

MARS

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OBSERVATIONS

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My Fellow Martian
(Adventures with Donald C. PARKER)

By
Carlos HERNANDEZ

The world lost a very talented pioneer planetary imager and I lost a very dear friend on February 22, 2015 with the passing of Donald Charles Parker from lung cancer. Don (or “Mongo” to his closest friends - a funny character from the movie *Blazing Saddles* by Mel Brooks) was a very knowledgeable planetary astronomer and a pioneer in the field of planetary imaging. He initially using sensitized films as suggested by our mentor Charles F. “Chick” Capen (1926-1986; Lowell Observatory) then later graduated to the Charge-coupled device (CCD). Don Parker was an inspiration of talented planetary imagers around the world including Christopher Go (Philippines), Damian Peach (Great Britain), and Isao Miyazaki (Japan) among many other imagers not mentioned. My adventures with Don began as a teenager interested in learning more about the planet Mars and the solar system.

Donald C. Parker was born on January ↗

Donald C. Parker standing in his observatory in Coral Gables, Florida (USA) and 16-inch (41-cm) F/6 Newtonian. Note the menagerie of accessories on the telescope tube. An example of being “Parkerized.”



↗28, 1939 in Urbana, Illinois (U.S.A) and was raised in Highland Park, Illinois and attended Loyola Academy High School (Wilmette, Illinois). Don Parker continued his undergraduate studies at St. Louis University (St. Louis, Missouri) obtaining a Bachelor of Science degree then a medical degree (M.D.) at Northwestern University (Evanston, Illinois). He and his wife, Maureen (or “Mo”)

whom he met at St. Louis University, then moved to Miami, Florida for Don to complete his internship and residency in Anesthesiology at Jackson Memorial Hospital. Don then began his Anesthesiology practice at Mercy Hospital (Miami, Florida). Don was in the Navy as a research diver studying physiology that included working with dolphins. He was highly respected by all of his medical colleagues and very compassionate to all of his patients. Don was a legend at his work for practical jokes, including the infamous rubber vomit in the operating room (obviously sterilized). Don Parker was always supportive of other individuals using levity to lift their spirits. He was a positive source for all persons fortunate to have made his acquaintance.

As a teenager I began in earnest my studies of the Moon and the solar system as I had just obtained a quality instrument, a Celestron 8-inch (20-cm) $F/10$ Schmidt-Cassegrain, in 1975. The planet Mars had reached opposition with the Earth in December 15, 1975 ($\delta=16.2$ arc-seconds(")) and closest approach to the Earth on December 9, 1975 ($\delta=16.6''$, 52.6 million miles (84.6 million km)). I had been making drawings of my visual impressions of albedo features noted over the disk of Mars and I wanted to share them with someone. I discussed my Mars observations with a friend and teacher Arthur P. Smith Jr. who suggested that I show them to two experienced planetary observers who were members of the Southern Cross Astronomical Society (SCAS; a respected amateur astronomy society founded in 1922). The monthly meeting of SCAS was held at the Museum of Science and Space Transit

Planetarium (founded in 1949) in Miami, Florida. At the meeting I was greeted by a large jovial man (Don C. Parker) and his friendly companion (Jeffrey D. Beish) and they were very impressed by my Mars observations and recruited me into their planetary group. I was very fortunate to have become a pupil of Don and Jeff as they themselves were being mentored by the eminent Lowell Observatory Observatory planetary astronomer Charles F. "Chick" Capen, Jr. (1926-1986) who was at the time the Association of Lunar and Planetary Observers (A.L.P.O.) Mars Coordinator and Don and Jeff being Assistant Mars Coordinators. Chick Capen recognized in Don a talented observer and photographer/imager and the analytical intellect of Jeff. Charles F. Capen was a very talented planetary astronomer/observer, artist, pioneer in astronomical photography, and experimented in the use of filters for visual and imaging purposes. Chick himself was mentored by Earl Carl Slipher (1883-1964; the famous Lowell Observatory planetary astronomer and imager (especially of the planet Mars using the famous Alvan Clark Lowell 24-inch (61-cm) refractor and other famous instruments around the world since



Jeff Beish, myself, and Charles F. Capen, Jr. in Don Parker's observatory (Don's excellent 12.5-inch (32-cm) $F/6.5$ Newtonian at the time) in 1978

1907). E. C. Slipher had been instructed in planetary astronomy and photography by his older brother Vesto Melvin Slipher (1875-1969; Assistant Director and later Director of Lowell Observatory). V. M. Slipher had been instructed in planetary astronomy and observation by the founder of Lowell Observatory, Percival Lowell (1855-1916). I could not have had better teachers to instruct me in the field of planetary astronomy/observation.

Under the guidance of Charles F. Capen we all became better planetary astronomers trained to obtain and report our findings in an analytical manner. Parker and Beish reviewed 24,130 A.L.P.O. Mars observations and images obtained between 1965 to 1995. From this intensive study of the Martian meteorology it was discovered that the discrete, water ice crystal cloud activity and surface fog occurrences are significantly higher in the spring and summer of the Martian northern hemisphere than they are during the corresponding seasons in the southern hemisphere. Astronomers in the past believed that the Martian North Polar Cap (NPC) exhibited little or no variation in its rate of thaw or in the size of its summer cap remnant from one apparition to another. Parker, Beish, and Capen after numerous filar-micrometer measurements showed that the North Polar Cap (NPC) does show variations in its rate of regression and final summer remnant size over different apparitions. The 1980 NPC showed a faster rate of regression compared to the NPC of the 1960's by four to six degrees in areographic latitude. The so-called Rima Tenuis, an NPC remnant located between 123°W to 133°W) was visible during the 1980 apparition in the presence of

a "smaller" summer remnant. The 1984 summer NPC remnant remained large for an abnormally long period of time and recondensed on three occasions during the Martian northern spring.

Don Parker was also instrumental in studies of the planets Jupiter and Saturn. Numerous highly detailed images of Jupiter over many years showed the dynamic nature of the Jovian atmosphere. The NASA Galileo orbiter and probe to Jupiter was launched on October 13, 1989. The Galileo probe separated from the orbiter on July 13, 1995 and finally entered the Jovian atmosphere on December 7, 1995 at 106,000 miles per hour (170,554 kph), temperatures up to 14,000°Kelvin (almost 2.5 times the surface of the Sun), and at 230g. The probe descended through the Jovian atmosphere for 97 miles (156 km) and transmitted for 58 minutes before being crushed by a pressure of 23 atmospheres and a temperature of 153°C (307°F). The Galileo Orbiter overhead (130,000 miles (209,215 km)) had developed a problem with its tape recorder and NASA did not want to risk using it to play the data (images) back to the Earth. The Hubble Space Telescope (HST) in order to protect its optics cannot observe any object closer than fifty degrees from the Sun. Jupiter at the time of the Galileo probe entry was only twelve degrees from the Sun. Don Parker and I were asked by Dr. Glenn Orton (JPL) to provide ground support to NASA/JPL during the entry of the probe to determine its exact point of entry within the Jovian atmosphere. Don was imaging the planet Jupiter in the daytime while I was out in Pasadena, California with Dr. Orton reviewing the data being received by the

probe. Don successfully imaged the planet and we were able to accurately determine the exact location of the entry of the Galileo probe (6.6°N, 4.4°W; over the northern half of the Equatorial Zone (EZ) within a "hot spot" (a bright feature within the Jovian atmosphere at infrared (5-micron) wavelength). The Galileo probe discovered this region of the Jovian atmosphere to be much drier (less water content) than predicted.

I could continue to list all of the contributions that Donald C. Parker has made during his lifetime but that is for another time. He is survived by his children, Kathleen (Ken Greenwood), Michael (Sherry)

and Suzanne (Chad Landsom) and his grandchildren, Megan, Kimberly, Dylan, Justin, Caitlyn and Kylie. We all will miss the incredible images of the planets by a talented imager that brought laughter to our hearts as well. Go in peace Mongo!



Don Parker, Jeff Beish, myself, Tom Cave, and John Westfall at the 1989 A.L.P.O. Convention in Pasadena, California (I believe)

Trend of the White Clouds Associated with the Martian Montes in 2014

By

Masatsugu MINAMI

ISMO 2013/14 Mars Note (#06)

0° Cotton ball like: At the beginning of the 1980s, we used to enjoy the scene of Olympus Mons covered by a white thick cloud by the use of an old 15cm refractor at the Observatory of the Fukui City Museum of Natural History. It looked clearly roundish bright just like a brightening cotton ball. Such an aspect of Olympus Mons however was not always the same: The cotton ball-like Olympus Mons was apparent during the season from $\lambda=050^\circ\text{Ls}$ to $\lambda=160^\circ\text{Ls}$, but especially conspicuous during the period $\lambda=080^\circ\text{Ls}\sim 120^\circ\text{Ls}$.

A report in CMO #185 (25 February 1997), made 17 years before from 2014, records a domestic Japanese observations as follows: "Olympus Mons was high in season and Very Active. MURAKAMI (*Mk*) identified it on 8 February 1997 ($\lambda=076^\circ\text{Ls}$) at $\omega=159^\circ\text{W}$, 169°W separated from the evening Tharsis. On 9 February *Mk* and MINAMI (*Mn*) more en-

joyed Olympus Mons: it was like a very whitish cotton ball as if floating. On 10 February ($\lambda=076^\circ\text{Ls}$), seeing becoming better, it was already caught when we began observing at midnight (15:10 GMT) from $\omega=145^\circ\text{W}$, and NAKAJIMA (*Nj*) and *Mn* alternatively watched the distinguished white ball until it disappeared from the terminator: We judged that it came to the terminator at $\omega=204^\circ\text{W}$ (when the phase angle was 25°). In advance the Tharsis cloud was also conspicuous bounded by a shadowy band from Olympus Mons. Tohru IWASAKI (*Iw*) also observed Olympus Mons clearly on 13 February at $\omega=153^\circ\text{W}$ and 163°W , and it must have been more impressive to him than the evening cloud over Tharsis."

Here VA=Very Active is a terminology originally used by S A SMITH & B A SMITH in *Icarus* **16** (1972) 509, where they discussed the activities of

several evening clouds on Mars.

However it was implicitly possible that the roundish-looking white spot detected by the smaller telescopes was not completely roundish if inspected in details. In fact, as shown in a following paragraph the cloud over Olympus Mons shot by the HST in 1997 (especially in Fig A below), the thick cloud concerned with Olympus Mons does not look roundish nor elliptical. It suggests a complicated formation at the western flank of Olympus Mons.

1° Status of the Cotton Ball-like clouds: After the observations in 1997, the present writer wrote an insufficient report entitled "Clouds at the Tharsis Ridge and Olympus Mons, Morning and Evening" in CMO #201 (25 March 1998) as 1996/97 Mars Sketch (3):

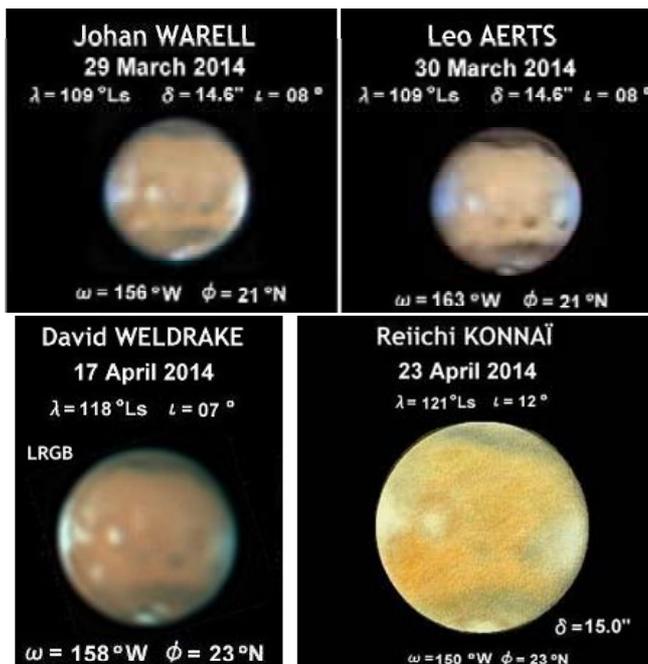
<http://www.kwasan.kyoto-u.ac.jp/~cmo/cmomn0/97Note03.htm>
 We here cite again the typical cases how the present writer observed the area in 1997, as well as in 1982 (Fig 8 and Fig 12 in the above reference) under the idea of the cotton ball-like Olympus Mons. The first

one here was made at Fukui on 10 February 1997 ($\lambda=076^\circ\text{Ls}$, $\delta=11.5''$, $\iota=25^\circ$) at $\omega=165^\circ\text{W}$ and the second one below was on 11 March 1982 ($\lambda=097^\circ\text{Ls}$) at $\omega=141^\circ\text{W}$ 430×18cm OG

by the use of a Sartorius refractor at the Kwasan Observatory. Note that the season was a bit different.

In the present 2014 apparition, we may choose the following images as corresponding to the above visual observation cases.

The season was still shifted. John WARELL (JWr) here is now a professional astronomer, but once established the NMO (Nordic Mars Observers) and has been one of our old colleagues. Leo AERTS



(LAT) is a veteran observer using a C14. David WELDRAGE (DWd) is a new comer from Australia to us. Reiichi KONNAI (Kn) is an all-around amateur astronomer, and worked in 2014 as a visual observer of Mars.

The term *Cotton ball-like* was used by the present writer at the beginning of the 1980s, and not used by the Japanese observers until then. Just we know, Frank MELILLO (FMI) in NY, an old colleague of the CMO, also used the word in the 1980s.

The present writer has long felt that there have been several misunderstandings/misinterpretations concerning the brightening of Olympus Mons or Nix Olympica. The so-called Nix Olympica is a result of the opposition effect, and so it is not always "Nix" at opposition. In 1997 we experienced when we practiced the CM Transit of Olympus Mons on 18 March 1997 ($\lambda=092^\circ\text{Ls}$) that it was not so easy to chase Olympus Mons because it was slightly hazy because of the water vapour near the CM. The definite Nix Olympica is apparent whole day long, but it is allowed only for a few days because the phase angle is critical. See the criticism entitled *Nix Olympica Misunderstanding* in CMO #389 (25 September 2011):

<http://www.kwasan.kyoto-u.ac.jp/~cmo/cmomn4/CMO389.pdf>

2° Variations of the Cotton-ball: In the article in CMO #201, we used some of photos and especially two HST images taken in 1997 (the planet was at opposition on 17 March 1997). The following were the original images we used then: One is the one produced on 10 March 1997 ($\lambda=089^\circ\text{Ls}$) and the other is one taken on 30 March 1997 ($\lambda=097^\circ\text{Ls}$), maybe at $\omega=195^\circ\text{W}$. We shall call the former Fig B, while the latter as Fig A.



What we expected to draw from these two images was how the cloud configurations of Tharsis Montes and Olympus Mons vary in the evening, but just two were not surely adequate. Olympus Mons was too close to the evening limb in Fig A,

while in Fig B Olympus Mons did not look yet so cloudy because it was far from the evening terminator.

In this sense it was our concern whether there were obtained some other shots which might fill the gap in the ISMO work collected in the 2013|2014 CMO/ISMO Mars Gallery. So we try to pick out next some important images obtained in February, March and April 2014 which as well could supplement Fig A and Fig B (we are sorry if we possibly miss some other meaningful images).

3° From CMO/ISMO Gallery images in 2014: We here try to enumerate some observations made in the period when the planet Mars was close to the Earth including those cloud images which are reminiscent of Fig A (as well as Fig B). The season runs from $\lambda=086^\circ\text{Ls}$ until $\lambda=125^\circ\text{Ls}$:

Anthony WESLEY (AWs)

6 February 2014 ($\lambda=086^\circ\text{Ls}$) $\omega=171^\circ\text{W}$

AWs

7 February 2014 ($\lambda=087^\circ\text{Ls}$) $\omega=159^\circ\text{W}$

AWs

8 February 2014 ($\lambda=087^\circ\text{Ls}$) $\omega=142^\circ\text{W}$

Maurice VALIMBERTI (MV)

9 February 2014 ($\lambda=088^\circ\text{Ls}$) $\omega=135^\circ\text{W}, 143^\circ\text{W}$

Mark JUSTICE (MJs)

9 February 2014 ($\lambda=088^\circ\text{Ls}$) $\omega=142^\circ\text{W}$

Stefan BUDA (SBd)

9 February 2014 ($\lambda=088^\circ\text{Ls}$) $\omega=164^\circ\text{W}$

Yukio MORITA (Mo)

10 February 2014 ($\lambda=088^\circ\text{Ls}$) $\omega=134^\circ\text{W}$

John KAZANAS (JKz)

10 February 2014 ($\lambda=088^\circ\text{Ls}$) $\omega=134^\circ\text{W}$

SBd

10 February 2014 ($\lambda=088^\circ\text{Ls}$) $\omega=154^\circ\text{W}$

MJs

11 February 2014 ($\lambda=089^\circ\text{Ls}$) $\omega=133^\circ\text{W}$

Efrain MORALES (EMr)

27 February 2014 ($\lambda=095^\circ\text{Ls}$) $\omega=182^\circ\text{W}$

Peter GORCZYNSKI (PGc)

27 February 2014 ($\lambda=095^\circ\text{Ls}$) $\omega=197^\circ\text{W}$

PGc

1 March 2014 ($\lambda=096^\circ\text{Ls}$) $\omega=162^\circ\text{W}$

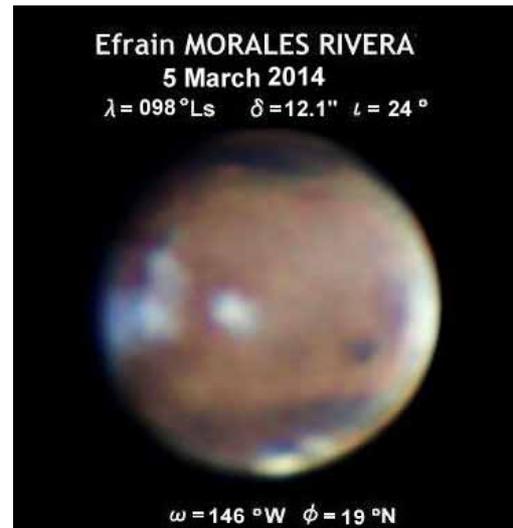
EMr

2 March 2014 ($\lambda=097^\circ\text{Ls}$) $\omega=140^\circ\text{W}$

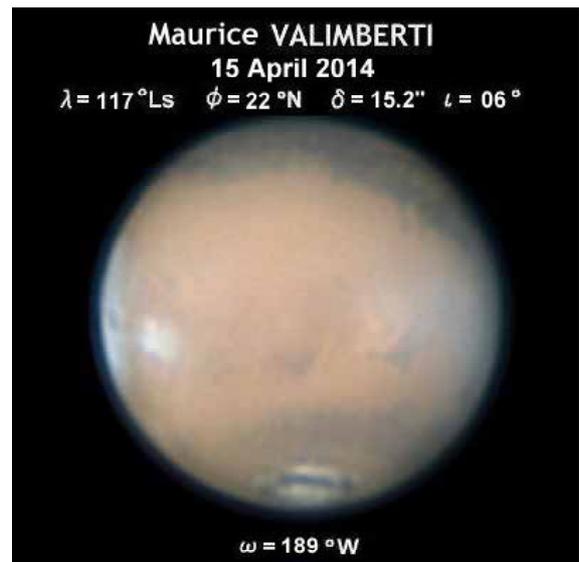
Don PARKER (DPk)4 March 2014 ($\lambda=098^\circ\text{Ls}$) $\omega=131^\circ\text{W}$ **EMr**5 March 2014 ($\lambda=098^\circ\text{Ls}$) $\omega=146^\circ\text{W}$ **MJs**13 March 2014 ($\lambda=102^\circ\text{Ls}$) $\omega=189^\circ\text{W}$ **JKz**13 March 2014 ($\lambda=102^\circ\text{Ls}$) $\omega=194^\circ\text{W}$ **Mo**14 March 2014 ($\lambda=102^\circ\text{Ls}$) $\omega=169^\circ\text{W}$ **Mo**15 March 2014 ($\lambda=103^\circ\text{Ls}$) $\omega=149^\circ\text{W}$ **Mo**16 March 2014 ($\lambda=103^\circ\text{Ls}$) $\omega=139^\circ\text{W}$ **Teruaki KUMAMORI (Km)**17 March 2014 ($\lambda=104^\circ\text{Ls}$) $\omega=146^\circ\text{W}$ **JKz**18 March 2014 ($\lambda=104^\circ\text{Ls}$) $\omega=130^\circ\text{W}$ **JKz**19 March 2014 ($\lambda=104^\circ\text{Ls}$) $\omega=116^\circ\text{W}$ **MJs**19 March 2014 ($\lambda=105^\circ\text{Ls}$) $\omega=128^\circ\text{W}$ **SBd**19 March 2014 ($\lambda=105^\circ\text{Ls}$) $\omega=140^\circ\text{W}$ **Bratislav CURCIC (BCr)**19 March 2014 ($\lambda=105^\circ\text{Ls}$) $\omega=146^\circ\text{W}$ **Manos KARDASIS (MKd)**23 March 2014 ($\lambda=106^\circ\text{Ls}$) $\omega=177^\circ\text{W}$ **DPk**2 April 2014 ($\lambda=111^\circ\text{Ls}$) $\omega=187^\circ\text{W}$ **Freddy WILLEMS (FWI)**3 April 2014 ($\lambda=111^\circ\text{Ls}$) $\omega=182^\circ\text{W}$ **PGc**3 April 2014 ($\lambda=111^\circ\text{Ls}$) $\omega=182^\circ\text{W}$ **MJs**14 April 2014 ($\lambda=116^\circ\text{Ls}$) $\omega=199^\circ\text{W}, 206^\circ\text{W}, 214^\circ\text{W}$ **Akinori NISHITA (Ns)**14 April 2014 ($\lambda=116^\circ\text{Ls}$) $\omega=204^\circ\text{W}, 216^\circ\text{W}$ **MVI**15 April 2014 ($\lambda=117^\circ\text{Ls}$) $\omega=184^\circ\text{W}, 189^\circ\text{W}, 198^\circ\text{W}$ **MJs**24 April 2014 ($\lambda=121^\circ\text{Ls}$) $\omega=181^\circ\text{W}$,

and so on. The images in February show the cloud over Olympus Mons to stand out because the phase angle ι is large. In April the images became milder.

We here explicitly show images by Efrain MORALES (*EMr*) before opposition in March and by Maurice VALIMBERTI (*MVI*) after opposition in April:



MVI alone observed on 15 April six times at $\omega=184^\circ\text{W}, 189^\circ\text{W}, 198^\circ\text{W}, 208^\circ\text{W}, 218^\circ\text{W}, 224^\circ\text{W}$, and the following is one of them.



Back to March, we note that the day of 19 March was a singular very-blessed day in Australia, and





several of observers joined to produce excellent images. *MVI* also worked and at the end of the preceding page we showed his two images on the day.

The image file at the top of this page shows an interesting sequence on the day made by John KAZANAS (*JKz*), Mark JUSTICE (*MJs*), Stefan BUDA (*Sbd*) and Blatislav CURCIC (*BCr*), all from Melbourne.

On the other hand, those images which are reminiscent of Fig B are already contained in the above list. The first shown images of Johan WARELL and others are also those, and every images on 19 March are all suggestive on this point.

In addition, the following images also attract our attention:

PGc
6 April 2014 ($\lambda=112^\circ\text{Ls}$) $\omega=161^\circ\text{W}$

Mo
22 April 2014 ($\lambda=120^\circ\text{Ls}$) $\omega=154^\circ\text{W}$

Km
23 April 2014
($\lambda=121^\circ\text{Ls}$) at
 $\omega=146^\circ\text{W}$

Mo
24 April 2014
($\lambda=121^\circ\text{Ls}$) at
 $\omega=124^\circ\text{W}$,
 134°W

Km
24 April 2014
($\lambda=121^\circ\text{Ls}$) at
 $\omega=129^\circ\text{W}$, here

MKd
30 April 2014 ($\lambda=124^\circ\text{Ls}$) $\omega=155^\circ\text{W}$

Christophe PELLIER (*CPi*)
3 May 2014 ($\lambda=125^\circ\text{Ls}$) $\omega=172^\circ\text{W}$, 181°W , 191°W
and so on.



4° Damian PEACH (*DPc*)'s images in 2012: We here recall that Damian PEACH (*DPc*) obtained a remarkable set of images on 14/15 March 2012 ($\lambda=083^\circ\text{Ls}$, $\delta=13.7''$). The file of disks consists of four colour images from $\omega=116^\circ\text{W}$ to $\omega=152^\circ\text{W}$, and the last one is famous because it shows a protrusion from the morning terminator. Otherwise, the first

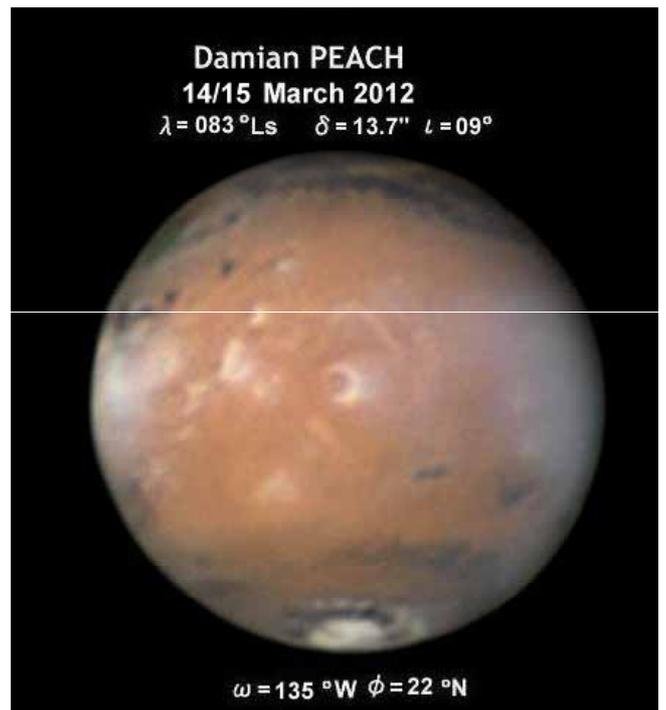


image barely shows the evening cloud at Arsia Mons, though other Montes look covered by the white lee clouds. It is not distinct yet at $\omega=128^\circ\text{W}$, while the image at $\omega=135^\circ\text{W}$ here shows the lee cloud of Arsia Mons definitely. Here Olympus Mons is near the CM. The ω and the phase angle as well as the season look most suitable to show the lifting cloud over Fortuna Fossæ. The planet was at opposition on 3 March 2012.

5° **A decent remark:** Finally we would like to give a remark: It is usually said that as the the Montes ridges approach the evening side clouds gather over the ridges. In fact on Fig B of HST, the lee cloud at Olympus Mons is weak, while it appears thicker near the evening terminator on Fig A. However rather unexpectedly, we should note that the lee clouds at Ascræus Mons as well as at Olympus Mons are visible from the morning. As is now well known, the "Ascræus cloud" whose definition was given in 1996/97 Mars Sketch (16) in CMO #215 (10 April 1999)

<http://www.kwasan.kyoto-u.ac.jp/~cmo/cmomn0/97Note16.htm> is thick in the morning though it gradually disperses as the Sun rises up higher while the remnant of the lee cloud at the western side of Ascræus Mons remains more thickly and does not disappear. We should say it will be veiled again by the evening cloud and thus the new lee clouds are united with the old one. The lee cloud of Olympus Mons

also behaves similarly.



The above images well show the circumstances. These images were made just before opposition, and the CM line may be on the afternoon side by nearly one hour LMT, but the clouds in question are located quite on the morning side.

We may say the cotton ball-like thick cloud is not solely generated by the evening effect, but its germ may be found in fount on the morning side. Further chase is recommended.

CMO/ISMO 2013/14 Mars Report #19

2013/2014 Mars Observations During the Final Period from March 2014 up until 13 April 2014

♂..... The planet Mars moved in March 2015 through the Psc constellation and its elongation was no larger than 19° at the end of March. The angular diameter went from $\delta=4.2''$ down to $3.9''$ at the end of March. Thus the apparition 2013|2014 ended. The Martian season proceeded from $\lambda=300^\circ\text{Ls}$ to 318°Ls : The south polar cap was minimal, but the season of the southern dust storms did not ended. The tilt moved from 26°S to 21°S . The phase angle was from $\iota=18^\circ$ to $\iota=13^\circ$.

♂..... During the period we just heard from no other than C FOSTER (CFs) in South Africa. The observation time was limited to a twilight time around the sunset time and he could not afford to use other lights than R and IR. There followed some observations in April, but the markings looked quite blurred.

♂..... The observer and his observations are as follows;

FOSTER, Clyde (CFs) Centurion, SOUTH AFRICA

1 R + 8 IR Images (5, 8, 12, 15, 16, 26 March; 6, 13 April 2015)

36cm SCT @f/33, f/27 with an ASI 120MM

♂..... In what follows we shall give short reviews to each observation:

5 March 2015 ($\lambda=303^\circ\text{Ls}$, $\delta=4.2''$): **Clyde FOSTER (CFs)** obtained an IR image at $\omega=004^\circ\text{W}$: S Meridiani is dark, and S Sabæus and Syrtis Mj are suggested. There is no bright feature on the southern

hemisphere. The south polar cap (spc) is quite vague if any.

8 March 2015 ($\lambda=305^\circ$ Ls, $\delta=4.1''$): *CFs* shows an IR disk at $\omega=332^\circ$ W: Syrtis Mj is checked. The area of Hellas shows a light belt but no exceptional figure at the following region including Noachis.

12 March 2015 ($\lambda=307^\circ$ Ls, $\delta=4.1''$): *CFs* gives a set of R and IR disks at $\omega=289^\circ$ W: Both show Syrtis Mj near the CM; the IR742 is clearer in showing Hellas and Ausonia. Both are not so bright.

15 March 2015 ($\lambda=309^\circ$ Ls, $\delta=4.1''$): *CFs* shows an IR742 image at $\omega=259^\circ$ W where Syrtis Mj has moved to the morning side. M Cimmerium is rather evident on the evening side. Ausonia looks a bit lighter. This may correspond to the dust indicated by R KONNAI based on the MRO-MARCI image on the day (see LtE in CMO #432. See also KONNAI's LtE in this issue where Mars Express VMC/ESA images on 13 & 14 March are shown). The spc is unknown here, though it is clearly visible by spacecraft (on the ME images).

16 March 2015 ($\lambda=309^\circ$ Ls, $\delta=4.1''$): *CFs* gives an IR image similar to the previous one. Angle is at $\omega=251^\circ$ W: Syrtis Mj is quite near the morning terminator and M Cimmerium looks completely inside the disk. Ausonia is considerably bright (maybe due to the dust).

NB: R KONNAI pointed out that the Mars Express showed a dust expansion from Phæthontis to Electris on a 21 March image at LtE of CMO #432.

26 March 2015 ($\lambda=315^\circ$ Ls, $\delta=4.0''$): *CFs*'s image is now no good: It looks featureless at $\omega=153^\circ$ W.

6 April 2015 ($\lambda=322^\circ$ Ls, $\delta=3.9''$): *CFs*'s image shows a dark area near the centre, but at a glance it should be said it does not imply anything.

13 April 2015 ($\lambda=325^\circ$ Ls, $\delta=3.9''$): *CFs* gives a final image where we find Syrtis Mj near the evening limb and others, but it may be no more possible to say something meaningful from this kind of image.

♂..... In the present 2013|2014 apparition, Mars was at opposition on 8 April 2014, and it was closest to the Earth on 14 April 2014 when its angular diameter attained $\delta=15.16''$. We received with thanks a total of 1,190 observations which were performed around the world during the 9.5 month period from 27 July 2013 until 13 April 2014. Domestically we received 320 observations from 8 members, while a total of 870 observations from 43 observers were sent from abroad. From the American continents 14 members joined who contributed 234 observations (from the US 170 observations arrived), from Europe 20 observers joined and sent us 292 observations (from France 90 observations, from the UK 89 observations and so on), from Australia 7 observers joined with 257 observations and so on: Consult the following site for more details.

<http://www.kwasan.kyoto-u.ac.jp/~cmo/cmons/2013/image13.html#ob>

We finally note: the counting is made such that any ccd set is counted one if it is separated from the preceding set by 5° W (20 minutes), while each drawing is one if separated from before/after by 10° W.

Masatsugu MINAMI & Masami MURAKAMI

Letters to the Editor

...Subject: Mars 5 March 2015
Received: 6 March 2015 at 01:56 JST

Good evening all, I managed to catch an IR image

of Mars early this evening in quite bright twilight and between light clouds. I took with a 2.5x barlow as against my "normal" setup of 3x barlow, as I am regularly taking Jupiter with the 2.5x barlow now. Some large scale detail visible: On the eastern limb Hellas and Syrtis major. Sinus Sabæus (quite dis-

tinct) and Mare Erythræum towards the centre and west. Possibly a hint of the SPC? Arabia region very bright (even showing a bit in the avi as I was capturing). I think it is fair to say that the chances of catching any major southern hemisphere dust storm is now rapidly fading.....! Best regards,

<http://www.kwasan.kyoto-u.ac.jp/~cmo/cmons/2013/150305/CFs05Mar15.jpg>

....*Subject: Mars 8 March 2015*

Received: 9 March 2015 at 02:38 JST

Good evening, all, Attached another IR image taken in fairly bright twilight this afternoon. Hellas, Syrtis Major, Sinus Sabæus, Sinus Meridiani all visible. Again a hint of the SPC? Best regards,

<http://www.kwasan.kyoto-u.ac.jp/~cmo/cmons/2013/150308/CFs08Mar15.jpg>

....*Subject: Mars 12 March 2015*

Received: 13 March 2015 at 01:36 JST

Good evening, all, Attached IR and R images taken in almost daylight conditions. Best regards,

<http://www.kwasan.kyoto-u.ac.jp/~cmo/cmons/2013/150312/CFs12Mar15.jpg>

....*Subject: RE: PEDE*

Received: 14 March 2015 at 04:40 JST

Dear Reiichi, It is good to hear from you. Thank you for the comments and also for the reference to the Director's notice. Yes, I am being careful with the slewing of my telescope during these conditions(daylight)! Richard McKim has indicated to me that the latest major encircling dust storm(in terms of the martian season) that he is aware of was on Ls311 in 1924, so we are approaching that time now. However it does look that the weather conditions in the southern hemisphere have been fairly clear and calm so far, so I am not expecting anything unusual. However, I have been surprised a few times in this first apparition for me! Best regards,

-----Original Message-----

Sent: 14 March 2015 00:42 (JST)

Subject: PEDE

Dear Clyde, Your recent Mars images taken in the daylight are still great! Please take care not to point your telescope at the Sun! It's around the Martian season the latest outbreaks of the planet-encircling dust events were recorded: Refer to Dr. Minami's Director's Notices in 2003, #6:

<http://www.kwasan.kyoto-u.ac.jp/~cmo/cmohk/2003ds/dr1.html>

Brighter (than Hellas) Ausonia on your 12 March images are rather curious... . Best Regards,

Reiichi KONNAÏ

....*Subject: RE: PEDE*

Received: 15 March 2015 at 14:46 JST

Dear Reiichi, I also noticed the rather bright region of Ausonia. However, I have noticed that limb effect (particularly brightening of certain areas on the preceding limb) does appear to have an influence, and I have become a bit wary of commenting on these too early. It will be interesting to see if there is anything significant over the next few days as it becomes more visible. However, weather conditions have not been good the last few days. Best regards,

....*Subject: RE: Bright Ausonia?*

Received: 15 March 2015 at 19:48 JST

Dear Reichii, Thank you very much- I was not aware of this website. Very useful! I haven't checked yet, but it would be interesting to see if it caught any nice images of the storms that I captured in July and October. Best regards,

....*Subject: Mars 15 March 2015*

Received: 16 March 2015 at 01:50 JST

Good evening, all, Attached an IR image taken in almost daylight conditions this afternoon. Best regards,

<http://www.kwasan.kyoto-u.ac.jp/~cmo/cmons/2013/150315/CFs15Mar15.jpg>

....*Subject: Mars 16 March 2015*

Received: 18 March 2015 at 01:32 JST

Good evening, all, Attached an IR image. there has been a few comments over the last few days regarding the brightness of the Ausonia region as compared with Hellas. Reiichi KONNAÏ kindly sent me an image from Mars Express VMC/ESA taken on the 14th March, which appears to show cloud or dust over this region. Best regards,

<http://www.kwasan.kyoto-u.ac.jp/~cmo/cmons/2013/150316/CFs16Mar15.jpg>

....*Subject: Re: Dust Storm in the southern hemisphere?*

Received: 23 March 2015 at 15:34 JST

Dear Reiichi, Interesting! It is a pity that I have had bad weather conditions for the last few days, as this area should be visible at the moment for imaging. As soon as I have better weather, I will try and image. Best regards,

....*Subject: Mars 26 March 2015*

Received: 27 March 2015 at 13:25 JST

Good evening, all, Attached IR image from this afternoon, following cloudy/stormy weather in the afternoons over the last week or so. I did try and capture RGB images, but conditions make it virtually impossible. Having had a good look at my maps and also winjupos, I am fairly convinced that the bright spot lower left of centre is at the location of Olympus Mons.

Best regards,

<http://www.kwasan.kyoto-u.ac.jp/~cmo/cmoms/2013/150326/CFs26Mar15.jpg>

...*Subject: Re: Mars 26 March 2015*
Received: 27 March 2015 at 22:22 JST

Hi, Richard, Thank you very much for your comments. It has been quite a learning curve for me, both from a Mars perspective as well as the image capture and processing aspects (still lots to learn!!). I think that this being my first serious Mars apparition has certainly helped me maintain my enthusiasm, as well as the positive feedback that I have had from you all, which I have really appreciated. Images such as Damian Peach's image of September 20, 2013 at $\delta = 4.3''$ indeed sets an amazing standard, which I certainly aspire to. However, seeing conditions are crucial in this regards, and such conditions in the summer/late summer season where I am located, have been far from ideal. I am expecting (hoping!) conditions to improve as we move towards winter. I have been investigating weather conditions more towards the western side of South Africa (near where the SALT telescope is located), with a possibility that I might relocate my observatory to that area when I retire in a few years. We shall see. I will continue to take Mars images as the opportunity arises, as it has very much become a habit for me now, and the first thing I look at when I leave the office in the afternoon is the western sky to see if conditions are clear !

Best regards,

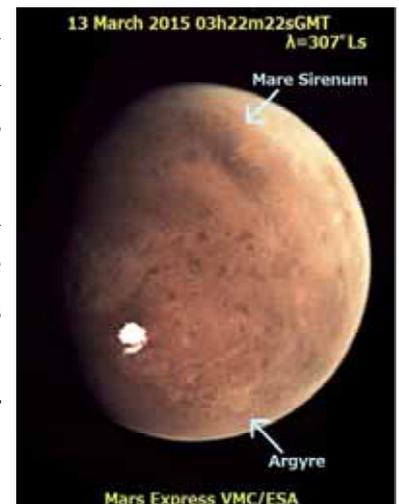
Clyde FOSTER (Centurion, SOUTH AFRICA)

...*Subject: Bright Ausonia?*
Received: 15 March 2015 at 19:10 JST

Dear Clyde, Yes, I also expect to see the area

lying near the center of your image with less influences of the limb effect. Please find attached a Mars Express' visual monitoring camera image taken on this 13 March: unfortunately, Ausonia area was in the night side some three hours before dawn!

You can check for yourself at:



https://www.flickr.com/photos/esa_marswebcam

Best Regards,

...*Subject: Dust over Ausonia?*
Received: 16 March 2015 at 23:16 JST



Dear Clyde, Please find attached an image by MEX VMC/ESA on this 14 March showing some cloudy/dusty matter just nightside off the dawn terminator, probably over Ausonia area.

Best Regards,

...*Subject: Southern circumpolar dust storm?*
Received: 27 March 2015 at 09:55 JST

Dear all, MRO-MARCI Weather Report for the week of 16 March 2015 ~ 22 March 2015 ($\lambda=309 \sim 312^\circ\text{Ls}$) depicts a large regional dust storm in the high-latitude southern hemisphere: The comment says "Dust-lifting in the southern high latitudes of Cimmeria-Promethei developed into a large regional dust storm over the course of the week. The storm propagated eastward from Cimmeria into Sirenum obscuring the surface up to $\sim 50^\circ\text{S}$ latitude. By the end of the week, all southern longitudes from $\sim 68^\circ\text{S}$ latitude and southward were obscured by atmospheric dust to varying degrees...." : Best Regards,

http://www.msss.com/msss_images/2015/03/25/

Reiichi KONNAI (Fukushima, JAPAN)

...*Subject: EPSC 2015 - Pro-Am session about...*
Received: 22 March 2015 at 02:10 JST

Dears, The European Planetary Science Congress (EPSC) will be held from September 27th to October 2nd 2015 this year in Nantes, France. In particular, we would like to draw your attention to the AM1 session dedicated to "Amateur and citizens collaborations in small bodies, terrestrial, giant and exoplanets professional studies", in the program group "Amateur Astronomy" For more information please visit:

<http://meetingorganizer.copernicus.org/EPSC2015/sessionprogramme/AM>

We would like to invite you to actively participate to this session by contributing a paper and/or meeting and exchanging views and ideas with other amateur and professional astronomers studying the solar system (planets, asteroids, comets, meteors, ...) and exoplanets. If you are interested in making an oral or poster contribution, please fill in the abstract submission form that you will find at the web page above (abstract deadline: April 29, 2014). Also, please feel free to circulate this message to all those who might be interested in the event. Looking forward your contribution or participation to EPSC,

Marc DELCROIX (Tournefeuille, FRANCE)

Convener of the AM1 session, member of SOC for AM program

SAF planetary observations commission
<http://astrosurf.com/delcroix>

...*Subject: Re: Mars 26 March 2015*
Received: 27 March 2015 at 17:46 JST

Dear Clive, Many congratulations upon this result which is as close to normal as one can judge. The last seasonal start of any encircling storm was Ls 311 back in 1924 December, and so you are just past that point with this image. This means that, unless 2015 should prove exceptional, there will be no such event this year, though of course we cannot rule out minor activity accessible only to spacecraft. It is remarkable that you carried on for a full Martian season longer than I had anticipated, and in so doing have generated a valuable scientific result which we should all thank you for. Somewhere in the records of Mars observing there must be an observation that would be the closest to solar conjunction. I wonder what it is? With all good wishes

Richard MCKIM (Peterborough, The UK)

International Society of the Mars Observers (ISMO)

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

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

CMO #433/ ISMO #59 (25 April 2015)

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



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