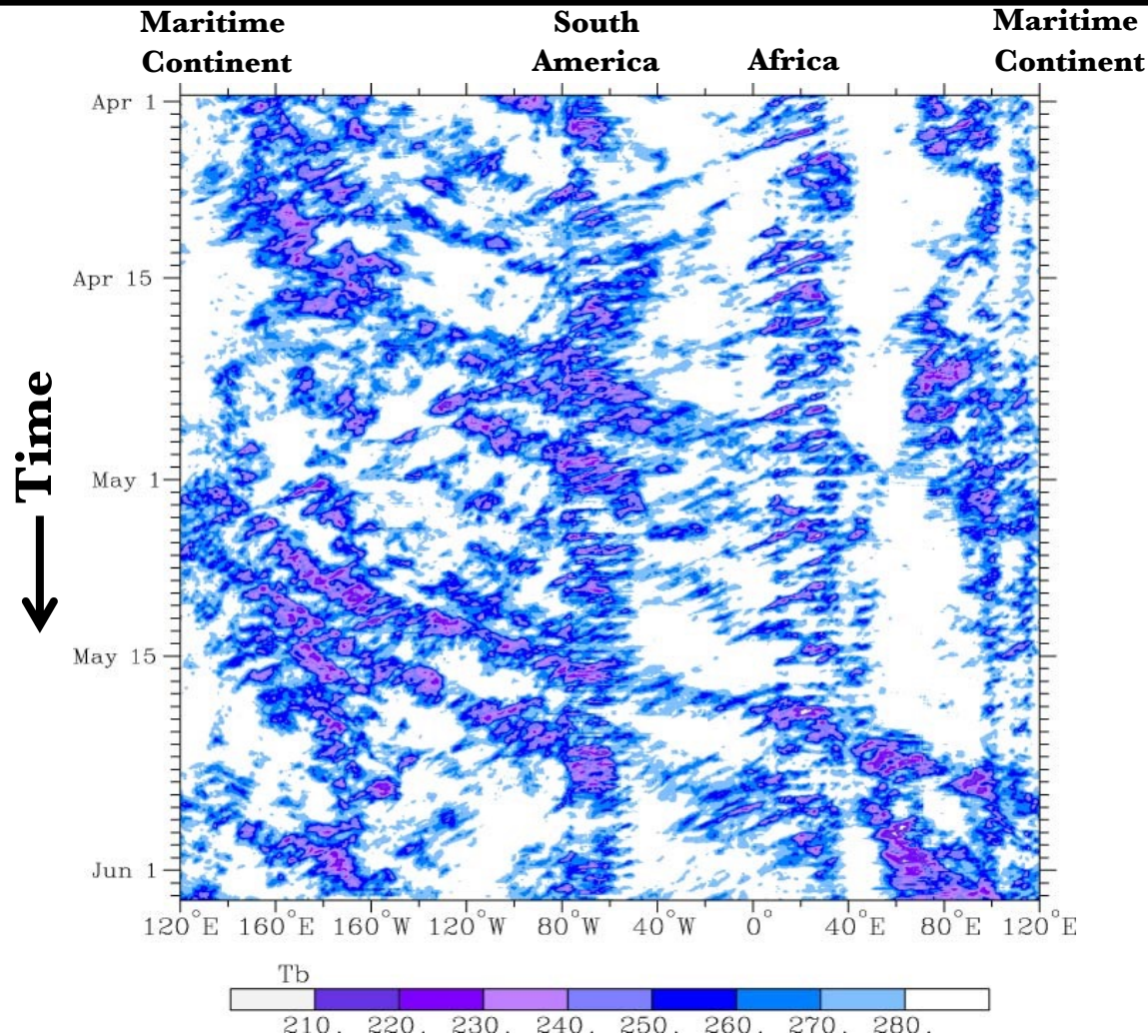


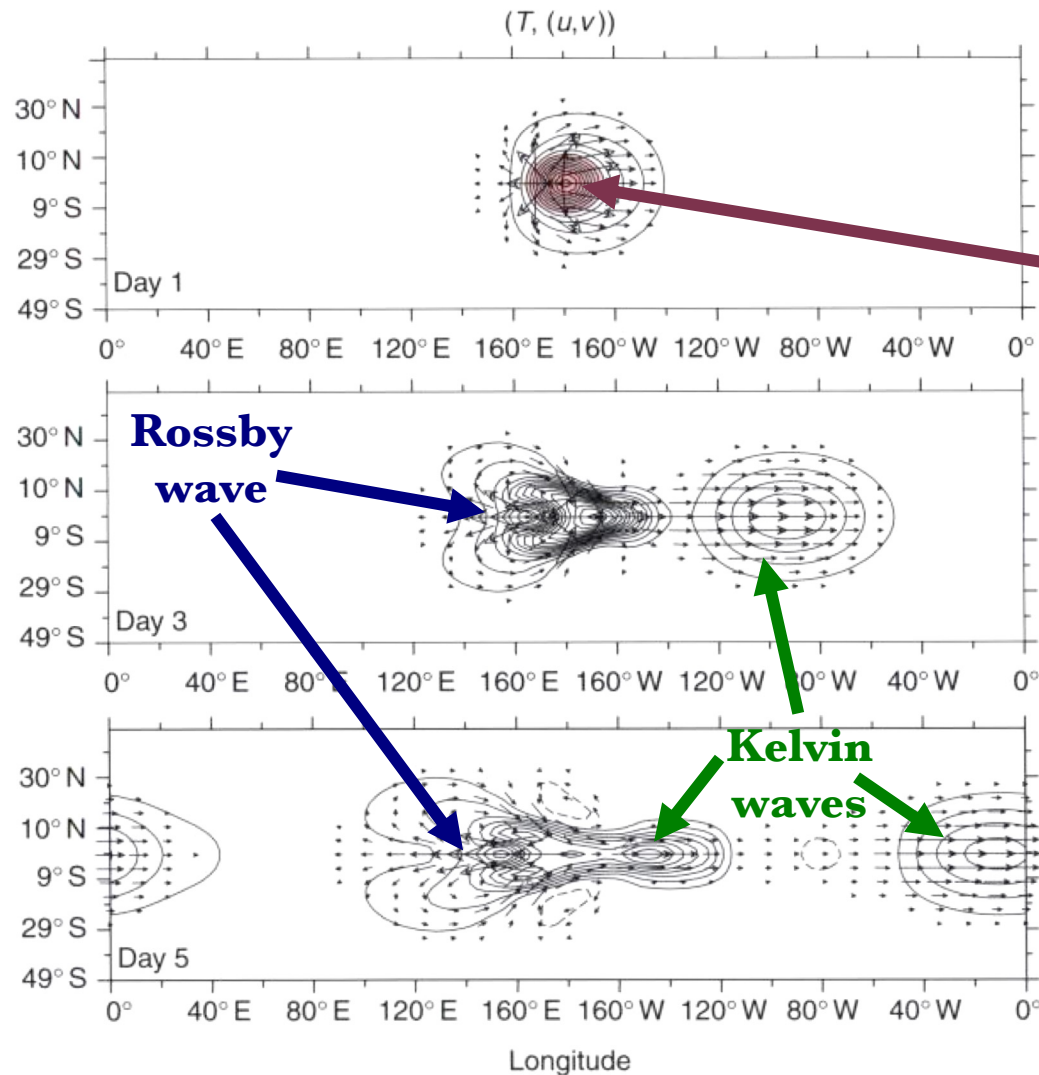
Propagating convection in the tropics



1 April–3 June 1997

CLAUS Brightness Temperature averaged 2.5° S–7.5° N

Gill (1980): Atmospheric response to equatorial heating

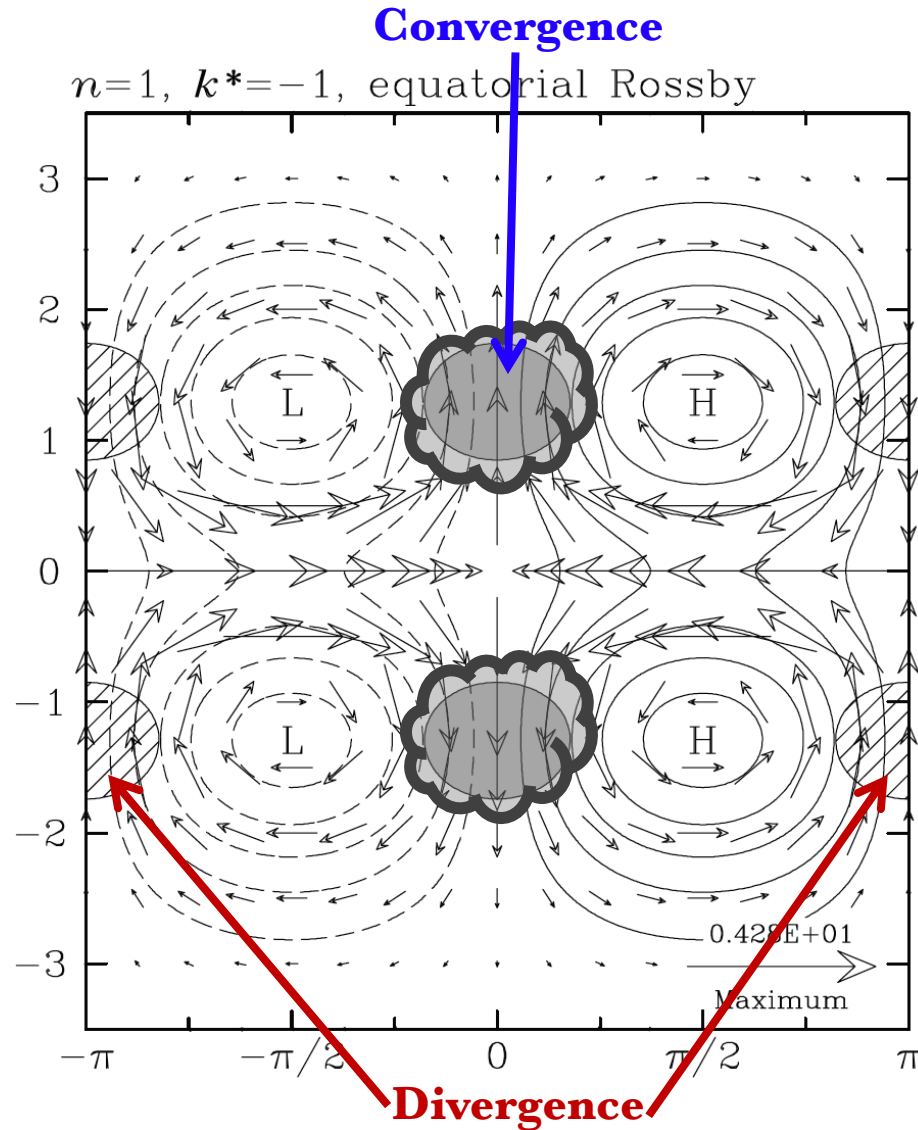


**Multilevel, primitive
atmospheric model
forced by
imposed heating,
representative of
latent heating in
organized convection**

**Vectors:
250-hPa winds**

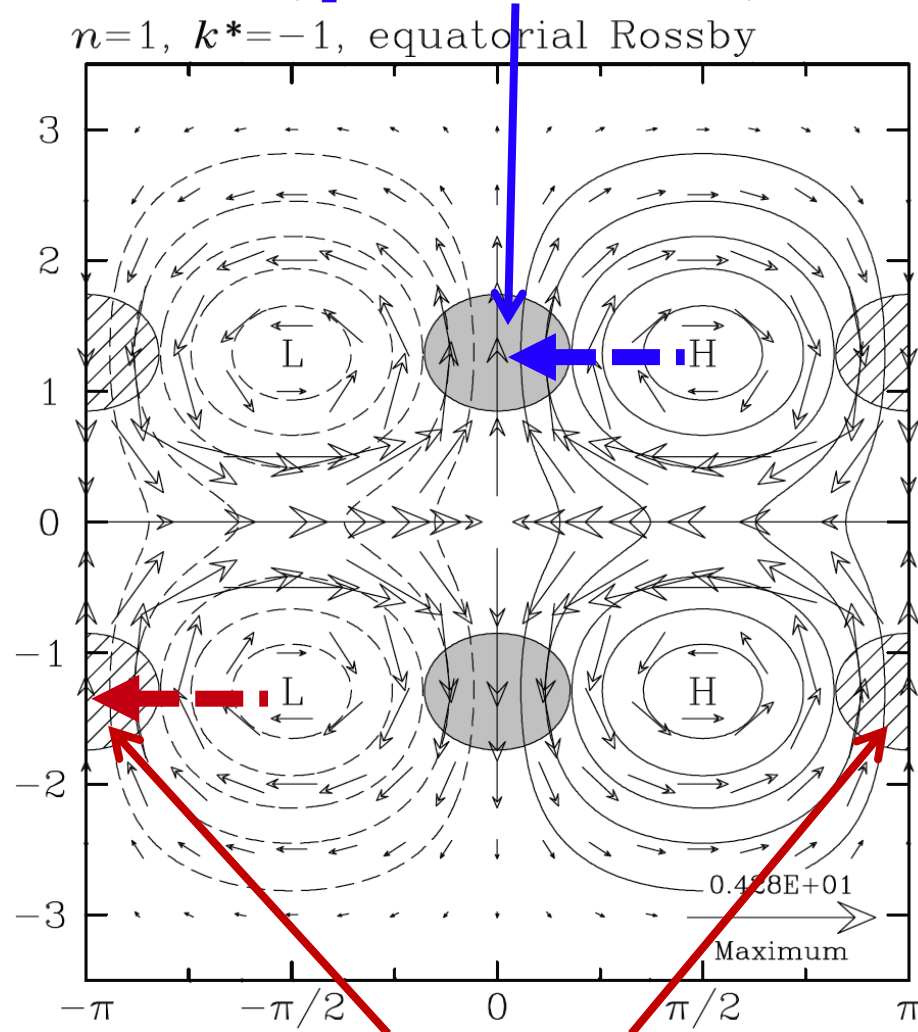
**Contours:
Temperature
perturbations**

Theoretical equatorial Rossby wave structure



Theoretical equatorial Rossby wave structure

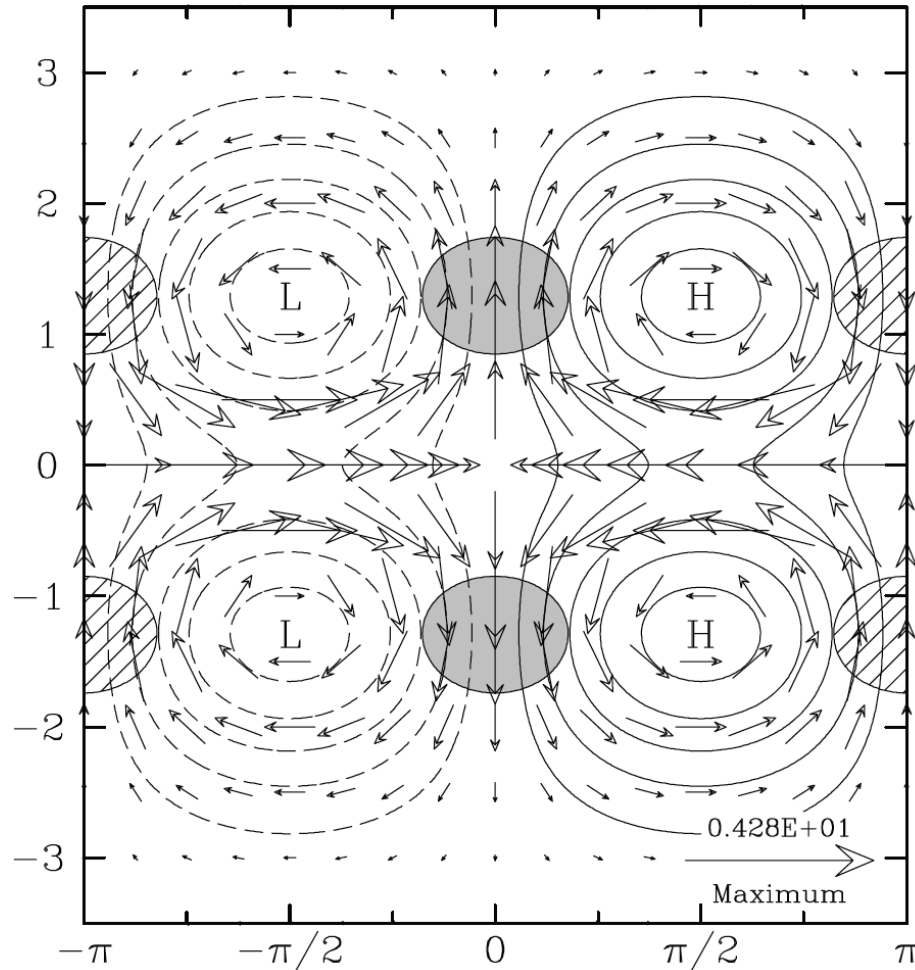
Mass accumulates, pressure increases, H moves westward



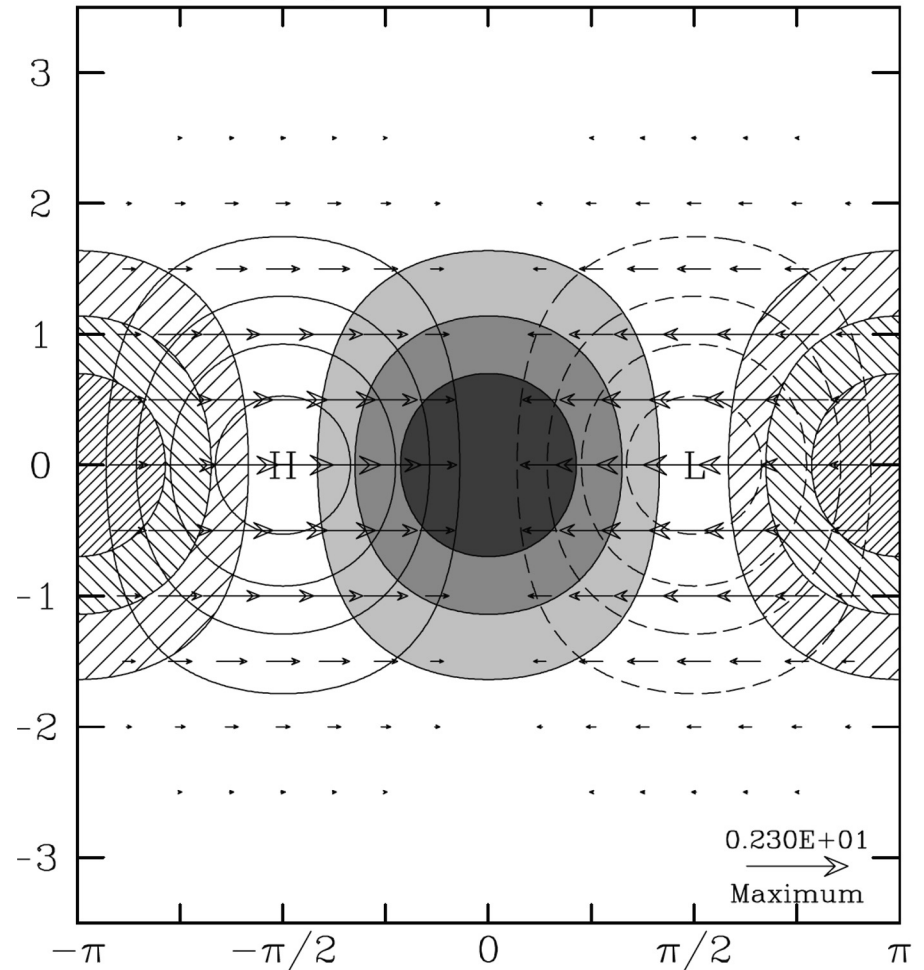
Mass is evacuated, pressure decreases, L moves westward

Theoretical equatorial Rossby & Kelvin wave structures

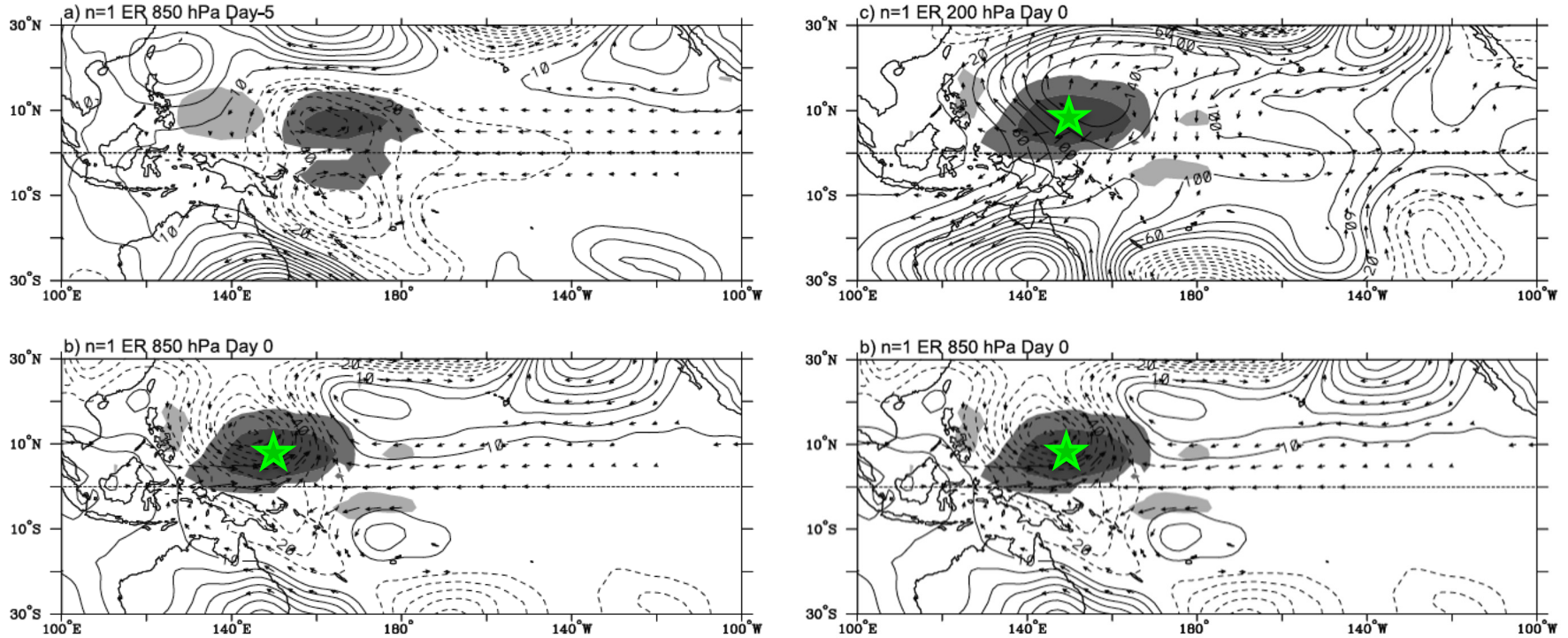
$n=1, k^*=-1$, equatorial Rossby



$n=-1, k^*=1$, Kelvin



Observed equatorial Rossby wave structure



Propagation (left) and vertical structure (right): Real ER wave

Anomalous T_b (shading; dark = active, light = suppressed convection)

Geopotential height anomalies (contours; dashed = negative)

Wind anomalies (vectors; largest = 2 m s^{-1})

ER wave at **star** on day 0