Trevor Paglen

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Frontier Photography

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 Mountains to the west of the ancient hypersaline lake mark the end of a vast desert stretching 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: nearly two-hundred classified American spacecraft gliding through the evening skies.

The satellites I'm interested in are "secret" in the sense that there is little or no official American acknowledgement of their existence. But there's a curious aspect to this: even though they aren't supposed to be officially "there," these spacecraft have to obey the same basic laws of physics that everything else in the known universe has to obey. In the case of orbiting

objects, this means Kepler's laws of planetary motion. What this means is that if I have two reliable observations of a particular spacecraft, I can accurately model the spacecraft's orbit, and can in turn produce highly accurate predictions of where a particular object will appear in the night sky. (I have lot of help: an ad hoc network of amateur astronomers and hobbyist "satellite spotters" maintain a remarkably accurate catalog of classified objects and post it to an online observer forum). Before a night of shooting, I spend the better part of a day calculating satellite passes and making technical decisions about how to best capture the motion of each spacecraft.

Spending so much time surrounded by desert valleys and mountains, I'm constantly aware of the violent histories embedded into the seemingly empty landscapes all around. Not too long ago, this wasn't quite a place at all. By the middle of the nineteenth century, forty-niners had blazed a well known trail across a sliver of territory just north of the Mono Basin, but vast swaths of the surrounding deserts remained "unexplored" (read: by white people). Well into the 1860s, maps depicted vast expanses of this desert as featureless "unexplored regions."

Blank spots on maps of the West were like the blank spots on other empires' maps, 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 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 telegraph's contemporaneous annihilation of space with time. The frontier was a space 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, of course, came with exceptional violence: fifty years before Conrad penned *Heart of Darkness*, Nevada newspapers openly advocated solving the "Indian problem" by "exterminating the whole race."

It is not a coincidence that these landscapes were also some 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 in to their cameras.

Watkins, for his part, got his start in the mountains here, shooting for-hire photos used to resolve land disputes and to document mining interests before going on to famously photograph Yosemite for the benefit of people who would never see it firsthand. Muybridge, like Watkins, made a living photographing Yosemite's granite cliffs and forested valleys, but Muybridge also worked for the United States Army. Instead of carrying a rifle, Muybridge carried a camera, documenting the military assault on the Modoc in the last of California's Indian Wars. But Muybridge's military legacy went far beyond those Army expeditions. The photographic tradition inaugurated with his motion studies at Stanford would go from representing another chapter in the technological annihilation of space and time to playing a role in annihilation itself. Harold Eugene "Doc" Edgerton's strobe cameras picked up where the Muybridge motion studies left off. First, Edgerton installed his high speed cameras in reconnaissance aircraft, and then improved on them to photograph nuclear explosions, photographically dissecting mushroom clouds at the Nevada Test Site. The photographer quickly realized that triggering a camera to record nuclear blasts

wasn't that different than triggering the blasts themselves and his company EG&G became a major military contractor by turning Edgerton's photographic triggers into nuclear detonators.

Timothy O'Sullivan's corpus is the most obvious intersection of frontier photography and the will to map. O'Sullivan shot much of his seminal images for the War Department on military surveys dedicated to "the exploration of these unknown areas." The Wheeler survey's mandate was typical: its main goal was "reconnaissance" to "obtain correct topographical knowledge of the country… and prepare accurate maps." Its secondary goals included surveying the "the numbers, habits, and disposition of the Indians who 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, O'Sullivan and the other western photographers were to the 19th century what reconnaissance satellites are to the late 20th and 21st centuries.

Contemporary military and reconnaissance satellites are ideologically and technologically descended from the men who once roamed the deserts and mountains photographing blank spots on maps. Imaging reconnaissance satellites such as the Keyhole series once used high speed films specifically designed by Kodak for reconnaissance missions. Since the mid 1970s, Keyhole-class spacecraft going by the code names Advanced Crystal and Ikon have used CCDs (charge-coupled devices) to broadcast real-time photo-intelligence to their operators below. (The imaging chips ubiquitous in digital cameras were first designed for reconnaissance satellites). Moreover, contemporary reconnaissance satellites have closed the temporal loop between surveying, ordering, and targeting. Eavesdropping satellites with football field-sized antennas at an altitude of 22,241 miles (going by code names such as Magnum (Advanced Orion), Mercury (Advanced Vortex), or Mentor) 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 spacecraft 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. The spacecraft so

essential to American “full spectrum” military power appear as faint points of light in the night sky from the northern shore of Mono Lake.

My own surveying and photographing of what I call the “other night sky” is perhaps yet another iteration of the frontier photographers’ tradition of visualizing and ordering blank spots on maps. Some of the photos are taken using a computer-controlled motorized tripod to move the camera exactly opposite to the earth’s rotation to keep stars in one place on the film pane over the course of an exposure. In these photos, 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 as single points of light in the case of spacecraft in geostationary orbits. After years spent paying close attention to the other night sky, these secret objects have become familiar to me. I can recognize how the orange glow of Lacrosse/Onyx 5 is different than 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 Naval Ocean Surveillance Systems. Over the course of this work, streaking points of light in the night sky have become like words in a language.

If, as was the case with the O’Sullivans and Muybridges of the past, the production of symbolic order goes hand-in-hand with the exertion of control (if we can only control things by first naming or imaging them), then perhaps developing a lexicon of the other night sky might be a step towards reclaiming the violence flowing through it. But this is not a passive exercise. I photograph the other night sky. The other night sky photographs back.