

Using Quasars to Map the Magellanic Corona

Text Description

Illustration showing a view of the Milky Way, the Small Magellanic Cloud, and the Large Magellanic Cloud from afar, on a black background of space dotted with distant galaxies and three bright quasars.

Near the top center of the illustration is the Milky Way, which appears as an edge-on disk with a bright bulge in the middle. Halfway between the bulge and the right edge of the disk is a bright circle labeled "Sun." The Milky Way is in the center of a large transparent sphere delineated by lines of latitude and longitude. Within and extended beyond the sphere a semi-transparent cloud of blue labeled, "Milky Way Corona." The blue color fades out with distance from the Milky Way.

Along the edge of the sphere, toward the bottom right, is an arcuate smear of light with two bright cores. The larger core, at the 4:30 position, is labeled "Large Magellanic Cloud." The smaller core, at the 5:00 position, is labeled "Small Magellanic Cloud." An oval-shaped, semi-transparent cloud of purple labeled "Magellanic Corona" surrounds the Large and Small Magellanic Clouds, overlapping with the Milky Way Corona. Scattered throughout the Magellanic Corona are numerous lighter-colored bubbles of different shapes and sizes. The purple coloring fades out with distance from the Magellanic Cloud.

In the dark region of the illustration, toward the bottom right, past the edge of the Magellanic Corona, are three bright white points labeled "Quasars." Projecting out from each quasar is a white line with arrows pointing toward the Sun. The lines pass through the Magellanic Corona and the Milky Way Corona, becoming thinner and more transparent with distance away from the quasar and toward the Sun. These lines represent beams of quasar light that are partially absorbed by the corona before being detected by the telescopes. Each beam passes through a different part of the Magellanic Corona (a different distance from the center of the Large Magellanic Cloud).

Alt Text

Illustration showing the Milky Way, Small Magellanic Cloud, and Large Magellanic Cloud from afar, with three bright quasars. Milky Way appears as edge-on disk with bright central bulge. Halfway between bulge and right edge of the disk is the Sun. Surrounding the Milky Way is a semi-transparent cloud of blue labeled, "Milky Way Corona," fading with distance. Toward bottom right, is a smear of light with two bright cores, one labeled "Large Magellanic Cloud" and another labeled "Small Magellanic Cloud." An elliptical, semi-transparent cloud of purple labeled "Magellanic Corona" surrounds Magellanic Clouds, fading with distance. Farther toward the bottom right, past the Magellanic Corona, are three bright white points labeled "Quasars." Projecting from each quasar is a white line with arrows pointing toward the Sun. The lines pass through both coronas, becoming thinner and more transparent with distance away from the quasar and toward the Sun. Each beam passes through a different part of the Magellanic Corona.