

## MARS

No. **301**  
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## OBSERVATIONS

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Tail of Comet Machholz by T AKUTSU on 10 Jan 2005

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Letters to the Editor

●.....Dear Masatsugu, Another year has passed, as you know, it hasn't been the greatest year as far as my health is concerned. Since late April another problem has turned up: Something horrible has happened to my back, so that every single day is a living hell of violent pains. It is *nothing* "serious" --"just" muscle tension, according to my doctor, and i'm sure he 's right 0 but so far nothing has worked to relieve the pain. Apart from that, however, we have enjoyed over new vacation home tremendously since we took possession of it on July 1st.

I think of you often and wonder if your heart problems are better now.

One question: does the paper version of the CMO not exist any more? I miss it sorely; although i read the Internet version, it is not the same.

- All the best wishes for you and your family, and a happy 2005 - in good health.

Yours sincerely (16 December 2004)

○.....Date: Mon, 10 Jan 2005 08:57:39 +0100  
Subject: RE: Happy New Year!

Dear Masatsugu, Thank you very much for your e-mail. I had also worried a bit because I hadn't heard from you as usual at this time of the year, so I was doubly pleased when I received it.

And - congratulations (even though slightly delayed) on your recent birthday. May you have many more!

I don't think the *tsunami* was the reason for my card reaching you so late. Just the other day, I received a Christmas greeting card from a cousin of mine, who lives in France, and it was written and sent before Christmas. So I suppose the holiday season has just been chaotic in the European postal system.

No, fortunately my family wouldn't dream of spending Christmas in Thailand (or anywhere else away from home, for that matter). What a horrible disaster. - It is true that a lot of Swedes are missing, but actually, there has also been quite a few Danish casualties (Thailand has become a VERY popular vacation destination for Danes in recent years) - seven Danish people are confirmed dead, but another 57 are still missing, and as quite a bit of time has now passed since the disaster, they have almost certainly lost their lives also, which brings the count up to 64. Fortunately I don't know any of them.

I am sorry to hear that your health problems haven't really become much better. I suppose we middle-aged or older guys and girls just have to be grateful for every good day we have, but it certainly isn't always easy when one's body isn't what it used to be any more.

Yes, thank you very much, I received the CMO #300 a few days ago. I have kept track of the other issues on the Web, of course. You and your colleagues are doing such a tremendous amount of great work.

I will leave for now, but thanks again for your mail, it was so good to hear from you.

Please receive all my best wishes once more for the New Year -

**Elisabeth SIEGEL** (エリサベト・シーゲル Malling 丹麥)  
esiegel@ofir.dk

●.....Date: Thu, 23 Dec 2004 13:55:02 -0600

Subject: Re: RE:Re: RE:Re:RE:A first analysis of the

Dear Christophe, That's wonderful news! This likely means the great Flammarion book can reappear, in English translation, at last. I'll peruse the documents and see which ones we would most likely need. The line drawings are quite acceptable as taken from the printed book but it's the half-tones that are really bad.

Meanwhile, I'll pop the (probably now outdated) Mars global warming paper in the mail next few days.

Next weekend I'll be at Lowell Observatory -- we're planning an observing campaign using both the Lick and Lowell refractors this late fall 2005. Masatsugu is coming over for it. All the best, yours,

○.....Date: Fri, 24 Dec 2004 11:50:18 -0600

Subject: Re: Seasons Greetings

Dear Masatsugu, It is very good to hear from you.

Christmas is mostly a lot of hassle -- especially since I can no longer believe, after the election, that the fundamentalist Christians are simply a nuisance to be tolerated.

.....  
I came down with viral pneumonia two weeks ago -- it was the worst cough I have had in my memory; continuous day and night for several days, and the after-effects still linger. I had to cancel my clinic for a week.

But I am gradually recovering and will be leaving with the family tomorrow for Arizona -- the Grand Canyon and Lowell Observatory. At the latter I am hoping to secure our plans for the fall 2005 opposition. My hope is that, even if we do all our observing at Mt. Hamilton, we can coordinate observations with those at Lowell and do an interesting comparison between the two sites reminiscent of the great Barnard/Lowell campaign of 1894 (which as you know we will closely repeat this year).

I am looking forward very much to your visit. We will spend two or three weeks observing Mars steadily at Mt. Hamilton.

Christophe Pellier is a very good person. He has been

in touch with authorities on Flammarion and they have discovered that the drawings that Flammarion used for his great Mars book have survived -- thus it seems that we will be able to include good-quality reproductions of them in the English translation of *\*La Planète Mars\**, vol 1 (translated by Patrick, now Sir Patrick, Moore) which I am hoping may be published this year in association with the great opposition. It was this book, which Percival Lowell received from a relation in December 1893, that stimulated his great passion for Mars -- within a month he had arranged a meeting in Boston with W H Pickering, and was planning the establishment of his observatory for the October 1894 Mars opposition. I am hoping to include a brief introduction describing Flammarion -- this book -- and its importance on P Lowell.

I have also had some discussions with an editor at the University of Arizona Press about reissuing *\*The Planet Mars\** in a new, completely revised edition, as well as *\*Worlds in the Sky\** (they were published eight and twelve years ago, respectively, and so are hopelessly out of date). In the Mars book, I intend to include a section on Lowell's earlier career -- especially about our Noto visit -- and will greatly expand the information on Japanese Mars observers as we always thought we should do.

I will be eager to get your wise counsel on these aspects of the project. Of course, we also now have all the interesting material on the Rovers -- including the "blueberries" -- the evidence that liquid water transformed these areas of the surface and now the recent information about Mars having been geologically active in the not so distant past and methane being present in the atmosphere. Mars may well have been -- or still be -- the abode of life. It is a very different scenario than the one I would have entertained only a year ago.

Regarding the global warming paper, I no longer have much faith in it -- .....and since I wrote that draft in the aftermath of the great 2001 dust storm, I think we have seen overwhelming evidence of greenhouse warming -- climate change -- and its relation to human activity. But perhaps Christophe will be able to make something useful of it.

Pardon my having been relatively incommunicado for awhile -- I have been swamped with professional work,

which has taxed me given my recent illness (and in fact I have had one thing or another since I returned from the Venus transit expeditions), but I trust my health will improve soon and I am also putting back on my "Mars thinking cap" for the 2005 opposition.

Still hoping we may have a great Lowell Mars conference again in 2008 -- perhaps we can have meetings both in the U.S. and in Japan to mark the occasion.

With my best regards to your wife, to Nakajima, to Asada, and to all my many dear Japanese friends. My visit to your country has changed me forever, and made me a Japanophile.

○ . . . . . *Date: Wed, 19 Jan 2005 18:33:10 -0600*  
*Subject: mars plans*

Dear Minami-san, Thank you for forwarding the message to Laurie Hatch. All the Mars observers are starting to come out of the woodwork in anticipation of the Great Opposition of 2005 -- I just heard from Michael Snowden, an American ex-patriate now living in New Zealand who made an extensive series of UV photographs of Mars from Argentina in 2003 and is planning to do similar work from Mauna Kea, from Christophe, and from Luigi Prestinzenza, a Sicilian science journalist and Mars fanatic like ourselves who has just published a book on Mars in lore and reality.

Meanwhile, I have started in earnest to make arrangements for our Mars observing at Lick and possibly at Lowell -- I am hoping that in regard to the latter, I can at least organize a common web page. I note that Barnard in 1894 had some of his best views of Mars in early September -- it was of those views he wrote to Simon Newcomb -- though opposition was October 13; so I am thinking that we might attack Mars with the Great Refractor earlier rather than later (I am checking with the folks on Mt. Hamilton but I believe the weather in September is better than later). Perhaps mid-September to first of October or so. What do you think? We might be best with Mars somewhat gibbous in trying for relief features.

Once we lock in dates for the telescope, we can start planning your air flights and ground transport -- I will plan to pick you up either in San Francisco or San Jose. We will be staying at the observatory. We may be

able to make some side visits -- probably I shall rent a car for us.

I am cc'ing the correspondence I have had with Laurie Hatch, Rem Stone, Tony Misch and Don Osterbrock about use of the telescope.

I hope you are well -- I was just thinking today of our beautiful travels in Japan, of the peace and serenity of the garden at *Ryoan* -- Rem spent a year in Japan in the service, and studied *Zen* archery, and Laurie is also a Japanophile; and I continue often to return to Basho. I am just now working on a project that has compelled me to read Lowell's *\*Occult Japan\**. I am hoping to revise my Mars book as well and to include much on our adventures in retracing Lowell's *Noto* path as well as to include information about the miraculous Saheki and other Japanese observers of our planet.

I shall write soon but I am starting to look forward in earnest to our Mars Expedition 2005.

With warmest regards, ever,

**Bill SHEEHAN** (ウイリアム・シーハン MN 美)  
 sheehan41@charter.net

● . . . . . *Date: Fri, 24 Dec 2004 11:14:27 +0100*  
*Subject: Seasons greetings*

Dear friends, We wish you all a *Very Merry Christmas and a Wonderful New Year!* Warm greetings from

**Christina & Johan WARELL** (ヨハン・ウァレツル LPL 美)  
 johan.warell@home.se

● . . . . . *Date: Sun, 26 Dec 2004 00:25:41 EST*  
*Subject: Mercury - December 25, 2004*

Dear all - I was blessed this morning with a crystal blue sky! I decided to image Mercury and the seeing was above average with no winds. Mercury was located 2 degrees northeast of Venus. I found both of them right away near the local meridian at 30 degrees above the horizon. If you're interested, see at:

<http://hometown.aol.com/frankj12/mercuryindex.html>

Please, note that south is at top and east is at right. All images show a slight marking on the north side. At CM - 280 degrees longitude, Solitudo Amphrodites may be visible along the terminator as a dark area.

I saw it visually and Mercury was a beautiful sight at high power. With a Wr. #21 orange filter, I think I saw

something on the north side just briefly. But, with the CCD images, this verifies what I saw.

The images match very well with the June/July 2001 and 2002 morning apparitions. I will compare them with side by side. More later...

○.....**Date: Wed, 29 Dec 2004 02:32:02 EST**  
**Subject: Mercury - December 28, 2004**

Dear all planetary observers -This morning about 6:45 am, it was such a beautiful sight of Mercury and Venus together low in the SE sky. (Mars was also faintly visible at the upper right.)

But, I waited until they reached near the meridian at 10 am in daylight. Mercury was located about a little over a degree north of Venus. I found Mercury in no time when I got Venus in the telescopic field.

Visually, Mercury at high power looked like Venus in low power. The seeing was nearly excellent and it looked like a half moon. Then, I took some CCD images I was done just on time when the high clouds rolled in!

At CM - 297 degrees, the dark marking Solitudo Aphrodites on Christmas Day was captured again, but much clearer, in the north near the terminator, Mercury had rotated very little in three days. Also, the bright spot near the SE limb could be the basin, according to Dr. Ann Sprague of LPL. Or, perhaps the new crater with ejecta ray system that was discovered by the radar telescope. It seems to be on the right spot. Or perhaps, a simply contrast effect. She said more observations are needed to confirm this. These are some fine images!

Dr. Ann Sprague is very interesting of these images and the resolution is good enough to see the broad features. Also, this is unmapped portion of the Mariner 10 spacecraft.

○.....**Date: Mon, 3 Jan 2005 02:07:23 EST**  
**Subject: More Mercury work...**

Dear all planetary observers - ..... See at:

<http://hometown.aol.com/frankj12/mercuryindexpage1.html>

The dark area Skinakas Basin (new name) in the north might be the same feature that was seen by Dr. Leonid Ksanfomality using the RC 1.29 meter telescope in Greece. My images agree very well with his. ....

The position of this feature matches very well. Also, the feature has another name as Solitudo Aphrodites which is no longer used by professionals. The Skinakas

Basin is like the same feature as Mare Imbrium on the moon with a possible double rim that stretches 25 degrees longitude or perhaps more. Secondly, it is possible that the bright area might be the new crater 'radar' ejecta rays that was discovered by the Arecibo radio astronomers. Again, it matches very well toward the SE limb. Also, another possible Kuiper crater ejecta rays may be seen on Jan. 1st image near the limb.

I have received drawings from Tim Wilson and Mario Frassati and we all agree one another.

..... This longitude phase will repeat again during the favorable morning apparition next December 2005.

Otherwise, we just might have to wait for the MESSENGER spacecraft gets there to verify what we saw at this location!

○.....**Date: Tue, 11 Jan 2005 02:21:02 EST**  
**Subject: Comet Machholz: Jan. 10th**

Dear all, I have posted a few images of Comet Machholz of Monday night January 10th. OK, these are not the greatest pictures you ever seen. But, please consider that I live in a moderately light-polluted sky in New York City suburbs. See:

<http://hometown.aol.com/frankj12/cometspage1.html>

..... Another note. I stood out at least 15 minutes until my eyes were well adapted to the darkness. Then, I took a deep breath and the comet was visible faintly in and out with the naked eye as a 4th magnitude fuzz ball!

**Frank J MELILLO** (フランク・メリッロ NY 美)  
FrankJ12@aol.com  
ALPO Mercury coordinator

●.....**謹賀新年** : 穴水ローエル会議、ありがとうございました。感激しました。2008年にローエル天文台とは素晴らしい。2005年ソウル開催は手間取っています。恐らく東京です。ローエル東京史跡巡りを混ぜれ藤田良雄先生を訪問しませんか。  
(1 Jan 2005)

**横尾 廣光** (Hiromitsu YOKOO 狛江 Tokyo)

●.....**Sent: Sunday, January 02, 2005 1:03 AM**  
**Subject: Re: A Happy New Year!/CMO**

Dear Masatsugu, *A Happy New Year to you, too.* I have been busy with Mars work. A long report on the

1995 apparition is awaiting space in the BAAJ; it contains a detailed discussion of the odd annular rift in the NPC that year. Another for 1997 is very nearly completed. Historical biographies of E.A.L. Atkins and N.E. Green have been written and published in the last two years and a major paper about Henry McEwen will appear in the *JBAA* in 2005. I am also looking after the Mercury & Venus Section at present.

My little daughter Michelle (age 20 months) absorbs the remainder of my time!

With regards

○ . . . . . **Date: Wed, 19 Jan 2005 16:21:33 EST**  
**Subject: Request for 1997 MARS drawing**

Dear Masatsugu: The 1995 BAA Mars Report will be published later in the year in the Journal. It will contain a number of your drawings. A report for 1997 has just been completed - finally! - and submitted for publication. In 1997 you did not send me any of your original work, although I have referred in my forthcoming account to your many reports in the CMO. In your Fukui City Museum Bulletin for 1997 (No. 46) there appears a drawing by yourself which I would particularly like to reproduce. It is your Figure 11, 1997 March 27th at 15.30 GMT, CM 115 deg. Is it possible for you to send me a good quality scan of the drawing?

I am now working upon the 1999 report. Again I do not have any original material by yourself but will be happy to use a selection of drawings in print if you would like to send any, either as paper copies or by email. *All the best for 2005,*

○ . . . . . **Date: Fri, 21 Jan 2005 15:51:17 EST**  
**Subject: Re: Request for 1997 MARS drawing**

Dear Masatsugu: Thanks for the rapid response. I did not know that you had retired. I suppose you will be able to make even more observations now!

Thanks also for the scan of the 1997 drawing which will suit my purposes very well. In the 1997 March 30 HST polar map Olympia and Ierne are shown well. The map is less informative about any outlier near long. 340-350 deg. such as the one reported by several ground-based observers such as yourself during February to April. This is odd, because the sightings are both earlier and later than Hubble's map. I have not seen your drawings of April 1 and 10 in print anywhere, but as the

outlier is reported in the classic location given by Dollfus and Antoniadi I cannot imagine that the reported observations are due to recurrent clouds.

Here is my text so far: "Ierne, a smaller outlier (located at  $\Omega = 104-152^\circ$  in Figure 12) was imaged by Parker (March 7, 11; Figure 1J) and drawn by Minami (March 20-27 and April 25). Earlier it had appeared as a small cap projection (Biver, January 30). Another classical outlier was reported in northern Ortygia. . . . ."

I will be glad to have any of your 1999 (or later) drawings. Regards

**Richard McKIM** (理查·麥肯 Peterborough 英)  
 RMckim5374@aol.com  
 Director, BAA Mars Section

● . . . . . **Date: Sat, 1 Jan 2005 09:39:04 -0800 (PST)**  
**Subject: "First Saturn" with new Nexstar 9.25 GPS**

All: Well, I just had to send this around. I recently purchased a Nexstar 9.25 GPS SCT for planetary imaging, and last night I took my first experimental images of Saturn with it (attached). Sorry I don't have the exact time taken (around Midnight, fireworks and noise everywhere!), but I didn't have a working version of k3ccdtools, so I used the camera capture software (that didn't record the time). I haven't tweaked the collimation of the scope, and it looks from the processed result like it needs attention, but I'm very impressed with these first results! Thanks to Damian Peach for the favorable recommendation of the 9.25 optics.

The reason for purchasing a "store-bought" scope is so that I can mount it in a confined space in the roof of our historic home here in Los Angeles. I needed something that I could operate remotely, and the space limits further called for a fork-mounted scope. I hope to add a motorized focuser in the near future.

For now, while I prepare the space to mount the scope, I just hastily set it up on the wedge and tripod in my back yard.

Seeing was rather good, considering we just had over 7 inches of rain this week. Dew was rather heavy, and I had to blow dry the corrector every half hour or so.

*Happy New Year to all!*

**Tim PARKER** (テイモシー・パーカー NASA 美)  
 tjp314@pacbell.net

●.....*Date: Sat, 01 Jan 2005 23:41:33 +0000*  
*Received: 02 January 2005 08:43 +9000*  
*Subject: Happy Birthday*

Hi Masatsugu, *Happy New Year and Happy Birthday!*  
 I hope you have a great year -- and especially get some more excellent Mars observations. It is hard to believe that Mars is here again. Time flies -- proof that at our age the Earth must be moving faster around the Sun!!

Have a fine year and thanks for your friendship and support. Best,

**Don PARKER** (唐那・派克 Miami, FL 美)  
 park3232@bellsouth.net

●.....*Subject: Re: A Happy New Year!/CMO*  
*Date: Sat, 1 Jan 2005 18:00:33 -0500*

Dear Masami, I have a new email address :

**jmbart2@verizon.net**

It is a "DSL" type, which is an improvement over my old dial-up type.

*Happy New Year to all at CMO!* -

**John BARNETT** (ジョン・バーネット VA 美)  
 jmbart2@verizon.net

●.....*Subject: Re: A Happy New Year!/CMO*  
*Date: Sat, 1 Jan 2005 18:59:04 -0500*

Very nice CMO #300. Mars is back. I am sending my 16" mirror for a new coat and will use the 12.5" if I get the energy to observe Mars. Getting older and losing eyesight makes observing Mars less desirable. Keep up the great work.

**Jeff BEISH** (ジェフリイ・ビッシュ FL 美)  
 dustymars@tnni.net

●.....*Date: Mon, 3 Jan 2005 02:11:21 -0500*  
*Subject: Comet Machholz*

I was able to make an observation of Comet Machholz (C/2004 Q2) through breaks in the clouds on January 3, 2005 at 04:50 U.T. using 7×50 binoculars. The comet appeared brighter than I last observed it. I estimate it's magnitude to be close to fourth magnitude (in comparison to Lambda Tauri (3.40) and 30 Tauri (5.06)). The nucleus remains star-like and the coma very extensive. I welcome any comments on my observation. The best of luck in your own observations of the comet. Regards,

○.....*Date: Thu, 6 Jan 2005 02:39:10 -0500*  
*Subject: Machholz and M45*

We were all treated to a spectacular view of Comet Machholz and M45 tonight. The pair produced a breathtaking view through a pair of binoculars. I made an observation of the pair on January 6, 2005 at 05:30 UT using my 7×50 binoculars at the time. They were separated by approximately 4.5 degrees at the time of my observation.

I hope that everyone else got a look at this pairing.

○.....*Date: Wed, 12 Jan 2005 15:11:43 -0500*  
*Subject: Jupiter Observation (January 12, 2005)*

I made an observation of Jupiter on January 12, 2005 at 07:15 U.T. under average seeing conditions (4-5/10). Some detail was noted over the jovian disk when the seeing steadied for a few moments at a time. The NEB and SEB exhibited detail that was more complex than recorded due to the seeing. I welcome any comments on my observation.

Date (U.T.): January 12, 2005

Time (U.T.): 07:15

L1 267.0, L2 261.0, L3 271.5

Instrument: 9-inch F/13.5 Maksutov-Cassegrain

Magnification: 172x and 248x

Filters: None (IL)

Seeing (0-10): 4-5, Antoniadi (I-V): III

Transparency (1-6): 4

○.....*Date: Fri, 21 Jan 2005 14:09:19 -0500*  
*From: Subject: Jupiter Observation (January 21, 2005)*

I made an observation of Jupiter on January 21, 2005 at 06:40 U.T. under average seeing conditions (5/10). The Great Red Spot (GRS) was visible on the preceding limb. The South Equatorial Belt (SEB) was very active following the GRS. Prominent blue festoons were visible along the southern border of the North Equatorial Belt (NEB-S). Io, Europa, and Ganymede were visible following the planet, from preceding to following. I welcome any comments on my observation.

Date (U.T.): January 21, 2005

Time (U.T.): 06:40

L1 228.0, L2 153.5, L3 166.3

Instrument: 23-cm F/13.5 Maksutov-Cassegrain

Magnification: 248×

Filters: IL

Seeing (0-10): 5, Antoniadi (I-V): III

Transparency (1-6): 5

○.....*Date: Sat, 22 Jan 2005 01:21:18 -0500*  
*Subject: Comet Machholz (January 22, 2005)*

I made an observation of Comet Machholz (C/2004 Q2) using my 7×50 binoculars. The comet's coma appears

large and diffuse. I estimate the magnitude of the comet to be close to 4.5 (in comparison to the nearby stars). The brightest star in the field towards the east is Alpha Persei (1.78m) and the star closest to the comet is Iota Persei (4.03m).

The best of luck in your observations and imaging of this interesting comet.

**Carlos HERNANDEZ** (カルロス・ヘルナンデス FL 美)  
mars@ilcs.net

●.....Date: Wed, 05 Jan 2005 08:34:52 +1100  
Subject: Re: Happy New Year

Mr Minami and Mr Murakami, Happy new year to you too. I received CMO 300 yesterday by mail and I am very grateful for that; thank you. I am looking forward to making a contribution to the 2005 observations of Mars. Best Regards

**Barry ADCOCK** (ハリイ・アドック Melbourne 豪)  
adcockl@hotmail.net.au

●.....Date: Thu, 06 Jan 2005 09:33:48 +0900  
Subject: Re: 謹賀新年

あけましておめでとうございます。今年もよろしくお願いいたします。CMO#300は届いています。ありがとうございます。...中島健介さんは、火星を主にやっているわけではないので、火星に関する知識は未知数ですが、対流の専門家ですし、わりと気安くお付き合いしているので、気象について質問するには適当な方かなと考えています。

一月8日に国立天文台に行きます。2006年の秋の天文学会を九国大で開かせていただくことになったので、理事会で報告せよと言われております。

**浅田 正** (Tadashi ASADA 宗像 Fukuoka)  
asada@kiu.ac.jp

●.....Date: Sun, 9 Jan 2005 15:22:41 +0000 (GMT)  
Subject: Re: A Happy New Year!/CMO

Dear Mr. Murakami, Thank you for your CMO bulletin, and for the paper copy which I just received. In future, I will be happy to receive only e-mail bulletins, and to look at your reports on your web site. The expense of sending a paper copy is not necessary now.

With best wishes for the new year and the new apparition of Mars,

**John ROGERS** (ジョン・ロジャース Cambridge UK 英)  
jhr11@hermes.cam.ac.uk

●.....Dear Dr Minami, This is just to acknowledge with many thanks No.300 Bulletin of the OAA Mars Section posted to me on 26. 12. 04 and just received. With the planet at such a high southern declination at present it is virtually impossible to make any meaningful observation as yet but I hope to resume when Mars attains a reasonable height for northern observers and presents a larger disc. Since the last apparition I have increased the aperture of my Maksutov-Cassegrain from 145mm to 200mm f/20 and hope for improved results later this year.

With my warm regards (11 January 2005)

**Harold HILL** (ハロルト・ヒル Lancashire, UK 英)

●.....Date: Sat, 15 Jan 2005 17:38:46 +0100  
Subject: Saturn images, jan1 2th and dec 20th again

Hi all, the night before opposition was a fair one but a few images have been obtained, and I must say that both the visual and CCD images did show brighter rings than before, as Dave noticed on his side. Visually the contrast looked strong between the bright whitish B ring and the dull, yellow globe. The opposition night was very promising but again fog ruined all the chances.

I'm sending again the december 20th set of images as I have added a R image showing a dark spot (arrowed). They also provide a good comparison for the rings which really looked duller one month ago. Regards

○.....Date: Sun, 16 Jan 2005 12:42:28 +0100  
Subject: Saturn, january 15th

Hi all, last night the fog has been finally teared apart by a slight eastern (I suppose dryer) wind. Seeing went from poor to good/very good, although transparency was fair, and no IR images could be obtained. Ring B looks still bright, but not so than a few days ago. I have noticed with a great interest Damian's interest in trying to make some seeing forecasts. I have attached a chart



showing the position of the jetstream last night - along with the position of the high pressure system, I was expecting some possible excellent conditions, as northern France was just where no high winds were present. This was exactly the situation over southern UK when Damian and Dave made some great shots in december 11th, but finally it didn't happened, as seeing was good, but certainly not superb (see for example the B image). I have not really found where lied the difference, except that there was that slight eastern wind near the ground, but it was very mild...

Seeing prediction is bit complicated, nonetheless the method of looking at direction of winds, and the position of air masses is reliable. Best wishes,

○.....Date: Sun, 16 Jan 2005 16:07:44 +0100  
Subject: Re: Saturn, january 15th

Damian and Paolo, I agree of course that the position of the jetstream is not the only thing to consider. Although, I was supposing it was much important. The easterly wind may have been the cause yes, for inferior seeing than expecting. There would be still much to say about it, as I have already seen one or two noticeable exceptions

# TEN YEARS AGO (113)

----CMO #153 (10 Jan 1995) & #154 (25 Jan 1995)----

1995年一月には二號出ている。10日號のCMO#153では1994/5年接近(11Feb1995最接近)を1980年、1963年の小接近と比較している。1995年には $\lambda = 058^\circ\text{Ls}$ で最接近だが、1980年には $\lambda = 071^\circ\text{Ls}$ で、1963年には $\lambda = 046^\circ\text{Ls}$ 等の違いのあることなどが述べられている。LtEは正月だから満載編集。「夜毎餘言」は「好日好天」で張教授の東粵坊・永平寺訪問の話。あれからもう十年ッカ。Reportは十二月後半( $\lambda = 032^\circ\text{Ls} \sim 039^\circ\text{Ls}$ )で、「予想以上に好成績」とある。Mo氏がTPで大活躍、眼視もIw, Mk, Hk氏など好く観測が揃っている。エリュシウム、プロポンティスIからタルシス、年末にはクリュセ邊りの精査が出来ている。前號紹介の合同観測は九名の参加で成功した。電話も飛び交ったようである。未だ衝前で開始が遅いが、Iw氏などの朝までハ枚聯續が見える。特に2Janは福井も含めて天気が良く、全體で $\omega = 330^\circ\text{W} \sim 090^\circ\text{W}$ まで密に観測されている。沖縄のId氏も六回、Mk氏も七回を数えている。この日は福井からカノープスが見えた。第二回合同観測が最接近比を挟んで二月10、11、12日に設定された。

25日號のCMO#154では、トップからReportで一月前半( $\lambda = 039^\circ\text{Ls} \sim 046^\circ\text{Ls}$ )の観測を扱っている。筆者は半月で38だが、Mk氏は33と迫っている。このFortnight Reportだけで十三頁という内容である。合同観測の纏めも含むが、時を同じくしてccdのDPk氏が三日連続で観測しハセットほど送られて来ている。十時間ほど早いのでシュルティス・マイヨル方面である。一方、ヨーロッパは正月は天候不順だったようである。Mo氏は未だTPだが、6Janには三色分解でクリュセからテムペに掛けての朝霧などを描寫して心境著しい。7Janには福井で筆者が十二枚連続で観測した。マレ・アキダリウムの邊りには愈々様々な現象が顕れている。尚、18Janの朝、Id氏から北極冠の内部に暗線が見える( $\omega = 260^\circ\text{W} \sim 270^\circ\text{W}$ )とのFAX報告があった(LtE)。早速電話や速達で速報した(未だemailがない)が、追加観測はなかった。しかし、 $\lambda = 050^\circ\text{Ls}$ 邊りでも既に可能ということであるから次回には忘れないようにしなければならない。

17日の早朝、神戸で大地震が発生した。筆者は大津で観測を終えて床に入ってからグラッと来て書棚から本が飛び出るのに出逢ったが、沖縄では未だ観測中の時刻であったようだ。ESgさんから直ぐ見舞い状が来た。永井氏は朝日福井支局から神戸に転勤されていて、中央区で被災した。佳く無事だったが、人を救うのは人しかない街を取材。その後東京本社勤務を経て、現在は大阪本社である。

南 政 次 (Mn)



(but many more confirmations ;-). For example, the night of november 25th here brought a very good seeing even in short wavelenghts, and this was with the high pressure situated over Belgium so winds came from the east also (and the position of the jetstream was a bit less favourable !). About exceptions to those rules, by looking at some old air masses charts (that you can find here : <http://www.wetterzentrale.de/topkarten/fsreacur.html>)

I have also been suprised by the fact that some of my old good observations have been made under a low pressure (I presume before a cold front maybe ?). Apart of this, for northern France as well as southern UK, I believe that seeing is reasonably easy to predict most of the time just by looking at air masses and the jetstream..

○ · · · · · *Date: Tue, 18 Jan 2005 20:03:09 +0100*  
*Subject: CMO 300*

Dear Masatsugu, just a word to thank you for the paper exemplar of the 300th CMO I received last week. Always a pleasure. Best wishes,

○ · · · · · *Date: Sat, 22 Jan 2005 19:53:55 +0100*  
*From: Subject: Re: Saturn, january 15th*

Hi all, I'm sending again my latest set of images, with a better B image (earlier AVI), and a re-built RGB composite (two blue images added for the B component to reduce noise). Regards

○ · · · · · *Date: Sat, 22 Jan 2005 19:58:37 +0100*  
*Subject: Jupiter, january 16th 2005*

Hi everyone, here is my first Jupiter image of the new season taken one week before. The seeing was interesting, but the transparency a bit poor (thin clouds).

Best wishes,

**Christophe PELLIER** (クルストフ・ペリエ nr Paris 法)  
 chrispellier@tiscali.fr

● · · · · · *Date: Sun, 16 Jan 2005 13:52:39 +0000*  
*Subject: Re: Saturn, january 15th*

Hi Christophe, Thanks for the excellent images. Your comments on the conditions are very interesting, and predicting seeing can be done with some accuracy i think, but predicting excellent seeing is really hard indeed. For example last night here was poor to fair at Pickering 4-5. Wind was SSE at 5mph. These wind directions here as you know are often poor.

January 13th was also interesting. During the first half of the night, seeing was Pickering 8-9, wind was SW at

2-5mph. It fell calm around 2330, and then the direction changed to SE at 5mph, then later E at 5mph. Seeing then notably deteriorated.

The best conditions over northern europe seem to be when the pressure pattern is very weak, meaning light winds at all altitudes, and heavy humidity. The worse condition is a strong NW wind, often meaning drier, clear air, with strong winds at 200-300mb level.

Best Wishes

○ · · · · · *Date: Sun, 16 Jan 2005 14:13:27 +0000*  
*Subject: Re: Saturn, january 15th*

Hi Paolo, I would agree with your comment on checking the jetstream is not a totally sure indicator of what the seeing is likely to be like. I have seen very poor seeing under high pressures with the jet well away before (though not very often thankfully!).

The winds crossing mountains is a very complex situation. Lee-side turbulence can extend upto 100km downwind, and more than 1km above the peaks. This means typically (for the Alps for example) such turbulence caused by them would be present all the way from 1000mb to 300mb. Good seeing in such places is very dependent on wind directions.

Its quite interesting how often the seeing can vary between Christophe's site and my own, despite being seperated by only 200 miles.

Best Wishes

○ · · · · · *Date: Sun, 16 Jan 2005 14:58:17 +0000*  
*Subject: Re: Seeing*

> You're not totally correct. · · · · ·

Here i would very much disagree. Having spent 8 months at Tenerife (and island dominated by a 13000ft mountain peak, which sits at the 500mb level) wind direction was absolutely crucial to the prevailing seeing.

Also, mountain peaks certainly do create turbulence high above them (it doesnt just extended down wind at the low altitude layers. For example Lenticular clouds are created high above mountain peaks (some were seen while i was there.) Also, strange "vortice like" patterns in the cirrus layer at 30,000ft could often be seen there. I would grant that with the jetstream.

My final point would be on nights when high winds at 200mb were present + the winds low coming across the mountains toward me created a turbulence the like of

which i have NEVER seen in almost 10yrs of serious planetary observing from Europe. Jupiter rendered almost blank in the eyepiece even at 80deg altitude!. Best Wishes

**Damian PEACH** (テミアン・ピーチ UK 英)  
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●.....Date: Sun, 16 Jan 2005 14:56:15 +0100  
Subject: Re: Saturn, january 15th

Another interesting set of images, Christophe!

For your seeing forecasting, the jetstream analysis by alone is not enough. You must check ANY current at ANY quota because you could have bad surprises with low or mid altitude currents. The chart I see is referred to 300 HPa map but nothing can say about lower layer currents. The various layers are always slightly different.

On my own I did find a very accurate model to forecast seeing with good precision. If bad, I can also estimate how much bad and the tipology of turbulence. Look at here to learn more about your seeing evaluation:

<http://www.meteoliguria.it/tabbolam21.asp>

You must check the following maps:.....

○.....Date: Sun, 16 Jan 2005 15:05:47 +0100  
Subject: Re: Saturn, january 15th

Damian, You're not correct. If you'll be evaluating the BOLAM model it will be easier than expected! You can also check old situations browsing their archive. I did forecast 2 nearly perfect night and I had 2 nearly perfect night in the date and in the place I forecasted. So, my crazy moves are no longer so crazy to your eyes! :-))

I'm going to unveil my secret! :-))

If you need of more information, ask me more.

○.....Date: Sun, 16 Jan 2005 15:30:04 +0100  
Subject: Re: Saturn, january 15th

Chris, Damian, You live in a very flat country, so your situation is much easier to forecast. I'm living very close to the Apuanian mountains and Appennines, 2 high chains that make any forecast an hazard. But if I learned nonetheless to guess the seeing here, well, that means it's not so complex as it seems. No ball glass here, just a bit of math.

Further, when you say: "This means typically (for the Alps for example) such turbulence caused by them would be present all the way from 1000mb to 300mb. Good seeing in such places is very dependent on wind direc-

tions." You're not totally correct. When winds do flow far above a mountain chain only, there's no additional turbulence in any layer. For this reason the jetstream (100-500 HPa) here in Europe is not provoking further damages. Your statement is correct for 700-1000 HPa layer only.

○.....Date: Sun, 16 Jan 2005 16:13:28 +0100  
Subject: Re: Seeing

.....The "blank" Jupiter is given by low winds.

Ok, I did miss to consider the highest mountains, so I must correct the quota I wrote but not my think.

The lenticular clouds are caused by cold winds meeting the warmer and more wet air coming up from lower levels. Their shape is always very smooth, so there's no strong turbulence there. The real turbulence is where you can see a very complex vortex structure, so that downwind to a mountain. I can assure if 2 observers are placed downwind and in the summit of a peak there's a strong difference. Where would you love to stay? :-))

○.....Date: Sun, 16 Jan 2005 21:08:28 +0100  
Subject: Re: Saturn, january 15th

Hi Chris,

> <http://www.wetterzentrale.de/topkarten/fsreaur.html>

This site is poor with maps and I can't either understand deutsch.

> I have also been suprised by the fact that some of my old good  
> observations have been made under a low pressure (I presume before a  
> cold front maybe ?).

Nothing to be surprised with: in the heart of a LP winds are close to 0. I think you might have a 10/10 seeing in an hurricane's eye! But you must hurry up a bit...;

○.....Date: Sun, 16 Jan 2005 21:19:31 +0100  
Subject: Re: Seeing

jim phillips wrote:

> Well, from the "flatlands" of South Carlona I have to say the ocean  
> has more effect than the mountains, 500 miles away .... :^)

Well, When sea temperature is very different to the air temp...I wouldn't love so much to be there! :-)

**Paolo LAZZAROTTI** (パオロ・ラッサロッティ Toscana 義)  
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●.....Date: Thu, 20 Jan 2005 17:43:46 +0900  
Subject: Re: [Fwd: RE:Re: 大気循環]

浅田さま(Cc: 南さま) : 興味深い問題を有難うございました。土曜、日曜のセンター入試に立ち会った後、定期試験と入試の準備に追われて、返事

が遅くなってすみません。

>昼と夜で、火星の大気の流れは大きく変わると思うのですが、  
>数値モデルではどう扱っているのでしょうか？

対流を考慮した、垂直温度分布の計算をしているものの、大気大循環の計算のこととなると、私もよく分かりません。例えば、私の大気温度の垂直分布を求める計算モデルでは、96分の1火星太陽日(約15.4分)、または192分の1火星太陽日(約7.7分)の時間刻み(time step)で、夜昼のかかわり無しに計算を繰り返していきます。大気大循環モデルでも同じことで、一定の時間刻みで夜、昼に関係なしに計算を続けていくものと思っています。その結果、対流が停止する夜間の影響も、当然考慮された形で、大循環モデルの結果がでてくると考えていますが、いかがでしょうか。

今、手元にある Haberle達の the NASA Ames General Circulationモデルの要約を見ると、緯度7.5度、経度9度のメッシュで、地表から大気のトップ(高度約47km、気圧約0.067mb)までを、厚さの異なる13層に分けて、time step 9分で50火星太陽日まで計算を行って、結果を出しているようです。

詳しいことは、判りませんが、9分ごとに次のtime stepを計算するという事は、夜間の状況も再現しながら、計算を進めていっていると思いますが如何でしょうか。

大循環モデルの結論の概要は、Leovy and Mintz (1969)の初期の結果と、あまり変わらないのではないかと考えています。これは、大筋として浅田さんの説明と一致するものと思います。

2003年の黄雲の運動や広がり方の観測から、従来の大気運動モデルでは説明出来ないものが出てきたのでしょうか。とすれば、とても面白いことだと思います。

大気の運動のこととなると、やはり森山さんかLeovyさんになるかと思っています。問題点をもう少し詳しく伺うことが出来たら、お二人に聞いてみるのも一案かと思いますが、如何でしょうか。

専門家でもないものが、お恥ずかしい限りですが、気をつきましたことを書いてみました。森山さん、Leovyさんは連絡をとれば適切なコメントを送ってくれると思います。私が仲介にはいってもよろしいですので、一度連絡をとってご意見をきいてみるのも、問題の明確化のために良い方法

かと考えていますが如何でしょうか。

まずは、とり急ぎ、ご連絡まで。

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●.....Date: Mon, 24 Jan 2005 00:31:22 +0900  
Subject: 気流不良

連絡が遅くなってしまいました。昨年末に日本に戻ってきました。常夏のセブ島と真冬の日本での温度差は25度以上あり、その為か帰国後に疲れが出てしまい、年始から病院通いになりました。幸い異常は無く今は調子も戻りつつあります。セブ島では毎週末、Christopher Go氏(人種は中国系、40歳)宅の家で明け方の惑星を見ることが出来ました。気流の関しては大変良く、すばらしい像を楽しめ、持参したATK-1HSとToUcamで土星と木星を撮像できました。火星も一度だけ挑戦しましたが、高度が低く像としては駄目でした。惑星観測の場所としてはジェット気流がなく、ある程度高度が上ってくると像は安定しだし、60度を超えると日本では得られないシャープな惑星が見られます。像の揺らぎがとて少なく20cmのシュミカセでも大変良く見えてしまいます。目からうるこが落ちたような印象でした。但し、年中暑くので体調を維持するのは結構大変でこれは南さんの沖縄滞在の時と似ていると思います。残念ながら夜中に野外観測が出来るような治安ではありません。ホテルのテラスか敷地内の観測となり、彼の家で観測できることは大変安心できます。今年も行く手筈になっているらしいので、もしも長期になれば彼の家望遠鏡を置いて貰う事も考えています。仕事貫きで観測だけで行ければ本当に良いのですが、現時点では将来の夢なんですね。

日本での火星は帰国後、何度かトライしていますが、この冬の気流は特に悪く、円盤像になりません。こんなに悪い冬季の経験はありません。

**阿久津 富夫** (Tomio AKUTSU 栃木 Tochigi)  
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(註) AKUTSU stayed at the Cebu island, Philippines, for a few weeks on business at the end of 2004, and enjoyed a good seeing without the jet stream to shoot Saturn and Jupiter when they were higher than 60° in altitude (Mars stayed low & proved no good). Returning home, the temperature difference by 25° made him unwell.

☆☆☆

Forthcoming 2005 Mars (4)

## Lowell's Mars in 1894 (1894年のローエルの火星)

Masatsugu MINAMI

南 政 次(Mn)

THE apparition of the 2005 Mars is just the next apparition of the great apparition, and so as far as we experienced it must be akin to the 1990 apparition or to the 1973 apparition. In order to draw up a plan of the campaign in 2005, to look back on these preceding apparitions may be instructive. ◇ Similar apparitions occurred several times during these one hundred years as are they listed as follows (in the order of the opposition days)

27 Nov 1990	$\delta=18.1''$	( $\lambda=340^\circ\text{Ls}$ )
25 Nov 1911	$\delta=18.3''$	
18 Nov 1958	$\delta=19.2''$	
<b>07 Nov 2005</b>	<b><math>\delta=20.1''</math></b>	( $\lambda=320^\circ\text{Ls}$ )
04 Nov 1926	$\delta=20.4''$	
25 Oct 1973	$\delta=21.5''$	
<b>20 Oct 1894</b>	<b><math>\delta=21.7''</math></b>	
10 Oct 1941	$\delta=22.8''$	( $\lambda=292^\circ\text{Ls}$ )

where  $\delta$  implies the maximal angular diameter when the planet was closest to the Earth.

◇ As seen, the 2005 Mars is quite akin to the 1926 apparition (79 years cycle), and further we should say the 2005 Mars lies mid-way between the 1990 and the 1973 apparition. The 1973 Mars should be said similar to the 1894 Mars. The 1941 Mars was particular, and it was quite akin to the grand opposition (opposition making a twin with the 1939 great opposition whose  $\delta$  was  $24.1''$ ) and has been remembered as the year when Bernard LYOT was active at the Pic du Midi and produced a lot of excellent composite images.

◇ Here we touch a bit upon the year of the 1894 Mars: Since it was the first year Percival LOWELL planned a Mars campaign at Flagstaff, his observational attitude may be suggestive to us. Percival LOWELL finally left Yokohama on 24 November 1893, and first appeared at Flagstaff on 28 May 1894. He missed the 1892 great opposition, but his plan was beginning around from 1890 through the communications with the Pickering brothers, and really his letter to W H PICKERING in November 1892 is known. According to

SHEEHAN's Mars book (Arizona Univ Press), P LOWELL was presented FLAMMARION's *La Planète Mars* in December 1893 as a Christmas present from his aunt. ◇ As to the 1894 Lowell Mars, the present writer (Mn) gave a series of talks at Anamidzu Lowell Conference in May 2004 based on LOWELL's *Mars* published in 1895, and also reported about it, and so the following items are no more than a repetition, but here we pick out the least cases that are appropriate to our plan of the 2005 observation. We never here enter into the logics or perspectives of LOWELL.

◇ We should first say the observation at Flagstaff in 1894 was well organised. The Mars campaign at the Lowell Observatory in 1894 has the following characteristics: 1) the observers made a team, and 2) the observation period lasted nearly one year. LOWELL thus employed from the outset the method which is suggestive and we should learn. Item 2) implies that the intension of LOWELL was not only to detect the canals or minor markings, but was quite interested in the climatology of Mars. The team of 1) consisted of W H PICKERING, A E DOUGLASS and P LOWELL. It was good that the former two had both already been established as Mars observers; especially they observed the great 1892 Mars at Arequipa, Peru.

◇ The observation was carried from 22 May 1894 to 3 April 1895. During this long period they made a total of 917 drawings. On 22 May 1894, the angular diameter was only about 8 arcsecs, and even then they started the routine observation. We suppose this must have depended on a strong suggestion by W H PICKERING to start their observation from the southern early spring within the period the south polar cap was not so melted away. Note that it was on 28 May that they got into Flagstaff, and really on 31 May LOWELL observed Mars for the first time with PICKERING but with a 30cm refractor, while it was on 1 June that they started to observe by the use of a

main 45cm  $F/17.5$  Brashear refractor (the famous Clark 61cm refractor was installed in July 1896, and could not be used in 1894). So we should say Mars arrived before their plan. On 22 May, 24 May, 25 May and 27 May they had to use a 15 cm refractor, the one LOWELL once brought into Tokyo, but on 22 May W H PICKERING already found a rift inside the spc and so they were forced to count 22 May into as the first day of their observation period. ◇ As far as our experience was concerned, we checked in 1986 that the centre of the spc began to be shadowy compared with the surrounding brighter torus ring just before the southern spring equinox  $\lambda=180^\circ\text{Ls}$ , and as noted again in CMO #274, Parva Depressio was observed in 1988 from 3 June 1988 ( $\lambda=208^\circ\text{Ls}$ ) at  $\omega=161^\circ\text{W}$ , and in 2003 Parva Depressio was quite evident on Maurice VALIMBERTI's image on 24 June 2003 ( $\lambda=209^\circ\text{Ls}$ ) at  $\omega=127^\circ\text{W}$ , and so we can suppose PICKERING was successful in detecting Parva Depressio on 22 May. On 31 May, they observed the surfaces showing Syrtis Mj and the rift was considered extending from  $170^\circ\text{W}$  to  $345^\circ\text{W}$ , and hence this was mainly occupied by Rima Australis including Parva Depressio. On 10 June DOUGLASS found another rift. The shadowy areas inside the spc play a serious and decisive role in making LOWELL's view of Mars and hence their start on 22 May can never be said too early. (We understand the day and time are described, if not specified, in terms of MST which is seven hrs west of GMT=GMST. GMST starts from the noon, and so the old day GMT=GMST is converted to the present day GMT by adding 12 hrs.)

◇ In 2005, the days correspond to the beginning of May 2005. On 10 May 2005, and  $\lambda=208^\circ\text{Ls}$  with the angular diameter  $\delta=7.1''$ . If we want to pin down the spring equinox, we must start from around 24 March 2005. With respect to the happening of the 2001 dust storm, it is necessary to for us to be on a train of observations in March. Fortunately the sub-Earth point latitude on 1 March is  $10^\circ\text{S}$ , and henceforward the south pole declines further to us, and reaches about  $25^\circ\text{S}$  around the beginning of June. Next bottom will visit at the end of

September to  $10^\circ\text{S}$ , but then rises up again.

◇ We here digress, but we should like to stress that from the point of view of the dust circumstances which we encountered in 1973 (a sister apparition of 1894), it is also preferable to start earlier: It is known in 1973, at least two conspicuous dust disturbances occurred (biggest one was onset at  $\lambda=300^\circ\text{Ls}$ ), but there is a reason that there must have occurred another dust much earlier which influenced the following dust storms. In 1973, Professor S MIYAMOTO started on 28 April 1973 ( $\lambda=195^\circ\text{Ls}$ ,  $\delta=7.1''$ ), and we can consider that this was determined from the same background as employed by the Lowell team, but even then this was too late from the view-point of the dust phenomena.

◇ Among many observations made by the Lowell team, LOWELL's detection of two bright spots in the midst of the spc on 7 June is known as a pioneering work of the flare detection on the planet Mars. They dazzled like stars and flashed out and then disappeared after a few minutes. He calculated their position located at  $\Omega=280^\circ\text{W}\sim 290^\circ\text{W}$ ,  $\Phi=76^\circ\text{S}$  and so it could be regarded as being associated with Novus Mons when it stayed still inside the spc. LOWELL knew that the detached Novus Mons had already been observed by MITCHEL in 1846 and GREEN in 1877, but LOWELL's was observed around  $\lambda=218^\circ\text{Ls}$ , and so totally inside. This was perhaps the reflection by the  $\text{H}_2\text{O}$  ice. That Novus Mons is fully bright inside the spc was proved by the Viking mission. It may be attractive if there is a moment we can catch the sunlight reflection on the spc by an appropriate tilt of the axis. ◇ As was said also last year, we may say DOUGLASS had a keen eye to the darker part, while LOWELL was inclined to detect bright spots. As noted, DOUGLASS checked another dark rift inside the spc on 10 June, while LOWELL found on 13 June a bright spot associated with the rift. In general, they were making a scrutiny along the terminator to detect brighter parts or shadowy depressions. ◇ During the campaign, it was reported they detected a total of 736 irregularities along the terminator, 694 out of which were measured. Of these 403 were depressions and 291 were the projections. We don't here discuss about the unbalance of the numbers of the depressions and projec-

tions, nor their causes as atmospheric or geographical, but the concern about the terminator of the Lowell team look quite natural. Nowadays, the MOLA provides the geographical undulation *in colour*, but we feel somewhat frustration since MGS MOC images don't provide the undulated limb but just flat limb (if not seen from the 14 hrs PM). In this sense the LOWELL description is quite attractive, and still these days the scrutiny along the critical terminator is necessary. The LOWELL book cites the observation of the terminator by W H PICKERING on 24 August 1894. ◇ DOUGLASS made also an interesting observation on 26 and 27 November GMT of a bright spot which was detected in the unilluminated part of Mars. The one observed on 26 Nov at 4:35 GMT was on the southern part of Protei Regio, and the one on 27 November appeared at 5:15 GMT nearly 9 degrees north. The description is quite detailed, and if similar observation is made henthforward they are easily compared. They considered this to be an atmospheric variation. (Here the date and time have been converted into the modern GMT.)

◇ Percival LOWELL was not a serious observer and often he was long absent from Flagstaff even when the planet is in the very season, but we should say his plan of the 1894 campaign was quite successful maybe under the advisory PICKERING to cover the whole season of the southern hemisphere. As the spc thawed, Novus Mons was detached and they observed around from  $\lambda=238^\circ\text{Ls}$  the deviation of the centre of the spc from the pole to the direction of  $\Omega=054^\circ\text{W}$ , and decided the spc disappeared on 13 October. This was slightly before  $\lambda=300^\circ\text{Ls}$  and should be said earlier than expected (at those time, it was believed the cap does not vanish as nowadays and soon grow large).

◇ The 1894 Mars was thus seen rather high in the sky from Flagstaff and we want to emphasise the 1894 Mars provided LOWELL to survey the possible cycle of the southern hemisphere to match his desire to be acquainted with the Martian season during the period from the season where the spc was largest to the season where the spc melted away. We also suggested their observations of the terminator should be revived in some sense.

◆ 2005年の接近は大接近後の接近であるから、近くで言えば1990年の火星、1973年の火星に相当するわけである。従って観測計画ということを考えるならば、こうした接近を振り返るのは無駄ではないであろう。そこで、ここ百数十年の間の仲間の接近を挙げる(英文の部参照)。衝日順、最大視直径順(逆順)である。この並びは軌道図で言えば、近日点以降に並ぶ並び方と同じである。◆ 詳しい状況としては、2005年の火星は79年前の1926年の火星に近いわけである。と同時にわれわれの好く知っている1990年の火星と1973年の火星の間になる。1973年は1894年と相似になる。1941年の火星は大接近に近い接近で、リヨールのピクでの活躍があったときである。

◆ 扱て、ここでは1894年のローエルの火星を二三採り上げるわけであるが、1894年はローエルが日本を去って初めて火星観測のキャンペーンをした年で、一方リックでバーナードが観測しており、スキアパレリ以降の観測史で重大な局面に当たる年である。ローエルの火星については、「穴水ローエル会議」で筆者が三度に渡って話した上、その後も記録しているので、殆ど重複する部分が多くなって申し訳ないが、ここでは2005年の観測の観点から二三採り上げるだけなので御容赦頂きたい。當然、ここではローエルの論理や的はずれな方法などは扱わない。

◆ ローエル天文臺での1984年の観測の特徴は、1)チームを組んだこと、更に2)長期に渡って観測を續行したことである。従って、ローエルは最初から見習うべき模範的な方策を施しているといえる。2)については運河が見えるであろう最接近時のみを狙っていない、火星の氣象についても目標に入っていたということで、その後のローエル天文臺の方針と少し違うと思われる。◆ 1)のチームというのは、ピカリング弟(W H PICKERING)とその後仲間割れするダグラス(A E DOUGLASS)と組んだものである。ピカリングは既にペルーのアレクイパ(Arequipa)での1892年大接近の火星観測の経験があり、ダグラスはそのときの助手であるから経験者と組むといういい方法を採用したわけである。使用した望遠鏡は後の有名な61cmクラーク鏡ではなく(これは1896年七月から)、45cmF/17.5のブラッシャー鏡が主力であった。

◆観測期間は22 May 1894から3 April 1895の殆ど一年に及ぶ。この間チームとして917枚のスケッチを齎している。この数は少なくはなく、長期観測としては必然的に得られるものであろう。何故長期観測が必要であったか。最初の視直径 $\delta$ は8秒程度であるが、早く緒に着いている。

それは多分、南極冠の溶解初期から気象の変化を含めて火星を観測しなければならないという考えがあったからだろうと思う。実はこれは前にも觸れたが、彼らがフラグスタッフに入ったのは28Mayであって、それにも拘わらずその前から観測期間の勘定は行われている譯であって、これはピカリングの忠告があったとみて好いであろう。22May、24May、25May、27Mayは15cm屈折での観測で、最初の二日はピカリング、後の二日はダグラスの観測である。28Mayにはフラグスタッフに入ってローエル自身はピカリングと31Mayから始めている。このときは30cm屈折、45cmは1Juneからの使用である。従って、普通なら1Juneをもって観測開始期と記録することは考えられることだが、既に22Mayには南極冠の中にピカリングが亀裂を見ているので初日と勘定しなければならなかったというのが実情であろう。多分ピカリングは当時 $\lambda=200^\circ\text{Ls}$ 辺りで、南極冠が既に溶解期に入っていることから、最大径から観測しなければならないと考えていたと考えて好いだろう。◆筆者の1988年の経験では3June1988( $\lambda=208^\circ\text{Ls}$ ) $\omega=161^\circ\text{W}$ でパルワ・デプレッショを見ているし、2003年でもヴァリムベルティが24 June ( $\lambda=209^\circ\text{Ls}$ )  $\omega=127^\circ\text{W}$ で描き出しているから、ピカリングも多分パルワ・デプレッショの出現を見たのではないかと思われる。実際には31Mayの観測ではリマ・アウストラリスを中心とする大亀裂のようでパルワ・デプレッショも含めて観察した様である。二時間ほどで12枚のスケッチをしている。この南極冠内の暗斑はローエルには大きな特別な意味を持つのであるから、この早期開始は遅いかも知れぬが早くはなかったし、好いセンスである様に思う。(日付は特別な記載がない場合はMSTというもので与えられている。GMSTとは7時間西である。GMSTをGMTに直すには12時間加える。)

◆2005年の場合、この時期を割り出すと五月上旬ということになる。10May2005で $\lambda=208^\circ\text{Ls}$ であ

るが、 $\delta$ は7.1"で、似たような背景になる。然し、春分を狙うとすると24Mar2005ということになるし、2001年の黄雲のことを考えると矢張りこの頃には観測が軌道に乗っている必要があるというのが現代的なセンスである。実は南極冠内の翳りということであれば、春分 $\lambda=180^\circ\text{Ls}$ 少し前から現れることは1986年の観測から分かっている。

◆一寸横道にそれるが、1894年の兄弟接近1973年では黄雲が $\lambda=230^\circ\text{Ls}$ 臺と $\lambda=300^\circ\text{Ls}$ (後者は大黃雲)二度起こっているのであるが、実はもっと早くに起こったのではないかと思われる節がある。しかし、当時、宮本正太郎氏は28 April 1973 ( $\lambda=195^\circ\text{Ls}$ ,  $\delta=7.1''$ )が初観測で、これに間に合っていない。宮本氏の開始はローエルと同じ背景で、矢張り南極冠の溶解から狙ったものとみて好いだろうが、矢張り春分を外したのは惜しい。

◆さて、ローエルの観測で屢々ピカリ現象の先魁として採り上げられるものに、例えば7Juneに南極冠内に二つの輝点を見ていること等がある。星のように輝き、二三分で消えていった由である。 $\Omega=280^\circ\text{W}\sim 0290^\circ\text{W}$ 、 $\Phi=76^\circ\text{S}$ と計算している。つまりノウス・モンズと関係あると考えているわけであって、グリーンズの1877年の観測やミッチェルの1846年の観測とも符合する場所とローエルは考える。ただ、ローエルの時は未だ南極冠の真ん中にある。 $\lambda=218^\circ\text{Ls}$ 頃であるから當然だが、多分これは  $\text{H}_2\text{O}$ の氷塊の反射であろう。ノウス・モンズが南極冠内で見えることはヴァイキングが実証している。◆これも前にも觸れたことだが、ダグラスは暗部などに強く、ローエルは輝点に強いという違いが出ている。10Juneにはダグラスが新しい亀裂を見たが、13Juneにはローエルがこの亀裂に附随する輝点を見るという具合である。特に彼らは像の縁を狙って観測する。多分、これは主にダグラスによると思うが、期間中ターミネーターの不規則な凸凹を736個観測していて、その内694個は測定している。この内403個が凹みであり、291個が突出である。どうしてprojectionが少ないとか、大氣的なことか地形に依るかという様な議論はここでは採り上げないが、最近MOLAなどの活躍があるものの、MGSのカメラは必ずしもターミネーターを撮さないで、ターミネーターを狙うというのはなかなかの見識であろう。◆ダ

グラスは衝後の26, 27Novにも鬺けの部分に明滅する輝点が出ていることを観測している。26Nov (4:35GMT)のはプロテイ・レギオの南部に立った様だが、27NovGMTには9°ほど北だった由である。ローエルの本には縁の観測の例としてピカリングのもの(24Aug)が出ている。◆南極冠の観測については南極冠の溶解に連れて9July邊りではノウス・モンスの分離を見ていて、ここで $\lambda=238^\circ\text{Ls}$ ぐらい、八月ぐらいからの偏芯は勿論把握しているし、最終的には $\omega=054^\circ\text{W}$ の方向へずれ(ダグラ

スの測定)、13Octには南極冠は消えたと見ている。 $\lambda=300^\circ\text{Ls}$ 直前でやや早い見積もりである。◆以上1894年の火星は、北半球からは適当な高さにあり、南極冠の縮小を最初から終わりまで観測出来る範囲で、南半球の季節を網羅しようとする意圖に合致していたという点でローエルに適うものであった。季節の網羅もそうだが、地形や雲の高さなどの検出のために、火星像の縁をいつも視野に入れているという態度がどうであったかを中心に紹介した。 ■

## CMO 2005 Mars Report # 02

## OAA Mars Section

THIS column was to treat the period: 16 Dec 2004 ( $\lambda=130^\circ\text{Ls}$ )~15 Jan 2005 ( $\lambda=144^\circ\text{Ls}$ ,  $\delta=4.3''$ ), but no report has arrived. AKUTSU (Ak) communicated that the seeing did not give any good images these days. MORITA (Mo) has been also ready to shoot from 2 Jan, but he also could not. At Fukui the weather has been terribly poor: On 5 and 14 Jan we (Mn and Nj) expected a lull at dawn at the observatory, but in vain. Otherwise note that the solar surface showed a sudden rise of AR#0720 around 11 Jan which ejected X4 flare on 17 Jan and X7 on 20 Jan, whose Martian season was  $\lambda=145^\circ\text{Ls}$ . In 2001 it was  $\lambda=140^\circ\text{Ls}$  when AR#9393 gave rise to a strong radiation storm before the 2001 dust entrainment. So it is advisable for us to be attentive at the coming southern spring equinox.

♂.....今回は16Dec2004( $\lambda=130^\circ\text{Ls}$ )から15Jan2005( $\lambda=144^\circ\text{Ls}$ ,  $\delta=4.3''$ )の一月を扱う筈であったが、報告は一件もない珍しい月となった。森田(Mo)氏も2Jan以降待機している由、また阿久津(Ak)氏も例えば8Janなど撮影を試みている様であるが、両者とも好い像が得られていない。北陸も十二月後半から天気は悪く、新年6日朝は晴れの予報で待機したが、駄目、14Janも夜半は晴れてNj氏と待機したが、朝は曇った。積雪は然程ではない。尚、11Jan頃に太陽面に発生したAR#0720は急速に発達し、17JanにはX4、20JanにはX7のフレアを出した。20Janは $\lambda=145^\circ\text{Ls}$ であり、2April2001に#9393が大フレアを出したのは $\lambda=140^\circ\text{Ls}$ であったから、今回も南半球春分頃から要注意であろう。 Masatsugu MINAMI

シー・エム・オー・フクイ

中島 孝 Nj

★前号に続き、成田 広様(356)、石橋 力様(357)よりカンパを頂戴しました。

ありがとうございました。引き続きよろしく願いいたします。不一

☆ Kasei-Tsushin CMO (Home Page: [http://www.mars.dti.ne.jp/~cmo/oaa\\_mars.html](http://www.mars.dti.ne.jp/~cmo/oaa_mars.html))

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