This thesis is devoted to the description of the Large Synoptics Survey Telescope (LSST) and its use in the physics of small solar–system bodies. Based on the telescope optics parameters and the theory of signal and noise we calculate limiting magnitude of the LSST $(24,9 \pm 0,4)$ mag (in the V band). This value, together with data from MPC and WISE databases, serve as an input parameter for the calculation of the minimum diameter (273 ± 55) m of a main–belt asteroid, that LSST will be able to observe. We also estimated that (160 ± 118) million asteroids could be observable by the LSST. Taking into account the planned observational strategy and cadence, we calculated that a sufficiently bright asteroid will be observed approximately 370 times. Finally, the possible applications of the LSST are discussed: e. g. a development of collisional models, explanation of orbital and rotational dynamics of sub-kilometer objects.