Poser Lighting Tips Part 1 – A Single Spotlight

Introduction

Lighting can make or break a picture. Dimly-lit images with little contrast are unlikely to stand out when people are browsing thumbnails, so images can be overlooked. It can mean the difference between plastic-looking people and real people; it can create that ultimate illusion of fantasy that transports the viewer into the world you've created; it can draw attention and add drama like nothing else - but it's a beast to master.

My own methods involve trial and error and a hundred-odd test renders to get 'right' (that and a modicum of luck!). There are plenty of tutorials around that will help you achieve good standard 3-point lighting (key light, fill light and rim light), like this one here.

If like me, you want something a bit weird and specific for your latest fantasy render, then the 3 point lighting advice doesn't always apply. What follows is some simple advice for lighting using **just a single spotlight**. Hopefully it's of use to someone! I'll be doing separate tutorials for HDRI lighting, indirect light and multiple lights, and whatever else springs to mind in the meantime!

Topics Covered
- Creating a Spotlight
- Adding Soft shadows
- Attenuation
- Volumetric Lights and Fog

Software / Hardware Notes
- I've created this using Poser Pro 2012, but the majority of this functionality is available in older versions of Poser Pro / Poser standard version.
- I'm using a 3.3ghz hex-core (AMD, not Intel, I hasten to add!) with 12GB of RAM. Ramping up some of the settings described in this document may well eat RAM / processing power and/or take ages to render. It'll (probably) be worth it.

Prepare your Scene

1. Open Poser and delete all the lights in the scene using the delete icon in the light palette.
2. Load a figure and add a MAT. I'm using M4 and the Spartacos MAT, because I think just about everyone and their dog has this one!
3. Load a scene item into your background. I really don't recommend rendering over background images, for a number of reasons:
   1. It almost always looks fake, and obvious that a figure has been rendered in front of a flat image (unless of course that's the look you're going for!)
   2. The figure in the scene really needs to cast shadows onto its surroundings (and vice versa)
   3. Light bounces off objects in the scene. A figure rendered in a real setting will have different shadows on it to a figure that's been rendered over a background picture.
   4. You need items in the scene for volumetric lighting to have an effect

- I've used Andi-3D's awesome cloister construction set for this tutorial. You can get something similar for free on his freestuff pages here.
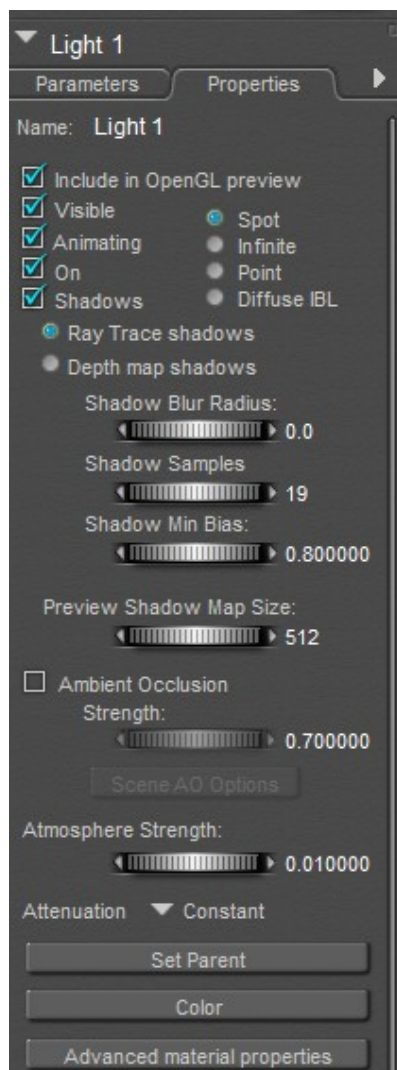

Illustration 1: M4 from the Poser Preview window

Create a Spotlight

1. Add a light using the 'new light' icon in the lights palette

2. Centre the light over your figure by clicking and dragging on the circular white light icon on top of the 3D sphere in the light palette

3. In the properties palette for your new light, you should see the following defaults:

- So we're creating a spotlight, using ray-traced shadows.
- Shadow blur radius is set to 0
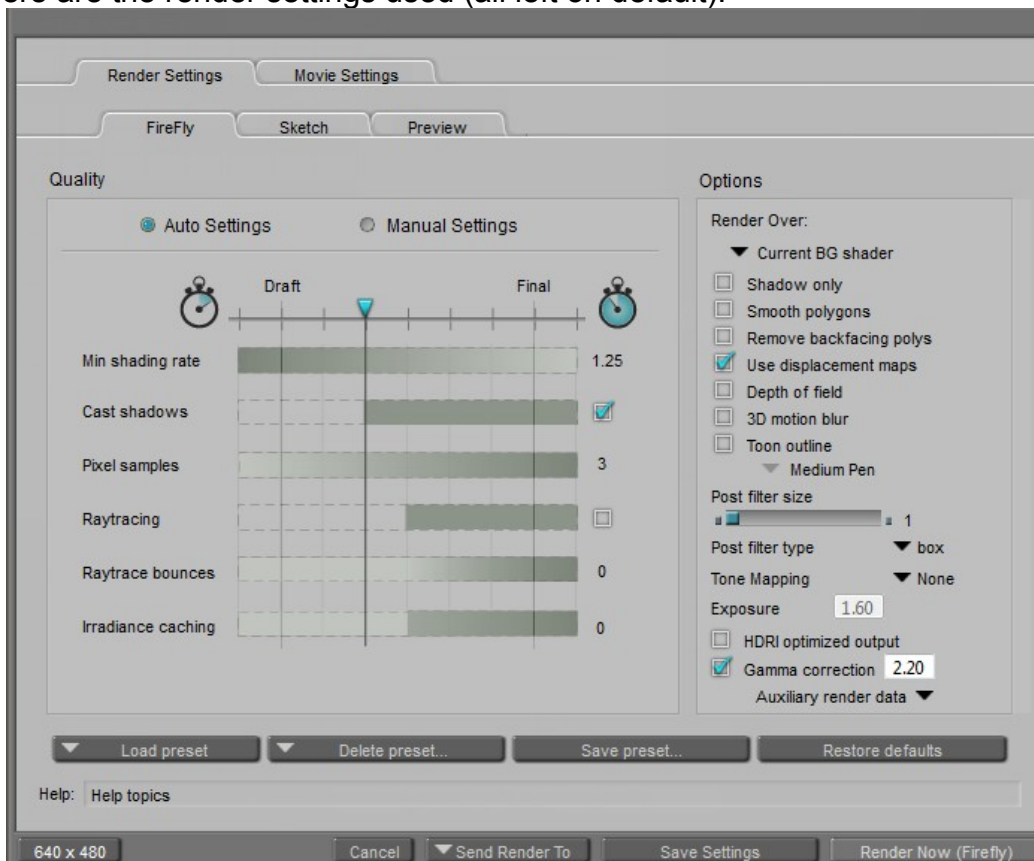- Atmosphere strength is set to 0.01 (this isn't important yet but it will be!)
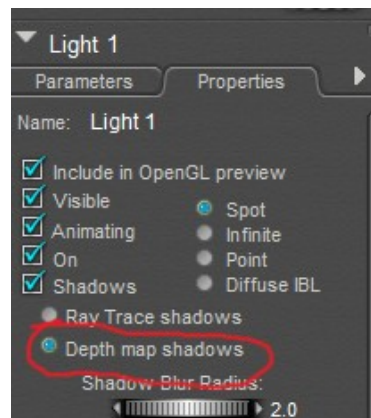
4. Click render. Here's the initial result:

Illustration 2: BORING!

- There's no real sense of depth, and shadows aren't being cast onto the door behind him.
- Here are the render settings used (all left on default).

Adding Soft Shadows

1. Go back to the light properties and click 'depth map shadows' instead of 'ray trace shadows'


2. Render again.

Illustration 3: Comparison of ray-traced vs depth mapped shadows

- The image on the left is the original render from above.
- The image on the right shows that some shadows have appeared behind the figure, giving the impression he's casting a shadow against the door.

- You'll notice that the shadows are quite soft. There's a setting in the light properties called '**shadow blur radius**', which allows you to define how soft you want your shadows to be.

- The lowest setting for this is 1.0 and the highest is 20.0.
- Low settings give sharper shadows.
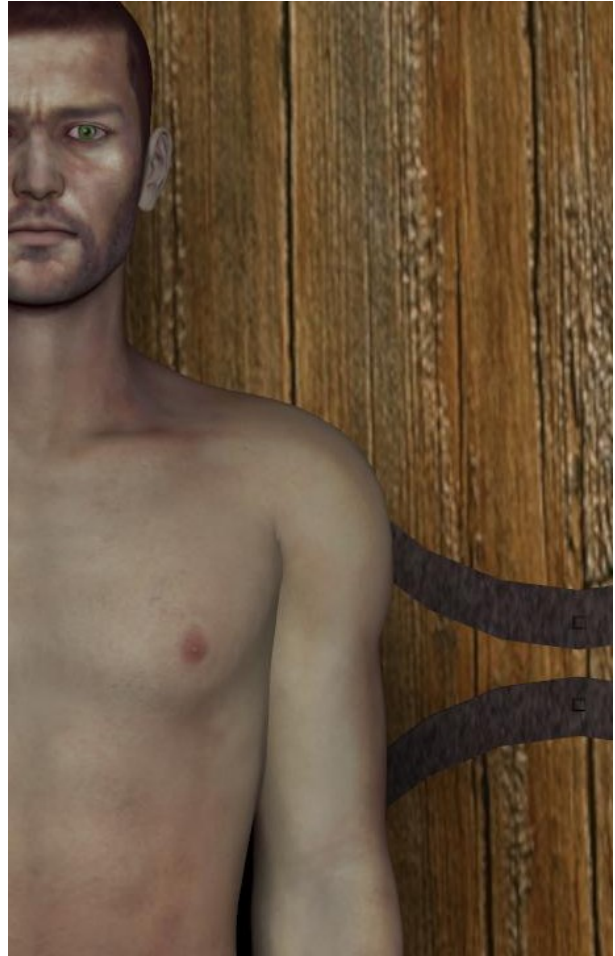- High settings give softer shadows.
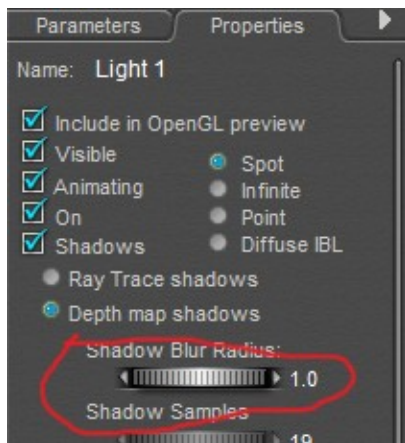
The comparison below shows how this setting affects your render.

Illustration 5: Shadow Blur Radius = 1

Illustration 4: Shadow Blur Radius = 2

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Attenuation

At the bottom of the light properties palette, you'll find **Attenuation** settings. This lets you define what happens to your light over distance.
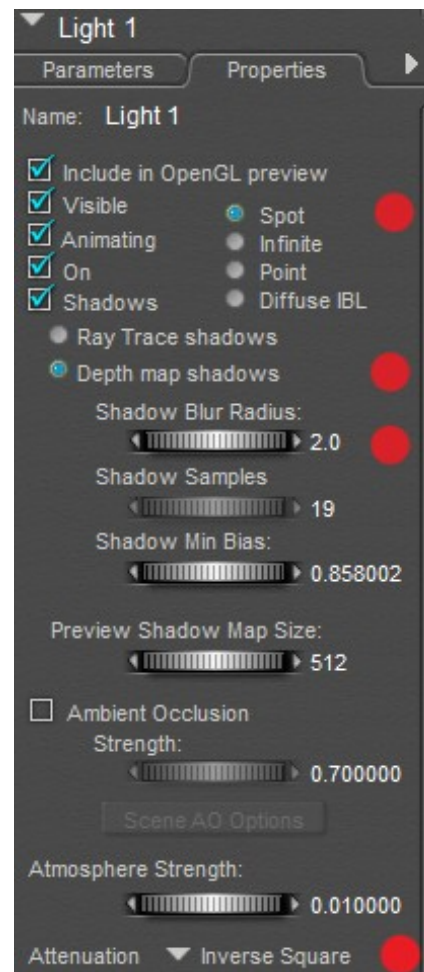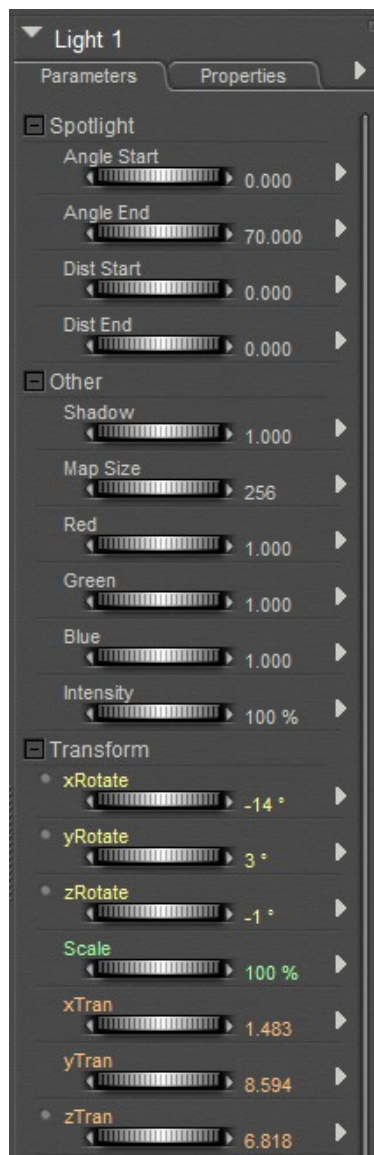
- **Constant** – this means that the intensity of the light doesn't change over distance – it will reach to infinity with the same intensity. An item twenty feet away will be lit as brightly as an item right next to the light. I've used this above.

- **Constant** (with tone mapping turned to exponential in the render settings) - the bright areas will be brighter, and the dark areas darker

- **Inverse square** – the closer you bring the light to your figure, the brighter it gets.

- **Inverse linear** – This is the same as Inverse Square above, but not as dramatic.

Below is an example of **Inverse Square**. I've just moved the spotlight a little closer.

If you want to try this out for yourself, here are the settings I've used:

- The figure is at 0,0,0

- The light parameters are set as below

- The light properties are also below, and I've highlighted the items to pay attention to with red dots.
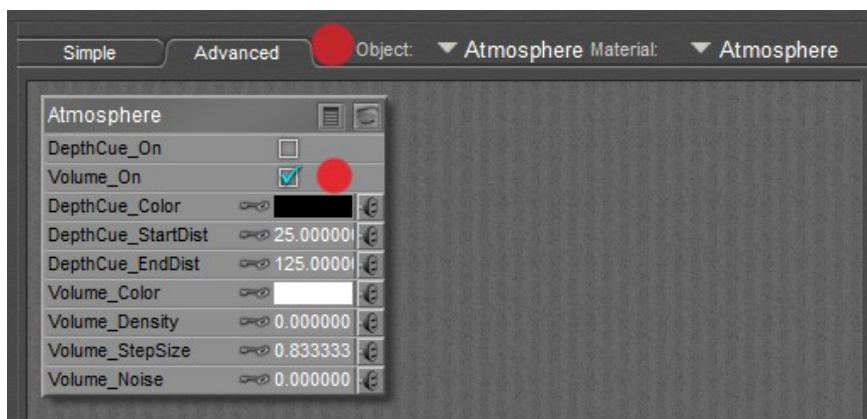
Light 1

Parameters | Properties ▶

Spotlight

Angle Start
0.000 ▶

Angle End
70.000 ▶

Dist Start
0.000 ▶

Dist End
0.000 ▶

Other

Shadow
1.000 ▶

Map Size
256 ▶

Red
1.000 ▶

Green
1.000 ▶

Blue
1.000 ▶

Intensity
100 % ▶

Transform

xRotate
-14 ° ▶

yRotate
3 ° ▶

zRotate
-1 ° ▶

Scale
100 % ▶

xTran
1.483 ▶

yTran
8.594 ▶

zTran
6.818 ▶

Light 1

Parameters | Properties ▶

Name: **Light 1**

☑ Include in OpenGL preview
☑ Visible   ⦿ Spot
☑ Animating   ○ Infinite
☑ On   ○ Point
☑ Shadows   ○ Diffuse IBL
    ○ Ray Trace shadows
    ⦿ Depth map shadows

Shadow Blur Radius:
2.0

Shadow Samples:
19

Shadow Min Bias:
0.858002

Preview Shadow Map Size:
512

☐ Ambient Occlusion
Strength:
0.700000

Scene AO Options

Atmosphere Strength:
0.010000

Attenuation ▼ Inverse Square

Volumetric Lights

- Volumetric lights are really powerful tools. You can use them to create an atmosphere, to emulate mist or fog, or visible rays of light, like sunbeams shining through a window.

- There are two main settings to be aware of when setting up volumetric lights

1. You've no doubt seen the **'Atmosphere strength'** setting in your light properties. Set this to 1.0. Be aware that turning this up won't have any effect on your scene until you turn on the atmosphere elsewhere.

2. Go into the material room tab.

3. Go to the Advanced tab

4. Select '**Atmosphere**' from the Object dropdown

5. Tick the checkbox for '**Volume_On'**.

6. Change the **Volume_Density** setting here to 0.005. Higher volume density settings will increase the brightness of the light.

- We have some misty light!
- The **Volume_StepSize** setting can be used to improve the quality of the volumetric light.
- Lower values result in better quality but longer render times

Volume_StepSize = 0.8   Volume_StepSize = 0.2

- You can then start to plug nodes in to simulate effects like fog. This is when it starts to get exciting! By playing around with the different types of nodes you can plug in, a wide variety of different effects can be achieved.

7. In the Material room, select Atmosphere from the object dropdown

8. Right-click on the node connector next to volume colour, and select New Node > 3D Textures > Clouds
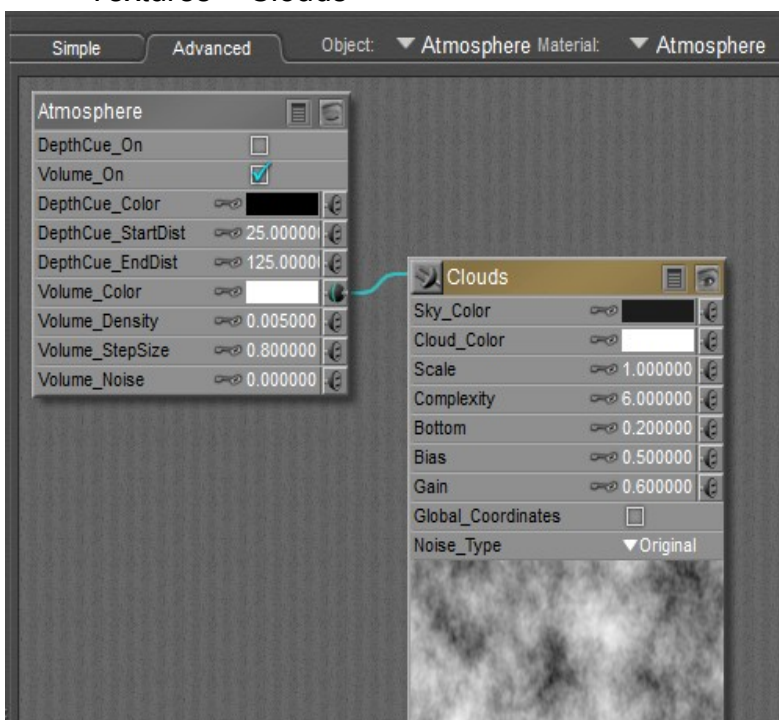
9. Set up the settings as on the left

10. Render

Illustration 6: Instant Fog!

The topics I've covered here just demonstrate some of the things you can do with a single spotlight. The best thing to do is play around with the settings and see what weird and wonderful effects you can produce!

Happy rendering!

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October 2012

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