NOTES.

Distances of stars.

It is somewhat disconcerting to note the serious disagreements which exist about the distances of a certain number of stars. For instance, in the Circular, number 205 issued by Harvard College Observatory, the distance of the great Nebula in Orion is given by W. H. Pickering as 2000 per sec of 6520 light-years. As against this, the average distance of the Nebula Group, which includes the Orion Nebula, is given by Professor Kapteyn as 600 light years. Surely, there must be some serious error here, for even in astronomy, a difference in estimates which involves the huge distance implied by nearly 6000 light years can scarcely be waived aside, as negligible.

Again W. H. Pickering has said that Rigel is 2,100,000 times brighter than the sun. Prof. Kapteyn deduces from his recent studies that this star is 12,000 times brighter than the sun. Some difference! Prof. Russell's comment on Kapteyn's estimate is that it makes Rigel, the brightest star of which, we have definite knowledge, notwithstanding the researches of Gill and Elkin which claim for Canopus a brilliancy 22,000 times greater than the sun.

The average reader is unhappily led by these widely diverging conclusions to believe that there is no reliable method yet discovered for determining the distances and brilliancy of the remote stars.

A Planet which did not exist.

As we all know very well, little Mercury is the nearest of the eight planets to our sun. Possibly there may be some tiny planetary body between Mercury and the sun, but that is improbable. Nevertheless, at one time, it was believed that such a planetary body had been discovered, for on March 26, 1859, Dr. Lescarbault at Orgeres in France announced that he had seen a small planet cross the sun's surface between Mercury and the sun. The famous

astronomer Leverrier visited Dr. Lescarbault and was convinced that the doctor had not been deceived. This new addition to the eight other planets of our solar system was named Vulcan, and although other astronomers believed afterwards that they saw Vulcan, it is certain today that this alleged planet never existed. Not only was it given a name but also its distance from the sun was estimated to be 13 million miles and its diameter 2500 miles. Since Dr. Lescarbault's "discovery" of Vulcan, about 60 years have passed, telescopes and telescopic cameras have been vastly improved, but no planet between Mercury and our sun has been observed. That tiny particles of matter exist on orbits between our sun and Mercury, astronomers do not doubt, indeed larger particles may exist there; but after all the long and careful search of our sun's surface and environments, with modern telescopes and methods, it seems improbable that anybody deserving the name of a planet is revolving between the sun and the orbit of Mercury.

A combination Sidereal-solar clock.

Professor E. Stromgren, Director of the Copenhagen Observatory and Engineer Jens Olsen have constructed a clock which shows sidereal time and mean solar time at the same instant, which will be a great convenience for all who are required to use the two times, especially astronomers, geodesists and seamen. The clock has four dials, one for each of the two kinds of hours, one for the minutes with two hands, the one hand gaining on the other in the ratio of 1 part to 365, and one dial for the seconds of mean time. The two sets of hands can be adjusted independently, so that one may be kept on local time and the other on the time of of any chosen meridian, or both may indicate the time of any chosen meridian. The clock is a little larger than the ordinary watch but may be easily carried in one's pocket.

The Highest Village on the Earth.

The highest village on the Earth is noted by a writer in

L' Astronomie, April 1916, as Karzok in Kasmir, latitude 33° 58′ 0″90, North and longitude, 78° 18′ 13″95, East from Greenwich. Its altitude is 455,6 metres or 14946 feet The village contains a few wretcheds tone houses and a small Buddhist monastery.

The Twenty-four Hour Day.

The spirit of standardisation and unification is abroad and one of its latest manifestations is the attempt to reduce the various methods of time reckoning to a single system. Astronomers have made an important contribution to this end by deciding to commence the astronomical day at midnight instead of noon. This reform will commence in the year 1925, an earlier date being inconvenient for the various nautical almanacs. While astronomers will gain, on the whole, by the change, yet in some respects, notably in the case of sets of observations, extending on both sides of midnight, it will cause inconvenience; this gives them a certain claim to ask for some sacrifice on the part of the general public in order to achieve the further unification which is now desired; this is the substitution of 24 hour reckoning for the present system of a.m and p. m

Twenty-four-hour time has long been used in Italy; it was introduced into the British Army, year before last and a few Railway companies already use it in their time tables, where its convenience is so manifest that it is surprising that its introduction has been so tardy.

The majority of social functions take place in the afternoon or evening and it undoubtedly is somewhat more troublesome to say seventeen than five or twenty-one than nine. Punch made some amusing remark on the subject, when the reform was suggested in 1885; possibly this had something to do with the failure to carry it, at that time. However, the fact that astronomers could not then agree to alter the astronomical day deprived the scheme of its driving power. The auspices are now more favourable and the report of the committee consisting of seven members

appointed towards the latter part of last year by the Home Secretary will be awaited with interest.

Satellites of Mars in "Gulliver's Travels".

The following passage occurs in "Gulliver's Travels"; "They have likewise discovered two lesser stars or satellites, which revolve about Mars, whereof the innermost is distant from the centre of the primary planet exactly three of his diameters, and the outermost, five; the former revolves in the space of ten hours, and the latter in twenty-one and a half; so that the squares of their periodic times are very near in the same proportion with the cubes of their distance from the centre of Mars, which evidently shows them to be governed by the same law of gravitation that influences the other heavenly bodies" While the above description does not exactly accord with the facts relating to the Satellites of Mars now known, it is interesting to note that as a matter of fiction, it is remarkably near the truth! "Gulliver's Travels" was written about a hundred years before the discovery of the satellites of Mars by Asaph Hall in 1877.

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