

Interactive comment on “A reconstruction of the August 1st 1674 thunderstorms over Holland” by Gerard van der Schrier and Rob Groenland

Gerard van der Schrier and Rob Groenland

schrier@knmi.nl

Received and published: 2 December 2016

Dear Dr. De Kraker,

Many thanks for your review and the time spend for this useful feedback. In your review you note the novelty of the study in that both the 1674 and the modern event are described in full detail, which is most unusual for a weather event of the 17th century to have been so completely recorded in so many different areas and from so many different perspectives. Nevertheless, you have some serious concerns.

In your main concern, you put the finger on the sore spot; the authors of are no historians but educated in meteorology and climatology. This explains the apparently confusing naming of regions/provinces which you note is not correct historically. We thank the reviewer for providing some guidance how to correct this aspect of the study and turn it

C1

into a study which is consequent in using geographical names. A map with the names and locations of the towns mentioned in the text will be added to the manuscript.

Related to the other concerns of the reviewer (which are numbered), we are confident that we can address these to the satisfaction of the reviewer.

2) The use of abbreviations like LT and UTC will be explained. We were unaware that in the 17th century different time zones existed in a small region like the Low Countries. We will look into this.

3) We have indeed used the map of Blaeu of 1649. The motivation to use this map is that it is as recent (but preceding) the storm event. We were unaware of the existence of the Van Deventer map of Utrecht (<https://www.kb.nl/sites/default/files/utrecht.jpg>), and it indeed very nicely shows all churches (with their spires!) which were destroyed by the storm. However, this map still has the Vredenburg defences which were largely demolished in 1577. This makes that we prefer the map by Blaeu which is a more accurate representation of the 1674 situation.

4) It is true that the trees were in full foliage in August 1674, which indeed makes them more vulnerable to storm damage. However, claiming that they can be tipped over or rolled over very easily is somewhat exaggerated. The Fujita scale makes a distinction between pines and deciduous trees, taking the foliage into account. Snapped-of trees in a row would indeed be a telling sign of strong gusts, but the documentary evidence is not that clear unfortunately. They mentioned uprooted and snapped trees without making the observations that groups of trees all snapped (or all were uprooted).

5) A map with the towns mentioned will be added

6) The viewing direction in figs. 1 and 3 can be added to the caption. About fig. 2: the damage report relates to Arnhem. It is indeed a bit of an outlier and we will need to re-check the documentary evidence to check ascertain that this location saw damage related to this event. The reviewer is right in noting that the drawings of figs. 6 and 7

C2

have been made long after the event. The dating of the drawings says “1674” but given the amount of grass, it is likely to have been later. It took about 70 years before the ruins of the Dom cathedral have been cleared. In this period, bits and pieces have been sold to pay for the maintenance of the remaining parts of the cathedral and the tower, but the drawings of Herman Saffleven on the ruins in the city have been made shortly after the disaster (although more specific timing is lacking) . Finally, in the discussion on the structural rigidity of the Dom cathedral, we indeed mean flying buttresses.

Interactive comment on Nat. Hazards Earth Syst. Sci. Discuss., doi:10.5194/nhess-2016-263, 2016.