FOR IMMEDIATE RELEASE – 4 MARCH 2008

As the first of a series of reflections on the 2008 Whitney Biennial, Dexter Sinister has staged a rotating spotlight near the entrance to the Whitney Museum of Art (Madison Avenue at 75th Street), marking the parallel site of the exhibition. This will be present during the opening nights of Tuesday 4 March and Wednesday 5 March only, operating from 7pm onwards.

Following the detailed proposal described by Margaret Wertheim of the Institute for Figuring in her New York Times Op-Ed piece of Wednesday 20 June 2007 (overleaf), this klieg light will cast a giant shadow into the New York City sky. To quote:

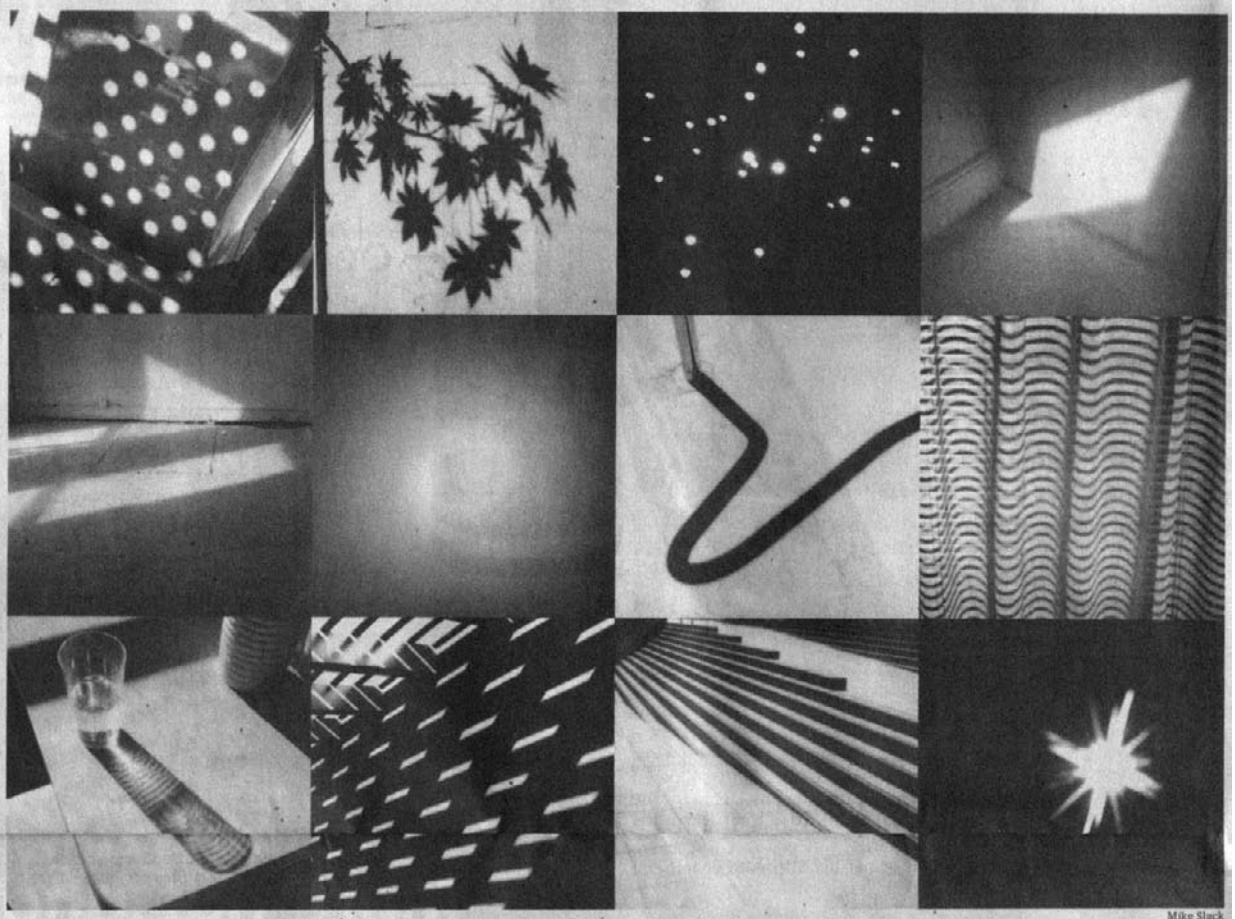
It's quite easy to conjure
A faster-than-light shadow
(Or in theory, at least):
Build a great klieg light,
A superstrong version
Of the ones at the Academy Awards.
Now paste a piece of black paper
Onto the klieg's glass
So there's a shadow in the middle of the beam.

(In this case, the shadow image will be formed by the inverted Whitney graphic (above) adhered to the surface of the light.)

During the following three weeks (4 March – 23 March) while the Armory building operates as an auxillary location for the exhibition, Dexter Sinister will continue to produce and release a number of commissioned 'texts' by various co-operators in various media.

The Shadow Goes

By Margaret Wertheim



Mike Slack

LOS ANGELES

ON Thursday, on the summer solstice, the Sun will celebrate the year's lazy months by resting on the horizon. The word solstice derives from the Latin "sol" (sun) and "sistere" (to stand still). The day marks the sun's highest point in the sky, the moment when our shadows shrink to their shortest length of the year. How strange to think that these mundane friends, our ever-present familiars, can actually go faster than the sun's rays.

I remarked on this recently to my husband as we sat on the porch with our shadows pooling by our chairs. Nothing can go faster than light, he insisted, expressing what is surely the most widely known law of physics, ingrained into us by a thousand "Nova" programs.

That is the point, I explained: Nothing can go faster than light. A shadow isn't a thing. It's a non-thing. It's the absence of light.

Special relativity dictates that we cannot move anything more quickly than the particles of light known as photons, but no law says you can't do *nothing* faster than light. Physicists have known this for a long time, even if they generally do not mention it on PBS documentaries.

My husband looked troubled, as did my sister and some friends I regaled with the story that evening. Like the warp drive on "Star Trek," faster-than-light travel is supposed to be a science-fiction fantasy. Isn't it?

They are right about the travel: According to relativity, no physical substance can exceed the speed of light because it would take infinite energy to accelerate anything to such a velocity.

Yet the laws of physics pertain only to that which is. That which *isn't* is not bound by relativity's restraint. From the point of view of relativity, a shadow (having no mass) is a non-thing, an existential void.

It's quite easy to conjure up a faster-than-light shadow, at least in theory. Build a great klieg light, a superstrong version of the ones set up at the Academy Awards. Now paste a piece of black paper onto the klieg's glass so there is a shadow in the middle of the beam, like the signal used to summon Batman. And we are going to mount our light in space and broadcast the Bat-call to the cosmos.

The key to our trick is to rotate the klieg. As the light turns, the bat shadow sweeps across the sky. Round and round it goes, projecting into the void. Just as the rim of a bicycle wheel moves faster than its hub, so too, away from the source our bat shadow will fly faster and faster, a consequence of the geometry that guarantees the rim of a really big wheel moves faster than a co-rotating small wheel.

At a great enough distance from the source, our shadow bat will go so fast it will exceed the speed of light. This does not violate relativity because a shadow carries no energy. Literally nothing is transferred. Our shadow bat can go 10 times the speed of light or 100 times faster without breaking any of physics' sacred rules.

> The shade cast by the solstice can go faster than light.

My sister leapt to the heart of this apparent paradox: Why isn't the light itself traveling faster than the speed of light? Isn't it also rotating in space? Actually, no. The bulbs that produce the light are spinning, but the light particles leave the source at 186,000 miles a second, the vaunted "speed of light." Once emitted, the photons continue to travel at this speed directly away from the source. Only the shadow revolves around the great circle. The critical point is that no object, no substance, defies light.

My husband was right to object that you'd need one spectacular klieg to produce a detectable shadow thousands of miles out in space. Still, the theory is sound.

The anthropologist Mary Douglas noted that all systems of categorizing break down somewhere, unable to incorporate certain forms. By standing beyond relativity's injunction, shadows suggest the limits of all classification schemes, a tension that even modern science cannot completely resolve.

In the terms recognized by relativity, shadows are non-things. Yet before the invention of clocks, shadows were the most important means for telling time. Weightless and without energy, shadows can nonetheless convey information — though they cannot, despite our giant klieg, be used for faster-than-light communication. That's because the shadow's location cannot be detected until the light, moving at its ponderous relativistic pace, arrives.

"Here there be monsters," said the medieval maps, signaling the limits of reason's reach. As a map of being, physics is flanked by the monsters of non-being whose outlines we glimpse in the paradoxes of quantum mechanics and in the zooming arc of a shadow bat going faster than light.

In Christian theology we are told, "God is that which nothing is greater than." The scientific corollary might be, "Light is that which nothing is faster than" — a statement true both in spirit and fact. □

Margaret Wertheim, the director of the Institute for Figuring, a science and mathematics education organization, is writing a book on physics and the imagination.