

4.5

5.5

6.5

An orthogneiss migmatitic, Bam 213 which

gives a concordant age to 1965  $\pm$  18 My,

interpreted as being that of the oldest unit.

7.5

8.5

These ages are known in Western Hoggar and

even for some in central Hoggar. For example,

the ages around 1950,2050,2500 and 2700 My

are common in In Ouzzal terrane.





Conclusion

For the first time, the terrane of Tirek is the subject of a multi-field study leading to a

geological map to the 1/200.000. Various lithologies are described in details. The garnet-

bearing paraderived formations allowed the reconstitution of clockwise P-T path thanks

to classical and automatic thermobarometry. This metamorphism corresponds in the

passing of amphibolitic conditions (500 and 600°C) to low granulite facies (700 - 750°C

and 4 to 6 kbar). This is followed by a light decrease in pressure, 680-700°C and 3-4

kbar, then a return towards the low temperatures (450-550°C), accompanied by a

U-Pb datings on monozircon by method ICP-MS, put in connections with petrographic

and thermobarometric study, make it possible to reconstitute the history of the area.

Thus, on a substratum orthogneissic dated at 1965 My settle paraderived formations, in

context of rifting according to Caby (2003), marked by the alkaline orthogneisses dated

at 1810 My. The area remained stable, until the Panafrican during which granites were

set up at approximately 665 My, which within the Tuareg shield corresponds to a

convergence period and syn-subduction or slowly post-collisional granitic intrusions. In

this last case, the granites which are set up are the product of fusion of the lower crust

(Liégeois and al., 1998). It is probably the case of the protolith of migmatitic

granodiorite dated here. In this same migmatitic granodiorite, concordant zircons giving

ages between 645 and 627 My correspond probably to metamorphism and

migmatisation observed in this area. These ages are in adequacy with age of gabbroic

pluton of Tirek (647 My, Marignac and Al, 1996).

rehydration.

20 analyzes make a concordia at  $663 \pm 4$  My with a

high intercept at 1987  $\pm$  26 My (age of

orthogneisses). Some zircons rim give ages between

645 and 627 My. We interpreted the age of 663 My

as being that of the protolithe and the ages between 645 and 627 My those of the metamorphism, the

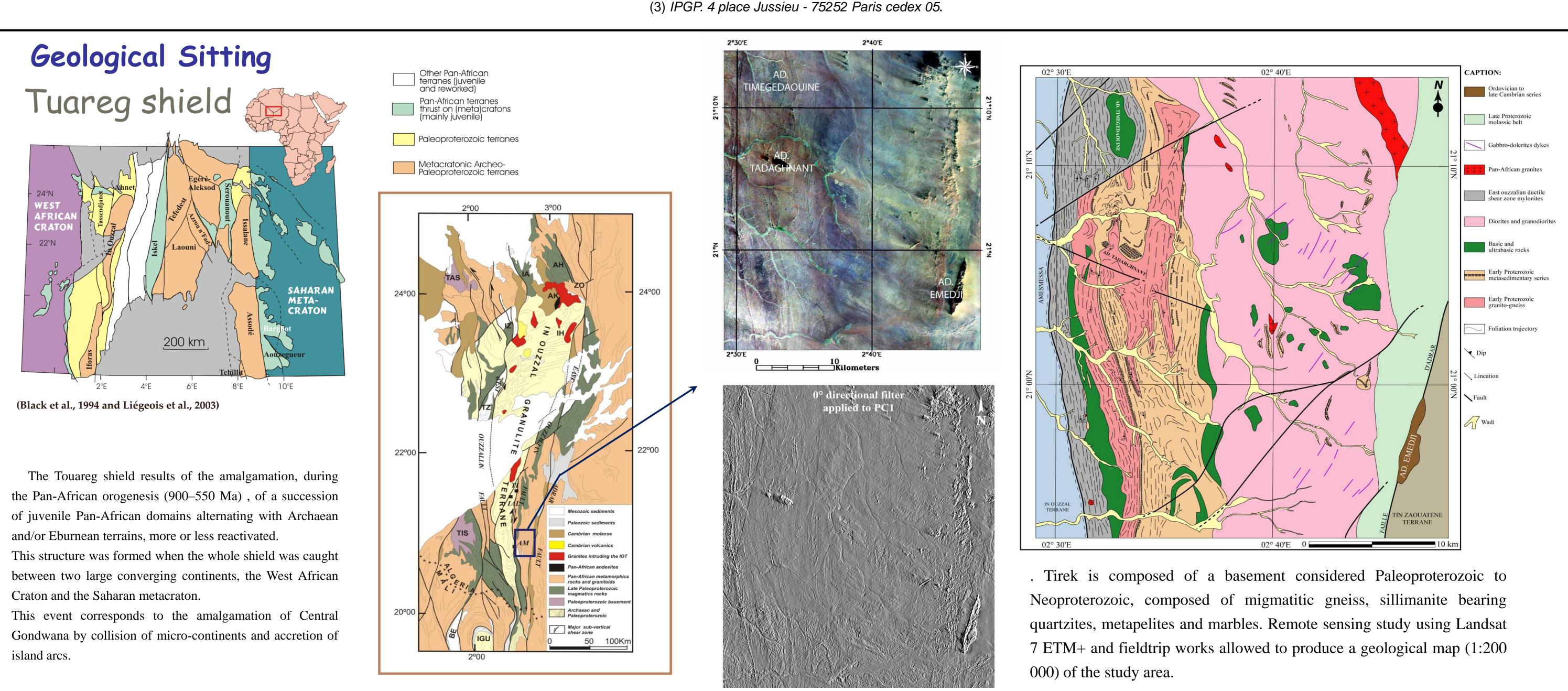
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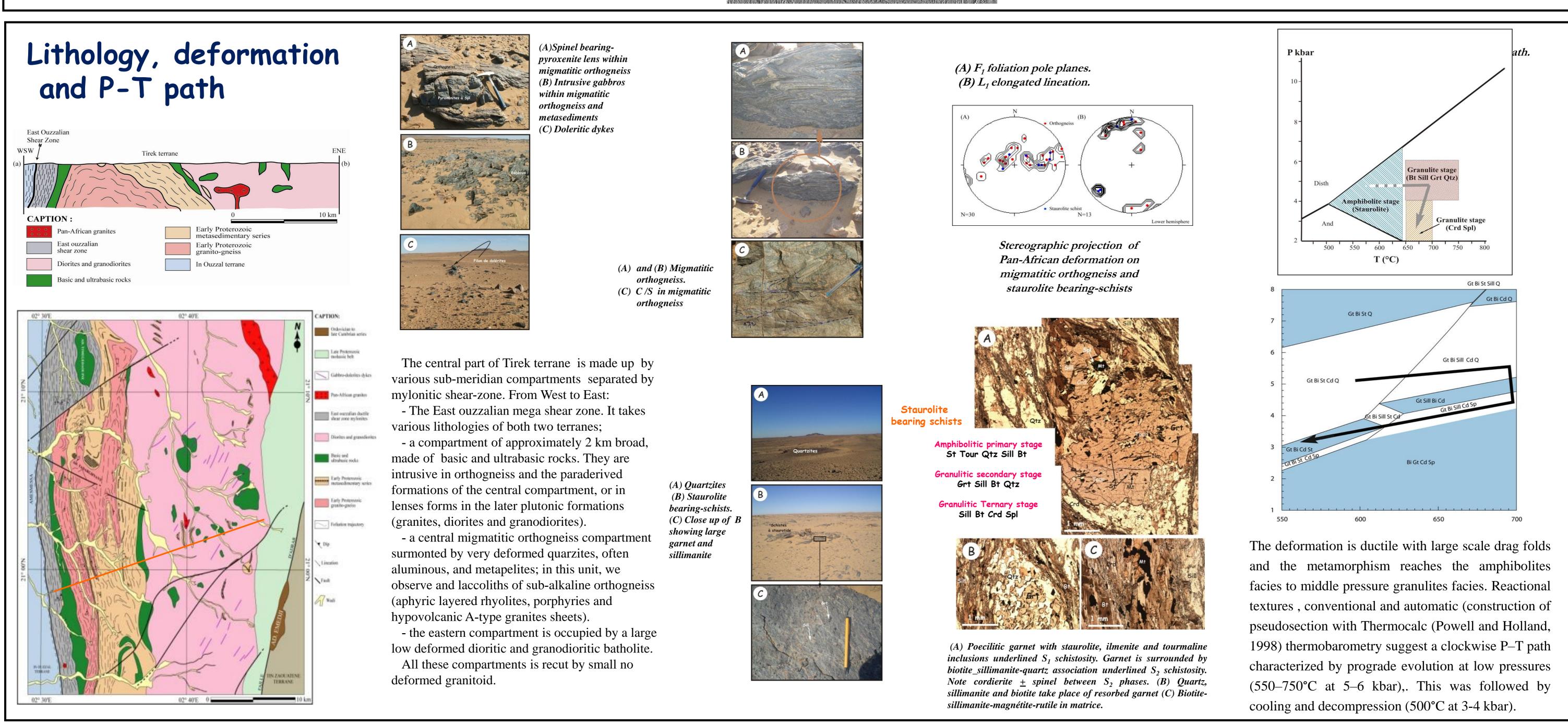
THE GEOLOGICAL MAP OF PALEOPROTEROZOIC TIREK TERRANE

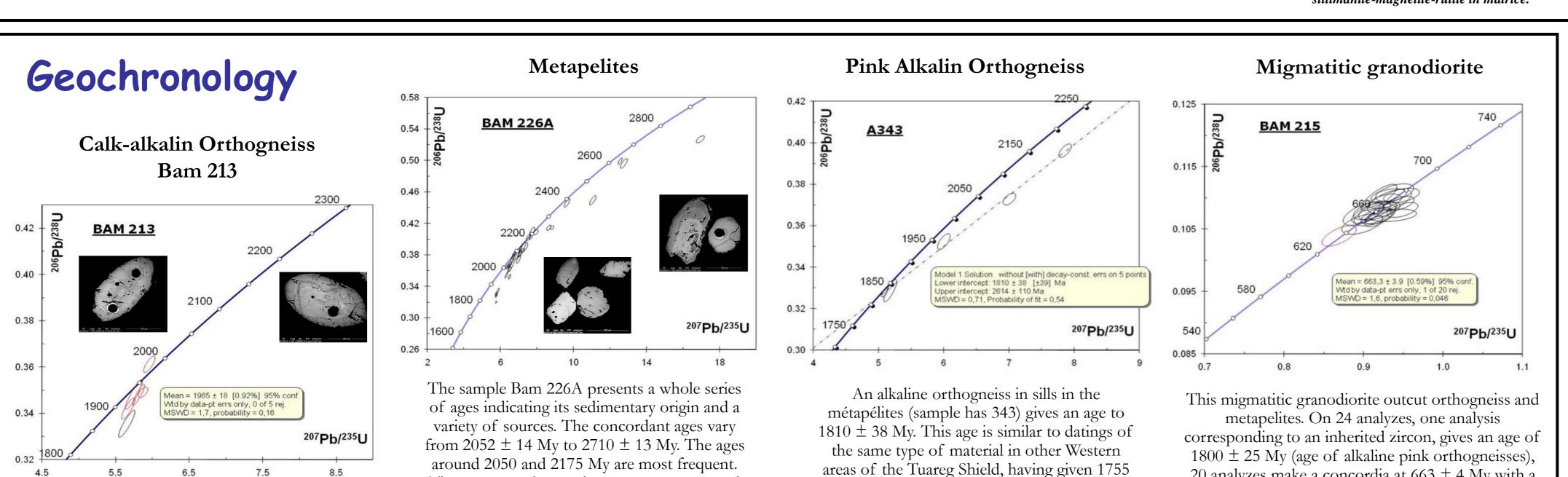
## 12th to 15th June, 2012, Bologna

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My and 1837 My respectively in Adrar of Iforas

and the terrane of Tassendjanet (Caby and

Andreaopoulos-Renaud, 1983).