Figure S1 Monthly averages of the departure statistics (RMSD) of the model background state and analysis, calculated for four observed variables: (a) surface temperature, (b) surface pressure, (c) surface zonal wind, and (d) surface meridional wind. Fractional difference in RMSD is calculated as (RMSD$_{O-A}$-RMSD$_{O-B}$)/RMSD$_{O-B}$ such that negative values signify better agreement with the observations after analysis. This supplements Table 2.

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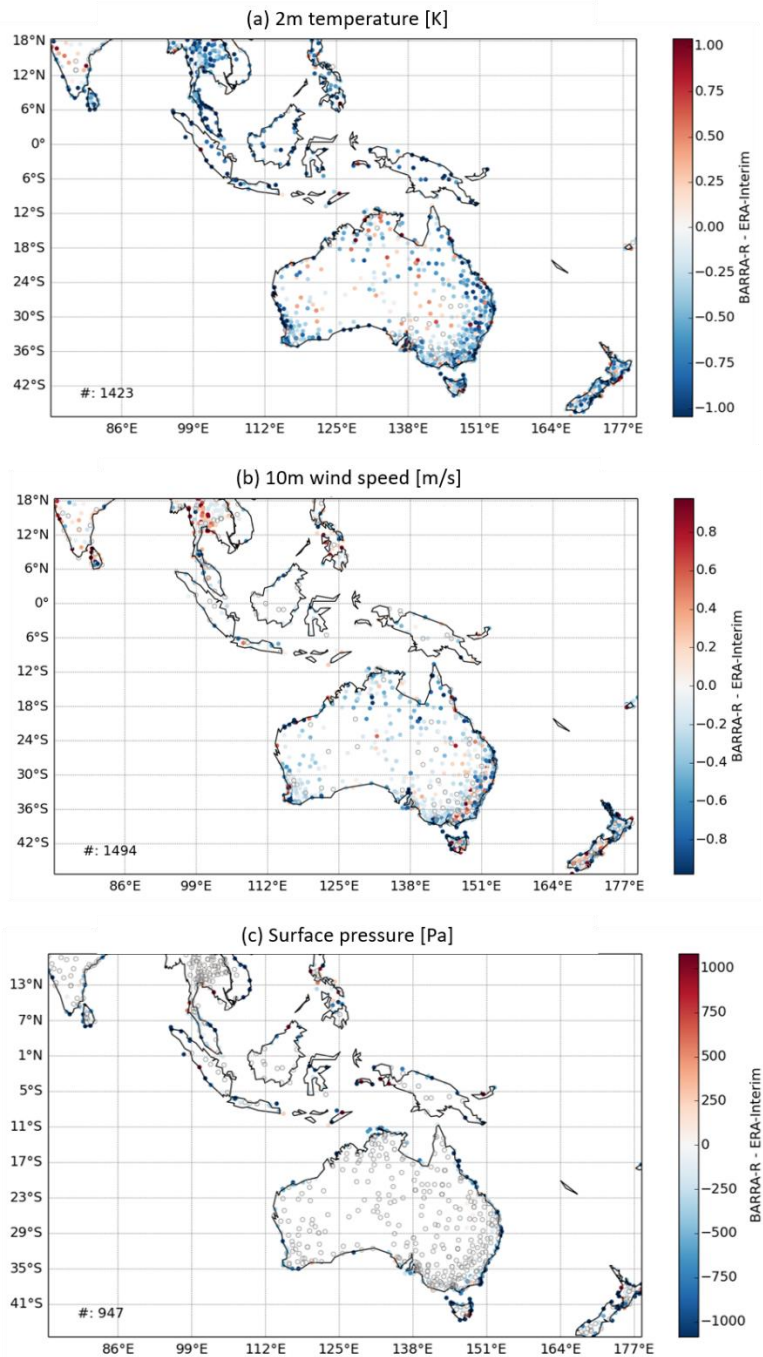
Figure S2 Difference in RMSD between BARRA-R and ERA-Interim. The RMSD is calculated on BARRA-R and ERA-Interim t_0+6h forecasts against observed screen temperature, 10 m wind speed and surface pressure. This shows the spatial variations, supplementing Figure 3.

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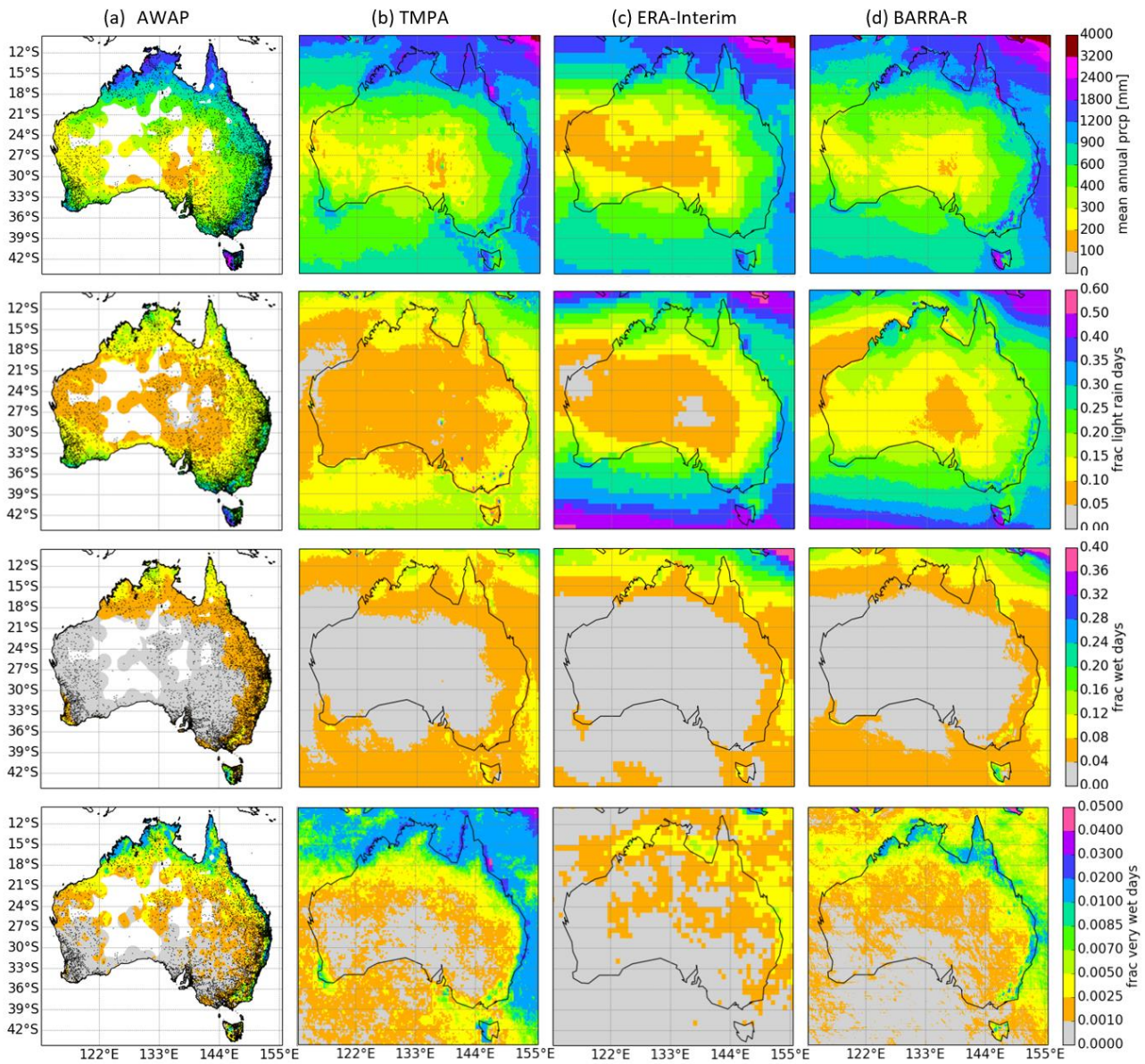
Figure S3 As Figure 7 but over Australia only. Mean annual precipitation (top row), fractions of rain days (second row), heavy precipitation days (third row) and very heavy precipitation days (bottom), from 2007 to 2016 from AWAP (first column), TMPA (second column), ERA-Interim (third column), and BARRA-R (last column). Regions with more than 10% missing values in AWAP are masked, and the black dots in the AWAP plots indicate the rain gauge locations.