



# Solar System Scene

by John McCarthy

## The Dawn of Modern Astronomy

Last month I mentioned one of the founding fathers of astronomy, Galileo. This month marks the birthdate of one of Galileo's sources of inspiration. **Nicolas Copernicus** was born on 1 March 1473, in Torun, Poland, and devoted much of his life to devising an explanation of the apparent motion of the planets. His work resulted in his becoming, albeit unwillingly, the architect of the overthrow of the time-honoured Aristotelian model of the universe, held by the Church to be proper description of the manner in which Heaven had ordered things. This retiring scientist, despite his devout religious beliefs, began the process which was to close the door once and for all on the ancient, mechanistic, human-centred view of the Cosmos. On 18 March 1781 the known Solar System doubled in size with William Herschel's discovery of a new planet, known to us as Uranus.

The **SUN** moves from Aquarius into Pisces on 11 March. On 1 March sunrise will be at 0602 CST, sunset at 1854 CST; the corresponding times on 31 March will be 0627 CST and 1812 CST respectively.

On 9 March there will be a total eclipse of the Sun. Those of you travelling to Japan or Western Canada at that time, take note. On 21 March, the Equinox, the Sun crosses the equator from south to north, marking the beginning of its annual circuit of the heavens.

The **MOON** will be at Last Quarter on 2 March at 1908 CST, New on 9 March at 1045 CST, at First Quarter on 16 March at 0937 CST and Full on 24 March at 1416 CST. Perigee will be reached on 8 March (357,758 km, 33.2 arc minutes diameter) and apogee on 20 March (405,958 km 29.4 arc minutes diameter). A partial eclipse of the Moon on 24 March will not be visible from Australia. On 1 March the Moon will be 6° north of Antares, on 11 March 4° south of The Pleiades, on 14 March 0.5° north of Aldebaran (occultation not visible from Australia), on 21

March 4° south of Regulus and on 25 March 4° north of Spica.

**MERCURY**, a morning object in Aquarius and moving into Pisces with the Sun mid-month, will be difficult to see until late  month, owing to the Sun's glare. On 11 March he will be in superior conjunction and 1.363 AU from Earth, and on 27 March reaches greatest brilliancy and perihelion. On 1 March Mercury will be 0.9° south of Venus, on 8 March 3.1° south of the old Moon and on 21 March 2.2° north of Saturn.

**VENUS**, also a morning object, moves from Aquarius via Cetus into Pisces in the course of the month. She will become increasingly difficult to observe as she approaches next month's superior conjunction. On 11 March she will be 1.708 AU from Earth, and her western elongation will be 6°. On 8 March she will be 3.1° south of the Moon and on 31 March 1.0° north of Saturn.

**MARS**, an all-night object, is regressing in Virgo, moving into Leo as the month closes. On 17 March he reaches opposition and on 20 March is at his closest approach to Earth (0.659 AU). On 11 March the planet will be 0.671 AU from Earth, exhibiting a disc 14.0 arc seconds in diameter, 100% illuminated and of magnitude -1.0. His western elongation will be 170°. On 7 March Mars will be 0.4° north of galaxy NGC4123 in Virgo and on 23 March 4.3° north of the Moon.

**JUPITER** is a morning object in Capricornus. On 11 March he will be 5.844 AU from Earth exhibiting a disc 33.7 arc seconds in diameter of magnitude -1.5. His western elongation will be 39°. On 6 March Jupiter will be 4.6° south of the Moon and on 11 March 0.1° south of mp8 Flora.

**SATURN**, in Cetus, is largely lost in the evening twilight this month, reaching conjunction on 30 March. On 11 March he will be 10.390 AU from Earth, exhibiting a disc 15.9 arc seconds in diameter and of magnitude +1.1. His eastern elongation will be

18°. On 10 March Saturn will be 1.5° south of the day-old Moon and on 31 March 1.0° south of Venus.

**URANUS** is a morning object in Capricornus. On 11 March he will be 20.52 AU from Earth, exhibiting a disc 3.4 arc seconds in diameter of magnitude 5.9. His western elongation will be 43°. On 3 March Uranus will be 0.5° south of mp8 Flora and on 6 March 4.9° south of the Moon.

**NEPTUNE**, also a morning object, is in Sagittarius. On 11 March he will be 30.77 AU from Earth, exhibiting a disc 2.2 arc seconds in diameter of magnitude 8.0. His western elongation will be 31°. On 3 March he will be 0.7° south of mp19 Fortuna and on 5 March 4.2° south of the Moon.

**PLUTO**, a morning object on the Ophiuchus/Scorpius border, becomes stationary in R.A. on 10 March and commences retrograde motion. On 21 March his co-ordinates will be R.A. 16<sup>h</sup>23<sup>m</sup>39<sup>s</sup>; Dec. -8°37'35". His disc diameter will be 0.1 arc seconds, he will be 29.54 AU from Earth and his magnitude will be 13.7.

### METEOR SHOWERS

The **Theta Centaurids** conclude around 7 March; radiant R.A. 210° Dec. -40°; 10 per hour.

### MINOR PLANETS

mp2 **PALLAS**, mag 10.4, will be 0.2° west of planetary nebula (pn) NGC6803 in Aquila on 21 March. mp6 **HEBE**, mag 10.0, will be 0.5° south of NGC3607 (g) in Leo on 26 March. mp7 **IRIS**, mag 9.8, will be 0.1° north of NGC5247 (g) in Virgo on 23 March and 0.8° north-east of NGC5170 (g) in Virgo on 31 March. mp8 **FLORA**, mag 11.3, will be 0.5° north of Uranus on 3 March and 1.2° north-east of mp40 **HARMONIA** on 8 March. mp15 **EUNOMIA**, mag 10.9, will be 0.4° north of open cluster (oc) NGC6405 on 3 March, 0.5° north of NGC6416 (oc) on 6 March and 0.4° south of NGC6425 (oc) on 9 March. mp19 **FORTUNA**, mag 12.5, will be 0.7° north of Neptune on 3 March.