LIGHT and COLOR

Part 2 of 2

Texture map: chrome material

Chrome texture applied to the Utah teapot.

Texture map: crystal material

Chrystal texture applied to the Utah teapot.

Texture map: wood material

Wood texture applied to the Utah teapot.

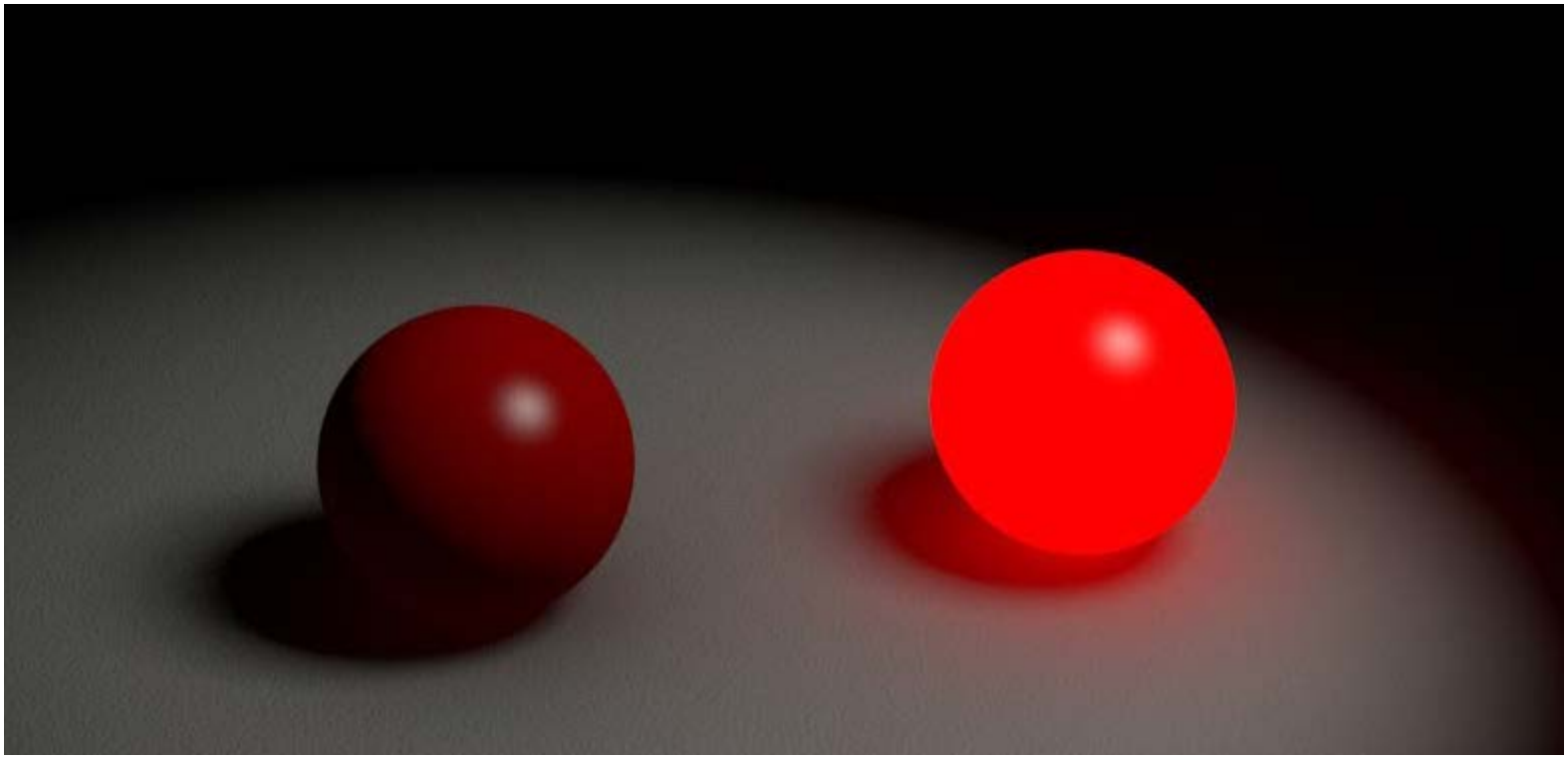
Texture map: porcelain material

Porcelain texture applied to the Utah teapot.

Texture map: chrome material

Chrome texture applied to the Utah teapot.

Emissive Lighting



Emissive Lighting

Material opacity and refraction

Refraction

Local vs. Global Illumination

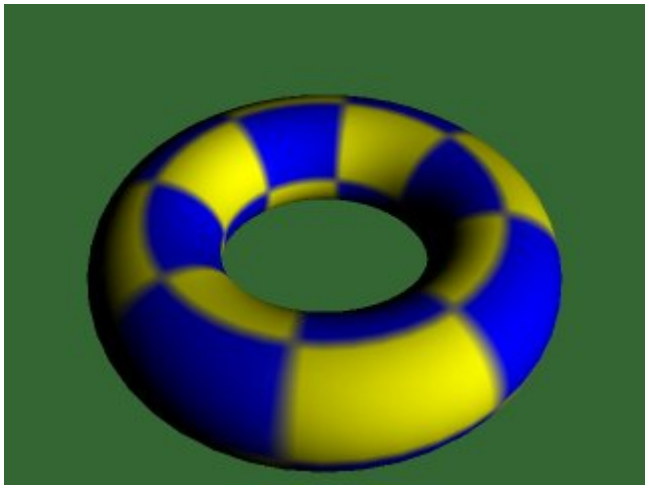
- Local Illumination
  - Light source reflected off surface and that's all.
  - No subsequent reflections from one surface to another.
- Global Illumination
  - Goal: to simulate and create realistic lighting.
  - Ray tracing : one type of algorithm used in Global Illumination

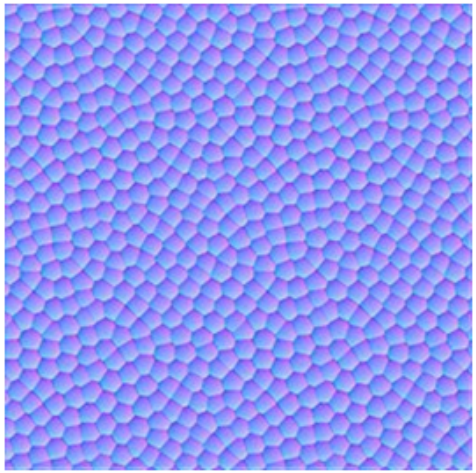
Ray tracing example

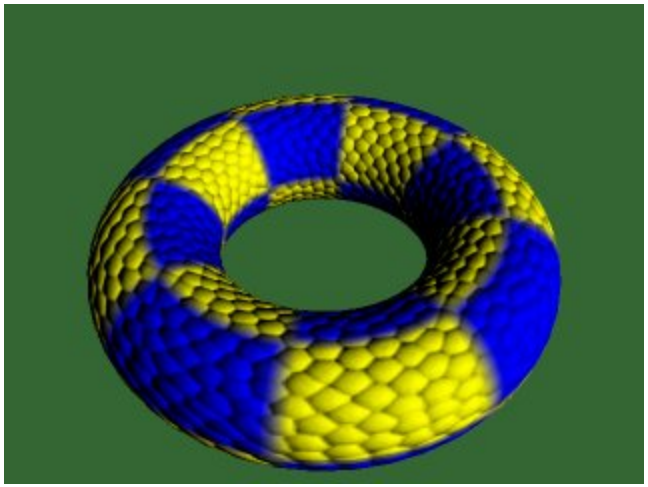
Bump map vs. Displacement map

- Bump map
  - Modifies surface normals
  - Defined in a image file (a map)
- Displacement map
  - More realistic than bump map.
  - Defined in a custom shader.
  - Can be programmed in OpenGL.

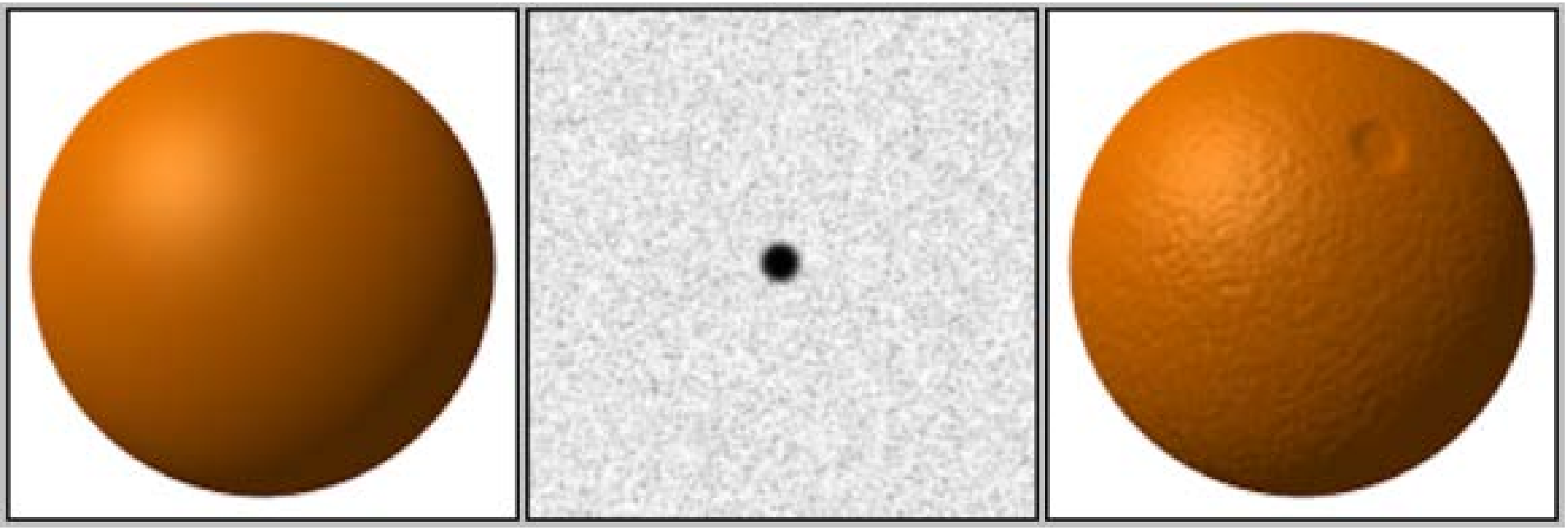
Bump map





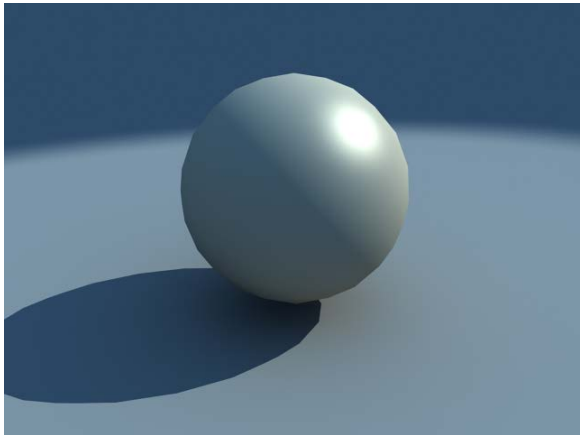


Bump map

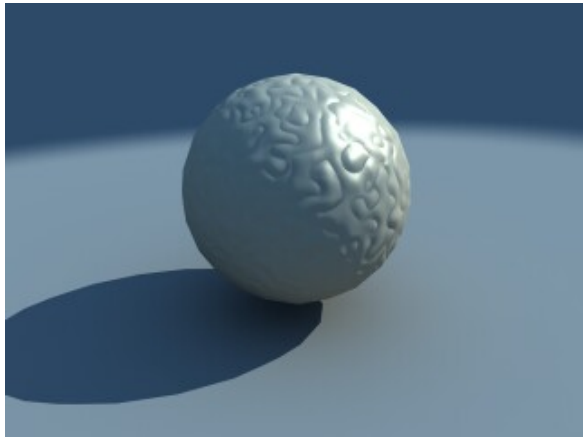


Original (smooth) **Bump map** **Bump map applied to surface**

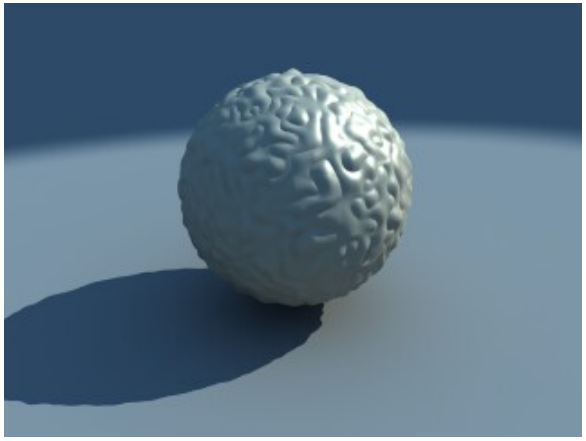
Original (smooth) vs. Bump map vs. Displacement map



Original (smooth)



Bump map



Displacement map

Blender examples

Now we'll render some scenes in Blender!

Blender examples