



Egg with soot dropped in the water



goblet

Silver egg setup

The "Silver Egg" Demo

Use tongs to hold a normal egg in a candle flame until it is covered with soot. Drop the soot-covered egg into a glass of water. A considerable amount of the light traveling through the water is totally internally reflected when it encounters an air layer that adheres to the soot. Since most of the light is reflected, the egg appears to have a silvery, shiny surface.

The egg will appear silvery until the air dissolves into the water, which only takes a couple of minutes. Look closely to observe what happens to the small fraction of light that passes through the air layer.