Faking UFO Photos for the Twenty-First Century

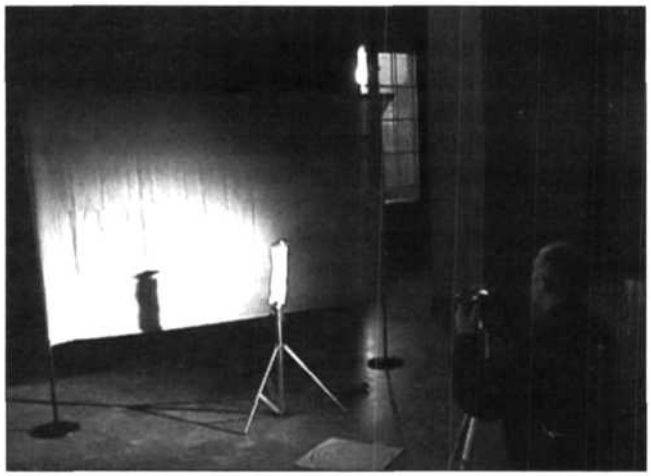
For a modern planetarium show, an astronomer/program producer created a variety of fake UFO images as a way of showing audiences how easily such photos can be done.

TOM CALLEN

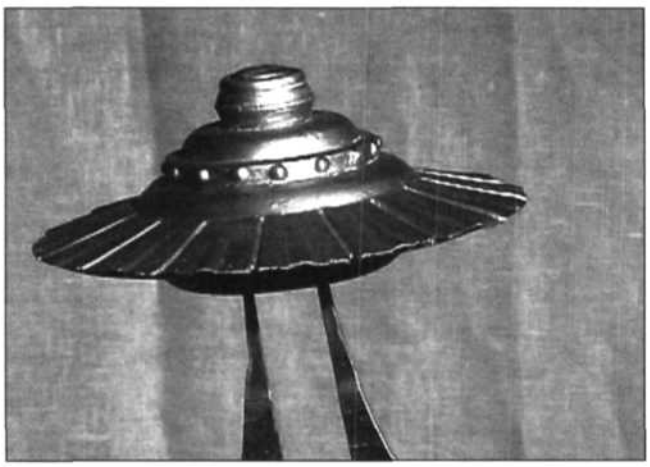
As the producer responsible for bringing Cosmonova's* latest public planetarium show, "UFO—The Truth is Here," to reality, I knew that one aspect of the UFO phenomenon that would be important to cover would be that of fake photographs. Ever since so-called flying saucers were first spotted in the 1940s, a variety of people around the world have created fake images that they claimed were authentic. The vast majority of these images have been exposed as the frauds they are. And yet even today there are those who continue this peculiar hobby. Rather than feature such photos as part of the program, I thought that the best example for our audiences would be to provide examples that were made

*Cosmonova, at the Swedish Museum of Natural History in Stockholm, is made up of an Omnitheatre with both a modern planetarium and a 70 mm-wide cinema.

Author Tom Callen aligns his 35mm camera during the photography of one of the UFO models. To capture as much detail in the models as possible it was necessary to get close to the models and try to fill the film frame. Image ©2001, Cosmonova



Cosmonova technician Olle Linder looks at one of the UFO models through the 35mm camera during photography. In the background can be seen the solid green cloth that was backlit by photoflood lights in order to get an even, uniform color that would help in "cutting out" the UFOs from the background of the final photographic prints. Image ©2001, Cosmonova.



One of the finished UFO models after photography against the green cloth background. You can also see the aluminum "fork" made by Olle Linder, one of Cosmonova's technicians, to hold the model on the tripod. This special mount allowed the UFOs to be turned in whatever direction was needed to get the best view of each model. Image ©2001, Cosmonova.

specifically for the show.

The first step was coming up with UFOs that would serve as my examples in these photos. Since it would not be visually interesting to show the same vehicle in every picture, I needed a variety of different models. Time constraints did not allow me to salvage together parts of different existing plastic kits, so I had to find another alternative. I located a small model company in California, Lunar Models, that makes unusual kits with a science fiction theme. They offer a series of resin-cast models based on "famous" UFO sightings.

Because the most appealing way to show these images was as 35mm slides projected in a montage, I bought seven kits from Lunar Models. Working with resin models was a challenging experience, like working with a model cast out of hard white soap. Each had surface imperfections treated with a hobby knife, sanded where needed, and then finished off with two coats of flat white primer spray paint. Any gluing had to be done with super glue-type adhesives and due to the variety of their compositions the model manufacturer couldn't guarantee results.

The final color schemes for the models were based on information about "actual" UFOs found on a Web site by a well-known UFO photographer, "Billy" Meier of Switzerland. To achieve a metallic luster for the models I used a special finishing compound over the white primer coats known as Rub 'n' Buff. I had used it nearly thirty years ago when I made models of military aircraft, and much to my surprise the company that made it was still in existence.

While working on the seven UFO models, I also took photographs that would become the background plates for the UFOs to appear against. In order to make the scenes more interesting I chose several well-known sites around the Stockholm area that would be easily recognizable. I also included scenes that showed everyday locations appropriate to the models and the concept.

Often fake UFO photos look too composed and without foreground objects in the images that would help to make identification possible. Both of these considerations were taken into account. For the background photos I tried to act as if I had been somewhere, looked up, saw something strange in the sky, and took a quick photo before the object disappeared. Foreground objects were also included in every image. This is most evident in the fake photo "taken" at Skansen, Stockholm's historic open-air park. More about that later on.

Just as important was how the background photographs themselves were taken. As each shot was made—with the same camera, lens, and film type—I also noted the date and time and used a compass to find the direction in azimuth that the camera was pointing at the time the photo was taken. All of this would be useful later in putting together the final fakes.

Once the background plate photos came back from the lab, they were scanned at high resolution and saved as JPEG-format files. Imperfections, such as dust and small pieces of hair on the photographic prints, were digitally removed from the

Tom Callen is Astronomer/Program Producer at Cosmonova, Swedish Museum of Natural History, Stockholm, Sweden. E-mail: tom.callen@nrm.se.

scanned images using a software program called Paint Shop Pro (PSP). Similar to Adobe Photo Shop, PSP would also be used to composite the final images together.

Before the completed UFO models could be photographed, I had to locate the Sun's position for each of the background plates. Since I already had the date and time that these photos were taken, it was a simple matter to use an astronomy program called Starry Night Pro to calculate both the altitude above the horizon and azimuth around the horizon for the Sun. This would allow the UFOs to have the same lighting and shadows as the real objects photographed in the background plates, thereby avoiding another common fake UFO attribute: mismatched shadows and lighting.

The UFO models were now ready for the "star treatment." We photographed them against a very large piece of solid green cloth that was lit from behind with photoflood lights so that the green would be an even color. One of our technicians at Cosmonova who helped me with the model shoot, Olle Linder, had once worked at Swedish Television as a lighting technician, so he was aware of this little detail to make the background as good as possible to make the final digital composition easier. This green acted in exactly the same way as the Chroma Key process (used in films and television) in order to separate foreground objects from their backgrounds and add in different backgrounds at a later time. In this case I was going to use this green color to "cut out" the UFO models and superimpose them in front of the background plate images. To aid in the background removal, the bracket and tripod head used to hold the models was also wrapped in a piece of the same green cloth.

Each UFO model was positioned after looking at a copy of the background plate that it was to be placed in so that it would have the most interesting attitude as far as the lighting in the scene was concerned.

The same camera, lens, and film type used to photograph the original background plate photos was also used to photograph the UFO models. This is a trick that Hollywood has used with much success in special effects-intensive films such as Woody Allen's *Zelig* and *Forrest Gump*. Hollywood cinematographers keep such good records of their shoots that it is often possible to go to these records and find out which type of lens was used to make a particular scene in a film. By using the same type of lens—and in some cases *the very same lens*—to shoot a modern actor against a Chroma Key screen, it is possible to digitally add an actor into another, older film. One famous example from *Forrest Gump* is the titular character receiving the Medal of Honor from President Lyndon Johnson in the White House. Since the UFOs were supposed to have been photographed flying over a particular landscape or location, it made sense to use this same Hollywood special effects trick.

To match up the relative positions of the Sun and the camera with respect to where the model was to go in the background plates, I made two very simple tools for measuring angles. The first was an enlarged copy of a 360-degree protractor to serve as an azimuth reference for placing the camera and light source in the correct position relative to the model sitting on the tripod before the green cloth background. The second tool was a variation of the enlarged protractor, but this one had only to be 180 degrees since I needed it only to determine the altitude above the horizon for our "sun," a bright photo lamp on an adjustable height light stand mounted on

A UFO seems to have suddenly appeared, flying right by the tower at Skansen in Stockholm. Note the horizontal motion blur that simulates the speed of the vehicle and the leaves that appear over the right end of the UFO. It is this sort of small detail that adds an extra sense of reality. Image ©2001, Cosmonova.

A UFO dips down so close to the water of Grönviken ("Green Bay") off the island of Rindö that its reflection can be seen on the surface. Fortunately the author had his camera ready as he stepped out of his house that morning. This image was the hardest one to create because of the need to get the reflection to look as real as possible. Image ©2001, Cosmonova.

This UFO model was based on those that were supposedly photographed by Californian George Adamski in the 1950s. It seemed to be the most appropriate choice to show over some of the antique buildings in Stortorget, Gamla Stan ("the Great Square, Old Town"), Stockholm, once the center of the capitol city. Image ©2001, Cosmonova.

A UFO "from" the Pleiades star cluster hovers over a pastoral scene northeast of Stockholm, Sweden. This photomontage is very reminiscent of the images made by Switzerland's "Billy" Meier. Image ©2001, Cosmonova.

Kaknästornet is the tallest building in Scandinavia, no doubt the reason for the interest of the alien craft flying over the Swedish Museum of Science and Technology (directly below the tower). Image ©2001, Cosmonova.

Aliens come to call at Stockholm City Hall on an overcast autumn day. This image was part of a three-part dissolve that started with just the City Hall background. The UFO was then added, finishing off with a colored panel running diagonally across the upper left corner containing the word *Stockholm*, turning the final view into a tongue-in-cheek souvenir post card to end the planetarium show sequence on fake UFO photos. Image ©2001, Cosmonova.

wheels. This enabled us to wheel the "sun" around to the correct azimuth and then raise it to the proper height above the horizon to duplicate the date and time of day that the background plate photo was taken.

When the photographic prints of all the UFO models came back from the lab, they too were scanned in at high resolution and cleaned up with PSP just as the background plates were earlier. The UFOs were then carefully "cut out" from the green background color by using a special selection tool in PSP that could be told what color to select and delete.

One of the simplest ways for investigators to determine if a UFO photo has been faked is to look for the wire, string, or thread that suspended the model. Unless the picture has been purposely copied many times to blur out fine details, photo investigative techniques can usually pick out the line running to the model. To avoid this give-away I decided that the final images would be digitally composited together in PSP by using its layering feature.

Another clue that a UFO may have been faked is that the UFO itself may be too sharp and well defined in the photograph when compared to other distant objects. Things at a distance appear to be a little fuzzy due to properties in the atmosphere (such as dust and moisture) so this too was taken into account.

I made a new copy of each background plate shot and then, one at a time, added in a particular copy of a cut-out UFO on another layer in the most realistic looking position. The size of each UFO was an important consideration since they also had to look believable; too large and the UFOs would look like models, too small and they would not look like anything interesting. But at the same time they also had to be far enough "away" from the camera to make the UFOs believable.

One image that received some special treatment was the so-called "grab shot" from Skansen. To make the final image seem more realistic, I made a copy of the part of the background plate that had some tree branches. I pasted this copy onto a separate layer in PSP, cleaned up the sky from all around the leaves and then sandwiched the UFO in front of the background plate, but behind the layer with the branches, which was aligned over their original position on the background. This made it appear that the UFO was physically passing behind the trees as it came around the Skansen tower. A little horizontal motion blur on the UFO made it look as if it was travelling at a fast speed, a little faster than the camera's shutter speed could record.

One of the hardest images to get right was the "Gulf Breeze" UFO that was seen passing so close over a large body of water (the bay in front of my house) that it reflected on its surface. This required making up multiple layers for the UFO that included a version that was mirrored, rippled, and faded in brightness to look as if it were the reflected image. To get this right I looked at a variety of photographs of water with real reflected objects, then achieved the result through trial and error.

The UFO planetary show's main character "Karl S. Andersson" (played by actor Fredrik Dolk) says, "With a camera, some models, a computer, and a painting software program anyone—with a little time and a little patience—can create impressive UFO photos that would fool just about anyone." Anyone, that is, except for those who investigate such seemingly incredible images and understand how easy it is to make them.□