

Mediterranean Extreme Events Experiment (M3E) and storm Harry

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Overview

- Aims of M3E
- New drifting buoys since September 2025
- Storm Harry

Aims of M3E

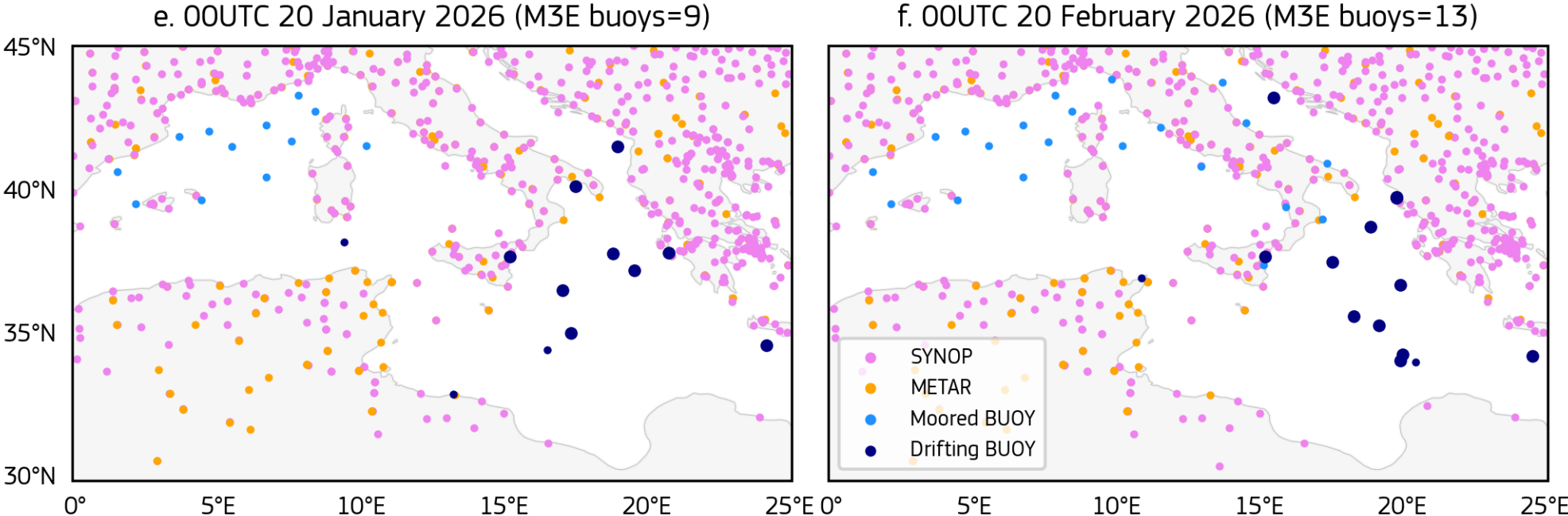


By deploying drifting buoys equipped with barometers into the data-sparse Ionian Sea and central Mediterranean, M3E aims to:

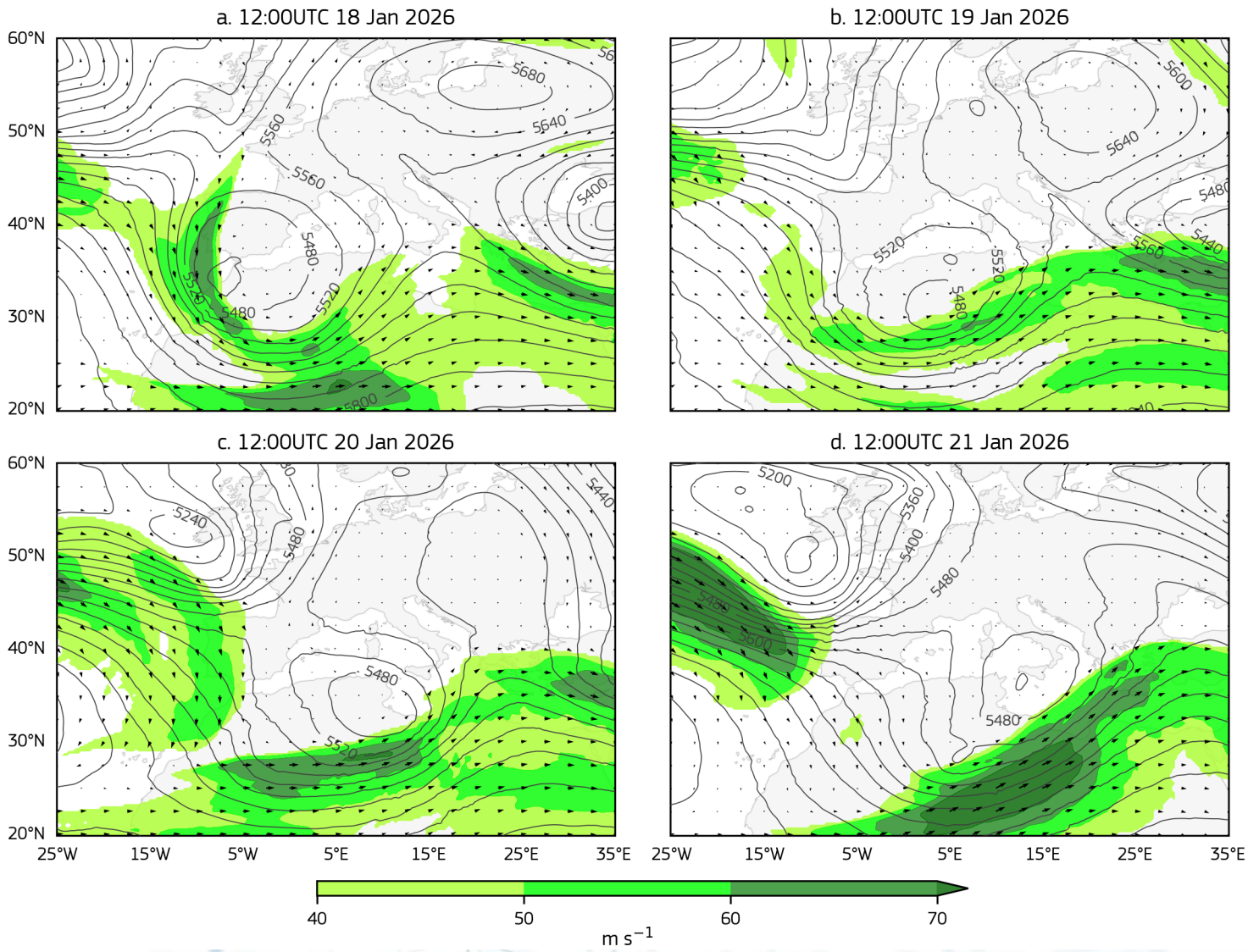
1. improve weather forecasting of extreme events
2. understand cyclone development across the Mediterranean
3. contribute to the Global Atmospheric River Reconnaissance Program (GARRP)



Drifting buoy locations since September 2025

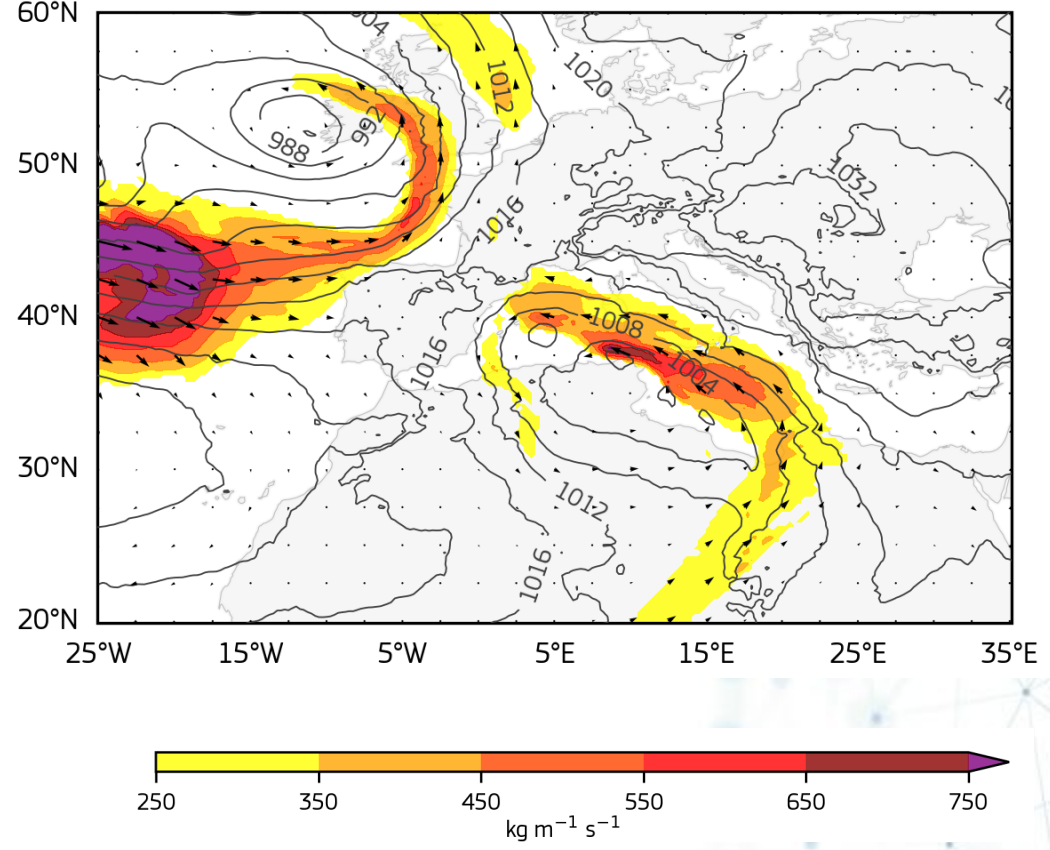


Storm Harry: upper atmosphere



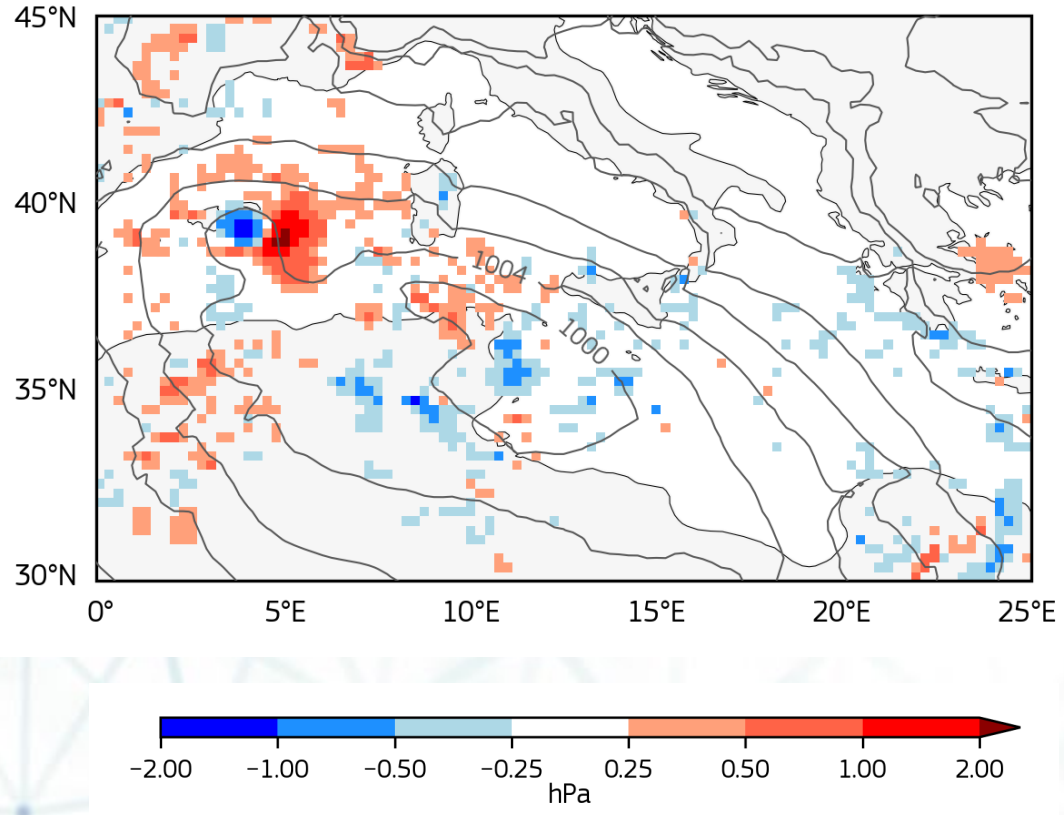
Observation impacts and mesoscale low systems

c. 12:00UTC 20 Jan 2026



Denial run had all drifting buoys removed from the Mediterranean

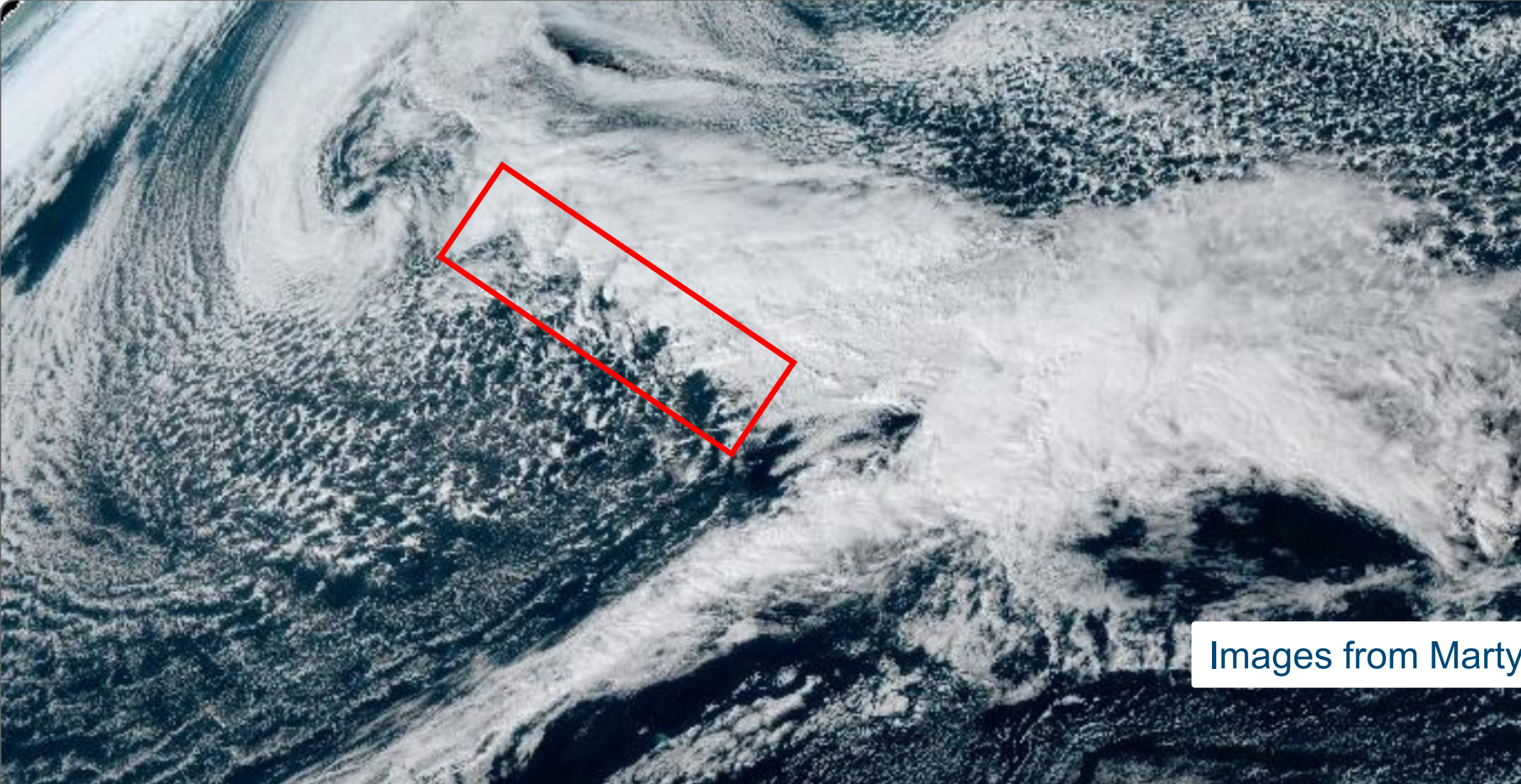
c. 12:00UTC 20 Jan 2026 (T+12)



Mean sea level pressure differences between control and denial run

Mesoscale low systems in the North Pacific

GeoColor - True Color daytime, multispectral IR at night - 16 Jan 2024 - 0040 UTC



Images from Marty Ralph

Conclusions

- M3E has deployed 20 drifting buoys (with barometers)
- M3E is filling in a data-sparse region
- Storm Harry was a significant extreme event with large impacts
- Observing system experiment show M3E buoy benefits
- Results support future M3E buoy deployments
- Importance of mesoscale low systems

Thank you

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