Tropical Cyclone Interactions with MJO Convection in the Indian Ocean

Jeffrey D. Thayer and Deanna A. Hence

University of Illinois Urbana-Champaign

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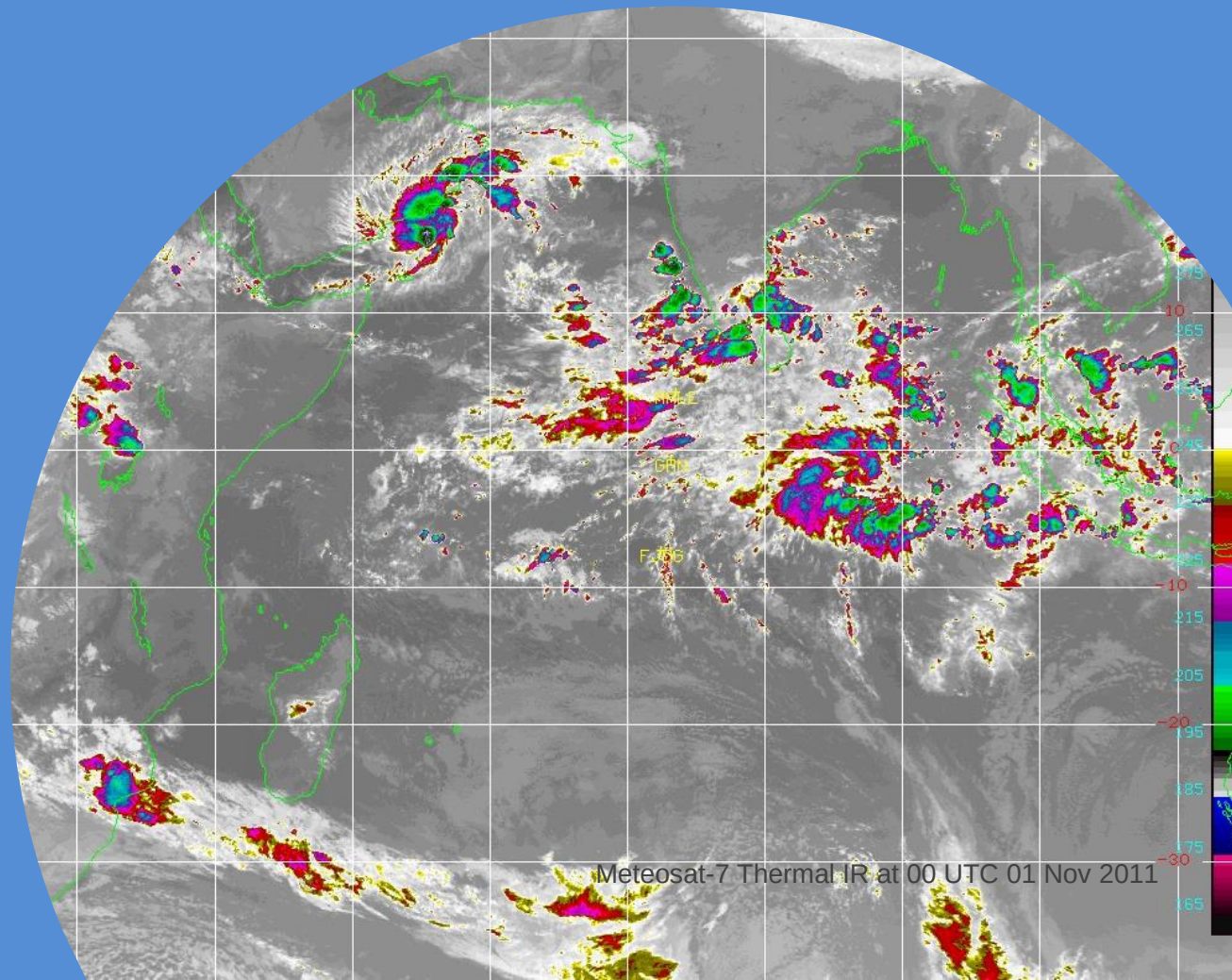
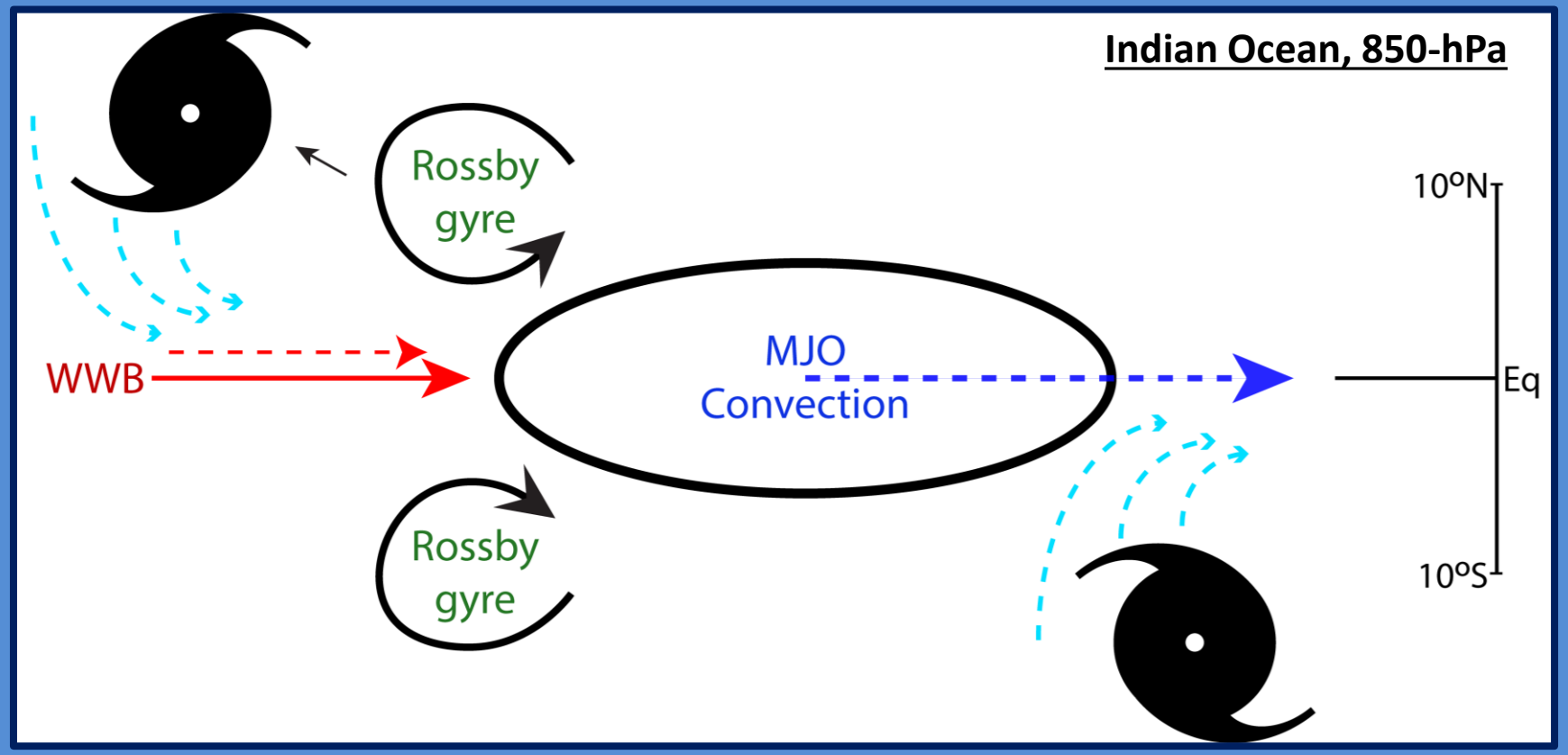


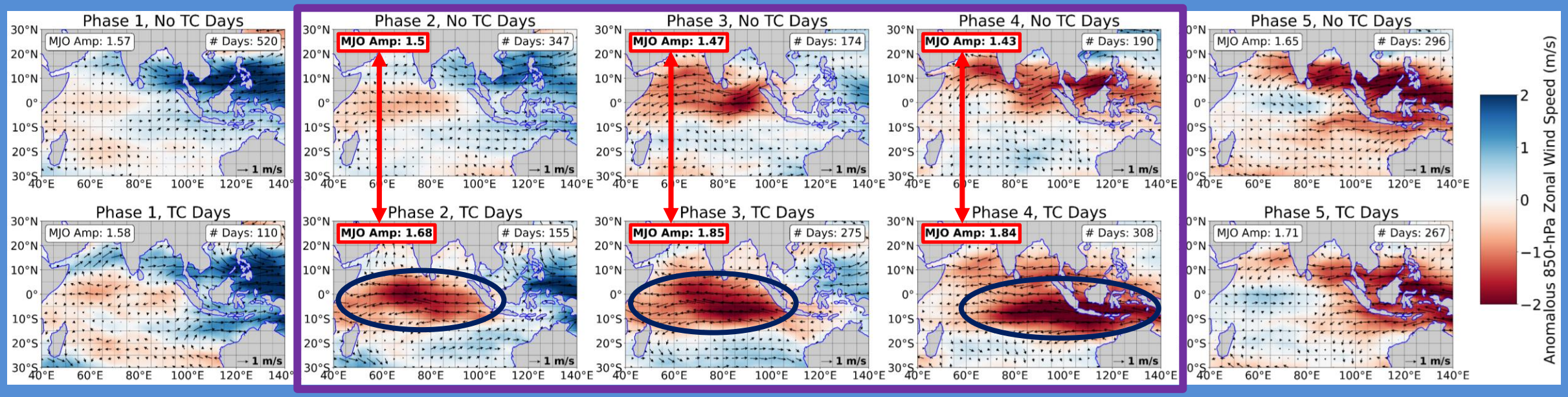
TCs can interact with MJO Convection either Directly or Indirectly [via Westerly Wind Burst]



(1) Indirect [via Westerly Wind Burst (WWB)]

(2) Direct

TC Days show stronger equatorial easterlies and increased MJO strength

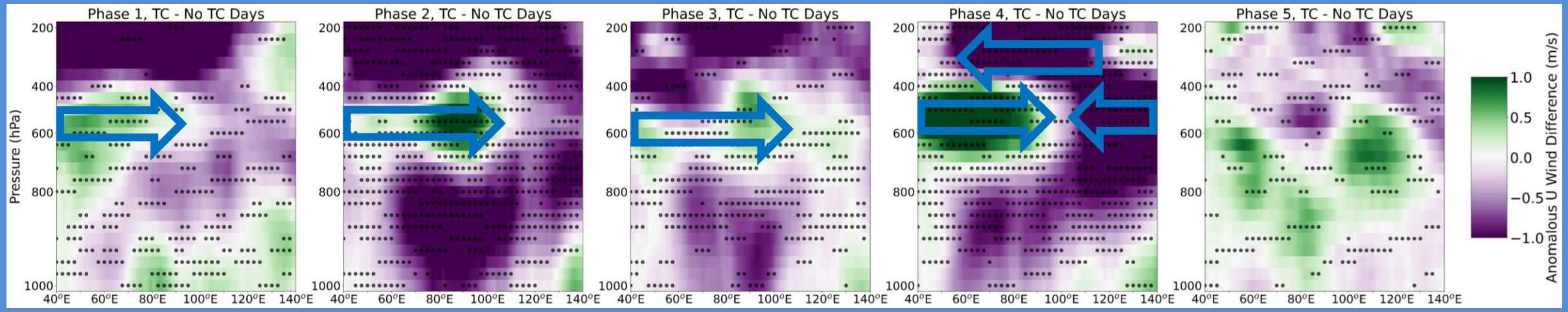


- In Phases 2-4, increased equatorial easterlies when TCs present

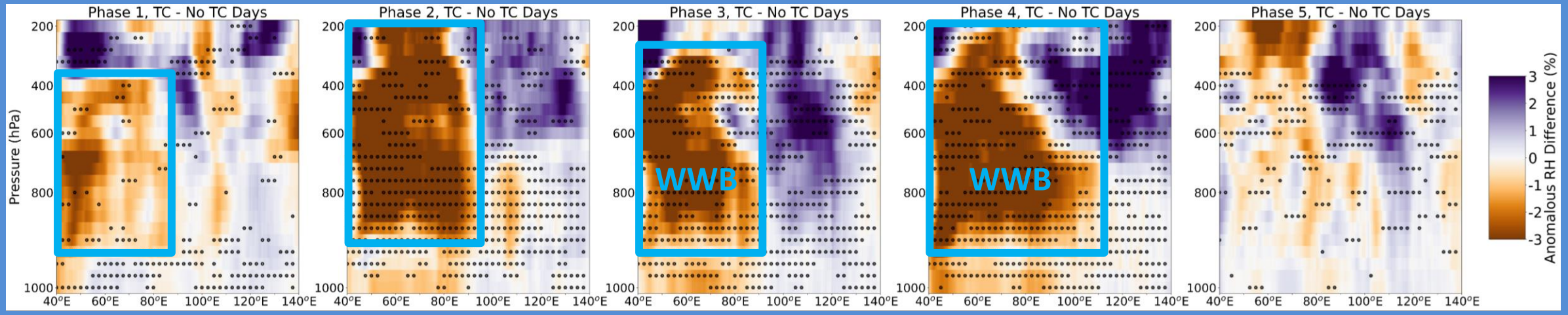
Now, we will focus on October - March

Increased mid-tropospheric westerlies and tropospheric drying when TCs present

Zonal Wind



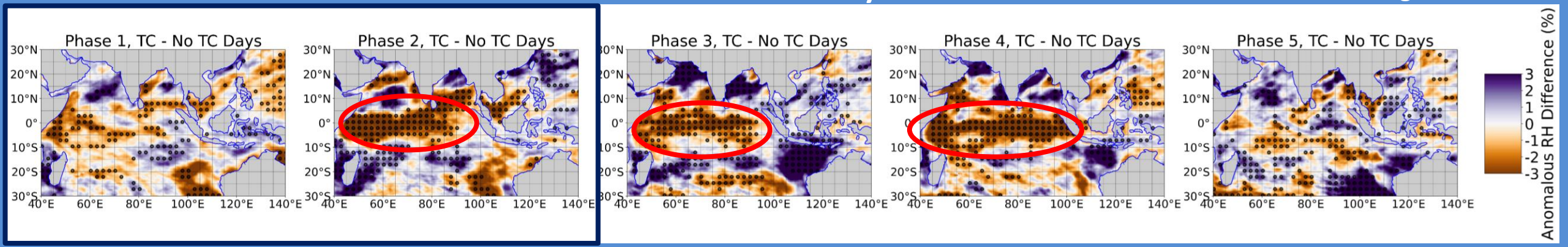
Relative Humidity



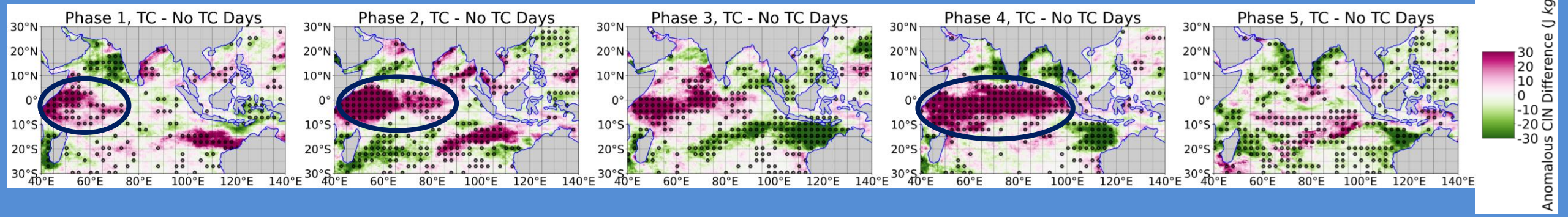
Increased equatorial drying, CIN, and CAPE when TCs present

Relative Humidity

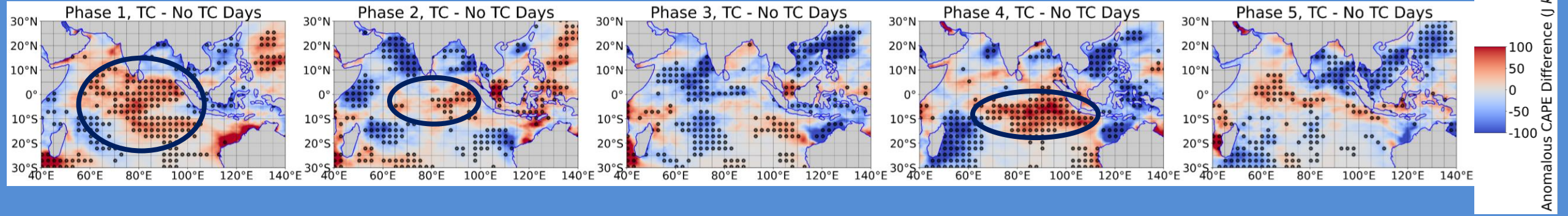
* = 95% statistical significance



Surface-based CIN

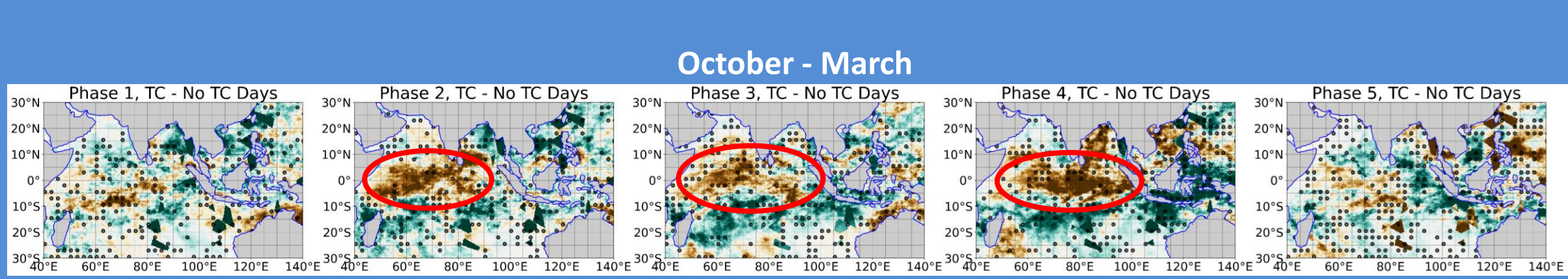


Surface-based CAPE



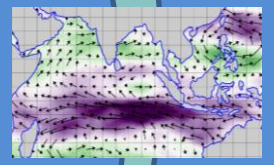
Decreased TRMM rainfall when TCs present

October - March

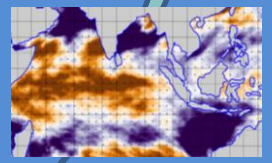


- Rainfall changes are closely associated with drier equatorial regions

Conclusions



Stronger equatorial easterlies and MJOs when TCs present



Increased equatorial drying contributes to increased CIN and decreased rainfall

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Difficult to quantify possible TC influences on MJO convection during MJO Phases 3-4 using *only* composite analysis

Acknowledgements:
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