ION MICROPROBE AGES OF ZIRCONS FROM BLUESCHISTS, SYROS, GREECE

CHENEY, J., Dept. of Geology, Amherst College, Amherst, MA 01002, jtcheney@unix.amherst.edu; SCHUMACHER, J. C., Dept. of Geology, Bristol Univ., UK; COATH, C.D., Dept. of Earth & Space Science, UCLA; **BRADY, J.B.**, DiFILLIPO, E.L, Smith College; ARGYROU, E.N., OTIS, J.W., SPERRY, A.J., SABLE, J.E., Amherst College; SKEMER, P.A., Pomona College

The metamorphic rocks of Syros consist principally of alternating schists and marbles that are locally punctuated by heterogeneous mafic igneous suites containing serpentinite, meta-gabbro, and meta-basalt (Brady et al., 2000). All these rocks have undergone high-pressure metamorphism in the Eurasia-Africa subduction zone during the Alpine Orogeny. There is one penetrative fabric that affects nearly all of the rocks of Syros. This fabric is defined by high-pressure minerals and it is parallel to lithologic contacts (Dixon & Ridley, 1987). In the north, at the top of the sequence, post tectonic greenschist metamorphism is sporadically developed, whereas in the south, the greenschists are more extensive (Dixon & Ridley, 1987).

The complexity of the PTt path that was followed by these rocks during subduction is indicated by multiple generations of hi-P minerals the occurrence of hornblende as inclusions in glaucophane, intricate chemical zoning of high-P minerals, and partial to complete "euhedral" psuedomorphs of lawsonite that contain inclusions of garnet. Some glaucophane, the lawsonite, and the psuedomorphs appear to postdate the main fabric.

Preliminary 206Pb/238U dates of zircons from two blueschists from the north end of Syros have been obtained from the UCLA ion microprobe. Five dates of three euhedral, crosscutting zircons in one sample average 83 +/- 10 Ma. These results are consistent with the 78 Ma zircon date of Broecker & Enders (1999) and probably represent the true metamorphic age for all the rocks, as they suggested. In a second sample, 4 ages from one large (>150 microns) euhedral zircon gave a range of ages from 81 +/- 2 to 54 +/- 4 Ma. The complexity of this zircon may be due to its occurrence in a blueschist block from the Kampos melange zone. The younger dates may reflect reequilibration that postdates transference of the Syros units to the upper plate of the subduction zone, whereas the older dates may record peak P-T conditions resulting from the slowing of the downgoing slab (Schumacher, 2000) in the late Cretaceous.