Stratigraphy and Age of the Timok Magmatic Complex

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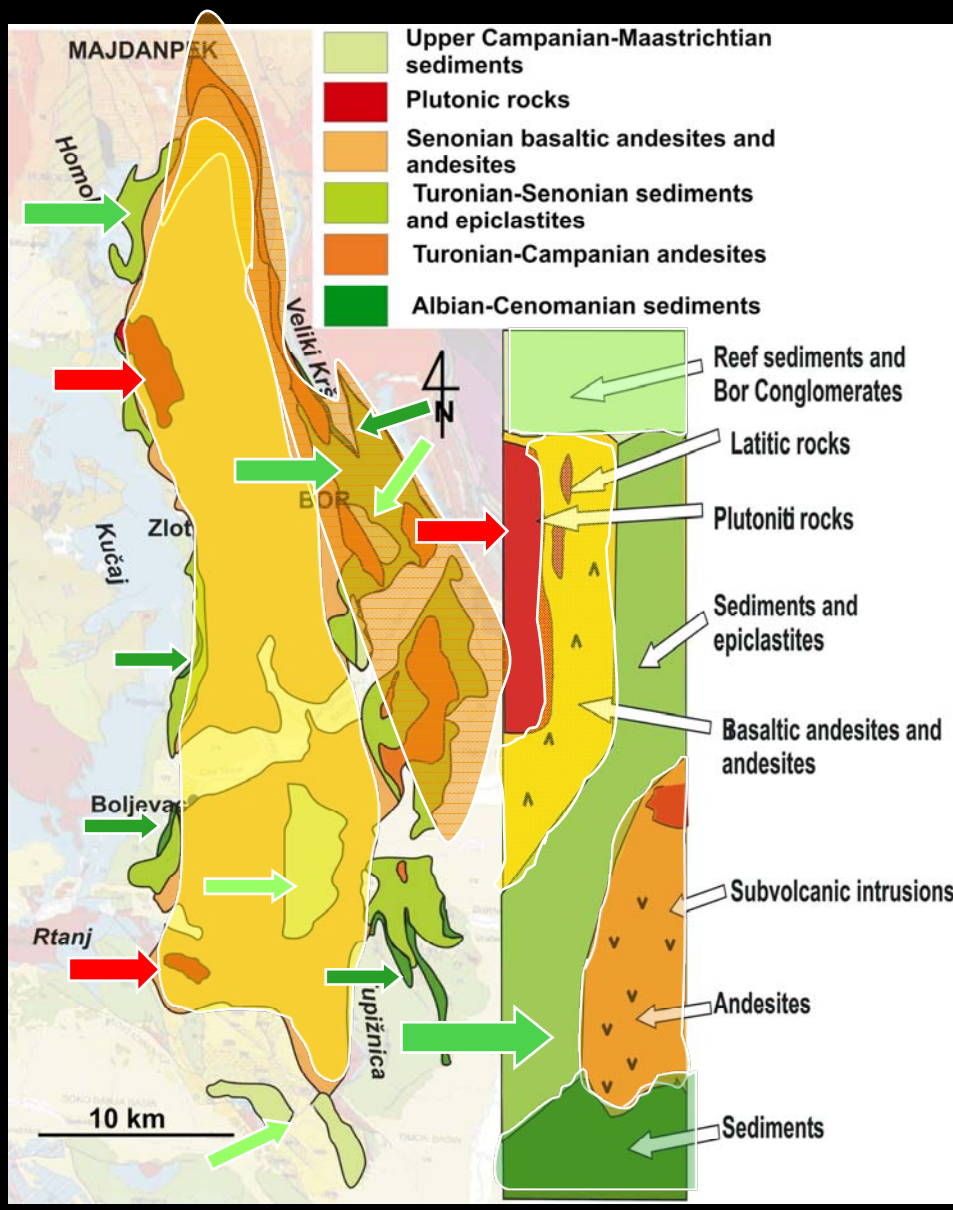
What I want to tell you with this presentation?

- **Evolution of the TMC:**
  - Stratigraphy based on new and old data
  - Radiometric age – new evidence
  - Volcanology – new explorations

Evolution of the Timok Magmatic Complex

The TMC consist of following geological units:

1. Albian-Cenomanian sediments,
2. Turonian-Campanian andesites,
3. Turonian-Senonian sediments and epiclastites,
4. Senonian basaltic andesite and andesite,
5. Plutonic rocks and Latite
6. Campanian-Maastrichtian sediments



TMC

Deposition area:

From Albian transgresion to Maastrichtian regresion

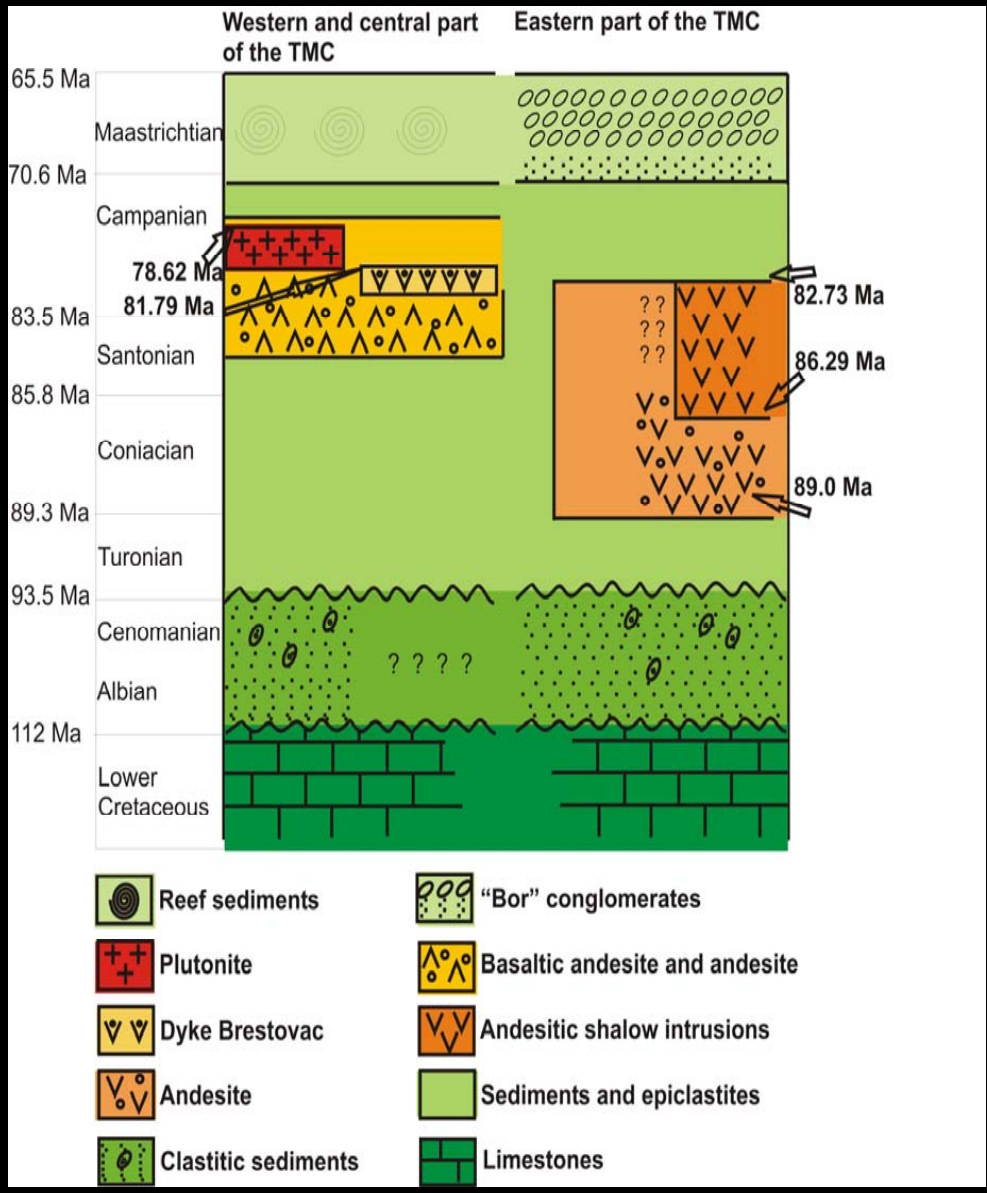
Magmatic province:

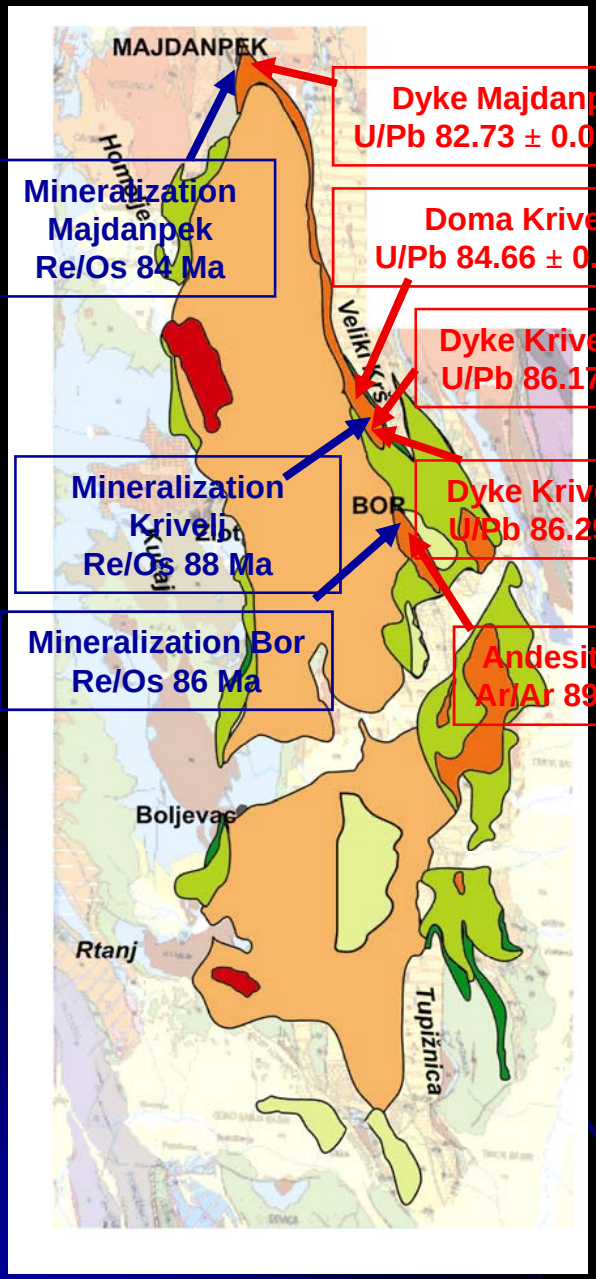
From Turonian to Campanian, ~89 to 79 Ma

Initial andesitic volcanism, overlie Cenomanian or Turonian sediments, cover with Senonian sediment

Basaltic andesite overlie Coniacian-Lower Santonian sediments and underlie Campanian clastitic and reef sediments

Plutonite (diorite, monconite) and latite small bodies intruded into the basaltic andesite.



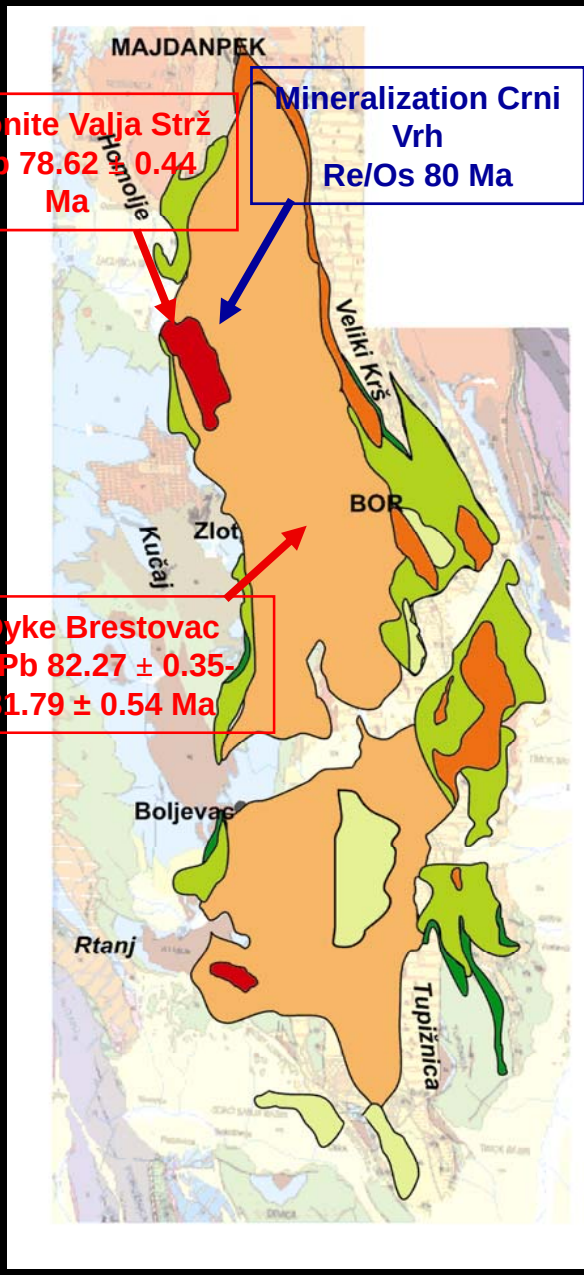


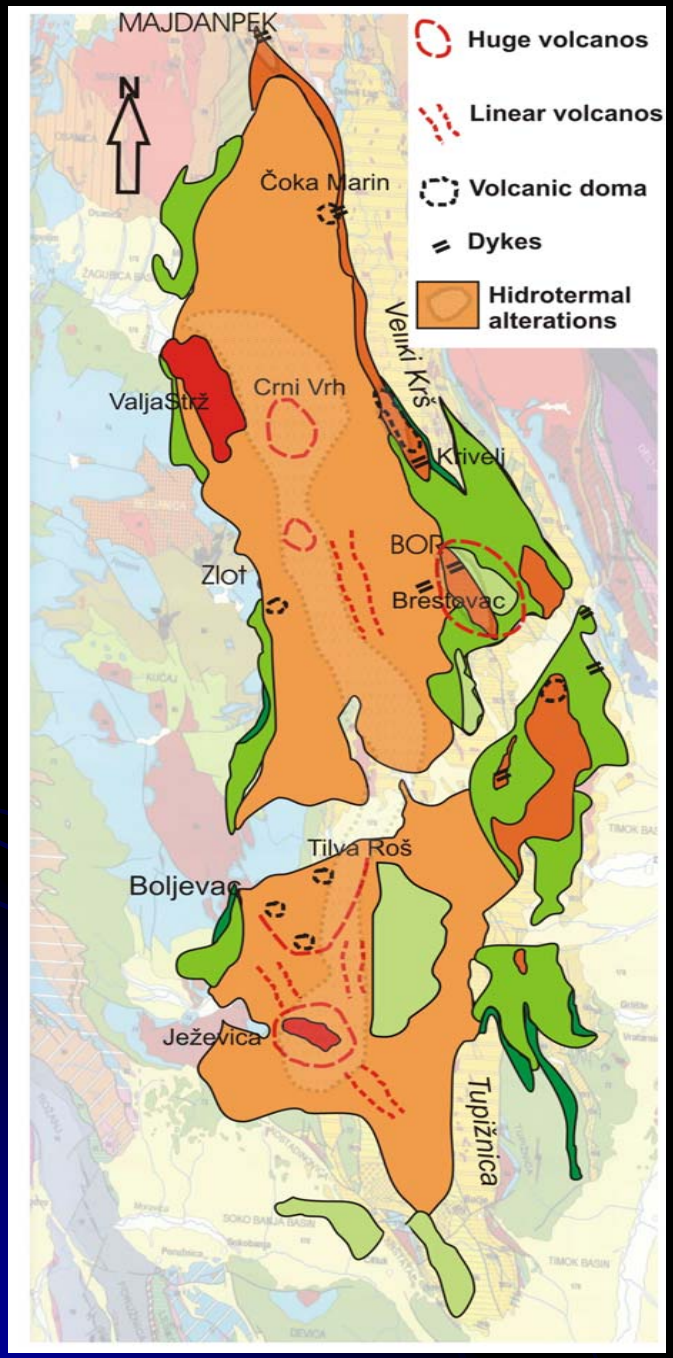
Andesite radiometric age :

- -Volcanism 7 m.y.
- -Lava flow 89 Ma
- -Shallow intrusion range 86.29-82.73 Ma
- -Mineralization 88-84 Ma

Basaltic andesite and plutonite radiometric age :

- -Shalow intrusion 82.3-81.8 Ma
- -Plutinite 78.6 Ma
- -Mineralization 80 Ma





Volcanology

I/ Turonian-Campanian andesite:

-subareal character of effusive and shallow intrusive volcanic activity,

-coherent and autoclastic facies (lava flow, autobreccias, dykes, volcanic doma)

-represented by huge volcanos

II/ Senonian basaltic andesite and andesite:

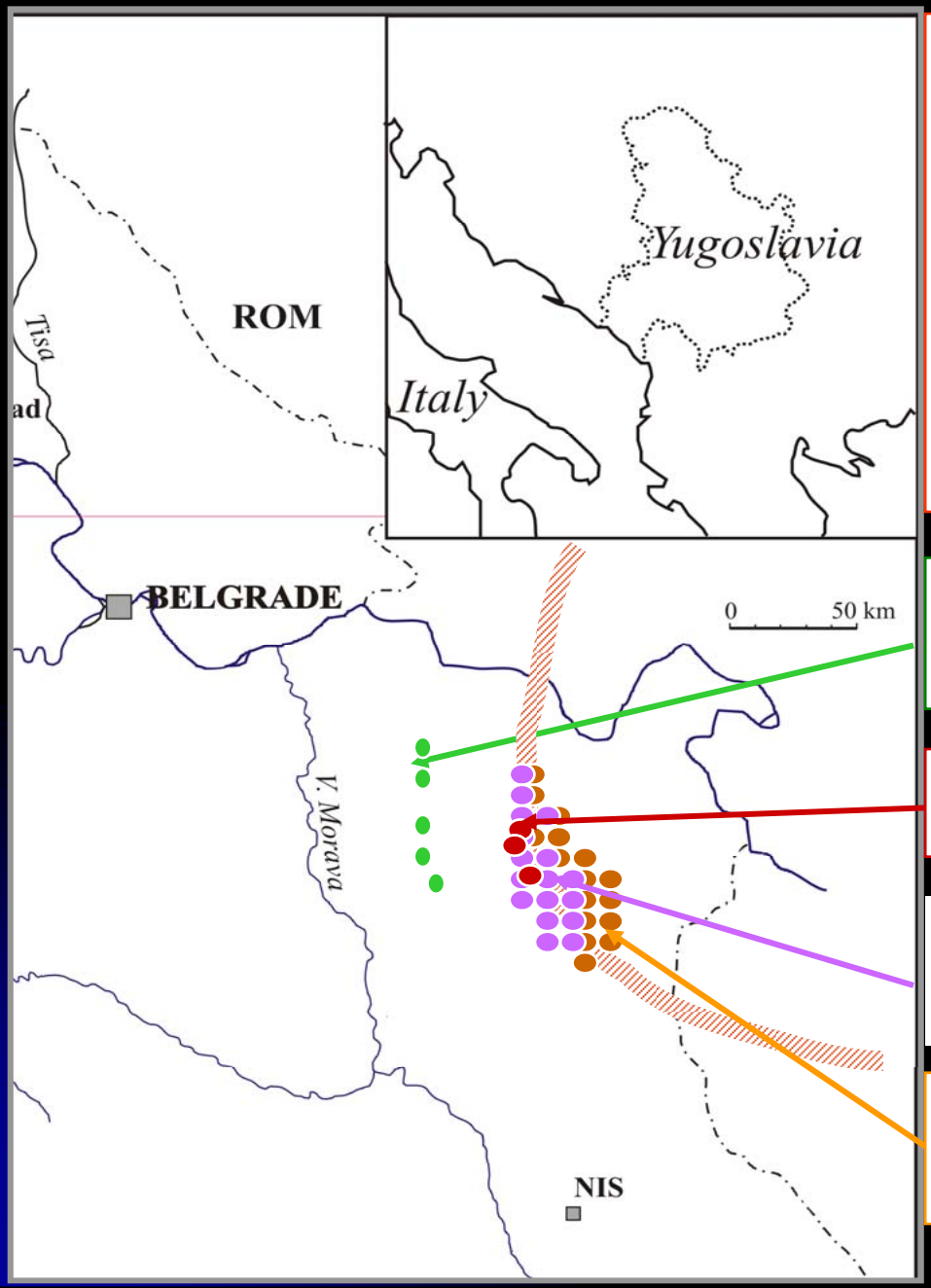
-subaquatic to subareal character of effusive volcanism,

-coherent and autoclastic facies (lava flow, autobreccias, hyaloclastites)

-intrusive phase – shallow intrusions and plutonite,

-represented by linear vulcanism small volcanos

Conclusions



1. Continuously volcanic activity lasted 10 m.y.
2. Volcanic front migrated and rejuvenated from East to West
3. Mineralization occurred 8 m.y.
4. Volcanism terminated in the TMC and continued in the RKZ

Ridanj-Krepoljin Belt, smaller volume, mostly acid magmatism, age 68.5 Ma Pb/Zn mostly skarn deposits

intrusive phase, plutonite/latite, age 78.6 Ma small porphyry systems, age 80 Ma

II volcanic phase, basaltic andesite and andesite, age ~80 Ma, Cu mineralization, epithermal deposits

I volcanic phase, andesite, age 89-82.7 Ma, giant porphyry Cu deposits, age 88-84 Ma, epithermal deposits

Thanks for you attention