

1 DR2010041

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3 Figure DR1: Palinspastic reconstruction of bridge 9840p2 (Figure 4c). Color code of zones corresponds to  
4 Figure 4c.

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6 Figure DR2.: Raman spectrum of the vapor bubble of inclusion p5ISO18 at room temperature and

7 simultaneously captured Ne emission lines (Table DR2). Peak positions of the methane ( $\nu_1$ ) symmetric  
8 stretching band and Ne emission lines were fit according to the parameters described by Lin et al (2007).

9 The true positions of the Ne lines are located at 2851.38 and 2972.44  $\text{cm}^{-1}$  and were used to correct for the  
10 absolute position of the methane peak. The corrected methane peak position for this inclusion is located at  
11 2916.81  $\text{cm}^{-1}$  (Table DR2). According to Equation (3) of Lin et al. (2007), this is equivalent to a pressure  
12 of 4.17 MPa (Table DR2).

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14 **TABLES**

15 Table DR1: Fluid inclusion results\* for FIAs in synkinematic quartz bridges 9840p2 and 9840p5.

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	n	T <sub>h</sub> (°C)	T <sub>m</sub> (°C)	S (wt. %)	CH <sub>4</sub> v <sub>l</sub>	P <sub>bub</sub> (MPa)	[CH <sub>4</sub> ] (ppm)	P <sub>h</sub> (MPa)
p2FIA1	9	139±1	-10.7±0.6	14.7	2916.78	4.29	2031.2	36.2
p2FIA2	3	136±3	-10.8±0.0	14.8				
p2FIA3	2	134±0	-11.3±0.0	15.3	2916.84	4.03	1835.0	32.6
p2FIA4	2	135±0	-11.3±0.0	15.3				
p2FIA5	4	135±1	-11.1±0.3	15.1				
p2FIA6	3	132±1	-10.8±0.5	14.8				
p2FIA7	2	138±0	-10.6±0.1	14.6	2916.78	4.34	2029.1	36.6
p2FIA8	3	137±2	-10.9±0.1	14.8				
p2FIA9	2	142±0	-10.5±0.0	14.5	2916.76	4.43	2148.6	38.3
p2FIA10	2	143±1	-10.9±0.1	14.8	2916.68	4.75	2272.3	42.3
p2FIA11	2	142±2	-10.9±0.1	14.9	2916.72	4.59	2211.4	40.3
p2FIA12	5	138±3	-11.0±0.4	15.0	2916.86	3.91	1862.2	31.7
p2FIA13	2	146±1	-11.1±0.1	15.1				
p2FIA14	4	143±2	-10.9±0.1	14.8				
p2FIA15	3	145±1	-10.5±0.2	14.5	2916.61	5.10	2470.0	47.1
p2FIA16	2	146±1	-10.6±0.3	14.5	2916.61	5.08	2486.4	47.0
p2FIA17	3	146±1	-10.7±0.1	14.7	2916.67	4.82	2391.2	43.7
p2FIA18	3	143±1	-10.8±0.1	14.8	2916.65	4.92	2355.4	44.5
p2FIA19	3	149±3	-10.9±0.1	14.9	2916.82	4.12	2168.7	35.4
p2FIA20	2	151±1	-10.8±0.0	14.8	2916.49	5.62	2788.2	54.8
p5FIA1	2	133±1	-10.3±0.0	14.3				
p5FIA2	2	127±0						
p5FIA3	2	136±2	-10.0±0.0	14.0	2916.81	4.17	1926.8	34.4
p5FIA4	3	135±4						
p5FIA5	4	136±1	-9.9±0.1	14.0	2916.82	4.15	1917.9	34.1

p5FIA6	2	145±0						
p5FIA7	2	149±1	-11.1±0.1	15.2	2916.53	5.46	2678.0	52.4
p5FIA8	2	145±0	-11.0±0.0	14.0				
p5FIA9	2	145±1	-10.7±0.0	14.7				
p5FIA10	3	140±0	-11.1±0.1	15.1				
p5FIA11	3	141±1						
p5FIA12	4	144±5	-10.9±0.2	14.9	2916.53	5.48	2579.8	52.0
p5FIA13	3	141±8	-10.2±0.0	14.2	2916.64	4.96	2324.8	44.7
p5FIA14	2	137±2	-11.2±0.0	15.1				
p5FIA15	3	135±1	-11.7±0.1	15.7				

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\*n is the number of inclusions,  $T_h$  is the average homogenization temperature,  $T_m$  is the average final ice melting temperature, S is the salinity in NaCl wt. % equivalent, “CH<sub>4</sub> v<sub>1</sub>” is the corrected methane Raman peak position of the bubble at room temperature,  $P_{\text{bub}}$  is the methane pressure inside the bubble at room temperature, [CH<sub>4</sub>] is the bulk methane concentration in the inclusion, and  $P_h$  is the homogenization pressure (or minimum trapping pressure)

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18 Table DR2: Fluid inclusion results\* for isolated/single inclusions in synkinematic quartz bridges 9840p2  
 19 and 9840p5.

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	T <sub>h</sub> (°C)	T <sub>m</sub> (°C)	S (wt. %)	CH <sub>4</sub> v <sub>1</sub>	P <sub>bub</sub> (MPa)	[CH <sub>4</sub> ] ppm	P <sub>h</sub> (MPa)
p2ISO1	138	-11.1	15.1				
p2ISO2	138	-11.0	15.0	2916.84	4.01	1900.4	32.8
p2ISO3	136	-11.4	15.4				
p2ISO4	134	-11.0	15.0	2916.87	3.89	1780.2	30.9
p2ISO5	135	-11.0	15.0				
p2ISO6	134	-10.7	14.7	2916.84	4.01	1826.1	32.2
p2ISO7	133	-11.0	15.0				
p2ISO8	132	-10.9	14.9				
p2ISO9	138	-10.5	14.5	2916.74	4.50	2090.3	38.6
p2ISO10	137	-10.8	14.8				
p2ISO11	137	-10.9	14.9	2916.74	4.50	2069.5	38.4
p2ISO12	141	-10.7	14.7	2916.78	4.34	2090.6	27.1
p2ISO13	141	-10.7	14.7				
p2ISO14	141	-10.7	14.7				
p2ISO15	145	-10.9	14.9	2916.50	5.60	2644.0	53.6
p2ISO16	146	-10.7	14.7	2916.53	5.44	2616.8	51.7
p2ISO17	144	-10.6	14.6				
p2ISO18	150	-11.5	15.5				
p2ISO19	145	-11.0	15.0				
p2ISO20	141						
p2ISO21	154						
p5ISO1	133						
p5ISO2	130						
p5ISO3	135						
p5ISO4	137			2916.77	4.36	2017.6	36.8

p5ISO5	152			2916.59	5.21	2691.6	49.6
p5ISO6	139						
p5ISO7	150			2916.51	5.53	2756.0	53.5
p5ISO8	141			2916.76	4.38	2109.2	37.6
p5ISO9	138	-10.6	14.6	2916.78	4.29	2011.1	36.1
p5ISO10	146						
p5ISO11	144	-10.0	14.0				
p5ISO12	136	-10.8	14.8				
p5ISO13	134						
p5ISO14	133						
p5ISO15	131	-10.6	14.6				
p5ISO16	131						
p5ISO17	145	-11.1	15.1				
p5ISO18	138	-11.2	15.2	2916.81	4.17	1965.8	34.7

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\*See Table DR1 footnote for meanings of column headings.

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Figure DR1.  
Becker et al., 2009

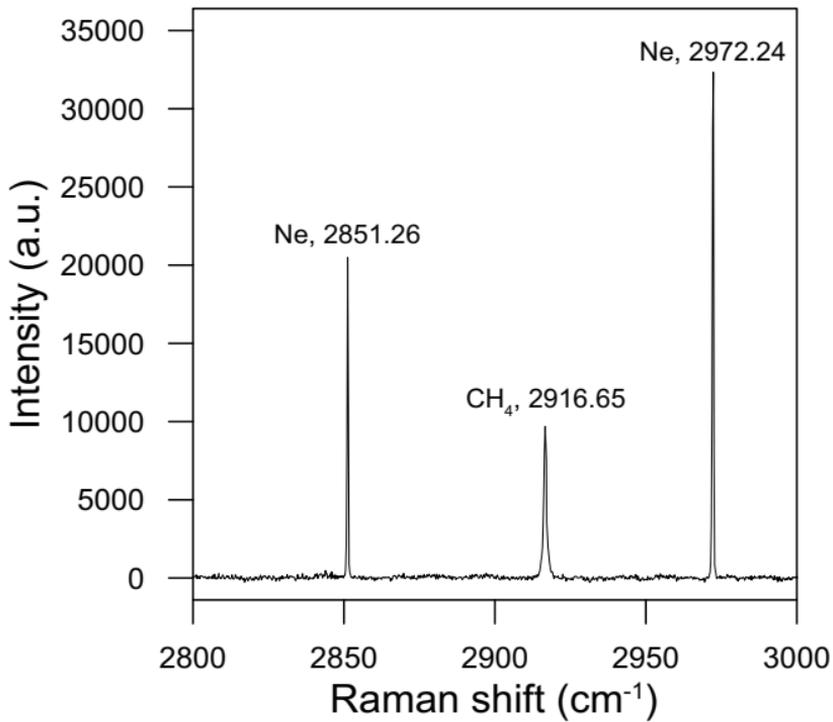


Figure DR2.