

ALTMAN SIEGEL

GALLERY S/F

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Trevor Paglen, DMSP 5B/F4
from Pyramid Lake Indian
Reservation (Military
Meteorological Satellite:
1973-054A), 2009, color
photograph, 37 1/2 x 30". From
"The Other Night Sky," 2007--.

"THERE'S NO REASON YOU SHOULD TRUST ME," says Trevor Paglen from his office in the Department of Geography at the University of California, Berkeley. "It's really terrible evidence." The "it" in question is a photograph from his series "The Other Night Sky," 2007–, that shows the trace left by one of nearly two hundred top-secret US satellites currently orbiting the earth. The photograph itself reveals very little; there is only a narrow line etched into star-flecked darkness. It could be a comet, for example, or a communications satellite from the so-called white—or open, public—world. "At the end of the day you have to trust that I'm some kind of reliable witness," Paglen says. "It would have been much easier to scratch the film with a razor blade."

In fact, the photograph conceals an intensive process, one that first required amassing the Keplerian codes—complex strings of numbers that describe orbital characteristics such as "perigee" and "eccentricity"—painstakingly researched by an informal global network of satellite spotters. These numbers were plugged into modeling software to predict where and when the satellite in question would appear (a process analogous to the one used by scientists in 2005 to retroactively date the exact time in 1948 that a landmark western land-sky photograph, Ansel Adams's *Autumn Moon*, was taken). Paglen then used a guided-exposure camera system to prevent the long-exposure shot from blurring every last star. In other pictures from the series, the stars form concentric circles, and satellites can be seen as lines crisscrossing the image; yet others include the landscape, captured in three- or four-hour-long exposures.

Paglen is a geographer, artist, and author, whose publications include *Torture Taxi: On the Trail of the CIA's Rendition Flights* (2006) and *I Could Tell You But Then You Would Have to Be Destroyed by Me: Emblems from the Pentagon's Black World* (2007). His latest and most wide-ranging book, published last month, is *Blank Spots on the Map: The Dark Geography of the Pentagon's Secret World*, which documents his research into US "black ops" sites. Paglen has emerged as a sort of Humboldtian scholar-explorer in an age of inexorably incremental secrecy, where the blank spots on the map are no longer fabulist spaces at the edge of empire, but purposeful voids within the empire itself. "It was hard for me to believe," he reflected upon finding swaths of missing terrain in US Geological Survey aerial maps, "that here, at the dawn of the twenty-first century, there could be such a thing as unmapped space."

The photographs in "The Other Night Sky" likewise reveal that something may be officially "secret," not able to be discussed in court or on the record and yet essentially known (at least to a few). Peering into the black world, says Paglen, primarily requires "knowing how to look and where to look." It is hiding in plain sight, able to be dialed up on Radio Shack scanners and seen through binoculars, or even, sometimes, with the naked eye. But looking presents its own problems. Paglen notes that "like desert-crossing forty-niners tricked by mirages because they wanted to see water, it's easy to see what one wants to see when staring into the distant landscape." Visual data is subsumed by a point of view.

There is also that bane of modern science, the "observer effect," according to which the act of observing something changes it. In the case of publishing satellite data, this is sometimes literally true; Paglen describes it as the "hacker dilemma": "You say, 'Here's the weakness,' then they fix it." The satellite spotters dwell in a world where truth can seem a galaxy away—satellites "disappear," their orbits seemingly changed to avoid the particular glances of these dedicated few, while other objects seem to be mere decoys. Paglen describes the ironic crux: "The black architecture of spy satellites—machines designed to be all-seeing, to serve as the ultimate instruments of rationality, to count Cold War missiles and tanks just as Galileo had counted Jupiter's moons . . . helped to create a world where one's own eyes and own ears could not be trusted." A further paradox is that it is easier to see the satellites than to see what they are seeing.

The idea of Paglen encamped in the expanses of Yosemite and staring heavenward, as so many have done in search of some cosmological or metaphysical truth, puts me in mind of a passage in Edward Abbey's 1968 classic *Desert Solitaire*, in which the narrator, looking at the body of a dead man, imagines looking down at himself through the "cruel eyes" of a hovering vulture, the view ever receding and expanding, eventually encompassing "the curving margins of the great earth itself, and beyond earth the ultimate world of sun and stars whose bounds we cannot discover." We are all being watched by such birds—lingo for satellites, of course—who dwell in a kind of visible darkness.

—TOM VANDERBILT

1000 WORDS

Trevor Paglen

TALKS ABOUT "THE OTHER NIGHT SKY," 2007–

FOR THE PAST SEVERAL YEARS, I've spent weeks on end working at the home of my friend Michael Light in a desert valley on the northern shore of California's Mono Lake. The Sierra Nevada to the west of the ancient hypersaline lake marks the end of a vast desert, which stretches north to Oregon, south to Mexico, and east to Utah. During the day, the horizon squirms and undulates with dry heat; after sunset, a dry chill descends and the night sky emerges one star at a time: Vega, Arcturus, Deneb, Antares,

Polaris. . . . I use the stars as reference points to align a computer-controlled telescope mount, but they are not the focus of my attention. Instead, I'm interested in far more obscure astronomical objects: the nearly two hundred classified American spacecraft gliding through the skies.

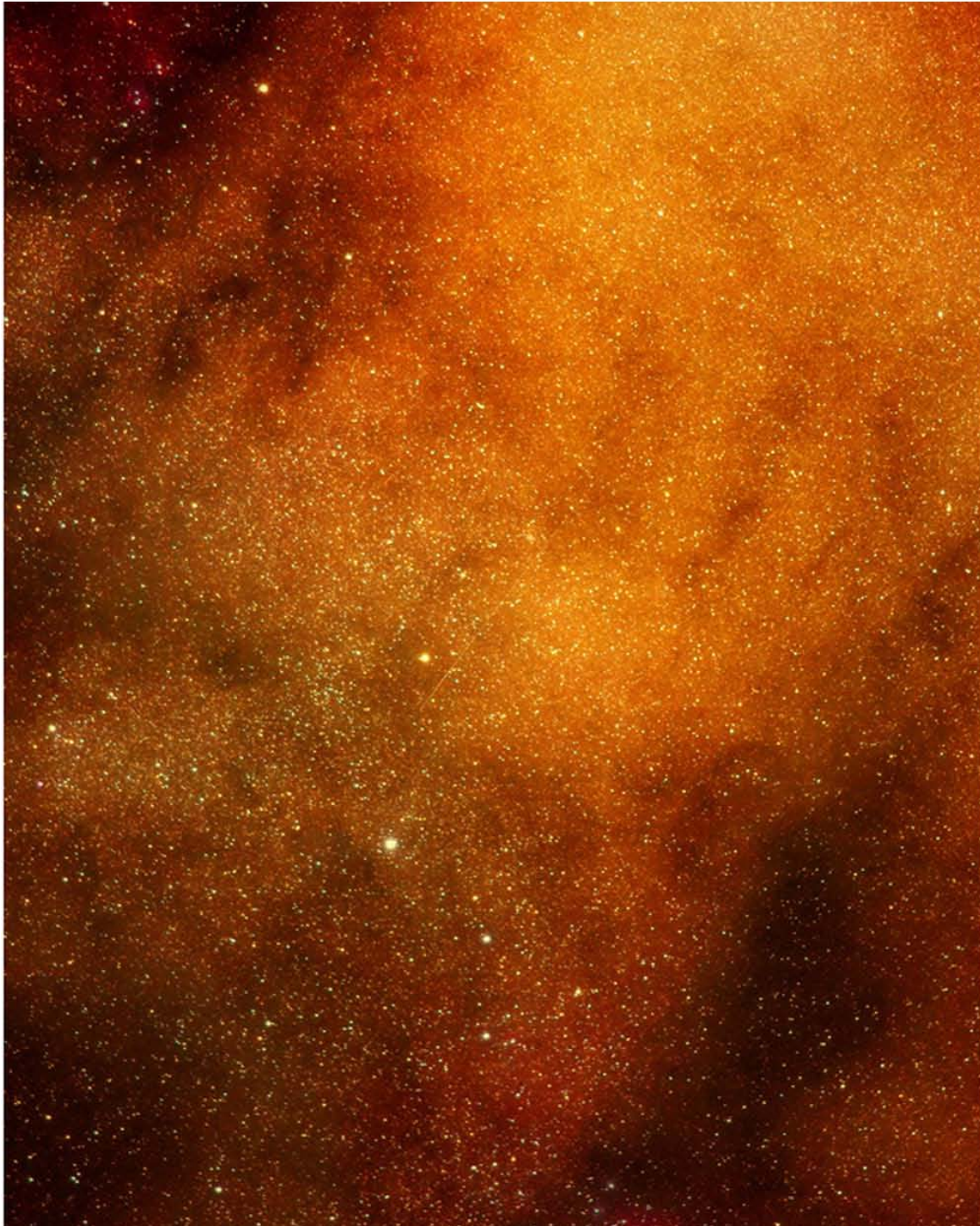
The satellites I'm interested in are "secret" in the sense that there is little or no official American acknowledgment of their existence. But even though they aren't supposed to be officially "there," the basic

laws of physics still apply—in this case, Kepler's laws of planetary motion—which means that I can model a particular spacecraft's orbit from just two reliable observations and so can accurately predict when and where it will appear in the night sky. (I have a lot of help: Amateur astronomers and hobbyist satellite spotters maintain a remarkably accurate online catalogue of classified objects.) Before a night of shooting, it takes the better part of a day to calculate satellite passes and make technical

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Left: Trevor Paglen, *Milstar 3 in Sagittarius (Inactive Communication and Targeting Satellite: USA 143)*, 2008, color photograph, 37 1/2 x 30". From "The Other Night Sky," 2007-
Right: Trevor Paglen, *USA 193 Near Alioth (Code Name Unknown)*, 2007, color photograph, 60 x 48". From "The Other Night Sky," 2007-.

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decisions about how to best capture the motion of spacecraft.

Spending so much time surrounded by desert valleys and mountains, I'm constantly aware of the violent histories embedded in this seemingly empty landscape. Not too long ago, it wasn't quite a place at all. In the middle of the nineteenth century, the forty-niners blazed a well-known trail across a sliver of territory just north of the Mono Basin, but much of the surrounding desert remained "unexplored"—read: by white people—well into the 1860s; maps long continued to depict vast expanses of this desert as featureless terra incognita.

These blank spots were places where fantasy, imagination, possibility, violence, beauty, and horror fed off one another to create landscapes where anything seemed—and often was—possible. With the advent of industrialized mining, men learned to

the last of California's Indian Wars. And he photographic tradition inaugurated with Muybridge's motion studies at Stanford would itself prove to have a military application: Harold Eugene "Doc" Edgerton, whose strobe cameras picked up where Muybridge's research left off, developed high-speed cameras that were first installed in reconnaissance aircraft and then improved to photograph nuclear explosions—dissecting, nanosecond by nanosecond, mushroom clouds at the Nevada Test Site Edgerton soon realized that triggering a camera to record nuclear blasts wasn't that different from rigging the blasts themselves; his company, EG&G, became a major military contractor by turning its photographic triggers into detonators.

O'Sullivan offers perhaps the clearest example of the intersection of frontier photography, he will to map, and military control. His seminal images were

such as *Magnum* (Orion), *Mercury* (Advanced Vortex), or *Mentor* (Advanced Orion), can pluck a cell phone call out of the electromagnetic ether, pinpoint its origin, and task a Keyhole- or Onyx-class spacecraft with imaging the area. The imaging satellite can then send targeting information to a covert data-relay spacecraft like *Quasar*, *Nemesis*, or *Milstar*, which can transmit bombing coordinates to airborne JSTARS command stations, *Tomahawk* cruise missiles, and "smart bombs" in B-2 stealth bombers. Remarkably, the spacecraft so essential to American "full spectrum" military dominance can be seen clearly in the night sky from the northern shore of Mono Lake.

My own surveying and photographing of "the other night sky" is yet another iteration of the frontier photographers' tradition of visualizing and ordering blank spots on maps. Some of the photos

Ideologically and technologically, today's military and reconnaissance spacecraft are directly descended from the men who once roamed America's deserts and mountains photographing blank spots on maps.

move mountains to extract almost unimaginable riches. In the process they laid waste to the land with a speed and totality as breathtaking as the train and the telegraph's contemporaneous annihilation of space and time. The frontier was also where old-world caste systems might be left behind and a man might become rich by simply being in the right place at the right time. This sense of possibility came, of course, with exceptional brutality: Forty years before Joseph Conrad penned *Heart of Darkness*, Nevada newspapers openly advocated solving the "Indian problem" by "exterminating the whole race."

It is not a coincidence that this terrain was also one of landscape photography's greatest proving grounds. "Taming the West" meant bringing symbolic and strategic order to blank spots on maps through surveillance, imaging, and mapping. The patriarchs of western photography—Carleton Watkins, Eadweard Muybridge, Timothy O'Sullivan, and others—all played a part in asserting control over the landscapes they drew into their cameras.

Watkins got his start in the mountains here shooting for-hire photos used to resolve land disputes and documenting mining interests before famously photographing Yosemite for the benefit of people who would never see it firsthand. Muybridge, likewise, spent time making a living from photographs of Yosemite's granite cliffs and forested valleys, but he also worked for the United States Army, documenting the military assault on the Modoc in

largely shot for the War Department on a survey dedicated to "the exploration of these unknown areas." While its main goal was "reconnaissance" to "obtain correct topographical knowledge of the country . . . and prepare accurate maps," secondary goals included surveying "the numbers, habits, and disposition of the Indians who may live in this section," and, tellingly, "the selection of such sites as may be of use for future military operations or occupation."

In a very real sense, then, O'Sullivan and the other western photographers were to the nineteenth century what satellites are to the late twentieth and twenty-first centuries; ideologically and technologically, today's military and reconnaissance spacecraft are directly descended from the men who once roamed the deserts and mountains photographing blank spots on maps. Imaging reconnaissance satellites such as the Keyhole series formerly used high-speed films specifically designed for such applications by Kodak. Since the mid-1970s, Keyhole-class spacecraft with the code names *Crystal* and *Ikon* have used CCDs (charge-coupled devices, i.e., imaging chips, now ubiquitous in digital cameras but originally designed for reconnaissance satellites) to broadcast real-time photo-intelligence to their operators below. Moreover, such satellites have closed the temporal loop between surveying, ordering, and targeting. Eavesdropping satellites with football-field-size antennas, going by code names

are taken using a computer-controlled motorized tripod to move the camera exactly counter to the earth's rotation, which keeps stars in one place on the film pane over the course of an exposure. In these images, the spacecraft appear as streaks of light against a static background. Other photographs are taken using a static mount, allowing stars and nebulae to move in concert across the film pane, disrupted by the angled streaks of spacecraft in low earth orbits, or single points of light made by those in geostationary orbits. After years spent paying close attention to the other night sky, I have become familiar with these secret objects. I can recognize how the orange glow of *Lacrosse* (Onyx) 5 is different from the kind of light reflected by its sister spacecraft 2, 3, and 4. I've become familiar with the distinctive flashing pattern of an object called USA 32 and the triangular formations of the Naval Ocean Surveillance System. Over the course of this work, faint points of light in the night sky have become like words in a foreign language.

If, as was the case with the landscape photographers of the past, the production of symbolic order goes hand in hand with the exertion of control—if, that is, we can only control things by first naming or imaging them—then developing a lexicon of the other night sky might be a step toward reclaiming the violence flowing through it. But this is not a passive exercise. As I photograph the other night sky, the other night sky photographs back. □

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Trevor Paglen, *Four Geostationary Satellites Above the Sierra Nevada*, 2007, color photograph, 48 x 60".
From "The Other Night Sky," 2007-.