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Comment

## ***Interactive comment on “The GOME-2 instrument on the Metop series of satellites: instrument design, calibration, and level 1 data processing - an overview” by R. Munro et al.***

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Dear authors,

Please find below some comments and suggestions:

(0) It is much appreciated that this paper on the GOME-2 instrument(s) has now appeared, since it is an important reference for the GOME-2 level-1 data users.

It would be nice to add a picture of the instrument, and have some numbers on the hardware, like size, mass and power consumption.

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(1) Terminology: please avoid the word “earthshine” !

The word ‘earthshine’ is used incorrectly in the paper. Earthshine is the reflection by the moon of sunlight reflected by the earth, also called the ashen glow (<http://en.wikipedia.org/wiki/Planetshine#Earthshine>). Webster’s dictionary says: earthshine is sunlight reflected by the earth that illuminates the dark part of the moon.

Since GOME-2 is most of the time observing the earth, but also has an option to observe the moon, please be clear in the terminology.

Therefore I suggest to use the term ‘earth radiance’ or ‘top-of-atmosphere radiance’ instead of ‘earthshine’.

(2) It is important that this paper on the GOME-2 instrument refers to the technical documents of EUMETSAT for details. But please provide the website path where these documents can be found for all.

(3) Table 1:

- 4 channels > 4 main science channels
- mention PMDs
- add spatial resolution of the PMDs

(4) Table 3:

- channels 5/6? please use PMDs as term for these channels.
- footnote 1 is missing
- please make clear for which period which start and end wavelengths of channels 1A and 1B were used.

(5) A schematic overview of the L0-1 data processing steps (calibration steps) would help the readers a lot.

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(6) Fig. 13, Caption: please add 'effective': FRESCO effective (or radiometric) cloud fraction ...

(7) p. 8669, l. 25: when discussing the assumption of the single scattering direction of polarization, please refer to:

Schutgens, N. A. J., L. G. Tilstra, P. Stammes, and F.-M. Bréon (2004), On the relationship between Stokes parameters Q and U of atmospheric ultraviolet/visible/near-infrared radiation, *J. Geophys. Res.*, 109, D09205, doi:10.1029/2003JD004081.

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Interactive comment on *Atmos. Meas. Tech. Discuss.*, 8, 8645, 2015.

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8, C3166–C3168, 2015

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