

MARS

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OBSERVATIONS

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Recent Dust Disturbance: On 22 February 2017 at 22:39 GMT ($\lambda=322^\circ\text{Ls}$), Efrain MORALES (EMr) detected a significant dust disturbance near at Auroræ Sinus on the early morning side. According to the MRO-MARCI Weather Report, the first precursor is spotted on 20 February near at Idæus Fons. Here we show the set of images made by MORALES compared with the MRO-MARCI images on 22 and 23 February.



(credit: NASA/JPL -Caltech /MSSS) (Masami MURAKAMI, OAA/ISMO)

CMO/ISMO 2016 Mars Report #19

2016 CMO/ISMO Mars Observations Made During the One-Month Period in January 2017 ($\lambda=291^\circ\text{Ls}\sim\lambda=309^\circ\text{Ls}$ 2017)

♂..... In this issue, as the 19th Report of the 2016 ISMO/CMO Mars observations, we deal with the observations made during the one-month period of January 2017. Celestially the planet Mars continued to move from the constellation Aquarius to the constellation Pisces, and shined near the planet Venus on the evening sky. On the New Year day, Mars approached the planet Neptune at 07h GMT and passed by. The apparent declination D was recovering from 8°S to around 0°N at the end of January. The apparent diameter decreased from $\delta=5.7''$ to $\delta=5.1''$ during the period, while several observers continued to contribute. The Martian season proceeded from $\lambda=291^\circ\text{Ls}\sim\lambda=309^\circ\text{Ls}$, and the season of the dust disturbances still continued. The tilt increased over 25°S , and reached the maximum $\varphi=26.4^\circ\text{S}$ in late January. Because of the tilt, the residual small south polar cap (spc) was occasionally seen nicely. The phase angle ι decreased from 37° to 32° .

According to the MRO MARCI images, some dust disturbances were checked at Eos on 18 January ($\lambda=301^\circ\text{Ls}$) and on 23 January ($\lambda=304^\circ\text{Ls}$). This might have been some resonances of the dust events occurred on the preceding days. The activities subsided within a few days. The white cloud activity at Arsia Mons is still checked by the MRO MARCI.

As to the dust activity during the present season, refer to the following article in the CMO: "Disturbances at Xanthe and around Lunæ Lacus after the Northern Autumnal Equinox"

<http://www.kwasan.kyoto-u.ac.jp/~cmo/cmomn4/CMO438.pdf>

(The Japanese readers can also refer to

<http://www.kwasan.kyoto-u.ac.jp/~cmo/cmo/438/ISMO Note 2014 11.htm>)

♂..... As the CMO/ISMO Mars observations made in January 2017, we received with thanks a total of 43 observations. The following are the contributed members and their instruments:

FOSTER, Clyde (CFs) Centurion, SOUTH AFRICA

2 Sets of RGB + 7 R + 7 IR Images (1*, 5*, 9, 10, ~12, 14, 15, 18, 22, 23, 25, 28 January 2017)
36cm SCT @f/22, @f/33* with an ASI290MM

KARDASIS, Manos (MKd) Glyfada-Athens, GREECE

2 Colour Images (3, 13 January 2017) 36cm SCT with a DMK21AU618

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

3 Colour Images (18, 20, 22 January 2017) 45cm Spec with an ASI224MC

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

4 IR Images (5, 7, 12, 29, 31 January 2017) 25cm Dall-Kirkham with an ASI290MM

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

4 IR Images (1, 15, 16, 29 January 2017) 25cm SCT with a DMK21AU618.AS

MORALES RIVERA, Efrain (EMr) Aguadilla, PUERTO RICO

10 Sets of RGB + 11 IR Images (1, 2, 9, 14, 15*, 19*, 20*, 23*, 25*, 26* January 2017)
31cm SCT with a Flea 3 & ASI290MM*

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

4 Sets of LRGB Images (1, 3, 22 January 2017) 36cm SCT with a Flea 3

♂..... We Further received 15 sets from Yukio MORITA as follows:

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

15 Sets of LRGB Images (1, 11, 13, 17, 18, 20, 22, 23, 30 May 2016) 36cm SCT with a Flea 3

♂..... We now give a short comment chronologically to each observation made in January 2017. Every image is found in the *Web of the ISMO 2016 Mars Gallery*. However we really missed to receive any observation made on 4, 6, 8, 17, 21, 24, 27, 30 January 2017.

1 January 2017 ($\lambda=291^\circ\text{Ls}-292^\circ\text{Ls}$, $\delta=5.7''$, $\varphi=25^\circ\text{S}$)

Yukio MORITA (Mo) obtained a set of excellent images from the very beginning in the new year. Mo uses a 36cm SCT equipped with a Flea 3 camera. Though the angular diameter is no larger than $\delta=5.7''$, Mo straightforwardly obtained the LRGB and RGB composites at $\omega=329^\circ\text{W}$ and $\omega=335^\circ\text{W}$ (unfortunately the interval is a bit shorter than 40 minutes). The residual spc is nicely explicit on every image (all of a dozen of images), and it looks most apparent that the centre of the spc is quite deviated from the geometrical south pole. (Since Mo always associate $p \leftarrow f$ with the images we will be able to try in a coming issue to prove how far is the deviation.) On the RGB image at $\omega=329^\circ\text{W}$, the explicit Yaonis Fr draws our attention because of the R image. The widened tail of M Serpentis is shown in some details,

and Pandoræ Fr proves to be also rich in the light and shade distribution. The R also shows that the northern part of Hellas is simply bright, but the southern half is rather shadowy made of some fine structures. The description of the area between the spc and Hellas is also of a fine success on the RGB. This part also shows an involvement with the more complexed details in Noachis. As to the description of the light and shade of Pandoræ Fr, the RGB image at $\omega=335^\circ\text{W}$ also shows nicely: From Pandoræ Fr some shadowy canals look to run across Deucalionis Regio down to S Sabæus. The region of Noachis looks to have been described showing higher imaging power: Hyllus may run. Syrtis Mj looks stable on both image sets. S Meridiani is more apparent on the latter image. The northern limb white matter is similarly seen. The role of the L filter worked below our expectation. The blurred L image is no use.

Clyde FOSTER (CFs) obtained two IR685 images at $\omega=062^\circ\text{W}$ and $\omega=072^\circ\text{W}$. The spc is visible. Both show a dark band along the evening limb line which looks unphysical. Although the dark Meridiani Sinus and the light Aram could be said fairly described, but their relations with the ghost are not good on the first image. The continuity of the description of the Margaritifer S does not seem to be maintained on the first and second images. The area from Auroræ S to the morning Tithonius and Solis L looks normal. Ophir is light.

Frank MELILLO (FMI) took an IR610 image at $\omega=157^\circ\text{W}$. M Sirenum and its southern neighbour look dark, and the existence of the spc is shown up. The image is associated with a "colorized" version but it does not show much except for a bit difference of contrast.

Efrain MORALES (EMr) produced an RGB composite at $\omega=167^\circ\text{W}$ after taking R, G, B components. The telescope used is a 31cm SCT equipped with a Flea 3. The spc is beautiful (bright in G and B). The deserts show a subdued beige (a bit reddish) colour. The tint, and the light and shade of the southern hemisphere, give a good impression: Near the CM, M Sirenum lies dark without details, and Phaethontis is a bit light with a dull wine-red colour. To its south, Palinuri Fr and M Chronium lie faintly. The circumpolar area is also attractive with a dark fringe and a spread of faded (or misty) area. On the northern hemisphere, Trivium Charontis *et al* seem to be under a vast white mist.

2 January 2017 ($\lambda=292^\circ\text{Ls}$, $\delta=5.7''$, $\phi=26^\circ\text{S}$)

EMr obtained an excellent RGB composite image at $\omega=158^\circ\text{W}$ similar to the procedure taken on the preceding night. The tint of the image is quite similar, and the spc appears as a small button though not so white. To its EN direction a whitish haze runs. M Sirenum is comparatively dark, and the area at Phaethontis may be of ochre colour. The area of Solis L is not so clear. The northern deserts show a nice colour, but the details are beyond. The northern end is whitish misty.

3 January 2017 ($\lambda=292^\circ\text{Ls}-293^\circ\text{Ls}$, $\delta=5.7''-5.6''$)

Mo obtained the LRGB and RGB composites at $\omega=313^\circ\text{W}$ after taking every ingredient of R, G, B and L. Syrtis Mj *et al* are decently described for $\delta=5.7''$. The spc is a nice small circle in the RGB image (dull however on B). The L image shows a strange ghost arc along the terminator line, and so the spc is strangely affected and hence the shape of the spc on LRGB looks deformed. Hellas is evident shot through with a blurred roundish light basin: without fine structure. On R the boundary of Hellas and

Noachis look definite and the widened tail of M Serpentis is dark conspicuous. The northern limb area is light in B but not so stand out on The RGB image.

Manos KARDASIS (MKd) produced a good composite colour image at $\omega=055^\circ\text{W}$ by the use of a 36cm SCT equipped with DMK21AU618. The spc is well visible though blurred, and the region from M Erythræum northwards down to the line of S Margaritifer and Auroræ S looks quite dark. The northern part of S Margaritifer is definite adjacent to the light Aram, and S Meridiani still remains bluish-faintly near the evening limb. The area of Argyre is rather ground-lit in a faint wine colour. The area around Solis L is not well separated but rather dark near the terminator and Tithonius L is also inside the disk. Ophir is light adjacent to Auroræ S. Niliacus L on the northern hemisphere is faintly visible and its north is concealed beneath the white mist governing the northern limb side.

5 January 2017 ($\lambda=293^\circ\text{Ls}$ ~ 294°Ls , $\delta=5.6''$)

Paul MAXSON (PMx) gave an IR685 image at $\omega=177^\circ\text{W}$ by the use of a 25 cm Dall-Kirkham equipped with an ASI 290MM. The treatment of the evening limb is not sufficient and hence the description around of the evening side of M Sirenum and its south has little confidence. However M Chromium looks real. The spc is dim, but might have been made clearer.

CFs obtained an L-colour image together with an IR685 image at $\omega=043^\circ\text{W}$. The spc looks blurred. It may be related with the insufficient procedure of the evening limb zone. This is also said about the IR image. The image of the area around S Margaritifer is however nice. S Meridiani looks to remain near the evening limb. The white matter at the northern limb looks recorded but its relation with Niliacus L is not clear.

7 January 2017 ($\lambda=295^\circ\text{Ls}$, $\delta=5.6''$ - $5.5''$)

PMx gave an IR685 image at $\omega=160^\circ\text{W}$. Still a ghost governs the evening limb side, and the spc is weak and blurred. M Sirenum and its western end look fat and dark.

9 January 2017 ($\lambda=296^\circ\text{Ls}$, $\delta=5.5''$)

CFs obtained an IR685 image at $\omega=350^\circ\text{W}$. This 290MM image suffers from the evening ghost zone (broad and unphysically dark). Hellas is also spoiled, and the spc is dull. However S Sabæus and S Meridiani look cool. The widened tail of M Serpentis shows up. S Margaritifer is visible.

EMr obtained a good RGB composite as well as an IR 685 image at $\omega=093^\circ\text{W}$. The spc is white and beautiful bounded by a dark band. To the east of the spc a white haze may possibly be spread. Solis L is near the centre of the images and looks roundish dark on the R and IR images. The RGB image is mediocre in contrast and it is possible to distinguish Depressio Ponticæ and Aonius S to the south of Solis L. Tithonius L is not detailed, but Ophir is bright in a slightly reddish tint. The markings which are located to the south of Auroræ S are considerably dark. The ground of Argyre is partly visible. The northern limb looks to be covered by a white mist (G and B).

10 January 2017 ($\lambda=296^\circ\text{Ls}$ ~ 297°Ls , $\delta=5.5''$)

CFs gave a similar IR685 image at the same angle as the image on the preceding day at $\omega=350^\circ\text{W}$ (different in time by 40 minutes). This image holds a similar ghost to the preceding, and the spc is as dim

as before. The shape of Meridiani S is inferior.

11 January 2017 ($\lambda=297^\circ\text{Ls}$ - 298°Ls , $\delta=5.5''$)

CFs gave an IR685 image at $\omega=345^\circ\text{W}$ and also an RGB composite at $\omega=346^\circ\text{W}$ based on the components obtained by using an ASI 290MM and the Baader RGB filters. He says this is a "challenging exercise" of his own. The IR685 image still shows a ghost along the evening limb as before, and the R component also shows similar ghost (not so explicit on the RGB composite because the dark ghost is blended into the back). In R, S Sabæus and S Meridiani are evident as well as the widened M Serpentis and these are reflected in the RGB. The spc is quite explicit in G while rather blurred on other channels.

12 January 2017 ($\lambda=298^\circ\text{Ls}$, $\delta=5.5''$ - $5.4''$)

PMx obtained an IR685 image at $\omega=111^\circ\text{W}$. Still a dark ghost along the evening limb is annoying, but more inside Solis L is dark roundish independent. Phœnicis L is visible. M Sirenum is dark evident up to the terminator, and a tail of M Chronium is visible. The spc should be said evident with a dark fringe at its western side. It may be judged this area (from Sols L to M Chronium) could have been more deeply depicted if the 290MM ghost-elimination was performed.

CFs gave an IR685 image at $\omega=333^\circ\text{W}$. The evening side 290MM ghost is strong. Syrtis Mj is now more inside, but its eastern side is invaded by the ghost. S Sabæus is nicely visible, but S Meridiani is weak near the terminator.

13 January 2017 ($\lambda=298^\circ\text{Ls}$ - 299°Ls , $\delta=5.4''$)

MKd issued an excellent, beautiful RGB composite at $\omega=331^\circ\text{W}$ by a DMK. The spc is decently depicted together with the surrounding shadowy fringe. To its EN side, there is seen a light reddish area which is located just outside of the southern shadowy border of Hellas. The brightness of the area is just weaker than the brightness of the northern part of Hellas, but a bit brighter than the southern part of Hellas. Yaonis Fr finely extends southwards and is followed by a subtle umbra spread belonging to Noachis. Pandoræ Fr shows strongly its dark band including the widened tail of M Serpentis. Deucalionis R is clearly light in a bit reddish tint. The description of Syrtis Mj to S Sabæus is also impeccable for the present angular diameter. S Meridiani is not yet definite; it may be near the terminator. The depiction of the white mist near the northern limb is also good.

14 January 2017 ($\lambda=299^\circ\text{Ls}$, $\delta=5.4''$)

CFs gave an R image at $\omega=312^\circ\text{W}$. Syrtis Mj, the eastern part of S Sabæus, and Hellas are sorted, but they follow a strange dark broad ghost band at the evening limb side.

EMr obtained an RGB composite at $\omega=040^\circ\text{W}$, as well as a couple of IR685 images at $\omega=036^\circ\text{W}$ and $\omega=042^\circ\text{W}$. Used a Flea 3. The spc is light in G, but blurred in B. The RGB image shows a strange red rust zone at the central Noachis. On the other hand the northern limb area looks white greenish. Meridiani S and the northern end of Margaritifer S are thickly identified. These are the same also on the IR images.

15 January 2017 ($\lambda=299^\circ\text{Ls}-300^\circ\text{Ls}$, $\delta=5.4''$)

CFs gave an R image at $\omega=308^\circ\text{W}$. Still, there is shown a dark broad ghost near the evening limb. Syrtis Mj, Hellas, M Serpentis *et al* are shown.

FMI gave an IR610 image at $\omega=014^\circ\text{W}$. S Sabæus with Meridiani S is separated from Pandora Fr which is dark and broad, and connected with M Serpentis. The spc is not so evident.

EMr obtained an RGB composite and an IR685 image at $\omega=038^\circ\text{W}$. Used here an ASI 290MM. The Red Rust area turned to normal, and Noachis is just of a brownish tint. Different from the images on the preceding day, this RGB shows that Niliacus L looks thickly dark, and its north is whitish. S Sabæus is dark enough. The spc also give a good impression. The south of Noachis is very nuanced. This set of images may be said quite excellent.

16 January 2017 ($\lambda=300^\circ\text{Ls}-301^\circ\text{Ls}$, $\delta=5.4''$)

FMI gave an IR610 image at $\omega=008^\circ\text{W}$. As the image on the preceding day, S Sabæus is shown dark together with the good image of S Meridiani, and the northern part of Margaritifer S is more clearly described. Pandora Fr is connected with Hellespontus which looks broader.

18 January 2017 ($\lambda=301^\circ\text{Ls}-302^\circ\text{Ls}$, $\delta=5.3''$)

CFs gave an R image at $\omega=264^\circ\text{W}$. Still troublesome is the evening limb ghost. The northern Ausonia looks normal. It's difficult to see the spc.

Martin LEWIS (MLw) obtained an ASI 224MC colour image at $\omega=298^\circ\text{W}$ by using a 44cm Dobsonian. The spc is attractively shown as a small roundish bright cap with a dark fringe. The image is not richly colourful, but a delicate difference in colour is exactly shown about Hellas and Ausonia (the latter being a bit more reddish). Syrtis Mj is described in a good shape with a good balance of light and shade. M Cimmerium remains slightly near the evening limb, and near at the morning terminator, the widened tail of M Serpentis is witnessed. The northern limb is occupied by a white mist.

19 January 2017 ($\lambda=302^\circ\text{Ls}$, $\delta=5.3''$)

EMr gave an RGB composite and IR 685 image at $\omega=352^\circ\text{W}$. Here is made use of an ASI 290MM. At a first glance, several main markings appear to be out of usual shape. For instance, look at Sinus Sabæus, and then it will readily prove the shape is strange. Otherwise the bright basin part of Hellas looks quite squashed. The description of the spc may be preferable, and the whitish part to the EN neighbour of the spc should be said interesting, but the dark band starting from the dark fringe of the spc down to the direction of Hellas is the one that gives us an impression of the crushed Hellas. Hence we are afraid to say that some wandering ghosts haunt in several ways on this set of images.

20 January 2017 ($\lambda=302^\circ\text{Ls}-303^\circ\text{Ls}$, $\delta=5.3''$)

MLw gave an ASI 224MC-colour image at $\omega=260^\circ\text{W}$. Different by 40°W from the case on 18 January, this image does not show the spc. Since the shape of Ausonia is not shown, this must be due to the unfavourable seeing condition. However, M Cimmerium, M Tyrrhenum and the morning Syrtis Mj are pinned down.

EMr gave an RGB composite and an IR685 image at $\omega=343^\circ\text{W}$. The band which runs along the evening limb looks artificial because this band, given originally in the R component, gives a different/heterogeneous colour to the eastern coast side of Syrtis Mj. This band also gives us an impression that the brighter area of Hellas is crushed. The spc is rather well depicted (R and G).

22 January 2017 ($\lambda=304^\circ\text{Ls}$, $\delta=5.3''-5.2''$)

Mo gave LRGB and RGB composites at $\omega=131^\circ\text{W}$. The R image roughly shows Solis L and M Sirenum, but all markings are quite blurred.

MLw shows us an ASI 224MC colour image at $\omega=239^\circ\text{W}$. The spc is a bit seen but quite definite. M Cimmerium and M Tyrrhenum are identified, both suggesting a quality of the usual image with a certain detail. The light and shade description of the lighter triangular or tetrahedral area around Ausonia (which just reminds us of one piece of a tetrapod structural block) impresses us the certainty of the MLw's procedure. A bit delicate reddish spread around here suggests a true fine structure of the real state. Note the light deserts on the northern hemisphere look to show several dark spots to some extent. Adjacent to the white mist part near the northern limb, there seems to be able to check a bit of dark markings.

CFs gave an R image at $\omega=245^\circ\text{W}$. M Cimmerium and M Tyrrhenum are dark evident, while both look as if launching mutually a few of spikes each other towards Hesperia. Ausonia's bright tetrapod is not seen. It is very certain that a dark ghost occupies the southern evening limb side.

23 January 2017 ($\lambda=304^\circ\text{Ls}-305^\circ\text{Ls}$, $\delta=5.2''$)

CFs gave an R image at $\omega=237^\circ\text{W}$. M Cimmerium and M Tyrrhenum are identifiable. The light tetrapod at Ausonia is a bit clear. The spc is not depicted and the dark evening limb ghost is still present.

EMr obtained an RGB composite and IR685 image at $\omega=320^\circ\text{W}$. Used is an ASI 290MM. A suspicious dark band may be spotted to the EN of the spc. However the spc shows a good shape. There is seen a small whitish patch between the spc and Hellas (especially in G). To the north of the bright northern Hellas, the southern part of Syrtis Mj looks rather fainter than expected. The southern part of Hellas suggests a fine structure. On the IR image, Pandora Fr and S Sabæus make a set of double broad bands on the morning side.

25 January 2017 ($\lambda=305^\circ\text{Ls}-306^\circ\text{Ls}$, $\delta=5.2''$)

CFs gave an R image at $\omega=224^\circ\text{W}$. M Cimmerium shows up roughly. No spc is checked.

EMr gave an IR685 image at $\omega=294^\circ\text{W}$ as well as an RGB composite at $\omega=295^\circ\text{W}$. Syrtis Mj is located near the CM, (compact in IR, but looks roughly larger in the RGB) and its inside is full of light and shade distribution. Hellas is not so light, but Ausonia looks a bit reddish and this tendency reaches to the southern Hellas. In R and G, the dark fringe stands out. On G there is seen a faded area to the north of the spc. M Cimmerium, near the evening limb, looks strange in shape.

26 January 2017 ($\lambda=306^\circ\text{Ls}$, $\delta=5.2''$)

EMr gave an RGB composite at $\omega=285^\circ\text{W}$ and an IR685 image at $\omega=289^\circ\text{W}$. The RGB image looks

more rough than the on the preceding day. M Cimmerium turned to be a ghost. This is well seen on the IR685 image: M Cimmerium disguises simply as a ghost, and M Tyrrhenum is also strange. The dark band which starts from the possible spc EN downwards is also a candidate of the ghost.

28 January 2017 ($\lambda=307^\circ\text{Ls}$ - 308°Ls , $\delta=5.1''$)

CFs gave an R image at $\omega=188^\circ\text{W}$. M Sirenum is dark on the evening side, but its SW is blurred and the spc is also indefinite.

29 January 2017 ($\lambda=308^\circ\text{Ls}$, $\delta=5.1''$)

PMx made an IR685 image at $\omega=303^\circ\text{W}$ (seeing 6/10). Several characteristics are shown of Syrtis Mj, Hellas, the root of S Sabæus but they do not always look suitable. How about M Tyrrhenum?

FMI gave an IR610 image at $\omega=241^\circ\text{W}$. M Cimmerium is nicely dark described. We regard that M Tyrrhenum and Ausonia are also described.

31 January 2017 ($\lambda=309^\circ\text{Ls}$, $\delta=5.1''$)

PMx gave an IR685 image at $\omega=285^\circ\text{W}$ (seeing 7/10). M Cimmerium disguised its form in a terribly dark ghost. However the northern half of Hellas is normally described lighter than the southern half. How about the position of the spc?

(Masatsugu MINAMI and Masami MURAKAMI)

Letters to the Editor

●.....Subject: Mars January 5, 2017
Received: 16 January 2017 at 05:37 JST

Below average seeing.

<http://www.kwasan.kyoto-u.ac.jp/~cmo/cmons/2016/170105/PMx05Jan17.jpg>

○.....Subject: Mars January 7
Received: 17 January 2017 at 07:36 JST

Average seeing.

<http://www.kwasan.kyoto-u.ac.jp/~cmo/cmons/2016/170107/PMx07Jan17.jpg>

○.....Subject: Mars January 12
Received: 17 January 2017 at 08:08 JST

Last images of the opposition (probably).

<http://www.kwasan.kyoto-u.ac.jp/~cmo/cmons/2016/170112/PMx12Jan17.jpg>

○.....Subject: Mars January 29
Received: 31 January 2017 at 08:33 JST

Had to try a couple more.

<http://www.kwasan.kyoto-u.ac.jp/~cmo/cmons/2016/170129/PMx29Jan17.jpg>

○.....Subject: Mars January 31
Received: 4 February 2017 at 08:09 JST

Not bad for 5.1".

<http://www.kwasan.kyoto-u.ac.jp/~cmo/cmons/2016/170131/PMx31Jan17.jpg>

○.....Subject: Mars January 31
Received: 4 February 2017 at 08:09 JST

Not bad for 5.1".

<http://www.kwasan.kyoto-u.ac.jp/~cmo/cmons/2016/170131/PMx31Jan17.jpg>

○.....Subject: Mars February 1
Received: 9 February 2017 at 03:15 JST

Last one for sure this time.

<http://www.kwasan.kyoto-u.ac.jp/~cmo/cmons/2016/170201/PMx01Feb17.jpg>

Paul MAXSON (Surprise, AZ)

●.....Subject: Mars: January 15, 2017
Received: 16 January 2017 at 11:38 JST

Hi, I have attached my latest image of Mars January 15, 2017 at 21:22 UT. Thanks,

<http://www.kwasan.kyoto-u.ac.jp/~cmo/cmons/2016/170115/FMI15Jan17.jpg>

○.....Subject: Mars: January 16, 2017
Received: 17 January 2017 at 10:29 JST

Hi, I have attached my latest image of Mars January 16, 2017 at 21:39 UT. Thanks,

<http://www.kwasan.kyoto-u.ac.jp/~cmo/cmons/2016/170116/FMI16Jan17.jpg>

○.....*Subject: Mars: January 29, 2017*
Received: 30 January 2017 at 11:43 JST

Hi, I have attached my latest image of Mars January 29, 2017 at 21:50 UT. Thanks,

<http://www.kwasan.kyoto-u.ac.jp/~cmo/cmons/2016/170129/FM129Jan17.jpg>

○.....*Subject: Mars: February 4, 2017*
Received: 5 February 2017 at 10:38 JST

Hi, I have attached my latest image of Mars February 4, 2017 at 22:49 UT. Thanks,

<http://www.kwasan.kyoto-u.ac.jp/~cmo/cmons/2016/170204/FM104Feb17.jpg>

Frank J MELILLO (Holtsville, NY)

●.....*Subject: Mars - January 14th*
Received: 16 January 2017 at 06:03 JST

Hi Mr. Minami and All!, Here I submit my latest session from January 14th under average conditions.

<http://www.kwasan.kyoto-u.ac.jp/~cmo/cmons/2016/170114/EMr14Jan17.jpg>

○.....*Subject: Mars - January 15th*
Received: 19 January 2017 at 01:37 JST

Hi Mr. Minami and All!, I submit my latest session under average conditions.

<http://www.kwasan.kyoto-u.ac.jp/~cmo/cmons/2016/170115/EMr15Jan17.jpg>

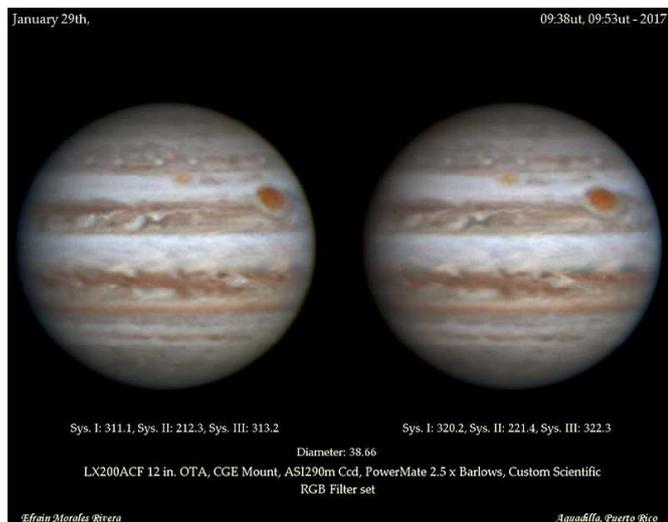
○.....*Subject: Mars - January 19th*
Received: 22 January 2017 at 05:03 JST

Hi Mr. Minami and All!, Here is one of my sessions from January 19th. Possible disturbance in the Hellas/Mare Amphitrites region?. Will continue to monitor

<http://www.kwasan.kyoto-u.ac.jp/~cmo/cmons/2016/170119/EMr19Jan17.jpg>

○.....*Subject: Mars - January 20th*
Received: 31 January 2017 at 06:11 JST

Hi Mr. Minami and All!, Here are some belated sessions taken on January 20th, 23rd, 25th, 26th. and my



most recent session of Jupiter from the January 29th.

<http://www.kwasan.kyoto-u.ac.jp/~cmo/cmons/2016/170120/EMr20Jan17.jpg>

<http://www.kwasan.kyoto-u.ac.jp/~cmo/cmons/2016/170123/EMr23Jan17.jpg>

<http://www.kwasan.kyoto-u.ac.jp/~cmo/cmons/2016/170125/EMr25Jan17.jpg>

<http://www.kwasan.kyoto-u.ac.jp/~cmo/cmons/2016/170126/EMr26Jan17.jpg>

○.....*Subject: Mars - February 1st*
Received: 3 February 2017 at 10:39 JST

Hi Mr. Minami and All!, Here I submit my latest session on February 1st under average conditions.

<http://www.kwasan.kyoto-u.ac.jp/~cmo/cmons/2016/170201/EMr01Feb17.jpg>

○.....*Subject: Mars - February 3rd*
Received: 6 February 2017 at 05:52 JST

Hi Mr. Minami and All!, Here is my most recent session from February 3rd, 23:02ut. Under average conditions.

<http://www.kwasan.kyoto-u.ac.jp/~cmo/cmons/2016/170203/EMr03Feb17.jpg>

○.....*Subject: Mars - February 5th*
Received: 8 February 2017 at 04:57 JST

Hi Mr. Minami and All!, Here is a short session only in IR as the rain clouds arrived.

<http://www.kwasan.kyoto-u.ac.jp/~cmo/cmons/2016/170205/EMr05Feb17.jpg>

○.....*Subject: Mars - February 8th*
Received: 13 February 2017 at 22:16 JST

Hi Mr. Minami and All!, Here is my session from February 8th under average conditions.

<http://www.kwasan.kyoto-u.ac.jp/~cmo/cmons/2016/170208/EMr08Feb17.jpg>

Efrain MORALES (Aguadilla, Puerto Rico)

●.....*Subject: Mars 2017/01/12 1633UT CM334 IR C Foster*
Received: 17 January 2017 at 15:52 JST

Hi all, An IR capture of Mars from 12 January. With Mars so small now (5.4"), afternoon conditions being rather poor, and quality of imaging reducing, I feel that it is time to stop circulating to the full list. In these conditions I am also experiencing quite a severe limb arc/rind. I will continue to circulate to a few of the Mars forums and individuals that wish me to. Kindly let me know if you do want to be retained on the list, probably for the next week or two before I stop. As mentioned a few times, my objective was to get to Ls300 with the primary aim of documenting whether there was any major dust activity or not. I believe I have just about achieved what I set out to, and I am approaching the end of my first full Mars apparition (I started following Mars after opposition

in 2014). I will consolidate and confirm the numbers, but I do know that I have submitted on approx. 200 days during the apparition. It has been a fascinating learning curve, and I would like to thank all of those on the list that have interacted with me in many interesting discussions, both on Mars weather and detail, as well as imaging issues. I look forward with great anticipation to the 2018 apparition, where Mars will be exceptionally well placed for observing from here. Best regards,

<http://www.kwasan.kyoto-u.ac.jp/~cmo/cmons/2016/170112/CFs12Jan17.jpg>

○.....*Subject: Mars 2017/01/14 1627UT CM312 R C Foster*
Received: 17 January 2017 at 16:18 JST

Hi all, A "R" capture from 14 January. Should you NOT wish to receive further images at this point(I will likely only continue for another week or two depending on conditions), please let me know.

Best regards,

<http://www.kwasan.kyoto-u.ac.jp/~cmo/cmons/2016/170114/CFs14Jan17.jpg>

○.....*Subject: Mars 2017/01/15 1653UT CM308 R C Foster*
Received: 17 January 2017 at 16:35 JST

Hi all, An R capture from 15 January. Hellas is almost central. Best regards,

<http://www.kwasan.kyoto-u.ac.jp/~cmo/cmons/2016/170115/CFs15Jan17.jpg>

○.....*Subject: Mars 2017/01/18 1553UT CM264 R C Foster*
Received: 19 January 2017 at 03:28 JST

Hi all, An R capture from this afternoon. Under these conditions the Libya/Isidis region is bright.

Best regards,

<http://www.kwasan.kyoto-u.ac.jp/~cmo/cmons/2016/170118/CFs18Jan17.jpg>

○.....*Subject: Mars 2017/01/22 1717UT CM244 R C Foster*
Received: 23 January 2017 at 03:13 JST

Hi all, An R capture from this afternoon in poor conditions. Best regards,

<http://www.kwasan.kyoto-u.ac.jp/~cmo/cmons/2016/170122/CFs22Jan17.jpg>

○.....*Subject: Mars 23 and 25 january R filter*
Received: 26 January 2017 at 03:47 JST

Hi all, Two Red filter images from the 23 and 25 January. Conditions particularly poor on the 25th.

Best regards,

<http://www.kwasan.kyoto-u.ac.jp/~cmo/cmons/2016/170123/CFs23Jan17.jpg>

<http://www.kwasan.kyoto-u.ac.jp/~cmo/cmons/2016/170125/CFs25Jan17.jpg>

○.....*Subject: Mars 28 January R filter*
Received: 1 February 2017 at 03:58 JST

Hi all, A red filter capture of Mars from 28 January.

Best regards,

<http://www.kwasan.kyoto-u.ac.jp/~cmo/cmons/2016/170128/CFs28Jan17.jpg>

○.....*Subject: Mars 1 February R filter*
Received: 2 February 2017 at 03:17 JST

Hi all, Another red filter capture from this afternoon. Mare Sirenum can still be seen. Ls 310 and 5.1".

Best regards,

<http://www.kwasan.kyoto-u.ac.jp/~cmo/cmons/2016/170201/CFs01Feb17.jpg>

○.....*Subject: Mars 2 February R filter*
Received: 3 February 2017 at 03:32 JST

Hi all, Red filter capture from this afternoon at Ls311 and 5.0". I may have an opportunity for a final capture tomorrow afternoon, after which I will be away for about a week and a half. Best regards,

<http://www.kwasan.kyoto-u.ac.jp/~cmo/cmons/2016/170202/CFs02Feb17.jpg>

Clyde FOSTER (Centurion, SOUTH AFRICA)

●.....*Subject: Mars and Venus 18th Jan 2017*
Received: 21 January 2017 at 06:56 JST

Hi, Despite imaging well past culmination the seeing was kind to me on 18th Jan and enabled a nice view of 5.3" dia. Mars to be teased out of the local convectional cooling using the edge quality setting in Autostakkert. Even later I imaged Venus in UV light at only 17° altitude. Cheers



<http://www.kwasan.kyoto-u.ac.jp/~cmo/cmons/2016/170118/MLw18Jan17.jpg>

○.....*Subject: Mars and Venus 20th Jan 2017*
Received: 24 January 2017 at 08:46 JST

Hi, An odd early session for me but with very jigglely seeing. Wonderful for Venus in the UV, reasonable for Venus in the IR at 807nm but poor

for nearby Mars at the same altitude but a bit later.
Other details on the images.



Images can be also seen here if somehow they are not attached to this mail

(happening with some recipients);

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

Cheers

<http://www.kwasan.kyoto-u.ac.jp/~cmo/cmons/2016/170120/MLw20Jan17.jpg>

○.....**Subject: Mars and Venus (UV and IR)**
Received: 29 January 2017 at 00:58 JST

Hi, Lots of image doubling in the cold local convection but ASI3 made the most of it combined with Astra Image deconvolution to bring out the details;



-Mars now at 5.2" with a colour ASI224MC camera
-Venus in UV and IR with ASI174MM mono camera

Also see these at the top of

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

Cheers

<http://www.kwasan.kyoto-u.ac.jp/~cmo/cmons/2016/170122/MLw22Jan17.jpg>

○.....**Subject: Mars and Venus (UV) 4th Feb. 2017**
Received: 9 February 2017 at 08:20 JST

Hello, A brief period of decent seeing at around sunset last Saturday afternoon with the jetstream south of the UK allowed for good imaging of Mars and Venus both at a reasonable altitude.

Venus in UV light (Baader Venus filter) showing



plenty of cloud structure, whilst Mars, at only 5.0" now, still keeps giving. Solus Lacus on show upper left and Mare Sirenum upper right and with Tharsis bang centre even a suggestion of Arsia Mons just below centre. Cheers

<http://www.kwasan.kyoto-u.ac.jp/~cmo/cmons/2016/170204/MLw04Feb17.jpg>

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

●.....**Subject: Mo01, 03 Jan_17**
Received: 09 January 2017 at 00:05 JST

Dear Dr M MINAMI, from the end of the last year, I have not been feeling very well, so I have been late in finishing the procedure of the backlogs before communicating with you. For all that, I continued to worry about the sky. On 1 January I was endowed with a favorable seeing. The 2nd and 4th days were totally no good, however on the 3rd day I could barely shoot. Best regards this year.

<http://www.kwasan.kyoto-u.ac.jp/~cmo/cmons/2016/170101/Mo01Jan17.jpg>

<http://www.kwasan.kyoto-u.ac.jp/~cmo/cmons/2016/170103/Mo03Jan17.jpg>

○.....**Subject: Mo22Jan_17**
Received: 24 January 2017 at 00:28 JST

Dear Dr M MINAMI, For a while the weather remained bad, but finally on Sunday the sky became clearer. The seeing condition was around 3~4, and I could managed to obtain images.

Best wishes.

<http://www.kwasan.kyoto-u.ac.jp/~cmo/cmons/2016/170122/Mo22Jan17.jpg>

○.....**Subject: Mars images in May 2016 (I)**
Received: 2 February 2017 at 01:35 JST

Dear Dr M MINAMI, Please find attached some old images just revealed from backlogs in May 2016. I excluded some blurred images. There are lots taken on 13 May, but almost all are beyond expectation. I wish I could find some preferable images. Best wishes.

<http://www.kwasan.kyoto-u.ac.jp/~cmo/cmons/2016/160501/Mo01May16.jpg>
<http://www.kwasan.kyoto-u.ac.jp/~cmo/cmons/2016/160511/Mo11May16.jpg>
<http://www.kwasan.kyoto-u.ac.jp/~cmo/cmons/2016/160517/Mo17May16.jpg>
<http://www.kwasan.kyoto-u.ac.jp/~cmo/cmons/2016/160518/Mo18May16.jpg>

○.....*Subject: Mars images in May 2016 (II)*
Received: 5 February 2017 at 23:29 JST

Dr M MINAMI, I hope you will receive my old images on 13, 20, and 22 May 2016. Those on 13 May remained poor though I tried to repeat the re-processing.

<http://www.kwasan.kyoto-u.ac.jp/~cmo/cmons/2016/160513/Mo13May16.jpg>
<http://www.kwasan.kyoto-u.ac.jp/~cmo/cmons/2016/160520/Mo20May16.jpg>
<http://www.kwasan.kyoto-u.ac.jp/~cmo/cmons/2016/160522/Mo22May16.jpg>

○.....*Subject: RE: Mo01, 03 Jan_17*
Received: 09 February 2017 at 01:02 JST

Dr M MINAMI, Thank you very much for your kind comments on the images on 1 January. At present I am tuning the backlogs of 23 and 30 May which will soon reach you, Best regards.

○.....*Subject: Mars images in May 2016 (III)*
Received: 15 February 2017 at 23:13 JST

Dr M MINAMI, Please find attached old images on 23 and 30 May 2016. I am sorry I was late. If these are no good, please say so and then I will repeat the re-processing. With best wishes.

<http://www.kwasan.kyoto-u.ac.jp/~cmo/cmons/2016/160523/Mo23May16.jpg>

<http://www.kwasan.kyoto-u.ac.jp/~cmo/cmons/2016/160530/Mo30May16.jpg>
Yukio MORITA (Hiroshima, JAPAN)

●.....*Subject: EPSC 2017*
Received: 17 February 2017 at 21:57 JST

The professional conference [European Planetary Science Congress](#) (EPSC) will be held from September 17 to September 22, 2017 in Riga, Latvia.

Meeting webpage: <http://www.epsc2017.eu/>

We would like to draw your attention to the AM1 session "Amateur collaborations in small bodies, terrestrial, giant and exo planets professional studies" and the AM2 session "Juno Ground-Based Support from Amateurs", in the program group "Amateur Astronomy". Both sessions are convened by amateur astronomers together with professionals. We would like to invite you to attend or actively participate to these sessions by contributing a paper and/or meeting and exchanging views and ideas with other amateur and professional astronomers studying the solar system (planets, asteroids, comets, meteors, ...) and exoplanets, and in supporting the Juno mission.

..... Looking forward to your contribution or participation to EPSC2017,

Marc DELCROIX (SAF, FRANCE)



APOLOGY: We are sorry we have been quite late in finishing and publishing this 459 issue of the CMO because one of our Editors (M MINAMI) has been in ill health these months. Since the terrestrial season is going to greet spring even here (northern, rear side of the J-Island), we are hoping that the next issue will be published regularly (although slightly late, maybe). □

International Society of the Mars Observers (ISMO)

Advisory Board: Donald PARKER †, Christophe PELLIER, William SHEEHAN, and Tadashi ASADA, Reiichi KONNAI, Masatsugu MINAMI

Bulletin: ~~Kasei-Tsushim~~ **CMO** (<http://www.mars.dti.ne.jp/~cmo/ISMO.html>)

CMO n°459/ ISMO #85 (25 February 2017)

Editorial Board: Tadashi ASADA, Masatsugu MINAMI, Masami MURAKAMI, Takashi NAKAJIMA and Akinori NISHITA



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