

1079-52-356

**Joy Marie D'Andrea\*** (jdandrea@mail.usf.edu), 4202 E. Fowler Ave, Tampa, FL 33620.

*Transversals of Crystal Nets.*

In crystallography, a crystal net is a three-dimensional Euclidean graph whose vertices or nodes are points in three-dimensional Euclidean space, and whose edges (or bonds or spacers) are line segments connecting pairs of vertices. For example, the program (Gavrog) Systre is often used to study crystal nets and show the results of how many different vertices (atoms) and edges there may be in the net. The number of different vertices and edges are also known as ‘orbits’. Given the number of orbits of vertices and edges of a crystal net, one can obtain a ‘connected fundamental transversal’ of a crystal net. A *connected fundamental transversal* of a crystal net intersects each orbit of vertices and edges exactly once. In following the construction demonstrated by Warren Dicks and M.J Dunwoody, we will present a formal description of a connected fundamental transversal of a crystal net and provide various examples. (Received January 17, 2012)