

ASTRONOMICAL NOTES.

The discovery of a new member of the asteroid group is becoming quite a common occurrence, but the last announcement of the kind calls attention, rather to a new planet than simply to another of the bodies revolving in the zone between Mars and Jupiter. The institution known as the *Urania*, of Berlin, has the honor this time, and Herr Witt the special credit of having first observed the stranger. He allowed a whole month to pass before making his discovery public, for the reason that the observations, upon analysis, gave an orbit which seemed unlikely to be the correct one; it appeared to lie actually within the orbit of Mars, though not wholly. In terms of the astronomical unit, the earth's mean distance, the stranger when at perihelion is 1.13 from the sun, and at aphelion is 1.79. The latter is farther away than the aphelion of Mars' orbit. This discovery will be of immense value to the mathematical astronomer, when the path of the new planet is accurately marked out, and will lead to closer determination of the sun's mean distance than has hitherto been thought possible.

Mars is now in good position for observation, rising about 10 o'clock, and a conspicuous object among the stars of Cancer. The disc of the planet towards the end of November is 12 seconds in diameter; this is larger than Mercury ever appears to us, and when it is remembered that drawings of Mercury have been made on many occasions we are prepared to hear that Mars has already, this season, become a subject for the artist at the telescope. We do not possess any photographs of the surface of Mars which could be said to aid us in the study of the planet. This field is open indeed to all.

Jupiter having now passed to the west of the sun, is morning star, and towards the end of the month is far enough out of the sun's rays to permit of the satellites being observed. Saturn is now too close to the sun for

observation. Venus also is rapidly approaching the sun, crossing the direct line on November 29th, about 7 degrees south. On this occasion Venus crosses the meridian twice within the same astronomical day. Mercury reaches the greatest elongation east of the sun on December 3rd, but, being far south in declination, will not be favorably placed for observation.

Observers of the stellar heavens will note that we now have the Pleiades group culminating on the meridian about midnight, and it is not to be forgotten that the feast of "All Souls," our now almost prosaic Hallowe'en, is associated with this phenomenon. It is a long step from matter-of-fact gala times of the present day to ancient festivals. Yet the connection is there, and as there appears to be no race without some tradition in connection with the Pleiades, it is open for explanation why this is so. A very fanciful idea is that the "lost Atlantis" was submerged when the Pleiades culminated at midnight, and hence the group would always mark the date of the anniversary.

Observers of the moon may note that on the evening of November 28th there will be an opportunity to observe most satisfactorily the great ring plains on the west limb. About a day past the full the lunar plain Petavius presents a beautiful appearance, the convex floor lit up by the sun, while the western wall is partly broken. It is a beautiful object for the pencil at the telescope. THOS. LINDSAY.

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