Appendix DR1

Analytical methods

Evaporation of Pb from altered domains

All operations are carried out under a stereomicroscope in a clean air box. Zone refined Re foil, 0.030 inches wide by 0.0005 inches thick (the thinnest available from H. Cross Co.), is spot welded to form a filament on a standard glass TIMS sample bead (Cathodeon Ltd.) and heated to 3.5 amp in vacuum to clean and anneal the foil. The posts are then bent slightly inward and a transverse "U" shaped fold is made in the centre of the filament using fine tweezers and a jig. The sample zircon grain is transferred to the fold in a small drop of water using a micro-pipette. It is important that the sample be kept wet while on the filament or it will easily pop off. It is usually necessary to reposition the grain to the centre of the filament using the point of the tweezers. This may take some patience since the grain is difficult to see when it is near the edge of the drop. Once positioned, the fold is squeezed shut using fine tweezers where the tines are sheathed in narrow FEP Teflon tubing (made by melting and pulling small-bore tubing with a hot air gun). This folds the Re foil around the grain, holding it more securely. The compression of the filament may have to be adjusted by bending the posts further. Although the edges of the foil around the grain are very close to each other, there is never been a problem with shorting of the filament current. Several grains have been mounted together but there is a risk of losing smaller grains. The filament is then mounted in vacuum and heated. This was done in a VG354 mass spectrometer equipped with a Daly pulse counter during these experiments. There is a temperature gradient of about 50-100^{o}C between the sides of the fold and the cooler adjacent parts of the filament. Temperatures were taken on the hottest part of the fold. Treatments varied during initial experiments but generally samples were heated to about 1450^{o}C for about 1 hour. A small radiogenic Pb signal of a few thousand counts per second was observed at this temperature and gradually decayed to a few hundred counts per second or less. Toward the end of the heating process the temperature was increased. At each increment of 10-20^{o}C signal strength increased and rapidly decayed. At about 1500^{o}C emission started to become unstable, showing continual spikes of a few thousand counts per second that decay with a period of a few seconds. This phenomenon was previously observed by Gentry et al. (1982) and probably marks the point at which rapid breakdown of unaltered zircon occurs.

Mounting of zircon in silica glass

The starting material to make the silica glass is a droplet consisting of a mixture of about 2:1 of concentrated silicic acid and 9N phosphoric acid. This is allowed to evaporate on parafilm under clean air for at least an hour to its maximum concentration. The hygroscopic nature of the phosphoric acid prevents the solution from becoming too dry or gelatinous but it has a high viscosity. A small drop of water is added to the fold in a pre-heated filament and the posts are carefully bent apart to partially open the fold and expose the grain. The water droplet stabilizes the grain on the filament. The filament is warmed by passing a small current through it to evaporate most of the water. About 2-3 mg of the concentrated silicic acid – phosphoric acid mixture is added to the grain. This may have to be done in several stages using minimum volumes with further reduction in volume each time by warming the filament. The silica gel droplet can be confined by either melting parafilm on each side of the fold (at about 1.2 Amp current) before it is opened or by shaping the fold to have shoulders on each side (Fig. DR2) using a jig. The silica gel droplet is heated slowly to dryness. Gas bubbles are often observed to form but usually do not disrupt the sample if the temperature is not increased too fast. The load dries to a white polycrystalline solid, which is heated to the point where phosphoric acid is observed to fume off of the base. This is put into a vacuum chamber (outgasser) and the temperature very slowly increased to remove excess phosphoric acid without allowing the pressure to rise excessively. The temperature is increased further, to about 1200^{o}C or 2.0 Amp, over about 10-15 min to fuse the silica. The load is then examined and if the grain is not fully embedded the process is repeated. Embedding the grain is the most difficult part of the process because there is a large (at least 10 to 1) volume reduction from silica gel to glass and molten silica does not seem to wet the zircon crystal. If melted parafilm is used to confine the drop, an additional problem is that partially reduced organic material may get into the glass and cause it to bubble during the analysis, resulting in unstable emission. A pre-heated grain can also be removed from the heating filament using a micropipette and reloaded onto a flat standard narrow Re filament with silica gel as above.

Mass spectrometry
Analyses were carried out on a MM354 mass spectrometer using a pulse counting Daly detector on the axial channel and three high mass Faraday cups (H1 to H3) connected to 10^{11} ohm resistors. Collectors were calibrated using the SRM982 Pb standard. Data blocks consisted of 9 multi-dynamic measurement cycles with 3 peak jumps each: baselines, followed by 204 to 207, and 205 to 208 in the axial to H3 collectors. This gave one static 207/208 measurement, two static and one dynamic 207/206 measurement and static 204 and 205 measurements in the Daly. The Daly gain was calibrated several times during the course of a day and was not found to drift by more than 1%, which is negligible for the high 207/204 ratios in these measurements. The dynamic 207/206 ratios (in H2) are usually much less precise than the two static measurements (in H1-H2 and H2-H3) because emission is usually not completely stable. The average of the two static measurements was therefore taken.

^{206}Pb emission was monitored using the Daly detector during warm-up of the filaments. For the grains in this study, emission gradually increased up to a few hundred thousand counts per second below 1500^{o}C (measured from the hottest part of the filament). If melted parafilm was used, emission may show strong spikes at regular intervals of a few seconds that increase in intensity as the temperature is increased. These are observed to correspond to bursting of bubbles on the surface of the silica melt. If the temperature is decreased below the solidification point of the silica melt and then gradually increased to the former point, this bubbling effect often disappears although it may recur at a higher temperature.

^{206}Pb emission from embedded grains typically shows a rapid increase at about 1500^{o}C to several hundred millivolts or more. It is important to anticipate this increase and protect the Daly collector by switching mass 204 into it beforehand. The 206 mass is then monitored using the H2 collector. The signal will rise to a plateau and, if necessary, the temperature is increased by 10-20C to the point where ^{207}Pb intensity is sufficient to acquire reasonably precise (±0.1% error) data on the Faraday cup (at least 4 millivolts). A few blocks of data are taken and the temperature is usually increased slightly again to try to 'coax' the intensity upward. At this stage there is no clear monotonic relationship between signal intensity and filament temperature. The sample will often emit at constant intensity for periods of a few minutes and then spontaneously increase to a new level. An increase in filament current sometimes causes an immediate decrease in intensity, which might spontaneously increase several minutes later. Emission from small grains (ca. 1 microgram) dies after several minutes but with large (>10 microgram) grains it can be maintained for up to an hour. Eventually emission will begin to decrease irreversibly and an increase in temperature just hastens the decrease.

Since the source of ^{204}Pb is different from that of the radiogenic Pb isotopes, the measured $^{207}Pb/^{204}Pb$ ratio is constantly changing. Data reduction software was written in Visual Basic to import the text data files and correct $^{207}Pb/^{206}Pb$ and $^{208}Pb/^{206}Pb$ ratios for measured common Pb (based on $^{207}Pb/^{204}Pb$) on a cycle-by-cycle basis. $^{207}Pb/^{204}Pb$ ratios usually show a rapid increase with signal strength to 10^4 or more where the correction is almost negligible. The corrected $^{207}Pb/^{206}Pb$ ratio is converted to an age and the corrected $^{208}Pb/^{206}Pb$ ratio is converted to a Th/U ratio, based on the $^{207}Pb/^{206}Pb$ age.

Table DR1

Table DR1 **Data in bold were chosen for the mean age**

Analysis: **EX070202C** **Frac corr.=** 0.18 **%/AMU**

Sample: **Sudbury Black Norite**

Fraction: **1 cracked unab zr, fresh looking**

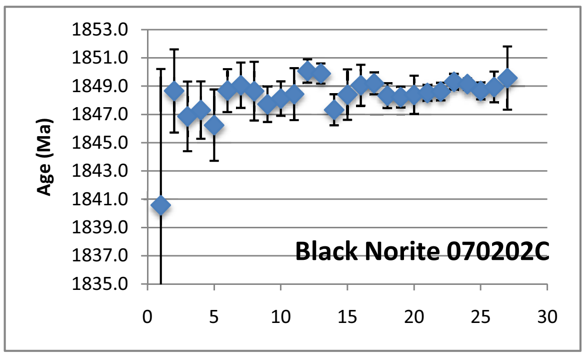
Wt.= **15 microgm**

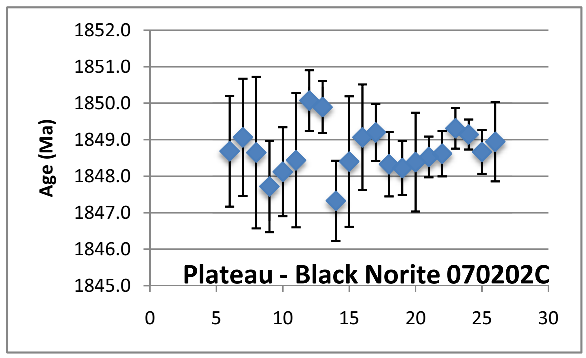
Nos. 6-26
Mean = 1848.88 0.27 [0.015%] 95% conf.
Wtd by data-pt errs only, 0 of 21 rej.
MSWD = 2.1, probability = 0.002

	Block	Age Ma	2 Sig	207Pb/206 corrected	2 Sig	207Pb/206 measured	2 Sig	207Pb/204 measured	2 Sig	Pb206 Volts	2 Sig
1	Bk 1, 9 cy	1840.6	9.6	0.112528	0.000598	0.113991	0.000594	924.0618	164.5438	0.029376	0.005026
2	Bk 2, 9 cy	1848.7	2.9	0.113028	0.000184	0.113548	0.000188	2117.46	219.1368	0.070409	0.007752
3	Bk 3, 9 cy	1846.9	2.5	0.112916	0.000154	0.113232	0.000146	2942.705	110.2709	0.098259	0.003644
4	Bk 4, 9 cy	1847.3	2.0	0.112943	0.000126	0.113236	0.000122	3081.758	82.65211	0.103088	0.001666
5	Bk 5, 9 cy	1846.2	2.5	0.112877	0.000158	0.113207	0.000158	2864.4	37.25089	0.104343	0.002852
6	**Bk 6, 9 cy**	**1848.7**	**1.5**	**0.11303**	**0.000094**	**0.113304**	**0.000088**	**3200.603**	**121.0794**	**0.122832**	**0.004718**
7	**Bk 7, 9 cy**	**1849.1**	**1.6**	**0.113053**	**0.0001**	**0.113376**	**0.000104**	**2904.081**	**58.8647**	**0.126199**	**0.00363**
8	**Bk 8, 9 cy**	**1848.6**	**2.1**	**0.113027**	**0.00013**	**0.113345**	**0.00013**	**2933.288**	**54.88407**	**0.137157**	**0.001198**
9	**Bk 9, 9 cy**	**1847.7**	**1.3**	**0.112969**	**0.000078**	**0.113261**	**0.000074**	**3081.777**	**77.26171**	**0.136061**	**0.002036**
10	**Bk 10, 9 c**	**1848.1**	**1.2**	**0.112994**	**0.000076**	**0.113313**	**0.000078**	**2925.855**	**51.77743**	**0.132063**	**0.00259**
11	**Bk 11, 9 c**	**1848.4**	**1.8**	**0.113014**	**0.000114**	**0.113368**	**0.000112**	**2744.139**	**72.35716**	**0.128043**	**0.001408**
12	**Bk 12, 9 c**	**1850.1**	**0.8**	**0.113116**	**0.000052**	**0.113539**	**0.000044**	**2443.113**	**71.42423**	**0.117131**	**0.002362**
13	**Bk 13, 9 c**	**1849.9**	**0.7**	**0.113105**	**0.000044**	**0.113442**	**0.000048**	**2831.117**	**81.88044**	**0.179746**	**0.001694**
14	**Bk 14, 9 c**	**1847.3**	**1.1**	**0.112945**	**0.000068**	**0.113322**	**0.000068**	**2631.846**	**73.96991**	**0.170853**	**0.00314**
15	**Bk 15, 9 c**	**1848.4**	**1.8**	**0.113012**	**0.000112**	**0.113397**	**0.000116**	**2596.93**	**32.64784**	**0.170489**	**0.001988**
16	**Bk 16, 9 c**	**1849.1**	**1.4**	**0.113053**	**0.00009**	**0.11343**	**0.000092**	**2636.934**	**45.51625**	**0.177353**	**0.002318**
17	**Bk 17, 9 c**	**1849.2**	**0.8**	**0.113062**	**0.000048**	**0.113378**	**0.000046**	**2941.403**	**53.16242**	**0.228679**	**0.002418**
18	**Bk 18, 9 c**	**1848.3**	**0.9**	**0.113007**	**0.000056**	**0.1133**	**0.000056**	**3079.341**	**45.58297**	**0.242755**	**0.002694**
19	**Bk 19, 9 c**	**1848.2**	**0.7**	**0.113001**	**0.000046**	**0.113246**	**0.000048**	**3401.689**	**117.0812**	**0.268954**	**0.010092**
20	**Bk 20, 9 c**	**1848.4**	**1.4**	**0.113011**	**0.000084**	**0.113294**	**0.000076**	**3140.482**	**146.9886**	**0.214461**	**0.018972**
21	**Bk 21, 9 c**	**1848.5**	**0.6**	**0.11302**	**0.000034**	**0.113234**	**0.000032**	**3657.536**	**249.4064**	**0.264396**	**0.027884**
22	**Bk 22, 9 c**	**1848.6**	**0.6**	**0.113025**	**0.000038**	**0.113163**	**0.000034**	**4479.167**	**112.4313**	**0.356728**	**0.011152**
23	**Bk 23, 9 c**	**1849.3**	**0.6**	**0.113069**	**0.000034**	**0.113201**	**0.000034**	**4542.402**	**181.451**	**0.400611**	**0.048556**

Table DR1

24	**Bk 24, 9 c**	**1849.1**	**0.4**	**0.113058**	**0.000026**	**0.113235**	**0.000032**	**4019.846**	**219.8754**	**0.361327**	**0.057564**
25	**Bk 25, 9 c**	**1848.7**	**0.6**	**0.113028**	**0.000038**	**0.113248**	**0.000036**	**3609.404**	**99.96149**	**0.197757**	**0.013314**
26	**Bk 26, 9 c**	**1848.9**	**1.1**	**0.113046**	**0.000068**	**0.113241**	**0.000056**	**3826.933**	**163.1666**	**0.211638**	**0.012552**
27	Bk 27, 9 c	1849.6	2.2	0.113085	0.00014	0.113545	0.000152	2308.341	292.332	0.110434	0.01733





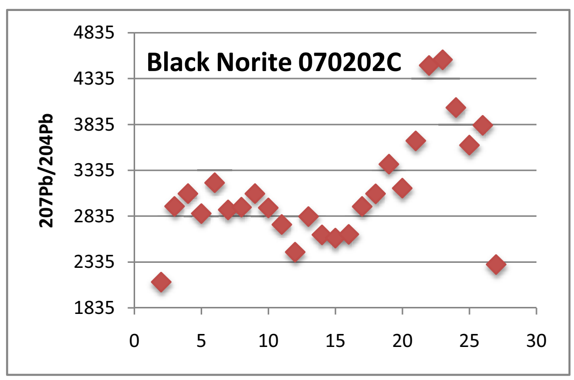


Table DR2

Table DR2 — **Data in bold were chosen for the mean age**

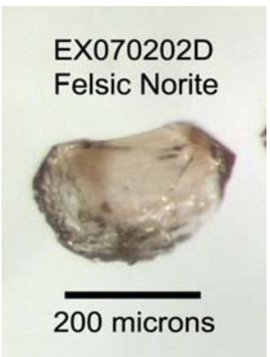
Analysis: **EX070202D** **Frac corr.=** **0.18** **%/AMU**
Sample: **Sudbury Felsic Norite**
Fraction: **1 unab zr, partly altered**
Wt.= **15 microgm**

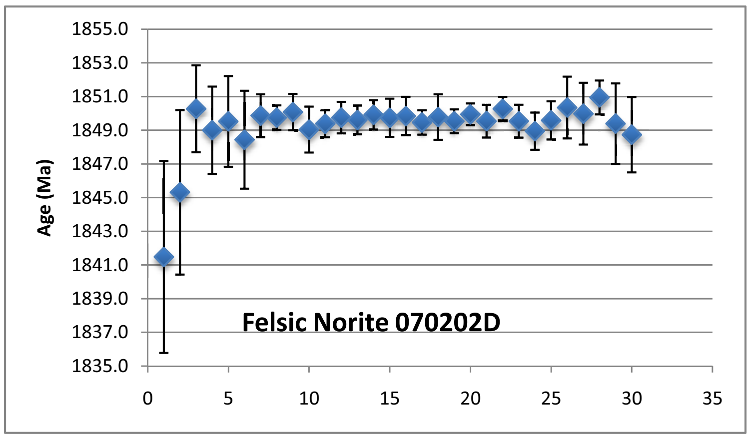
Nos 7-25
Mean = 1849.70 0.20 [0.011%] 95% conf.
Wtd by data-pt errs only, 0 of 19 rej.
MSWD = 0.47, probability = 0.97

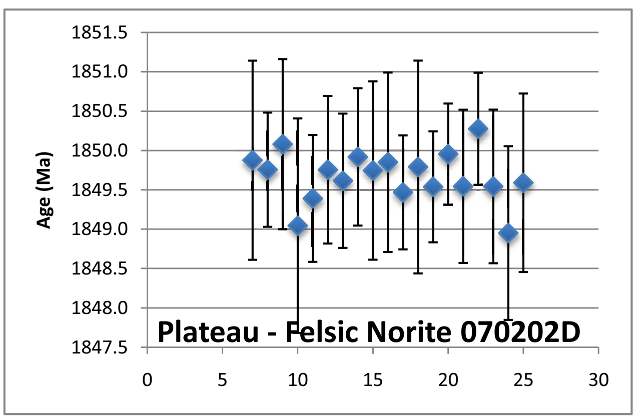
	Block	Age Ma	2 Sig	207Pb/206 corrected	2 Sig	207Pb/206 measured	2 Sig	207Pb/204 measured	2 Sig	Pb206 Volts	2 Sig
1	Bk 1, 9 cy	1841.5	5.7	0.112582	0.000356	0.116375	0.000462	392.9422	27.17073	0.024678	0.001774
2	Bk 2, 9 cy	1845.3	4.9	0.11282	0.000306	0.114884	0.00032	683.4977	31.89707	0.048863	0.001554
3	Bk 4, 9 cy	1850.3	2.6	0.113129	0.000162	0.114426	0.000174	1028.568	53.00794	0.072431	0.00329
4	Bk 5, 9 cy	1849.0	2.6	0.11305	0.000162	0.114034	0.000158	1294.761	97.14834	0.083261	0.005096
5	Bk 6, 9 cy	1849.5	2.7	0.113083	0.000168	0.113863	0.000174	1560.566	47.93528	0.092286	0.002036
6	Bk 7, 9 cy	1848.4	2.9	0.113015	0.000182	0.113734	0.000168	1662.182	43.0489	0.090492	0.000982
7	**Bk 8, 9 cy**	**1849.9**	**1.3**	**0.113104**	**0.00008**	**0.113336**	**0.000092**	**3512.217**	**225.6158**	**0.171658**	**0.010638**
8	**Bk 9, 9 cy**	**1849.8**	**0.7**	**0.113096**	**0.000046**	**0.113331**	**0.000038**	**3491.883**	**126.9546**	**0.157262**	**0.006732**
9	**Bk 10, 9 cy**	**1850.1**	**1.1**	**0.113117**	**0.000068**	**0.113338**	**0.00007**	**3598.633**	**97.10231**	**0.15453**	**0.002632**
10	**Bk 11, 9 cy**	**1849.0**	**1.4**	**0.113052**	**0.000086**	**0.113239**	**0.000086**	**3914.516**	**101.2097**	**0.16159**	**0.003916**
11	**Bk 12, 9 cy**	**1849.4**	**0.8**	**0.113074**	**0.00005**	**0.113117**	**0.000052**	**6181.378**	**250.8075**	**0.232444**	**0.012262**
12	**Bk 13, 9 cy**	**1849.8**	**0.9**	**0.113096**	**0.000058**	**0.113127**	**0.000058**	**6518.914**	**175.9152**	**0.248674**	**0.003108**
13	**Bk 14, 9 cy**	**1849.6**	**0.9**	**0.113088**	**0.000054**	**0.113104**	**0.000054**	**6941.896**	**208.7088**	**0.264266**	**0.005562**
14	**Bk 15, 9 cy**	**1849.9**	**0.9**	**0.113107**	**0.000054**	**0.113118**	**0.000054**	**7101.958**	**169.8341**	**0.255786**	**0.001932**
15	**Bk 16, 6 cy**	**1849.7**	**1.1**	**0.113096**	**0.00007**	**0.113067**	**0.000068**	**8735.624**	**428.163**	**0.322452**	**0.020408**
16	**Bk 17, 9 cy**	**1849.9**	**1.1**	**0.113102**	**0.000072**	**0.113097**	**0.000072**	**7705.661**	**153.7851**	**0.28384**	**0.003578**
17	**Bk 18, 9 cy**	**1849.5**	**0.7**	**0.113078**	**0.000046**	**0.113072**	**0.000042**	**7761.024**	**225.3447**	**0.284292**	**0.002428**
18	**Bk 19, 9 cy**	**1849.8**	**1.4**	**0.113099**	**0.000084**	**0.11309**	**0.000072**	**7822.347**	**1196.051**	**0.315237**	**0.016154**
19	**Bk 20, 9 cy**	**1849.5**	**0.7**	**0.113083**	**0.000044**	**0.113054**	**0.000044**	**8742.587**	**160.6752**	**0.310428**	**0.006382**
20	**Bk 21, 9 cy**	**1850.0**	**0.6**	**0.113109**	**0.00004**	**0.113053**	**0.000038**	**10358.06**	**206.7831**	**0.354075**	**0.014202**
21	**Bk 22, 9 cy**	**1849.5**	**1.0**	**0.113083**	**0.00006**	**0.11303**	**0.000062**	**10133.07**	**249.7638**	**0.30207**	**0.002724**
22	**Bk 23, 9 cy**	**1850.3**	**0.7**	**0.113129**	**0.000044**	**0.113082**	**0.000046**	**9748.367**	**183.0173**	**0.309887**	**0.007058**
23	**Bk 24, 9 cy**	**1849.5**	**1.0**	**0.113083**	**0.000062**	**0.113083**	**0.00006**	**7513.82**	**498.3438**	**0.185481**	**0.021296**
24	**Bk 25, 9 cy**	**1849.0**	**1.1**	**0.113046**	**0.000068**	**0.113072**	**0.00007**	**6648.106**	**155.229**	**0.152024**	**0.007708**
25	**Bk 26, 9 cy**	**1849.6**	**1.1**	**0.113086**	**0.00007**	**0.11313**	**0.000064**	**6180.149**	**244.2366**	**0.131215**	**0.00422**
26	Bk 27, 9 cy	1850.4	1.8	0.113134	0.000114	0.11317	0.000114	6367.914	174.3346	0.138792	0.005498

Table DR2

27	Bk 28, 9 cy	1850.0	1.8	0.113111	0.000114	0.113186	0.000116	5479.112	200.5959	0.123421	0.003342
28	Bk 29, 9 cy	1851.0	1.0	0.113171	0.000064	0.11326	0.000062	5231.437	150.5063	0.128326	0.002176
29	Bk 30, 9 cy	1849.4	2.4	0.113074	0.00015	0.113214	0.000154	4456.3	177.9915	0.111819	0.008034
30	Bk 31, 9 cy	1848.7	2.2	0.113033	0.00014	0.113241	0.000144	3710.388	175.9622	0.084135	0.004438







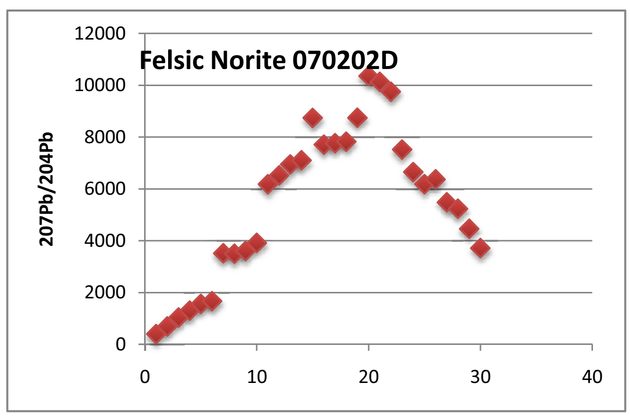


Table DR3

Table DR3 **Data in bold were chosen for the mean age**

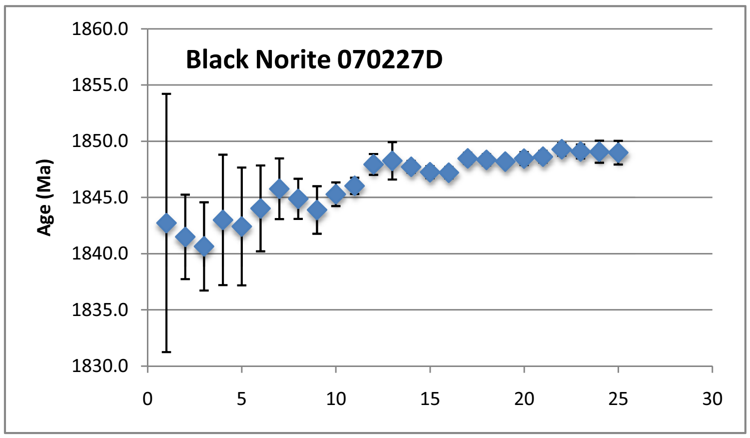
Analysis: **EX070227D** **Frac corr.=** 0.18 **%/AMU**
Sample: **Sudbury Black Norite**
Fraction: **1 cracked, clr, prism frag**
Wt.= **25 microgm**

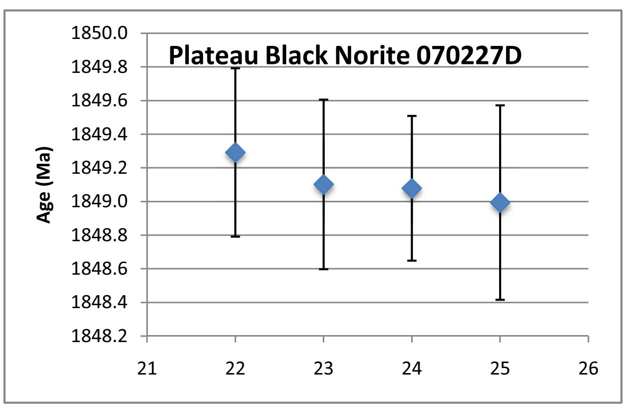
Nos. 22-25
Mean = 1849.16 0.35 95% conf.
Wtd by data-pt errs only, 0 of 4 rej.
MSWD = 0.13, probability = 0.94

	Block	Age Ma	2 Sig	207Pb/206 corrected	2 Sig	207Pb/206 measured	2 Sig	207Pb/204 measured	2 Sig	Pb206 Volts	2 Sig
1	Bk 1, 9 cy	1842.7	11.5	0.112664	0.000718	0.113586	0.000694	1362.773	93.75901	0.019181	0.000982
2	Bk 2, 9 cy	1841.5	3.8	0.112582	0.000234	0.112953	0.000232	2656.682	108.3368	0.040819	0.00086
3	Bk 3, 9 cy	1840.7	3.9	0.11253	0.000244	0.112919	0.00023	2573.551	99.94744	0.039338	0.000362
4	Bk 4, 9 cy	1843.0	5.8	0.112677	0.000362	0.113098	0.00037	2448.416	64.78062	0.037889	0.000708
5	Bk 5, 9 cy	1842.4	5.2	0.112641	0.000326	0.113078	0.00032	2385.054	78.74716	0.035138	0.000976
6	Bk 6, 9 cy	1844.0	3.8	0.11274	0.000238	0.112965	0.000236	3562.164	157.2509	0.070961	0.002138
7	Bk 7, 9 cy	1845.8	2.7	0.112849	0.000168	0.113252	0.000158	2520.817	94.46394	0.077426	0.000826
8	Bk 8, 9 cy	1844.9	1.8	0.112793	0.000112	0.113139	0.000108	2776.479	73.83517	0.080294	0.000628
9	Bk 9, 9 cy	1843.9	2.1	0.112731	0.000132	0.113043	0.000132	2963.178	32.56824	0.076374	0.001026
10	Bk 10, 9 cy	1845.3	1.1	0.112818	0.000066	0.113058	0.000078	3442.422	330.0757	0.131453	0.006856
11	Bk 11, 9 cy	1846.0	0.7	0.112864	0.000046	0.113113	0.000046	3377.453	103.4731	0.143776	0.002226
12	Bk 12, 9 cy	1847.9	0.9	0.112984	0.000058	0.113179	0.000056	3830.342	112.2666	0.138678	0.000702
13	Bk 13, 9 cy	1848.3	1.7	0.113004	0.000104	0.113165	0.000106	4182.079	94.61148	0.151811	0.004614
14	Bk 14, 9 cy	1847.7	0.5	0.11297	0.000032	0.113091	0.000038	4705.663	148.5449	0.343381	0.004664
15	Bk 15, 9 cy	1847.3	0.5	0.11294	0.000034	0.113032	0.000032	5163.187	124.8828	0.338253	0.016536
16	Bk 16, 9 cy	1847.2	0.5	0.112938	0.000032	0.112988	0.000034	6015.822	196.1553	0.479548	0.024316
17	Bk 17, 9 cy	1848.5	0.5	0.113017	0.000032	0.113032	0.000034	6981.799	229.2031	0.520143	0.005196
18	Bk 18, 9 cy	1848.4	0.5	0.113009	0.000032	0.112961	0.000032	9844.165	159.8694	0.464007	0.07325
19	Bk 19, 9 cy	1848.2	0.4	0.112999	0.000026	0.112931	0.000028	11291.51	714.6065	0.34903	0.007442
20	Bk 20, 9 cy	1848.5	0.6	0.113016	0.000036	0.112921	0.000036	14052.77	701.0788	0.466746	0.06188
21	Bk 21, 9 cy	1848.6	0.5	0.113026	0.000032	0.112919	0.000032	15802.19	214.7751	0.381737	0.029112
22	**Bk 22, 9 cy**	**1849.3**	**0.6**	**0.113067**	**0.000034**	**0.112946**	**0.000036**	**18546.92**	**620.2607**	**0.370289**	**0.030622**
23	**Bk 23, 9 cy**	**1849.1**	**0.6**	**0.113055**	**0.000038**	**0.112931**	**0.000038**	**19234.62**	**1164.213**	**0.406075**	**0.033594**
24	**Bk 24, 9 cy**	**1849.1**	**1.0**	**0.113054**	**0.000062**	**0.112927**	**0.000062**	**19882.94**	**2081.501**	**0.316923**	**0.042056**
25	**Bk 25, 9 cy**	**1849.0**	**1.1**	**0.113049**	**0.000066**	**0.112948**	**0.000062**	**14831.96**	**703.2453**	**0.19684**	**0.02362**

Table DR3


EX070227D
Black Norite
200 microns


Black Norite 070227D
Age (Ma)
1860.0
1855.0
1850.0
1845.0
1840.0
1835.0
1830.0
0
5
10
15
20
25
30


Plateau Black Norite 070227D
Age (Ma)
1850.0
1849.8
1849.6
1849.4
1849.2
1849.0
1848.8
1848.6
1848.4
1848.2
21
22
23
24
25
26

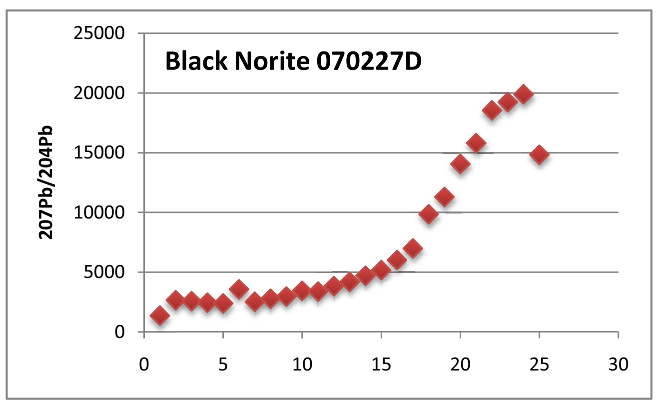

Black Norite 070227D
207Pb/204Pb
25000
20000
15000
10000
5000
0
0
5
10
15
20
25
30

Table DR4

Table DR4 Data in bold were chosen for the mean age

Analysis: EX070202F Frac corr.= 0.18 %/AMU

Sample: Sudbury Felsic norite

Fraction: 1 partly altered zr, zr on outside of glass droplet

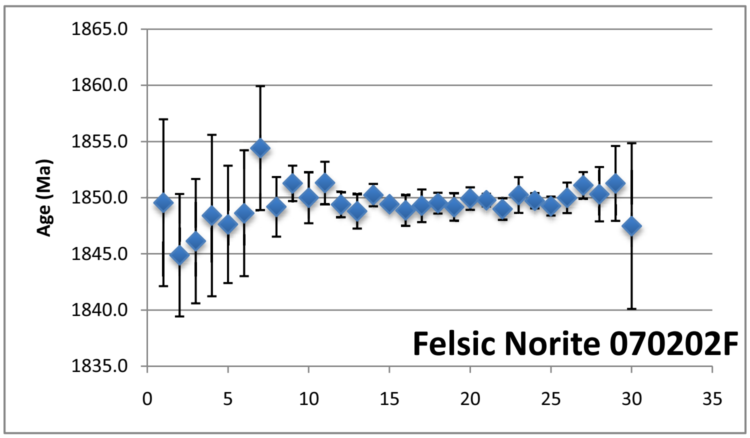
Wt.= 15 microgm

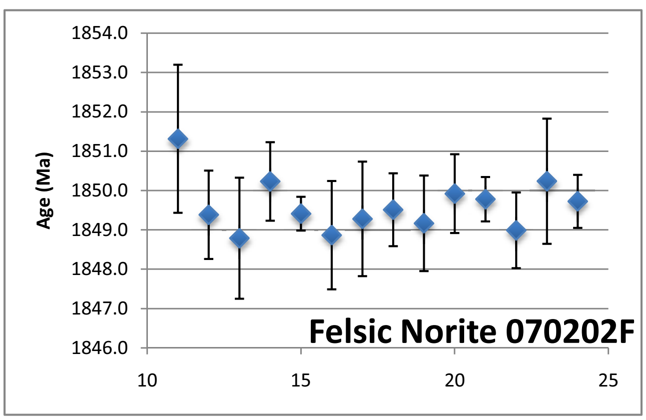
Nos 11-24
Mean = 1849.57 0.23 [0.012%] 95% conf.
Wtd by data-pt errs only, 0 of 14 rej.
MSWD = 0.92, probability = 0.53

	Block	Age Ma	2 Sig	207Pb/206 corrected	2 Sig	207Pb/206 measured	2 Sig	207Pb/204 measured	2 Sig	Pb206 Volts	2 Sig
1	Bk 1, 9 cy	1849.6	7.4	0.113086	0.000466	0.115273	0.00059	650.2744	50.80634	0.030463	0.002252
2	Bk 2, 9 cy	1844.9	5.4	0.112793	0.00034	0.114594	0.000312	771.2339	39.12745	0.036146	0.000396
3	Bk 3, 9 cy	1846.1	5.5	0.112871	0.000344	0.11466	0.000424	776.652	57.14559	0.035737	0.001488
4	Bk 4, 9 cy	1848.4	7.2	0.113014	0.000448	0.1148	0.000346	778.1475	63.56221	0.034467	0.001204
5	Bk 5, 9 cy	1847.6	5.2	0.112964	0.000326	0.11465	0.0004	818.6986	63.48271	0.037817	0.000282
6	Bk 6, 9 cy	1848.6	5.6	0.113027	0.00035	0.114539	0.000368	900.1189	49.0772	0.039277	0.001212
7	Bk 7, 9 cy	1854.4	5.5	0.113389	0.000346	0.114785	0.000302	966.8183	97.84848	0.045981	0.001342
8	Bk 8, 9 cy	1849.2	2.7	0.113061	0.000166	0.114011	0.000192	1333.096	129.5351	0.067294	0.003516
9	Bk 9, 9 cy	1851.3	1.6	0.113191	0.000098	0.113923	0.000128	1642.465	146.9998	0.087345	0.007668
10	Bk 10, 9 cy	1850.0	2.3	0.113112	0.000142	0.113722	0.000146	1884.665	151.3722	0.101608	0.004282
11	**Bk 11, 9 cy**	**1851.3**	**1.9**	**0.113194**	**0.000118**	**0.11366**	**0.000174**	**2289.216**	**294.0053**	**0.132523**	**0.003884**
12	**Bk 12, 9 cy**	**1849.4**	**1.1**	**0.113073**	**0.00007**	**0.113448**	**0.000068**	**2645.525**	**190.0613**	**0.13368**	**0.006554**
13	**Bk 13, 9 cy**	**1848.8**	**1.5**	**0.113036**	**0.000096**	**0.113373**	**0.00011**	**2830.561**	**159.4851**	**0.143116**	**0.004104**
14	**Bk 14, 9 cy**	**1850.2**	**1.0**	**0.113126**	**0.000062**	**0.113377**	**0.000082**	**3362.79**	**471.2307**	**0.169487**	**0.019346**
15	**Bk 15, 9 cy**	**1849.4**	**0.4**	**0.113075**	**0.000026**	**0.113218**	**0.000036**	**4403.304**	**219.4792**	**0.210657**	**0.010598**
16	**Bk 16, 9 cy**	**1848.9**	**1.4**	**0.113041**	**0.000086**	**0.113142**	**0.000088**	**5015.463**	**199.2691**	**0.187693**	**0.003964**
17	**Bk 17, 9 cy**	**1849.3**	**1.5**	**0.113067**	**0.00009**	**0.113157**	**0.000102**	**5205.909**	**362.5812**	**0.18212**	**0.010052**
18	**Bk 18, 9 cy**	**1849.5**	**0.9**	**0.113081**	**0.000058**	**0.113103**	**0.000058**	**6782.344**	**322.3427**	**0.246321**	**0.010792**
19	**Bk 19, 9 cy**	**1849.2**	**1.2**	**0.11306**	**0.000076**	**0.113135**	**0.00008**	**5473.036**	**312.3063**	**0.182198**	**0.012134**
20	**Bk 20, 9 cy**	**1849.9**	**1.0**	**0.113107**	**0.000062**	**0.113174**	**0.000078**	**5648.78**	**492.3361**	**0.201374**	**0.019406**
21	**Bk 21, 9 cy**	**1849.8**	**0.6**	**0.113098**	**0.000036**	**0.113111**	**0.000032**	**7058.583**	**274.4669**	**0.250281**	**0.006652**
22	**Bk 22, 9 cy**	**1849.0**	**1.0**	**0.113048**	**0.00006**	**0.113116**	**0.000064**	**5629.103**	**561.3166**	**0.183029**	**0.021338**
23	**Bk 23, 9 cy**	**1850.2**	**1.6**	**0.113126**	**0.0001**	**0.113201**	**0.0001**	**5489.398**	**142.6932**	**0.147793**	**0.002782**
24	**Bk 24, 9 cy**	**1849.7**	**0.7**	**0.113094**	**0.000042**	**0.113114**	**0.000042**	**6845.847**	**252.1099**	**0.182954**	**0.005452**
25	Bk 25, 9 cy	1849.3	0.8	0.113065	0.000052	0.113087	0.000054	6780.682	208.7971	0.16579	0.004656
26	Bk 26, 9 cy	1850.0	1.4	0.113111	0.000084	0.113166	0.000082	5908.591	132.8636	0.129574	0.003058

Table DR4

27	Bk 27, 9 cy	1851.1	1.2	0.113181	0.000074	0.113231	0.000082	6005.138	260.0495	0.160308	0.034338
28	Bk 28, 9 cy	1850.3	2.4	0.113131	0.000152	0.113273	0.00015	4427.476	190.1514	0.106175	0.007042
29	Bk 29, 9 cy	1851.3	3.3	0.113191	0.000208	0.113465	0.000218	3207.462	355.7099	0.06836	0.009494
30	Bk 30, 9 cy	1847.5	7.4	0.112956	0.00046	0.113566	0.000464	1882.784	251.1871	0.031338	0.00294





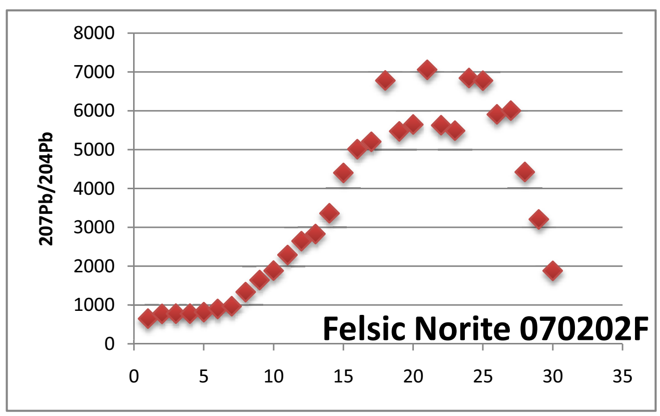


Table DR5

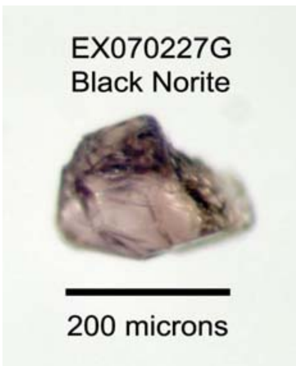
Table DR5 **Data in bold were chosen for the mean age**

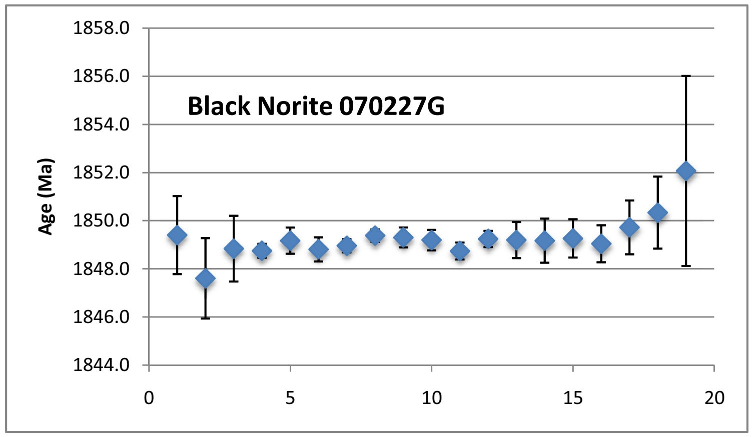
Analysis: **EX070227G** **Frac corr.=** 0.18 **%/AMU**
Sample: **Sudbury Black Norite**
Fraction: **1 unab clr cracked frag**
Wt.= **24 microgm**

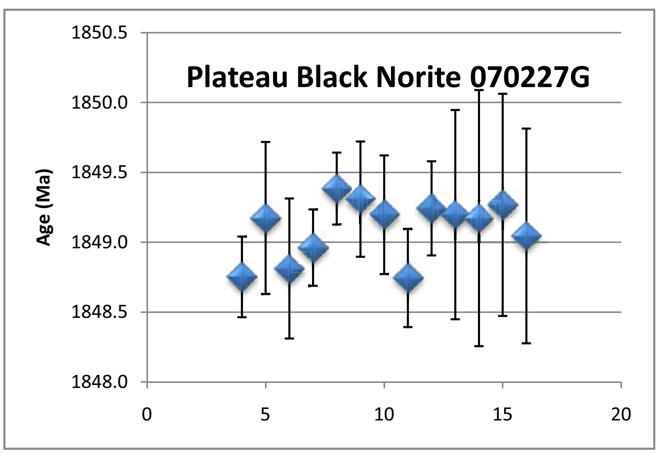
Nos. 4-16
Mean = 1849.07 0.15 [0.0082%] 95% conf.
Wtd by data-pt errs only, 0 of 13 rej.
MSWD = 1.6, probability = 0.084

	Block	Age Ma	2 Sig	207Pb/206 corrected	2 Sig	207Pb/206 measured	2 Sig	207Pb/204 measured	2 Sig	Pb206 Volts	2 Sig
1	Bk 1, 9 cy	1849.4	1.6	0.113075	0.000102	0.113202	0.000094	4616.208	276.033	0.137264	0.01137
2	Bk 2, 9 cy	1847.6	1.7	0.112962	0.000104	0.11311	0.000102	4352.892	132.5593	0.105619	0.00232
3	Bk 3, 9 cy	1848.8	1.4	0.113039	0.000086	0.113141	0.00009	5003.729	157.503	0.119857	0.003784
4	**Bk 4, 9 cy**	**1848.8**	**0.3**	**0.113034**	**0.000018**	**0.113003**	**0.000018**	**8851.19**	**238.6628**	**0.341123**	**0.007222**
5	**Bk 5, 9 cy**	**1849.2**	**0.5**	**0.11306**	**0.000034**	**0.113017**	**0.000036**	**9534.646**	**283.8984**	**0.367014**	**0.005594**
6	**Bk 6, 9 cy**	**1848.8**	**0.5**	**0.113037**	**0.000032**	**0.112966**	**0.000032**	**11579.34**	**754.4677**	**0.482224**	**0.043686**
7	**Bk 7, 9 cy**	**1849.0**	**0.3**	**0.113047**	**0.000018**	**0.112939**	**0.00002**	**15977.12**	**734.8298**	**0.722671**	**0.032748**
8	**Bk 8, 9 cy**	**1849.4**	**0.3**	**0.113073**	**0.000016**	**0.112955**	**0.000016**	**17832.44**	**381.6572**	**0.660556**	**0.028506**
9	**Bk 9, 9 cy**	**1849.3**	**0.4**	**0.113068**	**0.000026**	**0.112954**	**0.000024**	**17242.6**	**608.7375**	**0.657995**	**0.028302**
10	**Bk 10, 9 cy**	**1849.2**	**0.4**	**0.113061**	**0.000026**	**0.112945**	**0.000026**	**17622.59**	**401.1609**	**0.564995**	**0.028926**
11	**Bk 11, 9 cy**	**1848.7**	**0.4**	**0.113033**	**0.000022**	**0.112914**	**0.000022**	**18189.66**	**495.591**	**0.480947**	**0.025992**
12	**Bk 12, 9 cy**	**1849.2**	**0.3**	**0.113064**	**0.000022**	**0.112936**	**0.000022**	**20279.31**	**755.6845**	**0.322247**	**0.006964**
13	**Bk 13, 9 cy**	**1849.2**	**0.7**	**0.113061**	**0.000046**	**0.112928**	**0.000042**	**21742.89**	**1961.13**	**0.339527**	**0.060806**
14	**Bk 14, 9 cy**	**1849.2**	**0.9**	**0.11306**	**0.000058**	**0.11293**	**0.000056**	**20677.77**	**694.4981**	**0.266914**	**0.00315**
15	**Bk 15, 9 cy**	**1849.3**	**0.8**	**0.113066**	**0.00005**	**0.112935**	**0.00005**	**21151.59**	**1348.768**	**0.26784**	**0.006956**
16	**Bk 16, 9 cy**	**1849.0**	**0.8**	**0.113052**	**0.000048**	**0.112926**	**0.000046**	**19807.22**	**1375**	**0.2215**	**0.01105**
17	Bk 17, 9 cy	1849.7	1.1	0.113095	0.00007	0.11299	0.000072	15456.19	1299.953	0.161566	0.015988
18	Bk 18, 9 cy	1850.3	1.5	0.113133	0.000094	0.113056	0.000094	12084.28	493.7758	0.10176	0.008914
19	Bk 19, 9 cy	1852.1	3.9	0.113242	0.000248	0.113209	0.00024	8917.199	599.3282	0.063205	0.006756

Table DR5


EX070227G
Black Norite
200 microns


Black Norite 070227G
Age (Ma)
1858.0
1856.0
1854.0
1852.0
1850.0
1848.0
1846.0
1844.0
0
5
10
15
20


Plateau Black Norite 070227G
Age (Ma)
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1849.5
1849.0
1848.5
1848.0
0
5
10
15
20

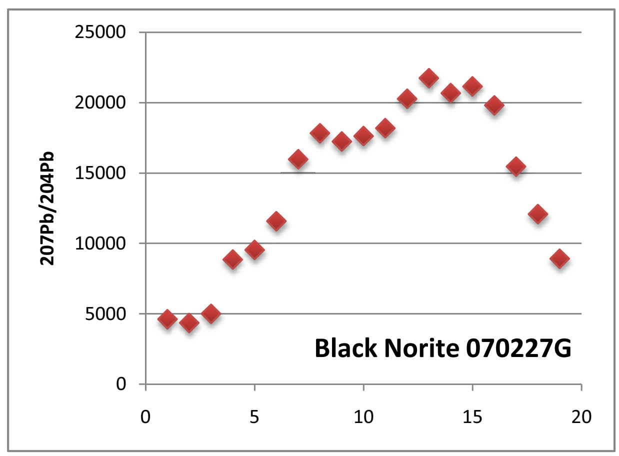

Black Norite 070227G
207Pb/204Pb
25000
20000
15000
10000
5000
0
0
5
10
15
20

Table DR6

Table DR6 Data in bold were chosen for the mean age

Analysis: EX070227A Frac corr.= 0.18 %/AMU

Sample: Sudbury Felsic Norite

Fraction: 1 unab stubby clr euh zr

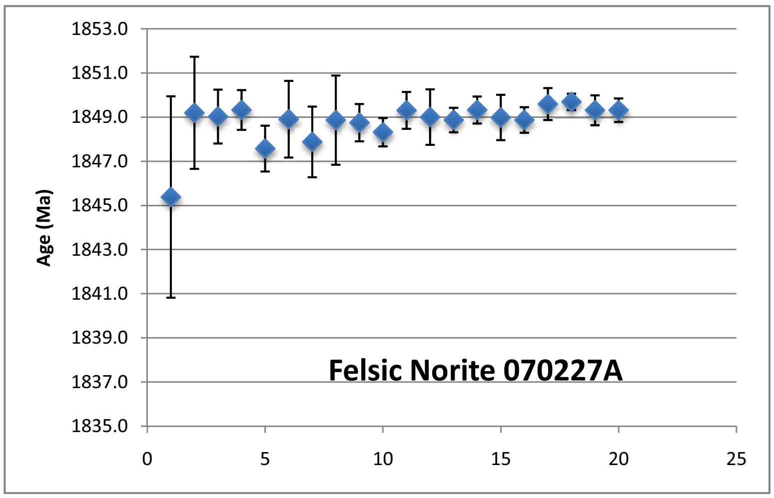
Wt.= 27 microgm

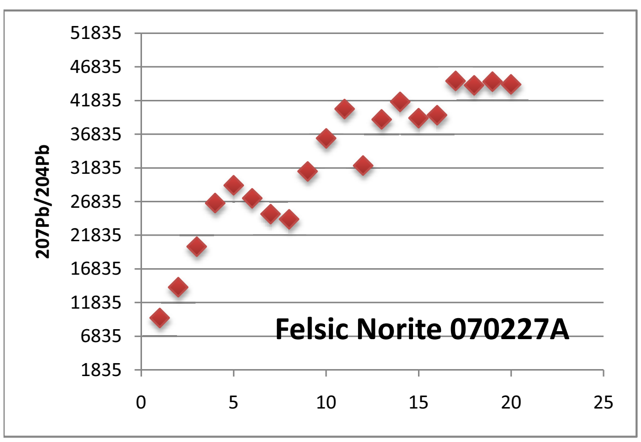
Nos 11-20
Mean = 1849.32 0.19 [0.010%] 95% conf.
Wtd by data-pt errs only, 0 of 10 rej.
MSWD = 1.15, probability = 0.33

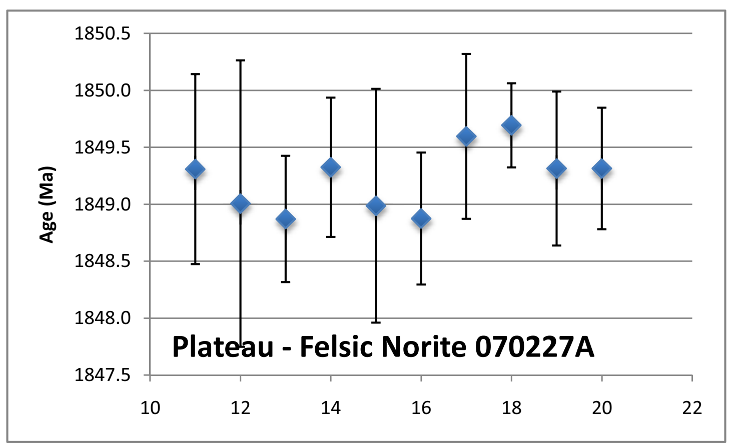
	Block	Age Ma	2 Sig	207Pb/206 corrected	2 Sig	207Pb/206 measured	2 Sig	207Pb/204 measured	2 Sig	Pb206 Volts	2 Sig
1	Bk 1, 9 cy	1845.4	4.6	0.112824	0.000284	0.112781	0.000282	9551.67	663.5325	0.046382	0.002334
2	Bk 2, 9 cy	1849.2	2.5	0.113062	0.000158	0.112967	0.000156	14124.68	1709.499	0.084794	0.01601
3	Bk 3, 9 cy	1849.0	1.2	0.113051	0.000076	0.112923	0.000078	20142.45	1246.495	0.143064	0.004712
4	Bk 4, 9 cy	1849.3	0.9	0.11307	0.000056	0.112924	0.000056	26612.81	2037.463	0.170662	0.006622
5	Bk 5, 9 cy	1847.6	1.0	0.11296	0.000064	0.112809	0.000066	29249.79	1523.171	0.168287	0.0079
6	Bk 6, 9 cy	1848.9	1.7	0.113044	0.000108	0.112896	0.000108	27326.61	1671.93	0.161671	0.005052
7	Bk 7, 9 cy	1847.9	1.6	0.112979	0.0001	0.112837	0.000098	24988.31	1982.904	0.139168	0.009394
8	Bk 8, 9 cy	1848.9	2.0	0.113041	0.000126	0.112901	0.000126	24223.28	2337.797	0.141259	0.021388
9	Bk 9, 9 cy	1848.8	0.8	0.113034	0.000052	0.112879	0.000054	31330.15	1958.872	0.195611	0.017184
10	Bk 10, 9 cy	1848.3	0.6	0.113007	0.00004	0.112846	0.00004	36227.07	2050.637	0.232849	0.00795
11	**Bk 11, 9 cy**	**1849.3**	**0.8**	**0.113068**	**0.000052**	**0.112903**	**0.00005**	**40595.71**	**4087.924**	**0.254876**	**0.0196**
12	**Bk 12, 9 cy**	**1849.0**	**1.3**	**0.11305**	**0.000078**	**0.112894**	**0.00008**	**32190.2**	**1241.064**	**0.189125**	**0.010164**
13	**Bk 13, 9 cy**	**1848.9**	**0.6**	**0.113041**	**0.000034**	**0.112877**	**0.000036**	**39036.17**	**3905.324**	**0.271705**	**0.02612**
14	**Bk 14, 9 cy**	**1849.3**	**0.6**	**0.113069**	**0.000038**	**0.112903**	**0.000038**	**41654.74**	**3359.329**	**0.292413**	**0.008694**
15	**Bk 15, 9 cy**	**1849.0**	**1.0**	**0.113048**	**0.000064**	**0.112884**	**0.000064**	**39234.84**	**1689.903**	**0.252592**	**0.006946**
16	**Bk 16, 9 cy**	**1848.9**	**0.6**	**0.113041**	**0.000036**	**0.112877**	**0.000036**	**39672.46**	**1816.846**	**0.250949**	**0.012766**
17	**Bk 17, 9 cy**	**1849.6**	**0.7**	**0.113086**	**0.000046**	**0.112917**	**0.000046**	**44747.94**	**2470.964**	**0.349818**	**0.010618**
18	**Bk 18, 9 cy**	**1849.7**	**0.4**	**0.113092**	**0.000024**	**0.112924**	**0.000022**	**44115.3**	**2977.739**	**0.34339**	**0.015486**
19	**Bk 19, 9 cy**	**1849.3**	**0.7**	**0.113069**	**0.000042**	**0.1129**	**0.000042**	**44636.49**	**2974.611**	**0.341471**	**0.017632**
20	**Bk 20, 9 cy**	**1849.3**	**0.5**	**0.113069**	**0.000034**	**0.1129**	**0.000036**	**44250.83**	**4138.765**	**0.284257**	**0.021454**

Table DR6


EX070227A
Felsic Norite
200 microns


Age (Ma)
Felsic Norite 070227A
1853.0
1851.0
1849.0
1847.0
1845.0
1843.0
1841.0
1839.0
1837.0
1835.0
0
5
10
15
20
25


207Pb/204Pb
Felsic Norite 070227A
51835
46835
41835
36835
31835
26835
21835
16835
11835
6835
1835
0
5
10
15
20
25


Age (Ma)
Plateau - Felsic Norite 070227A
1850.5
1850.0
1849.5
1849.0
1848.5
1848.0
1847.5
10
12
14
16
18
20
22

DR2008094

Table DR7

Table DR7 **Data in bold were chosen for the mean age**

Analysis: **EX070329A** **Frac corr.=** 0.18 **%/AMU**

Sample: **Sudbury Black Norite**

Fraction: **1 Ab zr, cracked, brn, fresh**

Wt.= **11 microgm**

Nos. 4-9
Mean = 1849.38 0.23 95% conf.
Wtd by data-pt errs only, 0 of 6 rej.
MSWD = 1.4, probability = 0.21

	Block	Age Ma	2 Sig	207Pb/206 corrected	2 Sig	208Pb/206 corrected	2 Sig	207Pb/206Pbm measured	2 Sig	207Pb/204 measured	2 Sig
1	Bk 1, 9 cy	1851.72	3.78	0.113221	0.000236	0.421853	0.00169	0.113434	0.000236	3675.37	204.446
2	Bk 2, 9 cy	1849.73	3.00	0.113096	0.000188	0.424332	0.004936	0.113264	0.000222	4110	288.3348
3	Bk 3, 9 cy	1848.11	1.21	0.112994	0.000076	0.455097	0.003782	0.112965	0.000084	8730.948	887.0585
4	**Bk 4, 9 cy**	**1848.99**	**0.61**	**0.113048**	**0.000038**	**0.459455**	**0.00267**	**0.11291**	**0.000034**	**23539.59**	**1418.148**
5	**Bk 5, 9 cy**	**1848.79**	**0.58**	**0.113036**	**0.000036**	**0.447474**	**0.002558**	**0.112891**	**0.000044**	**26320.43**	**1420.272**
6	**Bk 6, 9 cy**	**1849.42**	**0.26**	**0.113075**	**0.000016**	**0.428535**	**0.002126**	**0.112915**	**0.000016**	**35729.37**	**870.8089**
7	**Bk 7, 9 cy**	**1849.48**	**0.27**	**0.113079**	**0.000018**	**0.421404**	**0.000666**	**0.112925**	**0.000016**	**30943.57**	**5291.274**
8	**Bk 8, 9 cy**	**1849.51**	**0.33**	**0.113081**	**0.00002**	**0.429544**	**0.00432**	**0.112918**	**0.000024**	**37732.68**	**2836.789**
9	**Bk 9, 9 cy**	**1849.33**	**0.54**	**0.11307**	**0.000034**	**0.447916**	**0.002974**	**0.112912**	**0.000032**	**33417.8**	**7689.045**
10	Bk 10, 9 cy	1848.99	1.02	0.113048	0.000064	0.465953	0.001422	0.112919	0.000064	20757.08	1316.009

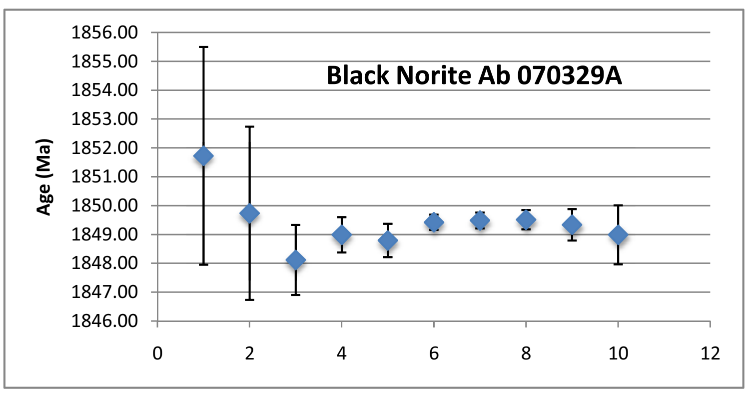
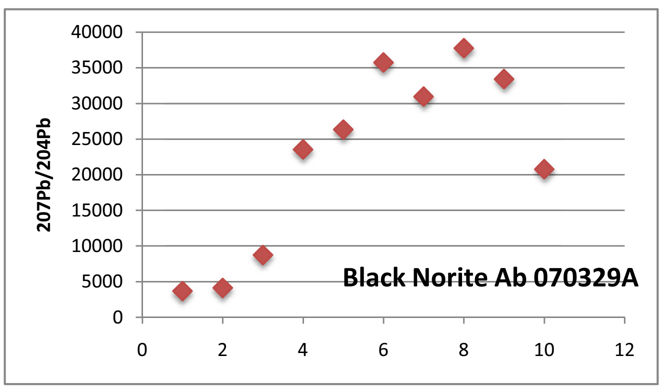
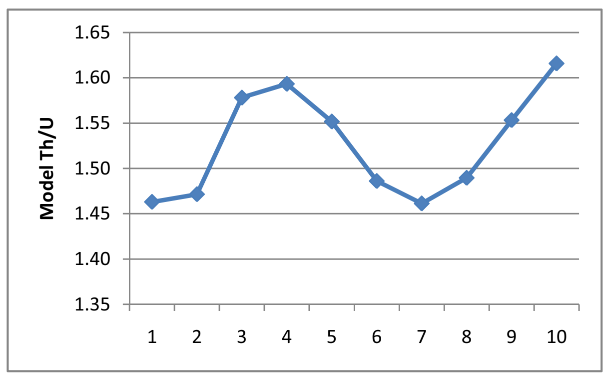


Table DR7

L238= 0.000155 /m.y.
L235= 0.000985 /m.y.
L232= 4.95E-05 /m.y.

208Pb/206 measured	2 Sig	Pb206 Volts	2 Sig	Pb207 Volts	2 Sig	Pb204 CPS	Th/U
0.42131	0.00165	0.033	0.001	0.003773	0.000102	-63	1.46
0.423676	0.004864	0.041	0.001	0.004613	0.000082	-69	1.47
0.453864	0.003732	0.090	0.013	0.009949	0.001364	-71	1.58
0.457954	**0.002668**	**0.245**	**0.007**	**0.027584**	**0.000572**	**73**	1.59
0.446002	**0.002552**	**0.232**	**0.014**	**0.026469**	**0.001458**	**61**	1.55
0.427097	**0.00212**	**0.645**	**0.032**	**0.072533**	**0.00377**	**126**	1.49
0.420007	**0.000662**	**0.564**	**0.022**	**0.062572**	**0.001514**	**122**	1.46
0.428097	**0.0043**	**0.404**	**0.022**	**0.046018**	**0.002426**	**74**	1.49
0.446414	**0.002988**	**0.356**	**0.044**	**0.040898**	**0.004642**	**70**	1.55
0.464448	0.001412	0.132	0.013	0.015266	0.001546	-43	1.62





DR2008094

Table DR8

Table DR8		Data in bold were chosen for the mean age									
	Analysis:	EX070329E		Frac corr.=	0.18 %/AMU						
	Sample:	Sudbury Felsic Norite									
	Fraction:	1 Ab zr, crks, brn, no incl									
	Wt.=	11 microgm									
	Block	Age Ma	2 Sig	207Pb/206 corrected	2 Sig	208Pb/206 corrected	2 Sig	207Pb/206 measured	2 Sig	207Pb/204 measured	2 Sig
1	Bk 1, 9 cy	1847.8	0.6	0.112973	0.000038	0.406026	0.006618	0.11311	0.000108	4487.011	1700.409
2	**Bk 2, 9 cy**	**1849.7**	**0.7**	**0.113091**	**0.000042**	**0.390686**	**0.000642**	**0.113509**	**0.000044**	**2462.774**	**194.2911**
3	**Bk 3, 9 cy**	**1848.5**	**0.8**	**0.11302**	**0.000052**	**0.388663**	**0.000458**	**0.113265**	**0.000052**	**3405.834**	**162.1889**
4	**Bk 4, 9 cy**	**1849.4**	**0.9**	**0.113072**	**0.000054**	**0.384683**	**0.000912**	**0.113277**	**0.000044**	**3747.168**	**101.4661**
5	**Bk 5, 9 cy**	**1849.8**	**0.6**	**0.1131**	**0.000034**	**0.381317**	**0.000528**	**0.113271**	**0.00004**	**4082.935**	**201.2823**
6	**Bk 6, 9 cy**	**1849.1**	**0.6**	**0.113056**	**0.000038**	**0.380347**	**0.000368**	**0.113118**	**0.000062**	**5751.616**	**336.1618**
7	**Bk 7, 9 cy**	**1849.2**	**0.5**	**0.113062**	**0.000032**	**0.381689**	**0.000136**	**0.113058**	**0.000036**	**7654.449**	**249.3343**
8	**Bk 8, 9 cy**	**1849.6**	**0.5**	**0.113087**	**0.00003**	**0.382236**	**0.0001**	**0.113054**	**0.000036**	**8938.506**	**376.5712**
9	**Bk 9, 9 cy**	**1849.9**	**0.5**	**0.113107**	**0.00003**	**0.382067**	**0.000126**	**0.113061**	**0.000048**	**9696.293**	**504.1009**
10	**Bk 10, 9 cy**	**1850.2**	**0.7**	**0.113124**	**0.000044**	**0.381545**	**0.000144**	**0.113112**	**0.000056**	**7954.815**	**200.7473**

Nos. 2-10
Mean = 1849.55 0.33 (0.018%) 95% conf.
Wtd by data-pt errs only, 0 of 9 rej.
MSWD = 2.1, probability = 0.029

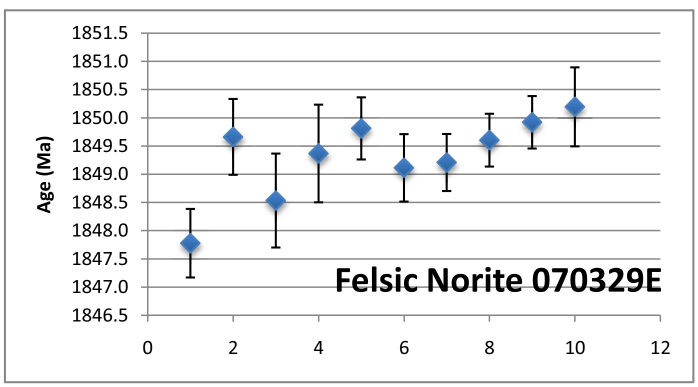
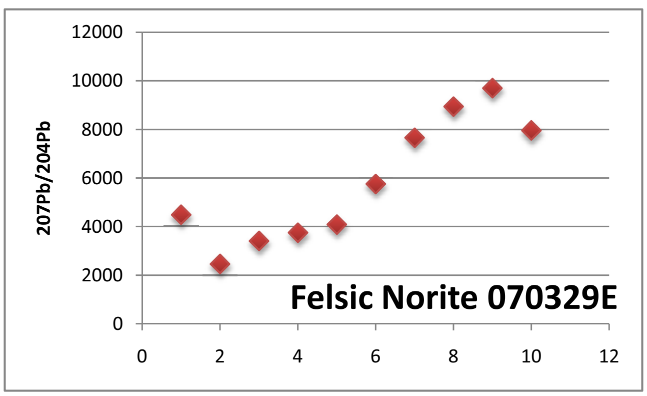


Table DR8

L238=	**0.000155**	**/m.y.**
L235=	**0.000985**	**/m.y.**
L232=	**4.95E-05**	**/m.y.**

208Pb/206 measured	2 Sig	Pb206 Volts	2 Sig	Pb207 Volts	2 Sig	Pb204 CPS	Th/U
0.405372	0.006324	0.246363	0.050178	0.02721	0.006362	-243	1.41
0.39076	**0.000748**	**0.199361**	**0.007966**	**0.022759**	**0.00098**	**562**	**1.35**
0.388334	**0.000496**	**0.198031**	**0.008618**	**0.02219**	**0.000904**	**410**	**1.35**
0.384274	**0.000884**	**0.220954**	**0.012476**	**0.024876**	**0.001354**	**413**	**1.33**
0.380842	**0.000566**	**0.221803**	**0.012844**	**0.025053**	**0.001476**	**378**	**1.32**
0.379616	**0.000332**	**0.187926**	**0.010406**	**0.021023**	**0.001232**	**229**	**1.32**
0.380795	**0.000128**	**0.226142**	**0.004238**	**0.025597**	**0.000526**	**208**	**1.32**
0.381272	**0.000088**	**0.245424**	**0.005504**	**0.027923**	**0.000718**	**193**	**1.33**
0.381072	**0.000118**	**0.343422**	**0.078668**	**0.031452**	**0.005584**	**228**	**1.32**
0.380634	**0.00014**	**0.165306**	**0.006826**	**0.01947**	**0.001384**	**147**	**1.32**



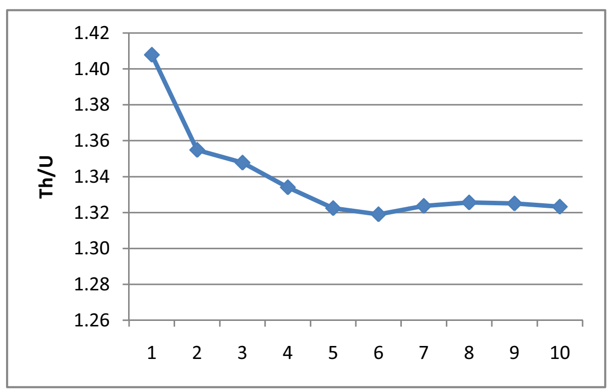


Table DR9

Table DR9 — Data in bold were chosen for the mean age

Analysis: EX070329B — **Frac corr.=** 0.18 %/AMU

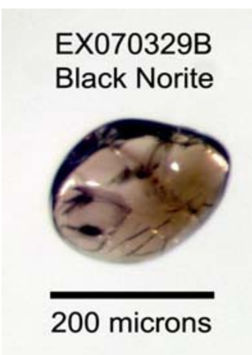
Sample: Sudbury Black Norite

Fraction: A few small frag of Ab brn zr

Wt.= 12 microgm

Nos. 1-3
Mean = 1849.07 0.54 (.029%) 95% conf.
Wtd by data-pt errs only, 0 of 3 rej.
MSWD = 0.003, probability = 0.997

	Block	Age Ma	2 Sig	207Pb/206 corrected	2 Sig	208Pb/206 corrected	2 Sig	207Pb/206 measured	2 Sig	207Pb/204 measured	2 Sig
1	Bk 1, 9 cy	1849.07	0.64	0.113053	0.00004	0.431383	0.003872	0.112931	0.000054	18818.15	1685.48
2	Bk 2, 9 cy	1849.11	1.12	0.113056	0.00007	0.427885	0.000474	0.112958	0.000078	14454.81	1227.757
3	Bk 3, 9 cy	1849.00	3.04	0.113050	0.00019	0.421187	0.002346	0.113017	0.000188	8961.789	2282.39



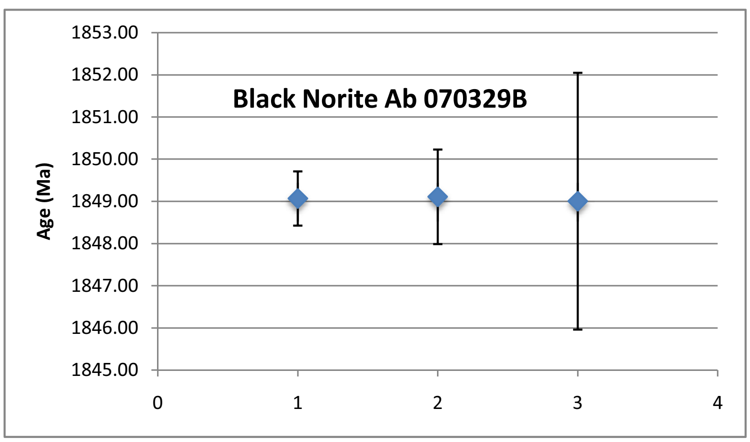
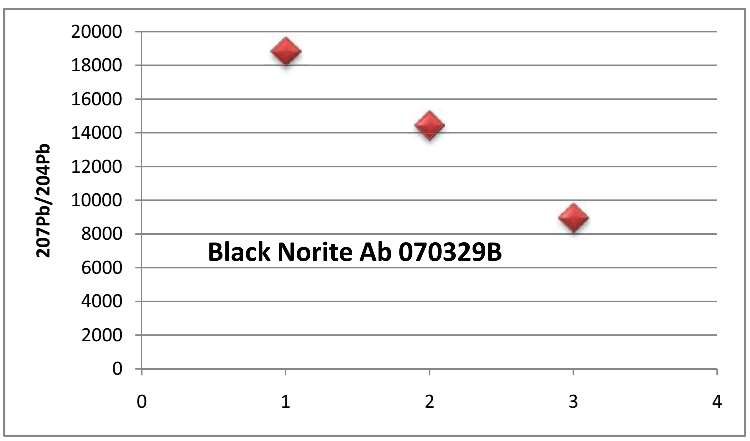


Table DR9

L238=	**0.000155**	**/m.y.**
L235=	**0.000985**	**/m.y.**
L232=	**4.95E-05**	**/m.y.**

208Pb/206 measured	**2 Sig**	**Pb206 Volts**	**2 Sig**	**Pb207 Volts**	**2 Sig**	**Pb204 CPS**	**Th/U**
0.430023	**0.003844**	**0.28529**	**0.091272**	**0.033092**	**0.00988**	**89**	1.50
0.426595	**0.00046**	**0.095971**	**0.007938**	**0.010968**	**0.00082**	**46**	1.48
0.420073	**0.002258**	**0.045808**	**0.011868**	**0.005239**	**0.001258**	**28**	1.46



DR2008094

Table DR10

Table DR10 Data in bold were chosen for the mean age

Nos 7-12
Mean = 1849.63 0.40 (0.022%) 95% conf.
Wtd by data-pt errs only, 0 of 6 rej.
MSWD = 1.02, probability = 0.40

Analysis: **EX070329F** **Frac corr.=** 0.18 **%/AMU**
Sample: **Sudbury Felsic Norite**
Fraction: **1 Ab zr, flat prism, clr, crks, possibly some alteration**
Wt.= **17 microgm**

	Block	Age Ma	2 Sig	207Pb/206 corrected	2 Sig	208Pb/206 corrected	2 Sig	207Pb/206 measured	2 Sig	207Pb/204 measured	2 Sig
1	Bk 1, 9 cy	1844.9	6.4	0.112799	0.000396	0.407054	0.001104	0.112995	0.000318	3828.755	247.7796
2	Bk 2, 9 cy	1851.7	3.1	0.113227	0.000196	0.412792	0.002114	0.113266	0.000192	6298.925	419.2166
3	Bk 3, 9 cy	1845.6	2.7	0.11284	0.00017	0.415825	0.000238	0.112836	0.000168	7654.93	649.1987
4	Bk 4, 2 cy	1846.5	1.8	0.112893	0.00011	0.415925	0.000264	0.112916	0.000192	6745.367	458.3202
5	Bk 5, 9 cy	1848.2	3.0	0.112999	0.000188	0.415807	0.000424	0.112991	0.000174	7793.146	425.5852
6	Bk 6, 9 cy	1850.5	2.9	0.113141	0.000182	0.416627	0.000224	0.113133	0.000162	7844.057	415.2744
7	**Bk 7, 9 cy**	**1850.3**	**1.1**	**0.11313**	**0.000066**	**0.418096**	**0.001362**	**0.113016**	**0.000076**	**17060.57**	**2337.014**
8	**Bk 8, 9 cy**	**1849.8**	**0.7**	**0.113099**	**0.000044**	**0.408657**	**0.002116**	**0.112974**	**0.00004**	**19499.75**	**946.205**
9	**Bk 9, 9 cy**	**1848.9**	**1.0**	**0.113044**	**0.000064**	**0.400041**	**0.000816**	**0.112899**	**0.00007**	**26158.02**	**1793.096**
10	**Bk 10, 9 c**	**1848.4**	**2.3**	**0.113009**	**0.000142**	**0.391907**	**0.00192**	**0.112855**	**0.00012**	**31589.29**	**2744.516**
11	**Bk 11, 9 c**	**1849.6**	**1.0**	**0.113085**	**0.00006**	**0.374195**	**0.00068**	**0.11293**	**0.00007**	**31773.48**	**2381.173**
12	**Bk 12, 9 c**	**1849.7**	**1.2**	**0.113095**	**0.000072**	**0.372629**	**0.001626**	**0.112959**	**0.000124**	**22653.92**	**2506.457**

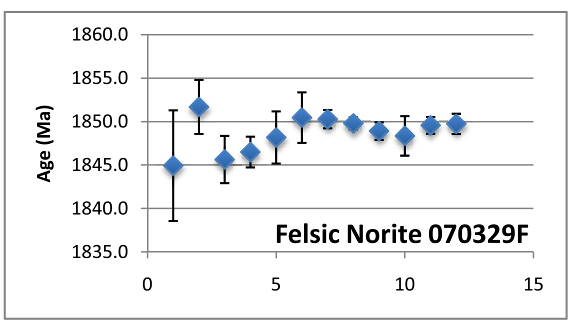
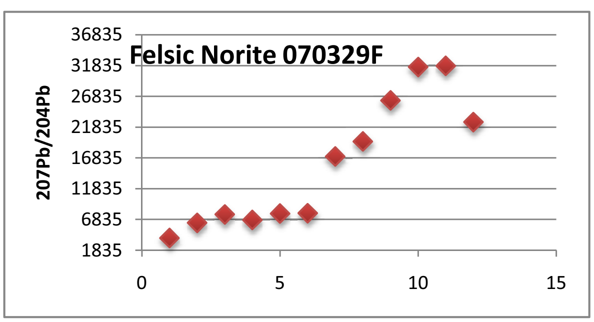


Table DR10

L238=	**0.000155**	**/m.y.**
L235=	**0.000985**	**/m.y.**
L232=	**4.95E-05**	**/m.y.**

208Pb/206 measured	2 Sig	Pb206 Volts	2 Sig	Pb207 Volts	2 Sig	Pb204 CPS	Th/U
0.40653	0.001144	0.021726	0.001044	0.002424	0.000126	-40	1.41
0.41188	0.00208	0.039526	0.001984	0.004346	0.00026	-44	1.43
0.414799	0.000256	0.038744	0.001906	0.004432	0.000214	-35	1.44
0.414962	0.000298	0.033852	0.000422	0.00379	0	-35	1.44
0.414772	0.000416	0.038208	0.0007	0.0043	0.000078	-34	1.44
0.415588	0.000206	0.040726	0.00018	0.004602	0.00002	-37	1.44
0.416805	**0.00136**	**0.176404**	**0.033168**	**0.018802**	**0.00391**	**68**	**1.45**
0.407375	**0.002112**	**0.191998**	**0.01051**	**0.021641**	**0.000894**	**69**	**1.42**
0.398743	**0.000808**	**0.135074**	**0.027126**	**0.015583**	**0.002998**	**33**	**1.39**
0.390616	**0.001912**	**0.071727**	**0.004246**	**0.008092**	**0.000482**	**16**	**1.36**
0.372968	**0.00068**	**0.128174**	**0.012716**	**0.014536**	**0.00146**	**28**	**1.30**
0.371454	**0.001638**	**0.0899**	**0.010934**	**0.010367**	**0.001206**	**27**	**1.29**



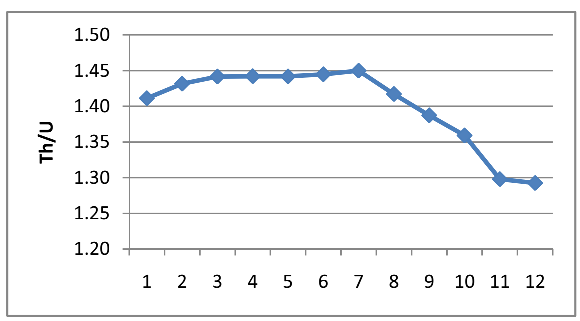


Table DR11

Table DR11 Data in bold were chosen for the mean age

Analysis: **EX070329C** **Frac corr.=** 0.18 **%/AMU**

Sample: Sudbury Black Norite

Fraction: 1 Ab zr, white turbid area on surface

Wt.= **11 microgm**

Nos. 4-10
Mean = 1848.60 0.96 (0.052%) 95% conf.
Wtd by data-pt errs only, 0 of 7 rej.
MSWD = 2.8, probability = 0.010

	Block	Age Ma	2 Sig	'Pb/206Pbc corrected	2 Sig	208Pb/206 corrected	2 Sig	207Pb/206 measured	2 Sig	207Pb/204 measured	2 Sig
1	Bk 1, 9 cy	1850.7	2.6	0.113159	0.000166	0.563985	0.001998	0.113259	0.000242	5036.202	438.9945
2	Bk 2, 9 cy	1844.5	3.4	0.112769	0.000214	0.570239	0.00538	0.112791	0.000192	6771.14	460.3255
3	Bk 3, 9 cy	1848.0	3.7	0.112987	0.00023	0.576686	0.000962	0.11298	0.000208	7740.27	131.3882
4	**Bk 4, 9 cy**	**1850.4**	**1.3**	**0.113134**	**0.000078**	**0.57908**	**0.00057**	**0.113091**	**0.000112**	**9472.434**	**468.7785**
5	**Bk 5, 9 cy**	**1849.6**	**2.0**	**0.113088**	**0.000124**	**0.571957**	**0.003476**	**0.113037**	**0.000114**	**10057.83**	**355.469**
6	**Bk 6, 9 cy**	**1847.8**	**1.7**	**0.112974**	**0.000106**	**0.547742**	**0.00244**	**0.11293**	**0.000108**	**9624.6**	**368.8273**
7	**Bk 7, 9 cy**	**1848.5**	**1.3**	**0.11302**	**0.000082**	**0.541458**	**0.000586**	**0.112966**	**0.000084**	**10194.51**	**167.4315**
8	**Bk 8, 9 cy**	**1847.8**	**0.7**	**0.112973**	**0.000044**	**0.542278**	**0.003028**	**0.112904**	**0.000054**	**11404.54**	**587.2995**
9	**Bk 9, 9 cy**	**1848.9**	**1.5**	**0.113046**	**0.000094**	**0.551917**	**0.00048**	**0.112963**	**0.000104**	**12727.58**	**880.3166**
10	**Bk 10, 9 cy**	**1849.7**	**1.7**	**0.113094**	**0.000108**	**0.551681**	**0.001764**	**0.113046**	**0.000136**	**9814.873**	**1132.643**
11	Bk 11, 9 cy	1844.2	7.4	0.112757	0.000458	0.5479	0.00063	0.112757	0.000404	7519.995	555.9672
12	Bk 12, 9 cy	1843.6	8.5	0.112717	0.000532	0.543235	0.001524	0.112738	0.00051	6793.565	500.4378
13	Bk 13, 9 cy	1843.7	4.9	0.112723	0.000308	0.54241	0.000954	0.112772	0.00044	6053.084	498.7117

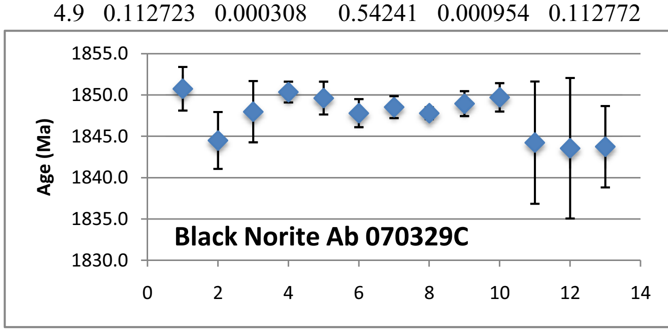
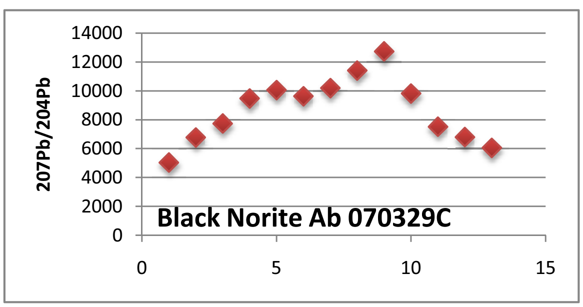


Table DR11

L238= 0.000155 /m.y.
L235= 0.000985 /m.y.
L232= 4.95E-05 /m.y.

208Pb/206 measured	**2 Sig**	**Pb206 Volts**	**2 Sig**	**Pb207 Volts**	**2 Sig**	**Pb204 CPS**	**Th/U**
0.562611	0.001942	0.036	0.003	0.003987	0.000282	-50	1.96
0.568673	0.005342	0.042	0.001	0.00482	0.000078	-43	1.98
0.575035	0.000964	0.054	0.004	0.005959	0.000392	-49	2.00
0.577344	**0.000564**	**0.104**	**0.008**	**0.011588**	**0.00092**	**77**	2.01
0.570228	**0.003456**	**0.114**	**0.003**	**0.013035**	**0.000516**	**80**	1.98
0.546119	**0.00243**	**0.107**	**0.001**	**0.012107**	**0.000122**	**78**	1.90
0.53984	**0.000582**	**0.109**	**0.003**	**0.012265**	**0.000416**	**75**	1.88
0.540622	**0.003004**	**0.132**	**0.008**	**0.014737**	**0.000826**	**81**	1.88
0.550195	**0.000474**	**0.111**	**0.016**	**0.012799**	**0.001764**	**59**	1.91
0.550037	**0.001736**	**0.048**	**0.011**	**0.005649**	**0.001302**	**31**	1.91
0.546372	0.000626	0.027	0.002	0.003149	0.00023	-25	1.90
0.541772	0.001508	0.019	0.001	0.002127	0.000158	-19	1.88
0.54101	0.000948	0.016	0.002	0.001834	0.000232	-18	1.88



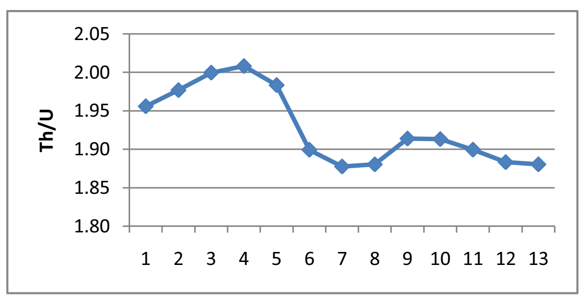
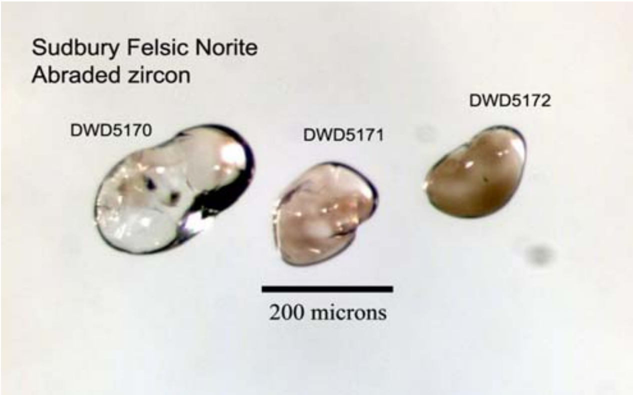


Table DR12: ID-TIMS data from the Sudbury norites used to determine ages in Figure 3

No.	Fraction	Weight (mg)	U (ppm)	Th/U	PbCom (pg)	^{207}Pb/^{204}Pb Meas.	^{206}Pb/^{238}U Corr.	2 Sig	^{207}Pb/^{235}U Corr.	2 Sig	^{207}Pb/^{206}Pb Age (Ma)	2 Sig	Disc %	Err. Correl.
Black Norite														
dwd5167	1 Ab zr	0.0094	1433	2.16	22.78	1360.5	0.31900	0.00080	4.9584	0.0141	1843.9	1.8	3.7	0.93960
dwd5168	1 Ab zr	0.0036	1905	1.62	0.70	23256.0	0.32846	0.00071	5.1145	0.0127	1847.1	1.6	1.0	0.94158
dwd5169	1 Ab zr	0.0046	368	1.12	1.14	3576.8	0.33118	0.00078	5.1625	0.0139	1849.1	1.5	0.3	0.95216
dwd56	M3+200	0.61	2028	3.45	6360	400.1	0.28058	0.00097	4.3146	0.0174	1824.4	3.5	14.2	0.87509
Felsic Norite														
dwd5170	1 Ab zr	0.0087	919	1.21	9.16	2081.8	0.33020	0.00112	5.1480	0.0187	1849.4	1.6	0.6	0.97082
dwd5171	1 Ab zr	0.004	1429	1.37	0.49	27724.4	0.33017	0.00075	5.1439	0.0134	1848.1	1.6	0.6	0.94504
dwd5172	1 Ab zr	0.0033	1171	1.20	4.39	2113.0	0.33132	0.00073	5.1647	0.0133	1849.1	1.5	0.3	0.95137
dwd132	M5 Alt zr	0.142	590	0.95	1746	78.0	0.19832	0.00063	2.8401	0.0302	1694.3	18.9	34.0	0.27967
dwd133	M7 Alt zr	0.047	542	1.10	409	92.4	0.19007	0.00073	2.6894	0.0244	1672.1	15.4	35.8	0.41049

FOOTNOTES TO TABLE

Fractions are ordered from highest to lowest 207Pb/206Pb age
zr - zircon; Ab - abraded; M5 - magnetic at 5 deg. on the Frantz separator; Alt - altered
Pbcom - common Pb assuming the isotopic composition of laboratory blank:
206/204 - 18.221; 207/204 - 15.612; 208/204 - 39.360 (errors of 2%).
Th/U calculated from radiogenic 208Pb/206Pb ratio and 207Pb/206Pb age assuming concordance.
Disc - per cent discordance for the given 207Pb/206Pb age



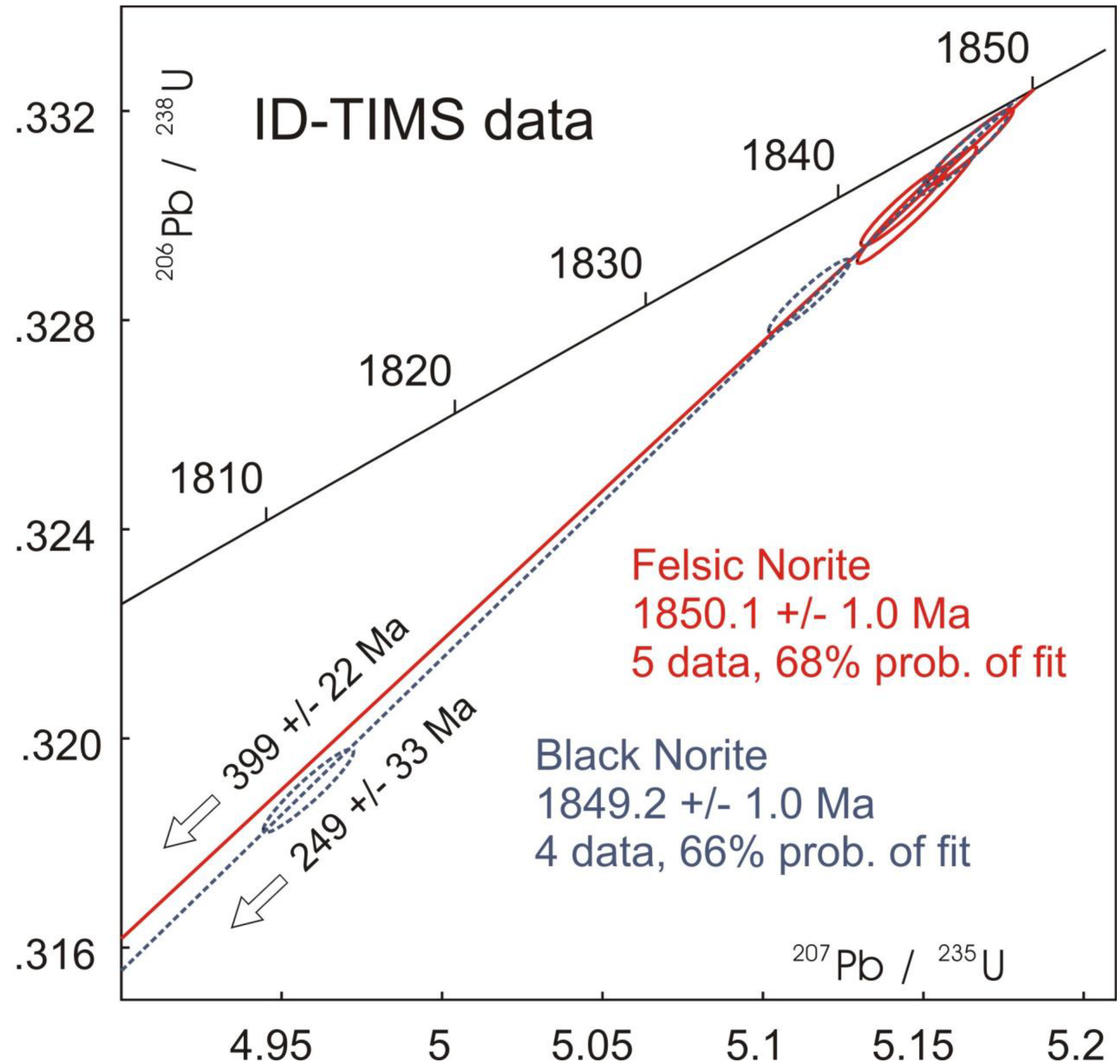


Figure DR1:

ID-TIMS data on abraded zircon from the Felsic Norite and the Black Norite. New near-concordant data are regressed through previously measured discordant data (off scale, all data given in Table DR12). Black Norite data and their regression are shown by dotted lines (one datum overlaps the most concordant Felsic Norite datum). Error ellipses are plotted at 2 s.e.m.