



B⁶

B⁶

S
U
S
E
C
O
N
D
S

JULIAN CHARRIÈRE SECOND SUNS

JULIAN CHARRIÈRE

HATJE
CANTZ

HATJE
CANTZ

UNITED

INCA

BUTERNUT

ESONIA

S
U
SECOND
S

JULIAN CHARRIÈRE

EDITED BY

NADIM SAMMAN









Operation Crossroads, a nuclear weapon test at Bikini Atoll, Micronesia, 1946





A charge.
A bolt of lightning.
A coconut.
An egg.
Its husk made of rusted iron.
Supporting it, cables buzzing
with atoms.
A push from the depths
of the lagoon and a
projection out from the water,
into the atmosphere.
A site. A sight.
The sun:
The dawn of an image.
The day of an image.
The tide of an image—
its currents and atmosphere.

17 NADIM SAMMAN
INTRODUCTION

41 NADIM SAMMAN
SECOND SUNS

66 CARSON CHAN
ATOMIC AQUARIUM

90 DAVID BRESKIN
PACIFIC PROVING
GROUNDS / TRUST
TERRITORY (105)

93 RICHARD RHODES
IN CONVERSATION
A DARK SUN

118 ELE CARPENTER
CARRYING THE
NUCLEAR HOME

140 BIOGRAPHIES

141 IMPRINT

* EXTRACTS THROUGHOUT
NADIM SAMMAN &
JULIAN CHARRIÈRE

INTRODUCTION

The works featured in this book explore fraught interactions between nuclear modernity and geography—addressing the atomic landscape and post-colonial ecology of Bikini Atoll. They are the result of a month-long expedition to its radioactive and abandoned sites. Partially inspired by science fiction author J.G Ballard's *The Terminal Beach* (1964), they picture terrain above and below water—from bunkers on palm-fringed beaches to the rusting Pacific "Ghost Fleet," submerged some 180 feet below sea level. The project follows a previous series, created at the Soviet Semipalatinsk nuclear test site (Kazakhstan, 2014), in recording the architectural legacy of the birth of the atomic age. Together, both bodies of work amount to a diptych, exploring twentieth century nuclear landscapes on both sides of the Iron Curtain.

Bikini Atoll is located on the fringe of the collective imagination, at the horizon of military-industrial endeavor, colonial excess, and contemporary infrastructure. For the last seventy years it has been a veritable ghost land. Between 1946 and 1958, twenty-three of the most powerful manmade explosions in history occurred there. During this period, bombs delivering a combined fission yield of 42.2 megatons were detonated. The force of one of these, Castle Bravo, was enough to vaporize two islands and gouge a massive crater—measuring 800 meters in diameter—out of the primordial reef. Another threw a fleet of ninety-five captured and decommissioned World War II battleships—some of them up to 250 meters long—up into

the air. A few were ripped to shreds. Others, like the USS Saratoga and the HIJMS Nagato—storied flagships of the US and Japanese navies—eventually sank to the bottom, where their rusting hulks remain today. During this period, obliterated geology would become radioactive particles, carried on the wind to then fall on communities in neighboring atolls. Meanwhile, the people of Bikini, who had been asked to temporarily leave their home to make way for a series of experiments ventured “for the good of mankind and to end all wars” began to learn the meaning of an exile and dispossession that continues until present. Today, the atoll's islands bear architectural scars that stand as profane registers of this program and its unresolved consequences: a series of concrete bunkers, jutting out from the shore or hidden beneath jungle.

Bikini lies beyond the forty-eight hour delivery rule. A global network of cars, trains, and airplanes can only get you to the dock at Majuro, capital of the Marshall Islands. From there, another new journey through 850 kilometers of open ocean must begin. There is no ferry, and only one suitable boat is available for charter—a beaten up pearl diver from the 1970s. Once you have concluded negotiations with its owner you can embark, and settle into your home for the next three weeks: a capsule, outside time and phone signal; a parenthesis in your life, involving complete circumscription by onboard micro-society—which, at the end of the expedition, you will leave behind at the pier. Out in the wide Pacific, flows of energy run up against the beam of the vessel, tipping it from side to side, constantly, in the time it takes for you to become a boatman, covering the distance. Days. The passage is an initiation, or sickness, that finally breaks with a sunrise, and first sight of land.

The island is a line of green, floating on a raft of yellow sand; a shock of luminous colour, like a gem set within another—the lagoon. It looks welcoming and serene, not what one expects from an atomic test site. It is a perfect picture: a desert island; *the good* as a geographical figure, so related in brochures promising space beyond the rhythms and strictures of metropolitan life. More than any resort, it performs archetypical paradise. You cannot help but recognize it as a place you have wanted, a figure centrally located in a dream that is our culture.

It is only after fully indulging this reflex impression that your gaze steadies. While the mirage holds from a distance, the island's constructed nature is gradually disclosed as you approach. You notice that its palm jungle is laid out in a grid. After the fire of hydrogen bombs, replanting was effected according to a “scientific” rubric. Later, having entered the

labyrinth on foot, your pushing through fronds eventually uncovers a clearing—home to a concrete remnant of an industrial modernity antithetical to coconuts, sand, and water. This monstrous bunker, and the others that you will encounter, resembles a pyramid, or totem, catapulted from another world. In the days you spend exploring the atoll's other islands, you discover others sitting right on shore, towering above the tree line. These bunkers were built as camera housings—to protect mechanisms for producing images of thermonuclear fire. In them you encounter a studio apparatus of atomic iconography; and you come to understand the atoll as a “found” stage upon which a western power spectacle was performed. In part, this stage was chosen because it came already dressed in tokens of innocence and purity. The addition of concrete contradictions was fine, as they would never be in the frame.

After it was a homeland, Bikini became an image production factory. Indeed, the atoll is central to the development of photography, both as a technical science, and as a geopolitical tool. A dense cloud of images resulted from the explosions there, particles of which continue to circulate, today, constitutive of our cultural atmosphere. Looking at the structures that housed the cameras, that produced the pictures, which conditioned the historical imaginary, offers this lesson: all images come from a place; a ground. Even if, today, we imagine that culture is nothing but a sea of images, that everything is fungible, there are islands where this subjectivity is rooted—a vision of mankind as a civilized, scientific, agency, planted, like a coconut tree, in irradiated soil.

More than any sapphire night;
more than the coast of
an empty island,
girt by glittering ocean,
and the calm of remove
from most of the life we know;
more than a coral fern
on the edge of
a primordial reef,
or a thousand-strong
school of jacks;
more than a green sprout
piercing the hard shell
of a coconut;
or the shimmering silver
of a black marlin's side—
this handful of grains—
this handful of sand—
an indistinct collection
of minerals and
once-organisms,
crushed to dust,
radiates
power.























NADIM SAMMAN ---

SECOND SUNS

As the storm advances, a line across the sea, we try to keep the cameras steady. There will not be a second take. Any minute the torrent will arrive and threaten our mechanics. The gusts grow more impressive, setting objects rolling across the crater ridge like tumbleweeds, alerting us to the fact that the surface of this pulverized reef is strewn with debris, issuing from countless other ground zeros of human enterprise. A glass ball skips towards the water. A few meters away another, larger and green, begins to move. Both are fishing lures from the early twentieth century. Next, a pink flip flop quivers through the air—half a drunken foam butterfly—before slapping into one of our tripods, as if admonishing us for standing our ground. Shards of polystyrene begin to emerge from the the sand, resembling shrapnel from crashed airplanes, or exploded munitions. A drop. Another. It's clearly time to think about waterproofing, and for want of anything more appropriate we yank what looks like a bat wing from the ground—a strip of black fabric attached to a pair of spokes: the last functional part of an umbrella—and fashion it into a visor. Deluge. Above us, the storm and the sunset meet like two opposing phalanxes on a battlefield. The first—blue, electric, and liquid. The second—flame. They connect in a clap of thunder—lightning and sun converging, molecules crackling in waves of energy which surge and break against one another. The sun turns the raindrops magma, and the clouds a conflagration. Everything is charged with light.¹

¹ Extract from Nadim Samman and Julian Charrière, *As We Used to Float* (Berlin, 2018).

Like a shockwave moving across the ocean, to break upon foreign shores, modern history is the story of influence spanning great physical distances. Too often, however, spatial extension blinds us to functional proximity. But no distance on earth resists the speed of light. And if we cannot feel the heat that generated this light, this does not entail any lack of fire. In the geopolitical Cold War, what was *cold* was only the surface of the pages and screens that bore the sign of the mushroom cloud. Bikini burned hotter than anything before.

Settled by humans for approximately 3,600 years, prior to atomic exodus, the twentieth century history of Bikini stands as a signal example of modern techno-colonial hubris. Its English name is transliterated from the Marshallese, *Pikinni* (p̄iŋgwiŋ'n̄ijj)—“*Pik*” meaning “surface” and “*Ni*” meaning “coconut;” *surface of coconuts*. The biological fate of the island’s namesake flora, as well as the currency that the word “Bikini” possesses today, are symptomatic of a profound historical ungrounding that has cut across biological, socio-linguistic, and civil fields.

Following the test program, Bikini was covered in a shroud of fallen palms—their fronds bleached by the nuclear sun; so many grey and white bones piled on top of each other, high enough that the ground beneath them was obscured; scatterings of coconuts husks everywhere, like skulls. Against this desolation, and asserting that they *must* return home, the Bikinian people petitioned for a cleanup. This would eventually involve removing all the highly irradiated material from their atoll. Namely, everything, down to the land itself. Using bulldozers and diggers the US military cleared the dead vegetation, and a few living pockets that had survived the fire of hydrogen bombs. Then they scraped off all the topsoil. Afterwards, they loaded everything onto a container ship, which undertook a week-long passage to Enewetak Atoll. In an echo of the World War II atrocities which spurred the urgent development of this class of weapons, upon arrival the heap was thrown into a mass grave, covered up and left, to be forgotten. For on the island of Runit the US had refashioned a gigantic crater (formed as a result of the Cactus test of 1958) as a storage facility. It was here they buried one homeland in the wound of another, underneath a concrete dome.

This done, Bikini was nothing more than a strip of desert, rising only inches above the water. Without tree roots to secure the sand it would only be a matter of time before the the island disappeared, into the sea. Action had to be taken. And in order to again sustain human settlement, coconuts—a food staple—had to return. Following the rationale of industrial

agriculture, new trees were laid out in grid formation—a suitably unnatural, modernist, overlay. The coconuts grew, and some people returned—after a disastrous alternative settlement on Rongerik, where the currents were wild and the catch poisonous.² But it would later become clear that no amount of earth scraped away might enable a safe harvest. Coral sand is poor in potassium, and the roots of the coconut palms, seeking this nutrient, found a plentiful substitute in cesium. In time, the returnees were tested, and in those who regularly consumed Bikini’s staple, dangerous levels of exposure were recorded. The atoll, so far from anywhere, would not be able to feed itself after all. Resettlement was abandoned.

When one visits Bikini, today, some trees register a pronounced mutation—their coconuts elongated, almost tubular, the shape of marrows, or missiles; too narrow to produce milk or flesh. Setting misshapen samples of these within a series of vitrines, recalling a museum display, a series of works by Charrière foreground the colonial sculpting of the region’s biosphere by radioactive technologies—proffering a post-apocalyptic botanical survey; an *unnatural history*. Standing vertically on a bed of coral sand, inside a glass housing that caps a mirror-sided plinth, each coconut is a castaway that has been washed up on *another* identificatory shore. In this arrangement, the sand implies a kind of terminal beach, while the mirror—long symbolic of water, and vanity—draws the viewer into its image-space. The fact that these coconuts stand erect, like totemic phalluses, suggestive of potency, is a bitter irony. Coconuts of this sort are utterly sterile from a reproductive standpoint. That the Marshallese creation myth involves a paradigmatic Mother giving birth to a coconut child, which then supplies her people with sustenance, tools and clothing, sets the issue of genetic disruption into relief.³

On the international cultural plane, Bikini’s ungrounding plays out in its hegemonic linguistic identification. MS Word’s autocorrect allows “Bikini” but not “Bikinian.” Rather than a place, a culture, or a people, the designation has—as we all know—become associated with something different. French designer Louis Réard named his women’s two-piece swimsuit after the atoll in 1946, trading on explosive media associations. The item’s ubiquity firmly established, today, an association with sun, sex, and leisure completely overshadows its namesake.

Charrière’s photo series of idyllic lagoon scenes, depicting water, palms, beaches, and horizons, enframe the image of Bikini’s sublimated trauma. Grains of sand from the atoll’s hot sites were placed on the negatives during the development process, altering the resulting pictures



2 In Bikinian legend, Lijibokra, the “demon of poison” contaminates Rongerik. When the Bikinians moved there the food available (fish, pandanus, and coconuts) caused sickness. See Jack Niedenthal, *For the Good of Mankind: A History of the People of Bikini and their Islands* (Majuro, 2001), pp. 44–45.

3 Jack A. Tobin, *Stories from the Marshall Islands* (Honolulu, 2002), pp. 12–13.

in an arresting fashion. Colorful figuration giving way, every so often, to bleached abstraction, the prints oscillate between the peaceful cliché of tropical sunset photography and the destructive beauty issuing from atomic second suns. By exposing the film stock to radioactive material Charrière's process serves to partially destroy one mode of (photographic) visual information, while at the same time adding another. In this manner, one encounters a register of the (manmade) energy of the landscape in the work, literally undermining paradisiac motifs typically found in tourist brochures.

In another group of photographs, cataloguing the architectural legacy of test program, Charrière also employs this atomic development process. As with his Kazakhstan series, these black and white works recall the objective compositions favored by the Düsseldorf School, while surveying bunker facilities whose monumental forms recall temples, or tombs; odious leftovers of a questionable *culture*. The nature of this culture is at the heart of Charrière's engagement with the atoll. In many respects, Bikini's modern trauma—its people exiled, its land blasted, vaporized in places, burned and irradiated—issued from an imperial desire to create a visual imaginary unparalleled in human history:

In 1968 the Apollo 8 Astronaut William Anders would capture the whole earth in a photograph. Some have claimed that this image, which was distributed worldwide on magazine pages and TV screens, helped to spur broader understanding of the planet as a single system—bolstering the nascent environmentalist movement. But if *Earthrise*, as the picture has come to be known, was the birth of a new mass-cultural relation to ecology, the US Department of Energy's documentation of Operation Crossroads was its birth pang. For the image of a jewel-like planet, suspended in space, to contribute to the urgency of conservation initiatives, there had to be a prior vision of the stakes involved. Photographs of Bikini are that vision—one of immense power, in the hands of man, on the scale of earthquakes and hurricanes; an exponential increase in our species' capacity to destroy; a hazard raised to the all-encompassing dimension of clouds, oceans, and land; climate itself.

At the time of the Able and Baker tests, eighteen tons of cinematography equipment and more than half the world's supply of motion picture film stock was present at Bikini.⁴ Every explosion was documented from a multitude of angles. While much of this effort served military-scientific analysis, it was just as integral to a propaganda function. Indeed, it was in the Marshall Islands that the nuclear blast as an image-project reached its

apogee—a performance writ large, attended by a huge public relations machine. This aspect of Operation Crossroads rendered one of the most remote places in the world the most photographed. In this light, just as one talks about the science of the bombs, or the “testing” of warheads at Bikini, one must talk about the manipulation of the global visual imaginary—deploying pictures as munitions.

But in order to shoot the camera had to take on a new dimension. Architectural symptoms are among the standard mutations precipitated by atomic enterprise. There is no such technology without the development of special facilities; super-strength concrete, etc. This is to say, the nuclear entails an envelope appropriate to its colossal power.⁵ The photo negative has always been an invertebrate, reliant on an exoskeleton. To capture images of the tests it now required a “housing” on the scale of battlements. Bikini's monstrous concrete bunkers announced a new camera body-format appropriate to the task. In the manner of a hermit crab, there, the negative left its old armor and crawled into the space of buildings. In depicting their totemic forms, Charrière's own photographs are as much an exercise in the history of photography as they are a pursuit of architectural taxonomy.

From its beach head on the shores of Bikini, the atomic camera consolidated an image of the new world order. This order was the appearance of a second sun on Earth—a thermonuclear process summoned by US military-industrial science. This image spoke of a capacity to reorganize the planet entirely; an energy that could move mountains; something akin to being able to spin the world in an opposite direction; to effect day in the night, and night in the day. Charrière's video work, *Iroojrilik*, pursues a motif of solar disorder by employing a series of elisions and substitutions. Through a series of montages, mixing sunsets and sunrises, it proposes an uncertain distinction between daybreak and nightfall—first light of a new day in world history, and the waning of another. Within this reordered time and space, the film sketches a further purgatory of doubling and dis-identification; its manner of editing suggesting morphological overlaps between rotting concrete bunkers and the monstrous wrecks that lie on the bottom of Bikini's lagoon, assailed by tide and time. Making no use of archival material—its original underwater footage captured at depths far below standard dive profiles—*Iroojrilik* is unquestionably the most unique perspective on the maritime ruins of Bikini ever created. Yet, rather than explicating individual vessels or buildings, the cumulative impression given is that of an Atlantis or lost civilization—architectural features of one ship cut together with those of others, such that it appears as though the film

5 Today, where the question of containing nuclear waste has assumed more prominence than developing shelter architecture, the logic of the ever-larger exoskeleton continues to play out. However, rather than building walls, we burrow into the side of mountains. The earth's crust has become architecture; a total architecture.

4 Niedenthal 2001, p. 3.

documents a lost superstructure. Within *Iroojrilik*, it would seem, what is explored is not just Bikini but the moral "light" of industrial modernity itself. Pictorial energies shift and sway, like palm trees and coral ferns growing on cannon mounts, between construction and destruction; transporting the viewer to a non-place, or the beginning of a brave new world.

*

A conjunction between the concept of the sun/light and the good has held for millennia, from Neolithic images to the biblical assertion that "the Lord God is a Sun."⁶ It is as if, throughout history, this symbolic nexus served as a fundamental component of human culture; a ground. Certainly, thousands of years of fascination with the sun eventually produced the Copernican Revolution, whose heliocentric universe ushered in an age of physical science—culminating, in the mid-twentieth century, with the splitting of the atom. With this great achievement, night fell on a period of human history, and new day was born.

In this day, everything took on a new light. For, as Richard Rhodes has it, elsewhere in this volume, thermonuclear explosions "are basically small stars ignited on earth." In so pulling the stars from the heavens, our species challenged the sun's dominion over the terrestrial realm. Instead of its singular influence, we established the precedent of subjecting the physical order of the environment to a rule of two. This doubling unleashed an aporia: the "uncanny" presence of radiation, a material *ungrounding*. But there are also profound aesthetic implications, namely, the emergence of a poesis rendering optional the longstanding equation of beauty with light, emanating from Apollo (the sun god), in the Western tradition. Cast in a post-atomic glow, contemporary beauty partakes of a pseudo-Apollo who is partly not-himself. The sun's other, a role once reserved for the moon, creeps in to the equation, smuggling in a kind of *lunacy*.

The second suns of Operation Crossroads, in the Marshall Islands, and the atomic bombs that preceded them, rose in the West. With daybreak, following the punishment of neutron violence, our nuclear Prometheus suffered another trauma: the concept of a bad sun. The contemporary moment is marked by this sign. The man who first seized thermonuclear fire knew that it rendered him "Death, the shatterer of worlds."⁷ The intellectual currents that reckoned with the war which demanded he do so condemned *enlightenment* as profane illumination. By the turn of the millennium there was talk of its wake.⁸ The passing of the solar good is now followed by its undead form. From unenlightened neo-fascists waving banners bearing the *Schwarze Sonne*, to the prospect of arcadia's eternal

summer desacralized *just as it is realized*, in the endless summer of global warming—the bad sun rises.⁹ Ours is a *Dark Ecology*.¹⁰ Modernism wanted *Victory over the Sun*, and *A Season in Hell*. It would come to pass.

From within a bunker on Bikini, immune to the destruction beyond its own housing, the spineless *negative* pictured a world—a world that was the negation of another which had been witnessed, and inhabited, for hundreds of generations. This new image was given to the twentieth century as a pure experiment; *positive*, compelling, and guilt free. Every vision of a bikini clad woman on a virgin beach, at the end of a burning jet-fuel, and damn the colonial question, is a print from this negative. As Charrière's double-exposures (once exposed to the sun, once to its terrestrial *other*) suggest, half of the gaze constitutive of a "beautiful landscape" (of Bikini or bikinis) emanates from an evil eye—an eye whose negative regard registers the light of a second sun.

⁹ The sun's season, summer, is no longer welcomed—as it was in the days when it could return from the far side of winter. For it cannot be reborn, as it never leaves, and yet there are blizzards.

¹⁰ Timothy Morton, *Dark Ecology: For a Logic of Future Coexistence* (New York, 2016).

⁶ Psalms 84:11.

⁷ See <https://archive.nytimes.com/www.nytimes.com/learning/general/onthisday/bday/0422.html> (accessed 12/07/2018).

⁸ John Gray, *Enlightenment's Wake* (London, 1995).

Lying right on the beach,
at the waterline,
as if it had washed
ashore in a storm.
With a massive plug
of pulverized coral,
recalling limestone
from the Jurassic period.
The material conjunction
is strange, but its twisted
logic soon becomes apparent:
During an almost
unimaginably powerful
explosion,
millions of particles
were pushed into motion—
flying through the sky before
smashing into the structure
with such intensity
that they were forced
into a compound:
squeezed into stone.



