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CMO/ISMO 2016 Mars Report #20

2016 CMO/ISMO Mars Observations Made During the One-Month Period in February 2017 (λ=309°Ls~λ=325°Ls 2016)

♂・・・・・We shall give here the 20th report of the ISMO/CMO Mars observations made in February 2017. However the season of the 2016 Mars proved to be close to an end since the angular diameter of the planet Mars quite decreased (from δ=5.1" to δ=4.6") and it became difficult to pursue the variations on the planet. Accordingly a total number of the observations also reduced in February. Mars proceeded to the constellation of Pisces so that it gained altitude seen from our hemisphere, and on 27 February passed by the slow-moving planet Uranus (declination was about 8°N). The red star Mars remained in the evening sky with the apparent magnitude 1.3 near the bright Venus.

During the period, apparent declination D went up from 0° to 9°N. The Martian season proceeded from λ=309°Ls to λ=325°Ls. The tilt returned from ϕ=26°S to ϕ=23°S. Still the residual south polar cap (spc) was visible. The phase angle decreased from ι=32° to ι=27°, thus the defect of illumination a bit decreased.

It became harder to check the details on the surface from the terrestrial bases, while the MRO-MARCI images were providing information about some pieces of dust disturbances. On 6 February (λ=313°Ls), some disturbances were checked around Eos and Ophir, and a small disturbance near Nilokeras checked on 20 February (λ=320°Ls) evoked further resonances at near Xanthe to Aurorae Sinus on the following day. On 22 February (λ=322°Ls), Efrain MORALES, Puerto Rico, detected by his telescope some further playback of dusts on the morning side. The blown up dust looked active near and on Argyre and looked until the end of the month. The evening cloud at Arsia Mons on MRO-MARCI images was witnessed until mid-February but became unnoticed at the end of February.

♂・・・・・We are pleased to have received a total of 15 observations during the month: Much decreased than before. The following are the contributed members this month and their instruments:

FOSTER, Clyde *(CFs)* Centurion, SOUTH AFRICA

3 *R* Images (1, 2, 19 February 2017) 36cm SCT @*f*/22 with an ASI 290MM

KLAUSER, Franz *(FKl)* Puchenstuben, AUSTRIA

1 *IR* Image (15 February 2017) 38cm Spec with a DMK21AU618

LEWIS, Martin *(MLw)* St. Albans, Hertfordshire, the UK

2 *Colour* Images (4, 18 February 2017) 45cm Spec with an ASI 224MC

MAXSON, Paul *(PMx)* Surprise, AZ, the USA

1 *IR* Image (1 February 2017) 25cm Dall-Kirkham with an ASI 290MM

MELILLO, Frank J (*FMl*) Holtsville, NY, the USA

2 *IR* Images (4, 19 February 2017) 25cm SCT with a DMK21AU618.AS

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

5 Sets of *RGB* + 5 *IR* Images (1, 3, 5, 8, 22, 27 February 2017)
31cm SCT with a Flea 3 & ASI 290MM*

♂·····We now give a short comment chronologically to each observation made in February 2017. Every image is found in the 2016 Mars Gallery. Note please that any observation is vacant on several days.

1 February 2017 (λ=309°Ls~310°Ls, δ=5.1", φ=26°S)

Paul MAXSON (PMx) gave an IR685 image at ω=276°W by using a Mewlon 250 equipped with an ASI 290MM. The morning Syrtis Mj is visible modestly as well as the northern part of Hellas. The problematic point is that M Cimmerium looks to have transformed into a very dark ghost near the evening limb.

Clyde FOSTER (CFs) gave an R image only at ω=145°W. Use was made of a 36cm SCT equipped with ASI 290MM. The image is a low contrast one; just the area of M Sirenum is dark, and to its south M Chronium is suggested. Some small dots around Phœnicis Lacus are visible. However the longitude of Solis L looks invaded by a ghost band. The spc is quite faint.

Efrain MORALES (EMr) obtained a nicer RGB image at ω=224°W as well as an IR685 image at ω=225°W by the use of a 31cm SCT equipped with an 290MM and a set of Custom Scientific RGB filters *et al*. The RGB composite shows an appropriate tinge: Ausonia is of a beige colour, and the desert to the north of M Cimmerium looks a bit reddish. The northern limb side is whitish. M Cimmerium must be showing some details in IR. The spc is weak also in G and B.

2 February 2017 (λ=310°Ls~311°Ls, δ=5.1"~5.0")

CFs gave an R image at ω=141°W. The composition of the surface is similar to the one on the preceding day, but M Sirenum looks more blurred. Due to the blurriness, the ghost is unnoticed.

3 February 2017 (λ=311°Ls, δ=5.0")

EMr made an RGB composite as well as an IR685 image at ω=209°W. The seeing condition does not look idealistic, while the light area of Ausonia in IR shows a reddish tint in the RGB. However, the desert to the north of M Cimmerium is of a beige colour. Cerberus looks faintly showing up. The northern limb side is largely whitish.

4 February 2017 (λ=311°Ls~312°Ls, δ=5.0")

Martin LEWIS (MLw) gave an equable but sub-hued ASI 224MC colour image at ω=116°W by using a 44cm Dobsonian. The residual spc is fainter and looks small but shows an area. As a dark marking Solis L shows a definite roundish area together with the proceeding dark band near Nectaris Fossae. To the north of Solis L, Tithonius L is recognised. Ophir is visible already slimmer, and Auroræ

Sinus is also checked. Following Solis L, Phasis is suggested as a devious line and connected with the area of Phœnicis L. Maybe, Tharsis Montes are traced as well as the area of Olympus Mons. On the morning side, a half of M Sirenum is shown and Palinuri Fr is suggested. The limb side has been well dealt with by the processing, and hence the white haze at the northern limb looks smaller.

Frank J MELILLO (FMl) produced an IR610 image at ω=196°W by the use of a 25cm SCT and a DMK. Even though the angular diameter is δ=5", the image is given in a good contrast, and the dark band from M Sirenum to M Cimmerium is well described. The area of M Chronium is shadowy. On the northern hemisphere, Trivium Charontis is suggested.

5 February 2017 (λ=312°Ls, δ=5.0")

EMr took an IR685 image at ω=182°W. Mare Sirenum and a morning half of M Cimmerium show up nicely in a zigzagged way at the central zone. Ausonia is not seen light. The spc is unknown. To the north of M Sirenum, Mesogæ and Amazonis appear a bit shadowy.

8 February 2017 (λ=313°Ls~314°Ls, δ=4.9", φ=26˚S)

EMr obtained an RGB composite at ω=153°W. M Sirenum is visible dark on the evening side, but the contour looks blurred. The distribution of hue of the surface is interesting. In R, M Sirenum is dark at around the latitude line at 30°S, M Chronium is at 60°S, and at the circumpolar area Depression Parva is dark at 80°S just like a set of fault zones; and the zones between them look vacant and rather light in R. The vacant zones take a beige tint on the RGB because of G and B. The circumpolar higher longitude areas are more whitish misty. The colour balance of the evening limb side is whitish declined, and it may include the area of the higher Thyle I.

15 February 2017 (λ=318°Ls, δ=4.8", φ=25°S)

Franz KLAUSER (FKl) at Puchenstuben, Österreich (and a friend of **Robert SCHULZ (RSz)** at Wien) sent us an IR742 image at ω=017°W by the use of a 38cm speculum equipped with the DMK21 AU618. Except for a thick description of S Sabæus, the markings are processed normal just like an R image: Especially the area of Noachis is nicely depicted. Pandoræ Fr and Margaritifer S are also mildly expressed though lacking the sharpness. Niliacus L is also shown faintly. The tail of M Serpentis is now near at the evening limb and so does not look dark, but sends a broad Hellespontus up to near the Antarctic region. The spc is checked but looks a bit larger (blurred).

We understand that it was difficult for the European observers to observe the 2016 Mars because the planet remained quite low at the southern sky if seen from Europe. For example, Wien is located near at 48°N, and so the planet just reached a low of about ten degrees compared with our Japanese place.

18 February 2017 (λ=319°Ls~320°Ls, δ=4.8")

MLw at St Albans (further deeply located at about 52°N), the UK, gave an ASI 224MC colour image at ω=341°W. Since the angular diameter is now below 5" arc second, it is now not so easy to fix some details even by using a 44cm speculum. The presence of the spc is described. The shape of Syrtis Mj near at the evening limb looks good, and also Hellas appears a bit light followed by the broad Hellespontus. M Serpentis and its broad tail are nicely explicit. Pandoræ Fr is also seen broadly, and Marga-

ritifer S is spotted near the morning terminator. Meridiani S is not so clear but pinned down as it stands. M Acidalium looks poking out near the northern morning terminator. The northern limb mist is compactly whitish.

19 February 2017 (λ=320°Ls, δ=4.8"~4.7", φ=25°S~24°S)

CFs gave a single R image at ω=326°W. Syrtis Mj is fully visible on the evening side. The root of M Serpentis is thick and dark. Hellas's northern part is light. However a strange band is recorded along the southern evening limb.

FMl gave an IR610 image at ω=050°W. At the first glance, the image does not prove that it is really an image of Mars. Just a dusky area occupies near the centre of the image, maybe composed by M Erythræum, S Margaritifer S, Auroræ S and so on. The direction of the spc might be suggested.

22 February 2017 (λ=321°Ls~322°Ls, δ=4.7", φ=24°S)

EMr produced an important RGB composite at ω=015°W (also an IR685 at ω=014°W). The fundamentals are not necessarily well organised, while it appears to describe a dust disturbance near a large area including the morning Auroræ S to the northern Chryse as well as to the southern part of Margaritifer S. A bit of Erythræum may also be influenced. On the other hand, Noachis and Deucalionis Regio look slightly ground-reddish (S Sabæus and Meridiani S are well dark based on the R image but their outlines are not regularised). The northern part of S Margaritifer is dark but its south is slightly disturbed (different in colour from the reddish Aram). Niliacus L is shadowy visible in R and the area to the north of Niliacus L up to the limb looks whitish hazed in RGB. We note that the spc is roughly spotted. Unfortunately, no other image was obtained on the day and also on the days before and after, and so it will be difficult to discuss some possible developments of the dust. We will however take account of the MOC-MARCI data in a coming Note when the present season is over. (Sometimes, however, the pasted image of several swaths taken in different times appears unrealistic, and so we should be careful when we refer to the MOC-MARCI images.)

27 February 2017 (λ=324°Ls~325°Ls, δ=4.6", φ=23°S)

EMr obtained an RGB composite and an IR685 image at ω=330°W (the surface has much changed from the previous one on 22 February). Now the angular diameter is close to its limit, but even then the surface looks well colourful and Syrtis Mj stands out nicely on the afternoon side. Mare Serpentis together with the eastern end of S Sabæus is imposing: The tail of M Serpentis is really dark and wide, and is connected with Pandræ Fr. A northern part of Hellas is light, and the southern part of Æria is impressively reddish, following Syrtis Mj. The EN limb side is misty whitish. This RGB image is excellent and tasteful for a smaller angular diameter (δ=4.6").

Masatsugu MINAMI and Masami MURAKAMI

Letters to the Editor

●·····***Subject: Mars images in June 2016 (I)***
Received: 19 February 2017 at 15:57 JST

Dear Dr Minami, Finishing the treatment of the backlogs in May 2016, I would like to deal with the backlogs from June 2016. Here are three sets of Images from 1 June and 2 June 2016.

http://www.kwasan.kyoto-u.ac.jp/~cmo/cmons/2016/160601/Mo01June16.jpg
http://www.kwasan.kyoto-u.ac.jp/~cmo/cmons/2016/160602/Mo02June16.jpg

○····***Subject: Mo04Mar_17 & images in June 2016 (II)***
Received: 10 March 2017 at 23:55 JST

Dear Dr Minami, Please find attached further seven image sets from June 2016.

http://www.kwasan.kyoto-u.ac.jp/~cmo/cmons/2016/160613/Mo13June16.jpg
http://www.kwasan.kyoto-u.ac.jp/~cmo/cmons/2016/160614/Mo14June16.jpg
http://www.kwasan.kyoto-u.ac.jp/~cmo/cmons/2016/160617/Mo17June16.jpg

I would also like to send a set of images made recently on 4 March 2017 when the angular diameter was 4.5″. This was one taken when the seeing condition was not preferable. I wish I could meet with more favorable sky.

http://www.kwasan.kyoto-u.ac.jp/~cmo/cmons/2016/170304/Mo04Mar17.jpg

Another annoyance: Unfortunately an ExpressCard which I used for nine years was recently broken. Without it I cannot take pictures of Mars!

Yukio MORITA (Hiroshima, JAPAN)

●·····***Subject: Mars 19 February R filter***
Received: 20 February 2017 at 21:59 JST

Hi all, Unfortunately afternoon conditions remain very poor. Attached is a rather poor R filter image. However I believe there is sufficient data to be able to confirm that Syrtis Major and Sinus Sabeaus are still detectable. Hellas is also detectable, and appears "normal", in my opinion. Ls 320 and 4.7".
Best regards,

http://www.kwasan.kyoto-u.ac.jp/~cmo/cmons/2016/170219/CFs19Feb17.jpg

○····***Subject: Re: Mars 19 February R filter***
Received: 20 February 2017 at 23:05 JST

Thanks Roger, Yes, it certainly looks like it was a rather tame apparition, at least compared with the 2nd half of the previous one, where I was able to pick up a number of local dust storms, and which got me off to an exciting start in Mars imaging! However, I guess that the passing of another relatively quiet apparition raises the probability of us having major activity on the next one.....

If I recall, the dust storm season will fall closer to opposition in 2018, so I guess that could be a good or a bad thing... It would certainly be exciting to capture hi-res images of the initiation and development of a planet-encircling storm, but I can imagine rather frustrating to image a relatively featureless Mars week after week... :-). Thanks again for all the interaction over the last while.

Best regards,

○····***Subject: RE: CMO #459 uploaded***
Received: 13 March 2017 at 15:28 JST

Dear Masami and Masatsugu (and Reiichi),

Thank you for the latest edition of the CMO. Thank you also for your ongoing dedication to recording Mars observations from around the world.

As you would have noticed, there have been a few contributing factors to me not submitting further images (weather, seeing conditions, problems with IR imaging, lower elevation of Mars, etc). I have resolved the IR issue, but it is unlikely that I will be able to submit further during this apparition with Mars becoming low from here.

I was very sorry to hear of the ill health of Masatsugu, and I wish him a speedy recovery, with better health in the future.

I look forward to the next Mars apparition with great excitement and anticipation as it will be particularly well placed for observation from my location.

In the next few years, I would definitely like to visit the Lowell and Harvard observatories in the USA specifically because of the Mars heritage and history that they have. If there are any specific people in the ISMO/CMO that are associated with, or closely connected with these observatories, I wonder if I can be given the contact details (I am thinking maybe of Bill Sheehan as a start?).

It has been exciting for me to discover and visit the Mars heritage and History at the Boyden observatory here in South Africa, as well as the Lamont-Hussey Observatory that has now been converted to a planetarium.

Very best regards,

Clyde FOSTER (Centurion, SOUTH AFRICA)

●·····***Subject: Re: Mars 19 February R filter***
Received: 20 February 2017 at 22:17 JST

Thanks, Clyde. I agree with your assessment.

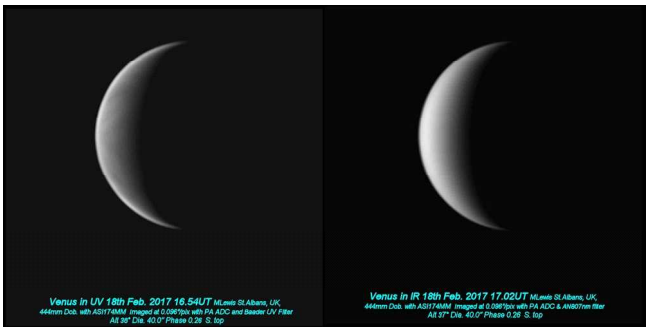
It looks as though another apparition has passed without at planet-encircling dust storm. The latest onset of a planet-encircling dust storm was Ls 312. It's now Ls 321, so it would be unusual for one to start now. Thank you for your conscientious and helpful observations through the dust season!

Roger VENABLE (ALPO: Chester, GA)

●·····*Subject: Mars and Venus (IR and UV) 18th Sat 2017*
Received: 21 February 2017 at 08:39 JST

Hi, Another lucky break in the generally cloudy weather on a Saturday afternoon again allowed an early set-up and imaging of a huge Venus and a tiny Mars around sunset with reasonable seeing conditions prevailing.

http://www.kwasan.kyoto-u.ac.jp/~cmo/cmons/2016/170218/MLw18Feb17.jpg



I must say that having Venus close to Mars makes hunting it down in a bright sky a realistic possible for my non GoTo Dobsonian- without Venus's beacon-like presence close by finding Mars around sunset would not be a practical proposition. Details are on the images and you can also see them online at the top of this page; Cheers,

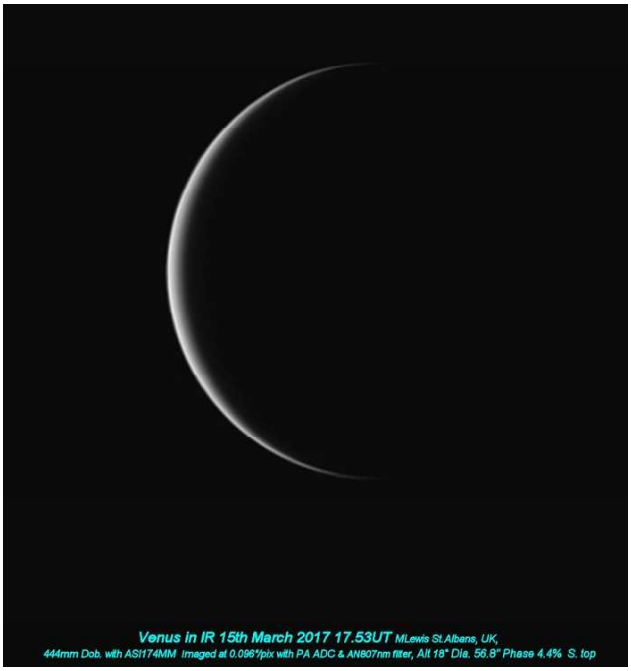
http://www.skyinspector.co.uk/mars-and-venus

○···· *Subject: Venus and Mars 15th March 2017*
Received: 17 March 2017 at 07:47 JST

Hi, Yesterday afternoon a lovely break in the long period of cloud we have been having, combined with decent seeing conditions, allowed imaging of Venus in IR light just 10days before inferior conjunction - showing it as a slender crescent. Venus lay directly above the sun and the bowl facing directly up from the horizon was a wonderful sight in the eyepiece. Later I managed with some luck to locate diminutive Mars at 4.4" across clearly showing Solis Lacus and a very small SPC.

Details are on the images which can also be seen at the top of this page;

http://www.skyinspector.co.uk/mars-and-venus



Cheers

http://www.kwasan.kyoto-u.ac.jp/~cmo/cmons/2016/170315/MLw15Mar17.jpg

Martin LEWIS (St Albans, the UK)
www.skyinspector.co.uk

●·····*Subject: Mars observation 15th February 2017*
Received: 22 February 2017 at 08:54 JST

Dear CMO/OAA-team ! Here is a Mars observation from 15th February 2017. It was taken by my friend Franz Klauser (FKr) using his 15" Newtonian located in Puchenstuben/Lower Austria. Thank You in advance for displaying his picture on the CMO page ! best regards

http://www.kwasan.kyoto-u.ac.jp/~cmo/cmons/2016/170215/FKl15Feb17.jpg

Robert SCHULZ (AUSTRIA)

●·····*Subject: February 19, 2017*
Received: 23 February 2017 at 11:34 JST

Hi, I have attached my latest image of Mars February 19, 2017 at 23:01 UT. Best,

http://www.kwasan.kyoto-u.ac.jp/~cmo/cmons/2016/170219/FMl19Feb17.jpg

○····*Subject: Mars: March 5, 2017*
Received: 7 March 2017 at 09:39 JST

Hi, I have attached my latest image of Mars March 5, 2017 at 23:10 UT. Best,

http://www.kwasan.kyoto-u.ac.jp/~cmo/cmons/2016/170305/FMl05Mar17.jpg

○····*Subject: Mars: March 12, 2017*
Received: 14 March 2017 at 11:20 JST

Hi , I have attached my latest image of Mars

http://www.kwasan.kyoto-u.ac.jp/~cmo/cmons/2016/170312/FMl12Mar17.jpg

○····*Subject: Mars: March 19, 2017*
Received: 22 March 2017 at 12:08 JST

Hi, I have attached my image of Mars March 19, 2017 at 23:45 UT. Thanks,

http://www.kwasan.kyoto-u.ac.jp/~cmo/cmons/2016/170319/FMl19Mar17.jpg

○····*Subject: Mars: March 21, 2017*
Received: 24 March 2017 at 03:11 JST

Hi, I have attached my latest image of Mars March 21, 2017 at 23:38 UT. Thanks,

http://www.kwasan.kyoto-u.ac.jp/~cmo/cmons/2016/170321/FMl21Mar17.jpg

Frank J MELILLO (Holtsville, NY)

●·····*Subject: Mars - February 22nd*
Received: 25 February 2017 at 02:41 JST

Hi Mr. Minami and All!, Here is my session under above average conditions.

http://www.kwasan.kyoto-u.ac.jp/~cmo/cmons/2016/170222/EMr22Feb17.jpg

Here I submit and updated a compilation of images during this current apparition.

○····*Subject: Mars - February 27th*
Received: 1 March 2017 at 10:21 JST

Hi Mr. Minami and All!, Here is my most recent session from february 27th under average conditions.

http://www.kwasan.kyoto-u.ac.jp/~cmo/cmons/2016/170227/EMr27Feb17.jpg

○····*Subject: Mars - March 2nd*
Received: 8 March 2017 at 08:25 JST

Hi Mr. Minami and All!, Here I submit a quick session just before conditions deteriated in IR685 filter.

http://www.kwasan.kyoto-u.ac.jp/~cmo/cmons/2016/170302/EMr02Mar17.jpg

Efrain MORALES RIVERA
(Aguadilla, PUERTO RICO)

●·····*Subject: Well wishes*
Received: 13 March 2017 at 08:09 JST

Dear Mr. Minami, I am writing to wish you a complete return to health. I am sorry you are not well. I have been an admirer of your excellent work on Mars for many years and am hoping you can return to observing the planet Mars soon.

Respectfully yours,

Myron E WASIUTA (VA, the USA)

(Myron WASIUTA is an old friend of our CMO. -Also he is a real acquaintance of Samuel WHITBY at Virginia).

http://www.kwasan.kyoto-u.ac.jp/~cmo/cmo/letter/mws/mws220.html
http://www.kwasan.kyoto-u.ac.jp/~cmo/cmomn0/MWs244.htm

☆ ☆ ☆

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