.6%, Sun altitude hsun=-47.2°; (Northern limit: 38°00'E 27°21'N, alt= 3.8°, bright limb; Southern limit: 38°00'E 4°10'S, alt= 6.6°, bright limb)

Wednesday 4 January 2017Time (24-hour clock) Object (Link) Event

16h55.4m Moon Immersion of 27 Psc, SAO 147008 (Close double star), 4.9mag, Position angle=128.7°, Azimuth az=170.0°, Altitude h=30.1°, RA=23h59.5m Dec= -3°27.8', Moon phase=36.5%, Sun altitude hsun=-6.1° (dark limb); (Southern limit: 38°00'E 54°03'N, alt=32.5°, bright limb)

17h17.2m Sun Perihelion (distance to sun: 0.9833 AU)

17h28.2m Moon Emersion of 27 Psc, SAO 147008 (Close double star), 4.9mag, Position Angle=182.0°, Azimuth az=179.5°, Altitude h=30.6°, RA=23h59.5m Dec= -3°27.8', Moon phase=36.8%, Sun altitude hsun=-10.1° (bright limb); (Southern limit: 38°00'E 54°03'N, alt=32.5°, bright limb)

18.1h Moon Close to 20 Psc, SAO 146915, 5.5mag, with Sun below horizon, Separation=2.96°, Limb separation=2.69° =5.07 lunar dia., Position angle=278.1° W, Azimuth az=193.7°, Altitude h=30.6°, RA=23h48.8m Dec= -2°40.1', Moon phase=37.1%, Sun altitude hsun=-15.0°

18h45.5m Moon Immersion of 29 Psc, SAO 147041, 5.1mag, Position angle=84.4°, Azimuth az=200.9°, Altitude h=29.3°, RA= 0h02.7m Dec= -2°56.1', Moon phase=37.3%, Sun altitude hsun=-20.3° (dark limb); (Southern limit: 38°00'E 41°12'N, alt=39.3°, bright limb)

Thursday 5 January 2017Time (24-hour clock) Object (Link) Event

4h23m Sun Rotation axis of the Sun is straight up (Position angle: 0.0°, heliographic latitude: -3.5°)

22h47.0m Moon First Quarter (diameter: 31.9779', declination: +3.040°)

Friday 6 January 2017Time (24-hour clock) Object (Link) Event

0h01.7m Moon Topocentric First Quarter (Altitude= +6.0°, topocentric diameter: 32.051', topocentric airfree declination: 2.47°)

0.4h Moon Close to 89 Psc, SAO 109793, 5.1mag, with Sun below horizon, Separation=3.78°, Limb separation=3.52° =6.59 lunar dia., Position angle=72.0° E, Azimuth az=267.7°, Altitude h=6.1°, RA= 1h18.7m Dec= +3°42.1', Moon phase=50.9%, Sun altitude hsun=-56.5°

17.8h Moon Close to Mu Psc, SAO 109926 (Double star, separation >10"), 4.8mag, with Sun below horizon, Separation=3.71°, Limb separation=3.43° =6.33 lunar dia., Position angle=277.1° W, Azimuth az=158.2°, Altitude h=38.5°, RA= 1h31.1m Dec= +6°13.8', Moon phase=59.0%, Sun altitude hsun=-12.0°

17.8h Moon Close to Nu Psc, SAO 110065, 4.5mag, with Sun below horizon, Separation=0.91°, Limb separation=0.64° =1.18 lunar dia., Position angle=258.5° W, Azimuth az=155.0°, Altitude h=37.2°, RA= 1h42.3m Dec= +5°34.3', Moon phase=59.0%, Sun altitude hsun=-12.0°

Saturday 7 January 2017Time (24-hour clock) Object (Link) Event

1.8h Moon Close to Xi 1 Cet, SAO 110408 (Close double star), 4.4mag, with Sun below horizon, Separation=3.68°, Limb separation=3.41° =6.32 lunar dia., Position angle=60.7° NE, Azimuth az=277.1°, Altitude h=6.1°, RA= 2h13.9m Dec= +8°55.4', Moon phase=62.7%, Sun altitude hsun=-53.9°

Pluto Conjunction, 1.0° separated from center of Sun. Distance to earth: 34.230 AU

15h25.9m Moon Max. Libration (6.966°)

17.8h Moon Close to Xi 2 Cet, SAO 110543, 4.3mag, with Sun below horizon, Separation=3.36°, Limb separation=3.08° =5.63 lunar dia., Position angle=245.6° SW, Azimuth az=141.5°, Altitude h=37.0°, RA= 2h29.1m Dec= +8°32.0', Moon phase=70.0%, Sun altitude hsun=-12.0°

18.2h Moon Close to Xi Ari, SAO 92932 (Close double star), 5.5mag, with Sun below horizon, Separation=4.10°, Limb separation=3.83° =6.99 lunar dia., Position angle=279.5° W, Azimuth az=148.5°, Altitude h=41.1°, RA= 2h25.7m Dec=+10°41.1', Moon phase=70.1%, Sun altitude hsun=-15.0°

19h34.1m Moon Immersion of Mu Cet, SAO 110723 (Multiple star system), 4.3mag, Position angle=97.2°, Azimuth az=169.7°, Altitude h=43.8°, RA= 2h45.9m Dec=+10°11.0', Moon phase=70.8%, Sun altitude hsun=-26.6° (dark limb); (Southern limit: 38°00'E 44°31'N, alt=55.7°, bright limb)

21.7h Moon Close to 38 Ari, SAO 93083 (Close double star), 5.2mag, Separation=2.07°, Limb separation=1.79° =3.27 lunar dia., Position angle=341.6° N, Azimuth az=213.1°, Altitude h=42.6°, RA= 2h45.9m Dec=+12°30.9', Moon phase=71.7%, Sun altitude hsun=-43.7°

Sunday 8 January 2017Time (24-hour clock) Object (Link) Event

3.8h Moon Golden Handle visible on the Moon from 3.6h - 3.8h (sun rises on the Jura mountains, while Sinus Iridum is still in shadow)

17.4h Moon Close to 5 Tau, SAO 93469 (Close double star), 4.1mag, with Sun below horizon, Separation=1.72°, Limb separation=1.45° =2.63 lunar dia., Position angle=255.0° W, Azimuth az=117.3°, Altitude h=32.2°, RA= 3h31.8m Dec=+12°59.5', Moon phase=79.9%, Sun altitude hsun=-9.0°

Monday 9 January 2017Time (24-hour clock) Object (Link) Event
8h42.6m Moon Max. Libration North: North Pole and Mare Frigoris are tipped into view (Earth's selenographic longitude: -1.052°, latitude: +6.646°)
12h03m Mercury (0.2 mag) Close to Saturn: 6.8° separated from center of Saturn, brightness: 0.5 mag, position angle=257.00° W; Sun elongation=20.57° West (morning)
16.8h Moon Close to Aldebaran, Alp Tau, SAO 94027 (Multiple star system), 0.9mag, Separation=0.48°, Limb separation=0.20° =0.36 lunar dia., Position angle=346.8° N, Azimuth az=92.9°, Altitude h=22.1°, RA= 4h36.9m Dec=+16°32.4', Moon phase=88.3%, Sun altitude hsun=-4.4°; (Northern limit: 38°00'E 33°22'N, alt=16.0°, bright limb)
17.4h Moon Close to Hyadum I, Gam Tau, SAO 93868 (Close double star), 3.6mag, with Sun below horizon, Separation=4.36°, Limb separation=4.08° =7.40 lunar dia., Position angle=262.9° W, Azimuth az=105.3°, Altitude h=28.8°, RA= 4h20.8m Dec=+15°39.9', Moon phase=88.5%, Sun altitude hsun=-9.0°
17.4h Moon Close to Hyadum II, Del1 Tau, SAO 93897 (Multiple star system), 3.8mag, with Sun below horizon, Separation=3.83°, Limb separation=3.56° =6.44 lunar dia., Position angle=291.1° W, Azimuth az=103.3°, Altitude h=30.0°, RA= 4h23.9m Dec=+17°34.7', Moon phase=88.5%, Sun altitude hsun=-9.0°
17.4h Moon Close to The1 Tau, SAO 93955 (Close double star), 3.8mag, with Sun below horizon, Separation=2.24°, Limb separation=1.96° =3.55 lunar dia., Position angle=265.5° W, Azimuth az=103.1°, Altitude h=27.9°, RA= 4h29.6m Dec=+15°59.8', Moon phase=88.5%, Sun altitude hsun=-9.0°
17.4h Moon Close to The2 Tau, SAO 93957 (Multiple star system), 3.4mag, with Sun below horizon, Separation=2.22°, Limb separation=1.95° =3.53 lunar dia., Position angle=263.1° W, Azimuth az=103.1°, Altitude h=27.8°, RA= 4h29.6m Dec=+15°54.3', Moon phase=88.5%, Sun altitude hsun=-9.0°
17.8h Moon Close to 71 Tau, SAO 93932 (Double star, separation >10"), 4.5mag, with Sun below horizon, Separation=3.03°, Limb separation=2.75° =4.98 lunar dia., Position angle=259.0° W, Azimuth az=109.3°, Altitude h=31.1°, RA= 4h27.3m Dec=+15°39.2', Moon phase=88.6%, Sun altitude hsun=-12.0°
17.8h Moon Close to 75 Tau, SAO 93950 (Close double star), 5.0mag, with Sun below horizon, Separation=2.48°, Limb separation=2.20° =3.99 lunar dia., Position angle=273.9° W, Azimuth az=108.3°, Altitude h=31.4°, RA= 4h29.4m Dec=+16°23.6', Moon phase=88.6%, Sun altitude hsun=-12.0°
17.8h Moon Close to Del2 Tau, SAO 93907 (Multiple star system), 4.8mag, with Sun below horizon, Separation=3.72°, Limb separation=3.44° =6.23 lunar dia., Position angle=289.4° W, Azimuth az=108.6°, Altitude h=32.9°, RA= 4h25.1m Dec=+17°28.8', Moon phase=88.6%, Sun altitude hsun=-12.0°
17.8h Moon Close to Del3 Tau, SAO 93923 (Multiple star system), 4.3mag, with Sun below horizon, Separation=3.61°, Limb separation=3.34° =6.04 lunar dia., Position angle=298.5° NW, Azimuth az=107.9°, Altitude h=33.1°, RA= 4h26.5m Dec=+17°57.8', Moon phase=88.6%, Sun altitude hsun=-12.0°
17.8h Moon Close to NSV 01627, SAO 93975 (Multiple star system), 4.8mag, with Sun below horizon, Separation=1.96°, Limb separation=1.69° =3.06 lunar dia., Position angle=270.2° W, Azimuth az=107.9°, Altitude h=31.0°, RA= 4h31.5m Dec=+16°13.6', Moon phase=88.6%, Sun altitude hsun=-12.0°
17.8h Moon Close to Sig1 Tau, SAO 94051 (Close double star), 5.1mag, Separation=0.39°, Limb separation=0.12° =0.21 lunar dia., Position angle=166.8° S, Azimuth az=106.3°, Altitude h=29.6°, RA= 4h40.1m Dec=+15°49.8', Moon phase=88.6%, Sun altitude hsun=-12.1°; (Southern limit: 38°00'E 73°05'N, alt=25.4°, bright limb)
17.9h Moon Close to Sig2 Tau, SAO 94054 (Double star, separation >10"), 4.7mag, Separation=0.28°, Limb separation=0.01° =0.01 lunar dia., Position angle=166.8° S, Azimuth az=107.6°, Altitude h=30.5°, RA= 4h40.3m Dec=+15°56.9', Moon phase=88.6%, Sun altitude hsun=-12.9°; (Southern limit: 38°00'E 56°48'N, alt=30.4°, bright limb)
18.2h Moon Close to 58 Tau, SAO 93876, 5.3mag, with Sun below horizon, Separation=4.69°, Limb separation=4.42° =7.98 lunar dia., Position angle=255.6° W, Azimuth az=116.5°, Altitude h=34.3°, RA= 4h21.6m Dec=+15°08.0', Moon phase=88.7%, Sun altitude hsun=-15.0°
18.2h Moon Close to 81 Tau, SAO 93978, 5.5mag, with Sun below horizon, Separation=2.21°, Limb separation=1.94° =3.50 lunar dia., Position angle=255.8° W, Azimuth az=113.6°, Altitude h=33.6°, RA= 4h31.6m Dec=+15°43.5', Moon phase=88.7%, Sun altitude hsun=-15.0°

Tuesday 10 January 2017Time (24-hour clock) Object (Link) Event
0.5h Moon Close to 97 Tau, SAO 94164, 5.1mag, Separation=2.04°, Limb separation=1.77° =3.18 lunar dia., Position angle=354.0° N, Azimuth az=232.0°, Altitude h=43.7°, RA= 4h52.4m Dec=+18°51.9', Moon phase=90.6%, Sun altitude hsun=-56.0°
5.5h Moon Close to 104 Tau, SAO 94332 (Close double star), 4.9mag, with Sun below horizon, Separation=1.83°, Limb separation=1.55° =2.83 lunar dia., Position angle=25.6° NE, Azimuth az=296.4°, Altitude h=5.1°, RA= 5h00.5m Dec=+18°39.8', Moon phase=92.0%, Sun altitude hsun=-27.4°
9h08.6m Moon Perigee (distance moon center to earth center: 363257.1 km; closest point on earth ellipsoid with latitude 18.1° (WGS84), distance to moon center: 356881.0 km, apparent diameter: 33'29.1")
12h08m Carrington Solar Rotation Begin of Carrington rotation number 2186
17.8h Moon Close to 111 Tau, SAO 94526, 5.0mag, with Sun below horizon, Separation=3.88°, Limb separation=3.60° =6.53 lunar dia., Position angle=263.4° W, Azimuth az=96.3°, Altitude h=25.3°, RA= 5h25.4m Dec=+17°23.7', Moon phase=95.0%, Sun altitude hsun=-12.0°
17.8h Moon Close to 119 Tau, SAO 94628, 4.3mag, with Sun below horizon, Separation=2.15°, Limb separation=1.88° =3.40 lunar dia., Position angle=291.5° W, Azimuth az=93.9°, Altitude h=25.2°, RA= 5h33.2m Dec=+18°36.2', Moon phase=95.0%, Sun altitude hsun=-12.0°
18.2h Moon Close to 115 Tau, SAO 94554 (Multiple star system), 5.4mag, with Sun below horizon, Separation=3.42°, Limb separation=3.14° =5.69 lunar dia., Position angle=271.8° W, Azimuth az=100.3°, Altitude h=28.6°, RA= 5h28.2m Dec=+17°58.4', Moon phase=95.1%, Sun altitude hsun=-15.0°
20.8h Moon Close to 130 Tau, SAO 94858 (Close double star), 5.5mag, Separation=0.29°, Limb separation=0.01° =0.02 lunar dia., Position angle=173.3° S, Azimuth az=135.6°, Altitude h=45.1°, RA= 5h48.4m Dec=+17°43.9', Moon phase=95.6%, Sun altitude hsun=-36.5°; (Southern limit: 38°00'E 57°08'N, alt=43.9°, bright limb)

Wednesday 11 January 2017Time (24-hour clock) Object (Link) Event
0.4h Moon Close to Chi1 Ori, SAO 77705, 4.4mag, Separation=2.13°, Limb separation=1.85° =3.33 lunar dia., Position angle=358.9° N, Azimuth az=212.8°, Altitude h=50.9°, RA= 5h55.4m Dec=+20°16.5', Moon phase=96.3%, Sun altitude hsun=-55.8°
4.3h Moon Close to 64 Ori, SAO 95166 (Close double star), 5.1mag, Separation=1.58°, Limb separation=1.30° =2.36 lunar dia., Position angle=2.8° N, Azimuth az=271.0°, Altitude h=23.3°, RA= 6h04.5m Dec=+19°41.2', Moon phase=97.0%, Sun altitude hsun=-36.9°
4.4h Moon Close to Chi2 Ori, SAO 77911 (Multiple star system), 4.6mag, Separation=2.03°, Limb separation=1.75° =3.18 lunar dia., Position angle=3.0° N, Azimuth az=272.9°, Altitude h=22.5°, RA= 6h04.9m Dec=+20°00.0', Moon phase=97.0%, Sun altitude hsun=-35.8°
7.3h Moon Close to 71 Ori, SAO 95432 (Multiple star system), 5.2mag, with Sun below horizon, Separation=1.40°, Limb separation=1.13° =2.06 lunar dia., Position angle=37.3° NE, Azimuth az=305.0°, Altitude h=0.8°, RA= 6h15.9m Dec=+19°00.8', Moon phase=97.5%, Sun altitude hsun=-12.0°
11h Mercury Magnitude brightens to 0 mag
12h30.0m Moon Max. Decl. North (declination: +18.934°)
This is the 3rd lowest northernmost moon position of the next 10 years. Former lower northern northernmost moon position was at 17.11.2016. Next lower northern northernmost moon position is at 7.2.2017 (calculated for the geocenter)
17.5h Moon Close to Nu Gem, SAO 78423 (Multiple star system), 4.1mag, with Sun below horizon, Separation=3.71°, Limb separation=3.43° =6.27 lunar dia., Position angle=303.7° NW, Azimuth az=77.6°, Altitude h=16.1°, RA= 6h30.0m Dec=+20°11.8', Moon phase=98.8%, Sun altitude hsun=-9.0°
17.6h Moon Close to 26 Gem, SAO 96015 (Close double star), 5.2mag, Separation=0.49°, Limb separation=0.21° =0.39 lunar dia., Position angle=177.1° S, Azimuth az=77.9°, Altitude h=13.2°, RA= 6h43.4m Dec=+17°37.5', Moon phase=98.8%, Sun altitude hsun=-9.9°

Thursday 12 January 2017Time (24-hour clock) Object (Link) Event
14h34.0m Moon Full Moon (diameter: 32.5597', declination: +18.188°)
This is the northernmost full moon of the year. Former more northern full moon was at 14.12.2016. Next more northern full moon is at 2.1.2018 (calculated for the geocenter)
14h43.3m Moon Topocentric Full Moon (Altitude=-12.0°, topocentric diameter: 32.444', topocentric airfree declination: 17.25°, maximum phase: 99.86%)
16.3h Venus Greatest Elongation (47.1° East, in the evenings, brightness: -4.5 mag)
17.5h Moon Close to SAO 96985, XZ 11245, 5.5mag, with Sun below horizon, Separation=2.77°, Limb separation=2.49° =4.59 lunar dia., Position angle=266.8° W, Azimuth az=68.2°, Altitude h=6.1°, RA= 7h32.8m Dec=+17°02.7', Moon phase=99.9%, Sun altitude hsun=-9.2°
17.9h Moon Close to 74 Gem, SAO 97120 (Close double star), 5.0mag, with Sun below horizon, Separation=1.25°, Limb separation=0.98° =1.80 lunar dia., Position angle=291.5° W, Azimuth az=70.8°, Altitude h=8.5°, RA= 7h40.5m Dec=+17°37.9', Moon phase=99.9%, Sun altitude hsun=-12.0°

18.5h Moon Close to 81 Gem, SAO 97221 (Close double star), 4.9mag, Separation=1.31°, Limb separation=1.04° =1.90 lunar dia., Position angle=1.9° N, Azimuth az=76.3°, Altitude h=13.2°, RA= 7h47.1m Dec=+18°27.9', Moon phase=99.9%, Sun altitude hsun=-16.9°

Friday 13 January 2017Time (24-hour clock) Object (Link) Event
0h04m Venus (-4.6 mag) Close to Neptune: only 21.8' separated from center of Neptune, brightness: 7.9 mag, position angle=152.34° SE; Sun elongation=47.14° East (evening)
0h54m Venus Conjunction with Neptune: only 21.9' separated from center of Neptune, position angle=157.81° S. Distance to earth: 0.681 AU
4h39m Venus Conjunction in Right Ascension with Neptune: only 24.6' separated from center of Neptune, position angle=180.00° S
6.4h Moon Close to Zet2 Cnc, SAO 97645 (Multiple star system), 5.1mag, Separation=1.32°, Limb separation=1.05° =1.94 lunar dia., Position angle=13.0° N, Azimuth az=270.6°, Altitude h=21.0°, RA= 8h13.2m Dec=+17°35.5', Moon phase=99.4%, Sun altitude hsun=-19.5°
18.3h Moon Close to The Cnc, SAO 97881 (Multiple star system), 5.3mag, with Sun below horizon, Separation=4.27°, Limb separation=4.00° =7.46 lunar dia., Position angle=313.4° NW, Azimuth az=65.7°, Altitude h=5.7°, RA= 8h32.6m Dec=+18°02.0', Moon phase=98.2%, Sun altitude hsun=-15.0°
23.8h Moon Close to Omi1 Cnc, SAO 98247, 5.2mag, Separation=0.64°, Limb separation=0.37° =0.68 lunar dia., Position angle=12.1° N, Azimuth az=137.5°, Altitude h=43.0°, RA= 8h58.2m Dec=+15°15.2', Moon phase=97.4%, Sun altitude hsun=-54.2°

Saturday 14 January 2017Time (24-hour clock) Object (Link) Event
1.2h Mercury Dichotomy/Half phase
6.9h Moon Close to Pi 2 Cnc, SAO 98456, 5.4mag, with Sun below horizon, Separation=1.69°, Limb separation=1.42° =2.66 lunar dia., Position angle=46.7° NE, Azimuth az=263.1°, Altitude h=22.7°, RA= 9h16.2m Dec=+14°52.0', Moon phase=96.3%, Sun altitude hsun=-15.1°
16.5h Venus Dichotomy/Half phase
19.9h Moon Close to Psi Leo, SAO 98733 (Double star, separation >10"), 5.4mag, with Sun below horizon, Separation=2.02°, Limb separation=1.76° =3.32 lunar dia., Position angle=354.5° N, Azimuth az=73.9°, Altitude h=6.1°, RA= 9h44.7m Dec=+13°56.4', Moon phase=93.7%, Sun altitude hsun=-28.2°

Sunday 15 January 2017Time (24-hour clock) Object (Link) Event
2.0h Moon Close to Nu Leo, SAO 98876 (Close double star), 5.3mag, Separation=1.25°, Limb separation=0.98° =1.84 lunar dia., Position angle=19.0° N, Azimuth az=163.4°, Altitude h=45.4°, RA= 9h59.1m Dec=+12°21.6', Moon phase=92.3%, Sun altitude hsun=-51.8°
7.3h Moon Close to 31 Leo, SAO 98964 (Double star, separation <10"), 4.4mag, with Sun below horizon, Separation=0.66°, Limb separation=0.39° =0.75 lunar dia., Position angle=130.5° SE, Azimuth az=256.1°, Altitude h=21.1°, RA=10h00.8m Dec= +9°54.7', Moon phase=91.0%, Sun altitude hsun=-12.0°
7.4h Moon Close to Regulus, Alp Leo, SAO 98967 (Multiple star system), 1.4mag, Separation=1.66°, Limb separation=1.39° =2.64 lunar dia., Position angle=20.0° N, Azimuth az=258.7°, Altitude h=21.8°, RA=10h00.3m Dec=+11°52.9', Moon phase=91.0%, Sun altitude hsun=-11.2°
21.1h Moon Close to Rho Leo, SAO 118355 (Close double star), 3.8mag, with Sun below horizon, Separation=2.12°, Limb separation=1.85° =3.56 lunar dia., Position angle=300.1° NW, Azimuth az=82.4°, Altitude h=6.1°, RA=10h33.7m Dec= +9°13.0', Moon phase=87.1%, Sun altitude hsun=-38.0°
21h21.7m Moon Max. Libration East: Mare Crisium limb is tipped into view (Earth's selenographic longitude: 6.327°, latitude: -0.488°)

Monday 16 January 2017Time (24-hour clock) Object (Link) Event
2h Mars Magnitude dims to +1 mag
7.3h Moon Close to Chi Leo, SAO 118648 (Multiple star system), 4.6mag, with Sun below horizon, Separation=1.91°, Limb separation=1.65° =3.16 lunar dia., Position angle=69.2° E, Azimuth az=240.1°, Altitude h=26.9°, RA=11h05.9m Dec= +7°14.5', Moon phase=84.0%, Sun altitude hsun=-12.1°
7.3h Moon Close to 59 Leo, SAO 118615 (Double star, separation >10"), 5.0mag, with Sun below horizon, Separation=0.91°, Limb separation=0.65° =1.24 lunar dia., Position angle=127.2° SE, Azimuth az=240.7°, Altitude h=25.2°, RA=11h01.6m Dec= +6°00.5', Moon phase=84.0%, Sun altitude hsun=-12.0°
22.2h Moon Close to Sig Leo, SAO 118804, 4.0mag, with Sun below horizon, Separation=3.42°, Limb separation=3.16° =6.16 lunar dia., Position angle=303.5° NW, Azimuth az=88.3°, Altitude h=6.1°, RA=11h22.0m Dec= +5°56.1', Moon phase=79.0%, Sun altitude hsun=-45.6°

Tuesday 17 January 2017Time (24-hour clock) Object (Link) Event
6.9h Moon Close to 7 Vir, SAO 119156, 5.4mag, with Sun below horizon, Separation=3.41°, Limb separation=3.15° =6.14 lunar dia., Position angle=73.9° E, Azimuth az=219.1°, Altitude h=31.5°, RA=12h00.8m Dec= +3°33.6', Moon phase=75.9%, Sun altitude hsun=-15.1°
7.6h Moon Close to Zavijah, Bet Vir, SAO 119076 (Multiple star system), 3.6mag, with Sun below horizon, Separation=1.05°, Limb separation=0.79° =1.54 lunar dia., Position angle=139.8° SE, Azimuth az=232.7°, Altitude h=24.1°, RA=11h51.6m Dec= +1°40.1', Moon phase=75.6%, Sun altitude hsun=-9.0°
23.8h Moon Close to Zaniah, Eta Vir, SAO 138721 (Close double star), 3.9mag, with Sun below horizon, Separation=1.05°, Limb separation=0.80° =1.58 lunar dia., Position angle=241.8° SW, Azimuth az=100.4°, Altitude h=6.1°, RA=12h20.8m Dec= -0°45.7', Moon phase=69.6%, Sun altitude hsun=-53.3°

Wednesday 18 January 2017Time (24-hour clock) Object (Link) Event
3.6h (4) Vesta →Star chartAsteroid in Opposition
Distance to Sun center=2.506 AU, Distance to Earth=1.523 AU, Magnitude= 6.2 mag, Diameter=530 km, Elongation=177.1° (in constellation Cancer/Cnc)
7.6h Moon Close to Porrima, Gam Vir, SAO 138917 (Multiple star system), 2.8mag, with Sun below horizon, Separation=1.48°, Limb separation=1.23° =2.42 lunar dia., Position angle=88.3° E, Azimuth az=219.1°, Altitude h=26.0°, RA=12h42.5m Dec= -1°32.5', Moon phase=66.6%, Sun altitude hsun=-9.0°
7.6h Moon Close to g29 Virginis (Multiple star system), 3.5mag, with Sun below horizon, Separation=1.48°, Limb separation=1.23° =2.43 lunar dia., Position angle=88.3° E, Azimuth az=219.1°, Altitude h=26.0°, RA=12h42.5m Dec= -1°32.5', Moon phase=66.6%, Sun altitude hsun=-9.0°

Thursday 19 January 2017Time (24-hour clock) Object (Link) Event
7.2h Moon Close to 74 Vir, SAO 139390, 4.7mag, with Sun below horizon, Separation=2.66°, Limb separation=2.41° =4.81 lunar dia., Position angle=109.3° E, Azimuth az=198.8°, Altitude h=26.1°, RA=13h32.8m Dec= -6°20.5', Moon phase=57.3%, Sun altitude hsun=-12.0°
8.4h Moon Close to Jupiter, -2.1mag, with Sun below horizon, Separation=1.93°, Limb separation=1.68° =3.35 lunar dia., Position angle=170.4° S, Azimuth az=218.9°, Altitude h=19.7°, RA=13h25.8m Dec= -7°32.8', Moon phase=56.8%, Sun altitude hsun=-2.9°
12.7h Mercury Greatest Elongation (24.1° West, in the mornings, brightness: -0.2 mag)
23h57.9m Moon Topocentric Last Quarter (Altitude=-10.8°, topocentric diameter: 29.634', topocentric airfree declination: -7.98°)

Friday 20 January 2017Time (24-hour clock) Object (Link) Event
1h13.5m Moon Last Quarter (diameter: 29.7048', declination: -7.430°)
6.6h Moon Close to 95 Vir, SAO 139736, 5.5mag, Separation=0.38°, Limb separation=0.13° =0.27 lunar dia., Position angle=203.1° SW, Azimuth az=179.7°, Altitude h=24.6°, RA=14h07.6m Dec= -9°23.6', Moon phase=48.0%, Sun altitude hsun=-17.0°

Saturday 21 January 2017Time (24-hour clock) Object (Link) Event
7.5h Moon Close to Xi 2 Lib, SAO 158915, 5.5mag, Separation=1.06°, Limb separation=0.81° =1.64 lunar dia., Position angle=20.1° N, Azimuth az=182.1°, Altitude h=22.5°, RA=14h57.7m Dec=-11°28.5', Moon phase=38.3%, Sun altitude hsun=-9.5°; (Southern limit: 38°00'E 49°45'S, alt=47.2°, bright limb)

Sunday 22 January 2017Time (24-hour clock) Object (Link) Event
3h17.3m Moon Apogee (distance moon center to earth center: 404876.9 km; closest point on earth ellipsoid with latitude -13.9° (WGS84), distance to moon center: 398500.0 km, apparent diameter: 29'59.3")
3h33.1m Moon Emersion of Zuben Elakrab, Gam Lib, SAO 159370 (Multiple star system), 3.9mag, Position Angle=255.6°, Azimuth az=117.7°, Altitude h=0.7°, RA=15h36.5m Dec=-14°50.6', Moon phase=30.8%, Sun altitude hsun=-41.4° (dark limb)
6.8h Moon Close to 49 Lib, SAO 159625, 5.5mag, with Sun below horizon, Separation=4.68°, Limb separation=4.43° =8.96 lunar dia., Position angle=106.5° E, Azimuth az=156.4°, Altitude h=14.7°, RA=16h01.3m Dec=-16°34.8', Moon phase=29.7%, Sun altitude hsun=-15.2°
6.8h Moon Close to Eta Lib, SAO 159466, 5.4mag, with Sun below horizon, Separation=0.77°, Limb separation=0.52° =1.06 lunar dia., Position angle=132.4° SE, Azimuth az=160.4°, Altitude h=16.5°, RA=15h45.0m Dec=-15°43.4', Moon phase=29.7%, Sun altitude hsun=-15.0°

7.2h Moon Close to 48 Lib, SAO 159607 (Close double star), 5.0mag, with Sun below horizon, Separation=3.95°, Limb separation=3.70° =7.49 lunar dia., Position angle=76.1° E, Azimuth az=162.2°, Altitude h=18.2°, RA=15h59.1m Dec=-14°19.5', Moon phase=29.5%, Sun altitude hsun=-12.0°
22h01.8m Moon Max. Libration South: South Pole is tipped into view (Earth's selenographic longitude: -0.228°, latitude: -6.782°)

Monday 23 January 2017Time (24-hour clock) Object (Link) Event
6.8h Moon Close to Phi Oph, SAO 159963 (Multiple star system), 4.3mag, Separation=0.80°, Limb separation=0.56° =1.13 lunar dia., Position angle=14.6° N, Azimuth az=149.5°, Altitude h=12.9°, RA=16h32.1m Dec=-16°38.8', Moon phase=21.5%, Sun altitude hsun=-15.3°; (Southern limit: 38°00'E 25°30'S, alt=70.2°, bright limb)
7.2h Moon Close to 24 (Scorpii)/Ophiuchi, SAO 160046, 4.9mag, with Sun below horizon, Separation=2.56°, Limb separation=2.31° =4.68 lunar dia., Position angle=96.5° E, Azimuth az=153.1°, Altitude h=12.7°, RA=16h42.5m Dec=-17°46.3', Moon phase=21.3%, Sun altitude hsun=-12.0°
10h37.6m Moon Max. Libration (6.797°)

Tuesday 24 January 2017Time (24-hour clock) Object (Link) Event
7.9h Moon Close to Saturn, 0.6mag, with Sun below horizon, Separation=3.84°, Limb separation=3.60° =7.24 lunar dia., Position angle=140.4° SE, Azimuth az=153.7°, Altitude h=8.5°, RA=17h33.5m Dec=-22°00.7', Moon phase=13.9%, Sun altitude hsun=-6.0°

Wednesday 25 January 2017Time (24-hour clock) Object (Link) Event
7.6h Moon Close to SAO 161564, XZ 25418 (Multiple star system), 5.1mag, with Sun below horizon, Separation=4.53°, Limb separation=4.29° =8.58 lunar dia., Position angle=72.5° E, Azimuth az=136.3°, Altitude h=6.1°, RA=18h32.4m Dec=-18°23.3', Moon phase=8.0%, Sun altitude hsun=-8.1°
15h01.7m Moon Max. Decl. South (declination: -18.902°)
This is the 2nd lowest southernmost moon position of the next 10 years, and the 2nd lowest of the year. Former lower southern southernmost moon position was at 4.11.2016. Next lower southern southernmost moon position is at 21.2.2017 (calculated for the geocenter)

Saturday 28 January 2017Time (24-hour clock) Object (Link) Event
3h07.0m Moon New Moon (diameter: 30.6598', declination: -16.043°)
3h18.0m Moon Topocentric New Moon (Altitude=-40.6°, topocentric diameter: 30.341', topocentric airfree declination: -16.65°, minimum phase: 0.02%)

Sunday 29 January 2017Time (24-hour clock) Object (Link) Event
Honda-Mrkos-Pajdusak →Star chart Comet '45P' brightest
Distance to Sun center=0.800 AU, Distance to Earth center=0.190 AU = 74.0 lunar distances, Relative velocity=24.51 km/s, Magnitude= 2.0 mag, Elongation=12.0°, RA=20h27.9m Dec= -6°53.6' (J2000, geocentric) (in constellation Aquila/Aql)
18.7h Moon Close to 38 Aqr, SAO 164910, 5.4mag, with Sun below horizon, Separation=1.72°, Limb separation=1.46° =2.82 lunar dia., Position angle=70.7° E, Azimuth az=247.2°, Altitude h=1.5°, RA=22h11.5m Dec=-11°28.9', Moon phase=3.0%, Sun altitude hsun=-15.0°
19h39.6m Moon Max. Libration West: Crater Grimaldi is tipped into view (Earth's selenographic longitude: -4.987°, latitude: -0.439°)
20h29m Mercury Conjunction in Right Ascension with Pluto (1.2° separated from center of Pluto), position angle=0.00° N
21h07m Mercury (-0.2 mag) Close to Pluto: 1.2° separated from center of Pluto, brightness: 14.3 mag, position angle=358.30° N; Sun elongation=22.14° West (morning)
23h21m Mercury Conjunction with Pluto, 1.2° separated from center of Pluto, position angle=352.39° N. Distance to earth: 1.175 AU

Monday 30 January 2017Time (24-hour clock) Object (Link) Event
17.7h Moon Close to Lam Aqr, SAO 146362, 3.7mag, Separation=1.08°, Limb separation=0.81° =1.55 lunar dia., Position angle=337.6° N, Azimuth az=226.8°, Altitude h=16.6°, RA=22h53.5m Dec= -7°29.4', Moon phase=7.4%, Sun altitude hsun=-6.3°; (Northern limit: 38°00'E 0°21'S, alt=44.3°, bright limb; Southern limit: 38°00'E 42°43'S, alt=46.1°, bright limb)
18.4h Moon Close to Sig Aqr, SAO 165134, 4.8mag, with Sun below horizon, Separation=6.47°, Limb separation=6.21° =11.83 lunar dia., Position angle=250.5° W, Azimuth az=240.0°, Altitude h=6.6°, RA=22h31.5m Dec=-10°35.5', Moon phase=7.6%, Sun altitude hsun=-12.0°
19.7h Moon Close to Phi Aqr, SAO 146585, 4.2mag, with Sun below horizon, Separation=4.57°, Limb separation=4.31° =8.22 lunar dia., Position angle=61.7° NE, Azimuth az=250.0°, Altitude h=6.1°, RA=23h15.2m Dec= -5°57.5', Moon phase=7.9%, Sun altitude hsun=-22.9°

Tuesday 31 January 2017Time (24-hour clock) Object (Link) Event
19.6h Moon Close to 20 Psc, SAO 146915, 5.5mag, Separation=1.34°, Limb separation=1.07° =2.03 lunar dia., Position angle=338.3° N, Azimuth az=244.5°, Altitude h=13.2°, RA=23h48.8m Dec= -2°40.1', Moon phase=14.8%, Sun altitude hsun=-22.2°
20.6h Moon Close to 27 Psc, SAO 147008 (Close double star), 4.9mag, with Sun below horizon, Separation=1.72°, Limb separation=1.45° =2.75 lunar dia., Position angle=81.3° E, Azimuth az=254.7°, Altitude h=6.1°, RA=23h59.5m Dec= -3°27.8', Moon phase=15.1%, Sun altitude hsun=-30.4°
20.8h Moon Close to 29 Psc, SAO 147041, 5.1mag, with Sun below horizon, Separation=2.55°, Limb separation=2.29° =4.33 lunar dia., Position angle=72.4° E, Azimuth az=255.6°, Altitude h=6.1°, RA= 0h02.7m Dec= -2°56.1', Moon phase=15.1%, Sun altitude hsun=-31.3°
21.3h Moon Close to Mars, 1.1mag, with Sun below horizon, Separation=5.91°, Limb separation=5.66° =10.72 lunar dia., Position angle=43.3° NE, Azimuth az=262.4°, Altitude h=6.0°, RA= 0h10.3m Dec= +0°42.0', Moon phase=15.3%, Sun altitude hsun=-35.3°
21.3h Moon Close to Venus, -4.7mag, Separation=4.45°, Limb separation=4.20° =7.96 lunar dia., Position angle=342.1° N, Azimuth az=267.6°, Altitude h=2.6°, RA=23h48.6m Dec= +0°39.3', Moon phase=15.3%, Sun altitude hsun=-35.7°

ФЕВРАЛЬ

Москва, Россия Lon: +38d00m00.00s Lat: +56d00m00.00s Alt: 194m Geoid Alt: 179m

Wednesday 1 February 2017Time (24-hour clock) Object (Link) Event
16h08m Jupiter (-2.2 mag) Close to Spica, Alp Vir, SAO 157923 (Multiple star system): 3.6° separated, brightness: 1.0 mag, Position angle=185.94° S; Sun elongation=108.78° West (morning)

Thursday 2 February 2017Time (24-hour clock) Object (Link) Event
14h31m Venus (-4.8 mag) Close to Mars: 5.4° separated from center of Mars, brightness: 1.1 mag, position angle=92.15° E; Sun elongation=45.28° East (evening)
18.3h Moon Close to Mu Psc, SAO 109926 (Double star, separation >10"), 4.8mag, Separation=1.64°, Limb separation=1.38° =2.55 lunar dia., Position angle=336.9° NW, Azimuth az=201.8°, Altitude h=38.4°, RA= 1h31.1m Dec= +6°13.7', Moon phase=32.9%, Sun altitude hsun=-10.1°; (Northern limit: 38°00'E 44°10'S, alt=39.6°, bright limb)
18.5h Moon Close to 89 Psc, SAO 109793, 5.1mag, with Sun below horizon, Separation=3.96°, Limb separation=3.69° =6.85 lunar dia., Position angle=254.5° W, Azimuth az=209.0°, Altitude h=34.4°, RA= 1h18.7m Dec= +3°42.1', Moon phase=33.0%, Sun altitude hsun=-12.0°
22h25.5m Moon Immersion of Nu Psc, SAO 110065, 4.5mag, Position angle=58.4°, Azimuth az=262.3°, Altitude h=12.0°, RA= 1h42.3m Dec= +5°34.2', Moon phase=34.8%, Sun altitude hsun=-42.9° (dark limb); (Northern limit: 38°00'E 73°09'N, alt= 8.7°, bright limb; Southern limit: 38°00'E 33°43'N, alt= 3.9°, bright limb)

Friday 3 February 2017Time (24-hour clock) Object (Link) Event
18.5h Moon Close to Xi 2 Cet, SAO 110543, 4.3mag, Separation=0.44°, Limb separation=0.17° =0.32 lunar dia., Position angle=158.9° S, Azimuth az=189.0°, Altitude h=42.3°, RA= 2h29.1m Dec= +8°32.0', Moon phase=44.0%, Sun altitude hsun=-11.6°; (Southern limit: 38°00'E 74°22'N, alt=23.9°, bright limb)
18.5h Moon Close to Xi Ari, SAO 92932 (Close double star), 5.5mag, Separation=1.86°, Limb separation=1.59° =2.92 lunar dia., Position angle=338.8° N, Azimuth az=190.8°, Altitude h=44.3°, RA= 2h25.7m Dec=+10°41.1', Moon phase=44.0%, Sun altitude hsun=-11.7°

18.5h Moon Close to Xi 1 Cet, SAO 110408 (Close double star), 4.4mag, with Sun below horizon, Separation=3.60°, Limb separation=3.32° =6.13 lunar dia., Position angle=269.2° W, Azimuth az=195.1°, Altitude h=42.1°, RA= 2h13.9m Dec= +8°55.4', Moon phase=44.1%, Sun altitude hsun=-12.0°

Saturday 4 February 2017Time (24-hour clock) Object (Link) Event
0.6h Moon Close to Mu Cet, SAO 110723 (Multiple star system), 4.3mag, with Sun below horizon, Separation=1.38°, Limb separation=1.11° =2.07 lunar dia., Position angle=75.8° E, Azimuth az=279.3°, Altitude h=6.1°, RA= 2h45.9m Dec=+10°11.0', Moon phase=46.9%, Sun altitude hsun=-50.2°
0.8h Moon Close to 38 Ari, SAO 93083 (Close double star), 5.2mag, with Sun below horizon, Separation=2.90°, Limb separation=2.63° =4.90 lunar dia., Position angle=24.6° NE, Azimuth az=283.5°, Altitude h=6.1°, RA= 2h45.9m Dec=+12°30.9', Moon phase=47.0%, Sun altitude hsun=-50.2°
7h18.7m Moon Topocentric First Quarter (Altitude=-22.4°, topocentric diameter: 32.020', topocentric airfree declination: 10.79°)
7h18.9m Moon First Quarter (diameter: 32.2308', declination: +11.694°)
This is the 2nd biggest first quarter moon of the year. Former larger first quarter moon was at 16.1.2016. Next larger first quarter moon is at 5.3.2017 (calculated for the geocenter)
21h50.7m Moon Immersion of 5 Tau, SAO 93469 (Close double star), 4.1mag, Position angle=104.9°, Azimuth az=234.8°, Altitude h=35.9°, RA= 3h31.8m Dec=+12°59.5', Moon phase=57.0%, Sun altitude hsun=-38.5° (dark limb); (Southern limit: 38°00'E 46°03'N, alt=34.9°, bright limb)

Sunday 5 February 2017Time (24-hour clock) Object (Link) Event
2h37.2m Moon Max. Libration (6.831°)
13h52.8m Moon Max. Libration North: North Pole and Mare Frigoris are tipped into view (Earth's selenographic longitude: -0.673°, latitude: +6.771°)
18.2h Moon Close to Hyadum I, Gam Tau, SAO 93868 (Close double star), 3.6mag, with Sun below horizon, Separation=0.36°, Limb separation=0.09° =0.16 lunar dia., Position angle=294.8° NW, Azimuth az=147.2°, Altitude h=46.0°, RA= 4h20.8m Dec=+15°39.9', Moon phase=66.5%, Sun altitude hsun=-9.0°
18.9h Moon Close to 58 Tau, SAO 93876, 5.3mag, with Sun below horizon, Separation=0.66°, Limb separation=0.38° =0.70 lunar dia., Position angle=224.8° SW, Azimuth az=162.1°, Altitude h=48.1°, RA= 4h21.6m Dec=+15°07.9', Moon phase=66.8%, Sun altitude hsun=-15.0°
20.1h Moon Close to Hyadum II, Del1 Tau, SAO 93897 (Multiple star system), 3.8mag, Separation=1.91°, Limb separation=1.63° =2.99 lunar dia., Position angle=347.6° N, Azimuth az=186.8°, Altitude h=51.4°, RA= 4h23.9m Dec=+17°34.7', Moon phase=67.3%, Sun altitude hsun=-24.6°
20h25.9m Moon Immersion of 71 Tau, SAO 93932 (Double star, separation >10"), 4.5mag, Position angle=110.3°, Azimuth az=192.8°, Altitude h=49.1°, RA= 4h27.3m Dec=+15°39.2', Moon phase=67.5%, Sun altitude hsun=-27.4° (dark limb); (Southern limit: 38°00'E 47°06'N, alt=55.9°, bright limb)
20.6h Moon Close to Del2 Tau, SAO 93907 (Multiple star system), 4.8mag, Separation=1.75°, Limb separation=1.48° =2.71 lunar dia., Position angle=348.5° N, Azimuth az=197.5°, Altitude h=50.5°, RA= 4h25.1m Dec=+17°28.8', Moon phase=67.6%, Sun altitude hsun=-28.6°; (Northern limit: 38°00'E 46°17'S, alt=26.1°, bright limb)
21.4h Moon Close to Del3 Tau, SAO 93923 (Multiple star system), 4.3mag, Separation=2.16°, Limb separation=1.89° =3.46 lunar dia., Position angle=349.9° N, Azimuth az=214.3°, Altitude h=48.1°, RA= 4h26.5m Dec=+17°57.8', Moon phase=67.9%, Sun altitude hsun=-35.0°
21h38.3m Moon Immersion of The2 Tau, SAO 93957 (Multiple star system), 3.4mag, Position angle=78.9°, Azimuth az=217.1°, Altitude h=45.2°, RA= 4h29.6m Dec=+15°54.3', Moon phase=68.0%, Sun altitude hsun=-36.8° (dark limb); (Northern limit: 38°00'E 79°14'N, alt=25.0°, bright limb; Southern limit: 38°00'E 37°29'N, alt=50.2°, bright limb)
21h40.2m Moon Immersion of The1 Tau, SAO 93955 (Close double star), 3.8mag, Position angle=58.7°, Azimuth az=217.8°, Altitude h=45.1°, RA= 4h29.6m Dec=+15°59.8', Moon phase=68.1%, Sun altitude hsun=-37.0° (dark limb); (Northern limit: 38°00'E 69°38'N, alt=32.7°, bright limb; Southern limit: 38°00'E 31°52'N, alt=51.6°, bright limb)
22.3h Moon Close to 75 Tau, SAO 93950 (Close double star), 5.0mag, Separation=0.50°, Limb separation=0.23° =0.42 lunar dia., Position angle=351.3° N, Azimuth az=228.9°, Altitude h=42.1°, RA= 4h29.4m Dec=+16°23.6', Moon phase=68.3%, Sun altitude hsun=-41.0°; (Northern limit: 38°00'E 40°52'N, alt=48.7°, bright limb; Southern limit: 38°00'E 8°44'N, alt=49.2°, bright limb)
22h46.8m Moon Emersion of The2 Tau, SAO 93957 (Multiple star system), 3.4mag, Position Angle=263.4°, Azimuth az=237.2°, Altitude h=38.2°, RA= 4h29.6m Dec=+15°54.3', Moon phase=68.6%, Sun altitude hsun=-44.1° (bright limb); (Northern limit: 38°00'E 79°14'N, alt=25.0°, bright limb; Southern limit: 38°00'E 37°29'N, alt=50.2°, bright limb)
22h51.8m Moon Immersion of 81 Tau, SAO 93978, 5.5mag, Position angle=142.5°, Azimuth az=237.9°, Altitude h=37.7°, RA= 4h31.6m Dec=+15°43.5', Moon phase=68.6%, Sun altitude hsun=-44.5° (dark limb); (Southern limit: 38°00'E 53°22'N, alt=36.5°, bright limb)
23h05.4m Moon Immersion of NSV 01627, SAO 93975 (Multiple star system), 4.8mag, Position angle=7.2°, Azimuth az=241.8°, Altitude h=36.4°, RA= 4h31.5m Dec=+16°13.6', Moon phase=68.7%, Sun altitude hsun=-45.7° (dark limb); (Northern limit: 38°00'E 56°40'N, alt=35.1°, bright limb; Southern limit: 38°00'E 21°21'N, alt=36.1°, bright limb)

Monday 6 February 2017Time (24-hour clock) Object (Link) Event
1.6h Moon Close to Aldebaran, Alp Tau, SAO 94027 (Multiple star system), 0.9mag, Separation=0.44°, Limb separation=0.17° =0.31 lunar dia., Position angle=355.1° N, Azimuth az=275.1°, Altitude h=16.6°, RA= 4h36.9m Dec=+16°32.4', Moon phase=69.8%, Sun altitude hsun=-48.2°; (Northern limit: 38°00'E 41°56'N, alt=11.6°, bright limb)
2h37.9m Moon Immersion of Sig2 Tau, SAO 94054 (Double star, separation >10"), 4.7mag, Position angle=138.2°, Azimuth az=286.1°, Altitude h=8.5°, RA= 4h40.3m Dec=+15°56.9', Moon phase=70.3%, Sun altitude hsun=-44.0° (dark limb); (Southern limit: 38°00'E 50°29'N, alt= 3.4°, bright limb)
2.8h Moon Close to Sig1 Tau, SAO 94051 (Close double star), 5.1mag, Separation=0.33°, Limb separation=0.06° =0.11 lunar dia., Position angle=175.5° S, Azimuth az=288.5°, Altitude h=6.8°, RA= 4h40.1m Dec=+15°49.8', Moon phase=70.3%, Sun altitude hsun=-42.8°; (Southern limit: 38°00'E 62°46'N, alt=10.0°, bright limb)
3.5h Moon Close to 97 Tau, SAO 94164, 5.1mag, with Sun below horizon, Separation=3.70°, Limb separation=3.43° =6.35 lunar dia., Position angle=44.2° NE, Azimuth az=295.2°, Altitude h=6.1°, RA= 4h52.4m Dec=+18°51.9', Moon phase=70.6%, Sun altitude hsun=-38.9°
9.7h Jupiter Stationary: Getting Retrograde (relative to ecliptic)
17h11.1m Moon Perigee (distance moon center to earth center: 368847.1 km; closest point on earth ellipsoid with latitude 18.0° (WGS84), distance to moon center: 362471.0 km, apparent diameter: 32'58.1")
18.6h Moon Close to 104 Tau, SAO 94332 (Close double star), 4.9mag, with Sun below horizon, Separation=3.56°, Limb separation=3.29° =6.01 lunar dia., Position angle=289.1° W, Azimuth az=141.8°, Altitude h=47.9°, RA= 5h00.5m Dec=+18°39.8', Moon phase=77.0%, Sun altitude hsun=-12.0°
19h33.4m Moon Immersion of 111 Tau, SAO 94526, 5.0mag, Position angle=120.4°, Azimuth az=153.2°, Altitude h=49.1°, RA= 5h25.4m Dec=+17°23.7', Moon phase=77.4%, Sun altitude hsun=-19.9° (dark limb); (Southern limit: 38°00'E 48°42'N, alt=56.8°, bright limb)
20h20m Carrington Solar Rotation Begin of Carrington rotation number 2187
21.5h Moon Golden Handle visible on the Moon from 19.5h - 4.8h (htop=52° at S at 20.9h) (sun rises on the Jura mountains, while Sinus Iridum is still in shadow)
21.6h Moon Close to 115 Tau, SAO 94554 (Multiple star system), 5.4mag, Separation=0.33°, Limb separation=0.06° =0.10 lunar dia., Position angle=354.7° N, Azimuth az=197.9°, Altitude h=51.0°, RA= 5h28.2m Dec=+17°58.4', Moon phase=78.2%, Sun altitude hsun=-36.1°; (Northern limit: 38°00'E 52°06'N, alt=54.5°, bright limb; Southern limit: 38°00'E 19°00'N, alt=79.0°, bright limb)
22.2h Jupiter Stationary: Getting Retrograde (relative to equator)

Tuesday 7 February 2017Time (24-hour clock) Object (Link) Event
0.1h Moon Close to 119 Tau, SAO 94628, 4.3mag, Separation=0.89°, Limb separation=0.62° =1.13 lunar dia., Position angle=358.6° N, Azimuth az=244.0°, Altitude h=38.1°, RA= 5h33.2m Dec=+18°36.2', Moon phase=79.2%, Sun altitude hsun=-48.8°; (Northern limit: 38°00'E 8°29'N, alt=26.4°, bright limb; Southern limit: 38°00'E 18°48'S, alt=23.2°, bright limb)
4.2h Moon Close to 130 Tau, SAO 94858 (Close double star), 5.5mag, with Sun below horizon, Separation=1.27°, Limb separation=1.00° =1.86 lunar dia., Position angle=89.6° E, Azimuth az=293.1°, Altitude h=6.1°, RA= 5h48.4m Dec=+17°43.9', Moon phase=80.8%, Sun altitude hsun=-33.2°

4.6h Moon Close to Chi1 Ori, SAO 77705, 4.4mag, with Sun below horizon, Separation=3.68°, Limb separation=3.41° =6.32 lunar dia., Position angle=46.5° NE, Azimuth az=297.9°, Altitude h=6.1°, RA= 5h55.4m Dec=+20°16.5', Moon phase=80.9%, Sun altitude hsun=-30.1°
17.3h Mercury Aphelion (distance to sun: 0.4667 AU)
18.6h Moon Close to 64 Ori, SAO 95166 (Close double star), 5.1mag, with Sun below horizon, Separation=4.68°, Limb separation=4.40° =8.08 lunar dia., Position angle=287.7° W, Azimuth az=123.5°, Altitude h=42.8°, RA= 6h04.5m Dec=+19°41.2', Moon phase=86.0%, Sun altitude hsun=-12.0°
18.6h Moon Close to 71 Ori, SAO 95432 (Multiple star system), 5.2mag, with Sun below horizon, Separation=1.99°, Limb separation=1.72° =3.15 lunar dia., Position angle=297.9° NW, Azimuth az=120.9°, Altitude h=40.9°, RA= 6h15.9m Dec=+19°00.8', Moon phase=86.0%, Sun altitude hsun=-12.0°
18.6h Moon Close to Chi2 Ori, SAO 77911 (Multiple star system), 4.6mag, with Sun below horizon, Separation=4.73°, Limb separation=4.46° =8.17 lunar dia., Position angle=293.3° NW, Azimuth az=123.2°, Altitude h=43.0°, RA= 6h04.9m Dec=+20°00.0', Moon phase=86.0%, Sun altitude hsun=-12.0°
21h39.3m Moon Max. Decl. North (declination: +18.867°)
This is the 2nd lowest northernmost moon position of the next 10 years, and the 2nd lowest of the year. Former lower northern northernmost moon position was at 17.11.2016. Next lower northern northernmost moon position is at 7.3.2017 (calculated for the geocenter)
22.0h Moon Close to Nu Gem, SAO 78423 (Multiple star system), 4.1mag, Separation=1.93°, Limb separation=1.66° =3.03 lunar dia., Position angle=0.5° N, Azimuth az=186.0°, Altitude h=54.1°, RA= 6h30.0m Dec=+20°11.8', Moon phase=87.1%, Sun altitude hsun=-38.8°

Wednesday 8 February 2017Time (24-hour clock) Object (Link) Event
4.3h Moon Close to 26 Gem, SAO 96015 (Close double star), 5.2mag, Separation=0.41°, Limb separation=0.14° =0.25 lunar dia., Position angle=185.2° S, Azimuth az=284.3°, Altitude h=11.8°, RA= 6h43.4m Dec=+17°37.5', Moon phase=89.0%, Sun altitude hsun=-32.0°
23.4h Moon Close to SAO 96985, XZ 11245, 5.5mag, Separation=0.53°, Limb separation=0.25° =0.47 lunar dia., Position angle=187.6° S, Azimuth az=194.9°, Altitude h=50.3°, RA= 7h32.8m Dec=+17°02.7', Moon phase=94.1%, Sun altitude hsun=-46.1°; (Southern limit: 38°00'E 81°30'N, alt=25.5°, bright limb)

Thursday 9 February 2017Time (24-hour clock) Object (Link) Event
2.9h Moon Close to 74 Gem, SAO 97120 (Close double star), 5.0mag, Separation=0.35°, Limb separation=0.08° =0.15 lunar dia., Position angle=10.6° N, Azimuth az=255.8°, Altitude h=30.6°, RA= 7h40.5m Dec=+17°37.9', Moon phase=94.8%, Sun altitude hsun=-41.4°; (Northern limit: 38°00'E 47°16'N, alt=30.0°, bright limb; Southern limit: 38°00'E 6°33'N, alt=16.5°, bright limb)
5.4h Moon Close to 81 Gem, SAO 97221 (Close double star), 4.9mag, Separation=1.46°, Limb separation=1.19° =2.21 lunar dia., Position angle=10.3° N, Azimuth az=286.0°, Altitude h=11.6°, RA= 7h47.1m Dec=+18°27.9', Moon phase=95.3%, Sun altitude hsun=-22.9°
18.7h Moon Close to Zet2 Cnc, SAO 97645 (Multiple star system), 5.1mag, with Sun below horizon, Separation=2.78°, Limb separation=2.51° =4.67 lunar dia., Position angle=302.6° NW, Azimuth az=96.7°, Altitude h=25.8°, RA= 8h13.2m Dec=+17°35.5', Moon phase=97.6%, Sun altitude hsun=-12.0°
Jupiter Apparent Diameter grows to 40 arcsec (Brightness: -2.3 mag)

Friday 10 February 2017Time (24-hour clock) Object (Link) Event
6.9h Moon Close to Omi1 Cnc, SAO 98247, 5.2mag, with Sun below horizon, Separation=2.57°, Limb separation=2.30° =4.32 lunar dia., Position angle=80.1° E, Azimuth az=288.5°, Altitude h=6.1°, RA= 8h58.2m Dec=+15°15.2', Moon phase=99.1%, Sun altitude hsun=-10.3°
19.1h Moon Close to Pi 2 Cnc, SAO 98456, 5.4mag, with Sun below horizon, Separation=1.82°, Limb separation=1.55° =2.92 lunar dia., Position angle=322.4° NW, Azimuth az=90.9°, Altitude h=18.7°, RA= 9h16.2m Dec=+14°52.0', Moon phase=99.8%, Sun altitude hsun=-15.0°

Saturday 11 February 2017Time (24-hour clock) Object (Link) Event
3h32.9m Moon Full Moon (diameter: 31.6504', declination: +13.078°)
3h43m53sLunar Eclipse →graphical chart Greatest eclipse: Penumbral Lunar Eclipse
Saros-Number: 114, Magnitude=1.014, Umbral Magnitude=-0.030, Position angle=13.4°, Position angle vertex=343.9°
Brightness=-11.9mag, Diameter=31.95'
Duration penumbral phase=263.2 minutes, ET-UT=68.6sec
Altitude=33.8°, Azimuth=237.8° WSW, Sun altitude=-35.6°
3h50.0m Moon Topocentric Full Moon (Altitude=+33.1°, topocentric diameter: 31.944', topocentric airfree declination: 12.34°, maximum phase: 99.98%)
4h16m Sun Equation of time is at minimum with -14.21 minutes (sundials are late). Today, the Sun culminates latest of the year
6.3h Moon Close to Psi Leo, SAO 98733 (Double star, separation >10"), 5.4mag, Separation=2.11°, Limb separation=1.84° =3.48 lunar dia., Position angle=17.9° N, Azimuth az=272.0°, Altitude h=15.6°, RA= 9h44.7m Dec=+13°56.4', Moon phase=100.0%, Sun altitude hsun=-14.9°
9.3h Honda-Mrkos-Pajdusak →Star chart Comet '45P' closest to earth
Distance to Sun center=0.980 AU, Distance to Earth center=0.084 AU = 32.8 lunar distances, Relative velocity=22.86 km/s, Magnitude= 2.7 mag, Elongation=82.9°, RA=16h38.4m Dec=+24°46.5' (J2000, geocentric) (in constellation Hercules/Her)
18.0h Moon Close to Regulus, Alp Leo, SAO 98967 (Multiple star system), 1.4mag, with Sun below horizon, Separation=1.87°, Limb separation=1.61° =3.07 lunar dia., Position angle=334.0° NW, Azimuth az=71.4°, Altitude h=2.2°, RA=10h00.3m Dec=+11°52.8', Moon phase=99.6%, Sun altitude hsun=-6.0°
18.5h Moon Close to Nu Leo, SAO 98876 (Close double star), 5.3mag, with Sun below horizon, Separation=4.19°, Limb separation=3.93° =7.50 lunar dia., Position angle=301.6° NW, Azimuth az=76.8°, Altitude h=6.1°, RA= 9h59.2m Dec=+12°21.6', Moon phase=99.5%, Sun altitude hsun=-9.6°
18.8h Moon Close to 31 Leo, SAO 98964 (Double star, separation <10"), 4.4mag, with Sun below horizon, Separation=1.37°, Limb separation=1.11° =2.11 lunar dia., Position angle=261.8° W, Azimuth az=81.4°, Altitude h=6.3°, RA=10h00.8m Dec= +9°54.6', Moon phase=99.5%, Sun altitude hsun=-12.0°

Sunday 12 February 2017Time (24-hour clock) Object (Link) Event
4.9h Moon Close to Rho Leo, SAO 118355 (Close double star), 3.8mag, Separation=0.67°, Limb separation=0.41° =0.77 lunar dia., Position angle=21.4° N, Azimuth az=241.0°, Altitude h=28.7°, RA=10h33.7m Dec= +9°12.9', Moon phase=98.7%, Sun altitude hsun=-25.9°; (Northern limit: 38°00'E 14°17'N, alt=23.0°, bright limb; Southern limit: 38°00'E 19°41'S, alt=14.1°, bright limb)
13h56.5m Moon Max. Libration East: Mare Crisium limb is tipped into view (Earth's selenographic longitude: 5.114°, latitude: -1.018°)
20.0h Moon Close to Chi Leo, SAO 118648 (Multiple star system), 4.6mag, with Sun below horizon, Separation=1.36°, Limb separation=1.10° =2.12 lunar dia., Position angle=327.5° NW, Azimuth az=85.9°, Altitude h=6.1°, RA=11h05.9m Dec= +7°14.5', Moon phase=96.7%, Sun altitude hsun=-22.3°
20.1h Moon Close to 59 Leo, SAO 118615 (Double star, separation >10"), 5.0mag, with Sun below horizon, Separation=1.82°, Limb separation=1.56° =3.01 lunar dia., Position angle=267.5° W, Azimuth az=88.1°, Altitude h=6.1°, RA=11h01.6m Dec= +6°00.4', Moon phase=96.7%, Sun altitude hsun=-22.7°

Monday 13 February 2017Time (24-hour clock) Object (Link) Event
2.7h Moon Close to Sig Leo, SAO 118804, 4.0mag, Separation=0.99°, Limb separation=0.73° =1.40 lunar dia., Position angle=24.1° NE, Azimuth az=187.6°, Altitude h=39.7°, RA=11h22.0m Dec= +5°56.0', Moon phase=95.6%, Sun altitude hsun=-41.6°; (Northern limit: 38°00'E 3°02'S, alt=65.9°, bright limb; Southern limit: 38°00'E 40°16'S, alt=36.2°, bright limb)
21.2h Moon Close to 7 Vir, SAO 119156, 5.4mag, with Sun below horizon, Separation=1.73°, Limb separation=1.47° =2.87 lunar dia., Position angle=359.6° N, Azimuth az=92.5°, Altitude h=6.1°, RA=12h00.8m Dec= +3°33.5', Moon phase=91.7%, Sun altitude hsun=-31.6°
21.3h Moon Close to Zavijah, Bet Vir, SAO 119076 (Multiple star system), 3.6mag, with Sun below horizon, Separation=2.34°, Limb separation=2.09° =4.08 lunar dia., Position angle=266.1° W, Azimuth az=95.9°, Altitude h=6.1°, RA=11h51.6m Dec= +1°40.0', Moon phase=91.7%, Sun altitude hsun=-31.9°

Tuesday 14 February 2017Time (24-hour clock) Object (Link) Event

6.9h Moon Close to Zaniah, Eta Vir, SAO 138721 (Close double star), 3.9mag, with Sun below horizon, Separation=1.42°, Limb separation=1.17° =2.28 lunar dia., Position angle=131.3° SE, Azimuth az=240.2°, Altitude h=17.7°, RA=12h20.8m Dec= -0°45.8', Moon phase=89.3%, Sun altitude hsun=-9.0°
22.4h Moon Close to Porrima, Gam Vir, SAO 138917 (Multiple star system), 2.8mag, with Sun below horizon, Separation=2.30°, Limb separation=2.05° =4.06 lunar dia., Position angle=292.9° NW, Azimuth az=101.8°, Altitude h=6.1°, RA=12h42.5m Dec= -1°32.6', Moon phase=85.0%, Sun altitude hsun=-39.1°
22.4h Moon Close to g29 Virginis (Multiple star system), 3.5mag, with Sun below horizon, Separation=2.30°, Limb separation=2.05° =4.05 lunar dia., Position angle=293.0° NW, Azimuth az=101.8°, Altitude h=6.1°, RA=12h42.6m Dec= -1°32.6', Moon phase=85.0%, Sun altitude hsun=-39.1°

Wednesday 15 February 2017Time (24-hour clock) Object (Link) Event
23.7h Moon Close to 74 Vir, SAO 139390, 4.7mag, with Sun below horizon, Separation=1.88°, Limb separation=1.63° =3.26 lunar dia., Position angle=276.6° W, Azimuth az=110.8°, Altitude h=6.1°, RA=13h32.9m Dec= -6°20.6', Moon phase=76.9%, Sun altitude hsun=-44.7°
23.7h Moon Close to Jupiter, -2.3mag, with Sun below horizon, Separation=3.42°, Limb separation=3.16° =6.32 lunar dia., Position angle=253.0° W, Azimuth az=113.1°, Altitude h=6.1°, RA=13h27.3m Dec= -7°34.6', Moon phase=76.8%, Sun altitude hsun=-44.9°

Thursday 16 February 2017Time (24-hour clock) Object (Link) Event
6.1h Moon Close to 95 Vir, SAO 139736, 5.5mag, with Sun below horizon, Separation=4.66°, Limb separation=4.41° =8.79 lunar dia., Position angle=112.2° E, Azimuth az=200.1°, Altitude h=22.8°, RA=14h07.6m Dec= -9°23.6', Moon phase=74.6%, Sun altitude hsun=-15.3°

Friday 17 February 2017Time (24-hour clock) Object (Link) Event
6.1h Moon Close to Xi 2 Lib, SAO 158915, 5.5mag, with Sun below horizon, Separation=5.05°, Limb separation=4.80° =9.64 lunar dia., Position angle=93.8° E, Azimuth az=187.0°, Altitude h=22.3°, RA=14h57.7m Dec=-11°28.6', Moon phase=65.9%, Sun altitude hsun=-15.3°

Saturday 18 February 2017Time (24-hour clock) Object (Link) Event
6.0h Moon Close to Eta Lib, SAO 159466, 5.4mag, with Sun below horizon, Separation=5.21°, Limb separation=4.96° =10.01 lunar dia., Position angle=107.0° E, Azimuth az=175.2°, Altitude h=18.2°, RA=15h45.0m Dec=-15°43.5', Moon phase=56.6%, Sun altitude hsun=-15.3°
6.8h Moon Close to Zuben Elakrab, Gam Lib, SAO 159370 (Multiple star system), 3.9mag, with Sun below horizon, Separation=2.73°, Limb separation=2.48° =5.00 lunar dia., Position angle=102.9° E, Azimuth az=188.9°, Altitude h=18.8°, RA=15h36.5m Dec=-14°50.6', Moon phase=56.3%, Sun altitude hsun=-9.0°
21h46.7m Moon Topocentric Last Quarter (Altitude=-35.1°, topocentric diameter: 29.281', topocentric airfree declination: -15.61°)
22h33.1m Moon Last Quarter (diameter: 29.5407', declination: -15.053°)
This is the 12th smallest last quarter moon of the last 1000 years, the 4th smallest of the last 100 years, the smallest of the last 10 years, the smallest of the next 100 years, the smallest of the year, the smallest of the decade, the smallest of the century, and the 17th smallest of the millenium. Former smaller last quarter moon was at 8.2.1999. Next smaller last quarter moon is at 31.12.2121 (calculated for the geocenter)

Sunday 19 February 2017Time (24-hour clock) Object (Link) Event
0h14.0m Moon Apogee (distance moon center to earth center: 404335.6 km; closest point on earth ellipsoid with latitude -15.2° (WGS84), distance to moon center: 397958.9 km, apparent diameter: 30'01.7")
2.8h Moon Close to 48 Lib, SAO 159607 (Close double star), 5.0mag, with Sun below horizon, Separation=2.81°, Limb separation=2.56° =5.19 lunar dia., Position angle=313.6° NW, Azimuth az=126.9°, Altitude h=6.1°, RA=15h59.1m Dec=-14°19.6', Moon phase=48.5%, Sun altitude hsun=-38.8°
3.2h Moon Close to 49 Lib, SAO 159625, 5.5mag, with Sun below horizon, Separation=1.68°, Limb separation=1.43° =2.91 lunar dia., Position angle=260.6° W, Azimuth az=132.0°, Altitude h=6.1°, RA=16h01.3m Dec=-16°34.8', Moon phase=48.3%, Sun altitude hsun=-36.8°
4h47.2m Moon Max. Libration South: South Pole is tipped into view (Earth's selenographic longitude: -0.385°, latitude: -6.865°)
This is the 13th southernmost total libration of the last 1000 years, the 4th southernmost of the last 100 years, the southernmost of the last 10 years, the southernmost of the next 100 years, the southernmost of the year, the southernmost of the decade, the southernmost of the century, and the 7th southernmost of the millenium. Former more southern total libration was at 18.1.1963. Next more southern total libration is at 26.11.2784 (calculated for the geocenter)
6.3h Moon Close to Phi Oph, SAO 159963 (Multiple star system), 4.3mag, with Sun below horizon, Separation=4.54°, Limb separation=4.30° =8.69 lunar dia., Position angle=89.4° E, Azimuth az=169.3°, Altitude h=16.8°, RA=16h32.1m Dec=-16°38.8', Moon phase=47.1%, Sun altitude hsun=-12.3°
21.1h Venus Brilliancy (Brightness: -4.85 mag)

Monday 20 February 2017Time (24-hour clock) Object (Link) Event
4.0h Moon Close to 24 (Scorpii)/Ophiuchi, SAO 160046, 4.9mag, with Sun below horizon, Separation=3.84°, Limb separation=3.59° =7.27 lunar dia., Position angle=277.6° W, Azimuth az=134.8°, Altitude h=6.1°, RA=16h42.6m Dec=-17°46.3', Moon phase=38.6%, Sun altitude hsun=-31.0°
5h05.1m Moon Max. Libration (6.913°)
20.0h Venus Perihelion (distance to sun: 0.7185 AU)

Tuesday 21 February 2017Time (24-hour clock) Object (Link) Event
5.7h Moon Close to Saturn, 0.6mag, with Sun below horizon, Separation=3.25°, Limb separation=3.01° =6.06 lunar dia., Position angle=216.3° SW, Azimuth az=146.3°, Altitude h=6.1°, RA=17h43.7m Dec=-22°05.0', Moon phase=29.0%, Sun altitude hsun=-17.2°
23h52.7m Moon Max. Decl. South (declination: -18.849°)
This is the lowest southernmost moon position of the next 10 years, and the lowest of the year. Former lower southern southernmost moon position was at 4.11.2016. Next lower southern southernmost moon position is at 24.2.2033 (calculated for the geocenter)

Wednesday 22 February 2017Time (24-hour clock) Object (Link) Event
5.8h Moon Close to SAO 161564, XZ 25418 (Multiple star system), 5.1mag, with Sun below horizon, Separation=2.94°, Limb separation=2.69° =5.37 lunar dia., Position angle=295.8° NW, Azimuth az=136.3°, Altitude h=6.1°, RA=18h32.4m Dec=-18°23.3', Moon phase=20.6%, Sun altitude hsun=-16.1°

Thursday 23 February 2017Time (24-hour clock) Object (Link) Event
6.2h Moon Close to 43 Sgr, SAO 162413 (Close double star), 4.9mag, with Sun below horizon, Separation=4.33°, Limb separation=4.08° =8.06 lunar dia., Position angle=271.1° W, Azimuth az=133.3°, Altitude h=4.2°, RA=19h18.6m Dec=-18°55.2', Moon phase=13.0%, Sun altitude hsun=-12.0°
6.4h Moon Close to Rho1 Sgr, SAO 162512 (Close double star), 3.9mag, with Sun below horizon, Separation=3.68°, Limb separation=3.42° =6.76 lunar dia., Position angle=288.5° W, Azimuth az=134.9°, Altitude h=6.1°, RA=19h22.6m Dec=-17°48.8', Moon phase=13.0%, Sun altitude hsun=-10.1°

Saturday 25 February 2017Time (24-hour clock) Object (Link) Event
11h03.8m Moon Max. Libration West: Crater Grimaldi is tipped into view (Earth's selenographic longitude: -5.349°, latitude: -1.506°)

Sunday 26 February 2017Time (24-hour clock) Object (Link) Event
15h10m49s Annular Solar EclipseSolar Eclipse begins
Contact at 95°04.1'W 33°05.8'S
16h15m20s Annular Solar EclipseUmbra eclipse begins
Contact at 113°35.2'W 42°57.2'S
17h53m24.0s Annular Solar EclipseGreatest Solar Eclipse: annular, Saros-Number: 140, Gamma: -0.4578
At 31°11.3'W 34°40.8'S, alt=62.7°, Width=27.3km, Duration= 0m39.3s, Magnitude=99.3%, Obscuration=98.6%, ET-UT=68.7sec
→MapIt →Load path of the Annular Solar Eclipse into Google Earth
17h58.4m Moon New Moon (diameter: 31.5854', declination: -8.904°)
19h19.4m Moon Topocentric New Moon (Altitude=-13.0°, topocentric diameter: 31.488', topocentric airfree declination: -9.46°, minimum phase: 0.01%)
19h31m35s Annular Solar EclipseUmbra eclipse ends
Contact at 26°54.6'E 10°45.3'S
20h36m00s Annular Solar EclipseSolar Eclipse ends
Contact at 9°19.2'E 0°52.0'S

Monday 27 February 2017Time (24-hour clock) Object (Link) Event
2h57m Mars (1.3 mag) Close to Uranus: only 34.2' separated from center of Uranus, brightness: 5.9 mag, position angle=157.04° SE; Sun elongation=43.41° East (evening)
3h19m Mars Conjunction with Uranus: only 34.2' separated from center of Uranus, position angle=158.10° S. Distance to earth: 2.023 AU
11h23m Mars Conjunction in Right Ascension with Uranus: only 37.1' separated from center of Uranus, position angle=180.00° S
18.8h Moon Close to 20 Psc, SAO 146915, 5.5mag, with Sun below horizon, Separation=4.87°, Limb separation=4.60° =8.65 lunar dia., Position angle=55.6° NE, Azimuth az=256.1°, Altitude h=6.1°, RA=23h48.8m Dec= -2°40.1', Moon phase=1.3%, Sun altitude hsun=-7.6°
19.3h Moon Close to 27 Psc, SAO 147008 (Close double star), 4.9mag, with Sun below horizon, Separation=6.65°, Limb separation=6.39° =12.02 lunar dia., Position angle=73.7° E, Azimuth az=260.6°, Altitude h=2.4°, RA=23h59.5m Dec= -3°27.8', Moon phase=1.4%, Sun altitude hsun=-12.3°

Tuesday 28 February 2017Time (24-hour clock) Object (Link) Event
18.9h Moon Close to 29 Psc, SAO 147041, 5.1mag, with Sun below horizon, Separation=6.18°, Limb separation=5.91° =11.01 lunar dia., Position angle=251.1° W, Azimuth az=255.6°, Altitude h=6.1°, RA= 0h02.7m Dec= -2°56.1', Moon phase=5.2%, Sun altitude hsun=-8.4°

МАРТ

Москва, Россия Lon: +38d00m00.00s Lat: +56d00m00.00s Alt: 194m Geoid Alt: 179m

Wednesday 1 March 2017Time (24-hour clock) Object (Link) Event
19.4h Moon Close to 89 Psc, SAO 109793, 5.1mag, with Sun below horizon, Separation=0.61°, Limb separation=0.34° =0.63 lunar dia., Position angle=266.0° W, Azimuth az=249.7°, Altitude h=17.6°, RA= 1h18.7m Dec= +3°42.1', Moon phase=11.6%, Sun altitude hsun=-12.0°
21.2h Moon Close to Mu Psc, SAO 109926 (Double star, separation >10"), 4.8mag, with Sun below horizon, Separation=2.62°, Limb separation=2.35° =4.37 lunar dia., Position angle=34.8° NE, Azimuth az=272.3°, Altitude h=6.1°, RA= 1h31.1m Dec= +6°13.7', Moon phase=12.2%, Sun altitude hsun=-26.8°
21.4h Moon Close to Nu Psc, SAO 110065, 4.5mag, with Sun below horizon, Separation=4.47°, Limb separation=4.21° =7.81 lunar dia., Position angle=70.9° E, Azimuth az=271.1°, Altitude h=6.1°, RA= 1h42.3m Dec= +5°34.2', Moon phase=12.2%, Sun altitude hsun=-27.7°
21.5h Moon Close to Mars, 1.3mag, with Sun below horizon, Separation=5.27°, Limb separation=5.01° =9.31 lunar dia., Position angle=8.7° N, Azimuth az=277.9°, Altitude h=6.1°, RA= 1h28.9m Dec= +9°20.7', Moon phase=12.3%, Sun altitude hsun=-28.7°

Thursday 2 March 2017Time (24-hour clock) Object (Link) Event
Neptune Conjunction: only 51.0' separated from center of Sun. Distance to earth: 30.942 AU
18.9h Moon Close to Xi 1 Cet, SAO 110408 (Close double star), 4.4mag, Separation=0.96°, Limb separation=0.69° =1.26 lunar dia., Position angle=341.3° N, Azimuth az=233.4°, Altitude h=31.9°, RA= 2h13.9m Dec= +8°55.4', Moon phase=19.8%, Sun altitude hsun=-7.7°; (Northern limit: 38°00'E 13°46'N, alt=44.3°, bright limb; Southern limit: 38°00'E 21°37'S, alt=43.1°, bright limb)
22.4h Moon Close to Xi 2 Cet, SAO 110543, 4.3mag, with Sun below horizon, Separation=1.64°, Limb separation=1.37° =2.54 lunar dia., Position angle=90.4° E, Azimuth az=276.4°, Altitude h=6.1°, RA= 2h29.1m Dec= +8°32.0', Moon phase=21.2%, Sun altitude hsun=-33.8°
22.5h Moon Close to Xi Ari, SAO 92932 (Close double star), 5.5mag, with Sun below horizon, Separation=2.24°, Limb separation=1.97° =3.64 lunar dia., Position angle=18.9° N, Azimuth az=280.2°, Altitude h=6.1°, RA= 2h25.7m Dec=+10°41.1', Moon phase=21.2%, Sun altitude hsun=-34.7°
22.8h Moon Close to Mu Cet, SAO 110723 (Multiple star system), 4.3mag, with Sun below horizon, Separation=5.73°, Limb separation=5.46° =10.11 lunar dia., Position angle=74.5° E, Azimuth az=279.3°, Altitude h=6.1°, RA= 2h45.9m Dec=+10°10.9', Moon phase=21.3%, Sun altitude hsun=-36.2°

Friday 3 March 2017Time (24-hour clock) Object (Link) Event
10h24.8m Moon Perigee (distance moon center to earth center: 369095.0 km; closest point on earth ellipsoid with latitude 11.2° (WGS84), distance to moon center: 362717.7 km, apparent diameter: 32'56.8")
19.4h Moon Close to 38 Ari, SAO 93083 (Close double star), 5.2mag, with Sun below horizon, Separation=6.49°, Limb separation=6.22° =11.40 lunar dia., Position angle=274.1° W, Azimuth az=236.7°, Altitude h=34.5°, RA= 2h45.9m Dec=+12°30.8', Moon phase=30.0%, Sun altitude hsun=-12.0°
23.8h Moon Close to 5 Tau, SAO 93469 (Close double star), 4.1mag, with Sun below horizon, Separation=2.47°, Limb separation=2.20° =4.07 lunar dia., Position angle=77.9° E, Azimuth az=284.4°, Altitude h=6.1°, RA= 3h31.8m Dec=+12°59.5', Moon phase=31.9%, Sun altitude hsun=-39.4°

Saturday 4 March 2017Time (24-hour clock) Object (Link) Event
8h30m Mercury Conjunction in Right Ascension with Neptune (1.1° separated from center of Neptune), position angle=360.00° N
14h10m Mercury Conjunction with Neptune, 1.0° separated from center of Neptune, position angle=337.52° N. Distance to earth: 1.374 AU
14h38m Mercury (-1.6 mag) Close to Neptune: 1.0° separated from center of Neptune, brightness: 8.0 mag, position angle=335.50° NW; Sun elongation=2.44° West (morning)
18h29.0m Moon Max. Libration North: North Pole and Mare Frigoris are tipped into view (Earth's selenographic longitude: 0.584°, latitude: +6.785°)
This is the 2nd northernmost total libration of the year. Former more northern total libration was at 25.8.2016. Next more northern total libration is at 15.8.2017 (calculated for the geocenter)

Sunday 5 March 2017Time (24-hour clock) Object (Link) Event
0h10.2m Moon Immersion of Hyadum I, Gam Tau, SAO 93868 (Close double star), 3.6mag, Position angle=23.1°, Azimuth az=281.5°, Altitude h=11.3°, RA= 4h20.8m Dec=+15°39.9', Moon phase=43.3%, Sun altitude hsun=-39.8° (dark limb); (Northern limit: 38°00'E 59°25'N, alt=10.7°, bright limb)
0.6h Moon Close to 58 Tau, SAO 93876, 5.3mag, Separation=0.31°, Limb separation=0.04° =0.08 lunar dia., Position angle=174.0° S, Azimuth az=286.4°, Altitude h=7.3°, RA= 4h21.6m Dec=+15°07.9', Moon phase=43.5%, Sun altitude hsun=-40.1°; (Southern limit: 38°00'E 60°33'N, alt= 9.3°, bright limb)
0.8h Moon Close to pNSV 15993, SAO 93935, 4.7mag, with Sun below horizon, Separation=1.52°, Limb separation=1.26° =2.33 lunar dia., Position angle=117.9° SE, Azimuth az=287.6°, Altitude h=6.1°, RA= 4h27.6m Dec=+14°44.9', Moon phase=43.6%, Sun altitude hsun=-40.1°

0.9h Moon Close to 71 Tau, SAO 93932 (Double star, separation >10"), 4.5mag, with Sun below horizon, Separation=1.25°, Limb separation=0.98° =1.81 lunar dia., Position angle=81.4° E, Azimuth az=289.2°, Altitude h=6.1°, RA= 4h27.3m Dec=+15°39.2', Moon phase=43.6%, Sun altitude hsun=-40.0°
1.0h Moon Close to The2 Tau, SAO 93957 (Multiple star system), 3.4mag, with Sun below horizon, Separation=1.80°, Limb separation=1.53° =2.84 lunar dia., Position angle=76.2° E, Azimuth az=289.7°, Altitude h=6.1°, RA= 4h29.6m Dec=+15°54.3', Moon phase=43.7%, Sun altitude hsun=-39.9°
1.0h Moon Close to The1 Tau, SAO 93955 (Close double star), 3.8mag, with Sun below horizon, Separation=1.80°, Limb separation=1.53° =2.84 lunar dia., Position angle=73.2° E, Azimuth az=289.9°, Altitude h=6.1°, RA= 4h29.5m Dec=+15°59.8', Moon phase=43.7%, Sun altitude hsun=-39.9°
1.0h Moon Close to 81 Tau, SAO 93978, 5.5mag, with Sun below horizon, Separation=2.23°, Limb separation=1.96° =3.64 lunar dia., Position angle=83.7° E, Azimuth az=289.4°, Altitude h=6.1°, RA= 4h31.6m Dec=+15°43.5', Moon phase=43.7%, Sun altitude hsun=-39.9°
1.0h Moon Close to 75 Tau, SAO 93950 (Close double star), 5.0mag, with Sun below horizon, Separation=1.90°, Limb separation=1.63° =3.03 lunar dia., Position angle=61.2° NE, Azimuth az=290.6°, Altitude h=6.1°, RA= 4h29.4m Dec=+16°23.6', Moon phase=43.7%, Sun altitude hsun=-39.9°
1.0h Moon Close to NSV 01627, SAO 93975 (Multiple star system), 4.8mag, with Sun below horizon, Separation=2.29°, Limb separation=2.02° =3.75 lunar dia., Position angle=71.1° E, Azimuth az=290.3°, Altitude h=6.1°, RA= 4h31.5m Dec=+16°13.6', Moon phase=43.7%, Sun altitude hsun=-39.9°
1.1h Moon Close to Hyadum II, Del1 Tau, SAO 93897 (Multiple star system), 3.8mag, with Sun below horizon, Separation=2.13°, Limb separation=1.86° =3.45 lunar dia., Position angle=8.7° N, Azimuth az=292.8°, Altitude h=6.1°, RA= 4h23.9m Dec=+17°34.7', Moon phase=43.7%, Sun altitude hsun=-39.9°
1.1h Moon Close to Del2 Tau, SAO 93907 (Multiple star system), 4.8mag, with Sun below horizon, Separation=2.09°, Limb separation=1.82° =3.38 lunar dia., Position angle=16.5° N, Azimuth az=292.6°, Altitude h=6.1°, RA= 4h25.1m Dec=+17°28.8', Moon phase=43.7%, Sun altitude hsun=-39.8°
1.2h Moon Close to Del3 Tau, SAO 93923 (Multiple star system), 4.3mag, with Sun below horizon, Separation=2.63°, Limb separation=2.36° =4.39 lunar dia., Position angle=19.6° N, Azimuth az=293.5°, Altitude h=6.1°, RA= 4h26.5m Dec=+17°57.8', Moon phase=43.7%, Sun altitude hsun=-39.8°
1.1h Moon Close to Sig1 Tau, SAO 94051 (Close double star), 5.1mag, with Sun below horizon, Separation=4.18°, Limb separation=3.91° =7.25 lunar dia., Position angle=85.8° E, Azimuth az=289.6°, Altitude h=6.1°, RA= 4h40.1m Dec=+15°49.8', Moon phase=43.7%, Sun altitude hsun=-39.8°
1.2h Moon Close to Sig2 Tau, SAO 94054 (Double star, separation >10"), 4.7mag, with Sun below horizon, Separation=4.21°, Limb separation=3.94° =7.31 lunar dia., Position angle=84.2° E, Azimuth az=289.8°, Altitude h=6.1°, RA= 4h40.3m Dec=+15°56.9', Moon phase=43.7%, Sun altitude hsun=-39.7°
1.2h Moon Close to Aldebaran, Alp Tau, SAO 94027 (Multiple star system), 0.9mag, with Sun below horizon, Separation=3.53°, Limb separation=3.26° =6.05 lunar dia., Position angle=73.1° E, Azimuth az=290.9°, Altitude h=6.1°, RA= 4h36.9m Dec=+16°32.4', Moon phase=43.7%, Sun altitude hsun=-39.7°
3h40.2m Moon Max. Libration (6.828°)
13h26.8m Moon Topocentric First Quarter (Altitude=+21.4°, topocentric diameter: 32.453', topocentric airfree declination: 16.64°)
14h32.4m Moon First Quarter (diameter: 32.2442', declination: +17.466°)
This is the biggest first quarter moon of the year. Former larger first quarter moon was at 29.11.2014. Next larger first quarter moon is at 24.3.2018 (calculated for the geocenter)
This is the 2nd northernmost first quarter moon of the year. Former more northern first quarter moon was at 15.3.2016. Next more northern first quarter moon is at 3.4.2017 (calculated for the geocenter)
19.5h Moon Close to 104 Tau, SAO 94332 (Close double star), 4.9mag, Separation=1.48°, Limb separation=1.21° =2.23 lunar dia., Position angle=352.7° N, Azimuth az=200.6°, Altitude h=51.3°, RA= 5h00.5m Dec=+18°39.8', Moon phase=52.5%, Sun altitude hsun=-11.5°; (Northern limit: 38°00'E 19°46'S, alt=50.3°, bright limb)
19.5h Moon Close to 97 Tau, SAO 94164, 5.1mag, with Sun below horizon, Separation=4.36°, Limb separation=4.09° =7.51 lunar dia., Position angle=291.8° W, Azimuth az=204.8°, Altitude h=50.9°, RA= 4h52.4m Dec=+18°51.9', Moon phase=52.5%, Sun altitude hsun=-12.0°

Monday 6 March 2017Time (24-hour clock) Object (Link) Event
2.1h Moon Close to 115 Tau, SAO 94554 (Multiple star system), 5.4mag, with Sun below horizon, Separation=1.20°, Limb separation=0.93° =1.73 lunar dia., Position angle=59.9° NE, Azimuth az=293.5°, Altitude h=6.1°, RA= 5h28.2m Dec=+17°58.4', Moon phase=55.6%, Sun altitude hsun=-36.8°
2.3h Moon Close to 119 Tau, SAO 94628, 4.3mag, with Sun below horizon, Separation=2.46°, Limb separation=2.19° =4.09 lunar dia., Position angle=60.4° NE, Azimuth az=294.7°, Altitude h=6.1°, RA= 5h33.2m Dec=+18°36.2', Moon phase=55.7%, Sun altitude hsun=-36.2°
2h17.5m Moon Immersion of 111 Tau, SAO 94526, 5.0mag, Position angle=85.0°, Azimuth az=296.0°, Altitude h=4.0°, RA= 5h25.4m Dec=+17°23.7', Moon phase=55.7%, Sun altitude hsun=-36.0° (dark limb)
4h23m Carrington Solar Rotation Begin of Carrington rotation number 2188
12h21m Sun Sun South Pole points towards us (maximum southern heliographic latitude of the Earth) (Position angle: -22.8°, heliographic latitude: -7.3°)
19.6h Moon Close to 64 Ori, SAO 95166 (Close double star), 5.1mag, with Sun below horizon, Separation=1.84°, Limb separation=1.57° =2.90 lunar dia., Position angle=323.9° NW, Azimuth az=179.6°, Altitude h=53.7°, RA= 6h04.5m Dec=+19°41.2', Moon phase=63.7%, Sun altitude hsun=-12.0°
19.6h Moon Close to Chi1 Ori, SAO 77705, 4.4mag, with Sun below horizon, Separation=3.83°, Limb separation=3.56° =6.56 lunar dia., Position angle=302.3° NW, Azimuth az=183.2°, Altitude h=54.3°, RA= 5h55.4m Dec=+20°16.5', Moon phase=63.7%, Sun altitude hsun=-12.0°
19.6h Moon Close to Chi2 Ori, SAO 77911 (Multiple star system), 4.6mag, with Sun below horizon, Separation=2.17°, Limb separation=1.90° =3.50 lunar dia., Position angle=333.3° NW, Azimuth az=179.4°, Altitude h=54.0°, RA= 6h04.9m Dec=+20°00.0', Moon phase=63.7%, Sun altitude hsun=-12.0°
19.9h Moon Close to 130 Tau, SAO 94858 (Close double star), 5.5mag, with Sun below horizon, Separation=5.07°, Limb separation=4.80° =8.86 lunar dia., Position angle=263.9° W, Azimuth az=194.1°, Altitude h=51.1°, RA= 5h48.4m Dec=+17°43.9', Moon phase=63.9%, Sun altitude hsun=-15.0°
23.0h Moon Close to 71 Ori, SAO 95432 (Multiple star system), 5.2mag, Separation=0.96°, Limb separation=0.69° =1.29 lunar dia., Position angle=2.9° N, Azimuth az=244.3°, Altitude h=38.5°, RA= 6h15.9m Dec=+19°00.8', Moon phase=65.3%, Sun altitude hsun=-35.5°; (Northern limit: 38°00'E 7°50'N, alt=30.7°, bright limb; Southern limit: 38°00'E 27°01'S, alt=16.7°, bright limb)

Tuesday 7 March 2017Time (24-hour clock) Object (Link) Event
3.3h Moon Close to 26 Gem, SAO 96015 (Close double star), 5.2mag, with Sun below horizon, Separation=4.20°, Limb separation=3.93° =7.35 lunar dia., Position angle=96.2° E, Azimuth az=292.9°, Altitude h=6.1°, RA= 6h43.4m Dec=+17°37.5', Moon phase=67.2%, Sun altitude hsun=-30.6°
3.3h Moon Close to Nu Gem, SAO 78423 (Multiple star system), 4.1mag, with Sun below horizon, Separation=2.36°, Limb separation=2.10° =3.92 lunar dia., Position angle=23.9° NE, Azimuth az=297.7°, Altitude h=6.1°, RA= 6h30.0m Dec=+20°11.8', Moon phase=67.2%, Sun altitude hsun=-30.2°
3.5h Mercury Conjunction (superior), 1.7° separated from center of Sun. Distance to earth: 1.363 AU
3h49.1m Moon Max. Decl. North (declination: +18.861°)
This is the lowest northernmost moon position of the next 10 years, and the lowest of the year. Former lower northern northernmost moon position was at 17.11.2016. Next lower northern northernmost moon position is at 8.3.2033 (calculated for the geocenter)

Wednesday 8 March 2017Time (24-hour clock) Object (Link) Event
4.0h Moon Close to SAO 96985, XZ 11245, 5.5mag, with Sun below horizon, Separation=1.67°, Limb separation=1.40° =2.63 lunar dia., Position angle=105.0° E, Azimuth az=291.8°, Altitude h=6.1°, RA= 7h32.8m Dec=+17°02.7', Moon phase=77.5%, Sun altitude hsun=-25.6°
4.1h Moon Close to 74 Gem, SAO 97120 (Close double star), 5.0mag, with Sun below horizon, Separation=3.32°, Limb separation=3.05° =5.74 lunar dia., Position angle=87.4° E, Azimuth az=292.9°, Altitude h=6.1°, RA= 7h40.5m Dec=+17°37.9', Moon phase=77.6%, Sun altitude hsun=-24.2°
13.4h Moon Golden Handle visible on the Moon from 13.4h -21.0h (sun rises on the Jura mountains, while Sinus Iridum is still in shadow)
19.6h Moon Close to 81 Gem, SAO 97221 (Close double star), 4.9mag, with Sun below horizon, Separation=5.03°, Limb separation=4.76° =8.89 lunar dia., Position angle=289.9° W, Azimuth az=146.0°, Altitude h=48.7°, RA= 7h47.1m Dec=+18°27.9', Moon phase=83.2%, Sun altitude hsun=-12.0°
22.6h Moon Close to Zet2 Cnc, SAO 97645 (Multiple star system), 5.1mag, Separation=1.15°, Limb separation=0.88° =1.65 lunar dia., Position angle=12.1° N, Azimuth az=202.2°, Altitude h=50.0°, RA= 8h13.2m Dec=+17°35.5', Moon phase=84.2%, Sun altitude hsun=-32.8°; (Northern limit: 38°00'E 3°38'S, alt=56.2°, bright limb; Southern limit: 38°00'E 44°37'S, alt=22.8°, bright limb)

Thursday 9 March 2017Time (24-hour clock) Object (Link) Event

Mars Dust storm season ends
19.7h Moon Close to Omi1 Cnc, SAO 98247, 5.2mag, with Sun below horizon, Separation=1.54°, Limb separation=1.27° =2.40 lunar dia., Position angle=305.1° NW, Azimuth az=127.8°, Altitude h=39.6°, RA= 8h58.2m Dec=+15°15.2', Moon phase=90.6%, Sun altitude hsun=-12.0°

Friday 10 March 2017Time (24-hour clock) Object (Link) Event
1.9h Moon Close to Pi 2 Cnc, SAO 98456, 5.4mag, Separation=1.32°, Limb separation=1.06° =2.00 lunar dia., Position angle=18.0° N, Azimuth az=243.7°, Altitude h=33.9°, RA= 9h16.2m Dec=+14°52.0', Moon phase=92.2%, Sun altitude hsun=-35.9°
5.2h Encke →Star chart Comet '2P' at perihelion (invisible)
Distance to Sun center=0.336 AU, Distance to Earth=0.663 AU, Magnitude= 7.1 mag, Elongation= 4.3°, RA=23h38.1m Dec= -3°05.9' (J2000, geocentric) (in constellation Pisces/Psc)
Encke →Star chart Comet '2P' brightest (invisible)
Distance to Sun center=0.336 AU, Distance to Earth=0.659 AU, Magnitude= 7.1 mag, Elongation= 2.8°, RA=23h34.8m Dec= -3°54.8' (J2000, geocentric) (in constellation Aquarius/Aqr)
19.8h Moon Close to Nu Leo, SAO 98876 (Close double star), 5.3mag, Separation=1.16°, Limb separation=0.90° =1.71 lunar dia., Position angle=14.9° N, Azimuth az=116.9°, Altitude h=31.3°, RA= 9h59.2m Dec=+12°21.6', Moon phase=96.0%, Sun altitude hsun=-12.9°
20.1h Moon Close to Psi Leo, SAO 98733 (Double star, separation >10"), 5.4mag, with Sun below horizon, Separation=4.33°, Limb separation=4.06° =7.73 lunar dia., Position angle=308.8° NW, Azimuth az=123.7°, Altitude h=36.3°, RA= 9h44.7m Dec=+13°56.4', Moon phase=96.0%, Sun altitude hsun=-15.0°

Saturday 11 March 2017Time (24-hour clock) Object (Link) Event
1.2h Moon Close to Regulus, Alp Leo, SAO 98967 (Multiple star system), 1.4mag, Separation=1.51°, Limb separation=1.24° =2.36 lunar dia., Position angle=21.4° N, Azimuth az=219.5°, Altitude h=40.3°, RA=10h00.3m Dec=+11°52.8', Moon phase=96.9%, Sun altitude hsun=-37.3°; (Northern limit: 38°00'E 38°49'S, alt=22.1°, bright limb)
2.5h Moon Close to 31 Leo, SAO 98964 (Double star, separation <10"), 4.4mag, Separation=0.37°, Limb separation=0.11° =0.21 lunar dia., Position angle=200.5° S, Azimuth az=239.8°, Altitude h=30.1°, RA=10h00.8m Dec= +9°54.6', Moon phase=97.1%, Sun altitude hsun=-33.1°
6h52.8m Moon Max. Libration East: Mare Crisium limb is tipped into view (Earth's selenographic longitude: 4.695°, latitude: -0.034°)
19.4h Moon Close to Rho Leo, SAO 118355 (Close double star), 3.8mag, with Sun below horizon, Separation=4.13°, Limb separation=3.88° =7.46 lunar dia., Position angle=292.4° W, Azimuth az=105.6°, Altitude h=21.3°, RA=10h33.7m Dec= +9°12.9', Moon phase=99.0%, Sun altitude hsun=-9.0°

Sunday 12 March 2017Time (24-hour clock) Object (Link) Event
3.3h Moon Close to 59 Leo, SAO 118615 (Double star, separation >10"), 5.0mag, Separation=0.38°, Limb separation=0.12° =0.23 lunar dia., Position angle=202.3° S, Azimuth az=234.6°, Altitude h=28.1°, RA=11h01.6m Dec= +6°00.4', Moon phase=99.6%, Sun altitude hsun=-28.7°
4.4h Moon Close to Chi Leo, SAO 118648 (Multiple star system), 4.6mag, Separation=1.16°, Limb separation=0.90° =1.74 lunar dia., Position angle=21.7° N, Azimuth az=250.0°, Altitude h=21.5°, RA=11h05.9m Dec= +7°14.5', Moon phase=99.6%, Sun altitude hsun=-21.1°; (Northern limit: 38°00'E 19°46'S, alt= 3.7°, bright limb; Southern limit: 38°00'E 53°25'S, alt= 0.5°, bright limb)
10.6h Encke →Star chart Comet '2P' closest to earth (invisible)
Distance to Sun center=0.341 AU, Distance to Earth=0.655 AU, Magnitude= 7.2 mag, Elongation= 3.1°, RA=23h25.0m Dec= -6°13.1' (J2000, geocentric) (in constellation Aquarius/Aqr)
16h09.3m Moon Topocentric Full Moon (Altitude=-16.2°, topocentric diameter: 30.604', topocentric airfree declination: 4.15°, maximum phase: 99.99%)
17h53.8m Moon Full Moon (diameter: 30.7193', declination: +4.648°)

Monday 13 March 2017Time (24-hour clock) Object (Link) Event
3.6h Moon Close to Zavijah, Bet Vir, SAO 119076 (Multiple star system), 3.6mag, Separation=0.62°, Limb separation=0.36° =0.71 lunar dia., Position angle=203.3° SW, Azimuth az=226.3°, Altitude h=26.9°, RA=11h51.6m Dec= +1°40.0', Moon phase=99.8%, Sun altitude hsun=-26.0°
20.2h Moon Close to Zaniah, Eta Vir, SAO 138721 (Close double star), 3.9mag, with Sun below horizon, Separation=2.13°, Limb separation=1.87° =3.69 lunar dia., Position angle=265.8° W, Azimuth az=100.4°, Altitude h=6.1°, RA=12h20.8m Dec= -0°45.8', Moon phase=98.7%, Sun altitude hsun=-15.0°

Tuesday 14 March 2017Time (24-hour clock) Object (Link) Event
4.1h Moon Close to Porrima, Gam Vir, SAO 138917 (Multiple star system), 2.8mag, Separation=0.46°, Limb separation=0.21° =0.41 lunar dia., Position angle=23.4° NE, Azimuth az=220.5°, Altitude h=25.5°, RA=12h42.5m Dec= -1°32.7', Moon phase=97.8%, Sun altitude hsun=-22.2°; (Northern limit: 38°00'E 28°50'N, alt=35.7°, bright limb; Southern limit: 38°00'E 9°16'S, alt=31.7°, bright limb)
4.1h Moon Close to g29 Virginis (Multiple star system), 3.5mag, Separation=0.46°, Limb separation=0.21° =0.41 lunar dia., Position angle=23.4° NE, Azimuth az=220.7°, Altitude h=25.5°, RA=12h42.6m Dec= -1°32.7', Moon phase=97.8%, Sun altitude hsun=-22.1°; (Northern limit: 38°00'E 28°41'N, alt=35.6°, bright limb; Southern limit: 38°00'E 9°22'S, alt=31.6°, bright limb)
23.9h Moon Close to Jupiter, -2.4mag, Separation=1.68°, Limb separation=1.42° =2.82 lunar dia., Position angle=204.3° SW, Azimuth az=141.0°, Altitude h=20.4°, RA=13h20.5m Dec= -6°48.1', Moon phase=94.8%, Sun altitude hsun=-35.4°

Wednesday 15 March 2017Time (24-hour clock) Object (Link) Event
5.4h Moon Close to 74 Vir, SAO 139390, 4.7mag, with Sun below horizon, Separation=0.42°, Limb separation=0.17° =0.33 lunar dia., Position angle=116.7° SE, Azimuth az=226.0°, Altitude h=18.2°, RA=13h32.9m Dec= -6°20.7', Moon phase=93.8%, Sun altitude hsun=-12.0°
22.7h Moon Close to 95 Vir, SAO 139736, 5.5mag, Separation=0.61°, Limb separation=0.37° =0.73 lunar dia., Position angle=201.5° S, Azimuth az=116.0°, Altitude h=5.7°, RA=14h07.6m Dec= -9°23.7', Moon phase=89.9%, Sun altitude hsun=-31.0°

Thursday 16 March 2017Time (24-hour clock) Object (Link) Event
23.2h Moon Close to Xi 2 Lib, SAO 158915, 5.5mag, Separation=0.82°, Limb separation=0.57° =1.15 lunar dia., Position angle=19.5° N, Azimuth az=113.3°, Altitude h=1.8°, RA=14h57.7m Dec=-11°28.6', Moon phase=83.3%, Sun altitude hsun=-32.6°

Friday 17 March 2017Time (24-hour clock) Object (Link) Event
2h21m Mercury Conjunction in Right Ascension with Venus (9.5° separated from center of Venus), position angle=0.00° N

Saturday 18 March 2017Time (24-hour clock) Object (Link) Event
0.8h Moon Close to Zuben Elakrab, Gam Lib, SAO 159370 (Multiple star system), 3.9mag, with Sun below horizon, Separation=2.61°, Limb separation=2.36° =4.78 lunar dia., Position angle=280.3° W, Azimuth az=128.1°, Altitude h=6.1°, RA=15h36.5m Dec=-14°50.7', Moon phase=75.1%, Sun altitude hsun=-35.0°
1.0h Moon Close to Eta Lib, SAO 159466, 5.4mag, with Sun below horizon, Separation=0.72°, Limb separation=0.48° =0.97 lunar dia., Position angle=237.2° SW, Azimuth az=130.0°, Altitude h=6.1°, RA=15h45.0m Dec=-15°43.5', Moon phase=75.0%, Sun altitude hsun=-34.8°

4.9h Moon Close to 49 Lib, SAO 159625, 5.5mag, with Sun below horizon, Separation=2.04°, Limb separation=1.79° =3.62 lunar dia., Position angle=112.8° SE, Azimuth az=181.5°, Altitude h=17.5°, RA=16h01.3m Dec=-16°34.9', Moon phase=73.7%, Sun altitude hsun=-15.0°
5.2h Moon Close to 48 Lib, SAO 159607 (Close double star), 5.0mag, with Sun below horizon, Separation=1.94°, Limb separation=1.69° =3.41 lunar dia., Position angle=39.6° NE, Azimuth az=187.9°, Altitude h=19.4°, RA=15h59.2m Dec=-14°19.6', Moon phase=73.5%, Sun altitude hsun=-12.0°
7h Sun Equilux - equal length of day and night for this site (local spring)
11h44.7m Moon Max. Libration South: South Pole is tipped into view (Earth's selenographic longitude: -0.543°, latitude: -6.810°)
15h27m Mercury Conjunction with Venus (Mercury is farther away), 8.5° separated from center of Venus, position angle=336.83° NW. Distance to earth: 1.229 AU
20h22.3m Moon Apogee (distance moon center to earth center: 404611.8 km; closest point on earth ellipsoid with latitude -16.3° (WGS84), distance to moon center: 398235.4 km, apparent diameter: 30'00.5")
21h01m Mercury (-1.3 mag) Close to Venus (Mercury is farther away): 8.5° separated from center of Venus, brightness: -4.2 mag, position angle=333.03° NW; Sun elongation=11.22° East (evening)

Sunday 19 March 2017Time (24-hour clock) Object (Link) Event
1.9h Moon Close to Phi Oph, SAO 159963 (Multiple star system), 4.3mag, with Sun below horizon, Separation=1.61°, Limb separation=1.37° =2.78 lunar dia., Position angle=305.8° NW, Azimuth az=132.1°, Altitude h=6.1°, RA=16h32.1m Dec=-16°38.8', Moon phase=66.1%, Sun altitude hsun=-32.5°
5h34.3m Moon Emersion of 24 (Scorpii)/Ophiuchi, SAO 160046, 4.9mag, Position Angle=306.2°, Azimuth az=182.8°, Altitude h=16.2°, RA=16h42.6m Dec=-17°46.3', Moon phase=64.7%, Sun altitude hsun=-9.0° (dark limb); (Southern limit: 38°00'E 17°06'N, alt=55.0°, bright limb)

Monday 20 March 2017Time (24-hour clock) Object (Link) Event
5.9h Moon Close to Saturn, 0.5mag, with Sun below horizon, Separation=4.62°, Limb separation=4.38° =8.83 lunar dia., Position angle=126.8° SE, Azimuth az=172.2°, Altitude h=11.7°, RA=17h49.4m Dec=-22°05.2', Moon phase=55.3%, Sun altitude hsun=-6.0°
13h28.6m Sun March Equinox
18h58.2m Moon Last Quarter (diameter: 29.6952', declination: -18.778°)
This is the 2nd smallest last quarter moon of the year. Former smaller last quarter moon was at 18.2.2017. Next smaller last quarter moon is at 9.3.2018 (calculated for the geocenter)
This is the southernmost last quarter moon of the year. Former more southern last quarter moon was at 4.3.2013. Next more southern last quarter moon is at 8.4.2018 (calculated for the geocenter)
19h08.9m Moon Topocentric Last Quarter (Altitude=-52.8°, topocentric diameter: 29.330', topocentric airfree declination: -19.32°)

Tuesday 21 March 2017Time (24-hour clock) Object (Link) Event
3h48.8m Moon Max. Libration (6.949°)
5.1h Moon Close to SAO 161564, XZ 25418 (Multiple star system), 5.1mag, with Sun below horizon, Separation=2.56°, Limb separation=2.31° =4.63 lunar dia., Position angle=57.0° NE, Azimuth az=151.3°, Altitude h=11.6°, RA=18h32.4m Dec=-18°23.3', Moon phase=46.1%, Sun altitude hsun=-12.0°
8h24.0m Moon Max. Decl. South (declination: -18.913°)
This is the lowest southernmost moon position of the next 10 years. Former lower southern southernmost moon position was at 21.2.2017. Next lower southern southernmost moon position is at 24.2.2033 (calculated for the geocenter)

Wednesday 22 March 2017Time (24-hour clock) Object (Link) Event
4.6h Moon Close to 29 Sgr, SAO 187324 (Double star, separation >10"), 5.2mag, with Sun below horizon, Separation=5.50°, Limb separation=5.25° =10.47 lunar dia., Position angle=262.0° W, Azimuth az=141.2°, Altitude h=6.1°, RA=18h50.7m Dec=-20°18.1', Moon phase=36.8%, Sun altitude hsun=-15.9°
5.1h Moon Close to 43 Sgr, SAO 162413 (Close double star), 4.9mag, with Sun below horizon, Separation=1.03°, Limb separation=0.78° =1.56 lunar dia., Position angle=59.9° NE, Azimuth az=141.2°, Altitude h=7.6°, RA=19h18.6m Dec=-18°55.2', Moon phase=36.6%, Sun altitude hsun=-12.0°
5.4h Moon Close to Rho1 Sgr, SAO 162512 (Close double star), 3.9mag, with Sun below horizon, Separation=2.35°, Limb separation=2.10° =4.18 lunar dia., Position angle=46.1° NE, Azimuth az=145.0°, Altitude h=10.2°, RA=19h22.7m Dec=-17°48.7', Moon phase=36.4%, Sun altitude hsun=-9.0°

Thursday 23 March 2017Time (24-hour clock) Object (Link) Event
16.9h Mercury Perihelion (distance to sun: 0.3075 AU)

Friday 24 March 2017Time (24-hour clock) Object (Link) Event
5.0h Moon Close to Rho Cap, SAO 163614 (Multiple star system), 4.9mag, with Sun below horizon, Separation=7.17°, Limb separation=6.91° =13.47 lunar dia., Position angle=258.0° W, Azimuth az=125.9°, Altitude h=1.9°, RA=20h29.8m Dec=-17°45.3', Moon phase=18.8%, Sun altitude hsun=-12.0°
5.0h Moon Close to Tau Cap, SAO 163771 (Multiple star system), 5.2mag, with Sun below horizon, Separation=4.75°, Limb separation=4.49° =8.74 lunar dia., Position angle=285.3° W, Azimuth az=122.3°, Altitude h=3.1°, RA=20h40.2m Dec=-14°53.6', Moon phase=18.8%, Sun altitude hsun=-12.0°

Saturday 25 March 2017Time (24-hour clock) Object (Link) Event
2h23.6m Moon Max. Libration West: Crater Grimaldi is tipped into view (Earth's selenographic longitude: -6.412°, latitude: -1.063°)
4.9h Venus Closest Approach (distance to earth: 0.281 AU, brightness: -4.2 mag, diameter: 59.35")
13.3h Venus Conjunction (inferior), 8.3° separated from center of Sun. Distance to earth: 0.281 AU

Sunday 26 March 2017Time (24-hour clock) Object (Link) Event
13h31m Mercury (-0.9 mag) Close to Uranus: 2.1° separated from center of Uranus, brightness: 5.9 mag, position angle=150.48° SE; Sun elongation=17.23° East (evening)
18h06m Mercury Conjunction with Uranus, 2.1° separated from center of Uranus, position angle=158.21° S. Distance to earth: 1.042 AU

Monday 27 March 2017Time (24-hour clock) Object (Link) Event
8h56m Mercury Conjunction in Right Ascension with Uranus (2.4° separated from center of Uranus), position angle=180.00° S

Tuesday 28 March 2017Time (24-hour clock) Object (Link) Event
4h54.1m Moon Topocentric New Moon (Altitude=-14.7°, topocentric diameter: 32.321', topocentric airfree declination: -0.71°, minimum phase: 0.11%)
5h57.2m Moon New Moon (diameter: 32.4721', declination: +0.314°)

Wednesday 29 March 2017Time (24-hour clock) Object (Link) Event

19.3h Moon Close to Mercury, -0.6mag, with Sun below horizon, Separation=7.24°, Limb separation=7.02° =12.81 lunar dia., Position angle=324.2° NW, Azimuth az=272.5°, Altitude h=13.6°, RA= 1h39.5m Dec=+12°37.4', Moon phase=3.5%, Sun altitude hsun=-2.9°
20.4h Moon Close to Xi 1 Cet, SAO 110408 (Close double star), 4.4mag, with Sun below horizon, Separation=4.15°, Limb separation=3.88° =7.09 lunar dia., Position angle=60.5° NE, Azimuth az=277.3°, Altitude h=6.0°, RA= 2h13.9m Dec= +8°55.4', Moon phase=3.7%, Sun altitude hsun=-12.0°
20.8h Moon Close to Xi Ari, SAO 92932 (Close double star), 5.5mag, with Sun below horizon, Separation=7.28°, Limb separation=7.01° =12.83 lunar dia., Position angle=59.6° NE, Azimuth az=280.9°, Altitude h=5.7°, RA= 2h25.7m Dec=+10°41.0', Moon phase=3.8%, Sun altitude hsun=-15.0°

Thursday 30 March 2017Time (24-hour clock) Object (Link) Event
8.7h Mercury Dichotomy/Half phase
15h24.4m Moon Perigee (distance moon center to earth center: 363874.0 km; closest point on earth ellipsoid with latitude 10.9° (WGS84), distance to moon center: 357496.6 km, apparent diameter: 33'25.6")
19.3h Moon Close to Mars, 1.5mag, Separation=5.88°, Limb separation=5.63° =10.22 lunar dia., Position angle=347.2° N, Azimuth az=261.5°, Altitude h=25.8°, RA= 2h48.8m Dec=+16°37.1', Moon phase=9.2%, Sun altitude hsun=-2.8°, in daylight, elongation from sun: 35.2°
19.7h Moon Close to Mars, 1.5mag, with Sun below horizon, Separation=5.88°, Limb separation=5.63° =10.23 lunar dia., Position angle=345.2° N, Azimuth az=266.4°, Altitude h=22.6°, RA= 2h48.8m Dec=+16°37.3', Moon phase=9.3%, Sun altitude hsun=-6.0°
20.4h Moon Close to 38 Ari, SAO 93083 (Close double star), 5.2mag, with Sun below horizon, Separation=3.04°, Limb separation=2.77° =5.04 lunar dia., Position angle=299.2° NW, Azimuth az=274.1°, Altitude h=12.4°, RA= 2h45.9m Dec=+12°30.8', Moon phase=9.5%, Sun altitude hsun=-12.0°
20.4h Moon Close to Mu Cet, SAO 110723 (Multiple star system), 4.3mag, with Sun below horizon, Separation=2.79°, Limb separation=2.51° =4.58 lunar dia., Position angle=252.5° W, Azimuth az=272.8°, Altitude h=10.5°, RA= 2h45.9m Dec=+10°10.9', Moon phase=9.5%, Sun altitude hsun=-12.0°
20.4h Moon Close to Xi 2 Cet, SAO 110543, 4.3mag, with Sun below horizon, Separation=7.19°, Limb separation=6.92° =12.60 lunar dia., Position angle=249.5° W, Azimuth az=275.3°, Altitude h=6.8°, RA= 2h29.1m Dec= +8°32.0', Moon phase=9.5%, Sun altitude hsun=-12.0°

Friday 31 March 2017Time (24-hour clock) Object (Link) Event
20.1h Moon Close to 5 Tau, SAO 93469 (Close double star), 4.1mag, with Sun below horizon, Separation=5.72°, Limb separation=5.45° =9.90 lunar dia., Position angle=255.1° W, Azimuth az=261.2°, Altitude h=21.6°, RA= 3h31.8m Dec=+12°59.5', Moon phase=17.5%, Sun altitude hsun=-9.0°
23.0h Moon Close to 58 Tau, SAO 93876, 5.3mag, with Sun below horizon, Separation=4.78°, Limb separation=4.51° =8.25 lunar dia., Position angle=84.9° E, Azimuth az=288.3°, Altitude h=6.1°, RA= 4h21.6m Dec=+15°07.9', Moon phase=18.6%, Sun altitude hsun=-26.7°
23.0h Moon Close to Hyadum I, Gam Tau, SAO 93868 (Close double star), 3.6mag, with Sun below horizon, Separation=4.64°, Limb separation=4.37° =8.00 lunar dia., Position angle=78.1° E, Azimuth az=289.2°, Altitude h=6.1°, RA= 4h20.8m Dec=+15°39.9', Moon phase=18.6%, Sun altitude hsun=-26.8°
23.1h Moon Close to 71 Tau, SAO 93932 (Double star, separation >10"), 4.5mag, with Sun below horizon, Separation=6.10°, Limb separation=5.83° =10.68 lunar dia., Position angle=81.6° E, Azimuth az=289.2°, Altitude h=6.1°, RA= 4h27.3m Dec=+15°39.2', Moon phase=18.6%, Sun altitude hsun=-27.2°
23.3h Moon Close to Hyadum II, Del1 Tau, SAO 93897 (Multiple star system), 3.8mag, with Sun below horizon, Separation=5.85°, Limb separation=5.58° =10.22 lunar dia., Position angle=61.2° NE, Azimuth az=292.8°, Altitude h=6.1°, RA= 4h23.9m Dec=+17°34.7', Moon phase=18.7%, Sun altitude hsun=-27.6°
23.3h Moon Close to Del2 Tau, SAO 93907 (Multiple star system), 4.8mag, with Sun below horizon, Separation=6.04°, Limb separation=5.77° =10.57 lunar dia., Position angle=63.4° NE, Azimuth az=292.6°, Altitude h=6.1°, RA= 4h25.1m Dec=+17°28.8', Moon phase=18.7%, Sun altitude hsun=-27.7°
23.4h Moon Close to Del3 Tau, SAO 93923 (Multiple star system), 4.3mag, with Sun below horizon, Separation=6.51°, Limb separation=6.24° =11.43 lunar dia., Position angle=60.9° NE, Azimuth az=293.5°, Altitude h=6.1°, RA= 4h26.5m Dec=+17°57.8', Moon phase=18.7%, Sun altitude hsun=-27.9°
23h36.1m Moon Max. Libration North: North Pole and Mare Frigoris are tipped into view (Earth's selenographic longitude: 1.208°, latitude: +6.681°)

АПРЕЛЬ

Москва, Россия Lon: +38d00m00.00s Lat: +56d00m00.00s Alt: 194m Geoid Alt: 179m

Saturday 1 April 2017Time (24-hour clock) Object (Link) Event
13.3h Mercury Greatest Elongation (19.0° East, in the evenings, brightness: -0.1 mag)
19.7h Moon Close to Aldebaran, Alp Tau, SAO 94027 (Multiple star system), 0.9mag, with Sun below horizon, Separation=4.11°, Limb separation=3.83° =6.98 lunar dia., Position angle=265.1° W, Azimuth az=244.5°, Altitude h=35.4°, RA= 4h36.9m Dec=+16°32.4', Moon phase=27.1%, Sun altitude hsun=-6.0°
20.1h Moon Close to The1 Tau, SAO 93955 (Close double star), 3.8mag, with Sun below horizon, Separation=6.11°, Limb separation=5.83° =10.63 lunar dia., Position angle=261.0° W, Azimuth az=251.5°, Altitude h=31.1°, RA= 4h29.5m Dec=+15°59.8', Moon phase=27.2%, Sun altitude hsun=-9.0°
20.1h Moon Close to The2 Tau, SAO 93957 (Multiple star system), 3.4mag, with Sun below horizon, Separation=6.10°, Limb separation=5.82° =10.62 lunar dia., Position angle=260.1° W, Azimuth az=251.4°, Altitude h=31.0°, RA= 4h29.6m Dec=+15°54.3', Moon phase=27.2%, Sun altitude hsun=-9.0°
20.5h Moon Close to 75 Tau, SAO 93950 (Close double star), 5.0mag, with Sun below horizon, Separation=6.29°, Limb separation=6.02° =10.98 lunar dia., Position angle=264.6° W, Azimuth az=257.3°, Altitude h=28.2°, RA= 4h29.4m Dec=+16°23.6', Moon phase=27.4%, Sun altitude hsun=-12.0°
20.5h Moon Close to 97 Tau, SAO 94164, 5.1mag, with Sun below horizon, Separation=2.13°, Limb separation=1.86° =3.39 lunar dia., Position angle=338.2° N, Azimuth az=253.7°, Altitude h=33.3°, RA= 4h52.4m Dec=+18°51.9', Moon phase=27.4%, Sun altitude hsun=-12.0°
20.5h Moon Close to NSV 01627, SAO 93975 (Multiple star system), 4.8mag, with Sun below horizon, Separation=5.81°, Limb separation=5.53° =10.10 lunar dia., Position angle=262.7° W, Azimuth az=256.7°, Altitude h=28.3°, RA= 4h31.5m Dec=+16°13.6', Moon phase=27.4%, Sun altitude hsun=-12.0°
20.5h Moon Close to Sig1 Tau, SAO 94051 (Close double star), 5.1mag, with Sun below horizon, Separation=3.87°, Limb separation=3.60° =6.56 lunar dia., Position angle=253.7° W, Azimuth az=254.5°, Altitude h=29.2°, RA= 4h40.1m Dec=+15°49.8', Moon phase=27.4%, Sun altitude hsun=-12.0°
20.5h Moon Close to Sig2 Tau, SAO 94054 (Double star, separation >10"), 4.7mag, with Sun below horizon, Separation=3.81°, Limb separation=3.54° =6.46 lunar dia., Position angle=255.3° W, Azimuth az=254.5°, Altitude h=29.3°, RA= 4h40.2m Dec=+15°56.9', Moon phase=27.4%, Sun altitude hsun=-12.0°
20.9h Moon Close to 81 Tau, SAO 93978, 5.5mag, with Sun below horizon, Separation=6.09°, Limb separation=5.82° =10.62 lunar dia., Position angle=258.0° W, Azimuth az=261.9°, Altitude h=24.5°, RA= 4h31.6m Dec=+15°43.5', Moon phase=27.6%, Sun altitude hsun=-15.0°

Sunday 2 April 2017Time (24-hour clock) Object (Link) Event
0.1h Moon Close to 104 Tau, SAO 94332 (Close double star), 4.9mag, with Sun below horizon, Separation=1.92°, Limb separation=1.65° =3.04 lunar dia., Position angle=30.6° NE, Azimuth az=296.4°, Altitude h=5.1°, RA= 5h00.5m Dec=+18°39.8', Moon phase=29.0%, Sun altitude hsun=-28.9°
0.2h Moon Close to 111 Tau, SAO 94526, 5.0mag, with Sun below horizon, Separation=4.93°, Limb separation=4.66° =8.58 lunar dia., Position angle=86.3° E, Azimuth az=292.4°, Altitude h=6.1°, RA= 5h25.4m Dec=+17°23.7', Moon phase=29.1%, Sun altitude hsun=-29.0°
0.3h Moon Close to 115 Tau, SAO 94554 (Multiple star system), 5.4mag, with Sun below horizon, Separation=5.56°, Limb separation=5.29° =9.75 lunar dia., Position angle=81.0° E, Azimuth az=293.5°, Altitude h=6.1°, RA= 5h28.2m Dec=+17°58.4', Moon phase=29.1%, Sun altitude hsun=-29.1°
10h Mercury Magnitude dims to 0 mag
10h38.5m Moon Max. Libration (6.997°)
11h44m Carrington Solar Rotation Begin of Carrington rotation number 2189
20.2h Moon Close to Chi1 Ori, SAO 77705, 4.4mag, Separation=2.11°, Limb separation=1.83° =3.36 lunar dia., Position angle=0.3° N, Azimuth az=233.7°, Altitude h=44.6°, RA= 5h55.4m Dec=+20°16.5', Moon phase=38.1%, Sun altitude hsun=-8.9°
20.6h Moon Close to 119 Tau, SAO 94628, 4.3mag, with Sun below horizon, Separation=5.46°, Limb separation=5.19° =9.52 lunar dia., Position angle=273.7° W, Azimuth az=245.1°, Altitude h=37.6°, RA= 5h33.2m Dec=+18°36.2', Moon phase=38.3%, Sun altitude hsun=-12.0°
21.0h Moon Close to 130 Tau, SAO 94858 (Close double star), 5.5mag, with Sun below horizon, Separation=2.09°, Limb separation=1.82° =3.35 lunar dia., Position angle=257.8° W, Azimuth az=247.1°, Altitude h=35.6°, RA= 5h48.4m Dec=+17°43.9', Moon phase=38.5%, Sun altitude hsun=-15.0°

Monday 3 April 2017Time (24-hour clock) Object (Link) Event

0.0h Moon Close to 64 Ori, SAO 95166 (Close double star), 5.1mag, Separation=1.58°, Limb separation=1.31° =2.42 lunar dia., Position angle=2.7° N, Azimuth az=284.5°, Altitude h=14.1°, RA= 6h04.5m Dec=+19°41.2', Moon phase=39.9%, Sun altitude hsun=-28.5°

0.2h Moon Close to Chi2 Ori, SAO 77911 (Multiple star system), 4.6mag, Separation=2.03°, Limb separation=1.76° =3.26 lunar dia., Position angle=2.8° N, Azimuth az=286.3°, Altitude h=13.3°, RA= 6h04.9m Dec=+20°00.0', Moon phase=40.0%, Sun altitude hsun=-28.6°
1.2h Moon Close to 71 Ori, SAO 95432 (Multiple star system), 5.2mag, with Sun below horizon, Separation=2.31°, Limb separation=2.04° =3.79 lunar dia., Position angle=63.0° NE, Azimuth az=295.6°, Altitude h=6.0°, RA= 6h15.8m Dec=+19°00.8', Moon phase=40.5%, Sun altitude hsun=-28.2°
1.6h Moon Close to Nu Gem, SAO 78423 (Multiple star system), 4.1mag, with Sun below horizon, Separation=5.54°, Limb separation=5.28° =9.81 lunar dia., Position angle=68.6° E, Azimuth az=297.7°, Altitude h=6.1°, RA= 6h30.0m Dec=+20°11.8', Moon phase=40.7%, Sun altitude hsun=-27.4°
9h14.0m Moon Max. Decl. North (declination: +18.983°)
This is the lowest northernmost moon position of the next 10 years. Former lower northern northernmost moon position was at 7.3.2017. Next lower northern northernmost moon position is at 9.2.2033 (calculated for the geocenter)
20.6h Moon Close to 26 Gem, SAO 96015 (Close double star), 5.2mag, with Sun below horizon, Separation=3.09°, Limb separation=2.82° =5.23 lunar dia., Position angle=258.2° W, Azimuth az=226.9°, Altitude h=44.1°, RA= 6h43.4m Dec=+17°37.5', Moon phase=49.6%, Sun altitude hsun=-12.0°
21h39.4m Moon First Quarter (diameter: 32.0216', declination: +18.826°)
This is the northernmost first quarter moon of the year. Former more northern first quarter moon was at 8.3.2014. Next more northern first quarter moon is at 24.3.2018 (calculated for the geocenter)
22h03.4m Moon Topocentric First Quarter (Altitude=+36.2°, topocentric diameter: 32.342', topocentric airfree declination: 18.15°)

Tuesday 4 April 2017Time (24-hour clock) Object (Link) Event
20.6h Moon Close to 74 Gem, SAO 97120 (Close double star), 5.0mag, with Sun below horizon, Separation=3.44°, Limb separation=3.17° =5.92 lunar dia., Position angle=277.8° W, Azimuth az=210.6°, Altitude h=48.6°, RA= 7h40.5m Dec=+17°37.9', Moon phase=60.7%, Sun altitude hsun=-12.0°
20.6h Moon Close to 81 Gem, SAO 97221 (Close double star), 4.9mag, with Sun below horizon, Separation=2.25°, Limb separation=1.98° =3.70 lunar dia., Position angle=306.0° NW, Azimuth az=208.7°, Altitude h=49.8°, RA= 7h47.1m Dec=+18°27.9', Moon phase=60.7%, Sun altitude hsun=-12.0°
21.1h Moon Close to SAO 96985, XZ 11245, 5.5mag, with Sun below horizon, Separation=5.43°, Limb separation=5.16° =9.63 lunar dia., Position angle=268.6° W, Azimuth az=221.3°, Altitude h=45.3°, RA= 7h32.8m Dec=+17°02.8', Moon phase=60.9%, Sun altitude hsun=-15.0°

Wednesday 5 April 2017Time (24-hour clock) Object (Link) Event
2.8h Moon Close to Zet2 Cnc, SAO 97645 (Multiple star system), 5.1mag, with Sun below horizon, Separation=1.68°, Limb separation=1.42° =2.69 lunar dia., Position angle=48.8° NE, Azimuth az=292.8°, Altitude h=6.1°, RA= 8h13.2m Dec=+17°35.6', Moon phase=63.5%, Sun altitude hsun=-21.6°
21.1h Moon Close to The Cnc, SAO 97881 (Multiple star system), 5.3mag, with Sun below horizon, Separation=5.56°, Limb separation=5.29° =9.99 lunar dia., Position angle=302.7° NW, Azimuth az=203.9°, Altitude h=50.2°, RA= 8h32.6m Dec=+18°02.0', Moon phase=71.2%, Sun altitude hsun=-15.0°
21.1h Tuttle-Giacobini-Kre →Star chart Comet '41P' closest to earth
Distance to Sun center=1.051 AU, Distance to Earth center=0.148 AU = 57.8 lunar distances, Relative velocity=8.37 km/s, Magnitude= 6.2 mag, Elongation=105.9°, RA=13h18.7m Dec=+67°43.2' (J2000, geocentric) (in constellation Draco/Dra)

Thursday 6 April 2017Time (24-hour clock) Object (Link) Event
0.1h Moon Close to Omi1 Cnc, SAO 98247, 5.2mag, Separation=0.70°, Limb separation=0.44° =0.83 lunar dia., Position angle=16.8° N, Azimuth az=248.0°, Altitude h=32.1°, RA= 8h58.2m Dec=+15°15.2', Moon phase=72.5%, Sun altitude hsun=-27.4°; (Northern limit: 38°00'E 15°03'N, alt=23.3°, bright limb; Southern limit: 38°00'E 19°41'S, alt= 9.7°, bright limb)
3.9h Moon Close to Pi 2 Cnc, SAO 98456, 5.4mag, with Sun below horizon, Separation=2.68°, Limb separation=2.42° =4.63 lunar dia., Position angle=72.3° E, Azimuth az=292.0°, Altitude h=3.5°, RA= 9h16.2m Dec=+14°52.0', Moon phase=74.0%, Sun altitude hsun=-15.0°
8h Saturn Stationary: Getting Retrograde (relative to ecliptic)
9h Saturn Stationary: Getting Retrograde (relative to equator)
13h16.2m Moon Max. Libration East: Mare Crisium limb is tipped into view (Earth's selenographic longitude: 5.582°, latitude: +1.380°)
19h30m Sun Sun rotation axis at maximum tilt (Position angle: -26.3°, heliographic latitude: -6.2°)
21.2h Moon Close to Psi Leo, SAO 98733 (Double star, separation >10"), 5.4mag, with Sun below horizon, Separation=1.95°, Limb separation=1.69° =3.22 lunar dia., Position angle=350.1° N, Azimuth az=179.2°, Altitude h=48.0°, RA= 9h44.7m Dec=+13°56.4', Moon phase=80.4%, Sun altitude hsun=-15.0°

Friday 7 April 2017Time (24-hour clock) Object (Link) Event
3.4h Moon Close to Nu Leo, SAO 98876 (Close double star), 5.3mag, Separation=1.39°, Limb separation=1.13° =2.18 lunar dia., Position angle=18.0° N, Azimuth az=276.8°, Altitude h=10.4°, RA= 9h59.2m Dec=+12°21.6', Moon phase=82.5%, Sun altitude hsun=-17.7°
3.5h Moon Golden Handle visible on the Moon from 1.5h - 4.7h (htop=10° at W at 3.5h) (sun rises on the Jura mountains, while Sinus Iridum is still in shadow)
4.1h Moon Close to Regulus, Alp Leo, SAO 98967 (Multiple star system), 1.4mag, with Sun below horizon, Separation=2.73°, Limb separation=2.47° =4.77 lunar dia., Position angle=69.9° E, Azimuth az=284.2°, Altitude h=4.9°, RA=10h00.3m Dec=+11°52.8', Moon phase=82.7%, Sun altitude hsun=-13.5°
4.3h Moon Close to 31 Leo, SAO 98964 (Double star, separation <10"), 4.4mag, with Sun below horizon, Separation=2.53°, Limb separation=2.27° =4.39 lunar dia., Position angle=113.0° SE, Azimuth az=285.7°, Altitude h=1.8°, RA=10h00.8m Dec= +9°54.6', Moon phase=82.8%, Sun altitude hsun=-12.0°
20.4h Moon Close to Rho Leo, SAO 118355 (Close double star), 3.8mag, with Sun below horizon, Separation=0.93°, Limb separation=0.67° =1.30 lunar dia., Position angle=311.8° NW, Azimuth az=148.7°, Altitude h=39.6°, RA=10h33.7m Dec= +9°12.9', Moon phase=87.8%, Sun altitude hsun=-9.0°

Saturday 8 April 2017Time (24-hour clock) Object (Link) Event
0h39m Jupiter Opposition (distance to earth: 4.455 AU, brightness: -2.5 mag, diameter: 44.19")
4.3h Moon Close to 59 Leo, SAO 118615 (Double star, separation >10"), 5.0mag, with Sun below horizon, Separation=3.14°, Limb separation=2.88° =5.61 lunar dia., Position angle=113.9° SE, Azimuth az=271.9°, Altitude h=6.1°, RA=11h01.6m Dec= +6°00.4', Moon phase=89.9%, Sun altitude hsun=-11.6°
4.5h Moon Close to Chi Leo, SAO 118648 (Multiple star system), 4.6mag, with Sun below horizon, Separation=3.82°, Limb separation=3.56° =6.95 lunar dia., Position angle=90.2° E, Azimuth az=274.1°, Altitude h=6.1°, RA=11h05.9m Dec= +7°14.5', Moon phase=90.0%, Sun altitude hsun=-10.2°
20.4h Moon Close to Sig Leo, SAO 118804, 4.0mag, with Sun below horizon, Separation=1.67°, Limb separation=1.41° =2.75 lunar dia., Position angle=318.7° NW, Azimuth az=137.9°, Altitude h=33.0°, RA=11h22.0m Dec= +5°56.0', Moon phase=93.7%, Sun altitude hsun=-9.0°

Sunday 9 April 2017Time (24-hour clock) Object (Link) Event
0h26m Jupiter Closest Approach (distance to earth: 4.455 AU, brightness: -2.5 mag, diameter: 44.19")
4.6h Moon Close to Zavijah, Bet Vir, SAO 119076 (Multiple star system), 3.6mag, with Sun below horizon, Separation=3.35°, Limb separation=3.10° =6.09 lunar dia., Position angle=118.4° SE, Azimuth az=264.1°, Altitude h=6.1°, RA=11h51.6m Dec= +1°40.0', Moon phase=95.3%, Sun altitude hsun=-8.8°
Tuttle-Giacobini-Kre →Star chart Comet '41P' brightest
Distance to Sun center=1.047 AU, Distance to Earth center=0.149 AU = 58.0 lunar distances, Relative velocity=8.33 km/s, Magnitude= 6.2 mag, Elongation=103.8°, RA=14h23.6m Dec=+67°33.2' (J2000, geocentric) (in constellation Ursa Minor/UMi)
21.3h Moon Close to 7 Vir, SAO 119156, 5.4mag, with Sun below horizon, Separation=4.96°, Limb separation=4.71° =9.25 lunar dia., Position angle=308.9° NW, Azimuth az=144.4°, Altitude h=32.5°, RA=12h00.8m Dec= +3°33.5', Moon phase=97.8%, Sun altitude hsun=-15.0°

Monday 10 April 2017Time (24-hour clock) Object (Link) Event
1.1h Moon Close to Zaniah, Eta Vir, SAO 138721 (Close double star), 3.9mag, Separation=0.61°, Limb separation=0.35° =0.70 lunar dia., Position angle=204.7° SW, Azimuth az=205.9°, Altitude h=30.5°, RA=12h20.8m Dec= -0°45.8', Moon phase=98.2%, Sun altitude hsun=-25.7°
5.1h Moon Close to Porrima, Gam Vir, SAO 138917 (Multiple star system), 2.8mag, with Sun below horizon, Separation=3.57°, Limb separation=3.32° =6.58 lunar dia., Position angle=100.5° E, Azimuth az=258.2°, Altitude h=6.1°, RA=12h42.5m Dec= -1°32.7', Moon phase=98.6%, Sun altitude hsun=-5.0°
5.1h Moon Close to g29 Virginis (Multiple star system), 3.5mag, with Sun below horizon, Separation=3.57°, Limb separation=3.32° =6.59 lunar dia., Position angle=100.5° E, Azimuth az=258.2°, Altitude h=6.1°, RA=12h42.6m Dec= -1°32.7', Moon phase=98.6%, Sun altitude hsun=-5.0°

Tuesday 11 April 2017Time (24-hour clock) Object (Link) Event
1.8h Moon Close to Jupiter, -2.5mag, Separation=1.26°, Limb separation=1.00° =1.98 lunar dia., Position angle=203.8° SW, Azimuth az=204.4°, Altitude h=25.9°, RA=13h08.3m Dec= -5°32.7', Moon phase=99.8%, Sun altitude hsun=-23.7°
8h37.4m Moon Topocentric Full Moon (Altitude=-21.6°, topocentric diameter: 29.792', topocentric airfree declination: -5.45°, maximum phase: 99.93%)
9h08.1m Moon Full Moon (diameter: 29.9599', declination: -4.807°)

Thursday 13 April 2017Time (24-hour clock) Object (Link) Event
3.5h Moon Close to Xi 2 Lib, SAO 158915, 5.5mag, with Sun below horizon, Separation=2.57°, Limb separation=2.32° =4.67 lunar dia., Position angle=78.5° E, Azimuth az=203.3°, Altitude h=20.0°, RA=14h57.7m Dec=-11°28.7', Moon phase=96.9%, Sun altitude hsun=-15.0°

Friday 14 April 2017Time (24-hour clock) Object (Link) Event
2.0h Tuttle-Giacobini-Kre →Star chart Comet '41P' at perihelion
Distance to Sun center=1.045 AU, Distance to Earth center=0.153 AU = 59.4 lunar distances, Relative velocity=8.26 km/s, Magnitude= 6.2 mag, Elongation=101.9°, RA=15h45.2m Dec=+64°29.5' (J2000, geocentric) (in constellation Draco/Dra)
3.4h Moon Close to Eta Lib, SAO 159466, 5.4mag, with Sun below horizon, Separation=2.49°, Limb separation=2.24° =4.53 lunar dia., Position angle=107.7° E, Azimuth az=190.7°, Altitude h=17.8°, RA=15h45.1m Dec=-15°43.5', Moon phase=92.8%, Sun altitude hsun=-15.0°
4h34.9m Moon Emersion of Zuben Elakrab, Gam Lib, SAO 159370 (Multiple star system), 3.9mag, Position Angle=334.0°, Azimuth az=210.0°, Altitude h=14.9°, RA=15h36.5m Dec=-14°50.7', Moon phase=92.6%, Sun altitude hsun=-7.3° (dark limb); (Southern limit: 38°00'E 9°00'N, alt=45.5°, bright limb)
Uranus Conjunction: only 33.6' separated from center of Sun. Distance to earth: 20.933 AU
16h38.6m Moon Max. Libration South: South Pole is tipped into view (Earth's selenographic longitude: -0.255°, latitude: -6.673°)
23.2h Moon Close to 48 Lib, SAO 159607 (Close double star), 5.0mag, with Sun below horizon, Separation=5.04°, Limb separation=4.80° =9.76 lunar dia., Position angle=301.0° NW, Azimuth az=126.9°, Altitude h=6.1°, RA=15h59.2m Dec=-14°19.6', Moon phase=88.3%, Sun altitude hsun=-22.5°
23.6h Moon Close to 49 Lib, SAO 159625, 5.5mag, with Sun below horizon, Separation=3.97°, Limb separation=3.73° =7.58 lunar dia., Position angle=275.5° W, Azimuth az=132.0°, Altitude h=6.1°, RA=16h01.3m Dec=-16°34.9', Moon phase=88.2%, Sun altitude hsun=-23.4°

Saturday 15 April 2017Time (24-hour clock) Object (Link) Event
3.8h Moon Close to 24 (Scorpii)/Ophiuchi, SAO 160046, 4.9mag, with Sun below horizon, Separation=4.33°, Limb separation=4.09° =8.29 lunar dia., Position angle=94.9° E, Azimuth az=182.7°, Altitude h=16.2°, RA=16h42.6m Dec=-17°46.4', Moon phase=87.2%, Sun altitude hsun=-12.4°
3.9h Moon Close to Phi Oph, SAO 159963 (Multiple star system), 4.3mag, with Sun below horizon, Separation=1.95°, Limb separation=1.71° =3.46 lunar dia., Position angle=68.5° E, Azimuth az=186.1°, Altitude h=17.2°, RA=16h32.1m Dec=-16°38.9', Moon phase=87.1%, Sun altitude hsun=-12.0°
12h21m Sun Equation of time is zero; the apparent solar time is now equal to the mean solar time
12h57.3m Moon Apogee (distance moon center to earth center: 405445.4 km; closest point on earth ellipsoid with latitude -17.2° (WGS84), distance to moon center: 399069.1 km, apparent diameter: 29'56.7")

Sunday 16 April 2017Time (24-hour clock) Object (Link) Event
3h Meteor Shower April Lyrids (LYR) (active until 25.4., from constellation Hercules/Her), persistent trails.

Monday 17 April 2017Time (24-hour clock) Object (Link) Event
2.2h Moon Close to Saturn, 0.4mag, with Sun below horizon, Separation=3.51°, Limb separation=3.27° =6.62 lunar dia., Position angle=230.2° SW, Azimuth az=146.2°, Altitude h=6.1°, RA=17h50.1m Dec=-22°03.6', Moon phase=72.8%, Sun altitude hsun=-20.2°
3.7h Moon Close to 21 Sgr, SAO 186794, 4.9mag, with Sun below horizon, Separation=5.29°, Limb separation=5.04° =10.19 lunar dia., Position angle=96.4° E, Azimuth az=158.2°, Altitude h=11.1°, RA=18h26.4m Dec=-20°31.7', Moon phase=72.3%, Sun altitude hsun=-12.3°
16h16.4m Moon Max. Decl. South (declination: -19.096°)
This is the lowest southernmost moon position of the next 10 years. Former lower southern southernmost moon position was at 21.3.2017. Next lower southern southernmost moon position is at 10.10.2032 (calculated for the geocenter)

Tuesday 18 April 2017Time (24-hour clock) Object (Link) Event
2.2h Moon Close to SAO 161564, XZ 25418 (Multiple star system), 5.1mag, with Sun below horizon, Separation=4.88°, Limb separation=4.63° =9.34 lunar dia., Position angle=288.0° W, Azimuth az=136.3°, Altitude h=6.1°, RA=18h32.4m Dec=-18°23.3', Moon phase=64.0%, Sun altitude hsun=-19.9°
2.8h Moon Close to 29 Sgr, SAO 187324 (Double star, separation >10"), 5.2mag, with Sun below horizon, Separation=0.77°, Limb separation=0.52° =1.06 lunar dia., Position angle=234.2° SW, Azimuth az=141.2°, Altitude h=6.1°, RA=18h50.7m Dec=-20°18.1', Moon phase=63.8%, Sun altitude hsun=-17.2°

Wednesday 19 April 2017Time (24-hour clock) Object (Link) Event
2.8h Moon Close to Rho1 Sgr, SAO 162512 (Close double star), 3.9mag, with Sun below horizon, Separation=5.31°, Limb separation=5.06° =10.12 lunar dia., Position angle=283.8° W, Azimuth az=134.9°, Altitude h=6.1°, RA=19h22.7m Dec=-17°48.7', Moon phase=54.3%, Sun altitude hsun=-16.5°
3.0h Moon Close to 43 Sgr, SAO 162413 (Close double star), 4.9mag, with Sun below horizon, Separation=6.14°, Limb separation=5.89° =11.77 lunar dia., Position angle=271.9° W, Azimuth az=137.6°, Altitude h=6.1°, RA=19h18.6m Dec=-18°55.2', Moon phase=54.2%, Sun altitude hsun=-16.0°
7.9h Pan-STARRS →Star chart Comet 'C/2015 ER61' closest to earth
Distance to Sun center=1.099 AU, Distance to Earth=1.179 AU, Magnitude= 5.9 mag, Elongation=59.8°, RA=22h00.4m Dec= -7°59.2' (J2000, geocentric) (in constellation Aquarius/Aqr)
12h56.7m Moon Last Quarter (diameter: 30.1191', declination: -17.595°)
This is the 2nd southernmost last quarter moon of the year. Former more southern last quarter moon was at 20.3.2017. Next more southern last quarter moon is at 9.3.2018 (calculated for the geocenter)
14h30.6m Moon Topocentric Last Quarter (Altitude=-29.9°, topocentric diameter: 29.907', topocentric airfree declination: -18.14°)

Thursday 20 April 2017Time (24-hour clock) Object (Link) Event

3.5h Moon Close to Okul, Pi Cap, SAO 163592 (Multiple star system), 5.1mag, with Sun below horizon, Separation=2.31°, Limb separation=2.06° =4.06 lunar dia., Position angle=248.2° W, Azimuth az=130.6°, Altitude h=3.9°, RA=20h28.3m Dec=-18°00.2', Moon phase=44.1%, Sun altitude hsun=-12.3°
3.5h Moon Close to Rho Cap, SAO 163614 (Multiple star system), 4.9mag, with Sun below horizon, Separation=1.84°, Limb separation=1.59° =3.13 lunar dia., Position angle=255.3° W, Azimuth az=130.2°, Altitude h=4.0°, RA=20h29.8m Dec=-17°45.3', Moon phase=44.1%, Sun altitude hsun=-12.3°
3.7h Moon Close to Tau Cap, SAO 163771 (Multiple star system), 5.2mag, with Sun below horizon, Separation=2.47°, Limb separation=2.22° =4.38 lunar dia., Position angle=15.2° N, Azimuth az=128.2°, Altitude h=6.1°, RA=20h40.2m Dec=-14°53.6', Moon phase=44.1%, Sun altitude hsun=-11.6°
8.9h Mercury Conjunction (inferior), 1.6° separated from center of Sun. Distance to earth: 0.575 AU
Pluto Stationary: Getting Retrograde (relative to ecliptic)
Pluto Stationary: Getting Retrograde (relative to equator)

Friday 21 April 2017Time (24-hour clock) Object (Link) Event
4.1h Moon Close to 18 Aqr, SAO 164364 (Double star, separation >10"), 5.5mag, with Sun below horizon, Separation=2.21°, Limb separation=1.95° =3.79 lunar dia., Position angle=328.4° NW, Azimuth az=123.7°, Altitude h=6.1°, RA=21h25.1m Dec=-12°48.2', Moon phase=34.0%, Sun altitude hsun=-8.6°
4.2h Moon Close to 29 Cap, SAO 164263, 5.3mag, with Sun below horizon, Separation=3.28°, Limb separation=3.02° =5.88 lunar dia., Position angle=262.8° W, Azimuth az=128.6°, Altitude h=6.1°, RA=21h16.7m Dec=-15°05.9', Moon phase=33.9%, Sun altitude hsun=-7.5°

Saturday 22 April 2017Time (24-hour clock) Object (Link) Event
3h44.8m Moon Max. Libration West: Crater Grimaldi is tipped into view (Earth's selenographic longitude: -7.421°, latitude: +0.144°)
9h02.2m Moon Max. Libration (7.425°)
17h Meteor Maximum April Lyrids (LYR) ZHR=12.8 Velocity=47.9km/s (rather rapid)
Radiant: RA=18.1h/271° Dec=33.2° (J2000) (in constellation Hercules/Her)
Solar longitude=32.4° (J2000)
Stream active from 16. to 25. April

Sunday 23 April 2017Time (24-hour clock) Object (Link) Event
11.6h Mercury Closest Approach (distance to earth: 0.568 AU, brightness: 5.3 mag, diameter: 11.83")

Monday 24 April 2017Time (24-hour clock) Object (Link) Event
4.7h Moon Close to Venus, -4.7mag, with Sun below horizon, Separation=6.48°, Limb separation=6.25° =11.62 lunar dia., Position angle=313.5° NW, Azimuth az=95.9°, Altitude h=6.1°, RA=23h49.7m Dec= +1°40.5', Moon phase=8.3%, Sun altitude hsun=-3.2°

Wednesday 26 April 2017Time (24-hour clock) Object (Link) Event
15h16.2m Moon New Moon (diameter: 33.1320', declination: +9.331°)
16h13.0m Moon Topocentric New Moon (Altitude=+26.2°, topocentric diameter: 33.404', topocentric airfree declination: 8.72°, minimum phase: 0.21%)
18.2h Venus Brilliancy (Brightness: -4.75 mag)

Thursday 27 April 2017Time (24-hour clock) Object (Link) Event
19h08.0m Moon Perigee (distance moon center to earth center: 359337.3 km; closest point on earth ellipsoid with latitude 13.9° (WGS84), distance to moon center: 352960.4 km, apparent diameter: 33'51.4")

Friday 28 April 2017Time (24-hour clock) Object (Link) Event
5h42.5m Moon Max. Libration North: North Pole and Mare Frigoris are tipped into view (Earth's selenographic longitude: 0.360°, latitude: +6.554°)
15h18m Mercury (3.2 mag) Close to Uranus: only 5.6' separated from center of Uranus, brightness: 5.9 mag, position angle=308.17° NW; Sun elongation=13.09° West (morning)
17h49m Mercury Conjunction with Uranus: only 6.5' separated from center of Uranus, position angle=338.64° N. Distance to earth: 0.585 AU
20.8h Moon Close to Mars, 1.6mag, with Sun below horizon, Separation=7.66°, Limb separation=7.44° =13.41 lunar dia., Position angle=314.8° NW, Azimuth az=289.0°, Altitude h=13.5°, RA= 4h11.9m Dec=+21°45.8', Moon phase=7.6%, Sun altitude hsun=-6.0°
20h49m Mercury Conjunction in Right Ascension with Uranus: only 9.2' separated from center of Uranus, position angle=360.00° N
21.2h Moon Close to 58 Tau, SAO 93876, 5.3mag, with Sun below horizon, Separation=3.58°, Limb separation=3.31° =5.97 lunar dia., Position angle=251.4° W, Azimuth az=288.3°, Altitude h=6.1°, RA= 4h21.6m Dec=+15°07.9', Moon phase=7.7%, Sun altitude hsun=-8.6°
21.2h Moon Close to Hyadum I, Gam Tau, SAO 93868 (Close double star), 3.6mag, with Sun below horizon, Separation=3.67°, Limb separation=3.39° =6.12 lunar dia., Position angle=260.3° W, Azimuth az=289.2°, Altitude h=6.1°, RA= 4h20.8m Dec=+15°39.9', Moon phase=7.7%, Sun altitude hsun=-8.9°
21.2h Moon Close to Hyadum II, Del1 Tau, SAO 93897 (Multiple star system), 3.8mag, with Sun below horizon, Separation=3.15°, Limb separation=2.88° =5.19 lunar dia., Position angle=294.3° NW, Azimuth az=289.9°, Altitude h=8.0°, RA= 4h23.9m Dec=+17°34.7', Moon phase=7.7%, Sun altitude hsun=-9.0°
21.2h Moon Close to The1 Tau, SAO 93955 (Close double star), 3.8mag, with Sun below horizon, Separation=1.55°, Limb separation=1.27° =2.29 lunar dia., Position angle=260.2° W, Azimuth az=287.9°, Altitude h=7.4°, RA= 4h29.5m Dec=+15°59.8', Moon phase=7.7%, Sun altitude hsun=-9.0°
21.2h Moon Close to The2 Tau, SAO 93957 (Multiple star system), 3.4mag, with Sun below horizon, Separation=1.54°, Limb separation=1.27° =2.29 lunar dia., Position angle=256.7° W, Azimuth az=287.8°, Altitude h=7.4°, RA= 4h29.6m Dec=+15°54.3', Moon phase=7.7%, Sun altitude hsun=-9.0°
21.3h Moon Close to 71 Tau, SAO 93932 (Double star, separation >10"), 4.5mag, with Sun below horizon, Separation=2.21°, Limb separation=1.93° =3.48 lunar dia., Position angle=253.7° W, Azimuth az=289.2°, Altitude h=6.1°, RA= 4h27.3m Dec=+15°39.2', Moon phase=7.7%, Sun altitude hsun=-9.6°
21.4h Moon Close to 81 Tau, SAO 93978, 5.5mag, with Sun below horizon, Separation=1.26°, Limb separation=0.98° =1.77 lunar dia., Position angle=244.5° SW, Azimuth az=289.4°, Altitude h=6.1°, RA= 4h31.6m Dec=+15°43.5', Moon phase=7.7%, Sun altitude hsun=-10.0°
21.4h Moon Close to 75 Tau, SAO 93950 (Close double star), 5.0mag, with Sun below horizon, Separation=1.69°, Limb separation=1.42° =2.56 lunar dia., Position angle=274.1° W, Azimuth az=290.6°, Altitude h=6.1°, RA= 4h29.4m Dec=+16°23.6', Moon phase=7.7%, Sun altitude hsun=-10.2°
21.4h Moon Close to NSV 01627, SAO 93975 (Multiple star system), 4.8mag, with Sun below horizon, Separation=1.19°, Limb separation=0.91° =1.65 lunar dia., Position angle=267.9° W, Azimuth az=290.3°, Altitude h=6.1°, RA= 4h31.5m Dec=+16°13.6', Moon phase=7.7%, Sun altitude hsun=-10.3°
21.5h Moon Close to Del2 Tau, SAO 93907 (Multiple star system), 4.8mag, with Sun below horizon, Separation=3.00°, Limb separation=2.72° =4.92 lunar dia., Position angle=293.3° NW, Azimuth az=292.6°, Altitude h=6.1°, RA= 4h25.1m Dec=+17°28.8', Moon phase=7.8%, Sun altitude hsun=-10.5°
21h29.7m Moon Immersion of Aldebaran, Alp Tau, SAO 94027 (Multiple star system), 0.9mag, Position angle=13.1°, Azimuth az=290.0°, Altitude h=6.7°, RA= 4h36.9m Dec=+16°32.4', Moon phase=7.8%, Sun altitude hsun=-10.6° (dark limb); (Northern limit: 38°00'E 57°25'N, alt= 6.2°, bright limb)
21.5h Moon Close to Del3 Tau, SAO 93923 (Multiple star system), 4.3mag, with Sun below horizon, Separation=2.98°, Limb separation=2.71° =4.89 lunar dia., Position angle=304.1° NW, Azimuth az=293.5°, Altitude h=6.1°, RA= 4h26.5m Dec=+17°57.8', Moon phase=7.8%, Sun altitude hsun=-10.9°
21.7h Moon Close to Sig1 Tau, SAO 94051 (Close double star), 5.1mag, with Sun below horizon, Separation=0.81°, Limb separation=0.54° =0.97 lunar dia., Position angle=124.1° SE, Azimuth az=292.0°, Altitude h=4.6°, RA= 4h40.1m Dec=+15°49.7', Moon phase=7.8%, Sun altitude hsun=-12.0°
21.7h Moon Close to Sig2 Tau, SAO 94054 (Double star, separation >10"), 4.7mag, with Sun below horizon, Separation=0.78°, Limb separation=0.50° =0.91 lunar dia., Position angle=115.7° SE, Azimuth az=292.0°, Altitude h=4.7°, RA= 4h40.2m Dec=+15°56.9', Moon phase=7.8%, Sun altitude hsun=-12.0°
21h45.3m Moon Emersion of Aldebaran, Alp Tau, SAO 94027 (Multiple star system), 0.9mag, Position Angle=337.1°, Azimuth az=293.1°, Altitude h=4.7°, RA= 4h36.9m Dec=+16°32.4', Moon phase=7.8%, Sun altitude hsun=-12.0° (bright limb); (Northern limit: 38°00'E 57°25'N, alt= 6.2°, bright limb)

22.1h Moon Close to 97 Tau, SAO 94164, 5.1mag, with Sun below horizon, Separation=4.22°, Limb separation=3.94° =7.13 lunar dia., Position angle=53.3° NE, Azimuth az=295.2°, Altitude h=6.1°, RA= 4h52.4m Dec=+18°51.9', Moon phase=7.9%, Sun altitude hsun=-13.7°
22.3h Moon Close to 104 Tau, SAO 94332 (Close double star), 4.9mag, with Sun below horizon, Separation=7.36°, Limb separation=7.08° =12.82 lunar dia., Position angle=72.7° E, Azimuth az=296.4°, Altitude h=5.1°, RA= 5h00.4m Dec=+18°39.8', Moon phase=8.0%, Sun altitude hsun=-14.8°

Saturday 29 April 2017Time (24-hour clock) Object (Link) Event
18h04m Carrington Solar Rotation Begin of Carrington rotation number 2190
21.8h Moon Close to 111 Tau, SAO 94526, 5.0mag, with Sun below horizon, Separation=3.41°, Limb separation=3.13° =5.69 lunar dia., Position angle=259.4° W, Azimuth az=285.2°, Altitude h=10.9°, RA= 5h25.4m Dec=+17°23.7', Moon phase=15.5%, Sun altitude hsun=-12.0°
21.8h Moon Close to 119 Tau, SAO 94628, 4.3mag, with Sun below horizon, Separation=1.62°, Limb separation=1.34° =2.44 lunar dia., Position angle=291.9° W, Azimuth az=284.3°, Altitude h=12.9°, RA= 5h33.2m Dec=+18°36.2', Moon phase=15.5%, Sun altitude hsun=-12.0°
22.4h Moon Close to 115 Tau, SAO 94554 (Multiple star system), 5.4mag, with Sun below horizon, Separation=3.10°, Limb separation=2.83° =5.15 lunar dia., Position angle=269.1° W, Azimuth az=292.6°, Altitude h=6.7°, RA= 5h28.2m Dec=+17°58.4', Moon phase=15.7%, Sun altitude hsun=-15.0°
22.8h Moon Close to 130 Tau, SAO 94858 (Close double star), 5.5mag, with Sun below horizon, Separation=1.48°, Limb separation=1.21° =2.20 lunar dia., Position angle=100.3° E, Azimuth az=293.1°, Altitude h=6.1°, RA= 5h48.4m Dec=+17°43.9', Moon phase=15.8%, Sun altitude hsun=-16.5°
23.2h Moon Close to Chi1 Ori, SAO 77705, 4.4mag, with Sun below horizon, Separation=3.63°, Limb separation=3.35° =6.11 lunar dia., Position angle=51.6° NE, Azimuth az=297.9°, Altitude h=6.1°, RA= 5h55.4m Dec=+20°16.5', Moon phase=16.0%, Sun altitude hsun=-17.7°
23.3h Moon Close to 64 Ori, SAO 95166 (Close double star), 5.1mag, with Sun below horizon, Separation=5.18°, Limb separation=4.91° =8.95 lunar dia., Position angle=71.9° E, Azimuth az=296.7°, Altitude h=6.1°, RA= 6h04.5m Dec=+19°41.2', Moon phase=16.0%, Sun altitude hsun=-17.9°
23.4h Moon Close to Chi2 Ori, SAO 77911 (Multiple star system), 4.6mag, with Sun below horizon, Separation=5.40°, Limb separation=5.13° =9.35 lunar dia., Position angle=67.7° E, Azimuth az=297.5°, Altitude h=6.0°, RA= 6h04.9m Dec=+20°00.0', Moon phase=16.0%, Sun altitude hsun=-18.0°

Sunday 30 April 2017Time (24-hour clock) Object (Link) Event
16h33.9m Moon Max. Decl. North (declination: +19.186°)
This is the lowest northernmost moon position of the next 10 years. Former lower northern northernmost moon position was at 3.4.2017. Next lower northern northernmost moon position is at 25.9.2032 (calculated for the geocenter)
21.3h Moon Close to Nu Gem, SAO 78423 (Multiple star system), 4.1mag, with Sun below horizon, Separation=2.97°, Limb separation=2.70° =4.93 lunar dia., Position angle=305.9° NW, Azimuth az=268.7°, Altitude h=25.5°, RA= 6h30.0m Dec=+20°11.9', Moon phase=24.7%, Sun altitude hsun=-9.0°
21.9h Moon Close to 71 Ori, SAO 95432 (Multiple star system), 5.2mag, with Sun below horizon, Separation=6.09°, Limb separation=5.81° =10.64 lunar dia., Position angle=275.9° W, Azimuth az=277.5°, Altitude h=18.1°, RA= 6h15.8m Dec=+19°00.8', Moon phase=24.9%, Sun altitude hsun=-12.0°
22.8h Moon Close to 26 Gem, SAO 96015 (Close double star), 5.2mag, Separation=0.73°, Limb separation=0.46° =0.85 lunar dia., Position angle=185.2° S, Azimuth az=282.1°, Altitude h=13.2°, RA= 6h43.4m Dec=+17°37.5', Moon phase=25.3%, Sun altitude hsun=-16.0°

МАЙ

Москва, Россия Lon: +38d00m00.00s Lat: +56d00m00.00s Alt: 194m Geoid Alt: 179m

Monday 1 May 2017Time (24-hour clock) Object (Link) Event
0.3h Moon Close to Mekbuda, Zet Gem, SAO 79031 (Multiple star system), 4.0mag, with Sun below horizon, Separation=4.62°, Limb separation=4.35° =8.02 lunar dia., Position angle=61.4° NE, Azimuth az=298.4°, Altitude h=6.1°, RA= 7h05.1m Dec=+20°32.5', Moon phase=26.0%, Sun altitude hsun=-19.0°
20h35.4m Moon Max. Libration (7.069°)
20h47.1m Moon Immersion of 74 Gem, SAO 97120 (Close double star), 5.0mag, Position angle=98.9°, Azimuth az=244.6°, Altitude h=36.7°, RA= 7h40.5m Dec=+17°37.9', Moon phase=35.0%, Sun altitude hsun=-5.4° (dark limb); (Southern limit: 38°00'E 31°25'N, alt=30.0°, bright limb)
21h49.7m Moon Emersion of 74 Gem, SAO 97120 (Close double star), 5.0mag, Position Angle=282.3°, Azimuth az=259.4°, Altitude h=28.4°, RA= 7h40.5m Dec=+17°37.9', Moon phase=35.5%, Sun altitude hsun=-11.6° (bright limb); (Southern limit: 38°00'E 31°25'N, alt=30.0°, bright limb)
22.6h Moon Close to SAO 96985, XZ 11245, 5.5mag, with Sun below horizon, Separation=2.54°, Limb separation=2.27° =4.21 lunar dia., Position angle=259.3° W, Azimuth az=270.2°, Altitude h=20.6°, RA= 7h32.8m Dec=+17°02.8', Moon phase=35.8%, Sun altitude hsun=-15.0°
23.8h Moon Close to 81 Gem, SAO 97221 (Close double star), 4.9mag, Separation=1.11°, Limb separation=0.85° =1.57 lunar dia., Position angle=10.5° N, Azimuth az=283.5°, Altitude h=13.3°, RA= 7h47.1m Dec=+18°27.9', Moon phase=36.4%, Sun altitude hsun=-18.3°

Tuesday 2 May 2017Time (24-hour clock) Object (Link) Event
1.1h Moon Close to Zet2 Cnc, SAO 97645 (Multiple star system), 5.1mag, with Sun below horizon, Separation=5.62°, Limb separation=5.35° =10.00 lunar dia., Position angle=87.3° E, Azimuth az=292.8°, Altitude h=6.1°, RA= 8h13.2m Dec=+17°35.6', Moon phase=37.0%, Sun altitude hsun=-18.2°
22.6h Moon Close to The Cnc, SAO 97881 (Multiple star system), 5.3mag, with Sun below horizon, Separation=3.22°, Limb separation=2.95° =5.54 lunar dia., Position angle=320.7° NW, Azimuth az=259.9°, Altitude h=28.5°, RA= 8h32.6m Dec=+18°02.0', Moon phase=46.9%, Sun altitude hsun=-15.0°

Wednesday 3 May 2017Time (24-hour clock) Object (Link) Event
1.5h Moon Close to Omi1 Cnc, SAO 98247, 5.2mag, with Sun below horizon, Separation=2.57°, Limb separation=2.31° =4.37 lunar dia., Position angle=87.6° E, Azimuth az=288.5°, Altitude h=6.1°, RA= 8h58.2m Dec=+15°15.3', Moon phase=48.2%, Sun altitude hsun=-17.0°
5h21.8m Moon Topocentric First Quarter (Altitude=-17.4°, topocentric diameter: 31.439', topocentric airfree declination: 14.62°)
5h46.9m Moon First Quarter (diameter: 31.5908', declination: +15.472°)
22.7h Moon Close to Pi 2 Cnc, SAO 98456, 5.4mag, with Sun below horizon, Separation=5.28°, Limb separation=5.01° =9.53 lunar dia., Position angle=293.8° NW, Azimuth az=249.9°, Altitude h=30.7°, RA= 9h16.2m Dec=+14°52.1', Moon phase=57.7%, Sun altitude hsun=-15.0°

Thursday 4 May 2017Time (24-hour clock) Object (Link) Event
0h44.4m Moon Max. Libration East: Mare Crisium limb is tipped into view (Earth's selenographic longitude: 6.801°, latitude: +0.757°)
1.9h Moon Close to Psi Leo, SAO 98733 (Double star, separation >10"), 5.4mag, Separation=1.84°, Limb separation=1.58° =3.02 lunar dia., Position angle=17.1° N, Azimuth az=283.5°, Altitude h=7.8°, RA= 9h44.7m Dec=+13°56.5', Moon phase=59.1%, Sun altitude hsun=-15.7°
2.2h Moon Close to Nu Leo, SAO 98876 (Close double star), 5.3mag, with Sun below horizon, Separation=3.90°, Limb separation=3.64° =6.99 lunar dia., Position angle=87.1° E, Azimuth az=283.2°, Altitude h=6.1°, RA= 9h59.1m Dec=+12°21.6', Moon phase=59.2%, Sun altitude hsun=-14.8°
21.0h Moon Close to Regulus, Alp Leo, SAO 98967 (Multiple star system), 1.4mag, with Sun below horizon, Separation=4.58°, Limb separation=4.32° =8.28 lunar dia., Position angle=300.7° NW, Azimuth az=208.1°, Altitude h=43.1°, RA=10h00.3m Dec=+11°52.9', Moon phase=67.2%, Sun altitude hsun=-6.0°
22.1h Moon Close to 31 Leo, SAO 98964 (Double star, separation <10"), 4.4mag, with Sun below horizon, Separation=4.52°, Limb separation=4.26° =8.17 lunar dia., Position angle=276.9° W, Azimuth az=226.5°, Altitude h=35.8°, RA=10h00.8m Dec= +9°54.7', Moon phase=67.6%, Sun altitude hsun=-12.0°
Pan-STARRS →Star chart Comet 'C/2015 ER61' brightest
Distance to Sun center=1.046 AU, Distance to Earth=1.213 AU, Magnitude= 5.7 mag, Elongation=55.2°, RA=23h12.7m Dec= +0°08.0' (J2000, geocentric) (in constellation Pisces/Psc)

Friday 5 May 2017Time (24-hour clock) Object (Link) Event

1.5h Moon Close to Rho Leo, SAO 118355 (Close double star), 3.8mag, Separation=0.48°, Limb separation=0.23° =0.44 lunar dia., Position angle=19.8° N, Azimuth az=266.4°, Altitude h=13.6°, RA=10h33.7m Dec= +9°13.0', Moon phase=69.0%, Sun altitude hsun=-16.6°; (Northern limit: 38°00'E 26°43'N, alt= 2.4°, bright limb)
14h52m Mars Begin of northern Spring
22.1h Moon Close to 59 Leo, SAO 118615 (Double star, separation >10"), 5.0mag, with Sun below horizon, Separation=3.86°, Limb separation=3.60° =6.99 lunar dia., Position angle=277.8° W, Azimuth az=209.4°, Altitude h=36.7°, RA=11h01.6m Dec= +6°00.4', Moon phase=76.9%, Sun altitude hsun=-12.0°
22.1h Moon Close to Chi Leo, SAO 118648 (Multiple star system), 4.6mag, with Sun below horizon, Separation=3.27°, Limb separation=3.02° =5.86 lunar dia., Position angle=302.6° NW, Azimuth az=208.5°, Altitude h=38.2°, RA=11h05.9m Dec= +7°14.5', Moon phase=76.9%, Sun altitude hsun=-12.0°

Saturday 6 May 2017Time (24-hour clock) Object (Link) Event
0.4h Moon Close to Sig Leo, SAO 118804, 4.0mag, Separation=0.93°, Limb separation=0.67° =1.31 lunar dia., Position angle=23.0° NE, Azimuth az=240.2°, Altitude h=25.3°, RA=11h22.0m Dec= +5°56.0', Moon phase=77.7%, Sun altitude hsun=-17.5°; (Northern limit: 38°00'E 6°23'S, alt=14.7°, bright limb; Southern limit: 38°00'E 38°50'S, alt= 8.3°, bright limb)
1h02m Mars (1.6 mag) Close to Aldebaran, Alp Tau, SAO 94027 (Multiple star system): 6.2° separated, brightness: 0.9 mag, Position angle=170.87° S; Sun elongation=24.38° East (evening)
16.4h Moon Golden Handle visible on the Moon from 15.2h - 0.4h (htop=37° at S at 21.5h) (sun rises on the Jura mountains, while Sinus Iridum is still in shadow)
16.5h Mercury Aphelion (distance to sun: 0.4667 AU)
23.0h Moon Close to 7 Vir, SAO 119156, 5.4mag, with Sun below horizon, Separation=2.70°, Limb separation=2.44° =4.80 lunar dia., Position angle=328.7° NW, Azimuth az=207.3°, Altitude h=34.6°, RA=12h00.8m Dec= +3°33.5', Moon phase=85.0%, Sun altitude hsun=-15.0°

Sunday 7 May 2017Time (24-hour clock) Object (Link) Event
3.2h Moon Close to Zaniah, Eta Vir, SAO 138721 (Close double star), 3.9mag, with Sun below horizon, Separation=2.23°, Limb separation=1.98° =3.92 lunar dia., Position angle=125.0° SE, Azimuth az=262.3°, Altitude h=4.4°, RA=12h20.8m Dec= -0°45.8', Moon phase=86.2%, Sun altitude hsun=-9.0°
21.6h Moon Close to Porrima, Gam Vir, SAO 138917 (Multiple star system), 2.8mag, with Sun below horizon, Separation=2.52°, Limb separation=2.27° =4.50 lunar dia., Position angle=295.1° NW, Azimuth az=171.2°, Altitude h=32.2°, RA=12h42.5m Dec= -1°32.7', Moon phase=91.0%, Sun altitude hsun=-9.0°
21.6h Moon Close to g29 Virginis (Multiple star system), 3.5mag, with Sun below horizon, Separation=2.52°, Limb separation=2.27° =4.50 lunar dia., Position angle=295.2° NW, Azimuth az=171.2°, Altitude h=32.2°, RA=12h42.6m Dec= -1°32.7', Moon phase=91.0%, Sun altitude hsun=-9.0°

Monday 8 May 2017Time (24-hour clock) Object (Link) Event
2.1h Moon Close to Jupiter, -2.4mag, Separation=1.12°, Limb separation=0.86° =1.72 lunar dia., Position angle=201.1° S, Azimuth az=239.5°, Altitude h=13.9°, RA=12h56.8m Dec= -4°24.6', Moon phase=92.0%, Sun altitude hsun=-13.7°
2h27m Mercury Conjunction in Right Ascension with Uranus (2.2° separated from center of Uranus), position angle=0.00° N
22.3h Moon Close to 74 Vir, SAO 139390, 4.7mag, with Sun below horizon, Separation=1.65°, Limb separation=1.40° =2.81 lunar dia., Position angle=282.1° W, Azimuth az=170.0°, Altitude h=27.2°, RA=13h32.9m Dec= -6°20.7', Moon phase=95.8%, Sun altitude hsun=-12.0°

Tuesday 9 May 2017Time (24-hour clock) Object (Link) Event
23.3h Moon Close to 95 Vir, SAO 139736, 5.5mag, with Sun below horizon, Separation=5.04°, Limb separation=4.79° =9.64 lunar dia., Position angle=283.2° W, Azimuth az=177.6°, Altitude h=24.6°, RA=14h07.6m Dec= -9°23.7', Moon phase=98.8%, Sun altitude hsun=-15.0°

Wednesday 10 May 2017Time (24-hour clock) Object (Link) Event
1.3h Pan-STARRS →Star chart Comet 'C/2015 ER61' at perihelion
Distance to Sun center=1.042 AU, Distance to Earth=1.237 AU, Magnitude= 5.7 mag, Elongation=54.1°, RA=23h34.7m Dec= +2°39.8' (J2000, geocentric) (in constellation Pisces/Psc)
8h20m Mercury Conjunction with Uranus, 2.4° separated from center of Uranus, position angle=338.86° N. Distance to earth: 0.705 AU
23.4h Moon Close to Xi 2 Lib, SAO 158915, 5.5mag, with Sun below horizon, Separation=4.83°, Limb separation=4.58° =9.27 lunar dia., Position angle=298.6° NW, Azimuth az=167.2°, Altitude h=21.8°, RA=14h57.7m Dec=-11°28.7', Moon phase=99.8%, Sun altitude hsun=-15.0°

Thursday 11 May 2017Time (24-hour clock) Object (Link) Event
0h42.5m Moon Full Moon (diameter: 29.5010', declination: -13.088°)
This is the 2nd smallest full moon of the year. Former smaller full moon was at 22.4.2016. Next smaller full moon is at 9.6.2017 (calculated for the geocenter)
1h00.1m Moon Topocentric Full Moon (Altitude=+19.8°, topocentric diameter: 29.662', topocentric airfree declination: -13.97°, maximum phase: 99.87%)
18h57.5m Moon Max. Libration South: South Pole is tipped into view (Earth's selenographic longitude: 0.614°, latitude: -6.577°)
22.3h Moon Close to 49 Lib, SAO 159625, 5.5mag, Separation=0.29°, Limb separation=0.04° =0.09 lunar dia., Position angle=197.9° S, Azimuth az=138.1°, Altitude h=8.9°, RA=16h01.3m Dec=-16°34.9', Moon phase=99.1%, Sun altitude hsun=-11.2°; (Southern limit: 38°00'E 61°48'N, alt= 4.8°, bright limb)
22.5h Moon Close to 48 Lib, SAO 159607 (Close double star), 5.0mag, with Sun below horizon, Separation=2.12°, Limb separation=1.87° =3.80 lunar dia., Position angle=341.2° N, Azimuth az=140.5°, Altitude h=12.2°, RA=15h59.2m Dec=-14°19.6', Moon phase=99.1%, Sun altitude hsun=-12.0°

Friday 12 May 2017Time (24-hour clock) Object (Link) Event
22.3h Moon Close to Phi Oph, SAO 159963 (Multiple star system), 4.3mag, with Sun below horizon, Separation=4.71°, Limb separation=4.46° =9.10 lunar dia., Position angle=291.6° W, Azimuth az=132.1°, Altitude h=6.1°, RA=16h32.1m Dec=-16°38.9', Moon phase=96.6%, Sun altitude hsun=-10.9°
22.6h Moon Close to 24 (Scorpii)/Ophiuchi, SAO 160046, 4.9mag, with Sun below horizon, Separation=2.13°, Limb separation=1.89° =3.85 lunar dia., Position angle=286.5° W, Azimuth az=134.8°, Altitude h=6.1°, RA=16h42.6m Dec=-17°46.4', Moon phase=96.6%, Sun altitude hsun=-12.2°
22h37.8m Moon Apogee (distance moon center to earth center: 406195.1 km; closest point on earth ellipsoid with latitude -17.5° (WGS84), distance to moon center: 399818.9 km, apparent diameter: 29'53.3")

Sunday 14 May 2017Time (24-hour clock) Object (Link) Event
2.1h Moon Close to Saturn, 0.2mag, Separation=2.20°, Limb separation=1.96° =3.98 lunar dia., Position angle=186.4° S, Azimuth az=170.6°, Altitude h=11.6°, RA=17h45.7m Dec=-22°01.4', Moon phase=91.7%, Sun altitude hsun=-12.3°
4h20m Sun Equation of time is at maximum with 3.67 minutes (sundials are early). The equation of time reaches a minor maximum - the Sun culminates before the mean noon
23h35.9m Moon Max. Decl. South (declination: -19.303°)
This is the lowest southernmost moon position of the next 10 years. Former lower southern southernmost moon position was at 17.4.2017. Next lower southern southernmost moon position is at 12.9.2032 (calculated for the geocenter)

Monday 15 May 2017Time (24-hour clock) Object (Link) Event

0.0h Moon Close to 15 Sgr, SAO 186543, 5.3mag, with Sun below horizon, Separation=4.17°, Limb separation=3.92° =7.96 lunar dia., Position angle=262.4° W, Azimuth az=135.7°, Altitude h=3.4°, RA=18h16.3m Dec=-20°43.2', Moon phase=86.3%, Sun altitude hsun=-15.0°
0.4h Moon Close to SAO 161564, XZ 25418 (Multiple star system), 5.1mag, with Sun below horizon, Separation=1.81°, Limb separation=1.56° =3.16 lunar dia., Position angle=343.9° N, Azimuth az=136.3°, Altitude h=6.1°, RA=18h32.5m Dec=-18°23.2', Moon phase=86.2%, Sun altitude hsun=-15.2°
0.7h Moon Close to 21 Sgr, SAO 186794, 4.9mag, with Sun below horizon, Separation=2.06°, Limb separation=1.82° =3.68 lunar dia., Position angle=259.2° W, Azimuth az=141.8°, Altitude h=6.1°, RA=18h26.4m Dec=-20°31.7', Moon phase=86.2%, Sun altitude hsun=-15.1°
2.1h Moon Close to 29 Sgr, SAO 187324 (Double star, separation >10"), 5.2mag, with Sun below horizon, Separation=3.11°, Limb separation=2.86° =5.79 lunar dia., Position angle=92.0° E, Azimuth az=156.4°, Altitude h=11.0°, RA=18h50.7m Dec=-20°18.1', Moon phase=85.7%, Sun altitude hsun=-12.0°
2.1h Moon Close to Xi 1 Sgr, SAO 187498, 5.0mag, with Sun below horizon, Separation=4.92°, Limb separation=4.67° =9.45 lunar dia., Position angle=94.5° E, Azimuth az=154.8°, Altitude h=10.2°, RA=18h58.4m Dec=-20°37.8', Moon phase=85.7%, Sun altitude hsun=-12.0°

Tuesday 16 May 2017Time (24-hour clock) Object (Link) Event
1.1h Moon Close to Rho1 Sgr, SAO 162512 (Close double star), 3.9mag, with Sun below horizon, Separation=2.04°, Limb separation=1.79° =3.62 lunar dia., Position angle=333.4° NW, Azimuth az=134.9°, Altitude h=6.1°, RA=19h22.7m Dec=-17°48.7', Moon phase=78.8%, Sun altitude hsun=-14.5°
1.2h Moon Close to 43 Sgr, SAO 162413 (Close double star), 4.9mag, with Sun below horizon, Separation=2.04°, Limb separation=1.79° =3.61 lunar dia., Position angle=290.9° W, Azimuth az=137.6°, Altitude h=6.1°, RA=19h18.7m Dec=-18°55.1', Moon phase=78.8%, Sun altitude hsun=-14.3°
2.1h Moon Close to 56 Sgr, SAO 162964, 4.9mag, with Sun below horizon, Separation=4.50°, Limb separation=4.26° =8.57 lunar dia., Position angle=90.3° E, Azimuth az=143.4°, Altitude h=7.6°, RA=19h47.4m Dec=-19°43.0', Moon phase=78.5%, Sun altitude hsun=-12.0°

Wednesday 17 May 2017Time (24-hour clock) Object (Link) Event
2.1h Moon Close to Rho Cap, SAO 163614 (Multiple star system), 4.9mag, with Sun below horizon, Separation=2.58°, Limb separation=2.33° =4.65 lunar dia., Position angle=78.9° E, Azimuth az=134.8°, Altitude h=6.1°, RA=20h29.8m Dec=-17°45.2', Moon phase=70.1%, Sun altitude hsun=-11.6°
2.2h Moon Close to Okul, Pi Cap, SAO 163592 (Multiple star system), 5.1mag, with Sun below horizon, Separation=2.15°, Limb separation=1.90° =3.79 lunar dia., Position angle=87.6° E, Azimuth az=135.7°, Altitude h=6.3°, RA=20h28.3m Dec=-18°00.1', Moon phase=70.1%, Sun altitude hsun=-11.5°

Thursday 18 May 2017Time (24-hour clock) Object (Link) Event
2.3h Moon Close to 18 Aqr, SAO 164364 (Double star, separation >10"), 5.5mag, with Sun below horizon, Separation=4.83°, Limb separation=4.57° =9.05 lunar dia., Position angle=48.0° NE, Azimuth az=123.7°, Altitude h=6.1°, RA=21h25.1m Dec=-12°48.1', Moon phase=60.7%, Sun altitude hsun=-10.8°
2.4h Mercury Greatest Elongation (25.8° West, in the mornings, brightness: 0.4 mag)
2.4h Moon Close to 29 Cap, SAO 164263, 5.3mag, with Sun below horizon, Separation=1.73°, Limb separation=1.48° =2.93 lunar dia., Position angle=58.9° NE, Azimuth az=128.6°, Altitude h=6.1°, RA=21h16.7m Dec=-15°05.9', Moon phase=60.6%, Sun altitude hsun=-10.2°

Friday 19 May 2017Time (24-hour clock) Object (Link) Event
1.9h Moon Close to 42 Cap, SAO 164580 (Close double star), 5.2mag, with Sun below horizon, Separation=4.35°, Limb separation=4.09° =8.00 lunar dia., Position angle=258.6° W, Azimuth az=116.1°, Altitude h=0.8°, RA=21h42.5m Dec=-13°58.1', Moon phase=50.8%, Sun altitude hsun=-12.0°
2.8h Moon Close to Mu Cap, SAO 164713, 5.1mag, with Sun below horizon, Separation=1.91°, Limb separation=1.65° =3.22 lunar dia., Position angle=254.9° W, Azimuth az=125.1°, Altitude h=6.1°, RA=21h54.2m Dec=-13°28.1', Moon phase=50.5%, Sun altitude hsun=-8.4°
2.8h Moon Close to 38 Aqr, SAO 164910, 5.4mag, with Sun below horizon, Separation=2.80°, Limb separation=2.54° =4.96 lunar dia., Position angle=57.7° NE, Azimuth az=120.9°, Altitude h=6.1°, RA=22h11.5m Dec=-11°28.7', Moon phase=50.4%, Sun altitude hsun=-8.3°
3h32.8m Moon Last Quarter (diameter: 30.7024', declination: -12.043°)
3h43.8m Moon Topocentric Last Quarter (Altitude=+11.7°, topocentric diameter: 30.815', topocentric airfree declination: -12.86°)

Saturday 20 May 2017Time (24-hour clock) Object (Link) Event
3.0h Moon Close to Sig Aqr, SAO 165134, 4.8mag, with Sun below horizon, Separation=5.38°, Limb separation=5.12° =9.85 lunar dia., Position angle=256.6° W, Azimuth az=119.1°, Altitude h=6.1°, RA=22h31.6m Dec=-10°35.3', Moon phase=40.0%, Sun altitude hsun=-7.3°
3.0h Moon Close to Lam Aqr, SAO 146362, 3.7mag, with Sun below horizon, Separation=1.80°, Limb separation=1.54° =2.97 lunar dia., Position angle=4.2° N, Azimuth az=113.0°, Altitude h=6.1°, RA=22h53.5m Dec= -7°29.3', Moon phase=40.0%, Sun altitude hsun=-7.2°
7h59.3m Moon Max. Libration West: Crater Grimaldi is tipped into view (Earth's selenographic longitude: -7.888°, latitude: +1.655°)
This is the 2nd westernmost total libration of the year. Former more western total libration was at 13.2.2015. Next more western total libration is at 26.12.2017 (calculated for the geocenter)

Sunday 21 May 2017Time (24-hour clock) Object (Link) Event
3.1h Moon Close to Phi Aqr, SAO 146585, 4.2mag, with Sun below horizon, Separation=7.26°, Limb separation=7.00° =13.24 lunar dia., Position angle=263.5° W, Azimuth az=110.0°, Altitude h=6.1°, RA=23h15.2m Dec= -5°57.4', Moon phase=29.7%, Sun altitude hsun=-6.4°
14h23.6m Moon Max. Libration (8.258°)

Tuesday 23 May 2017Time (24-hour clock) Object (Link) Event
3.7h Moon Close to Venus, -4.6mag, with Sun below horizon, Separation=7.04°, Limb separation=6.84° =12.56 lunar dia., Position angle=277.4° W, Azimuth az=89.7°, Altitude h=6.2°, RA= 1h04.2m Dec= +5°11.9', Moon phase=11.5%, Sun altitude hsun=-2.7°
17.8h Mercury Dichotomy/Half phase

Thursday 25 May 2017Time (24-hour clock) Object (Link) Event
2h30m Mars (1.7 mag) Close to Alnath, Bet Tau, SAO 77168 (Multiple star system): 4.6° separated, brightness: 1.6 mag, Position angle=356.36° N; Sun elongation=18.90° East (evening)
6h Saturn Summer begins on northern hemisphere
12h31.6m Moon Max. Libration North: North Pole and Mare Frigoris are tipped into view (Earth's selenographic longitude: -1.551°, latitude: +6.519°)
14h Mercury Magnitude brightens to 0 mag
22h44.5m Moon New Moon (diameter: 33.4363', declination: +16.192°)
This is the nearest new moon of the year. Former closer new moon was at 7.4.2016. Next closer new moon is at 30.8.2019 (calculated for the geocenter)
22h56.5m Moon Topocentric New Moon (Altitude=-16.2°, topocentric diameter: 33.275', topocentric airfree declination: 15.26°, minimum phase: 0.26%)

Friday 26 May 2017Time (24-hour clock) Object (Link) Event
4h14.5m Moon Perigee (distance moon center to earth center: 357209.8 km; closest point on earth ellipsoid with latitude 16.8° (WGS84), distance to moon center: 350833.4 km, apparent diameter: 34'03.7")
This is the nearest perigee of the year. Former closer perigee was at 14.11.2016. Next closer perigee is at 1.1.2018 (calculated for the closest point on the Earth ellipsoid)

21.8h Moon Close to Mars, 1.7mag, with Sun below horizon, Separation=8.08°, Limb separation=7.88° =14.17 lunar dia., Position angle=36.0° NE, Azimuth az=308.6°, Altitude h=4.4°, RA= 5h34.0m Dec=+24°08.3', Moon phase=1.6%, Sun altitude hsun=-6.0°
23h25m Carrington Solar Rotation Begin of Carrington rotation number 2191

Saturday 27 May 2017Time (24-hour clock) Object (Link) Event
22.5h Moon Close to Nu Gem, SAO 78423 (Multiple star system), 4.1mag, with Sun below horizon, Separation=3.00°, Limb separation=2.72° =4.93 lunar dia., Position angle=55.0° NE, Azimuth az=305.0°, Altitude h=2.0°, RA= 6h30.0m Dec=+20°11.9', Moon phase=6.2%, Sun altitude hsun=-9.0°

Sunday 28 May 2017Time (24-hour clock) Object (Link) Event
2h36.9m Moon Max. Decl. North (declination: +19.363°)
This is the lowest northernmost moon position of the next 10 years. Former lower northern northernmost moon position was at 30.4.2017. Next lower northern northernmost moon position is at 29.8.2032 (calculated for the geocenter)
22.3h Moon Close to 56 Gem, SAO 79328 (Double star, separation >10"), 5.1mag, Separation=2.34°, Limb separation=2.07° =3.78 lunar dia., Position angle=8.4° N, Azimuth az=292.4°, Altitude h=9.7°, RA= 7h22.9m Dec=+20°24.5', Moon phase=13.0%, Sun altitude hsun=-7.9°
22.5h Moon Close to Mekbuda, Zet Gem, SAO 79031 (Multiple star system), 4.0mag, with Sun below horizon, Separation=4.70°, Limb separation=4.42° =8.07 lunar dia., Position angle=301.0° NW, Azimuth az=298.4°, Altitude h=6.1°, RA= 7h05.1m Dec=+20°32.5', Moon phase=13.1%, Sun altitude hsun=-8.7°
22.6h Moon Close to SAO 96985, XZ 11245, 5.5mag, with Sun below horizon, Separation=2.70°, Limb separation=2.43° =4.43 lunar dia., Position angle=112.4° E, Azimuth az=291.8°, Altitude h=6.1°, RA= 7h32.8m Dec=+17°02.8', Moon phase=13.1%, Sun altitude hsun=-9.0°
22.8h Moon Close to 74 Gem, SAO 97120 (Close double star), 5.0mag, with Sun below horizon, Separation=4.20°, Limb separation=3.93° =7.18 lunar dia., Position angle=96.3° E, Azimuth az=292.9°, Altitude h=6.1°, RA= 7h40.5m Dec=+17°37.9', Moon phase=13.2%, Sun altitude hsun=-9.6°
23.0h Moon Close to 81 Gem, SAO 97221 (Close double star), 4.9mag, with Sun below horizon, Separation=5.61°, Limb separation=5.34° =9.76 lunar dia., Position angle=86.5° E, Azimuth az=294.4°, Altitude h=6.1°, RA= 7h47.1m Dec=+18°27.9', Moon phase=13.3%, Sun altitude hsun=-10.3°

Monday 29 May 2017Time (24-hour clock) Object (Link) Event
23.2h Moon Close to Zet2 Cnc, SAO 97645 (Multiple star system), 5.1mag, with Sun below horizon, Separation=2.93°, Limb separation=2.66° =4.92 lunar dia., Position angle=294.8° NW, Azimuth az=292.8°, Altitude h=6.1°, RA= 8h13.2m Dec=+17°35.6', Moon phase=22.2%, Sun altitude hsun=-10.8°
23.6h Moon Close to The Cnc, SAO 97881 (Multiple star system), 5.3mag, with Sun below horizon, Separation=2.46°, Limb separation=2.19° =4.06 lunar dia., Position angle=45.5° NE, Azimuth az=293.6°, Altitude h=6.1°, RA= 8h32.6m Dec=+18°02.0', Moon phase=22.4%, Sun altitude hsun=-11.6°

Tuesday 30 May 2017Time (24-hour clock) Object (Link) Event
23.7h Moon Close to Omi1 Cnc, SAO 98247, 5.2mag, with Sun below horizon, Separation=6.08°, Limb separation=5.81° =10.93 lunar dia., Position angle=284.8° W, Azimuth az=288.5°, Altitude h=6.1°, RA= 8h58.2m Dec=+15°15.3', Moon phase=32.5%, Sun altitude hsun=-11.5°
23.9h Moon Close to Pi 2 Cnc, SAO 98456, 5.4mag, with Sun below horizon, Separation=2.09°, Limb separation=1.83° =3.44 lunar dia., Position angle=307.8° NW, Azimuth az=287.8°, Altitude h=6.1°, RA= 9h16.2m Dec=+14°52.1', Moon phase=32.6%, Sun altitude hsun=-11.9°

Wednesday 31 May 2017Time (24-hour clock) Object (Link) Event
0.3h Moon Close to Psi Leo, SAO 98733 (Double star, separation >10"), 5.4mag, with Sun below horizon, Separation=5.02°, Limb separation=4.75° =8.95 lunar dia., Position angle=85.8° E, Azimuth az=286.1°, Altitude h=6.1°, RA= 9h44.7m Dec=+13°56.5', Moon phase=32.8%, Sun altitude hsun=-12.1°
22.0h Moon Close to Regulus, Alp Leo, SAO 98967 (Multiple star system), 1.4mag, with Sun below horizon, Separation=1.59°, Limb separation=1.33° =2.52 lunar dia., Position angle=327.9° NW, Azimuth az=253.0°, Altitude h=25.3°, RA=10h00.3m Dec=+11°52.9', Moon phase=42.3%, Sun altitude hsun=-6.0°

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Москва, Россия Lon: +38d00m00.00s Lat: +56d00m00.00s Alt: 194m Geoid Alt: 179m

Thursday 1 June 2017Time (24-hour clock) Object (Link) Event
0.3h Moon Close to Nu Leo, SAO 98876 (Close double star), 5.3mag, with Sun below horizon, Separation=5.04°, Limb separation=4.78° =9.14 lunar dia., Position angle=296.0° NW, Azimuth az=283.2°, Altitude h=6.1°, RA= 9h59.1m Dec=+12°21.7', Moon phase=43.3%, Sun altitude hsun=-12.0°
0.6h Moon Close to Rho Leo, SAO 118355 (Close double star), 3.8mag, with Sun below horizon, Separation=3.91°, Limb separation=3.65° =6.99 lunar dia., Position angle=102.9° E, Azimuth az=277.6°, Altitude h=6.1°, RA=10h33.7m Dec= +9°13.0', Moon phase=43.5%, Sun altitude hsun=-11.9°
2h45.2m Moon Max. Libration East: Mare Crisium limb is tipped into view (Earth's selenographic longitude: 7.453°, latitude: -0.773°)
This is the easternmost east libration of the year. Former more eastern east libration was at 18.12.2016. Next more eastern east libration is at 7.1.2018 (calculated for the geocenter)
13h55.0m Moon Topocentric First Quarter (Altitude=+17.3°, topocentric diameter: 31.209', topocentric airfree declination: 8.00°)
15h42.1m Moon First Quarter (diameter: 31.0205', declination: +8.462°)
22.5h Moon Close to Chi Leo, SAO 118648 (Multiple star system), 4.6mag, Separation=0.68°, Limb separation=0.43° =0.82 lunar dia., Position angle=22.7° NE, Azimuth az=242.7°, Altitude h=25.6°, RA=11h05.9m Dec= +7°14.5', Moon phase=53.1%, Sun altitude hsun=-7.9°; (Northern limit: 38°00'E 10°00'N, alt=16.0°, bright limb; Southern limit: 38°00'E 21°50'S, alt=11.6°, bright limb)

Friday 2 June 2017Time (24-hour clock) Object (Link) Event
1.0h Moon Close to Sig Leo, SAO 118804, 4.0mag, with Sun below horizon, Separation=3.06°, Limb separation=2.80° =5.45 lunar dia., Position angle=94.2° E, Azimuth az=271.7°, Altitude h=6.1°, RA=11h22.0m Dec= +5°56.1', Moon phase=54.2%, Sun altitude hsun=-11.5°
17h43m Venus Conjunction in Right Ascension with Uranus (1.8° separated from center of Uranus), position angle=0.00° N
20h46.0m Moon Max. Libration (7.619°)

Saturday 3 June 2017Time (24-hour clock) Object (Link) Event
1.2h Moon Close to 7 Vir, SAO 119156, 5.4mag, Separation=1.62°, Limb separation=1.36° =2.68 lunar dia., Position angle=20.8° N, Azimuth az=265.5°, Altitude h=7.4°, RA=12h00.8m Dec= +3°33.5', Moon phase=64.3%, Sun altitude hsun=-11.1°
8h08m Venus (-4.4 mag) Close to Uranus: 1.7° separated from center of Uranus, brightness: 5.9 mag, position angle=342.11° N; Sun elongation=45.74° West (morning)
10h32m Venus Conjunction with Uranus, 1.7° separated from center of Uranus, position angle=339.03° N. Distance to earth: 0.699 AU
15.5h Venus Greatest Elongation (45.9° West, in the mornings, brightness: -4.4 mag)
22h46.1m Moon Immersion of Porrima, Gam Vir, SAO 138917 (Multiple star system), 2.8mag, Position angle=62.1°, Azimuth az=220.9°, Altitude h=25.4°, RA=12h42.5m Dec= -1°32.6', Moon phase=72.6%, Sun altitude hsun=-8.8° (dark limb); (Southern limit: 38°00'E 8°08'N, alt=29.4°, bright limb)
22h46.8m Moon Immersion of g29 Virginis (Multiple star system), 3.5mag, Position angle=61.5°, Azimuth az=221.1°, Altitude h=25.3°, RA=12h42.6m Dec= -1°32.6', Moon phase=72.6%, Sun altitude hsun=-8.8° (dark limb); (Southern limit: 38°00'E 8°01'N, alt=29.3°, bright limb)
23h30.9m Moon Emersion of Porrima, Gam Vir, SAO 138917 (Multiple star system), 2.8mag, Position Angle=345.1°, Azimuth az=232.1°, Altitude h=20.8°, RA=12h42.5m Dec= -1°32.6', Moon phase=72.9%, Sun altitude hsun=-10.7° (bright limb); (Southern limit: 38°00'E 8°08'N, alt=29.4°, bright limb)

23h31.1m Moon Emersion of g29 Virginis (Multiple star system), 3.5mag, Position Angle=345.6°, Azimuth az=232.2°, Altitude h=20.8°, RA=12h42.6m Dec= -1°32.6', Moon phase=72.9%, Sun altitude hsun=-10.7° (bright limb); (Southern limit: 38°00'E 8°01'N, alt=29.3°, bright limb)

Sunday 4 June 2017Time (24-hour clock) Object (Link) Event
1.4h Moon Close to Jupiter, -2.3mag, with Sun below horizon, Separation=2.22°, Limb separation=1.97° =3.93 lunar dia., Position angle=145.0° SE, Azimuth az=253.8°, Altitude h=6.1°, RA=12h51.0m Dec= -3°55.3', Moon phase=73.5%, Sun altitude hsun=-10.7°
9.2h Venus Dichotomy/Half phase

Monday 5 June 2017Time (24-hour clock) Object (Link) Event
1.5h Johnson →Star chart Comet 'C/2015 V2' closest to earth
Distance to Sun center=1.640 AU, Distance to Earth=0.811 AU, Magnitude= 5.7 mag, Elongation=127.5°, RA=14h37.4m Dec=+18°27.4' (J2000, geocentric) (in constellation Bootes/Boo)
1h30.3m Moon Immersion of 74 Vir, SAO 139390, 4.7mag, Position angle=160.5°, Azimuth az=246.3°, Altitude h=7.9°, RA=13h32.9m Dec= -6°20.7', Moon phase=81.7%, Sun altitude hsun=-10.3° (dark limb); (Southern limit: 38°00'E 45°51'N, alt= 5.6°, bright limb)
2.7h Moon Golden Handle visible on the Moon from 1.8h - 2.7h (sun rises on the Jura mountains, while Sinus Iridum is still in shadow)

Tuesday 6 June 2017Time (24-hour clock) Object (Link) Event
1.9h Moon Close to 95 Vir, SAO 139736, 5.5mag, with Sun below horizon, Separation=2.98°, Limb separation=2.73° =5.52 lunar dia., Position angle=279.9° W, Azimuth az=243.3°, Altitude h=6.1°, RA=14h07.6m Dec= -9°23.7', Moon phase=88.6%, Sun altitude hsun=-9.2°
15h25m Sun Earth crosses the equator of the Sun south to north
Johnson →Star chart Comet 'C/2015 V2' brightest
Distance to Sun center=1.639 AU, Distance to Earth=0.812 AU, Magnitude= 5.7 mag, Elongation=127.2°, RA=14h34.5m Dec=+16°30.7' (J2000, geocentric) (in constellation Bootes/Boo)

Wednesday 7 June 2017Time (24-hour clock) Object (Link) Event
2.4h Moon Close to Xi 2 Lib, SAO 158915, 5.5mag, with Sun below horizon, Separation=2.95°, Limb separation=2.70° =5.49 lunar dia., Position angle=308.0° NW, Azimuth az=239.1°, Altitude h=6.1°, RA=14h57.7m Dec=-11°28.7', Moon phase=94.0%, Sun altitude hsun=-7.3°
Jupiter Apparent Diameter shrinks to 40 arcsec (Brightness: -2.3 mag)
20h15.0m Moon Max. Libration South: South Pole is tipped into view (Earth's selenographic longitude: 1.818°, latitude: -6.604°)
23.0h Moon Close to Zuben Elakrab, Gam Lib, SAO 159370 (Multiple star system), 3.9mag, with Sun below horizon, Separation=3.33°, Limb separation=3.09° =6.26 lunar dia., Position angle=286.6° W, Azimuth az=180.1°, Altitude h=19.2°, RA=15h36.5m Dec=-14°50.7', Moon phase=97.2%, Sun altitude hsun=-9.0°

Friday 9 June 2017Time (24-hour clock) Object (Link) Event
1h05.3m Moon Apogee (distance moon center to earth center: 406405.5 km; closest point on earth ellipsoid with latitude -17.3° (WGS84), distance to moon center: 400029.2 km, apparent diameter: 29'52.4")
This is the 2nd farthest apogee of the year. Former farther apogee was at 27.11.2016. Next farther apogee is at 19.12.2017 (calculated for the closest point on the Earth ellipsoid)
1.4h Moon Close to 24 (Scorpii)/Ophiuchi, SAO 160046, 4.9mag, Separation=0.44°, Limb separation=0.20° =0.40 lunar dia., Position angle=9.6° N, Azimuth az=201.0°, Altitude h=14.1°, RA=16h42.6m Dec=-17°46.4', Moon phase=99.5%, Sun altitude hsun=-10.1°; (Northern limit: 38°00'E 28°56'N, alt=36.0°, bright limb; Southern limit: 38°00'E 7°23'S, alt=52.1°, bright limb)
15h54.9m Moon Topocentric Full Moon (Altitude=-36.9°, topocentric diameter: 29.130', topocentric airfree declination: -18.92°, maximum phase: 99.87%)
16h09.6m Moon Full Moon (diameter: 29.4027', declination: -18.329°)
This is the smallest full moon of the next 10 years, and the smallest of the year. Former smaller full moon was at 5.3.2015. Next smaller full moon is at 22.10.2029 (calculated for the geocenter)
This is the 2nd southernmost full moon of the year. Former more southern full moon was at 20.6.2016. Next more southern full moon is at 9.7.2017 (calculated for the geocenter)
17.0h Jupiter Stationary: Getting Prograde (relative to ecliptic)

Saturday 10 June 2017Time (24-hour clock) Object (Link) Event
3.3h Moon Close to Saturn, 0.0mag, with Sun below horizon, Separation=2.37°, Limb separation=2.12° =4.32 lunar dia., Position angle=163.4° S, Azimuth az=214.0°, Altitude h=6.1°, RA=17h38.0m Dec=-21°58.7', Moon phase=99.7%, Sun altitude hsun=-2.9°
7h33m Mars (1.7 mag) Close to Tejat Prior, Eta Gem, SAO 78135: 1.8° separated, brightness: 3.5 mag, Position angle=181.15° S; Sun elongation=14.19° East (evening)
7.9h Jupiter Stationary: Getting Prograde (relative to equator)
22.6h Moon Close to SAO 161564, XZ 25418 (Multiple star system), 5.1mag, with Sun below horizon, Separation=3.81°, Limb separation=3.56° =7.24 lunar dia., Position angle=60.9° NE, Azimuth az=136.3°, Altitude h=6.1°, RA=18h32.5m Dec=-18°23.2', Moon phase=98.4%, Sun altitude hsun=-7.6°
22.7h Moon Close to 15 Sgr, SAO 186543, 5.3mag, with Sun below horizon, Separation=0.73°, Limb separation=0.48° =0.98 lunar dia., Position angle=225.9° SW, Azimuth az=142.4°, Altitude h=6.1°, RA=18h16.3m Dec=-20°43.2', Moon phase=98.4%, Sun altitude hsun=-8.0°
22.9h Moon Close to 21 Sgr, SAO 186794, 4.9mag, with Sun below horizon, Separation=1.83°, Limb separation=1.58° =3.21 lunar dia., Position angle=99.5° E, Azimuth az=141.8°, Altitude h=6.1°, RA=18h26.4m Dec=-20°31.7', Moon phase=98.4%, Sun altitude hsun=-8.4°

Sunday 11 June 2017Time (24-hour clock) Object (Link) Event
6h40.3m Moon Max. Decl. South (declination: -19.428°)
This is the 3rd lowest southernmost moon position of the next 10 years. Former lower southern southernmost moon position was at 14.5.2017. Next lower southern southernmost moon position is at 4.8.2017 (calculated for the geocenter)
23.2h Moon Close to 29 Sgr, SAO 187324 (Double star, separation >10"), 5.2mag, with Sun below horizon, Separation=4.55°, Limb separation=4.30° =8.71 lunar dia., Position angle=267.6° W, Azimuth az=141.2°, Altitude h=6.1°, RA=18h50.7m Dec=-20°18.1', Moon phase=95.2%, Sun altitude hsun=-9.2°
23.4h Moon Close to Xi 1 Sgr, SAO 187498, 5.0mag, with Sun below horizon, Separation=2.89°, Limb separation=2.64° =5.34 lunar dia., Position angle=258.9° W, Azimuth az=142.1°, Altitude h=6.1°, RA=18h58.4m Dec=-20°37.8', Moon phase=95.2%, Sun altitude hsun=-9.6°
23.4h Moon Close to 43 Sgr, SAO 162413 (Close double star), 4.9mag, with Sun below horizon, Separation=2.22°, Limb separation=1.97° =3.99 lunar dia., Position angle=59.2° NE, Azimuth az=137.6°, Altitude h=6.1°, RA=19h18.7m Dec=-18°55.1', Moon phase=95.2%, Sun altitude hsun=-9.7°
23h56m Mercury (-1.2 mag) Close to Aldebaran, Alp Tau, SAO 94027 (Multiple star system): 4.9° separated, brightness: 0.9 mag, Position angle=166.22° S; Sun elongation=11.55° West (morning)

Monday 12 June 2017Time (24-hour clock) Object (Link) Event

1.8h Moon Close to Rho1 Sgr, SAO 162512 (Close double star), 3.9mag, with Sun below horizon, Separation=2.95°, Limb separation=2.70° =5.45 lunar dia., Position angle=41.0° NE, Azimuth az=170.1°, Altitude h=15.8°, RA=19h22.7m Dec=-17°48.6', Moon phase=94.8%, Sun altitude hsun=-9.0°
11.4h Johnson →Star chart Comet 'C/2015 V2' at perihelion
Distance to Sun center=1.637 AU, Distance to Earth=0.822 AU, Magnitude= 5.7 mag, Elongation=125.6°, RA=14h26.6m Dec=+10°13.5' (J2000, geocentric) (in constellation Bootes/Boo)
24.0h Moon Close to 56 Sgr, SAO 162964, 4.9mag, with Sun below horizon, Separation=3.62°, Limb separation=3.37° =6.77 lunar dia., Position angle=258.7° W, Azimuth az=139.7°, Altitude h=6.1°, RA=19h47.4m Dec=-19°42.9', Moon phase=90.2%, Sun altitude hsun=-10.5°

Tuesday 13 June 2017Time (24-hour clock) Object (Link) Event
0.2h Venus Aphelion (distance to sun: 0.7282 AU)
3h19m Mars (1.7 mag) Close to Tejat Posterior, Mu Gem, SAO 78297 (Multiple star system): 1.8° separated, brightness: 2.9 mag, Position angle=181.97° S; Sun elongation=13.36° East (evening)
4h15m Sun Equation of time is zero; the apparent solar time is now equal to the mean solar time

Wednesday 14 June 2017Time (24-hour clock) Object (Link) Event
0.3h Moon Close to Rho Cap, SAO 163614 (Multiple star system), 4.9mag, with Sun below horizon, Separation=5.68°, Limb separation=5.43° =10.85 lunar dia., Position angle=263.6° W, Azimuth az=134.8°, Altitude h=6.1°, RA=20h29.9m Dec=-17°45.2', Moon phase=83.6%, Sun altitude hsun=-10.7°
0.3h Moon Close to Okul, Pi Cap, SAO 163592 (Multiple star system), 5.1mag, with Sun below horizon, Separation=6.11°, Limb separation=5.86° =11.69 lunar dia., Position angle=260.4° W, Azimuth az=135.7°, Altitude h=6.3°, RA=20h28.3m Dec=-18°00.1', Moon phase=83.6%, Sun altitude hsun=-10.7°
0.5h Moon Close to Ups Cap, SAO 163779, 5.2mag, with Sun below horizon, Separation=3.27°, Limb separation=3.02° =6.03 lunar dia., Position angle=251.6° W, Azimuth az=135.5°, Altitude h=6.1°, RA=20h41.0m Dec=-18°04.4', Moon phase=83.5%, Sun altitude hsun=-10.7°

Thursday 15 June 2017Time (24-hour clock) Object (Link) Event
0.6h Moon Close to 29 Cap, SAO 164263, 5.3mag, with Sun below horizon, Separation=6.69°, Limb separation=6.44° =12.73 lunar dia., Position angle=264.1° W, Azimuth az=128.6°, Altitude h=6.1°, RA=21h16.7m Dec=-15°05.8', Moon phase=75.6%, Sun altitude hsun=-10.7°
0.9h Moon Close to 42 Cap, SAO 164580 (Close double star), 5.2mag, with Sun below horizon, Separation=0.67°, Limb separation=0.42° =0.83 lunar dia., Position angle=297.2° NW, Azimuth az=126.1°, Altitude h=6.1°, RA=21h42.5m Dec=-13°58.1', Moon phase=75.5%, Sun altitude hsun=-10.5°
1.0h Moon Close to Mu Cap, SAO 164713, 5.1mag, with Sun below horizon, Separation=2.34°, Limb separation=2.09° =4.13 lunar dia., Position angle=69.9° E, Azimuth az=125.1°, Altitude h=6.1°, RA=21h54.2m Dec=-13°28.1', Moon phase=75.4%, Sun altitude hsun=-10.4°
13h Saturn Opposition (distance to earth: 9.043 AU, brightness: 0.0 mag, diameter: 18.30")
17h Saturn Closest Approach (distance to earth: 9.043 AU, brightness: 0.0 mag, diameter: 18.30")

Friday 16 June 2017Time (24-hour clock) Object (Link) Event
1.0h Moon Close to 38 Aqr, SAO 164910, 5.4mag, with Sun below horizon, Separation=5.74°, Limb separation=5.49° =10.73 lunar dia., Position angle=264.7° W, Azimuth az=120.9°, Altitude h=6.1°, RA=22h11.6m Dec=-11°28.7', Moon phase=66.2%, Sun altitude hsun=-10.4°
1.2h Moon Close to Sig Aqr, SAO 165134, 4.8mag, with Sun below horizon, Separation=0.99°, Limb separation=0.74° =1.44 lunar dia., Position angle=285.8° W, Azimuth az=119.1°, Altitude h=6.1°, RA=22h31.6m Dec=-10°35.2', Moon phase=66.1%, Sun altitude hsun=-10.1°
1.3h Moon Close to 42 Aqr, SAO 164974, 5.3mag, with Sun below horizon, Separation=4.72°, Limb separation=4.46° =8.71 lunar dia., Position angle=247.0° SW, Azimuth az=123.5°, Altitude h=6.1°, RA=22h17.7m Dec=-12°44.6', Moon phase=66.1%, Sun altitude hsun=-10.0°
1.8h Moon Close to Lam Aqr, SAO 146362, 3.7mag, with Sun below horizon, Separation=5.37°, Limb separation=5.11° =9.97 lunar dia., Position angle=51.7° NE, Azimuth az=119.7°, Altitude h=10.0°, RA=22h53.5m Dec= -7°29.2', Moon phase=65.9%, Sun altitude hsun=-9.0°
Neptune Stationary: Getting Retrograde (relative to ecliptic)

Saturday 17 June 2017Time (24-hour clock) Object (Link) Event
1.4h Moon Close to Phi Aqr, SAO 146585, 4.2mag, with Sun below horizon, Separation=2.75°, Limb separation=2.50° =4.81 lunar dia., Position angle=290.4° W, Azimuth az=110.0°, Altitude h=6.1°, RA=23h15.2m Dec= -5°57.3', Moon phase=56.0%, Sun altitude hsun=-9.8°
1.6h Moon Close to Chi Aqr, SAO 146612 (Close double star), 4.9mag, with Sun below horizon, Separation=2.20°, Limb separation=1.94° =3.73 lunar dia., Position angle=250.0° W, Azimuth az=113.2°, Altitude h=6.1°, RA=23h17.7m Dec= -7°37.9', Moon phase=55.9%, Sun altitude hsun=-9.4°
Neptune Stationary: Getting Retrograde (relative to equator)
10h13.6m Moon Max. Libration West: Crater Grimaldi is tipped into view (Earth's selenographic longitude: -7.585°, latitude: +3.065°)
14h32.7m Moon Last Quarter (diameter: 31.3098', declination: -3.781°)
16h01.0m Moon Topocentric Last Quarter (Altitude=-29.7°, topocentric diameter: 31.086', topocentric airfree declination: -4.27°)
23.2h Moon Close to Porrima, Gam Vir, SAO 138917 (Multiple star system), 2.8mag, with Sun below horizon, Separation=8.96°, Limb separation=8.70° =16.66 lunar dia., Position angle=300.1° NW, Azimuth az=240.9°, Altitude h=16.4°, RA=12h42.5m Dec= -1°32.6', Moon phase=46.2%, Sun altitude hsun=-9.0°

Sunday 18 June 2017Time (24-hour clock) Object (Link) Event
1.5h Moon Close to 20 Psc, SAO 146915, 5.5mag, with Sun below horizon, Separation=6.81°, Limb separation=6.55° =12.46 lunar dia., Position angle=269.3° W, Azimuth az=103.9°, Altitude h=6.1°, RA=23h48.8m Dec= -2°39.9', Moon phase=45.2%, Sun altitude hsun=-9.5°
1.8h Moon Close to 27 Psc, SAO 147008 (Close double star), 4.9mag, with Sun below horizon, Separation=4.42°, Limb separation=4.15° =7.89 lunar dia., Position angle=257.9° W, Azimuth az=105.3°, Altitude h=6.1°, RA=23h59.6m Dec= -3°27.6', Moon phase=45.1%, Sun altitude hsun=-8.9°
1.8h Moon Close to 29 Psc, SAO 147041, 5.1mag, with Sun below horizon, Separation=3.56°, Limb separation=3.30° =6.27 lunar dia., Position angle=263.5° W, Azimuth az=104.3°, Altitude h=6.1°, RA= 0h02.7m Dec= -2°55.9', Moon phase=45.1%, Sun altitude hsun=-8.9°
3h40.8m Sun Earliest Sunrise of the Year for this site
20h13m Mars (1.7 mag) Close to A24 Geminorum, SAO 95912 (Multiple star system): 7.7° separated, brightness: 1.9 mag, Position angle=183.62° S; Sun elongation=11.68° East (evening)

Monday 19 June 2017Time (24-hour clock) Object (Link) Event
2.3h Moon Close to Mu Psc, SAO 109926 (Double star, separation >10"), 4.8mag, with Sun below horizon, Separation=6.75°, Limb separation=6.48° =12.13 lunar dia., Position angle=52.4° NE, Azimuth az=87.7°, Altitude h=6.1°, RA= 1h31.1m Dec= +6°13.8', Moon phase=34.0%, Sun altitude hsun=-7.4°
2.3h Moon Close to 89 Psc, SAO 109793, 5.1mag, with Sun below horizon, Separation=2.73°, Limb separation=2.47° =4.61 lunar dia., Position angle=54.3° NE, Azimuth az=92.3°, Altitude h=6.1°, RA= 1h18.7m Dec= +3°42.2', Moon phase=34.0%, Sun altitude hsun=-7.3°
2h20.6m Moon Max. Libration (8.628°)
16.2h Mercury Perihelion (distance to sun: 0.3075 AU)

Tuesday 20 June 2017Time (24-hour clock) Object (Link) Event
2.4h Moon Close to Nu Psc, SAO 110065, 4.5mag, with Sun below horizon, Separation=5.44°, Limb separation=5.17° =9.54 lunar dia., Position angle=258.4° W, Azimuth az=88.9°, Altitude h=6.1°, RA= 1h42.3m Dec= +5°34.4', Moon phase=23.6%, Sun altitude hsun=-6.8°

2.6h Moon Close to Xi 1 Cet, SAO 110408 (Close double star), 4.4mag, with Sun below horizon, Separation=3.26°, Limb separation=2.99° =5.51 lunar dia., Position angle=46.6° NE, Azimuth az=82.9°, Altitude h=6.1°, RA= 2h13.9m Dec= +8°55.5', Moon phase=23.5%, Sun altitude hsun=-6.0°
4h56m Mars (1.7 mag) Close to Mebsuta, Eps Gem, SAO 78682: 1.1° separated, brightness: 3.1 mag, Position angle=4.01° N; Sun elongation=11.28° East (evening)

Wednesday 21 June 2017Time (24-hour clock) Object (Link) Event
2.7h Moon Close to Venus, -4.3mag, with Sun below horizon, Separation=3.41°, Limb separation=3.14° =5.73 lunar dia., Position angle=325.2° NW, Azimuth az=74.3°, Altitude h=6.1°, RA= 2h53.2m Dec=+13°42.6', Moon phase=14.3%, Sun altitude hsun=-5.6°
7h24.2m Sun Northern Solstice (declination: +23.434°)
17.2h Mercury Conjunction (superior), 1.1° separated from center of Sun. Distance to earth: 1.324 AU
19h28.7m Moon Max. Libration North: North Pole and Mare Frigoris are tipped into view (Earth's selenographic longitude: -3.307°, latitude: +6.604°)

Friday 23 June 2017Time (24-hour clock) Object (Link) Event
4h13m Carrington Solar Rotation Begin of Carrington rotation number 2192
13h45.2m Moon Perigee (distance moon center to earth center: 357931.5 km; closest point on earth ellipsoid with latitude 18.7° (WGS84), distance to moon center: 351555.5 km, apparent diameter: 33'59.5")

Saturday 24 June 2017Time (24-hour clock) Object (Link) Event
5h30.7m Moon New Moon (diameter: 33.3355', declination: +19.344°)
This is the 2nd nearest new moon of the year. Former closer new moon was at 25.5.2017. Next closer new moon is at 13.7.2018 (calculated for the geocenter)
5h36.9m Moon Topocentric New Moon (Altitude= +7.9°, topocentric diameter: 33.420', topocentric airfree declination: 18.51°, minimum phase: 0.19%)
14h09.2m Moon Max. Decl. North (declination: +19.436°)
21h18.7m Sun Latest Sunset of the Year for this site

Tuesday 27 June 2017Time (24-hour clock) Object (Link) Event
22.7h Moon Close to Regulus, Alp Leo, SAO 98967 (Multiple star system), 1.4mag, with Sun below horizon, Separation=3.39°, Limb separation=3.13° =5.86 lunar dia., Position angle=89.3° E, Azimuth az=284.2°, Altitude h=4.9°, RA=10h00.3m Dec=+11°52.9', Moon phase=18.5%, Sun altitude hsun=-7.3°

Wednesday 28 June 2017Time (24-hour clock) Object (Link) Event
21h17m Mercury Conjunction in Right Ascension with Mars: only 46.7' separated from center of Mars, position angle=180.00° S
22h24m Mercury (-1.4 mag) Close to Mars: only 46.5' separated from center of Mars, brightness: 1.7 mag, position angle=184.93° S; Sun elongation=8.69° East (evening)
22.8h Moon Close to Rho Leo, SAO 118355 (Close double star), 3.8mag, with Sun below horizon, Separation=3.96°, Limb separation=3.70° =7.05 lunar dia., Position angle=287.4° W, Azimuth az=277.6°, Altitude h=6.1°, RA=10h33.7m Dec= +9°13.0', Moon phase=27.8%, Sun altitude hsun=-7.6°
22h50m Mercury Conjunction with Mars: only 46.5' separated from center of Mars, position angle=186.87° S. Distance to earth: 1.298 AU
23.1h Moon Close to Chi Leo, SAO 118648 (Multiple star system), 4.6mag, with Sun below horizon, Separation=4.05°, Limb separation=3.78° =7.21 lunar dia., Position angle=100.3° E, Azimuth az=274.1°, Altitude h=6.1°, RA=11h05.9m Dec= +7°14.6', Moon phase=27.9%, Sun altitude hsun=-8.7°
23.1h Moon Close to 53 Leo, SAO 99305, 5.3mag, with Sun below horizon, Separation=2.51°, Limb separation=2.25° =4.28 lunar dia., Position angle=1.8° N, Azimuth az=279.8°, Altitude h=6.1°, RA=10h50.2m Dec=+10°27.2', Moon phase=27.9%, Sun altitude hsun=-8.9°

Thursday 29 June 2017Time (24-hour clock) Object (Link) Event
8h47.1m Moon Max. Libration East: Mare Crisium limb is tipped into view (Earth's selenographic longitude: 7.367°, latitude: -2.407°)
23.2h Moon Close to Sig Leo, SAO 118804, 4.0mag, with Sun below horizon, Separation=5.06°, Limb separation=4.80° =9.28 lunar dia., Position angle=294.4° NW, Azimuth az=271.7°, Altitude h=6.1°, RA=11h22.0m Dec= +5°56.1', Moon phase=38.0%, Sun altitude hsun=-8.9°
23.6h Moon Close to 7 Vir, SAO 119156, 5.4mag, with Sun below horizon, Separation=4.84°, Limb separation=4.58° =8.88 lunar dia., Position angle=92.5° E, Azimuth az=267.5°, Altitude h=6.1°, RA=12h00.8m Dec= +3°33.6', Moon phase=38.1%, Sun altitude hsun=-9.9°

Friday 30 June 2017Time (24-hour clock) Object (Link) Event
23.7h Moon Close to Porrima, Gam Vir, SAO 138917 (Multiple star system), 2.8mag, with Sun below horizon, Separation=3.31°, Limb separation=3.06° =6.01 lunar dia., Position angle=108.8° E, Azimuth az=258.2°, Altitude h=6.1°, RA=12h42.5m Dec= -1°32.6', Moon phase=48.4%, Sun altitude hsun=-10.2°
23.7h Moon Close to g29 Virginis (Multiple star system), 3.5mag, with Sun below horizon, Separation=3.32°, Limb separation=3.06° =6.02 lunar dia., Position angle=108.8° E, Azimuth az=258.2°, Altitude h=6.1°, RA=12h42.6m Dec= -1°32.6', Moon phase=48.4%, Sun altitude hsun=-10.2°

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Москва, Россия Lon: +38d00m00.00s Lat: +56d00m00.00s Alt: 194m Geoid Alt: 179m

Saturday 1 July 2017Time (24-hour clock) Object (Link) Event
3h36.5m Moon Topocentric First Quarter (Altitude=-25.1°, topocentric diameter: 30.215', topocentric airfree declination: -1.14°)
3h51.1m Moon First Quarter (diameter: 30.4199', declination: -0.422°)
13h20.5m Moon Max. Libration (8.229°)
21.7h Moon Close to Jupiter, -2.1mag, with Sun below horizon, Separation=5.09°, Limb separation=4.83° =9.55 lunar dia., Position angle=269.8° W, Azimuth az=228.2°, Altitude h=19.5°, RA=12h53.3m Dec= -4°17.8', Moon phase=57.5%, Sun altitude hsun=-2.9°
24.0h Moon Close to 74 Vir, SAO 139390, 4.7mag, with Sun below horizon, Separation=4.16°, Limb separation=3.91° =7.78 lunar dia., Position angle=114.0° SE, Azimuth az=249.2°, Altitude h=6.1°, RA=13h32.9m Dec= -6°20.6', Moon phase=58.4%, Sun altitude hsun=-10.6°

Sunday 2 July 2017Time (24-hour clock) Object (Link) Event
16h46m Mercury (-1.0 mag) Close to P78 Geminorum, SAO 79666 (Multiple star system): 4.8° separated, brightness: 1.2 mag, Position angle=9.75° N; Sun elongation=12.74° East (evening)

Monday 3 July 2017Time (24-hour clock) Object (Link) Event
0.1h Moon Close to 95 Vir, SAO 139736, 5.5mag, with Sun below horizon, Separation=1.18°, Limb separation=0.93° =1.87 lunar dia., Position angle=137.2° SE, Azimuth az=243.3°, Altitude h=6.1°, RA=14h07.6m Dec= -9°23.7', Moon phase=67.9%, Sun altitude hsun=-10.9°
6h58m Mars (1.7 mag) Close to Wasat, Del Gem, SAO 79294 (Multiple star system): 1.2° separated, brightness: 3.5 mag, Position angle=187.65° S; Sun elongation=7.33° East (evening)
23h11.6m Sun Aphelion (distance to sun: 1.0167 AU)

Tuesday 4 July 2017Time (24-hour clock) Object (Link) Event
0.7h Moon Close to Xi 2 Lib, SAO 158915, 5.5mag, with Sun below horizon, Separation=1.54°, Limb separation=1.29° =2.61 lunar dia., Position angle=66.2° NE, Azimuth az=239.1°, Altitude h=6.1°, RA=14h57.7m Dec=-11°28.7', Moon phase=76.7%, Sun altitude hsun=-11.1°
16.4h Moon Golden Handle visible on the Moon from 16.4h -22.0h (htop=21° at S at 21.0h) (sun rises on the Jura mountains, while Sinus Iridum is still in shadow)
22h11.7m Moon Immersion of Zuben Elakrab, Gam Lib, SAO 159370 (Multiple star system), 3.9mag, Position angle=82.6°, Azimuth az=195.0°, Altitude h=18.1°, RA=15h36.5m Dec=-14°50.7', Moon phase=83.5%, Sun altitude hsun=-5.7° (dark limb); (Southern limit: 38°00'E 15°19'N, alt=42.7°, bright limb)
22h49.4m Moon Max. Libration South: South Pole is tipped into view (Earth's selenographic longitude: 2.887°, latitude: -6.725°)
23h24.6m Moon Emersion of Zuben Elakrab, Gam Lib, SAO 159370 (Multiple star system), 3.9mag, Position Angle=309.0°, Azimuth az=212.9°, Altitude h=14.0°, RA=15h36.5m Dec=-14°50.7', Moon phase=83.8%, Sun altitude hsun=-9.9° (bright limb); (Southern limit: 38°00'E 15°19'N, alt=42.7°, bright limb)

Wednesday 5 July 2017Time (24-hour clock) Object (Link) Event
0.8h Moon Close to Eta Lib, SAO 159466, 5.4mag, with Sun below horizon, Separation=1.45°, Limb separation=1.20° =2.44 lunar dia., Position angle=114.0° SE, Azimuth az=230.0°, Altitude h=6.1°, RA=15h45.1m Dec=-15°43.5', Moon phase=84.2%, Sun altitude hsun=-11.1°
1.0h Moon Close to 49 Lib, SAO 159625, 5.5mag, with Sun below horizon, Separation=5.34°, Limb separation=5.10° =10.35 lunar dia., Position angle=104.8° E, Azimuth az=228.0°, Altitude h=6.1°, RA=16h01.3m Dec=-16°34.9', Moon phase=84.3%, Sun altitude hsun=-11.0°
1.3h Moon Close to 48 Lib, SAO 159607 (Close double star), 5.0mag, with Sun below horizon, Separation=4.63°, Limb separation=4.38° =8.91 lunar dia., Position angle=79.0° E, Azimuth az=233.1°, Altitude h=6.1°, RA=15h59.2m Dec=-14°19.6', Moon phase=84.3%, Sun altitude hsun=-10.7°

Thursday 6 July 2017Time (24-hour clock) Object (Link) Event
1.4h Moon Close to Phi Oph, SAO 159963 (Multiple star system), 4.3mag, with Sun below horizon, Separation=1.22°, Limb separation=0.97° =1.98 lunar dia., Position angle=39.7° NE, Azimuth az=227.9°, Altitude h=6.1°, RA=16h32.2m Dec=-16°38.8', Moon phase=90.6%, Sun altitude hsun=-10.5°
1.4h Moon Close to 24 (Scorpii)/Ophiuchi, SAO 160046, 4.9mag, with Sun below horizon, Separation=3.26°, Limb separation=3.02° =6.15 lunar dia., Position angle=92.8° E, Azimuth az=225.2°, Altitude h=6.1°, RA=16h42.6m Dec=-17°46.4', Moon phase=90.6%, Sun altitude hsun=-10.5°
7h17.7m Moon Apogee (distance moon center to earth center: 405955.3 km; closest point on earth ellipsoid with latitude -17.2° (WGS84), distance to moon center: 399579.0 km, apparent diameter: 29'54.4")
22h09m Sun Rotation axis of the Sun is straight up (Position angle: 0.0°, heliographic latitude: +3.5°)

Friday 7 July 2017Time (24-hour clock) Object (Link) Event
1.4h Moon Close to Saturn, 0.1mag, with Sun below horizon, Separation=3.75°, Limb separation=3.51° =7.14 lunar dia., Position angle=134.4° SE, Azimuth az=214.2°, Altitude h=6.1°, RA=17h29.7m Dec=-21°56.1', Moon phase=95.3%, Sun altitude hsun=-10.6°

Saturday 8 July 2017Time (24-hour clock) Object (Link) Event
2.4h Moon Close to 15 Sgr, SAO 186543, 5.3mag, with Sun below horizon, Separation=1.49°, Limb separation=1.24° =2.51 lunar dia., Position angle=111.5° E, Azimuth az=217.6°, Altitude h=6.1°, RA=18h16.3m Dec=-20°43.1', Moon phase=98.6%, Sun altitude hsun=-8.2°
2.6h Moon Close to 21 Sgr, SAO 186794, 4.9mag, with Sun below horizon, Separation=3.69°, Limb separation=3.44° =6.99 lunar dia., Position angle=94.9° E, Azimuth az=218.2°, Altitude h=6.1°, RA=18h26.4m Dec=-20°31.7', Moon phase=98.6%, Sun altitude hsun=-7.5°
13h48.7m Moon Max. Decl. South (declination: -19.439°)
This is the 3rd lowest southernmost moon position of the next 10 years. Former lower southern southernmost moon position was at 11.6.2017. Next lower southern southernmost moon position is at 4.8.2017 (calculated for the geocenter)

Sunday 9 July 2017Time (24-hour clock) Object (Link) Event
0.4h Moon Close to Xi 1 Sgr, SAO 187498, 5.0mag, Separation=0.40°, Limb separation=0.15° =0.30 lunar dia., Position angle=177.4° S, Azimuth az=180.7°, Altitude h=13.4°, RA=18h58.4m Dec=-20°37.8', Moon phase=99.8%, Sun altitude hsun=-11.6°
7h06.6m Moon Full Moon (diameter: 29.6690', declination: -19.209°)
This is the southernmost full moon of the year. Former more southern full moon was at 23.6.2013. Next more southern full moon is at 28.6.2018 (calculated for the geocenter)
8h17.8m Moon Topocentric Full Moon (Altitude=-31.0°, topocentric diameter: 29.439', topocentric airfree declination: -19.81°, maximum phase: 99.95%)
22.8h Moon Close to 56 Sgr, SAO 162964, 4.9mag, Separation=0.26°, Limb separation=0.01° =0.03 lunar dia., Position angle=176.1° S, Azimuth az=148.5°, Altitude h=9.3°, RA=19h47.4m Dec=-19°42.9', Moon phase=99.5%, Sun altitude hsun=-8.8°; (Southern limit: 38°00'E 63°00'N, alt= 4.2°, bright limb)

Monday 10 July 2017Time (24-hour clock) Object (Link) Event
Pluto Opposition (distance to earth: 32.347 AU, brightness: 14.2 mag, diameter: 0.13")
13h34m Mars (1.7 mag) Close to P78 Geminorum, SAO 79666 (Multiple star system): 5.6° separated, brightness: 1.2 mag, Position angle=9.56° N; Sun elongation=5.22° East (evening)
22.5h Moon Close to Rho Cap, SAO 163614 (Multiple star system), 4.9mag, with Sun below horizon, Separation=1.92°, Limb separation=1.67° =3.34 lunar dia., Position angle=272.1° W, Azimuth az=134.8°, Altitude h=6.1°, RA=20h29.9m Dec=-17°45.1', Moon phase=97.4%, Sun altitude hsun=-7.7°
22.5h Moon Close to Okul, Pi Cap, SAO 163592 (Multiple star system), 5.1mag, with Sun below horizon, Separation=2.32°, Limb separation=2.07° =4.14 lunar dia., Position angle=262.0° W, Azimuth az=135.7°, Altitude h=6.3°, RA=20h28.3m Dec=-18°00.0', Moon phase=97.4%, Sun altitude hsun=-7.8°
22.6h Moon Close to Sig Cap, SAO 163445, 5.3mag, with Sun below horizon, Separation=4.34°, Limb separation=4.09° =8.17 lunar dia., Position angle=254.0° W, Azimuth az=138.0°, Altitude h=6.1°, RA=20h20.4m Dec=-19°03.6', Moon phase=97.4%, Sun altitude hsun=-7.9°

Tuesday 11 July 2017Time (24-hour clock) Object (Link) Event
0.2h Moon Close to Ups Cap, SAO 163779, 5.2mag, Separation=0.37°, Limb separation=0.12° =0.24 lunar dia., Position angle=169.7° S, Azimuth az=155.4°, Altitude h=13.0°, RA=20h41.1m Dec=-18°04.4', Moon phase=97.2%, Sun altitude hsun=-11.8°
22.8h Moon Close to The Cap, SAO 164132, 4.1mag, with Sun below horizon, Separation=5.61°, Limb separation=5.36° =10.63 lunar dia., Position angle=251.9° W, Azimuth az=131.5°, Altitude h=5.5°, RA=21h06.9m Dec=-17°00.6', Moon phase=93.4%, Sun altitude hsun=-9.0°
22.8h Moon Close to 29 Cap, SAO 164263, 5.3mag, with Sun below horizon, Separation=3.02°, Limb separation=2.76° =5.48 lunar dia., Position angle=274.9° W, Azimuth az=128.6°, Altitude h=6.1°, RA=21h16.7m Dec=-15°05.7', Moon phase=93.4%, Sun altitude hsun=-9.0°

Wednesday 12 July 2017Time (24-hour clock) Object (Link) Event
0.7h Moon Close to 42 Cap, SAO 164580 (Close double star), 5.2mag, with Sun below horizon, Separation=2.73°, Limb separation=2.48° =4.90 lunar dia., Position angle=63.9° NE, Azimuth az=147.7°, Altitude h=15.1°, RA=21h42.5m Dec=-13°58.0', Moon phase=93.0%, Sun altitude hsun=-12.0°
23.2h Moon Close to Mu Cap, SAO 164713, 5.1mag, with Sun below horizon, Separation=6.35°, Limb separation=6.10° =11.99 lunar dia., Position angle=258.6° W, Azimuth az=125.1°, Altitude h=6.1°, RA=21h54.3m Dec=-13°28.0', Moon phase=87.4%, Sun altitude hsun=-10.2°

23.2h Moon Close to 38 Aqr, SAO 164910, 5.4mag, with Sun below horizon, Separation=2.17°, Limb separation=1.91° =3.76 lunar dia., Position angle=287.5° W, Azimuth az=120.9°, Altitude h=6.1°, RA=22h11.6m Dec=-11°28.6', Moon phase=87.4%, Sun altitude hsun=-10.3°
23.5h Moon Close to 42 Aqr, SAO 164974, 5.3mag, with Sun below horizon, Separation=0.94°, Limb separation=0.68° =1.34 lunar dia., Position angle=226.0° SW, Azimuth az=123.5°, Altitude h=6.1°, RA=22h17.7m Dec=-12°44.5', Moon phase=87.4%, Sun altitude hsun=-11.0°

Thursday 13 July 2017Time (24-hour clock) Object (Link) Event
1.0h Moon Close to Sig Aqr, SAO 165134, 4.8mag, with Sun below horizon, Separation=2.49°, Limb separation=2.23° =4.37 lunar dia., Position angle=57.7° NE, Azimuth az=139.4°, Altitude h=15.8°, RA=22h31.6m Dec=-10°35.2', Moon phase=86.9%, Sun altitude hsun=-12.0°
22.8h Moon Close to Lam Aqr, SAO 146362, 3.7mag, with Sun below horizon, Separation=3.89°, Limb separation=3.64° =7.10 lunar dia., Position angle=284.5° W, Azimuth az=104.9°, Altitude h=1.3°, RA=22h53.5m Dec= -7°29.1', Moon phase=80.0%, Sun altitude hsun=-9.0°

Friday 14 July 2017Time (24-hour clock) Object (Link) Event
1.1h Moon Close to Chi Aqr, SAO 146612 (Close double star), 4.9mag, with Sun below horizon, Separation=1.24°, Limb separation=0.99° =1.91 lunar dia., Position angle=67.7° E, Azimuth az=130.5°, Altitude h=15.3°, RA=23h17.8m Dec= -7°37.8', Moon phase=79.2%, Sun altitude hsun=-12.0°
1.1h Moon Close to Phi Aqr, SAO 146585, 4.2mag, with Sun below horizon, Separation=2.21°, Limb separation=1.95° =3.79 lunar dia., Position angle=13.7° N, Azimuth az=130.3°, Altitude h=17.0°, RA=23h15.2m Dec= -5°57.2', Moon phase=79.2%, Sun altitude hsun=-12.0°
2h23m Venus (-4.1 mag) Close to Aldebaran, Alp Tau, SAO 94027 (Multiple star system): 3.1° separated, brightness: 0.9 mag, Position angle=169.94° S; Sun elongation=41.86° West (morning)
23.7h Moon Close to 20 Psc, SAO 146915, 5.5mag, with Sun below horizon, Separation=3.24°, Limb separation=2.98° =5.74 lunar dia., Position angle=297.1° NW, Azimuth az=103.9°, Altitude h=6.1°, RA=23h48.8m Dec= -2°39.8', Moon phase=70.7%, Sun altitude hsun=-11.8°
23.8h Moon Close to 27 Psc, SAO 147008 (Close double star), 4.9mag, Separation=0.71°, Limb separation=0.45° =0.88 lunar dia., Position angle=340.6° N, Azimuth az=102.6°, Altitude h=4.4°, RA=23h59.6m Dec= -3°27.5', Moon phase=70.6%, Sun altitude hsun=-11.8°

Saturday 15 July 2017Time (24-hour clock) Object (Link) Event
1.8h Moon Close to 29 Psc, SAO 147041, 5.1mag, Separation=0.93°, Limb separation=0.67° =1.29 lunar dia., Position angle=337.6° N, Azimuth az=127.9°, Altitude h=19.3°, RA= 0h02.7m Dec= -2°55.8', Moon phase=69.8%, Sun altitude hsun=-11.0°; (Northern limit: 38°00'E 7°25'S, alt=16.0°, bright limb; Southern limit: 38°00'E 36°09'S, alt=19.9°, bright limb)
4h11.0m Moon Max. Libration West: Crater Grimaldi is tipped into view (Earth's selenographic longitude: -6.570°, latitude: +3.937°)

Sunday 16 July 2017Time (24-hour clock) Object (Link) Event
22h25.7m Moon Last Quarter (diameter: 31.8233', declination: +5.262°)
22h25.8m Moon Topocentric Last Quarter (Altitude=-12.6°, topocentric diameter: 31.712', topocentric airfree declination: 4.44°)

Monday 17 July 2017Time (24-hour clock) Object (Link) Event
0.3h Moon Close to Nu Psc, SAO 110065, 4.5mag, Separation=0.82°, Limb separation=0.56° =1.05 lunar dia., Position angle=340.4° N, Azimuth az=84.1°, Altitude h=3.0°, RA= 1h42.3m Dec= +5°34.5', Moon phase=49.3%, Sun altitude hsun=-12.7°
0.4h Moon Close to Mu Psc, SAO 109926 (Double star, separation >10"), 4.8mag, with Sun below horizon, Separation=3.44°, Limb separation=3.17° =5.97 lunar dia., Position angle=293.9° NW, Azimuth az=87.7°, Altitude h=6.1°, RA= 1h31.1m Dec= +6°13.9', Moon phase=49.2%, Sun altitude hsun=-12.8°
0.5h Moon Close to 89 Psc, SAO 109793, 5.1mag, with Sun below horizon, Separation=6.31°, Limb separation=6.05° =11.37 lunar dia., Position angle=259.6° W, Azimuth az=92.3°, Altitude h=6.1°, RA= 1h18.7m Dec= +3°42.3', Moon phase=49.2%, Sun altitude hsun=-12.8°
3h Meteor Shower Perseids (PER) (active until 24.8., from constellation Cassiopeia/Cas), 10-14 August numerous meteors.
6h35.9m Moon Max. Libration (8.392°)

Tuesday 18 July 2017Time (24-hour clock) Object (Link) Event
0.8h Moon Close to Xi 1 Cet, SAO 110408 (Close double star), 4.4mag, with Sun below horizon, Separation=5.96°, Limb separation=5.69° =10.58 lunar dia., Position angle=267.6° W, Azimuth az=82.9°, Altitude h=6.1°, RA= 2h13.9m Dec= +8°55.6', Moon phase=37.8%, Sun altitude hsun=-12.9°
0.8h Moon Close to Xi Ari, SAO 92932 (Close double star), 5.5mag, with Sun below horizon, Separation=3.45°, Limb separation=3.18° =5.91 lunar dia., Position angle=296.4° NW, Azimuth az=79.8°, Altitude h=6.1°, RA= 2h25.7m Dec=+10°41.2', Moon phase=37.8%, Sun altitude hsun=-12.9°
1.1h Moon Close to Xi 2 Cet, SAO 110543, 4.3mag, with Sun below horizon, Separation=2.51°, Limb separation=2.24° =4.16 lunar dia., Position angle=254.8° W, Azimuth az=83.6°, Altitude h=6.1°, RA= 2h29.1m Dec= +8°32.1', Moon phase=37.7%, Sun altitude hsun=-12.7°
1.5h Moon Close to Mu Cet, SAO 110723 (Multiple star system), 4.3mag, with Sun below horizon, Separation=1.73°, Limb separation=1.46° =2.72 lunar dia., Position angle=58.2° NE, Azimuth az=84.6°, Altitude h=8.8°, RA= 2h45.9m Dec=+10°11.1', Moon phase=37.5%, Sun altitude hsun=-12.0°

Wednesday 19 July 2017Time (24-hour clock) Object (Link) Event
1.6h Moon Close to 5 Tau, SAO 93469 (Close double star), 4.1mag, with Sun below horizon, Separation=1.14°, Limb separation=0.87° =1.59 lunar dia., Position angle=268.2° W, Azimuth az=75.6°, Altitude h=6.1°, RA= 3h31.8m Dec=+12°59.6', Moon phase=26.6%, Sun altitude hsun=-12.0°
1h53.9m Moon Max. Libration North: North Pole and Mare Frigoris are tipped into view (Earth's selenographic longitude: -3.892°, latitude: +6.733°)

Thursday 20 July 2017Time (24-hour clock) Object (Link) Event
1.7h Moon Close to 71 Tau, SAO 93932 (Double star, separation >10"), 4.5mag, with Sun below horizon, Separation=2.05°, Limb separation=1.78° =3.25 lunar dia., Position angle=260.4° W, Azimuth az=64.6°, Altitude h=2.3°, RA= 4h27.3m Dec=+15°39.2', Moon phase=16.8%, Sun altitude hsun=-12.0°
1.7h Moon Close to 75 Tau, SAO 93950 (Close double star), 5.0mag, with Sun below horizon, Separation=1.57°, Limb separation=1.30° =2.37 lunar dia., Position angle=284.7° W, Azimuth az=63.7°, Altitude h=2.7°, RA= 4h29.4m Dec=+16°23.7', Moon phase=16.8%, Sun altitude hsun=-12.0°
1.7h Moon Close to Del2 Tau, SAO 93907 (Multiple star system), 4.8mag, with Sun below horizon, Separation=2.95°, Limb separation=2.68° =4.89 lunar dia., Position angle=299.9° NW, Azimuth az=64.1°, Altitude h=4.1°, RA= 4h25.1m Dec=+17°28.8', Moon phase=16.8%, Sun altitude hsun=-12.0°
1.7h Moon Close to Del3 Tau, SAO 93923 (Multiple star system), 4.3mag, with Sun below horizon, Separation=2.97°, Limb separation=2.69° =4.91 lunar dia., Position angle=311.3° NW, Azimuth az=63.5°, Altitude h=4.3°, RA= 4h26.5m Dec=+17°57.8', Moon phase=16.8%, Sun altitude hsun=-12.0°
1.7h Moon Close to NSV 01627, SAO 93975 (Multiple star system), 4.8mag, with Sun below horizon, Separation=1.04°, Limb separation=0.77° =1.40 lunar dia., Position angle=283.2° W, Azimuth az=63.4°, Altitude h=2.3°, RA= 4h31.5m Dec=+16°13.7', Moon phase=16.8%, Sun altitude hsun=-12.0°
1.9h Moon Close to Hyadum II, Del1 Tau, SAO 93897 (Multiple star system), 3.8mag, with Sun below horizon, Separation=3.37°, Limb separation=3.09° =5.64 lunar dia., Position angle=297.0° NW, Azimuth az=67.2°, Altitude h=6.1°, RA= 4h23.9m Dec=+17°34.8', Moon phase=16.7%, Sun altitude hsun=-11.4°
2.1h Moon Close to Hyadum I, Gam Tau, SAO 93868 (Close double star), 3.6mag, with Sun below horizon, Separation=3.87°, Limb separation=3.60° =6.56 lunar dia., Position angle=263.9° W, Azimuth az=70.7°, Altitude h=6.1°, RA= 4h20.8m Dec=+15°40.0', Moon phase=16.7%, Sun altitude hsun=-10.9°
2.2h Moon Close to 58 Tau, SAO 93876, 5.3mag, with Sun below horizon, Separation=3.82°, Limb separation=3.55° =6.46 lunar dia., Position angle=255.6° W, Azimuth az=71.8°, Altitude h=6.0°, RA= 4h21.6m Dec=+15°00.0', Moon phase=16.7%, Sun altitude hsun=-10.7°
2.2h Moon Close to The1 Tau, SAO 93955 (Close double star), 3.8mag, with Sun below horizon, Separation=1.82°, Limb separation=1.55° =2.82 lunar dia., Position angle=267.8° W, Azimuth az=70.1°, Altitude h=6.1°, RA= 4h29.6m Dec=+15°59.8', Moon phase=16.7%, Sun altitude hsun=-10.6°

2.2h Moon Close to The2 Tau, SAO 93957 (Multiple star system), 3.4mag, with Sun below horizon, Separation=1.81°, Limb separation=1.54° =2.81 lunar dia., Position angle=264.8° W, Azimuth az=70.3°, Altitude h=6.1°, RA= 4h29.6m Dec=+15°54.4', Moon phase=16.6%, Sun altitude hsun=-10.5°
2.3h Moon Close to 81 Tau, SAO 93978, 5.5mag, with Sun below horizon, Separation=1.41°, Limb separation=1.13° =2.06 lunar dia., Position angle=255.7° W, Azimuth az=70.6°, Altitude h=6.1°, RA= 4h31.6m Dec=+15°43.6', Moon phase=16.6%, Sun altitude hsun=-10.4°
2.3h Moon Close to 97 Tau, SAO 94164, 5.1mag, with Sun below horizon, Separation=4.55°, Limb separation=4.27° =7.79 lunar dia., Position angle=52.7° NE, Azimuth az=64.8°, Altitude h=6.1°, RA= 4h52.4m Dec=+18°51.9', Moon phase=16.6%, Sun altitude hsun=-10.3°
2.3h Moon Close to Aldebaran, Alp Tau, SAO 94027 (Multiple star system), 0.9mag, Separation=0.48°, Limb separation=0.21° =0.38 lunar dia., Position angle=347.5° N, Azimuth az=69.3°, Altitude h=6.2°, RA= 4h36.9m Dec=+16°32.4', Moon phase=16.6%, Sun altitude hsun=-10.3°
2.4h Moon Close to Sig2 Tau, SAO 94054 (Double star, separation >10"), 4.7mag, with Sun below horizon, Separation=0.65°, Limb separation=0.37° =0.68 lunar dia., Position angle=102.3° E, Azimuth az=70.2°, Altitude h=6.1°, RA= 4h40.3m Dec=+15°56.9', Moon phase=16.6%, Sun altitude hsun=-9.9°
2.4h Moon Close to Sig1 Tau, SAO 94051 (Close double star), 5.1mag, with Sun below horizon, Separation=0.65°, Limb separation=0.37° =0.68 lunar dia., Position angle=113.4° SE, Azimuth az=70.4°, Altitude h=6.1°, RA= 4h40.1m Dec=+15°49.8', Moon phase=16.6%, Sun altitude hsun=-9.9°
4.2h Moon Close to Venus, -4.1mag, with Sun below horizon, Separation=6.61°, Limb separation=6.35° =11.52 lunar dia., Position angle=50.3° NE, Azimuth az=84.7°, Altitude h=21.6°, RA= 5h03.4m Dec=+20°39.7', Moon phase=15.9%, Sun altitude hsun=-0.1°
9h03m Carrington Solar Rotation Begin of Carrington rotation number 2193
15h Mercury Magnitude dims to 0 mag
15.4h Moon Close to Venus, -4.1mag, Separation=3.42°, Limb separation=3.15° =5.70 lunar dia., Position angle=357.8° N, Azimuth az=279.1°, Altitude h=19.1°, RA= 5h05.7m Dec=+20°43.9', Moon phase=12.0%, Sun altitude hsun=42.5°, in daylight, elongation from sun: 40.5°

Friday 21 July 2017Time (24-hour clock) Object (Link) Event
1.8h Moon Close to 104 Tau, SAO 94332 (Close double star), 4.9mag, with Sun below horizon, Separation=6.86°, Limb separation=6.59° =11.98 lunar dia., Position angle=275.4° W, Azimuth az=58.0°, Altitude h=1.9°, RA= 5h00.5m Dec=+18°39.9', Moon phase=8.8%, Sun altitude hsun=-12.0°
2.9h Moon Close to 115 Tau, SAO 94554 (Multiple star system), 5.4mag, with Sun below horizon, Separation=2.96°, Limb separation=2.68° =4.87 lunar dia., Position angle=269.4° W, Azimuth az=66.5°, Altitude h=6.1°, RA= 5h28.2m Dec=+17°58.4', Moon phase=8.5%, Sun altitude hsun=-8.0°
2.9h Moon Close to 111 Tau, SAO 94526, 5.0mag, with Sun below horizon, Separation=3.67°, Limb separation=3.40° =6.16 lunar dia., Position angle=260.3° W, Azimuth az=67.6°, Altitude h=6.1°, RA= 5h25.4m Dec=+17°23.8', Moon phase=8.5%, Sun altitude hsun=-7.9°
2.9h Moon Close to 119 Tau, SAO 94628, 4.3mag, with Sun below horizon, Separation=1.88°, Limb separation=1.60° =2.90 lunar dia., Position angle=289.0° W, Azimuth az=65.3°, Altitude h=6.1°, RA= 5h33.2m Dec=+18°36.2', Moon phase=8.5%, Sun altitude hsun=-7.9°
3.1h Moon Close to Chi1 Ori, SAO 77705, 4.4mag, with Sun below horizon, Separation=4.05°, Limb separation=3.77° =6.84 lunar dia., Position angle=56.5° NE, Azimuth az=62.1°, Altitude h=6.1°, RA= 5h55.4m Dec=+20°16.5', Moon phase=8.5%, Sun altitude hsun=-7.1°
3.3h Moon Close to Chi2 Ori, SAO 77911 (Multiple star system), 4.6mag, with Sun below horizon, Separation=5.87°, Limb separation=5.60° =10.14 lunar dia., Position angle=69.9° E, Azimuth az=62.5°, Altitude h=6.0°, RA= 6h04.9m Dec=+20°00.1', Moon phase=8.4%, Sun altitude hsun=-6.2°
20h04.9m Moon Perigee (distance moon center to earth center: 361222.1 km; closest point on earth ellipsoid with latitude 19.4° (WGS84), distance to moon center: 354846.3 km, apparent diameter: 33'40.6")

Saturday 22 July 2017Time (24-hour clock) Object (Link) Event
1h07.0m Moon Max. Decl. North (declination: +19.413°)
This is the 2nd lowest northernmost moon position of the next 10 years. Former lower northern northernmost moon position was at 27.5.2017. Next lower northern northernmost moon position is at 18.8.2017 (calculated for the geocenter)

Sunday 23 July 2017Time (24-hour clock) Object (Link) Event
12h45.6m Moon New Moon (diameter: 32.8585', declination: +17.940°)
12h46.8m Moon Topocentric New Moon (Altitude=+51.2°, topocentric diameter: 33.316', topocentric airfree declination: 17.31°, minimum phase: 0.06%)

Tuesday 25 July 2017Time (24-hour clock) Object (Link) Event
17h47m Venus (-4.0 mag) Close to Alnath, Bet Tau, SAO 77168 (Multiple star system): 7.3° separated, brightness: 1.6 mag, Position angle=354.76° N; Sun elongation=39.78° West (morning)

Wednesday 26 July 2017Time (24-hour clock) Object (Link) Event
0h58m Mercury (0.2 mag) Close to Regulus, Alp Leo, SAO 98967 (Multiple star system): only 57.0' separated, brightness: 1.4 mag, Position angle=29.43° NE; Sun elongation=26.79° East (evening)
6h45m Sun Equation of time is at minimum with -6.53 minutes (sundials are late). The equation of time reaches a minor minimum - the Sun culminates after the mean noon

Thursday 27 July 2017Time (24-hour clock) Object (Link) Event
3h57m Mars Conjunction, 1.1° separated from center of Sun. Distance to earth: 2.655 AU
9h40m Venus (-4.0 mag) Close to Zet Tau, SAO 77336 (Close double star): only 23.3' separated, brightness: 3.0 mag, Position angle=175.51° S; Sun elongation=39.46° West (morning)
13h34.6m Moon Max. Libration East: Mare Crisium limb is tipped into view (Earth's selenographic longitude: 6.693°, latitude: -3.716°)

Friday 28 July 2017Time (24-hour clock) Object (Link) Event
2.5h Mercury Dichotomy/Half phase
21.8h Moon Close to Jupiter, -1.9mag, with Sun below horizon, Separation=2.87°, Limb separation=2.63° =5.14 lunar dia., Position angle=154.9° SE, Azimuth az=251.0°, Altitude h=6.1°, RA=13h02.9m Dec= -5°24.5', Moon phase=32.0%, Sun altitude hsun=-7.4°
21.9h Moon Close to Porrima, Gam Vir, SAO 138917 (Multiple star system), 2.8mag, with Sun below horizon, Separation=4.11°, Limb separation=3.85° =7.55 lunar dia., Position angle=288.0° W, Azimuth az=258.2°, Altitude h=6.1°, RA=12h42.5m Dec= -1°32.6', Moon phase=32.0%, Sun altitude hsun=-7.7°
21.9h Moon Close to g29 Virginis (Multiple star system), 3.5mag, with Sun below horizon, Separation=4.11°, Limb separation=3.85° =7.54 lunar dia., Position angle=288.0° W, Azimuth az=258.2°, Altitude h=6.1°, RA=12h42.5m Dec= -1°32.6', Moon phase=32.0%, Sun altitude hsun=-7.7°

Saturday 29 July 2017Time (24-hour clock) Object (Link) Event
18h06.3m Moon Max. Libration (8.344°)
22.1h Moon Close to 74 Vir, SAO 139390, 4.7mag, with Sun below horizon, Separation=3.37°, Limb separation=3.12° =6.19 lunar dia., Position angle=279.9° W, Azimuth az=249.2°, Altitude h=6.1°, RA=13h32.9m Dec= -6°20.6', Moon phase=41.9%, Sun altitude hsun=-9.3°

Sunday 30 July 2017Time (24-hour clock) Object (Link) Event
7.6h Mercury Greatest Elongation (27.2° East, in the evenings, brightness: 0.3 mag)

17h10.5m Moon Topocentric First Quarter (Altitude=+22.5°, topocentric diameter: 30.111', topocentric airfree declination: -9.93°)
18h23.1m Moon First Quarter (diameter: 29.9121', declination: -9.285°)
22.9h Moon Close to Xi 2 Lib, SAO 158915, 5.5mag, with Sun below horizon, Separation=5.65°, Limb separation=5.40° =10.84 lunar dia., Position angle=97.0° E, Azimuth az=239.1°, Altitude h=6.1°, RA=14h57.7m Dec=-11°28.6', Moon phase=52.0%, Sun altitude hsun=-12.7°

Monday 31 July 2017Time (24-hour clock) Object (Link) Event
23.0h Moon Close to Zuben Elakrab, Gam Lib, SAO 159370 (Multiple star system), 3.9mag, with Sun below horizon, Separation=3.52°, Limb separation=3.28° =6.62 lunar dia., Position angle=103.6° E, Azimuth az=231.9°, Altitude h=6.1°, RA=15h36.5m Dec=-14°50.7', Moon phase=61.5%, Sun altitude hsun=-13.4°
23.6h Moon Close to Eta Lib, SAO 159466, 5.4mag, with Sun below horizon, Separation=5.47°, Limb separation=5.23° =10.58 lunar dia., Position angle=107.1° E, Azimuth az=237.3°, Altitude h=2.4°, RA=15h45.1m Dec=-15°43.5', Moon phase=61.8%, Sun altitude hsun=-15.0°

АВГУСТ

Москва, Россия Lon: +38d00m00.00s Lat: +56d00m00.00s Alt: 194m Geoid Alt: 179m

Tuesday 1 August 2017Time (24-hour clock) Object (Link) Event
3h53.7m Moon Max. Libration South: South Pole is tipped into view (Earth's selenographic longitude: 3.432°, latitude: -6.839°)
22.6h Moon Close to 48 Lib, SAO 159607 (Close double star), 5.0mag, with Sun below horizon, Separation=3.41°, Limb separation=3.16° =6.41 lunar dia., Position angle=312.6° NW, Azimuth az=221.8°, Altitude h=11.3°, RA=15h59.2m Dec=-14°19.6', Moon phase=70.4%, Sun altitude hsun=-12.0°
23.1h Moon Close to 49 Lib, SAO 159625, 5.5mag, with Sun below horizon, Separation=2.22°, Limb separation=1.97° =4.00 lunar dia., Position angle=272.4° W, Azimuth az=228.0°, Altitude h=6.1°, RA=16h01.3m Dec=-16°34.9', Moon phase=70.6%, Sun altitude hsun=-14.0°
23.6h Moon Close to Phi Oph, SAO 159963 (Multiple star system), 4.3mag, with Sun below horizon, Separation=4.95°, Limb separation=4.70° =9.54 lunar dia., Position angle=88.7° E, Azimuth az=227.9°, Altitude h=6.1°, RA=16h32.2m Dec=-16°38.8', Moon phase=70.8%, Sun altitude hsun=-15.3°

Wednesday 2 August 2017Time (24-hour clock) Object (Link) Event
15.8h Mercury Aphelion (distance to sun: 0.4667 AU)
20h49.5m Moon Apogee (distance moon center to earth center: 405058.0 km; closest point on earth ellipsoid with latitude -17.6° (WGS84), distance to moon center: 398681.8 km, apparent diameter: 29'58.5")
22.5h Moon Close to 24 (Scorpii)/Ophiuchi, SAO 160046, 4.9mag, with Sun below horizon, Separation=3.89°, Limb separation=3.65° =7.40 lunar dia., Position angle=283.2° W, Azimuth az=210.7°, Altitude h=11.6°, RA=16h42.6m Dec=-17°46.3', Moon phase=78.6%, Sun altitude hsun=-12.0°
23.6h Moon Golden Handle visible on the Moon from 21.6h - 0.9h (htop=8° at SW at 23.6h) (sun rises on the Jura mountains, while Sinus Iridum is still in shadow)

Thursday 3 August 2017Time (24-hour clock) Object (Link) Event
Uranus Stationary: Getting Retrograde (relative to ecliptic)
Uranus Stationary: Getting Retrograde (relative to equator)
21.3h Moon Close to Saturn, 0.3mag, with Sun below horizon, Separation=5.79°, Limb separation=5.58° =11.29 lunar dia., Position angle=250.1° W, Azimuth az=184.1°, Altitude h=12.1°, RA=17h23.6m Dec=-21°55.5', Moon phase=85.5%, Sun altitude hsun=-6.0°
22h42m Venus (-4.0 mag) Close to Tejat Prior, Eta Gem, SAO 78135: only 32.7' separated, brightness: 3.5 mag, Position angle=359.03° N; Sun elongation=37.98° West (morning)

Friday 4 August 2017Time (24-hour clock) Object (Link) Event
21h14.6m Moon Max. Decl. South (declination: -19.392°)
This is the lowest southernmost moon position of the next 10 years. Former lower southern southernmost moon position was at 14.5.2017. Next lower southern southernmost moon position is at 16.8.2032 (calculated for the geocenter)
22.4h Moon Close to 21 Sgr, SAO 186794, 4.9mag, with Sun below horizon, Separation=3.08°, Limb separation=2.83° =5.71 lunar dia., Position angle=265.8° W, Azimuth az=185.7°, Altitude h=13.4°, RA=18h26.4m Dec=-20°31.7', Moon phase=91.8%, Sun altitude hsun=-12.0°
22.4h Moon Close to SAO 161564, XZ 25418 (Multiple star system), 5.1mag, with Sun below horizon, Separation=2.51°, Limb separation=2.26° =4.56 lunar dia., Position angle=318.8° NW, Azimuth az=184.3°, Altitude h=15.6°, RA=18h32.5m Dec=-18°23.2', Moon phase=91.8%, Sun altitude hsun=-12.0°
23.2h Moon Close to 15 Sgr, SAO 186543, 5.3mag, with Sun below horizon, Separation=5.73°, Limb separation=5.49° =11.06 lunar dia., Position angle=266.5° W, Azimuth az=199.7°, Altitude h=11.4°, RA=18h16.3m Dec=-20°43.2', Moon phase=92.0%, Sun altitude hsun=-15.0°

Saturday 5 August 2017Time (24-hour clock) Object (Link) Event
1.2h Moon Close to 29 Sgr, SAO 187324 (Double star, separation >10"), 5.2mag, with Sun below horizon, Separation=1.56°, Limb separation=1.32° =2.66 lunar dia., Position angle=93.0° E, Azimuth az=218.8°, Altitude h=6.1°, RA=18h50.7m Dec=-20°18.0', Moon phase=92.4%, Sun altitude hsun=-16.6°
1.2h Moon Close to Xi 1 Sgr, SAO 187498, 5.0mag, with Sun below horizon, Separation=3.36°, Limb separation=3.11° =6.28 lunar dia., Position angle=96.6° E, Azimuth az=217.9°, Altitude h=6.1°, RA=18h58.4m Dec=-20°37.8', Moon phase=92.4%, Sun altitude hsun=-16.5°
13h18m Venus (-4.0 mag) Close to Tejat Posterior, Mu Gem, SAO 78297 (Multiple star system): only 31.7' separated, brightness: 2.9 mag, Position angle=359.80° N; Sun elongation=37.65° West (morning)
13h51m Mars Farest Distance (distance to earth: 2.658 AU, brightness: 1.7 mag, diameter: 3.52")
21.7h Moon Close to Rho1 Sgr, SAO 162512 (Close double star), 3.9mag, with Sun below horizon, Separation=2.64°, Limb separation=2.39° =4.80 lunar dia., Position angle=319.1° NW, Azimuth az=163.2°, Altitude h=14.9°, RA=19h22.7m Dec=-17°48.6', Moon phase=96.2%, Sun altitude hsun=-9.0°
22.3h Moon Close to 43 Sgr, SAO 162413 (Close double star), 4.9mag, with Sun below horizon, Separation=3.03°, Limb separation=2.78° =5.57 lunar dia., Position angle=287.1° W, Azimuth az=173.1°, Altitude h=14.9°, RA=19h18.7m Dec=-18°55.1', Moon phase=96.3%, Sun altitude hsun=-12.0°

Sunday 6 August 2017Time (24-hour clock) Object (Link) Event
2.8h Moon Close to 56 Sgr, SAO 162964, 4.9mag, with Sun below horizon, Separation=2.13°, Limb separation=1.88° =3.77 lunar dia., Position angle=94.7° E, Azimuth az=228.7°, Altitude h=2.4°, RA=19h47.4m Dec=-19°42.9', Moon phase=96.9%, Sun altitude hsun=-12.0°
23.0h Moon Close to Sig Cap, SAO 163445, 5.3mag, with Sun below horizon, Separation=1.07°, Limb separation=0.82° =1.63 lunar dia., Position angle=229.3° SW, Azimuth az=169.2°, Altitude h=14.4°, RA=20h20.4m Dec=-19°03.6', Moon phase=99.1%, Sun altitude hsun=-15.0°

Monday 7 August 2017Time (24-hour clock) Object (Link) Event
1h11.9m Moon Immersion of Okul, Pi Cap, SAO 163592 (Multiple star system), 5.1mag, Position angle=82.3°, Azimuth az=199.1°, Altitude h=14.2°, RA=20h28.3m Dec=-18°00.0', Moon phase=99.3%, Sun altitude hsun=-17.1° (dark limb); (Southern limit: 38°00'E 31°57'N, alt=30.7°, bright limb)
2.9h Moon Close to Rho Cap, SAO 163614 (Multiple star system), 4.9mag, Separation=0.27°, Limb separation=0.01° =0.03 lunar dia., Position angle=345.1° N, Azimuth az=222.7°, Altitude h=7.2°, RA=20h29.9m Dec=-17°45.1', Moon phase=99.4%, Sun altitude hsun=-11.7°; (Northern limit: 38°00'E 54°12'N, alt= 8.5°, bright limb; Southern limit: 38°00'E 12°51'N, alt=32.0°, bright limb)

3.2h Moon Close to Ups Cap, SAO 163779, 5.2mag, with Sun below horizon, Separation=2.46°, Limb separation=2.21° =4.40 lunar dia., Position angle=92.0° E, Azimuth az=224.5°, Altitude h=6.1°, RA=20h41.1m Dec=-18°04.4', Moon phase=99.4%, Sun altitude hsun=-10.1°
20h22m17s Lunar Eclipse Partial lunar eclipse begins
Position Angle=138.2°, Position angle vertex=168.2°, Altitude=1.1°, Azimuth=121.5° ESE, Sun altitude=-0.2°
20h47.4m Moon Topocentric Full Moon (Altitude= +3.8°, topocentric diameter: 30.289', topocentric airfree declination: -16.29°, maximum phase: 100.00%)
21h10.6m Moon Full Moon (diameter: 30.2574', declination: -15.439°)
21.2h Moon Close to The Cap, SAO 164132, 4.1mag, with Sun below horizon, Separation=1.56°, Limb separation=1.30° =2.58 lunar dia., Position angle=235.0° SW, Azimuth az=133.3°, Altitude h=6.3°, RA=21h06.9m Dec=-17°00.6', Moon phase=100.0%, Sun altitude hsun=-6.4°
21h20m28s Lunar Eclipse →graphical chart Greatest eclipse: Partial Lunar Eclipse
Saros-Number: 119, Magnitude=0.252, Position angle=168.5°, Position angle vertex=193.5°
Brightness=-11.1mag, Diameter=30.32'
Duration partial phase=116.5 minutes,
Duration penumbral phase=304.8 minutes, ET-UT=68.9sec
Altitude=7.2°, Azimuth=133.5° SE, Sun altitude=-7.2°
22h18m48s Lunar Eclipse Partial lunar eclipse ends
Position Angle=198.8°, Position angle vertex=217.5°, Altitude=12.3°, Azimuth=146.3° SSE, Sun altitude=-12.4°

Tuesday 8 August 2017Time (24-hour clock) Object (Link) Event
0.6h Moon Close to 29 Cap, SAO 164263, 5.3mag, Separation=0.89°, Limb separation=0.63° =1.25 lunar dia., Position angle=343.6° N, Azimuth az=178.9°, Altitude h=18.9°, RA=21h16.7m Dec=-15°05.7', Moon phase=100.0%, Sun altitude hsun=-17.8°; (Northern limit: 38°00'E 14°58'S, alt=65.0°, bright limb; Southern limit: 38°00'E 32°30'S, alt=70.4°, bright limb)
13h57m Venus (-4.0 mag) Close to A24 Geminorum, SAO 95912 (Multiple star system): 5.6° separated, brightness: 1.9 mag, Position angle=181.25° S; Sun elongation=37.02° West (morning)
21.4h Moon Close to Mu Cap, SAO 164713, 5.1mag, with Sun below horizon, Separation=2.27°, Limb separation=2.02° =3.96 lunar dia., Position angle=265.4° W, Azimuth az=125.1°, Altitude h=6.1°, RA=21h54.3m Dec=-13°28.0', Moon phase=99.0%, Sun altitude hsun=-8.0°

Wednesday 9 August 2017Time (24-hour clock) Object (Link) Event
2.3h Moon Close to 42 Aqr, SAO 164974, 5.3mag, with Sun below horizon, Separation=1.53°, Limb separation=1.28° =2.49 lunar dia., Position angle=93.3° E, Azimuth az=190.5°, Altitude h=20.8°, RA=22h17.8m Dec=-12°44.5', Moon phase=98.5%, Sun altitude hsun=-15.0°
3.0h Moon Close to Sig Aqr, SAO 165134, 4.8mag, with Sun below horizon, Separation=5.03°, Limb separation=4.77° =9.31 lunar dia., Position angle=66.7° NE, Azimuth az=199.2°, Altitude h=21.8°, RA=22h31.6m Dec=-10°35.1', Moon phase=98.4%, Sun altitude hsun=-11.7°
3.3h Moon Close to 38 Aqr, SAO 164910, 5.4mag, Separation=1.08°, Limb separation=0.83° =1.61 lunar dia., Position angle=338.4° N, Azimuth az=209.1°, Altitude h=18.6°, RA=22h11.6m Dec=-11°28.5', Moon phase=98.4%, Sun altitude hsun=-10.0°; (Northern limit: 38°00'E 8°49'S, alt=66.6°, bright limb; Southern limit: 38°00'E 47°37'S, alt=52.3°, bright limb)
22.7h Moon Close to Lam Aqr, SAO 146362, 3.7mag, Separation=2.12°, Limb separation=1.86° =3.62 lunar dia., Position angle=341.1° N, Azimuth az=126.7°, Altitude h=13.6°, RA=22h53.5m Dec= -7°29.0', Moon phase=95.6%, Sun altitude hsun=-14.5°

Thursday 10 August 2017Time (24-hour clock) Object (Link) Event
3.0h Moon Close to Phi Aqr, SAO 146585, 4.2mag, with Sun below horizon, Separation=4.12°, Limb separation=3.86° =7.45 lunar dia., Position angle=45.9° NE, Azimuth az=189.2°, Altitude h=27.7°, RA=23h15.2m Dec= -5°57.1', Moon phase=94.8%, Sun altitude hsun=-12.0°
3.1h Moon Close to Chi Aqr, SAO 146612 (Close double star), 4.9mag, with Sun below horizon, Separation=3.75°, Limb separation=3.50° =6.75 lunar dia., Position angle=71.5° E, Azimuth az=189.2°, Altitude h=26.0°, RA=23h17.8m Dec= -7°37.7', Moon phase=94.8%, Sun altitude hsun=-11.7°

Friday 11 August 2017Time (24-hour clock) Object (Link) Event
2h13.2m Moon Max. Libration West: Crater Grimaldi is tipped into view (Earth's selenographic longitude: -5.346°, latitude: +3.629°)
2.4h Moon Close to 20 Psc, SAO 146915, 5.5mag, Separation=2.30°, Limb separation=2.04° =3.91 lunar dia., Position angle=335.0° NW, Azimuth az=169.3°, Altitude h=30.9°, RA=23h48.9m Dec= -2°39.8', Moon phase=89.3%, Sun altitude hsun=-15.2°
3.1h Moon Close to 27 Psc, SAO 147008 (Close double star), 4.9mag, with Sun below horizon, Separation=1.84°, Limb separation=1.58° =3.02 lunar dia., Position angle=50.7° NE, Azimuth az=178.7°, Altitude h=30.6°, RA=23h59.6m Dec= -3°27.4', Moon phase=89.1%, Sun altitude hsun=-12.0°
3.1h Moon Close to 29 Psc, SAO 147041, 5.1mag, with Sun below horizon, Separation=2.79°, Limb separation=2.53° =4.83 lunar dia., Position angle=52.5° NE, Azimuth az=177.8°, Altitude h=31.1°, RA= 0h02.7m Dec= -2°55.7', Moon phase=89.1%, Sun altitude hsun=-12.0°

Saturday 12 August 2017Time (24-hour clock) Object (Link) Event
22.7h Moon Close to 89 Psc, SAO 109793, 5.1mag, with Sun below horizon, Separation=2.37°, Limb separation=2.11° =4.00 lunar dia., Position angle=276.3° W, Azimuth az=92.3°, Altitude h=6.1°, RA= 1h18.7m Dec= +3°42.4', Moon phase=74.1%, Sun altitude hsun=-15.5°

Sunday 13 August 2017Time (24-hour clock) Object (Link) Event
2.3h Moon Close to Mu Psc, SAO 109926 (Double star, separation >10"), 4.8mag, Separation=2.31°, Limb separation=2.05° =3.84 lunar dia., Position angle=335.3° NW, Azimuth az=138.3°, Altitude h=33.5°, RA= 1h31.1m Dec= +6°14.0', Moon phase=72.7%, Sun altitude hsun=-16.0°
3h Meteor Maximum Perseids (PER) ZHR=100
Local hour rate=52 Velocity=60.4km/s (rapid)
Radiant: RA=3.2h/48° Dec=58.0° (J2000) (in constellation Cassiopeia/Cas)
Solar longitude=140.2° (J2000)
Stream active from 17. July to 24. August
3.2h Moon Close to Nu Psc, SAO 110065, 4.5mag, with Sun below horizon, Separation=1.94°, Limb separation=1.68° =3.15 lunar dia., Position angle=49.0° NE, Azimuth az=150.8°, Altitude h=36.3°, RA= 1h42.3m Dec= +5°34.5', Moon phase=72.3%, Sun altitude hsun=-12.0°
23.0h Moon Close to Xi 1 Cet, SAO 110408 (Close double star), 4.4mag, with Sun below horizon, Separation=2.15°, Limb separation=1.89° =3.55 lunar dia., Position angle=301.7° NW, Azimuth az=82.9°, Altitude h=6.1°, RA= 2h13.9m Dec= +8°55.7', Moon phase=63.7%, Sun altitude hsun=-17.1°

Monday 14 August 2017Time (24-hour clock) Object (Link) Event
2h21.1m Moon Immersion of Xi 2 Cet, SAO 110543, 4.3mag, Position angle=64.2°, Azimuth az=123.9°, Altitude h=30.3°, RA= 2h29.1m Dec= +8°32.2', Moon phase=62.2%, Sun altitude hsun=-16.1° (bright limb); (Southern limit: 38°00'E 26°49'N, alt=41.2°, bright limb)
2h21.8m Moon Max. Libration (7.750°)
3.1h Moon Close to Xi Ari, SAO 92932 (Close double star), 5.5mag, Separation=2.32°, Limb separation=2.05° =3.81 lunar dia., Position angle=336.7° NW, Azimuth az=135.7°, Altitude h=37.4°, RA= 2h25.8m Dec=+10°41.3', Moon phase=61.9%, Sun altitude hsun=-12.7°
3.3h Moon Close to Mu Cet, SAO 110723 (Multiple star system), 4.3mag, with Sun below horizon, Separation=4.29°, Limb separation=4.02° =7.48 lunar dia., Position angle=68.5° E, Azimuth az=133.4°, Altitude h=36.0°, RA= 2h45.9m Dec=+10°11.2', Moon phase=61.8%, Sun altitude hsun=-11.7°

3h28.2m Moon Emersion of Xi 2 Cet, SAO 110543, 4.3mag, Position Angle=250.7°, Azimuth az=142.2°, Altitude h=37.2°, RA= 2h29.1m Dec= +8°32.2', Moon phase=61.7%, Sun altitude hsun=-10.7° (dark limb); (Southern limit: 38°00'E 26°49'N, alt=41.2°, bright limb)

Tuesday 15 August 2017Time (24-hour clock) Object (Link) Event
3.8h Moon Close to 5 Tau, SAO 93469 (Close double star), 4.1mag, with Sun below horizon, Separation=1.53°, Limb separation=1.26° =2.33 lunar dia., Position angle=71.1° E, Azimuth az=128.8°, Altitude h=37.4°, RA= 3h31.8m Dec=+12°59.7', Moon phase=50.3%, Sun altitude hsun=-9.0°
4h15.1m Moon Last Quarter (diameter: 32.1653', declination: +13.259°)
4h20.0m Moon Topocentric Last Quarter (Altitude=+40.8°, topocentric diameter: 32.537', topocentric airfree declination: 12.58°)
7h17.6m Moon Max. Libration North: North Pole and Mare Frigoris are tipped into view (Earth's selenographic longitude: -3.168°, latitude: +6.798°)
This is the northernmost total libration of the year. Former more northern total libration was at 15.3.2016. Next more northern total libration is at 25.1.2018 (calculated for the geocenter)

Wednesday 16 August 2017Time (24-hour clock) Object (Link) Event
2h32.3m Moon Immersion of Hyadum I, Gam Tau, SAO 93868 (Close double star), 3.6mag, Position angle=2.2°, Azimuth az=98.0°, Altitude h=24.4°, RA= 4h20.8m Dec=+15°40.0', Moon phase=39.5%, Sun altitude hsun=-15.9° (bright limb); (Northern limit: 38°00'E 57°46'N, alt=26.0°, bright limb; Southern limit: 38°00'E 8°33'N, alt= 8.5°, bright limb)
2.7h Moon Close to 81 Tau, SAO 93978, 5.5mag, with Sun below horizon, Separation=2.54°, Limb separation=2.27° =4.17 lunar dia., Position angle=83.5° E, Azimuth az=98.2°, Altitude h=24.5°, RA= 4h31.6m Dec=+15°43.6', Moon phase=39.4%, Sun altitude hsun=-15.0°
2.8h Moon Close to 58 Tau, SAO 93876, 5.3mag, Separation=0.31°, Limb separation=0.03° =0.06 lunar dia., Position angle=164.6° S, Azimuth az=101.4°, Altitude h=25.6°, RA= 4h21.6m Dec=+15°00.1', Moon phase=39.4%, Sun altitude hsun=-14.8°; (Southern limit: 38°00'E 61°19'N, alt=25.8°, bright limb)
2h50.4m Moon Emersion of Hyadum I, Gam Tau, SAO 93868 (Close double star), 3.6mag, Position Angle=326.7°, Azimuth az=102.0°, Altitude h=26.8°, RA= 4h20.8m Dec=+15°40.0', Moon phase=39.4%, Sun altitude hsun=-14.5° (dark limb); (Northern limit: 38°00'E 57°46'N, alt=26.0°, bright limb; Southern limit: 38°00'E 8°33'N, alt= 8.5°, bright limb)
3.3h Moon Close to 71 Tau, SAO 93932 (Double star, separation >10"), 4.5mag, with Sun below horizon, Separation=1.19°, Limb separation=0.91° =1.68 lunar dia., Position angle=83.2° E, Azimuth az=107.2°, Altitude h=29.9°, RA= 4h27.3m Dec=+15°39.3', Moon phase=39.1%, Sun altitude hsun=-12.0°
3.3h Moon Close to 75 Tau, SAO 93950 (Close double star), 5.0mag, with Sun below horizon, Separation=1.90°, Limb separation=1.63° =2.99 lunar dia., Position angle=62.4° NE, Azimuth az=106.2°, Altitude h=30.3°, RA= 4h29.4m Dec=+16°23.7', Moon phase=39.1%, Sun altitude hsun=-12.0°
3.3h Moon Close to Del2 Tau, SAO 93907 (Multiple star system), 4.8mag, with Sun below horizon, Separation=2.07°, Limb separation=1.80° =3.30 lunar dia., Position angle=17.9° N, Azimuth az=106.5°, Altitude h=31.7°, RA= 4h25.1m Dec=+17°28.9', Moon phase=39.1%, Sun altitude hsun=-12.0°
3.3h Moon Close to Del3 Tau, SAO 93923 (Multiple star system), 4.3mag, with Sun below horizon, Separation=2.64°, Limb separation=2.37° =4.35 lunar dia., Position angle=21.7° N, Azimuth az=105.9°, Altitude h=31.9°, RA= 4h26.5m Dec=+17°57.9', Moon phase=39.1%, Sun altitude hsun=-12.0°
3.3h Moon Close to NSV 01627, SAO 93975 (Multiple star system), 4.8mag, with Sun below horizon, Separation=2.30°, Limb separation=2.03° =3.73 lunar dia., Position angle=72.1° E, Azimuth az=105.9°, Altitude h=29.8°, RA= 4h31.6m Dec=+16°13.7', Moon phase=39.1%, Sun altitude hsun=-12.0°
3.3h Moon Close to Sig1 Tau, SAO 94051 (Close double star), 5.1mag, with Sun below horizon, Separation=4.27°, Limb separation=4.00° =7.35 lunar dia., Position angle=86.3° E, Azimuth az=104.2°, Altitude h=28.3°, RA= 4h40.1m Dec=+15°49.9', Moon phase=39.1%, Sun altitude hsun=-12.0°
3.3h Moon Close to Sig2 Tau, SAO 94054 (Double star, separation >10"), 4.7mag, with Sun below horizon, Separation=4.31°, Limb separation=4.04° =7.42 lunar dia., Position angle=84.8° E, Azimuth az=104.1°, Altitude h=28.4°, RA= 4h40.3m Dec=+15°57.0', Moon phase=39.1%, Sun altitude hsun=-12.0°
3.8h Moon Close to Hyadum II, Del1 Tau, SAO 93897 (Multiple star system), 3.8mag, with Sun below horizon, Separation=2.00°, Limb separation=1.73° =3.17 lunar dia., Position angle=2.9° N, Azimuth az=114.1°, Altitude h=36.0°, RA= 4h23.9m Dec=+17°34.8', Moon phase=38.9%, Sun altitude hsun=-9.0°
3.8h Moon Close to The1 Tau, SAO 93955 (Close double star), 3.8mag, with Sun below horizon, Separation=1.52°, Limb separation=1.24° =2.28 lunar dia., Position angle=74.3° E, Azimuth az=113.7°, Altitude h=33.9°, RA= 4h29.6m Dec=+15°59.9', Moon phase=38.9%, Sun altitude hsun=-9.0°
3.8h Moon Close to The2 Tau, SAO 93957 (Multiple star system), 3.4mag, with Sun below horizon, Separation=1.51°, Limb separation=1.24° =2.28 lunar dia., Position angle=77.8° E, Azimuth az=113.7°, Altitude h=33.8°, RA= 4h29.7m Dec=+15°54.4', Moon phase=38.9%, Sun altitude hsun=-9.0°
4.3h Moon Close to Aldebaran, Alp Tau, SAO 94027 (Multiple star system), 0.9mag, with Sun below horizon, Separation=3.13°, Limb separation=2.85° =5.23 lunar dia., Position angle=73.8° E, Azimuth az=118.4°, Altitude h=36.9°, RA= 4h36.9m Dec=+16°32.5', Moon phase=38.7%, Sun altitude hsun=-6.0°
14h22m Carrington Solar Rotation Begin of Carrington rotation number 2194
20h26m Venus (-3.9 mag) Close to Wasat, Del Gem, SAO 79294 (Multiple star system): only 33.7' separated, brightness: 3.5 mag, Position angle=5.24° N; Sun elongation=35.25° West (morning)

Thursday 17 August 2017Time (24-hour clock) Object (Link) Event
0.4h Moon Close to 97 Tau, SAO 94164, 5.1mag, with Sun below horizon, Separation=5.50°, Limb separation=5.23° =9.65 lunar dia., Position angle=285.5° W, Azimuth az=64.8°, Altitude h=6.1°, RA= 4h52.4m Dec=+18°52.0', Moon phase=29.4%, Sun altitude hsun=-20.5°
0.7h Moon Close to 104 Tau, SAO 94332 (Close double star), 4.9mag, with Sun below horizon, Separation=2.13°, Limb separation=1.86° =3.43 lunar dia., Position angle=308.1° NW, Azimuth az=66.8°, Altitude h=7.1°, RA= 5h00.5m Dec=+18°39.9', Moon phase=29.3%, Sun altitude hsun=-20.5°
2.8h Moon Close to 115 Tau, SAO 94554 (Multiple star system), 5.4mag, with Sun below horizon, Separation=1.81°, Limb separation=1.54° =2.82 lunar dia., Position angle=77.4° E, Azimuth az=86.6°, Altitude h=19.6°, RA= 5h28.2m Dec=+17°58.4', Moon phase=28.4%, Sun altitude hsun=-15.0°
3.4h Moon Close to 111 Tau, SAO 94526, 5.0mag, with Sun below horizon, Separation=0.82°, Limb separation=0.55° =1.00 lunar dia., Position angle=106.8° E, Azimuth az=94.8°, Altitude h=24.3°, RA= 5h25.4m Dec=+17°23.8', Moon phase=28.1%, Sun altitude hsun=-12.0°
3.4h Moon Close to 119 Tau, SAO 94628, 4.3mag, with Sun below horizon, Separation=2.81°, Limb separation=2.53° =4.64 lunar dia., Position angle=70.2° E, Azimuth az=92.3°, Altitude h=24.2°, RA= 5h33.2m Dec=+18°36.2', Moon phase=28.1%, Sun altitude hsun=-12.0°

Friday 18 August 2017Time (24-hour clock) Object (Link) Event
1.3h Moon Close to Chi1 Ori, SAO 77705, 4.4mag, with Sun below horizon, Separation=5.52°, Limb separation=5.25° =9.65 lunar dia., Position angle=288.4° W, Azimuth az=62.1°, Altitude h=6.1°, RA= 5h55.4m Dec=+20°16.6', Moon phase=19.1%, Sun altitude hsun=-20.3°
1.4h Moon Close to 130 Tau, SAO 94858 (Close double star), 5.5mag, with Sun below horizon, Separation=7.02°, Limb separation=6.75° =12.41 lunar dia., Position angle=263.0° W, Azimuth az=66.9°, Altitude h=6.1°, RA= 5h48.4m Dec=+17°44.0', Moon phase=19.0%, Sun altitude hsun=-20.0°
1.4h Moon Close to Chi2 Ori, SAO 77911 (Multiple star system), 4.6mag, with Sun below horizon, Separation=3.52°, Limb separation=3.25° =5.97 lunar dia., Position angle=298.0° NW, Azimuth az=62.5°, Altitude h=6.0°, RA= 6h04.9m Dec=+20°00.1', Moon phase=19.0%, Sun altitude hsun=-19.9°
1.5h Moon Close to 64 Ori, SAO 95166 (Close double star), 5.1mag, with Sun below horizon, Separation=3.46°, Limb separation=3.19° =5.86 lunar dia., Position angle=290.3° W, Azimuth az=63.3°, Altitude h=6.1°, RA= 6h04.5m Dec=+19°41.2', Moon phase=19.0%, Sun altitude hsun=-19.9°
1.7h Moon Close to 71 Ori, SAO 95432 (Multiple star system), 5.2mag, with Sun below horizon, Separation=0.98°, Limb separation=0.71° =1.31 lunar dia., Position angle=313.5° NW, Azimuth az=64.4°, Altitude h=6.0°, RA= 6h15.9m Dec=+19°00.8', Moon phase=18.9%, Sun altitude hsun=-19.3°
3.9h Moon Close to Nu Gem, SAO 78423 (Multiple star system), 4.1mag, with Sun below horizon, Separation=2.05°, Limb separation=1.77° =3.24 lunar dia., Position angle=39.0° NE, Azimuth az=87.1°, Altitude h=22.7°, RA= 6h30.0m Dec=+20°11.9', Moon phase=18.0%, Sun altitude hsun=-9.0°
9h49.8m Moon Max. Decl. North (declination: +19.381°)
This is the lowest northernmost moon position of the next 10 years. Former lower northern northernmost moon position was at 27.5.2017. Next lower northern northernmost moon position is at 29.8.2032 (calculated for the geocenter)
16h10.4m Moon Perigee (distance moon center to earth center: 366096.5 km; closest point on earth ellipsoid with latitude 19.4° (WGS84), distance to moon center: 359720.7 km, apparent diameter: 33'13.2")

Saturday 19 August 2017Time (24-hour clock) Object (Link) Event
2.3h Moon Close to Mekbuda, Zet Gem, SAO 79031 (Multiple star system), 4.0mag, with Sun below horizon, Separation=4.55°, Limb separation=4.28° =7.86 lunar dia., Position angle=299.9° NW, Azimuth az=61.6°, Altitude h=6.1°, RA= 7h05.1m Dec=+20°32.5', Moon phase=10.4%, Sun altitude hsun=-17.6°
2.8h Moon Close to 56 Gem, SAO 79328 (Double star, separation >10"), 5.1mag, Separation=2.18°, Limb separation=1.91° =3.51 lunar dia., Position angle=359.2° N, Azimuth az=63.9°, Altitude h=7.4°, RA= 7h23.0m Dec=+20°24.5', Moon phase=10.2%, Sun altitude hsun=-15.5°
3.5h Moon Close to 74 Gem, SAO 97120 (Close double star), 5.0mag, with Sun below horizon, Separation=3.74°, Limb separation=3.47° =6.36 lunar dia., Position angle=99.7° E, Azimuth az=69.9°, Altitude h=7.9°, RA= 7h40.5m Dec=+17°38.0', Moon phase=10.0%, Sun altitude hsun=-12.0°
3.5h Moon Close to 81 Gem, SAO 97221 (Close double star), 4.9mag, with Sun below horizon, Separation=5.26°, Limb separation=4.99° =9.14 lunar dia., Position angle=88.3° E, Azimuth az=68.1°, Altitude h=7.8°, RA= 7h47.1m Dec=+18°27.9', Moon phase=10.0%, Sun altitude hsun=-12.0°
5.1h Moon Close to Venus, -3.9mag, with Sun below horizon, Separation=3.01°, Limb separation=2.74° =5.00 lunar dia., Position angle=17.6° N, Azimuth az=89.2°, Altitude h=25.2°, RA= 7h32.8m Dec=+21°06.3', Moon phase=9.6%, Sun altitude hsun=-0.2°
6.9h Moon Close to Venus, -3.9mag, Separation=2.87°, Limb separation=2.60° =4.73 lunar dia., Position angle=0.4° N, Azimuth az=113.8°, Altitude h=40.0°, RA= 7h33.2m Dec=+21°05.7', Moon phase=9.0%, Sun altitude hsun=13.9°, in daylight, elongation from sun: 34.9°

Sunday 20 August 2017Time (24-hour clock) Object (Link) Event
3.0h Moon Close to 85 Gem, SAO 79799 (Close double star), 5.4mag, with Sun below horizon, Separation=7.20°, Limb separation=6.93° =12.79 lunar dia., Position angle=294.9° NW, Azimuth az=60.2°, Altitude h=4.5°, RA= 7h56.7m Dec=+19°50.1', Moon phase=4.2%, Sun altitude hsun=-15.0°
3.5h Moon Close to Zet2 Cnc, SAO 97645 (Multiple star system), 5.1mag, with Sun below horizon, Separation=3.10°, Limb separation=2.83° =5.21 lunar dia., Position angle=287.7° W, Azimuth az=64.7°, Altitude h=4.6°, RA= 8h13.2m Dec=+17°35.6', Moon phase=4.1%, Sun altitude hsun=-12.0°
4.0h Moon Close to The Cnc, SAO 97881 (Multiple star system), 5.3mag, with Sun below horizon, Separation=1.98°, Limb separation=1.71° =3.15 lunar dia., Position angle=44.1° NE, Azimuth az=66.4°, Altitude h=6.1°, RA= 8h32.6m Dec=+18°02.0', Moon phase=4.0%, Sun altitude hsun=-9.0°
4.2h Moon Close to Asellus Australis, Del Cnc, SAO 98087 (Multiple star system), 3.9mag, with Sun below horizon, Separation=4.59°, Limb separation=4.32° =7.95 lunar dia., Position angle=71.8° E, Azimuth az=66.3°, Altitude h=6.1°, RA= 8h45.7m Dec=+18°05.3', Moon phase=4.0%, Sun altitude hsun=-7.6°

Monday 21 August 2017Time (24-hour clock) Object (Link) Event
1h57m Venus (-3.9 mag) Close to P78 Geminorum, SAO 79666 (Multiple star system): 7.2° separated, brightness: 1.2 mag, Position angle=7.25° N; Sun elongation=34.32° West (morning)
18h46m52s Total Solar Eclipse Solar Eclipse begins
Contact at 153°02.1'W 30°30.0'N
19h48m34s Total Solar Eclipse Umbra eclipse begins
Contact at 171°21.1'W 39°37.9'N
21h25m31.3s Total Solar Eclipse Greatest Solar Eclipse: total, Saros-Number: 145, Gamma: 0.4367
At 87°40.2'W 36°58.0'N, alt=64.1°, Width=117.9km, Duration= 2m44.7s, Magnitude=103.1%, Obscuration=100.0%, ET-UT=68.9sec
→MapIt →Load path of the Total Solar Eclipse into Google Earth
21h30.2m Moon New Moon (diameter: 32.1016', declination: +12.264°)
21h41.2m Moon Topocentric New Moon (Altitude=-14.0°, topocentric diameter: 31.970', topocentric airfree declination: 11.36°, minimum phase: 0.00%)
23h02m35s Total Solar Eclipse Umbra eclipse ends
Contact at 27°36.0'W 10°54.8'N

Tuesday 22 August 2017Time (24-hour clock) Object (Link) Event
0h04m22sTotal Solar Eclipse Solar Eclipse ends
Contact at 44°59.7'W 1°42.2'N

Wednesday 23 August 2017Time (24-hour clock) Object (Link) Event
21.7h Mercury Closest Approach (distance to earth: 0.617 AU, brightness: 4.4 mag, diameter: 10.89")

Thursday 24 August 2017Time (24-hour clock) Object (Link) Event
12h15.6m Moon Max. Libration East: Mare Crisium limb is tipped into view (Earth's selenographic longitude: 5.757°, latitude: -4.459°)

Friday 25 August 2017Time (24-hour clock) Object (Link) Event
15h Saturn Stationary: Getting Prograde (relative to ecliptic)
18h Saturn Stationary: Getting Prograde (relative to equator)
19.9h Moon Close to Jupiter, -1.8mag, with Sun below horizon, Separation=2.50°, Limb separation=2.25° =4.40 lunar dia., Position angle=215.9° SW, Azimuth az=246.6°, Altitude h=6.8°, RA=13h18.8m Dec= -7°06.8', Moon phase=17.3%, Sun altitude hsun=-2.9°

Saturday 26 August 2017Time (24-hour clock) Object (Link) Event
17h15.3m Moon Max. Libration (8.088°)
23.7h Mercury Conjunction (inferior), 4.2° separated from center of Sun. Distance to earth: 0.625 AU

Sunday 27 August 2017Time (24-hour clock) Object (Link) Event
21.1h Moon Close to Xi 2 Lib, SAO 158915, 5.5mag, with Sun below horizon, Separation=1.71°, Limb separation=1.46° =2.92 lunar dia., Position angle=315.6° NW, Azimuth az=239.1°, Altitude h=6.1°, RA=14h57.7m Dec=-11°28.6', Moon phase=35.1%, Sun altitude hsun=-11.6°

Monday 28 August 2017Time (24-hour clock) Object (Link) Event
10h47.2m Moon Max. Libration South: South Pole is tipped into view (Earth's selenographic longitude: 3.413°, latitude: -6.849°)
This is the 2nd southernmost total libration of the year. Former more southern total libration was at 19.2.2017. Next more southern total libration is at 7.2.2018 (calculated for the geocenter)
20.6h Moon Close to Zuben Elakrab, Gam Lib, SAO 159370 (Multiple star system), 3.9mag, with Sun below horizon, Separation=3.37°, Limb separation=3.12° =6.29 lunar dia., Position angle=283.5° W, Azimuth az=224.2°, Altitude h=9.7°, RA=15h36.5m Dec=-14°50.7', Moon phase=44.3%, Sun altitude hsun=-9.0°
21.2h Moon Close to Eta Lib, SAO 159466, 5.4mag, with Sun below horizon, Separation=1.46°, Limb separation=1.21° =2.44 lunar dia., Position angle=267.4° W, Azimuth az=230.0°, Altitude h=6.1°, RA=15h45.1m Dec=-15°43.5', Moon phase=44.6%, Sun altitude hsun=-13.1°
21.5h Moon Close to 49 Lib, SAO 159625, 5.5mag, with Sun below horizon, Separation=2.49°, Limb separation=2.24° =4.53 lunar dia., Position angle=110.8° E, Azimuth az=230.0°, Altitude h=5.2°, RA=16h01.3m Dec=-16°34.9', Moon phase=44.7%, Sun altitude hsun=-15.0°

21.7h Moon Close to 48 Lib, SAO 159607 (Close double star), 5.0mag, with Sun below horizon, Separation=2.23°, Limb separation=1.99° =4.01 lunar dia., Position angle=52.3° NE, Azimuth az=233.1°, Altitude h=6.1°, RA=15h59.2m Dec=-14°19.6', Moon phase=44.7%, Sun altitude hsun=-15.7°

Tuesday 29 August 2017Time (24-hour clock) Object (Link) Event
9h46.7m Moon Topocentric First Quarter (Altitude=-34.4°, topocentric diameter: 29.349', topocentric airfree declination: -16.75°)
11h13.0m Moon First Quarter (diameter: 29.6056', declination: -16.252°)
This is the 2nd smallest first quarter moon of the year. Former smaller first quarter moon was at 10.8.2016. Next smaller first quarter moon is at 28.9.2017 (calculated for the geocenter)
21.0h Moon Close to Phi Oph, SAO 159963 (Multiple star system), 4.3mag, with Sun below horizon, Separation=2.19°, Limb separation=1.95° =3.94 lunar dia., Position angle=306.1° NW, Azimuth az=217.0°, Altitude h=10.7°, RA=16h32.1m Dec=-16°38.8', Moon phase=54.0%, Sun altitude hsun=-12.0°
22h37.3m Moon Immersion of 24 (Scorpii)/Ophiuchi, SAO 160046, 4.9mag, Position angle=15.1°, Azimuth az=235.5°, Altitude h=1.2°, RA=16h42.6m Dec=-17°46.3', Moon phase=54.6%, Sun altitude hsun=-20.9° (dark limb); (Southern limit: 38°00'E 11°07'N, alt= 8.4°, bright limb)

Wednesday 30 August 2017Time (24-hour clock) Object (Link) Event
14h22.8m Moon Apogee (distance moon center to earth center: 404347.3 km; closest point on earth ellipsoid with latitude -18.3° (WGS84), distance to moon center: 397971.3 km, apparent diameter: 30'01.7")
14h22.9m Moon Apogee (distance moon center to earth center: 404347.3 km; closest point on earth ellipsoid with latitude -18.3° (WGS84), distance to moon center: 397971.3 km, apparent diameter: 30'01.7")
20.1h Moon Close to Saturn, 0.4mag, with Sun below horizon, Separation=2.88°, Limb separation=2.63° =5.33 lunar dia., Position angle=208.8° SW, Azimuth az=192.6°, Altitude h=11.3°, RA=17h22.0m Dec=-21°59.1', Moon phase=63.0%, Sun altitude hsun=-6.0°

СЕНТЯБРЬ

Москва, Россия Lon: +38d00m00.00s Lat: +56d00m00.00s Alt: 194m Geoid Alt: 179m

Friday 1 September 2017Time (24-hour clock) Object (Link) Event
5h02.5m Moon Max. Decl. South (declination: -19.393°)
This is the lowest southernmost moon position of the next 10 years. Former lower southern southernmost moon position was at 4.8.2017. Next lower southern southernmost moon position is at 16.8.2032 (calculated for the geocenter)
10h04m Sun Equation of time is zero; the apparent solar time is now equal to the mean solar time
16.7h Moon Golden Handle visible on the Moon from 16.7h -17.4h (sun rises on the Jura mountains, while Sinus Iridum is still in shadow)
20.8h Moon Close to 29 Sgr, SAO 187324 (Double star, separation >10"), 5.2mag, with Sun below horizon, Separation=4.70°, Limb separation=4.45° =8.94 lunar dia., Position angle=268.2° W, Azimuth az=184.0°, Altitude h=13.7°, RA=18h50.7m Dec=-20°18.1', Moon phase=80.3%, Sun altitude hsun=-12.0°
20.8h Moon Close to Xi 1 Sgr, SAO 187498, 5.0mag, with Sun below horizon, Separation=2.96°, Limb separation=2.71° =5.44 lunar dia., Position angle=259.9° W, Azimuth az=182.1°, Altitude h=13.4°, RA=18h58.4m Dec=-20°37.8', Moon phase=80.3%, Sun altitude hsun=-12.0°

Saturday 2 September 2017Time (24-hour clock) Object (Link) Event
0.0h Moon Close to 43 Sgr, SAO 162413 (Close double star), 4.9mag, with Sun below horizon, Separation=1.20°, Limb separation=0.95° =1.91 lunar dia., Position angle=31.0° NE, Azimuth az=222.4°, Altitude h=6.1°, RA=19h18.7m Dec=-18°55.1', Moon phase=81.3%, Sun altitude hsun=-25.8°
0.3h Moon Close to Rho1 Sgr, SAO 162512 (Close double star), 3.9mag, with Sun below horizon, Separation=2.58°, Limb separation=2.33° =4.70 lunar dia., Position angle=34.6° NE, Azimuth az=225.1°, Altitude h=6.1°, RA=19h22.7m Dec=-17°48.6', Moon phase=81.4%, Sun altitude hsun=-26.0°
3h08m Mercury Conjunction in Right Ascension with Mars (4.1° separated from center of Mars), position angle=0.00° N
20.8h Moon Close to 56 Sgr, SAO 162964, 4.9mag, with Sun below horizon, Separation=3.58°, Limb separation=3.33° =6.63 lunar dia., Position angle=260.0° W, Azimuth az=170.5°, Altitude h=13.9°, RA=19h47.4m Dec=-19°42.9', Moon phase=87.4%, Sun altitude hsun=-12.0°

Sunday 3 September 2017Time (24-hour clock) Object (Link) Event
1.0h Moon Close to Sig Cap, SAO 163445, 5.3mag, with Sun below horizon, Separation=2.68°, Limb separation=2.43° =4.84 lunar dia., Position angle=96.5° E, Azimuth az=222.0°, Altitude h=6.1°, RA=20h20.4m Dec=-19°03.6', Moon phase=88.5%, Sun altitude hsun=-26.1°
1.3h Moon Close to Okul, Pi Cap, SAO 163592 (Multiple star system), 5.1mag, with Sun below horizon, Separation=4.47°, Limb separation=4.22° =8.41 lunar dia., Position angle=82.1° E, Azimuth az=224.3°, Altitude h=6.3°, RA=20h28.3m Dec=-18°00.0', Moon phase=88.6%, Sun altitude hsun=-25.7°
1.3h Moon Close to Rho Cap, SAO 163614 (Multiple star system), 4.9mag, with Sun below horizon, Separation=4.86°, Limb separation=4.61° =9.19 lunar dia., Position angle=78.0° E, Azimuth az=225.2°, Altitude h=6.1°, RA=20h29.9m Dec=-17°45.1', Moon phase=88.6%, Sun altitude hsun=-25.5°
12h38m Mercury Conjunction with Mars, 3.4° separated from center of Mars, position angle=20.18° N. Distance to earth: 0.716 AU
20.7h Moon Close to Ups Cap, SAO 163779, 5.2mag, with Sun below horizon, Separation=3.20°, Limb separation=2.95° =5.83 lunar dia., Position angle=253.7° W, Azimuth az=157.5°, Altitude h=13.5°, RA=20h41.1m Dec=-18°04.4', Moon phase=93.2%, Sun altitude hsun=-12.0°

Monday 4 September 2017Time (24-hour clock) Object (Link) Event
2.0h Moon Close to The Cap, SAO 164132, 4.1mag, with Sun below horizon, Separation=1.20°, Limb separation=0.95° =1.88 lunar dia., Position angle=118.5° SE, Azimuth az=226.7°, Altitude h=6.3°, RA=21h06.9m Dec=-17°00.6', Moon phase=94.3%, Sun altitude hsun=-24.0°
2.4h Moon Close to 29 Cap, SAO 164263, 5.3mag, with Sun below horizon, Separation=3.53°, Limb separation=3.27° =6.46 lunar dia., Position angle=65.7° NE, Azimuth az=231.4°, Altitude h=6.1°, RA=21h16.7m Dec=-15°05.7', Moon phase=94.4%, Sun altitude hsun=-22.2°
20.7h Moon Close to 42 Cap, SAO 164580 (Close double star), 5.2mag, with Sun below horizon, Separation=0.84°, Limb separation=0.58° =1.14 lunar dia., Position angle=302.7° NW, Azimuth az=142.0°, Altitude h=13.1°, RA=21h42.5m Dec=-13°58.0', Moon phase=97.4%, Sun altitude hsun=-12.0°

Tuesday 5 September 2017Time (24-hour clock) Object (Link) Event
2h00.2m Moon Immersion of Mu Cap, SAO 164713, 5.1mag, Position angle=13.5°, Azimuth az=218.7°, Altitude h=13.4°, RA=21h54.3m Dec=-13°28.0', Moon phase=98.1%, Sun altitude hsun=-24.3° (dark limb); (Northern limit: 38°00'E 60°56'N, alt= 8.5°, bright limb; Southern limit: 38°00'E 18°59'N, alt=34.0°, bright limb)
3h05m Mercury (1.5 mag) Close to Mars: 3.2° separated from center of Mars, brightness: 1.8 mag, position angle=44.41° NE; Sun elongation=12.94° West (morning)
3.8h Moon Close to 38 Aqr, SAO 164910, 5.4mag, with Sun below horizon, Separation=4.03°, Limb separation=3.77° =7.37 lunar dia., Position angle=60.5° NE, Azimuth az=239.6°, Altitude h=5.9°, RA=22h11.6m Dec=-11°28.5', Moon phase=98.3%, Sun altitude hsun=-15.0°
Neptune Opposition (distance to earth: 28.939 AU, brightness: 7.8 mag, diameter: 2.32")
15h04m Mars (1.8 mag) Close to Regulus, Alp Leo, SAO 98967 (Multiple star system): only 42.2' separated, brightness: 1.4 mag, Position angle=200.61° S; Sun elongation=13.06° West (morning)

Wednesday 6 September 2017Time (24-hour clock) Object (Link) Event
4.8h Moon Close to Lam Aqr, SAO 146362, 3.7mag, with Sun below horizon, Separation=2.30°, Limb separation=2.04° =3.95 lunar dia., Position angle=20.3° N, Azimuth az=247.0°, Altitude h=6.1°, RA=22h53.5m Dec= -7°29.0', Moon phase=99.9%, Sun altitude hsun=-7.7°
10h02.8m Moon Full Moon (diameter: 31.0774', declination: -7.972°)

10h27.1m Moon Topocentric Full Moon (Altitude=-36.9°, topocentric diameter: 30.778', topocentric airfree declination: -8.61°, maximum phase: 99.96%)
11h54.3m Moon Max. Libration West: Crater Grimaldi is tipped into view (Earth's selenographic longitude: -4.928°, latitude: +2.405°)
20.0h Moon Close to Phi Aqr, SAO 146585, 4.2mag, with Sun below horizon, Separation=3.00°, Limb separation=2.74° =5.27 lunar dia., Position angle=291.9° W, Azimuth az=110.0°, Altitude h=6.1°, RA=23h15.2m Dec= -5°57.1', Moon phase=99.8%, Sun altitude hsun=-7.5°
20.2h Moon Close to Chi Aqr, SAO 146612 (Close double star), 4.9mag, with Sun below horizon, Separation=2.35°, Limb separation=2.09° =4.00 lunar dia., Position angle=255.4° W, Azimuth az=113.2°, Altitude h=6.1°, RA=23h17.8m Dec= -7°37.7', Moon phase=99.8%, Sun altitude hsun=-9.2°

Thursday 7 September 2017Time (24-hour clock) Object (Link) Event
3.9h Moon Close to 20 Psc, SAO 146915, 5.5mag, with Sun below horizon, Separation=3.77°, Limb separation=3.51° =6.69 lunar dia., Position angle=36.8° NE, Azimuth az=224.9°, Altitude h=22.7°, RA=23h48.9m Dec= -2°39.7', Moon phase=99.3%, Sun altitude hsun=-14.7°
20.4h Moon Close to 29 Psc, SAO 147041, 5.1mag, with Sun below horizon, Separation=3.93°, Limb separation=3.67° =6.97 lunar dia., Position angle=265.6° W, Azimuth az=104.3°, Altitude h=6.1°, RA= 0h02.7m Dec= -2°55.7', Moon phase=97.6%, Sun altitude hsun=-11.0°

Friday 8 September 2017Time (24-hour clock) Object (Link) Event
14h26m Sun Sun North Pole points towards us (maximum northern heliographic latitude of the Earth) (Position angle: 22.8°, heliographic latitude: +7.3°)

Saturday 9 September 2017Time (24-hour clock) Object (Link) Event
1.8h Moon Close to 89 Psc, SAO 109793, 5.1mag, Separation=0.83°, Limb separation=0.56° =1.05 lunar dia., Position angle=334.8° NW, Azimuth az=164.9°, Altitude h=36.8°, RA= 1h18.7m Dec= +3°42.4', Moon phase=91.7%, Sun altitude hsun=-26.5°; (Northern limit: 38°00'E 7°12'N, alt=62.2°, bright limb; Southern limit: 38°00'E 28°37'S, alt=43.2°, bright limb)
4.4h Moon Close to Mu Psc, SAO 109926 (Double star, separation >10"), 4.8mag, with Sun below horizon, Separation=3.25°, Limb separation=2.98° =5.56 lunar dia., Position angle=31.0° NE, Azimuth az=210.4°, Altitude h=36.7°, RA= 1h31.1m Dec= +6°14.1', Moon phase=91.0%, Sun altitude hsun=-12.0°
20.4h Moon Close to Nu Psc, SAO 110065, 4.5mag, with Sun below horizon, Separation=5.15°, Limb separation=4.88° =9.17 lunar dia., Position angle=260.9° W, Azimuth az=81.0°, Altitude h=1.1°, RA= 1h42.4m Dec= +5°34.6', Moon phase=86.3%, Sun altitude hsun=-12.0°

Sunday 10 September 2017Time (24-hour clock) Object (Link) Event
3.3h Moon Close to Xi 1 Cet, SAO 110408 (Close double star), 4.4mag, Separation=1.37°, Limb separation=1.10° =2.04 lunar dia., Position angle=336.6° NW, Azimuth az=177.1°, Altitude h=42.9°, RA= 2h13.9m Dec= +8°55.7', Moon phase=84.0%, Sun altitude hsun=-19.7°
4.0h Moon Close to Xi Ari, SAO 92932 (Close double star), 5.5mag, with Sun below horizon, Separation=3.56°, Limb separation=3.29° =6.09 lunar dia., Position angle=35.9° NE, Azimuth az=187.9°, Altitude h=44.5°, RA= 2h25.8m Dec=+10°41.4', Moon phase=83.7%, Sun altitude hsun=-15.0°
4.5h Moon Close to Xi 2 Cet, SAO 110543, 4.3mag, with Sun below horizon, Separation=2.80°, Limb separation=2.53° =4.68 lunar dia., Position angle=76.5° E, Azimuth az=195.7°, Altitude h=41.7°, RA= 2h29.1m Dec= +8°32.3', Moon phase=83.6%, Sun altitude hsun=-11.7°
5h Mercury Magnitude brightens to 0 mag
12h11.9m Moon Max. Libration (7.143°)
15h09m Mercury (-0.1 mag) Close to Regulus, Alp Leo, SAO 98967 (Multiple star system): only 35.6' separated, brightness: 1.4 mag, Position angle=0.52° N; Sun elongation=17.70° West (morning)
21.6h Moon Close to Mu Cet, SAO 110723 (Multiple star system), 4.3mag, with Sun below horizon, Separation=3.46°, Limb separation=3.19° =5.96 lunar dia., Position angle=261.7° W, Azimuth az=80.7°, Altitude h=6.1°, RA= 2h45.9m Dec=+10°11.2', Moon phase=77.1%, Sun altitude hsun=-20.3°

Monday 11 September 2017Time (24-hour clock) Object (Link) Event
4.9h Moon Close to 5 Tau, SAO 93469 (Close double star), 4.1mag, with Sun below horizon, Separation=4.45°, Limb separation=4.18° =7.70 lunar dia., Position angle=76.6° E, Azimuth az=185.1°, Altitude h=46.9°, RA= 3h31.9m Dec=+12°59.7', Moon phase=74.2%, Sun altitude hsun=-8.7°
11h48.0m Moon Max. Libration North: North Pole and Mare Frigoris are tipped into view (Earth's selenographic longitude: -1.908°, latitude: +6.746°)

Tuesday 12 September 2017Time (24-hour clock) Object (Link) Event
4.1h Moon Close to 58 Tau, SAO 93876, 5.3mag, with Sun below horizon, Separation=2.83°, Limb separation=2.56° =4.70 lunar dia., Position angle=89.5° E, Azimuth az=151.5°, Altitude h=46.3°, RA= 4h21.6m Dec=+15°00.1', Moon phase=64.0%, Sun altitude hsun=-15.0°
4.1h Moon Close to 81 Tau, SAO 93978, 5.5mag, with Sun below horizon, Separation=5.26°, Limb separation=4.99° =9.16 lunar dia., Position angle=83.9° E, Azimuth az=148.7°, Altitude h=46.4°, RA= 4h31.7m Dec=+15°43.7', Moon phase=64.0%, Sun altitude hsun=-14.7°
4.5h Moon Close to 71 Tau, SAO 93932 (Double star, separation >10"), 4.5mag, with Sun below horizon, Separation=4.04°, Limb separation=3.77° =6.93 lunar dia., Position angle=83.4° E, Azimuth az=158.6°, Altitude h=48.1°, RA= 4h27.4m Dec=+15°39.3', Moon phase=63.8%, Sun altitude hsun=-11.7°
4.5h Moon Close to 75 Tau, SAO 93950 (Close double star), 5.0mag, with Sun below horizon, Separation=4.68°, Limb separation=4.40° =8.09 lunar dia., Position angle=75.2° E, Azimuth az=157.6°, Altitude h=48.8°, RA= 4h29.4m Dec=+16°23.8', Moon phase=63.8%, Sun altitude hsun=-11.7°
4.5h Moon Close to Del2 Tau, SAO 93907 (Multiple star system), 4.8mag, with Sun below horizon, Separation=4.17°, Limb separation=3.89° =7.15 lunar dia., Position angle=56.6° NE, Azimuth az=158.8°, Altitude h=50.0°, RA= 4h25.1m Dec=+17°28.9', Moon phase=63.8%, Sun altitude hsun=-11.7°
4.5h Moon Close to Del3 Tau, SAO 93923 (Multiple star system), 4.3mag, with Sun below horizon, Separation=4.71°, Limb separation=4.44° =8.16 lunar dia., Position angle=54.0° NE, Azimuth az=158.1°, Altitude h=50.4°, RA= 4h26.5m Dec=+17°57.9', Moon phase=63.8%, Sun altitude hsun=-11.7°
4.5h Moon Close to NSV 01627, SAO 93975 (Multiple star system), 4.8mag, with Sun below horizon, Separation=5.13°, Limb separation=4.86° =8.92 lunar dia., Position angle=78.6° E, Azimuth az=156.9°, Altitude h=48.5°, RA= 4h31.6m Dec=+16°13.8', Moon phase=63.8%, Sun altitude hsun=-11.7°
4.9h Moon Close to Hyadum I, Gam Tau, SAO 93868 (Close double star), 3.6mag, with Sun below horizon, Separation=2.33°, Limb separation=2.06° =3.78 lunar dia., Position angle=78.6° E, Azimuth az=168.6°, Altitude h=49.3°, RA= 4h20.8m Dec=+15°40.1', Moon phase=63.6%, Sun altitude hsun=-9.0°
4.9h Moon Close to Hyadum II, Del1 Tau, SAO 93897 (Multiple star system), 3.8mag, with Sun below horizon, Separation=3.84°, Limb separation=3.56° =6.54 lunar dia., Position angle=52.1° NE, Azimuth az=167.9°, Altitude h=51.1°, RA= 4h24.0m Dec=+17°34.9', Moon phase=63.6%, Sun altitude hsun=-8.7°
4.9h Moon Close to The1 Tau, SAO 93955 (Close double star), 3.8mag, with Sun below horizon, Separation=4.45°, Limb separation=4.17° =7.66 lunar dia., Position angle=80.3° E, Azimuth az=166.1°, Altitude h=49.4°, RA= 4h29.6m Dec=+15°59.9', Moon phase=63.6%, Sun altitude hsun=-8.7°
4.9h Moon Close to The2 Tau, SAO 93957 (Multiple star system), 3.4mag, with Sun below horizon, Separation=4.45°, Limb separation=4.18° =7.68 lunar dia., Position angle=81.5° E, Azimuth az=166.1°, Altitude h=49.3°, RA= 4h29.7m Dec=+15°54.4', Moon phase=63.6%, Sun altitude hsun=-8.7°
5h44m Jupiter (-1.7 mag) Close to Spica, Alp Vir, SAO 157923 (Multiple star system): 3.1° separated, brightness: 1.0 mag, Position angle=202.11° S; Sun elongation=34.59° East (evening)
5h44m Jupiter (-1.7 mag) Close to Spica, Alp Vir, SAO 157923 (Multiple star system): 3.1° separated, brightness: 1.0 mag, Position angle=202.11° S; Sun elongation=34.59° East (evening)
13.3h Mercury Greatest Elongation (17.9° West, in the mornings, brightness: -0.4 mag)
20h24m Carrington Solar Rotation Begin of Carrington rotation number 2195
22.7h Moon Close to Aldebaran, Alp Tau, SAO 94027 (Multiple star system), 0.9mag, with Sun below horizon, Separation=4.67°, Limb separation=4.40° =8.17 lunar dia., Position angle=266.1° W, Azimuth az=69.1°, Altitude h=6.1°, RA= 4h36.9m Dec=+16°32.5', Moon phase=55.3%, Sun altitude hsun=-26.5°
22.7h Moon Close to 97 Tau, SAO 94164, 5.1mag, with Sun below horizon, Separation=2.28°, Limb separation=2.01° =3.72 lunar dia., Position angle=334.7° NW, Azimuth az=64.8°, Altitude h=6.1°, RA= 4h52.4m Dec=+18°52.0', Moon phase=55.3%, Sun altitude hsun=-26.5°
22.8h Moon Close to Sig2 Tau, SAO 94054 (Double star, separation >10"), 4.7mag, with Sun below horizon, Separation=4.04°, Limb separation=3.77° =6.99 lunar dia., Position angle=257.0° W, Azimuth az=70.2°, Altitude h=6.1°, RA= 4h40.3m Dec=+15°57.0', Moon phase=55.2%, Sun altitude hsun=-26.9°

22.8h Moon Close to Sig1 Tau, SAO 94051 (Close double star), 5.1mag, with Sun below horizon, Separation=4.10°, Limb separation=3.83° =7.11 lunar dia., Position angle=255.5° W, Azimuth az=70.4°, Altitude h=6.1°, RA= 4h40.2m Dec=+15°49.9', Moon phase=55.2%, Sun altitude hsun=-27.0°

Wednesday 13 September 2017Time (24-hour clock) Object (Link) Event
4.2h Moon Close to 115 Tau, SAO 94554 (Multiple star system), 5.4mag, with Sun below horizon, Separation=4.61°, Limb separation=4.34° =7.97 lunar dia., Position angle=84.1° E, Azimuth az=131.7°, Altitude h=44.0°, RA= 5h28.2m Dec=+17°58.5', Moon phase=52.6%, Sun altitude hsun=-14.7°
4.5h Moon Close to 104 Tau, SAO 94332 (Close double star), 4.9mag, Separation=1.22°, Limb separation=0.95° =1.73 lunar dia., Position angle=348.3° N, Azimuth az=146.2°, Altitude h=49.0°, RA= 5h00.5m Dec=+18°39.9', Moon phase=52.5%, Sun altitude hsun=-12.4°
4.6h Moon Close to 111 Tau, SAO 94526, 5.0mag, with Sun below horizon, Separation=3.75°, Limb separation=3.48° =6.38 lunar dia., Position angle=91.9° E, Azimuth az=140.3°, Altitude h=46.1°, RA= 5h25.4m Dec=+17°23.8', Moon phase=52.5%, Sun altitude hsun=-11.7°
4.6h Moon Close to 119 Tau, SAO 94628, 4.3mag, with Sun below horizon, Separation=5.69°, Limb separation=5.42° =9.94 lunar dia., Position angle=79.6° E, Azimuth az=137.2°, Altitude h=46.5°, RA= 5h33.2m Dec=+18°36.3', Moon phase=52.5%, Sun altitude hsun=-11.7°
6.7h Mercury Dichotomy/Half phase
9h25.0m Moon Last Quarter (diameter: 32.2938', declination: +18.441°)
This is the 3rd biggest last quarter moon of the next 10 years, and the biggest of the year. Former larger last quarter moon was at 26.7.2016. Next larger last quarter moon is at 12.5.2023 (calculated for the geocenter)
This is the 2nd northernmost last quarter moon of the year. Former more northern last quarter moon was at 16.9.2014. Next more northern last quarter moon is at 12.10.2017 (calculated for the geocenter)
10h40.4m Moon Topocentric Last Quarter (Altitude=+28.5°, topocentric diameter: 32.569', topocentric airfree declination: 17.82°)
19h04.9m Moon Perigee (distance moon center to earth center: 369823.3 km; closest point on earth ellipsoid with latitude 19.0° (WGS84), distance to moon center: 363447.4 km, apparent diameter: 32'52.8")
23.0h Moon Close to Chi1 Ori, SAO 77705, 4.4mag, Separation=2.02°, Limb separation=1.75° =3.26 lunar dia., Position angle=353.1° N, Azimuth az=55.6°, Altitude h=2.4°, RA= 5h55.4m Dec=+20°16.6', Moon phase=43.7%, Sun altitude hsun=-28.0°
23.7h Moon Close to 130 Tau, SAO 94858 (Close double star), 5.5mag, with Sun below horizon, Separation=2.43°, Limb separation=2.16° =4.00 lunar dia., Position angle=255.6° W, Azimuth az=66.9°, Altitude h=6.1°, RA= 5h48.5m Dec=+17°44.0', Moon phase=43.3%, Sun altitude hsun=-29.9°

Thursday 14 September 2017Time (24-hour clock) Object (Link) Event
2.4h Moon Close to 64 Ori, SAO 95166 (Close double star), 5.1mag, Separation=1.17°, Limb separation=0.90° =1.66 lunar dia., Position angle=352.2° N, Azimuth az=95.8°, Altitude h=27.9°, RA= 6h04.5m Dec=+19°41.2', Moon phase=42.0%, Sun altitude hsun=-25.7°
2.7h Moon Close to Chi2 Ori, SAO 77911 (Multiple star system), 4.6mag, Separation=1.60°, Limb separation=1.33° =2.45 lunar dia., Position angle=352.1° N, Azimuth az=99.7°, Altitude h=30.7°, RA= 6h05.0m Dec=+20°00.1', Moon phase=41.9%, Sun altitude hsun=-24.2°
4.6h Moon Close to 71 Ori, SAO 95432 (Multiple star system), 5.2mag, with Sun below horizon, Separation=1.51°, Limb separation=1.23° =2.27 lunar dia., Position angle=71.5° E, Azimuth az=125.4°, Altitude h=42.8°, RA= 6h15.9m Dec=+19°00.9', Moon phase=41.0%, Sun altitude hsun=-12.0°
5.0h Moon Close to Nu Gem, SAO 78423 (Multiple star system), 4.1mag, with Sun below horizon, Separation=4.78°, Limb separation=4.51° =8.28 lunar dia., Position angle=72.4° E, Azimuth az=127.9°, Altitude h=45.1°, RA= 6h30.0m Dec=+20°11.9', Moon phase=40.8%, Sun altitude hsun=-8.7°
16h02.2m Moon Max. Decl. North (declination: +19.436°)
This is the lowest northernmost moon position of the next 10 years. Former lower northern northernmost moon position was at 18.8.2017. Next lower northern northernmost moon position is at 29.8.2032 (calculated for the geocenter)

Friday 15 September 2017Time (24-hour clock) Object (Link) Event
2.5h Moon Close to Mekbuda, Zet Gem, SAO 79031 (Multiple star system), 4.0mag, Separation=1.97°, Limb separation=1.70° =3.14 lunar dia., Position angle=357.3° N, Azimuth az=84.5°, Altitude h=21.3°, RA= 7h05.1m Dec=+20°32.5', Moon phase=30.9%, Sun altitude hsun=-25.7°
4.6h Moon Close to 56 Gem, SAO 79328 (Double star, separation >10"), 5.1mag, with Sun below horizon, Separation=3.47°, Limb separation=3.19° =5.88 lunar dia., Position angle=59.3° NE, Azimuth az=108.6°, Altitude h=36.4°, RA= 7h23.0m Dec=+20°24.5', Moon phase=30.0%, Sun altitude hsun=-12.0°
15.4h Mercury Perihelion (distance to sun: 0.3075 AU)

Saturday 16 September 2017Time (24-hour clock) Object (Link) Event
1.4h Moon Close to 74 Gem, SAO 97120 (Close double star), 5.0mag, with Sun below horizon, Separation=5.19°, Limb separation=4.92° =9.16 lunar dia., Position angle=271.5° W, Azimuth az=67.1°, Altitude h=6.1°, RA= 7h40.5m Dec=+17°37.9', Moon phase=21.3%, Sun altitude hsun=-30.0°
1.4h Moon Close to 81 Gem, SAO 97221 (Close double star), 4.9mag, with Sun below horizon, Separation=3.75°, Limb separation=3.49° =6.49 lunar dia., Position angle=285.5° W, Azimuth az=65.6°, Altitude h=6.1°, RA= 7h47.1m Dec=+18°27.9', Moon phase=21.3%, Sun altitude hsun=-30.0°
1.4h Moon Close to 85 Gem, SAO 79799 (Close double star), 5.4mag, with Sun below horizon, Separation=2.75°, Limb separation=2.49° =4.63 lunar dia., Position angle=330.7° NW, Azimuth az=63.0°, Altitude h=6.1°, RA= 7h56.7m Dec=+19°50.1', Moon phase=21.3%, Sun altitude hsun=-29.9°
4.3h Moon Close to The Cnc, SAO 97881 (Multiple star system), 5.3mag, with Sun below horizon, Separation=5.55°, Limb separation=5.28° =9.77 lunar dia., Position angle=83.7° E, Azimuth az=91.3°, Altitude h=22.8°, RA= 8h32.6m Dec=+18°02.0', Moon phase=20.2%, Sun altitude hsun=-14.7°
4.6h Moon Close to Zet2 Cnc, SAO 97645 (Multiple star system), 5.1mag, with Sun below horizon, Separation=0.78°, Limb separation=0.51° =0.94 lunar dia., Position angle=69.8° E, Azimuth az=100.4°, Altitude h=28.2°, RA= 8h13.2m Dec=+17°35.6', Moon phase=20.1%, Sun altitude hsun=-12.0°
21h23m Mercury Conjunction in Right Ascension with Mars: only 3.4' separated from center of Mars, position angle=180.00° S
21h43m Mercury (-0.9 mag) Close to Mars: only 3.3' separated from center of Mars, brightness: 1.8 mag, position angle=191.12° S; Sun elongation=16.90° West (morning)
22h01m Mercury Conjunction with Mars: only 3.4' separated from center of Mars, position angle=201.86° S. Distance to earth: 1.059 AU

Sunday 17 September 2017Time (24-hour clock) Object (Link) Event
2.4h Moon Close to Asellus Australis, Del Cnc, SAO 98087 (Multiple star system), 3.9mag, with Sun below horizon, Separation=5.03°, Limb separation=4.77° =8.92 lunar dia., Position angle=305.4° NW, Azimuth az=66.3°, Altitude h=6.1°, RA= 8h45.7m Dec=+18°05.3', Moon phase=12.5%, Sun altitude hsun=-26.8°
2.9h Moon Close to Omi1 Cnc, SAO 98247, 5.2mag, with Sun below horizon, Separation=1.40°, Limb separation=1.14° =2.13 lunar dia., Position angle=276.8° W, Azimuth az=71.5°, Altitude h=6.1°, RA= 8h58.2m Dec=+15°15.3', Moon phase=12.3%, Sun altitude hsun=-24.2°
4.3h Moon Close to Pi 2 Cnc, SAO 98456, 5.4mag, with Sun below horizon, Separation=2.13°, Limb separation=1.86° =3.47 lunar dia., Position angle=93.1° E, Azimuth az=85.1°, Altitude h=14.8°, RA= 9h16.2m Dec=+14°52.1', Moon phase=11.9%, Sun altitude hsun=-15.0°

Monday 18 September 2017Time (24-hour clock) Object (Link) Event
3.7h Moon Close to Psi Leo, SAO 98733 (Double star, separation >10"), 5.4mag, with Sun below horizon, Separation=4.71°, Limb separation=4.44° =8.37 lunar dia., Position angle=296.7° NW, Azimuth az=73.9°, Altitude h=6.1°, RA= 9h44.7m Dec=+13°56.5', Moon phase=5.8%, Sun altitude hsun=-19.2°
4.1h Moon Close to Venus, -3.9mag, with Sun below horizon, Separation=1.50°, Limb separation=1.23° =2.33 lunar dia., Position angle=335.8° NW, Azimuth az=75.4°, Altitude h=6.1°, RA=10h00.2m Dec=+13°07.2', Moon phase=5.7%, Sun altitude hsun=-16.8°
4.3h Moon Close to Nu Leo, SAO 98876 (Close double star), 5.3mag, with Sun below horizon, Separation=1.20°, Limb separation=0.93° =1.75 lunar dia., Position angle=302.3° NW, Azimuth az=79.1°, Altitude h=7.7°, RA= 9h59.1m Dec=+12°21.7', Moon phase=5.6%, Sun altitude hsun=-15.0°

5.5h Moon Close to Regulus, Alp Leo, SAO 98967 (Multiple star system), 1.4mag, with Sun below horizon, Separation=0.89°, Limb separation=0.62° =1.17 lunar dia., Position angle=70.2° E, Azimuth az=93.3°, Altitude h=16.6°, RA=10h00.3m Dec=+11°52.9', Moon phase=5.4%, Sun altitude hsun=-6.0°

Tuesday 19 September 2017Time (24-hour clock) Object (Link) Event
5.0h Moon Close to Rho Leo, SAO 118355 (Close double star), 3.8mag, with Sun below horizon, Separation=6.25°, Limb separation=5.98° =11.37 lunar dia., Position angle=283.2° W, Azimuth az=82.4°, Altitude h=6.1°, RA=10h33.7m Dec= +9°13.0', Moon phase=1.6%, Sun altitude hsun=-10.4°
5.1h Moon Close to Mars, 1.8mag, with Sun below horizon, Separation=4.20°, Limb separation=3.94° =7.48 lunar dia., Position angle=293.2° NW, Azimuth az=82.0°, Altitude h=6.1°, RA=10h43.0m Dec= +9°23.9', Moon phase=1.6%, Sun altitude hsun=-9.4°
5.1h Moon Close to 53 Leo, SAO 99305, 5.3mag, with Sun below horizon, Separation=3.44°, Limb separation=3.17° =6.03 lunar dia., Position angle=322.4° NW, Azimuth az=80.2°, Altitude h=6.1°, RA=10h50.2m Dec=+10°27.2', Moon phase=1.6%, Sun altitude hsun=-9.2°
5.3h Moon Close to Mercury, -1.0mag, with Sun below horizon, Separation=2.31°, Limb separation=2.04° =3.88 lunar dia., Position angle=302.9° NW, Azimuth az=82.8°, Altitude h=6.1°, RA=10h51.2m Dec= +8°57.3', Moon phase=1.5%, Sun altitude hsun=-7.9°

Wednesday 20 September 2017Time (24-hour clock) Object (Link) Event
5h18m Venus (-3.9 mag) Close to Regulus, Alp Leo, SAO 98967 (Multiple star system): only 27.9' separated, brightness: 1.4 mag, Position angle=198.93° S; Sun elongation=27.26° West (morning)
6h31.0m Moon Topocentric New Moon (Altitude= +3.8°, topocentric diameter: 31.274', topocentric airfree declination: 3.22°, minimum phase: 0.04%)
8h29.9m Moon New Moon (diameter: 31.2106', declination: +3.648°)
21h11.9m Moon Max. Libration East: Mare Crisium limb is tipped into view (Earth's selenographic longitude: 5.043°, latitude: -4.445°)

Friday 22 September 2017Time (24-hour clock) Object (Link) Event
23h01.8m Sun September Equinox

Saturday 23 September 2017Time (24-hour clock) Object (Link) Event
9h08.5m Moon Max. Libration (7.725°)
19.3h Moon Close to Xi 2 Lib, SAO 158915, 5.5mag, with Sun below horizon, Separation=3.86°, Limb separation=3.61° =7.19 lunar dia., Position angle=91.7° E, Azimuth az=239.1°, Altitude h=6.1°, RA=14h57.7m Dec=-11°28.6', Moon phase=12.4%, Sun altitude hsun=-8.2°

Sunday 24 September 2017Time (24-hour clock) Object (Link) Event
17h30.0m Moon Max. Libration South: South Pole is tipped into view (Earth's selenographic longitude: 3.156°, latitude: -6.744°)
19.4h Moon Close to Zuben Elakrab, Gam Lib, SAO 159370 (Multiple star system), 3.9mag, with Sun below horizon, Separation=1.44°, Limb separation=1.19° =2.39 lunar dia., Position angle=99.8° E, Azimuth az=231.9°, Altitude h=6.1°, RA=15h36.5m Dec=-14°50.6', Moon phase=19.7%, Sun altitude hsun=-9.8°
20.1h Moon Close to Eta Lib, SAO 159466, 5.4mag, with Sun below horizon, Separation=3.37°, Limb separation=3.12° =6.27 lunar dia., Position angle=108.0° E, Azimuth az=238.1°, Altitude h=2.0°, RA=15h45.0m Dec=-15°43.5', Moon phase=19.9%, Sun altitude hsun=-15.0°

Monday 25 September 2017Time (24-hour clock) Object (Link) Event
18h Sun Equilux - equal length of day and night for this site (local fall)
19.5h Moon Close to 49 Lib, SAO 159625, 5.5mag, with Sun below horizon, Separation=4.45°, Limb separation=4.20° =8.48 lunar dia., Position angle=278.7° W, Azimuth az=228.0°, Altitude h=6.1°, RA=16h01.3m Dec=-16°34.9', Moon phase=27.9%, Sun altitude hsun=-11.0°
19.7h Moon Close to 48 Lib, SAO 159607 (Close double star), 5.0mag, with Sun below horizon, Separation=5.76°, Limb separation=5.51° =11.13 lunar dia., Position angle=300.7° NW, Azimuth az=231.1°, Altitude h=7.1°, RA=15h59.2m Dec=-14°19.6', Moon phase=27.9%, Sun altitude hsun=-12.0°
20.0h Moon Close to Phi Oph, SAO 159963 (Multiple star system), 4.3mag, with Sun below horizon, Separation=2.82°, Limb separation=2.57° =5.20 lunar dia., Position angle=77.6° E, Azimuth az=227.9°, Altitude h=6.1°, RA=16h32.1m Dec=-16°38.8', Moon phase=28.0%, Sun altitude hsun=-15.0°
20.1h Moon Close to 24 (Scorpii)/Ophiuchi, SAO 160046, 4.9mag, with Sun below horizon, Separation=5.25°, Limb separation=5.00° =10.10 lunar dia., Position angle=95.0° E, Azimuth az=225.2°, Altitude h=6.1°, RA=16h42.6m Dec=-17°46.3', Moon phase=28.0%, Sun altitude hsun=-15.1°

Tuesday 26 September 2017Time (24-hour clock) Object (Link) Event
19.9h Moon Close to Saturn, 0.5mag, with Sun below horizon, Separation=4.72°, Limb separation=4.49° =9.09 lunar dia., Position angle=129.0° SE, Azimuth az=213.6°, Altitude h=6.1°, RA=17h25.5m Dec=-22°07.0', Moon phase=36.9%, Sun altitude hsun=-14.6°

Wednesday 27 September 2017Time (24-hour clock) Object (Link) Event
9h51.2m Moon Apogee (distance moon center to earth center: 404386.9 km; closest point on earth ellipsoid with latitude -19.0° (WGS84), distance to moon center: 398011.1 km, apparent diameter: 30'01.5")
21.0h Moon Close to 15 Sgr, SAO 186543, 5.3mag, with Sun below horizon, Separation=3.43°, Limb separation=3.18° =6.45 lunar dia., Position angle=99.0° E, Azimuth az=217.6°, Altitude h=6.1°, RA=18h16.3m Dec=-20°43.2', Moon phase=46.6%, Sun altitude hsun=-22.8°

Thursday 28 September 2017Time (24-hour clock) Object (Link) Event
5h46.1m Moon Topocentric First Quarter (Altitude=-53.4°, topocentric diameter: 29.203', topocentric airfree declination: -20.00°)
5h53.5m Moon First Quarter (diameter: 29.5758', declination: -19.476°)
This is the smallest first quarter moon of the year. Former smaller first quarter moon was at 7.5.2014. Next smaller first quarter moon is at 4.12.2019 (calculated for the geocenter)
This is the southernmost first quarter moon of the year. Former more southern first quarter moon was at 12.9.2013. Next more southern first quarter moon is at 16.9.2018 (calculated for the geocenter)
Pluto Stationary: Getting Prograde (relative to equator)
13h06.9m Moon Max. Decl. South (declination: -19.515°)
This is the lowest southernmost moon position of the next 10 years. Former lower southern southernmost moon position was at 1.9.2017. Next lower southern southernmost moon position is at 16.8.2032 (calculated for the geocenter)
19h13.4m Moon Immersion of 29 Sgr, SAO 187324 (Double star, separation >10"), 5.2mag, Position angle=75.3°, Azimuth az=186.1°, Altitude h=13.6°, RA=18h50.7m Dec=-20°18.1', Moon phase=55.4%, Sun altitude hsun=-9.5° (dark limb); (Southern limit: 38°00'E 20°54'N, alt=44.1°, bright limb)
19.5h Moon Close to 21 Sgr, SAO 186794, 4.9mag, with Sun below horizon, Separation=5.54°, Limb separation=5.29° =10.67 lunar dia., Position angle=269.3° W, Azimuth az=196.2°, Altitude h=12.2°, RA=18h26.4m Dec=-20°31.7', Moon phase=55.5%, Sun altitude hsun=-12.0°
19.5h Moon Close to SAO 161564, XZ 25418 (Multiple star system), 5.1mag, with Sun below horizon, Separation=4.60°, Limb separation=4.35° =8.77 lunar dia., Position angle=296.0° NW, Azimuth az=195.1°, Altitude h=14.5°, RA=18h32.5m Dec=-18°23.2', Moon phase=55.5%, Sun altitude hsun=-12.0°
21.6h Moon Close to Xi 1 Sgr, SAO 187498, 5.0mag, with Sun below horizon, Separation=1.18°, Limb separation=0.93° =1.88 lunar dia., Position angle=106.4° E, Azimuth az=217.9°, Altitude h=6.1°, RA=18h58.4m Dec=-20°37.8', Moon phase=56.3%, Sun altitude hsun=-27.5°

Pluto Stationary: Getting Prograde (relative to ecliptic)

Friday 29 September 2017Time (24-hour clock) Object (Link) Event
19.1h Moon Close to Rho1 Sgr, SAO 162512 (Close double star), 3.9mag, with Sun below horizon, Separation=4.62°, Limb separation=4.37° =8.76 lunar dia., Position angle=294.8° NW, Azimuth az=177.7°, Altitude h=16.2°, RA=19h22.7m Dec=-17°48.6', Moon phase=64.7%, Sun altitude hsun=-9.0°
19.5h Moon Close to 43 Sgr, SAO 162413 (Close double star), 4.9mag, with Sun below horizon, Separation=5.33°, Limb separation=5.08° =10.19 lunar dia., Position angle=279.2° W, Azimuth az=184.1°, Altitude h=15.1°, RA=19h18.7m Dec=-18°55.1', Moon phase=64.8%, Sun altitude hsun=-12.0°
23.1h Moon Close to 56 Sgr, SAO 162964, 4.9mag, Separation=0.27°, Limb separation=0.02° =0.05 lunar dia., Position angle=168.4° S, Azimuth az=228.1°, Altitude h=2.7°, RA=19h47.4m Dec=-19°42.9', Moon phase=66.2%, Sun altitude hsun=-34.9°; (Southern limit: 38°00'E 59°30'N, alt= 0.2°, bright limb)

Saturday 30 September 2017Time (24-hour clock) Object (Link) Event
19.4h Moon Close to Okul, Pi Cap, SAO 163592 (Multiple star system), 5.1mag, with Sun below horizon, Separation=0.95°, Limb separation=0.69° =1.38 lunar dia., Position angle=270.0° W, Azimuth az=167.2°, Altitude h=15.3°, RA=20h28.3m Dec=-18°00.1', Moon phase=73.8%, Sun altitude hsun=-12.0°
19.4h Moon Close to Rho Cap, SAO 163614 (Multiple star system), 4.9mag, with Sun below horizon, Separation=0.70°, Limb separation=0.45° =0.90 lunar dia., Position angle=304.3° NW, Azimuth az=166.8°, Altitude h=15.4°, RA=20h29.9m Dec=-17°45.1', Moon phase=73.8%, Sun altitude hsun=-12.0°
19.8h Moon Close to Sig Cap, SAO 163445, 5.3mag, with Sun below horizon, Separation=3.09°, Limb separation=2.84° =5.64 lunar dia., Position angle=252.9° W, Azimuth az=174.7°, Altitude h=14.9°, RA=20h20.4m Dec=-19°03.6', Moon phase=73.9%, Sun altitude hsun=-15.0°
20.2h Moon Golden Handle visible on the Moon from 18.2h - 0.7h (htop=17° at S at 20.5h) (sun rises on the Jura mountains, while Sinus Iridum is still in shadow)

ОКТЯБРЬ

Москва, Россия Lon: +38d00m00.00s Lat: +56d00m00.00s Alt: 194m Geoid Alt: 179m

Sunday 1 October 2017Time (24-hour clock) Object (Link) Event
0.4h Moon Close to Ups Cap, SAO 163779, 5.2mag, Separation=0.44°, Limb separation=0.19° =0.38 lunar dia., Position angle=164.2° S, Azimuth az=234.8°, Altitude h=1.2°, RA=20h41.1m Dec=-18°04.4', Moon phase=75.6%, Sun altitude hsun=-37.1°
19.0h Moon Close to The Cap, SAO 164132, 4.1mag, with Sun below horizon, Separation=4.04°, Limb separation=3.78° =7.44 lunar dia., Position angle=250.9° W, Azimuth az=152.8°, Altitude h=13.4°, RA=21h06.9m Dec=-17°00.6', Moon phase=81.9%, Sun altitude hsun=-9.0°
19.8h Moon Close to 29 Cap, SAO 164263, 5.3mag, with Sun below horizon, Separation=1.87°, Limb separation=1.62° =3.18 lunar dia., Position angle=289.7° W, Azimuth az=160.6°, Altitude h=17.1°, RA=21h16.7m Dec=-15°05.7', Moon phase=82.1%, Sun altitude hsun=-15.0°

Monday 2 October 2017Time (24-hour clock) Object (Link) Event
1.2h Moon Close to 42 Cap, SAO 164580 (Close double star), 5.2mag, with Sun below horizon, Separation=2.55°, Limb separation=2.30° =4.51 lunar dia., Position angle=65.4° NE, Azimuth az=233.9°, Altitude h=6.1°, RA=21h42.5m Dec=-13°58.0', Moon phase=83.8%, Sun altitude hsun=-36.5°
3h Meteor Shower Draconids (Giacobinids, DRA) (active until 16.10., from constellation Draco/Dra), irregular maximum, some years with outbursts, yellow meteors.
3h Meteor Shower Orionids (ORI) (active until 7.11., from constellation Orion/Ori), meteors with no distinct color.
19.3h Moon Close to Mu Cap, SAO 164713, 5.1mag, with Sun below horizon, Separation=4.99°, Limb separation=4.74° =9.19 lunar dia., Position angle=260.6° W, Azimuth az=145.9°, Altitude h=15.1°, RA=21h54.3m Dec=-13°28.0', Moon phase=89.1%, Sun altitude hsun=-12.0°
19.7h Moon Close to 38 Aqr, SAO 164910, 5.4mag, with Sun below horizon, Separation=1.39°, Limb separation=1.14° =2.20 lunar dia., Position angle=320.4° NW, Azimuth az=146.4°, Altitude h=17.3°, RA=22h11.6m Dec=-11°28.5', Moon phase=89.2%, Sun altitude hsun=-15.0°
20.9h Moon Close to 42 Aqr, SAO 164974, 5.3mag, Separation=0.38°, Limb separation=0.12° =0.24 lunar dia., Position angle=160.1° S, Azimuth az=163.8°, Altitude h=20.1°, RA=22h17.8m Dec=-12°44.5', Moon phase=89.5%, Sun altitude hsun=-24.4°

Tuesday 3 October 2017Time (24-hour clock) Object (Link) Event
2.3h Moon Close to Sig Aqr, SAO 165134, 4.8mag, with Sun below horizon, Separation=1.62°, Limb separation=1.37° =2.65 lunar dia., Position angle=55.1° NE, Azimuth az=240.9°, Altitude h=6.1°, RA=22h31.6m Dec=-10°35.1', Moon phase=90.9%, Sun altitude hsun=-32.4°
8.7h Venus Perihelion (distance to sun: 0.7184 AU)
15h54.9m Moon Max. Libration West: Crater Grimaldi is tipped into view (Earth's selenographic longitude: -5.588°, latitude: +2.176°)

Wednesday 4 October 2017Time (24-hour clock) Object (Link) Event
1h56.2m Moon Immersion of Chi Aqr, SAO 146612 (Close double star), 4.9mag, Position angle=89.7°, Azimuth az=227.3°, Altitude h=16.2°, RA=23h17.8m Dec= -7°37.7', Moon phase=96.0%, Sun altitude hsun=-34.6° (dark limb); (Southern limit: 38°00'E 43°50'N, alt=18.4°, bright limb)
2.6h Moon Close to Phi Aqr, SAO 146585, 4.2mag, Separation=1.68°, Limb separation=1.42° =2.71 lunar dia., Position angle=337.4° NW, Azimuth az=237.6°, Altitude h=13.2°, RA=23h15.2m Dec= -5°57.1', Moon phase=96.1%, Sun altitude hsun=-31.5°
21.1h Moon Close to 27 Psc, SAO 147008 (Close double star), 4.9mag, Separation=0.72°, Limb separation=0.45° =0.86 lunar dia., Position angle=336.6° NW, Azimuth az=140.0°, Altitude h=23.7°, RA=23h59.6m Dec= -3°27.4', Moon phase=98.6%, Sun altitude hsun=-26.5°; (Northern limit: 38°00'E 7°15'N, alt=30.7°, bright limb; Southern limit: 38°00'E 22°31'S, alt=33.1°, bright limb)
23.3h Moon Close to 29 Psc, SAO 147041, 5.1mag, Separation=0.88°, Limb separation=0.61° =1.15 lunar dia., Position angle=334.6° NW, Azimuth az=174.3°, Altitude h=31.0°, RA= 0h02.7m Dec= -2°55.7', Moon phase=98.8%, Sun altitude hsun=-37.3°; (Northern limit: 38°00'E 1°31'N, alt=66.5°, bright limb; Southern limit: 38°00'E 31°48'S, alt=53.0°, bright limb)

Thursday 5 October 2017Time (24-hour clock) Object (Link) Event
16h26m Venus Conjunction in Right Ascension with Mars: only 13.2' separated from center of Mars, position angle=180.00° S
19h36m Venus (-3.9 mag) Close to Mars: only 12.3' separated from center of Mars, brightness: 1.8 mag, position angle=201.16° S; Sun elongation=23.45° West (morning)
19h53m Venus Conjunction with Mars: only 12.3' separated from center of Mars, position angle=203.11° SW. Distance to earth: 1.515 AU
21h40.1m Moon Full Moon (diameter: 31.9900', declination: +1.434°)
21h54.2m Moon Topocentric Full Moon (Altitude=+27.0°, topocentric diameter: 32.247', topocentric airfree declination: 0.68°, maximum phase: 99.83%)

Friday 6 October 2017Time (24-hour clock)Object (Link) Event
19.1h Moon Close to Mu Psc, SAO 109926 (Double star, separation >10"), 4.8mag, with Sun below horizon, Separation=3.22°, Limb separation=2.95° =5.48 lunar dia., Position angle=297.0° NW, Azimuth az=87.7°, Altitude h=6.1°, RA= 1h31.1m Dec= +6°14.1', Moon phase=98.8%, Sun altitude hsun=-11.0°
19.4h Moon Close to Nu Psc, SAO 110065, 4.5mag, Separation=0.79°, Limb separation=0.52° =0.97 lunar dia., Position angle=339.6° N, Azimuth az=90.3°, Altitude h=7.0°, RA= 1h42.4m Dec= +5°34.6', Moon phase=98.8%, Sun altitude hsun=-14.0°

Saturday 7 October 2017Time (24-hour clock) Object (Link) Event

1h53.4m Moon Max. Libration (6.974°)
5.4h Moon Close to Xi 1 Cet, SAO 110408 (Close double star), 4.4mag, with Sun below horizon, Separation=3.67°, Limb separation=3.40° =6.27 lunar dia., Position angle=53.8° NE, Azimuth az=246.2°, Altitude h=25.7°, RA= 2h14.0m Dec= +8°55.7', Moon phase=97.5%, Sun altitude hsun=-11.7°
19.1h Moon Close to Xi 2 Cet, SAO 110543, 4.3mag, with Sun below horizon, Separation=2.23°, Limb separation=1.96° =3.63 lunar dia., Position angle=253.3° W, Azimuth az=76.2°, Altitude h=1.4°, RA= 2h29.1m Dec= +8°32.3', Moon phase=95.1%, Sun altitude hsun=-12.0°
19.5h Moon Close to Xi Ari, SAO 92932 (Close double star), 5.5mag, with Sun below horizon, Separation=3.46°, Limb separation=3.19° =5.90 lunar dia., Position angle=294.4° NW, Azimuth az=79.8°, Altitude h=6.1°, RA= 2h25.8m Dec=+10°41.4', Moon phase=95.1%, Sun altitude hsun=-14.7°
23.0h Moon Close to Mu Cet, SAO 110723 (Multiple star system), 4.3mag, Separation=0.27°, Limb separation=0.00° =0.00 lunar dia., Position angle=338.3° N, Azimuth az=122.9°, Altitude h=31.7°, RA= 2h45.9m Dec=+10°11.3', Moon phase=94.3%, Sun altitude hsun=-37.7°; (Northern limit: 38°00'E 55°41'N, alt=31.5°, bright limb; Southern limit: 38°00'E 6°32'N, alt=27.0°, bright limb)

Sunday 8 October 2017Time (24-hour clock) Object (Link) Event
0.8h Moon Close to 38 Ari, SAO 93083 (Close double star), 5.2mag, Separation=2.43°, Limb separation=2.16° =3.94 lunar dia., Position angle=337.5° N, Azimuth az=153.4°, Altitude h=44.1°, RA= 2h45.9m Dec=+12°31.1', Moon phase=93.9%, Sun altitude hsun=-39.4°
16h17.0m Moon Max. Libration North: North Pole and Mare Frigoris are tipped into view (Earth's selenographic longitude: -1.351°, latitude: +6.616°)
20.3h Moon Close to 5 Tau, SAO 93469 (Close double star), 4.1mag, with Sun below horizon, Separation=1.37°, Limb separation=1.09° =2.01 lunar dia., Position angle=260.8° W, Azimuth az=75.6°, Altitude h=6.1°, RA= 3h31.9m Dec=+12°59.7', Moon phase=88.6%, Sun altitude hsun=-21.5°
21h Meteor Maximum Draconids (Giacobinids, DRA) ZHR=20.0
Local hour rate=9.7 Velocity=23.7km/s (slow)
Radiant: RA=17.6h/263° Dec=55.8° (J2000) (in constellation Draco/Dra)
Solar longitude=195.4° (J2000)
Stream active from 2. to 16. October
23.9h Mercury Conjunction (superior), 1.1° separated from center of Sun. Distance to earth: 1.408 AU

Monday 9 October 2017Time (24-hour clock) Object (Link) Event
9h03.3m Moon Perigee (distance moon center to earth center: 366829.4 km; closest point on earth ellipsoid with latitude 15.7° (WGS84), distance to moon center: 360452.8 km, apparent diameter: 33'09.2")
20.6h Moon Close to Del3 Tau, SAO 93923 (Multiple star system), 4.3mag, with Sun below horizon, Separation=3.02°, Limb separation=2.75° =5.07 lunar dia., Position angle=305.0° NW, Azimuth az=66.5°, Altitude h=6.1°, RA= 4h26.5m Dec=+17°57.9', Moon phase=80.1%, Sun altitude hsun=-24.3°
20.6h Moon Close to Hyadum II, Del1 Tau, SAO 93897 (Multiple star system), 3.8mag, with Sun below horizon, Separation=3.37°, Limb separation=3.10° =5.70 lunar dia., Position angle=293.5° NW, Azimuth az=67.2°, Altitude h=6.1°, RA= 4h24.0m Dec=+17°34.9', Moon phase=80.1%, Sun altitude hsun=-24.3°
20.6h Moon Close to Del2 Tau, SAO 93907 (Multiple star system), 4.8mag, with Sun below horizon, Separation=3.09°, Limb separation=2.82° =5.19 lunar dia., Position angle=293.7° NW, Azimuth az=67.4°, Altitude h=6.1°, RA= 4h25.1m Dec=+17°29.0', Moon phase=80.1%, Sun altitude hsun=-24.5°
20.7h Moon Close to Aldebaran, Alp Tau, SAO 94027 (Multiple star system), 0.9mag, Separation=0.32°, Limb separation=0.05° =0.09 lunar dia., Position angle=347.5° N, Azimuth az=66.9°, Altitude h=4.7°, RA= 4h36.9m Dec=+16°32.5', Moon phase=80.0%, Sun altitude hsun=-25.4°; (Northern limit: 38°00'E 47°46'N, alt= 0.1°, bright limb)
20.7h Moon Close to Hyadum I, Gam Tau, SAO 93868 (Close double star), 3.6mag, with Sun below horizon, Separation=3.98°, Limb separation=3.71° =6.83 lunar dia., Position angle=261.3° W, Azimuth az=70.7°, Altitude h=6.1°, RA= 4h20.8m Dec=+15°40.1', Moon phase=80.0%, Sun altitude hsun=-25.4°
20.8h Moon Close to 58 Tau, SAO 93876, 5.3mag, with Sun below horizon, Separation=3.96°, Limb separation=3.68° =6.78 lunar dia., Position angle=253.3° W, Azimuth az=71.8°, Altitude h=6.0°, RA= 4h21.6m Dec=+15°00.1', Moon phase=80.0%, Sun altitude hsun=-25.9°
20.8h Moon Close to 75 Tau, SAO 93950 (Close double star), 5.0mag, with Sun below horizon, Separation=1.92°, Limb separation=1.64° =3.03 lunar dia., Position angle=274.4° W, Azimuth az=69.4°, Altitude h=6.1°, RA= 4h29.5m Dec=+16°23.8', Moon phase=80.0%, Sun altitude hsun=-25.9°
20.8h Moon Close to 71 Tau, SAO 93932 (Double star, separation >10"), 4.5mag, with Sun below horizon, Separation=2.51°, Limb separation=2.24° =4.13 lunar dia., Position angle=256.1° W, Azimuth az=70.8°, Altitude h=6.1°, RA= 4h27.4m Dec=+15°39.4', Moon phase=80.0%, Sun altitude hsun=-26.2°
20.8h Moon Close to The1 Tau, SAO 93955 (Close double star), 3.8mag, with Sun below horizon, Separation=1.92°, Limb separation=1.65° =3.04 lunar dia., Position angle=262.3° W, Azimuth az=70.1°, Altitude h=6.1°, RA= 4h29.6m Dec=+15°59.9', Moon phase=80.0%, Sun altitude hsun=-26.2°
20.8h Moon Close to NSV 01627, SAO 93975 (Multiple star system), 4.8mag, with Sun below horizon, Separation=1.44°, Limb separation=1.16° =2.14 lunar dia., Position angle=269.0° W, Azimuth az=69.7°, Altitude h=6.1°, RA= 4h31.6m Dec=+16°13.8', Moon phase=80.0%, Sun altitude hsun=-26.3°
20.8h Moon Close to The2 Tau, SAO 93957 (Multiple star system), 3.4mag, with Sun below horizon, Separation=1.92°, Limb separation=1.65° =3.04 lunar dia., Position angle=259.5° W, Azimuth az=70.3°, Altitude h=6.1°, RA= 4h29.7m Dec=+15°54.5', Moon phase=80.0%, Sun altitude hsun=-26.3°
20.9h Moon Close to 81 Tau, SAO 93978, 5.5mag, with Sun below horizon, Separation=1.54°, Limb separation=1.27° =2.34 lunar dia., Position angle=249.8° W, Azimuth az=70.6°, Altitude h=6.1°, RA= 4h31.7m Dec=+15°43.7', Moon phase=80.0%, Sun altitude hsun=-26.7°
21.7h Moon Close to Sig1 Tau, SAO 94051 (Close double star), 5.1mag, Separation=0.54°, Limb separation=0.27° =0.50 lunar dia., Position angle=167.1° S, Azimuth az=78.1°, Altitude h=11.2°, RA= 4h40.2m Dec=+15°49.9', Moon phase=79.7%, Sun altitude hsun=-31.8°
21.7h Moon Close to Sig2 Tau, SAO 94054 (Double star, separation >10"), 4.7mag, Separation=0.44°, Limb separation=0.16° =0.30 lunar dia., Position angle=167.0° S, Azimuth az=79.1°, Altitude h=12.0°, RA= 4h40.3m Dec=+15°57.0', Moon phase=79.6%, Sun altitude hsun=-32.3°

Tuesday 10 October 2017Time (24-hour clock) Object (Link) Event
3h03m Carrington Solar Rotation Begin of Carrington rotation number 2196
4.3h Moon Close to 97 Tau, SAO 94164, 5.1mag, Separation=1.73°, Limb separation=1.45° =2.65 lunar dia., Position angle=349.1° N, Azimuth az=185.6°, Altitude h=52.8°, RA= 4h52.4m Dec=+18°52.0', Moon phase=77.0%, Sun altitude hsun=-21.4°
5.5h Moon Close to 104 Tau, SAO 94332 (Close double star), 4.9mag, with Sun below horizon, Separation=3.27°, Limb separation=3.00° =5.45 lunar dia., Position angle=65.1° NE, Azimuth az=209.3°, Altitude h=49.9°, RA= 5h00.5m Dec=+18°40.0', Moon phase=76.5%, Sun altitude hsun=-11.7°
7h26m Sun Sun rotation axis at maximum tilt (Position angle: 26.3°, heliographic latitude: +6.2°)
21.5h Moon Close to 115 Tau, SAO 94554 (Multiple star system), 5.4mag, with Sun below horizon, Separation=2.64°, Limb separation=2.37° =4.37 lunar dia., Position angle=265.6° W, Azimuth az=66.5°, Altitude h=6.1°, RA= 5h28.2m Dec=+17°58.5', Moon phase=69.7%, Sun altitude hsun=-31.4°
21.5h Moon Close to 111 Tau, SAO 94526, 5.0mag, with Sun below horizon, Separation=3.38°, Limb separation=3.11° =5.74 lunar dia., Position angle=256.5° W, Azimuth az=67.6°, Altitude h=6.1°, RA= 5h25.5m Dec=+17°23.8', Moon phase=69.6%, Sun altitude hsun=-31.5°
21.5h Moon Close to 119 Tau, SAO 94628, 4.3mag, with Sun below horizon, Separation=1.51°, Limb separation=1.24° =2.28 lunar dia., Position angle=287.0° W, Azimuth az=65.3°, Altitude h=6.1°, RA= 5h33.3m Dec=+18°36.3', Moon phase=69.6%, Sun altitude hsun=-31.5°

Wednesday 11 October 2017Time (24-hour clock) Object (Link) Event
1.1h Moon Close to 130 Tau, SAO 94858 (Close double star), 5.5mag, Separation=0.75°, Limb separation=0.48° =0.88 lunar dia., Position angle=171.2° S, Azimuth az=106.8°, Altitude h=32.2°, RA= 5h48.5m Dec=+17°44.0', Moon phase=68.1%, Sun altitude hsun=-40.0°
5.0h Moon Close to Chi1 Ori, SAO 77705, 4.4mag, Separation=1.56°, Limb separation=1.28° =2.34 lunar dia., Position angle=355.3° N, Azimuth az=179.0°, Altitude h=54.3°, RA= 5h55.4m Dec=+20°16.6', Moon phase=66.3%, Sun altitude hsun=-16.0°
5.5h Moon Close to 64 Ori, SAO 95166 (Close double star), 5.1mag, with Sun below horizon, Separation=2.03°, Limb separation=1.75° =3.20 lunar dia., Position angle=62.5° NE, Azimuth az=187.0°, Altitude h=53.5°, RA= 6h04.5m Dec=+19°41.2', Moon phase=66.1%, Sun altitude hsun=-12.0°
5.5h Moon Close to Chi2 Ori, SAO 77911 (Multiple star system), 4.6mag, with Sun below horizon, Separation=2.36°, Limb separation=2.08° =3.80 lunar dia., Position angle=54.1° NE, Azimuth az=186.9°, Altitude h=53.9°, RA= 6h05.0m Dec=+20°00.1', Moon phase=66.1%, Sun altitude hsun=-12.0°

5.5h Moon Close to 71 Ori, SAO 95432 (Multiple star system), 5.2mag, with Sun below horizon, Separation=4.47°, Limb separation=4.20° =7.67 lunar dia., Position angle=85.6° E, Azimuth az=183.2°, Altitude h=53.0°, RA= 6h15.9m Dec=+19°00.8', Moon phase=66.0%, Sun altitude hsun=-11.7°
21h22.6m Moon Max. Decl. North (declination: +19.611°)
This is the lowest northernmost moon position of the next 10 years. Former lower northern northernmost moon position was at 14.9.2017. Next lower northern northernmost moon position is at 1.8.2032 (calculated for the geocenter)
22.2h Moon Close to Nu Gem, SAO 78423 (Multiple star system), 4.1mag, with Sun below horizon, Separation=3.05°, Limb separation=2.78° =5.15 lunar dia., Position angle=297.5° NW, Azimuth az=62.3°, Altitude h=6.1°, RA= 6h30.0m Dec=+20°11.9', Moon phase=58.3%, Sun altitude hsun=-35.9°

Thursday 12 October 2017Time (24-hour clock) Object (Link) Event
5.9h Moon Close to Mekbuda, Zet Gem, SAO 79031 (Multiple star system), 4.0mag, with Sun below horizon, Separation=2.23°, Limb separation=1.95° =3.58 lunar dia., Position angle=44.4° NE, Azimuth az=173.8°, Altitude h=54.4°, RA= 7h05.1m Dec=+20°32.5', Moon phase=54.6%, Sun altitude hsun=-9.0°
15h25.4m Moon Last Quarter (diameter: 32.1872', declination: +19.262°)
This is the 2nd biggest last quarter moon of the year. Former larger last quarter moon was at 13.9.2017. Next larger last quarter moon is at 31.10.2018 (calculated for the geocenter)
This is the northernmost last quarter moon of the year. Former more northern last quarter moon was at 8.9.2012. Next more northern last quarter moon is at 2.10.2018 (calculated for the geocenter)
16h02.2m Moon Topocentric Last Quarter (Altitude= -9.8°, topocentric diameter: 32.095', topocentric airfree declination: 18.33°)
23.0h Moon Close to 56 Gem, SAO 79328 (Double star, separation >10"), 5.1mag, with Sun below horizon, Separation=5.28°, Limb separation=5.01° =9.35 lunar dia., Position angle=295.4° NW, Azimuth az=61.9°, Altitude h=6.1°, RA= 7h23.0m Dec=+20°24.5', Moon phase=46.5%, Sun altitude hsun=-39.6°
23.6h Moon Close to 74 Gem, SAO 97120 (Close double star), 5.0mag, with Sun below horizon, Separation=1.08°, Limb separation=0.81° =1.51 lunar dia., Position angle=246.6° SW, Azimuth az=67.1°, Altitude h=6.1°, RA= 7h40.5m Dec=+17°37.9', Moon phase=46.2%, Sun altitude hsun=-41.2°

Friday 13 October 2017Time (24-hour clock) Object (Link) Event
0.6h Moon Close to 81 Gem, SAO 97221 (Close double star), 4.9mag, Separation=0.42°, Limb separation=0.15° =0.28 lunar dia., Position angle=1.3° N, Azimuth az=76.8°, Altitude h=13.5°, RA= 7h47.1m Dec=+18°27.9', Moon phase=45.8%, Sun altitude hsun=-41.5°; (Northern limit: 38°00'E 36°54'N, alt= 7.3°, bright limb)
4.6h Moon Close to 85 Gem, SAO 79799 (Close double star), 5.4mag, Separation=1.89°, Limb separation=1.62° =3.00 lunar dia., Position angle=4.8° N, Azimuth az=130.2°, Altitude h=45.6°, RA= 7h56.7m Dec=+19°50.1', Moon phase=43.9%, Sun altitude hsun=-19.7°

5.6h Moon Close to Zet2 Cnc, SAO 97645 (Multiple star system), 5.1mag, with Sun below horizon, Separation=3.65°, Limb separation=3.38° =6.25 lunar dia., Position angle=95.4° E, Azimuth az=144.6°, Altitude h=47.4°, RA= 8h13.2m Dec=+17°35.5', Moon phase=43.4%, Sun altitude hsun=-11.7°
23h32m Mercury (-1.3 mag) Close to Spica, Alp Vir, SAO 157923 (Multiple star system): 2.7° separated, brightness: 1.0 mag, Position angle=205.25° SW; Sun elongation=3.61° East (evening)

Saturday 14 October 2017Time (24-hour clock) Object (Link) Event
0.4h Moon Close to The Cnc, SAO 97881 (Multiple star system), 5.3mag, with Sun below horizon, Separation=3.41°, Limb separation=3.15° =5.91 lunar dia., Position angle=303.8° NW, Azimuth az=66.4°, Altitude h=6.1°, RA= 8h32.6m Dec=+18°02.0', Moon phase=34.9%, Sun altitude hsun=-42.1°
0.6h Moon Close to Asellus Australis, Del Cnc, SAO 98087 (Multiple star system), 3.9mag, Separation=1.99°, Limb separation=1.73° =3.25 lunar dia., Position angle=5.7° N, Azimuth az=65.9°, Altitude h=5.9°, RA= 8h45.7m Dec=+18°05.3', Moon phase=34.8%, Sun altitude hsun=-41.9°
5.3h Moon Close to Pi 2 Cnc, SAO 98456, 5.4mag, with Sun below horizon, Separation=5.10°, Limb separation=4.83° =9.01 lunar dia., Position angle=100.8° E, Azimuth az=122.8°, Altitude h=37.0°, RA= 9h16.2m Dec=+14°52.0', Moon phase=32.7%, Sun altitude hsun=-14.7°
5.6h Moon Close to Omi1 Cnc, SAO 98247, 5.2mag, with Sun below horizon, Separation=0.75°, Limb separation=0.48° =0.90 lunar dia., Position angle=130.2° SE, Azimuth az=133.1°, Altitude h=41.5°, RA= 8h58.2m Dec=+15°15.2', Moon phase=32.6%, Sun altitude hsun=-12.0°

Sunday 15 October 2017Time (24-hour clock) Object (Link) Event
2.1h Moon Close to Psi Leo, SAO 98733 (Double star, separation >10"), 5.4mag, Separation=0.89°, Limb separation=0.63° =1.19 lunar dia., Position angle=10.4° N, Azimuth az=75.1°, Altitude h=6.9°, RA= 9h44.7m Dec=+13°56.4', Moon phase=24.1%, Sun altitude hsun=-37.8°
5.3h Moon Close to Nu Leo, SAO 98876 (Close double star), 5.3mag, with Sun below horizon, Separation=2.05°, Limb separation=1.79° =3.36 lunar dia., Position angle=99.8° E, Azimuth az=114.5°, Altitude h=30.1°, RA= 9h59.2m Dec=+12°21.6', Moon phase=22.9%, Sun altitude hsun=-15.0°
6.4h Moon Close to Regulus, Alp Leo, SAO 98967 (Multiple star system), 1.4mag, with Sun below horizon, Separation=4.05°, Limb separation=3.78° =7.10 lunar dia., Position angle=100.2° E, Azimuth az=131.8°, Altitude h=37.3°, RA=10h00.3m Dec=+11°52.9', Moon phase=22.4%, Sun altitude hsun=-5.7°

Monday 16 October 2017Time (24-hour clock) Object (Link) Event
3.2h Moon Close to Rho Leo, SAO 118355 (Close double star), 3.8mag, with Sun below horizon, Separation=1.49°, Limb separation=1.23° =2.34 lunar dia., Position angle=267.7° W, Azimuth az=82.4°, Altitude h=6.1°, RA=10h33.7m Dec= +9°13.0', Moon phase=15.1%, Sun altitude hsun=-31.5°
5.3h Moon Close to 53 Leo, SAO 99305, 5.3mag, with Sun below horizon, Separation=2.09°, Limb separation=1.83° =3.48 lunar dia., Position angle=45.1° NE, Azimuth az=105.3°, Altitude h=22.5°, RA=10h50.2m Dec=+10°27.2', Moon phase=14.4%, Sun altitude hsun=-15.0°
5.7h Moon Close to Chi Leo, SAO 118648 (Multiple star system), 4.6mag, with Sun below horizon, Separation=5.42°, Limb separation=5.15° =9.79 lunar dia., Position angle=108.1° E, Azimuth az=108.9°, Altitude h=20.9°, RA=11h05.9m Dec= +7°14.5', Moon phase=14.3%, Sun altitude hsun=-11.7°

Tuesday 17 October 2017Time (24-hour clock) Object (Link) Event
2h58.4m Moon Max. Libration East: Mare Crisium limb is tipped into view (Earth's selenographic longitude: 5.207°, latitude: -3.165°)
4.2h Moon Close to Sig Leo, SAO 118804, 4.0mag, with Sun below horizon, Separation=2.93°, Limb separation=2.67° =5.14 lunar dia., Position angle=288.7° W, Azimuth az=88.3°, Altitude h=6.1°, RA=11h22.0m Dec= +5°56.1', Moon phase=8.0%, Sun altitude hsun=-24.0°
6.4h Moon Close to Mars, 1.8mag, with Sun below horizon, Separation=3.54°, Limb separation=3.30° =6.33 lunar dia., Position angle=127.2° SE, Azimuth az=112.5°, Altitude h=17.4°, RA=11h48.8m Dec= +2°28.6', Moon phase=7.5%, Sun altitude hsun=-6.0°

Wednesday 18 October 2017Time (24-hour clock) Object (Link) Event
5.1h Moon Close to 7 Vir, SAO 119156, 5.4mag, with Sun below horizon, Separation=6.62°, Limb separation=6.36° =12.39 lunar dia., Position angle=297.2° NW, Azimuth az=92.5°, Altitude h=6.1°, RA=12h00.8m Dec= +3°33.6', Moon phase=3.2%, Sun altitude hsun=-17.7°
5.8h Moon Close to Venus, -3.9mag, with Sun below horizon, Separation=1.82°, Limb separation=1.57° =3.05 lunar dia., Position angle=243.7° SW, Azimuth az=99.7°, Altitude h=6.1°, RA=12h19.3m Dec= -0°25.0', Moon phase=3.1%, Sun altitude hsun=-11.8°
6.3h Moon Close to Porrima, Gam Vir, SAO 138917 (Multiple star system), 2.8mag, with Sun below horizon, Separation=4.32°, Limb separation=4.06° =7.89 lunar dia., Position angle=115.0° SE, Azimuth az=101.8°, Altitude h=6.1°, RA=12h42.5m Dec= -1°32.6', Moon phase=3.0%, Sun altitude hsun=-7.6°
6.3h Moon Close to g29 Virginis (Multiple star system), 3.5mag, with Sun below horizon, Separation=4.32°, Limb separation=4.07° =7.90 lunar dia., Position angle=115.0° SE, Azimuth az=101.8°, Altitude h=6.1°, RA=12h42.5m Dec= -1°32.6', Moon phase=3.0%, Sun altitude hsun=-7.6°
10h38m Mercury (-0.9 mag) Close to Jupiter: only 55.8' separated from center of Jupiter, brightness: -1.7 mag, position angle=24.84° NE; Sun elongation=6.49° East (evening)

11h54m Mercury Conjunction with Jupiter: only 56.0' separated from center of Jupiter, position angle=20.24° N. Distance to earth: 1.425 AU
17h56m Mercury Conjunction in Right Ascension with Jupiter (1.0° separated from center of Jupiter), position angle=360.00° N

Thursday 19 October 2017Time (24-hour clock) Object (Link) Event
Uranus Opposition (distance to earth: 18.915 AU, brightness: 5.7 mag, diameter: 3.70")
21h27.1m Moon Topocentric New Moon (Altitude=-30.4°, topocentric diameter: 30.121', topocentric airfree declination: -6.60°, minimum phase: 0.11%)
22h12.1m Moon New Moon (diameter: 30.3567', declination: -6.006°)

Friday 20 October 2017Time (24-hour clock) Object (Link) Event
14h21.1m Moon Max. Libration (7.570°)

Saturday 21 October 2017Time (24-hour clock) Object (Link) Event
22h07.3m Moon Max. Libration South: South Pole is tipped into view (Earth's selenographic longitude: 3.143°, latitude: -6.608°)

Sunday 22 October 2017Time (24-hour clock) Object (Link) Event
4h Meteor Maximum Orionids (ORI) ZHR=23
Local hour rate=8.9 Velocity=67.1km/s (very rapid)
Radiant: RA=6.4h/95° Dec=15.9° (J2000) (in constellation Orion/Ori)
Solar longitude=208.6° (J2000)
Stream active from 2. October to 7. November
18.0h Moon Close to 48 Lib, SAO 159607 (Close double star), 5.0mag, with Sun below horizon, Separation=2.10°, Limb separation=1.85° =3.74 lunar dia., Position angle=352.9° N, Azimuth az=233.1°, Altitude h=6.1°, RA=15h59.2m Dec=-14°19.6', Moon phase=7.9%, Sun altitude hsun=-8.0°
18h11.7m Moon Immersion of 49 Lib, SAO 159625, 5.5mag, Position angle=129.4°, Azimuth az=233.5°, Altitude h=3.5°, RA=16h01.3m Dec=-16°34.9', Moon phase=7.9%, Sun altitude hsun=-9.2° (dark limb); (Southern limit: 38°00'E 38°55'N, alt= 3.0°, bright limb)
21h33m Venus (-3.9 mag) Close to Porrima, Gam Vir, SAO 138917 (Multiple star system): 1.2° separated, brightness: 2.8 mag, Position angle=23.08° NE; Sun elongation=19.23° West (morning)
21h37m Venus (-3.9 mag) Close to g29 Virginis (Multiple star system): 1.2° separated, brightness: 3.5 mag, Position angle=23.08° NE; Sun elongation=19.23° West (morning)

Monday 23 October 2017Time (24-hour clock) Object (Link) Event
18.2h Moon Close to Phi Oph, SAO 159963 (Multiple star system), 4.3mag, with Sun below horizon, Separation=4.69°, Limb separation=4.44° =8.99 lunar dia., Position angle=295.6° NW, Azimuth az=227.9°, Altitude h=6.1°, RA=16h32.1m Dec=-16°38.8', Moon phase=13.8%, Sun altitude hsun=-9.6°
18.2h Moon Close to 24 (Scorpii)/Ophiuchi, SAO 160046, 4.9mag, with Sun below horizon, Separation=1.96°, Limb separation=1.71° =3.47 lunar dia., Position angle=296.0° NW, Azimuth az=225.2°, Altitude h=6.1°, RA=16h42.6m Dec=-17°46.3', Moon phase=13.8%, Sun altitude hsun=-9.7°

Tuesday 24 October 2017Time (24-hour clock) Object (Link) Event
17.7h Moon Close to Saturn, 0.6mag, with Sun below horizon, Separation=2.59°, Limb separation=2.35° =4.77 lunar dia., Position angle=209.6° SW, Azimuth az=206.7°, Altitude h=8.1°, RA=17h33.8m Dec=-22°17.4', Moon phase=20.7%, Sun altitude hsun=-6.0°

Wednesday 25 October 2017Time (24-hour clock) Object (Link) Event
1h24m Jupiter Farest Distance (distance to earth: 6.435 AU, brightness: -1.7 mag, diameter: 30.59")
5h30.9m Moon Apogee (distance moon center to earth center: 405188.7 km; closest point on earth ellipsoid with latitude -19.6° (WGS84), distance to moon center: 398812.9 km, apparent diameter: 29'57.9")
18.1h Moon Close to Polis, Mu Sgr, SAO 186497 (Multiple star system), 3.8mag, with Sun below horizon, Separation=3.64°, Limb separation=3.39° =6.87 lunar dia., Position angle=263.5° W, Azimuth az=203.0°, Altitude h=10.3°, RA=18h14.8m Dec=-21°03.0', Moon phase=29.0%, Sun altitude hsun=-9.0°
18.4h Moon Close to 21 Sgr, SAO 186794, 4.9mag, with Sun below horizon, Separation=1.05°, Limb separation=0.80° =1.62 lunar dia., Position angle=273.6° W, Azimuth az=205.5°, Altitude h=10.2°, RA=18h26.4m Dec=-20°31.7', Moon phase=29.1%, Sun altitude hsun=-12.0°
18.8h Moon Close to 15 Sgr, SAO 186543, 5.3mag, with Sun below horizon, Separation=3.54°, Limb separation=3.30° =6.69 lunar dia., Position angle=268.5° W, Azimuth az=212.6°, Altitude h=7.9°, RA=18h16.3m Dec=-20°43.2', Moon phase=29.2%, Sun altitude hsun=-15.0°
19.8h Moon Close to SAO 161564, XZ 25418 (Multiple star system), 5.1mag, Separation=2.18°, Limb separation=1.93° =3.92 lunar dia., Position angle=356.2° N, Azimuth az=223.0°, Altitude h=6.4°, RA=18h32.5m Dec=-18°23.2', Moon phase=29.6%, Sun altitude hsun=-23.2°
19.8h Moon Close to 29 Sgr, SAO 187324 (Double star, separation >10"), 5.2mag, with Sun below horizon, Separation=4.12°, Limb separation=3.87° =7.87 lunar dia., Position angle=85.6° E, Azimuth az=218.8°, Altitude h=6.1°, RA=18h50.7m Dec=-20°18.1', Moon phase=29.6%, Sun altitude hsun=-23.5°
21h13.9m Moon Max. Decl. South (declination: -19.740°)
This is the lowest southernmost moon position of the next 10 years. Former lower southern southernmost moon position was at 28.9.2017. Next lower southern southernmost moon position is at 1.4.2032 (calculated for the geocenter)

Thursday 26 October 2017Time (24-hour clock) Object (Link) Event
18.0h Moon Close to Albaldah, Pi Sgr, SAO 187756 (Multiple star system), 2.9mag, with Sun below horizon, Separation=2.46°, Limb separation=2.21° =4.46 lunar dia., Position angle=253.8° W, Azimuth az=190.4°, Altitude h=12.5°, RA=19h10.8m Dec=-20°59.5', Moon phase=37.8%, Sun altitude hsun=-9.0°
18.0h Moon Close to Xi 2 Sgr, SAO 187504, 3.5mag, with Sun below horizon, Separation=5.20°, Limb separation=4.96° =10.01 lunar dia., Position angle=262.3° W, Azimuth az=193.2°, Altitude h=12.1°, RA=18h58.8m Dec=-21°04.8', Moon phase=37.8%, Sun altitude hsun=-9.0°
18.4h Moon Close to 43 Sgr, SAO 162413 (Close double star), 4.9mag, with Sun below horizon, Separation=1.50°, Limb separation=1.26° =2.54 lunar dia., Position angle=334.3° NW, Azimuth az=193.9°, Altitude h=14.2°, RA=19h18.7m Dec=-18°55.1', Moon phase=37.9%, Sun altitude hsun=-12.0°
18.4h Moon Close to Xi 1 Sgr, SAO 187498, 5.0mag, with Sun below horizon, Separation=5.38°, Limb separation=5.14° =10.38 lunar dia., Position angle=267.2° W, Azimuth az=198.5°, Altitude h=11.7°, RA=18h58.4m Dec=-20°37.8', Moon phase=37.9%, Sun altitude hsun=-12.0°
21h09m Jupiter Conjunction, 1.0° separated from center of Sun. Distance to earth: 6.435 AU

Friday 27 October 2017Time (24-hour clock) Object (Link) Event
18.3h Moon Close to 56 Sgr, SAO 162964, 4.9mag, with Sun below horizon, Separation=5.79°, Limb separation=5.55° =11.13 lunar dia., Position angle=264.8° W, Azimuth az=187.3°, Altitude h=14.1°, RA=19h47.4m Dec=-19°43.0', Moon phase=47.3%, Sun altitude hsun=-12.0°
21.4h Moon Close to Sig Cap, SAO 163445, 5.3mag, with Sun below horizon, Separation=0.88°, Limb separation=0.63° =1.27 lunar dia., Position angle=105.6° E, Azimuth az=222.0°, Altitude h=6.1°, RA=20h20.4m Dec=-19°03.7', Moon phase=48.5%, Sun altitude hsun=-36.1°
21.6h Moon Close to Okul, Pi Cap, SAO 163592 (Multiple star system), 5.1mag, with Sun below horizon, Separation=2.70°, Limb separation=2.45° =4.92 lunar dia., Position angle=75.8° E, Azimuth az=224.3°, Altitude h=6.3°, RA=20h28.3m Dec=-18°00.1', Moon phase=48.6%, Sun altitude hsun=-37.9°

21.7h Moon Close to Rho Cap, SAO 163614 (Multiple star system), 4.9mag, with Sun below horizon, Separation=3.13°, Limb separation=2.88° =5.79 lunar dia., Position angle=70.2° E, Azimuth az=225.2°, Altitude h=6.1°, RA=20h29.9m Dec=-17°45.2', Moon phase=48.7%, Sun altitude hsun=-38.5°

Saturday 28 October 2017Time (24-hour clock) Object (Link) Event
1h22.1m Moon First Quarter (diameter: 29.8442', declination: -17.695°)
This is the 2nd southernmost first quarter moon of the year. Former more southern first quarter moon was at 28.9.2017. Next more southern first quarter moon is at 16.9.2018 (calculated for the geocenter)
2h19.5m Moon Topocentric First Quarter (Altitude=-30.4°, topocentric diameter: 29.615', topocentric airfree declination: -18.26°)
18.3h Moon Close to Ups Cap, SAO 163779, 5.2mag, with Sun below horizon, Separation=5.15°, Limb separation=4.90° =9.74 lunar dia., Position angle=259.4° W, Azimuth az=174.7°, Altitude h=15.8°, RA=20h41.0m Dec=-18°04.4', Moon phase=56.9%, Sun altitude hsun=-12.0°
20.9h Moon Close to The Cap, SAO 164132, 4.1mag, Separation=0.41°, Limb separation=0.16° =0.32 lunar dia., Position angle=162.2° S, Azimuth az=206.7°, Altitude h=13.5°, RA=21h06.9m Dec=-17°00.6', Moon phase=58.0%, Sun altitude hsun=-33.1°
22.8h Moon Close to 29 Cap, SAO 164263, 5.3mag, with Sun below horizon, Separation=2.23°, Limb separation=1.97° =3.93 lunar dia., Position angle=50.0° NE, Azimuth az=231.4°, Altitude h=6.1°, RA=21h16.7m Dec=-15°05.8', Moon phase=58.8%, Sun altitude hsun=-44.5°

Sunday 29 October 2017Time (24-hour clock) Object (Link) Event
15.1h Mercury Aphelion (distance to sun: 0.4667 AU)
18.3h Moon Close to 42 Cap, SAO 164580 (Close double star), 5.2mag, with Sun below horizon, Separation=2.47°, Limb separation=2.21° =4.35 lunar dia., Position angle=276.5° W, Azimuth az=159.3°, Altitude h=18.0°, RA=21h42.5m Dec=-13°58.0', Moon phase=66.5%, Sun altitude hsun=-12.0°
19.9h Moon Close to Mu Cap, SAO 164713, 5.1mag, Separation=0.60°, Limb separation=0.35° =0.68 lunar dia., Position angle=340.1° N, Azimuth az=180.6°, Altitude h=20.6°, RA=21h54.3m Dec=-13°28.0', Moon phase=67.1%, Sun altitude hsun=-25.2°; (Northern limit: 38°00'E 13°00'N, alt=59.5°, bright limb; Southern limit: 38°00'E 14°23'S, alt=82.4°, bright limb)
23.8h Moon Close to Iot Aqr, SAO 164861 (Close double star), 4.3mag, with Sun below horizon, Separation=1.49°, Limb separation=1.23° =2.42 lunar dia., Position angle=103.2° E, Azimuth az=234.3°, Altitude h=6.1°, RA=22h07.4m Dec=-13°46.9', Moon phase=68.7%, Sun altitude hsun=-47.5°

Monday 30 October 2017Time (24-hour clock) Object (Link) Event
0.1h Moon Close to 42 Aqr, SAO 164974, 5.3mag, with Sun below horizon, Separation=3.90°, Limb separation=3.65° =7.17 lunar dia., Position angle=80.0° E, Azimuth az=236.5°, Altitude h=6.1°, RA=22h17.7m Dec=-12°44.5', Moon phase=68.8%, Sun altitude hsun=-47.7°
0.1h Moon Close to 38 Aqr, SAO 164910, 5.4mag, with Sun below horizon, Separation=3.00°, Limb separation=2.75° =5.40 lunar dia., Position angle=50.3° NE, Azimuth az=239.1°, Altitude h=6.1°, RA=22h11.6m Dec=-11°28.6', Moon phase=68.8%, Sun altitude hsun=-47.7°
2.6h (7) Iris →Star chart Asteroid in Opposition
Distance to Sun center=1.837 AU, Distance to Earth=0.849 AU, Magnitude= 6.9 mag, Diameter=200 km, Elongation=171.8° (in constellation Aries/Ari)
15.4h Moon Golden Handle visible on the Moon from 15.4h -16.5h (sun rises on the Jura mountains, while Sinus Iridum is still in shadow)
18.2h Moon Close to Sig Aqr, SAO 165134, 4.8mag, with Sun below horizon, Separation=2.79°, Limb separation=2.53° =4.90 lunar dia., Position angle=272.9° W, Azimuth az=146.7°, Altitude h=18.3°, RA=22h31.6m Dec=-10°35.2', Moon phase=75.7%, Sun altitude hsun=-12.0°

Tuesday 31 October 2017Time (24-hour clock) Object (Link) Event
1.2h Moon Close to Lam Aqr, SAO 146362, 3.7mag, with Sun below horizon, Separation=2.06°, Limb separation=1.81° =3.49 lunar dia., Position angle=354.5° N, Azimuth az=247.0°, Altitude h=6.1°, RA=22h53.5m Dec= -7°29.0', Moon phase=78.2%, Sun altitude hsun=-46.4°
11h39.7m Moon Max. Libration West: Crater Grimaldi is tipped into view (Earth's selenographic longitude: -6.729°, latitude: +2.951°)
18.2h Moon Close to Chi Aqr, SAO 146612 (Close double star), 4.9mag, with Sun below horizon, Separation=4.04°, Limb separation=3.78° =7.21 lunar dia., Position angle=255.8° W, Azimuth az=134.9°, Altitude h=17.2°, RA=23h17.8m Dec= -7°37.7', Moon phase=84.1%, Sun altitude hsun=-12.0°
18.2h Moon Close to Phi Aqr, SAO 146585, 4.2mag, with Sun below horizon, Separation=4.59°, Limb separation=4.33° =8.25 lunar dia., Position angle=278.5° W, Azimuth az=134.8°, Altitude h=19.0°, RA=23h15.2m Dec= -5°57.1', Moon phase=84.1%, Sun altitude hsun=-12.0°

НОЯБРЬ

Москва, Россия Lon: +38d00m00.00s Lat: +56d00m00.00s Alt: 194m Geoid Alt: 179m

Wednesday 1 November 2017Time (24-hour clock) Object (Link) Event
2.6h Moon Close to 20 Psc, SAO 146915, 5.5mag, with Sun below horizon, Separation=2.41°, Limb separation=2.15° =4.08 lunar dia., Position angle=6.6° N, Azimuth az=256.2°, Altitude h=6.1°, RA=23h48.9m Dec= -2°39.7', Moon phase=86.7%, Sun altitude hsun=-40.1°
2.7h Moon Close to 27 Psc, SAO 147008 (Close double star), 4.9mag, with Sun below horizon, Separation=3.31°, Limb separation=3.05° =5.81 lunar dia., Position angle=61.4° NE, Azimuth az=254.7°, Altitude h=6.1°, RA=23h59.6m Dec= -3°27.4', Moon phase=86.7%, Sun altitude hsun=-39.5°
2.8h Moon Close to 29 Psc, SAO 147041, 5.1mag, with Sun below horizon, Separation=4.20°, Limb separation=3.94° =7.51 lunar dia., Position angle=60.0° NE, Azimuth az=255.7°, Altitude h=6.1°, RA= 0h02.7m Dec= -2°55.7', Moon phase=86.8%, Sun altitude hsun=-38.8°
3h Meteor Shower Nov. Iota-Aurigids (IAR) (active until 23.11., from constellation Auriga/Aur)

Thursday 2 November 2017Time (24-hour clock) Object (Link) Event
6h32.4m Moon Max. Libration (7.842°)
19.2h Moon Close to 89 Psc, SAO 109793, 5.1mag, Separation=0.94°, Limb separation=0.67° =1.24 lunar dia., Position angle=336.8° NW, Azimuth az=116.8°, Altitude h=21.2°, RA= 1h18.7m Dec= +3°42.5', Moon phase=96.6%, Sun altitude hsun=-20.8°; (Northern limit: 38°00'E 4°14'S, alt=12.4°, bright limb; Southern limit: 38°00'E 36°21'S, alt= 7.9°, bright limb)
21h48m Venus (-3.9 mag) Close to Spica, Alp Vir, SAO 157923 (Multiple star system): 3.5° separated, brightness: 1.0 mag, Position angle=202.10° S; Sun elongation=16.49° West (morning)

Friday 3 November 2017Time (24-hour clock) Object (Link) Event
3.0h Moon Close to Mu Psc, SAO 109926 (Double star, separation >10"), 4.8mag, Separation=1.99°, Limb separation=1.71° =3.15 lunar dia., Position angle=339.2° N, Azimuth az=245.0°, Altitude h=23.2°, RA= 1h31.1m Dec= +6°14.1', Moon phase=97.8%, Sun altitude hsun=-38.3°
5.2h Moon Close to Nu Psc, SAO 110065, 4.5mag, with Sun below horizon, Separation=1.22°, Limb separation=0.95° =1.75 lunar dia., Position angle=49.7° NE, Azimuth az=271.1°, Altitude h=6.1°, RA= 1h42.4m Dec= +5°34.6', Moon phase=98.1%, Sun altitude hsun=-21.0°
9h00m Sun Equation of time is at maximum with 16.43 minutes (sundials are early). Today, the Sun culminates earliest of the year
19.6h Moon Close to Xi 1 Cet, SAO 110408 (Close double star), 4.4mag, Separation=1.45°, Limb separation=1.18° =2.15 lunar dia., Position angle=337.8° N, Azimuth az=107.5°, Altitude h=22.1°, RA= 2h14.0m Dec= +8°55.7', Moon phase=99.4%, Sun altitude hsun=-24.3°

Saturday 4 November 2017Time (24-hour clock) Object (Link) Event
2.2h Moon Close to Xi Ari, SAO 92932 (Close double star), 5.5mag, Separation=1.95°, Limb separation=1.67° =3.03 lunar dia., Position angle=339.7° N, Azimuth az=223.4°, Altitude h=37.7°, RA= 2h25.8m Dec=+10°41.4', Moon phase=99.7%, Sun altitude hsun=-43.1°

2.3h Moon Close to Xi 2 Cet, SAO 110543, 4.3mag, Separation=0.35°, Limb separation=0.08° =0.14 lunar dia., Position angle=159.7° S, Azimuth az=222.4°, Altitude h=35.7°, RA= 2h29.1m Dec= +8°32.3', Moon phase=99.7%, Sun altitude hsun=-42.8°; (Southern limit: 38°00'E 62°09'N, alt=30.9°, bright limb)
6.6h Moon Close to Mu Cet, SAO 110723 (Multiple star system), 4.3mag, with Sun below horizon, Separation=2.08°, Limb separation=1.80° =3.30 lunar dia., Position angle=72.8° E, Azimuth az=279.3°, Altitude h=6.1°, RA= 2h45.9m Dec=+10°11.3', Moon phase=99.8%, Sun altitude hsun=-9.2°
8h22.9m Moon Full Moon (diameter: 32.8171', declination: +10.709°)
This is the 2nd biggest full moon of the year. Former larger full moon was at 14.12.2016. Next larger full moon is at 3.12.2017 (calculated for the geocenter)
8h45.7m Moon Topocentric Full Moon (Altitude=-11.0°, topocentric diameter: 32.716', topocentric airfree declination: 9.90°, maximum phase: 99.76%)
21h47.0m Moon Max. Libration North: North Pole and Mare Frigoris are tipped into view (Earth's selenographic longitude: -2.341°, latitude: +6.524°)

Sunday 5 November 2017Time (24-hour clock) Object (Link) Event
4.5h Moon Close to 5 Tau, SAO 93469 (Close double star), 4.1mag, Separation=0.32°, Limb separation=0.04° =0.07 lunar dia., Position angle=166.2° S, Azimuth az=244.7°, Altitude h=31.2°, RA= 3h31.9m Dec=+12°59.7', Moon phase=98.8%, Sun altitude hsun=-26.8°; (Southern limit: 38°00'E 58°53'N, alt=30.2°, bright limb)
22h13.1m Moon Immersion of Hyadum I, Gam Tau, SAO 93868 (Close double star), 3.6mag, Position angle=105.6°, Azimuth az=112.5°, Altitude h=32.9°, RA= 4h20.8m Dec=+15°40.1', Moon phase=96.2%, Sun altitude hsun=-44.0° (bright limb); (Southern limit: 38°00'E 42°40'N, alt=38.0°, bright limb)
22.7h Moon Close to 58 Tau, SAO 93876, 5.3mag, Separation=0.71°, Limb separation=0.43° =0.78 lunar dia., Position angle=163.9° S, Azimuth az=120.4°, Altitude h=36.0°, RA= 4h21.6m Dec=+15°00.1', Moon phase=96.1%, Sun altitude hsun=-46.6°
23h06.0m Moon Emersion of Hyadum I, Gam Tau, SAO 93868 (Close double star), 3.6mag, Position Angle=222.0°, Azimuth az=126.1°, Altitude h=39.3°, RA= 4h20.8m Dec=+15°40.1', Moon phase=96.1%, Sun altitude hsun=-48.0° (dark limb); (Southern limit: 38°00'E 42°40'N, alt=38.0°, bright limb)

Monday 6 November 2017Time (24-hour clock) Object (Link) Event
1.1h Moon Close to Hyadum II, Del1 Tau, SAO 93897 (Multiple star system), 3.8mag, Separation=1.49°, Limb separation=1.21° =2.16 lunar dia., Position angle=344.9° N, Azimuth az=162.7°, Altitude h=50.6°, RA= 4h24.0m Dec=+17°34.9', Moon phase=95.7%, Sun altitude hsun=-48.7°
1.6h Moon Close to Del2 Tau, SAO 93907 (Multiple star system), 4.8mag, Separation=1.32°, Limb separation=1.04° =1.87 lunar dia., Position angle=345.5° N, Azimuth az=172.9°, Altitude h=51.3°, RA= 4h25.1m Dec=+17°29.0', Moon phase=95.6%, Sun altitude hsun=-47.0°; (Northern limit: 38°00'E 13°19'S, alt=57.4°, bright limb)
1.7h Moon Close to 71 Tau, SAO 93932 (Double star, separation >10"), 4.5mag, Separation=0.58°, Limb separation=0.30° =0.54 lunar dia., Position angle=165.9° S, Azimuth az=175.4°, Altitude h=49.6°, RA= 4h27.4m Dec=+15°39.4', Moon phase=95.6%, Sun altitude hsun=-46.4°; (Southern limit: 38°00'E 87°38'N, alt=18.0°, bright limb)
2.4h Moon Close to Del3 Tau, SAO 93923 (Multiple star system), 4.3mag, Separation=1.71°, Limb separation=1.43° =2.56 lunar dia., Position angle=346.8° N, Azimuth az=191.8°, Altitude h=51.5°, RA= 4h26.5m Dec=+17°58.0', Moon phase=95.4%, Sun altitude hsun=-42.7°
3.0h Moon Close to The1 Tau, SAO 93955 (Close double star), 3.8mag, Separation=0.37°, Limb separation=0.09° =0.16 lunar dia., Position angle=167.8° S, Azimuth az=202.7°, Altitude h=48.3°, RA= 4h29.6m Dec=+15°59.9', Moon phase=95.3%, Sun altitude hsun=-39.1°; (Southern limit: 38°00'E 62°42'N, alt=42.1°, bright limb)
3.0h Moon Close to The2 Tau, SAO 93957 (Multiple star system), 3.4mag, Separation=0.46°, Limb separation=0.18° =0.33 lunar dia., Position angle=167.8° S, Azimuth az=202.7°, Altitude h=48.2°, RA= 4h29.7m Dec=+15°54.5', Moon phase=95.3%, Sun altitude hsun=-39.0°; (Southern limit: 38°00'E 70°39'N, alt=34.5°, bright limb)
3h17.2m Moon Perigee (distance moon center to earth center: 361423.3 km; closest point on earth ellipsoid with latitude 17.0° (WGS84), distance to moon center: 355047.0 km, apparent diameter: 33'39.5")
3h38.5m Moon Emersion of 75 Tau, SAO 93950 (Close double star), 5.0mag, Position Angle=263.9°, Azimuth az=216.7°, Altitude h=45.9°, RA= 4h29.5m Dec=+16°23.8', Moon phase=95.2%, Sun altitude hsun=-34.1° (dark limb); (Northern limit: 38°00'E 77°04'N, alt=28.8°, bright limb; Southern limit: 38°00'E 36°36'N, alt=65.1°, bright limb)
3.9h Moon Close to 81 Tau, SAO 93978, 5.5mag, Separation=0.73°, Limb separation=0.45° =0.81 lunar dia., Position angle=169.3° S, Azimuth az=220.2°, Altitude h=44.2°, RA= 4h31.7m Dec=+15°43.7', Moon phase=95.1%, Sun altitude hsun=-32.3°
4h19.9m Moon Emersion of NSV 01627, SAO 93975 (Multiple star system), 4.8mag, Position Angle=202.3°, Azimuth az=228.6°, Altitude h=42.0°, RA= 4h31.6m Dec=+16°13.8', Moon phase=95.0%, Sun altitude hsun=-28.7° (dark limb); (Southern limit: 38°00'E 53°04'N, alt=45.9°, bright limb)
6h05.6m Moon Immersion of Aldebaran, Alp Tau, SAO 94027 (Multiple star system), 0.9mag, Position angle=107.5°, Azimuth az=254.6°, Altitude h=29.9°, RA= 4h37.0m Dec=+16°32.5', Moon phase=94.6%, Sun altitude hsun=-14.1° (bright limb); (Southern limit: 38°00'E 44°06'N, alt=24.8°, bright limb)
6.4h Moon Close to 97 Tau, SAO 94164, 5.1mag, with Sun below horizon, Separation=4.39°, Limb separation=4.11° =7.40 lunar dia., Position angle=60.3° NE, Azimuth az=256.5°, Altitude h=31.7°, RA= 4h52.4m Dec=+18°52.0', Moon phase=94.6%, Sun altitude hsun=-11.8°
6.4h Moon Close to Sig1 Tau, SAO 94051 (Close double star), 5.1mag, with Sun below horizon, Separation=1.20°, Limb separation=0.92° =1.67 lunar dia., Position angle=132.6° SE, Azimuth az=257.2°, Altitude h=27.5°, RA= 4h40.2m Dec=+15°49.9', Moon phase=94.6%, Sun altitude hsun=-11.8°
6.4h Moon Close to Sig2 Tau, SAO 94054 (Double star, separation >10"), 4.7mag, with Sun below horizon, Separation=1.15°, Limb separation=0.87° =1.57 lunar dia., Position angle=127.3° SE, Azimuth az=257.3°, Altitude h=27.6°, RA= 4h40.3m Dec=+15°57.0', Moon phase=94.6%, Sun altitude hsun=-11.8°
6h59.5m Moon Emersion of Aldebaran, Alp Tau, SAO 94027 (Multiple star system), 0.9mag, Position Angle=238.7°, Azimuth az=266.4°, Altitude h=22.5°, RA= 4h37.0m Dec=+16°32.5', Moon phase=94.4%, Sun altitude hsun=-6.7° (dark limb); (Southern limit: 38°00'E 44°06'N, alt=24.8°, bright limb)
10h10m Carrington Solar Rotation Begin of Carrington rotation number 2197
19.4h Moon Close to 104 Tau, SAO 94332 (Close double star), 4.9mag, with Sun below horizon, Separation=1.70°, Limb separation=1.42° =2.58 lunar dia., Position angle=304.1° NW, Azimuth az=66.8°, Altitude h=7.1°, RA= 5h00.5m Dec=+18°40.0', Moon phase=91.3%, Sun altitude hsun=-23.1°
23.5h Moon Close to 111 Tau, SAO 94526, 5.0mag, Separation=0.80°, Limb separation=0.53° =0.94 lunar dia., Position angle=169.2° S, Azimuth az=116.1°, Altitude h=36.8°, RA= 5h25.5m Dec=+17°23.8', Moon phase=90.1%, Sun altitude hsun=-49.5°

Tuesday 7 November 2017Time (24-hour clock) Object (Link) Event
1.0h Moon Close to 115 Tau, SAO 94554 (Multiple star system), 5.4mag, Separation=0.36°, Limb separation=0.08° =0.14 lunar dia., Position angle=170.1° S, Azimuth az=140.2°, Altitude h=46.7°, RA= 5h28.2m Dec=+17°58.5', Moon phase=89.6%, Sun altitude hsun=-49.1°; (Southern limit: 38°00'E 62°51'N, alt=41.6°, bright limb)
3h07.7m Moon Immersion of 119 Tau, SAO 94628, 4.3mag, Position angle=63.1°, Azimuth az=184.7°, Altitude h=52.5°, RA= 5h33.3m Dec=+18°36.3', Moon phase=89.0%, Sun altitude hsun=-38.2° (bright limb); (Northern limit: 38°00'E 69°29'N, alt=38.6°, bright limb; Southern limit: 38°00'E 33°11'N, alt=73.4°, bright limb)
4h12.8m Moon Emersion of 119 Tau, SAO 94628, 4.3mag, Position Angle=284.9°, Azimuth az=209.1°, Altitude h=49.9°, RA= 5h33.3m Dec=+18°36.3', Moon phase=88.6%, Sun altitude hsun=-29.9° (dark limb); (Northern limit: 38°00'E 69°29'N, alt=38.6°, bright limb; Southern limit: 38°00'E 33°11'N, alt=73.4°, bright limb)
6.0h Moon Close to 130 Tau, SAO 94858 (Close double star), 5.5mag, with Sun below horizon, Separation=2.58°, Limb separation=2.30° =4.14 lunar dia., Position angle=109.8° E, Azimuth az=237.9°, Altitude h=40.0°, RA= 5h48.5m Dec=+17°44.0', Moon phase=88.1%, Sun altitude hsun=-14.8°
6.4h Moon Close to Chi1 Ori, SAO 77705, 4.4mag, with Sun below horizon, Separation=4.21°, Limb separation=3.93° =7.07 lunar dia., Position angle=67.3° NE, Azimuth az=243.5°, Altitude h=40.3°, RA= 5h55.4m Dec=+20°16.6', Moon phase=87.9%, Sun altitude hsun=-11.8°
20.1h Moon Close to Chi2 Ori, SAO 77911 (Multiple star system), 4.6mag, with Sun below horizon, Separation=3.45°, Limb separation=3.18° =5.79 lunar dia., Position angle=290.3° W, Azimuth az=62.5°, Altitude h=6.0°, RA= 6h05.0m Dec=+20°00.1', Moon phase=83.2%, Sun altitude hsun=-29.2°
20.1h Moon Close to 64 Ori, SAO 95166 (Close double star), 5.1mag, with Sun below horizon, Separation=3.45°, Limb separation=3.18° =5.80 lunar dia., Position angle=282.5° W, Azimuth az=63.3°, Altitude h=6.1°, RA= 6h04.5m Dec=+19°41.2', Moon phase=83.2%, Sun altitude hsun=-29.5°
20.4h Moon Close to 71 Ori, SAO 95432 (Multiple star system), 5.2mag, with Sun below horizon, Separation=0.88°, Limb separation=0.60° =1.10 lunar dia., Position angle=284.8° W, Azimuth az=64.4°, Altitude h=6.0°, RA= 6h15.9m Dec=+19°00.8', Moon phase=83.1%, Sun altitude hsun=-31.5°

Wednesday 8 November 2017Time (24-hour clock) Object (Link) Event
0.8h Moon Close to Nu Gem, SAO 78423 (Multiple star system), 4.1mag, Separation=1.03°, Limb separation=0.75° =1.36 lunar dia., Position angle=355.1° N, Azimuth az=117.5°, Altitude h=40.8°, RA= 6h30.0m Dec=+20°11.9', Moon phase=81.4%, Sun altitude hsun=-50.0°
4h27.8m Moon Max. Decl. North (declination: +19.842°)
This is the 2nd northernmost moon position of the year. Former more northern moon position was at 2.8.2013. Next more northern moon position is at 5.12.2017 (calculated for the geocenter)
This is the lowest northernmost moon position of the next 10 years. Former lower northern northernmost moon position was at 11.10.2017. Next lower northern northernmost moon position is at 18.3.2032 (calculated for the geocenter)
7h55m Mars (1.8 mag) Close to Porrima, Gam Vir, SAO 138917 (Multiple star system): 1.7° separated, brightness: 2.8 mag, Position angle=23.27° NE; Sun elongation=35.62° West (morning)
8h03m Mars (1.8 mag) Close to g29 Virginis (Multiple star system): 1.7° separated, brightness: 3.5 mag, Position angle=23.27° NE; Sun elongation=35.62° West (morning)
21.0h Moon Close to Mekbuda, Zet Gem, SAO 79031 (Multiple star system), 4.0mag, with Sun below horizon, Separation=4.55°, Limb separation=4.28° =7.87 lunar dia., Position angle=293.4° NW, Azimuth az=61.6°, Altitude h=6.1°, RA= 7h05.2m Dec=+20°32.5', Moon phase=73.2%, Sun altitude hsun=-36.4°
21.1h Moon Close to 56 Gem, SAO 79328 (Double star, separation >10"), 5.1mag, Separation=1.73°, Limb separation=1.46° =2.68 lunar dia., Position angle=359.4° N, Azimuth az=59.3°, Altitude h=4.6°, RA= 7h23.0m Dec=+20°24.4', Moon phase=73.2%, Sun altitude hsun=-37.1°

Thursday 9 November 2017Time (24-hour clock) Object (Link) Event
5.0h Moon Close to 74 Gem, SAO 97120 (Close double star), 5.0mag, Separation=0.93°, Limb separation=0.66° =1.20 lunar dia., Position angle=187.0° S, Azimuth az=182.1°, Altitude h=51.6°, RA= 7h40.5m Dec=+17°37.9', Moon phase=69.7%, Sun altitude hsun=-23.9°
6.1h Moon Close to 85 Gem, SAO 79799 (Close double star), 5.4mag, with Sun below horizon, Separation=3.47°, Limb separation=3.19° =5.82 lunar dia., Position angle=67.9° E, Azimuth az=201.5°, Altitude h=52.4°, RA= 7h56.7m Dec=+19°50.0', Moon phase=69.2%, Sun altitude hsun=-14.8°
6.4h Moon Close to 81 Gem, SAO 97221 (Close double star), 4.9mag, with Sun below horizon, Separation=0.81°, Limb separation=0.53° =0.97 lunar dia., Position angle=90.2° E, Azimuth az=211.7°, Altitude h=49.2°, RA= 7h47.2m Dec=+18°27.8', Moon phase=69.1%, Sun altitude hsun=-12.0°
22.4h Moon Close to Zet2 Cnc, SAO 97645 (Multiple star system), 5.1mag, with Sun below horizon, Separation=3.15°, Limb separation=2.88° =5.36 lunar dia., Position angle=278.9° W, Azimuth az=67.2°, Altitude h=6.1°, RA= 8h13.2m Dec=+17°35.5', Moon phase=61.8%, Sun altitude hsun=-45.8°

Friday 10 November 2017Time (24-hour clock) Object (Link) Event
0.8h Moon Close to The Cnc, SAO 97881 (Multiple star system), 5.3mag, Separation=1.08°, Limb separation=0.81° =1.50 lunar dia., Position angle=5.5° N, Azimuth az=92.4°, Altitude h=23.5°, RA= 8h32.6m Dec=+18°01.9', Moon phase=60.7%, Sun altitude hsun=-50.6°
3h Meteor Shower Leonids (LEO) (active until 23.11., from constellation Leo/Leo), persistent trails.
6.5h Moon Close to Omi1 Cnc, SAO 98247, 5.2mag, with Sun below horizon, Separation=3.75°, Limb separation=3.48° =6.42 lunar dia., Position angle=109.9° E, Azimuth az=187.8°, Altitude h=49.1°, RA= 8h58.2m Dec=+15°15.2', Moon phase=58.1%, Sun altitude hsun=-11.8°
6.8h Moon Close to Asellus Australis, Del Cnc, SAO 98087 (Multiple star system), 3.9mag, Separation=1.66°, Limb separation=1.39° =2.57 lunar dia., Position angle=14.8° N, Azimuth az=199.0°, Altitude h=50.9°, RA= 8h45.7m Dec=+18°05.2', Moon phase=57.9%, Sun altitude hsun=-9.6°
22h32.1m Moon Topocentric Last Quarter (Altitude= -3.6°, topocentric diameter: 31.835', topocentric airfree declination: 14.43°)
23h36.4m Moon Last Quarter (diameter: 31.8454', declination: +15.138°)
23.6h Moon Close to Pi 2 Cnc, SAO 98456, 5.4mag, with Sun below horizon, Separation=2.52°, Limb separation=2.25° =4.24 lunar dia., Position angle=282.1° W, Azimuth az=72.2°, Altitude h=6.1°, RA= 9h16.2m Dec=+14°52.0', Moon phase=50.1%, Sun altitude hsun=-50.8°

Saturday 11 November 2017Time (24-hour clock) Object (Link) Event
6.1h Moon Close to Psi Leo, SAO 98733 (Double star, separation >10"), 5.4mag, with Sun below horizon, Separation=1.30°, Limb separation=1.03° =1.92 lunar dia., Position angle=75.8° E, Azimuth az=164.5°, Altitude h=47.1°, RA= 9h44.7m Dec=+13°56.4', Moon phase=47.1%, Sun altitude hsun=-15.0°
6.2h Moon Close to Nu Leo, SAO 98876 (Close double star), 5.3mag, with Sun below horizon, Separation=4.90°, Limb separation=4.63° =8.64 lunar dia., Position angle=105.3° E, Azimuth az=160.5°, Altitude h=45.0°, RA= 9h59.2m Dec=+12°21.6', Moon phase=47.1%, Sun altitude hsun=-14.8°

Sunday 12 November 2017Time (24-hour clock) Object (Link) Event
0.7h Moon Close to Regulus, Alp Leo, SAO 98967 (Multiple star system), 1.4mag, with Sun below horizon, Separation=3.54°, Limb separation=3.28° =6.25 lunar dia., Position angle=288.7° W, Azimuth az=79.5°, Altitude h=7.3°, RA=10h00.3m Dec=+11°52.8', Moon phase=38.8%, Sun altitude hsun=-51.2°
6.2h Moon Close to 53 Leo, SAO 99305, 5.3mag, with Sun below horizon, Separation=4.12°, Limb separation=3.85° =7.28 lunar dia., Position angle=83.7° E, Azimuth az=146.5°, Altitude h=40.4°, RA=10h50.2m Dec=+10°27.1', Moon phase=36.4%, Sun altitude hsun=-14.8°
7.0h Moon Close to Rho Leo, SAO 118355 (Close double star), 3.8mag, Separation=0.67°, Limb separation=0.41° =0.77 lunar dia., Position angle=201.8° S, Azimuth az=167.5°, Altitude h=42.7°, RA=10h33.7m Dec= +9°12.9', Moon phase=36.1%, Sun altitude hsun=-8.3°
17h26.8m Moon Max. Libration East: Mare Crisium limb is tipped into view (Earth's selenographic longitude: 6.392°, latitude: -2.533°)

Monday 13 November 2017Time (24-hour clock) Object (Link) Event
1h11m Mercury (-0.3 mag) Close to Antares, Alp Sco, SAO 184415 (Double star, separation <10"): 2.2° separated, brightness: 1.1 mag, Position angle=190.79° S; Sun elongation=19.51° East (evening)
2.1h Moon Close to Chi Leo, SAO 118648 (Multiple star system), 4.6mag, with Sun below horizon, Separation=2.89°, Limb separation=2.63° =5.07 lunar dia., Position angle=284.0° W, Azimuth az=85.9°, Altitude h=6.1°, RA=11h05.9m Dec= +7°14.4', Moon phase=28.2%, Sun altitude hsun=-46.4°
4h19.7m Moon Immersion of Sig Leo, SAO 118804, 4.0mag, Position angle=156.4°, Azimuth az=112.2°, Altitude h=21.3°, RA=11h22.0m Dec= +5°56.0', Moon phase=27.3%, Sun altitude hsun=-30.4° (bright limb); (Southern limit: 38°00'E 52°21'N, alt=23.5°, bright limb)
5h06.2m Moon Emersion of Sig Leo, SAO 118804, 4.0mag, Position Angle=244.6°, Azimuth az=123.2°, Altitude h=27.0°, RA=11h22.0m Dec= +5°56.0', Moon phase=27.0%, Sun altitude hsun=-24.0° (dark limb); (Southern limit: 38°00'E 52°21'N, alt=23.5°, bright limb)
9h10m Venus Conjunction in Right Ascension with Jupiter: only 16.8' separated from center of Jupiter, position angle=180.00° S
11h16m Venus Conjunction with Jupiter: only 15.7' separated from center of Jupiter, position angle=198.92° S. Distance to earth: 1.642 AU
11h24m Venus (-3.9 mag) Close to Jupiter: only 15.7' separated from center of Jupiter, brightness: -1.7 mag, position angle=200.21° S; Sun elongation=13.84° West (morning)

Tuesday 14 November 2017Time (24-hour clock) Object (Link) Event
3.3h Moon Close to 7 Vir, SAO 119156, 5.4mag, with Sun below horizon, Separation=2.54°, Limb separation=2.28° =4.44 lunar dia., Position angle=306.3° NW, Azimuth az=92.5°, Altitude h=6.1°, RA=12h00.8m Dec= +3°33.5', Moon phase=18.9%, Sun altitude hsun=-38.8°

Wednesday 15 November 2017Time (24-hour clock) Object (Link) Event
4.4h Moon Close to Porrima, Gam Vir, SAO 138917 (Multiple star system), 2.8mag, with Sun below horizon, Separation=4.29°, Limb separation=4.04° =7.95 lunar dia., Position angle=282.6° W, Azimuth az=101.8°, Altitude h=6.1°, RA=12h42.5m Dec= -1°32.6', Moon phase=11.3%, Sun altitude hsun=-30.1°

4.4h Moon Close to g29 Virginis (Multiple star system), 3.5mag, with Sun below horizon, Separation=4.29°, Limb separation=4.04° =7.94 lunar dia., Position angle=282.6° W, Azimuth az=101.8°, Altitude h=6.1°, RA=12h42.6m Dec= -1°32.6', Moon phase=11.3%, Sun altitude hsun=-30.1°
4.5h Moon Close to Mars, 1.8mag, Separation=2.45°, Limb separation=2.20° =4.33 lunar dia., Position angle=201.9° S, Azimuth az=102.2°, Altitude h=2.6°, RA=12h55.9m Dec= -4°46.5', Moon phase=11.3%, Sun altitude hsun=-29.2°

Thursday 16 November 2017Time (24-hour clock) Object (Link) Event
4h28.7m Moon Max. Libration (7.960°)
4h Meteor Maximum Nov. Iota-Aurigids (IAR) ZHR=8.2
Local hour rate=3.6 Velocity=35.8km/s (medium speed)
Radiant: RA=5.1h/76° Dec=33.3° (J2000) (in constellation Auriga/Aur)
Solar longitude=233.6° (J2000)
Stream active from 1. to 23. November
5.7h Moon Close to 74 Vir, SAO 139390, 4.7mag, with Sun below horizon, Separation=4.10°, Limb separation=3.85° =7.64 lunar dia., Position angle=277.8° W, Azimuth az=110.8°, Altitude h=6.1°, RA=13h32.9m Dec= -6°20.6', Moon phase=5.6%, Sun altitude hsun=-19.7°
6.6h Moon Close to 95 Vir, SAO 139736, 5.5mag, with Sun below horizon, Separation=4.73°, Limb separation=4.48° =8.88 lunar dia., Position angle=119.1° SE, Azimuth az=116.7°, Altitude h=6.1°, RA=14h07.6m Dec= -9°23.6', Moon phase=5.4%, Sun altitude hsun=-12.2°

Friday 17 November 2017Time (24-hour clock) Object (Link) Event
7.3h Moon Close to Jupiter, -1.7mag, with Sun below horizon, Separation=4.34°, Limb separation=4.10° =8.19 lunar dia., Position angle=239.1° SW, Azimuth az=124.6°, Altitude h=6.1°, RA=14h24.5m Dec=-13°16.2', Moon phase=1.8%, Sun altitude hsun=-7.0°
8.1h Moon Close to Venus, -3.9mag, with Sun below horizon, Separation=3.21°, Limb separation=2.97° =5.94 lunar dia., Position angle=182.8° S, Azimuth az=132.8°, Altitude h=8.9°, RA=14h40.5m Dec=-14°22.5', Moon phase=1.7%, Sun altitude hsun=-0.2°
11.4h Moon Close to Venus, -3.9mag, Separation=3.00°, Limb separation=2.75° =5.49 lunar dia., Position angle=203.5° SW, Azimuth az=179.8°, Altitude h=19.6°, RA=14h41.2m Dec=-14°25.8', Moon phase=1.4%, Sun altitude hsun=14.2°, in daylight, elongation from sun: 13.7°
19h Meteor Maximum Leonids (LEO) ZHR=15.0 Velocity=22.9km/s (very slow)
Radiant: RA=10.3h/155° Dec=21.4° (J2000) (in constellation Leo/Leo)
Solar longitude=235.3° (J2000)
Stream active from 10. to 23. November

Saturday 18 November 2017Time (24-hour clock) Object (Link) Event
0h20.3m Moon Max. Libration South: South Pole is tipped into view (Earth's selenographic longitude: 3.733°, latitude: -6.566°)
14h42.1m Moon New Moon (diameter: 29.7066', declination: -14.508°)
This is the 2nd farthest new moon of the year. Former farther new moon was at 29.11.2016. Next farther new moon is at 18.12.2017 (calculated for the geocenter)
15h08.1m Moon Topocentric New Moon (Altitude=+10.2°, topocentric diameter: 29.791', topocentric airfree declination: -15.38°, minimum phase: 0.13%)

Sunday 19 November 2017Time (24-hour clock) Object (Link) Event
20h14m Venus (-3.9 mag) Close to Zuben Elgenubi, Alp2 Lib, SAO 158840 (Multiple star system): only 46.5' separated, brightness: 2.8 mag, Position angle=198.17° S; Sun elongation=12.25° West (morning)

Monday 20 November 2017Time (24-hour clock) Object (Link) Event
4h49m Mars Summer begins on northern hemisphere
16.9h Moon Close to Saturn, 0.5mag, with Sun below horizon, Separation=5.93°, Limb separation=5.72° =11.63 lunar dia., Position angle=115.3° SE, Azimuth az=216.8°, Altitude h=4.6°, RA=17h45.3m Dec=-22°26.4', Moon phase=4.1%, Sun altitude hsun=-6.0°

Tuesday 21 November 2017Time (24-hour clock) Object (Link) Event
17.7h Moon Close to 21 Sgr, SAO 186794, 4.9mag, with Sun below horizon, Separation=2.89°, Limb separation=2.64° =5.39 lunar dia., Position angle=86.5° E, Azimuth az=219.3°, Altitude h=5.7°, RA=18h26.4m Dec=-20°31.7', Moon phase=8.8%, Sun altitude hsun=-12.0°
18.1h Moon Close to Polis, Mu Sgr, SAO 186497 (Multiple star system), 3.8mag, Separation=0.38°, Limb separation=0.13° =0.27 lunar dia., Position angle=177.3° S, Azimuth az=226.7°, Altitude h=2.0°, RA=18h14.8m Dec=-21°03.0', Moon phase=8.8%, Sun altitude hsun=-15.2°
18h21.5m Moon Immersion of 15 Sgr, SAO 186543, 5.3mag, Position angle=102.5°, Azimuth az=230.1°, Altitude h=0.8°, RA=18h16.2m Dec=-20°43.2', Moon phase=8.9%, Sun altitude hsun=-17.5° (dark limb); (Southern limit: 38°00'E 36°59'N, alt= 1.8°, bright limb)

22h03.4m Moon Apogee (distance moon center to earth center: 406155.2 km; closest point on earth ellipsoid with latitude -19.9° (WGS84), distance to moon center: 399779.6 km, apparent diameter: 29'53.5")

Wednesday 22 November 2017Time (24-hour clock) Object (Link) Event
5h06.2m Moon Max. Decl. South (declination: -19.958°)
This is the 2nd southernmost moon position of the year. Former more southern moon position was at 20.7.2013. Next more southern moon position is at 19.12.2017 (calculated for the geocenter)
This is the lowest southernmost moon position of the next 10 years. Former lower southern southernmost moon position was at 25.10.2017. Next lower southern southernmost moon position is at 5.3.2032 (calculated for the geocenter)
17.3h Moon Close to Xi 2 Sgr, SAO 187504, 3.5mag, with Sun below horizon, Separation=1.27°, Limb separation=1.02° =2.07 lunar dia., Position angle=252.7° W, Azimuth az=207.5°, Altitude h=9.1°, RA=18h58.8m Dec=-21°04.8', Moon phase=14.6%, Sun altitude hsun=-9.0°
Neptune Stationary: Getting Prograde (relative to ecliptic)
17.7h Moon Close to 29 Sgr, SAO 187324 (Double star, separation >10"), 5.2mag, with Sun below horizon, Separation=3.26°, Limb separation=3.01° =6.13 lunar dia., Position angle=277.3° W, Azimuth az=214.7°, Altitude h=7.7°, RA=18h50.7m Dec=-20°18.1', Moon phase=14.7%, Sun altitude hsun=-12.0°
17.7h Moon Close to Xi 1 Sgr, SAO 187498, 5.0mag, with Sun below horizon, Separation=1.45°, Limb separation=1.20° =2.44 lunar dia., Position angle=272.3° W, Azimuth az=212.9°, Altitude h=7.9°, RA=18h58.4m Dec=-20°37.8', Moon phase=14.7%, Sun altitude hsun=-12.0°
18.2h Moon Close to Albaldah, Pi Sgr, SAO 187756 (Multiple star system), 2.9mag, with Sun below horizon, Separation=1.30°, Limb separation=1.06° =2.15 lunar dia., Position angle=104.7° E, Azimuth az=216.9°, Altitude h=6.1°, RA=19h10.8m Dec=-20°59.6', Moon phase=14.9%, Sun altitude hsun=-16.2°
18.7h Moon Close to 43 Sgr, SAO 162413 (Close double star), 4.9mag, with Sun below horizon, Separation=3.38°, Limb separation=3.14° =6.39 lunar dia., Position angle=59.1° NE, Azimuth az=222.4°, Altitude h=6.1°, RA=19h18.6m Dec=-18°55.1', Moon phase=15.0%, Sun altitude hsun=-20.2°
Neptune Stationary: Getting Prograde (relative to equator)

Thursday 23 November 2017Time (24-hour clock) Object (Link) Event
17.6h Moon Close to 56 Sgr, SAO 162964, 4.9mag, with Sun below horizon, Separation=1.78°, Limb separation=1.53° =3.10 lunar dia., Position angle=273.3° W, Azimuth az=202.6°, Altitude h=11.8°, RA=19h47.4m Dec=-19°43.0', Moon phase=22.0%, Sun altitude hsun=-12.0°

19.6h Moon Close to Sig Cap, SAO 163445, 5.3mag, with Sun below horizon, Separation=5.28°, Limb separation=5.04° =10.22 lunar dia., Position angle=82.7° E, Azimuth az=222.0°, Altitude h=6.1°, RA=20h20.4m Dec=-19°03.7', Moon phase=22.6%, Sun altitude hsun=-28.2°

Friday 24 November 2017Time (24-hour clock) Object (Link) Event
3.5h Mercury Greatest Elongation (22.0° East, in the evenings, brightness: -0.4 mag)
17.6h Moon Close to Okul, Pi Cap, SAO 163592 (Multiple star system), 5.1mag, with Sun below horizon, Separation=3.93°, Limb separation=3.68° =7.40 lunar dia., Position angle=269.8° W, Azimuth az=193.8°, Altitude h=15.1°, RA=20h28.3m Dec=-18°00.1', Moon phase=30.3%, Sun altitude hsun=-12.0°
17.6h Moon Close to Rho Cap, SAO 163614 (Multiple star system), 4.9mag, with Sun below horizon, Separation=3.58°, Limb separation=3.34° =6.71 lunar dia., Position angle=276.0° W, Azimuth az=193.5°, Altitude h=15.4°, RA=20h29.9m Dec=-17°45.2', Moon phase=30.3%, Sun altitude hsun=-12.0°
17.6h Moon Close to Ups Cap, SAO 163779, 5.2mag, with Sun below horizon, Separation=0.92°, Limb separation=0.67° =1.35 lunar dia., Position angle=271.2° W, Azimuth az=190.7°, Altitude h=15.4°, RA=20h41.0m Dec=-18°04.5', Moon phase=30.3%, Sun altitude hsun=-12.0°
20.6h Moon Close to The Cap, SAO 164132, 4.1mag, with Sun below horizon, Separation=4.16°, Limb separation=3.91° =7.89 lunar dia., Position angle=81.1° E, Azimuth az=226.7°, Altitude h=6.3°, RA=21h06.9m Dec=-17°00.7', Moon phase=31.3%, Sun altitude hsun=-36.6°

Saturday 25 November 2017Time (24-hour clock) Object (Link) Event
17.6h Moon Close to Iot Cap, SAO 164346, 4.3mag, with Sun below horizon, Separation=2.93°, Limb separation=2.67° =5.33 lunar dia., Position angle=246.9° SW, Azimuth az=181.1°, Altitude h=17.3°, RA=21h23.2m Dec=-16°45.5', Moon phase=39.4%, Sun altitude hsun=-12.0°
18.0h Moon Close to 29 Cap, SAO 164263, 5.3mag, with Sun below horizon, Separation=4.41°, Limb separation=4.15° =8.27 lunar dia., Position angle=276.4° W, Azimuth az=188.5°, Altitude h=18.6°, RA=21h16.7m Dec=-15°05.8', Moon phase=39.5%, Sun altitude hsun=-15.0°
21.6h Moon Close to 42 Cap, SAO 164580 (Close double star), 5.2mag, with Sun below horizon, Separation=1.17°, Limb separation=0.92° =1.83 lunar dia., Position angle=22.2° N, Azimuth az=233.9°, Altitude h=6.1°, RA=21h42.5m Dec=-13°58.0', Moon phase=41.0%, Sun altitude hsun=-44.0°
21.8h Moon Close to Mu Cap, SAO 164713, 5.1mag, with Sun below horizon, Separation=3.54°, Limb separation=3.29° =6.57 lunar dia., Position angle=63.8° NE, Azimuth az=234.9°, Altitude h=6.1°, RA=21h54.3m Dec=-13°28.0', Moon phase=41.1%, Sun altitude hsun=-45.8°

Sunday 26 November 2017Time (24-hour clock) Object (Link) Event
17.6h Moon Close to Iot Aqr, SAO 164861 (Close double star), 4.3mag, with Sun below horizon, Separation=4.17°, Limb separation=3.92° =7.71 lunar dia., Position angle=251.0° W, Azimuth az=170.5°, Altitude h=19.8°, RA=22h07.4m Dec=-13°47.0', Moon phase=49.1%, Sun altitude hsun=-12.0°
18.0h Moon Close to 38 Aqr, SAO 164910, 5.4mag, with Sun below horizon, Separation=3.19°, Limb separation=2.94° =5.78 lunar dia., Position angle=285.8° W, Azimuth az=175.1°, Altitude h=22.5°, RA=22h11.6m Dec=-11°28.6', Moon phase=49.3%, Sun altitude hsun=-15.0°
18.0h Moon Close to 42 Aqr, SAO 164974, 5.3mag, with Sun below horizon, Separation=1.63°, Limb separation=1.37° =2.70 lunar dia., Position angle=255.5° W, Azimuth az=173.6°, Altitude h=21.1°, RA=22h17.7m Dec=-12°44.5', Moon phase=49.3%, Sun altitude hsun=-15.0°
20h02.9m Moon First Quarter (diameter: 30.3548', declination: -11.165°)
20h58.4m Moon Topocentric First Quarter (Altitude=+15.8°, topocentric diameter: 30.505', topocentric airfree declination: -11.86°)
23.4h Moon Close to Sig Aqr, SAO 165134, 4.8mag, Separation=0.92°, Limb separation=0.67° =1.32 lunar dia., Position angle=339.1° N, Azimuth az=249.3°, Altitude h=1.3°, RA=22h31.6m Dec=-10°35.2', Moon phase=51.5%, Sun altitude hsun=-53.8°; (Northern limit: 38°00'E 10°18'N, alt=12.4°, bright limb; Southern limit: 38°00'E 27°16'S, alt=25.0°, bright limb)

Monday 27 November 2017Time (24-hour clock) Object (Link) Event
19.3h Moon Close to Psi1 Aqr, SAO 146598 (Multiple star system), 4.2mag, Separation=0.78°, Limb separation=0.52° =1.00 lunar dia., Position angle=155.3° SE, Azimuth az=180.5°, Altitude h=25.0°, RA=23h16.8m Dec= -8°59.5', Moon phase=59.9%, Sun altitude hsun=-26.4°
21.2h Moon Close to Chi Aqr, SAO 146612 (Close double star), 4.9mag, Separation=0.36°, Limb separation=0.10° =0.19 lunar dia., Position angle=335.0° NW, Azimuth az=210.8°, Altitude h=22.2°, RA=23h17.8m Dec= -7°37.8', Moon phase=60.7%, Sun altitude hsun=-41.6°; (Northern limit: 38°00'E 46°31'N, alt=29.8°, bright limb; Southern limit: 38°00'E 7°39'N, alt=61.3°, bright limb)
21.5h Moon Close to Phi Aqr, SAO 146585, 4.2mag, Separation=2.14°, Limb separation=1.88° =3.64 lunar dia., Position angle=335.4° NW, Azimuth az=216.5°, Altitude h=22.2°, RA=23h15.2m Dec= -5°57.2', Moon phase=60.8%, Sun altitude hsun=-43.7°

Tuesday 28 November 2017Time (24-hour clock) Object (Link) Event
9h58m Mercury Conjunction with Saturn, 3.1° separated from center of Saturn, position angle=1.12° N. Distance to earth: 0.921 AU
12.2h Mercury Dichotomy/Half phase
12h28m Mercury Conjunction in Right Ascension with Saturn (3.1° separated from center of Saturn), position angle=0.00° N
15h25.4m Moon Max. Libration West: Crater Grimaldi is tipped into view (Earth's selenographic longitude: -7.687°, latitude: +4.194°)
17.6h Moon Close to 27 Psc, SAO 147008 (Close double star), 4.9mag, with Sun below horizon, Separation=1.13°, Limb separation=0.87° =1.66 lunar dia., Position angle=317.6° NW, Azimuth az=140.5°, Altitude h=23.8°, RA=23h59.6m Dec= -3°27.4', Moon phase=69.1%, Sun altitude hsun=-12.0°
19.0h Moon Close to 29 Psc, SAO 147041, 5.1mag, Separation=1.23°, Limb separation=0.97° =1.85 lunar dia., Position angle=334.4° NW, Azimuth az=162.1°, Altitude h=29.8°, RA= 0h02.7m Dec= -2°55.7', Moon phase=69.7%, Sun altitude hsun=-23.4°
22.5h Moon Golden Handle visible on the Moon from 20.5h - 2.0h (htop=26° at SW at 22.5h) (sun rises on the Jura mountains, while Sinus Iridum is still in shadow)

Wednesday 29 November 2017Time (24-hour clock) Object (Link) Event
21h52.0m Moon Max. Libration (9.114°)
This is the 2nd largest total libration of the year. Former larger total libration was at 21.10.2016. Next larger total libration is at 27.12.2017 (calculated for the geocenter)

Thursday 30 November 2017Time (24-hour clock) Object (Link) Event
2h47m Mars (1.7 mag) Close to Spica, Alp Vir, SAO 157923 (Multiple star system): 3.1° separated, brightness: 1.0 mag, Position angle=201.86° S; Sun elongation=43.87° West (morning)
2.8h Moon Close to 89 Psc, SAO 109793, 5.1mag, with Sun below horizon, Separation=2.73°, Limb separation=2.46° =4.61 lunar dia., Position angle=54.0° NE, Azimuth az=267.7°, Altitude h=6.1°, RA= 1h18.7m Dec= +3°42.4', Moon phase=82.0%, Sun altitude hsun=-45.5°
17.5h Moon Close to Mu Psc, SAO 109926 (Double star, separation >10"), 4.8mag, with Sun below horizon, Separation=4.03°, Limb separation=3.76° =6.94 lunar dia., Position angle=287.6° W, Azimuth az=115.0°, Altitude h=23.2°, RA= 1h31.1m Dec= +6°14.1', Moon phase=87.0%, Sun altitude hsun=-12.0°
17.5h Moon Close to Nu Psc, SAO 110065, 4.5mag, with Sun below horizon, Separation=1.21°, Limb separation=0.94° =1.73 lunar dia., Position angle=298.6° NW, Azimuth az=112.8°, Altitude h=21.2°, RA= 1h42.4m Dec= +5°34.6', Moon phase=87.0%, Sun altitude hsun=-12.0°

ДЕКАБРЬ

Москва, Россия Lon: +38d00m00.00s Lat: +56d00m00.00s Alt: 194m Geoid Alt: 179m

Friday 1 December 2017Time (24-hour clock) Object (Link) Event

4.2h Moon Close to Xi 1 Cet, SAO 110408 (Close double star), 4.4mag, with Sun below horizon, Separation=2.64°, Limb separation=2.37° =4.37 lunar dia., Position angle=43.6° NE, Azimuth az=277.1°, Altitude h=6.1°, RA= 2h14.0m Dec= +8°55.7', Moon phase=90.2%, Sun altitude hsun=-35.3°
16h Mercury Magnitude dims to 0 mag
17.9h Moon Close to Xi Ari, SAO 92932 (Close double star), 5.5mag, with Sun below horizon, Separation=4.36°, Limb separation=4.08° =7.43 lunar dia., Position angle=284.1° W, Azimuth az=106.0°, Altitude h=23.3°, RA= 2h25.8m Dec=+10°41.4', Moon phase=93.8%, Sun altitude hsun=-15.0°
19.5h Moon Close to Mu Cet, SAO 110723 (Multiple star system), 4.3mag, Separation=0.29°, Limb separation=0.01° =0.03 lunar dia., Position angle=337.8° N, Azimuth az=124.8°, Altitude h=32.6°, RA= 2h45.9m Dec=+10°11.3', Moon phase=94.2%, Sun altitude hsun=-28.4°; (Northern limit: 38°00'E 53°36'N, alt=32.9°, bright limb; Southern limit: 38°00'E 5°40'N, alt=28.9°, bright limb)

Saturday 2 December 2017Time (24-hour clock) Object (Link) Event
4h43.7m Moon Max. Libration North: North Pole and Mare Frigoris are tipped into view (Earth's selenographic longitude: -4.464°, latitude: +6.565°)
16.6h Moon Close to 5 Tau, SAO 93469 (Close double star), 4.1mag, with Sun below horizon, Separation=1.66°, Limb separation=1.38° =2.50 lunar dia., Position angle=257.2° W, Azimuth az=75.6°, Altitude h=6.1°, RA= 3h31.9m Dec=+12°59.7', Moon phase=98.0%, Sun altitude hsun=-5.4°

Sunday 3 December 2017Time (24-hour clock) Object (Link) Event
6.8h Moon Close to 58 Tau, SAO 93876, 5.3mag, with Sun below horizon, Separation=2.86°, Limb separation=2.58° =4.65 lunar dia., Position angle=94.8° E, Azimuth az=288.2°, Altitude h=6.0°, RA= 4h21.6m Dec=+15°00.1', Moon phase=99.4%, Sun altitude hsun=-14.0°
7.5h Moon Close to Hyadum I, Gam Tau, SAO 93868 (Close double star), 3.6mag, with Sun below horizon, Separation=2.23°, Limb separation=1.96° =3.53 lunar dia., Position angle=83.9° E, Azimuth az=296.7°, Altitude h=1.6°, RA= 4h20.8m Dec=+15°40.1', Moon phase=99.5%, Sun altitude hsun=-9.0°
7.5h Moon Close to Hyadum II, Del1 Tau, SAO 93897 (Multiple star system), 3.8mag, with Sun below horizon, Separation=3.67°, Limb separation=3.39° =6.12 lunar dia., Position angle=54.3° NE, Azimuth az=297.0°, Altitude h=3.5°, RA= 4h24.0m Dec=+17°34.9', Moon phase=99.5%, Sun altitude hsun=-9.0°
17.0h Moon Close to Del3 Tau, SAO 93923 (Multiple star system), 4.3mag, with Sun below horizon, Separation=3.65°, Limb separation=3.37° =6.06 lunar dia., Position angle=292.0° W, Azimuth az=66.5°, Altitude h=6.1°, RA= 4h26.5m Dec=+17°58.0', Moon phase=99.8%, Sun altitude hsun=-7.8°
17.0h Moon Close to Del2 Tau, SAO 93907 (Multiple star system), 4.8mag, with Sun below horizon, Separation=3.84°, Limb separation=3.56° =6.40 lunar dia., Position angle=283.2° W, Azimuth az=67.4°, Altitude h=6.1°, RA= 4h25.1m Dec=+17°29.0', Moon phase=99.8%, Sun altitude hsun=-8.0°
17.1h Moon Close to The1 Tau, SAO 93955 (Close double star), 3.8mag, with Sun below horizon, Separation=2.82°, Limb separation=2.54° =4.57 lunar dia., Position angle=257.6° W, Azimuth az=68.9°, Altitude h=5.3°, RA= 4h29.6m Dec=+15°59.9', Moon phase=99.8%, Sun altitude hsun=-9.0°
17.1h Moon Close to The2 Tau, SAO 93957 (Multiple star system), 3.4mag, with Sun below horizon, Separation=2.82°, Limb separation=2.55° =4.57 lunar dia., Position angle=255.7° W, Azimuth az=68.9°, Altitude h=5.2°, RA= 4h29.7m Dec=+15°54.5', Moon phase=99.8%, Sun altitude hsun=-9.0°
17.2h Moon Close to 75 Tau, SAO 93950 (Close double star), 5.0mag, with Sun below horizon, Separation=2.84°, Limb separation=2.56° =4.60 lunar dia., Position angle=265.6° W, Azimuth az=69.4°, Altitude h=6.1°, RA= 4h29.5m Dec=+16°23.8', Moon phase=99.8%, Sun altitude hsun=-9.5°
17.2h Moon Close to 71 Tau, SAO 93932 (Double star, separation >10"), 4.5mag, with Sun below horizon, Separation=3.50°, Limb separation=3.22° =5.78 lunar dia., Position angle=253.9° W, Azimuth az=70.8°, Altitude h=6.1°, RA= 4h27.4m Dec=+15°39.4', Moon phase=99.8%, Sun altitude hsun=-9.8°
17.2h Moon Close to NSV 01627, SAO 93975 (Multiple star system), 4.8mag, with Sun below horizon, Separation=2.39°, Limb separation=2.11° =3.79 lunar dia., Position angle=260.7° W, Azimuth az=69.7°, Altitude h=6.1°, RA= 4h31.6m Dec=+16°13.8', Moon phase=99.8%, Sun altitude hsun=-9.9°
17.3h Moon Close to 81 Tau, SAO 93978, 5.5mag, with Sun below horizon, Separation=2.54°, Limb separation=2.26° =4.05 lunar dia., Position angle=249.3° W, Azimuth az=70.6°, Altitude h=6.1°, RA= 4h31.7m Dec=+15°43.7', Moon phase=99.8%, Sun altitude hsun=-10.3°
17.3h Moon Close to Aldebaran, Alp Tau, SAO 94027 (Multiple star system), 0.9mag, with Sun below horizon, Separation=1.12°, Limb separation=0.84° =1.50 lunar dia., Position angle=266.3° W, Azimuth az=69.1°, Altitude h=6.1°, RA= 4h37.0m Dec=+16°32.5', Moon phase=99.8%, Sun altitude hsun=-10.3°
17.5h Moon Close to Sig1 Tau, SAO 94051 (Close double star), 5.1mag, with Sun below horizon, Separation=0.95°, Limb separation=0.67° =1.20 lunar dia., Position angle=211.0° SW, Azimuth az=71.6°, Altitude h=6.9°, RA= 4h40.2m Dec=+15°49.9', Moon phase=99.8%, Sun altitude hsun=-12.0°
17.5h Moon Close to Sig2 Tau, SAO 94054 (Double star, separation >10"), 4.7mag, with Sun below horizon, Separation=0.83°, Limb separation=0.55° =0.99 lunar dia., Position angle=213.5° SW, Azimuth az=71.5°, Altitude h=7.0°, RA= 4h40.3m Dec=+15°57.0', Moon phase=99.8%, Sun altitude hsun=-12.0°
17h38m Carrington Solar Rotation Begin of Carrington rotation number 2198
18h47.0m Moon Full Moon (diameter: 33.3689', declination: +17.620°)
This is the biggest full moon of the year. Former larger full moon was at 14.11.2016. Next larger full moon is at 2.1.2018 (calculated for the geocenter)
This is the 2nd northernmost full moon of the year. Former more northern full moon was at 12.1.2017. Next more northern full moon is at 2.1.2018 (calculated for the geocenter)
19h07.7m Moon Topocentric Full Moon (Altitude=+20.1°, topocentric diameter: 33.580', topocentric airfree declination: 16.88°, maximum phase: 99.77%)
22.4h Moon Close to 97 Tau, SAO 94164, 5.1mag, Separation=1.58°, Limb separation=1.30° =2.30 lunar dia., Position angle=346.1° N, Azimuth az=135.4°, Altitude h=46.3°, RA= 4h52.4m Dec=+18°52.0', Moon phase=99.8%, Sun altitude hsun=-50.4°

Monday 4 December 2017Time (24-hour clock) Object (Link) Event
5.3h Moon Close to 104 Tau, SAO 94332 (Close double star), 4.9mag, Separation=0.79°, Limb separation=0.51° =0.91 lunar dia., Position angle=356.0° N, Azimuth az=264.8°, Altitude h=26.2°, RA= 5h00.5m Dec=+18°39.9', Moon phase=99.6%, Sun altitude hsun=-26.5°; (Northern limit: 38°00'E 20°48'N, alt=17.4°, bright limb; Southern limit: 38°00'E 12°27'S, alt= 7.9°, bright limb)
5h31m Venus (-3.9 mag) Close to Graffias, Bet1 Sco, SAO 159682 (Multiple star system): only 22.8' separated, brightness: 2.6 mag, Position angle=12.63° N; Sun elongation=8.73° West (morning)
11h52.2m Moon Perigee (distance moon center to earth center: 357486.0 km; closest point on earth ellipsoid with latitude 19.1° (WGS84), distance to moon center: 351110.2 km, apparent diameter: 34'02.1")
This is the 2nd nearest perigee of the year. Former closer perigee was at 26.5.2017. Next closer perigee is at 1.1.2018 (calculated for the closest point on the Earth ellipsoid)
17.5h Moon Close to 119 Tau, SAO 94628, 4.3mag, with Sun below horizon, Separation=2.96°, Limb separation=2.68° =4.81 lunar dia., Position angle=270.3° W, Azimuth az=60.1°, Altitude h=3.0°, RA= 5h33.3m Dec=+18°36.3', Moon phase=98.5%, Sun altitude hsun=-12.0°
21.5h Moon Close to Chi1 Ori, SAO 77705, 4.4mag, Separation=1.36°, Limb separation=1.08° =1.92 lunar dia., Position angle=351.1° N, Azimuth az=103.4°, Altitude h=33.3°, RA= 5h55.5m Dec=+20°16.6', Moon phase=98.0%, Sun altitude hsun=-44.1°

Tuesday 5 December 2017Time (24-hour clock) Object (Link) Event
1.3h Moon Close to 64 Ori, SAO 95166 (Close double star), 5.1mag, Separation=0.51°, Limb separation=0.23° =0.41 lunar dia., Position angle=355.5° N, Azimuth az=172.0°, Altitude h=53.5°, RA= 6h04.5m Dec=+19°41.2', Moon phase=97.4%, Sun altitude hsun=-54.7°; (Northern limit: 38°00'E 39°20'N, alt=70.3°, bright limb; Southern limit: 38°00'E 14°25'N, alt=72.6°, bright limb)
1.6h Moon Close to Chi2 Ori, SAO 77911 (Multiple star system), 4.6mag, Separation=0.95°, Limb separation=0.67° =1.18 lunar dia., Position angle=355.9° N, Azimuth az=178.5°, Altitude h=54.0°, RA= 6h05.0m Dec=+20°00.1', Moon phase=97.4%, Sun altitude hsun=-53.6°; (Northern limit: 38°00'E 14°13'N, alt=83.6°, bright limb)
6h50.1m Moon Emersion of 71 Ori, SAO 95432 (Multiple star system), 5.2mag, Position Angle=261.7°, Azimuth az=269.3°, Altitude h=23.7°, RA= 6h15.9m Dec=+19°00.8', Moon phase=96.5%, Sun altitude hsun=-14.2° (dark limb); (Southern limit: 38°00'E 37°26'N, alt=23.9°, bright limb)
7.5h Moon Close to Nu Gem, SAO 78423 (Multiple star system), 4.1mag, with Sun below horizon, Separation=2.82°, Limb separation=2.54° =4.54 lunar dia., Position angle=69.1° E, Azimuth az=275.7°, Altitude h=20.8°, RA= 6h30.0m Dec=+20°11.8', Moon phase=96.4%, Sun altitude hsun=-8.9°
14h42.0m Moon Max. Decl. North (declination: +20.013°)
This is the northernmost moon position of the year. Former more northern moon position was at 2.8.2013. Next more northern moon position is at 1.1.2018 (calculated for the geocenter)

This is the lowest northernmost moon position of the next 10 years. Former lower northern northernmost moon position was at 8.11.2017. Next lower northern northernmost moon position is at 19.2.2032 (calculated for the geocenter)
23.3h Moon Close to Mekbuda, Zet Gem, SAO 79031 (Multiple star system), 4.0mag, Separation=1.29°, Limb separation=1.01° =1.80 lunar dia., Position angle=358.2° N, Azimuth az=113.5°, Altitude h=39.2°, RA= 7h05.2m Dec=+20°32.4', Moon phase=92.8%, Sun altitude hsun=-54.5°

Wednesday 6 December 2017Time (24-hour clock) Object (Link) Event
7.1h Moon Close to 56 Gem, SAO 79328 (Double star, separation >10"), 5.1mag, Separation=1.45°, Limb separation=1.17° =2.10 lunar dia., Position angle=8.8° N, Azimuth az=259.8°, Altitude h=31.5°, RA= 7h23.0m Dec=+20°24.4', Moon phase=90.7%, Sun altitude hsun=-12.4°; (Northern limit: 38°00'E 26°12'S, alt= 2.2°, bright limb)
14h32m Mercury Conjunction in Right Ascension with Saturn (1.3° separated from center of Saturn), position angle=0.00° N
15h06m Mercury Conjunction with Saturn, 1.3° separated from center of Saturn, position angle=0.70° N. Distance to earth: 0.742 AU
20.1h Moon Close to 81 Gem, SAO 97221 (Close double star), 4.9mag, with Sun below horizon, Separation=3.17°, Limb separation=2.89° =5.26 lunar dia., Position angle=275.9° W, Azimuth az=65.6°, Altitude h=6.1°, RA= 7h47.2m Dec=+18°27.8', Moon phase=86.6%, Sun altitude hsun=-33.0°
20.1h Moon Close to 85 Gem, SAO 79799 (Close double star), 5.4mag, with Sun below horizon, Separation=1.93°, Limb separation=1.66° =3.02 lunar dia., Position angle=332.7° NW, Azimuth az=63.0°, Altitude h=6.1°, RA= 7h56.7m Dec=+19°50.0', Moon phase=86.6%, Sun altitude hsun=-33.0°

Thursday 7 December 2017Time (24-hour clock) Object (Link) Event
1.5h Moon Close to Zet2 Cnc, SAO 97645 (Multiple star system), 5.1mag, Separation=0.32°, Limb separation=0.04° =0.08 lunar dia., Position angle=186.8° S, Azimuth az=134.2°, Altitude h=44.5°, RA= 8h13.2m Dec=+17°35.4', Moon phase=84.7%, Sun altitude hsun=-54.3°; (Southern limit: 38°00'E 60°55'N, alt=40.1°, bright limb)
3h Meteor Shower Geminids (GEM) (active until 17.12., from constellation Gemini/Gem), yellowish, bright meteors.
5h22m Mercury (1.6 mag) Close to Saturn: 1.2° separated from center of Saturn, brightness: 0.5 mag, position angle=22.05° N; Sun elongation=12.86° East (evening)
6.8h Moon Close to The Cnc, SAO 97881 (Multiple star system), 5.3mag, with Sun below horizon, Separation=2.13°, Limb separation=1.85° =3.35 lunar dia., Position angle=73.7° E, Azimuth az=237.8°, Altitude h=40.3°, RA= 8h32.6m Dec=+18°01.9', Moon phase=82.8%, Sun altitude hsun=-14.9°
7.6h Moon Close to Asellus Australis, Del Cnc, SAO 98087 (Multiple star system), 3.9mag, with Sun below horizon, Separation=4.79°, Limb separation=4.51° =8.19 lunar dia., Position angle=81.7° E, Azimuth az=246.6°, Altitude h=36.2°, RA= 8h45.7m Dec=+18°05.1', Moon phase=82.5%, Sun altitude hsun=-8.9°
21.5h Moon Close to Omi1 Cnc, SAO 98247, 5.2mag, with Sun below horizon, Separation=1.61°, Limb separation=1.34° =2.46 lunar dia., Position angle=253.3° W, Azimuth az=71.5°, Altitude h=6.1°, RA= 8h58.2m Dec=+15°15.1', Moon phase=77.0%, Sun altitude hsun=-44.6°

Friday 8 December 2017Time (24-hour clock) Object (Link) Event
1h03m Sun Earth crosses the equator of the Sun north to south
2.9h Moon Close to Pi 2 Cnc, SAO 98456, 5.4mag, Separation=0.35°, Limb separation=0.08° =0.15 lunar dia., Position angle=193.9° S, Azimuth az=144.9°, Altitude h=44.6°, RA= 9h16.2m Dec=+14°51.9', Moon phase=74.8%, Sun altitude hsun=-46.1°; (Southern limit: 38°00'E 63°32'N, alt=37.8°, bright limb)
22.4h Moon Close to Psi Leo, SAO 98733 (Double star, separation >10"), 5.4mag, with Sun below horizon, Separation=4.87°, Limb separation=4.60° =8.61 lunar dia., Position angle=288.9° W, Azimuth az=73.9°, Altitude h=6.1°, RA= 9h44.7m Dec=+13°56.3', Moon phase=66.5%, Sun altitude hsun=-50.3°
22.8h Moon Close to Nu Leo, SAO 98876 (Close double star), 5.3mag, with Sun below horizon, Separation=1.30°, Limb separation=1.04° =1.94 lunar dia., Position angle=273.7° W, Azimuth az=76.8°, Altitude h=6.1°, RA= 9h59.2m Dec=+12°21.5', Moon phase=66.3%, Sun altitude hsun=-52.5°

Saturday 9 December 2017Time (24-hour clock) Object (Link) Event
0h31.1m Moon Immersion of Regulus, Alp Leo, SAO 98967 (Multiple star system), 1.4mag, Position angle=130.2°, Azimuth az=98.7°, Altitude h=20.2°, RA=10h00.3m Dec=+11°52.7', Moon phase=65.5%, Sun altitude hsun=-56.7° (bright limb); (Southern limit: 38°00'E 47°17'N, alt=20.4°, bright limb)
1h27.1m Moon Emersion of Regulus, Alp Leo, SAO 98967 (Multiple star system), 1.4mag, Position Angle=258.6°, Azimuth az=111.3°, Altitude h=27.7°, RA=10h00.3m Dec=+11°52.7', Moon phase=65.1%, Sun altitude hsun=-54.6° (dark limb); (Southern limit: 38°00'E 47°17'N, alt=20.4°, bright limb)
3.8h Moon Close to 37 Leo, SAO 99034, 5.4mag, Separation=2.14°, Limb separation=1.87° =3.48 lunar dia., Position angle=18.9° N, Azimuth az=143.9°, Altitude h=43.1°, RA=10h17.6m Dec=+13°38.3', Moon phase=64.0%, Sun altitude hsun=-39.6°
7.6h Moon Close to Rho Leo, SAO 118355 (Close double star), 3.8mag, with Sun below horizon, Separation=3.53°, Limb separation=3.26° =6.07 lunar dia., Position angle=120.3° SE, Azimuth az=214.7°, Altitude h=38.8°, RA=10h33.7m Dec= +9°12.8', Moon phase=62.3%, Sun altitude hsun=-8.9°
14h06m Venus (-3.9 mag) Close to Antares, Alp Sco, SAO 184415 (Double star, separation <10"): 5.0° separated, brightness: 1.1 mag, Position angle=190.12° S; Sun elongation=7.41° West (morning)
23.7h Moon Close to 53 Leo, SAO 99305, 5.3mag, with Sun below horizon, Separation=3.33°, Limb separation=3.07° =5.83 lunar dia., Position angle=312.5° NW, Azimuth az=80.2°, Altitude h=6.1°, RA=10h50.2m Dec=+10°27.0', Moon phase=55.1%, Sun altitude hsun=-56.2°

Sunday 10 December 2017Time (24-hour clock) Object (Link) Event
3.0h Moon Close to Chi Leo, SAO 118648 (Multiple star system), 4.6mag, Separation=0.47°, Limb separation=0.21° =0.39 lunar dia., Position angle=200.1° S, Azimuth az=121.1°, Altitude h=27.5°, RA=11h05.9m Dec= +7°14.4', Moon phase=53.7%, Sun altitude hsun=-46.1°; (Southern limit: 38°00'E 75°51'N, alt=16.5°, bright limb)
7.6h Moon Close to Sig Leo, SAO 118804, 4.0mag, with Sun below horizon, Separation=2.17°, Limb separation=1.91° =3.61 lunar dia., Position angle=116.0° SE, Azimuth az=200.0°, Altitude h=38.4°, RA=11h22.0m Dec= +5°55.9', Moon phase=51.6%, Sun altitude hsun=-9.0°
10h51.4m Moon Last Quarter (diameter: 31.3106', declination: +7.033°)
11h29.3m Moon Topocentric Last Quarter (Altitude=+13.9°, topocentric diameter: 31.431', topocentric airfree declination: 6.15°)
15h50.3m Moon Max. Libration East: Mare Crisium limb is tipped into view (Earth's selenographic longitude: 7.414°, latitude: -3.752°)
This is the 2nd easternmost east libration of the year. Former more eastern east libration was at 31.5.2017. Next more eastern east libration is at 7.1.2018 (calculated for the geocenter)
Machholz →Star chart Comet '96P' brightest
Distance to Sun center=1.189 AU, Distance to Earth=2.150 AU, Magnitude= 3.7 mag, Elongation= 9.3°, RA=17h25.0m Dec=-14°19.0' (J2000, geocentric) (in constellation Serpens Cauda/Ser)

Monday 11 December 2017Time (24-hour clock) Object (Link) Event
1.0h Moon Close to Nu Vir, SAO 119035, 4.0mag, with Sun below horizon, Separation=3.18°, Limb separation=2.92° =5.64 lunar dia., Position angle=329.0° NW, Azimuth az=87.4°, Altitude h=6.1°, RA=11h46.8m Dec= +6°25.8', Moon phase=43.9%, Sun altitude hsun=-56.2°
4.6h Moon Close to 7 Vir, SAO 119156, 5.4mag, Separation=0.54°, Limb separation=0.28° =0.54 lunar dia., Position angle=23.9° NE, Azimuth az=135.6°, Altitude h=29.6°, RA=12h00.9m Dec= +3°33.4', Moon phase=42.3%, Sun altitude hsun=-33.1°
7.2h Moon Close to 16 Vir, SAO 119341 (Double star, separation >10"), 5.0mag, with Sun below horizon, Separation=4.33°, Limb separation=4.07° =7.81 lunar dia., Position angle=81.9° E, Azimuth az=175.4°, Altitude h=37.2°, RA=12h21.2m Dec= +3°12.9', Moon phase=41.2%, Sun altitude hsun=-11.9°

Tuesday 12 December 2017Time (24-hour clock) Object (Link) Event

2.7h Moon Close to Porrima, Gam Vir, SAO 138917 (Multiple star system), 2.8mag, with Sun below horizon, Separation=0.87°, Limb separation=0.61° =1.19 lunar dia., Position angle=228.4° SW, Azimuth az=101.8°, Altitude h=6.1°, RA=12h42.6m Dec= -1°32.7', Moon phase=33.2%, Sun altitude hsun=-48.5°
2.7h Moon Close to g29 Virginis (Multiple star system), 3.5mag, with Sun below horizon, Separation=0.86°, Limb separation=0.61° =1.19 lunar dia., Position angle=228.2° SW, Azimuth az=101.8°, Altitude h=6.1°, RA=12h42.6m Dec= -1°32.7', Moon phase=33.2%, Sun altitude hsun=-48.5°
14.7h Mercury Perihelion (distance to sun: 0.3075 AU)
17h29.0m Sun Earliest Dusk (sun at -12°) of the Year for this site
19h27.2m Moon Max. Libration (8.923°)

Wednesday 13 December 2017Time (24-hour clock) Object (Link) Event
4.8h Mercury Conjunction (inferior), 1.7° separated from center of Sun. Distance to earth: 0.678 AU
5.7h Mercury Closest Approach (distance to earth: 0.678 AU, brightness: 5.9 mag, diameter: 9.91")

Thursday 14 December 2017Time (24-hour clock) Object (Link) Event
5.0h Moon Close to Mars, 1.6mag, with Sun below horizon, Separation=5.18°, Limb separation=4.94° =9.87 lunar dia., Position angle=248.6° W, Azimuth az=121.0°, Altitude h=6.1°, RA=14h04.4m Dec=-11°33.4', Moon phase=15.5%, Sun altitude hsun=-30.7°
6h Meteor Maximum Geminids (GEM) ZHR=88
Local hour rate=32 Velocity=36.2km/s (medium speed)
Radiant: RA=7.5h/113° Dec=32.5° (J2000) (in constellation Gemini/Gem)
Solar longitude=262.1° (J2000)
Stream active from 7. to 17. December
8.5h Moon Close to Jupiter, -1.8mag, with Sun below horizon, Separation=6.19°, Limb separation=6.00° =11.95 lunar dia., Position angle=138.7° SE, Azimuth az=162.4°, Altitude h=17.6°, RA=14h46.3m Dec=-14°58.2', Moon phase=14.5%, Sun altitude hsun=-2.7°
15h52.9m Sun Earliest Sunset of the Year for this site

Friday 15 December 2017Time (24-hour clock) Object (Link) Event
1h53.8m Moon Max. Libration South: South Pole is tipped into view (Earth's selenographic longitude: 4.872°, latitude: -6.662°)
5.8h Moon Close to Xi 2 Lib, SAO 158915, 5.5mag, with Sun below horizon, Separation=4.12°, Limb separation=3.87° =7.80 lunar dia., Position angle=296.5° NW, Azimuth az=120.9°, Altitude h=6.1°, RA=14h57.7m Dec=-11°28.7', Moon phase=9.0%, Sun altitude hsun=-24.0°
7.7h Moon Close to Zuben Elakrab, Gam Lib, SAO 159370 (Multiple star system), 3.9mag, with Sun below horizon, Separation=5.09°, Limb separation=4.84° =9.73 lunar dia., Position angle=103.5° E, Azimuth az=139.1°, Altitude h=11.1°, RA=15h36.5m Dec=-14°50.7', Moon phase=8.6%, Sun altitude hsun=-8.9°
15h00m Mercury (3.9 mag) Close to Venus: 2.2° separated from center of Venus, brightness: -3.9 mag, position angle=190.94° S; Sun elongation=5.95° West (morning)
17h09m Mercury Conjunction with Venus, 2.2° separated from center of Venus, position angle=185.12° S. Distance to earth: 0.688 AU
19h04m Mercury Conjunction in Right Ascension with Venus (2.2° separated from center of Venus), position angle=180.00° S

Saturday 16 December 2017Time (24-hour clock) Object (Link) Event
6.9h Moon Close to Eta Lib, SAO 159466, 5.4mag, with Sun below horizon, Separation=4.38°, Limb separation=4.13° =8.37 lunar dia., Position angle=279.6° W, Azimuth az=128.0°, Altitude h=5.1°, RA=15h45.1m Dec=-15°43.5', Moon phase=4.2%, Sun altitude hsun=-15.0°
7.1h Moon Close to 48 Lib, SAO 159607 (Close double star), 5.0mag, with Sun below horizon, Separation=2.34°, Limb separation=2.09° =4.24 lunar dia., Position angle=334.2° NW, Azimuth az=126.9°, Altitude h=6.1°, RA=15h59.2m Dec=-14°19.6', Moon phase=4.1%, Sun altitude hsun=-13.4°
7.4h Moon Close to The Lib, SAO 159563 (Close double star), 4.1mag, with Sun below horizon, Separation=2.19°, Limb separation=1.94° =3.93 lunar dia., Position angle=262.3° W, Azimuth az=132.4°, Altitude h=6.1°, RA=15h54.8m Dec=-16°46.6', Moon phase=4.1%, Sun altitude hsun=-11.4°
7.5h Moon Close to 49 Lib, SAO 159625, 5.5mag, with Sun below horizon, Separation=0.65°, Limb separation=0.41° =0.82 lunar dia., Position angle=261.3° W, Azimuth az=132.0°, Altitude h=6.1°, RA=16h01.3m Dec=-16°34.9', Moon phase=4.1%, Sun altitude hsun=-10.8°

Sunday 17 December 2017Time (24-hour clock) Object (Link) Event
3h Meteor Shower Ursae Minorids (Ursids, URS) (active until 26.12., from constellation Ursa Minor/UMi), sharp maximum, white and yellow meteors.
7.3h Moon Close to Phi Oph, SAO 159963 (Multiple star system), 4.3mag, with Sun below horizon, Separation=5.34°, Limb separation=5.10° =10.39 lunar dia., Position angle=293.3° NW, Azimuth az=124.4°, Altitude h=2.3°, RA=16h32.1m Dec=-16°38.8', Moon phase=1.2%, Sun altitude hsun=-12.0°

Monday 18 December 2017Time (24-hour clock) Object (Link) Event
9h30.4m Moon New Moon (diameter: 29.3932', declination: -19.503°)
This is the 2nd farthest new moon of the last 10 years, the farthest of the year, and the 2nd farthest of the decade. Former farther new moon was at 27.12.2008. Next farther new moon is at 4.2.2019 (calculated for the geocenter)
9h56.2m Moon Topocentric New Moon (Altitude= +7.4°, topocentric diameter: 29.455', topocentric airfree declination: -20.36°, minimum phase: 0.07%)
18h08m Venus (-3.9 mag) Close to The Oph, SAO 185320 (Close double star): 1.9° separated, brightness: 3.3 mag, Position angle=185.41° S; Sun elongation=5.19° West (morning)

Tuesday 19 December 2017Time (24-hour clock) Object (Link) Event
4h42.8m Moon Apogee (distance moon center to earth center: 406608.6 km; closest point on earth ellipsoid with latitude -20.0° (WGS84), distance to moon center: 400233.0 km, apparent diameter: 29'51.5")
This is the 3rd farthest apogee of the last 10 years, the farthest of the year, and the 3rd farthest of the decade. Former farther apogee was at 31.10.2016. Next farther apogee is at 24.3.2020 (calculated for the closest point on the Earth ellipsoid)
12h31.5m Moon Max. Decl. South (declination: -20.062°)
This is the southernmost moon position of the year. Former more southern moon position was at 20.7.2013. Next more southern moon position is at 11.3.2018 (calculated for the geocenter)
This is the 3rd lowest southernmost moon position of the next 10 years. Former lower southern southernmost moon position was at 22.11.2017. Next lower southern southernmost moon position is at 15.1.2018 (calculated for the geocenter)
17.1h Moon Close to Albaldah, Pi Sgr, SAO 187756 (Multiple star system), 2.9mag, with Sun below horizon, Separation=4.92°, Limb separation=4.67° =9.54 lunar dia., Position angle=90.8° E, Azimuth az=225.9°, Altitude h=2.4°, RA=19h10.8m Dec=-20°59.6', Moon phase=1.6%, Sun altitude hsun=-9.0°
17.1h Moon Close to Xi 2 Sgr, SAO 187504, 3.5mag, with Sun below horizon, Separation=2.13°, Limb separation=1.88° =3.84 lunar dia., Position angle=96.0° E, Azimuth az=228.4°, Altitude h=1.2°, RA=18h58.8m Dec=-21°04.8', Moon phase=1.6%, Sun altitude hsun=-9.0°

Wednesday 20 December 2017Time (24-hour clock) Object (Link) Event
16.8h Moon Close to 43 Sgr, SAO 162413 (Close double star), 4.9mag, with Sun below horizon, Separation=5.13°, Limb separation=4.89° =9.94 lunar dia., Position angle=286.2° W, Azimuth az=222.4°, Altitude h=6.1°, RA=19h18.6m Dec=-18°55.1', Moon phase=4.7%, Sun altitude hsun=-6.9°

17.5h Moon Close to 56 Sgr, SAO 162964, 4.9mag, with Sun below horizon, Separation=1.60°, Limb separation=1.35° =2.76 lunar dia., Position angle=71.0° E, Azimuth az=224.7°, Altitude h=4.3°, RA=19h47.4m Dec=-19°43.0', Moon phase=4.8%, Sun altitude hsun=-12.0°

Thursday 21 December 2017Time (24-hour clock) Object (Link) Event
17.5h Moon Close to Rho Cap, SAO 163614 (Multiple star system), 4.9mag, Separation=1.06°, Limb separation=0.81° =1.64 lunar dia., Position angle=345.2° N, Azimuth az=216.8°, Altitude h=9.6°, RA=20h29.8m Dec=-17°45.2', Moon phase=9.6%, Sun altitude hsun=-11.8°; (Northern limit: 38°00'E 9°59'S, alt=49.7°, bright limb; Southern limit: 38°00'E 48°28'S, alt=51.3°, bright limb)
17.5h Moon Close to Okul, Pi Cap, SAO 163592 (Multiple star system), 5.1mag, with Sun below horizon, Separation=0.89°, Limb separation=0.65° =1.31 lunar dia., Position angle=314.0° NW, Azimuth az=217.4°, Altitude h=9.1°, RA=20h28.3m Dec=-18°00.1', Moon phase=9.6%, Sun altitude hsun=-12.0°
17.8h Moon Close to Sig Cap, SAO 163445, 5.3mag, with Sun below horizon, Separation=2.62°, Limb separation=2.38° =4.82 lunar dia., Position angle=263.6° W, Azimuth az=222.0°, Altitude h=6.1°, RA=20h20.4m Dec=-19°03.7', Moon phase=9.7%, Sun altitude hsun=-13.9°
18.3h Moon Close to Ups Cap, SAO 163779, 5.2mag, with Sun below horizon, Separation=2.17°, Limb separation=1.92° =3.90 lunar dia., Position angle=73.1° E, Azimuth az=224.5°, Altitude h=6.1°, RA=20h41.0m Dec=-18°04.5', Moon phase=9.8%, Sun altitude hsun=-17.9°
19h27.9m Sun Southern Solstice (declination: -23.435°)
20h Saturn Farest Distance (distance to earth: 11.048 AU, brightness: 0.4 mag, diameter: 14.98")

Friday 22 December 2017Time (24-hour clock) Object (Link) Event
0h Saturn Conjunction: only 54.4' separated from center of Sun. Distance to earth: 11.048 AU
17.1h Moon Close to The Cap, SAO 164132, 4.1mag, with Sun below horizon, Separation=3.15°, Limb separation=2.90° =5.83 lunar dia., Position angle=259.6° W, Azimuth az=204.2°, Altitude h=14.2°, RA=21h06.9m Dec=-17°00.7', Moon phase=15.8%, Sun altitude hsun=-9.0°
17.9h Moon Close to 29 Cap, SAO 164263, 5.3mag, with Sun below horizon, Separation=1.73°, Limb separation=1.48° =2.98 lunar dia., Position angle=322.5° NW, Azimuth az=213.6°, Altitude h=13.5°, RA=21h16.7m Dec=-15°05.8', Moon phase=16.0%, Sun altitude hsun=-15.0°
18.8h Moon Close to Iot Cap, SAO 164346, 4.3mag, Separation=0.44°, Limb separation=0.19° =0.39 lunar dia., Position angle=160.7° S, Azimuth az=224.3°, Altitude h=7.6°, RA=21h23.2m Dec=-16°45.5', Moon phase=16.3%, Sun altitude hsun=-22.5°
19.8h Moon Close to 42 Cap, SAO 164580 (Close double star), 5.2mag, with Sun below horizon, Separation=4.95°, Limb separation=4.70° =9.47 lunar dia., Position angle=62.5° NE, Azimuth az=233.9°, Altitude h=6.1°, RA=21h42.5m Dec=-13°58.1', Moon phase=16.6%, Sun altitude hsun=-30.5°
20.2h Pan-STARRS →Star chart Comet 'C/2016 R2' closest to earth
Distance to Sun center=2.978 AU, Distance to Earth=2.053 AU, Magnitude= 6.2 mag, Elongation=155.9°, RA= 4h35.6m Dec=+11°25.8' (J2000, geocentric) (in constellation Taurus/Tau)
22h33m Jupiter (-1.8 mag) Close to Zuben Elgenubi, Alp2 Lib, SAO 158840 (Multiple star system): only 42.4' separated, brightness: 2.8 mag, Position angle=196.46° S; Sun elongation=45.83° West (morning)

Saturday 23 December 2017Time (24-hour clock) Object (Link) Event
1h Meteor Maximum Ursae Minorids (Ursids, URS) ZHR=12.0
Local hour rate=4.1 Velocity=34.8km/s (medium speed)
Radiant: RA=14.6h/219° Dec=75.3° (J2000) (in constellation Ursa Minor/UMi)
Solar longitude=271.0° (J2000)
Stream active from 17. to 26. December
17.5h Moon Close to Iot Aqr, SAO 164861 (Close double star), 4.3mag, with Sun below horizon, Separation=0.53°, Limb separation=0.28° =0.55 lunar dia., Position angle=243.3° SW, Azimuth az=197.0°, Altitude h=18.9°, RA=22h07.4m Dec=-13°47.0', Moon phase=23.6%, Sun altitude hsun=-12.0°
17.5h Moon Close to Mu Cap, SAO 164713, 5.1mag, with Sun below horizon, Separation=3.65°, Limb separation=3.40° =6.77 lunar dia., Position angle=271.7° W, Azimuth az=200.4°, Altitude h=18.6°, RA=21h54.2m Dec=-13°28.1', Moon phase=23.6%, Sun altitude hsun=-12.0°
20.5h Moon Close to 42 Aqr, SAO 164974, 5.3mag, with Sun below horizon, Separation=0.98°, Limb separation=0.73° =1.45 lunar dia., Position angle=69.3° E, Azimuth az=236.5°, Altitude h=6.1°, RA=22h17.7m Dec=-12°44.6', Moon phase=24.6%, Sun altitude hsun=-36.1°
20.5h Moon Close to 38 Aqr, SAO 164910, 5.4mag, Separation=1.71°, Limb separation=1.46° =2.92 lunar dia., Position angle=339.1° N, Azimuth az=239.1°, Altitude h=6.1°, RA=22h11.6m Dec=-11°28.6', Moon phase=24.6%, Sun altitude hsun=-36.5°
21.0h Moon Close to Sig Aqr, SAO 165134, 4.8mag, with Sun below horizon, Separation=4.76°, Limb separation=4.51° =9.02 lunar dia., Position angle=59.0° NE, Azimuth az=240.9°, Altitude h=6.1°, RA=22h31.6m Dec=-10°35.2', Moon phase=24.8%, Sun altitude hsun=-40.1°

Sunday 24 December 2017Time (24-hour clock) Object (Link) Event
3h52m Mercury (0.1 mag) Close to Antares, Alp Sco, SAO 184415 (Double star, separation <10"): 8.1° separated, brightness: 1.1 mag, Position angle=209.41° SW; Sun elongation=19.53° West (morning)
21.8h Moon Close to Psi1 Aqr, SAO 146598 (Multiple star system), 4.2mag, with Sun below horizon, Separation=3.06°, Limb separation=2.81° =5.54 lunar dia., Position angle=85.3° E, Azimuth az=244.1°, Altitude h=6.1°, RA=23h16.8m Dec= -8°59.5', Moon phase=34.1%, Sun altitude hsun=-46.6°
22.0h Moon Close to Chi Aqr, SAO 146612 (Close double star), 4.9mag, with Sun below horizon, Separation=3.58°, Limb separation=3.33° =6.57 lunar dia., Position angle=63.7° NE, Azimuth az=246.8°, Altitude h=6.1°, RA=23h17.8m Dec= -7°37.8', Moon phase=34.1%, Sun altitude hsun=-47.7°
24h Mercury Magnitude brightens to 0 mag

Monday 25 December 2017Time (24-hour clock) Object (Link) Event
6h28m Sun Equation of time is zero; the apparent solar time is now equal to the mean solar time
20h07m Venus (-4.0 mag) Close to Saturn: 1.1° separated from center of Saturn, brightness: 0.5 mag, position angle=1.67° N; Sun elongation=3.50° West (morning)
20h48m Venus Conjunction in Right Ascension with Saturn (1.1° separated from center of Saturn), position angle=360.00° N
20h55m Venus Conjunction with Saturn, 1.1° separated from center of Saturn, position angle=359.72° N. Distance to earth: 1.706 AU
23.1h Moon Close to 27 Psc, SAO 147008 (Close double star), 4.9mag, with Sun below horizon, Separation=1.85°, Limb separation=1.59° =3.11 lunar dia., Position angle=38.7° NE, Azimuth az=254.7°, Altitude h=6.1°, RA=23h59.6m Dec= -3°27.5', Moon phase=44.4%, Sun altitude hsun=-54.0°
23.2h Moon Close to 29 Psc, SAO 147041, 5.1mag, with Sun below horizon, Separation=2.72°, Limb separation=2.47° =4.81 lunar dia., Position angle=44.1° NE, Azimuth az=255.7°, Altitude h=6.1°, RA= 0h02.7m Dec= -2°55.8', Moon phase=44.5%, Sun altitude hsun=-54.5°

Tuesday 26 December 2017Time (24-hour clock) Object (Link) Event
11h41.9m Moon Topocentric First Quarter (Altitude= -9.2°, topocentric diameter: 30.885', topocentric airfree declination: -2.59°)
12h20.1m Moon First Quarter (diameter: 30.9784', declination: -1.701°)
21h09.4m Moon Max. Libration West: Crater Grimaldi is tipped into view (Earth's selenographic longitude: -7.939°, latitude: +5.396°)
This is the westernmost total libration of the year. Former more western total libration was at 13.2.2015. Next more western total libration is at 1.4.2020 (calculated for the geocenter)

Wednesday 27 December 2017Time (24-hour clock) Object (Link) Event

17.6h Moon Close to 89 Psc, SAO 109793, 5.1mag, with Sun below horizon, Separation=1.84°, Limb separation=1.58° =2.97 lunar dia., Position angle=291.2° W, Azimuth az=147.6°, Altitude h=33.6°, RA= 1h18.7m Dec= +3°42.4', Moon phase=63.0%, Sun altitude hsun=-12.0°
22h01.3m Moon Max. Libration (9.862°)
This is the largest total libration of the year. Former larger total libration was at 31.3.2016. Next larger total libration is at 7.7.2018 (calculated for the geocenter)

Thursday 28 December 2017Time (24-hour clock) Object (Link) Event
1.6h Moon Close to Nu Psc, SAO 110065, 4.5mag, with Sun below horizon, Separation=1.27°, Limb separation=1.01° =1.90 lunar dia., Position angle=34.1° NE, Azimuth az=271.1°, Altitude h=6.1°, RA= 1h42.4m Dec= +5°34.6', Moon phase=66.4%, Sun altitude hsun=-55.2°
2.5h Mercury Dichotomy/Half phase
13.9h Moon Golden Handle visible on the Moon from 13.4h -21.9h (htop=42° at S at 20.2h) (sun rises on the Jura mountains, while Sinus Iridum is still in shadow)
17.6h Moon Close to Xi 1 Cet, SAO 110408 (Close double star), 4.4mag, with Sun below horizon, Separation=1.75°, Limb separation=1.48° =2.74 lunar dia., Position angle=321.5° NW, Azimuth az=131.2°, Altitude h=33.8°, RA= 2h14.0m Dec= +8°55.7', Moon phase=73.3%, Sun altitude hsun=-12.0°
23h12.0m Moon Immersion of Xi 2 Cet, SAO 110543, 4.3mag, Position angle=98.8°, Azimuth az=230.7°, Altitude h=32.7°, RA= 2h29.1m Dec= +8°32.3', Moon phase=75.6%, Sun altitude hsun=-54.2° (dark limb); (Southern limit: 38°00'E 46°28'N, alt=32.7°, bright limb)
23.6h Moon Close to Xi Ari, SAO 92932 (Close double star), 5.5mag, Separation=2.17°, Limb separation=1.90° =3.51 lunar dia., Position angle=340.6° N, Azimuth az=238.4°, Altitude h=31.7°, RA= 2h25.8m Dec=+10°41.4', Moon phase=75.7%, Sun altitude hsun=-55.7°

Friday 29 December 2017Time (24-hour clock) Object (Link) Event
3.0h Moon Close to Mu Cet, SAO 110723 (Multiple star system), 4.3mag, with Sun below horizon, Separation=2.65°, Limb separation=2.38° =4.43 lunar dia., Position angle=68.0° E, Azimuth az=279.3°, Altitude h=6.1°, RA= 2h45.9m Dec=+10°11.2', Moon phase=77.1%, Sun altitude hsun=-47.2°
8h59.6m Sun Latest Sunrise of the Year for this site
12h23.9m Moon Max. Libration North: North Pole and Mare Frigoris are tipped into view (Earth's selenographic longitude: -6.268°, latitude: +6.706°)

Saturday 30 December 2017Time (24-hour clock) Object (Link) Event
2h17.9m Moon Immersion of 5 Tau, SAO 93469 (Close double star), 4.1mag, Position angle=114.4°, Azimuth az=263.3°, Altitude h=20.2°, RA= 3h31.9m Dec=+12°59.7', Moon phase=85.8%, Sun altitude hsun=-51.7° (dark limb); (Southern limit: 38°00'E 47°57'N, alt=15.4°, bright limb)
14h31m Venus (-4.0 mag) Close to Kaus Borealis, Lam Sgr, SAO 186841 (Double star, separation >10"): 1.7° separated, brightness: 2.8 mag, Position angle=178.87° S; Sun elongation=2.38° West (morning)
20h47.5m Moon Immersion of Hyadum I, Gam Tau, SAO 93868 (Close double star), 3.6mag, Position angle=119.9°, Azimuth az=149.9°, Altitude h=46.6°, RA= 4h20.8m Dec=+15°40.1', Moon phase=91.6%, Sun altitude hsun=-37.9° (dark limb); (Southern limit: 38°00'E 49°43'N, alt=53.4°, bright limb)
21.3h Moon Close to 58 Tau, SAO 93876, 5.3mag, Separation=0.77°, Limb separation=0.49° =0.87 lunar dia., Position angle=164.2° S, Azimuth az=159.8°, Altitude h=47.6°, RA= 4h21.6m Dec=+15°00.1', Moon phase=91.7%, Sun altitude hsun=-41.7°
23.6h Moon Close to Hyadum II, Del1 Tau, SAO 93897 (Multiple star system), 3.8mag, Separation=1.46°, Limb separation=1.18° =2.11 lunar dia., Position angle=347.3° N, Azimuth az=210.3°, Altitude h=48.6°, RA= 4h24.0m Dec=+17°34.9', Moon phase=92.4%, Sun altitude hsun=-55.6°; (Northern limit: 38°00'E 15°23'S, alt=53.2°, bright limb)

Sunday 31 December 2017Time (24-hour clock) Object (Link) Event
0.1h Moon Close to Del2 Tau, SAO 93907 (Multiple star system), 4.8mag, Separation=1.31°, Limb separation=1.03° =1.84 lunar dia., Position angle=348.1° N, Azimuth az=219.3°, Altitude h=46.3°, RA= 4h25.1m Dec=+17°29.0', Moon phase=92.5%, Sun altitude hsun=-56.7°; (Northern limit: 38°00'E 4°35'S, alt=55.1°, bright limb)
0.4h Moon Close to 71 Tau, SAO 93932 (Double star, separation >10"), 4.5mag, Separation=0.59°, Limb separation=0.31° =0.56 lunar dia., Position angle=168.6° S, Azimuth az=223.4°, Altitude h=43.1°, RA= 4h27.4m Dec=+15°39.3', Moon phase=92.6%, Sun altitude hsun=-57.1°; (Southern limit: 38°00'E 83°50'N, alt=21.1°, bright limb)
0.8h Moon Close to Del3 Tau, SAO 93923 (Multiple star system), 4.3mag, Separation=1.71°, Limb separation=1.43° =2.57 lunar dia., Position angle=349.5° N, Azimuth az=233.1°, Altitude h=42.2°, RA= 4h26.5m Dec=+17°58.0', Moon phase=92.7%, Sun altitude hsun=-56.9°; (Northern limit: 38°00'E 35°19'S, alt=26.7°, bright limb)
1h05.9m Moon Immersion of 75 Tau, SAO 93950 (Close double star), 5.0mag, Position angle=70.5°, Azimuth az=235.6°, Altitude h=39.4°, RA= 4h29.5m Dec=+16°23.8', Moon phase=92.8%, Sun altitude hsun=-56.5° (dark limb); (Northern limit: 38°00'E 75°10'N, alt=26.6°, bright limb; Southern limit: 38°00'E 34°55'N, alt=38.4°, bright limb)
1h27m Carrington Solar Rotation Begin of Carrington rotation number 2199
1.6h Moon Close to The1 Tau, SAO 93955 (Close double star), 3.8mag, Separation=0.35°, Limb separation=0.07° =0.13 lunar dia., Position angle=170.5° S, Azimuth az=242.6°, Altitude h=35.8°, RA= 4h29.6m Dec=+15°59.9', Moon phase=92.9%, Sun altitude hsun=-55.1°; (Southern limit: 38°00'E 61°16'N, alt=33.8°, bright limb)
1.6h Moon Close to The2 Tau, SAO 93957 (Multiple star system), 3.4mag, Separation=0.44°, Limb separation=0.16° =0.29 lunar dia., Position angle=170.5° S, Azimuth az=242.7°, Altitude h=35.6°, RA= 4h29.7m Dec=+15°54.4', Moon phase=92.9%, Sun altitude hsun=-55.1°; (Southern limit: 38°00'E 68°56'N, alt=30.0°, bright limb)
2h08.7m Moon Immersion of NSV 01627, SAO 93975 (Multiple star system), 4.8mag, Position angle=125.8°, Azimuth az=250.9°, Altitude h=31.7°, RA= 4h31.6m Dec=+16°13.8', Moon phase=93.0%, Sun altitude hsun=-52.5° (dark limb); (Southern limit: 38°00'E 49°54'N, alt=28.9°, bright limb)
2.4h Moon Close to 81 Tau, SAO 93978, 5.5mag, Separation=0.69°, Limb separation=0.42° =0.75 lunar dia., Position angle=171.6° S, Azimuth az=254.3°, Altitude h=29.2°, RA= 4h31.7m Dec=+15°43.7', Moon phase=93.1%, Sun altitude hsun=-51.0°
3h Meteor Shower Quadrantids (QUA) (active until 6.1., from constellation Bootes/Boo), sharp maximum, meteors show long trails.
4h17.7m Moon Immersion of Aldebaran, Alp Tau, SAO 94027 (Multiple star system), 0.9mag, Position angle=92.6°, Azimuth az=277.7°, Altitude h=14.9°, RA= 4h37.0m Dec=+16°32.5', Moon phase=93.6%, Sun altitude hsun=-37.4° (dark limb); (Southern limit: 38°00'E 37°03'N, alt= 2.6°, bright limb)
5h09.7m Moon Emersion of Aldebaran, Alp Tau, SAO 94027 (Multiple star system), 0.9mag, Position Angle=254.8°, Azimuth az=288.2°, Altitude h=7.9°, RA= 4h37.0m Dec=+16°32.5', Moon phase=93.8%, Sun altitude hsun=-30.2° (bright limb); (Southern limit: 38°00'E 37°03'N, alt= 2.6°, bright limb)
5.8h Moon Close to Sig1 Tau, SAO 94051 (Close double star), 5.1mag, Separation=0.83°, Limb separation=0.55° =1.00 lunar dia., Position angle=174.0° S, Azimuth az=294.9°, Altitude h=2.8°, RA= 4h40.2m Dec=+15°49.9', Moon phase=93.9%, Sun altitude hsun=-24.9°
5.9h Moon Close to Sig2 Tau, SAO 94054 (Double star, separation >10"), 4.7mag, Separation=0.72°, Limb separation=0.44° =0.79 lunar dia., Position angle=174.0° S, Azimuth az=295.7°, Altitude h=2.5°, RA= 4h40.3m Dec=+15°57.0', Moon phase=94.0%, Sun altitude hsun=-24.4°
5.9h Moon Close to 97 Tau, SAO 94164, 5.1mag, with Sun below horizon, Separation=3.68°, Limb separation=3.40° =6.14 lunar dia., Position angle=53.7° NE, Azimuth az=295.2°, Altitude h=6.1°, RA= 4h52.4m Dec=+18°52.0', Moon phase=94.0%, Sun altitude hsun=-24.1°
7h23.6m Sun Latest Dawn (sun at -12°) of the Year for this site
17.6h Moon Close to 104 Tau, SAO 94332 (Close double star), 4.9mag, with Sun below horizon, Separation=1.83°, Limb separation=1.55° =2.77 lunar dia., Position angle=295.3° NW, Azimuth az=89.7°, Altitude h=22.5°, RA= 5h00.5m Dec=+18°39.9', Moon phase=96.5%, Sun altitude hsun=-12.0°
21.7h Moon Close to 111 Tau, SAO 94526, 5.0mag, Separation=0.95°, Limb separation=0.67° =1.18 lunar dia., Position angle=169.8° S, Azimuth az=147.2°, Altitude h=47.8°, RA= 5h25.5m Dec=+17°23.8', Moon phase=97.2%, Sun altitude hsun=-44.9°
23.2h Moon Close to 115 Tau, SAO 94554 (Multiple star system), 5.4mag, Separation=0.49°, Limb separation=0.20° =0.36 lunar dia., Position angle=171.8° S, Azimuth az=179.8°, Altitude h=52.0°, RA= 5h28.2m Dec=+17°58.4', Moon phase=97.5%, Sun altitude hsun=-54.1°; (Southern limit: 38°00'E 72°33'N, alt=35.4°, bright limb)