|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Test Name** | **T Mantle**  **[°C]** | **T Plume**  **[°C]** | **Plume Radius**  **[km]** | **Thermal Age**  **[Myrs]** | **Plate Velocity**  **[cm/yr]** | **Total Eruption Event(1)** | **Total Preserved Zircon Erupted(1)** |
| **Reference** | **1350** | **1600** | **150** | **30** |  | **2896** | **2614** |
| **Test\_15M** | **15** | **5** | **4584** | **4251** |
| **Test\_40M** | **40** |  | **1126** | **1110** |
| **Test\_1\_15M** | **15** |  | **5030** | **4944** |
| **Reference\_1** | **30** | **1** | **2689** | **2514** |
| **Test\_1\_40M** | **40** |  | **2167** | **1544** |
| **Test\_10\_15M** | **15** |  | **4949** | **4949** |
| **Reference\_10** | **30** | **10** | **1647** | **1647** |
| **Test\_10\_40M** | **40** |  | **1045** | **1045** |
| **Reference\_0d** | **30** | **5** | **2228** | **2206** |
| **Reference\_150d** | **30** |  | **2150** | **1963** |
| **Ref\_no\_Pl(2)** | **30** |  | **454** | **454** |
| **Test\_15M\_noPl(2)** | **15** | **5** | **1818** | **1818** |
| **Test\_40M\_noPl(2)** | **40** |  | **444** | **444** |
| **Test\_15M\_weak(3)** |  | **15** |  | **9** | **9** |
| **Reference\_weak(3)** | **50** | **30** | **5** | **0** | **0** |
| **Test\_40M\_weak(3)** |  | **40** |  | **0** | **0** |
| **Test\_15M\_strong(4)** |  |  | **15** |  | **5659** | **5659** |
| **Reference\_strong(4)** | **1700** | **150** | **30** | **5** | **5200** | **5200** |
| **Test\_40M\_strong(4)** |  |  | **40** |  | **2547** | **2547** |

**Table S6.**