1125-57-3070   **William Ballinger**, **Ching-Yun Hsu**, **Wyatt Mackey**, **Yi Ni**, **Tynan Ochse** and **Faramarz Vafaee*** (`vafaee@caltech.edu`), 1200 E California Blvd, Pasadena, CA 91125. *The prism manifold realization problem.*

The spherical manifold realization problem asks which spherical three-manifolds arise by surgery on knots in S^3. In recent years, the realization problem for C,T,O,I-type spherical manifolds has been solved, leaving the D-type spherical manifolds (aka prism manifolds) as the only remaining case. Every prism manifold can be parametrized as $P(p, q)$, for a pair of relatively prime integers $p > 1$ and q. We determine a complete list of prism manifolds $P(p, q)$ that can be realized by positive integral surgery on knots in S^3 when $q < 0$. The general methodology undertaken to obtain the classification is similar to that of Greene for lens spaces. The arguments rely on tools from Floer homology and lattice theory, and are primarily combinatorial in nature. (Received September 20, 2016)