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Deformation and cooling history of Sør Rondane, East Antarctica, from $^{40}Ar/^{39}Ar$ and U-Pb geochronology: implications for the final assembly of Gondwana significance for correlations within Gondwana

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‘Supplementary Material’

Figure S3

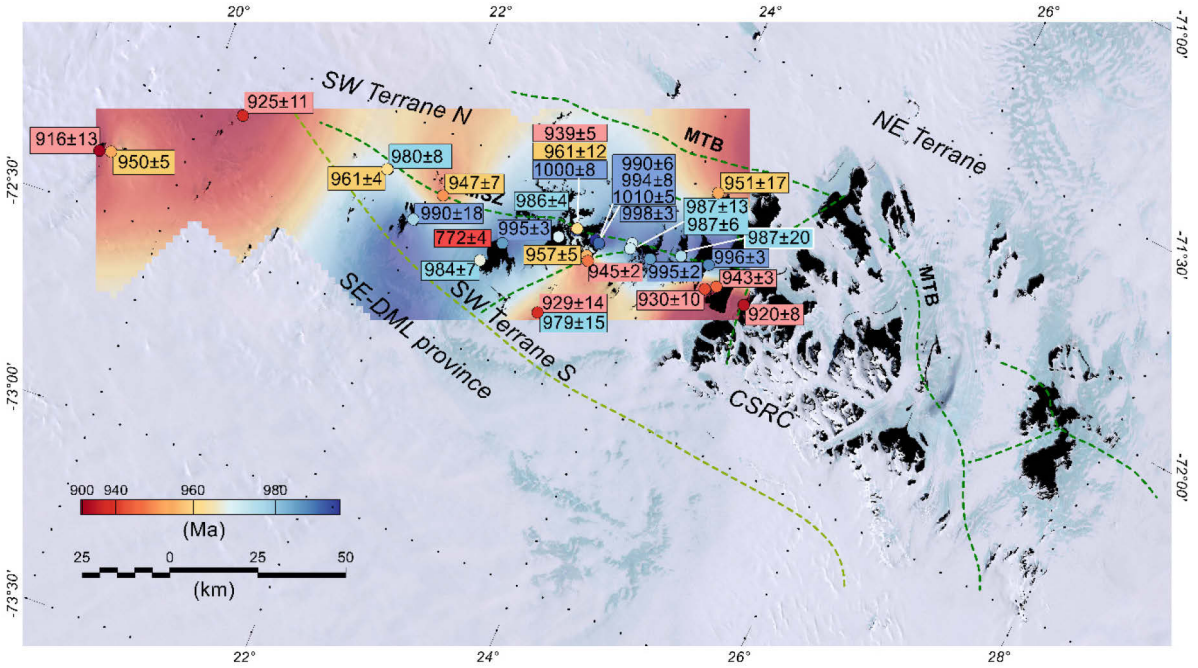

Figure S3a: Color-coded distribution and locations of Late Mesoproterozoic–Early Neoproterozoic ages from the gabbro-tonalite-trondhjemite-granodiorite suite across Sør Rondane. Data from Shiraishi et al. (2008); Kamei et al. (2013); Elburg et al. (2015); Jacobs et al. (2015); Tsukada et al. (2017). Age surrounded by white rectangles is from this study. Note: Color-coded map is calculated without outlier of 722±4 Ma in the western part of SW Terrane S (red backdrop). Ages surrounded by white rectangles derive from this study. Age distribution maps were generated by geophysical software Oasis Montaj by Geosoft. Available age data were gridded with a grid cell size of 2 km with the minimum curvature gridding algorithm, which can be used if data are randomly distributed. This algorithm fits a minimum curvature surface to the data points using a method similar to that described by Swain (1976) and Briggs (1974). A minimum curvature surface is the smoothest possible surface that will fit the given data values.

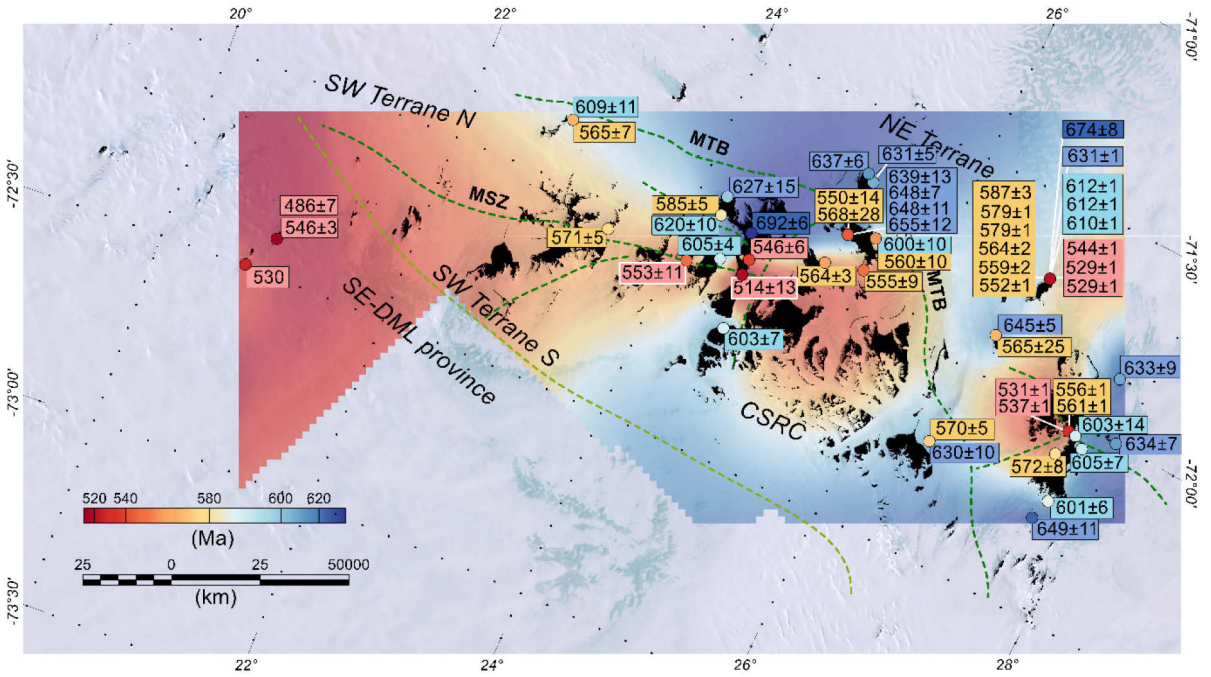

Figure S3b: Color-coded distribution and locations of metamorphic U-Pb zircon ages across Sør Rondane. Ages surrounded by white rectangles are from this study. Data from Shiraishi et al. (2008); Adachi et al. (2013); Grantham et al. (2013); Higashino et al. (2013); Nakano et al. (2013); Adachi et al. (2010); Jacobs et al. (2015); (Elburg et al., 2016).

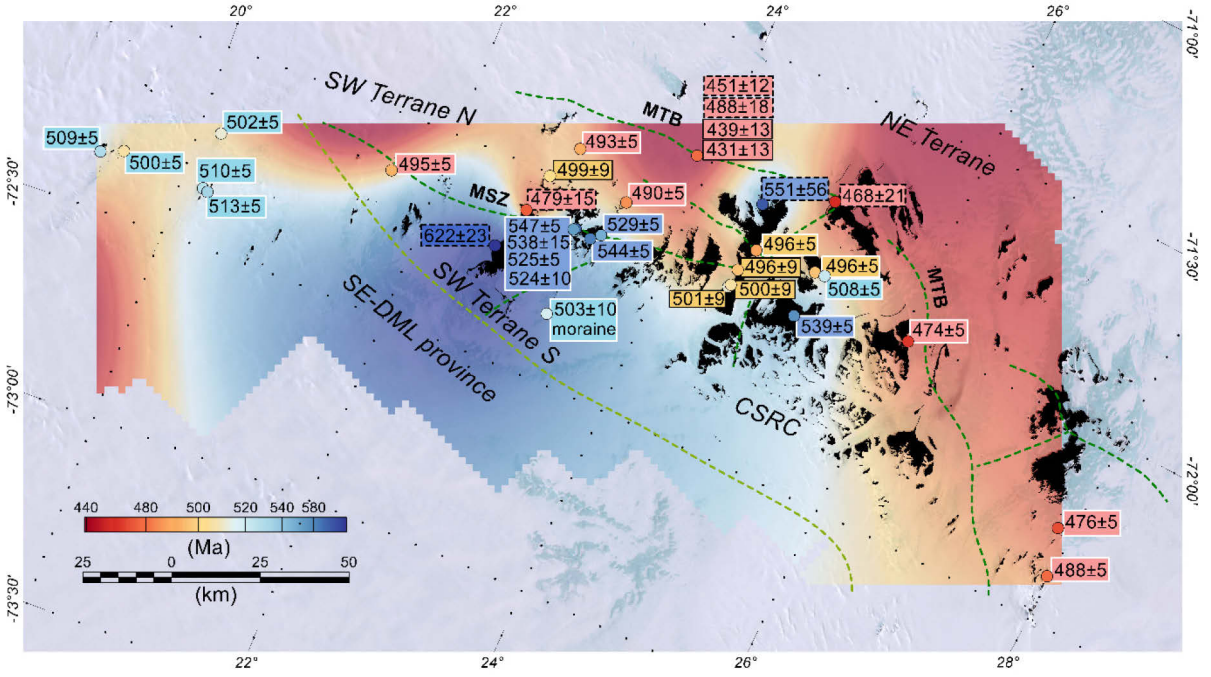

Figure S3c: Color-coded distribution and locations of biotite $^{40}Ar/^{39}Ar$ and K-Ar ages across Sør Rondane. Ages surrounded by white rectangles are $^{40}Ar/^{39}Ar$ biotite ages from this study. Black rectangles with solid surrounding = Ar/Ar and black, dotted rectangles = K-Ar ages published by Takigami et al. (1987) and Takigami & Funaki (1991), respectively.

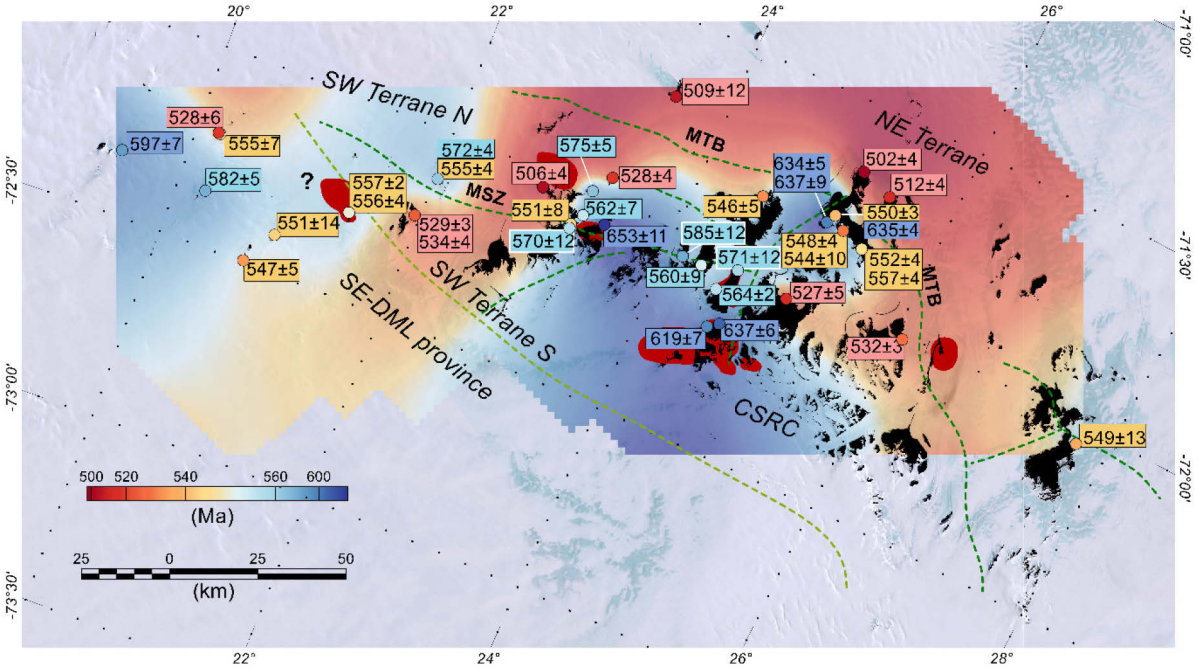

Figure S3d: Color-coded distribution and locations of U-Pb zircon crystallization ages from igneous rocks across Sør Rondane. Ages surrounded by white rectangles are from this study. Literature data are from Li et al. (2006); Shiraishi et al. (2008); Adachi et al. (2013); Hokada et al. (2013); (Owada et al., 2013); Nakano et al. (2013); Jacobs et al. (2015); (Elburg et al., 2016). Red highlighted areas indicate postulated igneous intrusions based on airborne aeromagnetic data interpretation adapted from Mieth et al. (2014).

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