

Due: Wednesday April 7 at 6:00am

Assignment 7—Environment Mapped Reflections

In a nutshell

Extend your interactive 3-D graphics application with the ability to render environment mapped reflections.

Details

1. Environment map
 - Construct a cube map from the `uffizi_cross.tiff` image provided (courtesy of Paul Debevec).
2. Environment mapped reflections
 - Enhance your triangle rendering function with environment mapped reflection capability.
3. Example
 - Demonstrate environment mapped reflections with a specular teapot (i.e. perfect mirror).
 - Show the environment map as well (i.e. background).
 - Make a 20s 30fps video showing your environment mapped reflections.
4. Extra credit
 - Golden teapot (as opposed to silver). (2%)
 - Fresnel reflections (i.e. specularity decreasing as eye rays become more perpendicular to the reflector surface). (3%)
 - Illustration of the limitations of rendering reflections by environment mapping. (3%)
 - Improved reflection of object close to reflector by modeling reflected object with billboard. (4%)

Turn in

- Code.
- Cube map (i.e. one image per cube map face).
- Movie file.
- A README.txt description of your GUI.