



The Viking Sunstone: calcite cleavage rhomb or iolite pebbles?

The Fabled Viking Sunstone

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The intriguing theory of the Viking's use of a coveted stone to find their way in arctic waters has its roots in the ancient Viking Sagas, optical mineralogy, and in practical application by modern navigators. The proposed minerals thought to be the Fabled Viking "Sunstone" are excellent models for understanding the optical phenomena of pleochroism and birefringence - the very properties which make them useful for navigation are also those which make them valuable as lapidary and gem materials today. There are several candidates for the stone, among them are "Iceland Spar" calcite of which a coveted optical quality was found abundantly in Iceland, and the blue variety of the mineral cordierite, found in Norway and popularly known as "Viking's Compass" and as the gem "iolite." The former is explored in her 2015 paper "Double Trouble: Navigating Birefringence" published by the Mineralogical Society of America, while the latter is featured in her paper "Blue Minerals: Exploring Cause & Effect" published in the special 2016 January/February issue of *Rocks & Minerals* magazine.

Along with exploring the properties of these legendary sunstones, this presentation pays tribute to the work of the late Norwegian-American Leif Karlsen and his wonderfully written and thoroughly researched 2003 book: [Secrets of the Viking Navigators](#). A professional navigator in the Merchant

Marines with a fascination for Viking navigation, Mr. Karlsen devised a plausible scenario as it might have happened more than 1000 years ago and which he found to be extremely accurate.

The topic of Vikings, Viking navigation and the legend of the Viking Sunstone has been one which has captured the present author's imagination from a very young age when her summers were spent in the historically "Viking-rich" area of Vestfold, Norway. This is where the famous "Oseberg" and "Gokstad" Viking ships were found and where the ship barrows remain, inspiring dreams of voyages and a life in far distant times. As an adult, journey by sea at the stormy end of Winter in the North Sea from Iceland to the Faeroe Islands and on to Norway, as well as a later voyage during a tremendous nighttime storm in the frigid waters around the Lofoton Islands, made very real the incredible skills of these ancient mariners.



Elise A. Skalwold is an Accredited Senior Gemologist, independent researcher, educator and author. She serves as Consulting Gemological Curator at her alma mater, Cornell University (B.Sc. 1982), and is Contributing Editor and author for the quarterly column *G&G Micro-World* featured in *Gems & Gemology*, the peer-reviewed scientific journal of the Gemological Institute of America (GIA). Ms. Skalwold is a Graduate Gemologist (G.G.) trained in residence at the Gemological Institute of America Robert Mouawad Campus located in Carlsbad, CA. While living in Thailand she worked in the famous gem markets of both Chanthaburi and Bangkok and pursued studies at the Gem & Jewelry Institute of Thailand for which she was subsequently elected a Fellow of the Gemmological Association of Great Britain (F.G.A.). She is an active member of the Society of Mineral Museum Professionals (SMMP), a world-wide network linking curators from large and small institutions from which members draw on combined expertise.

As well as having co-authored the 415 page book [The Edward Arthur Metzger Gem Collection](#) and presently working on a companion volume to it, Ms. Skalwold is an author/co-author of gemology and mineralogy papers featured in *InColor*, *Gems & Gemology*, *The Journal of Gemmology* and *Rocks & Minerals Magazine*. Passionate about gemology, she is actively involved in bringing this science into a university setting for the benefit of students and non-students alike – this is the quintessential theme of her paper “Scholarly Treasure: The Role of Gems in a University Setting” presented at the 2013 GIA-sponsored first-ever Gemological Session of the Geological Society of America (GSA) 125th Anniversary Annual Meeting. For her review of the Gemological Session please see: “Gemology bears triumphant tidings: a review of the historic 125th Anniversary Annual Meeting of the Geological Society of America (GSA)” http://www.nordskip.com/GSA_Gemology_Session.pdf. Her speaking engagements have recently included the Manhattan Gemological Institute of America Alumni Association Chapter, the New York Mineralogical Club (co-founded by George F. Kunz in 1886), the Rochester Mineralogical Symposium and the 11th Annual Sinkankas Symposium [Ruby] held at the Gemological Institute of America in Carlsbad, CA.

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