## July

01 Venus: $25.4^{\circ} \mathrm{E}$
Last quarter Moon
02 Venus near Beehive Open Star Cluster

04 Mercury at Western Elongation: $21.6^{\circ} \mathrm{W}$

05 Moon at apogee: 251,842 miles [405,300 km]

Earth at aphelion: 1.0167 AU [94,508,169 miles; $152,096,155 \mathrm{~km}$ ]

06 Moon at ascending node
07 Waning crescent MoonMercury conjunction

09 Moon north Dec.: $25.6^{\circ} \mathrm{N}$
New Moon
12 Waxing crescent MoonVenus conjunction

Waxing crescent MoonMars conjunction

13 Venus-Mars conjunction
17 First quarter Moon
18 Dwarf planet Pluto at opposition 3.865 AU: 359,274,195 miles [578,195,770 km]

20 Moon at descending node Viking 1 landing on Mars [1976]

21 Moon at perigee: 226,490 miles [364,500 km] Venus-Regulus
conjunction
22 Moon at most southern declination: $25.6^{\circ} \mathrm{S}$

First dogs launched into space [1951]

23 Full Moon

## 24 Waning gibbous MoonSaturn conjunction

25 Waning gibbous MoonJupiter conjunction

Viking 1 returns face on Mars image [1976]

27 Delta Aquarid shower: ZHR = 20

29 Mars-Regulus conjunction
31 Last quarter Moon

## August

01 Mercury at superior conjunction

02 Saturn at opposition
Moon at apogee: 251,283
miles [404,400 km]
Moon at ascending node
05 Moon at most northern declination: $25.7^{\circ} \mathrm{N}$

08 New Moon
ESA Solar Orbiter 2nd flyby of Venus

09 Parker Solar Probe at 2nd perihelion

11 Waxing crescent MoonVenus conjunction

ESA BepiColumbo Mercury Orbiter 2nd flyby of Venus

12 Perseid shower: ZHR = 90 [Moonlight will not interfere]

15 First quarter Moon
16 Moon at descending node
17 Moon at perigee: 229,348 miles [369,100 km]

18 Moon at most southern declination: $25.8^{\circ} \mathrm{S}$ Mercury-Mars conjunction

19 Jupiter at opposition Mercury and Mars conjunction

20 Waxing gibbous MoonSaturn conjunction

21 Waxing gibbous MoonJupiter conjunction

22 Full Moon
24 Pluto officially a Dwarf planet [2006]

25 Summer solstice on Mars
29 Moon at apogee: 251,096 miles [404,100 km]

30 Moon at ascending node Last quarter Moon

