

Galactic plane

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The **galactic plane** is the plane in which the majority of a disk-shaped galaxy's mass lies. The directions perpendicular to the galactic plane point to the **galactic poles**. Most often, in actual usage, the terms "galactic plane" and "galactic poles" are used to refer specifically to the plane and poles of the Milky Way, which is the galaxy in which the Earth is located.

Some galaxies are irregular and do not have any well-defined disk. Even in the case of a barred spiral galaxy like the Milky Way, defining the galactic plane is slightly imprecise and arbitrary since the stars are not perfectly coplanar. In 1959 the IAU defined the position of the Milky Way's north galactic pole as exactly $RA = 12^{\text{h}} 49^{\text{m}}$, $Dec = 27^{\circ} 24'$ in the then-used B1950 epoch; in the currently-used J2000 epoch, after precession is taken into account, its position is $RA 12^{\text{h}} 51^{\text{m}} 26.282^{\text{s}}$, $Dec 27^{\circ} 07' 42.01''$. This position is in Coma Berenices, near the bright star Arcturus; likewise, the south galactic pole lies in the constellation Sculptor.

The "zero of longitude" of galactic coordinates was also defined in 1959 to be at position angle 123° from the north celestial pole. Thus the zero longitude point on the galactic equator was at $17^{\text{h}} 42^{\text{m}} 26.603^{\text{s}}$, $-28^{\circ} 55' 00.445''$ (B1950) or $17^{\text{h}} 45^{\text{m}} 37.224^{\text{s}}$, $-28^{\circ} 56' 10.23''$ (J2000), and its J2000 position angle is 122.932° . The galactic center is located at position angle 31.72° (B1950) or 31.40° (J2000) east of north.

See also

- Galactic coordinate system

External links

- Reid, M. J.; Brunthaler, A. (December 2004), "The Proper Motion of Sagittarius A*. II. The Mass of Sagittarius A*", *The Astrophysical Journal*, **616** (2): 872–884, arXiv:astro-ph/0408107 , Bibcode:2004ApJ...616..872R, doi:10.1086/424960. See appendix for the numbers listed above.

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Categories: Galactic astronomy



Galaxy NGC 4452 is being viewed edge-on from Earth, showing its galactic plane with the nucleus at center.



This edge-on view of the spiral galaxy NGC 891 shows a profile of a dusty galactic plane.

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