Asteroids are the most numerous group of bodies in our Solar System. However, our observations are limited because of their size and distance. Occultations allow us to determine the shape and size of even the smaller asteroids with kilometer precision. All observations of occultations are publicly available, but not generally used in modelling of asteroids. Even thou occultations can scale models from light curves and solve their pole ambiguity, most models are created only from light curves. The aim of this thesis is to implement occultations in the process of asteroids' modelling. in my bachelor thesis I have scaled already existing models for 274 asteroids thus determined their precise dimensions and solved the pole ambiguity in some cases. In this thesis I have created new models using occultations. The occultations allows me to create new and more precise models than light curves alone with non-convex features, thus expanding our knowledge of asteroids.