Sunday, February 10, 2019

Luminance: Observation.

Sirius: a binary star.

Sirius A: star visible to the naked eye is a white star whose mass is 2.1 solar masses.

Age estimated: at around 250 million years.

Surface temperature is about 9,900 K and its diameter about 1,711 times the solar diameter.

Sirius B: a white dwarf (below, to the left of Sirius A)

It was the first white dwarf to be discovered in 1862 by Alvan Graham Clark, and is one of the three best-known white dwarfs, with Procyon B and 40 Eridani B, among which it is the most massive.

The orbit of the Sirius A-B system is fairly strongly elliptical: the distance between the two stars varying between 8.1 and 31.5 astronomical units, for an average distance of 19.5 AU

Previous passes to the system's periast occurred in 1944, 1994, the next being scheduled for 2044.

The angular separation between these two bodies should be large enough to distinguish the two, but the task is made extremely complicated by the extreme contrast of brightness between the two stars.

Sirius B, three times warmer than Sirius A , is especially much smaller, because of its nature of white dwarf, with a diameter comparable to that of the Earth. Its brightness is therefore much lower than that of Sirius A , with an apparent magnitude of only 8.44.

The presence of Sirius B and its orbital characteristics can, however, be highlighted by the study of Sirius A's own motion.

It is not rectilinear as it would be for an isolated star, but has a ripple around it a straight rectilinear trajectory.

Today, it is clear that Sirius has always been white, reddish at the horizon, and glittering in a multicolored way by strong atmospheric turbulence, but many journalists and websites want to ignore it and continue to peddle the legend of Sirius red in antiquity.

Sirius is in the constellation Grand Dog and is therefore known as the dog's star.

Just look to the left of Orion east to find Sirius.

Do not confuse it with Jupiter while the brightness is fixed.

youtu.be/Bsz4qb6rY5w

youtu.be/kyLua6dyI34

Please enlarge

From the Earth, Sirius is the brightest star in the sky after the Sun, overtaking Canopus and Arcturus belongs the category of white stars.

Because of its declination, Sirius is never very high above the horizon since the temperate latitudes of the northern hemisphere.

The atmospheric extinction attenuates its brightness compared to Arcturus.

Canopus being, invisible from these latitude.

Because of its proximity and brilliance, Sirius is one of the most studied stars of astronomers and was the subject of several "firsts", including the

detection of its own movement and its radial velocity.

This bring me in October 2018: The spacial luminous power of space.

Complex synonym, but which makes it possible to analyze by decomposing terms, the structure of the luminance.

The surface density of space flow in heavy terminology.

The fluence rate of light in learned terminology.

Synonymous light exitance used when the source is punctual

The word emittance used when the source has a large surface (and whose constant emission temperature is assumed)

The shine if it is a distant star.

Shine, which is an obsolete expression.

It's luminance term used when the light is returned by a receiver body, which becomes a transmitte (and in this case, only half of the space is concerned)

Chrominance if it is a luminance with a specified color gamut.

Chrominance does not mean monochromatic, because this word refers to only 1 color, whereas chrominance refers to a range of color-shade.

Relationship between luminance and other quantities of light study:

- **luminance = luminous intensity-surface**
- **luminance = irradiance-solid angle**
- **luminance = monochromatic luminance x wavelength**

- luminance = brightness-surface x solid angle

- luminance coefficient

Comparison of 2 luminances between 2 conditions of departure of the luminous flux.

- luminance factor: emitting power in light.

Comparison between the luminance re-emitted by a body and that emitted by the black body taken as reference under equivalent conditions.

As we compare luminances and they are proportional to the powers, it is easier to give yϕ in the form of a ratio of 2 powers.

The gray bodies have an emitting power yϕ independent of the wavelength: a gray body emits whitish light of low intensity.

Link

Abstract updates:

As I was recontacted about my abstract and not being scientifically focused, I was directed to test my work in the right place to learn the practice, step by step.

Here it is: SYMPOSIUM E2

Posted by Veronica IN DREAM at 9:06 AM