The Discovery of the Constant Speed of Light

by James Carter

Credit for the great discovery of the speed of light should be given to Galileo since he was the first person to actually measure its speed by flashing the light from lanterns between mountain tops. With only his heartbeat for a clock, Galileo measured the speed of light to be many miles in less than a heart beat.

Since Galileo, value of the speed of light has continued to be measured to higher and higher degrees of accuracy until the measurements were made of the dipole anisotropy of the 2.7˚ CBR. These measurements can establish a position of absolute photon rest relative to which all CBR photons move at the same constant speed of light C.

When CBR photons are measured from a rapidly moving body such as Earth, the precise 2.7˚ K temperature of the blackbody curve is Doppler-shifted to a slightly warmer temperature in the direction of its motion and a slightly cooler one behind it. The true position of universal absolute photon rest exists at a velocity of about 375 km/sec in the general direction of the constellation Aquarius. From any such location of rest, the CBR would be measured to have the same temperature in all directions.

Binary Pulsars

The observation of binary pulsars offers very convincing experimental evidence that all photons move at exactly C within the common reference frame of photon rest. A binary pulsar emits rapid bursts of X-ray photons at very regular intervals as it revolves around a companion star. When photons from a pulsar are carefully measured, it is found that they are blue shifted when the revolving pulsar is moving toward the earth and red shifted when the pulsar is moving away. Even though the pulsar may be two hundred thousand light years from earth, the photons remain perfectly lined up in their order of emission. They are observed as repeating sequences of first red shifted photons and then blue shifted photons. If the changing motion of the revolving pulsar had any effect on the photons' velocity of C, then the photons could never have remained in their sequence of emission for two hundred thousand years. If any of these photons moved even slightly faster or slower than C, then they would be observed as a jumbled up mixture of red and blue shifted photons.

Binary Pulsar Observations