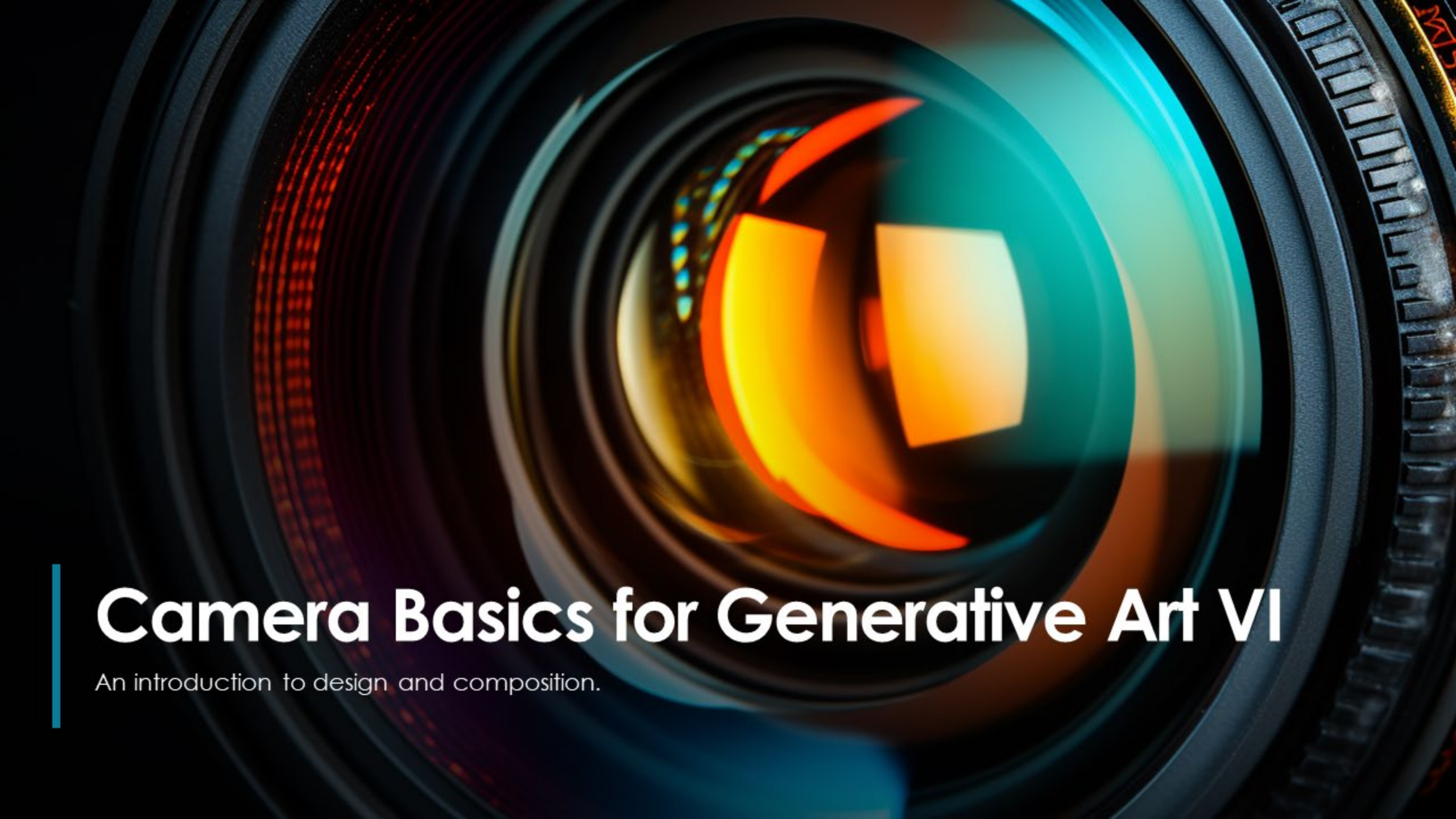


Camera Basics for Generative Art VI

An introduction to design and composition.

The Elements of Design, Part II

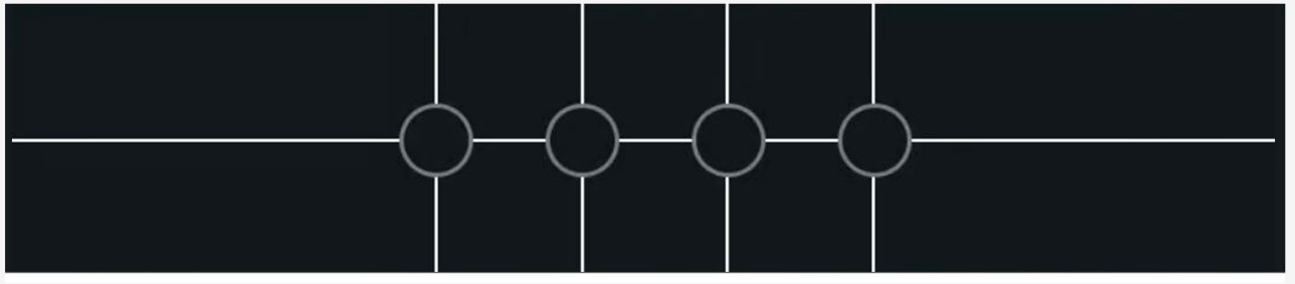
https://medialoot.com/blog/the-elements-and-principles-of-design/

The **elements of design** are the building blocks used by artists to create their designs. They are the parts, the components that can be isolated and defined in any visual design, they are the structure of the work, the objects to be arranged and used as part of any composition. Part II will address **textures/materials, space, color, and value** (this presentation starting with **texture**).

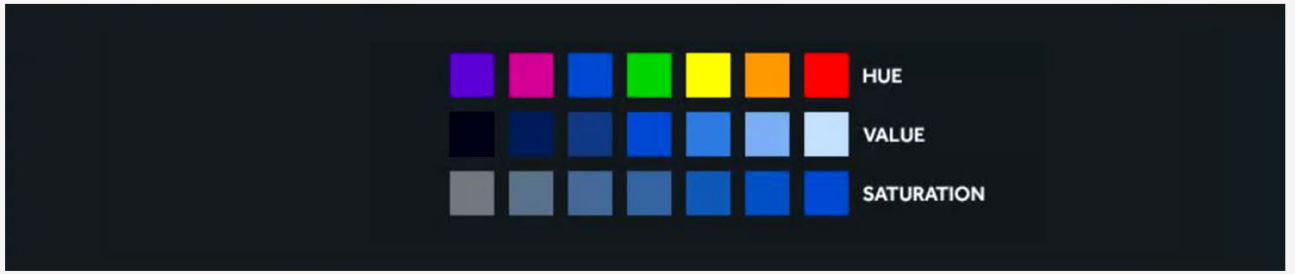
Improvisació I • 14.3 x 9.5 • Barcelona, Spain • 6.9.2012 • f/3.5 • 1/2500 sec • 500 ISO • 18 mm • Nikon D300 • Jazno Francoeur

TEXTURE & MATERIALS
Textures and materials are the surface quality (simulated and/or actual) that can be seen and felt, can be rough or smooth, soft or hard, etc. It exists as a surface we can feel, but also as a surface we can see and imagine the sensation we might have if we touch it, is both a tactile and a visual phenomenon.

SPACE:
Space is the area between and around objects (negative space) but it also refers to variations in the perspective and proportions of objects, lines or shapes and it is used for the comparative relation between different objects or areas. The real space is three dimensional, but in design when we create the feeling of depth we call it space.



COLOR:
The color is the response of the eye to differing wavelengths of radiation within the visible spectrum. Colors are used to generate emotions, define hierarchy, create interest, etc. There are many different kinds of color systems and theories but we will focus on the 3 properties: Hue, Value and Saturation.



VALUE:
Value is defined as the relative lightness or darkness, which suggests the depth or volume of a particular object or area— it is the degree of light and dark in a design, the contrast between black and white, and all the tones in between.

https://medialoot.com/blog/the-elements-and-principles-of-design/

AN INTRODUCTION TO TEXTURES & MATERIALS

Texture is a Multi-dimensional Aspect of Our Sensory Perception

Texture is often overlooked in photography (and therefore in other art forms, such as generative art). While we can't physically touch textures in photos, they are conveyed through visual cues like patterns, tonal variations, and interplay of light and shadow. In photography, texture serves as a vital element, infusing depth and intrigue into images. It invites viewers to mentally engage, pondering the tactile qualities of the subject.

Texture can also play a pivotal role in composition, guiding the viewer's eye. Art theory categorizes texture into various forms: **actual** (tangible feel), **simulated** (visual representation), **abstract** (non-representational), and **invented** (created for artistic effect). Additionally, textures can be classified as **tactile** (real-world touch) or **visual** (artistically portrayed).

Photographers harness texture's power by emphasizing surface details, employing various angles and lighting to accentuate textures' play of light and shadow. The interplay of smoothness, roughness, or graininess can evoke emotions, enhancing storytelling within a photograph. Ultimately, while we can't physically touch texture in photos, its visual presence bridges the sensory gap, inviting viewers to explore the tactile and imaginative dimensions of the subjects captured through the lens or generative art program.

District One Improvisation • 44 x 58.7 • Hanoi, Vietnam • 9.28.2008 • f/2.8 • 1/160 sec • 400 ISO • 7.6 mm • Sony DSC-W30 • Jazno Francoeur

The closer you get to your subject, the clearer and more detailed your textures will appear

These days, most cell phones have the capability to zoom in without losing too much fidelity, and in some models you can attach macro/micro lenses. If you are shooting with a manual or DSLR camera, you'll need a professional micro/macro lens to get a higher level of detail (this is a prime lens, so you cannot magnify further with it). Likewise, in generative art the level of detail will change as you zoom closer into your subject, though luckily we don't have to worry about adding physical lenses.

In the first prompt, there is no verbiage suggesting we get closer to the wall; in the second prompt, **'macro lens'** was added to the prompt, leading to increased detail; in the third prompt, I added **'extreme close-up'** to the prompt and got roughly the same result; however, by adding both 'extreme close-up' and 'macro lens', the level of detail and complexity increased. The difference between the first set of renders versus the last is considerable.

a paint-chipped rotting wall --v 5.2

a paint-chipped rotting wall, **macro lens** --v 5.2

extreme close-up of a paint-chipped rotting wall --v 5.2

extreme close-up of a paint-chipped rotting wall, **macro lens** --v 5.2

https://shotkit.com/texture-photography/

a paint-chipped rotting wall --v 5.2

extreme close-up of a paint-chipped rotting wall, **macro lens** --v 5.2

Texture in your images depends on two key factors: the quality and position of light

By understanding light qualities and positions, generative artists can control and manipulate texture, adding depth and interest to their images.

Quality of Light: Light can be categorized as soft or hard. Hard light produces well-defined shadows, emphasizing textures. This is why soft lighting is favored in portrait photography to minimize skin texture emphasis. To enhance texture in your images, opt for bright sunlight or high-power flash. Overexposing or underexposing also minimizes detail, so look for the sweet spot with your exposure triangle.

Position of Light: The light source's placement impacts texture photography. Front-on lighting minimizes shadows, flattening texture appearance. On the other hand, side lighting, achieved at a 90-degree angle, accentuates shadows and enhances object textures. During natural light photography, the **golden hour**— with the sun positioned low— creates longer shadows, bringing out texture details.

rusted metal wall with battle damage, extreme rusting, corrosive build-up and flaking metal, **diffuse neutral lighting** --v 5.2

extreme close-up, rusted metal wall with battle damage, extreme rusting, corrosive build-up and flaking metal, **diffuse neutral lighting**, **macro lens** --v 5.2

extreme close-up, rusted metal wall with battle damage, extreme rusting, corrosive build-up, and flaking metal, **golden hour, hard light, side lighting, cast shadows, macro lens** --v 5.2

extreme close-up, rusted metal wall 3/4 view with battle damage, extreme rusting, corrosive build-up, and flaking metal, **golden hour, hard light, side lighting, long cast shadows, macro lens, chiaroscuro, interpolating warm to coo**l --v 5.2

https://shotkit.com/texture-photography/

rusted metal wall with battle damage, extreme rusting, corrosive build-up and flaking metal, **diffuse neutral lighting** --v 5.2

extreme close-up, rusted metal wall with battle damage, extreme rusting, corrosive build-up, and flaking metal, **golden hour, hard light, side lighting, cast shadows, macro lens** --v 5.2

A shallow depth of field can force the viewer to focus more on areas of complex detail

To capture intricate textures in landscapes or close-ups like tree bark, opt for a lens that is 24mm or below (especially a macro/micro lens) or simply prompt ‘deep focus’. Conversely, an 85mm lens creates a shallow DOF, isolating one area while blurring the remainder for artistic emphasis; again, you can also just say ‘shallow DOF’ or ‘shallow depth of field’. All that said, it is still critical that your main area of focus is sharp, particularly if you want to see the finer details.

extreme close-up of white laundry hanging on a line, layers of fabric --v 5.2

extreme close-up of textured laundry hanging on a line, **subsurface scattering**, **hard light,** layers of fabric --v 5.2

extreme close-up of textured white laundry hanging on a line, **hard light, shallow depth of field**, layers of fabric, **85mm, strong contrast, low exposure, telephoto lens** --v 5.2

https://shotkit.com/texture-photography/

Discovering textures is an exciting journey with endless possibilities

https://shotkit.com/texture-photography/

Nature: Explore the natural world for diverse textures, from rock formations to intricate tree rings and the mesmerizing patterns of Romanesco broccoli.
Wildlife: Animals provide a rich source of texture, whether it's the softness of fur, the intricate details of feathers, or the patterns in scales.
Textiles: Fabrics offer an array of textures, from cozy knitted sweaters to plush velvet curtains, woven rugs, and the smoothness of silk.
Cityscapes: Your local neighborhood is a textured wonderland. Look down at pavements, up at building facades, and explore parks, playgrounds, train stations, and more for various textured objects and surfaces.

Before you sit down to prompt, take your cell phone around the neighborhood and do research on your own. Mastering the art of texture photography will help to make your generative images come alive, tempting viewers to reach out and touch the textures you've skillfully captured. **You can also amass a library of textures which can be repurposed for blending. The image to the right incorporated textures I shot while on urban walkabouts.**

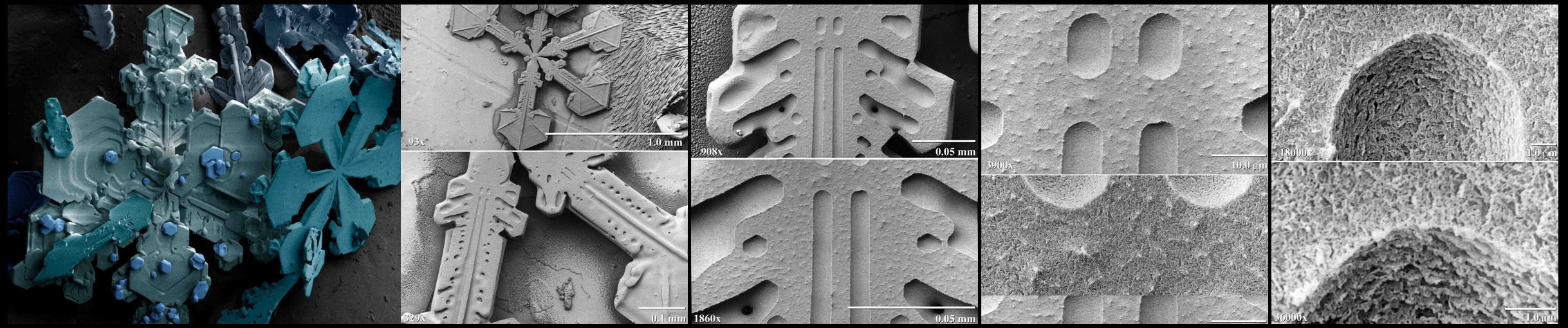
Textures vs. Patterns: What's the Difference?

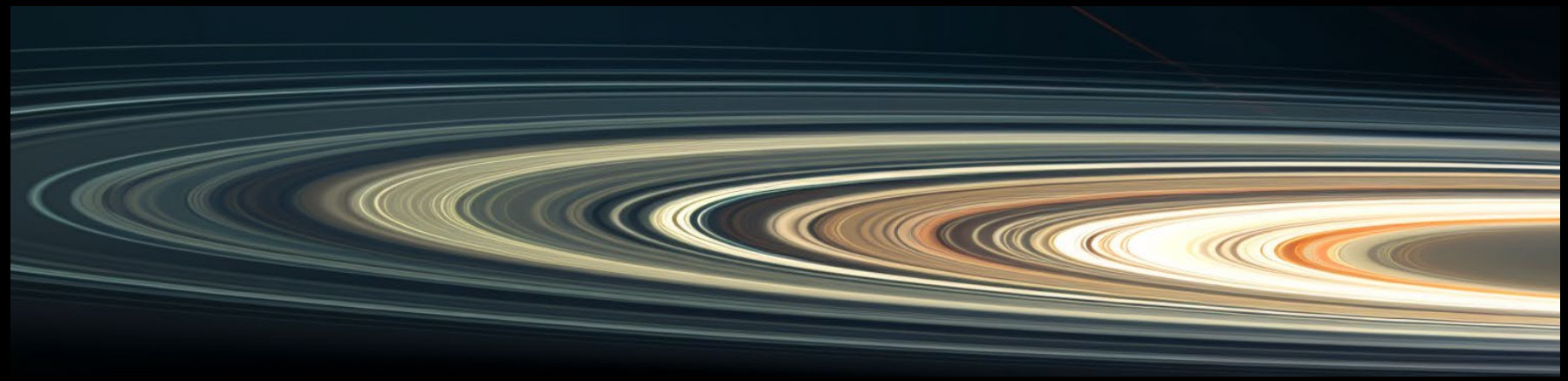
Textures and patterns are fundamental elements in art, design, and photography, but they possess distinct characteristics and roles while also intersecting in creative expressions. Textures refer to the tactile quality and visual appearance of a surface, whether real or simulated. They encompass a sense of touch, creating depth and dimension within an image. Textures can be rough, smooth, soft, or coarse, and they often replicate real-world surfaces. For instance, the rough texture of tree bark or the smooth texture of glass can be convincingly represented in a photograph. **Patterns, on the other hand, entail the repetition of shapes, forms, or designs.** They establish rhythm and order within a composition and can be purely visual, lacking tactile qualities. Examples include symmetrical patterns in wallpaper, the intricate designs of a Persian rug, or a field of identical flowers. The convergence of textures and patterns occurs when textured surfaces or objects create repetitive designs. For instance, a brick wall incorporates both texture (the rough, tactile quality of the bricks) and pattern (the consistent arrangement of the bricks in rows). The veins in a leaf display both the texture of their intricate structure and the pattern formed by their network. Understanding these nuances is pivotal in creative endeavors. Photographers, artists, and designers use textures to convey a tactile and sensory experience. Patterns, on the other hand, add structure and rhythm to compositions. However, blending them can produce compelling visual experiences that engage the viewer on multiple levels, whether through the intricacies of a textured pattern in a natural scene or the rhythmic repetition of elements in an urban landscape. The bowl below has a quasi-Greek key pattern, but the surface itself is a texture.

Scale and Textures

https://en.m.wikipedia.org/wiki/File:Snow_crystals.jpg https://imgur.com/gallery/TILOxo6
https://www.vox.com/2015/1/27/7921543/snow-photos-electron-microscope

Texture is variable, depending on your vantage point. As a rule of thumb, the closer you move toward an object, the more textures will become visible to the naked eye. In the example below, zooming into a snowflake reveals increasingly variegated textures. This guideline is particularly important for expressing depth, as those objects closer to camera will always have more perceptible detail, whereas those images in the mid-ground will sometimes have 50% less detail; this decreases exponentially as we look to the background elements. That said, a remarkable thing happens when you increase the scale beyond the perception of the human eye, which is the case of the snowflake: the further we move into the image, it becomes less symmetrical, and eventually appears chaotic. Similarly, if we look at Saturn's rings from afar, they appear perfectly smooth and symmetrical; however, as the Cassini probe made its way into Saturn's atmosphere, the same phenomena occurred: the rings broke down into chaotic, asymmetrical groupings of ice and rock.

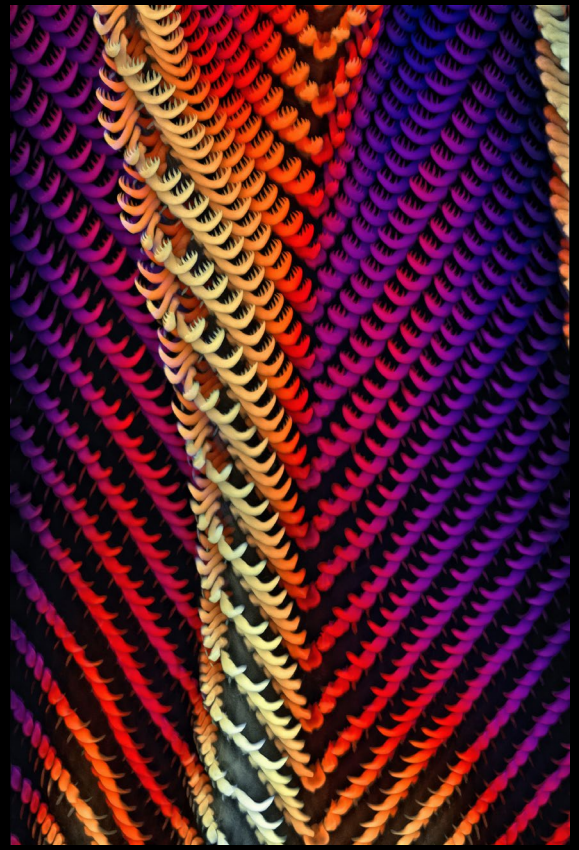




The Microcosm: Textures Hidden from the Naked Eye

https://www.usgs.gov/

At the macroscopic level, scanning electron microscopes (SEMs) unveil remarkable details, capturing the intricate landscapes of surfaces, such as the delicate textures of insect wings. SEM provides high-resolution, three-dimensional imagery, offering insights into biological adaptations, structural integrity, and surface characteristics. Moving to the cellular realm, **confocal scanning microscopes** excel in capturing the 3D architecture of living cells. By targeting specific fluorophores, they create sharp, detailed images with precision, enabling scientists to explore cellular textures and structures. These insights prove crucial for research in biology, medicine, and pharmacology. At the atomic level, **scanning tunneling microscopes (STM) and atomic force microscopes (AFM)** unveil the hidden textures of matter's fundamental building blocks. STM visualizes individual atoms by monitoring the flow of electrons between a sharp tip and a sample's surface, allowing for atomic manipulation and precise visualization. AFM employs a cantilever with a sharp tip to scan and map the atomic textures of surfaces, opening new avenues in material science and nanotechnology.



Human Scale: Textures and the Limits of Distance

https://www.romeartlover.it/Heaven.html

The Colonnade in St. Peter's Square, a masterpiece by Gian Lorenzo Bernini, employs an ingenious artistic strategy known as **"aesthetic deception."** Understanding that viewers would primarily observe the colonnade from a considerable distance in the square, the artists intentionally limited the level of detail on the statues adorning the colonnade. This technique, referred to as **"non finito" or "unfinished,"** is a deliberate choice to emphasize the grandeur and coherence of the architectural structure. By forgoing intricate detailing, the artists directed attention to the colonnade's overall unity and symmetry.

This approach ensures that from a distance, viewers perceive a harmonious and impressive whole rather than being distracted by individual sculptural elements. The result is a breathtaking visual impact, where the structure itself takes precedence over the specifics of each statue, making the Colonnade an iconic and enduring symbol of St. Peter's Square.

Macrocosmic Scale: Textures of the Earth

https://www.usgs.gov/

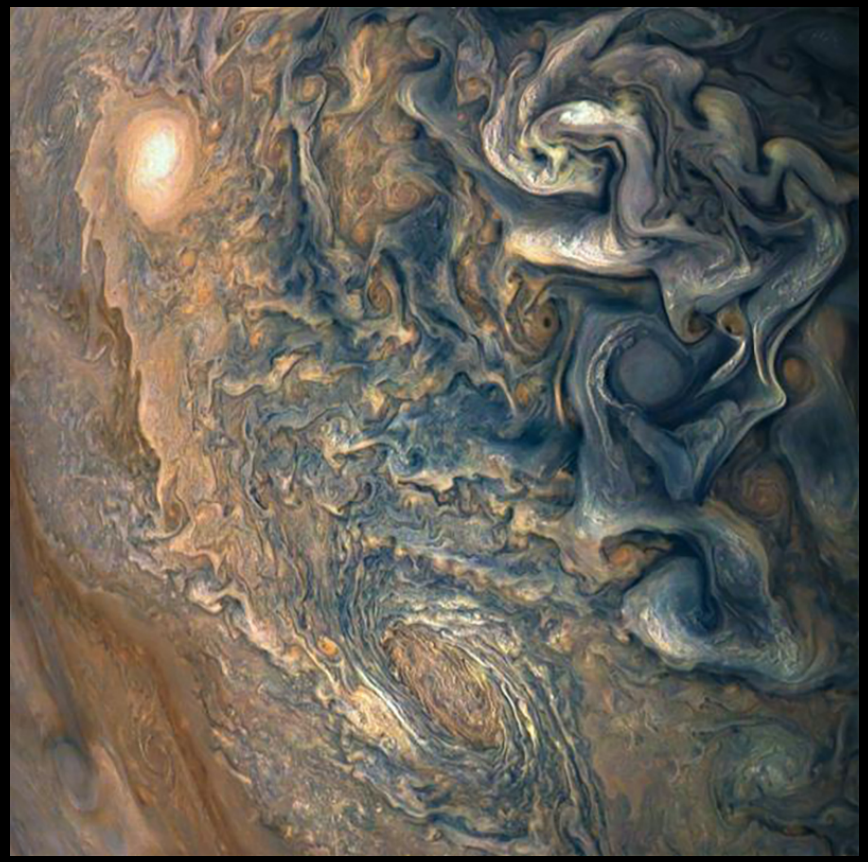
Landsat 8 and its successor, Landsat 9, have proven to be invaluable tools for the United States Geological Survey (USGS) in documenting Earth's ever-changing landscapes with a wealth of beautiful textured images. These satellites capture an array of image types, each offering unique insights into our planet's natural and anthropogenic features. One captivating aspect of Landsat imagery is the inherent abstraction created by the vast distance between the satellite and the Earth's surface. This distance allows for the capture of Earth's features as patterns, and it's in this abstraction that we often find artistic beauty. The textures and patterns formed by mountains, forests, bodies of water, and urban areas present a stunning visual tapestry that reflects the planet's diversity. Landsat satellites capture various types of images, including true color, false color, and infrared images. True-color images mimic the natural appearance of landscapes, with lush green forests, deep blue oceans, and brown or tan deserts. False-color images, on the other hand, enhance certain features for scientific analysis. For instance, healthy vegetation appears as bright red, making it easier to monitor plant health and detect changes. Infrared images provide information about temperature variations, helping with applications like monitoring urban heat islands and vegetation health.

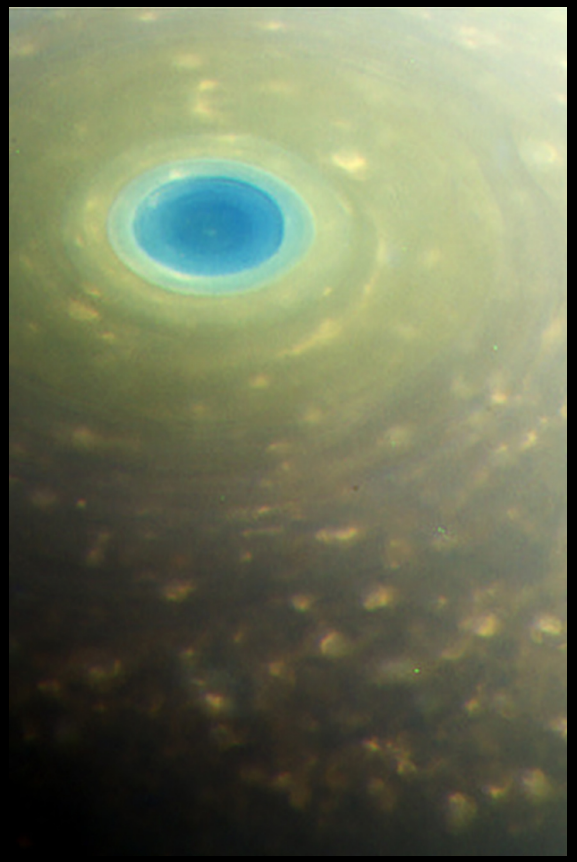
2013 + 2021- Atlas V- Landsat 8 and 9 Launches

Cosmic Scale: Textures of the Solar System

https://www.nasa.gov/

Space probes like Cassini, Juno, and the SDO have delivered a treasure trove of otherworldly and textured images of planets and the Sun, offering breathtaking insights into the cosmic wonders beyond Earth. Cassini's mission to Saturn unveiled astonishing images of the gas giant's mesmerizing rings, its enigmatic moons, and the colossal hexagonal storm at its north pole. These textured visuals not only showcase the complexity and dynamism of Saturn's ring system but also reveal the intricate landscapes of its moons, like Enceladus with its geysers and Titan with its lakes of liquid methane. **Juno's mission to Jupiter** has provided an unparalleled perspective on the largest planet in our solar system. Its textured images reveal Jupiter's turbulent atmosphere with its colorful bands, massive storms, and the mesmerizing Great Red Spot, a centuries-old hurricane. The textured visuals allow scientists to study the planet's complex weather patterns and atmospheric dynamics. The Sun, our nearest star, has been observed in extraordinary detail by solar probes like the **Solar Dynamics Observatory (SDO).** Textured images of the Sun's surface show bubbling, roiling features like granules and sunspots, and its outer atmosphere, the corona, during solar eclipses. These visuals help us understand solar activity, space weather, and their effects on our planet.

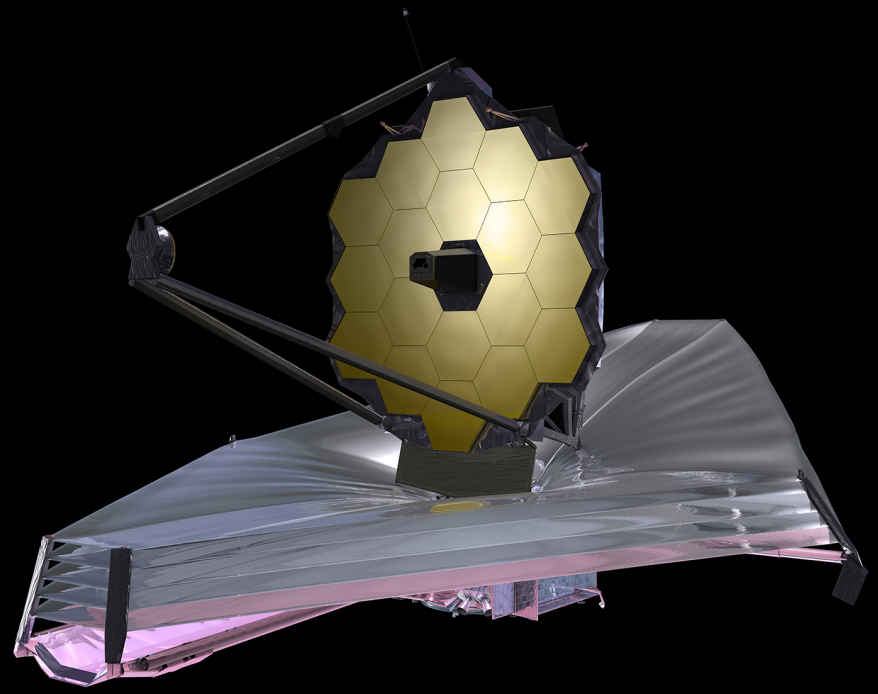




Cosmic Scale: Textures of the Universe

http://www.jwst.nasa.gov/images_artist13532.html
https://hubblesite.org/mission-and-telescope/servicing-missions
Hubble: bit.ly/3OnC7id Webb: bit.ly/3OrP22G

The Hubble Space Telescope, launched in 1990, primarily operates in the visible and near-infrared spectra. It excels in capturing exquisite texture details and high resolution, providing stunning visuals of celestial objects. Its optical and ultraviolet instruments reveal intricate features in this wavelength range. In contrast, the **James Webb Space Telescope,** which has already been launched, specializes in observing celestial objects in the infrared spectrum. **While it may not produce the same vivid colors as Hubble, Webb compensates by offering remarkable texture detail and resolution in the infrared range**. Infrared observations are less affected by dust and gas, allowing Webb to unveil previously hidden celestial phenomena. Overall, Hubble's strength lies in texture detail and resolution in the visible and near-infrared, while Webb is designed to excel in the infrared spectrum, providing complementary insights into the universe. Each telescope contributes valuable information, with Hubble providing exquisite visuals and Webb uncovering hidden celestial wonders in the infrared.



LENSES, LIGHT, & MAGIC

Abstract textures are achieved through the practical magic of camera and film processes, experimental methods, and modern technology.

Creating textures through analog film and print manipulation

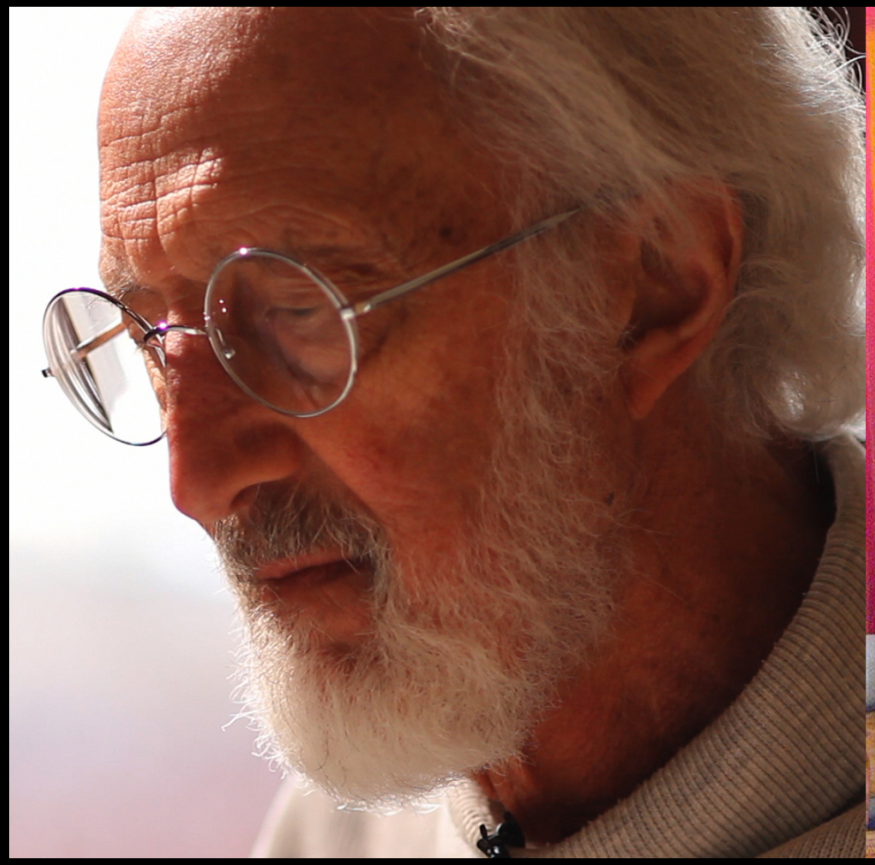
Many deprecated camera processes and dark room tricks can be resurrected in generative art programs. Such techniques included damaging a negative or print through scratching, boiling, and even microwaving. In this series, I damaged the negatives by adding extra developer, then I manipulated them further in the darkroom. As with light artifacts, damaged negatives and prints are easily replicated in most generative art programs.

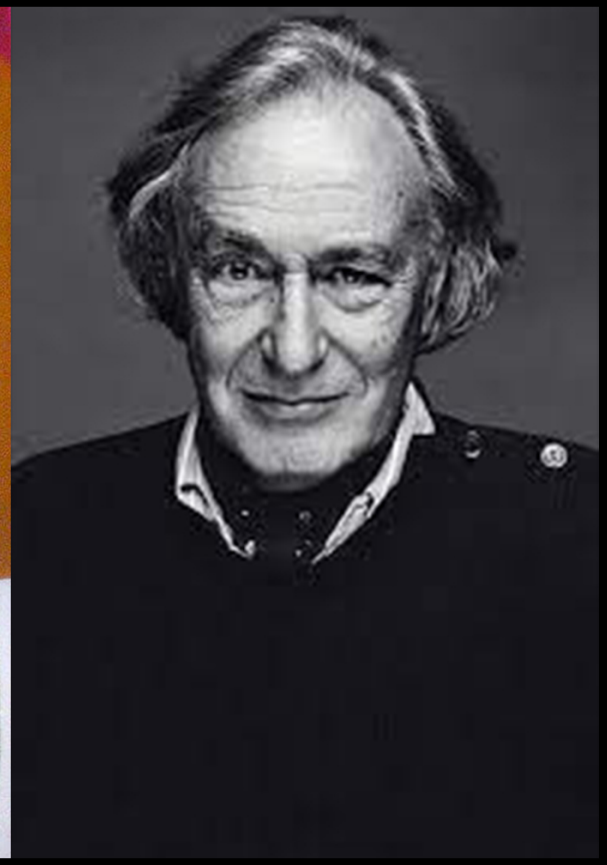
Performance Art I • 9043 x 6030 • 6400 dpi • Kansas City, MO • Fall, 1998 • OM-10

Performance Art II • 9130 x 6058 • 6400 dpi • Kansas City, MO • Fall, 1998 • OM-10

Modern Pioneers of Manipulated Film and Prints

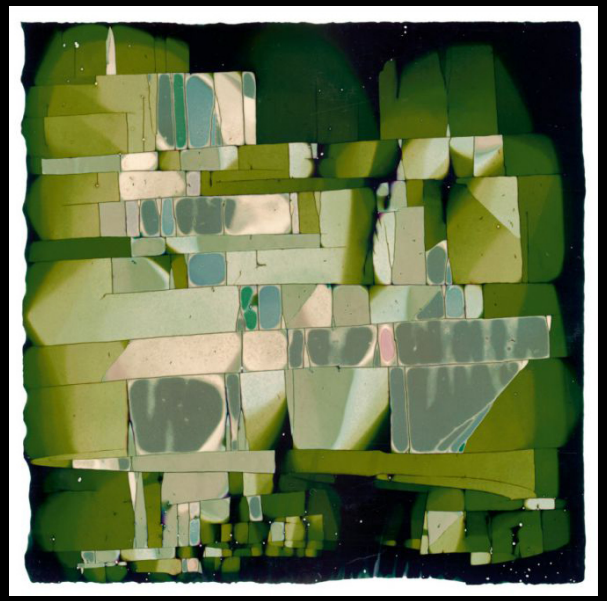
Pierre Cordier pioneers the technique of "chemigrams," manipulating negatives directly by applying various chemicals. This method allows him to achieve unpredictable textures, blurring the line between painting and photography. **Seung-Hwan Oh's experimentation involves intentionally cultivating bacteria on his negatives, introducing an organic decay that results in unique and unpredictable textures. William Klein, a trailblazer in street photography, pushes boundaries by physically manipulating his prints during development**. Klein's aggressive techniques include scratching, bleaching, and overexposing, creating gritty and dynamic textures that enhance the raw energy of his urban subjects. Each artist's unconventional approach to manipulating negatives and prints contributes to the creation of original and experimental textures in their respective photographs.





Manipulated Film + Print Textures: Pierre Cordier

https://www.pierrecordier.com/

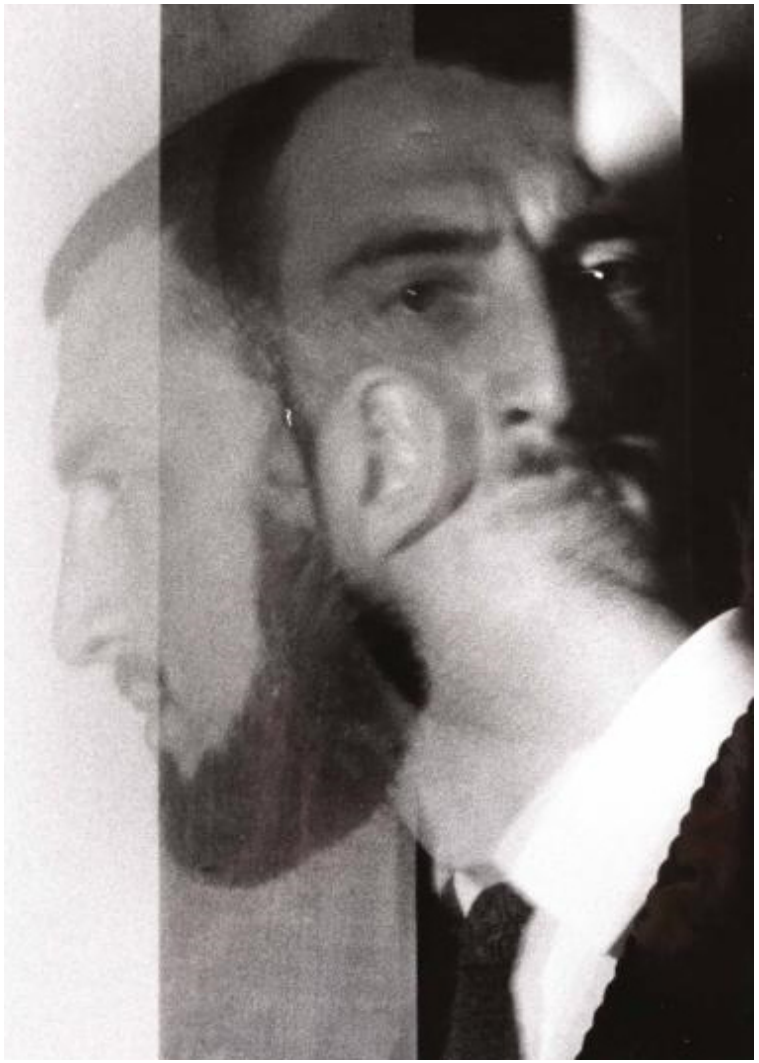





"With the advent of photography in 1839, painting underwent a radical transformation. Nowadays, the digital process is revolutionizing photography. The chemigram, a fusion of painting and photography, is most likely the ultimate adventure of gelatin silver bromide."

Chemigram: Invented in 1956 by Pierre Cordier, the chemigram combines the physics of painting (varnish, wax, oil) and the chemistry of photography (photosensitive emulsion, developer, fixer) ; without a camera, without an enlarger and in full light.

https://www.dslrphotographycourses.com/interviews/time-stuck-beautiful-timelapse-sky-photography-by-matt-molloy



Manipulated Film + Print Textures: Seung-Hwan Oh

https://www.seunghwan-oh.com/








Seung-Hwan Oh begins by taking a photo using his Hasselblad 500 C/M loaded with Fujichrome Provia 400X (below). "I use the medium format color reversal film to see the damages on the image more clearly," he explained. He then lets homegrown bacteria sit on the developed film in water for months or even years, noting, "It is key that you have to preserve the developed film wet and warm enough that mold can propagate itself. And then you just check them once a while." The photos that comprise "Impermanence" veer on the surreal, with the many colors and patterns and distortions that have appeared courtesy of the bacteria present. Oh, on the other hand, has a fancier description for the series: "An aesthetic of entangled creation and destruction that inevitably is ephemeral." Without saying anything specific, he revealed that his favorite photograph out of the whole series is "the first one I have gotten after 18 months of waiting."

Manipulated Film + Print Textures: William Klein

https://www.howardgreenberg.com/artists/william-klein

William Klein is renowned for his avant-garde design techniques, notably showcasing the full frame carriage and drawing directly on negatives/prints. By revealing the entirety of the photographic frame, Klein breaks from conventional cropping, embracing the raw, unfiltered essence of the captured scene. His drawings on negatives or prints inject a dynamic and personalized touch, transforming traditional images into expressive and chaotic compositions. This hands-on approach blurs the boundaries between photography and fine art, giving his work a distinct, energetic quality that characterizes his innovative contributions to the visual arts. Klein's technique reflects a rebellion against photographic norms, fostering a raw and immediate connection between the artist's vision and the viewer's perception.

Klein frequently employed a wide-angle lens with a 35mm camera to achieve his distinctive, immersive scenes. His preferred camera, the Pentax 6x7, a medium format SLR, offered a larger film size that facilitated enhanced detail and a broader tonal range. This feature was instrumental in capturing the lively tumult of his urban landscapes, showcasing the vibrant chaos characteristic of Klein's work.

https://www.co-berlin.org/en/program/exhibitions/william-klein

MANIPULATED FILM + PRINT TEXTURES, VISIONES FRACTAE:

VISIBLE DAMAGED + SCRATCHED FILM NEGATIVE, FRANZ KLINE, WOMAN SHAPE-SHIFTING, GRITTY DESATURATED ANALOG 35MM, **FILM SOUP, BOILED EMULSION,** SEUNG-HWAN OH, GLEN LUCHFORD + JOSH LEE, ANAMORPHIC, **EXPIRED FILM, MICROWAVED POLAROID** --AR 2:1 **[MIDJOURNEY 5.2]**

MANIPULATED FILM + PRINT TEXTURES, VISIONES FRACTAE:

VISIBLE DAMAGED + SCRATCHED FILM NEGATIVE, FRANZ KLINE, WOMAN SHAPE-SHIFTING, GRITTY DESATURATED ANALOG 35MM, **FILM SOUP, BOILED EMULSION,** SEUNG-HWAN OH, GLEN LUCHFORD + JOSH LEE, ANAMORPHIC, **EXPIRED FILM, MICROWAVED POLAROID** --AR 2:1 **[MIDJOURNEY 5.2]**

MANIPULATED FILM + PRINT TEXTURES, VISIONES FRACTAE:

VISIBLE DAMAGED + SCRATCHED FILM NEGATIVE, FRANZ KLINE, COUNT UGOLINO CHASING A CHILD, GRITTY DESATURATED ANALOG 35MM, **FILM SOUP, BOILED EMULSION,** SEUNG-HWAN OH, GLEN LUCHFORD + JOSH LEE, ANAMORPHIC, **EXPIRED FILM, MICROWAVED POLAROID** --AR 2:1 **[MIDJOURNEY 5.2]**

MANIPULATED FILM + PRINT TEXTURES, VISIONES FRACTAE:

VISIBLE DAMAGED AND SCRATCHED FILM NEGATIVE SPROCKET HOLES, ABSTRACT TEXTURES, **[INSERT COLORS HERE],** GRITTY DESATURATED ANALOG 35MM, ANAMORPHIC, **FILM SOUP, BOILED EMULSION,** GUM BICHROMATE PRINT, FILM NOISE, 35MM ANAMORPHIC GRAIN, **EXPIRED FILM, MICROWAVABLE POLAROID** --AR 2:1 **[MIDJOURNEY 5.2]**

MANIPULATED FILM + PRINT TEXTURES, AMERICAN ICONS:

HTTPS://S.MJ.RUN/DFDDPXLHWMA HTTPS://S.MJ.RUN/UU97UWOHUDK HTTPS://S.MJ.RUN/C4GF9EPC8DW HTTPS://S.MJ.RUN/W5PA8YUVXW4 EXTREME CLOSE-UP OF MARILYN MONROE'S LIPS AS **EXTRUDED BIREFRINGENT DE STIJL FIBER OPTICS** IN STENBERG TWINS CONSTRUCTIVIST MOVIE POSTER, STYLE OF DAIDO MORIYAMA AND WILLIAM KLEIN SHOT WITH **LOMO LC-WIDE 35MM, EXPOSED FRAME CARRIAGE, LIGHT LEAKS, LOMOGRAPHY REDSCALE XR 50-200 35MM, CARL ZEISS PLANAR 50MM F/0.7** --AR 2:1 **[MIDJOURNEY 5.2]**

MANIPULATED FILM + PRINT TEXTURES, AMERICAN ICONS:

JIMMY STEWART IN VERTIGO AS **EXTRUDED BIREFRINGENT DE STIJL FIBER OPTICS** IN STENBERG TWINS CONSTRUCTIVIST POSTER, STYLE OF DAIDO MORIYAMA AND WILLIAM KLEIN SHOT WITH **LOMO LC-WIDE 35MM, EXPOSED FRAME CARRIAGE, LIGHT LEAKS**, **LOMOGRAPHY BLUESCALE XR 50-200 35MM, CARL ZEISS PLANAR 50MM F/0.7** –AR 2:1 **[MIDJOURNEY 5.2]**

MANIPULATED FILM + PRINT TEXTURES, AMERICAN ICONS:

JIMMY STEWART IN VERTIGO AS **EXTRUDED BIREFRINGENT DE STIJL FIBER OPTICS** IN STENBERG TWINS CONSTRUCTIVIST POSTER, STYLE OF DAIDO MORIYAMA AND WILLIAM KLEIN SHOT WITH **LOMO LC-WIDE 35MM, EXPOSED FRAME CARRIAGE, LIGHT LEAKS**, **LOMOGRAPHY BLUESCALE XR 50-200 35MM, CARL ZEISS PLANAR 50MM F/0.7** –AR 2:1 **[MIDJOURNEY 5.2]**

MANIPULATED FILM + PRINT TEXTURES, AMERICAN ICONS:

HTTPS://S.MJ.RUN/QHCAQ1PF-1G HTTPS://S.MJ.RUN/SYT7ZYHBOZW HTTPS://S.MJ.RUN/COM55M8DJVU HTTPS://S.MJ.RUN/8NL1FBXVILY BLUE ELVIS IN HAWAII AS **EXTRUDED BIREFRINGENT DE STIJL FIBER OPTICS** IN STENBERG TWINS CONSTRUCTIVIST POSTER, DAIDO MORIYAMA + WILLIAM KLEIN, **LOMO LC-WIDE 35MM, EXPOSED FRAME CARRIAGE, LIGHT LEAKS, LOMOGRAPHY BLUESCALE XR 50-200 35MM, CARL ZEISS PLANAR 50MM F/0.7** --AR 2:1 **[MIDJOURNEY 5.2]**

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Optical Textures

In the realm of photography, **optical textures** offer a realm of creative exploration, where innovative camera techniques and experimental methods lead to intriguing and unpredictable results. **Multiple exposures** become a canvas for layering diverse subjects, producing intricate textures that blend disparate elements into harmonious compositions. This technique, akin to visual poetry, transforms ordinary scenes into dreamlike tapestries, offering a glimpse into the surreal.

Long exposures introduce another dimension to optical textures, extending shutter times to introduce motion blur and light trails. This dynamic approach transforms mundane scenes into vibrant tapestries, creating a visual narrative of streaks and patterns. Light phenomena, such as the ethereal play of light painting and reflections, further weave numinous textures into the visual narrative, adding depth and intrigue.

Beyond conventional practices, a subversive art emerges in the **deliberate damage to negatives and prints.** The concept of "film soup" involves immersing film in chemicals or liquids, leading to unpredictable and ethereal effects. Boiling emulsions and microwaving Polaroids push the boundaries even further, as the elements react, corroding the image and yielding textures that are a delicate dance between chance and intention.

Christmas Tree • 36 x 27 • Orlando, FL• 12.11.2003 • f/2.8 • 1/10 sec • 100 ISO • 7 mm • Sony DSC-V1 • Jazno Francoeur

Creating textures through multiple exposures and motion blur

My aesthetic centers around layers, transparency, reflections, and ambiguity. Naturally, this is fertile ground in the creation of abstract textures. This series was shot in Cannes in 2004 with the bulb setting on. These exceedingly long exposures, fractured by colored strobe lights, led to many unintended artifacts. But as one famous artist once opined, 'whatever you inferred, I intended'.

L'heure Fatale • 36 x 27 • Le Divina, Cannes, France • 1.24.2004 • f/3.2 • 8 sec • 100 ISO • 7 mm • Sony DSC-V1 • Jazno Francoeur

Les Régents du Chaos • 36 x 27 • Le Divina, Cannes, France • 1.24.2004 • f/3.2 • 8 sec • 100 ISO • 7 mm • Sony DSC-V1 • Jazno Francoeur

Creating textures through multiple exposures and motion blur

These textured images were all shot with a 5 megapixel Sony Cybershot (also with a bulb setting), which is not nearly as powerful as a typical cell phone these days. Aside from the first and last panels, the subjects and environments are still shots.

Creating textures through multiple exposures and motion blur

Textured multiple exposures are easy to create with an iPhone if you shoot in panorama mode while moving. If you are shooting with a digital camera, you can achieve a similar result by leaving the shutter open while in motion (i.e. the shot taken while running, from a moving vehicle, etc.)

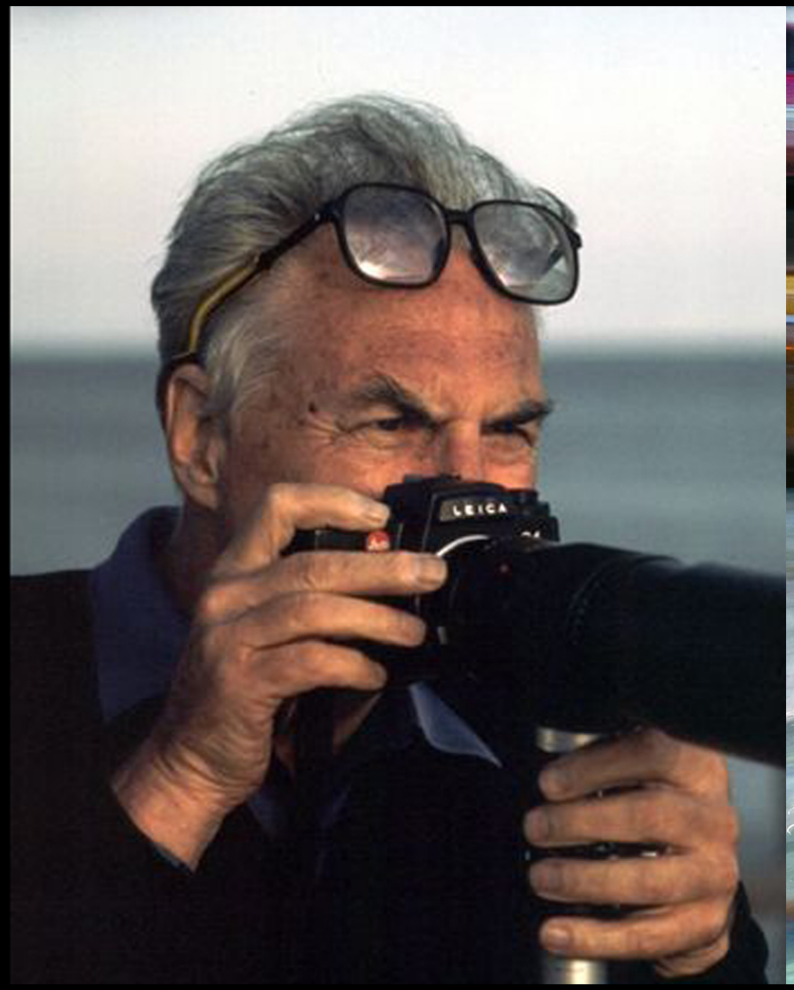
Bali Countryside II • 2332 x 2332 • Bali, Indonesia • 6.8.2013 • f/2.4 • 1/786 sec • 200 ISO • 4 mm • iPhone 5 • Jazno Francoeur

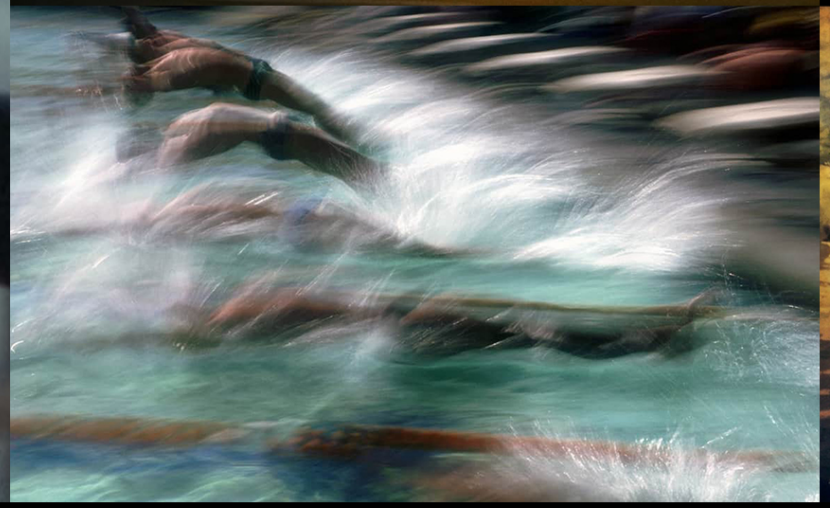
Bali Countryside I • 1711 x 1711 • Bali, Indonesia • 6.8.2013 • f/2.4 • 1/678 sec • 200 ISO • 4 mm • iPhone 5 • Jazno Francoeur

Ernst Haas, Pioneer of Color + Experimental Photography

https://en.wikipedia.org/wiki/Ernst_Haas

Though Haas continued to use black-and-white film for much of his career, color film and visual experimentalism became integral to his photography. He frequently employed techniques like shallow depth of field, selective focus, and blurred motion to create evocative, metaphorical works. When he submitted his blurred motion bullfight photos to the lab, they said there was a problem and they were unusable. Nevertheless, Life ran a 12-page spread. He became interested in, as he put it, "transforming an object from what it is to what you want it to be." Beyond the physical place, person, or object he depicted, Haas hoped to reflect the joy of looking and of human experience.





Modern Pioneers of Experimental Photography

Chris Friel is known for his abstract textures that evoke a sense of mystery and depth. His work often features intricate patterns and subtle gradients, creating a dreamlike atmosphere. Friel's use of color and form adds a layer of complexity to his compositions, inviting viewers to explore the interplay of shapes and tones. **Matt Molloy blends multiple time-lapse photographs into a single image, revealing the dynamic beauty hidden in the passage of time.** The resulting textures showcase a harmonious fusion of colors and shapes, forming vibrant landscapes that transcend conventional photographic boundaries. Molloy employs a distinctive technique known as **time stacking** to create his abstract textures. **Michael Wesely's abstract textures emerge from his unique approach to long-exposure photography.** His images capture the passage of time in a single frame, resulting in ethereal and otherworldly textures. Wesely's use of extended exposure blurs the boundaries between objects, producing a visual experience that challenges traditional notions of stillness. **Kim Pimmel's abstract textures emerge from his innovative use of light, motion, and technology.** Through experiments with liquids, magnets, and programmable LEDs, Pimmel crafts visuals that dance between order and chaos. His work often features intricate patterns and fluid movements, creating a visual symphony that pushes the boundaries of traditional artistic mediums.



Time Lapse + Double Exposure Textures: Chris Friel

https://www.cfriel.com/






Chris Friel is a British photographer who has spent a long time trying to take a photograph that he likes. To that end he has produced more than two million images over the last decade. His photos have been exhibited at the South Bank Centre, on the Santiago subway in Chile, and projected behind the London Sinfonietta in the royal festival hall. They have appeared in The Times, The Guardian, The Wall Street Journal, Rolling Stone magazine, and on a lot of album covers. He has worked in 150 countries and would very much like to visit the remaining 46 before the next world war. "I usually shoot with a Canon EOS 5D Mark II and either a 45mm tilt-shift lens or a 50mm prime, coupled with an neutral density graduated filter and a polarizer. Most shots are two or three seconds in duration with some movement towards the end of the exposure. The direction of movement depends on the composition." *https://www.cfriel.com/home*

Canon EOS 5D Mark II

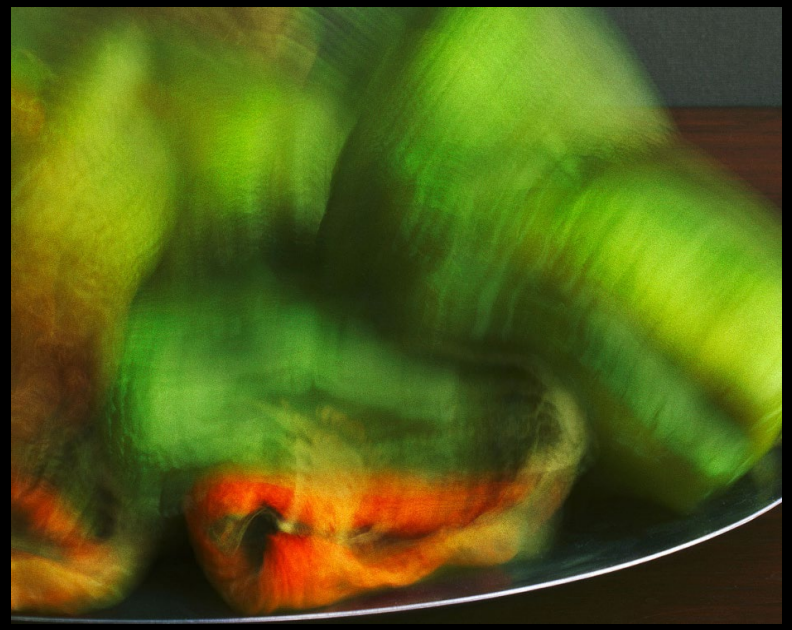
Canon 45mm Tilt Shift

Canon 50mm Prime

Filter and Polarizer

Time Lapse + Double Exposure Textures: Michael Wesely

https://wesely.org/






Michael Wesely's works deal with the subject of time and the change that takes place over time. Due to the extremely long exposure and the special bulb he uses, those elements that move the least dominate his images, while those moving will later be seen as transparent figures or the outlines of newly erect buildings overlapping. The pictures "reveal the passage of time by showing the changing skyline, the skeletons of cranes, the rise of new buildings, and the disappearance of others. Beams of sunlight, the residue of the ever-changing positions of the earth and sun, are also evident, like a palimpsest of seasons."

Everything that ever happened on the scene during exposure (during weeks, months, or even up to two or three years) will be seen in one single picture. Michael Wesely presumably works with 4×5 wide-angle cameras. Using neutral filters and a very small diaphragm makes the exposure thousands of times longer than normal. He can make exposures endlessly long, 40 years if necessary. To the right is one of his wall-mounted cameras; to the left, Wesely checks in on his handiwork.

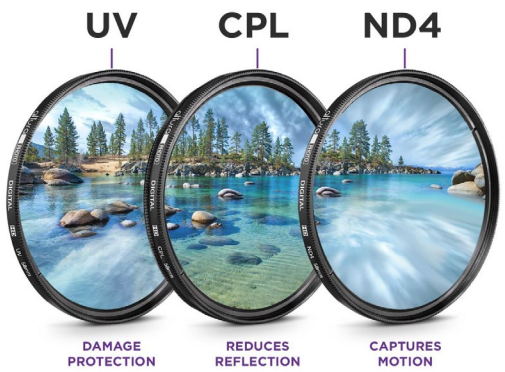
en.wikipedia.org/wiki/Michael_Wesely

Time Lapse + Double Exposure Textures: Matt Molloy

https://fineartamerica.com/profiles/matt-molloy

"I would call my style experimental, because I love to try new things, and I don't really stick to one particular style. I like to call my time-lapse photos "time stacks" because I'm using multiple photos to create one image that shows a fairly large chunk of time (compared to the average photo). I had seen time-lapses on TV and in movies, but when I discovered the intravelometer function on my first camera and shot my first time-lapse, that's when I really began to appreciate time-lapse photography. I was amazed how the world around me looked with a different concept of time. I started out with a Canon S5 IS. I've been trough a few cameras since then. Now I have a Canon 60D with 3 lenses, a Tamron 10-24mm (my favorite) a Tamron 18-270 and a Canon 50mm prime. I also use a CP filter and software for my camera called Magic Lantern."

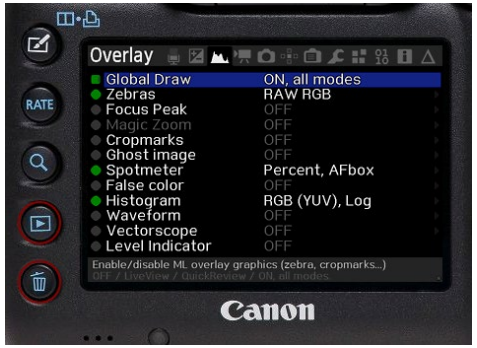
https://www.dslrphotographycourses.com/interviews/time-stuck-beautiful-timelapse-sky-photography-by-matt-molloy



CP Filter

Canon S5 IS Powershot Pro

Canon 60D



Magic Lantern Software

Tamron 10-24mm

Tamron 18-270

Canon 50mm

OPTICAL TEXTURES, IMPROVISATIONS:

EXTREME CLOSE-UP OF BAHAUS POSTER OF CHICK COREA PLAYING PIANO, FORCED PERSPECTIVE, CHROMOGENIC YELLOW PRINT, **FRACTURED MOTION BLUR**, EMULSION PRINT WITH DIMENSIONAL FRAME CARRIAGE VISIBLE, **MULTIPLE EXPOSURE** --AR 2:1 **[MIDJOURNEY NIJI 5]**

OPTICAL TEXTURES, IMPROVISATIONS:

EXTREME CLOSE-UP OF BAHAUS POSTER OF CHARLIE BIRD PARKER PLAYING SAX, CHROMOGENIC RED PRINT, **FRACTURED MOTION BLUR**, EMULSION PRINT WITH DIMENSIONAL FRAME CARRIAGE VISIBLE, **MULTIPLE EXPOSURE** --AR 2:1 **[MIDJOURNEY NIJI 5]**

OPTICAL TEXTURES, IMPROVISATIONS:

BAHAUS-STYLE JOSEPHINE BAKER IN PARIS DANCING MANICALLY IN A WHIRLING BLUE DRESS, **FRACTURED MOTION BLUR,** MADE FROM INK-SPATTERED PALIMPSEST OF COMPLEX MUSICAL NOTATION, BAKER EMERGING FROM 2D TO PHOTO-REAL 3-D ILLUMINATED MANUSCRIPT MADE UP OF FAUVIST-COLORED PENROSE GIRIH TILES, STYLE OF FRANCIS BACON, BALTHUS, WHITE PAPER TORN IN RUSSIAN CONSTRUCTIVIST SHAPES --AR 2:1 **[MIDJOURNEY 5.2]**

OPTICAL TEXTURES, IMPROVISATIONS:

BAUHAUS-STYLE JOSEPHINE BAKER IN PARIS DANCING MANICALLY IN A WHIRLING DRESS, **FRACTURED MOTION BLUR**, MADE FROM INK-SPATTERED PALIMPSEST OF COMPLEX MUSICAL NOTATION, BAKER EMERGING FROM 2D TO PHOTO-REAL 3-D ILLUMINATED MANUPSCRIPT MADE UP OF FAUVIST-COLORED PENROSE GIRIH TILES, STYLE OF FRANCIS BACON, BALTHUS, WHITE PAPER TORN IN RUSSIAN CONSTRUCTIVIST SHAPES --AR 2:1 **[MIDJOURNEY 5.2]**

Creating textures with light through multiple exposures and motion blur

In generative art, you can create textures with layers of light left behind as tracers when you invoke 'multiple exposure', 'motion blur', or 'optimized photon capture'. Below are images from a series I created with an open bulb setting, where the camera was mounted on a steering wheel as I drove around the city, with some exposures as long as two seconds.

Airport Run, 77 mph • 36 x 27 • Orlando, Florida, USA • 12.11.2003 • f/2.8 • 2 sec • 100 ISO • 7 mm • Sony DSC-V1 • Jazno Francoeur

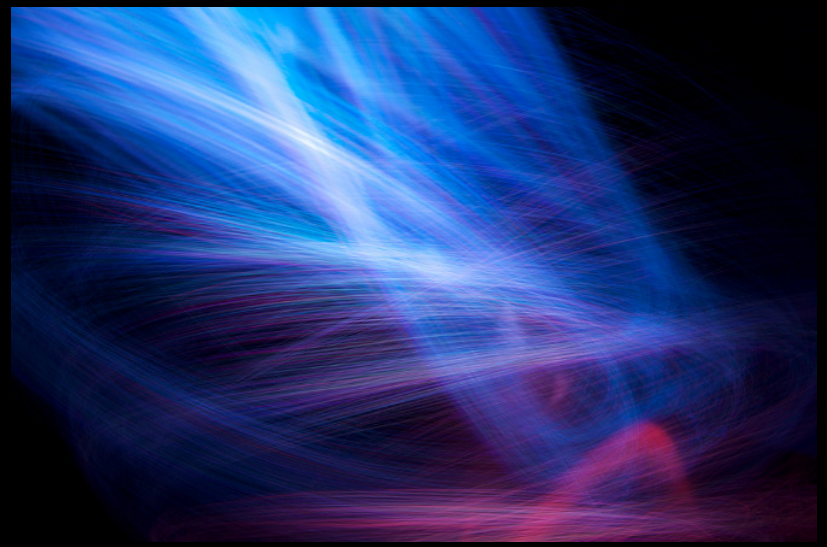
Airport Run, 90 mph • 36 x 27 • Orlando, Florida, USA • 12.11.2003 • f/2.8 • 1.6 sec • 100 ISO • 7 mm • Sony DSC-V1 • Jazno Francoeur

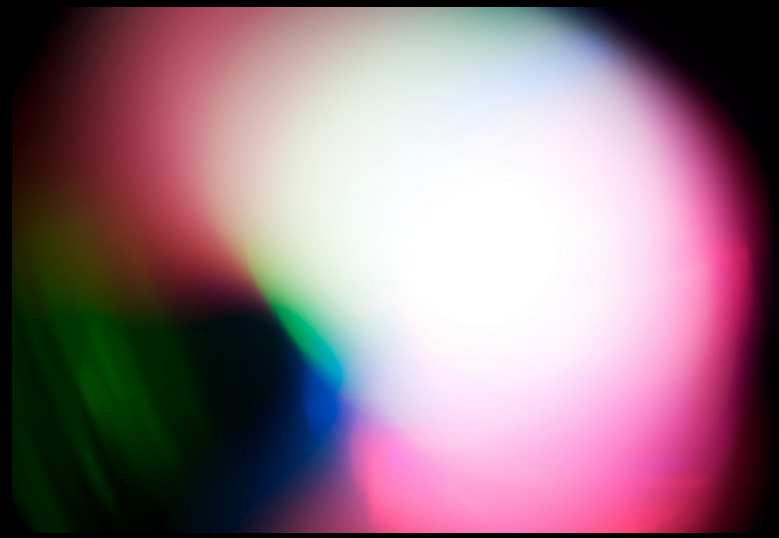
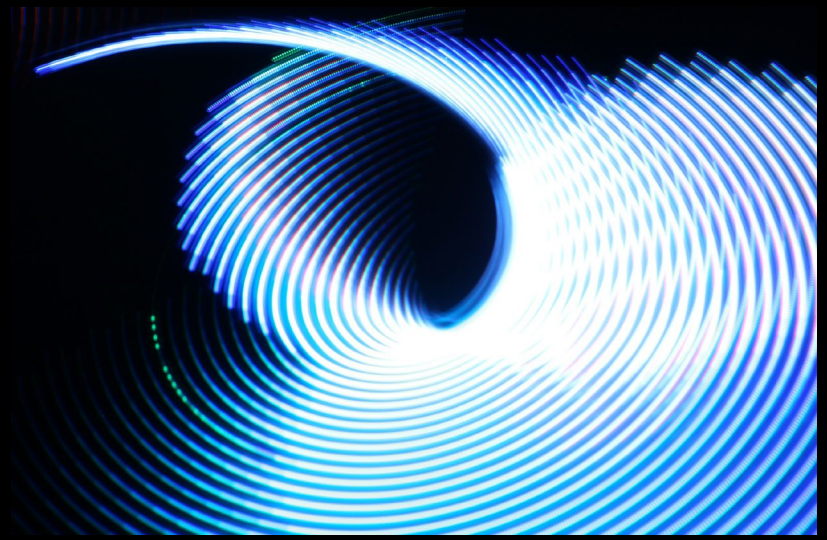
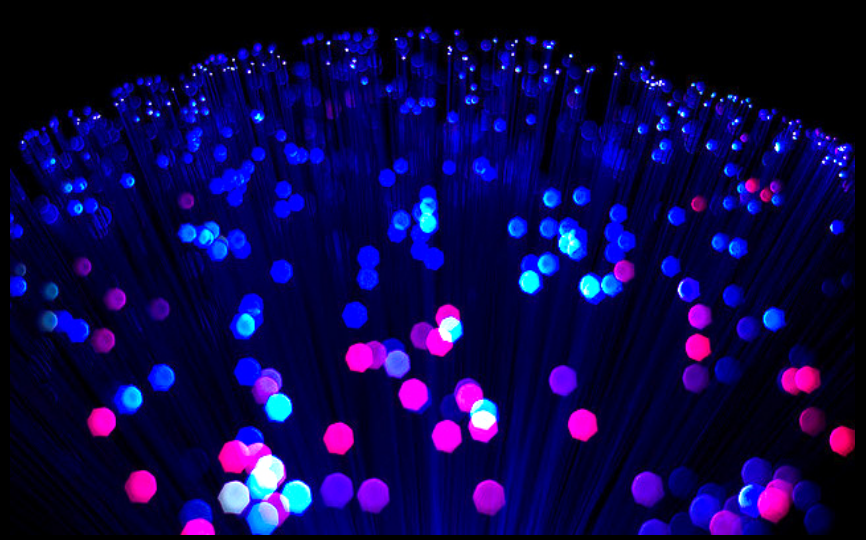
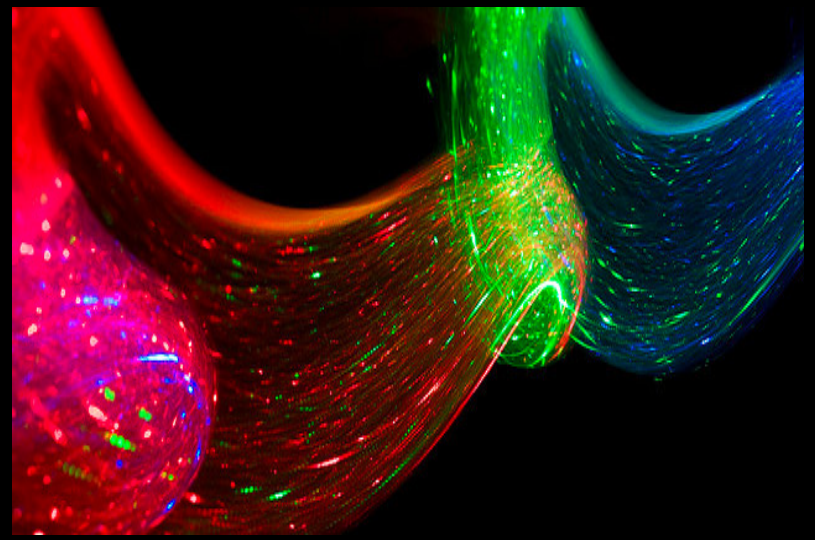
Creating textures with light through multiple exposures and motion blur

To create this series, I experimented with keeping the camera still with **long exposures**, or alternately, I moved the camera around with a normal exposure. In several instances, I utilized both methods at the same time (moving the camera with long exposure times). These methods can be replicated in a generative art program with simple prompts. However, AI programs as of yet do not recognize f stops or shutter speeds, only verbal approximations.

Light Textures: Kim Pimmel

https://www.kimpimmel.com/



https://www.thisiscolossal.com/2012/10/light-studies-experimental-light-photos-by-kim-pimmel/

San Francisco-based UI designer and photographer Kim Pimmel creates extraordinary long exposure light photographs using a huge variety of common objects and technologies. Although the photos appear digitally rendered, they actually merge simple things like ping pong balls, old turntables, and simple pendulums with LEDs, Arduino microcomputers, servos and other lighting mechanisms (such as iPhone screens, to make the photos you see here). His light studies set on Flickr is well worth your time and he also made a wild video using some of the same techniques (https://vimeo.com/14980662).

The SpaceTime Camera, designed and built by HoloLens designer Kim Pimmel, explores the future of lightfield photography and film-making, imagining a world where you can look into images that have a spatial presence. The camera emulates a plenoptic lightfield sensor by moving a stereoscopic sensor along a track, capturing stereo pairs from multiple angles. Additionally, the track is curved, giving the camera a focal point. The experimental camera was made using a mix of 3D printing & woodworking, uses a customized Fujifilm W3 camera as the sensor, and runs on 2 Arduinos.

https://www.thisiscolossal.com/2012/10/light-studies-experimental-light-photos-by-kim-pimmel/

LIGHT TEXTURES, MAGICAL PILGRIMAGE:

STYLE OF SARGENT + MOEBIUS, DUTCH ANGLE, **EXPLOSION OF COLORED CIRCUITS & LIGHTS** INTERPOLATING BLUE TO GREEN WITH YELLOW SPARKS, **MULTIPLE EXPOSURE, MOTION BLUR, TIME LAPSE,** ANDROIDS CONDUCTING BAPTISM WITH MAGICAL ENERGY EMITTING FROM HANDS, HOLY WATER POURED ON YOUNG WOMAN, BLUE FILL LIGHT, ORANGE KEY LIGHT, EXTREME CLOSE-UP, DRAMATIC LIGHTING, **QUANTIFIED PHOTON CAPTURE** **[DALL-E 2]**

LIGHT TEXTURES, MAGICAL PILGRIMAGE:

STYLE OF SARGENT + MOEBIUS, DUTCH ANGLE, **EXPLOSION OF COLORED CIRCUITS & LIGHTS** INTERPOLATING BLUE TO GREEN WITH YELLOW SPARKS, **MULTIPLE EXPOSURE, MOTION BLUR, TIME LAPSE,** ANDROIDS CONDUCTING BAPTISM WITH MAGICAL ENERGY EMITTING FROM HANDS, HOLY WATER POURED ON YOUNG WOMAN, BLUE FILL LIGHT, ORANGE KEY LIGHT, EXTREME CLOSE-UP, DRAMATIC LIGHTING, **QUANTIFIED PHOTON CAPTURE** **[DALL-E 2]**

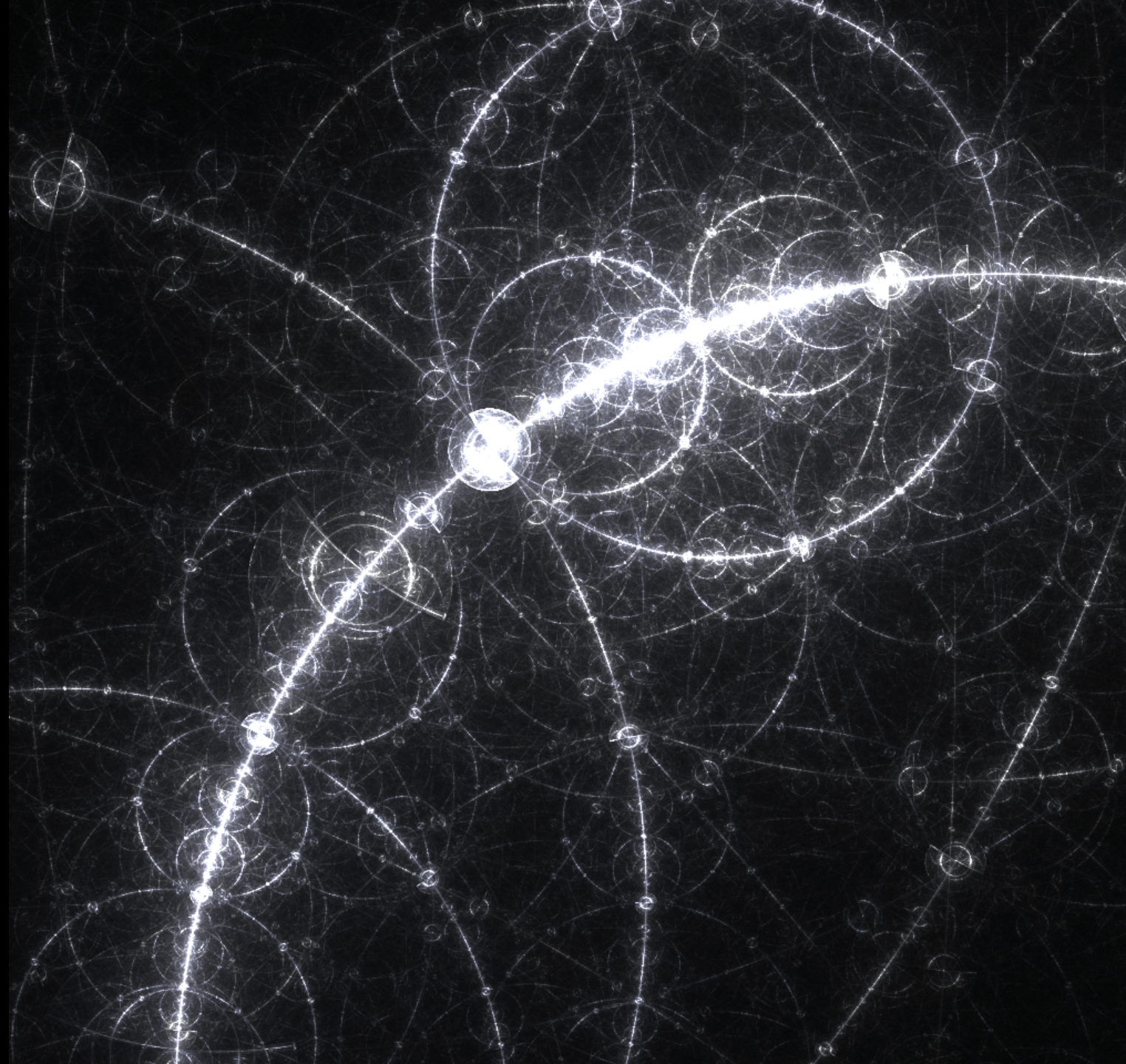

QUANTUM TEXTURES
Subatomic particles dance in a realm where uncertainty and certitude intertwine, captured by quantum imaging, colliders, and particle detectors.

Tools and Methods for Capturing Quantum Textures

In **colliders,** high-energy particle collisions generate complex patterns of particle tracks. Detectors surrounding collision points capture the energy, momentum, and types of particles produced. The resulting data, translated into visual representations, unveils abstract textures that signify the fundamental interactions at play. These textures reflect the dynamic interplay of particles, revealing the underlying structure of matter.

Bubble chambers, on the other hand, create abstract textures through the formation of bubbles in a superheated liquid when charged particles traverse the medium. The patterns of bubbles, captured through photography, serve as a visual record of particle trajectories. This artistic manifestation of particle interactions yields abstract textures that convey the unpredictable nature of subatomic dynamics.

Quantum imaging introduces another dimension to abstract textures by utilizing the entanglement of particles. Information entangled in particle states is harnessed to enhance imaging resolution beyond classical limits. The resulting visualizations showcase abstract textures that symbolize the delicate interconnectedness inherent in quantum systems.



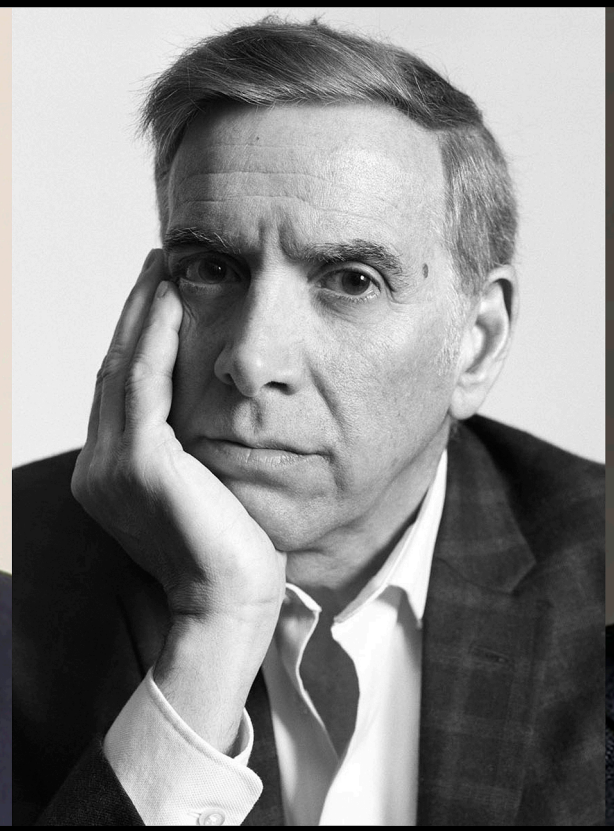
Fermilab Bubble Chamber photograph of colliding particles

Pioneers in Particle Detection at CERN

https://home.cern/

Lyn Evans, the Welsh physicist, led the construction of the Large Hadron Collider (LHC) at CERN, overseeing its intricate design and commissioning. The operational LHC, under Evans' guidance, yielded groundbreaking discoveries, notably confirming the Higgs boson in 2012, crucial for comprehending the universe's building blocks. **Guido Tonelli and Joe Incandela**, CMS experiment spokespeople, played key roles in the Higgs discovery. Their leadership orchestrated global collaboration, making CMS pivotal in understanding fundamental particles. Similarly, **Peter Jenni's** impact on the ATLAS project was profound, guiding its design and operations, culminating in key discoveries. **These achievements underscore the collaborative nature of these projects, involving hundreds, if not thousands, of individuals globally, emphasizing the collective triumphs of the scientific community in unraveling the universe's mysteries.**

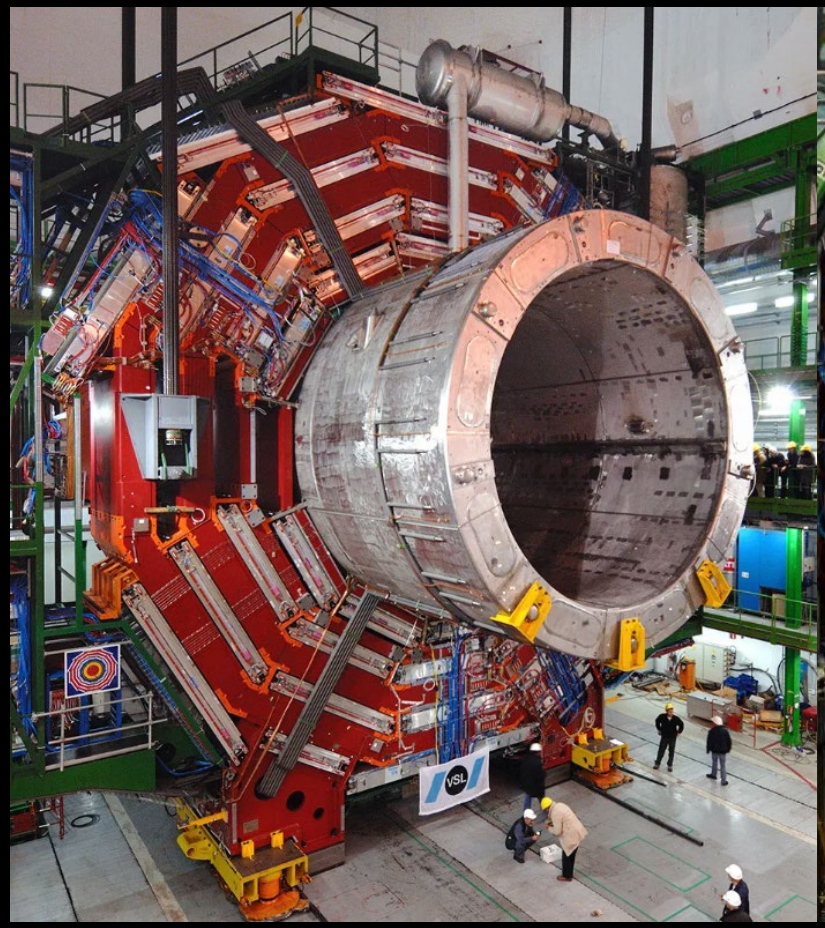


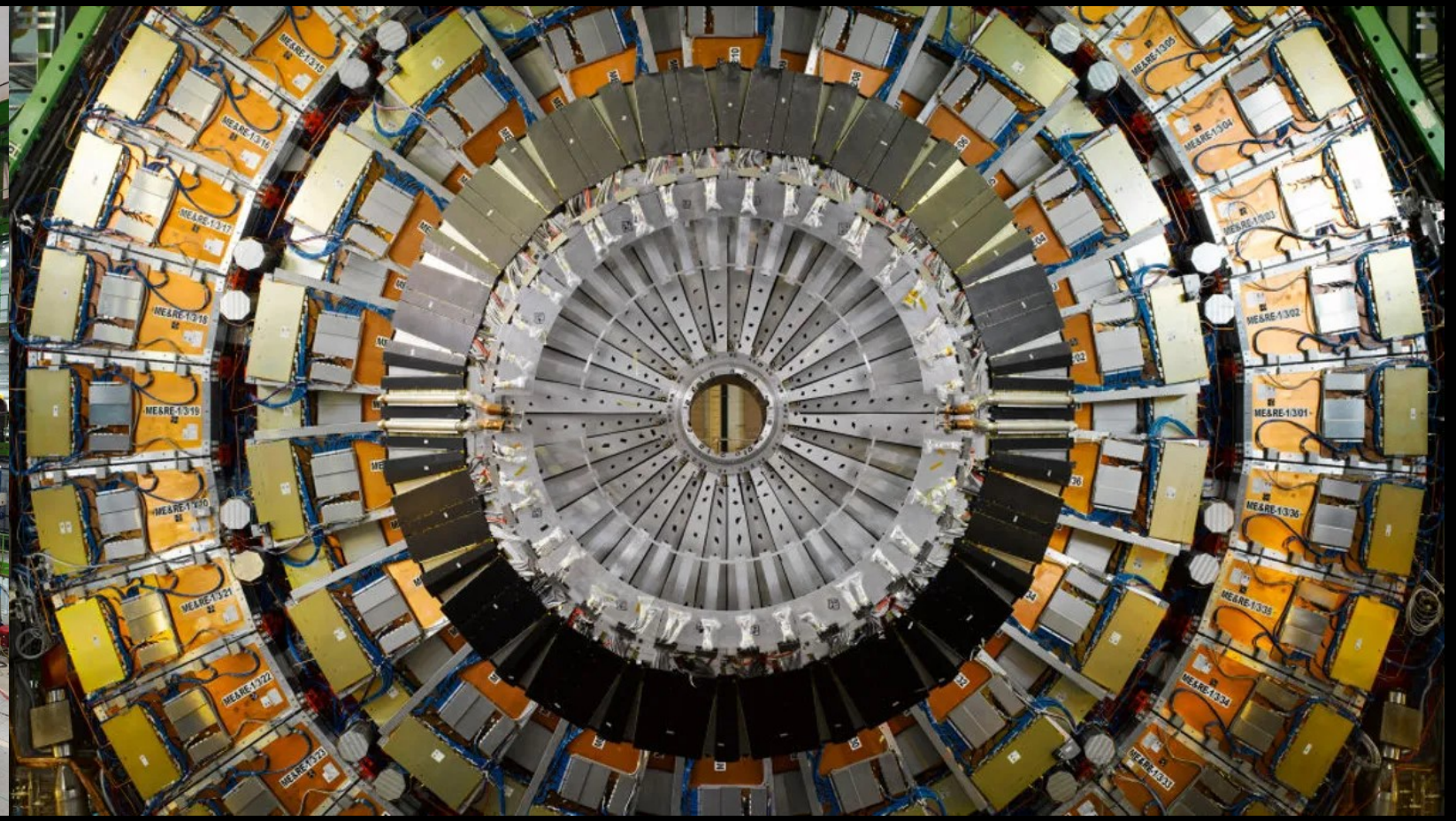



Pioneering Technology in Particle Detection at CERN

https://home.cern/

The Large Hadron Collider (LHC), situated at CERN near Geneva, Switzerland, is the most potent and sophisticated particle accelerator globally, spanning a circumference of 17 miles. Functioning at energies approaching the speed of light, the LHC propels protons in opposite directions along its circular tunnel, facilitating high-energy collisions. These collisions generate conditions akin to the universe's earliest moments, allowing scientists to explore fundamental questions in particle physics. The LHC has been pivotal in groundbreaking discoveries, including the confirmation of the Higgs boson in 2012, a particle crucial to understanding mass in the Standard Model. Beyond the Higgs, the LHC continues to investigate mysteries such as dark matter, supersymmetry, and potential new particles, pushing the boundaries of our comprehension of the fundamental constituents of the cosmos. The collaborative efforts at the LHC exemplify the international scientific community's commitment to unraveling the mysteries of the universe.

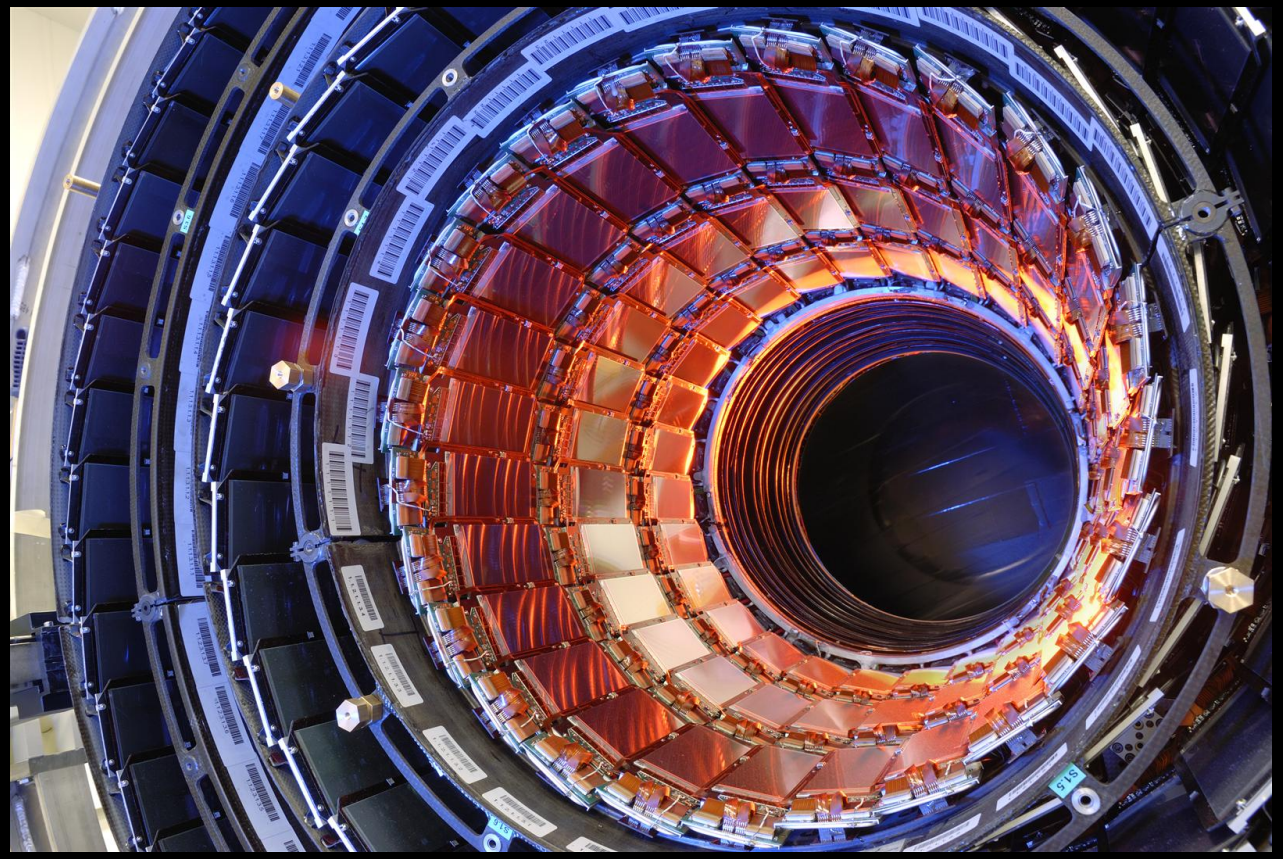


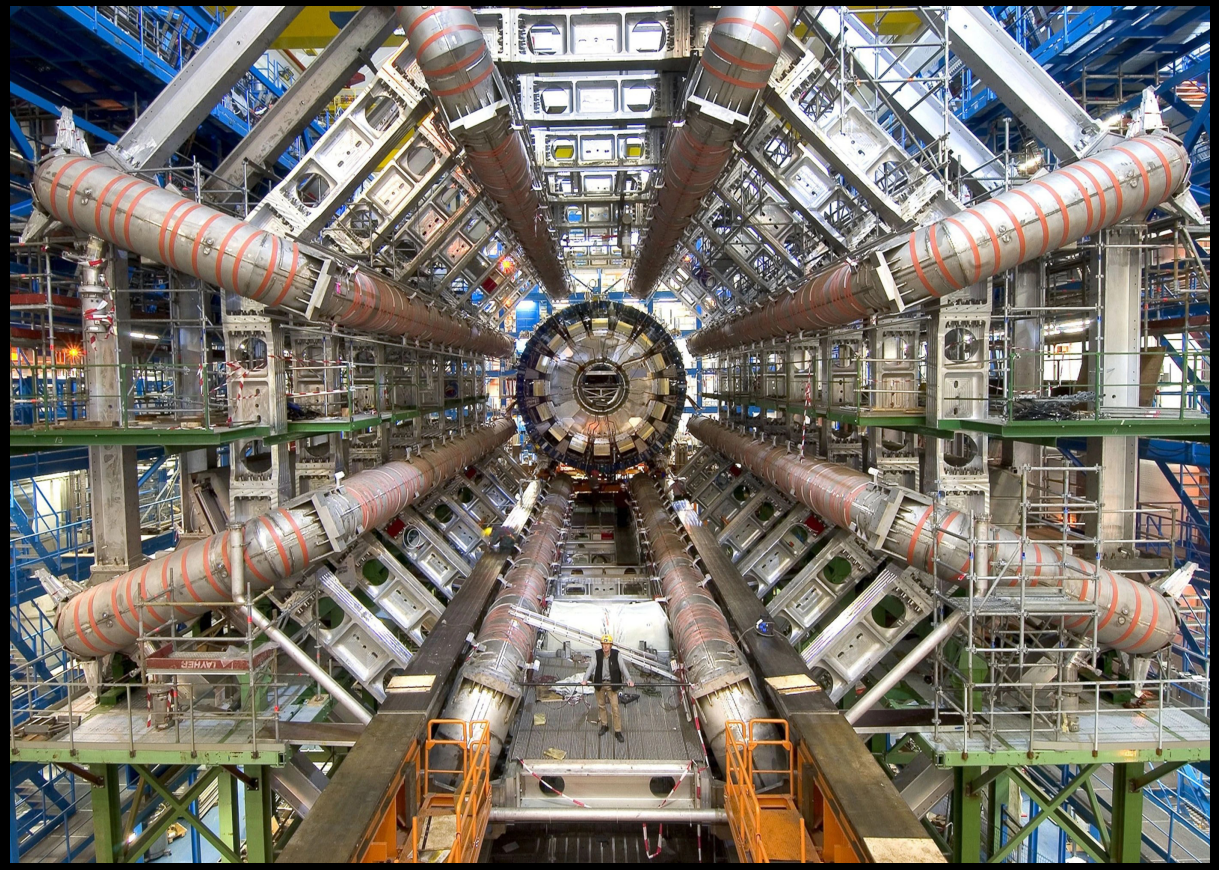


Pioneering Technology in Particle Detection at CERN

https://home.cern/

The Compact Muon Solenoid (CMS) and ATLAS Experiment at CERN are two colossal detectors situated at the Large Hadron Collider (LHC), contributing significantly to particle physics research (left to right). Both detectors are multifaceted instruments designed to capture and analyze the myriad particles produced during high-energy proton collisions. CMS and ATLAS played pivotal roles in the discovery of the Higgs boson in 2012, providing crucial experimental evidence that led to a deeper understanding of the fundamental forces and particles in the universe. These detectors employ sophisticated technologies, such as calorimeters and tracking systems, to measure the energy, momentum, and charge of particles resulting from collisions. Their comprehensive designs enable scientists to explore a broad spectrum of physics phenomena, from the properties of known particles to the search for novel particles and interactions, enhancing our comprehension of the universe's underlying structure. The collaboration between researchers worldwide within the CMS and ATLAS experiments exemplifies the cooperative spirit driving cutting-edge discoveries in particle physics.

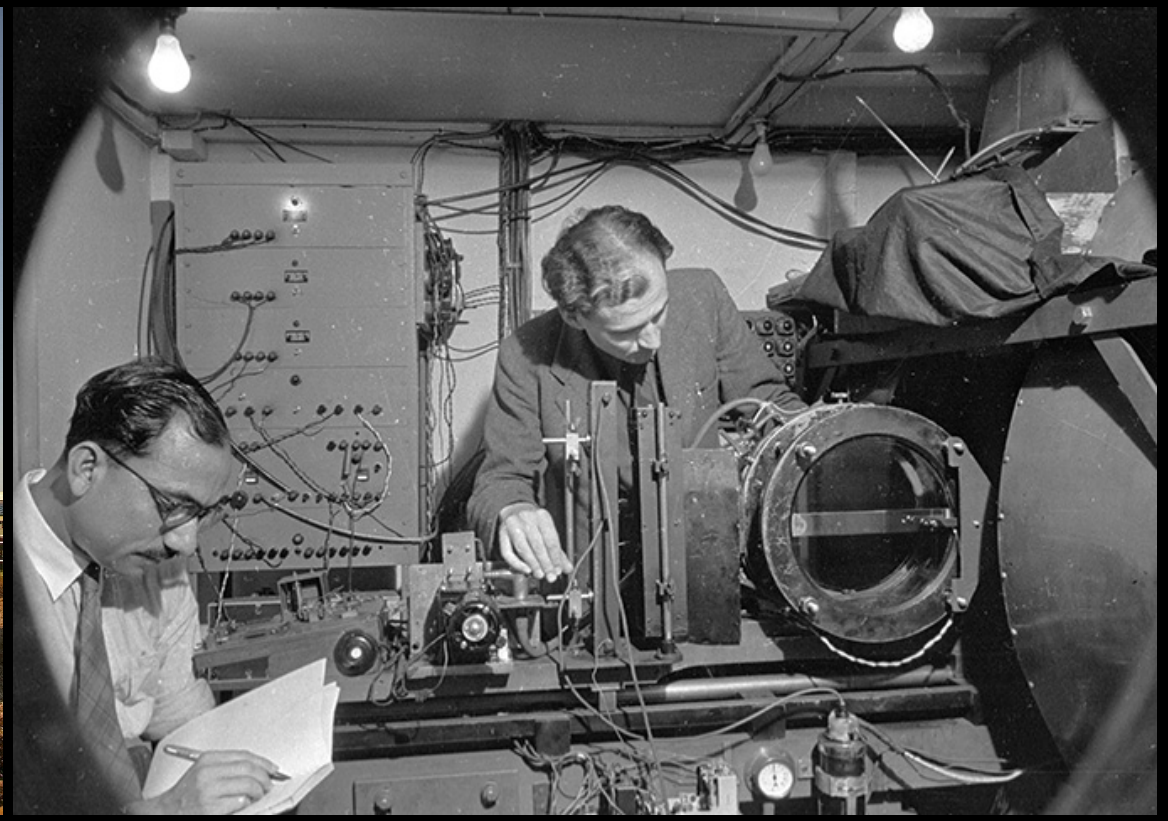




Pioneering Technology in Particle Detection at Fermilab

https://home.cern/

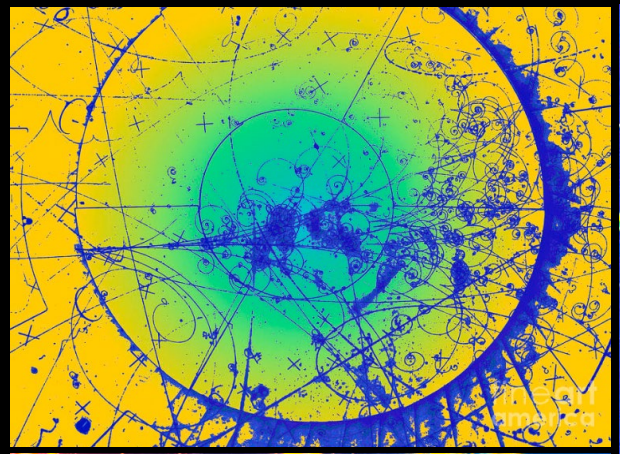
Fermilab, the Fermi National Accelerator Laboratory, has been at the forefront of particle physics research, employing innovative technologies to understand the fundamental building blocks of the universe. One pivotal technology that contributed to their discoveries is the **bubble chamber**. Fermilab utilized bubble chambers extensively in experiments conducted during the mid-20th century. The bubble chamber, a device filled with superheated liquid, allowed scientists to visualize and track the paths of charged particles produced in high-energy particle collisions. As particles traversed the chamber, they left a trail of bubbles, providing a tangible record of their trajectories. This revolutionary technology significantly enhanced the precision and detail of observations in particle physics experiments. Fermilab's bubble chamber experiments played a crucial role in unraveling the mysteries of particle collisions. The visualization of particle tracks in these chambers provided essential data for studying particle interactions, leading to groundbreaking discoveries such as the observation of new particles and the validation of theoretical predictions.

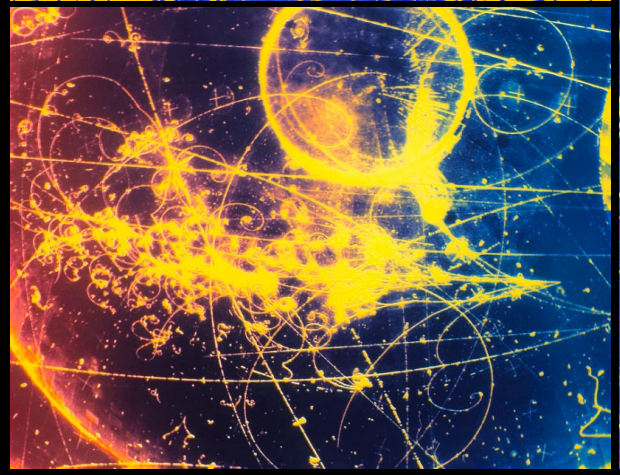


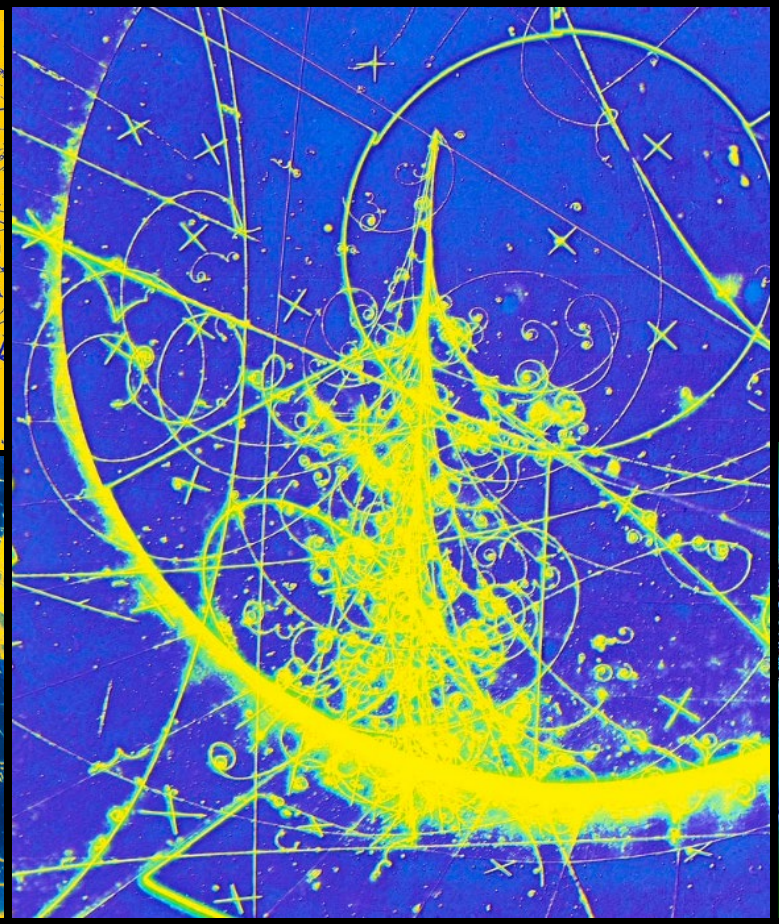
Bubble Chamber Particle Collisions

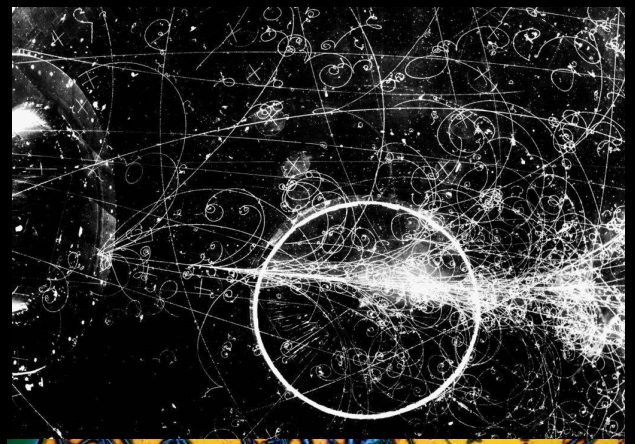
https://home.cern/

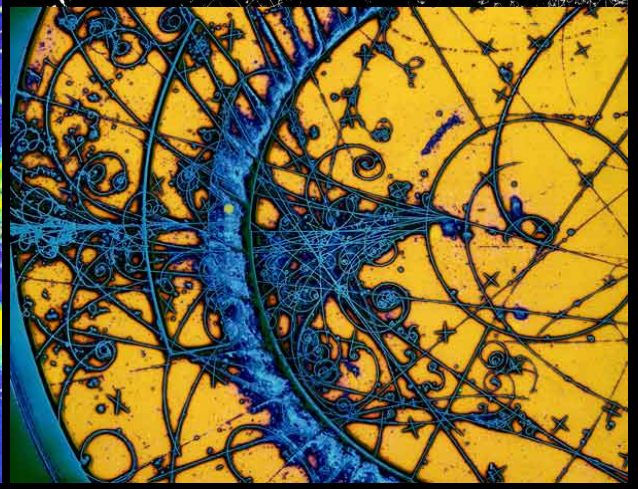
Bubble chamber photos of particle collisions have been instrumental in unraveling the mysteries of the subatomic realm. Filled with superheated liquid, bubble chambers captured stunning visual records of charged particle trajectories. As particles traversed the chamber, they left distinct tracks of bubbles, providing a tangible and visual representation of their paths. These images served as crucial data in studying particle interactions, leading to groundbreaking discoveries such as the observation of new particles and validation of theoretical predictions. CERN's use of bubble chambers exemplifies its historical commitment to pushing the frontiers of particle physics through innovative technologies.







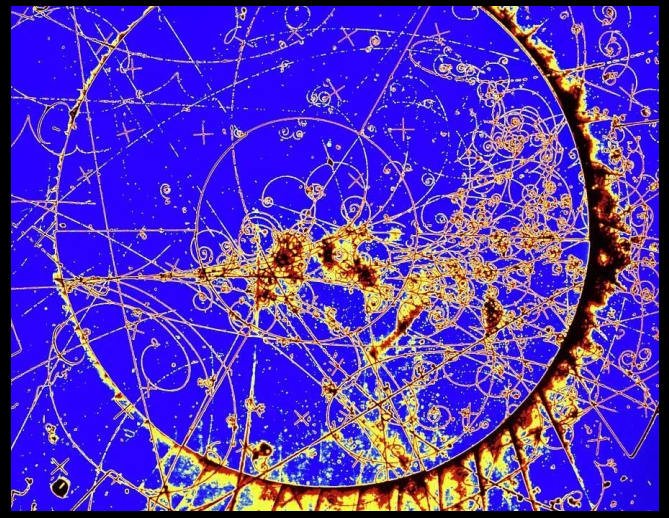


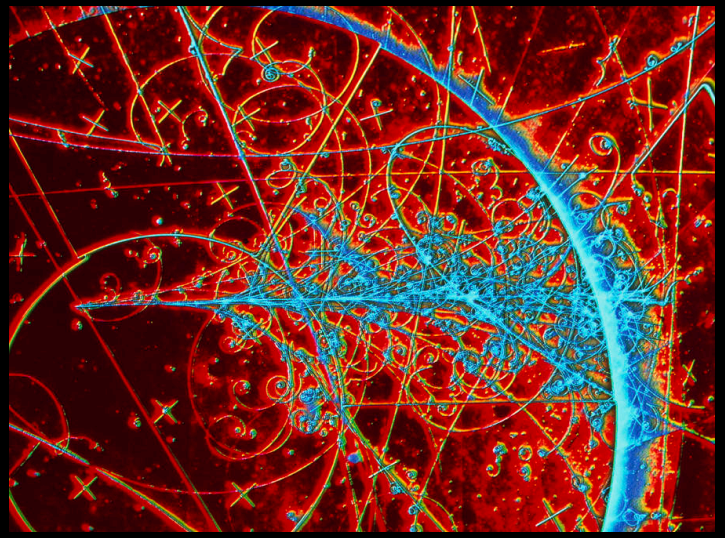


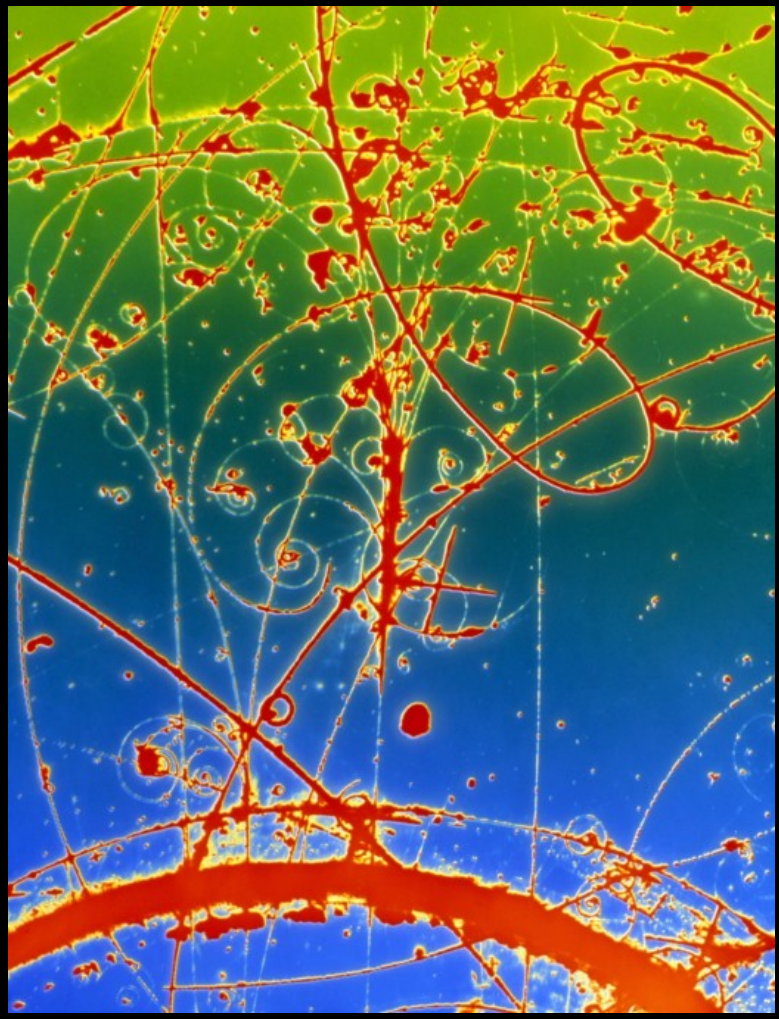
Bubble Chamber Particle Collisions

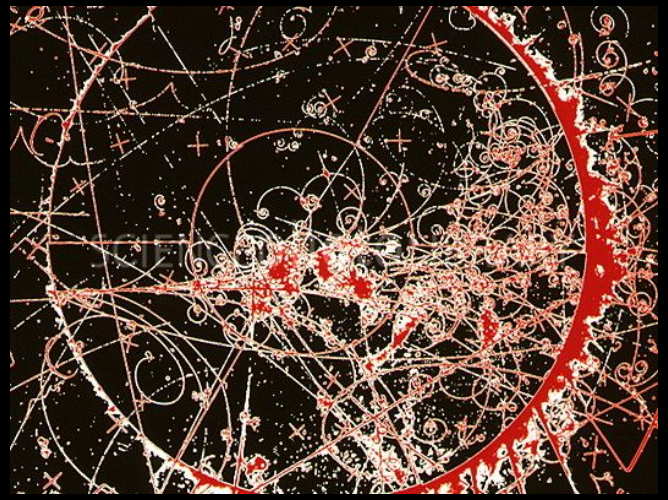
https://home.cern/

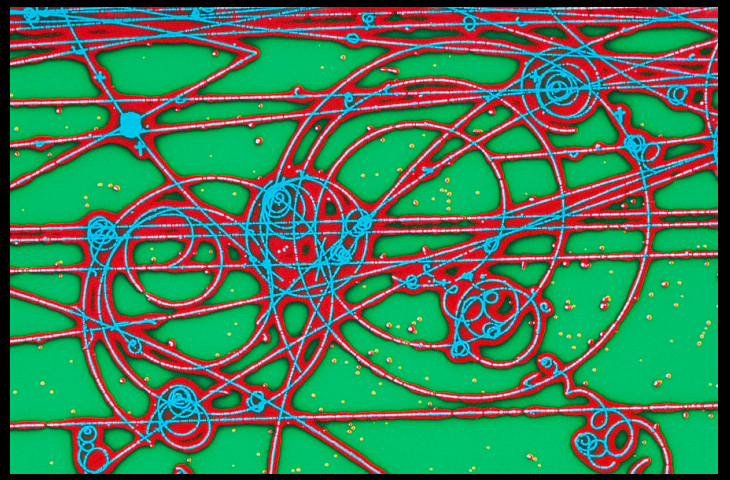
In bubble chambers, particle tracks transform into mesmerizing, textured artworks. Charged particles leave trails of bubbles, crafting intricate and dynamic patterns. These visual records, resembling abstract compositions, provide a unique lens into the hidden world of subatomic particles, turning the complexities of particle collisions into visually stunning displays.









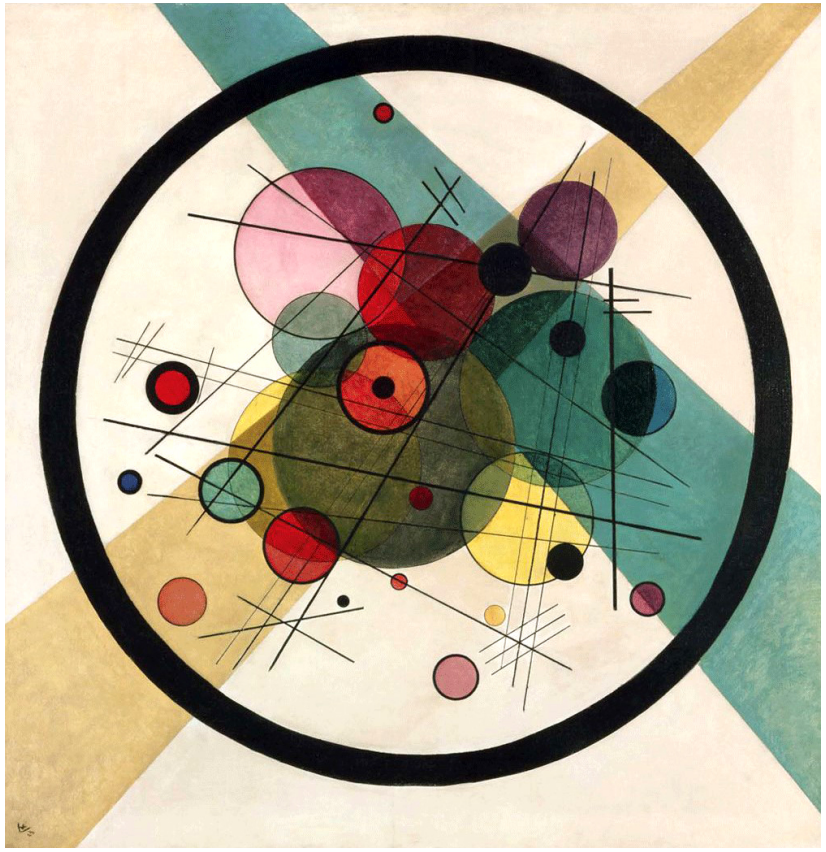


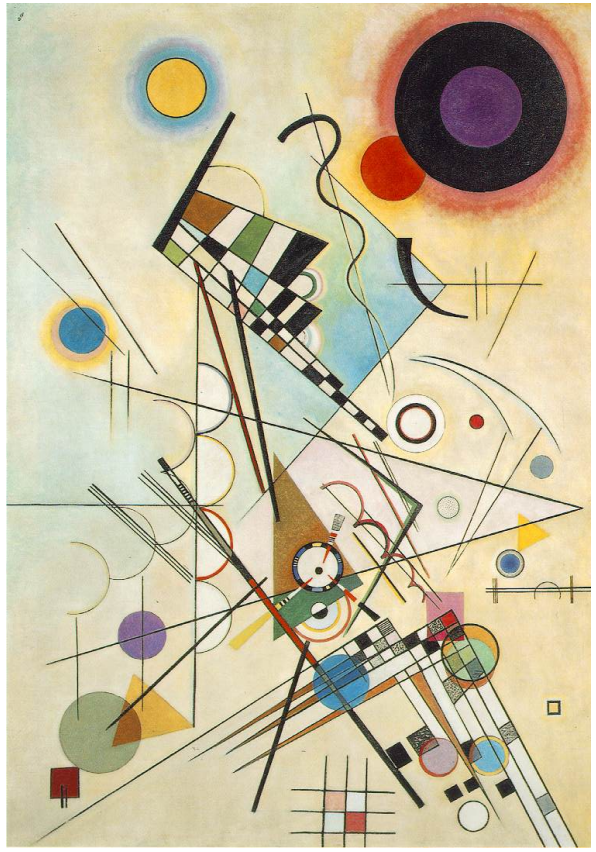
Kandinsky's Visual Physics

https://www.artforum.com/features/kandinsky-and-problems-of-abstraction-209197/

"The crumbling of the atom was to my soul like the crumbling of the whole world. Suddenly the heaviest walls toppled. Everything became uncertain, tottering and weak. I would not have been surprised if a stone had dissolved in the air in front of me and became invisible. Science seemed to me destroyed; its most important basis was only a delusion, an error of the learned, who did not build their godly structures stone by stone with a steady hand in transfigured light, but groped at random in the darkness for truth and blindly mistook one object for another."

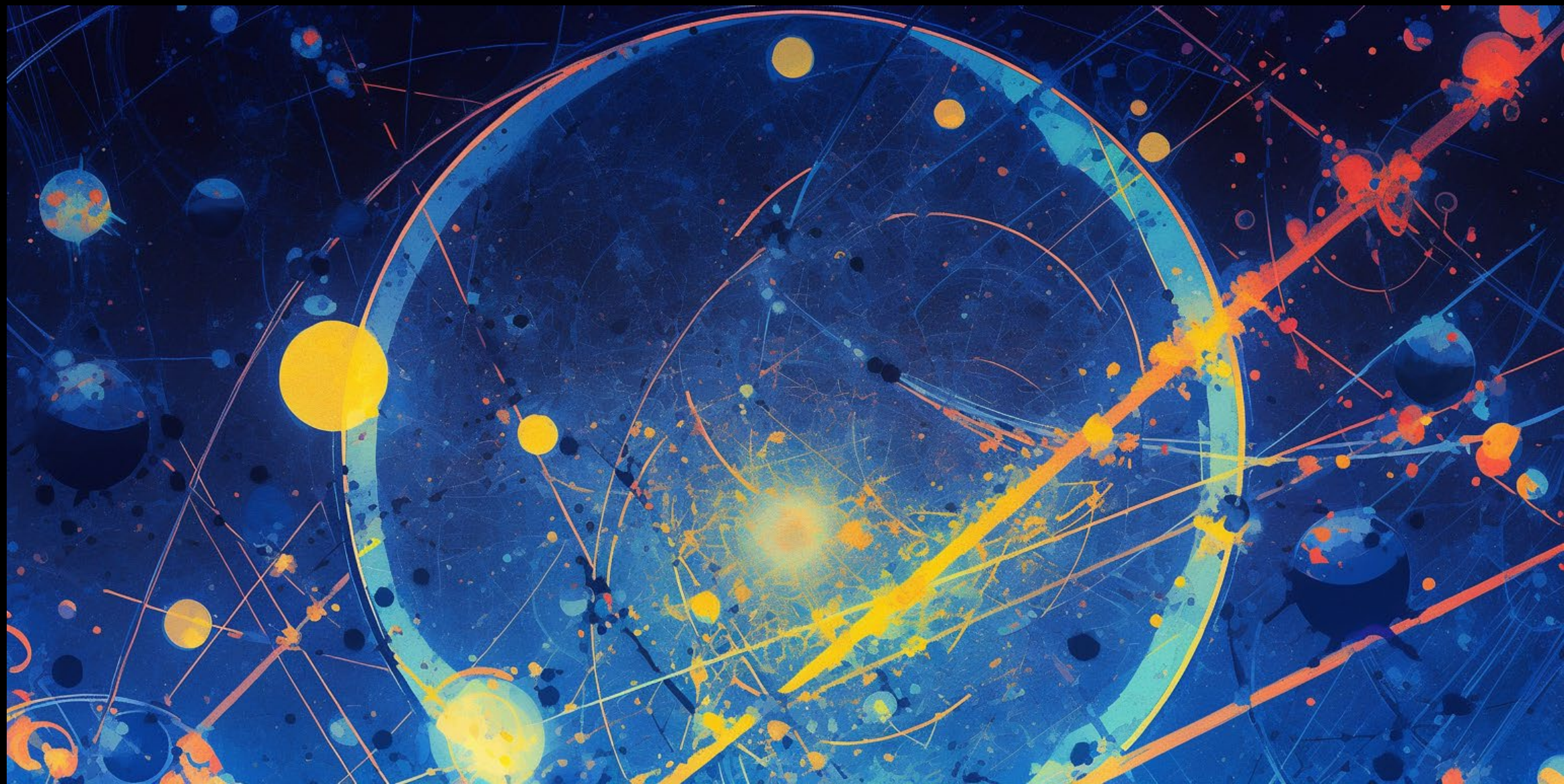
Particle tracks in bubble chambers echo the abstract artistry of Wassily Kandinsky. Much like Kandinsky's work, the tracks are dynamic, intricate compositions of motion and energy. Kandinsky, a trailblazer in abstract art, aimed to convey spiritual and emotional depth through form and color. In a parallel sense, the tracks left by charged particles reveal the hidden choreography of the subatomic world, translating the intangible dance of particles into tangible, expressive patterns





SUB-ATOMIC LIGHT TEXTURES, PARTICLE COLLIDER SERIES:

[BLEND IMAGES] **BUBBLE CHAMBER PARTICLE COLLISIONS, CERN,** FUJI SUSPIRIA, LOMOGRAPHY BLUESCALE XR 50-200 35M, CARL ZEISS PLANAR 50MM F/0.7, **KANDINSKY** --AR 2:1 --S 750 **[MIDJOURNEY NIJI 5]**



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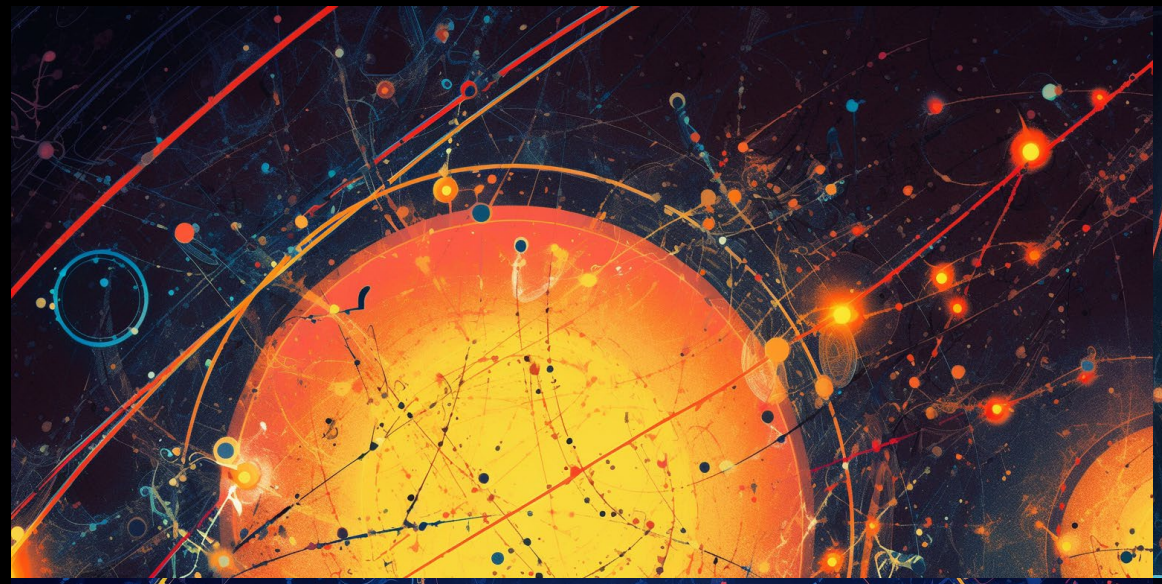
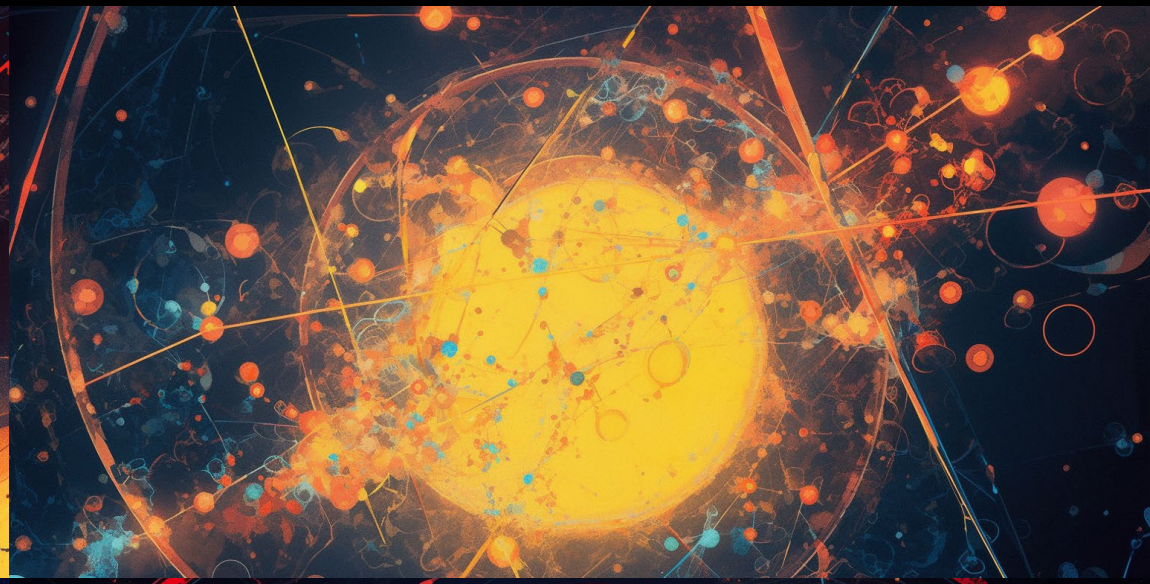
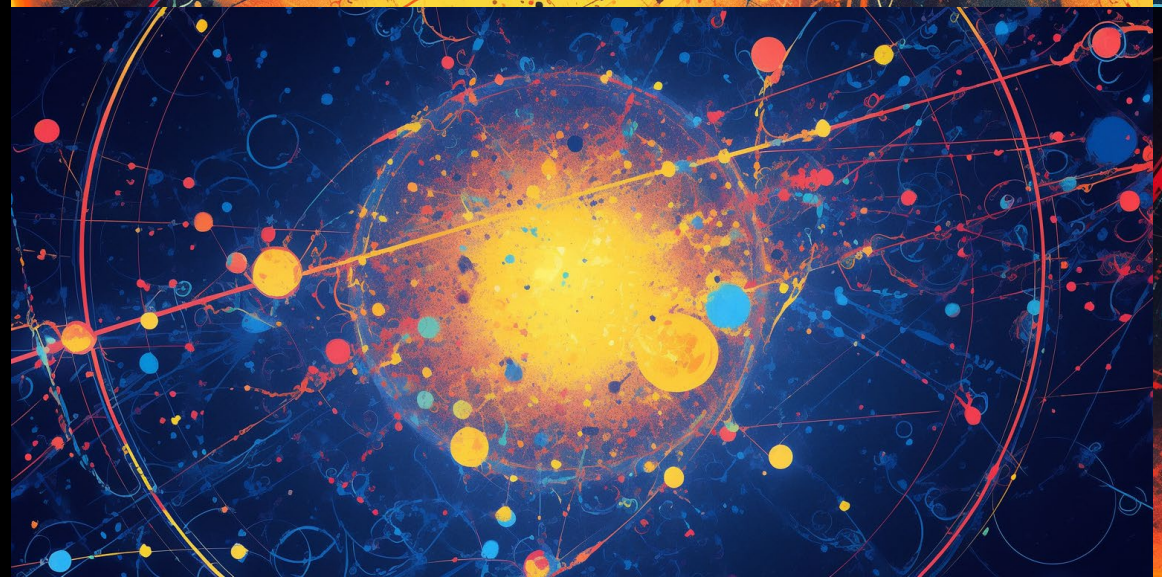


SUB-ATOMIC LIGHT TEXTURES, PARTICLE COLLIDER SERIES:

[BLEND IMAGES] BUBBLE CHAMBER PARTICLE COLLISIONS, CERN, DYNAMIC PATTERNS COLORS AND TEXTURES, **LARGE HADRON COLLIDER,** GUM BICHROMATE PRINT --AR 2:1 --S 750 **[MIDJOURNEY 5.2]**

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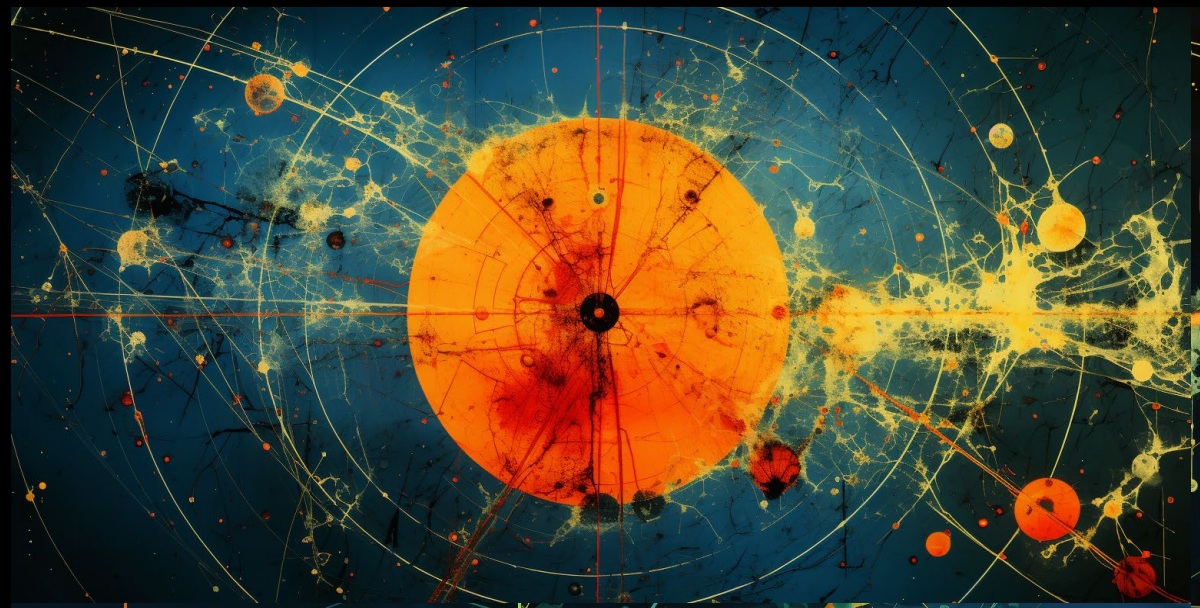

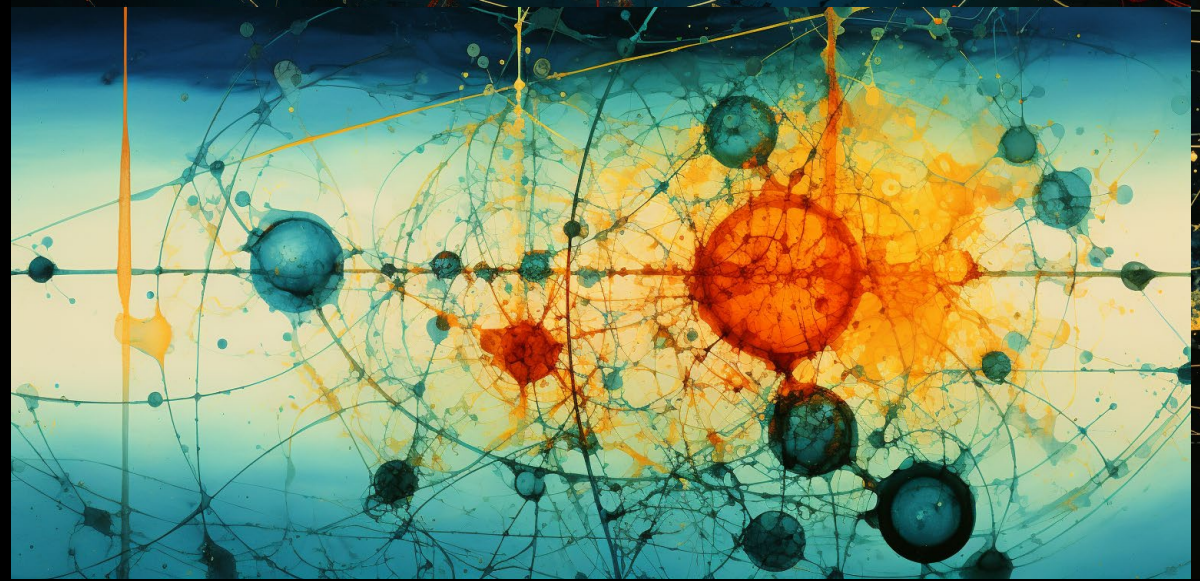

SUB-ATOMIC LIGHT TEXTURES, PARTICLE COLLIDER SERIES:

EXTREME CLOSEUP OF SUBATOMIC RESIDUE FROM ATOM SMASHER, THE QUANTUM UNIVERSE, INTRICATE LIGHT TEXTURES ON A MICROCOSMIC LEVEL, UNDULATING RIBBONS OF ENERGY AND PARTICLES, BLUE INTERPOLATING TO GREEN, GUM BICHROMATE PRINT, **KANDINSKY** --AR 2:1 **[MIDJOURNEY NIJI 5]**

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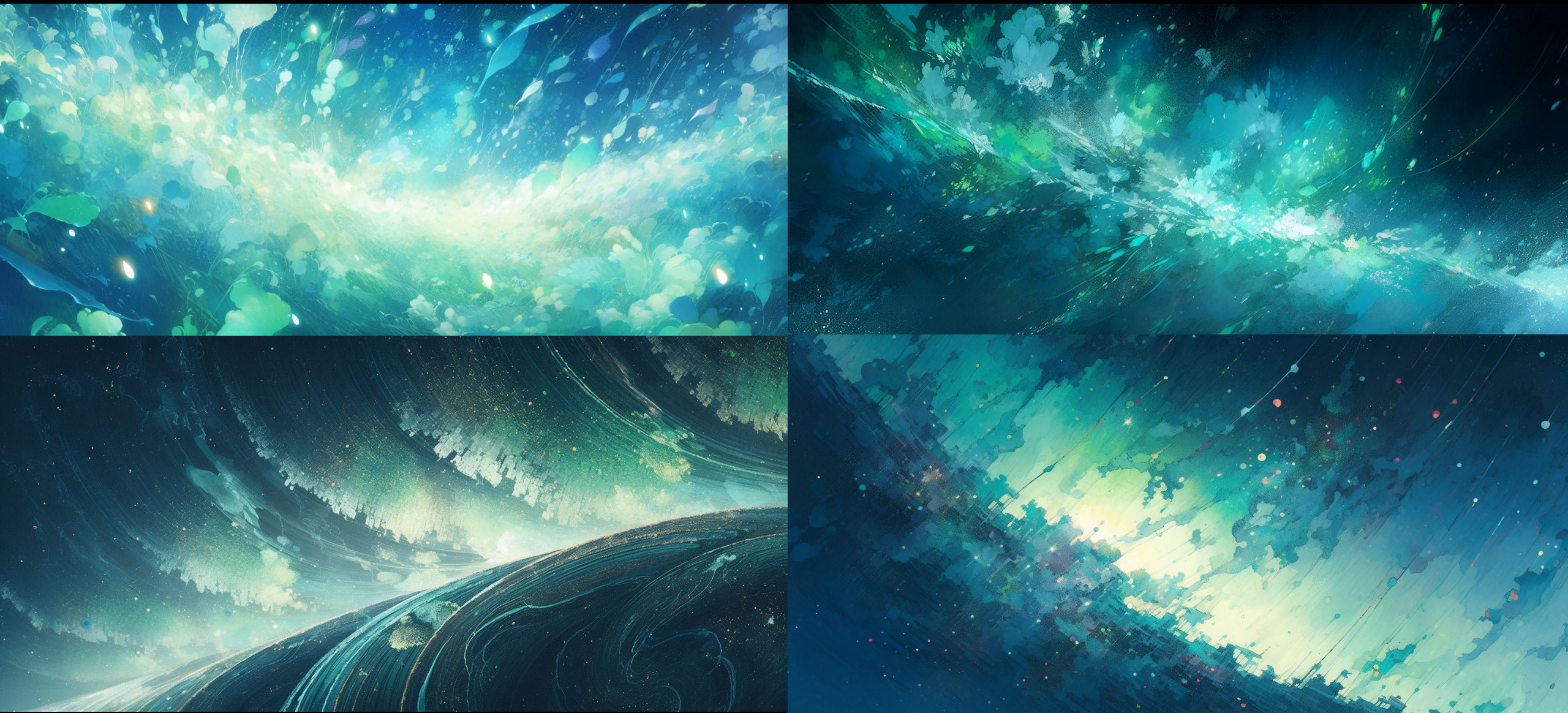

SUB-ATOMIC LIGHT TEXTURES, PARTICLE COLLIDER SERIES:

INSIDE A PARTICLE COLLIDER, THE QUANTUM UNIVERSE, **LIGHT TEXTURES ON A MICROSCOSMIC LEVEL,** UNDULATING RIBBONS OF ENERGY AND PARTICLES, BLUE INTERPOLATING TO PURPLE, GUM BICHROMATE PRINT --AR 2:1 **[MIDJOURNEY 5.2]**

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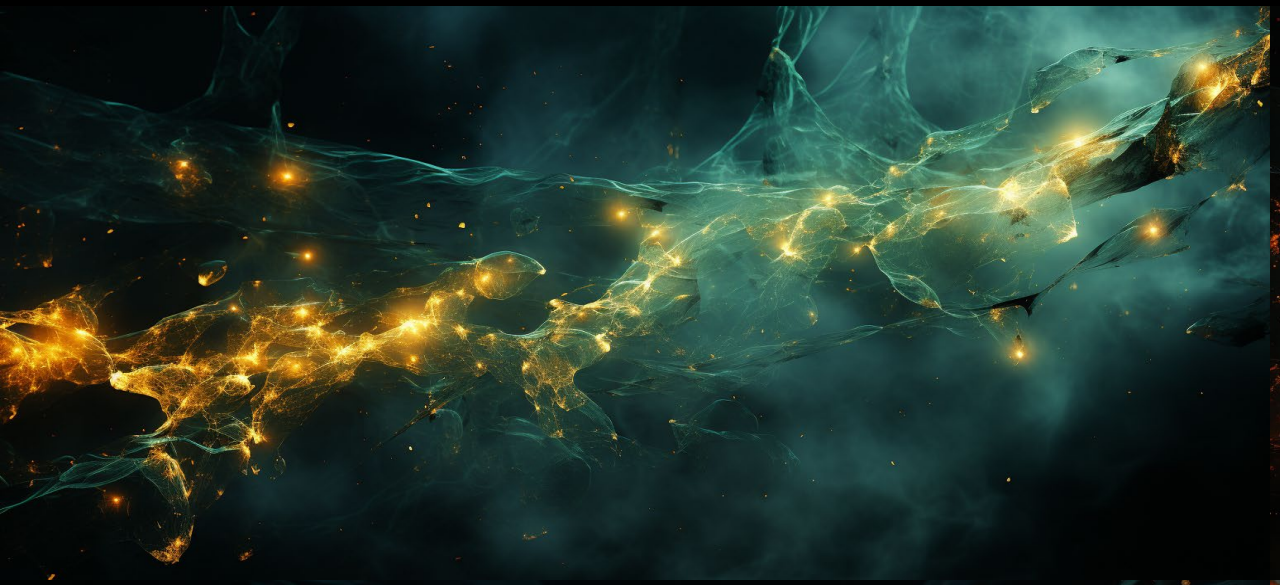
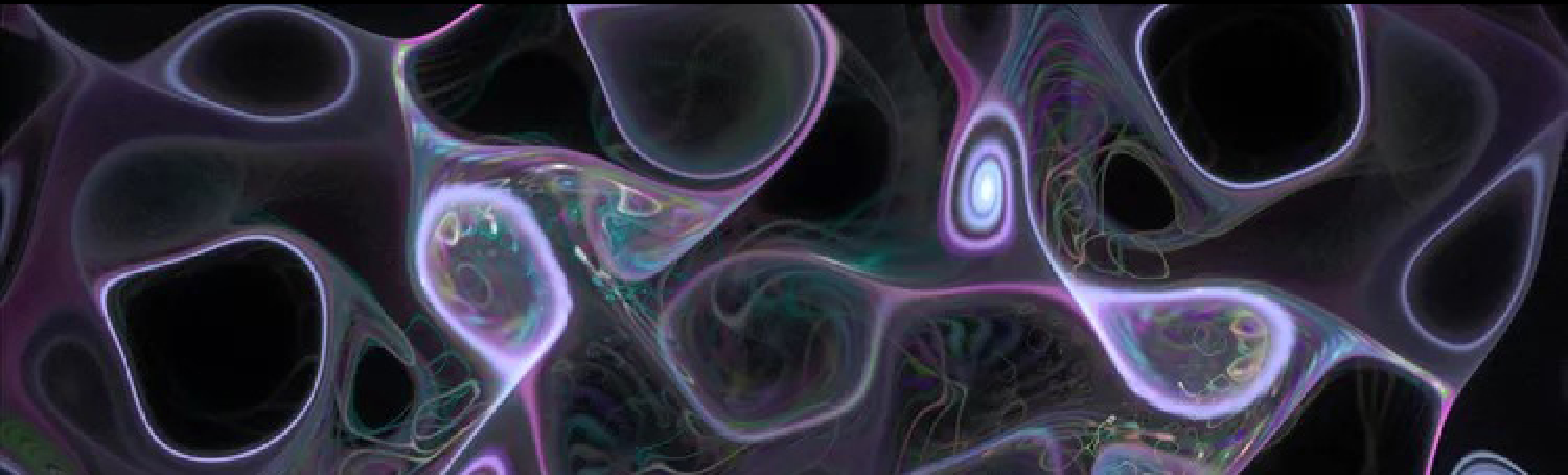


Non-linear Optical Textures & Theoretical Quantum Physics

https://www.treehugger.com/what-is-quantum-foam-4862885 *https://en.wikipedia.org/wiki/Nonlinear_optics* *https://en.wikipedia.org/wiki/Quantum_foam*

In everyday terms, optics is the study of light and how it behaves. **When we say "non-linear optics," we're talking about situations where light doesn't follow the usual, straightforward rules.** In "linear optics," light typically moves in a predictable way—like when it passes through a clear glass, it doesn't change its nature much. However, in non-linear optics, things get interesting. When light is really intense, like with powerful lasers, or when it interacts with certain materials, its behavior becomes more complex. Think of it like this: In linear optics, it's like following a path on a map. You know exactly where you'll end up. In non-linear optics, it's more like navigating a maze. The light can change its color, split into different beams, or combine in unexpected ways. Scientists use non-linear optics for various purposes, from creating new colors of light to developing advanced technologies like laser-based medical treatments and high-speed communication systems. It's essentially about exploring the fascinating and sometimes unpredictable ways light behaves under specific conditions. **"Holographic quantum foam" blends holography and the concept of quantum foam.** Holography proposes that a 3D space's information can be encoded on a 2D surface, akin to holographic images. Quantum foam speculates that at minuscule scales, space-time is frothy and fluctuating. Combining these ideas suggests the universe's fundamental structure might be a holographic projection from a 2D surface, with dynamic turbulence at the tiniest scales – the quantum foam. While theoretical, it represents an exploration of space-time's nature at its most fundamental level.

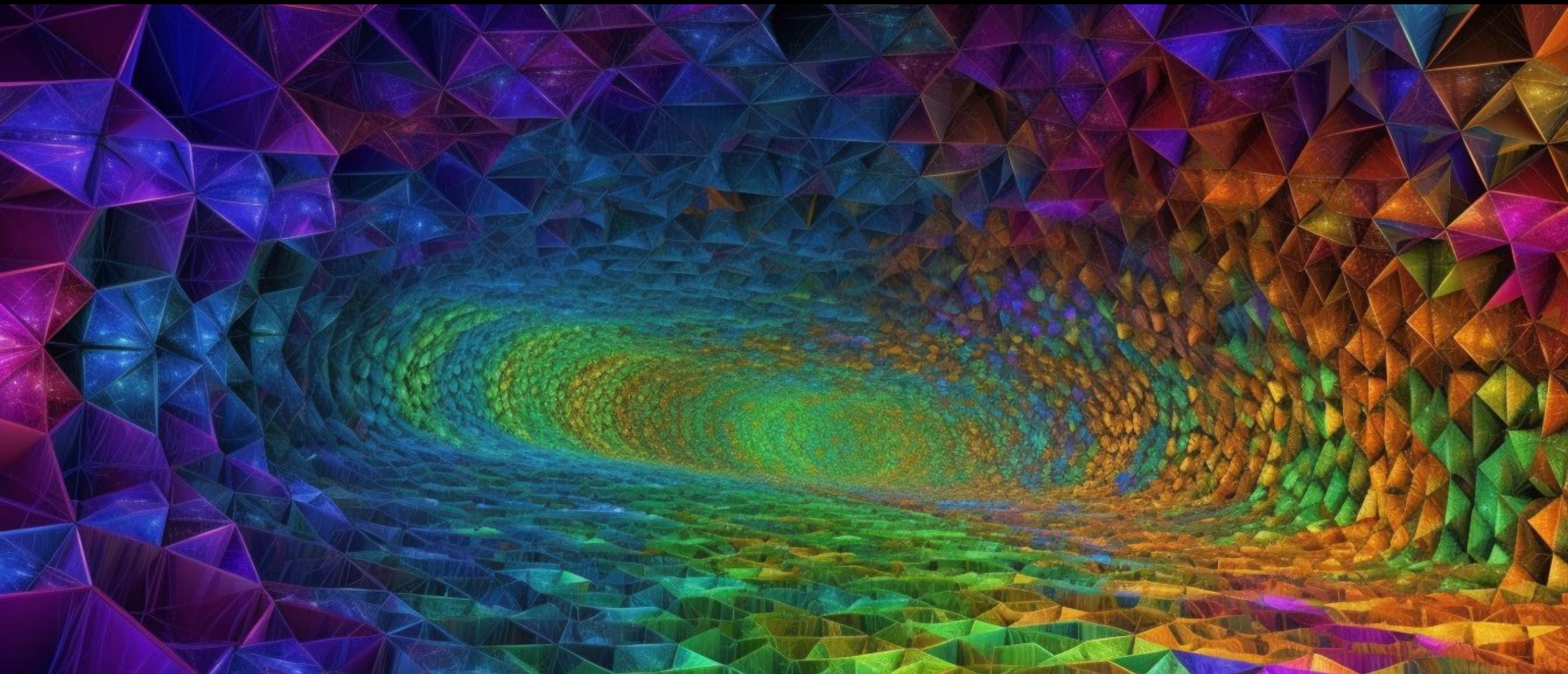


Fourier Transform Spectroscopy

Imagine you have a magical pair of glasses that can help you understand colors in a special way. You put on these glasses, and when you look at something, they show you all the different colors that are mixed together. **Fourier Transform Spectroscopy (FTS) is a bit like those magical glasses but for scientists.** Instead of colors, it helps them understand the special colors of light. We know sunlight has many colors; FTS helps scientists see all those colors and figure out what's happening when light goes through things like air, water, or even tiny particles. It's like having a superpower to see the hidden rainbow in light. Scientists use this to learn about stars, figure out what things are made of, and explore the secrets of our world. Fourier Transform Spectroscopy is like magical glasses for scientists to unlock the mysteries hidden in the colors of light.

NON-LINEAR OPTICAL TEXTURES, THE QUANTUM MUSEUM:

A SPACE TRAVELER UTILIZES **FOURIER TRANSFORM SPECTROSCOPY + NON-LINEAR OPTICS** TO NAVIGATE **HOLOGRAPHIC QUANTUM FOAM**, ENCOUNTERING RELATIONAL SYMBIOTIC FUNDAMENTAL PERTURBATIONS THAT MANIFEST AS FRACTAL TESSELLATIONS OF UNBELIEVABLE OPTICAL ILLUSIONS. QUASI-PARTICULATE NATURE OF CRYSTALLINE REALITY GIVES RISE TO LANDSCAPE OF INDESCRIBABLE SHAPES AND VIBRANT COLORS --AR 3:2 **[MIDJOURNEY 5]**



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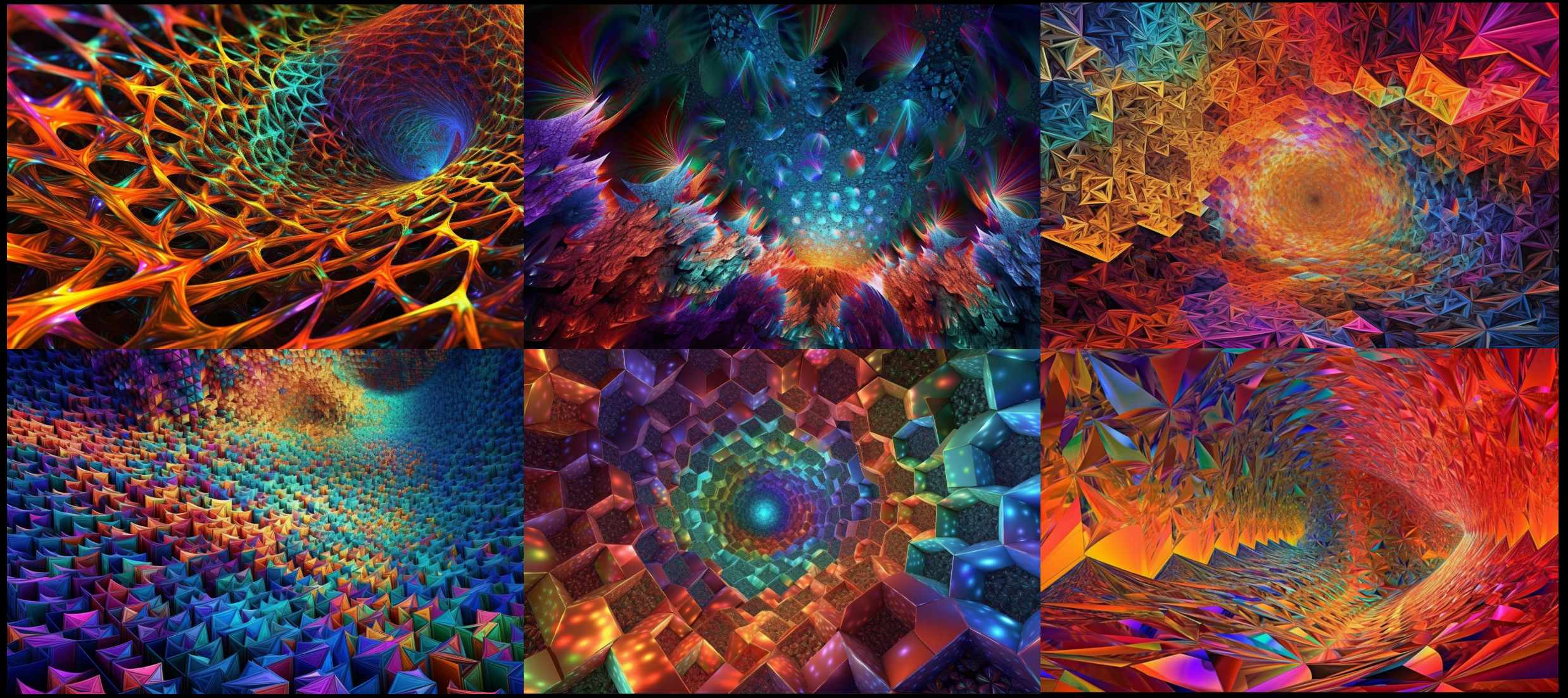

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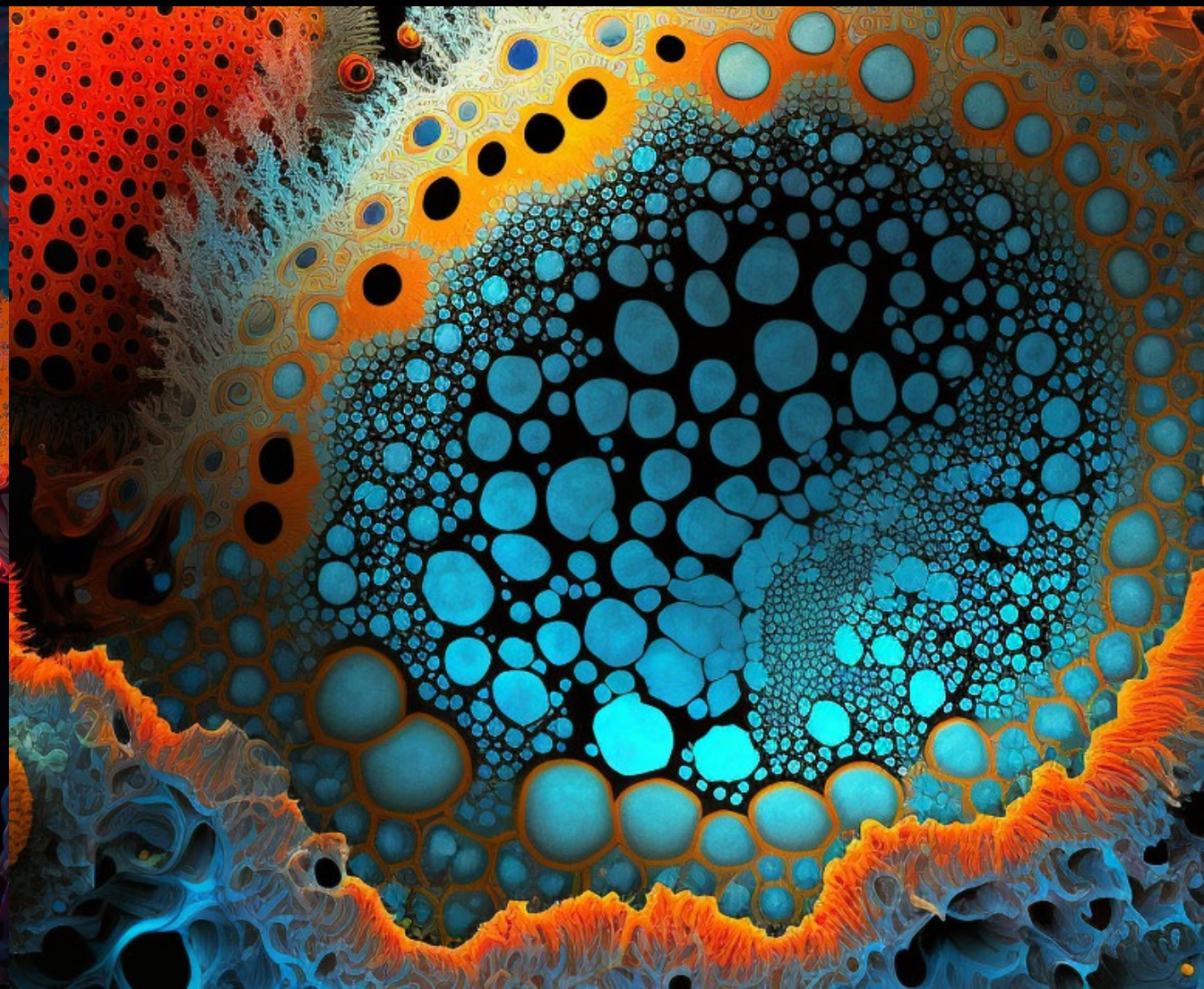

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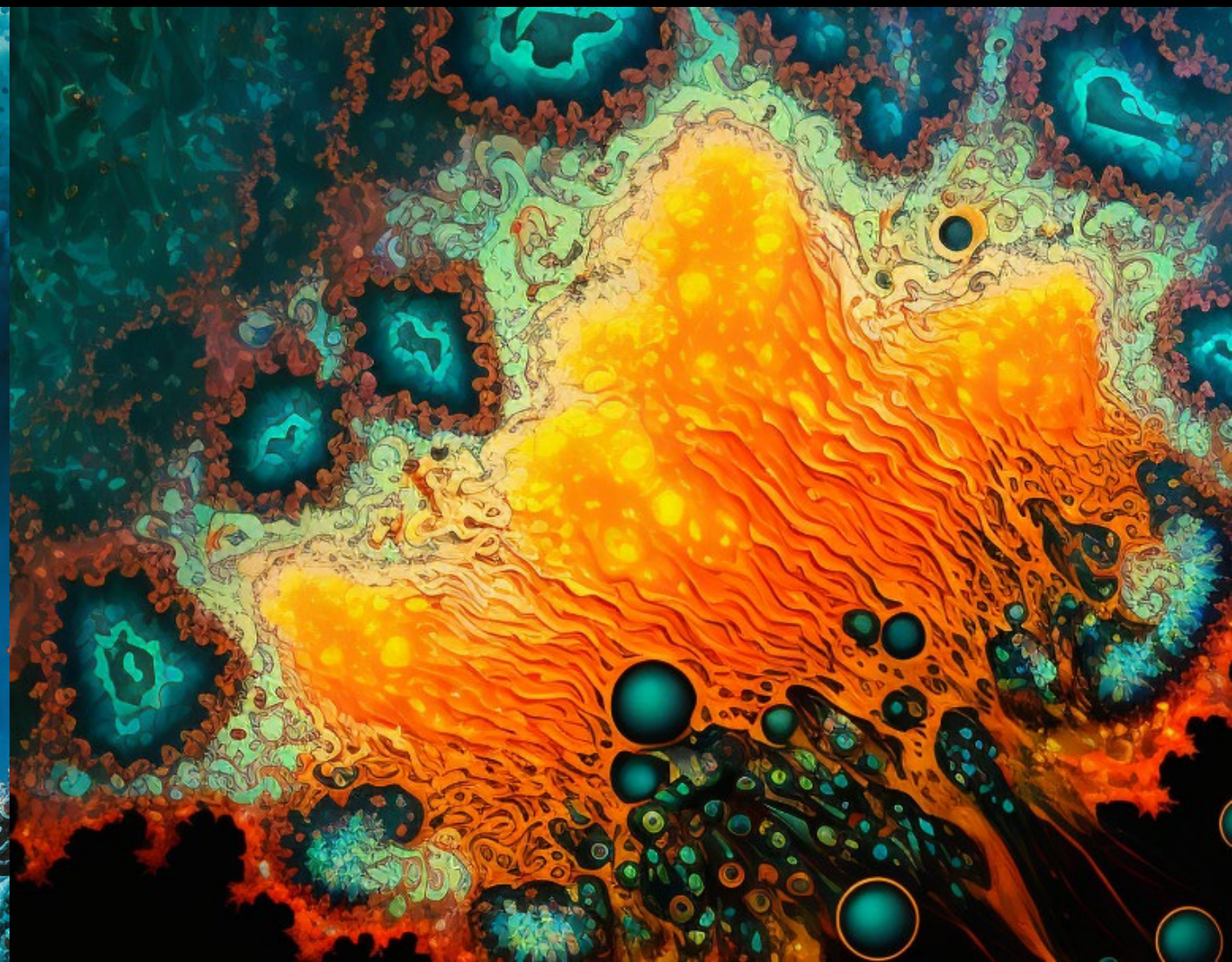

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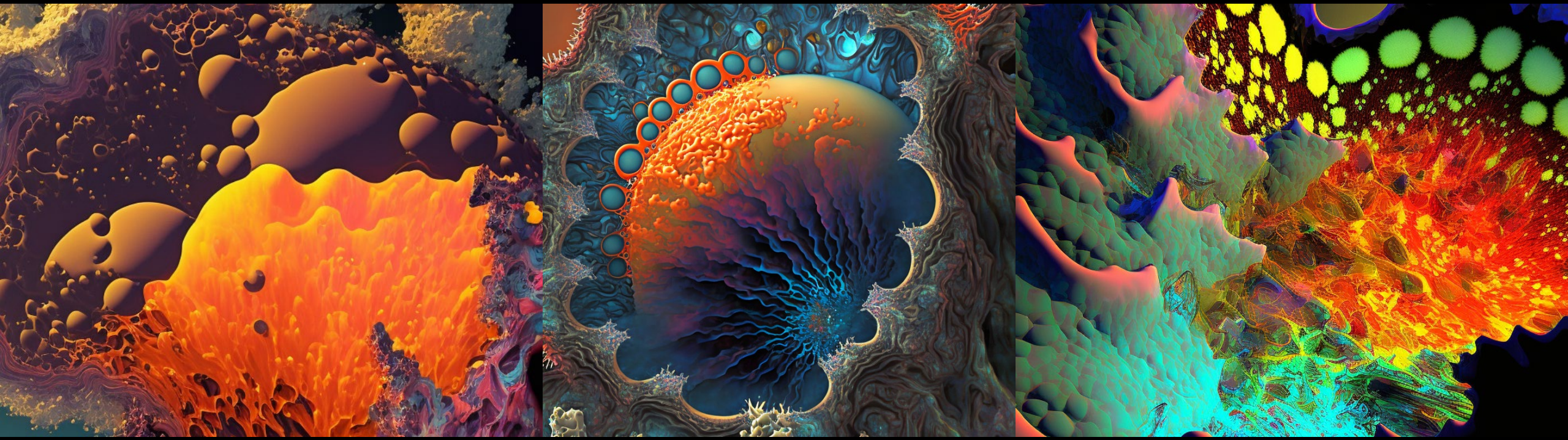

NON-LINEAR OPTICAL TEXTURES, THE QUANTUM MUSEUM:

QUANTUM RESIDUE MATERIALIZES FROM A PORTAL COMPRISED OF GELATINOUS NON-NEWTONIAN FLUIDS SURGING THROUGH COMPLEX & **LABYRINTHINE ENERGY MATRIX,** BATIK DESIGNS, INTERPOLATING YELLOW TO RED, **INVERTED HEILGENSCHEIN LIGHTS**, **NON-LINEAR OPTICS,** NACREOUS EMBRYONIC ENERGY SHIELD ENCASING THE PORTAL, **FOURIER TRANSFORM SPECTROSCOPY** --AR 2:1 **[MIDJOURNEY 5]**

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NON-LINEAR OPTICAL TEXTURES, THE QUANTUM MUSEUM:

AS A MASSIVE TELEPORTATION PORTAL ACTIVATES, IT CREATES AN ENIGMATIC PALIMPSEST OF GELATINOUS NON-NEWTONIAN FLUIDS THAT FLOW THROUGH AN **ENERGY MATRIX OF INCANDESCENT BATIK DESIGNS,** PUNCTURING THIS MAELSTROM ARE **HEILGENSCHEIN LIGHTS,** ILLUMINATING A NACREOUS EMBRYONIC ENERGY SHIELD, **QUANTUM RESIDUE,** EXTREME REALISM --AR 3:2 --S 750 **[MIDJOURNEY 5]**

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ACKNOWLEDGMENTS:

MANY OF MY LIVE-ACTION PHOTOS TAKEN IN THIS SERIES CAN BE VIEWED AT **JAZNO.COM**. THANK YOU, **STUDIO BINDER SERIES**, WHICH CAN BE FOUND AT HTTPS://WWW.STUDIOBINDER.COM/BLOG (THE MOST COMPREHENSIVE REPOSITORY OF FILM AND PHOTOGRAPHY TUTORIALS ON THE WEB). AND OF COURSE, A NOD TO **WIKIPEDIA**, FOR PROVIDING A FAIR AMOUNT OF CONTENT/CONTEXT (ALL IMAGES AND TEXT HAVE BEEN ATTRIBUTED ON RESPECTIVE SLIDES, UNLESS CREATIVE COMMONS). AND THANKS TO **GIL ALTER** FROM THE **MIDJOURNEY: PROMPT TRICKS FORUM** FOR HIS INSPIRATIONAL RESEARCH.

The next lecture in this series is **Camera Basics for Generative Art VI**, where we will cover large-scale textures.