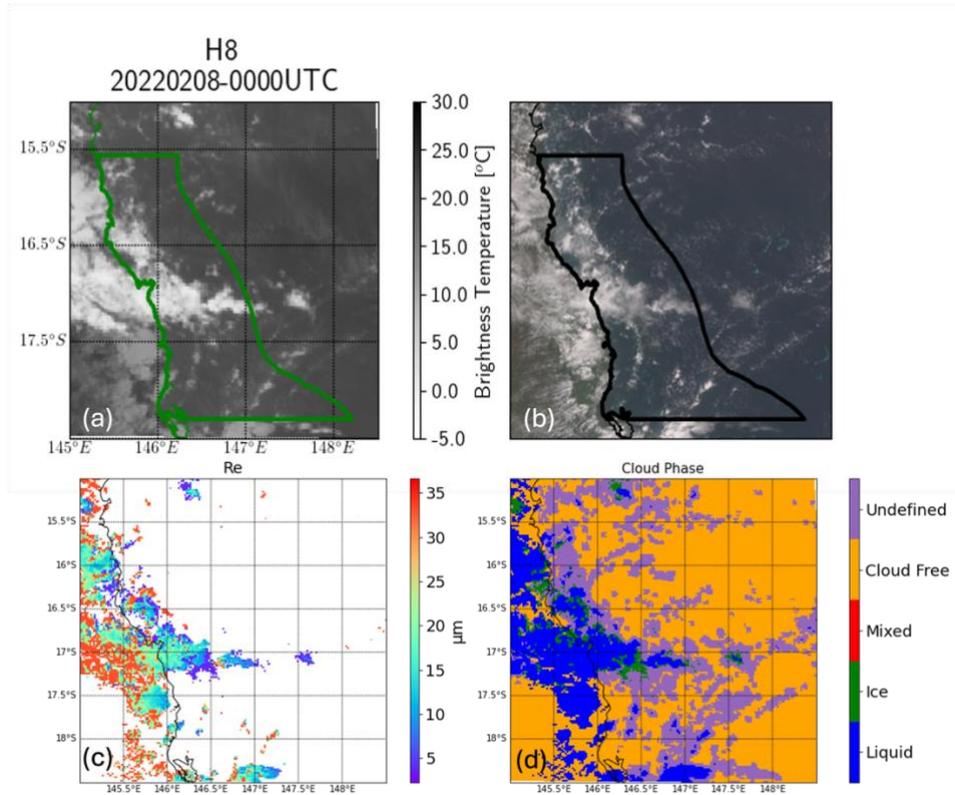


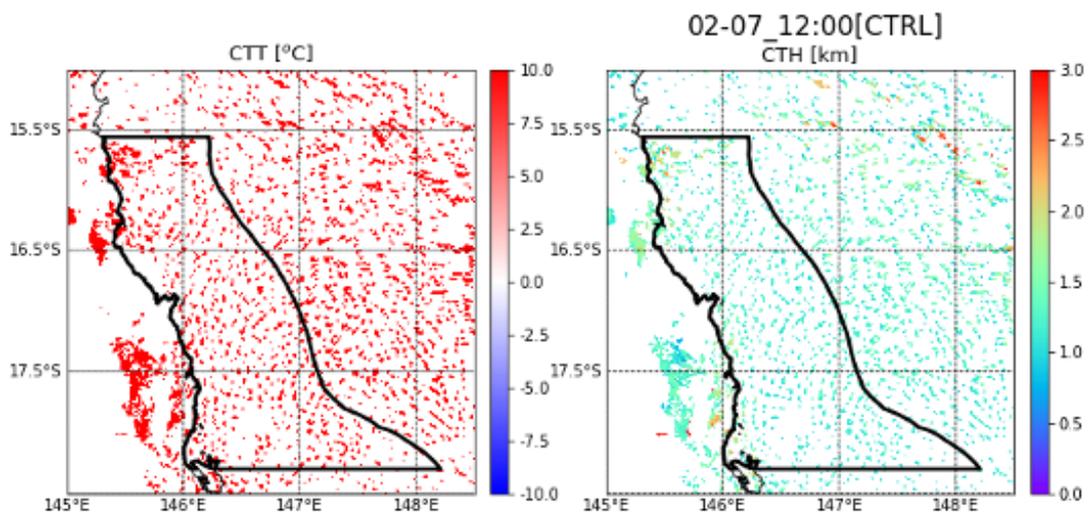
1 **Supplementary**



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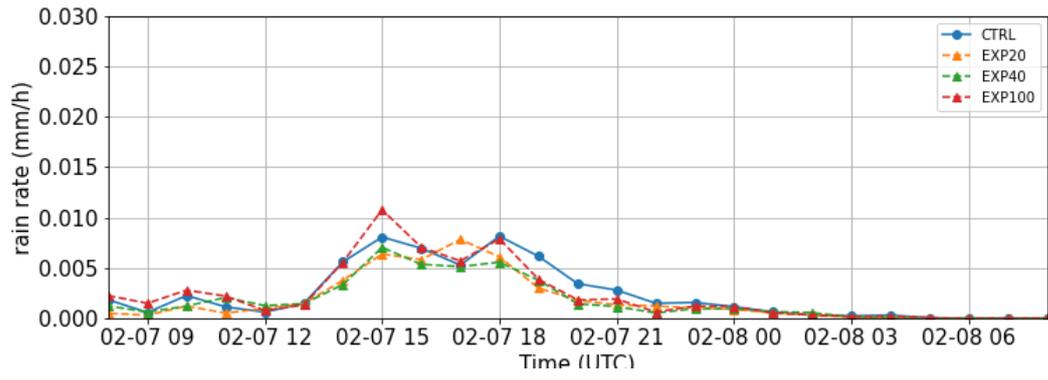
3 Figure S1: (a) Brightness temperatures of band 13 (10.4 μm) derived from Himawari-8 satellite observations on 08 of Feb
4 2022 at 0000 UTC. Green lines outline the domain of Carins region. (b) True color image from Himawari-8 satellite
5 observations on 07 of Feb 2022 at 0000 UTC. (c-d) Cloud top effective radius and cloud phase retrievals from Himawari-8 on
6 07 of Feb 2022 at 0000 UTC.

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8 Figure S2: Simulated cloud top temperature and cloud top height field over the Carins Region at 12UTC 07 Feb.

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11 Figure S3: Simulated surface rain rate over the Cairns Region.

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