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CALCULATIONS AND PLOTTING IN IGNEOUS GEOCHEMISTRY: CORVÉE ABOLISHED AT LAST! [GCDKIT 2.00 RELEASED]

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The interpretation of whole-rock geochemical data requires complex calculations which on PC compatible computers are mainly performed using dedicated, stand alone programs. They are all menu-driven and thus relatively easy to use. Paradoxically it is their bullet-proof nature that is their main weakness – it prevents modifications or additions to the available algorithms. The other possibility is to use flexible statistical and computing environments (e.g., S-Plus, Statistica, MatLab), which however require a high degree of computational skills. JANOUŠEK *et al.* (2003) offered a third way, attempting to combine the advantages of both approaches. They have opted to use the Windows version of the freeware R language *(http://www.r-project.org),* which in itself provides a rich environment for data analysis, graphics and software development. On its basis they have built a flexible environment with a graphical user interface for geochemical data processing, which, at the same time, should not prevent the user from creative work and full control over his data.

Almost two years have elapsed since the first release of the **Geochemical Data Toolkit for Windows** *(GCDkit)*. Since then, a number of more or less satisfied users have saved considerable time when analysing their data. In turn, the authors have gathered much experience and user feedback, such as bug reports, usability comments, and requests for new functions. Additionally, the R programming environment itself has been developed to version 2.01, bringing new capabilities. This led the authors to develop and release a new, fully updated and expanded version of the toolkit, *GCDkit 2.00*.

Since the beginning, all functions of *GCDkit* are accessible via pull-down menus. The management tools include loading and saving data files, data editing, searching and generation of subsets. Analyses may be grouped for subsequent statistical processing or plotting on the basis of various attributes such as locality, ranges of a numerical variable, cluster analysis or selected classification diagram. Statistical functions include descriptive statistics, box-and-whiskers and correlation plots or multivariate methods. Also implemented are a variety of calculation schemes, for instance CIPW and Mesonorm, as are the common geochemical graphs (e.g. Harker plots, spider plots, classification and geotectonic diagrams). All diagrams are publication ready but can be further retouched by built-in commands. Additional specialist plugin modules are provided to calculate saturation temperatures of apatite, zircon and monazite and for interpretation of the Sr–Nd isotopic data.

The new release brings an improved user interface and increased stability. In addition, it is now possible to directly import from Excel, Access and DBF files, as well as the data formats used by the geochemical packages NewPet, IgPet and MinPet. Several new diagrams have been added and the plot editing revised completely. Much more detailed documentation and help are also provided. Interested? *GCDkit* can be found at *http://www.gla.ac.uk/gcdkit*!