

Fire Tutorial © Jonathan Koehn

1. Things needed

1.1 Sphereglow transparency this may be substituted but I find this works best. Currently this is not available for download but can be purchased through [Caligari](#) in plusPack 2.

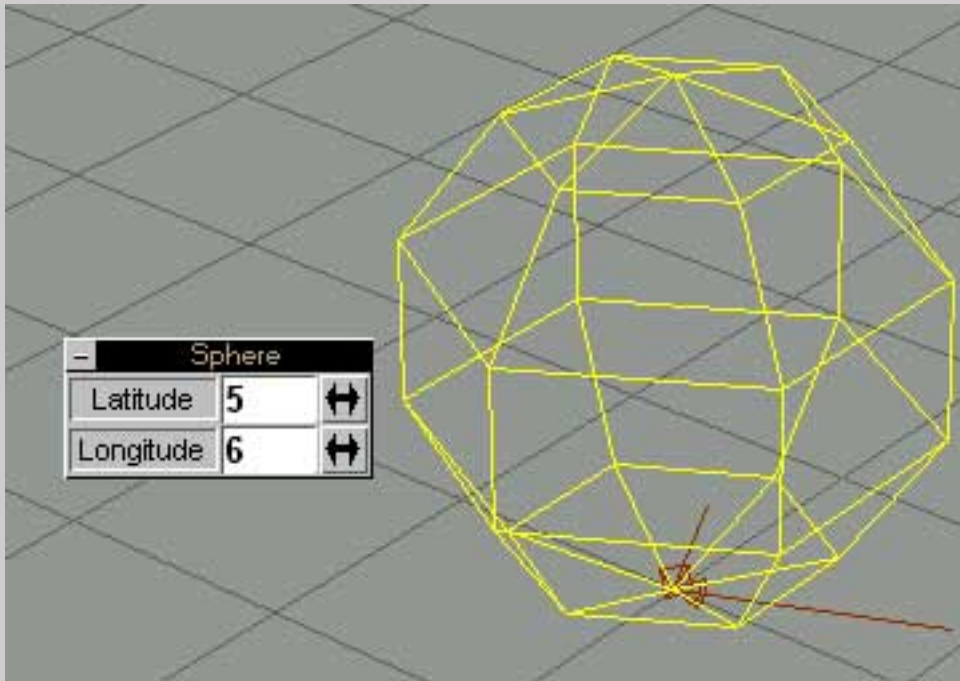
1.2 MBAcloudshader or an appropriate texture for smoke and fire. Available through download from [here](#).

1.3 For the column any particle generator will do or python script. (Note) I have include a python script that makes an ok column.

2. Lets Get started

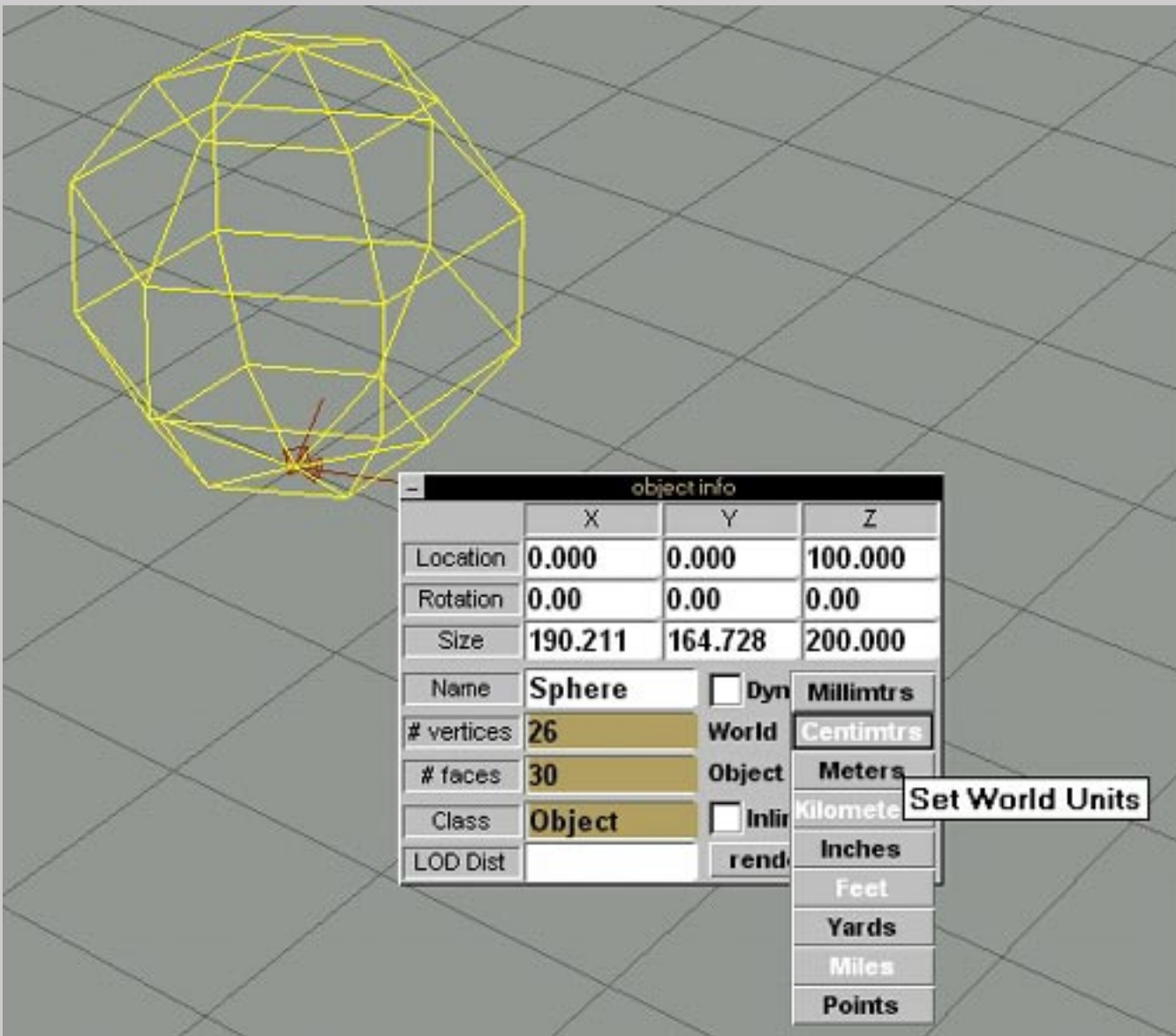
2.1 Make the particle

A sphere with latitude of (5) and longitude of (6) will do fine. This is to keep polygon count down. Refer to Fig.2-a



2.2 Set measurements

Make the object and world properties to either millimeters or centimeters in object info pannel. This makes sure the particle column doesnt get to big. Referr to Fig.2-b



3. Smoke&Fire

I've included 2 python scripts we use the column one for this tutorial. They can be found here. [Column](#) / [Clouds](#)

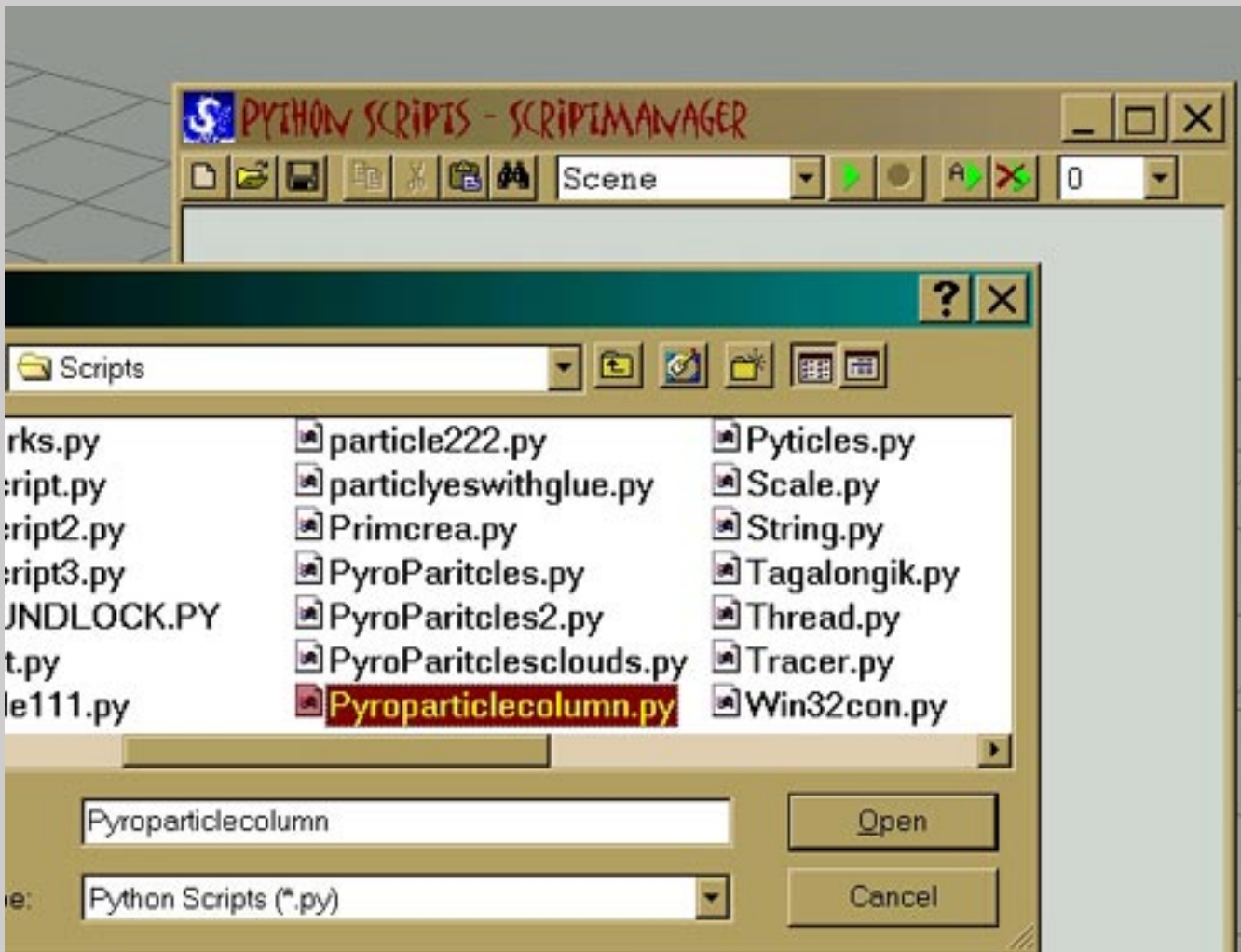
3.1 Particle

Select the above made particle.

3.2 Python or Particle generator

Open python scripts up and then load up the python

script that I included under scene. Or use your own generator.



3.3 Play script

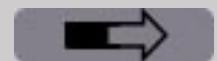
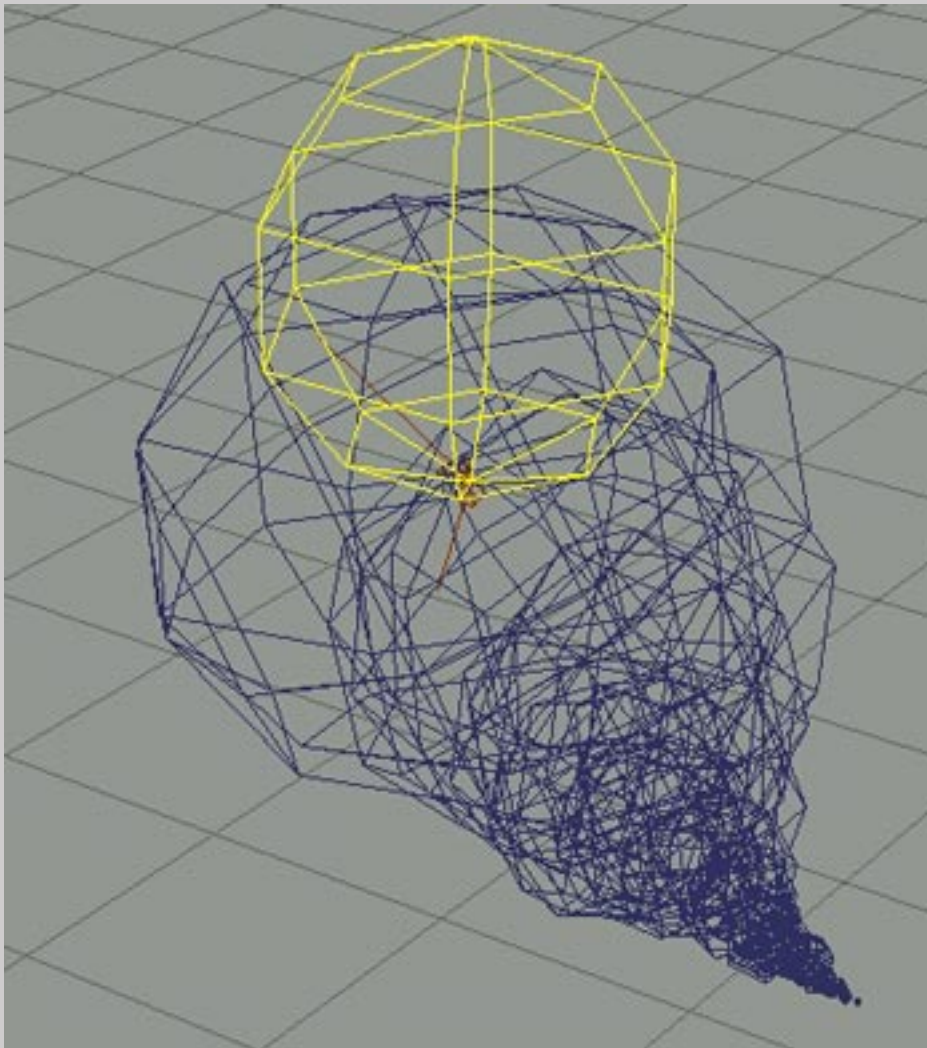
This will create a suitable test column for us. This one only works with stills I would really to see it tried out with animated particles. (Note) Experiment here alot this is where you can get from column, clouds, to atom bomb effects.



3.4 Adjusting

Lets resize it if you did like I did and used centimenters. Go to object info again and divide size by 8 for x,y,z and in the location enter 0,0,250. Then rotate the perspective view so you can see the column. Also delete the original particle.

object info			
	X	Y	Z
Location	0.000	0.000	0.000
Rotation	-32.01	-29.36	35.85
Size	133.184/8	353.909	354.236



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4. Material

4.1 Smoke

Lets get MBA out or a texture make a texture that works good for the smoke. Here's a setting you might try. Brown, 1 Black, 1 Darkred almost black, 1 I'd make one redish-dark grey. Use matte with full diffusion and 0 ambient. For transparency we will use one of our secret ingredients, Spherglow transparency with these settings: attentuation of 1.80

(Note) Experiment with the transparency settings also experiment with steam columns. Save this to a new material library.



4.2 Fire

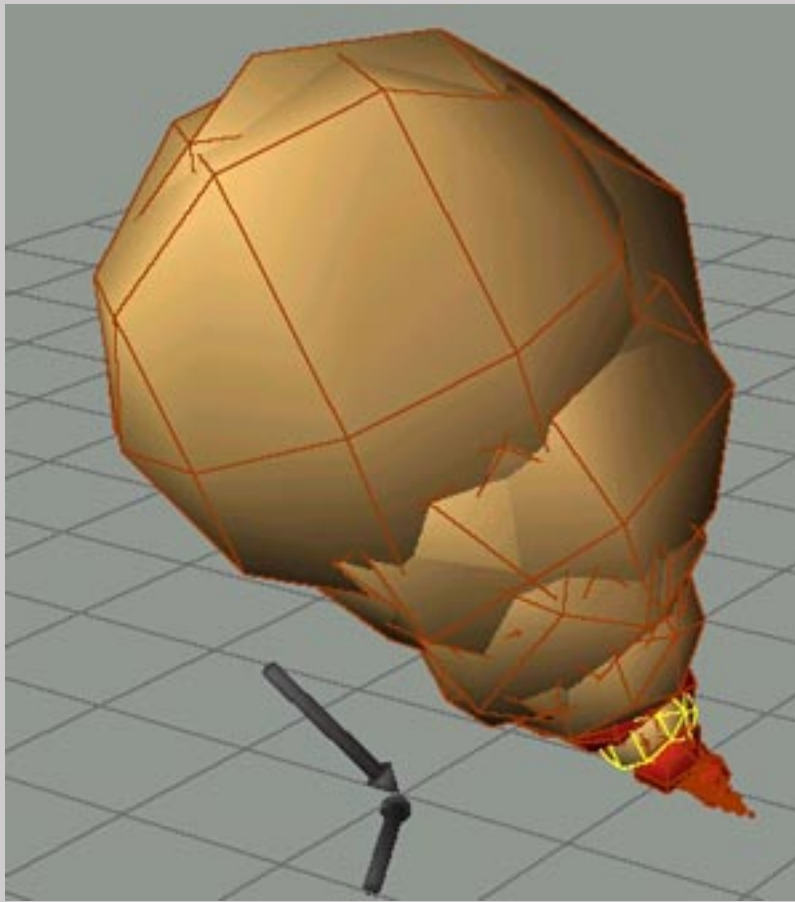
Same as above except for the color but I've found a fair solution for fire with MBA. First color orange set at like 5, next one red set at 1 and finally yellow set at .5. Save this to a new material library.



4.3 Texturing

Paint the whole column with the smoke material you made. Then step through the particles by first pressing the down arrow key then pressing right or left. The particles at the bottom we want as fire so paint them with the second material you made. Step up through the column painting the particles with fire till about 1/3 of the way up. And at this point you want to start varying the materials, so make some fire and some smoke. Then leave the top 2/3 smoke.





5. Shadows

5.1 Blend

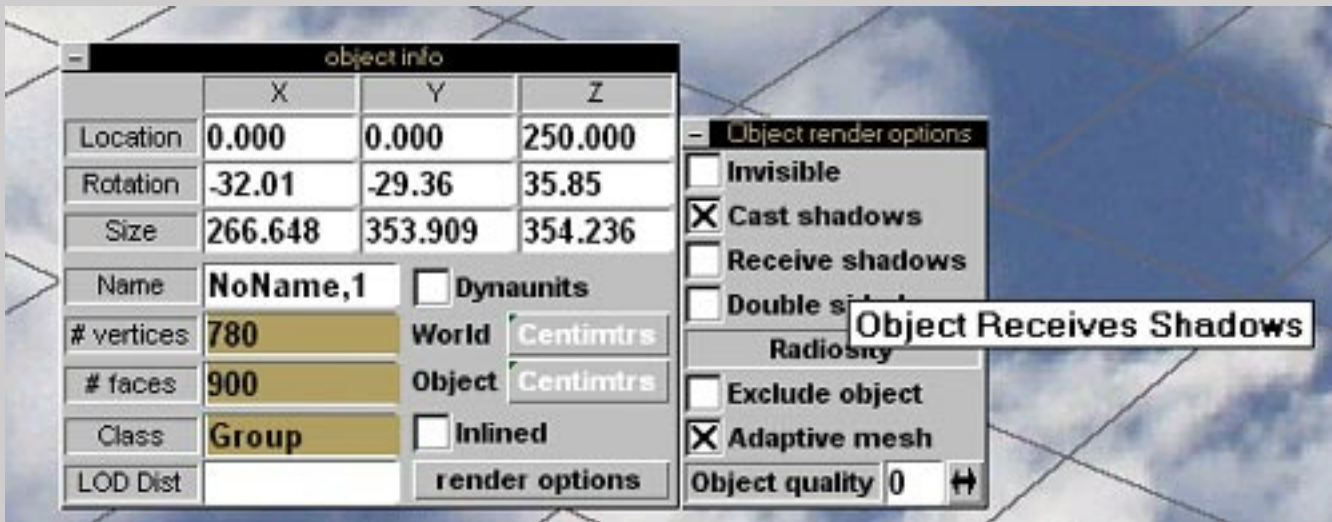
If you render now with a shadow casting light you may notice something about the particles being too dark in some places, this is where they might be catching shadows.

(Note) I didn't put enough fire into the smoke. It should be like in the scene with the barrel.



5.2 Fix it

Another secret ingredient. Select the whole column. In object info under render options make sure Receive shadows is not checked. :)



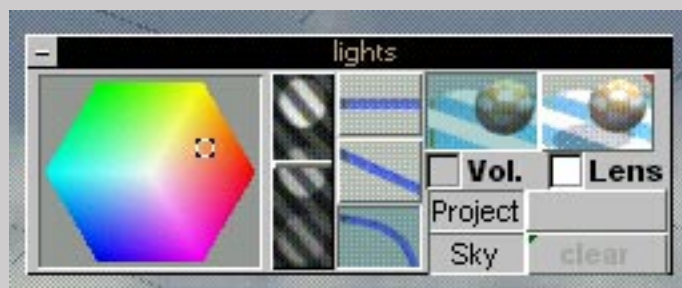
6. Lights

Finally lets do a bit of lighting for the fire.

6.1 Make a ground object this is so we can see our lighting better.

6.2 Fire ring lights.

Make 4 locals with these settings. Arrange these around the middle portion of the flame.



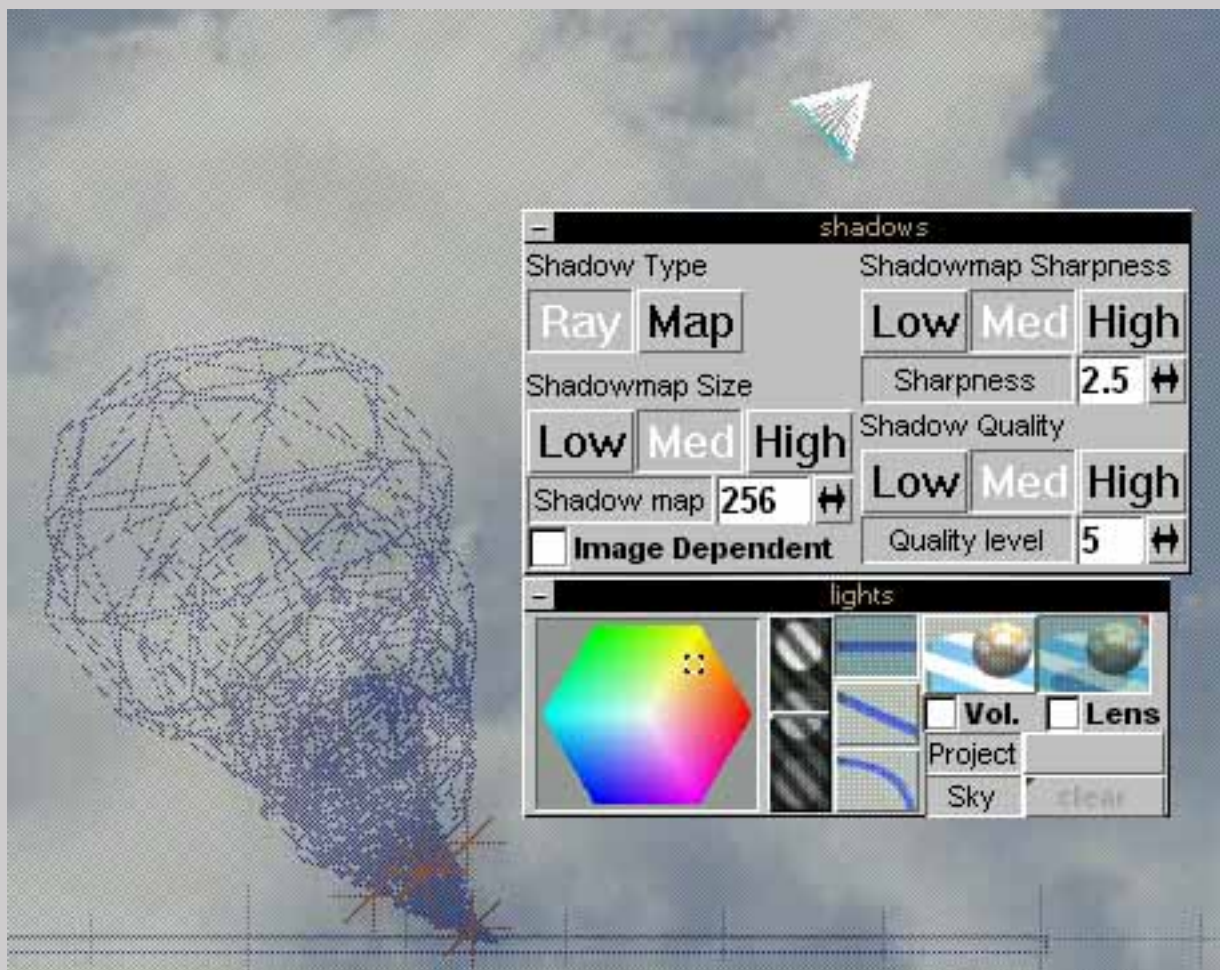


6.3 Fire center light.

Make 1 local with these settings.



And place it at the bottom center of the flame.





7. Brought to you by Jonathan Koehn.

Special thanks to Terry Halladay. For all the much appreciated help.

Thanks Darren Waschow and Kevin Barnett for trying giving me the much needed feed back on the tutorial.

Thanks IRC #truespace for looking at all the test renders and for all the feed back :)

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