

THE LITTLE ICE AGE AND HOW IT WAS CAPTURED IN VISUAL ARTS

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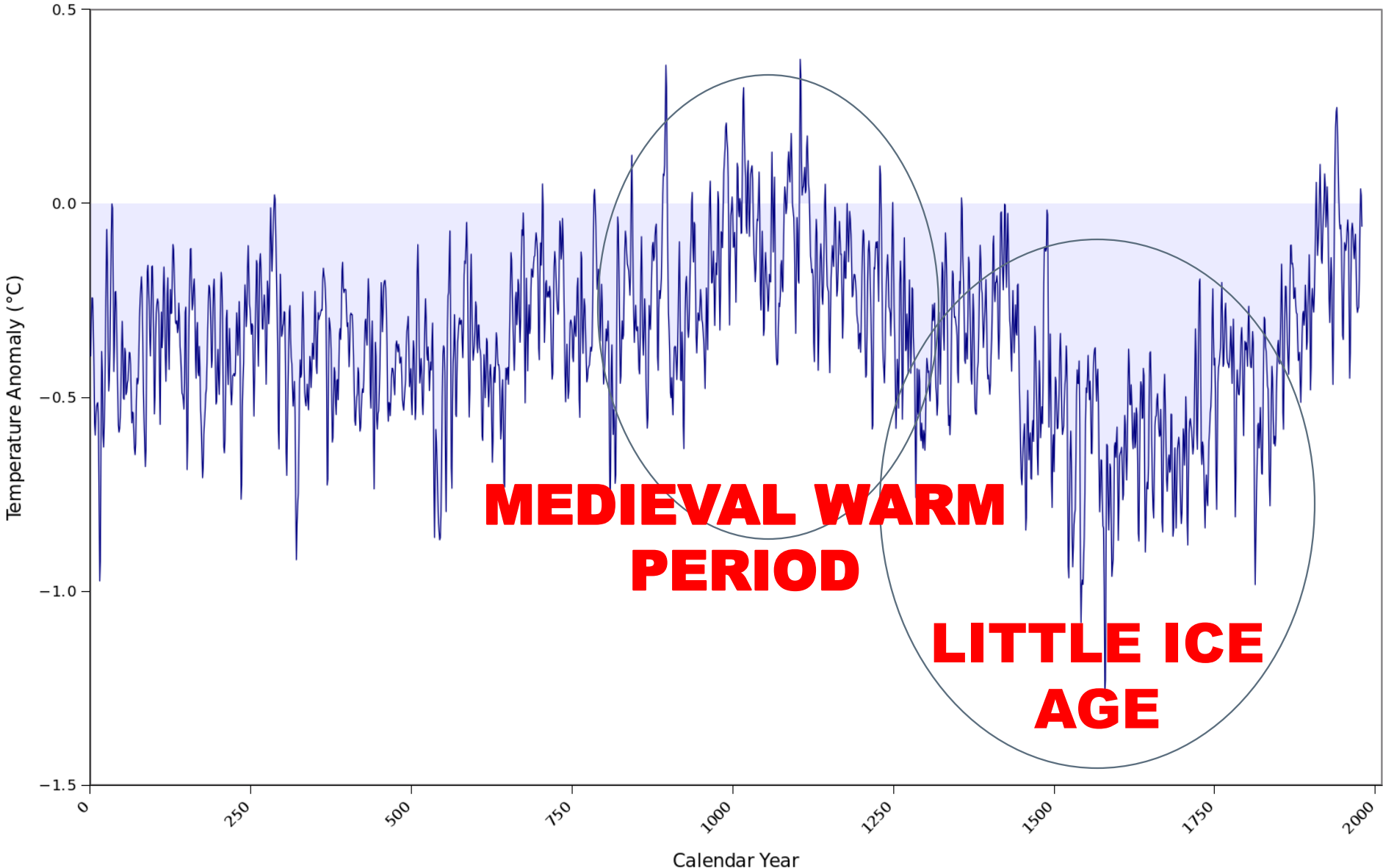
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Zagreb, 2015

2,000 Years of Temperature Change

Moberg, 2005

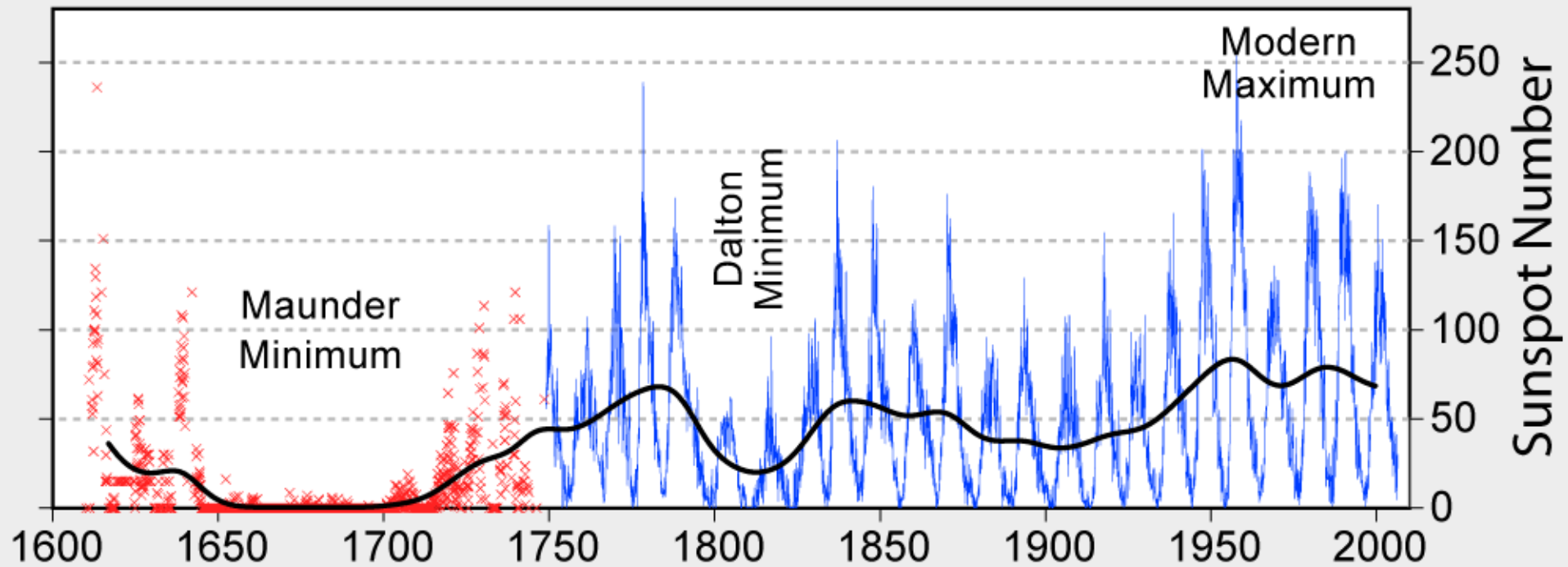


LITTLE ICE AGE

- a change in 0,8°C
- Europe, Alaska, New Zealand, East Asia, Patagonia
- possible causes: volcanic eruptions, changes in thermohaline circulation, reduced number of sunspots

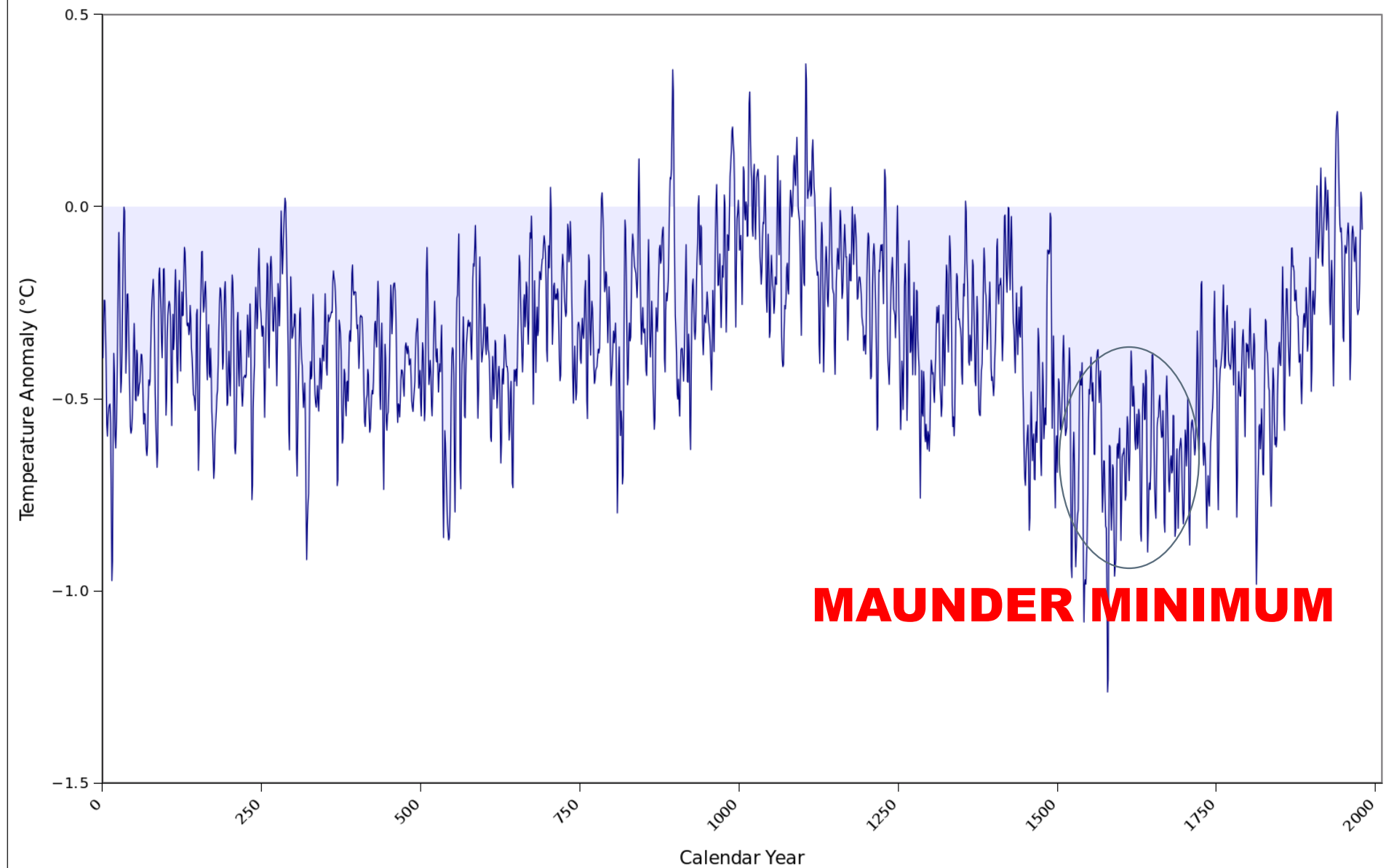
MAUNDER MINIMUM

400 Years of Sunspot Observations



2,000 Years of Temperature Change

Moberg, 2005



- Pieter Bruegel the Elder, *The Corn Harvest* (detail), 1565



- Hendrick Avercamp, *Winter Landscape with a Windmill*, 1610-1620



THE LITTLE ICE AGE (LIA) AND VISUAL ARTS

- Are the paintings and the real weather correlated?
- Do the paintings genuinely show how the weather was when they were painted?
- The Dutch Golden Age (17th century)
- the Dutch landscape paintings of the 17th Century

- Pieter Bruegel the Elder, *Winter Landscape with Skaters and a Bird Trap*, 1565



- Pieter Bruegel the Elder, *Massacre of the Innocents*, 1565 - 1567



- Pieter Bruegel the Elder, *The Census at Bethlehem*, 1566



- Pieter Bruegel the Elder, *The Adoration of the Magi in the Snow*, 1567

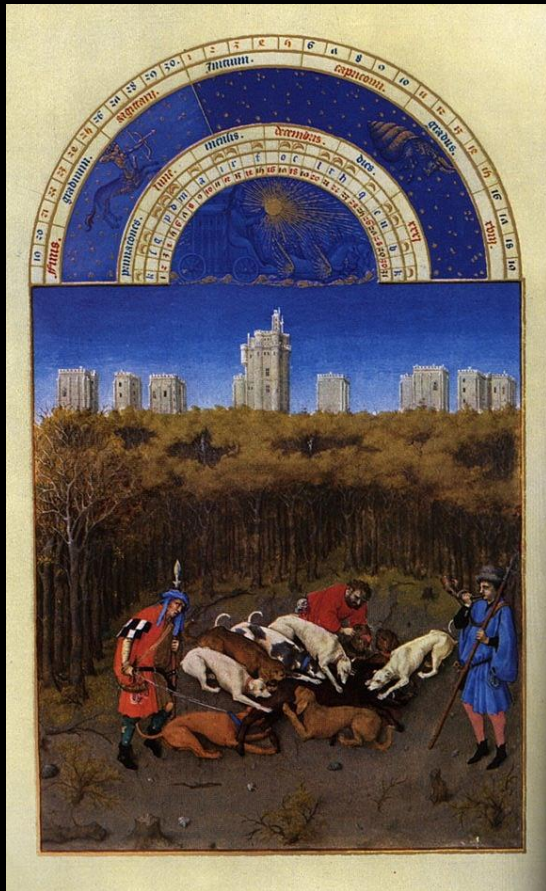


- Pieter Bruegel the Elder, *Hunters in the Snow*, 1565



- Brothers Limbourg, *Les Très Riches Heures du Duc de Berry*, 1412 - 1416

- *illumination of December*



- Hendrick Avercamp, *Numerous Figures on the Ice at Sunset* (date unknown)



- Adam van Breen: *Landscape with a frozen Canal, Skaters and an Ice Boat* (*Winter Entertainment*), 1611



- Adrian van de Venne: *The Winter, 1614*



- Isack van Ostade: *Icy landscape with sleigh and frozen boats*, 1645



- Jan van Goyen: *Ice Pleasure in front of a Tavern*, 1650



- Aert van der Neer: *Winter Landscape with Skaters*, 1655/60



- Jacob Isaackszon van Ruisdael: *Winterlandscape with a view of the River Amstel and Amsterdam, 1670/75*



- Jacob Isaackszon van Ruisdael, *A Village in Winter*, 1665



Ahmed M. et al. (2013): *Continental-scale temperature variability during the past two millennia*. Nature Geoscience 6: 339–346.

Bauer, Linda et George (March 1984): *The Winter Landscape with Skaters and Bird Trap by Pieter Bruegel the Elder*. In: *The Art Bulletin*, p. 145-150

Behringer W. (1999): *Climate Change and Witch-hunting: the Impact of the Little Ice Age on Mentalities*. Climatic Change 43: 335–351.

Budde, Michael (2001): *Eisvergnügen und andere Lebenswirklichkeiten – Bedeutungsebenen holländischer Winterlandschaften*. In: M. Budde, *Die "Kleine Eiszeit" Holländische Landschaftsmalerei im 17. Jahrhundert*. Berlin: Gemäldegalerie. p. 64-86

Buchanan, I. (August 1990): *The Collection of Nicolaes Jongelinc: II The 'Months' by Pieter Bruegel the Elder*. The Burlington Magazine. p. 541-550

Burroughs, W.J. (December 1981): *Winter Landscapes and Climatic Change*. In: *Weather*, p. 352-357

Camuffo, D. et Jones, P.M. (2002): *Improved Understanding of Past Climatic Variability from Early Daily European Instrumental Sources*. Dordrecht: Kluwer Academic Publishers.

Cartwright F. F., Biddiss M. (2006): *Bolest i povijest*. Zagreb, Croatia: Naklada Ljevak.

Eddy J. A. (1976): *The Maunder Minimum*. Science: 1189–1202.

Fagan B. (2000): *The Little Ice Age: How Climate Made History 1300 – 1850*. New York, USA: Basic Books.

Fischler, S. (2015): *The Handy Hockey Answer Book*. USA: Visible Ink Press.

Fowler, Alastair (Fall 2014).: *Brueghel's „Hunters in the snow“*. In: *Notes in the History of Art*. p. 9-15

Gabrić P., Jelenić V. (2014): *Etika u arheologiji - od arheološkog iskopavanja do muzejskog izložka*. In: *Filozofija i znanost: zbornik radova s međunarodnog studentskog simpozija Udruženja studenata filozofije u Zagrebu, 15. i 16. svibnja 2014. godine*. Zagreb, Hrvatska: Udruženje studenata filozofije Filozofskog fakulteta u Zagrebu (USF), p. 179–193.

Hedinger, B. (2001): *Wirklichkeit und Erfindung in der Holländischen Landschaftsmalerei*. In: M. Budde, *Die "Kleine Eiszeit" Holländische Landschaftsmalerei im 17. Jahrhundert*. Berlin: Gemäldegalerie. p. 55-63

Houghton J. T. et al. (2001): *Climate Change 2001: The Scientific Basis*. Cambridge, United Kingdom: Cambridge University Press.

Janković I., Karavanić I. (2009): *Osvit čovječanstva: Početci našega biološkog i kulturnog razvoja*. Zagreb, Croatia: Školska knjiga.

Lucas D. (2003): *World Population Growth*. In: *An Introduction to Global Studies*. Hoboken, USA: Wiley. p. 1–15.

Matthes F. É. (1939): *Report of Committee on Glaciers*. *Transactions of the American Geophysical Union* 20: 518–523.

Metzger, Alexis et Tabeaud, Martine (February, 2012): *The Birth of Winter Landscape*. In: *Geopolitics, History, and International Relations*. p. 224-33

Möller et al. (2007): *Erratum to: Severnaya Zemlya, Arctic Russia: a nucleation area for Kara Sea ice sheets during the Middle to Late Quaternary [Quaternary Science Reviews 25(21–22) (2006) 2894–2936]*. Quaternary Science Reviews 27: 1149–1191.

Metzger, Alexis et Tabeaud, Martine: *The winter scenes in the painting of the Dutch Golden Age*. In: *Physio-Geo* [Online], Vol. 4 | 2010, online set: October 20, 2010, Accessed: November 2, 2015. URL: <http://physio-geo.revues.org/1312>

Negendank J. F. W., Brüchmann C., Kienel U. (2001): *Die „Kleine Eiszeit“ und ihre Abbildung im Klimaarchiv Binnensee*. In: *Die „Kleine Eiszeit“: Holländische Landschaftsmalerei im 17. Jahrhundert*. Berlin, Germany: Gemäldegalerie, Staatliche Museen zu Berlin. p. 55–63.

Ossing, F. (2001): *Der unvollständige Himmel – Zur Wolkenendarstellung der holländischen Meister des 17. Jahrhunderts*. In: M. Budde, *Die "Kleine Eiszeit" Holländische Landschaftsmalerei im 17. Jahrhundert*. Berlin: Gemäldegalerie. p. 41-55

Parker G. (2013): *Global Crisis: War, Climate Change & Catastrophe in the Seventeenth Century*. Padstow, United Kingdom: Yale University Press.

Perkins S. (2009): *Disaster goes global: The eruption in 1600 of a seemingly quiet volcano in Peru changed global climate and triggered famine as far away as Russia*. Science News: 16–21.

Raedisch L. (2013): *The Old Magic of Christmas: Yuletide Traditions for the Darkest Days of the Year*. Woodbury, USA: Llewellyn Publications.

Rampino M. R., Self S. (1984): *Sulphur-rich volcanic eruptions and stratospheric aerosols*. Nature: 677–679.

Young F. D. (1940): *Frost and the Prevention of Frost Damage*. Washington, D.C., USA: U.S. Department of Agriculture.