DR2005075

TABLE 1. OXYGEN ISOTOPE VALUES FOR QUARTZ AND CALCITE AND FLUID-INCLUSION HOMOGENIZATION TEMPERATURES IN STRAIN FRINGES

		PS 3	PS4			PS5		
		$\delta^{18}O_q$	$\delta^{18}O_q$	$\delta^{18}O_{cc}$	T_h	$\delta^{18}O_q$	$\delta^{18}O_{cc}$	T_h
Oldest	I	--	19.69	16.46	157.6 ± 4.0	19.52	16.34	151.9 ± 3.6
	II	19.97	19.83	16.44	n = 8	19.81	15.68	n = 5
		20.00	19.98	16.34		19.98	16.33	
	III	19.93	19.41	16.16	160.6 ± 3.7	19.84	15.96	146.7 ± 3.2
		19.62	19.28	16.39	n = 5	19.43	16.14	n = 5
Youngest		19.71	19.45	16.29		19.58	16.26	

Note: Isotope values are stated relative to VSMOW (Vienna standard mean ocean water). PS3, PS4, and PS5 are three strain fringe analyzed; PS3 has insufficient calcite to analyze. Homogenization temperatures are combined for zones I and II, and position within each zone is not indicated because there are no significant variations. Errors are 1σ and number of analyses is indicated.

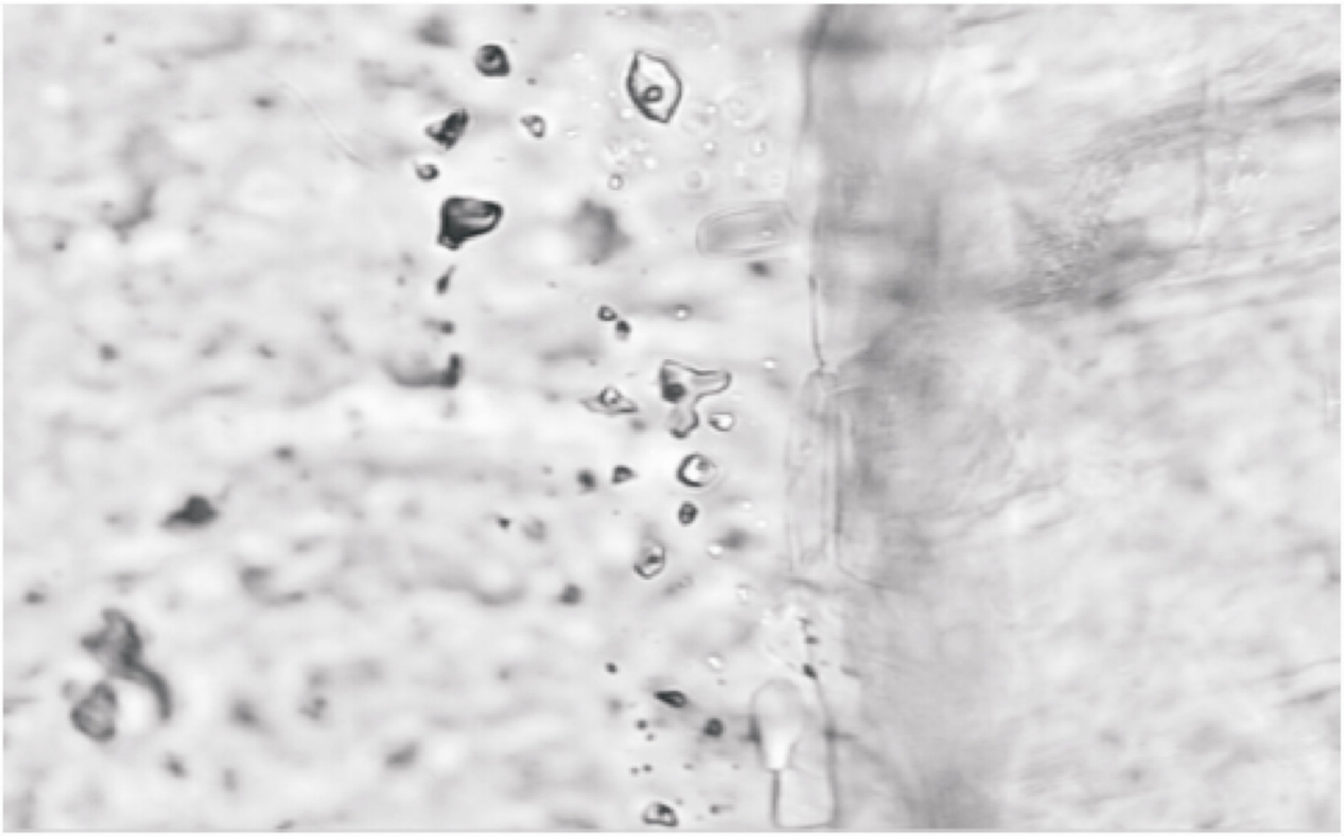
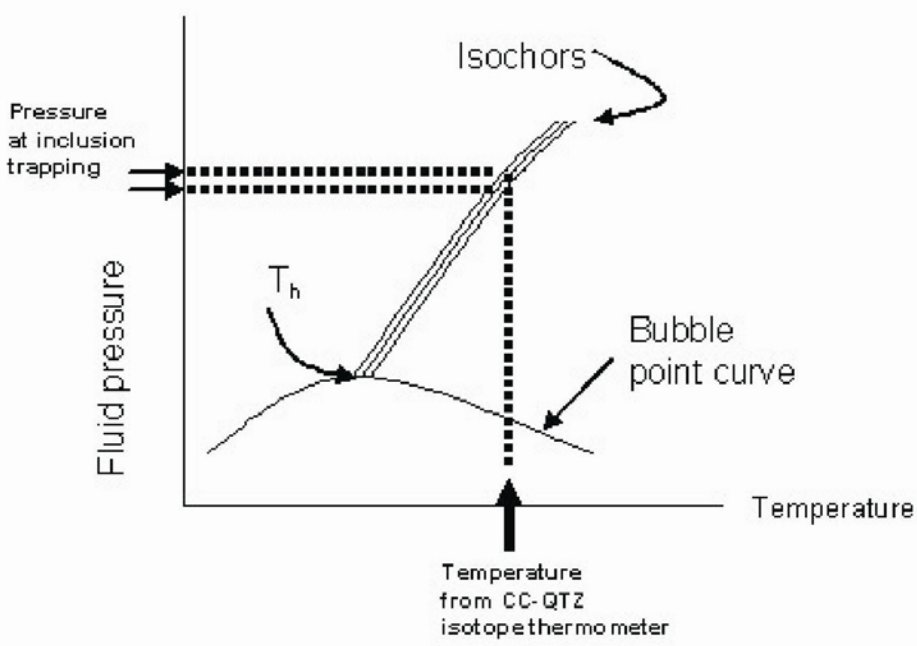


Figure 3. Example of primary, aqueous two-phase fluid inclusion used in pilot study. The boundary between quartz and calcite fibers is runs vertically; calcite is on right and quartz is on left.



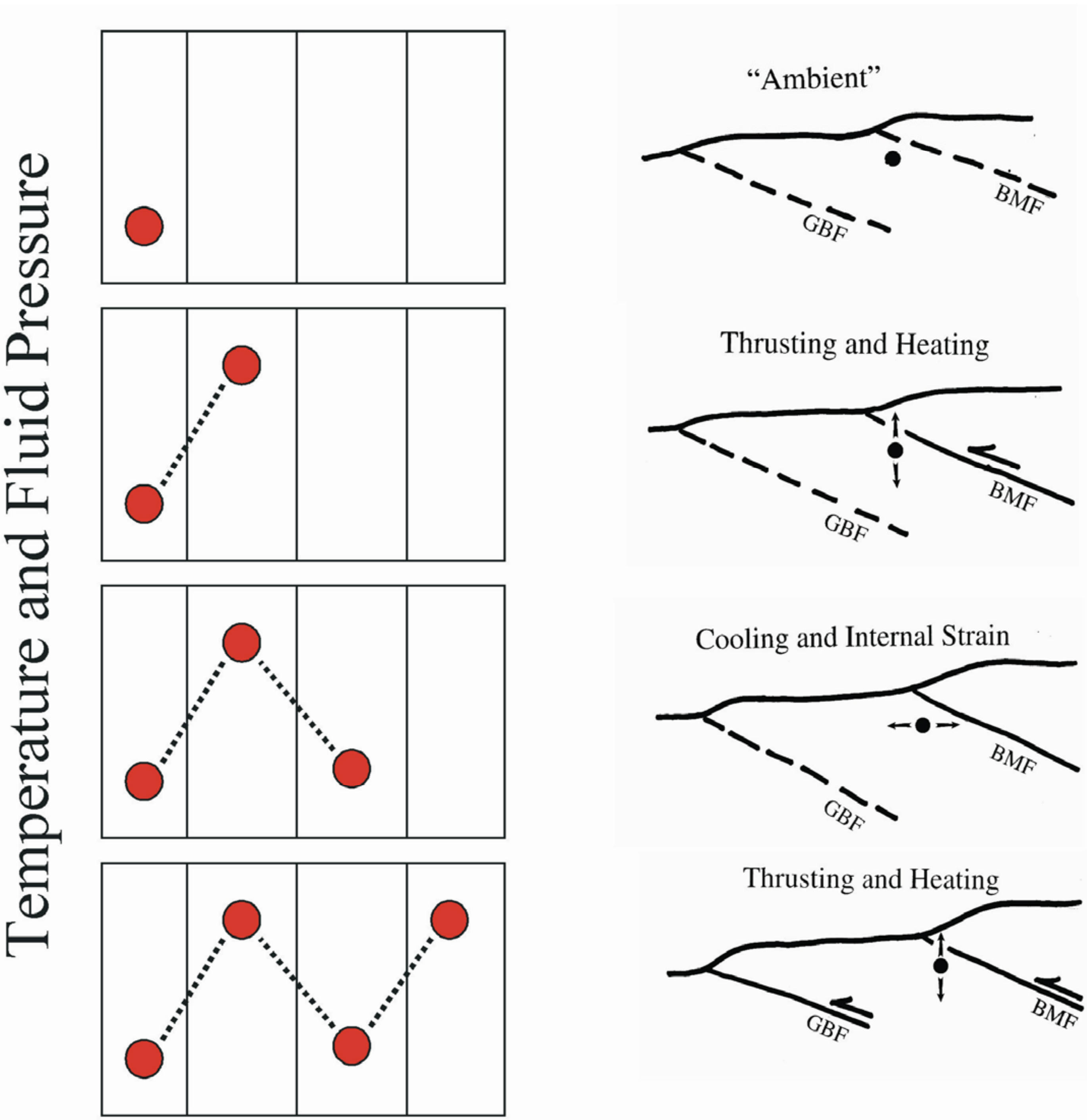
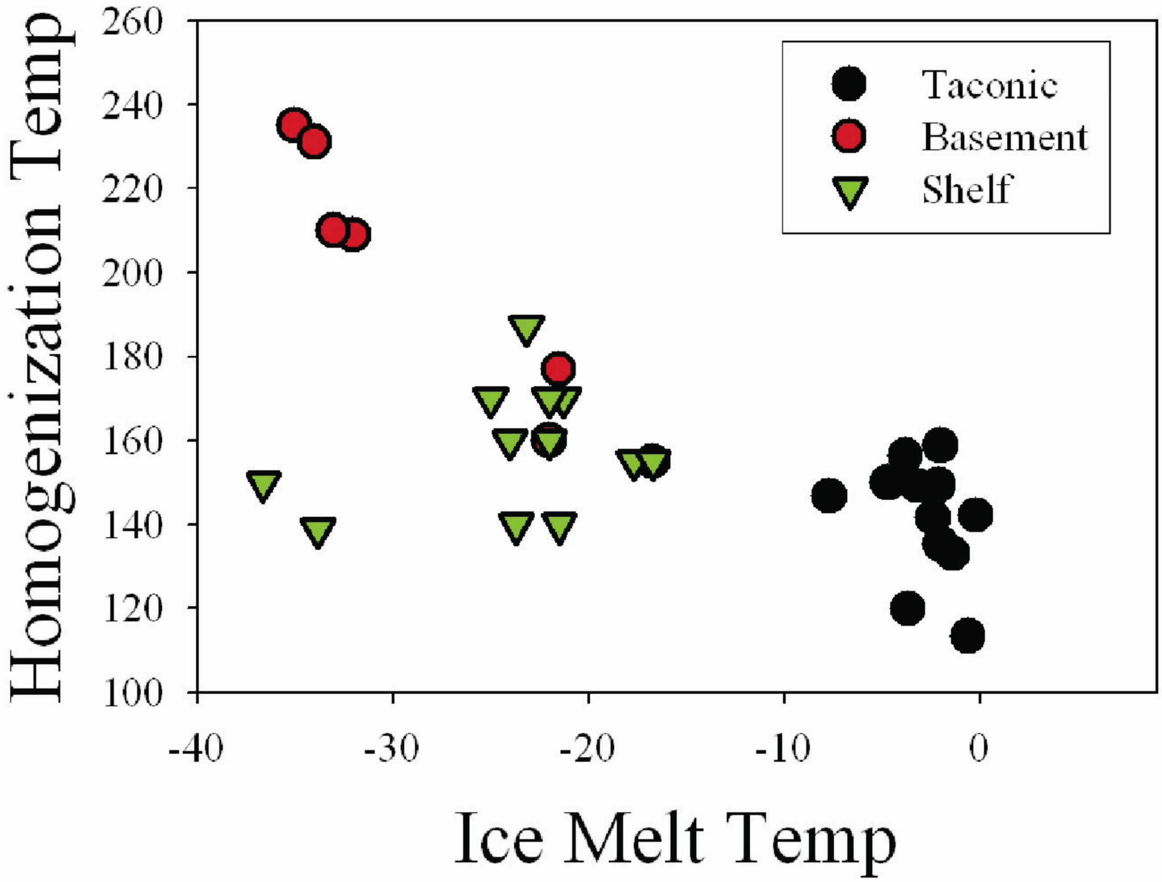


Illustration of model proposed in the paper. The top figures illustrate the conditions before any strain fringe growth. Time progresses downward in the sketches and from left to right on the graphs, illustrating how we relate motion on the Bird Mountain Fault and the temperature and fluid pressure at our sample site.



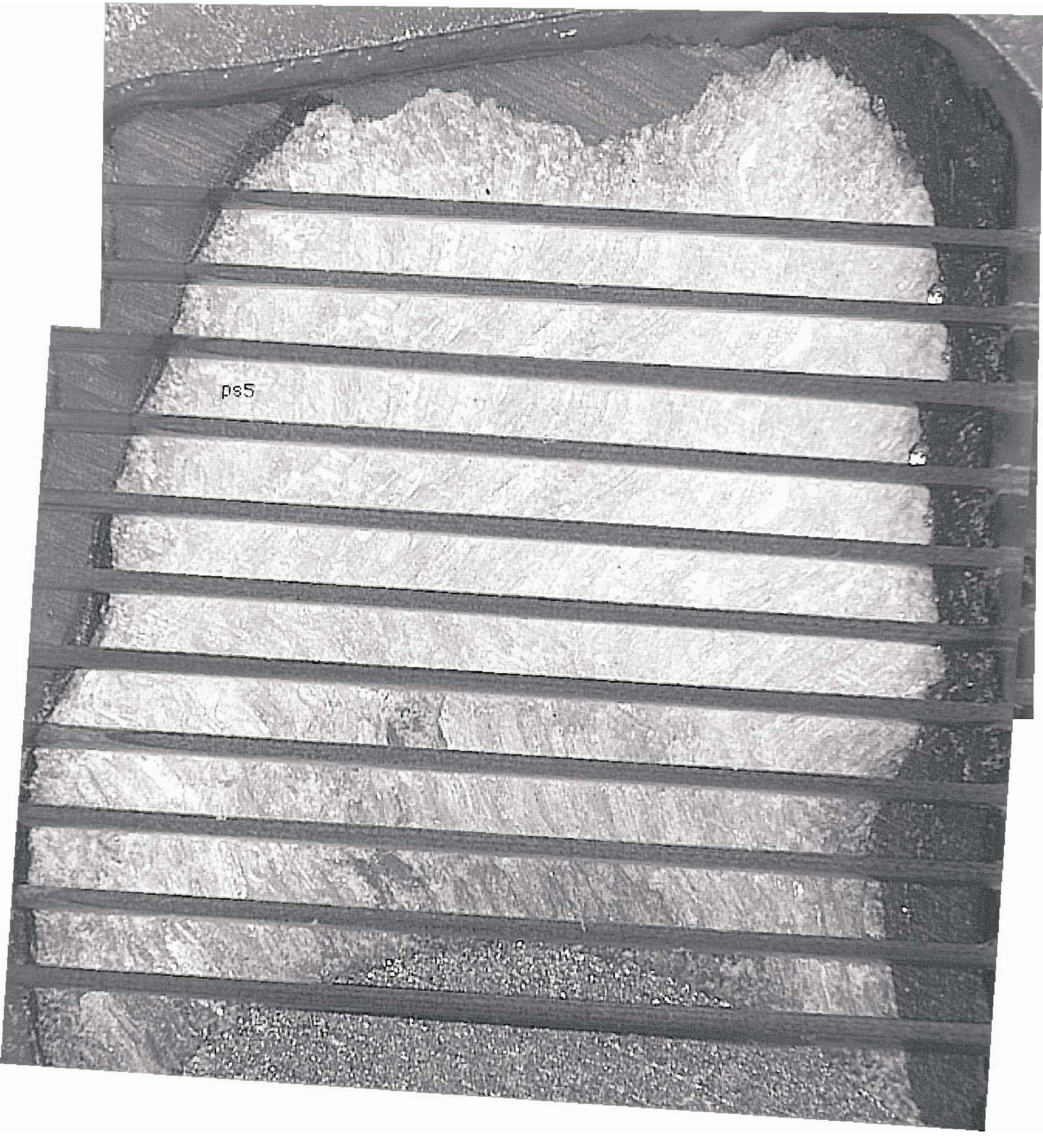
Homogenization Temp
260
240
220
200
180
160
140
120
100
-40
-30
-20
-10
0
Ice Melt Temp
Taconic
Basement
Shelf

The samples for this study came from a road cut approximately 5 miles north of Poultney, Vt. on the east side of Rt. 30. The road cut exposes Hatch Hill Formation, a fine-grained, sulfidic black slate that typically weathers rusty. Within the outcrop are two isoclinal mesoscopic folds, defining an east-over-west asymmetry. The fold hinges plunge gently southward and the slaty cleavage dips approximately 45 degrees east, parallel to the fold axial planes. These orientations are typical of folds found throughout the Giddings Brook thrust sheet. The pyrite nodules are confined to a bed approximately 5 cm thick that wraps around the fold. Other than the strain fringes around the pyrite spheroids, no other mineralization is present. In fact, throughout the Giddings Brook sheet veins are generally absent. One may find descriptions to field trip localities in several NEIGC Guidebooks, such as Goldstein et al. (1997). Other studies of deformation in this region of the Taconics include Goldstein et al. (1998 and 1995).

Goldstein, A.G., Knight, J. and Kimball, K., 1998, Deformed Graptolites, finite strain and volume loss during cleavage formation in rocks of the Taconic slate belt, New York and Vermont: Jour. Str. Geol. Vol. 20, p. 1769-1782.

Goldstein, A., Chan, Y., Pickens, J. and Crespi, J., 1997, Deformation of the Taconic Sequence, western Vermont and eastern New York, *in* Grover, T.W., Mango, H.N. and Hasenohr, E.J. (eds.), Guidebook to Fieldtrips in Vermont and Adjacent New Hampshire and New York, 1997 NEIGC, p. 1-31.

Goldstein, A.G., Pickens, J., Klepeis, K., and Linn, F., 1995, Finite strain heterogeneity and volume loss in slates of the Taconic Allochthon, Vermont, USA. Journal of Structural Geology, v. 17, p. 1207-1216.


ps5