

RECOGNITION OF INDIVIDUAL AA LAVA FLOW UNIT IN THE LOWER PORTION OF THE PARANÁ PLATEAU BASALT, RIO GRANDE DO SUL, BRAZIL

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The Paraná Plateau Flood Basalt, early Cretaceous, covers an immense area of southern Brazil. In spite of plentiful geochemical, geochronological and palaeomagnetic researches, volcanological studies based on fieldwork were scarce. The average thickness of individual lava flow was estimated traditionally based on field observation and drilling core investigation to be 50m, being very large relative to the common sense. In Caxias do Sul region, Southern Brazil, at southern margin of the trap, a scarp more than 700m high, takes place exposing basaltic lava sequence from the basal unconformity contact with the Botucatu eolian sandstone. The upper portion of the lava plateau, so-called Galópolis Unit, 300m thick, is composed of basalt with small olivine phenocrysts, characterised by well-developed rhyotaxitic-like flow texture and frequent amigdaloidal cavities, suggesting pahoehoe lava units.

The lower portion, Caí Unit, 200m thick, is constituted by aphyric massive lava with slightly developed columnar joint system, characterised by intercalation of silicified breccia layers, in average interval of 15m. These layers are approximately 4m thick, in some places more than 8m, and composed uniquely of porous basalt fragments. They are overlain by massive basalt with basal sub-horizontal parallel joint system following the irregular contact plain, and underlain by massive basalt with well-flattened amigdaloidal cavities. These features indicate that the breccia are clinker layers of aa lava flow units, and their mean thickness is about 15m. Some blocks present in clinker zones show welding-like texture. The palaeo-soil is present between these aa lava units, but are not expressive, being less than 1m.