# NOAA’s GOES-18 satellite captures dramatic dust storm sweeping southern US and Mexico



A formidable dust storm swept through parts of southern New Mexico, southwestern Texas, and northern Mexico last week, captivating scientists and meteorologists with its scale and intensity. This event was captured in striking detail by the National Oceanic and Atmospheric Administration's (NOAA) GOES-18 satellite, providing an unprecedented high-speed visual of the storm as it rolled across the terrain like a colossal ocean wave.

The dramatic footage rapidly circulated on social media and was described by Colorado-based researcher Dakota Smith as “an all-timer,” underscoring the remarkable size and speed of the phenomenon. According to the Cooperative Institute for Meteorological Satellite Studies (CIMSS) Satellite Blog, the dust storm was precipitated by strong winds behind a cold front, which lifted enormous quantities of dust and soil into the atmosphere. This created a fast-moving wall of particulate matter that dramatically affected the landscape.

Wind speeds in affected areas were significant, with gusts reaching 50 knots (58 mph) in El Paso, Texas. Visibility was severely reduced in Carlsbad, New Mexico, where dust limited sight to just a quarter of a mile. In northern Mexico, the storm's leading edge was observed moving at speeds up to 35 knots. This kind of dust storm, often called a "haboob," poses serious challenges including impaired visibility and respiratory hazards, which are especially critical for drivers and residents in impacted regions.

The stunning imagery was made possible by the advanced technology onboard NOAA's GOES-18 satellite, launched in 2022 from Cape Canaveral, Florida. This satellite covers an expansive view extending from the US West Coast through Mexico and Central America, and over the Pacific Ocean. It continuously sends data every 30 seconds to NOAA’s Satellite Operations Facility in Maryland, allowing meteorologists to monitor weather patterns with remarkable precision and timeliness.

GOES-18’s real-time, high-resolution imaging capabilities represent a significant advancement in meteorological observation. Beyond tracking dust storms, the satellite system plays a vital role in monitoring thunderstorms, hurricanes, fog, wildfires, and volcanic eruptions, thereby enhancing preparedness and safety.

Platforms such as The Weather Channel and AccuWeather regularly feature imagery from GOES satellites in their forecasts, demonstrating its crucial role in public weather education and hazard awareness. The recent haboob event, vividly captured by GOES-18, highlights the system’s capacity to reveal the dramatic and dynamic nature of extreme weather events, offering both meteorologists and communities valuable time to respond.

Source: [Noah Wire Services](https://www.noahwire.com)

## Bibliography

1. <https://mexiconewsdaily.com/news/massive-dust-storm-mexico-april-2025/> - This article corroborates the occurrence of a massive dust storm in northern Mexico, highlighting the storm's impact on visibility and its classification as a haboob. It also mentions the closure of the Pan-American Highway due to low visibility.
2. <https://newsroom.ap.org/detail/HeavyduststormsweepsacrossstateinnorthernMexico/6857c53624d548a086afa49c5d66575c/video> - This news piece documents a heavy dust storm sweeping across northern Mexico, emphasizing health concerns and road closings, which aligns with the challenges posed by such storms.
3. <https://cimss.ssec.wisc.edu/satellite-blog/archives/64258> - This CIMSS Satellite Blog entry explains how strong winds behind a cold front caused the dust storm in southern New Mexico, southwestern Texas, and northern Mexico, which supports the mechanism described in the article.
4. <https://www.techtimes.com/articles/310111/20250424/monster-dust-storm-satellite-captures-insane-tsunami-sand-racing-across-desert-new-mexico.htm> - This article provides visuals and descriptions of the massive dust storm, mirroring the dramatic imagery captured by satellites. It highlights the storm's scale and speed.
5. <https://www.youtube.com/watch?v=X0VTnBDLJwY> - This YouTube video demonstrates the visual impact of the dust storm as it rolled across northern Mexico, showing footage of the storm's effects on the landscape and public infrastructure.
6. <https://www.nesdis.noaa.gov/SatelliteApplications/Pages/GOES-R/GOES18.html> - This NOAA website provides information on the GOES-18 satellite's capabilities and operational details, including its advanced imaging technology and coverage areas, supporting the article's descriptions of GOES-18's role in weather observation.
7. <https://www.techtimes.com/articles/310111/20250424/monster-dust-storm-satellite-captures-insane-tsunami-sand-racing-across-desert-new-mexico.htm> - Please view link - unable to able to access data