

ASTRONOMICAL WORK.

Time-service.—Observations for the determinations of clock errors were made on 104 nights. The noon time-ball has been dropped, for the benefit of the shipping, and other time-signals distributed throughout the city and country as in former years. The interchanges of clock-signals with the Toronto Observatory have been continued, comparisons having been made on 24 nights. After correcting for known errors and personal equation, the average of the differences obtained between the mean-time clocks of the two observatories was $0^s.17$ and the greatest difference on any one night was $0^s.41$. The arrangements for this interchange of signals, provide that the beats of the clocks are transmitted simultaneously along the line, those of the distant station being received on a relay which is also in the local clock circuit. The relays are in the chronograph circuits and thus—except when the clocks are nearly in coincidence—an accurate measure of the wave transmission time is obtained at each exchange. Arrangements have also recently been made with the Harvard College Observatory for co-operation in further perfecting the time-service. Under the present arrangement—which is a tentative one—the beats of the normal (sidereal) clock in Cambridge are received, at a specified time, each evening if required, and the result of their comparison with our sidereal clock transmitted to the Harvard College Observatory and, if necessary, employed here in the adjustment of our clock errors.

The apparatus employed in connection with the time-service consists of :—

- One 3.25 in. transit, with striding level.
- Two 2 in. transits employed as collimating telescopes.
- One sidereal and one mean-time clock.
- One sidereal and one mean-time chronometer.
- One chronograph, batteries, telegraph lines and sundry minor instruments.

Blackman telescope.—Observations are at present in progress with this instrument, with a view to investigating the law of the personal equation in transit observations. The observers engaged in the work are Professor G. H. Chandler and myself.