Axial rotation and paleogeodynamics during Phanerozoic

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Among the phenomena influencing the evolution and dynamics of the Earth only one has an external origin: the long-term despinning of axial rotation due to tidal friction. The tidal torque determines the despinning of the Earth and it is composed of three components:
- atmospheric tidal torque +0.4×10^{16} J
- solid earth tide \geq –0.5×10^{16} J
- oceanic tidal torque –5.1×10^{16} J

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Geomagnetic VDM values during 0.570 Ga - present (above) and from 3.500 Ga to 0.570 Ga (below). (The plotted VDM data are in relative units, the magnetic moment values are divided by 6.77·10^{22} Am^2 (the average present magnetic moment)). The straight lines show the regression lines VDM=a t+b with slope estimates 
a=(–0.00019\pm 0.000284) Am^2 /Ma and 
a=(0.00019\pm 7.89 \times 10^{-5}) Am^2 /Ma for the Pz and Arch+Ptz, respectively.

LOD data for the time intervals 0.570 Ga - present (above) and 2.500 Ga - 0.570 Ga (below). The straight lines shows the regression LOD= a t+b which have numerical values 
a=(0.0054\pm 0.0006) h/Ma and 
a=(0.00124\pm 0.00072) h/Ma for the Pz and Arch+Ptz, respectively.

Part of the Earth surface covered by oceanic crust [%]. The straight line shows the regression line a t+b with a slope value a=(–0.011\pm0.0025 %/Ma) for the Pz.

Length [km] of spreading centres (above) and subduction zones (below) during the Phanerozoic. The straight lines shows the slopes which have numerical values 
a=(20.5\pm9.8) km/Ma and a=(105\pm16.4) km/Ma for the Pz, respectively.

It is assumed therefore that in the time between Ptz and early Pz the dynamics of the Earth and perhaps also the nature of tectonic processes has undergone significant change.