

VENUS AL 2015 by S.Maksymowicz

Here are some thoughts about AL on Venus.

Don't know if this can be a 1st approach of the AL model but this try to illustrate what can appear :

1st part regarding the polarisation light

2nd part regarding the nature of AL.

1- I am continuing to follow Venus.

I did this this morning:

Excellent blue sky transparency with the vision of AL without filter and best with the polaroid filter.

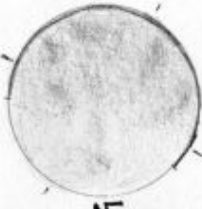
Dark patches were noted converging to a focus point and perpendicular to the Terminator, it seemed.

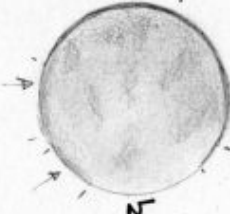
This was also observed when diaphragming to 50mm the refractor.


16-08-15
R100ED TS/G 57.9" K=0,003 Equ. pa: 17.3°
EC=7.9° Height 31°-41°

Notes:

- Excellent sky transparency.
- AL seen without filter with coppered hue on terminator.
- The best seen with polaroid filter and adequate settlements.


SH25UT w.F.
45x S=6.7/10


SH25UT w.F.
72-118x S=6.7/10
C111 = 332° C112 : 356°


SH25UT Polaroid
37x S=7/10
stopped by clouds.

S. MAKSYMOWICZ
Equatorially - FRA -

I am sorry but again, generally speaking it is researched a night and day effect, without filter, with, with polaroid.

This is subtle indeed, colored filters may improve a SNR ratio only, from my exercises and experience now the polaroid gives the best ratio when the filter is well settled.

I think if you don't see some light merging on DS, you have low chance to exhibit the light even with a polaroid.

What is researched a light on DS which is supposed to be low level on a lighted sky.

1st way: wait for a pure sky, this is improving the SNR.

2nd way: as the light is polarised we can contribute to improve the SNR with use of a filter polaroid. I am using 2 filters on the same ring.

The fact of the density varying with the respective settlement by the rotation is in fact the fact of making wider the light filtration and when rotation the filter settled it is allowed more or less light entering through the filter, maximum effect being when the angle of the light studied is on the filter angle.

But the filtration width may be not enough settled or too wide so that it is needed to research the best effect between darkening the sky and not too lower the light level researched.

The greatest effect should be when the polar angle of the filter suits to the venus phase Terminator angle, but this is disturbed by the sky light polarisation which is high level. The final angle has to be researched in order to improve the SNR.

From a day to day the settlement needs to be researched with some new angles settlement, filters together, filters respectively against sky transparency, against mutual geometric position of planet, sun, and your scope aperture.

Sorry this is not a method but some rules in order to find an optimum, because this is an optimum only of a not night and day effect.

Hope this is clear for you this was almost given in previous posts.

Again not an illusion because of the tests practiced with an occulting bar with the residual presence of this light yet away the occulting bar edge.

And from my opinion also now with the polaroid filter practice and results got with.

You may note also that with the reports performed, quite indifferent with color channels, no filter, polaroid, the light is here when it is here (among the observations performed I noted one day with no light without apparent reasons why).

From my opinion only sunlight playing with the entities in presence, earth atmosphere, venus atmosphere, planet phase, locations of sun and venus in sky around the conjunction.

Sun light because all color channels are involved,

Better SNR because light are polarised.

Coppered tint hue because ?

Dark patches on DS light converging towards a point because probably diffraction light at the Terminator.

Grainy appearance of the light on DS away the conjunction date because a light diffracted at the terminator.

2- There was an objection not answered above:

“Coppered tint hue because ?”

In fact the response can be simple.

If we take the moon eclipse as example for illustration, during the total eclipse event we can see colors on the moon disk due to diffraction of the sun light through earth atmosphere on the terminator. Colors goes from grey tones yellowish, a blue ring, deep yellow, red to violet. Depends on the atmosphere status, dusty more or less, area concerned.

Now this is venus AL we see around the conjunction period, we are on earth and earth is crossing the sun light diffracted beam by the venus atmosphere. This is what we see.

With the respective distances sun venus earth the diameter of the sun light beam diffracted by Venus is huge. Reason why some are collecting AL for the least AL one month away the conjunction date.

We have penumbra then the beam with colors, but penumbra and dark shadow are mixed considering the distances.

When earth is crossing the diffracted beam full of colors we could see color hue on the planet.

The illusion may consist in the fact that this is not a projection of light on the planet disk (impossible) but what we see is the beam shape created at the planet terminator this is a kind of cone surface where our eye is sensitive to colors.

The best prove is the dark patches collected on the light named AL on DS. This seems to converge to a focus point as the light surface is not cylindrical but "conic". With the geometrical perspective (sun venus earth locations) this appears converging.

This works!

Last objection: seen only on DS not on sky background, daylight, dawn sky, night sky.

May be based on the fact that the AL light is polarised low level and moderate light level and the blue sky also but strongly polarised (we never have a complete night sky for observing).

Problem is almost solved.

- 3- Don't desirable to go to electro-thermo-chemical analysis into Venus atmosphere, this is nothing in regards as well the thermographics photo above $1\mu\text{m}$ which has nothing to see with.
- 4- The only serious objection to rise is the absence of the reports using photo. But light is polarised and classic photo may be not the proper answer, a field to be investigated (the SNR ratio must be managed).

Faithfully.

Stanislas 17th.08.15