

Let us discuss the accuracy which is to be met for the time distances between the different occultations. It is clear that we need to take into account possible errors because of Ptolemy's reduction of all the dates to the same era (Nabonassar). It is evident that this recalculation can lead to errors of 1-2 years only because the different eras used different beginnings of the calendar year. It is well known that the beginning of the year in different eras was in March, August, September, October, January etc. (sometimes even a variable starting point of the year was used!). So, it is not surprising to encounter errors of several years. The best solution we found has an error of 4 years.

*Statement 1. There exist only two solutions for the time interval 500 B.C.-1600 A.D. First solution (medieval):*

1) At midnight Greenwich time on September 9, 887 A.D., Venus covered the star  $\eta$ -Virgo (the calculated distance between them is less than 1').

2) At 6.50 AM Greenwich time on January 27, 959 A.D., Mars covered the star  $\beta$ -Scorpio (the calculated distance is equal to 3').

3) At 5.15 AM Greenwich time on August 13, 994 A.D., the distance between Jupiter and the star  $\delta$ -Cancer was about 20'. This distance is close to the absolute minimum of a possible distance between Jupiter and the star  $\delta$ -Cancer in the time interval under the consideration.

4) At 4.50 AM Greenwich time on September 30, 1009 A.D., Saturn was at a distance equal to 50' from the star  $\gamma$ -Virgo (below the star).

*Second solution (ancient):*

1) At 7.45 PM Greenwich time on September 1, 329 B.C., Venus covered the star  $\eta$ -Virgo (the calculated distance is less than 1').

2) At 5.10 AM Greenwich time on January 17, 257 B.C., Mars covered the star  $\beta$ -Scorpio (the calculated distance is less than 1').

3) At 4.15 AM Greenwich time on September 9, 229 B.C., Jupiter was at a distance of about 15' from the star  $\delta$ -Cancer. This distance is close to the absolute minimum for the distance between Jupiter and this star in the entire historical time interval.

4) At 3.10 PM Greenwich time on September 6, 229 B.C., Saturn was at a distance equal to 127' for the star  $\gamma$ -Virgo (below the star).

For both solutions the error for the time intervals between successive observations (events) relative to Ptolemy's time intervals is less than or equal to 4 years. If we omit Saturn, then for the first (medieval) solution, we obtain a time error of only 3 years. To obtain some other (additional) solutions, we must extend the time error to 10 years. (This is the statement about the stability of our result).

All dates in Statement 1 are given in terms of the Julian calendar, with the beginning of the year being on January 1.