THE YERKES OBSERVATORY OF THE UNIVERSITY OF CHICAGO.

BULLETIN NO. 6.

PARALLAX OF THE ANDROMEDA NEBULA.

Attention has recently been directed to the great nebula in Andromeda by reason of the announcement that a new star had appeared within it, at or near the position of the new star of 1885. Professor Barnard's observations of the nebula with the 40-inch refractor of this Observatory, which have been confirmed with the Lick telescope, as well as by photographs taken at the Harvard Observatory, show that the central parts of the nebula appear as usual, and that the nucleus must have been mistaken for a new star. At about the time of the announcement Professor Barnard was engaged in an attempt to determine the parallax of the nebula from micrometric measurements with the 40-inch telescope of the position of the nucleus with reference to two comparison stars. On account of the exceptional brightness of the Andromeda nebula, and its great angular dimensions, any attempt to determine its distance is likely to be of general interest. Professor Barnard's preliminary results are accordingly given at the present time.

The mean results of the corrected measures of position angles and distances of the two small stars from the nucleus are as follows:

COMPARISONS WITH THE FIRST STAR.

<table>
<thead>
<tr>
<th>Period</th>
<th>Position Angle</th>
<th>Distance</th>
</tr>
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<tbody>
<tr>
<td>In July and August, 1898</td>
<td>-</td>
<td>261.23° 124.70°</td>
</tr>
<tr>
<td>In November and December, 1898</td>
<td>-</td>
<td>261.34° 124.89°</td>
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COMPARISONS WITH THE SECOND STAR.

In July and August, 1898 - - - 160.51° 228.42°
In November and December, 1898 - - 160.51 228.28

The differences between the first and last sets in each case are no greater than would be expected in the measurement of such an object, and are contrary in sign to what would be required if the nebula were nearer than the stars.

If it can be assumed that the comparison stars are in reality far beyond the nebula in space, the results would indicate that the distance of the nebula from the Earth is much greater than that of the nearest fixed star. As the stars are apparently in the nebula, and may in reality lie within its boundaries, such an assumption is, perhaps, hardly justifiable. The same objection, however, is applicable to any star in this region accessible to a large telescope. The great focal length of the 40-inch refractor, which so materially increases the precision of measures made with it, necessarily limits the choice of comparison stars to those lying within the immediate neighborhood of the nucleus.

THE SPECTRUM OF SATURN'S RINGS.

The strong absorption band in the red region of the spectrum of Saturn, the wave-length of which is given by Vogel as 6183, was seen by this observer to be absent, or extremely faint, in the spectrum of the rings. In 1889 Professor Keeler could detect no trace of the band in the spectrum of the rings with the Lick telescope (A.N., 2927). An opportunity to test this point photographically presented itself last August, through the courtesy of the International Color-Photo Co., of Chicago. The "Erythro" plates made by this company for the Yerkes Observatory are so sensitive in the red that photographs of the spectra of fifth magnitude stars extending down to \( H\alpha \) have been secured with their aid. An "Erythro" plate was used by Mr. Ellerman in making the accompanying photograph of the spectrum of Saturn with the 40-inch telescope on August 18, 1898. At that time the planet was so far south and west in the early evening that a long