Supplementary material

Table S1: A summary of zircon U-Pb ages of the Late Cretaceous igneous rocks in South China

Area	Pluton	N (Latitude)	E (Longitude)	Sample	Rock type	Age used (Ma)	Method	Reference
Guangxi	Maqigang	22°04′ 23″	109°47′27″	YK436-1	Beschtauite	85.0 ± 1.2	LA-ICP-MS zircon U-Pb	This study
Guangxi	Maqigang	22°05′ 30″	109°46′53″	YK041	Beschtauite	83.3 ± 2.1	LA-ICP-MS zircon U-Pb	
Guangxi	Maqigang	22°05'32.99″	109°45'49.62″	Mqg-01	Beschtauite	90.2 ± 1.5	LA-ICP-MS zircon U-Pb	Wang *et al.* (2017)
Guangxi	Longtoushan	23°09.106'	109°29.160'	LTS06-01	Porphyry	96.2 ± 0.4	LA-ICP-MS zircon U-Pb	Duan *et al.* (2011)
Guangxi	Pingtaisnhan	23°08.866'	109°32.362'	XM06-01	Granodiorite	96.1 ± 3.0	LA-ICP-MS zircon U-Pb	
Guangxi	Dachang	24°40′ to 25°00′	107°40′ to 107°50′	LM-1	Biotite granite	96.1 ± 2.0	LA-MC-ICP-MS zircon U-Pb	Liang *et al.* (2011)
Guangxi	Dachang	24°40′ to 25°00′	107°40′ to 107°50′	LM-2	Biotite granite	96.6 ± 2.5	LA-MC-ICP-MS zircon U-Pb	
Guangxi	Dachang	24°40′ to 25°00′	107°40′ to 107°50′	LM-3	Biotite granite	94.3 ± 2	LA-MC-ICP-MS zircon U-Pb	
Guangxi	Dachang	24°40′ to 25°00′	107°40′ to 107°50′	LM-4	Biotite granite	93.86 ± 0.8	LA-MC-ICP-MS zircon U-Pb	
Guangxi	Dachang			L1	Biotite granite	93 ± 1	SHRIMP zircon U-Pb	Cai *et al.* (2006)
Guangxi	Dachang			L2	Granite	91 ± 1	SHRIMP zircon U-Pb	
Guangxi	Dachang			T2	Dioritic porphyrite	91 ± 1	SHRIMP zircon U-Pb	
Guangxi	Dachang			T3	Granite porphyry	91 ± 1	SHRIMP zircon U-Pb	
Guangxi	Maanshan	23°00′ to 23°15′	111°20′ to 111°30′	MS-01	Rhyodacite	100 ± 1	LA-ICP-MS zircon U-Pb	Geng *et al.* (2006)
Guangxi	Zhougongding	23°05′ to 23°20′	111°40′ to 111°55′	DX-01	Granodacite	100 ± 2	LA-ICP-MS zircon U-Pb	
Guangxi	Longchang				Lamprophyres	89	K-Ar	Li *et al.* 2014
Guangxi	Songwang			SW08	Granite	98 ± 1	LA-ICP-MS zircon U-Pb	Wang (2017)
Guangxi	Guantian			DT02	Biotite granite	88 ± 1	LA-ICP-MS zircon U-Pb	
Guangxi	Kunlunguan	23°00′ to 23°15′	108°35′ to 111°50′	KLG01-01	Biotite granite	97.23 ± 0.23	LA-ICP-MS zircon U-Pb	Wang (2018)
Guangxi	Kunlunguan	23°00′ to 23°15′	108°35′ to 111°50′	KLG03-01	Biotite granite	97.14 ± 0.23	LA-ICP-MS zircon U-Pb	
Guangxi	Kunlunguan	23°00′ to 23°15′	108°35′ to 111°50′	KLG06-01	Biotite granite	97.9 ± 0.32	LA-ICP-MS zircon U-Pb	
Guangxi	Dachang	24°50′	107°35′	DC04-02	Alkali–feldspar granite	91.77 ± 0.43	LA-ICP-MS zircon U-Pb	
Guangxi	Kunlunguan	23°05'20″	108°36'43″	KLG10	Granite	97.7 ± 1.3	LA-ICP-MS zircon U-Pb	Li (2018)
Guangxi	Fozichong	23°00′ to 23°10′	111°05′ to 111°15′	F16-32-3	Granite porphyry	98.6 ± 1.2	LA-ICP-MS zircon U-Pb	

(Continued)

Table S1: *Continued*

Area	Pluton	N (Latitude)	E (Longitude)	Sample	Rock type	Age used (Ma)	Method	Reference
Guangxi	Fozichong	23°00′ to 23°10′	111°05′ to 111°15′	F16-44-1	Granite porphyry	100.0 ± 2.0	LA-ICP-MS zircon U-Pb	
Guangxi	Xintang	23°00′ to 23°10′	111°05′ to 111°15′	FZ069-3	Granodiorite porphyry	100.4 ± 1.0	LA-ICP-MS zircon U-Pb	
Guangxi	Xintang	23°00′ to 23°10′	111°05′ to 111°15′	FZ060-3	Granite porphyry	99.2 ± 1.2	LA-ICP-MS zircon U-Pb	
Guangxi	Zhougongding	23°00′ to 23°10′	111°05′ to 111°15′	FZ001-3	Volcanic tuff	100.3 ± 0.83	LA-ICP-MS zircon U-Pb	
Guangxi	Fozichong	23°00′ to 23°10′	111°05′ to 111°15′	FZ16-36-2	Dacite	99.9 ± 1.8	LA-ICP-MS zircon U-Pb	
Guangxi	Kunlunguan			NY-3-10	Biotite granite	93 ± 1	LA-ICP-MS zircon U-Pb	Tan *et al.* (2008)
Guangxi	Gumin	23°10'31.39″	108°40'04.89″	KLG-2a	Biotite granite	94.9 ± 0.4	LA-ICP-MS zircon U-Pb	Cai (2015)
Guangxi	Silong	23°10'31.39″	108°40'04.89″	KLG-1	Granite	92.0 ± 1.1	LA-ICP-MS zircon U-Pb	
Guangxi	Silong	23°35'35.64″	108°20'22.36″	SJ-1	Granite porphyry	94.2 ± 0.5	LA-ICP-MS zircon U-Pb	
Guangxi	Luowei			ZK001	Granite	94.3 ± 1.9	LA-ICP-MS zircon U-Pb	Zhang (2017)
Guangxi	Luowei			ZK003B	Granite	90.63 ± 1.4	LA-ICP-MS zircon U-Pb	
Guangxi	Naning			NN-02	Quartz porphyry	93.46 ± 0.46	LA-ICP-MS zircon U-Pb	
Guangxi	Xidamingshan			DOO4	Diabase	95.3 ± 0.43	LA-ICP-MS zircon U-Pb	
Guangxi	Daxin			DX-01	Diabase	89.32 ± 0.9	LA-ICP-MS zircon U-Pb	Xu *et al.* (2012)
Guangxi	Shengshan			S001	Granite porphyry	91.05 ± 0.31	LA-ICP-MS zircon U-Pb	Chen *et al.* (2011)
Guangxi	Shengdong	23°33′49″to 23°35′09″	110°54′43″ to 110°57′03″	BS1	Granite porphyry	91.3 ± 0.8	LA-ICP-MS zircon U-Pb	Bi *et al.* (2015)
Guangxi	Shengdong	23°33′49″to 23°35′09″	110°54′43″ to 110°57′03″	BS2	Granite porphyry	90.1 ± 1.0	LA-ICP-MS zircon U-Pb	
Guangxi	Shengdong	23°33′49″to 23°35′09″	110°54′43″ to 110°57′03″	BS3	Granite porphyry	91.1 ± 0.6	LA-ICP-MS zircon U-Pb	
Guangxi	Liuwang	22°43′30″to 22°47′30″	114°45′30″ to 114°46′30″	CX16-N1	Quartz porphyry	98 ± 0.64	LA-ICP-MS zircon U-Pb	Liu *et al.* (2022)
Guangxi	Xinzhoutang	22°31'51″	110°13'20.5″	19XZT-01	Andesite	100.5 ± 1.7	LA-ICP-MS zircon U-Pb	Li *et al.* (2023)
Guangxi	Xinzhoutang	22°31'51″	110°13'20.5″	19XZT-02	Andesite	98.6 ± 1.5	LA-ICP-MS zircon U-Pb	Li *et al.* (2023)
Guangxi	Xinzhoutang	22°31'51″	110°13'20.5″	20XZT-02	Andesite	98.6 ± 0.7	LA-ICP-MS zircon U-Pb	
Guangxi	Xinzhoutang	22°31'51″	110°13'20.5″	20XZT-04	Andesite	98.4 ± 0.7	LA-ICP-MS zircon U-Pb	
Guangxi	Daye	22°58'16.98″	111°12'43.32″	19DY-02	Dacite	99.2 ± 1.6	LA-ICP-MS zircon U-Pb	
Guangxi	Liuwang	22°47′12.75″	110°45′07.55″	CX15	Quartz porphyry	97.89 ± 0.68	LA-ICP-MS zircon U-Pb	Mao *et al.* 2023
Guangxi	Yantianling	24°20'	111°21'	18SH-21	Granite	100.4 ± 1.0	LA-ICP-MS zircon U-Pb	Zhang *et al.* 2020
Guangxi	Yantianling	24°20'	111°21'	18SH-26	Granite	100.4 ± 1.1	LA-ICP-MS zircon U-Pb	Zhang *et al.* (2022)
Guangdong	Lianyang	24°00′ to 24°10′	112°15′ to 112°25′	DP222-1	Granite	100.2 ± 1.8	LA-ICP-MS zircon U-Pb	

(Continued)

Table S1: *Continued*

Area	Pluton	N (Latitude)	E (Longitude)	Sample	Rock type	Age used (Ma)	Method	Reference
Guangdong	Lianyang	24°00′ to 24°10′	112°15′ to 112°25′	PM06-3	Granite	98.9 ± 1.1	LA-ICP-MS zircon U-Pb	
Guangdong	Lianyang	24°00′ to 24°10′	112°15′ to 112°25′	PM06-54	Granite	99.9 ± 0.9	LA-ICP-MS zircon U-Pb	
Guangdong	Lianyang	24°00′ to 24°10′	112°15′ to 112°25′	PM06-53	Granite	97.1 ± 1.7	LA-ICP-MS zircon U-Pb	
Guangdong	Lianyang	24°00′ to 24°10′	112°15′ to 112°25′	PM06-1	Granite	100.1 ± 0.8	LA-ICP-MS zircon U-Pb	
Guangdong	Lianyang	24°00′ to 24°10′	112°15′ to 112°25′	DP204-1	Granite	98.0 ± 1.4	LA-ICP-MS zircon U-Pb	
Guangdong	Lianyang	24°00′ to 24°10′	112°15′ to 112°25′	D3178-1	Granite	99.9 ± 1.0	LA-ICP-MS zircon U-Pb	
Guangdong	Lianyang	24°00′ to 24°10′	112°15′ to 112°25′	D3020-1	Granite	99.5 ± 1.1	LA-ICP-MS zircon U-Pb	
Guangdong	Renju-Chagan	24°52'16″	112°58'09″	No.2	Rhyolite	88.3 ± 0.5	LA-ICP-MS zircon U-Pb	Lan *et al.* (2021)
Guangdong	Renju-Chagan	24°95'28″	112°57'29″	No.3	Rhyolite	88.9 ± 0.5	LA-ICP-MS zircon U-Pb	
Guangdong	Renju-Chagan	24°50'43″	112°55'07″	No.5	Rhyolite	93.7 ± 0.5	LA-ICP-MS zircon U-Pb	
Guangdong	Yingwuling	22°07′ to 22°09′	111°33′ to 111°35′	YWL06	K-feldspar granite	79.6 ± 0.7	LA-ICP-MS zircon U-Pb	Zhang *et al.* 2018
Guangdong	Yingwuling	22°07′ to 22°09′	111°33′ to 111°35′	YWL10	K-feldspar granite	79.4 ± 0.8	LA-ICP-MS zircon U-Pb	
Guangdong	Yingwuling	22°07′ to 22°09′	111°33′ to 111°35′	YWL1506	biotite granite	78.9 ± 1.0	LA-ICP-MS zircon U-Pb	
Guangdong	Yingwuling	22°07′ to 22°09′	111°33′ to 111°35′	YWL11	K-feldspar granite	79.1 ± 0.7	LA-ICP-MS zircon U-Pb	
Guangdong	Yingwuling	22°07′ to 22°09′	111°33′ to 111°35′	YWL1503	Biotite granite	79.1 ± 0.7	LA-ICP-MS zircon U-Pb	Zhang *et al.* 2018
Guangdong	Yingwuling	22°07′ to 22°09′	111°33′ to 111°35′	YWL1504	Biotite granite	79.4 ± 0.7	LA-ICP-MS zircon U-Pb	
Guangdong	Dajinshan	22°39′ to 22°40′	111°49′ to 111°50′	4302-10	Granite	82.89 ± 0.35	LA-ICP-IC-MS zircon U-Pb	Yu *et al.* (2012)
Guangdong	Dajinshan	22°39′ to 22°40′	111°49′ to 111°50′	003-11	Granite	85.6 ± 0.52	LA-ICP-IC-MS zircon U-Pb	
Fujian	Baishishan	23°00′ to 24°00′	118°00′ to 119°00′	08JH247	Porphyry	96 ± 1	SIMS zircon U-Pb	Chen *et al.* 2022
Fujian	Baishishan	23°00′ to 24°00′	118°00′ to 119°00′	08JH249	Porphyry	98 ± 2	LA-ICP-MS zircon U-Pb	
Fujian	Tatan	23°00′ to 24°00′	118°00′ to 119°00′	08JH285	Monzogranite	97 ± 1	SIMS zircon U-Pb	
Fujian	Tatan	23°00′ to 24°00′	118°00′ to 119°00′	08JH289	Monzogranite	98 ± 2	LA-ICP-MS zircon U-Pb	
Fujian	Tatan	23°00′ to 24°00′	118°00′ to 119°00′	08JH290	Monzogranite	97 ± 2	LA-ICP-MS zircon U-Pb	
Fujian	Jinggangsshan	23°00′ to 24°00′	118°00′ to 119°00′	08JH253	Alkali-feldspar granite	96 ± 1	SIMS zircon U-Pb	
Fujian	Yangjiaxi	26°32′ to 26°57′	119°50′ to 120°15′	09JH206	Alkali-feldspar granite	98.0 ± 2.8	LA-ICP-MS zircon U-Pb	Chen *et al.* 2023
Fujian	Shihu	26°32′ to 26°57′	119°50′ to 120°15′	09JH222	Alkali-feldspar granite	97.5 ± 1.5	SIMS zircon U-Pb	
Fujian	Ju'an	26°32′ to 26°57′	119°50′ to 120°15′	09JH224	Alkali-feldspar granite	99.1 ± 1.1	SIMS zircon U-Pb	
Fujian	Ju'an	26°32′ to 26°57′	119°50′ to 120°15′	09JH226	Alkali-feldspar granite	97.5 ± 2.8	LA-ICP-MS zircon U-Pb	

(Continued)

Table S1: *Continued*

Area	Pluton	N (Latitude)	E (Longitude)	Sample	Rock type	Age used (Ma)	Method	Reference
Fujian	Chuangchun	26°32′ to 26°57′	119°50′ to 120°15′	09JH221	Granitic porphyry	94.4 ± 1.2	LA-ICP-MS zircon U-Pb	
Fujian	Jingdong	25°11′ to 25°13′	119°15′ to 119°17′	D4130	Granite	84.5 ± 1.0	LA-ICP-MS zircon U-Pb	Huang and Lin (2019)
Fujian	Jingdong	25°11′ to 25°14′	119°15′ to 119°18′	PM001-8-1	Granite	81.8 ± 0.6	LA-ICP-MS zircon U-Pb	
Fujian	Jingdong	25°11′ to 25°15′	119°15′ to 119°19′	PM010-9-1	Granite	84.9 ± 0.5	LA-ICP-MS zircon U-Pb	
Fujian	Wutong	25°47′	118°47′	PM902-4	Diorite	97.1 ± 1.4	LA-ICP-MS zircon U-Pb	Li (2023)
Fujian	Yunshan	25°42′ to 25°52′	118°55′ to 119°00′	10YS29	Andesite	100.1 ± 1.0	LA-ICP-MS zircon U-Pb	Hong (2012)
Fujian	Yunshan	25°42′ to 25°52′	118°55′ to 119°00′	11YS50	Basalt	100.3 ± 0.7	LA-ICP-MS zircon U-Pb	
Fujian	Yunshan	25°42′ to 25°52′	118°55′ to 119°00′	10YS02	Trachyandensite	100.9 ± 1.3	LA-ICP-MS zircon U-Pb	Hong (2012)
Fujian	Yunshan	25°42′ to 25°52′	118°55′ to 119°00′	10YS04	Rhyolite	100.6 ± 1.0	LA-ICP-MS zircon U-Pb	
Fujian	Yunshan	25°42′ to 25°52′	118°55′ to 119°00′	10YS07	Rhyolite	100.8 ± 0.8	LA-ICP-MS zircon U-Pb	
Fujian	Yunshan	25°42′ to 25°52′	118°55′ to 119°00′	10YS28	Volcanic tuff	100.7 ± 0.6	LA-ICP-MS zircon U-Pb	
Fujian	Yunshan	25°42′ to 25°52′	118°55′ to 119°00′	10YS11	Volcanic tuff	96.3 ± 0.8	LA-ICP-MS zircon U-Pb	
Fujian	Yunshan	25°42′ to 25°52′	118°55′ to 119°00′	10YS14	Rhyolite	96.2 ± 0.9	LA-ICP-MS zircon U-Pb	
Fujian	Yunshan	25°42′ to 25°52′	118°55′ to 119°00′	10YS17	Volcanic tuff	94.0 ± 0.9	LA-ICP-MS zircon U-Pb	
Fujian	Yunshan	25°42′ to 25°52′	118°55′ to 119°00′	10YS20	Rhyolite	92.2 ± 0.7	LA-ICP-MS zircon U-Pb	
Fujian	Yunshan	25°42′ to 25°52′	118°55′ to 119°00′	YS01-10	Beschtauite	89.4 ± 0.9	LA-ICP-MS zircon U-Pb	
Fujian	Kuiqi	26°00′ to 26°10′	119°23′ to 119°33′	FZ04	Granite	93.03 ± 0.80	LA-ICP-MS zircon U-Pb	Zhu (2015)
Fujian	Kuiqi	26°00′ to 26°10′	119°23′ to 119°33′	FZ10	Granite	93.1 ± 1.5	LA-ICP-MS zircon U-Pb	
Fujian	Kuiqi	26°00′ to 26°10′	119°23′ to 119°33′	FZ15	Granite	95.4 ± 0.73	LA-ICP-MS zircon U-Pb	
Fujian	Fugaishan	28°14′	118°28′	D5066-1	Syenogranite	97.4 ± 0.61	LA-ICP-MS zircon U-Pb	Wang (2019)
Fujian	Yujing	27°03'32″	120°16'46″	TM09	Granite	96.6 ± 1.6	LA-ICP-MS zircon U-Pb	Li *et al.* (2013)
Fujian	Gushan	26°03'54.2″	119°23'21.4″	GS01	Alkaline granite	99.4 ± 2.3	LA-ICP-MS zircon U-Pb	
Fujian	Dayuan	28°00′ to 28°15′	119°45 to 119°55′	99FJ010-1	Granite	95 ± 2	SHRIMP zircon U-Pb	Wang *et al.* (2005)
Anhui	Donggushan	31°16′ to 31°17′	117°18′ to 117°19′	ZK2	Biotite granite	99.9 ± 1.7	LA-ICP-MS zircon U-Pb	Nie *et al.* (2016)
Anhui	Donggushan	31°16′ to 31°17′	117°18′ to 117°19′	ZK2	Biotite granite	99.7 ± 1.5	LA-ICP-MS zircon U-Pb	
Zhejiang	Yaokeng	27°16′ to 27°18′	120°27′ to 120°29′	YK-1	Alkaline granite	91.3 ± 2.5	LA-ICP-MS zircon U-Pb	Xiao *et al.* (2007)
Zhejiang	Wuxiaoyang	27°41′00″to 27°45′00″	120°14′00″ to 120°15′00″	WXY1-2-2	Biotite granite	89.2 ± 0.8	LA-ICP-MS zircon U-Pb	Ding *et al.* (2023)
Zhejiang	Caomen	27°41′00″to 27°45′00″	120°14′00″ to 120°15′00″	NSY-1	Granite porphyry	97.5 ± 0.4	LA-ICP-MS zircon U-Pb	

(Continued)

Table S1: *Continued*

Area	Pluton	N (Latitude)	E (Longitude)	Sample	Rock type	Age used (Ma)	Method	Reference
Zhejiang	Yantan	28°27′05″	120°43′22″	DY11-79	Syenogranite	94.7 ± 1.4	LA-ICP-MS zircon U-Pb	Gao *et al.* (2014)
Zhejiang	Beiwaishan	27°09′to 27°11′	118°00′ to 118°02′	TS-5	Granite	96.2 ± 0.8	LA-ICP-MS zircon U-Pb	Duan *et al.* (2017)
Zhejiang	Daheshan	30°05′ to 30°15′	120°25′ to 120°35′	99ZJ003	Kfs-granite	86 ± 3	SHRIMP zircon U-Pb	Wang *et al.* 2006
Zhejiang	Putongshan	30°01'24.0''	122°23'32.6''	12PT-3	Alkali-feldspar granite	97.6 ± 0.9	LA-ICP-MS zircon U-Pb	Zhao *et al.* 2016
Zhejiang	Dadongao	29°56'34.0''	122°24'58.9''	ZZJ-3	Alkali-feldspar granite	95.8 ± 1.0	LA-ICP-MS zircon U-Pb	
Zhejiang	Daqingshan	29°51'08.9''	122°23'46.3''	ZJJ-8	Peralkaline granite	88.1 ± 0.9	LA-ICP-MS zircon U-Pb	
Zhejiang	Taohuadao	29°49'05.0''	122°14'45.6''	12THD-1	Peralkaline granite	88.6 ± 0.5	LA-ICP-MS zircon U-Pb	
Zhejiang	Taohuadao	29°47'52.7''	122°18'10.1''	12THD-4	Peralkaline granite	89.2 ± 1.0	LA-ICP-MS zircon U-Pb	
Zhejiang	Xiazhidao	29°44'35.8''	122°18'08.9''	XZD-2	Peralkaline granite	86.1 ± 0.8	LA-ICP-MS zircon U-Pb	
Zhejiang	Xiaoxiong			03SM13	Syenite-porphyry	87.9 ± 1.2	LA-ICP-MS zircon U-Pb	Xing *et al.* (2009)
Zhejiang	Shiniushan			03SNS-7-1	Syenogranite-porphyry	93.8 ± 1.3	SHRIMP zircon U-Pb	
Hunan	Shangbao	26°12′01″to 26°14′12″	112°57′34″ to 112°59′22″	D9705	Granite	87.3 ± 0.9	LA-ICP-IC-MS zircon U-Pb	Zhao *et al.* 2021
Hunan	Jiepailing	25°30′ to 25°35′	113°15′ to 113°20′	JPL-28	Granite porphyry	90.5 ± 0.9	LA-ICP-MS zircon U-Pb	Yuan *et al.* 2015

Table S2: A summary of whole-rock major and trace elements of the Late Cretaceous granitic rocks in South China

Area	Sample number	Pluton	N (Latitude)	E (Longitude)	Rock type	SiO_2	TiO_2	Al_2O_3	TFe_2O_3	Fe_2O_3	FeO	MnO	MgO	CaO
Guangxi	YK435	Maqigang	22°04′ 20″	109°47′25″	Beschtauite	65.79	0.92	14.26	5.45			0.07	1.58	2.78
Guangxi	YK436-1	Maqigang	22°04′ 23″	109°47′27″	Beschtauite	65.22	0.91	14.63	5.35			0.07	1.71	2.80
Guangxi	YK436-2	Maqigang	22°04′ 23″	109°47′27″	Beschtauite	66.09	0.98	12.95	5.83			0.07	1.73	2.69
Guangxi	YK437-1	Maqigang	22°04′ 54″	109°48′00″	Beschtauite	65.37	0.93	14.37	5.56			0.08	1.67	2.75
Guangxi	YK437-2	Maqigang	22°04′ 54″	109°48′00″	Beschtauite	65.58	0.94	14.01	5.66			0.08	1.58	2.51
Guangxi	YK041	Maqigang	22°05′ 30″	109°46′53″	Beschtauite	64.16	0.55	14.44	5.35			0.05	2.12	2.57
Guangxi	YK042	Maqigang	22°05′ 33″	109°45′57″	Beschtauite	64.25	0.57	14.29	5.23			0.05	2.63	2.65
Guangxi	mqg-1	Maqigang	22°05'	109°45'	Beschtauite	64.76	0.94	14.66	6.14			0.09	1.42	2.50
Guangxi	mqg-2	Maqigang	22°05'	109°45'	Beschtauite	64.04	1.07	14.69	5.79			0.10	1.49	2.88
Guangxi	mqg-3	Maqigang	22°05'	109°45'	Beschtauite	64.26	1.08	14.68	6.03			0.09	1.45	3.33
Guangxi	GG07-20	Pingtaisnhan	23°07' to 123°12′	109°30' to 119°35′	Granodiorite	64.10	0.33	22.50	2.77			0.05	1.14	2.24
Guangxi	GG07-21	Pingtaisnhan	23°07' to 123°12′	109°30' to 119°35′	Granodiorite	66.70	0.35	18.30	2.81			0.06	1.27	2.42
Guangxi	GG07-22	Pingtaisnhan	23°07' to 123°12′	109°30' to 119°35′	Granodiorite	66.10	0.40	17.70	3.18			0.05	1.45	2.81
Guangxi	GG07-23	Pingtaisnhan	23°07' to 123°12′	109°30' to 119°35′	Granodiorite	66.70	0.36	18.70	2.73			0.07	1.16	2.34
Guangxi	GG07-24	Pingtaisnhan	23°07' to 123°12′	109°30' to 119°35′	Granodiorite	66.20	0.37	18.90	2.92			0.06	1.27	2.42
Guangxi	XM06-1	Pingtaisnhan	23°07' to 123°12′	109°30' to 119°35′	Granodiorite	70.60	0.33	14.90	2.97			0.08	1.26	2.17
Guangxi	XM06-2	Pingtaisnhan	23°07' to 123°12′	109°30' to 119°35′	Granodiorite	69.90	0.34	14.90	3.08			0.08	1.38	2.14
Guangxi	XM06-6	Pingtaisnhan	23°07' to 123°12′	109°30' to 119°35′	Granodiorite	69.50	0.33	14.60	3.04			0.08	1.39	2.04
Guangxi	PIS06-1	Pingtaisnhan	23°07' to 123°12′	109°30' to 119°35′	Granodiorite	69.50	0.36	14.90	3.19			0.06	1.41	2.68
Guangxi	PIS06-2	Pingtaisnhan	23°07' to 123°12′	109°30' to 119°35′	Granodiorite	69.70	0.36	14.90	3.11			0.06	1.37	2.61
Guangxi	GT-3	Guatian			Granite	70.65	0.34	14.34	2.47			0.06	0.89	2.18
Guangxi	GT-5	Guatian			Granite	72.22	0.29	14.03	2.29			0.04	0.77	2.05

Area	Sample number	Na_2O	K_2O	P_2O_5	LOI	TOTAL	Ga	Rb	Sr	Y	Zr	Nb	Cs	Ba	La	Ce	Pr	Nd	Sm	Eu	Gd	Tb
Guangxi	YK435	2.99	4.14	0.35	1.35	99.70	20.23	162.60	272.69	35.10	344.69	31.40	5.06	989.04	67.54	133.68	15.12	54.93	12.12	2.15	8.92	1.34
Guangxi	YK436-1	2.86	4.17	0.35	1.57	99.65	19.81	160.66	285.92	33.82	304.54	29.83	5.50	1075.81	65.13	127.42	15.04	53.17	12.10	2.12	8.60	1.27
Guangxi	YK436-2	2.86	4.60	0.36	1.53	99.68	19.44	174.04	273.42	34.72	346.98	31.84	5.92	1119.72	67.74	131.13	15.13	54.76	12.12	2.07	8.77	1.30
Guangxi	YK437-1	3.01	4.27	0.37	1.33	99.70	19.48	157.96	266.63	32.87	271.81	30.53	4.49	1032.41	64.83	129.75	14.51	53.28	11.52	2.12	8.47	1.27
Guangxi	YK437-2	3.19	4.42	0.34	1.40	99.70	19.00	166.65	247.22	33.76	277.47	30.44	4.87	1010.57	66.15	129.34	14.05	52.00	12.08	2.05	8.62	1.29

(Continued)

Table S2: *Continued*

Area	Sample number	Na_2O	K_2O	P_2O_5	LOI	TOTAL	Ga	Rb	Sr	Y	Zr	Nb	Cs	Ba	La	Ce	Pr	Nd	Sm	Eu	Gd	Tb
Guangxi	YK041	3.56	4.53	0.30	1.41	99.05	20.56	155.96	243.16	37.42	238.16	32.08	7.25	1095.58	63.33	128.68	14.68	52.87	12.07	2.14	8.97	1.27
Guangxi	YK042	3.49	3.99	0.35	1.59	99.07	19.99	161.61	249.63	36.23	255.08	32.59	7.17	1076.63	65.66	131.45	15.39	54.30	12.14	2.19	9.06	1.26
Guangxi	mqg-1	3.36	4.78	0.28	0.78	99.71	23.80	176.00	268.00	47.50	265.00	37.80	9.37	1173.00	70.30	128.00	14.20	54.30	10.30	2.45	9.19	1.51
Guangxi	mqg-2	3.27	4.52	0.28	0.84	98.97	23.10	170.00	280.00	56.20	207.00	37.20	8.47	1049.00	68.70	127.00	14.30	55.00	9.98	2.30	9.27	1.60
Guangxi	mqg-3	3.08	4.41	0.33	0.90	99.64	22.50	155.00	304.00	47.80	386.00	37.80	10.60	1031.00	69.20	128.00	14.30	54.60	9.96	2.32	9.20	1.54
Guangxi	GG07-20	3.09	3.25	0.14	0.75	100.36		187.00	209.00	28.10	156.00	15.30	33.00	626.00	52.30	76.30	8.00	29.00	5.36	0.87	4.24	0.62
Guangxi	GG07-21	2.80	3.46	0.15	0.84	99.16		184.00	227.00	25.20	143.00	15.70	21.80	694.00	45.60	75.00	8.04	29.00	5.42	0.95	4.20	0.64
Guangxi	GG07-22	3.25	3.16	0.15	0.54	98.79		127.00	279.00	25.40	151.00	15.70	14.40	760.00	48.30	78.90	8.54	31.00	5.62	1.09	4.44	0.66
Guangxi	GG07-23	3.27	3.44	0.15	0.59	99.51		192.00	216.00	27.50	156.00	15.80	25.70	671.00	46.20	75.00	7.84	28.50	5.33	0.96	4.41	0.67
Guangxi	GG07-24	3.20	3.34	0.14	0.48	99.30		186.00	229.00	26.80	148.00	16.30	25.50	689.00	49.00	77.80	8.38	30.40	5.61	1.00	4.49	0.68
Guangxi	XM06-1	3.55	3.77	0.15	0.61	100.39		133.00	149.00	20.60	182.00	11.00	23.50	632.00	28.90	50.00	6.28	24.10	4.59	0.80	3.59	0.58
Guangxi	XM06-2	3.63	3.73	0.15	0.75	100.08		191.50	223.30	19.07	132.20	15.07	17.28	801.00	38.54	80.27	8.03	29.12	5.56	1.02	4.48	0.70
Guangxi	XM06-6	3.45	3.82	0.15	0.76	99.16		92.10	121.00	18.40	169.00	7.55	18.20	565.00	17.80	33.00	4.28	16.90	3.55	0.63	2.88	0.48
Guangxi	PIS06-1	3.59	3.51	0.15	0.43	99.78		103.00	186.00	20.80	151.00	8.25	15.70	689.00	29.00	50.40	6.52	24.40	4.75	0.89	3.66	0.57
Guangxi	PIS06-2	3.60	3.48	0.14	0.37	99.70		152.00	270.00	30.80	265.00	20.80	20.60	972.00	47.90	82.40	10.40	39.10	7.18	1.35	5.54	0.87
Guangxi	GT-3	3.36	4.71	0.11	0.60	99.71	19.20	247.00	488.00	19.10	195.00	16.20	6.98	1000.00	65.60	117.00	11.35	38.40	6.01	1.19	3.98	0.59
Guangxi	GT-5	3.30	4.57	0.09	0.49	100.14	18.10	222.00	427.00	13.80	205.00	13.20	6.33	779.00	58.40	98.40	9.64	31.80	4.85	1.04	3.23	0.43

Area	Sample number	Dy	Ho	Er	Tm	Yb	Lu	Hf	Ta	Pb	Th	U	REE	LREE	HREE	LREE/HREE	Eu^*	Reference
Guangxi	YK435	7.28	1.39	3.70	0.56	3.57	0.53	8.88	1.60	21.78	18.36	3.34	312.81	285.53	27.29	10.46	0.63	This study
Guangxi	YK436-1	6.96	1.31	3.50	0.53	3.40	0.52	8.01	1.45	20.10	17.08	3.12	301.07	274.98	26.09	10.54	0.64	
Guangxi	YK436-2	7.08	1.35	3.68	0.54	3.41	0.53	8.89	1.58	20.40	19.03	3.38	309.61	282.95	26.66	10.61	0.61	
Guangxi	YK437-1	6.89	1.31	3.51	0.52	3.38	0.52	7.23	1.49	21.79	17.77	3.07	301.86	276.01	25.86	10.67	0.66	
Guangxi	YK437-2	7.00	1.33	3.49	0.52	3.34	0.50	7.39	1.54	20.71	18.53	3.23	301.76	275.68	26.08	10.57	0.61	
Guangxi	YK041	7.30	1.38	3.80	0.55	3.47	0.50	6.78	2.01	20.65	19.25	3.37	301.02	273.78	27.24	10.05	0.63	
Guangxi	YK042	7.18	1.35	3.72	0.54	3.45	0.50	7.05	2.03	21.81	20.10	3.47	308.20	281.13	27.07	10.38	0.64	
Guangxi	mqg-1	8.80	1.60	4.68	0.77	4.53	0.68	7.40	2.15	27.10	18.30	3.63	311.31	279.55	31.76	8.80	0.77	Wang *et al.* (2017)

(Continued)

Table S2: *Continued*

Area	Sample number	Dy	Ho	Er	Tm	Yb	Lu	Hf	Ta	Pb	Th	U	REE	LREE	HREE	LREE/HREE	Eu*	Reference
Guangxi	mqg-2	9.48	1.75	5.56	0.84	5.56	0.82	6.07	2.16	25.20	18.20	3.44	312.16	277.28	34.88	7.95	0.73	
Guangxi	mqg-3	8.94	1.56	4.92	0.70	4.92	0.67	9.61	2.15	24.30	17.10	3.29	310.83	278.38	32.45	8.58	0.74	
Guangxi	GG07-20	3.55	0.68	1.86	0.28	1.79	0.27	4.46	1.96	84.30	22.80	7.26	185.12	171.83	13.29	12.93	0.56	Duan *et al.* (2011)
Guangxi	GG07-21	3.65	0.70	1.94	0.28	1.84	0.28	4.03	1.96	66.40	22.40	10.00	177.54	164.01	13.53	12.12	0.61	
Guangxi	GG07-22	3.80	0.72	2.05	0.30	2.04	0.30	4.27	1.87	36.60	24.30	6.33	187.76	173.45	14.31	12.12	0.67	
Guangxi	GG07-23	3.93	0.75	2.06	0.32	2.05	0.31	4.41	1.98	95.40	22.60	9.31	178.33	163.83	14.50	11.30	0.61	
Guangxi	GG07-24	3.92	0.73	2.08	0.30	1.91	0.28	4.34	2.00	68.80	23.80	9.15	186.58	172.19	14.39	11.97	0.61	
Guangxi	XM06-1	3.52	0.68	1.79	0.28	2.05	0.28	4.71	1.24	100.00	18.40	7.96	127.44	114.67	12.77	8.98	0.60	
Guangxi	XM06-2	4.73	0.67	2.16	0.30	2.04	0.33	4.27	2.11	88.96	21.45	5.24	177.95	162.54	15.41	10.54	0.62	
Guangxi	XM06-6	3.10	0.58	1.57	0.25	1.74	0.24	4.24	0.47	84.00	14.60	8.78	87.00	76.16	10.84	7.03	0.60	
Guangxi	PIS06-1	3.44	0.67	1.73	0.25	1.85	0.26	3.84	0.28	32.00	17.40	7.80	128.39	115.96	12.43	9.33	0.65	
Guangxi	PIS06-2	5.39	1.05	2.71	0.41	3.07	0.43	7.10	2.14	55.70	29.80	12.00	207.80	188.33	19.47	9.67	0.65	
Guangxi	GT-3	3.30	0.65	1.71	0.27	1.80	0.28		1.80		31.00	7.61	252.13	239.55	12.58	19.04	0.74	Wang (2017)
Guangxi	GT-5	2.38	0.48	1.40	0.21	1.43	0.23		1.50		28.60	7.09	213.92	204.13	9.79	20.85	0.80	

Area	Sample number	Pluton	N (Latitude)	E (Longitude)	Rock type	SiO_2	TiO_2	Al_2O_3	TFe_2O_3	Fe_2O_3	FeO	MnO	MgO	CaO
Guangxi	GT-6	Guatian			Granite	71.65	0.30	13.85	2.45			0.04	0.79	1.96
Guangxi	F16-30-2	Fozichong	23°00′ to 23°10′	111°05′ to 111°15′	Granite porphyry	67.49	0.38	14.09		0.99	1.97	0.07	1.12	2.86
Guangxi	F16-31-2	Fozichong	23°00′ to 23°10′	111°05′ to 111°15′	Granite porphyry	70.19	0.31	13.75		0.90	1.79	0.05	1.00	2.25
Guangxi	F16-33-2	Fozichong	23°00′ to 23°10′	111°05′ to 111°15′	Granite porphyry	69.13	0.38	14.27		1.02	2.04	0.07	1.07	1.74
Guangxi	F16-34-2	Fozichong	23°00′ to 23°10′	111°05′ to 111°15′	Granite porphyry	70.47	0.27	13.94		0.73	1.46	0.04	0.99	1.76
Guangxi	F16-37-1	Fozichong	23°00′ to 23°10′	111°05′ to 111°15′	Granite porphyry	63.59	0.48	15.19		1.37	2.74	0.07	1.55	3.50

(Continued)

Table S2: *Continued*

Area	Sample number	Pluton	N (Latitude)	E (Longitude)	Rock type	SiO_2	TiO_2	Al_2O_3	TFe_2O_3	Fe_2O_3	FeO	MnO	MgO	CaO
Guangxi	F16-39-1	Fozichong	23°00′ to 23°10′	111°05′ to 111°15′	Granite porphyry	69.76	0.46	15.58		1.18	2.36	0.02	1.24	0.09
Guangxi	F16-41-2	Fozichong	23°00′ to 23°10′	111°05′ to 111°15′	Granite porphyry	62.94	0.72	16.43		1.87	3.74	0.09	2.12	3.26
Guangxi	F16-42-2	Fozichong	23°00′ to 23°10′	111°05′ to 111°15′	Granite porphyry	62.77	0.73	16.36		1.94	3.87	0.13	2.19	3.79
Guangxi	FZ069-2	Xintang	23°00′ to 23°10′	111°05′ to 111°15′	Granodiorite porphyry	62.31	0.73	16.44		1.95	3.89	0.08	2.17	3.38
Guangxi	FZ069-4	Xintang	23°00′ to 23°10′	111°05′ to 111°15′	Granodiorite porphyry	62.02	0.74	16.40		2.00	4.01	0.07	2.18	3.20
Guangxi	FZ069-5	Xintang	23°00′ to 23°10′	111°05′ to 111°15′	Granodiorite porphyry	62.49	0.74	16.04		1.98	3.95	0.08	2.25	3.40
Guangxi	FZ069-6	Xintang	23°00′ to 23°10′	111°05′ to 111°15′	Granodiorite porphyry	62.08	0.77	16.32		2.02	4.05	0.08	2.33	3.64
Guangxi	FZ058-2	Xintang	23°00′ to 23°10′	111°05′ to 111°15′	Granite porphyry	71.34	0.27	14.64		0.71	1.43	0.06	0.41	0.31
Guangxi	FZ060-2	Xintang	23°00′ to 23°10′	111°05′ to 111°15′	Granite porphyry	71.70	0.26	14.39		0.69	1.38	0.06	0.37	1.28
Guangxi	FZ061-2	Xintang	23°00′ to 23°10′	111°05′ to 111°15′	Granite porphyry	72.30	0.26	14.52		0.67	1.35	0.04	0.33	0.54
Guangxi	FZ062-1	Xintang	23°00′ to 23°10′	111°05′ to 111°15′	Granite porphyry	72.48	0.26	14.75		0.69	1.39	0.05	0.33	0.69
Guangxi	FZ063-1	Xintang	23°00′ to 23°10′	111°05′ to 111°15′	Granite porphyry	72.00	0.27	15.33		0.69	1.37	0.05	0.43	0.05
Guangxi	FZ064-1	Xintang	23°00′ to 23°10′	111°05′ to 111°15′	Granite porphyry	72.58	0.26	14.86		0.72	1.44	0.07	0.52	0.10
Guangxi	FZ088-2	Xintang	23°00′ to 23°10′	111°05′ to 111°15′	Granite porphyry	71.02	0.25	14.36		0.73	1.47	0.08	0.53	1.44

(Continued)

Table S2: *Continued*

Area	Sample number	Pluton	N (Latitude)	E (Longitude)	Rock type	SiO_2	TiO_2	Al_2O_3	TFe_2O_3	Fe_2O_3	FeO	MnO	MgO	CaO
Guangxi	CX16-H1	Liuwang	22°43′30″to 22°47′30″	114°45′30″ to 114°46′30″	Quartz porphyry	75.77	0.04	12.94	0.67			0.05	0.15	0.55
Guangxi	CX16-H2	Liuwang	22°43′30″to 22°47′30″	114°45′30″ to 114°46′30″	Quartz porphyry	75.34	0.03	13.02	0.83			0.06	0.15	0.51

Area	Sample number	Na_2O	K_2O	P_2O_5	LOI	TOTAL	Ga	Rb	Sr	Y	Zr	Nb	Cs	Ba	La	Ce	Pr	Nd	Sm	Eu	Gd	Tb
Guangxi	GT-6	3.29	4.58	0.10	0.70	99.71	18.70	235.00	472.00	15.40	190.00	15.50	7.29	836.00	56.10	98.50	9.48	31.10	4.75	0.97	3.25	0.43
Guangxi	F16-30-2	2.52	4.16	0.13	3.63	99.41	19.10	228.00	138.50	21.90	154.00	13.00		474.00	41.60	76.10	8.61	31.60	5.50	0.99	4.35	0.63
Guangxi	F16-31-2	2.68	4.34	0.10	2.79	100.15	19.40	209.00	213.00	18.30	143.00	16.70		482.00	35.50	69.70	6.91	23.90	4.74	0.74	3.70	0.52
Guangxi	F16-33-2	3.78	4.49	0.12	2.22	100.33	20.20	226.00	236.00	17.20	166.00	13.80		560.00	39.10	76.80	8.00	27.70	5.23	0.92	3.91	0.56
Guangxi	F16-34-2	2.72	5.30	0.11	1.87	99.66	17.60	276.00	425.00	17.90	141.00	16.50		690.00	27.50	57.60	6.09	22.00	4.69	0.78	3.89	0.58
Guangxi	F16-37-1	4.08	2.45	0.17	4.65	99.84	18.50	142.00	296.00	19.00	161.00	9.70		445.00	35.00	65.00	6.92	25.40	4.70	1.16	3.88	0.55
Guangxi	F16-39-1	2.77	3.83	0.15	2.52	99.96	20.80	230.00	287.00	206.00	152.00	14.70		568.00	50.50	82.90	10.45	35.90	6.70	1.31	4.75	0.67
Guangxi	F16-41-2	3.15	3.70	0.27	2.00	100.29	20.90	156.00	714.00	26.30	322.00	13.80		1350.00	64.70	121.50	12.50	44.30	7.89	1.86	5.75	0.80
Guangxi	F16-42-2	3.18	3.74	0.29	2.06	101.05	21.50	171.00	718.00	31.40	289.00	13.70		1405.00	62.10	120.00	12.00	43.60	7.51	1.96	6.00	0.87
Guangxi	FZ069-2	3.15	3.63	0.29	1.76	99.78	21.70	153.00	706.00	25.40	291.00	14.00		1545.00	68.30	127.50	14.25	50.30	8.33	1.83	6.17	0.83
Guangxi	FZ069-4	3.03	6.78	0.27	1.79	102.49	21.70	168.50	632.00	25.60	297.00	138.00		1500.00	63.90	121.50	13.75	47.40	8.38	1.75	6.37	0.85
Guangxi	FZ069-5	3.03	3.49	0.28	1.84	99.57	20.40	161.00	633.00	27.40	289.00	13.10		1630.00	57.90	111.50	12.80	44.90	7.87	1.75	6.04	0.88
Guangxi	FZ069-6	2.98	3.40	0.29	1.90	99.86	21.40	145.00	657.00	25.10	277.00	13.00		1395.00	59.70	114.00	13.10	46.50	7.76	1.74	6.22	0.83
Guangxi	FZ058-2	3.27	3.44	0.15	0.59	99.51		192.00	216.00	27.50	156.00	15.80	25.70	671.00	46.20	75.00	7.84	28.50	5.33	0.96	4.41	0.67
Guangxi	FZ060-2	3.20	3.34	0.14	0.48	99.30		186.00	229.00	26.80	148.00	16.30	25.50	689.00	49.00	77.80	8.38	30.40	5.61	1.00	4.49	0.68
Guangxi	FZ061-2	3.55	3.77	0.15	0.61	100.39		133.00	149.00	20.60	182.00	11.00	23.50	632.00	28.90	50.00	6.28	24.10	4.59	0.80	3.59	0.58
Guangxi	FZ062-1	3.63	3.73	0.15	0.75	100.08		191.50	223.30	19.07	132.20	15.07	17.28	801.00	38.54	80.27	8.03	29.12	5.56	1.02	4.48	0.70
Guangxi	FZ063-1	3.45	3.82	0.15	0.76	99.16		92.10	121.00	18.40	169.00	7.55	18.20	565.00	17.80	33.00	4.28	16.90	3.55	0.63	2.88	0.48
Guangxi	FZ064-1	3.59	3.51	0.15	0.43	99.78		103.00	186.00	20.80	151.00	8.25	15.70	689.00	29.00	50.40	6.52	24.40	4.75	0.89	3.66	0.57
Guangxi	FZ088-2	3.60	3.48	0.14	0.37	99.70		152.00	270.00	30.80	265.00	20.80	20.60	972.00	47.90	82.40	10.40	39.10	7.18	1.35	5.54	0.87
Guangxi	CX16-H1	3.25	4.98	0.01	0.66	99.07		637.13	8.84	71.79	128.59	50.14		13.82	9.83	24.01	3.62	20.52	8.80	0.02	8.19	2.00
Guangxi	CX16-H2	2.52	6.02	0.01	0.87	99.36		729.86	16.04	65.51	137.15	51.18		27.80	12.71	27.31	4.85	27.72	12.13	0.03	10.27	2.25

(Continued)

Table S2: *Continued*

Area	Sample number	Dy	Ho	Er	Tm	Yb	Lu	Hf	Ta	Pb	Th	U	REE	LREE	HREE	LREE/HREE	Eu*	Reference
Guangxi	GT-6	2.37	0.47	1.39	0.22	1.48	0.23		1.50		34.20	5.68	210.74	200.90	9.84	20.42	0.75	Wang (2017)
Guangxi	F16-30-2	3.38	0.64	1.74	0.25	1.59	0.23	4.80	1.60		24.50	4.48	177.21	164.40	12.81	12.83	0.62	Li (2018)
Guangxi	F16-31-2	3.12	0.60	1.69	0.28	1.82	0.31	4.40	2.00		26.20	10.20	153.53	141.49	12.04	11.75	0.54	
Guangxi	F16-33-2	3.15	0.61	1.64	0.27	1.59	0.26	4.80	1.60		24.50	7.33	169.74	157.75	11.99	13.16	0.62	
Guangxi	F16-34-2	3.22	0.62	1.62	0.26	1.60	0.27	4.30	2.20		23.20	8.86	130.72	118.66	12.06	9.84	0.56	
Guangxi	F16-37-1	3.17	0.62	1.65	0.24	1.44	0.24	4.20	0.90		12.95	2.88	149.97	138.18	11.79	11.72	0.83	
Guangxi	F16-39-1	3.64	0.72	1.98	0.30	2.01	0.33	4.20	1.70		21.80	7.82	202.16	187.76	14.40	13.04	0.71	
Guangxi	F16-41-2	4.58	0.90	2.54	0.36	2.25	0.35	7.40	1.10		17.00	4.06	270.28	252.75	17.53	14.42	0.84	
Guangxi	F16-42-2	5.10	1.03	2.99	0.42	2.59	0.40	6.70	1.10		16.45	3.80	266.57	247.17	19.40	12.74	0.89	
Guangxi	FZ069-2	4.87	0.92	2.52	0.38	2.37	0.36	7.00	1.20		18.95	4.15	288.93	270.51	18.42	14.69	0.78	
Guangxi	FZ069-4	4.93	0.94	2.58	0.41	2.46	0.37	7.30	1.10		19.00	4.19	275.59	256.68	18.91	13.57	0.73	
Guangxi	FZ069-5	4.96	0.97	2.70	0.40	2.53	0.38	7.10	1.10		17.60	4.06	255.58	236.72	18.86	12.55	0.78	
Guangxi	FZ069-6	4.75	0.93	2.47	0.38	2.27	0.36	6.70	1.10		17.25	4.06	261.01	242.80	18.21	13.33	0.77	
Guangxi	FZ058-2	4.51	0.87	2.59	0.38	2.31	0.35	7.20	1.40		33.70	5.24	365.83	347.97	17.86	19.48	0.58	
Guangxi	FZ060-2	4.60	0.94	2.56	0.38	2.45	0.36	6.80	1.30		32.80	4.10	357.36	338.78	18.58	18.23	0.68	
Guangxi	FZ061-2	4.75	0.91	2.48	0.39	2.44	0.37	6.60	1.40		32.20	4.15	351.69	333.19	18.50	18.01	0.68	
Guangxi	FZ062-1	6.79	1.29	3.73	0.55	3.42	0.53	6.70	1.50		32.40	4.53	394.23	368.37	25.86	14.24	0.79	
Guangxi	FZ063-1	5.20	0.95	2.75	0.41	2.48	0.37	7.40	1.50		34.30	3.67	382.09	362.05	20.04	18.07	0.69	
Guangxi	FZ064-1	5.47	1.03	3.03	0.47	2.89	0.44	6.80	1.30		30.90	2.77	391.26	370.18	21.08	17.56	0.78	
Guangxi	FZ088-2	4.72	0.89	2.51	0.39	2.43	0.38	6.70	1.40		32.70	4.62	351.59	333.10	18.49	18.02	0.68	
Guangxi	FZ069-4	13.82	2.74	8.32	1.34	8.80	1.33	8.44	5.58	28.45	48.79	17.66	113.34	66.80	46.54	1.44	0.01	Liu *et al.* (2022)
Guangxi	FZ069-5	14.22	2.66	7.82	1.23	8.20	1.25	8.91	5.88	33.43	55.46	21.93	132.65	84.75	47.90	1.77	0.01	

Area	Sample number	Pluton	N (Latitude)	E (Longitude)	Rock type	SiO_2	TiO_2	Al_2O_3	TFe_2O_3	Fe_2O_3	FeO	MnO	MgO	CaO

(Continued)

Table S2: *Continued*

Area	Sample number	Pluton	N (Latitude)	E (Longitude)	Rock type	SiO_2	TiO_2	Al_2O_3	TFe_2O_3	Fe_2O_3	FeO	MnO	MgO	CaO
Guangxi	CX16-H3	Liuwang	22°43′30″to 22°47′30″	114°45′30″ to 114°46′30″	Quartz porphyry	75.68	0.03	13.21	0.85			0.06	0.15	0.47
Guangxi	CX16-H4	Liuwang	22°43′30″to 22°47′30″	114°45′30″ to 114°46′30″	Quartz porphyry	75.55	0.04	13.26	0.80			0.06	0.15	0.42
Guangxi	CX16-H5	Liuwang	22°43′30″to 22°47′30″	114°45′30″ to 114°46′30″	Quartz porphyry	75.28	0.03	13.48	0.63			0.04	0.16	0.36
Guangxi	CX16-H6	Liuwang	22°43′30″to 22°47′30″	114°45′30″ to 114°46′30″	Quartz porphyry	75.34	0.03	13.07	1.03			0.07	0.14	0.60
Guangxi	CX15-N1-H1	Liuwang	22°47′12.75″	110°45′ 07.55″	Quartz porphyry	78.28	0.04	11.37	1.15			0.07	0.15	0.49
Guangxi	CX15-N1-H2	Liuwang	22°47′12.75″	110°45′ 07.55″	Quartz porphyry	76.53	0.04	11.39	1.47			0.08	0.20	1.43
Guangxi	CX15-N1-H3	Liuwang	22°47′12.75″	110°45′ 07.55″	Quartz porphyry	76.46	0.04	12.10	0.83			0.07	0.16	0.56
Guangxi	CX15-N1-H4	Liuwang	22°47′12.75″	110°45′ 07.55″	Quartz porphyry	74.61	0.04	12.82	1.62			0.07	0.20	1.17
Guangxi	CX15-N1-H5	Liuwang	22°47′12.75″	110°45′ 07.55″	Quartz porphyry	74.99	0.04	12.72	1.51			0.07	0.18	0.69
Guangxi	CX15-N1-H6	Liuwang	22°47′12.75″	110°45′ 07.55″	Quartz porphyry	76.98	0.03	11.95	0.98			0.07	0.16	0.04
Guangxi	18SH-19	Yantianling	24°20'	111°21'	Granite	73.55	0.02	13.20	1.24			0.04	0.24	1.78
Guangxi	18SH-24	Yantianling	24°20'	111°21'	Granite	73.26	0.02	14.07	0.61			0.04	0.20	1.24

(Continued)

Table S2: *Continued*

Area	Sample number	Pluton	N (Latitude)	E (Longitude)	Rock type	SiO_2	TiO_2	Al_2O_3	TFe_2O_3	Fe_2O_3	FeO	MnO	MgO	CaO
Guangxi	18SH-25	Yantianling	24°20'	111°21'	Granite	72.59	0.01	16.34	0.52			0.06	0.32	1.62
Guangxi	18SH-27	Yantianling	24°20'	111°21'	Granite	72.01	0.03	13.46	1.34			0.05	0.24	2.43
Guangxi	18SH-28	Yantianling	24°20'	111°21'	Granite	74.62	0.01	14.01	0.95			0.06	0.14	0.71
Guangxi	18SH-29	Yantianling	24°20'	111°21'	Granite	72.83	0.01	13.61	0.99			0.05	0.27	1.36
Guangxi	18SH-30	Yantianling	24°20'	111°21'	Granite	73.08	0.01	14.27	1.61			0.05	0.18	1.07
Guangxi	KLG-2a	Gumin	23°11'06.37″	108°36'12.7-1″	Biotite granite	69.65	0.36	14.73	2.01			0.82	0.04	2.38
Guangxi	KLG-3a	Gumin	23°11'06.37″	108°36'12.7-1″	Biotite granite	71.46	0.31	13.85	1.95			0.93	0.03	1.62
Guangxi	KLG-4a	Gumin	23°10'00.17″	108°37'25.-57″	Biotite granite	68.68	0.48	14.29	3.22			1.44	0.06	2.45
Guangxi	KLG-5a	Gumin	23°10'00.17″	108°37'25.-57″	Biotite granite	69.03	0.45	13.95	3.54			1.29	0.08	2.14
Guangxi	KLG-1	Silong	23°10'31.39″	108°40'04.-89″	Granite	71.76	0.40	14.32	3.12			1.10	0.05	1.97

Area	Sample number	Na_2O	K_2O	P_2O_5	LOI	TOTAL	Ga	Rb	Sr	Y	Zr	Nb	Cs	Ba	La	Ce	Pr	Nd	Sm	Eu	Gd	Tb
Guangxi	CX16-H3	3.25	5.18	0.01	0.82	99.71		643.14	9.13	61.41	132.98	52.07		17.43	7.87	20.54	3.07	17.14	7.06	0.01	6.52	1.62
Guangxi	CX16-H4	3.57	4.90	0.01	0.73	99.49		645.37	7.36	60.30	128.39	52.18		11.81	6.54	20.03	2.57	14.23	5.93	0.01	6.01	1.56
Guangxi	CX16-H5	3.57	4.63	0.01	1.20	99.39		594.97	5.76	60.59	153.33	53.28		10.23	6.03	18.29	2.30	12.53	4.43	0.01	4.58	1.33
Guangxi	CX16-H6	3.14	5.20	0.01	0.89	99.52		652.24	14.08	75.63	134.54	53.50		16.90	13.65	36.23	5.80	33.51	15.15	0.02	11.37	2.42
Guangxi	CX15-N1-H1	3.68	3.14	0.01	1.12	99.50		141.61	306.51	41.91	262.70	43.95		741.49	73.81	143.45	16.76	80.65	12.26	2.42	11.35	1.72
Guangxi	CX15-N1-H2	3.48	3.68	0.01	1.11	99.42		148.13	338.80	38.12	331.06	42.22		818.93	51.13	100.97	12.42	62.00	10.07	2.18	9.18	1.47
Guangxi	CX15-N1-H3	2.72	5.52	0.01	1.18	99.65		162.73	326.36	40.51	268.55	44.15		928.39	55.37	111.28	13.69	67.83	10.94	2.14	10.01	1.57
Guangxi	CX15-N1-H4	3.52	4.43	0.01	1.26	99.75		127.44	309.27	22.75	259.88	22.51		685.70	43.80	84.12	9.36	43.72	6.47	1.67	5.64	0.89
Guangxi	CX15-N1-H5	2.60	5.73	0.01	1.22	99.76		176.98	339.91	37.68	284.10	45.74		926.17	39.49	82.50	10.80	55.66	9.73	2.25	8.66	1.44

(Continued)

Table S2: *Continued*

Area	Sample number	Na_2O	K_2O	P_2O_5	LOI	TOTAL	Ga	Rb	Sr	Y	Zr	Nb	Cs	Ba	La	Ce	Pr	Nd	Sm	Eu	Gd	Tb
Guangxi	CX15-N1-H6	2.53	5.43	0.01	1.17	99.35		173.46	325.10	41.42	320.00	47.73		1049.90	49.85	101.72	12.72	64.18	10.83	2.19	9.75	1.58
Guangxi	18SH-19	1.38	4.87	0.04	2.66	99.02	25.50	341.00	229.00	35.10	29.10	29.80	18.70	4900.00	17.90	43.80	5.50	19.90	7.40	0.29	8.42	1.57
Guangxi	18SH-24	3.25	4.64	0.03	1.68	99.04	26.00	275.00	122.00	36.00	47.10	31.00	10.30	2620.00	10.00	21.80	3.25	12.40	4.70	0.17	7.36	1.51
Guangxi	18SH-25	0.53	4.79	0.04	3.00	99.82	18.80	372.00	39.60	31.30	42.70	6.75	13.80	159.00	8.77	11.50	2.82	10.60	4.32	0.07	5.56	1.17
Guangxi	18SH-27	0.25	5.49	0.03	3.76	99.09	23.30	353.00	96.50	84.80	91.90	25.30	18.20	1310.00	26.50	57.80	8.12	31.40	10.40	0.24	11.90	2.37
Guangxi	18SH-28	0.14	6.15	0.03	2.34	99.16	21.70	471.00	44.80	24.10	44.70	36.40	19.10	2000.00	9.28	26.20	2.94	10.90	4.63	0.14	5.64	1.12
Guangxi	18SH-29	2.36	5.44	0.04	2.14	99.10	22.90	330.00	297.00	54.30	36.60	32.80	10.90	9050.00	12.10	28.00	3.81	14.70	6.89	0.43	9.88	2.12
Guangxi	18SH-30	1.95	5.14	0.02	1.89	99.27	30.10	371.00	35.50	31.80	40.80	35.70	17.90	685.00	10.50	22.00	3.42	13.10	5.64	0.06	6.96	1.38
Guangxi	KLG-2a	3.46	4.28	0.13	2.13	99.99	19.66	228.82	292.64	20.34	150.25	19.35	9.62	627.77	54.67	104.31	11.03	37.80	6.63	1.08	4.30	0.76
Guangxi	KLG-3a	3.05	5.02	0.13	1.64	99.99	20.61	272.20	240.02	19.90	161.33	21.66	18.42	723.46	62.77	121.50	12.90	43.99	8.08	1.01	4.96	0.87
Guangxi	KLG-4a	3.32	4.11	0.19	1.77	100.01	20.34	244.93	306.03	33.71	183.57	25.11	14.77	655.22	48.07	97.46	10.85	41.14	8.58	1.15	5.60	1.13
Guangxi	KLG-5a	3.06	4.65	0.17	1.63	99.99	20.21	257.23	288.59	30.27	175.64	22.15	13.11	820.13	70.69	132.46	13.87	48.44	8.70	1.08	5.31	1.07
Guangxi	KLG-1	3.23	4.85	0.17	0.11	101.08	20.96	239.81	302.09	26.54	189.67	23.10	10.54	722.59	42.58	79.19	8.92	31.24	5.86	0.93	5.23	0.71

Area	Sample number	Dy	Ho	Er	Tm	Yb	Lu	Hf	Ta	Pb	Th	U	REE	LREE	HREE	LREE/HREE	Eu^*	Reference
Guangxi	CX16-H3	11.73	2.42	7.56	1.23	8.18	1.25	8.80	5.82	29.38	51.42	21.50	96.20	55.69	40.51	1.37	0.004	Liu *et al.* (2022)
Guangxi	CX16-H4	11.45	2.37	7.41	1.21	8.02	1.21	8.45	5.85	32.39	51.54	16.08	88.55	49.31	39.24	1.26	0.01	
Guangxi	CX16-H5	10.93	2.40	7.80	1.28	8.58	1.31	10.04	6.16	30.96	52.68	18.01	81.80	43.59	38.21	1.14	0.01	
Guangxi	CX16-H6	14.96	2.81	8.39	1.32	8.87	1.34	8.79	5.97	36.12	52.90	21.13	155.84	104.36	51.48	2.03	0.004	
Guangxi	CX15-N1-H1	9.01	1.63	4.60	0.62	3.89	0.58	7.72	2.81	17.18	22.19	4.20	362.75	329.35	33.40	9.86	0.63	Mao *et al.* 2023
Guangxi	CX15-N1-H2	7.96	1.45	4.10	0.56	3.52	0.52	8.98	2.75	15.95	16.54	4.19	267.53	238.77	28.76	8.30	0.69	
Guangxi	CX15-N1-H3	8.57	1.55	4.41	0.61	3.78	0.57	7.60	2.94	11.74	19.05	4.68	292.32	261.25	31.07	8.41	0.63	
Guangxi	CX15-N1-H4	4.79	0.86	2.43	0.34	2.12	0.32	6.86	0.65	9.61	11.11	2.00	206.53	189.14	17.39	10.88	0.85	
Guangxi	CX15-N1-H5	7.90	1.44	4.09	0.56	3.51	0.52	7.79	2.88	15.17	14.83	4.12	228.55	200.43	28.12	7.13	0.75	
Guangxi	CX15-N1-H6	8.71	1.58	4.45	0.61	3.84	0.57	8.73	3.16	18.28	21.38	15.53	272.58	241.49	31.09	7.77	0.65	
Guangxi	18SH-19	7.43	1.00	2.06	0.26	1.40	0.18	1.91	3.39		11.30	12.40	117.11	94.79	22.32	4.25	0.11	Zhang *et al.* 2020
Guangxi	18SH-24	7.47	1.02	2.14	0.28	1.52	0.20	3.21	4.93		12.30	19.10	73.82	52.32	21.50	2.43	0.09	
Guangxi	18SH-25	5.82	0.82	1.73	0.32	1.30	0.17	3.11	2.77		7.35	3.23	54.97	38.08	16.89	2.25	0.04	

(Continued)

Table S2: *Continued*

Area	Sample number	Dy	Ho	Er	Tm	Yb	Lu	Hf	Ta	Pb	Th	U	REE	LREE	HREE	LREE/HREE	Eu^*	Reference
Guangxi	18SH-27	14.30	2.73	7.26	1.08	6.40	0.87	4.83	3.68		19.40	10.00	181.37	134.46	46.91	2.87	0.07	
Guangxi	18SH-28	5.38	0.71	1.45	1.90	0.99	0.13	2.99	5.19		7.44	13.40	71.41	54.09	17.32	3.12	0.08	
Guangxi	18SH-29	11.00	1.59	3.51	0.47	2.61	0.34	2.51	5.72		11.60	16.50	97.45	65.93	31.52	2.09	0.16	
Guangxi	18SH-30	6.69	0.91	1.88	0.25	1.32	0.17	2.81	5.92		11.60	18.50	74.28	54.72	19.56	2.80	0.03	
Guangxi	KLG-2a	3.61	0.76	2.32	0.31	2.17	0.33	4.38	2.23	35.64	29.15	8.44	230.08	215.52	14.56	14.80	0.62	Cai (2015)
Guangxi	KLG-3a	3.86	0.78	2.23	0.27	1.71	0.27	5.06	2.08	42.88	36.85	15.06	265.20	250.25	14.95	16.74	0.49	
Guangxi	KLG-4a	6.12	1.29	3.58	0.51	3.60	0.53	5.57	3.50	32.11	42.29	12.61	229.61	207.25	22.36	9.27	0.51	
Guangxi	KLG-5a	5.44	1.16	3.25	0.45	3.16	0.46	5.32	2.88	34.36	39.79	12.10	295.54	275.24	20.30	13.56	0.49	
Guangxi	KLG-1	3.96	0.73	2.06	0.30	2.17	0.33	4.84	1.80	29.66	39.74	9.02	184.21	168.72	15.49	10.89	0.51	

Area	Sample number	Pluton	N (Latitude)	E (Longitude)	Rock type	SiO_2	TiO_2	Al_2O_3	TFe_2O_3	Fe_2O_3	FeO	MnO	MgO	CaO
Guangxi	KLG-2	Silong	23°10'31.39″	108°40'04.-89″	Granite	71.76	0.38	15.01	2.78			1.03	0.05	2.24
Guangxi	KLG-4	Silong	23°10'31.39″	108°40'04.-89″	Granite	73.47	0.43	13.71	2.53			0.84	0.04	1.89
Guangxi	KLG-5	Silong	23°05'32.9-9″	108°43'24.-14″	Granite	72.02	0.33	14.51	2.19			0.96	0.03	1.58
Guangxi	GT-1	Silong	23°05'41.87″	108°41'38.-49″	Granite	72.49	0.29	14.58	1.87			0.81	0.03	1.43
Guangxi	GT-4	Silong			Granite	72.23	0.38	13.35	2.45			0.84	0.05	1.72
Guangxi	NY-3-11	Kunlungua-n			Granite	70.23	0.50	13.75	2.93			1.12	0.05	2.21
Guangxi	NY-3-13	Kunlungua-n			Granite	68.13	0.39	12.73	4.27			1.17	0.09	3.81
Guangxi	KLG02	Kunlungua-n	23°05'	108°36'	Granite	70.12	0.51	14.25		1.30	1.76	0.04	1.28	1.22

(Continued)

Table S2: *Continued*

Area	Sample number	Pluton	N (Latitude)	E (Longitude)	Rock type	SiO_2	TiO_2	Al_2O_3	TFe_2O_3	Fe_2O_3	FeO	MnO	MgO	CaO
Guangxi	KLG03	Kunlungua-n	23°05'	108°36'	Granite	71.36	0.44	13.83		0.57	1.97	0.05	1.09	2.00
Guangxi	KLG04	Kunlungua-n	23°05'	108°36'	Granite	72.52	0.27	14.20		0.02	1.47	0.03	0.72	1.28
Guangxi	KLG05	Kunlungua-n	23°05'	108°36'	Granite	69.78	0.53	13.65		0.97	2.08	0.05	1.76	2.64
Guangxi	KLG06	Kunlungua-n	23°05'	108°36'	Granite	70.75	0.45	14.04		0.41	2.18	0.05	1.26	2.30
Guangxi	KLG07	Kunlungua-n	23°05'	108°36'	Granite	73.36	0.31	13.60		0.40	1.37	0.04	0.63	1.49
Guangxi	KLG09	Kunlungua-n	23°05'	108°36'	Granite	70.24	0.49	14.06		0.72	2.12	0.05	1.35	2.34
Guangxi	KLG10	Kunlungua-n	23°05'	108°36'	Granite	71.33	0.48	13.66		0.92	1.76	0.05	1.11	1.96
Guangxi	KLG11	Kunlungua-n	23°05'	108°36'	Granite	69.42	0.50	14.06		1.01	1.99	0.07	1.78	2.78
Guangxi	KLG12	Kunlungua-n	23°05'	108°36'	Granite	70.43	0.48	14.20		0.54	2.20	0.05	1.26	1.65
Guangxi	KLG03-01	Kunlungua-n	23°00′ to 23°15′	108°35′ to 111°50′	Biotite granite	71.26	0.27	14.67	1.77			0.03	0.67	1.14
Guangxi	KLG04-03	Kunlungua-n	23°00′ to 23°16′	108°35′ to 111°51′	Biotite granite	72.43	0.37	13.48	2.28			0.04	0.81	1.60
Guangxi	KLG01-1	Kunlungua-n	23°00′ to 23°17′	108°35′ to 111°52′	Biotite granite	70.03	0.46	14.19	2.98			0.05	1.14	1.99
Guangxi	KLG01-2	Kunlungua-n	23°00′ to 23°18′	108°35′ to 111°53′	Biotite granite	70.27	0.46	14.22	3.08			0.05	0.96	2.04

(Continued)

Table S2: *Continued*

Area	Sample number	Pluton	N (Latitude)	E (Longitude)	Rock type	SiO_2	TiO_2	Al_2O_3	TFe_2O_3	Fe_2O_3	FeO	MnO	MgO	CaO
Guangxi	KLG01-3	Kunlungua-n	23°00′ to 23°19′	108°35′ to 111°54′	Biotite granite	70.35	0.45	14.12	2.95			0.05	0.94	1.97

Area	Sample number	Na_2O	K_2O	P_2O_5	LOI	TOTAL	Ga	Rb	Sr	Y	Zr	Nb	Cs	Ba	La	Ce	Pr	Nd	Sm	Eu	Gd	Tb
Guangxi	KLG-2	3.56	4.58	0.15	0.21	101.75	21.13	230.72	339.51	27.55	175.39	21.57	10.30	698.99	31.72	61.57	7.20	25.52	5.53	0.95	4.61	0.69
Guangxi	KLG-4	3.26	4.59	0.13	0.17	101.06	19.61	230.02	243.78	22.23	192.49	27.67	8.93	657.66	32.53	63.56	7.49	27.09	5.63	0.94	4.59	0.61
Guangxi	KLG-5	3.24	5.52	0.15	0.12	100.65	22.36	277.66	291.27	21.82	170.14	24.86	16.52	851.17	56.93	103.85	11.28	37.44	5.64	0.90	5.43	0.71
Guangxi	GT-1	2.75	5.78	0.21	0.20	100.44	20.41	344.37	126.68	14.72	141.49	18.54	25.40	450.05	29.67	56.83	6.45	22.38	4.67	0.61	3.86	0.53
Guangxi	GT-4	3.33	4.63	0.13	0.30	99.41	28.80	232.00	231.70	23.17	86.50	16.90		383.00	46.39	88.35	10.04	36.92	6.57	1.11	5.88	0.83
Guangxi	NY-3-11	3.50	4.49	0.18	0.51	99.47	34.50	235.00	370.50	27.95	168.10	20.90		414.00	57.01	110.00	12.93	48.17	8.28	1.52	7.23	1.02
Guangxi	NY-3-13	3.17	4.26	0.17	0.12	98.31	27.80	199.00	266.10	21.05	696.00	16.20		406.00	52.19	100.20	11.03	39.91	6.66	1.20	5.82	0.79
Guangxi	KLG02	3.00	4.75	0.18	1.18	99.59	30.50	259.00	298.00	24.20	227.00	19.80		1020.00	56.80	114.00	12.30	39.26	7.27	1.30	6.44	0.94
Guangxi	KLG03	3.23	4.51	0.16	0.37	99.58	28.30	251.00	293.00	25.00	117.00	18.90		821.00	56.00	110.00	12.10	34.93	6.54	1.28	6.42	0.93
Guangxi	KLG04	3.41	5.02	0.19	0.56	99.69	28.60	278.00	187.00	13.30	99.20	16.00		633.00	36.30	71.70	7.91	28.71	5.94	1.85	4.39	0.62
Guangxi	KLG05	3.23	4.20	0.21	0.48	99.58	29.70	217.00	418.00	23.40	148.00	23.60		817.00	47.70	96.90	11.00	39.06	7.08	1.38	5.81	0.84
Guangxi	KLG06	3.30	4.31	0.16	0.35	99.56	30.70	240.00	305.00	21.20	144.00	17.80		892.00	66.60	138.00	13.60	38.39	6.75	1.23	6.30	0.86
Guangxi	KLG07	3.40	4.78	0.11	0.18	99.67	27.50	245.00	197.00	23.80	131.00	16.80		771.00	48.40	96.50	10.60	37.45	7.20	1.00	5.73	0.86
Guangxi	KLG09	3.24	4.40	0.18	0.36	99.55	31.40	218.00	357.00	21.00	171.00	18.70		935.00	61.40	119.00	12.70	31.11	6.00	1.30	5.91	0.83
Guangxi	KLG10	2.94	4.77	0.19	0.42	99.59	34.80	233.00	309.00	21.50	190.00	22.50		1260.00	70.60	154.00	14.50	49.06	8.25	1.43	6.81	0.89
Guangxi	KLG11	3.43	4.00	0.21	0.38	99.63	28.20	220.00	424.00	25.00	119.00	20.50		727.00	59.70	122.00	12.70	39.54	7.40	1.42	6.62	0.94
Guangxi	KLG12	3.18	4.72	0.18	0.73	99.62	30.10	266.00	322.00	21.80	122.00	18.30		963.00	45.40	90.00	10.10	31.62	6.03	1.27	5.52	0.81
Guangxi	KLG03-01	3.17	5.34	0.18	0.59	99.09	20.83	317.16	185.83	11.33	133.70	15.83	19.43	731.11	36.78	74.04	8.26	29.69	5.68	0.87	4.71	0.55
Guangxi	KLG04-03	2.98	4.52	0.13	0.60	99.24	18.40	206.49	192.22	21.45	142.34	17.12	13.79	628.20	38.04	78.38	8.70	32.45	6.33	0.97	5.57	0.78
Guangxi	KLG01-1	3.15	4.48	0.16	0.43	99.06	20.30	216.87	259.01	21.03	154.08	17.23	13.32	742.78	58.01	113.57	12.07	42.62	7.27	1.14	6.17	0.78
Guangxi	KLG01-2	3.24	4.35	0.14	0.43	99.24	19.12	200.78	254.76	23.22	208.79	18.84	11.97	746.85	45.69	92.37	10.34	38.39	6.95	1.23	6.15	0.83
Guangxi	KLG01-3	3.13	4.65	0.14	0.40	99.15	19.83	230.40	255.14	25.06	178.74	19.18	12.41	871.42	45.62	92.57	10.34	38.01	7.25	1.25	6.49	0.89

(Continued)

Table S2: *Continued*

Area	Sample number	Dy	Ho	Er	Tm	Yb	Lu	Hf	Ta	Pb	Th	U	REE	LREE	HREE	LREE/HREE	Eu*	Reference
Guangxi	KLG-2	4.20	0.78	2.17	0.31	2.24	0.34	4.51	1.84	28.24	23.44	13.26	147.83	132.49	15.34	8.64	0.58	Cai (2015)
Guangxi	KLG-4	3.41	0.62	1.80	0.27	1.83	0.27	4.56	1.51	28.93	19.05	5.84	150.64	137.24	13.40	10.24	0.57	
Guangxi	KLG-5	3.57	0.61	1.63	0.21	1.49	0.21	4.15	1.44	40.77	30.92	8.84	229.90	216.04	13.86	15.59	0.50	
Guangxi	GT-1	2.61	0.42	1.00	0.14	0.96	0.13	3.54	1.54	45.72	18.83	5.52	130.26	120.61	9.65	12.50	0.44	
Guangxi	GT-4	4.42	0.81	2.34	0.34	2.23	0.33	3.30	2.22	34.20	26.33	8.05	206.56	189.38	17.18	11.02	0.55	Tan *et al.* (2008)
Guangxi	NY-3-11	5.56	1.03	2.93	0.44	2.83	0.42	5.40	2.49	46.60	35.58	7.23	259.37	237.91	21.46	11.09	0.60	
Guangxi	NY-3-13	4.11	0.75	2.07	0.29	1.91	0.30	2.83	1.86	88.60	27.90	6.63	227.23	211.19	16.04	13.17	0.59	
Guangxi	KLG02	5.23	0.99	2.70	0.43	2.96	0.41	5.30	2.50	25.10	22.40	6.25	251.03	230.93	20.10	11.49	0.58	Wang (2018)
Guangxi	KLG03	5.19	0.96	2.65	0.41	2.67	0.36	3.03	1.96	23.70	26.80	24.30	240.44	220.85	19.59	11.27	0.60	
Guangxi	KLG04	3.07	0.52	1.32	0.20	1.32	0.17	2.82	2.06	40.30	19.90	9.17	164.02	152.41	11.61	13.13	1.11	
Guangxi	KLG05	4.62	0.89	2.49	0.40	2.71	0.38	3.54	2.31	22.50	30.50	6.15	221.26	203.12	18.14	11.20	0.66	
Guangxi	KLG06	4.44	0.82	2.24	0.34	2.26	0.31	3.50	1.46	29.10	30.00	6.82	282.14	264.57	17.57	15.06	0.58	
Guangxi	KLG07	4.82	0.90	2.40	0.38	2.51	0.35	3.37	1.65	41.40	27.30	6.24	219.10	201.15	17.95	11.21	0.48	
Guangxi	KLG09	4.41	0.82	2.27	0.34	2.24	0.31	3.39	1.55	27.40	26.10	4.81	248.64	231.51	17.13	13.51	0.67	
Guangxi	KLG10	4.52	0.82	2.28	0.36	2.55	0.36	4.39	2.12	36.50	36.00	4.60	316.43	297.84	18.59	16.02	0.58	
Guangxi	KLG11	5.10	0.96	2.66	0.42	2.82	0.40	3.12	1.88	28.00	29.80	11.10	262.68	242.76	19.92	12.19	0.62	
Guangxi	KLG12	4.47	0.86	2.32	0.36	2.45	0.34	3.26	1.65	22.30	26.00	5.68	201.55	184.42	17.13	10.77	0.67	
Guangxi	KLG03-01	2.51	0.42	1.17	0.16	1.03	0.16	4.07	2.13	50.83	24.15	17.59	166.03	155.32	10.71	14.50	0.51	
Guangxi	KLG04-03	4.19	0.79	2.24	0.33	2.25	0.32	4.24	1.86	36.60	27.26	12.31	181.34	164.87	16.47	10.01	0.50	
Guangxi	KLG01-1	3.99	0.76	2.16	0.30	1.98	0.29	4.47	2.02	30.75	38.46	17.27	251.11	234.68	16.43	14.28	0.52	
Guangxi	KLG01-2	4.39	0.82	2.44	0.34	2.44	0.36	5.82	1.87	29.06	27.41	8.93	212.74	194.97	17.77	10.97	0.58	
Guangxi	KLG01-3	4.87	0.93	2.67	0.37	2.55	0.37	5.00	1.95	38.34	27.69	13.39	214.18	195.04	19.14	10.19	0.56	

Area	Sample number	Pluton	N (Latitude)	E (Longitude)	Rock type	SiO_2	TiO_2	Al_2O_3	TFe_2O_3	Fe_2O_3	FeO	MnO	MgO	CaO	Na_2O
Guangxi	KLG01-4	Kunlungu-an	23°00′ to 23°15′	108°35′ to 111°50′	Biotite granite	70.69	0.41	14.31	2.65			0.05	0.82	2.03	3.30

(Continued)

Table S2: *Continued*

Area	Sample number	Pluton	N (Latitude)	E (Longitude)	Rock type	SiO_2	TiO_2	Al_2O_3	TFe_2O_3	Fe_2O_3	FeO	MnO	MgO	CaO	Na_2O
Guangxi	KLG02-1	Kunlungu-an	23°00′ to 23°15′	108°35′ to 111°50′	Biotite granite	70.59	0.46	14.10	3.02			0.06	0.84	1.90	3.20
Guangxi	KLG02-2	Kunlungu-an	23°00′ to 23°15′	108°35′ to 111°50′	Biotite granite	70.80	0.41	13.99	2.55			0.05	0.74	1.82	3.14
Guangxi	KLG04-01	Kunlungu-an	23°00′ to 23°15′	108°35′ to 111°50′	Biotite granite	71.11	0.39	14.16	2.59			0.04	0.86	1.85	3.18
Guangxi	KLG05-03	Kunlungu-an	23°00′ to 23°15′	108°35′ to 111°50′	Biotite granite	69.01	0.51	14.27	3.25			0.05	1.40	2.46	3.07
Guangxi	KLG06-01	Kunlungu-an	23°00′ to 23°15′	108°35′ to 111°50′	Biotite granite	69.57	0.47	13.62	3.23			0.06	1.31	1.99	2.91
Guangxi	KLG06-02	Kunlungu-an	23°00′ to 23°15′	108°35′ to 111°50′	Biotite granite	69.29	0.49	14.13	3.21			0.06	1.49	2.39	2.99
Guangxi	KLG08-01	Kunlungu-an	23°00′ to 23°15′	108°35′ to 111°50′	Biotite granite	70.70	0.51	13.66	3.38			0.06	1.35	2.25	2.97
Guangxi	KLG09-01	Kunlungu-an	23°00′ to 23°15′	108°35′ to 111°50′	Biotite granite	68.90	0.49	14.55	3.10			0.05	1.36	2.36	3.17
Guangxi	DC04-01	Dachang	24°50′	107°35′	Alkali–feld-spar granite	74.07	0.10	14.44	1.44			0.09	0.14	0.49	3.00
Guangxi	DC04-03	Dachang	24°50′	107°35′	Alkali–feld-spar granite	73.35	0.10	14.60	1.26			0.13	0.12	0.50	3.47
Guangxi	DC04-02	Dachang	24°50′	107°35′	Alkali–feld-spar granite	73.83	0.11	14.37	1.27			0.07	0.13	0.50	3.32

(Continued)

Table S2: *Continued*

Area	Sample number	Pluton	N (Latitude)	E (Longitude)	Rock type	SiO_2	TiO_2	Al_2O_3	TFe_2O_3	Fe_2O_3	FeO	MnO	MgO	CaO	Na_2O
Guangxi	DC04-04	Dachang	24°50′	107°35′	Alkali–feldspar granite	73.74	0.12	14.66	1.31			0.08	0.14	0.49	3.33
Guangxi	DC04-05	Dachang	24°50′	107°35′	Alkali–feldspar granite	74.39	0.12	14.05	1.32			0.09	0.16	0.57	2.85
Zhejiang	06SM-11	Shiniushan			Syenite-porphyry	62.50	1.03	16.53		2.57	1.90	0.13	0.79	1.59	4.90
Zhejiang	06SM-12	Shiniushan			Syenite-porphyry	62.86	0.96	16.46		2.33	1.71	0.15	1.07	1.84	4.94
Zhejiang	06LH-2	Shiniushan			Syenite-porphyry	61.01	1.15	16.03		2.78	2.05	0.11	1.36	2.00	5.64
Zhejiang	03SNS-5	Shiniushan			Syenogranite-porphyry	71.01	0.45	12.92		1.23	1.34	0.12	0.40	1.04	4.29
Zhejiang	03SNS-6	Shiniushan			Syenogranite-porphyry	70.41	0.45	13.25		1.41	1.14	0.12	0.41	0.99	4.75
Zhejiang	03SNS-7	Shiniushan			Syenogranite-porphyry	74.03	0.29	12.67		1.17	0.85	0.10	0.20	0.61	3.99
Zhejiang	03SNS-11	Shiniushan			Syenogranite-porphyry	69.72	0.65	13.63		1.48	1.82	0.12	0.78	1.51	3.98
Zhejiang	YK-2	Yaokeng	27°16′ to 27°18′	120°27′ to 120°29′	Alkaline granite	77.60	0.08	11.47		1.25	0.06	0.01	0.01	0.01	3.77

(Continued)

Area	Sample number	K_2O	P_2O_5	LOI	TOTAL	Ga	Rb	Sr	Y	Zr	Nb	Cs	Ba	La	Ce	Pr	Nd	Sm	Eu	Gd	Tb
Guangxi	KLG01-4	4.35	0.13	0.41	99.15	19.93	226.55	241.68	25.15	198.78	18.70	10.29	721.91	48.90	97.44	10.61	38.00	7.07	1.19	6.41	0.88
Guangxi	KLG02-1	4.56	0.13	0.40	99.26	19.74	247.43	232.90	31.19	194.46	21.39	21.08	833.89	44.76	90.72	10.17	37.96	7.49	1.20	7.09	1.02
Guangxi	KLG02-2	4.53	0.12	0.41	98.56	19.79	226.05	214.45	25.20	192.17	18.87	10.77	809.11	50.19	102.79	11.27	40.97	7.50	1.08	6.37	0.87
Guangxi	KLG04-01	4.56	0.14	0.47	99.35	19.59	255.85	214.94	21.77	163.73	19.16	21.34	674.97	45.05	92.85	10.34	38.34	7.28	1.06	6.37	0.82
Guangxi	KLG05-03	4.15	0.18	0.73	99.08	20.36	149.97	297.41	23.38	201.50	21.65	11.29	841.83	48.03	102.79	11.18	41.95	7.88	1.27	6.84	0.89
Guangxi	KLG06-01	4.21	0.18	1.80	99.35	19.25	225.32	282.39	28.92	216.85	21.12	16.90	768.92	61.22	122.29	12.96	46.44	8.26	1.28	7.40	0.98
Guangxi	KLG06-02	4.56	0.19	0.65	99.45	19.59	189.47	373.40	29.14	165.10	19.56	21.06	903.49	57.91	114.43	12.16	44.55	7.84	1.36	6.91	0.95
Guangxi	KLG08-01	4.13	0.18	0.55	99.74	19.49	206.38	278.54	26.19	213.53	23.15	20.20	745.09	45.35	93.71	10.34	39.25	7.57	1.22	6.73	0.92
Guangxi	KLG09-01	4.27	0.17	0.62	99.04	19.46	196.79	329.65	17.64	211.57	17.92	15.22	927.38	51.10	101.44	10.72	39.93	6.82	1.24	5.77	0.71
Guangxi	DC04-01	4.21	0.32	0.84	99.14	20.58	1051.28	27.60	10.07	49.87	84.48	110.38	46.06	10.13	21.93	2.52	9.10	2.34	0.10	2.15	0.36
Guangxi	DC04-03	4.70	0.34	0.62	99.19	19.79	1033.16	13.83	10.09	53.96	73.51	148.52	45.97	9.51	21.26	2.33	8.36	2.13	0.11	2.16	0.37
Guangxi	DC04-02	4.57	0.27	0.76	99.20	19.85	1036.06	16.49	11.04	53.98	72.53	148.99	50.12	10.46	22.97	2.63	9.42	2.41	0.12	2.38	0.39
Guangxi	DC04-04	4.40	0.25	0.58	99.10	20.80	1065.98	14.95	12.17	68.96	73.78	185.57	51.81	12.95	28.51	3.15	10.98	2.86	0.13	2.74	0.44
Guangxi	DC04-05	4.76	0.30	1.01	99.62	21.63	982.85	20.92	11.03	55.28	74.12	104.40	51.37	9.92	21.38	2.51	8.96	2.41	0.13	2.36	0.39
Zhejiang	06SM-11	6.01	0.38	0.69	99.02	20.62	67.00	347.00	35.09	474.00	16.09		1488.00	93.20	182.00	21.80	87.40	13.50	3.69	10.10	1.37
Zhejiang	06SM-12	5.97	0.31	0.38	98.98	21.23	79.00	220.00	33.27	580.00	15.85		1986.00	109.50	219.00	25.20	96.10	14.10	3.73	10.31	1.35
Zhejiang	06LH-2	5.59	0.45	0.43	98.60	21.08	73.00	236.00	31.80	532.00	15.70		1715.00	100.60	197.00	23.10	88.70	13.10	3.63	9.90	1.31
Zhejiang	03SNS-5	6.31	0.10	0.61	99.82	15.48	118.00	35.00	35.53	514.00	20.29		299.00	77.00	154.00	17.60	62.70	10.60	0.96	9.28	1.43
Zhejiang	03SNS-6	6.30	0.10	0.52	99.85	19.99	158.00	50.00	45.88	620.00	25.79		451.00	100.00	201.00	24.60	81.70	14.50	1.44	11.93	1.74
Zhejiang	03SNS-7	5.62	0.05	0.29	99.87	19.27	177.00	20.00	42.07	348.00	27.65		171.00	108.00	209.00	24.30	83.70	13.90	0.74	11.73	1.73
Zhejiang	03SNS-11	5.24	0.19	0.68	99.80	20.66	135.00	98.00	46.51	624.00	24.91		731.00	102.00	182.00	23.30	88.60	14.70	1.97	11.88	1.73
Zhejiang	YK-2	4.44	0.05	0.63	99.38	25.78	273.40	6.64	51.92	371.30	51.46	1.88	11.89	58.25	73.92	9.63	27.81	5.31	0.35	5.37	1.00

Area	Sample number	Dy	Ho	Er	Tm	Yb	Lu	Hf	Ta	Pb	Th	U	REE	LREE	HREE	LREE/HREE	Eu^*	Reference
Guangxi	KLG01-4	4.83	0.91	2.68	0.37	2.67	0.37	5.79	2.32	39.96	26.95	12.80	222.33	203.21	19.12	10.63	0.54	Wang (2018)
Guangxi	KLG02-1	5.76	1.10	3.29	0.49	3.26	0.47	5.55	2.87	29.86	22.63	10.64	214.78	192.30	22.48	8.55	0.50	
Guangxi	KLG02-2	4.65	0.89	2.64	0.38	2.73	0.40	5.55	2.55	34.00	34.80	7.62	232.73	213.80	18.93	11.29	0.48	
Guangxi	KLG04-01	4.34	0.82	2.30	0.33	2.17	0.31	4.97	2.20	40.02	32.10	12.20	212.38	194.92	17.46	11.16	0.48	
Guangxi	KLG05-03	4.65	0.85	2.45	0.35	2.34	0.32	5.61	2.17	30.97	27.60	7.18	231.79	213.10	18.69	11.40	0.53	
Guangxi	KLG06-01	5.48	1.05	3.13	0.45	3.15	0.46	6.14	2.63	47.06	35.23	13.40	274.55	252.45	22.10	11.42	0.50	
Guangxi	KLG06-02	5.27	1.03	3.16	0.48	3.18	0.47	4.88	2.43	36.23	32.68	10.75	259.70	238.25	21.45	11.11	0.56	

(Continued)

Table S2: *Continued*

Area	Sample number	Dy	Ho	Er	Tm	Yb	Lu	Hf	Ta	Pb	Th	U	REE	LREE	HREE	LREE/HREE	Eu*	Reference
Guangxi	KLG08-01	5.15	0.96	2.84	0.41	2.82	0.42	6.52	2.68	32.20	31.50	13.54	217.69	197.44	20.25	9.75	0.52	
Guangxi	KLG09-01	3.64	0.66	1.85	0.24	1.60	0.46	5.87	1.48	29.89	31.55	3.47	226.18	211.25	14.93	14.15	0.60	
Guangxi	DC04-01	1.92	0.34	0.99	0.16	1.11	0.16	2.47	28.96	11.52	9.94	33.13	53.31	46.12	7.19	6.41	0.14	
Guangxi	DC04-03	2.02	0.37	1.06	0.17	1.21	0.17	2.59	23.38	15.06	9.29	38.22	51.23	43.70	7.53	5.80	0.16	
Guangxi	DC04-02	2.18	0.38	1.12	0.18	1.26	0.18	2.49	21.28	14.34	10.71	41.45	56.08	48.01	8.07	5.95	0.15	
Guangxi	DC04-04	2.48	0.44	1.29	0.20	1.56	0.23	3.17	17.87	15.64	12.59	40.83	67.96	58.58	9.38	6.25	0.14	
Guangxi	DC04-05	2.31	0.43	1.18	0.22	1.46	0.22	2.56	20.86	12.29	9.96	29.87	53.88	45.31	8.57	5.29	0.17	
Zhejiang	06SM-11	7.30	1.40	3.56	0.52	3.17	0.51	8.81	0.99	15.80	6.50		429.52	401.59	27.93	14.38	0.97	Xing *et al.* (2009)
Zhejiang	06SM-12	7.23	1.38	3.65	0.52	3.20	0.52	10.24	0.96	17.20	6.01		495.79	467.63	28.16	16.61	0.95	
Zhejiang	06LH-2	6.78	1.29	3.33	0.48	3.03	0.49	9.50	0.95	15.90	6.64		452.74	426.13	26.61	16.01	0.97	
Zhejiang	03SNS-5	7.45	1.30	4.00	0.57	3.70	0.56	12.50	1.25	20.90	15.91		351.15	322.86	28.29	11.41	0.30	
Zhejiang	03SNS-6	9.12	1.62	4.98	0.72	4.66	0.72	15.97	1.53	28.70	20.29		458.73	423.24	35.49	11.93	0.33	
Zhejiang	03SNS-7	9.43	1.71	5.33	0.77	4.89	0.76	13.43	1.83	30.10	22.66		475.99	439.64	36.35	12.09	0.18	
Zhejiang	03SNS-11	9.44	1.76	5.23	0.74	5.07	0.80	17.76	1.68	26.00	24.24		449.22	412.57	36.65	11.26	0.46	
Zhejiang	YK-2	6.26	1.50	5.33	0.93	6.86	1.11	13.63	3.02		31.69	6.77	203.63	175.27	28.36	6.18	0.20	Xiao *et al.* (2007)

Area	Sample number	Pluton	N (Latitude)	E (Longitude)	Rock type	SiO_2	TiO_2	Al_2O_3	TFe_2O_3	Fe_2O_3	FeO	MnO	MgO	CaO	Na_2O
Zhejiang	YK-4	Yaokeng	27°16′ to 27°18′	120°27′ to 120°29′	Alkaline granite	77.76	0.08	11.38		1.24	0.07	0.03	0.02	0.01	3.64
Zhejiang	YK-5	Yaokeng	27°16′ to 27°18′	120°27′ to 120°29′	Alkaline granite	77.68	0.10	11.35		1.16	0.23	0.08	0.02	0.01	3.90
Zhejiang	YK-6	Yaokeng	27°16′ to 27°18′	120°27′ to 120°29′	Alkaline granite	77.50	0.08	11.47		1.14	0.25	0.09	0.02	0.01	3.90
Zhejiang	YK-7	Yaokeng	27°16′ to 27°18′	120°27′ to 120°29′	Alkaline granite	77.68	0.08	11.25		1.54	0.07	0.14	0.02	0.14	4.05

(Continued)

Table S2: *Continued*

Area	Sample number	Pluton	N (Latitude)	E (Longitude)	Rock type	SiO_2	TiO_2	Al_2O_3	TFe_2O_3	Fe_2O_3	FeO	MnO	MgO	CaO	Na_2O
Zhejiang	YK-8	Yaokeng	27°16′ to 27°18′	120°27′ to 120°29′	Alkaline granite	77.82	0.10	11.01		1.34	0.16	0.11	0.18	0.24	3.98
Zhejiang	WXY1-2-2	Caomen	27°41′00″to 27°45′00″	120°14′00″ to 120°15′00″	Biotite granite	75.40	0.04	13.40	0.41			0.02	0.11	0.20	4.31
Zhejiang	NSY-1	Caomen	27°41′00″to 27°45′00″	120°14′00″ to 120°15′00″	Granite porphyry	77.06	0.04	12.50	2.18			0.04	0.30	0.08	1.51
Zhejiang	NSY-2	Caomen	27°41′00″to 27°45′01″	120°14′00″ to 120°15′01″	Granite porphyry	75.31	0.09	12.91	2.31			0.07	0.10	0.09	2.74
Zhejiang	DY11-79	Caomen	28°27′05″	120°43′22″	Syenogranite	73.73	0.29	13.64		0.89	0.54	0.04	0.23	0.80	4.45
Zhejiang	TS-5-1	Beiwaishan	27°09′ to 27°11′	118°00′ to 118°02′	Granite	76.84	0.12	12.25		0.45	0.38	0.05	0.10	0.55	3.89
Zhejiang	TS-5-2	Beiwaishan	27°09′ to 27°11′	118°00′ to 118°02′	Granite	76.93	0.11	12.33		0.48	0.23	0.03	0.10	0.55	3.84
Zhejiang	TS-5-3	Beiwaishan	27°09′ to 27°11′	118°00′ to 118°02′	Granite	76.69	0.11	12.27		0.58	0.39	0.06	0.09	0.50	3.88
Zhejiang	TS-5-4	Beiwaishan	27°09′ to 27°11′	118°00′ to 118°02′	Granite	76.76	0.12	12.21		0.75	0.34	0.06	0.10	0.54	3.79
Zhejiang	TS-5-5	Beiwaishan	27°09′ to 27°11′	118°00′ to 118°02′	Granite	77.44	0.11	12.45		0.27	0.13	0.03	0.07	0.41	3.87
Zhejiang	TS-5-6	Beiwaishan	27°09′ to 27°11′	118°00′ to 118°02′	Granite	77.58	0.11	12.37		0.22	0.32	0.04	0.07	0.57	3.89
Zhejiang	TM05	Yujing	27°03′32″	120°16′46″	Granite	76.93	0.14	12.44	0.72			0.11	0.07	0.22	4.34

(Continued)

Table S2: *Continued*

Area	Sample number	Pluton	N (Latitude)	E (Longitude)	Rock type	SiO_2	TiO_2	Al_2O_3	TFe_2O_3	Fe_2O_3	FeO	MnO	MgO	CaO	Na_2O
Zhejiang	TM09	Yujing	27°03'	120°16'	Granite	77.59	0.12	12.20	0.73			0.05	0.09	0.25	4.14
Zhejiang	TM11	Yujing	27°03'	120°16'	Granite	78.63	0.12	11.13	0.88			0.09	0.08	0.23	3.97
Zhejiang	TM12	Yujing	27°03'	120°16'	Granite	77.68	0.12	11.82	1.17			0.06	0.09	0.29	4.50
Zhejiang	TM17	Yujing	27°03'	120°16'	Granite	77.71	0.10	11.84	0.95			0.06	0.06	0.20	4.28
Zhejiang	GS02	Gushan	26°03'54.2″	119°23'21.4″	Alkaline granite	77.77	0.15	11.45	1.33			0.11	0.08	0.02	4.14
Zhejiang	GS03	Gushan	26°03'54.2″	119°23'21.4″	Alkaline granite	77.72	0.16	11.50	1.38			0.09	0.10	0.02	4.38

Area	Sample number	K_2O	P_2O_5	LOI	TOTAL	Ga	Rb	Sr	Y	Zr	Nb	Cs	Ba	La	Ce	Pr	Nd	Sm	Eu	Gd	Tb
Zhejiang	YK-4	4.56	0.05	0.47	99.31	23.55	268.10	2.04	31.62	428.00	55.82	1.27	13.67	18.15	51.60	2.75	7.54	1.43	0.09	1.93	0.46
Zhejiang	YK-5	4.58	0.04	0.30	99.45	21.94	295.80	4.91	48.26	443.80	57.26	1.29	11.66	47.08	75.43	7.49	21.04	4.39	0.25	5.02	0.99
Zhejiang	YK-6	4.47	0.02	0.33	99.28	24.18	304.00	6.82	61.33	601.80	71.66	1.48	10.56	38.61	61.59	7.21	21.81	4.80	0.33	6.20	1.33
Zhejiang	YK-7	4.23	0.03	0.25	99.48	21.68	275.00	11.42	58.75	509.90	62.64	1.59	10.62	47.73	78.74	7.69	19.86	4.41	0.23	5.09	1.08
Zhejiang	YK-8	4.06	0.04	0.43	99.47	25.73	342.00	4.23	62.33	581.40	57.12	2.02	13.73	40.69	64.03	7.14	20.47	4.36	0.28	5.61	1.22
Zhejiang	WXY1-2-2	5.23	0.01	0.06	99.19	22.20	336.00	8.28	9.77	675.00	114.00	1.72	43.90	9.13	26.30	1.60	5.06	1.19	0.01	1.14	0.24
Zhejiang	NSY-1	3.70	0.03	2.03	99.47	25.90	455.00	34.10	51.30	744.00	37.30	4.17	269.00	67.10	128.00	15.70	61.40	13.10	0.33	11.00	1.84
Zhejiang	NSY-2	4.60	0.02	1.22	99.46	16.10	256.00	17.30	9.50	672.00	39.00	1.38	55.90	26.90	72.70	4.91	18.00	2.94	0.07	2.56	0.40
Zhejiang	DY11-79	5.01	0.04	0.19	99.85	18.00	152.00	43.00	34.00	237.00	21.00	2.20	615.00	57.40	102.80	12.21	43.66	7.19	1.19	6.27	0.97
Zhejiang	TS-5-1	4.79	0.01	0.10	99.53	19.70	449.00	2.47	3.99	173.00	46.20	2.89	218.00	47.40	92.70	6.26	16.80	1.88	0.06	4.96	0.20
Zhejiang	TS-5-2	4.75	0.02	0.18	99.55	19.00	421.00	4.82	16.10	147.00	39.10	2.55	213.00	48.50	75.30	6.43	18.50	2.72	0.14	2.01	0.27
Zhejiang	TS-5-3	4.84	0.02	0.10	99.53	18.60	441.00	2.78	11.10	212.00	40.90	2.19	224.00	65.10	91.40	7.55	22.00	2.89	0.24	6.80	0.38
Zhejiang	TS-5-4	4.54	0.02	0.65	99.88	17.00	377.00	12.60	44.40	198.00	45.20	1.93	290.00	89.90	88.50	15.20	52.70	9.05	1.52	7.51	1.15
Zhejiang	TS-5-5	4.57	0.01	0.11	99.47	18.70	313.00	5.30	5.69	177.00	41.60	1.98	246.00	34.50	41.90	4.21	12.80	1.62	0.11	3.40	0.22
Zhejiang	TS-5-6	4.24	0.01	0.53	99.95	17.40	240.00	10.90	16.10	152.00	35.60	1.59	125.00	62.90	90.40	8.47	24.20	3.46	0.22	2.28	0.22
Zhejiang	TM05	4.54	0.01	0.14	99.66	19.40	224.00	8.03	41.90	138.00	30.00		12.70	23.80	52.30	5.78	18.30	4.49	0.12	4.83	0.91

(Continued)

Table S2: *Continued*

Area	Sample number	K_2O	P_2O_5	LOI	TOTAL	Ga	Rb	Sr	Y	Zr	Nb	Cs	Ba	La	Ce	Pr	Nd	Sm	Eu	Gd	Tb
Zhejiang	TM09	4.43	0.01	0.30	99.91	21.40	161.00	5.38	42.80	249.00	24.50		8.81	25.70	25.20	5.03	15.60	3.13	0.20	3.54	0.64
Zhejiang	TM11	4.35	0.00	0.47	99.95	18.70	296.00	11.80	27.20	170.00	27.00		101.00	41.40	75.90	7.69	23.30	3.97	0.28	3.60	0.57
Zhejiang	TM12	4.10	0.00	0.51	100.34	21.70	210.00	10.60	65.40	358.00	40.40		65.60	93.50	191.00	24.40	78.60	14.60	0.43	12.80	1.97
Zhejiang	TM17	4.42	0.00	0.30	99.92	18.80	296.00	11.90	28.10	163.00	27.20		100.00	40.90	75.00	7.49	22.50	3.86	0.28	3.57	0.58
Zhejiang	GS02	4.54	0.00	0.41	100.00	21.00	199.00	2.25	71.00	417.00	51.20		4.20	24.10	41.50	6.03	20.20	4.83	0.35	6.21	1.13
Zhejiang	GS03	3.83	0.00	0.39	99.57	20.20	186.00	13.00	68.40	368.00	35.40		73.20	90.20	187.00	23.40	76.80	13.80	0.47	12.70	1.87

Area	Sample number	Dy	Ho	Er	Tm	Yb	Lu	Hf	Ta	Pb	Th	U	REE	LREE	HREE	LREE/HREE	Eu^*	Reference
Zhejiang	YK-4	4.00	1.08	4.30	0.83	6.60	1.10	14.84	3.43		32.33	4.43	101.86	81.56	20.30	4.02	0.17	Xiao *et al.* (2007)
Zhejiang	YK-5	6.40	1.52	5.42	0.93	6.64	1.11	16.28	3.42		46.16	6.83	183.71	155.68	28.03	5.55	0.16	
Zhejiang	YK-6	8.24	2.02	6.33	1.07	7.86	1.26	23.10	4.38		19.99	12.42	168.66	134.35	34.31	3.92	0.18	
Zhejiang	YK-7	7.64	1.99	7.01	1.24	8.22	1.34	18.20	3.60		47.46	10.31	192.27	158.66	33.61	4.72	0.15	
Zhejiang	YK-8	8.16	2.00	6.52	1.17	8.59	1.52	18.94	3.72		36.61	7.78	171.76	136.97	34.79	3.94	0.17	
Zhejiang	WXY1-2-2	1.68	0.37	1.21	0.24	1.69	0.26	30.20	10.30	67.50	26.40	9.26	50.12	43.29	6.83	6.34	0.03	Ding *et al.* (2023)
Zhejiang	NSY-1	10.92	2.23	6.44	1.01	6.45	0.94	18.20	2.67	519.00	31.00	7.10	326.46	285.63	40.83	7.00	0.08	
Zhejiang	NSY-2	2.13	0.39	1.02	0.13	0.80	0.12	15.50	2.47	43.00	19.90	7.26	133.07	125.52	7.55	16.63	0.08	
Zhejiang	DY11-79	5.86	1.17	3.52	0.59	3.84	0.57	9.00	1.31	20.00	15.00	2.41	247.24	224.45	22.79	9.85	0.54	Gao *et al.* (2014)
Zhejiang	TS-5-1	0.57	0.10	0.67	0.07	0.59	0.09	5.78	2.47	50.40	14.10	6.22	172.35	165.10	7.25	22.77	0.06	Duan *et al.* (2017)
Zhejiang	TS-5-2	2.04	0.46	1.64	0.26	2.54	0.42	6.23	1.78	23.70	10.80	3.41	161.23	151.59	9.64	15.73	0.18	
Zhejiang	TS-5-3	1.48	0.32	1.40	0.20	1.45	0.26	8.23	2.04	33.70	14.50	4.44	201.47	189.18	12.29	15.39	0.17	
Zhejiang	TS-5-4	7.41	1.61	4.69	0.79	5.38	0.90	8.56	2.13	17.60	11.40	17.30	286.31	256.87	29.44	8.73	0.56	
Zhejiang	TS-5-5	0.80	0.16	0.80	0.12	0.89	0.18	6.63	2.51	13.10	9.59	3.22	101.71	95.14	6.57	14.48	0.14	
Zhejiang	TS-5-6	2.08	0.38	1.39	0.16	2.18	0.26	6.68	1.88	18.40	10.20	4.29	198.60	189.65	8.95	21.19	0.24	
Zhejiang	TM05	6.25	1.30	4.26	0.67	4.45	0.65	5.89	2.11	32.10	20.30	3.42	128.11	104.79	23.32	4.49	0.08	Li *et al.* (2013)
Zhejiang	TM09	4.74	1.08	4.00	0.66	4.75	0.76	7.82	1.43	14.70	16.40	3.00	95.03	74.86	20.17	3.71	0.18	
Zhejiang	TM11	3.66	0.77	2.77	0.45	3.35	0.52	6.48	1.75	38.10	40.50	8.25	168.23	152.54	15.69	9.72	0.23	
Zhejiang	TM12	11.60	2.22	6.85	1.00	6.65	0.95	11.80	2.59	36.70	29.30	5.81	446.57	402.53	44.04	9.14	0.10	
Zhejiang	TM17	3.69	0.81	2.81	0.46	3.35	0.53	6.23	1.78	38.20	36.80	7.89	165.83	150.03	15.80	9.50	0.23	

(Continued)

Table S2: *Continued*

Area	Sample number	Dy	Ho	Er	Tm	Yb	Lu	Hf	Ta	Pb	Th	U	REE	LREE	HREE	LREE/HREE	Eu*	Reference
Zhejiang	GS02	8.16	1.90	6.59	1.03	7.05	1.07	15.90	3.41	66.70	21.80	4.22	130.15	97.01	33.14	2.93	0.20	
Zhejiang	GS03	11.20	2.24	7.09	1.02	6.54	0.99	10.70	2.21	35.40	25.80	4.90	435.32	391.67	43.65	8.97	0.11	

Area	Sample number	Pluton	N (Latitude)	E (Longitude)	Rock type	SiO_2	TiO_2	Al_2O_3	TFe_2O_3	Fe_2O_3	FeO	MnO	MgO	CaO	Na_2O
Zhejiang	GDR-1-1	Taohuadao	29°50′ to 30°00′	122°15′ to 122°20′	Alkaline granite	72.83	0.29	13.74	2.14			0.06	0.42	1.57	3.31
Zhejiang	GDR-1-2	Taohuadao	29°50′ to 30°01′	122°15′ to 122°21′	Alkaline granite	72.90	0.29	13.63	2.14			0.06	0.45	1.58	3.29
Fujian	FZ03	Kuiqi	26°00′ to 26°10′	119°23′ to 119°33′	Alkaline granite	77.59	0.14	11.56	0.99			0.03	0.10	0.12	4.18
Fujian	FZ04	Kuiqi	26°00′ to 26°10′	119°23′ to 119°33′	Alkaline granite	77.56	0.13	11.67	0.98			0.03	0.09	0.12	4.27
Fujian	FZ05	Kuiqi	26°00′ to 26°10′	119°23′ to 119°33′	Alkaline granite	77.59	0.15	11.42	1.29			0.11	0.12	0.15	4.24
Fujian	FZ06	Kuiqi	26°00′ to 26°10′	119°23′ to 119°33′	Alkaline granite	76.42	0.11	11.95	1.17			0.11	0.11	0.15	4.57
Fujian	FZ07	Kuiqi	26°00′ to 26°10′	119°23′ to 119°33′	Alkaline granite	77.09	0.14	11.60	1.27			0.11	0.09	0.16	4.29
Fujian	FZ08	Kuiqi	26°00′ to 26°10′	119°23′ to 119°33′	Alkaline granite	76.99	0.08	11.76	1.17			0.08	0.09	0.37	4.17
Fujian	FZ09	Kuiqi	26°00′ to 26°10′	119°23′ to 119°33′	Alkaline granite	76.58	0.09	12.01	1.15			0.07	0.10	0.25	4.34
Fujian	FZ10	Kuiqi	26°00′ to 26°10′	119°23′ to 119°33′	Alkaline granite	76.44	0.11	12.10	1.05			0.06	0.10	0.15	4.38
Fujian	FZ11	Kuiqi	26°00′ to 26°10′	119°23′ to 119°33′	Alkaline granite	77.62	0.08	11.73	1.05			0.13	0.09	0.03	4.25

(Continued)

Table S2: *Continued*

Area	Sample number	Pluton	N (Latitude)	E (Longitude)	Rock type	SiO_2	TiO_2	Al_2O_3	TFe_2O_3	Fe_2O_3	FeO	MnO	MgO	CaO	Na_2O
Fujian	FZ12	Kuiqi	26°00′ to 26°10′	119°23′ to 119°33′	Alkaline granite	76.55	0.06	11.96	1.05			0.08	0.11	0.01	4.42
Fujian	FZ13	Kuiqi	26°00′ to 26°10′	119°23′ to 119°33′	Alkaline granite	72.48	0.26	14.08	1.67			0.08	0.43	1.34	3.96
Fujian	FZ14	Kuiqi	26°00′ to 26°10′	119°23′ to 119°33′	Alkaline granite	76.11	0.15	12.70	0.93			0.07	0.26	0.58	2.81
Fujian	FZ15	Kuiqi	26°00′ to 26°10′	119°23′ to 119°33′	Alkaline granite	75.77	0.13	13.06	0.76			0.05	0.16	0.14	3.51
Fujian	FZ16	Kuiqi	26°00′ to 26°10′	119°23′ to 119°33′	Alkaline granite	76.60	0.14	12.01	1.09			0.08	0.12	0.25	4.48
Fujian	FZ18	Kuiqi	26°00′ to 26°10′	119°23′ to 119°33′	Alkaline granite	76.71	0.09	12.29	0.67			0.07	0.11	3.00	4.08
Fujian	FZ19	Kuiqi	26°00′ to 26°10′	119°23′ to 119°33′	Granite	66.59	0.56	15.75	3.43			0.07	1.23	3.03	3.60
Fujian	FZ20	Kuiqi	26°00′ to 26°10′	119°23′ to 119°33′	Granite	65.60	0.60	16.12	3.66			0.07	1.33	3.41	3.69
Fujian	FZ21	Kuiqi	26°00′ to 26°10′	119°23′ to 119°33′	Granite	74.23	0.15	13.39	1.08			0.05	0.30	1.22	3.86
Fujian	D5066-1	Fugaishan	28°14′	118°28′	Syenogranite	76.79	0.06	12.38		0.77	0.24	0.02	0.05	0.17	3.30
Fujian	D5066-2	Fugaishan	28°14′	118°28′	Syenogranite	76.85	0.07	12.17		0.81	0.29	0.03	0.01	0.28	3.54

Area	Sample number	K_2O	P_2O_5	LOI	TOTAL	Ga	Rb	Sr	Y	Zr	Nb	Cs	Ba	La	Ce	Pr	Nd	Sm	Eu	Gd	Tb
Zhejiang	GDR-1-1	4.97	0.10	0.70	100.13	19.30	469.00	107.00	63.10	172.00	39.20		350.00	55.20	110.00	12.90	47.20	9.71	0.86	9.30	1.65
Zhejiang	GDR-1-2	4.98	0.09	0.70	100.11	19.00	463.00	105.00	62.10	168.00	38.60		341.00	54.70	110.00	13.00	47.60	9.74	0.85	9.30	1.65

(Continued)

Table S2: *Continued*

Area	Sample number	K_2O	P_2O_5	LOI	TOTAL	Ga	Rb	Sr	Y	Zr	Nb	Cs	Ba	La	Ce	Pr	Nd	Sm	Eu	Gd	Tb
Fujian	FZ03	4.33	0.01	0.35	99.40	21.20	157.00	1.15	41.20	204.00	24.80	0.83	0.82	18.70	38.40	4.53	15.50	3.62	0.24	3.98	0.73
Fujian	FZ04	4.40	0.01	0.30	99.56	20.80	183.00	1.71	43.80	203.00	26.60	1.32	1.30	15.90	37.50	4.45	15.40	3.79	0.24	4.12	0.79
Fujian	FZ05	4.38	0.01	0.39	99.85	22.00	224.00	2.13	64.20	343.00	38.70	1.35	5.05	28.70	62.40	6.62	22.50	5.94	0.36	6.62	1.29
Fujian	FZ06	4.47	0.01	0.00	99.07	23.10	238.00	2.28	46.40	203.00	31.10	1.47	4.53	23.10	45.50	4.55	14.30	3.53	0.24	3.91	0.82
Fujian	FZ07	4.29	0.01	0.44	99.49	22.60	232.00	3.91	90.90	352.00	42.60	1.59	14.70	30.10	59.50	5.88	19.60	4.71	0.33	5.33	1.08
Fujian	FZ08	4.17	0.01	0.60	99.49	25.30	369.00	11.50	60.30	230.00	53.30	1.89	13.70	37.20	55.60	4.87	13.80	2.72	0.20	3.25	0.70
Fujian	FZ09	4.34	0.01	0.57	99.51	25.50	377.00	22.80	44.00	354.00	65.80	1.85	12.70	35.10	54.10	4.31	11.30	2.06	0.15	2.14	0.46
Fujian	FZ10	4.38	0.01	0.44	99.22	25.40	364.00	4.20	40.90	389.00	64.50	1.64	18.30	36.90	54.40	4.30	11.00	1.84	0.14	2.01	0.43
Fujian	FZ11	4.25	0.01	0.35	99.59	25.60	403.00	1.45	28.10	51.00	23.90	1.85	13.00	24.80	42.80	3.11	8.31	1.44	0.11	1.51	0.31
Fujian	FZ12	4.25	0.01	0.33	98.83	25.50	269.00	0.87	17.00	153.00	26.60	1.50	7.66	11.40	15.90	1.68	5.01	1.05	0.08	1.13	0.24
Fujian	FZ13	4.91	0.07	0.38	99.66	15.10	201.00	174.00	23.20	202.00	17.00	2.61	808.00	46.00	81.90	8.04	26.60	4.42	0.85	3.50	0.56
Fujian	FZ14	5.02	0.02	0.63	99.28	15.50	172.00	70.60	35.50	185.00	21.10	2.14	220.00	71.80	133.00	13.90	48.00	8.11	0.79	6.58	1.01
Fujian	FZ15	5.19	0.03	0.77	99.57	17.10	166.00	75.10	20.10	125.00	19.80	1.78	430.00	25.40	38.10	4.93	16.10	2.88	0.37	2.40	0.40
Fujian	FZ16	4.03	0.01	0.37	99.18	19.10	138.00	19.90	42.90	216.00	25.70	2.60	29.40	38.90	82.70	9.33	34.20	7.30	0.63	6.56	1.13
Fujian	FZ18	4.41	0.01	0.41	101.85	18.10	233.00	13.20	13.20	131.00	32.40	2.41	5.60	29.90	55.20	4.83	12.80	2.49	0.05	2.52	0.51
Fujian	FZ19	4.49	0.15	0.94	99.84	18.30	183.00	362.00	30.10	282.00	17.10	2.19	875.00	52.10	105.00	11.40	40.30	7.35	1.17	5.67	0.83
Fujian	FZ20	4.21	0.15	0.80	99.64	18.30	152.00	419.00	23.40	306.00	14.70	2.00	10.75	46.60	89.70	9.51	34.00	5.98	1.22	4.77	0.66
Fujian	FZ21	4.01	0.04	0.44	98.77	15.10	141.00	273.00	10.20	82.70	8.69	1.45	8.27	24.20	44.40	4.63	15.90	2.68	0.47	1.83	0.27
Fujian	D5066-1	4.90	0.01	0.95	99.64	20.19	308.25	19.18	17.70	132.00	32.96	2.07	52.86	6.96	16.82	2.07	7.27	2.03	0.10	1.84	0.37
Fujian	D5066-2	4.49	0.00	0.79	99.33	19.30	267.00	4.30	23.92	128.00	33.70	6.40	19.60	14.09	40.13	4.68	18.45	5.04	0.11	4.43	0.76

Area	Sample number	Dy	Ho	Er	Tm	Yb	Lu	Hf	Ta	Pb	Th	U	REE	LREE	HREE	LREE/HREE	Eu^*	Reference
Zhejiang	GDR-1-1	10.20	2.03	6.46	1.06	7.40	1.15	6.24	7.76	30.20	53.50	19.00	275.12	235.87	39.25	6.01	0.28	Zhao *et al.* 2016
Zhejiang	GDR-1-2	10.30	2.06	6.55	1.06	7.57	1.17	6.34	7.94	31.00	55.20	19.60	275.55	235.89	39.66	5.95	0.27	
Fujian	FZ03	4.98	1.17	3.78	0.60	4.34	0.66	6.52	1.34	11.30	10.90	2.91	101.23	80.99	20.24	4.00	0.19	Zhu (2015)
Fujian	FZ04	5.43	1.27	3.89	0.60	4.05	0.62	6.92	1.57	38.40	13.80	3.20	98.05	77.28	20.77	3.72	0.19	
Fujian	FZ05	8.53	1.94	6.31	1.00	7.16	1.11	10.60	2.34	16.20	19.20	5.42	160.48	126.52	33.96	3.73	0.18	
Fujian	FZ06	5.69	1.32	4.32	0.68	4.65	0.73	7.10	1.70	17.20	14.50	6.91	113.34	91.22	22.12	4.12	0.20	

(Continued)

Table S2: *Continued*

Area	Sample number	Dy	Ho	Er	Tm	Yb	Lu	Hf	Ta	Pb	Th	U	REE	LREE	HREE	LREE/HREE	Eu^*	Reference
Fujian	FZ07	7.85	1.87	6.40	1.08	7.50	1.21	12.60	2.34	7.70	23.30	3.94	152.44	120.12	32.32	3.72	0.20	
Fujian	FZ08	5.22	1.43	5.55	1.04	8.20	1.40	10.30	3.07	109.00	34.90	8.96	141.18	114.39	26.79	4.27	0.21	
Fujian	FZ09	3.73	1.05	4.26	0.85	7.05	1.28	15.20	3.76	39.70	38.90	11.30	127.84	107.02	20.82	5.14	0.22	
Fujian	FZ10	3.59	1.03	4.11	0.82	6.88	1.21	16.70	3.87	34.90	45.80	9.49	128.66	108.58	20.08	5.41	0.22	
Fujian	FZ11	2.32	0.65	2.44	0.45	3.31	0.56	2.30	0.87	342.00	9.97	3.05	92.12	80.57	11.55	6.98	0.23	
Fujian	FZ12	1.79	0.45	1.71	0.35	2.85	0.49	6.43	1.57	10.70	19.00	3.25	44.13	35.12	9.01	3.90	0.22	
Fujian	FZ13	3.50	0.71	2.23	0.37	2.70	0.43	5.66	1.12	22.60	17.90	2.49	181.81	167.81	14.00	11.99	0.66	
Fujian	FZ14	6.05	1.22	3.57	0.54	3.83	0.58	5.62	1.57	45.00	25.40	4.67	298.98	275.60	23.38	11.79	0.33	
Fujian	FZ15	2.77	0.61	2.06	0.34	2.58	0.40	4.45	1.23	23.80	13.60	1.95	99.34	87.78	11.56	7.59	0.43	
Fujian	FZ16	7.04	1.42	4.26	0.64	4.34	0.62	6.70	1.63	22.20	14.20	3.14	199.07	173.06	26.01	6.65	0.28	
Fujian	FZ18	3.81	0.92	3.07	0.51	3.75	0.59	6.13	1.88	39.10	24.80	5.37	120.95	105.27	15.68	6.71	0.06	
Fujian	FZ19	4.89	0.97	2.89	0.43	3.00	0.46	7.31	1.29	26.30	22.60	5.88	236.46	217.32	19.14	11.35	0.55	
Fujian	FZ20	3.78	0.75	2.25	0.35	2.38	0.39	7.86	0.92	23.50	18.60	3.96	202.34	187.01	15.33	12.20	0.70	
Zhejiang	FZ21	3.69	0.81	2.81	0.46	3.35	0.53	6.23	1.78	38.20	36.80	7.89	165.83	150.03	15.80	9.50	0.23	
Zhejiang	D5066-1	8.16	1.90	6.59	1.03	7.05	1.07	15.90	3.41	66.70	21.80	4.22	130.15	97.01	33.14	2.93	0.20	Wang (2019)
Zhejiang	D5066-2	11.20	2.24	7.09	1.02	6.54	0.99	10.70	2.21	35.40	25.80	4.90	435.32	391.67	43.65	8.97	0.11	

Area	Sample number	Pluton	N (Latitude)	E (Longitude)	Rock type	SiO_2	TiO_2	Al_2O_3	TFe_2O_3	Fe_2O_3	FeO	MnO	MgO	CaO	Na_2O
Fujian	D5066-3	Fugaishan	28°14′	118°28′	Syenogranite	77.08	0.07	11.95		0.78	0.26	0.02	0.01	0.27	3.84
Fujian	D5066-4	Fugaishan	28°14′	118°28′	Syenogranite	76.90	0.08	12.17		0.86	0.29	0.03	0.02	0.33	3.74
Fujian	08JH249	Baishishan	23°00′ to 24°00′	118°00′ to 119°00′	Porphyry	76.15	0.10	12.78	0.70			0.02	0.04	0.15	3.15
Fujian	08JH250	Baishishan	23°00′ to 24°00′	118°00′ to 119°00′	Porphyry	76.61	0.10	12.17	0.47			0.01	0.05	0.24	3.52

(Continued)

Table S2: *Continued*

Area	Sample number	Pluton	N (Latitude)	E (Longitude)	Rock type	SiO_2	TiO_2	Al_2O_3	TFe_2O_3	Fe_2O_3	FeO	MnO	MgO	CaO	Na_2O
Fujian	08JH251	Tatan	23°00′ to 24°00′	118°00′ to 119°00′	Alkali-feldspar granite	77.36	0.08	12.62	0.70			0.09	0.09	0.36	4.29
Fujian	08JH252	Tatan	23°00′ to 24°00′	118°00′ to 119°00′	Alkali-feldspar granite	77.83	0.05	12.51	0.48			0.05	0.06	0.32	4.34
Fujian	08JH253	Jinggangss-han	23°00′ to 24°00′	118°00′ to 119°00′	Alkali-feldspar granite	77.35	0.07	12.21	0.60			0.13	0.06	0.33	4.07
Fujian	08JH254	Jinggangss-han	23°00′ to 24°00′	118°00′ to 119°00′	Alkali-feldspar granite	77.57	0.07	12.50	0.62			0.18	0.08	0.35	4.20
Fujian	08JH255	Jinggangss-han	23°00′ to 24°00′	118°00′ to 119°00′	Alkali-feldspar granite	78.41	0.07	12.29	0.56			0.09	0.05	0.34	4.32
Fujian	08JH244	Jinggangss-han	23°00′ to 24°00′	118°00′ to 119°00′	Alkali-feldspar granite	77.97	0.08	12.52	0.74			0.11	0.11	0.42	4.39
Fujian	08JH245	Jinggangss-han	23°00′ to 24°00′	118°00′ to 119°00′	Alkali-feldspar granite	76.45	0.08	12.65	0.68			0.10	0.07	0.35	4.35
Fujian	08JH280	Tatan	23°00′ to 24°00′	118°00′ to 119°00′	Monzogranite	76.89	0.07	13.26	0.67			0.11	0.05	0.41	4.47
Fujian	08JH281	Tatan	23°00′ to 24°00′	118°00′ to 119°00′	Monzogranite	76.75	0.06	13.28	0.51			0.07	0.06	0.44	4.50

(Continued)

Table S2: *Continued*

Area	Sample number	Pluton	N (Latitude)	E (Longitude)	Rock type	SiO_2	TiO_2	Al_2O_3	TFe_2O_3	Fe_2O_3	FeO	MnO	MgO	CaO	Na_2O
Fujian	08JH282	Tatan	23°00′ to 24°00′	118°00′ to 119°00′	Monzogranite	77.09	0.05	12.95	0.65			0.06	0.05	0.39	4.19
Fujian	08JH283	Tatan	23°00′ to 24°00′	118°00′ to 119°00′	Monzogranite	77.61	0.07	12.52	0.67			0.05	0.09	0.53	3.94
Fujian	08JH284	Tatan	23°00′ to 24°00′	118°00′ to 119°00′	Monzogranite	77.63	0.08	12.35	0.67			0.06	0.09	0.56	3.71
Fujian	08JH285	Tatan	23°00′ to 24°00′	118°00′ to 119°00′	Monzogranite	76.16	0.18	12.33	1.17			0.06	0.26	0.92	3.44
Fujian	08JH286	Tatan	23°00′ to 24°00′	118°00′ to 119°00′	Monzogranite	75.43	0.17	12.81	1.06			0.05	0.22	0.87	3.61
Fujian	08JH287	Tatan	23°00′ to 24°00′	118°00′ to 119°00′	Monzogranite	75.56	0.18	13.40	1.11			0.08	0.22	0.83	3.88
Fujian	08JH288	Tatan	23°00′ to 24°00′	118°00′ to 119°00′	Monzogranite	75.18	0.25	12.75	1.59			0.08	0.36	0.99	3.70
Fujian	08JH289	Tatan	23°00′ to 24°00′	118°00′ to 119°00′	Monzogranite	75.10	0.26	12.83	1.65			0.08	0.39	1.05	3.49
Fujian	08JH290	Tatan	23°00′ to 24°00′	118°00′ to 119°00′	Monzogranite	76.27	0.15	13.04	1.06			0.08	0.22	0.89	3.95

Area	Sample number	K_2O	P_2O_5	LOI	TOTAL	Ga	Rb	Sr	Y	Zr	Nb	Cs	Ba	La	Ce	Pr	Nd	Sm	Eu	Gd	Tb
Fujian	D5066-3	4.54	0.00	0.52	99.34	19.60	276.00	3.90	30.90	134.00	34.90	6.20	10.70	20.10	42.74	6.32	25.06	6.54	0.12	5.87	0.95
Fujian	D5066-4	4.54	0.01	0.70	99.67	18.80	268.00	4.80	29.97	138.00	33.80	6.20	17.20	17.69	49.91	5.70	22.52	6.05	0.13	5.51	0.94
Fujian	08JH249	4.65	0.01	1.38	99.13	15.24	207.92	9.60	63.93	113.78	25.24	1.89	19.13	58.09	38.59	11.59	40.86	9.44	0.67	8.33	1.55
Fujian	08JH250	4.64	0.01	1.08	98.90	15.11	201.57	8.92	41.48	110.19	24.48	1.79	8.56	32.15	46.48	6.75	23.71	5.46	0.30	4.67	0.89
Fujian	08JH251	4.35	0.01	0.24	100.19	19.37	341.32	6.47	47.16	118.53	58.16	3.64	28.01	27.51	52.42	5.25	16.42	3.38	0.15	3.08	0.65
Fujian	08JH252	4.31	0.01	0.24	100.20	19.44	341.12	6.24	53.29	124.46	55.12	3.71	26.85	31.34	55.94	5.86	17.99	3.64	0.17	3.27	0.71

(Continued)

Table S2: *Continued*

Area	Sample number	K_2O	P_2O_5	LOI	TOTAL	Ga	Rb	Sr	Y	Zr	Nb	Cs	Ba	La	Ce	Pr	Nd	Sm	Eu	Gd	Tb
Fujian	08JH253	4.22	0.01	0.34	99.39	17.29	258.96	3.43	37.80	76.72	36.33	5.94	19.29	20.28	39.51	4.32	13.29	3.27	0.15	3.11	0.65
Fujian	08JH254	4.34	0.01	0.26	100.18	18.30	264.98	3.60	42.26	96.11	42.77	6.31	16.08	20.48	41.76	4.27	14.01	3.24	0.15	3.07	0.65
Fujian	08JH255	4.13	0.01	0.16	100.43	17.47	263.69	3.29	33.84	75.47	30.78	5.84	15.34	17.35	33.75	3.59	11.58	2.72	0.14	2.52	0.53
Fujian	08JH244	4.29	0.01	0.36	101.00	18.02	280.23	4.32	68.15	112.54	36.34	4.67	9.69	34.60	49.75	7.05	24.41	5.70	0.25	5.41	1.04
Fujian	08JH245	4.39	0.01	0.34	99.47	18.01	284.70	4.35	64.15	114.07	33.23	4.92	12.32	32.12	49.99	6.65	22.98	5.22	0.23	5.00	0.95
Fujian	08JH280	4.53	0.01	0.22	100.69	19.06	403.67	4.15	35.78	92.23	42.88	6.16	6.19	20.04	44.15	4.55	14.89	3.54	0.09	3.09	0.62
Fujian	08JH281	4.57	0.01	0.30	100.55	18.32	406.08	4.39	40.51	68.51	45.97	6.64	6.69	15.74	32.54	3.61	12.36	3.36	0.10	3.33	0.72
Fujian	08JH282	4.93	0.01	0.28	100.65	21.00	457.11	0.93	76.73	78.95	87.26	8.61	1.12	11.14	29.61	3.98	15.54	5.49	0.07	5.58	1.26
Fujian	08JH283	4.66	0.01	0.26	100.41	15.48	306.44	19.19	7.27	60.64	17.98	4.48	13.41	34.79	44.07	2.87	6.25	0.71	0.08	0.63	0.09
Fujian	08JH284	4.67	0.01	0.24	100.07	16.11	304.77	18.40	8.57	84.65	20.36	4.61	13.42	49.87	61.74	3.84	8.41	0.88	0.09	0.81	0.11
Fujian	08JH285	4.47	0.05	0.26	99.30	13.89	205.78	79.90	17.14	111.03	15.01	3.03	145.72	44.71	65.83	5.88	17.45	3.12	0.38	2.55	0.40
Fujian	08JH286	4.68	0.04	0.28	99.22	14.66	232.75	95.62	18.49	103.82	15.83	3.38	229.37	40.88	62.18	5.61	17.69	3.15	0.43	2.63	0.41
Fujian	08JH287	4.93	0.04	0.34	100.57	16.22	258.15	89.98	34.34	106.79	22.09	4.79	303.20	66.20	68.53	8.89	30.69	5.23	0.69	4.55	0.74
Fujian	08JH288	4.60	0.07	0.42	99.99	15.38	240.21	104.87	25.61	144.88	20.80	4.38	265.23	54.66	83.68	7.68	25.13	4.39	0.60	3.53	0.58
Fujian	08JH289	4.71	0.08	0.36	100.00	14.78	236.42	108.61	23.40	107.28	19.53	4.48	323.22	46.29	74.44	7.28	22.96	4.27	0.57	3.49	0.54
Fujian	08JH290	4.44	0.04	0.22	100.36	14.71	259.87	59.09	16.67	94.64	20.67	5.42	156.82	35.32	54.64	4.87	14.10	2.50	0.29	2.16	0.34

Area	Sample number	Dy	Ho	Er	Tm	Yb	Lu	Hf	Ta	Pb	Th	U	REE	LREE	HREE	LREE/HREE	Eu^*	Reference
Fujian	D5066-3	5.47	1.05	3.02	0.50	3.24	0.49	3.18	7.40	27.80	20.60	5.30	121.47	100.88	20.59	4.90	0.06	Wang (2019)
Fujian	D5066-4	5.23	0.98	3.07	0.51	3.13	0.51	3.16	6.60	26.50	19.30	4.50	121.88	102.00	19.88	5.13	0.07	
Fujian	08JH249	9.18	2.10	5.42	0.87	5.61	0.87	5.76	2.04	30.74	33.50	7.01	193.16	159.23	33.93	4.69	0.23	Chen *et al.* 2022
Fujian	08JH250	5.21	1.25	3.37	0.58	3.73	0.60	4.96	1.82	27.50	28.69	7.72	135.14	114.84	20.30	5.66	0.18	
Fujian	08JH251	4.32	1.17	3.71	0.72	5.15	0.89	7.13	3.74	65.41	43.72	11.08	124.81	105.13	19.68	5.34	0.15	
Fujian	08JH252	5.00	1.40	4.47	0.92	6.75	1.14	7.34	3.69	37.84	50.81	11.05	138.61	114.94	23.66	4.86	0.15	
Fujian	08JH253	4.59	1.12	3.77	0.67	4.77	0.75	4.63	3.18	36.93	34.21	17.75	100.25	80.81	19.44	4.16	0.15	
Fujian	08JH254	4.44	1.17	3.67	0.70	4.90	0.82	5.51	2.93	38.35	33.79	10.61	103.33	83.90	19.43	4.32	0.14	
Fujian	08JH255	3.55	0.94	2.84	0.54	3.52	0.60	4.34	2.00	37.57	28.56	10.21	84.17	69.12	15.05	4.59	0.16	
Fujian	08JH244	6.49	1.69	5.05	0.95	6.47	1.13	6.48	2.61	33.52	42.63	8.24	150.00	121.77	28.23	4.31	0.14	

(Continued)

Table S2: *Continued*

Area	Sample number	Dy	Ho	Er	Tm	Yb	Lu	Hf	Ta	Pb	Th	U	REE	LREE	HREE	LREE/HREE	Eu^*	Reference
Fujian	08JH245	6.04	1.57	4.69	0.87	6.13	1.06	6.31	2.37	33.84	35.05	8.11	143.50	117.20	26.29	4.46	0.14	
Fujian	08JH280	3.95	0.98	2.93	0.55	3.85	0.64	5.26	3.51	41.76	32.85	11.81	103.87	87.27	16.60	5.26	0.09	
Fujian	08JH281	4.62	1.14	3.22	0.57	3.87	0.62	4.31	2.99	42.66	27.93	9.23	85.81	67.71	18.10	3.74	0.09	
Fujian	08JH282	8.07	2.04	5.75	1.01	6.60	1.05	6.40	4.57	52.06	30.18	22.14	97.19	65.84	31.36	2.10	0.04	
Fujian	08JH283	0.61	0.17	0.60	0.14	1.34	0.31	3.15	1.62	48.20	28.91	10.08	92.64	88.76	3.89	22.82	0.36	
Fujian	08JH284	0.66	0.19	0.70	0.18	1.63	0.38	4.51	1.47	48.11	31.23	11.32	129.49	124.83	4.66	26.79	0.31	
Fujian	08JH285	2.36	0.52	1.57	0.27	1.95	0.34	3.92	1.83	26.22	45.65	6.33	147.33	137.37	9.96	13.80	0.41	
Fujian	08JH286	2.61	0.54	1.57	0.27	2.09	0.37	3.92	1.35	30.31	42.49	5.91	140.43	129.94	10.49	12.38	0.45	
Fujian	08JH287	4.25	1.00	2.77	0.49	3.50	0.63	4.29	1.62	33.76	34.19	9.35	198.16	180.23	17.93	10.05	0.43	
Fujian	08JH288	3.38	0.78	2.17	0.40	2.75	0.49	4.90	1.53	28.65	43.80	6.03	190.22	176.13	14.08	12.51	0.46	
Fujian	08JH289	3.22	0.71	2.13	0.35	2.49	0.43	3.76	2.01	28.70	37.11	5.13	169.15	155.81	13.35	11.67	0.45	
Fujian	08JH290	2.09	0.49	1.54	0.28	2.18	0.40	4.17	2.38	31.12	38.08	11.47	121.19	111.71	9.48	11.79	0.39	

Area	Sample number	Pluton	N (Latitude)	E (Longitude)	Rock type	SiO_2	TiO_2	Al_2O_3	TFe_2O_3	Fe_2O_3	FeO	MnO	MgO	CaO	Na_2O
Fujian	08JH291	Tatan	23°00′ to 24°00′	118°00′ to 119°00′	Monzogranite	76.92	0.16	12.58	1.07			0.08	0.22	0.81	3.76
Fujian	08JH292	Tatan	23°00′ to 24°00′	118°00′ to 119°00′	Monzogranite	77.07	0.16	12.60	1.12			0.08	0.20	0.79	3.89
Fujian	08JH293	Tatan	23°00′ to 24°00′	118°00′ to 119°00′	Monzogranite	76.09	0.15	13.26	1.08			0.07	0.20	0.84	4.01
Fujian	08JH177	Tatan	23°00′ to 24°00′	118°00′ to 119°00′	Monzogranite	77.26	0.10	12.70	0.66			0.06	0.10	0.42	3.96
Fujian	08JH178	Tatan	23°00′ to 24°00′	118°00′ to 119°00′	Monzogranite	76.51	0.16	13.02	1.08			0.06	0.28	0.84	3.74
Fujian	08JH179	Tatan	23°00′ to 24°00′	118°00′ to 119°00′	Monzogranite	76.08	0.16	13.05	1.04			0.06	0.27	0.86	3.76

(Continued)

Table S2: *Continued*

Area	Sample number	Pluton	N (Latitude)	E (Longitude)	Rock type	SiO_2	TiO_2	Al_2O_3	TFe_2O_3	Fe_2O_3	FeO	MnO	MgO	CaO	Na_2O
Fujian	08JH180	Tatan	23°00′ to 24°00′	118°00′ to 119°00′	Monzogranite	77.29	0.10	12.88	0.63			0.08	0.09	0.46	4.01
Fujian	08JH181	Tatan	23°00′ to 24°00′	118°00′ to 119°00′	Monzogranite	76.99	0.09	12.78	0.60			0.07	0.09	0.49	3.80
Fujian	09JH206	Yangjiaxi	26°32′ to 26°57′	119°50′ to 120°15′	Alkali-feldspar granite	78.27	0.10	11.88	1.40			0.03	0.06	0.21	4.22
Fujian	09JH207	Yangjiaxi	26°32′ to 26°57′	119°50′ to 120°15′	Alkali-feldspar granite	78.30	0.10	11.80	1.30			0.02	0.05	0.19	4.15
Fujian	09JH222	Shihu	26°32′ to 26°57′	119°50′ to 120°15′	Alkali-feldspar granite	77.76	0.05	12.56	0.98			0.07	0.06	0.25	3.97
Fujian	09JH223	Shihu	26°32′ to 26°57′	119°50′ to 120°15′	Alkali-feldspar granite	76.97	0.05	12.49	1.06			0.07	0.07	0.23	3.54
Fujian	09JH224	Ju'an	26°32′ to 26°57′	119°50′ to 120°15′	Alkali-feldspar granite	77.93	0.09	11.74	0.61			0.02	0.07	0.32	3.83
Fujian	09JH225	Ju'an	26°32′ to 26°57′	119°50′ to 120°15′	Alkali-feldspar granite	78.18	0.10	12.49	0.77			0.02	0.07	0.32	4.31
Fujian	09JH226	Ju'an	26°32′ to 26°57′	119°50′ to 120°15′	Alkali-feldspar granite	77.95	0.09	12.35	0.66			0.03	0.07	0.36	4.16

(Continued)

Table S2: *Continued*

Area	Sample number	Pluton	N (Latitude)	E (Longitude)	Rock type	SiO_2	TiO_2	Al_2O_3	TFe_2O_3	Fe_2O_3	FeO	MnO	MgO	CaO	Na_2O
Fujian	09JH227	Ju'an	26°32′ to 26°57′	119°50′ to 120°15′	Alkali-feldspar granite	78.18	0.11	12.39	0.78			0.01	0.06	0.35	4.17
Fujian	09JH228	Ju'an	26°32′ to 26°57′	119°50′ to 120°15′	Alkali-feldspar granite	76.91	0.08	12.82	1.12			0.07	0.07	0.22	4.08
Fujian	09JH215	Ju'an	26°32′ to 26°57′	119°50′ to 120°15′	Granitic porphyry	72.93	0.36	14.57	1.88			0.07	0.42	0.48	3.97
Fujian	09JH216	Ju'an	26°32′ to 26°57′	119°50′ to 120°15′	Granitic porphyry	73.01	0.36	14.41	1.84			0.07	0.43	0.44	4.12
Fujian	09JH220	Ju'an	26°32′ to 26°57′	119°50′ to 120°15′	Granitic porphyry	75.71	0.17	13.60	0.92			0.06	0.14	0.21	4.30
Fujian	09JH221	Ju'an	26°32′ to 26°57′	119°50′ to 120°15′	Granitic porphyry	75.84	0.08	13.61	1.30			0.06	0.06	0.34	4.53
Hunan	D9701	Shangbao	26°12′01″to 26°14′12″	112°57′34″ to 112°59′22″	Granite	75.20	0.03	12.88	1.06			0.02	0.01	0.72	3.45

Area	Sample number	K_2O	P_2O_5	LOI	TOTAL	Ga	Rb	Sr	Y	Zr	Nb	Cs	Ba	La	Ce	Pr	Nd	Sm	Eu	Gd	Tb
Fujian	08JH291	4.49	0.04	0.32	100.45	15.64	268.84	63.13	18.59	75.23	21.89	5.42	117.83	37.93	59.98	5.00	15.58	2.70	0.32	2.18	0.37
Fujian	08JH292	4.42	0.04	0.24	100.61	16.04	268.39	62.74	22.30	106.43	25.14	5.41	128.85	43.21	63.66	5.57	17.27	3.04	0.36	2.58	0.43
Fujian	08JH293	4.59	0.04	0.34	100.67	16.31	273.27	74.66	22.17	90.97	22.22	5.28	167.06	41.18	58.13	5.08	15.86	2.77	0.37	2.41	0.41
Fujian	08JH177	4.46	0.01	0.22	99.95	18.19	207.68	33.05	18.97	68.56	20.37	4.52	242.10	22.16	53.86	5.90	22.28	4.53	0.52	4.93	0.74
Fujian	08JH178	4.63	0.04	0.24	100.60	18.78	235.19	94.01	21.01	75.05	22.21	5.66	375.20	25.15	56.20	5.94	22.38	4.41	0.57	4.84	0.74
Fujian	08JH179	4.60	0.04	0.34	100.26	14.69	223.55	93.02	27.17	73.21	17.95	4.84	321.50	28.57	57.73	6.34	22.73	4.91	0.50	3.91	0.68
Fujian	08JH180	4.61	0.01	0.24	100.40	17.35	213.90	29.43	16.56	84.71	20.35	8.84	257.48	18.74	45.85	4.94	18.65	3.83	0.47	4.16	0.64

(Continued)

Table S2: *Continued*

Area	Sample number	K_2O	P_2O_5	LOI	TOTAL	Ga	Rb	Sr	Y	Zr	Nb	Cs	Ba	La	Ce	Pr	Nd	Sm	Eu	Gd	Tb
Fujian	08JH181	4.75	0.01	0.30	99.97	19.34	205.29	36.47	17.97	66.37	19.12	6.31	247.79	17.19	41.68	4.61	17.80	3.69	0.49	4.08	0.63
Fujian	09JH206	4.31	0.01	0.34	100.83	32.80	394.00	3.00	42.00	200.00	92.77	1.65	6.00	35.90	68.00	5.50	15.40	2.65	0.07	3.61	0.66
Fujian	09JH207	4.35	0.01	0.36	100.63	30.60	400.00	4.00	44.00	249.00	78.99	2.20	8.00	48.50	85.40	7.30	18.20	3.24	0.10	4.67	0.84
Fujian	09JH222	4.53	0.01	0.44	100.68	18.00	185.00	26.00	15.00	94.00	14.00	1.66	97.00	14.60	46.30	3.90	15.80	2.95	0.14	3.42	0.51
Fujian	09JH223	4.76	0.01	0.48	99.73	18.20	199.00	34.00	23.00	122.00	15.59	1.83	193.00	30.50	61.80	8.00	25.30	4.89	0.22	5.29	0.75
Fujian	09JH224	4.45	0.01	0.22	99.29	19.80	237.00	2.00	21.00	97.00	28.67	2.12	3.00	37.50	70.10	6.00	17.30	17.30	0.07	3.39	0.54
Fujian	09JH225	4.53	0.01	0.18	100.98	22.30	266.00	2.00	23.00	117.00	27.43	2.71	3.00	40.20	69.90	6.50	16.80	2.85	0.09	3.60	0.58
Fujian	09JH226	4.41	0.01	0.30	100.39	23.40	304.00	6.00	18.00	89.00	33.79	3.59	5.00	32.30	58.80	4.70	13.40	1.96	0.06	2.48	0.40
Fujian	09JH227	4.55	0.01	0.28	100.89	21.20	293.00	8.00	19.00	79.00	34.75	2.06	11.00	35.80	66.70	5.70	16.30	2.51	0.07	3.06	0.46
Fujian	09JH228	4.76	0.01	0.28	100.42	18.80	192.00	61.00	22.00	147.00	26.82	1.24	112.00	25.10	82.70	7.00	22.70	4.75	0.16	5.27	0.81
Fujian	09JH215	5.32	0.08	0.60	100.68	21.90	180.00	130.00	23.00	111.00	19.27	1.58	841.00	68.40	150.70	14.00	53.50	7.80	1.45	7.51	0.96
Fujian	09JH216	5.24	0.08	0.54	100.54	20.90	172.00	129.00	26.00	299.00	18.93	1.70	919.00	81.90	161.10	18.30	62.40	9.46	1.75	9.44	1.17
Fujian	09JH220	4.52	0.02	0.54	100.19	16.40	165.00	90.00	12.00	134.00	13.33	1.30	1072.00	38.10	64.40	7.80	22.30	3.30	0.52	3.26	0.44
Fujian	09JH221	4.73	0.02	0.32	100.89	19.60	187.00	40.00	21.00	149.00	15.06	0.92	667.00	47.70	96.00	10.70	36.20	5.92	0.50	6.26	0.85
Hunan	D9701	4.61	0.01	0.78	98.77	26.20	1255.00	7.40	138.50	129.00	96.70	63.30	9.60	73.50	156.50	16.80	52.50	13.60	0.07	13.15	2.91

Area	Sample number	Dy	Ho	Er	Tm	Yb	Lu	Hf	Ta	Pb	Th	U	REE	LREE	HREE	LREE/HREE	Eu^*	Reference
Fujian	08JH291	2.21	0.53	1.54	0.30	2.18	0.41	3.67	1.56	33.21	39.70	11.81	131.21	121.51	9.70	12.52	0.41	Chen *et al.* 2022
Fujian	08JH292	2.63	0.65	1.95	0.38	2.75	0.53	4.67	1.80	31.88	41.99	13.19	145.01	133.11	11.90	11.18	0.39	
Fujian	08JH293	2.53	0.62	1.92	0.36	2.77	0.53	4.19	1.57	33.21	38.84	12.66	134.94	123.37	11.56	10.67	0.43	
Fujian	08JH177	4.66	0.86	2.82	0.26	2.93	0.42	3.97	5.16	39.13	17.04	7.57	126.86	109.26	17.60	6.21	0.34	
Fujian	08JH178	4.68	0.91	3.09	0.29	3.35	0.48	3.99	8.91	37.08	17.36	8.65	133.03	114.66	18.37	6.24	0.38	
Fujian	08JH179	4.19	0.84	2.20	0.37	2.60	0.39	2.90	2.28	33.24	19.74	6.37	135.99	120.79	15.19	7.95	0.35	
Fujian	08JH180	4.01	0.75	2.45	0.22	2.44	0.35	4.51	5.88	35.33	14.46	5.91	107.49	92.47	15.01	6.16	0.36	
Fujian	08JH181	3.95	0.74	2.34	0.33	2.27	0.34	3.04	1.86	27.63	11.56	4.61	100.14	85.46	14.67	5.82	0.38	
Fujian	09JH206	5.04	1.21	5.00	0.97	7.37	1.30	8.68	10.47	9.10	34.10	4.80	152.68	127.52	25.16	5.07	0.07	Chen *et al.* 2023
Fujian	09JH207	6.52	1.60	7.14	1.18	9.18	1.64	18.32	5.57	15.20	48.80	6.80	195.51	162.74	32.77	4.97	0.08	
Fujian	09JH222	3.29	0.64	2.18	0.33	2.31	0.35	4.08	2.25	26.60	12.70	2.90	96.72	83.69	13.03	6.42	0.13	

(Continued)

Table S2: *Continued*

Area	Sample number	Dy	Ho	Er	Tm	Yb	Lu	Hf	Ta	Pb	Th	U	REE	LREE	HREE	LREE/HREE	Eu*	Reference
Fujian	09JH223	4.63	0.91	3.31	0.44	3.36	0.51	5.86	1.30	34.30	18.00	5.40	149.91	130.71	19.20	6.81	0.13	
Fujian	09JH224	3.81	0.82	3.10	0.30	3.51	0.52	5.46	4.70	34.90	34.60	7.00	164.26	148.27	15.99	9.27	0.03	
Fujian	09JH225	4.01	0.89	3.57	0.52	3.77	0.63	7.79	2.05	46.50	45.10	9.20	153.91	136.34	17.57	7.76	0.09	
Fujian	09JH226	2.71	0.60	2.28	0.40	2.93	0.50	4.90	3.64	30.20	30.20	6.40	123.52	111.22	12.30	9.04	0.08	
Fujian	09JH227	3.22	0.69	2.62	0.26	3.42	0.49	4.77	7.45	36.60	36.60	4.60	141.30	127.08	14.22	8.94	0.08	
Fujian	09JH228	5.03	1.02	3.62	0.47	3.60	0.54	8.12	1.90	25.30	25.30	6.30	162.77	142.41	20.36	6.99	0.10	
Fujian	09JH215	5.50	0.99	3.08	0.44	2.93	0.44	3.59	2.30	17.00	17.00	2.90	317.70	295.85	21.85	13.54	0.58	
Fujian	09JH216	6.73	1.25	4.32	0.57	3.81	0.62	10.39	1.50	23.40	23.40	4.00	362.82	334.91	27.91	12.00	0.57	
Fujian	09JH220	2.54	0.50	1.90	0.26	1.98	0.31	5.46	1.09	16.40	16.40	3.10	147.61	136.42	11.19	12.19	0.48	
Fujian	09JH221	5.03	0.98	3.43	0.47	3.12	0.50	7.09	1.37	19.70	19.70	4.50	217.66	197.02	20.64	9.55	0.25	
Hunan	D9701	20.80	4.63	16.55	3.10	23.10	3.68	9.00	31.00		67.00	56.60	400.89	312.97	87.92	3.56	0.02	Zhao *et al.* 2021

Area	Sample number	Pluton	N (Latitude)	E (Longitude)	Rock type	SiO_2	TiO_2	Al_2O_3	TFe_2O_3	Fe_2O_3	FeO	MnO	MgO	CaO	Na_2O
Hunan	D9702	Shangbao	26°12′01″to 26°14′12″	112°57′34″ to 112°59′22″	Granite	76.76	0.02	12.45	1.22			0.04	0.01	0.43	3.56
Hunan	D9703	Shangbao	26°12′01″to 26°14′12″	112°57′34″ to 112°59′22″	Granite	75.54	0.05	13.18	1.44			0.04	0.05	0.70	3.66
Hunan	D9704	Shangbao	26°12′01″to 26°14′12″	112°57′34″ to 112°59′22″	Granite	76.57	0.06	12.48	1.50			0.04	0.04	0.56	3.53
Hunan	D9705	Shangbao	26°12′01″to 26°14′12″	112°57′34″ to 112°59′22″	Granite	75.98	0.06	12.58	1.50			0.04	0.03	0.59	3.44

(Continued)

Table S2: *Continued*

Area	Sample number	Pluton	N (Latitude)	E (Longitude)	Rock type	SiO_2	TiO_2	Al_2O_3	TFe_2O_3	Fe_2O_3	FeO	MnO	MgO	CaO	Na_2O
Hunan	D9706	Shangbao	26°12′01″to 26°14′12″	112°57′34″ to 112°59′22″	Granite	75.32	0.02	13.33	1.37			0.04	0.01	0.44	3.84
Hunan	D9707	Shangbao	26°12′01″to 26°14′12″	112°57′34″ to 112°59′22″	Granite	75.28	0.02	13.54	0.89			0.02	0.06	0.41	4.15
Guangdong	YWL06	Yingwuling	22°07′ to 22°09′	111°33′ to 111°35′	K-feldspar granite	72.10	0.13	13.80	2.11			0.15	0.10	0.69	3.46
Guangdong	YWL10-1	Yingwuling	22°07′ to 22°09′	111°33′ to 111°35′	K-feldspar granite	72.90	0.19	13.30	2.01			0.06	0.30	0.69	2.46
Guangdong	YWL10-2	Yingwuling	22°07′ to 22°09′	111°33′ to 111°35′	K-feldspar granite	71.80	0.29	12.80	3.11			0.08	0.48	0.73	2.66
Guangdong	YWL11-1	Yingwuling	22°07′ to 22°09′	111°33′ to 111°35′	Biotite granite	75.30	0.05	12.50	1.13			0.05	0.14	0.76	3.52
Guangdong	YWL11-2	Yingwuling	22°07′ to 22°09′	111°33′ to 111°35′	Biotite granite	76.10	0.05	12.40	1.09			0.05	0.13	0.74	3.55
Guangdong	YWL1506	Yingwuling	22°07′ to 22°09′	111°33′ to 111°35′	Biotite granite	73.50	0.05	13.40	1.27			0.14	0.13	0.74	3.14
Guangdong	ZK4302-6	Dajinshan	22°39′ to 22°40′	111°49′ to 111°50′	Granite	75.79	0.02	12.26		0.11	0.60	0.08	0.03	0.40	4.25
Guangdong	ZK4302-7	Dajinshan	22°39′ to 22°40′	111°49′ to 111°50′	Granite	75.51	0.03	12.10		0.26	1.50	0.16	0.01	0.47	3.58
Guangdong	ZK4302-9	Dajinshan	22°39′ to 22°40′	111°49′ to 111°50′	Granite	77.14	0.02	11.47		0.25	1.40	0.16	0.02	0.47	3.69
Guangdong	ZK4302-10	Dajinshan	22°39′ to 22°40′	111°49′ to 111°50′	Granite	77.32	0.02	11.78		0.21	1.20	0.15	0.03	0.42	3.90

(Continued)

Table S2: *Continued*

Area	Sample number	Pluton	N (Latitude)	E (Longitude)	Rock type	SiO_2	TiO_2	Al_2O_3	TFe_2O_3	Fe_2O_3	FeO	MnO	MgO	CaO	Na_2O
Guangdong	ZK4302-A2	Dajinshan	22°39′ to 22°40′	111°49′ to 111°50′	Granite	76.51	0.02	12.28		0.13	0.75	0.09	0.01	0.45	4.14
Guangdong	ZK003-1	Dajinshan	22°39′ to 22°40′	111°49′ to 111°50′	Granite	74.31	0.15	12.66		0.19	1.02	0.06	0.18	0.91	3.39
Guangdong	ZK003-5	Dajinshan	22°39′ to 22°40′	111°49′ to 111°50′	Granite	77.44	0.11	11.30		0.18	1.00	0.07	0.08	0.71	0.35
Guangdong	ZK003-11	Dajinshan	22°39′ to 22°40′	111°49′ to 111°50′	Granite	76.14	0.14	11.31		0.21	1.20	0.07	0.14	0.78	3.12
Guangdong	ZK001-5	Dajinshan	22°39′ to 22°40′	111°49′ to 111°50′	Granite	75.17	0.17	12.04		0.23	1.30	0.08	0.20	0.91	3.11
Guangdong	ZK001-B1	Dajinshan	22°39′ to 22°40′	111°49′ to 111°50′	Granite	75.50	0.17	11.97		0.21	1.20	0.07	0.21	0.91	3.32

Area	Sample number	K_2O	P_2O_5	LOI	TOTAL	Ga	Rb	Sr	Y	Zr	Nb	Cs	Ba	La	Ce	Pr	Nd	Sm	Eu	Gd	Tb
Hunan	D9702	4.20	0.01	0.67	99.37	28.10	1335.00	3.70	81.80	85.00	96.00	149.50	4.30	58.50	121.50	12.90	38.70	9.21	0.06	8.53	1.89
Hunan	D9703	4.30	0.01	0.84	99.81	29.40	1695.00	9.00	156.00	158.00	122.00	156.00	7.90	71.10	157.50	17.30	55.70	14.45	0.08	14.00	3.15
Hunan	D9704	4.46	0.01	0.61	99.86	26.30	1100.00	5.80	131.00	193.00	100.80	107.00	18.30	55.70	109.50	12.30	43.20	11.70	0.13	12.90	2.66
Hunan	D9705	4.66	0.02	0.75	99.65	26.50	1140.00	6.30	138.00	145.00	90.90	105.00	19.00	56.20	106.00	12.35	43.70	11.80	0.14	12.70	2.75
Hunan	D9706	4.48	0.01	0.77	99.63	30.10	1545.00	3.60	107.50	127.00	119.50	170.00	4.00	67.20	141.50	15.10	46.20	11.50	0.05	10.50	2.53
Hunan	D9707	5.01	0.01	0.49	99.88	30.20	1130.00	5.90	63.60	82.00	115.00	124.00	5.80	41.00	84.10	9.21	28.40	7.47	0.06	6.97	1.63
Guangdong	YWL06	5.61	0.02	0.87	99.04	22.50	765.00	26.80	101.50	188.00	51.60	11.40	73.10	44.40	91.80	10.85	38.10	9.80	0.29	9.92	1.95
Guangdong	YWL10-1	6.71	0.02	1.26	99.90	19.20	394.00	61.00	33.90	116.00	23.60	5.85	82.70	40.00	79.80	8.71	31.20	6.16	0.39	5.27	0.88
Guangdong	YWL10-2	5.27	0.03	1.80	99.05	21.40	337.00	76.10	47.60	182.00	36.00	7.26	65.30	62.30	126.00	13.65	47.00	9.19	0.37	7.77	1.32
Guangdong	YWL11-1	4.77	0.01	0.96	99.19	20.80	778.00	29.40	124.50	104.00	56.80	61.00	14.00	21.60	51.80	6.49	25.90	8.41	0.08	10.20	2.19
Guangdong	YWL11-2	4.72	0.01	0.87	99.71	21.00	765.00	28.20	126.00	111.00	57.10	53.80	13.80	21.40	51.70	6.60	26.60	8.73	0.07	10.60	2.35
Guangdong	YWL1506	5.00	0.01	1.24	98.62	22.60	1085.00	17.10	116.50	101.00	56.00	26.90	19.10	25.70	55.70	6.64	26.40	8.26	0.12	9.96	2.22

(Continued)

Table S2: *Continued*

Area	Sample number	K_2O	P_2O_5	LOI	TOTAL	Ga	Rb	Sr	Y	Zr	Nb	Cs	Ba	La	Ce	Pr	Nd	Sm	Eu	Gd	Tb
Guangdong	ZK4302-6	4.39	0.01	1.79	99.72	29.40	732.00	4.85	203.00	108.00	26.10	13.80	5.90	16.60	46.20	7.02	31.30	15.80	0.02	17.30	4.93
Guangdong	ZK4302-7	4.10	0.01	2.11	99.84	28.70	802.00	7.14	177.00	102.00	33.50	20.20	10.80	14.80	40.80	5.95	26.90	12.10	0.03	14.00	3.92
Guangdong	ZK4302-9	3.80	0.01	1.42	99.86	30.20	806.00	10.30	187.00	108.00	27.80	24.00	13.30	15.30	41.40	6.23	27.80	13.20	0.03	15.00	4.15
Guangdong	ZK4302-10	3.96	0.01	0.77	99.77	29.50	751.00	9.76	190.00	89.70	21.80	20.10	15.00	16.50	45.80	6.99	31.50	14.50	0.03	16.00	4.52
Guangdong	ZK4302-A2	4.55	0.01	0.82	99.76	27.90	726.00	8.64	178.00	106.00	28.80	16.50	14.80	15.10	42.40	6.07	27.00	12.20	0.04	14.50	4.01
Guangdong	ZK003-1	5.42	0.03	1.30	99.62	19.40	389.00	70.50	60.30	128.00	34.70	7.41	280.00	45.30	93.30	11.70	45.50	10.80	0.43	9.21	1.77
Guangdong	ZK003-5	4.57	0.02	0.80	96.62	20.20	421.00	37.60	100.00	179.00	49.60	8.11	84.00	39.20	86.60	11.00	44.60	12.70	0.24	11.70	2.64
Guangdong	ZK003-11	5.00	0.03	1.37	99.51	20.00	439.00	45.90	82.30	156.00	37.40	8.42	162.00	43.30	90.30	11.40	43.30	10.80	0.34	9.88	2.14
Guangdong	ZK001-5	5.14	0.03	1.10	99.48	21.20	440.00	37.50	62.60	155.00	35.20	12.30	251.00	47.10	91.50	11.80	45.10	10.50	0.39	8.76	1.74
Guangdong	ZK001-B1	4.88	0.04	1.21	99.69	19.10	400.00	67.10	77.70	147.00	28.10	7.76	279.00	45.80	95.00	11.80	45.60	10.80	0.42	9.88	2.00

Area	Sample number	Dy	Ho	Er	Tm	Yb	Lu	Hf	Ta	Pb	Th	U	REE	LREE	HREE	LREE/HREE	Eu^*	Reference
Hunan	D9702	13.55	3.09	10.75	2.12	15.45	2.52	6.60	33.00		50.90	25.20	298.77	240.87	57.90	4.16	0.02	Zhao *et al.* 2021
Hunan	D9703	22.30	5.02	17.75	3.38	24.50	4.00	11.10	44.80		75.90	15.40	410.23	316.13	94.10	3.36	0.02	
Hunan	D9704	18.60	4.27	14.70	2.73	20.00	3.13	11.80	32.50		83.80	32.80	311.52	232.53	78.99	2.94	0.03	
Hunan	D9705	19.35	4.34	15.40	2.75	20.10	3.13	9.20	29.60		83.70	28.80	310.71	230.19	80.52	2.86	0.03	
Hunan	D9706	16.70	3.63	13.30	2.53	18.80	2.91	9.60	36.90		57.00	29.80	352.45	281.55	70.90	3.97	0.01	
Hunan	D9707	11.20	2.37	8.76	1.63	12.30	2.02	7.60	50.50		35.00	34.90	217.12	170.24	46.88	3.63	0.03	
Guangdong	YWL06	13.55	2.97	9.78	1.65	11.55	1.73	8.10	12.50		73.20	32.60	248.34	195.24	53.10	3.68	0.09	Zhang *et al.* 2018
Guangdong	YWL10-1	5.56	1.19	3.50	0.52	3.65	0.51	4.10	3.40		61.10	12.50	187.34	166.26	21.08	7.89	0.21	
Guangdong	YWL10-2	7.61	1.62	5.04	0.71	4.78	0.72	6.40	4.90		103.00	19.60	288.08	258.51	29.57	8.74	0.13	
Guangdong	YWL11-1	16.10	3.63	12.85	2.04	15.85	2.27	6.10	12.30		48.20	24.60	179.41	114.28	65.13	1.75	0.03	
Guangdong	YWL11-2	16.10	3.70	12.55	2.13	14.80	2.19	6.50	11.90		48.80	24.60	179.52	115.10	64.42	1.79	0.02	
Guangdong	YWL1506	14.70	3.30	11.05	1.94	12.95	1.84	5.00	11.80		48.20	20.00	180.78	122.82	57.96	2.12	0.04	
Guangdong	ZK4302-6	33.30	6.78	23.40	4.79	35.40	5.58	9.54	18.80	65.60	22.90	25.60	248.42	116.94	131.48	0.89	0.004	Yu *et al.* (2012)
Guangdong	ZK4302-7	26.70	5.51	18.90	3.65	26.00	4.10	7.43	16.00	269.00	25.60	21.60	203.36	100.58	102.78	0.98	0.01	
Guangdong	ZK4302-9	27.80	5.75	19.70	3.88	28.50	4.49	8.78	17.50	123.00	23.90	22.20	213.23	103.96	109.27	0.95	0.01	
Guangdong	ZK4302-10	30.10	6.11	20.80	4.18	30.70	4.87	8.30	16.10	91.00	22.00	20.30	232.60	115.32	117.28	0.98	0.01	

(Continued)

Table S2: *Continued*

Area	Sample number	Dy	Ho	Er	Tm	Yb	Lu	Hf	Ta	Pb	Th	U	REE	LREE	HREE	LREE/HREE	Eu*	Reference
Guangdong	ZK4302-A2	27.00	5.59	18.60	3.62	25.50	4.07	7.86	15.40	75.40	25.60	21.50	205.70	102.81	102.89	1.00	0.01	
Guangdong	ZK003-1	9.85	1.85	5.72	1.03	6.39	0.99	5.41	6.85	38.00	38.30	14.40	243.84	207.03	36.81	5.62	0.13	
Guangdong	ZK003-5	16.20	3.31	10.40	1.81	11.60	1.80	7.90	7.13	34.90	54.80	20.90	253.80	194.34	59.46	3.27	0.06	
Guangdong	ZK003-11	13.30	2.68	8.41	1.45	9.34	1.48	6.36	5.17	33.70	41.20	13.80	248.12	199.44	48.68	4.10	0.10	
Guangdong	ZK001-5	10.00	1.90	5.98	1.04	6.83	1.12	5.93	5.58	36.00	36.60	11.10	243.76	206.39	37.37	5.52	0.12	
Guangdong	ZK001-B1	12.10	2.39	7.57	1.34	9.25	1.40	5.66	4.18	34.50	38.20	10.30	255.35	209.42	45.93	4.56	0.13	

(Continued)

Table S3: Microprobe compositional profiles of the representative plagioclase grains in the Maqigang beschtauite sample (in percentage)

Spot	SiO_2	TiO_2	Al_2O_3	FeO	MnO	MgO	CaO	Na_2O	K_2O	P_2O_5	Cr_2O_3	BaO	NiO	TOTAL	Ab	Or	An
YK042-9-001	58.62	0.00	25.56	0.26	0.01	0.02	8.18	6.50	0.89	0.01	0.03	0.01	0.00	100.09	56.00	5.05	38.95
YK042-9-002	58.61	0.02	25.55	0.28	0.01	0.02	8.05	6.58	0.99	0.00	0.00	0.00	0.00	100.10	56.34	5.57	38.10
YK042-9-003	59.30	0.00	25.13	0.31	0.00	0.01	7.53	6.68	0.98	0.00	0.00	0.00	0.00	99.93	58.15	5.63	36.22
YK042-9-004	59.28	0.05	25.53	0.27	0.01	0.00	7.62	6.41	0.95	0.03	0.02	0.00	0.00	100.17	57.02	5.56	37.42
YK042-9-005	58.93	0.02	24.98	0.28	0.00	0.04	7.42	6.71	0.79	0.00	0.00	0.00	0.01	99.19	59.23	4.59	36.18
YK042-9-006	60.14	0.01	24.48	0.30	0.00	0.00	6.86	6.93	0.91	0.02	0.00	0.04	0.01	99.69	61.24	5.26	33.50
YK042-9-007	59.82	0.00	24.64	0.26	0.01	0.00	7.06	6.86	0.93	0.04	0.01	0.04	0.00	99.66	60.33	5.36	34.31
YK042-9-008	59.88	0.02	24.25	0.26	0.03	0.01	6.84	7.22	0.87	0.03	0.00	0.02	0.01	99.43	62.41	4.92	32.67
YK042-9-009	60.19	0.00	24.75	0.28	0.02	0.00	6.67	7.07	0.95	0.01	0.00	0.02	0.01	99.97	62.13	5.48	32.40
YK042-9-010	59.92	0.00	24.72	0.28	0.00	0.00	6.84	6.88	1.10	0.03	0.00	0.00	0.01	99.79	60.43	6.37	33.19
YK042-9-011	59.19	0.01	25.53	0.33	0.03	0.00	7.65	6.83	0.97	0.02	0.00	0.03	0.00	100.58	58.40	5.44	36.16
YK042-9-012	58.30	0.01	24.89	0.28	0.00	0.00	7.67	6.80	0.98	0.00	0.01	0.11	0.00	99.06	58.20	5.54	36.26
YK042-9-013	58.78	0.00	25.11	0.30	0.00	0.02	7.59	6.78	0.59	0.03	0.02	0.10	0.00	99.32	59.64	3.43	36.93
YK042-9-014	58.78	0.00	25.32	0.32	0.01	0.01	7.65	6.83	0.79	0.00	0.00	0.05	0.00	99.77	59.01	4.51	36.48
YK042-9-015	57.25	0.02	26.31	0.28	0.01	0.01	8.77	6.14	0.53	0.01	0.00	0.00	0.00	99.33	54.16	3.08	42.77
YK042-9-016	60.01	0.00	24.64	0.31	0.00	0.02	7.05	6.66	1.23	0.00	0.00	0.01	0.01	99.94	58.59	7.12	34.29
YK042-9-017	58.71	0.02	25.28	0.29	0.00	0.02	7.68	6.52	0.90	0.00	0.00	0.07	0.00	99.48	57.39	5.24	37.37
YK042-9-018	59.54	0.00	24.75	0.31	0.00	0.02	7.02	6.79	1.00	0.02	0.00	0.01	0.00	99.47	59.95	5.79	34.26
YK042-9-019	60.07	0.04	24.23	0.28	0.00	0.02	6.87	7.01	0.92	0.00	0.01	0.12	0.02	99.60	61.43	5.31	33.26
YK042-9-020	60.05	0.01	24.59	0.36	0.02	0.00	6.74	7.41	0.44	0.00	0.00	0.05	0.02	99.69	64.87	2.53	32.60
YK041-1-001	60.20	0.00	24.90	0.22	0.02	0.00	6.85	6.78	1.17	0.02	0.00	0.00	0.02	100.17	59.82	6.79	33.38
YK041-1-002	59.73	0.00	24.90	0.23	0.01	0.02	7.07	6.70	1.13	0.05	0.01	0.09	0.02	99.95	59.03	6.55	34.42
YK041-1-003	59.98	0.00	24.98	0.26	0.00	0.01	7.20	6.47	1.07	0.00	0.00	0.02	0.00	99.99	58.03	6.28	35.69
YK041-1-004	59.69	0.00	25.07	0.28	0.02	0.01	7.25	6.71	1.10	0.04	0.00	0.04	0.04	100.24	58.65	6.35	35.00
YK041-1-005	58.94	0.01	24.89	0.22	0.02	0.01	7.45	6.59	0.97	0.01	0.00	0.00	0.00	99.11	58.12	5.60	36.28
YK041-1-006	60.09	0.00	24.76	0.29	0.00	0.00	7.03	6.74	1.14	0.05	0.01	0.01	0.00	100.11	59.28	6.57	34.15
YK041-1-007	60.57	0.00	24.72	0.24	0.00	0.01	7.05	6.79	1.18	0.03	0.00	0.04	0.00	100.63	59.25	6.78	33.97
YK041-1-008	60.74	0.00	24.60	0.24	0.00	0.00	6.62	7.08	1.37	0.05	0.00	0.00	0.00	100.70	60.86	7.72	31.43
YK041-1-009	59.83	0.00	24.83	0.27	0.01	0.00	7.05	6.75	1.11	0.01	0.02	0.08	0.00	99.96	59.31	6.44	34.26
YK041-1-010	59.52	0.01	25.47	0.25	0.01	0.00	7.36	6.79	0.98	0.00	0.02	0.11	0.03	100.53	59.04	5.59	35.36
YK041-1-011	59.83	0.00	25.06	0.27	0.01	0.00	7.26	6.67	1.13	0.00	0.00	0.08	0.02	100.33	58.40	6.52	35.09
YK041-1-012	59.54	0.02	25.19	0.27	0.00	0.00	7.29	6.66	1.07	0.00	0.00	0.00	0.00	100.05	58.46	6.20	35.35
YK041-1-013	59.88	0.00	25.04	0.28	0.00	0.00	6.99	6.96	1.12	0.01	0.02	0.00	0.00	100.30	60.23	6.35	33.43
YK041-1-014	62.41	0.01	23.48	0.22	0.00	0.02	5.27	8.12	0.94	0.02	0.00	0.02	0.00	100.50	69.68	5.33	24.99

Table S4: Zircon U-Th-Pb isotopic analysis of the Maqigang beschtauite in southeastern Guangxi, South China

Spot	ppm			Isotope ratio						Age/Ma					
	Pb	Th	U	$^{207}Pb/^{206}Pb$	± 1σ	$^{207}Pb/^{235}U$	± 1σ	$^{206}Pb/^{238}U$	± 1σ	$^{207}Pb/^{206}Pb$	± 1σ	$^{207}Pb/^{235}U$	± 1σ	$^{206}Pb/^{238}U$	± 1σ
YK436-1-01	23.45	62.98	533.90	0.0547	0.0023	0.2911	0.0127	0.0386	0.0004	467	96	259	10	244	3
YK436-1-02	4.23	142.79	256.80	0.0520	0.0033	0.0912	0.0057	0.0129	0.0002	283	151	89	5	83	2
YK436-1-03	3.97	130.16	227.02	0.0512	0.0038	0.0909	0.0062	0.0132	0.0002	250	168	88	6	85	1
YK436-1-04	10.71	287.79	652.39	0.0541	0.0023	0.0959	0.0040	0.0131	0.0004	376	101	93	4	84	3
YK436-1-05	5.28	321.97	275.07	0.0543	0.0053	0.0868	0.0059	0.0131	0.0004	383	220	85	5	84	3
YK436-1-06	4.52	146.59	267.28	0.0523	0.0036	0.0941	0.0059	0.0135	0.0003	298	159	91	5	86	2
YK436-1-07	3.67	115.09	210.58	0.0512	0.0040	0.0944	0.0067	0.0138	0.0003	256	178	92	6	88	2
YK436-1-08	5.51	45.42	97.33	0.4045	0.0182	1.2941	0.0592	0.0235	0.0006	3926	68	843	26	150	4
YK436-1-09	5.72	192.51	348.51	0.0477	0.0029	0.0849	0.0048	0.0132	0.0002	83	150	83	4	85	1
YK436-1-10	3.73	130.11	232.82	0.0525	0.0046	0.0901	0.0077	0.0129	0.0002	309	200	88	7	83	2
YK436-1-11	3.01	104.49	180.37	0.0542	0.0048	0.0951	0.0082	0.0128	0.0003	389	202	92	8	82	2
YK436-1-12	3.67	126.37	217.91	0.0515	0.0043	0.0912	0.0074	0.0133	0.0004	265	191	89	7	85	2
YK436-1-13	4.16	127.90	249.01	0.0474	0.0043	0.0887	0.0087	0.0138	0.0005	78	194	86	8	88	3
YK436-1-14	6.06	167.97	319.27	0.0464	0.0029	0.0981	0.0081	0.0148	0.0006	17	144	95	8	95	4
YK436-1-15	4.06	101.86	206.10	0.0473	0.0040	0.0967	0.0089	0.0147	0.0006	65	189	94	8	94	4
YK436-1-16	5.03	125.61	289.73	0.0511	0.0034	0.0948	0.0060	0.0137	0.0002	256	156	92	6	88	2
YK436-1-17	2.41	82.51	137.66	0.0502	0.0047	0.0903	0.0079	0.0134	0.0003	206	204	88	7	86	2
YK436-1-18	5.46	194.00	326.32	0.0579	0.0058	0.0924	0.0056	0.0132	0.0007	524	222	90	5	85	4
YK436-1-19	17.81	55.98	400.63	0.0491	0.0029	0.2781	0.0278	0.0399	0.0009	150	137	249	22	252	5
YK436-1-20	3.43	87.05	208.66	0.0646	0.0045	0.1126	0.0081	0.0128	0.0003	761	146	108	7	82	2
YK436-1-21	3.43	87.05	208.66	0.0646	0.0045	0.1126	0.0081	0.0128	0.0003	391	181	89	6	84	2
YK436-1-22	3.36	109.30	198.83	0.0545	0.0044	0.0913	0.0064	0.0131	0.0003	235	155	88	6	83	2
YK436-1-23	4.94	167.42	293.87	0.0509	0.0035	0.0907	0.0059	0.0130	0.0003	117	248	85	9	89	3
YK436-1-24	2.38	85.27	132.14	0.0484	0.0054	0.0875	0.0093	0.0139	0.0005	480	232	94	6	89	4
YK436-1-25	6.26	205.58	367.01	0.0567	0.0060	0.0970	0.0069	0.0139	0.0006	9	180	85	11	87	4
YK041-01	3.20	124.24	180.20	0.0498	0.0044	0.0821	0.0068	0.0124	0.0003	183	206	80	6	79	2
YK041-02	8.14	277.45	418.07	0.0502	0.0026	0.0930	0.0044	0.0135	0.0003	211	119	90	4	87	2

(Continued)

Table S4: *Continued*

Spot	ppm			Isotope ratio						Age/Ma					
	Pb	Th	U	$^{207}Pb/^{206}Pb$	± 1σ	$^{207}Pb/^{235}U$	± 1σ	$^{206}Pb/^{238}U$	± 1σ	$^{207}Pb/^{206}Pb$	± 1σ	$^{207}Pb/^{235}U$	± 1σ	$^{206}Pb/^{238}U$	± 1σ
YK041-03	3.41	121.31	198.54	0.0523	0.0039	0.0876	0.0060	0.0126	0.0003	302	170	85	6	81	2
YK041-04	4.25	102.34	266.45	0.0543	0.0036	0.0909	0.0059	0.0122	0.0003	387	148	88	6	78	2
YK041-05	5.88	282.93	291.03	0.0922	0.0064	0.1566	0.0101	0.0126	0.0003	1472	99	148	9	80	2
YK041-06	4.15	128.10	231.09	0.0518	0.0048	0.0915	0.0083	0.0128	0.0003	276	210	89	8	82	2
YK041-07	67.39	96.38	206.04	0.0918	0.0033	3.0922	0.1170	0.2500	0.0080	1463	67	1431	29	1439	41
YK041-08	5.94	153.74	313.07	0.0553	0.0066	0.0951	0.0103	0.0137	0.0006	433	270	92	10	88	4
YK041-09	14.71	359.25	926.70	0.0461	0.0028	0.0802	0.0046	0.0130	0.0004	400	257	78	4	83	2
YK041-10	6.37	193.03	358.87	0.0469	0.0048	0.0846	0.0076	0.0137	0.0005	43	291	82	7	87	3
YK041-11	14.10	303.06	861.60	0.0529	0.0045	0.0918	0.0062	0.0133	0.0005	324	193	89	6	85	3
YK041-12	7.24	119.31	263.13	0.0840	0.0124	0.2084	0.0507	0.0168	0.0009	1292	292	192	43	108	6
YK041-13	7.33	125.76	375.93	0.0485	0.0048	0.1107	0.0109	0.0168	0.0008	124	218	107	10	108	5
YK041-14	5.44	169.64	342.17	0.0535	0.0056	0.0943	0.0091	0.0136	0.0006	350	237	92	8	87	4
YK041-15	7.26	160.93	405.99	0.0490	0.0074	0.0922	0.0120	0.0138	0.0007	150	322	90	11	88	4
YK041-16	6.12	122.92	362.26	0.0621	0.0090	0.0990	0.0121	0.0139	0.0007	676	314	96	11	89	5
YK041-17	12.00	261.22	581.17	0.0588	0.0058	0.1279	0.0106	0.0169	0.0008	561	215	122	10	108	5
YK041-18	11.16	257.03	616.89	0.0518	0.0060	0.0947	0.0102	0.0137	0.0006	276	244	92	10	88	4
YK041-19	11.16	248.29	672.12	0.0493	0.0037	0.0924	0.0075	0.0135	0.0006	161	170	90	7	86	4
YK041-20	7.03	85.80	197.74	0.1831	0.0234	0.4119	0.0529	0.0173	0.0009	2681	213	350	38	110	6

Table S5: Hf isotopic analysis of the Maqigang beschtauite in southeastern Guangxi, South China

Spot	$^{176}Lu/^{177}Hf$	$^{176}Yb/^{177}Hf$	$^{176}Hf/^{177}Hf$	T/Ma	ε_{Hf} (t)	T_{DM} (Ga)	T_{2DM} (Ga)
YK436-02	0.00132	0.04915	0.282585	85	−4.8	0.95	1.45
YK436-03	0.00061	0.03951	0.282620	85	−3.6	0.89	1.37
YK436-04	0.00089	0.04953	0.282571	85	−5.3	0.96	1.48
YK436-05	0.00223	0.14278	0.282563	85	−5.6	1.01	1.50
YK436-06	0.00063	0.03799	0.282599	85	−4.3	0.92	1.42
YK436-07	0.00063	0.03719	0.282636	85	−3.0	0.86	1.34
YK436-09	0.00076	0.04619	0.282571	85	−5.3	0.96	1.48
YK436-10	0.00088	0.04119	0.282595	85	−4.5	0.93	1.43
YK436-11	0.00085	0.04656	0.282605	85	−4.1	0.91	1.41
YK436-12	0.00057	0.03531	0.282622	85	−3.5	0.88	1.37
YK436-13	0.00063	0.03866	0.282615	85	−3.7	0.89	1.38
YK436-14	0.00066	0.03982	0.282452	85	−9.5	1.12	1.75
YK436-15	0.00065	0.03873	0.282583	85	−4.8	0.94	1.45
YK436-16	0.00075	0.04362	0.282604	85	−4.1	0.91	1.41
YK436-17	0.00059	0.03501	0.282630	85	−3.2	0.87	1.35
YK436-19	0.00082	0.04408	0.282603	85	−4.2	0.91	1.41
YK436-20	0.00086	0.05216	0.282550	85	−6.0	0.99	1.53
YK436-21	0.00063	0.04179	0.282567	85	−5.4	0.96	1.49
YK436-22	0.00069	0.03991	0.282589	85	−4.7	0.93	1.44
YK436-23	0.00056	0.03736	0.282416	85	−10.8	1.17	1.82
YK436-24	0.00067	0.04007	0.282624	85	−3.4	0.88	1.36
YK436-25	0.00058	0.03504	0.282568	85	−5.4	0.96	1.49
1*	0.00088	0.03134	0.28264	88	−2.7	0.86	1.33
2*	0.00069	0.02452	0.28259	91	−4.4	0.93	1.44
3*	0.00108	0.03801	0.28269	88	−0.9	0.79	1.21
5*	0.00107	0.03730	0.28264	93	−2.8	0.87	1.33
6*	0.00078	0.02770	0.28261	91	−3.8	0.90	1.40
7*	0.00122	0.04403	0.28268	97	−1.3	0.82	1.24
10*	0.00076	0.02664	0.28261	90	−3.9	0.91	1.41
11*	0.00096	0.03168	0.28263	89	−3.3	0.89	1.36
12*	0.00128	0.04569	0.28268	90	−1.3	0.81	1.24
16*	0.00103	0.03655	0.28267	93	−1.8	0.83	1.27
17*	0.00066	0.02279	0.28266	89	−2.2	0.84	1.30
18*	0.00083	0.02832	0.28266	89	−1.9	0.83	1.28

* Hf isotopic data from Wang et al. (2017)).

Table S6: A summary of zircon Hf isotopic of the Late Cretaceous granitic rocks in South China

Area	Pluton	Age (Ma)	ε_{Hf} (t)	T_{DM2} (Ga)	Reference
Guangxi	Jinzhu	99	−12.0	1.88	Liu
		100	−12.3	1.91	*et al.* (2022)
		99	−13.8	2.00	
		98	−12.7	1.94	
		96	−17.4	2.22	
		100	−12.7	1.93	
		100	−16.4	2.16	
		100	−9.8	1.75	
		98	−9.6	1.74	
	Guantian	98	−3.9	1.05	Wang (2017)
		98	−4.1	1.42	
		98	−4.7	1.46	
		98	−3.3	1.37	
		98	−4.5	1.44	
		98	−4.3	1.43	
		98	−3.8	1.4	
		98	−3.4	1.38	
		98	−5.9	1.53	
		98	−3.1	1.36	
		98	−5.6	1.51	
		98	−3.6	1.39	
		98	−4.8	1.46	
		98	−4.4	1.44	
		98	−4.8	1.47	
		98	−4.5	1.45	
	Songwang	88	−4.1	1.41	Wang (2017)
		88	−4.2	1.42	
		88	−3.8	1.39	
		88	−4.5	1.44	
		88	−5.2	1.48	
		88	−3.8	1.40	
		88	−4.5	1.44	
		88	−3.6	1.38	
		88	−4.3	1.42	
		88	−3.8	1.39	
		88	−4.4	1.43	
		88	−4.2	1.42	
		88	−4.7	1.45	
		88	−4.1	1.41	

Table S6: *Continued*

Area	Pluton	Age (Ma)	ε_{Hf} (t)	T_{DM2} (Ga)	Reference
Guangxi	Yantianling	100	−11.6	1.90	Zhang
		100	−10.6	1.84	*et al.* 2020
		100	−10.7	1.85	
		100	−9.6	1.78	
		100	−10.7	1.85	
		100	−10.2	1.82	
		100	−9	1.74	
		100	−8.2	1.68	
		100	−12.7	1.98	
		100	−12.3	1.95	
		100	−9.3	1.76	
		100	−9	1.74	
		100	−9.2	1.75	
		100	−10.2	1.82	
		100	−0.8	1.21	
		100	−8.7	1.71	
		100	−12.5	1.95	
	Shengdong	92	−7.2	1.32	Bi
		91	−7.6	1.33	*et al.* (2015)
		91	−7.6	1.34	
		92	−7.7	1.34	
		92	−6.1	1.26	
		92	−6.2	1.28	
		91	−7.7	1.34	
		92	−6.7	1.29	
		92	−8.6	1.39	
		91	−8.4	1.38	
		90	−6.2	1.27	
		92	−6.6	1.29	
		91	−7.3	1.32	
		88	−8	1.35	
		94	−7.7	1.34	
		88	−8.8	1.40	
		89	−7.9	1.35	
		84	−7.9	1.35	
		88	−8.3	1.37	
		92	−8.5	1.37	
		90	−7.9	1.35	
		88	−8.8	1.35	

(Continued)

Table S6: *Continued*

Area	Pluton	Age (Ma)	ε_{Hf} (t)	T_{DM2} (Ga)	Reference
		89	−7.3	1.32	
Guangxi	Shengdong	93	−8.5	1.38	Bi
		91	−5.3	1.22	*et al.* (2015)
		91	−5.6	1.24	
		90	−7.7	1.34	
		91	−7.1	1.31	
		92	−6.5	1.28	
		92	−6.9	1.30	
		91	−7.2	1.32	
		92	−7.2	1.32	
		91	−8.1	1.62	
		90	−7.9	1.53	
		89	−8.1	1.36	
		91	−5.1	1.21	
		91	−7.8	1.35	
		92	−7.1	1.31	
		92	−7.7	1.34	
	Liuwang	99	−2.5	1.29	Liu
					et al. (2022)
		97	−1.6	1.23	
		98	−2.4	1.28	
		99	−1.8	1.25	
		99	−3.2	1.33	
		100	−3	1.33	
		99	−2.7	1.30	
		98	−1.9	1.25	
	Gumin	95	−10.2	1.81	Cai (2015)
		95	−9.2	1.74	
		95	−9.3	1.75	
		95	−8.3	1.69	
		95	−3.1	1.36	
		95	−6.4	1.57	
		95	−9.2	1.75	
		95	−4.3	1.43	
		95	−7.4	1.63	
		95	−8.8	1.72	
		95	−11.4	1.89	
		95	−9.4	1.76	
		95	−9.3	1.75	

Table S6: *Continued*

Area	Pluton	Age (Ma)	ε_{Hf} (t)	T_{DM2} (Ga)	Reference
		95	−7.7	1.65	
		95	−10.4	1.82	
		95	−8.5	1.70	
		95	−9.6	1.77	
Guangxi	Gumin	95	−8.4	1.69	Cai (2015)
		95	−3.4	1.38	
		95	−7.1	1.61	
		95	−10.3	1.81	
		95	−9.4	1.76	
		95	−14.1	2.06	
		95	−5.9	1.53	
		95	−8.9	1.72	
		95	−9.6	1.77	
		95	−9.3	1.75	
		95	−9.1	1.74	
		95	−10.4	1.82	
		95	−11.9	1.91	
		95	−8.5	1.70	
		95	−9.5	1.76	
	Silong	92	−4.8	1.47	Cai (2015)
		92	−2.6	1.32	
		92	−1.8	1.27	
		92	−2.0	1.28	
		92	0.0	1.16	
		92	−4.2	1.43	
		92	−2.7	1.33	
		92	−3.7	1.39	
		92	−2.8	1.34	
		92	−1.4	1.25	
		92	−2.3	1.31	
		92	−3.8	1.40	
		92	−4.6	1.45	
		92	−4.7	1.46	
		92	−4.3	1.43	
		92	−4.9	1.47	
		92	−3.3	1.37	
		92	−4.6	1.46	
		92	−2.3	1.31	
		92	−5.5	1.51	

(Continued)

Table S6: *Continued*

Area	Pluton	Age (Ma)	ε_{Hf} (t)	T_{DM2} (Ga)	Reference
		92	−3.8	1.40	
		92	−4.8	1.46	
		92	−5.9	1.54	
		92	−4.3	1.44	
		92	−6.1	1.55	
		92	−5.8	1.53	
Guangxi	Silong	92	1.3	1.08	Cai (2015)
		92	−4.7	1.46	
		92	−6.3	1.56	
		92	−3.8	1.40	
	Kunlunguan	92	−7.3	1.62	Wang (2018)
		92	−5.4	1.50	
		97	−5.5	1.51	
		97	−7.3	1.62	
		96	−7.6	1.65	
		97	−7.7	1.65	
		97	−6.5	1.57	
		98	−5.8	1.53	
		97	−6.5	1.58	
		97	−7.2	1.62	
		97	−5.5	1.51	
		98	−6.4	1.57	
		97	−8.0	1.67	
		97	−7.7	1.65	
		97	−8.2	1.68	
		98	−10.7	1.84	
		98	−11.0	1.86	
		98	−7.7	1.65	
		98	−8.4	1.70	
		97	−9.3	1.75	
		98	−7.1	1.61	
		97	−9.3	1.75	
		98	−8.8	1.72	
		98	−11.0	1.86	
		97	−10.4	1.82	
		97	−8.2	1.68	
		97	−8.7	1.72	
		98	−2.1	1.30	
		98	−1.2	1.24	

Table S6: *Continued*

Area	Pluton	Age (Ma)	ε_{Hf} (t)	T_{DM2} (Ga)	Reference
		98	−7.4	1.63	
		99	−6.9	1.60	
		98	−8.9	1.73	
		99	−7.4	1.63	
		98	−8.9	1.73	
		97	−9.1	1.74	
	Dachang	90	−4.9	1.47	Wang (2018)
		91	−3.6	1.38	
Guangxi	Dachang	91	−3.6	1.38	Wang (2018)
		92	−3.7	1.39	
		92	−3.7	1.39	
		93	−4.5	1.44	
		93	−5.2	1.49	
		92	−2.4	1.31	
		93	−6.5	1.57	
		92	−2.1	1.29	
		93	−3.2	1.36	
		92	−4.3	1.43	
		92	−4.3	1.43	
		92	−5.7	1.52	
		92	−4.6	1.45	
	Luowei	86	−6.1	1.36	Zhang
		87	−5.7	1.33	(2017)
		88	−7.8	1.45	
		91	−5.5	1.33	
		91	−4.5	1.27	
		91	−4.7	1.28	
		89	−6.2	1.36	
		89	−5.9	1.35	
		95	−6.5	1.38	
		93	−2.7	1.17	
		94	−4.3	1.26	
		90	0.3	1.01	
		96	−7.7	1.45	
		91	−6.2	1.37	
		89	−4.7	1.28	
		92	−4.6	1.28	
		94	−5.7	1.34	
		90	−0.9	1.07	

(Continued)

Table S6: *Continued*

Area	Pluton	Age (Ma)	ε_{Hf} (t)	T_{DM2} (Ga)	Reference
		89	−4.6	1.27	
		94	−3.1	1.19	
		90	−5.2	1.31	
		90	−5.0	1.30	
		93	−5.9	1.35	
		94	−5.1	1.31	
		92	−6.7	1.39	
		93	−7.1	1.42	
		85	−6.1	1.35	
		89	−4.7	1.28	
Guangxi	Luowei	89	−5.1	1.30	Zhang
		88	−6.8	1.39	(2017)
		87	−19.5	2.10	
		94	−3.6	1.22	
		93	−6.0	1.36	
		89	−5.4	1.32	
		93	−6.1	1.36	
		93	−12.2	1.70	
Fujian	Yunshan	99	−3.3	1.33	Hong (2012)
		99	−2.4	1.27	
		100	−3.8	1.36	
		100	−4.4	1.40	
		100	−4.6	1.41	
		100	−2.6	1.28	
		100	−2.4	1.27	
		100	−3.4	1.33	
		100	−2.9	1.30	
		100	−4.4	1.40	
		100	−4.2	1.38	
		100	−2.7	1.29	
		100	−3.7	1.35	
		100	−3.8	1.36	
		100	−5.4	1.46	
		100	−4.5	1.40	
		100	−3.9	1.37	
		100	−5.6	1.47	
		100	−4.5	1.41	
		100	−4.3	1.39	
		100	−3.5	1.34	

Table S6: *Continued*

Area	Pluton	Age (Ma)	ε_{Hf} (t)	T_{DM2} (Ga)	Reference
		100	−4.8	1.42	
		100	−5.0	1.43	
		100	−4.8	1.42	
		100	−4.3	1.39	
		100	−4.3	1.39	
		100	−5.5	1.46	
		100	−3.7	1.36	
		100	−5.6	1.47	
		100	−7.0	1.56	
		100	−6.0	1.49	
		100	−3.5	1.34	
		100	0.6	1.09	
Fujian	Yunshan	100	−5.2	1.44	Hong (2012)
		100	−2.8	1.30	
		100	−2.3	1.27	
		100	−4.3	1.39	
		100	−4.9	1.43	
		100	−6.2	1.51	
		100	−6.9	1.55	
		100	−5.0	1.44	
		100	−4.7	1.41	
		100	−6.4	1.52	
		100	−4.9	1.53	
		100	−4.8	1.42	
		99	−3.8	1.36	
		100	−3.9	1.37	
		100	−5.0	1.43	
		100	−6.9	1.55	
		99	−3.6	1.35	
		98	−5.0	1.43	
		100	−4.2	1.38	
		99	−4.1	1.38	
		98	−4.1	1.38	
		99	−3.9	1.36	
		98	−5.2	1.45	
		100	−5.6	1.47	
		86	−5.7	1.47	
		100	−9.4	1.70	
		100	−4.1	1.38	

(Continued)

Table S6: *Continued*

Area	Pluton	Age (Ma)	ε_{Hf} (t)	T_{DM2} (Ga)	Reference
		100	−4.4	1.40	
		100	−4.0	1.37	
		100	7.2	1.57	
		100	0.1	1.12	
		100	−3.6	1.35	
		100	−4.9	1.43	
		100	−5.3	1.45	
		100	−10.0	1.74	
		100	−6.2	1.51	
		99	−5.7	1.47	
		98	−3.4	1.34	
		99	−3.9	1.37	
		99	−3.7	1.35	
		98	−2.5	1.28	
Fujian	Yunshan	93	−12.5	1.89	Hong (2012)
		96	−4.0	1.37	
		95	−4.0	1.37	
		98	−10.4	1.76	
		93	−3.6	1.35	
		96	−4.4	1.39	
		96	−4.6	1.41	
		100	−3.0	1.31	
		100	−4.2	1.38	
		100	−4.1	1.38	
		100	−2.2	1.26	
		100	−8.2	1.32	
		100	−5.6	1.47	
		100	−4.5	1.40	
		100	−2.7	1.29	
		100	−5.7	1.48	
		100	−3.8	1.36	
		100	−4.8	1.42	
		100	−7.7	1.60	
		100	−4.1	1.38	
		100	−5.6	1.47	
		100	−4.2	1.38	
		100	−3.2	1.32	
		97	−4.5	1.40	
		99	−4.2	1.39	

Table S6: *Continued*

Area	Pluton	Age (Ma)	ε_{Hf} (t)	T_{DM2} (Ga)	Reference
		99	−4.5	1.40	
		99	−4.3	1.39	
		99	−3.2	1.32	
		100	−4.2	1.39	
		100	−1.5	1.22	
		100	−2.2	1.26	
		100	−3.8	1.36	
		100	−2.2	1.27	
		99	−3.8	1.36	
		100	−2.0	1.25	
		100	−3.6	1.35	
		94	−0.6	1.16	
		96	−1.0	1.19	
		92	−2.0	1.24	
		95	−2.8	1.30	
		96	−1.1	1.19	
Fujian	Yunshan	96	−1.7	1.23	Hong (2012)
		95	−1.1	1.19	
		96	−0.7	1.16	
		96	−0.6	1.16	
		95	−0.4	1.15	
		99	−0.9	1.18	
		97	−0.9	1.18	
		96	−3.2	1.32	
		93	−1.6	1.22	
		97	−1.0	1.19	
		96	−0.8	1.17	
		95	−0.5	1.15	
		97	2.2	0.99	
		99	1.4	1.04	
		97	3.4	0.92	
		93	4.1	0.87	
		96	4.5	0.85	
		96	1.8	1.01	
		96	2.0	1.00	
		93	2.3	0.98	
		95	1.7	1.02	
		95	2.4	0.98	
		96	−0.8	1.18	

(Continued)

Table S6: *Continued*

Area	Pluton	Age (Ma)	ε_{Hf} (t)	T_{DM2} (Ga)	Reference
		97	2.0	1.01	
		96	0.4	1.10	
		96	1.3	1.04	
		96	1.8	1.02	
		96	2.9	0.95	
		96	1.6	1.03	
		96	2.2	0.99	
		96	2.1	0.99	
		96	1.3	1.04	
		96	1.9	1.01	
		95	1.6	1.03	
		93	1.5	1.03	
		96	3.8	0.89	
		96	3.1	0.93	
		100	4.7	0.84	
		96	1.9	1.01	
		97	0.9	1.07	
		95	2.6	0.96	
Fujian	Yunshan	98	2.9	0.95	Hong (2012)
		98	2.1	1.00	
		96	2.0	1.00	
		96	0.6	1.09	
		97	1.0	1.06	
		96	0.4	1.10	
		97	0.2	1.11	
		95	−0.4	1.15	
		92	2.1	0.99	
		96	1.9	1.01	
		96	−8.8	1.66	
		96	0.0	1.12	
		96	1.6	1.02	
		97	1.8	1.02	
		96	1.6	1.03	
		97	2.9	0.95	
		97	1.2	1.05	
		98	1.2	1.05	
		98	0.2	1.12	
		96	2.1	1.00	
		98	1.3	1.05	

Table S6: *Continued*

Area	Pluton	Age (Ma)	ε_{Hf} (t)	T_{DM2} (Ga)	Reference
		97	0.1	1.12	
		97	1.7	1.02	
		98	0.9	1.07	
		97	0.1	1.12	
		97	2.2	0.99	
		97	−2.8	1.30	
		93	0.7	1.08	
		98	0.2	1.12	
		95	1.8	1.02	
		95	1.0	1.06	
		93	1.3	1.05	
		95	1.0	1.07	
		95	0.2	1.11	
		94	−1.3	1.20	
		95	−3.6	1.34	
		95	0.6	1.09	
		95	−0.1	1.13	
		100	0.7	1.09	
		96	0.8	1.08	
		98	−2.0	1.25	
Fujian	Yunshan	95	−0.7	1.16	Hong (2012)
		98	1.7	1.02	
		95	1.1	1.05	
		95	1.6	1.03	
		95	1.4	1.04	
		95	3.4	0.91	
		95	1.5	1.03	
		92	1.5	1.03	
		92	0.5	1.09	
		93	1.1	1.05	
		90	0.2	1.11	
		93	0.0	1.12	
		92	−0.7	1.16	
		94	0.2	1.11	
		94	−3.0	1.31	
		93	0.6	1.09	
		96	1.6	1.02	
		94	0.5	1.10	
		94	0.5	1.09	

(Continued)

Table S6: *Continued*

Area	Pluton	Age (Ma)	ε_{Hf} (t)	T_{DM2} (Ga)	Reference
		93	−1.2	1.20	
		94	0.9	1.07	
		95	1.0	1.07	
		96	1.1	1.03	
		96	0.5	1.09	
		94	2.1	0.99	
		93	1.2	1.05	
		93	1.3	1.05	
		90	1.5	1.03	
		90	2.0	1.00	
		90	1.3	1.04	
		90	1.7	1.02	
		90	1.6	1.02	
		90	2.1	0.99	
		90	2.4	0.97	
		90	1.6	1.02	
		90	1.6	1.02	
		90	2.3	0.98	
		90	2.6	0.96	
		90	2.2	0.99	
		90	2.3	0.98	
		90	2.1	0.99	
Fujian	Yunshan	90	1.4	1.04	Hong (2012)
		90	2.3	0.98	
		90	1.7	0.76	
		90	1.6	1.02	
		90	2.2	1.00	
		90	2.5	0.97	
		90	1.2	1.05	
		90	2.0	1.00	
		90	1.8	1.01	
		90	1.6	1.02	
		90	1.7	1.02	
		90	2.9	0.94	
		90	1.7	1.02	
		90	2.3	0.98	
		90	1.7	1.02	
		90	1.9	1.00	
		90	1.2	1.05	

Table S6: *Continued*

Area	Pluton	Age (Ma)	ε_{Hf} (t)	T_{DM2} (Ga)	Reference
		90	1.8	1.01	
		90	1.4	1.03	
		90	1.8	1.01	
	Kuiqi	94	2.5	0.90	Zhu (2015)
		93	1.3	0.95	
		95	3.0	0.86	
		92	1.5	0.94	
		95	3.1	0.85	
		100	1.8	0.93	
		94	3.9	0.81	
		93	2.0	0.91	
		92	3.5	0.83	
		94	3.6	0.82	
		89	1.9	0.91	
		94	2.2	0.90	
		91	2.4	0.89	
		93	2.7	0.87	
		92	3.3	0.84	
		92	4.8	0.76	
		91	3.0	0.85	
		93	3.7	0.82	
		96	2.9	0.86	
		91	2.3	0.89	
		98	3.3	0.84	
Fujian	Kuiqi	95	3.3	0.84	Zhu (2015)
		90	4.6	0.76	
		97	2.5	0.89	
		92	2.3	0.89	
		94	3.9	0.84	
		97	1.9	0.97	
		97	1.2	0.96	
		97	1.3	0.96	
		97	2.1	0.91	
		96	1.6	0.94	
		97	1.2	0.96	
		91	1.7	0.93	
		94	0.9	0.97	
		96	0.1	1.02	
		94	1.3	0.95	

(Continued)

Table S6: *Continued*

Area	Pluton	Age (Ma)	ε_{Hf} (t)	T_{DM2} (Ga)	Reference
		94	0.0	1.02	
	Shihu	96	2.1	0.91	Chen
		95	1.2	0.96	*et al.* 2023
		93	0.6	0.99	
		94	1.3	0.95	
		98	0.7	1.54	
		98	1.1	1.50	
		98	−1.7	1.76	
		98	−1.4	1.73	
		98	−4.2	1.98	
		98	−5.2	2.07	
		99	−3.2	1.89	
		99	−4.1	1.97	
		98	−0.3	1.63	
		98	0.5	1.55	
		98	0.7	1.54	
		98	0.6	1.55	
		98	0.7	1.54	
		98	0.3	1.57	
		98	1.1	1.50	
		98	1.3	1.49	
		98	0.9	1.52	
		98	−0.2	1.62	
		98	0.5	1.56	
		98	1.0	1.52	
		98	0.1	1.60	
Fujian	Shihu	98	0.2	1.59	Chen
		98	0.3	1.58	*et al.* 2023
		98	0.5	1.56	
		98	−0.8	1.68	
		98	0.6	1.55	
		98	−1.5	1.74	
		98	−0.3	1.63	
		98	−2.3	1.81	
		98	−0.2	1.62	
		98	−1.8	1.77	
		98	1.5	1.47	
		98	0.7	1.54	
		98	−0.2	1.63	

Table S6: *Continued*

Area	Pluton	Age (Ma)	ε_{Hf} (t)	T_{DM2} (Ga)	Reference
		98	−1.0	1.69	
		98	−0.7	1.67	
		98	−2.8	1.86	
		98	−1.3	1.72	
		98	−0.3	1.63	
	Ju'an	99	−3.6	1.93	Chen
		99	−4.2	1.99	*et al.* 2023
		99	−1.8	1.77	
		99	−2.7	1.84	
		99	−3.6	1.93	
		99	−3.7	1.94	
		99	−2.8	1.86	
		99	−2.3	1.81	
		99	−3.3	1.90	
		99	−2.6	1.84	
		99	−2.3	1.81	
		99	−5.5	2.10	
		99	−4.4	2.00	
		99	−3.3	1.91	
		99	−3.9	1.96	
		99	−3.2	1.89	
		99	−3.9	1.95	
		99	−2.4	1.82	
		98	−2.2	1.80	
		98	−3.0	1.88	
		98	−2.8	1.86	
		98	−4.2	1.99	
		98	−2.0	1.78	
Fujian	Ju'an	98	−3.6	1.93	Chen
		98	−4.0	1.97	*et al.* 2023
		98	−2.4	1.82	
		98	−2.1	1.80	
		98	−3.9	1.95	
		98	−3.4	1.91	
		98	−3.2	1.89	
		98	−2.9	1.87	
		98	−3.8	1.95	
		98	−1.2	1.71	
		96	−2.2	1.80	

(Continued)

Table S6: *Continued*

Area	Pluton	Age (Ma)	ε_{Hf} (t)	T_{DM2} (Ga)	Reference
		96	−1.4	1.73	
		96	−1.9	1.77	
		96	−2.6	1.84	
		96	−1.9	1.77	
		96	−2.1	1.79	
		96	−2.0	1.78	
		96	−1.9	1.77	
		96	−2.3	1.81	
		96	−3.7	1.93	
		96	−2.0	1.79	
		96	−3.2	1.89	
		96	−4.4	2.00	
		96	−2.1	1.79	
		96	−2.6	1.83	
	Chuangchun	94	0.4	1.56	Chen
		94	−0.9	1.69	*et al.* 2023
		94	−1.7	1.75	
		94	0.8	1.53	
		94	−0.4	1.64	
		94	−2.2	1.80	
		94	−1.0	1.69	
		94	−2.0	1.78	
		94	1.5	1.47	
		94	−0.8	1.68	
		94	1.0	1.51	
		94	0.0	1.60	
		94	−2.7	1.84	
		94	0.1	1.59	
		94	−1.2	1.71	
	Tatan	97	1.7	0.71	Chen
					et al. 2022
Fujian	Tatan	97	1.3	0.73	Chen
		97	−0.6	0.80	*et al.* 2022
		97	−1.5	0.82	
		97	1.3	0.72	
		97	−0.3	0.78	
		97	1.0	0.73	
		97	−0.3	0.79	
		97	1.0	0.74	

Table S6: *Continued*

Area	Pluton	Age (Ma)	ε_{Hf} (t)	T_{DM2} (Ga)	Reference
		97	1.9	0.69	
		97	1.3	0.72	
		97	1.9	0.69	
		97	−0.9	0.80	
		97	0.8	0.74	
		97	0.0	0.77	
		97	−2.0	0.85	
		97	2.6	0.68	
		97	0.0	0.78	
	Jinggangsshan	95	2.1	0.69	Chen
		95	0.2	0.77	*et al.* 2022
		95	−0.1	0.77	
		95	0.2	0.75	
		95	0.0	0.77	
		95	1.3	0.73	
		95	−0.4	0.78	
		95	2.8	0.66	
		95	−0.2	0.79	
		95	0.7	0.75	
		95	0.4	0.78	
		95	−1.6	0.83	
		95	−0.8	0.80	
		95	−0.4	0.78	
		95	−0.4	0.79	
		95	0.3	0.77	
		95	0.6	0.75	
		95	−1.6	0.90	
	Baishishan	96	0.0	0.78	Chen
		96	2.5	0.68	*et al.* 2022
		96	0.5	0.75	
		96	0.3	0.77	
		96	0.5	0.75	
		96	1.0	0.75	
Fujian	Baishishan	96	0.0	0.78	Chen
		96	1.2	0.73	*et al.* 2022
		96	1.9	0.72	
		96	0.0	0.78	
		96	2.9	0.66	
		96	2.2	0.70	

(Continued)

Table S6: *Continued*

Area	Pluton	Age (Ma)	ε_{Hf} (t)	T_{DM2} (Ga)	Reference
		96	0.0	0.77	
		96	3.0	0.68	
		96	0.6	0.75	
		98	1.1	0.75	
		98	1.5	0.71	
		98	0.4	0.77	
		98	0.2	0.78	
		98	−0.2	0.79	
		98	0.1	0.78	
		98	−0.4	0.79	
		98	−0.1	0.80	
		98	−0.4	0.79	
		98	−0.4	0.80	
		98	−0.4	0.81	
		98	−1.4	0.83	
		98	0.3	0.77	
		98	0.3	0.77	
		98	−1.7	0.85	
		98	0.0	0.78	
		98	−0.9	0.82	
		98	−0.4	0.80	
		98	0.4	0.77	
		98	−0.1	0.78	
		98	0.5	0.76	
		98	0.0	0.78	
	Tatan	98	−3.3	0.91	Chen
		98	0.7	0.77	*et al.* 2022
		98	0.9	0.73	
		98	0.4	0.76	
		98	0.6	0.75	
		98	0.1	0.77	
		98	0.2	0.79	
		98	0.7	0.74	
		98	1.9	0.70	
		98	0.3	0.78	
Fujian	Tatan	98	0.3	0.78	Chen
		98	0.3	0.76	*et al.* 2022
		98	1.4	0.74	
		97	0.3	0.77	

Table S6: *Continued*

Area	Pluton	Age (Ma)	ε_{Hf} (t)	T_{DM2} (Ga)	Reference
		97	−0.2	0.78	
		97	0.7	0.76	
		97	0.3	0.76	
		97	1.0	0.73	
		97	−1.0	0.81	
		97	0.1	0.78	
		97	0.9	0.74	
		97	−0.3	0.78	
		97	−0.6	0.80	
		97	−0.1	0.78	
		97	−0.8	0.80	
		97	0.2	0.76	
		97	−1.5	0.83	
		97	−0.5	0.79	
		97	0.7	0.75	
		97	−0.5	0.80	
		97	−0.2	0.78	
		97	0.1	0.79	
		97	0.0	0.77	
		97	−1.0	0.81	
		97	−1.8	0.84	
		97	−0.3	0.78	
		97	−0.8	0.80	
		97	−2.6	0.86	
		97	−2.8	0.88	
		97	−3.1	0.90	
		97	−1.8	0.84	
		97	−1.0	0.81	
		97	−1.4	0.83	
		97	0.0	0.77	
		97	−1.0	0.82	
		97	−2.4	0.87	
		97	−1.8	0.84	
		97	−0.9	0.80	
		97	−0.3	0.79	
		97	−0.5	0.80	
		97	0.0	0.77	
Zhejiang	Beiwaishan	96	−12.9	1.98	Duan
		95	−10.8	1.84	*et al.* (2017)

(Continued)

Table S6: *Continued*

Area	Pluton	Age (Ma)	ε_{Hf} (t)	T_{DM2} (Ga)	Reference
		99	−8.2	1.68	
		93	−12.4	1.94	
		98	−8.4	1.69	
		98	−8.5	1.70	
		94	−11.7	1.89	
		97	−9.3	1.75	
		93	−11.6	1.89	
		98	−8.2	1.68	
		98	−9.3	1.75	
		97	−9.4	1.76	
		95	−9.2	1.74	
		94	−8.2	1.68	
		94	−11.0	1.85	
		96	−8.0	1.67	
	Putuoshan	97	−5.2	1.50	Zhao
		97	−6.5	1.58	*et al.* 2016
		97	−3.3	1.37	
		97	−9.8	1.78	
		97	−5.9	1.54	
		97	−4.7	1.46	
		97	−3.5	1.38	
		97	−3.1	1.36	
		97	−4.1	1.42	
		97	−5.5	1.51	
		97	−4.7	1.46	
		97	−6.4	1.57	
		97	−5.2	1.49	
		97	−3.4	1.38	
		97	−7.9	1.66	
		97	−4.3	1.44	
		97	−5.6	1.52	
		97	−4.5	1.45	
		97	−3.8	1.40	
		97	−6.1	1.55	
	Dadong'ao	95	−12.1	1.93	Zhao
		95	−7.6	1.65	*et al.* 2016
		95	−12.3	1.94	
		95	−5.7	1.52	
		95	−4.8	1.47	

Table S6: *Continued*

Area	Pluton	Age (Ma)	ε_{Hf} (t)	T_{DM2} (Ga)	Reference
Zhejiang	Dadong'ao	95	−6.8	1.60	Zhao
		95	−5.7	1.53	*et al.* 2016
		95	−10.4	1.82	
		95	−8.1	1.67	
		95	−5.0	1.48	
		95	−6.3	1.56	
		95	−8.3	1.68	
		95	−6.6	1.58	
		95	−7.6	1.64	
		95	−6.5	1.58	
		95	−8.9	1.73	
		95	−7.4	1.63	
		95	−5.2	1.49	
		95	−6.1	1.55	
		95	−6.3	1.56	
		95	−5.9	1.53	
		95	−5.9	1.54	
	Daqingshan	88	−5.3	1.49	Zhao
		88	−4.8	1.46	*et al.* 2016
		88	−5.2	1.49	
		88	−7.7	1.65	
		88	−6.7	1.58	
		88	−3.6	1.39	
		88	−5.1	1.48	
		88	−5.1	1.48	
		88	−3.9	1.40	
		88	−3.1	1.35	
		88	−3.9	1.40	
		88	−3.4	1.37	
		88	−7.7	1.64	
		88	−5.3	1.49	
		88	−4.0	1.41	
		88	−3.1	1.35	
		88	−3.3	1.37	
		88	−4.0	1.41	
		88	−4.4	1.44	
		88	−4.4	1.43	
		88	−4.5	1.44	
	Taohuadao	88	−4.4	1.44	

(Continued)

Table S6: *Continued*

Area	Pluton	Age (Ma)	ε_{Hf} (t)	T_{DM2} (Ga)	Reference
		88	−5.2	1.49	Zhao
		88	−3.0	1.34	*et al.* 2016
Zhejiang	Taohuadao	88	−4.6	1.45	Zhao
		88	−3.7	1.39	*et al.* 2016
		88	−1.7	1.27	
		88	−3.6	1.38	
		88	−4.5	1.44	
		88	−7.4	1.62	
		88	−4.9	1.47	
		88	−2.5	1.31	
		88	−4.1	1.41	
		88	−4.5	1.44	
		88	−4.4	1.43	
		88	−3.3	1.36	
		88	−4.2	1.42	
		88	−3.8	1.40	
		88	−6.5	1.57	
		88	−4.4	1.43	
		88	−4.9	1.47	
		88	−4.8	1.46	
		89	−5.5	1.50	
		89	−4.4	1.43	
		89	−4.0	1.41	
		89	−4.2	1.42	
		89	−4.6	1.45	
		89	−5.1	1.48	
		89	−2.6	1.32	
		89	−2.6	1.32	
		89	−2.2	1.30	
		89	−5.4	1.50	
		89	−4.6	1.45	
		89	−3.2	1.36	
		89	−3.2	1.36	
		89	−3.3	1.37	
		89	−4.9	1.46	
		89	−7.5	1.63	
		89	−4.6	1.45	
	Xiazhidao	86	−3.6	1.38	Zhao
		86	−5.2	1.49	*et al.* 2016
		86	−4.1	1.42	
		86	−3.9	1.40	
		86	−3.5	1.38	
		86	−4.7	1.45	
Zhejiang	Xiazhidao	86	−2.1	1.28	Zhao
		86	−4.8	1.46	*et al.* 2016
		86	−4.9	1.47	
		86	−3.9	1.40	
		86	−6.3	1.55	
		86	−4.5	1.44	
		86	−4.4	1.43	
		86	−5.7	1.52	
		86	−5.1	1.48	
		86	−1.6	1.25	
		86	−4.4	1.43	
		86	−2.4	1.31	
		86	−6.2	1.55	
		86	−4.8	1.46	
Guangdong	Yingwuling	80	−0.1	1.15	Zhang
		80	−2.2	1.28	*et al.* 2018
		80	−3.6	1.38	
		80	−0.9	1.20	
		80	−0.7	1.19	
		80	−1.6	1.25	
		80	−1.9	1.27	
		80	−0.4	1.17	
		80	−3.4	1.36	
		80	−2.2	1.28	
		80	−1.7	1.26	
		80	−1.5	1.24	
		80	−3.3	1.35	
		80	−2.3	1.29	
		80	−4.2	1.41	
		80	0.6	1.11	
		80	−3.5	1.37	
		80	−2.7	1.32	
		80	−0.1	1.15	
		80	−2.8	1.32	
		80	−6.6	1.57	

(Continued)

Table S6: *Continued*

Area	Pluton	Age (Ma)	ε_{Hf} (t)	T_{DM2} (Ga)	Reference
		80	−2.9	1.33	
		80	−1.9	1.27	
		80	0.0	1.14	
		80	−2.1	1.28	
		80	−2.4	1.30	
		80	0.6	1.11	
Guangdong	Yingwuling	80	−2.5	1.31	Zhang
		80	0.8	1.09	*et al.* 2018
		80	−3.3	1.35	
		80	−2.1	1.28	
		80	−3.2	1.35	
		80	−2.5	1.30	
		80	−2.4	1.29	
		80	−1.3	1.23	
		80	−2.5	1.31	
		80	−0.7	1.19	
		80	−0.8	1.19	
		80	−2.4	1.30	
		80	−0.5	1.18	
		80	−3.6	1.37	
		80	−1.3	1.23	
		80	−3.2	1.35	
		80	−4.1	1.40	
		80	−1.2	1.22	
		80	−2.7	1.32	
		80	−3.2	1.35	
		80	−3.2	1.35	
		80	−2.4	1.30	
		80	−2.1	1.28	
		80	−3.4	1.36	
		80	−2.5	1.30	
		80	−2.6	1.31	
		80	−2.6	1.31	
		80	−2.5	1.30	
		80	−1.6	1.25	
		80	−4.3	1.42	
		80	−1.9	1.27	
		80	−3.7	1.38	
		80	−0.6	1.18	

Table S6: *Continued*

Area	Pluton	Age (Ma)	ε_{Hf} (t)	T_{DM2} (Ga)	Reference
		80	−3.0	1.33	
		80	−2.8	1.32	
		80	−3.6	1.37	
		80	−2.6	1.31	
		80	−2.0	1.27	
		80	−2.5	1.30	
		80	−2.9	1.33	
		80	−2.1	1.28	
Guangdong	Yingwuling	80	−2.7	1.32	Zhang
		80	−1.7	1.25	*et al.* 2018
	Dajinshan	85	−8.6	1.69	Yu
		85	−2.8	1.32	*et al.* (2012)
		86	−2.1	1.28	
		87	−6.6	1.56	
		82	−3.0	1.34	
		84	−3.2	1.35	
		84	−2.4	1.30	
		83	−5.5	1.50	
		83	−5.4	1.49	
		81	−5.1	1.47	
		80	−5.2	1.48	
		83	−5.9	1.52	
		84	−4.6	1.44	
		82	−5.1	1.47	
		84	−5.2	1.48	
		83	−2.2	1.28	
		88	−2.7	1.32	
		86	−3.9	1.40	
		87	−1.2	1.22	
		85	−3.3	1.36	
		84	−5.6	1.50	
		84	−4.6	1.44	
		84	−4.9	1.46	
		83	−5.3	1.48	
		84	−5.5	1.49	
		85	−2.9	1.33	
		83	−2.0	1.27	
		84	−2.7	1.32	
		84	−0.9	1.20	

(Continued)

Table S6: *Continued*

Area	Pluton	Age (Ma)	ε_{Hf} (t)	T_{DM2} (Ga)	Reference
		84	−5.2	1.48	
		83	−3.7	1.38	
		86	−3.3	1.36	

Table S7: A summary of Sr–Nd isotopic of the Late Cretaceous granitic rocks in South China

Area	Age (Ma)	$(^{87}Sr/^{86}Sr)_i$	$\varepsilon_{Nd}(t)$	T_{DM2} (Ga)	Reference
Zhejiang	85	0.7080	−2.8	1.12	Cai
	85	0.7082	−3.4	1.16	*et al.* (2004)
	85	0.7080	−3.8	1.20	
	85	0.7078	−2.3	1.07	
	85	0.7071	−2.9	1.12	
	85	0.7082	−3.0	1.13	
	85	0.7069	−0.5	0.94	
	85	0.7068	−0.5	0.92	
	91	0.7096	−7.5	1.51	Zhu
	91	0.7118	−6.0	1.39	*et al.* (2008)
	91	0.7151	−9.8	1.69	
	91	0.7153	−5.8	1.46	
	91	0.7090	−6.4	1.42	
	91	0.7113	−7.1	1.47	
	74	0.7049	1.8	0.73	Du
	74	0.7049	1.5	0.76	*et al.* (2022)
	74	0.7049	1.9	0.73	
	93		−0.8	0.96	Xiao
	93	0.6965	−0.8	0.96	*et al.* (2007)
	93	0.7032	−0.7	0.95	
	93		−1.4	1.01	
	98		−7.0	1.47	Zhao
	98		−7.1	1.48	*et al.* 2016
	98		−7.1	1.48	
	98		−7.3	1.49	
	96		−7.5	1.51	
	96		−7.4	1.50	
	88		−6.3	1.40	
	88		−5.7	1.35	
	89		−6.0	1.38	
	89		−6.3	1.40	
	87		−6.5	1.42	
	87		−5.8	1.36	
	87		−6.4	1.41	
	87		−5.9	1.37	
	88	0.7082	−3.9	1.01	Xing
	88	0.7084	−3.9	0.97	*et al.* (2009)
	88	0.7084	−3.8	0.96	
	88	0.7082	−4.0	1.04	
	88	0.7083	−3.7	0.98	
	93		−9.1	1.63	Qiu
					et al. 2004
Zhejiang	93		−10.1	1.72	Qiu
	93		−9.3	1.64	*et al.* 2004
	93		−9.1	1.63	
	94		−9.3	1.65	
	93		−5.2	1.31	
	93		−3.5	1.17	
	92		−4.4	1.25	
	92		−4.3	1.24	
	95		−5.0	1.29	
	100	0.7082	−6.0	1.37	Hong (2012)
	100	0.7077	−5.9	1.37	
	100	0.7082	−4.6	1.28	
	96	0.6982	−2.7	1.12	
	96	0.7030	−2.8	1.12	
	96	0.7112	−2.2	1.08	
	94	0.7069	−2.8	1.13	
	92	0.7018	−3.5	1.18	
	92	0.7017	−2.7	1.11	
	97	0.7014	−8.7	1.60	Wang (2019)
	96		−3.8	1.23	Chen
	98		−2.2	1.08	*et al.* 2022
	98		−3.6	1.23	
	96		−2.5	1.08	
	97		−5.0	1.37	
	97		−4.9	1.07	
	97		−3.2	1.14	
	97		−3.2	1.15	
	97		−3.3	1.14	
	97		−3.3	1.14	
	96		−2.5	1.10	
	96		−3.0	1.14	
	96		−2.5	1.10	
Guangdong	80	0.7097	−5.6	1.34	Zhang
	80	0.7027	−5.7	1.35	*et al.* 2018
	82		−8.9	1.57	Yu
	82		−8.1	1.55	*et al.* (2012)

(Continued)

Table S7: *Continued*

Area	Age (Ma)	$(^{87}Sr/^{86}Sr)$ i	ε_{Nd} (t)	T_{DM2} (Ga)	Reference
	82		−9.1	1.63	
	85	0.7143	−8.6	1.59	
	85	0.7167	−8.0	1.54	
	85	0.7145	−8.6	1.59	
	85	0.7052	−8.6	1.58	
Guangdong	85	0.7152	−9.2	1.63	Yu
					et al. (2012)
Guangxi	90	0.7092	−5.2	1.33	Wang
	90	0.7092	−5.4	1.34	*et al.* (2017)
	90	0.7091	−5.6	1.36	
	96	0.7104	−7.2	1.27	Duan
	96	0.7104	−7.1	1.27	*et al.* (2011)
	96	0.7093	−6.7	1.24	
	96	0.7103	−7.4	1.29	
	96	0.7102	−7.2	1.27	
	96	0.7106	−7.1	1.26	
	96	0.7106	−7.4	1.29	
	96	0.7109	−7.3	1.28	
	96	0.7097	−6.8	1.24	
	96	0.7095	−6.6	1.23	
	94	0.7102	−7.4	1.50	Cai (2015)
	94	0.7108	−8.8	1.61	
	94	0.7103	−8.1	1.55	
	94	0.7102	−6.9	1.50	
	92	0.7108	−8.0	1.55	
	92	0.7108	−8.3	1.57	
	92		−8.6	1.59	
	92		−8.6	1.59	
	97		−8.4	1.57	Liu
	97		−8.1	1.55	*et al.* (2018)
	97		−10.3	1.73	
	97		−7.8	1.53	
	97		−8.8	1.61	
	97		−7.7	1.52	
	97		−8.4	1.57	
	97		−9.0	1.63	
	97		−8.3	1.56	
	97		−8.2	1.56	
	100		−9.4	1.66	

Table S7: *Continued*

Area	Age (Ma)	$(^{87}Sr/^{86}Sr)$ i	ε_{Nd} (t)	T_{DM2} (Ga)	Reference
	100		−9.4	1.67	Zhang
	100		−9.5	1.67	*et al.* 2020
	100		−9.3	1.66	
Jiangxi	85	0.7080	−2.8	1.12	Cai
	85	0.7082	−3.4	1.16	*et al.* (2004)
	85	0.7080	−3.8	1.20	
	85	0.7078	−2.3	1.07	
	85	0.7071	−2.9	1.12	
Jiangxi	85	0.7082	−3.0	1.13	Cai
	85	0.7069	−0.5	0.94	*et al.* (2004)
	85	0.7068	−0.5	0.92	
Fujian	93		−5.2	1.31	Qiu
	93		−3.5	1.17	*et al.* 2004
	92		−4.4	1.25	
	92		−4.3	1.24	
	95		−5.0	1.29	
	100	0.7082	−6.0	1.37	Hong (2012)
	100	0.7077	−5.9	1.37	
	100	0.7082	−4.6	1.28	
	96	0.6982	−2.7	1.12	
	96	0.7030	−2.8	1.12	
	96	0.7112	−2.2	1.08	
	94	0.7069	−2.8	1.13	
	92	0.7018	−3.5	1.18	
	92	0.7017	−2.7	1.11	
	97	0.7014	−8.7	1.60	Wang (2019)
	96		−3.8	1.23	Chen
	98		−2.2	1.08	*et al.* 2022
	98		−3.6	1.23	
	96		−2.5	1.08	
	97		−5.0	1.37	
	97		−4.9	1.07	
	97		−3.2	1.14	
	97		−3.2	1.15	
	97		−3.3	1.14	
	97		−3.3	1.14	
	96		−2.5	1.10	
	96		−3.0	1.14	
	96		−2.5	1.10	

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