



Utility of SPoRT VIIRS Imagery to Detect Small-Scale Blowing Dust

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SPoRT Partners Virtual Workshop

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October 29, 2013 Localized Wind Blown Dust Event

A chain reaction accident occurred just after Noon MST on Interstate 10 between Phoenix and Tucson



- 19 vehicles involved
- 3 fatalities
- 12 injuries
- I-10 closed for 10 hours

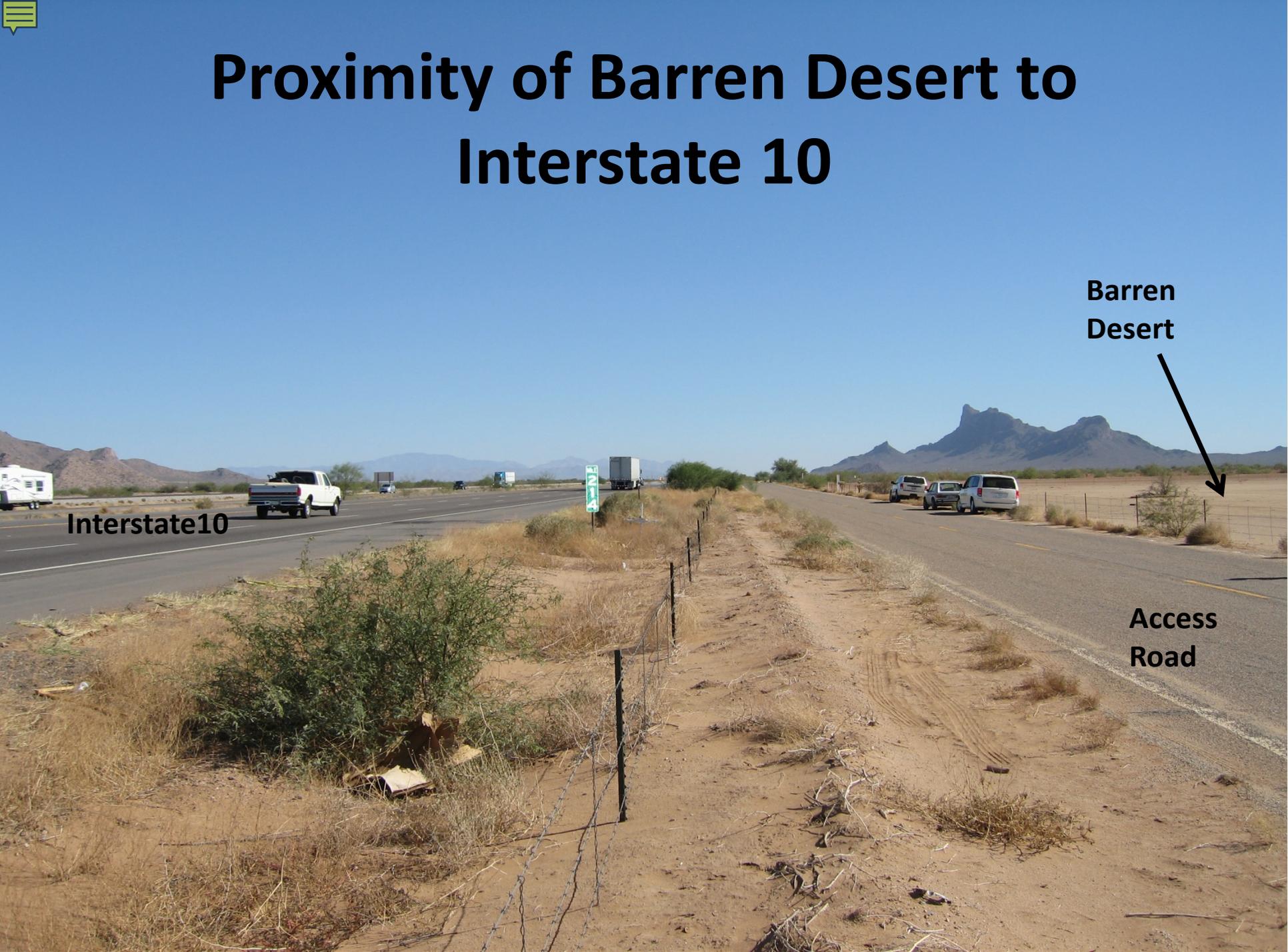
Accident Site 10/29/2013



MM 214 Crash Site



Proximity of Barren Desert to Interstate 10



Interstate10

Barren
Desert

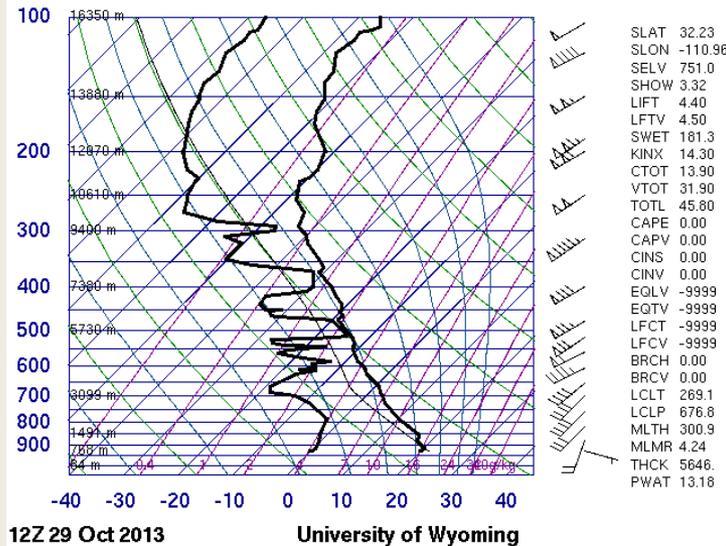


Access
Road

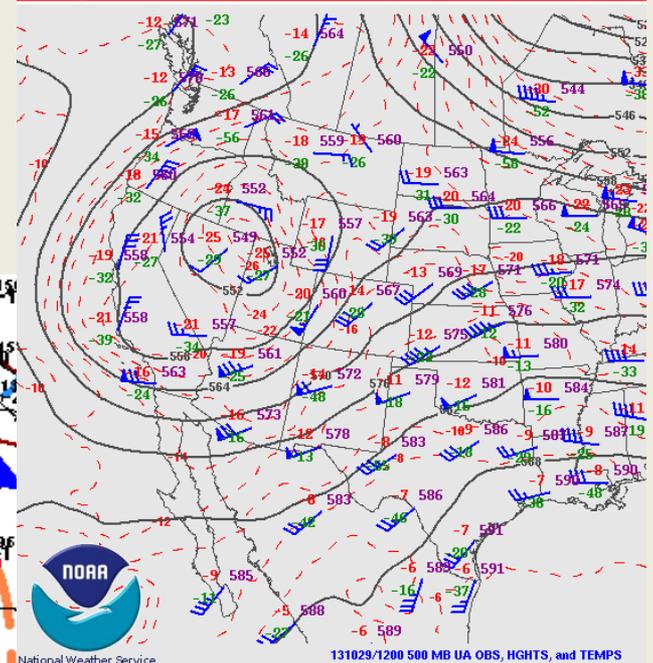
Meteorological Conditions

- Southwest flow aloft south of 500 mb Great Basin low pressure
- Cold front approaching from the northwest

72274 TUS Tucson



500mb @ 131029/1200



Surface Weather Map and Station Weather at 7:00 A.M. E.S.T.
TUE, OCT 29, 2013



Surface Winds

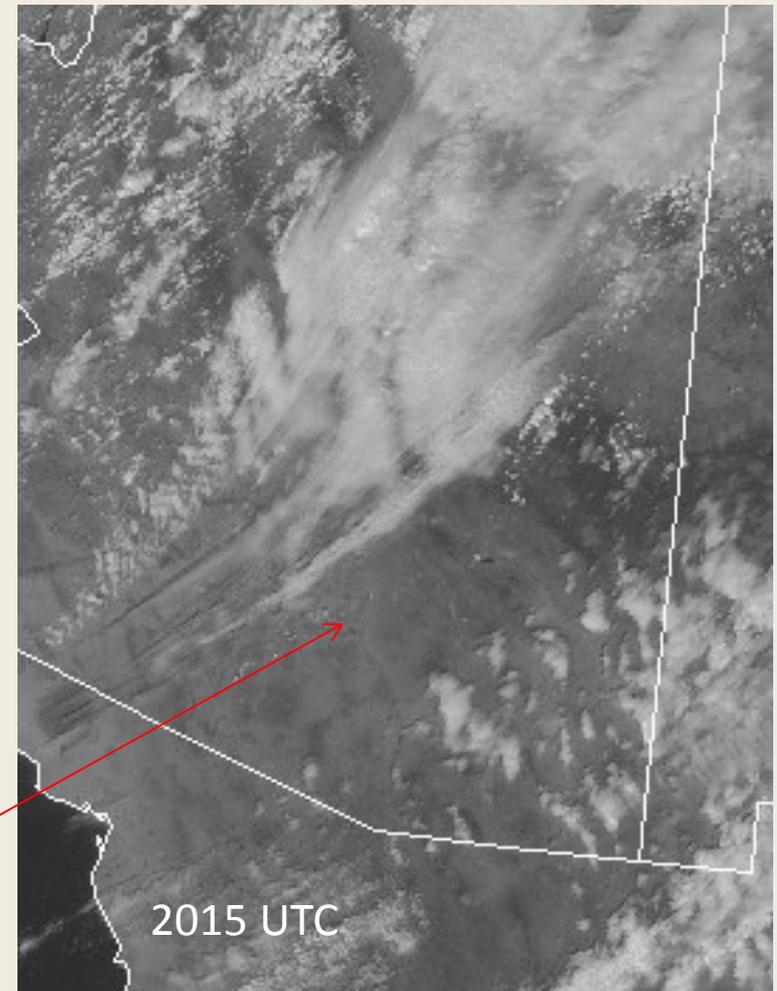
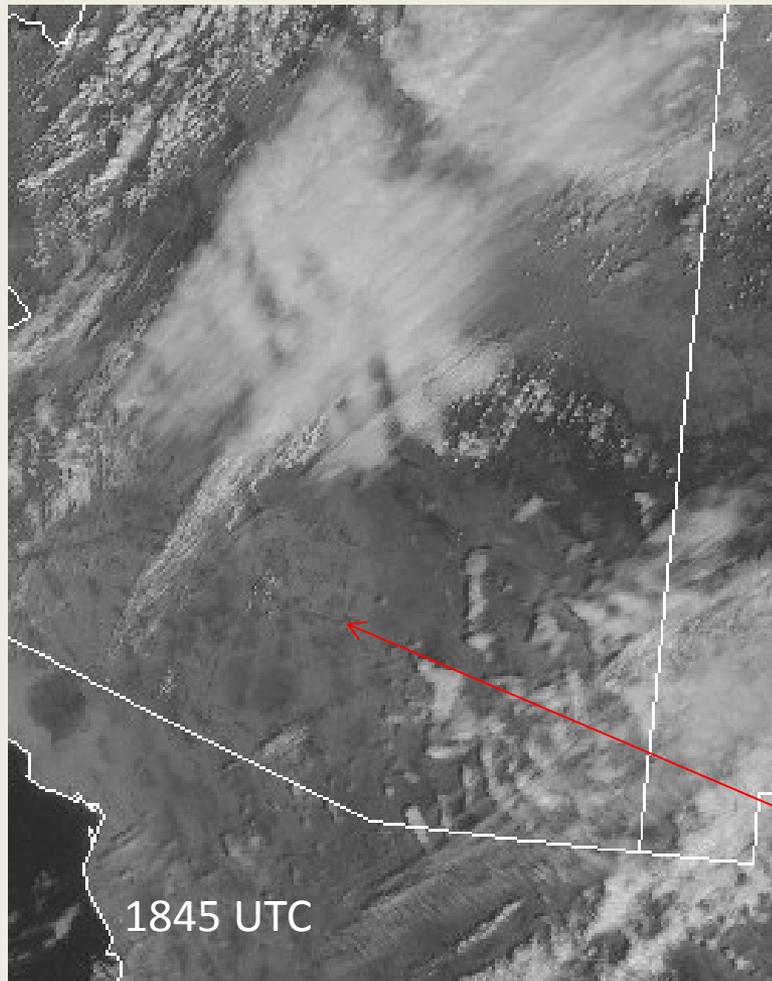
Wind observations from 11 am to 1 pm MST from Casa Grande Airport (KCGZ) approximately 25 miles NW of accident site:

- SW - 210-230 degrees (perpendicular to I-10)
- Sustained 11-17 kts/13-20 mph/6-9 m/s
- Highest gust 23 kts/26 mph/12 m/s

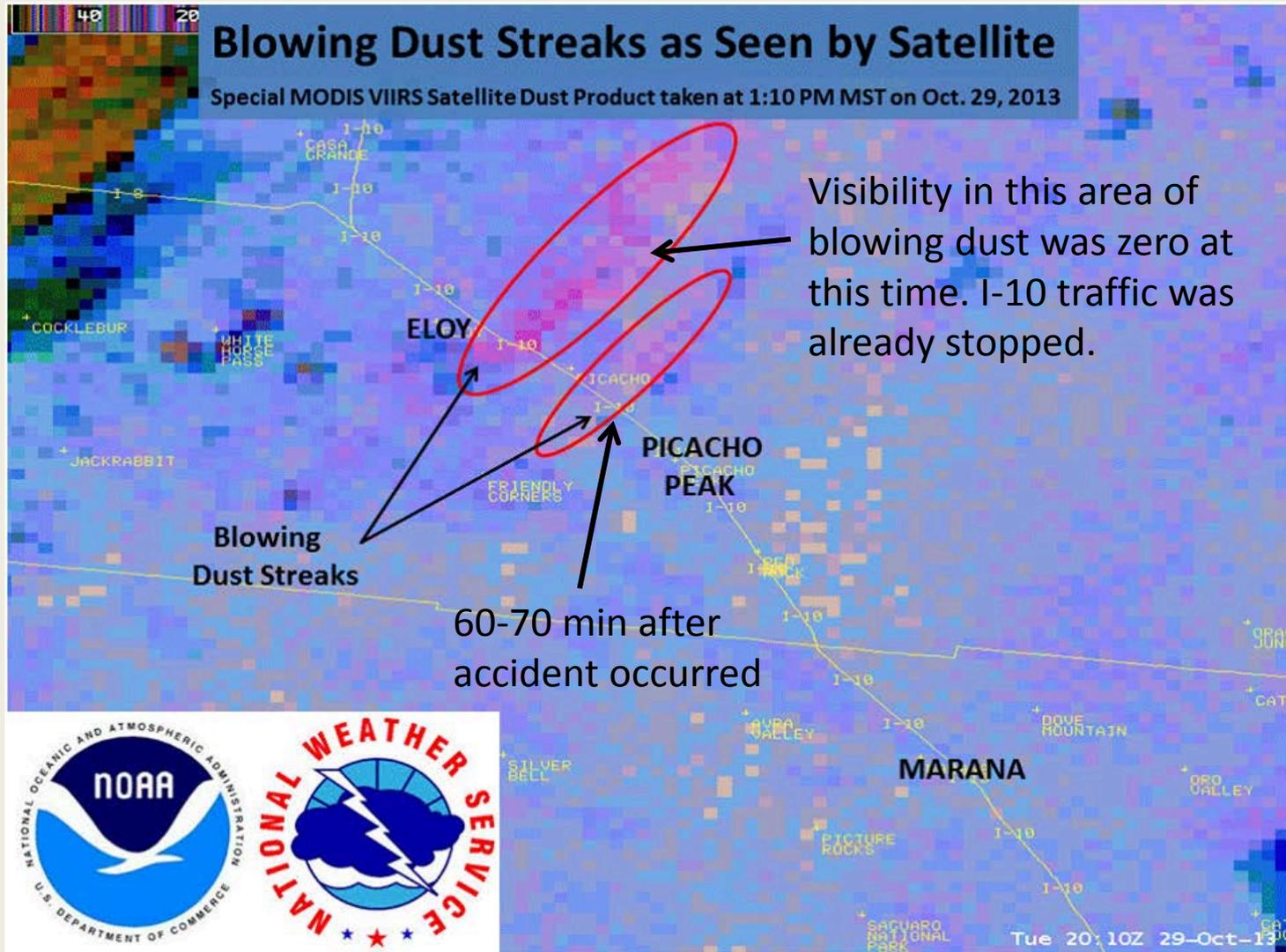


Visible Satellite

Visible satellite indicated a clear sky over the accident site until 2015 UTC when cumulus clouds were observed near an approaching cold front.



MODIS VIIRS Satellite Imagery



Summary

- Moderate SW winds created a localized area of blowing dust that channeled across I-10 in southern Arizona, causing a multi-vehicle fatal accident.
- The blowing dust was detected by MODIS VIIRS satellite imagery.
- The only available image was approximately 1 hour after the blowing dust initiated.
- More frequent MODIS VIIRS satellite data is desired to enhance NWS dust storm warning capabilities.