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Obituary:

Richard BAUM (1930 ~ 2017)

by
William SHEEHAN

Richard BAUM, noted amateur astronomer, artist, and historian of astronomy, passed away on November 12, 2017. He belonged to the BAA for seventy years, serving as Director of the Terrestrial Planets Section from 1979 to 1991, and of the Mercury and Venus Section from 1991 to 2000.

He also served in a similar role for the Association of Lunar and Planetary Observers for several years. He received the Lydia Brown award for meritorious service from the BAA in 1988, and was honored with the Walter Haas observing award from the ALPO. In addition, he was an Honorary Member of the Society for the History of Astronomy. Asteroid 7966, discovered by the Japanese amateur astronomer Takao Kobayashi at the Oizumi Observatory on February 18, 1996, was named *Richardbaum* in his honor.

He was known the world around for his enthusiasm, skill as an observer, historical essays and books, and above all for his generous encouragement of others.

Baum grew up in Chester during the War. His father was a policeman, and the family lived at 1 Dee Banks, Boughton. Despite the distractions occasioned by the Blitz, he became interested in astronomy in his pre-teens. At first he used only a 3-inch refractor on a pillar and claw stand, with which he observed through the window such objects as tolerated such observing conditions-the Sun and Moon.

He went to art school, and satisfied his compulsory service requirement with the Royal Air Force between 1948 and 1950. By then he was already a member of the BAA, and acquainted with the likes of H. P. Wilkins, Robert Barker, and "Dai" Arthur. And, of course, Patrick Moore. His sketch of the great sunspot group of April 1947, which is still the largest ever observed, was used by F. J. Sellers to illustrate his report. His first publication, that same year, was an article with Moore on the lunar features then known as the D'Alembert Mountains and now known to be part of the Montes Cordilleras ring of the Orientale Basin.

On returning home to Chester in 1950, he took an interest in reviving the Astronomical Section of the Chester Society of Natural Science, Literature and Art. This gave him access to the Grosvenor Museum, where he discovered two telescopes in the basement and acquired one-a 3-inch refractor on a proper tripod - for his own use. It was his main telescope until he acquired a 4.5-inch Wray on an equatorial by Cooke some years later. He never had the use of large telescopes, so what he accom-

plished, observationally, is a testimony to his acuteness of vision and skill in recording what he saw.
He early took a special interest in the planet Venus, and engaged in a somewhat acrimonious debate with Patrick Moore in the pages of the ALPO journal *The Strolling Astronomer* regarding broadly linear markings he recorded on the planet but to which Moore was insensible. Though at the time Moore seemed to have the upper hand with his argument that the impressions in large telescopes were to be preferred to those in small telescopes, in the end Richard's impressions were borne out. It is now clear that observers differ in their sensitivity to detail in the far blue or near ultraviolet, and that Richard was simply one of those with this kind of vision. He himself wrote, 'What Patrick failed to appreciate was that modern science showed individuals see things differently from each other, and what seemed commonplace to one was no such thing to another.'

Also at this time, the mid-1950s, Baum was planning to write a small book on Venus. However, he was forestalled. As he described later, "Forgetting the warning proferred to me at my first BAA meeting … in 1946 by D. W. G. Arthur, I made the mistake of mentioning my idea to Patrick Moore. He wished me luck and seemed comfortable with things. About two months later I received a letter from him. Full of apologies but saying a publisher had invited him to write a book about Venus. Would I mind if he agreed. I was taken aback … but because of our friendship I said yes and abandoned my idea…. Frankly I was angry with myself for bowing down to the request. Anyhow, Patrick finished his book and it was published by Faber and Faber in 1956. It is dedicated vaguely 'To Richard…' but … like Dr. Who it's Richard WHO?!!"

Richard and his dear Audrey were married in 1956 - they were in London for their honeymoon when Patrick Moore had his interview with the BBC that led to the Sky at Night and fame. They moved to 25 Whitchurch Road, Chester - an address to become famous to many friends of astronomy and history of astronomy--where Richard made a living running a post office store until 1981. There they remained for the rest of their lives, and raised their three children, Adrian, Jacqueline, and Julian - the latter to follow in Richard's footsteps as an extraordinary space artist. Richard published numerous essays in the *JBAA* on topics of interest, and in 1973 published his groundbreaking first book, *The Planets:* some myths and realities, noticed by none other than the great Carl Sagan in Science. It was followed by *In Search of Planet Vulcan*: the ghost in Newton's clockwork universe (with William Sheehan), in 1997, and by his magnum opus, *The Haunted Observatory*, in 2007. These books, deeply researched and written in a unique style, established him as (in the words of Martin Mobberley) "an astronomical historian and wordsmith of the finest order."

Perhaps his greatest legacy was the large number of younger people he inspired to take a keen interest in the Moon and planets. They included talented observers and BAA Section directors and ALPO recorders such as David L. Graham, Frank J. Melillo, and Richard McKim. He remained active to the very end. In fact, two days before his death, he was attempting to answer inquiries regarding Vulcan from a Chinese correspondent, Jinming Lin.
Though he was always modest about his accomplishments, and too often overly self-critical, after his death accolades flowed in from around the world. Professor Michael Crowe of the University of Notre Dame noted, 'His writings … had a sophistication that was remarkable for a person who, so far as I know, had no university training.' Randall Rosenfeld, the archivist of the Royal Astronomical Society of Canada, said of him, 'He was able to formulate research questions beyond the ordinary, to see what others had missed in familiar sources, and to discover overlooked sources.' The artist and planetary scientist William K. Hartmann of the Lunar and Planetary Laboratory in Tucson recount-

ed that 'Baum's telescopic drawings of the planets were some of the most beautifully rendered, and were among the sources that made me want to have a telescope and take up astronomy, when I was a teenager.'

He was not only great he was generous, and not only admirable, but lovable. In the past few years we have lost some legendary figures: Arthur C. Clarke, Patrick Moore, Ewen Whitaker. It seemed that Richard was the last one left. Now he is gone, the 'magic era' when amateurs were still largely the keepers of the Moon and planets has passed, and will soon be a fading memory. That memory can, however, be refreshed by anyone who looks into Richard Baum's essays and books, or studies his exquisite renderings of the bodies of the Solar System as they appeared before, as he put it, "myth and legend were swept away." □

CMO/ISMO 2018 Mars Report #02

2018 CMO/ISMO Mars Observations Made in December 2017 (λ=094°Ls~λ=109°Ls 2018)

by
Masatsugu MINAMI and Masami MURAKAMI

♂・・・・・This is the second report of the 2018 CMO/ISMO Mars observations. We shall here deal with the observations performed during December 2017. During the period the planet Mars moved from the Vir constellation to the Lib constellation, just passed by the north of Spica at the end of November 2017. The apparent declination D was under 10°S and went further southwards. At the end of December, it shined near the planet Jupiter.

In December 2017, the apparent diameter increased from δ=4.2" to 4.8". The Martian season proceeded from λ=094°Ls to λ=109°Ls: This was the very season when Hellas was whitish bright whole the day as if it's a part of the south polar cap (spc). The orographic activities of the southern/northern Montes were quite lively. The tilt was ϕ=22°N to ϕ=16°N. The phase angle ι was 25° to 39°, with a large defect of illumination of the evening terminator.

The density of the observation number was low, but the brightness of Hellas was checked. This Mars season, several nicer images despite the fact that the δ was under 5" were being produced due to the recent idea of the de-rotation composites. The images of colour composite are also increasing in number.

The images of the MRO MARCI do not show well the southern higher latitudes, but the whitish bright Hellas appears evidently. The orographic clouds are quite active concerning Tharsis Montes and Alba Patera. The cloud area of Elysium Mons and the long tail of the orographic cloud from Olympus Mons are seen impressively every day. The equatorial zone mist is noticed when it covers the northern area of Syrtis Major, while looked gradually faded and finally the dark markings from Margaritifer Sinus to Auroræ Sinus have become slightly clearer. Near the residual north polar cap (npc), Olympia is seen isolated. No big disturbance was checked this period.

♂・・・・・We have received with thanks a total of 29 observations which were performed by 6 members in December 2017. Observers and the instruments they used are recorded as follows:

AKUTSU, Tomio (*Ak*) Hitach-Oota, Ibaraki, JAPAN

1 *IR* Image (23 December 2017) 32cm Spec with an ASI 290MM

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

4 Sets of *RGB* + 8 *IR* Images (1, 9, 12, 14, 17, 18, 28, 31 December 2017)
36cm SCT @ *f*/27 with an ASI 290MM

KUMAMORI, Teruaki *(Km)* Sakai, Osaka, JAPAN

4 *Colour** + 8 *R* + 4 *B* Images (5, 6, 12, 16, 17, 19, 20, 21, 29, 31 December 2017)
36cm SCT @ *f/35*, *40* with an ASI 290MM & ASI 224MC*

PEACH, Damian (*DPc*) Selsey, West Sussex, the UK remote controlled the Chilescope Team in CHILE

2 Sets of RGB Images (23, 26 December 2017)
100cm Richey Chretien (Chilescope)

WESLEY, Anthony *(AWs)* Rubyvale, QLD, AUSTRALIA

1 *Colour* + 3 *IR* Images (12, 14, 19, 29 December 2017) (51cm Spec with a PGR GS3-U3-32S4M)

WILSON, Tim *(TWl)* Jefferson City, MO, the USA

1 *IR* Image (1 December 2017) 20cm SCT with an ASI 290MM

♂・・・・・We shall next give some short comments for the images made in December 2017: We hope the readers will refer kindly to the original images shown in the CMO/ISMO Mars Gallery of the 2018 Mars: http://www.kwasan.kyoto-u.ac.jp/~cmo/cmons/2018/f_image.html

♂・・・・・On 1 December 2017 (λ=095°Ls, δ=4.2"), Clyde FOSTER (CFs) obtained by using a 36cm SCT an IR image at ω=208°W, φ=22°N. The western part of M Cimmerium looks dark. Near the centre, Elysium (or the area of Elysium Mons) is well-lighted and it is bounded westwards by the Ætheria dark patch, and also bounded eastwards by Phlegra which is connected with the area of Propontis I. Utopia shows well the shade and its southern tip is clearly visible. The area between Nodus Alcyonius and the Ætheria dark patch is similarly as light as the Elysium core. Every dark marking does not however show sharpness. The arctic area looks largely light, and it cannot be denied that a delicate crack may be visible inside the light arctic area. See several comments given by Richard McKIM and Roger VENABLE in the LtE of the preceding CMO issue (#464) about the possible crack or the possible dust.

On the same day, Tim WILSON (TWl) gave an IR image at ω=337°W. The area of S Meridiani is not clear, but Gehon looks to go downwards. The area of the north polar cap (npc) is well light. Used a 20cm SCT.

On 5 December (λ=097°Ls, δ=4.3"), Teruaki KUMAMORI (Km) obtained by the use of a 36cm SCT an R image at ω=090°W, φ=21°N. The residual npc looks small. M Acidalium lies near the evening terminator. At its northern end Hyperboreus L is suggested. In connection with the southern part of M Acidalium, Nilokeras and Ganges are evident dark. Ophir is a bit lighter and to its SW Tithonius L is described, and its southwards Solis L is well suggested. On the vast morning side, several shadowy or bright spots are suggested including the area of the Tharsis ridge and others. To produce this R image Km used a 10 minutes derotation to obtain a total of 15,000 frames to compose. Seeing was 2~3/10.

On 6 December (λ=097°Ls, δ=4.3"), Km produced an L-colour image (at ω=064°W), B component (at ω=067°W), and also R image (at ω=077°W). The R image is comparable with the one on the preceding day at ω=090°W. On the present day he used the 27 minutes derotation to secure 30,000 frames to stack. Thus the present one is thicker by about 1.4 times and also the contrast is increased. Solis L has become more definite. The area of Olympus Mons might have been described. The L-colour image is also good with preferable colour, and the morning white mist was nicely described along the equatorial zone. Especially it is notable that a white mist rose from the southern part of M Acidalium to Lunæ L, up until the Tharsis

continent. To make the L component, Km used 18,000 frames to stack while for the Colour Cam he admitted 6,000 frames. The 27 minutes sound a bit longer and so the description may lose trust at the limb side by the width 7°W. Note however the residual npc is compactly shown white roundish. Seeing was 2~3/10.

On 9 December (λ=098°Ls, δ=4.4"), CFs composed an RGB image at ω=132°W, φ=20°N from the R,G,B components. The arctic area is just whitish blurred, but the Tharsis ridge near the evening terminator is largely white due to the work of G and B. Olympus Mons looks visible light near the centre but not so strong. The IR685 image shows several dark spots around Propontis I.

On 12 December (λ=100°Ls, δ=4.4"), CFs gave an IR image at ω=100°W. M Acidalium is dark at the evening terminator.

On the same day, Anthony WESLEY (AWs) gave then an IR image (maybe by using a 51cm spec) at ω=335°W. S Sabæus and S Meridiani are definite with Edom. Margaritifer S is also visible connected with Niliacus L. M Acidalium is shown up slimly but its bottom is thicker. The residual npc is small roundish light. Syrtis Major (Mj) is quite near the evening terminator.

On the day Km further gave an L-colour image at ω=012°W, with B image at ω=014°W. To obtain the L image he stacked 30,000 frames by a 6 minutes derotation. M Acidalium shows up massively on the morning side, but the relation of Iaxartes with the residual npc is not clear. The npc shows a white core. The description of S Meridiani is definite but not so clear (seeing 2~3/10). There must be found a thin mist at the eastern corner of Chryse.

On 14 December (λ=101°Ls, δ=4.5"), CFs obtained an IR image at ω=081°W where M Acidalium is near the evening terminator, and the area of Solis L is quite depressed near the evening terminator, giving a poor impression. The arctic area may be largely whitish but blurred.

On the day AWs gave an IR image at ω=315°W, φ=19°N. Syrtis Mj is almost all visible near the evening terminator, and S Sabæus + S Meridiani are shown up on the morning side. A bottom part of M Acidalium is darkly seen near the morning limb. The residual npc looks small light. Since λ=100°Ls was passed, Hellas should be much brighter.

On 16 December (λ=102°Ls), Km stacked 15,000 frs to make an R image at ω=342°W by 18 minutes derotation. Seeing 2/10. The form of S Meridiani does not well show up. M Acidalium is described normally but loses sharpness. Oxus is witnessed along M Acidalium. The residual npc is blurred but surely exists.

On 17 December (λ=102°Ls, δ=4.5"), CFs stacked the three colour ingredients to make an RGB image at ω=054°W where the residual npc is quite evident with some thin mist around the arctic area. There is seen a white mist at Chryse and Xanthe (due to R and G). The R image is excellent in good contrast describing the clear npc, as well as Hyperboreus L. The RGB image is not so bright, but multi-coloured. The dark markings near the arctic area look slightly bluish. Tempe on IR 685 image is bright but in desert colour on RGB. Ophir is bluish white along Ganges. The area of Tithonius L is detailed due to the R image, while Solis L is not so definitely seen due to the tilt.

On the day, Km secured an excellent L-colour image at ω=322°W. The L image is made stacked 13,500 frs with 4 minutes derotation. The colour-cam image was made with 10,000 frames. The desert looks in ochre colour. Hellas is near the evening terminator with a well whitish tint. Seeing is 2~3/10, and hence the every dark marking looks to lose sharpness. The R image was composed from 30,000 frs (11 minutes derotation) at ω=331°W where dark makings are shown in good contrast. (Note that L and R were processed differently, and here the R image must be finer. Compare the area of Ismenius L. Furthermore, in R, Edom is brighter.)

On 18 December (λ=102°Ls, δ=4.5"), CFs obtained an RGB composite at ω=046°W from the three ingredients. The R image shows some details including ghosts and this is reflected on the RGB composite which gives a cool feeling without loud colour. The M Acidalium area looks composed of three parts i.e. the part of Niliacus L, the central part and the bottom part. The bottom contains the triangular dark area. Nilokeras and Ganges are also evident including Lunæ L, and the complex around Tithonius L is also well described. To the north of the bottom, a whitish bright matter is seen invading to emphasis the presence of Hyperboreus L adjacent to the clear residual npc. However the long line along the morning limb starting upwards from Hyperboreus L is possibly a ghost. Tempe and the arctic area may be of the same brightness, but Tempe is of the ochre colour while the npc area is whitish.

On 19 December (λ=103°Ls, δ=4.6"), AWs put forwards an excellent IR-GB composite at ω=266°W, φ=18°N. The image looks nice in colour. The area of Isidis R to its north is light in ochre colour. Especially the whiteness of Hellas was first caught vividly. On this image it is shown in a bit bluish white colour. Elysium Mons is whitish light near the evening terminator. The arctic area is slightly misty, while the core of the residual npc is evident.

On the same day, Km gave an R image at ω=315°W. Derotaion of 14 minutes was employed to produce 18,000 frs to compose. It appears that the image picks out every possible dark marking without omission, but every does not look sharpened. Seeing was 1~3/10. We should however admire the fact that the residual npc is nicely distinguished.

On 20 December (λ=104°Ls, δ=4.6"), Km gave an R image at ω=301°W. Still the seeing condition was 2~3/10, and the image was made just from 6,000 frs. So even Syrtis Mj loses its shape. Unexpectedly, however, Edom is described bright.

On 21 December (λ=104°Ls, δ=4.6"), Km gave a pretty L-colour image at ω=277°W (and also an R image at ω=293°W). The 4 minutes derotation was employed to compose the L image of 13,500 frs, while the 11 minutes derotation with 30,000 frs for the R image. Both show the shade and light inside Syrtis Mj, as well as the western part of Utopia, but we cannot assure that Huygens crater is identifiable. The B image (from 20,000 frs) show a light Hellas, but not so bright or white. For the images at this apparent diameter, the northern end of Syrtis Mj shows a nice shape with Nilosyrtis projected.

On 23 December (λ=105°Ls, δ=4.6"), Damian PEACH (DPc) obtained a nicer set of R,G,B ingredients and composed RGB image at ω=093°W, φ=18°N by the use of the remote sensing system of the Chilescope Observatory equipped with one metre Ritchey Chretien telescope. Location of the telescope is at (30°27'S, 70°45'W). The detail of Solis L is uncertain because of the tilt, but the northern Mare Acidalium is seen

lying near the evening terminator. The whitish mist at the equatorial zone is thickly caught because of the excellent B image. Especially a thick evening mist is visible at Chryse-Xanthe, as well as a thick morning mist near the morning limb is conspicuous. The arctic area is also whitish but looks blurred. As to an officail information on the Chilescope, refer to
http://www.chilescope.com

On the same day, Tomio AKUTSU (Ak), by using his 32cm spec in Japan, gave an IR685 image at ω=253°W, φ=18°N. The shape of Syrtis Mj is not well reproduced and the area of the npc looks also blurred.

26 December (λ=106°Ls, δ=4.7"), DPc again in collaboration with the Chilescope team obtained a remote sensing RGB ingredients and composed an RGB image at ω=052°W. The colour of the disk is really pretty. The white mist still shows up near Xanthe, and M Acidalium stands up and the shape is well caught in the R image. Auroræ S is dark recognised as well as Ganges and Nilokeras, and a rough presentation of Solis Lacus is grasped. In R, the area of Tithonius L is more definite. Ophir is seen as a light streak, but must be independent of the white mist. The arctic area around the npc is not said clear without any core.

On 28 December (λ=107°Ls, δ=4.7"), CFs gave an excellent RGB composite at ω=302°W, φ=17°N together with three components and IR685 image. On the morning side, S Sabæus and S Meridiani make a good shape: The area around the latter looks nice as if it sticks to the spherical surface. Different from the southern part of Syrtis Mj, the northern part shows a bluish tint, maybe caused by the reason because the part is beneath a white equatorial mist which looks started from the evening terminator. Hellas is whitish bright as if it's a roundish canopy which shows a crack near the southern limb. The white residual npc is also described beautifully to be small roundish, thanks to the good unison of R, G and B components.

On 29 December (λ=108°Ls, δ=4.8"), AWs took an IR(>750nm) image at ω=164°W, φ=16°N. Phlegra and Propontis I are dark evident as well as the area of Panchaia, and the light Elysium looks slim near the morning limb. On the southern hemisphere, M Cimmerium is dark identified. The npc is not clear.

On the same day, Km produced an R image at ω=221°W stacked of 24,000 frs (14 minutes derotaion). Lots of dark markings are shown, while all are described in strong contrast. Phlegra looks blurred as well as Propontis I. The Ætheria dark patch shows up following a bright core in Elysium. The npc does not look definite. There is shown an indiscriminately dark slim streak near the morning limb. Is it the coming Syrtis Mj? If so, it is quite unrealistic. It should have been much fainter.

Finally on 31 December 2017 (λ=108°Ls, δ=4.8"), CFs gave an IR685 image at ω=268°W, φ=16°N. Syrtis Mj is now near the noon and the description of Casius and Boreosyrtis is good. In IR the npc is not distinct. Hellas is shown but duller in IR.

On the same day Km used 10,000 frs (two minutes derotation) to stack to obtain an R image at ω=196°W. The bright npc is visible as a core in the arctic area. Elysium shows a very bright area preceding the Ætheria dark patch. Propontis I, Phlegra and Cerberus look darker than the case on the preceding day. M Cimmerium appears in full view.

Letters to the Editor

●·····***Subject: Mars 2017/12/05-Kumamori***
Received: 6 December 2017 at 17:22 JST

Dear Masatsugu MINAMI: Now the season of the Cold Wave has come, and it is quite difficult to meet with the fine skies. They forecasted that it could be fine this morning. However several cloud patches floated from the north, and no more than an R image of Mars was got in a break of the clouds. Best wishes,

http://www.kwasan.kyoto-u.ac.jp/~cmo/cmons/2018/171205/Km05Dec17.png

○····***Subject: Mars 2017/12/06-Kumamori***
Received: 7 December 2017 at 17:57 JST

Dear Masatsugu: The sky turned out to be clear this morning, and so I could have many chances to shoot the Martian images. However the seeing condition was so unstable (2~3/10) that it was rather hard to compile the good image frames. Especially the B image proved distressing. Best wishes,

http://www.kwasan.kyoto-u.ac.jp/~cmo/cmons/2018/171206/Km06Dec17.png

○····***Subject: Mars 2017/12/12-Kumamori***
Received: 13 December 2017 at 19:01 JST

Dear Masatsugu: These days the weather has been poor due to the cold wave from the Siberian continent. This morning it looked rather fine, so I could obtain an L-color cam image at ω=012°W by 6 minutes derotation. I also tried to make an R image, but when I happened once to remove Mars from the C14 field of view, I could no more re-introduce the object into C14 because the sky had been already bright. Best wishes,

http://www.kwasan.kyoto-u.ac.jp/~cmo/cmons/2018/171212/Km12Dec17.png

○····***Subject: Mars 2017/12/16-Kumamori***
Received: 17 December 2017 at 16:59 JST

Dear Masatsugu: The weather was fine for the situation where the cold wave existed. However, the seeing condition was very poor (2~3/10), so that the L image and the color cam image (both stacked) turned out to be poor. Just an R image stacked from 30.000 frames (11 minutes derotation) looks better. Best wishes,

http://www.kwasan.kyoto-u.ac.jp/~cmo/cmons/2018/171216/Km16Dec17.png

○····***Subject: Mars 2017/12/17-Kumamori***
Received: 18 December 2017 at 18:55 JST

Dear Masatsugu: It was very cold the morning due to the government of the Siberian cold wave. It was good however because it was not windy. Seeing also somewhat improved, and so the images were so-so except for the blue image. Best wishes,

http://www.kwasan.kyoto-u.ac.jp/~cmo/cmons/2018/171217/Km17Dec17.png

○····***Subject: Mars 2017/12/19-Kumamori***
Received: 20 December 2017 at 17:35 JST

Dear Masatsugu: Another cold wave came, and the temperature went down to around 1°C. It was windless and sky was rather clear the morning. But the seeing condition remained very poor, and the images were all vanished except for an R image. Best wishes,

http://www.kwasan.kyoto-u.ac.jp/~cmo/cmons/2018/171219/Km19Dec17.png

○····***Subject: Mars 2017/12/20-Kumamori***
Received: 21 December 2017 at 17:30 JST

Dear Masatsugu: The weather forecast guaranteed the fine sky, but near at dawn the clouds appeared and just an R image was obtained through a crack of the clouds. Best

http://www.kwasan.kyoto-u.ac.jp/~cmo/cmons/2018/171220/Km20Dec17.png

○····***Subject: Mars 2017/12/21-Kumamori***
Received: 22 December 2017 at 15:58 JST

Dear Masatsugu: The weather was fine, and the seeing was passable but never the best. The B image remained poor. Best

http://www.kwasan.kyoto-u.ac.jp/~cmo/cmons/2018/171221/Km21Dec17.png

○····***Subject: Mars 2017/12/29-Kumamori***
Received: 30 December 2017 at 16:12 JST

Dear Masatsugu: The cold wave has stayed long, and the weather has not long been restored. An R image was obtained when the planet came out from behind the clouds. Seeing 2~3/10. Best

http://www.kwasan.kyoto-u.ac.jp/~cmo/cmons/2018/171229/Km29Dec17.png

○····***Subject: Mars 2017/12/31-Kumamori***
Received: 1 January 2018 at 13:27 JST

Dear Masatsugu MINAMI,

A Happy New Year!

It was fine when I got up on the morning of the

New Year's Eve, but during preparing the shooting, it became cloudy. This is an R image just I took when the planet peeped out from the clouds.

All the Best Wishes for the 2018 New Year,

http://www.kwasan.kyoto-u.ac.jp/~cmo/cmons/2018/171231/Km31Dec17.png

○‥‥***Subject: Mars 2018/01/15-Kumamori***
Received: 16 January 2018 at 20:27 JST

Dear Masatsugu: This is a shooting after a while. Because dew formed on the optics, the image turned out to be not quite good. The apparent diameter exceeded 5" at last, and so I could have expected much more details but the seeing did not improve enough. Best

http://www.kwasan.kyoto-u.ac.jp/~cmo/cmons/2018/180115/Km15Jan18.png

Teruaki KUMAMORI (Osaka, JAPAN)

●‥‥***Subject: Mars 09 December 2017 0247UT IR***
Received: 9 December 2017 at 19:49 JST

Hi all, It was nice to be back out in the observatory after a week of rain and thunderstorms, this, together with unseasonal cool weather, resulted in very heavy dew conditions. Olympus Mons is almost central. Best regards,

http://www.kwasan.kyoto-u.ac.jp/~cmo/cmons/2018/171209/CFs09Dec17.png

○‥‥***Subject: Mars 09 December 2017 0247UT RGB and IR***
Received: 10 December 2017 at 04:47 JST

Hi all, Not particularly good data, but this is the full RGB/IR image set from this morning. As noted in the IR image circulated earlier, Olympus Mons is central. The most notable feature is the equatorial cloud over the Tharsis region. Best regards,

http://www.kwasan.kyoto-u.ac.jp/~cmo/cmons/2018/171209/CFs09Dec17.png

○‥‥***Subject: Mars 12 December 2017 0236UT IR***
Received: 13 December 2017 at 00:37 JST

Hi all, The RGB data from this morning was too poor and I was limited to an IR. A rather bland view of the Tharsis region, with M Acidalium just coming into view, and some indication of the NPC. Best regards,

http://www.kwasan.kyoto-u.ac.jp/~cmo/cmons/2018/171212/CFs12Dec17.png

○‥‥***Subject: Mars 14 December 2017 0238UT IR***
Received: 14 December 2017 at 19:16 JST

Hi all, Very poor seeing conditions this morning. Circulating the image for the record only. Bets regards,

http://www.kwasan.kyoto-u.ac.jp/~cmo/cmons/2018/171214/CFs14Dec17.png

○‥‥***Subject: Mars 17 December 2017 0248UT RGB and IR***
Received: 17 December 2017 at 15:34 JST

Hi all, Despite Mars still only at 4.5", a number of interesting features may be noted, including what appears to be some small discrete equatorial clouds: a) The small NPC is evident. b) In the B image, there appears to be bright cloud over equatorial Tharsis. There also appears to be a more subtle broad band of equatorial cloud extending across the planet, as well as possible cloud at the NP region. c) In the G image, the Tharsis equatorial region is also bright. Ophir/Candor also shows as quite bright. There are two small discrete features in the Chryse region adjacent to Margarifiter S, which appear to be clouds. There is also a subtle feature extending north-west across the Tempe region.

d) In the R image, it is interesting to note that the Chryse/Margaritifer clouds are quite clearly seen, as well as the subtle Tempe feature, possibly indicating that there may be a dust component to these clouds? Comments welcome. Best regards,

http://www.kwasan.kyoto-u.ac.jp/~cmo/cmons/2018/171217/CFs17Dec17.png

○‥‥***Subject: Mars 18 December 2017 0254UT RGB and IR***
Received: 18 December 2017 at 21:16 JST

Hi all, Kindly find RGB and IR image set from this morning. M Acidalium and Niliacus Lacus are prominent. Nilokeras and Lunæ Lacus are also visible. Margarifiter Sinus, Auroræ Sinus and the Valles Marineris complex also detected. Some indication of cloud over Tharsis on the bright limb. I am a bit concerned that the G and B images are similar- possibly an error on my part. Best regards,

http://www.kwasan.kyoto-u.ac.jp/~cmo/cmons/2018/171218/CFs18Dec17.png

○‥‥***Subject: Mars 28 December 2017 0226UT RGB and IR***
Received: 28 December 2017 at 15:29 JST

Hi all, I hope that you were all able to enjoy a happy Xmas with your loved ones. I was privileged to spend another Xmas with my 92 year old dad and my sisters family down near Durban. On a further personal note, I am pleased to share with my Planetary friends that I proposed to Marina before

Xmas and we will be married in March- nicely timed so as not to interfere too much with the Jupiter, Saturn and Mars oppositions a few months later!! We returned home on Tuesday to cloudy weather, but I woke early this morning to clear skies and a nice late Xmas present- some nice seeing conditions! The attached image set shows Syrtis Major to the centre left with possible cloud hanging over it(most noticeable in the G image) Below Syrtis Major, a number of familiar features are detected including Boreosyrtis and a few albedo features south of Protonilus. The NPC is clearly seen. Hellas seems to be filled with cloud, although there appears to be a dark indentation/feature towards the southern limb. It would be nice if these seeing conditions stayed for a while…Best regards,

http://www.kwasan.kyoto-u.ac.jp/~cmo/cmons/2018/171228/CFs28Dec17.png

○····***Subject: Mars 31 December 2017 0206UT IR***
Received: 31 December 2017 at 13:40 JST

Hi all, Finishing off the year with unfortunately very poor seeing conditions and this was the best IR I could get. May I wish you all a safe and happy New Year. I believe that as a Mars community, we can look forward to an amazing year ahead!
Best regards,

http://www.kwasan.kyoto-u.ac.jp/~cmo/cmons/2018/171231/CFs31Dec17.png

(out of interest, I had my first experience of Mammatus Cloud formation after a severe storm in our area yesterday- an amazing and beautiful sight. The lighting was also unusual- very yellow. I have attached an image)

○····***Subject: Mars 2 January 2018 0256UT IR***
Received: 2 January 2018 at 19:05 JST

Hi all, A very Happy New Year to everyone!
Attached is a low resolution IR>685nm capture of Mars from this morning. Very poor seeing conditions, preventing RGB imaging. Best regards,

http://www.kwasan.kyoto-u.ac.jp/~cmo/cmons/2018/180102/CFs02Jan18.png

○····***Subject: Mars 3 January 2018 0220UT RGB and IR***
Received: 3 January 2018 at 13:41 JST

Hi all, A beautiful fresh morning with some reasonable conditions. Jupiter and Mars are getting close now. Cloud over Elysium and I suspect NPC outlier may be detectable. Possibly a hint one of the "antennae" that extend of M Cimmerium in the IR image. Hesperia is showing nicely. Best regards,

http://www.kwasan.kyoto-u.ac.jp/~cmo/cmons/2018/180103/CFs03Jan18.png

○····***Subject: Mars 3 January 2018 0220UT RGB and IR***
Received: 3 January 2018 at 13:41 JST

Hi all, Mars image set from this morning with cloud over Elysium, with a possible plume extending south west (B image). Best regards,

http://www.kwasan.kyoto-u.ac.jp/~cmo/cmons/2018/180104/CFs04Jan18.png

○····***Subject: Mars 5 January 2018 0219UT RGB and IR***
Received: 5 January 2018 at 16:23 JST

Hi all, Mars image set from this morning, under poorer conditions, with cloud remaining over Elysium. There also appears to be cloud over Tharsis and Syrtis Major. I believe this is the season of broad equatorial cloud. In the B image, I suspect that there may be an interesting cloud structure SW(above right) of Elysium, with possibly two curved clouds. However at this size and resolution, difficult to confirm.
Best regards,

http://www.kwasan.kyoto-u.ac.jp/~cmo/cmons/2018/180105/CFs05Jan18.png

○····***Subject: Mars 6 January 2018 0303UT RGB and IR***
Received: 6 January 2018 at 16:51 JST

Hi all, Mars image set from this morning. Almost the same CM as yesterday, as I was up a bit later.
Best regards,

http://www.kwasan.kyoto-u.ac.jp/~cmo/cmons/2018/180106/CFs06Jan18.png

○····***Subject: Mars 12 January 2018 0239UT RGB and IR***
Received: 12 January 2018 at 17:38 JST

Hi all, Mars image set from this morning, after a period of cloudy mornings. Poor seeing conditions. Cloud is detected over Olympus Mons as well as the other Tharsis volcanos. Best regards,

http://www.kwasan.kyoto-u.ac.jp/~cmo/cmons/2018/180112/CFs12Jan18.png

○····***Subject: Mars 13 January 2018 0244UT RGB and IR***
Received: 13 January 2018 at 18:30 JST

Hi all, Slightly improved conditions this morning. Olympus Mons is prominent on all channels. Afternoon cloud over OM and the Tharsis Montes. Possible structure in the NPC? Best regards, Clyde

http://www.kwasan.kyoto-u.ac.jp/~cmo/cmons/2018/180113/CFs13Jan18.png

○····***Subject: Mars 14 January 2018 0225UT RGB and IR***
Received: 14 January 2018 at 13:07 JST

Hi all, Rather frustrating seeing this morning-soft and shaky, making focussing difficult, but the Olympus Mons (almost central now) and the Tharsis clouds are still well seen. I have been informed that "double NPC" is likely due to the Olympia NPC outlier. Best regards,

http://www.kwasan.kyoto-u.ac.jp/~cmo/cmons/2018/180114/CFs14Jan18.png

○····***Subject: Mars 15 January 2018 0227UT RGB and IR***
Received: 15 January 2018 at 21:48 JST

Hi all, Poor conditions continue, although the Tharsis orographic clouds are still seen.
Best regards,

http://www.kwasan.kyoto-u.ac.jp/~cmo/cmons/2018/180115/CFs15Jan18.png

○····***Subject: Mars 17 January 2018 0237UT RGB and IR***
Received: 17 January 2018 at 17:52 JST

Hi all, RGB/IR image set from this morning. Despite earlier afternoon conditions, cloud remans over Olympus Mons, as well as Ascraeus Mons. Reduced cloud over Pavonis Mons, and no significant cloud noted over Arsia Mons. Late afternoon cloud is seen over the northern regions of Valles Marineris which is now coming into view. A hint of possible cloud over Alba Patera. NPC Olympia outlier is seen. Best regards,

http://www.kwasan.kyoto-u.ac.jp/~cmo/cmons/2018/180117/CFs17Jan18.png

○····***Subject: Mars 18 January 2018 0239UT RGB and IR***
Received: 18 January 2018 at 15:52 JST

Hi all, Rather low-res RGB and IR image set from this morning. Maybe I must start calling these conditions "average" for this time of year…..
Clouds are less prominent over the Tharsis volcanos. I did note that in the B image, there appears to be two bright spots in the South Polar Cap region. Although at this resolution detail is suspect, any comments would be welcome.
Best regards,

http://www.kwasan.kyoto-u.ac.jp/~cmo/cmons/2018/180118/CFs18Jan18.png

Clyde FOSTER (Centurion, SOUTH AFRICA)

●·····***Subject: irradiation in astronomy paper***
Received: 12 December 2017 at 03:02 JST

Dear colleagues, Attached you will find the final version of the Irradiation in astronomy paper, which has incorporated many of the suggestions you made. I thank you for your interest and support. I am not sure where to publish it as it is pretty "cross disciplinary" in scope, but thought perhaps Antiquarian Astronomer, JHA, JAH2, JRASC, where similar topics have been discussed. Best,

○····***Subject: Re: CMO464 uploaded***
Received: 31 December 2017 at 01:51 JST

Dear friends, I just wanted to congratulate you on the latest CMO--and tell you how much I enjoyed Dr. Minami's reminiscences of his lifetime of Mars dust storm observations, and look forward to the continuation. All good wishes for the New Year,

○····***Subject: Image-1.png***
Received: 5 January 2018 at 08:50 JST

(Sent from my iPhone)

Bill SHEEHAN (Flagstaff, AZ)

●·····*Subject: Mars, December 12*
Received: 13 December 2017 at 05:01 JST

Hi all, attached is my first Mars for the 2018 season. The seeing was not good but still some details can be seen by comparison with the WinJupos reference image. I've been looking forward to this season for a long time, it's going to finally be here... regards,

http://www.acquerra.com.au/astro/gallery/mars/20171212-184048/m20171212-184048utc.png
http://www.kwasan.kyoto-u.ac.jp/~cmo/cmons/2018/171212/AWs12Dec17.png

○····*Subject: Mars, December 14*
Received: 15 December 2017 at 10:50 JST

Here is an IR image of Mars from this morning in very poor seeing. The 750nm longpass filter was the only option. regards, Anthony

http://www.acquerra.com.au/astro/gallery/mars/20171214-183954/m20171214-183954utc.png
http://www.kwasan.kyoto-u.ac.jp/~cmo/cmons/2018/171214/AWs14Dec17.png

○····*Subject: Mars, December 19*
Received: 20 December 2017 at 06:02 JST

Hi all, some decent seeing this morning for Mars - here's a false colour IR-G-B image showing some cloud over Elysium setting at right and also cloud in Hellas at bottom. The small north polar cap is faintly visible at top. regards,

http://www.acquerra.com.au/astro/gallery/mars/20171219-183906/m20171219-183906utc.png
http://www.kwasan.kyoto-u.ac.jp/~cmo/cmons/2018/171219/AWs19Dec17.png

○····*Subject: Mars, December 29*
Received: 30 December 2017 at 05:34 JST

Hi all, poor seeing and clouds caused some interference this morning, so only a 750nm IR image. Fingers crossed for better seeing tomorrow. Olympus Mons can be faintly seen as a brighter patch at upper right. cheers,

http://www.acquerra.com.au/astro/gallery/mars/20171229-181718/m20171229-181718utc.png
http://www.kwasan.kyoto-u.ac.jp/~cmo/cmons/2018/171229/AWs29Dec17.png

Anthony WESLEY (NSW, AUSTRALIA)

●·····*Subject: Re: Mars, December 12*
Received: 13 December 2017 at 06:35 JST

Very nice work Anthony. Watching this CM Longitude around Ls 117 will give you a chance to time the appearance of the north polar spiral clouds over Baltia-Mare Boreum. The current Ls is a little early. Of the albedo features we can see that Pandoræ Fretum is quite prominent. In writing up the 2014 report recently this feature was found to darken in response to Southern Hemisphere regional dust storm activity that crossed from NW of Hellas to Argyre in October that year. We had such regional activity late in the 2016-17 apparition too, though there has been no encircling storm since 2007. This is definitely one of the best images of the current apparition, and others have done some impressive work too. All the best from a snowbound UK - or at least this bit..... (Sent from my iPad)

Richard McKIM (Peterborough, The UK)

☆ ☆ ☆

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CMO n°465/ ISMO #91 (25 January 2018)

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