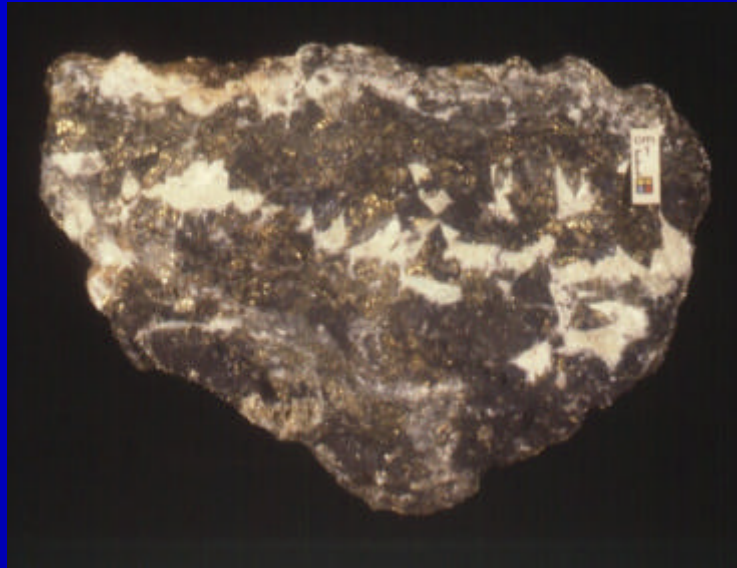


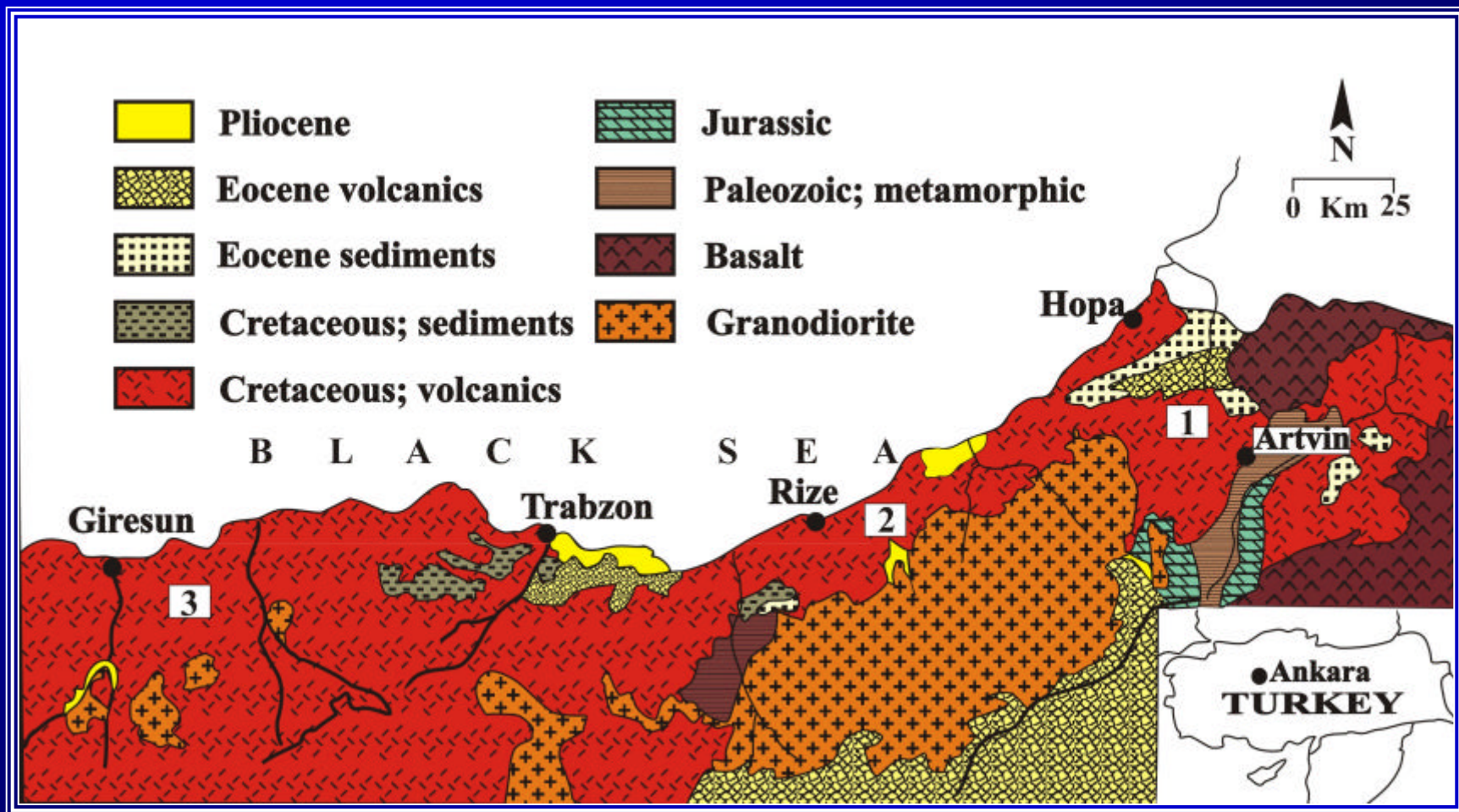
Volcanogenic massive sulfide deposits (VMSD) in the East Pontic metallotect, NE Turkey



**Nevzat Özgür
Süleyman Demirel Üniversitesi
Research and Application Center for Geothermal Energy,
Groundwater and Mineral Resources,
32260 Isparta, Turkey**

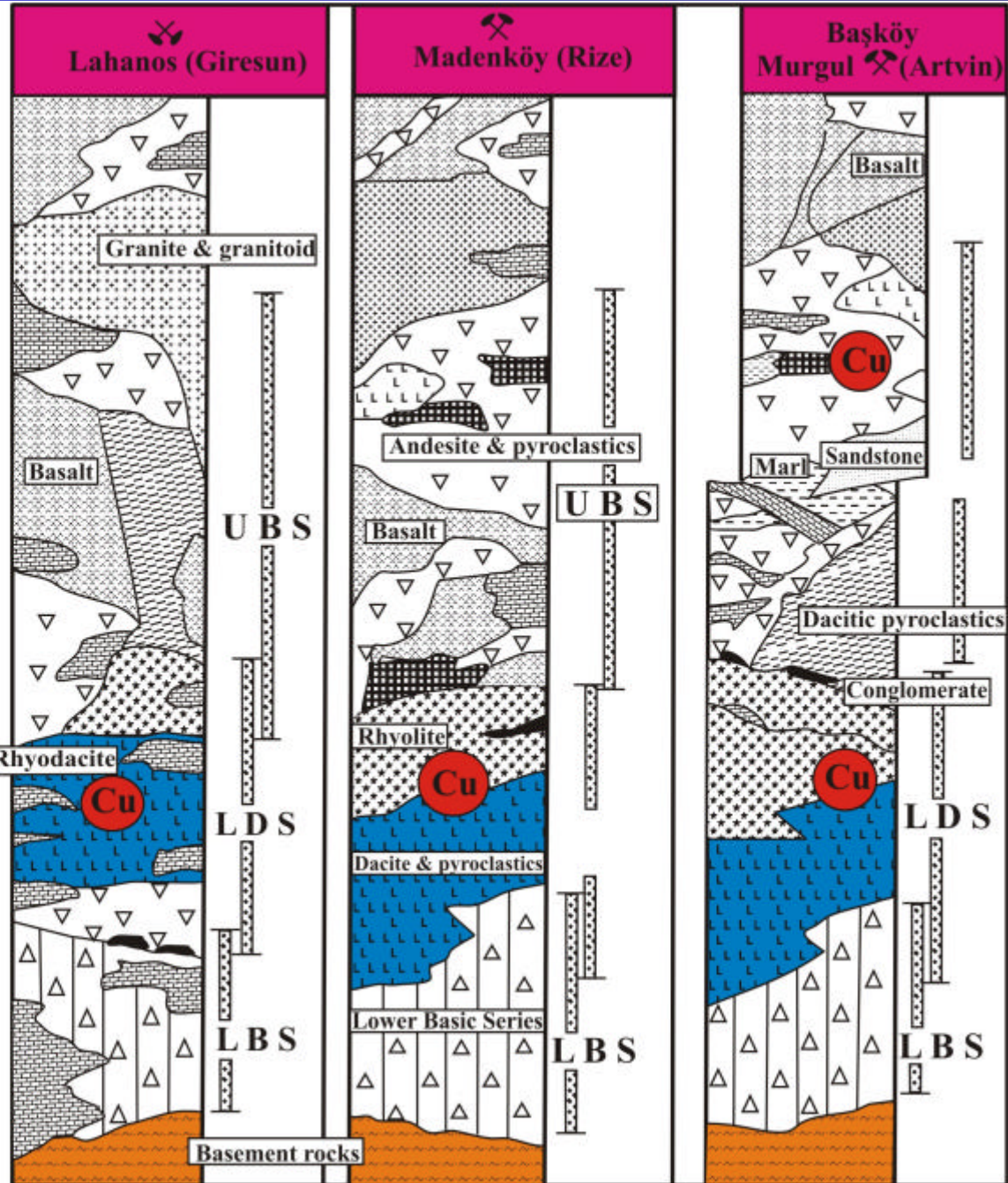
Aims of the investigation:

- ? to give a geological overview of the volcanogenic massive sulfide deposits in the East Pontic Metallotect, NE Turkey
- ? to elucidate the genesis of these volcanogenic massive sulfide deposits in the East Pontic Metallotect, NE Turkey

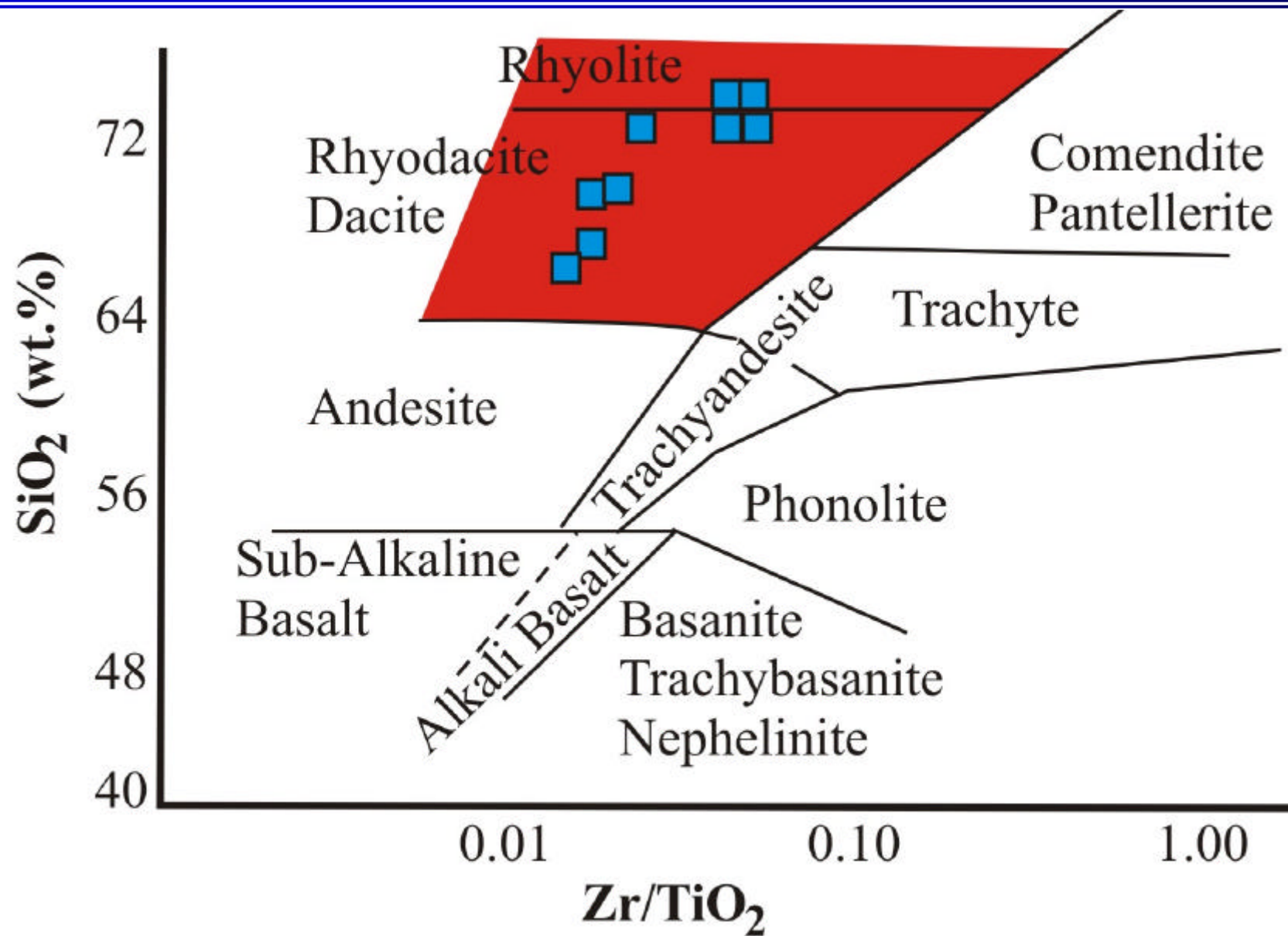


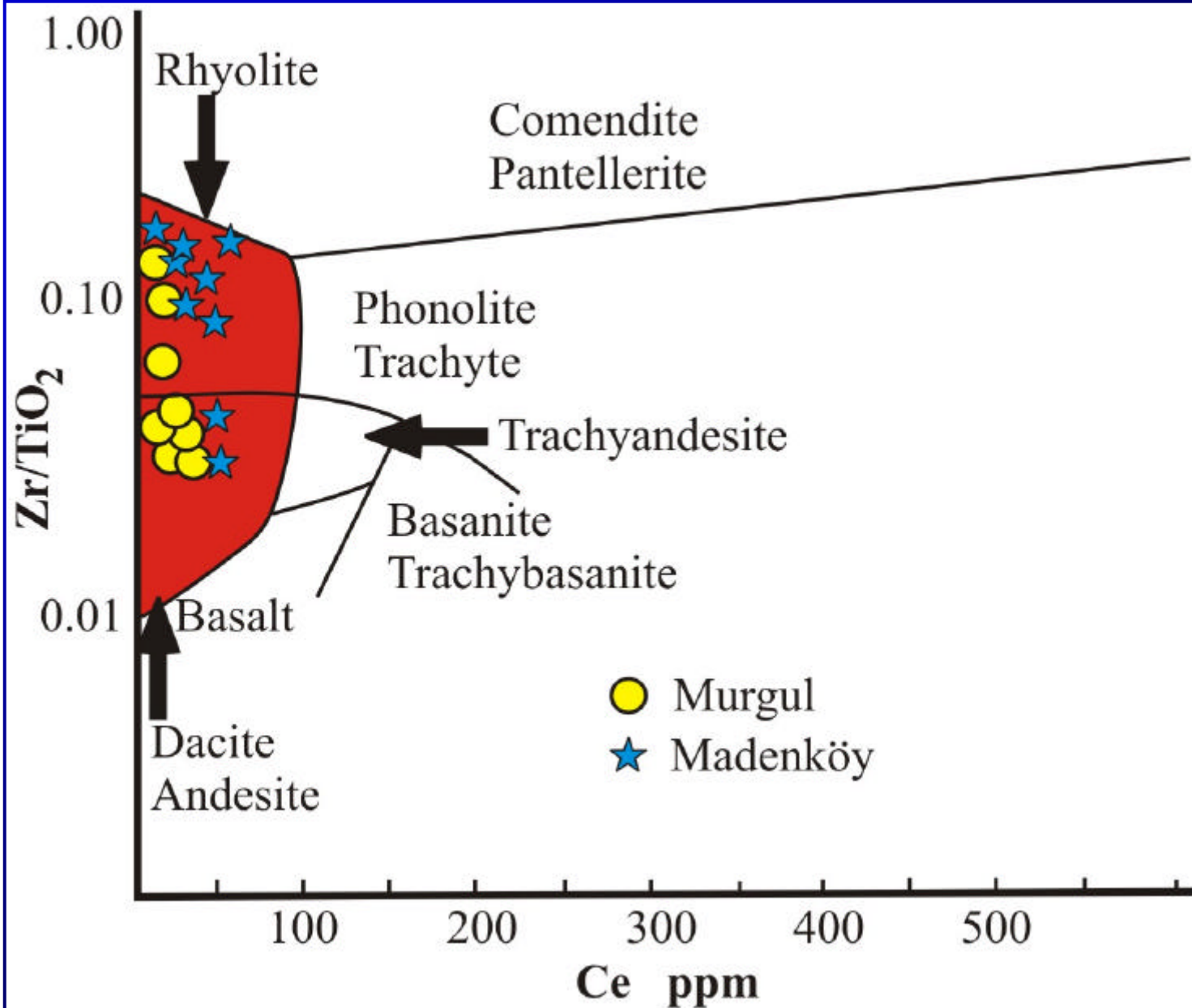
HOLOCENE
-
MIOCENE
OLIGOCENE
EOCENE
-
PALEOCENE
MAAST- RICHTIAN
CAMPANIAN
SANTONIAN
CONIACIAN
TURONIAN
-
LIAS
PALEOZOIC

M a g m a t i c c y c l e s

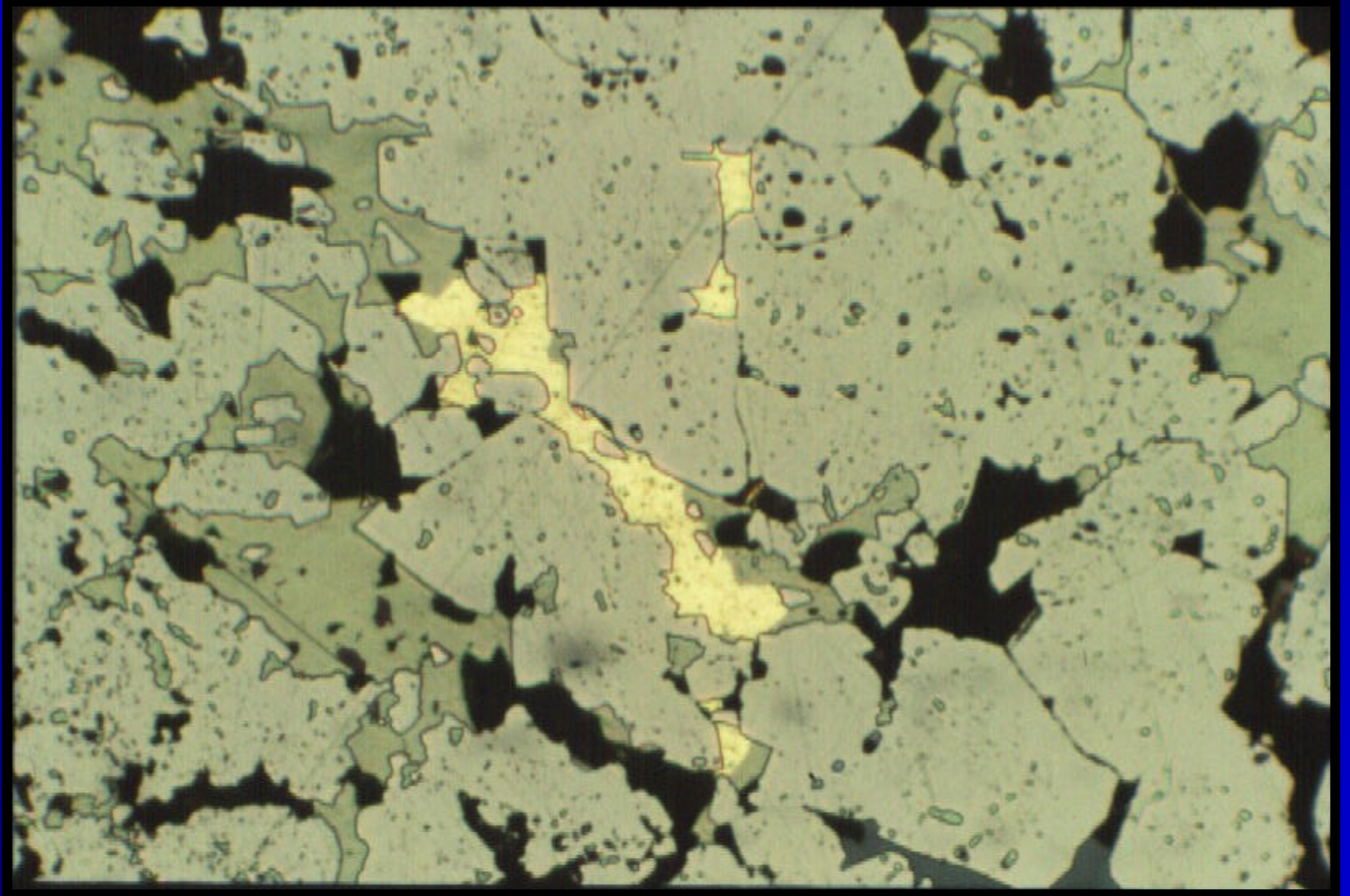








Ore deposits	Lahanos	Madenköy	Murgul
Host rocks	Dacitic-rhyolitic pyroclastics	Dacitic-rhyolitic pyroclastics	Dacitic-rhyolitic pyroclastics
Mineral paragenensis	pyrite marcasite chalcoppyrite sphalerite galena fahlore bornite enargite	pyrite chalcoppyrite sphalerite galena bornite enargite bornite	pyrite chalcoppyrite sphalerite galena fahlore covellite gold aikinite hessite tetradymite claustalithe
Alteration stages	argillic phyllic silicic	argillic phyllic silicic	argillic phyllic silicic
Ore types	disseminated ore stockwork ore small ore lodes	disseminated ore stockwork ore small ore lodes	disseminated ore stockwork ore small ore lodes
Ore reserves (million metric tones)	8 1,6 % Cu, 2,3 % Zn	30 2,9 % Cu, 4,3 % Zn	40 1,25 % Cu, 0,1 % Zn



Ore types:

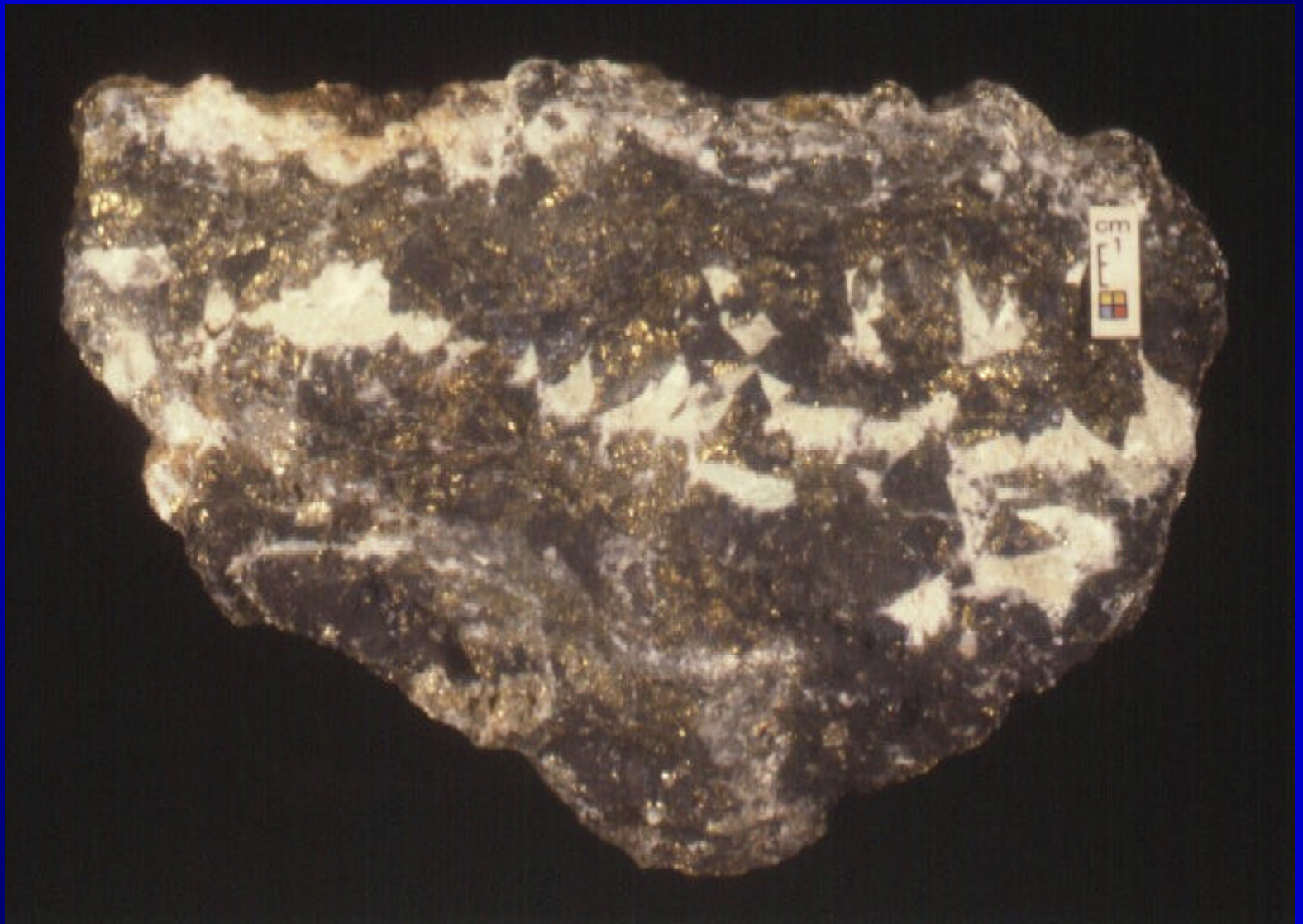
type 1: disseminated ore

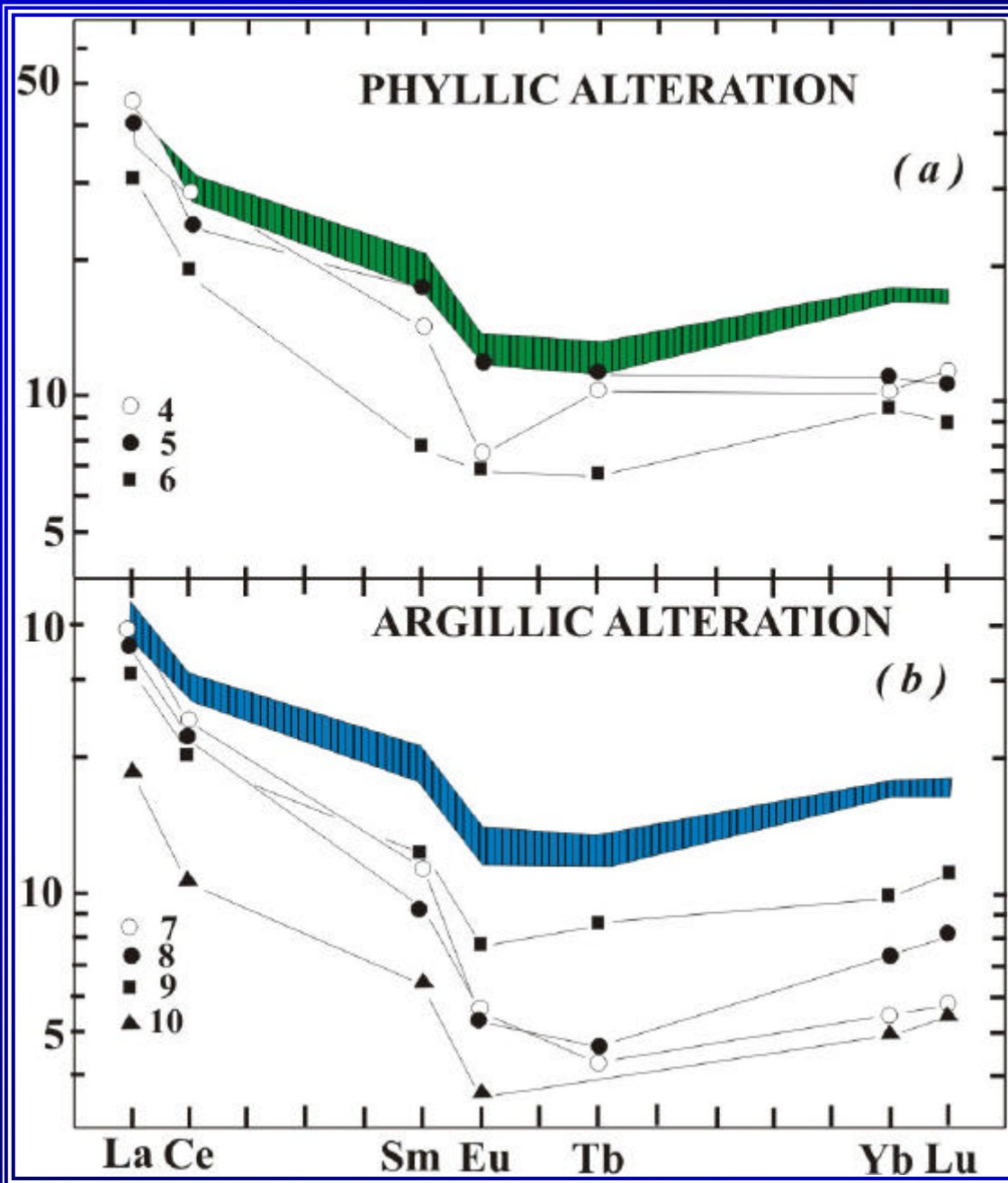
type 2: stockwork-like ore

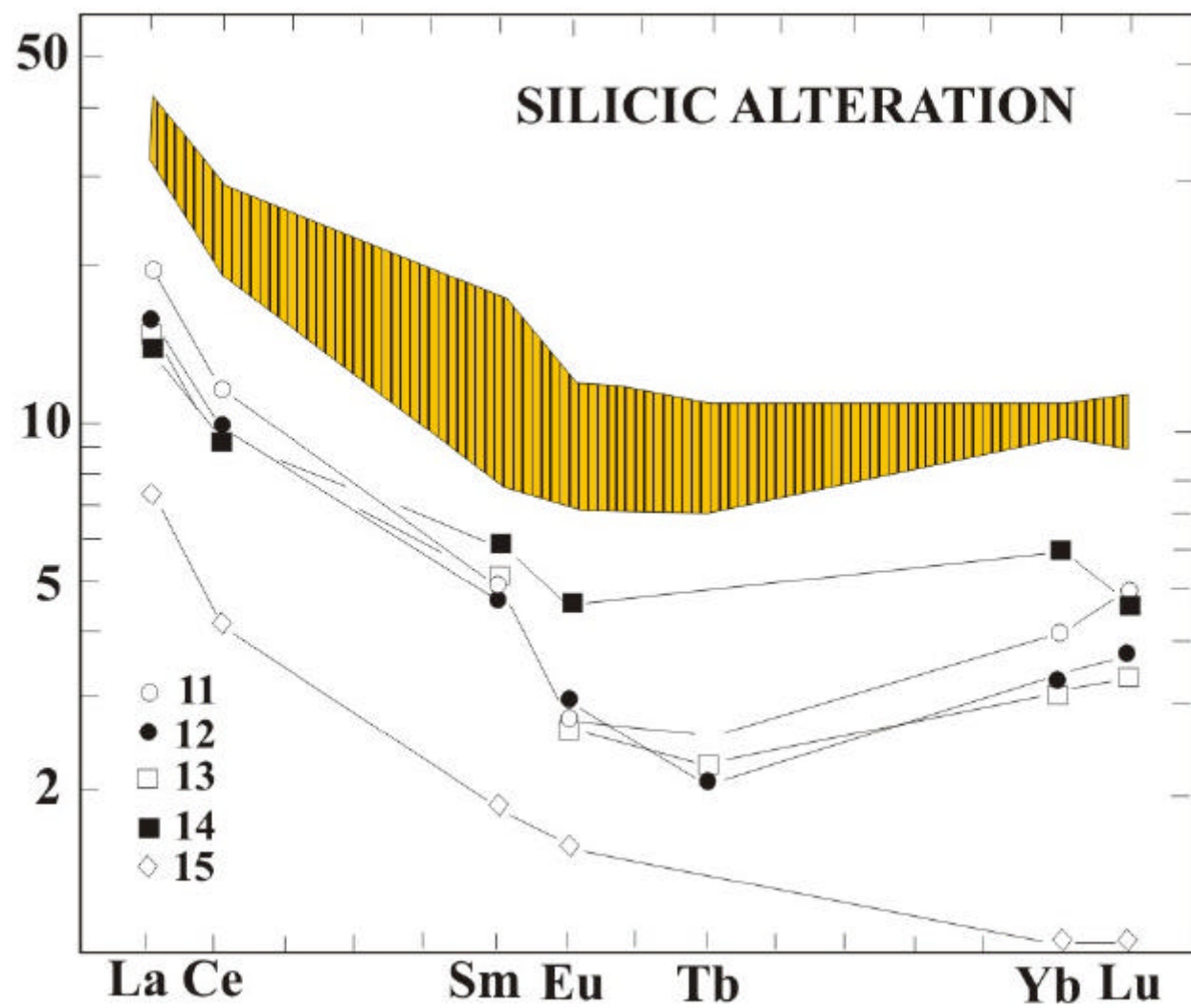
type 3: small ore lodes

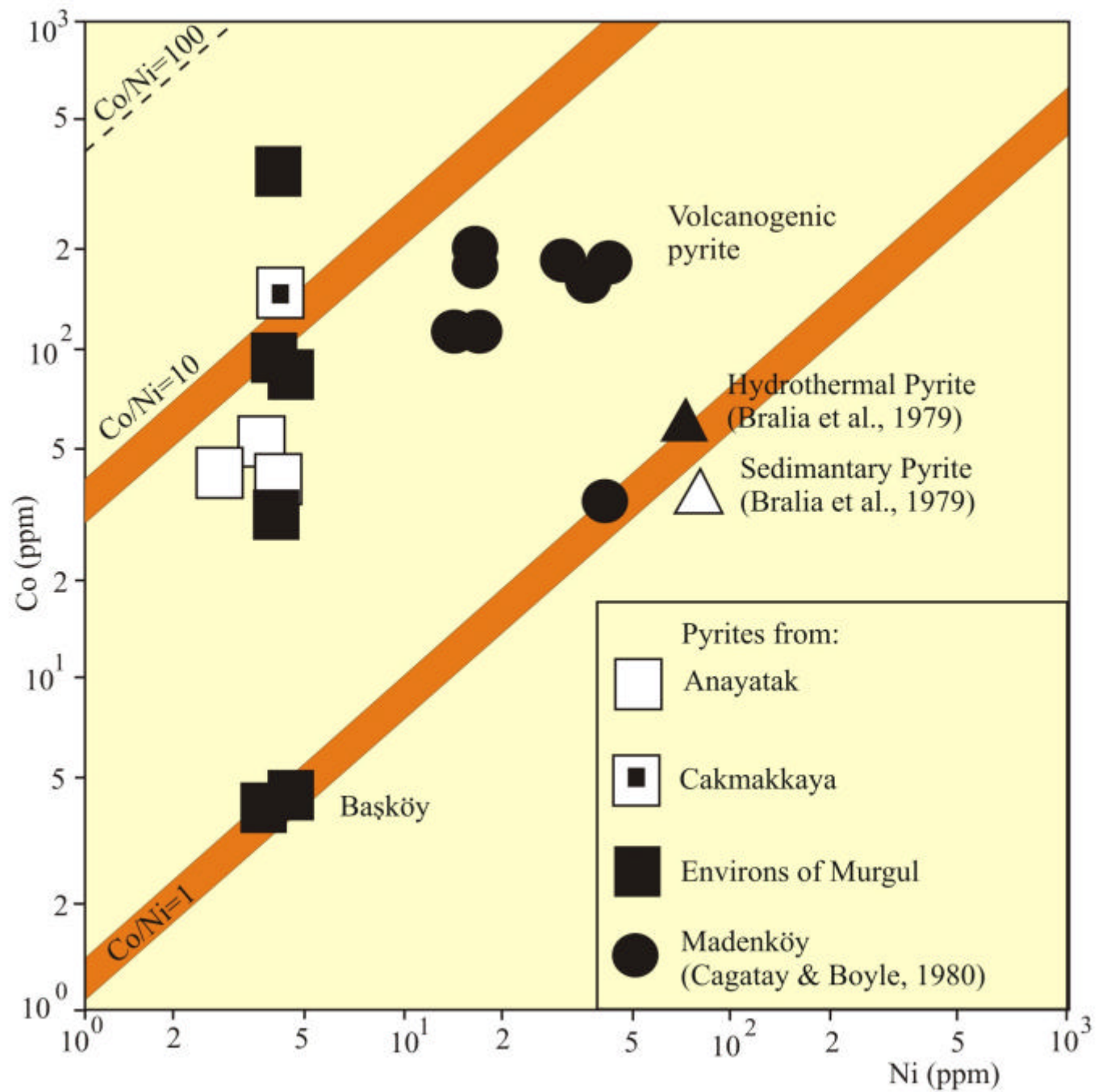


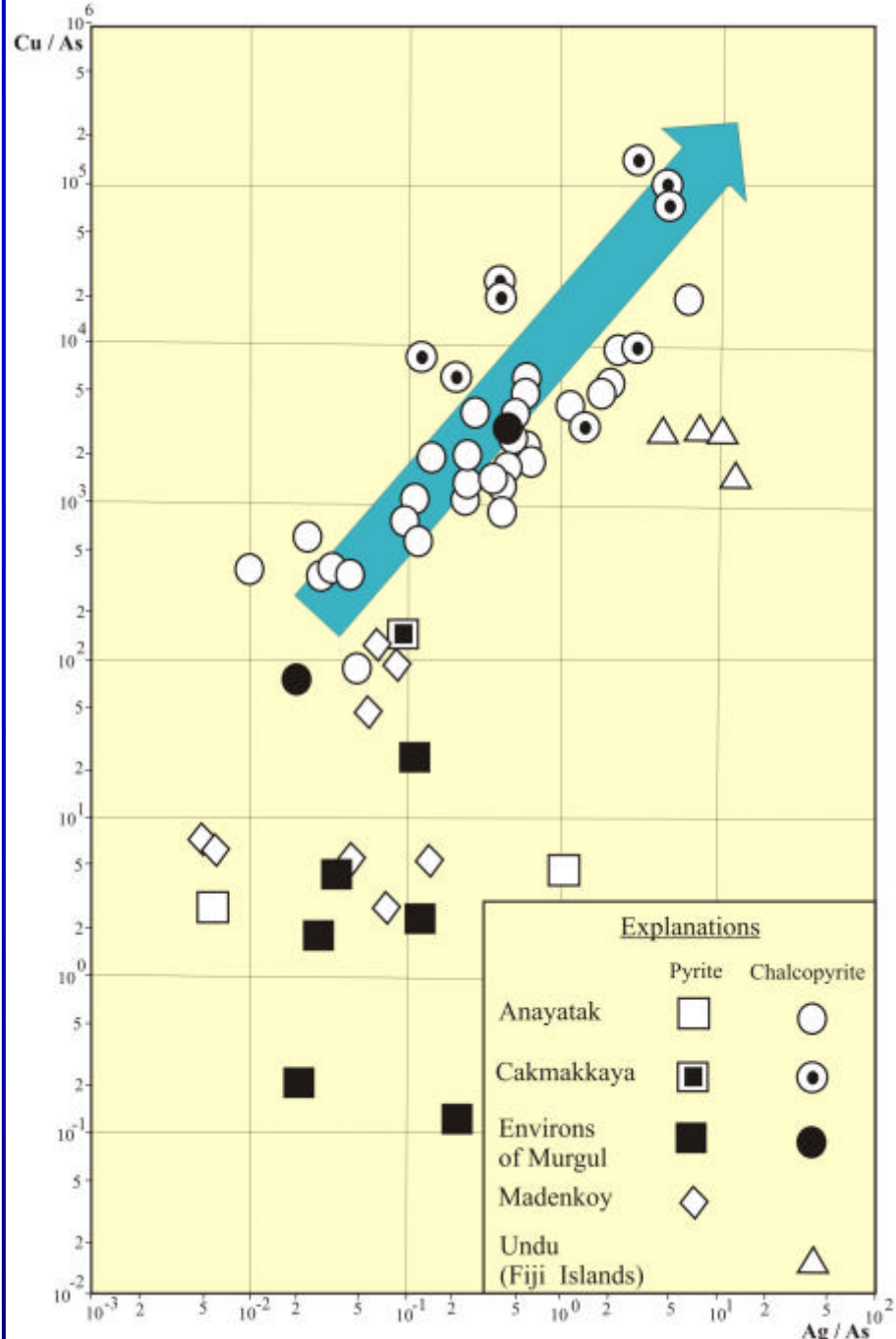


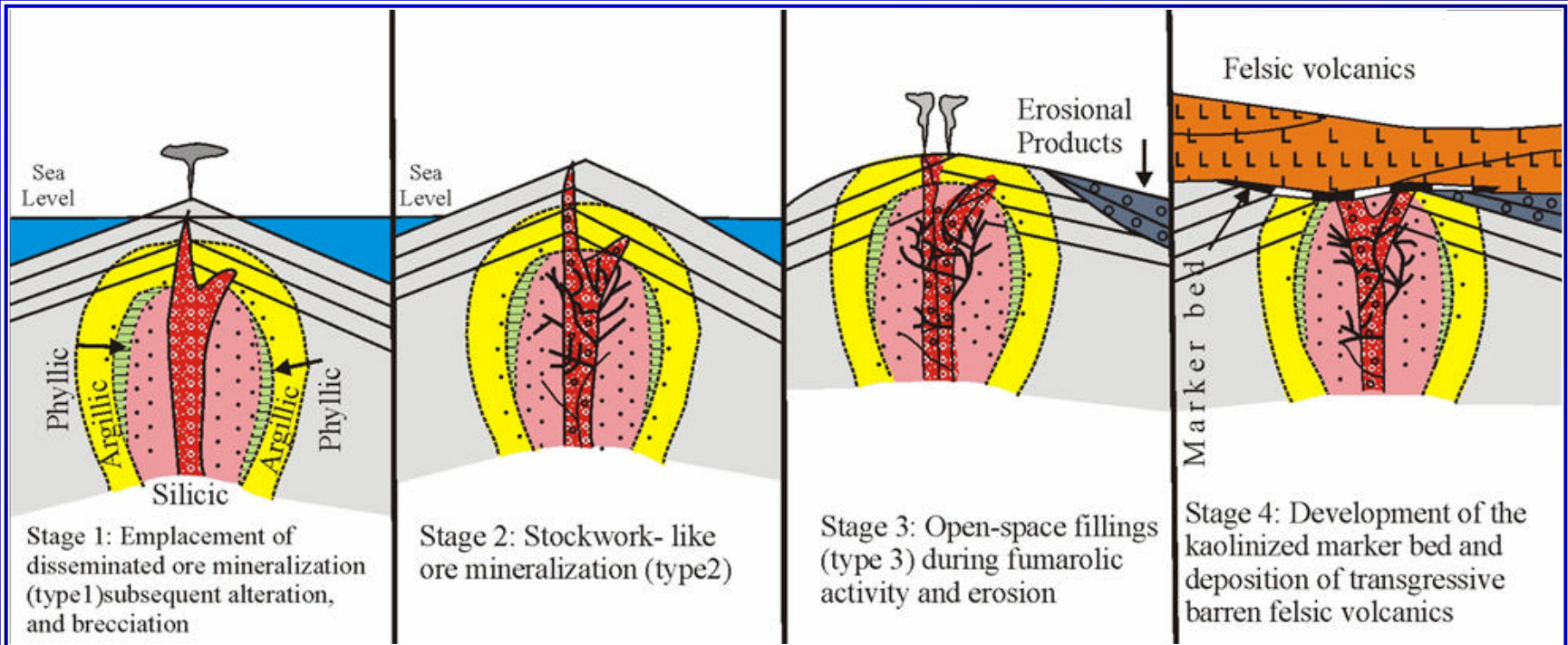






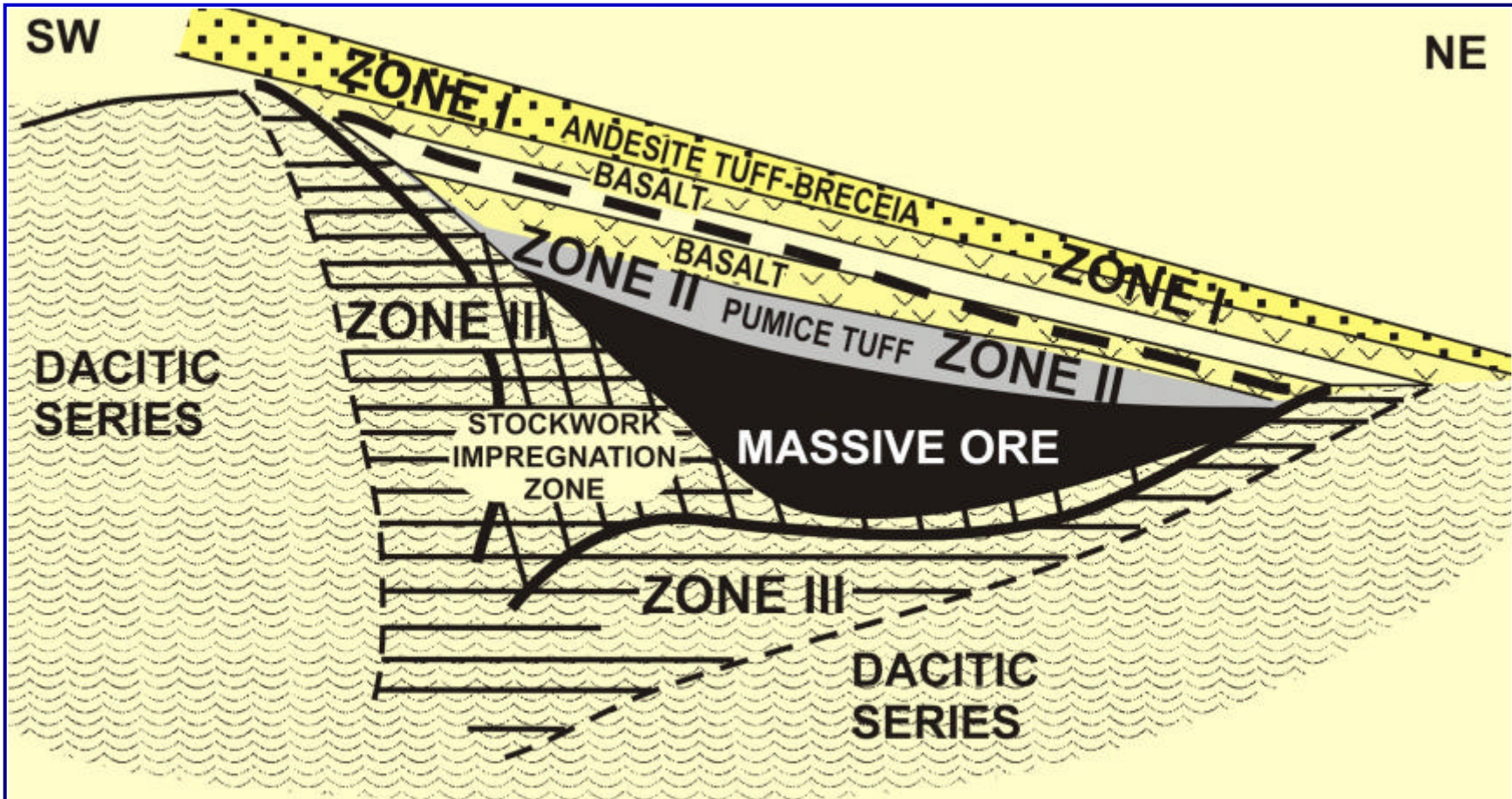


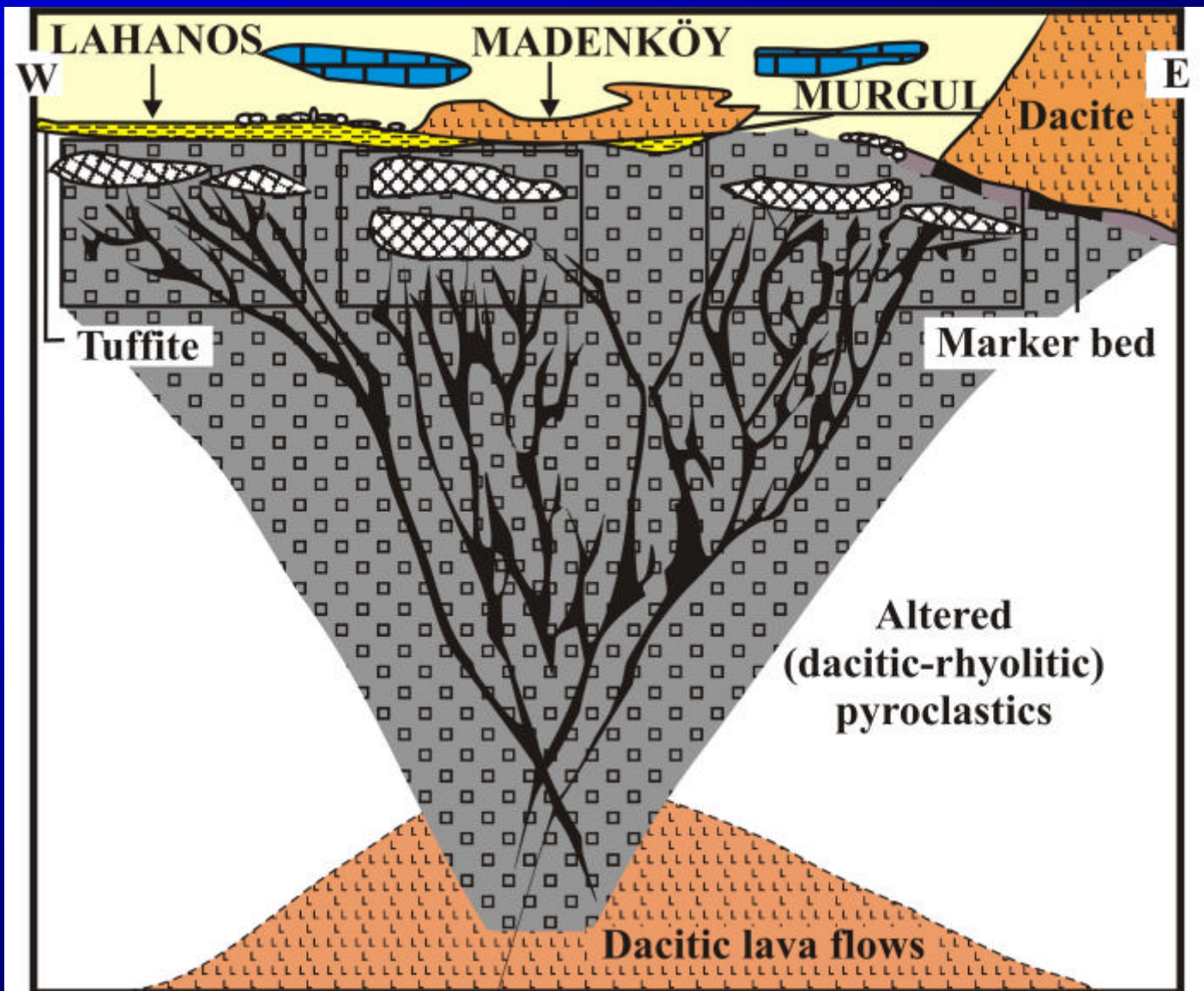




SW

NE





Conclusions

- ? **Volcanogenic massive sulfide deposits of Lahanos and Madenköy in the western part of the East Pontic metallotect are related to submarine-hydrothermal activity in a volcano-sedimentary sequence under temporarily subaquatic conditions and represent Kuroko-type deposits.**
- ? **The volcanogenic massive sulfide deposits of Murgul can be assigned to a subvolcanic-hydrothermal origin with an island arc volcanism under subaerial conditions and forms a transition from Kuroko-type deposits to copper porphyries genetically. It can be also considered as Murgul-type.**