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The Realm of the Galaxies

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With the long-awaited arrival of spring, Earth's orbit points us away from the plane of the Milky Way galaxy during the warmer nights.

Familiar winter constellations like Orion begin to set in the west with the onset of darkness, bringing the spring constellations of Leo, Virgo, Coma Bernices and Ursa Major into prominence. It is within these that hosts of galaxies reside.

The North Galactic Pole, the point in the sky directly over the centre of our galaxy, is in the constellation Coma Bernices. With our night sky pointing away from the hustle and bustle of the plane of the Milky Way, we can see deep into the sky without objects being obscured or dimmed by looking through our galaxy.

In spring skies we are treated to views of the closest cluster of galaxies in Virgo of which our local group of galaxies are outlying members. Here galaxies are so numerous that they seem to outnumber the visible stars. Estimates of the total number are between 1,200 and 2,000 and the average distance is 53 million light years (a light year is about 10 trillion kilometres).

As with virtually all clusters of galaxies, the Virgo Cluster is anchored by large, massive elliptical galaxies, in this case the galaxies M49, 60, and 87. These main bodies are surrounded by clouds of lesser galaxies. The galaxy M87 is an extremely massive galaxy that contains 2.7 trillion stars with a supermassive black hole at the centre. Visible in large amateur telescopes is one of the plasma jets emanating from the black hole and is one of the best indicators of the existence of such objects. The Lethbridge Astronomy Society's C14 telescope has imaged this object using our special astrovideo camera – an amazing sight to behold.

Can you see this host of galaxies easily? Even 10 X 50 binoculars will begin to show the fuzzy patches with larger optics showing more. A six-inch telescope will allow you to see all of the brighter members. The main area of the galaxy cluster is centred two-thirds of the way on a line drawn from Denebola, the bright star that forms the tail of Leo, and Vindemiatrix, a relatively bright star (2,8 magnitude) in Virgo.

Even in a modest telescope so many galaxies become visible that identification becomes difficult. When viewing them, consider that these dim fuzzy patches represent huge stellar systems at immense distances and that we, our galaxy, is a member of this family group.

