

Description of Additional Supplementary Files

File Name: Supplementary Data 1

Description: Excel file divided into three sheets: *Sheet 1 – Radiometric Ages*, lists all the radiometric ages (2,029) compiled in the database, where information on location, method and material, age (reported as mean and two sigma), and reference, among others, is provided. *Sheet 2 – Ignimbrites*, summarizes all the ignimbrites reported as such in the literature for our study area; in this sheet, information on ignimbrite name (or names), location, estimated volume, age ranges, eruption source, and reference(s), among others, is provided. *Sheet 3 – References*, includes all the references mentioned in the previous two sheets; in this sheet, it is provided information on authors, journal title, article title, volume number, and DOI, among others.

File Name: Supplementary Data 2

Description: Zip file that includes three files: *RecRate.xls*, which provides the ages (reported as mean and two sigma) and volumes (reported in km³) for each volcanic deposit compiled in the database. *RecRate.m* is an open source Matlab code that uses the data provided in *RecRate.xls* to calculate volumes and eruption rates over time, where the user can change the number of simulations. *RecRateCrustal.m* is an open source Matlab code that uses the results from *RecRate.m* to calculate crustal growth rates, where the user can change the number of simulations.

File Name: Supplementary Data 3

Description: Gif file that shows different moving averages calculated for the crustal growth rate. Moving averages of 100 kyr, 250 kyr, 500 kyr, 1 Myr, 2.5 Myr, and 5 Myr were calculated. Moving averages were obtained by using the file *RecRateCrustal.m* provided in Supplementary Data 2, where the user can also change the period analysed.