

Kimberlitic Zircons from the Northern Rianabarie

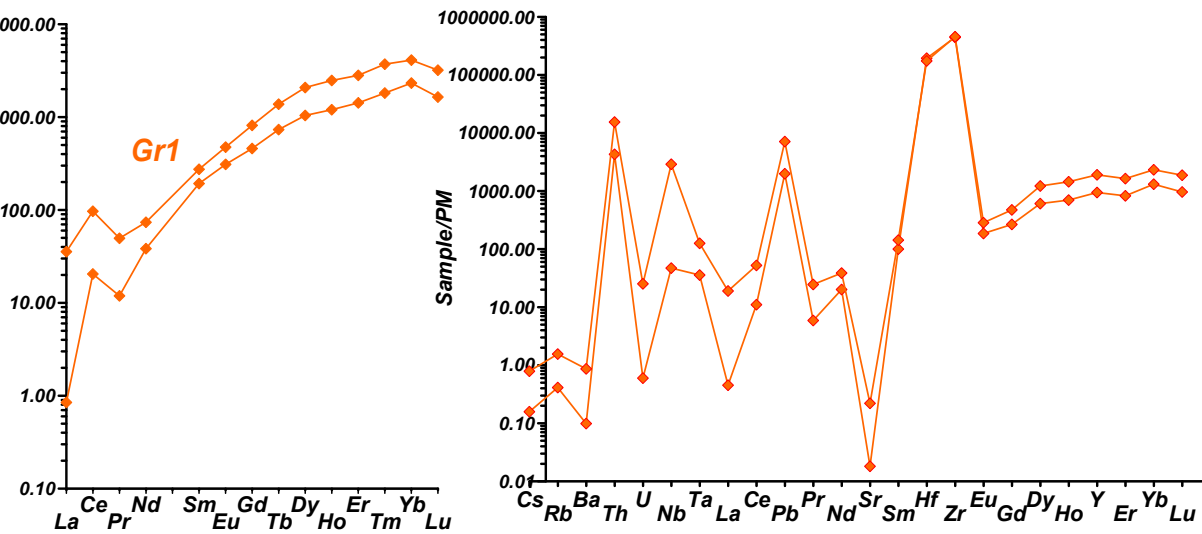
Svetlana Babushkina, Nikolai Mevedev, and Igor Ashchepkov

¹*Diamond and Precious Metal Geology Institute, Siberian Branch, Russian Academy of Sciences.*

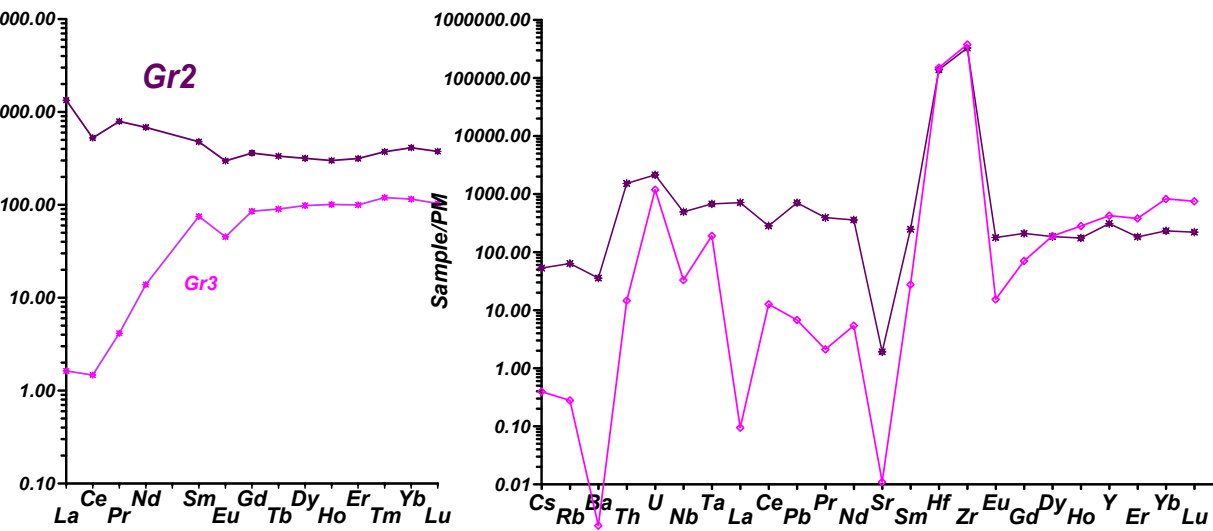
²*Nikolaev Institute of Inorganic Chemistry, Acad. Lavrentiev Ave.3, Novosibirsk, 630090, Russian Federation*

³*Institute of Geology and Mineralogy, SD RAS, acad. Koptuyug avenue 3, Novosibirsk 630090, Russian Federation*

- More >50 zircons from the Ortho –Yargyn field (Prianaabarie, NE of Siberianb Craton) were collected from the washed alluvium near kimberlite pipe Zapretnaya .
- The kimberlite and lamprophyric zircons are mostly parent and have now fractures being ideal for the geochemical studios and were derived from the kimbelite lamprophyric and and carbonatite small bodies
- Zircon grains were analyzed in Nikolaev Institute of Inorganic Chemistry SB RAS, Novosibirsk, Russia by laser ablation inductively coupled plasma mass spectrometry (LA-ICP-MS) in Nikolaev Institute of Inorganic Chemistry SB RAS using “aniCAP Q” (Quadrupole) Thermo Scientific mass spectrometer at low resolution and a NWR 213 (New Wave Research), Nd YAG: UV 133 nm laser ablation system. As standards, the NIST 610-612 SRF were used. The measured trace element values were normalized using contents of ²⁹Si, ²⁴Mg and ⁴⁴Ca and data obtained with EPMA for these elements.
- Zircons were divided in to 9 groups according to the Ree and TRE patters and Ce*, Eu* ratios which essentially vary.
- They shows variation of the TYRE and REE levels and altitude of the naximum of Zr -Hf and Ta -NB. According to the configuration of the TRE spider diagrams they were divided in to 9 groups and
- The series derived from different kimberlites lamprophyre and carbonatites in general have conformed and coherent series and reveal the signs of the crystallization from fractionated magmas and possibly were derived from the different levyls in mantle columns.
- The ages from zircons are varying from Upper Triassic to prevailing Late Jurassic (Malkovets et al., 2017)
- Grant RFBR 19-05-00788.

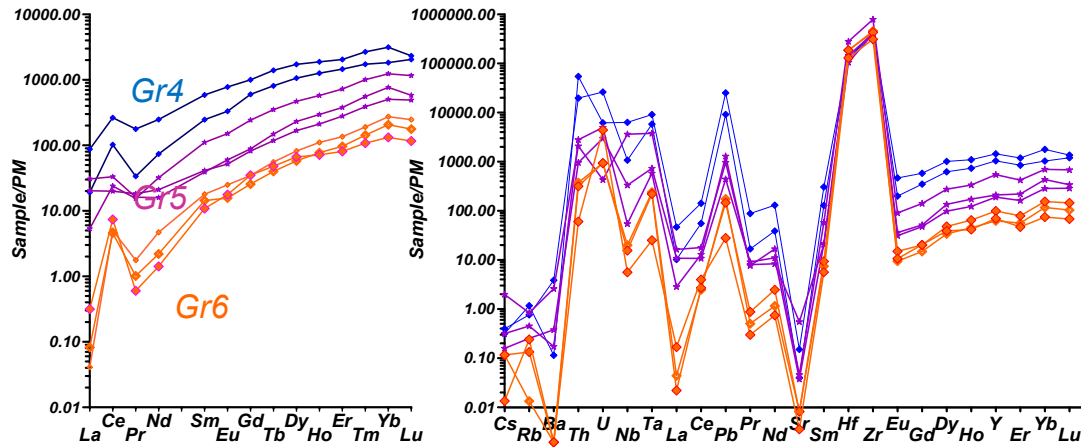


Gr 1. Zircons semi round inclined REE patterns. They reveal small Ce*. They have separate Th, Nb, Pb peaks



Gr2. Reveal small Ce minima relatively low level and inclination of REE. The U, Th, Pb are nearly flat essentially but Hf, Zr is high

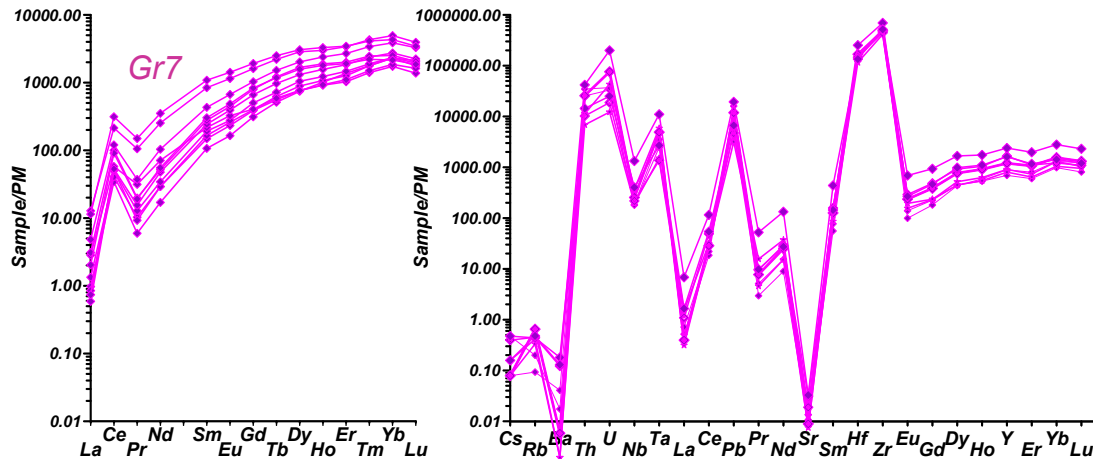
Gr3. The REE is inclined – flat from Gd to La and highly inclined. Ce and Eu have minima. U and Ta, peaks



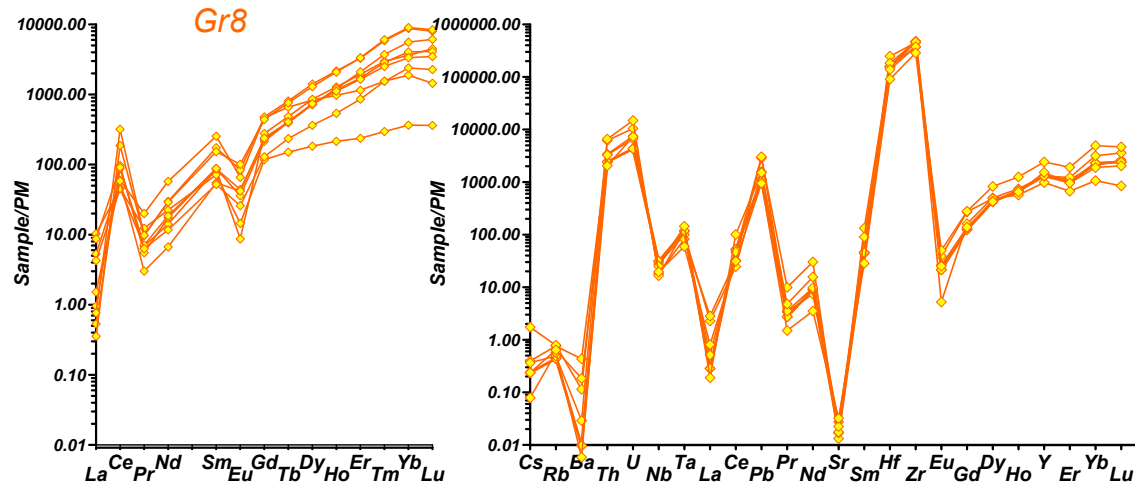
Gr 4. reveal Small Ce* peaks and high Th, and elevated Nb, Ta. Peaks

Gr4-5. have lower TRE level, U essentially higher Th, and low Ba

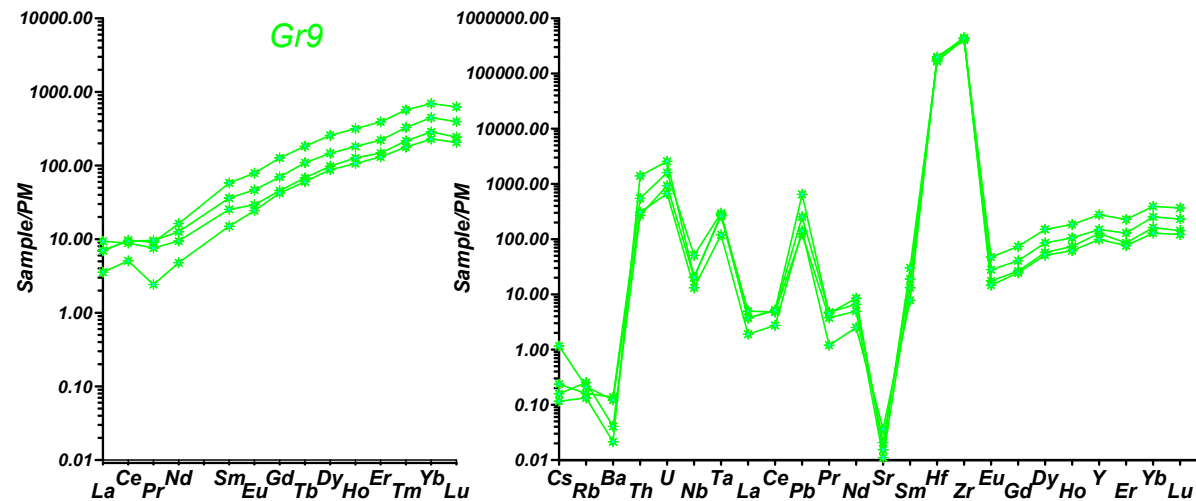
Gr6 have essentially lower TRE content. The level of Th-U peak is nearly twice lower compared to Hf-Zr.



Gr7 have very high Th, Zr, Hf, and Pb peaks to 100000/PM and a lower Ta.



Gr 8. reveal Ce* peaks and Eu* depressions
highly negatively inclined REE patterns
small Ta peak and high Th, U
and elevated Nb, Ta.



Gr9. Reveal small Ce minima relatively low level and
inclination of REE. The U, Th, is essentially lower
and low then Hf, Zr

•Thank you !.

