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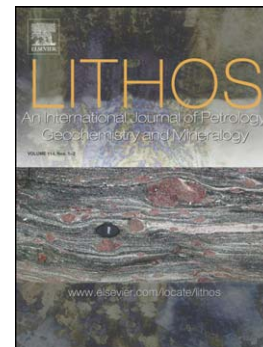
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# Trace Element and Isotopic Geochemistry of Cretaceous Magmatism in NE Asia: Spatial Zonation, Temporal Evolution, and Tectonic Controls

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## ABSTRACT

Results of a comprehensive geochemical study (major and trace elements, and isotopes of Sr, Nd, Pb, Hf) of Cretaceous volcanic rocks from the Chukotka area in northeastern Russia are presented. Synthesis of available geological and geochronological data suggests diachronous onset of activity of the Okhotsk-Chukotka volcanic belt (OCVB), the largest magmatic province in the region. The OCVB consists of ca.  $10^6$  km<sup>3</sup> of volcanic rocks. At 106–105 Ma, subduction-related magmatism initiated in the southern and central segments of the OCVB.

In the Central and Northern Chukotka areas, where the northern OCVB is exposed, onset of arc magmatism occurred ca. 10 m.y. after extension-related magmatism of the Chaun igneous province at 109-104 Ma. Mafic rocks from the OCVB yield (<sup>87</sup>Sr/<sup>86</sup>Sr)<sup>80 Ma</sup> of 0.7033 to 0.7047, εNd<sup>80 Ma</sup> of 0.0 to 7.10, εHf<sup>80 Ma</sup> of 4.12 to 12.88, (<sup>206</sup>Pb/<sup>204</sup>Pb)<sup>80 Ma</sup> of 18.11 to 18.42, and (<sup>208</sup>Pb/<sup>204</sup>Pb)<sup>80 Ma</sup> of 37.96 to 38.21. Volcanic rocks from the Chaun province, as well as OCVB rocks from Northern Chukotka, originate from a relatively enriched source and have (<sup>87</sup>Sr/<sup>86</sup>Sr)<sup>80 Ma</sup> of 0.7088 to 0.7100, εNd<sup>80 Ma</sup> of -5.81 to -3.42, εHf<sup>80 Ma</sup> of -3.40 to -0.25,

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