Ann. Geophys. Discuss.,
https://doi.org/10.5194/angeo-2018-55-RC1, 2018

Annales Geophysicae Discussions

Interactive comment on "Sporadic Aurora near Geomagnetic Equator: In the Philippines, on 27 October 1856" *by* Hisashi Hayakawa et al.

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Received and published: 17 July 2018

This paper presents an interesting small piece of information: a probable observation of aurora at very low latitudes without a large geomagnetic storm. As the observation is very old, and thus not much information is available, it is unavoidable that the conclusions remain a bit vague and uncertain. Still, I think it is good to bring into the attention of the scientific community that such a "non-standard" occurrence of the aurora also seems to exist. The few existing data from those days are well surveyed in the paper.

Specific comments

I agree with the authors that the description of Antonio Llanos very muchs sounds like aurora. The authors have well considered and excluded several alternative explana-

tions. Auroras should not be "white", as Llanos writes, but we can attribute this to the fact that the human eye is insensitive to colour in dark and thus easily percieves any very weak light as white.

On p. 6-7, I suggest that the authors more explicitly discuss the timing of the aurora and the possibly corresponding magnetic disturbance. Assuming Llanos' "9 o'clock at night" refers to Manila local solar time, it would correspond to 13 hours UT and 15 hours Helsinki local time. This would roughly correspond to the descending part of the negative excursion of H in Helsinki.

The negative excursion of $\sim$140 nT certainly does not signify a major geomagnetic storm, as the authors demonstrate. Still, it is not an everyday variation in Helsinki, especially not in the early afternoon. I find it plausible that it could be related to the interplanetary shock that the authors hypothesise as a possible explanation for Llanos' observation, and of course, with the one hour time resolution, the peak of the effect may have been missed at Helsinki.

Considering Figure 3, the pseudo-random variation in Helsinki H seems larger than what I am used to seeing in modern data. Could the authors add a brief comment on the precision of observations in 1856?

p. 4, line 1-2: Llanos ends his observation report with the words "with a quite a lot of rain". I find this a bit bizarre: how could he see auroras hundreds of kilometers away in such a weather? Well, perhaps the rain was only a very localized shower. Can the authors comment on this detail?

Technical corrections

The correct name of the "Lovo" observatory is Lovö. While in some cases it may be necessary, for technical reasons, to replace the Scandinavian letter ö with the most similar-looking one from the English alphabet, at least in normal text I would prefer to see the correct spelling.

The two last sections of the paper, "Contemporary..." and "Conclusions", are both numbered 6.

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