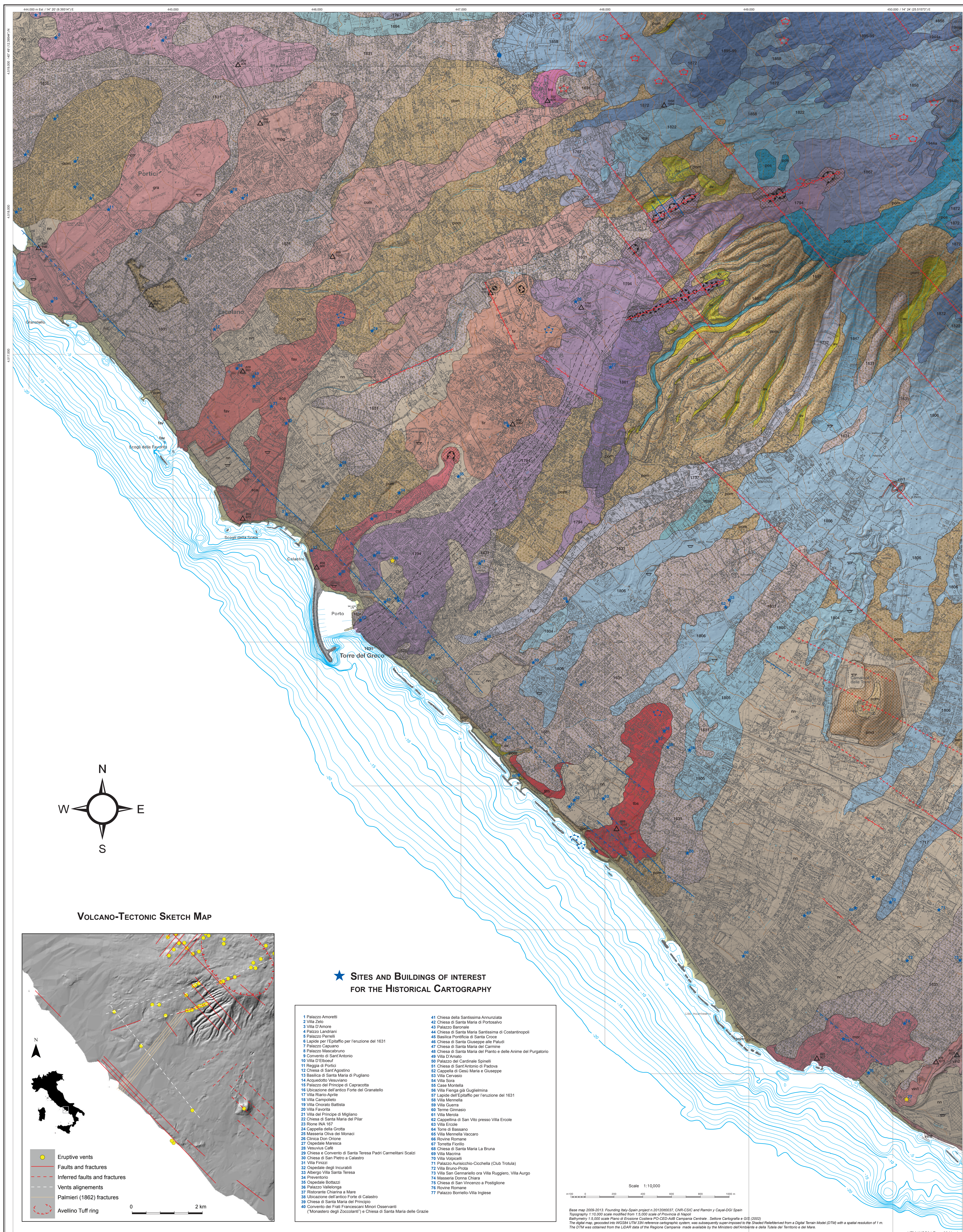


# VOLCANOLOGICAL MAP OF THE SOUTHWESTERN SECTOR OF VESUVIUS

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### LEGEND

#### Present Vesuvius Synthem

##### Piano delle Ginestre Subsynthem

- 1944 Primary and reworked talus deposits, Vesuvian activity between AD 1631 and 1944
- 1895-1899 Laeucite-rich phonotephritic lava flows and hot avianche deposits from 1844 eruption
- 1872 Phonotephritic lava domes and lava flows emitted between 1899 and 1895 (Colle Umberto)
- 1867 Phonotephritic lava flows emitted in 1867
- 1861 Phonotephritic lateral lava flow emitted in 1861
- 1858 Laeucite-rich phonotephritic lava domes and lava flows emitted in 1858
- 1847 Phonotephritic lava flows emitted in 1847
- 1822 Phonotephritic lava flows emitted in 1822
- 1806 Phonotephritic lava flows emitted in 1806
- 1805 Phonotephritic lava flows emitted in 1805
- 1804 Phonotephritic lava flows emitted in 1804
- 1794 Phonotephritic lateral lava flow emitted in 1794
- 1767 Phonotephritic lava flows emitted in 1767
- 1737 Phonotephritic lava flow emitted in 1737
- 1717 Phonotephritic lava flow emitted in 1717
- 1698 Phonotephritic lava flows emitted in 1698
- 1697 Phonotephritic lava flows emitted in 1697
- 1694 Phonotephritic lava flows emitted in 1694

##### AD 1631 Subsynthem

- 1631 Concentrated pyroclastic density current deposits of the 1631 small-scale plinian eruption. Chemical composition ranges from phonotephritic to leucite/phonotephritic. Juvenile fraction is made of grey-greenish scoriae with abundant leucite and biotite phenocrysts. Inside Villa Inglese (77) quarry hyper-concentrated debris flows outcrop

#### Medieval Vesuvius Synthem

##### Miglio d'oro Subsynthem

- cum Cupa dei Monti and Madonna di Pugliano phonotephritic lava flows. Ascribed to the 1037 eruption
- vt1 Trioni phonotephritic lava flow. Ascribed to the 1006-1007 eruption
- vnt1 Villa Inglese phonotephritic lava flow. Ascribed to the AD 969 eruption
- vnt2 Lower Villa Inglese phonotephritic lava flow. Ascribed to the AD 991 eruption
- tba Torre Bassano phonotephritic lava flow. Ascribed to the AD 968 eruption
- cal Calabro trachybasaltic lava flow. The age of eruption is comprised between the second half of the IX<sup>th</sup> and the first half of the X<sup>th</sup> century
- gra Granatello phonotephritic lava flow. The age of eruption is comprised between the beginning of the IX<sup>th</sup> and the first half of the X<sup>th</sup> century
- bel Bellavista phonotephritic lava flow. The age of eruption is comprised between the beginning of the IX<sup>th</sup> and the first half of the X<sup>th</sup> century
- fav Favara and Scogli della Scala phonotephritic lava flows. The age of eruption is comprised between the beginning of the IX<sup>th</sup> and the first half of the X<sup>th</sup> century
- tro Trioni phonotephritic lava dome. The age of eruption is comprised between the IX<sup>th</sup> and X<sup>th</sup> century
- mor Le Morlele phonotephritic lava flow, dated IX<sup>th</sup> century

##### Proto Vesuvius Synthem

##### AD 79 Subsynthem

- mn Soil, mainly derived from the AD 79 Plinian eruption deposits
- poim Diluted and dense (generally massive) pyroclastic density current deposits, within in color, containing steam and marble fragments. Grey porphyritic (andesite, plagioclase, leucite, amphibole, garnet, biotite) particles represent the juvenile fraction. Chemical composition ranges from leucite/phonotephritic to phonotephritic. At places (40, 64) hyper-concentrated debris flows outcrop
- cmd Camaldoli della Torre (Colle Sant'Angelo) scoria cone, the age span between Avellino and Pompeii eruptions. In the uppermost portion of Scoppella Barattoli area thin layers of black lapilli fallout and whitish ashes outcrop ascribed to the APS eruption by Antonino & Coni, Bull. Volcanol. 2002

#### Pre-historic Vesuvius Synthem

##### Avellino Subsynthem

- av Diluted pyroclastic density current deposits ascribed to the Avellino eruption (1906±10 BC). Scoriae at base (see Fig. 2011). Alternating of fine (light) and coarse ash beds with abundant lava and carbonate fragments (lower sequence). Alternation of massive ash with abundant lime blocks and dense-bedded ash with internal cross-stratification, and massive accessory lapilli bearing ash beds (upper sequence) (Dupont et al., Bull. Volcanol. 2010)

#### Lithofacies

- Lava flow
- Diluted pyroclastic density current deposit
- Condensed pyroclastic density current deposit
- Scoriae cone or spatter rampart
- Lapilli fallout deposit
- Hot avalanche deposit
- Beach deposit

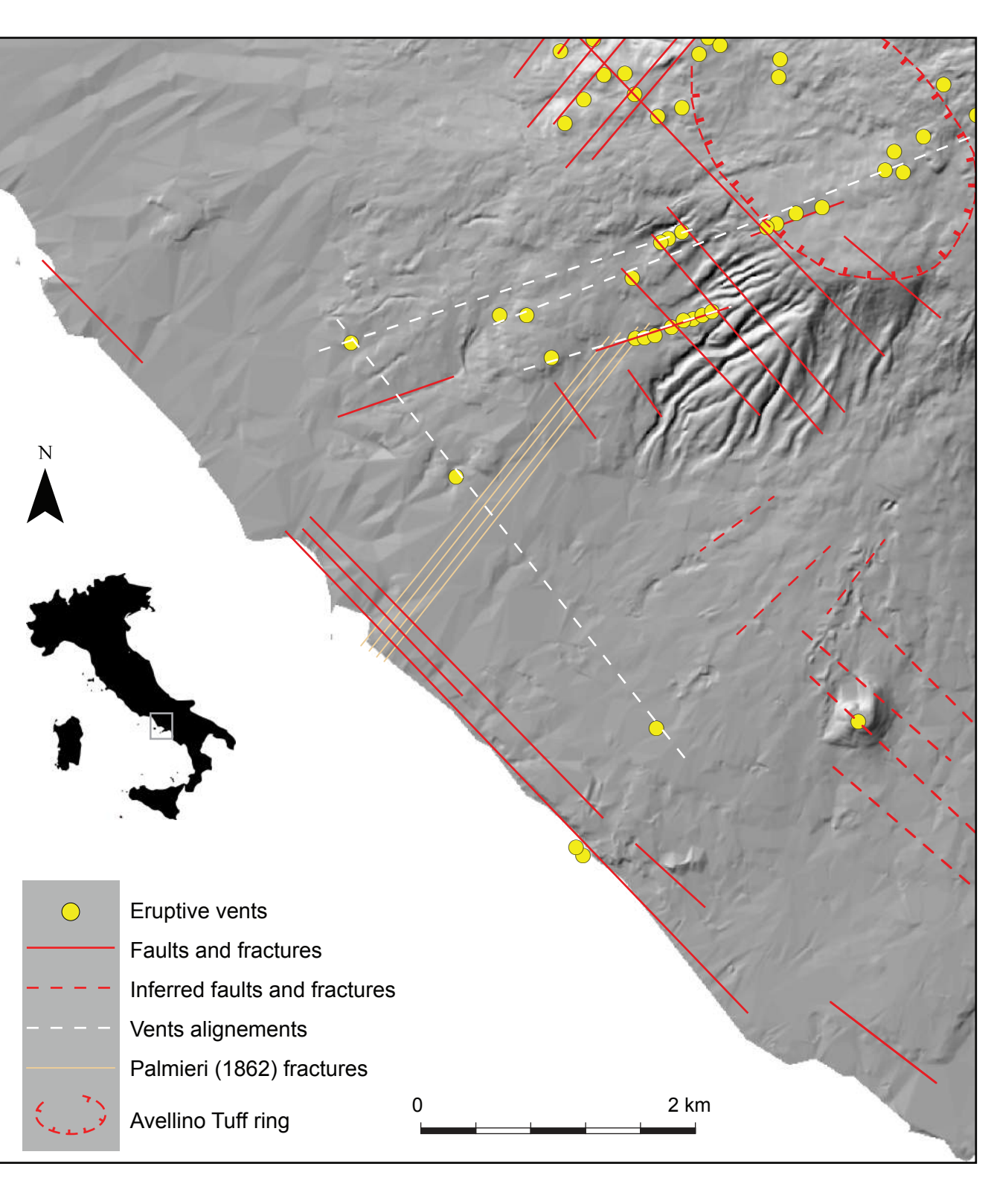
#### Symbols

- Abandoned quarry
- Vent
- Buried vent
- Inferred vent
- Cater rim/inferred crater rim
- Fumarole
- Stream
- Normal fault dashed where inferred
- Fracture dashed where inferred
- Cohesive vent alignment
- Fractures opened during the 1861 eruption from the cartography of Luigi Palmieri (1862)
- Geological boundary
- Erosional archaeological area
- Archaeomagnetic age interval, years after Christ

#### TAS CHEMICAL CLASSIFICATION (1)

1) TAS - Total Alkali Silica diagram from R.L. Le Maitre (ed.), International Union of Geological Sciences, University Press, Cambridge, 2002.  
 2) Data from Coni et al. (1993), J. Petrology 34 (3): 739-776.  
 3) Data from Di Piero et al. (2007), J. Petrology 48 (1): 753-784.

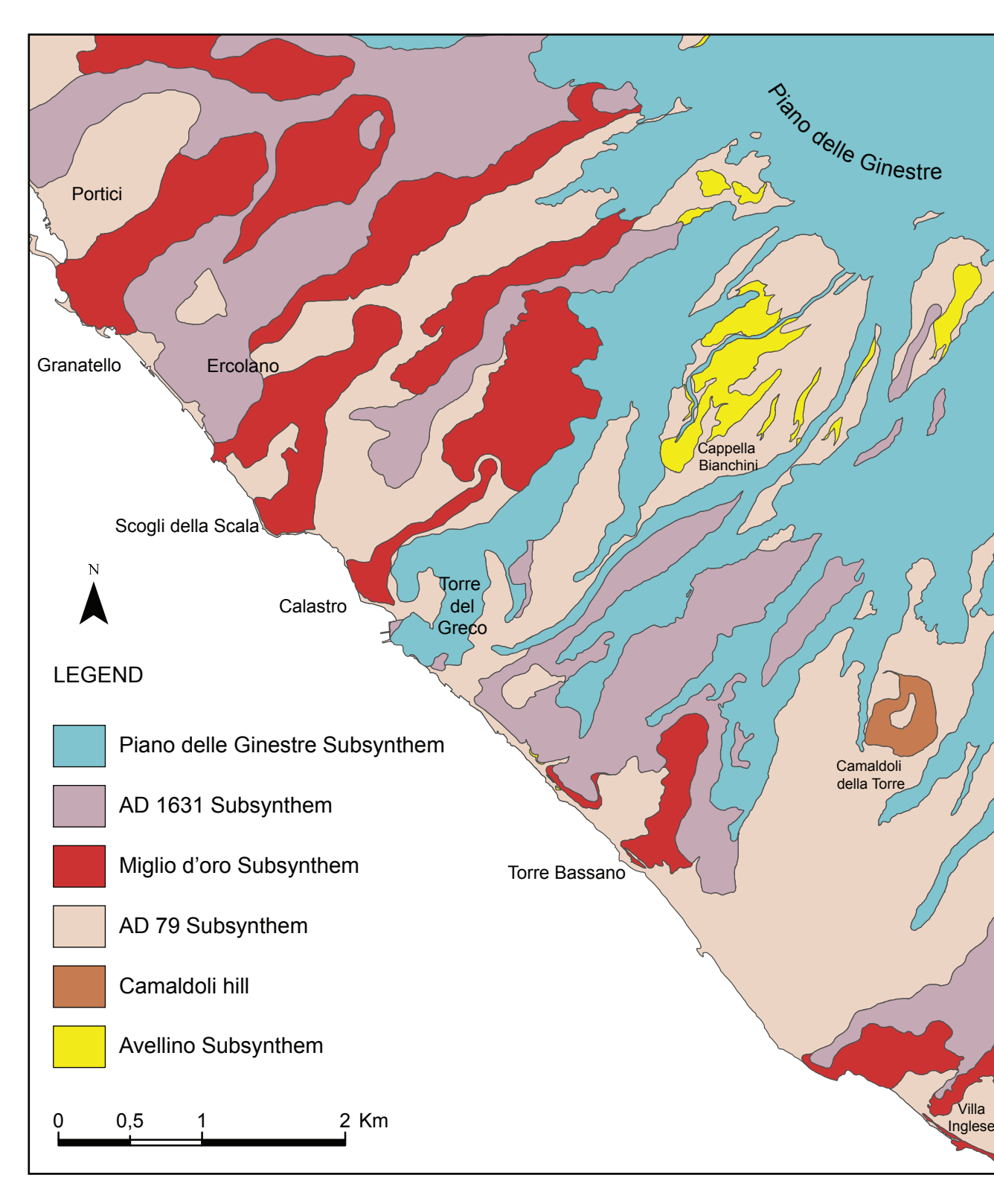
### VOLCANO-TECTONIC SKETCH MAP



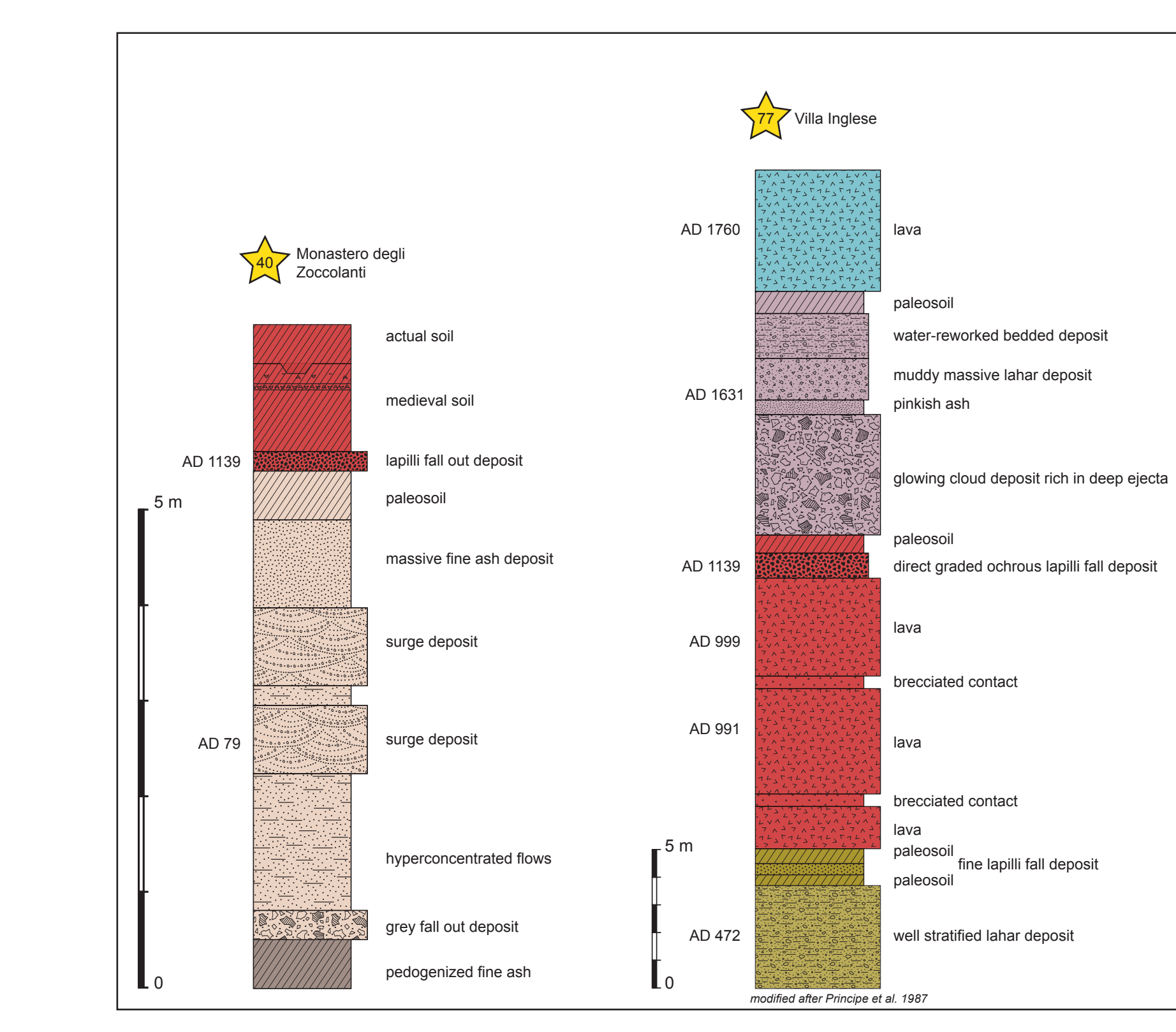
### SITES AND BUILDINGS OF INTEREST FOR THE HISTORICAL CARTOGRAPHY

- 1 Palazzo Amoretti
- 2 Villa Zani
- 3 Villa D'Amore
- 4 Palazzo Landolfi
- 5 Palazzo Perotti
- 6 Lapide per l'effigie per l'eruzione del 1631
- 7 Palazzo Capovano
- 8 Palazzo Mascabruno
- 9 Convento di Sant'Antonio
- 10 Villa D'Elboeuf
- 11 Reggia di Portici
- 12 Chiesa di Sant'Agostino
- 13 Basilica di Santa Maria di Pugliano
- 14 Acquedotto Vesuviano
- 15 Palazzo del Principe di Casarcutta
- 16 Ubicazione dell'antico Forte del Granatello
- 17 Villa Ruffini-Angeli
- 18 Villa Campofelice
- 19 Villa Favara
- 20 Villa Chiaravalle
- 21 Villa del Principe di Mignano
- 22 Chiesa di Santa Maria del Pilar
- 23 Rocca Nuova
- 24 Cappella della Grotta
- 25 Massaro Olivo dei Monaci
- 26 Chiesa Don Orione
- 27 Ospedale Marella
- 28 Chiesa di Santa Teresa Padri Carmelitani Scalzi
- 29 Chiesa a Convento di Santa Teresa Padri Carmelitani Scalzi
- 30 Chiesa di Santa Maria del Piccolo
- 31 Villa Frosini
- 32 Ospedale degli Incurabili
- 33 Albergo Villa Santa Teresa
- 34 Provettoia
- 35 Ospedale Bonazzi
- 36 Palazzo Velletrigo
- 37 Riservata Chiarina a Mare
- 38 Ubicazione dell'antico Forte di Calabro
- 39 Chiesa di Santa Maria del Piccolo
- 40 Convento dei Frati Filippiniani Monaci Osservanti (Monastero degli Zoccolanti) e Chiesa di Santa Maria delle Grazie
- 41 Chiesa della Santissima Annunziata
- 42 Chiesa di Santa Maria di Portosanto
- 43 Palazzo Barone
- 44 Chiesa di Santa Maria Santissima di Costantinopoli
- 45 Basilica Pontificia di Santa Croce
- 46 Chiesa di Santa Giuseppa alle Pisciarelle
- 47 Chiesa di Santa Maria del Carmine
- 48 Chiesa di Santa Maria del Piano e delle Anime del Purgatorio
- 49 Villa D'Amore
- 50 Palazzo del Cardinale Spinelli
- 51 Chiesa di Sant'Antonio di Padova
- 52 Cappella di Gesù Maria e Giuseppe
- 53 Villa Capovano
- 54 Villa Sora
- 55 Casa Marone
- 56 Villa Fanga già Gugliemina
- 57 Lapide dell'effigie per l'eruzione del 1631
- 58 Villa Marone
- 59 Villa Guerra
- 60 Torre Giansola
- 61 Villa Merola
- 62 Cappella di San Vito presso Villa Ercole
- 63 Villa Ercole
- 64 Torre di Bassano
- 65 Villa Merone
- 66 Villa Merone Vecchio
- 67 Torre Focillo
- 68 Chiesa di Santa Maria La Bruna
- 69 Villa Marone
- 70 Villa Vespucio
- 71 Palazzo Aususichio-Cocchella (Club Trout)
- 72 Villa Ruffini-Angeli
- 73 Villa San Gerardo ora Villa Ruggiero, Villa Argeo
- 74 Masseria Donna Chiara
- 75 Chiesa di San Vito a Postiglione
- 76 Rocce Romane
- 77 Palazzo Barone Villa Inglese

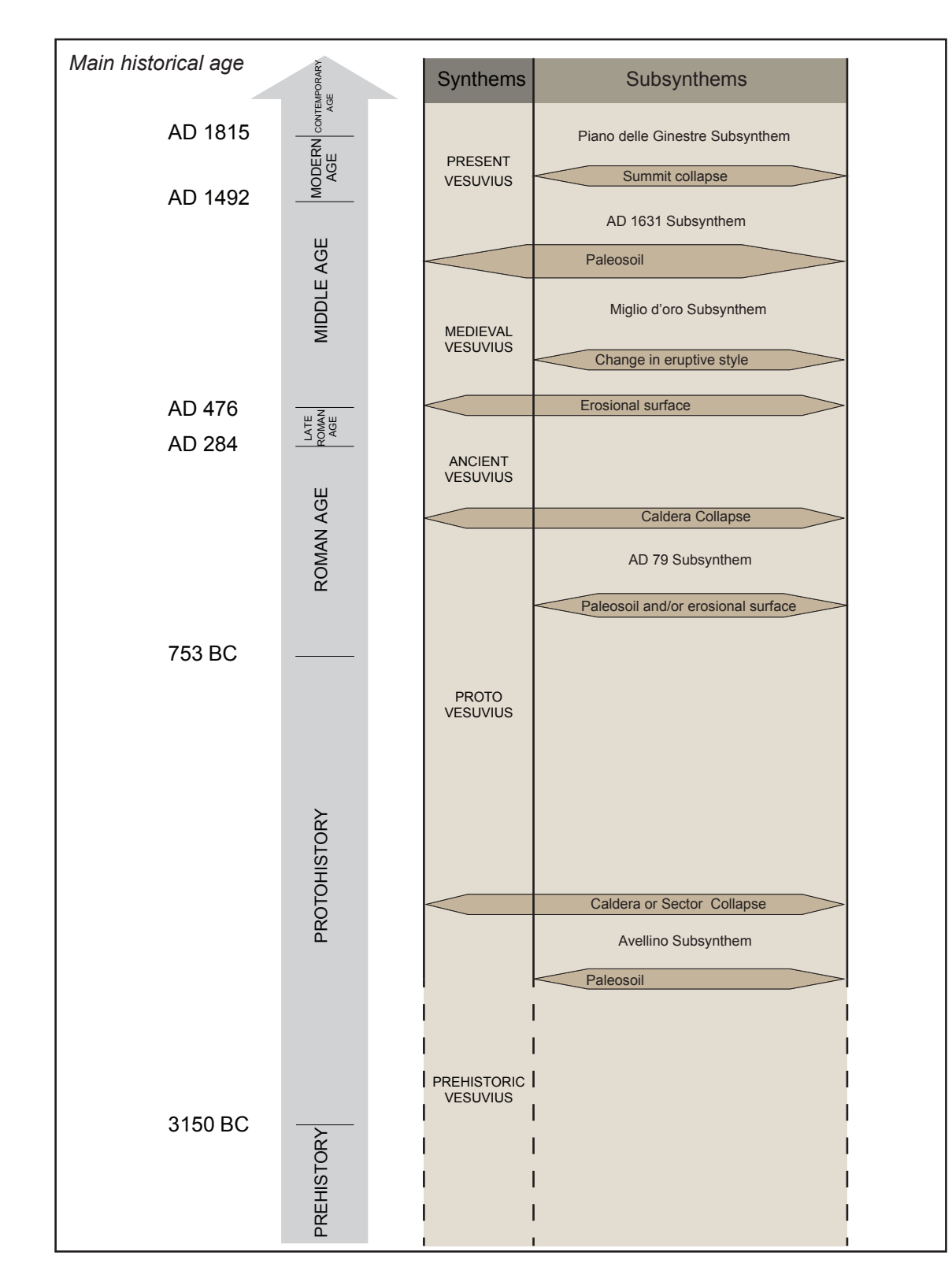
### SYNTHETIC SKETCH MAP



### STRATIGRAPHIC SECTIONS



### SYNTHETIC SUBDIVISION



### MAIN PETROGRAPHIC FEATURES

Units	Androsite	Leucite	Plagioclase	Olivine	Biotite	Fe-Titanite	Verticillite	Rock color*
1944	+	+	+	+	+	+	+	N4 medium light grey
1895-1899	+	+	+	+	+	+	+	N4 medium grey
1872	+	+	+	+	+	+	+	N4 medium dark grey
1867	+	+	+	+	+	+	+	N4 medium dark grey
1861	+	+	+	+	+	+	+	N4 dark grey
1858	+	+	+	+	+	+	+	N4 dark grey
1847	+	+	+	+	+	+	+	N4 medium dark grey
1822	+	+	+	+	+	+	+	N4 medium grey
1806	+	+	+	+	+	+	+	N4 medium grey
1805	+	+	+	+	+	+	+	N4 medium grey
1804	+	+	+	+	+	+	+	N4 medium grey
1794	+	+	+	+	+	+	+	N4 medium dark grey
1767	+	+	+	+	+	+	+	N4 medium grey
1737	+	+	+	+	+	+	+	N4 medium grey
1717	+	+	+	+	+	+	+	N4 medium grey
1698	+	+	+	+	+	+	+	N4 medium grey
1697	+	+	+	+	+	+	+	N4 medium grey
1694	+	+	+	+	+	+	+	N4 medium dark grey
1631	+	+	+	+	+	+	+	N4 medium grey
cum	+	+	+	+	+	+	+	N4 medium dark grey
poim	+	+	+	+	+	+	+	N4 medium dark grey
vt1	+	+	+	+	+	+	+	N4 medium dark grey
vnt1	+	+	+	+	+	+	+	N4 medium dark grey
vnt2	+	+	+	+	+	+	+	N4 medium light grey
tba	+	+	+	+	+	+	+	N4 medium light grey
cal	+	+	+	+	+	+	+	N4 medium light grey
gra	+	+	+	+	+	+	+	N4 medium dark grey
bel	+	+	+	+	+	+	+	N4 medium grey
fav	+	+	+	+	+	+	+	N4 medium light grey
tro	+	+	+	+	+	+	+	N4 medium light grey
mor	+	+	+	+	+	+	+	N4 medium dark grey

abundances: + rare ○ poor ● abundant  
 \* codes refer to Munsell rock-color chart (2011)  
 † = phenocrysts m = microlites