

moon's place in the heavens at any future time, toward the latter part of the 17th century, the more advanced governments of Europe recognized the great value such predictions would be to navigation. Increasing commerce with India in the east, and America in the west, made some exact method of determining longitude highly desirable, especially if it could be made simple enough for general use at sea. What was needed, and sought after, was to find the exact difference in time between two meridians, as the distance could then be readily enough known. The seaman could know from the sun's altitude the time at his meridian of observation, but it was at that day impossible for him to know at the moment of such observation the exact local time at his first meridian. To meet that difficulty two plans were suggested. One was to make accurate timekeepers not affected by ordinary changes of temperature, the other was to make the moon serve as a chronometer. To accomplish the latter task it was necessary to work out in advance at some first meridian the exact angular distance, at every hour, between the moon and some of the principal stars. By this means, when the seaman had taken the exact distance between the moon and a given star, simple inspection of his tables would shew him the exact time at his first meridian, when moon and star were the same angular distance apart as at his observation.

Charles II. was told in 1674, that such tables of lunar distances, worked out in advance, would be of great service to English seamen. The result was Greenwich Observatory was founded in 1675, and Flamsteed, who furnished his own instruments, was appointed "Astronomical Observer," at the salary of £100 a year. He determined with great accuracy the positions of about 3000 stars, and made a large number of lunar observations.

In 1714 the English parliament offered a reward to any discoverer of a method of finding the longitude at sea, the reward to be proportionate to the accuracy of the method found out. £10,000 was to be given if in a long voyage the method discovered approached absolute accuracy within sixty miles, £15,000 if within forty miles, and £20,000 if within thirty miles. Many methods were suggested. Some of these, as described in a letter by Flamsteed to his assistant, Sharp, were most absurd. The problem was at length solved by John Harrison, whose improved chronometers brought him, in