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| TABLE 1. EASTERN ALASKA RANGE GEOCHRONOLOGY | | | | | | | | | | | | | | | | |
| Sample name | Location  (WGS84) | | Elev.  (m) | Rock type | Age  (Ma) | North or south of Denali fault | Reference |  | Sample name | Location  (WGS84) | | Elev.  (m) | Rock type | Age  (Ma) | North or south of Denali fault | Reference |
| Lat  (°N) | Long  (°W) |  | Lat  (°N) | Long  (°W) |
| **40Ar/39Ar hornblende (HO)** |  |  |  |  | **Preferred Age** |  |  |  | **40Ar/39Ar muscovite (MU)** | |  |  |  | **Preferred age** |  |  |
| 18DEB HO#L1 | 63.5489 | 147.2642 | 1427 | granitoid | 44.5 ± 1.2 | North | This study |  | Birch Creek schist | 63.8516 | 148.8407 | 495 | mica schist | 104.8 ± 1.5 | North | Benowitz et al., 2019 |
| 67SUS HO#L1 | 63.5251 | 147.0788 | 1624 | granitoid | 67.4 ± 0.6 | South | This study |  | 10CH05B MU#L1 | 63.5156 | 147.6574 | 1562 | metased | 36.4 ± 0.2 | North | Benowitz et al., 2019 |
| 15CSR14 HO#L1 | 63.5339 | 147.0621 | 1435 | orthogneiss | 44.3 ± 1.0 | North | This study |  | 43DEB MU#L1 | 63.5371 | 147.3649 | 1484 | granitoid | 16.9 ± 1.0 | North | Benowitz et al., 2019 |
| 15CSR12 HO#L1 | 63.5294 | 147.0572 | 1329 | metased | 32.9 ± 1.2 | North | This study |  | 22DEB MU#L1 | 63.5391 | 147.3237 | 1341 | orthogneiss | 15.1 ± 0.2 | North | Benowitz et al., 2019 |
| 15CSR10 HO#L1 | 63.5279 | 147.0548 | 1282 | metased | 30.0 ± 0.5 | North | This study |  | 60SUS MU#L1 | 63.5339 | 147.0872 | 1737 | granitoid | 16.0 ± 0.1 | North | Benowitz et al., 2019 |
| 86SUS HO#L1 | 63.5363 | 146.9944 | 1340 | amphibolite | 43.1 ± 0.3 | North | This study |  | 95SUS MU#L1 | 63.5279 | 147.0548 | 1280 | muscovite schist | 16.1 ± 0.3 | North | Benowitz et al., 2019 |
| 90CSUS HO#L1 | 63.5205 | 146.8477 | 1275 | granitoid | 42.7 ± 0.3 | North | This study |  | 61BSUS MU#L1 | 63.5336 | 147.0517 | 1408 | granitoid | 17.6 ± 0.1 | North | Benowitz et al., 2019 |
| 32RAP HO#L1 | 63.5219 | 146.6854 | 2067 | granitoid | 34.3 ± 0.4 | North | This study |  | 62ASUS MU#L1 | 63.5336 | 147.0517 | 1408 | granitoid | 16.9 ± 0.1 | North | Benowitz et al., 2019 |
| 41RAP HO#L1 | 63.4916 | 146.5062 | 1811 | granitoid | 37.4 ± 0.1 | North | This study |  | 87SUS MU#L1 | 63.5284 | 147.0154 | 1266 | granitoid | 16.3 ± 0.2 | North | Benowitz et al., 2019 |
| 311AST HO#L1 | 63.4826 | 146.8213 | 1855 | orthogneiss | 35.4 ± 0.6 | South | Benowitz et al., 2011a |  | 85SUS MU#L1 | 63.5363 | 146.9944 | 1340 | granitoid | 20.0 ± 0.5 | North | Benowitz et al., 2019 |
| DT45 HO | 63.5928 | 147.6391 | 1359 | granite | 39.6 ± 1.1 (K-Ar) | North | Csejtey et al., 1992 |  | 63SUS MU#L1 | 63.5388 | 146.9919 | 1403 | granitoid | 17.4 ± 0.1 | North | Benowitz et al., 2019 |
|  |  |  |  |  |  |  |  |  | 84SUS MU#L1 | 63.5318 | 146.9549 | 1187 | granitoid | 19.3 ± 0.3 | North | Benowitz et al., 2019 |
| **40Ar/39Ar biotite (BI)** |  |  |  |  | **Preferred Age** |  |  |  | 18BAL MU#L1 | 63.5808 | 146.9405 | 1750 | granitoid | 23.7 ± 0.2 | North | Benowitz et al., 2019 |
| 18BAL MU#L1 | 63.5808 | 146.9405 | 1750 | granitoid | 23.7 ± 0.2 | North | Benowitz et al., 2019 |  | 90SUS MU#L1 | 63.5205 | 146.8477 | 1275 | granitoid | 17.3 ± 0.8 | North | Benowitz et al., 2019 |
| 90SUS MU#L1 | 63.5205 | 146.8477 | 1275 | granitoid | 17.3 ± 0.8 | North | Benowitz et al., 2019 |  | 96SUS MU#L1 | 63.5167 | 146.7641 | 1457 | granitoid | 15.4 ± 0.5 | North | Benowitz et al., 2019 |
| 45NEN BI#L1 | 63.5377 | 147.8731 | 1427 | granitoid | 37.8 ± 0.2 | North | This study |  | 30RAP MU#L1 | 63.5160 | 146.6847 | 1719 | granitoid | 18.0 ± 0.2 | North | Benowitz et al., 2019 |
| 43NEN BI#L1 | 63.5049 | 147.9173 | 1817 | granitoid | 39.6 ± 0.5 | North | This study |  | 46RAP MU#L1 | 63.5075 | 146.3052 | 1734 | granitoid | 23.2 ± 0.2 | North | Benowitz et al., 2019 |
| 41NEN BI#L1 | 63.4991 | 147.9099 | 1609 | granitoid | 37.6 ± 0.2 | North | This study |  | 26RAP MU#L1 | 63.5193 | 146.6010 | 2076 | granitoid | 24.3 ± 0.2 | North | Benowitz et al., 2014 |
| 02NEN BI#L1 | 63.5259 | 147.8656 | 1466 | granitoid | 37.0 ± 0.2 | North | This study |  | 28RAP MU#L1 | 63.5148 | 146.6136 | 2313 | granitoid | 23.4 ± 0.1 | North | Benowitz et al., 2014 |
| 48NEN BI#L1 | 63.5507 | 147.8525 | 1982 | granitoid | 37.2 ± 0.2 | North | This study |  | 51SUS MU#L1 | 63.4983 | 147.1329 | 1422 | granitoid | 52.2 ± 0.3 | South | Riccio et al., 2014 |
| 03NEN BI#L1 | 63.5191 | 147.8361 | 1708 | granitoid | 35.9 ± 0.3 | North | This study |  | 45RAP MU#L1 | 63.4723 | 146.4310 | 1635 | orthogneiss | 31.6 ± 0.1 | South | Benowitz et al., 2011a |
| 30NEN BI#L1 | 63.5046 | 147.7852 | 1155 | granitoid | 35.0 ± 0.1 | North | This study |  | 05RAP MU#L1 | 63.4337 | 146.5411 | 2111 | orthogneiss | 32.6 ± 0.3 | South | Benowitz et al., 2011a |
| 10CH05B BI#L1 | 63.5156 | 147.6574 | 1562 | metased | 24.6 ± 0.3 | North | This study |  | 85BT232 MU | 63.3681 | 145.7931 | 1531 | orthogneiss | 42.2 ± 1.3 (K-Ar) | South | Nokleberg et al., 1992 |
| 10DEB BI#L1 | 63.5787 | 147.1990 | 1859 | granitoid | 28.2 ± 0.1 | North | This study |  | 71AWr476 MU | 63.3744 | 145.8061 | 1492 | orthogneiss | 36.5 ± 1.1 (K-Ar) | South | Nokleberg et al., 1992 |
| 15DEB BI#L1 | 63.5929 | 147.1850 | 1850 | granitoid | 31.3 ± 0.2 | North | This study |  | 71WR452 MU | 63.4157 | 145.8534 | 939 | orthogneiss | 33.4 ± 1.0 (K-Ar) | South | Nokleberg et al., 1992 |
| 65SUS BI#L1 | 63.5284 | 147.1114 | 1629 | granitoid | 53.3 ± 0.4 | South | This study |  | 71AWR480 MU | 63.4360 | 146.0249 | 1545 | orthogneiss | 29.9 ± 0.9 (K-Ar) | South | Nokleberg et al., 1992 |
| 54SUS BI#L1 | 63.5335 | 147.1050 | 1804 | granitoid | 19.2 ± 0.2 | North | This study |  | 72DT37B MU | 63.4532 | 146.2207 | 1268 | orthogneiss | 31.3 ± 0.9 (K-Ar) | South | Nokleberg et al., 1992 |
| 15CSR08B BI#L1 | 63.5335 | 147.0899 | 1733 | orthogneiss | 18.1 ± 0.1 | North | This study |  | 72DT40 MU | 63.4742 | 146.3834 | 1498 | orthogneiss | 30.7 ± 0.9 (K-Ar) | South | Nokleberg et al., 1992 |
| 60SUS BI#L1 | 63.5339 | 147.0872 | 1737 | granitoid | 17.3 ± 0.2 | South | This study |  |  |  |  |  |  |  |  |  |
| 15CSR07B BI#L1 | 63.5289 | 147.0865 | 1598 | fault gouge | 18.8 ± 0.2 | North | This study |  | **40Ar/39Ar potassium feldspar (FS)** | |  |  |  | **Minimum age** |  |  |
| 67SUS BI#L1 | 63.5251 | 147.0788 | 1624 | granitoid | 42.0 ± 0.2 | South | This study |  | 10CH08 FS#L1 | 63.5167 | 147.6434 | 1726 | granitoid | 8.9 ± 0.8 | North | This study |
| 91SUS BI#L1 | 63.5263 | 147.0500 | 1233 | granitoid | 41.7 ± 0.5 | South | This study |  | 15CSR02 FS#L1 | 63.5181 | 147.5686 | 1677 | orthogneiss | 8.2 ± 0.3 | North | This study |
| 06BAL BI#L1 | 63.6196 | 146.9280 | 2062 | granitoid | 26.2 ± 0.2 | North | This study |  | 55SUS FS#L1 | 63.5350 | 147.1036 | 1850 | granitoid | 9.5 ± 1.3 | North | This study |
| 23BAL BI#L1 | 63.6282 | 146.9093 | 2214 | granitoid | 28.9 ± 0.2 | North | This study |  | 10ANK003 FS#F1 | 63.7747 | 147.2282 | 1781 | granitoid | 23.9 ± 1.4 | North | This study |
| 21BAL BI#L1 | 63.6178 | 146.8984 | 2117 | granitoid | 25.9 ± 0.1 | North | This study |  | 42NEN FS#L1 | 63.5021 | 147.9180 | 1731 | granite | 14.4 ± 0.2 | North | This study |
| 01BAL BI#L1 | 63.6326 | 146.8637 | 2499 | granitoid | 29.5 ± 0.2 | North | This study |  | 41NEN FS#L1 | 63.4991 | 147.9099 | 1609 | granite | 14.4 ± 0.6 | North | This study |
| 32RAP BI#L1 | 63.5219 | 146.6854 | 2067 | granitoid | 25.4 ± 0.2 | North | This study |  | 01NEN FS#L1 | 63.5308 | 147.8830 | 1377 | granite | 9.3 ± 0.2 | North | This study |
| 27RAP BI#L1 | 63.5172 | 146.6034 | 2051 | granitoid | 20.2 ± 0.1 | North | This study |  | 45NEN FS#F1 | 63.5377 | 147.8731 | 1427 | granite | 14.9 ± 0.5 | North | This study |
| 33RAP BI#L1 | 63.5049 | 146.5584 | 2124 | granitoid | 19.1 ± 0.2 | North | This study |  | 60NEN FS# L1 | 63.5559 | 147.8574 | 2256 | granite | 28.0 ± 0.4 | North | This study |
| 34RAP BI#L1 | 63.5073 | 146.5551 | 2303 | granitoid | 20.6 ± 0.1 | North | This study |  | 48NEN FS#L1 | 63.5507 | 147.8525 | 1982 | granite | 22.7 ± 0.3 | North | This study |
| 40RAP BI#L1 | 63.4916 | 146.5062 | 1811 | granitoid | 22.1 ± 0.3 | North | This study |  | 05NEN FS#L1 | 63.5098 | 147.8443 | 1640 | granite | 8.5 ± 0.1 | North | This study |
| 39RAP BI#L1 | 63.5041 | 146.4817 | 1806 | granitoid | 25.0 ± 0.1 | North | This study |  | 28NEN FS#L1 | 63.5060 | 147.7804 | 1170 | granite | 10.4 ± 0.2 | North | This study |
| 43RAP BI#L1 | 63.4934 | 146.4202 | 1679 | granitoid | 20.5 ± 0.2 | North | This study |  | 30NEN FS#L1 | 63.5046 | 147.7852 | 1155 | granite | 10.6 ± 0.5 | North | This study |
| 59COL BI#L1 | 63.2277 | 145.3335 | 1832 | granitoid | 121.3 ± 0.5 | South | This study |  | 29NEN FS#L1 | 63.5080 | 147.7662 | 1231 | granite | 10.0 ± 0.4 | North | This study |
| 01HAJ BI#L1 | 63.5631 | 145.1136 | 2125 | granitoid | 70.6 ± 0.7 | North | This study |  | 72DT44A FS#F1 | 63.7335 | 147.3834 | 2058 | granitoid | 81.2 ± 1.3 | North | This study |
| 26RAP BI#L1 | 63.5193 | 146.6010 | 2076 | granitoid | 19.5 ± 0.2 | North | Benowitz et al., 2014 |  | 72DT43B FS#F1 | 63.7597 | 147.3222 | 1968 | granitoid | 92.6 ± 0.9 | North | This study |
| 28RAP Bi#L1 | 63.5148 | 146.6136 | 2313 | granitoid | 19.7 ± 0.1 | North | Benowitz et al., 2014 |  | 19BAL FS#F1 | 63.5713 | 146.9481 | 1615 | granite | 8.9 ± 0.2 | North | This study |
| EAR 10-16 BI#L1 | 63.4252 | 147.1040 | 1465 | granitoid | 54.1 ± 0.4 | South | Riccio et al., 2014 |  | 21BAL FS#L1 | 63.6178 | 146.8984 | 2117 | granite | 10.5 ± 0.2 | North | This study |
| 51SUS BI#L1 | 63.4983 | 147.1329 | 1422 | granitoid | 51.0 ± 0.4 | South | Riccio et al., 2014 |  | 31RAP FS#L1 | 63.5219 | 146.6854 | 2067 | granitoid | 9.8 ± 0.2 | North | This study |
| 72DT37B MU | 63.4532 | 146.2207 | 1268 | orthogneiss | 31.3 ± 0.9 (K-Ar) | South | Nokleberg et al., 1992 |  | 30RAP FS#L1 | 63.5160 | 146.6847 | 1719 | granitoid | 9.7 ± 0.3 | North | This study |
| 72DT40 MU | 63.4742 | 146.3834 | 1498 | orthogneiss | 30.7 ± 0.9 (K-Ar) | South | Nokleberg et al., 1992 |  | 27RAP FS#L1 | 63.5172 | 146.6034 | 2051 | granitoid | 9.7 ± 0.2 | North | This study |
| 10CH13 BI#L1 | 63.5153 | 147.6453 | 1697 | granitoid | 26.4 ± 0.2 | North | This study |  | 26RAP FS#F1 | 63.5193 | 146.6010 | 2076 | granitoid | 6.7 ± 0.5 | North | This study |
| 10CH09 BI#L1 | 63.5164 | 147.6439 | 1728 | granitoid | 27.0 ± 0.1 | North | This study |  | 34RAP FS#L1 | 63.5073 | 146.5551 | 2303 | granitoid | 9.5 ± 0.2 | North | This study |
| 15CSR06 BI#L1 | 63.5220 | 147.5660 | 1681 | orthogneiss | 18.8 ± 0.1 | North | This study |  | 40RAP FS#L1 | 63.4916 | 146.5062 | 1811 | granitoid | 11.3 ± 0.3 | North | This study |
| 15CSR05 BI#L1 | 63.5125 | 147.5630 | 1505 | orthogneiss | 26.6 ± 0.2 | North | This study |  | 43RAP FS#L1 | 63.4934 | 146.4202 | 1679 | granitoid | 10.6 ± 0.2 | North | This study |
| 43DEB BI#L1 | 63.5371 | 147.3649 | 1484 | granitoid | 16.4 ± 0.2 | North | This study |  | 72DT40 FS# L1 | 63.4742 | 146.3834 | 1498 | orthogneiss | 29.1 ± 0.2 | South | Benowitz et al., 2014 |
| 25DEB BI#L1 | 63.5932 | 147.3481 | 2042 | granitoid | 28.4 ± 0.5 | North | This study |  | 72DT37B FS#L1 | 63.4532 | 146.2207 | 1268 | orthogneiss | 26.2 ± 0.2 | South | Benowitz et al., 2014 |
| 22DEB BI#L1 | 63.5391 | 147.3237 | 1341 | orthogneiss | 15.8 ± 0.2 | North | This study |  | 71AWR480 FS#L1 | 63.4360 | 146.0249 | 1545 | orthogneiss | 26.0 ± 0.2 | South | Benowitz et al., 2014 |
| 12DEB BI#L1 | 63.5820 | 147.2073 | 1859 | granitoid | 31.8 ± 0.2 | North | This study |  | 71AWR479 FS#L1 | 63.4234 | 145.8178 | 899 | orthogneiss | 37.4 ± 0.9 | North | Benowitz et al., 2014 |
| 01PAN BI#L1 | 63.4670 | 148.7350 | 1011 | granite | 36.9 ± 0.2 | North | Benowitz et al., 2011a |  | 60SUS FS#L1 | 63.5339 | 147.0872 | 1737 | granitoid | 7.4 ± 0.4 | North | This study |
| 04NEN BI#L1 | 63.5160 | 147.8477 | 1859 | granite | 38.3 ± 0.2 | North | Benowitz et al., 2011a |  | 67SUS FS#L1 | 63.5251 | 147.0788 | 1624 | granitoid | 31.9 ± 0.6 | South | This study |
| 32NEN BI#L1 | 63.5130 | 147.7270 | 1271 | granodiorite | 30.2 ± 2.3 | North | Benowitz et al., 2011a |  | 10ANK002 FS#F1 | 63.7702 | 147.1418 | 1533 | granitoid | 31.3 ± 1.2 | North | This study |
| 37NEN BI#L1 | 63.5440 | 147.6970 | 2347 | granodiorite | 36.2 ± 0.1 | North | Benowitz et al., 2011a |  | 60COL FS#L1 | 63.2323 | 145.3489 | 1901 | granitoid | 104.9 ± 0.7 | South | Benowitz et al., 2014 |
| 24DEB BI#L1 | 63.5957 | 147.3449 | 2042 | tonalite | 32.5 ± 0.1 | North | Benowitz et al., 2011a |  | 81COL FS#L1 | 63.2703 | 145.2984 | 2467 | granitoid | 80.8 ± 0.8 | South | Benowitz et al., 2014 |
| 07DEB BI#L1 | 63.5699 | 147.2897 | 1524 | tonalite | 28.5 ± 0.2 | North | Benowitz et al., 2011a |  | 01HAJ FS#L1 | 63.5631 | 145.1136 | 2125 | granite | 58.3 ± 0.7 | North | Benowitz et al., 2014 |
| 02DEB BI#L1 | 63.6126 | 147.2770 | 2268 | tonalite | 68.4 ± 0.3 | North | Benowitz et al., 2011a |  | 01KIM FS#F1 | 63.1694 | 144.6036 | 1421 | granite | 35.0 ± 1.4 | North | Benowitz et al., 2014 |
| 19BAL BI#L1 | 63.5713 | 146.9481 | 1615 | granite | 21.3 ± 0.1 | North | Benowitz et al., 2011a |  | EAR 10-16 FS#L1 | 63.4252 | 147.1040 | 1465 | granitoid | 48.5 ± 0.3 | South | Riccio et al., 2014 |
| 18BAL BI#L1 | 63.5808 | 146.9405 | 1750 | granite | 22.5 ± 0.1 | North | Benowitz et al., 2011a |  | 51SUS FS#L1 | 63.4983 | 147.1329 | 1422 | granitoid | 45.5 ± 0.6 | South | Riccio et al., 2014 |
| 03BAL BI#L1 | 63.6224 | 146.9251 | 2164 | granite | 33.3 ± 0.2 | North | Benowitz et al., 2011a |  | 01PAN FS#L2 | 63.4670 | 148.7350 | 1011 | granite | 30 ± 3.8 | North | Benowitz et al., 2011a |
| 311AST BI#L1 | 63.4826 | 146.8213 | 1855 | orthogneiss | 34.6 ± 0.2 | South | Benowitz et al., 2011a |  | 332AST FS#L1 | 63.4826 | 148.4865 | 1470 | granite | 29.8 ± 0.4 | North | Benowitz et al., 2011a |
| 30RAP BI#L1 | 63.5160 | 146.6847 | 1719 | granite | 18.4 ± 0.1 | North | Benowitz et al., 2011a |  | 32NEN FS#F1 | 63.5130 | 147.7270 | 1271 | granodiorite | 6.5 ± 0.3 | North | Benowitz et al., 2011a |
| 05RAP BI#L1 | 63.4337 | 146.5411 | 2111 | orthogneiss | 31.9 ± 0.1 | South | Benowitz et al., 2011a |  | 37NENFS#F1 | 63.5440 | 147.6970 | 2347 | granodiorite | 10.7 ± 2.1 | North | Benowitz et al., 2011a |
| 09RAP BI#L1 | 63.4345 | 146.5277 | 1918 | orthogneiss | 31.4 ± 0.2 | South | Benowitz et al., 2011a |  | DT45 FS#F1 | 63.5928 | 147.6391 | 1359 | granodiorite | 12.5 ± 0.4 | North | Benowitz et al., 2011a |
| 45RAP BI#L1 | 63.4723 | 146.4310 | 1635 | orthogneiss | 32.5 ± 0.1 | South | Benowitz et al., 2011a |  | 24DEB FS#F1 | 63.5957 | 147.3449 | 2042 | tonalite | 10.9 ± 1.7 | North | Benowitz et al., 2011a |
| 03RAP BI#L1 | 63.4827 | 146.0428 | 2041 | granite | 32.5 ± 0.1 | North | Benowitz et al., 2011a |  | 22DEB FS#F1 | 63.5391 | 147.3237 | 1341 | orthogneiss | 6.0 ± 0.2 | North | Benowitz et al., 2011a |
| 2008LF196A BI#L1 | 63.8434 | 147.6087 | 1980 | granitoid | 93.1 ± 0.6 | North | Benowitz et al., 2011b |  | 02DEB FS#F1 | 63.6126 | 147.2770 | 2268 | tonalite | 14.8 ± 0.8 | North | Benowitz et al., 2011a |
| 71AWr480 BI | 63.4360 | 146.0249 | 1545 | orthogneiss | 30.2 ± 0.9 (K-Ar) | South | Nokleberg et al., 1992 |  | 18BAL FS#F1 | 63.5808 | 146.9405 | 1750 | granite | 8.5 ± 0.4 | North | Benowitz et al., 2011a |
| 72DT37B BI | 63.4532 | 146.2207 | 1268 | orthogneiss | 30.3 ± 0.9 (K-Ar) | South | Nokleberg et al., 1992 |  | 03BAL FS#F1 | 63.6224 | 146.9251 | 2164 | granite | 12.8 ± 0.4 | North | Benowitz et al., 2011a |
| ANK28 BI | 63.5417 | 146.9750 | 1786 | orthogneiss | 18.2 ± 0.6 (K-Ar) | North | Nokleberg et al., 1992 |  | 26BAL FS#F1 | 63.6139 | 146.8696 | 2846 | granite | 9.7 ± 1.8 | North | Benowitz et al., 2011a |
| 72DT44A BI | 63.7335 | 147.3834 | 2058 | granitoid | 94.9 ± 2.9 (K-Ar) | North | Nokleberg et al., 1992 |  | 311AST FS#F1 | 63.4826 | 146.8213 | 1855 | orthogneiss | 29.9 ± 4.7 | South | Benowitz et al., 2011a |
| 72DT43B BI | 63.7597 | 147.3222 | 1968 | granitoid | 96.1 ± 2.9 (K-Ar) | North | Nokleberg et al., 1992 |  | 05RAP FS#L1 | 63.4337 | 146.5411 | 2111 | orthogneiss | 28.7 ± 0.2 | South | Benowitz et al., 2011a |
| DT45 BI | 63.5928 | 147.6391 | 1359 | granodiorite | 37.9 ± 1.1 (K-Ar) | North | Csejtey et al., 1992 |  | 09RAP FS#L1 | 63.4345 | 146.5277 | 1918 | orthogneiss | 28.8 ± 0.2 | South | Benowitz et al., 2011a |
| UW-1596/26 BI | 63.4450 | 147.9103 | 1123 | granite | 57.7 ± 2.3 (K-Ar) | South | Csejtey et al., 1992 |  | 16RAP FS#L1 | 63.4635 | 146.5028 | 1748 | orthogneiss | 28.2 ± 0.2 | South | Benowitz et al., 2011a |
| UW1574/18 BI | 63.4505 | 148.4355 | 1349 | granite | 57.2 ± 2.3 (K-Ar) | South | Csejtey et al., 1992 |  | 23RAP FS#L1 | 63.4492 | 146.4516 | 2458 | orthogneiss | 29.3 ± 0.2 | South | Benowitz et al., 2011a |
| AST332 BI | 63.4826 | 148.4865 | 1470 | granite | 37.9 ± 1.1 (K-Ar) | North | Csejtey et al., 1992 |  | 45RAP FS#L1 | 63.4723 | 146.4310 | 1635 | orthogneiss | 28.6 ± 0.4 | South | Benowitz et al., 2011a |
|  |  |  |  |  |  |  |  |  | 03RAP FS#F1 | 63.4827 | 146.0428 | 2041 | granite | 18.6 ± 0.5 | North | Benowitz et al., 2011a |
| **40Ar/39Ar whole rock (WR)** |  |  |  |  | **Preferred age** |  |  |  | 2008MBW550B FS#L1 | 63.8532 | 147.5443 | 1479 | granitoid | 82.9 ± 0.4 | North | Benowitz et al., 2011b |
| 55NEN WR#L1 | 63.5104 | 147.7665 | 1369 | mafic dike | 25.4 ± 0.1 | North | Trop et al., 2019 |  | 2008LF196A FS#L1 | 63.8434 | 147.6087 | 1980 | granitoid | 64.2 ±1.0 | North | Benowitz et al., 2011b |
| 02BAL WR#L1 | 63.6169 | 146.8887 | 2273 | mafic dike | 28.4 ± 0.2 | North | Trop et al., 2019 |  |  |  |  |  |  |  |  |  |
| 10910DIKE WR#L1 | 63.6110 | 146.7878 | 2825 | mafic dike | 27.6 ± 0.9 | North | Trop et al., 2019 |  | **U-Pb** |  |  |  |  | **Preferred age** |  |  |
| 07BAL WR#L1 | 63.6201 | 146.9245 | 2092 | mafic dike | 27.1 ± 0.2 | North | Trop et al., 2019 |  | Pyramid | 63.6425 | 148.5027 | 1342 | granitoid | 38.2 ± 0.1 | North | This study |
| 28BAL WR#L1 | 63.6139 | 146.8696 | 2693 | mafic dike | 32.1 ± 0.2 | North | Trop et al., 2019 |  | 01PAN | 63.4670 | 148.7350 | 1011 | granitoid | 36.5 ± 0.6 | North | Regan et al., 2021 |
|  |  |  |  |  |  |  |  |  | 19SC18 | 63.4687 | 148.5593 | 1044 | granitoid | 37.4 ± 0.2 | North | Regan et al., 2021 |
| **Modern river sand (zircon U-Pb)** |  |  |  |  | **Preferred age** |  |  |  | 19SC17 | 63.4927 | 148.5107 | 1348 | granitoid | 37.8 ± 0.3 | North | Regan et al., 2021 |
| Nenana Glacier | 63.4908 | 147.8042 | 959 | sand | N/A | Both | This study |  | 72NEN | 63.5006 | 147.8865 | 1555 | granitoid | 37.9 ± 0.2 | North | Regan et al., 2021 |
| West Fork River | 63.3496 | 147.5224 | 806 | sand | N/A | Both | Regan et al., 2021 |  | 01NEN | 63.5308 | 147.8830 | 1377 | granitoid | 38.4 ± 0.6 | North | Regan et al., 2021 |
| Augastana River | 63.4152 | 145.8270 | 807 | sand | N/A | Both | Regan et al., 2021 |  | 90NEN | 63.5069 | 147.8080 | 1495 | granitoid | 38.5 ± 0.2 | North | Regan et al., 2021 |
| Susitna River | 63.4191 | 147.2222 | 792 | sand | N/A | Both | Regan et al., 2021 |  | 29NEN | 63.5080 | 147.7662 | 1231 | granitoid | 38.2 ± 0.2 | North | Regan et al., 2021 |
| Black Rapids River | 63.5052 | 145.8944 | 695 | sand | N/A | Both | Regan et al., 2021 |  | 37NEN | 63.5440 | 147.6970 | 2347 | granitoid | 38.2 ± 0.2 | North | Regan et al., 2021 |
|  |  |  |  |  |  |  |  |  | 10CH08 | 63.5167 | 147.6434 | 1726 | orthogneiss | 67.0 ± 0.7 | North | Regan et al., 2021 |
| **Modern river sand (40Ar/39Ar biotite)** | |  |  |  | **Preferred age** |  |  |  | 44DEB | 63.5371 | 147.3649 | 1482 | orthogneiss | 63.2 ± 0.5 | North | Regan et al., 2021 |
| West Fork River | 63.3496 | 147.5224 | 806 | sand | N/A | Both | This study |  | 22DEB | 63.5391 | 147.3237 | 1341 | orthogneiss | 38.6 ± 1.7 | North | Regan et al., 2021 |
| Black Rapids River | 63.5052 | 145.8944 | 695 | sand | N/A | Both | This study |  | 04DEB | 63.6084 | 147.2729 | 2068 | granitoid | 97.0 ± 1.2 | North | Regan et al., 2021 |
|  |  |  |  |  |  |  |  |  | 60SUS | 63.5339 | 147.0872 | 1737 | orthogneiss | 51.9 ± 0.5 | North | Regan et al., 2021 |
| **AHe** |  |  |  |  | **Preferred age** |  |  |  | 48SUS | 63.5337 | 147.0799 | 1714 | orthogneiss | 66.3 ± 0.5 | North | Regan et al., 2021 |
| 01JAR | 63.7525 | 145.6515 | 686 | granitoid | 40.0 ± 2.6 | North | This study |  | 10ANK001 | 63.8060 | 147.3629 | 1405 | granitoid | 94.7 ± 1.4 | North | Nokleberg et al., 2013 |
| 10ANK01 | 63.8060 | 147.3629 | 1405 | granitoid | 3.6 ± 0.5 | North | This study |  | EAR10-24 | 63.4849 | 147.1849 | 1495 | granitoid | 98.1 ± 0.7 | South | Riccio et al. 2014 |
| 10ANK03 | 63.7747 | 147.2282 | 1781 | granitoid | 4.3 ± 0.6 | North | This study |  | EAR10-16 | 63.4352 | 147.1040 | 1465 | granitoid | 57.1 ± 0.5 | South | Riccio et al. 2014 |
| 2008MBW550B | 63.8532 | 147.5443 | 1479 | granitoid | 5.4 ± 0.3 | North | This study |  | 79ank249a | 63.3450 | 146.9233 | 1441 | granitoid | 70.0 ± 7.0 | South | Nokleberg et al.,1992 |
| 07JB59 | 63.2265 | 145.3356 | 1832 | granitoid | 4.2 ± 1.1 | South | Waldien et al., 2018 |  | 20RAP | 63.4276 | 146.4447 | 2276 | granitoid | 33.5 ± 0.1 | South | This study |
| 05PH001A | 63.5952 | 146.9522 | 2003 | granitoid | 3.7 ± 0.8 | North | Benowitz et al., 2011a |  | 19BAL | 63.5713 | 146.9481 | 1615 | orthogneiss | 57.3 ± 1.0 | North | Regan et al., 2021 |
| 05PH005A | 63.5291 | 147.0158 | 1282 | granitoid | 1.1 ± 0.1 | North | Benowitz et al., 2011a |  | 90SUS | 63.5205 | 146.8477 | 1275 | orthogneiss | 62.6 ± 0.4 | North | Regan et al., 2021 |
| 05PH003A | 63.5043 | 146.8302 | 1358 | granitoid | 4.5 ± 0.5 | South | Benowitz et al., 2011a |  | 97SUS | 63.5054 | 146.7696 | 1479 | granitoid | 36.2 ± 0.4 | South | Regan et al., 2021 |
| EAR10-05 | 63.5231 | 147.4341 | 1523 | granitoid | 1.9 ± 0.3 | North | Riccio et al., 2014 |  | 31RAP | 63.5219 | 146.6854 | 2067 | orthogneiss | 63.0 ± 0.7 | North | Regan et al., 2021 |
| EAR10-06 | 63.5242 | 147.4049 | 1493 | granitoid | 2.0 ± 0.7 | North | Riccio et al., 2014 |  | 26RAP | 63.5193 | 146.6010 | 2076 | granitoid | 57.5 ± 0.7 | North | Regan et al., 2021 |
| EAR10-15 | 63.4377 | 147.1005 | 1544 | granitoid | 24.0 ± 6.0 | South | Riccio et al., 2014 |  | 09RAP | 63.4345 | 146.5277 | 1918 | orthogneiss | 32.6 ± 0.5 | North | Regan et al., 2021 |
| EAR10-16 | 63.4352 | 147.1040 | 1465 | granitoid | 28.0 ± 2.3 | South | Riccio et al., 2014 |  | 41RAP | 63.4916 | 146.5062 | 1811 | granitoid | 94.9 ± 0.6 | North | Regan et al., 2021 |
| EAR10-17 | 63.4299 | 147.1237 | 1380 | granitoid | 28.9 ± 1.8 | South | Riccio et al., 2014 |  | 23RAP | 63.4492 | 146.4516 | 2458 | orthogneiss | 33.7 ± 0.5 | South | Regan et al., 2021 |
| EAR10-18 | 63.4283 | 147.1297 | 1265 | granitoid | 26.3 ± 2.5 | South | Riccio et al., 2014 |  | 45RAP | 63.4723 | 146.4310 | 1635 | orthogneiss | 42.0 ± 0.7 | South | Regan et al., 2021 |
| EAR10-19 | 63.4306 | 147.1331 | 1076 | granitoid | 28.1 ± 1.8 | South | Riccio et al., 2014 |  | 43RAP | 63.4934 | 146.4202 | 1679 | granitoid | 56.9± 1.0 | North | Regan et al., 2021 |
| EAR10-20 | 63.4299 | 147.1312 | 1178 | granitoid | 25.0 ± 2.0 | South | Riccio et al., 2014 |  | 18ATW25 | 63.4117 | 146.0749 | 1464 | granitoid | 38.4 ± 0.4 | North | Regan et al., 2021 |
| EAR10-08 | 63.4144 | 147.0592 | 1347 | granitoid | 23.6 ± 9.9 | South | Riccio et al., 2014 |  | 18ATW24 | 63.4206 | 146.0732 | 1378 | granitoid | 37.3 ± 0.7 | North | Regan et al., 2021 |
| EAR10-10 | 63.4141 | 146.7815 | 1411 | granitoid | 16.4 ± 1.2 | South | Riccio et al., 2014 |  | 03RAP | 63.4827 | 146.0428 | 2041 | granitoid | 95.0 ± 1.2 | North | Regan et al., 2021 |
| EAR10-21 | 63.4875 | 147.1654 | 1800 | granitoid | 18.0 ± 11.0 | South | Riccio et al., 2014 |  | 05MET | 63.4297 | 146.0075 | 1732 | granitoid | 37.4 ± 0.6 | South | Regan et al., 2021 |
| EAR10-22 | 63.4893 | 147.1699 | 1682 | granitoid | 13.0 ± 3.0 | South | Riccio et al., 2014 |  | 02WIN | 63.4514 | 145.9516 | 2120 | granitoid | 97.5 ± 0.5 | North | Regan et al., 2021 |
| EAR10-23 | 63.4875 | 147.1794 | 1580 | granitoid | 15.3 ± 2.1 | South | Riccio et al., 2014 |  | 90SUS | 63.5205 | 146.8477 | 1275 | orthogneiss | 62.6 ± 0.4 | North | Regan et al., 2021 |
| EAR10-24 | 63.4849 | 147.1849 | 1495 | granitoid | 16.0 ± 3.2 | South | Riccio et al., 2014 |  | 10ANK004 | 63.7761 | 147.2276 | 1753 | granitoid | 98 ± 1.4 | North | Nokleberg et al., 2013 |
| EAR10-25 | 63.4827 | 147.1908 | 1354 | granitoid | 8.4 ± 5.5 | South | Riccio et al., 2014 |  | 80AAF038AK | 63.6348 | 146.7703 | 2228 | granitoid | 70.0 | North | Aleinikoff et al.,1987 |
| EAR10-26 | 63.4780 | 147.1514 | 1347 | granitoid | 18.7 ± 6.3 | South | Riccio et al., 2014 |  | 08ank075a | 63.5205 | 146.7486 | 1772 | granitoid | 71.0 ± 0.5 | South | Nokleberg et al.,1992 |
| EAR10-27 | 63.4720 | 147.1682 | 1249 | granitoid | 22.8 ± 7.4 | South | Riccio et al., 2014 |  |  |  |  |  |  |  |  |  |
| EAR10-28 | 63.4666 | 147.2243 | 1468 | granitoid | 24.2 ± 3.4 | South | Riccio et al., 2014 |  | **AFT** |  |  |  |  | **Age with uncertainty** |  |  |
|  |  |  |  |  |  |  |  |  | 02CAN | 63.3644 | 145.6361 | 951 | mica schist | 10.2 (+2.3/-2.9) | North | This study |
| **AFT** |  |  |  |  | **Preferred age** |  |  |  | 01JAR | 63.7525 | 145.6515 | 686 | granitoid | 41.9 (+2.5/-2.6) | North | This study |
| 05PH006A | 63.5386 | 147.0736 | 1730 | granitoid | 2.7 ± 0.2 | North | Benowitz et al., 2011a |  | 01HAJ | 63.5631 | 145.1136 | 2125 | granitoid | 27.4 (+2.4/-2.6) | North | This study |
| 05NEN | 63.5098 | 147.8443 | 1640 | granitoid | 1.2 ± 0.3 | North | Benowitz et al., 2011a |  | 91SUS | 63.5263 | 147.0500 | 1233 | granitoid | 7.0 (+1.0/-1.1) | North | This study |
| 22DEB | 63.5391 | 147.3237 | 1341 | granitoid | 3.3 ± 0.5 | North | Benowitz et al., 2011a |  | 10ANK001 | 63.8060 | 147.3629 | 1405 | granitoid | 6.2 (+0.9/-1.1) | North | This study |
| 05PH003A | 63.5043 | 146.8302 | 1358 | granitoid | 15.5 ± 1.3 | South | Benowitz et al., 2011a |  | 10ANK002 | 63.7702 | 147.1418 | 1533 | granitoid | 7.2 (+0.7/-0.8) | North | This study |
| 05PH006A | 63.5386 | 147.0736 | 1730 | granitoid | 2.7 ± 0.2 | North | Benowitz et al., 2011a |  | 10ANK003 | 63.7747 | 147.2282 | 1781 | granitoid | 7.2 (+1.0/-1.2) | North | This study |
| 05NEN | 63.5098 | 147.8443 | 1640 | granitoid | 1.2 ± 0.3 | North | Benowitz et al., 2011a |  | 10ANK004 | 63.7761 | 147.2276 | 1753 | granitoid | 7.9 (+1.1/-1.3) | North | This study |
| 22DEB | 63.5391 | 147.3237 | 1341 | orthogneiss | 3.3 ± 0.5 | North | Benowitz et al., 2011a |  | 01PIL | 63.5398 | 146.0466 | 1055 | granitoid | 3.0 (+0.9/-1.3) | North | This study |
| EAR1 0-22 | 63.4892 | 147.1698 | 1682 | granitoid | 31.7 ± 2.3 | South | Riccio et al., 2014 |  | 2008MBW550B | 63.8532 | 147.5443 | 1479 | granitoid | 9.3 (+1.1/-1.2) | North | This study |
| EAR10-23 | 63.4874 | 147.1794 | 1580 | granitoid | 38.3 ± 2.4 | South | Riccio et al., 2014 |  | 2008LF196A | 63.8434 | 147.6087 | 1980 | granitoid | 4.1 (+0.7/-0.8) | North | This study |
| EAR10-24 | 63.4849 | 147.1848 | 1495 | granitoid | 27.6 ± 1.8 | South | Riccio et al., 2014 |  | 02CAN | 63.3644 | 145.6361 | 951 | mica schist | 10.2 (+2.3/-2.9) | North | This study |
| EAR10-25 | 63.4826 | 147.1908 | 1354 | granitoid | 41.6 ± 4.3 | South | Riccio et al., 2014 |  | 01JAR | 63.7525 | 145.6515 | 686 | granitoid | 41.9 (+2.5/-2.6) | North | This study |
| EAR10-27 | 63.4719 | 147.1682 | 1249 | granitoid | 32.5 ± 2.8 | South | Riccio et al., 2014 |  | 01HAJ | 63.5631 | 145.1136 | 2125 | granitoid | 27.4 (+2.4/-2.6) | North | This study |
| EAR10-05 | 63.5231 | 147.4340 | 1523 | granitoid | 8.9 ± 1.7 | North | Riccio et al., 2014 |  | 91SUS | 63.5263 | 147.0500 | 1233 | granitoid | 7.0 (+1.0/-1.1) | South | This study |
| EAR10-15 | 63.4376 | 147.1005 | 1544 | granitoid | 32.2 ± 3.4 | South | Riccio et al., 2014 |  | 10ANK001 | 63.8060 | 147.3629 | 1405 | granitoid | 6.2 (+0.9/-1.1) | North | This study |
| EAR10-16 | 63.4351 | 147.1040 | 1465 | granitoid | 35.5 ± 1.5 | South | Riccio et al., 2014 |  | 10ANK002 | 63.7702 | 147.1418 | 1533 | granitoid | 7.2 (+0.7/-0.8) | North | This study |
| EAR10-17 | 63.4299 | 147.1236 | 1380 | granitoid | 39 ± 2.8 | South | Riccio et al., 2014 |  | 10ANK003 | 63.7747 | 147.2282 | 1781 | granitoid | 7.2 (+1.0/-1.2) | North | This study |
| EAR10-18 | 63.4282 | 147.1297 | 1265 | granitoid | 42.7 ± 2.6 | South | Riccio et al., 2014 |  | 81COL | 63.2703 | 145.2984 | 2467 | granitoid | 4.6 ± 0.6 | South | Waldien et al., 2018 |
| EAR10-19 | 63.4305 | 147.1330 | 1076 | granitoid | 39.7 ± 2.4 | South | Riccio et al., 2014 |  | 01CAN | 63.3369 | 145.6084 | 1150 | granitoid | 5.1 ± 2.1 | South | Waldien et al., 2018 |
| EAR10-20 | 63.4299 | 147.1311 | 1178 | granitoid | 39.9 ± 2.4 | South | Riccio et al., 2014 |  | 14ATW-34B | 63.2643 | 145.6230 | 1214 | meta-andesite | 33.3 ± 5.4 | South | Waldien et al., 2018 |
| EAR10-21 | 63.4875 | 147.1653 | 1800 | granitoid | 34.3 ± 2.6 | South | Riccio et al., 2014 |  | 14ATW-45 | 63.2321 | 145.5566 | 1412 | meta-andesite | 6.7 ± 3.6 | South | Waldien et al., 2018 |
| EAR10-06 | 63.5242 | 147.4049 | 1493 | granitoid | 7.5 ± 1.9 | North | Riccio et al., 2014 |  | 14ATW-50 | 63.2483 | 145.4094 | 1751 | granitoid | 6.5 ± 2.4 | South | Waldien et al., 2018 |
| EAR 0-08 | 63.4143 | 147.0591 | 1347 | granitoid | 33.3 ± 3.5 | South | Riccio et al., 2014 |  | 14ATW-52 | 63.2675 | 145.4022 | 1640 | granitoid | 5.9 ± 2.4 | South | Waldien et al., 2018 |
| EAR 0-10 | 63.4140 | 146.7815 | 1411 | granitoid | 28.3 ± 2.4 | South | Riccio et al., 2014 |  | 07JB59 | 63.2265 | 145.3356 | 1832 | granitoid | 21.3 ± 2.5 | South | Waldien et al., 2018 |
| EAR10-26 | 63.4779 | 147.1514 | 1472 | granitoid | 38.4 ± 4.2 | South | Riccio et al., 2014 |  | 05PH001A | 63.5952 | 146.9522 | 2003 | granitoid | 5.1 ± 0.8 | North | Benowitz et al., 2011a |
| EAR10-28 | 63.4666 | 147.2242 | 1468 | granitoid | 38 ± 2.3 | South | Riccio et al., 2014 |  | 05PH002A | 63.5730 | 146.9507 | 1607 | granitoid | 3.5 ± 0.8 | North | Benowitz et al., 2011a |
|  |  |  |  |  |  |  |  |  | 05PH005A | 63.5291 | 147.0158 | 1282 | granitoid | 2.8 ± 0.5 | North | Benowitz et al., 2011a |
| *Note:* Compilation of all bedrock U-Pb zircon, 40Ar/39Ar (hornblende, muscovite, biotite, KFATmin), AFT and AHe preferred locations, general rock type, preferred ages, and references from this study and previously published data from the Mount Hayes area. Location of detrital U-Pb zircon and 40Ar/39Ar biotite samples given. Table S1 (see text footnote 1) provides additional data details and data sources from outside our main focus area. Metased—metasedimentary. | | | | | | | | | | | | | | | | |