The aim of this diploma thesis was to study forbidden green oxygen line emission. It was found out that green line emit mainly in heights 100–110 kilometers, exceptionally below 90 kilometers. Time evolution of green line intensity with respect of heights was investigated in detail. There was suggested theoretical dependency and agreement with observed data was fulfilled. Dependency of integral intensity was investigated as well. Mechanisms of excitation and quenching of green line in emission was proposed in previous studies in 70. of previous century. This work discuss with its results. Efficiency of transformation of kinetic energy of meteoroid to forbidden green line's emission was discussed. The concentrations of atomic oxygen was estimated by several way in heights of green line emission.