

Table DR1. Bulk-rock analyses of the major elements for studied gneisses from the Luliangshan and Xitieshan

Sample	SiO <sub>2</sub>	TiO <sub>2</sub>	Al <sub>2</sub> O <sub>3</sub>	Fe <sub>2</sub> O <sub>3</sub>	FeO	MnO	MgO	CaO	Na <sub>2</sub> O	K <sub>2</sub> O	P <sub>2</sub> O <sub>5</sub>	H <sub>2</sub> O <sup>+</sup>	CO <sub>2</sub>	LOI	total
ZM5-5.5	68.58	0.83	15.56	4.50	1.60	0.15	1.46	0.82	1.06	4.22	0.05	1.60	0.16	0.50	100.69
ZM5-5.4	71.29	0.37	13.69	0.68	2.10	0.04	0.78	1.42	2.01	5.93	0.17	0.70	0.18	0.55	99.91
ZM10-5.2	52.31	1.17	21.19	2.01	9.93	0.36	2.18	3.77	3.45	1.22	0.03	1.54	0.18	0.65	99.99
XT-36	57.09	1.07	18.03	1.22	7.54	0.19	2.82	2.18	0.48	2.96	0.11	2.50	0.20	2.88	99.27
XTS-1	61.72	0.94	18.37	2.02	5.55	0.14	2.08	0.72	0.86	4.39	0.09	3.08	0.09	0.80	100.85

## Captions of Figs. DR1-4

Fig. DR1. P-T diagrams showing the results of thermobarometric calculations for mafic granulites enclosed in paragneisses in Luliangshan. Alumino-silicate stability fields are from Holdaway (1971). GADS ( $2\text{Grs} + \text{Prp} + 3\text{Qtz} = 3\text{Di} + 3\text{An}$ ) and GAES ( $\text{Grs} + 2\text{Prp} + 3\text{Qtz} = \text{En} + 3\text{An}$ ) reactions were calculated by THERMOCALC v.3.1 (Holland and Powell, 1998). Grt-Cpx (P85): Powell, 1985; Grt-Opx (H84): Harley, 1984. The high pressure granulite facies condition is estimated using the compositions of garnet core, clinopyroxene and plagioclase inclusions in garnet, whereas the medium pressure granulite facies condition is estimated by the compositions of garnet rim and adjacent orthopyroxene and plagioclase.

Fig. DR2 CL images of representative zircons from mafic granulite. Ellipses indicate SHRIMP analysis spots for which  $^{206}\text{Pb}/^{238}\text{U}$  ages and Th/U ratios are given.

Fig. DR3 U-Pb concordia diagram of SHRIMP data for zircon from mafic granulite, grey-filled ellipses are included in the weighted mean  $^{206}\text{Pb}/^{238}\text{U}$  age of  $448+/-3\text{Ma}$  ( $\pm 2\sigma$ ).

Fig. DR4 U-Pb concordia diagram of SHRIMP data for zircon from granite intruding into gneisses in the Luliangshan unit.







