

Our place in the Milky Way Galaxy

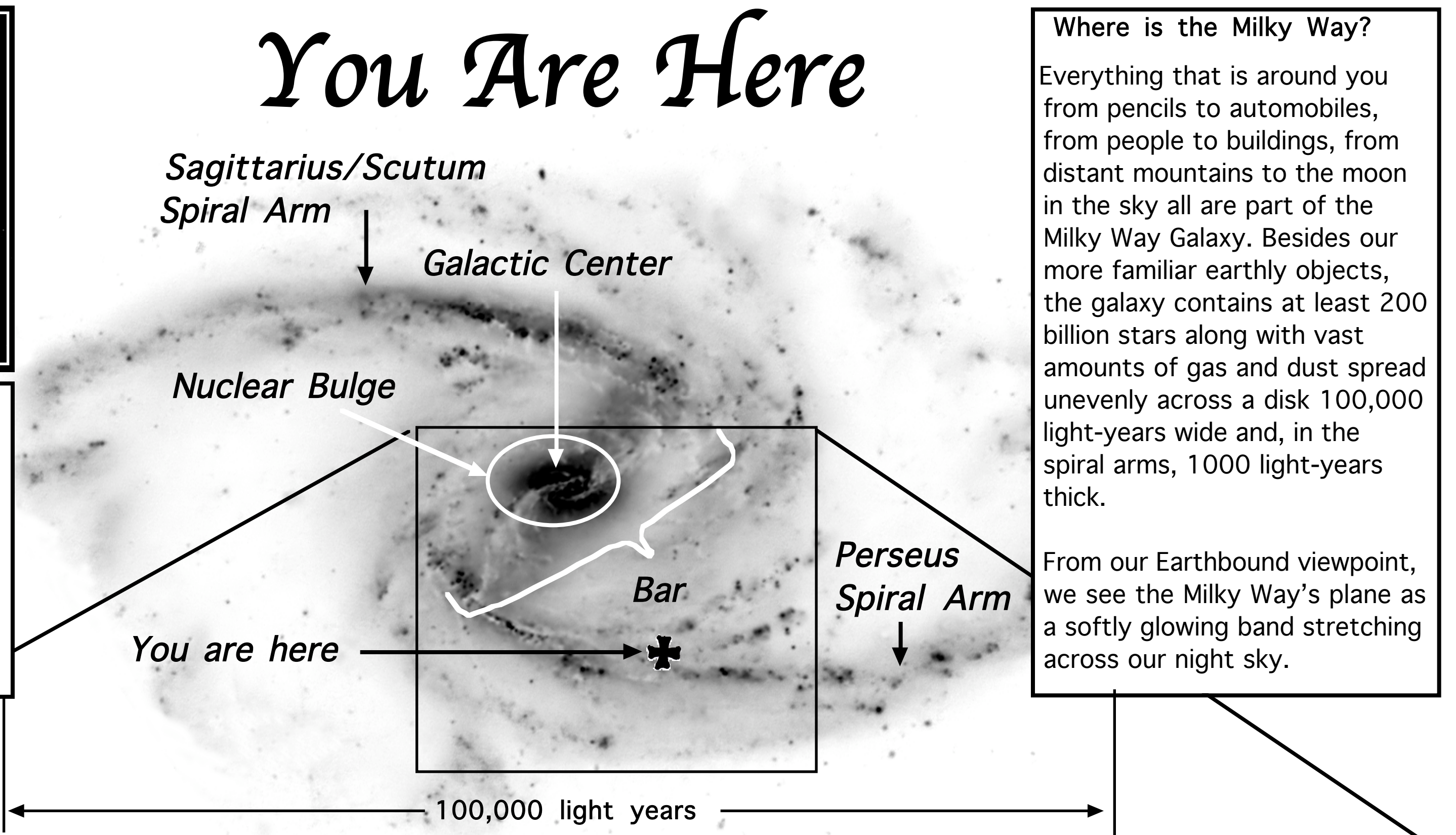
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Our barred spiral galaxy

Many astronomers believe that the appearance of the Milky Way Galaxy resembles that of the 60 million light year distant barred spiral galaxy NGC 1365.

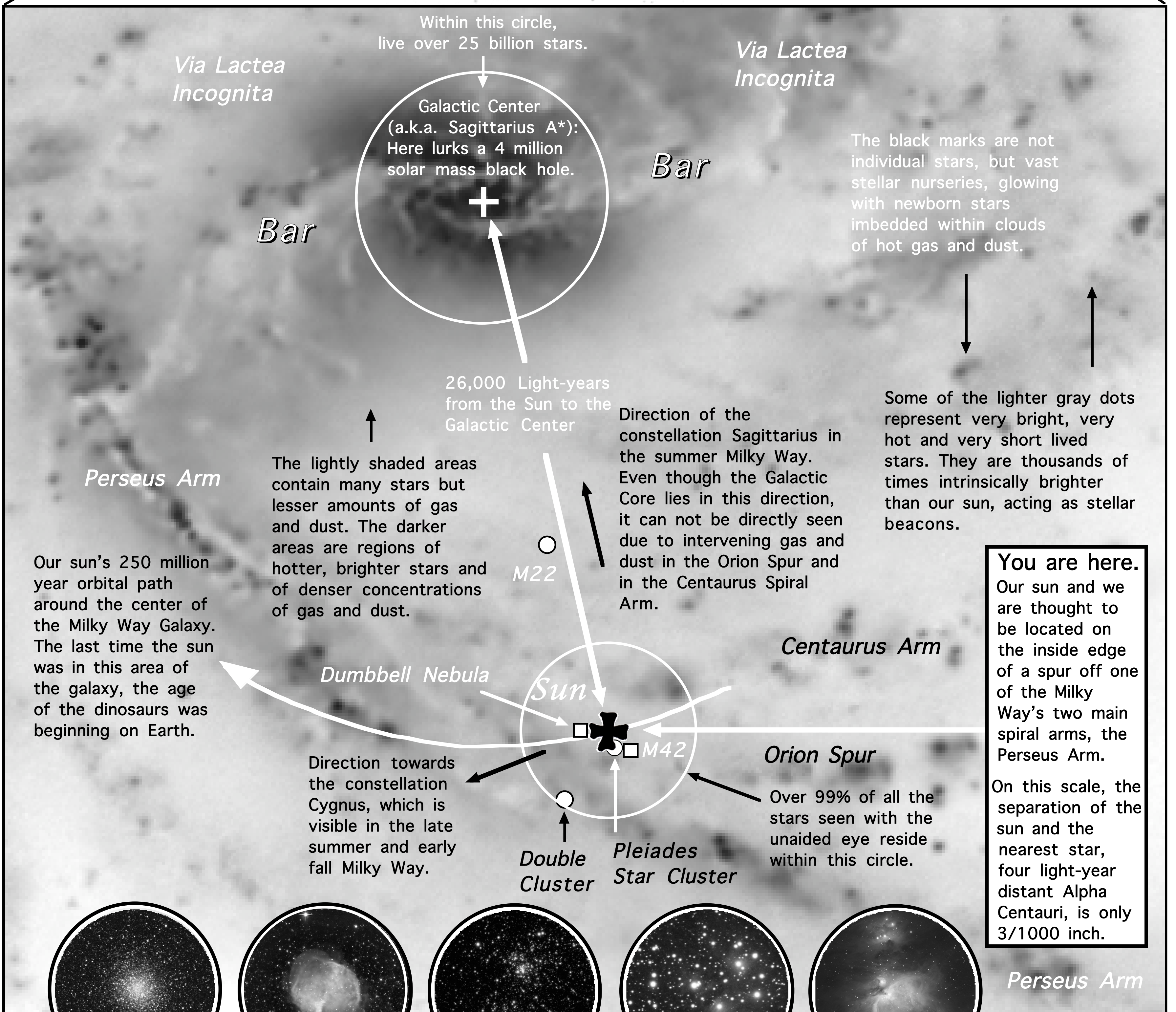
Original source image of NGC 1365 courtesy of NOAO/AURA/NSF.



Where is the Milky Way?

Everything that is around you from pencils to automobiles, from people to buildings, from distant mountains to the moon in the sky all are part of the Milky Way Galaxy. Besides our more familiar earthly objects, the galaxy contains at least 200 billion stars along with vast amounts of gas and dust spread unevenly across a disk 100,000 light-years wide and, in the spiral arms, 1000 light-years thick.

From our Earthbound viewpoint, we see the Milky Way's plane as a softly glowing band stretching across our night sky.



Via Lactea Incognita

Within this circle, live over 25 billion stars.

Galactic Center (a.k.a. Sagittarius A*): Here lurks a 4 million solar mass black hole.

Via Lactea Incognita

Bar

The black marks are not individual stars, but vast stellar nurseries, glowing with newborn stars imbedded within clouds of hot gas and dust.

Bar

26,000 Light-years from the Sun to the Galactic Center

Direction of the constellation Sagittarius in the summer Milky Way. Even though the Galactic Core lies in this direction, it can not be directly seen due to intervening gas and dust in the Orion Spur and in the Centaurus Spiral Arm.

Some of the lighter gray dots represent very bright, very hot and very short lived stars. They are thousands of times intrinsically brighter than our sun, acting as stellar beacons.

Perseus Arm

The lightly shaded areas contain many stars but lesser amounts of gas and dust. The darker areas are regions of hotter, brighter stars and of denser concentrations of gas and dust.

Centaurus Arm

Our sun's 250 million year orbital path around the center of the Milky Way Galaxy. The last time the sun was in this area of the galaxy, the age of the dinosaurs was beginning on Earth.

Dumbbell Nebula

Direction towards the constellation Cygnus, which is visible in the late summer and early fall Milky Way.

Double Cluster

Pleiades Star Cluster

Orion Spur

Over 99% of all the stars seen with the unaided eye reside within this circle.

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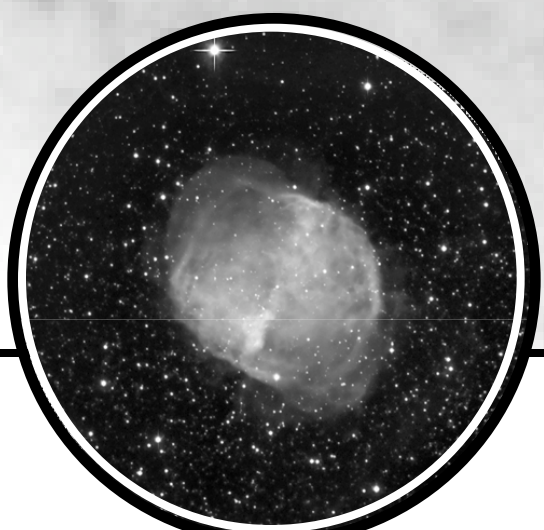
Our sun and we are thought to be located on the inside edge of a spur off one of the Milky Way's two main spiral arms, the Perseus Arm.

On this scale, the separation of the sun and the nearest star, four light-year distant Alpha Centauri, is only 3/1000 inch.

Perseus Arm



M22 Cluster
A popular summer telescope object imbedded in the star fields of Sagittarius. It glows, 10,000 light-years towards the center of the galaxy.



The Dumbbell Nebula
At a distance of 1300 light-years, this 2 light-year wide cloud of gas and dust is the ejecta from a dying star.

Michael Good,
Roanoke Valley
Astronomical Society



The Double Cluster
Glowing dimly in the fall Milky Way, its true nature is revealed with binoculars. It lies 7000 light-years away, making it the farthest object in the Milky Way that is visible to unaided eyes.

Gary Hatfield



The Pleiades
An easy to see star cluster in the fall sky, also known as the "Seven Sisters." It lies 370 light-years from Earth.

Gary Hatfield,
Starry Estate
Observatory



M42
A stargazer's favorite object in the winter sky, the 1600 light-year distant nebula, M42, is easily seen in the constellation Orion.

Brian Kimball,
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Astronomical League
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