

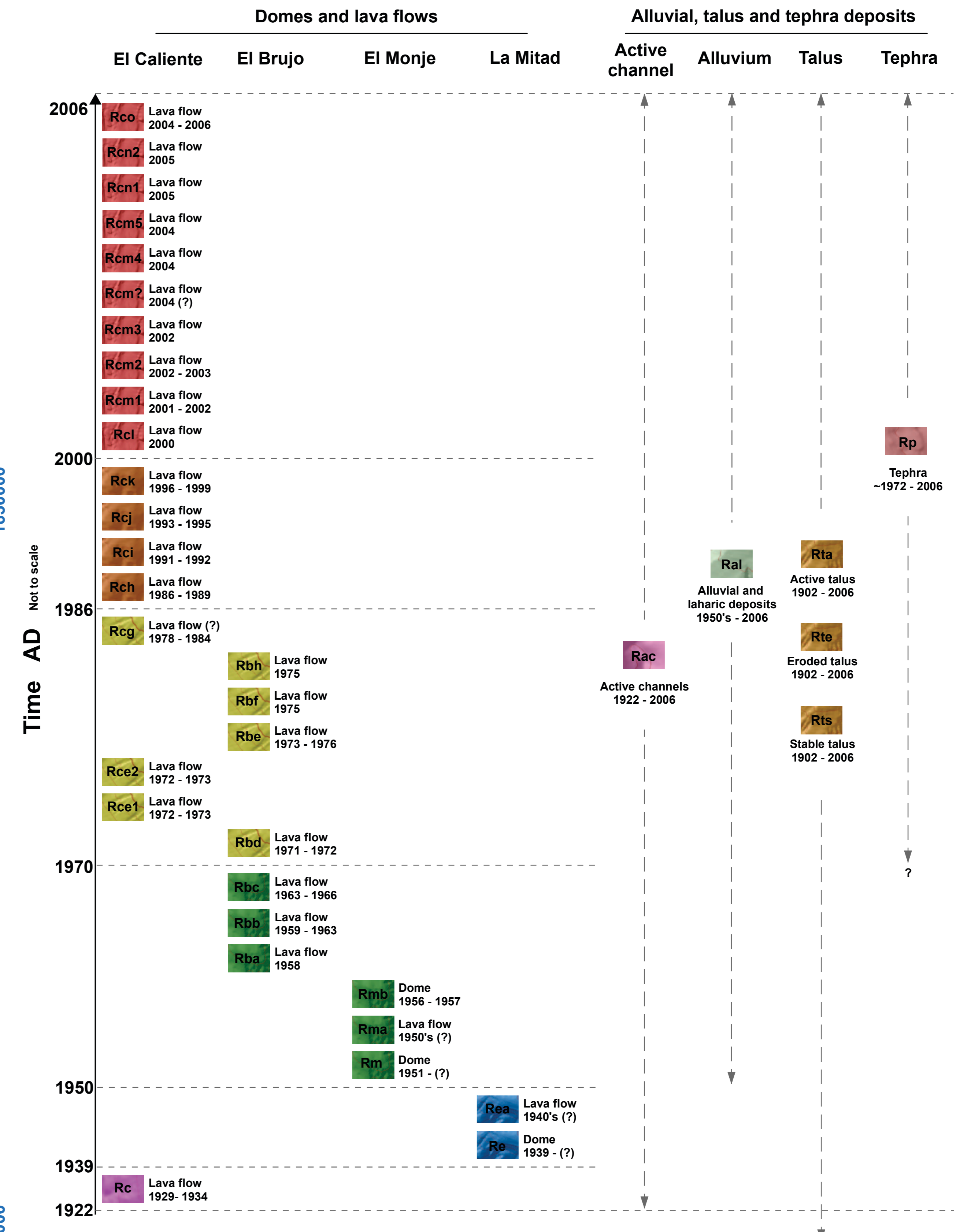
Santiaguito Dome Geologic Map 2006

Rüdiger Escobar Wolf, Otoniel Matias Gomez and William I. Rose
 Department of Geological and Mining Engineering and Sciences
 Michigan Tech University, June, 2008.



Geologic units

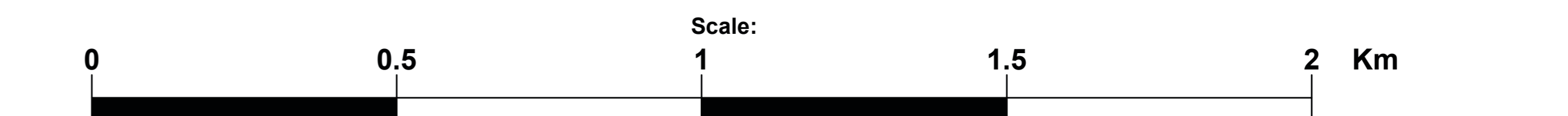
The map follows conventions used by Rose (1972). All deposits of Santiaguito are mapped with prefix R for "recent". "Ral" corresponds to alluvial deposits; "Rac" corresponds to active river channels, some of which are seasonal or intermittent; "Rta" corresponds to active talus; "Rte" corresponds to eroded talus; "Rts" corresponds to stable talus usually covered with vegetation. Remaining units are all of the dome complex extruded at different times since 1922. The second letter refers to the location of the source vents: "Rc" - El Caliente vent; "Re" - La Mitad Vent; "Rm" - El Monje Vent and "Rb" - El Brujo Vent. The third letter expresses the age progression of units from each vent, starting with "a" for the oldest, and continuing in alphabetic order to the youngest (e. g. from "a" (Rba) for the oldest (1958) to "h" (Rbh) for the youngest (1975) El Brujo vent units). Some older units mapped by Rose can no longer be found at the surface, as they are covered by younger units. These correspond to missing letters (e. g. Rca, Rcb, Rcc, Rcd). Additional numbers at the end of some unit names are used to distinguish between subunits that were emplaced sequentially in time, e. g. subunit Rcm1 was followed by subunit Rcm2. For more details on Santiaguito's growth history and evolution see Rose, 1972; Rose, 1987; Harris et al 2003, and Harris et al 2004.



Geospatial reference:
 Coordinate system: Guatemala Transverse Mercator (GTM).
 Projection parameters: False Easting 500000. False Northing 0. Central Meridian -90.5. Scale Factor 0.9998. Latitude of Origin 0. Datum: WGS 1984.
 Elevation contours: Labeled contours interval 500 m. Intermediate contour interval 50 m. Elevation values in meters above sea level.

Sources of information:
 Compiled from high resolution (0.5 m pixel) aerial orthophotos 1860-II-14 and 1860-II-19, acquired between November 2005 and April 2006 by the Instituto Geográfico Nacional de Guatemala (IGN). Aerial photographs from 2001, 2000, 1991, 1984, 1978, 1977, 1971, 1967, 1959, 1954 and 1947 were used to constrain the ages of some units. Maps published by Rose (1972), Rose (1987) and Harris et al (2003) were also used to identify and date units. Unpublished field notes and reports by the authors were used as well. Elevation data (contours) published by Japanese International Cooperation Agency and IGN (JICA et al 2003), generated by photogrammetric methods of aerial photography acquired in 2001.

References:
 Harris, A. J. L., W. I. Rose, and L. P. Flynn. 2003. Temporal trends in lava dome extrusion at Santiaguito 1922 - 2000. *Bulletin of Volcanology*, 65 : 77 - 89.
 Harris, A. J. L., L. P. Flynn, O. Matias, W. I. Rose, and J. Cornejo. 2004. The evolution of an active silicic lava flow field: An ETM+ perspective. *Journal of Volcanology and Geothermal Research*, 135 : 147 - 168.
 Japanese International Development Agency (JICA), Instituto Geográfico Nacional (IGN), Instituto Nacional de Sismología, Vulcanología, Meteorología e Hidrología (INSIVUMEH) and Secretaría de Planificación y Programación de la Presidencia (SEGEPLAN). 2003. Estudio del establecimiento de los mapas básicos y mapas de amenaza para el sistema de información geográfica de la República de Guatemala. Final report.
 Rose, W. I. 1972. Santiaguito Volcanic Dome, Guatemala. *Geological Society of America Bulletin*, v. 83, p. 1413-1434.
 Rose, W. I. 1987. Volcanic activity at Santiaguito volcano, 1976 - 1984. In: Fink J (ed.) *The emplacement of silicic domes and lava flows*. Geological Society of America special paper 212, p. 17 - 25.



NOTE: The electronic image file for this map is formatted for printing at a 1 : 7,500 scale for a paper printing size A0 (841 mm X 1189 mm).