**Table S1: Fission-track Data**

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Sample | Latitude | Longitude | Description | Mineral | No. ofCrystals | Track Density (x 106 tracks.cm-2) | AgeDispersion | Central Age(Ma) | Apatite MeanTrack Length | StandardDeviation |
|  |  |  |  |  |  | ρs(Ns) | ρi(Ni) | ρd(Nd) | (Pχ2) | (±1σ) | (µm ± 1 s.e.)(no. of tracks) | (µm) |
|  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |
| 11CAT01 | 37.78716°N | 34.98259°E | BurçFormation | Apatite | 40 | 0.8128(811) | 2.775(2769) | 1.329(4251) | 44.7%(2.9%) | **71.1±4.2** | **-** | **-** |
|  |  |  |  | Zircon | 9 | 8.181(822) | 4.041(406) | 0.4926(3153) | 97.8%(<0.01%) | **60.1±4.2** | **-** | **-** |
| 11CAT02 | 37.78992°N | 34.98825°E | BurçFormation | Apatite | 4 | 0.04018(9) | 0.1652(37) | 1.317(4213) | 25.4%(0.6%) | **58.7±22.0** | **-** | **-** |
| 11CAT03 | 37.79303°N | 34.97564°E | ÇukurbagFormation | Apatite | 42 | 0.3220(482) | 1.432(2143) | 1.305(4175) | >99.9%(<0.01%) | **53.8±4.0** | **-** | **-** |
|  |  |  |  | Zircon | 60 | 7.763(6653) | 4.201(3600) | 0.4902(3137) | 0.46%(12.4%) | **52.7±1.8** | **-** | **-** |
| 11CAT04 | 37.82790°N | 34.95514°E | ÇamardıFormation | Apatite | 20 | 0.4848(215) | 5.869(2603) | 1.293(4137) | 99.9%(<0.01%) | **19.6±1.6** | **14.32±0.60****(24)** | **1.37** |
|  |  |  |  | Zircon | 23 | 5.963(1557) | 3.676(960) | 4.878(3122) | 62.3%(4.1%) | **47.7±2.6** | **-** | **-** |
| 11CAT05 | 37.79498°N | 34.97799°E | UlukişlaFormation | Apatite | 39 | 0.4843(345) | 3.110(2215) | 1.281(4098) | 41.8%(19.0%) | **37.1±3.1** | **13.52±0.21****(69)** | **1.74** |
|  |  |  |  | Zircon | 28 | 9.516(2844) | 4.236(1266) | 0.4854(3106) | 78.1%(4.9%) | **65.6±3.2** | **-** | **-** |
| 11CAT06 | 37.87114°N | 34.99717°E | ÇamardıFormation | Apatite | 20 | 0.3297(161) | 4.079(1992) | 1.269(4060) | >99.9%(<0.01%) | **19.0±1.8** | **14.31±0.25****(21)** | **1.13** |
|  |  |  |  | Zircon | 25 | 4.534(1770) | 1.949(761) | 0.4805(3075) | >99.9%(<0.01%) | **67.3±3.7** | **-** | **-** |
| 11CAT07 | 37.86568°N | 34.99656°E | ÇamardıFormation | Apatite | 20 | 0.3770(145) | 4.547(1749) | 1.257(4022) | >99.9%(<0.01%) | **19.2±1.9** | **14.35±0.43****(8)** | **1.14** |
|  |  |  |  | Zircon | 25 | 0.6559(2380) | 2.830(1027) | 0.4781(3060) | 99.6%(<0.01%) | **66.7±3.4** | **-** | **-** |
| 11CAT08 | 37.83774°N | 35.10138°E | ÇukurbagFormation | Apatite | 6 | 0.1974(3984) | 1.235(219) | 1.245(3984) | 19.0%(10.7%) | **36.5±7.1** | **-** | **-** |
|  |  |  |  | Zircon | 7 | 10.05(688) | 1.636(112) | 0.4757(3044) | 8.6%(15.6%) | **175±22** | **-** | **-** |
| 11CAT09 | 37.89443°N | 35.10092°E | ÇukurbagFormation | Apatite | 31 | 0.2707(267) | 1.355(1336) | 1.233(3945) | >99.9%(<0.01%) | **45.2±3.6** | **-** | **-** |
|  |  |  |  | Zircon | 37 | 11.24(5242) | 3.922(1830) | 0.4732(3029) | <0.01%(55.5%) | **79.1±7.8** | **-** | **-** |
| 11CAT10 | 38.14688°N | 35.13848°E | ÇukurbagFormation | Apatite | 20 | 0.2701(224) | 1.297(1076) | 1.221(3907) | 99.2%(<0.01%) | **46.6±4.0** | **-** | **-** |
|  |  |  |  | Zircon | 20 | 5.893(1833) | 2.768(861) | 0.4708(3013) | 17.6%(10.8%) | **59.8±3.6** | **-** | **-** |
| 11CAT11 | 37.83387°N | 35.11545°E | ÇukurbagFormation | Apatite | 9 | 0.2553(91) | 0.8724(311) | 1.209(3869) | 54.7%(2.8%) | **64.8±8.3** | **-** | **-** |
|  |  |  |  | Zircon | 20 | 10.47(2728) | 1.655(431) | 0.4659(2982) | 5.0%(14.5%) | **173±12** | **-** | **-** |
| 11CAT12 | 37.83834°N | 34.97974°E | ÇamardıFormation | Apatite | 20 | 0.5000(144) | 5.948(1713) | 1.197(3831) | >99.9%(<0.01%) | **18.5±1.8** | **-** | **-** |
|  |  |  |  | Zircon | 20 | 10.38(1621) | 5.309(829) | 0.4611(2951) | 85.4%(0.1%) | **54.4±3.0** | **-** | **-** |
| 11CAT13 | 37.91344°N | 35.13664°E | ÇukurbagFormation | Apatite | 36 | 0.2190(199) | 1.429(1299) | 1.185(3792) | 91.6%(0.6%) | **33.3±2.9** | **13.65±0.51****(27)** | **2.61** |
|  |  |  |  | Zircon | 28 | 8.081(2229) | 3.277(904) | 0.4562(2920) | <0.01%(51.3%) | **70.1±7.8** | **-** | **-** |
| 11CAT14 | 37.82684°N | 35.10864°E | ÇukurbagFormation | Apatite | 5 | 0.2927(59) | 0.6349(128) | 1.173(3754) | 55.8%(0.1%) | **98.8±16.1** | **-** | **-** |
|  |  |  |  | Zircon | 18 | 8.729(1514) | 2.756(478) | 0.4538(2904) | <0.01%(56.4%) | **85.7±12.6** | **-** | **-** |
| 11CAT15 | 37.79485°N | 34.87634°E | OvacıkFormation | Apatite | 30 | 0.5863(471) | 3.171(2539) | 1.161(3716) | 98.6%(<0.01%) | **39.5±2.6** | **13.99±0.10****(103)** | **1.05** |
|  |  |  |  | Zircon | 20 | 10.49(2966) | 3.938(1114) | 0.4489(2873) | 84.9%(0.1%) | **72.0±3.5** | **-** | **-** |
| 11CAT16 | 37.79264°N | 34.85197°E | OvacıkFormation | Apatite | 28 | 0.4238(335) | 2.396(1893) | 1.149(3678) | 99.7%(<0.01%) | **37.3±2.8** | **14.75±0.14****(70)** | **1.19** |
|  |  |  |  | Zircon | 20 | 9.395(1864) | 3.377(670) | 0.4465(2858) | 90.8%(0.1%) | **74.8±4.2** | **-** | **-** |
| 11CAT17 | 37.79779°N | 34.77112°E | OvacıkFormation | Apatite | 25 | 0.5403(268) | 4.141(2064) | 1.137(3639) | 79.8%(4.1%) | **27.2±2.2** | **14.84±0.18****(63)** | **1.42** |
|  |  |  |  | Zircon | 20 | 9.568(2229) | 3.679(857) | 0.4417(2827) | 98.4%(<0.01%) | **69.2±3.7** | **-** | **-** |
| UK25 | 37.58076°N | 34.77878°E | Elmalı Syenite | Apatite | 11 | 0.1940(108) | 0.9411(524) | 1.483(4746) | 99.4%(<0.01%) | **53.6±5.7†** | **-** | **-** |
| EL13 | 37.57327°N | 34.77850°E | Elmalı Syenite  | Zircon | 15 | 15.81(2519) | 9.042(1441) | 0.5150(3296) | 92.7%(<0.01%) | **52.0±2.0†** | **-** | **-** |
|  |  |  |  |  |  |  |  |  |  |  |  |  |

Notes:

(i). Analyses by external detector method using 0.5 for the 4π/2π geometry correction factor;

(ii). Ages calculated using dosimeter glass: IRMM540R with ζ540R = 368.1±14.9 (apatite); IRMM541 with ζ541 = 121.5±3.5 (zircon);

 † ζ540R = 351.9±3.8 (apatite); IRMM541 with ζ541 = 121.5±3.5 (zircon);

(iii). Pχ2 is the probability of obtaining a χ2 value for v degrees of freedom where v = no. of crystals - 1;

(iv). s.e. = Standard Error.