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Figure A: Concordia diagrams. Ellipses and errors reflect 2 sigma errors. POF = probability of fit (see Methods for discussion).
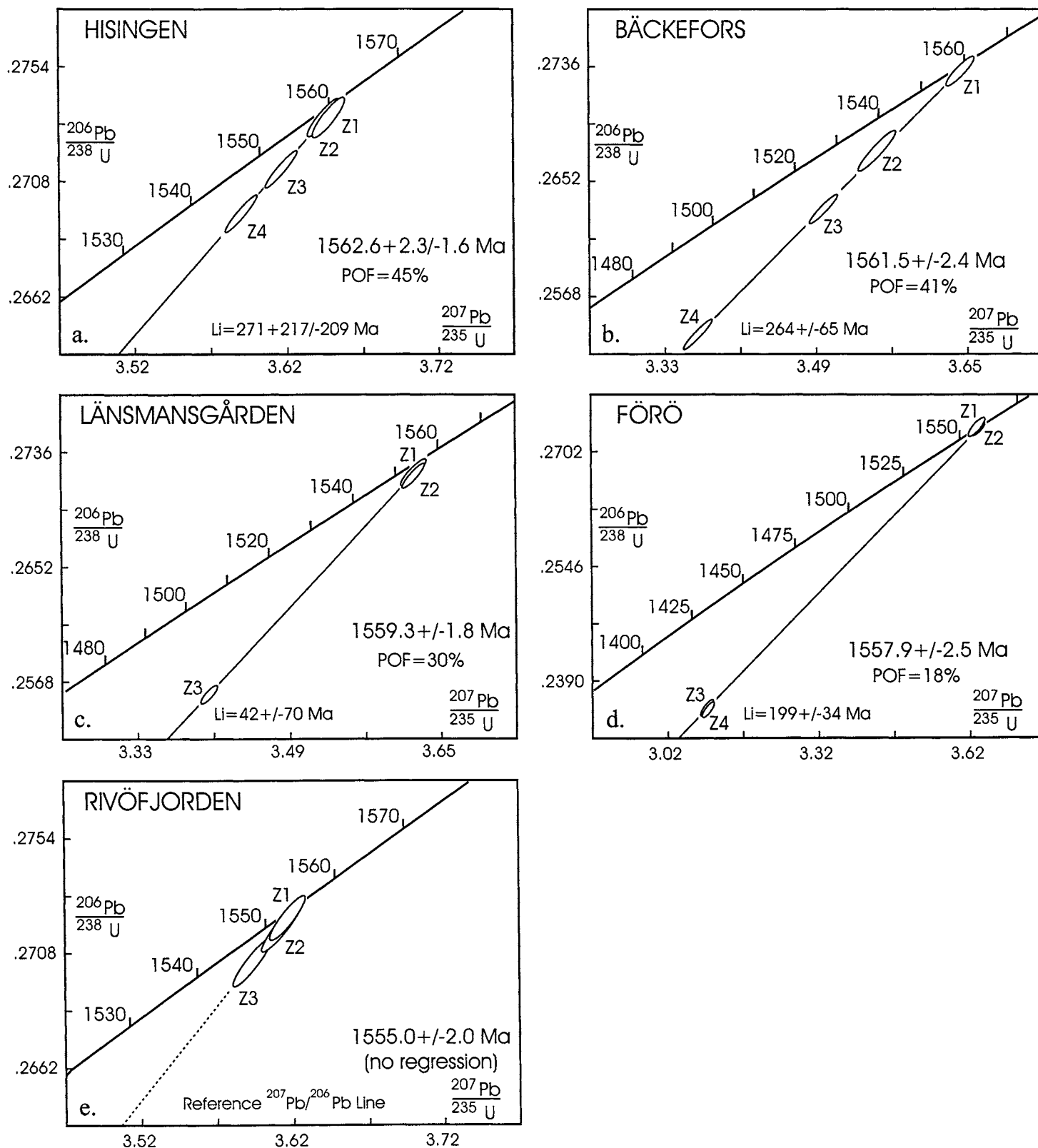

a. **HISINGEN**
$\frac{206\,Pb}{238\,U}$, $\frac{207\,Pb}{235\,U}$
1570, 1560, 1550, 1540, 1530
Z1, Z2, Z3, Z4
1562.6+2.3/-1.6 Ma
POF=45%
Li=271+217/-209 Ma
.2754, .2708, .2662
3.52, 3.62, 3.72

b. **BÄCKEFORS**
$\frac{206\,Pb}{238\,U}$, $\frac{207\,Pb}{235\,U}$
1560, 1540, 1520, 1500, 1480
Z1, Z2, Z3, Z4
1561.5+/-2.4 Ma
POF=41%
Li=264+/-65 Ma
.2736, .2652, .2568
3.33, 3.49, 3.65

c. **LÄNSMANSGÅRDEN**
$\frac{206\,Pb}{238\,U}$, $\frac{207\,Pb}{235\,U}$
1560, 1540, 1520, 1500, 1480
Z1, Z2, Z3
1559.3+/-1.8 Ma
POF=30%
Li=42+/-70 Ma
.2736, .2652, .2568
3.33, 3.49, 3.65

d. **FÖRÖ**
$\frac{206\,Pb}{238\,U}$, $\frac{207\,Pb}{235\,U}$
1550, 1525, 1500, 1475, 1450, 1425, 1400
Z1, Z2, Z3, Z4
1557.9+/-2.5 Ma
POF=18%
Li=199+/-34 Ma
.2702, .2546, .2390
3.02, 3.32, 3.62

e. **RIVÖFJORDEN**
$\frac{206\,Pb}{238\,U}$, $\frac{207\,Pb}{235\,U}$
1570, 1560, 1550, 1540, 1530
Z1, Z2, Z3
1555.0+/-2.0 Ma
(no regression)
Reference $^{207}Pb/^{206}Pb$ Line
.2754, .2708, .2662
3.52, 3.62, 3.72

Table A. U-Pb results.

Fraction	Weight [mg]	Concentration U [ppm]	Concentration Pb[R] [ppm]	Measured Common Pb[T] [pg]	Measured $\frac{^{206}Pb}{^{204}Pb}$	*Corrected Atomic Ratios $\frac{^{208}Pb}{^{206}Pb}$	*Corrected Atomic Ratios $\frac{^{206}Pb}{^{238}U}$		*Corrected Atomic Ratios $\frac{^{207}Pb}{^{235}U}$		*Corrected Atomic Ratios $\frac{^{207}Pb}{^{206}Pb}$		Ages [Ma] $\frac{^{206}Pb}{^{238}U}$	Ages [Ma] $\frac{^{207}Pb}{^{235}U}$	Ages [Ma] $\frac{^{207}Pb}{^{206}Pb}$
HISINGEN GRANITE															
Z1 35 sm clr clrls euh	0.035	139	41.1	4	22639	0.1641	0.27335	66	3.6475	86	0.09678	12	1558	1560	1563
Z2 clr clrls euh elong	0.030	133	39.2	7	10136	0.1579	0.27335	62	3.6441	86	0.09669	10	1558	1559	1561
Z3 sm clr clrls euh prsm	0.057	135	39.5	6	23280	0.1554	0.27128	62	3.6163	86	0.09668	8	1547	1553	1561
Z4 sm clr clrls euh prsm	0.042	136	39.2	2	39674	0.1508	0.26951	60	3.5899	86	0.09661	8	1538	1547	1560
LÄNSMANSGÅRDEN GRANITE															
Z1 euh elong-need clr	0.022	142	41.7	32	1694	0.1547	0.27209	80	3.6215	110	0.09653	14	1551	1554	1558
Z2 2:1-3:1 clr euh prsm	0.033	159	46.2	3	29245	0.1485	0.27184	74	3.6215	98	0.09662	12	1550	1554	1560
Z3 med elong crk sub	0.043	167	46.4	7	15439	0.1635	0.25587	54	3.4048	72	0.09651	12	1469	1505	1558
FÖRÖ DYKE															
Z1 2 med clr pink	0.006	109	32.1	3	4255	0.1493	0.27355	106	3.6361	136	0.09640	22	1559	1557	1556
Z2 single pink	0.018	65	19.8	6	3438	0.1924	0.27326	76	3.6391	110	0.09658	16	1557	1558	1559
Z3 vsm euh need	0.007	514	130.4	6	8260	0.1582	0.23530	90	3.0977	106	0.09548	20	1362	1432	1538
Z4 b vsm need clr euh	0.005	473	120.0	4	7962	0.1586	0.23505	86	3.1001	98	0.09566	20	1361	1433	1541
RIVÖFJORD GABBRO															
Z1 clr blocky euh frags	0.042	182	52.9	18	7190	0.1451	0.27221	72	3.6165	96	0.09636	12	1552	1553	1555
Z2 5 med clr lt bge ang	0.038	112	31.9	3	21454	0.1195	0.27187	84	3.6130	110	0.09638	12	1550	1552	1555
Z3 2 lg clr lt bge ang	0.038	158	45.2	11	9473	0.1368	0.27043	78	3.5932	104	0.09637	10	1543	1548	1555
BÄCKEFORS GRANITE															
Z1 b lg-med elong need	0.003	226	67.5	2	5326	0.1739	0.27326	88	3.6433	122	0.09670	14	1557	1559	1561
Z2 clr amber xls	0.011	384	112.0	3	22372	0.1715	0.26768	122	3.5583	162	0.09641	16	1529	1540	1556
Z3 med ang xls	0.028	491	143.1	10	23165	0.1886	0.26340	86	3.5012	122	0.09641	12	1507	1527	1556
Z4 lg-med elong-need	0.041	490	139.5	10	30585	0.2053	0.25427	88	3.3674	124	0.09605	10	1460	1497	1549

All analyses are single and multigrain zircon fractions. Pb[R]= Radiogenic Pb; Pb[T]= Total Common Pb

Abbreviations are: ang= angular; b=best; bge=beige; clr=clear; clrls=colourless; crk=cracked; elong=elongate; euh=euhedral; frags=fragments; lg=large; lt=light; med=medium size (75-100μm); need=needles; prsm=prisms; sm=small size (50-75μm); sub=subhedral; vsm=very small size (<50 μm); xls=crystals.

*Ratios corrected for fractionation, 1 pg and .25 pg laboratory Pb and U blanks respectively and initial common Pb calculated using Pb isotopic compositions of Stacey and Kramers (1975). All fractions extensively abraded. Two-sigma uncertainties on isotopic ratios are reported after the ratios and refer to the final digits.

Appendix A: Methods

Rock samples were processed at The University of Texas at Austin. They were crushed to mineral size under clean conditions using a jaw crusher, disc pulverizer and initial mineral separation used a Wilfley™ table. Heavy mineral components were processed further using sieves, heavy liquids and a Frantz™ magnetic separator. Mineral fractions were characterised using a binocular reflected-light microscope, transmitted light petrographic microscope (with condenser lens inserted to minimise edge refraction) and a scanning cathodoluminescence (CL) imaging system on a JEOL 730 scanning electron microscope.

Multiple or single grains of each population were selected for analysis on the basis of optical properties to ensure that only the highest quality grains were analysed. All mineral fractions analysed were strongly abraded (Krogh 1982), subsequently re-evaluated optically and then washed successively in distilled 4N nitric acid, water and acetone. They were loaded dry into Teflon™ capsules with a mixed $^{205}Pb/^{235}U$ isotopic tracer solution and dissolved with HF and HNO_3. Chemical separation of U and Pb from zircon using minicolumns (0.055 ml resin volume; after Krogh 1973) resulted in total procedural blanks of 1 and .25 pg for Pb and U, respectively. Pb and U were loaded together with silica gel and phosphoric acid onto an outgassed filament of zone-refined rhenium ribbon and analysed on a multi-collector MAT 261 thermal ionization mass spectrometer, either operating in static mode (with ^{204}Pb measured in the axial secondary electron multiplier (SEM) - ion counting system) or dynamic mode with all masses measured sequentially by the SEM - ion counting system. Initial common Pb was corrected for using Stacey and Kramers (1975) and ages were calculated using decay constants of Jaffey et al. (1971). Errors on isotopic ratios were calculated by propagating uncertainties in measurement of isotopic ratios, fractionation and amount of blank with a program written by J.N. Connelly. Results are reported in Table 1 with 2σ errors. Linear regressions were performed using the procedure of Davis (1982). The goodness of fit of a regressed line is represented as a probability of fit, where 10% or better is considered acceptable and corresponds to a Mean Square of Weighted Deviates (MSWD) of 2 or less. Ages listed in the text, table and figures are quoted with 2σ errors.

References Cited in Methods

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