On the trail of Vikings with polarized skylight: experimental study of the atmospheric optical prerequisites allowing polarimetric navigation by Viking seafarers

01 Feb
On the trail of Vikings with polarized skylight: experimental study of the atmospheric optical prerequisites allowing polarimetric navigation by Viking seafarers

By Gábor Horváth et al.


Abstract: Between AD 900 and AD 1200 Vikings, being able to navigate skillfully across the open sea, were the dominant seafarers of the North Atlantic. When the Sun was shining, geographical north could be determined with a special sundial. However, how the Vikings could have navigated in cloudy or foggy situations, when the Sun’s disc was unusable, is still not fully known. A hypothesis was formulated in 1967, which suggested that under foggy or cloudy conditions, Vikings might have been able to determine the azimuth direction of the Sun with the help of skylight polarization, just like some insects. This hypothesis has been widely accepted and is regularly cited by researchers, even though an experimental basis, so far, has not been forthcoming. According to this theory, the Vikings could have determined the direction of the skylight polarization with the help of an enigmatic birefringent crystal, functioning as a linearly polarizing filter. Such a crystal is referred to as ‘sunstone’ in one of the Viking’s sagas, but its exact nature is unknown. Although accepted by many, the hypothesis of polarimetric navigation by Vikings also has numerous sceptics. In this paper, we summarize the results of our own celestial polarization measurements and psychophysical laboratory experiments, in which we studied the atmospheric optical prerequisites of possible sky-polarimetric navigation in Tunisia, Finland, Hungary and the high Arctic.

[Click here to read this article from the Royal Society](#)

[Click here to see the ‘Did Vikings navigate by polarized light?’ from Medieval News](#)
Hi everyone - not only is tomorrow Superbowl Sunday, but also all-requests for medieval articles! Let us know what you would like to see.

10 hours ago

Latest update about the situation in Egypt...

Work suspended at 4,600 year-old Seila Pyramid in Egypt - History of the Ancient World
bit.ly
Archaeological work has been

Recent Posts

- Pilgrimage and its Effects on San Paolo Fuori le Mura during the Middle Ages
- Social Choice in Medieval Europe
In Our Time: Battle of Bannockburn
Vikings in Greenland
Real and imagined feudalism in highland Georgia
The Zheng He Voyages: A Reassessment

• Popular Posts

○ Castle for Sale 3961 view(s)
○ Ironclad 577 view(s)
○ Castle for Sale in France: Montbrun Castle 545 view(s)
○ Medieval Castle for Sale in Southern France 512 view(s)
○ Castle for Sale: Cregg Castle in Ireland 467 view(s)

• Sections

○ Medieval News
○ Features
  ▪ Interviews
○ Medieval Articles
  ▪ Tags
○ Medieval Books
○ Medieval Videos
  ▪ Documentaries
  ▪ Lectures
○ Academia
  ▪ International Congress on Medieval Studies
○ Medieval Fiction
  ▪ Medieval Book Reviews
○ Medieval Movies
○ Medieval TV
○ Medieval Music
○ Medieval History Websites
○ Medieval Travel
○ Medieval Video Games
○ Living History / Fairs
○ About this site
  ▪ Advertise
  ▪ Terms of Use

• Medieval News

○ Work suspended at 4,600 year-old Seila Pyramid in Egypt
• Manuscripts bring history to life
• Ancient burials found under Lichfield Cathedral
• New Trailer for the Sims Medieval

• 📚 History of the Ancient World
  • Hagar El-Beida 2: saving Sudanese Antiquities
  • Some Remarks on the Origins and the History of the Gold Plaques from Amathus

• 📚 Early Modern England
  • Changing Patterns of Marriage and Family in England from the Late Medieval to the Early Modern Age
  • Forgery and Miracles in the Reign of Henry VIII

Medievalists.net by Themebuilder | Entries (RSS) and Comments (RSS).