Camera Clips

Bi monthly publication

January 2012

From the Editor

James Allan

One year ends, and another begins. I was a bit lazy over summer and have not put out a special edition with the results of the end of year competition, as in previous years. You will however find that Chris has put together an excellent article with photographs by Ray Goulter on the club website. Well done to all of the award winners, in particular Jo Tabe, Helen Whitford and John Vidgeon who have done particularly well.

Over the summer break Chris has arranged a successful exhibition of photographs from the club at the Stirling library. This was both well attended and well received. There is a lot of hard work in putting on such an exhibition, thanks to all who helped, especially to Chris Schultz. Again there is an excellent article on the club website including a list of contributors.

The other club event that took place over the summer months was the December 31 day challenge. This event was reinstated by our president at the 12th hour, but none the less attracted a good range of participants. There is a short photo-essay on page 2 of Camera clips. Also an image from the challenge, "Lazy Morning" by Yvonne Sears features as the banner of this months Camera clips.

We have had the first meeting this year which was an Audiovisual night. This was a new format for our club and a great opportunity to see the various creative endeavors of the members. The presentations, mostly around 5 minutes. took us on a trip to Kaikoura and the subantarctic islands of New Zealand, to the Sweeps Festival in Rochester, Branxholm in Tasmania and Paris in France. We had a photo-essay on the colour red, a retrospective of Helen's best of summer (best is a good word), a presentation of images superimposed on wood grain and 40 minutes of snaps in Marks garden. It was interesting to see the range of ideas. People used many differing software programs to create these presentations. I believe that a workshop on Audiovisual presentations will be conducted later in the year.

Our first competition will be next fortnight with the "Mitchim council area" being the set theme.

This edition of Camera clips has a number of articles. I have put together a small photo essay about Olegas Truchanas and Peter Dombrovskis (page 4). This topic was as a result of a radio program on ABC radio which reminded me of the important political impact made Tasmanian Wilderness Photographers. The main article is on the topic 'noise' which was suggested to me by Chris Schultz. I think this might have been after a number of my images were particularly noisy. Thanks for the suggestion Chris. I have learned a lot in preparing this article, I hope that it is useful to you also. We have an addendum to our article on Fox Talbot last month as John Sansome sent me copies of the pinhole camera images that he created in his photography course. Lastly I have an article about lightning photography based on an excellent image by Michael Davidson. Check out the original image on Flickr.

Noise

By James Allan

Noise is that image on my old analogue TV after the television station stops transmitting. It is a grainy snow storm that hisses and morphs endlessly. I have heard people say that it is caused by interstellar cosmic radiation. This may be true, but contributes only a small amount to the noise. Most of the noise is random unintended sensor activity. It is caused by the inadequacies of the sensor, the electronics and the TV screen. It appears to be chaotic! It is the antithesis of the signal, which is the intended reception. In fact most images have noise. It is a problem with sensors. (Even our ears occasionally produce unintended noise or tinnitus) There is a continuum from complete noise at one extreme to complete reception at the other. When I take my TV camping I often have a poor signal, the picture can be discerned only vaguely hidden in amongst the snow. The amount of noise compared to signal can be changed by twisting the antenna, or tightening the cable socket connection. Even with good reception there was a very faint hint of noise in the picture giving it a transmitted quality. Now that I have digital TV I have crystal clear images with no apparent noise whatsoever.

The digital camera also generates noise. The light sensors randomly produce signal when none is present. The electronics may add unintended signal to the picture. It all appears as noise. Like when I am camping with my TV, the noise is most apparent when the

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Contacting a member from the club; This month Mark & Jenny Pedlar :mnjpedlar@biqpond.com

Upcoming Events

January 19—Tell a story in 5 minutes—Bring along your digital or slide audiovisual presentations

February 2—Competition—Photos to be taken in the Mitchim area

February 16—Workshop—Portrait in natural lighting

March 1—Competition—Man vs Nature

March 15—Workshop—Low light

March 29—Competition—Book Title

April 12—Speaker—(TBA) - ? Lindsay Poland—Getting the most when printing images

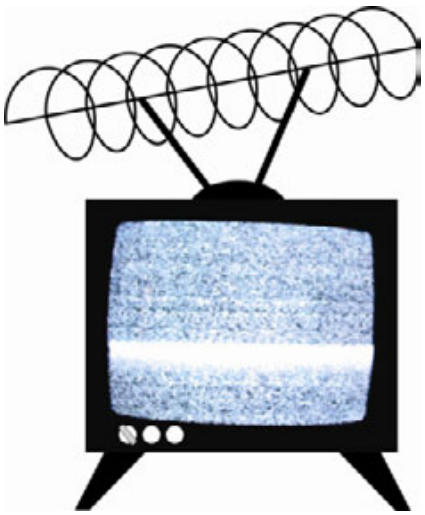
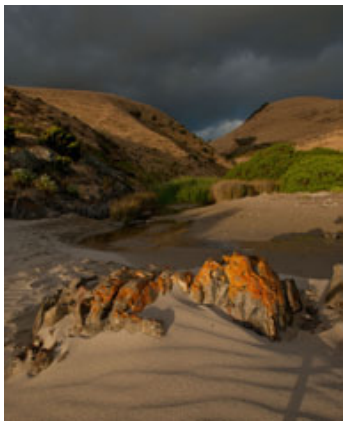


Photo-essay: **December 31 Day Challenge**










I don't know if you have been watching the club website this last month. It has been sponsoring the December 31 day challenge. This is the second year that we have run the challenge. I have found it to be an increadibly creative and innovative experience. I have been inspired by the images, perhaps more so than by the club competitions. Basically the challenge is to post an image every day for the 31 days. Most contributors however achieve only 5 to 10 days during the month. However the real success has been in creating a forum where a lot of people are contributing, and where there are a lot of comments and support. Also there is a dialogue where people inspired by one photograph have attempted their own version of the image. This artistic dialogue has been exciting to watch.

I think perhaps the highlight has been Yvonne Sears black and white portraits of her girls. We have seen similar portraits from Ashley Hoff and Helen Whitford. I have taken the liberty to use the key image, "Lazy Morning" by Yvonne as the banner for this months camera clips. Above another of Yvonnes portraits, Natural light.

On this page starting at the top left, Michael Davidson with Salsify. There were a lot of responses to this abstract macro of a dandelion seed head. Next David Gardiner, the eye. (David is a conact of mine from Queensland) Hilary Fran, Tibetan singing bowl. It's worth reading the description of this image. Chris Schultz, rusty chain, one of a series he had of old Port Adelaide. Jo Tabe had a phenomenal response to this tone mapped image of the pier at Port Lincoln. Andy Steven a cycling friend of mine, Blow hole Beach, Deep Creek. Eric Budsworth, red flowering gum in full bloom. Tom Allan with a concert photograph of the Burning sea. Jim Trice, Bumbling ant. If you haven't looked at Jim's work yet, take some time and check out his fantastic insect and native flower macro work. Matt Carr posted only a few colour images this December, but his caterpillar 2 was a fantastic insect study. Lastly Adrian Hill, leaning on a lamp post watching the girls go by. (I think that it is actually Adrian doing the watching). I love the range of colours Adrian has captured in this night scene.

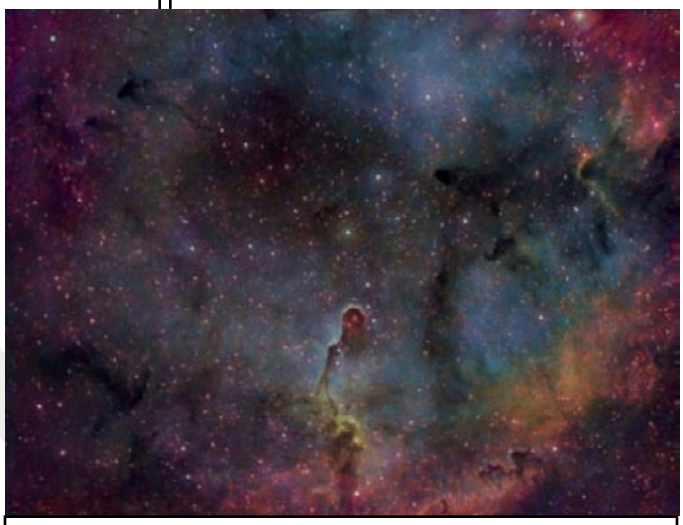
Noise

from page 1

By James Allan

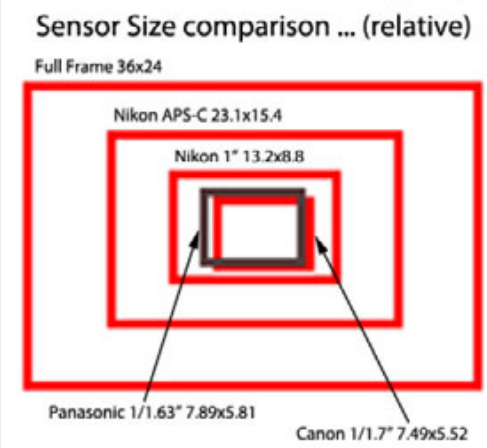
signal is weakest. Perhaps the most difficult digital photography is undertaken by astronomers whose images are only barely discernable above the background noise. Low light photography really puts the camera to the test. Interestingly astronomers can produce beautiful accurate and low noise images. They do this through good optics, good sensors and image manipulation. Noise reduction algorithms have added greatly to these improvements. Some of the tricks are applicable to digital photography.

So with digital photography we strive to capture images that maximise the signal and minimise the noise. Below I hope to cover the important points.



Deep space photograph of the Elephants trunk. Over 20 light years long it winds through the emission nebula and young star cluster complex IC 1396, in Cepheus. The data for this image was gathered over 5 separate nights in June 2011. Ken Mackintosh. http://www.flickr.com/photos/42731607@N08/5932074996/in/photostream/

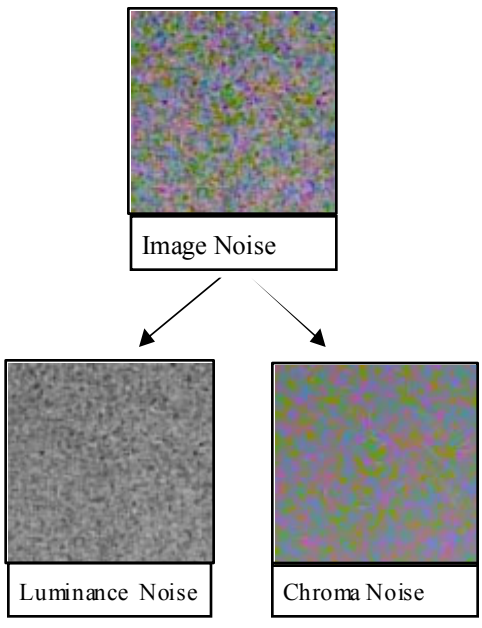
The sensor size. I was erroneously under the impression that the more mega-pixels the better the quality of the image. Not so. The noise produced from a sensor is actually related to it's physical size. A 10mm 18Mpx sensor will generate more noise than a 30mm 12Mpx sensor. In fact at these small sizes it seems that more mega pixels equates to more noise. Therefore the dSLR's have a distinct advantage over the compact cameras, mainly because they are bulkier. You probably will not be aware of the difference in normal lighting, but when it comes to low light the dSLR's will consistently out perform the compact cameras. The new Sony Interchangeable lens cameras offer a compromise where a large sensor and a standard lens is attached to a slim body without bulky mirrors and through the lens view finding.



ISO and Shutter speed. Any shutter speed over 1 or 2 seconds will generate noise. It is just a time factor. If you clock up the ISO setting you can capture images in low light at faster shutter speeds, however the penalty being more noise. With my camera (Panasonic Lumix) the noise created with the ISO over 400 makes the picture not worth taking. With a better sensor (and in camera noise reduction), good images can be achieved with an ISO over 3200 (Nikon seems to have a reputation here). With ISO and shutter speed you are between the devil and the deep blue sea. I guess a light lens with a large aperture will allow you to get away with a favourable ISO and shutter speed. If forced to choose I usually prefer to use longer exposures than higher ISO settings.

Image manipulation. Many manipulation processes will actually exacerbate noise. For instance sharpening of details will also sharpen the noise and make it more apparent. Contrast enhancement through curves will increase chroma or colour channel noise. For example take a photograph of the blue sky. The image should be a nice even tone or gradation of blue. If you open just the red channel (there is very little red in a blue sky) suddenly you have an unattractive blotchy appearance. You don't want to enhance the red channel and reproduce this blotchiness on your lovely gentle sky. However that is what you will be doing if you try and darken the sky with some of the enhancement tools.

There are ways to manipulate images and minimise noise production. The Unsharp tool provides a threshold that will allow you to sharpen just areas with greater difference in luminance (the detail) and leave unaffected more subtle variations (the noise). Using selection tools or layers you can sharpen just the detailed areas and leave large expanses like sky unsharpened. Skies can be darkened by adjusting luminance but not colour values.



Noise reduction. Although noise may look chaotic, often it is not. Understanding the physics of how noise is produced has allowed tools to be produced that filter out noise. There are different types of noise.

The principle distinction is between black and white noise (luminance) and colour channel noise (Chroma). Most people find Chroma less tolerable than luminance noise. These can be reduced independently to achieve a desirable effect.

Gaussian noise refers to the way in which a sensor will over or under read a light value. Mostly the value is quite close to the true value, but will over or under read to a greater extent on rare occasions.

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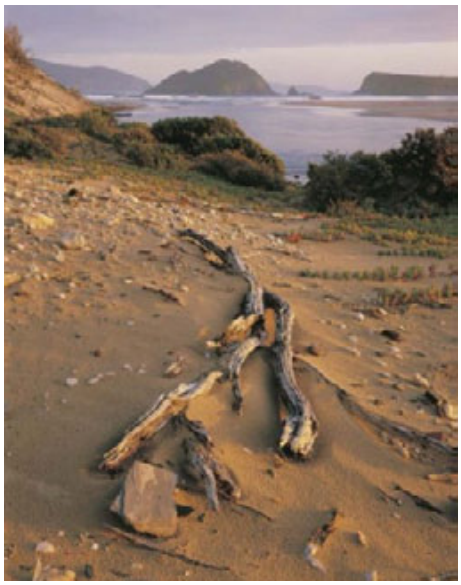
Photo Essay—Tasmanian Wilderness Photography



It is amazing the power of photography to motivate public opinion. I am aware of Ansel Adams starting the National Parks movement in the United States and of the war photo journalism in Vietnam and other modern conflicts. However a very significant chapter of photo history was written in our country, in the Tasmanian wilderness. The photographer was Olegas Truchanas, an expatriate Lithuanian who started giving public talks to oppose the flooding of lake Pedder. (bottom left) In a high school hall he would talk to a running slide show of the pristine wilderness. He ran two slide projectors, one image fading as the next was coming into focus. At the time this was brand new technology. To quote Olegas *"This vanishing world is beautiful beyond our dreams and contains in itself rewards and gratifications never found in an artificial landscape or man-made objects."* The effect was hypnotic and a wilderness consciousness was forged in this country. Unfortunately it was not enough to save the lake.

A decade later the Franklin river was under threat. Peter Dombrovskis (of Latvian parents) steps into Olegas's shoes and produces an iconic photo, 'Rock Island Bend' (above left). This image as a poster graced the family rooms and bedrooms of an environmentally aware generation. It was this campaign that not only saved a river but also played a part in toppling the Federal liberal government under Malcolm Fraser. Peter went on to develop a portfolio of images that have been sold for a decade as calendars and posters.

Both Olegas and Peter died in the beautiful but treacherous Tasmanian wilderness. In 1972 Olegas slipped into the Gordon river and drowned. Peter died in 1996 while on a photo assignment in the Western Arthur Range.

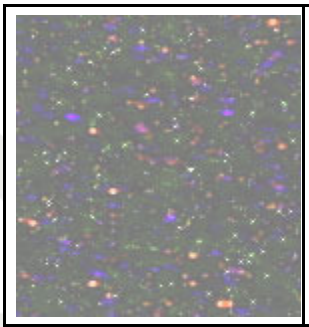
Noise (from page 3)

By James Allan.

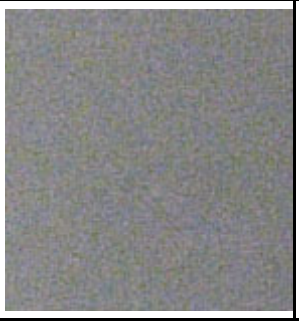
The distribution will fit a bell curve or Gaussian distribution in which the average will represent the true value. Thus a noise filter that averages readings will remove noise. (It may also remove fine detail).

Fixed pattern noise refers to the fact that some sensors will always read high (or low) in comparison to others. This is highly predictable. Some cameras will take a black photo (with the shutter closed) and subtract the resulting image from the exposed image to remove fixed pattern noise. This can also be done in photoshop.

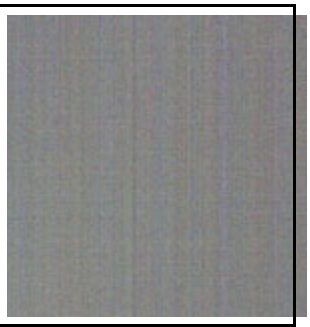
Salt and pepper noise refers to bright or dark specks that stand out markedly from the background. It is quite simple to identify these and replace them with values from surrounding pixels.



Fixed Pattern Noise
Long Exposure
Low ISO Speed



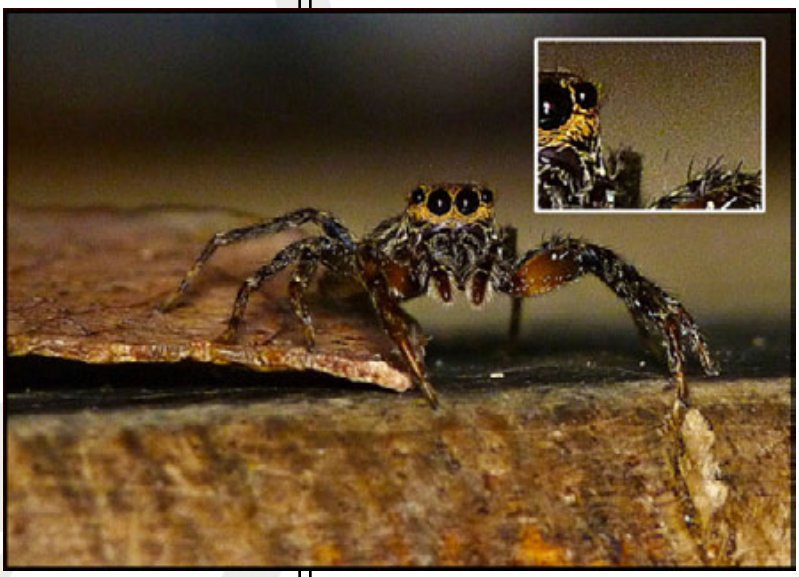
Random (Gaussian) Noise
Short Exposure
High ISO Speed



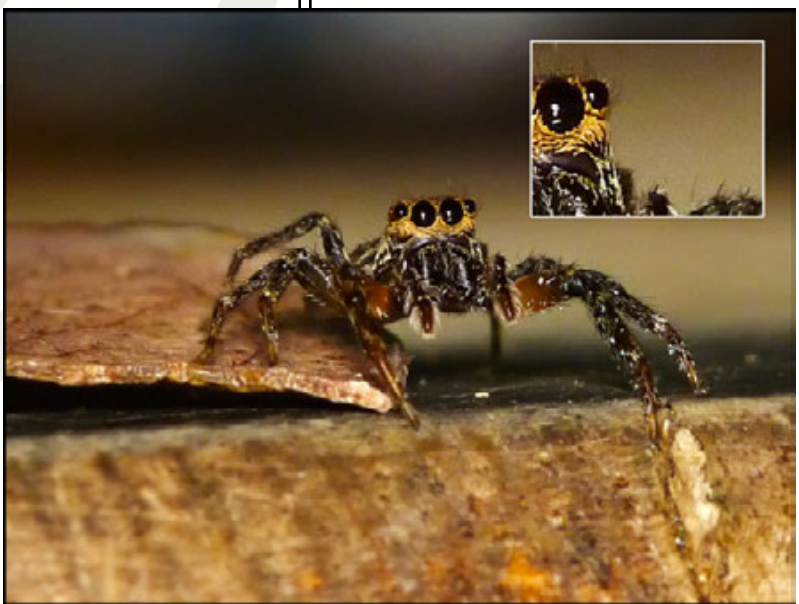
Banding Noise
Susceptible Camera
Brightened Shadows

There are good noise reduction programs that will automate all of these processes. Perhaps the most notable are Imagenomic's Noiseware and PictureCode's Noise Ninja. I don't think that the photoshop noise reduction quite compares to these independent programs. I have found that it is preferable to run noise reduction before you start to manipulate the image. It is much harder for these programs to remove noise once it has been sharpened and enhanced. Also it is wise not to use noise reduction in parts of the image that have fine and sharp detail which could be lost in the processing.

Adding noise. Sometimes removing too much noise can give a plastic unauthentic look to a picture. You might notice this when you blur a background to make the subject stand out. A sense of authenticity can be regained by putting some noise back into the picture. Also a small amount of noise increases the illusion of sharpness (acutance) This can be done with a noise adding filter (photoshop), or by blending the noise reduced picture with the original image. Noise deliberately added to a picture is sometimes called dither.



To demonstrate these principles look at my picture of a jumping spider to the left. The top picture is the image I put on the Flikr site 12 months ago. I had sharpened this in Photoshop with the unsharp tool and adjusted curves. Matt Carr commented on the excessive noise (see the insert). Below I reprocessed a similar image from this series. Before processing I ran the NIK Define filter for noise reduction. Subsequently I used the same steps, however I masked the sharpening tool to exclude the background. Can you tell the difference?



Well there you have it. Not all judges notice noise. I guess it depends upon their eyesight. Some might mistake it for grain which at one time was thought to be attractive. If the judge starts complaining about the noise in your pictures, hopefully here are some tips that will help you to correct the situation. It is not always necessary to buy the biggest and most expensive brand of camera. There are many tricks to reduce noise.

Calotype demonstration — John Sansome

You may recall in the last edition of Camera Clips we had an article from a photographic lecturer from Wiltshire, John Sansome. John discussed the making of a Calotype similar to that used by John Fox–Talbot. This week John sent me some copies of the films he took during the course. To quote John;

"I have used his method as a part of a photographic course I ran for several years. On the first session of a basic course, I would put a sheet of photographic paper in a large 'pinhole' camera we had constructed from a cardboard box. I would place the box on top of a filing cabinet overlooking the group and start the exposure. After about 35minutes (from experience), I would process the paper. At that point I had a paper negative, the next week I would make a print by sandwiching the negative with another sheet of photographic printing paper and make a positive print. This would show the room, with lots of swirls where the group had moved around during the first session. It was always a hit with the groups, and a graphic illustration of how the process worked."

At the time I asked John if he could send images from his pinhole camera. Thanks John for undertaking to do so. I think if nothing else I enjoy that positive—negative aspects of the image. The motion blur captured by the pinhole camera is equally evocative. I think it would be fun to build a pinhole camera and try this experiment ourselves.

Lightning Photography — Michael Davidson

One image on the Flikr group last year that really impressed me was a bolt of lightning taken by Michael Davidson during a spring storm in November In his own words;

"A storm blew in over the Gulf today. Managed to cop a few bolts on it's way through, ODC: Soft Light."

Also,

"Yep just happened to be sitting on the verandah in the middle of the night, with my camera. Bing, bang, bosh there it was !!"

and when talking about the location of the lightning strike,

"I think Windy Point Restaurant might have a hole in it !"

I have always wanted to take such a picture. I asked Eric about it several months ago, and he said;

"It's not for me, Sitting out at some high spot like Windy Point or Mt Lofty in the middle of the night while it's raining during a thunderstorm. Sounds like a recipe for disaster,

My research suggests the following technique.

Firstly find a suitable location. Ideally in a sheltered spot eg a verandah with a good view of the sky, preferably with interesting silhouette features. It is harder taking these shots with wet equipment. Set the camera on a tripod, with a cable release and set to a bulb setting. Use a wide lens eg 28mm. Select ISO 100 and choose a midrange aperture say f5.6. Open the shutter and wait for a bolt of lightning. Close the shutter immediately the lightning occurs, or the exposure time is too long for the ambient light (say 1 minute). Have a look at the image and adjust the aperture to improve the exposure. If you don't have a bulb setting you may have to set up 20—60 second exposures and keep firing away until you catch something. Not all storms are suitable. Perhaps the best storms are those fronts coming across the bight with a short but intense lightening display 15 to 20 minutes ahead of the rain. Of course it has to be dark. It requires a lot of skill and luck to expose these shots in daylight.

I will be interested to speak to Michael and see how he took this photo and if he has any tips.

Reference: http://www.weatherscapes.com/techniques.php?cat=lightning&page=lightning