

Short Communication

The earliest recorded aurora in North America since European colonization

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Abstract

Jesuit missionaries in the seventeenth century, in what is now Quebec, Canada and New England, United States, periodically sent reports on their activities to their superiors in Canada and France. These were then edited and published in annual volumes. A translation of these reports, together with related documents, was published in the United States around the turn of the twentieth century. Included in these volumes are three reports easily identified as auroras. The earliest of these, from 1611, predates the hitherto known first North American report, in 1719, by more than a century. The other reports are from Quebec in 1662 and mid-America in 1736. These reports are quoted in full and discussed in terms of the geophysical context of the times. Additional reports from New England for the aurora of 1719, not previously available in the auroral literature, are also presented and discussed.

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The earliest North American aurora listed in standard auroral catalogs was that of December 22, 1719 in New England (Lovering, 1866). Strangely enough the widely cited catalog of Fritz (1873), which cites a number of observations in Europe, does not note the New England observation. A much earlier observation, prior to sustained European colonization, was likely made from a much further northern location, in Ellesmere Island, in about 1255 (Silverman, 2002). Here, I present an observation of an aurora in 1611, in what is now New Brunswick, Canada. In addition, I present some additional information on the New England aurora of December 22, 1719 and on early Canadian observations.

Soon after the European re-discovery of the Americas by Christopher Columbus in 1492, exploitation and colonization of these territories were undertaken by

European powers, but principally by France, England and Spain. In the eastern part of what is now the United States and Canada there were, initially at least, spheres of influence with the French in the north, the English in the central part, and the Spanish in the south. Following exploratory voyages the French established the first year-round settlements in 1604 in Acadia, present day Nova Scotia, New Brunswick and northern Maine (see, e.g., Greer, 2000). French colonists, traders and fishermen were soon added to by Catholic missionaries, primarily by Jesuits, whose objective was to convert the natives. The Jesuits would live with the Indians, observing their customs, and preaching the gospel, and sharing their lives and hardships. Annually narratives of their doings would be sent to their superiors in Quebec or Montreal, edited, and sent on to France. These narratives, known as *Relations*, were printed annually between 1632 and 1673, and had a wide readership. The reports consisted of much more than the progress of

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evangelization, including news about European colonization, sicknesses, local wars, and the customs and ways of life of the Indians. The *Relations* thus provide a treasure trove of ethnographic and historical information for the period, and of the initial encounters between the Europeans and Indians. Between 1896 and 1901 Reuben Gold Thwaites, Secretary of the State Historical Society of Wisconsin, compiled and edited a collection, in 73 volumes, of the *Relations* with much supplementary material. The volumes contained English translations, on one page, facing, on the other page, the original document in French, Latin or Italian. The few auroral notations which are the subject of this paper are included in this material. A more recent compilation of a portion of all the available material was edited by Campeau (1967 et seq.).

In 1611, Pierre Biard, one of two Jesuit priests sent to convert the natives, arrived, after many political and natural difficulties, at Port Royal (now Annapolis Royal) in what is now Nova Scotia. It was a settlement originally founded in 1604, abandoned and then re-inhabited. Subsequently, on October 3 Biard set out for visits to settlements in the region (Thwaites, 1896–1901, vol. 3, p. 209). At the beginning of this trip they were on their way to visit a party of seven or eight colonists from St. Malo, France, who were wintering on an island in the St. John river, six leagues from the mouth of the river, where the city of St. John in New Brunswick now stands. The island, Emenenic is now called Caton's Island, 45°28'N., 66°07'W.. Biard, reporting to the Provincial in Paris, in a letter dated January 31, 1612, (Thwaites, vol. 2, p. 27) wrote:

We were still one league and a half from the island when the twilight ended and night came on. The stars had already begun to appear, when suddenly, toward the Northward, a part of the heavens became blood-red; and this light spreading, little by little, in vivid streaks and flashes, moved directly over the settlement of the Malouins and there stopped. The red glow was so brilliant that the whole river was tinged and made luminous by it. This apparition lasted some 8 min, and as soon as it disappeared another came of the same form, direction and appearance.

There was not one of us who did not consider this meteoric display prophetic. As to the Savages, they immediately cried out, *Gara gara enderquir Gara gara*, meaning we shall have war, such signs announce war. Nevertheless, both our arrival that evening and our landing the next morning were very quiet and peaceful. During the day, nothing but friendliness. But (alas!) when evening came, I know not how, everything was turned topsy-turvy; confusion, discord, rage, uproar reigned between our people and those of St. Malo. I do not doubt that a cursed band of furious and sanguinary spirits were

hovering about all this night, expecting every hour and moment a horrible massacre of the few Christians who were there; but the goodness of God restrained the poor wretches. There was no bloodshed; and the next day this nocturnal storm ended in a beautiful and delightful calm, the dark shadows and spectres giving way to a luminous peace.

Biard's description, in a later extensive discussion of New France, dated 1616, is slightly different (Thwaites, vol. 3, p. 211, 217):

...the heavens became wonderfully red over the Maloûin habitation, and then the glow, separating into long rays and flashes of light, moved on and melted away over this settlement. This appeared twice. Our Savages, when they saw this wonder, cried out in their language: *Gara gara: Maredo*. "We shall have war, there will be blood." The French also made some Prophecies thereupon, each according to his own idea. ...Now I could not describe to you what a night this was; for it passed in continual alarms, gunshots and rash acts on the part of some of the men; so that it was feared with good reason that the prognostications seen in the heavens the night before would have their bloody fulfillment upon earth.

The reactions of both Indians and French indicate that the aurora was not a common sight, though perhaps not rare. The redness of the aurora presaging bloody doings was common in European descriptions. A description from Prague, Czech Republic, of an aurora in October 1611 reads: "A flaming meteor over Prague in the form of a corona. The people saw men of war fighting where the corona was." (Link, 1964, p. 510, my translation).

Another North American description, from the fall of 1662, though coupled with a description of another phenomenon, appears to be that of an aurora. Lalemant, writing from Quebec on September 4, 1663, of the year from the summer of 1662 to summer 1663, writes (Thwaites, vol. 48, p. 37):

Heaven and Earth have spoken to us many times during the past year, and that in a language both kind and mysterious, which threw us at the same time into fear and admiration. The Heavens began with Phenomena of great beauty, and the Earth followed with violent upheavals, which made it very evident to us that these mute and brilliant aerial voices were not, after all, mere empty words, since they presaged convulsions that were to make us shudder while making the Earth tremble.

As early as last Autumn we saw fiery Serpents, intertwined in the form of the Caduceus, and flying through mid-air, borne on wings of flame. Over Quebec we beheld a great Ball of fire, which

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