

INTERESTING FACTS ABOUT THE
BLAZAR

1ES1011+496

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ITS ORIGINS...



WHAT IS A FERMI BLAZAR?

THE BLAZAR FERMI J1015.0+4926, ALSO KNOWN AS 1ES 1011+496, IS A CELESTIAL OBJECT OF GREAT INTEREST TO THE ASTRONOMICAL COMMUNITY. THIS BLAZAR IS CLASSIFIED AS A BL LAC-TYPE OBJECT.

IN THIS WORK, WE WILL PRESENT AN OVERVIEW OF THE PROPERTIES AND CHARACTERISTICS OF THIS BLAZAR, INCLUDING ITS POSITION, DESCRIPTION, DISCOVERY, REDSHIFT, AND GALACTIC DISTANCE

The blazar was discovered on August 1, 2007, by two satellites:

- VERITAS
- MAGIC

The observation was triggered by an optical outburst in March 2007, and the source was observed with the MAGIC telescope from March to May 2007.



WHERE CAN WE FIND IT?

It is located in the constellation Ursa Major, at a declination of $+49^{\circ} 26' 01''$ and a right ascension of 10h 15m 04.1s.

REDSHIFT AND RELATED DATA

Redshift is the phenomenon by which light or other electromagnetic radiation emitted by a receding object has a longer wavelength compared to when it was originally emitted. The redshift of our blazar is 0.212.

Thanks to this, we can calculate the galaxy's distance in megaparsecs (Mpc) using the formula:

$$d = (C \times Z) / H_0,$$

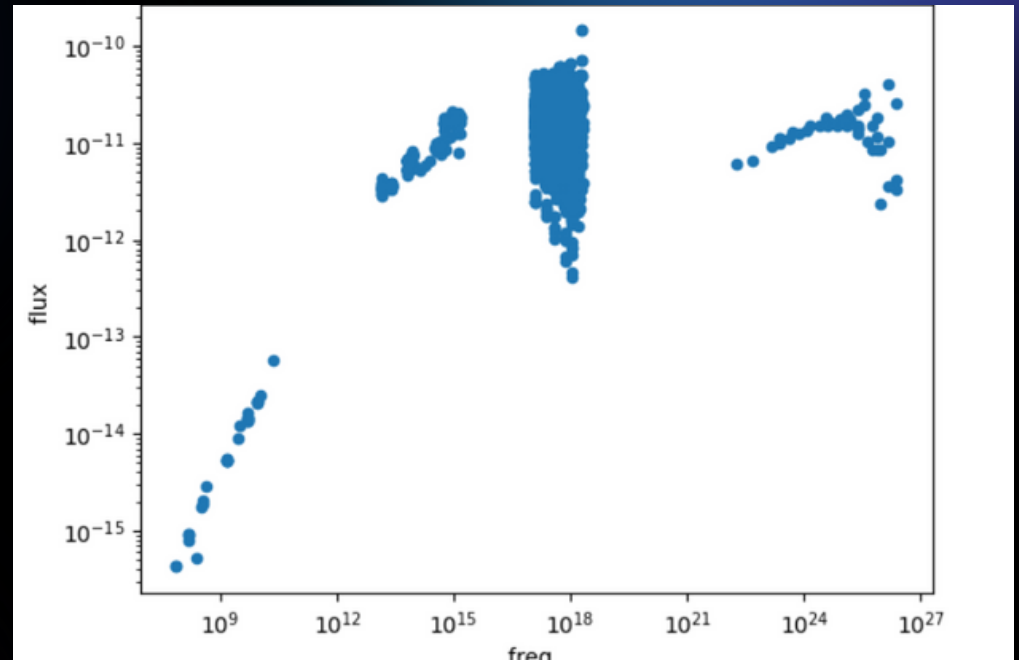
where d is the distance, C is the speed of light constant (2.99×10^9 m/s), Z is the redshift, and H_0 is the Hubble constant (67.15).

The final result of the calculation is: 9,439,761.727.

THE SED (SPECTRAL ENERGY DISTRIBUTION)

The SED (Spectral Energy Distribution) represents the distribution of energy emitted by an astronomical object, such as a blazar, as a function of frequency. In blazars, the SED typically exhibits a double-hump structure, with two distinct peaks located in different regions of the electromagnetic spectrum:

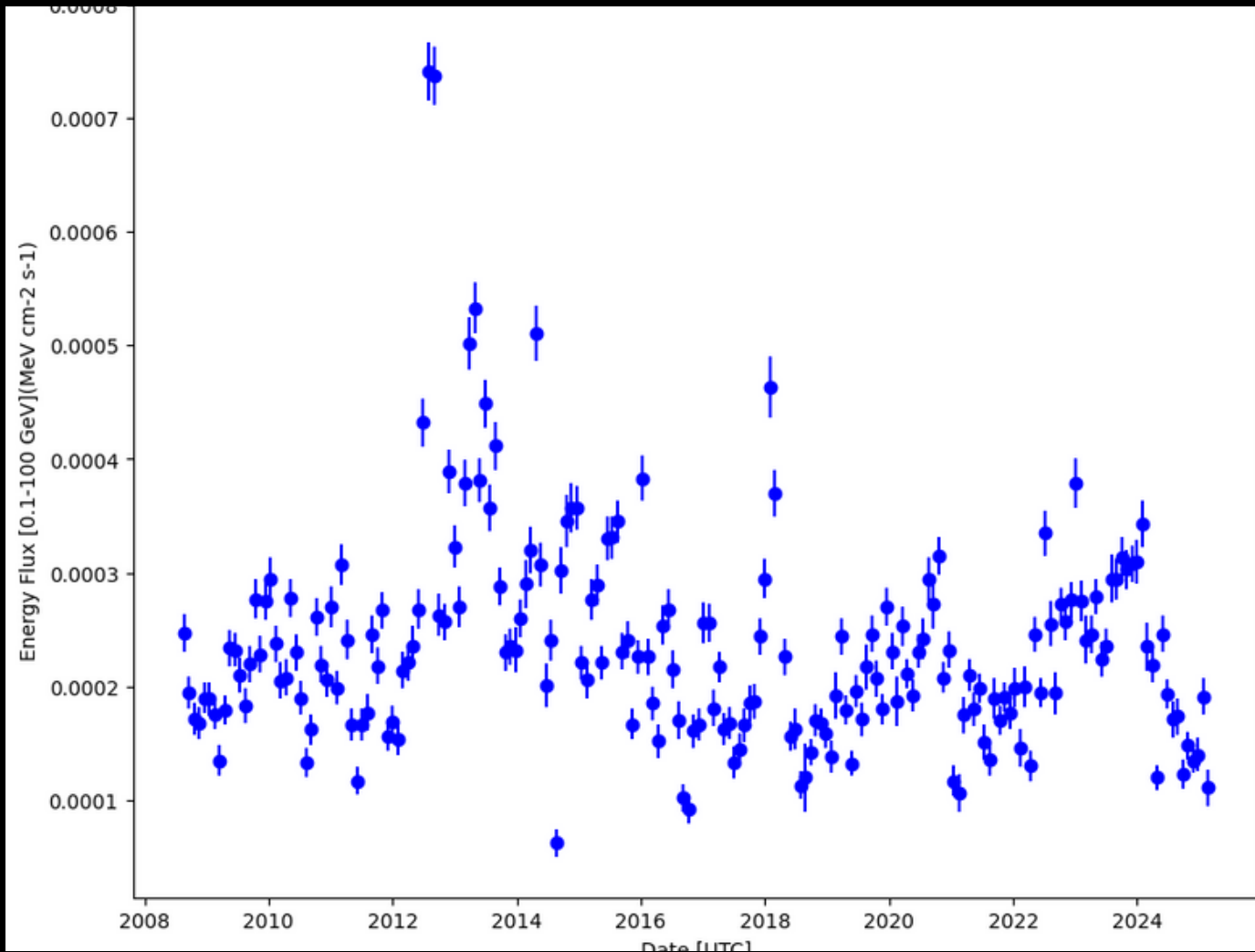
- The first peak is due to synchrotron radiation, occurring at frequencies around 10^{17} Hz.
- The second peak, known as the leptonic peak, falls within the gamma-ray domain. It is caused by inverse Compton emission, with frequencies between 10^{16} and 10^{18} Hz, and is typically located in the ultraviolet or X-ray band.



The analysis of the SED is essential for understanding the emission mechanisms of blazars and their evolution in the universe.

LIGHT CURVE GRAPH

AND



OUR SOURCES

- <https://tevcat2.tevcat.org/sources/agykYI>
- https://firmamento.nyu.edu/data_access
- <https://ui.adsabs.harvard.edu/abs/2011arXiv1110.6341R/abstract>
- <https://ui.adsabs.harvard.edu/abs/2013arXiv1308.0287D/abstract>