

Centimeter-sized meteoroids cause bright meteors, called meteoric fireballs, during their encounter with the Earth's atmosphere. These fireballs can be observed by all-sky photographic methods. In this thesis, bright meteors belonging to major meteor streams are studied. All presented fireballs were recorded during last few years by all-sky photographic cameras from the Czech part of the European Fireball Network, Spain (Leonids 1999 campaign), and from the Australian Desert Network. Physical properties in terms of different methods (end height criterion, beginning heights, apparent ablation coefficient, fragmentation, dynamic pressure at the height of fragmentation or terminal flare), very detailed light curves (periodic changes of brightness, afterglow, shortlived flares, profiles) and heliocentric orbits are studied by individual showers. Studied meteor showers are Orionids, Geminids, β -Capricornids, Southern α -Aquariids, Leonids and Perseids and a comparison of their main properties was performed. Also comparison with meteorite dropping fireballs was performed.