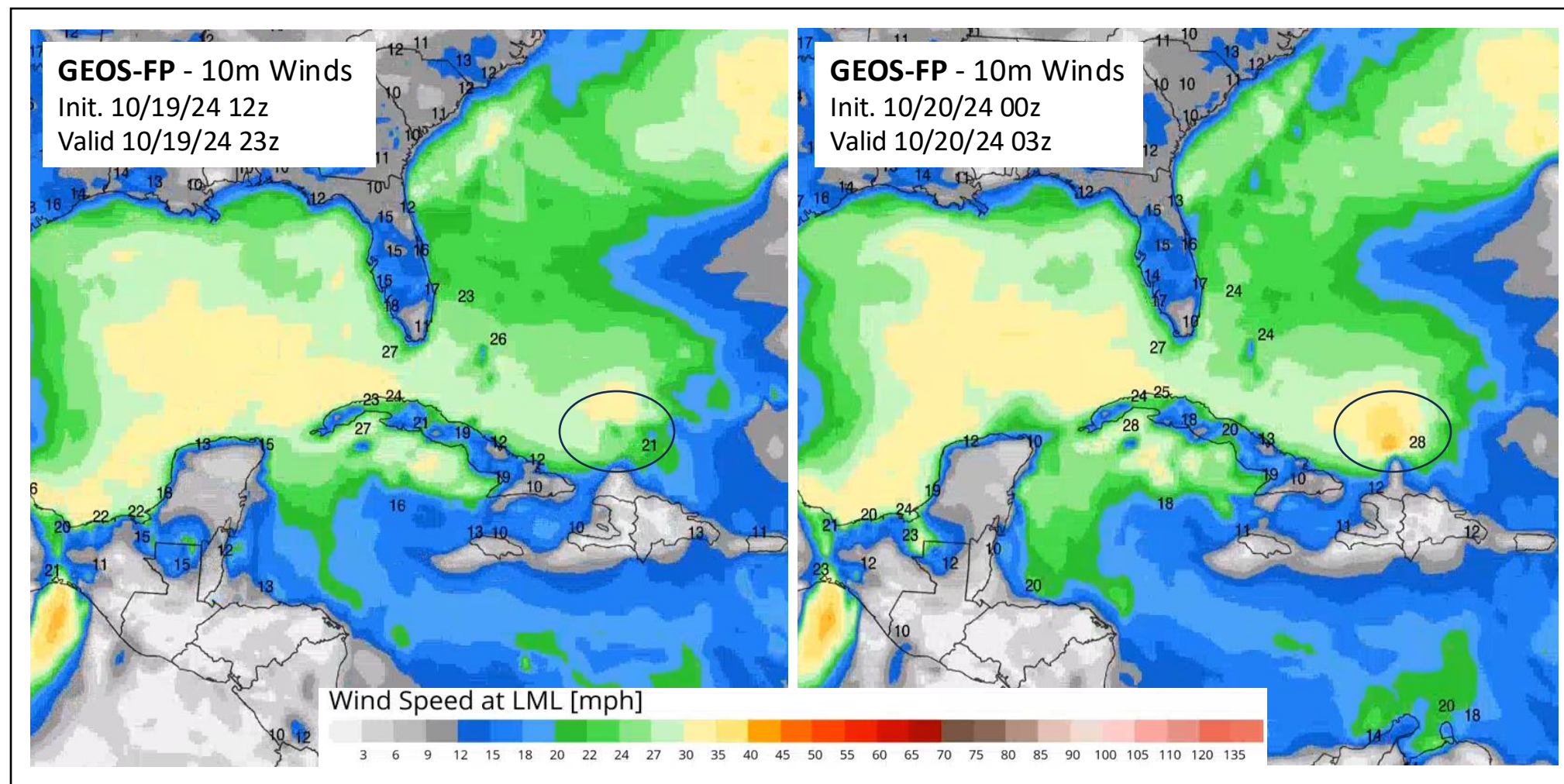
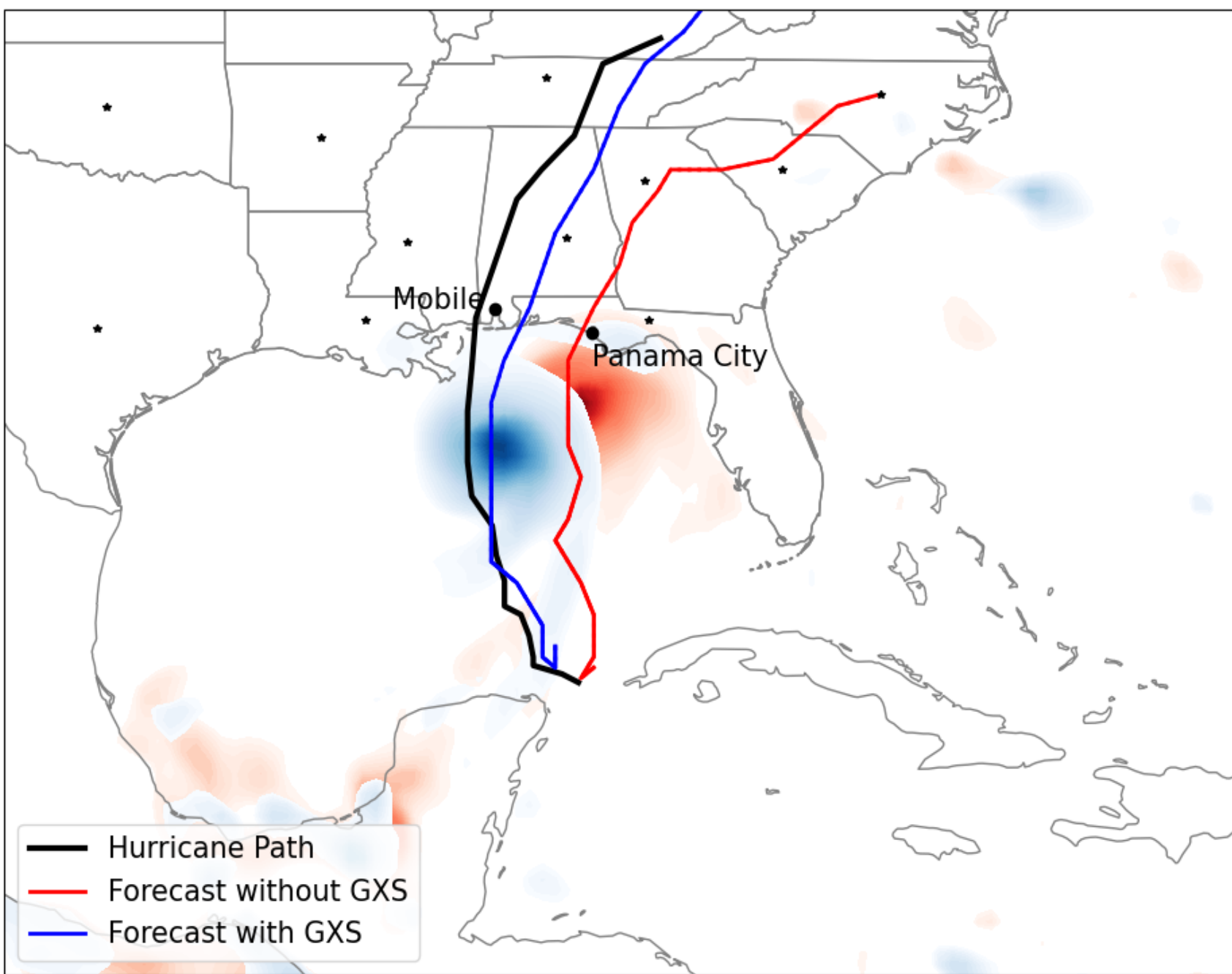


Following the launch of the last GOES-R satellite in June 2024, NOAA and NASA are collaborating on the next generation of geostationary satellites, the Geostationary eXtended Observations (GeoXO) constellation. Set to launch in the mid-2030s, the GeoXO Sounder (GXS) is a hyperspectral infrared sounder that will scan the Western Hemisphere in 30 minutes or less with a nadir footprint of 4km providing high resolution horizontal and vertical information on temperature, water vapor, and trace gases throughout the atmosphere. Efforts are already underway at the GMAO to prepare the GEOS DAS to assimilate these data through work using the GMAO OSSE framework, with prior work showing significant improvement to hurricane forecasts. Full expansion and implementation of GeoXO is expected in the coming decade.



Though it had the Atlantic's smallest hurricane-force wind field on record, Hurricane Oscar highlighted limitations of the current GEOS system. The small size of the storm led to it not resolving (above, 1st panel) until a lucky LEO satellite pass provided observations (above, 2nd panel). GeoXO will provide significant enough temporal improvements to allow GEOS to simulate storms of that size and make improved forecasts such as the 60-hour forecast of a simulated hurricane at left.