Rascals mission is to perform proximity operations similar to those below, this knowledge and technology can be used to further NASA research in the future. The baseline mission involves Rascal being launched into orbit and being kicked off the rocket. Once Rascal is released from the rocket and stabilized, it can move into checkout mode. During checkout the ground crew establishes contact with Rascal confirming all systems are working properly. Once confirmed all systems are working. Rascal is initiated to start separation between the two 3U spacecraft’s. Upon separation it begins inter-satellite communication, when communication is established Rascal can begin its mission of demonstrating key proximity operations. The first stage is stationkeeping this is maintaining a relative displacement of 10-75 meter sphere of the other spacecraft for at least 5 orbits. Next phase of the mission is to perform an “escape” maneuver an orbital maneuver that increases the relative displacement to at least 100 meters within 1 orbit between two space objects. After completion of the “escape” maneuver the two structures need to perform a rendezvous which is an orbital maneuver that decreases the relative displacement of the spacecraft within 50 meters of the other spacecraft for at least 5 orbits. After that stage is complete the cycle starting with the stationkeeping should be repeated for the secondary spacecraft. To finish the mission after these cycles have been completed the spacecraft’s can be used for extended operations and eventually deorbit. In order for the Rascal mission to be considered successful, it must meet the success criteria listed below.