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Interactive comment

Interactive comment on "Semi-automatic sunshots with the WIDIF DIflux" *by* Jean L. Rasson et al.

Anonymous Referee #2

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Semi automatic sunshots with the WIDIF DIFlux Jean L. Rasson, Olivier Hendrickx, Jean-Luc Marin

Overall Quality This paper presents a useful and novel method to semi-automate the determination of azimuth using the azimuth-by-hour-angle method of sun observation with a photo-cell electronic add-on mounted on the telescope of a declination-inclination fluxgate theodolite.

I recommend the paper be published with minor additions and changes.

Individual Scientific Questions The method described in the paper uses a zero difference in the output of the two photo-cells and the observing method calls for observations with vertical circle right and vertical circle left, presumably to correct, via averaging, for photo-cell collimation error or unbalanced output voltage from the individual

photo cells. I think the paper would be improved if this aspect was briefly discussed explicitly.

The discussion on page 4, line 17, 18 and 19 requires further explanation. I interpret the statement on line 17 "without the add-on being necessary" to mean the photo-cell attachment is not connected to the theodolite so how is it then possible to manually time photo-cell zero crossing epochs?

I would be interested to see the standard deviation of the individual readings used to calculate each of the three average azimuths included in table 6.

Technical Corrections There is inconsistency in capitalisation throughout the paper and some minor grammatical corrections required. The paper refers indirectly to an algorithm to calculate the location of the Sun but should specifically reference the paper Bennet, G.G."A solar ephemeris for use with programmable calculators", The Australian Surveyor, Vol. 30, No. 3 pp 147-151

Please see the accompanying PDF file containing annotations for specific details.

Please also note the supplement to this comment:
http://www.geosci-instrum-method-data-syst-discuss.net/gi-2017-11/gi-2017-11-RC2-supplement.pdf

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