

Tom Swift's New Camera, Ready for Space and Spies

By JULIE SALAMON DEC. 9, 2004

As an adolescent, Clifford Ross was an apathetic science student but obsessed by Tom Swift. Now 52, Mr. Ross has become a character appropriate to a boys' adventure novel. An artist and businessman, he recently became an inventor -- of a camera unusual enough to capture the attention of serious scientists, including the kinds who work for the government, experimenting with nuclear fusion, space travel and spy systems. What grabbed them were photographs Mr. Ross took that allowed them to see with astonishing clarity a tiny footpath on the top of a Colorado mountain seven miles from the camera.

Yesterday and today, Mr. Ross is talking gigapixels, art and the essence of visual comprehension with a dozen scientists, at a meeting at New York University. This summit, closed to the public, was organized by Mr. Ross and his new scientific pals at the government's Sandia National Laboratories in New Mexico, which specializes in matters pertaining to nuclear weapons and threats to national security.

"We're good at making big computers," said Carl Diegert, lead computational and imaging scientist at Sandia. But, Mr. Diegert said, when scientists look at pictures of the space shuttle, for example, they may not see things as clearly as they might. "We're trying to find how the human emotional part comes into play in finding a crack in the space shuttle. Clifford has figured out how to catch all this information at a moment in time."

Mr. Diegert and six other scientists joined Mr. Ross on Tuesday night at his home in Greenwich Village for a presummit dinner and viewing of his whiz-bang camera. The camera, called the R-1 (R for Ross), looks oddly rigged, like something out of Dr. Seuss, and almost like an antique viewfinder camera on legs. In fact, Mr. Ross pulls a cloth over his head and the back of his contraption when he takes a

picture. But with this camera that he concocted out of 60-year-old camera parts, mirrors, a microscope and other items -- none of them digital -- Mr. Ross has taken photographs on 9-by-18-inch negatives that when slowly processed by hand and digitally scanned contain 100 times as much data as the average professional digital camera.

For example, in the mountain photographs that Mr. Ross took in Colorado -- of Mount Sopris, near Carbondale -- shingles on a barn appear in sharp focus 4,000 feet from the camera, as does a tree on a ridge four miles away.

The scientists studied blowups of these photographs, hanging on the walls of Mr. Ross's studio. "This is a different way of interacting with image, moving in until your nose is quite close," said Mr. Diegert, who demonstrated by doing just that.

Later, during dinner, Chuck Harrison, who won a technical Academy Award for an optical printer, commented: "What Clifford has come up with is a kind of hyperacuity. He's posing us a challenge. I've never been in a situation where I've had to think of this at the gigapixel level."

How Mr. Ross ended up providing a curiosity worthy of serious scientific consideration resulted from a phenomenon familiar to scientists and artists: obsession that disregards intellect and common sense.

His journey to the mountain began at Yale University in the early 1970's, when he decided not to become a lawyer as he had planned but to pursue art. He emerged from school an abstract painter, good enough to be shown at prominent galleries. Mr. Ross, an exuberant type who cheerfully expounds on any subject at hand, punctuates his conversation with good-natured proclamations. "It hit me in 1980 or so that the avant-garde had become the academy," he said.

So he enrolled in the National Academy of Design and studied realism. He painted and sculptured in a classical vein. There were more exhibitions.

Along the way, Mr. Ross, son of a businessman, decided to try another love, the movie business. In the mid-1980's he focused on three of his passions with the idea of licensing. He acquired rights to some of the work of Edward Gorey, the artist and author of the comic macabre; to the children's book character Babar; and, yes, to Tom Swift. He also was a co-author of a monograph on Gorey and displays his complete collection of Tom Swift books in his home. But it was through Babar that he found the gigapixel of merchandising: with a business partner, Nelvana, which is part of Corus, a Canadian entertainment company, he has produced a Babar movie, a television cartoon series about Babar and products

involving the elephant hero that have included toys, pajamas, mugs and perfume.

Still, he kept painting, combining abstraction and realism, gaining attention and continuing to exhibit in desirable places. Yet during a successful show at the Salander-O'Reilly Galleries, he said, he became depressed. Why? Because he found that the 16-foot paintings he had created were far less interesting to him than the 1 1/2-inch photographs he had hung alongside to show the landscape roots of his work.

"I was confronted by a simple fact," Mr. Ross said. "I would look at the little photographs, and I was moved by them."

So the man who had never been interested in photographs essentially took up residence with Chuck Kelton of Kelton Labs, a photo studio in Manhattan, to learn how to develop photographs. When Mr. Kelton evicted him after eight months, Mr. Ross said, he found someone else and then finally hired his own printer. But first he designed a processing studio that is both high and low tech, including a gizmo to hang oversize prints that uses large paper clips, magnets and long strips of tuxedo ribbon (his wife, Betsy, is in the fashion business).

He became obsessed with hurricanes and how to photograph the waves they cause but still used standard professional equipment. Though he had grown up in New York City, he had spent summers in East Hampton all his life. He began tracking winds in the Sahara on the Internet to see what kinds of waves they would kick up on the East Coast of the United States. If the weather patterns were promising, he would drive to Long Island, stand in the surf and begin to shoot. (No wonder, while toasting his wife at dinner, he remarked on her patience.)

The pictures that resulted are unusual sculptural images of a natural force, all shot in black and white. Again, he found significant representation: his photographs were shown at the Edwynn Houk Gallery on Fifth Avenue. Many of these images will appear in "Wave Music," a book to be published by Aperture this spring.

Mr. Ross was not satisfied. "I need a good failure to get me going," he said. He found it in Carbondale, Colo., on a family visit. His brother-in-law drove him to Mount Sopris. "My breath was taken away," Mr. Ross said. "I've been obsessed with the 19th-century notion of the sublime, and this scene knocked my socks off." But he didn't have any film and the local convenience store stocked only color, which Mr. Ross disdained. "My brother-in-law told me to get a grip." He shot in color.

He thought the resulting photographs were wonderful, but his wife and others were unimpressed. "I realized they didn't have the memory of the mountain," he said. "I became determined to capture the mountain so people could experience what I did."

He followed a familiar path. He found experts who could teach him. A man who ran an aerial photography lab in Dayton, Ohio; a machinist in Kingston, N.Y.; technicians in Alabama, Chicago and Los Angeles. When the technician in Chicago would not accept payment, Mr. Ross found out from the man's wife that he craved pastrami and corned beef from the Carnegie Deli -- and shipped a boxful.

Mr. Ross remembered a trick with mirrors he used in the eighth grade to check the back of his head for cowlicks before embarking on his first date. That became part of the camera too.

Back to Carbondale, in June 2003, for a month of taking hundreds of pictures of the mountain from 4 a.m. to 9 p.m. every day. This time he not only captured the mountain, but almost every blade of grass in the surrounding fields.

Last spring the Sonnabend Gallery showed some of the photographs, and word began to circulate about a photographer who had found the stratosphere of clarity.

What do the scientists hope to learn? "Why do stereos sound so bad?" asked Clint Hope, who was at Mr. Ross's informal dinner and is executive director for experiential systems at Applied Minds Inc., a research and development company. "The technicians don't understand the small subtleties. An artist can see things I may not be able to see, but I'd be happy if I could."

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