

OBSERVATIONS OF THE PLANET SATURN, 1885.

The planet was scrutinised very frequently during the months of January and December; it was, however, but seldom that the definition was steady enough for good observations of the details of this remarkable object. On two nights of this year, January 8th and December 15th, the conditions were highly favourable, the planet, with powers of 206 and 310 on the $6\frac{1}{4}$ inch telescope, appeared sharp and steady, as if cut out of cardboard, and the definition of the details was superb.

The equatorial region of the Globe was as usual very bright; on either side of this brilliant zone was a dusky belt, and the ring was so widely open that the belt to the north of it could be seen. On the southern half of the ball two of the belts were plainly visible, and during moments of very good definition a number of fainter streaks were more or less strongly suspected between these distinct belts and the North Pole.

The principal division of the ring was perfectly black and sharp, and there could be no doubt of this being a real interval in the ring system; both the inner and outer edges were sharp and well defined, and at the extremities of the ring the space appeared of considerable breadth. Altogether different to this was what is termed the division of the outer ring. There was a perfectly distinct line on the outer ring, but it more resembled a band of fine shading and was not so black as the main division. A very good illustration of this peculiar appearance is afforded by observing the apparent band caused by the aperture in the side of an ordinary humming top when it is set spinning. Here we see that a single aperture is by rapid revolution apparently converted into a regular shaded zone or band, and the question is strongly suggested whether discontinuities in the ring are not by rapid revolution the cause of this uniformly shaded appearance.

The ring immediately within the principal division was as usual the most brilliant portion of the whole system; the brightness, however, decreased as it approached the planet, and the precise line of demarcation between this and the inner dusky or crape ring was difficult to see. Lower telescopic powers, which did not show the crape ring, gave a false appearance of sharpness to the inner edge of this bright ring, and with such powers the edge was seen with considerable clearness. Any inferences however made under such conditions must be more or less delusive, for as telescopic power was increased no distinct division could be seen.

The inner dusky or crape ring was beautifully distinct and of a decided coppery or warm colour; there was a marked difference in the definition of its inner and outer edges, for whereas, as just stated, it was difficult to assign its precise outer limit, the inner margin was clearly seen within the opening of the ring. As might be expected, it was most distinctly visible crossing in front of the ball, where it was projected on the northern equatorial belt. The difference in curve between the belt on the planet and the edge of the ring was very marked, and it was where it crossed the limb of the planet that its semi-transparency was so beautifully seen. The edge of the ball appeared as if observed through smoke-tinted glass, and it was here, with the bright planet for a background, that the division between the dusky and the next bright ring was seen more clearly than in the Anse.

Much attention was given to determine how much was seen beyond the South Pole. This part of the ball was so dim and obscure that it was not always possible to clearly discern the limb, but I was able to ascertain that it coincided with the inner edge of the principal division of the ring. I could distinctly trace this black line beyond the planet, but I did not see the least trace of the bright ring over its South Pole.

The shadow of the ball on the rings was always more or less visible, according as the planet was preceding or following opposition, and could be easily traced over the dusky and the next bright ring;