1098-52-75 **Barry Monson*** (bmonson@unb.ca), Dept. Math/Stat, UNB, Box 4400, Fredericton, NB E3B 5A3, Canada, and **Leah Berman**, **Mark Mixer**, **Deborah Oliveros** and **Gordon Williams**.
Pyramids in 3-space and Crystallographic Groups in 4-space.

The monodromy group $M(\mathcal{P})$ for a polyhedron $\mathcal{P}$ (or indeed for any convex, even abstract, d-polytope $\mathcal{P}$) is a combinatorial invariant of $\mathcal{P}$. This group somehow encodes the essential structural features of the polytope. Intuitively, $M(\mathcal{P})$ describes how an abstract set $\mathcal{F}$ of *flags* can be assembled to produce $\mathcal{P}$.

Recently (*Discrete Mathematics*, in press) we have completely described $M(\mathcal{P})$ when $\mathcal{P}$ is an ordinary pyramid over an n-gonal base. Though $\mathcal{P}$ itself is very familiar, $M(\mathcal{P})$ has some interesting features.

Here we focus on the extreme cases $n = 2$ and ∞. In the first instance, when $\mathcal{P}$ is the rather modest pyramid over the digon, $M(\mathcal{P})$ is, surprisingly, isomorphic to the symmetry group of a 4-cube. And, at the other extreme, when $n = \infty$, $M(\mathcal{P})$ acts, in a natural way, as a crystallographic group in real 4-space.

But why dimension 4? Well, look at a pyramid and count flag orbits under the action of the automorphism group of the base. (Received January 10, 2014)