

# NC161 HISTORY COMMITTEE REPORT

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## ASTRONOMY IN SEVENTEENTH-CENTURY CANADA

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### ABSTRACT

Arctic explorers, French missionaries, and others made numerous astronomical observations in seventeenth-century Canada, usually to fix their geographical position. Their attempts at finding longitude are discussed in detail.

*Introduction.* The Voyagers now exploring the Solar System had their courses plotted meticulously months or years in advance; when and where they would arrive held no surprise. In the seventeenth century who were the voyagers of the shores, not knowing where they had to go, or even how far they had to go.

The problem of finding longitude was of vital importance to the fur trade and lives were lost because of it. The improvement required a far more accurate method.

Latitude was easily found by finding the meridian altitude of the sun. The latitude within a few degrees of Champlain, nearly a century later, his famous astrolabe was used in several places.

Longitude, on the other hand, was a few degrees. So important was it that kings and princes offered prizes for its solution. Activity in the 1600s was devoted to its solution.

The most straightforward method was to transport a clock running accurately on time for some standard meridian, like London or Paris. Then local time, noon for example, found astronomically at the remote location could be readily compared with the standard time by the clock and the difference in time converted into longitude by the relation one hour equals fifteen degrees. Though this simple solution was proposed as early as 1510, it remained impracticable for over two hundred years. No wonder! An ocean voyage lasting several

*This report details activities of the Committee, and initiatives of Committee members consonant with the spirit of the Committee, to further the RASC's Vision and Mission through pursuing our Mandate (<http://www.rasc.ca/society>).*

## DONATIONS

The anonymous benefactor of our meteorite collection has donated to the Archives a 198-year-old medal of Pierre Gassendi (1592-1655), the celebrated astronomer. A skilled and frequent observer, one of the first Europeans to view a transit (Mercury, 1631 November 7), a cleric and an atomistically committed sceptic, he was also an important historian of other astronomers. Edward Gibbon paid him the ultimate compliment when he remarked that he was "The best philosopher among men of letters, and the best man of letters among philosophers".<sup>1</sup> Gassendi was acquainted with all the significant astronomers in his day, and he was active in France during the first period of European astronomy in Canada (for which see Peter's paper at [adsabs.harvard.edu/abs/1981JRASC...75...175B](http://adsabs.harvard.edu/abs/1981JRASC...75...175B)—Gassendi is not directly mentioned, but the eventual publication of his complete correspondence may reveal the astronomy of the New World among his interests). For those reasons alone, his likeness is welcome to a place in our Archives.

Ursin Jules Vatinelle. Ob.: PIERRE GASSENDI/VATINELLE. Rev.: NÉ/A CHANTERSIER/PRÉS DIGNE/EN M.D.XCVIII./MORT/EN M.DC.LVI./GALERIE MÉTALLIQUE DES GRANDS HOMMES FRANÇAIS./1818. 41mm, 35g. AE. Condition: 3.5-4 (AG-G).



The David H. Levy Logbooks ([www.rasc.ca/david-h-levy-logbooks](http://www.rasc.ca/david-h-levy-logbooks)) project has received notice of another forthcoming gift from its donor (and, one is almost tempted to say, patron), namely electronic facsimiles of his comet search records and his photographic album, covering the years 1965 to 2016. Plans at present are to have these transferred during the 2016 RASC General Assembly in London. We are most grateful to Dr. Levy for continuing to make his material available to all who might have an interest in a remarkable career in amateur astronomy, and who seek inspiration in a personal and poetic engagement with the night sky.



We have begun to receive the first of the materials comprising the official CASCA Archives. Martha Jarrell delivered a box of early materials (including some "pre"-CASCA items) to the Archives in early February. These are materials that the late Prof. Richard Jarrell had begun to collect in the course of his work on the history of astronomy in Canada, many decades before there was any thought of establishing a curated and accessible official CASCA archive, in the hope that one day this would indeed happen. In doing so he showed considerable foresight, and

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<sup>1</sup> "Gassendi, le meilleur Philosophe des Littérateurs et le meilleur Littérateur des Philosophes"; Edward Gibbon, *Essai sur l'Étude de la littérature* (London: T. Beckett & P.A. de Hondt, 1761), p. 14.

we appreciate Martha's ongoing commitment to furthering the work Richard did so much to chronicle and explore in his lifetime.

In the spring the bulk of the materials for the CASCA Archive will be physically transferred from the Royal Military College (RMC) in Kingston.

### ***CASCA ARCHIVES***

As some readers of these reports will be aware, the CASCA Heritage Committee, on behalf of the CASCA Board, began seeking a more permanent home under one roof for its disparately housed Archive, which at present is scattered in far flung locales from Victoria to Kingston, if not beyond. The RASC responded to that call, by offering to host the CASCA Archives within the RASC Archives, where they would be housed, curated, catalogued, and made consultable (the CASCA Archives would remain the property of the CASCA Board, but be managed along with its own Archives by the RASC). During the Square Kilometre Array (SKA) meeting last December in Toronto, the RASC Archivist was informed by the CASCA President, Prof. Chris Wilson, that the Board was grateful for the RASC offer, and had accepted it. The physical transfer of the materials may not be complete till late summer.

### ***OTHER ACTIVITY***

Heather Laird (Calgary Centre) reports that:

"I began working on my Canadian Women in Astronomy presentation in late 2015. I presented it to Chris Beckett's astronomy class on the evening of Tuesday, February 23 via Google Hangouts, and it was quite well received (which is great—considering it's the first time I've presented in over a decade!). I have been invited to present it to the Calgary Centre during one of the General Public meetings in the fall, and London Centre has enquired about having me present via Google Hangouts, or in person (but this was just mentioned in passing, I haven't been formally invited). I have begun writing a *Journal* article on the topic as well, and I plan to delve a little deeper into what I have found so I can craft a couple of versions of this presentation for different audiences (as well as ensuring a fairly decent article for the *Journal*). I hope to submit it to *JRASC* in the summer".

In Peter's history of the Society, he showed that the RASC of the 1890s (then the TAPS) was quite forward looking in not specifying gender as a requirement for membership, and from the start women gave presentations at meetings, and wrote articles for our publications (in this respect the RASC kept pace with organizations such as the BAA, and its predecessor, the

Liverpool Astronomical Society).<sup>2</sup> The varied predecessors Heather presents can further modern-day gender parity in the RASC, by showing that it *is* part of our tradition, and, by telling the interesting stories of female scientists, more women (of any age) may be encouraged to pursue astronomy vocationally and avocationally.

Clark Muir (K-W Centre) writes that:

"I am scheduled to speak at the K-W RASC general meeting. I will be doing a presentation about the 1797 "temporary" observatory built in St. Andrews N.B. for the purpose of determining the boundary between Canada and the U.S. Details about the construction of the observatory along with the instruments, telescopes used and astronomical observations conducted for determining longitude will be included. The tentative title is simply: A Late 18th Century New Brunswick "Temporary" Observatory".

Clark has been making excellent and intelligent use of the rich and massive resources of the Board of Longitude Collections hosted at the University of Cambridge's Cambridge Digital Library ([cudl.lib.cam.ac.uk/collections/longitude](http://cudl.lib.cam.ac.uk/collections/longitude)). The chronological span of these materials is approximately 1714-1828, covering nearly the whole of the "long 18th century". The potential for new discoveries in the history of "Canadian" astronomy during the search for longitude is considerable, as Clark has demonstrated.

Chris Gainor (Victoria Centre) continues his work writing the official NASA history of the epochal Hubble Space Telescope (HST) in operation, as well as leading the team compiling the HST historical archive. In addition to those enviable tasks, he is the new editor of the prestigious quarterly *Quest: the History of Spaceflight*. Quest is the premier referred periodical publication for the history of all aspects of that field ([www.spacehistory101.com/](http://www.spacehistory101.com/)).

At the 2015 December 15 BOD meeting, a motion was passed to "to form a Working Group... to coordinate efforts for the 2018 celebration of the 150th anniversary of the origins of the RASC" (MOTION BOD15-11-4). This group will further the discussion which has taken place thus far within the History Committee, and build on the foundational document originating from within the History Committee, *Looking Up for 150 Years: possible projects for RASC anniversaries 2015 & 2018*

([rasc.ca/sites/default/files/2015and2018\\_Anniversry\\_Projects\\_NAC151.pdf](http://rasc.ca/sites/default/files/2015and2018_Anniversry_Projects_NAC151.pdf)), although it will not be limited to the possible projects offered there. The working group consists of Paul Delaney (Toronto Centre), Jim Hesser (Victoria Centre), Heather Laird (Calgary Centre), June MacDonald (New Brunswick Centre), Lauri Roche (Victoria Centre), & R.A. Rosenfeld (unattached).

Walter MacDonald has been busy during the abundant cloudy nights between the autumnal and vernal equinoxes in completing the digitization of historic centre newsletters. These now number

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<sup>2</sup> R.P. Broughton, *Looking Up: A History of the Royal Astronomical Society of Canada* (Toronto & Oxford: Dundurn, 1994), pp. 27, 44-50. Note the statistics for the varying proportions of female membership over time. If graphed, the data would hardly be consistently linear.

over 3,000 ([www.rasc.ca/centre-newsletters](http://www.rasc.ca/centre-newsletters)). Also note the downloadable centre histories on the left-hand side of <http://www.rasc.ca/rasc-history>.

### ***PUBLICATIONS***

R.A. Rosenfeld, "The Value in Bad Images", *JRASC* vol. 109, no. 6 (Dec. 2015), 259, 262-264

R.A. Rosenfeld, "What Can be Worse than a Dark and Stormy Night?", *JRASC* vol. 110, no. 1 (Feb. 2016), 25-27

### ***ACKNOWLEDGEMENTS***

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Respectfully submitted,  
R.A. Rosenfeld, Chair

Committee Members:

- \*Randy Attwood, FRASC (ED)
- \*Chris Beckett (Unattached, consultant)
- Dr. Roy Bishop, FRASC (Halifax)
- Eric Briggs (Toronto)
- Peter Broughton, FRASC (Toronto)
- \*James Edgar ex officio (President, Regina)
- Dr. Chris Gainor (Victoria)
- \*Dr. Robert Garrison (Toronto, consultant)
- \*Renata Koziol (Office Administrator)
- Heather Laird (Calgary)
- Clark Muir (Kitchener-Waterloo)
- Andrew Oakes (Unattached)
- Randall Rosenfeld (Unattached), Chair
- Dr. Mark Tovey (London)
- \*=non-voting members