Tectonics

Supporting Information S2:Figures

Eocene Metamorphism and Anatexis in the Kathmandu Klippe, central Nepal: Implications for early crustal thickening and initial rise of the Himalaya

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Note: Rock samples were collected in Kathmandu Nepal in summer of 2016 and 2017. The monazite trace elements and ages data were analyzed at the Institute of Geology and Geophysics, Chinese Academy of Sciences by Gautam Prashad Khanal and Jia-Min Wang in 2019.

S2.1: Eu_N/Eu^*_N distribution over the $^{208}Pb/^{232}Th$ ages.

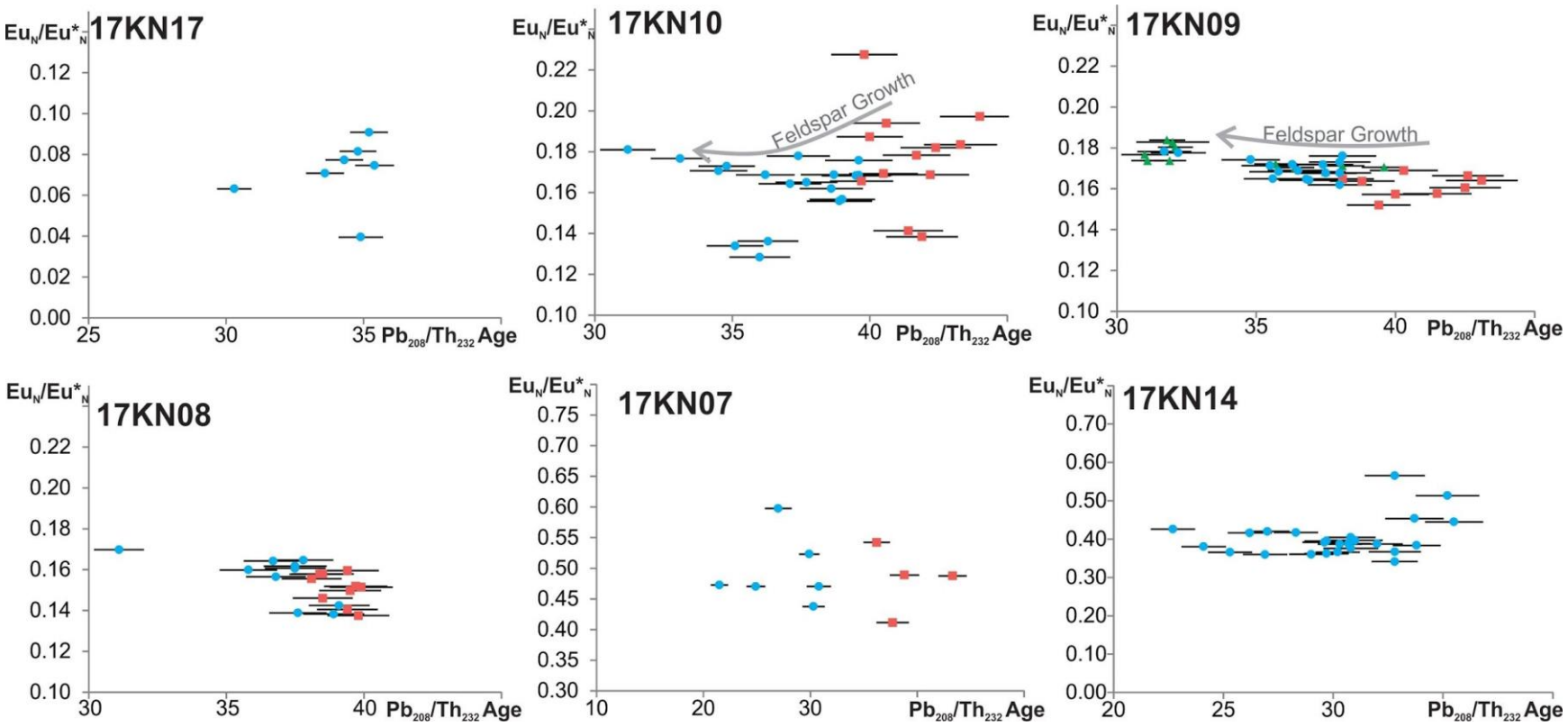
S2.2: HREE distribution over the $^{208}Pb/^{232}Th$ ages.

S2.3: Yn_N/Gd_N distribution over the $^{208}Pb/^{232}Th$ ages.

S2.4: BSE images of the monazites used for grain separate monazite dating.

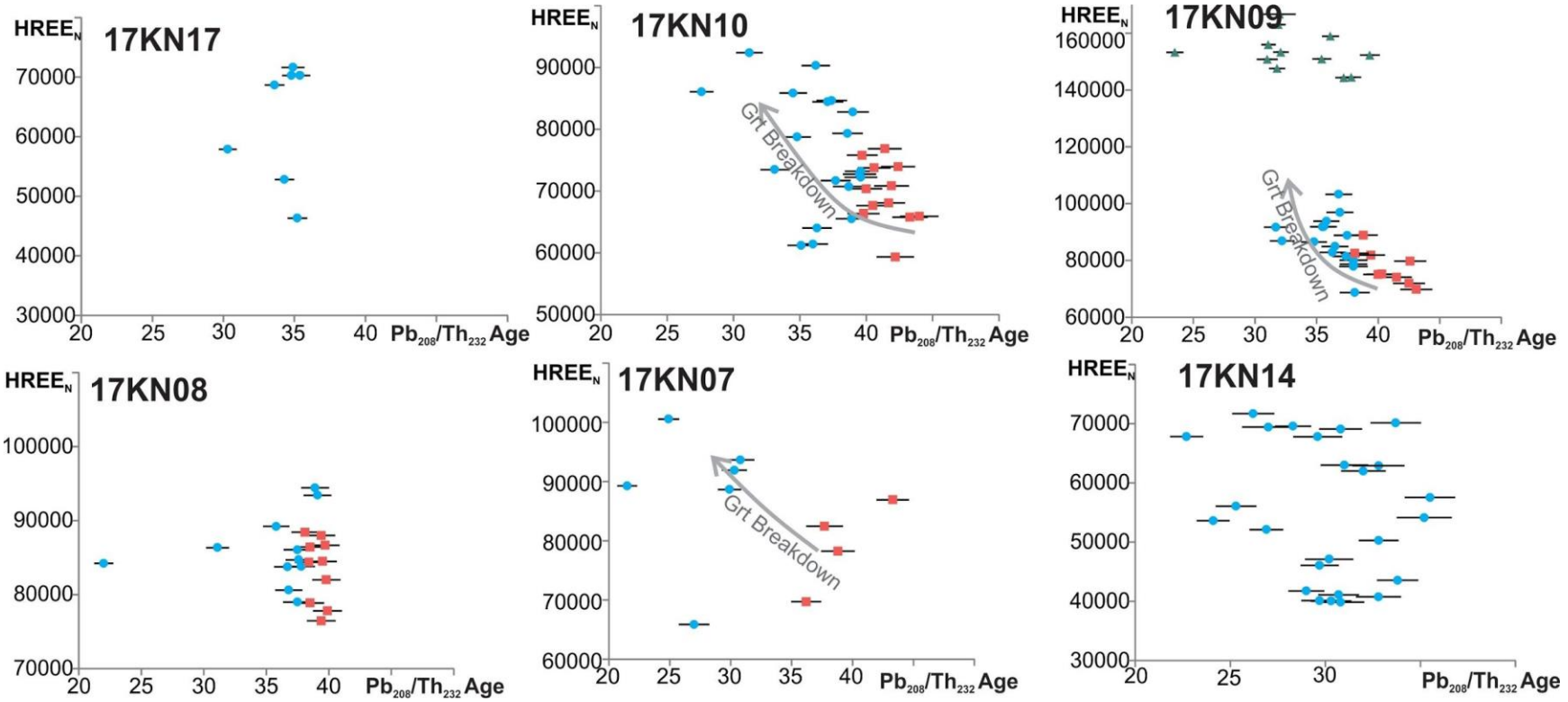
S2.5: BSE images of the monazites in thinsection used for in-situ monazite dating.

S2.1: EuN/Eu*N distribution over the $^{208}Pb/^{232}Th$ ages.



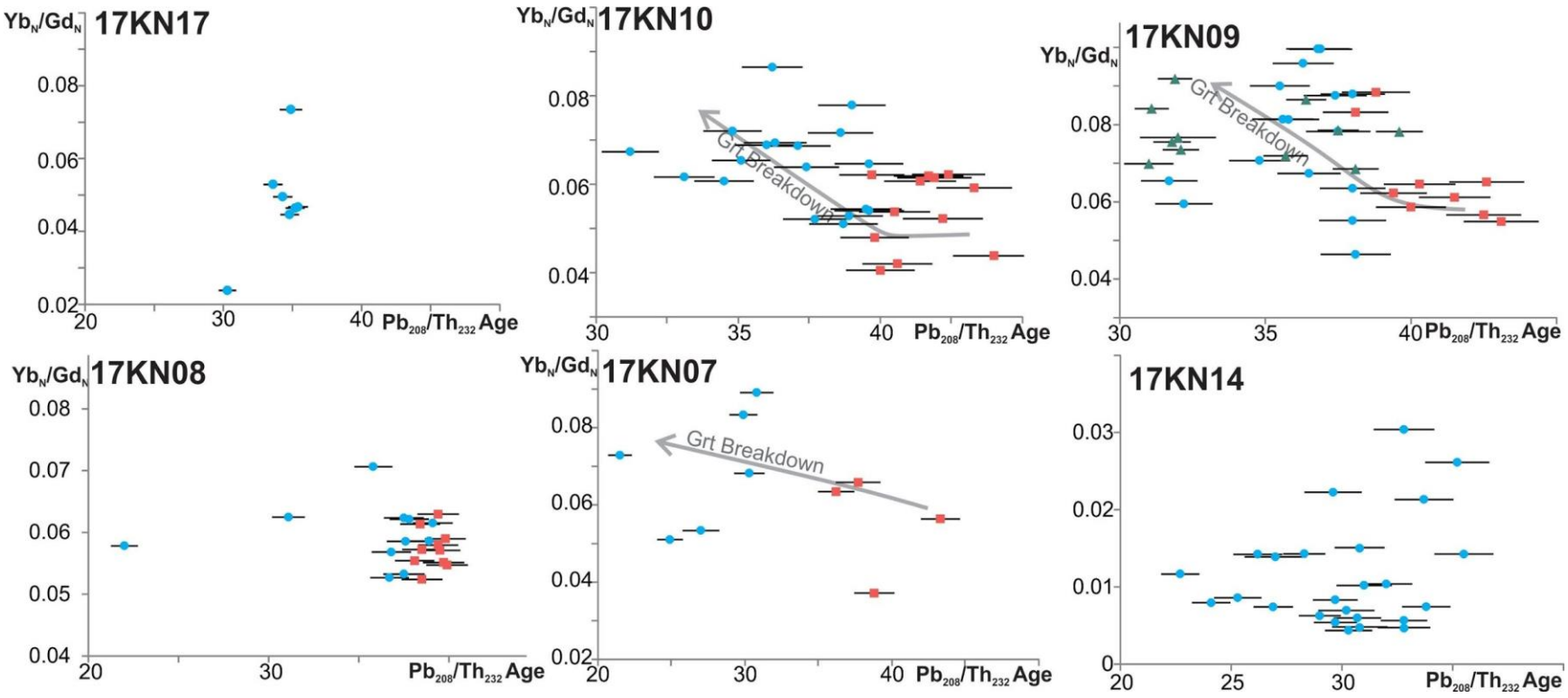
Caption: Plot of Eu_N/Eu^*_N ratio versus Pb^{208}/Th^{232} age for the analysed monazite grains in the study area.The black bars represent 2 sigma age error, red rectangle represent older cores, and blue circle represent younger rims while green triangle represent insitu grains hosted in Bt, Qz or Kfs. Grey arrows in samples 17KN10 and 17KN09 show feldspar growth trend with decreasing age.

S2.2: HREE distribution over the $^{208}Pb/^{232}Th$ ages.



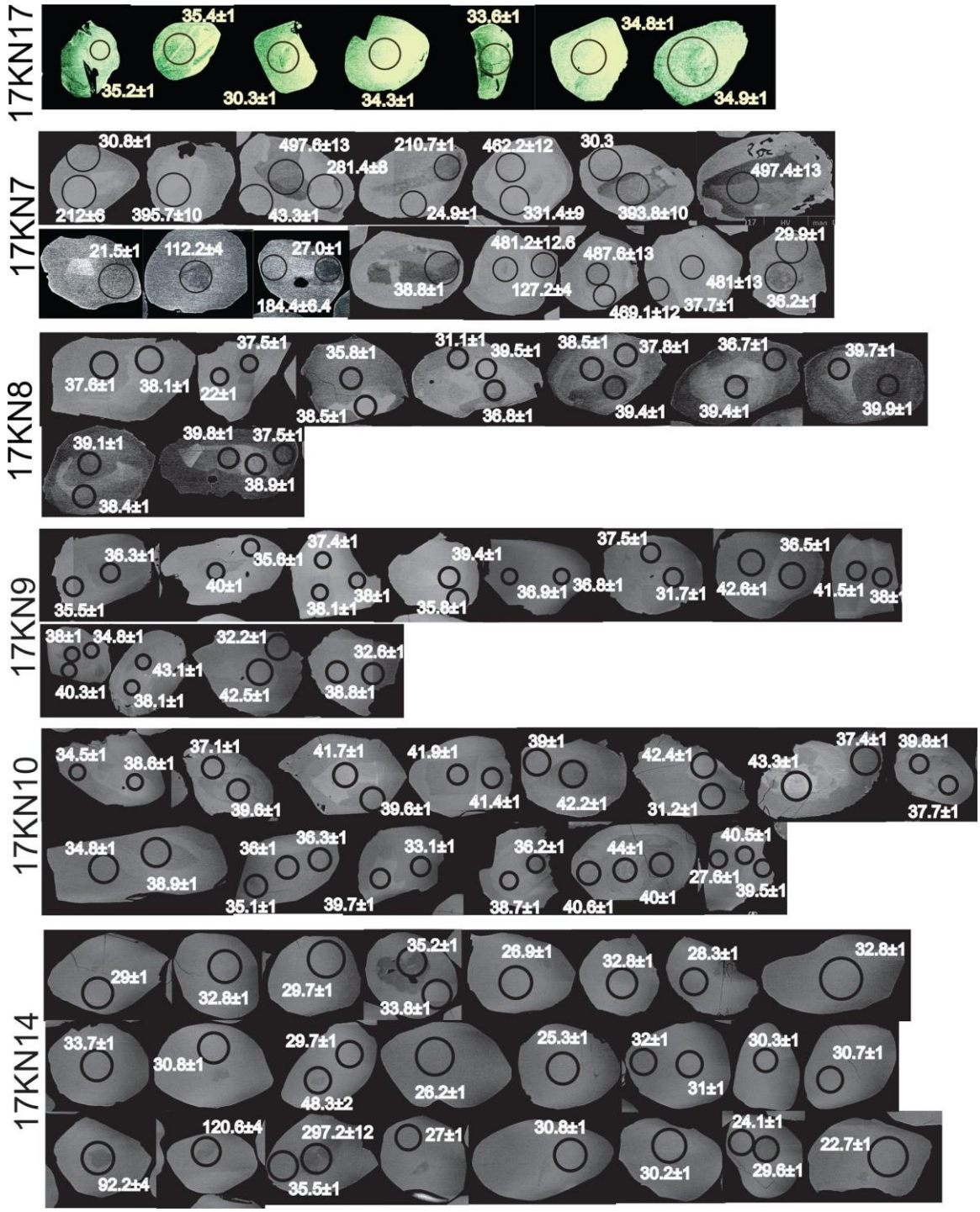
Caption: Plot of normalised Heavy Rare Earth Elements ($HREE_N$) versus Pb^{208}/Th^{232} age for the analysed monazite grains in the study area. The black bars represent 2 sigma age error, red rectangle represent older cores, and blue circle represent younger rims while green triangle represent insitu grains hosted in Bt, Qz or Kfs. Grey arrows in samples 17KN10, 17KN09 and 17KN07 show garnet breakdown trend with decreasing age.

S2.3: Yn_N/Gd_N distribution over the $^{208}Pb/^{232}Th$ ages.



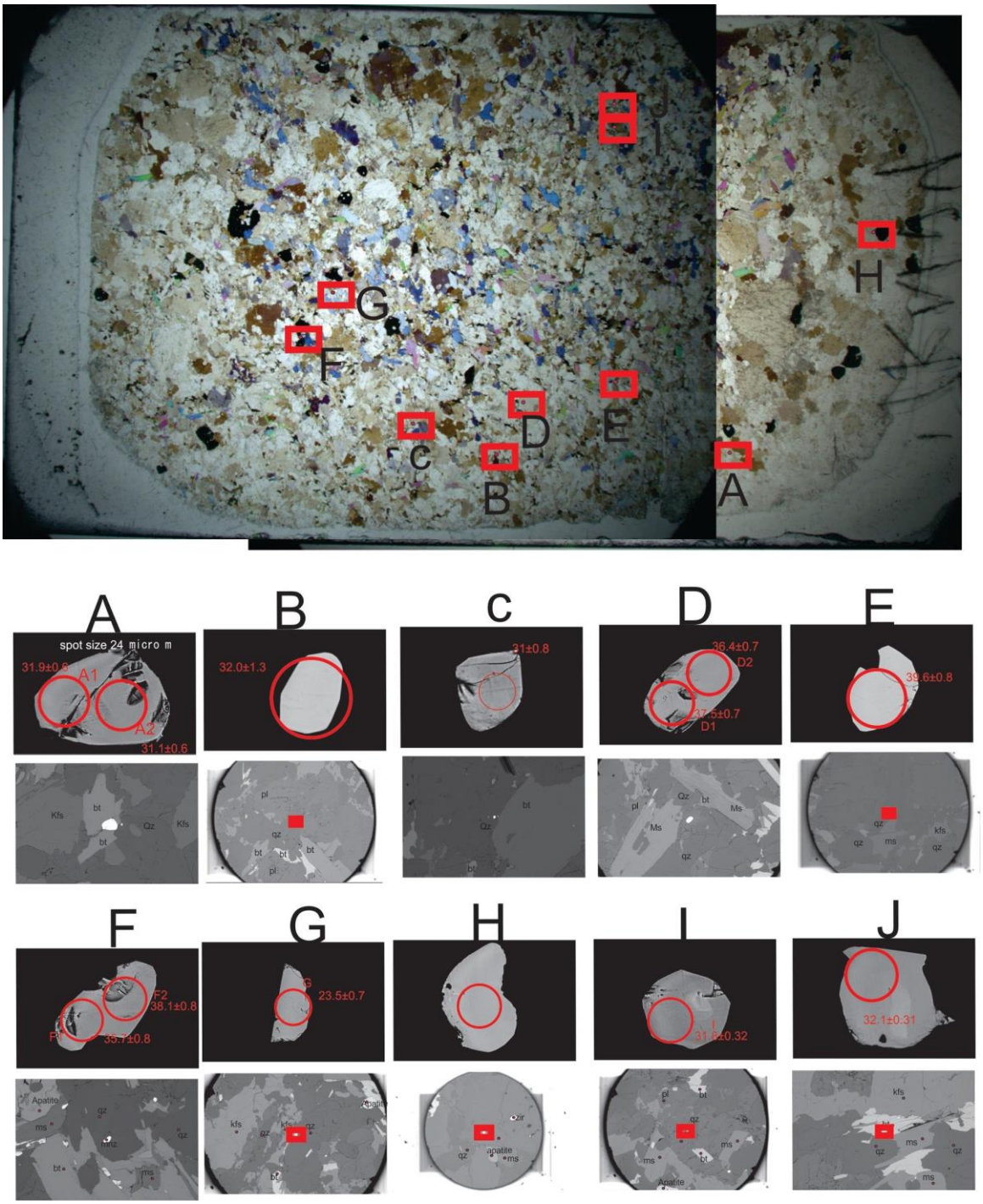
Caption: Plot of Yb_N/Gd_N ratio versus Pb^{208}/Th^{232} age for the analysed monazite grains in the study area. The black bars represent 2 sigma age error, red rectangle represent older cores, and blue circle represent younger rims while green triangle represent insitu grains hosted in Bt, Qz or Kfs. Grey arrows in samples 17KN10, 17KN09 and 17Kn07 show garnet breakdown trend with decreasing age.

S2.4: BSE images of the monazites grain separates showing laser spot.



Caption: Selected BSE images of dated monazite separate grains showing spot locations. The black circles are 24μm and the numbers represent $^{208}Pb/^{232}Th$ ages in Ma.

S2.5: BSE images of the monazites in thin section showing laser spot.



Caption: The thinsection plane polarised image (Upper figure) showing location and textural control of the dated monazites for the sample 17KN09. The red boxes represent the monazite location, red circles laser spot which are 24μm and the red numbers represent $^{208}Pb/^{232}Th$ ages in Ma.