

MARS

No. **461**

25 April 2017

OBSERVATIONS

No. **87**Published by the *International Society of the Mars Observers*

CMO/ISMO 2016 Mars Report #21

2016 CMO/ISMO Mars Observations Made During the One-Month Period in March 2017 ($\lambda=325^\circ\text{Ls}\sim\lambda=342^\circ\text{Ls}$ 2017)

♂..... This is the 21st Report of the CMO/ISMO 2016 Mars observations made during one month period of March 2017. We were in the final stage of the 2016 Mars apparition, and the angular diameter δ was under 5 seconds of arc (really from $\delta=4.6''$ to $4.2''$ in March). The planet was already deep in the western sky, celestially moving from the Pisces constellation to the Aries one in March 2017. The apparent declination D went up nicely (seen from our Northern Hemisphere observers) from 9°N to 16°N , while the days were getting longer, and hence the observation times of Mars got shorter each day. Thus the amount of observations submitted to us did much decrease. The Martian season proceeded from $\lambda=325^\circ\text{Ls}$ to $\lambda=342^\circ\text{Ls}$, and the northern cloud canopy was expected to be active, but the tilt quite remained southwards from $\varphi=23^\circ\text{S}$ to 17°S , so that it was difficult to chase the arctic region. The phase angle varied from $\alpha=27^\circ$ to 22° .

We were still in the season of the southern dust disturbances. Fortunately Yukio MORITA (*Mo*) detected a striking dust disturbance covering Margaritifer Sinus to Mare Erythræum on 11 March ($\lambda=331^\circ\text{Ls}$) from the angle $\omega=024^\circ\text{W}$. The dust was not only bespread out the whole of Margaritifer S, but also distorted the area of Meridiani Sinus. The MRO-MARCI images suggests that the area of Margaritifer S was haunted by dusts around from 5 March ($\lambda=328^\circ\text{Ls}$) and remained dusty. Unfortunately however, the region was not continuously watched from the terrestrial bases perhaps because of dismal weather. The case of Yukio MORITA on 11 March proves that the dust activities can be detected even if the apparent diameter is mere $4.5''$. According to the results shown by the MRO-MARCI images which look sometimes lanterns full of broken holes, the Margaritifer S dust looked to have extended southwards and grossly speaking dispersed after 15 March. Otherwise MRO-MARCI also suggests minor disturbances near Mare Acidalium, but these did not continue.

During the period the whitish cloud at the northern high-latitude has been sometimes conspicuous. We regard that a milder image made by Martin LEWIS (on 24 March at $\lambda=338^\circ\text{Ls}$) seen from $\omega=019^\circ\text{W}$ by the use of a colour-com shows clearly an arctic white cloud patch near the northern limb.

We incidentally note that the season characteristics in this month are *déjà-vu* in 2005, and we hope the readers would like to refer to the 2005 CMO Mars Gallery corner:

http://www.kwasan.kyoto-u.ac.jp/~cmo/cmoms/2005/f_image.html

The following could also be useful to understand the situation at this season:

"Watch the North Polar Region from $\lambda=310^\circ\text{Ls}$ to $\lambda=350^\circ\text{Ls}$ "

http://www.kwasan.kyoto-u.ac.jp/~cmo/cmomn2/2005Coming_9.htm

"The Season of the Northern Hemisphere "

http://www.kwasan.kyoto-u.ac.jp/~cmo/cmomn2/2007Coming_3.htm

♂..... As the reported CMO/ISMO Mars observations made in March 2017, we received with thanks a total of 14 sets of observations. The following are the contributed members and their instruments used:

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

2 Colour Images (15, 24 March 2017) 45cm Spec with an ASI 224MC

MELILLO, Frank J (FMI) Holtsville, NY, the USA

5 IR Images (5, 12, 19, 21*, 23* March 2017)

25cm SCT with a DMK21AU618.AS & DBK21AU618.AS*

MORALES RIVERA, Efrain (EMr) Aguadilla, PUERTO RICO

1 IR Image (2 March 2017) 31cm SCT with an ASI 290MM

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

3 Sets of LRGB-RGB Images (4, 11, 19 March 2017) 36cm SCT with a Flea 3

♂..... We further received from

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

3 Sets of LRGB Images (26 June 2016) 36cm SCT with a Flea 3

♂..... The amount of observations which were submitted to us has quite decreased because the angular diameters δ was no larger than $4.6'' \sim 4.3''$, while several enthusiasts including Frank J MELILLO were still producing interesting images with markings. We here try to give a short comment to each observation in March 2017 chronologically: We hope the reader would like to refer to the CMO/ISMO 2016 Mars Gallery for each image.

2 March 2017 ($\lambda=326^\circ\text{Ls}$ - 327°Ls , $\delta=4.6''$, $\varphi=23^\circ\text{S}$, $\iota=27^\circ$)

Efrain MORALES (EMr) obtained, by the use of a 31cm SCT equipped with an ASI 290M, an IR685 image at $\omega=297^\circ\text{W}$. Syrtis Major (Mj) is dark apparent northerly near the CM, and its southern part looks a bit faded. Mare Tyrrhenum looks moderately dark, but M Cimmerium is not separated. Hellas is a bit light both at the southern and northern parts. Ausonia forms also a lighter part. M Serpentis appears considerably dark. There is seen a dark area to the south of Hellas, but no glimpse of the residual south polar cap (spc)

4 March 2017 ($\lambda=327^\circ\text{Ls}$ - 328°Ls , $\delta=4.6''$, $\varphi=22^\circ\text{S}$)

Yukio MORITA (Mo) used a 36cm SCT equipped with a Flea 3 to produce a set of LRGB and RGB images *et al* at $\omega=097^\circ\text{W}$. On the R image, there is visible a dark area from Auroræ S to its south, while Solis L and its south are not definite. On the RGB image the fuzzy markings on R remain but it is not reminiscent of any definite Martian marking.

5 March 2017 ($\lambda=328^\circ\text{Ls}$, $\delta=4.6'' \sim 4.5''$)

Frank MELILLO (FMI) obtained an IR610 image $\omega=274^\circ\text{W}$ by using a 25cm SCT equipped with a DMK21AU618.AS. Though $\delta=4.5''$, Syrtis Mj and M Tyrrhenum look very realistic. Hellas is a bit faded

and M Hadriacum runs up southwards. The evening limb is light.

11 March 2017 ($\lambda=331^\circ\text{Ls}$ - 332°Ls , $\delta=4.5''$ - $4.4''$, $\phi=21^\circ\text{S}$)

Mo obtained a set of LRGB and RGB images *et al* at $\omega=024^\circ\text{W}$. The L RGB looks better: there is visible Sinus Sabæus very dark and broad while Meridiani Sinus is not so evident, and the following Sinus Margaritifer looks quite faded out while the area of Auroræ Sinus is dark near the morning terminator: This suggests that the area of Margaritifer S is covered by dusts including a part of M Erythræum as well as a western part of Meridiani S. By referring to the MRO-MARCI images on 11 March, we are convinced again of the dust disturbance. The MRO-MARCI images really show a broad dust stream which is bespread over Margaritifer S, and especially clearly shows an intrusion of dust into the western half of Meridiani S, as is in accordance with a suggestion of the Mo's images. The MRO-MARCI images also suggest an activity of the dust on the days before and after around 11 March, although the images always annoy us because of several broken holes (just like a lantern with several broken holes) which occur when interfaced with the pieces taken at different times, and so it is difficult to exactly trace, but the dust looks to have governed from around 6 March, and Meridiani S looks sometimes obscured but sometimes explicit. Otherwise Margaritifer S was obscure already also on 3 March. Unfortunately no other terrestrial observations of the region were performed on and around 11 March.



12 March 2017 ($\lambda=332^\circ\text{Ls}$, $\delta=4.4''$)

FMI took an IR610 picture at $\omega=210^\circ\text{W}$. The band from M Sirenum and M Cimmericum is explicit. Maybe Simois is visible to the south of M Sirenum. Maybe Cerberus is seen near the northern part of the morning terminator.

15 March 2017 ($\lambda=333^\circ\text{Ls}$ - 334°Ls , $\delta=4.4''$, $\phi=20^\circ\text{S}$)

Martin LEWIS (MLw) gave a 224MC colour image at $\omega=111^\circ\text{W}$ by using a 44cm Dobsonian. This image reminds us of a preferable Martian colour. For $\delta=4.4''$, Solis Lacus shows up as a large roundish marking, and Aonius Sinus and the tail of Mare Sirenum are evident. Agathodæmon and Tithonius Lacus are visible and Ganges goes down along the evening limb. Phœnicis L is also explicit. To the south of Phaethontis, there is seen a vast white morning haze. The remnant of the spc is suggested. The procedure of the light evening limb is pertinent.

19 March 2017 ($\lambda=335^\circ\text{Ls}$ - 336°Ls , $\delta=4.3''$, $\phi=19^\circ\text{S}$)

Mo gave a set of images at $\omega=307^\circ\text{W}$. On the R image, Syrtis Mj is suggested, but no further.

FMI obtained an IR610 image at $\omega=144^\circ\text{W}$. M Sirenum appears a bit dark and to its south a shadowy area exists.

21 March 2017 ($\lambda=336^\circ\text{Ls}$ - 337°Ls , $\delta=4.3''$)

FMI gave an IR610 image at $\omega=123^\circ\text{W}$. The surface gives an impression that the lighter surface is

covered by some minute spots group, but since Solis L is not well figured, such fine markings could not be regarded as real points if the main area is not faded away. Here used was DBK.

23 March 2017 ($\lambda=337^\circ\text{Ls}-338^\circ\text{Ls}$, $\delta=4.3''$, $\phi=18^\circ\text{S}$)

FMI also obtained an IR610 image by DBK at $\omega=101^\circ\text{W}$. The preceding observation was made when the seeing condition was 4/10, while this time it was 7/10. This time the existence of Solis L is definite though the contour is rather vague. Aonius S and the tail of M Sirenum are evident. Some shadowy markings on the northern hemisphere are suggested.

24 March 2017 ($\lambda=338^\circ\text{Ls}-339^\circ\text{Ls}$, $\delta=4.3''$)

MLw sent us a 224MC colour image at $\omega=019^\circ\text{W}$. S Sabæus and S Meridiani are rather dark evident. The tail of S Sabæus (or M Serpentis) leaps up southwards. Hellas looks rather whitish near the evening limb. Margaritifer S is not so dark, but shows up: The eastern neighbour looks slightly faded, while the western connection with Auroræ S is rather darker. The light and shade of Noachis are nicely described. The area of Niliacus Lacus is largely dark, adjacent to the arctic white cloud. The desert region including Thymiamata is quite reddish.

That's all in March 2017. However, since $\delta=4.3''$ on the day, further observations are expected. From the place of Martin LEWIS (St Albans, the UK, at 51.76°N), the altitude of the planet was 29° high, and this evening observation was performed at 18:33 GMT. (To be concluded)

(Masatsugu MINAMI and Masami MURAKAMI)

Letters to the Editor

●.....*Subject: Re: CMO #459 uploaded*
Received: 19 March 2017 at 22:31 JST

Dear Masatsugu, Thank you for your kindful engagements to Mars observings. I'm not active in observing but interested to get your email notifications ahead. Thank you and many greetings to Japan. Best wishes

André NIKOLAI (GERMANY)

●.....*Subject: Mars 24th March 2017*
Received: 25 March 2017 at 07:58 JST

Hi, Mars at only 4.3" rescued from a very jittery, poor on-screen image this evening. Hats off to Autostakkert and Astra Image deconvolution to pull the detail out. Sinus Sebæus on left with Hellas at LH limb and Mare Acidalium at bottom with some cloud structure. Also visible at the top of this page;

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

Cheers

<http://www.kwasan.kyoto-u.ac.jp/~cmo/cmons/2016/170324/MLw24Mar17.jpg>

○.....*Subject: Mars 7th April and Jupiter 8th April 2017*
Received: 14 April 2017 at 19:13 JST

Hi, A couple of very different sessions last week-end. On the Friday (7th April) Mars 10.5 months sunset with multiple overlapping images during



Jupiter 8th April 2017, 22.32UT MLewis St Albans UK
444mm Dobsonian imaged @0.096"/pix with ASI174MC (colour cam.) +
PA ADC + WJ Derotate CM l=186° ll=257° ll=16° Dia. 44.3" Alt. 30° 150% resize S. top



after opposition at 4.1" in low in the West just after preview- rescued by edge quality sort in AS!3, then the following day Jupiter one day after opposition in very good seeing which was much easier to process. Jupiter with colour camera and also with ZWO CH4 filter. Details on both images and see the images also here;

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

<http://www.skyinspector.co.uk/jupiter>

Cheers

<http://www.kwasan.kyoto-u.ac.jp/~cmo/cmoms/2016/170407/MLw07Apr17.jpg>

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

●.....*Subject: March 23, 2017*

Received: 26 March 2017 at 08:46 JST

Hi, I am sending my latest image of Mars March 23, 2017 at 23:30 UT. Thanks,

<http://www.kwasan.kyoto-u.ac.jp/~cmo/cmoms/2016/170323/FMI23Mar17.jpg>

Frank J MELILLO (Holtsville, NY)

●.....*Subject: Mo19Mar_17 and others*

Received: 3 April 2017 at 00:21 JST

Dear Masatsugu and Masami, as you know the apparent diameter of the planet Mars has considerably shrunk, and because it does not stay long in the evening sky, I had little chance to grasp Mars after getting home. So just the holidays give me the opportunity to shoot. In March, I was just able to observe three times. So here are attached images made on 11 March and 19 March (in

addition to the previous on 4 March). I will soon begin to process some backlogs made in July 2016.

How are you feeling, Dr. MINAMI, these days? I hope you will soon get even a little better. Best

<http://www.kwasan.kyoto-u.ac.jp/~cmo/cmoms/2016/170311/Mo11Mar17.jpg>

<http://www.kwasan.kyoto-u.ac.jp/~cmo/cmoms/2016/170319/Mo19Mar17.jpg>

<http://www.kwasan.kyoto-u.ac.jp/~cmo/cmoms/2016/160626/Mo26June16.jpg>

Yukio MORITA (Hiroshima, JAPAN)

●.....*Subject: Video, Five Years Advocacy Success*

Received: 16 April 2017 at 01:29 JST

Greetings fellow space enthusiast,

Next Saturday, Planetary Society members around the world will participate in the worldwide [March for Science](#).

In Washington, D. C.- where I'll be marching as honorary Co-Chair- and at over 500 satellite marches around the world, our community of scientists and science supporters will unite as advocates for space and science. It will be a historic occasion, and I hope you join us.

But this year, with big changes in the White House and at NASA it's vital for every Society member to become an activated Space Advocate and speak out!

Please take a moment to watch this video update from Casey Dreier, our Director of Space Policy. Find out what you can do to power our efforts to reach key members of Congress - your donation will be matched - and to have your voice heard by your representatives.

Contribute Now:

<http://support.planetary.org/site/R?i=FIAtMY0pTXc2qhuoMaC78A>

Onward, **Bill NYE** (CEO The Planetary Society)

●.....*Subject: from Bill Sheehan: Mars*

Received: 22 April 2017 at 02:30 JST

Dear Masatsugu, I hope you are well, and that your health has improved to allow you to return to your usual intensive work on Mars.

I was at Arizona State University a week ago, hosted by Jim Bell planetary scientist who is in charge of the Spirit and Opportunity rover imaging team and who is Principal Investigator for the 2020 Mars rover, which is now narrowing to three possible landing sites. This mission will in-

volve, for the first time, sample return missions, so NASA is needless to say being quite paranoid about introducing contamination and so everything is proceeding more slowly. Jim and I are writing a new book on Mars to replace "The Planet Mars," which is now some twenty years out of date.

In preparing for this, I am hoping to visit sites around Flagstaff that informed Percival Lowell's view of Arizona as a model for Mars, and Mars as a place like Arizona - an illusion, of course, since Mars is much more inhospitable than anyone knew around the turn of the 20th century. Some of these places include the San Francisco Peaks, Turkey Tanks, a small basalt canyon between here and Meteor Crater, Sunset Crater, Wupatki Ruins, etc which I hope to visit (and study) systematically.

Lowell Observatory has proved to be less available to my pursuits than I had hoped - the Clark refractor is entirely committed to the public programs, and not able to be used for serious observing. The observatory is also quite uninterested now in historical matters, and entirely focused on their public visitors' programs as a way to raise funds for the Discovery Channel Telescope project. I still see the white dome on the hill every day on going to work, and in fact can see it clearly from where I am now (Flagstaff

Medical Center, where I am employed full-time as a psychiatrist). However, it no longer evokes the awe and wonder it once did. With familiarity, it fades into the light of common day.

***I am writing partly because, now a year after I moved to Flagstaff, I have been pondering the visit to Japan I made in spring of 2004 - it was at about this season - which I will never forget. Unfortunately, when I moved here, some items-including the OAA gold medal and the small piece of porcelain that the Saheki family gave me, as well as other valuables - were stolen, presumably by the movers or by someone who went through the open houses of the property in Willmar which we had to sell before moving here. But I still have pictures and fond memories of my visit to Nagasaki and the splendid Noto route that you, Asada, and I took. I remember the fish kites that were flown on Children's Day (May 5). This was an adventure never to be forgotten, and inspired in me a love for Japan that has not faded.

PS. Since Lowell has proved to be unreceptive, I am trying to determine a better place from which to observe the 2018 Mars opposition. New Zealand perhaps. All best

Bill SHEEHAN (Flagstaff, AZ)

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International Society of the Mars Observers (ISMO)

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CMO n°461/ ISMO #87 (25 April 2017)

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