Problems related to the numerical age in a time table

*Ichiro Kaneoka[1]

1.Earthquake Research Institute, University of Tokyo

To refer an age through the Earth's history, various kinds of time tables have been used and numerical ages are assigned. However, criteria to present such numerical ages are not always the same , depending on each time table and their values do not always represent effective numerical values.

 Geologic time table has been constructed primarily on the basis of the stratigraphic classification, defined as relative ages. Then, numerical ages are assigned to each boundary between the two stratigraphic units based on the radiometric age data for rock and/or minerals which are included in each stratigraphic unit. However, in the geologic time table (ICS, 2009), three kinds of numerical ages are assigned depending on the age range. For the range of Precambrian ages, each geologic unit is defined based on the nmerical age value. Hence, no error is included in these numerical values. For the range since Neogene to present, astronomical age values are assigned for each boundary. Since the errors in the astronomical age values are regarded to be too small to be assigned, no errors are attached in the numerical age values in this range. However, it shoud be noted that an astronomical age is a model age, whose ucertainties should be checked further. For the other range from the Paleogene to the Cambrian, the numerical age values are assigned wth error for the boundary based on the radiometric age data.

 In the case of magnetostratigraphic time table, it is constructed based on the zpaleomagnetic data for sucesive marine sediments. Numerical age values for wach boundary are estimated based on interporation of age values of some age standards, assuming a constant sedimentation speed. In the magnetosratigraphic time table by Cande and Kent (1995), numerical age vaues with 5 to 6 numerical figures are indicated. However, the effective numerical values for the age standards have only 3 nmerical figures. Hence, even if the apparent numerical age values are shown with 5 or 6 numerical figures, their effectiv numerical values should be treated as 3 numerical figures.

 The situation is the same for the other time table, as long as their key age standards were dated by the radiometric method. In the acse of rdiomeric dating, their numerical age values have an effective numerical vaalues of 4 numerical figures aat most.

 Thus, we should be very careful to treat numerical age values in a time stable.

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