

MARS

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OBSERVATIONS

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Bright Argyre Cloud in the Daytime
from 9 January 2008 ($\lambda=015^\circ\text{Ls}$)9 Jan 2008 ($\lambda=015^\circ\text{Ls}$) からの
白昼のアルギュレ白雲

0° Although Argyre is one of a trio of the biggest crater basins, the meteorology at the area is not so well known as that of Hellas. The apparitions here however include the autumnal season of the southern hemisphere and so we may be able to pursue the meteorology over Argyre at the period. In 2003, any conspicuous white cloud activity of Argyre was not known (though it was once covered by a yellow cloud), and also in 2005 it appeared rather commonplace when the apparent diameter δ was enough (to be reported below). However in 2007/2008, as was pre-cautioned in CMO #341, page Ser2-0844 (Forthcoming (17)), it was a good opportunity to observe the southern high-latitude zone after the southern autumnal equinox. So here we shall make a list of the observations of the white cloud at Argyre chronologically and shall see roughly the rise and fall of the cloud activity.

The first white cloud event that attracted our attention at the area of Argyre was on the images obtained on 9 January 2008 ($\lambda=015^\circ\text{Ls}$) by Emilio HIDALGO TORTOSA (*EHD*) at $\omega=053^\circ\text{W}/056^\circ\text{W}$, 062°W , 073°W (see CMO #342 page Ser2-0847). It was important on these images that the white cloud survived even after it was good away off from the morning terminator. On the preceding day 8 Janu-

E HIDALGO TORTOSA's image
on 9 January 2008 ($\lambda=015^\circ\text{Ls}$)
 $\omega = 056^\circ\text{W}$ $\phi = 01^\circ\text{S}$
 $\delta = 14.6''$ $l = 14^\circ$

ary, as shall be cited below, we have a good set of images made by Michael KARRER (*MKr*) at $\omega=048^\circ\text{W}$, but on these the Argyre cloud does never look conspicuous. Hence we first check the cases after 9 January (Table 1 below), and afterward we shall see the cases before 8 January (Table 2).

Unfortunately *EHD*'s images were not accompanied by the B images, but mostly we make notice of the B image each case.

The case where the cloud looks most active is marked \odot , and we order the less cases as follows.

 $\odot > \circ > \triangle > \nabla > \times$

When we cannot judge we shall use the mark of ?.

It should be noted however that the density of the cloud on the B images does not necessarily imply the real activity since the condition (es-

pecially the water vapour density) of the terrestrial atmosphere will largely influence the density of the cloud on the B images. So Δ or ∇ may not necessarily denote any weakness of the activity. Contrarily some light Argyre on B might imply the long-wavelength Argyre because of the technical lack of ability to include the short length waves.

0° アルギュレは三大盆地(隕石孔)の一つでありながらその気象はヘッラスほどには知られていない。今回以降の接近は南半球の秋分を挟んでいるので、ここ暫くアルギュレの水蒸気による気象が追える可能性がある。2003年の接近でもアルギュレの気象は平凡であったし(黄雲に塗れることはあったが)、2005年の接近でも然程追えなかった(後述する)。然し、2007/2008年の接近では秋分が過ぎてから歴然とした様相を示した。CMO #341、Forthcoming(17) (pageSer2-0844)で指摘したように、今回は南半球の秋分後は南極地を眺める絶好の機会になっていたのである。この項ではアルギュレ白雲に限って時間を追って観測を列挙し、盛衰を勘案することにする。

最初に注目を浴びたのは9Jan($\lambda=015^\circ\text{Ls}$)におけるイダルゴ-トルトサ(EHd)氏の $\omega=053^\circ\text{W}/056^\circ\text{W}$ 、 062°W 、 073°W の画像に現れたアルギュレ白雲である(CMO#342 Ser2-0850頁)。特にこれは早朝だけでなく、可成りお昼に近づいても息づいていたことが重要である。なお、前日8Janには(後で引用するが)カッレル(MKr)氏の $\omega=048^\circ\text{W}$ の良像があるのであるが、これには然程アルギュレ雲が強く顕れていない。従って、以下では9Jan以降と8Jan以前を分けて列挙する。

残念ながらEHd氏の像にはB光像の添附が無いが、以下では主にB光に注目する。

アルギュレ雲が好く現れているものには◎を附し、次の順序で濃度を示す。

◎>○>△>▽>×

不明なものには?を付ける。但し濃度はactivityを直接表現するものではないであろう。B光は空の状態(特に水蒸気の状態)によって出来不出来が出るであろうから、△乃至▽が附いていても、活動が弱いとは言えない場合があるかも知れない。逆に、(注意はしているが)技術的にB光が効かないために、長波長がアルギュレを出している場合も

あり得る。同様に×が附いて居ても(空の状態の他)技術的な問題のため出していない場合もある。

1° On 9 January 2008 ($\lambda=015^\circ\text{Ls}$), ARDITTI (DAr) took an early morning cloud at Argyre before EHd. We first begin to list up the observations from early 9 January to 19 March ($\lambda=047^\circ\text{Ls}$) (Table 1). On 19 March the apparent diameter δ decreased to $\delta=7.7''$

The codes of the names of observers are as follows in order of citation: As to the full names refer to CMO #342~#344.

DAr=ARDITTI, EHd=HIDALGO TORTOSA,
SMk=MAKSYMOWICZ, Jct=CASTELLÀ,
JSc=SÁNCHEZ, DGH=GRAHAM,
PGc=GORCZYNSKI, JWn=WARREN,
WFl=FLANAGAN, PCq=CASQUINHA,
SWk=WALKER, JMI=MELKA, MLw=LEWIS,
FMI=MELILLO, DPk=PARKER, ELM=LOMELI,
EAl=ALLEN, Km=KUMAMORI, Ak=AKUTSU,
Mo=MORITA, Mn=MINAMI,
SGh=GHOMIZADEH, PGm=GÓMEZ, DTy=TYLER,
JAd=ADELAAR, JSd=SOLDEVILLA_GONZALEZ,
RSz=SCHULZ, RGH=GERSTHEIMER,
RBs=BOSMAN, MKr=KARRER, DPC=PEACH,
SKd=KIDD, JWn=WARELL,
FFn=FERNÁNDEZ_GÓMEZ, MDc=DELCROIX,
ISp=SHARP, GTC=TEICHERT.

(E) and (M) imply the Argyre cloud at the Evening side and near the Morning limb respectively. The morning mist sometimes soon disperses, and the evening one (or afternoon one) may be seen excessively thicker because of the obliqueness, and so there are uncertainties about the density.

1° 9Janにはアルディッチ(DAr)氏の画像があり、EHdより更に朝方のアルギュレを撮っている。以下まず最初に9Jan($\lambda=015^\circ\text{Ls}$)早朝から、視直径 $\delta=7.7''$ となった19Mar($\lambda=047^\circ\text{Ls}$)迄の動向を示す。

尚、氏名コードは、出てくる順に示すと、DAr=アルディッチ、EHd=イダルゴ-トルトサ、SMk=マクシモヴィッチ、Jct=カステーヤ、JSc=サンチェス、DGH=グレアム、PGc=ゴルチンスキ、JWn=ウォーレン、WFl=フラナガン、PCq=カスキニヤ、SWk=ウォーカー、JMI=メルカ、MLw=ル

イス、FMI=メリッロ、DPk=パーカー、ELm=ロメリ、EAI=アッレン、Km=熊森、Ak=阿久津、Mo=森田、Mn=南、SGh=ゴミサデ、PGm=ゴメス、DTy=タイラー、JAd=アデラール、JSd=ソルデビーヤゴンサレス、RSz=シュルツ、RGh=ゲルシュトハイマー、RBs=ボスマン、MKr=カッレル、DPc=ピーチ、SKd=キッド、JWr=ヴァレル、FFn=フェルナンデス-ゴメス、MDc=デルクロア、ISp=シャープ、GTc=タイシャート、である。フルネームはCMO#342~#344を参照されたい。尚、(E)は夕方におけるアルギュレ、(M)は朝方に於けるものを示す。朝方だけのものは本来は直ぐ消えるものもあるわけである。ここで言う夕方は位相角 ι の所爲で午後の方が好いかも知れない。縁に来て濃く見えるときがあるから厄介である。従って、何れにしても朝夕のものには重点は置かない方が好いとも言える。

Table 1

20 Jan ($\lambda=020^\circ\text{Ls}$)	<i>JMI</i>	$\omega=040^\circ\text{W}$	Δ
22 Jan ($\lambda=021^\circ\text{Ls}$)	<i>FMI</i>	$\omega=040^\circ\text{W},050^\circ\text{W}$	\odot
	<i>PGc</i>	$\omega=049^\circ\text{W}$	\odot
24 Jan ($\lambda=022^\circ\text{Ls}$)	<i>DPk</i>	$\omega=007^\circ\text{W}$	\odot (M)
26 Jan ($\lambda=023^\circ\text{Ls}$)	<i>Km</i>	$\omega=097^\circ\text{W}$	\odot (E)
27 Jan ($\lambda=024^\circ\text{Ls}$)	<i>Km</i>	$\omega=086^\circ\text{W}$	\odot (E)
	<i>Ak</i>	$\omega=094^\circ\text{W}$	\circ (E)
	<i>Mo</i>	$\omega=109^\circ\text{W}$	\circ (E)
30 Jan ($\lambda=025^\circ\text{Ls}$)	<i>Ak</i>	$\omega=090^\circ\text{W}$	\circ (E)
31 Jan ($\lambda=025^\circ\text{Ls}$)	<i>Ak</i>	$\omega=083^\circ\text{W}\sim112^\circ\text{W}$	\circ
	<i>Mo</i>	$\omega=092^\circ\text{W},102^\circ\text{W}$	\odot
01 Feb ($\lambda=026^\circ\text{Ls}$)	<i>Ak</i>	$\omega=065^\circ\text{W}$	\circ
04 Feb ($\lambda=027^\circ\text{Ls}$)	<i>Mo</i>	$\omega=033^\circ\text{W}\sim065^\circ\text{W}$	\circ
05 Feb ($\lambda=028^\circ\text{Ls}$)	<i>Ak</i>	$\omega=035^\circ\text{W},045^\circ\text{W}$	\circ
06 Feb ($\lambda=028^\circ\text{Ls}$)	<i>SGh</i>	$\omega=064^\circ\text{W},095^\circ\text{W}$	\circ (E)
	<i>PGm</i>	$\omega=109^\circ\text{W}$	\circ (E)
08 Feb ($\lambda=029^\circ\text{Ls}$)	<i>Mn</i>	$\omega=014^\circ\text{W}\sim044^\circ\text{W}$	\circ (M)
	<i>DTy</i>	$\omega=107^\circ\text{W}$	\circ (E)
	<i>DAr</i>	$\omega=113^\circ\text{W}$	\circ (E)
09 Feb ($\lambda=030^\circ\text{Ls}$)	<i>JAd</i>	$\omega=088^\circ\text{W}$	Δ (E)
	<i>JSd</i>	$\omega=095^\circ\text{W}$	\circ (E)
	<i>DTy</i>	$\omega=098^\circ\text{W}$	Δ (E)
	<i>RSz</i>	$\omega=104^\circ\text{W}$	\circ (E)
	<i>JCt</i>	$\omega=105^\circ\text{W}$	\circ (E)
10 Feb ($\lambda=030^\circ\text{Ls}$)	<i>RGh</i>	$\omega=052^\circ\text{W},087^\circ\text{W}$	\circ
	<i>RSz</i>	$\omega=061^\circ\text{W}\sim075^\circ\text{W}$	\circ
	<i>DTy</i>	$\omega=097^\circ\text{W}$	Δ/\circ
	<i>DGh</i>	$\omega=101^\circ\text{W}$	\circ (E)
	<i>DAr</i>	$\omega=107^\circ\text{W},110^\circ\text{W}$	\circ (E)
11 Feb ($\lambda=031^\circ\text{Ls}$)	<i>RGh</i>	$\omega=053^\circ\text{W},074^\circ\text{W}$	\circ
	<i>DTy</i>	$\omega=070^\circ\text{W}$	\circ
	<i>RBs</i>	$\omega=071^\circ\text{W}$	\circ
	<i>DGh</i>	$\omega=083^\circ\text{W}$	\circ (E)
	<i>MKr</i>	$\omega=083^\circ\text{W}$	\circ (E)
12 Feb ($\lambda=031^\circ\text{Ls}$)	<i>DPc</i>	$\omega=044^\circ\text{W}\sim068^\circ\text{W}$	\circ
	<i>DTy</i>	$\omega=046^\circ\text{W}$	Δ
	<i>DGh</i>	$\omega=086^\circ\text{W}$	\circ (E)
	<i>SKd</i>	$\omega=088^\circ\text{W}$	Δ (E)
	<i>DAr</i>	$\omega=094^\circ\text{W}$	\circ (E)
13 Feb ($\lambda=032^\circ\text{Ls}$)	<i>RGh</i>	$\omega=026^\circ\text{W}$	\times (M)
	<i>DPc</i>	$\omega=040^\circ\text{W}\sim057^\circ\text{W}$	\circ
14 Feb ($\lambda=032^\circ\text{Ls}$)	<i>JWr</i>	$\omega=069^\circ\text{W}$	\circ (E)
15 Feb ($\lambda=032^\circ\text{Ls}$)	<i>DPc</i>	$\omega=027^\circ\text{W},035^\circ\text{W}$	\circ (M)
09 Jan ($\lambda=015^\circ\text{Ls}$)	<i>DAr</i>	$\omega=010^\circ\text{W}$	\circ (M)
	<i>EHD</i>	$\omega=053^\circ\text{W}\sim073^\circ\text{W}$	\odot
	<i>SMk</i>	$\omega=060^\circ\text{W}$	\circ
10 Jan ($\lambda=016^\circ\text{Ls}$)	<i>JCt</i>	$\omega=034^\circ\text{W}$	Δ
	<i>DGh</i>	$\omega=037^\circ\text{W}$?
	<i>EHD</i>	$\omega=045^\circ\text{W}\sim056^\circ\text{W}$	\circ/Δ
	<i>JSc</i>	$\omega=061^\circ\text{W},070^\circ\text{W}$	Δ
12 Jan ($\lambda=017^\circ\text{Ls}$)	<i>EHD</i>	$\omega=023^\circ\text{W}\sim037^\circ\text{W}$	\circ/Δ
13 Jan ($\lambda=017^\circ\text{Ls}$)	<i>PGc</i>	$\omega=093^\circ\text{W}$	\circ (E)
14 Jan ($\lambda=017^\circ\text{Ls}$)	<i>JCt</i>	$\omega=051^\circ\text{W}$	\odot
	<i>JWr</i>	$\omega=089^\circ\text{W}$	Δ (E)
	<i>WFl</i>	$\omega=094^\circ\text{W}$	\circ (E)
14/15 Jan ($\lambda=018^\circ\text{Ls}$)	<i>PCq</i>	$\omega=019^\circ\text{W},039^\circ\text{W}$	\circ
16 Jan ($\lambda=018^\circ\text{Ls}$)	<i>SWk</i>	$\omega=026^\circ\text{W}/028^\circ\text{W}$	\circ
	<i>DAr</i>	$\omega=035^\circ\text{W}$	\circ
	<i>JMI</i>	$\omega=078^\circ\text{W}$	\circ (E)
	<i>MLw</i>	$\omega=358^\circ\text{W}$	\times (M)
17 Jan ($\lambda=019^\circ\text{Ls}$)	<i>PCq</i>	$\omega=025^\circ\text{W},031^\circ\text{W}$	\circ (M)
	<i>PGc</i>	$\omega=049^\circ\text{W}$	\circ
	<i>FMI</i>	$\omega=083^\circ\text{W},095^\circ\text{W}$	\circ (E)
19 Jan ($\lambda=020^\circ\text{Ls}$)	<i>DPk</i>	$\omega=029^\circ\text{W}$	\odot
	<i>PGc</i>	$\omega=049^\circ\text{W}$	\odot
	<i>ELm</i>	$\omega=071^\circ\text{W}\sim087^\circ\text{W}$	\odot
	<i>EAI</i>	$\omega=071^\circ\text{W}$	\odot

	<i>DAr</i>	$\omega=035^{\circ}\text{W}$	○(M)
	<i>DTy</i>	$\omega=057^{\circ}\text{W},065^{\circ}\text{W}$	○
	<i>FFn</i>	$\omega=065^{\circ}\text{W}$	○
	<i>MDc</i>	$\omega=082^{\circ}\text{W}$	○(E)
16 Feb ($\lambda=033^{\circ}\text{Ls}$)	<i>DPc</i>	$\omega=006^{\circ}\text{W}$	△(M)
	<i>SKd</i>	$\omega=016^{\circ}\text{W}$	×
	<i>ISp</i>	$\omega=022^{\circ}\text{W}$	×
17 Feb ($\lambda=033^{\circ}\text{Ls}$)	<i>DPc</i>	$\omega=007^{\circ}\text{W}$	×(M)
	<i>DTy</i>	$\omega=010^{\circ}\text{W}\sim035^{\circ}\text{W}$	△
18 Feb ($\lambda=034^{\circ}\text{Ls}$)	<i>DPc</i>	$\omega=016^{\circ}\text{W}$	△(M)
19 Feb ($\lambda=034^{\circ}\text{Ls}$)	<i>WFl</i>	$\omega=090^{\circ}\text{W}\sim100^{\circ}\text{W}$	◎
	<i>DPk</i>	$\omega=104^{\circ}\text{W}$	◎
	<i>DPc</i>	$\omega=010^{\circ}\text{W}$?(M)
	<i>GTc</i>	$\omega=353^{\circ}\text{W}$	○(M)
	<i>SKd</i>	$\omega=041^{\circ}\text{W}$?(M)
22 Feb ($\lambda=035^{\circ}\text{Ls}$)	<i>DPk</i>	$\omega=077^{\circ}\text{W}$	◎(E)
23 Feb ($\lambda=036^{\circ}\text{Ls}$)	<i>SWk</i>	$\omega=022^{\circ}\text{W}$?(M)
24 Feb ($\lambda=036^{\circ}\text{Ls}$)	<i>WFl</i>	$\omega=047^{\circ}\text{W}$	○
25 Feb ($\lambda=037^{\circ}\text{Ls}$)	<i>WFl</i>	$\omega=033^{\circ}\text{W},043^{\circ}\text{W}$	○
	<i>PGc</i>	$\omega=040^{\circ}\text{W}$	○
	<i>FMI</i>	$\omega=076^{\circ}\text{W}$	△
26 Feb ($\lambda=037^{\circ}\text{Ls}$)	<i>DPk</i>	$\omega=034^{\circ}\text{W}$	◎
	<i>EAl</i>	$\omega=059^{\circ}\text{W}$	◎
01 Mar($\lambda=039^{\circ}\text{Ls}$)	<i>DPk</i>	$\omega=010^{\circ}\text{W}$	×(M)
08 Mar($\lambda=042^{\circ}\text{Ls}$)	<i>Mo</i>	$\omega=069^{\circ}\text{W}\sim106^{\circ}\text{W}$	○(E)
	<i>Mn</i>	$\omega=069^{\circ}\text{W}\sim089^{\circ}\text{W}$	○
19 Mar($\lambda=047^{\circ}\text{Ls}$)	<i>DPc</i>	$\omega=077^{\circ}\text{W}$	○

2° We next see the case before 9 January ($\lambda=015^{\circ}\text{Ls}$) from around the southern autumnal equinox. As we shall see, a bit of morning mist at Argyre was observed but rather inactive and any considerable change did not occur before 7 January 2008 ($\lambda=014^{\circ}\text{Ls}$). The images at opposition in December 2007 rather showed a detail of the surface aspect inside Argyre. Newly employed codes of names are as follows:

Ns=NISHITA, *VAm*=AMADORI, *NZr*=ZURTUZA, *DAd*=ANDERSON, *RCv*=CHAVEZ, *DBt*=BATES, *IBr*=BRUCE, *XDp*=DUPONT, *SKw*=KOWOLLIK:
See CMO#341 & #342 for the full names.

2° 次に、9Jan($\lambda=015^{\circ}\text{Ls}$)以前の観測で南半球の秋分以降について少し見てみる。筆者の見るところ、

朝方には朝霧が見えていたが、不活性で、大きな兆候は7Jan($\lambda=014^{\circ}\text{Ls}$)辺りまで無いと見られる。寧ろ十二月の衝の頃は、アルギュレ近傍の地形模様が好く見えていた。以下の表で、新しく氏名コードが現れるのは、*Ns*=西田、*VAm*=アマドリ、*NZr*=スルツサ、*DAd*=アンダーソン、*RCv*=チャヴェス、*DBt*=ベーツ、*IBr*=ブルース、*XDp*=デュポン、*SKw*=コヴォツリク。フルネームはCMO#341、#342を参照されたい。

Table 2

22 Nov($\lambda=351^{\circ}\text{Ls}$)	<i>Km</i>	$\omega=029^{\circ}\text{W},034^{\circ}\text{W}$	×
23 Nov($\lambda=352^{\circ}\text{Ls}$)	<i>Mo</i>	$\omega=357^{\circ}\text{W}$	▽(M)
	<i>Mn</i>	$\omega=004^{\circ}\text{W},014^{\circ}\text{W}$	△(M)
	<i>Km</i>	$\omega=017^{\circ}\text{W},024^{\circ}\text{W}$	×
	<i>Ns</i>	$\omega=024^{\circ}\text{W}$	▽
24 Nov($\lambda=352^{\circ}\text{Ls}$)	<i>Km</i>	$\omega=004^{\circ}\text{W},012^{\circ}\text{W}$	▽(M)
28 Nov($\lambda=355^{\circ}\text{Ls}$)	<i>RGh</i>	$\omega=078^{\circ}\text{W}$?(E)
29 Nov($\lambda=355^{\circ}\text{Ls}$)	<i>VAm</i>	$\omega=065^{\circ}\text{W}$	×(E)
	<i>NZr</i>	$\omega=089^{\circ}\text{W}$	×(E)
30 Nov($\lambda=356^{\circ}\text{Ls}$)	<i>JSd</i>	$\omega=067^{\circ}\text{W}$	×(E)
04 Dec ($\lambda=358^{\circ}\text{Ls}$)	<i>JSd</i>	$\omega=024^{\circ}\text{W},031^{\circ}\text{W}$	▽
4/5 Dec($\lambda=358^{\circ}\text{Ls}$)	<i>JSd</i>	$\omega=029^{\circ}\text{W}\sim054^{\circ}\text{W}$	▽
07 Dec ($\lambda=359^{\circ}\text{Ls}$)	<i>JSd</i>	$\omega=021^{\circ}\text{W}\sim046^{\circ}\text{W}$	▽
	<i>DPc</i>	$\omega=066^{\circ}\text{W}\sim079^{\circ}\text{W}$	○(E)
	<i>ISp</i>	$\omega=065^{\circ}\text{W}\sim089^{\circ}\text{W}$	▽(E)
08 Dec ($\lambda=359^{\circ}\text{Ls}$)	<i>DPc</i>	$\omega=072^{\circ}\text{W}$	▽
09 Dec ($\lambda=360^{\circ}\text{Ls}$)	<i>DAd</i>	$\omega=040^{\circ}\text{W}$	▽
	<i>DPc</i>	$\omega=059^{\circ}\text{W},064^{\circ}\text{W}$	▽
	<i>SWk</i>	$\omega=060^{\circ}\text{W}/062^{\circ}\text{W}$	▽
10 Dec ($\lambda=000^{\circ}\text{Ls}$)	<i>ISp</i>	$\omega=036^{\circ}\text{W}$	×/▽
	<i>DPc</i>	$\omega=037^{\circ}\text{W},046^{\circ}\text{W}$	▽
	<i>DTy</i>	$\omega=060^{\circ}\text{W}$	×
11 Dec ($\lambda=001^{\circ}\text{Ls}$)	<i>DAd</i>	$\omega=051^{\circ}\text{W}$	×
	<i>DPc</i>	$\omega=051^{\circ}\text{W}$	▽
	<i>DTy</i>	$\omega=070^{\circ}\text{W}$	×
	<i>PGc</i>	$\omega=071^{\circ}\text{W}$?
12 Dec ($\lambda=001^{\circ}\text{Ls}$)	<i>RCv</i>	$\omega=030^{\circ}\text{W}$	×/▽
13 Dec ($\lambda=002^{\circ}\text{Ls}$)	<i>DPk</i>	$\omega=051^{\circ}\text{W}$	×/▽
17 Dec ($\lambda=004^{\circ}\text{Ls}$)	<i>WFl</i>	$\omega=015^{\circ}\text{W}\sim024^{\circ}\text{W}$	×/▽
21 Dec ($\lambda=006^{\circ}\text{Ls}$)	<i>DBt</i>	$\omega=314^{\circ}\text{W}$	▽(M)
	<i>DPk</i>	$\omega=326^{\circ}\text{W}$	○(M)
	<i>WFl</i>	$\omega=345^{\circ}\text{W},350^{\circ}\text{W}$	△(M)

25 Dec ($\lambda=008^\circ\text{Ls}$)	<i>Mn</i>	$\omega=035^\circ\text{W},045^\circ\text{W}$	×
26 Dec ($\lambda=008^\circ\text{Ls}$)	<i>Mn</i>	$\omega=357^\circ\text{W}\sim026^\circ\text{W}$	Δ (M)
	<i>Km</i>	$\omega=046^\circ\text{W},050^\circ\text{W}$	×
	<i>Mo</i>	$\omega=050^\circ\text{W}\sim079^\circ\text{W}$	∇
02 Jan ($\lambda=012^\circ\text{Ls}$)	<i>Mo</i>	$\omega=329^\circ\text{W}\sim342^\circ\text{W}$	∇ (M)
05 Jan ($\lambda=013^\circ\text{Ls}$)	<i>IBr</i>	$\omega=069^\circ\text{W}$	×
	<i>DTy</i>	$\omega=095^\circ\text{W}$?
06 Jan ($\lambda=014^\circ\text{Ls}$)	<i>JAd</i>	$\omega=067^\circ\text{W}$	×
	<i>RGh</i>	$\omega=076^\circ\text{W}$	∇
07 Jan ($\lambda=014^\circ\text{Ls}$)	<i>EHD</i>	$\omega=025^\circ\text{W}\sim079^\circ\text{W}$	\circ
	<i>XDp</i>	$\omega=059^\circ\text{W}$	Δ
	<i>DPc</i>	$\omega=070^\circ\text{W}$	\circ
	<i>PLw</i>	$\omega=081^\circ\text{W}/083^\circ\text{W}$	\circ (E)
08 Jan ($\lambda=014^\circ\text{Ls}$)	<i>MKr</i>	$\omega=048^\circ\text{W}$	∇
	<i>SKw</i>	$\omega=056^\circ\text{W}$?/×

Since $\delta=7.7''$ on 19 March, we shall stop listing up, and expect the forthcoming data in 2010. However it will not be easy in 2009/2010 to check the southern high latitude areas like Argyre because of the tilt ϕ . For example the tilt is $\phi=19^\circ\text{N}$ when $\lambda=015^\circ\text{Ls}$ on 26 November 2009. Even when Mars is at opposition (on 29 January 2010), $\phi=15^\circ\text{N}$.

19Marで $\delta=7.7''$ である。従って、これ以上追わないこととし、次回の接近の結果を期待する。但し、 ϕ の関係でより注意が必要である。因みに $\lambda=015^\circ\text{Ls}$ は26Nov2009に訪れるが、 $\phi=19^\circ\text{N}$ であって、南半球高緯度の観察は今回よりも困難である。また2010年の衝(29Jan)の頃でも $\phi=15^\circ\text{N}$ である。

3° One of the reasons why we ceased to check before the autumnal equinox is because during the period before the autumnal equinox in 2007, the tilt ϕ was rather deeply toward the north. On the contrary in 2005/2006, the southern hemisphere was quite toward us. For example on 23 November ($\lambda=329^\circ\text{Ls}$) 2005 where the diameter was $\delta=18.2''$ we can check as follows:

23 Nov ($\lambda=329^\circ\text{Ls}$) *WFl* $\omega=060^\circ\text{W},067^\circ\text{W}$ ∇

where a bit of a thin mist is seen over Argyre in B. Just before the autumnal equinox, we have

18 Dec ($\lambda=343^\circ\text{Ls}$) *CPl* $\omega=047^\circ\text{W}\sim062^\circ\text{W}$ Δ

19 Dec ($\lambda=343^\circ\text{Ls}$) *DPc* $\omega=052^\circ\text{W}\sim066^\circ\text{W}$ ∇

where Argyre is apparent in B. *CPl* stands for Ch PELLIER. As the new year of 2006 came in, we had similar results on the following days:

23 Jan ($\lambda=001^\circ\text{Ls}$) *CPl* $\omega=072^\circ\text{W},077^\circ\text{W}$ \circ

24 Jan ($\lambda=002^\circ\text{Ls}$) *DPc* $\omega=057^\circ\text{W}$ \circ

CPl $\omega=063^\circ\text{W},071^\circ\text{W}$ \circ

25 Jan ($\lambda=002^\circ\text{Ls}$) *DPc* $\omega=053^\circ\text{W}$ ∇

So we may say at the period of the southern autumnal equinox in 2006 the white mist on Argyre was rather not less active. After $\lambda=015^\circ\text{Ls}$, the Argyre cloud was well recognisable even in 2006. The following are a few of examples:

01 Mar ($\lambda=019^\circ\text{Ls}$) *DPc* $\omega=080^\circ\text{W}$ \circ

02 Mar ($\lambda=019^\circ\text{Ls}$) *DPc* $\omega=074^\circ\text{W}$ \circ

3° 2007/2008年の場合南半球の秋分以前は ϕ が北向きで、南極地方との絡みで調査が難しい(而も、 $\lambda=340^\circ\text{Ls}$ 臺では歐羅巴であったが、好いB像が出なかった)。その点、2005/2006年の方が南半球が好く見えた。2005年の

23 Nov ($\lambda=329^\circ\text{Ls}$) *WFl* $\omega=060^\circ\text{W},067^\circ\text{W}$ ∇

では既に僅かながらアルギュレ附近に霧が漂っている。 $\delta=18.2''$ であった。秋分直前でも、

18 Dec ($\lambda=343^\circ\text{Ls}$) *CPl* $\omega=047^\circ\text{W}\sim062^\circ\text{W}$ Δ

19 Dec ($\lambda=343^\circ\text{Ls}$) *DPc* $\omega=052^\circ\text{W}\sim066^\circ\text{W}$ Δ

ではBでアルギュレが確認出来る。*CPl*はペリエ氏である。年が明けて2006年に入って

23 Jan ($\lambda=001^\circ\text{Ls}$) *CPl* $\omega=072^\circ\text{W},077^\circ\text{W}$ \circ

24 Jan ($\lambda=002^\circ\text{Ls}$) *DPc* $\omega=057^\circ\text{W}$ \circ

CPl $\omega=063^\circ\text{W},071^\circ\text{W}$ \circ

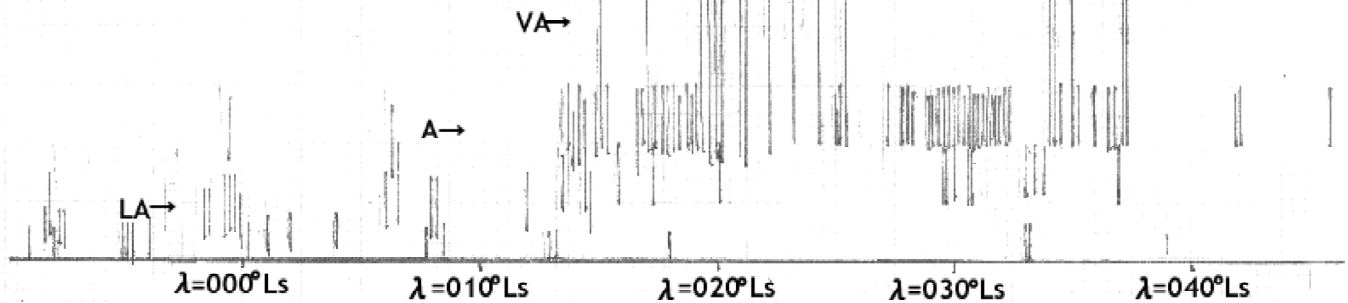
25 Jan ($\lambda=002^\circ\text{Ls}$) *DPc* $\omega=053^\circ\text{W}$ ∇

でも明白である。従って、秋分の頃には可成り強くなったのではないかと思われる。問題の $\lambda=015^\circ\text{Ls}$ 以降では2006年の場合もアルギュレ白雲は充分確認出来る次がその例である:

02 Mar ($\lambda=019^\circ\text{Ls}$) *DPc* $\omega=074^\circ\text{W}$ \circ

01 Mar ($\lambda=019^\circ\text{Ls}$) *DPc* $\omega=080^\circ\text{W}$ \circ

Fig. 2: Trend of the Argyre white cloud in 2007/2008



4° Figure 2 shall show schematically the rise and fall of the Argyre white cloud as a function of Ls as we saw in the above (quite roughly). It however depicts a general trend of the activity: The very active case began around $\lambda=015^\circ\text{Ls}$, before whose period the case was less active, and furthermore the figure shows a shallow dip around at $\lambda=030^\circ\text{Ls}$. If we do not collect further data in the southern winter at least after $\lambda=100^\circ\text{Ls}$ we cannot compare with the behaviour of Hellas for example, but even then we think we have nearly given a good series of data around the autumnal equinox.

4° 上で見てきたような期間中のアルギュレ雲の盛衰を模式図にしたものが圖2である。圖は簡便に作ったものであるが、一般的な傾向は示していると思う。 $\lambda=015^\circ\text{Ls}$ 以前では不活動(LA)であるが、 $\lambda=015^\circ\text{Ls}$ 邊りからVAになり、 $\lambda=030^\circ\text{Ls}$ に少し緩みが出てくる。更にLsについて伸ばさなければ、ヘッラスなどの動向と比較は出来ないが、春分直後の動きはほぼ捉えられたと思う。

5° The white cloud in the day time at this period must be due to an abundance of water vapour at the southern high latitudes. We here recite a figure (Fig 3) from 1988 Note (15) in CMO #108 (25 Aug 1991) at page 0931 which dealt with 1988 Note (15). This figure is originally from Fig 1 of the article on the Viking data made by B M JAKOSKY, R W ZUREK & M R LA POINTE "The Observed Day-to-Day Variability of Mars Atmospheric Water Vapour" *Icarus* 73 (1988) 80. This shows how at this period of the autumnal equinox the water vapour

haunts seasonally at the southern high-latitude areas around 40°S . This is based on the observations by the Mars Atmospheric Water Detection (MAWD) apparatus onboard Vikings which had five kinds of spectrometer channels and three of them corre-

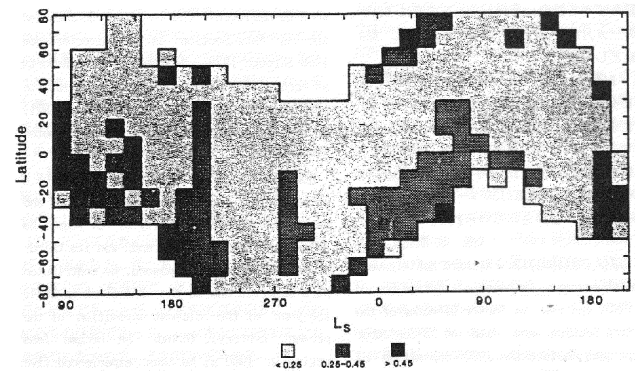


FIG. 1. The zonally averaged day-to-day variability of atmospheric water vapor as a function of season on Mars. Blank areas represent no data. The variability is described in detail in the text.

Fig 3: Cited from *Icarus* 73 (1988) 80. Note that south is downward.

sponded to the water vapour absorption belts proving the water abundance by a trace of the reflections from the Martian atmosphere. Note that according to this figure the water vapour decreases at around $\lambda=100^\circ\text{Ls}$, and so in late winter we should be concerned with the CO_2 frost at Argyre basin in the next apparition.

5° この時期のアルギュレ白雲は秋口に入って水蒸気が出たもので好い結果が得られていると思う。水蒸気は案外と南半球高緯度に残っているもので、圖3はヴァイキングによる結果であるが、南半球の秋分頃から 40°S 邊りに水蒸気が漂っている。此の圖はCMO#108(25Aug1991)p0931の1988 Note (15)に掲載したものの再引用で、もともとはB M JAKOSKY, R W ZUREK & M R LA POINTE "The Observed Day-to-Day Variability of Mars

Atmospheric Water Vapour" *Icarus* 73 (1988) 80からの引用である。ヴァイキングの測定はMAWDという装置で、太陽輻射の火星表面の大気からの反射を分光器で集め、水蒸気の吸収帯を取りだしたものである。これに據ると $\lambda=100^\circ\text{Ls}$ 以降は意外に水蒸気は少なくなっている。今度はヘッラスと同じく CO_2 の氷床が問題になるかも知れない。これ

もφの関係で難しいが。

6° Finally the present writer acknowledges his thanks to Masami MURAKAMI (*Mk*) who kindly checked the lists (Tables) above.

6° 最後に、リストを丁寧に検討して下さった村上(*Mk*)氏に感謝します。 (*Mn*)

CMO 2007/2008 Mars Report #21

OAA Mars Section

♂.....追加報告: We Further Received the following observations (received on 6 October 2008):

WARELL, Johan ヨハン・ヴァレル (JWr) 烏普薩拉 Uppsala, SWEDEN

15 Sets of RGB Images (14*, 25*, 27* February; 6*, 21, 22, 24,~27 March; 1, 5, 17, 19, 24 April 2008)
f/19 \times 28cm SCT with a ToUcam Pro*, ToUcam Pro III

WARELL (JWr)'s preceding observation was last made on 8 December 2007, as reported in #340 (25 Dec 2007 issue). A rough sketch of JWr's images we received this time is as follows: The set of images on 14 Feb ($\lambda=032^\circ\text{Ls}$, $\delta=10.5''$) at $\omega=069^\circ\text{W}$ shows clearly the Argyre cloud at the evening side. On the images on 25 Feb ($\lambda=037^\circ\text{Ls}$) at $\omega=318^\circ\text{W}$ and on 27 Feb ($\lambda=038^\circ\text{Ls}$) at $\omega=311^\circ\text{W}$, Hellas is at the evening limb. The images on 21 Mar ($\lambda=048^\circ\text{Ls}$) at $\omega=088^\circ\text{W}$ prove that the evening Xanthe is light. M Acidalium and the npc are well shown on the images made on 25 Mar ($\lambda=050^\circ\text{Ls}$) at $\omega=056^\circ\text{W}$ and on 26 Mar ($\lambda=050^\circ\text{Ls}$) at $\omega=041^\circ\text{W}$. The morning cloud following M Acidalium is interestingly thick on the B image made on 27 Mar ($\lambda=051^\circ\text{Ls}$) at $\omega=021^\circ\text{W}$. The images on 1 Apr ($\lambda=053^\circ\text{Ls}$) at $\omega=328^\circ\text{W}$ show the evening Hellas cloud. The B image on 19 Apr ($\lambda=061^\circ\text{Ls}$) at $\omega=160^\circ\text{W}$ may show the evening Tharsis. JWr's final set of images was taken on 24 Apr ($\lambda=063^\circ\text{Ls}$) at $\omega=116^\circ\text{W}$ when $\delta=6.0''$.

ヴァレル(JWr)氏はCMOでは古参の観測者で、いまではプロの天文家である。この追加報告の前は#340(25Dec2007号)に出ているが8Decの画像が最後であった。今回の14Feb($\lambda=032^\circ\text{Ls}$, $\delta=10.5''$) $\omega=069^\circ\text{W}$ にはアルギュレの夕雲が出ている。25Feb($\lambda=037^\circ\text{Ls}$) $\omega=318^\circ\text{W}$ 、27Feb($\lambda=038^\circ\text{Ls}$) $\omega=311^\circ\text{W}$ にはヘッラスが夕方である。21Mar($\lambda=048^\circ\text{Ls}$) $\omega=088^\circ\text{W}$ ではクサンテが夕方である。25Mar($\lambda=050^\circ\text{Ls}$) $\omega=056^\circ\text{W}$ 、26Mar($\lambda=050^\circ\text{Ls}$) $\omega=041^\circ\text{W}$ にはマレ・アキダリウムと北極冠が出ている。27Mar($\lambda=051^\circ\text{Ls}$) $\omega=021^\circ\text{W}$ にはマレ・アキダリウムの朝方に濃い雲が見える。1Apr($\lambda=053^\circ\text{Ls}$) $\omega=328^\circ\text{W}$ にはヘッラスの夕雲。19Apr($\lambda=061^\circ\text{Ls}$) $\omega=160^\circ\text{W}$ には夕方のタルシスカ?最後の24Apr($\lambda=063^\circ\text{Ls}$, $\delta=6.0''$)は $\omega=116^\circ\text{W}$ で撮られている。

南 政 次・村上 昌己 M MINAMI & M MURAKAMI

便 り

Letters to the Editor

●.....Subject: AR11002 update, Sept 22nd
Received: Tue 23 Sept 2008 22:27:53 JST

Hi all, No let up in the cloud today but it did thin for a few minutes.

The variation in cloud thickness makes it hard to maintain exposure levels and these have to be adjusted in real time by hand. The net result is a rather soft image.

Attached is an image from today and a new one from

yesterday, taken under slightly more favourable conditions. Best regards,

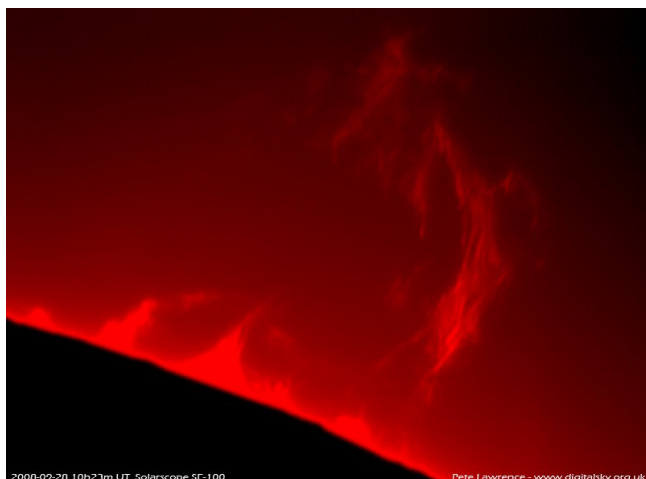
○.....Subject: Re: very tall prom alert
Received: Sun 28 Sept 2008 22:29:33 JST

Thanks for the heads up Dave. Very much appreciated after observing though the night until 7am this morning (the last bit was to catch a really thin Moon:

http://www.digitalsky.org.uk/lunar/2008-09-28_Old-Moon_IMG_4187.jpg

Only joking, it's always a pleasure to have such alerts and great image of it by the way.

My first one's attached. I've got about an hours worth of animation to put together too, but in my current state of tiredness, it's not a priority. Cheers,

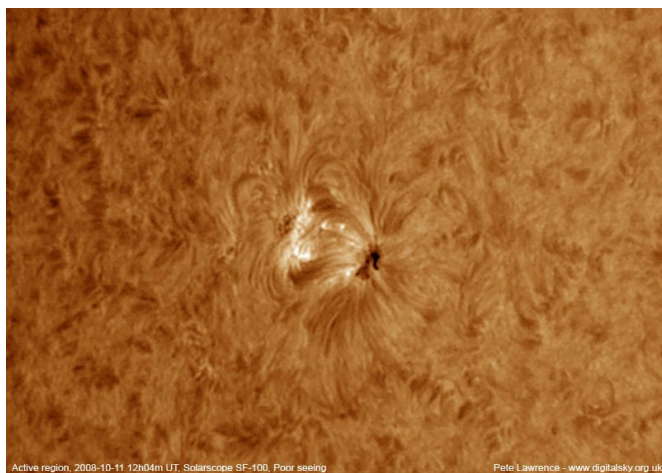


○ **Subject: 100 frame animation: 30% completed**
Received: Thu 2 Oct 2008 07:26:58 JST

Hi all, This is the large prom that put on a dramatic show on the 28th September. I have 100 movie captures to process in order to form an animation spanning 50 minutes, interval of separation being 30s. It's taking a while to pull it all together and I'm just passing the half way mark. However, here's an interim result - an animation formed from 30 of the frames, covering a time period of 15 minutes. As you can see, it was an active one!
<http://www.digitalsky.org.uk/solar/2008/animtest30.gif>

The gif is currently 1.4Mb in size. Best regards,

○ **Subject: 1 of 3**
Received: Sun 12 Oct 2008 00:14:05 JST



Hi all, Three new AR's visible in H-alpha today, with this one being the largest... Best regards,

○ **Subject: Re: Todays sunspots**
Received: Sun 12 Oct 2008 17:39:26 JST

Great shots Dave. Yes, there was confusion over it being called 11004 which was a label given to an earlier short lived AR. This one is indeed AR11005.

Best regards,

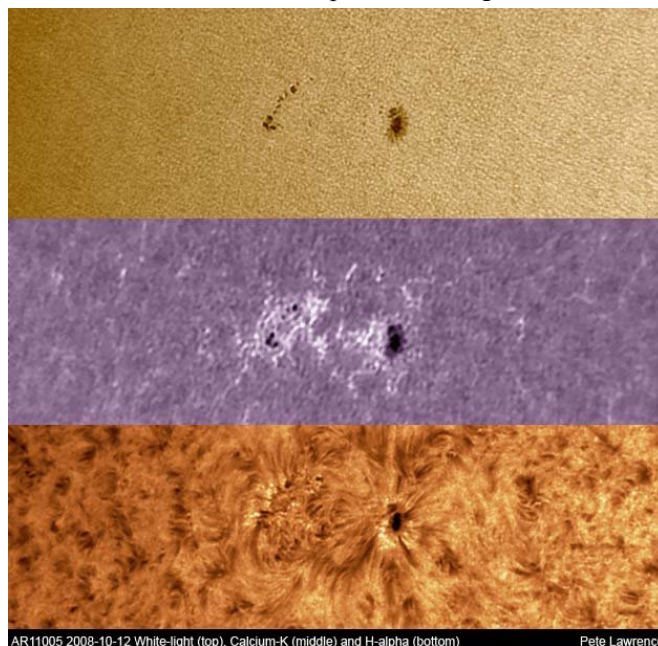
○ **Subject: AR11005, October 12th 2008**
Received: Mon 13 Oct 2008 01:00:50 JST

Hi all, Here are some shots of the current flavour of the month, AR11005. A couple of white light images mixed with the H-alpha this time. Best regards,

○ **Subject: Final comparison from October 12th**
Received: Mon 13 Oct 2008 03:53:38 JST

Hi all, One final shot from the 12th, showing AR11005

in white, calcium-k and h-alpha... Best regards,



○ **Subject: Mare Orientale region, Oct 13th 2008**
Received: Wed 15 Oct 2008 17:29:53 JST

Hi all, Here is a limb mosaic from the night of October 13th. Conditions weren't fantastic during this session with cloud rolling past the Moon. However, despite the poor and somewhat variable transparency, the seeing wasn't too bad in parts.

A reasonably favourable lighting/libration combination for the outskirts of the Mare Orientale region.

Full size image (600kb):

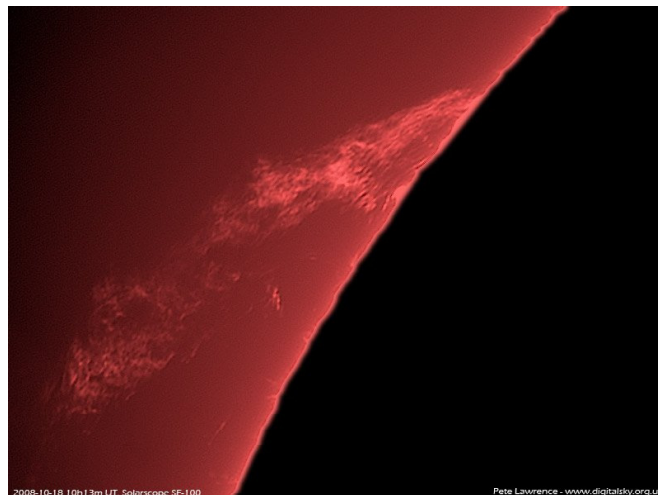
http://www.digitalsky.org.uk/lunar/2008-10-13_22-22-45_742_flat3.jpg

Overview comparison with the famous Lunar Orbiter 4 image:

<http://www.digitalsky.org.uk/lunar/orientale-earth-lunar-orbiter-4.jpg>

Best regards,

○ **Subject: Monster prom**
Received: Sat 18 Oct 2008 22:08:39 JST



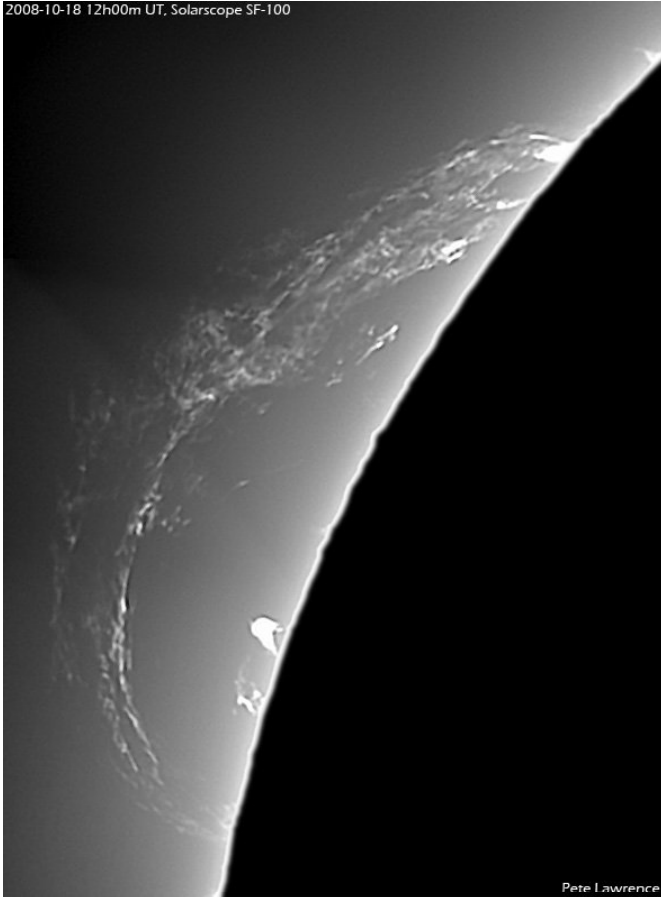
Hi all, If you get a chance, take a look at the Sun today (Oct 18) as there's a monster prominence visible on the NE limb. The attached image is only part of it. Lots more images to be processed... Best regards,

○ **Subject: Re: Large prominence of the 18th**
Received: Sun 19 Oct 2008 18:34:41 JST

Excellent work Dave - it was a beauty wasn't it?

I'm still plodding through my data set and it's likely to

2008-10-18 12h00m UT, Solarscope SF-100



take me a while to get it all done. There's a 10 minute animation in there too which, judging by the amount of motion in this thing, should be interesting.

Here are a number of the shots I've put together so far...

Best regards,

Pete LAWRENCE (ピート・ローレンス Selsey 英)

●.....*Subject: Jupiter 18 september 2008*
Received: Wed 24 Sept 2008 03:21:15 JST

Hi all, Just two images from sept. 18th

<http://www.astrosurf.com/pellier/J080918-CPE>

○.....*Subject: Uranus 28-29 september 2008*
Received: Sat 4 Oct 2008 19:29:39 JST

Hi all, Seeing was very good that night. It has been the first time that I saw raw frames with sharp edges on Uranus! None the less the G and B frames are disappointing; perhaps a bit misfocused. Note the the RG630 images are more circular due to the stronger limb absorption in long wavelenghts.

http://www.astrosurf.com/pellier/U080928_29-CPE

The main project was to stack a hudge number of frames with a RG 630 filter (R+IR), to eventually detect some belts, regardless of the rotation of the planet.

The result is really curious; if dark patches do appear, only with this filter, and although they look to be present on each one of the three files, they do not resemble to anything. Moreover, the brighter zone on the lower left edge of the planet (west edge) is more likely to be the result of the sligh defect of collimation that I detected before imaging. Again no conclusions can be made :-//

Best wishes,

○.....*Subject: Jupiter 28 september 2008*
Received: Sat 4 Oct 2008 19:49:11 JST

Hi again, Some Jupiter images taken before Uranus
<http://www.astrosurf.com/pellier/J080928-CPE>

○.....*Subject: Uranus and 2 moons, 18 october*
Received: Mon 20 Oct 2008 04:05:31 JST

My first true attempt at the uranian moons. Unfortunately, three are too close to the planet to be detected.

<http://www.astrosurf.com/pellier/U081018-CPE>

Taken at prime focus of the telescope, 150 × 2,5 sec for the moons, and three normal 6 mn captures for the RGB.

Best wishes

Christophe PELLIER (クリストフ・ペリエ nr Paris 法)

●.....*Subject: monster prom*
Received: Fri 26 Sept 2008 22:56:33 JST

Hi solar Guys, There is a big one out there today. This one is actually turned to south at the top, as the blood was rushing to my head with it at the bottom of the disc. It's not the only nice one either. I expect you are looking at it about now Ralph? Best wishes

○.....*Subject: solar images 26-Sept-2008*
Received: Sun 28 Sept 2008 03:54:35 JST

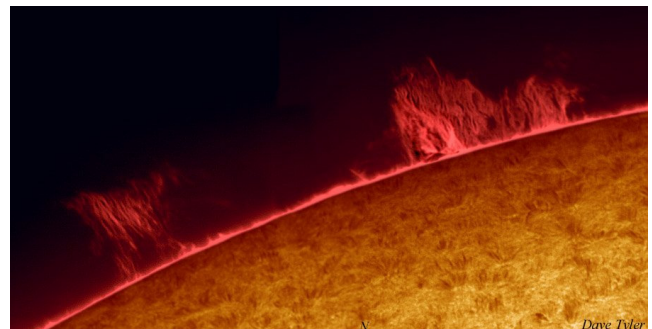
Hi Guys, Here are some more images from the 26th the montage is 1024 pix wide. Although at a minimum this was a good display, but there again have never seen a maximum in Ha. The best is yet to come. All images 180inches efl, seeing ok. Scope, A home brew 6 inch achromat f15, 2.5 x powermate (becomes 2x when stretched by the filter), Daystar ATM .6A, with trutek red ir blocked 1.25 filter (keeps the dust out) Lumenera 075M. With the 2.5 x Powermate, this is the only ghost free setup I have found. Best wishes

○.....*Subject: very tall prom alert*
Received: Sun 28 Sept 2008 18:55:43 JST

Hi Guys I hope its clear for you, this was taken about 85 mins ago. Cheers

○.....*Subject: Solar Proms 28th Sept 08*
Received: Tue 30 Sept 2008 06:04:56 JST

Hi Guys, All this sunny weather means delayed processing, but it has been a blessing as its been running parallel to the appearance of these beautiful prominences. Best wishes



○.....*Subject: Solar proms from 25th Sept*
Received: Tue 30 Sept 2008 20:24:59 JST

Hi Guys, Here are 4 prominences imaged in poor seeing on the 25th Sept. Two of them developed into the current (to 29th) beautiful prominences in the north and south of the Sun. I.e. the 10:02 ut northern image and the 09:18 ut southern image. Best wishes

○.....**Subject: Those two proms 27th Sept.**
Received: Tue 30 Sept 2008 20:45:05 JST

Hi Guys, Here they are again. The mono southern one shown inverted, looks highly charged, and in a bit of a tizz! Best wishes

○.....**Subject: solar images 29th Sept 2008**
Received: Wed 1 Oct 2008 23:37:24 JST

Hi Guys This is the last I caught of the Big Proms, no Trace of them today. Colour 180" efl, and mono 90" efl. Best wishes

○.....**Subject: Proms 1-Oct-2008**
Received: Thu 2 Oct 2008 07:20:04 JST

Hi Guys, Here is today's prominence group on the Eastern limb, nothing too exciting, bit like the seeing ! Best wishes

○.....**Subject: Solar images 9-Oct-2008**
Received: Thu 9 Oct 2008 19:46:30 JST

Hi Guys, Here's how I saw the proms yesterday. Quite large, quite faint, unless it the low sun altitude that we have already. Nevertheless, quite entertaining. Seeing was poor, one had to pick ones moments. More out there today too. Best wishes

○.....**Subject: Solar 9-Oct-2008**
Received: Fri 10 Oct 2008 06:23:53 JST

Hi Guys, Yet another sunny day today, pity the seeing was so soft ; there was some nice prominences too. All images taken on 180 inches focal length. Alt 27? Best wishes

○.....**Subject: Solar image today**
Received: Sat 11 Oct 2008 09:27:41 JST



Hi Guys, yet another day of sunshine Ha shine Hey hashine!

A nice little flare was "burning" brightly on the western limb adjacent to a Prominence. Best wishes

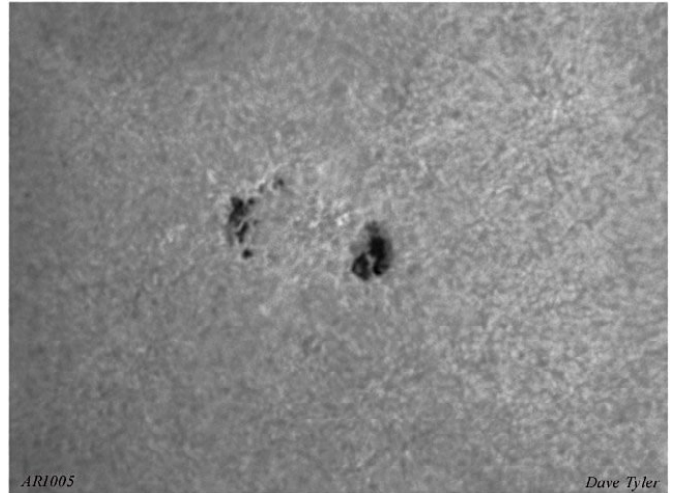
○.....**Subject: Todays sunspots**
Received: Sun 12 Oct 2008 08:07:16 JST (11 Oct GMT)

Hi Guys, Great stuff Pete and Alan.

Here is my contribution taken in far less than fair conditions, high speed mega shimmer. Now that is bad ! Much experimentation with Multipoint box sizes on individual images and parts of images, is behind the final image. I have gambled the group will be called AR1005. It was great to unexpectedly bump into this group, I exclaimed "Great Scott", as one does, this is in the wrong place for 1004 !

The wide white light shot was at 90" efl the other two

were with a 2x powermate at 180 inches efl. Its interesting to compare the two images, and note what is spot and what is filament. There was also a couple of nice proms, suffering from the seeing. Best wishes



○.....**Subject: solar images 12 Oct 2008**
Received: Mon 13 Oct 2008 17:28:32 JST

Hi Guys, Nice multi spectral display Pete, excellent big Mak image Alan.

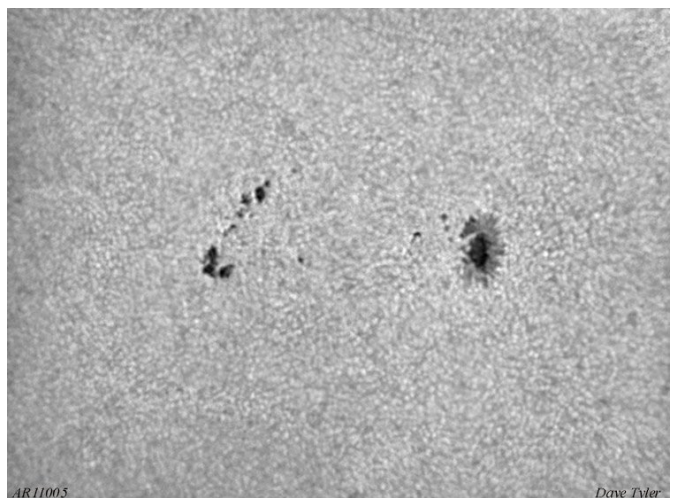
Clear weather on both side of the pond for a change.

I shuffled between H α on the Daystar and green off the Intes Wedge. Very agitated seeing, but with sharp detail at times.

The spots were noticeably more widely spaced as they came onto the disc a little more. The laptop view in H α was quite spectacular in the moments of good seeing, at 180 inches focal length and full 6 inch aperture. One couldn't ignore the prominence. Best wishes

○.....**Subject: Solar white light 11005**
Received: Mon 13 Oct 2008 17:52:58 JST

Hi Guys, This is a white light image of AR11005. Intes wedge, 6 inch f15 achromat@f30. Green Baader solar continuum filter plus IR blocker. Lumenera 075 M. Best wishes



○.....**Subject: SOLAR IMAGES 16th Oct 2008**
Received: Fri 17 Oct 2008 18:01:51 JST

Hi Guys, There was plenty to image on the 16th. A cute prominence, one mini flare /AR, a larger Active Region numbered AR11006 near the western limb, and the old spot group AR11005. Seeing was awful. wide field are 90 inch Focal length, and higher res' are 180 inch.



Dave Tyler 2008oct16 09:51 ut AR11006

For European observers, this website gives you a real time surface detail H α image, updated every minute. It is located in Austria, and will go live as the sun is available.

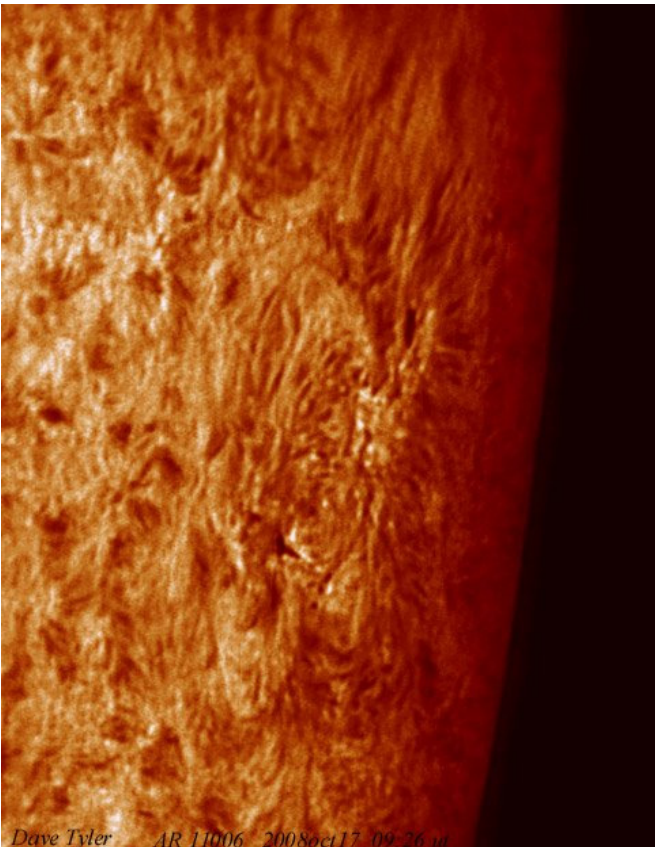
http://www.bbso.njit.edu/Research/Halpha/ha_1minbw.html

Looking out of the window here at 10am BST, I see I still have 3 inches of mist on the inside of my 6 inch object glass. I'd better get set up and capture what's there before the clouds roll in. Best wishes

○ **Subject: Today's sun 17 Oct 2008**
Received: Sat 18 Oct 2008 04:27:06 JST

Hi Guys, Still some spectacular surface detail was visible in H α today. Short moments of sharp seeing in the boiling, allowed registax to work its magic. This is a montage of 4 overlapping frames, taken at 180 inch focal length. Images of AR 11006 approaching the limb are to follow. Best wishes

○ **Subject: AR 11006 17 Oct 2008**
Received: Sat 18 Oct 2008 08:12:33 JST

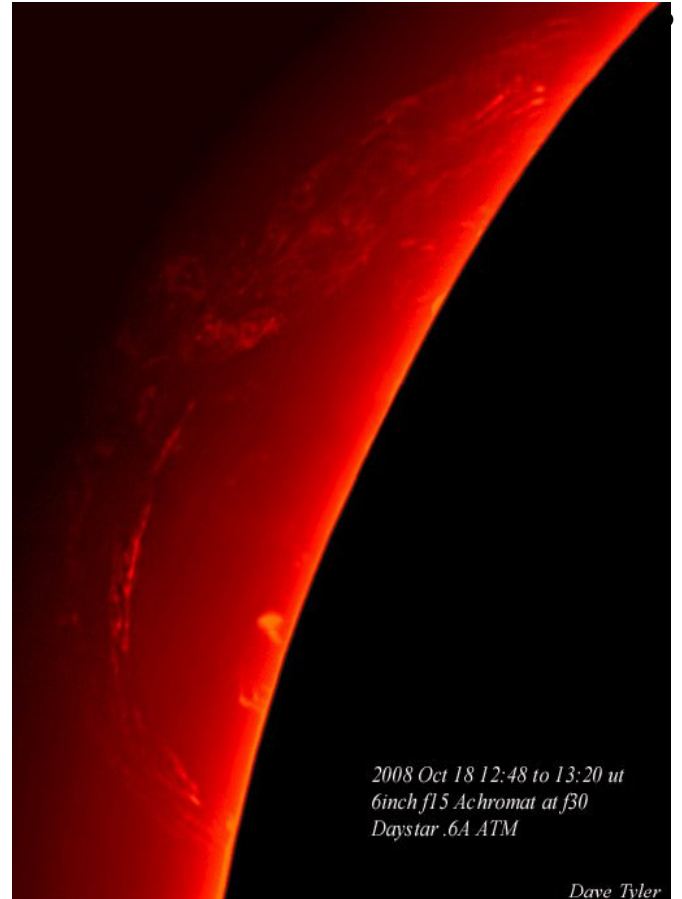


Dave Tyler AR 11006 2008oct17 09:36 ut

Hi Guys here's a shot of the short visiting AR11006 about to go over the edge, and a prominence that looks like a Santa Ana wind fire. Both 6 inch aperture and 180 efl. That's it for today images. Best wishes

○ **Subject: Large prominence of the 18th**
Received: Sun 19 Oct 2008 08:35:32 JST

Hi Guys, This morning, I heard about the large prominence being out there, from the yahoo solar group. Our local forecast was for 98% cloud all day. But, we had some small patches of blue. I had the scope tracking and ready for most of the day just waiting for an opening. I was lucky to get a few small ones but with clouds rushing across. The prom was captured in two halves about 30



2008 Oct 18 12:48 to 13:20 ut
 6inch f15 Achromat at f30
 Daystar .6A ATM

Dave Tyler

It was the largest prominence I have seen in the two years that I have been using H α . Best wishes

○ **Subject: Today sun**
Received: Wed 22 Oct 2008 04:56:49 JST (21 Oct GMT)

Hi Guys, this is a record of today's three medium sized prominence groups. Poor seeing prevented higher resolution. They look pretty small on the compass at one fifth size. On my normal 180 inch focal length they would be 10 x this size. The images were captured at 90 inches focal length. Best wishes

Dave TYLER (テラウイット・タイラー Bkh 英)
<http://www.david-tyler.com/>

● **Subject: Changed my e-mail adress !!!**
Received: Tue 30 Sept 2008 04:26:45 JST

I recently changed my e-mail address to :
 gt-eich_a_hotmail.fr.

I am looking forward to hearing from you. Best regards,
Gérard TEICHERT (シエラール・テシエール Hattstatt法)

●.....Subject: *Some widefield images*
Received: *Tue 30 Sept 2008 05:42:02 JST*

Hi all, These images were taken over the last 10 days or so. All taken with a Canon 350D and Sigma 17-70mm lens. The first one, "Jupiter in the Milky Way" was taken at Mangrove Mountain on the Central Coast during a monthly new moon meet.

<http://www.iceinspace.com.au/mygallery/displayimage.php?pos=-758>

The next two were taken at Lostock in the Hunter Valley, during site reconnaissance for IISAC2008. Beautiful

dark skies! I hope they continue in a months time!

<http://www.iceinspace.com.au/mygallery/displayimage.php?pos=-757>

<http://www.iceinspace.com.au/mygallery/displayimage.php?pos=-759>

Thanks for looking.

○.....Subject: *My new personal blog site and image gallery - mikesalway.com.au is launched!*
Received: *Mon 20 Oct 2008 19:34:55 JST*

created, it was originally my little home on the internet -

Hi all; Over 4 years ago when IceInSpace was first a place to upload my images and share and write about

TEN YEARS AGO (158)

----CMO #208 (25 October 1998) pp2339~2350 ----

巻頭はCMO Mars Report #01 1998/99 で、いよいよ今号から観測報告が始まった。観測者は、日岐敏明(Hk)氏、南政次(Mn)氏、中島孝(Nj)氏、R・シュムード(RSc)氏の四名であった。当時の火星はしし座にあり、15Oct1998で $\delta=4.2^\circ$, $\lambda=043^\circ\text{Ls}$, $\varphi=24^\circ\text{N}$ と北に大きく傾き、北半球の立夏頃の季節だった。タークフリンジに囲まれた北極冠が大きく明るく見えていた。

次いで、1996/97 Mars Sketch (11)「イアクサルテスの検出(Id氏の観測を中心に)」"Detection of Iaxartes by ISADOH around from 095°Ls to 120°Ls "が掲載された。イアクサルテスは、マレ・アキダリウムの北縁と北極域のヒュペルボレオス・ラクスを結ぶ運河で、大きく北に傾く時に見ることができると、付近を覆う北極雲の影響もあって難しい対象である。今後の北半球の見える接近時の観測対象となる。以下のURLから閲覧できる

<http://www.hida.kyoto-u.ac.jp/~cmo/cmo/note/9611/11.html>

<http://www.hida.kyoto-u.ac.jp/~cmo/cmo/note/9611/11j.html>

"Coming 1998/99 Mars" (3) には、1994~1999年の火星の視直径の変化(対Ls) "Apparent Diameter vs Ls in 1994~1999"が取り上げられている。この接近で δ が8秒角以上あったのは 090°Ls から 185°Ls の期間であった。

<http://www.hida.kyoto-u.ac.jp/~cmo/cmo/coming/9903/03.html>

<http://www.hida.kyoto-u.ac.jp/~cmo/cmo/coming/9903/03j.html>

LtEは、Samuel WHITBY (USA), Nelson FALSARELLA (Brasil), Nicolas BIVER (Hawaii), Richard H SCHMUDE Jr (USA), 頼武揚 (Taiwan), 蔡章獻 (Taiwan), Giovanni QUARRA (Italy)の外国各氏からと、国内からは日岐敏明氏(伊那)、岩崎徹氏(小倉)から寄せられている。

『夜毎餘言』・LVIII は、「Ten Years Ago- 地下道」と題して、南政次氏の10年前の1988年の火星大接近時に臺北で観測滞在していた時の地下連絡路の様子と、そこで見かけた少女の話である。 <http://homepage2.nifty.com/~cmomn/Zure9.htm>

TYA(38)は、CMO#061(10Oct1988)とCMO#062(25Oct1988)の紹介で、最接近(22Sept)前後の様子が述べられている。Olympus Monsの衝効果の確認と、Thaumasia Phoelixに見られた強い朝霧の記事が報告された。この二号は観測報告がメインの見開き四ページ建てで、他には、南政次氏の「臺北再見(3)」が見られるだけであった。「火星観測は儲かるか?」と題したコラム記事であった。 <http://www.hida.kyoto-u.ac.jp/~cmo/cmo/208/tya038.html>

村上 昌己(Mk)

ISSN 0917-7388

COMMUNICATIONS IN 東亞天文學會 『火星通信』 since 1986

MARS

No. **208**
25 October 1998

OBSERVATIONS Published by the OAA Mars Section

CMO Mars Report # 01 (1998/99) OAA Mars Section

この号では、16 September 1998から15 October 1998迄の観測報告を扱う。九月末には既にハワイのニコラ・ビヴェール(NBv)氏(フランスFASの観測家)から、20Septに初観測を済ませたという報告があった(LtE参照)。16Septで視直径 δ は4.0秒角、季節は 030°Ls 、中央緯度は 20°N 、位相角 ϕ は 20° 、一方、 150Oa ではそれぞれ4.2秒角、 043°Ls 、 24°N 、 26° となっている。位相角はこれから強くなる。 ϕ は 25.4°N まで行く。問題は視線緯度で16Septには $+17^\circ$ であったが、 150Oa では $+11^\circ$ と落ちて来ている。このことについては前号で特に注意した。

In the present issue, we treat the observations made during the period from
16 September 1998 to 15 October 1998 (043°Ls)

On 16 Sept, the apparent diameter δ was 4.0 arcsecs while it only rose to 4.3 arcsecs on 15 Oct. During the period the Martian season proceeded from 030°Ls to 043°Ls , the central latitude ϕ from 20°N to 24°N , and the phase angle ϕ from 20° to 26° . The illumination of defect will increase gradually for the present. Notable was the fact that the apparent declination was $+17^\circ$ on 16 September, while it went down to $+11^\circ$ on 15 October. This is an annoying problem we encounter this apparition as stated in the preceding issue.

2 3 3 9

my experiences in astronomy. It soon grew into a community site for amateur astronomers in Australia and across the world. I still kept my personal image gallery on IceInSpace but it always bothered me that it wasn't really the right place for it anymore. Earlier this year, I decided it was finally time to completely separate my personal work from IceInSpace and create a new site specifically dedicated to my thoughts and my images - and here it is, mikesalway.com.au . It's been a long time coming - I started it back in April 2008 but have only found time to work on it in shorts bursts, before being dragged off to do more work on IceInSpace, or just being able to find the time outside of real work and family life. I'd love for you to take a look, and i'd be happy to receive your feedback, suggestions, input, comments etc. mikesalway.com.au - Astronomy and Photography by Mike Salway Thanks!

Mike SALWAY (マイク・ソルウェー NSW 澳)
www.mikesalway.com.au

●.....*Subject: Uranus 2008 September 28*
Received: Wed 1 Oct 2008 03:36:07 JST

These images of Uranus were taken in fair seeing 3 hours after culmination.

They are oriented with celestial south at the top. They show the oblate shape of the planet with the equator running in the 1.30/7.30 o'clock direction, and perhaps a hint, in the green image, of a darker belt running along the equator, strongest at the top of the image, but it is hard to be certain.

<http://www.davidarditti.co.uk/ura2008-09-28-DLA.jpg>

○.....*Subject: Re: Mare Orientale region, October 13th 2008*
Received: Thu 16 Oct 2008 03:02:46 JST

Fascinating, Pete. Though you have not caught Orientale itself, you have made very clear the relationship between the true topography and the view we see.

David ARDITTI (デヴィッド・アーデイチ Edgware ME 英)

●.....*Subject: 『火星通信』#350拝受いたしました*
Received: Wed 1 Oct 2008 20:13:03 JST

南政次様、本日『火星通信』#350届いておりました。ありがとうございます。編集委員に浅田さんが復活され、ますます発展されることと存じます。今後とも宜しく願いいたします。

○.....*Subject: AR1005*
Received: Thu 16 Oct 2008 10:36:49 JST

...現在太陽面は北半球に#1005黒点群が子午線通過で、ほかには特筆すべき黒点が見られずほぼ無黒点に近い状況です。#1005も小規模で地磁気に影響を与えるものではありません。今太陽面は平穏ですが、トピックスがあればお知らせします。

昨夜は好い満月が見られましたが、無粋な通り雨が流れていきました。

○.....*Subject: Re: 蕪村の蘭*
Received: Thu 23 Oct 2008 19:44:40 JST

朝日俳壇のコラム記事を有難うございました。(蕪村の句は)幻影的な句ですね。「蘭」「夕」「狐」「奇楠」すべてが幻影的な様相を放っています。太陽面は無黒点が続く、特筆すべき活動は見ら

れません。東リムにもトピックスとなる光はありませぬから当分おとなしい状態が続くでしょう。

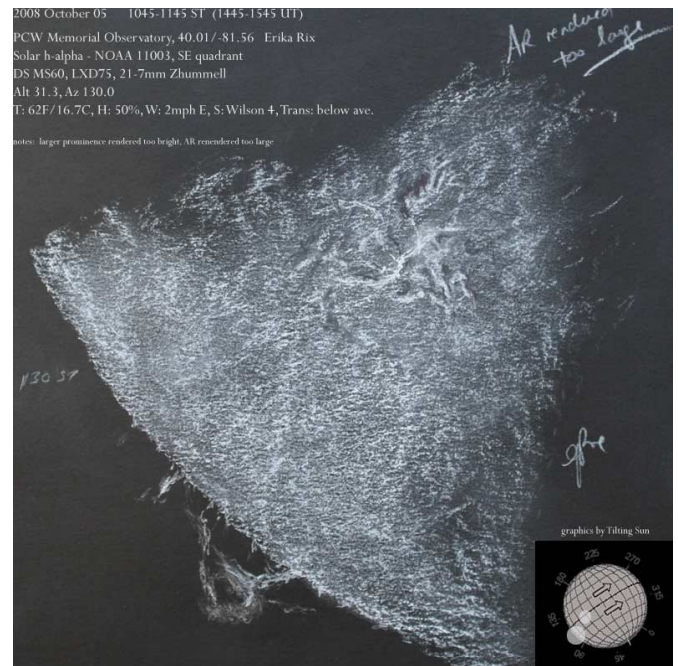
常間地 ひとみ

(Hitomi TSUNEMACHI 横濱 Yokohama)

●.....*Subject: 2008 10 05 solar*
Received: Mon 6 Oct 2008 02:09:20 JST

Taking a little more time out of my day than I should have for fun, I managed white light and h-alpha viewing.

AR 11003 was not visible to me in white light using my ETX70 with a TV8mm plossl. I did see granulation on and off, transparency isn't too great today. I almost thought I detected this region briefly, but couldn't con-



firm it.

In h-alpha using my Maxscope, the area was lit up very nicely by bright slender plage making some of the background around it appear darker in comparison to the rest of the disk. I didn't see any sunspots within the active region.

There were many prominences scattered around the limb and a very short, almost spot-like filament in the southern hemisphere west of the AR.

I did grab a quick sketch of the large prominence to the east of the AR, although I rendered the loop way too bright in my attempt to grab the details within it. Along those lines, the AR was sketched too close to the limb and a little too large. Best regards,

Erika RIX (エリカ・リックス Zanesville OH 美)

●.....*Subject: Mars images from last apparition*
Received: Mon 6 Oct 2008 05:10:54 JST

Dear all, A very delayed set of Mars images from the past apparition starting December 20, 2007, and ending April 24, 2008, will appear in a few forthcoming e-mails. I hope they will fill in missing time slots in your Mars observation collections and may be of some use despite their relative fuzziness. Mars imaging is not easy from here, but I hope to improve results for the next apparition.

tion. With the very best regards,

2007/12/11 Johan Warell <johan.warell_a_gmail.com>:

> Dear friends,
> Enclosing the few Mars imaging observations I have managed to acquire
> this fall from Uppsala, not much to write home about in terms of
> detail or sheer numbers but hopefully they may have some value.
> Wishing you all a wonderful Christmas and New Year, > Johan

Johan WARELL (ヨハン・ワレツル Uppsala 瑞典)

●.....**Subject: Re: AR 1004**
Received: Sun 12 Oct 2008 07:22:33 JST

Great work, Pete. It's something how a tiny sunspot group can whet the appetite after a long solar fast. I avoided all my fall chores today and sat outside for hours in the sunshine... under a blanket!

Here is a little animation that dives through the chromosphere (H α) to the photosphere (CaH):

http://www.avertedimagination.com/img_pages/Sunspot1004_101108.html

... and a portrait of the region in Hydrogen Alpha:

http://www.avertedimagination.com/img_pages/AR1004_Ha.html

best wishes,

○.....**Subject: AR1005 close up**
Received: Mon 13 Oct 2008 06:03:21 JST

Hi all, I've only used my A-P 10" mak on the sun once before, from Florida. It was such a pretty and warm October day today - I decided to give it a go:

http://www.avertedimagination.com/img_pages/AR1005.html

Seeing really couldn't support the large aperture, but it was fun to construct this image - taken with a Baader solar film filter over the front of the scope and narrow band filters on the camera. The two wavelengths combined for this image were an 8nm H α and the Baader CaK line 8nm filter. I would love to attack a nice sunspot group with the 10" mak in good seeing... someday <sigh>! best regards,

Alan FRIEDMAN (アラン・フリートマン Buffalo NY 美)

●.....**Subject: Uranus & satellites le 2008.09.20**
Received: Mon 13 Oct 2008 02:20:09 JST

Dears, Here is a composite image of Uranus and 4 satellites:

http://astrosurf.com/delcroix/images/uranus_20080920_lrgb_sat.jpg

This image was assembled from the different images available on the image below with technical details:

http://astrosurf.com/delcroix/images/planches/astro_images.php?lang=fr&o=&racine=u&y=2008&m=9&d=20

There is a possible darker zone correctly oriented according to Uranus rotational axis, but its curvature is too large - it's an artifact. The globe looks a bit flattened in the correct direction but with such a tiny disk any measurement would not be accurate enough. Clear skies,

Marc DELCROIX (マルク・テルクロア Tournefeuille 法)

●.....**Subject: non title**
Sent: Wed 15 Oct 2008

南政次様、お世話になっています。

A Photographic Study of the Brighter Planets by E C SLIPHERを二部お送りします。

ローエル天文台訪問の際、格安で売ってるのを見つけたのですが、荷物になるので三〜四冊しか買えませんでした(木星観測者に差し上げました)。それで最近になって郵送して貰いました。

余部は貸し出し用、またはどなたか惑星観測者へのプレゼント用としてお使い下さい。

二冊別々の便にしたのは、その方が二冊を一通で纏めるより二分の一以下(三分の一に近い)の郵送料で送れるからです(厚さが2cm以下は「メール便」、2cm以上は「宅配便」)。突然お送りして申しわけありません。

昼夜の温度差が大きくなりましたが、何とぞお大事に!

佐藤 健 (Takeshi SATO 廿日市 Hiroshima)
(註) ご本(二冊)と一緒に Lowell天文台の Picture Postcardを三枚(二組)ほど送って頂いたので、61cm

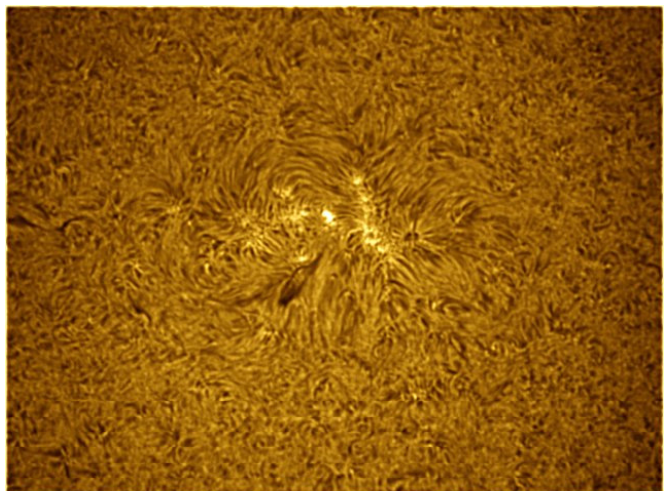


Alvan Clark 鏡 (1896) のものを掲載する。Copyright は Flagstaff の T ALEXANDER 氏であるが、構圖が好いと思う。只説明書きには Vesto SLIPHER の赤外変移の発見に使われたとだけ書いてあり、ローエルの火星は書かれていない。日本へ持って来た 15cm 鏡が見える。

(Mn)

●.....**Subject: 15 Oct 08 Observations of AR 1005**
Received: Thu 16 Oct 2008 07:11:52 JST

Hi All, Here are a couple of images taken this morning of AR 1005. The setup was a Tak Sky 90, Solar Spectrum 0.2A H-alpha filter and a DMK 21AU04 Camera. Seeing conditions were good in spite of the Santa Ana winds.



Lower resolution image was at 17:56 UT and the higher resolution one was at 18:40 UT.

Patrick STOKER (ハット・スター CA 美)
http://home.earthlink.net/~pjstok/wp10_intro.htm

●.....*Subject: Sun disk*
Received: Thu 16 Oct 2008 23:52:06 JST

Hi, here is a full solar disk mosaic of 9 images with a PST @ f/20 and Skynyx 2.0M, from October 14.

BW version

http://www.astrosurf.com/pcasquinha/sol_081014.jpg

Colour version

http://www.astrosurf.com/pcasquinha/sol_081014_c.jpg

My best regards

○.....*Subject: Petavius*
Received: Fri 17 Oct 2008 06:08:07 JST

Hi, Here is an image of crater Petavius, 180 Km wide and height 3300 m, the biggest crater on Petavius basin is Petavius C, 5 Km wide, using this as a measure we can easily find a lot of craters with less than 1000m wide. C14 @ f/22 + Skynyx 2.0M

<http://www.astrosurf.com/pcasquinha/petavius.jpg>

My best regards

Paulo CASQUINHA (ハ°ウロ・カスキニャ Portugal 葡)

●.....*Subject: Moon Images - 21st/22nd October 2008*
Received: Thu 23 Oct 2008 19:46:18 JST

Hi all,
 Taken on the Mornings of the 21st / 22nd October at around 05:00 - 07:00am in the back garden. Great



Copernicus

22nd October 2008
 By James Jefferson

conditions considering its not winter yet !

Details : Celestron C9.25 LU075M 1.5 & 2x Barlow Lens EQ6Pro Mount Approx 1500 - 1800 stacked in



Plato

21st October 2008
 By James Jefferson

Registax. No Processing at all, just wavelets and contrast adjustments (try to keep it as natural as possible).

James JEFFERSON (ジ°ェームス°ジ°ェファーソンBBC英)

☆☆☆

時時間間 : 廿年目の「最後一夜」 : ▼今年は1988年の大接近から廿年目になる。私の二回目の臺北遠征からも廿年である。宮崎勲氏の40cm反射による畫期的な火星照片が出てからも廿年である。當時はバブル崩壊前であり、平均株価も金融崩壊の現在の三、四倍もあって、これも隔世の感がある。この間私などスッカリ老境に入ってしまった。天文臺下のプールから、喜多郎の「絲綢之路」が流れて聞こえていたときの自分の気分などいまでも鮮やかだが、いま思うと、あの夏の暑さなど好く過ごせたものだと思う。▼今年、臺灣を訪れたTsさんに依ると、劍潭から士林に掛けては當時の俵が無く、士林夜市はすっかり様変わりしてしまった様である。圓山天文臺も無くなり、こちらも隔世の感である。▼今號のTYAでMk氏が觸れているので、CMO #61(10Oct1988)(當時はLtEは端折り、後で纏めて収録した)の「臺北再見」(3)を讀んでみると、滞在の辛さは何も暑さばかりの所爲ではなかったようで、殆ど忘れていたが、私は火星觀測で稼ぎに来ていると勘違いされる様な雰囲氣が臺灣社會全體にあった、という事實があったのである。これはいまはどうであろうか。

▼扱て、當時、臺灣の歌星「蔡琴」(TSAI_Chin)のことは『火星通信』では何度も觸れた。1986年以來私を魅了した歌聲の持ち主であった。暫くご無沙汰であったが、當然廿年を経て、蔡琴も幾らか歳を取った筈である。ところがその蔡琴がいまも大活躍中であることを、最近YouTubeで知った。▼YouTubeが流行り出したのは2005/06年頃だと思ふが、2007年に蔡琴が臺灣だけでなく北京、香港、新加坡などで盛大な演唱會をやっている實況が澤山YouTubeにuploadされているのである。ふくよかになって、大まかな衣装を着たおばさんという感じだが、雰囲氣はさながらで、うまく歳を重ねている。何れも大きな會場で手拍子、聲援で喧しいばかり、時には歡聲が擧がる。中には堪らない影像や録音もあるが、稀には廿年前を彷彿させるものがある。最近の目鼻立ちと共に落ち着いた聲は(聲自身は落ちているものの)、「跟我說愛我」の

<http://jp.youtube.com/watch?v=siXPDIrGiRA>

で見られる。▼「最後一夜」も喧しい方の會場で唱っているのが二編ばかりある。然し、1994

年に國防部(!)の管弦樂團の伴奏で唱った
<http://jp.youtube.com/watch?v=8sSIAlbRqa4>
 が(録音は不好だが)未だ聲もよく、體型もほっそりとしていて宜しい。▼残念ながら、私の最も好きだったアルバム「傷心小站」の曲は殆ど見附か
 っていない。ただ、「童年往事」だけは侯孝賢監督の同名の映画の trailer に収録されていて聴いていたのだが、規約違反があったとかで、最近削除されてしまった。▼「天天天天」(多分1988年の像)や「繼續」等も入っているが、「你的眼神」や「相思河畔」、「被遺忘的時光」、「不了情」、「恰似你的溫柔」などは人氣の様である。最近の「不了情」は<http://jp.youtube.com/watch?v=NP8BybH9nG4>
 この中の「新不了情」は、文字通り新しいのであろうが、これは若い張靚穎の録音の方が好い(ステレオ)。蔡琴の「恰似你的溫柔」も Just Like Your Tenderness 等として何編も入っているが、涙聲に

なるのが二編ほどある。私は中國語が分からないので、尾代君に是非解説して欲しいところである。「被遺忘的時光」も懐かしいが、プロモーション・ビデオ風で、LPの針の疵音が入っているのが一編ある。http://jp.youtube.com/watch?v=FDIM_ysjLFQ
 疵が入って居るといことは当時の盤からのものの再生だろうと思うが、歡聲に包まれた現在のものは例えば<http://jp.youtube.com/watch?v=4Njt68d3vrQ>
 にある。「夜來香」も当時の聲や録音に遠く及ばないが、<http://jp.youtube.com/watch?v=fHUN9DXQhqQ>
 等に入っている。▼YouTubeはハンドルネームによる投稿だから、随分酷い影像のものもあるし、インチキもあるが、アニメで丁寧で作っているのもあり、「你是我心中的一朵雲」
<http://jp.youtube.com/watch?v=QaJmoLgJ4k4>
 は好く出来ている例である。いずれにしても隔世廿年一日の如し。
 (Mn)

 シー・エム・オー・フクイ

 中島 孝 Nj

★佐藤健様より(LtE掲載の如く)E C スライファアの"A Photographic Study of the Brighter Planets"を二冊頂戴しました。有難うございました。いずれも『火星通信』の貸出し用に保存しますので、ご用のかたはお問い合わせ下さい。

★前号でお知らせしましたように、今号から浅田正氏が常間地ひとみさんに替わって編集部に入られました。浅田氏は1986年の『火星通信』創刊当初から事務局を担当され、米国留学の直前の1990/1991年まで編集や会計を勤められたかたで(25_May_1991_#105において会計引き継ぎ)、特に1986年と1988年、南政次氏が台湾に遠征されていたときはお独りで編集・印刷・発送を受け持たれたこととはご記憶のことと思います。今回は、浅田氏のお世話で、CMOのWebサイトを京都大学・飛騨天文台のサーバーに接続できることになり、漸次作業が進められ、一部は<http://www.hida.kyoto-u.ac.jp/~cmo>でリンクされています。近々ファサードのURLも変更になりますのでご留意下さい。不一

☆Dr Tadashi ASADA joined the CMO editorial board from this issue, replacing Ms Hitomi TSUNEMACHI who worked from April 2001 as an editor to September 2008. ASADA was originally a staff of the CMO from the start in 1986 until 1991 when he was going to stay in the US for a year. Now by an idea of ASADA, the URLs of the CMO-Webs shall presently be linked to the server of the Hida Observatory, Kyoto University. Thank you.

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

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