

Review of flare

Overview

The authors chose a C7 flare that occurred on March 12, 2015 at 2:18 am for their analysis. In this energy calculation, the authors used the local minimums method to do the baseline correction. They first found all of the minimums with the `argrextrema()` function, and then put those values into an array. After that they used the `np.mean()` function on the array to get the average baseline. The total energy they calculated was 1.239×10^{28} ergs.

Merits

The subclass of the flare and the date/time of its peak were both correctly reported. The authors did a great job clearly showing their process and how they made all of their corrections. It was clear why they chose their method for the baseline correction, how they removed the secondary flare, and how they calculated their bounds of integration. They also very clearly used all of the functions correctly and came to a reasonable conclusion. Their final answer for flare energy was in ergs, which was correct.

Critiques

The one critique I have is with the baseline correction. Specifically, the inclusion of the local minimum around $t = 5600$ where the first flare is coming down and the second flare is starting. This does not seem to be reflective of the baseline, it is part of both the first and second flare, so I believe removing this point will make for a more accurate baseline. Other than this, the flare looks great.

Overall Recommendation

Needs minor revisions, just reconsidering whether the one minimum mentioned earlier should be included.

Conclusions

Overall, this is very well done. The figures all make the decisions the authors made clear and the reasoning is well thought through and justified. All of the information was verified and is correct, great work. The only correction I recommend is to the one point that I believe should be excluded from the baseline correction.