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Wu, J.T.-J., and Wu, J., 2019, Izanagi-Pacific ridge subduction revealed by a 56 to 46 Ma magmatic gap along the northeast Asian margin: *Geology*, <https://doi.org/10.1130/G46778.1>

This file contains:

Figure DR1: comparison between alternative Japan Sea reconstructions)

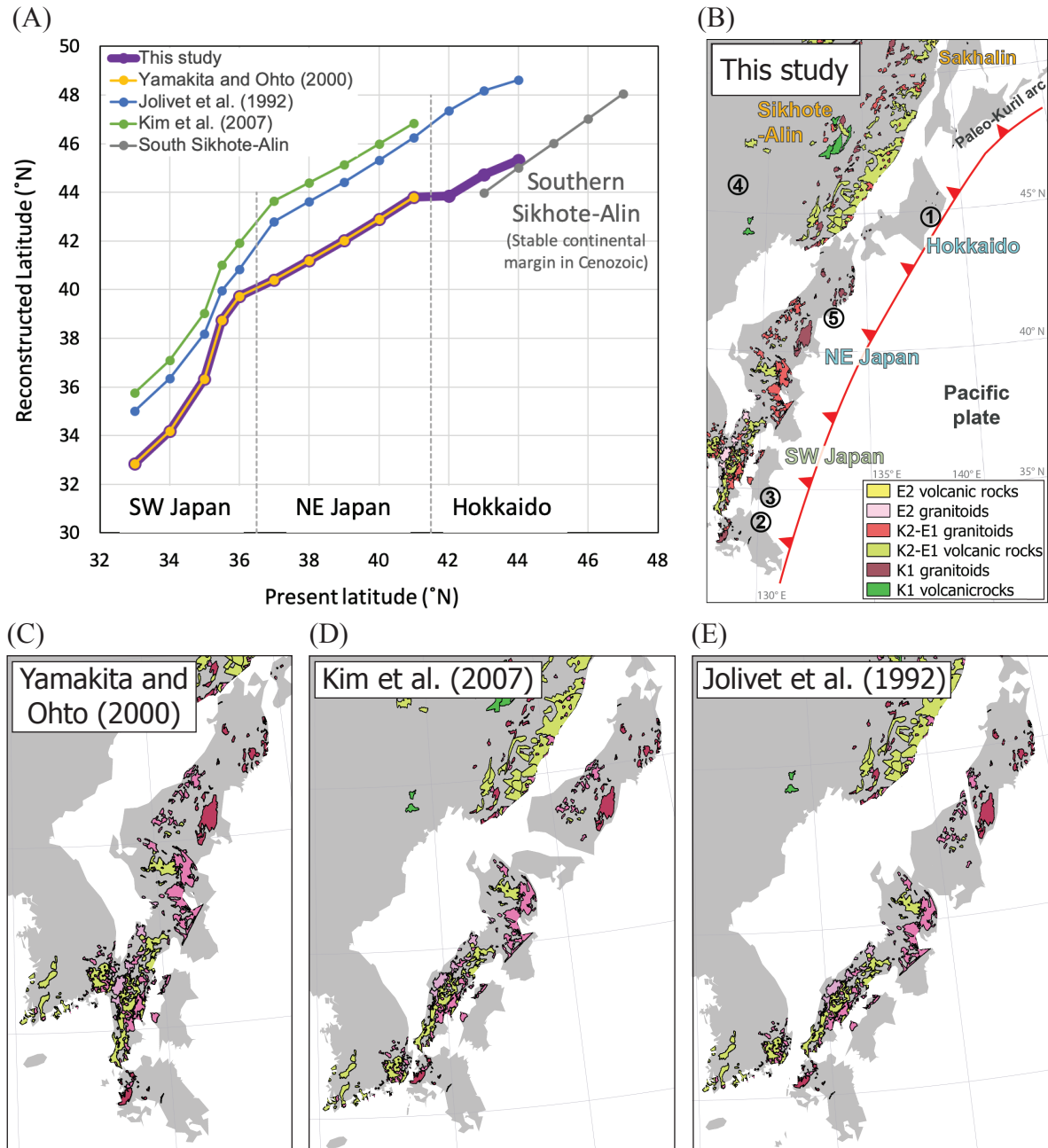
Table DR1: database of magmatic rocks in northeast Asia

Attached as a separate Excel file (2019337\_Table DR1.xlsx)

## Figure DR1: Comparison between alternative Japan Sea reconstruction models at 30 Ma

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This figure accompanies Wu and Wu (submitted to *Geology*), manuscript# G46183



A) Plot of pre-Japan Sea opening reconstructed latitudes for the Japan islands based on alternative plate models. B) Preferred model from this study, compared against alternative plate models of C) Yamakita and Ohto (2000), D) Kim et al. (2007), and E) Jolivet et al. (1992).

In A) we used reference points marked on SW, NE Japan and Hokkaido to compare to reconstructed reference points in the three reconstruction models. The results show that the reconstructed Japan islands in this study were located between 32°N to 46°N in the early Cenozoic. Jolivet et al. (1992) reconstructed Japan islands with paleolatitudes shifted northward by 1 to 3 degrees (i.e. between 35°N to 49°N), which is similar to Kim et al. (2007).

We constructed our preferred plate model in B) (shown in Fig. 3) using GPlates software and followed these criteria, as follows. First, we separated the Japan islands into NE, SW Japan and the paleo-Kuril arc (east Hokkaido). The boundary between NE and SW Japan is consistent with parts of the Itoigawa-Shizuoka Tectonic Line and the Median Tectonic Lin, and eastern Hokkaido was assigned to the Kuril arc-trench system following Ueda (2016) (the two grey dash lines in Fig. 1Az), which is the west boundary of the Yubetsu-Nakanogawa Sub-belt in the Hidaka belt. Second, we followed Yamakita and Ohto (2000) for NW and SW Japan. Third, for reconstruction of Paleo-Kuril arc, we considered the geological correlation between Hokkaido and Sakhalin island from Zharov (2005) and closed the Kuril basin in the southern margin of the Okhotsk Sea.