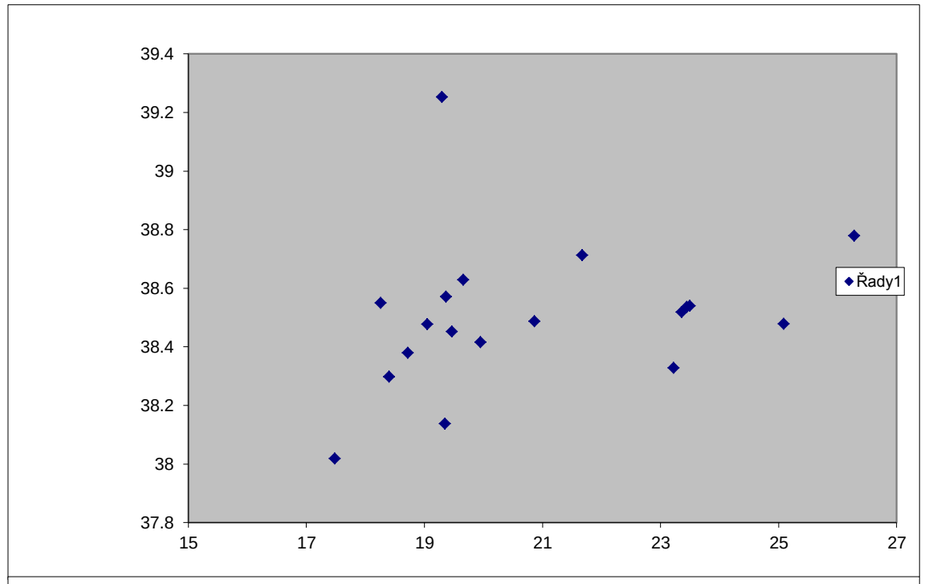
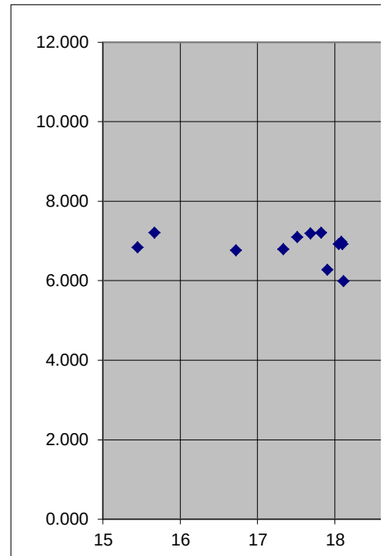
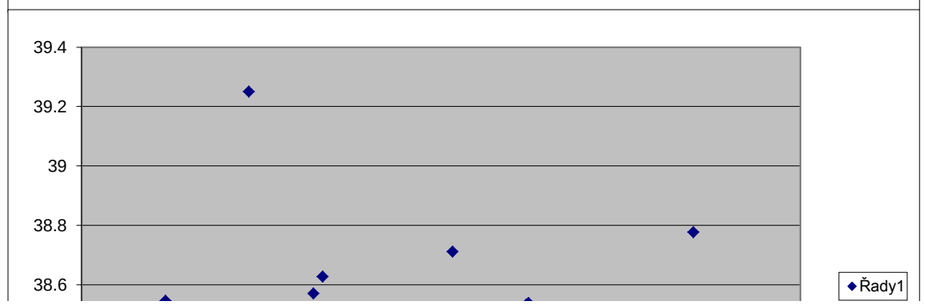
sample	206/204	207/204	208/204	238/204	U (ppm)	Pb (ppm)	Th (ppm)		206 pmol	207 pmol	208 pmol	204 pmol	238 pmol	x	6/4comm	7/4comm
862	325.033	34.803	38.446	14990	1584.6	36.31	0.5	29.785	77.693	8.319	9.190	0.239	3,582.975	0.356	68.4	21
863	280.421	31.541	38.511	10780	1499.9	42.067	0.5	33.468	49.947	5.618	6.859	0.178	1,920.919	0.375	79.5	22.2
864	266.674	31.261	38.596	12010	1575.3	38.1	0.5	29.994	68.584	8.039	9.926	0.257	3,088.738	0.399	54.5	19.5
865	320.435	34.932	38.659	15420	1654	36.455	0.5	29.826	55.915	6.095	6.745	0.174	2,690.977	0.417	54.5	19.5
866	236.207	29.311	38.401	10690	1577.3	38.72	0.5	29.604	55.811	6.945	9.073	0.236	2,526.780	0.343	54.5	19.5
867	556.186	48.548	38.592	25290	1570.02	34.397	0.5	30.56	1,123.330	98.050	77.942	2.020	51,087.736	0.398	102.6	24.7
868	552.491	48.228	38.38	25240	1569.15	34.212	0.5	30.3707	1,117.206	97.520	77.606	2.022	51,060.322	0.337	114.7	26
869	552.513	48.242	38.587	25030	1566.3	34.4593	0.5	30.5923	1,124.743	98.379	78.549	2.036	50,967.988	0.396	102.6	24.7
870	555.499	48.494	38.57	25370	1574.7	34.351	0.5	30.5154	1,121.790	97.930	77.888	2.019	51,240.668	0.391	102.6	24.7
817	1002.328	75.509	38.594	50900	1419.9	26.799	0.5	25.077	4.778	0.360	0.184	0.005	242.677	0.398	114.7	26
818	756.723	63.525	38.647	45690	1514.82	24.514	0.5	22.267	4.916	0.413	0.251	0.006	296.834	0.413	29.5	16.8
819	190.597	25.833	38.471	6430	1069.9	36.66	0.5	26.277	8.465	1.147	1.708	0.044	285.553	0.363	63.7	20.5
820	631.728	55.812	39.33	36860	1547.645	26.278	0.5	23.686	3.979	0.351	0.247	0.006	232.207	0.609	29.5	16.8
805	308.252	33.293	38.739	11730	1412.6	39.333	0.5	31.923	32.065	3.463	4.029	0.104	1,225.677	0.440	74.9	21.7
806	366.398	36.803	38.176	17620	1478.945	31.929	0.5	26.756	22.960	2.304	2.386	0.062	1,104.312	0.279	74.9	21.7
807	134.028	22.86	38.032	5430	1342.6	41.704	0.5	26.429	17.408	2.969	4.939	0.130	705.639	0.238	54.5	19.5
808	185.463	25.775	38.315	7440	1380.759	40.05	0.5	28.574	18.529	2.575	3.828	0.100	742.973	0.319	54.5	19.5
809	617.802	52.165	38.84	26130	1376.185	32.146	0.5	28.891	17.641	1.489	1.109	0.029	746.254	0.469	114.7	26
810	223.141	28.066	38.497	9100	1510.766	41.5137	0.5	31.262	18.840	2.369	3.249	0.084	768.809	0.371	54.5	19.5

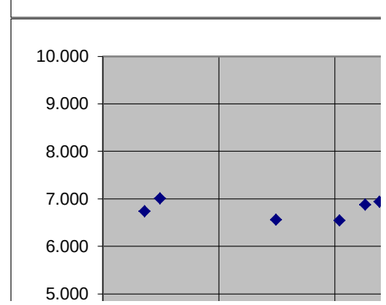
		206/204	207/204	208/024
T=130	862	19.6722646	19.9526962	38.41547733
	863	60.8220189	20.861462	38.4878102
	864	22.0187344	19.3629247	38.57140084
	865	6.31475054	19.6557035	38.6289192
	866	18.4414055	18.7206232	38.37913226
	867	41.0043457	23.4936849	38.54002624
	868	38.3278939	23.2232189	38.32810024
	869	42.6277961	23.4452619	38.5354384
	870	38.6876687	23.3604304	38.51801679
	817	-34.5540167	25.083352	38.47833539
	818	-174.026299	18.2607985	38.54968033
	819	59.6117079	19.462923	38.45160864
	820	-119.145696	19.2955091	39.25315343
	805	69.300604	21.6723153	38.71220713
	806	7.46163194	19.3472059	38.13755903
	807	23.4136709	17.4806038	38.01895051
	808	33.9030353	18.4043355	38.29761417
	809	85.5087368	26.2785131	38.77873632
	810	37.7652367	19.0508056	38.47756499

		206/204	207/204	208/024
T=135	862	7.80420195	19.3426846	38.41429945
	863	52.2871479	20.4227745	38.4869153
	864	12.5100331	18.8741829	38.57045155
	865	-5.8937569	19.0281933	38.62775837
	866	9.97779045	18.2855983	38.37828838
	867	20.9814435	22.4645193	38.53802055
	868	18.3445782	22.196088	38.3260974
	869	22.8107442	22.4266769	38.53344862
	870	18.6014279	22.3280093	38.51601073
	817	-74.8531755	23.0119985	38.47387184





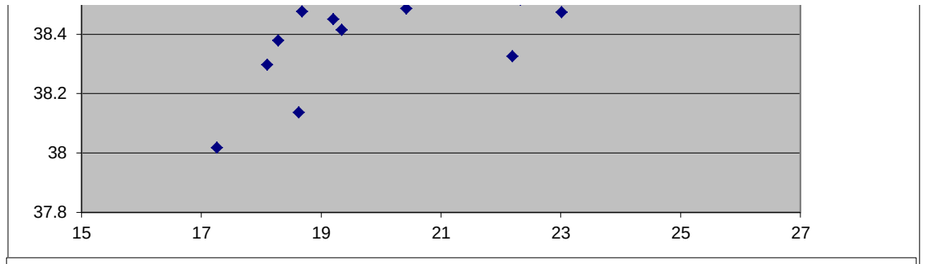


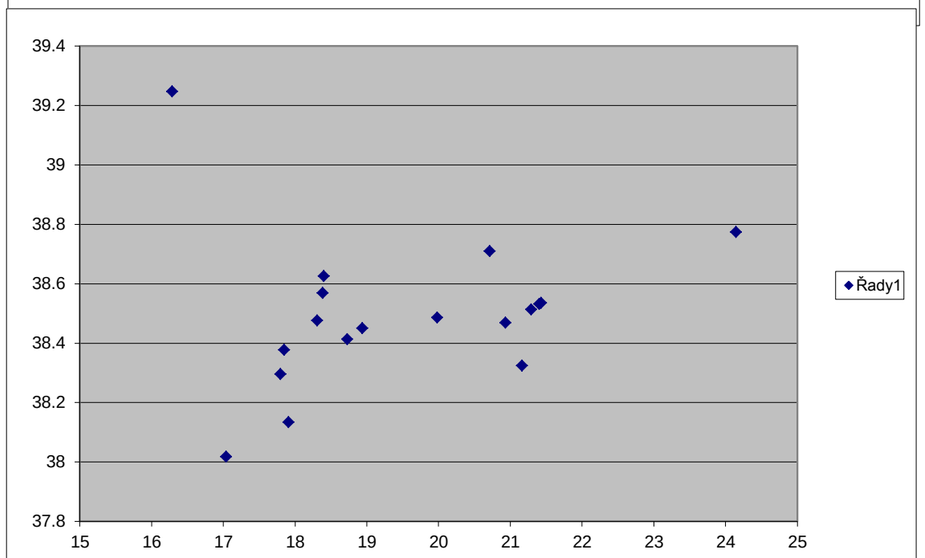


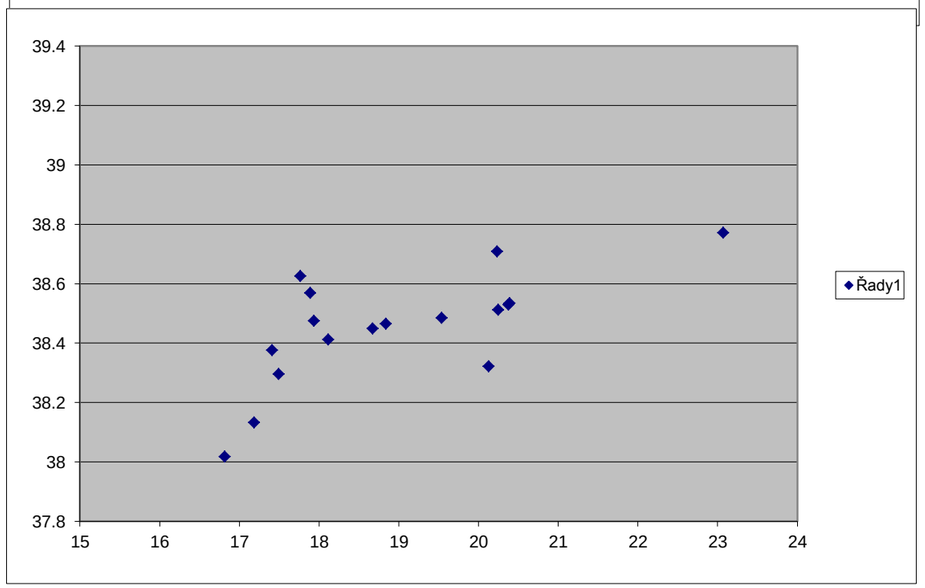
	818	-210.200535	16.4014637	38.54592473
	819	54.5208712	19.201257	38.45086032
	820	-148.328938	17.7955073	39.25018789
	805	60.0135877	21.194968	38.71117318
	806	-6.4886859	18.6301676	38.13607557
	807	19.1145662	17.2596323	38.01844692
	808	28.0125492	18.1015679	38.29694324
	809	64.8207797	25.215164	38.77637213
	810	30.5604755	18.680485	38.47681499

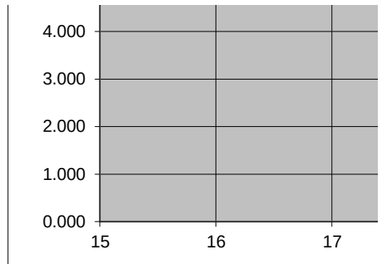
		206/204	207/204	208/024
T=140	862	-4.07306459	18.7296617	38.41312129
	863	43.745658	19.9819215	38.48602018
	864	2.99395759	18.3830285	38.56950203
	865	-18.1117322	18.3975853	38.62659726
	866	1.50761171	17.8484258	38.37744429
	867	0.94301311	21.4302731	38.53601438
	868	-1.65423484	21.1638866	38.32409409
	869	2.97832377	21.4030635	38.53145835
	870	-1.50039017	21.2904914	38.5140042
	817	-115.183587	20.9304196	38.46940722
	818	-246.402823	14.5329501	38.54216822
	819	49.4260864	18.9382992	38.45011182
	820	-177.534811	16.2881007	39.24722164
	805	50.7193691	20.7152643	38.71013898
	806	-20.4498224	17.9095896	38.13459176
	807	14.8121274	17.0375699	38.01794321
	808	22.117495	17.7973057	38.29627215
	809	44.1167787	24.1465657	38.77400737
	810	23.3501269	18.3083363	38.4760648

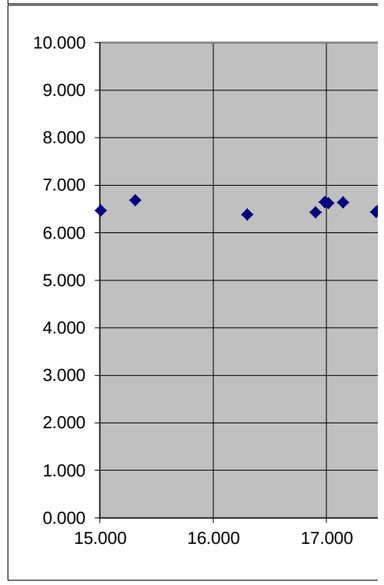
		206/204	207/204	208/024
T=145	862	-15.959565	18.1136125	38.41194283
	863	35.1975277	19.5388921	38.48512484
	864	-6.52951603	17.8894493	38.56855228
	865	-30.3392063	17.7638642	38.62543587
	866	-6.96915207	17.4090952	38.37659999
	867	-19.1109959	20.3909212	38.53400772
	868	-21.6685957	20.1265896	38.32209028
	869	-16.8695151	20.3743969	38.5294676
	870	-21.6178361	20.2478518	38.51199717
	817	-155.545353	18.8385647	38.46494151
	818	-282.633257	12.6552124	38.53841078
	819	44.3273407	18.6740432	38.44936313
	820	-206.763391	14.7732525	39.24425466
	805	41.4179248	20.2331924	38.70910453
	806	-34.4218129	17.1854544	38.13310759
	807	10.5063437	16.8144113	38.01743938
	808	16.2178577	17.4915415	38.2956009
	809	23.3966816	23.072692	38.77164203
	810	16.1341727	17.9343505	38.47531443

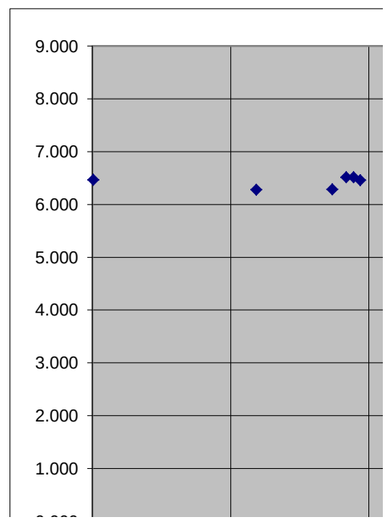








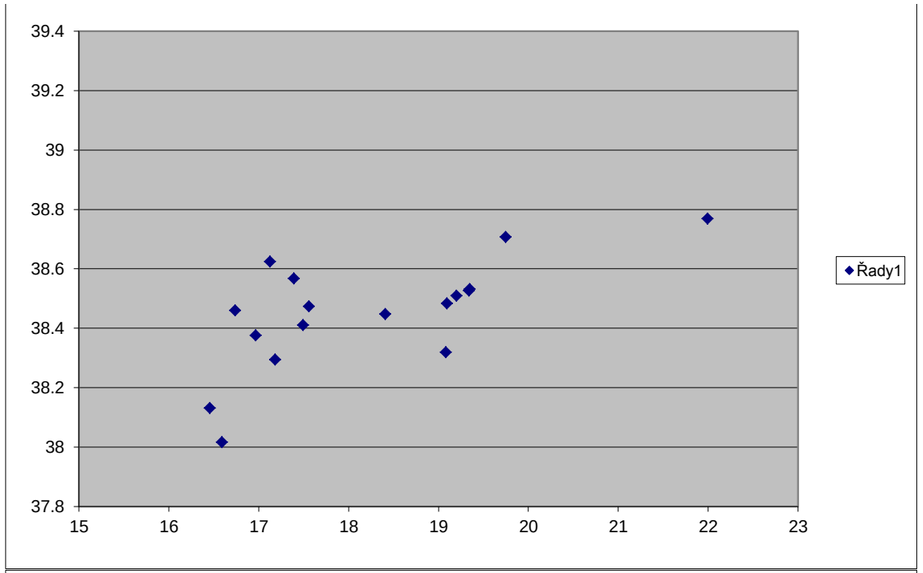


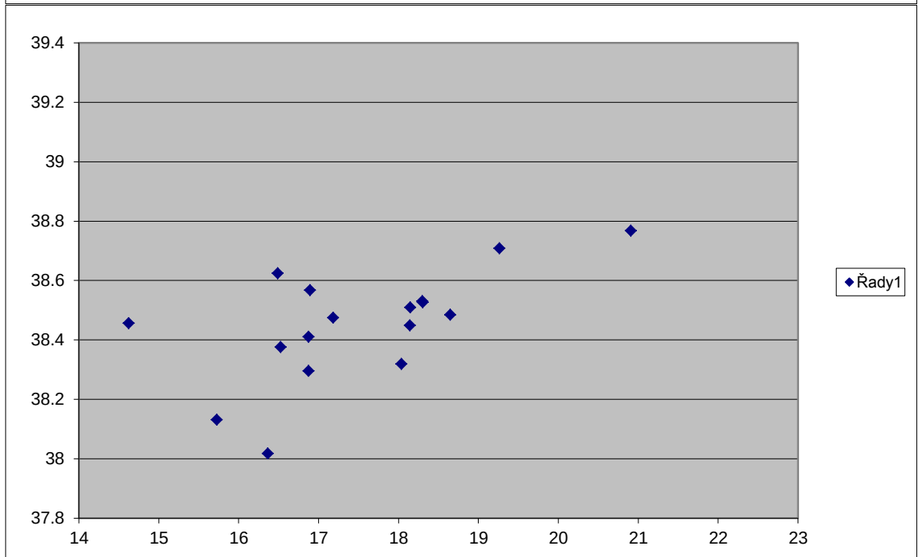


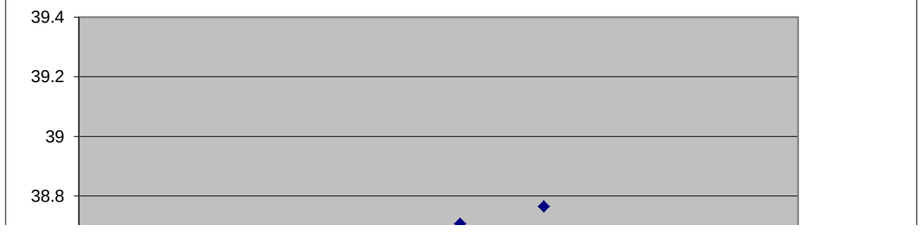
		206/204	207/204	208/024
T=150	862	-27.8552692	17.4945221	38.41076408
	863	26.6427784	19.0936757	38.48422928
	864	-16.0603638	17.3934336	38.56760229
	865	-42.5761482	17.1270147	38.62427418
	866	-15.4524795	16.9675958	38.37575549
	867	-39.1805329	19.3464385	38.53200055
	868	-41.698454	19.084172	38.32008598
	869	-36.7327224	19.3406523	38.52747636
	870	-41.7508592	19.2000651	38.50998964
	817	-195.938371	16.7363832	38.46047468
	818	-318.891745	10.7682051	38.53465242
	819	39.224647	18.4084828	38.44861426
	820	-236.014602	13.2509262	39.24128694
	805	32.1092783	19.7487408	38.70806982
	806	-48.404622	16.4577445	38.13162305
	807	6.19722603	16.5901511	38.01693543
	808	10.3136522	17.1842678	38.29492948
	809	2.66054073	21.9935172	38.7692761
	810	8.9126311	17.5585184	38.47456388

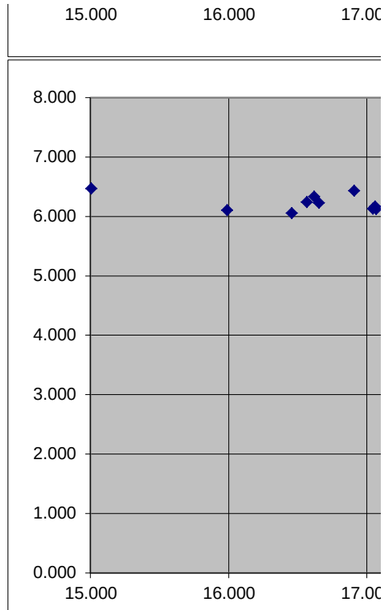
		206/204	207/204	208/024
T=155	862	-39.7602223	16.8723755	38.40958504
	863	18.0813778	18.6462613	38.4833335
	864	-25.5986217	16.8949693	38.56665206
	865	-54.8226042	16.4870213	38.62311221
	866	-23.9424027	16.5239169	38.37491077
	867	-59.2656739	18.2967995	38.52999289
	868	-61.7438853	18.0366082	38.31808117
	869	-56.6113732	18.3018044	38.52548462
	870	-61.8995356	18.1471058	38.50798161
	817	-236.362795	14.6238239	38.45600674
	818	-355.178423	8.87188222	38.53089312
	819	34.117986	18.1416114	38.44786521
	820	-265.288556	11.7210847	39.23831848
	805	22.7933944	19.2618975	38.70703486
	806	-62.3983026	15.726442	38.13013813
	807	1.88475804	16.3647838	38.01643135
	808	4.40485632	16.8754772	38.29425789
	809	-18.0917224	20.9090147	38.76690959
	810	1.6854748	17.180831	38.47381314

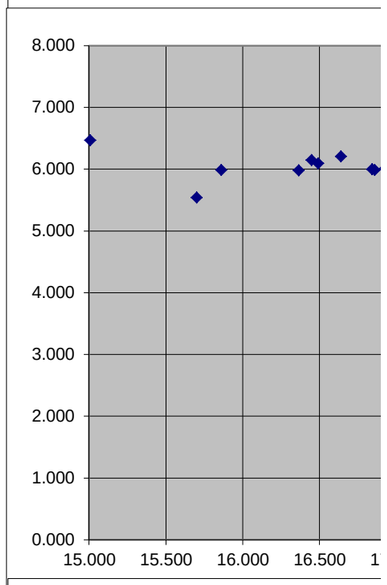
		206/204	207/204	208/024
T=160	862	-51.6743942	16.2471574	38.40840571
	863	9.5133476	18.1966382	38.48243749
	864	-35.1442658	16.3940441	38.5657016
	865	-67.0785436	15.8438684	38.62194995
	866	-32.4389002	16.0780476	38.37406585
	867	-79.3663682	17.2419787	38.52798473
	868	-81.8048392	16.9838728	38.31607587

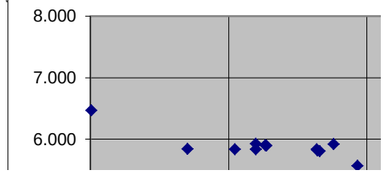




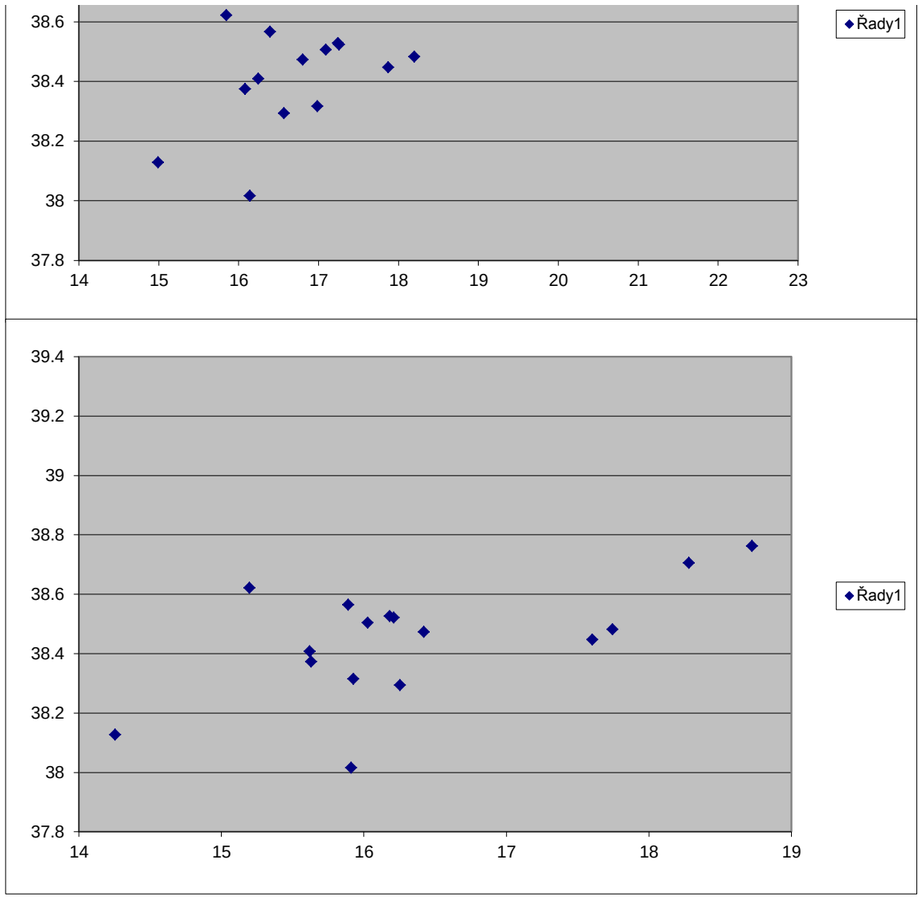


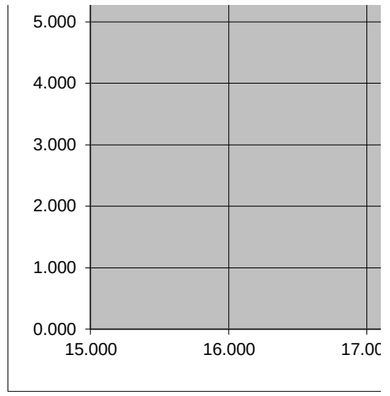






869	-76.5054174	17.2578279	38.52349238
870	-82.0638146	17.0889482	38.50597308
817	-276.818522	12.5008354	38.4515377
818	-391.4932	6.96619765	38.52713288
819	29.0073706	17.8734224	38.44711596
820	-294.585179	10.1836906	39.23534928
805	13.4702966	18.7726509	38.70599963
806	-76.4028196	14.9915293	38.12865285
807	-2.4310494	16.1383039	38.01592714
808	-1.5085152	16.5651622	38.29358614
809	-38.8600554	19.8191583	38.76454248
810	-5.547278	16.801279	38.47306221



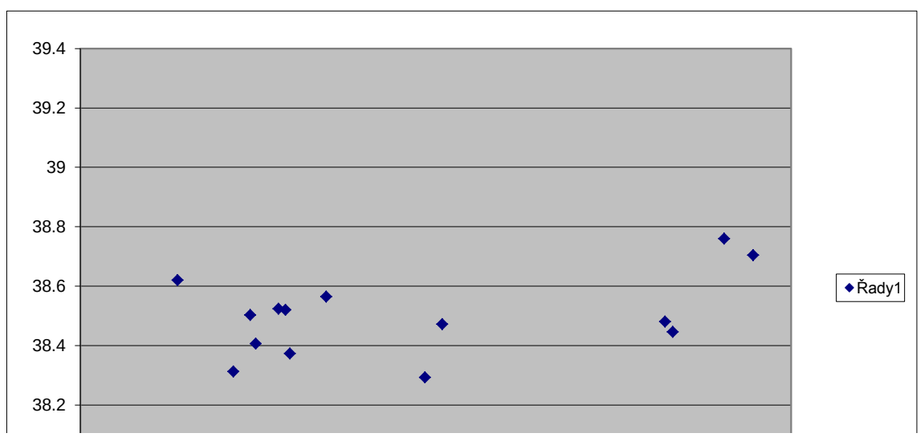


T=165

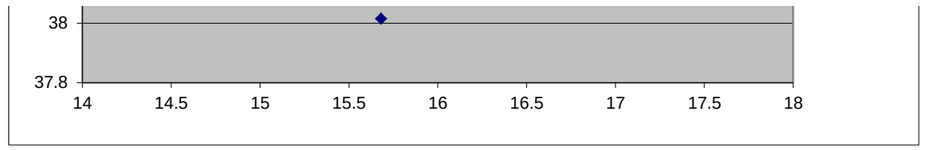
	206/204	207/204	208/024
862	-63.5978299	15.618853	38.40722608
863	0.93865532	17.7447956	38.48154126
864	-44.6973321	15.8906461	38.56475091
865	-79.3440125	15.1975406	38.6207874
866	-40.9420041	15.6299772	38.37322071
867	-99.4826917	16.1819508	38.52597608
868	-101.881391	15.9259406	38.31407008
869	-96.4149302	16.2086979	38.52149966
870	-102.243772	16.0255671	38.50396407
817	-317.305705	10.3673668	38.44706756
818	-427.836214	5.05110568	38.52337173
819	23.8927814	17.6039096	38.44636654
820	-323.904581	8.63870727	39.23237936
805	4.13994962	18.280989	38.70496416
806	-90.4182257	14.2529887	38.12716721
807	-6.75021258	15.9107059	38.01542281
808	-7.42648464	16.2533153	38.29291422
809	-59.6445368	18.7239219	38.7621748
810	-12.7856546	16.4198534	38.47231109

T=170

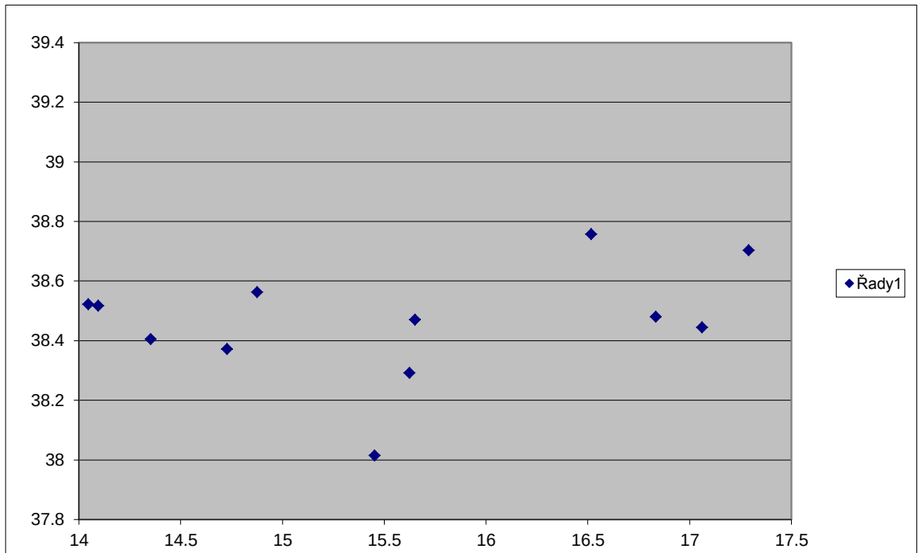
	206/204	207/204	208/024
862	-75.5304995	14.9874468	38.40604617
863	-7.64267744	17.2907222	38.48064481
864	-54.2577965	15.3847629	38.56379998
865	-91.6189802	14.548022	38.61962457
866	-49.4516931	15.1796949	38.37237537
867	-119.614594	15.1166897	38.52396692
868	-121.973492	14.8627856	38.31206379
869	-116.339861	15.1543884	38.51950644
870	-122.439358	14.9569363	38.50195455
817	-357.824243	8.22336562	38.4425963
818	-464.207373	3.12655924	38.51960963
819	18.7742314	17.3330662	38.44561692
820	-353.246689	7.0860966	39.2294087



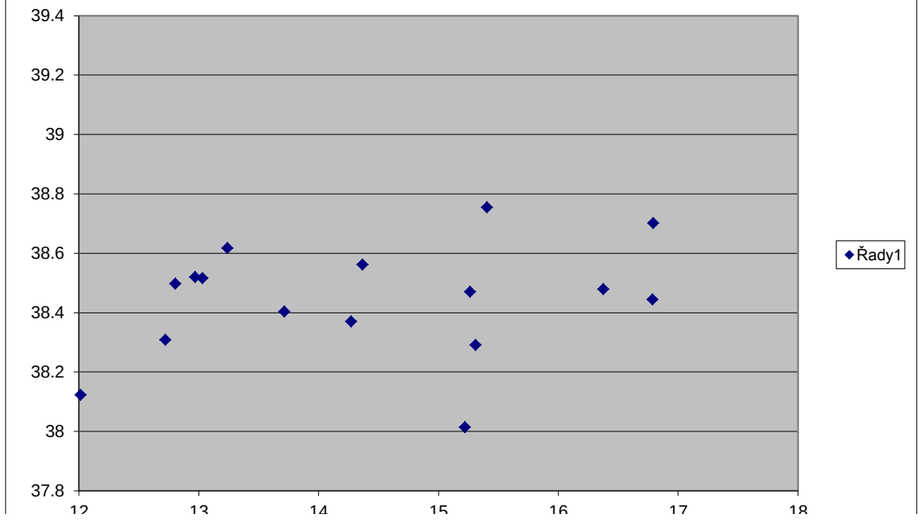
805	-5.19762304	17.7869	38.70392843
806	-104.444486	13.510802	38.12568119
807	-11.0727206	15.6819844	38.01491836
808	-13.3490371	15.9399289	38.29224214
809	-80.4451142	17.6232785	38.75980652
810	-20.0296368	16.0365447	38.47155979



		206/204	207/204	208/024
T=175	862	-87.4724329	14.3529236	38.40486596
	863	-16.2306722	16.8344074	38.47974814
	864	-63.8256831	14.8763824	38.56284881
	865	-103.903477	13.895297	38.61846144
	866	-57.9679885	14.7271897	38.37152982
	867	-139.762125	14.04617	38.52195727
	868	-142.08119	13.7943824	38.31005699
	869	-136.280261	14.0948744	38.51751272
	870	-142.650622	13.8830301	38.49994453
	817	-398.374237	6.06878058	38.43812394
	818	-500.606769	1.19251227	38.51584661
	819	13.6517076	17.0608858	38.44486713
	820	-382.611577	5.52582146	39.2264373
	805	-14.5424448	17.2903718	38.70289243
	806	-118.481635	12.7649515	38.12419481
	807	-15.3985844	15.4521338	38.01441378
	808	-19.2761875	15.6249954	38.29156988
	809	-101.26184	16.5172017	38.75743766
	810	-27.2792428	15.6513439	38.47080831



		206/204	207/204	208/024
T=180	862	-99.4236451	13.7152679	38.40368546
	863	-24.8253399	16.3758398	38.47885125
	864	-73.4010039	14.3654922	38.56189741
	865	-116.19752	13.2393497	38.61729804
	866	-66.490901	14.2724506	38.37068406
	867	-159.925311	12.9703653	38.51994713
	868	-162.204512	12.7207046	38.30804971
	869	-156.236155	13.0301298	38.51551852
	870	-162.87759	12.8038224	38.49793402
	817	-438.955738	3.90355889	38.43365048
	818	-537.034446	-0.7510826	38.51208266
	819	8.52520359	16.7873618	38.44411714
	820	-411.999281	3.95784363	39.22346517
	805	-23.8945275	16.7913925	38.70185619
	806	-132.529691	12.015419	38.12270806
	807	-19.7278094	15.2211484	38.01390907
	808	-25.2079433	15.3085072	38.29089747
	809	-122.09474	15.4056645	38.75506822
	810	-34.5344817	15.2642414	38.47005664

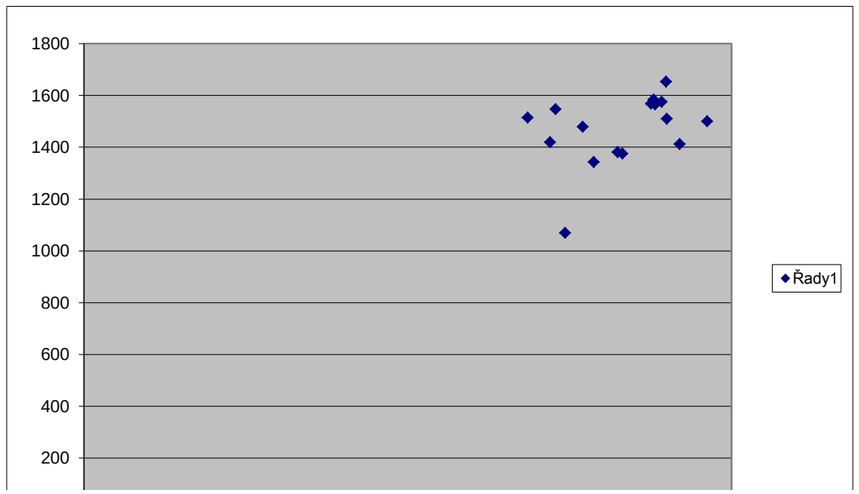


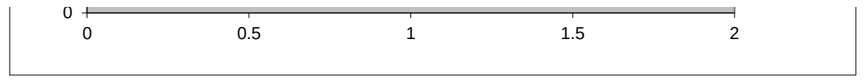
						T=250 Ma		T=500 Ma		T=1900 Ma	
sample	206/204	207/204	238/204	206/238	207/235	206/238eff	Rn-loss %	206/238eff	Rn-loss %	206/238eff	Rn-loss %
862	325.033	34.803	14990	0.02051588	0.177551544	0.02596201	20.9773138	0.02563228	19.9607901	0.02418852	15.1834027
863	280.421	31.541	10780	0.0243897	0.205170045	0.0296531	17.7499109	0.02894471	15.7369125	0.02584286	5.62305443
864	266.674	31.261	12010	0.02074721	0.180943104	0.02641528	21.4575307	0.02603905	20.3227054	0.02439167	14.9414139
865	320.435	34.932	15420	0.01964559	0.173753837	0.02545446	22.8206439	0.02517681	21.9694895	0.02396104	18.0102612
866	236.207	29.311	10690	0.02045903	0.178134769	0.02603995	21.4321716	0.02570223	20.3998057	0.02422345	15.5404158
867	556.186	48.548	25290	0.02130036	0.180176285	0.02631279	19.0494354	0.02594708	17.9084718	0.02434574	12.5088952
868	552.491	48.228	25240	0.02119616	0.178785128	0.02612687	18.8722005	0.02578023	17.7813617	0.02426241	12.6378708
869	552.513	48.242	25030	0.02137487	0.180362244	0.02633765	18.8429024	0.02596938	17.6920422	0.02435688	12.2429797
870	555.499	48.494	25370	0.02120611	0.179314652	0.02619764	19.0533629	0.02584374	17.9448946	0.02429413	12.7109633
817	1002.328	75.509	50900	0.01934829	0.162554831	0.02395776	19.2399971	0.02383365	18.819453	0.02329022	16.9252427
818	756.723	63.525	45690	0.0161791	0.144926395	0.0216018	25.1030077	0.02171939	25.5085018	0.02223428	27.2335269
819	190.597	25.833	6430	0.02692022	0.221572946	0.03184528	15.4655933	0.03091199	12.9133373	0.02682539	-0.35349006
820	631.728	55.812	36860	0.01666381	0.15079269	0.0223858	25.5608217	0.02242296	25.6841779	0.02258567	26.2195365
805	308.252	33.293	11730	0.02478704	0.209147386	0.03018466	17.8819827	0.02942173	15.7525981	0.0260811	4.96168313
806	366.398	36.803	17620	0.01980125	0.166700207	0.02451178	19.2174032	0.02433083	18.6166311	0.02353852	15.8772709
807	134.028	22.86	5430	0.02146004	0.186887072	0.02720966	21.1308227	0.02675194	19.7813791	0.02474771	13.2847711
808	185.463	25.775	7440	0.02257567	0.190418952	0.02768168	18.4454492	0.02717554	16.9264857	0.02495927	9.54996167
809	617.802	52.165	26130	0.02297367	0.193469966	0.02808944	18.2124239	0.02754146	16.5851353	0.02514203	8.62443631
810	223.141	28.066	9100	0.02259791	0.190395613	0.02767856	18.3559077	0.02717274	16.8360813	0.02495788	9.45578495

	T=145 Ma	T=250 Ma	T=500 Ma	T=1900Ma
206/238	0.022748	0.03954306	0.08064977	0.34277383
207/235	0.15350283	0.27917137	0.63627939	5.49618447

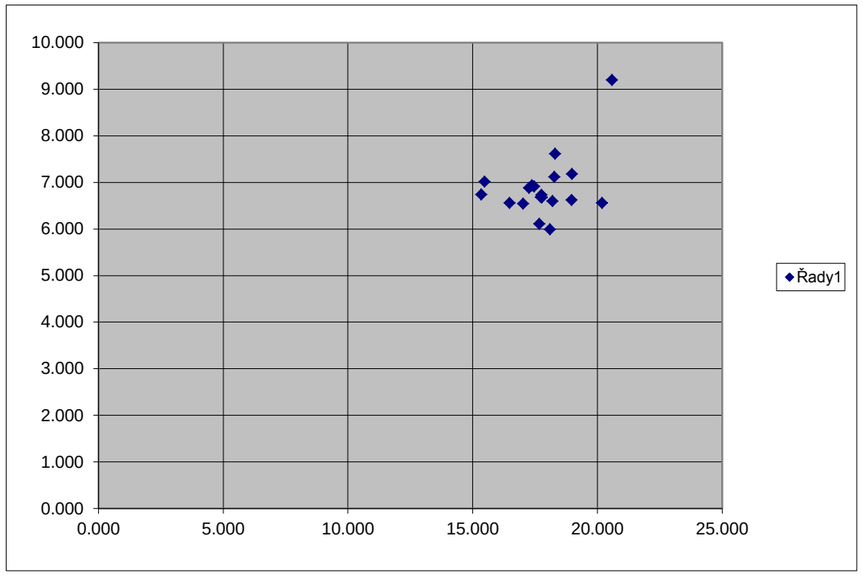
lambda238	0.155125
lambda235	0.98485

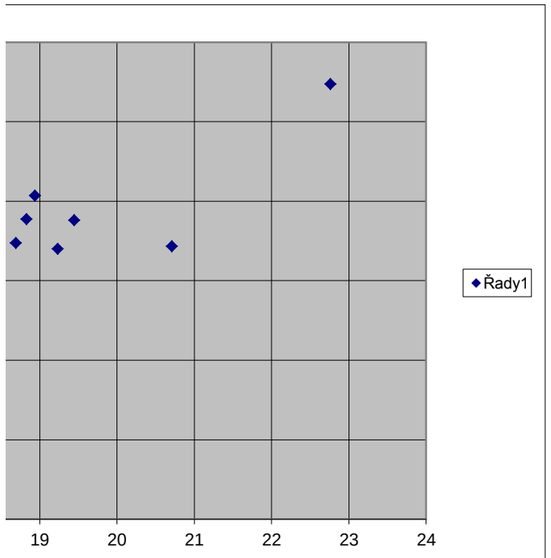
	207Pb/rad	U ppm
862	1.75978811	1584.6
863	1.92538868	1499.9
864	1.78436489	1575.3
865	1.79783456	1654
866	1.75955409	1577.3
867	1.76699225	1570.02
868	1.75198261	1569.15
869	1.76473061	1566.3
870	1.76383778	1574.7
817	1.44046626	1419.9
818	1.37069706	1514.82
819	1.48609766	1069.9
820	1.45737028	1547.645
805	1.84034056	1412.6
806	1.54104878	1478.945
807	1.5747047	1342.6
808	1.64900342	1380.759
809	1.66284065	1376.185
810	1.80066949	1510.766

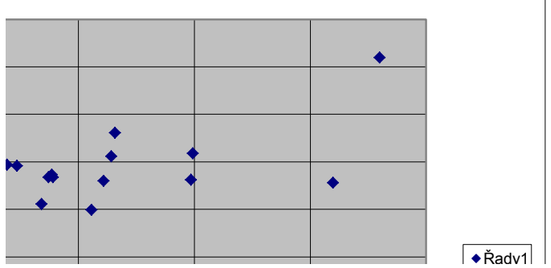



0
0
0.5
1
1.5
2

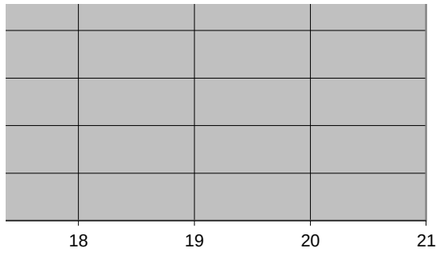
8/4comm	206red pmol	207red pmol	206/207red	207red/235	sample
	65.670	3.759	17.471	6.913	862
	39.918	2.104	18.971	6.621	863
	58.354	3.424	17.041	6.542	864
	49.090	2.976	16.494	6.557	865
	45.927	2.642	17.385	6.937	866
	984.341	55.474	17.744	6.679	867
	951.500	52.036	18.285	7.117	868
	984.407	55.363	17.781	6.677	869
	981.740	55.243	17.771	6.727	870
	4.416	0.256	17.263	6.881	817
	4.756	0.307	15.493	7.012	818
	6.378	0.316	20.197	6.558	819
	3.839	0.250	15.359	6.738	820
	26.897	1.485	18.114	5.987	805
	19.270	1.052	18.317	7.613	806
	11.470	0.557	20.600	9.191	807
	14.259	0.751	18.987	7.175	808
	15.665	0.886	17.682	6.109	809
	15.394	0.845	18.217	6.599	810



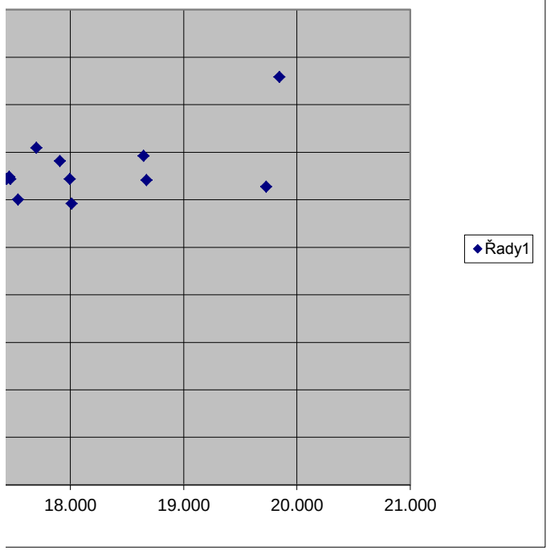




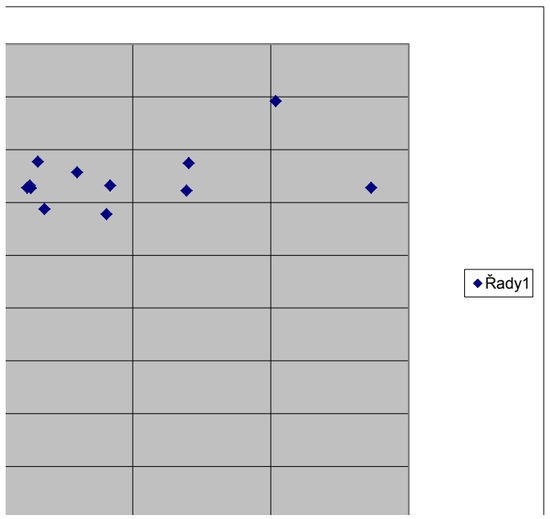
T=130	77.6	22	64.244	3.605	17.821	7.209	862
	84.1	22.7	39.402	2.048	19.235	6.801	863
	61.9	20.3	57.209	3.301	17.332	6.787	864
	62.8	20.4	48.242	2.885	16.724	6.766	865
	60.0	20.1	45.065	2.548	17.684	7.191	866
	117.5	26.3	966.320	53.528	18.053	6.922	867
	135.0	28.2	924.196	49.088	18.828	7.544	868
	117.5	26.3	966.200	53.393	18.096	6.923	869
	117.5	26.3	963.534	53.277	18.085	6.975	870
	139.7	28.7	4.344	0.248	17.513	7.096	817
	49.9	19	4.679	0.299	15.668	7.209	818
	68.4	21	6.247	0.302	20.709	6.866	819
	43.4	18.3	3.805	0.246	15.450	6.839	820
	74.9	21.7	26.897	1.485	18.114	5.987	805
	88.7	23.2	18.642	0.984	18.940	8.137	806
	62.8	20.4	10.645	0.468	22.760	10.943	807
	59.1	20	13.944	0.717	19.448	7.516	808
	128.6	27.5	15.455	0.863	17.904	6.270	809
	61.9	20.3	15.000	0.803	18.691	6.948	810
T=135	68.4	21	65.670	3.759	17.471	6.913	862
	79.5	22.2	39.918	2.104	18.971	6.621	863
	54.5	19.5	58.354	3.424	17.041	6.542	864
	54.5	19.5	49.090	2.976	16.494	6.557	865
	54.5	19.5	45.927	2.642	17.385	6.937	866
	102.6	24.7	984.341	55.474	17.744	6.679	867
	114.7	26	951.500	52.036	18.285	7.117	868
	102.6	24.7	984.407	55.363	17.781	6.677	869
	102.6	24.7	981.740	55.243	17.771	6.727	870
	114.7	26	4.416	0.256	17.263	6.881	817



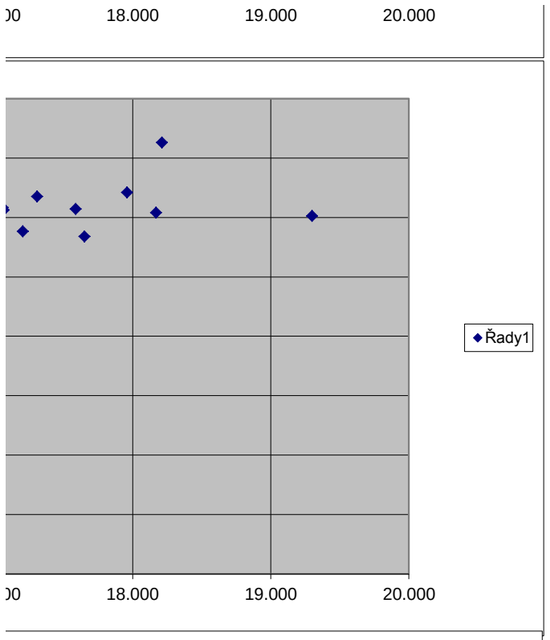
	29.5	16.8	4.756	0.307	15.493	7.012	818
	63.7	20.5	6.378	0.316	20.197	6.558	819
	29.5	16.8	3.839	0.250	15.359	6.738	820
	74.9	21.7	26.897	1.485	18.114	5.987	805
	74.9	21.7	19.270	1.052	18.317	7.613	806
	54.5	19.5	11.470	0.557	20.600	9.191	807
	54.5	19.5	14.259	0.751	18.987	7.175	808
	114.7	26	15.665	0.886	17.682	6.109	809
	54.5	19.5	15.394	0.845	18.217	6.599	810

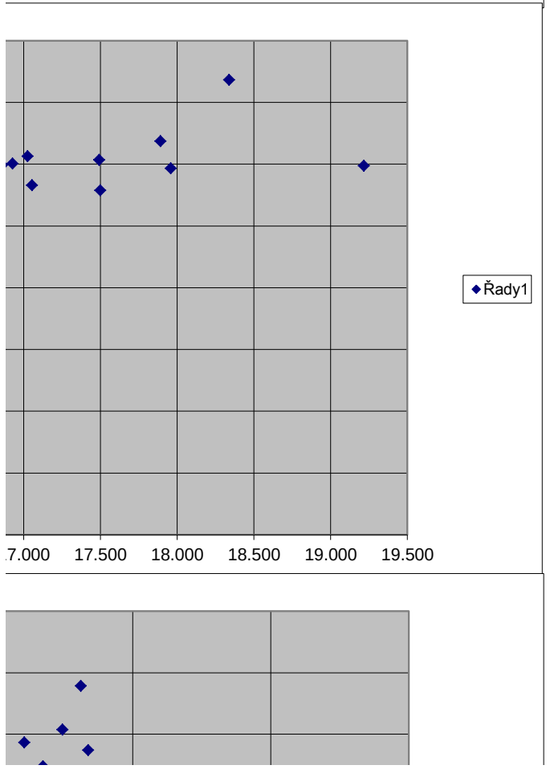


T=140	59.1	20	67.095	3.913	17.148	6.641	862
	73.9	21.6	40.537	2.171	18.672	6.417	863
	50.8	19.1	58.927	3.486	16.903	6.426	864
	47.1	18.7	49.844	3.058	16.301	6.383	865
	47.1	18.7	47.077	2.766	17.018	6.625	866
	86.9	23	1003.489	57.542	17.439	6.439	867
	98.9	24.3	972.599	54.315	17.907	6.818	868
	86.9	23	1003.752	57.456	17.470	6.434	869
	86.9	23	1001.085	57.333	17.461	6.482	870
	85.0	22.8	4.501	0.265	16.986	6.642	817
	-33.5	10	4.996	0.333	15.007	6.466	818
	59.1	20	6.509	0.330	19.728	6.277	819
	22.1	16	3.857	0.252	15.312	6.685	820
	72.1	21.4	27.059	1.502	18.011	5.917	805
	59.1	20	19.981	1.129	17.702	7.096	806
	50.8	19.1	11.836	0.596	19.847	8.581	807
	50.8	19.1	14.511	0.778	18.646	6.924	808
	105.4	25	15.806	0.901	17.540	6.006	809
	50.8	19.1	15.590	0.866	17.997	6.437	810

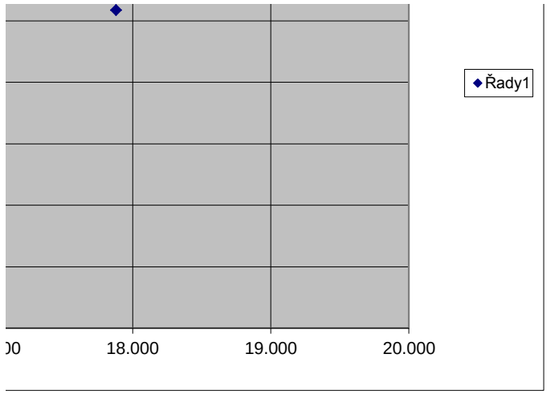


T=145	52.6	19.3	68.093	4.021	16.936	6.463	862
	68.4	21	41.156	2.238	18.391	6.226	863
	46.2	18.6	59.643	3.564	16.737	6.286	864
	42.5	18.2	50.315	3.109	16.186	6.278	865
	44.3	18.4	47.508	2.813	16.889	6.515	866
	75.8	21.8	1017.005	59.002	17.237	6.280	867
	85.0	22.8	991.215	56.325	17.598	6.575	868
	75.8	21.8	1017.407	58.933	17.264	6.272	869
	75.8	21.8	1014.740	58.807	17.255	6.319	870
	68.4	21	4.548	0.270	16.838	6.516	817
	-33.5	10	4.996	0.333	15.007	6.466	818
	59.1	20	6.509	0.330	19.728	6.277	819
	-33.5	10	3.994	0.267	14.977	6.315	820
	66.5	20.8	27.383	1.537	17.812	5.782	805
	48.0	18.8	20.483	1.183	17.316	6.771	806
	46.2	18.6	12.295	0.646	19.035	7.923	807
	48.0	18.8	14.701	0.799	18.406	6.747	808
	93.4	23.7	15.989	0.921	17.363	5.878	809
	48.0	18.8	15.738	0.882	17.839	6.320	810





T=150	43.4	18.3	69.518	4.174	16.653	6.225	862
	63.7	20.5	41.671	2.294	18.169	6.074	863
	37.8	17.7	60.931	3.703	16.456	6.050	864
	34.1	17.3	51.163	3.200	15.988	6.099	865
	36.9	17.6	48.658	2.937	16.565	6.239	866
	64.7	20.6	1030.521	60.461	17.044	6.128	867
	71.2	21.3	1009.832	58.336	17.311	6.348	868
	64.7	20.6	1031.062	60.410	17.068	6.119	869
	64.7	20.6	1028.396	60.282	17.060	6.165	870
	42.5	18.2	4.623	0.278	16.619	6.327	817
	-33.5	10	4.996	0.333	15.007	6.466	818
	54.5	19.5	6.640	0.344	19.298	6.019	819
	-33.5	10	3.994	0.267	14.977	6.315	820
	61.9	20.3	27.653	1.566	17.653	5.675	805
	35.0	17.4	21.069	1.246	16.908	6.427	806
	40.6	18	12.845	0.705	18.212	7.256	807
	42.5	18.2	15.079	0.840	17.961	6.419	808
	82.3	22.5	16.157	0.939	17.206	5.764	809
	43.4	18.3	15.984	0.909	17.588	6.136	810
T=155	37.8	17.7	70.373	4.267	16.493	6.090	862
	59.1	20	42.187	2.349	17.958	5.930	863
	35.0	17.4	61.361	3.749	16.367	5.975	864
	28.6	16.7	51.728	3.261	15.862	5.985	865
	34.1	17.3	49.089	2.984	16.450	6.141	866
	53.6	19.4	1044.037	61.921	16.861	5.984	867
	56.3	19.7	1029.689	60.480	17.025	6.123	868
	56.3	19.7	1041.304	61.519	16.927	6.009	869
	51.7	19.2	1044.327	62.003	16.843	5.994	870
	-85.3	4.4	4.989	0.318	15.702	5.539	817
	-33.5	10	4.996	0.333	15.007	6.466	818
	53.6	19.4	6.666	0.347	19.216	5.970	819
	-33.5	10	3.994	0.267	14.977	6.315	820
	57.3	19.8	27.922	1.596	17.500	5.571	805
	25.8	16.4	21.487	1.291	16.640	6.203	806
	41.5	18.1	12.753	0.695	18.339	7.359	807
	41.5	18.1	15.142	0.846	17.891	6.367	808
	71.2	21.3	16.326	0.957	17.055	5.654	809
	41.5	18.1	16.083	0.919	17.492	6.065	810
T=160	29.5	16.8	71.656	4.405	16.266	5.899	862
	52.6	19.3	42.909	2.427	17.679	5.740	863
	29.5	16.8	62.220	3.842	16.195	5.831	864
	21.2	15.9	52.482	3.343	15.701	5.839	865
	27.6	16.6	50.095	3.093	16.196	5.925	866
	39.7	17.9	1060.932	63.746	16.643	5.813	867
	41.5	18.1	1049.547	62.625	16.759	5.913	868
	39.7	17.9	1061.786	63.735	16.660	5.800	869
	38.7	17.8	1060.258	63.723	16.638	5.832	870



	-33.5	10	4.841	0.302	16.045	5.834	817
	-33.5	10	4.996	0.333	15.007	6.466	818
	36.0	17.5	7.164	0.401	17.881	5.169	819
	-33.5	10	3.994	0.267	14.977	6.315	820
	52.6	19.3	28.192	1.625	17.352	5.471	805
	11.9	14.9	22.115	1.359	16.273	5.894	806
	36.0	17.5	13.303	0.755	17.625	6.780	807
	36.0	17.5	15.520	0.887	17.494	6.074	808
	61.9	20.3	16.466	0.972	16.933	5.566	809
	36.0	17.5	16.378	0.951	17.216	5.861	810
T=165	43.4	18.3	69.518	4.174	16.653	6.225	862
	63.7	20.5	41.671	2.294	18.169	6.074	863
	37.8	17.7	60.931	3.703	16.456	6.050	864
	34.1	17.3	51.163	3.200	15.988	6.099	865
	36.9	17.6	48.658	2.937	16.565	6.239	866
	64.7	20.6	1030.521	60.461	17.044	6.128	867
	71.2	21.3	1009.832	58.336	17.311	6.348	868
	64.7	20.6	1031.062	60.410	17.068	6.119	869
	64.7	20.6	1028.396	60.282	17.060	6.165	870
	42.5	18.2	4.623	0.278	16.619	6.327	817
	-33.5	10	4.996	0.333	15.007	6.466	818
	54.5	19.5	6.640	0.344	19.298	6.019	819
	-33.5	10	3.994	0.267	14.977	6.315	820
	61.9	20.3	27.653	1.566	17.653	5.675	805
	35.0	17.4	21.069	1.246	16.908	6.427	806
	40.6	18	12.845	0.705	18.212	7.256	807
	42.5	18.2	15.079	0.840	17.961	6.419	808
	82.3	22.5	16.157	0.939	17.206	5.764	809
	43.4	18.3	15.984	0.909	17.588	6.136	810
T=170	43.4	18.3	69.518	4.174	16.653	6.225	862
	63.7	20.5	41.671	2.294	18.169	6.074	863
	37.8	17.7	60.931	3.703	16.456	6.050	864
	34.1	17.3	51.163	3.200	15.988	6.099	865
	36.9	17.6	48.658	2.937	16.565	6.239	866
	64.7	20.6	1030.521	60.461	17.044	6.128	867
	71.2	21.3	1009.832	58.336	17.311	6.348	868
	64.7	20.6	1031.062	60.410	17.068	6.119	869
	64.7	20.6	1028.396	60.282	17.060	6.165	870
	42.5	18.2	4.623	0.278	16.619	6.327	817
	-33.5	10	4.996	0.333	15.007	6.466	818
	54.5	19.5	6.640	0.344	19.298	6.019	819
	-33.5	10	3.994	0.267	14.977	6.315	820
	61.9	20.3	27.653	1.566	17.653	5.675	805
	35.0	17.4	21.069	1.246	16.908	6.427	806
	40.6	18	12.845	0.705	18.212	7.256	807
	42.5	18.2	15.079	0.840	17.961	6.419	808
	82.3	22.5	16.157	0.939	17.206	5.764	809
	43.4	18.3	15.984	0.909	17.588	6.136	810

T=175	43.4	18.3	69.518	4.174	16.653	6.225	862
	63.7	20.5	41.671	2.294	18.169	6.074	863
	37.8	17.7	60.931	3.703	16.456	6.050	864
	34.1	17.3	51.163	3.200	15.988	6.099	865
	36.9	17.6	48.658	2.937	16.565	6.239	866
	64.7	20.6	1030.521	60.461	17.044	6.128	867
	71.2	21.3	1009.832	58.336	17.311	6.348	868
	64.7	20.6	1031.062	60.410	17.068	6.119	869
	64.7	20.6	1028.396	60.282	17.060	6.165	870
	42.5	18.2	4.623	0.278	16.619	6.327	817
	-33.5	10	4.996	0.333	15.007	6.466	818
	54.5	19.5	6.640	0.344	19.298	6.019	819
	-33.5	10	3.994	0.267	14.977	6.315	820
	61.9	20.3	27.653	1.566	17.653	5.675	805
	35.0	17.4	21.069	1.246	16.908	6.427	806
	40.6	18	12.845	0.705	18.212	7.256	807
	42.5	18.2	15.079	0.840	17.961	6.419	808
	82.3	22.5	16.157	0.939	17.206	5.764	809
	43.4	18.3	15.984	0.909	17.588	6.136	810
T=180	43.4	18.3	69.518	4.174	16.653	6.225	862
	63.7	20.5	41.671	2.294	18.169	6.074	863
	37.8	17.7	60.931	3.703	16.456	6.050	864
	34.1	17.3	51.163	3.200	15.988	6.099	865
	36.9	17.6	48.658	2.937	16.565	6.239	866
	64.7	20.6	1030.521	60.461	17.044	6.128	867
	71.2	21.3	1009.832	58.336	17.311	6.348	868
	64.7	20.6	1031.062	60.410	17.068	6.119	869
	64.7	20.6	1028.396	60.282	17.060	6.165	870
	42.5	18.2	4.623	0.278	16.619	6.327	817
	-33.5	10	4.996	0.333	15.007	6.466	818
	54.5	19.5	6.640	0.344	19.298	6.019	819
	-33.5	10	3.994	0.267	14.977	6.315	820
	61.9	20.3	27.653	1.566	17.653	5.675	805
	35.0	17.4	21.069	1.246	16.908	6.427	806
	40.6	18	12.845	0.705	18.212	7.256	807
	42.5	18.2	15.079	0.840	17.961	6.419	808
	82.3	22.5	16.157	0.939	17.206	5.764	809
	43.4	18.3	15.984	0.909	17.588	6.136	810

$^{238}U/^{235}U$	137.88
$\lambda\ ^{238}U\ [Ma^{-1}]$	0.00016
$\lambda\ ^{235}U\ [Ma^{-1}]$	0.00098
$\lambda\ ^{232}Th\ [Ma^{-1}]$	0.00005

Vzorek	Stáří T [Ma]	$^{206}Pb/^{204}Pb_{corr}$	$^{207}Pb/^{204}Pb_{corr}$	$^{208}Pb/^{204}Pb_{corr}$	Pb [ppm]	U [ppm]	Th [ppm]	fact(^{204}Pb)	fact(Pb/U)	$^{206}Pb/^{204}Pb_T$	$^{207}Pb/^{204}Pb_T$	$^{208}Pb/^{204}Pb_T$
A	41.9	19.752	15.620	39.489	4	1.9	7.5					
B	25.4	19.902	15.644	39.652	4	1.6	6.5					
C	26.8	19.222	15.599	39.060	7	2.3	7.9					
D	24.7	19.280	15.610	39.127	7	3.1	8.9					
E	26.6	19.781	15.650	39.356	7	5.7	9.0					
F	25.8	19.577	15.652	39.343	34	18.6	49.7					
G	31	19.237	15.607	39.164	15	4.1	17.9					
H	27	19.720	15.625	39.536	10	3.7	17.0					

Přepočet poměrů izotopů olova na stáří (návod jak si sám vytvořit funkční program)

dopočtěte si za domácí úkol a doneste na flashdiscu k testu :-)

1) Do sloupců D, E vepište označení vzorků a jejich stáří.
2) Do sloupců F, G, H vepiště příslušné izotopové poměry po korekci na frakcionaci.
3) Do sloupců I, J, K vepiště koncentrace prvků Pb, U a Th v ppm, které získáte z celohorninové analýzy.
4) Do sloupce L vypočítáte faktor stabilního izotopu Pb [fact(^{204}Pb)], který vyjadřuje průměrnou hmotnost všech čtyř izotopů v našem vzorku.
Vzorec (zápis pomocí symbolu =) představuje zlomek, v jehož čitateli je součet jednotlivých poměrů izotopů ze sloupců F, G, H roznásobených nukleonovým číslem příslušného radiogenního izotopu (206; 207; 208).
Nakonec bude přičtena ještě neroznásobená hodnota nukleonového čísla 204, protože poměr $^{204}Pb/^{204}Pb$ je vždy roven 1 a tedy 1 * 204 = 204. Ve jmenovateli vzorce bude součet jednotlivých poměrů izotopů ze sloupců F, G, H + 1 (poměr $^{204}Pb/^{204}Pb$ je vždy roven 1).
Takto by měl vypadat vzorec: `=(F2*206+G2*207+H2*208+204)/(F2+G2+H2+1)`
5) Do sloupce M vypočítáte faktor Pb/U [fact(Pb/U)]. V čitateli bude součet poměrů izotopů ze sloupců F, G, H + 1 (stejně jako ve jmenovateli předchozího vzorce).
Ve jmenovateli bude poměr $^{238}U/^{235}U$, který je vždy konstatntní a je uveden v buňce B1, roznásobený nukleonovým číslem ^{238}U, tedy číslem 238. Vzorec roztáhněte dolů pro všechny vzorky, ale ne do strany.
Takto by měl vypadat vzorec: `=(F2+G2+H2+1)/(137.88*238)`
6) Pro přepočet $^{206}Pb/^{204}Pb$ na stáří (dolní index T - time) odečteme od poměru ve sloupci F součin $^{238}U/^{235}U$ z buňky B1 (absolutní hodnota) * fact(^{204}Pb) * fact(Pb/U) * U [ppm] / Pb [ppm] * e (Eulerovo číslo - ve vzorci se značí EXP)
umocněné na stáří horniny [Ma] a rozpadovou konstantu λ ^{238}U přepočtenou na Ma (buňka B2 - absolutní hodnota), mínus 1.
Takto by měl vypadat vzorec: `=F2-$B$1*L2*M2*J2/I2*(EXP(E2*$B$2)-1)`
7) Pro přepočet $^{207}Pb/^{204}Pb$ na stáří odečteme od poměru ve sloupci G součin fact(^{204}Pb) * fact(Pb/U) * U [ppm] / Pb [ppm] * e umocněné na stáří horniny [Ma] a rozpadovou konstantu λ ^{235}U přepočtenou na Ma (buňka B3 - absolutní hodnota), mínus 1.
Takto by měl vypadat vzorec: `=G2-L2*M2*J2/I2*(EXP(E2*$B$3)-1)`
8) Pro přepočet $^{208}Pb/^{204}Pb$ na stáří odečteme od poměru ve sloupci H součin fact(^{204}Pb) * (součet poměrů ze sloupců F, G, H + 1) * Th [ppm] / {232 (nukleonové číslo Th) / Pb [ppm]} * e umocněné na stáří horniny [Ma] a rozpadovou konstantu λ ^{235}U
přepočtenou na Ma (buňka B3 - absolutní hodnota), mínus 1.
Takto by měl vypadat vzorec: `=H2-(L2*(F2+G2+H2+1)*K2/(232*I2))*(EXP(E2*$B$4)-1)`
9) Přepočtené hodnoty zaokrouhlete na dvě desetinná místa.
10) Přepočtené poměry izotopů Pb ve žlutém poli lze teprve v této podobě používat pro interpretace.