The Makings of Meteor Astronomy: Part XIV

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August is Perseid month and this not only gives us the opportunity to get out and observe meteors, it also gives us an excuse to look at some Perseid folklore.

1. Introduction

If we exclude the transitory outburst of activity that presently occurs around August 12.4 UT, the main peak of the Perseids is actually realized on August 12.75 UT [1]. The Perseid stream delivers a consistent rain of meteors each year, and this indicates that the shower is old and well established, with material being smoothly distributed around the stream orbit. Having a high orbital inclination of 113° to the ecliptic, the Perseid stream does not suffer significantly from planetary perturbations and its nodal progression rate is very small.

The time interval between successive Perseid maxima is essentially that of the sidereal year (365.25637 days). Because the sidereal year is some 0.0139 days longer than the Gregorian calendar year, the date on which the Perseids reach their maximum advances by 1 day in every 72 years (the Gregorian calendar year is 365.2425 days long). The result of this effect is that, if we go back in time, the date of Perseid maximum shifts to early August. All this would be fine from a historical point of view except for a slight complication which occurred in October 1582, when the Julian calendar was abandoned (at least by most European countries) for the modern-day Gregorian calendar. The change in calendars introduced a jump of 10 days in the daily reckoning. Also, the Julian calendar attributed 254.25 days to the year, and, consequently, in the Julian calendar the date of the Perseid maximum will change by one day in 151.5 years. Hasegawa [2] suggests that the Perseids may have been observed as long ago as 36 AD, but Hughes [3] has questioned this, and it would appear that the earliest bonafide observation of the Perseid shower dates to 830 AD. We shall return to the calendar issue shortly, but first we have to consider some history.

2. The tears of Saint Lawrence

Human beings are the greatest architects of hyperbole. Sometimes, just the slightest anecdote of a story is blown out of all proportion, taking-on as it does a life of its own. The association of the Perseid meteors with the burning tears of Saint Lawrence (also spelt "Laurance" and "Laurence") is, I would contend, one such example of admittedly harmless human excess. We have all heard of the association of the Perseids with St. Lawrence, and every newspaper and every science magazine quotes the story verbatim—indeed, ad nauseam. What I want to consider here is the actual evidence for the folkloric association. If one is to believe the popular press, it would seem that virtually all our European ancestors knew of the burning tears that could be seen on August 10—the designated feast day of St. Lawrence.

Let us first consider the story of St. Lawrence. Taking our lead from the *Penguin Dictionary of Saints* [4], Lawrence was one of the seven deacons of Rome and was martyred three days after Pope Sixtus II, on August 10, 258 AD. He was buried in the cemetery on the road to Tivoli, where the church of St. Lawrence-outside-the-Walls now stands. According to tradition, when ordered by the city prefect to hand over the church's riches, Lawrence assembled the poor and sick and presented them to the prefect saying "here is the church's treasure." There upon he was put to death by being roasted on a gridiron. The story is a powerful one full of allegory, but it is the case that the description of Lawrence's death is almost certainly untrue. *The Catholic Encyclopedia* notes, for example, that it was much more likely that Lawrence was beheaded—as Pope Sixtus was [5]. The story of the gridiron is due solely to the poet Prudentius who wrote a hymn in honor of St. Lawrence circa 405 AD, some 150 years after Lawrence's death [6].

The key lines that Prudentius wrote concern the words of the city prefect,

> *Get up on the pyre they have laid for you, lie down on the bed you deserve; and then, if you like, argue that my god of fire is nothing.*

So, here we encounter out first problem with the legend of St. Lawrence. Essentially, it would appear that the story of St. Lawrence being roasted on a gridiron was poetic license. Strangely, while St. Lawrence is understandably the patron saint of the poor, he is also, in somewhat bad taste, the patron saint of cooks, and restaurateurs [7].

3. What Mr. T. Forster actually wrote

The association of the Perseid meteors with the tears of St. Lawrence can be traced to essentially a single source. In 1839, Edward C. Herrick [8] re-produced a quote from Quetelet, who in turn explained,

> *"According to Mr. T. Forster, a superstition has 'for ages' existed among the Catholics of some parts of England and Germany, that the burning tears of St. Lawrence are seen in the sky on the night of August 10th; this being the anniversary of his martyrdom."*

And this is it! Not one single manuscript note or reference is given to how or where Forster acquired his information. Certainly, Forster did not mention any connection between the August meteors and St. Lawrence in his text, *The Pocket Encyclopaedia*, published in 1827 [9]. Forster did note that *"falling stars or small meteors are seen all the year, but are most common in August, as are all meteors."* The term *meteor* in the context used by Forster accounted for many diverse phenomena, ranging from wind squalls, lightning, rain storms, and shooting stars. Forster's views on meteors were, in fact, decidedly out-dated and basically Aristotelian [10]. In the Rustic Calendar appended to his Encyclopaedia, Forster writes,

> *"August 10th—St. Lawrence, M.—sunflower Helianthus annus, flowers abundantly; falling stars and meteors most abound about this time of year."*

The reference to St. Lawrence is purely an acknowledgment that August the 10th is his designated feast day. In Supplement to Part IV of the Rustic Calendar, however, Forster makes reference to a *"curious"* manuscript named *Ephemerides Rerum Naturalium*, in which the days of the year are named according to the *"phenomena which happen on the average of years on each day."* For August 10, the manuscript provides the simple description, *"meteorides."* This entry sounds very compelling, but there are, once again, a few problems. Firstly, as was pointed out by Alexander von Humboldt in 1849 [11], the reference that Forster gave for the preservation site of the manuscript was incorrect. Forster claimed that the manuscript was held in the library of Christ's College, Cambridge, England. They have no such manuscript, and it would appear that the manuscript is lost. Not only this, Forster suggested that the manuscript was written by a monk in the 10th century. The key point here is that, if the manuscript was actually written in the 10th century, then we know for a certainty that it could not possibly have referred to the Perseids. In the 10th century, the Perseids would have peaked around July 23! The *New Catholic Encyclopedia* [12] comments that *"the feast of St. Lawrence is noted in martyrologies as early as the beginning of the 4th century."* In the 4th century, the Perseids would have peaked around July 19.

So, there we are, no reference to burning tears, and a lost manuscript that presumably would not support the link between St. Lawrence's feast day and the Perseids anyway. Not only this, support for the "popular" idea that shooting stars could be seen on August 10 is not exactly easy to come by. Indeed, I have not been able to find a single reference to such an association in any of the well-known sources on proverbs, folklore, and superstitions. In *Inwards Weather Lore* [12], however, the entry for August 10 reads,

> *St. Lawrence—Germany—if on St. Lawrence's day the weather be fine, fair autumn and good wine may be hoped for.*

In Lean's *Collectanea* [14], the only reference to St. Lawrence is the English aphorism,

> *"Lawrence bids wages—A proverbial saying for the lazy, because of St. Lawrence's Day (August 10) being in the dog-days, the weather is usually hot and faint.*

In *The Book of Days* [15] (a miscellany of popular antiquities in connection with the Calendar—published in 1862), no mention of meteors is made on any of the five pages relating to August 10. In Brewer's *Dictionary of Phrase and Fable* (published 1870), the only reference to St. Lawrence is the phrase *"lazy as Lawrence."* The phrase being associated with Christian fortitude and made with reference to the detail that Lawrence did not squirm before his tortures [16]—the "detail" being related to Prudentius's account of Lawrence's martyrdom [6]. In an anonymous article on Worcestershire folklore, published in the *Folk-Lore Journal* [17], there is mention of the ancient tradition of roasting an ox on August 10. Tilley [18] makes reference to the following proverbs for August:

(1573) *"dry August and warm does harvest no harm;"*
(1732) *"a wet August never brings dearth."*

Tilley also collected the saying *"more like the Devil than St. Lawrence."* This proverb has parallels with that given in Brewer's *Dictionary*. I make no claim to exhaustion in this study, but do contend that the association of the August meteors with the tears of St. Lawrence was never a popular one.

The Perseids would have peaked on the night of August 10 in the mid-1750s. It seems, therefore, that any truly ancient linkage between the Perseids and the tears of St. Lawrence cannot be believed. It is also curious that, if the linkage was established during the late 1700s to early 1800s, so little mention of it can be found in the literature. I am sure someone, somewhere, can find an original source describing an aphorism between the Perseids and the fiery tears of St. Lawrence—and when he or she does, I would be pleased to learn.

In summing up, it would appear that the whole story of St. Lawrence and the Perseids is mostly one of fabrication—it is a fine story nonetheless. Church historians believe that St. Lawrence was beheaded rather than roasted on a gridiron, and the idea that ancient European peoples associated August 10 with Perseid meteors can not be true. Likewise, the suggestion that contemporary (i.e., within the last several hundred years) European peasantry linked August 10 with the Perseids and the tears of St. Lawrence, while possibly true, has no actual documentation.

4. Saved by Gozo

There is, I am pleased to say, one apparently well-attested custom that links the feast day of St. Lawrence with the August meteors. I am grateful to Adrian Galea for sending me an article by Sandro Lanfranco, which appeared in the magazine *Sirius* [19]. The article concerns the collection of a supposed Perseid meteorite from the village of St. Lawrence on the island of Gozo—Gozo is one of the islands in the Maltese Archipelago.

Each year, the inhabitants of the village of St. Lawrence scour the surrounding land for small black rocks, which are supposed to be coals from the fire that consumed St. Lawrence. The coals are supposed by the villagers to fall from the sky. Lanfranco goes on to reveal in his article that the black rocks collected by the villagers are indeed samples of coal—probably relics from the islands' once thriving lime manufacturing industry. No indication is given in Lanfranco's article on how long the Gozo tradition has been enacted; that the tradition has *"solid foothold"* is the only indication of age. The Gozo tradition is truly wonderful and has a number of parallels with the topic raised by Alastair McBeath [20] where fossils are identified as fallen stars—see also [21].

5. Other saintly tears

Since every day of the year is the feast day of at least one saint, it is not too surprising that many naturally recurring events have been attributed to one saint or another.

Forster writes in his *Perennial Calendar* [22], for example, *"the sunflower is referred to as 'St. Bartholemow's star',"* since it flowers around August 24, the feast day of St. Bartholomew. Likewise, the glow worm (Lampyris noctiluca) is called "St. John's worm," since it is first seen at about the time of the feast of St. John the Baptist. While the linkage between meteors and "fiery tears" does appear to be a very natural, although not actually proven one to make, there are other accounts of saints crying. Forster [22], for example, gives the following proverb for July 15:

"All the tears that St. Swithin can cry, St. Bartlemy's dust mantle wipes dry."

July 15 is the feast day for St. Swithin. Inwards [13] also noted the St. Swithin proverb and adds another:

"In this month is St. Swithin's day,
On which if that it rain they say,
Full forty days it will,
Or more or less some rain distil."

In St. Swithin's case, the saintly tears clearly refer to rain.

References

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[3] D.W. Hughes, *Earth, Moon and Planets* 68:1–3, 1995, pp. 31-70.

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[5] "The Catholic Encyclopedia", Robert Appleton Company, New York, 1910.

[6] H.J. Thomson, "The Poems of Prudentius", Vol. II, William Heinmann Ltd., London, 1953.

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[10] M. Beech, "WGN 21:1", February 1993, p. 36.

[11] A. Von Humboldt, in *Cosmos*, Vol. 1, 1849, p. 111.

[12] "The New Catholic Encyclopedia", Catholic University of America, Washington, DC, 1967.

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[19] S. Lanfranco, *Sirius*, no. 14, 1988, p. 29.

[20] A. McBeath, *WGN* 25:3, June 1997, p. 128.

[21] M. Beech, "in Letters to WGN", *WGN* 25:4, August 1997, p. 147.

[22] T. Forster, "The Perennial Calendar", Harding, Mavor and Lepard, London, 1824.