

MARS

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Forthcoming 13/14 Mars (1)

The 2013/2014 Apparition of Mars

By

Masami MURAKAMI

WE soon welcome Mars at the constellation Virgo, where Mars will be closest to the Earth on 14 April 2014, still aphelically. Mars's apparent diameter is then $\delta=15.2$ arcsecs. Mars will be at opposition on 8 April 2014 with the apparent declination of about 5°S . Before that, in September this year the apparent diameter will be over $4''$, and it will be possible to capture some markings by any CCD camera; and thus the season of Mars observation begins.

We shall here roughly describe some of the aspects of this Mars apparition and some points to be observed to help the observations of the members. This apparition in 2013/2014 will provide the last opportunity in this cycle to check closely the northern hemisphere of Mars since throughout this season the northern hemisphere faces toward us.

Aspects of this Apparition

Figure 1 below shows the orbit of the 2013/2014 Mars with the orbit of the Earth for the background. This is made by using the data in *The Astronomical Almanac 2013 & 2014*. The Greek letter λ denotes the Martian season depending on the areocentric longitude of the Sun L_s .

At the beginning of December 2013, the planet will pass the meridian when the Sun

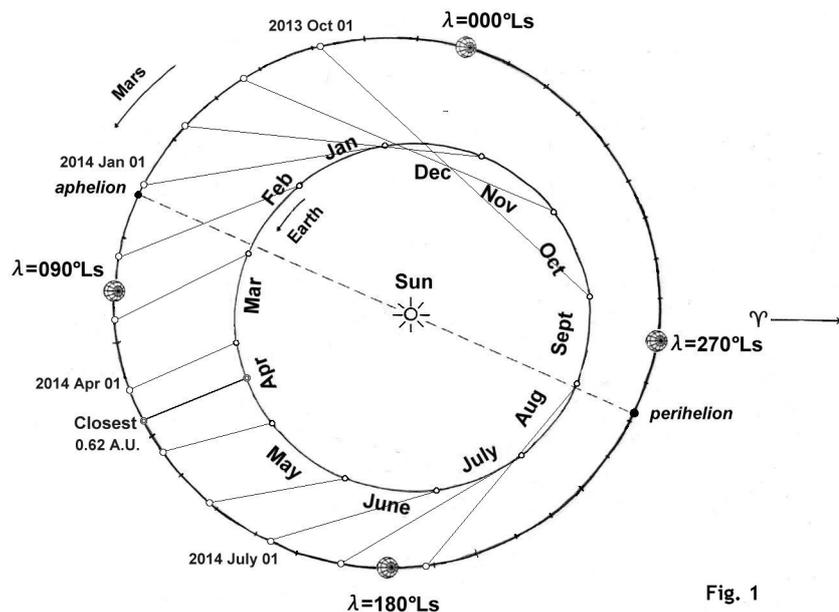
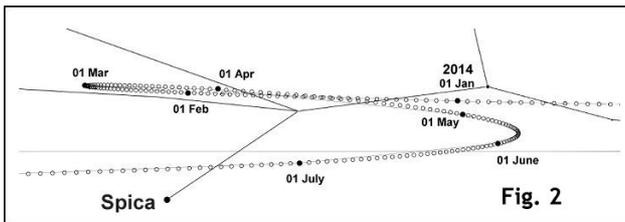


Fig. 1

rises. It will be stationary on 1 March 2014, and then the planet will move backward. As abovementioned a bit, Mars will be at opposition on 8 April 2014 at 21h (TD), and it will be closest to the Earth on 14 April 2014 at 13h (TD): According to Jean MEEUS, the least distance is 0.61756AU and the largest diameter is 15.16" (while they were 0.37272AU and 23.81" respectively in 2003). It will come again to be stationary on 21 May 2014. During the closer period, Mars moves drawing a loop in Vir as shown in Fig. 2, and passes to the north of Spica backward and forward three times (on 28 January, on 31 March and on 12 July 2014). After regularly moving,



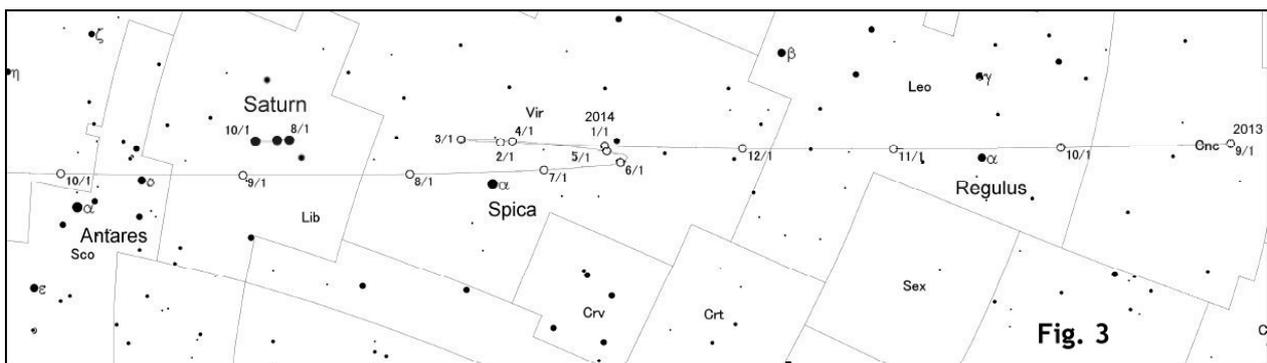
Mars will attain the eastern quadrature around 15 June, and at that time the planet will be near the meridian when the Sun sets. Afterward the apparent declination goes southward and Mars goes down westward.

Figure 3 below shows how the planet Mars moves among the star constellations in the sky in the 2013/2014 apparition. In September 2013, it will shine in Cnc, and the altitude of Mars at the Sunrise time is higher than 30

degrees. Around 9 September 2013 the planet will pass the inside of the Beehive Cluster (Praesepe, M44). On 14 October 2013 the planet will be close to Regulus (α Leonis) from the north, moves regularly in Leo and at the beginning of December 2013 it will enter the constellation of Vir to appear in the eastern sky near at midnight.

At the beginning of January 2014, the apparent diameter δ is 6.8", while $\delta=8.8"$ at the beginning of February 2014, and, $\delta=11.5"$ at the beginning of March 2014. As shown already in Fig. 2 the planet draws the loop inside Vir during the time.

On 6 July 2014 a lunar occultation of Mars will be seen from the area of Hawaii to the northern part of South America. On 27 August 2014, Mars will be close to Saturn in Lib, and at the end of September 2014 the red planet will be closer to the rival Antares. An Oort cloud comet C/2013 A1 (Siding Spring) is said to pass extremely close to Mars on 19 October 2014. From Europe it will be possible to check when Mars and the comet are closest, and from Japan just before the closest time. In November Mars enters Sgr, and the apparent declination D becomes so low that it will be hard to observe Mars in the western sky. At the end of 2014, the planet shrinks to $\delta=4.8"$ in the constellation Cap.



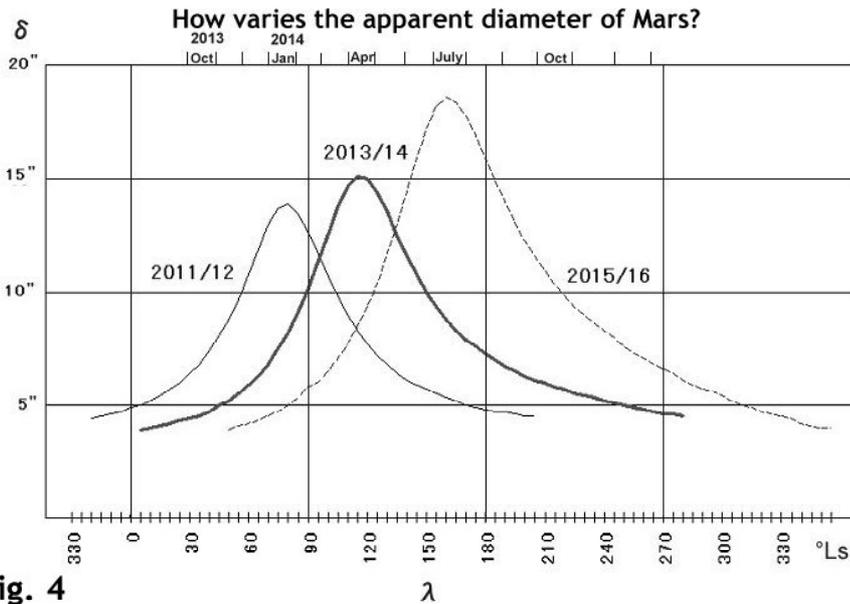


Fig. 4

How the Apparent Diameter Varies

Figure 4 above shows how the apparent diameter varies in 2013/2014, compared with those of the variations in the preceding and following apparitions. In the 2014 apparition, the apparent diameter δ will be larger than $\delta=10''$ during the about four months period from 15 February 2014 ($\lambda=089^\circ\text{Ls}$) till to 22 June 2014 ($\lambda=150^\circ\text{Ls}$), and the period δ is larger than $14''$ is from 24 March 2014 ($\lambda=107^\circ\text{Ls}$) till 8 May 2014 ($\lambda=127^\circ\text{Ls}$).

The graphs are effective to grasp the general aspects of the rise and fall of the observables, but a list or table of the real numerical values may give directly intuitions: So here tentatively we show the values of the apparent diameters δ as well as the apparent declination D every half a month: The value D will give an intuition to the height of the planet.

2013	δ	D
01 Sept	4.1"	+20° 34'
15 Sept	4.2"	+18° 27'
01 Oct	4.4"	+15° 37'
15 Oct	4.6"	+12° 53'

01 Nov	4.9"	+09° 22'
15 Nov	5.2"	+06° 25'
01 Dec	5.6"	+03° 07'
15 Dec	6.1"	+00° 23'

2014 δ D

01 Jan	6.8"	-02° 36'
15 Jan	7.7"	-04° 42'
01 Feb	8.8"	-06° 38'
15 Feb	10.1"	-07° 38'
01 Mar	11.6"	-07° 58'
15 Mar	13.2"	-07° 32'
01 Apr	14.7"	-06° 02'
15 Apr	15.2"	-04° 26'

2014 δ D

01 May	14.5"	-03° 02'
15 May	13.6"	-02° 44'
01 June	11.8"	-03° 36'
15 June	10.5"	-05° 11'
01 July	9.3"	-07° 39'
15 July	8.7"	-10° 11'
01 Aug	7.9"	-13° 31'
15 Aug	7.4"	-16° 18'
01 Sept	6.8"	-19° 27'
15 Sept	6.4"	-21° 42'
01 Oct	6.1"	-23° 40'
15 Oct	5.8"	-24° 41'
01 Nov	5.5"	-24° 53'
15 Nov	5.3"	-24° 05'
01 Dec	5.1"	-22° 08'
15 Dec	5.0"	-19° 34'

As shown in Fig. 4, during the season from $\lambda=095^\circ\text{Ls}$ (27 February 2014) to $\lambda=134^\circ\text{Ls}$ (22 May 2014) we can observe Mars with the larger diameters than those seasons in the preceding and following apparitions. The observation of Mars is nothing but the observation of Mars according to the Martian season, and hence such a comparison is very important. Also the observations in the preceding

apparition will make a preparation of the observations of the following apparition.

We tentatively note here the previous apparition akin to the present 2014 one is the 1999 apparition where Mars was closest to the Earth on 1 May 1999 with the maximal diameter of $\delta=16.1''$.

Some Objects for the Mars Observations in 2013/2014

As has been stated, in this apparition the preferable apparent diameters occur during the seasons from $\lambda=090^\circ\text{Ls}$ till $\lambda=150^\circ\text{Ls}$. During the season, the central latitude or tilt of the pole of Mars ϕ will read from $\phi=19^\circ\text{N}$ to 25°N and hence we can observe well the northern hemisphere under the summer season of the northern polar region since $\lambda=090^\circ\text{Ls}$ implies the summer solstice of the northern hemisphere. So here we shall pick out some of observational points in this season:

1) The North Polar Cap and Its Vicinity:

The observation period of the Baum plateau will be ended by the end of December 2013 within the period of smaller diameter δ , and hence it may be hard to check it. However we will be allowed to observe the residual north polar cap (npc) as well as the isolated Olympia and so on in better conditions. The dusts will frequently occur near or over the npc to be checked every time.

2) **The Orographic Clouds:** The activity of the orographic clouds in the afternoon over Olympus Mons, Tharsis trio Montes, Elysium Mons and so on is amusing to observe. Better to watch them before opposition when the evening terminator is deeper. Note that the activity of Arsia Mons is slightly

different than the others because Arsia Mons lies on the southern hemisphere. The darkish summits which were seen poked out inside the morning mist may turn to be weaker because the mist along the equatorial band itself would become weaker.

3) Morning Spiral Cloud at the NP Area:

In 1999 a morning spiral white cloud was visually caught at Baltia near M Acidalium at the season $\lambda=130^\circ\text{Ls}$. This was also caught by the HST. Also at around $\lambda=145^\circ\text{Ls}$ a morning cloud patch was observed concealing a northern-west corner of M Acidalium. Attention will be needed to watch also the region of Utopia to check the similar kind clouds.

4) **Vanishing of the Mist along the EB:** At the season of the northern summer solstice ($\lambda=090^\circ\text{Ls}$), we should check the fact that the mist activity along the equatorial band becomes weaker; so the morning and evening mists may be weaker. Accordingly the transparency of the Martian atmosphere improves.

5) Color and Density of Syrtis Major:

Notice the differences of the color and density of Syrtis Mj in the morning and also in the evening according as the area is affected by the variable mist.

6) **Aspect of the Brightened Hellas:** It is hard to watch the southern rim area because of the tilt, but in the southern winter the south polar cap (spc) is growing under the south polar hood (sph). It corresponds to the season when Hellas becomes whitish frosty and brightened.

7) Projections from the Terminator:

After opposition previously several projections have been observed from the morning terminator. It is suggested that the phenomenon may have a relation with the Solar wind

interacted with the area of some strong residual magnetic field around some continents such as Eridania. The continuous observations of the projections are highly welcome.

Finally we note that the following site describing some observational items in 1999 may be helpful.

<http://www.kwasan.kyoto-u.ac.jp/~cmo/cmomn0/99NoteIndex.htm>

To Conclude

Before closing, we would like to repeat to recommend our way of observations. Essentially (and ideally) we recommend to repeat your observations plurally every 40 minutes at the same o'clock every day. As to the reason why every 40 minutes rule stands, see the article written by Yukio MORITA and the present writer in CMO/ISMO #387:

<http://www.kwasan.kyoto-u.ac.jp/~cmo/cmomn4/CMO387.pdf>

Since the rotation period of any planet is irrational, we need to adjust the time little by little. However the essence is to keep the same ω (longitude of the central meridian) for a plural set of succeeding days: This is

ISMO 11/12 Mars Note (16)

Dust inside the NPC at $\lambda=066^\circ\text{Ls}$ - $\lambda=082^\circ\text{Ls}$
Seen from the Angles $\omega=160^\circ\text{W}$ - $\omega=180^\circ\text{W}$

Masatsugu MINAMI & Masami MURAKAMI

IN a previous Note (CMO #403, Note #05) we partly surveyed the area of the north polar cap (npc) and its vicinity from some points in case if there are found comparable series of the observations. There may remain however other viewpoints to survey the area of the npc. We here recall an interesting image (here→ cited as Fig.1) taken by Efrain MORALES RIVERA (EMr) on 11 Feb 2012 ($\lambda=069^\circ\text{Ls}$) at $\omega=173^\circ\text{W}$; the image which may be one of the most impressive ones in 2012 if we focus on the npc area. Apparently the npc area looks to

important to compare the surfaces day by day. In the case of the observations by means of the CCD cameras, it may be possible to obtain two sets of the comparable data if one successively observes every 20 minutes.

Any CCD observation (as well as any visual observation) is welcome to be sent to the following mail addresses at the same time:

cmo@mars.dti.ne.jp (M MURAKAMI)

and vzv03210@nifty.com (M MINAMI)

The observations on the same day are acknowledged if they are put on one jpg file. Out of each series, the composed RGB image should be put at the left end, and then the original R, G, B images should follow. If the IR image is taken it should be put at the right end. Any image set made by Yukio MORITA in the CMO Mars Galleries hitherto will be helpful to you to make the composition form to report the images to us.

□



show a clear spread of a dust fallout inside the npc;

though we don't tentatively judge whether the dust spread to the south of the npc was the origin of the invasion of the dust into the npc area or the outer dust spread was the one that came from the npc area. It is notable that the spread inside the npc looks comparatively large. This reminds us of the cases that are frequently seen inside the spc in the opposite season. It is so that this case must be estimated highly.

Unfortunately it is however hard to find some comparable observations since *EMr* does not pay attention to the accumulation of the images showing the same angle, while the dust spread seems to have seen on the images of Silvia KOWOLLIK (*SKw*) on 5 Feb ($\lambda=066^\circ\text{Ls}$). Her observations were made at $\omega=171^\circ\text{W}$, 186°W and 192°W due to the difference of the telescope apertures, but

we may agree that the situation inside the npc is similar on two.

Figure 3 is a comparison of three images: *SKw*'s image on 6 Feb 2012 ($\lambda=067^\circ\text{Ls}$) at $\omega=162^\circ\text{W}$, Sean WALKER (*SWk*)'s image on 10 Feb 2012 ($\lambda=069^\circ\text{Ls}$) at $\omega=161^\circ\text{W}$ and *EMr*'s on 12 Feb 2012 ($\lambda=069^\circ\text{Ls}$) at $\omega=159^\circ\text{W}$. These may prove that around 10 Feb ($\lambda=069^\circ\text{Ls}$) the inside of the npc with the dust has

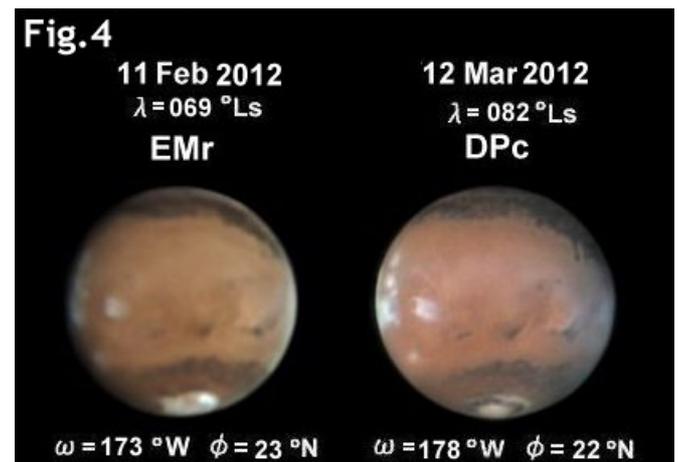
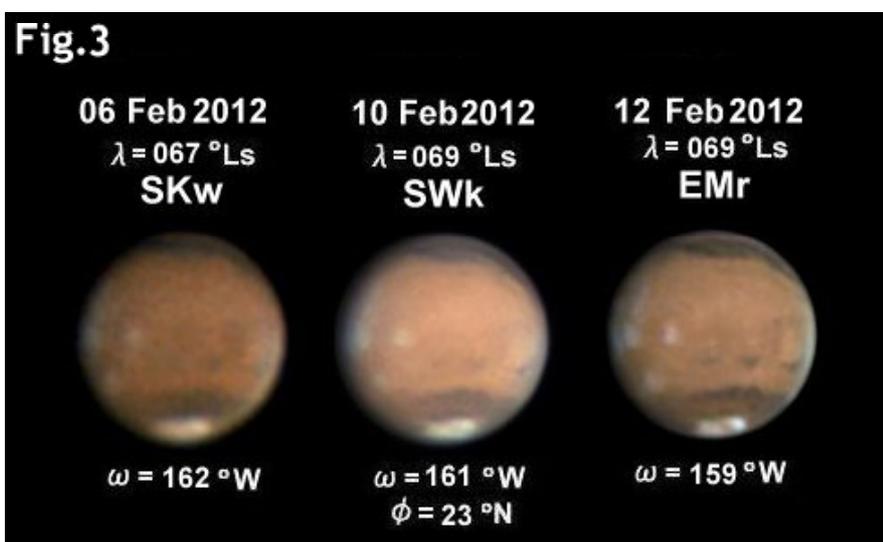


Figure 4 is a comparison of *EMr*'s image on 11 Feb 2012 ($\lambda=069^\circ\text{Ls}$) at $\omega=173^\circ\text{W}$ (so just the one in Fig. 1) with the image of Damian PEACH (*DPC*) taken one month later on 12 Mar 2012 ($\lambda=082^\circ\text{Ls}$) at $\omega=178^\circ\text{W}$. This clearly shows that the bright part at the western end of the npc on *EMr*'s image was



just the part which turned to be Olympia: Thus the dust at this area seems to work to make the icy element of the npc melt faster and contributed to produce Rima Borealis. This may in turn imply that the dust in question was quite seasonal just to dig Rima Borealis. The more inside part however does not so thaw but remains still in an other colour.

↓ and the one at $\omega=171^\circ\text{W}$ may correspond to the *EMr* case in 11 Feb. Figure 2 here shows the two images. There exist some differences on the images

Figure 5 (next page) shows also a comparison of the February and March situations. One is *SKw*'s image on 6 Feb 2012 ($\lambda=067^\circ\text{Ls}$) at $\omega=152^\circ\text{W}$, and the other is Manos KARDASIS



(*MKd*)'s image on 8 Mar 2012 ($\lambda=081^\circ\text{Ls}$) at $\omega=154^\circ\text{W}$: These show that there occurred a big variation on the western side of the npc during the period. On the latter image, Olympia is less bright than the main part of the npc. In the case of *DPc*, the LCM was $\omega=178^\circ\text{W}$, and so differs by 20°W (more than one hour) on the morning side than the case of *MKd* at $\omega=154^\circ\text{W}$ and hence the brightness must have appeared different.

□

Forthcoming 13/14 Mars (2)

Ephemeris for the Observations of the 2013/14 Mars. I September & October 2013

Akinori NISHITA & Masami MURAKAMI

WE now start describing the Ephemeris for the physical observations of Mars: We first list up the necessary elements of the Ephemeris for the period from 01 September 2013 till 31 October 2013: 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 (denoted D) of the planet is also given at the final column.

The data here are basically based on *The Astronomical Almanac for the Year 2013*.

Date (00:00GMT)	ω	ϕ	λ	δ	ι	Π	D
01 September 2013	352.06°W	15.84°N	015.32°Ls	4.09"	22.0°	-7.9°	+20°34'
02 September 2013	342.34°W	16.06°N	015.80°Ls	4.10"	22.2°	-7.5°	+20°26'
03 September 2013	332.62°W	16.28°N	016.27°Ls	4.11"	22.3°	-7.1°	+20°18'
04 September 2013	322.90°W	16.50°N	016.75°Ls	4.11"	22.5°	-6.7°	+20°09'
05 September 2013	313.18°W	16.72°N	017.22°Ls	4.12"	22.6°	-6.3°	+20°00'
06 September 2013	303.45°W	16.93°N	017.69°Ls	4.13"	22.8°	-5.9°	+19°52'
07 September 2013	293.73°W	17.14°N	018.17°Ls	4.14"	23.0°	-5.5°	+19°43'
08 September 2013	284.01°W	17.35°N	018.64°Ls	4.14"	23.1°	-5.1°	+19°34'
09 September 2013	274.28°W	17.56°N	019.11°Ls	4.15"	23.3°	-4.7°	+19°25'
10 September 2013	264.56°W	17.76°N	019.58°Ls	4.16"	23.5°	-4.3°	+19°15'
11 September 2013	254.83°W	17.96°N	020.05°Ls	4.17"	23.6°	-3.9°	+19°06'
12 September 2013	245.11°W	18.16°N	020.52°Ls	4.18"	23.8°	-3.5°	+18°56'
13 September 2013	235.38°W	18.36°N	020.99°Ls	4.19"	23.9°	-3.1°	+18°47'
14 September 2013	225.66°W	18.55°N	021.46°Ls	4.20"	24.1°	-2.7°	+18°37'
15 September 2013	215.93°W	18.74°N	021.93°Ls	4.21"	24.2°	-2.3°	+18°27'
16 September 2013	206.20°W	18.93°N	022.40°Ls	4.22"	24.4°	-1.9°	+18°17'
17 September 2013	196.47°W	19.12°N	022.87°Ls	4.23"	24.5°	-1.5°	+18°07'
18 September 2013	186.75°W	19.30°N	023.34°Ls	4.24"	24.7°	-1.1°	+17°57'

Date (00:00GMT)	ω	ϕ	λ	δ	ι	Π	D	
19 September 2013	177.02°W	19.48°N	023.80°Ls	4.25"	24.8°	-0.7°	+17°47'	
20 September 2013	167.29°W	19.66°N	024.27°Ls	4.26"	25.0°	-0.3°	+17°37'	
21 September 2013	157.56°W	19.84°N	024.73°Ls	4.27"	25.1°	0.1°	+17°26'	
22 September 2013	147.83°W	20.01°N	025.19°Ls	4.28"	25.3°	0.5°	+17°16'	
23 September 2013	138.10°W	20.18°N	025.66°Ls	4.29"	25.5°	0.9°	+17°05'	
24 September 2013	128.37°W	20.35°N	026.12°Ls	4.30"	25.6°	1.3°	+16°54'	
25 September 2013	118.64°W	20.52°N	026.58°Ls	4.31"	25.8°	1.7°	+16°44'	
26 September 2013	108.91°W	20.68°N	027.04°Ls	4.32"	26.0°	2.1°	+16°33'	
27 September 2013	099.17°W	20.84°N	027.51°Ls	4.34"	26.1°	2.5°	+16°22'	
28 September 2013	089.44°W	21.00°N	027.97°Ls	4.35"	26.3°	2.9°	+16°11'	
29 September 2013	079.71°W	21.16°N	028.43°Ls	4.36"	26.4°	3.3°	+16°00'	
30 September 2013	069.98°W	21.31°N	028.89°Ls	4.37"	26.6°	3.7°	+15°48'	
01 October 2013	060.24°W	21.46°N	029.35°Ls	4.39"	26.7°	4.1°	+15°37'	
02 October 2013	050.51°W	21.60°N	029.81°Ls	4.40"	26.9°	4.4°	+15°26'	
03 October 2013	040.78°W	21.75°N	030.27°Ls	4.41"	27.0°	4.8°	+15°14'	
04 October 2013	031.04°W	21.89°N	030.73°Ls	4.42"	27.2°	5.2°	+15°03'	
05 October 2013	021.31°W	22.03°N	031.19°Ls	4.44"	27.3°	5.6°	+14°51'	
06 October 2013	011.58°W	22.16°N	031.64°Ls	4.45"	27.5°	6.0°	+14°40'	
07 October 2013	001.84°W	22.30°N	032.10°Ls	4.46"	27.6°	6.4°	+14°28'	
08 October 2013	352.11°W	22.43°N	032.56°Ls	4.48"	27.8°	6.8°	+14°16'	
09 October 2013	342.38°W	22.55°N	033.01°Ls	4.49"	27.9°	7.2°	+14°05'	
10 October 2013	332.64°W	22.68°N	033.47°Ls	4.51"	28.1°	7.6°	+13°53'	
11 October 2013	322.91°W	22.80°N	033.92°Ls	4.52"	28.2°	7.9°	+13°41'	
12 October 2013	313.17°W	22.91°N	034.38°Ls	4.54"	28.4°	8.3°	+13°29'	
13 October 2013	303.44°W	23.03°N	034.83°Ls	4.55"	28.5°	8.7°	+13°17'	
14 October 2013	293.71°W	23.14°N	035.29°Ls	4.57"	28.7°	9.1°	+13°05'	
15 October 2013	283.98°W	23.25°N	035.74°Ls	4.58"	28.8°	9.5°	+12°53'	
16 October 2013	274.24°W	23.35°N	036.19°Ls	4.60"	28.9°	9.8°	+12°41'	
17 October 2013	264.51°W	23.46°N	036.65°Ls	4.61"	29.1°	10.2°	+12°28'	
18 October 2013	254.78°W	23.56°N	037.10°Ls	4.63"	29.2°	10.6°	+12°16'	
19 October 2013	245.04°W	23.66°N	037.55°Ls	4.64"	29.3°	11.0°	+12°04'	
20 October 2013	235.31°W	23.75°N	038.00°Ls	4.66"	29.5°	11.3°	+11°52'	
21 October 2013	225.58°W	23.84°N	038.45°Ls	4.68"	29.6°	11.7°	+11°39'	
22 October 2013	215.85°W	23.93°N	038.90°Ls	4.69"	29.8°	12.1°	+11°27'	
23 October 2013	206.12°W	24.02°N	039.35°Ls	4.71"	29.9°	12.5°	+11°14'	
24 October 2013	196.39°W	24.10°N	039.80°Ls	4.73"	30.0°	12.8°	+11°02'	
25 October 2013	186.66°W	24.18°N	040.25°Ls	4.75"	30.2°	13.2°	+10°49'	
26 October 2013	176.93°W	24.25°N	040.70°Ls	4.76"	30.3°	13.5°	+10°37'	
27 October 2013	167.20°W	24.33°N	041.15°Ls	4.78"	30.4°	13.9°	+10°24'	
28 October 2013	157.47°W	24.40°N	041.60°Ls	4.80"	30.6°	14.3°	+10°12'	
29 October 2013	147.75°W	24.46°N	042.05°Ls	4.82"	30.7°	14.6°	+09°59'	
30 October 2013	138.02°W	24.53°N	042.49°Ls	4.84"	30.9°	15.0°	+09°47'	
31 October 2013	128.29°W	24.59°N	042.94°Ls	4.86"	31.0°	15.3°	+09°34'	
01 November 2013	118.57°W	24.65°N	043.39°Ls	4.88"	31.1°	15.7°	+09°22'	---

Obituary

Sadao MURAYAMA (1924~2013)

By

Reiichi KONNAI

IT is with profound sorrow that we announce the passing of Professor Sadao MURAYAMA after several years battling prostate cancer at 12:03 PM on 13 August 2013 at Jikei University School of Medicine Hospital in Tokyo at the age of 89.

He was born in Tokyo on 9 April 1924, the year of the great apparition of Mars, as a grandson of the renowned parasitologist Keinosuke MIYAIRI (1865~1946).

Sadao MURAYAMA (reads "sudd-ah-oh, moolah-yum-ah") studied chemistry at Tokyo Imperial University Department of Science. Before that in 1939 at the age of 15 during World War II he started his life-long work, visual observation of Mars, with a 7cm hand-made Newtonian altazimuth reflector. His drawings of the red planet are of most natural-looking and exactness, have been amazingly homogeneous throughout the years as well, making them still the first-class materials for the study of secular changes of Martian albedo markings.

He also pioneered the silver-salt photography of Mars in this country, first succeeded

in shooting the planet on 5 April 1952 with Kodak XX film by the use of the famous Nikon 20cm $F/18$ semi-apochromat refractor at the National Science Museum in



Tokyo, where the long curved Thoth-Nepenthes was still shown.

On 20 August 1956, the emergence of the Great Dust Storm in Noachis was just captured on MURAYAMA's Tri X photos with the same 20cm telescope.

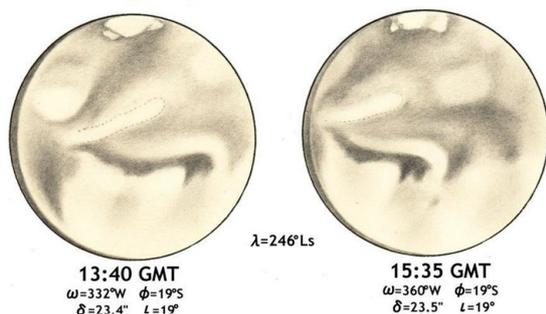
Some of his works, Martian drawings, photographs, and his portraits are reported in Masatsugu MINAMI's oral presentation "A History of the Mars Observations in Japan" in the 2009 Paris/Meudon IWCMO Conference.

http://www.kwasan.kyoto-u.ac.jp/~cmo/cmomn5/2009Paris_Meudon_Talks_Mn1.htm

Sadao MURAYAMA successively held the director of the National Museum of Nature and Science, Institute of Science and Chemistry, and the director of the Astronomical Museum GOTO Planetarium in Tokyo.

Professor Sadao MURAYAMA was also a great astronomy popularizer, appeared countless times on television, authored many guidebooks to astronomy.

Sadao MURAYAMA's drawings on 20 August 1956
Emergence of the Great Dust Storm in Noachis



The present writer certainly remembers that his office in the National Science Museum was always like a salon with thronging pupils, and on his desk our Professor was polishing his mirror (or sometimes

a component of objective lens) while radiating love for astronomy.

(*Note*) The photograph of Sadao MURAYAMA on the preceding page was taken on 18 May 1968 in Tokyo with Audouin DOLLFUS (*left*). □

Letters to the Editor

●.....*Subject: Re: Re: CMO 412 Note 15*
Received: 15 July 2013 at 16:33 JST

Well thanks Masami for the corrections. I must have ended the work too quickly...

Christophe PELLIER (Nantes, France)

◎.....*Facebook:*
Sent: 23 July 2013 at 07:21 JST

Masatsugu MINAMI on 23 July 2013 at 15:16 wrote as follows and uploaded Cassini's images on Facebook:

Dr Carolyn PORCO, Cassini Imaging Team Leader, NASA, kindly sent us some of Cassini's images where Saturn and the Earth with its Moon are shot on a frame taken on 19 July 2013 (IMAGES OF PLANET EARTH AND ITS MOON ... FROM A BILLION MILES AWAY)

◎.....*Facebook:*
Sent: 24 July 2013 at 01:31 via mobile

This is simply awesome! Thank you for sharing!

Uta WHITBY (Prince George, VA)

◎.....*Facebook:*
Sent: 25 July 2013 at 03:21 JST

Dear Uta, Thank you for your kind correspondence in Facebook. Though this is the first time I write to you, but I have been an acquaintance of Sam from the period when the email-system was not yet popular. I have just found his Mars letter received on February 22, 1995. I received a following letter from him on March 1, and further in the next letter on March 15, 1995 he wrote as follows: "We have had some quite warm and pleasant weather recently. Crocuses and daffodils are blooming in the yard, and I have begun the preparation of the family garden which is my other avocation, in

addition to observing planets" (in CMO #158, 25 March 1995 issue).

Recently Sam informed me that he and David had appeared in CMO #200 (25 February 1998). Yes, I have unearthed the following:

<http://www.kwasan.kyoto-u.ac.jp/~cmo/cmo/200/swh200.html>

Furthermore, Sam wrote on March 3, 1998 by email as follows: "I have seen part of CMO 200 on the Web. It is very satisfying to see our son and myself and my words on your page on the Internet. Tyler is waking up now, so he needs my attention. If there is time, I will try to get back to you." This proves thus that I have known the names David and Tyler from their childhood. I am happy now to see the grown-up brothers David and Tyler on Facebook. David looks like a film-star and Tyler like a philosopher. You and Sam have now grandchildren. I am glad to hear about your big family on FB. With best wishes, **Masatsugu MINAMI**

PS: Please tell them that I may be able to see Shogo Hamada on TV within a few days.

◎.....*Facebook*
Sent: 25 July 2013 at 10:22 via mobile

Dear Masatsugu, your comments about my family are very flattering! I am very proud of all of them. As I was reading your note, I was smiling, because we are just now listening and watching a music video by Shogo Hamada. He just sang, *Mou Hitotsu No Doyoubi*. I love that song! There is another video recording, named "I am a father." It is very sentimental. You can probably find it on YouTube. Sam always speaks fondly of you, and we are both honored to count you as mentor and friend. Very respectfully, **Uta WHITBY** (Prince George, VA)

(*Note*) Shogo HAMADA appeared at last on NHK BS Premium TV on 28 July 2013 after these 12 years, and sang and talked for 90 minutes.

●.....*Subject: Mars 2013/07/27*
Received: 30 July 2013 at 00:04 JST

Hello, here is a quite successful result on the tiny Mars with my daylight observation methodology that I will present at the EPSC. Amazonis-Tharsis look bright, the dark Mare Sirenum is visible on the top. Mare Erythraeum is setting. That was made at 11:37 local time with the Sun high in the Sky and average seeing.

<http://kardasis.weebly.com/mars-2013-14.html>

Manos KARDASIS (Glyfada-Athens, GREECE)

●.....*Subject: Congrat. Curiosity: One Year on Mars*
Received: 5 August 2013 at 01:01 JST

Dear , It has been a year on Mars with Curiosity, and what a year!

Hope you were with us in person or on line for the Curiosity rover landing last summer. So far...we rolled right into a riverbed, we zapped Martian rocks with our own laser ray gun, and discovered the chemistry for life. Who knows what we'll find in the coming months?

We can be sure that whatever we discover next will be astonishing. That is so long as we keep exploring. It's up to you and me to keep space explo-

ration alive. It's through your participation, your passion, and your support that we have been able keep the discoveries coming.

So, thank you especially for being part of our community of space fans. We are explorers looking up and out beyond the horizon, seeking a deeper understanding of our place in space.

Together we can keep missions of discovery, like Curiosity, unveiling the wonders of science and the excitement and adventure of space. Onward,

Bill NYE, CEO, The Planetary Society

<http://support.planetary.org/site/R?i=nRfGWy-TnBRPBMzkIHMVag>

●.....*Subject: Mars - August 11, 2013*
Received: 12 August 2013 at 06:56 JST

Gentlemen, This is my first Mars post of the season. Regards,

Peter GORCZYNSKI (Oxford, Connecticut)

(Note) The image will soon appear (together with MKd's image) on the forthcoming CMO/ISMO 2013/2014 Mars Gallery. We also received a Mars image from Tomio AKUTSU produced on 6 August. Tentatively PGc's image is already on Facebook Masatsugu Minami's corner. (Ed)

☆☆☆

TEN YEARS AGO (220)

---- **CMO #276 (10 August 2003),**
and CMO#277 (25 August 2003) ----

<http://www.kwasan.kyoto-u.ac.jp/~cmo/cmomn3/cmo276/index.htm>

<http://www.kwasan.kyoto-u.ac.jp/~cmo/cmomn3/cmo277/index.htm>

Similarly to the case in July 2003, the case in August 2003 was also treated twice fortnightly in CMO #276 (10 August 2003) and in CMO # 277 (25 August 2003).

In CMO #276 (10 August 2003), the 2003 Great Mars CMO Report was numbered (11), and reviewed were the observations produced during the period from 16 July 2003 until 31 July 2003. During the period the planet was moving usually in Aqr, and the apparent declination was about 13°S when the altitude at the meridian was maximal in mid-July. The Martian season moved from $\lambda=222^\circ\text{Ls}$ to 232°Ls during the fortnight period, and the apparent diameter δ augmented from 19.2" to 22.2"; just before the opposition time. The tilt φ was 21°S down to 20°S, and the phase angle ι decreased from 32° down to 24°. The disk became more roundish. Our observation time was from midnight to dawn.

The 50 numbers of observers joined with 403 observations: From Japan, 7 observers reported 179 observations, from the North America we heard from 18 observers with 89 observations, from Europe 19 observers contributed 111 observations, and from Oceania-Asia 6 observers sent to us 24 observations. Among them, M MINAMI (*Mn*) obtained 107 observations at Okinawa, and similarly many observations were sent to us from T ASADA (*As*), T KUMAMORI (*Km*), Don PARKER (*DPk*), Silvia KOWOLLIK (*SKw*), Ch PELLIER (*CPl*) and so on. New members were also recorded, and 23 numbers of observers used the ToUcam as the ccd camera: Still there were some troubles as to the procedure and processing, but the fact proved that from around this apparition the ccd images of Mars were turned to be taken easily.

Reviews were given for significant items according to the days: The dusty Argyre, the morning aspect of Hellas, the dusty cloud at Chryse-Eos on 29 July ($\lambda=231^\circ\text{Ls}$) and the following days (in August). Otherwise it was also picked out a light dust at Isidis planitia on 25 July ($\lambda=228^\circ\text{Ls}$) which was similar to the one observed in June. A detailed description of the spc and its surroundings: The extension of Parva Depressio, the bright spots of Thyles Mons and Thyles Collis, the deviation of the centre of the spc from the pole, Novus Mons, Argenteus Mons, and the cascades (eruptions) from the edge of the spc and so on are treated. The bright rim of the spc was regarded as a ring of the water ice after the gradual sublimation of CO₂ inside towards the perimeter. There was cited a figure gained by the IRTM on the occasion of the Viking. See the details on the site:

<http://www.kwasan.kyoto-u.ac.jp/~cmo/cmomn3/276OAA/index.htm>

A detailed description of the areas of Solis L was then given, where a flickering of Claritas which MINAMI (*Mn*) experienced on 29 July was also stated. Otherwise there follow some reports on Trinacria, Olympus Mons (its back shadow), Arsia Mons (white cloud) and VALIMBERTI (*MVl*) identification of the Terby crater.

It was also reported the grazing of Mars on 17 July (the age of the Moon =17) which was seen from the Caribbean Sea to the Florida Peninsula: The observations successfully done at Florida by Don PARKER (*DPk*) and Jeff BEISH (*JBs*) as well as by Andrew CHAIKIN (*ACK*) et al. Also finally made was a prediction of the possible Martian flares at the beginning of August.

At the final corner, a photographic view was given from the rooftop of the building where *Mn*'s observation site was set. The sky from Okinawa was fine, while the skies in the Japanese main land seemed to remain dismal.

Great 2003 Mars Coming (12) was given by Akinori NISHITA (*Ns*) showed "Ephemeris for the Observation of the 2003 Mars. IV" from 1 Sept to 31 Oct 2003.

<http://www.kwasan.kyoto-u.ac.jp/~cmo/cmohk/coming2003/12.html>

We received LtE as follows during the period from 25 July to 9 August: (46 persons from abroad and 11 domestically): Barry ADCOCK (Australia), Paolo BALDONI (Italy), John BARNETT (VA, the USA), Don BATES (TX, the USA), Jeffrey BEISH (FL, the USA), Stefan BUDA (Australia), Bob BUNGE (MD, the USA), Andrew CHAIKIN (MA,

the USA), Brian COLVILLE (Canada), Jamie COOPER (the UK), Daniel CRUSSAIRE (France), Tom DOBBINS (OH, the USA), Mario FRASSATI (Italy), Camilo FUMEGA (Spain), Bernd GAEHRKEN (Germany), Ed GRAFTON (TX, the USA), Alan HEATH (the UK), Carlos HERNANDEZ (FL, the USA), Zlatko KOVACEVIC (Croatia), Silvia KOWOLLIK (Germany), Paolo LAZZAROTTI (Italy), Joachim LORENZ (Germany), Richard McKIM (the UK), Frank MELILLO (NY, the USA), David MOORE (AZ, the USA), André NIKOLAI (Germany), Ben PACE (Australia), Don PARKER (FL, the USA), Tim PARKER (JPL/CIT, CA, the USA), Damian PEACH (the UK), Christophe PELLIER (France), Eric ROEL (Mexico), Jesús SANCHEZ (Spain), Stefan SEIP (Germany), Bill SHEEHAN (MN, the USA), Clay SHERROD (AR, the USA), Robert SCHULZ (Austria), Elisabeth SIEGEL (Denmark), Jose SURO (FL, the USA), Maurice VALIMBERTI (Australia), Erwin Van Der VELDEN† (Australia), Step WALLER (TX, the USA), Sam WHITBY (VA, the USA), Marcus WIENECKE (Germany), Tom WILLIAMSON (NM, the USA), Ferruccio ZANOTTI (Italy), and domestically Tomio AKUTSU (Tochigi), Tadashi ASADA (Fukuoka), Toshiaki HIKI (Nagano), Hiroshi ISHADOH (Okinawa), Tsutomu ISHIBASHI (Kanagawa) Tohru IWASAKI (KitaKyushu), Teruaki KUMAMORI (Osaka), Yukio MORITA (Hiroshima), Kunihiko OKANO (Tokyo), Kanehiro OSA (Ishikawa), and Tetsuo WAKUGAWA (Okinawa).

Next in the following CMO #277 (25 August 2003), the 12th 2003 Great Mars CMO Report dealt with the observations made during the period from 1 August 2003 till 15 August 2003. The planet was stationary at Aqr on 30 July and then moved reverse-ly. The great opposition was quite near at hand, and so the apparent diameter δ was $\delta=22.4''$ on 1 August, while went up to $\delta=24.4''$ on 15 August. The Martian season λ proceeded from $\lambda=232^\circ\text{Ls}$ to 242°Ls , and this was the very season when the deviation of the centre of the spc was more apparent as well as the clear detachment of Novus Mons was quite revealed. The tilt φ was 20°S or 19°S , and the phase angle ι decreased from 23° down to 13° and the disk looked nearly roundish.

A total of the observers augmented to 70 with 532 observations during the fortnight period: Domestically 15 members joined with 258 observations, in North America 19 observers with 82 observations, in Europe 30 observers with 170 observations, and from Asia and Oceania 6 observers sent us 22 observations. Some days in this period, some US and Asian observers went to OH, the USA, invited by Tom DOBBINS (*TDb*) to attend an ALPO meeting and were unable to continue to observe. At the Japanese main island, the rainy season ended at the beginning of August, but the observation rate remained lower. In Okinawa, the observations were obstructed by the passing of Typhoon 10. During the fortnight period M MINAMI (*Mn*) took 86 drawings every 40 minutes, otherwise followed Silvia KOWOLLIK (*SKw*) with 59 ccd observations (we count any RGB and IR simultaneous set as one observation if separated by 40 minutes or more), Hitomi TSUNEMACHI (*Ts*) with 34 drawings, Clay SHERROD (*CSr*) with 23 ccd observations, Tohru IWASAKI (*Iw*) with 22 drawings, Tomio AKUTSU (*Ak*) with 21 ccd observations, Teruaki KUMAMORI (*Km*) with 19 ccd observations, Masami MURAKAMI (*Mk*) with 19 drawings, Christophe PELLIER (*CPl*) with 14 ccd observations,

Tadashi ASADA (*As*) with 14 ccd observations, and so on. *Ts* and *Iw* partly observed with *Mn* at Okinawa. Unfortunately the observations of H ISHADOH (*Id*) and T WAKUGAWA (*Wk*) were not counted here because they often talked with *Mn* directly but did not write reports.

At the beginning, there was a description how the Martian surface looked dirty yellowish because of the foregoing dust occurrences. Some observations by H ISHADOH (*Id*), by Elisabeth SIEGEL (*ESg*), by the late Harold HILL (*HHL*), and by T ISHIBASHI (*Is*) were cited. *ESg* regarded the dirty colour as "like old butter." *Is* alluded to the different reports of Reiichi KONNAI in 1971. The dust at Capri Cornu was described then. The dust must have been related with the previous dust streak which appeared on 29 July ($\lambda=231^\circ\text{Ls}$) at Achillis Pons. On 2 Aug ($\lambda=233^\circ\text{Ls}$), the dust at Capri Cornu appeared to be very conspicuous, and it was well chased in the US and Asia. The activity became gradually quiet and its aspect was chased from Japan until 13 Aug. Observations were mainly due to Ed GRAFTON (*EGf*), Don BATES (*DBt*), T E WILLIAMSON (*TWs*), Clay SHERROD (*CSH*), Maurice VALIMBERTI (*MVL*), Tomio AKUTSU (*AK*), Yukio MORITA (*Mo*), Teruaki KUMAMORI (*Km*), *Mn*, Tohru IWASAKI (*Iw*), T ASADA (*As*) et al.

Next, the spc and its vicinity were detailed about Novus Mons from around $\lambda=233^\circ\text{Ls}$. At the vicinity there were several detached bright spots surrounding the npc associated with Argenteus Mons and Thytes Mons. The part of the spc which was to rapidly thaw looked less bright and thus the deviation of the centre of the spc occurred. This half shadowy aspect was watched by several observer, and especially *ESg*'s report on 7 Aug was interesting. S KOWOLLIK (*SKw*) also chased the shadowy half area. During this period Ch PELLIER (*CPI*) made several important observations. The cascades from around Parva Depressio is another interesting phenomenon. Otherwise, the region which looked wine-coloured was pointed out. Hellas and its surrounding were also picked out, and Trinacria was compared with its aspect in 1988, and some detailed aspects of M Cimmerium and the Aetheria dark patch were given because they became easily caught because the apparent diameter increased. It is advisable to read again the corresponding report in

<http://www.kwasan.kyoto-u.ac.jp/~cmo/cmomn3/277OAA/index.htm>

(Unfortunately, this should not be perusal at once by the use of Windows 8. Please use an earlier version of IE.)

Since we were aware in advance that the case $De=Ds=20.1^\circ\text{S}$ could happen at the beginning of August, we prepared to carefully watch the area of Solis L to find another glint phenomenon. However a possible collaboration with the staff of the NAO ended in failure. So in Tokyo, MURAKAMI (*Mk*) organised a team at the Observatory of his Alma Mater, and in Okinawa, ISHADOH (*Id*) organised a team including *Mn* and *Iw*, both, visually and by the use of Video record from 30 July to 3 August. However we all were unsuccessful. ISHIBASHI (*Is*) at Sagamihara also personally made Video observation until 4 Aug, but in vain. Later on 15 Aug, we heard from Tatsujiro MATSUMOTO (*TMt*) that he detected a white spot near the Huygens crater to the SE of Syrtis Mj.

NISHITA's Great 2003 Mars Coming (13) was "Grid Disks with Relative Sizes and Phases in 2003. III" in which those maps from 1 Aug till 1 November:

<http://www.kwasan.kyoto-u.ac.jp/~cmo/cmohk/coming2003/13.html>

A total of 56 members sent to us the LtE during the period from 10 Aug to 24 Aug as follows: John BARNETT, Don BATES, Nicolas BIVER (France), Jeff BEISH, Raphael BENAVIDES (Spain), Angel CAPARRÓS (Spain), Rolando CHAVEZ (GA, the USA), Brian COLVILLE, Daniel CRUSSAIRE (France), Mario FRASSATI (Italy), Ed GRAFTON, George HALL (TX, the USA), Harold HILL (the UK), Michael KARRER (Austria), Silvia KOWOLLIK, Paolo LAZZAROTTI, Canon LAU (劉佳能, Hong Kong), Patrick LAU (劉啓業, Hong Kong), Frank MELILLO, Jim MELKA (MO, the USA), David MOORE, Eric NG (吳偉堅, Hon Kong), Don PARKER, Christophe PELLIER, Gianni QUARRA (Italy), Jesús SANCHEZ, Clay SHERROD, Jürgen STÖGER (Austria). Jose SURO, TAN Wei-Leong (陳韋龍, Singapore), Randy TATUM (VA, the USA), Dan TROIANI (IL, the USA), Maurice VALIMBERTI, John WARELL (LPL, AZ, the USA), Sam WHITBY, Tom WILLIAMSON and Ferruccio ZANOTTI; and domestically from T AKUTSU, T ASADA, H ISHADOH, T ISHIBASHI, T IWASAKI, T KUMAMORI, I MIYAZAKI, Y MORITA, K OKANO and T WAKUGAWA.

TYA #96 was concerned with CMO#136 (25 August 1993) which was published 20 years ago, and written by Toshiaki HIKI (Nagano). Since the period in 1993 was a season-off, the LtE came to the first page. The OAA Mars Section corner picked out domestic 20 numbers of observers in 1993, and showed statistics of rate of observations and a variety of the instruments. MINAMI wrote a XXXVIIth essay about an intimatness of the Japanese classical myth and that those in Arcadia. For example, some episodes concerned with *Demeter* in Arcadia are positively found in an old Myth of Goddess *Amaterasu* in Japan. MURAKAMI is of the opinion that it is amusing as well as instructive to be acquainted with the Greek mythology for Mars observers because of the nomenclatures on Mars.

M MURAKAMI (Mk) and M MINAMI (Mn)

International Society of the Mars Observers (ISMO)

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

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

CMO #413/ ISMO #39 (25 August 2013)

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



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