

another ; the one in the northern hemisphere, the other in the southern, viz., at Hammerfest in Norway, and at the Cape of Good Hope, both very nearly on the same meridian, so that the sun, or the moon, or any other heavenly body attains its greatest altitude above the horizon of each (or as astronomers express it, passes the meridian of each) very nearly at the same time. Supposing then that this, its *meridian altitude*, is carefully observed at each of these two stations on the same day ; it is easy to find, by computation, the angles included between each of the two lines of direction in which it was seen from the two places, and their common line of junction ; so that taking this latter line for the base of a triangle, of which the two sides are the distances of the object from either place, those two sides can thence be calculated by the very same process of computation which is employed in geographical surveying to find the distance of a signal from observations at the ends of a measured base. Now, the distance between Hammerfest and the Cape in a straight line is nearly 6300 miles, and owing to the situations of the two places in latitude, the triangle in question is always what a land surveyor would call a favourable one for calculation : so that, with so long a base, we may reasonably expect to arrive at a considerably exact knowledge of its sides,—after which a little additional calculation will readily enable us to conclude the distance of the object observed from the earth's centre.

(8.) When the moon is the object observed, this expectation is found to be justified. The triangle in question, though a long one, is not extravagantly so. Its