

glass the head of the Comet was very apparent and bright and the tail was visible for a considerable distance; through a telescope the nucleus appeared well defined, head better developed, the tail much brighter, especially near the head and wider in proportion to the latter. The nucleus appeared to be somewhat yellowish in colour.

*October 12.*—Very beautiful; the nucleus light greenish yellow in colour.

*October 25.*—Mr. C. Groves of Ronerdan Observatory found it a truly splendid naked eye object. The nucleus was quite bright and the long straight tail pointing nearly vertical, fully 20 degrees in length.

*October 27, 28, 29.*—Observed on three successive nights, it appeared very conspicuous, although suffering greatly with the glittering effulgence of the Venus. On 28th it appeared one of unexpected and unrivalled beauty, with a bright nucleus and a tail about equally bright and absolutely perpendicular. Seen through a field glass, one-third of the tail seemed to be as bright as the nucleus itself, verging away gradually and imperfectly into a dimmer yellow.

*November 2, 3, 4.*—Observed at Calcutta by the naked eye, the coma with the bright nucleus was distinctly visible. The tail extended to a great distance and through which some stars could be seen. The light of the Venus almost dimmed the tail to a certain extent, but obstructing the Venus, by means of the hand, the tail could be traced to a considerable distance from the coma.

The observations from Calcutta were not favourable during the summer nights, as the moonlight obstructed the dim light of the Comet, and latterly the moving clouds obstructed the vision altogether.

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## The Movements of the Planets in 1912.

BY H. HART.

The accompanying diagram will show the heliocentric positions of the planets on the day in each month on which

the Sun enters the different signs of the Zodiac : *i.e.*, on January 21 (Aquarius), February 22 (Pisces), March 20 (Aries), April 19 (Taurus), May 20 (Gemini), June 21 (Cancer), July 22 (Leo), August 22 (Virgo), September 22 (Libra), October 23 (Scorpio), November 22 (Sagittarius), December 21 (Capricornus). The positions on intervening days can easily be calculated ; the dots between the Earth's positions representing intervals of five days.

Mercury is a morning star until March 2, when he is in superior conjunction with the Sun. An evening star thence until April 15 when in inferior conjunction, a morning star until June 17, an evening star until August 21, a morning star until October 3, an evening star until December 8, and a morning star for the rest of the year.

Venus is a morning star until July 5, when she becomes in superior conjunction with the Sun and is an evening star for the rest of the year.

Mars continues as an evening star until November 4, when he is in conjunction with the Sun ; and thereafter a morning star for the rest of the year. He is in quadrature with the Sun on March 4.

Jupiter is a morning star until May 31 when he becomes in opposition to the Sun. An evening star thence until December 18, when he is in conjunction, and a morning star for the rest of the year. He is in quadrature on March 4 and August 30.

Saturn is in evening star until May 14, when he becomes in conjunction with the Sun ; thereafter a morning star until November 22, when he is in opposition ; and an evening star for the rest of the year. He is in quadrature on August 26.

Uranus is in conjunction with the Sun on January 20, in quadrature on April 21, in opposition on July 24, and in quadrature on October 22. He covers only  $4\frac{1}{2}$  degrees of his orbit during the year.

Neptune covers only  $2\frac{1}{2}$  degrees of his orbit in the year. He is in opposition on January 13, in quadrature on April 10, in conjunction on July 15, and in quadrature on October 19.

The diagram will show that when looking from the Earth towards the Sun on any date, the planets on the left hand are evening stars, and those on the right hand are morning stars. Thus, on March 20, Mercury, Mars, Saturn and Neptune are evening stars ; and Venus, Jupiter and Uranus are morning stars.