

Answer to report #3:

**>>...2 with a figure showing the effect of ozone and multiple scattering in connection to the >>discussion in the text. I think this would be more convincing. Some suggested minor >>corrections are listed below (see also supplement pdf).**

We exchange figure 2 by a figure showing a comparison of SCIATRAN single and multiple scattering simulations, which show that multiple scattering can be neglected.

**>>Minor corrections:**

**>>Page 4446, line 1: . . .the Earth's atmosphere. . .**

Changed as suggested. Also changed all "earth" to "Earth".

**>>Page 4446, line 5-6: . . .retrieval of metal atom and ion number densities. . .**

Changed as suggested.

**>>Page 4446, line 10: Metal atoms and ions are strong emitters. . .**

Changed as suggested.

**>>Page 4446, line 24-25: The meteoroids ablate. . .**

Changed as suggested.

**>>Page 4446, line 25-26: . . .around 80 to 100 km altitude. . . (to be consistent with the >>rest of the paper).**

Changed as suggested.

**>>Page 4447, line 2-3: The ablated metal atoms may also. . .**

Changed as suggested.

**>>Page 4447, line 25: . . .until the mid 1990s have been. . .**

Changed as suggested.

**>>Page 4451, line 20: . . .absorption paths). . .**

Changed as suggested.

**>>Page 4453, line 21: . . .from this band is negligible small.... "Neglible" is not an English >>word as far as I know. Correct throughout the paper.**

Changed as suggested, at several positions in the paper.

**>>Page 4460, line 15: . . .inverted be  $Kx = y$ , where y represents. . .**

Changed as suggested.

>>Page 4460, line 16: . . .individual measurements, y is a . . .

Changed as suggested.

>>Page 4468, line 17: . . .conditions, like e.g. scattering angles. . .

Changed as suggested.

>>Caption figure 2, line 4: Rewrite to something like “. . .remaining light at 285 nm and  
>>280nm, values of the order of 10<sup>-9</sup> and 10<sup>-14</sup>, respectively, are obtained.”

Changed as suggested.

>>Caption figure 3, line 1, and figure captions in general: This is just my personal opinion,  
>>but avoid having abbreviations in the figure captions without defining them. E.g. for  
>>figure 3, “Fig. 3. Slant column emission (SCE) determination.” Same for SCD, LOS,  
>>  
>>LFS, etc. They are defined earlier in the text and maybe this is enough. . .

Changed in Fig. 3 and (2,8,13.14, 15,16,17,20).

>>Caption figure 4, line 1: remove comma after “line” i.e. . . .285.2 nm line for a limb. . .

Changed as suggested.

>>Caption figure 4, line 4: too many “the”. . .the differences are nearly the same. . .  
Changed as suggested.

>>Caption figure 17, line 2: “. . .center of the line.” or “. . .line center.”

Changed as suggested.

>>Caption figure 17, line 2: something missing between “product” and “solar”. . . maybe  
>>“of”?

Changed as suggested.

>>Caption figure 20, line 5: “so” instead of “that”? . . .the self absorption is so strong, that  
>>the measured. . .

Changed as suggested.

>>Caption figure 30, line 6: . . .the differences drastically rise.  
>>Please also note the supplement to this comment:

Changed as suggested.

>>[http://www.atmos-meas-tech-discuss.net/6/C3078/2013/amtd-6-C3078-2013-](http://www.atmos-meas-tech-discuss.net/6/C3078/2013/amtd-6-C3078-2013-supplement.pdf)  
>>supplement.pdf

Thanks for highlighting the changes.