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Author: Mr. Dylan J. Slocki
University at Buffalo, United States, dylanslo@buffalo.edu

SUPERMASSIVE BLACK HOLES IN GALAXIES AND SIMILARITIES TO CALCULATIONS OF
GRAVITATIONAL LAGRANGE POINTS**Abstract**

This paper looks at the possibility that the super massive black hole in the center of the milky way galaxy and other galaxies is actually the galactic multibody Lagrange point. A galactic Lagrange point would be the Lagrange point from every single mass inside a galaxy. Basically, the center of mass of the galaxy. What this implies is that objects should be pulled towards this point, yet there is nothing there acting like a traditional Lagrange point. Lagrange points are known to be areas in space that exhibit unique properties. Mainly they act like gravitational wells which keep satellites and other celestial bodies trapped orbiting a specific location between to masses. This is due to the net gravity of two objects. The Earth-Sun L points are used for space mission already and the Jupiter-Sun L points noticeably have increased densities of asteroids. This idea originates from expanding on the theoretical limit of what these points can be. Exactly how extreme could their properties get. Furthermore, considering that mass becomes trapped in these points, at what limit would it trap light. While two massive object cannot achieve this, what about all the objects in a galaxy. This would mean that more massive galaxies have more massive black holes and less massive would have very small black holes. What can disprove this is seeing a huge galaxy with a small central black hole or a small galaxy with a large central black hole. Keywords: Galaxy, Lagrange Points, Supermassive Black Holes