

Raytracer 3

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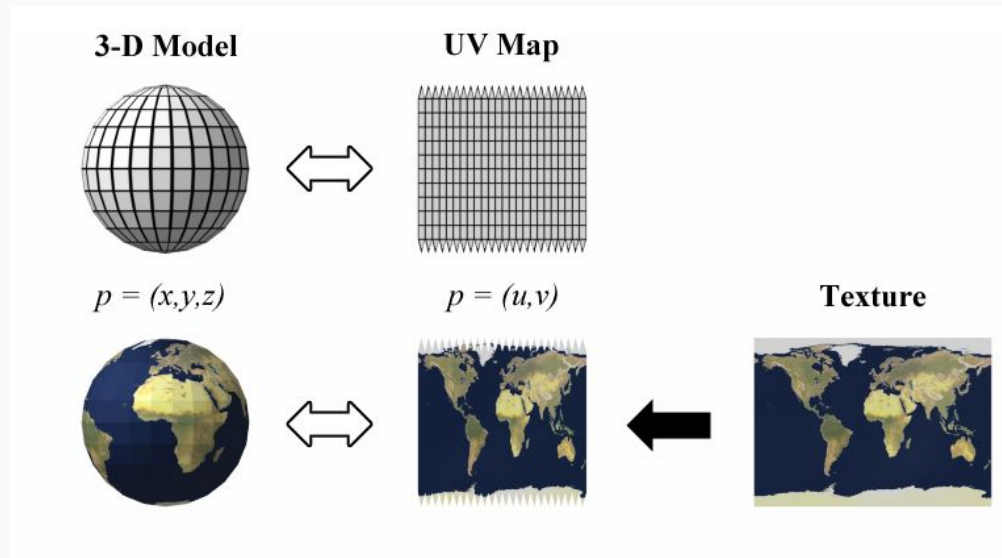
Textures

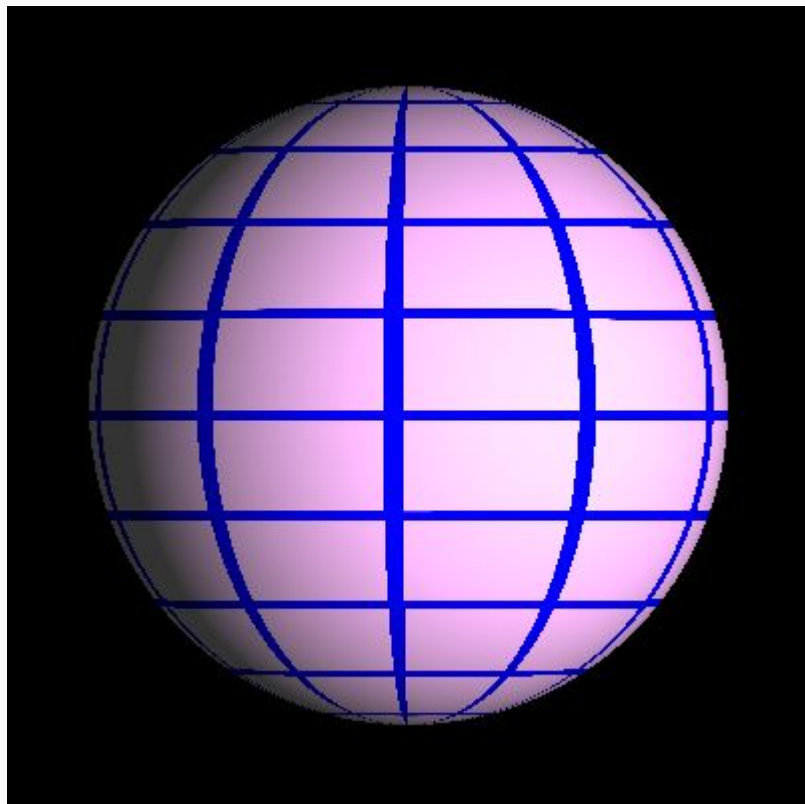
UV coordintes

Read Images

$$u = 0.5 + \frac{\arctan 2(d_z, d_x)}{2\pi}$$

$$v = 0.5 - \frac{\arcsin(d_y)}{\pi}$$

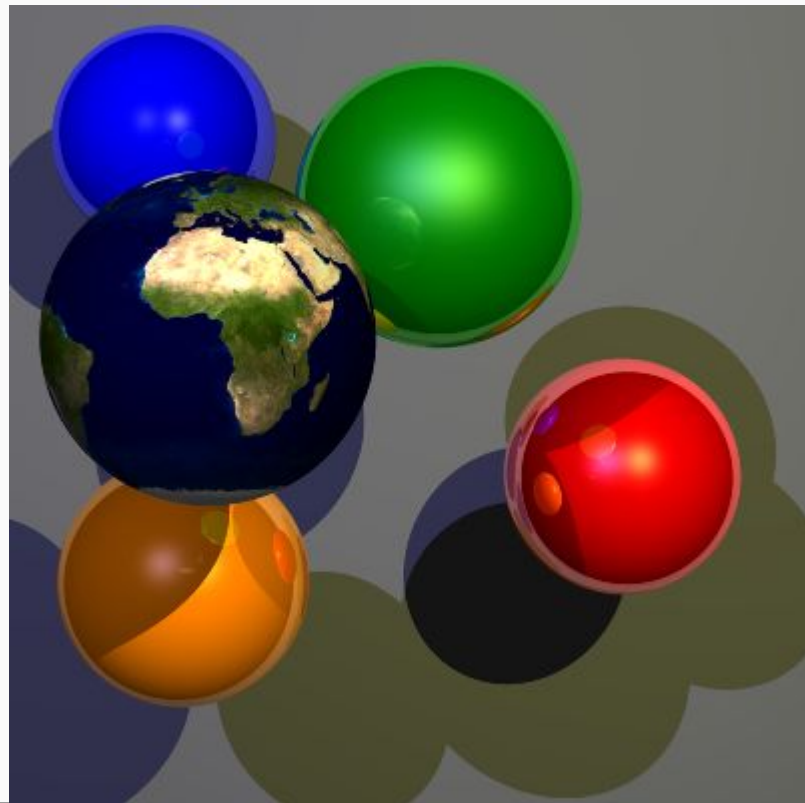
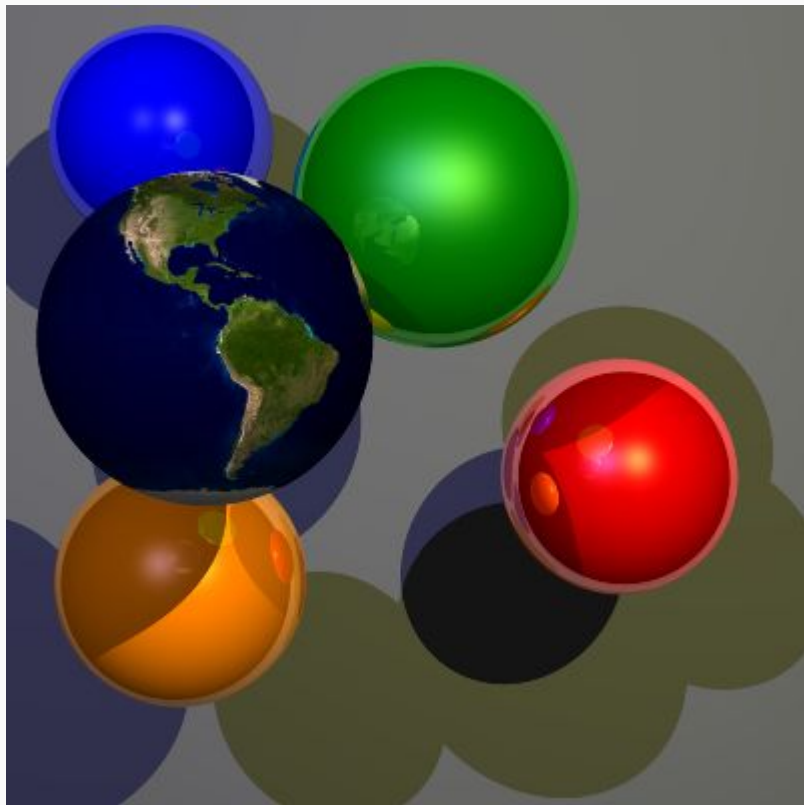




Rotation

Angle to radians

multiply with u coordinate (atan)



rotated earth



Gooch shading

$$k_{cdiff} = k_{cool} + \alpha k_{diffuse}$$

$$k_{wdiff} = k_{warm} + \beta k_{diffuse}$$

$$k_{final} = \left(\frac{1 + N \cdot L}{2}\right) k_{cdiff} + \left(1 - \frac{1 + N \cdot L}{2}\right) k_{wdiff}$$

