ASTRONOMICAL NOTES FOR JANUARY.

As was the case in December, Jupiter will be the most conspicuous stellar object in the night sky during January. Having come to opposition on the 22nd of December, this planet will throughout January be visible practically all night long. Not even excepting Saturn, Jupiter (with his belts, spots and ever-circling moons, easily observed in telescopes of moderate power), is without doubt the most interesting of the planetary bodies. During January there will be a ceaseless train of phenomena, of which some of the most noteworthy may be mentioned. January 2, at 9 57, Satellite I. will commence to transit the planet's disc, and be followed at 10.14, by this moon's shadow. On the 3rd, at 8.56, Satellite III. will transit, and be followed by its shadow at 10.10; the transit will last until 11.45, but the moon's shadow will remain visible until 1 a.m., on the 14th. As a rule, the satellites become visible, even in good telescopes, after they appear to get well in on the planet, but III. is occasionally an exception, crossing Jupiter like a spot as black as its own shadow. Whilst one watches these phenomena, one may form some conception of the appearance, from a distant point, of our own moon's shadow, flitting over the earth's surface during a total eclipse of the sun, for each transit of a satellite across the face of Jupiter, so far as the central track of the shadow of the satellite is concerned, occasions a total eclipse of the sun. On the 7th, at 10.23 p.m., Satellite III. will, in passing on the further side of Jupiter, as seen from the earth, disappear, first behind the planet and then into the planet's shadow, and be lost sight of until 2.46 a.m., when it will reappear like a dim, brown ball, gradually brightening as it emerges from the penumbra of the shadow into the sun-light. On the 9th, after 6.13, Satellite II. and its shadow may be visible on the planet. II. sometimes transits as a black spot; the satellite will emerge from the disc at 7.56, and the shadow will follow at 8 51. On the 11th, Satellite I. will transit at 8.23,

and be followed by its shadow at 8.54. On the 16th, at 7.37, Satellite II. will transit; shadow following at 8.50. On the 21st, satellite III. will disappear behind Jupiter at 5.05, and reappear from occultation at 7.54, only to disappear again into the planet's shadow at 8.02, where it will remain eclipsed until 10.48; for some miuutes prior to complete eclipse, and prior to reappearance, the moon may be visible as a brown ball. On the 25th, Satellite III. will transit at 6.58, and actually leave the planet 22 minutes (or at 9.47) before its shadow becomes apparent; this shadow will be visible until 1.04 a.m. On the night of the 25th, also, and for the first time in two years, the shadow of Satellite IV. will make a transit of Jupiter visible from the earth, its passages during that period having been either above or below the planet. This transit will commence at 5.39, and end at 6.46. On the 28th, Satellite III. will be occulted by the planet at 8.32, and reappear at 11.2?, and disappear by eclipse in Jupiter's shadow at 12.03 a.m., reappearing at 2.50. During the month there will be many other interesting phenomena.

The positions of the other planets are scarcely noteworthy. Mars is rapidly passing over to the west, and becoming so distant that surface detail is being lost in the telescope. Venus is working her way to her best position as an evening star, and Mercury is behind the sun.

On New Year's night, the moon will, at 8 21, occult Phi Aquarii, a 4th magnitude star. If the conditions be favorable, this phenomenon should be easily visible in an opera glass. On the evening of the 12th, Y. Cancri, 4th mag., will also be occulted. On the night of February 3rd, commencing at 9.18, and ending at 9.53 the less than halfmoon will occult five members of the Pleiade group. With a fine sky, this event should prove to be one of the most interesting of the year, as these stars will apparently be blotted out of the heavens by the dark edge of the moon.—G E.L.

