

WHAT ARE HABOOB DUST STORMS

Dust storms, also known as haboobs, occur when winds from dying thunderstorms push downward and pick up sand and dirt across desert areas.

Haboobs are intense sand-and-dust storms, carried on winds blowing in summertime in desert regions of the world. Haboobs can create problems for travellers, as well as respiratory problems for those caught in them. Dust seems to consume the air, making visibility low.

What's it like to encounter a haboob? *"The wind gusts blew my sunglasses off on my motorcycle ride. It did not feel/look/taste very good from within that cloud of dust! It lasted for about an hour. Then the rain came".*

During the summer months in the southwestern United States – in particular, Arizona – the “monsoonal” flow can provide heavy rains for parts of Arizona. If storms develop away from a dry area, then the outflow and winds from that storm can produce these dust storms. They can form from weakening thunderstorms that are pushed by the winds aloft into lower deserts during the evening hours. The rain may fall and virtually evaporate into the hot, dry desert air.

As this process occurs, it cools the air and accelerates it to the surface, creating microbursts or downbursts. These downward winds, which can spread one or two miles across, can produce winds speeds over 70 miles per hour, which is as strong as a weak tornado.

These strong, downward-forcing winds strike the desert valley floors, and when this occurs, dust gets picked up into the air and is pushed in the direction the winds are traveling at the surface. These storms can spread outwards at great heights and travel dozens of miles away from the collapsing thunderstorm. Visibilities can drop near zero.

OPPORTUNITY EMERGES FROM MARS DUST

We still haven't heard from the Opportunity rover on Mars, which went silent in June when a dust storm engulfed it. Now, at least, the dust has cleared, and we can see the rover!

NASA said on September 25, 2018, that it still hasn't heard from its Opportunity rover on Mars, which had been going strong on the red planet since landing there in early 2004. But, at least we can see it again.

The high-resolution camera (HiRISE) aboard NASA's Mars Reconnaissance Orbiter captured a small object on the slopes of Mars' Perseverance Valley. That object is Opportunity, which was descending into this valley on Mars when a dust storm swept over the region a little more than 100 days ago. The storm was one of several that stirred up enough dust to enshroud most of the red planet and block sunlight from reaching the surface. The lack of sunlight caused the solar-powered Opportunity to go into hibernation.

The rover's team at NASA's Jet Propulsion Laboratory in Pasadena, California, hasn't heard from it since. On September 11, JPL began increasing the frequency of Wake-up commands it beams to the 14-year-old rover.

The tau — a measurement of how much sunlight reaches the surface — over Opportunity was estimated to be a little higher than 10 during some points during the dust storm. The tau has steadily fallen in the last several months. On Thursday, September 20, when this image was taken, tau was estimated to be about 1.3 by MRO's Mars Colour Imager camera.

The image was produced from about 267 km above the Martian surface.



Monster haboob that tracked across southern Arizona on July 10, 2018



The HiRISE camera aboard NASA's Mars Reconnaissance Orbiter (MRO) captured this image on September 20, 2018. The object centred in the square is the Opportunity rover, now visible again for the 1st time since a dust storm swept over it a little more than 100 days ago