very slowly, owing to its vicinity to the south pole of the ecliptic. The Southern Cross began to become invisible in 52° 30′ north latitude 2900 years before our era, since, according to Galle, this constellation might previously have reached an altitude of more than 10°. When it disappeared from the horizon of the countries on the Baltic, the great pyramid of Cheops had already been erected more than five hundred years. The pastoral tribe of the Hyksos made their incursion seven hundred years earlier. The past seems to be visibly nearer to us when we connect its measurement with great and memorable events.

The progress made in nautical astronomy, that is to say, in the improvement of methods of determining the ship's place (its geographical latitude and longitude), was simultaneous with the extension of a knowledge of the regions of space, although this knowledge was more the result of sensuous observation than of scientific induction. All that was able in the course of ages to favor advance in the art of navigation—the compass and the more correct acquaintance with magnetic declination; the measurement of a ship's speed by a more careful construction of the log, and by the use of chronometers and lunar observations; the improved construction of ships; the substitution of another force for that of the wind; and lastly and most especially, the skillful application of astronomy to the ship's reckoning—must all be regarded as powerful means toward the opening of the different portions of the earth, the more rapid and animated furtherance of general intercourse, and the acquirement of a knowledge of cosmical relations. Assuming this as one point of view, we would again observe, that even in the middle of the thirteenth century, nautical instruments capable of determining the time by the altitude of the stars were in use among the seamen of Catalonia and the island of Majorca, and that the astrolabe described by Raymond Lully in his *Arte de Navegar* was almost two hundred years older than that of Martin Behaim. The importance of astronomical methods was so thoroughly appreciated in Portugal, that toward the year 1484 Behaim was nominated president of a *Junta de Mathematicos*, who were to form tables of the sun's declination, and, as Barros observes, to teach pilots the method of navigating by the sun's altitude, *maniera de navegar por altura del Sol*.* This mode of navigating by the meridian altitude of the sun was even at that

* Barros, *Da Asia*, Dec. i., liv. iv., cap. 2 (1788), p. 282.