

## ***Interactive comment on “Comment on “Radiative forcings for 28 potential Archean greenhouse gases” Clim. Past 10, 1779 (2014)” by R. V. Kochanov et al.***

### **Anonymous Referee #1**

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This comment on the paper by Byrne and Goldblatt is a necessary clarification of the handling of the spectroscopic data of 8 of the 28 gases in that paper. I recommend acceptance subject to minor revisions.

### Specific comments

1987:5 "very thorough" - I suggest a change of tone here, as it comes across in a way that I do not believe is intended. HITRAN is, of course, very thorough in its handling of data that enters its line database. But it is also a monumental undertaking and it is no surprise that occasionally errors do creep in, which are acknowledged on the HITRAN website at <https://www.cfa.harvard.edu/hitran/>. I suggest something like "we

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welcome interaction with users where they have good reason to believe that they have identified possible errors in the most recent version of the database", either here or in the conclusions.

1994:21. It is strange to find HF in the subsection (3.4) related to HO2. This confused me when I revisited the paper. I suggest adding a new subsection, or changing the sub-section title.

1996:4-7. This negative comment on a different paper by Byrne and Goldblatt seems inappropriate here, and I suggest it is deleted.

1996:13-14. "Unfortunately, the conclusion of this comment is that Fig. 1, Fig. 11 and discussions around them in the BG paper are simply incorrect." Unless I misunderstand, this ought to be toned down. It gives the impression that these figures are "simply incorrect" in their entirety, rather than in connection with the sub-set of gases discussed in the comment.

Technical comment

1990:24 I could not find the Rothman (2005) paper in the reference list

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Interactive comment on Clim. Past Discuss., 11, 1985, 2015.

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