

MARS

No. 393

25 January 2012

OBSERVATIONS

No. 19

Published by the International Society of the Mars Observers

Six Decades of Observing Mars

By

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I would like to thank Masatsugu Minami for giving me the honor of writing an essay for the January, 2012, CMO/ISMO. He informed me that I could write about any subject of my choosing. Obviously "Physical Fitness Through Proper Diet and Exercise" would not be taken seriously! When deciding on a topic it occurred to me that I began serious Mars observations in 1954. Looking back over the last six decades, I have witnessed dramatic transformations in both the observing techniques and the goals of amateur planetary astronomers.

The 1950s was an exciting time for young people interested in astronomy. The Space Age was dawning and the prospect of life on other worlds in the Solar System was still considered probable. Books like Ray Bradbury's *The Martian Chronicles* and movies like *The Day the Earth Stood Still* fired the imagination of a generation of budding astronomers. I was caught up in this setting and wanted to see the planets for myself. Back in those days decent commercial telescopes were prohibitively expensive, but my father had a saying: "If you want something, build it yourself!"



Fig 1

1954



Fig 2

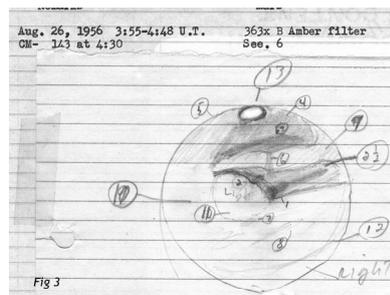
2011

With his help I proceeded to build some small reflectors, culminating in an 8-inch $f/8$ Newtonian with a fine Cave mirror (donated by my wonderful Aunt Hattie!). This scope was set in a cubic

meter of concrete in my parents' backyard and provided wonderful views of the planets. (Over the next 50 years my telescope, like me, doubled in size! See Figs. 1 and 2.)

I remember the excitement I felt as the date of the 1956 Mars opposition approached, when the planet's apparent diameter would be a whopping 24.7 arc-seconds. I had been dutifully sketching the planet Mars during early summer of that year and had watched the SPC retreat while various albedo features - and, yes, even "canals" - came into view. On August 26, however, I was bitterly disappointed. Only some two weeks before opposition my view of Mars revealed only muted albedo features, with some prominent features missing entirely! (See Figure 3.) I thought that

something was wrong with my scope, but a few days later Chicago's Adler Planetarium announced that there was a



massive dust storm forming on Mars. Today, of course, I would be elated to observe such an event. With today's Internet and the worldwide network if Mars observers want, word of a dust storm would be disseminated in seconds rather than days or weeks. We now take these advances for granted, but I remember the "good old days" when we had to physically mail our observations to others around the world - not only slow but expensive. Major events sometimes required overseas telephone calls. IAU telegrams were the fastest way to inform observers, but these were not usually available to amateurs. Time-sensitive phenomena, like Anthony Wesley's Jovian impact or the 2010 SEB Revival, could not have been monitored with the thoroughness that we enjoy today.

During the 1960s astronomy had to take a back seat to my medical training and to raising a fam-

ily, although I did manage to observe Mars occasionally when visiting my parents. During these years I was fortunate to have dedicated professors who exposed me to the joys of honest scientific inquiry. I did research on deep diving physiology, near drowning, and mapping the oxygen storage system of the Bottlenose Dolphin. I remember my disappointment in 1965 when the images taken by Mariner IV revealed a cratered, seemingly dead world. The romance of Mars was gone! Fortunately the Mariner IX mission showed Mars to be an exciting, dynamic world worthy of intensive study.

Around this time Schmidt-Cassegrain telescopes that were portable and affordable came on the market, stimulating an explosion in amateur astronomy. However when we settled in Miami in 1971 I had little intention of pursuing astronomy, since my wife and I were primarily interested in diving and racing sailboats. Furthermore, the "experts" stated that the tropics would be a poor venue for astronomy due to frequent clouds and the sea level altitude. The moist air just wasn't suitable for serious observations! But in 1972 my parents shipped my trusty 8-inch reflector to Miami because they wanted to put a bird bath on the pier. The bird bath is still there, attached to the 4-inch steel pipe embedded in the cubic meter of concrete, and I am quite sure that no force of nature will ever disturb it! Late in 1973 my son and I reassembled the telescope and our first view was of post-opposition Mars. The image was stunning. I had rarely experienced such fine seeing conditions - I was once again hooked. It seems that the "experts" were wrong about maritime seeing conditions, a fact reinforced by the work of William H. Pickering in Jamaica, Isao Miyazaki in Okinawa, and later, Damian Peach in Barbados and coastal England.

I joined the Miami astronomy club, the Southern Cross Astronomical Society (SCAS), where I met Jeff Beish, who became a lifelong friend and

superb Mars observer. Jeff and I began to seriously draw Mars and submit observations to the A.L.P.O. Mars Section. Charles F. "Chick" Capen directed that section and soon took us under his wing, introducing us to the proper use of color filters, drawing techniques, and showing us the importance of placing our work in historical perspective. On numerous occasions Chick invited us to observe with him on the 24-inch Lowell refractor. A gentle teacher, he eventually steered us into doing quantitative work, since he was dedicated to the idea of professional-amateur cooperation and knew that professional astronomers appreciated solid quantitative observations. With this in mind, Chick "suggested" that we embark on two projects, which culminated in Jeff's studies of Martian cloud types and frequencies from 26,000 ALPO and professional observations and with the two of us performing several thousand bifilar micrometer measurements of the polar caps. At the time all we wanted to do was to make pretty drawings and photographs, but I am glad we followed Capen's advice, since our studies produced interesting data on Mars's atmosphere and climate and were published in professional journals. Chick Capen was dedicated to amateurs establishing a worldwide network of Mars observers, the goal being 24-hour coverage of the planet. He avidly corresponded with overseas amateurs, exchanging ideas and observations. Early on, a number of Japanese observers such as the artistic and technical geniuses Toshihiko Osawa and Hideaki Saito shared their observations with A.L.P.O. and provided much-needed data on what was happening on the "other side" of the planet. By 1973 such luminaries as Great Britain's Alan Heath and France's Jean Dragesco joined forces and formed the core of Capen's International Mars Patrol (IMP). Today this has grown to dozens of observers in over 20 countries and, thanks to electronic imaging and the Internet, nearly instantaneous com-

munication has become routine.

Capen, a master photographer, reawakened my interest in planetary photography. In the 1960s and early '70s the state of the art in Solar System imaging was high contrast copy film developed in D-19. This produced photos that had satisfactory grain but were very contrasty. Chick introduced us to a Kodak film called "Special Order 410." This was a fairly slow emulsion but had very fine grain. It eventually became the famous Technical Pan Film. Mars is a high contrast subject and the common developers of the day produced images in which much fine, faint detail was lost. In the 1980s Chick and I embarked on a quest for a better developer. After extensively testing dozens of messy, complex, and often odoriferous combinations, we found that one of the oldest developers, Rodinal, produced fine grain, adequate speed, and good shadow detail.

At this time deep sky photographers discovered that baking Tech Pan in "forming gas" (a mixture composed of 92% nitrogen and 8% hydrogen) for a few days overcame the film's reciprocity law failure during long exposures. The "experts" stated that hypering the film for planetary photography would not increase its speed, since the exposures would be too short to see any effect. Professor Alex Smith at the University of Florida was a pioneer in film hypersensitization and asked his PhD candidate, Mike Reynolds to test this. Mike (now Dean and Professor of Astronomy at the Florida State College in Jacksonville) asked me to take planetary images with Tech Pan film baked in 100% hydrogen. Every few weeks he took a commercial flight to Miami carrying a large aluminum tank containing film and hydrogen gas. Times have certainly changed. If he were to try that today, he might well wind up in Guantanamo! We found that the hypered film was not only 50% faster but also produced markedly improved shadow detail - increased "toe speed." After this and during most of the

1980s I baked all my Tech Pan film for 2 hours in pure hydrogen. A secondary benefit was that the large tanks of hydrogen gas in my garage discouraged break-ins!

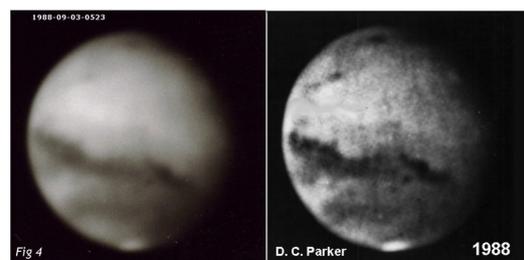
The volume of work that planetary photographers performed is staggering in retrospect. Many hours were spent in the darkroom, since numerous prints had to be made, carefully labeled and air mailed to other observers. Experimentation was also costly and time-consuming. Jeff Beish and I spent a total of 26 hours in the darkroom unsharp masking a Mars negative in order to reveal the *Rima Tenuis*. (This could be considered as symptomatic of an obsessive-compulsive disorder.) Today a single mouse click produces superior results in seconds.

Late in the 1980s many of us began experimenting with simple analog video cameras. The initial results were very encouraging, and we found that Martian surface features were often more discernable on the T.V. screen than they were in the eyepiece. This may have been due to using both eyes and observing in physical comfort. In addition, polar cap measurements made with a simple ruler held up to the T.V screen were nearly as accurate as those obtained after 2 hours fighting with a bifilar micrometer! Video was not the ultimate answer, however, because quality hard copies were difficult to obtain and the sheer volume of tape recordings soon became unmanageable.

Video imaging, however, did play a vital role in one of the highlights of my Mars career. In 2001 Tom Dobbins and Bill Sheehan calculated that the Earth-Sun-Mars geometry would be identical to that when Tsuneo Saheki observed a series of bright flashes over Edom Promontorium in July, 1954. Feeling that these events were caused by the Sun glinting off water ice crystal Martian clouds, we set out determined to repeat the observations. Dobbins led an expedition of 17 observers to the lower Florida Keys. The group

included A.L.P.O. Mars Section members J. Beish, D. Moore, D. Troiani and R. Schmude. R. Feinberg and G. Seronik from *Sky and Telescope* and T. Parker from the Jet Propulsion Laboratory were also active participants. Mead Instruments kindly lent SCAS vice president Tippy D'Auria a 12-inch SCT which he used to obtain video images. After three nights of negative results, a series of bright flashes over Edom were detected on June 7, 2001. These were recorded on videotape and were easily seen by team members using telescopes as small as 6 inches aperture. Upon analyzing the data it became apparent that the geometry was wrong for specular reflections off clouds and that a surface phenomenon must be involved. The Mars Global Surveyor spacecraft confirmed that no clouds were present over the Meridiani Planum, but careful examination of this region revealed unusual chaotic terrain. In 2004 an article in *Scientific American* mentioned that our Martian flare results had partly influenced the selection of Meridiani Planum as the exploration site for the Opportunity Rover. Not bad for a group of amateurs using small telescopes!

In 1989 Dr. Steve Larson of the University of Arizona Lunar and Planetary Laboratory asked me for some of my photographs from the 1988 perihelic Mars apparition. He selected one of my "best" images and, using a primitive CCD camera, digitized it. The results were astounding (Figure 4). The age of digital imaging had ar-



rived. I soon acquired a Lynxx PC CCD camera

but was actually afraid to use it! A major problem was how to process the images. The algorithms employed by Dr. Larson were complex and far beyond my pay grade. Then Richard

Berry, editor and founder of *Astronomy* magazine paid me a visit and explained that electronic imaging was no different than film photography. That night we took over 400 images of Jupiter. Berry also had written a simple but powerful imaging processing program that stacked and deconvolved planetary images.

Berry had written a color-combining DOS program for our new IBM-XT computers (with monster 30 megabyte hard drives!). However, creating and displaying color images remained problematic. These difficulties were solved one night in 1990. Richard Berry, Jack Newton and I were attending a star party in central Ohio and were approached by someone who had a new program for us to try. Standing in the middle of a field on

that cold night we each signed a document stating that we would not share the program with anyone else and then received a 3.5-inch floppy disk. The program was called Photostyler which was eventually purchased by Adobe as the precursor to Photoshop!

I am fortunate to have witnessed the dramatic technological revolution in amateur astronomy that has occurred over the past six decades. There is no reason to think that further developments in our technology and knowledge of the planets won't be just as thrilling 60 years from now. I am also fortunate that this technology hasn't diminished my pure joy when I look through my telescope - even with my cataracts - at our ever-changing neighbor worlds. □

CMO/ISMO 2011/12 Mars Report #05

2011/2012 Mars Observations in December 2011

♂..... This is the fifth report of the present Mars apparition and deals with the observations made in December 2011. The planet Mars was moving near the hind legs of Leo, and around on 8 December it attained the western quadrature and went high up near the meridian at dawn. The apparent declination D was near 6°N at the end of the month. The apparent diameter δ rose from $7.1''$ to $9.0''$, and the season proceeded from $\lambda=037^\circ\text{Ls}$ to 051°Ls during the month. The central latitude stayed near $\phi=24^\circ\text{N}$. The phase angle went down from $\iota=37^\circ$ to 34° .

♂..... The observations in December were sent from the following ISMO members. Domestically 6 members joined and from the foreign countries we received from 13 members. It is gratifying that we began to receive the observations from Australia because the declination went down.

AKUTSU, Tomio Cebu, the Philippines

1 Set of *RGB + 2 Colour + 1 IR* Images (10 December 2011)
36cm SCT @f/45 with a DMK21AU04, DFK21AU04

BUDA, Stefan (SBd) Melbourne, Australia

1 Set of *RGB +1 Colour* images (21, 29 December 2011) 40cm Dall-Kirkham with a DMK21AU04

FLANAGAN, William Houston, TX, the USA

2 Sets of *LRGB* Images (1, 30 December 2011) 36cm SCT @f/27 with a Flea3

GHOMIZADEH, Sadegh (SGh) Tehran, Iran

5 *Colour + 1 R + 2 B* Images (20, 21, 28, 29, 31 December 2011)
(28cm SCT with a DMK21AU04.AS)

GORCZYNSKI, Peter (PGc) Oxford, CT, the USA

5 Sets of *RGB + 5 IR* Images (2, 12, 18, 27, 29 December 2011)
36cm SCT @f/28 with a DMKAU618.AS

KONNAI, Reiichi (Kn) Ishikawa, Fukushima, Japan

9 Drawings (24, 27, 31 December 2011) 500×30cm SCT

MAKSYMOWICZ, Stanislas (SMk) Ecquevilley, France

4 Sets of Drawings (24, 26[#], 27^{##}, 29 December 2011)
290, 340×31cm Cassegrain, 260×11cm Refractor[#], 320×20cm Cassegrain^{##}

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

5 Colour Images (3, 12, 19 December 2011) 25cm SCT with a ToUcam pro II

MINAMI, Masatsugu (Mn) *Fukui City Observatory, Fukui, Japan

9 Drawings (13, 31 December 2011) 400×20cm Goto ED refractor*

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

5 Sets of RGB + 5 LRGB Colour + 5 L Images (4, 13, 27, 28, 30 December 2011)
25cm speculum @f/80 with a Flea3

MURAKAMI, Masami (Mk) Fujisawa, Kanagawa, Japan

5 Drawings (17, 24 December 2011) 320×20cm F/8 speculum

NAKAJIMA, Takashi (Nj) *Fukui City Observatory, Fukui, Japan

9 Drawings (13, 31 December 2011) 400×20cm Goto ED refractor*

POUPEAU, Jean-Jacques (Jpp) Essonne, France

3 Sets of RGB Images (10, 11 December 2011) 35cm Cassegrain with a SKYnyx 2-0

ROSOLINA, Michael (MRs) Friars, WV, the USA

1 Colour Drawing (3 December 2011) 390, 490×35cm SCT

SHARP, Ian (Isp) Barbados, the West Indies

5 RGB Colour Images (9, 11, 14, 16, 18 December 2011) 28cm SCT @ f/67 with Flea3

SMET, Kris (KSm) Bornem, Belgium

1 Colour Drawing (10 December 2011) 220×30cm Dobsonian

WALKER, Sean (SWk) Manchester, NH, the USA

3 LRGB Colour Images (2, 12 December 2011) 32cm speculum with a DMK21AU618

WARELL, Johan (JWr) Skivarp, Sweden

2 Sets of RGB Images (8, 19 December 2011) 22cm speculum @f/17 with a ToUcam pro III

♂.....We further received as follows:

GORCZYNSKI, Peter (PGc) Oxford, CT, the USA

1 Set of RGB + 1 IR Images (31 October 2011) 36cm SCT @f/28 with a DMKAU618.AS

PEACH, Damian A (DPc) Selsey, West Sussex, the UK

2 Colour + 1R + 1B Images (23 November 2011) (36cm SCT with a SKYnyx 2-0M)

♂.....The season was important because of a critical season of the north polar cap (npc), while the seeing remained poor in Japan. Especially at the rear side of the Japanese islands, it was almost rainy or snowy all days: At Fukui NAKAJIMA (Nj) and MINAMI (Mn) caught the planet no more than on 13 Dec ($\lambda=043^\circ\text{Ls}$) and 31 Dec ($\lambda=051^\circ\text{Ls}$) under a very poor transparency (as stated below). The opposite side facing to the Pacific Ocean was rather sunny but with the poor seeing. MURAKAMI (Mk) near Yokohama started from 17 Dec, but he did not meet any favourable seeing. MORITA (Mo) at Hiroshima was active though he was very busy but was bothered with the poor seeings. On 04 Dec ($\lambda=039^\circ\text{Ls}$) at $\omega=298^\circ\text{W}$, he took Syrtis Mj but Hellas was not evident, just S Sabaeus was finely caught. He also tried on 13 Dec ($\lambda=043^\circ\text{Ls}$) at $\omega=203^\circ\text{W}$ but the seeing was poor, though he took the broadened Phlegra, and a light Elysium just after the noon. On 27 Dec ($\lambda=049^\circ\text{Ls}$) he took at $\omega=045^\circ\text{W}/048^\circ\text{W}$ where the region from M Acidalium to Solis L was shown, and similarly on 28 Dec ($\lambda=050^\circ\text{Ls}$) at $\omega=054^\circ\text{W}$ he produced a better set of images showing the area from Nilokeras to Ophir. Argyre is seen. He further took on 30 Dec ($\lambda=050^\circ\text{Ls}$) at $\omega=019^\circ\text{W}$, but the images were rather blurred. AKUTSU (Ak) who is staying at Cebu, the Philippines, produced images on 10 Dec ($\lambda=042^\circ\text{Ls}$) at $\omega=237^\circ\text{W}/241^\circ\text{W}$, 249°W and showed several markings including the evening cloud of Elysium but it looks there are a lot of ghosts on the surface, and so we don't touch here any more. KONNAÏ (Kn) at Fukushima, 80km away from the dreadful destruction of Fukushima Dai-ichi nuclear plant, started the visual observations by the use of a new telescope (because his routine observatory was useless at present because of the devastating earthquake on 11 March 2011):

On 24 Dec ($\lambda=048^\circ\text{Ls}$) at $\omega=088^\circ\text{W}$, 097°W , the fringe of the npc was quite dark and observed the region from M Acidalium to Solis L. On 26 Dec ($\lambda=049^\circ\text{Ls}$) at $\omega=059^\circ\text{W}$, 069°W , the npc was definite, surrounded by the broad dark fringe and its eastern part was darker. The colour of M Acidalium was neural, while

Aurorae S and Solis L looked rather brownish. Argyre was a bit light. On 31 Dec ($\lambda=051^\circ\text{Ls}$), *Kn* observed consecutively at $\omega=001^\circ\text{W}$, 011°W , 021°W , 030°W , 040°W and described the markings from S Sabaeus to Solis L quite beautifully. Argyre a bit light. The day was under a good transparency and the temperature went down to -1°C . At Fukui, on 13 Dec ($\lambda=043^\circ\text{Ls}$) just the surface was scarce with the marking and just the npc was conspicuously bright. On 31 Dec ($\lambda=051^\circ\text{Ls}$), the transparency was very poor contrary to the area of Fukushima.

On the other hand there reached good results from foreign countries. On 01 Dec ($\lambda=037^\circ\text{Ls}$) at $\omega=195^\circ\text{W}$, FLANAGAN (*WFl*) at Houston produced a good set of images: Elysium was light just after the noon. Especially there is shown inside the npc a perimetric boundary of the residual cap is already seen (we call this a P-ring). The P-ring is also seen on the images of WALKER (*SWk*), near NY, taken on 02 Dec ($\lambda=038^\circ\text{Ls}$) at $\omega=156/159^\circ\text{W}$. From 02 Dec on, GORCZYNSKI (*PGc*) at CT covered a large region as follows: On 02 Dec ($\lambda=038^\circ\text{Ls}$) at $\omega=156^\circ\text{W}$, it particularly shows the evening mist on Olympus Mons and furthermore it seems to show the shadow of the caldera ($\iota=37^\circ$). The P-ring is also seen. Next *PGc* took on 12 Dec ($\lambda=042^\circ\text{Ls}$) at $\omega=055^\circ\text{W}$ and depicted the triangle dark part on M Acidalium, the pair of Nilokeras and the area of Solis L. On the day *SWk* also produced similar image at $\omega=053^\circ\text{W}$ where the P-ring is also definite. *PGc* further took on 18 Dec ($\lambda=045^\circ\text{Ls}$) at $\omega=360^\circ\text{W}$ and showed the two nails of S Meridiani, the triangle dark part of M Acidalium and its west clearly. On 27 Dec ($\lambda=049^\circ\text{Ls}$) at $\omega=274^\circ\text{W}$, *PGc*'s images show Syrtis Mj near the CM, and the P-ring. S Sabaeus was delicately shown and the area of Utopia is fully described. On 29 Dec ($\lambda=050^\circ\text{Ls}$) at $\omega=247^\circ\text{W}$, *PGc* shows Syrtis Mj was at the morning (near noon) side and a faint evening mist over Elysium is vaguely seen. The P-ring is evident and the residual cap is like a hole (as in *AK*'s image aforementioned).

Now SHARP (*ISp*) visited Barbados at the seasons from $\lambda=041^\circ\text{Ls}$ to 045°Ls and sent us five images which show the areas from Solis L to S Sabaeus: On 09 Dec ($\lambda=041^\circ\text{Ls}$) at $\omega=066^\circ\text{W}$, the P-ring is definite and Ophir is bright. On 11 Dec ($\lambda=042^\circ\text{Ls}$) at $\omega=049^\circ\text{W}$ also the image shows the P-ring: Solis L is on the morning side and M Acidalium is quite evening. On 14 Dec ($\lambda=043^\circ\text{Ls}$) at $\omega=023^\circ\text{W}$, M Acidalium is near the CM. Argyre a bit misty. On 16 Dec ($\lambda=044^\circ\text{Ls}$) at $\omega=002^\circ\text{W}$, Argyre is a bit light. On 18 Dec ($\lambda=045^\circ\text{Ls}$) at $\omega=344^\circ\text{W}$, the image competes with *PGc*'s on 18 Dec ($\lambda=045^\circ\text{Ls}$) at $\omega=360^\circ\text{W}$ which was mentioned before. Finally a set of excellent images made by *WFl* reached us which was taken on 30 Dec ($\lambda=050^\circ\text{Ls}$) at $\omega=270^\circ\text{W}$: Syrtis Mj with a tail of S Sabaeus was shot, and the area Utopia is finely reproduced. Hellas is not light ($\phi=24^\circ\text{N}$). The P-ring is evident.

Otherwise we received from the US the images made by MELILLO (*FMI*): The images on 03 Dec ($\lambda=038^\circ\text{Ls}$) at $\omega=163^\circ\text{W}$, 174°W show, though the images being small, the clear bright npc, and the images on 12 Dec ($\lambda=042^\circ\text{Ls}$) at $\omega=078^\circ\text{W}$, 084°W depict the evening mist at Chryse-Xanthe, as well as near at Alba. On the day *PGc* and *SWk* took images but the evening mist was not so evident as in *FMI* by a ToUcam. *FMI*'s image on 19 Dec ($\lambda=045^\circ\text{Ls}$) at $\omega=010^\circ\text{W}$ shows the bright npc with other definite major markings. Chryse looks a bit light near the noon. Visually ROSOLINA (*MRs*) made a colour drawing on 03 Dec ($\lambda=038^\circ\text{Ls}$) at $\omega=177^\circ\text{W}$.

In Australia, BUDA (*SBd*) issued a pretty image on 21 Dec ($\lambda=046^\circ\text{Ls}$) at $\omega=109^\circ\text{W}$ where the npc is clear and shows faintly an evening mist, and on 29 Dec ($\lambda=050^\circ\text{Ls}$) at $\omega=024^\circ\text{W}$ he obtained a nice set of images in which M Acidalium governs and Argyre a bit seen.

In Europe, WARELL (*JWr*) in Sweden brought an image where M Acidalium is near the CM earlier on 08 Dec ($\lambda=041^\circ\text{Ls}$) at $\omega=028^\circ\text{W}$, and at a similar angle POUPEAU (*JPp*) in France more vividly described M Acidalium on 10 Dec ($\lambda=041^\circ\text{Ls}$) at $\omega=034^\circ\text{W}$, and also on 11 Dec ($\lambda=042^\circ\text{Ls}$) at $\omega=004^\circ\text{W}$, 015°W he chased M Acidalium and S Meridiani. The angle came in Japan at the end of the month. We should add that *JWr* caught Syrtis Mj with a faint evening mist and the npc on 19 Dec ($\lambda=045^\circ\text{Ls}$) at $\omega=293^\circ\text{W}$. On 10 Dec ($\lambda=041^\circ\text{Ls}$) SMET (*KSm*) in Belgium obtained a sketch at $\omega=041^\circ\text{W}$. Otherwise MAKSYMOWICZ (*SMk*) in France drew on 24 Dec ($\lambda=048^\circ\text{Ls}$) at $\omega=259^\circ\text{W}/261^\circ\text{W}$, on 26 Dec ($\lambda=048^\circ\text{Ls}$) $\omega=250^\circ\text{W}$, on 27 Dec ($\lambda=049^\circ\text{Ls}$) at $\omega=238^\circ\text{W}$, 248°W , and on 29 Dec ($\lambda=050^\circ\text{Ls}$) at $\omega=197^\circ\text{W}$, 206°W . The first three days Syrtis Mj and Utopia were seen. Many filters are used but it is difficult to discriminate from the drawing errors.

Iran is located importantly between Asia and Europe and GHOMIZADEH (*SGh*) observes there: However the images on 20 Dec ($\lambda=046^\circ\text{Ls}$) at $\omega=236^\circ\text{W}$ and on 21 Dec ($\lambda=046^\circ\text{Ls}$) at $\omega=219^\circ\text{W}$ show a lot of ghosts. However the image on 28 Dec ($\lambda=050^\circ\text{Ls}$) at $\omega=088^\circ\text{W}$ is milder, and some clouds over Alba and Tharsis are seen. It must depend on the B image, and so he should take G image also. The one on 29 Dec ($\lambda=050^\circ\text{Ls}$) at $\omega=086^\circ\text{W}$ is also full of ghost but shows the evening clouds. The one on 31 Dec ($\lambda=053^\circ\text{Ls}$) at $\omega=066^\circ\text{W}$ shows much interesting aspects but the procedure should be much better.

We further received a set made on 31 Oct ($\lambda=023^\circ\text{Ls}$) at $\omega=091^\circ\text{W}$ from *PGc*: There seems to exist a rift inside the npc in R. PEACH (*DPc*) sent us two sets made on 23 Nov ($\lambda=034^\circ\text{Ls}$) at $\omega=191^\circ\text{W}$, 196°W where Phlegra and Tri Charontis are broad and Elysium light just after the noon. The npc is bright. (*Mn & Mk*)

Letters to the Editor

●.....*Subject: Mars images (November 23rd)*
Received: Mon 19 Dec 2011 02:16 JST

Hi all, Some belated Mars images from Nov 23rd showing the Elysium hemisphere. Fair seeing. Numerous bright clouds over the disk in blue light:

http://www.damianpeach.com/mars1112/2011_11_23rgb.jpg

Best Wishes

Damian PEACH (Selsey, West Sussex, the UK)

●.....*Subject: Mars 20 dec.*
Received: Wed 21 Dec 2011 11:33 JST

Hi: After long time in Tehran Could I some images capture of Mars seeing was average trans very bad.

<http://www.hida.kyoto-u.ac.jp/~cmo/cmons/2011/111220/SGh20Dec11.jpg>

○.....*Subject: Mars 21 dec*
Received: Mon 26 Dec 2011 01:12 JST

Hi, On 21 December I took one image on the occasion the Mars seeing was average & condition also. At the end, I hope Merry Christmas & a Happy New Year for the OAA/ISMO members.

<http://www.hida.kyoto-u.ac.jp/~cmo/cmons/2011/111221/SGh21Dec11.jpg>

○.....*Subject: Mars 28 Dec*
Received: Fri 30 Dec 2011 14:13 JST

Hi, On 28 December seeing was average: atmosphere was good so that I took one set of images of Mars. PLS see it.

<http://www.hida.kyoto-u.ac.jp/~cmo/cmons/2011/111228/SGh28Dec11.jpg>

○.....*Subject: Mars 29 Dec*
Received: Sun 01 Jan 2012 13:11 JST

Hi, On 29 December seeing was poor while the atmosphere was average: PLS see the Mars image.

<http://www.hida.kyoto-u.ac.jp/~cmo/cmons/2011/111229/SGh29Dec11.jpg>

○.....*Subject: Mars 31 Dec.*
Received: Tue 03 Jan 2012 06:37 JST

Hi, End of 2011 I took one image of Mars though seeing was poor. PLS see it.

<http://www.hida.kyoto-u.ac.jp/~cmo/cmons/2011/111231/SGh31Dec11.jpg>

○.....*Subject: mars 5 jan.*
Received: Sat 07 Jan 2012 05:15 JST

Hi: This is the first image from new year seeing was poor atmosphere was so so PLS see it

<http://www.hida.kyoto-u.ac.jp/~cmo/cmons/2011/120105/SGh05Jan12.jpg>

Ciao

Sadegh GHOMIZADEH (Tehran, Iran)

●.....*Subject: hi*
Received: Wed 21 Dec 2011 21:17 JST

Dear Masatsugu, I took your advice, after several years, and had cataract surgery yesterday. The procedure was quick and painless. Maybe I will catch Mars this apparition.

To those who celebrate it, Merry Christmas, and to everyone else, good health and clear sky.

Sam WHITBY (VA)

●.....*Subject: Essay for the CMO/ISMO*
Received: Thu 22 Dec 2011 10:35 JST

Dear Masatsugu, I have attached the essay you

requested for the January issue of the CMO/ISMO. I have also included four illustrations which you may use if you want.

I hope that the essay is satisfactory. I will be leaving home on Friday to spend Christmas with my oldest daughter and her family. I will be back next Wednesday. I should have Internet access at her house. Best and have a great holiday,

○.....*Subject: Re: Essay for the CMO*
Received: Thu 22 Dec 2011 14:38 JST

Thanks, Masatsugu. Happy New Year (and Happy Birthday!) to you as well. Best,

○.....*Subject: Mars 2 January*
Received: Mon 09 Jan 2012 06:52 JST

Hi All, I have attached an RGB Mars image from 2 January. Lots of clouds over Elysium-Ætheria.

<http://www.hida.kyoto-u.ac.jp/~cmo/cmons/2011/120102/DPk02Jan12.jpg>

○.....*Subject: eCard from AmericanGreetings.com*
Received: Mon 09 Jan 2012 06:58 JST

Donald Parker has sent you an eCard: *Dear Masatsugu, Sorry that I am so late in sending you Birthday wishes. I hope that you have a great year, clear skies and good seeing! Best,*

○.....*Subject: Mars 8 January*
Received: Tue 10 Jan 2012 13:52 JST

Hi All, I have attached an RGB Mars images from 8 January. Prominent "Domino Clouds" over the four Tharsis volcanoes and Alba Patera.

<http://www.hida.kyoto-u.ac.jp/~cmo/cmons/2011/120108/DPk08Jan12.jpg>

Best,

Don PARKER (Miami, FL)

●.....*Subject: Mars this morning*
Received: Thu 22 Dec 2011 13:07 JST

Hello everyone, I got up early this morning to have a look at Comet Lovejoy but unfortunately it did not work out due to a large gum tree in the wrong spot so instead I dusted off the 16" 'scope and produced the attached image. I have never experienced good seeing in the morning from this location and today was no different. Even Mars turned its boring side...

<http://www.hida.kyoto-u.ac.jp/~cmo/cmons/2011/111221/SBd21Dec11.jpg>

I wish everyone happy holydays and merry Christmas to those that celebrate it.

○.....*Subject: Mars RGB set 29122011*
Received: Fri 30 Dec 2011 10:32 JST

Hi everyone, Conditions seemed promising this morning with better than the usual morning seeing but as soon as I finished setting up, the clouds rolled in. Still I managed to capture one RGB set between the clouds and saved the day.

<http://www.hida.kyoto-u.ac.jp/~cmo/cmons/2011/111229/SBd29Dec11.jpg>

Best regards,

Stefan BUDA (Melbourne, Australia)

●.....*Subject: Mars: December 19, 2011*
Received: Thu 22 Dec 2011 13:55 JST

Hi - I have attached my latest image of Mars December 19, 2011 to be posted.

<http://www.hida.kyoto-u.ac.jp/~cmo/cmons/2011/111219/FMI19Dec11.jpg>

○ *Subject: Mars: January 1, 2012*
Received: Mon 02 Jan 2012 14:33 JST

Hi - Happy New Year! I have attached my latest image of Mars January 1, 2012 at 8:06 UT to be posted.

<http://www.hida.kyoto-u.ac.jp/~cmo/cmoms/2011/120101/FMI01Jan12.jpg>

○ *Subject: Mars: January 7, 2012*
Received: Sun 08 Jan 2012 15:03 JST

Hi - I have attached my latest image of Mars January 7, 2012 to be posted.

<http://www.hida.kyoto-u.ac.jp/~cmo/cmoms/2011/120107/FMI07Jan12.jpg>

Thanks,

Frank J MELILLO (Holtsville, NY)

● *Subject: Re: CMO #392 (ISMO #18)*
Received: Sat 24 Dec 2011 20:11 JST

Dear Masami san, Thanks for your transmission of the monthly bulletin.

After 2 months interruption of Mars observations, I have the pleasure to send you mine of this morning with average conditions only. However, some events were collected resumed on notes given with the sketch.

<http://www.hida.kyoto-u.ac.jp/~cmo/cmoms/2011/111224/SMk24Dec11.jpg>

Have good receipt of this material. I profit of the present mail to transmit you and the observer community my best wishes for a merry Christmas and an happy new year from France. Health and prosperities to you and your family. Faithfully.

○ *Subject: Mars 26-27th and Uranus 26th*
Received: Wed 28 Dec 2011 12:19 JST

Good afternoon, Here are my last observations about:- Mars this morning 27th with the 203mm Cassegrain with always the equatorial area hazy (rather in blue color). Intensity variations are noted with the sketch (C clear, B bright). This confirms the observations of last 24 and 26th. A sketch performed last 26th with a 110mm refractor is added.

<http://www.hida.kyoto-u.ac.jp/~cmo/cmoms/2011/111226/SMk26Dec11.jpg>

<http://www.hida.kyoto-u.ac.jp/~cmo/cmoms/2011/111227/SMk27Dec11.jpg>

○ *Subject: Mars 29.12.11 report*
Received: Thu 29 Dec 2011 22:58 JST

Dear sir, Here is the last observation about mars this morning under poor images with the 305mm.

<http://www.hida.kyoto-u.ac.jp/~cmo/cmoms/2011/111229/SMk29Dec11.jpg>

For your perusal. Have good receipt of the present mail.

Stanislas MAKSYMOWICZ (Ecquevilly, France)

● *Subject: RE: CMO #392 (ISMO #18)*
Received: Sun 25 Dec 2011 11:13 JST

Hello Masami: Thank you for sending me this issue of CMO. I have been making some brightness measurements of Mars. Mars has been near its expected brightness. On another note: I hope that you have a happy Holiday season.

Richard SCHMUDE, Jr. (GA)

● *Subject: Mars Images - December 2012*
Received: Thu 29 Dec 2011 00:00 JST

Gentlemen, Sorry that I haven't sent you these images sooner. I have been very busy and have not had a lot of time to process Mars images. I still have a backlog of images to be processed. These are some

of the more recent images where Mars is finally starting to showsome finer detail.

<http://www.hida.kyoto-u.ac.jp/~cmo/cmoms/2011/111227/PGc27Dec11.jpg>

<http://www.hida.kyoto-u.ac.jp/~cmo/cmoms/2011/111218/PGc18Dec11.jpg>

<http://www.hida.kyoto-u.ac.jp/~cmo/cmoms/2011/111212/PGc12Dec11.jpg>

<http://www.hida.kyoto-u.ac.jp/~cmo/cmoms/2011/111202/PGc02Dec11.jpg>

○ *Subject: Mars Image - December 29, 2011*
Received: Fri 30 Dec 2011 13:19 JST

Gentlemen, Attached is my most recent Mars image. Seeing was less than average. That is evident by the poor quality of the blue image. The blue image, however, does show a hint of clouds over Elysium. Regards,

<http://www.hida.kyoto-u.ac.jp/~cmo/cmoms/2011/111229/PGc29Dec11.jpg>

○ *Subject: Mars Images - Jan. 1, & Oct. 31*
Received: Mon 02 Jan 2012 02:07 JST

Gentlemen, Happy New Year! Attached is my first image of 2012 as well as an older set from October. Seeing on both of those nights was about average.

<http://www.hida.kyoto-u.ac.jp/~cmo/cmoms/2011/120101/PGc01Jan12.jpg>

<http://www.hida.kyoto-u.ac.jp/~cmo/cmoms/2011/111031/PGc31Oct11.jpg>

○ *Subject: Mars Image - Jan. 3*
Received: Wed 04 Jan 2012 11:31 JST

Gentlemen, Attached is an image from January 3. Seeing was less than average with a moderate wind blowing things around.

<http://www.hida.kyoto-u.ac.jp/~cmo/cmoms/2011/120103/PGc03Jan12.jpg>

○ *Subject: Mars Images - Jan. 4 and Jan. 7*
Received: Mon 09 Jan 2012 10:37 JST

Gentlemen, Attached are Mars images from January 4 and January 7.

<http://www.hida.kyoto-u.ac.jp/~cmo/cmoms/2011/120104/PGc04Jan12.jpg>

<http://www.hida.kyoto-u.ac.jp/~cmo/cmoms/2011/120107/PGc07Jan12.jpg>

Seeing was very bad on Jan. 4 so I was only able to capture an IR image. The seeing on Jan. 7 was below average, but at least I was able to capture RGB as well as IR images. I am also including an animated gif of all the red frames I captured that night from 7:57UT to 9:11UT. The animation allows detail to be visible which otherwise would be overlooked in a still image. . . . Regards

Peter GORCZYNSKI (Oxford, CT)

● . . . *Subject: 5 Mars RGB Images from Barbados*
Received: Thu 29 Dec 2011 21:41 JST

Hi all,

<http://www.hida.kyoto-u.ac.jp/~cmo/cmoms/2011/111218/ISp18Dec11.jpg>

<http://www.hida.kyoto-u.ac.jp/~cmo/cmoms/2011/111216/ISp16Dec11.jpg>

<http://www.hida.kyoto-u.ac.jp/~cmo/cmoms/2011/111214/ISp14Dec11.jpg>

<http://www.hida.kyoto-u.ac.jp/~cmo/cmoms/2011/111211/ISp11Dec11.jpg>

<http://www.hida.kyoto-u.ac.jp/~cmo/cmoms/2011/111209/ISp09Dec11.jpg>

Here are 5 RGB images of Mars from 9th to 18th December, taken on my recent trip to Barbados:

<http://tinyurl.com/coslfvl> Best Regards

Ian SHARP (Ham, West Sussex, the UK)

● *Subject: Mars on 30 December 2011*
Received: Sat 31 Dec 2011 08:18 JST

Dear Masatsugu, I finally had another clear night last night and I managed to get at least one set of images of Mars on December 30th. Hopefully the skies here will begin to cooperate a little better as Mars nears opposition.

<http://www.hida.kyoto-u.ac.jp/~cmo/cmoms/2011/111230/WFI30Dec11.jpg>

Best Regards and I want to wish you and your colleagues at ISMO a Happy New Year!

○.....*Subject: Mars on 03 January 2012*
Received: Wed 04 Jan 2012 07:14 JST

Dear Masatsugu, Attached is a set of images of Mars from this morning, 03-January. I hope the weather there is clearing some for you and the rest of the observers in Fukui Prefecture!

<http://www.hida.kyoto-u.ac.jp/~cmo/cmons/2011/120103/WFI03Jan12.jpg>

○.....*Subject: Mars on 07 January 2012*
Received: Tue 10 Jan 2012 08:10 JST

Dear Masatsugu, Attached is a set of images of Mars from the morning of 07-January.

<http://www.hida.kyoto-u.ac.jp/~cmo/cmons/2011/120107/WFI07Jan12.jpg>

I had to struggle with this one. It was clear when I turned on the scope to begin imaging but as soon as I had Mars centered in the field of view clouds began rolling in from the south. I waited for a good hole in the clouds and I finally got one about 30 minutes later. However, it wasn't quite big enough and the about 80 percent of green frames and 60 percent of the blue frames were no good. As a result the green and blue images are not that good. I did manage to squeeze out enough information from them to get reasonable color for the composite. Hopefully I'll have some clearer nights later this week. Best Regards,

Bill FLANAGAN (Houston, TX)

●.....*Subject: Happy new year !*
Received: Sun 01 Jan 2012 23:36 JST

Dear friends, I wish you clear and steady skies for 2012. Happy new Mars apparition! Best wishes,

Christophe PELLIER (Nantes, France)

●.....*Subject: Mars 1-1-2012*
Received: Tue 03 Jan 2012 03:22 JST

Dear, Masatsugu and Masami, Attached is an image of Mars from new years day. I used the 25.4 f/12 refl., 2xbarlow, Baader minus IR, Imaging Source camera, Registax 5 and Photoshop CS2.

<http://www.hida.kyoto-u.ac.jp/~cmo/cmons/2011/120101/RTm01Jan12.jpg>

I hope you are well and Happy New Year! Thank You for the CMOs! Sincerely,

Randy TATUM (Henrico, VA)

●.....*Subject: mars sketch 04/01/'12*
Received: Fri 06 Jan 2012 05:33JST

Hi, here is my sketch from january 04

<http://www.hida.kyoto-u.ac.jp/~cmo/cmons/2011/120104/KSm04Jan12.jpg>

Greetings,

Kris SMET (Bornem, Belgium)

●.....*Subject: Mars - Jan. 2nd, 2012*
Received: Mon 09 Jan 2012 11:44 JST

Hi Minami and Murakami, My first post for this year from january 2, 2012.

<http://www.hida.kyoto-u.ac.jp/~cmo/cmons/2011/120102/EMr02Jan12.jpg>

Efrain MORALES RIVERA (Aguadilla, Puerto Rico)

☆☆☆

Ephemeris for the Observations of the 2011/12 Mars. VII

February 2012

Masami MURAKAMI

As a sequel to the preceding list of the Ephemeris for the physical observations of Mars, we here list up the necessary elements of the Ephemeris for period from 27 January 2012 to 5 March 2012: The data are listed for every day at 00:00 GMT (not TDT). The symbols ω and ϕ denote the Longitude and Latitude of the sub-Earth point respectively. The symbols λ , δ and ι stand for the Areocentric Longitude of

the Sun, the Apparent Diameter and the Phase Angle respectively. We also add the column of the Position Angle Π of the axis rotation, measured eastwards from the north point: This is useful to determine the north pole direction from the $p\leftarrow$. The Apparent Declination of the planet is also given at the final column (denoted D). The data here are basically based on *The Astronomical Almanac for the Year 2012*.

Date (00:00GMT)	ω	ϕ	λ	δ	ι	Π	D
27 January 2012	211.70°W	23.3°N	062.35°Ls	11.33"	25.5°	23.4°	+06°09'
28 January 2012	202.65°W	23.2°N	062.79°Ls	11.43"	25.0°	23.4°	+06°12'
29 January 2012	193.63°W	23.2°N	063.22°Ls	11.52"	24.5°	23.3°	+06°15'
30 January 2012	184.61°W	23.2°N	063.66°Ls	11.62"	24.0°	23.3°	+06°18'
31 January 2012	175.59°W	23.2°N	064.10°Ls	11.72"	23.5°	23.2°	+06°21'
01 February 2012	166.61°W	23.1°N	064.54°Ls	11.82"	23.0°	23.2°	+06°25'
02 February 2012	157.63°W	23.1°N	064.97°Ls	11.91"	22.4°	23.1°	+06°29'
03 February 2012	148.67°W	23.1°N	065.41°Ls	12.01"	21.9°	23.1°	+06°33'
04 February 2012	139.72°W	23.1°N	065.85°Ls	12.11"	21.3°	23.0°	+06°38'
05 February 2012	130.78°W	23.0°N	066.29°Ls	12.20"	20.8°	22.9°	+06°42'

Date (00:00GMT)	ω	φ	λ	δ	ι	Π	D
06 February 2012	121.87°W	23.0°N	066.72°Ls	12.30"	20.2°	22.9°	+06°48'
07 February 2012	112.96°W	23.0°N	067.16°Ls	12.39"	19.6°	22.8°	+06°54'
08 February 2012	104.06°W	23.0°N	067.60°Ls	12.48"	19.0°	22.7°	+06°59'
09 February 2012	095.19°W	22.9°N	068.03°Ls	12.57"	18.3°	22.6°	+07°05'
10 February 2012	086.31°W	22.9°N	068.47°Ls	12.65"	17.7°	22.4°	+07°11'
11 February 2012	077.46°W	22.9°N	068.90°Ls	12.74"	17.0°	22.3°	+07°18'
12 February 2012	068.62°W	22.9°N	069.34°Ls	12.82"	16.3°	22.2°	+07°25'
13 February 2012	059.80°W	22.8°N	069.78°Ls	12.91"	15.7°	22.1°	+07°31'
14 February 2012	050.98°W	22.8°N	070.21°Ls	12.99"	15.0°	21.9°	+07°39'
15 February 2012	042.18°W	22.8°N	070.65°Ls	13.07"	14.3°	21.8°	+07°46'
16 February 2012	033.38°W	22.8°N	071.09°Ls	13.14"	13.6°	21.6°	+07°54'
17 February 2012	024.59°W	22.7°N	071.53°Ls	13.22"	12.9°	21.5°	+08°01'
18 February 2012	015.83°W	22.7°N	071.96°Ls	13.29"	12.1°	21.3°	+08°09'
19 February 2012	007.07°W	22.7°N	072.40°Ls	13.36"	11.4°	21.1°	+08°17'
20 February 2012	358.32°W	22.7°N	072.84°Ls	13.42"	10.7°	21.0°	+08°26'
21 February 2012	349.59°W	22.7°N	073.27°Ls	13.48"	9.9°	20.8°	+08°34'
22 February 2012	340.84°W	22.6°N	073.71°Ls	13.53"	9.2°	20.6°	+08°42'
23 February 2012	332.13°W	22.6°N	074.14°Ls	13.59"	8.4°	20.4°	+08°51'
24 February 2012	323.41°W	22.6°N	074.58°Ls	13.64"	7.7°	20.2°	+09°00'
25 February 2012	314.71°W	22.6°N	075.02°Ls	13.68"	6.9°	20.0°	+09°08'
26 February 2012	306.00°W	22.5°N	075.45°Ls	13.73"	6.2°	19.8°	+09°17'
27 February 2012	297.31°W	22.5°N	075.89°Ls	13.77"	5.4°	19.6°	+09°26'
28 February 2012	288.62°W	22.5°N	076.33°Ls	13.80"	4.8°	19.4°	+09°35'
29 February 2012	279.92°W	22.5°N	076.77°Ls	13.82"	4.2°	19.1°	+09°43'
01 March 2012	271.24°W	22.5°N	077.20°Ls	13.85"	3.5°	18.9°	+09°52'
02 March 2012	262.56°W	22.4°N	077.64°Ls	13.87"	2.9°	18.7°	+10°01'
03 March 2012	253.88°W	22.4°N	078.08°Ls	13.88"	2.8°	18.5°	+10°10'
04 March 2012	245.18°W	22.4°N	078.51°Ls	13.89"	2.9°	18.2°	+10°18'
05 March 2012	236.51°W	22.4°N	078.95°Ls	13.89"	3.0°	18.0°	+10°27'

TEN YEARS AGO (201)

-----CMO #255 (10 January 2002) pp3207~3226 -----
 -----CMO #256 (25 January 2002) pp3227~3250 -----

<http://www.hida.kyoto-u.ac.jp/~cmo/cmomn2/cmo255/index.htm>

<http://www.hida.kyoto-u.ac.jp/~cmo/cmomn2/cmo256/index.htm>

In January 2002, two issues of the CMO were published (CMO #255 on 10 Jan and #256 on 25 Jan). It was declared in #255 that 2002 could be the year to analyse the global dust cloud in 2001. The first CMO Note was entitled "Trend of the South Polar Cap in Southern Spring When the Major Yellow Cloud Started" and analysed the period from the end of May 2001 ($\lambda=165^\circ\text{Ls}$) around to the beginning of Sept ($\lambda=230^\circ\text{Ls}$). It was especially stated that the area of spc was already affected by the pre-dust in $170^\circ\text{Ls}\sim 180^\circ\text{Ls}$:

<http://www.hida.kyoto-u.ac.jp/~cmo/cmomn0/01Note01/index.htm>

The second one in #256 contained CMO Note (2) entitled "Dust Devil is To Be Produced Early in the Morning and Stay Stationary in the Daytime" and can be read in

<http://www.hida.kyoto-u.ac.jp/~cmo/cmomn0/01Note02/index.htm>

LtE in #255 and #256 contained Greetings: In #255 we received from GRAHAM (the UK), TATUM (VA), COLVILLE (Canada), SHERROD (AR), Dave MOORE (AZ), MELILLO (NY), PEACH (the UK), GRAFTON (TX), SHEEHAN (MN), NIKOLAI (Germany), and SCHMUDE (GA). Domestically we received from KUMAMORI, MORITA, Hisaya HASEGAWA, HORIKAWA and Naoya MATSUMOTO. In #256, we received from WÅRELL (Sweden), MELILLO (NY), BIVER (the Netherlands), Dave MOORE (AZ), SHERROD (AR), Don PARKER (FL), BATES (TX) and domestically from Ichiro HASEGAWA, NAKAGAMI, Ken SATO, KUMAMORI, T IWASAKI, MORITA, AKUTSU, and ISHADOH. In #256 the

ISSN 0917-7388
COMMUNICATIONS IN 東亜天文学会 『火星通信』 since 1986

MARS

No. **255**
10 January 2002

OBSERVATIONS Published by the OAA Mars Section

All the Best Wishes

2002年も for the 2002 CMO

どうぞ宜しく



From the CMO Editors
Masatsugu MINAMI
Masami MURAKAMI
Takashi NAKAJIMA
Akinori NISHITA
Hitomi TSUNEMACHI

This issue is an extra edition

新しい年になりました。二十世紀閉幕の
どと書いている昨年と比べて、最後のマ
とはありませんが、更に
2001年 世紀の火星大異変とシネオツ
2002年 ?
2003年 エシニア大異変大接近
2004年 一世紀ぶりの金星凌出
と書かれておられ、「天文異変」を扱って来て、
今のごとくお祝いのごときが長つかりました。
書つてしまえば、2001年大異変の分析に明け
暮れ毎年に及びます。特にCMOでは
北に大異変の案の案の年がつかないこと、と書
かれましたが、或いは「歳少」の歳も短く、
形振り難い年が来る、異変が来ると言っ
ていばきであったが、或いは何となく常時出現
して、或いは、或いは、或いは、或いは、
方法を確立してはいたし、や、その歳
が如何に短く、今年ハッセルとごま
かす、今年も何となく宜しく、(Mn)
We had a Great Martian Year in 2001, and
will have a Millennium Opposition in
2009, and we wait for a rare opportunity in
2004 of the Venus Transit over the Sun. What
on earth do we have in 2002? Some say we
will have the 2002 CMO to analyze the 2001
Dust Event.

3 2 0 7

Mars report continued (19th) and treated the period from the latter half of Dec 2001 to the first half of Jan 2002 ($\lambda=292^\circ\text{Ls}\sim 310^\circ\text{Ls}$) and still 12 members observed (187 observations): At the areas facing to the Pacific Ocean the fine weather well continued and TSUNEMACH much observed. MORITA finally mended his machine, while δ was 6.8" to 5.9" and the tilt was from $\varphi=25^\circ\text{S}$ to 27°S .

In #255 it was first reported Toshihiko OSAWA already died in solitude in March 2001, and an obituary was written by MINAMI and NAKAJIMA, and memorial writing was given by Ichiro HASEGAWA (the president of the OAA at that time) in Japanese.

Hitomi TSUNEMACHI's essay (14th) in #255 treated Twin Peaks of the Sunspots which were very active in 2001. In July 1999 the R attained a peak, but it still elongated and at the latter half of 2001 the R was augmenting: She so predicted this

must be accompanied by a "twin peak" as Cycle 22. As far as the one of present writer (Mk) observed the second peak curve appeared at the first half of 2002. Afterward it decreased gradually and at last attained the bottom in 2009. TSUNEMACHI's essay (15th) in #256 was concerned about Haiku: She treated the Moon in winter, and MATSUO Basho was picked out.

TYA 77 was about CMO #113 (25 January 1992 issue): 20 years ago in January the planet Mars was still in the morning sky. 1990 OAA Mars NOTE (3) treated "Hellas in Dec 1990 (around 345°Ls)", and MINAMI began to introduce the Japanese language for foreigners and otherwise wrote about a Zen training in China of DOHGEN-Zenji (of course in Japanese).
(Mk & Mn)

ISSN 0917-7388
COMMUNICATIONS IN 東亜天文学会 『火星通信』 since 1986

MARS

No. **256**
25 January 2002

OBSERVATIONS Published by the OAA Mars Section

CMO 2001 Mars Report # 19 — OAA Mars Section

THIS is a 19th review of the CMO Observations of the 2001 Mars, and treats the following period:
16 December 2001 (292°Ls) to 15 January 2002 (310°Ls)
during which the apparent angular diameter δ went down from 6.8" to 5.9" of arc, while the apparent declination went up from -11.5° to -1.5° : Even if the planet goes far west its altitude remains higher than before, and hence the observable time is not yet so shortened. The central latitude φ was from 25°S up to 26.5°S (maximum), and so the southern hemisphere faced maximally toward us. The weather in the Japan islands was various. The area facing to the Pacific Ocean (including Yokohama) was endowed with clear skies, while the rear side (to which Fukui belongs) suffered from the dismal weather. This is typical in winter, but very contrast unusually this winter.
今、今頃は今月十九日目のレジャーで、次の観測の観測を扱う。但し、観測の年々増加は例年にならぬほどの悪天候で、観測は火星出の観測を断念してない。ただ、我日本は晴天に恵まれたようで、Yokohamaなどの観測は充実している。ただ、後述観測が冬の観測にシフトが少くないようである。

16 Dec 2001 (292°Ls) to 15 Jan 2002 (310°Ls)
この間、視面率は6.8から5.9に落ちた。また、視赤緯は-11.5から-1.5に昇った。火星の高度は相
違なものである。可成り西へ移ってもまだ高さがあるから、観測時間は短縮減らない。中央緯度の
は25°から27°Sで南半球が好く見える。位相角は41°から37°とやや縮減が起っている。

THE observations recorded this period are as follows: The telescope of MORITA came back from 1 January. BIVIER, Nicolas ニコラ・ビビエール (NBV) Noordwijk, Nederland/9 Versailles, France* 11 CCD Drawings (1, 10', 15 November, 7, 16, 23', 30', 31' December 2001) 300x20cm speculum/510, 330x26cm speculum* ISHIAOHI, Hiroshi 伊舎堂 弘 (Id) 那覇 Naha, Okinawa, Japan 4 Drawings (29 December 2001; 4, 9, 12, 15 January 2002) 400, 530x31cm speculum KUMAMORI, Teruaki 熊森 泰明 (Kt) 堺 Sakai, Osaka, Japan 10 CCD Colour Images (19, 20, 26, 29 December 2001; 9, 12 January 2002) 60cm Cassegrain* with a Sony TRV-900 MELILLO, Frank J フランク・メリッロ (FM) 紐約 Holsville, NY, USA 3 CCD Images (19 December 2001; 12 January 2002) 20cm SCT with a Starlight Xpress MXS MINAMI, Masatsugu 前 政次 (Mn) 福井 Fukui, Japan 28 Drawings (20, 26, 28, 29 December 2001; 7, 14 January 2002) 480, 400x20cm ED Goto refractor*
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T NAKAJIMA (Nj)

★ We would like to express our sincere thanks to Reichi KONANAÏ (453) and Teruaki KUMAMORI (454) for their kind donations to the CMO/ISMO. We also thank Ichiro KOHZAKI (455) for his kindness.

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CMO #393/ ISMO #19 (25 January 2012)

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