



Stormy Skies 2012-2013

Wild Weather for All Seasons

Description of featured material on this video:

After the opening photo and video montage, *Stormy Skies 2012-2013: Wild Weather for All Seasons* begins with segments from three days in which thunderstorms produced winter precipitation. While snow and other winter precipitation types with thunder and lightning are a rare event in most of the United States, this phenomenon often occurs two or three times a winter in some of the mountainous regions such as southern Colorado and northern New Mexico. I was fortunate to document three such events in the 2012-13 winter.

September 29, 2012 – Colorado “Thunderslush” – This storm near Pagosa Springs, CO offered up one of my favorite oddball precipitation types, something I call "thunderslush." It is partially-melted snow or graupel, usually mixed with rain, accompanied by thunder and lightning. Kind of like falling slushballs. In this video segment you can see the "slushballs" hitting my windshield, along with some distant flashes of lightning and some thunder from a closer flash of lightning. There was also a little hail just before I started this video - so rain, hail, and half-melted snow all occurred in the same storm.

November 9, 2012 – Winter Thunderstorm with Cloud-to-Ground Lightning - As a strong trough was digging into the western states, a strong southwesterly flow was pumping moist, unstable air into Colorado. This, combined with forcing from a cold front, triggered thunderstorms over much of western Colorado, with temperatures in the higher elevations cold enough for some of the precipitation to be in the form of snow. Captured at around 8000-8500 feet above sea level, northwest of Pagosa Springs, CO, this segment of the video shows an intense barrage of cloud-to-ground (CG) lightning as graupel (snow pellets) falls and covers the ground. It includes rare footage of a close bolt of CG lightning associated with winter precipitation. While the lightning occurred with the first wave of precipitation, several additional

waves of precipitation followed, producing snow accumulations ranging from around 2 inches at 7000 feet to as much as 20 inches in the high mountains.

March 8, 2013 – Thundersnow! As low pressure approached the Four Corners region from southern California, I was hopeful that the combination of a strong moisture surge and cold upper air would generate an opportunity to observe thundersnow. Indeed, thundersnow was in the forecast for much of northern Arizona and New Mexico and Colorado, and in many areas, that forecast verified. By 2:30, thunderstorms were in the area of Navajo Lake, about 35 miles southwest of Pagosa Springs. When I heard the first rumble of thunder around 2:50 p.m., I knew it was time to head out. This video segment shows the snow rapidly intensifying as long, slow rumbles of thunder are repeatedly heard. More than an inch of snow fell in just 45 minutes. This was the first of several waves of snow on March 8-9 – the next one also included some thunder – that produced eventual snow totals around 6 inches in the Pagosa Springs area but much more in the higher mountains.

The next several video segments document various severe weather events that I observed from May through August in several storm chase outings that covered various parts of Kansas, Oklahoma, and Colorado.

May 18, 2013 – Kinsley KS Funnel Cloud and Rozel, KS EF-4 Tornado – The combination of very unstable air and good directional wind shear ahead of a dryline in western Kansas led to a fairly widespread outbreak of severe thunderstorms. I targeted the area around Greensburg, KS and my patience with an isolated storm that was slow to develop but eventually produced big-time paid off. This 22-minute segment of video shows a high-based funnel cloud associated with the storm near Kinsley, KS and, later and farther northeast, the entire lifecycle of the beautifully-backlit Rozel, KS EF-4 tornado, from the wall cloud before the tornado through its maturity when it was more than a half-mile wide to its eventual ropeout (some time after the tornado appeared to dissipate but did not – the funnel disappeared but the ground circulation continued, with a large funnel cloud eventually re-appearing and continuing for several more minutes until final ropeout). This video segment also includes a spectacular flash of CG lightning that zapped down just behind the tornado during the time the funnel was fully condensed to the ground.

May 29, 2013 – Supercell and Possible Rain-Wrapped Tornado south of Elk City, OK – After my earlier intercept of a squall line with a spectacular shelf cloud in west-central OK (photos are in the montage sections of this highlights video), I moved southwest to catch a tail-end supercell passing south of Elk City, OK, the storm shown in this segment. A tornado was reported about 10 miles to my southwest as I videotaped the rain-wrapped mesocyclone. This video segment also includes more video of the same supercell as it cycles, produces multiple lowerings, and leads to siren activation as a menacing lowering approaches Cordell, OK after dark.

May 30, 2013 – Supercell, Rotating Wall Clouds, and Funnel Cloud, Chickasha to Purcell, OK – I intercepted a supercell near Chickasha and tracked it all the way east to the Purcell area, as it received numerous severe thunderstorm warnings and one tornado warning. As is evident in the video, this storm rotated more than any storm I have ever seen that did not produce a tornado, in the course attracting the attention of a TV chase helicopter, the OU RaXPol Doppler radar team, and lots and lots of storm chasers. The rotating wall clouds and the large funnel cloud that this storm produced were spectacular sights, even though it never did tighten up enough to produce a tornado. (Note: this day's chase is dedicated to the memory of storm researchers Tim Samaras, Paul Samaras, and Carl Young, whose lives were lost in the massive El Reno, OK tornado the next day, not far from the area where this video was captured.)

June 17, 2013 – Two Supercells in Eastern Colorado - This chase day featured pretty much everything you could see except a tornado – two tornado-warned supercells, towering dust devils interacting with storms, gustnadoes, splitting storms, merging storms, hail, high wind and blowing dust, rotating wall clouds, flash floods, and some real eye candy. A good example of how you don't have to see a tornado to have a really enjoyable chase day. This video segment shows a towering dust devil interacting with the first storm, then later a gustnado, a rotating wall cloud, and even later, some wild

outflow-associated cloud motion - all from the same storm. Then on to the second storm, as it blasts me with intense blowing dust from wind measured at over 70 mph a short distance from where I was filming.

June 18, 2013 – Severe Storms on and near Colorado’s Palmer Divide, and some cool dust devils, too – Another chase day when I was able to document a wide variety of weather phenomena. The setup looked favorable for supercells and tornadoes around Colorado’s Palmer Divide, but too many storms formed too early, too far west, and in too many places for that to happen – the only tornado of the day was at the Denver airport, of all places. But looking at many storms, often at a distance, I was able to document a lot of interesting weather that is all in this video segment – strong, fast-moving dust devils nearby, distant gustnadoes and dust plumes associated with thunderstorm outflow, some interesting cloud motion and a possible funnel cloud, and a violent microburst with an associated rainfoot and an interesting sunlit outflow cloud formation.

August 10, 2013 – Lightning, Hail, and Wind from a Severe-warned Storm in Archuleta County, CO – As strong monsoonal flow interacted with the jet stream and a diffuse stationary front, strong storms developed in southwest Colorado. This video segment shows some spectacular lightning over the San Juan Mountains, followed by a heavy barrage of hail and strong wind as the storm regenerates overhead on its outflow boundary in northern Archuleta County, Colorado.

Stormy Skies 2012-13: Wild Weather for All Seasons ends with a photo montage including photos and/or video captures from all of the storms in the videos above, and many more that occurred in eight states in 2012 and 2013. This includes numerous spectacular daytime and nighttime lightning photos, both photos and video captures of the Rozel, KS EF-4 tornado, beautiful winter snow scenes, photos of the billion-dollar hailstorm that hit the St. Louis area in April, 2012, pictures of menacing shelf clouds and rotating wall clouds, and much more – all set to music selected to fit what’s going on visually.