

MARS

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OBSERVATIONS

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■ CMO 2005 Mars Note (12)

Dust Aspects on 19, 20 October 2005

19, 20 Oct 2005の黄雲

■ 南 政 次 M MINAMI

I° Introduction

The dust cloud on 18 October 2005 which occurred at the upper Chryse, as discussed in CMO #324 (25 Oct 2006 issue), stayed almost unvaried in the day time from morning till evening, while it was regenerated again next morning in a different configuration as reported in #312 (10 Nov 2005 issue). This time we treat this reappeared dust on 19 October as well as that on the following day: These have something remarkable in their features.

The dust on 18 October showed a particularly bright part at the south-western end which must have been located at Ganges Chasma (as to the nomenclature, refer to the Mola Elevation Map - here mc18 -- accessible from "Our favourite Links" of the CMO-Web or use Google Mars Map). Ganges Chasma is also a rift valley just like Coprates Chasma (Agathodæmon canal) which was

formed by a reaction of the Tharsis great upheaval. Ganges Chasma is about 3km deep while its southern neighbour Auroræ Planum is about 3km high, so that the valley should be said to



look very deep. This may work as a dead end alley to cause a big drift of dusts which were raised at the eastern side. The area was brightest on 18 October. At least at this area the descending air worked hard to make the drift. The dust at this site looks survived the following night and it revived on the morning of 19 October.

II° Dusts on 19 October ($\lambda=309^\circ\text{Ls}$)

The final observation on 18 Oct was made by Jesús SÁNCHEZ (*JSc*) at 23:59 GMT ($\omega=318^\circ\text{W}$) but the area in question was not well shown up. As the new day came, at 1:24 GMT (3:24 local time) Silvia KOWOLLIK (*SKw*) succeeded in showing that the dust really expanded still at the place nearly as observed the day before. Her email to us reached at 3:02 GMT telling the weather condition (see CMO #311). Her next observation was made about one and half hours later because of the cloudy condition as we heard at 3:38 GMT when the sky however was turning to be clear. Her observations on the morning of 19 October were as listed in the Table and the final one was made at 4:04 GMT ($\omega=018^\circ\text{W}$ at 6:04 local time). In the US already Don BATES (*DBt*), Sean WALKER (*SWk*), Joel WARREN (*JWn*) and others started to observe. The dust appeared larger than the day before extending southward. The images by made Bill DICKINGSON (*WDC*) at $\omega=026^\circ\text{W}$, 028°W came to show that Valles Marineris, especially Coprates Chasma was filled thickly with the dust. We here cite Bill FLANAGAN's image at $\omega=059^\circ\text{W}$, but later also show other images by Ed GRAFTON (*EGf*) and others in comparison with the images on 20 October. Alan FRIEDMAN (*AFr*), Larry OWENS (*LOW*), Roland CHAVEZ (*RCv*), Jim PHILLIPS (*JPh*) and others also

Table I: *Observations of the Dust Expansion on 19 Oct 2005 ($\lambda=309^\circ\text{Ls}$)*

Time	LCM	Observers
01:24 GMT	$\omega=339^\circ\text{W}$	KOWOLLIK (<i>SKw</i>)
03:05 GMT	$\omega=004^\circ\text{W}$	BATES (<i>DBt</i>)
03:08 GMT	$\omega=005^\circ\text{W}$	KOWOLLIK (<i>SKw</i>)
03:15 GMT	$\omega=006^\circ\text{W}$	WALKER (<i>SWk</i>)
03:47 GMT	$\omega=014^\circ\text{W}$	KOWOLLIK (<i>SKw</i>)
04:00 GMT	$\omega=017^\circ\text{W}$	WARREN (<i>JWn</i>)
04:04 GMT	$\omega=018^\circ\text{W}$	KOWOLLIK (<i>SKw</i>)
04:36 GMT	$\omega=026^\circ\text{W}$	DICKINSON (<i>WDC</i>)
04:47 GMT	$\omega=028^\circ\text{W}$	DICKINSON (<i>WDC</i>)
04:50 GMT	$\omega=029^\circ\text{W}$	WARREN (<i>JWn</i>)
04:57 GMT	$\omega=031^\circ\text{W}$	KOVACEVIC (<i>ZKv</i>)
05:34 GMT	$\omega=039^\circ\text{W}$	MELILLO (<i>FMI</i>)
05:43 GMT	$\omega=042^\circ\text{W}$	SHERROD (<i>CSr</i>)
05:54 GMT	$\omega=045^\circ\text{W}$	TATUM (<i>RTm</i>)
06:15 GMT	$\omega=050^\circ\text{W}$	ROSOLINA (<i>MRs</i>)
06:21 GMT	$\omega=051^\circ\text{W}$	SHERROD (<i>CSr</i>)
06:30 GMT	$\omega=054^\circ\text{W}$	FRIEDMAN (<i>AFr</i>)
06:46 GMT	$\omega=057^\circ\text{W}$	OWENS (<i>LOW</i>)
06:52 GMT	$\omega=059^\circ\text{W}$	CHAVEZ (<i>RCv</i>)
06:53 GMT	$\omega=059^\circ\text{W}$	FLANAGAN (<i>WFl</i>)
06:53 GMT	$\omega=059^\circ\text{W}$	OWENS (<i>LOW</i>)
07:00 GMT	$\omega=061^\circ\text{W}$	OWENS (<i>LOW</i>)
07:07 GMT	$\omega=063^\circ\text{W}$	FLANAGAN (<i>WFl</i>)
07:09 GMT	$\omega=063^\circ\text{W}$	PHILLIPS (<i>JPh</i>)
07:19 GMT	$\omega=065^\circ\text{W}$	GRAFTON (<i>EGf</i>)
07:30 GMT	$\omega=068^\circ\text{W}$	OWENS (<i>LOW</i>)
09:15 GMT	$\omega=094^\circ\text{W}$	ROSOLINA (<i>MRs</i>)

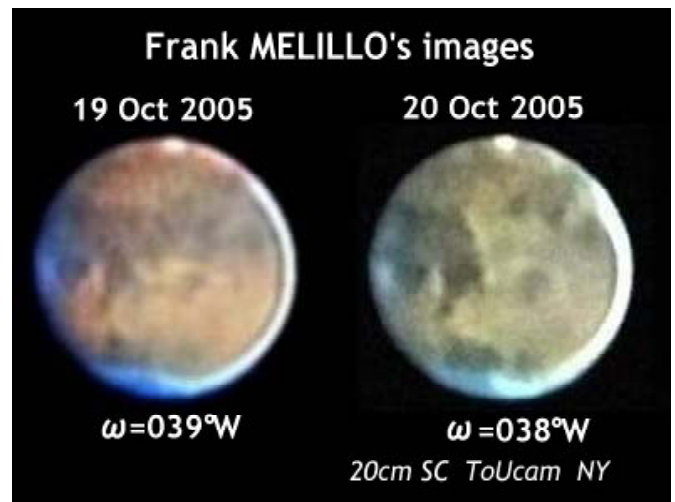
produced excellent images (see our Gallery). It was now apparent that the dust at Ganges Chasma was alive, and it is notable that the high plain Auroræ Planum now looked as a dark island.

The dust on the new day looked to have the following features, some being characteristic. *a)* As shown in comparison with the case on the image of ADELAAR (*JAd*) on 18 October at $\omega=344^\circ\text{W}$, the dust on 19 Oct turns out to be expansive, and proves that the airborne dust has become thicker. *b)* However the condensed dusts are confined at the low lands to the west of $\Omega=030^\circ\text{W}$ and to the north of $\Phi=15^\circ\text{S}$ lines. *c)* In particular, almost all of Valles Marineris are filled thickly with the dusts including Ganges Chasma. *d)* Coprates Chasma's northern deeper side, being possibly 7km deep, is especially thickly filled, but the southern side remains dark. *e)* The northern part of Juventæ Fons (Juventæ Chasma) is also filled with a thick dust. It should be remarked that especially the dust at Juventæ Fons is not any one that came from other place, but quite independent. We should consider that a peculiar condition of the atmosphere at the region provided a set of low lying dusts at the independent several chasmata around there.

Unfortunately, atop Mt Hamilton, the sky was only good until evening, but it became so foggy or/and cloudy at night that we were not able to see even the remote orange lights of San José which had shined usually beautiful. Despite the happy fuss on 18 Oct, not so many observations followed on 19 Oct, perhaps because an unfavourable weather condition was cast generally over the US continent as well as at Europe. I don't quite remember but a hurricane might have been near Florida.

III° Expansion on 20 Oct ($\lambda=309^\circ\text{Ls}\sim 310^\circ\text{Ls}$)

The image of *SKw* at 2:04 GMT ($\omega=340^\circ\text{W}$) shows that the dust revived also on 20 October, and her image at $\omega=350^\circ\text{W}$ showed some details. However the humidity at her place became 99%. In England, Richard McKIM (*RMk*) visually observed at $\omega=002^\circ\text{W}$, and at 014°W (4:27 GMT). In the latter, he grasped that Valles Marineris was still filled with the dust remnants, and further noted that an explicit expansion of dust to M Erythræum. A detail of the Coprates Chasma dust was shown well on the images at 5:15GMT ($\omega=026^\circ\text{W}$) made by *JWn* and David ANDERSON (*DAd*). The images at



6:03GMT ($\omega=038^\circ\text{W}$) by Frank MELILLO (*FMI*) et al show a general/gross aspect of the 20 Oct dust.

Interesting phenomenological points of the dust on 20 October are as follows: *a)* The dusts at Valles Marineris have become blurred in general. And furthermore *b)* its preceding (eastern) end has become more blurred and weakened, while *c)* from here towards M Erythræum the airborne dust rather thickly expanded as noted by *RMk* (more thickly than the day before, but still without cores). *d)* The eastern border of the dust expansion is rather clear (clearly bounded) because of some unknown

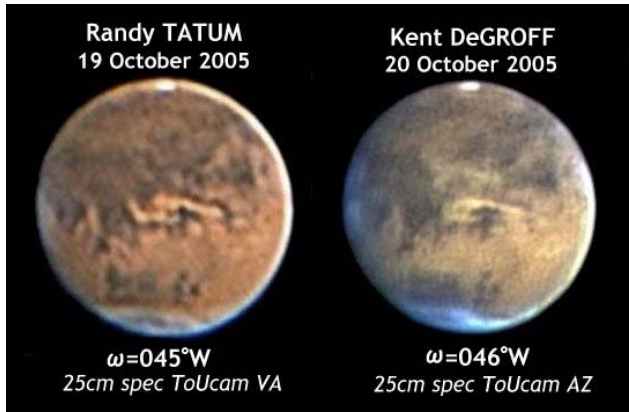
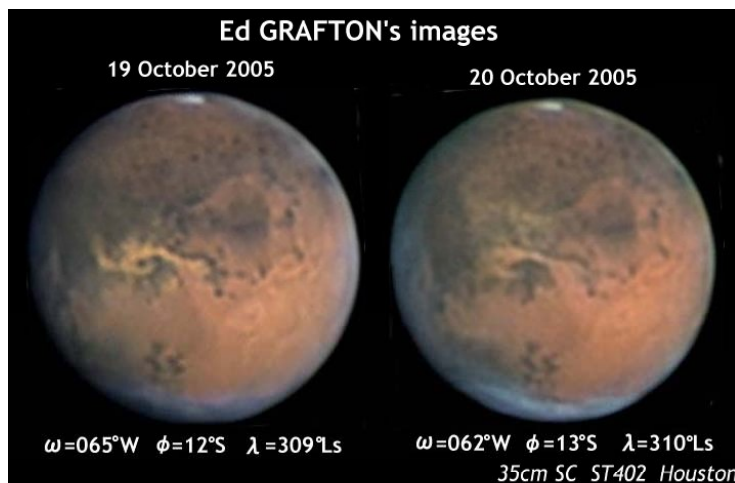


Table II: *Observations of Dusts*
on 20 October 2005 ($\lambda=309^\circ\text{Ls}\sim 310^\circ\text{Ls}$)

Time	LCM	Observer
01:09 GMT	$\omega=326^\circ\text{W}$	WARELL (<i>JWr</i>)
01:24 GMT	$\omega=330^\circ\text{W}$	KOWOLLIK (<i>SKw</i>)
01:44 GMT	$\omega=335^\circ\text{W}$	KOWOLLIK (<i>SKw</i>)
02:04 GMT	$\omega=340^\circ\text{W}$	KOWOLLIK (<i>SKw</i>)
02:24 GMT	$\omega=345^\circ\text{W}$	KOWOLLIK (<i>SKw</i>)
02:44 GMT	$\omega=350^\circ\text{W}$	KOWOLLIK (<i>SKw</i>)
03:04 GMT	$\omega=355^\circ\text{W}$	KOWOLLIK (<i>SKw</i>)
03:24 GMT	$\omega=000^\circ\text{W}$	KOWOLLIK (<i>SKw</i>)
03:35 GMT	$\omega=002^\circ\text{W}$	McKIM (<i>RMk</i>)
04:03 GMT	$\omega=009^\circ\text{W}$	BATES (<i>DBt</i>)
04:27 GMT	$\omega=014^\circ\text{W}$	McKIM (<i>RMk</i>)
05:02 GMT	$\omega=023^\circ\text{W}$	WALKER (<i>SWk</i>)
05:10 GMT	$\omega=025^\circ\text{W}$	MELILLO (<i>FMI</i>)
05:15 GMT	$\omega=026^\circ\text{W}$	ANDERSON (<i>DAd</i>)
05:15 GMT	$\omega=026^\circ\text{W}$	WARREN (<i>JWn</i>)
05:31 GMT	$\omega=030^\circ\text{W}$	TATUM (<i>RTm</i>)
05:37 GMT	$\omega=032^\circ\text{W}$	SHERROD (<i>CSr</i>)
06:03 GMT	$\omega=038^\circ\text{W}$	MELILLO (<i>FMI</i>)
06:20 GMT	$\omega=042^\circ\text{W}$	WARREN (<i>JWn</i>)
06:34 GMT	$\omega=046^\circ\text{W}$	De GROFF (<i>KGr</i>)
06:36 GMT	$\omega=046^\circ\text{W}$	PHILLIPS (<i>JPh</i>)
06:37 GMT	$\omega=046^\circ\text{W}$	FLANAGAN (<i>WFl</i>)
06:49 GMT	$\omega=049^\circ\text{W}$	De GROFF (<i>KGr</i>)
06:56 GMT	$\omega=051^\circ\text{W}$	PHILLIPS (<i>JPh</i>)
06:56 GMT	$\omega=051^\circ\text{W}$	FLANAGAN (<i>WFl</i>)
07:19 GMT	$\omega=057^\circ\text{W}$	De GROFF (<i>KGr</i>)
07:35 GMT	$\omega=060^\circ\text{W}$	WARREN (<i>JWn</i>)
07:38 GMT	$\omega=062^\circ\text{W}$	GRAFTON (<i>EGf</i>)
07:54 GMT	$\omega=065^\circ\text{W}$	De GROFF (<i>KGr</i>)



reason. It does not look to depend on the elevation gap, but the dusty area is rather on a higher plain. *e)* We additionally note here that the boundary moves on the following day (21 October) as remarked in CMO #328 Note (11) by showing two corresponding images of *WFl* (p0554). As to the slackened dusts inside Valles Marineris, we should note that they occurred at the same time at such chasmata as Ganges and Juventæ Fons and so on.

In order to depict the difference of the dust expansion on 20 October from that on 19 October, we have here shown three sets of images.

On the day *SKw* succeeded in chasing every 40 minutes, and at the final stage Kent De GROFF (*KGr*) took successively four images. The night the planet Mars shined clearly atop Mt Hamilton, while the slit of the big dome did never open because the humidity was excessive. Old writings on the table near the pillar said “*Humid limit: Very strictly 95%*”, but we supposed its limit must have been set much lower down since the time of re-polishing of the OG in the 1980s. Waited until 2 o'clock, but in vain. Outside it looked to be a pleasant night, and we should say, it could have been a nice observation night if we had been observing at Fukui. To visit a big observatory, we had better bring over a portable telescope for emergency use.

IV° Dusts at the Lower Bottoms

The dust streaks fitted inside the valleys stayed inside without overflowing to the outside from morning till evening on 19 Oct. Since the same phenomenon occurred at several independent chasmata, a common reason must have existed at the higher atmosphere level, and must have depended on the preceding day dust condition.

At any rate, this kind of dusts should be different from that kind of dust disturbances which are usually seen on the higher plains. The fact that the disturbances were seen at the bottoms of the deep valleys may suggest that some kind of abrupt downbursts occurred and the dusts ran from east towards west at a stretch in the case of Coprates Chasma. We may thus make a proposition concerning the mechanism of the downbursts as follows: The air near the bottom must

be drier and higher in temperature than the upper air which must be more moist and mistier in the morning. Hence at the upper level there occurs a phase transition of vaporisation and a certain amount of latent heat must be deprived so that the temperature should rapidly go down: This eventually must cause the airs at Chasmata at meso high states, and a set of strong descending airs must be derived to raise the dust disturbances on the ground or bottom. Naturally since the airs should be meso high, the dusts can not overflow.

Dust which fills the inside of Valles Marineris in the very morning was once serendipitously trapped by the HST on 27 June 1997 on the occasion HST pre-watched the Pathfinder landing site. The occurrence situation must be identical with the present case, but the season was quite different (ie $\lambda=137^\circ\text{Ls}$). As seen in the following URLs, the dust at the area of Ganges Chasma is weak, but the area to the east of Ganges Chasma looks very thick, and so the morning downburst must have occurred there.

<http://imgsrc.hubblesite.org/hu/db/1997/24/images/a/formats/print.jpg>
<http://imgsrc.hubblesite.org/hu/db/1997/23/images/a/formats/print.jpg>

At that moment, the GMS was on the way to the planet, and provided a remote image at the beginning of July 1997. A report of the dust in the CMO was given in:

<http://www.mars.dti.ne.jp/~cmo/sec96/015/sec015.html>

V° Appendix: The Case in November 1990

Another example of the dust streak along Valles Marineris was given on the occasion of the November 1990 dust. The case is similar to the present one since the season of the Coprates dust was at $\lambda=329^\circ\text{Ls}$, and furthermore this event was observed in Europe and the

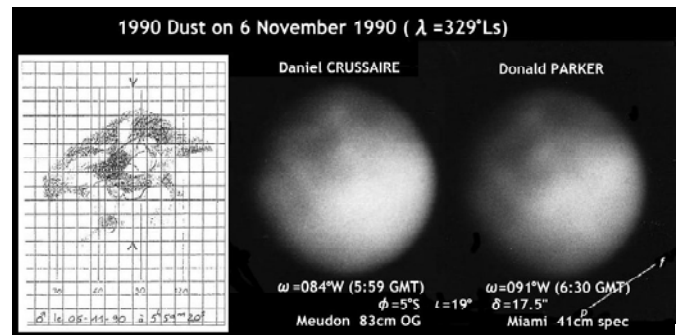


US. The first detections were made in Italy and England on 3 Nov 1990 ($\lambda=327^\circ\text{Ls}$). The details were given by Richard McKIM (*RMk*) in *JBA* **102** (1992) 248 (see pp261-262) as well as in “*Telescopic Martian Dust Storms: Narrative and Catalogue*” *Mem. BAA* **44** (1999) (see p113). As to the reports in the CMO, see below*.

Here we pay attention to the case on 6 November 1990 since the Coprates Chasma cloud was clearly shot at Pic du Midi. The ccd image, taken on 6 November at 02:51 GMT ($\omega=034^\circ\text{W}$) was used on the front cover of the *S&T* June 1991 issue, and in the CMO we showed it in #106 (25 June 1991) citing a page from *Ciel et Espace*. Christophe PELLIER (*CPI*) this time kindly communicated privately to us that the very image is uploaded in the following site:

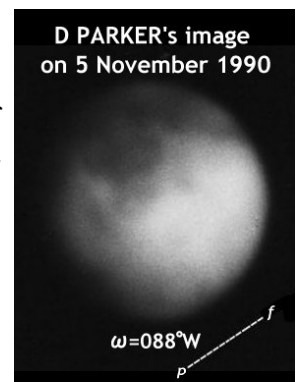
<http://www.astronef.fr/astro/pic/images/mars/ma06y90a.gif>

Notable is the fact that in this case also the northern deeper side of Coprates Chasma is thickly filled with dust while the upper southern side remains darker. A dust is also checked at Ganges Chasma as in the 2005 case. In addition to this we show TP photos taken by Daniel CRUSSAIRE (*DCr*, Meudon) and Don PARKER (*DPk*, Miami). Note that the time difference between the



two is just half an hour, and so the Atlantic ocean was not obstructive. *DCr*'s photo was sent kindly to us from Audouin DOLLFUS, and its illustration was cited from p236 of *l'Astronomie* **113** juillet-août-septembre 1999.

According to the analysis of *RMk*, already on 5 Nov, there seemed for a dust streak to lie over Agathodæmon, and so here we also cite one of *DPk*'s photos from 5 Nov (*DPk* took at $\omega=088^\circ\text{W}$, 092°W). The *p---f* line was based on the original given by *DPk*, and the upward south direction was fixed here by Masami MURAKAMI (*Mk*). The dust patches near Solis L was developed most on 6 Nov. The dust development continued up until 8 November. On 8 Nov, from Japan Takashi NAKAJIMA (*Nj*) at Fukui was able to comment about



the Solis L area at $\omega=164^\circ\text{W}$. On 11 November ($\lambda=331^\circ\text{Ls}$), Tohru IWASAKI (*Iw*), Isao MIYAZAKI (*My*) and the present writer (*Mn*) observed the area but less productive (CMO #097).

We finally note that in 2007, the season $\lambda=329^\circ\text{Ls}$ will reach on 11 Oct when the angular diameter $\delta=10.4''$, while $\lambda=309^\circ\text{Ls}$ around 7 Sept when $\delta=8.4''$.

***How the CMO reported about the Nov 1990 dust:** The occurrence of the Nov 1990 dust was first communicated to the OAA kindly by *DPk* concerning the observations on 4 Nov of John ROGERS (*JRg*), *DPk* himself as well as Frank MELILLO (*FMI*) which was sent at 22:43 EST on 5 November (cited in CMO #096 (10 Nov 1990 issue) p0823 (LtE)). An aftermath was at 1:08 EST on 7 November. We received also a letter dated 13 Nov from *FMI* on his observations on 3, 4, 5, 7, and 9 Nov, which was cited in LtE of CMO #097 (25 Nov 1990 issue) p0833 (at least his TP photo on 4 Nov at $\omega=070^\circ\text{W}$ shows a large dust expansion on Chryse. His apparatus was the same C8). In CMO #097, the *Fortnight Report* stated about the dust event. CMO #099 shows a letter of *RMk*. On #105 (25 May 1991 issue) p908 we summarised *RMk's Interim Report* in *J BAA* 101 (1991) 73. *DPk's* photographs until Jan 1991 were reviewed later (40 colour images were in CMO #103 (25 Mar 1991 issue), and the 70 numbers of the TP photos in CMO #105 (25 May 1991 issue)). We also reviewed "*Dust Clouds on Mars in 1990*" by the APLO Mars Recorders in CMO #112 (25 Dec 1991 issue). Two of colour photos by *DPk* [one on 5 Nov 1991 ($\lambda=328^\circ\text{Ls}$) at $\omega=080^\circ\text{W}$, and the other on 8 Nov 1991 ($\lambda=330^\circ\text{Ls}$) at $\omega=079^\circ\text{W}$] were shown on a colour page of the 1992 edition of the *Tenmon Nenkan* (a Japanese Almanac), published at the end of 1991 (with *Mn's* explanation). *DPk* used the 41cm spec and Fujichrome 100 in colour.

I° はじめに

18Octに発生したクリュセ黄雲はCMO#324(25 Oct2006)号で議論したように、朝方発生し殆ど変化を見せずに夕端に沈んでいったが、翌日には黄雲は違った形で再現した(報告は#312(10Nov2005号))。それを今回扱うが、18Octの黄雲の内、西南端に明部があり、これはガンゲス・カスマに相当するところであると思われ、ここが翌日に大きな

役割を果たした可能性がある。ガンゲス・カスマ (Ganges Chasma)は矢張りコプラテス・カスマの成因と同じくタルシスの造山活動による陥没地で、3km程の深さがある。一方、その南側のアウロラエ・プラヌム(Auroræ Planum)は3kmほど高いので、可成りの深さということになる(地名についてはCMO-Webのリンク頁でMola Elevation Mapのmcl18區をみるか、同頁のGoogle Mars Mapの検索で何處か調べることが出来る)。

黄雲は東部で起こり始めるわけであるから、ここは吹きだまりのようになるのであろうが、少なくともガンゲス・カスマ部では上昇気流ではなく急激な下降気流が黄塵を齎してコアの様に輝いているのだと思われる。多分ここは夜間もほとんど潰れることなく生き残ったと思われる。

II° 19 Oct ($\lambda=309^\circ\text{Ls}$)の黄雲

18Octの黄雲発生のおと、18Oct最終の観測はヘスス・サンチェス(JSc)氏の23:59GMT $\omega=318^\circ\text{W}$ で、未だ当該領域が不明であるが、19Octに入って1:24 GMT(現地時間は3:24と思う)のコヴォツリク(SKw)さんの画像では既にほぼ同じ處に大きく黄雲が出ているのは確かである。便りによると(CMO #311) 氣象条件は然程ではなく雲が出ているようであるが、次第に濃くなったらしく、次の観測は3:08 GMT($\omega=005^\circ\text{W}$)となって、尙時間四十分ほどのギャップが出て二度ほど観測がトンだ由。第一の観測に就いての連絡は3:02GMTに入っているが、3:38GMTのemailでは3:17現在で曇っているものの、晴れ間が来るかもしれないという様子である。この日のSKwさんの観測は表の如くだが、最終は4:04GMT(現地時間6:04)であった。この間既にベーツ(DBt)氏、ウォーカー(SWk)氏、ウォーレン(JWr)氏などアメリカ側の観測が入り、黄雲は明らかで、SWk氏の像などから前日より南部に延び大きくなっていることは明らかである。 $\omega=026^\circ\text{W}$ 、 028°W のディッキンソン(WDc)氏の画像で、ワッレス・マリネリス(VallesはVallisワッリスの複數形、この一帯の幾つかのVallisの總稱、マリナーに依って発見された溪谷の爲この名がある)に黄雲が濃く溜まっていることがハッキリする。代表としてフラナガン(WFl)氏の画像を最初に掲げたが、後半20Octの黄雲との比較でグラフトン(EGf)氏等の像も英文に掲げてあるので参照されたい。他にフリ

ードマン(AFr)氏やオーエンス(LOw)氏、チャヴェス(RCv)氏、フィリップ(JPh)氏などの良像がある。ガンゲス・カスマの黄塵が生きていることは明らかだが、アウロラエ・プラヌムが黒斑になっていることに注意する。

この日の黄雲は18Octの黄雲の必然の結果というところもあろうかと思うが、珍しい特徴を持っていて、大凡次の通りである：a) 18Octのアデラル(JAd)氏の $\omega=344^\circ\text{W}$ の画像と比較しても拡散傾向があり、可成りの浮遊黄雲がこの領域に漂っていること、b) 然し凝縮した黄雲がほぼ $\Omega=030^\circ\text{W}$ 以西、 $\Phi=15^\circ\text{S}$ 以北の低地に固まっていること、c) とくに前日に引き継ぎガンゲス・カスマ、ワッレス・マリネリスの低地に閉じ籠もっていること、d) ワッレス・マリネリスの内、アガトダエモンに相当する、コプラテス・カスマでは北側の深い部分に濃く分布し、南側の斜面では弱く従って、ここは暗線として残っている。e) イウウエンタエ・フォンス(イウウエンタエ・カスマ)の北部低地に黄塵が出ていること、などである。特にe)はこの黄塵が移動してきたものではなく、独立していると見られることから、この辺りの低地には黄塵が立つような条件が揃ったことが考えられ、これは興味深いことである。

なお、残念ながらリックは夕方まで晴れていたが、観測時間には曇ったというか、霧が出て下のサンノゼの灯りも見えなくなって仕舞った。この日は18Octの騒動のあとにも拘わらず意外に観測数が伸びなかったのは美大陸の天候が概して好くなかったのかも知れない。フロリダの近くにはハリケーンがあったと思う。

III° 翌20 Oct ($\lambda=309^\circ\text{Ls}\sim 310^\circ\text{Ls}$)での発展

既にSKwさんの2:04GMT $\omega=340^\circ\text{W}$ で、20Octも黄雲が生きていることは明らかであり、 $\omega=350^\circ\text{W}$ ではやや詳細が判る。SKwさんのところは遂に湿度が99%になったようだが、英国で理查・麥肯(RMk)氏が眼視で $\omega=002^\circ\text{W}$ 、 014°W (4:27GMT)で観測している。後者ではワッレス・マリネリスに前日同様漂っている様子を掴んでいるほか、マレ・エリュトウラエウムの方への拡がりも明白になっている。マリナー溪谷での黄雲の様子は5:15GMT $\omega=026^\circ\text{W}$ のJWn氏やアンダーソン(DAd)氏の像で明確である。6:03GMT $\omega=038^\circ\text{W}$ のFMI氏の像など

で黄雲の全体像が見えている。

現象として20Octの興味ある点は、a) ワッレス・マリネリスの黄雲が惚けた、だけでなく、b) その先端(東端)のボケがひどく、c) 實はここから南に掛けて中程度に濃い浮遊黄雲が擴がっていることである。これはRMk氏の眼視の結果参照。d) その東端は可成りハッキリ境が出来ており、何らかの理由があると思われるが、高低差ではない様である。但し、強いて言えば高台の方に黄雲は擴がっているが、コアは存在しない。e) この境界は既に#328のNoteでWFI氏の圖を對照して示した如く(p0554)、21Octにはまた違った境界を見せる。19Octと20Octの擴がりの相違については比較圖三圖を擧げて示す。

なお、ワッレス・マリネリス内での黄雲の擴がりについては、コプラテス・カスマだけの緩みだけでなく、ガンゲス・カスマやイウウエンタエ・カスマも同時進行で回復傾向にある。

この日はSKwさんが連続して観測出来たほか、最終段階ではデグロフ(KGr)氏の四連射がある。

この日も残念ながらリックでの観測は無いのである。實は大快晴で火星は煌々と輝いていたし、シーイングも好い筈であったが、湿度が高いということで全山スリットは開かなかった譯である。観測テーブルには古そうな文字でHumid limit: Very strictly 95%と刻まれているが、1980年代に主鏡が再研磨されてから多分もっと低い値で禁止されているのであろうと思う。午前2時まで待ったが、解禁とはならなかった。そんなに湿めっぽいかというところでもなく、外に出ても気持ちの好い夜で、福井なら最高だと思ったものだが、確かに宿に辿り着くと欄干等は濡れていた。こういう闊の高い遠征には自前で20cmSCTぐらいを携帯して登山するのが適當だろと思う。

IV° 溪谷低地の黄雲について

19Octの溪谷に嵌っている黄雲はそのまま外に出ることなく朝に始まり一日を過ごしたと考えられる。複数のカスマで同時に起こっているから、上空に於いて共通する条件が揃ったのであろうし、これは前日の黄雲と無関係ではないであろうが、その邊りは難しい。カスマの底深く起こったというのは、一種のダウンバーストが起こり、コプラテス・カスマの場合は一氣に東から西へ底を

走ったのであろうと思う。カスマの底は朝方に於いても上空の湿った霧帯より稍乾燥且つ高温で、上空では相轉移(蒸發)が起こり潜熱(氣化熱)を奪うので、氣温が下がりカスマはメソハイ状態になり、強力な下降氣流が起こって底で砂塵を巻き上げ、特に細長い溪谷では一気に流れると思われる。當然高氣壓状態だからこの黄塵は上へは出て行かない。

朝方に見られたワッレス・マリネリス黄塵の例はHSTが1997年七月のパスファインダーの着陸の爲に撮影を行ったとき、偶然27June97に捉えた。發生の事情は同じであらうと思われるが、季節は大きく異なり1997年は $\lambda=137^\circ\text{Ls}$ であった。ガンゲス・カスマの邊りは弱いとその東の低地に黄塵が濃く、ここがダウンバーストの發生源であらうと思われる。極めて朝方と全景のHST畫像が揃っており、次を参照されたい。

<http://imgsrc.hubblesite.org/hu/db/1997/24/images/a/formats/print.jpg>

<http://imgsrc.hubblesite.org/hu/db/1997/23/images/a/formats/print.jpg>

この黄塵の時は、MGSが未だ火星への途上にあつた。尚、當時のCMO-Reportにはこの黄塵に関する報告がある。

<http://www.mars.dti.ne.jp/~cmo/sec96/015/sec015.html>

V° 附録：1990年十一月黄塵の場合

1990年の十一月黄塵の折に矢張りワッレス・マリネリスに黄塵が立ち籠める例があつた。季節が $\lambda=329^\circ\text{Ls}$ であつたから、今回とよく似ている。これも歐羅巴から美國で觀測されたが、最初のデテクションは義太利と英國で3Nov($\lambda=327^\circ\text{Ls}$)であつたようである。詳しくは理查・麥肯(RMk)氏のJBAA102 (1992) 248の年間レポート(そのpp261-262)か*Telescopic Martian Dust Storms: Narrative and Catalogue (Mem. BAA 44 (1999))*のp113を参照されたい。CMOでの報告は以下参照*。英文の部では6Novの觀測に注目しているが、それはPic du Midiで撮られたccd像にワッレス・マリネリスに黄塵が満ちているからである。当日のRMk氏のチャートを引用する。Pic du Midiのccd像はS&Tの1991年June號の表紙に出だし、CMOでも#106(25June1991號)に*Ciel et Espace*から引用してコピーを載せた。次のサイトはペリエ(CPI)氏に教えて貰つたが(LtE)、これに出ているものである。

<http://www.astronef.fr/astro/pic/images/mars/ma06y90a.gif>

この場合もコプラテス・カスマでは北側の深いところが黄塵で詰まり、南側の暗線は残っている。また2005年と同じくガンゲス・カスマにも黄塵が見られる。この時刻(02:51GMT) $\omega=034^\circ\text{W}$ に續く二觀測を擧げる。ダニエル・クリュセル(DCr)氏(ムードンの83cm屈折)とDPk氏の畫像との差は三十分で大西洋は問題でない。DCr氏の写真は當時ドルフュス氏から送られて來た。尚、左に掲げた解説圖は*l'Astronomie 113 juillet-août-septembre 1999*號のp236から採つた。RMk氏の分析によると、5Novの例えばDPk氏の畫像 $\omega=088^\circ\text{W}$ 、 092°W にもアガトダエモンに沿って出ている様であるから、6Novは二日目ということになるろうか。そこでDPk氏の5Novの写真も入れた。ソリス・ラクス邊りの黄塵は6Novに強くなったようである。この黄塵は8Nov頃まで顕著であつたようで、8Novには福井で中島(Nj)氏が $\omega=164^\circ\text{W}$ でソリス・ラクスとその南方が靄に包まれていると指摘し、11Novには岩崎徹(Iw)氏、宮崎勲(My)氏、筆者などが様子を傳えている(CMO#097)。

尚、2007年には $\lambda=329^\circ\text{Ls}$ は11 Oct 頃に訪れ、視直徑は $\delta=10.4''$ になっているが、 $\lambda=309^\circ\text{Ls}$ の時點7 Sept 邊り)では $\delta=8.4''$ に過ぎない。

*附録の附録：CMOに於ける紹介：Nov1990黄塵は最初DPk氏によってOAAに知らされた。4Novのロジャース(JRg)氏の觀測とDPk氏自身の撮影、メリッロ(FMI)氏の觀測などを5Nov22:43ESTに、その後の様子を7Nov1:08ESTに連絡を受けている。これはCMO#096(10Nov1990號)p0823(LtE)に掲載したが、次いでFMI氏から3、4、5、7、9Novの觀測模様を13Nov附けの手紙で受け取つた。これはCMO#097(25Nov1990號)p0833(LtE)に掲載した(少なくとも4Novには $\omega=070^\circ\text{W}$ のTP照片がある。小さい畫像だが、クリュセに黄塵が見られる。器械はいまも同じC8である)。このCMO#097では*Fortnight Report*でこの黄塵について述べている。CMO#099にはRMkのLtEがある。DPk氏の写真はJan1991までのカラー40點を#103(25Mar1991號)でレビューし、B&W70點を#105(25May1991號)で採り上げたが、その中に十一月黄塵の觀測も含まれる。JBAA101(1991)73にはRMk氏による*Interim Report*があり、これに十一月黄塵についての速報があるので、これはCMO #105(25May1991號)p908で紹介している。その後APLO Mars Recordersの"*Dust Clouds on Mars in 1990*"が送られてきて、そのレビューをCMO #112(25Dec1991號)に書いた。なお、DPk氏のカラー写真は『天文年鑑』1992年版カラー口繪に5 Nov 1991 ($\lambda=328^\circ\text{Ls}$) $\omega=080^\circ\text{W}$ 、8 Nov 1991 ($\lambda=330^\circ\text{Ls}$) $\omega=079^\circ\text{W}$ の二葉を併べたので参照されたい。DPk氏は41cm反射、Fujichrome100使用。 □

Forthcoming 2007/2008 Mars (5)

The Vanishing NPH and the Perimeter of the NPC 末期の北極雲と北極冠の境界

Masatsugu MINAMI 南 政 次(Mn)

1° In this issue, we shall give a forecast of a trend of the northern polar region (npr) at around the spring equinox of the northern hemisphere $\lambda=360^\circ\text{Ls}=000^\circ\text{Ls}$ based on the observations in 1992. The north polar cap (npc) can be expected to attain the largest size just before the spring equinox, though it may difficult to see the details since at the same time it must be still covered by the north polar hood (nph). After the spring equinox the npc will show up its rigid state while still a thinner part of the nph will haunt the outside of the npc to conceal perimeter. In general it is hard for us to meet with the case where the Sub-Earth latitude $DE=\varphi$ is appropriate to watch the npr fully, and since $Ds=0^\circ$ the npc does not easily shine up to us. Furthermore for the Japanese observers the appropriate case occurs in winter when the weather condition is dismal.

2° The diagrams presented in Coming (3) of CMO #327 p0541 show well that the spring equinox visited in 2005 quite late (when δ was down to 9.7") and the tilt was in a poor condition ($\varphi=17^\circ\text{S}$). Furthermore the terrestrial day of 22 Jan implies a period of hard days for the Japanese observers and in fact on the day just only four observations were reported in the CMO Gallery (from the US and England). On the contrary, in the coming 2007 Martian spring equinox, the condition will turn out to be better: The angular diameter is nearly maximal up to $\delta=15.7''$ (on 10 Dec 2007) and the tilt of the north pole will face towards us, though still discontent since it's shallow ($\varphi=4^\circ\text{N}$), and one month later (on 10 Jan 2008 when $\lambda=015^\circ\text{Ls}$), it will decrease to $\varphi=1.4^\circ\text{S}$ when we need to watch the perimeter well. However before the equinox, for instance at $\lambda=340^\circ\text{Ls}$ (on 11 Nov), φ and δ reads 9°N and 12.2" respectively, and hence we can expect to be able to watch some interesting pre-equinox phenomena at the npr.

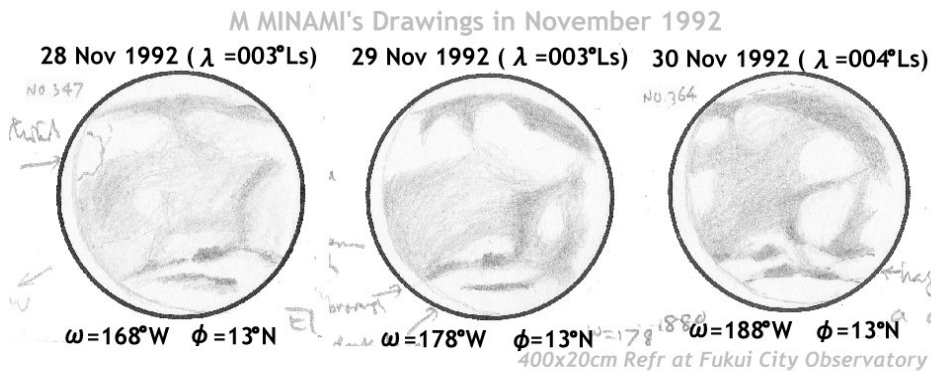
3° As is also shown on the diagrams in Coming (3), the apparition in 1975 was more akin to the 2007 apparition. In 1975 the spring equinox occurred on 21 Dec 1975 when $\delta=16.1''$. But the condition was not better

since $\varphi=4^\circ\text{S}$, and was increasing further to the south. As for the present writer (Mn), he was not productive in 1975 partially because of the weather conditions. In 2005 also, the sky was utterly destructive in Dec 2005 in Fukui, and so we are afraid lest it should repeat again in Dec 2007.

In the 1990/1991 apparition where Mars most approached on 20 Nov 1990, the Martian spring equinox occurred on 4 Jan 1991 when $\delta=13.4''$, while $\varphi=13^\circ\text{S}$, and so it was as worse as in 2005.

4° In this respect the 1992/93 apparition was quite better. The spring equinox visited earlier on 22 Nov 1992 when the weather was still stable in Fukui (while closest approach on 3 Jan 1993): Though δ was only 11.9", the tilt φ went up to 13°N and stayed more than 10°N around then so that the northern hemisphere was largely watched. At the time of $\lambda=020^\circ\text{Ls}$, φ was still 9°N . So here we try to look back the case in 1992, and we expect it may be instructive to the observations in 2007 since the 2007 curves are quite near the 1992 case.

5° In Coming (3), we touched on the Dawes slit inside the nph observed in 1990 around $\lambda=320^\circ\text{Ls}$ (while $\varphi=4^\circ\text{S}$). Since it was apparent in 1990, we might have been able to observe it in 1992, but at least the present writer (Mn) did not catch it in the 1992 apparition. At $\lambda=320^\circ\text{Ls}$, the diameter δ was 7.2", and even at the season $\lambda=337^\circ\text{Ls}$ when DAWES was considered to have observed the slit really in 1864, the diameter was mere $\delta=8.6''$ in 1992. Of course it might have been possible to detect it later: We observed the CM passing of M Acidalium from Japan from the beginning of November to mid-Nov at around $\lambda=350^\circ\text{Ls}\sim 356^\circ\text{Ls}$ with $\varphi=12^\circ\text{N}\sim 13^\circ\text{N}$ and $\delta=10.4''\rightarrow 11.2''$, but could not detect the slit. On 10 Nov 1992 ($\lambda=354^\circ\text{Ls}$, $\varphi=13^\circ\text{N}$, $\delta=10.8''$, $\iota=36^\circ$) at $\omega=010^\circ\text{W}$, 022°W , the northern part of M Acidalium was seen obscurely through the nph, but the boundary of the nph itself was also vague, and so the nph had become weaker. But on 13 Nov 1992 ($\lambda=356^\circ\text{Ls}$, $\varphi=13^\circ\text{N}$, $\delta=11.1''$) at younger $\omega=320^\circ\text{W}$, 330°W , 340°W , 349°W ,



the nph was thick and active over the morning M Acidalium, but we could not chase any more (already 4:30 JST at $\omega = 359^\circ\text{W}$).

Back to 1990, we just note that, as repeatedly stated, the slit was visible from Japan around $\lambda = 320^\circ\text{Ls}$ when $\delta = 15.8''$. At the same season as DAWES himself detected the slit, the diameter was $\delta = 18.1''$ in 1990 when the plane was nearly closest to the Earth, and M Acidalium was seen around 20h GMT (maybe from Europe).

6° In 1992, we thus failed to see the Dawes slit, but we were able to see similar slit or segment at a different region from around 24 Nov 1992 ($\lambda = 001^\circ\text{Ls}$, $\delta = 12.1''$). At around $\omega = 190^\circ\text{W}$, Propontis I became clearly passing the CM, and its north was thinly covered by the nph, while seen through the weak hood, a dark segment became visible. The activity of the thin nph was not stable and so the segment appeared different from day to day. We here show three full drawings which were secured from 28 Nov ($\lambda = 003^\circ\text{Ls}$, $\delta = 12.5''$) to 30 Nov 1992 ($\lambda = 004^\circ\text{Ls}$, $\delta = 12.7''$) at $\omega = 168^\circ\text{W} \sim 188^\circ\text{W}$. A more table of the nph activity on those days was once given in CMO #125 p1134-1135. In Internet, the Web site of the Fukui City Museum of Natural History shows in

<http://www.nature.museum.city.fukui.fukui.jp/shuppan/kenpou/42/42-1-18.pdf> (see p8). The dark segment or line must have been the perimeter located at Gyndes of the solid npc. This was apparent to the naked eyes, while the the nph was still present though thinner, and not clear over the npc. At that time we had already received several Lynxx ccd images of Don PARKER (*DPk*) made on 13 Nov 1992 ($\lambda = 355^\circ\text{Ls}$, $\delta = 11.1''$, $\phi = 13^\circ\text{N}$) at $\omega = 190^\circ\text{W}$, 196°W , 209°W , and also we received Video images from Y HIGA (*Hg*) on 22 Nov at $\omega = 255^\circ\text{W}$, and also several TP images from Y MOTITA (*Mo*) on 27 Nov and so on.

7° So next we turn to the question how the situation

could be expected at around the Martian vernal equinox in 2007. The angular diameter will be satisfactory as often repeated. Just the tilt ϕ is shallower at $4^\circ\text{N} \sim 0^\circ\text{N}$ during $\lambda = 000^\circ\text{Ls} \sim 010^\circ\text{Ls}$. This may be slightly worse than the case in 1992, but it can be fully expected

that the interrelation of the vanishing nph with the dark perimeter of the rigid npc can be seen in an interesting manner. In Japan the area of the north of Propontis I will be watched by us (if the weather condition is not as worse as in 2005), and the region of the north of M Acidalium will face towards Europe.

In 1975, the present writer watched $\omega = 198^\circ\text{W}$ and others under a preferable seeing condition on 2 Jan 1975 ($\lambda = 006^\circ\text{Ls}$, $\delta = 15.0''$), but $\phi = 5^\circ\text{S}$ so that the npr was quite dull, even the boundary of the nph being unclear.

8° N.B. Personally to the present writer *Mn* who works here at Fukui, it is inconvenient that the spring equinox in 2007 occurs in December because of the expected dismal weather, while in 1992 it came in November. If we regard the observation rate in November 1992 as 100, the observations in December 1992 amounted 74. However in 2005, if we regard the observations in November 2006 as 100%, the rate in December 2005 was no more than 6%. In January, 90% in 1993, but in 2006 just 25%. They said the winter in 2006/2007 was warmer, but we have no statistics about the night skies at present. We are sure this is a particular situation at the areas facing to the north, and the situation at the region facing to the Pacific Ocean is different, and we expect good observations on the latter side of the Japanese island.

1° 今回は1992年の接近を振り返りながら、北半球の春分 $\lambda = 360^\circ\text{Ls} = 000^\circ\text{Ls}$ 邊りを豫想してみようと思う。北極冠は春分前に最大徑になっていると思われるが、その頃は未だ北極雲に覆われていて詳細が掴めない。一方、春分後には北極雲が霽れて来るのであるが、その中から出る北極冠を見極めてうまくキャッチするのは容易ではない。理由は適当な中央緯度 ϕ に出逢うことが少ないこと、 $Ds = 0^\circ$ という関係もあってなかなか燦然とした姿

は掴めないものである。もう一つ地球側の季節がある。

2° Coming(3) (CMO#327p0541)の圖ではぼ解るが、2005年の接近での春分は遅く、既に $\delta=9.7''$ になっており、 ϕ は 17°S であったから条件が悪く、22Janというのも北半球の観測者には辛いものである。この日 Galleryに upされたのは四點ほどの観測にすぎない。2007年には春分は $\delta=15.7''$ もあり、この點では久々の好条件である。然し、 ϕ は 4°N で少々浅いのと、直ぐ南へ動くのが辛いところである。これは10Dec2007であるが一ヶ月後の10Jan2008には ϕ は 1.4°S と南を向く。季節は $\lambda=015^\circ\text{Ls}$ で未だ北極冠の見極めに重要なところである。ただ、春分前は $\lambda=340^\circ\text{Ls}$ (11Nov)では $\phi=9^\circ\text{N}$ 程ある上、 $\delta=12.2''$ であるから案外面白い風景が掴めるかも知れない。

3° Coming(3)の圖から分かるように2007年に近い接近は最近では1975年のものである。この時の春分は21Dec1975に起こっていて、 δ は $16.1''$ 程あった。但し ϕ は 4°S に近く、その後も増加したから好条件とは言えなかった。筆者の観測に限って言えばこの年は不作で、事情は忘れたが、仕事の他に天候も優れなかったのかと思う。この點は2007年にも心配なことで、Decと言えは2005年には福井では壊滅状態であったから、今回も心配している。1990/1991年の接近では春分(4Jan1991)は下り坂で $\delta=13.4''$ であった(最接近は20Nov1990)が、 ϕ も 13°S であったから、2005年と大差ない不満の年であった。

4° その点1992/93年の接近は圖から判るように稍事情が違っていた。春分は22Novと早く(最接近は3Jan1993) δ は $11.9''$ しかなかったが、 ϕ は 13°N と大きく北半球が見渡せ、その前後も 10°N 以上を推移したわけである。 $\lambda=020^\circ\text{Ls}$ 時點でも $\phi=9^\circ\text{N}$ であった。そこで、筆者の1992/93年の観測を若干振り返ってみるが、coming(3)の圖から判るように2007年にやや遅れた形で2007年に近い譯であるから些し参考になるかも知れないと思う。

5° Coming(3)では1990年の北極雲の激しい動きからドーズのスリットについて觸れている。1990年にはきわめて明白であったから、1992年はどうかということ、可能性はあったものの[遅まきのドーズの場合 $\lambda=337^\circ\text{Ls}$ 邊りと考えられるから、

1992年には $\delta=8.6''$ ほどで、ちょっと難しかった。1990年の場合日本から好く見られたのは $\lambda=320^\circ\text{Ls}$ 邊りで、 $\delta=15.8''$ であったが(然し乍 $\phi=4^\circ\text{S}$)、ドーズの季節では1990年には $\delta=18.1''$ もあったから、未だまだ可能であった。最接近時で、もし見えていれば、ヨーロッパで20hGMT頃の筈である]、実際には筆者は出會^{てくわ}していない。一寸可能性があったかな、と思われるのは1992年の十一月の月上旬から中旬で、 $\lambda=350^\circ\text{Ls}\sim 356^\circ\text{Ls}$ 邊りであったろうか、 ϕ が $12^\circ\text{N}\sim 13^\circ\text{N}$ でマレ・アキダリウムが何度か南中しているからドーズのスリットが期待されるが、現れてはいない。 δ が $10.4''\rightarrow 11.2''$ というのもシーイングに影響する。10Nov92($\lambda=354^\circ\text{Ls}$ 、 $\phi=13^\circ\text{N}$ 、 $\delta=10.8''$ 、 $\iota=36^\circ$) $\omega=010^\circ\text{W}$ 、 022°W ではマレ・アキダリウムが北極雲を透かせて稍濃く出ているが、北極雲の境界自身が不明で、弱まった感じであった。但し13Nov92($\lambda=356^\circ\text{Ls}$ 、 $\phi=13^\circ\text{N}$ 、 $\delta=11.1''$)には ω の若い $\omega=320^\circ\text{W}$ 、 330°W 、 340°W 、 349°W などではシーイングの向上などもあって、朝方のマレ・アキダリウムの邊りの北極雲は活發で、面白い様相を示していたが、 $\omega=359^\circ\text{W}$ で既に4:30JSTでそれ以上の追求が出来ず、この地方は去っていった。

6° ところが、春分の24Nov92($\lambda=001^\circ\text{Ls}$ 、 $\delta=12.1''$)頃から、別の箇所でもドーズ現象に似た濃いセグメント(線分)が見られたのである。 $\omega=190^\circ\text{W}$ 前後になるとプロポンティスIなどが見えてきて、その北に仄かに北極雲が見えているが、その中に暗線が見える譯である。これは北極雲の動きが複雑で毎日一定していない。この時の筆者のチェックはCMO#125p1134-1135に北極雲部だけを圖表化してある。Internetでは福井市自然史博物館紀要でも次のサイト(p8)で見ることが出来る：

<http://www.nature.museum.city.fukui.fukui.jp/shuppan/kenpou/42/42-1-18.pdf>

この中から例として28Nov($\lambda=003^\circ\text{Ls}$ 、 $\delta=12.5''$) \sim 30Nov92($\lambda=004^\circ\text{Ls}$ 、 $\delta=12.7''$) $\omega=168^\circ\text{W}\sim 188^\circ\text{W}$ の筆者のスケッチを英文の部に集めた。暗線は白さの深みを増す北極冠の外側のギンデス(パンカイアの外側)が見えているのだろうと思われる。ただ、日毎北極雲の動きが激しい。この時は春分でも快晴ではないことは確かである。なお、唐那・派克(DPk)氏は13Nov1992($\lambda=355^\circ\text{Ls}$ 、 $\delta=11.1''$ 、 $\phi=13^\circ\text{N}$)で $\omega=190^\circ\text{W}$ 、 196°W 、 209°W とLynxxで撮っているし、22Nov $\omega=255^\circ\text{W}$ で比嘉(Hg)氏の像、27Novには

森田(Mo)氏の像が報告されている。

7° では2007年の春分邊りの動向はどうなるかという、何度も述べるように視直径は申し分ない。問題は、しかし、 ϕ は $\lambda=000^\circ\text{Ls}\sim 010^\circ\text{Ls}$ では $4^\circ\text{N}\sim 0^\circ\text{N}$ を推移するから、1992年ほどではないが、可成り好条件で、北極冠と最後の北極雲の絡みが下の暗部を介して観察されるかも知れない。日本ではこの邊りが観察出来る。マレ・アキダリウムは欧羅巴の朝方に観測出来ると思う。

先にも述べたように、2007年の前倒し型の1975年には筆者は2Jan75($\lambda=006^\circ\text{Ls}$, $\delta=15.0''$)で好いシーイングに恵まれ、 $\omega=198^\circ\text{W}$ 等の場面が得られたが、 $\phi=5^\circ\text{S}$ であって、變哲もない北極冠域になってい

る(境界はクリアーではない)。

8° 附記：個人的には筆者には1992年は春分が十一月だったのに對し、2007年は十二月に来ることにちょっと困るなあという気がする。それは天氣の問題である。筆者の福井でのNovの観測数を100%とすると。1992年にはDecは74%であったのに對し、2005年は6%に過ぎなかった。Janも1992年には90%であったが、2005年には25%であった。観測時間帯に稍違いがあるが、年によって違いがあるのが、氣懸かりなことである。2006/2007年の冬は暖冬となったが夜間の観測可能性については統計がない。太平洋側に於いては事情が違ふと思うので、頑張っていたきたい。 □

便り

Letters to the Editor

●.....Date: Sun, 25 Feb 2007 18:26:26 +0100
Subject: A comparative tests of UV filters

Hi all, Following this link you will find some experiences I have made to test the Baader and Schuler UV filters which are the most used among the amateurs : <http://www.astrosurf.org/pellier/comparuvfilters>

It shows clearly that the Schuler is the most efficient filter. The Venus and Mars observers should really consider using this one... Best wishes,

○.....Date: Sun, 25 Feb 2007 21:08:47 +0100
Subject: Re: A comparative tests of UV filters

Hi Damian, yes the filter is a bit disappointing. The Schuler really performs better and should be used on Venus instead of the Baader. I think I will still observe the gas giants with the Baader - I really think it could give a kind of "UV+" image because it has a better separation from deep blue/violet light than the Schuler.

Regards

○.....Date: Tue, 27 Feb 2007 19:59:19 +0100
Subject: Re: A comparative tests of UV filters

Hi Paolo, Interesting news - so I should update my page.. The filter looks however very expensive... Another point that should be investigated by Baader is the noticeable difference also in light gathering. The 30% loss from Schuler to Baader really doesn't look coherent to me with the transmissions curves... It shouldn't go that bad.

○.....Date: Wed, 07 Mar 2007 19:52:32 +0100
Subject: Re: FW:first light UV Venus

Dear Masatsugu, It's a long time since I've written to you. I must apologize for this - but during december and january, I have had some health problems that kept me a bit "apart from everyday life", although nothing was found, fortunately... I'm now fine even if I'm still a bit tired.

I have also a bit stopped to write about Mars. Right now, only the first part (out of 3) of my 2005 report is

complete. And I have then not had time to think about writing a new CMO note... I'm going to send a message to Sylvia, although there is not much advice to give, the image is sharp, certainly a bit undersampled but fine nonetheless.

I hope that you're fine too... Bien amicalement

○.....Date: Mon, 12 Mar 2007 20:33:57 +0100
Subject: Venus image

Dear Sylvia, I have long been reading your correspondence to the CMO team and I'm happy to write my first message to you.

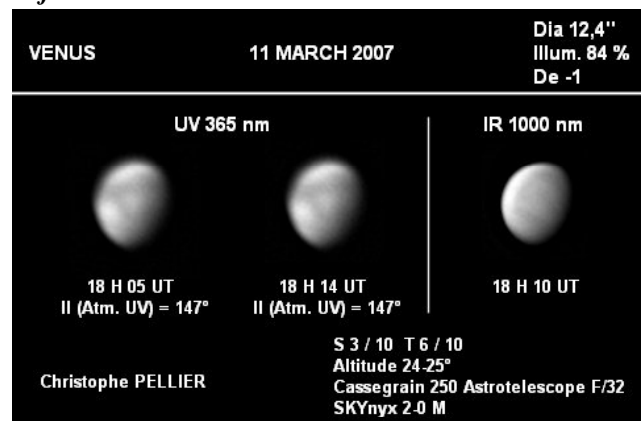
Masatsugu kindly forwarded me your Venus image that I find quite good, it is sharp, there are some details and the image is free from noise and artefacts. I have taken some Venus images recently and although they're not that sharp, they show interesting things. I'm thinking about sending you those images as well as the future martian ones, if you're ok... Best wishes,

○.....Date: Tue, 13 Mar 2007 19:42:28 +0100
Subject: Saturn 10-11th march 2007

Hi all, images taken again under fair conditions. I've tested an even shorter focal length that allowed none the less a full set of images. Here is also a first image with the Astronomik IR 807.

http://www.astrosurf.com/pellier/S070310_11-CPE

○.....Date: Tue, 13 Mar 2007 21:30:45 +0100
Subject: Venus march 11th 2007



Hi all, Here are a few Venus images. It looks like there

are some shadings in the 1-micron image, as seen in several occasions.

<http://www.astrosurf.com/pellier/V070311-CPE>

UV filter used is from Schuler. Regards

○·····Date: **Thu, 15 Mar 2007 20:02:23 +0100**
Subject: **Venus march 12th**

Hi all, Next day's observations. Seeing still poor, but the two consecutive IR images show identical shadings. Richard has measured the rotation at 1 micron to be around 5 days.

<http://www.astrosurf.com/pellier/V070312-CPE>

○·····Date: **Fri, 16 Mar 2007 19:07:21 +0100**
Subject: **Venus march 15th 2007**

Hi all, Although transparency was poor, seeing was very good for the altitude and the results are surprising.

<http://www.astrosurf.com/pellier/V070315-CPE>

The UV image suffered considerably from the hazy sky. The 1-micron images display clear and contrasty details ; this is not really a surprise but they're rarely that visible! But the most interesting is the presence of a corresponding banding pattern in green light, identical in both so it must not be artefacts.

I think I will now image Venus in the full range of UV, B, G, R, IR colors... Best wishes

○·····Date: **Sat, 17 Mar 2007 19:08:33 +0100**
Subject: **Saturn 11th march 2007**

Hello, Again some fair conditions for these.

<http://www.astrosurf.com/pellier/S070311-CPE>

Have a nice week-end,

○·····Date: **Sun, 18 Mar 2007 13:37:08 +0100**
Subject: **Re: [Venus-ALPO] Venus march 15th 2007**

Paolo, One would conclude that the G details are found in the middle. However, they look to correspond so they can as well be the same details, perhaps seen through some higher clouds in G, but "naked" in near-IR. I found one set from my 2004 collection where there is also a correspondance between IR and integrated light (look for a central equatorial band, very low contrasted) :

<http://astrosurf.com/pellier/V040316-CPE>

One more research area !!

○·····Date: **Sun, 18 Mar 2007 13:46:47 +0100**
Subject: **Re: [Venus-ALPO] Venus march 15th 2007**

Hi Sanjay, Richard had the same idea, but this filter has built-in IR blocking. I'm quite aware of this kind of error;). Even if there was any residual IR leak, it would be completely overwhelmed by green light, where the CCD is far more sensitive... I will not failed to get more data !

Sanjay Limaye a écrit :

> Christophe, Spacecraft images at 550 nm have seldom shown any
> features.. except at somewhat longer wavelengths (610 nm for example
> from Mariner 10 Orange filter). So I suspect you are getting some read
> leak in your G filter. > Sanjay

○·····Date: **Sun, 18 Mar 2007 17:31:35 +0100**
Subject: **Re: FW:first light UV Venus**

Dear Masatsugu, I am well, although quite tired, and these last days I have either observe or sleep early, so I'm a bit late in writing the longer e-mails...

The 1990 Mars image you're refering to can be found here: <http://www.astronef.fr/astro/pic/images/mars.html> if you don't have it already. For a permission use, I'm not

sure where you should write, but try to ask Eric Frappa.

Do you have news about the possible meeting ? I have understood that Bill Sheehan wrote to Audouin Dolfus ? I think we good do something here, although I'm not used to organize this... ···Hoping that you are well and feel good, *Avec mes amitiés les plus sincères,*

Christophe PELLIER (ケルストフ・ペリエ nr Paris 法)
<http://pellier.christophe.club.fr/index.htm>

●·····Date: **Sun, 25 Feb 2007 12:36:12 EST**

Subject: **Re: A comparative tests of UV filters**

Hmmm...pretty interesting! I wonder how those two UV filters compare with the UG-1.

○·····Date: **Sun, 4 Mar 2007 01:04:56 EST**
Subject: **Re: Lunar eclipse**

Good report Dave (ARDITTI) with your excellent photo! I saw it too from New York and the moon was just visible at mid-totality at 6 degrees above the eastern horizon! It was mid-twilight and it became clearer within last half hour before totality ended. I used my 10×70 binoculars and the moon occulted a 5th magnitude star 59 Leonis at 23:33 UT and reappeared at 0:10 UT (Mar. 4th). By the way, I think the star is 59 Leonis in your photo. I cannot judge well what was the Danjon scale. But it was a bit brighter than I thought especailly along the north side of the moon.

○·····Date: **Mon, 19 Mar 2007 13:34:48 -0400**
Subject: **Re: Venus march 11th 2007**

Good shots Rich! I don't think a 38 minute animation can show much of the rotation. The time is just too small. However, if you image Venus at least 3-4 hours apart, then you might see a slight movement.

Christophe Pellier and I imaged Venus 5 hrs apart back in Feb. 2004 and you can see the rotation quite clearly. Also I had imaged with other observers.

<http://hometown.aol.com/frankj12/venusindex.html>

Frank MELILLO (フランク・メリッロ Holtsville NY 美)
ALPO Mercury Coordinator

●·····Date: **Sun, 25 Feb 2007 18:07:50 -0000**

Subject: **Re: A comparative tests of UV filters**

Hi Christophe, Thats a really informative piece of work and very useful I was aware of the problems with the Baader. I really must say, its a poor show on their part. If you look at the bandpass charts for both their Venus filter and the solar continuum filter there is no sign of any IR leaks, yet both have them (the solar continuum is useless without an IR blocking filter inline as well.) It really does make me wonder just what testing they do on their filters. The Venus filter i think is a major problem, since many people will image Venus at altitudes of less than 30d at sunset/sunrise. Best Wishes

○·····Date: **Tue, 27 Feb 2007 18:45:46 -0000**
Subject: **Re: A comparative tests of UV filters**

Hi all, Here is a link to a set of images i took in 2004 using a C11@F31, ATIK camera and Schuler UV + True Tech IR rejection filter. I certainly had no problem with this older true tech IR blocking filter cutting the UV signal. Its seems from recent discussions that the logical

choice for UV Venus work is the Schuler filter (since I am sure the True Tech filters are now discontinued, and the Baader/Astronomik alternatives seem unsuitable.

http://www.damianpeach.com/images/venus/2004_10_01imgs.jpg

I must say I am rather amazed a company like Baader have ended up releasing a flawed filter into the marketplace like this, especially at a wavelength where the signal is very weak, and any IR leak could pose destructive to high resolution work (especially with our typical CCDs being so sensitive to IR and so insensitive to UV!.) Best Wishes

Damian PEACH (デミアン・ピーチ Bkh 英)
<http://www.damianpeach.com/>

●.....Date: Sun, 25 Feb 2007 12:58:22 -0800
Subject: RE: A comparative tests of UV filters

Very interesting. I've had good results with the Baader, but perhaps it could work better in conjunction with an IR block filter?

○.....Date: Mon, 26 Feb 2007 08:46:13 -0800
Subject: RE: A comparative tests of UV filters

I'm only referring to the Astronomik Near-IR blocker, not one that specifically blocks UV also:

http://www.astronomik.com/english/eng_ir.html

Does this one block UV also? The published curve conveniently starts at 400nm. This is the filter I own.

○.....Date: Tue, 27 Feb 2007 11:16:40 -0800
Subject: RE: A comparative tests of UV filters

You know, I just received my Baader UV (Venus) filter last month, and it seems to perform well. Here's a result using Don Parker's 10" Mewlon:

http://media.skytonight.com/images/Venus-2-13-07_UV_341.jpg

○.....Date: Tue, 27 Feb 2007 21:04:31 -0800
Subject: Saturn in different light

Had rather good seeing tonight for the first time in months, too bad I only have a 7" scope. I shot this in UV, Vis, and IR. A bit different to say the least. 7" Maksutov-Newtonian at roughly *f*/30.

○.....Date: Thu, 1 Mar 2007 03:47:37 -0800
Subject: Saturn, Jupiter 3-1-07

Seeing was fair for Saturn, poor for Jupiter (which is pretty good for my latitude of 42.9°N). Details in images.



Sean WALKER (シヨン・ウォーカー MA 美)
<http://masil-astro-imaging.netfirms.com/home.html>

●.....Date: Sun, 25 Feb 2007 23:28:09 +0000
Subject: Re: A comparative tests of UV filters

I tried the Baader IR block with the Baader Venus filter, and the loss of UV was unacceptable. Thanks for the very interesting work, Christophe and Arnaud.

○.....Date: Tue, 27 Feb 2007 16:40:37 +0000
Subject: Re: A comparative tests of UV filters

Dear Arnaud et al, I did a test with the Baader Venus

filter and a TruTek IR block filter back in 2005. Here it is. The TruTek looks, in its presentation and casing, identical to the Astronomik filters, and I suspect it is exactly the same as the Astronomik IR block (non UV-block) that Sean mentions. On the image, I wrongly wrote it was a Baader IR block filter.

This was with a Dall-Kirkham Cassegrain, an open-tube instrument, with a 2× relay lens and no Barlow. Clearly, there was not much diminution of the UV from the IR block. However, similar experiments I did with a C11 SCT recently and a Celestron Barlow gave a completely different result - about a 50% loss of the UV signal with the IR block in place. However, I am not now sure which IR block I used, TruTek or Baader. I will have to experiment further when we get decent conditions.

On both telescopes, the IR ghost from the Baader Venus has been quite prominent. The lower in the atmosphere, the more separated the two images are.

I have not been able to find a dealer for the Schott or Schuler filters in Europe. Baader and Astronomik are much easier to get.

○.....Date: Sun, 4 Mar 2007 03:19:56 +0000
Subject: Lunar eclipse

I am sure everyone who saw it will agree it was a particularly beautiful lunar eclipse: not only the colour of the Moon, but its excellent position high in the sky and in interesting starfields, and the excellent conditions we had in England. This shot is from 2007 March 04 00:31. 30 mins after after mid-eclipse. Canon EOS 350D, 90mm refractor *f*/10, 6 seconds at ISO 200.

Full-res version available here

<http://www.davidarditti.co.uk/luneeclipse07.html>

○.....Date: Sun, 4 Mar 2007 22:32:52 +0000
Subject: Lunar occultation of Saturn

I have finally done something with my webcam images of the occultation of the 2nd. I have made them into two short animations, one showing the ingress phase 02:28-02:45, and one showing the egress phase 02:54-02:59. These animations are approximately centred on Saturn (to within the tracking accuracy of the mount going at sidereal rate), so the Moon appears to move.

I have left these videos "natural" and minimally-processed. Exposure is for Saturn with no attempt to hide the consequent over-exposure of the Moon. This is what was really seen on the screen. There is some loss of quality in the conversion to GIF animations. There are also some twigs visible in the foreground as the scene was going behind a tree. Each frame is a stack of 100 frames (10 second AVI files), taken with a standard Toucam Pro through a 10" Dall-Kirkham-Dall Cassegrain at approx. *f*/15. (These are the first publicly-released images from this telescope following its optical re-work).

Location is 51°35'49.26" N 0°16'15.21" W.

○.....Date: Wed, 7 Mar 2007 02:54:32 +0000
Subject: Saturn 2007 March 06

First of all, I would like to thank David Graham for his excellent work in co-ordinating the BAA Saturn Section over the past years.

I had excellent seeing on Saturn just before taking these

images, and a superb visual view. Unfortunately, it clouded over as I was taking them, and R and G were captured through a layer of fog, and B was not captured at all. I have consequently resorted to making a faked colour image, in which the G channel is a really an R-G average, and the B channel is really the G image. Hence the colours are quite wrong.

I hope others had better luck tonight. I did want to give this newly re-worked telescope a good testing on Saturn,

but have not quite succeeded yet. The visual view was very fine, however.

○.....Date: Fri, 16 Mar 2007 03:09:15 +0000
Subject: Saturn 2007 March 14

Seeing was rather variable, but good for brief spells. Two sets of RGB were taken, but there were 0% differences visible between them, so I have combined them here into one image set. The most interesting feature is the greenish shading on the globe N of the ring, which is

TEN YEARS AGO (139)

---CMO #186 (10 Mar 1997) & #187 (25 Mar 1997)---

1997年三月も二回の発行となっている。#186(pp2015-2026)では、二月後半の観測が纏められている。λは080°Ls付近で三月中旬の接近を前に視直径δは二月末で13.3"と大きくなってきていた。日本からはソリス・ラクスからマレ・アキダリウムと見え、期末にはシュルティス・マイヨルの夕方迄の観測だった。この期間、夕靄朝靄が明るく見えて注目された。北極冠周辺も詳しく見える様になり、北極冠内の亀裂カスマ・ボレアレも観測されている。観測報告者は国内からは八名、国外からは六名を数えた。G QUARRA氏の属するSGPG (Firenze, Italy)からのCCD画像が紹介されている。

LtEは、中野雄吉、岩崎徹(Iw)、伊舎堂弘(Id)、山本進、日岐敏明(Hk)の各氏より、国外からは、Francis OGER (France), André NIKOLAI (Germany), David LEHMAN (USA), Nelson FALSARELLA (Brasil), Frank MELILLO (USA), Richard SCHMUDE (USA), Gianni QUARRA SACCO (Italy)の各氏からの来信が紹介されている。IMWからのNewsLetterには、10 March 1997のHSTの撮影スケジュールがアナウンスされた。日本から同時観測出来る時間帯であり、国内同人宛にe-mail/FAX網にて通知された。

#187(pp2027-2042)では三月前半の観測報告が纏められた。最接近直前の期間で、15Marにはδ=14.1"に達した。13Marにλ=090°Lsに達した。国内からは12名、国外からは追加報告も含め14名からの報告があった。日本からは、シュルティス・マイヨルの南中からエリュシウムの南中迄の範囲の観測、傾きは大きく北向きで、極少状態の北極冠と周辺の様子が詳説されている。

この観測期から、阿久津氏のCCD画像、比嘉氏のビデオ画像など、観測のデジタル化が進み始めている。とはいえ、海外からの観測報告も、当時はまだスケッチ中心で、CCD画像のインターネットからの参照は僅かであった。CMO同人へのメッセージとして、e-mail環境の開設を呼びかけている。

LtEは、岩崎恭輔、Iw、Hk、Id、永井靖二、松本達次郎、Hgの各氏より、国外からは、蔡章献先生、T. CAVE (USA), W. MEYER (Germany), R. SCHMUDE (USA), H. GROSS (Germany), D. NIECHOY (Germany), H. SUDWISCHER (USA), J. DIJON (France), A. HEATH (UK), N. FALSARELLA (Brasil)の各氏から寄せられている。この号にもIMWからのNews Letterがあり、30, 31 March 1997のHSTの撮影スケジュールが載せられている。

TYA(16)はCMO#028 (10 March 1987), TYA(17)はCMO#029 (25 March 1987)の短い紹介で、1986年接近の最終盤の様子が取り上げられている。浅田正氏の惑星写真に関するアンケートの集計が掲載されていた。

村上昌己 (Mk)



not quite the shape I would expect.

○ · · · · · **Date: Sat, 17 Mar 2007 01:04:23 +0000**
Subject: Venus 2007 February

This is a digest of my Venus observations for February. This is not a very consistent set, as, while the UV images are all with the same filter, the lower line uses different IR area filters. Also, there is a change of telescope (and scale) for the Feb. 26 images. The Feb 06 IR looks badly-processed (turned out too small), but unfortunately I have deleted the AVI file so I can't go over it again.

It will be seen that during February, the bright polar caps were prominent in UV. The most interesting images are Feb. 21, which show features in IR-R distinct from the UV features. I have turned this data into an enlarged false colour image, in a separate file, for what it is worth.

○ · · · · · **Date: Sun, 18 Mar 2007 17:15:48 +0000**
Subject: Re: [Venus-ALPO] Venus march 15th 2007

It is interesting that, in this case, the IR features are virtually the negative of the UV ones, and that the G channel is allied to the R. If this is quite general, it shows why the Venus clouds are so difficult to record in integrated light either visually or electronically - the information in one part of the visual spectrum cancels out the other. Details in G are at best weak, if not completely cancelled, at the frequency of highest sensitivity of the human eye. On 18 Mar 2007, at 12:46, Christophe Pellier wrote:> Hi Sanjay,

○ · · · · · **Date: Sun, 18 Mar 2007 21:45:43 +0000**
Subject: Venus 2007 March 01-07

Here are my Venus observations for the first week of March. Again, one UV filter has been used, but a variety of IR filters. This time they all use the same telescope, the 10" Cassegrain.

The bright polar cusps continued to be prominent in UV as in the previous month. Most noteworthy was the occasion of March 01, when the I saw the dark marking more clearly visually than I have done on any other occasion. Using a Meade no. 47 violet filter it was extremely obvious, as reflected in the UV image (an attempt to image using the no. 47 filter produced a poor result, probably because of IR transmission). There is, however, no evidence of markings in IR.

David ARDITTI (テ`ウ`イット`・ア`テ`イチ Edgware ME 英)
<http://www.davidarditti.co.uk/observatory.html>

● · · · · · **Date: Sun, 25 Feb 2007 23:33:13 -0000**
Subject: Re: A comparative tests of UV filters

Ah yes the Baader IR blocking filter also blocks UV .
<http://www.scsastro.co.uk/it100003.htm>

○ · · · · · **Date: Mon, 26 Feb 2007 00:05:21 -0000**
Subject: spot 0944

Hi Guys, I felt like an Eskimo fishing in a hole in the ice today. We had 99% cloud cover and squalls of heavy rain. Little patches of blue were screaming across the sky today, a finger was poised to capture some frames on the next one that exposed the Sun. We did it and here is the result. Colour or Mono, take your pick. There seems to be a little flare activity to the right of the spot. You can see changes in the two mono images at 1504 and 1516.

○ · · · · · **Date: Tue, 27 Feb 2007 14:55:22 -0000**
Subject: Sun 26-Feb

Hi Guys, Less cloud on the 26th brought some nice

Solar views, poor seeing, but I'm not complaining. The Sun is up a massive 30 degrees now at noon, extending the imaging window very nicely. Three of the images were on 90 inch efl. The higher res one is a montage of two avis taken at 180"efl. .6A Daystar ATM. Best wishes

○ · · · · · **Date: Wed, 28 Feb 2007 23:28:48 -0000**
Subject: sun 28th Feb

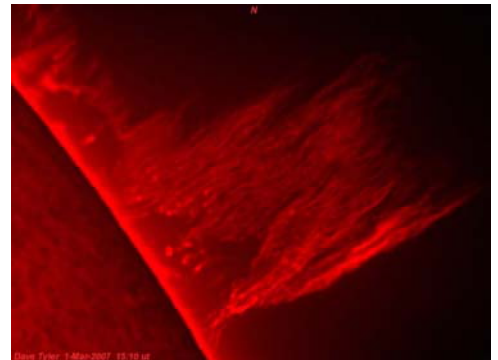
Hi Guys fun on the sun between cloudbursts today. The detail was changing around the spot quite quickly. I should have enough avi's for a short animation, to follow. All Images with 3 inch stop on my 6 inch f15 for f30. Daystar A T M .6A Seeing poor for higher res. Best

○ · · · · · **Date: Thu, 1 Mar 2007 11:19:06 -0000**
Subject: Alert

Hi Guys this event is still happening, but is dying down now. This started as a chameleons tongue, turned into a flaming hoop and then this. It all happened very fast, I have enough frames for an animation of the first half of this event. Cheers

○ · · · · · **Date: Thu, 1 Mar 2007 18:39:28 -0000**
Subject: Large prominence

Hi Guys;
 Plenty of sun today I nearly missed this monster, whilst being distracted by a fast changing flaming hoop prominence. This one only just fitted on my chip at 180"efl. Cheers



○ · · · · · **Date: Sat, 3 Mar 2007 00:06:53 -0000**
Subject: Sat occultation 2 March 2007



Hi Guys,
 Here are 3 stages at one minute intervals. An 8 second exposure of the correctly exposed moon with very

weak Saturn, was used to position the correctly exposed rgb of Saturn. The rgb was taken on the same settings as the occultation sequence and 10 minutes before the event. Best wishes

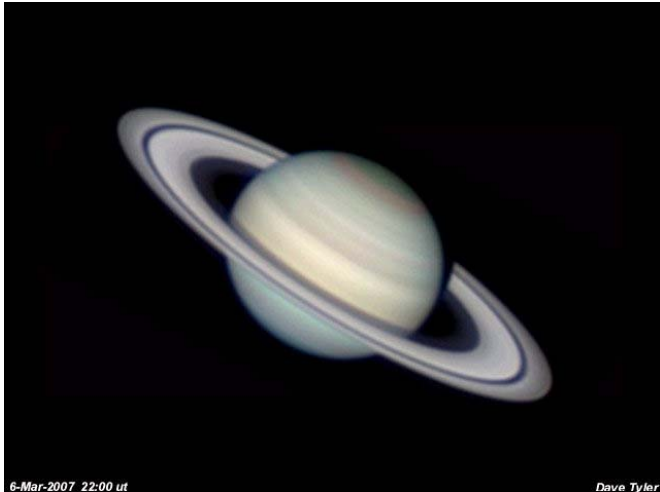
○ · · · · · **Date: Mon, 5 Mar 2007 22:51:35 -0000**
Subject: the sun today

Hi guys, one from very early this am. Many small proms today, all rather quiescent. A bit of action around 944. 90"efl., 76mm aperture. Seeing poor. Best wishes

○ · · · · · **Date: Wed, 7 Mar 2007 13:29:30 -0000**
Subject: Solar images from 2-March

Hi Guys here are a few solar images from the 2 March. The large prom image which is a higher res version of the left hand one of the pair image, is the same prom that I imaged on the first of March. Best wishes

○ · · · · · **Date: Thu, 8 Mar 2007 11:32:40 -0000**
Subject: Saturn 6-March



Hi Guys; At last we had some reasonable seeing. It was all a bit pre meridian, as cloud spoiled it too soon. There is a spot on the reds and greens, in the SEB that can be followed. Seeing was 5-8 in red, 4-6 in green, 2-3 in blue. During a typical AVI, C14 @ f40 Trutek type 2 G and B, and type 1 red. Lumenera 075M 15 fps.

○ · · · · · **Date: Sun, 11 Mar 2007 00:49:31 -0000**
Subject: The sun 10-mar.

Hi Guys; Here are a couple of images from about 12 hrs ago. Same group of proms as Eric's fine image. Also there was an interesting little disturbance going on. It actually looks like someone winking at me, but surely not.

Both images taken at 76mm dia f30 (90inches fl) as seeing was so poor at 180inches and full aperture.

○ · · · · · **Date: Sun, 11 Mar 2007 17:22:26 -0000**
Subject: Solar images 11th March

Hi Guys; The disturbance near the off limb is developing quickly. Since yesterday, its effect on the surrounding chromosphere appears quite dramatic.

○ · · · · · **Date: Sun, 11 Mar 2007 23:46:07 -0000**
Subject: Solar animation preview

Hi Guys; In seeing downtime, I have been working on an animation of a spectacular fast changing prominence that I imaged on the 1st March. It is 38 frames long from 0920 ut to 1043 ut. Clouds interrupted the latter stages, so they are a bit more spaced out but things happen faster. It started as a loop, then started to collapse, recovered, over did it and started to spiral, then lost it completely with a spectacular finish see stills. The animation should be on my website soon, should you like to see it. I expect it will take 4 mins to load up the first time you view it. Best wishes

○ · · · · · **Date: Thu, 15 Mar 2007 09:57:52 -0000**
Subject: Saturn 13-March-07

Hi guys, Here is a study of Saturn from the 13th. The monos for the RGB were processed uniformly and gently so as to let the RGB filters do their job. (as per the article on my website). I have pushed the red and green on a separate image in an attempt to reveal, if any, features or spots. Luminance was a reg green combination. Filters are Trutek type 2 G and B (with ir blocker), and type 1 red with no ir blocker. Lumenera 075Mono and C14 @ f39.

○ · · · · · **Date: Fri, 16 Mar 2007 23:33:06 -0000**

Subject: solar images from the 14th March

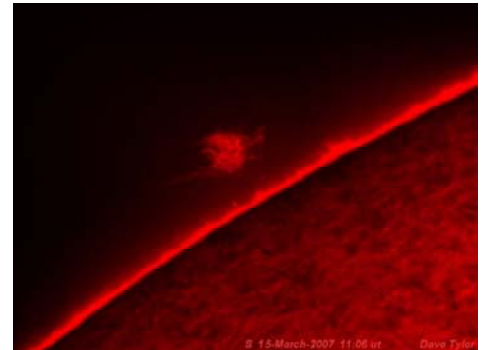
Hi Guys; Solar seeing was pretty good on the 14th I did a couple of centre sun shots on the granulation in white light, as that was about all there was to image!!!

Image of 09:53 ut is not an alien parasite or a neural network. It is the centre of the sun's disc in H α showing both H α clouds and granulation. The Day also put on a good show of proms, I particularly like the giant insect prom complete with antennae. Below is the link to the fast changing prom of the 1st March

http://www.david-tyler.com/images/solar/Animation_solar_prom_1-mar-2007.gif

○ · · · · · **Date: Sat, 17 Mar 2007 22:50:31 -0000**
Subject: ball Prominence

Hi guys; An unusual "ball" prominence was imaged on the 15th. It first of all brought to mind the recent occultation of Saturn,



with a similar image scale. You can see how it broke up in the 2hour interval between the two images. Best wishes

○ · · · · · **Date: Sun, 18 Mar 2007 19:00:44 -0000**
Subject: prominences from 15th March

Hi Guys here are a few more proms from the 15th. A couple of them showing progress from the previous day. Namely 2ocp1 (ref to 14th image in same posn.) and 8ocp1. Best wishes

○ · · · · · **Date: Mon, 19 Mar 2007 22:03:52 -0000**
Subject: solar images from the 17th March

Hi Guys; Here is a couple of images from the 17th Mar, seeing was not so good, as the 15th. The images are "astro view" with south at the top of the image. North being Earth's axis North as opposed to solar north or ecliptic north. Scope 150mm f15 achromat @f30 No ERF 2 \times power mate with 2inch baader ir/uv cut. plus further 1.25 badder ir uv cut on Daystar ATM .6A . CCD Lu 075 Mono. 60fps. Best wishes

○ · · · · · **Date: Wed, 21 Mar 2007 18:05:26 -0000**
Subject: active prominence

Hi Guys; There were quite a few small proms on the sun on the 20th, but one was a little different. It appears to be a loop, edge-on, with matter traveling around it. In the full animation the sun's surface seems to come up to meet the descending material. Here are a few frames from the 15 that will shortly be on the website below.

○ · · · · · **Date: Thu, 22 Mar 2007 21:34:16 -0000**
Subject: SOLAR IMAGES FROM THE 21st

Hi Guys; Although the sun is a little quiet at the moment, there is still some activity to be found, with a little bit of luck with timing. Here are a couple of images of a large but faint prominence. The images were taken about an hour apart and show quite a few changes over that hour. You can overlay the images and match up the curves and toggle between the two, if you have a mind to. The short 3 frame animation is of an active loop and

covers just 5 minutes from 10:12 to 10:17 ut. You could just notice the movement live on screen. Note how the small vertical prominence adjacent to it, is part of the same system, and is joining in the activity. Best wishes

Dave TYLER (テヴァイト・タイラー Bkh 英)
<http://www.david-tyler.com/>

●.....Date: Mon, 26 Feb 2007 11:47:38 +0100
Subject: Re: A comparative tests of UV filters

Hi Chrisophe and all, thanks for your compering. I'm on a short vacation, but when i get home i do some more practical test with the baader and schuller.

I have a new schuller uv and i hope that's is beter then the baader. I have experience with the baader,the ghost images is not always there, I think that it have to do with daytime observing. False sunlight get into telescope and give the ghost image or what it else. With a baader ir filter(no baader ir/uv filter) the ghost image disapear for 95% and a clear image from venus is there.

Also align/stacking in registax is given a problem,raw uv frames from an avi are low in contrast,noisy etc. and by a worse seeing registax align in very bad.

Let's hope the weather will be good the next week to do some test. Regards

○.....Date: Sun, 4 Mar 2007 10:47:15 +0100
Subject: Lunar Eclipse

Hi, little problem with the weather and problems with the ccd camera, here in image from Lunar Eclipse. It was taken with the „old ToUcam Pro,, and 80 mm Scopos Apo. Kindly regards

○.....Date: Mon, 19 Mar 2007 13:17:37 +0100
Subject: Venus march 11th 2007

Hi Guys, Venus observation from the 2007/3/11. Small gif from 38 min. Venus in UV 370 nm., Venus is moving very slow. Kindly regards

○.....Date: Sat, 24 Mar 2007 12:38:14 +0100
Subject: Saturn 2007.3.13 RGRGB

Hi guys, how more you learn , how more you get more out your picture. This images is taken with RGRGB.

Richard BOSMAN (リヒャルト・ホースマン Enschede 荷蘭)
<http://www.astrofotografie.nl/>

●.....Date: Tue, 27 Feb 2007 11:40:51 +0100
Subject: Re: A comparative tests of UV filters

Hi all, I took the liberty of forwarding Pellier's UV filters test to Baader company directly and I got this reply from them. In a short, they released a new filter preventing any IR leakage. But I cannot understand why it's made in the 2" size.....

○.....Date: Fri, 16 Mar 2007 21:32:00 +0100
Subject: Re: [Venus-ALPO] Venus march 15th 2007

Hi Chris, What should represent that banding captured in the G band? UV is for the highest atmosphere, IR for the lowest. And the G? Just out of curiosity.

Paolo LAZZAROTTI (パオロ・ラッツァロ ヲッティ Massa 義)
<http://www.lazzarotti-optics.com>

●.....Date: Wed, 28 Feb 2007 22:05:53 +0900
Subject: 火星観測

この間はお電話有難うございました。朝、6時半

までは見ているのですが、それ以降にならないと火星が昇ってこないようです。また、そうこうしているうちに陽が上ってきますので、結局、いまだに観測出来ていません。・・・今度の日曜は晴れそうですので、何とか観測してみようと思います。

森田 行雄 (Yukio MORITA 廿日市 Hiroshima)

●.....Date: Wed, 28 Feb 2007 09:09:13 -0500
Subject: RE: CMO#328 uploaded

Hello Masami: Thank you for sending me CMO #328.

I measured Mars' brightness on Feb. 26 at 11:12-11:16 UT and found that it was 1.19 magnitude. This is just a little brighter than I expected. I used an SSP-3 Photometer along with a 9 cm telescope to make this measurement. Please keep up the good work.

Richard SCHMUDE (リチャード・シュムダ GA 美)

●.....Date: Mon, 5 Mar 2007 12:33:00 -0000
Subject: Total eclipse image with IR luminance

Hi all, I've got quite a few images of the total lunar eclipse but I'll only send out this one. This is a SKYnyx IR capture of the eclipsed Moon taken 10 minutes after mid eclipse. As the IR result was being captured, a colour image was take using a Canon 20Da DSLR camera. Both results were combined with the SKYnyx IR result (a 4-pane mosaic) being used as luminance and the 20Da as colour. The 20Da's IR response actually rendered quite a pink cast to the image (the totally eclipsed Moon was very bright in IR!) and this has been reduced slightly to give a more pleasing aesthetic colour. I'll be comparing the IR result with a pre-eclipse full Moon shot later to see what subtle differences, if any, can be picked up.

○.....Date: Wed, 7 Mar 2007 12:48:15 -0000
Subject: Saturn March 1st 2007 finalised

Hi all, Please find attached the final version of my pre-occultation Saturn from March 2nd 2007. As David Arditti commented in an earlier mail, the visual seeing from the UK's south coast was also rather good last night but the clouds intervened before imaging could begin. Let's hope this is the end of the recent poor quality skies we've been getting.

I have also finalised my occultation summary graphic. There are two images available - both are rather large (the full size image is ~600kb). Full size version:

http://www.digitalsky.org.uk/occultations/20070302_occultation-summary.jpg

○.....Date: Sun, 11 Mar 2007 18:24:18 -0000
Subject: Re: Solar images 11th March

Excellent Dave. I managed to get out myself today but I haven't had time to process most of the images yet. However, this is a quick overview which places the various proms and disk features seen today...

<http://www.digitalsky.org.uk/solar/overviews/20070311.jpg>

○.....Date: Wed, 14 Mar 2007 11:00:45 -0000
Subject: Saturn, March 13th 2007

Hi all, Rather time challenged today but here's my first process from last night's session. Rather jittery seeing which led to a rather poor blue. I'll send the full result out when I have time to process it properly. Best regards,

Pete LAWRENCE (ピート・ローレンス Selsey 英)
<http://www.digitalsky.org.uk>

●.....Date: Fri, 02 Mar 2007 19:15:01 -0600
 Subject: Re: the sun today

Hello: Finally imaged the Sun with a 40mm Coronado stacked filters mounted on a 76mm f/6.3 TeleVue.944 was taken with a 6" f/12 A-P refractor working at f/28. The camera on the 3 images was the LU-075M. Seeing was regular as also transparency. Best regards,

○.....Date: Sat, 10 Mar 2007 17:47:36 -0600
 Subject: Re: Solar image from 11 of March.

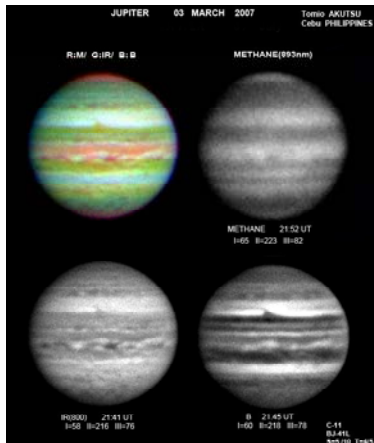
Hello: Today I tried to image the Sun through clouds and small cloud breaks. It sure was hard because I had to keep moving the Gain slider during each of the 4 frames that compose the mosaic, so to keep the prominence visible at the PC monitor and near the same intensity.

Hope you like the result, it is not optimum but shows the nice Headgrow prominence. I am showing a photo of the sky during the imaging, I thought it would not come out in H-alpha due to the clouds. Thanks for looking.

Eric ROEL (エリック・ロエル Mèxico 墨西哥)

●.....Date: Mon, 5 Mar 2007 12:06:18 +0900
 Subject: 木星画像 070303

こんにちは。3月3日の夜、Chris宅で久々に木星を見ることが出来ました。日本より20度以上も高く、有利ですが、この日は気流は悪かった。しかし乍、STRd-2は明瞭と捉えることが出来ました。



○.....Date: Mon, 12 Mar 2007 13:34:22 +0900

Subject: 土星、木星画像 070310セブ

こんにちは。セブでは抜けるような晴れの天気が続き、本格的な真夏の季節に入り、暑くなってきました。3、4、5月は年間で一番暑くなり、気流も例年では良くなりますが、今年はまだ安定しておりません。週末のChris宅での観測もペースが上がり、木星のSTRz攪乱の変化は無いようですがSEB内部の活動がありますので、今後楽しみです。

○.....Date: Mon, 19 Mar 2007 14:32:04 +0900

Subject: 金星画像 070318

こんにちは。昨日夕方、ホテルのテラスから金星の紫外線光画像を撮って見ました。エアコンの影響がありましたが、内部模様が見られます。U340のゴーストが出て気になります。自宅の32cm反射では気にならなかったのですが、困ります。

阿久津 富夫(Tomio AKUTSU セブThe Philippines)

●.....Date: Mon, 5 Mar 2007 14:21:27 -0600
 Subject: updates and moon chapter

Dear Masatsugu, Apologies for being out of touch. I have been kept quite busy with professional work -- there is a great deal of interest just now in the question of properly caring for veterans of the Iraq and Afghanistan wars who have sustained head injuries (blast inju-

ries), and traumatic brain injury has become my professional area of expertise. Also I went to Easter Island and Patagonia with the Astronomical Society of the Pacific's tour in January -- Frank Drake was another lecturer; we had splendid views of Comet McNaught, which reminded me very much of Ikeya-Seki, which remains the most spectacular comet I have seen in my lifetime (or is it only that childhood recollection garnishes things).

I have been moving forward with the book on the planets I mentioned sometime ago -- the one in which I hope to feature your excellent biography of Saheki. Meanwhile, I have progressed only as far as the Moon, and will send you as an attachment this chapter.

I exchanged e-mails with Dollfus awhile back, and mentioned our possible interest in visiting Meudon and Juvisy in 2009. Has there been any further discussion of plans? With my best regards,

○.....Date: Mon, 5 Mar 2007 15:16:55 -0600
 Subject: one more comment

Dear Masatsugu, I wanted to ask you to direct me if there is any Japanese work that you feel deserves inclusion in my chapter. Too often the Japanese astronomers are unknown in the U.S. and that must be changed. For instance, I have heard that the great lunar photographic atlas by S. Miyamoto and A. Hattori at the Kwasan Observatory is a rival to G.P. Kuiper's and yet I have never seen it and it is rarely even cited here. I believe we saw Miyamoto's instrument.

○.....Date: Thu, 8 Mar 2007 20:42:14 -0600
 Subject: Re: RE:updates and moon chapter

Dear Masatsugu, I have greatly enjoyed receiving your note, but distressed and saddened to hear that your health and vigor have suffered of late. I hope that it is nothing that a little rest will not restore and that your physicians have been successful in re-adjusting your medications. Is this a recurrence of the heart rate problem?

I recognize that the CMO Mars reports are a huge undertaking--I hope you do not overtax yourself. Rest assured that they are greatly appreciated. Your lead essays are always insightful and I especially enjoyed the "miracles on October 18, 2005." The latter puts me in mind again of our observing campaign on Mt. Hamilton, which I will never think of except with regret that owing to certain circumstances I was not able to enjoy with you, Laurie, Tony and Rem. You know that I am eager for you to write up your account of your Mt. Hamilton observations. The drawings that you made should be published and together with your comments will enlighten us to the possibilities of a good observer with a first-class instrument (if only we had had consistently good atmospheric conditions in October 2005; this was a disappointment compared to the fine air we enjoyed in August 2003, and I apologize for it).

I thank you for all the interesting comments on the Moon chapter draft -- as you inferred, you were the first person to lay eyes on it. I am working, as time allows, on the other planets in seriatim. The book is to be published by Springer, and it is my intention to make it per-

sonal -- it is, after all, entitled "*A Passion for the Planets*"; thus the reason I am more often presenting myself as a first-person character is to make the book more human and more approachable-- not in any way intended to suggest that I or my work are at all significant, which they are not. I am hoping to showcase much greater observers including Saheki. I am grateful for your summary of his achievements, and I can picture him with his telescope observing Mars from the shrine near his home.

At each step I would like to include information about Japanese astronomers which is rarely included in books by American or British authors. Therefore I am pleased that you should have presented me with all these useful details; in particular, I find the pre-Meiji restoration drawings exquisite. Their style raises the question I have asked before as to whether there might be a particularly Japanese way of drawing the celestial objects. I assume the answer is a qualified yes when the drawings are not influenced by Western models (as the Japanese Mars observers were, say, by Pickering).

I have not heard a response yet from Dollfus, but I had written him on another matter (Charles Boyer, the French observer of Venus) and he may not have understood that any further correspondence was requested. I shall ask him his thoughts about a visit to Meudon in 2009. Otherwise we shall turn our attention to making it possible for us to meet at Lowell. With best wishes,

○ · · · · · **Date: Sun, 11 Mar 2007 20:08:17 -0500**
Subject: Re: RE:updates and moon chapter

Dear Masatsugu, This is on a completely unrelated topic -- but as you know, my good friend, history of astronomy mentor and former director of Lick Observatory, Don Osterbrock, passed away this past January 11. I have written several obits and some of my words, in his memory, were spoken in my behalf by Tony Misch at Don's memorial service in Santa Cruz. But the most significant work I have done in his memory is this piece on W. W. Morgan's discovery of the spiral-arm structure of the Milky Way, which was one of the greatest discoveries to take place at Yerkes -- and to which Don contributed as a graduate student collaborator. It may interest you. It is being submitted to the *Journal of Astronomical History and Heritage* (published in Australia and New Zealand) for publication.

I greatly appreciate all the fine material on the Japanese views of the Moon -- especially the splendid drawings from the pre-Meiji period. One of my regular collaborators, Richard Baum, asked why so little is known of the Japanese contributions? I think it is a mere question of chauvinism. I hope to showcase Japanese Solar System astronomy which I have come to appreciate and value as of the highest importance.

By the way, I am hoping this spring and summer to lay the foundations of a Japanese garden in the backyard of my in-town home here. Thanks again for all your help, with kind regards,

Bill SHEEHAN (ウイリアム・シーハン MN 美)

● · · · · · **Date: Tue, 06 Mar 2007 23:05:14 +0100**
Subject: first light UV Venus

Dear Friends, yesterday I had "*First Light*" with my brandnew Schüler U Filter. I was not sure, if my Eyepiece is ok with UV Light or not, because I don't know what kind of glass it is made with. So I was very happy, when I got some structures on my screen with the b/w Videomodul. 8" Newton, Eyepieceprojection, Schüler U Filter and Videomodul are a good combination for



UV-Pictures :-))... best wishes

○ · · · · · **Date: Fri, 09 Mar 2007 15:47:15 +0100**
Subject: Re: marspictures 2007/ UV-Venuspictures?

Dear Masatsugu, · · · · ·

I am a Member of "Sternwarte Zollern-Alb", a private Observatory in Germany

<http://www.sternwarte-zollern-Alb.de>

We open for visitors every Saturday evening and offer an 1 hour lecture to different astronomical topics and with clear sky our visitors can look through our 80 cm telescope. On our Website the Members of the Observatory can publish their results with private or Observatory Equipments. So my Results can be seen on:

<http://www.sternwarte-zollern-Alb.de/mitarbeiterseiten/kowolik/index.htm>

Pictures for CMO I will send you direct, as I did in past... best wishes

○ · · · · · **Date: Sun, 11 Mar 2007 07:08:49 +0100**
Subject: Re: marspictures 2007/ UV

Dear Masatsugu, · · · · · at home I am Member of 3 mailing-lists (Planetary Observers, CCD-Technology and a general astronomy list) with about 400-500 Participants. Most of them are only "Readers", but about 50 of them (including me) share Observing Results, News, Infos around Technology... . The general language is german, we have also Members from Austria, Switzerland and Denmark speaking german. Other Members are from Sweden, Norway and Finnland. They understand a little bit german, but write in english and so we also answer them in english (Babel Fish helps a lot). · · · · ·

○ · · · · · **Date: Wed, 14 Mar 2007 00:45:40 +0100**
Subject: UV-Venus from 13.3.2007

Dear friends, here my new venus with 8" Newton, Eyepieceprojection, Schüler U-Filter, captured with Videomodul SK 1004-X around local sunset. best wishes

○ · · · · · **Date: Sat, 17 Mar 2007 02:49:53 +0100**
Subject: Re: [Venus-ALPO] Venus march 15th 2007

Hi Paolo,

> What should represent that banding captured in the G band?

> UV is for the highest atmosphere, IR for the lowest. And the G?

if Christophe's green filter is brought enough it might be structures from about 60-70 km height on 418 nm... Here

you wil find a compilation of different wavelength and visible structures:

<http://www.astro.uni-bonn.de/~dfischer/venus/>

Christophe, both show the same clouds, so it is not really surprising, that you got corresponding structures... Suprising was the good seeing, we had that days. I got reports, that on 13./14. and 15.3. Clouds have been seen without any Filter from visual Observers!

My Experience is, that a normal red Filter shows an overexposed picture. If you can use a high shutter-velocity, you might get results... What kind of rgb filter do you use, Christophe? Astronomik? Baader? Anything else? best wishes

Silvia KOWOLLIK

(シルヴァ・イ・コワリク Ludwigsburg 徳)

●.....Date: Fri, 09 Mar 2007 08:37:09 +0900

Subject: Re: 最近の写真

> 7日の雪の降り始めの写真と、2日の早朝、天文臺から白山・荒島岳の方向の写真
> を送ります。この日は曇って火星は見えませんでした。サイズが大きくて済みませ
> ん。白山は拡大に耐えるはずです。> 猫はソト猫で小三毛という三毛猫です。

福井の雪も10cmくらいでしょうか？金沢と富山はニュースで見ました。

我が家のMeadeの赤緯方向のモーターが不調で(昨シーズンもその傾向がありました)、今シーズンはまだ全く撮像できていません。土星ぐらいは写してみたいのですが。近日中に長崎から富田さんが見に来てくれることになっていますが、モーターの全面交換となるとまた大変です。

○.....Date: Tue, 13 Mar 2007 13:28:50 +0900

Subject: 東北大学の研究会

東北大学の研究会で話す内容とプログラムをお送りします。小郷原さんは来ないようですね。私は22日の午前にあたったので、21日から行って、22日の夕方の便で福岡に帰る予定です。ご連絡まで。

浅田 正 (Tadashi ASADA 宗像 Fukuoka)

☆☆☆

常盤優俳句撰 (2006年)

月ひとつもてあそばれて除夜の鐘
すきないろ青とこたへし冬の星
月白や音なきことの胸さはぎ
月日星ほろほろ紫山子の腕真直
遙かなる星に手翳す風の盆
弓張りの月真南に潔し
二百十日凄雨軒より始まりぬ
さそり座の心突き抜けし揚花火
屈むれば猫の擦り寄る十三夜
父母を富士に眠らせ早星
なぬか月落とし天河の高きかな
梅雨明けの空切り割いて琴の星
七月の星未だ逢へぬ人ひとり
あひ見ざる星は雲居に小暑かな
笹の星揺るることなし小暑かな
うちなーの群星涼し海鏡
蒼天に雲立つ沖繩慰靈の日
またひとつ天に近づくさくらかな
糠星や啓蟄の土こそばゆし
うさぎ座の片耳探す霧の花
むつらぼし天心に在り寒の入り
静けさや三日のうちの大き星

「常盤優」は常間地ひとみさんの俳號です(Ed)

http://homepage3.nifty.com/~cmomn4/Ts_Haiku.htm

シー・エム・オー・フクイ

中島 孝 Nj

★前号報告以降、カンパご寄付はありませんでした。不一

☆ Kasei-Tsushin CMO (Home Page: http://www.mars.dti.ne.jp/~cmo/oaa_mars.html)

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