Supplementary materials for: "Barren ground depressions, natural H$_2$ and orogenic gold deposits: spatial link and geochemical model" - Supplementary Figures

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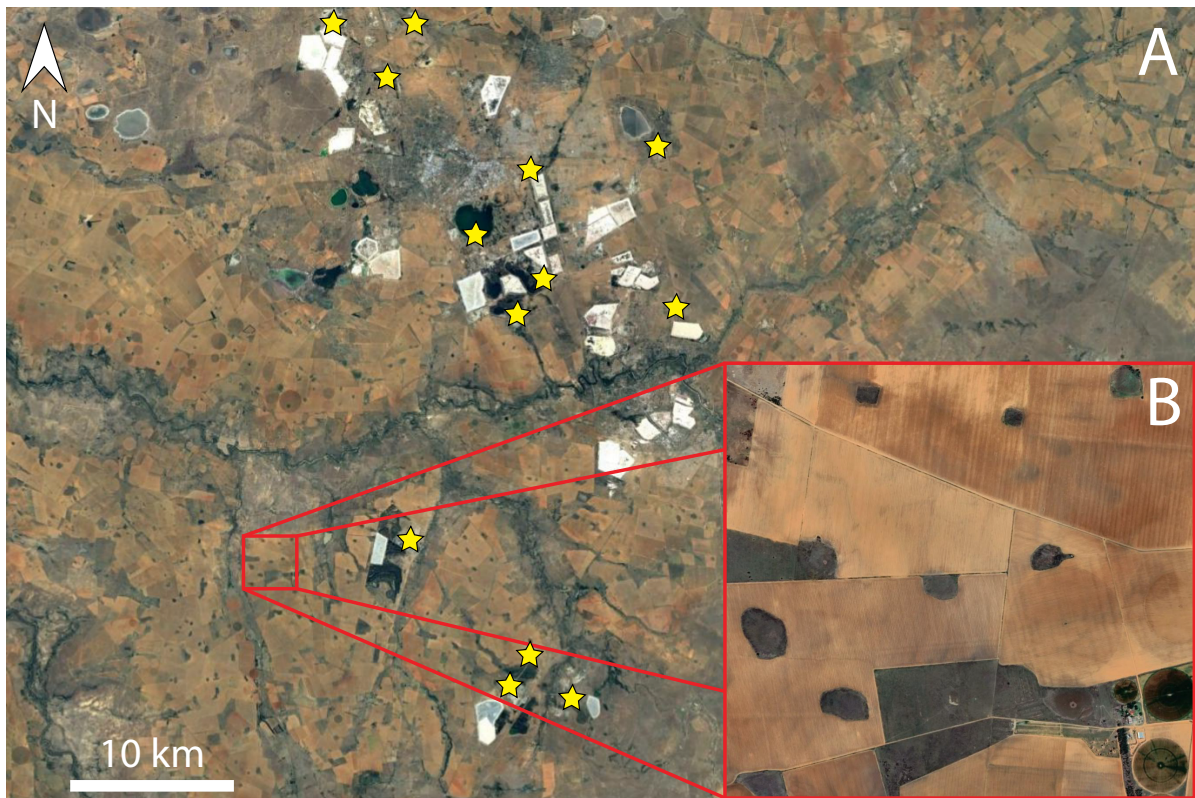*Corresponding author: benjamin.malvoisin@univ-grenoble-alpes.fr

Figure S1: Satellite images of ground depressions near Welkom city (southwest of Witwatersrand basin; South Africa; 28° 5'26"S 26°46'36"E). A: general view of the region showing the distribution of gold mines (yellow stars). B: close-up view showing the presence of several barren ground depressions.
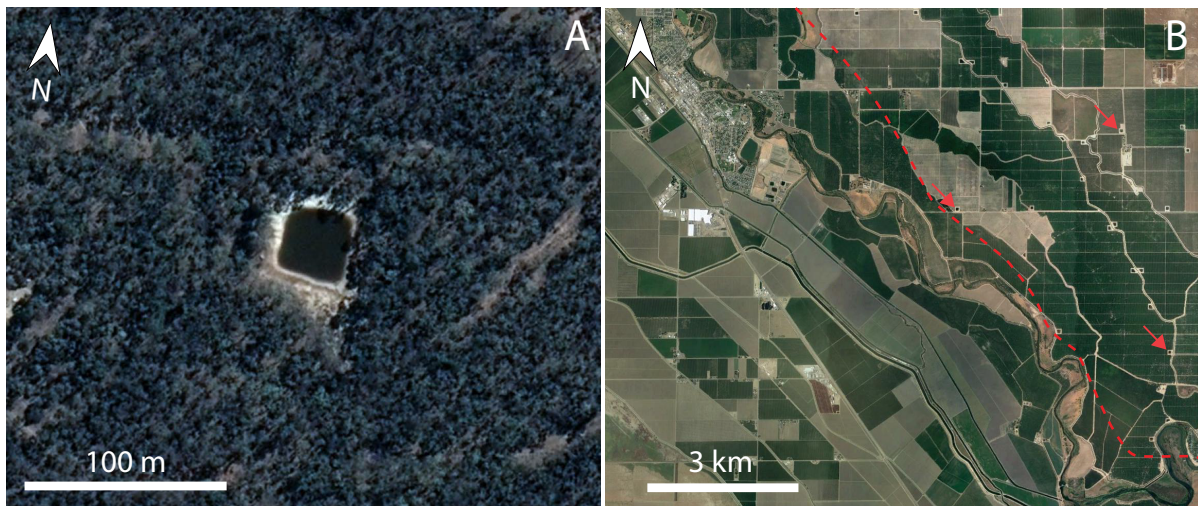

Figure S2: Satellite images of square shaped depressions. A: square-shaped depression in a forest area in Victoria at 40 km to the east of Fosterville gold mine. B: sharp boundary between a region rich in ground depression (east), and a region devoid of ground depression (west). The satellite image was taken in California at 50 km to the west of Fresno city. The red arrows point to square-shaped depressions probably re-worked by human activities.
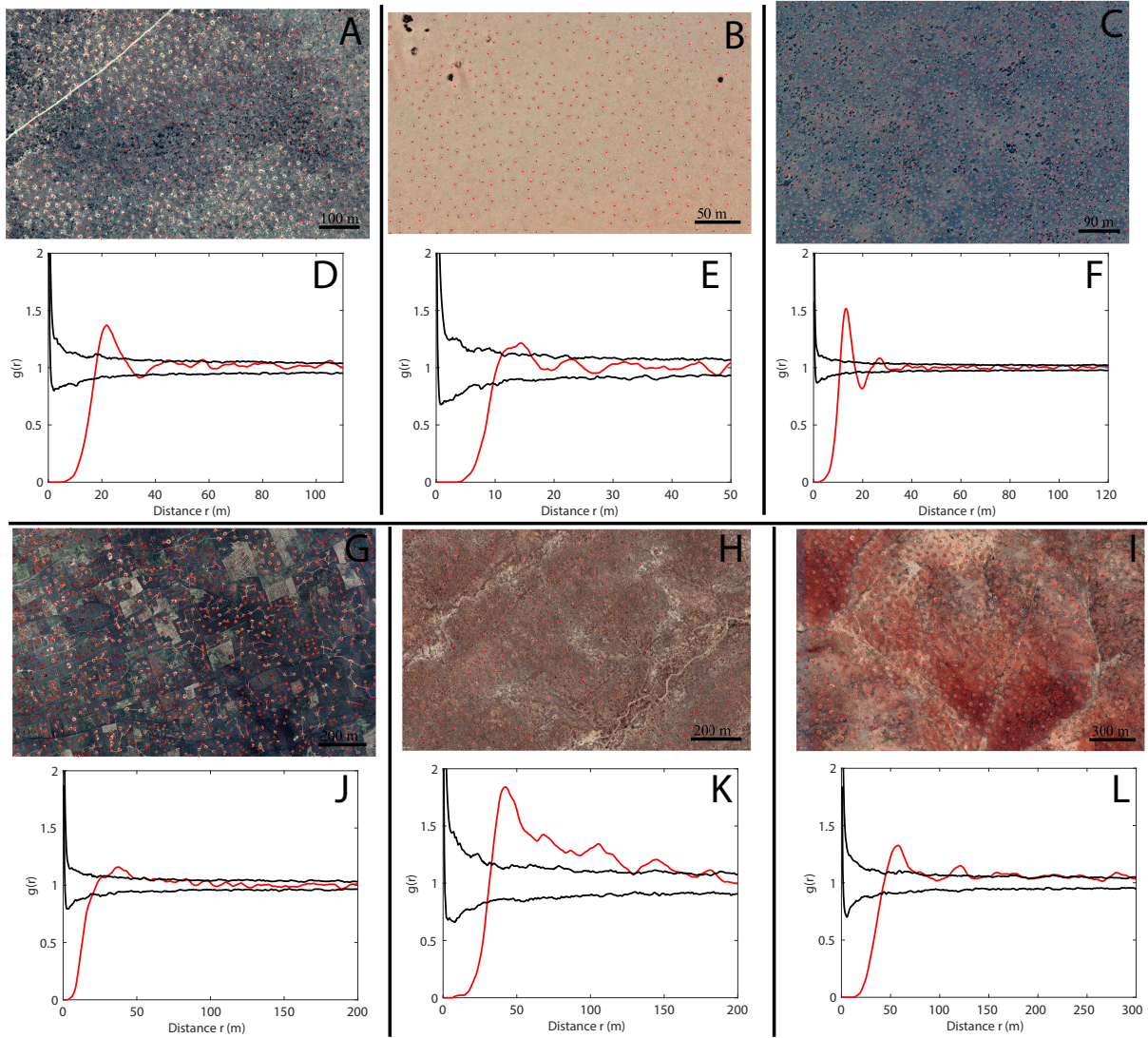
Figure S3: Results of spatial point pattern analysis with pair-correlation function of barren white spots observed on satellite images. The spots are located in the vicinity of iron ore deposit and carbonatites: in Brazil near the Angico dos Dias carbonatite (A and D), in Namibia near the Dicker Willem carbonatite (B and E), in Australia near the Mount Whaleback iron deposit (C and F; same location as the fairy circles described in Getzin et al. (2016)), in Malawi near the Chilwa Island carbonatite (G and J), in South Africa near the Palabora carbonatite (H and K) and in South Africa near the Zandkopsdrift carbonatite (I and L). A, B, C, G, H and I: Satellite images with mapped barren geomorphological features (red dots). D, E, F, J, K and L: Pair-correlation function (g(r); red line) as a function of distance for the spatial patterns displayed in A, B, C, G, H and I, respectively. The black lines indicate the 5th-lowest and 5th-highest value of 200 complete spatial randomness (CSR) simulations.