

Geomagnetic data observed at Tokyo in Meiji era

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The Kakioka Magnetic Observatory was established in 1912 and began the observation of geomagnetic field in the next year. There have remained, however, an older data. They are the so-called Tokyo Data for geomagnetic fields observed at the Central Meteorological Observatory in Tokyo. The observation was carried out during 16 years from 1897 till 1912. Although magnetograms and observation notes that had been kept in the Central Meteorological Observatory were burned out when the 1923 Kanto earthquake caused a severe damage to the Metropolitan city, printed yearbooks were fortunately left. Having known the fact, we planned to digitize the hourly data during the whole 16 years in order that the valuable data can be utilized for various purposes, and now have completed it. In publishing the digital data we checked whether there was any mistakes that might have arisen when the original data were reprinted in the yearbooks. As a result, we found that a lot of obvious mistakes are included in the data. Incidentally, we could not find any mistakes at the time of digitizing the data. Needless to say, it is no good to change original data basing on indefinite estimates. But we considered that it is better to correct obvious mistakes so that this oldest records of the geomagnetic observation in Japan could be more convenient for various studies. Thence, we tried to revise the data comprehensively. In this talk we introduce the basic idea of the revision and show how the corrected version is improved by comparing figures made from the original data and those from the corrected data.

Following are basic standpoints we took in the revising procedure. They had not been determined beforehand, but decided in doing the task.

1. We revised those figures when hundreds or tens digit were considered mistyped. In doing that we took into consideration maximum and minimum values on that day and whether the calculated mean value is different from the one printed on the report.

2. However, we did not make a revision when the difference between the two kind of mean values is 0.1 or 0.2.

3. We filled blanks of hundreds and tens digit only when we could clearly estimate an appropriate figure from preceding and following hourly values and the mean value.

When a doubt remained, we did not revise the original figure, but noted comments, leaving a decision to users' whether to revise or not. Thus, we took a position that the revision should be confined only for those that are obviously mistaken. Nevertheless, number of revision became as large as 900. We can see how the data was cleaned by figures where hourly values in long period are plotted.