

## Dr. Sommer's Moon: Philology, Cartography, and Oblivion



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*"The comparatively small distance of our satellite, 240,000 miles, renders it the easiest of telescopic objects"*  
—Rev'd T.W. Webb (1859, 46).

*"THE MOON...one of the first objects to which the incipient possessor of a telescope will be likely to direct his instrument and attention"*  
—Capt. W. Noble (1886, 14).

### Abstract

A rare 19th-century map of the Moon, and its context, are explored here. This map may be the earliest issued in a Canadian publication by an amateur astronomer active in Canada. It has not thus far been noted in the literature.

### Lunar attraction

The personified Moon could claim that she is the novice's favourite celestial target for first-light initiation of optical aids to astronomical sight. The reasons are not hard to seek: the Moon is easier to locate than most other astronomical objects, she displays more detail than nearly all other solar system bodies, and she is safer, less complicated, and less expensive to view than the Sun, her rival great luminary. For the beginner with his or her first telescope or binoculars, the observational accessibility of the Moon has not changed from the founding of the RASC till now. Similarly, the challenge to the experienced observer of capturing with ever greater fidelity the abundant and dramatic lunar detail seen in the eyepiece remains a challenge, whether the recording medium is pencil and paper, or an array of electronic sensors. The prolonged formative engagement of serious and recreational science with the Moon, coupled with her long, broad, and varied presence in cultures, lends an enriching resonance through recall and retelling to private, and outreach observing alike.

In the years after Confederation, the Moon interested many amateurs of astronomy, some of whom left a memorial of their activities. Not all of these figures have been written into the present narrative of astronomy in Canada. One such person is the Reverend Dr. Alfred Sommer.

### Dr. Sommer

Very little information is available on Alfred Sommer. It is known that he was a native German, which probably, though not necessarily, means he was born in one of the German states (Anon. 1883, 92). His birth and death dates have thus far not been recovered, but a tentative *floruit* of 1875–1886 can be established for his activity in Canada (Sommer 1879; Anon. 1883; Cronmiller 1961, 169, 188–189). He worked as a Lutheran pastor, and school teacher. Those professions could certainly be complementary, and indeed may not necessarily have been separable, given the particular circumstances of local engagement. That he was well educated is evident from his honorific of "Doctor," although in which discipline that academic grade was awarded, and by which institution, is not known. It may have been in a branch of theology. His work on selenography shows acquaintance with many sources in diverse fields, which also implies access to a good library, or libraries.<sup>1</sup>

During the period 1875–1880, Dr. Sommer was pastor of St. John's, Montréal (Cronmiller 1961, 169).<sup>2</sup> In the late 1870s he served as Chair of the Charitable Committee, and Chair of the Law Committee of the German Society of that city (Lovell 1878–1879, 767). In 1881–1888 he transferred to the parish of Listowel, Wallace, and Trecastle, in Ontario. In 1881, he founded St. Paul's Church in Listowel, and St. James, Trecastle (Cronmiller 1961, 169, 189). Early in his time there we read that: "The Listowel high school Board have engaged a native German, Dr. Sommer, to give lessons to the pupils wishing to acquire the German language. There are 15 in the class at present, with the prospect of an increase" (Anon. 1883, 92).

The secondary sources, contemporary and later, however, make no mention of Dr. Sommer's astronomical interests. Scientifically inclined clergymen were certainly a regular part of the learned landscape. Many made real contributions to astronomy, and astrophysics (Chapman 1998, 225–241, 295–299, for a few examples). Among the membership of the early RASC are numbered Msgr. C. Choquette, the Rev'd Dr. T.C. Street Macklem, Rev'd D.B. Marsh, Bishop J.A. Newnham, and the Rev'd C.H. Shortt, among other clergy (only Choquette and Marsh were figures of any astronomical distinction). Sommer was not, however, of their number within the RASC. For what we know of his astronomy, we must turn to his paper on the Moon.

### Aspiring to philology, and science

One of the periodicals founded in the wake of Canadian Confederation was the aptly named *New Dominion Monthly*. It lasted for about twelve years, not a bad run for a periodical of the day (magazine publishing was always a venture attended by risk). Typical of the quality general periodical literature of the time, like *The Edinburgh Review*, *The Quarterly Review*, and *Harper's Magazine*, the *New Dominion Monthly*

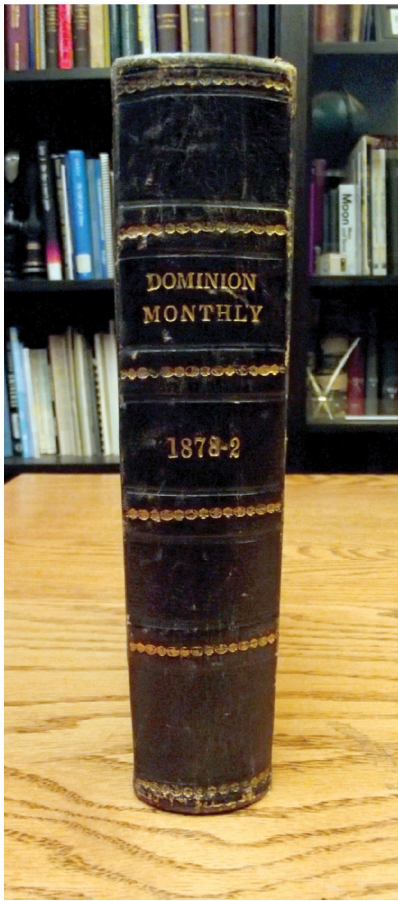


Figure 1 — The RASC Archives' rare copy of the *New Dominion Monthly* (1879, January), containing what may be the earliest published lunar map of Canadian origin.

the “Farewell Number” of the *New Dominion Monthly* 1879, January, before it ceased publication for good. Occupying double columns on pages 58–73, even with seven images, and one fold-out map, it still has a larger word count than the longest of articles in numbers of the *Journal* in recent years (Figure 1).<sup>3</sup> There is no authorial or editorial indication of why this article was chosen for the final issue, but there is an internal indication that at the time of writing (and, presumably, the checking of proofs) Sommer did not expect the magazine to fold: “Perhaps time and the favor of our readers may allow us to speak at some future time about these highly interesting facts...” (Sommer 1879, 72, note). That time never came in this particular forum.

The impression Sommer’s paper leaves on the reader is that of someone attempting to write a miniature treatise touching on as many scientific and cultural aspects of our relationship to the Moon as possible. The materials are not all accorded equal space. First up is a disparate selection of facts on the place of the Moon in myth, religion, and literature (58–60), followed by a smaller section on dynamics and physical characteristics (60–61). The longest section is an imaginary trip to the Moon to survey her features more closely, and experience

published articles on a broad range of topics, including the sciences. Some of the articles could be quite lengthy, and, when illustrated (as was not infrequent), they always featured a greater proportion of text to image than is common now. The images, executed in media allowing only black & white, or greyscale (to use modern equivalents), offered less of a contrast with the text than do our magazine layouts (at least to the later 20th-, and 21st-century eye). All of these indicate that reading habits and expectations differed in the age of Victoria from what they are now—for those with the leisure to read.

Sommer’s article, “The Moon,” appeared in

her environment (61–72). This narrative device is not consistently maintained, frequently faltering to make room for various topics, including a sketch of the progress of selenography (63–65), a claim to possess proof of a lunar atmosphere (69–70), a discussion of Linné and observable changes on the Moon (67–70), the question of life on the Moon (72), and lunar influence on the Earth (72–73). Of interest is Sommer’s introduction of evidence from his own personal observations (67–70).

To give some flavour of the quality of Sommer’s handling of these topics, several will be explored further below.

His approach to myth, religion, and literature is of the type now identified with Victorian cultural anthropologists like Sir Edward Burnett Tylor (1832–1917), the evolutionary universalist, who to illustrate a point drew examples from many different cultures regardless of chronological and geographical differences. The style can be as exhilarating as it is uncritical.

On the opening page alone, Sommer introduces the Roman attitude to Jupiter, the Hindu and other “Indo-Germanic races[.]” view of the Moon, the Caananite(?) Astarte, the days of the week, Old Testament Jewish Law, and biblical Jewish, ancient Roman, and Roman Catholic terms for the *Regina caelorum*, nomadic worship of the Moon, and the commonality of the nomad’s(!) Moon with the Roman’s Diana, the Egyptian’s Upis, and the Greek’s Artemis.

Citations to supporting texts are there none, justified, in the author’s words, with: “In the course of this paper various English, French and German authorities are made use of, but the names are only mentioned when particular important facts and observations are referred to” (58, note). Well and good, until one attempts confirmations of the author’s statements. We are told that “...the Romans held their Curia and Senate according to the moon’s phases” (60). Unfortunately, modern scholarship knows nothing of this (Rüpke 2011, 149–150; Stein 2012, 204–227). One likes to think Sommer didn’t go in for wholesale invention (*à la* Kellyanne Conway’s “alternative facts”), but without some indication of his source it may be hard to trace.

Further on we encounter: “The Jews already called a period of twenty-eight days according to the circuit of the moon... (*Jareah*)” (60). Sommer is not quite correct. One of the poetic words for “Moon” and one of the words for “month” are very similar, sharing the same consonants, but not the same niqqud diacriticals for the vowels. The etymology he states as fact is not unequivocally established by the outstanding Hebrew lexicon of his day (Gesenius 1906, 437; the first edition appeared in 1847). And “The weeks in the month also originated in the four phases of the moon...” (60). This may be Sommer’s interpretation of a passage in Philo, however the ancient author does not actually identify the lunar phases as the origin of the weeks (Philo 1937, I. 177–178, 200–201). It

would seem that Sommer, while ready to delight and inform his readers with a barrage of varied facts of lunar philology, could not be relied upon to inform accurately, even by the standards of his day.

What of his lunar science? To his credit, it appears that he was concerned to provide his readers with the most up-to-date information he could find. Unfortunately, he is again dogged by errors.

We learn that the diameter of the Moon is 472 miles (61). Of the errors here, the most serious is in the order of magnitude. Sommer's  $7.5961 \times 10^2$  km ought to be  $3.476 \times 10^3$  km; a check of the authorities on the Moon he actually does cite ought to have shown him his error (e.g. Nasmyth & Carpenter 1874, 43. The figure is close to the modern value; Vaniman et al. 1991, 28, table 3.1). He even manages to mangle the name of one of the authorities he frequently cites (and a German, at that!); Beer & Mädler consistently appear as "Bähr & Mädler" (e.g. 62; Beer & Mädler 1837). Regarding the synodical month, one reads: "...since one day upon the moon lasts nearly twenty-eight terrestrial days" (63). It had been known for millennia that the synodical month is in fact ca. 29.5 days (Newcomb 1878, 47). Further on we are informed that Beer & Mädler's Fraunhofer telescope had a "five inch focus"! (66). The O.G. was just under 100-mm, and most refractors of that class had a focal ratio of  $f/15$ , which would be 1.524-metres, or five feet. Sommer's error may have been due to a simple

confusion of units. None of this particularly inspires confidence, even if some of the mistakes might possibly be laid at the feet of the printers, rather than the author.

His most startling scientific claim is in regard to a purported lunar atmosphere. It is worth examining at length, both for what it reveals about the strengths, and the limitations, of Sommer's concept of the scientific enterprise.

He begins by laying out something of the history of the question, proffering strong reasons for believing that the Moon has no atmosphere, and listing the galaxy of the great and the good of selenography who argued that side: Tobias Mayer (1723–1762), John Herschel (1792–1871), François Arago (1786–1853), and Johann Mädler (1794–1874) (69). He honestly states that he can cite but a single "modern" astronomer backing the other view; Johann Schroeter (1745–1816, whose name Sommer insists on rendering as "Schroedter"). His admiration for Schroeter leads him to imagine an alternative turn to astronomical history, in which Schroeter had access to spectroscopic evidence before planetary spectroscopy(!), to bolster the acceptance of his observations of a lunar atmosphere:

*"...we have only one modern astronomer who boldly asserted and defended the idea of a lunar atmosphere in despite of all others, and that was Schroedter [sic.] of Dresden. If this able and diligent observer had been armed with a spectro-*

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*scope...surely his results had been happier and would not be disregarded by his fellow-astronomers" (69).*

Sommer's praise of Schroeter culminates in his support of the minority opinion affirming the existence of a lunar atmosphere. That does not, however, quite prepare the reader for what follows:

*"The main argument[s] of those who still cling to the idea of a lunar atmosphere are:...5. The green spectroscopic lines in the moon's light. Impelled by comparatively new reports in the Poggendorfer Annalen on the observation of certain green lines outside the photosphere of the sun, I endeavored to find the origin of these lines, and discovered them not only in the sun's atmosphere far beyond the loftiest protuberances, but also on the moon's edge, and even on the rim of an intense kerosene oil flame I detected a corresponding line in the ultraviolet part of the spectrum, and found that these lines are coincident with the main lines of nitrogen. (Here I may state that I found it extremely difficult to detect any other lines than the solar spectrum in the sun's reflected light upon the moon. But of course this is no reason why a lunar spectrum should not exist...[69|70]...)...we cannot help concluding that the elements of the moon are and must be the same as those existing on the earth...nothing remained except a cold mass of oxidized elements, surrounded by a layer of nitrogen as a lunar atmosphere. In my opinion, as the result of many spectroscopic observations, made in Canada's clear winter nights, there is certainly a layer of nitrogen existing around the moon; but as to the thickness of layer I neither possess the suitable instruments for measuring it, nor am I sufficiently prepared to lay before the public my unfinished calculations. So much only I may remark that the density of the lunar atmosphere must be at least 1/1000 times rarer than the density of our own air; it must be perfectly translucent, and does not cause the sun's rays to diverge[!]; it must be, by force of gravity, 50,000 times denser than the surrounding cosmical air or atmosphere; and it must be free from all combinations of nitrogen known to our terrestrial chemistry[!];" (69–70).*

It is unfortunate that Sommer omits all details concerning his spectroscope. Did it have a prism train or grating, was it provided with a slit or was it slitless, was it placed at the objective or the eyepiece end of the telescope? What was his source of comparison spectra, if any? Amateurs of his day who ventured into optical spectroscopy used the "star spectroscope," available in both professional and amateur formats. The star spectroscopes were equipped with prism trains (usually three prisms, but models with one, or five prisms were available), and were equipped with a collimating or line-broadening lens, or both, and sometimes a slit (Browning 1882, 24–29).

The inspiration for his spectroscopic excursion to the detection of a lunar "atmosphere" looks to be precisely cited, until one attempts to follow it up. The pages Sommer cites from

Poggendorf have nothing to do with "the observation of certain green lines outside the photosphere of the sun," but are rather about mercuric bromide in the lab (Anon. 1842).

The "certain green lines...corresponding [to a] line in the ultraviolet part of the spectrum... coincident with the main lines of nitrogen" is much too vague a description to accurately identify the location of the lines, and to compare them to those of known substances. And one could be forgiven for asking what "green lines" have to do with the "ultraviolet part of the spectrum?"<sup>4</sup>

Sommer is forced to admit that the lunar spectrum within reach of his spectroscope is in fact the reflected spectrum of the Sun, but wants to keep faith with his hypothesis of a lunar atmosphere, despite the absence of good observational evidence:

*"Here I may state that I found it extremely difficult to detect any other lines than the solar spectrum in the sun's reflected light upon the moon. But of course this is no reason why a lunar spectrum should not exist... there is certainly a layer of nitrogen existing around the moon; but as to the thickness of layer I neither possess the suitable instruments for measuring it, nor am I sufficiently prepared to lay before the public my unfinished calculations...[the nitrogen-based lunar atmosphere]...must be perfectly translucent, and does not cause the sun's rays to diverge...[it] must be free from all combinations of nitrogen known to our terrestrial chemistry."*

In addition to lacking the (unspecified) instrumental means to gather quality data to test his theory, he confesses his inability to complete and present a theoretical model. He characterizes his lunar "atmosphere" as incapable of refracting light, and composed of a type of "nitrogen" unlike any nitrogen known to Earthbound chemists in their laboratories. Sommer had quintessenced his lunar atmosphere, effectively rendering it unobservable, untestable, and unknowable.<sup>5</sup>

Sommer's approach to doing astronomy appears at its best in is his attitude to the literature. He clearly made an attempt to search out and present the main scholarly views on the cultural and scientific aspects of his subject. He claimed to be able to read the astronomical literature in the main western European languages, which, if true, was certainly an asset. It must be remembered that conducting a literature search in the colonies in the 1870s was a more difficult undertaking than it is now. The citations he provided weren't always full, or accurate, and neither was his reading (as noted above), but he deserves credit for making the effort. This, however much it is necessary, is preparatory to gathering, reducing, and interpreting data (observations)—it is a prolegomenon to doing science.

Sommer's astronomy is at its weakest when he tries to explain his methods, and interpret his data. After presenting the most likely of explanations for the resemblance of the lunar

spectrum to that of the Sun, he doesn't chose this simplest of explanations, but opts for one which relies on poorly supported conclusions (e.g. we are not given the wavelengths of the green lines he believes are emission lines of nitrogen; he admits to being unable to present his mathematical model of the "atmosphere," etc.), and effects and entities unknown to the science of his day (e.g. an "atmosphere" that doesn't interact with light; "nitrogen" that is completely unlike any nitrogen then known). In Sommer's case, seeing wasn't believing, but believing bent seeing.

## Observing the Moon

A few scattered details on Sommer's apparatus and observing can be extracted from his comments, but the resulting picture is most incomplete. We begin with the equipment he had at his disposal.

It emerges that his telescope is a refractor with an aperture of 101.6 mm., but nothing is stated as to its focal length (65; based on contemporary tastes, his refractor was probably an  $f/15$  instrument, but it could have been  $f/10$  to  $f/20$ ). He claims to have employed "high telescopic power" at times, but doesn't tell us what those powers are, or provide the focal length of his eyepieces, or specify their design (67; Huygens, Ramsden, or Kellner designs are most likely). As noted above, Sommer mentions vague results from using a spectroscope, but a description of its construction is not offered (69). He states that he measured the width of some lunar rays, which implies the use of a micrometer (67; the most practicable micrometer design for this is the filar micrometer). The writer affirms that he has witnessed real changes on the face of the Moon, apparently following the lead (and mistake) of the superb observer Julius Schmidt (1825–1884) of Athens in regard to the crater Linné (Ashbrook 1984, 272–278; Sheehan & Dobbins 2001, 155–174).<sup>6</sup> This implies that Sommer made use of some recording media for his observations (most probably pencil, or pen or ink on some text support). His lunar map, if it is derived from his own observations, would also attest to this.

Regarding his observing, it is no surprise that he viewed the Moon with the naked eye, as most readers of this article have done at one time, or another (64).

He appears also to have devoted some energy to inventorying features of the lunar landscape, such as the number of "small" craters, 2,800, discernible in his telescope (65), the rays, 100, radiating from Tycho (67), and the number of mountain ranges, 5 (67).<sup>7</sup> One wonders why he did so. No details are given of any of this work, and it is not known if he produced catalogues of features. Competition from experienced observers internationally, some of whom had more capable instrumental means at their disposal than did Sommer, would have been considerable, and likely have limited the significance of any lists he may have produced to personal use.



Figure 2 — Dr. Sommer's lunar map, set between pp. 64 & 65.

Was Sommer in contact with members of the Selenographical Society, or the selenographically inclined correspondent-contributors to the *English Mechanic & World of Science*?<sup>8</sup>

He observed the Moon spectroscopically, "...the result of many...observations, made in Canada's clear winter nights" (70), as discussed above.

Sommer seems particularly sensitive to the different colours of the lunar surface revealed through a telescope (64, 68). Finally, he was capable of responding to the aesthetic dimensions of the Moon as an object of vision: "It [Gassendi] forms one of the finest views in the morning or evening of the moon, more beautiful, perhaps, than even Tycho..." (67).

## The map

Sommer's article includes a 17.2-cm diameter fold-out lithographic map of the Moon (Figure 2; the medium appears to be wood engraving).<sup>9</sup> It is of interest for several reasons. It is rare, as few copies of the final number of the *New Dominion Monthly* are extant. It is among the earliest of lunar maps by an astronomer (amateur or professional) working in Canada, bearing a Canadian imprint. It may, in fact, be the earliest published lunar map of Canadian origin. Other points of interest are the unusual cartographic style of the map, and its equally curious textual presentation. We start with the last of these aspects.

What makes the textual presentation of Dr. Sommer's map so curious is Dr. Sommer's silence regarding his map! It is not mentioned once in the article of which it forms part of

the graphic apparatus. We are not informed when or why the map was drawn, what the selenographer's intention was in presenting it, or how it was made. Was it meant to provide an accessible reference to the relative location of the lunar features discussed in the text? Did it include any data or aspects of presentation Sommer thought were novel? Was it intended for use at the eyepiece? Was it based on Sommer's own observations of the changing face of the Moon through his own 101.6-mm O.G. telescope? Or was it compiled from a combination of his observations, observations of others, and previously published maps? Was it entirely derivative from earlier maps? If he observed the Moon for this purpose, over how many lunations did he take notes and make drawings? What media were used in its making of the map? Did Sommer as selenographer employ a particular projection, and why? The author's silence effectively prevents answering any of these questions in a meaningful way.

Cartographically, the face of the map is unlike most other lunar charts from the 19th century, nor is it likely to appear normative to a modern observer. The use of hachures is not unusual (although in Sommer's hands they are crude, and approximate), and the labelling is serviceable. The strangeness of aspect of the map is almost entirely due to Sommer's use of stylized "contours" made up of chains of arcs to indicate the lunar *maria*. The arcs seem to be laid down qualitatively, rather than quantitatively (they are not constructed to convey information based on a defined unit). They give the *maria* a terraced appearance (or that of a pie crust gone terribly wrong).<sup>10</sup>

It must be admitted that the map is not particularly accurate—nor attractive. The shapes, relative volumes, and orientations of features fall very far short of the best of 19th-century selenography. Beer & Mädler's (1837) superb map—which Sommer cites—or Julius Schmidt's equally impressive Atlas (1878, contemporary with Sommer's map) well illustrate the high point of the art and science of representing the surface of the Moon. Even the numerous index maps such as Webb's (1859, derived from Beer & Mädler), or Captain Noble's (1883), exceed Sommer's map in standards of positional accuracy, representational fidelity to the telescopic Moon, and artistry. The earliest Canadian lunar map, if such it is, was not a product of a Baedeker, or a Bierstadt.

Accuracy is weakest in features found toward the limb, but representing features near the limb presents formidable difficulties to even experienced selenographers (Hill 1991, xix–xx, 34). Sommer is prone to reduce or ignore the full effect of foreshortening on features (compare limb features in Sommer's map to the image from the Virtual Moon Atlas in Figure 3).

Features needn't be on the limb to prove troublesome to Sommer. He represents Autolycus as larger than Aristillus, when the former should be shown as nearly half the size of the latter.

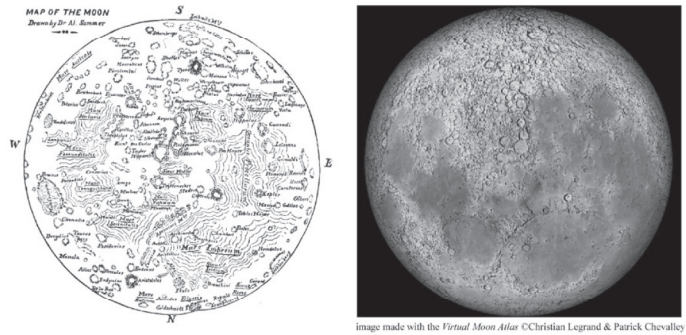


Figure 3 — Dr. Sommer's lunar map compared to a modern image of the Moon.

Another oddity of Sommer's map is the omission of features contiguous to and at least as prominent as some of those included, e.g. Gassendi is present, but Mersenius isn't; Messala is mapped, but not Lacus spei; Stadius is marked, but Eratosthenes, if included, isn't labelled (the drawing is doubtful).

Sommer also includes spurious features, such as a large fictive *valles* to the south of Arago.

### Significance...

Sommer's significance does not lie in his total absence from the modern narrative of selenography, or in his present invisibility to historians of North American amateur astronomy, or his failure to enter upon the pages recounting Canada's astronomical history and heritage.

Sommer's Moon attests to the space in Canadian Journalism for a substantial piece on the Moon within a decade of Confederation, in the expectation that readers will have the capacity to consider the Moon as a cultural object reflected in Ancient and biblical philology, as a scientific object whose surface can be explained by geological science, as a dynamic body whose course through space can be mathematically modelled, and as a source of observational delight, all within the confines of fifteen pages.

Sommer's philological acumen wasn't equal to the task he set, his grasp of contemporary scientific methods was weak, and his abilities as a lunar cartographer were very amateur, yet the course of his ambition was grand. With the critical stimulation of other informed amateurs, he might have been able to better his deficiencies. Was his practice of astronomy a wholly solitary one?

Sommer's presence doing astronomy in the Montréal of the 1870s can serve to remind RASC members during their sesquicentennial year that their Ontarian astronomical ancestors were not the only ones looking up in British North America. For that matter, at no time in its history was the future RASC destined to be the only astronomical game in town. ★

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## References

### Manuscripts, Books, and Articles

- Anon. (1842). *Annalen der physik und chemie*, (Ed.) W. Poggenдорff (79–128, 405–443). Leipzig: Verlag von Johann Ambrosius Barth
- Anon. (1883). Notes and News. *The Canadian School Journal*, 7, 70, 92–94
- Ashbrook, J. (1984). *The Astronomical Scrapbook: Skywatchers, Pioneers, and Seekers in Astronomy*. Cambridge, Cambridge MA: Cambridge University Press and Sky Publishing Corporation
- Beer, W. & Mädler, J.H. (1837). *Der Mond nach seinen kosmischen und individuellen Verhältnissen oder allgemeine vergleichende Selenographie*. Berlin: Simon Schropp & Comp.
- Browning, J. (1882). *How to Work with the Spectroscope: A Manual of Practical Manipulation with Spectroscopes of all Kinds*. London: John Browning
- Chapman, A. (1998). *The Victorian Amateur Astronomer: Independent Astronomical Research in Britain 1820–1920*. Chichester: John Wiley & Sons
- Cronmiller, C.R. (1961). *A History of the Lutheran Church in Canada*, 1. n.p. (Toronto?): Evangelical Lutheran Synod of Canada
- Gesenius, W. (1906). (Tr.) Edward Robinson, (Eds.) Francis Brown, S.R. Driver, and Charles A. Briggs, *A Hebrew and English Lexicon of the Old Testament*.... Oxford: Clarendon Press
- Haas, W.H. (1942). Does Anything Ever Happen on the Moon? *JRASC* 36, 6, 237–272
- Hill, H. (1991). *A Portfolio of Lunar Drawings*, Practical Astronomy Handbook 1. Cambridge: Cambridge University Press
- Kirchhoff, G. (1862). (Tr.) H.E. Roscoe, *Researches on the Solar Spectrum, and the Spectra of the Chemical Elements*. Cambridge–London: Macmillan and Co.
- Kirchhoff, G. (1863). (Tr.) H.E. Roscoe, *Researches on the Solar Spectrum, and the Spectra of the Chemical Elements: Second Part*. Cambridge–London: Macmillan and Co.
- Lardner, D. (1875). (Ed.) E. Dunkin, *Handbook of Astronomy*, 4th ed. London: Lockwood & Co.
- Lovell, J. (n.d.). *Lovell's Montreal Directory, for 1878–79: Containing an Alphabetical Directory of the Citizens...* Montreal: Lovell Printing and Publishing Company
- Nasmyth, J. & Carpenter, J. (1874). *The Moon: Considered as a Planet, a World, and a Satellite*. London: John Murray
- Neison, E. [pseud. for E.N. Nevill] (1876). *The Moon and the Condition and Configuration of its Surface*. London: Longmans, Green, and Co.
- Newcomb, S. (1878). *Popular Astronomy*. London: MacMillan and Co.
- Noble, W. (1886). *Hours with a Three-Inch Telescope*. London: Spottiswoode and Co.
- Philo Judaeus (1937). On the Special Laws (*De specialibus legibus*), I. In (Tr.) F.H. Coulson, *Philo in Nine Volumes*, VII (pp. 98–303). London–Cambridge, MA: William Heinemann Ltd., and Harvard university Press
- Roscoe, H.E. (1869). *Spectrum Analysis: Six Lectures Delivered n 1868, Before the Society of Apothecaries of London*. New York: D. Appleton and Co.
- Rüpke, J. (2011). (Tr.) D.M.B. Richardson, *The Roman Calendar from Numa to Constantine: Time, History and the Fasti*. Chichester: Wiley-Blackwell
- Schellen, H. (1872). (Ed.) W. Huggins, (Tr.) J. & C. Lassell, *Spectrum Analysis in its Application to Terrestrial Substances, and the Physical Constitution of the Heavenly Bodies*. New York: D. Appleton and Company
- Schmidt, J.F.J. (1878). *Charte der Gebirge des Mondes, nach eigenen Beobachtungen in den Jahren 1840–1874*. Berlin: Dietrich Reimer
- Sheehan, W.P., & Dobbins, T.A. (2001). *Epic Moon: a History of*

*Lunar Exploration in the Age of the Telescope*. Richmond, VA: Willmann-Bell

- Somers, D. 1995. *The Church Of the Augsburg Confession in Quebec*. M.A. Thesis, University of Ottawa
- Sommers, A. (1879). The Moon. *New Dominion Monthly, January*, 58–73
- Stern, S. (2012). *Calendars in Antiquity: Empires, States, and Societies*. Oxford: Oxford University Press
- Vaniman, D., et al. (1991). The Lunar Environment. In (Ed.) G.H. Heiken, D.T. Vaniman, & B.M. French, *Lunar Sourcebook: A User's Guide to the Moon* (pp. 27–60). Cambridge: Cambridge University Press, & Lunar and Planetary Institute
- Webb, T.W. (pre-1859 to 1885). Manuscript Notebook in the RASC Rare Books Collection
- Webb, T.W. (1859). *Celestial Objects for Common Telescopes*. London: Longman, Green, Longman, and Roberts

### Endnotes

- 1 That access may have been at a time earlier than when Sommer was working on his lunar article. It was not uncommon for readers to create their own notebooks of extracts from their reading, which they could then turn to as a “commonplace book” when required, without returning to the library. It appears from the manuscript notebook of the Rev'd T.W. Webb in the RASC Rare Books Collection that he might have done this when writing his *Celestial Objects for Common Telescopes* (1859, and later editions; Webb n.d.).
- 2 Somers 1995 disappointingly casts no light on Sommer's ecclesiastical career.
- 3 Amusingly enough, a Montréal optician, H. Sanders, placed an ad on the inside front cover for the “Lord Dufferin Telescope, Extraordinarily cheap and powerful glass; no Rifleman or Farmer should be without one;” Sommer 1879, front cover verso.
- 4 There appears to be nothing in Kirchhoff 1862, Kirchhoff 1863, Roscoe 1869, or Schellen 1872 that can confirm Sommer's description of the line locations, or their elemental identities.
- 5 Sommer's unorthodox treatment can be contrasted with any of a number of others more representative of the established scientific opinion of the time, such as Lardner 1875, 136–138. Aimed at “those possessed of an average amount of general knowledge” (presumably the same sort of audience as *The New Dominion Monthly*), Lardner presents abundant observational proofs of the absence of a lunar atmosphere, none of which are addressed in Sommer's paper. Lardner's popularizations enjoyed a considerably greater dissemination than Sommer's.
- 6 The yearning desire, chiefly among amateur lunar observers, to discover evidence of contemporary change in the topography of the Moon was surprisingly persistent. Its flavour can be sampled in a treatment of Linné from six decades after Sommer's publication; Haas 1942, 258–260. The crater pair of Messier and Messier A are a similar case; Hill 1991, 210–214.
- 7 Neison 1876, 68–69, gives the names of six ranges, and there is no indication he considers his list exhaustive. Beer & Mädler 1837 apply the terms *Bergkette*, and *Gebirgskette*, to considerably more than five features.
- 8 A quick search of the *Selenographical Journal* did not unearth his name among the contributors, or members. In the present author's opinion, Sommer's work is not up to the level of the Selenographical Society.
- 9 Sommer's map was not the only illustrative material accompanying his text. Some of his images raise the issue of plagiarism. Five illustrations, several of which are signed with some variant of “Dr. A.S.,” appear to be very closely based on the Woodbury type prints in Nasmyth & Carpenter 1874; Sommer 1879, 65–68.
- 10 In a figural alternative to a Moon made of cheese!

Larger versions of Figures 2 & 3 can be downloaded from [www.rasc.ca/dr-sommers-map-moon](http://www.rasc.ca/dr-sommers-map-moon).