



Tom Fecht: # VII from the series *INCERTITUDES (ISO 3200)*, 2008  
Poster published in Times of Uncertainty in Winter 2020  
Design Hubert Neidhart / 250 copies 128 x 89.5 cm

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**Emma Nilsson**

**The Silent Urge to Jump out of your own Skin**  
**Introducing Tom Fecht's series INCERTITUDES**

*(Excerpt from the complete publication attached below as PDF)*

Incertitude: How do you imagine that which is ambiguous or unknown? And how do you visualize it? The title of Tom Fecht's recent series of works establishes an existentially precarious state of destabilization. Incertitude implies the motivation of pushing forward into the unknown, of advancing one step further than one would normally go – without any safety net and with no guarantee in terms of result.

What, if anything, is certain in these works? An abstract picture, held entirely in black and white, subdivided by a narrow, jet-black horizontal bar at its lower border, and an infinitely fine black-and-white field with a granularity that takes up the largest part of the picture until it loses itself deep within the sphere-like curvature of the nocturnal pictorial space at the upper border. The works in this series vary, above all, in the different degree of their granular refinement, a fineness that enables a specific photographic grain structure and interference patterns unique for each of these vintage prints. The black horizon provides the weight, forms the focus of the picture, and thus supports the eye in order to grasp the fineness of the granularity, which already begins to oscillate gently upon first sight. Although each and every micro-grain can be identified by the naked eye, it is their diversity, separation blur and changing density that exceed our capacity of getting even close to any exact number. (...) The more the eye focuses, the more the photographic surface begins to oscillate in a shimmering, flickering way. The navigation of the eye gradually begins to fail in this no-man's-land, unable to find its point of departure. (...)

Our habits of perception tempt us to think of the starry nocturnal sky over imaginary horizons. Here, however, it is not the stars that we see high above us in the night, not the starry sky that prehistoric man painted repeatedly on the walls of his caves. In this series of works, the starry sky steps into the background and a nocturnal sky of stars extinguished long ago manifests itself in photography's *dark matter*. To be more precise, countless silver halide microcrystals are exposed to the light of stars extinguished billions or millions of light years ago – and in this manner, it can produce an immense refinement of even granularity. What we are therefore directly confronted with is an abstraction of that age-old prehistoric light. We look into

the dark and simultaneously into a dimension of time that is difficult to grasp. Our present coincides with an inaccessible, temporal cosmic depth on these two-dimensional sheets of photographic paper.

Time and time again, art has sought to capture – or even touch – the universe. Vija Celmins, Anish Kapoor, Anselm Kiefer, Yayoi Kusama, Wolfgang Tillmans, Thomas Ruff, or Hiroshi Sugimoto are but a few prominent artists in recent decades who have pinned their gaze into the very depths of the cosmos, attempting to make outer space tangible or the connection between man and the cosmos perceptible.

In doing so, the viewer always tends to look into a profoundly deep night, into the black darkness that has had a quality of transformation ever since antiquity. The separation of darkness from light, of night from day, creates the world and creates life. Our gaze into darkness is confronted with something absolute, absolute because nothing is to be seen. With open eyes, the viewer turns blind, and seemingly he can see nothing, or more precise: he cannot see anything that could be identified. Destabilized in such nothingness, the gaze is reflected backwards; it turns inwards and returns to the viewer. "Shut your eyes and see" are the words with which James Joyce conjures up this human gaze in *Ulysses*—a gaze that unfolds from within and only exists there. (...)

When we follow Joyce's invitation, our senses are stimulated and seduced to perceive these images more profoundly over and beyond the initial visual impulse. On account of the "shimmering" of the granules caused by the interferences, the dots and silver-like crystals, the impression of oscillations, the ease, and cosmic resonance, we effortlessly move into the sphere of sounds, into an acoustic space where these crystalline vibrations swing into the audible realm. Here, a musical language can be found that has mutated to notation by means of photography. Dense and undirected crystalline clusters seem to spread melodically within the spatial suspense comparable to an acoustic image or visualized score. The Incertitude-Series may by implication also be read as *Études*, as analog compositions or studies of photographic instruments.

Tom Fecht's *Incertitudes* offer the possibility of opening up an incredible sense of transparency for us. Seen as alchemical notations or photographic gestures, they tempt us to step beyond the known into the void and they remind our intuition to penetrate the unknown with all of our senses. Or as Tom Fecht likes to put it in homage to the abstract painter Agnes Martin: "It is one thing, to penetrate the night. But to be penetrated by the night—that means being overtaken by an experience much older and greater than us". (...)

In order to tentatively approach the imaginary space-time reality warped by gravity, it is simply not enough to only embrace the unknown—it also requires the silent urge to jump out of our very own skin.

T O M F E C H T

I N C E R T I T U D E S

**T O M F E C H T**

# INCERTITUDES

INTRODUCTION BY EMMA NILSSON  
ESSAY BY GÉRARD KLEIN

IN TIMES OF UNCERTAINTY



Viewer with test-print ISO 25, 120 x 80 cm  
Left: Detail 1:1 of *INCERTITUDE # II* / ISO 25

It is simply not enough to embrace  
the unknown – it sometimes requires the silent  
urge to jump out of our very own skin.

On the occasion of a permanent installation of recent work by Tom Fecht at Museum DKM in 2018, the Swiss based curator Emma Nilsson introduces the artist's *Incertitudes*, two of which are now part of the museum's renowned collection in Duisburg, Germany. The new series transcends the aesthetics of contemporary landscape photography by magically transforming nature through the profound depths of time.

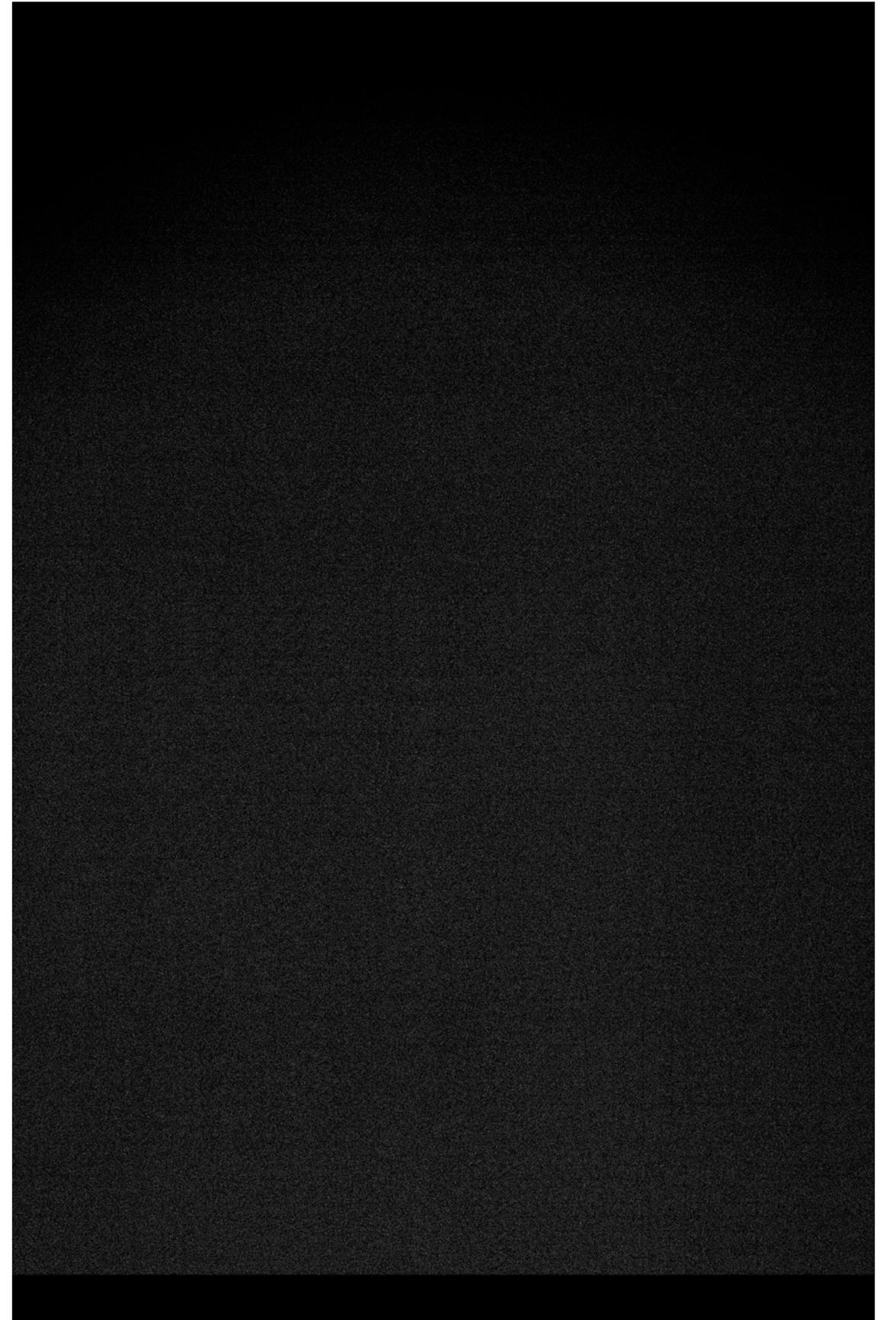
The sheet-film negatives for these handmade prints on classic Baryta silver gelatin paper are based on a series of nocturnal experiments. Varied in size and by horizontal landscape – or unexpected vertical portrait-proportions, the silver crystals of these unique prints diminish in size by nine gradations: From the most coarse ISO 6400 grain with extremely high light sensitivity via ISO 3200, 1600, 800, 400, 160, 50, and 25 down to the dust-like ISO 5 microcrystals. The extremely high resolution and the microscopic refinement of the granular structure allow the naked eye to identify and potentially count up to a million of these individual crystals. The small 1:1 detail on the opposite page gives evidence however, that this intimate viewer experience requires a fully sized original print. The given limits of any high-end reproduction will more or less hide all these details in unpredictable interferences and grey noise. The series combines conventional photochemistry with extreme long exposures and the artist's own innovations sourced from thermodynamics. Thus, these silver firmaments focus in particular on phenomena beyond representation and the visible spectrum to reveal an unexpected transformation of deep time in the universe.

The Paris based author Gérard Klein examines the sublime austerity of *Incertitudes* in his essay *DARK MATTERS*. With a closer look at *Eclipse* and the moonlight series *Gravity Fields* Klein explores the scientific implications in the larger context of Fecht's innovative night photography. Pushing photography towards the edge of quantum physics the artist challenges us with a form of the real as if he were absent from it. Guiding the viewer's eye into the deeper universe of human uncertainty these enigmatic firmaments reflect our world's fundamental chance: the quantum chance. The author, often regarded as the grey eminence of the global science fiction community, concludes: "Where we believe we cannot fathom anything, we sometimes reach into something of the real, that can only assert with certainty what it is not. Dark is not the void. *Dark matters.*"

We'll see you  
on the other side.

4 | 5

The words of astronaut James Lovell on Apollo 8 in 1969, before disappearing behind the moon, the first time in history men had been occulted.



*INCERTITUDE # 1* / ISO 5, 2018  
Unique silver gelatin print, 120 × 80 cm

## INTRODUCING TOM FECHT'S *INCERTITUDES*

Incertitude: How do you imagine that which is ambiguous or unknown? And how do you visualize it? The title of Tom Fecht's most recent series establishes an existentially precarious state of destabilization. Incertitude implies the motivation of pushing forward into the unknown, of advancing one step further than one would normally go – without any safety net and with no guarantee in terms of result.

What, if anything, is certain in these works? An abstract picture, held entirely in black and white, subdivided by a narrow, jet-black horizontal bar at its lower border, and an infinitely fine black-and-white field with a granularity that takes up the largest part of the picture until it loses itself deep within the sphere-like curvature of the nocturnal pictorial space at the upper border. The works in the series vary, above all, in the different degree of their granular refinement, a fineness that enables a specific photographic grain structure and interference patterns unique for each of these vintage prints. The black horizon provides the weight, forms the focus of the picture, and thus supports the eye in order to grasp the fineness of the granularity, which already begins to oscillate gently upon first sight. Although each and every micro-grain can be identified by the naked eye, it is their diversity, separation blur and changing density that nullifies our capacity to count or getting even close to any exact number.

Each attempt to count them seems to be in vain and only leads to an infinite loop out of which, despite our efforts, it is impossible to escape. On the contrary, the more the eye focuses, the more the photographic surface begins to oscillate in a shimmering, flickering way. The navigation of the eye gradually begins to fail in this no-man's-land, unable to find its point of departure.

This visual experience is based on a large negative that was exposed for many hours on well-aged sheets of silver gelatin film, yet it is only seemingly related to classic analog photography. Here, the focus lies beyond representation and the visible spectrum. Such a vintage print can in fact no longer be effectively reproduced without losing its unique magic.

Our habits of perception tempt us to think of the starry nocturnal sky over imaginary horizons. Here, however, it is not the stars that we see high above us in the night, not the starry sky that prehistoric man painted repeatedly on the walls of his caves. In this series of works, the starry sky steps into the background and a nocturnal sky of stars extinguished long ago manifests itself in photography's "dark matter." To be more precise, countless silver halide microcrystals are exposed to the light of stars extinguished billions or millions of light years ago – and in this manner, it can produce an immense refinement of even granularity. What we are therefore directly confronted with is an abstraction of that age-old prehistoric light. We look into the dark and simultaneously into a dimension of time that is difficult to grasp. Our present coincides with an inaccessible, temporal cosmic depth on these two-dimensional sheets of photographic paper.

Time and time again, art has sought to capture – or even touch – the universe. Vija Celmins, Anish Kapoor, Anselm Kiefer, Yayoi Kusama, Wolfgang Tillmans, Thomas Ruff, or Hiroshi Sugimoto are but a few prominent artists in recent decades who have pinned their gaze into the very depths of the cosmos, attempting to make outer space tangible or the connection between man and the cosmos perceptible.

In doing so, the viewer always tends to look into a profoundly deep night, into the black darkness that has had a quality of transformation ever since antiquity. The separation of darkness from light, of night from day, creates the world and creates life. Our gaze into darkness is confronted with something absolute, absolute because nothing is to be seen. With open eyes, the viewer turns blind, and seemingly he can see nothing, or more precise: he cannot see anything that could be identified. Destabilized in such



*INCERTITUDE # II / ISO 25, 2018*  
Unique silver gelatin print, 120 × 80 cm

nothingness, the gaze is reflected backwards; it turns inwards and returns to the viewer. “*Shut your eyes and see*” are the words with which James Joyce conjures up this human gaze in *Ulysses* – a gaze that unfolds from within and only exists there.

Our imagination easily makes us forget that looking at the starry nocturnal sky is always historic. In doing so, we do not look into the future, nor into the present, but into a deep past light years away. Stargazing unknowingly transforms us into time travelers, thus into a starry night where childhood’s innocence fires back. Here, imagination defies science, an unfamiliar new worldview of space-time and quantum physics. This subatomic world, in which certitude becomes the exception and incertitude the dynamic standard, is inaccessible for the naked eye and entirely alien to us.

Provided we accept the uncertainties of the *Incertitudes*, we can look deep into the night and are capable of seeing the invisible. Outer space becomes magically transparent through these photographs. The invisible emerges on the photographic paper in the form of a minimalist abstraction oscillating between black-and-white dots. It does not represent a direct copy of space, but it nevertheless mirrors its profound resonance.

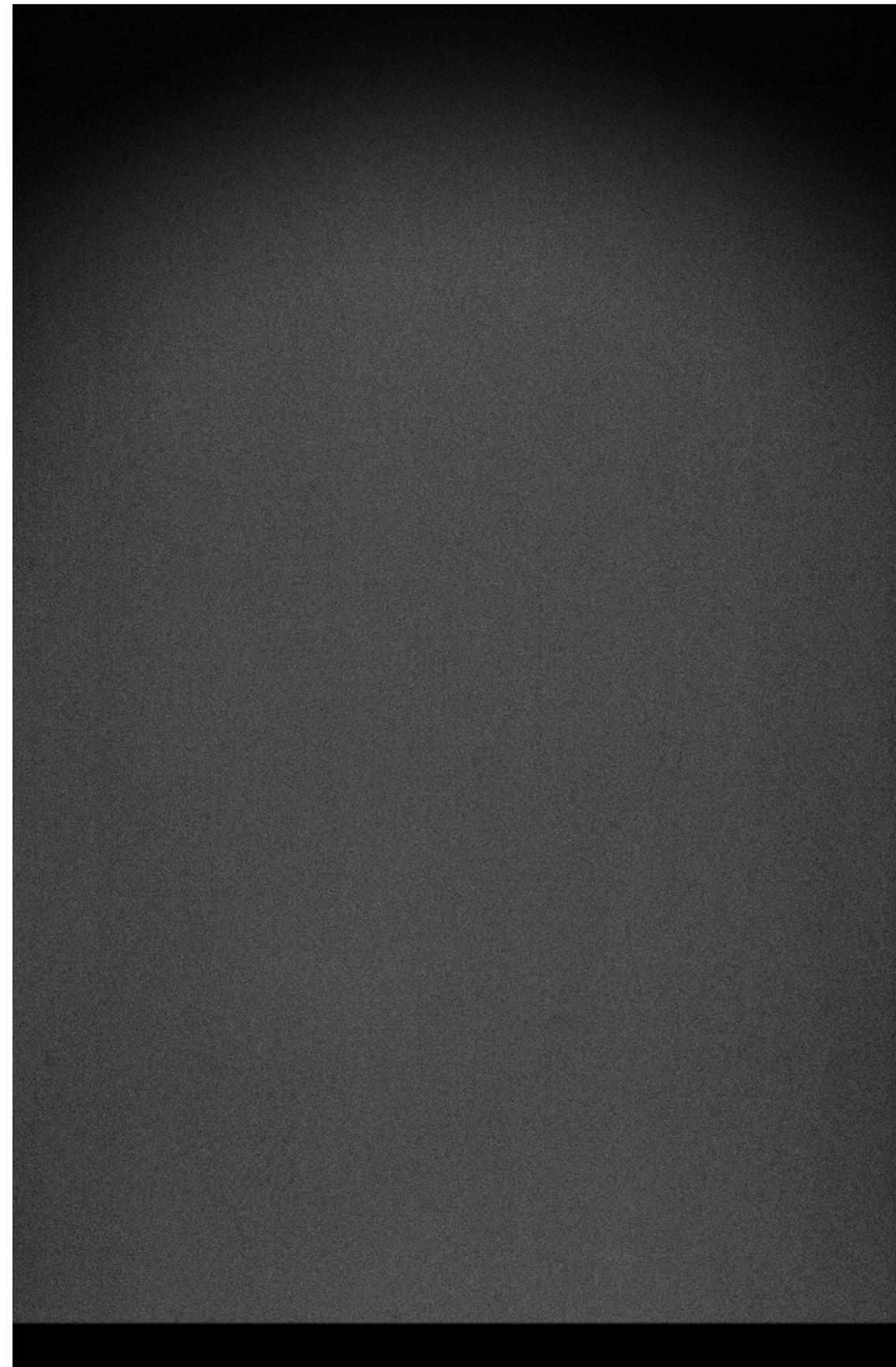
When we follow Joyce’s invitation to shut our eyes in order to see, our senses are stimulated and seduced to perceive these images in full depth and beyond the initial visual impulse. On account of the “shimmering” of the granules caused by the interferences, the dots and silver-like crystals, the impression of oscillations, the ease, and cosmic resonance, we effortlessly move into the sphere of sounds, into an acoustic space where these crystalline vibrations swing into the audible realm. Here, a musical language can be found that has mutated to notation by means of photography. Dense and undirected crystalline clusters seem to spread melodically within the spatial suspense comparable to an acoustic image or visualized score. The *Incertitude*-Series may by implication also be read as *Études*, as analog compositions or studies of photographic instruments.

Tom Fecht’s *Incertitudes* offer us the possibility of opening up an unfathomable sense of transparency. Seen as alchemical notations or photographic gestures, they tempt us to step beyond the known into the void and they remind our intuition to penetrate the unknown with all of our senses. Or as Tom Fecht likes to put it in homage to the abstract painter Agnes Martin: “*It is one thing, to penetrate the night. But to be penetrated by the night – that means being overtaken by an experience much older and greater than us.*”

Thus, these *Études* may even imply the silent exercise to rediscover the very sensation of being penetrated and deeply gripped, an experience that has become so rare in times of omnipresent stimulation. For the light that has not only aged billions of times but also left its traces on these photographic scores has already moved on through the infinity of space, moved on after it was captured for a fleeting moment, while we, the viewers of these *Incertitudes*, are instinctively thrown with all of our senses into simultaneity with that unimaginable dimension of time.

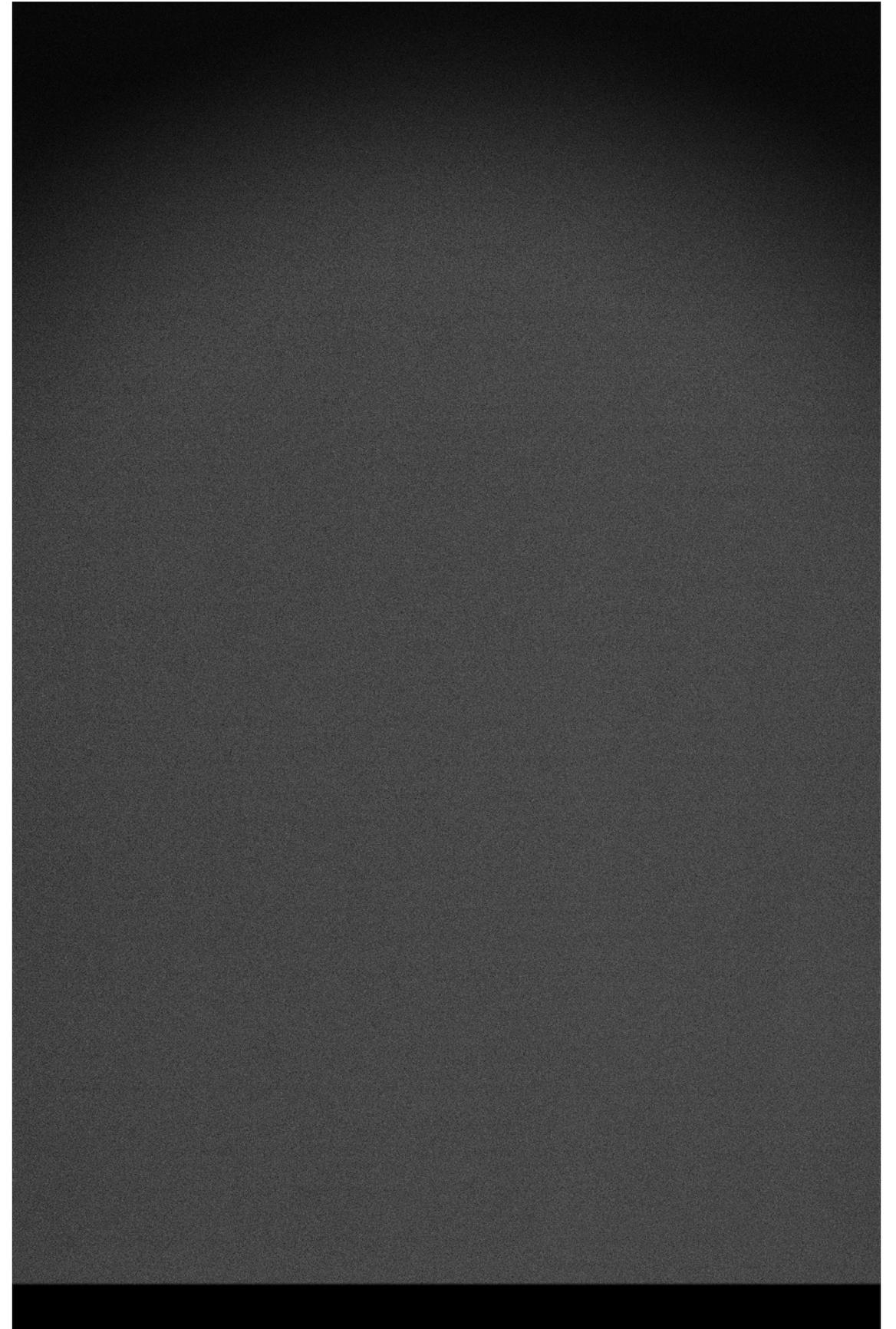
In order to tentatively approach the imaginary space-time reality warped by gravity, it is simply not enough to embrace the unknown – it also requires the silent urge to jump out of our very own skin.

**Emma Nilsson** is a freelance curator based in Lugano, Switzerland. She studied musicology and literature as well as cultural- and scandinavian studies and is currently teaching at Heinrich-Heine University Düsseldorf as guest lecturer. Over many years she has been actively engaged in fine art books, artists’ books and the art trade in Berlin, London and Zurich. She is the editor of several monographic publications and exhibition catalogues. Most recently she served as the founding director of Setareh Gallery, Düsseldorf. She also co-founded *Transhuman Art Critics* with former *Kraftwerk* musician Emil Schult, the duo’s audio-visual performance toured recently in China, the UK, Italy and Germany. The text compiles excerpts of her comprehensive illustrated introduction to Fecht’s *Incertitudes*.



*INCERTITUDE # III / ISO 50, 2018*  
Unique silver gelatin print, 120 × 80 cm

I would say that while science is the absolute queen when it comes to accessing empirical reality, it is however ill adapted when dealing with the “bottom of things”. There, at least, an emotion that might be artistic, for example, can actually be on a par with it, since both deliver but a pale yet precious glimmer across a domain, exposing only a glimpse of it.



**DARK MATTERS**WAVE, LIGHT AND CHANCE:  
IMAGES IN A QUEST FOR THE INVISIBLE

The immense stretch of violent, salted water was referred to as the bitter wave in ancient times ...

Thales, the ancient Greek philosopher and mathematician, saw in water the primary element. This was a slight exaggeration, according to Anaximander, his disciple and follower in Milet, who is considered by many to be the first representative of scientific thought. While water is today regarded as a mere ash indispensable to life, waves still hold their ubiquitous dimension.

Several centuries later, photography – comprising electromagnetic waves, photons, particles, and the other face of light striking and activating complex salts – purports to represent reality as we see it or at least as we would see it if we were to stand in the place of the lens. Photography delivers faces, landscapes, streets, and images of peaceful life, or of wars and accidents; altogether, it delivers reflections of the surface of things.

Stationed at the edge of the earth, at the farthest tip of Brittany, Tom Fecht makes portraits of the ocean, an ocean we could never see with our bare eyes, as he captures it in a thousandth of a second through an aperture reduced to a pinpoint. The beholder is mesmerized by the precision of detail, the depth of field, and the print size (180 x 295 cm / see p.24–25) of the works comprising his series *Eclipse*: “The sea is your mirror; you contemplate your soul.” And because the sea never displays the same face twice, every print of this series is unique.

The meditative state to which Tom Fecht’s photographs of the ocean or the sky invite us fosters yet another reflection. It leads to the other side of the mirror in search of the very different, even incompatible, representations of the world suggested by both classical and quantum physics.

Gravity, or better said, the force of gravitation, forms and shapes the waves. It also stirs up the winds that heave the swell of the sea. It governs the tides that let the surf break against or spread along the beaches. It is undoubtedly the force best defined by classical physics which proves that it extends into the farthest confines of the universe: at least in theory, the movement of the most distant star turns, admittedly unnoticeable, the contour of every wave that Tom Fecht captures with his lens in *Gravity Fields* and his diptych *Gravitational Pull* (see p.22–23). Relying on the works of Galileo and Kepler, Hooke and Halley, Isaac Newton provides an excellent evaluation of the attraction of the universe, published in 1687, in which he indicates that this force is proportionately equivalent to the mass that produces it and that it decreases when raised to the power of two in proportion to the distance from the gravitational center of the mass. The equation governs not only the fall of apples, but also the orbit of stars. For the purpose of establishing it, Newton conceives a space and an absolute time and takes into consideration that it is transmitted immediately, thus at an infinite speed, into the void regarded by Newton himself as an absurdity so great that, as he writes to a friend, no sensible mind would accept it. In 1915, Albert Einstein will resolve the question and find an answer to Newton’s qualms with his theory of general relativity, incorporating gravitation to a deformation of space-time as a result of the masses. In more than one way, classical physics is thus brought to an end. It is the universe as a whole that is stirred by gravitational waves as predicted by the theory, but not until September 14, 2015, will it be observed for the first time, exactly one hundred years after the theory was made public that conjured up the possibility.

The quasi-metaphysical and ultimately insoluble question that is prompted by photography is to decide what should be documented. It is not that the image mostly represents what it shows. News, wars, marriages, births, spectacular landscapes, celebrities, accidents, nudes, chance oddities, or overly image-like images generally relate to an author’s intention or to a possible appeal to the beholder – fear or emotion, awe or distraction, approval or rejection – possibly even encouraging artificial setups behind the spontaneous mask of the instantaneous that a somewhat naive critic would likely rule out as anecdotal.



INCERTITUDE # V / ISO 400, 2018  
Unique silver gelatin print, 120 x 80 cm

Nothing of the like with Tom Fecht. He confronts us with a form of the real as if he were absent from it. The real should not be deciphered through our pitiful emotions, but we should attempt to understand it instead.

The ocean waves that Tom Fecht loves photographing in the rare moonlight and even dimmer starlight are a matter for classical physics, as waves are indeed a matter of surface – superficial, in other words. Yet they bring us back to the depths of their element and to ours, encouraging food for thought. We can only imperfectly decipher their writing. An old, science-savvy friend of mine used to say that if we knew how to analyze one single wave, or at least the waves of an ocean resulting from all the forces at play over that stretch of water, then we would be able to trace the bow of Cleopatra's ship in Actium. Or any other.

From the tip of the Finistère, where the photographer sets up his cameras for endless nights of work, Tom Fecht might possibly succeed in reading Christopher Columbus's transatlantic journey, which was only made possible as a consequence of gross miscalculations relating to the actual size of our planet. These planet's curves are imperceptibly illustrated in Tom Fecht's horizons. It is a simple matter of the principle of Fourier transform (FT). But waves are extremely complex. After attempts by Airy, Stokes and others, we still do not know how to fully break them up. Waves have a random dimension, and only statistical approximations can be made of them.

Ocean waves also carry a fractal dimension under certain constraints: Tom Fecht's photographs distinctively show the greater wave jolted by wavelets, themselves quivering from smaller vibrations. Any reflection about waves brings us to consider both the power and the limits of classical physics; it describes a simplified world and yet stumbles over the nearly infinite multiplication of a detail.

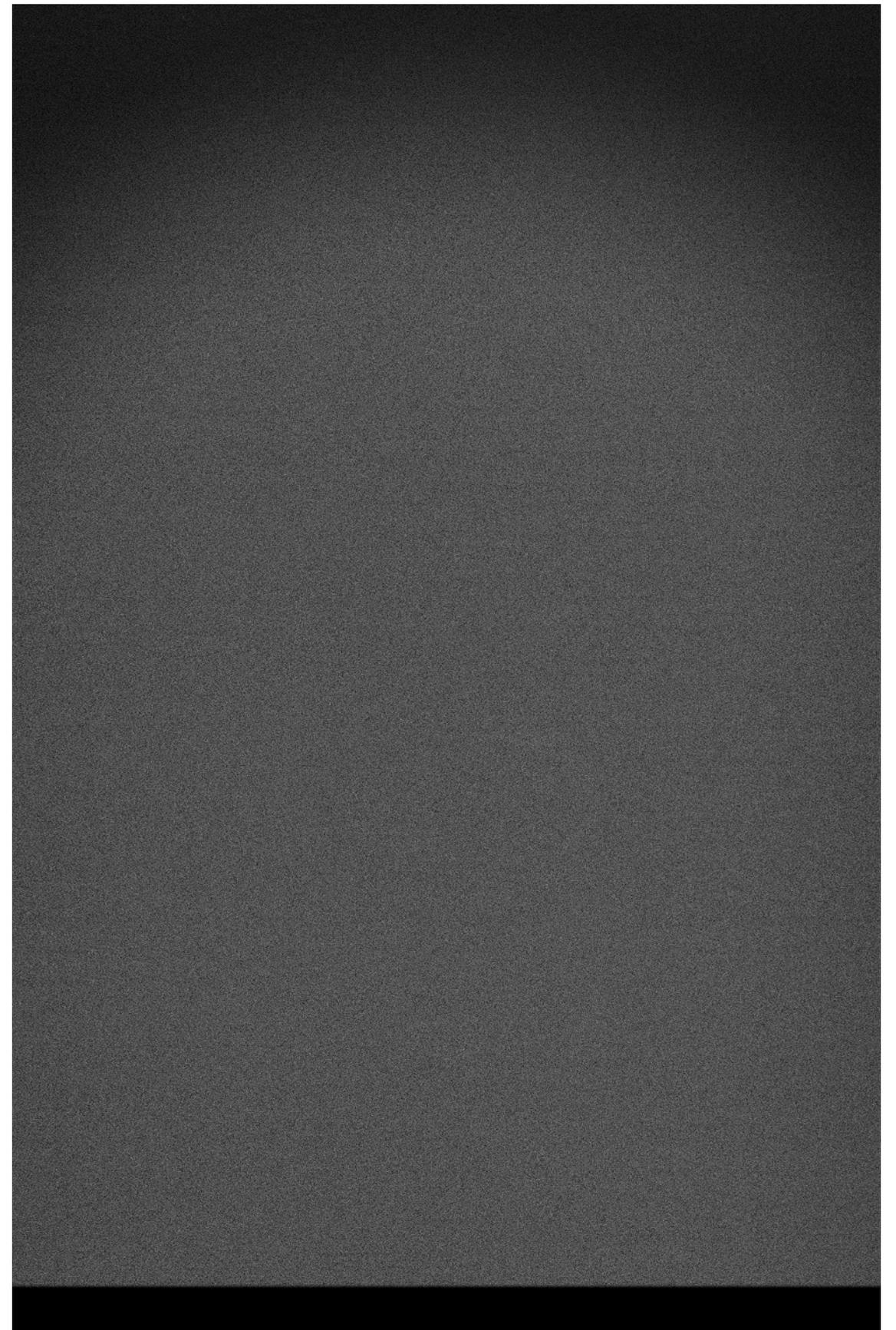
The ocean-wave model provided physics with an extremely powerful tool: the concept of the wave. There is nothing intuitive about the notion of the wave, except in the case of ocean waves. Pythagoras's disciples nonetheless drew a conclusion for the sound of an instrument, which they zealously expanded to the whole universe. In many ways, they were anticipating modern, classical, and quantum physics. Classical physics explores sound, light, material vibrations, and hydrodynamic whirlwinds through the concept of the wave.

Quantum physics drew some principles from the real that violate classical physics and even often challenge common sense – discontinuity, for example, or uncertainty, complementarity, and non-locality. Waves are essential to quantum physics. The latter first considers that the real, starting with energy, is fundamentally composed of small packets, or quanta, and specifically of wave packets. The real ignores continuity.

As a result of discontinuity and of its undulatory aspect, it then shows, for instance, that it is impossible to measure both the speed (physicists use the terms "momentum" or quantity of movement) and position of a particle or of a wave packet with an arbitrary or unlimited precision. The more one aspect is precisely measured, the more the other's measurement will be uncertain, the relation between both values being determined by Planck's constant.

Quantum physics sees two states – the particle, in principle locally or even punctually defined, and the wave, expanding in space – as complementary and alternatively revealed through various different experimentations. Tom Fecht's favorite tool, the photon, is not only a particle in Newton's terms or a wave as demonstrated by Young: it is alternatively one or the other, according to the perspective from which it is considered. The property of complementarity has been extended to any presumed particle and even to any object. These "wavelets" do not have any definite position, but only the probability of a position described by a wave. Thus, according to quantum physics, an object has no definite position – only a probability to be at a given position as revealed by measurement, thus excluding any other possibility. While significant on a microscopic scale, these effects remain negligible on ours.

Non-locality is the most recently established effect in quantum physics and the most striking, too: when two quantum objects have interacted at any moment in the past, they remain conflated in one, interlocked. Even when they have drifted very far apart, they "seem" to instantly communicate when one of their properties is measured. The measurement of a property for one of the objects instantly creates an immediately acknowledgeable value of that same property for the other object. This does not violate relativity, according to which nothing travels faster than light, since no energy and no information can be transferred that way. The objects thus interlocked, inseparable albeit spatially distant, have no particular properties of their own; a system that may be at once positive and negative on a single criterion. If the measurement of one object gives a positive value, the other instantaneously becomes negative – as if it had received the information by common sense.



Another consequence of quantum physics is the energy of the void, a very different void than in classical physics. According to the latter, there would, by definition, be nothing, meaning that a region in space can carry a set energetic value, and it would be null in this particular instance. This is incompatible with quantum uncertainty, for which each region carries a form of non-null value: pairs of virtual particles appear only to instantly vanish, leaving too little time to violate the general law of energy conservation. Not seen, not caught. Even if these particles are unobservable, the Casimir effect establishes their existence. These fluctuations in the void evoke a form of “quantum lapping.”

The wave of position probability has a curious effect: when a particle meets a wall (a barrier of potential) and if it is insufficiently charged in energy to cross that wall, then there is a small, yet not null probability that it will be found on the other side; this is the “tunnel” effect used in many techniques such as microscopy.

Since calculations cannot predict the features of an object prior to measurement and only the probabilities that they may hold such value, the quantum approach ultimately introduces true chance. It is as if the value informed by measurement were to be drawn out of all the possibilities suggested by the wave of probability. Chance is not a form of ignorance such as that which prevents us from knowing which side of a coin tossed in the air will face up, while its trajectory is entirely determined by the way it is tossed and the influences it will meet on its way, like a blow of air. For some, chance – which is fundamental, a quality of the real – establishes the sentiment of our free will.

What meaning can these reminders bear when reading Tom Fecht’s photographs?

These prints of the ocean refer to classical physics, even if they suggest some of its limits. Ocean waves are human-sized objects, macroscopic, even if their multiplicity, variability, and complexity cannot be fully described. Better even, their movement is congealed as if the image represented a slice of relativity’s space-time block. This leads us to question the nature of time. And what if it was but a dimension linking the successive stages of the universe according to an absolute determinism, yet excluding any simultaneity and any possibility of freedom?

With its slightly slanted horizon and asymmetry resulting from the direction of light, Fecht’s *Eclipse #7953* thus seems to have congealed waves borne by a current that shapes them into near-sinusoidal traces. The dark sky in *Eclipse #8078* evokes the spiral of some galaxy suddenly jammed along its central axis (see p.25).

For a nonscientific mind somewhat acquainted with quantum physics, however, other images from the *Incertitudes* series are even more enigmatic in their sublime austerity. A dark sky colonized by white dots overlook a uniform black stretch of sea. No waves here and no reflection either. Along with an absence of color, already reluctant in the *Eclipse* series, the minimalism of innumerable dots suggest abstraction. Indeed, the kind of abstraction that arouses the imagination and refers to a physical reality only made accessible to us by means of technical devices.

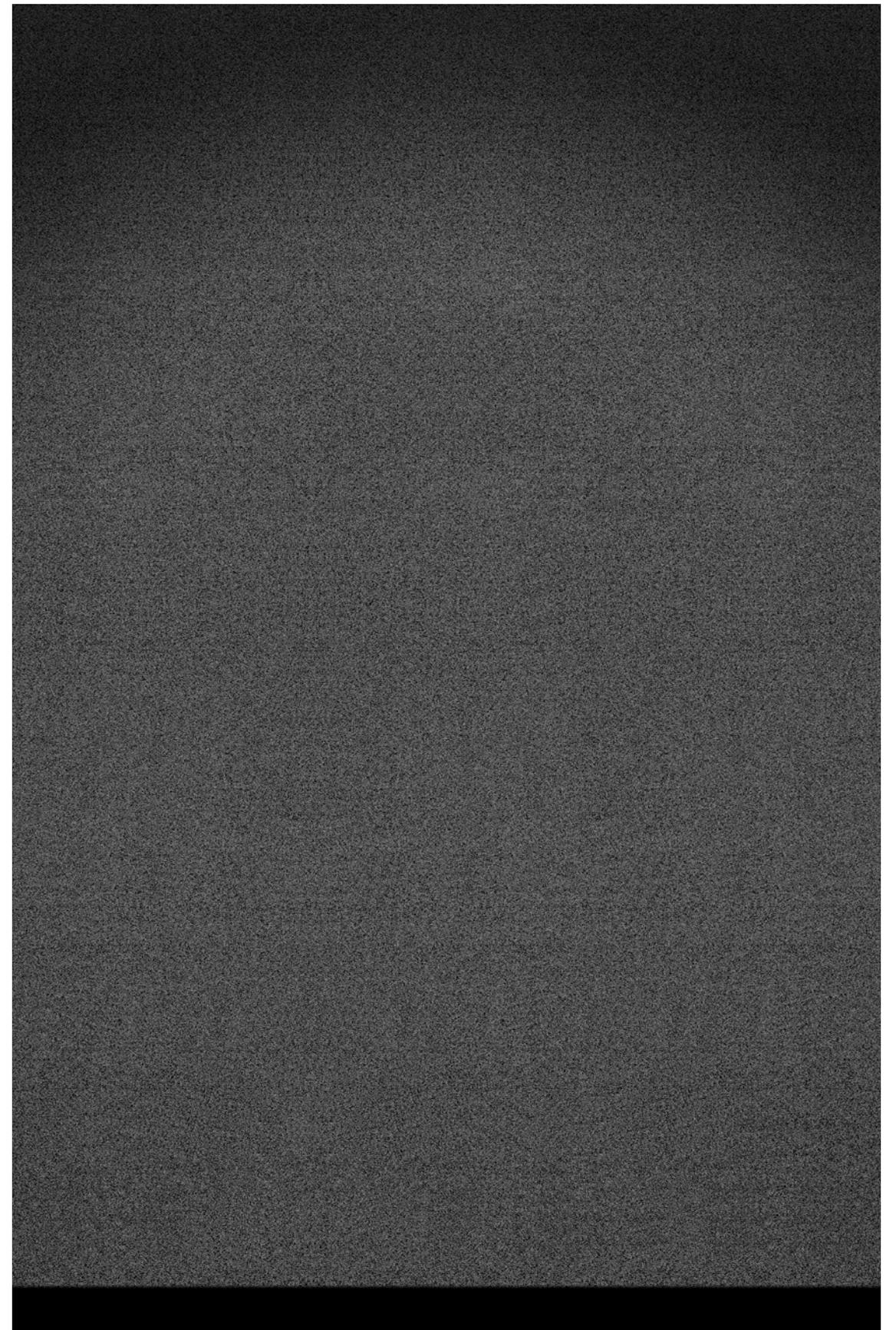
We know that these views result from long photographic exposures that can last up to four hours and that the sensitive surface is outdated, thus no longer offering the full properties of a normal film. We also assume that these photographs have been taken on completely black, moonless nights, and probably under covered skies, as is so often the case in Brittany; a sky like a curtain, blocking any light from space, at least to the human eye.

Let me guess.

Why is the lower part of the image – in other words, the sea – seemingly uniformly dark, as if no light had reached it? Most likely because too little of the rare light was reflected by the ocean to substantially expose the reluctant film. The water probably absorbed the most energetic photons, but the ones that could be reflected were not strong enough to be revealed in the view. Ocean waves cannot appear in long pauses; their contradicting movements are annulled on average, and the ocean turns into an obscure mirror. They are annihilated in their successive superimpositions.

The sky is more mysterious. The white dots are not stars, and no constellations are discernible. Their distribution seems purely random, and there are no large gaps of luminosity as is the case in a clear night sky. The circular movement of the stars, approximately around the polar star, resulting from Earth’s rotation and usually tracing its line in any long exposure, is not detectible either. The eye might be led to believe that it is vaguely seeing alveolar structures, but the brain is being trumped through a phenomenon referred to as pareidolia.

These dots do not represent stars. Perhaps some radiance from the depths of the universe ... Photochromic substances are usually only sensitive to light. So this is indeed light, even if only due perhaps to some cosmic emission that tends to escape our vision.



INCERTITUDE # VII / ISO 1600, 2018  
Unique silver gelatin print, 120 x 80 cm

The light from the stars comes from far away and, thus, from a long time ago. Some of the celestial bodies that were emitting light years, centuries, even millions or billions of years ago have faded, but not all of them. It is a fossil kind of light in a way, though for each of these photons, according to relativity, no time has spanned since it was emitted. Old for us, they are newborn from their perspective. The apparently random distribution of the dots possibly stems in part from the obstacles, the clouds, that photons meet as they fall from the sky; but they are most likely due to the film's strongly attenuated, now stochastic sensitivity. At different moments, the most energetic photons have excited, and exhausted, the randomly distributed zones still active on the sensitive surface. The aging of the film generated chance, which in turn reflected quantum chance, or true chance, on the side of the photons that have reached Earth and of the still active molecules.

Clearly, this enigma is the result of the activation of photochromic components by photons. Photochromism comes from a modification in the electronic configuration of the substance being excited. This generates a possibly reversible modification of the absorption spectrum within the visible. Tom Fecht prepared an installation: the result is observable, but we ignore the details of the intermediate stages, as does he. This hints at quantum mechanics in which the evolution between the preparation space (the system from which a particle is emitted) and the space of measurement, when properly described through Schrödinger's equation, does not convey the result of the measurement.

Temperature is another physical variable at work in these images, as the sensitivity of the outdated large-format films (8 × 10 in.) is greatly dampened. Heating the film, in reasonable yet subtle proportions to be determined, can improve this. Thus, beyond the regular parameters such as aperture and exposure, Tom Fecht must also master the temperature of the sensitive surface during exposure and in the dark room where it will be processed. Uncertainty, which is not quantum here, is warranted. The photographer's experience can never fully guarantee the result. Physical conditions and the local state of the universe also express themselves in these instances.

However, reality is substantially different from what I may have suggested and from what I had naively imagined before even knowing about it.

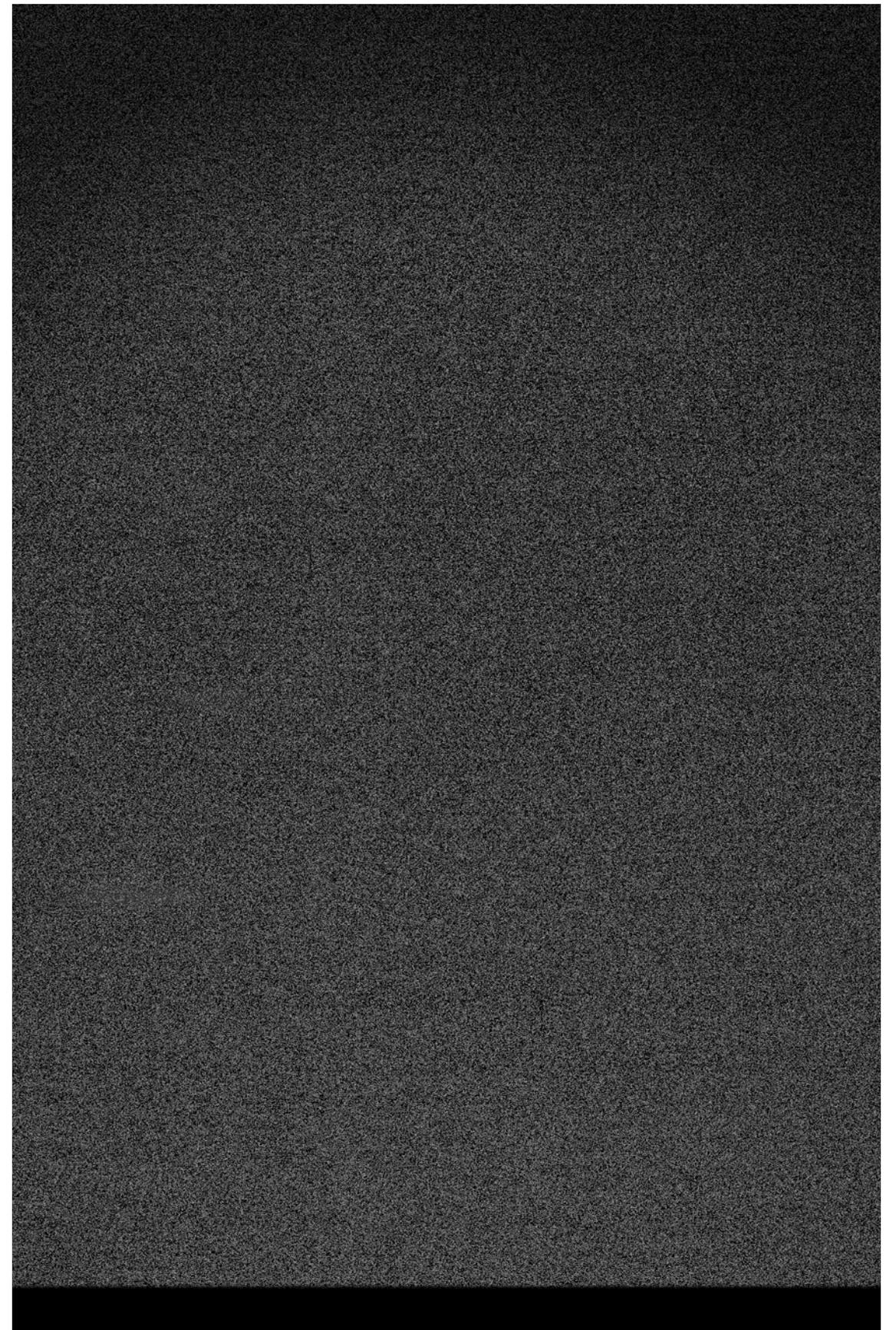
Each of these *Incertitudes*, in spite of the size of the print (up to 226 × 146 cm), corresponds to a minute detail on the negative, on a scale of one square centimeter. At that level, the dark stripe in the lower part shows the blurry line of the tide swinging endlessly back and forth. The stars are absent from the image, as they stand way above the white dotted space. A space confined between both sea and stars, haunted only by the activation of tiny, still-sensitive photochromic crystals distributed by chance on the outdated film. We are in the realm of the near microscopic, on the verge of the quantum world. No one can tell where these photons came from or why they have randomly revived the molecules. These enigmatic firmaments reflect our world's fundamental chance – or quantum chance.

The apparent curve of the firmament does not correspond to any cosmic reality. It is due to vignetting, a loss of light in the angles due less to the features of the highest-quality photographic lens, a loss possibly amplified by the extended exposure than to imperfections in the optical device of projection onto the baryta paper during the printing process. Here, the viewer can perceive a macroscopic physical object, the actual equipment. Physicists, particularly those who deal with the quantum world, know about these interactions between a microscopic object, never directly observable, and their macroscopic instruments, allowing them to observe them at our own scale.

Each of these photographs – whose print, may it be reminded here, is unique – is different from the next, even if it may seem otherwise. What happens when vagabond photons interact with photochromic particles is a result of the quantum. As the mathematician Alain Connes writes: "It is very hard to acknowledge the fact that, at the microscopic, quantum level, some phenomena cannot be reproduced. However, it is a fact. Its philosophical impact is difficult to grasp. Here, it is difficult to acknowledge the fact that nature, at the atomic level, is unpredictable – even if the physico-chemical 'reality' is deceptively subtler."<sup>1</sup>

The white dots in *Incertitudes*, where no constellation or movement can be perceived, send us back to the most fundamental indecision revealed by the boldest theory of our times.

From the perspective of quantum physics, the universe is a prodigiously complex wave that might be described by a generalization of Schrödinger's equation. The wave



INCERTITUDE # VIII / ISO 3200, 2018  
Unique silver gelatin print, 120 × 80 cm

<sup>1</sup> Alain Connes, *Matière à pensée*, entretiens avec Jean-Pierre Changeux (Paris: Editions Odile Jacob, 1989).

universe is mostly cosmic – as in Tom’s Fechts photographs, where the lights falling from the sky, long after leaving their celestial bodies (some of which have since probably faded out) come to excite the photochromic surface after an indescribable journey. Quantum physics sheds some light on the matter. It suggests that everything is a wave, not only a wave agitating a medium, but a wave of probability, a positional wave, and an altogether existential wave whose perpetual oscillation prevents us from ever reaching to the bottom of things.

In a conversation with Thierry Magnin at the Collège des Bernardins, Paris, on September 30, 2009, the recently deceased physicist Bernard d’Espagnat said: “I thus feel [...] that our knowledge is not about ‘the real,’ the bottom of things, but only about empirical reality; it is about the image of reality that the human mind, considering its finite structure and capacities, is led to constitute itself of reality as such. And considering the global nature of things, I feel that we should even abandon the idea that objects, be they elementary or composed, exist by themselves in every instance, each in a given location. It is truer to say that if we see them in such a way, it is because the structure of our senses and of our mind leads us to see them that way.”

Bernard d’Espagnat later added: “I would say that while science is the absolute queen when it comes to accessing empirical reality, it is however ill adapted when dealing with the ‘bottom of things.’ There, at least, an emotion that might be artistic, for example, can actually be on a par with it, since both deliver but a pale yet precious glimmer across a domain, exposing only a glimpse of it.”

The approach chosen by Tom Fecht is one of the real, of the being, and it is to a large extent drastically different from that of contemporary art – a medium that has abandoned this ambition and is based on the idea of a game, the rules of which would be established by the artist ... rules that should preferably be original or avant-gardist in nature. For over a century, literature has already somewhat forsaken the quest for meaning, rejecting it as overly metaphysical and thus vain, favoring instead more playful combinations whose effects wither away after an initial surprise.

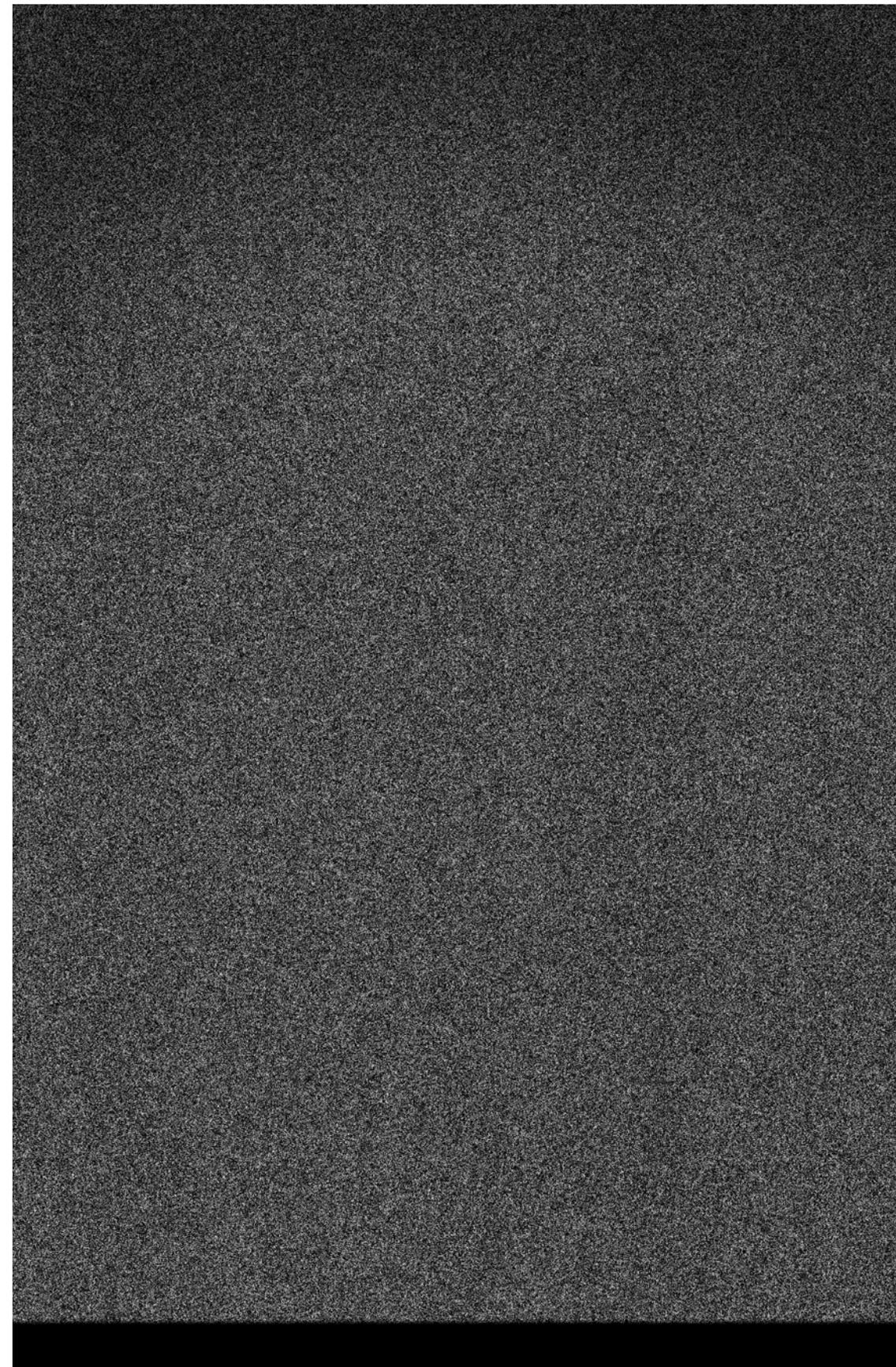
As such, the work of Tom Fecht meets that of his compatriot and near contemporary, Anselm Kiefer (born in 1945), or of Paul Celan (1920–1970) in his effort to experience the inexpressible through the atomism of words. After the demise of totalitarian rules – negations of all sense of meaning or any hope for it on behalf of humans – they have had to recover the path to a possible innocence, on their own terms, with or without any illusions: “... to be naked again under new stars” as Tom Fecht likes to put it.<sup>2</sup>

For us, of course, the real, the being, will remain forever inaccessible or concealed according to the words of Bernard d’Espagnat. But it is the tension toward that being, that real, the unyielding and yet hopeful effort to move closer to the “bottom of things,” the absent object, that ultimately supports the arts and the sciences – and, sometimes, their encounter.

Where we believe we cannot fathom anything, we sometimes reach into something of the real, that can only assert with certainty what it is not. Dark is not the void. *Dark matters.*

<sup>2</sup> Tom Fecht and Dietmar Kamper (ed.): *Umzug ins Offene – Vier Versuche über den Raum* (Movement into the Open – Four Studies on Space). Springer Verlag Wien New York, 2000, p.250

**Gérard Klein**, writer, essayist, economist, and editor, has an avid interest in the arts and sciences, and enjoys thinking about the future. He is the founder and editor of the literary collection *Ailleurs et demain*, a symbol of quality science fiction in France. He has published close to 15 books translated into a dozen languages and is the recipient of several prizes such as the *Pilgrim Award* from the Science Fiction Research Association for his lifetime achievements. Most recently he published *Heurs et malheurs de la physique quantique* (Triumphs and Failures of Quantum Physics) in collaboration with Jean-Pierre Pharabod at Édition Odile Jacob, Paris 2017.



*INCERTITUDE # IX / ISO 6400, 2018*  
Unique silver gelatin print, 120 × 80 cm  
(+ 1 Artist's Proof # I–IX, 180 × 120 cm)

*INCERTITUDE #32001*(left) and *#4001*(right), 2016  
Unique silver gelatin prints on baryta paper /  
3200 and 400 ISO, 125 × 210 cm  
Installation view at Museum DKM, Duisburg, Germany (2017)



*GRAVITATIONAL PULL* (Diptych), 2017  
Homage to Barnett Newman  
Left: *#8475 (Day before One)* / Right: *#8568 (Day One)*.  
Unique C-prints 305 × 125 cm each  
Installation view at Museum DKM, Duisburg, Germany (2017)



*GRAVITY FIELD #8564*, 2017  
Unique C-print 244 × 180 cm

*ECLIPSE #7953*, 2011/2018  
Unique C-print 180 x 295 cm

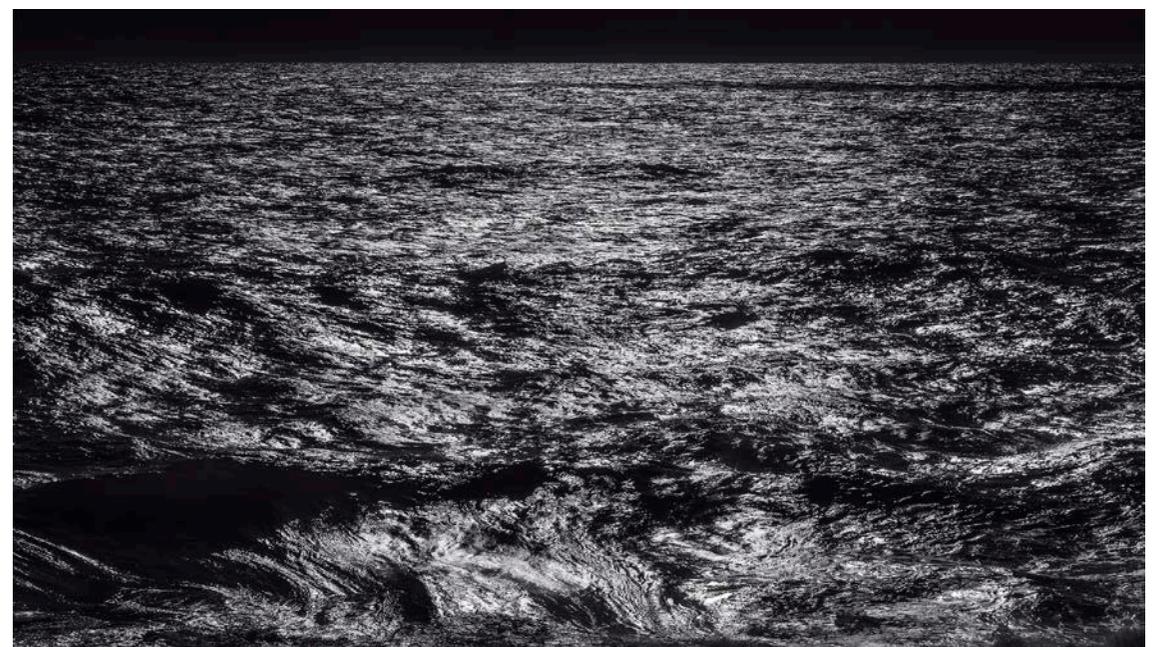
*ECLIPSE #8078*, 2014/2018  
Unique C-print 180 x 295 cm

*ECLIPSE #1482*, 2018  
Unique C-print 145 x 237.5 cm

*The Wave* by Gustave Courbet, 1870  
with *ECLIPSE #8090* by Tom Fecht, 2013  
Installation view of *Rétour de Mer*,  
Musée des Beaux-Arts - LAAC Dunkerque, France (2014)



*TIME I (Triptych)*, 2017  
3 Unique C-prints 180 x 295 cm  
Installation view at Museum DKM, Duisburg, Germany (2017)



It is one thing, to  
penetrate the night.  
But to be penetrated  
by the night – that  
means being overtaken  
by an experience  
much older and greater  
than us.



**Tom Fecht** launched his artistic career in 1992 at Jan Hoet's *Documenta IX*. In the late 1990s, he embraced photography as his preferred medium. He has since produced an extensive body of landscape and portrait work. In recent years, Fecht has become known for his innovative night photography and monochrome seascapes that focus on natural phenomena hidden in time and invisible to the naked eye. His large-scale minimalist works hover between the physical world and the invisible aspects of the universe – magically transforming nature through the profound depths of time. His most recent series *DARK MATTERS* push his photographic adventures to the edge of quantum physics.

Inspired by the Apollo moon missions and Kubrick's iconic *2001: A Space Odyssey* (1968), Fecht studied cybernetics, thermodynamics and engineering at Columbia University in New York and art history at Technische Universität in Berlin. As a young engineer, Fecht was involved in developing fax machines and computer-based imaging at IBM. In the 1970s, he founded his own gallery and publishing company *Elefanten Press* in Berlin. Over the next two decades, Fecht worked as a gallerist, publisher, author and editor focusing on historic, artistic and documentary photography. Expanding his imagination into engineering and scientific imaging reshaped his artistic practice; today he builds his own image machines testing the limits of his medium as a tool and toy. Fecht holds own patents and has taught at Cornell University, NY, at the Royal College of Art and the Imperial College in London. His current research explores the thermodynamic potential of silver gelatins in collaboration with CNRS Bordeaux.

As of 2012, Fecht's photographic works have been limited to unique vintage prints. His work is regularly presented at TEFAF Maastricht and New York and has been featured in museum exhibitions and collections, including the Neue Nationalgalerie and Martin-Gropius-Bau in Berlin; Hamburger Kunsthalle; Bundeskunsthalle, Bonn; Royal College of Art, London; Helmhaus Zürich; Museum DKM, Duisburg; Museum Folkwang Essen; MuCEM Marseille; Musée des Beaux-Arts LAAC, Dunkerque and Musée des Beaux-Arts de Liège. His work is also represented in both corporate and private collections across Europe, North America, and Asia.

Tom Fecht was born in Germany and lives in Berlin and Brittany (France), his work is centered around his research studio at the Atlantic coast.

## RELATED PUBLICATIONS

Dirk Krämer and Klaus Maas (ed.): *Tiefenzeit / DeepTime*, Dusiburg 2018.

*Tom Fecht at Museum DKM* – Exhibition catalogue

Introductions by Siegfried Zielinski and Emma Nilsson, essay by Irmgard Bernrieder.

ISBN 978-3-942650-13-7 (German/English edition)

Tom Fecht: *ECLIPSE* – 25 Unique vintage prints. Essay by Hans Irrek.

Galerie Downtown François Laffanour, Paris 2015

ISBN 978-2-952034-94-4 (English/French edition)

Tom Fecht: *Mirror and Transformation* in: *FLUSSERIANA – An Intellectual Toolbox*

edited by Siegfried Zielinski and Peter Weibel. ZKM Center for Art and Media,

Karlsruhe and Univocal Publishing, Minneapolis 2015

ISBN 978-1-937561-52-9 (English/German/Portuguese edition)

Tom Fecht: *Refocusing the Euclidian Horizon* in: The Cornell Journal of

Architecture # 9 Mathematics – From the Ideal to the Uncertain. Ithaca, NY 2014

ISBN: 978-0-978506-12-4

Tom Fecht: *Towards Projection*, in: Dessin et Représentation:

Comment communique-t-on les idées? Les Conférences de Malaquais,

Jean Atali and Nasrine Seraji (ed.), ENSA Paris, 2008

Tom Fecht and Dietmar Kamper (ed.): *Umzug ins Offene – Vier Versuche über den Raum*

(Movement into the Open - Four Studies on Space). Springer Verlag Wien New York, 2000

ISBN 3-211-83476-1

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