

MARS

No. **328**
25 February 2007

OBSERVATIONS

Published by the OAA Mars Section

■ CMO 2005 Mars Note (11)

***Bright Dust Core at Solis L Generated
on 21 October 2005*****21Oct2005ソリス・ラクス發現の黄塵**

■ 南 政 次 M MINAMI

I° Introduction and Conclusions

The dust entrained on 18 October 2005 which was discussed in #324 gave rise to another dust stretch near the original on the Martian morning of 19 Oct, and similarly on 20 Oct. On the following 21st day, however a bright dust core newly built at the Solis L area, and for the time being the area played a central role in the October dust activity, and so we here deal with the Solis L dust in the present Note.

We here show

- 1-1) This dust core at Solis L was no one that was propagated from other places, but it was the very dust core that was born over there.
- 1-2) So, this was certainly created on the morning of the day 21 Oct at the place.
- 1-3) The core did not change its shape and strength during the whole day of 21 Oct.

We further note that

- 2-1) This dust core stayed not only on 21 Oct, but stayed there and did not move from there for a few days even though its shape or density deformed or transformed over there.
- 2-2) Eventually the core was made weakened on 25 Oct, and completely disappeared on 27 Oct, but this did never imply it moved away. It repeated at the place and disappeared at the same

place.

- 2-3) From 21 Oct to 25 Oct, the core must have survived the nights though weakened and revived in the following mornings and scattered the dust to the air during the daytime.

These must be summarised as

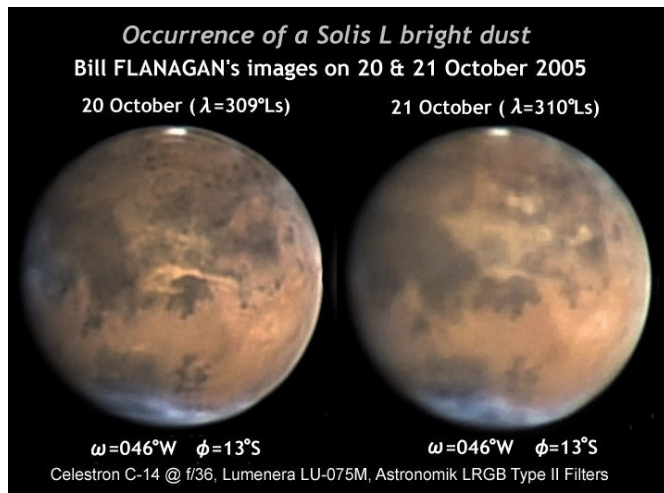
- 3-1) The Solis L dust core raised on 21 Oct was not completely destroyed in the following night but had an ability to maintain its troposphere, and the meteorological condition allowed it to revive and swell on the morning of 22 Oct at the same place. On the following 23 Oct, the situation repeated, and so on, but on the morning of 27 Oct the dust core ceased to revive again.
- 3-2) Since other dust cores also behaved similarly, we may postulate in general that any dust macroscopically rises and falls at the same place and its resonances also behave similarly. The resonances are also no phenomena that are caused by the movements of the dust cores.
- 3-3) We may also be able to swear that even the so-called great dust storm also should obey this pattern. In the cases of great dust clouds, it must be the cases where the resonances are onset very frequently and successively to the extent the air borne dusts thickly make us blind about the rise and fall of the dust cores.

We shall treat the great dust case in Oct 1973 for comparison in the final section.

The October 2005 dust was rare in the sense that it gave us a lot of lessons; The above mentioned mechanism is thus one of the lessons which we can pick out from the behaviours of the 21 Oct dust cores.

II° Dust Cores on 21 Oct ($\lambda=310^\circ\text{Ls}$)

On 21 Oct, before the appearance of the Solis L area from the limb, there was seen a pair of bright dust cores near Argyre (maybe to the northwest of Argyre) when the present writer (*Mn*) stood by the Lick refractor at 5:40 GMT. The pair looked very conspicuous. Its north was thickly bordered by a dark stretch. The gradually appearing Solis L dust core also was such that its northwest was bordered by the dark marking (may be a part of Solis L). We here show two excellent images of the areas both of which were produced by Bill FLANAGAN (*WFI*) on 20 Oct and 21 Oct at the same angle. These



well show the independency of the new dust cores from the cores of the preceding day. The cores at the Solis L area as well as the ones near Argyre was very brilliant to the naked eyes and its brightness should be said much stronger than presented on the ccd images.

Masami MURAKAMI (*Mk*) estimated the positions of the cores from the images posted on the CMO Gallery: According to him the first ones are around the two centres:

$$(\Omega=054^\circ\text{W}, \Phi=44^\circ\text{S})$$

$$(\Omega=061^\circ\text{W}, \Phi=40^\circ\text{S}).$$

The present writer (*Mn*)'s estimations are also within $\pm 01^\circ$. *Mk*'s data also show the following as longitudes and latitudes of the centres of the Solis L dust cores.

$$(\Omega=086^\circ\text{W}, \Phi=28^\circ\text{S})$$

$$(\Omega=079^\circ\text{W}, \Phi=25^\circ\text{S})$$

Otherwise a third core was seen (to the naked eyes also) near Bosporos at

$$(\Omega=068^\circ\text{W}, \Phi=30^\circ\text{S})$$

If we employ the range description, the Argyre dust

cores should be said to be inside the range:

$$(\Omega=050^\circ\text{W}\sim 65^\circ\text{W}, \Phi=38^\circ\text{S}\sim 47^\circ\text{S}),$$

and the Solis L dust cores might be in

$$(\Omega=078^\circ\text{W}\sim 90^\circ\text{W}, \Phi=25^\circ\text{S}\sim 31^\circ\text{S}).$$

We shall show the positions on the MOLA elevation map in a paragraph of the following Japanese column (see p0562) where we put \times at the centres of the bright cores. Both prove to be located at slopes which rise up to the west. It should be noted there that the former dust was not onset inside the Argyre basin but at its outskirts.

On 21 Oct the season was at $\lambda=310^\circ\text{Ls}$, and the tilt was $\varphi=13^\circ\text{S}$, the angular diameter was $\delta=19.9''$, and the phase angle was $\iota=16^\circ$ before opposition. The apparent declination was $+16.5^\circ$, and hence the condition was good from the Northern Hemisphere.

The fact that the Solis L dust core was vivid at the morning side was apparent on the image made by Jesús SÁNCHEZ (*JSc*) at $\omega=015^\circ\text{W}$. Since $\iota=16^\circ$, a one-hour period of the morning was not seen from the Earth. However $\Omega=100^\circ\text{W}$ should be inside the illuminated disk, and hence the bright matter caught by *JSc* must be caused by the Solis L dust on the limb. It is absurd to imagine that the dust had crept up to the Solis L area from Agathodæmon at night.

The observations secured on 21 Oct concerning the Solis L dust are listed in Table I.

Table I: Observations of the Bright Dust Core at the Solis L Area on 21 Oct 2005 ($\lambda=310^\circ\text{Ls}$)

Time	LCM	Observers
05:05 GMT	$\omega=015^\circ\text{W}$	SANCHEZ (<i>JSc</i>)
05:19 GMT	$\omega=019^\circ\text{W}$	SANCHEZ (<i>JSc</i>)
05:49 GMT	$\omega=026^\circ\text{W}$	SHERROD (<i>CSr</i>)
05:50 GMT	$\omega=026^\circ\text{W}$	MINAMI (<i>Mn</i>)
06:06 GMT	$\omega=030^\circ\text{W}$	FLANAGAN (<i>WFI</i>)
06:12 GMT	$\omega=031^\circ\text{W}$	De GROFF (<i>KGr</i>)
06:38 GMT	$\omega=038^\circ\text{W}$	De GROFF (<i>KGr</i>)
06:41 GMT	$\omega=038^\circ\text{W}$	CHAVEZ (<i>RCv</i>)
06:42 GMT	$\omega=039^\circ\text{W}$	SHERROD (<i>CSr</i>)
07:05 GMT	$\omega=044^\circ\text{W}$	WARREN (<i>JWn</i>)
07:08 GMT	$\omega=045^\circ\text{W}$	GRAFTON (<i>EGf</i>)
07:09 GMT	$\omega=045^\circ\text{W}$	CHAVEZ (<i>RCv</i>)
07:12 GMT	$\omega=046^\circ\text{W}$	FLANAGAN (<i>WFI</i>)
07:28 GMT	$\omega=050^\circ\text{W}$	FLANAGAN (<i>WFI</i>)
07:35 GMT	$\omega=052^\circ\text{W}$	FRIEDMAN (<i>AFr</i>)
07:40 GMT	$\omega=053^\circ\text{W}$	SHERROD (<i>CSr</i>)
07:50 GMT	$\omega=055^\circ\text{W}$	MINAMI (<i>Mn</i>)
08:30 GMT	$\omega=065^\circ\text{W}$	MINAMI (<i>Mn</i>)
09:01 GMT	$\omega=074^\circ\text{W}$	LOMELO (<i>ELm</i>)
09:10 GMT	$\omega=075^\circ\text{W}$	MINAMI (<i>Mn</i>)

The observations were produced densely: Every observation was made within 10°W from the preceding observation. During the four hours, no sign of macroscopic change of the density and shape of the dust cores was detected. Unfortunately, the observations stopped here but should have been carried out far at the West Coast because Solis L was not yet at meridian. It must have been possible, but it was not scheduled to observe after the meridian at Lick. Here is shown *Mn's* drawing made



at $\omega=065^\circ\text{W}$, which was the last but one. The noon line was more western than the CM about by 16° , and so we may say the Solis L dust core did just reach the noon or not yet. At $\omega=055^\circ\text{W}$, the core made reminded *Mn* of the 1973 dust case. The Observing Note made at $\omega=065^\circ\text{W}$ shows that Ophir was bright but quite different in colour than the dust core, and Xanthe was more reddish. The NW part of Solis L which was still uncovered by the dust was quite dark, as dark as Auroræ S.

Ed LOMELO (*ELm*) was located at Sacramento, near Lick, but he looks also to have stopped observing when the planet reached the meridian.

As every one knows, there follows a large gap of the Pacific Ocean after the American continents. So it is expected the observations at the West Coast are made as late as possible and the observations from Japan or Australia should be made as early as possible. On the day, however, no observation was made in Japan (perhaps because of the weather condition). Canon LAU (*CLa*) at Hong Kong observed at 16:12 GMT ($\omega=178^\circ\text{W}$) but too late, and Tomio AKUTSU (*Ak*) at Cebu took an image but just before dawn at 19:34 GMT ($\omega=227^\circ\text{W}$) (*Ak's* observing terrace seems to face to the west, and so he could not catch the early Mars).

Since there is no timely observation of the Solis L dust core on the Martian afternoon of 21 Oct, we cannot in principle discuss about the afternoon aspect of the dust core. However, experimentally our observations of

the afternoon dusts have rather thickly been done hitherto, and their general trend doubtlessly proves that dusts in the afternoon do not alter its shape and density from the macroscopic point of view. So at least we are sure the central area of the dust core must have remained the same and then was concealed to the rear side. At Lick when we stopped observing, we anticipated that the core should move to the evening side without change, and it could make another leap next morning.

III° On the Following Day; 22 Oct ($\lambda=311^\circ\text{Ls}$)

There was made a good stuff of observations on 22 Oct in the Martian morning as well as in the afternoon. On the image of Sean WALKER (*SWk*) at $\omega=018^\circ\text{W}$, the core was dim, and hence the situation near the limb was different from the preceding day. *Mn's* observation at $\omega=024^\circ\text{W}$ did not show so vividly (the observation at $\omega=014^\circ\text{W}$ does not show explicitly), but surely it showed an egg-like expanse compared with the core of the preceding day while the density looked lessened. However as it moved to the CM it proved considerable and showed an interesting shade and light complex inside the egg-like area. The present writer (*Mn*) thought that the core on 21 Oct had diminished at night, but was not completely destroyed to survive the night until the following morning and it made a burst at the same place

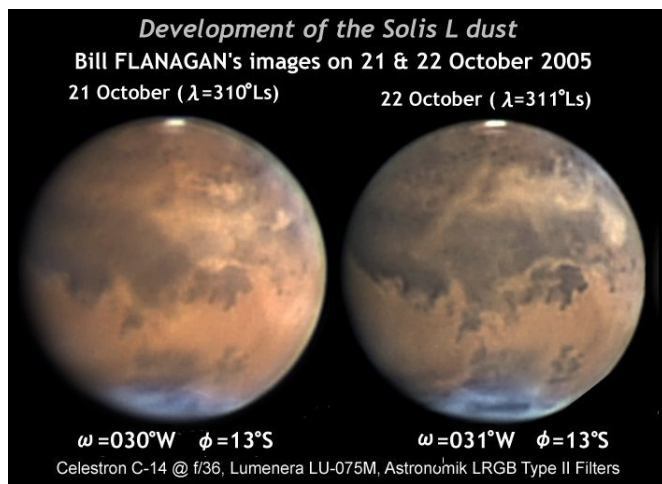
Table II: Observations of the Bright Dust Core at the Solis L Area on 22 Oct 2005 ($\lambda=311^\circ\text{Ls}$)

Time	LCM	Observers
05:53 GMT	$\omega=018^\circ\text{W}$	WALKER (<i>SWk</i>)
06:20 GMT	$\omega=024^\circ\text{W}$	MINAMI (<i>Mn</i>)
06:25 GMT	$\omega=026^\circ\text{W}$	FLANAGAN (<i>WFl</i>)
06:47 GMT	$\omega=031^\circ\text{W}$	FLANAGAN (<i>WFl</i>)
07:00 GMT	$\omega=034^\circ\text{W}$	MINAMI (<i>Mn</i>)
07:21 GMT	$\omega=039^\circ\text{W}$	FLANAGAN (<i>WFl</i>)
07:40 GMT	$\omega=044^\circ\text{W}$	MINAMI (<i>Mn</i>)
08:14 GMT	$\omega=053^\circ\text{W}$	LOMELO (<i>ELm</i>)
08:20 GMT	$\omega=053^\circ\text{W}$	MINAMI (<i>Mn</i>)
08:25 GMT	$\omega=055^\circ\text{W}$	WARREN (<i>JWn</i>)
08:25 GMT	$\omega=055^\circ\text{W}$	ROEL (<i>ERl</i>)
09:20 GMT	$\omega=068^\circ\text{W}$	MINAMI (<i>Mn</i>)
09:54 GMT	$\omega=077^\circ\text{W}$	LOMELO (<i>ELm</i>)
12:52 GMT	$\omega=120^\circ\text{W}$	HIGA (<i>Hg</i>)
13:02 GMT	$\omega=122^\circ\text{W}$	KUMAMORI (<i>Km</i>)
13:32 GMT	$\omega=130^\circ\text{W}$	HEFFNER (<i>RHf</i>)
13:43 GMT	$\omega=132^\circ\text{W}$	BUDA (<i>SBd</i>)
13:46 GMT	$\omega=133^\circ\text{W}$	HIGA (<i>Hg</i>)
14:07 GMT	$\omega=137^\circ\text{W}$	BUDA (<i>SBd</i>)
14:30 GMT	$\omega=143^\circ\text{W}$	BUDA (<i>SBd</i>)
14:38 GMT	$\omega=146^\circ\text{W}$	ADCOCK (<i>BAd</i>)

as the preceding day Solis L dust core.

On the other hand the dust cores to the NW of Argyre must have been diminished at night and never revived largely in an explicit form, but just in a small core. A steep slope where the dust cores were born on 21 Oct must have demanded much energy for the bright dust to be raised again. On the other hand the Solis L core was put on 21 Oct on the higher but rather plain land.

The difference of the aspect of the 22 Oct dust from that of the 21 Oct one is shown here by using *WFI's* excellent images at around $\omega=030^\circ\text{W}$. It should be noted



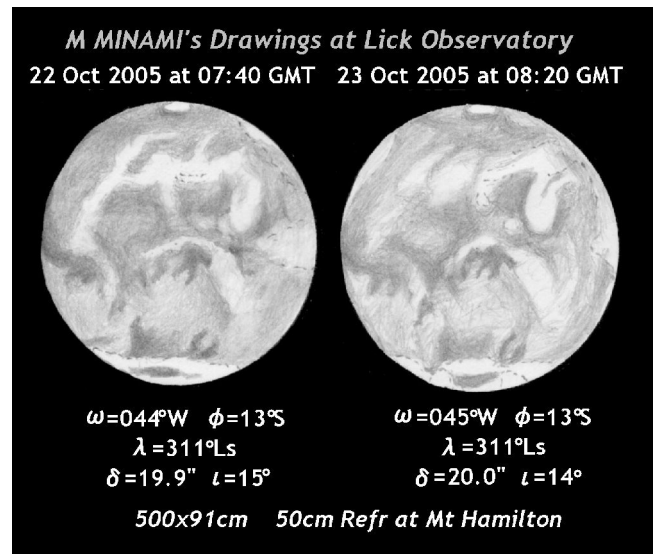
that the airborne dust on 21 Oct expanded from Margaritifer S to M Erythræum which must have been caused by the Agathodæmon dust streaks on 20 Oct has now been extinct. The observations on 22 Oct were listed in Table II (previous page); The list until $\omega=055^\circ\text{W}$ is the same as in Table I in CMO #326 Note (9).

A period of three hours on the Pacific Ocean is vacant, but the observations in Australia and Japan chased well the transit of the dust area of Solis L. It moved without macroscopic change and sank to the night side. If however we choose some excellent images, it may be possible to make a closer look at the internal change of the dust at the Solis L area since it showed a complex light and shade inside the dust. We shall show a file of 22 Oct made of six images later (at p0563).

IV° Expansion on 23 Oct ($\lambda=311^\circ\text{Ls}$)

On 23 Oct, the present writer (*Mn*) also started from 5:30 GMT (5:40 GMT $\omega=006^\circ\text{W}$): The dust area was still obscure, but at 6:20 GMT ($\omega=015^\circ\text{W}$) the eastern border of the egg-like dust area became distinct, and at

the end of observation (at 6:30 GMT), the western border was also seen. The dust looked more developed than the day before. We here show *Mn's* drawing at $\omega=045^\circ\text{W}$ to be compared with a similar one on 22 Oct.



The area looked not so different from the one on 22 Oct, but the boundary was more distinct and dark. The observations on 23 Oct are listed in Table III.

Table III: Observations of the Bright Dust Core at the Solis L Area on 23 Oct 2005 ($\lambda=311^\circ\text{Ls}$)

Time	LCM	Observers
06:00 GMT	$\omega=011^\circ\text{W}$	FLANAGAN (<i>WFI</i>)
06:05 GMT	$\omega=012^\circ\text{W}$	SHERROD (<i>CSr</i>)
06:13 GMT	$\omega=014^\circ\text{W}$	GRAFTON (<i>EGf</i>)
06:20 GMT	$\omega=015^\circ\text{W}$	MINAMI (<i>Mn</i>)
06:23 GMT	$\omega=016^\circ\text{W}$	FLANAGAN (<i>WFI</i>)
06:51 GMT	$\omega=023^\circ\text{W}$	MEGNA (<i>RMg</i>)
07:00 GMT	$\omega=025^\circ\text{W}$	SHERROD (<i>CSr</i>) & <i>Mn</i>
07:26 GMT	$\omega=032^\circ\text{W}$	LOMELI (<i>ELm</i>)
07:40 GMT	$\omega=035^\circ\text{W}$	MINAMI (<i>Mn</i>)
07:43 GMT	$\omega=036^\circ\text{W}$	LOMELI (<i>ELm</i>)
07:56 GMT	$\omega=039^\circ\text{W}$	CHAVEZ (<i>RCv</i>)
08:20 GMT	$\omega=045^\circ\text{W}$	MINAMI (<i>Mn</i>)
08:22 GMT	$\omega=045^\circ\text{W}$	LOMELI (<i>ELm</i>)
08:33 GMT	$\omega=048^\circ\text{W}$	LOMELI (<i>ELm</i>)
08:46 GMT	$\omega=051^\circ\text{W}$	LOMELI (<i>ELm</i>)
08:59 GMT	$\omega=054^\circ\text{W}$	LOMELI (<i>ELm</i>)
09:00 GMT	$\omega=054^\circ\text{W}$	MINAMI (<i>Mn</i>)
09:13 GMT	$\omega=058^\circ\text{W}$	LOMELI (<i>ELm</i>)
09:20 GMT	$\omega=060^\circ\text{W}$	LOMELI (<i>ELm</i>)
09:34 GMT	$\omega=063^\circ\text{W}$	DICKINSON (<i>WDc</i>)
11:20 GMT	$\omega=089^\circ\text{W}$	UMEBAYASHI (<i>Um</i>)
12:00 GMT	$\omega=098^\circ\text{W}$	NARITA (<i>Nr</i>)
12:40 GMT	$\omega=108^\circ\text{W}$	VALIMBERTI (<i>MVT</i>)
12:55 GMT	$\omega=112^\circ\text{W}$	MORITA (<i>Mo</i>)
13:16 GMT	$\omega=117^\circ\text{W}$	MORITA (<i>Mo</i>)
13:20 GMT	$\omega=118^\circ\text{W}$	NARITA (<i>Nr</i>)
13:50 GMT	$\omega=125^\circ\text{W}$	MORITA (<i>Mo</i>)
14:06 GMT	$\omega=129^\circ\text{W}$	KUMAMORI (<i>Km</i>)
14:30 GMT	$\omega=135^\circ\text{W}$	MORITA (<i>Mo</i>)
15:11 GMT	$\omega=145^\circ\text{W}$	MORITA (<i>Mo</i>)
15:50 GMT	$\omega=154^\circ\text{W}$	MORITA (<i>Mo</i>)

In Table III the observations up until 08:20 GMT ($\omega=045^\circ\text{W}$) are common with those employed in Table III of CMO #326.

The belt like expansion of dust around the line $\Phi=50^\circ\text{S}$ over Argyre was also denser and more complex inside than the configuration in 22 Oct. From the general appearance it suggests as if it has stemmed from the Solis L area, but the situation must have not been so simple, since the Solis L area must have not been active before dawn when the belt faced to us. If there had been a strong westerly, it could have made an encircling dust belt more easily. The airborne dusts that were swirled up from the Solis L area looked quite dispersed in the air, and might have made some other disturbances rise up, but any must not be a branch of the Solis L dust core.

It was also expected for an easterly to bring another set of resonances at the region to the west of Solis L, but the Oriental-Oceania observations showed that no such disturbance was explicitly onset. We shall show a file made of eight images on 23 Oct later (on p0564).

V° The Case of 24 Oct ($\lambda=312^\circ\text{Ls}$)

On the day, the observations from the side of the ↗

Table IV: *Observations of the Dust Core at the Solis L Area on 24 Oct 2005 ($\lambda=312^\circ\text{Ls}$)*

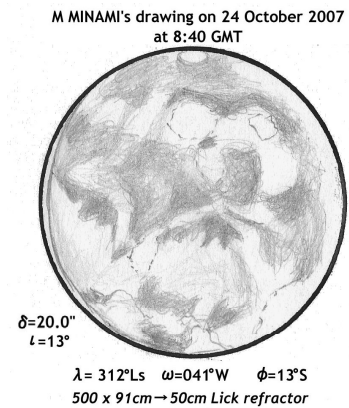
Time	LCM	Observers
04:55 GMT	$\omega=346^\circ\text{W}$	ANDERSON (<i>DAd</i>)
05:03 GMT	$\omega=348^\circ\text{W}$	MELILLO (<i>FMI</i>)
05:30 GMT	$\omega=354^\circ\text{W}$	MINAMI (<i>Mn</i>)
06:10 GMT	$\omega=004^\circ\text{W}$	MINAMI (<i>Mn</i>)
06:50 GMT	$\omega=014^\circ\text{W}$	MINAMI (<i>Mn</i>)
07:40 GMT	$\omega=026^\circ\text{W}$	MINAMI (<i>Mn</i>)
07:45 GMT	$\omega=027^\circ\text{W}$	WARREN (<i>JWn</i>)
08:40 GMT	$\omega=041^\circ\text{W}$	MINAMI (<i>Mn</i>)
11:20 GMT	$\omega=080^\circ\text{W}$	NARITA (<i>Nr</i>)
12:00 GMT	$\omega=090^\circ\text{W}$	NARITA (<i>Nr</i>)
12:20 GMT	$\omega=095^\circ\text{W}$	MURAKAMI (<i>Mk</i>)
12:30 GMT	$\omega=097^\circ\text{W}$	ISHIBASHI (<i>Is</i>)
12:40 GMT	$\omega=099^\circ\text{W}$	NARITA (<i>Nr</i>)
12:46 GMT	$\omega=101^\circ\text{W}$	KUMAMORI (<i>Km</i>)
13:00 GMT	$\omega=104^\circ\text{W}$	<i>Km</i> & <i>Mk</i>
13:20 GMT	$\omega=109^\circ\text{W}$	NARITA (<i>Nr</i>)
13:30 GMT	$\omega=112^\circ\text{W}$	T MATSUMOTO (<i>TMt</i>)
13:35 GMT	$\omega=113^\circ\text{W}$	AKUTSU (<i>Ak</i>) & <i>Km</i>
13:40 GMT	$\omega=114^\circ\text{W}$	MURAKAMI (<i>Mk</i>)
13:49 GMT	$\omega=116^\circ\text{W}$	KUMAMORI (<i>Km</i>)
13:51 GMT	$\omega=117^\circ\text{W}$	C LAU (<i>CLa</i>)
14:13 GMT	$\omega=122^\circ\text{W}$	VALIMBERTI (<i>MVT</i>)
14:20 GMT	$\omega=124^\circ\text{W}$	MURAKAMI (<i>Mk</i>)
14:23 GMT	$\omega=127^\circ\text{W}$	HEFFNER (<i>RHf</i>)
14:59 GMT	$\omega=133^\circ\text{W}$	C LAU (<i>CLa</i>)
15:00 GMT	$\omega=134^\circ\text{W}$	MURAKAMI (<i>Mk</i>)
15:11 GMT	$\omega=136^\circ\text{W}$	C LAU (<i>CLa</i>)

US are only a few. The seeing atop Mt Hamilton was rather stable though cloud passing. In the Orient, the observations were done rich. See Table IV.

The reason we cited younger angles' is because Frank MELILLO (*FMI*)'s image shows a bright limb where Solis L is supposed on the edge. However another image by David ANDERSON (*DAd*) that was not so different from *FMI*'s angle does not show it vividly, though on the B image the limb distribution of water vapour looks rich. *Mn*'s observation at $\omega=354^\circ\text{W}$ also showed a brighter limb at the southern higher latitudes.

The Solis L dust was seen similar to the day before's and its western border was also visible at $\omega=026^\circ\text{W}$. The egg-like area looked looser but the northern end slightly extends to the NE direction. The drawing here of *Mn* is the last one at Lick made at the breaks in the clouds.

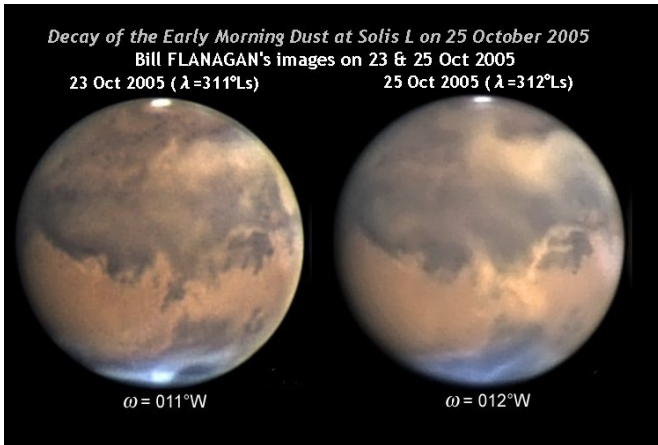
The observations at Japan/HongKong/Australia on the day seem to prove that the dust area moved to the evening side without any conspicuous change. Those days, the Solis L dust core must have



been durable also at night, but looks too weakened to arouse the dust, while the west of Solis L was also airborne dusty. Referring to the images to *Ak*, Teruaki KUMAMORI (*Km*), *CLa et al*, the area of Solis L slightly seems to have recovered and the dark area was quite dense. This must be a large difference than 23 Oct.

VI° Decay on 25 Oct ($\lambda=313^\circ\text{Ls}$)

The Solis L area was not seen in the US since no observations were made at the West Coast. In Japan the observation of the Solis L area was made rich but just on the afternoon side. The area of the dust followed the aspect of the day before, but looked quite loosened. As shown (see the next page), the image of *WFI* at $\omega=012^\circ\text{W}$ can be compared with his own image on 23 Oct at $\omega=011^\circ\text{W}$: Apparently the east border of the dust area is quite softened, and so we can suppose that any further reproduction of the dust raising has become to cease. On the Tom WILLIAMSON (*TWs*) image at



ω=021°W, the Solis L dust is much weaker than the preceding one at the Argyre area.

The observations on 25 Oct were made as listed in Table V.

Table V: Observations of the Dust Core at the Solis L Area on 25 Oct 2005 (λ=313°Ls)

Time	LCM	Observers
07:17 GMT	ω=012°W	FLANAGAN (<i>WFI</i>)
07:55 GMT	ω=021°W	WILLIAMSON (<i>TWs</i>)
11:20 GMT	ω=071°W	NARITA (<i>Nr</i>)
11:30 GMT	ω=073°W	T NAKAJIMA (<i>Nj</i>)
12:00 GMT	ω=080°W	NARITA (<i>Nr</i>)
12:10 GMT	ω=083°W	NAKAJIMA (<i>Nj</i>)
12:25 GMT	ω=087°W	VALIMBERTI (<i>MVI</i>)
12:40 GMT	ω=090°W	NARITA (<i>Nr</i>)
13:00 GMT	ω=095°W	MURAKAMI (<i>Mk</i>)
13:12 GMT	ω=099°W	VALIMBERTI (<i>MVI</i>)
13:20 GMT	ω=100°W	NARITA (<i>Nr</i>)
13:30 GMT	ω=103°W	NAKAJIMA (<i>Nj</i>)
13:40 GMT	ω=105°W	MURAKAMI (<i>Mk</i>)
13:50 GMT	ω=107°W	MORITA (<i>Mo</i>)
14:00 GMT	ω=110°W	MINAMI (<i>Mn</i>)
14:25 GMT	ω=116°W	MORITA (<i>Mo</i>)
14:30 GMT	ω=117°W	NAKAJIMA (<i>Nj</i>)
14:38 GMT	ω=119°W	C LAU (<i>CLa</i>)
15:00 GMT	ω=124°W	MINAMI (<i>Mn</i>)
15:10 GMT	ω=127°W	MORITA (<i>Mo</i>)
15:30 GMT	ω=132°W	NAKAJIMA (<i>Nj</i>)
15:50 GMT	ω=137°W	MINAMI (<i>Mn</i>)
15:52 GMT	ω=137°W	MORITA (<i>Mo</i>)
16:10 GMT	ω=142°W	NAKAJIMA (<i>Nj</i>)
16:50 GMT	ω=152°W	NAKAJIMA (<i>Nj</i>)
17:10 GMT	ω=156°W	MINAMI (<i>Mn</i>)

The images at Oceania/Orient also show the same situation. The new aspect on 25 Oct is, in addition to the airborne dust being generally thicker, the occurrence of the new dust from Eos to the eastern Chryse. This new is never the one that came from other place.

The present writer (*Mn*), as reported in CMO #312, was still on board (AA lines) at the time of 9h GMT, and after landing, just gave the first observation at the Fukui City Observatory at 14:00 GMT (ω=110°W).

Masami MURAKAMI (*Mk*), after meeting *Mn* at the relay airport, made his drawing slightly earlier. The Solis L dust core was at the same place though dispersed, and the NW part of Solis L was quite dark. The Argyre area was bright near the terminator. The region of M Sirenum shows the markings as usual and there was no explicit westward propagation of core resonances. These are well recorded on the images of Yukio MORITA (*Mo*) at ω=116°W. The shape of the dust is preserved but the dust density is weaker. *CLa*'s image at ω=119°W shows the darkness of the Solis L part, as dark as the day before. Takashi NAKAJIMA (*Nj*) and *Mn* chased up until the dust core went to the night side but the area was not bright in particular.

VII° After 26 Oct (λ=313°Ls)

On 26 Oct, the Solis L area completely moved to the Orient/Oceania region. On the day however almost all stations in Japan suffered from unpleasant weather conditions, and no visual observation was done. Just Tadashi ASADA (*As*) and Yasunobu HIGA (*Hg*) in addition to the Australian observers (VALIMBERTI (*MVI*) and BUDA (*SBd*)) obtained precious images. They prove that the dust was away from the Solis L area. See Table VI.

Table VI: Observations of the Solis L Area on 26 Oct 2005 (λ=313°Ls)

Time	LCM	Observers
12:45 GMT	ω=083°W	ASADA (<i>As</i>)
13:10 GMT	ω=089°W	VALIMBERTI (<i>MVI</i>)
13:25 GMT	ω=093°W	ASADA (<i>As</i>)
14:05 GMT	ω=102°W	ASADA (<i>As</i>)
14:15 GMT	ω=104°W	BUDA (<i>SBd</i>)
14:34 GMT	ω=109°W	HIGA (<i>Hg</i>)
14:45 GMT	ω=112°W	ASADA (<i>As</i>)

The preceding images of *WFI* at ω=354°W, 003°W show that the whole Martian surface was enveloped by the airborne dust. The dust around Argyre was much stronger than the following region. This was also apparent on the work at Orient/Oceania, but explicitly the dust reproduction turned out to have diminished at the area with which we have been concerned here. The dark area of Solis L looks to have slightly invaded further the NW part and slightly faded at the EN corner, and hence the area looks deformed. Thaumasia is not yet usual. The west end of M Erythræum is dark including the eastern Nectar. The two dark areas are as dark as S Auroræ.

On 27 Oct ($\lambda=314^\circ\text{Ls}$), visual observations were made at Fukui et al: At $\omega=046^\circ\text{W}\sim 056^\circ\text{W}$ Thaumasia looked slightly recovered. On the day the seeing improved and those images by *Km* at $\omega=065^\circ\text{W}$, 069°W , 073°W , by Robert HEFFNER (*RHf*) at $\omega=090^\circ\text{W}$, 113°W , by Isao MIYAZAKI (*My*) at $\omega=100^\circ\text{W}$ and so on show the details. The recovered Solis L shows the same area but the shade and light configuration is somewhat different: The SE part is slightly faded, but the N part darker. Nectar also shows a difference. Compare here *My*'s image with *WFI*'s image (previous to the occurrence of the dust) on 15 Oct at $\omega=101^\circ\text{W}$. Note however that in the two the phase angles are not identical.



VIII° Retrospect and Outlook

It was very fortunate to have been able to chase the same dust area, ie the Solis L area, for about one week. Different from the one-day dust (as the one on 18 Oct ($\lambda=308^\circ\text{Ls}$)), this dust provided another precious occasion and experience by repeating its rise and fall at the same area, and kept the sand swirling for a period.

We are now in a position to postulate that the great dust cloud in 1973 behaved similarly at the initial stage. This dust was first trapped by Phil CRUMP at Mauna Kea as a part of the IPP (as to the IPP, see CMO #324 p0469) on 13 October 1973 ($\lambda=300^\circ\text{Ls}$) at 7:01 GMT ($\omega=025^\circ\text{W}$) (in R and one minute later by G). According to Leonard MARTIN's plot, its position was at

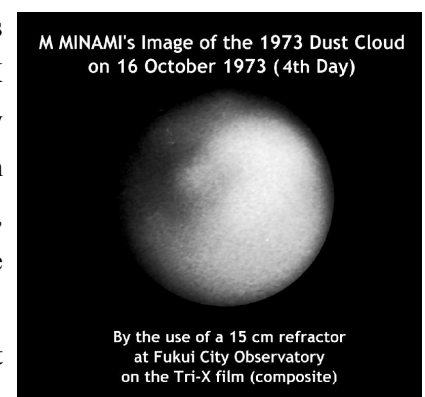
$$(\Omega=081^\circ\text{W}\sim 93^\circ\text{W}, \Phi=20^\circ\text{S}\sim 29^\circ\text{S}).$$

And so we should say it was found quite early Martian morning. On the day $\tau=11^\circ$ before opposition, and hence the very early morning was still at the rear side, and so it was certain that the dust sprang just in the early morning of the day since no dust was detected on 12 October. In Japan, Shigeru KURISU (OAA member) and others in-

dependently found it on 14 October. At Fukui, it was also detected (without any news) by ours (Takeshi HANAYAMA, *Nj* and *Mn* at the Fukui City Observatory with a 15 cm refractor). *Mn*'s first drawing was made at $\omega=079^\circ\text{W}$ (11:55 GMT) where two loofah-like down streaks of dust were apparent. We were later led to see the photos by KURISU and at Mauna Kea, and noted that the dust had developed much, but out of two loofahs the following loofah was no other than an expanse of the original dust. At that time we were not accustomed with any plausible method of dust observation, and on the day *Mn* just obtained no more than four drawings up until 17:05 GMT ($\omega=154^\circ\text{W}$). And so we cannot say we chased well the dust, but the drawing at $\omega=115^\circ\text{W}$ does not show any change of the second loofah. On 16 Oct, first at $\omega=063^\circ\text{W}$ (see *Mn*'s drawing cited in the following Japanese column, p0565), the appearance quite changed and the first loofah quite developed and looked like a spoon with a broad arm, and the second loofah looked slightly dispersed, but the positions of the cores remained the same as before. On the night, the sky at Fukui turned to be cloudy, then rainy, and so the drawing at $\omega=089^\circ\text{W}$ was the last: the Tri-X composite photo by *Mn* here was taken between the two, showing well the spoon. On the following 17 Oct ($\lambda=302^\circ\text{Ls}$), *Mn*

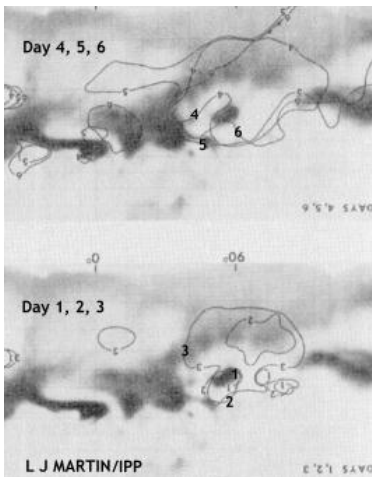
took 7 drawings from $\omega=035^\circ\text{W}$ (10:05 GMT) to 170°W (19:20 GMT). The two streaks looked broader: The first one was quite broad and rough, and the second one still showed the core. These areas were well observed until around $\omega=120^\circ\text{W}$, and later we watched the deformed Dædalia and Sirenum M area and then the dust stream running to the south of M Sirenum (see below).

The 1973 apparition was the last season Shotaro MIYAMOTO (1912~1992) observed Mars, but he was away from the Kwasan Observatory at the onset time and it was not until 17 October (fifth day) that he resumed his observations ("Meteorological Observations of



Mars during the 1973 Opposition", *Contrib. Kwasan & Hida Obs.* No. 217 (1974)). On 17 October 1973 he took drawings at $\omega=037^\circ\text{W}$, 061°W , 78°W , 091°W , 100°W , and at 133°W where his attention was much paid to the preceding streak and looks confused with the original following loofah. This may conversely imply that the original loofah's core was quite dispersed on 17 Oct. The original loofah was observed from 15 Oct to 19 Oct but it went away from Japan. In Japan the dusty Solis L area was imaged at Hida by Tokuhide AKABANE (A HATTORI & T AKABANE, "Photographic Observations of Mars during the 1973 Opposition", *Contrib. Kwasan & Hida Obs.* No. 221, 1974) continuously from 15 Oct to 19 Oct (ten or so if counted in R and O), and also observed by Shiro EBISAWA from 15 Oct to 19 Oct by the use of a 20 cm spec (11 drawings) ("Mars Observations and Secular Change of Albedo Markings during the 1973 Opposition", *Contrib. Kwasan & Hida Obs.* No. 223, 1975). Otherwise Reichi Horiguchi (OAA member) also published his observations in a Japanese astronomical magazine. KURISU's image on 14 October was cited in a paper by Audouin DOLLFUS and others later.

The fact that the two streaks basically stayed longer is

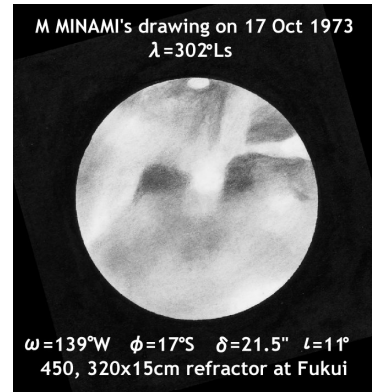


also shown on the plotted map made by L MARTIN ("The Major Martian Dust Storms of 1971 and 1973", *Icarus* **23** (1974) 108): Here a part of the chart is shown. It also proves that the new dust near Sinus Meridiani on 17 Oct was onset inde-

pendently from the Solis L area dusts. This resonance was also observed by Chick CAPEN *et al* and on the following day this isolation was clearly seen in Japan. This kind of dust near S Meridiani was also observed in 2005 on 28 October (eleventh day) with which we shall be concerned on another occasion.

It should be noted here that at the time L MARTIN wrote "1973 Dust Storm on Mars: Maps from Hourly Photographs" *Icarus* **29** (1976) 363, no IPP's images

were known on the third and fourth days around from $\omega=132^\circ\text{W}$ to 156°W , and on the fifth day around from $\omega=072^\circ\text{W}$ to 108°W . Partly because of these deficits, we suppose the westward resonances were not well traced. For instance, the westward plot is not coincident with the one suggested by the present writer's observations. The drawing here cited was obtained on 17 Oct 1973 ($\lambda=302^\circ\text{Ls}$) at $\omega=135^\circ\text{W}$ where a bright dust stream to the south of M Sirenum was seen, and conspicuous at least until $\omega=170^\circ\text{W}$. In fact in 1973 the westward propagation was too violent to identify the markings easily. The region was soon away from Japan,



but also the IPP failed to observe on 18 Oct (sixth day) the region of M Cimberium. On the other hand the eastward expansion was still up to Noachis on 19 Oct (seventh day). On 21 Oct the IPP also did not wholly cover.

In 1973 the disturbances were raised too rough, and it must have been difficult to trace the resonances of the dust cores due to the thick airborne dusts, but as far as we researched, the dust cores were immobile, and macroscopically did not deform during the daytime. Furthermore, since it was really first found in the early morning, we don't think the situation was much different from the 2005 case especially at the initial stage.

The big difference is however there in the sense the 1973 dust was the great dust storm. At the initial stage the core was not different from the 2005 core, just the 1973 location being slightly more to the NNW direction, closer to *the down slope* of the Solis L area. And in 2005 we had other dust cores to the east of Solis L, but in 1973 another one existed at Claritas. However the original big difference must have been in the fact that by Oct 1973 the region of Claritas-Dædalia had been largely darkened. Because of the fact, the area must have been so sensitive to the insolation that the area secured much more amount of the radiant heat. On 15 Oct (third day), the area of M Sirenum was already much dusty.

At present however the question whether any dust

grows eventually great or not is unanswerable: In fact we think we have not yet obtained any first effective meteorological or physical key to the question. We need some non-local elements of reason of the dust disturbance and its development.

We shall close our Note by stressing again the following: The ascending air to raise the dust may not be caused merely by the high temperature, but may depend much on the gradient or derivative of the temperature and the density of the air. Probabilistically early afternoon air must more receive the ascending tendency (so that the airborne dusts must obey this power), but it will need much more gradient difference of the temperature and the pressure system in order to disturb and lift the dust from the ground. So the early morning area is the first candidate to produce the dust disturbance and so needs to be further watched. At night the dust core must diminish as the stratosphere comes down, but in case some cores survive the night and revive again after dawn (just like the case here treated) or otherwise some continuing meteorological condition may make another set of cores be borne at other places. The airborne dust may also obey the system, but in the daytime it may also obey the grand circulation system. Classification is necessary if the dust is higher or lower, or airborne or core-like (or like the Huygens envelope of cores). □

I° はじめの終わり :

#324で論述した18Oct黄塵後、19Oct、20Octと黄塵は様子を變えて毎朝再活動していたが、21Octにはソリス・ラクスに勾玉型のコアが現れ、暫くここが中心となったので、今回はこれを採り上げる。ここで示すことは、1-1) これは何處からか傳播して來たのではなく、まさしくここで發生したこと、1-2) 當然、その日の朝そこで發生したこと、1-3) お昼の間は形も強さも大きく變えることはなかったこと、2-1) このコアは21Octだけでなく、そのあと數日そこにあつて朝方そこで形を變化(膨張)させるが、(それは發展と言えるものかも知れないとしても)コア自身は場所を變えると云うことではなかったこと、2-2) 結局、このコアは25Octには弱まり、27Octには消失したが、これは何處かへ移つたというのではなく、そこで盛衰

を見せたということ、2-3) その間、夜は黄塵は衰えても消えることなく、昼は砂塵を巻き上げ浮遊黄雲を撒き散らしたということ。これ等は多分次のことを意味する：3-1) 18Octの黄雲活動は、夜には沈静化し、19Octには改めて近傍で再生産され、20Octも同様であったが、21Octのソリス・ラクスのコアはその夜もある程度對流状態を残し、22Oct朝には同じところでバーストがあつた。23Oct以降も同じであるが、次第に弱くなり、27Oct朝にはコアの再生は不可能になり、殘骸も消え失せた、等である。更には、當時の幾つかのコアが同じ様な振る舞いをしたことから、一般的に、3-2) 黄塵はマクロには一ヶ處で盛衰するのであつて、幾つかのレゾナンス(共鳴)がまた同じように振る舞うというに過ぎないであろうということである。黄塵やその共鳴の發生は移動によって起こるものではない様である。3-3) 多分、大黃雲と言われるものも基本的にこの盛衰の繰り返しであろう、と考えられる。黄雲の擴がりというものは砂塵巻き上げに據る浮遊黄塵によるもので、大黃雲ではこれが強いのであろう。

2005年十月黄雲は教訓を幾つも示した珍しい黄雲であるが、上も21Octのコアから讀み取れるレッスンの一つである。特に黄雲が一日に何キロ動いたとか、それを秒まで縮めて...m/s等という馬鹿げた總括とは早く縁を切つた方が好いということである。

II° 21 Oct ($\lambda=310^\circ$ Ls)の黄塵

實はソリス・ラクスのコアに先立ってアルギュレの北西に矢張り明るいコアが見られ、筆者(Mn)が5:40GMTに取り附いた段階ではこれが非常に目についた。その北側は實に濃く縁取られていて初期黄塵の様相を示していた。ソリス・ラクスの黄塵も同じくソリス・ラクスの北西側が残つて濃く見えていた。20Octのこの邊の様子と21Octの比較をフラナガン(WFl)氏のccd像で示してある。黄塵の明るさはccd像で想像するものより遙かに明るく、輝いているといった方がいいぐらいであつた。村上昌己(Mk)氏は他のccd像からの結果も勘案し、前者の二つの輝點の中心位置を

($\Omega=054^\circ$ W、 $\Phi=44^\circ$ S)

($\Omega=061^\circ$ W、 $\Phi=40^\circ$ S)

と定めている。筆者のccd像からの結果も $\pm 01^\circ$ の範囲である。同じくソリス・ラクス勾玉黄塵について

($\Omega=086^\circ\text{W}$ 、 $\Phi=28^\circ\text{S}$)

($\Omega=079^\circ\text{W}$ 、 $\Phi=25^\circ\text{S}$)

に二つの輝度中心があるとする。ほかにボスポロスの北に小さな黄塵が肉眼でも見えていて、これは

($\Omega=068^\circ\text{W}$ 、 $\Phi=30^\circ\text{S}$)

であろうかと思う。範囲で示すならば、アルギュレ北西黄塵は

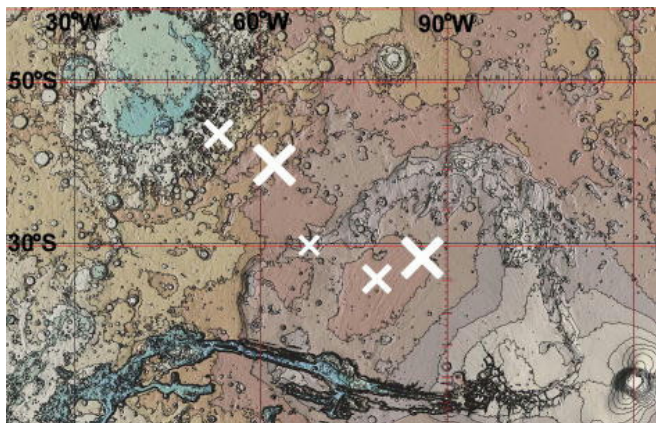
($\Omega=050^\circ\text{W}\sim 65^\circ\text{W}$ 、 $\Phi=38^\circ\text{S}\sim 47^\circ\text{S}$)

ソリス・ラクス黄塵は

($\Omega=078^\circ\text{W}\sim 90^\circ\text{W}$ 、 $\Phi=25^\circ\text{S}\sim 31^\circ\text{S}$)

の囲まれるということになるのか。

輝点中心部をMOLA高低圖にバッテン印で示しておく。何れも西向きに上向きの傾斜を持つ坂か



高地に発生したことが分かる。特に前者はアルギュレの盆地を外しているということに注意する。盆地内部での下層の黄塵は発達しない。何度も繰り返すが、煌びやかな黄雲は盆地の外側で出ることが多い。なお、21Octは $\lambda=310^\circ\text{Ls}$ 、 $\phi=13^\circ\text{S}$ 、 $\delta=19.9^\circ$ 、 $\iota=16^\circ$ 、視赤緯は $+16.5^\circ$ で北半球からは好条件であった。

ソリス・ラクス黄塵が既に朝方で形成されていることはヘスス・サンチェス(JSc)氏の $\omega=015^\circ\text{W}$ 像で分かる(Gallery参照)。位相角 ι が 16° であるから、ほぼ朝の一時間が地球からは見えない。簡略な計算で $\Omega=100^\circ\text{W}$ は円盤の内に入っているはずであるから、圓の縁の輝部はソリス・ラクス黄塵に據っていると見て好い。

この日のソリス・ラクス黄塵の観測をTable_1に時系列で示してある(英文の部)。

表Iで明らかのように、すべて一つ前の観測から 10°W 以内に次の観測が行われ、密であるが、

残念ながら、まだソリス・ラクスが南中前というところで観測が途絶えた。筆者の $\omega=065^\circ\text{W}$ のスケッチを掲げるが(英文の部)、これは最後の一つ手前、実は角度上、未だまだ観測続行が可能であったし、必要であった。正午線は中央子午線よりほぼ 16° 右側(東側)にあるから、最後の観測で $\Omega=090^\circ\text{W}$ 邊りにあり、従ってコアは正午と云うことになる。ただ、リックで観測がここで終わるのは、仕方のない状況であった。元來この遠征計画には黄雲が出た時にはどうするかと云う様なことは話われて居らず、大望遠鏡のオペレータの関係でこれが最後とせざるを得なかった譯である。望遠鏡を反轉させるだけでも相当なトラブルである。もともと火星を一二回で済ませるといような寄り合い所帯の客員の構成で、相談も何も臨機應變に事が運ばないのは當然であった。筆者の観測が前半二時間跳んでいるのも、雲行きの所為ではなく、まあ占領されていたからである。二時間空いて $\omega=055^\circ\text{W}$ の時点で1973年の黄雲を思い出している。引用の $\omega=065^\circ\text{W}$ のNoteではこれは發達の兆しと受け止めているが、次の夜(22Oct)には豫感が当たったという感じであった。尚、このスケッチのノートには他に、オピールは明るい、黄塵と全く違う色合いであることを記している(よくオピールを黄雲と間違える向きがあるが、肉眼で観るといい)。この違いはccd像には顕著ではないが、オピールは稍赤味が掛かっている、クサンテは更に紅いという違いである。黄塵に侵されないソリス・ラクスの北西部はアウロラエ・シヌスと同じくらいに濃く残っていた。下降氣流の裾野を作る筆者のいう高氣壓部であろう。

リックに近いサクラメントのロメロ(ELm)氏の事情は分からないが、矢張り南中後の朝までの観測を捨てているように思う。太平洋内に観測網があれば、こういう頓挫はなく、日本へスムーズに繋げることが出来たのだが、何度も言う様に、もともと大きな太平洋というギャップがあり、奇蹟は起こらない。

ただこの日は日本の観測は天氣の所為か皆無であったから、どうしようもない。せめて12:00GMTの観測が在れば、様子が分かったかも知れないのだが。12hが無理となれば、この日は18Octのような僥倖に見放されたということであろう。香港で

劉佳能(CLa)氏が観測したのは16:10GMT $\omega=178^\circ\text{W}$ 、セブの阿久津氏(Ak)は19:34GMT $\omega=227^\circ\text{W}$ で遅いというものではなかった。CLa氏は情報を読んでいなかったのだろうし、Ak氏は西空でなくては適わなかったからであろうか。但し両者とも、24Octには14hGMT前には観測している。

観測がこれ以上揃わない、とあれば、午後の状態は云々出来ないのだけれども、逆に言えば実は黄塵発生の午前の観測がこれほど揃う例は午後の例に比べて餘程数少なく(實はこの十月黄雲が初めてのようなもの)、寧ろ一般的な午后を補ったとも言え、イーヴンとなったと言える。つまり、午後の予想は立つし、多分一般的には間違いないのである。個別的に確證が出なかったのが残念だが、黄塵は然程午前と変わらずに推移したであろう、ということは確度が高いのである。

III° 22 Oct ($\lambda=311^\circ\text{Ls}$)の場合

22Octでも朝方の観測は揃い、また日本での観測も出て来ており、追跡は可成りのものであった。

$\omega=018^\circ\text{W}$ のウォーカー(SWk)氏の画像では、未だ餘り鮮明ではないし、筆者の($\omega=014^\circ\text{W}$ では不明) $\omega=024^\circ\text{W}$ でも際立つほどではなかった。明らかに前日より勾玉から玉子型に大きく発達していたが、密度は落ちていたように思う。

但し、筆者は、21Octのコアはその夜も衰退するものの幾らか夜間も存在し、22Octの朝方にもう一度同じ處でバーストしたと考える。CMに近づくと可成りのものであった。 $\omega=068^\circ\text{W}$ では内部に明暗があり複雑な様相を見せている。

なお、前日のアルギュレ北西のコアは夜間に入って衰退し、翌朝は然程の再生産はなく、奇妙な馬蹄形の筋を遺したのみである。傾斜のある坂で再生産するにはある程度以上のエネルギーが要るのであろうが、それが伴わなかったわけであろう。一方、ソリス・ラクスの方は坂と云っても高地で安定出来たものと思われる。

21Octと22Octの様子の違いを英文の部でWFl氏の良像を使って示してあるので参照されたい。21Octにはマルガリティフェル・シヌスからマレ・エリュトウラエウムに掛けて20Octのアガトダエモン黄雲の影響を受けてやや淡い浮遊黄雲があったが、これが抜けて来ているのが分かる。シーイングの違いだけではなからう。

この日の観測は表IIに挙げてある。 $\omega=055^\circ\text{W}$ 迄は#326のNote(9)のTable_Iと同じである。

太平洋の三時間が空いているが、カリフォルニアで前日同様もう少し押せた筈ではある。然し、比嘉(Hg)氏はじめ日本とオーストラリアの観測で、三時間は殆ど問題ではなく、ソリス・ラクス黄雲の核が予想通り変化なく夕方に沈んで行く光景を追えている。この卵型黄雲核の内部は複雑な様相を示していたので、良像を選んで、どの様な変化があったか、無かったかについてある程度は調べることが出来るかも知れない。

22Octは、稍荒いが、六像を並べてファイルを作ったのでご覧頂きたい(PDF)では拡大可能)。



IV° 23 Oct ($\lambda=311^\circ\text{Ls}$)での発達

23Octも筆者は5:30GMTからの開始であるが(5:40GMT $\omega=006^\circ\text{W}$)、最初は不分明であった。しかし、6:20GMT $\omega=015^\circ\text{W}$ では卵形のソリス・ラクス黄雲の東側境界がはっきりし、6:30GMTでは西側の境界が見えた。少し前日よりこのコアは発達した感じがした。この邊りはWFl氏の画像が優れている。面積は前日と比べて大きく発展することはなかったが、縁取りが稍顕著になり、アルギュレの東西に延びる黄雲と並んで、美事であった。22Octとの比較のために筆者の $\omega=045^\circ\text{W}$ のスケッチを挙げてある(英文の部)。この日の観測はTable_IIIに列挙する。表の中で08:20GMT $\omega=045^\circ\text{W}$ 迄は#326のTable_IIIと同じである。

尚、アルギュレの東西 $\Phi=50^\circ\text{S}$ 邊りに帯状の黄雲が、前日より顕著になってソリス・ラクスから流れたように見えるが、實際はそうではないと思う。朝を迎えるのは東側の方が早く、この帯が見えて来ているときは、未だソリス・ラクスの方の



その後然程の變化も見せず推移した様である。ここ數日夜間も核を残しながら、然し再生の吹き上げは弱くなっているように見える。ただ、ソリス・ラクス以西も相當に高空のエアボーンダストが満ちているように見える。なお、強調處理のAk氏の畫像だけでなく、熊森(Km)氏、CLa氏の像ではソリス・ラクスが面積を少し回復して、濃く見えている。これは23Octとの大きな違

いであろう。活動は弱いと考えられる。もし強い偏西風があるなら簡単にencirclingになったであろうと思う。ソリス・ラクスで巻き上げられている黄雲は大氣中に擴散し、新たな黄塵を齎すかも知れないが、新たな黄塵はソリス・ラクス黄雲の分枝ではない。

尚、偏東風によりソリス・ラクス周邊から西の方への擴散があろうかと期待したが、これは起こらなかった様である。

この日のファイルを八像から造ったので上に掲げる。一寸東西にシーイングの違いがあるようである。

V° 24 Oct ($\lambda=312^\circ\text{Ls}$)の場合

この日は美國側の觀測が極端に少ない。リックは晴れて並のシーイングであったが雲はあった。全般的に美大陸の天氣が優れなかったのであろう。一方日本での觀測は揃った。

少し若い角度の觀測を引用したのはメリッコ(FMI)氏のccd像に縁が明るく見えているからである。縁は $\Omega=080^\circ\text{W}$ 邊りであろうから、ソリス・ラクス黄雲が縁に乗っているかと思われる。しかし然程 ω の違わないアンダーソン(DAd)氏の像では目立たない。ただBでは強く出ていて、水蒸氣かとも思われる。筆者の $\omega=354^\circ\text{W}$ でもかなり高緯度の縁がbrighterと記している。

ソリス・ラクス黄塵は $\omega=014^\circ\text{W}$ では前日と同じく西縁がはっきりして見え、 $\omega=026^\circ\text{W}$ では雲が通過してシーイングが稍悪化し、黄雲部の卵形は稍弛緩して見えていたが、黄雲部の北端が北東に流れているように見えた。引用するスケッチはリック最後のものである。

日本/香港/澳大利亞の觀測を見る限り、矢張り、

いであろう。

VI° 25 Oct ($\lambda=313^\circ\text{Ls}$)での衰退

この日の觀測はTable Vのように行われている。西海岸の觀測がない爲、既に美國ではソリス・ラクスが見えていない。日本では後半の觀測で、午前中の様子は分からない。ソリス・ラクス黄雲のコアは基本的には24Octの形状を踏襲しているが、可成り惚けてきているようである。WFI氏の $\omega=012^\circ\text{W}$ は23Octの $\omega=011^\circ\text{W}$ と比較できるが黄雲の東岸がひどく惚けており、最早朝方で強い再生産が起こらなくなったことを示している。キリアムソン(TWs)氏の像でもソリス・ラクス黄雲コアはアルギュレ方向より可成り暗くなっている。オセアニア/東洋でも同じ様な状態である。25Octの新しい要素として、この邊り全體が更にエアボーンダストで覆われてきて、新しい黄雲の發生がエオスからクリュセ東部に見られている。これも何處からか流れて來たものではない。

筆者(Mn)は#312で述べたように、9hGMTの時點では未だ航空機の中で、足羽山に駆けつけ、最初に行った觀測は14:00GMT $\omega=110^\circ\text{W}$ になっていた。ソリス・ラクス黄雲は動かずコアが擴散してソリス・ラクスの北西部が濃く見えた。アルギュレ方面は夕端で明るい。マレ・シレナムの方は模様が見えており、コアが傳播していない。これらは森田(Mo)氏の $\omega=116^\circ\text{W}$ で上手く記録されている。黄雲の形状は保存されているが、密度は低く、ソリス・ラクスの北西部が濃い。CLa氏の $\omega=119^\circ\text{W}$ も前日に引き續きソリス・ラクスが濃く出ている。

中島(Nj)氏と筆者は黄雲の沈むまで追ったが、縁で然程明るくはなかった。

VII° 26 Oct ($\lambda=313^\circ\text{Ls}$)以降

26Oct以降は完全にソリス・ラクス領域は東洋側に移ったのだが、26Octには日本は全国的に天気が悪かったようで、我が方では眼視観測が得られていない。しかし、幸い浅田正(As)氏や沖縄の比嘉(Hg)氏、オーストラリアの観測家MVI氏、SBd氏によってこの日にはソリス・ラクス領域から黄雲が殆ど消え失せたことが証明された。Table_VI参照。

尚、美國のWFI氏の $\omega=354^\circ\text{W}$ 、 003°W 等では火星全面に浮遊黄雲が強く立ち籠めているのが判るが、ソリス・ラクスに先立つアルギュレ邊りの黄雲は可成り強い。これはオセアニア-日本の観測でも明瞭だが、それに續くソリス・ラクスには遂に再発生が見られなくなった譯である。ソリス・ラクス暗部はその北西が少し張り出したように見え、まだ東北部が稍淡化して全體變形しているように見える。タウマジアも未だ正常ではない様である。マレ・エリュトウラエウムの西端もネクタルを含んで濃い。この二つはアウロラエ・シヌスの濃度に匹敵している。

27Octには福井(Nj&Mn)でも観測が出来たが、 $\omega=046^\circ\text{W}\sim 056^\circ\text{W}$ の時点でタウマジアは殆ど回復したように見えた。この日はKm氏の $\omega=065^\circ\text{W}$ 、 069°W 、 073°W 、ヘフナー(RHf)氏の $\omega=090^\circ\text{W}$ 、 113°W 、宮崎(My)氏の $\omega=100^\circ\text{W}$ 等の良像が得られており、詳細が判る。ソリス・ラクスは面積は同じ様だが濃淡の配分が黄塵発生前とは異なっており、南東部が稍淡化したのに對し、北部は稍濃くなっている。ネクタルも稍違っているようだ。詳細は黄塵発生前のWFI氏の像(15Oct $\omega=101^\circ\text{W}$)とMy氏の像とを比べていただきたい。ただ両者 ι が稍違っている。十一月に入ってソリス・ラクスは回復していったように思う。

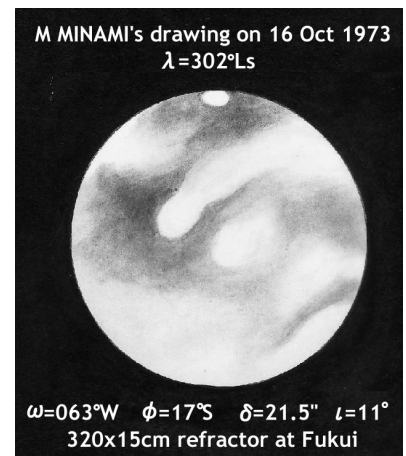
VIII° おわりのはじめ

今回はソリス・ラクス内だけに注目して観測が得られたのは幸いであった。一日黄雲(18Oct黄雲などがそうである)ではなく、同じ處に発生を繰り返し、砂を巻き上げ續ける例を一週間許り追えた譯で、矢張り貴重な経験でもあり、また資料を得る好い機會でもあった。

多分1973年の黄雲も同じ様な振る舞いであったのではないかと思われる。この黄雲は13Oct1973に発生した。IPPに属するマウナケア天文臺のPhil

CRUMPの撮影になるもので、7:01GMT $\omega=025^\circ\text{W}$ でのR光写真であったようである(一分後にG光)。マーチンのプロットに依れば、この黄塵の位置は
($\Omega=081^\circ\text{W}\sim 93^\circ\text{W}$ 、 $\Phi=20^\circ\text{S}\sim 29^\circ\text{S}$)

の範囲にある様であるから、相当朝である。この日 $\iota=11^\circ$ で矢張り朝直ぐには見えていないが、朝早くには出ていたことは確かであろう。14Octには日本で栗栖茂氏他が観測し、福井では15Octに獨立して筆者の他、花山豪氏、Nj氏に依って観測された。筆者の最初の観測は $\omega=079^\circ\text{W}$ (11:55GMT)で中央に二本の糸瓜型の明るい黄塵が見られた。あとで、前日の栗栖氏の畫像を見て(『天界』か)、明らかに發達していたが、二本目の糸瓜はもとのコアの擴張であったと思う(多分一本目が新しい)。當時は未だ筆者達の黄雲の観測方法が確立していないときで、17:05GMT($\omega=154^\circ\text{W}$)のスケッチまで全部で四枚の観測をしているが、黄塵を上手く追えていない。ただ $\omega=115^\circ\text{W}$ では糸瓜は變つてはいない。16Octは $\omega=063^\circ\text{W}$ で、黄雲は15Octとは餘程違い、一本目が強く發達し、二本目は擴散しているように見えたが、矢張り位置は替わってはいないように思える。英文の部では写真を示したのでここではスケッチを掲げる。この日は $\omega=089^\circ\text{W}$ が最後で、曇から雨になったが、二本目はソリス・ラクスから下に掛けて延びている。



翌17Octには筆者は $\omega=035^\circ\text{W}$ (10:05 GMT) $\sim 170^\circ\text{W}$ (19:20 GMT)迄七枚の観測をしたが、二本の分離が辛うじて出来る程度に黄雲が立ち籠めていたが、一本目は太く明確だし、矢張りソリス・ラクスの邊りには核が存在していた。但しこの邊りがうまく観測出来たのは $\omega=120^\circ\text{W}$ 邊り迄で、あとは變形したダエダリア-マレ・シレヌムの暗部とその南を流れる筋雲の観測になっている(後述)。

宮本正太郎氏は肝心な時に花山を離れたようで遅れて17Oct(五日目)が最初になった。この日 $\omega=037^\circ\text{W}$ 、 061°W 、 78°W 、 091°W 、 100°W 、 133°W

と観測されているが、第一の筋への注意が強く、ソリス・ラクス黄塵については餘り明確ではないので、17Octには擴散傾向にあったといつてよいかも知れない(宮本氏は黄塵の核には白ペンキを使う。論文集のコピー印刷では少しニュアンスが違うので注意)。第一の筋も16Octから19Octまでは観測出来たが、以後日本からは見えなくなっている。當時の黄塵は赤羽徳英氏が飛驒で15Octから19Octまで連続してTriX観測している(RとO光では十數枚)ほか、海老澤嗣郎氏が20cm反射で15Oct~19Octまでで十一観測を公表している。他に堀内令一氏の観測が發表されているし、勿論栗栖氏の観測も『天界』にあったと思う。栗栖氏の観測は後にドルフュス氏達の論文に収録された。

二本の筋が案外と長くソリス・ラクスからマレ・エリュトウラエウム域で長く存在したことはマーチンの圖からも判ると思う。英文の部の引用圖は L J MARTIN "The Major Martian Dust Storms of 1971 and 1973" *Icarus* 23 (1974) 108からであるが、17Oct(第五日)のシヌス・メリディアニの近くの黄塵も何處から來たものではなく獨立に發生したものであることは明らかであろう。これは18Octには日本からも好く孤立が確認された。この種のシヌス・メリディアニ黄塵は2005年の場合、28Oct(十一日目)に矢張り獨立して發生している。一方、L J MARTIN "1973 Dust Storm on Mars: Maps from Hourly Photographs" *Icarus* 29 (1976) 363の時點では第三、四日には $\omega=132^{\circ}\text{W}\sim 156^{\circ}\text{W}$ の畫像は存在しないようであるし、第五日には $\omega=072^{\circ}\text{W}\sim 108^{\circ}\text{W}$ に欠損があったようである。その所爲か西側のプロットが筆者などの観測と合っていない。英文の部に引用したのは筆者の17Oct($\lambda=302^{\circ}\text{Ls}$) $\omega=135^{\circ}\text{W}$ であるが、マレ・シレヌムの南側には濃い黄塵の流れが出來ている。これは $\omega=170^{\circ}\text{W}$ には顕著なものであった。實際、1973年の黄塵は西回りも強く、模様と同定できない程に凄い荒れようであったと思う。日本からは次第に見えなくなったが、18Oct(六日目)にはIPPではマレ・キムメリウム邊りの観測が脱落している。一方、19Oct(七日目)の東回りの黄塵は未だノアキスで留まっている。21OctもIPPは脱落が多い。當時はアレヨアレヨという感じであったし、いまもうまく浮遊黄塵やコアの追跡はされていないと思うが、全體コアは案外動かず、

またお昼に變化が大きかったということはないように思われる。それに實際に13Octの朝に見附かっているならば、初期段階で本質的には2005年の場合と違いを見つける方が難しい。

ただ、1973年の黄塵は大黄塵になったという違いがある。初期の段階ではコアの違いは然程ではない様に思うが、位置は1973年の方がやや2005年より北北西という感じで、Mola圖でいえば、下り坂にあるという違いはある。更に2005年はソリス・ラクスより東に他の黄塵があったのに對し、1973年には西方、クラリタス邊りにもう一つの黄塵があったという違いもある。そのことも含めて然し、最も大きな要因は1973年にはクラリタス・ダエダリアに大きな暗色模様が擴がっていた點ではないかと思われる。これはこの地方での熱吸収・熱容量が相當に違っていて、朝方の攪亂が大きく、また西への發達を促したのかも知れない。15Oct(第三日)には既にマレ・シレヌムの方への黄塵の擴がりは相當なものであった。もう一つの違いは15Octに見えた第一の糸瓜の強さである。これは2005年には見られていない。何れにしても大黄塵に到るか到らないかの問題は、まだ鍵になる要素について現在は未知であるように思う。もっと非局所的な要素の勘案が必要に思う。

ところで、繰り返すが、1973年の初期の例を見ても、コアが朝方に出來て、殆ど移動しないこと、別のコアは獨自に翌朝出來ることは認識できるだろうことは強調しておく。これはもとのデータ(写真)を詳しく再調査しなければならないが、春秋の筆法ならぬ、柳田國男の論法を使えば、黄塵の縁が毎日ところを換えることで、連続變移に執着して黄塵の動きを「説いてみよう」とせられる學者がたが、今日些しでも「非連続變異を「考えようとせられぬのは、第一に私には不審である。」勿論、昼は昼で夜は夜で連続變化はあり得るし、そういう描像が必ずしも想像に難くはないのだが、現實に昼大きな變化はない、夜は見えないが、更にある筈がない、「そんならどうして」黄塵が現れてくるのかを「合点が行くように説明してみよう」としなかったのは、何だかお互いの怠慢であったように気が咎める。」「その罪滅ぼしの意味もあって、きょうは一つの推定説を出してみる」ということになろうか(「内は『海上の道』(1952

年)から)。ここでは出してみた、ということで、筆者の推定説ということになれば、もう一度最初の要約を繰り返すことである。即ち、

コアの低気圧は温度によるものでなく、その微分たる温度傾度に依ろうということである。上昇する高温大気は昼過ぎに確率としては大きいだろう(だから浮遊黄雲については成り立つ)、砂を攫う核の様な上昇気流は気圧や温度差分の大きい場合、必ずしもそれだけではないが、最少必要條

件としてその場合が可能性が大きいということであろう。そうすれば朝方であるということになる。夜方には鎮静に向かう。但し、繰り返すが、浮遊黄塵は多分に大気循環に随うだろうし、強いコアは夜も衰退傾向ながら存続しうると考える。

尚、黄雲の分類について、globalとかregionalとかlocalとかいうのがあるけれども、実際には高低差、コア(或いはホイヘンス流にコアの包絡面)か浮遊黄雲か等の方が重要な分類であると思う。□

Forthcoming 2007/2008 Mars (4)

Ephemeris for the Observations of the 2007/2008 Mars. II

March and April 2007 (Revised)

Masami MURAKAMI 村上 昌己(Mk)

As a sequel to the Ephemeris I (in CMO#326), we here list the necessary elements of the Ephemeris for the physical observation of Mars from 1 March 2007 to 30 April 2007. The data are listed for every day at 00:00 GMT (not TDT). ω and φ denote the longitude and latitude of the sub-Earth point respectively. The symbols λ , δ and ι stand for the areocentric longitude of the Sun, the apparent diameter and the phase angle respectively.

From this apparition, we newly add the column of the Position Angle Π of the axis rotation, measured eastwards from the north point: This is useful to determine the north pole direction from the p \leftarrow . The apparent declination of the planet is also given at the final column. The data here are basically based on *The Astronomical Almanac for the Year 2007*.

Date (00:00GMT)	ω	φ	λ	δ	ι	Π	Declination
27 February 2007	232.99°W	15.3°S	191.01°Ls	04.46"	24.6°	09.1°	-20°54'
28 February 2007	223.16°W	15.5°S	191.59°Ls	04.47"	24.7°	08.6°	-20°45'
01 March 2007	213.33°W	15.8°S	192.17°Ls	04.48"	24.9°	08.1°	-20°35'
02 March 2007	203.49°W	16.1°S	192.76°Ls	04.49"	25.1°	07.6°	-20°25'
03 March 2007	193.65°W	16.3°S	193.34°Ls	04.51"	25.3°	07.2°	-20°15'
04 March 2007	183.81°W	16.6°S	193.93°Ls	04.52"	25.4°	06.7°	-20°05'
05 March 2007	173.97°W	16.9°S	194.51°Ls	04.53"	25.6°	06.2°	-19°55'
06 March 2007	164.12°W	17.1°S	195.10°Ls	04.54"	25.8°	05.7°	-19°44'
07 March 2007	154.27°W	17.4°S	195.69°Ls	04.55"	26.0°	05.2°	-19°38'
08 March 2007	144.42°W	17.6°S	196.28°Ls	04.56"	26.1°	04.7°	-19°22'
09 March 2007	134.57°W	17.9°S	196.87°Ls	04.57"	26.3°	04.3°	-19°11'
10 March 2007	124.71°W	18.1°S	197.46°Ls	04.58"	26.5°	03.8°	-18°54'
11 March 2007	114.86°W	18.4°S	198.06°Ls	04.60"	26.7°	03.3°	-18°48'
12 March 2007	105.00°W	18.6°S	198.65°Ls	04.61"	26.8°	02.8°	-18°36'
13 March 2007	095.13°W	18.8°S	199.24°Ls	04.62"	27.0°	02.3°	-18°24'
14 March 2007	085.27°W	19.1°S	199.84°Ls	04.63"	27.2°	01.8°	-18°12'
15 March 2007	075.40°W	19.3°S	200.43°Ls	04.65"	27.3°	01.3°	-17°59'
16 March 2007	065.53°W	19.5°S	201.03°Ls	04.66"	27.5°	00.8°	-17°47'
17 March 2007	055.66°W	19.7°S	201.62°Ls	04.67"	27.6°	00.3°	-17°34'
18 March 2007	045.78°W	19.9°S	202.22°Ls	04.68"	27.8°	-00.2°	-17°21'
19 March 2007	035.90°W	20.2°S	202.82°Ls	04.70"	28.0°	-00.6°	-17°08'
20 March 2007	026.02°W	20.4°S	203.42°Ls	04.71"	28.1°	-01.1°	-16°55'
21 March 2007	016.14°W	20.6°S	204.02°Ls	04.72"	28.3°	-01.6°	-16°41'
22 March 2007	006.26°W	20.8°S	204.68°Ls	04.73"	28.5°	-02.1°	-16°28'
23 March 2007	356.37°W	21.0°S	205.23°Ls	04.75"	28.7°	-02.6°	-16°14'
24 March 2007	346.48°W	21.2°S	205.83°Ls	04.76"	28.8°	-03.1°	-16°00'
25 March 2007	336.59°W	21.4°S	206.43°Ls	04.77"	29.0°	-03.6°	-15°46'
26 March 2007	326.69°W	21.6°S	207.04°Ls	04.78"	29.2°	-04.1°	-15°32'
27 March 2007	316.80°W	21.8°S	207.64°Ls	04.80"	29.3°	-04.6°	-15°17'

Date (00:00GMT)	ω	ϕ	λ	δ	ι	Π	Declination
28 March 2007	306.90°W	21.9°S	208.25°Ls	04.81"	29.5°	-05.1°	-15°03'
29 March 2007	297.00°W	22.1°S	208.85°Ls	04.82"	29.6°	-05.6°	-14°48'
30 March 2007	287.10°W	22.3°S	209.46°Ls	04.83"	29.8°	-06.1°	-14°33'
31 March 2007	277.19°W	22.5°S	210.07°Ls	04.85"	29.9°	-06.1°	-14°19'
01 April 2007	267.29°W	22.6°S	210.67°Ls	04.86"	30.1°	-07.0°	-14°03'
02 April 2007	257.38°W	22.8°S	211.28°Ls	04.87"	30.2°	-07.5°	-13°48'
03 April 2007	247.47°W	22.9°S	211.89°Ls	04.89"	30.4°	-08.0°	-13°33'
04 April 2007	237.55°W	23.1°S	212.51°Ls	04.90"	30.5°	-08.5°	-13°17'
05 April 2007	227.64°W	23.2°S	213.12°Ls	04.92"	30.7°	-09.0°	-13°02'
06 April 2007	217.72°W	23.4°S	213.73°Ls	04.93"	30.8°	-09.5°	-12°46'
07 April 2007	207.80°W	23.5°S	214.34°Ls	04.94"	31.0°	-10.0°	-12°30'
08 April 2007	197.88°W	23.6°S	214.96°Ls	04.96"	31.2°	-10.5°	-12°14'
09 April 2007	187.96°W	23.8°S	215.57°Ls	04.97"	31.3°	-10.9°	-11°58'
10 April 2007	178.04°W	23.9°S	216.18°Ls	04.98"	31.5°	-11.4°	-11°42'
11 April 2007	168.11°W	24.0°S	216.80°Ls	05.00"	31.7°	-11.9°	-11°26'
12 April 2007	158.19°W	24.1°S	217.42°Ls	05.01"	31.8°	-12.4°	-11°10'
13 April 2007	148.26°W	24.3°S	218.03°Ls	05.03"	32.0°	-12.9°	-10°53'
14 April 2007	138.33°W	24.4°S	218.65°Ls	05.04"	32.1°	-13.3°	-10°37'
15 April 2007	128.40°W	24.5°S	219.27°Ls	05.05"	32.3°	-13.8°	-10°20'
16 April 2007	118.46°W	24.6°S	219.89°Ls	05.07"	32.4°	-14.3°	-10°03'
17 April 2007	108.53°W	24.7°S	220.51°Ls	05.08"	32.6°	-14.7°	-09°46'
18 April 2007	098.59°W	24.8°S	221.13°Ls	05.09"	32.7°	-15.2°	-09°29'
19 April 2007	088.66°W	24.8°S	221.75°Ls	05.11"	32.8°	-15.7°	-09°12'
20 April 2007	078.72°W	24.9°S	222.37°Ls	05.12"	33.0°	-16.1°	-08°55'
21 April 2007	068.78°W	25.0°S	222.99°Ls	05.14"	33.1°	-16.6°	-08°38'
22 April 2007	058.85°W	25.1°S	223.61°Ls	05.15"	33.2°	-17.1°	-08°21'
23 April 2007	048.91°W	25.1°S	224.24°Ls	05.17"	33.4°	-17.5°	-08°04'
24 April 2007	038.97°W	25.2°S	224.86°Ls	05.18"	33.5°	-18.0°	-07°46'
25 April 2007	029.03°W	25.2°S	225.49°Ls	05.20"	33.7°	-18.4°	-07°29'
26 April 2007	019.09°W	25.3°S	226.11°Ls	05.21"	33.8°	-18.9°	-07°12'
27 April 2007	009.15°W	25.3°S	226.74°Ls	05.22"	34.0°	-19.3°	-06°54'
28 April 2007	359.20°W	25.4°S	227.36°Ls	05.24"	34.1°	-19.7°	-06°37'
29 April 2007	349.26°W	25.4°S	227.99°Ls	05.25"	34.3°	-20.2°	-06°19'
30 April 2007	339.32°W	25.4°S	228.61°Ls	05.26"	34.4°	-20.6°	-06°01'

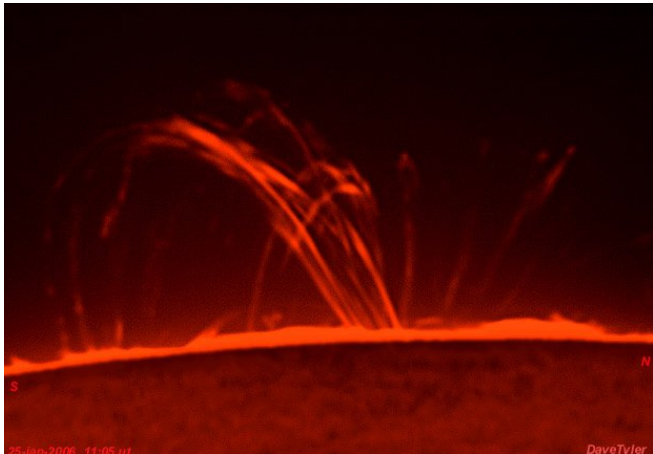
Errata: In I, The Π data was wrong for 27 and 28 Feb, and so the days with the corrected data here listed again. Unfortunately in I the lines of data from 11 Feb to 15 Feb were left out, and so here shall be shown (already the in the Web -CMO they have been corrected)

Date (00:00GMT)	ω	ϕ	λ	δ	ι	Π	Declination
11 February 2007	030.00°W	10.7°S	181.83°Ls	04.29"	21.7°	016.4°	-22°53'
12 February 2007	020.20°W	11.0°S	182.39°Ls	04.30"	21.9°	016.0°	-22°48'
13 February 2007	010.40°W	11.3°S	182.96°Ls	04.31"	22.1°	015.5°	-22°42'
14 February 2007	000.60°W	11.6°S	183.03°Ls	04.32"	22.3°	015.1°	-22°35'
15 February 2007	350.80°W	11.9°S	183.10°Ls	04.33"	22.5°	014.6°	-22°29'

便り
 Letters to the Editor

●.....Date: Fri, 26 Jan 2007 09:33:45 -0000
 Subject: Magnificent Loops

Hi Guys, There was a wonderful display of this "wire loop" prominence yesterday. There were more loops in the structure at 09:40 ut but the sun was very low at that time. Movement was very rapid as a later animation should show. It was just over the Eastern horizon and coming onto the disc, so hopefully it heralds the arrival of some good spots. The 12:32 ut prominence is also on the Eastern limb. 6 inch f15 achromat in home built tube



assy @ f30. 50mm Baader ir uv blocker, 2x Poweramte

Daystar ATM .65Å. Best wishes

○ ······ **Date: Fri, 26 Jan 2007 14:07:08 -0000**
Subject: Saturn 25 th Jan 07

Hi Guys, A too brief window to image Saturn in variable fair seeing, presented itself last night. No "features" were picked up on any of the avis. The globe on ring shadow is very small now as opposition approaches. I hope we get to image it on the very night of opposition, in order to catch the amazing increase in brightness of the rings, That's if the phenomena still occurs at this angle of tilt. See example on web site below captured in superb seeing in 2005. Best wishes

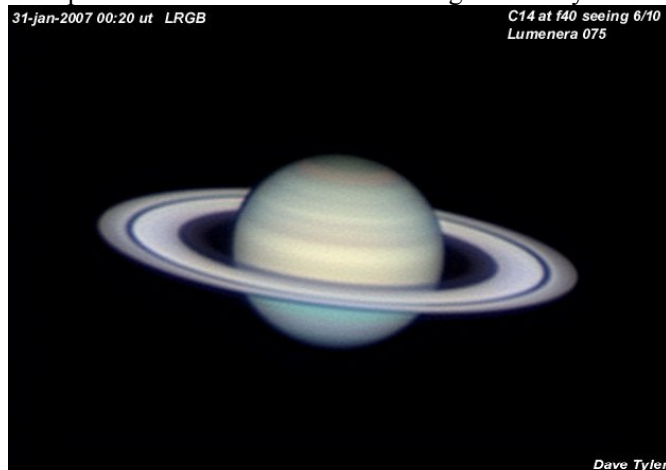
○ ······ **Date: Tue, 30 Jan 2007 11:20:01 -0000**
Subject: "Slinky" loop Prom animation

Hi guys, This is a 3 frame extract from a 20 frame animation of this spectacular prominence, that preceded spot 940. The full animation covering a time of 20 mins and compressed to 4 seconds, is on the web site below.

Loading it for the first time may take 2 1/2 mins., so hang in there. Note how glowing material seems to materialise from nothing, then "fall" down both sides of the arcs. Best wishes

○ ······ **Date: Wed, 31 Jan 2007 17:07:23 -0000**
Subject: Saturn 31-jan-2007

Hi Guys, we had a bit of reasonable seeing last night. No spots or other features were imaged on any of the



lrgb components taken between midnight and 12:50 ut. The blue north polar cap is clearly defined. C14 @ f40 Trutek type 2 Green & blue and type 1 red. Lumenera 075M CCD Seeing 4 to 6/10. Best wishes

○ ······ **Date: Sat, 3 Feb 2007 01:38:07 -0000**
Subject: Saturn 1st Feb 07

Hi guys, Seeing was "unusual" on the 1st, good resolution but marred by registax hating ripple. No features were noted on any of the component images

○ ······ **Date: Mon, 5 Feb 2007 15:06:48 -0000**
Subject: spots 0941 and 0940

Hi Guys, here a few routine images from the 3rd. Seeing was fair for the alt, the mag was a bit high at 180 inches efl. We have a "flag" type prom this time.

○ ······ **Date: Mon, 5 Feb 2007 15:54:15 -0000**
Subject: spots 0940 and 09414th feb

Hi Guys, Here are the two current spot systems, half the magnification of the 3rd feb images: these being 90" efl and 3 inch og. The tiny bright dot near the little outcrop of spots on 940 appeared only for a few minutes. It was

blinking through the turbulence, and the brightest thing on the screen. Prominences were almost non-existent in my set-up. What were there were little more than pimples. Best wishes

○ ······ **Date: Tue, 6 Feb 2007 13:32:39 -0000**
Subject: THE SUN THIS MORNING

Hi Guys, this a shot from earlier this morning of the two current spots. Seeing limited the resolution, so only 90 inches efl was used and the scope stopped to 3 inches for an f30. They make an interesting duet. Best wishes

○ ······ **Date: Wed, 7 Feb 2007 22:55:58 -0000**
Subj: A prominence and Saturn 4 days from opposition

Hi Guys, Another mediocre Saturn shot from 3 single avis captured in poor fuzzy seeing. On the run up to opposition the globe shadow on the rings quickly disappears, and on opposition night itself the rings blaze out with much greater than normal brightness, well worth capturing even in poor seeing. The forecast here near London is not looking good though.

There was not a lot of solar prominence activity on the 6th, but this one looked nice. 180" efl f30. Best wishes

○ ······ **Date: Thu, 8 Feb 2007 01:04:29 -0000**
Subject: the sun this morning

Hi Guys, Some interesting stuff on the sun this morning. The spot group now foreshortened, fits on the chip in one avi. the two proms were quite faint and were taken at 180" efl, i.e. twice the mag of the spots.

○ ······ **Date: Fri, 9 Feb 2007 14:50:23 -0000**
Subject: Saturn's opposition approach

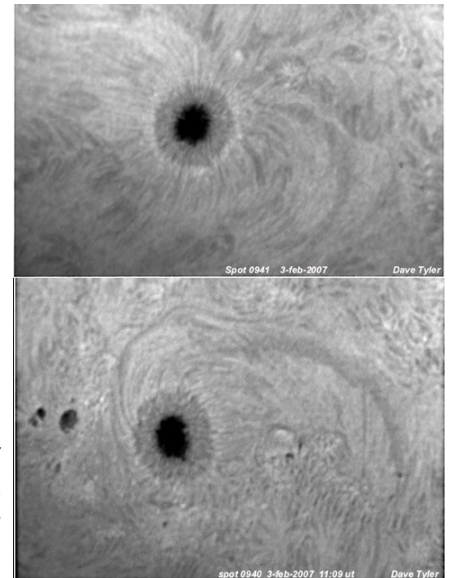
Hi Guys, A brief clear spell allowed another capture of Saturn just that bit closer to opposition. The three red mono images, show subtle differences in the brightness of the rings with respect to the planet. The Animation highlights the other changes that are occurring also. The changes are subtle right now, but are dramatic on the actual night of opposition. Seeing was abominable last night, the red image is made up of the best 700 frames from the 9000 frames from 3 avi's. Best wishes

○ ······ **Date: Sun, 11 Feb 2007 21:43:32 -0000**
Subject: a double arched prominence

Hi Guys, This was a nice sight this afternoon. The sun had 4 decent prominences, 2 more images to follow. This one is a composite made from two adjacent avis. 6" f15 at f30, with a Daystar ATM.65Å. Best wishes

○ ······ **Date: Mon, 12 Feb 2007 11:31:39 -0000**
Subject: Solar proms 11th Feb

Hi Guys, Here are a few more Proms from yesterday afternoon. (South shown, is Terrestrial south)



○.....Date: Tue, 13 Feb 2007 22:55:00 -0000
Subject: Saturn 12th Feb

Hi Guys, Lucky to catch Saturn on the 12 but with poor

seeing of course. It was still not back to normal after it's opposition. The blue channel southern hemisphere was looking particularly dark still. This gave a slight yellow

TEN YEARS AGO (138)

----CMO #184 (10 Feb 1997)& #185 (25 Feb 1997)----

今回はCMO #184 & #185 の二号(p1987-p2014) 取り上げる。先ずCMO#184の巻頭は、1996/97年の火星(6)として、Mn氏により「北極地での颶風」"COMING 1996/97 MARS(6) Arctic Typhoon" が取り上げられている。これはVO-1によって捉えられた北極域周辺の渦巻き雲の画像の分析で、Nature278(1979)531からの紹介である。これら二つの画像の季節は $\lambda=105^\circ\text{Ls}$ と 126°Ls で、北半球の夏至(090°Ls)過ぎに発生したものである。北極域周辺では、この後にもHSTやMGSの画像に、北半球の春分(000°Ls)過ぎからの、黄雲の活動やサイクロンの活動が幾度も捉えられている。2007/08年の観測期にはこの時期が含まれていて、同様の現象が捉えられることが期待される。再読して参考にされたい。次いで、OAA MARS SECTION Report (16 Jan~ 31 Jan 1997)で、1997年一月後半の観測報告がまとめられている。この期間に火星の視直径は10秒角を上回り、本格的な観測期に入っていた。季節は北半球の夏至前の $\lambda=065^\circ\text{Ls}$ から 072°Ls にすすみ、 $\phi=23^\circ\text{N}$ と大きく北半球に傾いて北極域が見えていた。国内からの報告は十名を数え、国外からは三名の報告があった。まず、クアツラ(GQr)氏の属するSGPGからの、エリュシウム領域とマレ・アキダリウム領域の写っているCCD画像について取り上げている。日本からはマレ・アキダリウムからシュルティス・マイヨルまでの経度が観測されて、シュルティス・マイヨルを横切る夕靄が確認された。LtEには、国外からは、FML, ANK, GQr, CHr, JW rの各氏からの便りがある。国内からは、Mo氏、Iw氏、Id氏、Hk氏他氏、筆者(Mk)からの便りが紹介されている。三国町でのタンカー座礁事件のあった時であり、各氏の文面にも取り上げられている。TYA(14)はCMO#026(10 Feb1987)が取り上げられている。当時の火星は、視直径は6秒角と小さくなったが、南氏・中島氏は日本で、臺北では張麗霞氏が観測を続けていた。東矩をすぎていて、一月後半に季節は $\lambda=320^\circ\text{Ls}$ に達している。沼沢茂美氏の惑星写真に関する記事が掲載されていた。

CMO#185では先ずは、OAA MARS SECTION Report (1 Feb~ 15 Feb 1997)で、1997年二月前半の観測報告である。火星は留から逆行に移り、この期間の終わりには、 δ は12秒角まで大きくなった。この接近時の最大 δ は14秒角であったから、観測も佳境に入ってCMOも月に二回の発行態勢となっていた。観測報告も国内十二名、国外六名に増えた。この期間に合同観測日が企画された。福井では連日の晴れ間に恵まれたが、沖縄は雲が多く、ほかの諸氏も成果は上がらなかった。

日本からの観測では、エリュシウム中心で、シュルティス・マイヨルの夜明けから、タルシスが夕方に見える経度の観測だった。オリュムプス・モンスの白雲活動が活発な季節で各氏が捉えている。特筆するのは、10Feb($\lambda=076^\circ\text{Ls}$)に北極冠の一部が明るさを落として黄土色に見えたことで、国内をはじめに16Febにはヨーロッパの観測者中心に、e-mail速報を出して確認観測を依頼した。南氏による、合同観測日の結果についての総括があり、観測の計画不足と勉強不足が指摘されている。また、1996/97年の火星(7)として、Ns氏の「1996/97年の火星観測暦表(その3)」が掲載された。April 1997からJune 1997までの期間である。LtEでは、国外から、RSc, JW r, DTr, NFl, ESg, SWb, PTg(Italy), Jim BELL, DLm氏から寄せられた。BELL氏からは、マウナ・ケアのIRTF望遠鏡での最良シーイング下での観測成功が興奮気味に語られていて、その画像の紹介もある。日本からは、Nr, Hk, IW, Id, Hg, Akの各氏からのお便りがある。次いで、南氏による「福井便り」で、2月8/9日に筆者(Mk)が福井を訪ねて、足羽山で合同観測に参加した様子が記録されている。この期間には、広島森田氏も旅の途中で、短時間だが三国のお宅を訪ねられ、お会いできた。離福時の早朝のやりとりは今も覚えている。南氏はドームで最後の観測中で、ドーム越しにお別れの挨拶をして中島氏に福井駅まで送っていただいた。福井駅で羽毛服にくるまって始発電車を待っていたことを思い出した。TYA (15)はCMO#027(25 Feb 1987)が取り上げられている。当時の火星は、視直径は5秒角台に小さくなり観測を継続しているのは南、中島両氏(福井)と張麗霞さん(台北)だけになっていた。観測時間も短くなって、いよいよ最終盤となった。火星の季節は二月中旬で $\lambda=336^\circ\text{Ls}$ に達していた。1987年二月3日には火星食があったが、天候が不順で、関東地方で潜入が観測されただけだった。CMOはこの号で通算2000ページを超えて、2001ページには、数にちなんだ「2001年宇宙の旅」の書評が筆者(Mk)によるコラム記事で取り上げられている。巻末には、シー・エム・オー・フクイからの、カンパ受領の報告が見える。 村上昌己 (Mk)



Fig. 1: Arctic cyclone revealed by Viking Orbiter 1 at 105°La at 160°W , 81°N

hue to the globe in the rgb image. I have enclosed a set of channels from the 25th Jan, for reference. This indicates to me that none of the channels were back to normal on the 12th. at 2300ut.

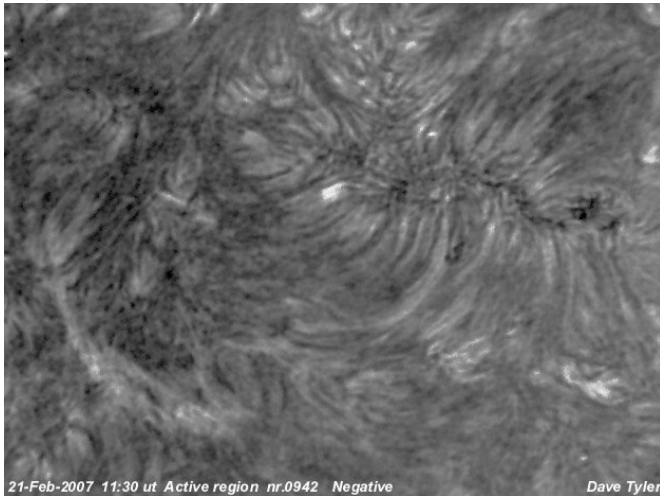
If anyone has the ut of the exact opposition moment, I would appreciate it. Best wishes

○·····Date: Thu, 15 Feb 2007 21:10:16 -0000
Subject: The Sun 14 feb

Hi Guys; Our Star is a little quiescent right now, but there always seems something of interest in H α . This one was very faint and almost invisible in the winter watery sunshine.

Half way through February the sun is still 16deg alt. at 3pm ! PM viewing time has been extended 2 hrs. It then sets behind my workshop. Best wishes

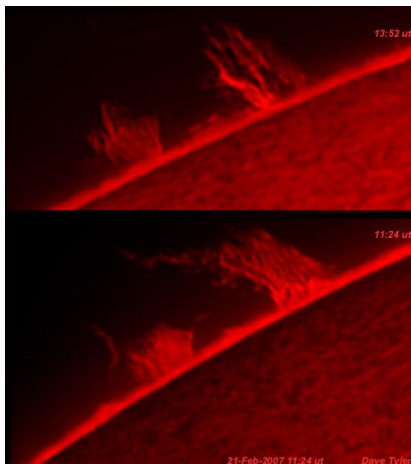
○·····Date: Thu, 22 Feb 2007 18:07:03 -0000
Subject: A sunny day



Hi Guys, Amid really jolly bad weather, we had a sunny day. 5 hours of bliss, with the temperature rising to 14,4°C sitting in the focus of the inside of the solar illuminated dome shell.. The sun was very quiet except for an active area and one decent sized prominence. Well quite a decent size one at 222inches efl. The wider shot of the Active Area, was on 90 inches with the OG stopped to 3 inches. I think this one looks like a couple of scorpions. One image is a negative of the other, quite dramatic !

○·····Date: Fri, 23 Feb 2007 16:55:43 -0000
Subject: prominence progress

Hi Guys, here are a couple more images from the 21st, one shows the progress of the finger prominence from 11:24 to 13:52 ut.



The other is a higher resolution montage of the 0942 related active region. Best wishes

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

●·····Date: Sat, 27 Jan 2007 07:14:07 +0900
Subject: Re: 小郷原一智氏

> ずっとCMOで時間を潰していて失礼してしまいましたが、
> いま#327をuploadしたところです。ご覧下さい。

ご苦労様です。ざっと拝見いたしました。

> お陰様で、予定通り小郷原さんに会ってきました。感じのよい人
> で、議論で抵触することはありませんでした。モデルは先ず数日かかって半
> 年ぐらいGCMを走らせて、火星の大気を作り、そこで季節を勘案して、ヘッ
> ラスやその周辺へ黄塵を植え付けるらしい。彼は穴を開けて吹き上げるとい
> う言い方をしていました。それを放って置くかどうかということで、こ
> れは貴君もご存じです。パナソニックのパソコンで、見せてもらいました
> が、確かにヘッラス内からは出ません。そして外側のP8というところから出
> た場合は東へ砂がばらまかれるように移動してゆきます。高さも上ってゆ
> く。ただ、それ以後北半球で黄塵の吹き上げがあるのですが、それは入って
> いません。ですから南半球を動かすだけですね。シュルティス・マイヨルの西
> と、エリュシウム邊にも監視通り黄塵を植え付けたいらとおきまし
> た。1956、1971年も季節を変えるだけですから、それは別にやりたいよう
> です。西進の場合は南極をトロロ巻くといったらそれは面白いと言っていま
> した。……

> 進々堂で二時間ほどでしたがいろいろ話しました。夜明けの話は多分そう
> だろうということでした。ヘッラスはやはり高気圧と考えてよいということ
> でした。ただ、南極冠からの吹き下ろしの話をしていましたね。南極冠縁の
> カスケードの話をしたらメモしていました。……

> ハドレー循環については説明して貰いました。pole-poleという考え方で
> なく、丁度地球の赤道が極の方にずれるという考え方がいい。ですからロス
> ビーも残っているらしい。これは好い説明でした。ですから、北極雲近傍は
> ロスビーでしょう。ときどきこの人と逢うと勉強になると思いました。…
> 先ずは報告まで。疲れているので、又思い出したら、書きます。

会見が無事に終わってよかったですね。南さんは京都に行かれる機会が多いでしょうからぜひ度々会ってお話をされてください。

○·····Date: Sun, 28 Jan 2007 08:39:42 +0900
Subject: Re:RE:Re 小郷原一智氏

> 小郷原氏が参照していた文献に、M D Smith, *Icarus* 167 (2004) 148-165
> がありました。これ貰っていました。私はこのSmithは2001年にその存
> 在を識りましたが、若い人だと思ふ。新しいCantorと一緒に送っていただけ
> れば幸いです。新しいCantorは小郷原氏も未だ見ていないようでした。……

承知しました。Cantor氏の論文と一緒に送ります。M. D. Smith氏は、多分、私がコーネルに行ったときにGierasch先生のところでポストクをしていた人だと思います。一度彼の友人と夕食に招待したこともあります。その後、ゴダード・スペース・フライト・センターへ行き、またコーネルに戻っているのではなかったかと思ふ。…

○·····Date: Tue, 30 Jan 2007 11:18:00 +0900
Subject: 幕張の連合大会の予稿原稿

幕張の連合大会での講演申し込み用の予稿原稿です。目を通していただければ幸いです。

○·····Date: Tue, 06 Feb 2007 11:09:38 +0900
Subject: 講演用PowerPoint

東北大学の研究会と、幕張の合同大会用のPowerPointを作ってみました。目を通していただければ幸いです。

○·····Date: Tue, 06 Feb 2007 14:18:03 +0900
Subject: CMO#4327 拝受

本日午前中、CMO#327届きました。いつもありがとうございます。お礼まで。

○·····Date: Tue, 06 Feb 2007 15:50:53 +0900
Subject: Re:RE:Re 講演用PowerPoint

> これはいついつあるのですか？

東北大学の研究会は3月22日と23日、合同大会は5月19日～24日に幕張で行われます。

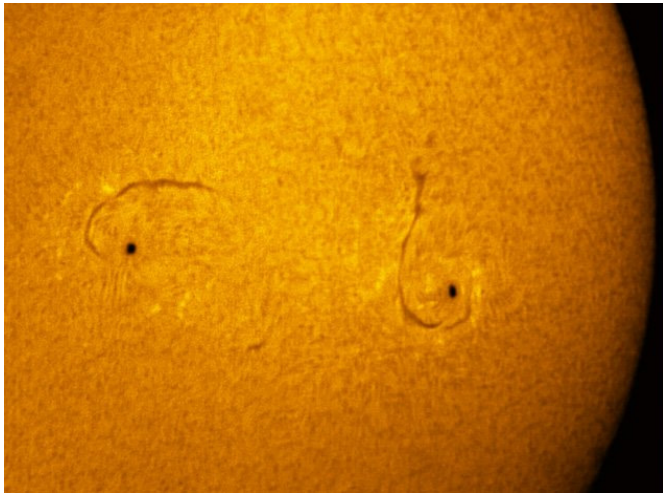
浅田 正 (Tadashi ASADA 宗像 Fukuoka)

●·····Date: Sun, 28 Jan 2007 18:48:14 -0500
Subject: Venus, UV

Tried out a Baader Venus UV filter today- great transmission! Here are two shots recorded abot 3 hours a-

part. Each image was also recorded with the camera rotated 90-degrees from the other, to try ensure the detail in UV isn't artifacts.

○ ······ **Date: Mon, 05 Feb 2007 11:38:52 -0500**



Subject: Re: spots 0940 and 0941 4th feb

Excellent David. Here is my attempt under rather bad seeing yesterday. I also captured an active region coming into view. PST@f/20, LU075

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

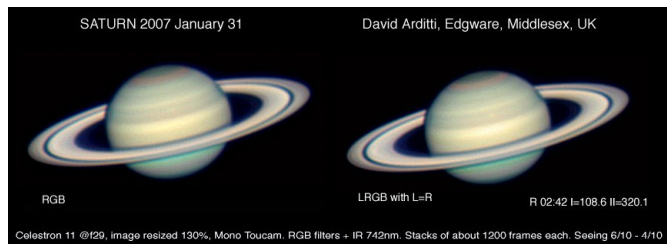
● ······ **Date: Sun, 28 Jan 2007 23:41:10 +0000**
Subject: Venus in the last week

In the last week I have been imaging Venus in daylight in UV and IR in the afternoons. The disk is about 11" and culminating altitude 23?, though these images were all taken well after culmination. The phase always looks much smaller in images than the calculated phase, probably due to the sharpening. Details in IR are debatable, but the UV markings are clear here, as is their rotation in a period of 4 days.

○ ······ **Date: Thu, 1 Feb 2007 02:05:16 +0000**
Subject: Saturn Jan 31 - white spot imaged

A brief period of good seeing was experienced on Wednesday morning about 02:45. This only lasted a few minutes, during which the R and G shown here were taken. By the time the B and IR were taken it had deteriorated greatly.

Some features of interest are shown. There is a white oval in the SEB centred about II=325. This is seen in both the R and G images, and probably just about in the



B, but not the poor IR image. So far as I am aware this spot has not been previously recorded. There are several small divisions in the rings revealed in the R and G images. The exposures were all 160s long.

○ ······ **Date: Fri, 2 Feb 2007 02:37:57 +0000**
Subject: Re: Saturn Feb 01, 2007

Pete, have you noticed you have the STB spot there? Your R corresponds to LII=2.5. The spot is visible about 30 deg p the CM, corresponding to my rough estimate of LII=325.

○ ······ **Date: Thu, 8 Feb 2007 00:28:51 +0000**
Subject: Saturn Feb 07

It was "a bit parky" here this morning, temp. about -4°C. I resorted to the heated summer house for remote imaging, only coming out to change the filter. Seeing was of a blurry species. However, Registax has done well to reveal some ring details. Nothing new on globe, but the rings are taking on that 'glowing' effect just prior to opposition, which evidences itself most in the blue.

○ ······ **Date: Fri, 9 Feb 2007 22:44:27 +0000**
Subj: Re: Saturn 2007/2/8/Seeliger Effect (R BOSMAN)

Very nice. Just to point out that, as was pointed out to me last year, the brightening of the rings at opposition is not correctly termed the Seeliger Effect. You see this a lot, but there is no such thing as the Seeliger Effect. There is a theory of planetary surface brightness called the Lommel-Seeliger model. However, this does not explain the extra brightening of Saturn's rings at opposition, which is due to "coherent backscattering".

Don't ask me how this works, I have not studied it in detail. I believe it is something to do with the properties of the ice particles, behaving almost as mirrors.

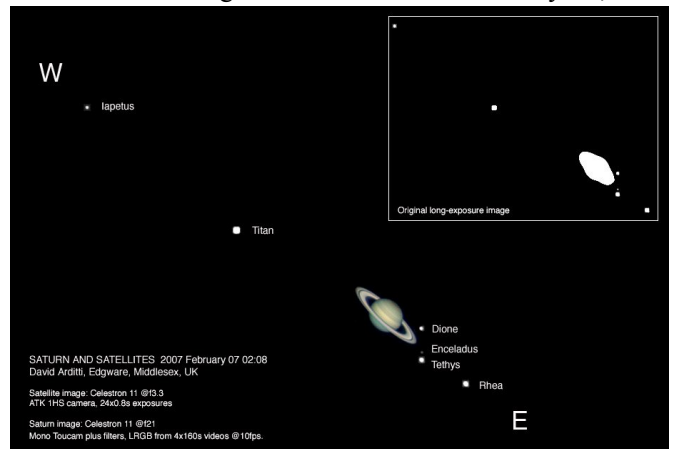
○ ······ **Date: Thu, 15 Feb 2007 18:54:04 +0000**
Subject: Saturn Feb 13

Seeing was particularly bad this night, but I took these images as they were the closest I could get to opposition. Cloud interfered constantly.

Despite the blurred images there is some evidence of the coherent-backscattering ring-brightening (sometimes incorrectly called the Seeliger Effect) notable in the blue image, where the rings are brighter compared to the globe than they are normally (compared, for example, to my Jan 31 images).

○ ······ **Date: Sun, 18 Feb 2007 23:23:20 +0000**
Subject: Saturn and Satellites, Feb .07

Here is something a bit different. On February 07, three



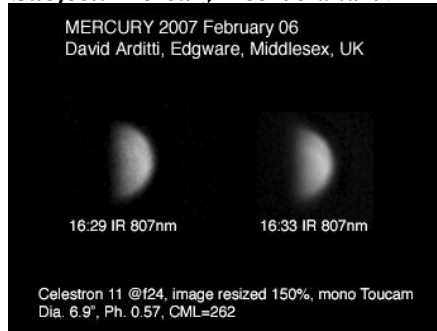
days before the opposition of Saturn, all the bright satellites were almost in a line, with Titan close to greatest western elongation, Iapetus about two-thirds of the way to greatest western elongation, and several others close to greatest eastern elongation. This image is a composite of an image derived from a sequence of 0.8s exposures

taken at short focal length to show all the satellites in one frame, and an image derived from webcam videos consisting of 0.1s exposures, taken at long focal length, to show the planet's details and colours.

The whole of the long-exposure image is shown in the inset. In the composite, the sizes of the satellite disks do not represent true sizes in respect to Saturn, obviously. They are just indicative of brightness.

The time given is for the satellite image. The planet was imaged about an hour earlier.

○.....Date: Thu, 22 Feb 2007 02:14:05 +0000
Subject: Mercury Feb 06 and 07



These are the only images of Mercury I have ever taken.

Seeing was poor on both occasions, but the Feb 06 images have come out much clearer.

There seems to be a consistent semi-circular intensity pattern centred on the centre of the disk. Whether this is real or artificial I have no way of knowing. This is the unmapped side of Mercury.

David ARDITTI (デヴィッド・アーティチ Edgware ME 英)

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

Author: "Setting-Up a Small Observatory", pub. Springer, 2007

●.....Date: Sun, 28 Jan 2007 23:58:14 EST
Subject: Re: Venus in the last week

Sean Walker and David Arditti -

Excellent shots! Between both of your images, I can make out the 4 -day rotation period. It is the same feature in David's image on Jan 24th and Sean's on Jan 28th. Venus is showing a dark equatorial band.

Pretty soon I will dust off my UV filter and point toward Venus!

○.....Date: Wed, 14 Feb 2007 11:28:05 EST
Subject: Venus: Feb, 11, 2007

All - Here's my first image of Venus in UV light for the year. The seeing was bad but there were some fine moments. There is a nice band across the disk.

○.....Date: Thu, 15 Feb 2007 14:54:38 -0500
Subject: Re: Saturn Feb 13

Good shot Dave! Even though it is blurry due to seeing condition, still it provides much information about the rings' brightness. I agree with you that the rings are somewhat brighter with respect to the disk in blue light. Still I'm not sure at this time yet. You can see it in my image during opposition night.

<http://hometown.aol.com/frankj12/saturnindexpage2.html>

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

●.....Date: Tue, 30 Jan 2007 16:43:26 +0900
Subject: 2007年度の行事予定

梅田です。お世話になります。

2007年度の天体観望会について以下のように考えてみました。ご教示ください。・・・6月と7月は、どちらか一方でもかまわないかと思います。

4月20日金	19:00-21:00	「土星をみよう」
5月18日金	19:00-21:00	「金星と土星」
6月15日金	19:30-21:30	「木星」
7月7日土	19:30-21:30	「七夕の星と木星」
8月17日金	19:00-21:00	「夏の星座」
8月28日火	18:30-21:30	「皆既月食」
9月25日火	17:30-19:30	「中秋の名月」
10月19日金	17:30-19:30	「上弦の月」
11月16日金	19:00-21:00	「秋の星座と天王星」
12月19日水	20:00-22:00	「火星が最接近」
1月11日金	19:00-21:00	「冬の星座とM42」
3月14日金	19:00-21:00	「土星」

お手数ですが、よろしくお願ひいたします。

○.....Date: Fri, 02 Feb 2007 19:39:49 +0900
Subject: 雪の状況

南様; 来年度行事について、アドバイスありがとうございます。アドバイスにそって見直してみます。また、アタッチメントの型番などは西田先生にお聞きすればよいのでしょうか。

取り急ぎ、足羽山の雪の状況のみご連絡いたします。スノータイヤであれば、全く問題ないと思います。本日、自家用車出勤組は通常どおりでした。しかし、昨夜のこと:いつもの運正寺側に下りましたが、あまり積雪がなかったので、横着をしてスピードが出たのか(もちろんセカンドには落としていました)、最後のゆるいカーブを曲がったところで、ハンドルを取られ、ブレーキを踏めば踏むほど車が制御できなくなったのです。危うく、ふもとの墓地に落ちるかと思いきや、今度は反対側の民家の駐車中の車に衝突するところでした。危機一髪、車はとまってくれた(という感じ)ので、事無きを得ましたが、車は完全に道路に対して横になっていました。道の脇を人でも歩いていようものなら、本日このようなメールを書いているどころではなかったでしょう。ということで、積雪は少しだったのですが、解けた雪が氷面のようになっていたのでしょうか。下る時は本当に気をつけてください。

行事予定の改訂版は近日中にメール致します。

梅田 美由紀 (Miyuki UMEDA)
福井市自然史博物館 Fukui

●.....Date: Wed, 31 Jan 2007 18:24:52 +0100
Subject: Mare Frigoris

Hi all, In Europe we have strange weather last month and we are glad if we see the blue sky. So even on the night on the 25 januari, just afther sunset. Not the best seeing but I was able the do somethingafter a weather break. Wild traffic(down-town city) give me sometime a headache. So I have made this image, Mare Frigoris. Kindly regards

○.....Date: Fri, 9 Feb 2007 23:31:03 +0100
Subject: Saturn 2007/2/8/Seeliger Effect

Hi all, nice to see that we have all have clear skies and freezing temperature. That's ok, that remeind us the it is winter. The night from the 8 feb. is was cold en clear

skies and we can see the Seeliger Effect. Kindly regards



○.....Date: Sat, 10 Feb 2007 00:14:56 +0100
 Subject: Re: Saturn 2007/2/8/Seeliger Effect

Thanks David, for your comments. This effect was really visible in eyepieces. Regards

○.....Date: Tue, 13 Feb 2007 21:25:37 +0100
 Subject: Re: Saturn 2007/2/8/Seeliger Effect

Thanks Damian for this animation. I was wondering why the color from the globe is difference than before/after the opposition. It is a real phenomena I can hard see visuel the difference (perhaps is the citylight's that give me no change to see it). Is it the CCD that registrate the difference? Or is it that one color chanel Blue give a difference registration ? I don't know.Regards
Richard BOSMAN (リヒャルト・ホースマン Enschede 荷蘭)
<http://www.astrofotografie.nl/>

●.....Date: Thu, 01 Feb 2007 05:13:25 +0000
 Subject: Venus in Ultraviolet

Hi All, I have attached an image from 31 Jan. of Venus in ultraviolet light. Note the large dark clouds in the south. Looks like Mars! Best,



○.....Date: Wed, 21 Feb 2007 19:36:40 +0000
 Subject: Venus Images

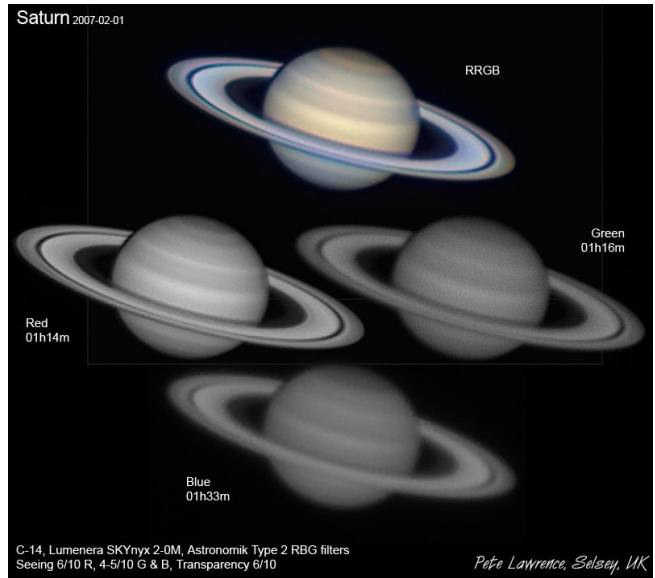
Hi All, I have attached some UV and IR Venus images taken by Sean Walker at the Winter Star Party in the Florida Keys. Best,

Don PARKER (唐那·派克 FL 美)

●.....Date: Thu, 1 Feb 2007 15:31:59 -0000
 Subject: Saturn Feb 01, 2007

Hi all, Poor seeing gave way just before the clouds rolled in this morning and allows me to at least capture a half decent red channel. With the onset of thin fast mov-

ing cloud, transparency was lost and the seeing broke down noticeably. There's always next time... Best regards,
 ○.....Date: Tue, 6 Feb 2007 12:47:09 -0000

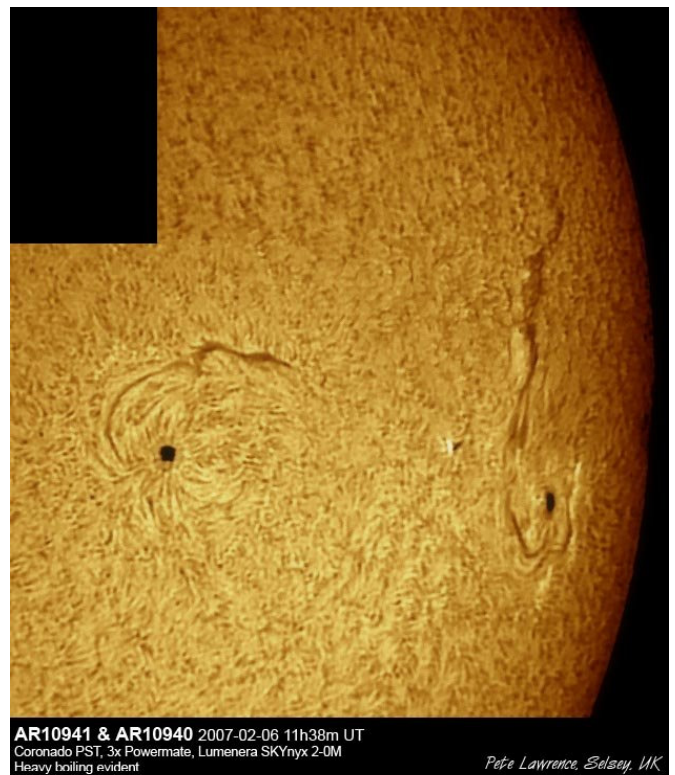


Subject: AR10940/941 Feb 6th

Amazing filament associated with 940 (closest to the limb). It should be interesting to watch this feature as it rotates out of view. Seeing today wasn't brilliant with heavy boiliing evident, especially at high magnification. Otherwise the sky was cloudless. Best regards,

○.....Date: Tue, 6 Feb 2007 14:14:16 -0000
 Subject: AR10940/941 additional magnification

Apologies for a second posting today but my original belief that my higher image scale captures wouldn't process to anything because of the boiliing visible this morn-



ing turned out to be in error. This second capture shows additional structure and detail along the impressive large 'vertical' filament associated with 940. Best regards,

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

●.....Date: Sat, 3 Feb 2007 15:01:51 -0000
 Subject: Full Moon

Hi guys, Here is a shot I took of the Moon last night, 2 Feb 2007@ 23:23 UT. This is a single exposure: 1/100 sec F5.6 @ ISO 100 I used a Canon 20D with a 500mm lens plus 1.4x extender. Best wishes

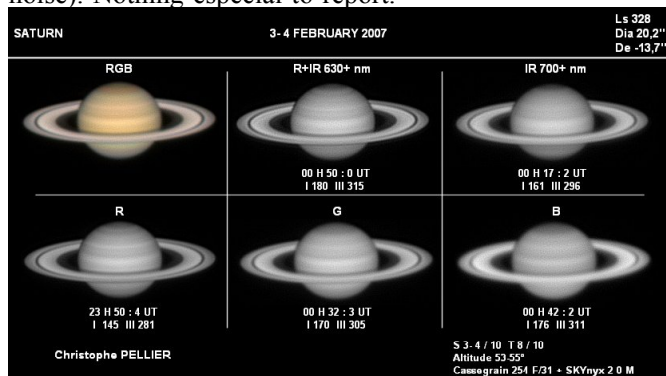
○.....Date: Sat, 3 Feb 2007 17:00:30 -0000
 Subject: The composite (Moon and Saturn)



Hi guys, Here is the composite. Cheers ↑
 Jamie COOPER (ジャミール・クーパー Nmp 英)

●.....Date: Sun, 04 Feb 2007 16:14:04 +0100
 Subject: Saturn, february 3-4th 2007

Hi all, Here are finally my **first images taken with my new 10" F/13,5 cassegrain**, unfortunately under rather poor conditions, but it's nice to be back at it after 5 months... I'm also using a Skynyx 2-0M which is quite an improvement from the LU075M (even much less noise). Nothing especial to report.



http://www.astrosurf.com/pellier/S070203_04-CPE

Best wishes to everyone,

○.....Date: Tue, 06 Feb 2007 19:52:31 +0100
 Subject: Re: Venus 2007-02-03 UV

Hi all, I have bought last september the Baader UV filter. I also own the Schuler UV, and after many tests, I can confirm that the Baader as a residual IR leak, that may appear when observing brights objects - Venus is a good candidate... The Schuler has an almost undetectable IR ghost and passes noticeably more UV light, because its transmission pic is found 10 to 15 nm more toward red, where the sensitivity of the CCD is raising fast (365 or 370 nm against 355). As soon as I can present some real tests on planets, I will write a web page. Regards

○.....Date: Fri, 16 Feb 2007 20:18:41 +0100

Subject: Saturn feb. 14th

Hello ! Poor seeing and no commentary !
<http://www.astrosurf.com/pellier/S070214-CPE>

○.....Date: Sat, 24 Feb 2007 10:04:03 +0100
 Subject: Saturn february 21th

Hi all, conditions improved a little bit last wednesday, although this is still not really good.

<http://www.astrosurf.com/pellier/S070221-CPE>

Best wishes

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

●.....Date: Sat, 10 Feb 2007 00:15:29 -0000
 Subject: Re: Saturn 2007/2/8/Seeliger Effect

Hi David, None of the upcoming oppositions will present us with the dramatic sight we had for the exact opposition of January 13th, 2005 (when alignment was such that the Earth transted across the Sun seen from Saturn) to witness this so called coherent backscattering. What you say regarding the ice particles acting as mirrors seems a good way to describe it. As Dave Tyler said, like a car numberplate reflecting light straight back to an onlooker, and glowing brilliantly. The Jan 13th 05' event also coincided with a night of superb seeing conditions, and Dave Tyler and Myself were able to watch this dramatic sight.

The view then was very strange. The most notable thing i recall was the globe looked so dim and colourless compared to before opposition, while the rings were "glowing magnificently" on the live image. Its a night i will remember for a long time.

I've attached a small animation showing the brightness changes from Dec 11th, 2004 to Jan 13th 2005 opposition. The image was taken about 10 minutes prior to exact opposition that night. The changes between are very evident. Best Wishes

○.....Date: Sat, 10 Feb 2007 00:15:29 -0000
 Subject: Re: Saturn 2007/2/8/Seeliger Effect

Hi David (ARDITTI), None of the upcoming oppositions will present us with the dramatic sight we had for the exact opposition of January 13th, 2005 (when alignment was such that the Earth transted across the Sun seen from Saturn) to witness this so called coherent backscattering. What you say regarding the ice particles acting as mirrors seems a good way to describe it. As Dave Tyler said, like a car numberplate reflecting light straight back to an onlooker, and glowing brilliantly. The Jan 13th 05' event also coincided with a night of superb seeing conditions, and Dave Tyler and Myself were able to watch this dramatic sight.

The view then was very strange. The most notable thing i recall was the globe looked so dim and colourless compared to before opposition, while the rings were "glowing magnificently" on the live image. Its a night i will remember for a long time.

I've attached a small animation showing the brightness changes from Dec 11th, 2004 to Jan 13th 2005 opposition. The image was taken about 10 minutes prior to exact opposition that night. The changes between are

very evident. Best Wishes

○.....Date: Sat, 24 Feb 2007 00:16:06 -0000
Subject: My best ever Saturn reworked.

Hi guys, During the continuing utterly dismal weather here, i spent this evening from scratch re-working my best ever Saturn data from 2006 April 10-11th. I used registax 4 to multipoint align everything. The final result is the 5 best files combined across 25mins.

This is an LRGB image using purely G filter luminance. Colour data was from a ToUcam taken about 20 mins later than the luminance imagery. L is around 8000 images. C14 @ F41.

The final result was a slight improvement on the original, in that it can be present at a slightly larger size while retaining sharpness.

http://www.damianpeach.com/barbados06/saturn/sat2006_04_11rgbmap.jpg

http://www.damianpeach.com/barbados06/saturn/sat2006_04_11greenmap.jpg

Overall i am pleased with the outcome which is probably about as good as it can be from the raw data - allot of work this evening but at least something resulted from the dreadful weather :-). Best Wishes

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

●.....Date: Mon, 12 Feb 2007 22:23:57 +0900
Subject: Mo23Oct_05

ご無沙汰しております。やっとご依頼の画像処理ができました。なかなか上手いかず、てこずりましたが前のものよりはコントラストがついています。Registax4によるものですが、処理が早い

分微妙なところは慣れないと難しいようです。

森田 行雄 (Yukio MORITA 廿日市 Hiroshima)

●.....Date: Wed, 14 Feb 2007 18:16:20 +0900
Subject: 土星、木星画像 (セブ島)

今年はセブ島の天気が悪く、1月は全く駄目でした。2月になり、少し良くなってきました。さて2月9日から13日まで星仲間で大学からの友人の富田安明氏が惑星観望にセブ島まで来てくれました。友人のChristopher Go宅のC-11で天頂に上った土星(丁度衝でした)を心ゆくまで見て感動したようです。また明け方の木星も見ましたが、日本より25度近く高く上り、これも眼視的には良く見えていました。気流の違いをまざまざと、感じたようです。



2007/02/10 20:39:16 (UT)
l=304.7 ll=263.3 III=117.5
De= -3.1 E.Dia=34.69"
5fps AVI 90sec 450frames
S=6/10 T=4/5
C-11 ToUcam II

阿久津 富夫(Tomio AKUTSU セブThe Philippines)

☆☆☆

シー・エム・オー・フクイ

中島 孝 Nj

★前号報告以降、東亜天文学会様(389)よりの援助を頂戴しました。有難うございました。また編集部の村上昌己、南政次、西田昭徳の三氏から『天文観測年表』2007年版火星項の原稿料を全額寄付していただき(390)、加えて常間地ひとみさん(388)からもカンパを頂きました。有難うございました。不一。

★報告: 足羽山の福井市自然史博物館天文台ではMn氏と15Janから火星の協同観測を開始し、以後数回待機していますが、火星の高度は未だ低く、思うような結果が出ません。皆さんは如何でしょうか。観測がございましたら火星課の方へどうぞ。1Marには $\delta=4.5''$ になります。敬具

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

『火星通信』 #328 (25 February 2007) 編集: 南 政次(Mn)、村上昌己(Mk)、中島 孝(Nj)
西田 昭徳(Ns)、常間地 ひとみ(Ts)

Edited by: Masatsugu MINAMI, Masami MURAKAMI, Takashi NAKAJIMA,
Akinori NISHITA and Hitomi TSUNEMACHI

発行 Published by/for: 東亜天文学会 OAA 火星課 Mars Section

☆ Any e-mail to CMO is acknowledged if addressed to

cmo@mars.dti.ne.jp (Masami MURAKAMI at Fujisawa)

vzv03210@nifty.com (Masatsugu MINAMI at Mikuni-Sakai)

☆ Usual mails to CMO are acknowledged if addressed to

Dr Masatsugu MINAMI, 3-6-74 Midori-ga-Oka, Mikuni, Sakai City, Fukui, 913-0048 JAPAN

☎ 913-0048 福井県坂井市三國町緑ヶ丘3丁目6-74 南 政次 (☎/FAX 0776-82-6222)

