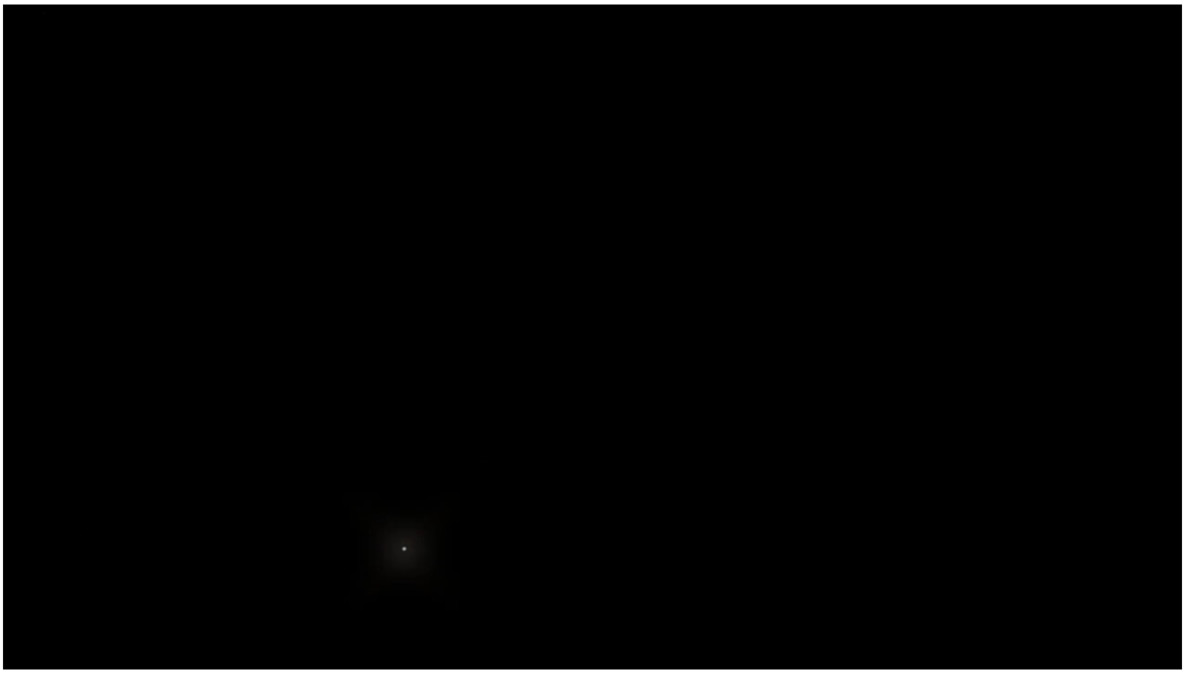
Saturday, May 26, 2018

Some different plans of a same video with some captures of the light signal of Vega star.



1

Terms such astronomical data: absorbtion lines, astronomical units, arcseconds , dust disk, exoplanets, and many more are no longer just a reading.

I recognize and start to find in the texts, what will, with time, enter as data in my brain and be part of common terms.

Art and Science are intimately linked and that fills me.   This is the point.

Last week , i got the edge of the antisocial cliff.

One of the keys seemed to be an area of the brain, the dorsolateral prefrontal cortex, that generates mental stimulations.

This suggests that learning physics is an imaginative process, which is not typically how people think of it.

Focus on VEGA.

Because of its properties, Vega has been the subject of numerous studies by astronomers and has thus played an important role in the history of astronomy many times over.

It was for example the first star other than the Sun to be photographed and whose spectrum was measured.

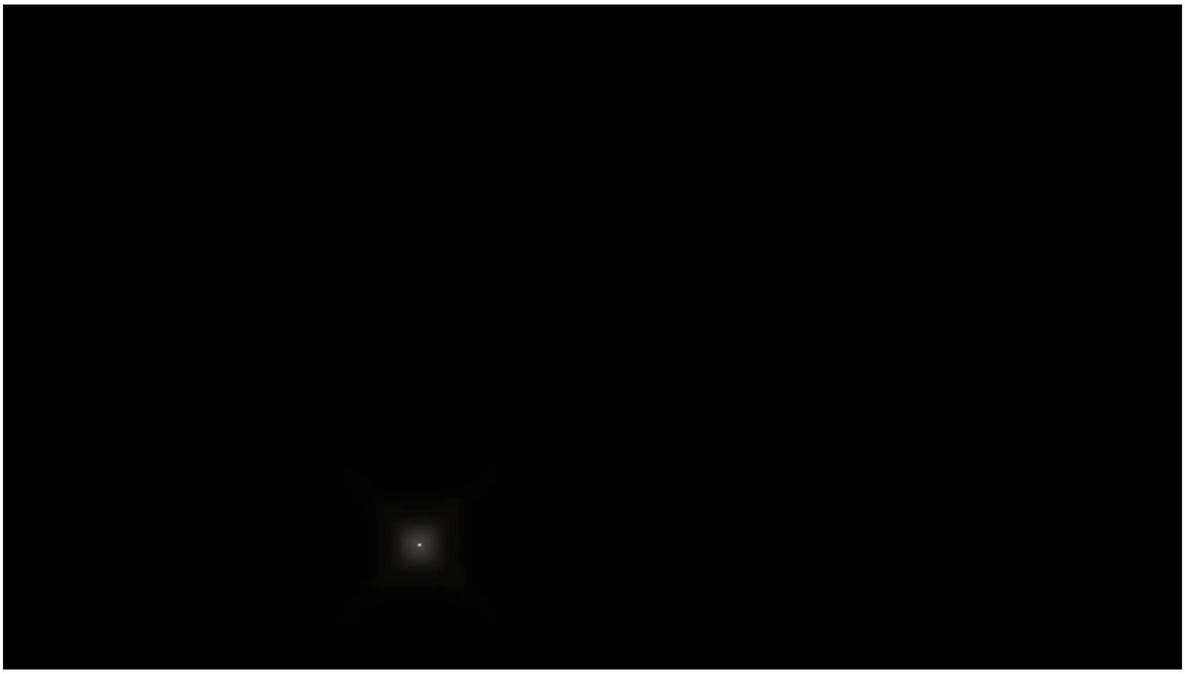
Vega would be a variable star (that is, its brightness would vary periodically)

Measurement of infrared radiation from Vega has determined that the star has a dust disk centered on the star.

Stars with excessive infrared radiation due to dust emissions are called "Vega-like stars"

(Vega-like stars)

The irregularities of the Vega disk suggest the presence of at least one exoplanet, probably the size of Jupiter orbiting the star.



Vega

Vega in the history of observation.

Astrophotography, the photograph of celestial objects, was created in 1840 when John William Draper took an image of the moon using a daguerreotype. On July 17, 1850, Vega became the first star other than the Sun to be photographed.

She was at Harvard College Observatory, also by a daguerreotype.

Draper used Vega in August 1872 to take the first image of a spectrum and was the first to show the presence of absorption lines in the spectrum of a star.

This one being noticeably brighter than all the other stars of the sky, the astronomers chose Vega as reference of the scale of magnitude: the magnitude of Vega was declared null at all the wavelengths.

Thus, for many years, Vega was used to calibrate brightness scales in absolute photometry.

Nowadays, Vega is no longer the reference of the apparent magnitude which is now a digitally specified stream.

This approach is more rigorous because it ignores possible variations in the brightness of the star, and more practical for astronomers because Vega is not always available or observable in good conditions for calibration (especially in the southern hemisphere)

Vega is spectral type A0V.

Vega is a star more massive than the Sun and will spend a billion years on the main sequence, one tenth of the Sun .

The age of the star is between 386 and 511 million years, about half of its life on the main sequence.

After leaving the main sequence, Vega will become a red giant type M and a white dwarf.

At present, Vega has a mass more than twice the size of the Sun and its brightness is about 37 times that of the Sun.

Vega could be a Delta Scuti variable star whose period would be 0.107 days.

The Vega radius was measured with great precision by interferometry.

It was estimated at 2.73 ± 0.01 times the solar radius.

Infrared emissions:

One of the first results of the Infrared Astronomy Satellite (IRAS) was the discovery of an anomaly in the infrared flux coming from Vega:

the flux is greater than that expected for a single star.

This difference was identified at wavelengths of 25, 60 and 100 µm and is due to an area with an angular radius of 10 arcseconds (10 ") centered on the star.

Given the distance from Vega, the area has a radius of 80 astronomical units.

It was suggested that the radiation originated from particles of a millimeter size orbiting Vega; any particle of smaller size should be ejected from the system by the radiation pressure or attracted by the star by the Poynting-Robertson effect.

This last effect is a consequence of the radiation pressure which creates a force opposed to the orbital movement of a particle of dust, causing its fall towards the star.

This effect is more pronounced for small particles near the star.

Subsequent measurements of Vega at the 193 µm wavelength found a lower flux than expected in the case of particles of the order of a millimeter, suggesting that their size should be less than or equal to 100 µm.

The presence of particles of this size is only possible if a source continuously supplies the disk.

One of the possible mechanisms of feeding would be a body disc forming a planet.

Theoretical models of dust distribution indicate that the disk around Vega is circular, with a radius of 120 ua.

In addition, there would be a hole of radius greater than 80 ua in the center of the disc.

Following the discovery of this excess of infrared radiation from the region around Vega, studies have found other stars with the same type of anomaly due to emissions from dust.

In 2002, about 400 stars of this type were identified.

These stars could improve the understanding of the origin of the solar system.

it's a circumpolar star.

Around July 1, Vega reaches its opposition because it reaches its culmination point at solar midnight around this date.

The star is located at a peak of the summer triangle, an asterism formed of Vega stars, α Cygni (Deneb) of the constellation Cygnus and α Aquilae (Altaïr) of the constellation of the Eagle which are all stars of magnitude 0 or 172.

This formation resembles a right triangle whose Vega would be the vertex at the right angle

The summer triangle is recognizable in the skies of the northern hemisphere because there are few bright stars in its vicinity.

The position of stars in the sky changes during the night due to the rotation of the Earth

However, a star in the direction of the Earth's axis of rotation remains in the same position and is thus called the Polar Star.

Posted by Veronica IN DREAM at 8:49 PM