Understanding the jet streams on Jupiter is a primary goal of the Juno spacecraft, and new data helps clarify this puzzle.

- The well-known belts and zones on Jupiter represent east-west jet streams and show a clear asymmetry across the equator. Measurements by Juno show that Jupiter’s gravity field has a similar asymmetry, and indicate that these jet streams penetrate 3000 km into Jupiter.
- This implies that the dynamical atmosphere of Jupiter is equivalent to about 1% of Jupiter’s mass, or the equivalent of 3 Earth masses.
- The gravity results were unexpected and indicate the origin of Jupiter’s zone and belt structure may lie deep inside of Jupiter rather than being purely meteorological.

Kaspi et al. (2018) Nature