

elongation of Polaris, as given by the tables of elongation, No. XVI, set up the transit firmly, with its vertical axis exactly over the mark, and carefully level the instrument.

3. Illuminate the cross wires by the light from a bull's-eye lantern or other source, the rays being directed into the object end of the telescope by an assistant; while great care will be taken to see that the line of collimation describes a truly vertical plane.

4. Place the vertical wire upon the star, which, if it has not reached its elongation, will move to the right for eastern and to the left for western elongation.

5. While the star moves towards its point of elongation, by means of the tangent screw of the vernier plate it will be continually covered by the vertical wire, until a point is reached where it will appear to remain on the wire for some time, then leave it in a direction contrary to its former motion; thus indicating the point of elongation.

6. At the instant the star appears to thread the vertical wire, depress the telescope to a horizontal position; about 100 yards north of the place of observation set a stone or drive a wooden plug, upon which by a strongly illuminated pencil or other slender object, exactly coincident with the vertical wire, mark a point in the line of sight thus determined; then *quickly* revolve the vernier plate 180° , repeat the observation, and as before mark a point in the new direction; then the middle point between the two marks, with the point under the instrument, will define on the ground the trace of the vertical plane through Polaris at its eastern or western elongation, as the case may be.

7. By daylight lay off to the east or west, as the case may require, the proper azimuth taken from the table No. XVI; the instrument will then define the *true meridian*, which may be permanently marked by monuments for future reference.