

## Referee Report

I have read the revised version of the manuscript submitted by Bertolin et al., retitled as “An Early Mid Latitude Aurora Observed by Rozier (Béziers, 1780)”, as well as their responses to the two reviewers who assessed the initial version.

In this manuscript, the authors analyzed the report of Francois Rozier concerning the observation of an aurora borealis in Beauséjour, close to Beziars (at MLAT= 50.18°N). The event is described as a “big white cloud ... whitish color of phosphorus burning in the open air”. It occurred on 15 August 1780 in the declining phase of the solar cycle 3, as shown in Figure 2. In this period, no sunspots were seen on the disk of the Sun for 48 days (Figure 4). However, it should be noted that during the same night (15 Aug.), the aurora was also observed at Ratisbon (Germany, 49° 01' N, 12° 05' E) and recorded in Angot's catalogue (1897).

In section 3, the physical description of the aurora is analyzed (shape and color). The authors noted that the event occurred during the full moon phase, which has not been mentioned by Rozier.

In Section 4, a comparative analysis is made with other existing series recorded by Toaldo (Padova), Salvà (Barcelona), and Hughes (Stroud). They noticed that the Rozier's observation was close to the maximum observed by Toaldo.

In conclusion, the authors indicate the importance of this record: "*This auroral event contributes to enlarge the geomagnetic knowledge of the late 18th century period in which the geomagnetic and the solar activity have high uncertainties due to few sunspot and LMLA observations reported from primary sources*".

The authors answered correctly to the questions of the two reviewers. The text of the manuscript improved, many errors corrected, and the main approach revised. The introduction and the conclusion especially are rewritten and expanded.

The subsection (2.1), which is a biography of F. Rozier, is reduced by about quarter and a new reference is added.

### **Minor Comments:**

I think that the paper can be accepted for publication in ANGEО after considering some minor comments:

1. Line 135: "homogenous bands tooStörmer (1955)", correct the sentence
2. Figure 1 (a) : that is not a "Photographic portrait", I think is an "Engraved portrait".  
Also, I cannot find this photo on the website of the Library of Congress (loc.gov) !!!  
Please verify all information is correct
3. Figure 1 (b): The source of the two printed pages reporting the aurora must be cited as  
"Source gallica.bnf.fr/Bibliothèque Nationale de France"
4. Legend of Figure 2: instead of "The grey column remarks the year ..." I prefer "The  
grey column indicates the year ..."
5. References to books shall be made in the forms indicated in "Manuscript preparation  
guidelines for authors" of ANGEО: [https://www.annales-  
geophysicae.net/for\\_authors/manuscript\\_preparation.html](https://www.annales-geophysicae.net/for_authors/manuscript_preparation.html)
6. In Supplementary Material, the text must be correctly displayed. Furthermore, it is not  
necessary to cite the same reference two times.
7. I am not native English speaker, but I think the language should be improved  
throughout the manuscript.