

- the eclipses Nos. 8-9—by dates of the Athenian magistracy;
- the elipses Nos. 10-12—by dates of the 3rd Callippic period;
- the eclipse No. 13 is assigned to the era of Philometor;
- the eclipses Nos. 15-18—by dates of the era of Hadrian.

As we can see, Ptolemy made some errors (sometimes of about 10 years) when recalculating from one era to another. This means that Ptolemy, generally speaking, does not have the exact position of the initial points for different eras. Consequently, the time distances (separation) between the eclipses which are given in terms of the same era must be considered to be more reliable in comparison with the distances between the eclipses assigned to different eras. The reason is that, in the first case, Ptolemy simply extracted the time differences from some ancient document, and consequently these values do not depend on the position of these eclipses on an absolute time scale. But in the second case, the time distances depend on Ptolemy's recalculations of dates belonging to different ancient eras for those belonging to the "era of Nabonassar". These recalculations can produce additional errors.

This is the reason why we decided to continue our computer calculations to study the problem: "Are there any other solutions of our problem if we permit possible errors in time distances to increase?" We decided to leave the accuracy of 3 years for inter-eclipse times belonging to the same chronological era, and to permit the accuracy to increase up to 30 years (!) for inter-eclipse times "connecting" eclipses assigned to different eras. Remark: the eclipses assigned (in the *Almagest*) to the same era form some compact groups on the time axis, i.e., they are located inside sufficiently small time intervals. But distances between successive eclipses, assigned to different eras, are about tens and hundreds of years. In other words, the eclipses form some concentrations on the time axis. It is clear that each such concentration is the reflection of some homogeneous set of observations, which were made (according to the *Almagest*) by the same scientific school, maybe in the same place (more or less). Consequently, it is natural to think that the mutual position of the eclipses inside each "homogeneous group" must itself be more precise than the mutual position (on the time axis) of the concentrations. The location of these concentrations on a common time scale is evidently the result of more recent chronological work and recalculations.

*Statement 3. Let us consider an accuracy of 3 years for inter-eclipse times for successive eclipses assigned to the same era, and an accuracy of 30 years for inter-eclipse times for successive eclipses assigned to different eras. Then the solution found in Statement 2 still remains unique for the entire historical time interval under consideration.*

If we extended the accuracy (error) up to 4 years for all cases, then a new solution would appear with the first eclipse at 721 B.C. This solution is close to the traditional one (suggested by historians and chronologists) but does not coincide in details with traditional datings. Figure 126 shows two histograms which demonstrate the distribution of the deviation (in comparison with the *Almagest*) of inter-eclipse times for both solutions. It is clear that the first (medieval) solution is considerably better than the second one (ancient).