

'Facet Designer' - Newsletter 04

WHERE ARE 'BLIKI' FROM ?

WHAT ARE 'BLIKI' ?

The Russians have copied words from us if they had none as suitable. We should copy one of theirs; it will save time and space in many discussions here. 'Bliki' (pronounced 'bleekee') means 'speck of light'; Anton uses it in his articles.

MAKE YOUR OWN SPOT LIGHT

Fig.1 is a 'picture' I made with the 'Paint' program. Of the many I made, I like this little spot best because I can select individual light sources on the *Map of Illumination* which correspond to single 'bliki' on the surface of the gem. A more central spot might be better for some studies. I find it necessary to use this picture in bitmap format (*.bmp).

Again I use the Tolkowsky diamond because it has been the subject of so much detailed interest and discussion.

I have set *Transparent* to only 4 reflections for this study.

Guidelines for this effort were presented in Tips # 03:

- 1) The gem turns in the sphere only if you drag IT directly (right click on gem image to reset it if necessary).
- 2) Use LEFT mouse button to move sphere to a different view.
- 3) Use RIGHT mouse button to move light on the sphere.

FINDING THE ARROW AGAIN

Fig.2 shows that I have selected the customizing sphere (far right under *RayTracing*), painted the back side of the sphere red, and the front side with my spot picture. Use the RIGHT mouse button to move the spot around the sphere; the gem and sphere don't move - only the light. You will see the spots much better if you maximize the *Light Map* (black arrow).

In Fig.2 the light covers the two brightest spots near the axis of the sphere and gem. These illuminate the two components of the familiar 'arrow', which is normally seen as black when the viewer's head blocks these pairs.

A DIRECT REFLECTION

In Fig.3 I found a spot near the horizon and on a meridian (green arrow) which is a direct reflection of a 'main' facet (yellow arrow). It is logical that the mains are on meridians; we know that surface reflections come from wide angles.

The reflection is dim because it is only part of the light source; much of this beam is refracted into the gem and passes out somewhere else (perhaps the pavilion). Can you find it?

Surface reflections from the 'stars' should be higher up and halfway between the meridians; you should find them easily.

A BIGGER SPOT LIGHT

Fig.4 uses a different 'picture' with a bigger spot; the sphere and gem have been turned to see the spots on the pavilion side. With this I was able to cover a pair of spots and show partial exit of light from these at the perimeter of the crown view = the infamous 'wedges' discussed in Newsletter 03.

They are not bright, like the arrows in Fig.2; apparently they are a lower percent of the light that originally entered. Where did the rest of it go? You can spend hours pursuing questions like this = educational and/or fun for some of us.

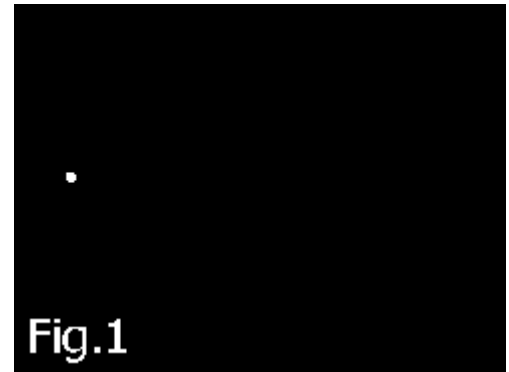


Fig.1

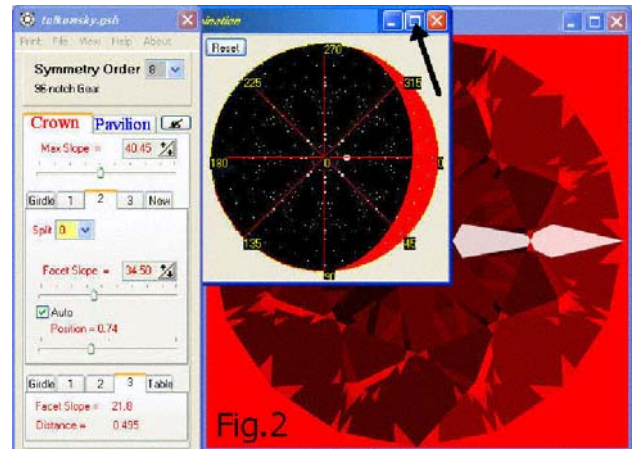


Fig.2

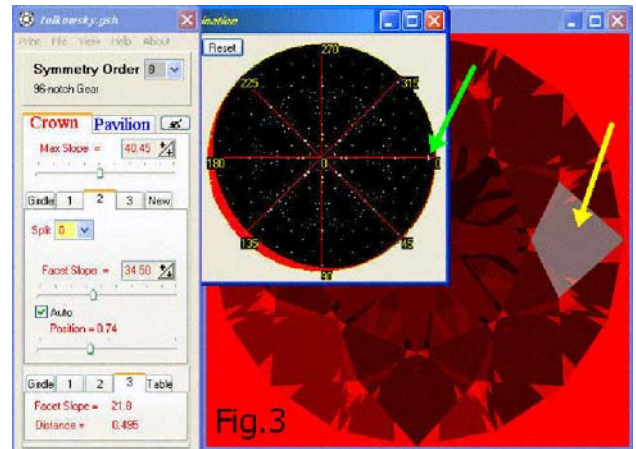


Fig.3



Fig.4