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Some Thoughts around "*Limited only by Diffraction*". Part II

By

Reiichi KONNAÏ

A Classical Optical Simulation of Observing Mars

I, who am a typical "half (telescope) maker /half user", am very curious how the heavenly bodies look through various types of telescopes with varying levels of optical problems. "Miyazaki/Okinawa Shock" in 1988 rocked my brain, caused me indulging in flights of fancy; ….What is it like to see Mars at the closest opposition with an excellent 40cm telescope under perfect seeing? Is it like peering our Moon through a pair of opera-glasses or a finderscope? ….Wait! Our full Moon is about 31′ or 1860″ in apparent diameter, which is roughly 80 times larger compared with 23~24″ across Mars at 1988 closest approach. Thus, 400mm÷80=5mm, means looking a full Moon through a 5mm aperture telescope would show a view similar to Mars at 1988 opposition seen with a 40cm aperture instrument at least in terms of optical resolution/ image sharpness. With our familiar maximum effective magnification standard, a full Moon peered through a 10×5mm telescope might give the same image quality of 23″ diameter Mars viewed in an 800×40cm one. Optical quality of the smaller telescope could be regarded as perfect, because only very small near-axial portion of the objective lens is used. "Seeing" is also perfect, as the Moon is large enough for such a low magnification. Of course, this kind of simulation is pretty rough, because the colors, the overall albedoes, the surface brightnesses per unit area, the markings themselves, the contrasts of the markings, and etc. ….are different between these two objects. But the Moon is a real heavenly body floating in the sky anyhow, so that the idea would be informative in grasping the feeling of observing planets under ideal conditions as : a flawless telescope/ the highest effective magnification/ the most perfect seeing condition; OK, let's do the simulation!

Figure 3a depicts the homemade Mars observing simulator for visual use. It only consists of three parts, mainly a 70~210mm interchangeable zoom lens, an eyepiece adapter secured to the rear end (so-called "object confirming adapter" for deep sky photogra phy), and an iris diaphragm (taken off my

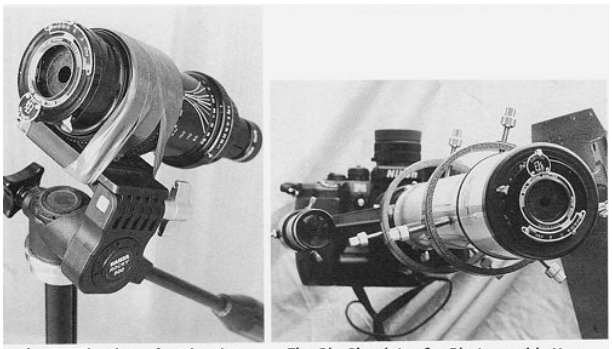

Fig. 3a Simulator for Visual Use Fig. 3b Simulator for Photographic Use

second-hand *2C Pocket Kodak*…1920s' folding camera) attached at the front end. With this variable aperture/ magnification instrument you can get any aperture between 2~25mm range which corresponds to simulating observing 23″ across Mars with 16cm~2m (!) aperture telescopes. And by combining zooming of the objective lens and various focal length of eyepieces, you can choose and check for the most appropriate corresponding magnification to any given aperture simulation, including the maximum effective magnification or, if you want, over magnifications as well.

Figure 3b shows the Mars observing simulator for photographic use. The same iris diaphragm at the top end of a 6cm f.530mm achromatic refractor, with a Nikon F4S body at the back end. Provided the image is 5mm across or larger on the focal plane, the auto-exposure system of the Nikon F4S works out quite comfortably regardless of the given effective focal ratio.

Figure 4 displays the photo images of the artificial double stars with various angular separations taken with the instrument shown in Fig. 3b, with 5mm and 8mm aperture respectively. Each number beside the image indicates the angular separation in arcseconds of the artificial double star. According to the Rayleigh criterion, the resolving power with a wavelength of 507nm is 25.5″ for 5mm aperture, and 15.9″ for 8mm one, respectively (each value coincides with the diameter of the first diffraction minimum of the image of a single light source point). Likewise, our popular Dawes' empirical criterion gives the resolution of 23.2″ for 5mm diameter of the opening of the iris diaphragm, and 14.5″ for 8mm one. As you can see, the results shown in Fig. 4 verify that the small circular aperture gives the resolving power definitely close to the diffraction theory and the empirical measure.

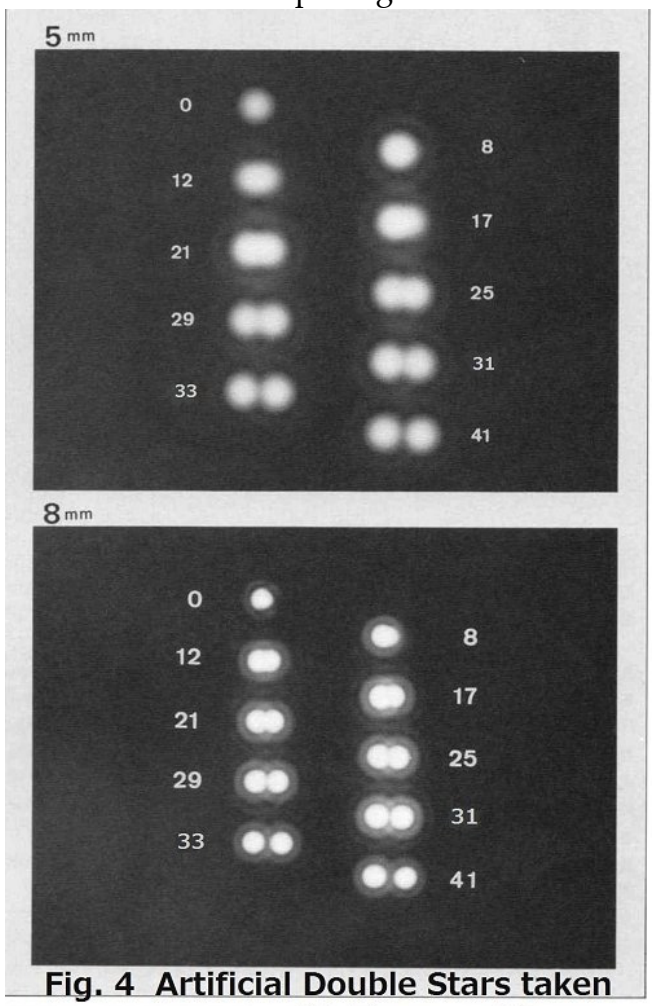

Fig. 4 Artificial Double Stars taken with 5mm and 8mm Apertured Simulators

Each figure beside the image indicates the angular separation of the artificial double star in arcseconds.

←The author at the age of 40

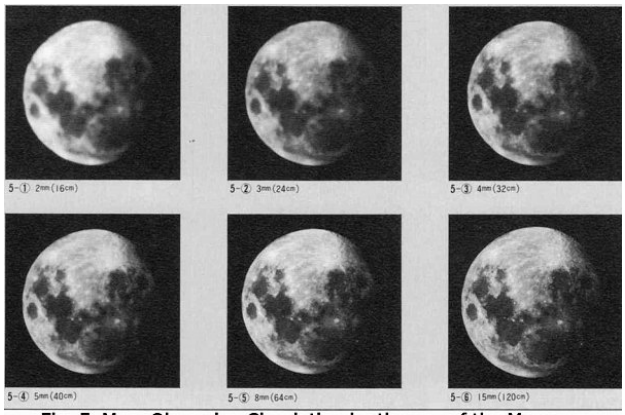

Fig. 5 Mars Observing Simulation by the use of the Moon

Figure 5 (1~6) demonstrates the photographs of a 13.5 days old Moon taken with 2~15mm apertures, effective focal length of 850mm, Nikon F4S auto-exposure, H_2 hypered TP2415, developed with Rodinal 1:50 20°C 12 minutes. This film/development combination seems presently to be the best for planetary photography, reproduces every visually perceptible detail on the lunar images in Fig. 5; thus I am going to discuss the visual findings through the Fig. 3a instrument with the Fig. 5 photo images. Each image in Fig. 5 simulates to look at Mars of 23″ in apparent diameter with a telescope of the aperture shown in the parentheses; so, the simulation covers 16cm~120cm (!) aperture range of telescopes.

The simulation 40cm/800×/23″ Mars, what started this, corresponds to the image 5-(4) in Fig. 5 (the Moon taken with 5mm aperture) seen at about 40cm distance. What do you feel when looking at this? (or why don't you try visually with your finder scope or your household binoculars stopped down to 5mm aperture….just a piece of paper with a pencil penetration taped to the top end would do perfectly!...on the next clear night when you have a big fat Moon in your sky!?) As for myself, when I first visually tried with my Fig. 3a apparatus with a 5mm iris diaphragm opening, I perceived some definite diffractionally natural blurring on the 10× magnification image of the full Moon, still I felt overall image to be unexpectedly sharp. Zigzagged boundaries of Maria Fecunditatis, Nectaris and Nubium are easy, which may be equivalent in apparent scale to the plenty of fine projections and indentations along the northern coasts of Martian Maria Sirenum and Cimmerium. Dark patches and bright spots as small as 40~50km across on the Moon are detectable which corresponds to about 100km ones on the red planet or 0.3″ spread markings on the 23″ diameter Martian disk---interestingly enough, very close match with the Dawes' limit (0.29″)! Linear markings as bright rays or dark streaks are easier, equivalent to 0.1~0.2″ ones can be well detected---again agrees with the senior expert planetary observers' conclusion "Experienced observers can catch as fine details as one-third of calculated resolution". (Detection of sharp linear markings with extreme contrast as the major divisions in the Saturnian ring system nears one-tenth of the Dawes' limit, to be discussed in future issues with optical simulations).

Checking Figs. 5-(3) and 5-(4) images, possible visual detection of larger craters and valleys, or high peaks with 30~40cm aperture instruments on the Martian terminator as shadowed reliefs or intagli around the best opposition would be expected. In fact, Isao MIYAZAKI and other Okinawa observers told me that, in 1988 apparition, they had been able to confirm several solitary gigantic volcanoes and the huge Valles Marineris ap-

peared undoubtedly three-dimensionally with their shadows cast.

Comparing the images and the drawing shown in Fig. 2 (see the Part I in the previous issue), you can see that the MIYAZAKI's planetary photographing system, 40cm Newtonian/gas-hypered TP2415/Rodinal 1:100, constantly captured and reproduced the planetary details coming close to the finest and delicatest ones that the experienced visual observers can discern with superb 25~30cm aperture telescopes. This is quite something; you can try and find it almost impossible, even for a genius, *to draw exactly, all the* Martian or Jovian details perceptible with an excellent medium-sized instrument under good seeing within a limited observing period of time. All the reliable (…I would say) visual planetary observers of all ages and countries using this class of telescopes or larger have/had been cutting out and selecting the needed information, making highly objective "*modest*" planetary drawings. It is encouraging for us to know that we can make a real scientific contribution with objective data available from this level of (around the resolution limits of 25~30cm aperture class telescopes) planetary photographs in analyzing Martian, Jovian or Saturnian phenomena (Cf. ROGERS, J. H., and I. MIYAZAKI, 1990. First Earth-Based Observations of a South Temperate Jet Stream on Jupiter. *Icarus* **87**. 193~197).

Around 1990, the CCD revolution seemed to have started, to be going strong also for planetary imaging, seemed to have awful potential in terms of the detection of the details.

(*Unfinished*)

Editor's Note: R KONNAÏ became aware that there would be much to be written before he could give concluding remarks. Anyway he still has an intention to give his thought on the following subject: "what am I really?" as an amateur astronomer, and "what is the CMO for us?" in a near future.

We should note this Part II was conceived about twenty years ago, and he is aware that soon after he published the idea in Japanese "there appeared young professional opticians' work*)**) in which they had performed quantitatively conditioned optical comparisons of the telescopes, ……with far more sophisticated/elegant designs/manners." KONNAÏ however believes that even now, "it would be instructive to take images of the Moon with the favourite telescope stopped down to a several millimetre aperture in checking the performance of the planetary telescope/CCD imaging/image processing system."

*) *Optical Quality in Telescopes*, Peter CERAVOLO, et al., Sky & Telescope, March 1992.

**) *Star Testing Astronomical Telescopes*, Harold Richard SUITER, Willmann-Bell Inc.,1994.

ISMO 11/12 Mars Note (13)

The Winter State of the Hellas Basin

Christophe PELLIER

It has been frequently observed during past apparitions that the Hellas basin brightens considerably around the southern winter solstice, so much that it is sometimes "mistaken" by beginners or occasional observers for the south polar cap itself. In a sense, however, winter frost on Hellas' ground is understandable as an extension of the true cap, so the "confusion" is not that wrong, after all… In this new ISMO note, we review the brightening of Hellas as it has been observed in 2012 as a seasonal manifestation of the beginning of winter in the southern hemisphere of the planet.

"The winter state" of the Hellas basin can be defined by the deposition of frost on its ground. However, it must be added that the observed cloud activity over the basin, is also a manifestation of the winter state. Clouds and frost are different phenomena and we should calculate as well when they respectively appear, and how it could be possible to differentiate them.

I - Physical conditions that make frost develop on the ground of Hellas

The brightening (whitening) of Hellas is a manifestation of the deposition of carbon dioxide (CO_2) ice on the ground. The phenomenon is identical to the formation of the winter south cap as a solidification of the atmospheric CO_2 to a ground layer of "dry ice". Average conditions on Mars say that the freezing point of CO_2 happens when the temperature cools down to 148 K (-125°C). The extremely low temperatures that exist over polar regions in winter explain why the CO_2 atmosphere of the planet can partially solidify itself on the ground.

But Hellas is not situated inside the polar region (latitude ranges from 55°S to 30°S and it remains enlightened by the Sun for several hours even during winter), so we must look for additional reasons than temperature to explain its cap aspect. The corresponding latitudes at other longitudes do not frost macroscopically during winter.[1)] The depth of the basin reaches several km and so the mean atmospheric pressure is more important than on surrounding regions. As a result, the freezing point of CO_2 is found at a relatively "warmer" temperature, so it can frost on the ground even if it has not reached 148 K.

II - Clues deduced from the HST case in 1997

In 1997, the HST made a lot of imaging runs throughout the whole apparition, and two of them were luckily conducted before and after the frost of Hellas in a short time, so we have at hand a very useful high-resolution data. The first run was secured on 10th March 1997 at λ=089°Ls (ID: 6852) and the second on 30th March at λ= 097°Ls (ID: 6741). RGB's show clearly that the basin is free from dry ice on 10th March although clouds are growing, but is full to the edges by frost 20 days later. These colour images have been widely press-released at the time, but we show here two additional IR shots from the HST archive on Fig. 1

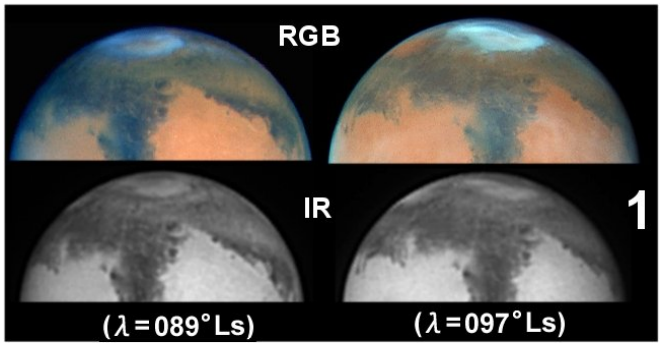

Figure 1: The Hellas winter state observed by the HST in 1997 (10th and 30th March). The brightening of the basin is clearly seen in 20 days. IR images are taken respectively with F953N and F1042M filters. Note that the 10th March image has not been made with regular RGB filters and so the interpretation of the brightness of Hellas is not reliable.

The comparison is interesting because near IR is supposed to eliminate white clouds, so we can hope to see differences on the floor of Hellas alone, and perhaps a higher albedo of the ground in that wavelength will reveal the presence of ice.

However, it should be noted that there is a drawback: the albedo of dry ice (but also water ice) is quite lower in near IR and on images we usually note a decrease in contrast between polar caps and the surrounding bright regions. We are to expect the Hellas frost to be dull through such a filter.

That said, the comparison of both sets of images show us the following facts:

1) Clouds are forming first (10th March)
2) If we glimpse dark pink areas inside the basin, then it is either not frosted, or only partially (10th March)
3) Albedo of frost in RGB is lower than albedo of clouds (30th March)
4) If Hellas is frost-full, the frost will fit the geological shape of the basin with sharp borders (30th March)
5) The visibility of frosted craters outside the basin correlates strongly with the presence of frost inside it. Especially here, on the 30th we note the presence of a relatively big one, the Terby crater, at the north-west border (285°W; 28°S)

6) In near IR, there is a very slight increase of albedo on 30th March; however the thick cloud streak visible in the corresponding RGB has not completely disappeared. So the help brought by IR views looks not decisive here.

III - The 2012 case in discussion

For 2012 we benefit from a lot of good amateur images. However, it should be recalled here how useful it is to present the original R, G, and B images alone on one's set. A good RGB or LRGB image is nice (not RRGB) but a view of the sepa rated components helps to decide if we see ↗ clouds or ground frost. For this study, the IR images are welcome.

Phase A: the growth of clouds

Throughout February 2012 (λ=065°Ls to 076°Ls, second part of southern fall) Hellas still has a classical aspect, not bright, and the pinkish ground is easily seen inside the dark rim that corresponds to the elevated mountains around. Clouds belonging to the forming winter polar hood can be glimpsed sometimes at the very southern limb. The situation changes at late February when Hellas came to view of European observers (25/26 February ~λ=075°Ls), because clouds can now be seen inside the basin itself (Fig. 2).

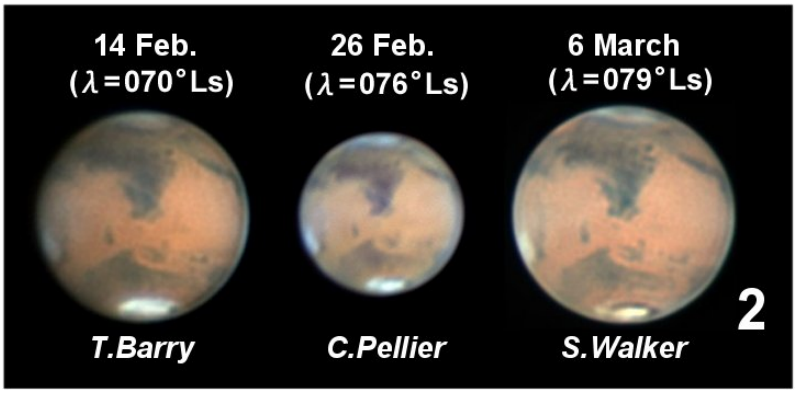

Figure 2: The growth of clouds. The basin is free from clouds and its ground is well visible at λ= 070°Ls, Clouds are visible but only at extreme southern limb. From λ= 076°Ls, clouds develop inside the basin.

Images by Trevor Barry, Christophe Pellier and Sean Walker.

Phase B: clouds are getting bright

Despite this, the basin is still not bright in the first half of March 2012 (λ=077°Ls~083°Ls, late southern fall). The first image of the season that shows a bright Hellas has been taken by Stefan Buda (*SBd*) on 17th March at λ= 084°Ls, so we can mark the λ= 083/084°Ls date to be the start of the advent of bright clouds there. On 20th March (λ= 086°Ls), Anthony Wesley (*AWs*) took an RGB image that shows an aspect similar to that of the 30th March HST shot in 1997, with a bright streak crossing the basin that looks dull white or grey. On the following day (21st) visual observer Reiichi Konnaï (*Kn*) commented (with drawings) "Hellas large, a bit bright, fairly bluish but not well demarcated". However, frost does not look formed already because on the same day, Tomio Akutsu (*Ak*) took a complete set where the center of Hellas looks too ↗ dim in RGB, and too dark in IR, to have welcomed frost on the ground. Rather, the set shows a presence of bright clouds along the northern border, that are commonly seen probably because this is a poleward rim and because its steep flank falls on the deepest part of the basin, forming a wall where clouds can accumulate. The clouds make the edge of the bright Hellas to appear blurred; this is certainly why *Kn* commented about the lack of demarcation. This is also why we can say that this is not frost because the edges would have been sharper (see above section II). The same aspect without evolution is observed on 25th March still on *Ak*'s images. Images are shown on Fig. 3 below.

Phase C: frost on the ground?

The deposition of CO_2 ice on the ground is the most difficult thing to analyse, because we must try to discriminate ice from white clouds, and

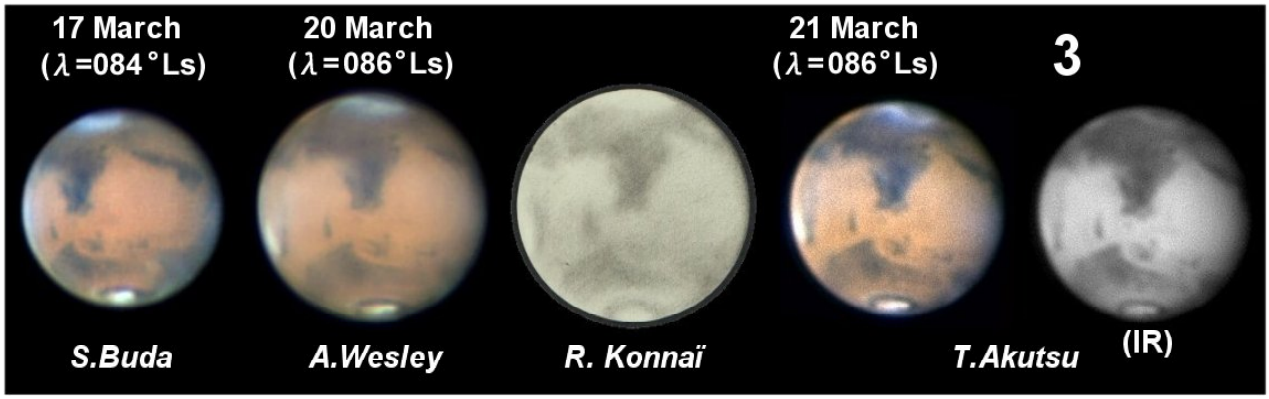

Figure 3: The bright state of Hellas with clouds but probably not frost.

despite the quality of today's amateur images, their resolution is at best, fair, to decide clearly. On 30th March, 1st and 2nd April 2012 (λ=090/091°Ls, winter solstice), Damian Peach (DPc) took high resolution images of Hellas where the basin appears fully bright, with sharp edges, and so it can be now frosted. We do not see the Terby crater however, but this could be because the resolution is still not good enough. [2)]

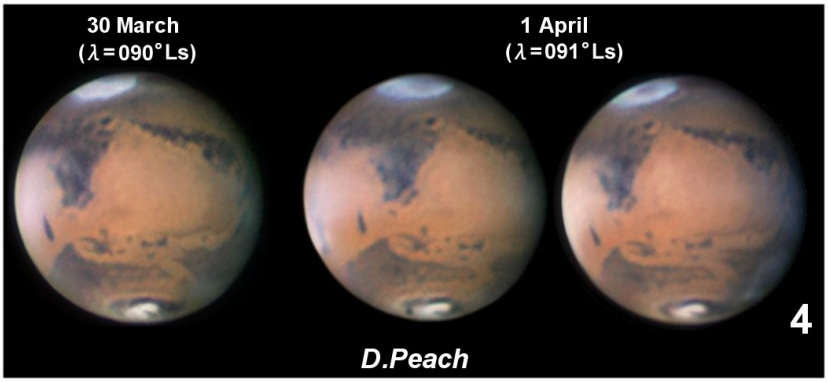

Figure 4: Images by Damian Peach (*DPc*) at winter solstice. The Hellas basin has sharp borders, just how it should look like if frost was filling it completely.

Here we may recall as well the conclusions of the last 11th ISMO Note about the "Escaping Cloud"[3)]. This cloud visible around the winter solstice looks strongly correlated with the deposition of frost inside Hellas. It appears before the frost stage, but reaches its brightest aspect during this phase. In 2012, we saw that the cloud was well visible from the winter solstice, and so this sustains the idea that we see frost on these images by *DPc*, and on all taken during the same period.

Finally, a review of the IR images taken in April and May (after winter solstice) is instructive. They show Hellas brighter than usual. It is possible that those images show the ground ice of Hellas.

Figure 5 shows results obtain by Peter Gorczynski (*PGc*) on 10th April and Paul Maxson (*PMx* on SAF gallery) on 11th April both at λ=095°Ls, and especially *PMx* on May 18th (λ=112°Ls) and 20st (λ=113°Ls) where the basin looks really brighter.

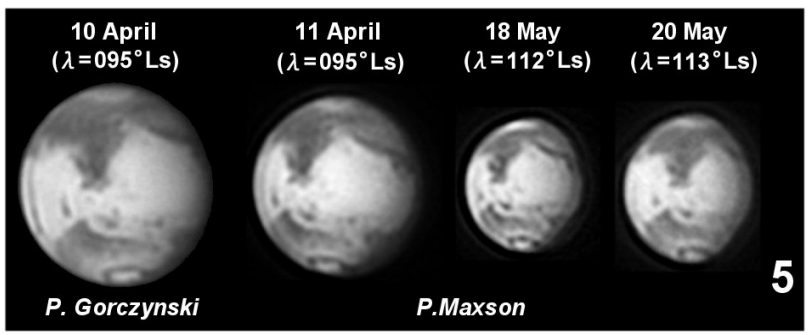

Figure 5: IR images of Hellas at early winter. The relatively high albedo of the basin must be an evidence of the frost deposit. It seems unlikely that clouds alone would explain the aspect in that wavelength.

Those last images may be the "smoking gun" that allows us to definitely identify dry ice inside Hellas.

Conclusion

In 2012, the winter state of the Hellas basin has been reached through three steps around λ=075°Ls (apparition of clouds inside the basin), λ=085°Ls (brightening of clouds) and λ=095°Ls~095°Ls (deposition of frost on the ground). The timing looks coherent with that observed in 1997 by the HST and the CMO team of the time - M. Minami was concluding that *"Hellas became quite whitish bright at 085°Ls~090°Ls and maintained its white brightness up until 140°Ls~150°Ls."*[4] However, the author thinks that to the contrary of many other climatic phenomena, the frost of Hellas may not happen at similar Ls dates every Martian year, and the timing could differ from 05° to 10°Ls degrees. This could be an interesting subject of further study.

In 2014, we will watch a new winter phase on Hellas weeks before opposition (λ=090°Ls happens on mid-February when diameter is around 10"), and this will be the last chance of the current 15-years cycle to observe it in detail. But we will be able to observe the decay of the winter state with the sublimation of the dry ice.

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1) CO_2 frost can be found at a smaller scale, for example on the pole-facing slope of craters, because the angle of sunlit is very low and the ground temperature will reach the freezing point.

2) The whitish Terby crater is visible in MRO animations in 2012. It looks visible quite earlier - perhaps from mid March - but despite the resolution the angle of view of the probe, closer to the planet, makes the latitudes of Hellas hard to see on the movies.

3) «White cloud escaping from Hellas at winter solstice », in http://www.hida.kyoto-u.ac.jp/~cmo/cmomn4/CMO409.pdf

4) However *Mn* wrote also that the brightness did not remain constant and that some shading could still be observed from time to time. Read *White Hellas, from Its Brightest through its Decline, Observed in 1997*, 5th Note of the 1997 apparition, in CMO #203. http://www.hida.kyoto-u.ac.jp/~cmo/cmomn0/97Note05.htm
The reader may also refer to the corresponding CMO note of the 1995 apparition, still by *Mn*, "*Mere Hellas, But No Mean Hellas*" in CMO #174.
http://www.hida.kyoto-u.ac.jp/~cmo/cmomn0/95Note10.htm

□

Letters to the Editor

●·····***Subject: : RE: pickering***
Received; 16 April 2013 at 00:03 JST

Dear Masatsugu,

Thanks for your interesting e-mail. I haven't seen the Oliver Stone, but the ideas presented certainly sound reasonable. My understanding is that Truman dropped the atomic bombs really not to speed the end of the war, as was claimed at the time, but to demonstrate US power to the Soviets, who were the new threat in the US "bipolar" view of the world (and of course the British were swept underfoot at Yalta; the body language of Roosevelt, Stalin, and Churchill is very revealing--Churchill has his bowler hat covering his privates).

I gave a talk on aspects of visual observing to a group including many physicians--and two ophthalmologists from the Mayo Clinic were on the same program, as well as a retired hematologist. It was very interesting and I learned a great deal. I would consider it a successful venture. I also spent some time (en route) at Carleton College--the alma mater of Thorstein Veblen, most famously, but also E. A. Fath. I was looking through Fath's papers, etc.

Glad to see that Reiichi is writing essays for the next two issues, followed by Christophe. By the time those are through I may have caught my breath and will be able to do something on Pickering. I will have little spare time until June 1.

Bill SHEEHAN (Willmar, MN)

>-----Original Message-----
>From: Masatsugu MINAMI
>Sent: Monday, April 15, 2013 12:52 AM (+09:00)
>To: Sheehan, William P (DHS);
>Subject: Re: pickering

>Dear Bill,
>How are you getting well? I don't well remember, but I think I have not heard yet about your recent travel to Rochester.

>This is just to inform that we had an occasion to watch a TV programme broadcasted by the Japan Broadcasting Corporation (so-called NHK). Its original

title is the Untold History of the US, told by William Oliver Stone (we of course were watching the translated scenarios). It is composed of ten subtitles, and as an April part just four out of ten were casted last week. The remainder will be shown in May and June. Every issue in April sounded quite interesting.

>Oliver Stone's treatment of Henry A Wallace looks quite outstanding. Oliver Stone says if, instead of Harry S Truman, Henry Wallace happened to have been elected as the succeeded President of Franklin Roosevelt, the atomic weapons could have never been used under the excuse of ending WWII. It seems to be believed still by almost all Americans that the atomic bombs against Japan led to a speedy end of the war. But this is false as Oliver Stone insists because Japan had been just about to surrender (just a trivial matter remained was concerning the future position of the Emperor).

> At that time already even such a small city like Fukui had been air raided. I was just around six or seven years old, but at the bombing night fleeted with mother and grandmother to the direction of Mikuni avoiding the indiscriminate bombing. Wikipedia says it occurred on 19 July 1945 at 23:24 until 00:45 JST, with 127 numbers of B29 which flew from Tinian. A total of 84.9% of the City were destroyed and 1576 were dead, and 6527 wounded (later, 108 died further). More than 20 thousand houses at Fukui burnt down including our house. Of course these minor cases were not narrated in Oliver Stone's scenario, but he mentioned the case of the more tragic bombing of Tokyo: Tokyo was attacked several times already, but the one on 10 March 1945 was the heaviest. Total of 279 B29s out of the prepared 325 flew up inside the area of Tokyo city and made a long term indiscriminate bombing with 381,300 bombs, and more than 100,000 Tokyo civilians were dead or missing on the night. These attacks were ordered by Curtis LeMay. These indiscriminate bombings opened the way of the use of the atomic bombs at Hiroshima and Nagasaki. Stone looks to have talked nicely about the A-bomb problem.

> Oliver Stone says it is generally believed in the US that WWII was ended by the effort of the US, but he mentioned that the defence sacrifice paid by the USSR cost very high on the occasion of the German invasion to the area of Moscow, while USSR's counterattack made the German troops too weak to rise up again, and Stone believes this is the main cause Hitler finally gave up and killed himself (and Eva Brown).

> As to the cold war also, Oliver Stone blames the behaviour of Truman, and suggests if Wallace was elected again as the vice-President of Roosevelt, the situation afterward must have been quite different. Americans brought about the tragedy to Americans by themselves.

> During the era of the cold war, Robert Oppenheimer already was against the H-bombs. But I think there were a lot of fanatic scientists who were no more than mere technical experts without any philosophical thoughts.

> I thought when watching it was quite appropriate for the little Bush to appear several times on the screen as an apparition of Truman.

> At the severe cold war times, I spent my life mainly at Kyoto. When the new Treaty of Mutual Cooperation and Security between the US and Japan was signed in 1960, I took part in the demonstration parade in Kyoto against the treaty.

> As you know, I was born at Fukui in 1939. After the bombing affair, we evacuated to Mikuni for a while, but after the war we came back to Fukui to live there again. In 1952, as a memorial or symbolic building of the reconstruction of the ruined city, the Fukui City Museum of Natural History was established with an astronomical dome, the place you once visited and watched the planet Jupiter in 2004. This dome is also the place I first observed Mars in 1954 (maybe first watched it in 1952) when I was 15 years old. At the age of 18, I went to Kyoto to enter the University, and officially stayed there as an undergraduate and graduate student for 9 years, and readily worked there from the age of 27 at a Mathematical Institute, and retired at 63 of age in 2002. Before retirement I of course frequently went back to Fukui to watch the planet Mars. I also used a 15 cm refractor at the Kyoto University. After retirement, I live at Mikuni.

> Around 1980~1990, we had a group working in the University for the anti-nuclear movement (we said “non-nuclear”). We for example learned about the nuclear winter. When the Chernobyl disaster occurred, I was in Taipei to observe Mars in 1986, and hence I don’t know the movements in Kyoto and the University, though about the disaster news I heard from a Hong-Kong radio's English broadcast. In Taiwan the students of the National Taiwan University surrounded the main building of the Taiwan Electric because it had some nuclear power plants. I don’t well remember but I think I heard about the Reykjavík meetings. I remember the signing of the INF (Intermediate-Range Nuclear Forces) Treaty was talked about in Kyoto. Mikhail Gorbachev after Perestroika was liked by us.

> I look forward further to the Oliver Stone's TV Programme in May.

> I should now set out to edit CMO/ISMO #409. Reiichi wishes to write the opening essays in #409 and #410. I also expect to hear from Christophe.

> I sincerely hope you will prepare some essay about Pickering.

>With best wishes,

>Masatsugu

○…***Subject: Oliver Stone from The Guardian***
Received; 16 April 2013 at 02:53 JST

What follows consists of several pieces of citation from an article in *The Gardian* which Bill SHEEHAN sent to us

Oliver Stone will teach that the bombing of Hiroshima was premised on a lie, that the CIA's secret war against leftist Central American governments was based on chimerical communist threat, that the invasions of Afghanistan and Iraq were follies and, perhaps most intolerable of all to patriots, that the United States of America is just as self-serving, duplicitous, corrupt, oppressive, expansionist and racist as – there's no easy way to say this – the British empire.

* It will be the latest improbable chapter in the life story of a man raised as an Eisenhower Republican, who fought as a patriot in Vietnam and made his name in Hollywood writing such splashy, amoral screenplays as Scarface for Al Pacino, before becoming an Oscar-winning,

* For the past five years, the 66-year-old director has been working with historian Peter Kuznick on the desanitised version, complete with horror stories. The result is a 10-hour TV series called The Untold History of the United States, and an allied 750-page book.

* "I was brought up with all that manifest destiny stuff when I was a kid," says Stone. "I was sleepwalking until I was 40." What catalysed him to make this documentary history was finding that the sanitised version of US history he had jettisoned was still being taught to his children. "The reasons given for the atomic bomb are, in my opinion, nefarious and disingenuous. But we bought it. Now my 17-year-old daughter goes to a very good school where they're still told that in the textbooks: 'Japan would not have surrendered. The bomb ended the war to save American lives.'"

Didn't President Harry S Truman argue that the bombing of Hiroshima spared the lives of thousands of GIs who would have otherwise died in an invasion of Japan in 1945? "That's bullshit," snaps Stone. "And there's a very practical reason it's bullshit – we couldn't have even mounted an invasion until November."

* His and Kuznick's theory, then, is that the atomic bombing of civilians was aimed, not at securing Japanese surrender, but at shocking and awing Stalin. They believe that, had Hiroshima and Nagasaki not been bombed in August 1945 by the US, something more intolerable to both Japanese and American sensibilities would have happened – namely that the Red Army, which by August had already swept through Japanese-occupied Manchuria, would have invaded Japan. Stone imagines the scenario from a Japanese perspective: "The Japanese are terrified. These guys [ie Soviet troops] are beasts. They rape, they kill. They'd kill an emperor without thinking about it. Look what they did in Germany."

* As for Truman's US, the threat of a rampant Soviet Union in the postwar Pacific rim was even more chilling. So nuking Japan was aimed at impressing the Soviets. The bombs, for Stone and Kuznick, didn't just kill thousands of innocents, but unleashed a nuclear arms race and the cold war.

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* Arguably, though, Stone and Kuznick's contention is less readily confuted. In his recent biography of so-called father of the bomb, Robert Oppenheimer, for instance, Ray Monk http://www.guardian.co.uk/culture/2012/nov/09/ray-monk-life-in-writing reports that the only nuclear scientist to have resigned on principle from the Manhattan Project, Joseph Rotblat http://www.guardian.co.uk/science/2005/sep/02/obituaries.obituaries, did so when he realised that the atomic bomb was not to be used to defeat the Nazis but to cow their ostensible allies. Rotblat overheard the military director of the Manhattan Project, Lieutenant General Richard Groves, say at a wartime dinner party: "You realise of course that the main purpose of this project is to subdue the Russkies."
http://www.guardian.co.uk/culture/2012/nov/09/ray-monk-life-in-writing

* Their contention is that if, after FDR died in April 1945, vice-president Wallace had succeeded, postwar world history would have been very different. "The bomb would not have been dropped with Wallace or Roosevelt as president, in my opinion," says Stone. "Not at all. Not a chance. The military would have opposed Wallace, given him a hard time, but you can't force a president to drop a bomb. You just can't."

* "Bush is the climax to an American mindset that had started with Truman and accelerated after world war two."

* He portrays Wallace as the man who could have spared the US its postwar debacles – the cold war, Vietnam, the "war on terror" – had he managed to get that vice-presidential nomination in 1944. Wallace was, in short, the good father snatched away when America needed him most.

* Nobody seems to have told the US, yet. Stone is upbeat: "In 15, 20 years, some young person is going to see The Untold History of the United States and it will maybe inspire the person who's going to lead the next generation. There's always hope."

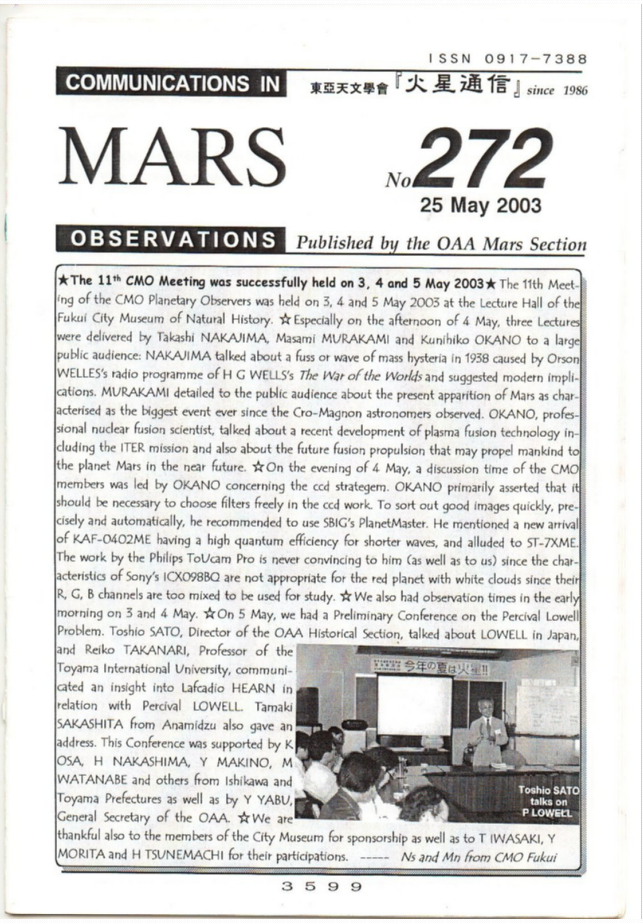
☆ ☆ ☆

TEN YEARS AGO (217)

---- *CMO #272 (25 May 2003) pp3599~3622*-----

http://www.hida.kyoto-u.ac.jp/~cmo/cmomn3/cmo272/index.htm

At the top page, a column appeared concerning the Public Lectures and the CMO Mars Meeting which were held at the Fukui City Museum of Natural History on 3, 4, and 5 May 2003. On the afternoon of 4 May, three Lectures were given for the pubic audience; 1) by Takashi NAKAJIMA on the mass hysteria in 1938 caused by the Orson WELLES radio programme based on H G WELLS's *The War of the Worlds,* 2) by Masami MURAKAMI on the upcoming opposition of Mars as the biggest one ever since the apparition in the period of the Cro-Magnon astronomers, and 3) by Kunihiko OKANO, a nuclear fusion scientist as well as an amateur astronomer, on the updated development of the plasma fusion technology including the ITER mission and also about the fusion propulsion that might send mankind to Mars in the near future.



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★The 11th CMO Meeting was successfully held on 3, 4 and 5 May 2003★ The 11th Meeting of the CMO Planetary Observers was held on 3, 4 and 5 May 2003 at the Lecture Hall of the Fukui City Museum of Natural History. ☆Especially on the afternoon of 4 May, three Lectures were delivered by Takashi NAKAJIMA, Masami MURAKAMI and Kunihiko OKANO to a large public audience: NAKAJIMA talked about a fuss or wave of mass hysteria in 1938 caused by Orson WELLES's radio programme of H G WELLS's *The War of the Worlds* and suggested modern implications. MURAKAMI detailed to the public audience about the present apparition of Mars as characterised as the biggest event ever since the Cro-Magnon astronomers observed. OKANO, professional nuclear fusion scientist, talked about a recent development of plasma fusion technology including the ITER mission and also about the future fusion propulsion that may propel mankind to the planet Mars in the near future. ☆On the evening of 4 May, a discussion time of the CMO members was led by OKANO concerning the ccd strategem. OKANO primarily asserted that it should be necessary to choose filters freely in the ccd work. To sort out good images quickly, precisely and automatically, he recommended to use SBIG's PlanetMaster. He mentioned a new arrival of KAF-0402ME having a high quantum efficiency for shorter waves, and alluded to ST-7XME. The work by the Philips ToUcam Pro is never convincing to him (as well as to us) since the characteristics of Sony's ICX098BQ are not appropriate for the red planet with white clouds since their R, G, B channels are too mixed to be used for study. ☆We also had observation times in the early morning on 3 and 4 May. ☆On 5 May, we had a Preliminary Conference on the Percival Lowell Problem. Toshio SATO, Director of the OAA Historical Section, talked about LOWELL in Japan, and Reiko TAKANARI, Professor of the Toyama International University, communicated an insight into Lafcadio HEARN in relation with Percival LOWELL. Tamaki SAKASHITA from Anamidzu also gave an address. This Conference was supported by K. OSA, H. NAKASHIMA, Y. MAKINO, M. WATANABE and others from Ishikawa and Toyama Prefectures as well as by Y. YABU, General Secretary of the OAA. ☆We are thankful also to the members of the City Museum for sponsorship as well as to T. IWASAKI, Y. MORITA and H. TSUNEMACHI for their participations. ----- *Ns and Mn from CMO Fukui*

Toshio SATO talks on P. LOWELL

3599

On the evening of 4 May, a Meeting of the CMO members was held, and especially Dr OKANO delivered an informative talk on the problem of an exact reproduction of true colour of Martian surface by the use of the ccd cameras and necessary filters. On 5 May it was held a precursory meeting of the coming Lowell Conference at Anamidzu Noto in 2004, where some talks by Toshio SATO (OAA Historical Section), by Reiko TAKANARI (Toyama Univ) and by Tamaki SAKASHITA (Lowell Society of Japan) on Percival LOWELL.

On the early mornings of 3 and 4, the CMO members joined to observe Mars at the Observatory.

http://www.hida.kyoto-u.ac.jp/~cmo/cmomn4/CMOMeet.htm#CMO_Meeting_2003_Fukui

The corner of the "2003 Great Mars CMO Report" was 7th, and treated the one-month period from 16 April to 15 May: During the period the apparent diameter of Mars was over δ=10" so that the number of observations increased with 22 observers (10 from Japan, 6 from the US, 3 from Europe and 4 from the Asia-Oceania region. The planet moved from Sgr to Cap. The Martian season proceeded from λ=169°Ls to 185°Ls, the season when the 2001 vast dust occurred. The apparent diameter went up from δ=8.4" to 10.6", and the phase angle attained ι=43.1°, the biggest. The tilt went from φ=14°S to 19°S showing much of the southern hemisphere. The report first picked out the aspect on16 Apr when the observations were made world widely. Then the aspect of the spc was reported as well those of several markings toward the north. Inside the spc some shadows were witnessed after

λ=170°Ls. The dark fringe was also seen. At the beginning of May, the brightness of the western corner of Hellas was checked by the ccd images by MORITA (*Mo*) and KUMAMORI (*Km*) but this was missed visually on the occasion of the joint observations at the Fukui City Observatory. The morning Syrtis Mj was dull for a while beneath the morning mist, but contrarily on the ToUcam images it showed up because of the mal leakage. Also picked out the evening Tharsis concerning the W-shaped clouds, Solis L whose western side slightly faded and the faint aspect around M Erythraeum. The tilt was largely southward, while the nph and cloud projections southward were seen occasionally.
http://www.hida.kyoto-u.ac.jp/~cmo/cmohk/2003repo/07/07.html

LtE: From abroad, we received from Eric NG (呉偉堅, Hon Kong), Jeff BEISH (FL, the USA), K C PAU (鮑國全, Hon Kong), Dave MOORE (AZ, the USA), Damian PEACH (the UK), Maurice VALIMBERTI (Australia), Don PARKER (FL, the USA), Frank MELILLO (NY, the USA), Christophe PELLIER (France), Bill SHEEHAN (MN, the USA), Don BATES (TX, the USA), Paolo LAZZAROTTI (Italy), TAN Wei-Leong (陳韋龍, Singapore), Carlos HERNANDEZ (FL, the USA), Ferruccio ZANOTTI (Italy), Erwin van der VELDEN (Australia), and domestically from K OKANO (Tokyo), M WATANABE (Toyama), T KUMAMORI (Osaka), Y MAKINO (Toyama), T HIKI (Nagano), Y MORITA (Hiroshima), K OSA (Ishikawa), H NAKASHIMA (Ishikawa), T IWASAKI (KitaKyushu), R TAKANARI (Toyama), Y YABU (OAA General Secretary), H ISHADOH (Okinawa), and T SATO (Tokyo).

The corner TYA #093 was written by T HIKI concerning CMO#133 (25 May 1993) 20 years ago: In the period, the 1992/93 Mars was near the end as the angular diameter was around 5 sec, the season was from λ=067°Ls to 079°Ls. In 1993 May Elisabeth SIEGEL (*ESg*) had an opportunity to visit the Fukui City Observatory (and Mikuni).

***Note*: The issue of #272 (25 May 2003) is the last of the first series of the printed version of the CMO. This was because M MINAMI (*Mn*), avoiding the rainy season at Fukui, went to Okinawa to observe Mars and could not afford to edit the CMO since he became very busy in observing Mars and checking the reports by emails. Later, in the Web Site the CMOs were published until CMO #289 (25 March 2004).** *M MURAKAMI (Mk) and M MINAMI (Mn)*

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