

passing through star Maghâ (Regulus) also points to the same antiquity. We get therefore 23rd or 24th century B.C. as the time of the war. The only doubt which may arise is the question whether the Rishis could accurately determine the east point. I should say, yes ; for it does not require the aid of a modern instrument to mark the point approximately, say within a degree. Further, observations of the heliacal rising of the stars were much in vogue in ancient times.

4. Visnu Puran describes the method of finding the position of the line of the *Saptarishi* and adds that Parikshit was king when 1200 years of the Kali Yuga had expired. That is to say his date was  $3100 - 1200 = 1900$  B.C. (It is to be noted that the historian of Kashmir made it 2448 B.C.)

5. In the same Puran we find it stated that there was an interval of 1015 years between Parikshit—the grandson of Arjun and king Nanda. Now we know from history that the Nanda dynasty ruled for 100 years, after which Chandra Gupta of the Mourya dynasty became the king of Magadh in 315 B.C. Hence  $1015 + 100 + 315 = 1430$  B.C. was the time of the war.

It will be seen from the above that we arrive at two dates separated by an interval of about a thousand years, one pointing to the 24th cent. B.C., the other to the 13th cent. B.C. with a connecting link of the 18th century B.C. between (A 3, B 4). The earliest date accords pretty well with the Indian tradition and the era of Yudishthira. There is thus reason to maintain (1) that the great war took place some time in the twenty-fourth century B.C. (B 1, 2, 3); (2) that the greater portion of the present Mahâbhârat was composed about the 13th cent. B.C. (A 1, 2, B 5); and (3) that the latest edition of which we have any astronomical evidence was made so late as the 4th or 5th cent. B.C. (A 4).

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## Notes on Jupiter.

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JUPITER now (25th May) rises before 10 P.M. and with its comparatively high altitude in this latitude is a very fine telescopic object. I have examined the planet several times of late, both in the early morning and late at night, but so far the sky

has not been of the clearest nor the definition of the sharpest. However, I have seen sufficient to know that better views are coming. One point I have already noticed, and that is that Jupiter is a more difficult object to define than Saturn.

I enclose three sketches \* of the planet made on the night of the 17th May 1913. The sky was fairly clear in the neighbourhood of the planet, but the atmosphere was damp and definition not very good, though it improved later.

Fig. 1 represents Jupiter at 10-45 P.M. Note the shadow of the inner satellite on the disc. In the telescope it was sharp and inky black. The satellite itself is not shown in the sketch. The belts were fairly clearly defined. The two upper belts were sharp and free from irregularities, but the lowest and broadest had three dark markings.

Fig. 2 (time 11-30 P.M.) A dent now appears in the thin belt. It may have been present at 10-45 P.M., and owing to poor definition was not seen, but it is clear enough now and as it rapidly travels across the disc it gives one a vivid idea of the enormous velocity the circumference of the planet is travelling, *viz.*, about 8 miles per second (Jupiter is 86,000 miles in diameter and revolves on its axis once in 10 hours). The three dark patches in the lowest belt have travelled a considerable distance. The shadow of the satellite, still exceedingly black and sharp, is nearing the edge and the satellite itself, shown to the right in the figure, is now nearing the edge of the disc.

In Fig. 3 (time 1-30 A.M.) the dent has now almost reached the edge. Two patches for the first time appear in the middle belt and the new patches in the lowest belt appear to have a different slope and to be distinctly farther apart. The most interesting feature of all to me is the appearance of the satellite itself on the disc, not nearly so sharp and inky as the shadow, yet still fairly sharp and easily visible. It is evident that either the satellite possesses inherent light or is, relatively to the planet, much brighter. A number of years ago it was my good fortune to witness an occultation of Jupiter by the Moon through a 6" Cooke Refractor, and I shall never forget the sight. What struck me then most was the marked contrast on the brightness of the Moon as compared with the surface of Jupiter. The Moon was dazzlingly silver bright, whereas the planet had a dull and reddish appearance. The satellite therefore shows up on the planet's disc because of its superior brightness.

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\* These sketches will appear in the July issue.