

VIII Азиатско-Тихоокеанская
астрономическая олимпиадаVIII Asian-Pacific
Astronomy Olympiad**Practical round**

7. **Noon.** An observer based in some city in Bangladesh monitored time of local noon on each day in the year 2012. In table 1, first column is serial number, second column is date of observation (**D**), third column is time of local noon (**T**) as per observer's clock and the last column is measured altitude of the Sun at local noon (**a**) in degrees. Bangladesh follows UT+6 hours timezone, and it is known that on 15th April every year, the mean sun's position matches exactly with the true sun. Use this data to find:
- 7.1. Longitude of the Observatory.
 - 7.2. Latitude of the Observatory.
 - 7.3. Use the given map of Bangladesh, to identify the city. Write the name of city exactly as given in the Map.
 - 7.4. Draw a graph showing equation of time (EoT) correction required (in minutes) for each day.
 - 7.5. Date on which the Sun culminates at the earliest and difference in minutes from local noon.
 - 7.6. Date on which the Sun culminates at the latest and difference in minutes from local noon.
 - 7.7. Dates apart from 15th April when the Sun culminates exactly at local noon.

Note: write all dates in DD.MM.YYYY format using Arabic numerals only.

