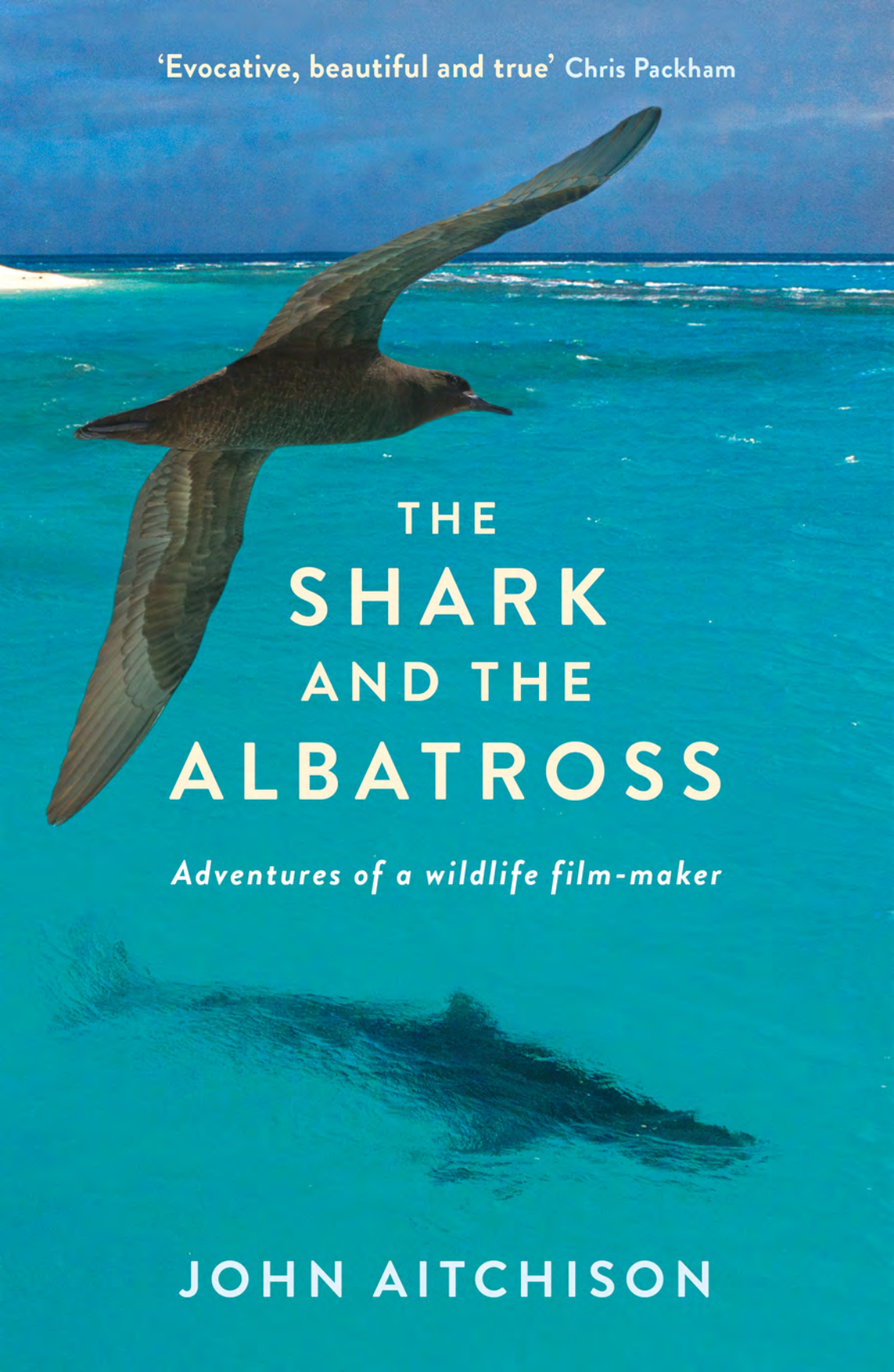


'Evocative, beautiful and true' Chris Packham

A large albatross is shown in flight, its wings spread wide, flying over a vibrant turquoise ocean. In the background, a white sandy beach and a clear blue sky are visible. Below the albatross, the dark, dorsal fin of a shark is seen breaking the surface of the water.

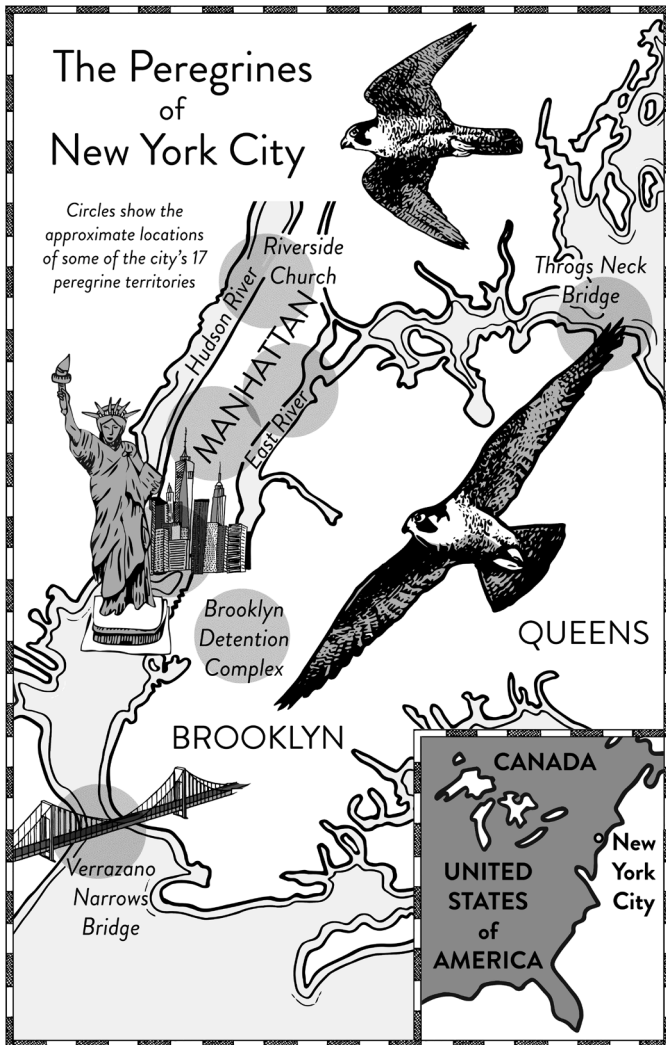
THE SHARK AND THE ALBATROSS

Adventures of a wildlife film-maker

JOHN AITCHISON

The Peregrines of New York City

Circles show the
approximate locations
of some of the city's 17
peregrine territories



– T H R E E –

PEREGRINES AMONG THE SKYSCRAPERS

Other reintroductions have been less controversial than the wolves'. New York City is not an obvious place to film wildlife, yet it's home to one of the world's most exciting birds: the peregrine falcon. This bird of prey has come back from the brink. In the twentieth century peregrines were all but wiped out in America. The story of their recovery shows that, given a helping hand, some wild animals can adapt well to the modern world.



A policeman spills his coffee, sets his car's wheels spinning and zooms away, with blue and red lights flashing.

'We got a deer dying on the approach way, we got a cat on the upper roadway, we got falcons on the tower: it's like being back in the country,' says the manager. 'Welcome to the Verrazano-Narrows Bridge.'

The bridge was built during the 1960s: a time of confident expansion in the United States when, alongside ambitious engineering projects like building the Apollo moon rockets, the country's chemical industry was in full flow, producing a miracle pesticide called DDT. Seeds were soaked in it before being sown and tractors sprayed it onto orchards and fields. Crop yields soared as a result.

When the bridge was built across the Hudson River, at the

Verrazano Narrows, it had the world's longest span, suspended from cables almost a metre thick, running from towers more than 200 metres (about 700ft) tall. The peregrines are nesting on top of one of these towers so filming them will be complicated. Without Chris Nadareski it would be impossible. Chris works for the city's Department of Environmental Protection and every year he visits all the accessible peregrine eyries in New York City, to fit numbered and coloured bands (known as rings in Europe) to the legs of their chicks.

We each put on a harness and a hard hat and are driven in a slow convoy across the bridge to the base of one of the towers. It soars above us like a huge staple. The traffic lane is closed while we unload our gear and take turns to duck through a door small enough to challenge some of today's larger engineers. Inside there are hot, cramped metal cells, studded with bolts on every surface. The sound is extraordinary: a bass rumble of traffic on the bridge's twin six-lane highways, stacked one above the other. Sometimes there are loud and inexplicable booms, as if we were deep in the guts of an iron beast. There are very few lights. The elevator is just large enough for three of us. It feels like squeezing into a suitcase. The controls have notes beside them, handwritten in correcting fluid: *TOP* next to one button and *Don't press, don't press!* by the one above it. Clanking upwards, we all look through a hole in the ceiling, watching the cable winding into and out of the darkness. To reach the uppermost level we climb through circular holes cut in the steel decking, hauling our gear after us with ropes.

When Chris opens the hatch onto the roof there is a welcome flood of fresh air and immediately we can hear the peregrines' alarm calls. He climbs out and I set up to film. We must all leave once the last chick is banded, so there is not much time. The top of the tower is a smooth metal surface, enclosed by a low rail. The bridge below has shrunk to the width of a pencil and its trucks are the size of rice grains. A container ship passes easily beneath the span. I don't mind the height but I am worried about the consequences of dropping anything over the side, so I tuck everything loose into my bag before concentrating on the job in hand, which is to film the peregrines as they hurtle past.

They circle, superbly indifferent to the gulf of air below them, taking turns to dive at Chris's head. He approaches their nest, which is in a wooden box, roofed with plywood and floored with pea gravel. Chris put the box here to encourage the birds to move home because their

old eyrie, under the bridge, was in the way of maintenance work. They adopted the new one the next spring. I can see him deftly checking the four young falcons and fitting their bands. The bridge maintenance crew crouch, holding brooms over their shoulders to protect the backs of their heads. Chris takes the chance to show them what he is doing. Part of his skill is in explaining why it matters to balance the birds' needs with theirs. After all, 190,000 vehicles cross this bridge every day and it was no small ask to interrupt the traffic so we could come up here. By placing the peregrines' nest box where the birds will have the least effect on the workings of the bridge, Chris is giving something back on their behalf.

On the way down, the guy in the lift says he grew up on Staten Island, where he could see the bridge being built from his house. On its opening day his parents drove him here, intending to cross, but the sign above the toll-booths brought them to a screeching halt. Fifty cents! They drove straight home. That was in 1964.

In the preceding four years, not one pair of peregrines had bred anywhere on the eastern seaboard of the USA.



During the 1960s Professor Tom Cade, of Cornell University's Ornithology Lab, realised that something was wrong. As well as being a scientist, Cade was a falconer and he loved peregrines. His research, and others', proved there was a connection between the high levels of DDT accumulating in birds of prey and their inability to raise chicks. Top predators such as peregrines were swallowing the chemical whenever they ate birds that had fed on treated seeds or insects. Cade even found DDT in peregrines in Alaska, far from sprayed fields, and concluded that they had encountered the poison while on migration. It so weakened the falcons' eggshells that the incubating adults crushed them, killing their unborn chicks. Peregrines faced extinction in America and wherever else DDT was used.

Cade came up with an ambitious plan. He founded the Peregrine Fund to breed the birds in captivity, on an unprecedented scale, and to release them into the wild. If it worked they would at least have a better world in which to hunt because, by 1972, Cade's research had helped win the fight to have DDT banned. By then it had been found in

animals all over the globe, even Adélie penguins in the Antarctic. The Peregrine Fund's first captive-bred birds hatched the following year, but the most difficult part of the plan to bring back the peregrine still lay ahead.



I have been asked to film New York's peregrines for a programme about urban wildlife, being made by a producer called Fredi. He dreams of filming a city peregrine hunting to feed its family, among the skyscrapers of Manhattan. It would be the ultimate proof that the falcons have adapted fully to life in the city. Filming a peregrine hunting is one of the hardest things a cameraman can do. They dive at more than 300kph (up to 200mph), often from such a height that they are invisible to the naked eye. Just following a fast-stooping bird through a long lens is hard enough, never mind the difficulties of keeping it in focus, and to make matters worse they often travel so far that their stoops end out of sight. That problem at least would be eased by filming from higher up. In the wild that's only possible if you can find a convenient hill but in New York it's easy. When Paul, the programme's researcher, reads out Chris's list of peregrine nest sites, it sounds as though he is describing the city itself: there are several hospitals, skyscrapers overlooking Park Avenue, America's tallest church, a detention complex and many bridges. They all share the thing most useful to us and the peregrines: elevation.

We are captivated by New York's peregrines as soon as we step onto our first rooftop, which belongs to a building directly opposite the tall church. The male peregrine (called a tiercel) from the pair nesting on the church tower rides the wind up the vertical walls and passes us slowly, just beyond arm's reach. The skin around his beak and eyes, and on his legs, is the same bright yellow as the taxis in the streets below. He seems completely at ease in the upper air among the towers, where light bounces from building to mirrored building, dappling some like skin and banishing shadows from dark corners. He hardly glances at the city's people and its cars crawling far below, as if they were sea creatures on the bottom of the ocean.



Matt, a peregrine expert, stands beside me, to help spot the falcons and their potential prey. Paul and Fredi station themselves with radios on different corners of the roof. Feathers swirl in bright eddies against its plain surface: the glinting wing feathers of a jay, flashing indigo and blue. We stand near the edge with a wall of metal shutters at our backs. To our amazement, the female peregrine lands on it, less than twenty metres away. In the countryside, birds would be far more wary than this. She is larger than her mate and more heavily built. Her talons scratch a little on the metal as she rouses, opening her feathers for a shake, then preening them in the sun. This pair have chosen well: from their nest behind a gargoyle they have clear views across Harlem and the Hudson River. Their neighbours are carved devils and animals: a winged demon on a throne rests his chin on his hand, contemplating several big cats and a wicked pelican. All of them leer at us across the void. The tiercel perches on a stone lion, gripping its ear with his long bird-catching toes. His front is pale and streaked while his back is a subtle two-tone grey, like the carbon-fibre housing of the camera. With his white mask and black helmet he looks like an assassin: one whose home is a church. He stands as perfectly still as the gargoyles and stares intently across the river.

This pair must be good hunters. We saw their five chicks yesterday, when Chris took us up the church tower to fit their bands. He had moved the young birds from the nest into a cluttered room, where elevator motors whirled. The female was so defensive of her family that when Chris went to lift the first chick, she flew at his face with her talons outstretched. Astonishingly he caught her calmly by her legs in the split second before she struck, then put her in a box where she would not harm herself while he worked. He joked that over the years he has 'had the honour of multiple body parts being autographed' by falcons' talons. As soon as her chicks were back in the nest, Chris released the female and she settled at once.

From our filming position on the roof we can see messages drifting up from the streets. They are printed on helium balloons and they are always the same: *Happy Birthday!* Usually the birthday balloons come in ones or twos but this morning forty pass together, hinting at a day's lost profits or a party spoiled. They separate and drift among the buildings, rising over some and between others, revealing the air currents the falcons ride so effortlessly as they search for prey below them in the deep. It's breezy down there too, where a bride struggles to control her

billowing dress. Laughter rises above the sounds of traffic. So does bird-song from the park. The peregrines watch these other birds like hawks (of course) but they'll be hard to catch as long as they stay close to the trees. The falcons watch the river too, where reflected light makes patterns on the surface like a leopard's fur. While we wait, the shadow of a tall building creeps across the water: a gnomon in the largest of sundials.

The tiercel takes off and accelerates astonishingly quickly, pumping his wings. He has spotted the flicker of wings, catching the sunlight a kilometre away. Through the long lens I can see that it's a grackle, flying above the river's far bank, which is so distant that with my naked eyes I can't even make out people. The grackle sees him coming and at the last moment dives into the trees. The tiercel returns to perch on a different gargoyle: a stone bird of prey, whose hooked beak and talons are just like his own, but it has flowers for its eyes. Beside him rows of stone saints gaze vacantly across Manhattan.

On the stroke of five the church bells chime in chorus while, on our rooftop, more secular air-conditioning fans come to life. As we leave the building the lady behind the reception desk asks, 'How's my birds?' and we pass the pipe band of the New York Fire Service, arriving to practise in their kilts.



First saints and now sinners: above the door of the building we are facing in Brooklyn, it says *Department of Correction*: it's not quite *Abandon Hope All Ye Who Enter Here* but it's near enough. There are high walls, surveillance cameras and coils of razor wire. Outside, a policeman patrols on foot. He's armed, of course, and when Fredi runs up behind him, to explain why we are pointing a long lens at his jail, the rest of us wince at the potential for misunderstanding. When he comes back, un-arrested, Fredi says, 'People have been filing complaints about voodoo rites – it was the peregrines, dropping dead pigeons at their feet. I asked him about filming them and he just said, "God bless ..."'

The policeman is not the only one who's interested in what we are doing. A woman stops to ask, 'What are you filming?'

'Falcons, on the jail.'

'Felons?'

'No, falcons. Birds.'

‘Boids? Boids? I thought you were paparazzi and it must be some high-profile criminal that was in there. We get them around here too, you know.’

This pair of peregrines have chosen to nest behind a grating in a ventilation shaft in the detention complex’s wall. To reach their chicks the adults have to break into the prison by squeezing between the bars. With a little more height we would be able to see into their nest, so Paul has cleared the way for us to film from the roof of a building nearby. On the way up the stairs we ask the owner whether he is hoping to be paid and if he thinks anyone will mind us filming the jail. He says, ‘I don’t much care for money. Don’t much care for rules neither.’ He points out the liquor store down the street and leaves us to it.

A peregrine’s shadow, sharp-edged and curve-winged, slides across the prison’s walls. Prisoners are playing basketball inside a wire cage on the roof. They stop and stare at us, miming, ‘What are you filming?’ Fredi points at the falcon, perched on a light fitting nearby, and waves his arms like wings.

‘Birds?’ their blank faces signal back. ‘Really?’

She is plucking something in a blizzard of feathers. Some float across the road and Fredi catches one: another jay. With the extra height afforded by the roof, we can see her chicks inside the shaft. They are real jailbirds, pushing their heads through the bars and testing the metal with their claws. Matt can sex them by their size: the females are larger. They line up to watch the sky and all three pan their heads around as if they were one, to track passing pigeons. The pigeons fly low and fast, aware of the risk from the peregrines but getting on with their lives like pragmatic New Yorkers. The young falcons are no threat yet. Their down is slowly giving way to brown feathers and it will be some weeks before they can fly. They take turns to exercise their wings, blasting dust through the grille. We leave the roof when it starts to rain.

Thunder echoes through the canyons of New York and the spray from tyres, lit by the headlights behind, makes the cars look rocket-propelled. The tops of the buildings have vanished into cloud, which makes them seem to go on up for ever. The uppermost windows of the Chrysler Building glow yellow through the mist, as if a spacecraft was hovering there. An ambulance passes, hooting like a gibbon, and in the distance a fire engine seems to answer with a primeval wail, forlorn and fading, calling for company and finding none.



Hunting does not come much harder than catching a bird in flight, yet peregrines do almost nothing else. In the wild the parent birds will feed their young until they have learned how to intercept their prey at blistering speeds, but when the Peregrine Fund freed its captive-bred youngsters, they had to manage on their own. In all, 6,000 were released in places where they had lived before DDT took its toll. Chris Nadareski joined the army of helpers who kept the birds alive by providing them with food while they taught themselves to hunt (a process called 'hacking back'). The peregrines' recovery was slow at first because the young birds were vulnerable without their parents' protection. Many were killed by golden eagles and great horned owls. The eagles avoid urban America and the owls are less of a problem there too, so the Peregrine Fund tried something bold. They released some of their birds in New York City.



From fifty storeys up, on top of a skyscraper, I look around midtown Manhattan. The surrounding buildings have plenty of ledges for falcons to nest on but they can be dangerous too. Distorted reflections of taxis and people slide along walls made of glass and metal. Some almost perfectly reflect the sky, so puffy clouds disguise their hard surfaces, and at night many windows will be brightly lit. It is a complex and confusing home for the fastest animal on Earth and it was by no means certain that the peregrines would be able to adapt, yet they did. The first two pairs nested in New York City in 1983, on the Verrazano-Narrows and Throgs Neck bridges. Chris Nadareski had been inspired by the work of Tom Cade and others to study the falcons as they recovered. He says with pride that the city has the highest density of urban peregrines in the world. There are seventeen pairs in the five boroughs, soaring and nesting among New York's tallest buildings, on its bridges, its offices and the penthouse mansions of millionaires. Some have even learned to use the city's lights to hunt birds migrating above it at night, and their street-wise youngsters are helping to repopulate the countryside.

The falcons were there too when the Twin Towers fell. Chris talks quietly about joining the bucket brigades: the human chains that

moved rubble away from Ground Zero by hand. Among the chaos of that dreadful day he looked up to see a pair of peregrines passing overhead. It was a reminder, he says, that good can follow disaster and that lives can be repaired.



Between stints spent on the roofs we drop down to the city's parks, to film one of the reasons that the falcons are doing so well here: New York has a thriving population of feral pigeons. These birds are the descendants of wild rock doves, coastal European pigeons, which were carried around the world by human colonists and kept for their eggs and meat. They adapted easily to the man-made cliffs and caves of city buildings and they have become so ubiquitous that we barely notice them. On the wild coasts of the Old World these birds were the peregrines' main prey, so it was a boon for the falcons to find them already established in New York and many other cities. Pigeons are far from easy to catch – they have spent millennia under the falcons' unwavering gaze and they have evolved their own ways to escape. With a special slow-motion camera we film pigeons turning completely upside down as they take off, then righting themselves within a body length. This ability to jink in flight can save their lives.

For experienced peregrines flying is easy: gravity powers their stoops and sunshine warms the air, which raises them again without a flap, but finding suitable targets is much harder because the pigeons do not fly far and they stay low over the streets. The falcons' technique is as simple as it is effective: they go very high and use their exceptional eyesight to search, like the NYPD helicopters sharing their airspace.

We watch one pair scanning the surrounding space from the silver pinnacle of the Chrysler Building, in unconscious mimicry of its art deco eagles. Their other favourite hunting perch is the navigation light on the tip of the Bank of America tower, almost a quarter of a mile above the ground. When the tiercel stoops from there he folds his wings into a teardrop shape and hurtles through the lesser buildings, past mirrored glass, past steel and concrete, past video screens flickering green and red: falling like a meteor. He could almost have left a flaming trail or bubbles fizzing in his wake. When the pigeon sees him coming it dives for its life among the water tanks and rooftops. This time the

tiercel rises with empty talons to graze the reflection of his wingtips in a sheer glass wall, entirely at home.

On other days we film the peregrines chasing a pigeon out over the Hudson River, where there is nowhere to hide. The pair work together, taking turns to stoop until the tiercel binds on, then circles with their prize in his talons, calling to his mate. She flies up to receive the bird as he lets it fall and carries it back, to pluck and feed it to their chicks.



While we are in New York a rare alignment of the sunset and the city's cross-streets means the sun will touch the horizon exactly at the end of 42nd Street. This is close to where we have been filming, beside the beautiful Chrysler Building. When astrophysicist Neil deGrasse Tyson noticed this coincidence, which happens on a few days every year, he pointed out that future anthropologists might argue that the city's grid of streets had been aligned with the sun for just this purpose, like Stonehenge at the summer solstice.

Of course there is no significance to the alignment of New York's streets, except that their regularity makes it easier to navigate, but the sight is said to be spectacular, so we join the group of photographers looking down 42nd Street. Many have been waiting for hours in the hope that the showers will pass and the horizon will clear at the right moment. Everyone yearns for the perfect image of the sun, framed and reflected by the city's gleaming walls, while the tail lights of taxis stretch into the distance like a thousand suns in miniature. As the time approaches it is easy to grow excited with the crowd. DeGrasse Tyson encapsulated the feeling that the natural world has aligned with our own by naming this event 'Manhattanhenge'.

At the last moment the clouds break and the sunlit street becomes beautiful. People worship the moment with their cameras then rush to be the first to post their pictures online, to tweet their versions of 'I am here. Now'.

No doubt we will always look for patterns in the world around us, for significance, even where there is none. For real significance I look up to the Chrysler Building, where a soaring peregrine catches the light of the setting sun and burns there like a star.

AN UPDATE ON NEW YORK CITY'S PEREGRINES

*T*aking your first flight is dangerous in the wild but flying from a building carries extra risks – the fledglings could easily end up among the traffic. That is exactly what happened to two of the birds we had filmed at the Brooklyn Detention Complex. Fortunately for them, Barbara Saunders, a biologist who works for the New York State Department of Environmental Conservation, was on standby when their time came to leave.

I'd get a call, sometimes from building personnel at the nest site, or from someone who'd spotted a youngster on the street. I'd pick it up and drive it out to New Jersey to have it checked for injuries at the Raptor Trust. If all was well, back the youngster would go to the nest site for "take two". One week I was out there every day. I called myself the Peregrine Limo Service.'

When the first of the Brooklyn females squeezed between the jail's bars and launched herself out over the street, her maiden flight did not go too well: she fluttered down and was hit by a bus. A local person saw the collision, put the young bird in a box and took her to a veterinary surgeon, just half a block away – there are some advantages to being a city falcon. The vet called Barbara and the Peregrine Limo Service rolled into action.

Another of the Brooklyn youngsters crash-landed and was rescued by local people. It ended up in an even stranger situation than its sister.

'These neighbourhood guys were incredible. They managed to catch the falcon and put it under a lampshade. It kept trying to pop out so they added a second lampshade but when that didn't help much they replaced it with an upside-down laundry basket, topped with a brick ... New Yorkers are a very resourceful bunch!'

Off went the young peregrine to the Raptor Trust. She was not injured and after a rest and some food she was banded and released.

As well as enjoying the fun and games, Barbara is delighted to see so many people involving themselves with their city's peregrine falcons.