

## stagnant slabs and the Eocene plate reorganization

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We examined cross-sectional views across typical island arcs for several recent P and S wave tomographic models. We found that the slabs that started or restarted subduction after the Eocene tend to be now subhorizontally deflected in the mantle transition region at depths from 400 to 1000km, and that the slabs that had subducted before the Eocene are now descending through the deep lower mantle without continuing upward to surface plates. These findings suggest that the slabs once stagnant in the transition region were subject to gravitational instability in the Eocene epoch to cause their global fall into the lower mantle and the global plate reorganization.