

Xuxuan Ma, Zhiqin Xu, Joseph G. Meert, Zuolin Tian, and Haibing Li, 2020, Early Eocene high-flux magmatism and concurrent high-temperature metamorphism in the Gangdese belt, southern Tibet: GSA Bulletin, <https://doi.org/10.1130/B35770.1>.

## Supplemental Material

**Figure S1.** Phenocrystic structures of the hornblendes in the gabbro-norite from the northern margin of the Nymo intrusive complex of the Gangdese belt, southern Tibet.

**Figure S2.** Representative cathodoluminescence (CL) images of the zircon grains and the dating spots on them. The CL images were taken at the Key Laboratory of Deep-Earth Dynamics of Ministry of Natural Resources, Institute of Geology, Chinese Academy of Geological Sciences, Beijing 100037, China.

**Figure S3.** Backscattered-electron (BSE) images for the monazites from the garnet-biotite schist or gneiss in the Nymo region of the Gangdese belt, southern Tibet. The BSE images were taken at the Key Laboratory of Deep-Earth Dynamics of Ministry of Natural Resources, Institute of Geology, Chinese Academy of Geological Sciences, Beijing 100037, China.

**Figure S4.** The garnet-biotite schist/gneiss has been cut by *in-situ* leucosome veins.

**Table S1.** Zircon U-Pb dating results of diorite, meta-volcanics, and monazite U-Th-Pb ages of the garnet-biotite schist/gneiss in the Nymo region of the Gangdese magmatic belt, southern Tibet.

**Table S2.** Whole-rock geochemical data of the garnet-biotite schists/gneisses in the Nymo region, central Gangdese belt, southern Tibet.

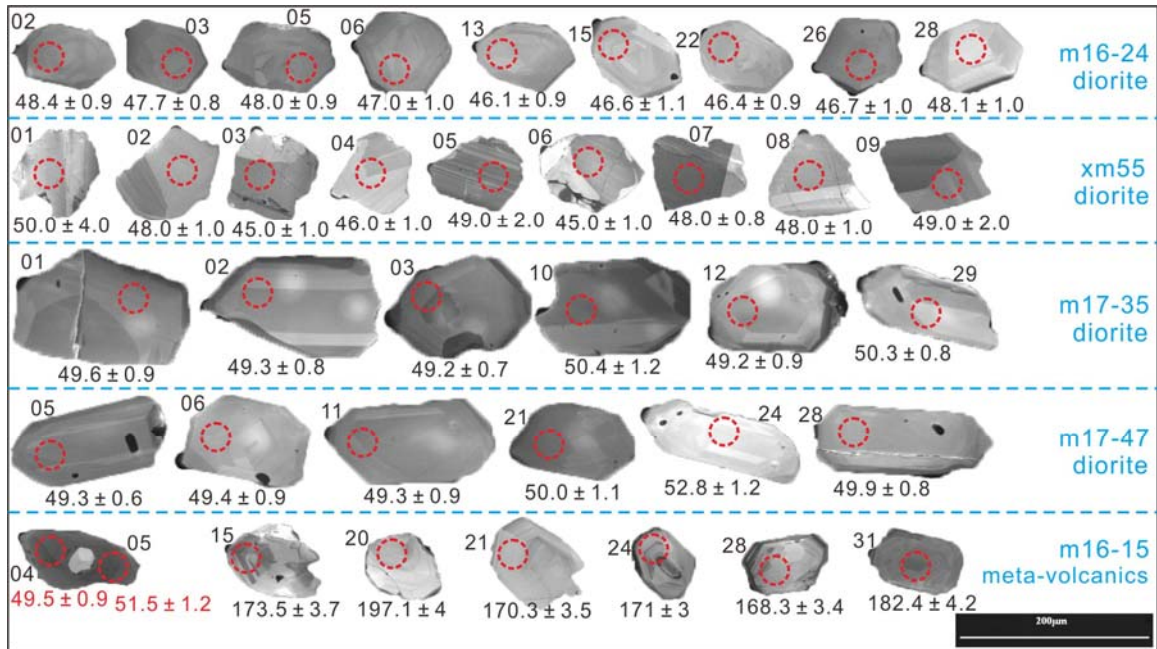
**Table S3.** Electron microprobe analyzed data for the minerals in the garnet-biotite schists/gneisses in the Nymo region, central Gangdese belt, southern Tibet.

**Table S4.** Electron microprobe analyzed data for the minerals in the diorite in the Nymo region, central Gangdese belt, southern Tibet.

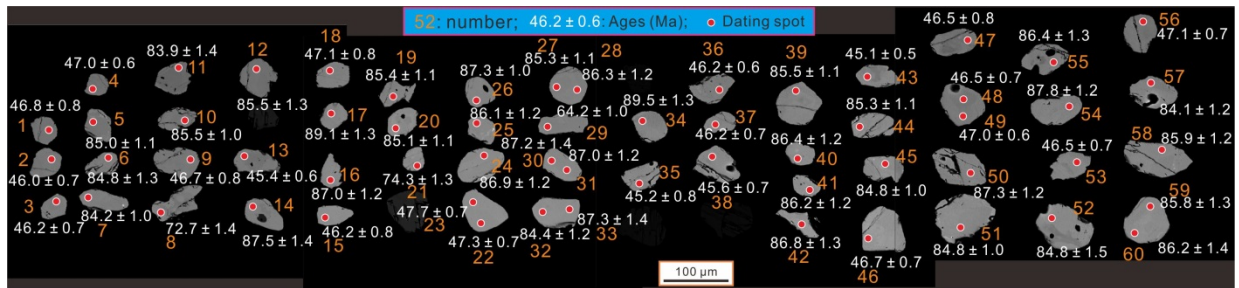
**Table S5.** Compiled geochemical data for plutonic rocks in the Gangdese belt, southern Tibet.



**Figure S1.** Phenocrystic structure of the hornblendes in the gabbro-norite from the northern margin of the Nymo intrusive complex of the Gangdese belt, southern Tibet.



**Figure S2.** Representative cathodoluminescence (CL) images of the zircon grains and the dating spots on them. The CL images were taken at the Key Laboratory of Deep-Earth Dynamics of Ministry of Natural Resources, Institute of Geology, Chinese Academy of Geological Sciences, Beijing 100037, China.



**Figure S3.** Backscattered-electron (BSE) images for the monazites from the garnet-biotite schist or gneiss in the Nymo region of the Gangdese belt, southern Tibet. The BSE images were taken at the Key Laboratory of Deep-Earth Dynamics of Ministry of Natural Resources, Institute of Geology, Chinese Academy of Geological Sciences, Beijing 100037, China.



**Figure S4.** The garnet-biotite schist/gneiss has been cut by *in-situ* leucosome veins.