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O isotope zoning in garnet and staurolite: Evidence for closed-system mineral growth during regional metamorphism

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For deposit: Tables 1-3

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Table 1. Analyses of standards UW Gore Mountain garnet, NBS-28 quartz, and NBS-30 biotite.

Date	Analy #	Material	Power (W)	BrF ₅	NC (mT)	μmole	δ ¹³ C (‰)	δ ¹⁸ O (‰)	Yield (%)
1/4/92	2-272-1	NBS-28 Qtz	3,8	30"	1	9.4	-28.06	9.46	
1/4/92	2-272-2	NBS-28 Qtz	3,8	1<30"	0	10.5	-28.02	9.32	
1/4/92	2-272-3	NBS-28 Qtz	3,8	30"	0	9.0	-28.13	9.58	
1/4/92	2-272-4	NBS-28 Qtz	3,8	1<30"	0	7.4	-28.13	9.35	
1/4/92	2-272-5	NBS-28 Qtz	3,8	30"	0	10.8	-28.08	9.33	
1/4/92	2-272-6	NBS-28 Qtz	3,8	1<30"	0	7.9	-27.98	9.42	
1/4/92	2-272-7	GMGrt (powder)	2,6	30"	0	12.3	-28.11	6.25	
1/4/92	2-272-8	GMGrt (powder)	2,7	1<30"	0	12.1	-28.05	6.39	
1/4/92	2-272-9	GMGrt (powder)	2,7	30"	0	15.3	-28.10	6.17	
1/4/92	2-272-10	GMGrt (powder)	2,7	1<30"	0	17.5	-28.08	6.18	
1/4/92	2-272-11	GMGrt (powder)	2,7	30"	0	17.5	-28.06	6.18	
1/4/92	2-272-12	GMGrt (powder)	2,7	1<30"	0	11.8	-28.09	6.23	
1/4/92	2-272-13	GMGrt (powder)	2,7	30"	0	16.3	-28.06	6.13	
1/4/92	2-274-1	GMGrt (powder)	2,7	1<30"	0	21.3	-28.05	6.40	
1/4/92	2-274-2	GMGrt (powder)	2,7	30"	0	15.3	-28.04	6.23	
1/4/92	2-274-3	GMGrt (powder)	2,7	1<30"	0	18.9	-28.08	6.30	
1/4/92	2-274-4	GMGrt (powder)	2,7	30"	0	16.1	-28.10	6.13	
1/4/92	2-274-5	GMGrt (powder)	2,8	1<30"	0	12.5	-28.08	6.16	
1/4/92	2-274-6	NBS-28 Qtz	3,8	30"	0	5.8	-28.20	9.29	
1/8/92	2-280-1	GMGrt (powder)	2,7	30"	1	26.6	-28.08	6.29	
1/8/92	2-280-2	GMGrt (powder)	2,8	1<30"	1	28.8	-28.04	6.32	
1/8/92	2-280-3	GMGrt (powder)	2,8	2<30"	1	28.6	-28.08	6.26	
1/8/92	2-280-4	GMGrt (powder)	2,8	3<30"	1	24.8	-28.09	6.21	
1/8/92	2-280-5	GMGrt (powder)	2,8	4<30"	1	33.1	-28.07	6.27	
1/8/92	2-280-6	GMGrt (powder)	2,8	5<30"	0	38.1	-28.11	6.14	
1/8/92	2-280-7	GMGrt (powder)	2,8	6<30"	0	29.9	-28.05	6.22	
1/8/92	2-280-8	GMGrt (chip)	2,8	30"	0	8.8	-28.20	6.35	99±3
1/8/92	2-280-9	GMGrt (chip)	2,8	1<30"	1	11.4	-28.18	6.36	101±2
1/8/92	2-280-10	GMGrt (chip)	2,8	2<30"	1	12.2	-28.18	6.20	99±2
1/8/92	2-280-11	GMGrt (chip)	2,8	3<30"	1	17.4	-28.15	6.26	98±1.5
1/8/92	2-280-12	GMGrt (chip)	2,8	4<30"	1	16.9	-28.21	6.25	97±1.5
1/8/92	2-280-13	GMGrt (chip)	2,8	5<30"	1	14.2	-28.16	6.21	96±2
1/8/92	2-280-14	GMGrt (chip)	2,8	6<30"	1	15.7	-28.16	6.25	100±1.5
1/8/92	2-280-15	GMGrt (chip)	2,8	7<30"	1	24.9	-28.09	6.29	101±1
1/8/92	2-280-16	GMGrt (chip)	2,8	8<30"	1	19.3	-28.14	6.18	100±1.5
1/8/92	2-280-17	GMGrt (chip)	2,8	9<30"	1	25.0	-28.11	6.14	101±1
1/8/92	2-280-18	GMGrt (chip)	1.5,8	10<30"	1	27.8	-28.13	6.18	100±1
1/8/92	2-280-19	GMGrt (chip)	1.5,8	11<30"	0	6.5	-28.30	5.68	96±4
3/6/92	3-48-1	GMGrt (powder)	2,9	15"	1	38.6	-28.03	6.03	
3/6/92	3-48-2	GMGrt (powder)	2,9	15"	1	14.8	-28.03	5.80	
3/6/92	3-48-3	GMGrt (powder)	2,9	15"	0	16.6	-28.03	5.62	
3/6/92	3-48-4	GMGrt (powder)	2,9	15"	1	15.5	-28.05	5.65	
3/6/92	3-48-5	GMGrt (powder)	2,9	15"	1	16.5	-28.08	5.78	
3/6/92	3-48-6	GMGrt (Chip)	2,9	20"	0	13.8	-28.15	6.00	100±2
3/6/92	3-48-7	GMGrt (Chip)	2,9	1<20"	0	8.9	-28.04	5.71	95±3
3/6/92	3-48-8	GMGrt (Chip)	2,9	20"	0	6.5	-28.09	5.98	100±4
3/6/92	3-48-9	GMGrt (Chip)	2,9	1<20"	0	6.2	-28.05	5.59	99±4
3/6/92	3-48-10	GMGrt (Chip)	2,9	20"	1	5.6	-28.09	5.78	94±4.5
3/6/92	3-48-11	GMGrt (Chip)	2,9	1<20"	1	4.8	-28.19	5.92	100±5
3/6/92	3-48-12	GMGrt (Chip)	2,9	20"	1	3.9	-28.05	5.65	103±6.5
3/6/92	3-48-13	GMGrt (Chip)	2,9	1<20"	0	3.8	-28.08	5.82	100±6.5
3/6/92	3-48-14	GMGrt (Chip)	2,9	20"	0	3.4	-28.16	5.91	94±7.5
3/6/92	3-48-15	GMGrt (Chip)	2,9	1<20"	0	3.6	-28.18	5.79	98±7
3/6/92	3-48-16	GMGrt (Chip)	2,9	20"	0	2.5	-28.19	6.12	98±10
3/6/92	3-48-17	GMGrt (Chip)	2,9	1<20"	0	2.9	-28.13	5.71	116±8.5
3/6/92	3-48-18	GMGrt (powder)	2,9	15"	1	15.8	-28.08	5.59	
3/6/92	3-48-19	GMGrt (powder)	2,9	15"	0	20.2	-28.09	5.61	
5/1/92	3-100-1	GMGrt (Powder)	2,9	15"	1	21.0	-28.06	5.78	
5/1/92	3-100-2	GMGrt (Powder)	2,9	15"	1	14.7	-28.15	5.79	

5/1/92	3-100-3	GMGr (Powder)	2,9	15"	3	10.5	-28.15	5.77
5/1/92	3-100-4	GMGr (Powder)	2,9	15"	2	12.2	-28.14	5.79
5/2/92	3-102-1	GMGr (Powder)	2,9	15"	1	41.8	-28.00	6.21
5/2/92	3-102-2	GMGr (Powder)	2,9	15"	1	22.0	-27.98	6.12
5/2/92	3-102-3	GMGr (Powder)	2,9	15"	1	15.0	-28.04	5.91
5/2/92	3-102-4	GMGr (Powder)	2,9	15"	1	20.6	-27.96	6.22
5/2/92	3-102-5	GMGr (Powder)	2,9	15"	1	19.9	-27.87	6.28
5/2/92	3-102-18	GMGr (Powder)	2,9	15"	1	35.6	-28.02	5.93
5/2/92	3-102-19	GMGr (Powder)	2,9	15"	1	18.2	-27.98	5.94
5/3/92	3-104-1	GMGr (Powder)	2,9	15"	1	33.4	-27.98	6.32*
5/3/92	3-104-2	GMGr (Powder)	2,9	15"	1	12.0	-27.99	5.95
5/3/92	3-104-3	GMGr (Powder)	2,9	15"	1	15.1	-28.01	5.88
5/3/92	3-104-4	GMGr (Powder)	2,9	15"	0	17.9	-28.00	5.96
5/3/92	3-104-5	GMGr (Powder)	2,9	15"	0	11.6	-27.99	6.02
5/3/92	3-104-18	GMGr (Powder)	2,9	15"	0	36.2	-27.96	6.15
5/3/92	3-104-19	GMGr (Powder)	2,9	15"	1	21.4	-27.92	6.21
5/5/92	3-108-1	GMGr (Powder)	2,9	15"	1	24.6	-27.92	5.88
5/5/92	3-108-2	GMGr (Powder)	2,9	15"	0	16.1	-28.03	6.08
5/5/92	3-108-3	GMGr (Powder)	2,9	15"	0	13.0	-28.01	6.03
5/5/92	3-108-4	GMGr (Powder)	2,9	15"	0	12.1	-27.99	5.95
6/13/92	3-122-1	GMGr (Powder)	2,9	1<20"	1	37.8	-27.99	6.00
6/13/92	3-122-2	GMGr (Powder)	2,9	15"	1	12.7	-27.99	5.76
6/13/92	3-122-3	GMGr (Powder)	2,9	15"	1	18.0	-28.02	5.95
6/13/92	3-122-4	GMGr (Powder)	2,9	15"	1	16.2	-28.04	5.72
6/13/92	3-122-5	GMGr (Powder)	2,9	15"	1	19.1	-28.00	5.97
6/13/92	3-122-16	GMGr (Powder)	2,9	15"	0	30.7	-27.98	5.91
6/13/92	3-122-17	GMGr (Powder)	2,9	15"	0	15.0	-28.05	5.81
6/13/92	3-122-18	GMGr (Powder)	2,9	15"	0	9.9	-28.04	5.56
6/13/92	3-122-19	GMGr (Powder)	2,9	15"	0	12.1	-28.05	5.64
6/17/92	3-126-1	GMGr (Powder)	2,9	1<20"	1	29.0	-27.99	6.14*
6/17/92	3-126-2	GMGr (Powder)	2,9	15"	1	8.8	-28.03	5.34*,**
6/17/92	3-126-3	GMGr (Powder)	2,9	15"	1	9.9	-28.04	5.62
6/17/92	3-126-4	GMGr (Powder)	2,9	15"	0	11.5	-28.04	5.85
6/17/92	3-126-5	GMGr (Powder)	2,9	15"	0	9.7	-28.02	5.65
6/17/92	3-126-6	GMGr (Powder)	2,9	15"	0	8.2	-28.01	5.51
6/22/92	3-128-1	GMGr (Powder)	2,9	1<20"	1	37.7	-28.04	5.81*
6/22/92	3-128-2	GMGr (Powder)	2,9	15"	0	6.8	-28.08	5.07
6/22/92	3-128-3	GMGr (Powder)	2,9	15"	1	10.2	-28.05	5.38
6/22/92	3-128-4	GMGr (Powder)	2,9	15"	1	8.1	-28.08	5.26
6/22/92	3-128-5	GMGr (Powder)	2,9	15"	0	13.7	-28.08	5.37
9/1/92	3-216-1	GMGr (Powder)	2,9	15"	1	26.0	-27.98	6.15*
9/1/92	3-216-2	GMGr (Powder)	2,9	15"	1	10.0	-28.03	5.92
9/1/92	3-216-3	GMGr (Powder)	2,9	15"	1	10.4	-28.02	5.94
9/1/92	3-216-4	GMGr (Powder)	2,9	15"	1	13.7	-28.04	5.96
9/1/92	3-216-5	GMGr (Powder)	2,9	15"	1	12.9	-28.05	5.95
9/1/92	3-216-18	GMGr (Powder)	2,9	15"	0	9.9	-28.06	5.87
9/1/92	3-216-19	GMGr (Powder)	2,9	15"	0	26.8	-28.05	5.95
9/2/92	3-218-1	GMGr (Powder)	2,9	15"	1	35.8	-28.02	6.07
9/2/92	3-218-2	GMGr (Powder)	2,9	15"	0	15.2	-28.04	6.07
9/2/92	3-218-3	GMGr (Powder)	2,9	15"	0	11.7	-28.01	5.95
9/2/92	3-218-4	GMGr (Powder)	2,9	15"	0	11.8	-28.04	6.04
9/2/92	3-218-5	GMGr (Powder)	2,9	15"	1	12.9	-28.03	5.97
9/3/92	3-220-1	GMGr (Powder)	2,9	15"	0	17.1	-28.00	6.00
9/3/92	3-220-2	GMGr (Powder)	2,9	15"	1	7.6	-28.02	5.91
9/3/92	3-220-3	GMGr (Powder)	2,9	15"	0	14.0	-28.06	5.91
9/3/92	3-220-4	GMGr (Powder)	2,9	15"	0	10.9	-28.04	5.98
9/3/92	3-220-5	GMGr (Powder)	2,9	15"	0	10.1	-28.03	5.98
9/3/92	3-220-18	GMGr (Powder)	2,9	15"	0	14.7	-28.06	6.00
9/3/92	3-220-19	GMGr (Powder)	2,9	15"	0	30.4	-28.02	6.18*
9/4/92	3-222-1	GMGr (Powder)	2,9	15"	1	23.5	-28.02	5.92
9/4/92	3-222-2	GMGr (Powder)	2,9	15"	1	18.5	-28.00	6.06

9/4/92	3-222-3	GMGr (Powder)	2,9	15"	1	20.2	-28.00	6.06
9/4/92	3-222-4	GMGr (Powder)	2,9	15"	0	15.3	-28.04	6.15
9/4/92	3-222-5	GMGr (Powder)	2,9	15"	0	12.1	-28.01	6.01
9/4/92	3-222-18	GMGr (Powder)	2,9	15"	0	15.5	-28.06	6.00
9/4/92	3-222-19	GMGr (Powder)	2,9	15"	0	26.5	-27.98	6.06
9/5/92	3-224-1	GMGr (Powder)	2,9	15"	1	17.0	-28.01	5.93
9/5/92	3-224-2	GMGr (Powder)	2,9	15"	0	10.9	-28.02	5.97
9/5/92	3-224-3	GMGr (Powder)	2,9	15"	0	9.7	-28.01	5.95
9/5/92	3-224-4	GMGr (Powder)	2,9	15"	0	13.7	-28.02	6.04
9/5/92	3-224-19	GMGr (Powder)	2,9	15"	0	13.1	-28.03	5.94
9/7/92	3-226-1	GMGr (Powder)	2,9	15"	0	23.7	-28.04	5.98
9/7/92	3-226-2	GMGr (Powder)	2,9	15"	0	17.1	-28.00	6.09
9/7/92	3-226-3	GMGr (Powder)	2,9	15"	0	19.5	-28.04	6.10
9/7/92	3-226-4	GMGr (Powder)	2,9	15"	0	17.1	-28.02	5.93
9/7/92	3-226-5	GMGr (Powder)	2,9	15"	0	18.1	-28.04	6.12
9/7/92	3-226-18	GMGr (Powder)	2,9	15"	0	15.3	-28.06	6.10
9/7/92	3-226-19	GMGr (Powder)	2,9	15"	0	17.1	-28.06	5.94
9/10/92	3-228-1	GMGr (Powder)	2,9	15"	1	11.4	-27.99	5.68*,†
9/10/92	3-228-2	GMGr (Powder)	2,9	15"	0	12.7	-28.02	6.01
9/10/92	3-228-3	GMGr (Powder)	2,9	15"	0	15.7	-28.03	6.06
9/10/92	3-228-4	GMGr (Powder)	2,9	15"	0	18.1	-28.03	5.99
9/10/92	3-228-5	GMGr (Powder)	2,9	15"	0	14.6	-28.02	6.06
9/10/92	3-228-18	GMGr (Powder)	2,9	15"	0	9.6	-28.03	5.76*,‡
9/10/92	3-228-19	GMGr (Powder)	2,9	15"	0	13.9	-28.03	5.88*,‡
9/11/92	3-230-1	GMGr (Powder)	2,9	15"	1	40.0	-28.05	5.97
9/11/92	3-230-2	GMGr (Powder)	2,9	15"	0	17.8	-28.01	5.88
9/11/92	3-230-3	GMGr (Powder)	2,9	15"	0	11.5	-28.00	6.06
9/11/92	3-230-4	GMGr (Powder)	2,9	15"	1	10.3	-28.02	5.97
9/17/92	3-236-1	GMGr (Powder)	2,9	1<15"	2	18.4	-28.08	5.89
9/17/92	3-236-2	GMGr (Powder)	2,9	15"	1	15.9	-28.12	5.93
9/17/92	3-236-3	GMGr (Powder)	2,9	15"	2	17.8	-28.04	6.02
9/17/92	3-236-4	GMGr (Powder)	2,9	15"	1	17.0	-28.10	5.95
9/17/92	3-236-5	GMGr (Powder)	2,9	15"	0	17.0	-28.09	6.00
9/17/92	3-236-17	GMGr (Powder)	2,9	15"	1	15.9	-28.12	5.97
9/17/92	3-236-18	GMGr (Powder)	2,9	15"	0	17.1	-28.06	6.01
9/17/92	3-236-19	GMGr (Powder)	2,9	15"	1	9.3	-28.11	5.89
9/19/92	3-240-1	GMGr (Powder)	2,9	2<16"	1	11.9	-28.02	5.94
9/19/92	3-240-2	GMGr (Powder)	2,9	15"	0	13.8	-28.05	5.97
9/19/92	3-240-3	GMGr (Powder)	2,9	15"	1	16.8	-28.01	6.11
9/19/92	3-240-4	GMGr (Powder)	2,9	15"	0	10.7	-28.06	5.95
9/19/92	3-240-5	GMGr (Powder)	2,9	15"	1	13.4	-28.06	6.02
9/19/92	3-240-18	GMGr (Powder)	2,9	15"	0	12.3	-28.05	6.10
9/19/92	3-240-19	GMGr (Powder)	2,9	15"	0	12.7	-28.06	5.98
9/21/92	3-242-1	GMGr (Powder)	2,9	2<18"	1	8.0	-28.02	5.99
9/21/92	3-242-2	GMGr (Powder)	2,9	15"	0	14.0	-28.02	5.95
9/21/92	3-242-3	GMGr (Powder)	2,9	15"	0	11.5	-28.04	5.87
9/21/92	3-242-4	GMGr (Powder)	2,9	15"	0	11.7	-28.05	5.91
9/21/92	3-242-5	GMGr (Powder)	2,9	15"	0	9.3	-28.05	5.97
9/22/92	3-244-1	GMGr (Powder)	2,9	18"	0	32.3	-28.12	5.72*,§
9/22/92	3-244-2	GMGr (Powder)	2,9	18"	10	24.8	-28.11	6.10\$
9/22/92	3-244-3	GMGr (Powder)	2,9	18"	0	25.5	-28.08	5.92\$
9/22/92	3-244-4	GMGr (Powder)	2,9	18"	5	29.9	-28.11	6.07\$
9/22/92	3-244-5	GMGr (Powder)	2,9	18"	2	31.1	-28.05	5.98\$
9/23/92	3-246-1	GMGr (Powder)	2,9	18"	0	35.5	-28.03	5.86\$
9/23/92	3-246-2	GMGr (Powder)	2,9	18"	5	33.2	-28.06	6.03\$
9/23/92	3-246-3	GMGr (Powder)	2,9	18"	5	24.2	-28.12	5.95\$
9/24/92	3-250-1	GMGr (Powder)	2,9	1<18"	1	18.7	-28.07	6.01
9/24/92	3-250-2	GMGr (Powder)	2,9	15"	0	10.5	-28.08	6.01
9/24/92	3-250-3	GMGr (Powder)	2,9	15"	0	13.0	-28.08	5.97
9/24/92	3-250-4	GMGr (Powder)	2,9	15"	0	11.4	-28.10	5.90
9/24/92	3-250-5	GMGr (Powder)	2,9	15"	0	16.3	-28.11	5.82

9/24/92	3-250-6	GMGrT (Powder)	2,9	15"	0	25.9	-28.09	6.03	
9/24/92	3-250-7	NBS-30 Bt	1.5,9	15"	0	18.0	-28.11	4.73	88
9/24/92	3-250-8	NBS-30 Bt	1.5,9	15"	3	9.9	-28.16	4.68	76
9/24/92	3-250-9	NBS-30 Bt	1.5,9	15"	1	14.9	-28.16	4.66	81
9/24/92	3-250-10	NBS-30 Bt	1.5,9	15"	0	14.3	-28.16	4.61	107
9/24/92	3-250-11	NBS-30 Bt	1.5,9	15"	0	8.3	-28.15	4.50	98
9/24/92	3-250-12	NBS-30 Bt	1.5,9	15"	0	10.3	-28.14	4.53	96
11/14/92	3-260-1	NBS-30 Bt	1.5,9	15"	1	10.2	-27.97	4.82	
11/14/92	3-260-2	NBS-30 Bt	1.5,9	15"	0	11.7	-28.01	4.68	
11/14/92	3-260-3	NBS-30 Bt	1.5,9	15"	0	7.7	-28.00	4.72	
11/14/92	3-260-4	NBS-30 Bt	1.5,9	15"	0	6.6	-28.00	4.63	
11/14/92	3-260-5	NBS-30 Bt	1.5,9	15"	0	8.3	-28.02	4.63	
11/14/92	3-260-6	NBS-30 Bt	1.5,9	15"	0	6.0	-28.00	4.59	
11/14/92	3-260-7	NBS-30 Bt	1.5,9	15"	0	6.4	-28.01	4.64	
11/14/92	3-260-8	NBS-30 Bt	1.5,9	15"	1	8.7	-28.01	4.77	
11/14/92	3-260-9	NBS-30 Bt	1.5,9	15"	0	9.0	-28.01	4.79	
11/14/92	3-260-10	GMGrT (Powder)	2,9	15"	0	13.8	-27.99	6.14	
11/14/92	3-260-11	GMGrT (Powder)	2,9	15"	0	16.6	-28.02	6.08	
11/14/92	3-260-12	GMGrT (Powder)	2,9	15"	0	18.9	-27.99	6.14	
11/14/92	3-260-13	GMGrT (Powder)	2,9	15"	1	22.0	-28.00	6.12	
11/14/92	3-260-14	GMGrT (Powder)	2,9	15"	0	19.4	-27.98	6.15	
11/14/92	3-260-15	GMGrT (Powder)	2,9	15"	0	18.8	-28.00	6.11	
11/14/92	3-260-16	GMGrT (Powder)	2,9	15"	0	17.8	-28.01	6.02	
11/14/92	3-260-17	GMGrT (Powder)	2,9	15"	0	22.2	-28.00	6.13	
11/14/92	3-260-18	GMGrT (Powder)	2,9	15"	0	22.3	-27.99	6.24	
11/14/92	3-260-19	GMGrT (Powder)	2,9	15"	0	20.6	-28.00	6.14	
11/16/92	3-262-1	GMGrT (Powder)	2,9	15"	1	14.4	-28.00	5.87	
11/16/92	3-262-2	GMGrT (Powder)	2,9	15"	1	27.4	-28.05	5.97	
11/16/92	3-262-3	GMGrT (Powder)	2,9	15"	0	13.3	-28.05	5.96	
11/16/92	3-262-4	GMGrT (Powder)	2,9	15"	0	10.5	-28.04	5.97	
11/16/92	3-262-5	GMGrT (Powder)	2,9	15"	0	13.3	-28.05	5.88	
11/16/92	3-262-6	GMGrT (Powder)	2,9	15"	0	11.3	-28.04	5.90	
11/16/92	3-262-7	GMGrT (Powder)	2,9	15"	0	17.4	-28.03	6.06	
11/16/92	3-262-8	GMGrT (Powder)	2,9	15"	2	15.9	-28.03	5.98	
11/16/92	3-262-9	GMGrT (Powder)	2,9	15"	0	10.1	-28.06	5.86	
11/16/92	3-262-10	NBS-28 Quartz	9	15"	0	33.2	-28.02	9.36	
11/16/92	3-262-11	NBS-28 Quartz	9	15"	0	15.8	-28.04	8.97	
11/16/92	3-262-12	NBS-28 Quartz	9	15"	0	16.1	-28.04	8.99	
11/16/92	3-262-13	NBS-28 Quartz	9	15"	0	23.5	-28.02	9.25	
11/16/92	3-262-14	NBS-28 Quartz	9	15"	0	17.7	-28.03	9.02	
11/16/92	3-262-15	NBS-28 Quartz	9	15"	0	25.6	-28.03	9.19	
11/16/92	3-262-16	NBS-28 Quartz	9	15"	0	25.7	-28.02	9.39	
11/16/92	3-262-17	NBS-28 Quartz	9	15"	0	15.9	-28.02	8.96	
11/16/92	3-262-18	NBS-28 Quartz	9	15"	0	19.9	-28.04	9.26	
11/16/92	3-262-19	NBS-28 Quartz	9	15"	0	19.1	-28.01	9.18	
12/9/92	3-272-1	GMGrT (Powder)	2,9	15"	0	24.2	-28.01	6.13	
12/9/92	3-272-2	GMGrT (Powder)	2,9	15"	0	24.9	-28.02	6.06	
12/9/92	3-272-3	GMGrT (Powder)	2,9	15"	0	23.4	-28.01	6.21	
12/9/92	3-272-4	GMGrT (Powder)	2,9	15"	0	22.3	-27.96	6.26	
12/9/92	3-272-5	GMGrT (Powder)	2,9	15"	0	23.2	-27.97	6.28	
12/9/92	3-272-6	GMGrT (Powder)	2,9	15"	0	23.4	-28.00	6.14	
12/9/92	3-274-11	GMGrT (Powder)	2,9	15"	0	29.7	-28.02	6.16	
12/9/92	3-274-12	GMGrT (Powder)	2,9	15"	0	21.6	-28.04	6.03	
12/9/92	3-274-13	GMGrT (Powder)	2,9	15"	0	36.1	-28.00	6.17	
12/9/92	3-274-14	GMGrT (Powder)	2,9	15"	0	22.2	-28.05	6.16	
12/9/92	3-274-15	GMGrT (Powder)	2,9	15"	0	30.3	-28.08	6.00	
12/9/92	3-274-16	GMGrT (Powder)	2,9	15"	0	25.8	-28.03	6.17	
12/9/92	3-276-20	GMGrT (Powder)	2,9	15"	0	24.7	-28.06	6.17	
12/9/92	3-276-21	GMGrT (Powder)	2,9	15"	0	27.6	-28.08	5.99	
12/9/92	3-276-22	GMGrT (Powder)	2,9	15"	0	26.5	-28.02	6.13	
12/9/92	3-276-23	GMGrT (Powder)	2,9	15"	0	16.9	-28.03	6.05	
12/9/92	3-276-24	GMGrT (Powder)	2,9	15"	0	20.8	-28.09	6.01	

12/9/92	3-276-25	GMGrt (Powder)	2,9	15"	0	16.3	-28.06	6.04
1/19/93	4-6-1	GMGrt (Powder)	2,9	1<15"	4	13.5	-28.02	6.20
1/19/93	4-6-2	GMGrt (Powder)	2,9	15"	3	14.9	-28.08	5.96//
1/19/93	4-6-3	GMGrt (Powder)	2,9	15"	1	17.4	-28.05	6.29
1/19/93	4-6-4	GMGrt (Powder)	2,9	15"	0	16.1	-28.06	6.36
1/19/93	4-6-5	GMGrt (Powder)	2,9	15"	1	13.2	-28.08	6.17
1/19/93	4-6-24	GMGrt (Powder)	2,9	15"	0	16.0	-28.04	6.14
1/19/93	4-6-25	GMGrt (Powder)	2,9	15"	0	17.4	-28.08	6.14
2/2/93	4-30-1	GMGrt (Powder)	2,9	1<16"	2	23.3	-28.03	6.17
2/2/93	4-30-2	GMGrt (Powder)	2,9	15"	0	15.9	-28.04	6.01
2/2/93	4-30-3	GMGrt (Powder)	2,9	15"	0	9.8	-28.05	5.49//
2/2/93	4-30-4	GMGrt (Powder)	2,9	15"	0	7.4	-28.03	5.90
2/2/93	4-30-5	GMGrt (Powder)	2,9	15"	1	6.7	-28.02	5.73
2/2/93	4-30-6	GMGrt (Powder)	2,9	15"	0	7.7	-28.05	5.90
2/2/93	4-30-7	GMGrt (Powder)	2,9	15"	0	6.1	-28.04	6.00
2/2/93	4-30-8	GMGrt (Powder)	2,9	15"	0	7.8	-28.04	6.10
2/2/93	4-30-9	GMGrt (Powder)	2,9	15"	0	8.2	-28.08	5.88
2/3/93	4-32-13	GMGrt (Powder)	2,9	15"	0	24.9	-27.98	6.19
2/3/93	4-32-14	GMGrt (Powder)	2,9	15"	0	11.4	-28.02	6.25
2/3/93	4-32-15	GMGrt (Powder)	2,9	15"	0	14.1	-28.05	6.15
2/3/93	4-32-16	GMGrt (Powder)	2,9	15"	0	10.8	-28.04	6.14
2/3/93	4-32-17	GMGrt (Powder)	2,9	15"	0	9.3	-28.02	6.04
2/3/93	4-32-18	GMGrt (Powder)	2,9	15"	0	6.5	-28.03	5.93
2/3/93	4-34-17	GMGrt (Powder)	2,9	15"	0	31.8	-28.05	6.06
2/3/93	4-34-18	GMGrt (Powder)	2,9	15"	0	13.5	-28.06	6.03
2/3/93	4-34-19	GMGrt (Powder)	2,9	15"	0	6.9	-28.04	5.92

Note: If an analysis is the first of the day (e.g., analysis LZ3-122-1), then only blanks were run first. NBS28 is a finely ground quartz powder; NBS30 Bt consists of ~0.5 mm diameter biotite grains; GMGrt is Gore Mountain garnet analyzed either as single chips or as a fine powder. Power density can be derived by dividing the power (Watts) by the beam area at the analytical surface ($2 \times 10^{-7} \text{ m}^2$; determined by *in situ* analyses on wafers); e.g., 2,9 means that power density started at $1 \times 10^7 \text{ W/m}^2$ and was increased to $4.5 \times 10^7 \text{ W/m}^2$. 1" BrF₅ = 67 μmoles or a pressure of 4.7 Torr in the sample chamber. 1<20" means that reagent was recycled and that this was the second use of an original ~1350 μmoles of reagent. NC=non-condensable excess pressure in millitorr after conversion and transferral of sample gas to a calibrated volume. $\delta^{13}\text{C}$ and $\delta^{18}\text{O}$ are relative to PDB and V-SMOW respectively. Uncertainty in the yield is 1σ and is based on a weighing uncertainty of $\pm 0.02 \text{ mg}$ and a predicted yield of 12.5 $\mu\text{moles/mg}$ for almandine-rich garnet. No uncertainty is reported for NBS-30 Bt yield because of difficulty in transferring each weighed sample to a single hole.

Comments:

* LZ3-104-1, LZ3-126-1, LZ3-126-2, LZ3-128-1, LZ3-216-1, LZ3-220-19, LZ3-228-1, LZ3-228-18, LZ3-228-19, 244-1; not used in average for day because they are statistically different from the average of the remaining standard analyses.

** LZ3-126-2; insufficient conversion time (?).

† LZ3-228-1; insufficient freeze-down time during transferral (?).

‡ Shift in standard value during day or contamination during day; samples run immediately prior were compositionally very light and sputtered extensively during reaction.

§ LZ3-244-1 through LZ3-246-3; analyst = M. J. Spicuzza.

// LZ4-6-2 and LZ4-30-3; analysis is probably light because sample chamber was insufficiently evacuated after previous analysis.