

Global and Regional Characteristics of Radially Outward Propagating Tropical Cyclone Diurnal Pulses

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Introduction

This supporting information includes two tables: Table S1 provides adjustment factors applied to the WWLLN lightning flash data each year from 2001–2018 in the four main ocean basins. Table S2 provides the number of over-land data points in the GridSat-B1 IR BT tendency fields as well as the percentage of over-land data points relative to the total number data points. Figures S1–S3 then provide the composite diurnal pattern of IR BT, precipitation, and lightning after removing the data points over land. They are analogous to Figs. 8–10 in the main text.

Table S1. Adjustment factors applied to the WLLN data in the NWP, SI, NEP, and NA basins based on the annual mean lightning density climatology (1998–2015) from the TRMM LIS/OTD high resolution (0.5°) data.

Year	NWP	SI	NEP	NA
2005	12.0	23.0	96.7	18.3
2006	9.4	21.0	20.3	12.1
2007	10.6	10.8	19.4	12.0
2008	7.4	11.7	9.5	9.2
2009	5.8	8.8	4.6	5.7
2010	5.0	6.0	5.4	4.7
2011	5.3	6.5	4.2	4.2
2012	4.8	6.0	2.7	3.3
2013	4.2	5.2	2.6	3.4
2014	4.1	4.7	2.6	3.3
2015	4.2	4.5	2.1	3.3
2016	4.6	4.4	2.8	3.4
2017	3.1	4.3	2.5	3.6
2018	3.3	4.1	2.0	3.5

Table S2. The number of over-land data points in the GridSat-B1 IR BT tendency fields as well as the percentage of over-land data points relative to the total number data points for all TC days and DP days of varying durations over all radii and in particular radial ranges.

Radius	All TC days	DP 6–9 h	DP 9–12 h	DP 12–15 h	DP ≥ 15 h
All	20.43×10^8 (9.0%)	3.10×10^8 (8.6%)	2.42×10^8 (8.3%)	2.18×10^8 (8.0%)	2.38×10^8 (7.7%)
0–200 km	1.08×10^8 (7.2%)	0.15×10^8 (6.6%)	0.12×10^8 (6.7%)	0.11×10^8 (6.6%)	0.13×10^8 (6.8%)
200–400 km	3.31×10^8 (7.4%)	0.49×10^8 (7.2%)	0.39×10^8 (7.2%)	0.34×10^8 (7.0%)	0.38×10^8 (6.7%)
400–600 km	6.14×10^8 (8.3%)	0.93×10^8 (8.2%)	0.73×10^8 (8.0%)	0.66×10^8 (7.8%)	0.71×10^8 (7.4%)
600–800 km	9.94×10^8 (9.6%)	1.54×10^8 (9.8%)	1.17×10^8 (9.2%)	1.07×10^8 (9.0%)	1.16×10^8 (8.6%)

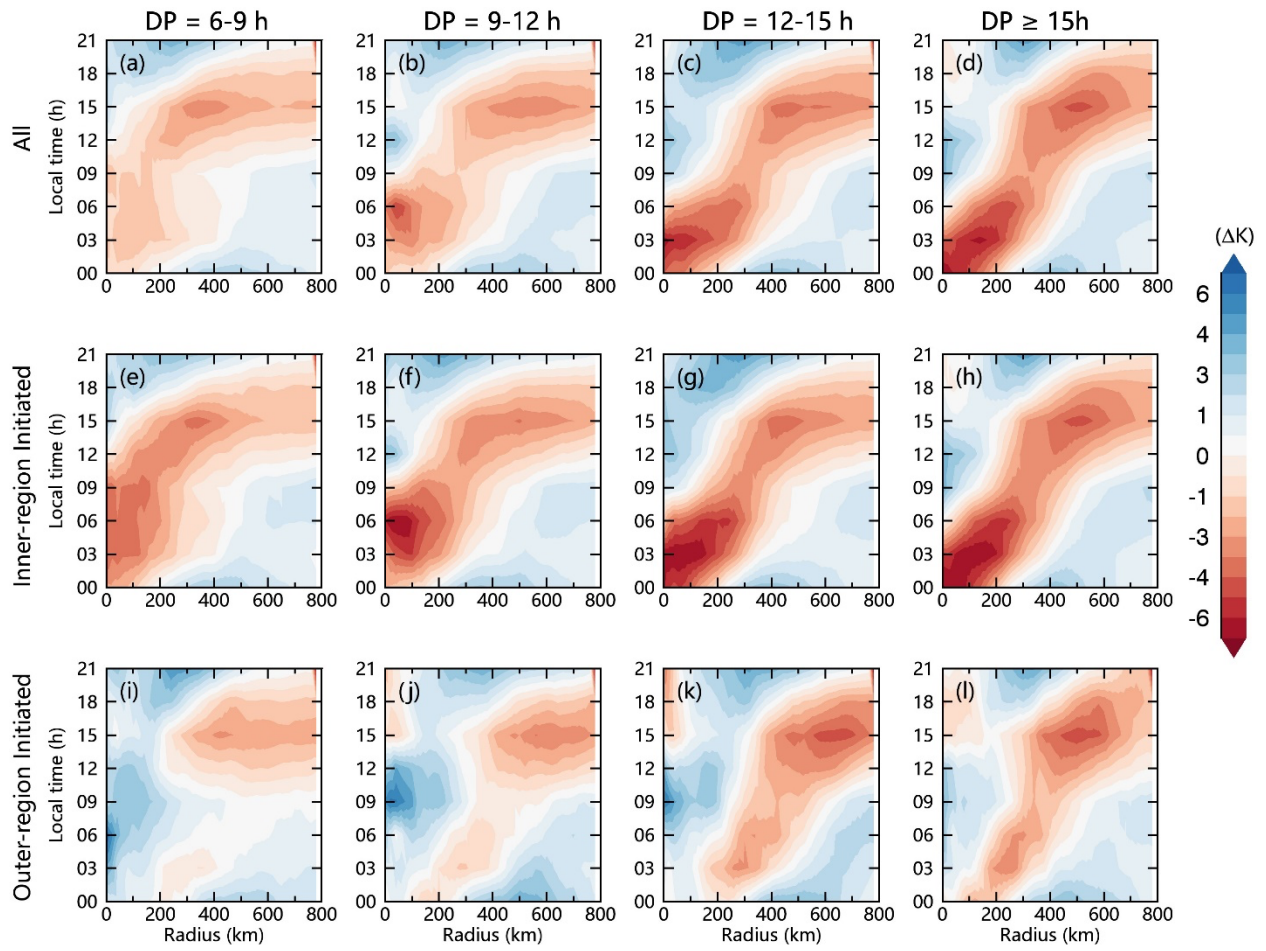


Figure S1. Similar to Fig. 8, but data points over land are removed.

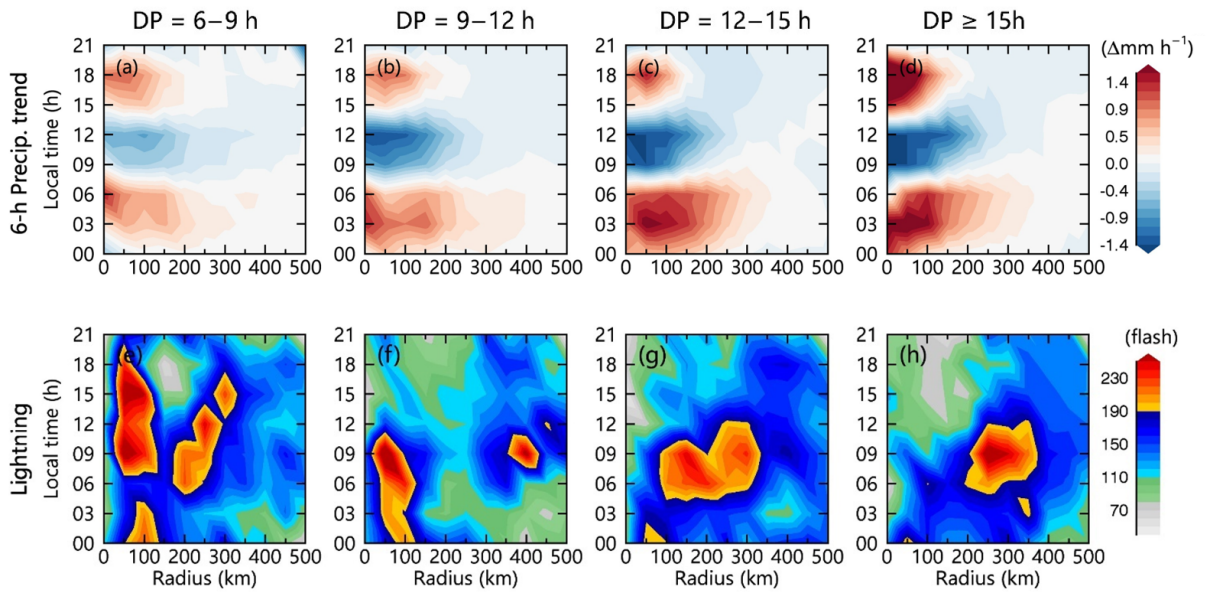


Figure S2. Similar to Fig. 9, but data points over land are removed.

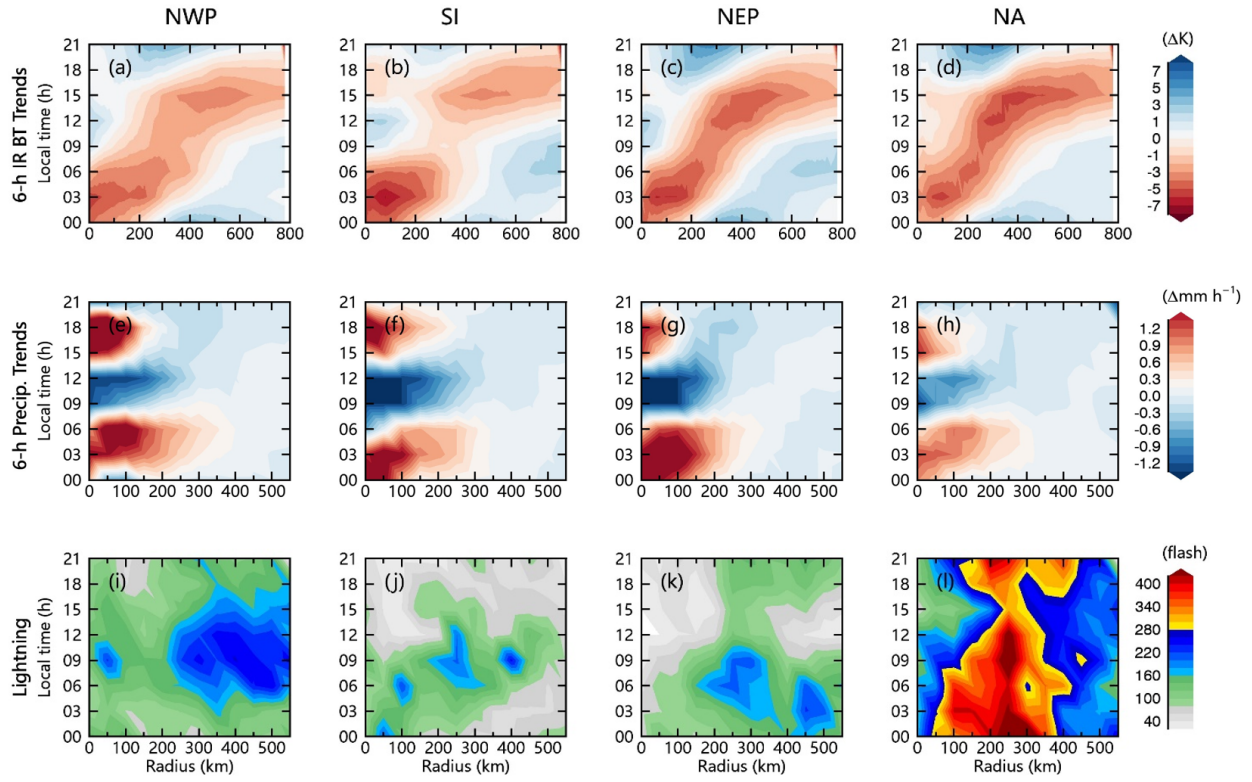


Figure S3. Similar to Fig. 10, but data points over land are removed.