

## Cutting the Kiev Triangle in feldspar

by Jeff Theesfeld Material: Feldspar (including Moonstone, Orthoclase, and Labradorite)

Width: 12 mm +/- 0.1 mm. Girdle: 0.3 mm +/- 0.1 mm

The Kiev Triangle was one of the gems included in the 2007 North American Faceting Challenge (NAFC). Because of this, a CAM preform design is included on the USFG Single Stone Competition homepage. I used this preform to set an exact girdle outline and calibrate the size of the gem. I started with a piece of New Mexico sunstone rough only slightly over the required size. Thus, I had very little material to remove from this gem. As such, I started cutting with a newer 1200 grit lap. I also did this to minimize any subsurface damage near the final facet locations. That meant there were only going to be 2 laps used for this cut, my 1200 grit pre-polish lap, and my Cerium oxide final polish lap. I "preformed" my rough using the CAM preform. I left plenty of material for the pre-polish. Once I had the girdle pattern I was happy with, I cut in the pavilion break facets and leveled the girdle. (Note: I could have polished the girdle and pavilion break facets at this time, and I wished I had) The hardest part of this design is getting the corner triangle facets nice and level with the rest of the girdle. If that is not done to perfection, errors will multiply rapidly. I was somewhat surprised at how well the fine corner edge facets snuck into place, but there is a significant challenge to get all the meets just right. My strategy was to make the 1200 pre-polish meets as perfect as possible, to allow only one fine polish step. This was difficult, and the final result was having to re-cut some facets with 1200 grit, then re-polish. Although this worked, my final size came in just under the 12mm +/- 0.1 mm requirement. It turned out 11.88 mm, so beware of this issue and avoid it with pre-planning. I was able to follow all listed sequences, but no matter what I did, I had to tweek most of the meets on the corner facets. I also had to account for softer and harder facets around the gem. I would think this is not uncommon for so many small, fine facets. This will prove to be a very challenging design to cut for this competition. I believe cutting and polishing this design in soft feldspar, for this competition, will prove to be much more difficult to finish, than it did in 2007, in a harder material like CZ.