Geology of the Late Pliocene - Pleistocene Acoculco caldera complex, eastern Trans-Mexican Volcanic Belt (México)

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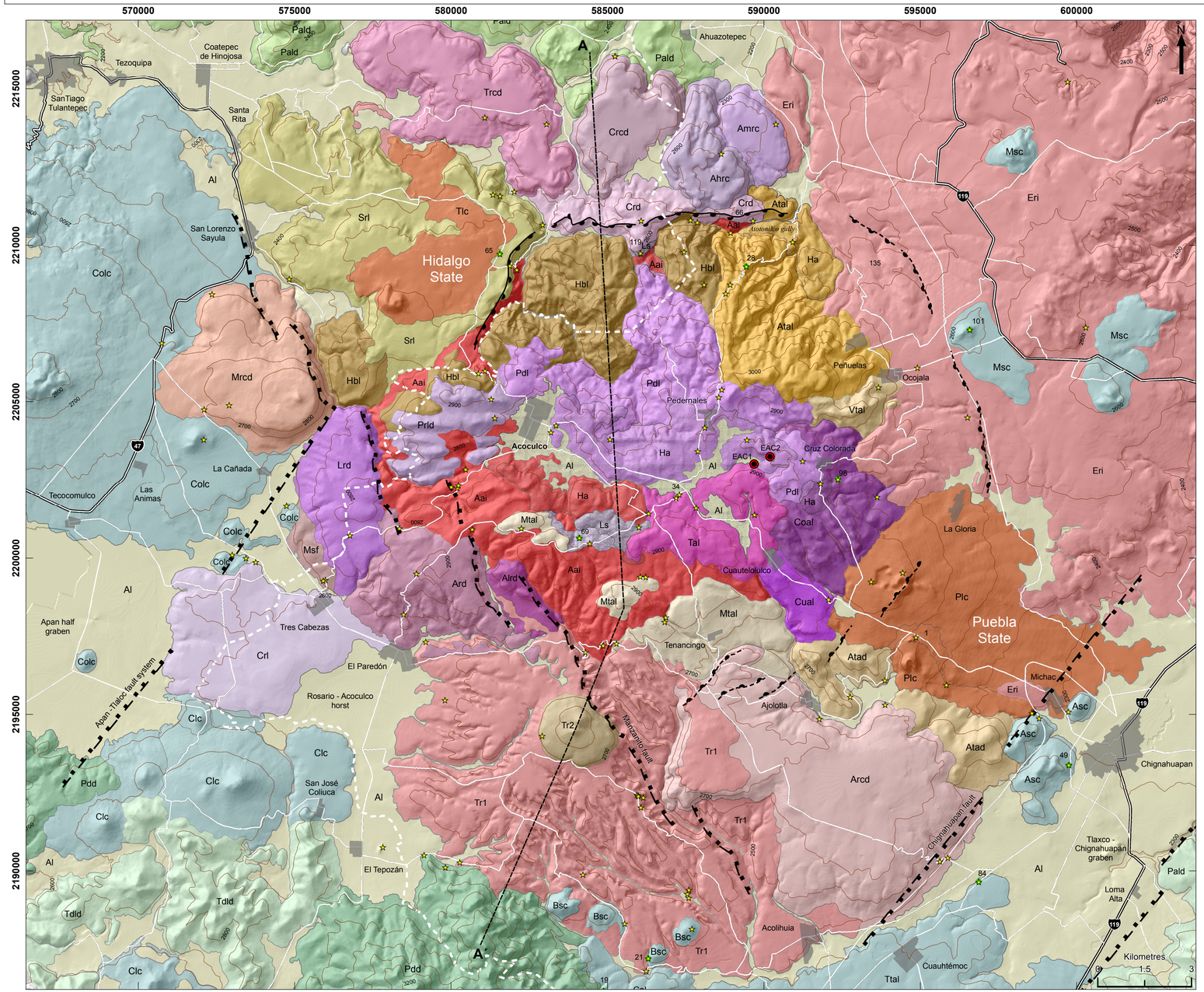

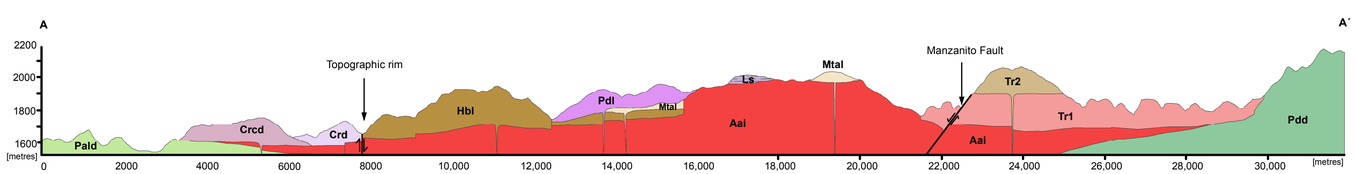

Cartographic Reference

Spheroid: W G S 84
Projection: U T M (metres)
Horizontal Datum: W G S 84
Geographical Area: Z14
Scale: 1: 80,000
DATA SOURCE
Information generated from photointerpretation of orthophotos 2009, satellite images 2015 and direct visits in the field

Explanation

Lithostratigraphic units

Age (Ma)

Quaternary – Holocene

0.01

Quaternary – Pleistocene

1.8

Tertiary – Pliocene

2.6

5.3

Tertiary – Miocene

23.0

Acoculco caldera complex

- **Al / Ha** – Alluvium / Hydrothermal alteration
- **Late post-caldera volcanism**
  - **Tlc** – Tulimán basaltic andesite lava cone (63 ± 9 ka)[4]
  - **Plc** – Paila basaltic trachyandesite scoria cone
  - **Tr2 / Tr1** – Tecoloquillo rhyolitic ignimbrite (0.8 ± 0.1 Ma)[2]
  - **Mrcd** – Minilla rhyolitic coulée dome
  - **Msf** – Maguey surges / fall rhyolitic pyroclastic
  - **Arcd** – Ailitla rhyolitic coulée dome
  - **Crl** – Cabezas rhyolitic lava (1,274 ± 27 ka)[3]
  - **Eri** – Encimada rhyolitic ignimbrite (1,300 ± 200 ka)[2]
  - **Ard** – Arco rhyolitic dome
  - **Crd** – Canoas rhyolitic dome (1,300 ± 600 ka)[2]
  - **Trcd** – Togo rhyolitic coulée dome
  - **Ahrc** – Ahuacatla rhyolitic coulée dome
  - **Crcd** – Chica rhyolitic coulée dome
  - **Prld** – Pintada rhyolitic lava dome (1,400 ± 200 ka)[2]
  - **Amrc** – Amolo rhyolitic coulée dome
  - **Pdl** – Pedernal rhyolitic lava (1,600 ± 100 ka)[2]
  - **Cual** – Cuautelolulco trachy-andesitic lava (1,600 ± 200 ka)[2]
  - **Lrd** – Lobera rhyolitic dome (1,700 ± 400 ka)[2]
  - **Tal** – Terrerillos andesitic lava and scoria cone
  - **Alrd** – Altamira rhyolitic dome
  - **Coal** – Colorada andesitic lava (2,027 ± 40 ka)[4]
- **Early post-caldera volcanism**
  - **Atad** – Ajolotla trachyandesitic dome
  - **Mtal** – Manzanito basaltic trachyandesite lava
  - **Vtal** – Viejo basaltic trachyandesite lava
  - **Atal** – Aguila basaltic trachyandesite lava (2,441 ± 234 ka)[4]
  - **Srl** – Sayula rhyolitic lava
  - **Hbl** – Huistongo basaltic andesite lava
  - **Ls** – Lacustrine sediments
- **Caldera-forming eruption**
  - **Aai** – Acoculco andesitic ignimbrite (2,731.8 ± 185 ka)[4]
- **Pre-caldera volcanism**
  - **Tdld** – Terrerillos dacitic lava domes (3.0 ± 0.4 Ma)[3]
  - **Pald** – Puente andesitic lava domes
- **Pdd** – Peñuela dacitic domes (12.7 ± 0.6 Ma)[1]

Apan Tezontepec volcanic field

- **Extra-caldera volcanism**
  - **Clc** – Coliuca basaltic scoria cones (188 ± 6 ka)[3]
  - **Msc** – Moxhuite basaltic andesite scoria cones (239 ± 34 ka)[4]
  - **Ttal** – Tetelas basaltic trachyandesite lava (1,060 ± 84 ka)[4]
  - **Colc** – Coatzetzengo basaltic lava cones
  - **Bsc** – Blanco basaltic andesite scoria cones (1,274 ± 62 ka)[4]
  - **Cal** – Camelia andesitic lava (2,033 ± 84 ka)[4]
  - **Asc** – Amanalco basaltic scoria cones (2,408 ± 58 ka)[4]

References: [1]García -Palomo et al. (2002), [2]López -Hernández et al. (2009), [3]García-Tovar et al. (2015), [4]This study

Symbols

- Normal fault
- Topographic (Caldera rim)
- Inferred (Caldera rim)
- Geologic profile
- Study sites
- Age
- Exploratory well
- Town
- Contour
- State limit
- Main road
- Road