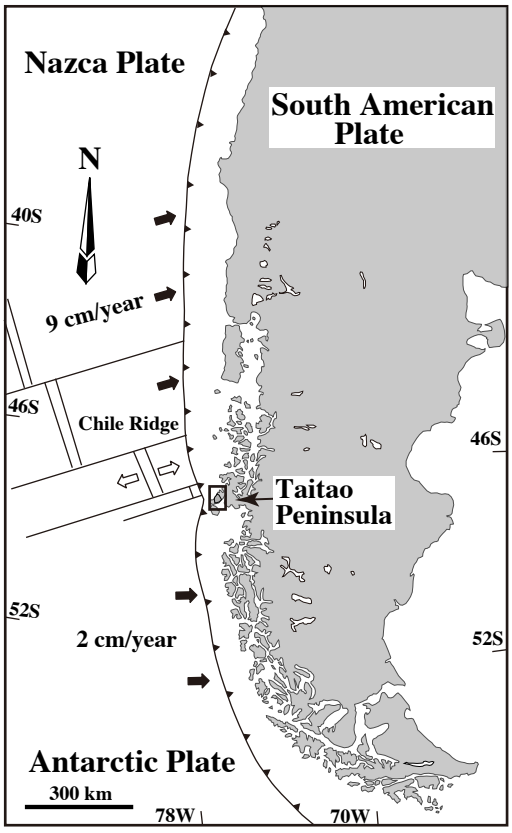
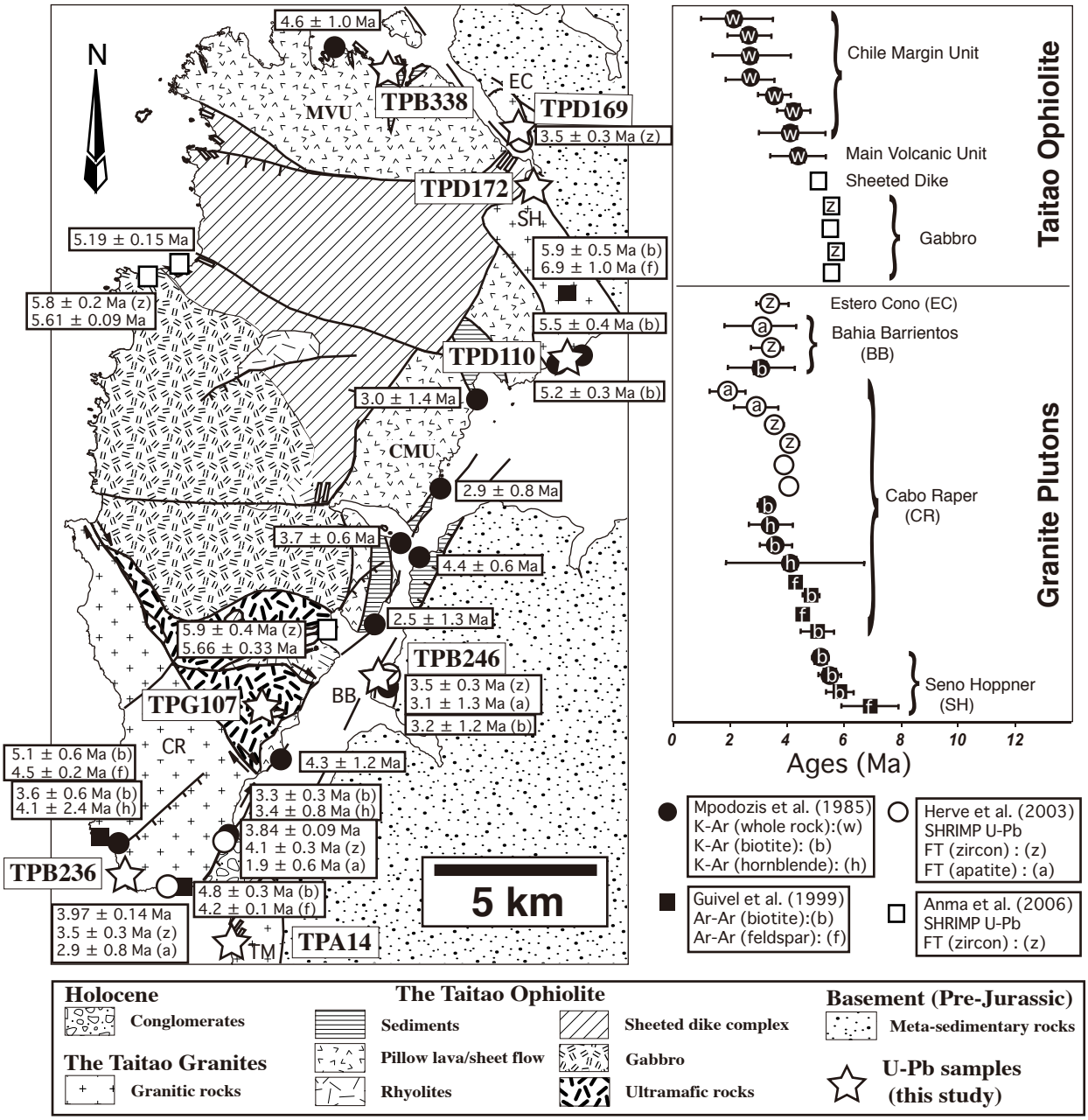
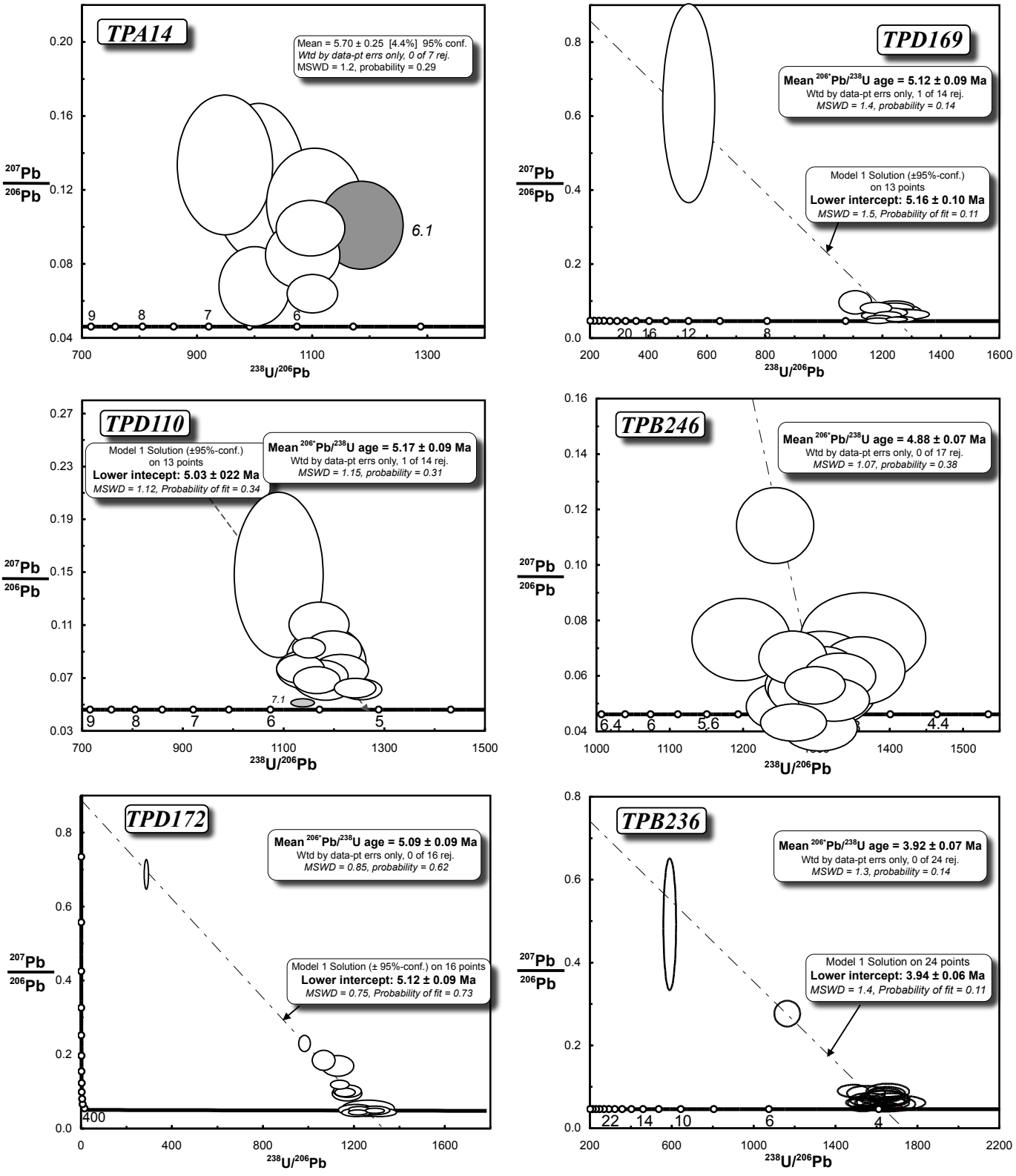


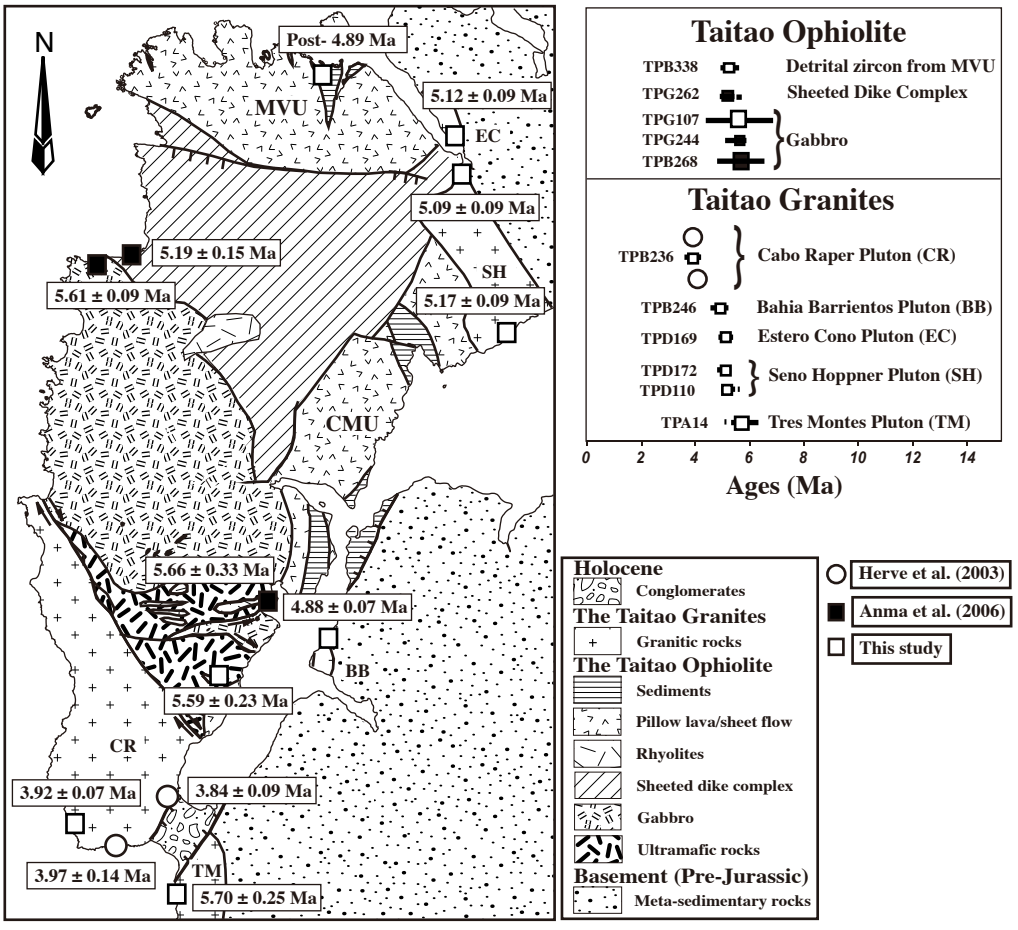
Anma et al. (2009) Fig. 1



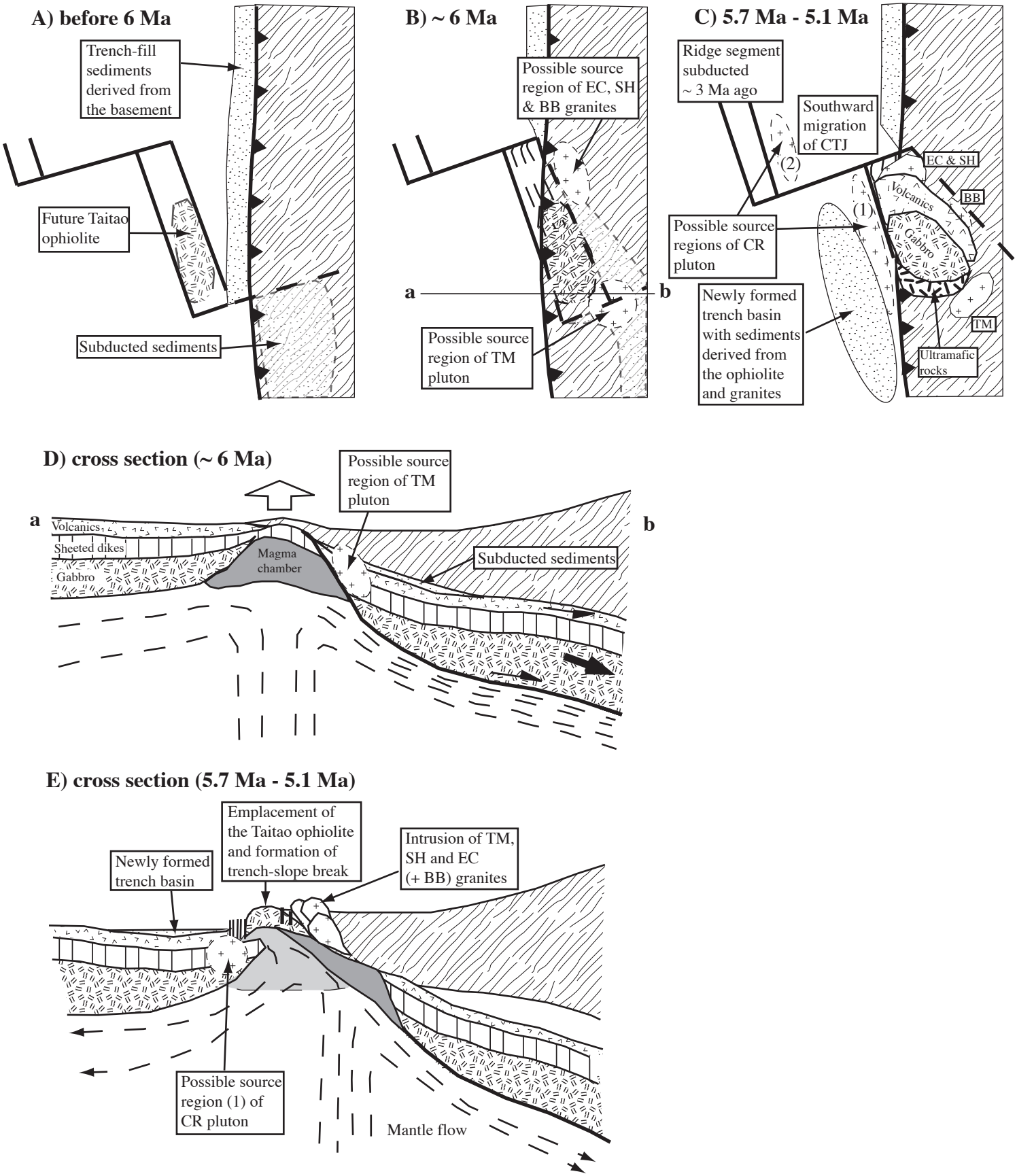
Anma et al. (2009) Fig. 2



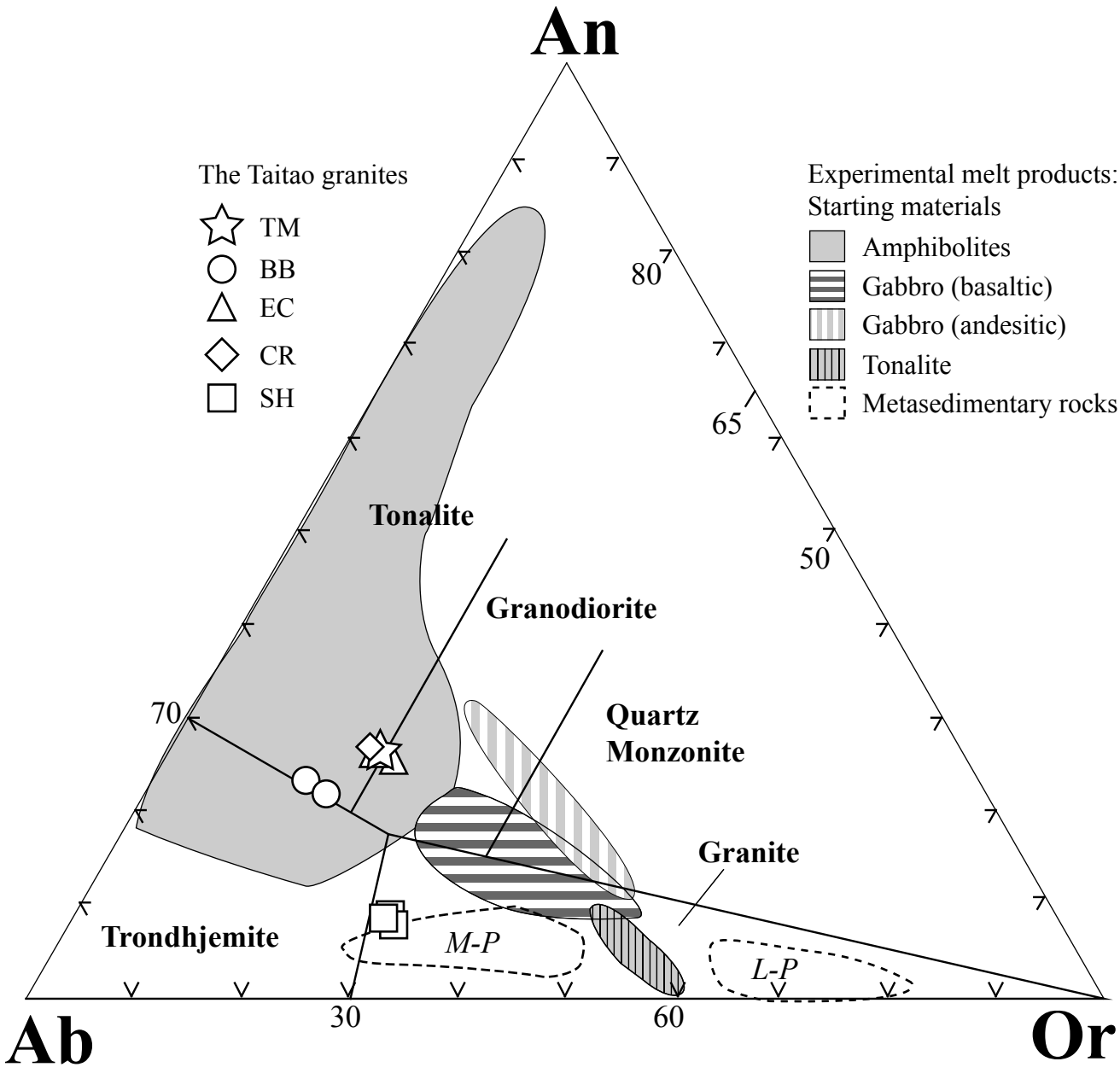
Anma et al (2009) Fig. 3



Anma et al. (2009) Fig.4



Anma et al. (2009) Fig. 5



Anma et al. (2009) Fig. 6

Figure Captions

Figure 1: Tectonic map of the Southeast Pacific margin. The Nazca plate and Antarctic plate separated by spreading ridges of the Chile ridge system, subduct beneath the South American plate with convergent rate of 9 cm/yr and 2 cm/yr, respectively. The Chile ridge system is disrupted by numerous fracture zones. Three ridge collision events took place offshore of the Taitao peninsula during 6 Ma - present.

Figure 2: Geological map of the Taitao ophiolite and available radiometric age data. The geological map was modified based on Anma et al. (2006). Age data source; K-Ar ages: Mpodozis et al. (1985), Ar-Ar ages: Bourgois et al. (1992, 1993), Guivel et al. (1999); Fission Track (FT) and SHRIMP U-Pb data: Herve et al. (2003) and Anma et al. (2006). Zircon SHRIMP data are indicated by open circles (Herve et al., 2003) and squares (Anma et al., 2006) without notation of the mineral phase. Stars: sample localities for U-Pb dating (this study). Abbreviations in the geological map; TM: Tres Montes pluton, SH: Seno Hoppner pluton, EC: Estero Cono pluton, BB: Bahia Barrientos intrusion, CR: Cabo Raper pluton, MVU: Main Volcanic Unit, CMU: Chile Margin Unit.

Figure 3: SHRIMP analytical data for zircons separated from the Taitao granites. The ellipses in the Tera-Wasserburg concordia plot represents ± 1 sigma precision. Data are listed in table 1.

Figure 4: Summary of SHRIMP U-Pb data for the Taitao granites and sediments,

sheeted dike and gabbros of the Taitao ophiolite. The standard deviation (one sigma error range) for the current SHRIMP U-Pb dating is smaller than the size of symbols in top-right figure. Abbreviations are same as in figure 2.

Figure 5: Subduction of the Chile ridge and emplacement of the Taitao ophiolite and the Taitao granites. A) to C): plan view. D) and E): cross section. See text for the details. Abbreviations are same as in figure 2.

Figure 6: Normative An-Ab-Or compositions for the Taitao granites (data listed in Table 4 plus unpublished data). An-Ab-Or fields of granitic melts obtained by high T and high P (under pressure conditions less than 1 GPa) experimental studies are shown. Data source: Beard and Lofgren, 1990; Rapp et al., 1991; Patino Douce, 1995; Rapp and Watson, 1995; Springer and Seck, 1997; Sisson et al., 2005 for amphibolites, gabbros and tonalite and Patino Douce and Johnston, 1991; Vielzeuf and Montel, 1994; Patino Douce and Harris, 1998; Spicer et al., 2004 for metasedimentary rocks. Abbreviations are same as in figure 2.