



A selection of riflescope reticles available from Kahles, an Austrian optical instruments manufacturer.

SPIDERS, STARS, AND DEATH

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In the autumn of 2016, Colin Kaepernick, the African-American quarterback of the San Francisco-based American football team known as the “49ers,” initiated a quiet protest in response to a series of well-publicized police shootings of black men under questionable circumstances: he ceased to stand for the singing of the national anthem. By early October, his gesture had drawn considerable attention, spawned emulation, and attracted virulent hostility. Perhaps the most notorious instance of the latter? The sale of T-shirts featuring his image under the superimposed conventional iconography of impending death: the plus-sign-within-a-ring figure known as “crosshairs.”

It will be worth taking a moment to recover a genealogy for this potent symbol—the universal modern index of imminent violent killing.

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One morning in the late 1630s, in Yorkshire, not far from the town of Leeds, a gentleman by the name of William Gascoigne (he was then twenty-eight or so) rose and returned to his avocation: tinkering with one of the very new “viewing tubes” that had become the rage among learned persons across Europe and beyond in the wake of celebrated publications by Galileo and Descartes. Gascoigne enjoyed the company of a circle of provincial virtuosi in the Midlands, and he was justifiably proud of his success in securing and configuring the lenses necessary to make a reasonably powerful telescope, one that made use of the design advocated by Johannes Kepler—two biconvex lenses mounted in a cylinder of brass (or sometimes lacquered leather). Gascoigne’s tube was not, however, hermetically sealed. For on this particular day, turning to his observations, he was startled to discern, in the visual field of his instrument, clearly delineated upon whatever he viewed, a thread-like filament. Further investigation revealed that a spider had, overnight, insinuated itself into his optical device, and had begun to spin a web therein. As fate would have it, the creature had undertaken this fruitless endeavor in the precise focal plane of the objective lens—producing an uncanny effect: a clear, distinct, and ultrafine line that seemed to hover over whatever Gascoigne observed through his telescope. He wrote of the discovery to his friend, the



T-shirt targeting Colin Kaepernick for sale outside the Buffalo Bills’ stadium when the team hosted the San Francisco 49ers on 16 October 2016.

mathematician William Oughtred, declaring it a providential gift from the “All Disposer” Himself.

Why? Because that serendipitous bit of silk immediately suggested a technique for introducing index lines into telescopic (and microscopic) instruments—lines that could be used to make metrical observations newly precise. Following the spider’s principle, Gascoigne soon configured the world’s first “micrometer,” in effect a tiny ruler within the viewing tube, suitable for taking the measure of celestial bodies.

The whole episode marks the origin of what has come to be called (since the early eighteenth century) the reticle: “A grid or other pattern of fine threads, wires, lines, etc., in the focal plane or eyepiece of a telescope or other optical instrument in order to facilitate positioning, aiming, and measurement.”

The crosshairs of our contemporary death-wishes are a species in the reticle genus: we could designate them *Reticulum trucidatorum*, the reticle of the assassins.

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Importantly, then: for most of the history of the crosshairs, these fine lines were trained on the heavens. The bulk labor of astronomers for several centuries consisted of the making and refining of star charts, necessary to navigation and cartography. The



Nan Songer, who like Mary Pfeiffer supplied manufacturers with spider silk for crosshairs, extracting the material from one of her charges. Photo from *Natural History*, November 1955.

perfecting of such celestial maps hinged on the observation of stellar “transits,” the passage of a given star across the “meridian”—which amounts to the measurement of the star’s “noon,” its apogee in the sky, its highest point on a given night from a given location.

Which is to say, for hundreds of years, we used crosshairs to take aim at rising stars. In dark observatories, peaceful, patient snipers waited, watching the bright specks walk slowly into their sights—which were often called “spider lines,” no wire or thread or etching having proven as fine and resilient as the silk of the web weavers.

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The unholy marriage of the gun and the telescope came late. Not until the middle of the nineteenth century were rifles sufficiently accurate that a marksman, taking aim squinting down the barrel, could wish for preternatural sight—could want to see beyond the reach of his eyes, more clearly to direct the lead slug at his command. While there had been experiments with telescopic range finders for cannons, and while a few early suggestions of gunsights that made use of lenses can be found, it is really only with the publication of the English-born American immigrant-engineer John Ratcliffe

Chapman’s 1848 *Instructions to Young Marksmen* that we find wide dissemination of the design for an integrated telescope-rifle, suitable for improved death-dealing at long range. The idea caught on rapidly. The catalogues for the Crystal Palace exhibition of 1851 list a number of the novel systems, and by the US Civil War, carefully selected “sharpshooters” were training spider-silk crosshairs on human beings in combat.

This is the earliest account of the killing of a specific person by telescopic sight that I have been able to find. It reports a skirmish in Virginia in April of 1862: “Several times one bolder than the rest would take off his cap and wave it defiantly in the air, and upon one occasion, while doing this [sic], Colonel Berdan directed one of his men to wing him. Notwithstanding the distance, at least thirteen hundred (1,300) yards, the unerring telescopic rifle brought down the bold rebel.”

In scenes like this, we turned an instrument for measuring the heavens into a new mechanism for effecting fatal action at a distance.

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As late as 1941, in Hoboken, New Jersey, a woman named Mary Pfeiffer remained employed, as she had been since 1889, collecting some two thousand feet of spider silk every year for use in gunsights and optical instruments. During World War II, black widows were amassed at the military base of Fort Knox, and milked for their weapon-grade web-strands.

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It amounts, perhaps, to this: our primary global icon of hate is a kind of re-fallen angel. Those nearly invisible threads by which the spider craftily seizes its prey became, for a time, nothing less than the rational yardstick of the infinitesimal and the infinite. But it did not last. Repurposed by the men-at-arms, those same micro-meticulous reticles once again snared victims, who danced with death on the head of a pin.

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Genealogy cannot save us. But it offers options, queers conditions—e.g., every person upon whom the crosshairs fall momentarily shares the subject position of a celestial body, cresting across its apogee in the night sky.

Strangely enough, the astronomers call this point in the transit of a star its *culmination*.