

High-Volume Magmatic Events in Subduction Systems
Ducea et al. (2015) *Elements* 11: 99-104

Supplementary Tables

SUPPLEMENTARY TABLE 1 List of some major subduction-related magmatic arcs since Rodinia breakup (~750 Ma)

Name of Arc	Location	Type	Age Range	Exposure *
Mariana Izu Bonin	Western Pacific	Island	48–0 Ma	Volcanic
Aleutians	Northern Pacific	Island	50–0 Ma	Volcanic
Japan	Western Pacific	Mixed	65–0 Ma	Volcanic
Cascades	NW USA	Continental	35–0 Ma	Volcanic
Andes	Western South America	Continental	200–0 Ma	Mixed
Central American	Mexico to Panama	Continental	160–0 Ma	Volcanic
Sierra Nevada	California	Continental	250–80 Ma	Plutonic
Peninsular Ranges	Baja, Mexico	Mixed	200–80 Ma	Plutonic
Fiordland	New Zealand	Continental	170–100 Ma	Plutonic
Idaho batholith	NW USA	Continental	160–80 Ma	Plutonic
Coast Mountains	SE Alaska and British Columbia	Mixed	200–50 Ma	Plutonic
Gandese	Southern Tibet	Continental	250–40 Ma	Plutonic
Ladhak-Kohistan	Himalaya	Mixed	100–50 Ma	Mixed
European Variscan	Western and central Europe	Continental	350–290 Ma	Plutonic
Gobi-Tien Shan	Mongolia	Mixed	320–290 Ma	Mixed
Pampean-Famatinian	Peru to Argentina	Mixed	550–465 Ma	Plutonic
Appalachian Caledonian	Eastern USA	Continental	560–440 Ma	Plutonic
Lachlan	Eastern Australia	Continental	450–340 Ma	Plutonic
European Caledonian	Europe, Various	Island	500–400 Ma	Plutonic
European Cadomian	Europe, Various	Mixed	650–500 Ma	Plutonic

* denotes main exposure levels: volcanic, plutonic, or mixed

SUPPLEMENTARY TABLE 2 Tilted exposures of arcs and ranges of paleo-depths

Name	Location	Type	Age Range	Depth range	Reference
Kohistan	Pakistan, India	Island	100–50 Ma	0–55 km	Jagoutz and Schmidt (2013)
Talkeetna	Alaska	Island	200–150 Ma	0–10; 20–30 km	Hacker et al. a (2011)
Sierra de Valle Fértil	Argentina	Transitional	500–470 Ma	10–30 km	Otamendi et al. (2012)
Gobi-Tianshan	Mongolia	Transitional	300–280 Ma	0–15 km	Economos et al. (2012)
Southern Sierra	California	Continental	160–80 Ma	5–30 km	Chapman et al. (2012)
Salinia	California	Continental	95–80 Ma	5–30 km	Kidder et al. (2003)
Fjordland	New Zealand	Continental	170–100 Ma	15(?)–50 km	Stowell et al. (2010)
Coast Mountains	British Columbia	Continental	180–50 Ma	5–35 km	Gehrels et al. (2009)
Cascades Core	Washington	Continental	95–65 Ma	10–35 km	Miller et al. (2009)

SUPPLEMENTARY TABLE 3 Commonly used geochronometric techniques for arc magmatic rocks

Material	Decay Scheme	Type of Rock
Zircon	U–Pb	Intermediate and silicic rocks, rarely mafic
Hornblende, biotite, whole-rock	Ar–Ar	Basalt and andesite
Whole-rock, various minerals*	Rb–Sr	Intermediate and silicic rocks
Sphene, rutile	U–Pb	Mafic and intermediate rocks
Garnet + other phase*	Sm–Nd	Mafic and ultramafic deep crustal
Garnet + other phase*	Lu–Hf	Mafic and ultramafic deep crustal
Whole-rock, biotite, hornblende	K–Ar	Basalt and andesite
Molybdenite	Re–Os	Hydrothermal veins associated with intermediate rocks

* denotes techniques requiring at least two data points for an isochron

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