Version 5.0, 28 March 2018 (El Chupacabra)
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New features:

+ In command-line/batch mode, the GCDkit should run also operation systems other than Windows, notably Linux or Mac OSX.

+ New Windows GUI installer based on Tcl/Tk (including also Windows 10, and people without administrative rights ;-)).

+ User-defined templates for stand-alone Figaro plots or their plates. They can be uploaded into the directory Diagrams/User and then employed for standard plotting (i.e. not classification) purposes. This mechanism allows easy and fully automatic expansion of the plotting capabilities of the GCDkit system. For further info, see the file @README.txt in the directory in question.

+ Five examples of user-defined geotectonic plots - three binary plots for discrimination of lavas from destructive plate boundaries (Pearce 1982), Al2O3/SiO2 vs MgO/SiO2 binary plot for mantle peridotites of Paulick et al. (2006) and one ternary for classification of A-type granites (Grebennikov 2014).

+ New possibility of obtaining dataset by online search of the EarthChem.org database (GUI by O. Laurent, ETH Zurich).

+ New plugin 'disclosure' for log-transformation of compositional data.

+ New zircon saturation model of Boehnke et al. (2013).

+ figOverplot - allows overplotting new datapoints onto standard single binary, ternary, spiderplots or multiple plots. For plotting serves a reference dataset, either real-world data or a numeric matrix spanning, for instance, from petrogenetic modelling.

+ figOverplotDiagram - a function that serves for overplotting new data points onto Figaro-compatible templates defined for classification or geotectonic plots (binary or ternary, stand alone or extracted from plates).

+ overplotDataset, underplotDataset - front-end functions to the previous two. They add new data points from a reference dataset stored (by function pokeDataset) in the memory onto any type of standalone Figaro-compatible plots (or their plates). This can be done either into foreground, or (with some limitations) into background.

+ plateAddReservoirs - a function that enables adding compositions of selected geochemical reservoirs or ideal minerals to a plate of Figaro-compatible plots (binary, ternary or spider).

+ calcAnomaly, a function for calculating a magnitude of any anomaly on spiderplot, based on concentrations of selected neighboring (not necessarily adjacent) elements.

+ new geotectonic/general purpose diagrams:
  - La/Yb vs. Nb/La and La/Yb vs. Th/Nb of Hollocher et al. (2012)
  - La/10-Y/15-Nb/8 of Cabanis and Lecolle (1989)
  - Zr/Y-Th/Yb of Ross and Bedard (2009)
  - YbN vs. LaN/YbN of Martin (1986) to distinguish adakites and TTGs
  - F-M-W diagram (Ohta and Arai 2007) for chemical weathering of igneous rocks

+ new training dataset atacazo.data giving the whole-rock major- and trace-element contents, together with Sr and Nd isotopic compositions of lavas from two volcanic complexes in Ecuador: the Atacazo and the Ninahuilca (Hidalgo, 2006; Hidalgo et al., 2008). This dataset, kindly provided by Silvana Hidalgo, shidalgo@igepn.edu.ec, is used in a worked example (chapter 25) of Janousek et al.'s book (2016).

+ new training dataset blatna.data from the Central Bohemian Plutonic Complex, Czech Republic (Janousek et al. 2000, 2010). It could be, together with sazava.data already present, used to test dataset switching etc.

+ New function figFixLim() extends the scales of both axes of a binary plot automatically if necessary to accommodate all the data points.

+ Spanish translation of the classification plots (courtesy of Tomas Grijalva, Geology Department of UNAM, Mexico).

+ new normalization scheme of Anders and Grevesse (1989) for chondrite-normalized REE spiderplots.

+ setTransparency can also return now the hexadecimal code(s) of specified colour(s) with the desired degree of transparency (if setting the parameter save=FALSE).

+ better behaviour of many functions in batch mode (in RTerm, Jupyter, on Linux/Mac etc.)......

+ stripBoxplot was extensively tested and modified, it allows to specify pch, col, cex, and also addition to a preexisting plot.

Bug fixes, performance improvements:

+ CIPW norm was incorrectly calculated for silica-poor nephelinites and melilitites kp, ol, lc and di were all affected (rules 29-30 of Hutchison 1974) - bug was tracked down by Heinz-Günter Stosch.

+ functions assignSymbLab and assignColLab can assign plotting symbols or colours not only according to the levels of the chosen label, but also sample names. They can be newly invoked in batch mode as well.

+ assignSymbLett works in batch mode now.

+ groupsByDiagram accepts a new parameter fun, which is a name of plotting/classification function to be used (in batch mode)

+ legends are correctly displayed now, even if plotting colours are assigned by numeric variable (such as SiO2).

+ figUser was not working with parameters xlim, ylim. Newly it can be called with a parameter redraw=FALSE.

+ Slope and intercept of the regression line, returned by function figAddFit(), were swapped in the previous versions.

+ selectNorm allows now selecting a sample, or a search pattern for average of several samples, also directly, i.e. in the batch mode.

+ selectPalette and assignColVar accept now also names of user-defined palette functions.

+ stripBoxplot allows to specify the relative scaling of the circles plotted, and/or the data for the underlying boxplots (for comparison).

+ fixed ASI index in Frost() that was not sufficiently corrected for Ca in apatite (thanks to Benjamin Jost, UK).

+ fixed were some problems of figBW and plateBW - now they set also background fields into gray colour (e.g., on spider plots, PearceNbThYb, PearceNbTiYb).

+ addContours can be called in direct mode, with some graphical parameters. It will work on both a standalone Figaro-compatible plot or a plate thereof.

+ peekDataset accepts also sequence number of the dataset now.

+ (hopefully) fixed long-standing problems with setting the data directory.

+ GCDkit should start correctly in Windows RStudio.

+ WRanh was not calculated properly in mixed datafiles, where occur samples with both FeO and Fe2O3 determined, as well as only those with FeOt

+ in figMulti legend is drawn last, over any grid lines etc.

+ Labels for isotopic plots involving initial epsilon values now better fit the plotting area

+ If all radiogenic isotope analyses are recalculated to the same age, this age is correctly shown now instead of the general "i" subscript

+ OConnorPlut can accept specification of variables with modal or normative compositions upon call (i.e. in batch mode)

+ assignColVar may newly ignore the outliers (values outside the given quantiles).

+ profiler has been opening an unecessary empty plotting window