

MARS

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OBSERVATIONS

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The EPSC 2013 in London

By

Christophe PELLIER

The European Planetary Science Congress (EPSC) took place this year in London at the UCL (University College London).



For the second time, the congress welcomed a session dedicated to amateur astronomy and as last year in Madrid I have been able to attend the meeting. At the end of the week we participated as well to a BAA side meeting whose theme was also planetary astronomy. Here is a summary of these events !

The 2013 amateur session at EPSC has been even more interesting than the 2012

one, first because the works presented were more achieved, and because more people joined to meet themselves.

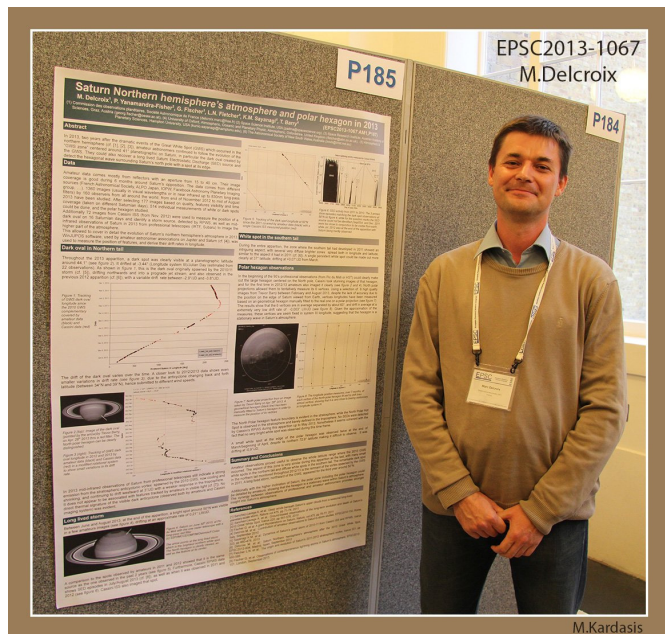
The session began by a talk by Ricardo Alonso, from the Superior technical school of engineering of Bilbao (in replacement of François Colas, who was unfortunately unable to attend). The talk was a presentation of the paper submitted to *Experimental Astronomy* that tries to summarize all the possible cooperation areas between amateurs and professionals (please refer to CMO n°411 for a wider description of this major paper). The paper is still waiting for its acceptance.

Then I had the pleasure to talk about some Venus analysis we have been conducting for one year with Giuseppe Monachino, an SAF Belgian observer. We have been trying to measure the rotation of the planet in near infrared to see if it is different from that observed in UV (we found one more terrestrial day - 4,9 against 3,8). I shortly described as well the last result obtained from images of the thermal emission on the night side

where we can identify the Venusian mountains.



Manos Kardasis thereafter gave an exposé about an observing method he calls DDO for *Digital Daylight Observation*. These are techniques to make images when planets are close to the Sun and must be observed during daylight. This allows us to expand the time of following and proves to be particularly interesting for Jupiter (in 2012, we observed strong upheaval in its northern hemisphere that began shortly before Solar conjunction).



Marc Delcroix talked about the project he launched last year together with Ricardo Alonso: DeTeCT, whose purpose is to look for undetected impact Jovian flashes on amateur videos. This is a software that works automatically. So far no flashes has been

revealed but the amount of data analysed is still very low. All amateurs are welcomed to participate to this project whose final idea is to increase our estimation of the frequency of impacts on Jupiter.



Jupiter was the purpose of John Rogers' intervention. He talked about the recent Jovian upheaval observed in the northern hemisphere of the planet; some unprecedented events has been found. Such results would not have been obtained without the help of the Jupos project and the amateur images we are now so many to send !

Finally, in a somewhat different domain Richard Miles, from the BAA, described results obtained from photometric studies of asteroids of the Themis family.

The BAA side-meeting: On the following



day we were all attending an amateur meet-

ing organised by the BAA also at the UCL. It has been rich of several exposés that cover a wide range of topics: cybersketching (by Peter Grego), recent developments in amateur planetary imaging (a well informed exposé by David Arditti), exposés about impact flashes, once again on Jupiter by Marc Delcroix but also a very detailed one on the moon impacts by Tony Cook; Richard Miles concluded the morning with another presentation of asteroid studies. Then on the afternoon we listened to Paul Abel about Uranus, and to two WinJupos exposés: Michel



Jacquesson (measurements for JUPOS), Manos Kardasis (mapmaking and derotation - Manos briefly allowed me to speak about video derotation at the end). Chris Hooker then spoke about polarization as a technique for analysing the lunar regolith, and Nigel

Manson gave the final talk about the Virtual atomic and molecular data center.

I want to insist on the success of such meetings. If only one evidence was needed, the number of scientists that came to listen to us at the EPSC amateur session - I think around a dozen - would be that one. Planetary astronomy is today an extremely dynamic domain that deserves to amateur many rewarding things, far from the low-noise, somewhat peripheral activity it was several years ago...



You can also read on my blog: Amateur planetary astronomy under the spotlights:

<http://www.planetary-astronomy-and-imaging.com/en/epsc-2013-london/>
and access to all conferences of the EPSC amateur session on Marc Delcroix's EPSC page:

<http://www.astrosurf.com/delcroix/doc/EPSC2013/EPSC2013.htm>



CMO/ISMO 2013/14 Mars Report #01

2013/2014 Mars Observations up until 30 September 2013

♂..... This is the first CMO/ISMO Mars Observation report in this 2003/2014 apparition and reviews the work made during the period from 27 July until the end of September 2013 ($\lambda=029^\circ\text{Ls}$) when $\delta=4.4''$. The first image reached us from Manos KARDASIS (*Mkd*) who started to take the Mars images on 27 July 2013 ($\lambda=358^\circ\text{Ls}$) when the angular diameter was only $\delta=3.9''$: He took the image through the IR light and the LCM of the surface read $\omega=108^\circ\text{W}$ with the tilt $\phi=07^\circ\text{N}$ and the phase angle $\iota=16^\circ$. With these conditions, the markings are quite scarce. In August a few IR images were obtained by Tomio AKUTSU (*Ak*),

Peter GORCZYNSKI (*PGc*) and Efrain MORALES (*EMr*). The images began to show a bit of albedo features. From mid-September, Yukio MORITA (*Mo*), Damian PEACH (*DPc*) and Don PARKER (*DPk*) joined in addition to *EMr*, *PGc* and *MKd*. The telescope-model with the 36cm aperture employed by *Mo* this apparition differs from that used before, and *PGc*'s ccd camera has been renewed.

In September, the planet was moving inside the Cnc constellation and passed through Præsepe (M44) around 9 September. Mars now is visible in the morning sky after midnight. At the end of September it entered the Leo constellation. On 14 October it went to the north of Regulus. The apparent declination D at the end of September was about $+15.6^\circ$.

♂.....The observers with observations we heard this period are as follows:

AKUTSU, Tomio (*Ak*) Cebu, the Philippines

1 IR Image (6 Aug 2013) 36cm SCT @f/24 with a DMK21AU618AS

GORCZYNSKI, Peter (*PGc*) Oxford, CT, the USA

1 Set of RGB + 3 IR Images (11, 17 Aug; 27 Sept 2013) 36cm SCT with an ASI 120MM

KARDASIS, Manos (*MKd*) Glyfada-Athens, GREECE

1 Set of RGB + 1 Colour + 1 IR Images (27 July, 28 Sept 2013) 28cm SCT with a DMK21AU618

MORALES RIVERA, Efrain (*EMr*) Aguadilla, Puerto Rico

3 Sets of LRGB Images (11 Aug; 23, 24 Sept 2013) 31cm SCT with a Flea3

MORITA, Yukio (*Mo*) Hatsuka-ichi, Hiroshima, Japan

8 Sets of RGB, 8 LRGB Colour + 1 R + 9 L Images (19,~24, 26, 30 Sept 2013) 36cm SCT with a Flea3

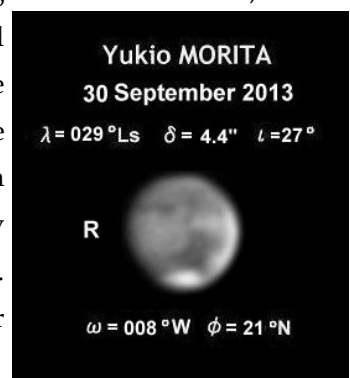
PARKER, Donald C (*DPk*) Miami, FL, the USA

1 Set of RGB + 1 IR Images (26 Sept 2013) 41cm Spec @f/26 with an ASI 120MM

PEACH, Damian A (*DPc*) Selsey, West Sussex, the UK

2 Colour + 2 R + 1 B Images (20 Sept 2013) (36cm SCT with a SKYnyx 2-0M)

♂.....The first observation of Yukio MORITA (*Mo*) was made when $\delta=4.3''$ on 19 Sept ($\lambda=024^\circ\text{Ls}$) at $\omega=119^\circ\text{W}$: There was not yielded any detail except for a weak light-and-shade expansion near the centre. The north polar cap (npc) is bright and large surrounded by the broad dark fringe. The week of the day looked fine in Hiroshima, as *Mo* tried to watch every morning. On 20 Sept and 26 Sept he observed twice every 20 minutes. On 22 Sept ($\lambda=026^\circ\text{Ls}$) at $\omega=088^\circ\text{W}$, he caught Solis L at the southern region, and to the west of Nilokeras a bright area ran at the NS direction. On 23 Sept ($\lambda=026^\circ\text{Ls}$) at $\omega=079^\circ\text{W}$ the seeing improved to disclose the inside of the disk, and the bright area to the west of Nilokeras up until Candor is remarkable. Solis L was also evident. On 24 Sept at $\omega=069^\circ\text{W}$, the seeing a bit deteriorated, but M Acidalium began to appear at the evening side. On 26 Sept, *Mo* observed twice at $\omega=049^\circ\text{W}$ and $\omega=054^\circ\text{W}$ to show a movement of M Acidalium, while the seeing must have not been well favourable judging from the image of the npc. On 30 Sept ($\lambda=029^\circ\text{Ls}$), the surface rounded to $\omega=008^\circ\text{W}$: M Acidalium was definite on the morning side, with the WN corner looking triangularly darker (normal, but usually it is difficult to show this with this tiny diameter). The streak pinched by Oxus and M Acidalium was taken light as usual. Near the equator, S Sabæus and Margaritifer S appeared to be separated. This aspect was more explicitly caught on 1 Oct ($\lambda=030^\circ\text{Ls}$), but will be reported in the next issue.



Yukio MORITA

30 September 2013

$\lambda = 029^\circ\text{Ls}$ $\delta = 4.4''$ $l = 27^\circ$

R

$\omega = 008^\circ\text{W}$ $\phi = 21^\circ\text{N}$

On 20 Sept ($\lambda=024^\circ\text{Ls}$), *Mo* watched $\omega=109^\circ\text{W}$ from Japan, while Damian PEACH (*DPc*) produced an



image with angle at $\omega=251^\circ\text{W}$. This image (set) is excellent: The east coast of Syrtis Mj is quite detailed. Hesperia is clearly cut. Hellas looks hazed. There seems to exist a bright dust to the west of Utopia (to the north of Syrtis Mj). $\delta = 4.3''$.

On 23 Sept ($\lambda=025^\circ\text{Ls}$), Efrain MORALES (*EMr*) at Puerto Rico took the images at $\omega=277^\circ\text{W}$ where Syrtis Mj was a bit before the noon, but the markings look fainter and the npc is not vivid, while the L image is better. On 24 Sept, the seeing condition improved, and Syrtis Mj looked nicer at $\omega=270^\circ\text{W}$. To the north of Syrtis Mj there is suggested to exist still the dust. In IR it is more definite than in R.

On 26 Sept ($\lambda=027^\circ\text{Ls}$) at $\omega=267^\circ\text{W}$, Don PARKER (*DPk*) obtained an excellent set of images. The east coast of Syrtis Mj was detailed. The dimmer appearance of Hesperia is certain and Hellas is hazed. The area to the north of Syrtis Mj is interesting and, if compared with the area on the images of *DPc* on 20 Sept (and *EMr*'s on 23 Sept), the dust caught by *DPc* looks diffused.

On 27 Sept ($\lambda=028^\circ\text{Ls}$) Peter GORCZYNSKI (*PGc*) took a complete set of images at $\omega=243^\circ\text{W}$: Syrtis Mj was still near the morning limb. Elysium looks near the evening terminator. The brightness of the npc might have been not uniform.

On 28 Sept ($\lambda=028^\circ\text{Ls}$), Manos KARDASIS (*MKd*)'s image set was at $\omega=147^\circ\text{W}$ where some albedo differences may be seen with a misty area near the evening terminator. M Sirenum looks to show up with an eyebrow shape at the high-latitude region of the southern hemisphere.

Going back to August, *PGc*'s excellent IR image on 11 Aug ($\lambda=005^\circ\text{Ls}$, $\delta=4.0''$) was taken at $\omega=354^\circ\text{W}$ where M Acidalium was at the morning side, and S Meridiani was dark near the centre. S Margaritifer is clearly isolated, and Aram is light. $\phi=11^\circ\text{N}$. *PGc*'s IR image on 17 Aug ($\lambda=008^\circ\text{Ls}$) at $\omega=290^\circ\text{W}$ is also excellent, and Syrtis Mj is definite on the afternoon side. The eastern part of S Sabæus looks to be visible.

EMr's first image in this apparition was taken on 11 Aug ($\lambda=005^\circ\text{Ls}$, $\delta=4.0''$) at $\omega=338^\circ\text{W}$.

Tomio AKUTSU (*Ak*)'s first image (IR) was taken on 6 Aug ($\lambda=003^\circ\text{Ls}$, $\delta=3.9''$) at $\omega=193^\circ\text{W}$ where M Cimmerium looks to be identified. Elysium may be also checked, but the image looks blurred in general. We hear *Ak* tried several times in September to focus on Mars, but the seeing condition remained poor.

(Note) "CMO/ISMO Mars Gallery of the 2013/2014 Mars" where every image here referred is compiled in http://www.kwasan.kyoto-u.ac.jp/~cmo/cmons/2013/f_image.html

Masatsugu MINAMI & Masami MURAKAMI

Forthcoming 13/14 Mars (4)

Ephemeris for the Observations of the 2013/14 Mars. II

November & December 2013

Akinori NISHITA

As a sequel to the Ephemeris for the physical observations of Mars in CMO/ISMO #413, we here list up the necessary elements of the Ephemeris for period from 1 November 2013 till 31 December

2013: The data are listed for every day at 00:00 GMT (not TDT). The symbols 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. We also 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 (denoted D).

The data here are basically based on *The Astronomical Almanac for the Year 2013*.

Date (00:00GMT)	ω	ϕ	λ	δ	ι	Π	D
01 November 2013	118.57°W	24.65°N	043.39°Ls	4.88"	31.1°	15.7°	+09°22'
02 November 2013	108.85°W	24.70°N	043.83°Ls	4.90"	31.3°	16.0°	+09°09'
03 November 2013	099.12°W	24.76°N	044.28°Ls	4.92"	31.4°	16.4°	+08°56'
04 November 2013	089.40°W	24.81°N	044.72°Ls	4.94"	31.5°	16.7°	+08°44'
05 November 2013	079.68°W	24.85°N	045.17°Ls	4.96"	31.6°	17.1°	+08°31'
06 November 2013	069.96°W	24.90°N	045.62°Ls	4.98"	31.8°	17.4°	+08°19'
07 November 2013	060.24°W	24.94°N	046.06°Ls	5.00"	31.9°	17.7°	+08°06'
08 November 2013	050.53°W	24.98°N	046.51°Ls	5.02"	32.0°	18.1°	+07°53'
09 November 2013	040.81°W	25.01°N	046.95°Ls	5.04"	32.1°	18.4°	+07°41'
10 November 2013	031.10°W	25.04°N	047.40°Ls	5.07"	32.3°	18.7°	+07°28'
11 November 2013	021.38°W	25.07°N	047.84°Ls	5.09"	32.4°	19.1°	+07°15'
12 November 2013	011.67°W	25.10°N	048.28°Ls	5.11"	32.5°	19.4°	+07°03'
13 November 2013	001.96°W	25.12°N	048.72°Ls	5.14"	32.6°	19.7°	+06°50'
14 November 2013	352.25°W	25.14°N	049.17°Ls	5.16"	32.8°	20.0°	+06°38'
15 November 2013	342.55°W	25.16°N	049.61°Ls	5.19"	32.9°	20.4°	+06°25'
16 November 2013	332.84°W	25.18°N	050.05°Ls	5.21"	33.0°	20.7°	+06°12'
17 November 2013	323.14°W	25.19°N	050.49°Ls	5.24"	33.1°	21.0°	+06°00'
18 November 2013	313.44°W	25.20°N	050.94°Ls	5.26"	33.2°	21.3°	+05°47'
19 November 2013	303.74°W	25.20°N	051.38°Ls	5.29"	33.3°	21.6°	+05°35'
20 November 2013	294.04°W	25.21°N	051.82°Ls	5.31"	33.4°	21.9°	+05°22'
21 November 2013	284.34°W	25.21°N	052.26°Ls	5.34"	33.5°	22.2°	+05°10'
22 November 2013	274.65°W	25.21°N	052.71°Ls	5.37"	33.6°	22.5°	+04°57'
23 November 2013	264.96°W	25.20°N	053.15°Ls	5.39"	33.7°	22.8°	+04°45'
24 November 2013	255.27°W	25.20°N	053.59°Ls	5.42"	33.8°	23.1°	+04°33'
25 November 2013	245.58°W	25.19°N	054.03°Ls	5.45"	33.9°	23.4°	+04°20'
26 November 2013	235.89°W	25.18°N	054.47°Ls	5.48"	34.0°	23.7°	+04°08'
27 November 2013	226.21°W	25.16°N	054.91°Ls	5.51"	34.1°	24.0°	+03°56'
28 November 2013	216.53°W	25.15°N	055.35°Ls	5.54"	34.2°	24.3°	+03°44'
29 November 2013	206.85°W	25.13°N	055.79°Ls	5.57"	34.3°	24.5°	+03°31'
30 November 2013	197.17°W	25.11°N	056.23°Ls	5.60"	34.4°	24.8°	+03°19'
01 December 2013	187.50°W	25.08°N	056.66°Ls	5.63"	34.5°	25.1°	+03°07'
02 December 2013	177.83°W	25.06°N	057.10°Ls	5.66"	34.6°	25.4°	+02°55'
03 December 2013	168.16°W	25.03°N	057.54°Ls	5.69"	34.7°	25.6°	+02°43'
04 December 2013	158.49°W	25.00°N	057.98°Ls	5.73"	34.8°	25.9°	+02°31'
05 December 2013	148.83°W	24.96°N	058.42°Ls	5.76"	34.8°	26.1°	+02°19'
06 December 2013	139.17°W	24.93°N	058.86°Ls	5.79"	34.9°	26.4°	+02°07'
07 December 2013	129.51°W	24.89°N	059.30°Ls	5.83"	35.0°	26.6°	+01°55'
08 December 2013	119.86°W	24.85°N	059.74°Ls	5.86"	35.1°	26.9°	+01°44'
09 December 2013	110.21°W	24.80°N	060.17°Ls	5.90"	35.1°	27.1°	+01°32'
10 December 2013	100.56°W	24.76°N	060.61°Ls	5.93"	35.2°	27.4°	+01°20'
11 December 2013	090.91°W	24.71°N	061.05°Ls	5.97"	35.3°	27.6°	+01°09'
12 December 2013	081.27°W	24.66°N	061.49°Ls	6.00"	35.4°	27.9°	+00°57'
13 December 2013	071.63°W	24.61°N	061.92°Ls	6.04"	35.4°	28.1°	+00°46'
14 December 2013	062.00°W	24.56°N	062.36°Ls	6.07"	35.5°	28.3°	+00°35'

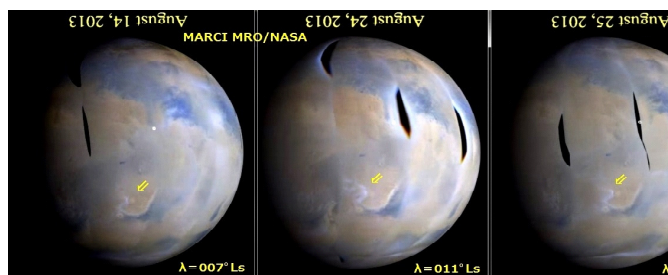
Date (00:00GMT)	ω	ϕ	λ	δ	ι	Π	D	
15 December 2013	052.37°W	24.50°N	062.80°Ls	6.11"	35.6°	28.6°	+00°23'	
16 December 2013	042.74°W	24.45°N	063.24°Ls	6.15"	35.6°	28.8°	+00°12'	
17 December 2013	033.11°W	24.39°N	063.67°Ls	6.19"	35.7°	29.0°	+00°01'	
18 December 2013	023.49°W	24.33°N	064.11°Ls	6.23"	35.7°	29.2°	-00°10'	
19 December 2013	013.87°W	24.27°N	064.55°Ls	6.27"	35.8°	29.4°	-00°21'	
20 December 2013	004.26°W	24.20°N	064.99°Ls	6.32"	35.8°	29.6°	-00°32'	
21 December 2013	354.65°W	24.14°N	065.42°Ls	6.36"	35.9°	29.9°	-00°43'	
22 December 2013	345.04°W	24.07°N	065.86°Ls	6.40"	35.9°	30.1°	-00°54'	
23 December 2013	335.44°W	24.00°N	066.30°Ls	6.44"	36.0°	30.3°	-01°04'	
24 December 2013	325.84°W	23.93°N	066.74°Ls	6.49"	36.0°	30.5°	-01°15'	
25 December 2013	316.24°W	23.86°N	067.17°Ls	6.53"	36.1°	30.6°	-01°25'	
26 December 2013	306.65°W	23.79°N	067.61°Ls	6.57"	36.1°	30.8°	-01°36'	
27 December 2013	297.07°W	23.72°N	068.05°Ls	6.62"	36.1°	31.0°	-01°46'	
28 December 2013	287.48°W	23.64°N	068.48°Ls	6.67"	36.1°	31.2°	-01°56'	
29 December 2013	277.90°W	23.57°N	068.92°Ls	6.71"	36.1°	31.4°	-02°06'	
30 December 2013	268.33°W	23.49°N	069.35°Ls	6.76"	36.1°	31.6°	-02°16'	
31 December 2013	258.76°W	23.41°N	069.79°Ls	6.81"	36.1°	31.7°	-02°26'	
01 January 2014	249.20°W	23.33°N	070.23°Ls	6.86"	36.2°	31.9°	-02°36'	---

Letters to the Editor

●.....Subject: *Elysium Trailing Clouds*
Received: 1 September 2013 at 12:33 JST

Dear Christophe, I believe you are busy in preparing for the coming EPSC in London.

On our side, Reiko is quite well, still eager to conquer as many art museums as possible. I am preparing myself for the coming Mars, tuning up my visual observing system: telescope, binoviewer and eyepieces, and also trying to tune up my brain, to immerse myself in information on Martian climate as well. Attached here is a montage from the recent MARCI MRO images showing the emergence



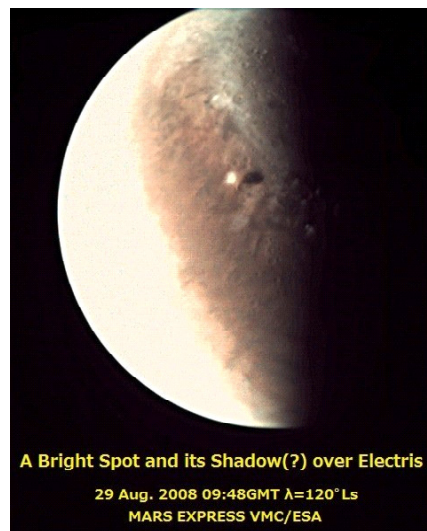
of Elysium Trailing Clouds in this Martian year. The season is quite close to the past records of the simi-

lar events, so it can be a seasonal manifestation of the Martian water vapor activity? Best Regards,

○.....Subject: *A Spherical Cloud floating high*
Received: 6 September 2013 at 02:11 JST

Dear Christophe, Thanks a lot for your comments on the Elysium Trailing Clouds the other day! I agree with you that they are not associated with the summertime Hadley cell. As far as I could have checked, they appear around $\lambda=000^\circ\text{Ls}$ and 180°Ls ...both equinoxes. So that, I guess, they might be related to the equinox patterns of double Hadley circulation cells.

These days I have been enjoying browsing through ESA's VMC Mars Webcam's Flickr. I am attaching here a quite unusual image; An extremely bright spot with adjoining surprisingly

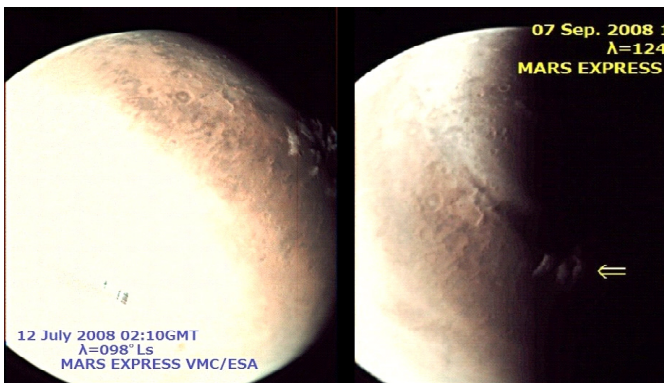


dark well-defined patch was shown near the dawn terminator over the classical Electris. Roughly estimated position is 192°W 45°S, close to the 2003&2012 terminator projected clouds area... actually this image seems to show the sign of the terminator protrusion. The bright spot seems to have been around 180km in across. And the dark patch is clearly detached from the bright spot; so that if it was the shadow of the glittering spot, the bright object should have had a spherical shape, and have been floating very high in the Martian sky. It's far beyond my understanding. If you had a chance at the coming EPSC in London, Christophe, could you ask some professional scientists what on Mars the phenomenon was?

Change of the object with the passing time is also very interesting :

http://www.flickr.com/photos/esa_marswebcam/sets/72157632224124774/

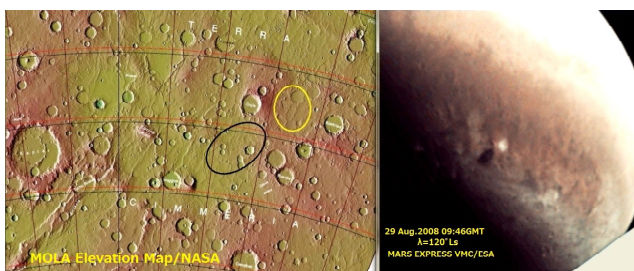
I am also attaching some 2008 VMC images of the 2003&2012 type (?) dawn terminator projection.



Best Wishes for your performance in London,

○...*Subject: High altitude cloud*
Received; 10 September 2013 at 15:57 JST

Dear Christophe, Attached montage is from the 29 August 2008 MEX VMC image showing the



bright spot with its shadow cast, and the corresponding plots on the MOLA Elevation Map. Simple rough mental calculation suggested that the

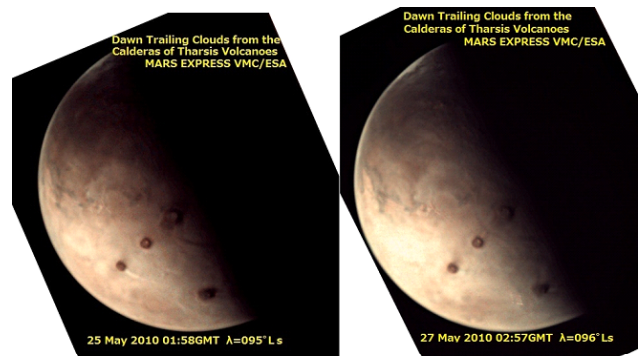
"Huge Ad-balloon" was about 180km across and 60km thick spheroidal, floating at an altitude of 80km, with the top reaching 110km height, and the bottom staying at 50km above the ground!

Best Wishes,

○...*Subject: Tharsis Dawn Trailing Clouds*
Received: 22 September 2013 at 19:43 JST

Dear Christophe, Thanks for your Email the other day. I am looking forward to your note on the high altitude Martian clouds!

I am attaching here today, again other MEX VMC images in the midst of "the Tharsis Bright Morning Fog" season showing the morning trailing clouds from some of the Tharsis volcanoes (other than Arsia Mons for which we already know many similar examples). They seem to have been higher than the sea of dawn fog from which the heads of the huge volcanoes poked out. Trailing clouds of the Montes Ascræus and Olympus seem to have originated at a certain altitude on the flank of each volcano (though I haven't checked the contour maps) rather than from each of the calderas. I guess they have some influence on the collective formation of the Tharsis Morning Bright Clouds.



Best Regards,

Reiichi KONNAI (Fukushima, JAPAN)

●...*Subject: Re: Elysium Trailing Clouds*
Received: 2 September 2013 at 06:23 JST

Dear Reiichi, Thanks for the montage ! I don't know if these are really trailing clouds just like we saw last year - because the martians season is too early here. Trailing clouds are an effect of the summertime Hadley cell ;)

Mars is still a bit far in my mind, although the

next apparition is around the corner. On my side yes I'm about to attend again to EPSC in two weeks (in London) where I will give a talk about Venus. Only after I will be able to write for ISMO again (I will have some words to say about EPSC first, but I do not have ideas yet for Mars itself...)

Let's keep in touch, we must animate the ISMO for the 2014 Mars ! best wishes,

○.....*Subject: Re: A Spherical Cloud floating high*
Received: 10 September 2013 at 07:05 JST

Dear Reiichi, Woh, these are great images that you found! For me this is just the same as we observed in 2012 (and before).

The casted shadows and night presence would prove that this is a high altitude phenomena... I will look if I can ask someone at the EPSC... Best wishes,

○.....*Subject: Re: High altitude cloud*
Received; 20 Sept 2013 at 05:15 JST

Dear Reiichi, Again thanks ! This confirms that the cloud is really high. I should write a short ISMO note based on your last two e-mails... Best wishes,

Christophe PELLIER (Nantes, FRANCE)

●.....*Subject: Chamberlain's Guide to Japan*
Received; 5 September 2013 at 08:51 JST

Dear Masatsugu, I am working on a book proposal for a new Mars book (for U of Arizona Press), and am revising the chapter draft on Percival Lowell. I am recalling our trip to Noto in 2004 - it seems that Lowell had a guidebook, probably Murray's, but it was not the 3rd edition by Basil Hall Chamberlain which appeared in 1891. I am unable to find any references to the earlier editions (or the authors thereof). Do you know this reference?

It would be interesting sometime to read those old guide books to see what they had to say about Japan at the time, and to compare the accounts therein with what Lowell wrote in Noto and elsewhere.

***I should have some material for you on Mars 2003 from my notebooks in a few days - I have been rereading the notebooks and marking passages of

interest. Meanwhile, my very best to you,

Bill SHEEHAN (Willmar, MN)

●.....*Subject: Re: Chamberlain's Guide to Japan*
Received: 10 September 2013 at 21:19 JST

Dear Bill, I'm sorry I am slow in replying to your enquiry. I tried to remember but in vain how we settled the question about the reason why Percival Lowell had chosen the way to Harinoki Pass when he tried to go back. We supposed there were some guide books, but I think unfortunately I could not identify any of them. (I might have heard some references later, but unfortunately then I had lost completely interest in his trip.)

What I remember a bit is about a possibility in which Percival might have heard the episode of Sassa-Narimasa's adventure as noted in

<http://www.kwasan.kyoto-u.ac.jp/~cmo/cmomn3/LProads1.htm>

I did not know even how Chamberlain had any relation with the Percival trip to Noto. However, I

it was—was opened, several parties of foreign travellers, including Satow, Chamberlain, Atkinson, and others, crossed the pass without much difficulty. Soon, however, the ravages of those influences we call the tooth of time began to tell; avalanches and landslips, with the heavy autumn rains, before long had battered the track out of all recognition, and the Harinoki-tōge became a mere wreck of its former self. For practical purposes it was soon abandoned, and it is now dead—indeed, almost buried—and its epitaph has been already written *Tōge fuit*. An American traveller, Mr. P. Lowell, in his book on “Noto, an unexplored corner of Japan,” describes an attempt he made to cross the pass in the spring some seven or eight years ago, from the west, or Toyama, side. The four chapters he devotes to the expedition, however, only bring the reader to the beginning of the pass proper, as on reaching Ryūzanjita, at the foot of Tateyama, he found himself unable to proceed further and had to return. Earlier than that another traveller, the late Mr. Francis, of Shanghai, in 1885, tried it from the east or Ōmachi side, but met with little better success. He reached the top of the pass, after having nearly been killed through a slip on a steep talus of earth high above a torrent bed, but was then obliged to turn back. His guides told him the expedition had not been made for some years, excepting by occasional hunters. “One year,” they said, “two native travellers

just found, Walter Weston had written that, before

Percival, several including Chamberlain had passed easily the route to Harinoki, (and a few years later than Percival, Weston himself must have passed the route,) and so the route must have already been quite famous and well-known.

Weston's famous book: "*Mountaineering and Exploration in the Japanese Alps*" was published later in 1896 by John Murray in London and it is now readable on Internet, and as shown here (jpg image) the page of the book just implies Percival Lowell was merely unfortunate.

<http://ia600809.us.archive.org/zipview.php?zip=/11/items/olcovers585/olcovers585-L.zip&file=5856233-L.jpg>

Even then we may need to pin down the guide book Percival carried with. I will write to you if I could come across any hint. With best wishes,

Masatsugu MINAMI (Mikuni, Fukui, JAPAN)

●.....*Subject: Mars images (September 20th)*
Received: 22 September 2013 at 02:17 JST

Hi all, The red planet is now back in the skies before dawn. Despite the tiny angular diameter of 4.2" many familiar details can be seen such as Syrtis Major.

http://www.damianpeach.com/mars1314/2013_09_20rgb.jpg

Best Wishes

Damian PEACH (Selsey, West Sussex, the UK)
Web: <http://www.damianpeach.com/>
FB: <http://www.facebook.com/peachastro>

●.....*Subject: Mo19Sept13*
Received: 22 September 2013 at 08:27 JST

This is my first contribution in this apparition. While the weather here is not preferable, how about at Fukui? I hope you will soon recover.

This set of Mars images was the first one made by the use of C14. The focusing is cosy because the camera became placed lower than before. The resolution looks finer because the exposure time has become shorter than before. Best regards

<http://www.kwasan.kyoto-u.ac.jp/~cmo/cmons/2013/130919/Mo19Sept13.jpg>

○.....*Subject: Mo20Sept13*
Received: 22 September 2013 at 23:34 JST

Taken twice just after the planet was seen above the neighbour's roof. Regards.

<http://www.kwasan.kyoto-u.ac.jp/~cmo/cmons/2013/130920/Mo20Sept13.jpg>

○.....*Subject: Mo21~26Sept13*
Received: 29 September 2013 at 22:12 JST

Five sets taken during the period 21 Sept ~26 Sept. The images on 23 Sept look to show some dusty-like expansion areas. Best Regards.

<http://www.kwasan.kyoto-u.ac.jp/~cmo/cmons/2013/130921/Mo21Sept13.jpg>
<http://www.kwasan.kyoto-u.ac.jp/~cmo/cmons/2013/130922/Mo22Sept13.jpg>
<http://www.kwasan.kyoto-u.ac.jp/~cmo/cmons/2013/130923/Mo23Sept13.jpg>
<http://www.kwasan.kyoto-u.ac.jp/~cmo/cmons/2013/130924/Mo24Sept13.jpg>
<http://www.kwasan.kyoto-u.ac.jp/~cmo/cmons/2013/130926/Mo26Sept13.jpg>

Yukio MORITA (Hiroshima, JAPAN)

●.....*Subject: Mars*
Received: 28 Sept 2013 at 15:18 JST

Hello Mr. Minami, I hope all is well. Here is my first submission from my latest session on September 24th, 09:41ut.

<http://www.kwasan.kyoto-u.ac.jp/~cmo/cmons/2013/130924/EMr24Sept13.jpg>

Clear Skies.

Efrain MORALES RIVERA (Peruto Rico)

●.....*Subject: Mars 2013/09/28*
Received: 29 September 2013 at 04:36 JST

Hello, here is a tiny Mars:

<http://kardasis.weebly.com/mars-2013-14.html>

○.....*Subject: Mars 2013/09/28 b*
Received: 30 September 2013 at 17:34 JST

Hello, here is a better image some minutes before the previous I uploaded, with a much better blue channel. Clouds on Tharsis.

<http://www.kwasan.kyoto-u.ac.jp/~cmo/cmons/2013/130928/MKd28Sept13.jpg>

<http://kardasis.weebly.com/mars-2013-14.html>

Manos KARDASIS (Glyfada-Athens, GREECE)

●.....*Subject: Mars - 2013-September-27*
Received: 29 Sept 2013 at 10:12 JST

Gentlemen, This image was captured in average seeing. This is my first good color image of the season. There appears to be an afternoon cloud over Elysium.

<http://www.kwasan.kyoto-u.ac.jp/~cmo/cmons/2013/130927/PGc27Sept13.jpg>

Regards,

Peter GORCYNski (CT, the USA)

TEN YEARS AGO (222)

----- CMO #280 (10 October 2003),
CMO#281 (25 October 2003)

---<http://www.hida.kyoto-u.ac.jp/~cmo/cmomn0/cmo280/index.htm>

<http://www.hida.kyoto-u.ac.jp/~cmo/cmomn0/cmo281/index.htm>

This time also, we shall review two CMOs, that is, CMO #280 and CMO #281 published twice in October 2003.

CMO #280 contains the observational report (2003 Great Mars CMO Report (15)) which treated the international observations made during the period from 16 September to 30 September 2003. The super opposition time already passed, while the angular diameter was well large and read still $\delta=23.4''$ to $20.9''$. The Martian season proceeded from $\lambda=262^\circ\text{Ls}$ until 270°Ls ; thus the southern hemisphere received the summer solstice. The central meridian ϕ was 19°S to 20°S ; thus the southern polar region largely faced toward us. The phase angle ι was 16° to 25° and the defect illumination began to again catch our eye.

The total number of observers decreased to 47 with 336 observations. Domestically 11 members joined with 190 observations: Tohru IWASAKI (*Iw*) became more active. From the American continents 15 observers joined with 60 observations, from Europe 17 observers with 73 observations, and from Asia Oceania 4 observers with 13 observations. As an impressive observation, the Canon LAU phenomenon (as reported before at $\lambda=257^\circ\text{Ls}$) was again caught by Don PARKER (*DPk*) on 27 September ($\lambda=269^\circ\text{Ls}$): This was a phenomenon where a wine-coloured roundish patch was seen through the whitish morning mist. It was concluded that this occurred at the same place by taking account of the different phase angle. It might have been given rise to at this season because of a geographical and/or temperature gradient; it must be the place where the de-concentration of mist occurs more rapidly than the area outside. Next some remarks were given about the morning mist or frost. Because of the procession of the season, the water vapour moved much northwards, and the morning mist or frost now looked conspicuous as the phase angle increased. To the naked eyes, the morning side was largely covered by a white mist including frost, while the evening side was rather yellowish and quite different. It was also suggested that after the spring equinox of the summer hemisphere, the warmed air mass comes down from the summer polar region towards the equatorial region, while since the equator loses the Coriolis force, the air is more cooled down to make a condensation mist belt. This time the atmosphere was so mingled with airborne dust, that the equator band might have been too critical to produce the thicker mist. However the present season proved thus very interesting concerning the mixture of water-condensate mist and the airborne dust. The presence of the white mist does not necessarily imply the decrease of the dusts because the nuclei of the thick white condensates must have been composed of the airborne dust particles. On the other hand, the wine-coloured area must be the place rather free from the airborne dusts. Thus we may say the Martian season to which we faced in super-2003 must have been a very important season to be observed much thickly. Of

course we had several timely observations including Maurice VALIMBERTI (*MVI*) and others.

Otherwise at the corners subtitled Thyle, Dædalia, and Eridania, Ausonia, Trinacria and Hellas we were able to discuss the southern higher latitude region, some darkened areas, and several aspects of the southern continents.

The spc was observed to have been thawing regularly. Thyles Mons, previously mentioned, was quite critical: We compared MIYAZAKI (*My*)'s image on 2 Sept ($\lambda=253^\circ\text{Ls}$) at $\omega=136^\circ\text{W}$ with that of *DPk*'s on 23 Sept ($\lambda=266^\circ\text{Ls}$) at $\omega=138^\circ\text{W}$.

Finally we note that the final stage of Novus Mons was well observed from Asia-Oceania. In 1988 one of us (*Mk*) took Novus Mons at $\lambda=266^\circ\text{Ls}$ by the use of a 10cm Nikon refractor exposed on TP2415 (see CMO #116), and fortunately this 2003 period *Mk* was able to chase it on 16 Sept ($\lambda=262^\circ\text{Ls}$) from $\omega=331^\circ\text{W}$ to 013°W as well as the sights on the following day. Visually also *Iw* observed it on 16 Sept and 18 Sept every 40 minutes. The late Erwin Van der VELDEN (*EVI*)'s images at $\omega=287^\circ\text{W}$, 299°W on 22 Sept ($\lambda=266^\circ\text{Ls}$) show it clearly. Hitomi TSUNEMACHI (*Ts*) came down to Fukui to check it with *Mn* and *Nj*. On 22 Sept ($\lambda=266^\circ\text{Ls}$), *Ts* observed from $\omega=265^\circ\text{W}$ to 330°W . The other of us (*Mn*)'s chasing at Fukui of the faint trace of Novus Mons ended around on 26 Sept ($\lambda=268^\circ\text{Ls}$) at $\omega=288^\circ\text{W}$, and 27 Sept ($\lambda=269^\circ\text{Ls}$) at $\omega=278^\circ\text{W}$. It finally went to Europe and the drawing by Nicolas BIVER (*NBV*) on 26 Sept ($\lambda=268^\circ\text{Ls}$) at $\omega=019^\circ\text{W}$ shows it on the evening side. Finally Damian PEACH (*DPc*)'s images on 28 Sept ($\lambda=269^\circ\text{Ls}$) at $\omega=351^\circ$ & 002°W show a remnant, while we should say it proved no whiteness. We thus concluded that Novus Mons ceased to exist within $\lambda=269^\circ\text{Ls}$. See the full account in

<http://www.kwasan.kyoto-u.ac.jp/~cmo/cmomn0/280OAA/index.htm>

including the behaviour of the np hood.

LtEs are collected those during the period from 25 September to 9 October 2003. From abroad, we received from John BARNETT (VA, the USA), Nicolas BIVER (France), Jeff BEISH (FL, the USA), Bob BUNGE (MD, the USA), Brian COLVILLE (Canada), Daniel CRUSSAIRE (France), Tom DOBBINS (OH, the USA), Mario FRASSATI (Italy), Martin GASKELL (NE, the USA), Ed GRAFTON (TX, the USA), David KLASSEN (Rowan University, NJ, the USA), Silvia KOWOLLIK (Germany), Frank J MELILLO (NY, the USA), Don PARKER (FL, the USA), Tim PARKER (JPL/CIT, CA, the USA), Damian PEACH (the UK), Christophe PELLIER (France), Bill SHEEHAN (MN, the USA), Clay SHERROD (AR, the USA), Elisabeth SIEGEL (Denmark), Dan TROIANI (IL, the USA), Maurice VALIMBERTI (Australia), John WARELL (LPL, AZ, the USA), and domestically from T AKUTSU (Tochigi), T ASADA (Fukuoka), T HIKI (Nagano), T IWASAKI (KitaKyushu), T KUMAMORI (Osaka), and Y MORITA (Hiroshima).

Next, CMO #281 contained the 16th 2003 Great Mars Report which was concerned with the observations made during the period from 1 October 2003 ($\lambda=271^\circ\text{Ls}$) until 15 October 2003 ($\lambda=280^\circ\text{Ls}$). The apparent diameter went down from $\delta=20.7''$ to $\delta=17.9''$. The tilt was from $\phi=20^\circ\text{S}$ to 22°S , and the phase angle went up from $\iota=26^\circ$ to

33°. The season was similar to the one in 1988 when the planet was closest to the Earth (on 22 September 1988, $\lambda=277^\circ\text{Ls}$).

The observers further decreased in number to a total of 33 with 221 observations. Japanese members were counted 7 with 123 observations. MORITA (*Mo*) and AKUTSU (*Ak*) met with some troubles of their telescopes. We received further from 12 observers of the US with 54 observations, 11 observers with 35 observations from Europe and 3 observers from Asian-Oceania with 9 observations. Just Don PARKER (*DPk*) and Johan WARELL (*JWr*) contributed many.

The observations of the Canon LAU phenomenon at the morning time of the Amazonis area followed also in Report (16): This time it was observed from the west coast of the US to Japan. The observations by T AKUTSU (*Ak*), M VALIMBERTI (*MVl*), T KUMAMORI (*Km*) et al were cited. The local times of the de-concentration of mists were counted. *JWr*'s position was located in the US as a successive site from *DPk*'s location, while it was suggested that they were not necessarily in good harmony to chase the changing of the morning mists. As the wine coloured grounds, the regions were pointed out to the east of Thaumasia Fœlix and at M Chronium. As to the latter, in addition to the observations by *Ak*, *MVl* and *Km*, D PEACH (*DPc*)'s images joined on 14 Oct ($\lambda=279^\circ\text{Ls}$). Notably it was also possible to visually detect the wine-coloured region especially to the east of Solis L. Since the phase angle increased, the evening complex mists were thickly observed. As to the morning Hellas covered by a thick condensate mist, it was stated before. This time, Ch PELLIER (*CPl*) depicted it on 7 Oct ($\lambda=275^\circ\text{Ls}$) and on 11 Oct ($\lambda=278^\circ\text{Ls}$). Elisabeth SIEGEL (*ESg*), A CIDADÃO (*ACd*) et al also checked it. *DPk*'s images on 14 Oct ($\lambda=279^\circ\text{Ls}$) show that Hellas was quite inside, but his B images proved still a white veil over Hellas. So it was suspected that Hellas in this period was covered by condensate mist from morning to evening. The brightness of Hellas was also seen on Ed GRAFTON (*EGf*)'s images at $\lambda=277^\circ\text{Ls}\sim\lambda=279^\circ\text{Ls}$. Furthermore, *DPk*'s B images at $\lambda=279^\circ\text{Ls}$ showed that the white condensate covered the area of Iapygia Viridis to the north of Hellas. *JWr* further showed at $\lambda=280^\circ\text{Ls}$ that the condensate mist flew out to Æria to the north of S Sabæus. This indicated a flowing-out of condensate along the equatorial zone in this season. It was suggested in the US and Europe that some dust disturbances in this period (Oct 2003) around Hellas and Ausonia, but it was denied.

A description of the vicinity of the spc was given including the aftermath of Novus Mons. The aspects of Olympus Mons compared with that of Arsia Mons are touched in relation with the case in 1988. The summit of Olympus Mons had become free from the orographic cloud from $\lambda=200^\circ\text{Ls}$, and so dull in general, while in 1988 the season corresponded to the opposition time, and hence we can regard in 1988 the opposition effect worked strongly. In 1971, the season came after opposition. It is known that Arsia Mons continues to suffer from the condensate activity in the evening for a long time and should be supposed to be clouded up to this season. The Arsia cloud really once decreases at around $\lambda=230^\circ\text{Ls}$, but soon becomes reactive from before the south-

ern summer solstice. In 1988, at this period Arsia Mons was vivid in B while Olympus Mons was not. More detailed observations around the areas were expected to be made in 2005. Concerning the nph, *DPk*'s and *JWr*'s images brought some results around at $\lambda=273^\circ\text{Ls}\sim\lambda=276^\circ\text{Ls}$ together with the results at $\lambda=279^\circ\text{Ls}$ at by *MVL*. Occultation of Mars on 6 October 2003 was observable at Oceania including New Zealand and Australia. *MVL* sent us a beautiful set of images of the occultation from 16:32 to 16:39 GMT.
<http://www.kwasan.kyoto-u.ac.jp/~cmo/cmomn0/281OAA/index.htm>

LtEs received during the period from 10 October to 24 October 2003 were cited. From the overseas, John BARNETT, Peter BERRY (FL, the USA), Nicolas BIVER, Brian COLVILLE, Tom DOBBINS, Ed GRAFTON, Alan HEATH (the UK), Silvia KOWOLLIK, Eric NG (吳偉堅, Hon Kong), Don PARKER, Tim PARKER, Damian PEACH, Christophe PELLIER, Clay SHERROD, Elisabeth SIEGEL, Maurice VALIMBERTI, and John WARELL sent. Domestically we received emails from T AKUTSU, T ISHIBASHI (Tokyo), T IWASAKI, T KUMAMORI, N MATSUMOTO (Nagasaki), K OKANO (Tokyo), K OSA (Ishikawa), and M UMEDA (Fukui City Museum of Natural History).

Finally, it was M MINAMI (*Mn*) who described Ten Years Ago (98) in CMO #138 (25 October 1993 issue). Twenty years ago, in October, the season of the planet Mars had already ended, and Mars appeared near the Sun: The conjunction was expected to occur in December. Hence there were written 1992/1993 Mars Notes. In this issue, published were three Notes; (9), (10) and (11). The first one (9) was entitled "*Distributions of Observation Rates of Hk, Id, Iw, Mk, Mn & Mo in 1992/93*", (10) was "*The NPC Watched from $\omega=330^\circ\text{W}\pm 10^\circ\text{W}$ at around 355°Ls , 015°Ls and 030°Ls* " and (11) was "*The Recession of the North Polar Cap Observed by T IWASAKI (Iw) at $000^\circ\text{Ls}\sim 040^\circ\text{Ls}$* ". Since *Iw* observed many times, we also obtained a spiral recession tendency. In LtE, there was recorded a reply from Europe about the *Mo*'s observation of the Elysium dust on 13 Feb 1993.

Masami MURAKAMI (Mk) and Masatsugu MINAMI (Mn)

International Society of the Mars Observers (ISMO)

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CMO #415/ ISMO #41 (25 October 2013)

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