

CS 6630: Realistic Image Synthesis

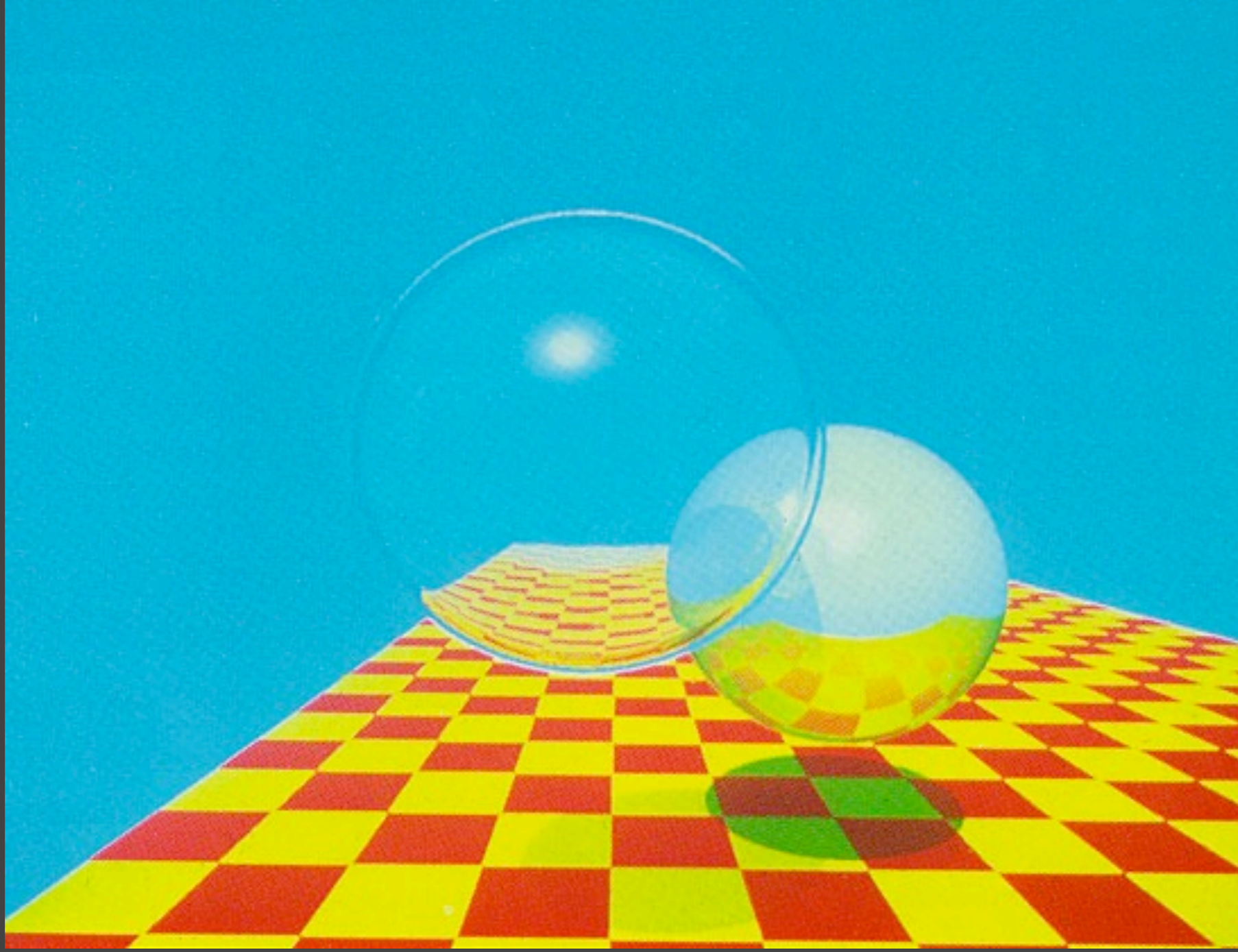
Prof. Steve Marschner
Fall 2007

Participating Media

1980 Ray tracing
1984 Volume ray tracing
1984 Radiosity
1986 Path tracing
1987 Zonal method
1988 Volume path tracing
1993 Bidirectional path tr.
1994 Volume bidirectional
1995 Diffusion
1996 Photon mapping
1997 Metropolis
1998 Volume photon mapping
2000 Volume Metropolis
2001 Translucent materials
2000s GPUs; more diffusion; ...

Volume Visualization

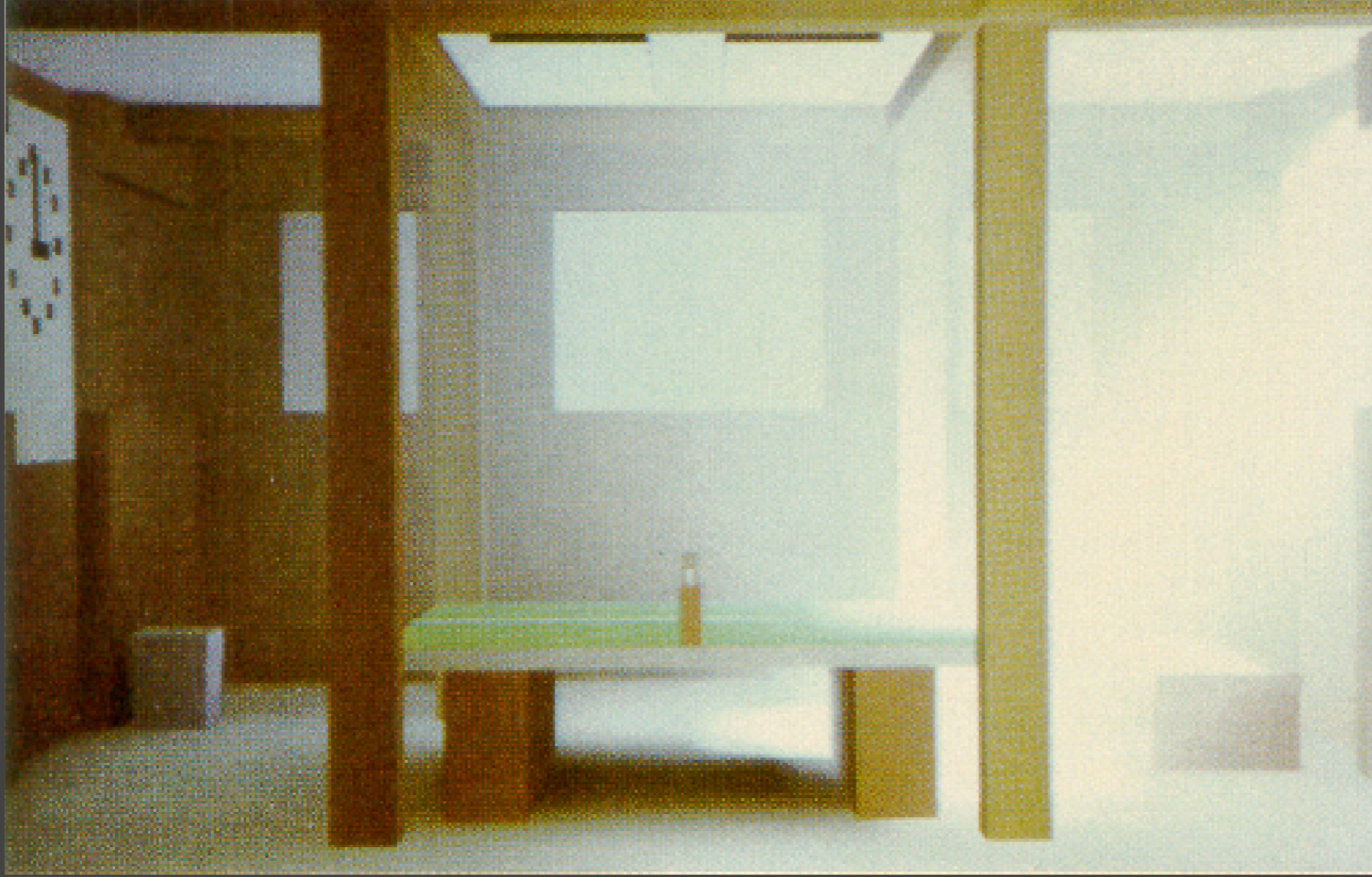
1988 Volume ray tracing
1990 Splatting
1994 Shear-warp factorization
1994 Texture-based rendering
2000s GPUs; parallel systems; ...



[Turner Whitted, SIGGRAPH 1980]







[Rushmeier and Torrance, SIGGRAPH 84]

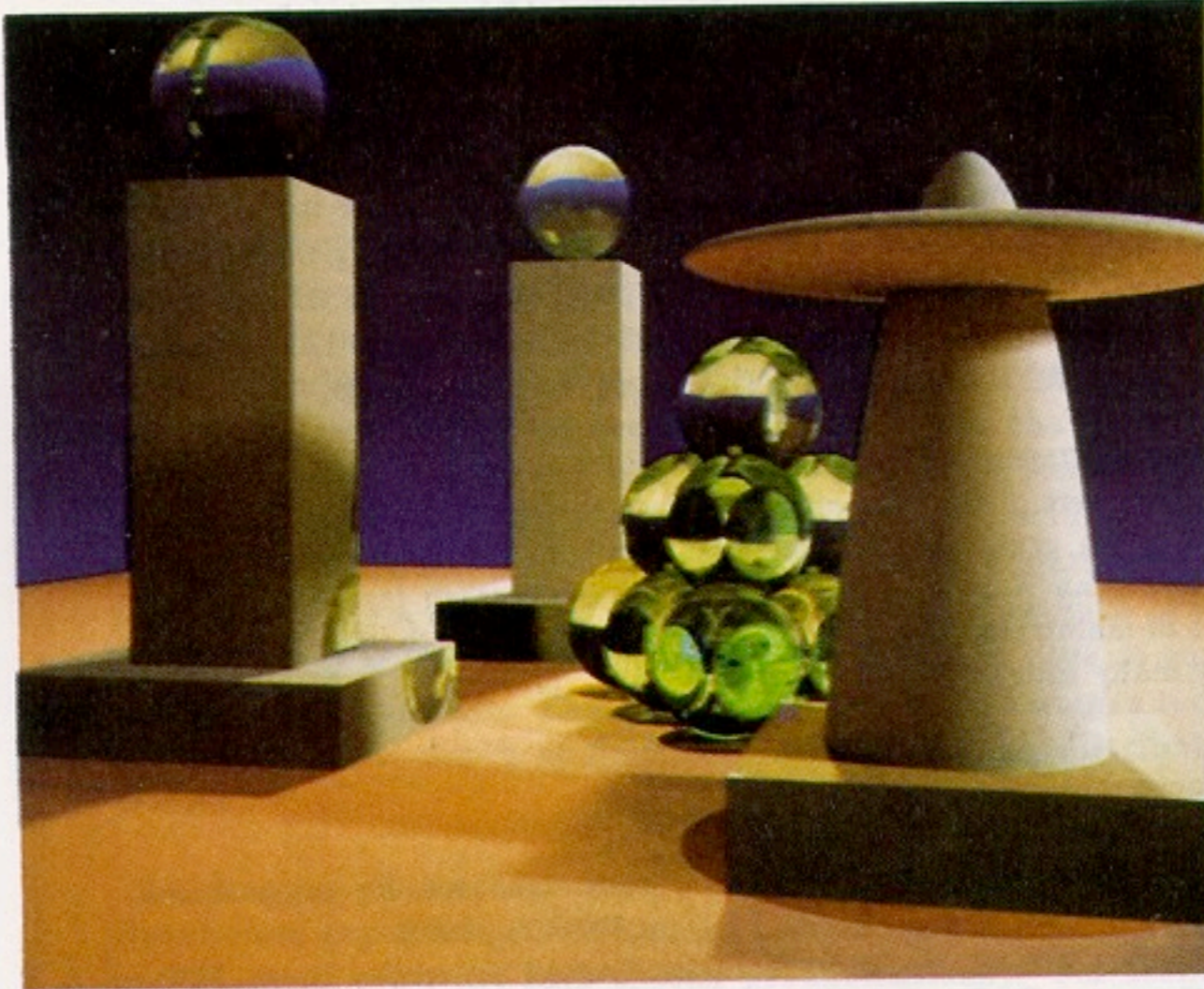
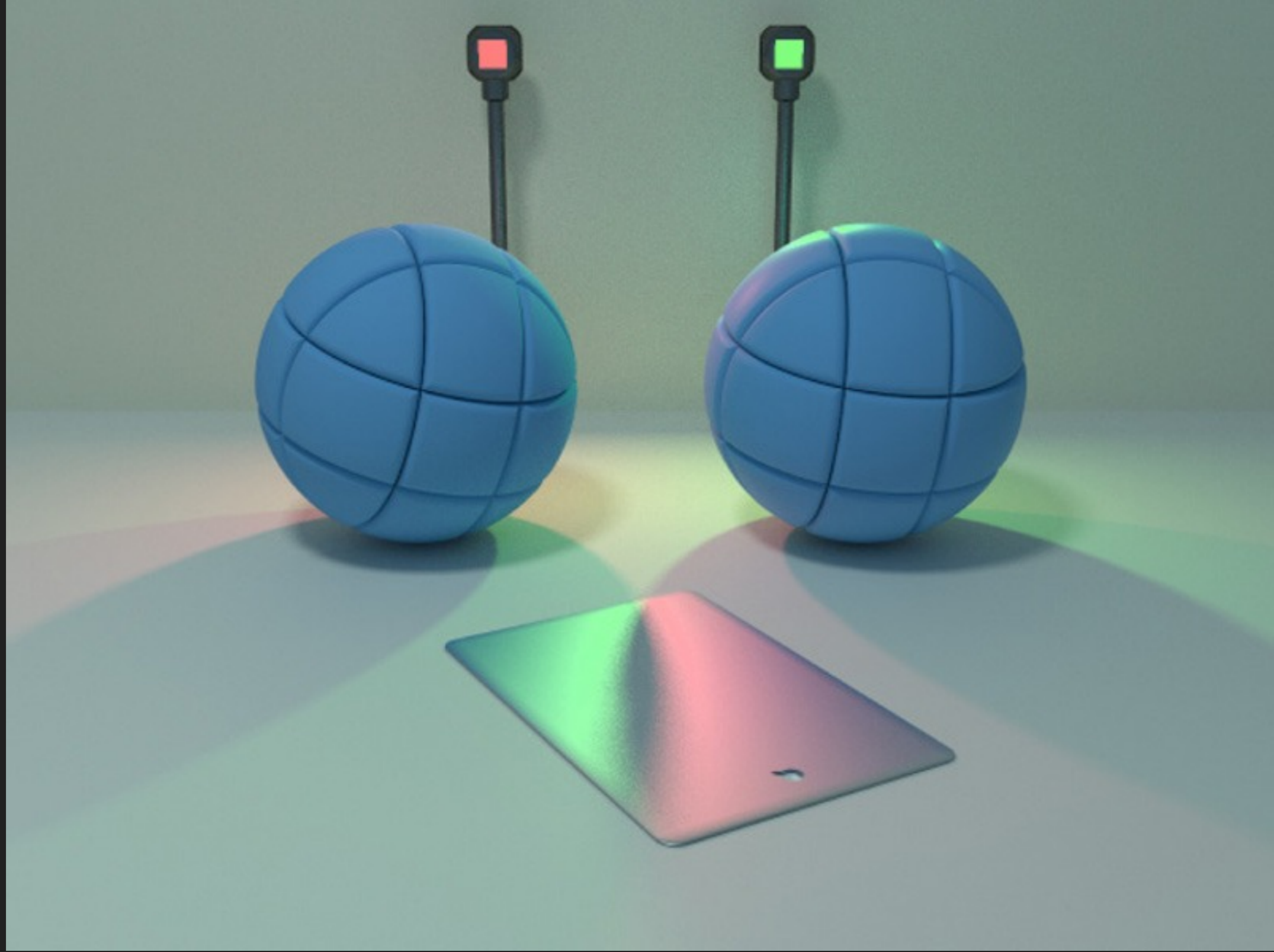
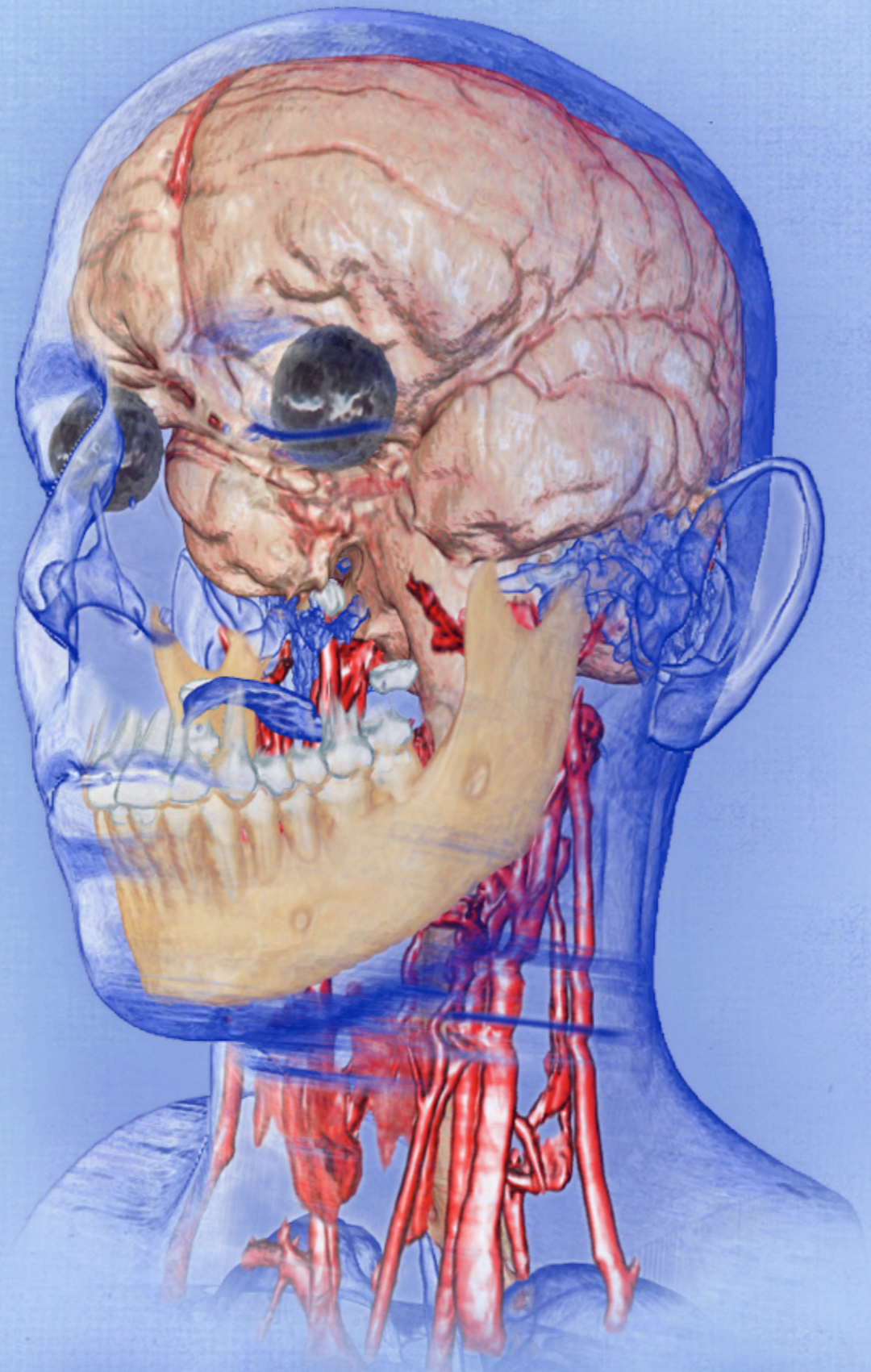
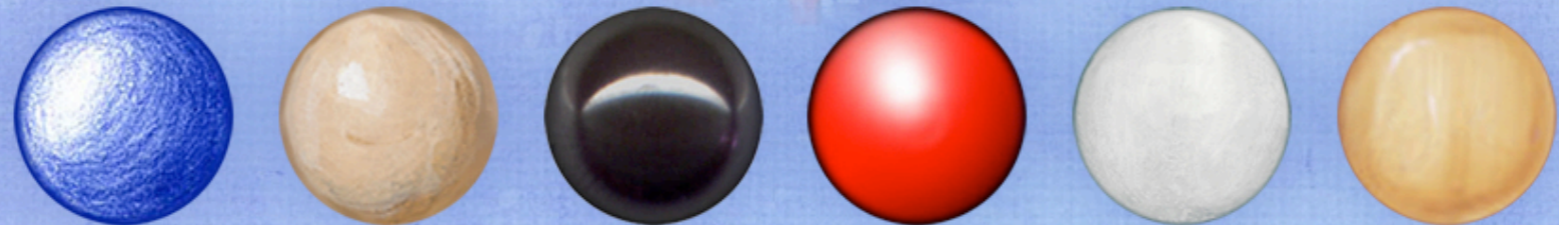


Figure 6. A sample image. All objects are neutral grey. Color on the objects is due to caustics from the green glass balls and color bleeding from the base polygon.

[Jim Kajiya, SIGGRAPH 1986]







[Stefan Bruckner]

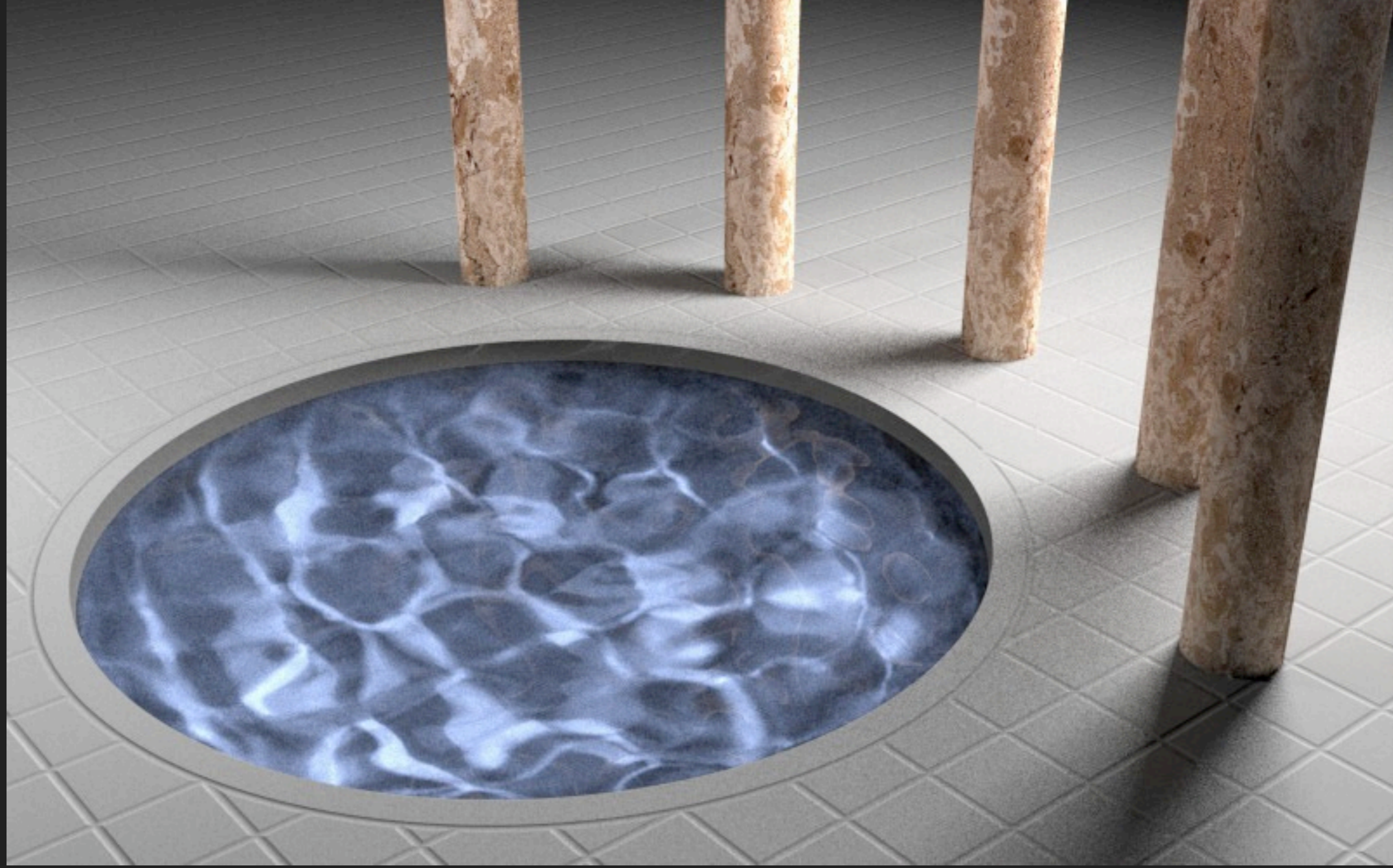
Henrik Wann Jensen



RENDERED USING DALI - HENRIK WANN JENSEN 2000



RENDERED USING BOLT - HENRIK JENSEN 2000







[Flickr user MarkAndMarina]





[Jensen, Marschner, Levoy, & Hanrahan 01]

NVIDIA's Human Head Demo





