CO 417 - Advanced Computer Graphics
Coursework 1
Report

Images were generated using our own C++ code.

Part 1

Our chosen weighting function is the function described in Debevec & Malik's paper 'Recovering High Dynamic Range Radiance Maps from Photographs'.

$$w(z) = \begin{cases} z - Z_{min} & \text{for } z \leq \frac{1}{2}(Z_{min} + Z_{max}) \\ Z_{max} - z & \text{for } z > \frac{1}{2}(Z_{min} + Z_{max}) \end{cases}$$

toneMapped.ppm

Oliver Wilkie (osw09)
Jonathan Price (jmp09)

exposure.ppm (8.8 Stops)
We found this exposure value to produce the most aesthetically pleasing result.

Oliver Wilkie (osw09)
Jonathan Price (jmp09)

gamma.ppm
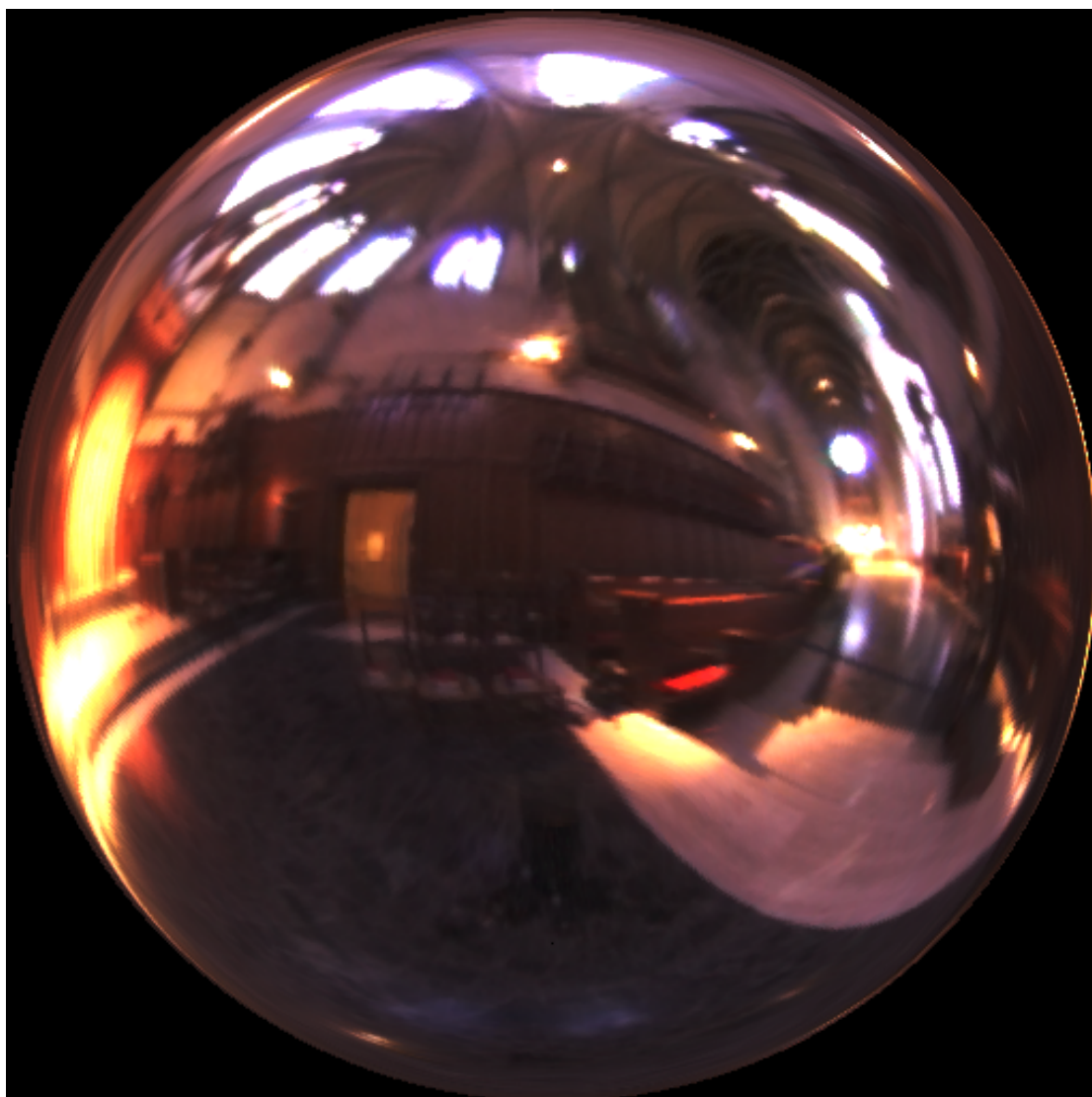Gamma Value **2.2** - Exposure **6** stops
We found this combination to produce the optimum result.

We detected a dynamic range in *HDR.pfm* of 1:191696. This was calculated by taking the largest pixel value in the hdr image (the sum of the pixel's components) and dividing it by the smallest pixel value in the hdr image.

Oliver Wilkie (osw09)
Jonathan Price (jmp09)

Part 2

rVectors.ppm
XYZ -> RGB

Oliver Wilkie (osw09)
Jonathan Price (jmp09)

sphere.ppm
Gamma Value = 2.2
No alteration to Exposure

Oliver Wilkie (osw09)
Jonathan Price (jmp09)