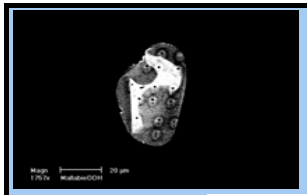

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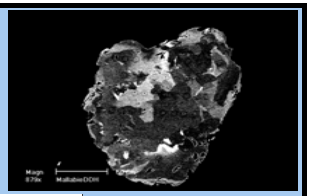
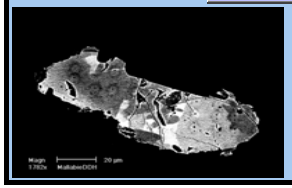
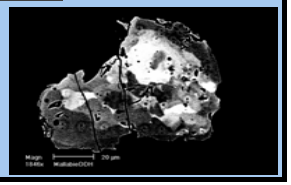


Insert Probe Data	Age and Error	Mole Fractions
Cation Normalisation	Exchange Vectors	Cation Substitutions
Cation Freq. Distribution	YAG Thermometer	Spidergrams





Probe Data File

1) Save your probe file with wells, wt% oxides, Pk and Bg

2) Insert it into this worksheet in this order as this links to every other sheet

3) *BEFORE YOU USE THIS MAKE SURE* Go to Tools/Options/Calculation and change calculation to Automatic or else the links between sheets wont work

4) Insert in your counting time (peak only)

Peak counting times		
Pk	Bg	U
20	10	10

Decay constants		
Th230	U234	U238
9.2E-06	2.82E-06	1.55E-10

Proportions		
A	b	
0.8	0.2	0.00137

Pb correction for Ca (crystal ages (Pb/Ca, ppm))

Ca	Pb
400000	0.5

Label	No	Mn*p(1)	Mn*p(2)	Mn*p(3)	Mn*p(4)	Mn*p(5)	Mn*p(6)	Mn*p(7)	Mn*p(8)	Mn*p(9)	Mn*p(10)	Mn*p(11)	Mn*p(12)	Mn*p(13)	Mn*p(14)	Mn*p(15)	Mn*p(16)	Pb(1)	Pb(2)	Pb(3)	Pb(4)	Pb(5)	Pb(6)	Pb(7)	Pb(8)	Pb(9)	Pb(10)	Pb(11)	Pb(12)	Pb(13)	Pb(14)	Pb(15)	Pb(16)	Total
MAD_1	1	26.1272	0.0002	0.7352	11.899	0.0915	0.673	11.9934	25.728	2.6507	9.0648	1.8622	0.7627	0.2358	0.0257	0.1982	6.7196	0.2134	0	0.0005	1.5728	27.3646	0.4079	0.673	0.5963	30.1321	3.1022	10.573	2.2754	0.6791	0.2707	0.0294	0.2135	7.6462	0.2421	0	102.9318	824.1325	2081.416	2432.6067	39.9548	2829.618	6084.264	163.1465	498.9959	168.5185	123.1455	100.8205	307.6598	23.0079	402.0343	83.2458	0
MAD_2	2	26.1453	0.0119	0.7267	11.8538	0.0921	0.6911	11.697	25.6551	2.7352	9.0745	1.8559	0.8373	0.1989	0.1011	0.182	6.6438	0.2407	0	0.0225	1.5547	27.161	0.4227	0.6951	0.5772	30.1649	3.242	10.6344	2.2622	0.6831	0.2263	0.0136	0.1971	7.4462	0.2459	0	105.1331	793.0244	1968.962	2353.9454	38.9605	2736.177	5767.081	154.3381	473.2209	156.707	116.5407	94.8759	301.3558	21.9827	390.6329	79.9882	0
MAD_3	3	26.2386	0.0002	0.732	11.9768	0.0128	0.5868	11.901	25.6216	2.8365	9.4033	1.9655	0.8479	0.2131	0.0462	0.1972	6.5049	0.2411	0	0.0005	1.566	27.4381	0.4377	0.5868	0.5967	30.0099	3.2196	10.6678	2.2676	0.9773	0.2466	0.0538	0.2124	7.4019	0.2735	0	103.7223	812.71	2079.067	2372.8231	38.3539	2818.228	6020.035	157.0923	504.9137	166.7634	123.846	102.0913	308.4102	22.9266	398.673	82.9652	0
MAD_4	4	26.9482	0.0146	0.6893	12.0905	0.0979	0.6733	11.8098	26.3722	2.7124	9.4357	1.9511	0.8061	0.2047	0.1141	0.1911	6.6758	0.2156	0	0.0031	1.5145	27.8352	0.4121	0.6894	0.5922	31.7441	3.2862	10.9143	2.271	0.9681	0.2648	0.1218	0.2009	7.5965	0.2537	0	110.5266	794.3886	2120.329	2577.4867	39.4047	2944.5486	5842.173	161.4115	503.3094	162.5459	124.2129	102.0366	305.9827	22.9766	397.0208	82.5579	0
MAD_5	5	26.7923	0.0002	0.708	12.1459	0.2945	0.6964	11.9711	27.1023	2.8094	9.3574	1.9584	0.8634	0.2091	0.1161	0.1682	6.596	0.1965	0	0.0005	1.5145	27.8352	0.4121	0.6964	0.5922	31.7441	3.2862	10.9143	2.271	0.9681	0.2648	0.1227	0.1912	7.5044	0.2236	0	107.8344	813.8158	2095.083	2562.9672	39.0533	2911.923	5266.366	159.9434	501.7552	162.8795	122.7452	102.5616	307.0346	22.3327	393.3905	80.607	0
MAD_6	6	26.8161	0.0002	0.7139	12.1459	0.2945	0.6964	11.9711	27.1023	2.8094	9.3574	1.9584	0.8634	0.2091	0.1161	0.1682	6.596	0.1965	0	0.0005	1.5145	27.8352	0.4121	0.6964	0.5922	31.7441	3.2862	10.9143	2.271	0.9681	0.2648	0.1227	0.1912	7.5044	0.2236	0	107.8344	813.8158	2095.083	2562.9672	39.0533	2911.923	5266.366	159.9434	501.7552	162.8795	122.7452	102.5616	307.0346	22.3327	393.3905	80.607	0
MAD_7	7	26.9331	0.0002	0.7154	11.9205	0.0932	0.6911	11.9435	25.7842	2.7651	9.2056	1.8485	0.7909	0.2206	0.0562	0.1964	6.4262	0.1873	0	0.0005	1.5729	27.3727	0.4262	0.6873	0.5729	29.9859	3.2355	10.6515	2.2546	0.9516	0.2532	0.0588	0.2124	7.4019	0.2735	0	99.7266	752.8632	1963.267	2357.9495	36.8041	2704.974	5456.163	155.339	472.6569	154.4672	114.7365	96.2528	302.6586	21.8284	381.1864	79.0562	0
MAD_8	8	26.3831	0.0002	0.7315	12.0391	0.2819	0.6215	11.771	25.691	2.7769	9.2444	1.9717	0.8745	0.2092	0.0739	0.1742	6.6375	0.2087	0	0.0005	1.5649	27.5855	0.3944	0.6215	0.5806	29.9857	3.2498	10.7925	2.2864	0.9773	0.2466	0.0538	0.2124	7.5526	0.2967	0	107.3345	822.0556	2099.542	2610.1075	37.0541	2861.931	6040.137	166.3496	503.058	167.9179	127.1937	104.6328	309.6109	22.8516	398.3755	84.0712	0
MAD_9	9	26.3379	0.0002	0.7238	11.9922	0.2868	0.6049	11.9501	25.55	2.832	9.0002	1.9014	0.8453	0.2063	0.0613	0.1772	6.5738	0.1982	0	0.0005	1.5484	27.4092	0.4055	0.6049	0.5966	29.9259	3.3164	11.1975	2.2178	0.9665	0.2645	0.0907	0.1966	7.4956	0.2556	0	110.8359	807.6555	2066.581	2581.6115	36.8538	2820.888	6023.516	162.7481	487.8068	161.6778	121.1774	100.9556	306.5941	22.3999	390.5599	82.8456	0
MAD_10	10	26.5941	0.0002	0.4775	12.1697	0.3068	0.612	11.7061	26.1927	2.7152	9.3263	1.8284	0.8297	0.256	0.0752	0.1925	6.6601	0.2284	0	0.0005	1.4494	27.9397	0.4279	0.612	0.5883	29.7211	3.2975	10.8983	2.2202	0.9563	0.2638	0.1096	0.2124	7.4897	0.2694	0	109.5932	803.2978	2074.595	2574.3577	36.4264	2778.543	5488.981	162.4792	495.2948	158.7088	119.9765	97.9789	303.1819	22.1077	378.3289	82.6061	0
MAD_11	11	26.6349	0.0159	0.6939	12.0456	0.2973	0.6167	11.8242	27.2205	2.7607	9.3277	1.9129	0.8446	0.2763	0.0909	0.1774	6.6772	0.2409	0	0.0346	1.4988	27.963	0.42	0.6833	0.5847	32.1845	3.2961	11.6455	2.2236	0.9622	0.2621	0.0476	0.1783	7.5081	0.2769	0	109.9256	793.2451	2094.543	2610.1075	37.0541	2861.931	6040.137	166.3496	503.058	167.9179	127.1937	104.6328	309.6109	22.8516	398.3755	84.0712	0
MAD_12	12	26.9322	0.0024	0.7006	12.2039	0.3002	0.6834	11.8517	27.4356	2.8156	9.8292	1.9175	0.8348	0.2109	0.0416	0.1655	6.5982	0.2441	0	0.0046	1.4988	27.963	0.42	0.6833	0.5847	32.1845	3.2961	11.6455	2.2236	0.9622	0.2621	0.0476	0.1783	7.5081	0.2769	0	109.9256	793.2451	2094.543	2610.1075	37.0541	2861.931	6040.137	166.3496	503.058	167.9179	127.1937	104.6328	309.6109	22.8516	398.3755	84.0712	0
MAD_13	13	26.8245	0.0002	0.6749	11.9306	0.2883	0.5844	11.7256	25.4852	2.7656	9.0902	1.7701	0.7427	0.2033	0.0573	0.1598	6.5555	0.1989	0	0.0005	1.4455	27.3553	0.4198	0.5844	0.5892	29.8478	3.1601	10.9494	2.2035	0.9561	0.2611	0.0904	0.1966	7.4595	0.2556	0	110.8359	772.4191	2065.581	2581.6115	36.8538	2820.888	6023.516	162.7481	487.8068	161.6778	121.1774	100.9556	306.5941	22.3999	390.5599	82.8456	0
MAD_14	14	26.3816	0.0002	0.666	12.2226	0.299	0.6934	11.655	25.2066	2.6262	8.9975	1.915	0.7661	0.3138	0.1348	0.2229	6.5487	0.203	0	0.0005	1.4248	28.0302	0.4183	0.6934	0.5688	29.5273	3.0735	10.6945	2.2207	0.9177	0.3601	0.1542	0.2401	7.4745	0.2303	0	101.8311	729.5334	2077.468	2590.8023	37.3542	2769.318	5764.494	154.9053	465.0479	159.6097	117.3413	98.3544	304.2639	23.0641	375.733	81.7325	0
MAD_15	15	26.2795	0.0002	0.6823	12.0884	0.2962	0.6876	11.6576	25.1356	2.7048	9.0021	1.8952	0.7929	0.2085	0.0777	0.1615	6.5733	0.2056	0	0.0005	1.4849	27.8353	0.4198	0.6876	0.5688	29.5273	3.2052	10.6945	2.2207	0.9177	0.3601	0.1542	0.2401	7.4745	0.2303	0	103.8311	729.5334	2077.468	2590.8023	37.3542	2769.318	5764.494	154.9053	465.0479	159.6097	117.3413	98.3544	304.2639	23.0641	375.733	81.7325	0
MAD_16	16	26.1443	0.0213	0.6789	11.8927	0.2989	0.6414	11.9153	25.7862	2.5884	8.9914	1.9148	0.8385	0.2488	0.064	0.175	6.64	0.2119	0	0.0298	1.4524	27.2521	0.4182	0.5814	0.5798	30.1792	3.2192	10.9358	2.2107	0.9665	0.2853	0.0732	0.1885	7.5557	0.2404	0	104.5457	772.2851	2066.735	2581.1155	35.7528	2808.736	5888.708	163.3597	487.8238	163.8863	119.7286	103.6994	307.7857	22.2318	394.1223	83.1369	0
MAD_17	17	26.1443	0.0213	0.6789	11.8927	0.2989	0.6414	11.9153	25.7862	2.5884	8.9914	1.9148	0.8385	0.2488	0.064	0.175	6.64	0.2119	0	0.0298	1.4524	27.2521	0.4182	0.5814	0.5798	30.1792	3.2192	10.9358	2.2107	0.9665	0.2853	0.0732	0.1885	7.5557	0.2404	0	104.5457	772.2851	2066.735	2581.1155	35.7528	2808.736	5888.708	163.3597	487.8238	163.8863	119.7286	103.6994	307.7857	22.2318	394.1223	83.1369	0
MAD_18	18	26.2232	0.0002	0.6877	12.0943	0.2967	0.6759	11.8161	25.9771	2.6363	9.2667	1.7918	0.7765	0.2026	0.0421	0.1819	6.6561	0.2288	0	0.0005	1.4285	27.7117	0.4082	0.6759	0.5825	29.3732	3.0853	10.8281	2.2076	0.9483	0.2625	0.0805	0.1869	7.5193	0.2597	0	95.5274	733.0418	2058.13	2552.3835	36.3546	2658.431	5748.557	153.4706	479.526	153.9277	116.0727	95.2522	301.706	22.4316	377.0761	82.0377	0
MAD_19	19	26.0564	0.0076	0.6893	11.8804	0.2884	0.5922	11.8196	25.7132	2.664	8.9968	1.9646	0.7938	0.2225	0.0163	0.1918	6.5159	0.2153	0	0.0144	1.4745	27.222	0.4035	0.5922	0.5838	30.0988	3.1177	10.6163	2.1622	0.9827	0.2553	0.0232	0.2066	7.4087	0.2443	0	110.4966	761.3271	2069.469	2580.8006	36.354	2680.682	6075.451	162.9463	498.9959	165.8491	120.3768	103.9574	305.4584	23.0453	389.6299	83.9086	0
MAD_20	20	26.1939	0.0002	0.6754	11.7184	0.2738	0.5959	11.6146	27.9989	2.6662	9.1095	1.8577	0.7159	0.2802	0.1053	0.1714	6.3637	0.1773	0	0.0005	1.4449	26.8507	0.3831	0.5959	0.5626	32.6211	3.2772	10.1558	2.1252	0.9482	0.3216	0.1235	0.1847	7.2413	0.2012	0	107.5247	797.299	2056.409	2574.743	35.4528	2812.736	5551.337	159.6431	504.2115	159.9429	117.2079	102.4183	306.5841	22.2765	379.3562	80.5194	0
MAD_21	21	26.0487	0.0002	0.6701	11.6646	0.288	0.617	11.3679	27.8152	2.778	9.1619	1.908	0.8403	0.2073	0.0341	0.1555	6.336	0.2163	0	0.0005	1.4334	26.7273	0.4039	0.617	0.5825	32.3319	3.2792	10.2512	2.1683	0.9686	0.2379	0.0169	0.1745	7.2076	0.2456	0	111.4427	754.4004	2027.84	2538.2972	35.0252	2766.514	5636.355	156.5068	492.3706	157.8648	117.5414	99.905	304.9823	22.4515	374.4314	80.5925	0
MAD_22	22	26.7815	0.0002	0.686	12.0731	0.2962	0.6866	11.9844	26.9992	2.8156	9.4033	1.9	0.7946	0.226	0.1256	0.1655	6.5978	0.2265	0	0.0005	1.4676	27.6634	0.413	0.6866	0.5858	31.2297	3.2956	11.1086	2.2358	0.9162	0.2582	0.1438	0.1763	7.5076	0.2649	0	110.1647	774.6497	2119.676	2570.4634	36.5025	2766.514	5636.355	156.5068	492.3706	157.8648	117.5414	99.905	304.9823	22.4515	374.4314	80.5925	0
MAD_23	23	26.1869	0.0026	0.6878	12.0348	0.3025	0.6208	11.7753	25.0963	2.6999	9.1896	1.9432	0.7646	0.2525	0.0677	0.1987	6.6977	0.2316	0	0.005	1.4286	27.5755	0.4232	0.6208	0.5896	29.3646	3.1568	10.6952	2.2534	0.8836	0.2696	0.0774	0.2118	7.6213	0.2627	0	105.8335	726.0781	2042.945	2603.203	37.2542	2805.211	5748.557	156.44	474.3741	158.1083	116.1404	98.5541	302.2313	22.7766	380.7845	82.0952	0
MAD_24	24	26.0564	0.0132	0.6741	11.8106	0.2868	0.5765	11.7955	25.7964	2.6526	9.1681	1.9296	0.7549	0.2166	0.0077	0.1665	6.5978	0.2265	0	0.0025	1.4457	27.5755	0.4232	0.6208	0.5896	29.3646	3.1568	10.6952	2.2534	0.8836	0.2696	0.0774	0.2118	7.6213	0.2627	0	111.3273	770.0975	2055.599	2597.2665	36.9572	2805.211	5748.557	156.44	474.3741	158.1083	116.1404	98.5541	302.2313	22.7766	380.7845	82.0952	0
MAD_25	25	26.1055	0.021	0.6786	11.6763	0.2848	0.6206	11.3687	27.8597	2.697	9.1857	1.9241	0.8199	0.2657	0.0466	0.1617	6.4529	0.1867	0	0.0396	1.4517	26.7588	0.3985	0.6206	0.5826	32.3329	3.2413	10.1446	2.1446	0.9384	0.2312	0.0461	0.1742	7.2858	0.2118	0	116.0454	801.3887	2055.093	2599.8023	35.5038	2707.488	5549.477	158.2417	506.3179	164.0807	119.4044	101.731	303.5672	22.3577	381.1854	78.7311	0
MAD_26	26	26.577	0.0086	0.6822	12.1197	0.3005	0.6434	12.096	25.8227	2.6937	9.569	1.9038	0.8127	0.2848	0.1063	0.1701	6.5568	0.2461	0	0.0162	1.4887	27.7763	0.4205	0.6434	0.5948	29.9258	3.2454	11.1616	2.2077	1.052	0.2659	0.1218	0.1822	7.4723	0.2792	0	109.8362	771.9497	2077.904	2615.5139	36.9543	2809.721	5926.745	159.7581	487.9381	164.8445	119.9562	104.9631	312.5203	23.1581	391.6449	84.0253	0
MAD_27	27	26.5414	0.0063	0.6916	11.876	0.2984	0.6432	11.563	26.2053	2.696	9.5171	1.9288	0.8602	0.2705	0.0238	0.2124	6.5225	0.2318	0	0.0158	1.4796	27.2119	0.4175	0.6432	0.5907	33.0361	3.3522	11.1055	2.2344	0.9224	0.3104	0.0272	0.2288	7.422	0.2639	0	106.434	766.0632	2014.906	2602.9072	36.9541	2758.236	5665.484	158.7756	492.9487	158.8671	118.941	98.2039	303.332	22.3452	376.8756	81.6075	0
MAD_28	28	26.2795	0.0002	0.6823	12.0884	0.2962	0.6876	11.6576	25.1356	2.7048	9.0021	1.8952	0.7929	0.2085	0.0777	0.1615	6.5733	0.2056	0	0.0005	1.4849	27.8353	0.4198	0.6876	0.5688	29.5273	3.2052	10.6945	2.2207	0.9177	0.3601	0.1542	0.2401	7.4745	0.2303	0	103.8311	729.5334	2077.468	2590.8023	37.3542	2769.318	5764.494	154.9053	465.0479	159.6097	117.3413	98.3544	304.2639	23.0641	375.733	81.7325	0
MAD_29	29	26.1443	0.0213	0.6789	11.8927	0.2989	0.6414	11.9153	25.7862	2.5884	8.9914	1.9148	0.8385	0.2488	0.064	0.175	6.64	0.2119	0	0.0298	1.4524	27.2521	0.4182	0.5814	0.5798	30.1792	3.2192	10.9358	2.2107	0.9665	0.2853	0.0732	0.1885	7.5557	0.2404	0	104.5457	772.2851	2066.735	2581.1155	35.7528	2808.736	5888.708	163.3597	487.8238	163.8863	119.7286	103.6994	307.7857	22.2318	394.1223	83.1369	0
MAD_30	30	26.1443	0.0213	0.6789	11.8927	0.2989	0.6414	11.9153	25.7862	2.5884	8.9914	1.9148	0.8385	0.2488	0.064	0.175	6.64	0.2119	0	0.0298	1.4524	27.2521	0.4182	0.5814	0.5798	30.1792	3.2192	10.9358	2.2107	0.9665	0.2853	0.0732	0.1885	7.5557	0.2404	0	104.5457	772.2851	2066.735	2581.1155	35.7528	2808.736	5888.708	163.3597	487.8238	163.8863	119.7286	103.6994	307.7857	22.2318	394.1223	83.1369	0
MAD_31	31	26.3739	0.0064	0.6917	11.8917	0.2905	0.5807	11.5132	25.1393	2.6615	9.0346	1.8319	0.8218	0.2744	0.0972	0.175	6.272	0.2023	0	0.0064	1.4583	27.1561	0.4027	0.5807	0.5664	29.5266	3.2158	10.5278	2.1243	0.9418	0.3115	0.1382	0.1786	7.3369	0.2556	0	109.8342	766.6328	2084.96	2600.6555	36.4248	2751.501	5812.168	158.4419	502.6788	160.9656	117.2306	101.6272	307.2962	22.4554	381.5006	81.0172	0	0
MAD_32	32	26.9451	0.0002	0.6906	12.2009	0.2963	0.597	11.5798	26.3482	2.6842	9.5062	1.9454	0.7571	0.2872	0.0033	0.1894	6.5214	0.205	0	0.0005	1.4775	27.9551	0.4131	0.597	0.5792	33.2035	3.3145	11.0879	2.2559	0.8726	0.2696	0.0038	0.204	7.4357	0.2336	0	103.5322	795.0585	2076.151	2586.7906	35.8537	2717.626	5879.34	159.1092	484.6537	159.9758	118.6756	99.6798	301.4559	22.6015	377.4018	85.3319	0
MAD_33	33	26.1542	0.0002	0.6909	11.8706	0.2868	0.5766	11.6178	25.3966	2.6189	9.0266	1.8761	0.7999	0.2035	0.0093	0.1744	6.3978	0.2063	0	0.0005	1.4549	27.3833	0.4069	0.5766	0.5732	29.9966	3.2392	10.7966	2.2746	0.9752	0.2754	0.0264	0.1984	7.4284	0.2446	0	104.3724	736.1396	2042.943	2564.0858	36.4958	2697.868	5727.871	155.3372	469.2096	155.6696	116.6474	96.4529	301.6522	22.2778	369.7285	80.4969	0	0
MAD_34	34	26.0885	0.014	0.679	11.8916	0.2893	0.6769	11.7149	25.6762	2.7544	9.2568	1.9624	0.8615	0.2581	0.1107	0.1555	6.6169	0.2161	0	0.0264	1.4526	27.1599	0.3966	0.6769	0.5788	30.0738	3.2235	10.7969	2.2756	0.9583	0.2663	0.1266	0.1745	7.5294	0.2627	0	104.8986	760.949	2115.649	2615.0141	36.9541	2751.501	5812.168	158.4419	502.6788	160.9656	117.2306	101.6272	307.2962	22.4554	381.5006	81.0172	0	0
MAD_35	35	26.1727	0.0012	0.7186	11.9043	0.3114	0.6145	11.9217	25.468	2.7997	9.2855	1.9065	0.8663	0.2879	0.1013	0.1693	6.5309	0.2269	0	0.0023	1.5394	27.8162	0.4102	0.6145	0.5966	29.9227	3.3182	10.9376	2.2466	0.9227	0.2682	0.1196	0.2124	7.5136	0.2619	0	101.631	761.3899	1976.777	2572.2985	35.9539	2766.527	5722.585	156.5282	476.1769	157.1407	115.3732	96.703	302.2584	21.7284	367.4787	81.3949	0	0
MAD_36	36	26.6827	0.0036	0.6645	12.183	0.3066	0.6227	12.0254	25.9055	2.8341	9.7512	1.9755	0.8654	0.2316	0.0964	0.1845	6.5933	0.2129	0	0.0067	1.4218	27.9151	0.4389	0.6227	0.6	34.103	3.4624	11.3168	2.2968	0.9675	0.2658	0.1102	0.2265	7.5026	0.2415	0	109.1357	746.4344	2087.568	2641.059	37.1041	2820.242	5996.156	164.2475	513.3992	163.9139	122.1761	100.9806	306.7642	22.6963	386.5477	81.2573	0
MAD_37	37	26.7814	0.0169	0.6823	12.0582	0.2948	0.6758	11.5288	25.2597	2.7126	9.4475	1.93	0.8096	0.2811	0.0663	0.1781	6.4253	0.2188	0	0.0375	1.4811	27.5355	0.4117	0.6758	0.5884	29.5266	3.2392	10.7966	2.2746	0.9752	0.2754	0.0264	0.1984	7.4284	0.2446	0	104.1724	747.3169	2068.462	2564.0858	36.4958	2697.868	5727.871	155.3372	469.2096	155.6696	116.6474	96.4529	301.6522	22.2778	369.7285	80.4969	0	0
MAD_38	38	26.3013	0.0002	0.6786	12.1587	0.3004	0.5884	11.6637	25.0962	2.714	9.0737	1.9059	0.8151	0.1886	0.0764	0.1709	6.5884	0.209	0	0.0005	1.4517	27.8596	0.4093	0.5884	0.5966	29.9227	3.2413	10.6883	2.2116	0.9383	0.2583	0.0826	0.2124	7.4977	0.2371	0	103.332	735.5863	2004.508	2599.9526	36.2535	2748.574	5587.988	156.5521	474.4715	157.6061	116.9026	104.3626	312.8452	23.7483	380.6992	83.0921	0
MAD_39	39	26.1281	0.0099	0.6869	11.8481	0.2884	0.5776	11.5789	25.6496	2.6962	9.0032	1.8432	0.7966	0.2124	0.0511	0.1668	6.5707	0.2124	0	0.0264	1.4605	26.9454	0.4022	0.5776	0.5826	29.9227	3.2413	10.6883	2.2116	0.9383	0.2583	0.0826	0.2124	7.4977	0.2371	0	114.0357	765.6321	2078.864	2599.9526	36.2535	2748.574	5587.988	156.5521	474.4715	157.6061	116.9026	104.3626	312.8452	23.7483	380.6992	83.0921	0	0
MAD_40	40	26.0215	0.0039	0.6865	11.6853	0.2832	0.6373	11.3293	27.7442	2.7555	9.0963	1.8041	0.8408	0.2299	0.0658	0.1888	6.235	0.2055	0	0.0054	1.49	26.729	0.3962	0.6373	0.5882	32.2831	3.2496	10.6074	2.2021	0.9681	0.2639	0.0752	0.1495	7.0948	0.2331	0	107.8348	814.8542	2052.967	2588.8008	37.2042	2754.272	5330.15	161.645	504.5125	158.3418	121.8446	101.3369	306.434	21.7899	375.8371	80.7921	0
MAD_41	41	26.1542	0.0002	0.6909	11.8706	0.2868	0.5766	11.6178	25.3966	2.6189	9.0266	1.8761	0.7999	0.2035	0.0093	0.1744	6.3978	0.2063	0	0.0005	1.4549	27.3833	0.4069	0.5766	0.5732	29.9966	3.2392	10.7966	2.2746	0.9752	0.2754	0.0264	0.1984	7.4284	0.2446	0	104.1724	736.1396	2042.943	2564.0858	36.4958	2697.868	5727.871	155.3372	469.2096	155.6696	116.6474	96.4529	301.6522	22.2778	369.7285	80.4969	0	0
MAD_42	42	26.2094	0.0057	0.6945	11.9209	0.2944	0.6352	11.9455	25.7658	2.5904	9.0024	1.9059	0.8579	0.2539	0.0641	0.1881	6.546	0.2757	0	0.0108	1.4858	27.3147	0.4119	0.6352	0.5892	30.0993	3.2496	10.7966	2.2746	0.9752	0.2754	0.0264	0.1984	7.4284	0.2446	0	104.1724	736.1396	2042.

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Spot	Pb wt%	Th (wt%)	U (wt%)	Pb peak	Th peak	U peak	Pb bkgd	Th bkgd	U bkgd	Pb ppm	Th ppm	U ppm	Age (Ma)	1σ error
MAD_1	0.1882	6.7196	0.2116	19.6078	458.0343	83.2458	17.8645	39.115	69.1156	1882	67196	2116	525	58
MAD_2	0.173	6.5438	0.2167	21.8027	366.6529	79.9692	17.5073	39.4904	63.3481	1730	65438	2167	531	58
MAD_3	0.1873	6.5049	0.2411	22.9266	386.973	82.9832	17.8942	29.7176	63.7266	1873	65049	2411	570	57
MAD_4	0.2052	6.6759	0.2236	22.9766	397.0238	82.5579	17.9462	29.0456	64.9174	2052	66759	2236	615	57
MAD_5	0.1884	6.7	0.2316	21.9284	381.9048	81.6204	17.8966	29.0909	64.1558	1884	67000	2316	557	57
MAD_6	0.1934	6.6445	0.2163	21.984	383.9096	79.519	18.0358	29.0713	63.1588	1934	66449	2163	557	57
MAD_7	0.1994	6.4503	0.2144	21.8264	361.3914	78.9562	17.773	28.3281	62.9323	1994	64503	2144	597	60
MAD_8	0.1642	6.6375	0.2067	22.8516	368.3706	84.0712	18.361	30.9513	67.3549	1642	66375	2067	500	56
MAD_9	0.2117	6.5738	0.2283	23.9317	390.2564	83.3333	17.8929	29.4276	66.0965	2117	65738	2283	641	57
MAD_10	0.1825	6.6801	0.2284	22.7391	380.8962	82.2328	17.9117	28.4663	64.2051	1825	66801	2284	548	57
MAD_11	0.1679	6.5645	0.2084	22.6578	381.8118	82.1577	18.1602	29.0316	65.6852	1679	65645	2084	516	57
MAD_12	0.1555	6.5982	0.2441	22.1077	378.3399	82.8081	18.0054	28.4167	63.7823	1555	65982	2441	469	57
MAD_13	0.1667	6.5555	0.1989	22.289	390.5939	82.8456	17.7256	32.3868	66.8966	1667	65555	1989	515	56
MAD_14	0.2129	6.687	0.203	23.0641	375.723	81.7325	17.6343	30.736	63.8969	2129	66867	2030	652	58
MAD_15	0.1484	6.5251	0.2386	21.9952	382.9392	82.1077	17.9108	29.771	63.2925	1484	65251	2386	453	56
MAD_16	0.1914	6.3637	0.1773	22.2765	379.3562	80.5246	17.8504	29.921	64.0972	1914	63637	1773	587	58
MAD_17	0.1648	6.5284	0.215	22.014	377.562	80.857	17.6739	28.9775	63.7832	1648	65284	2150	507	58
MAD_18	0.2119	6.6107	0.2265	23.0514	387.5	82.4657	17.9	29.0909	64.0909	2119	66107	2265	647	58
MAD_19	0.1918	6.5109	0.2153	23.0453	384.6299	83.0096	18.0985	29.2131	64.6027	1918	65109	2153	588	57
MAD_20	0.1709	6.5502	0.2023	22.514	384.4679	82.2453	17.9609	29.7789	66.2976	1709	65502	2023	527	58
MAD_21	0.1655	6.339	0.2163	21.9514	379.0533	82.2703	17.9299	29.9955	64.6392	1655	63390	2163	494	57
MAD_22	0.1565	6.5978	0.2335	22.4515	379.4314	81.5825	18.1035	27.6564	63.2914	1565	65978	2335	474	57
MAD_23	0.1867	6.6977	0.2316	22.7766	380.7845	82.0952	17.9795	29.4876	64.0159	1867	66977	2316	566	58
MAD_24	0.1747	6.6682	0.2619	22.5828	399.0522	85.0217	17.8212	29.9146	64.0493	1747	66682	2619	517	64
MAD_25	0.1517	6.4039	0.1957	22.3277	381.1954	78.7311	18.1699	29.5374	63.524	1517	64039	1957	452	57
MAD_26	0.1601	6.5968	0.2461	22.5203	384.5181	81.5449	18.2425	29.1743	62.3573	1601	65968	2461	483	58
MAD_27	0.2024	6.5255	0.2318	22.2452	374.8756	81.8075	18.0798	29.2743	63.4493	2024	65255	2318	617	57
MAD_28	0.183	6.6581	0.2147	22.3265	382.7139	81.1073	17.6191	32.3651	64.3387	1830	66581	2147	552	58
MAD_29	0.1783	6.5	0.2167	22.6504	381.1	81.5657	17.9348	29.4348	63.8261	1783	65000	2167	537	58
MAD_30	0.1914	6.434	0.2146	22.7991	377.1763	81.3649	17.7222	29.552	64.4834	1914	64340	2146	586	58
MAD_31	0.165	6.272	0.2033	23.314	375.2319	81.0072	17.7833	29.862	64.4945	1650	62720	2033	529	58
MAD_32	0.1794	6.5214	0.206	22.6515	377.4518	80.3319	17.9038	29.7163	64.2408	1794	65214	2060	551	58
MAD_33	0.2004	6.6306	0.2344	23.8766	376.1786	82.0327	17.7403	29.1659	63.7154	2004	66306	2344	601	58
MAD_34	0.1655	6.6169	0.2316	22.589	396.2204	84.7666	18.0803	29.6884	64.2336	1655	66169	2316	492	58
MAD_35	0.1581	6.2273	0.2271	21.8077	378.354	81.4699	17.4544	29.8243	62.9363	1581	62273	2271	498	56
MAD_36	0.1845	6.5933	0.2129	22.6053	386.5477	81.3573	17.7996	29.4305	64.4723	1845	65933	2129	572	58
MAD_37	0.1671	6.6263	0.198	22.1265	383.8415	80.607	17.7306	30.0113	65.0733	1671	66263	1980	511	57
MAD_38	0.1809	6.5884	0.209	21.8452	376.4483	80.0692	17.5871	29.2622	63.7488	1809	65884	2090	553	58
MAD_39	0.1652	6.6349	0.2065	22.7391	390.2705	84.1212	18.2168	29.3106	65.9971	1652	66349	2065	499	55
MAD_40	0.1967	6.5	0.2316	22.7766	381.7845	81.5152	17.9795	29.4876	64.0159	1967	65000	2316	602	57
MAD_41	0.1847	6.5406	0.177	23.9766	382.5135	79.9185	17.9791	29.4853	64.4726	1847	65406	1770	576	58
MAD_42	0.1848	6.6767	0.2241	22.589	390.0629	81.745	17.8369	28.64	64.2374	1848	66767	2241	564	58
MAD_43	0.1789	6.546	0.2757	22.9328	381.6394	84.1723	18.0665	29.6766	64.105	1789	65460	2757	534	56
MAD_44	0.1506	6.5406	0.2126	22.5703	381.4109	80.1568	18.0291	27.3683	63.4938	1506	65406	2126	464	58
MAD_45	0.1708	6.2463	0.203	22.4328	374.3469	80.0192	17.7324	30.3885	63.4483	1708	62463	2030	549	58
MAD_46	0.1628	6.7675	0.2417	22.189	385.7459	82.658	17.9686	29.4445	63.7822	1628	67675	2417	480	56
MAD_47	0.1619	6.6449	0.2061	22.9578	387.724	82.3078	18.0222	30.4838	65.5852	1619	66449	2061	492	58
MAD_48	0.1422	6.5644	0.216	21.8077	384.042	79.8641	17.9793	28.7435	62.8807	1422	65644	2160	436	58
MAD_49	0.1602	6.613	0.2364	22.1077	381.882	82.2453	17.8057	28.7523	63.6932	1602	66130	2364	488	57
MAD_50	0.1701	6.5328	0.2299	22.6515	392.4365	83.7095	18.0152	30.1358	65.307	1701	65328	2299	518	56
MAD_51	0.1672	6.59	0.2237	22.5703	374.9964	81.0822	18.2474	28.3619	63.682	1672	65900	2237	508	58
MAD_52	0.1686	6.4453	0.2072	22.414	378.2788	80.9071	18.4271	29.5376	64.5724	1686	64453	2072	493	58
MAD_53	0.1668	6.6	0.2316	22.7766	381.7845	81.5152	17.9795	29.4876	64.0159	1668	66000	2316	503	57
MAD_54	0.1309	6.5219	0.2116	22.7391	381.7396	83.8441	19.0969	30.3122	64.8763	1309	65219	2116	405	56
MAD_55	0.1562	6.5251	0.2284	22.014	386.0231	82.733	17.7803	28.4914	64.6056	1562	65231	2284	479	58
MAD_56	0.1741	6.7064	0.2182	22.7641	387.9009	81.9652	18.1017	29.2053	64.7639	1741	67064	2182	522	57
MAD_57	0.1649	6.5003	0.2101	22.6265	376.8756	80.5194	18.2017	27.1326	63.7822	1649	65003	2101	511	58
MAD_58	0.1745	6.578	0.2108	22.114	378.2538	79.8815	17.5891	30.0151	63.2814	1745	65780	2108	534	58
MAD_59	0.1791	6.6765	0.2085	22.264	381.1854	80.8196	17.8394	29.1096	64.4945	1791	66765	2085	541	58
MAD_60	0.1545	6.5958	0.2276	23.164	394.8923	84.3338	18.1254	30.1069	66.1195	1545	65958	2276	469	55
MAD_61	0.1916	6.4193	0.1943	22.8703	377.9531	79.9567	17.9025	30.765	64.6923	1916	64193	1943	602	59
MAD_62	0.1487	6.575	0.2245	21.5701	379.4063	81.3074	17.8287	28.5475	63.5144	1487	65750	2245	438	58
MAD_63	0.1718	6.4931	0.2222	22.389	384.423	80.2193	18.0396	29.736	63.1701	1718	64931	2222	530	61
MAD_64	0.1641	6.5855	0.2137	22.7391	382.1396	82.1053	18.0769	29.3884	64.1	1641	65855	2137	503	57
MAD_65	0.1641	6.605	0.2137	22.7253	382.238	82.3203	18.2763	29.9864	65.2925	1641	66050	2137	503	56
MAD_66	0.1533	6.5907	0.2154	22.4515	382.9895	81.4074	18.3598	29.2737	64.4055	1533	65907	2154	468	57
MAD_67	0.1979	6.5847	0.2361	23.0641	377.7276	81.7926	17.934	28.9899	64.1829	1979	65847	2361	602	58
MAD_68	0.1699	6.5376	0.2174	22.489	379.9075	82.3453	17.9409	28.4212	65.051	1699	65376	2174	522	57
MAD_69	0.1515	6.5206	0.2292	21.6764	384.448	79.6811	17.8137	27.949	61.0888	1515	65206	2292	465	58
MAD_70	0.1481	6.4583	0.2195	22.3828	389.3292	83.8461	18.3015	31.3264	66.2167	1481	64583	2195	460	58
MAD_71	0.1799	6.6152	0.2669	22.8253	385.1946	84.5589	18.0582	30.1569	63.4817	1799	66152	2669	534	58
MAD_72	0.1369	6.5962	0.2111	23.3577	391.7849	82.7831	18.559	29.6266	65.9191	1369	65962	2111	425	56
MAD_73	0.1768	6.4093	0.2155	22.9766	373.7186	82.1452	18.3533	29.161	63.5485	1768	64093	2155	548	58
MAD_74	0.1623	6.5129	0.2286	22.6328	375.3472	81.3574	18.3676	30.6957	63.5707	1623	65129	2286	501	59
MAD_75	0.1669	6.5988	0.2111	22.6328	386.0231	82.1452	18.0582	30.1569	63.4817	1669	65988	2111	519	58
MAD_76	0.1609	6.599	0.231	23.0766	384.0701	84.434	18.6665	30.4506	64.9097	1609	65990	2310	489	56
MAD_77	0.1499	6.5377	0.2326	23.8953	388.1765	83.0207	18.8199	29.6574	64.45	1499	65377	2326	468	57
MAD_78	0.2221	6.7303	0.2474	23.3828	391.0582	84.1452	17.9587	29.5965	64.6058	2221	67303	2474	683	57
MAD_79	0.1618	6.5381	0.197	22.4828	379.4565	80.7921	18.1396	27.941	65.1067	1618	65381	1970	501	58
MAD_80	0.1888	6.5958	0.2638	22.6328	376.9638	81.8201	17.7372	29.0623	61.3225	1888	65958	2638	562	57
MAD_81	0.1679	6.4733	0.2233	21.9202	380.9655	79.6568	17.6657	26.9707	62.7249	1679	64733	2233	519	60
MAD_82	0.2106	6.5177	0.2358	23.9205	390.2564	84.8841	18.233	29.6839	65.9858	2106	65177	2358	643	57
MAD_83	0.1465	6.5017	0.2104	22.4078	386.9464	82.3078	18.4196	29.3375	65.0073	1465	65017	2104	454	57
MAD_84	0.1771	6.68	0.2156	22.7391	389.2039	82.3579	18.0495	30.8687	65.9414	1771	66800	2156	538	57
MAD_85	0.1674	6.5253	0.2362	22.5203	379.7822	83.2958	18.0334	28.8199	64.2497	1674	65253	2362	510	57
MAD_86	0.1367	6.6124	0.2031	21.9014	377.8027	78.456	18.2914	27.7971	63.736	1367	66124	2031	420	58
MAD_87	0.1847	6.454	0.2366	21.9264	380.8152	80.3194	17.2467	27.3211	61.9124	1847	64540	2366	567	59
MAD_88	0.1707	6.5177	0.2156	22.7641	384.5181	81.0322	18.1163	30.1535	64.2197	1707	65177	2156	524	58
MAD_89	0.1707	6.4442	0.1864	22.7266	384.5181	81.0322	18.1163	32.335	64.2197	1707	64442	1864	538	58
MAD_90	0.1492	6.5413	0.1976	22.014	382.1125	81.8701	18.035	31.1053	66.2642	1492	65413	1976	463	57
MAD_91	0.163	6.5168	0.213	22.2077	378.4391	82.3203	17.8358	28.2167	63.3738	1630	65168	2130	508	57
MAD_92	0.1515	6.6926	0.2396	22.4453	383.0898	81.6449	18.4663	28.6572	62.8038	1515	66926	2396	452	57
MAD_93	0.1925	6.5738	0.2262	22.339	388.532	79.9642	17.4864	29.8345	62.5691	1925	65738	2262	594	58
MAD_94	0.1338	6.639	0.2126	22.4515	390.9698	82.7956	18.7389	28.1294	65.7522	1338	66390	2126	408	65
MAD_95	0.1703	6.454	0.2502	22.6453	383.5498	82.7455	18.0513	29.574	62.7583	1703	64540	2502	518	58
MAD_96	0.1724	6.7069	0.209	22.6078	388.6276	82.4079	18.0368	29.1207	65.9191	1724	67069	2090	519	57
MAD_97	0.1601	6.5646	0.2068	22.639	381.5863	82.2953	18.2177	29.098	64.8635	1601	65646	2068	508	57
MAD_98	0.1933	6.5861	0.1909	23.7703	379.7571	78.3809	17.7686	30.6368	64.2942	1933	65861	1909	597	59
MAD_99	0.1668	6.5966	0.2316	22.589	386.2204	84.7666	18.0803	29.6884	64.2336	1668	65966	2316	503	58
MAD_100	0.1686	6.4787	0.2268	23.3594	388.7514	84.3338	18.0736	29.6652	64.4936	1686	64787	2268	522	58
MAD_101	0.1833	6.5968	0.2048	23.1266	390.6573	82.7455	18.1945	28.613	66.3966	1833	65968	2048	561	57
MAD_102	0.1848	6.6038	0.2045	22.3703	379.3561	80.9622	17.4913	30.5798	64.8366	1848	66038	2045	572	58
MAD_103	0.1422	6.6253	0.2015	22.0265	380.7594	79.8441	18.2683	29.2639	64.1384	1422	66253	2015	435	58
MAD_104	0.1345	6.5348	0.2298	22.2077	379.6319	82.5764	18.8086	28.7569	64.3053	1345	65348	2298	412	57
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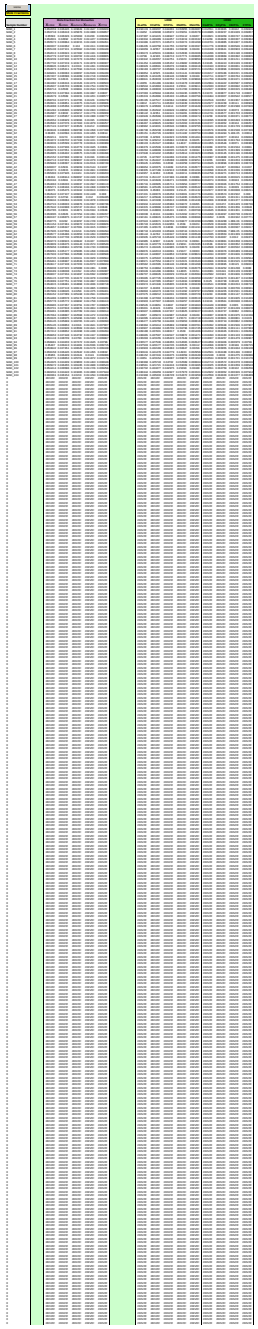

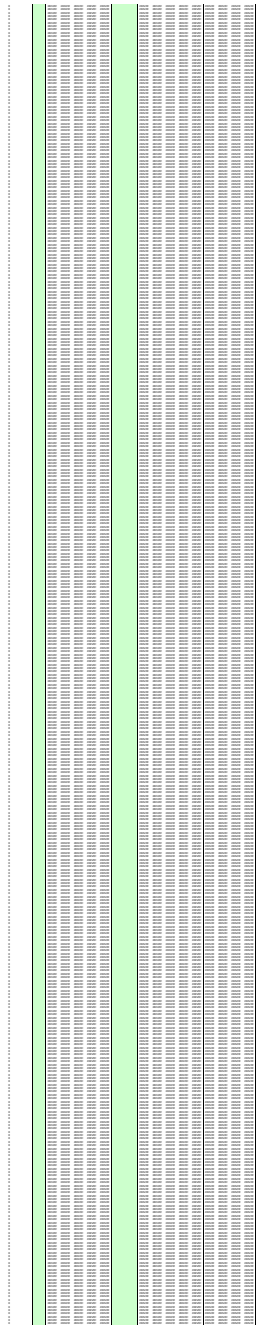

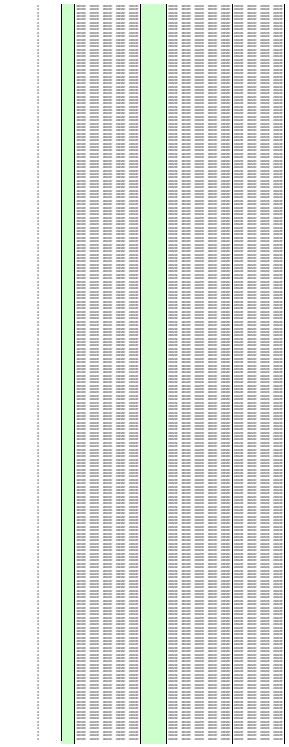

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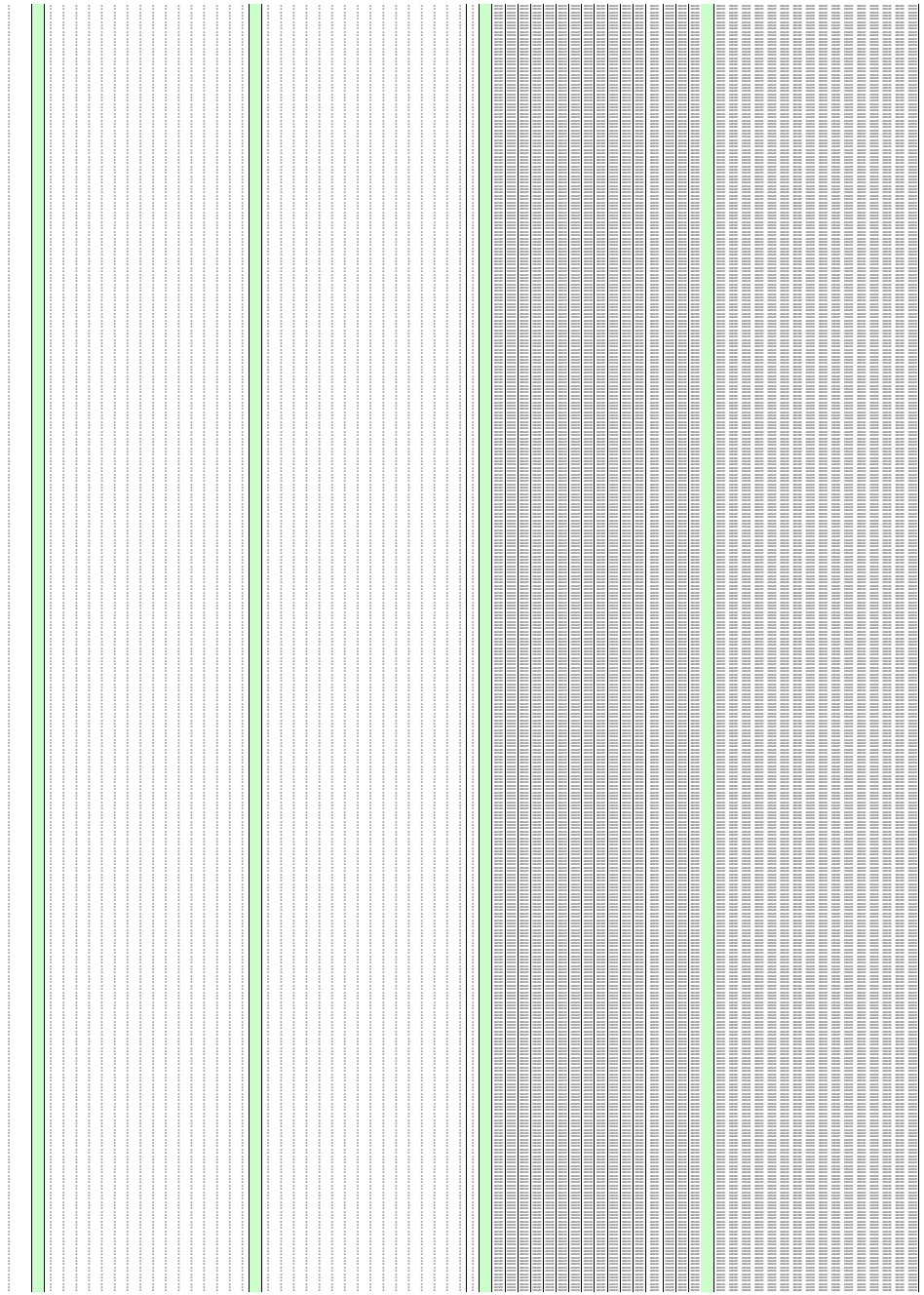
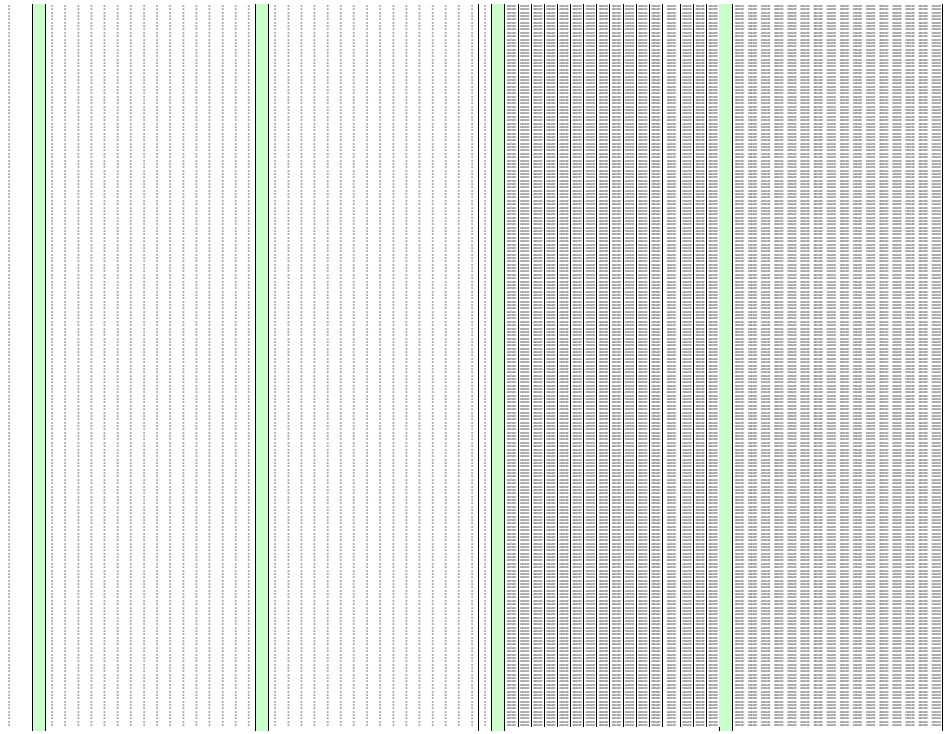


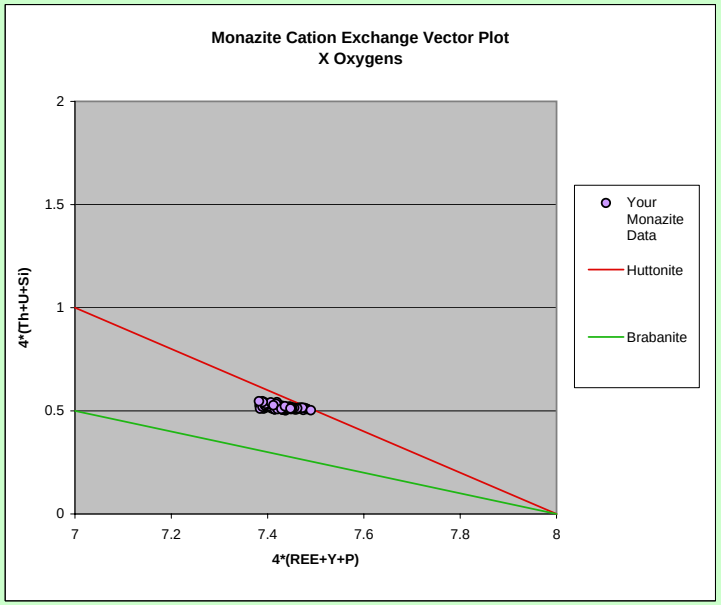


Home

Exchange Vector Graphs

Only implemented for solid solution exchange of your monazites with either Huttonite[(Th,U)SiREE$_{-1}$P$_{-1}$] and/or Brabanite[Ca(Th,U)REE$_{-2}$]

In the below diagrams you can see that our standard MAD is approximately on a solid solution with Huttonite and plots within the monazite compositional field



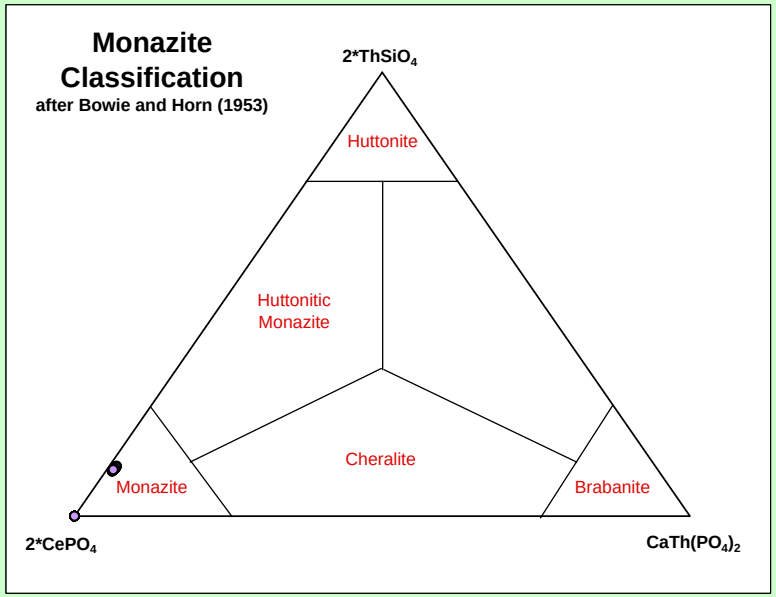


Table 1

Within-Subjects Effects

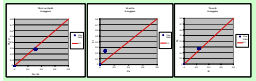
What is this table? It organizes the breakdown for our two previous **"Within-Subjects or Repeated-Measures"** ANOVAs.

Which effect matters? We only look at the **Time** row. It tells us if the change in Reaction Time was significant across the three sessions.

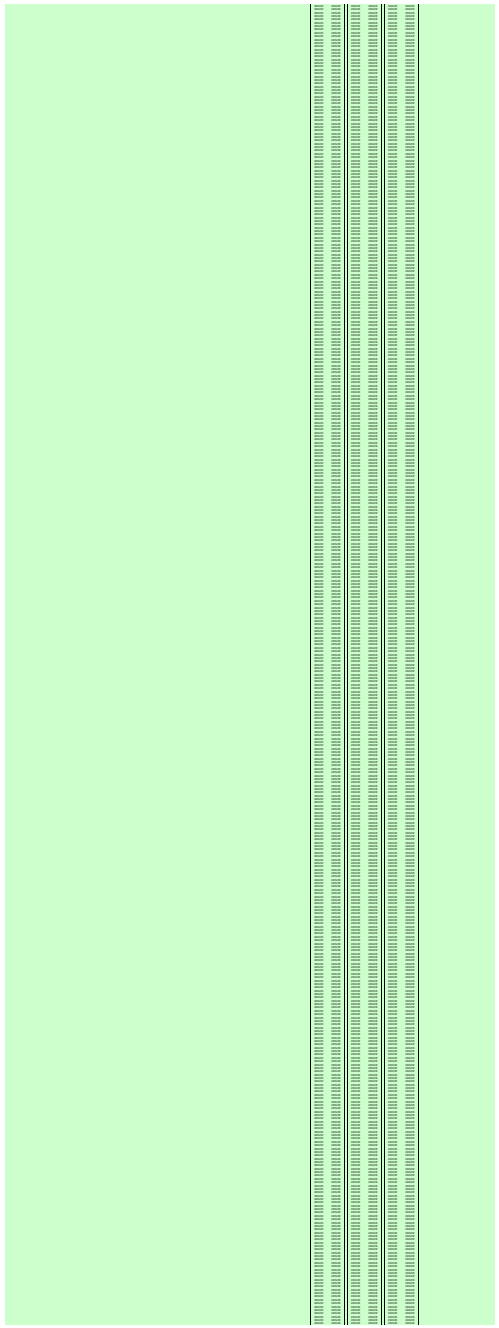
Sphericity Assumed is the standard row we look at because our data met the assumption of sphericity.

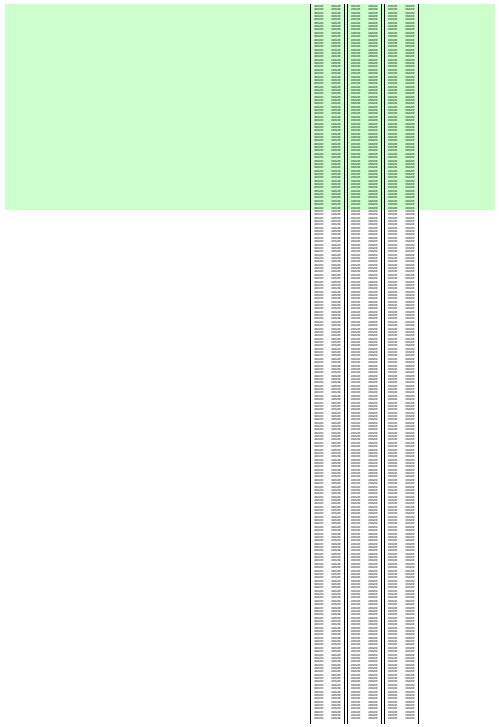
Sig. is the most important number. If it is **less than .05**, it means the difference between Session 1, Session 2, and Session 3 is statistically significant.

The Verdict: Because the Sig. value is .000 (which is less than .05), we can confidently reject the null hypothesis. The massive F-value (1,000.000) tells us that the drop in RT was not just a fluke; it is a massive, highly significant effect.



	Type III Sum of Squares	df	Mean Square	F	Sig.
Time	Sphericity Assumed	2	1000.000	1000.000	.000
	Greenhouse-Geisser	1.000	1000.000	1000.000	.000
	Huynh-Feldt	1.000	1000.000	1000.000	.000
	Lower-bound	1.000	1000.000	1000.000	.000
Error(Time)	Sphericity Assumed	198	1.000		
	Greenhouse-Geisser	99.000	1.000		
	Huynh-Feldt	99.000	1.000		
	Lower-bound	99.000	1.000		





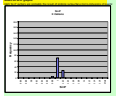
Sheet1

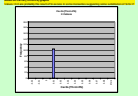
Instructions for using this workbook

There is a graph that has been pre-populated
1) Click on the Sheet2 tab at the bottom and you will see a graph. Ignore the "Sheet2" and "Sheet3" worksheet
2) Cut and Paste data in from source such as from spreadsheet of when the data values that "Sheet2" is referring to
3) Click on the graph and you will see that the data values in the graph are now updated to the data in the "Processing" sheets
4) Check with client as well and to check values for whatever rows in this sheet with the scattergram allowing or becoming go to click for
5) Once the data is in, click on the graph and you will see that the data values in the graph are now updated
6) Check that the data looks right, and the data values in the graph are correct. If the data looks correct and ready to publish, then click on the graph to select it and press Ctrl+C to copy it to the clipboard. Then click on the Sheet1 tab at the bottom and press Ctrl+V to paste the graph into this sheet.
7) DO NOT PUBLISH EITHER: the values are not right. You must ignore if THE DATA WRONG
8) Check that the graph looks right. Make sure that the data values are correct. If there is something graph format should change, please advise your values
9) Repeat the steps 4 and 5 from the top of the list and make sure the data values are correct

Values cut and paste

Values cut and Sheet2 graphs





Distance	Sum of Distance (MP)
0.000-0.250	0.000
0.251-0.500	0.000
0.501-0.750	0.000
0.751-1.000	0.000
1.001-1.250	0.000
1.251-1.500	0.000
1.501-1.750	0.000
1.751-2.000	0.000
2.001-2.250	0.000
2.251-2.500	0.000
2.501-2.750	0.000
2.751-3.000	0.000
3.001-3.250	0.000
3.251-3.500	0.000
3.501-3.750	0.000
3.751-4.000	0.000
4.001-4.250	0.000
4.251-4.500	0.000
4.501-4.750	0.000
4.751-5.000	0.000
5.001-5.250	0.000
5.251-5.500	0.000
5.501-5.750	0.000
5.751-6.000	0.000
6.001-6.250	0.000
6.251-6.500	0.000
6.501-6.750	0.000
6.751-7.000	0.000
7.001-7.250	0.000
7.251-7.500	0.000
7.501-7.750	0.000
7.751-8.000	0.000
8.001-8.250	0.000
8.251-8.500	0.000
8.501-8.750	0.000
8.751-9.000	0.000
9.001-9.250	0.000
9.251-9.500	0.000
9.501-9.750	0.000
9.751-10.000	0.000
10.001-10.250	0.000
10.251-10.500	0.000
10.501-10.750	0.000
10.751-11.000	0.000
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11.251-11.500	0.000
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11.751-12.000	0.000
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12.251-12.500	0.000
12.501-12.750	0.000
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35.001-35.250	0.000
35.251-35.500	0.000
35.501-35.750	0.000
35.751-36.000	0.000
36.001-36.250	0.000
36.251-36.500	0.000
36.501-36.750	0.000
36.751-37.000	0.000
37.001-37.250	0.000
37.251-37.500	0.000
37.501-37.750	0.000
37.751-38.000	0.000
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38.251-38.500	0.000
38.501-38.750	0.000
38.751-39.000	0.000
39.001-39.250	0.000
39.251-39.500	0.000
39.501-39.750	0.000
39.751-40.000	0.000
40.001-40.250	0.000
40.251-40.500	0.000
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49.751-50.000	0.000
50.001-50.250	0.000
50.251-50.500	0.000
50.501-50.750	0.000
50.751-51.000	0.000
51.001-51.250	0.000
51.251-51.500	0.000
51.501-51.750	0.000
51.751-52.000	0.000
52.001-52.250	0.000
52.251-52.500	0.000
52.501-52.750	0.000
52.751-53.000	0.000
53.001-53.250	0.000
53.251-53.500	0.000
53.501-53.750	0.000
53.751-54.000	0.000
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54.251-54.500	0.000
54.501-54.750	0.000
54.751-55.000	0.000
55.001-55.250	0.000
55.251-55.500	0.000
55.501-55.750	0.000
55.751-56.000	0.000
56.001-56.250	0.000
56.251-56.500	0.000
56.501-56.750	0.000
56.751-57.000	0.000
57.001-57.250	0.000
57.251-57.500	0.000
57.501-57.750	0.000
57.751-58.000	0.000
58.001-58.250	0.000
58.251-58.500	0.000
58.501-58.750	0.000
58.751-59.000	0.000
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59.251-59.500	0.000
59.501-59.750	0.000
59.751-60.000	0.000
60.001-60.250	0.000
60.251-60.500	0.000
60.501-60.750	0.000
60.751-61.000	0.000
61.001-61.250	0.000
61.251-61.500	0.000
61.501-61.750	0.000
61.751-62.000	0.000
62.001-62.250	0.000
62.251-62.500	0.000
62.501-62.750	0.000
62.751-63.000	0.000
63.001-63.250	0.000
63.251-63.500	0.000
63.501-63.750	0.000
63.751-64.000	0.000
64.001-64.250	0.000
64.251-64.500	0.000
64.501-64.750	0.000
64.751-65.000	0.000
65.001-65.250	0.000
65.251-65.500	0.000
65.501-65.750	0.000
65.751-66.000	0.000
66.001-66.250	0.000
66.251-66.500	0.000
66.501-66.750	0.000
66.751-67.000	0.000
67.001-67.250	0.000
67.251-67.500	0.000
67.501-67.750	0.000
67.751-68.000	0.000
68.001-68.250	0.000
68.251-68.500	0.000
68.501-68.750	0.000
68.751-69.000	0.000
69.001-69.250	0.000
69.251-69.500	0.000
69.501-69.750	0.000
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70.501-70.750	0.000
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71.001-71.250	0.000
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71.501-71.750	0.000
71.751-72.000	0.000
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72.251-72.500	0.000
72.501-72.750	0.000
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82.501-82.750	0.000
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84.501-84.750	0.000
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85.251-85.500	0.000
85.501-85.750	0.000
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86.001-86.250	0.000
86.251-86.500	0.000
86.501-86.750	0.000
86.751-87.000	0.000
87.001-87.250	0.000
87.251-87.500	0.000
87.501-87.750	0.000
87.751-88.000	0.000
88.001-88.250	0.000
88.251-88.500	0.000
88.501-88.750	0.000
88.751-89.000	0.000
89.001-89.250	0.000
89.251-89.500	0.000
89.501-89.750	0.000
89.751-90.000	0.000
90.001-90.250	0.000
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90.501-90.750	0.000
90.751-91.000	0.000
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91.501-91.750	0.000
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92.001-92.250	0.000
92.251-92.500	0.000
92.501-92.750	0.000
92.751-93.000	0.000
93.001-93.250	0.000
93.251-93.500	0.000
93.501-93.750	0.000
93.751-94.000	0.000
94.001-94.250	0.000
94.251-94.500	0.000
94.501-94.750	0.000
94.751-95.000	0.000
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95.251-95.500	0.000
95.501-95.750	0.000
95.751-96.000	0.000
96.001-96.250	0.000
96.251-96.500	0.000
96.501-96.750	0.000
96.751-97.000	0.000
97.001-97.250	0.000
97.251-97.500	0.000
97.501-97.750	0.000
97.751-98.000	0.000
98.001-98.250	0.000
98.251-98.500	0.000
98.501-98.750	0.000
98.751-99.000	0.000
99.001-99.250	0.000
99.251-99.500	0.000
99.501-99.750	0.000
99.751-100.000	0.000
100.001-100.250	0.000
100.251-100.500	0.000
100.501-100.750	0.000
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112.501-112.750	0.000
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113.501-113.750	0.000
113.751-114.000	0.000
114.001-114.250	0.000
114.251-114.500	0.000
114.501-114.750	0.000
114.751-115.000	0.000
115.001-115.250	0.000
115.251-115.500	0.000
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115.751-116.000	0.000
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116.751-117.000	0.000
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119.501-119.750	0.000
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120.001-120.250	0.000
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120.501-120.750	0.000
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121.251-121.500	0.000
121.501-121.750	0.000
121.751-122.000	0.000
122.001-122.250	0.000
122.251-122.500	0.000
122.501-122.750	0.000
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124.501-124.750	0.000
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130.501-130.750	0.000
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134.001-134.250	0.000
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138.501-138.750	0.000
138.751-139.000	0.000
139.001-139.250	0.000
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139.501-139.750	0.000
139.751-140.000	0.000
140.001-140.250	0.000
140.251-140.500	0.000
140.501-140.750	0.000
140.751-141.000	0.000
141.001-141.250	0.000
141.251-141.500	0.000
141.501-141.750	0.000
141.751-142.000	0.000
142.001-142.250	0.000
142.251-142.500	0.000
142.501-142.750	0.000
142.751-143.000	0.000
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143.251-143.500	0.000
143.501-143.750	0.000
143.751-144.000	0.000
144.001-144.250	0.000
144.251-144.500	0.000
144.501-144.750	0.000
144.751-145.000	0.000
145.001-145.250	0.000
145.251-145.500	0.000
145.501-145.750	0.000
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146.251-146.500	0.000
146.501-146.750	0.000
146.751-147.000	0.000
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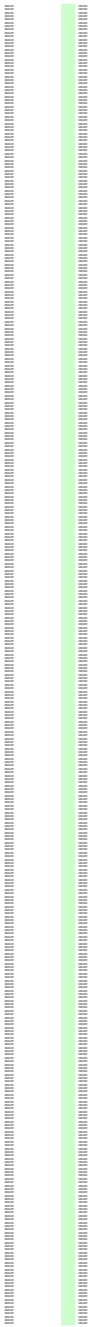
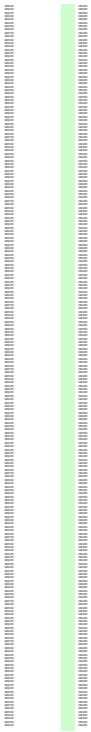
147.251-147.500	0.000
147.501-147.750	0.000
147.751-148.000	0.000
148.001-148.250	0.000
148.251-148.500	0.000
148.501-148.750	0.000
148.751-149.000	0.000
149.001-149.250	0.000
149.251-149.500	0.000
149.501-149.750	0.000
149.751-150.000	0.000
150.001-150.250	0.000
150.251-150.500	0.000
150.501-150.750	0.000
150.751-151.000	0.000
151.001-151.250	0.000
151.251-151.500	0.000
151.501-151.750	0.000
151.751-152.000	0.000
152.001-152.250	0.000
152.251-152.500	0.000
152.501-152.750	0.000
152.751-153.000	0.000
153.001-153.250	0.000
153.251-153.500	0.000
153.501-153.750	0.000
153.751-154.000	0.000
154.001-154.250	0.000
154.251-154.500	0.000
154.501-154.750	0.000
154.751-155.000	0.000
155.001-155.250	0.000
155.251-155.500	0.000
155.501-155.750	0.000
155.751-156.000	0.000
156.001-156.250	0.000
156.251-156.500	0.000
156.501-156.750	0.000
156.751-157.000	0.000
157.001-157.250	0.000
157.251-157.500	0.000
157.501-157.750	0.000
157.751-158.000	0.000
158.001-158.250	0.000
158.251-158.500	0.000
158.501-158.750	0.000
158.751-159.000	0.000
159.001-159.250	0.000
159.251-159.500	0.000
159.501-159.750	0.000
159.751-160.000	0.000
160.001-160.250	0.000
160.251-160.500	0.000
160.501-160.750	0.000
160.751-161.000	0.000
161.001-161.250	0.000
161.251-161.500	0.000
161.501-161.750	0.000
161.751-162.000	0.000
162.001-162.250	0.000
162.251-162.500	0.000
162.501-162.750	0.000
162.751-163.000	0.000
163.001-163.250	0.000
163.251-163.500	0.000
163.501-163.750	0.000
163.751-164.000	0.000
164.001-164.250	0.000
164.251-164.500	0.000
164.501-164.750	0.000
164.751-165.000	0.000
165.001-165.250	0.000
165.251-165.500	0.000
165.501-165.750	0.000
165.751-166.000	0.000
166.001-166.250	0.000
166.251-166.500	0.000
166.501-166.750	0.000
166.751-167.000	0.000
167.001-167.250	0.000
167.251-167.500	0.000
167.501-167.750	0.000
167.751-168.000	0.000
168.001-168.250	0.000
168.251-168.500	0.000
168.501-168.750	0.000
168.751-169.000	0.000
169.001-169.250	0.000
169.251-169.500	0.000
169.501-169.750	0.000
169.751-170.000	0.000
170.001-170.250	0.000
170.251-170.500	0.000
170.501-170.750	0.000
170.751-171.000	0.000
171.001-171.250	0.000
171.251-171.500	0.000
171.501-171.750	0.000
171.751-172.000	0.000
172.001-172.250	0.000
172.251-172.500	0.000
172.501-172.750	0.000
172.751-173.000	0.000
173.001-173.250	0.000
173.251-173.500	0.000
173.501-173.750	0.000
173.751-174.000	0.000
174.001-174.250	0.000
174.251-174.500	0.000
174.501-174.750	0.000
174.751-175.000	0.000
175.001-175.250	0.000
175.251-175.500	0.000
175.501-175.750	0.000
175.751-176.000	0.000
176.001-176.250	0.000
176.251-176.500	0.000
176.501-176.750	0.000
176.751-177.000	0.000
177.001-177.250	0.000
177.251-177.500	0.000
177.501-177.750	0.000
177.751-178.000	0.000
178.001-178.250	0.000
178.251-178.500	0.000
178.501-178.750	0.000
178.751-179.000	0.000
179.001-179.250	0.000
179.251-179.500	0.000
179.501-179.750	0.000
179.751-180.000	0.000
180.001-180.250	0.000
180.251-180.500	0.000
180.501-180.750	0.000
180.751-181.000	0.000
181.001-181.250	0.000
181.251-181.500	0.000
181.501-181.750	0.000
181.751-182.000	0.000
182.001-182.250	0.000
182.251-182.500	0.000
182.501-182.750	0.000
182.751-183.000	0.000
183.001-183.250	0.000
183.251-183.500	0.000
183.501-183.750	0.000
183.751-184.000	0.000
184.001-184.250	0.000
184.251-184.500	0.000
184.501-184.750	0.000
184.751-185.000	0.000
185.001-185.250	0.000
185.251-185.500	0.000
185.501-185.750	0.000
185.751-186.000	0.000
186.001-186.250	0.000
186.251-186.500	0.000
186.501-186.750	0.000
186.751-187.000	0.000
187.001-187.250	0.000
187.251-187.500	0.000
187.501-187.750	0.000
187.751-188.000	0.000
188.001-188.250	0.000
188.251-188.500	0.000
188.501-188.750	0.000
188.751-189.000	0.000
189.001-189.250	0.000
189.251-189.500	0.000
189.501-189.750	0.000
189.751-190.000	0.000
190.001-190.250	0.000
190.251-190.500	0.000
190.501-190.750	0.000
190.751-191.000	0.000
191.001-191.250	0.000
191.251-191.500	0.000
191.501-191.750	0.000
191.751-192.000	0.000
192.001-192.250	0.000
192.251-192.500	0.000
192.501-192.750	0.000
192.751-193.000	0.000
193.001-193.250	0.000
193.251-193.500	0.000
193.501-193.750	0.000
193.751-194.000	0.000
194.001-194.250	0.000
194.251-194.500	0.000
194.501-194.750	0.000
194.751-195.000	0.000
195.001-195.250	0.000
195.251-195.500	0.000
195.501-195.750	0.000
195.751-196.000	0.000
196.001-196.250	0.000
196.251-196.500	0.000
196.501-196.750	0.000
196.751-197.000	0.000
197.001-197.250	0.000
197.251-197.500	0.000
197.501-197.750	0.000
197.751-198.000	0.000
198.001-198.250	0.000
198.251-198.500	0.000
198.501-198.750	0.000
198.751-199.000	0.000
199.001-199.250	0.000
199.251-199.500	0.000
199.501-199.750	0.000
199.751-200.000	0.000

Distance	Sum of Distance (MP)
0.000-0.250	0.000
0.251-0.500	0.000
0.501-0.750	0.000
0.751-1.000	0.000
1.001-1.250	0.000
1.251-1.500	0.000
1.501-1.750	0.000
1.751-2.000	0.000
2.001-2.250	0.000
2.251-2.500	0.000
2.501-2.750	0.000
2.751-3.000	0.000
3.001-3.250	0.000
3.251-3.500	0.000
3.501-3.750	0.000
3.751-4.000	0.000
4.001-4.250	0.000
4.251-4.500	0.000
4.501-4.750	0.000
4.751-5.000	0.000
5.001-5.250	0.000
5.251-5.500	0.000
5.501-5.750	0.000
5.751-6.000	0.000
6.001-6.250	0.000
6.251-6.500	0.000
6.501-6.750	0.000
6.751-7.000	0.000
7.001-7.250	0.000
7.251-7.500	0.000
7.501-7.750	0.000
7.751-8.000	0.000
8.001-8.250	0.000
8.251-8.500	0.000
8.501-8.750	0.000
8.751-9.000	0.000
9.001-9.250	0.000
9.251-9.500	0.000
9.501-9.750	0.000
9.751-10.000	0.000
10.001-10.250	0.000
10.251-10.500	0.000
10.501-10.750	0.000
10.751-11.000	0.000
11.001-11.250	0.000
11.251-11.500	0.000
11.501-11.750	0.000
11.751-12.000	0.000
12.001-12.250	0.000
12.251-12.500	0.000





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YAG-Monazite Thermometer

***WARNING* Use this at your own risk, only applicable in limited circumstances. See below for very brief outline but read Pyle et al., (2001) for full details on its use [Journal of Petrology, v12 no.11 p2083-2107]**

Notes on the YAG-Monazite Thermometer

Utilises the mass transfer between Yttrium Aluminous Garnet (YAG) and monazite
Thermometer based on the consumption of YAG, OH component of Apatite, and Quartz to produce Grossular, Anorthite, andYPO4 component of Monazite
YAG in Garnet + OH in Apatite + Qtz → Grossular + Anorthite + YPO4 Monazite
So I guess if you don't have these in your assemblage to start with give up using this now.
Even if you do have these must make sure that monazite and garnet grew in equilibrium through textural and chemical analysis (see paper mentioned above for criteria)
f(H2O) should ideally be calculated but if you fiddle around below you see it doesn't change the T at all really
Components of the T equation are sample specific such as the ln(Keq), Xgrs, XYAG, Xan, XYPO4 and XOH-Ap
However in the T equation I have entered in values for the volume of YPO4 monazite in J/Bar taken directly from the paper
Errors on the T are given as ±20-30°C

Data	Example 1	Example 2													
Xgrs	0.07	0.07													
XYAG	0.0097	0.0097													
Xan	0.03	0.03													
XYPO4	0.0225	0.0225													
XOH-Ap	0.27	0.27													
f(H2O)	1262.7	5000													
ln(KEq)	-6.95142	-6.26332	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
P	4000	4000													
T	434	441	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!

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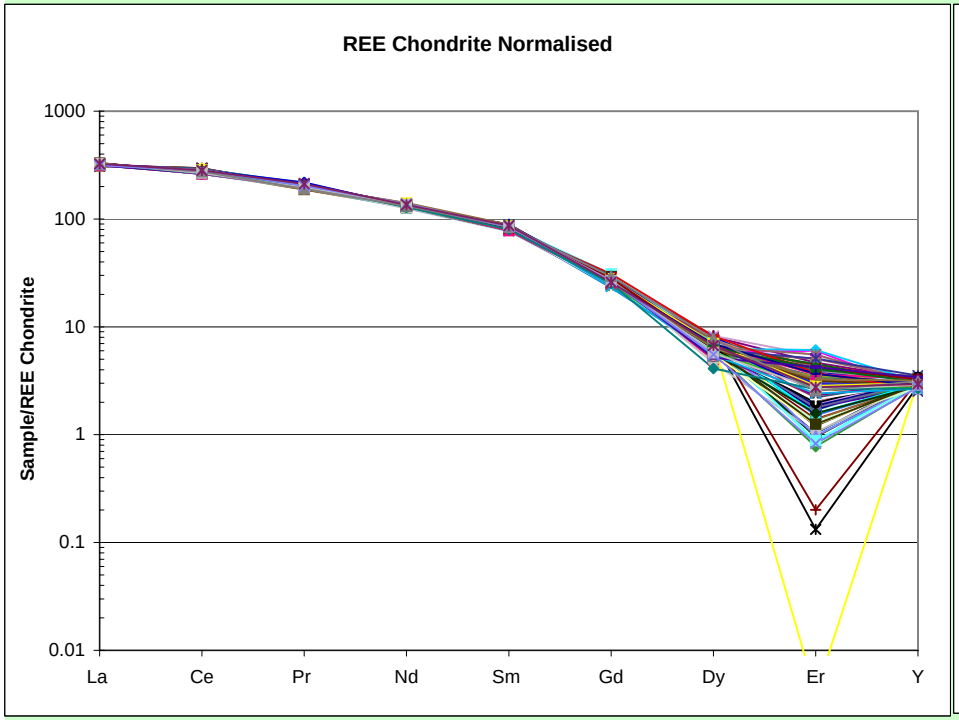
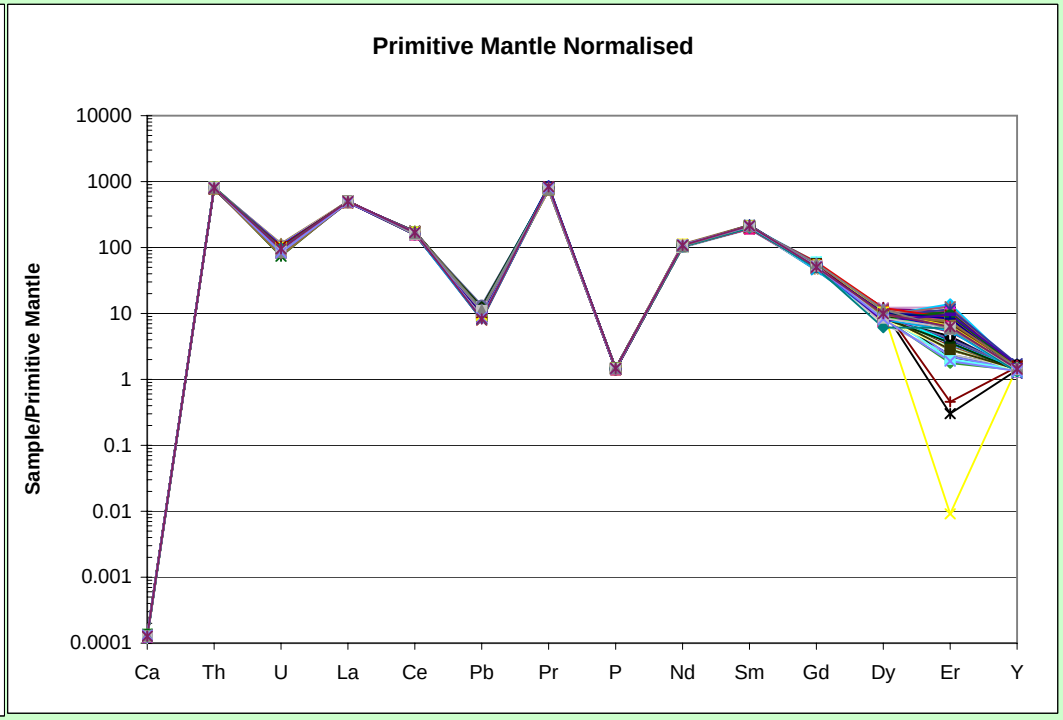
Chondrite REE and Primitive Mantle Normalised Spidergrams

1) Graphs of both REE chondrite normalised to Taylor and McLennan (1985) and Primitive Mantle normalised to Sun and McDonough (1989)
2) Graphs should appear automatically