

| Sample Name | Unit and Lithology  | Sample Age  | Locality                                | Latitude<br>(°N) | Longitude<br>(°W) | GEM Categories | N <sup>a</sup> | Additional Geochronologic and Thermo-chronologic Data   |
|-------------|---|-------------|---|------------------|-------------------|----------------|----------------|---|
| FCT         | Fish Canyon Tuff, Dacite  | Oligocene   | San Juan Mountains,<br>Colorado, USA    | 37.756           | 106.934           | A              | 23             | Zircon U-Pb $28.172 \pm 0.028$ Ma (2sigma) (Schmitz and Bowring, 2001); ZHe $28.7 \pm 0.4$ Ma (1sigma) (Gleadow et al., 2015)                 |
| RGD17-21    | Harrison Pass Pluton,<br>Granodiorite                           | Eocene      | Ruby Mountains, Nevada,<br>USA          | 40.326           | 115.510           | A, B           | 23             | Zircon U-Pb ca. 36 Ma (Wright and Snoke, 1993); ZHe 20-16 Ma <sup>b</sup> (McGrew & Metcalf., 2000)   |
| CA8         | Potomac terrane,<br>Quartzofeldspathic schist                   | Precambrian | Appalachian Mountains,<br>Virginia, USA | 37.984           | 78.311            | A, B           | 27             | ZHe 186-121 Ma <sup>b</sup> (Basler et al., 2021)   |
| PP4         | Pikes Peak Batholith,<br>Syenogranite                           | Proterozoic | Pikes Peak, Colorado, USA               | 38.842           | 105.025           | A, B           | 20             | Hornblende & Biotite <sup>40</sup> Ar/ <sup>39</sup> Ar 1.08-1.07 Ga (Unruh, 1995); ZHe 115- 773 Ma <sup>b</sup> (Havranek and Flowers, 2022) |
| CP06-70     | 245-Mile Complex,<br>Granodiorite                               | Proterozoic | Grand Canyon, AZ, USA                   | 35.843           | 113.599           | A, B, C        | 39             | Zircon U-Pb ca. 1700 Ma (Hawkins et al., 1996); ZHe 560-96 Ma <sup>b</sup> (2sigma) (Peak et al., 2021)                                       |
| 01-OE-38    | Migmatitic Gneiss   | Archean     | Superior craton, Canada                 | 47.270           | 84.560            | A, B           | 24             | Zircon U-Pb 2720–2680 Ma (Hoffman, 1989); AHe 275-34 Ma <sup>b</sup> (Sturrock et al., 2024)  |
| 56JBM14     | Río de los Patos Fm.,<br>medium-grained<br>tuffaceous sandstone | Paleogene   | Manantiales Basin,<br>Argentina         | -32.050          | 69.750            | B              | 10             | Zircon U-Pb $38.68 \pm 0.21$ (2sigma) (Suriano et al., 2023)  |
| CP06-14     | Coconino Sandstone  | Permian     | Colorado Plateau, AZ, USA               | 34.300           | 110.901           | C              | 28             | No geochronologic data for this sample  |
| CP06-15     | Esplanade Sandstone   | Permian     | Colorado Plateau, AZ, USA               | 34.298           | 110.906           | B, C           | 29             | No geochronologic data for this sample  |