image: *www.nasa.gov/content/hubble-sees-a-smiling-len*

episode 1 (2018 January) *Beginnings—documentary traces & tatters*

Heather: Hello everyone, it's 2018, the year of the RASC's sesquicentennial, and welcome back to the RASC 150 History Podcast. My name is Heather Laird, I am a Director of The Royal Astronomical Society of Canada, and my co-host is the RASC Archivist, Randall Rosenfeld! Say hello, Randall!

Randall: *[some mumbled greeting, or other]*

Heather: Today we're visiting the events which are often taken to mark the beginnings of the RASC, we'll look at some of the Society's earliest founders, and reverently poke at some of the surviving artifacts from the founding year. The search for origins—origins of all types—seems to be nearly irresistible to people.

Randall: And to the institutions they animate. And why not? Founding narratives can exert powerful influences on institutions, throughout their life. They can be entertaining, they can function as constructors of identity, as tools for cohesion, and as anchors for setting policy direction—and their retelling and refashioning offer points of entry for myth. One myth still prevalent in all too many popular accounts of what is termed the "Copernican Revolution", is that throughout its later life the Ptolemaic system became weirdly and unwieldy complex, with ever more epicycles piled on epicycles, and that Copernicus cleaned all that up. In fact, the Ptolemaic system didn't acquire epicycles upon epicycles, and Copernicus himself was quite happy to use them in his system.

Heather: And for an origin myth closer to home, there's one concerning the "R" in RASC. People still refer to our "royal charter", but the fact is, we petitioned King Edward VII for the prefix Royal, he gave his spoken ascent, and that was that. We never requested a charter (probably out of proverbial RASC frugality), none was ever issued, and, truly, none was ever needed. But this happened in 1903, decades

after the event we're talking about today, namely, the origins of the RASC in 1868. Let's set the scene...

Randall: It's 1868, a year after Confederation, and what came to be called the Dominion of Canada then consisted of versions of Ontario, Quebec, Nova Scotia, and New Brunswick—and it was still a colony. The English speaking population was drawn overwhelmingly from Great Britain, and the main English cultural influences were English, Scottish, and Irish, with some areas of localized Protestant German influence; American influence came via loyalist immigrants of the century before, and, of course, the undeniable proximity of the republic to the south. The French speaking population was that largely inherited from New France. They don't enter our story just yet.

Heather: Trouble was brewing in this new dominion, because the "vast, empty, promised land" in which the colonial dream was playing out was vast, but it was far from empty. The First Nations were here first, they weren't going anywhere, and settler-culture colonialism seemed to have trouble with that.

Cities were smaller, towns were relatively more important, and more citizens were engaged in agricultural labour, and standards of living were relatively lower than at present. Reformers were pushing for a classically liberal market-oriented society, industrialization was underway, and the expanding railway (and its financing scandals, and shrinking of distance) was a sign and an agent of those changes. The population of Toronto at the time the Society was founded stood at about 50,000—the current population of Toronto is approaching three million, and if one adds the population of Hamilton, it would equal the population of all the colonies of British North America at Confederation.

Randall: Super-fast communication was available with Great Britain & Europe via the transatlantic telegraph cable, which had been recently installed—well, super-fast communication for the 1860s, that is. There was a move towards state-supported schools, and Mechanics' Institutes spread from Great Britain, with their mission of providing education for the working classes, who had little hope of crossing the class boundaries to attend one of the few existing universities in Canada. The temperance movement was on the rise. Darwin had made his appearance on these shores, or rather his *Origin of Species* had, to face opposition

from more than a few established scientists. And, it should be noted, the word "scientist" itself was only three decades old when Canada, and what would become the RASC, were founded. Professional astronomy in Canada was then of a very practical kind; it was the astronomy of place, done by surveyors parceling out the North American landscape with reference to the heavenly bodies. It was, quite frankly, astronomy in the service of the colonial enterprise. Some of the surveyors were very good practical astronomers, but they weren't always welcomed when they turned up. But that could happen to practical astronomers who showed up in the remoter parts of Western Europe, as well.

Heather: The founding of the RASC occurred in Toronto, on the evening of Tuesday, December 1, 1868. The place was the Mechanics' Institute, at Adelaide and Church. The purpose? In words taken from the minutes of the meeting, this was: "*to take into consideration the propriety of forming a Society for the prosecution of Astronomical Science*".

Randall: And here we run up against the limits of our sources. We don't know the time of day the founders met. It was probably in the evening, for none of the founders were men of leisure, and the time of the next meeting is specified as 7 PM. Nor do we have complete knowledge of the technologies used to distribute the notice of the meeting to those who might be interested, nor do we know if the notice of the meeting was tailored to attract a wide, or a narrow sector of Toronto's population. We've yet to locate a copy of the text. We do know that a circular was sent out to some recipients, because at least one writer refers to it. When the waters were tested for the founding of what was to become the British Astronomical Association in 1890, the movers of that enterprise used printed circulars *and* letters placed in the periodical press to advertise their organizational meeting. The founders of the RASC may have turned to such means as well. It would be worth searching the Toronto papers of the time for any such notices.

Heather: Whatever mode was used to get the word out, eight people from that population of 50,000 turned up to the meeting. Who were they?

Randall: Mungo Turnbull, a cabinet maker from Scotland.

Heather: Andrew Elvins, a tailor from Cornwall.

Randall: Daniel K. Winder, a former college instructor at a minor American school, and at that time a printer and non-conformist lay preacher, from the United States.

Heather: James L. Hughes, an instructor at the Toronto Normal & Model Schools, from Ontario.

Randall: Samuel Clare, the writing master at the Toronto Normal School, from—well, we don't yet know.

Heather: Robert Ridgeway, a teacher at Jarvis Collegiate, who may or may not have been from Ontario.

Randall: Charles Potter, optician, from London, England.

Heather: And George Brunt, accountant, and partner in the "Mammoth House", the tailoring firm which employed Andrew Elvins, who hails from somewhere or other.

That's a total of eight people out of a population of about 50,000. At first glance that turnout looks like the last word in apathy, indicating almost no interest in astronomy as an organized endeavour in Confederation era Toronto, but that would be the wrong conclusion, because proportionally, that turnout is an order and a half of magnitude greater than even the best attended meetings of our largest RASC Centres in major cities today. It was also two orders of magnitude greater than the number of people who attended the organizing meeting in London in 1820 for what would in time become the Royal Astronomical Society. Those eight RASC founders represent a strong turnout.

Randall: What can we say about the social position of the group? Four of these eight white men were members of the working class, Elvins, Potter, Turnbull, and the downwardly mobile Winder. Four were members of the middle class: Brunt, Clare, Hughes, and Ridgeway. With special pleading the working class men could all be considered master craftsmen, but only two were unequivocally so, Elvins and Potter, the former enjoying a steady if modest and hard career, and the latter eventually prospering as owner of one of the leading scientific instrument firms in the country. Of the middle-class men, Clare and Hughes were teaching at the least distinguished tier of post-secondary education, the Normal School, Ridgeway was

a teacher in the secondary system, and Brunt was a partner in the "Mammoth House", a tailoring enterprise, for which he served as accountant. Elvins worked for Brunt's firm. And none of them owned significant astronomical apparatus. What they had going for them was an active interest in astronomy.

None of these men were members of the Toronto establishment in 1868. Hughes and Potter eventually rose to some distinction in their professional positions. None were professional scientists. None were astronomical researchers of distinction. The contrast with the founding groups of other astronomical societies of the period is striking. The fourteen members who joined John Herschel in 1820 to found the Astronomical Society (later the Royal Astronomical Society) included leading scientific researchers, university professors, members of the upper middle class, and lower gentry. The group included no one from the working class.

—*Heather (interjecting)*: and they met in a pub, the Freemasons Tavern, whereas we, sadly, held our organizing meeting in a dry Mechanics' Institute—

Our founders as a group also contrast with the founders of the British Astronomical Association in 1890, among whom were several professional astronomers (including some from the Royal Greenwich Observatory), leading amateur observers, important astronomy authors, world-class instrument makers, and members of the upper-middle class. Again, the contrast with the founders of the RASC is striking. The best analogue to the founding and early history of the RASC may be the Leeds Astronomical Society of 1859.

Heather: One of the more colourful incidents around the founding of the RASC was the attempt by some professionals to politely make sure it didn't happen! Their letters are worth hearing. The first is from the Rev'd William Hincks, professor of natural history at University College, Toronto, and President of the Canadian Institute (it too became "Royal" in time). Hincks wrote:

> Considering what I know of the many difficulties attending the organization of societies, the cost of rooms, printing, and various services, and the interference of one society with another, I am compelled to conclude that, except where the votaries of science are very numerous and abundant in means, it is incomparably the best plan to have a Society like the Canadian Institute embracing all scientific and learned pursuits and pursuing its objects in common. ... Members specially interested in one branch may organise special

meetings ... so as to unite any real advantages of a separate society with the solid benefits of union.

Randall: The letter from George Templeman Kingston, professor of meteorology at the University of Toronto & Director of the Toronto Magnetic & Meteorological Observatory, also poured cold water on the idea of founding an astronomical society:

Clare Esq
Secretary
of the Proposed Astronomical Society

Sir,
I have to acknowledge your circular inviting me to a meeting to be held at the Mechanics' Institute for the organising of an Astronomical Society.

After thinking over the matter, I have come to the conclusion that instead of forming a separate Society, it would be better that those gentlemen whose tastes lead them to astronomical pursuits should become members of the Canadian Institute, at whose meetings, and in the pages of whose journals the communication of any new astronomical fact would be sure to meet with a cordial welcome.

If their astronomical discoveries should prove to be sufficiently numerous & important, it might become expedient hereafter to form an Astronomical Section of the Canadian Institute, as there already is a Medical Section; or indeed it might be necessary to establish a separate Society; but my fear is that if a Society with such a title were to be started now it would lead to disappointment.

Believe me
Yours truly
G.T. Kingston

It would not be surprising if Hincks and Kingston sent their separate letters as part of a planned effort, as both were prominent members of the Canadian Institute.

In another one of those coincidences of history, when John Herschel and Charles Babbage and friends moved to organize what became the Royal Astronomical Society in 1820, they received discouragement from another part of the scientific establishment, namely Sir Joseph Banks in his capacity as President of the Royal Society. One can't doubt that there were elements of sincerity in these discouragements, in part motivated by concerns about the potential for increased

competition over resources & patronage, and the fracturing of the scientific community, as well as the possible lessening of prestige of the older established learned bodies. Doubtless fears of the lessening of the scientific authority and power of the established body—and its president—in the face of potential upstart astronomical organizations was also a considerable factor in the opposition.

We're the letters of discouragement effective?

Heather & Randall: ***No!***

Randall: And a good thing two, otherwise we'd not be doing this podcast, or celebrating our sesquicentennial.

Heather: Messers Elvins, Clare, Ridgeway, Hughes, Winder, Turnbull, Potter, and Brunt held their meeting, and duly instituted The Toronto Astronomical Club, which became The Toronto Astronomical Society within the year. In the surviving minutes of that first meeting they set their present and future agenda:

> I. To meet monthly at such time and place as may be agreed upon;
> II. To spend the evening somewhat as follows:
>
> a. Reading extracts from papers or publications, of anything new or otherwise interesting bearing on the subject of Astronomy;
> b. Reading original papers connected with any department of Astronomy;
> c. Examining anything new in Astronomical Science;
> d. Observing celestial objects if circumstances should favor our doing so;
> e. Conversation &c.

Institutional patterns do change over time, but it's interesting to note that we still do some of those activities: we observe, we research and present our own work, we discuss developments in the astronomical world formally and informally in different fora, and, yes, we still like to talk! One item missing from that list is education and public outreach. That didn't become a preoccupation till much later.

Randall: In the time remaining, we'd like to turn to the most charismatic and evocative artifact which has come down to us as a result of that first meeting leading to the RASC, before we offer some closing reflections.

In the RASC Archives is a document dating to late 1868 or early 1869, a document with all the photogenic appeal of a cinematic pirate map, complete with interlinear

additions, text in different media, picturesque holes, tears and other signs of rough usage, and all the patina and fading of age one could want. It also has an equally picturesque recovery story.

About the year 1930, Bert Topham, in response to a newspaper ad for an antique refracting telescope, travelled to a community outside Toronto to take a look. Bert, incidentally, was one of our truly outstanding members from the first half of the last century. The telescope he examined turned out to belong to one of the RASC founders, Robert Ridgeway, who had since passed away. Within the telescope case was this very document. It's a copy of our earliest extant by-laws. To see this document, and some other artifacts associated with this episode, visit www.rasc.ca/rasc-2018-podcasts.

Heather: To the question "what created us?", we can answer that we were brought into being by the desire of eight men to pursue astronomy as an avocation in a mutually beneficial association. Such interests were not unusual in the Victorian period, and other approximately similar groups arose in the latter nineteenth century, but the one which started in Toronto in 1868 seems to have been unique in its Canadian setting. And Andrew Elvins, one of the 1868 founders, stated around the time of the First World War, that "the Society's meetings have never been discontinued at any time since their inception in 1868", and that the RASC is in direct lineal descent from the Toronto Astronomical Club of 1868. It is of some significance that the RASC is now a Canada wide organization, and its legacy is ongoing.

Thanks to everyone who tuned in, and we hope you enjoyed this podcast. If you have any questions, please visit www.rasc.ca/rasc-2018-podcasts for contact details.

Our next podcast is scheduled for a month from now, and is on a major figure of Canadian astronomy known for his efforts to build the Canadian astronomical community. His story is not what one might suspect, and we come face to face with the difficulty in assessing the effectiveness of now obsolete communications technologies.

Our sound engineer is Chelsea Body, and our theme music is by Eric Svilpis.