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Mars Above the Dreaming Spires: John Phillips and the First Globe of Mars

By

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During the first week of August this year, I participated in a fascinating Stellafane pre-conference on Lunar Morphology featuring authorities such as Peter Schultz, Chuck Wood, Ron Doel, and Tom Dobbins. A number of geologists who contributed to the understanding of the morphology of the lunar features were discussed; so, when Dr. Minami asked me to contribute an article on the history of Mars studies for the next issue of ISMO, I decided to recall the career of the first professional geologist to make a detailed study of Mars.

A hundred fifty years ago, John Phillips, professor of geology at Oxford, ordered a 6½-inch Cooke refractor that, when delivered in 1862, he set up near the Oxford Museum of Natural History and used to observe Mars at the splendid opposition of that year. These observations served as the basis of the first globe of Mars ever constructed, a forerunner of those by Camille Flammarion, Percival Lowell, and Greg Mort some of us admired at the One Century of Mars Observations conference in Paris last year.

I present this paper to my fellow readers of ISMO in celebration of the (almost) sesquicentennial celebration of the first globe of Mars.

On June 30, 1860, seven months after the publication of Charles Darwin's *Origin of Species*, the British Association for the Advancement of Science (BAAS) met in the new University Museum, which houses the teaching collections of the six professors of Natural Science. John William Draper of New York City (a physician well remembered in the annals of astronomy for having obtained the first photographic image of any type of a celestial body, the Moon, in 1840, and as the father of Henry Draper), presented a paper in a room crowded to suffocation—not to hear him, but to hear the eloquent bishop of Oxford, Samuel Wilberforce, a smooth orator his detractors called "Soapy Sam," who was preparing to "smash Darwin" at the meeting. Darwin himself was not present, suffering from one of his incessant illnesses;[1] but the seven hundred who were there included notables such as Robert Fitzroy, commander of the *Beagle* during the circumnavigation of the globe on which Darwin had served as naturalist, and Darwin's allies Joseph Hooker, a botanist and assistant director of Kew Gardens, and Thomas Henry Huxley, the former Fullerian professor at the Royal Institution. Since no transcript was made, we will never know exactly what was said. According to the correspondent who wrote the account in *Macmillan's Magazine*,

> Dr. Draper droned out his paper, turning first to the right hand and then to the left, of course bringing in a reference to the *Origin of Species* which set the ball rolling.

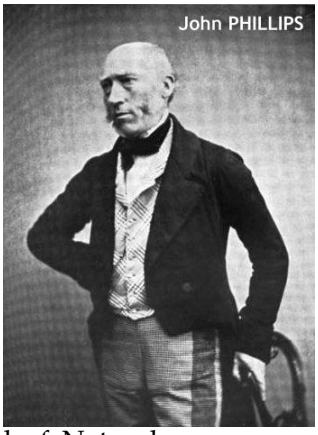
Several persons who are now all-but-forgotten par-

ticipated in the ensuing discussion (and it was a discussion, not a debate). Finally Wilberforce rose to speak. This was the moment all had been waiting for, and "Soapy Sam" did not disappoint. "It was evident from his mode of handling the subject that he had been 'crammed up to the throat,' and knew nothing at first hand, he ridiculed Darwin badly and Huxley savagely; all in … dulcet tones." He went on for half an hour "with inimitable spirit, emptiness and unfairness," assuring his antagonists that there was nothing in the idea of evolution; that rock pigeons were rock pigeons and had always been. He then turned to Huxley with smiling insolence and begged to know, "was it through his grandfather or his grandmother that he claimed his descent from a monkey?"

At this, Huxley

> slowly and deliberately arose. A slight tall figure, stern and pale, very quiet and very grave, he stood before us and spoke the tremendous words… He was not ashamed to have a monkey for his ancestor but he would be ashamed to be connected with a man who used great gifts to obscure the truth…. One lady fainted and had to be carried out; I, for one, jumped out of my seat.[2]

We don't know whether Oxford's most eminent scientist, John Phillips, was present on this occasion. If he was, he would have stood—as Benjamin Disraeli later quipped—"on the side of the angels," opposing Darwin's ideas with every fiber of his being as did the vast majority of those in attendance that June day. Though Phillips was a man of science, science was a relatively new force in Oxford. In 1850, when University's Honour School of Natural was organized, two-thirds of the graduates were still taking holy orders. The colleges, with names like Jesus, Christ, and Magdalen, still rang with debates over religious doctrine and ritual stirred earlier in the century by the Tractarians of the "Oxford Movement," Pusey, Keble, and Newman. The city must have seemed as much imbrued with the atmosphere of Duns Scotus's 13th century as with the scientific revolutions of the 19th. One of Newman's disciples, the poet Gerard Manley Hopkins (who later followed Newman into the Roman Catholic Church), arrived a few years after the Great Debate, and could still describe Oxford with dripping nostalgia as a



> Towery city and branchy between towers;
> Cuckoo-echoing, bell-swarmèd, lark-charmèd, rook-racked, river-rounded;
> The dapple-eared lily below thee…,

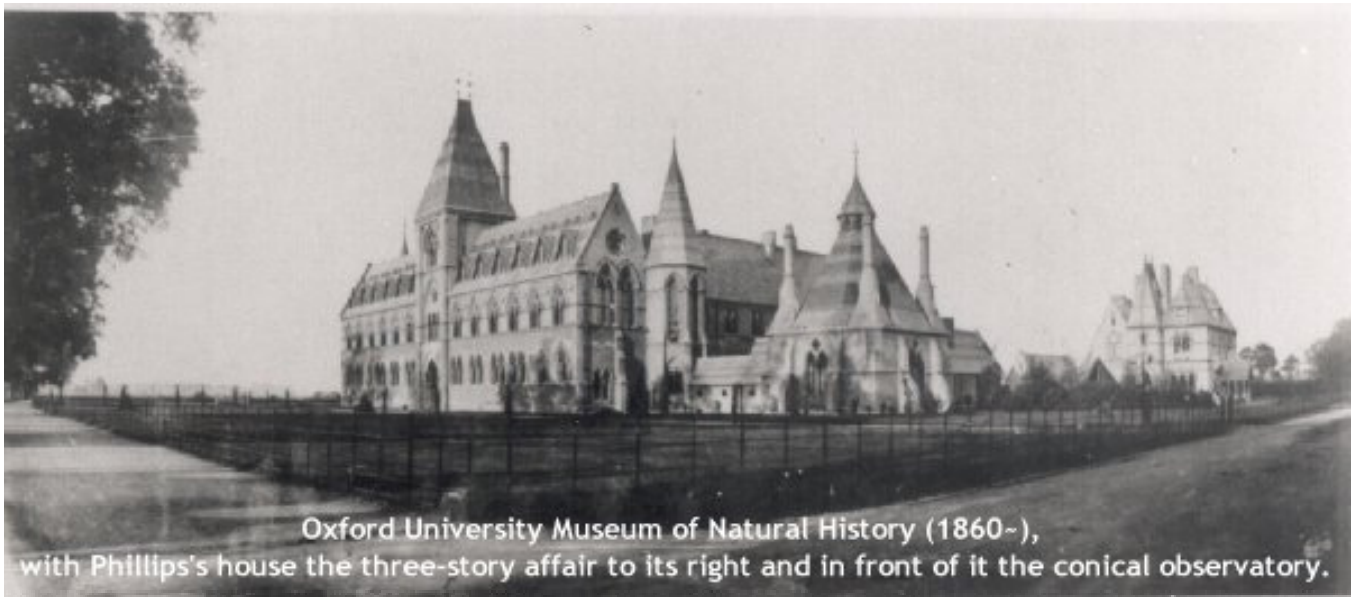
If Phillips had happened to cast his eye upwards to the heavens on the night of the great debate, he would have thrilled to see a brilliant burning coal hovering over the spires. This coal was the planet Mars, then nearing a Perihelic Opposition in Capricorn. On the night of the Huxley-Wilberforce debate, the planet was already displaying a respectable apparent diameter of 22.1", on the way to reaching 23.9" at opposition on July 17. Though his ears were probably still ringing too much with thundering words of apes and angels to pay attention to the planet as more than a distant background, it would presently loom in the foreground of his attention, and invite his participation in the strangely exhilarating survey of the geology of another world.

Born at Marden, Wiltshire, on Christmas Day, 1800, John Phillips had been orphaned at age seven, and was subsequently raised by his uncle, William Smith (later to become known as the "Father of English geology")[3]. In his middle teens, Phillips followed his uncle to London, where he helped him with his geological work and received training from him in surveying. In 1819, Smith was imprisoned for debt and lost his London home; after this disaster the two of them spent four years wandering

through the north of England, surveying as they went and working on Smith's geological maps including that of Yorkshire (1824). By now, Phillips was beginning to establish a reputation independent of his uncle. He proved so adept at arranging the fossils in the Yorkshire Museum that he was appointed its keeper, and for many years made York his home. In 1829, he was joined by his sister Ann who became his companion and housekeeper for more than thirty years. Though little is known of her (she was certainly not a Caroline Herschel or Margaret Huggins), her support was surely crucial to the steady productivity he enjoyed over a long career, and it cannot be a coincidence that that same year he achieved a great success with the publication of *Geology of the Yorkshire Coast*. In York, he was second-in-command to William Vernon Harcourt at the Yorkshire Philosophical Society, and played a leading role in organizing at York the first meeting of the British Association for the Advancement of Science (BAAS) in 1831. The following year he became assistant secretary of the BAAS, a position in which he served for thirty years. This expanded his contacts in London, with the result that in 1834 he was elected a Fellow of the Royal Society and appointed to the chair of geology at King's College, London. For several years he juggled his time between York and London, as he oversaw the publication of *Guide to Geology*, which went through three editions, and a monograph on the Carboniferous limestone of Yorkshire. Between 1836 and 1838, he volunteered his services to the Geological Survey, and then received a temporary contract to draw and describe (for pay) the fossils of Cornwall, Devon, and west Somerset. This led to *Palaeozoic Fossils* (1841), in which introduced the terms Palaeozoic, Mesozoic, and Cenozoic, still in use today. In 1839 he resigned his position in London, and in 1840 that at the Yorkshire Museum. He now received a full-time appointment with the Geological survey for two-thirds of the year, and—in expectation of becoming the director of a new branch of the Survey in Ireland, accepted the chair of geology and mineralogy at Trinity College, Dublin, but the plan for the Irish branch of the survey never materialized; he returned to England and worked for the Survey (though in a demoted position) until 1849, when he resigned and returned to York.

Now took place one of the turning points of his life. In 1852, he visited Birr, Ireland, and was given an opportunity to observe the Moon with the Third Earl of Rosse's great six-foot reflector. His geological interests had always been exceptionally broad (as early as 1839, when he was living at St. Mary's Lodge, Marygate, York, he set up a 2.4-inch Cooke refractor on a stone pillar in his garden, with which he occasionally observed the Moon), but it was the breathtaking view with the Rosse telescope—and in particular, of the great walled-plain Gassendi—that stirred his passion as never before. From that point onward he devoted a great deal of his time to astronomy, and in particular was a founding member of the BAAS "Moon Committee." In 1853, he presented at the BAAS meeting at Hull a preliminary "Report on the Physical Character of the Moon's Surface, as compared with that of the Earth," and later helped draw up plans for a collaborative effort, involving fourteen volunteer observers, to map the Moon on a scale greater than had ever been attempted. Though the activities of the "Moon Committee" later came to be coordinated by William Radcliffe Birt, Phillips was always the driving force behind it.[4]

The year of the Hull meeting and the first efforts of the "Moon Committee" saw Phillips's arrival at Oxford to assume the position of deputy reader in geology. Though well known for theology, philosophy, the classics, history and literature, Oxford had fallen far behind Cambridge in science. There was a small number of the faculty eager to do something about it. As far back as the 1830s, William Buckland, who is best remembered for writing the first full account of a fossil dinosaur, had already instigated a plan to build a Museum, and was supported by young Henry Acland, later the Regius professor of medicine. However, it was only the immi-


Oxford University Museum of Natural History (1860~),
with Phillips's house the three-story affair to its right and in front of it the conical observatory.

nent threat of a government inquiry into the teaching of science in the two universities, in 1850, that persuaded Convocation to make the concession introducing a school of Natural Science, and only then it also dawned upon them that they would have to provide facilities, hence the Museum, proposed in 1853, commenced in 1855, and completed in 1860. By 1855, Charles Daubeny was the University's undisputed senior scientist, but he remained in the background while Acland fronted the project and left Phillips, who became Keeper of the Museum, in charge of all the detail.

(On a personal note, I gave a lecture in the Oxford University Museum in May 2004, on the eve of the transit of Venus, and it was the most superb situation in which I have ever done so. The neo-Gothic building was designed by the Irish architects Thomas Newenham Deane and Benjamin Woodward from suggestions in the writings of John Ruskin. Its glass roof is supported by cast iron pillars, and the cloistered arcades circle the ground and first floor of the building, supported by columns of native British stone chosen by Phillips himself. Ornamentation of the stonework and iron pillars consists of elegantly blended fern- and fossil motifs. Corridors are filled with the reassembled skeletons of dinosaurs and mammals, and many of the cabinets are crammed with fossil collections organized by Phillips. Among the statues of eminent men of science are represented Phillips's uncle, William "Strata" Smith, and Phillips himself.)

As the Museum neared completion in 1858, Acland pointed out that hitherto the University that had often been one-sided in the forms of study it offered. But he insisted that the opportunity was needed to learn about the natural world as a means of acquiring "knowledge of the great material design of which the Supreme Master-Worker has made us a constituent part." Phillips, indeed, would have agreed wholeheartedly. By then, "the great material design" included the fabric of the heavens—chiefly the Moon but also, as we shall see, Mars.

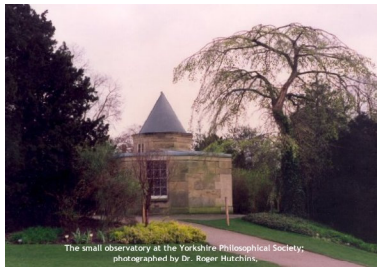
Phillips never seems to have had quite enough to do. In addition to being Keeper of the University Museum and Professor of Geology, he was Keeper of the Ashmolean Museum and the leading light of the Ashmolean Society. Moreover, by now he was as interested in astronomy as in geology, and already beginning to swap around for the facilities he needed to pursue the grandiose BAAS Moon-mapping project. Astronomy at Oxford had, alas, been in the doldrums for decades, and needed to be rebuilt from the ground up. Earlier in the century, the University had blunderingly lost control of the splendid Radcliffe Observatory, a gem of eighteenth century architecture that remained active (though not part of the University's facilities, and not front line). When the dust from that fiasco finally cleared, it was found, to its considerable embarrassment

that it retained no facilities for observing other than the roof of the Tower of the Five Orders in the Bodleian quadrangle (from which the Rev. Thomas Hornsby had once observed a transit of Venus) and the window of a little observatory in the house in New College Lane where Edmond Halley had once lived and through which William Fishburn Donkin, the rather dated Savilian professor of astronomy, taught students how to use sextants and other small instruments.

He was corresponding with Edward Sabine, Secretary of the Royal Society and chair of the Government Grant Committee, about obtaining funds for a proper telescope. However, he was eager to begin, even if he didn't get the funds (and he didn't the first time it was voted). In 1860 he ordered, at his own expense, a 6½-inch refractor from the York firm of Thomas Cooke & Sons, and began to project a collaboration in which all fourteen members of the lunar-mapping scheme would divide up the Moon among themselves and draw features with similar instruments.

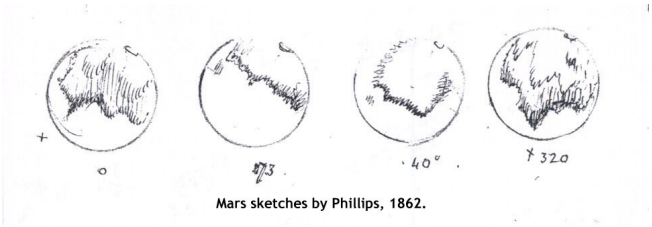

A six-inch Cooke refractor, an instrument similar to that with which Phillips used (Courtesy Tom Dobbins.)

The telescope was not delivered for two years, and when it came, Phillips was reeling from a devastating loss. His sister and housekeeper Ann had died. No doubt the three-story Keeper's house behind the Museum, where they had lived together for several years, became oppressively quiet and full of anguished remembrance. Presumably Phillips's religious faith sustained him through his loss, as did his friends and committee work. Nevertheless, his personal and administrative correspondence fell off for a time. Under the circumstances, the Cooke refractor provided much-needed distraction, not to say almost therapy. In July, he proceeded to set it up in a small conical observatory fashioned, perhaps, on the model of the one he had known at the Yorkshire Philosophical Society long before. When he swung open its shutter to the sky, Mars was an irresistibly alluring target. It would not quite approach as close as it had been in 1860, but it was higher in the sky and more favorably placed for observation by Northern Hemisphere observers. So the Moon would have to wait, and the first object of serious investigation with the new refractor would not be the walled plains of the Moon but the ruddy- and grey-green areas (lands and seas?) on this other Earth.


The small observatory at the Yorkshire Philosophical Society; photographed by Dr. Roger Hutchins.

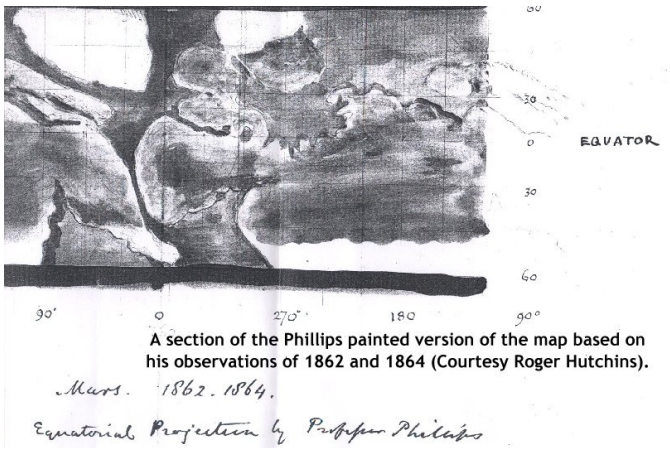
Recall just how primitive knowledge of Mars was in 1862. The first map of the planet, by the German amateurs Wilhelm Beer and Johann Heinrich Mädler using a 3.7-inch Fraunhofer refractor at Beer's observatory in the Berlin Tiergarten, was only twenty years old and had not yet been superseded. Though previous observers, such as Schroeter and Flaugergues, had imagined themselves to be witnessing features on an ever-changing and ephemeral shell of clouds, Beer and Mädler had seemingly established that the features were permanent and based in a solid surface (curiously, after leaving for Dorpat in 1840, Mädler began to shift his ground, and was no longer so sure). Phillips, pondering a series of sketches by such leading observers as Mädler, John Herschel, Warren de la Rue, Angelo Secchi, and others, found that they corresponded so little with one another that he was not even able to convince himself that the features of the planet were permanent—much less arrive at a conclusion as to their nature.

At once he had an inspiration. He realized that a much more satisfactory opinion could be formed of


Mars sketches by Phillips, 1862.

the actual arrangement land and water upon Mars

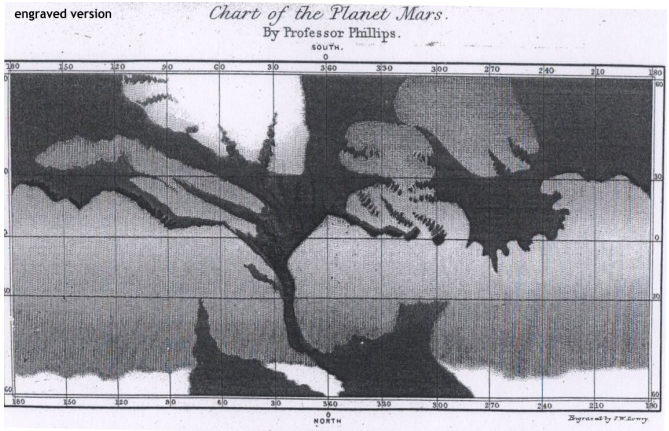
if a globe of the planet were constructed than from a mere chart or planisphere, and so made, between September 27 and December 13, 1862, fourteen



A section of the Phillips painted version of the map based on his observations of 1862 and 1864 (Courtesy Roger Hutchins).

Mars. 1862. 1864.
Equatorial Projection by Professor Phillips

engraved version



sketches of the planet and arranged them in order relative to an arbitrary prime-meridian (he chose a different one from that of Beer and Mädler and adopted by the later observers of the planet; instead of passing through the feature Schiaparelli would call Sinus Meridiani, it passed through his Hammonis Cornu). Phillips then used these sketches,

> for constructing a globe of Mars. [I] constructed one, and mounted it on a wooden frame. By considering the way in which the globe was presented to the observer on Earth at different periods in the revolution of Mars, I was able to perceive clearly the reason for the very different appearances presented by the drawings of the earlier eminent observers. This was the first example of a globe of Mars on which the main features were laid down.[5]

This globe seems first to have been exhibited to the Royal Society. It was apparently quite small, and not a globe in the usual sense implied (i.e., a ball). Instead, it was fashioned around a hexagonal frame of wood, on which he mounted his drawings in the order of the computed longitudes. Actually, Phillips refers to two globes being in existence by the end of 1862. In February 1863, he alludes to a third. They must have been of rather flimsy fabric, and once they had served their purpose, they were either broken up or discarded, perhaps by Phillips himself, or perhaps knocked about the rooms of the Ashmolean Society for a few years before being thrown out as rubbish by some low-browed Philistine. In any case, and sadly, none of them have survived. Nor did the next globe—an apparently rather exquisitely artistic little globe, constructed on a scale of 7.5 cm by the instrument-maker John Browning, exhibited in 1868, with Richard Proctor's system of nomenclature.[6] A number of Mars globes by other observers would eventually follow.[7]

Having settled the permanency of the Martian features, Phillips next attempted to shed some light upon their nature. Sir John Herschel, in his celebrated *Outlines of Astronomy*, had maintained:

> In this planet we frequently discern, with perfect distinctness, the outlines of what may be continents and seas. Of these, the former are distinguished by that ruddy colour which characterizes the light of this planet—which always appears red and fiery—and indicates *an ochre tinge in the general soil*—like what the red sandstone districts on Earth may possibly offer to the inhabitants of Mars, only more decided. Contrasted with this (by a general law of optics), the seas, as we may well call them, appear greenish….[8]

Phillips considered the differences in the colors reported by various well-known observers. Thus, he noted, to James Nasmyth, using a large reflector, the "land" on Mars appeared of a decidedly red tint, and the "water" green; Norman Lockyer's "overcorrected" achromatic refractor showed no redness; while to Phillips himself, the "land" appeared red in some areas, in others bright and even silvery, and the "water "appeared greyish or greenish.[9] Though clearly inclined to accept the usual

identification of the reddish areas with lands and the grey-green areas with seas, Phillips exercised a degree of caution that would not always be in evidence among later writers about Mars:

> Allowing the white [?light] spaces to be land, which reflects light as the Moon in opposition, it seems a natural supposition that the shady spaces should be called sea; and this may be supported by the obvious requirement of water somewhere on Mars, to agree with the alternate gathering and melting of the snow around the poles. Still, every observer remarks no small resemblance of some of these shady tracts with particular parts of the unequally tinted grey surfaces of the moon. A positive proof of ocean on the disk of Mars would be afforded by the star-like image of the sun reflected from the quiet surface, or the more diffused light thrown back from the waves; but nothing of this sort has been placed on record. [(10)]

Phillips was the first person to carry out a rough calculation of the visibility of a specular reflection of the Sun from an ocean on Mars, and concluded that—at least if the reflection were assumed to be taking place at a nearly vertical incidence—it could not be observed with any telescopes then in existence.[(11)] Later investigators—notably Schiaparelli—reopened the question, and estimated that the image of the Sun reflected off a Martian ocean would be observable as a brilliant flash, and the geometrical circumstances in which this was expected were published with ephemerides. Of course, reflections off a standing body of water would never be reported—for the simple reason that the so-called seas of Mars are not seas. But Phillips was the first to propose this as a fruitful area of investigation, and he stands as a distant progenitor of events such as Percival Lowell's glimpses of flashes off the Mountains of Mitchel in 1894 or the flares at Edom recorded by Tsuneo Saheki in 1954.[(12)]

Phillips would observe Mars again in 1864-65 (the same opposition at which the Rev. William Rutter Dawes produced his fine series of drawings with an 8¼-inch Clark refractor at Haddenham, Buckinghamshire). Instead of another globe, Phillips's main result of the apparition was the production of an evocative color-map of the planet, which combined both the 1862 and 1864 observations. The original, which is carefully preserved in the library of the Oxford Museum of Natural History, gives a good idea of the way that Phillips's eye perceived the Martian colors, but sadly, it has never been published. Lacking access to this admirable piece of work, Phillips's map has never been fully appreciated by historians of Mars. If known at all, it is in the form of rather substandard engravings. Also, it was quickly overshadowed by Richard Proctor's chart of 1867. Proctor's map, based (rather crudely) on the drawings of Mars, is poorly executed from an artistic viewpoint, but is historical importance nevertheless as being the vessel on which was floated the first tentative nomenclature for the features of the planet.

After 1865, Phillips does not seem to have made any additional observations of Mars, and even the Moon—the subject of intense investigations during the same few years—was neglected. His interests seem to have come once more back down to Earth. In 1871, the year in which Darwin published *The Descent of Man*, Phillips's *Geology of Oxford and the Thames Valley* appeared. He was still arguing against Darwin, claiming he had exaggerated the incompleteness of the fossil record, and in support of William Thomson (Lord Kelvin), who had seemingly rebutted Darwin by calculating a relatively youthful age of the Earth. Though he was now over seventy, he still seemed to have many years of work in him. But the end came abruptly. After dining at All Soul's College on April 23, 1874, he slipped and fell down a stone stairway; and though he lingered overnight, he never regained consciousness and died the following day. In accordance with his wishes, he was buried in York Cemetery, next to his sister, the great Peter bell in York

Minster minster ringing for ninety minutes in his honor.

More recently, his name has been honored with a crater on the Moon and another on Mars—fittingly so, for he deserves to be remembered better than he is as the first great geologist to attempt a serious investigation of worlds beyond the Earth.

September 7, 2010

(Notes)

(1) The literature on Darwin's illnesses is extensive; for a recent account, with an extensive bibliography, see William Sheehan, William H. Meller, and Steven Thurber, "More on Darwin's Illness: comment on the final diagnosis of Charles Darwin," *Notes & Records of the Royal Society* (2008), 62, 205-209.

(2) Leonard Huxley. *The Life and Letters of Thomas Henry Huxley*, 2 vols. (MacMillan, 1900); vol. 1, p. 202.

(3) The authoritative biography of Phillips, though it contains little about his developing astronomical interests and activities, is Jack Morrell, *John Phillips and the Business of Victorian Science* (Aldershot, England, 2005). See also Jack Morrell, "John Phillips," *Dictionary of National Biography* (Oxford, 200) vol. 44, pp. 120-122. On Phillips's astronomy, the best account is by my friend Roger Hutchins, "John Phillips, geologist-astronomer, and the origins of the Oxford University Observatory, 1853-1875," *History of Universities*, **13** (1994), 193-249.

(4) Phillips's lunar studies are described in William Sheehan and Thomas Dobbins, *Epic Moon: a history of lunar exploration in the age of the telescope* (Richmond, Virginia: Willmann-Bell, 2001).

(5) John Phillips, "Ashmolean Society," report of meeting, 2 March 1863; Ashmolean Natural History Society, Department of Western Manuscripts, Bodleian Library.

(6) Browning's globe, which he presented to the Royal Astronomical Society in 1868, is described by Richard A. Proctor in a 15-page pamphlet, "Remarks on Browning's Stereograms of Mars," London: John Browning, 1869. Proctor does concede in a footnote that "Mr. Browning's globe was not actually the first ever constructed to represent the ruddy planet, Professor Phillips of Oxford having, some years before, exhibited a Martian globe. But so many more details were shewn in Mr. Browning's globe, that it may be looked upon as the first really satisfactory attempt to represent the features in this manner." Whether Proctor actually saw Phillips's globe is not made clear. His preference for Browning's can be sufficiently explained by the fact that, as Browning was publisher as well as subject of this pamphlet, Proctor produced it for him as a work for hire.

(7) As far as I have been able to determine, the oldest Mars globe still extant is that constructed in 1882 by Camille Flammarion. It exhibits his system of nomenclature, and I have seen a copy of it at Juvisy. Another, by L. Niesten, which follows the nomenclature of the English observer Nathaniel Green, appeared in 1892. I have seen one in the British Museum (Natural History), and another in the private possession of Sir Patrick Moore. The series of Mars globes constructed by Percival Lowell, which utilize Schiaparelli's nomenclature, commence with that constructed after the opposition of 1894. All are on exhibit at Lowell Observatory with the exception of one, from 1905, which is on loan to the Smithsonian Institution in Washington, D.C., and a larger, and more extravagantly colored, Mars globe by Lowell given to Flammarion can be seen at Juvisy.

(8) John Herschel, *Outlines of Astronomy* (Philadelphia: Blanchard & Lea, 1861), p. 272.

(9) John Phillips, "On the Telescopic Appearance of the Planet Mars," *Proceedings of the Royal Society of London*, vol. XII (London, 1863), pp.431-437. Needless to say, the inter-rater reliability of different observers concerning planetary colors is notorious.

(10) ibid., p. 435.

(11) ibid., p. 435n: "The quiet image here alluded to would not exceed 1/20th of a second of angle at the opposition, if no allowance be made for irradiation. But much allowance must be made for this. A thermometer-bulb, with diameter half an inch, reflects the sun as a star visible by the eye at 25 yards' distance, the reflecting surface in this case being about 1/240th of an inch in diameter, and therefore (if no irradiation were allowed for) the angle subtended at the eye would be only about 1". By employing on Mars a power of 300, the 1/20" becomes relatively magnified to 15".

"The reflective power of water at a nearly vertical incidence is, however, so much reduced, that Professor Phillips found it possible, under that condition, to observe the Sun's image in water without a protecting dark glass. It seems probable, therefore, that even in very large reflectors the direct solar reflexion from water on Mars would be too faint for observation."

(12) See Thomas Dobbins and William Sheehan, "The Martian-Flares Mystery," *Sky & Telescope*, May 2001, 115-123, for the prediction of a flare-event at Edom based on a careful analysis of the circumstances of Saheki's observations.

CMO 2009/2010 Mars Report #20

CMO/OAA→ISMO

Now the last report of this apparition: This time we treat the period

16 August 2010 (λ=134°Ls) to 31 August 2010 (λ=142°Ls)

The apparent diameter was 4.4" at the end of August, implying the end of the apparition came. Furthermore the apparent declination was from 4°S to 8°S so that the position of the red planet is very

low and it is even difficult to find at the sunset time. However we received the following reports. The central latitude ϕ was from 25°N to 24°N, and the phase angle was from 28° to 26°. In Japan it was terribly hot throughout August.

MAKSYMOWICZ, Stanislas (*SMk*) Ecquevilly, France

1 Drawing (19 August 2010) 360×20cm Cassegrain

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

4 Sets of *RGB* + 4 *LRGB Colour* + 4 *L* Images (16, 17, 21, 22 August 2010)
25cm speculum @*f*/60 with a Lu-075M

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

1 Drawing (31 August 2010) 400×20cm *F*/12 Goto ED refractor*
(*The Observatory, Fukui City Museum of Natural History)

#. . . . . .MORITA (*Mo*) chased the planet until the last moment: On 16 Aug (λ=134°Ls) at ω=119°W, and on 17 Aug (λ=134°Ls) at ω=112°W, he shot the surfaces where the dark markings were scarce, but looks to have caught the sinking of Solis L. In B, the evening mist is obvious. On 21 Aug (λ=136°Ls) at ω=072°W, and on 22 Aug (λ=137°Ls) at ω=058°W, he described the large M Acidalium near the CM: The latter is better because of the seeing. Margaritifer S and Aurorae S are visible. However the area around of the npc is obscure.

Visually MAKSYMOWICZ (*SMk*) observed on 19 Aug (λ=135°Ls) at ω=189°W where also the dark markings are scarce. The morning side is light by the use of Wr#8(Y). The last runner was NAKAJIMA (*Nj*) at Fukui who observed on the hot evening of 31 Aug (λ=141°Ls) at 9:50 GMT: The LCM was ω=324°W where Syrtis Mj was apparent, and he believed the npc to be seen. The southern limb including Hellas was just dimly light.

#. . . . . .This season, among the ccd imagers, *Mo* was the most productive, and secured 223 sets (each set is made of 5 images including IR before 17 Jan, however later his one set consisted of 6 images after he began to use the L filter). Visually MINAMI (*Mn*) drew a total of 518 sketches.

Masami MURAKAMI (*Mk*) & Masatsugu MINAMI (*Mn*)

Notice: Recent Trend of the OAA Mars Section:

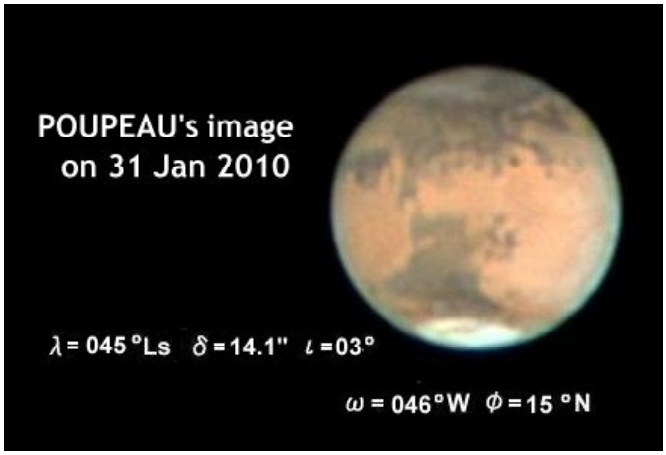
Masatsugu MINAMI (*Mn*) vacated the chair of Director of the OAA Mars Section to Masami MURAKAMI (*Mk*) recently (public announcement was made in the September 2010 Issue of *the Heavens*, the OAA Journal). The Secretariat is then kept by Takashi NAKAJIMA (*Nj*) as well as newly by Akinori NISHITA (*Ns*). *Mn* occupied the position from April 1990 after Tsuneo SAHEKI retired, and hence he spent 20 years as the Director. He and Tadashi ASADA (*As*) (also a former Secretary of the OAA Mars Section) will devote themselves to the management of the *International Society of the Mars Observers* (ISMO) henceforth. The *Communications in Mars Observations* (CMO), which was first published in 1986 before *Mn* assumed the directorship, shall be the Bulletin of the ISMO henceforward, as announced in the preceding issue. We hope every Mars observer of the world (including the so-called armchair observers) comes together to the ISMO and the Japanese Mars observer more participate in the OAA Mars Section. The Web-Side of the OAA Mars Section will be more fruitful in Japanese.

Masami MURAKAMI (*Mk*), Takashi NAKAJIMA (*Nj*) & Akinori NISHITA (*Ns*)

CMO 09/10 Mars Note (4)

Off-Opposition Effect of the Evening Nilokeras

It is advisable to see the images of CASQUINHA (*PCq*) on 29 Jan (λ=044°Ls, ι=03°) 2010 at ω=053°W, of LAWRENCE (*PLw*) on 30 Jan (λ=045°Ls, ι=03°) at ω=053°W, or of POUPEAU (*JPp*) on 31 Jan

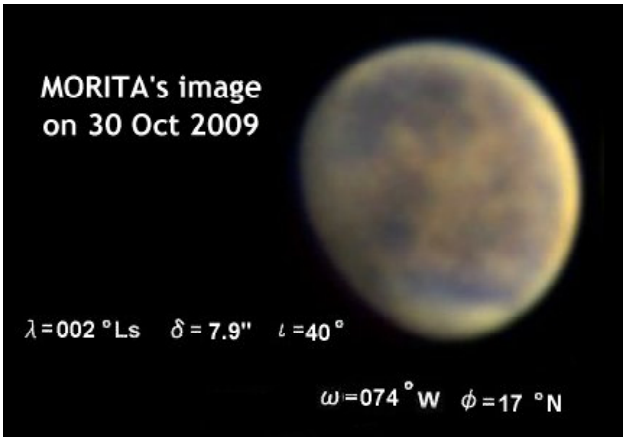


(λ=045°Ls, ι=03°) at ω=046°W how Nilokeras appears near the opposition time. These are those taken when Nilokeras is near the CM. The evening Nilokeras is caught by MORALES (*EMr*) on 31 Jan (λ=045°Ls, ι=03°) at ω=081°W or by Don PARKER (*DPk*) on the same day at ω=100°W. Nilokeras looks not so different.

However when the phase angle ι is large, Nilokeras looks quite different. For instance, if we see MORITA (*Mo*)'s images on 23 Sept (λ=343°Ls, ι=39°) 2009 at ω=073°W, 083°W, the area of Nilokeras is quite dark even if we discard the area of Lunae P. The visual observations by the present writer (*Mn*) made on

24 Oct (λ=359°Ls, ι=40°) ω=081°W, 092°W, 100°W
27 Oct (λ=001°Ls, ι=40°) ω=062°W, 072°W, 082°W
28 Oct (λ=001°Ls, ι=40°) ω=072°W, 082°W,
29 Oct (λ=002°Ls, ι=40°) ω=062°W, 072°W, 082°W
30 Oct (λ=002°Ls, ι=40°) ω=063°W, 072°W,
31 Oct (λ=003°Ls, ι=40°) ω=063°W,

also show the dark Nilokeras near the evening terminator. Especially Nilokeras appeared quite dark brownish on 27 Oct, 28 Oct and on 29 Oct at ω=072°W the area including the remnant of M Acidalium was the darkest inside the whole disk. On 30 Oct earlier at ω=043°W, Nilokeras was not near the evening terminator, but the area was really dark brownish while the southern markings were rather bluish. On 30 Oct (λ=002°Ls, ι=40°), *Mo* pro-



duced images at ω=058°W, 064°W(066°W), 074°W, 084°W which showed the area of Nilokeras was dark brownish.

In November 2009, the place was watched from Europe to the US. GERSTHEIMER (*RGh*)'s IR images on 19 Nov (λ=012°Ls, ι=37°) at ω=079°W show that Nilokeras is dark, and GORCZYNSKI (*PGc*)'s images on 21 Nov (λ=013°Ls, ι=37°) at ω=096°W also show the similar fact. BATES (*DBt*)'s image, made on 22 Nov (λ=013°Ls, ι=37°) at ω=062°W, though smaller, also shows the brownish Nilokeras and the rather bluish southern markings.

From Japan *Mn* chased again on 2 Dec (λ=018°Ls, ι=35°) 2009 at ω=065°W, 075°W, 084°W, 094°W when Nilokeras became darker quite near the terminator at ω=094°W. *Mn* also observed on 4 Dec (λ=019°Ls, ι=34°) at ω=076°W, and AKUTSU (*Ak*) produced good images at ω=094°W. *Mo* also took at ω=069°W, but the time is a bit early, whereas he added an IR image at ω=087°W in which Nilokeras was conspicuous. On 6 Dec (λ=020°Ls, ι=33°) *Mo* continued to shoot until ω=075°W, and *Ak* gave a clear image of Nilokeras at ω=086°W. This set of images is important since we can compare it with the image sets taken near the opposition time.

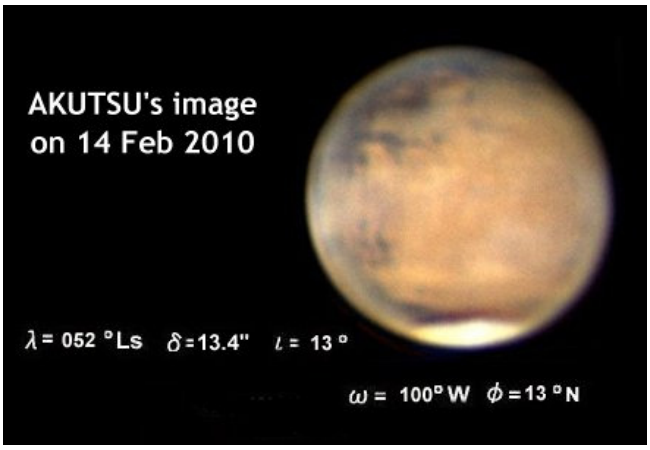
As the new year came in, the phase angle ι went down to 15°, and Nilokeras has become less dark.

On the drawings of *Mn* on 10 Jan (λ=036°Ls, ι=16°) at ω=078°W Nilokeras is never dark, and on 16 Jan (λ=039°Ls, ι＝12°) at ω=072°W, 081°W, *Mn* observed that it was rather thinner. Then the planet became near at opposition.

The point we describe this time is that the density of the evening Nilokeras looks different before the opposition time from the cases we see it at the opposition time. Unfortunately after opposition time it becomes difficult to compare the cases because the sunset line moves to the rear side. We are however of the opinion the remaining Nilokeras must be not so dark because it is somewhat far from the evening terminator.

The reason why there occurs a difference in density is because the area of Nilokeras is not made of a flat ground marking but it's a deeply depressed concave ground and when the sunbeam shines in obliquely (that is the phase angle ι is large) the sunken place becomes quite shadowy and the area must be quite darkened. Since the case is obvious before opposition, the western wall must be a deep cliff. It is unknown what kind of the depressed ground is there but the ground itself must be a dark marking, and the shadows of the western wall will produce a further darker nuance. The colour must also be influenced by the formation of the north polar hood. The shadowy concave ground must be checked similarly on the eastern side, but as aforementioned it is difficult to see the true evening terminator after opposition. Possibly the eastern side will be checked on the morning side.

At least as a good example after opposition, we pick out *Ak*'s images on 14 Feb (λ=052°Ls, ι=13°) at ω=091°W, 100°W, where the phase angle ι is not large enough, and Nilokeras looks to have been fainter (compare with Solis L). Before this observation, on 13 Feb (λ=051°Ls, ι=12°), NAKAJIMA (*Nj*) and *Mn* visually chased at ω=097°W(*Nj*), 101°W(*Mn*), 106°W(*Nj*), 111°W(*Mn*), 116°W(*Nj*), 121°W(*Mn*), and we had an impression that the area



of Nilokeras was less dark in general, whereas at ω=101°W it was dark brownish, and at ω=121°W it was very dark on the limb. On the same day *Mo* took images at ω=106°W where the area is rather dark despite the evening mist. On 21 Feb (λ=055°Ls, ι=18°) at Fukui we checked at ω=085°W(*Mn*), 089°W (*Nj*), 094°W(*Mn*) but rather faint, and at ω=104°W (*Mn*) it was quite faint. On 23 Feb (λ=056°Ls, ι=19°) at ω=086°W *Mn* did not see any trace, and this caused a motivation to compare the cases though the angles are different from the cases before opposition. As mentioned the sunset line is far at the rear side.

We may possibly pick out other cases where the area including Lunae P became fainter near the evening limb, but since the phase angle ι became deeper, we stop describing the details any longer. Just only we touch *PGc*'s images on 7 Mar (λ=061°Ls, ι=25°) at ω=094°W which is instructive. And as an example when the phase angle ι is deeper, we can pick out PEACH (*DPc*)'s images on 11 May (λ=089°Ls, ι=38°) at ω=118°W, 122°W: The dark brownish aspect disappeared. (*Mn*)

Letters to the Editor

● ---------***Subject: Mo 17 Aug_10***
Received: Fri 20 Aug 2010 23:52:47 JST

These images were taken on 17 Aug. The seeing was poor, but Solis L becomes to be seen though the image is a bit turbulent. It is expected that tomorrow and the day after tomorrow the sky seems fine, and so I will try to shoot.

○---------*Subject: Mo 21 Aug_10*
Received: Tue 24 Aug 2010 00:26:55 JST

I send the images on 21 August. The seeing was poor, and hence I used *f*60. The dark markings were visible in R, while the B image is not good. Best

○--------- *Subject: Mo 22 Aug_10*
Received: Sun 29 Aug 2010 22:24:44 JST

I waited Mars to take yesterday and today, but the cloudy matter interrupted. Furthermore the planet is already so low that a neighbourhood roof began to obstruct. So I should say my apparition of Mars this year ended. Here is a set of the images which I took on 22 Aug, and maybe the last. Best

Yukio MORITA (Hatsuka-ichi, Hiroshima, Japan)

●-----*Subject: Mars observation last 19th*
Received: Fri 20 Aug 2010 18:41 JST

Good afternoon, Here are the last observation performed last 19th concerning mars (day light conditions and pure sky transparency) with the 50mm refractor and the 200mm. Mars exhibits brigthtness at the limb and the terminator with the light yellow filter W8. Interesting to do after waiting the best seeing conditions (about 5-10 min). Here is a photo of the scope, an RC with a high optical accuracy (superpolished), the 50mm refractor is just behind the scope. Small aperture can do something consistent still. For your perusal. Best regards

Stanislas MKSYMOWICZ(Ecquevilly, France)

●---------*Subject : Re: Your article (in Japanese)*
Received: Sun 22 Aug 2010 01:09:01 JST

Dear Masatsugu, Many thanks for the Japanese translation!

About my personal site, I have no idea of what is happening. It's completely blocked since a few days... I have just written to the webmaster of astrosurf. But btw, the URL of the footnotes are the good ones, so you may keep them. Perhaps warning people that the site is in trouble but should recover asap... ... Best wishes

○-----*Subject: Re: The peculiar reddish features on Mars*
Received: Sun 22 Aug 2010 02:53:55 JST

Dear Bill, Many thanks for having translated my article. As a non-native speaker it's really hard to know how my written "style" in english do really sounds to people and I will learn from how you changed it... I do not know of any older references about Valhalla, but my personal astronomical historical culture is just basic. Weren't you the first to name it? Anyway I agree that it could be a nice idea to keep in the theme of colors for the following issues. I haven't heard about Young's paper and I would be curious to know it...

Just a few word about the translation if you don't mind - there is one or two things that has been added from the original text, especially in the conclusion. Although I support them, they sound a bit strange to me because they are very typical of your style as a writer Bill (like speaking about Lowell)... but this is not "me";). No need to say what I write is opened to discussion and so on, but we're rich of our diversified profiles. Best wishes

○-----*Subject: URL for the W47*
Received: Sun 22 Aug 2010 20:41:28 JST

Dear Masatsugu, It appears that Astrosurf is currently saturated, so it might explain why we don't see my pages. Anyway for the purpose of the article, here is a new link, if it's not too late to change it... http://pellier.christophe.perso.sfr.fr/W47e.htm

Best wishes

○-----*Subject: Re: PD_CMO#375*
Received: Mon 23 Aug 2010 00:07:43 JST

Dear Masatsugu, just two remarks: Page 1: first paragraph, "lead to e white clouds" (e for enhanced, surely) ... and if it could be possible just to say that "the author would like to thank Bill Sheehan for having corrected his original text"! Very nice btw ! Best wishes

○-----*Subject: Re: The peculiar reddish features on Mars*
Received: Mon 23 Aug 2010 02:40:02 JST

Dear Bill, No problem really, and by the way I enjoyed what you completed about the comparison with the moon (seeing its relief or not, this is absolutely the relevant reference). Looking for old images of Valhalla would be a good thing - you may not know the BDIP site where you can find treasures in old images ?

http://www.lesia.obspm.fr/BDIP/ Best wishes

○---------*Subject: Re: CMO #370*
Received: Tue 07 Sept 2010 02:56:43 JST

Dear Masatsugu, I'm sorry about the returned CMO issue - during a period last winter, my name dropped of my mailbox, and many mails never reached me until I got aware of the situation. But

the postal address is good... I will be happy to receive it - sorry for the additional cost... I don't know why you did not received the summer issue of *l'Astronomie*. I'm going to write to Marie-Claude Paskoff to know if there have been a problem. Here the summer has been disappointing. Not cold, but very cloudy and rainy... I have the feeling that Japan and Europe have opposite weathers? Each time we talked about weather conditions, they were opposed... Best wishes

Christophe PELLIER (Seine-St-Denis, France)

●-----***Subject: Re: The peculiar reddish features on Mars***
Received: Sun 2 Aug 2010 11:01:13 JST

Dear Christophe, I greatly enjoyed reading your article, and admit that mine was a rather "free" translation. I aimed to write it as I imagined Christophe would have written it as a native-speaker in English. Apologies for adding a bit here and there; I guess I got carried away. Of course, you and Masatsugu will (and should) have the final say as to what is included in the published version.

The fanciful name Valhalla was indeed first applied in 1988, but I know of no previous observations of the feature. Surely since it is a slope between different areas of terrain it seems perhaps that it should in the past have been sometimes visible, and perhaps it was-- I admit I have not looked through old photographs to see if any trace of it is to be found. It has certainly been very prominent since the late 1980s. Next I will send to you the web site where you can access Andy Young's very nice paper. Best,

○---------***Subject: Re: Article please***
Received: Fri 03 Sept 2010 22:38:42 JST

Dear Masatsugu, I'm a bit swamped at the moment, but suppose that something on John Phillips, the first professionally trained geologist to pay attention to Mars, might be worth doing on the 150th anniversary of his work at Oxford for the 1862 opposition of Mars. Will this meet your needs?

Sincerely,

○---------***Subject: Re: Article please***
Received: Sat 04 Sept 2010 00:45:54 JST

Dear Masatsugu, I shall get this to you in a few days. Yes, he did construct the first Mars globe, though it did not survive, and also produced the first stereo maps of Mars. I may have pictures of some of those things from the Oxford Museum of Science here. Best,

○---------***Subject: Re: Phillips***
Received: Sun 05 Sept 2010 04:14:02 JST

Dear Masatsugu, I have read through the first draft--added various corrections--and have also appended the footnotes. Here is the new version--please disregard the other. I will also send it to Christophe for comments.

Give me another day or two to line up some possible illustrations. Best,

○---------***Subject: A bit more on Phillips***
Received: Sun 05 Sept 2010 06:10:40 JST

Dear Masatsugu, I have been investigating a bit more about the Phillips' globes with the help of my friend Dr. Roger Hutchins of Oxford. He sends me correspondence with Jurgen Blunck in Berlin from 1993—at the time Blunck was setting up an exposition of globes. It appears from the manuscript of the Bodleian library that Phillips actually may have constructed three globes—they were small and appear to have been "fixed together as a hexagon on which he mounted his drawings." None of them exist anywhere in Oxford; and nothing is known of their whereabouts even during the lifetime of Phillips. The prime meridian he chose differed from that chosen by B&M and was later adopted by Proctor and Schiaparelli. I have also found more information about the globe of Browning, which did not survive either. This makes the oldest existing globes that of Flammarion from 1882 (which we saw at Juvisy!) as well as an unknown German one.

I have also a number of pictures to send you of Phillips, his instrument, the small observatory in York that he may have used when he was there, the conical observatory near the Oxford Museum of Natural History (no longer extant), etc., etc. I also have some of his Mars drawings to send.

This is an interesting topic and I am glad that you prodded me to write something. Best,

○--------- *Subject: Re: Phillips*
Received: Mon 06 Sept 2010 01:19:50 JST

Dear Masatsugu, Thanks for the suggestions--I was up all night, but hope to finish yet a third revision of this paper today, and will send it with illustrations. Best,

○---------*Subject: Phillips paper--third (final) draft*
Received: Mon 06 Sept 2010 06:30:57 JST

Dear Masatsugu, et al. I have kept on this and now am presenting a draft that I hope you will edit and revise as needed. I will presently follow with some jpegs of possible illustrations. Best,

○---------*Subject: New text and thoughts*
Received: Mon 06 Sept 2010 23:14:59 JST

Dear Masatsugu and Christophe, Here is a slightly edited intro to the paper on Mars. Please exchange this for the other.

I am wondering if for the next issue of ISMO we might publish (perhaps only in part) my friend Andrew T. Young's paper on planetary colors, as this is a complicated subject of great importance in Mars studies especially that may not be well understood even by many of our readers. He has generously granted us permission to use it. I would help edit it for the purposes of ISMO if this were to be accepted. Best wishes,

○---------*Subject: Re: New text and thoughts*
Received: Wed 08 Sept 2010 06:54:48 JST

Dear Masatsugu--The photo of the Oxford University Museum must have been taken in 1862 or later, as Phillips's conical observatory is visible (just) on this image. The figure 22.1" was its apparent diameter on the date of the Wilberforce-Huxley debate. I shall make a slight change to reflect exactly what was meant. .....

Also: Laurie Hatch made some nice comments and I will incorporate those with the rest and send you the text--I hope corrected for the last time--later. I understand that we may not be able to use all illustrations; use what you think appropriate (and in the interests of space). Best

○---------*Subject: Re: New text and thoughts*
Received: Wed 08 Sept 2010 08:34:37 JST

TEN YEARS AGO (181)

----*CMO #235 (25 September 2000) pp2795~2818*----

http://www.hida.kyoto-u.ac.jp/~cmo/cmo/235/cmo235.html

This issue is a special one reporting the 8th CMO Meeting of the Planetary Observers held in mid-September at Yokohama, and summarised also in

http://www.hida.kyoto-u.ac.jp/~cmo/cmohk/ws/08/ws8.html

The meeting was fully successful and attended by 18 persons, including a special guest of K OKANO (*Ok*).

The LtE of the issue consists of those from H TSUNEMACHI (*Ts*), H OYAMADA (*Oy*), Y MORITA (*Mo*), T AKABANE (hida), I MIYAZAKI (*My*), H ISHADOH (*Id*), T OSHIRO (*Os*), K OKANO (*Ok*), T HIKI (*Hk*), Y HIGA (*Hg*), T ISHIBASHI (*Is*), T AKUTSU (*Ak*), T IWASAKI (*Iw*) as well as those from abroad: W Y LAI (Taiwan), B COLVILL (Canada), Gianni QUARRA (Italy), André NIKOLAI (Germany) and Damian PEACH (UK).

The issue treated the report further received from *Mo* (CMO Mars Report #25 (1998/99)).

TYA (61) recalled two issues CMO#092 (10 Sept 1990), and CMO#093 (25 Sept 1990) of twenty years ago. At the beginning of September 1990, Mars was of δ=11.0", λ=290°Ls, φ=8°S located in Tau.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COMMUNICATIONS IN 東亞天文學會『火星通信』since 1986
MARS No. 235
25 September 2000
OBSERVATIONS Published by the OAA Mars Section

第八回CMO惑星觀測者懇談會・九月15、16、17日・横濱 CMO Meeting 2000
The 8th CMO Meeting of Planetary Observers held in Yokohama on 15, 16 & 17 September 2000

序章：夏の暑さが未だ残る九月15、16、17日、横濱で「第八回CMO惑星観測者懇談會」が開催された。この懇談會はCMOの主なメンバーの情報交換と交誼の爲に随時開かれるものだが、今回は2001年の火星接近に向けて、早くから關東開催が立案され、CMO-Kanagawaの村上昌己(Mk)氏と常間地ひとみ(Ts)さんに依って準備・遂行され、四～五月の段階で岩崎徹(Iw)氏や比嘉保信(Hg)氏の上京の際に具體化された。七～八月には、Mk氏とTsさんがロケーションやプログラムの作成に入り、開催一ヶ月前には會場の「神奈川県立青少年センター」の小會議室を確保し、OHPやTVモニターやスクリーンなども豫約された(LtE)。八月末にはMk氏から關東域のCMOメンバーには往復葉書で出缺がアンケートされ、追い追い参加者が把握された。

通常シーズン中の「懇談會」は夜間觀測が中心で講話・懇談は附け足しであるが、今回は火星がない(他の惑星もない)という機會であったので、プログラム重視となった。メインの16日の豫定は最終的に次のように決められた：

9:00 受附開始
9:30 開會の挨拶 村上 昌己
(午前の部 司会：村上 昌己)
9:40 講演1「惑星CCD撮像の實際と問題點」 阿久津 富夫
10:30 講演2 「2001年の接近と注目點 I」 (火星暦を中心に 西田 昭徳
11:00 講演3 「2001年の接近と注目點 II」 (觀測のポイント) 南 政 次
11:45 自己紹介 出席者各位
12:00 昼食休憩 一階「メルヘン」
(午後の部 司会：南 政 次)
13:00 講演4「前回大接近1986/88年の火星觀測」 中島 守正
14:00 ティー・ブレーク/比嘉氏のヴィデオ紹介
14:30 講演5 「CCD撮像と畫像處理---LRGBを中心に」 岡野 邦彦
15:30 講演6「ディジタルヴィデオ/カメラ撮像と畫像處理」 比嘉 保信
16:20 閉會の挨拶 南 政 次
17:00 小パーティ 「メルヘン」
19:00 歓談會 「ホテル三愛 ラウンジ」

前編：沖縄の比嘉(Hg)氏は前日の朝一番の飛行機で那覇を發って、午後には横濱に入られるというので、15日15:00センター一階のレストラン「メルヘン」が集合場所に選ばれた。蒸し暑い日であったが三々五々馴染みの顔が参集した。CMO神奈川のMk氏、Tsさん の他、Hg氏が早くに到着、あと阿久津富夫(Ak)氏、成田廣(Nr)氏、岩

Opening Address by M MURAKAMI

2795

(*Mk & Mn*)

Dear Masatsugu and Laurie, Thanks to both for the good comments on the Phillips article. Here, I hope, is the last of it.

An article on Herschel's study of Mars on the night of the Great Discovery of the "Georgian" would be excellent. Just on Saturday night I imaged Uranus in the same field as Jupiter with its satellites--Uranus is just like one of the satellites, but a long way away. Best to both,

°---------***Subject: Oops, one more time***
Received: Wed 08 Sept 2010 08:45:16 JST

Masatsugu and Laurie, et al., One last try to get this right--this should be considered the definitive version (at least till the next one). Thanks to all,

°---------***Subject: FW: Phillips article***
Received: Thu 09 Sept 2010 07:05:27 JST

Dear Masatsugu, I just got some comments from my friend Roger Hutchins, with whom Laurie and I travelled through Flanders and the Somme last year—he's the expert on Phillips. He sent some more comments and so please let me revise the text once more before we go to press with it. I will have the corrected version in a day or two. Best,

°---------***Subject: Phillips***
Received: Wed 08 Sept 2010 08:49:52 JST

Hi, all, Here's the final version (at least till the next one).

Bill SHEEHAN (Willmar, MN, USA)

●-----***Subject: Wow! English only!***
Received: Sat 28 Aug 2010 17:43:23 JST

Dear Dr. Minami, Just received your very first printed CMO/ISMO #01 with special feelings. Congratulations on your wise decision and the good start of ISMO!

By the way, I found Fig. 5 in Christophe Pellier's excellent paper in this ISMO #01 issue most interesting. This W47 image by Christophe Guillou with Pic du Midi 1 meter Cass looks "too normal" for a violet light image. .....

I am submitting you soon some of my opinions on this Pellier's article.

As to my paper on your Martian Wine-Coloring Phenomenon which I noticed in my latest LtE to sending you soon then, please wait for a while: After reading Andrew T. Young's truly fascinating paper on planetary colors (which Dr. Sheehan introduced in his LtE in ISMO #01) I have come to feel I need a total reconsideration of my thoughts on Martian colors. Good Seeing with Excellent Scopes!

°--------- ***Subject: Overdo Things***
Received: Sun 05 Aug 2010 1:49:24 JST

Dear Dr. Minami, Lately I often find myself overdoing daily things, maybe a sign of aging. When I emailed you the other night just after returning from the celebration party for our town's summer fireworks festival I was a bit high (alcoholic concentration in my blood was also high).

I wrote you "Valhalla's changing appearance of darkness depending on phase angle can be none other than an illusion or an artifact"(I guess you've got upset). Now got sober, I regret what I told was too extreme. So please let me offer you my correction in my expression: I should have written "Factors other than topography-related shading effect can also exert strong influence on Valhalla phenomenon (of phase angle-depending variation in apparent darkness)."

Now on your question about W47, I think any Wratten series filters have nothing to do with polarized light because they are made of gelatin films in which specific character of dyes are dispersed quite randomly. Interference filters while, may work differently especially when applied obliquely. I agree with you that astronomical filter technique is Dr. Kunihiko Okano's very specialty. You'd better ask him for informations soon. And why don't you request him an original paper on planetary filtering works for ISMO. I once heard he called himself "a paper-writing maniac". Also he is very good at English, about two-hundred times better than my one !

Then for your another late question: If I remember right, in 1971 in the period around opposition day on 10 August when I was observing Mars in Tokyo with my excellent 25cm *F*7.6 Newtonian almost whole the Japanese Archipelago was overspread with gigantic Ogasawara high pressure system. Mercurian or Venusian Earth observers might

have noticed Japan area to be very transparent and Wine-Colored or reddened (the Japan Communist Party was energetic then). The seeing was exceptional, frequently perfect, no trace of image dispersion nor drifting (CMO/ISMO readers can see my drawings and photos in 1971 apparition reproduced in one of Dr. Minami's Talks in 2009 Paris/Meudon IWCMO Conference "*A History of the Mars Observations in Japan*").

It's getting more and more busy in our town in preparing for the coming Autumnal Mountain-Top Festival (we have so many festivals all year round!). So I think I can manage to meet this month's deadline for submission of my another LtE on Christophe Pellier's paper, but I am sorry my original paper on something seems nearly impossible to meet your expectation. Please wait for a while. Take care in this heatwave.

Good Seeing with Excellent Scopes,

°---------***Subject: Must Read!***
Received: Wed 08 Sept 2010 23:54:23 JST

Dear Dr. Minami, Andrew T. Young's "What Color is it" is undoubtedly a MUST READ paper for everyone with any degree of interest in planetary colors. His very first lines will lead you to "a never experienced world"! I guess it was too unique to be accepted by *Icarus*' editors!

Now for my overdoing various things, I made my teacher of English conversation cry while taking her lesson last week. She is from New Zealand, of Northern European extraction, a perfect English/French/German trilingual and also very good at many other languages except Japanese. We feel each other kinda like high school classmates rather than a teacher and a student, and our chats are very open, often too direct. While talking about pronunciations of Martian geographical names in various European languages I noticed she didn't know much about Valhalla. Then my tongue began to slip to blame her ignorance of her ancestor's myths. I said to her too much with many words too rude to reproduce in LtE in ISMO. Our friendship as well as teacher-student relationship were almost breaking up. I know I solely was to blame. Tonight I'm gonna have her lesson again, where I'll give her a bouquet of roses to show her I am a gentleman, and ask her for making up with me.

It's getting a bit cooler, so please take care not to catch a cold. Good Seeings with Excellent Scopes,

Reiichi KONNAÏ (Ishikawa, Fukushima, Japan)

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C_M_O Fu_Ku_I — **T NAKAJIMA (*Nj*)**

★We are cordially thankful to Tomio AKUTSU (441) for his kind donation to our CMO/ISMO.

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