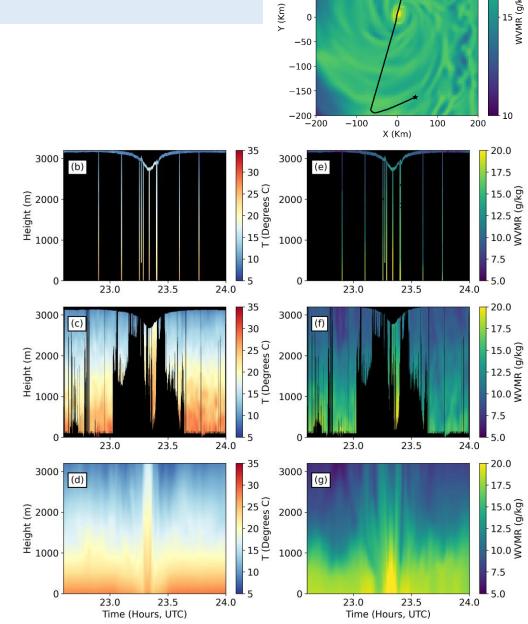# Collecting Novel Measurements to Better Understand Tropical Cyclones

- Ethan Murray, 4th year PhD candidate at the University of Colorado.

- TCs cause $34.3 billion in damage annually in the United States, with significant yearly variance.

- TC forecasts must be improved to better prepare for these systems and protect lives.

- To do so, my research harnesses unique observations to improve our understanding of TC clouds, rainfall, and thermodynamics.

- TC forecast models are compared to dropsonde, in situ, radar, and lidar aircraft measurements (right).

- This has led to diagnosing biases in models like COAMPS-TC and HWRF.

- Link to my first paper, examining measurements in the TC eye: https://doi.org/10.1029/2024GL108515