

**MSA PRESIDENTIAL ADDRESS**

**Metamorphism and the evolution of subduction on Earth**

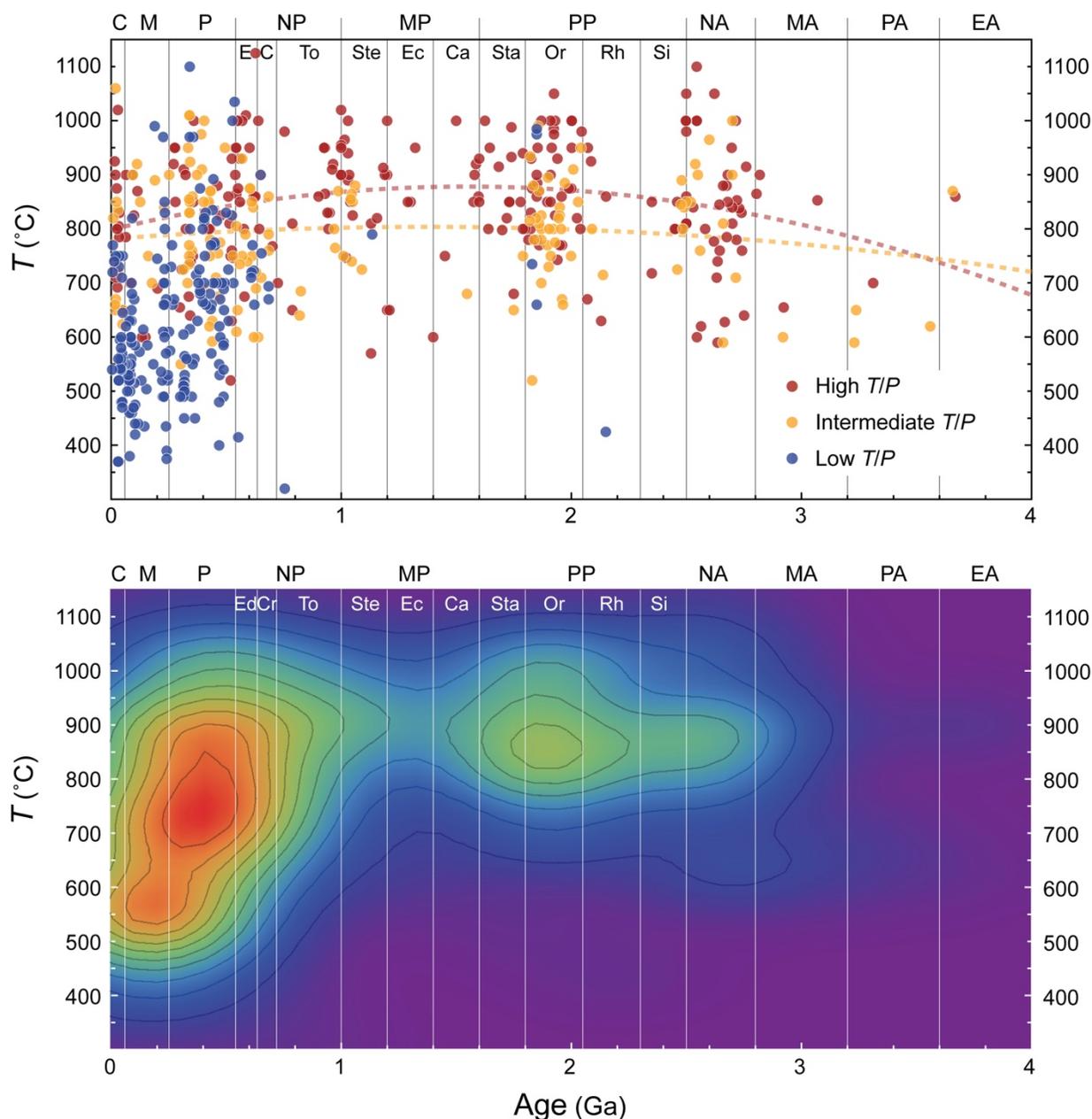
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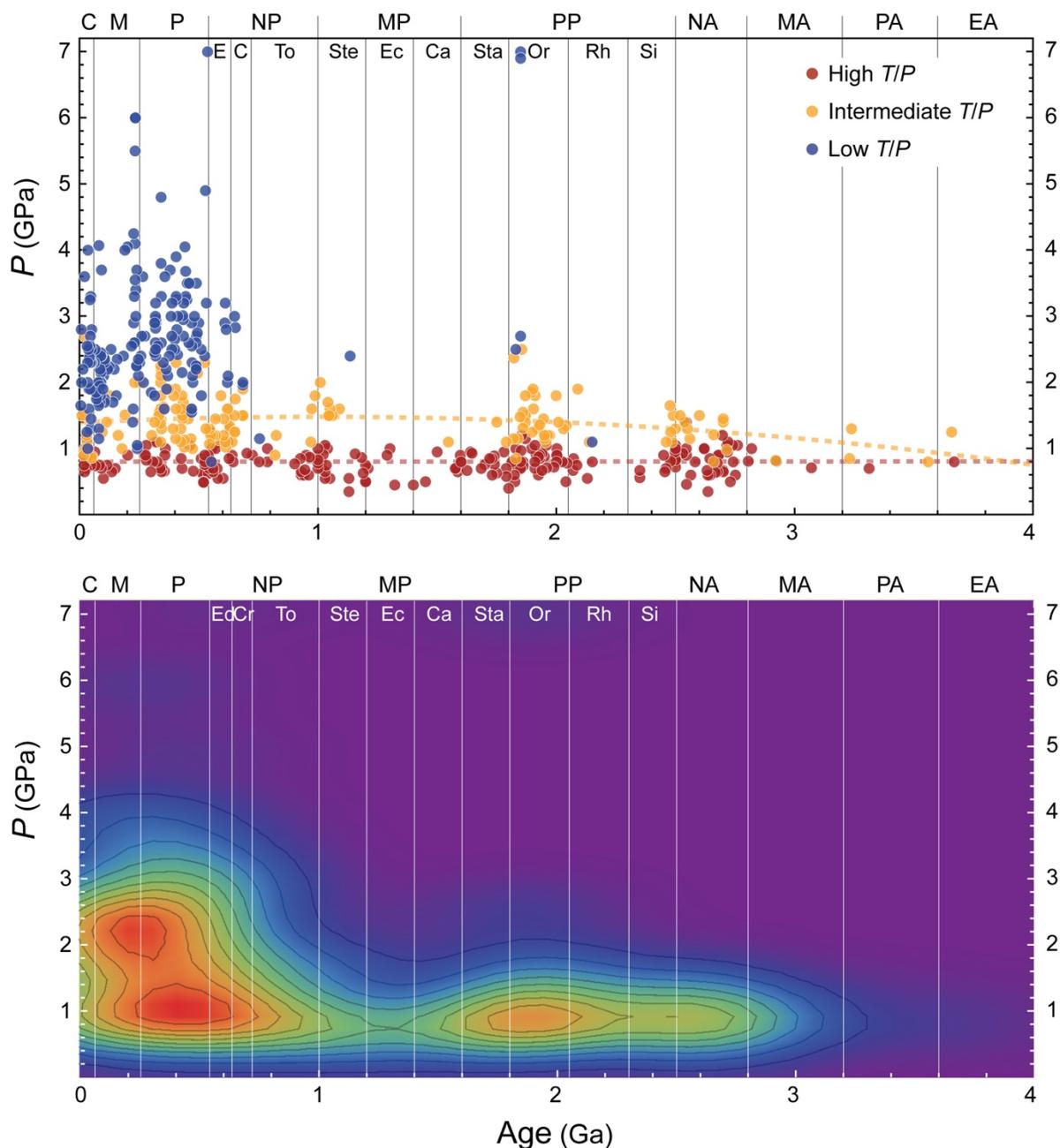
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University, GPO Box U1987, Perth WA 6845, Australia

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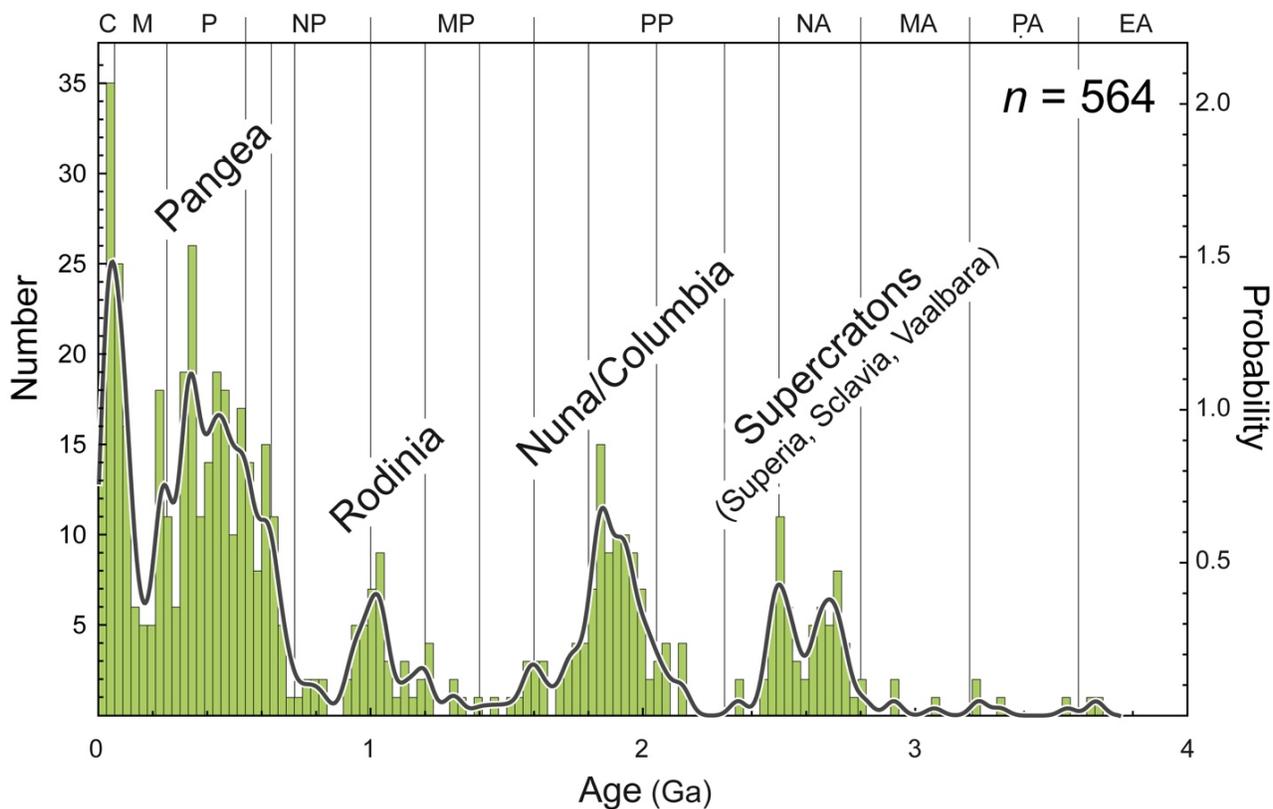
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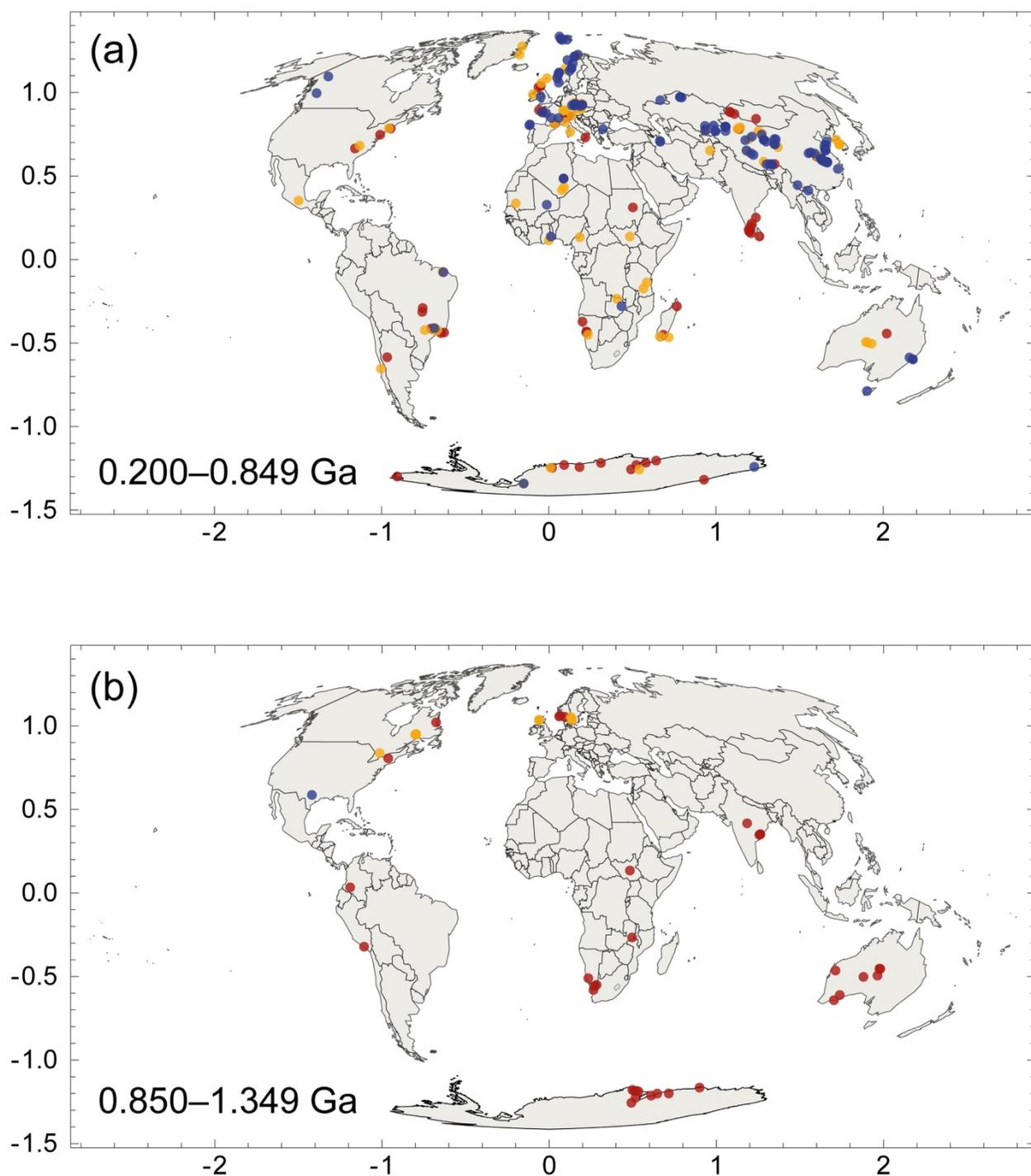
**SUPPLEMENTARY FIGURE 1.** Metamorphic temperature for 564 localities grouped by type and plotted against age. In (a), the three types of metamorphism are high  $T/P$  in red, intermediate  $T/P$  in orange and low  $T/P$  in blue. The dashed lines show second-order polynomial regressions of the data for the high  $T/P$  (red) and intermediate  $T/P$  (orange) types, respectively. In (b), the data are contoured for density. The abbreviations in the top row are C - Cenozoic, M - Mesozoic, P - Paleozoic, NP - Neoproterozoic, MP - Mesoproterozoic, PP - Paleoproterozoic, NA - Neoproterozoic, MA - Mesoarchean, PA - Paleoproterozoic, and EA - Eoarchean; and, the abbreviations in the second row are E - Ediacaran, C - Cryogenian, To - Tonian, Ste - Stenian, Ec - Ectasian, Ca - Calymmian, Sta - Statherian, Or - Orosirian, Rh - Rhyacian, and Si - Siderian. This figure is from Brown, M. and Johnson, T. (2019) The 51st Hallimond Lecture—Time’s arrow, time’s cycle: Granulite metamorphism and geodynamics. *Mineralogical Magazine*, <https://doi.org/10.1180/mgm.2019.19>, reproduced with permission.



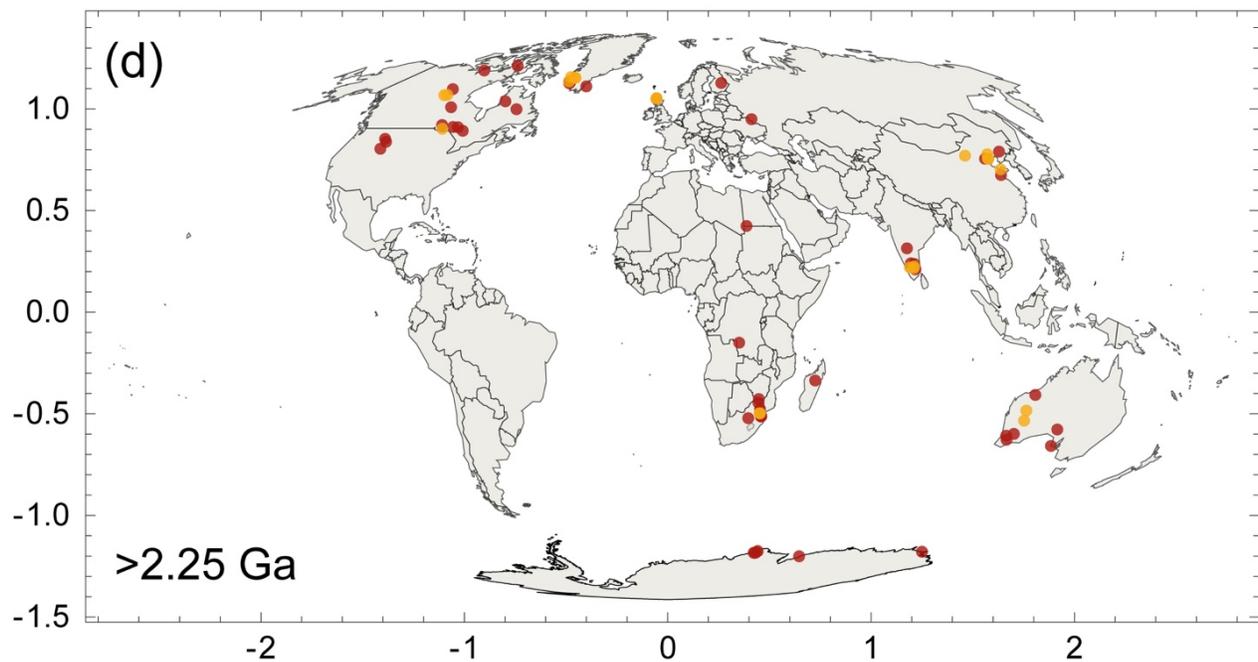
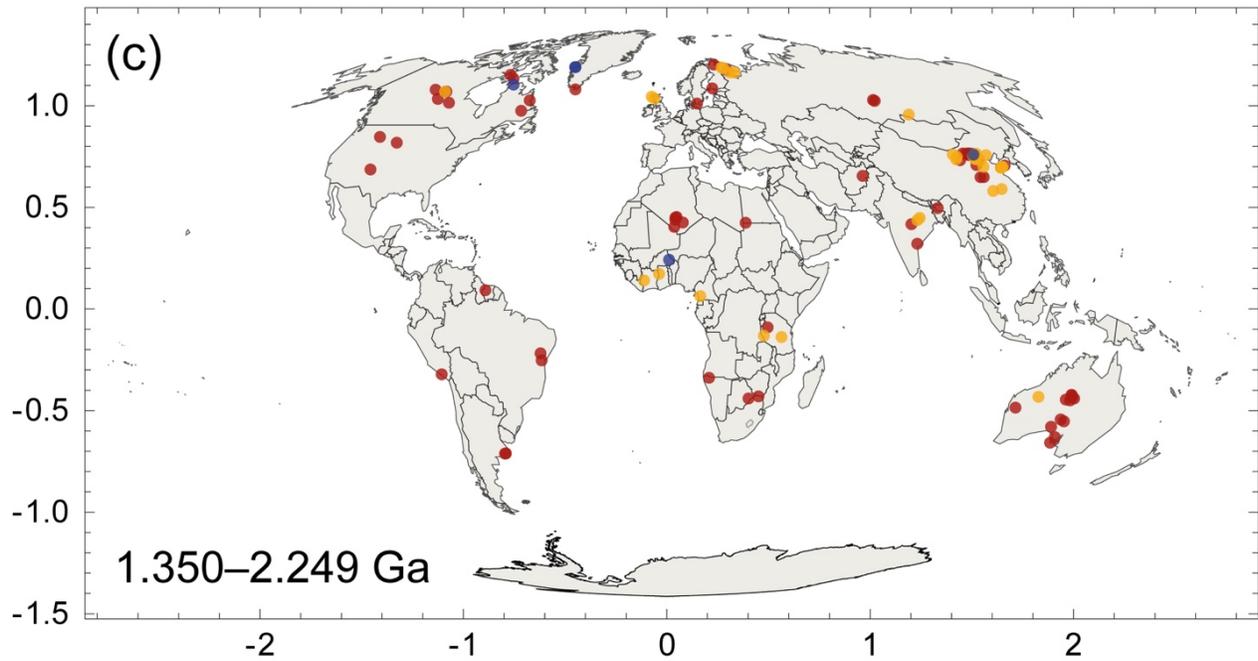
**SUPPLEMENTARY FIGURE 2.** Metamorphic pressure for 564 localities grouped by type plotted against age. In (a), the three types of metamorphism are high T/P in red, intermediate T/P in orange and low T/P in blue. The dashed lines show a linear regression of the data for the high T/P (red) and a second-order polynomial regression of the data for the intermediate T/P (orange) types, respectively. In (b), the data are contoured for density. The abbreviations in the top row are C - Cenozoic, M - Mesozoic, P - Paleozoic, NP - Neoproterozoic, MP - Mesoproterozoic, PP - Paleoproterozoic, NA - Neoproterozoic, MA - Mesoarchean, PA - Paleoproterozoic, and EA - Eoarchean; and, the abbreviations in the second row are E - Ediacaran, C - Cryogenian, To - Tonian, Ste - Stenian, Ec - Ectasian, Ca - Calymmian, Sta - Statherian, Or - Orosirian, Rh - Rhyacian, and Si - Siderian. This figure is from Brown, M. and Johnson, T. (2019) The 51st Hallimond Lecture—Time's arrow, time's cycle: Granulite metamorphism and geodynamics. *Mineralogical Magazine*, <https://doi.org/10.1180/mgm.2019.19>, reproduced with permission.



**SUPPLEMENTARY FIGURE 3.** Histogram and probability density function (PDF) curve for the age of metamorphism for the 564 localities used in this study. This figure is from Brown, M. and Johnson, T. (2019) The 51st Hallimond Lecture—Time’s arrow, time’s cycle: Granulite metamorphism and geodynamics. *Mineralogical Magazine*, <https://doi.org/10.1180/mgm.2019.19>, reproduced with permission.



**SUPPLEMENTARY FIGURE 4.** Maps to show the geographic distribution of low, intermediate and high T/P metamorphic rocks: (a) 0.200 to 0.849 Ga; (b) 0.850 to 1.349 Ga; (c) 1.350 to 2.249 Ga; and, (d) >2.250 Ga. This figure is from Brown, M. and Johnson, T. (2019) The 51st Hallimond Lecture—Time’s arrow, time’s cycle: Granulite metamorphism and geodynamics. *Mineralogical Magazine*, <https://doi.org/10.1180/mgm.2019.19>, reproduced with permission.



**SUPPLEMENTARY FIGURE 4 (continued).** Maps to show the geographic distribution of low, intermediate and high T/P metamorphic rocks: (a) 0.200 to 0.849 Ga; (b) 0.850 to 1.349 Ga; (c) 1.350 to 2.249 Ga; and, (d) >2.250 Ga. This figure is from Brown, M. and Johnson, T. (2019) The 51st Hallimond Lecture—Time’s arrow, time’s cycle: Granulite metamorphism and geodynamics. *Mineralogical Magazine*, <https://doi.org/10.1180/mgm.2019.19>, reproduced with permission.