

Maya - Tuning Global Illumination

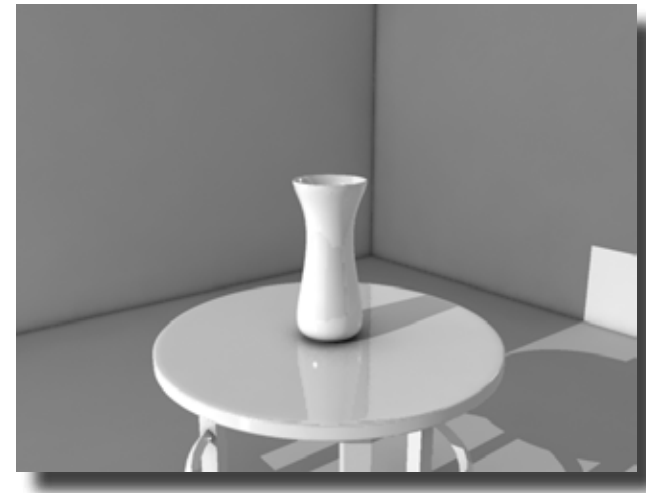
Step 1

Global Illumination can provide a more accurate result but are usually tougher to create a smooth result (A). When Global Illumination (GI) is combined with Final Gather, very smooth result can be achieved with little effort (B). However, the rendering times will increase greatly. Part of this tutorial will cover how to minimize the longer render times.

Global Illumination Only

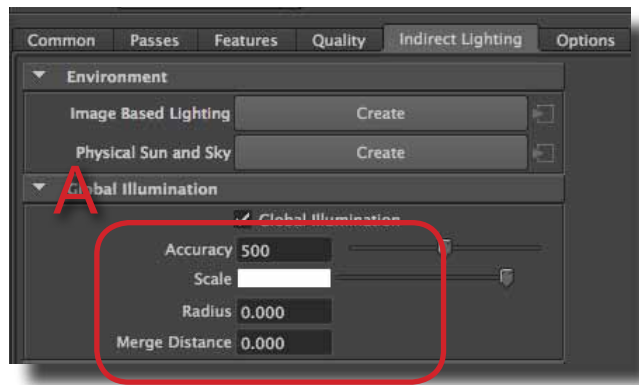


Global Illumination
& Final Gather

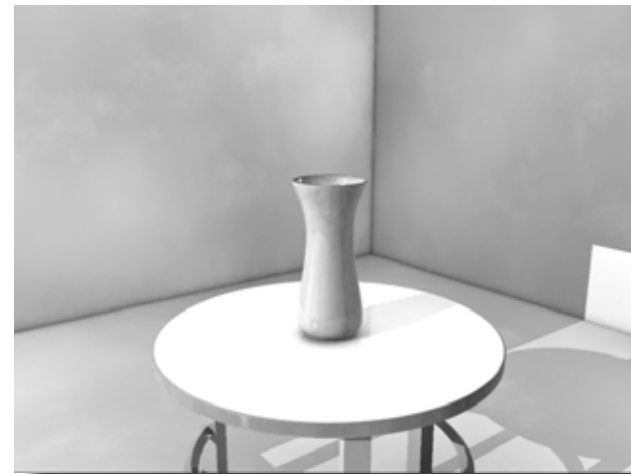


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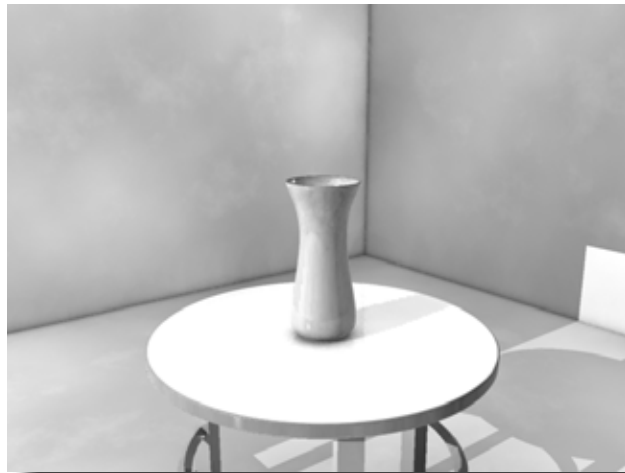
Step 2 As you can see from the different settings below, little improvement is made by increasing the Accuracy or the Merge Distance (A).



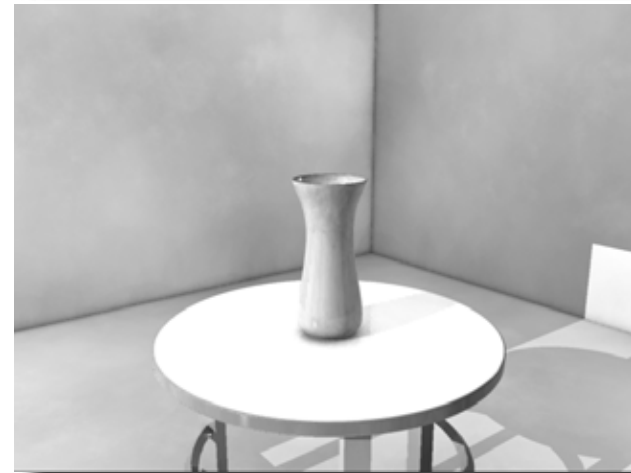
Accuracy: 500
Radius: 0
Merge Dist: 1



Accuracy: 500
Radius: 0
Merge Dist: 0

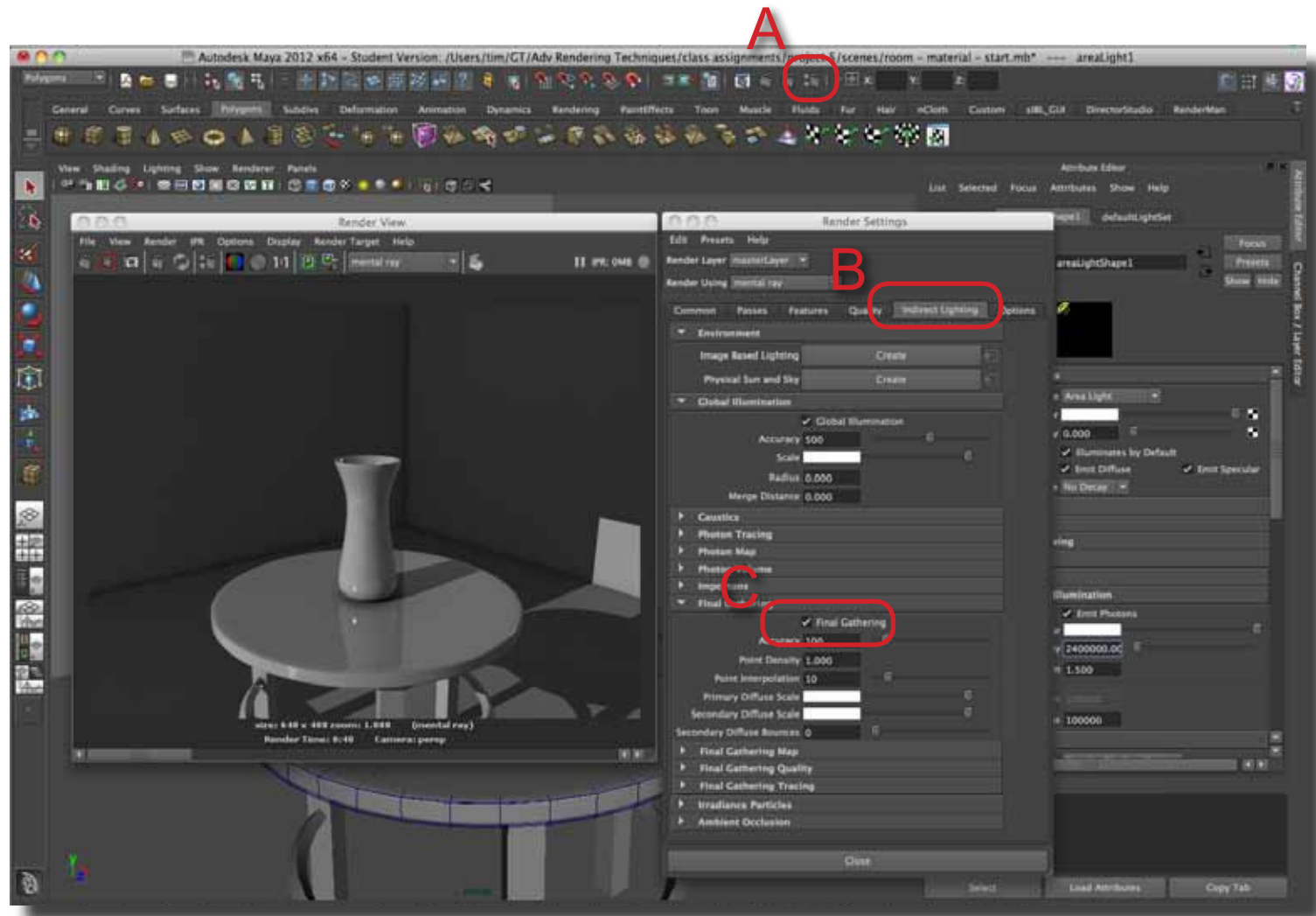


Accuracy: 1000
Radius: 0
Merge Dist: 1



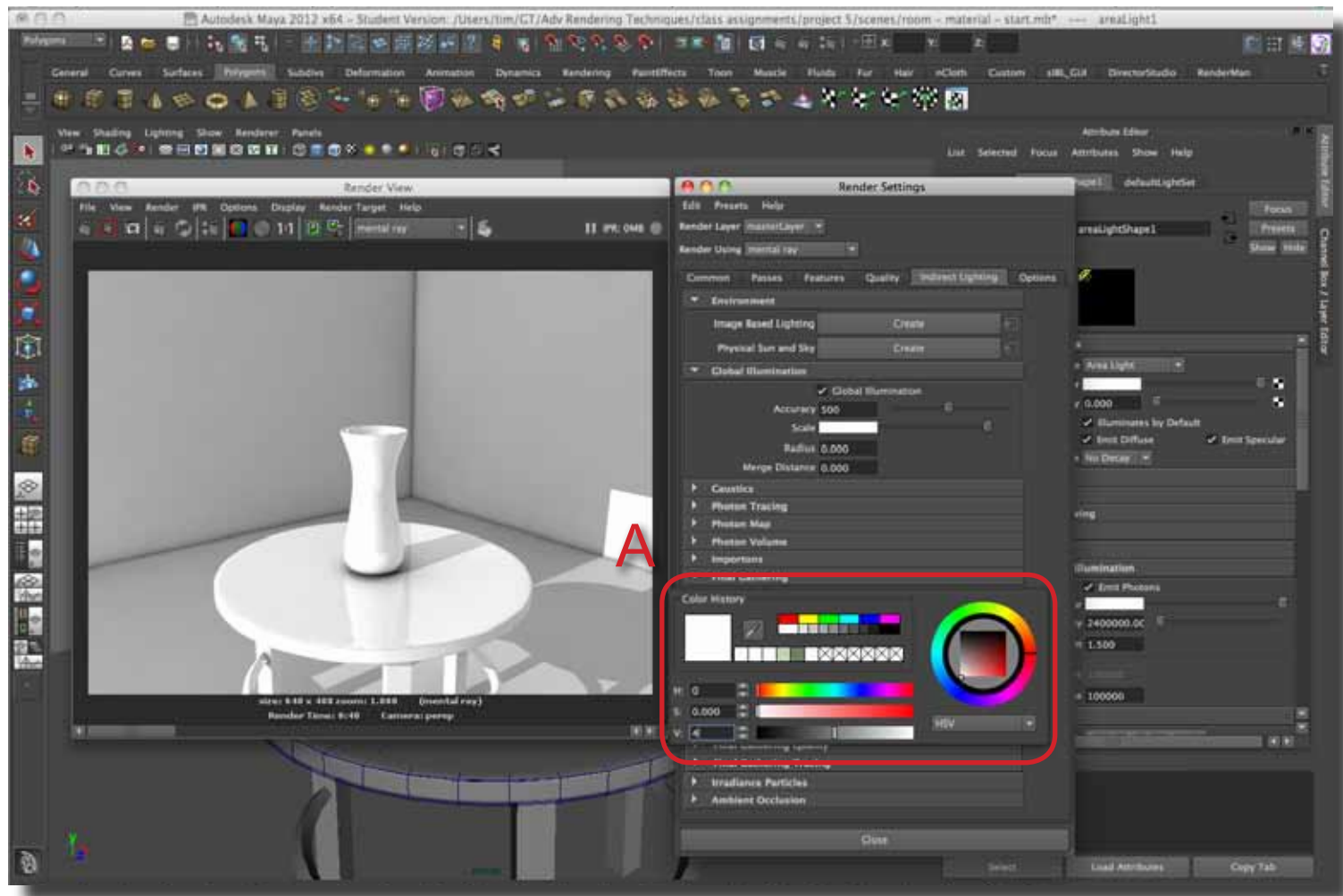
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Step 3 Open the Render Setting window (A) and go to the Indirect Lighting Tab (B). Turn on the Final Gather option (C) and render the scene. The scene looks much smoother but is darker. Also, the render times have increased from 7 seconds to 40 seconds.



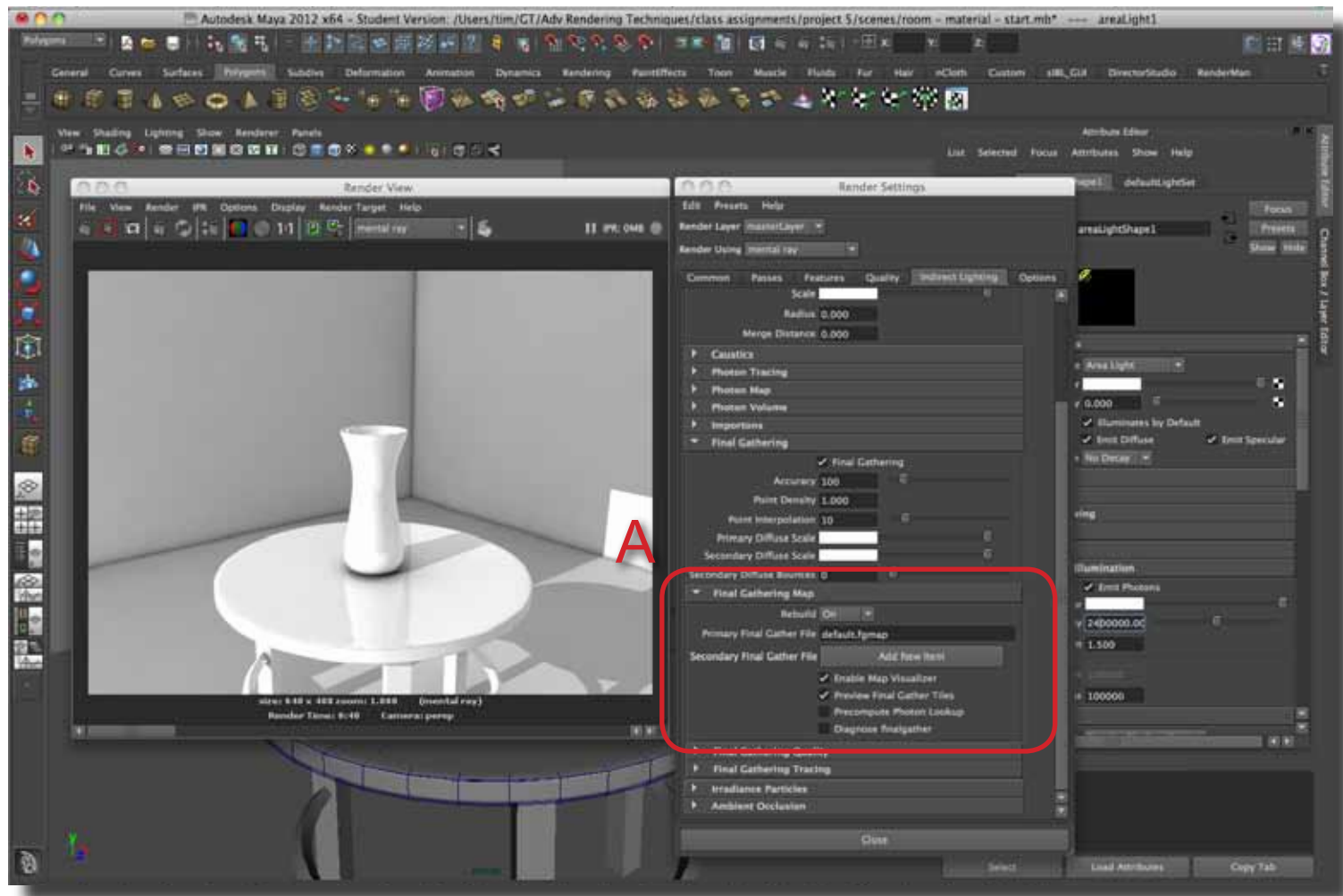
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Step 4 To increase the lighting, click on the Primary Diffuse Scale and make sure the Color scale is set to HSV. Then over drive the “V” value beyond 1. In this example, value is set to 4 (A). Once materials are assign to the room, this value may need to be backed down.



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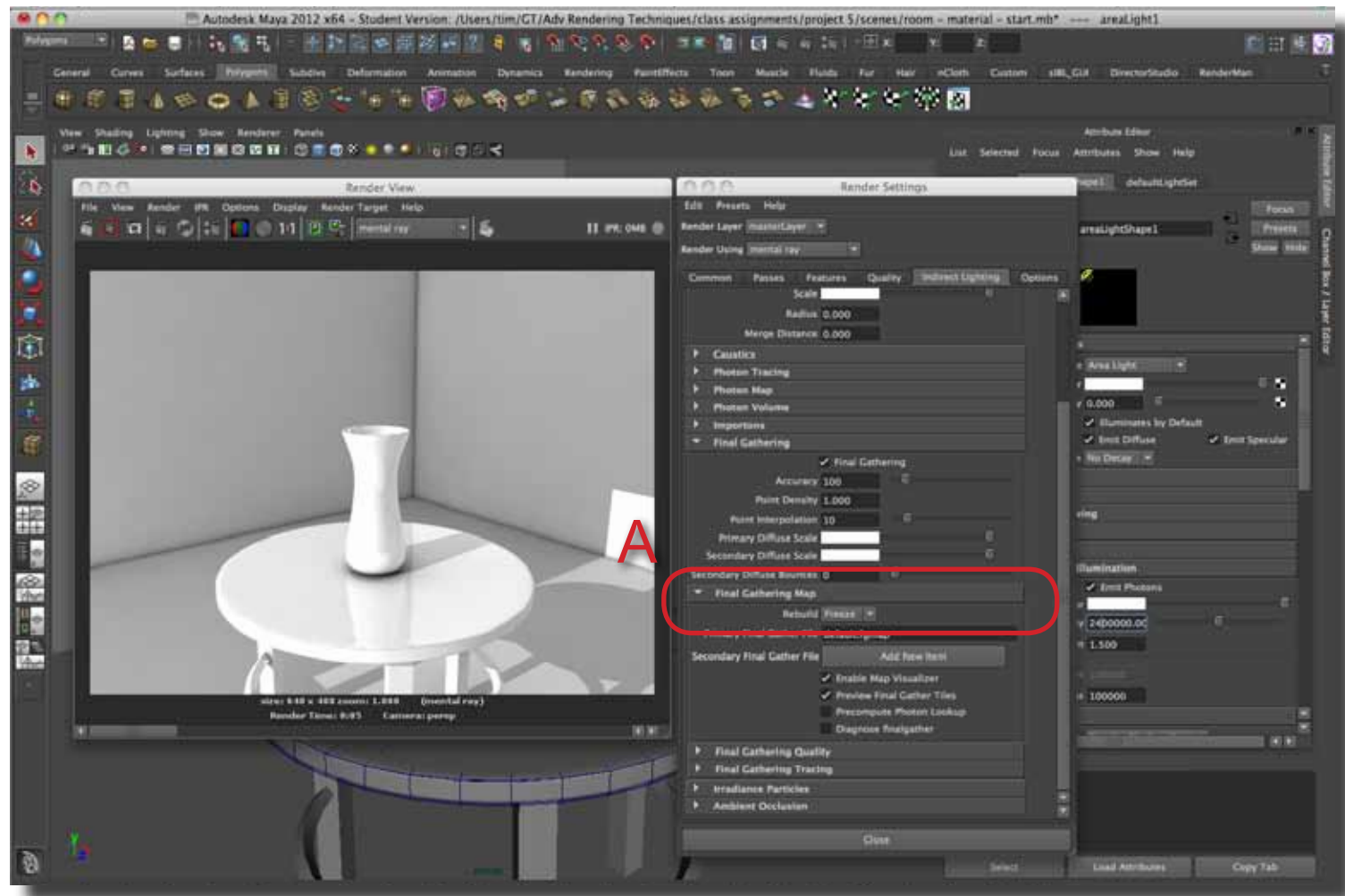
Step 5 To decrease the rendering time, open the Final Gather Map tab and select the Enable Map Visualizer (A). This enters a default name in Primary Final Gather File section. Re-render the scene to save out the final gather points to this file. At this point, the rendering times will not be changed.



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Step 6

After re-rendering, change the Rebuild option from “On” to “Freeze”(A). Rendering the scene now will only take 5 seconds versus the 40 seconds. The Final Gather map will have to be rebuilt if the resolution size changes, the view changes or if objects are added or removed from the scene. Some materials may require that the maps to be rebuilt as well. To be safe, rebuild the Final Gather map prior to completing the project.



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Step 7 Here is the same scene with materials applied. The Primary Diffuse Scale was reduced from 4 to 1.5 since the material is providing indirect lighting into the scene (A).

