Astronomical observations in the Anglo-Saxon Chronicle

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Introduction

The Anglo-Saxon Chronicle is a series of annals thought to have been written down in the monasteries of Winchester, Canterbury, Peterborough, Abingdon and Worcester. The annals detail the history of England and Europe from about AD 1 to AD 1154. Since this period encompasses 1066 and the appearance of Halley's comet it was thought to be of interest to search through the Chronicle to see what other astronomical events were recorded. Since my own knowledge of Anglo-Saxon is negligible, the descriptions are subject to the translator's interpretation as well as my own.

The Anglo-Saxon Chronicle is not a single book but was put together from a number of fragments. The Parker Chronicle was kept for 200 years in the same book, almost certainly written at Winchester, and is possibly the original started by Alfred. At Peterborough the writing of this copy went on for almost 100 years after the last Saxon king had died. There are seven manuscripts of the Chronicle available, but some are just copies of the originals. There are effectively just four separate manuscripts which had a common root stock but which were then embellished by the scribes at the monasteries to which they were sent so that local events could be noted. Unfortunately, although astronomical observations, particularly those of solar eclipses, could be used to pinpoint fairly precisely the location where an event was witnessed, the reports in the Chronicle do not give enough detail for this to be achieved. For a fuller account of the history of the Anglo-Saxon Chronicle see the translation by Garmonsway, which was used for this review.[1]

The Anglo-Saxon Chronicle has two very interesting features. The first was that it was written in the vernacular i.e., English, at a time when the language of the clergy was Latin, and the second was that it used the system introduced by the Venerable Bede of numbering years from the birth of Christ. The search for astronomical references may not be complete but should give an idea of what kind of events struck the medieval mind as being worth reporting. Table 1 gives a summary of the events that were recorded. The exact date of the start of the Chronicle is open to some debate. It has been popularly ascribed to King Alfred who requested a book of history and laws and he may have had some older manuscript translated from Latin into English. In general there are fewer observations in the years 850 to 1000 as the chroniclers were more concerned with the ravages of the Vikings than with what went on in the heavens, unless it could be used as a portent.

Solar eclipses

As can be seen from Table 2, all but one of the recorded eclipses fit the correct year. In the case of the eclipse in 538, both the Parker and Laud Chronicles give a date and time of February 16 in the morning. It is possible, indeed likely, that both manuscripts used the same original source manuscript for the record. I am at a loss to find a calculated eclipse for this date. In this case the date may be in error due to errors in the transcribing of earlier documents by the medieval copyists. The eclipse in 1135 was recorded thus

> 'At Lammas [1 August] of this year King Henry went overseas and on the following day while he lay on board, the light of the day was eclipsed over all the lands, and the sun looked like a moon three days old and there were stars around it at mid-day. Then men were greatly astonished and terrified and said that some important event should follow upon this; and so it did for the King died in Normandy the day after St. Andrews day'.

Similarly in 1140 an eclipse was recorded thus

> 'Afterwards in Lent, the sun and the light of day were eclipsed about noon when men were eating and candles had to be lit for them to eat by. This happened on the 20 March and men marvelled greatly.'

All the other eclipses were just recorded with a date and time. The actual success rate in recording eclipses was very poor. By my calculations in the period of time covered by the Chronicles there were about 29 Total eclipses visible from the British Isles and about 31 Partial eclipses (with the phase greater than 50% visible). Some of these eclipses would only have been visible from Scotland but it does suggest a very local coverage of events. The fact that only the last two eclipses have any reported details suggest that the others were not witnessed by a Chronicler but were taken from earlier records. The fact that even with cloud cover a total eclipse would be noticeable makes the lack of recorded observations even more striking. A partial eclipse with cloud cover might not be noticeable.

Lunar eclipses

Possible Lunar Eclipses were recorded in 734, 796, 800, 802, 904, 1078, 1110, 1117 and 1121. Mostly these are just observations that the Moon was eclipsed but the eclipse in 1110 was recorded thus

> On the fifth day of May, the moon appeared in the evening shining brightly and afterwards little by little its light waned so that as soon as it was night it was so completely extinguished that neither light nor circle could be seen of it; and it remained so until almost daybreak when it appeared at the full and shining brightly.'

Table 1

Type of event	*Number recorded*
Solar eclipses	8
Lunar eclipses	9
Comets	11
Aurorae	8
Meteor showers	2

Table 2. Solar eclipses

Date recorded (AD)	*Date calculated*
538	536 ?
540	540 June 20
664	664 May
733	
809	809 July
878	878 October
1135	1135
1140	1140 March 20

Comets

Comets were always a source of wonder, so it is of no surprise that many of these events were recorded. Comets were recorded in 676, 729 (twice), 892, 905, 975, 995, 1066, 1097, 1105, 1110 and 1113. The comet of 729 is insufficiently documented to see whether we had two comets or the same comet seen twice. Only the Laud Chronicle recorded two comets. The comet's appearance was related to the death of St Egbert. Which of the two comets was being referred to in this instance is not clear. The comet of 1066, i.e. Halley's, was recorded thus

> 'At that time throughout all England a portent such as men had never seen before was seen in the heavens. Some declared the star was a comet, which some called the 'long haired star': it first appeared on the eve of the festival of Letania major, that is on the 24 April, and it shone every night for a week'.

The comet of 892 also had an interesting entry

> 'And the same year after Rogationtide or earlier appeared the star which in Latin is called "cometa". Likewise, men say in English that the comet is a long-haired star, because long beams of light shine therefrom, sometimes on one side, sometimes on every side'.

The comet of 1105 was tied up with other interesting entries:

> 'In the first week of Lent on the Friday, 16 February a strange star appeared in the evening, and for a long time afterwards was seen shining for a while each evening. The star made its appearance in the south-west, and seemed small and dark, but the light that shone from it was very bright, and appeared like an enormous beam of light shining north-east; and one evening it seemed as if the beam were flashing in the opposite direction towards the star. Some said that they had seen other unknown stars about this time, but we cannot speak about these without reservation, because we did not ourselves see them. On the evening of Cena Domini The Thursday before Easter two moons were seen in the sky before day one to the east and one to the west and both at the full and that same day the moon was a fortnight old.'

Meteor showers

There are only two entries reporting meteor showers, which must have been quite spectacular. In 1095 the scribe noted it thus

> 'Then after Easter on the eve of St Ambrose, which is on 4 April, almost everywhere in this country and almost the whole night, stars in very large numbers were seen fall from heaven not by ones or twos but in such quick succession that they could not be counted'.

Aurorae

Possibly one of the most terrifying sights to the superstitious men of the Dark Ages was the appearance of the Northern Lights or Aurora. Possible displays were recorded in 776, 789,793, 926, 979, 1117, 1122 and 1132. The most often quoted description is from the Auroral display of 793:

> 'In this year terrible portents appeared in Northumbria, and miserably afflicted the inhabitants: these were exceptional flashes of lightning, and fiery dragons were seen flying in the air and soon followed a great famine, and after that in the same year the harrying of the heathen miserably destroyed God's church in Lindisfarne by rapine and slaughter.'

The scribe appeared to connect the appearance of the aurora with the following disasters. In 979 a red aurora was seen:

> 'This same year a cloud as red as blood was seen, frequently with the appearance of fire, and it usually appeared about midnight: It took the form of rays of light of various colours and at the first streak of dawn it vanished'.

This description parallels closely some of the auroral displays that I have seen from St Andrews in Scotland. Perhaps the most extreme case of panic over an auroral display was the description of the display in 1130:

> 'In this year after Christmas on Sunday evening just after bedtime, all the northern sky appeared like blazing fire so that all who saw it were more terrified than ever before; this happened on 11 January. In this same year over the whole of England murrain [plague] among the cattle and pigs was worse than any in living memory; so that in a village where ten or twelve plows were in use, not a single one was left working, and a man who had owned two or three hundred pigs found himself with none. After that the hens died and then meat and cheese and butter were in short supply. May God improve on these matters at his will!'

Parhelic display

The Chroniclers did note other atmospheric phenomena as in this description from 1104 of a halo display around the Sun.

> 'This year the first day of Whitsuntide was on 5 June and on the following Tuesday at noon there appeared four intersecting halo displays around the sun, white in colour, and looking as if they had been painted. All who saw it were astonished, for they did not remember seeing anything like it before.'

This has been suggested as being a parhelic display and must have been quite exceptional for it to have been noted down.

Conclusions

The lack of note in the Chronicles of western Europe of the novae seen by the Eastern astronomers are well documented and it seems it took a quite exceptional occurrence which could be related as a portent for it to be mentioned in the Chronicle. It would be of some interest to know how much of the information was not noted because it contradicted the established teaching of the time, or because their knowledge of the sky was not really good enough to note new interlopers. It should be noted that other manuscripts from England in this timeframe do record sky phenomena, especially reports of solar eclipse observations.

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References

1 Garmonsway, G. N., *The Anglo-Saxon Chronicle*, Dent, 1972.

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