

PRO ZONE

Learn the techniques and get tips from the professionals

Copper Smelter,
Utah

THE SKY AT NIGHT

As the summer draws nearer and the evenings grow warmer, why not step outside to capture the night sky? National Geographic photographer and master of night photography **JIM RICHARDSON** shares his passion, tips and advice. By **SEAN SAMUELS**.

Jim Richardson was immersed in photography from a young age. Growing up on a farm in Kansas in the 1950s, he quickly learned to make use of the cameras his father, a keen amateur photographer, regularly brought home with him. He would trawl the pawn shops

that lined the freeways between Kansas and Texas – the route he used to transport eggs between the two states – and it was not long before Jim had access to a good collection of cameras including a Kodak Retina 3C, a Zeiss Ikon Ikonoflex and a Voigtlander Vitessa L. He used

these tools to photograph everything around him, from trees, to his dog and the night sky.

Jim loved to experiment with his photography. One memorable success was when he turned a pair of binoculars into a telephoto lens when he was 12.▶

“THE STORIES JIM CHOOSES TO DO COME FROM AREAS IN WHICH HE HAS SOME EXPERTISE, THINGS HE IS INTERESTED IN AND FEELS HE CAN MAKE A CONTRIBUTION TO.”



Detroit highway lighting

Jim discovered that, if you squeezed the binoculars together and placed them in front of the Zeiss Ikonflex, you could get one lens lined up with the viewing lens and one lined up with the taking lens. He also worked out that, if you put the camera close to the eyepiece of a microscope, you could photograph the magnified subject matter. Jim was also experimenting with



BIOGRAPHY

Jim Richardson photographs for *National Geographic* and is a contributing editor of its sister publication, *Traveler* magazine.

He has photographed more than 25 stories for *National Geographic* and gives talks about his work internationally. He lives in Kansas, US. www.jimrichardsonphotography.com

Kodak Royal X Pan film, which had an ASA of 1,250, and pretty soon, he was urging his father to bring back a darkroom kit from his travels.

Finally in one of these pawn shops he picked up a darkroom kit with an enlarger, a bunch of old paper, packets of developer and the like. “At night I would set it up in the kitchen, and while my parents were watching *I Love Lucy* in the other room, I would be developing prints. It’s pretty magical the first time you see a black and white print come up in the safe light.”

By the time Jim reached high school, he was already a good amateur photographer and the idea of becoming a professional appealed.

“I saw an image of Black Star photographer Ted Spiegel’s kit laid out like peacock feathers. It was quite romantic; he had all these Nikons and extreme telephoto lenses and fish-eye lenses, stuff that was

brand new in the sixties. He was also telling stories about riding in helicopters and taking trips on camel trains across the desert. It was pretty cool.”

But drawn as he was to the world of photography, Jim took a more traditional path and spent the next few years at Kansas State University studying a number of subjects from electrical engineering to education to history, concentrating on psychology in his final years.

In 1968 he tried out for the Olympic rifle team, but was not selected, and once he realised what psychologists did every day when they went to work, he knew he didn’t want to do that anymore. Jim was starting to feel a little lost.

Fortunately, he had a friend who worked for the student newspaper. It had an opening. Jim joined journalism school and stayed in college for another year taking photographs for all the student

last 40 years; Magnum photographer David Allen Harvey; Pulitzer Prize winner Brian Lanker; David Griffin, who is now the director of photography at *National Geographic* and Sarah Lean, who is now a picture editor at the same magazine.

“We were all about 22 years old at the time. It was a boiler pot of young photographers with huge ambitions and the opportunity to really do something. During those years a number of people came and went including Susan Ford, President Gerald Ford’s daughter. At one point we had the Secret Service following us around on assignments. We learned a lot.”

All the photographers were required to publish around five picture pages a week from a Sunday magazine article, another full-page Sunday feature layout and then three or four picture pages a week. This meant any one photographer was always shooting a picture story or two a week, doing the layouts, writing the headlines and captions and even setting the type. In the time he was with *Topeka Capital-Journal*, Jim shot around 1,000 picture stories.

Jim found he was greatly inspired by the documentary work of Eugene Smith, Henri Cartier-Bresson, David Douglas Duncan and Gordon Parks, and so he returned to rural Kansas and embarked on a personal project alongside his work for the newspaper. Over the next three years he photographed adolescent life in a small town. This work became the book *High School USA*. He also began photographing the inhabitants of another small town called Cuba, a project that lasted 30 years. It was this social documentary work the editors at *National Geographic* were familiar with by the time he started freelancing for the magazine and was what got him through the door.

“I think the essential thing about this work was going back to things most people would consider ordinary and making interesting images in the same way a novelist will make interesting stories out of everyday life. My newspaper training was invaluable in this respect because I knew my images had to stand on their own. You meet some photographers and if an H-bomb isn’t going off in front of them they can’t take a picture. Generally, newspaper photographers can go in and make a picture out of nothing.”

Another important factor in being accepted by the magazine was Jim’s wish to do photography that had lasting value. That was very important to him. The rest of his work was news based, which meant his images were great in the afternoon paper, but worthless the next day. He wanted to

create pictures that had greater staying power than that. This meant he took images that had a more universal appeal, something all staff photographers at *National Geographic* must be able to do as their images are not going to appear in the magazine for a year and a half to two years, meaning they can’t rely on the news value of the event to carry the pictures.

“If I was given an assignment right now, I would plan that I’m probably not going to photograph it this year, that I’m going to start shooting next spring or next summer and finish in the autumn of 2011 with the shots appearing in the magazine in the spring of 2012.”

National Geographic is one of the few magazines that will send photographers to eight or 10 countries to shoot pictures for one story. It is also one of the few magazines to grant its photographers up to three months in the field.

But while this may seem like a long time, there is a lot more to do than simply take arresting images.

“This is not just the time you have to take pictures, but also the time you have to get to grips with the story in your own imagination and learning, to fully explore the issues and figure out how to take pictures of things no one has ever photographed before. How to make a story out of it over just finding a location and taking a bunch of pretty pictures of it, that’s the hard work.”

At *National Geographic* a picture editor is assigned to every story and it is their job along with the photographer to determine the visual narrative of the piece and then to decide where the photographer needs to go to get the story and how much it’s going to cost. The photographer considers all of the travel logistics, the shot list and the finding of the subjects. There isn’t someone sending them a shoot list.

“Doing those long-term documentary projects was great training for this because I had to learn how to tell a story – how you make all these shots hang together. Something I learned was you have to adopt a consistent graphic style. You can’t be really extreme on one shot because it will stand out from the narrative.”

Another skill he learned was the ability to sell a story idea and then follow through on that pitch. This has certainly helped with *National Geographic*. Around 70-75% of the stories Jim proposes for the magazine are approved. The stories he chooses to do come from areas in which he has some expertise, things he is interested in and feels he can make a contribution to.

“I’m 62 years old now and am at a stage

Photographing lightscapes at night



Central Park,
New York

in my life when I want my pictures to do something. It's not enough to just make nice stuff to put on the wall; they have to do real work and make a difference. If I am going to do anything with the skill I have been given, I need to pay attention to stuff that really matters."

The light pollution story is a good example of this. As well as being a keen photographer as a boy, Jim was an amateur astronomer and he was all-too familiar with the effects of light pollution. He just had to wait until the low-light technology was available.

"I switched to digital with a Nikon D100. There were only about three or four photographers at *National Geographic* experimenting with digital at the time and the general feeling was we were years away from digital matching film in quality. For me, this concern lasted about as long as it took me to take a D100 file and make an 11 x 14 print. It was a rapid collapse after that and I'd say there is hardly anyone working on film at the magazine today. I have no nostalgia for film. For what I need my pictures to do, digital is so superior and so effective, it just opens up so much more of the world than I could ever capture on film."

Prior to the arrival of digital, if low-light film images didn't look good, the photographers didn't shoot those situations.

"This was how we edited the world. If it didn't look good it didn't make the magazine, so you went out photographing the pieces of the world that would give good results. So either we left out the parts of the world illuminated by fluorescent lights, which left out a fair old piece of the world, or we left it green as a metaphor for the stark reality of the

modern world – the dingy-dark-dream-of-the-factory-landscape-we-live-in type of pictures – which were effective, but also, in many cases, simply not true."

Jim started this light pollution project in early 2008 and spent 30 days driving across the US and Canada from location to location. His road trip took him from LA to Toronto and everywhere in between. He decided to drive because of the flexibility it afforded him. He couldn't be sure the conditions would be right when he wanted, which ruled out flying with its restrictions and regimented routine. So he packed his car with the equipment he needed and simply started driving. Having already done his research, Jim knew he needed two kinds of pictures – the beauty of the night skies and light pollution. He would drive in the day and at night shoot whichever conditions he had before him.

"I had no planes to catch and no security to go through, I could listen to audio books all day while I drove and shoot at night. It was a nice way to take pictures."

Jim wanted a city at night emitting light. After researching extensively on the internet, he knew Chicago was the only city where he could do this because of the way it is laid out. Once he arrived he then had to secure a plane and a pilot able to work around the air traffic controllers and their restrictions. They flew at 10,000ft for the shot above right, which was taken at ISO 4000, 1/13th of a second at f/2. No mean feat from a small plane.

"Thankfully, we had still air and if you don't let your arms touch the airplane, you won't pick up the vibrations. I've run two pages of images in *National Geographic* before which I have shot at 1/8th of a second this way. It can be done."

Jim made 20 passes for this picture.



Chicago

"I'M NOT GOING TO GO UP IN THE AIR AND SEE IF I CAN GET THAT PICTURE. I KNOW I HAVE TO GET IT. I'LL GO AT IT THREE OR FOUR NIGHTS TO GET IT. I DON'T CARE HOW MANY THOUSANDS OF BAD FRAMES I HAVE."

As soon as he was in the sky and saw the clouds coming in, he knew this was the image he wanted. He had to make enough passes to capture an opening in the clouds over the downtown core of Chicago. His success is in some part down to training the pilot. Often there are elements of the plane in the way of the shot such as the strut, the wheel and the tail and there's a limit to how wide a photographer can go. Usually about a 24mm lens is the limit.

"There's a very precise angle you can shoot at because you can't move your camera around, so the geometry of the plane has to be such that it is going by the right place at the right angle and heading so you can frame your picture properly. So what you do is go around and around and each time you tell the pilot we need to be further to the left or to the right, but on the same heading. Or you say the position was correct but the heading was 10 degrees off. Then all of a sudden everything will be framed up and you use the motor drive.

WHAT'S IN YOUR KIT BAG?

- ▶ Nikon D3
- ▶ Nikon D3x
- ▶ Nikkor 14-24mm F2.8
- ▶ Nikkor 16-35mm F4
- ▶ Nikkor 24-70mm F2.8
- ▶ Nikkor 24mm F3.5 PC-E
- ▶ Nikkor 70-200mm F2.8
- ▶ Two Nikon SB-800 flashguns
- ▶ Nikon SU-800 Infrared Remote Commander
- ▶ Small LED flashlight
- ▶ Selection of Singh-Ray split ND filters
- ▶ Honl flash modifiers, Velcro straps and filters
- ▶ A short Gitzo carbon fibre tripod
- ▶ Really Right Stuff BH-40 ball head with the PCL-1 for doing pans
- ▶ Really Right Stuff MPR-CLII slide for moving the lens over the nodal point for doing pans
- ▶ 15in MacBook Pro
- ▶ ThinkTank Airport Acceleration backpack

JIM RICHARDSON

You turn that thing on and hope it works."

Once Jim is happy he has the shot he wants lined up, he takes a lot of frames. Using a motor drive he will shoot 15-20 pictures, all the while utterly aware of the need to be still. At these slower shutter speeds he makes sure he pans so the image stays at a constant place in the viewfinder. He picks out something to focus on and stays with it.

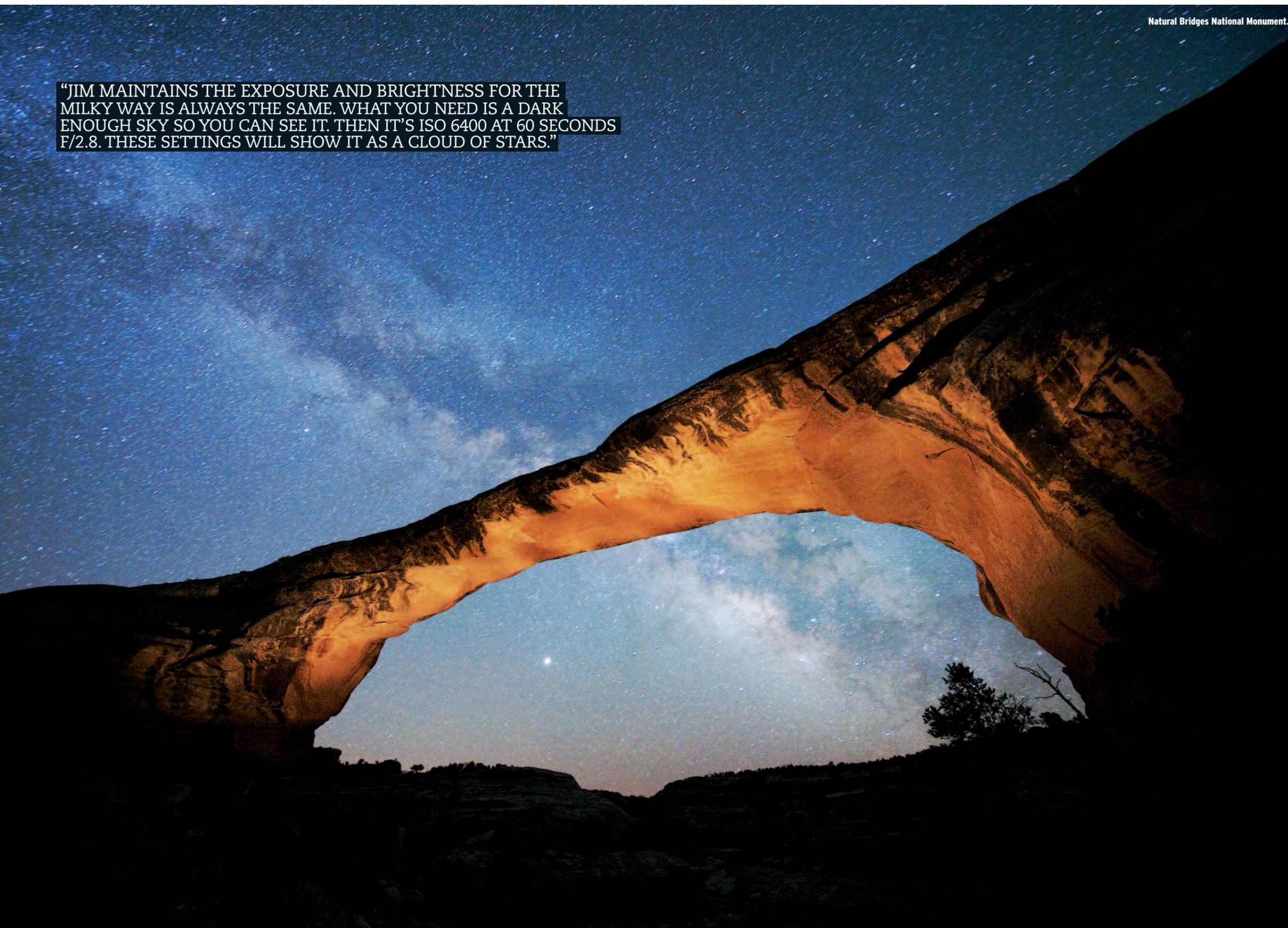
Jim makes a serious commitment to this type of photography and to the shot he is after.

"I'm not going to go up in the air and see if I get that picture. I know I have to get it. I'll go at it three or four nights to get it. I don't care how many thousands of bad frames I have. This is why it is so important to understand what the story should be before you go after the pictures. If you don't know what the story should be then it's very difficult to commit to a difficult situation that has all sorts of technical hurdles in the way. It's like a writer that comes to something that is

really important to get across so they labour over that particular paragraph forever to get it right and that once you have that, everything else falls into place. This process started months before I even got into the field. I had to consider how we were going to make a story from this. Were we going to get enough variety here to get an interesting story? How were we going to make people feel that this loss of the night through light pollution matters to them?"

When the story first appeared in *National Geographic*, it began with an image that depicted the beauty of the night sky and would draw readers in – this image was the natural stone arch with the Milky Way in the background (see overleaf). According to Jim, once you have your audience caring about the subject matter, you can present them with the complete story, which in this case was the fact mankind is losing the night sky because of the way we light up our cities.

His shots are taken on either a Nikon D3



Natural Bridges National Monument.

"JIM MAINTAINS THE EXPOSURE AND BRIGHTNESS FOR THE MILKY WAY IS ALWAYS THE SAME. WHAT YOU NEED IS A DARK ENOUGH SKY SO YOU CAN SEE IT. THEN IT'S ISO 6400 AT 60 SECONDS F/2.8. THESE SETTINGS WILL SHOW IT AS A CLOUD OF STARS."

or D700 with a 14-24mm F2.8 lens, which is the best way to capture the Milky Way – wide and fast. Jim maintains the exposure and brightness for the Milky Way is always the same. What you need is a dark enough sky so you can see it. Then it's ISO 6400 at 60 seconds f/2.8. These settings will show the Milky Way as a cloud of stars.

"The maximum shutter speed depends on how wide the angle is of the lens you have on. With a 14mm lens you can use 60 seconds before the stars start streaking. To limit this you can go to 90 seconds, but after that the Milky Way starts to smudge and you will lose substance and detail, so if you have a 35mm lens on, then the shutter speed goes down to 30 seconds at the most because the higher magnification results in the higher magnification of the star field. If it's a 50mm or an 85mm lens shutter speed is down to about eight or 15 seconds. The wider lens you use, the longer shutter speed you have, which is why f/2.8 is an important factor. Even if you had a 14mm lens that was an f/4, it wouldn't do it. You can't go to 120 seconds because the stars start to streak."

A remote location is required to find a dark sky. Through his experience, Jim knows a village of 200 people five miles away throws out quite a bit of light. Neither can you have a moon. As soon as it comes up the sky will turn blue.

The next requirement is to eliminate all of the lights along the horizon to increase the angles you can shoot from. So there is a limited window of opportunity to capture the Milky Way, but Jim advocates using astronomy software either on a laptop or on an iPhone to help with predicting these opportunities, which he feels are vitally important. Jim has seen statistics that suggest as much as 80% of the world's population will never see the Milky Way again.

"All of our life on Earth, the night sky has been our constant companion, and in 100 years we've thrown it away. This needs saying. I don't have an illusion that I'm going to change the world; a single picture isn't going to make people sit up in the morning and say: 'We can't do that anymore.' It just doesn't work that way."

That said, Jim's light pollution story has been used by government organisations to highlight the problem and encourage change. His work is making a difference.

The next project Jim undertakes will have new challenges and new meaning, but the core process will remain the same.

He will get to know his subject inside and out and know why he is shooting. In this way, his images reflect what he sees and tell the story from every side. **PM**