

THE WAY WE WERE | PALOMAR MOUNTAIN

Folks got an eyeful as telescope's huge mirror was trucked in

By Vincent Nicholas Rossi

The press dubbed it "The Big Eye" in November 1947. It was actually a gigantic, \$600,000 mirror 200 inches in diameter, weighing 16.5 tons and designed as the core of the Hale Telescope at Palomar Observatory.

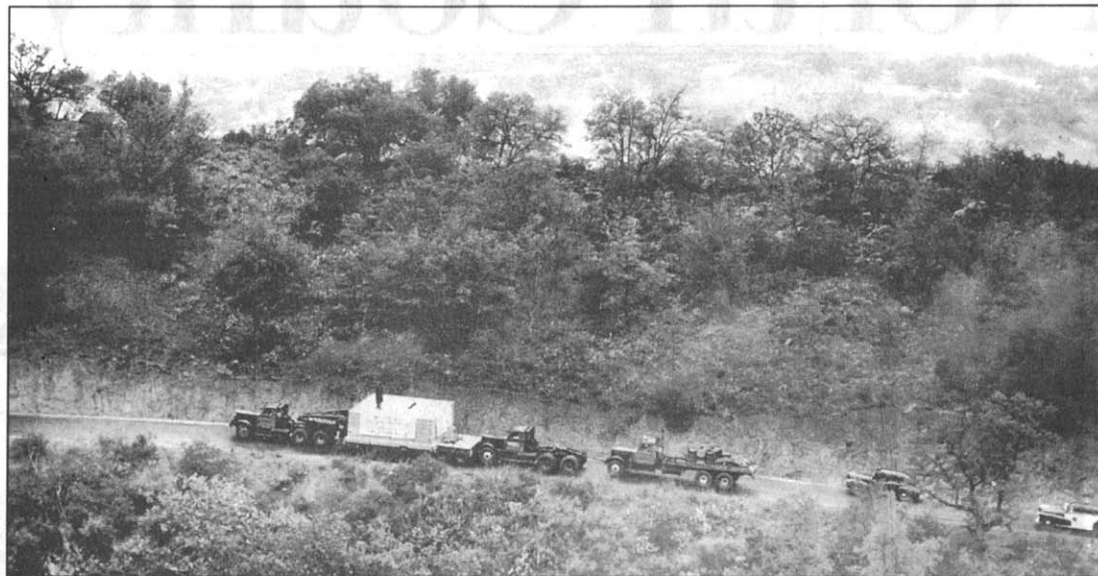
The observatory was the brainchild of George Ellery Hale, who by the late 1920s was one of the nation's best-known astronomers. After reviewing a number of sites across the nation, Hale and his Caltech team picked Palomar Mountain as the site for a new observatory.

Corning Glass Works in New York was selected to fashion the massive mirror out of a newly developed glass blend called Pyrex. The casting and curing process took two years, from 1934 to 1936, with final shaping to be done at Caltech's labs in Pasadena.

The Big Eye, crated and mounted on a special railroad car, took 16 days to cross the country, with speed limited to under 25 mph because of the delicate cargo. Once in Pasadena, it took nine more years of processing, interrupted by World War II, before the mirror was ready.

The Big Eye was bundled into a heavy wooden crate. The total cargo — mirror, support cell and crate — weighed 40 tons. The crate was mounted on a 16-wheel trailer that weighed an additional 20 tons.

Caltech engineers carefully mapped out the route, which followed the coast to Carlsbad and then turned east to Escondido, then up the mountain by Route 6, renamed the "Highway to the Stars" and built by San Diego County in the late 1930s to facilitate



"The Big Eye," the 200-inch-diameter mirror for Palomar Observatory's Hale Telescope, was hauled up Palomar Mountain under California Highway Patrol escort in November 1947. Palomar Observatory

observatory construction.

"The route they chose added 30 miles to the most direct route but avoided suspicious bridges and underpasses and congested thoroughfares," according to the 1994 book "The Perfect Machine: Building the Palomar Telescope" by historian Ronald Florence.

"The engineers tested every bridge, overpass and culvert with strain gauges to make sure they could safely bear the load. Five bridges on the route needed additional shoring."

The mirror's support cell included equipment to closely monitor vibrations. The load to be pulled was just

within the limits of a diesel tractor on a level highway.

"The civil engineers had estimated that speeds of up to 15 miles per hour would be safe on the best stretches of road," Florence wrote.

For the final stretch of Palomar Mountain, the speed would have to be held to 4 mph. At those speeds, they scheduled one day for the 125 miles from Pasadena to Escondido, then another day for the 37 miles from Escondido to the observatory.

Shortly after 3 a.m. Nov. 18, 1947, the tractor-trailer left Pasadena with an escort of 10 California Highway

Patrol motorcycles in the lead and two patrol cars behind.

The journey of The Big Eye became a major media event.

"As the day wore on, the crowds got larger," Florence wrote. Police were called out, but there were no incidents. "Everywhere people watched in awe."

Among those in the awed crowd when the convoy turned inland was the Allen family of Oceanside. Bernard Allen brought his wife, Theo, and three daughters to the corner of Vista Way and Hill Street — now Coast Highway — to watch the mirror pass by.

Patricia Bonyng, 68, was 7 years old that day she joined her family to watch. Bonyng remembers the crowd and the passage of the crated mirror that looked as if "somebody was bringing a big spaceship down the highway." Vista Way had been widened so the truck could make a left turn off Hill Street.

"It was gargantuan," Bonyng said.

As the convoy passed through Carlsbad, a second diesel tractor was hitched to the back of the trailer in preparation for the climb up the mountain. About 5 p.m., the convoy stopped overnight in Escondido.

"Tonight the trailer is parked under guard on Ohio Avenue between Juniper Street and Valley Boulevard," the *Times-Advocate* newspaper reported. "The block is closed to auto traffic, but pedestrians may pass within 10 feet of the huge crate. Hundreds have come to stare since word spread that 'The Big Eye' was in town."

At about 5 a.m. on a cold, rainy Nov. 19, the convoy got under way for the final stretch. The motorcycle escort dropped out after Rincon, the road up the mountain being wide enough only for the trucks and police-car escorts.

The convoy arrived at the observatory site at 11 a.m. Shortly thereafter, the mirror was driven slowly through a 25-foot-high doorway into the observatory itself.

A few years after that day, the Allen family took a trip up to Palomar Mountain to visit the observatory, with Theo Allen and her daughters posing in front of the huge doorway through which The Big Eye had passed.

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