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taining it and the readings taken for the purpose must be recorded.

The log-book should contain a continuous narrative of all that is done by the expedition and of all incidents which occur on shipboard, and a similar journal should be kept by each sledge party. The actual observations for determining time, latitude, the sun's bearing, and all notes having reference to mapping the shore, soundings, temperature, &c., should be entered in the log-book or journal in the regular order of occurrence. When scientific observations are more fully recorded in the note-books of the scientific observer than can be conveniently transcribed into the log-book, the fact of the observation and reference to the note-book should be entered.

The evidence of the genuineness of the observations brought back should be of the most irrefragable character. No erasures, whatever, with rubber or knife, should be made. When an entry requires correction, the figures or words should be merely crossed by a line and the correct figures written above.

[J. E. H.]

## ASTRONOMY.

Astronomical observations.—One of the chronometers, the most valuable, if there is any difference, should be selected as the standard by which all observations are to be made, as far as practicable. The other chronometers should all be compared with this every day at the time of winding, and the comparisons entered in the astronomical note-book.

When practicable, the altitude or zenith distance of the sun should be taken four times a day—morning and evening for time; noou and midnight for latitude. The chronometer or watch times of the latitude observations, as well as of the time observations, should always be recorded. Each observation should always be repeated at least three times in all, to detect any mistake.

When the moon is visible, three measures of her altitude should be taken about the time of her passage over each cardinal point of true bearing, and the chronometer time of each altitude should be recorded.

As the Greenwich time deduced from the chronometers will be quite unreliable after the first six months, it will be necessary to have recourse to lunar distances. These should be