

## MARS

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**A Triptych of Planetary Themes:  
Mars in 1914, Lowell Observing Venus in Daylight,  
and Mellish Revisited**

By

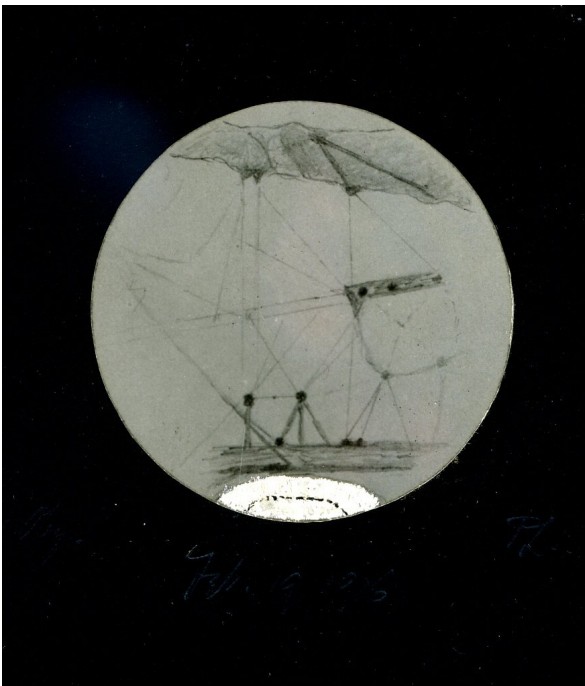
**William SHEEHAN****1914: the Year the Peace Ended**

August 1914 marks the centennial of the outbreak of World War I, and will be commemorated in many places. For instance, a friend in Britain recently wrote to me to say that "the British government have put more than £50 million into supporting a vast range of commemorative and educational projects spread over four years to mark the war. It's quite extraordinary, and some of it is frankly rather puzzling. The French are planning a whole series of events across France, where every commune has its memorial. The Germans have been very slow off the mark. In their culture apparently WWI has been ignored except as the source of the Versailles Treaty and the road to National Socialism. But now invited to various events, and in response to growing public interest,

they have appointed a senior figure to recommend appropriate commemoration." In the U.S., so far at least, interest has been muted; but then perhaps we've been "commemorated" to death. We're just finishing up the 150th anniversary of the Civil War, which has seen, for instance, reruns of daily newspaper reports from the period in the NY Times, and a virtual onslaught of material on the Kennedy assassination. Even though the US mobilization of 1 million men was a more brutal conscription than among the other Allies, and the American intervention on the Meuse-Argonne in 1918 was crucial, American entry into the war was delayed until near the very end, and it emerged relatively unscathed; the war effort was followed by a near-total collapse of interest in European affairs marked by the failure of the ailing Wilson to win support for the League of Nations and the isolationism of the 1920s. Are

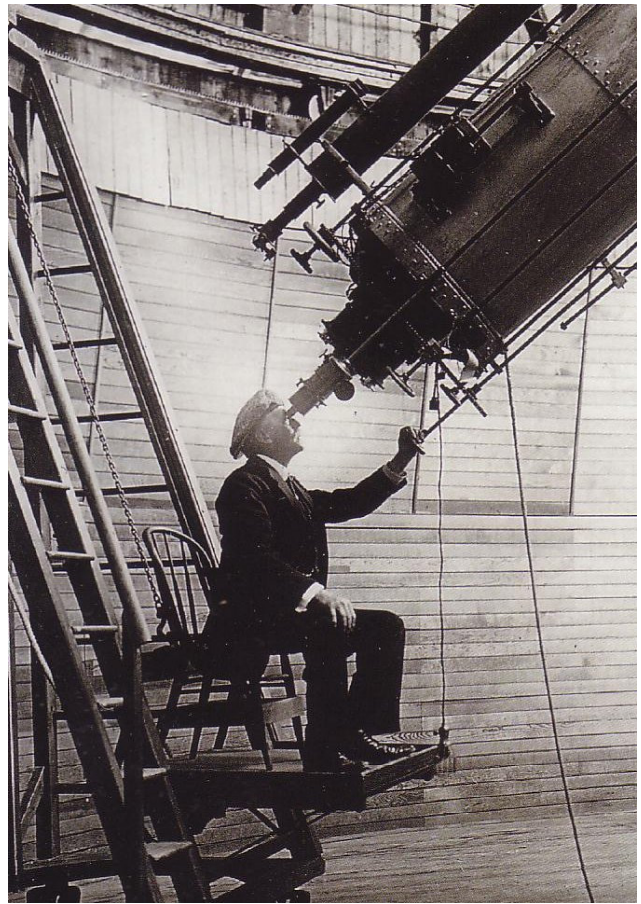
there any events planned in Japan?

The War centennial also calls to mind some Martian centennials. For instance, we have already (as of this writing) passed the centennial of the January 5, 1914 opposition of Mars, when the planet's apparent diameter was 15".1. This was, by the way, the second-to-last opposition observed by Percival Lowell, who had just recovered from a late-1913 "breakdown," briefer and less severe than that which had immobilized him after he returned from Mexico but no doubt due to the same causes of overwork and discouragement. One Mars drawing from 1914, in Lowell's inimitable style, is reproduced here.



It was in 1914, too, that the iconic image of Percival Lowell, swankily dressed with a soft cap turned backward covering his bald head, three-piece suit, and polished suede shoes, observing not Mars but Venus during broad daylight with the 24-inch Clark.

Many a Mars devotee, seated on Lowell's chair, has emulated his famous pose; including the famed Mars observer (and men-



tor to amateurs) Chick Capen, and yours truly.



(This was posed by Bill Sheehan and taken by Klaus Brasch in May 2012, with the telescope (as close as we could get it) in the same position as it was in October 1914 when Percy sat in that chair gazing, in broad daylight, at the Planet of Loves.)

### LOWELL Observing Venus by Daylight

The exact date of the famous photo of Lowell observing Venus has only recently been determined. In the albums of

photographs at Lowell Observatory, the date is given as August 1914, but Lowell was not in Flagstaff at the time, nor was the photographer, Philip Fox, formerly an astronomer at Yerkes but by 1914 a professor at Northwestern University, near Chicago. Lowell was, though only briefly, in Flagstaff in the middle of October, and happened to be there when Fox dropped by after a visit to the Grand Canyon. I looked into existing materials in the Lowell archives in the spring of last year, including C. O. Lampland's diary, and established that Fox and Lowell were together only on the date of October 17, 1914, and that Venus an Evening Star, with an apparent diameter of 36.9 arcseconds and a phase of 30.3%--would have made good daytime viewing, culminating just when the Clark refractor was in the position shown in the image. So this image was not posed as I once believed Percival really was observing the planet at the time. Casual dress apparently did not appeal to him even when he was working.

It should be possible, by the way, to determine (Donald Olson style) not only the day but almost the exact time that Fox clicked the shutter--but probably not until the



Clark refractor, recently removed for refurb-

ishing from its dome on Mars Hill for the first time since it came back from its brief foray to Mexico, returns from Lowell instrument man Ralph Nye's shop. It is expected to be back in place well before the Observatory marks the centennial of its founder's death in November 1916.

It is rather sobering to recall what was going on in Europe at the moment that Fox captured this serene portrait of a man pursuing his otherworldly passion. The battle of the Marne had taken place just a month before, and the lines first stuck north of the river Aisne as the men dug themselves in the trenches. Moltke, the German general charged with implementing the Schlieffen plan, had already been dismissed, and replaced by Falkenhayn, and on October 10, as the Germans raced to outflank the allies in what became known as the "race to the sea" and just a week before Lowell observed Venus-- Antwerp fell. At the very moment Lowell swiveled the dust cap from the objective lens to Venus, the Germans were moving toward Ypres, trying to outflank the enemy, and doing so as the British, moving up from the Aisne, were arriving with the intention of outflanking the Germans. The two sides collided quite accidentally at Ypres the same week the iconic photo of Venus was taken on Mars Hill, and thus began what is known as the First Battle of Ypres. The god of war failed to slake his thirst despite the fact that the two sides engaged in a mutual battering that would last for weeks, in which, as British war historian A. J. P. Taylor wrote, "men were fed in day after day on a narrow fortified front; there was much slaughter and no

result. The British Expeditionary Force suffered heavier casualties at Ypres than throughout the previous campaign. The British regular army was shattered, leaving only a framework for the new mass armies that were to come."

### MELLISH Again

Of course, the war was still raging a year later and in the spring, in what became known as the Second Battle of Ypres, the Germans unleashed chlorine gas as a weapon, with the British following suit in September at Loos. In November 1915 the same month that Einstein in Berlin completed work on the General Theory of Relativity, and arrived at a small correction to the Newtonian prediction to explain a hitherto puzzling excess in the precession of the perihelion of Mercury, John E. Mellish, at Yerkes Observatory, made observations of Mars that have been previously discussed in these pages.

With Mars still far from the Earth, he was regularly studying Mars to his heart's content with the observatory's 12-inch refractor, and on the morning of November 13, 1915 (according to the date later calculated by Daniel Harris at Yerkes at Mellish's request) he was able to avail himself of the 40-inch itself. That November southern Wisconsin enjoyed an unusually balmy "Indian Summer," with weather reports showing temperatures in the first part of the month running several degrees above normal. The sun rose at 6:42 a.m. on November 13 - it was a brisk clear morning, with the temperature hovering near freezing (but well above the dew point) and

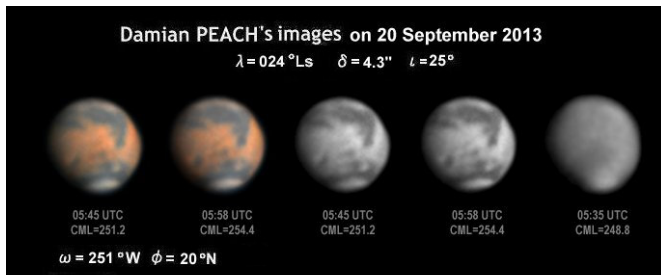
without a breath of wind - and Mellish followed Mars, a small disk only 7".7 across (the LCM was 61° at sunrise) as it stood at an altitude of some sixty degrees in the morning sky. Employing magnifications of 750x and 1100x, he noted "[Mars] is not flat but has many craters and cracks. I saw a lot of the craters and mountains with the 40" and could hardly believe my eyes and that was after sun rise and Mars was high in a splendid sky and I used a power of 750."

Though I have tried to keep an open mind, personally I have always inclined to the view that Mellish saw only an illusion of craters and cracks. The small cold disk of Mars, far from the Earth, cast a spell on him, and he was misled. Probably some of the detail he saw consisted of clouds or frost, and when he decided that Mars was not flat, he must have seen cloud or other bright areas projecting above the limb due to what Hermann von Helmholtz referred to as the "irradiation illusion." CCD imaging of Mars under conditions similar to those in which Mellish reported his canals and cracks, as CCD imagers such as Damian Peach (*DPc*) of the U.K. and Leo Aerts (*ALt*) of Belgium who have imaged the planet's disk from the Earth when it has been as small as it was when Mellish observed, show more detail than he could have made out even with the 40-inch refractor, and suggest aspects that Mars might have presented to his eye. (Refer to the **APPENDIX** below for *DPc*'s and *ALt*'s images.)

His imagination would have filled in the rest. He happened to guess right that Mars has craters and cracks but they were, no less than the spiderwebs of the canals, tricks of

the eye and brain, illusions. □

**APPENDIX:** These Martian images are those □



obtained by D. Peach (*DPc*) and L. Aerts (*ALt*) in the present apparition when Mars was still far away from the Earth, and the angular diameter  $\delta$  was 4"~6". Refer to the CMO/ISMO Gallery via the following URL:



[http://www.kwasan.kyoto-u.ac.jp/~cmo/cmoms/2013/f\\_image.html](http://www.kwasan.kyoto-u.ac.jp/~cmo/cmoms/2013/f_image.html)

## CMO/ISMO 2013/14 Mars Report #05

### 2013/2014 Mars Observations in January 2014

♂..... This is the 5<sup>th</sup> CMO/ISMO 2013/2014 Mars Report, and here treated are the CMO/ISMO Mars observations made in January 2014. During January 2014 the planet Mars moved regularly in the Vir constellation, and approached the north of Spica and then its apparent declination went down to 06°30'S at the end of the month. The planet reached the meridian around 5h in the morning LT, and hence it was possible to observe Mars after the midnight. However the terrestrial season (on the northern hemisphere) has brought us intense coldness with unfavourable seeing conditions, and thus we have not got along with the observations in the northern districts. On the other hand, several veteran observers on the opposite southern hemisphere now began to join as the apparent declination improved for them under the warm (or hot) atmosphere. The Martian season proceeded from  $\lambda=070^\circ\text{Ls}$  to  $084^\circ\text{Ls}$ , quite near the northern summer solstice. The apparent diameter  $\delta$  went up from 6.9" to 8.9", enough angular diameter to the visual observations. The phase angle  $\iota$  was from  $36^\circ$  to  $34^\circ$ , still the defect illumination at the evening side was large yet. The tilt  $\phi$  moved from around  $23^\circ\text{N}$  to around  $21^\circ\text{N}$ , and so it was still possible to watch the northern hemisphere and the area of the npc.

♂..... This period we were indebted to the following observers for their precious observations:

#### **AERTS, Leo (*LA*t)** BELGIUM

1 Colour + 1 R Images (24 January 2014) 36cm SCT with a DMK21AU618

#### **BUDA, Stefan (*SB*d)** Melbourne, AUSTRALIA

2 Sets of RGB + 1 Colour Images (7, 12, 25 January 2014) 40cm Dall-Kirkham with a DMK21AU04

#### **GRAFTON, Edward A (*EG*f)** Houston, TX, the USA

1 Set of RGB Images (18 January 2014) 36cm SCT with an ASI 120MM

#### **KONNAI, Reiichi (*Kn*)** Ishikawa, Fukushima, JAPAN

1 Drawing (7 January 2014) 30cm SCT, 500×

#### **MORALES RIVERA, Efrain (*EM*r)** Aguadilla, PUERTO RICO

4 Sets of LRGB Images (9, 17, 22, 31 January 2014) 31cm SCT with a Flea3

#### **MORITA, Yukio (*Mo*)** Hatsuka-ichi, Hiroshima, JAPAN

10 Sets of RGB + 10 LRGB Colour + 10 L Images (1, 2, 6, 12, 22, ~24, 31 January 2014)

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

2 Sets of RGB + 1 IR Images (6, 14 January 2014) 41cm Spec @f/26 with an ASI 120MM

**POUPEAU, Jean-Jacques (Jpp)** Essonne, FRANCE

1 Set of RGB Images (8 January 2014) 35cm Cassegrain @f/23 with a Baster acA640-100gm

**SMET, Kris (KSm)** Bornem, BELGIUM

1 Drawing (12 January 2014) 30cm spec, 250×

**SUSSENBACH, John S (JSb)** Houten, The NETHERLANDS

1 Colour Image (28 January 2014) 28cm SCT @f/25 with a QHYL5II

**VALIMBERTI, Maurice (MVI)** Melbourne, AUSTRALIA

1 Set of RGB Images (25 January 2014) 28cm SCT @f/20 with an ASI 120MM

**WESLEY, Anthony (AWs)** Murrumbateman, NSW, AUSTRALIA

2 Colour + 2 IR Images (25, 26, 28, 30 January 2014)

(37cm spec with a Point Gray Grasshopper Express)

♂..... This time we review each observation in principle in chronological order, but then we reorder them in the same [Name Box](#) on the first observer-first-reviewed basis.

**Y MORITA (Mo):** Throughout January, he observed diligently, while he was not well endowed with the better seeing conditions. He made his first observation this year on 1 Jan 2014 ( $\lambda=071^\circ\text{Ls}$ ) and tried to observe three times at  $\omega=158^\circ\text{W}$ ,  $\omega=165^\circ\text{W}$ , and at  $\omega=173^\circ\text{W}$ , while the results were not preferable and the aspects of the npc were shot quite blurred. The set at  $\omega=173^\circ\text{W}$  may be the best, but the set does not tell much although the region is scarce of the markings. On R and L images, the area of Elysium is a bit light, but the B image does not say anything. Henceforward this month he observed no more than once a day if the sky looked to allow his observations. The images he took on 2 Jan 2014 ( $\lambda=071^\circ\text{Ls}$ ) at  $\omega=185^\circ\text{W}$  were quite the same as the day before: the npc was not well caught. On 6 Jan ( $\lambda=073^\circ\text{Ls}$ ) he caught Mars at  $\omega=134^\circ\text{W}$ : Just he proved a presence in B of a swell of a white mist at the terminator. On 12 Jan ( $\lambda=075^\circ\text{Ls}$ ) at  $\omega=084^\circ\text{W}$ , it was difficult to figure out the npc. Solis L and M Acidalium were not distinct. Just the misty band which originated from the evening Chryse looked to extend to the morning side. On 22 Jan ( $\lambda=080^\circ\text{Ls}$ ) Mo make a shot at  $\omega=357^\circ\text{W}$ : The atmospheric condition was not well improved, but the R image looks partially excellent, and the description of the two Aryn nails of S Meridiani was successful, and the area around Oxus and the inside of M Acidalium are slightly detailed. Oxia P is also definite, and the image shows a small dust adjacent to its west. The npc has become roundish smaller and maybe totally inside the disk. The southern limb area is dull even in B, and this continues throughout January.

<http://www.kwasan.kyoto-u.ac.jp/~cmo/cmons/2013/140122/Mo22Jan14.jpg>

On 23 Jan ( $\lambda=080^\circ\text{Ls}$ ), Mo tried at  $\omega=344^\circ\text{W}$ , while the seeing condition turned out poorer than the day before. Just the slit at Aram is recognised. On 24 Jan ( $\lambda=081^\circ\text{Ls}$ ) at  $\omega=329^\circ\text{W}$ , the presence of S Sabæus is checked but nothing others to tell. On the last day 31 Jan ( $\lambda=084^\circ\text{Ls}$ ) he took at  $\omega=258^\circ\text{W}$ : The angular diameter  $\delta$  went up to 8.8". Syrtis Mj is seen at the morning side and Elysium is visible at the evening side, but the seeing is not ample. The Elysium cloud is not well checked in B, but seen helped by the G and L images. The description of the npc is not adequate. It is possible to check the main core of the npc, but its south brings a misty boundary. It is expected for him to be able to disclose clearly the area around N Alcyonius in R.

<http://www.kwasan.kyoto-u.ac.jp/~cmo/cmons/2013/140131/Mo31Jan14.jpg>

**Don PARKER (DPK):** *DPK's* first observation was made on 6 Jan ( $\lambda=073^\circ\text{Ls}$ ) at  $\omega=331^\circ\text{W}$ . The observation time was at around 9h GMT, while *Mo's* in Japan was at around 20h GMT. S Sabæus and S Meridiani are shot attractive: From Meridiani S westward the faint canal Brangæna looks run but it must be shown because contrasted by a ground-lit part of the Upper Aram. Edom is not so bright. The string-like area between Oxus and M Acidalium is light as usual. Æria is misty light, but this is originated from the eastern terminator region and floats out across over the wide Syrtis Mj. The npc is seen now smaller, while its south looks to be covered by a thick mist. M Acidalium is at the morning side; a half of which is covered by the morning mist and it is connected with Chryse. Tanais looks dark. The southern limb area does not still show any distinct suggestion. At the northern evening, the markings around Protonilus are notable.

<http://www.kwasan.kyoto-u.ac.jp/~cmo/cmons/2013/140106/DPk06Jan14.jpg>

On 14 Jan ( $\lambda=076^\circ\text{Ls}$ ) he issued another detailed set of images at  $\omega=248^\circ\text{W}$ . Syrtis Mj is shown large on the morning side, but looks rather faded in colour, maybe covered by the morning mist connected with Æria. The NW corner of M Acidalium is quite detailed. Utopia is also a bit faded, maybe some parts of the inside being covered by an airborne dust. N Alcyonius is an isolated spot. Hellas is rather whitish; well seen on B, while weak in R. Elysium is a thick white lump, which is very apparent on B. The area of the npc is largely bright, but the npc itself appears as the northern half. The southern part looks like a white cloud entangled with the airborne dust having an off-white tint, but its core is Olympia detached from the npc, and we can peep out the presence of Rima Borealis between them.

<http://www.kwasan.kyoto-u.ac.jp/~cmo/cmons/2013/140114/DPk14Jan14.jpg>

**Stefan BUDA (SBd):** *SBd* made his first observation this year on 7 Jan ( $\lambda=073^\circ\text{Ls}$ ) at  $\omega=103^\circ\text{W}$  where the npc is seen compactly. There is no B ingredient attached, but Alba appears as a light patch. There seems to exist the so-called Ascræus cloud (as to a most recent recalling of the Ascræus cloud, see ISMO 11/12 Mars Note (10) in CMO #408 at page Ser3-0452), and as well there seems to exist other localised cloud patches near at the Tharsis ridge side. Solis L is however not well reproduced. Next *SBd* observed on 12 Jan ( $\lambda=075^\circ\text{Ls}$ ) at  $\omega=054^\circ\text{W}$ : The dark markings are more definite on the R image, in which Solis L is depicted dark as connecting with the preceding M Erythræum, and the outer wall of Tithonius L is clearly visible. In addition, the nipper of Nilokeras, the triangular darker area at the NW corner of M Acidalium and Hyperboreus L adjacent to the npc are all definite. However there seems to be aroused a ghost-line along the morning limb because of an unnatural enhancement processing (which similarly appears even on B). On 25 Jan ( $\lambda=081^\circ\text{Ls}$ ) the sky must have been clear at the area around Melbourne since as will be stated later other two Australian observers joined on the day. *SBd* observed at  $\omega=299^\circ\text{W}$ : On the B image, Hellas appears to contain a white cloud, and it is seen also on RGB image. At the west corner of Hellas, a dark marking is checked. The area of the npc is well shot, and Olympia looks to exist, from which a cloud-like tail swirlingly flutters toward the western direction. This case was also checked in 2012 (see eg the image of Peter GORCZYNSKI (*PGc*) made on 7 Mar 2012 ( $\lambda=080^\circ\text{Ls}$ ) at  $\omega=277^\circ\text{W}$  when  $\delta=13.9''$ ):

<http://www.kwasan.kyoto-u.ac.jp/~cmo/cmons/2011/120307/PGc07Mar12.jpg>

Dark markings in R include the two nails of S Meridiani which are visible quite near at the morning limb, and as well shown is the familiar aspect of the region from N Alcyonius and Utopia to the northern part of M Acidalium. Already minor dark spots which exist to the north of the western part of S Sabæus is unearthed here on the desert area.

<http://www.kwasan.kyoto-u.ac.jp/~cmo/cmons/2013/140125/SBd25Jan14.jpg>

**R KONNAÏ (*Kn*):** This is the fourth drawing of *Kn* this season and made on 7 Jan ( $\lambda=073^\circ\text{Ls}$ ) at 19:45 GMT ( $\omega=120^\circ\text{W}$ ). The area is generally free from any conspicuous markings while he saw a dark marking near on the morning side of the southern limb. The evening mist is suggested to exist near the terminator. The boundary of the npc is not definite.

<http://www.kwasan.kyoto-u.ac.jp/~cmo/cmons/2013/140107/Kn07Jan14.jpg>

**J.-J POUPEAU (*JPp*):** In France the time around 8h GMT seems to be at the right moment to observe Mar. *JPp* shot on 8 Jan ( $\lambda=073^\circ\text{Ls}$ ) at  $\omega=289^\circ\text{W}$  when Syrtis Mj was seen and S Sabæus was visible at the morning side. Thru R, the area of Utopia is shadowy causing a good colour in RGB. The southern limb area looks to suggest a whitish Hellas, which is rather clear in R but not so on B. In G the npc is quite clear but Hellas is duller. The boundary of the npc is obscure. On B, Æria is not so shown up.

<http://www.kwasan.kyoto-u.ac.jp/~cmo/cmons/2013/140108/JPp08Jan14.jpg>

**E MORALES (*EMr*):** *EMr* first observed on 9 Jan ( $\lambda=074^\circ\text{Ls}$ ) at  $\omega=326^\circ\text{W}$ : On the RGB image, S Meridiani and others are blurred, while on LRGB the Aryn nails of S Meridiani are shown because of the L image. Oxia P is also visible, and Aram is shown up. The description of Æria looks in short. The area of the npc is bright, but the core cannot be pinned down.

<http://www.kwasan.kyoto-u.ac.jp/~cmo/cmons/2013/140109/EMr09Jan14.jpg>

*EMr* also obtained images on 17 Jan ( $\lambda=077^\circ\text{Ls}$ ) at  $\omega=248^\circ\text{W}$ : Its angle is the very same as *DPk*'s images made on 14 Jan (already reviewed). If compared, *EMr*'s here are inferior to *DPk*'s images in quality and in sharpness. The description is poorer including that of the npc. The Elysium cloud is not shown even on B though it can be traced on L or G.

<http://www.kwasan.kyoto-u.ac.jp/~cmo/cmons/2013/140117/EMr17Jan14.jpg>

*EMr* then took on 22 Jan ( $\lambda=080^\circ\text{Ls}$ ) at  $\omega=189^\circ\text{W}$ . Elysium came up to the morning side and bright on R and a bit light on B. Propontis I is visible in addition to the Ætheria dark patch. The npc appears to be rightly small, and the area of Olympia looks blurred just like a cloud. On the southern hemisphere, a whole of M Cimmerium is well described on R and L.

<http://www.kwasan.kyoto-u.ac.jp/~cmo/cmons/2013/140122/EMr22Jan14.jpg>

At the end of the month on 31 Jan ( $\lambda=084^\circ\text{Ls}$ ), *EMr* shot at  $\omega=104^\circ\text{W}$  where Solis L is appearing but not definite. The npc's body is seen but rough. Conspicuously described is the evening mist starting from Chryse which extends to the morning side. In B the Ascræus cloud looks to be seen, and a trace of Alba is certain.

<http://www.kwasan.kyoto-u.ac.jp/~cmo/cmons/2013/140131/EMr31Jan14.jpg>

**K SMET (*KSm*):** *KSm* produced a colour drawing on 12 January 2014 ( $\lambda=075^\circ\text{Ls}$ ) at  $\omega=243^\circ\text{W}$ . Syrtis Mj was faintly seen at the morning side, and he drew Utopia in a triangular form. The npc was well visible. The drawing is not so colourful, but he depicts very exquisitely the early morning long area near the limb.

<http://www.kwasan.kyoto-u.ac.jp/~cmo/cmons/2013/140112/KSm12Jan14.jpg>

**Ed GRAFTON (*EGf*):** On 18 Jan ( $\lambda=078^\circ\text{Ls}$ ) at  $\omega=259^\circ\text{W}$ , *EGf* produced a set of images, which show a similar configuration to *DPk14Jan* and *EMr17Jan*, but the angle is different by 10 degrees. This is his first contribution to us this season. As usual, he produces here rather-high contrast images to define clearly the markings by means of some sharpness improving method. Compared with the case of *DPk*, Syrtis Mj is darker, and the marking projected from the east coast of Syrtis Mj is more explicit (perhaps because of the retardation by 10 degrees). N Alcyonius is depicted as a darker spot. Elysium more sank to the area of the defect of illumination. Rima Borealis is caught, and the area of Olympia looks to have inflated wider by an off-white cloud. The npc itself is white and compact. The morning mist at Æria is vivid in B.



<http://www.kwasan.kyoto-u.ac.jp/~cmo/cmons/2013/140118/EGf18Jan14.jpg>

**Leo AERTS (LAT):** On 24 Jan ( $\lambda=080^\circ\text{Ls}$ ), *LAt* produced a set at  $\omega=109^\circ\text{W}$ . Solis L looks to have set out. Except for the npc and the band around it, markings are delicate because this place is originally scarce. Alba seems to be seen. The whitish mist band running in the EW direction to the south of Alba is shown: The band starts from the area of Xanthe and its tail to the western area must contain the Ascræus cloud and others. This also suggests a presence of shadowy Ulysses.

<http://www.kwasan.kyoto-u.ac.jp/~cmo/cmons/2013/140124/LAt24Jan14.jpg>

**M VALIMBERTI (MVI):** *MVI* first sent his image set made on 25 Jan ( $\lambda=081^\circ\text{Ls}$ ) at  $\omega=276^\circ\text{W}$ . Syrtis Mj is seen nearly at the centre, and S Sabæus goes pretty down towards the morning limb. The area at Utopia is normally described and N Alcyonius is thin. The description of Olympia is very interesting: It is visible near terminator all on R, G, B and send rather vividly a swirled tail to the west. Hellas is much weaker than the npc/Olympia in B.

<http://www.kwasan.kyoto-u.ac.jp/~cmo/cmons/2013/140125/MVI25Jan14.jpg>

**A WESLEY (AWs):** On the same day 25 Jan ( $\lambda=081^\circ\text{Ls}$ ) *AWs* took an IR image at  $\omega=293^\circ\text{W}$  one hour later than *MVI*. S Meridiani is now totally inside the disk. Olympia must have sunk into the dark side, and the npc looks smaller. There are described several detailed markings: Some of the minor markings are those aforementioned when we reviewed the observation of *SBD25Jan*. As well, the line near the morning limb must be a ghost caused by the enhanced image processing. Hellas and its vicinity are interesting, but no image thru B.

<http://www.kwasan.kyoto-u.ac.jp/~cmo/cmons/2013/140125/AWs25Jan14.jpg>

On the next 26 Jan ( $\lambda=081^\circ\text{Ls}$ ) at  $\omega=267^\circ\text{W}$ , *AWs* produced another IR image. The angle differs by 30 degrees than the preceding image, so that the Ætheria dark patch is now visible. The description of the light-and-shadowy areas of Utopia is well done. The dark stretch adjacent to the npc is conspicuous which may lie on the same latitude as Rima Borealis, but we cannot find the nomenclature in ANTONIADI's map.

<http://www.kwasan.kyoto-u.ac.jp/~cmo/cmons/2013/140126/AWs26Jan14.jpg>

On 28 Jan ( $\lambda=082^\circ\text{Ls}$ ) *AWs* first produced a colour image at  $\omega=253^\circ\text{W}$ , without showing the ingredients. Syrtis Mj appear to decline to the morning side, and oppositely Elysium shows up in the evening with a white colour. Hellas is a bit seen whitish. There must be a remnant of Olympia at the evening side.

<http://www.kwasan.kyoto-u.ac.jp/~cmo/cmons/2013/140128/AWs28Jan14.jpg>

On 30 Jan ( $\lambda=083^\circ\text{Ls}$ ), *AWs* made a shot at  $\omega=234^\circ\text{W}$ : The white cloud over Elysium comes more deeply into the disk. Near the terminator preceding Elysium there must be a thin evening mist. Syrtis Mj is near the morning limb followed by a thick white mist. Hesperia is now more evident. Hellas is not distinct from this angle. At the npc region, Rima Borealis is a bit seen and Olympia looks whitish blurred. The detail of Utopia's density configuration is interesting but beyond our narrative description.

<http://www.kwasan.kyoto-u.ac.jp/~cmo/cmons/2013/140130/AWs30Jan14.jpg>

**J SUSSENBACH (JSb):** On 28 Jan ( $\lambda=082^\circ\text{Ls}$ ) at  $\omega=060^\circ\text{W}$ , *JSb* put forward a colour image which showed that Solis L was rather dark and Ophir-Candor was ground-lit. Nilokeras looks to show the nipper. M Acidalium extends on the evening side. We feel we need more pieces of information concerning the northern part of M Acidalium. There seems to exist something to be mentioned.

<http://www.kwasan.kyoto-u.ac.jp/~cmo/cmons/2013/140128/JSb28Jan14.jpg>

**Masatsugu MINAMI & Masami MURAKAMI**

Forthcoming 13/14 Mars (7)

## *Ephemeris for the Observations of the 2013/14 Mars. IV*

### *March & April 2014*

**Akinori NISHITA**

**A**s a sequel to the Ephemeris for the physical observations of Mars in CMO/ISMO #417, we here list up the necessary elements of the Ephemeris for period from 1 March 2014 till 30 April 2014: The data are listed for every day at 00:00 GMT (not TDT). The symbols  $\omega$  and  $\phi$  denote the longitude and latitude of the sub-Earth point respectively. The symbols  $\lambda$ ,  $\delta$  and  $\iota$  stand for the areocentric longitude of the Sun, the apparent di-

ameter and the phase angle respectively. We also add the column of the Position Angle  $\Pi$  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 2014* and on *Web-Interface to JPL's HORIZONS System*.

Date (00:00GMT)	$\omega$	$\phi$	$\lambda$	$\delta$	$\iota$	$\Pi$	$D$
01 March 2014	056.48°W	19.27°N	096.14°Ls	11.58"	26.2°	36.5°	-07°58'
02 March 2014	047.38°W	19.26°N	096.58°Ls	11.70"	25.7°	36.5°	-07°57'
03 March 2014	038.30°W	19.26°N	097.03°Ls	11.81"	25.3°	36.5°	-07°57'
04 March 2014	029.24°W	19.25°N	097.47°Ls	11.92"	24.8°	36.5°	-07°56'
05 March 2014	020.18°W	19.26°N	097.92°Ls	12.03"	24.3°	36.5°	-07°55'
06 March 2014	011.14°W	19.27°N	098.36°Ls	12.15"	23.8°	36.4°	-07°54'
07 March 2014	002.10°W	19.28°N	098.81°Ls	12.26"	23.3°	36.4°	-07°52'
08 March 2014	353.09°W	19.29°N	099.25°Ls	12.37"	22.8°	36.4°	-07°50'
09 March 2014	344.08°W	19.32°N	099.70°Ls	12.48"	22.3°	36.4°	-07°48'
10 March 2014	335.09°W	19.35°N	100.15°Ls	12.60"	21.7°	36.4°	-07°46'
11 March 2014	326.11°W	19.37°N	100.60°Ls	12.71"	21.2°	36.4°	-07°44'
12 March 2014	317.14°W	19.40°N	101.05°Ls	12.82"	20.6°	36.3°	-07°41'
13 March 2014	308.18°W	19.44°N	101.50°Ls	12.93"	20.0°	36.3°	-07°38'
14 March 2014	299.24°W	19.49°N	101.95°Ls	13.04"	19.4°	36.3°	-07°35'
15 March 2014	290.31°W	19.53°N	102.39°Ls	13.15"	18.8°	36.2°	-07°32'
16 March 2014	281.39°W	19.57°N	102.84°Ls	13.26"	18.2°	36.2°	-07°28'
17 March 2014	272.49°W	19.63°N	103.29°Ls	13.37"	17.6°	36.2°	-07°24'
18 March 2014	263.59°W	19.69°N	103.75°Ls	13.47"	16.9°	36.1°	-07°20'
19 March 2014	254.71°W	19.74°N	104.20°Ls	13.58"	16.3°	36.1°	-07°16'
20 March 2014	245.84°W	19.80°N	104.65°Ls	13.68"	15.6°	36.0°	-07°11'
21 March 2014	236.99°W	19.88°N	105.10°Ls	13.78"	14.9°	36.0°	-07°06'
22 March 2014	228.14°W	19.95°N	105.56°Ls	13.88"	14.2°	35.9°	-07°02'
23 March 2014	219.31°W	20.03°N	106.01°Ls	13.97"	13.5°	35.9°	-06°56'
24 March 2014	210.49°W	20.10°N	106.46°Ls	14.07"	12.8°	35.8°	-06°51'
25 March 2014	201.67°W	20.19°N	106.91°Ls	14.16"	12.1°	35.7°	-06°46'
26 March 2014	192.87°W	20.27°N	107.37°Ls	14.25"	11.3°	35.6°	-06°40'
27 March 2014	184.08°W	20.36°N	107.82°Ls	14.33"	10.6°	35.5°	-06°34'
28 March 2014	175.30°W	20.44°N	108.27°Ls	14.42"	9.8°	35.4°	-06°28'
29 March 2014	166.53°W	20.54°N	108.73°Ls	14.49"	9.0°	35.3°	-06°22'
30 March 2014	157.77°W	20.64°N	109.18°Ls	14.57"	8.3°	35.3°	-06°15'
31 March 2014	149.01°W	20.73°N	109.64°Ls	14.64"	7.5°	35.2°	-06°09'
01 April 2014	140.26°W	20.83°N	110.09°Ls	14.71"	6.7°	35.1°	-06°02'
02 April 2014	131.52°W	20.94°N	110.55°Ls	14.77"	5.9°	35.0°	-05°56'
03 April 2014	122.79°W	21.05°N	111.01°Ls	14.83"	5.2°	34.9°	-05°49'
04 April 2014	114.06°W	21.15°N	111.46°Ls	14.88"	4.4°	34.8°	-05°42'
05 April 2014	105.34°W	21.26°N	111.92°Ls	14.94"	3.6°	34.7°	-05°35'

Date (00:00GMT)	$\omega$	$\phi$	$\lambda$	$\delta$	$\iota$	$\Pi$	$D$
06 April	2014 096.62°W	21.37°N	112.38°Ls	14.98"	2.9°	34.6°	-05°28'
07 April	2014 087.90°W	21.48°N	112.84°Ls	15.02"	2.2°	34.5°	-05°21'
08 April	2014 079.19°W	21.59°N	113.30°Ls	15.05"	1.7°	34.3°	-05°14'
09 April	2014 070.48°W	21.70°N	113.76°Ls	15.09"	1.5°	34.2°	-05°07'
10 April	2014 061.77°W	21.81°N	114.22°Ls	15.11"	1.8°	34.1°	-05°00'
11 April	2014 053.06°W	21.92°N	114.69°Ls	15.13"	2.3°	34.0°	-04°53'
12 April	2014 044.35°W	22.03°N	115.15°Ls	15.15"	3.0°	33.9°	-04°46'
13 April	2014 035.64°W	22.14°N	115.61°Ls	15.16"	3.8°	33.8°	-04°39'
14 April	2014 026.92°W	22.25°N	116.07°Ls	15.16"	4.6°	33.7°	-04°33'
15 April	2014 018.21°W	22.36°N	116.54°Ls	15.16"	5.4°	33.5°	-04°26'
16 April	2014 009.49°W	22.47°N	117.00°Ls	15.16"	6.2°	33.4°	-04°19'
17 April	2014 000.77°W	22.58°N	117.46°Ls	15.15"	7.0°	33.3°	-04°13'
18 April	2014 352.04°W	22.69°N	117.93°Ls	15.13"	7.8°	33.2°	-04°07'
19 April	2014 343.31°W	22.79°N	118.40°Ls	15.11"	8.6°	33.1°	-04°01'
20 April	2014 334.57°W	22.90°N	118.86°Ls	15.08"	9.4°	33.1°	-03°54'
21 April	2014 325.82°W	23.00°N	119.33°Ls	15.06"	10.2°	32.9°	-03°49'
22 April	2014 317.07°W	23.10°N	119.80°Ls	15.02"	11.0°	32.8°	-03°43'
23 April	2014 308.31°W	23.20°N	120.27°Ls	14.98"	11.8°	32.7°	-03°38'
24 April	2014 299.54°W	23.29°N	120.73°Ls	14.94"	12.6°	32.6°	-03°32'
25 April	2014 290.76°W	23.39°N	121.20°Ls	14.90"	13.4°	32.5°	-03°27'
26 April	2014 281.97°W	23.48°N	121.67°Ls	14.85"	14.2°	32.4°	-03°22'
27 April	2014 273.17°W	23.58°N	122.14°Ls	14.79"	14.9°	32.3°	-03°18'
28 April	2014 264.36°W	23.67°N	122.61°Ls	14.74"	15.7°	32.2°	-03°14'
29 April	2014 255.54°W	23.76°N	123.08°Ls	14.68"	16.4°	32.1°	-03°09'
30 April	2014 246.70°W	23.84°N	123.55°Ls	14.61"	17.1°	32.0°	-03°06'
01 May	2014 237.85°W	23.93°N	124.03°Ls	14.55"	17.9°	31.9°	-03°02' ---

## *Letters to the Editor*

●.....*Subject: RE: CMO #417 updated!*  
*Received: 3 January 2014 at 17:42 JST*

Dear Mars Observers, All the very best wishes for 2014 and thank you for the publications and support:

**Barry ADCOCK** (Victoria, AUSTRALIA)

(註) Thank you, Barry, for your New Year message. We are very pleased since the group members organised by you are now highly active. (*Ed*)

●.....*Subject: Mars 2013-12-30 03:12.6 UT*  
*Received: 5 January 2014 at 22:43 JST*

Hello! My last picture during 2013 and my first of Mars for this season.

<http://www.kwasan.kyoto-u.ac.jp/~cmo/cmons/2013/131230/MHg30Dec13.jpg>

**Martin HÖGBERG** (Örebro, SWEDEN)

●.....*Subject: Mars 2014/01/08*

*Received: 8 January 2014 at 18:06 JST*

Hello, Here is Mars on 2014/01/08. The seeing was bad and the transparency was average.

T = +7.5°C. Regards

<http://www.kwasan.kyoto-u.ac.jp/~cmo/cmons/2013/140108/JPp08Jan14.jpg>

**Jean-Jacques POUPEAU** (Essonne, FRANCE)

●.....*Subject: Mars image 7th of January*  
*Received: 8 January 2014 at 19:27 JST*

Hi everyone, This morning I captured my first Mars images through Astrodon I-series filters. For many years I have been using the Edmund RGB set and I was curious to see the difference.

Well, the seeing was very marginal this morning so I can't say for sure but it seems that the old Edmund filters produce better colour rendering or more colour saturation but the Astrodon ones let more light through, which helps with the G and B exposure times.

Mars itself looks rather misty and it's interesting

how bright Alba Patera is, even though it doesn't seem to have cloud over it like some of the other volcanoes. Best regards,

<http://www.kwasan.kyoto-u.ac.jp/~cmo/cmons/2013/140107/SBd07Jan14.jpg>

○.....*Subject: Mars image 12th Jan 2014*  
*Received: 13 January 2014 at 14:11 JST*

Hi everyone, I managed to capture an RGB in reasonably good seeing despite a thin cloud cover over my location this morning. Mars is looking very foggy on my image. Regards,

<http://www.kwasan.kyoto-u.ac.jp/~cmo/cmons/2013/140112/SBd12Jan14.jpg>

○.....*Subject: Mars 25-01-2014*  
*Received: 26 January 2014 at 10:55 JST*

Hi everyone, Finally good seeing came to Melbourne this morning. Regards,

<http://www.kwasan.kyoto-u.ac.jp/~cmo/cmons/2013/140125/SBd25Jan14.jpg>

**Stefan BUDA** (Melbourne, AUSTRALIA)

●.....*Subject: A Drawing of Mars*  
*Received: 9 January 2014 at 14:00 JST*

Dear Dr. Minami, Attached here is my latest drawing of Mars. Seeing was quite disappointing.

I was surprised to learn that you think you'll be back into Mars observation when the snow melts away in this coming spring! You'd like to drive your car yourself to Fukui Observatory 23km away!? With all due respect, it seems to be no go! Please try your first going-back- to-driving with Mrs. Minami in the front seat next to you!

Good Seeing, Good Health,

<http://www.kwasan.kyoto-u.ac.jp/~cmo/cmons/2013/140107/Kn07Jan14.jpg>

**Reiichi KONNAI** (Fukushima, JAPAN)

●.....*Subject: Mars 6 January*  
*Received: 10 January 2014 at 06:48 JST*

Hi All, I have attached RGB-NIR Mars images from 6 January. Bright AM limb clouds appear over Chryse, Tempe, western Acidalius. A faint ECB extends eastward into Aeria and the Syrtis Plateau. Protonilus, Deuteronilus and Pierius are very conspicuous. Chasma Borealis is seen on NPC. This could be a processing artifact, although it is seen on all red-light images. Best.

<http://www.kwasan.kyoto-u.ac.jp/~cmo/cmons/2013/140106/DPk06Jan14.jpg>

○.....*Subject: Mars 14 January, NPC dust?*  
*Received: 17 January 2014 at 15:00 JST*

Hi All, I have attached RGB Mars images from 14 January. There appears to be a large dust streak crossing the preceding edge of the NPC. The Elysium cloud is bright and AM hazes cover much of Syrtis Major. Best

<http://www.kwasan.kyoto-u.ac.jp/~cmo/cmons/2013/140114/DPk14Jan14.jpg>

**Donald PARKER** (Coral Gables, FL)

●.....*Subject: Mars - January 9th, 10:31ut*  
*Received: 10 January 2014 at 08:58 JST*

Hi Mr.Minami, Here is my latest session from the 9th of January under above average conditions finally.

<http://www.kwasan.kyoto-u.ac.jp/~cmo/cmons/2013/140109/EMr09Jan14.jpg>

Clear Skies to All!

○.....*Subject: Mars - January 17th, 10:21ut*  
*Received: 20 January 2014 at 03:09 JST*

Hi Mr. Minami and all staff members!. Here I submit my latest image set of Mars from January 17th, lots of turbulence but with average results and also my latest Jupiter set. Clear Skies to All!

<http://www.kwasan.kyoto-u.ac.jp/~cmo/cmons/2013/140117/EMr17Jan14.jpg>

○.....*Subject: Mars Jan 22, Jupiter, GRS, Ganymede*  
*Received: 25 January 2014 at 22:51 JST*

Hi Mr. Minami and All!, Here I submit my latest session of Mars. Jupiter was taken earlier.

<http://www.kwasan.kyoto-u.ac.jp/~cmo/cmons/2013/140122/EMr22Jan14.jpg>

**Efrain MORALES** (Aguadilla, PUERTO RICO)

●.....*Subject: mars sketches 15/01/'12*  
*Received: 14 January 2014 at 22:44 JST*

Hi, here is my sketch from january 12:

<http://www.kwasan.kyoto-u.ac.jp/~cmo/cmons/2013/140112/KSm12Jan14.jpg>

Date: january 12, 2014 Time: 06:45 UT

observer: Kris Smet. location: Bornem, Belgium

instrument: 12" f/5 dobson. magnification: 250x

seeing: good to very good. filters: apodizing mask

Greetings,

**Kris SMET** (Bornem, BELGIUM)

●.....*Subject: Mars Jan 18th at 11:43 from Houston*  
*Received: 20 January 2014 at 12:01 JST*

Here is an image from January 18th 2014 at

11:43 UT. The seeing was 3/10 and the transparency was 9/10.

<http://www.kwasan.kyoto-u.ac.jp/~cmo/cmons/2013/140118/EGf18Jan14.jpg>

**Ed GRAFTON** (Houston, TX)

●.....*Subject: Mars January 24th 2014 at 5h21 UT*  
*Received: 25 January 2014 at 18:29 JST*

Hi All, Cloudy weather over Tharsis volcanos. Imaging done with C14, 2.5x powermate projection, use of dispersion corrector, RGB Baader filterset, DMK 21AU618 webcam. Seeing was excellent.

January 24th 2014 at 5h21 UT. Mars 8"27, Two R RGB results and one red filter result. Best regards.

<http://www.kwasan.kyoto-u.ac.jp/~cmo/cmons/2013/140124/LAt24Jan14.jpg>

**Leo AERTS** (BELGIUM)

●.....*Subject: Mars 25th Jan 2014*  
*Received: 26 January 2014 at 13:34 JST*

Good afternoon, Please find attached an image of Mars taken this morning from Melbourne, Australia as marked with a C11 @ f/20. Mid exposure was 17:28UT. With best wishes,

<http://www.kwasan.kyoto-u.ac.jp/~cmo/cmons/2013/140125/MV125Jan14.jpg>

○.....*Subject: Re: Mars 25th Jan 2014*  
*Received: 28 January 2014 at 02:45 JST*

Dear Masatsugu, Thank you very much for your message. I hope that you are well. I have been keen to return to imaging for a couple of years now, but have been unable to due to health, family & work commitments. Hopefully this year I will be more productive. Best wishes

○.....*Subject: Mars 1st February 2014*  
*Received: 2 February 2014 at 18:52 JST*

Please find attached an image set of Mars taken on the 1st Feb UT. Seeing was quite poor when these were taken (very 'fast' seeing) which blurred fine detail. Best wishes

**Maurice VALIMBERTI**

(Melbourne, AUSTRALIA)

●.....*Subject: Mars, Jan 25 2014*  
*Received: 26 January 2014 at 17:12 JST*

A small Mars this morning, seeing was not so

good so only an IR image. regards,

<http://www.kwasan.kyoto-u.ac.jp/~cmo/cmons/2013/140125/AWs25Jan14.jpg>

<http://www.acquerra.com.au/astro/gallery/mars/20140125-183539/m20140125-183539utc.png>

○.....*Subject: mars Jan 26*  
*Received: 27 January 2014 at 17:24 JST*

Another IR Mars this morning, showing a slightly different view of Syrtis Mj and surrounds than yesterday... regards

<http://www.kwasan.kyoto-u.ac.jp/~cmo/cmons/2013/140126/AWs26Jan14.jpg>

○.....*Subject: RGB Mars this morning, Jan 28*  
*Received: 29 January 2014 at 18:15 JST*

Slightly better seeing this morning, here is an RGB image of Mars showing cloud over Elysium Mons as well as equatorial haze and some blue cloud over the south polar hood. regards,

<http://www.kwasan.kyoto-u.ac.jp/~cmo/cmons/2013/140128/AWs28Jan14.jpg>

○.....*Subject: Mars Jan 30*  
*Received: 31 January 2014 at 09:23 JST*

Another small Mars in mediocre seeing from this morning... the cloud over Elysium is still prominent and also the blue-ish limb cloud at bottom in Hellas. Is that really cloud over Elysium, or could there be some dust in there? It's not quite white in colour. regards,

<http://www.kwasan.kyoto-u.ac.jp/~cmo/cmons/2013/140130/AWs30Jan14.jpg>

**Anthony WESLEY** (NSW, AUSTRALIA)

●.....*Subject: Mars 28 January 2014*  
*Received: 29 January 2014 at 17:34 JST*

Dear friends, Attached find my Mars image of 28 January 2014. Seeing was poor and wind disturbed the capturing. Nevertheless, thanks to the program Astrostrakker!2 still several details are seen. Note the small North Polar cap, Mare Acidaliu en Nilokeras and the fork structure of Valles Marineris. Regards,

<http://www.kwasan.kyoto-u.ac.jp/~cmo/cmons/2013/140128/JSb28Jan14.jpg>

**John S SUSSENBACH**

(Houten, The NETHERLANDS)

☆☆☆

## TEN YEARS AGO (226)

--- CMO #288 (25 February 2004) ---

<http://www.hida.kyoto-u.ac.jp/~cmo/cmomn3/cmo288/index.htm>

**F**rom this issue, the CMO turned to be published once a month. CMO #288 (25 February 2004) contains the report of the observations made during the one-month period from 16 January 2004 to 15 February 2004. The report is the 23rd one in the 2003 great apparition. During the period the planet was seen moved from the Psc to the Ari constellation. At the Sunset time, it shined at the southern evening corner and disappeared around at 23h Local Time. The angular diameter  $\delta$  went down from 7.5" to 6.2" during the period and the Martian season proceeded from  $\lambda=334^\circ\text{Ls}$  to  $351^\circ\text{Ls}$ , approaching the southern autumnal equinox. The tilt  $\phi$  varied from  $25^\circ\text{S}$  to  $19^\circ\text{S}$ . The phase angle  $\iota$  did from  $41^\circ$  to  $38^\circ$ .

The observers who contributed were counted to 14 with 134 observations. Domestically 6 observers sent to us 96 observations. The winter weather at Fukui was very poor (on 22 January it snowed all day long at Mikuni), so that the observations were made mostly by the observers who lived at the places which faced to the Pacific Ocean. From the US three observers joined with 23 observations, mostly made by Don PARKER (*DPk*). From Europe four observers including E SIEGEL (*ESg*), D PEACH (*DPc*) and Ch PELLIER (*CPl*), sent us a total of 14 observations. We also acknowledged one observation from Erwin van der VELDEN † (*EVL*) in Australia. Johan WARELL (*JWr*)'s observations were made at Tucson.

The review went as follows: **1) *Aftermath of the Dust Cloud in December***: The December 2003 dust was no more active except for the drifting airborne dust. Just *DPk* and *JWr* chased. The TES images sometimes showed a few remnant minor activities of dust, but undetectable from the Earth. **2) *Hellas***: The observations of Hellas in 1990 should be standard, and here also observed the fact of the lighter bottom at the northern part and the light western side affected by condensates (CMO#113 (25 Jan 1992) Note 3). This time, the observations by *DPc*, *DPk*, and *CPl* are mentioned. After 5 Feb ( $\lambda=348^\circ\text{Ls}$ ), the Martian area faced to Japan, and the observations by K KUMAMORI (*Km*), M MINAMI (*Mn*), M MURAKAMI (*Mk*), T AKUTSU (*Ak*) and Y MORITA (*Mo*) are mentioned. **3) *M Serpentis***: The area of M Serpentis and the eastern part of Deucalionis R has been an interesting area to be watched because the sweeping-out of the ground sands over there was apparent ever since July 2003. *Mo* took an image on 8 Feb ( $\lambda=346^\circ\text{Ls}$ ) at  $\omega=330^\circ\text{W}$  and this became an important ingredient of the series of the images at around  $\omega=328^\circ\text{W}$ .

[http://www.kwasan.kyoto-u.ac.jp/~cmo/cmomk/2003/M\\_Serpentis\\_June\\_Nov.jpg](http://www.kwasan.kyoto-u.ac.jp/~cmo/cmomk/2003/M_Serpentis_June_Nov.jpg)

It is also mentioned about the dark long band crossing Noachis from M Serpentis which looks irregular and incomplete. **4) *The SPC and SPH***: It was stated the last observation of the diminishing spc was made by *DPc* on 18 Dec ( $\lambda=318^\circ\text{Ls}, \iota=42^\circ$ ). *DPk* observed the final spc on the preceding day, and detected it visually by 700 $\times$ . No other definite observations of the spc henceforward, and at the end of January the area showed a misty aspect (observed by T IWASAKI (*Iw*) and *Mk*). On 31 Jan ( $\lambda=343^\circ\text{Ls}$ ), *Mn* saw a dully bright spot at  $\omega=046^\circ\text{W}$  and  $075^\circ\text{W}$  but admitted that it was natural to regard the spr as governed by a condensate. *Mo*'s B image on the day at  $\omega=054^\circ\text{W}$  seems to show a light mist at the south polar region (spr). In February, the spr looked as if covered by a white mist or cloud. *DPk*'s

images on 10 Feb ( $\lambda=348^\circ\text{Ls}$ ) at  $\omega=194^\circ\text{W}$  and  $197^\circ\text{W}$  show more clearly the hood-like matter. On 11 Feb ( $\lambda=348^\circ\text{Ls}$ ) at  $\omega=076^\circ\text{W}$ , *ESg* saw a light area through Int, but noted that it was not seen through her favourite Wr#47. 5) ***The Argyre Condensates***: Argyre looked to be covered by a condensate in the morning (by *DPk* and *Iw*) while as it moved to the afternoon side, it showed a ground-lit triangular aspect

<http://www.kwasan.kyoto-u.ac.jp/~cmo/cmomn3/288OAA/index.htm>

From this issue, the corner of so-called "Note" started which analyses the observations in 2003, and as "2003 Mars CMO Note #01" an article entitled "Why Did the July 2003 Noachis Dust Shrink So Soon?" was given by *Mn*.

The analysis begins with "***The Situation in July 2003***": Sam WHITBY (*SWb*) witnessed a yellow matter mingled with a condensate over the evening Syrtis Mj on 26 June ( $\lambda=210^\circ\text{Ls}$ ) and successively he also detected a similar matter at Iapygia Viridis on 30 June ( $\lambda=213^\circ\text{Ls}$ ). On 29 June ( $\lambda=212^\circ\text{Ls}$ ), the MGS-MOC revealed dust disturbances at Isidis Planitia, dating back to 21 June ( $\lambda=207^\circ\text{Ls}$ ). Ch PELLIER (*CPl*) already caught a dust germ to the east of Syrtis Mj, and so it was possible it had been originated earlier and more northerly than expected.

On 1st, 2nd, and 3rd July, many American observers witnessed a hard core of dust and its variation at Iapygia Viridis or at the northern border of Hellas. Then the US observers, especially *DPk* and T WILLIAMSON (*TWs*) at New Mexico suggested to have caught a new germ of dust at the morning limb on 4 July ( $\lambda=215^\circ\text{Ls}$ ,  $\iota=36^\circ$ ) at the area of the morning M Serpentis (*DPk* at ( $\omega=254^\circ\text{W}$ ) and *TWs* at ( $\omega=266^\circ\text{W}$ )). Unfortunately however no further observation was made in the US (though the west coast is still one hour west of Albuquerque). On the same day, at Okinawa, *Mn* and *Id* (H ISHADOH) started around from  $\omega=320^\circ\text{W}$ : from the outset, the scene around M Serpentis aroused them an aha moment. Really there was witnessed quite clearly a vivid dust disturbance to the south of the area of Huygens crater, and its bright tail at the eastern part of Deucalionis R bent down to cut clearly across the eastern part of S Sabæus. It appeared furthermore that the rest of the eastern part of S Sabæus was quite in a different colour density than the following part of S Sabæus and S Meridiani. So as to the colour distribution of S Sabæus, there is a discussion in a later subsection entitled "***High Pressure Area Associated with the Ascending Dust***" where it was described that on 4 July the dust arch covering the eastern part of Deucalionis Regio and an eastern part of S Sabæus looked fading in contrast with the western half of S Sabæus which was quite dense showing a chocolate colour. Also the desert around S Meridiani was clearly reddish. (On 3 July, S Sabæus was totally shown up with a chocolate colour). On 5 July, as S Sabæus recovered, its colour turned out to convey a dark bluish tinge (not chocolate). It says "apparently, on 4 July, the area around S Meridiani was under the high pressure air, and its outflow cleared the airborne dusts and contributed them to the lower pressure area of dust disturbance."

This article also briefly summarises the day-by-day changing of the appearance of the dust by citing the email alert "Noachis Dust from 4 July to 7 July (CMO 2003 News #3)" which was sent out on 8 July 2003. We also here cite it from "***Appendix III***": "As far as we caught the first light of a new core of dust disturbance on 4 July from our side (not detect-

ed on 3 July), it was furious enough to conceal the eastern part of S Sabæus, and looked to possibly make an extension to the northern hemisphere as in 2001, but turned out not. On the following 5th day, the front was rebuilt in the western Noachis with a clear boundary, and looked to swirl back to the direction of Hellas. The assumed Yaonis Fretum and Hellespontus were nothing but two faded blurred spots inside the yellow cloud on the day. S Sabæus already recovered its original shape though the eastern tail-end was not so extended southward because the area of M Ionium was cut by a bright band of dust, and rather connected with Syrtis Mj which was dark but going away. On 6 July, the dark band of Hellespontus almost recovered (the northern end was cut out), and the brighter core of dust in Noachis looked slightly shrunk, but yet it had a fat roundish core and we could expect much of this Falstaff to do something. On 7 July, however, he reappeared to have been emaciated within a day, though the wide Hellespontus again looked cut off its head as well as foot by dust, and the slimmed core lay down along the ghosted Hellespontus. Its north-western edge was bounded by a narrow band from Deucalionis R where a branch of dust was seen. S Sabæus was normal (no more in chocolate tinge), and the desert adjacent to it looked still reddish. The brighter slimmed core is reminiscent of the cudgel-like dust emergence seen in 1956 starting from Iapygia Viridis straightforwardly to Noachis, but we are not sure this humble Falstaff is vigorous enough to encircle the southern hemisphere up to the south pole. Anyway we may be able to chase this side for a while, and really at present we are murmuring every night for the Mars observers nothing is better than to watch the dust clouds on Noachis.”

Other subsections are those entitled “*Cases in 1956 and 1971*”, “*Why Does the Dust Disturbance Occur at the Outside of the Hellas Basin?*”, “*The Noachis Cloud Germinated at  $\lambda=215^\circ\text{Ls}$  Does Not Develop to the West*”, “*High Pressure Area Associated with the Ascending Dust*”, “*The Dust Distribution Detected by the MGS-MOC*”, “*Appendix I: Cases in 1969 and 1986*”, “*Appendix II: CMO 2003 News #1*”, “*Appendix III: Noachis Dust from 4 July to 7 July (CMO 2003 News #3)*” and “*Appendix IV: Spectacular Dust Storm was observed here in Japan from 4 July through 8 July 2003 (from 2003 CMO News C)*.” We don’t here summarise the contents any more, but hope the following site is referred.

[http://www.kwasan.kyoto-u.ac.jp/~cmo/cmomn3/288Note01\\_03/index.htm](http://www.kwasan.kyoto-u.ac.jp/~cmo/cmomn3/288Note01_03/index.htm)

Just we here close by citing “*Summary*”: “To sum up,

0° We observed after a long interval a dust disturbance at Noachis in July 2003. This however stayed restricted, and was similar to (or a bit larger compared with) the dust in July 1971 (1971a). It was different from the 1956 great dust storm at  $\lambda=250^\circ\text{Ls}$  and the other one in 1971b at  $\lambda=260^\circ\text{Ls}$ .

1° The origin of the Noachis dust clouds looks to lie at the outer border of Hellas or at M Serpentis.

2° This kind disturbance must be caused by the difference of the reactions when the area greets the dawn because there is a deep topographic difference between the basin of Hellas and the outside of Hellas.

3° If Ds is about  $15^\circ\text{S}$  (2003 July, 1971b), the disturbance may stay near the outside of Hellas or a bit to the direction of Noachis, but if Ds is about  $25^\circ\text{S}$  (1956, 1971b), and once



the disturbance is entrained, the cores successively call resonances to the west, and in the next stage if the dusty air becomes to fill the night hemisphere and the troposphere turns to be active at night, then the easterly will work fully and cause a westward encircling of dust.

4° A single ascending air disturbance may be associated with a descending air current near the place. The latter will give rise to a ground wind to sweep the airborne dust.”

We note additionally that the aspect of the July 2003 dust is also paraphrased in

<http://www.nature.museum.city.fukui.fukui.jp/shuppan/kenpou/58/58-1-10.pdf>

The LtE corner contains the emails received during the period from 25 January 2004 to 24 February: From abroad, we heard from Wu-Yang LAI (賴 武揚, Taiwan), Françoise LAUNAY (Meudon, France), Don PARKER (FL, the USA), Damian PEACH (the UK), Christophe PELLIER (France), and Bill SHEEHAN (MN, the USA), and domestically we heard from T AKUTSU (Tochigi), A HIRAOKA (Tokyo, Lowell Society), T KUMAMORI (Osaka), Y MAKINO (Toyama) N MATSUMOTO (Nagasaki), I MIYAZAKI (Okinawa), Y MORITA (Hiroshima), R TAKANARI† (Toyama), M UMEDA (Fukui City Museum of Natural History), Y YABU (OAA secretary general, Shiga). Frequently there were flurry of emails concerning the coming Lowell Conference and the OAA Convention.

Ten Years Ago (102) was written by MURAKAMI (*Mk*) in CMO #142 (25 February 1994). Twenty years ago, the planet Mars was away just after the conjunction, and it was not the season. At the opening, announced were the OAA Planetary Symposium and the OAA convention which were to be held at Fukui in August. Next *Mn* paraphrased the article "Seasonal Variation of the Martian Polar Caps" written by the professional astronomers H TANAKA and Y ABE. In 1992/93 CMO Note (14), "HIGA's Video Images in 1992/93" were listed which HIGA (*Hg*) obtained during the period from 11 Nov 1992 until 29 Mar 1993.

*Mn*'s "Yogoto" essay was XLIIrd and touched on an Issei YAMAMOTO's old conjecture on a Japanese myth in respect to Mars.

*Masami MURAKAMI (Mk) and Masatsugu MINAMI (Mn)*

## **International Society of the Mars Observers (ISMO)**

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**CMO #419/ ISMO #45 (25 February 2014)**

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