



## MODELLING A GLASS

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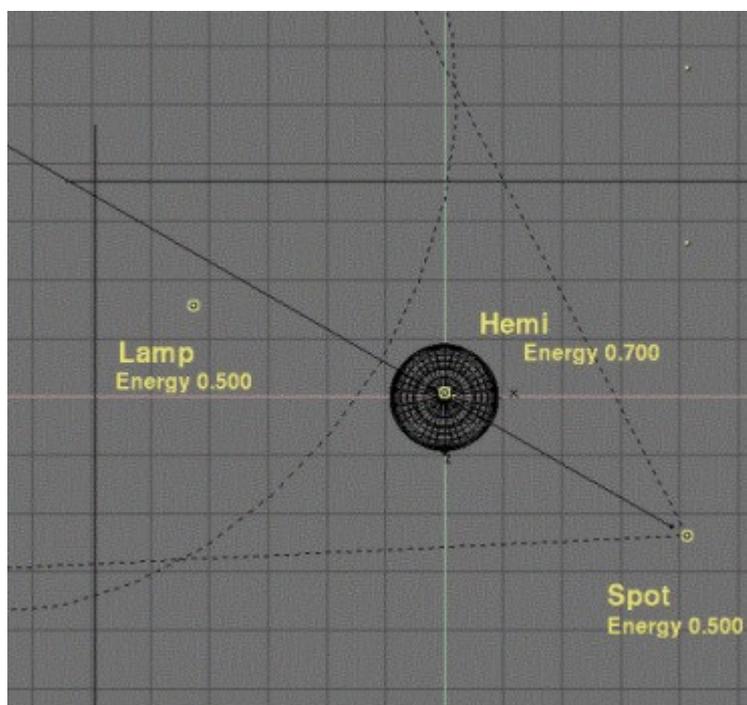
LinuxGraphic.org

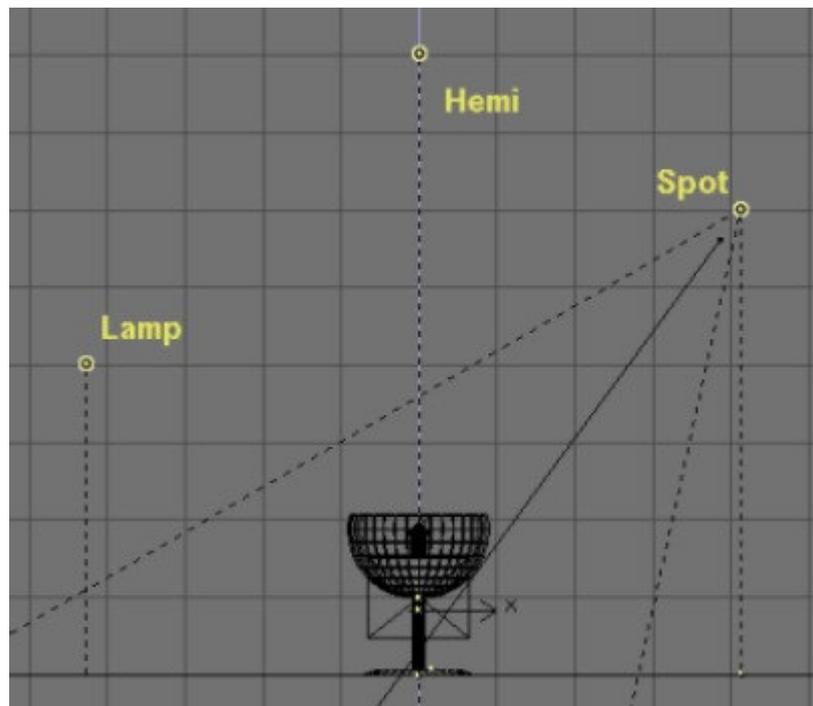
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### Step 5 :

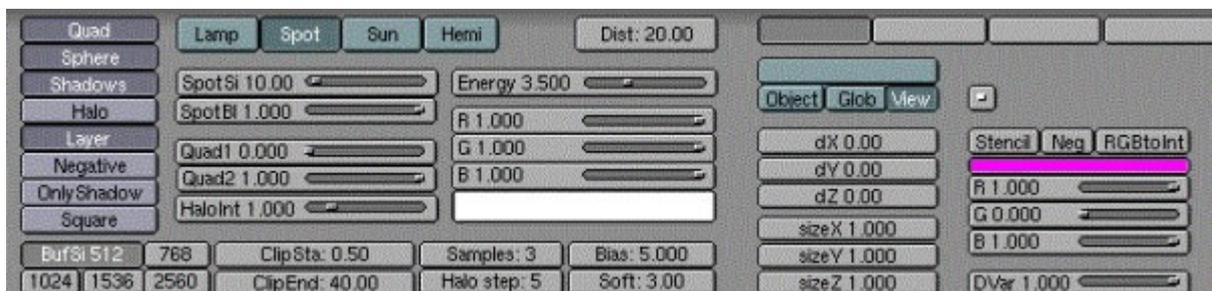
There's a major topic that haven't been discussed yet, while it has a clear influence on the rendering samples showed earlier in the tutorial : lighting !

For this scene, I added a **lamp** (**Energy 0.500**) to the left of the glass, a **Hemi** (**Energy 0.700**) above it, and a **spot** (**Energy 0.500**, **'Only shadow'** turned on), slightly on the foreground and to the right of the glass, as shown on the two following pictures.

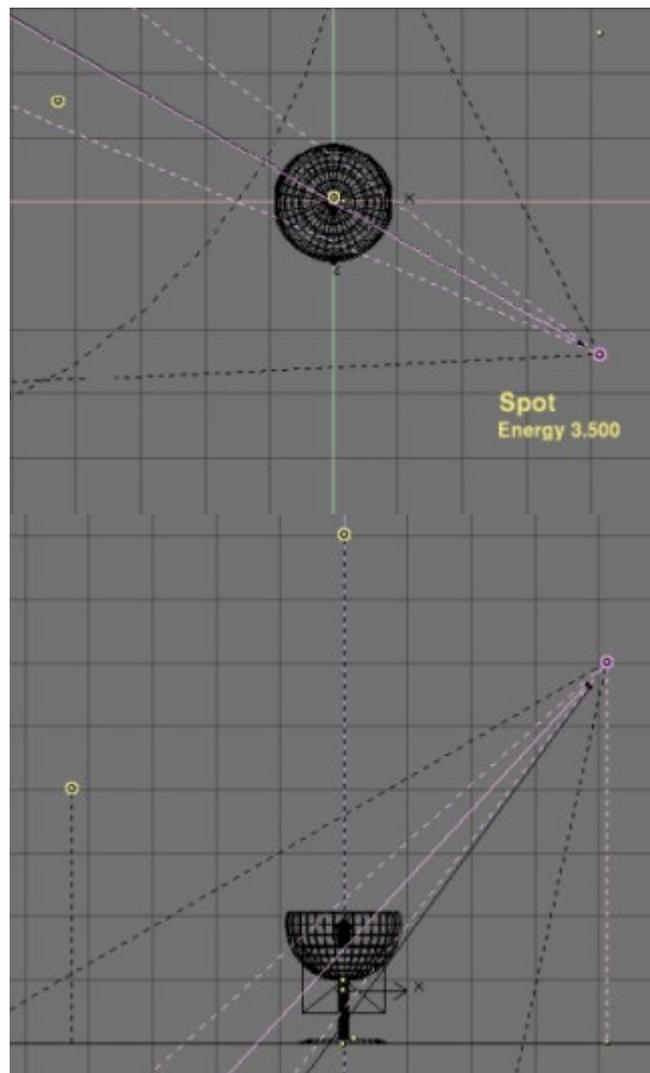




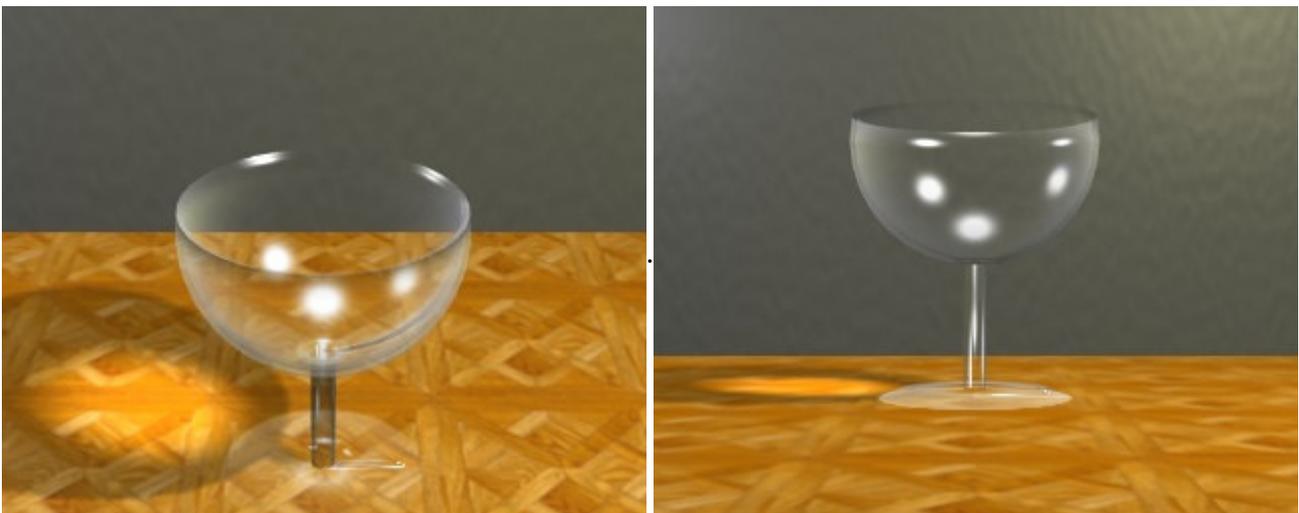
As a last step to enhance the realism of our scene, we will simulate the appearance of caustics, e.g. the flocks of light that show in the shade of a glass object, light warped and concentrated by the roundness and thickness of the glass. In order to simulate this phenomenon, move the glass on the second layer of the scene (**M-KEY** and then select the second little square from the left). Now select the spot and make a copy of it with **SHIFT-D** and call the Lamp Buttons (**F4-KEY**). Deselect the '**Only Shadow**' button but select '**Layer**' instead, because you don't want the glass to be lit by the light. Set the lamp parameters as shown hereafter, and especially the **Energy 3.500** and **SpotBl 1.000** parameters.



You will certainly have to make many intermediate renderings in order to set the correct location (regarding Loc and Rot) and the **SpotSi** that you need for your scene. The spot should point at the very heart of the glass' shade ! Within a few guess-and-try, you should be able to find the most visual striking location, which should make its way through the geometrical center of the glass ball.



You now have a very last render to do in order to enjoy the result, which should be satisfying enough until NaN develops for Blender some control over indices of refraction ! We are yet a long step from absolute realism, but this trick should be sufficient to lure the non-expert into a good illusion of reality.



### L a s t w o r d s f r o m t h e a u t h o r :

\* **about refraction:** a common method used to fake refraction (the bending of objects seen through

the curves surfaces of a glass) is to apply to the object an **EnvMap** texture map, and to set in the Material Buttons (**F5-KEY**) negative values of **SizeX**, **SizeY** and above all **SizeZ** (a 'minus' sign inverts the picture ; thus SizeY -1 inverts the mapped texture upside-down). For instance, we commonly see **SizeZ -5.000** as a starting work value. The mapping should be done with the **Nor** or **Ref** toggled on instead of the default traditional **Orco** button. However, the refractions resulting from this method are barely realist or satisfying, from my point of view, and ask for tremendous tweaking to finally get parameters like **SizeX -0.1**, **SizeY -0.1** and **SizeZ -2.5**. The more strange is that the experienced user of this method render similar pictures on a raytracers in order to examine the refraction map to achieve, and then tweak the SizeZ and other parameters until the achieve a similar result with the scanline mode of Blender. Having not a raytracer nor the skill to use one, I never got satisfying results while faking refractions this way. If you manage to do it, remember me ! ;o)

\* **about caustics** : according to the shape of your glass object, you could have to use many spots in order to light the shade of your object a likely luminous area. Don't forget that you can get a square spot section by toggling on the '**Square**' button ! In the folling picture, I achieved caustics with the proper stacking of many square spots.



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