

*A Brief Column for the Beginning Stargazer Introducing a New Astronomical Term Each Month*

**A**stronomy is rich with terminology. This column will help beginning stargazers ease into the world of astronomy by *briefly introducing* a new but *basic astronomical term* (word, acronym or abbreviation) each month. This list, which began January 1999 with the letter *a*, is alphabetical but uses successive letters for each month's entry. (We will return to the letter *a* after twenty-six months.)

## Word of the Month for February 2000

**nebula** (pl. nebulae or nebulas) An interstellar cloud of gas and/or dust. (Latin: a *cloud* or *mist*.) Visible in telescopes as luminous patches or areas of darkness.

Originally any fuzzy appearing, telescopic celestial objects including objects now called *galaxies*. However, astronomers no longer designate galaxies as nebulae since telescopes, at the beginning of the 20<sup>th</sup> century, revealed such nebulae also contained stars. The term *extragalactic nebula* is also obsolete.

Astronomers recognize three basic types of nebulae depending on how each is illuminated or revealed. The first two are *bright nebulae*; the third is a *dark nebula*:

**emission nebula** Gas glows or shines by its own light.

**reflection nebula** Material (dust) shines by reflecting (scattering) light from nearby bright stars.

**dark (absorption) nebula** Gas absorbs light from background objects making the nebula appear dark or silhouetted against background bright nebulae or stars.

Other types of nebulae are designated by their morphology and origin. These include:

**bipolar nebula** A luminous (bright) nebula containing two emission lobes, probably resulting from the channeling of gas in opposite directions from a star.

**Bok globule** See *globule*.

**cometary globule** A globule nebula with a bright-rimmed head and a diffuse tail, usually pointing away from a highly luminous, probably young star.

**diffuse nebula** Any irregular or widely spread shaped nebula. May have emission, reflection and dark nebula components. Many represent stellar birthplace regions where new stars are forming. Now often call diffuse nebulae *HII regions* (ionized hydrogen).

**filamentary nebula** Elongated appearing emission nebulae with fine, thread-like structures that are probably sheets of material seen edge-on. They are possibly very old, *supernova remnants* (see below).

**globule** A small, almost spherical dark nebula, probably representing an early state in stellar evolution. *Bok globules* (Bark J. Bok, 1906–83) are small globules, usually less than one *light-year* across. (A light-year is the distance light travels in a year, about six trillion miles or nine trillion kilometers.)

**Herbig-Haro object (HH object)** Peculiar, emission nebulae associated with newly forming stars, possibly from the interaction of a protostar's strong *bipolar flow* (gas streaming outwards in opposing directions) and interstellar gas. Named for George H. Herbig (1920–) and Guillermo Haro (1913–88).

**molecular cloud** Large and small clouds of interstellar material largely containing gas in molecular form.

**planetary nebula** Ring-shaped, circular, dumbbell-like or irregular emission nebulae representing the ejected, expanding shells of gas around some old stars.

**supernova remnant** The expanding shell of gas created by the explosive ejection of stellar material from some old stars that undergo a *supernova explosion*. (catastrophic events that release energy equivalent to billions of stars). ☼

References. J. Mitton 1991, *Concise Dictionary of Astronomy* (Oxford Univ. Press); I. Ridpath 1997, *A Dictionary of Astronomy* (Oxford Univ. Press).