# VENUS ASHEN LIGHT

(Superior conjunction on last 2012.06.06th)

## 1- Abstract :

80 drawings (27 days) were performed this present opposition with 100-305mm apertures (from March 2012 until August 2012).

Venus exhibited from the April 2012 to July 2012 period some ashen light occurrences accessible visually with the help of light coloured filters (blue to red filters and often the OIII and R tricolor that covers the Halpha ray).

Almost featureless at the beginning with average apertures, the ashen light was captured in different colour domains, surprisingly sometimes in blue colour area then more consistently clearer in green (OIII) and red (R tricolor) lights.

Markings on the dark side were collected at some periods without apparent relation with the planet phase or something more evident. The dark markings from a day period to another were in good shape and at the same similar locations. With the time being they seemed to move slightly. This conducts to think that they were ground features.

Clear bright patches appeared on the dark side at the beginning period of observation and were not collected again after.

The observation period seemed to be not a main parameter for collecting the ashen light as this was captured during night, dawn light and day light, the sky transparency at the contrary is a main topic and this needs to be pure sky.

However, some pic intensities of ashen light were noted and this is a fact to be considered. The occurrence of the solar wind interacting with the planet atmosphere would be interesting to study through correlations. The writer does not have these data available.

Mainly the solar wind interaction would have an effect of the light amount observed with the OIII filter.

### 2- Main topics:

### 2.1- Parameters and observations:

Essentially 2 parameters were taken for the understanding the ashen light intensity:

- Step intensity levels: 4 steps were taken for classification of the light intensity and quoted from a day to another. The level 3 was given when the intensity was captured say a t a first look.

What is remarquable is the fact that the intensity was stronger 30 days around (35° Elongation E) before the superior conjunction and around 15 days after (25° Elongation W). This phenomenon is concerning more or less all the colour channels of observations. The observation results without filtering follow the same pattern. It is difficult to say more because a lack of observations of 20 days before the superior conjunction was interfering with the results.

- Surface extension on the dark side: the ashen light extension ratio is expressed in terms of the light occupation on the dark side with the total dark side surface seen at the eyepiece. This is a just an indicator as the ratio is calculated from the 2D drawing surface and this should be pondered with the surface of the sphere area lighted or not by the ashen light on the accessible dark side from earth.

It is interesting to note for all the colour channels the same evolution shape of the lighted surface.

A first pic was noted 37 days before the superior conjunction, a second 28 days a third 29 days before. However these fluctuations may come from the observational conditions. Without consideration of those picks, the global pic intensity of the group occurred 30 days before the superior conjunction.

The same tendency occurred around 15 days after with also fluctuations in light intensity extension.

### Blue colour observations:

Normally the planet disk on dark side should be featureless in that field.

However, this was well noted at the beginning of the observations. The few results followed also the same shape pattern of the light curve fluctuations compared with the other colour channels.

This colour channel of observation is important to be followed as no theory is involving lighting in these fields.

#### 2.2- Comments:

In spite of the few reports, the coverage needs to be improved in order to verify some assessments suggested above through the "events" observed. This would make stronger some approaches brought here.

The weather was not cooperating before the superior conjunction; this was not possible to see if fluctuations of light intensities occurred again.

What is obvious:

- ashen light is not in relation typically with the light colour channel,

- ashen light follows the similar shape pattern in different colour channels (B, G, R), observations without filter would be enough for the least,

- ashen light exhibits pic intensity around 30 days before conjunction and around 15 days after. This needs indeed more coverage for being more accurate and to perform surveys on next superior conjunctions for confirmation through a larger coverage.

- ashen light was accessible when the planet phase was 0.31 before and 0.37 after superior conjunction.

Hope the next conjunctions will occur in relation with better weather local conditions. Only 20% of the time was usable for the survey. This is not enough as for some periods a daily basis observation program is needed (during the light fluctuations) for understanding what is happening more exactly.

What is remarquable for conclusion is the fact that a colour channel is not emerging more than the others.

This involves the conclusion that explanations bring by some like water vapour presence interacting with the solar wind and OIII light reinforcement or excess in red light due to thermal planet activity cannot be supported by these results.

It is rather here a matter of solar light diffusion into the dark side part of the Venusian atmosphere noted at the eyepiece because of the large colour channels observed. This could be the better explanation.

Anyway the thermal activity of the ground at 450°C in average will never explain an excess of red light at the R channel except by a chemical processus occurring in an atmosphere layer with specific conditions elevating locally the physical temperature.

Therefore dark markings and clear markings noted are either these holes of temperature lacks or ground features. As dark markings seemed to rotate with the planet ground this should be rather ground features.

## 3- Future survey:

A daily or bi-daily basis program needs to be undertaken for more accurate results. This should be performed with:

- Observation times: during day, dawn before sunset, dawn after sunset,
- Conditions: as possible when the sky is transparent,
- Colour filters: B W80A, G OIII or W56, R tricolor or W29, without
- Exit pupil diameter: around 1.5mm,
- Apertures: 100mm min, 150mm perfect strongly baffled, not sun lighted and for getting fixed images easily,
- If possible, the use of 2 different apertures at the same times (the use of the 50mm refractor get some surprisingly results).

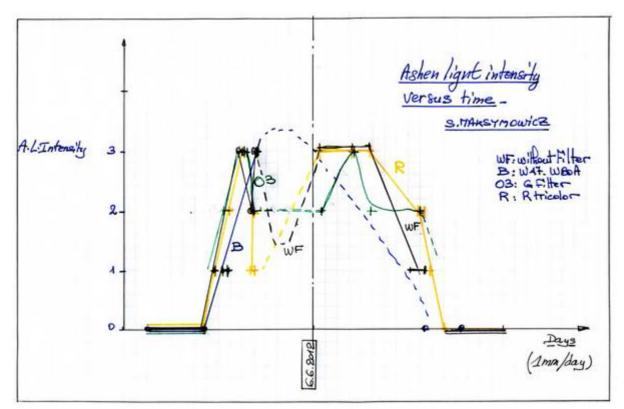
The more data we collect would contribute for research of convergences.

Please refer to the attachments:

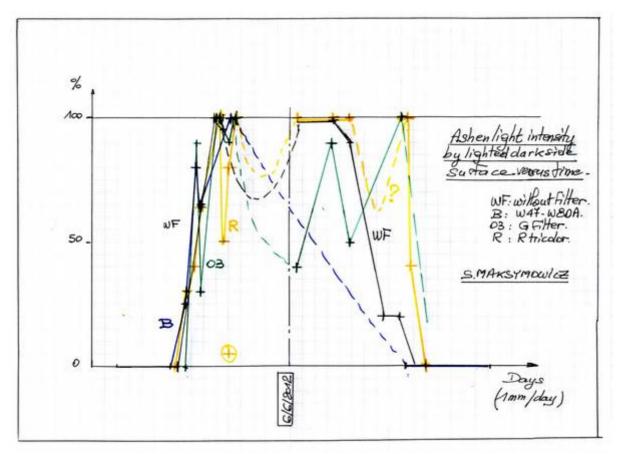
- ashen light data Venus superior conjunction 2012,
- graphs of ashen light intensities versus time,
- data drawings performed, jpg files.

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Date	Scope (mm)	Magnification	W47	W80A	OIII	R	W.F.	Phase	Ashen light	Markings	% dark side	Cusp extent (°)	Moment	Solar activity	DWG
			I										dawn		
													day		
													nautic night		
28.3.12	R150	188x		yes 0%	yes 0%	yes 0%		0.504	NO	NO	0%	NO	day		4
1.4.12	SC203	160x					yes 0%	0.48	NO	NO	NO	NO	dawn		1
2.4.12	SC203	160x		yes 0%	yes 0%	yes 0%		0.475	NO	NO	NO	NO	day		3
06.4.12	R100	95x/167x	yes 0%	yes 0%	yes 0%	yes 0%	yes 0%	0.45	yes? W58	NO	0%	NO	day		4
16.4.12	MC127	108x/143x	yes 0%				yes 0%	0.385	yes? WF	NO	0%	NO	nautic night		2
17.4.12	MC127	108x/143x			yes 0%	yes 0%	yes 0%	0.375	yes? R	NO	0%	NO	dawn		2
19.4.12	MC127	60x/120x	yes 0%	yes 0%	yes 0%	yes 0%	yes 0%	0.361	yes? R	NO	0%	NO	dawn		5
21.4.12	MC150	107x			yes 0%	yes 0%	yes 0%	0.346	NO	NO	0%	NO	day		4
25.4.12	MC150	107x		yes 25%	yes 0%	yes 30%		0.314	yes W80/R	NO	30%	10°/20° B/R	dawn		3
29.4.12	MC150	120x		yes 80%	yes 90%	yes 40%		0.281	yes OIII/B	yes Olll	90% OIII	15° OIII/ R	dawn		3
1.5.12	MC150	107x/200x		yes 65%	yes 30%	yes 65%		0.263	yes	NO	65% R/B	15-20°	dawn		3
7.5.12	R100	40x/111x			yes 100%		yes 100%	0.195	yes WF/O3	yes WF	100% all f.	30°	day		2
8.5.12	MC150	72x/120x			yes 100%	yes 100%	yes 100%	0.191	yes	yes all f.	100% all f.	NO	day		3
9.5.12	R50	30x/67x					yes 0%	0.188	NO	NO	0%	NO	night		1
10.5.12	MC150	72x			yes 95%	yes 50%	yes 95%	0.179	yes	yes WF/O3	100% O3	25°	dawn		3
	R50	40x/57x			yes 95%	yes 10%		0.179	yes	NO	>20% O3	NO	dawn		3
12.5.12	MC150	72x/120x/200x			yes 90%	yes 5%	yes 100%	0.162	yes all f.	yes all f.	100%WF/O3	NO	day		3
	MC150	72x/120x/200x			yes 90%	yes 80%	yes 90%	0.162	yes all f.	yes all f.	100% WF/R	NO	dawn		3
	R50	30x/67x					yes 100%	0.162	yes	yes	100%	NO	nautic night		1
13.5.12	MC150	72x		yes 100%	yes 100%	yes 100%	yes 100%	0.151	yes all f.	yes all f.	100%	15° WF	dawn		4
9.6.12	R100	60x			yes 40%	yes 100%	yes 100%	0.005	yes all f.	yes WF/R	100% R	100%	day		3
23.6.12	DK180	87x			yes 90%	yes 100%	yes 100%	0.095	yes all	yes WF/O3	100%	45° R	day		3
30.6.12	R150	90x			yes 50%	yes 100%	yes 90%	0.16	yes R stro.	yes all f.	100% R	NO	day		3
14.7.12	MC150	60x/90x					yes 20%	0.285	yes small	NO	5-10%	NO	day/ El.40°		1
21.7.12	DK180	67x/129x/227			yes 100%	yes 100%	yes 20%	0.34	yes R/O3	yes O3/R	100%	15°/30°	day		3
23.7.12	DK180	144x		yes 0%		yes 100%		0.354	yes R	NO	80% R	NO	dawn		2
25.7.12	SC305	200x		yes 0%		yes 40%		0.368	yes small R	NO	25% R	NO	dawn		2
1.8.12	N200	167x		yes 0%		yes 0%		0.416	NO	NO	NO	NO	dawn		2
8.8.12	DK180	125x		yes 0%		yes 0%				NO		NO	dawn		2
25.8.12	SC203	222x	yes 0%			yes 0%		0.552	NO	NO	NO	NO	dawn		2
27 days														DWG:	80



Graph for representing the ashen light intensity in four level steps with the time.



Graph representing the ashen light extension on the dark side with the time.