**Dear referee,**

**Thank you very much for your comments and suggestions.**

**All our changes are in boldface in the text or described in this text.**

*(\*) One consequence of being so thorough is that the paper does drag, and is rather long. I'll leave it to the authors to consider, but I saw little use in all the details of Table 13 and 14 (or even Tables 10-12), or the long discussions of each line ratio in section 8. I'm not sure how useful the whole t^2 formalism is for a shocked filamentary object. I don't know what we learn from that, really. Some of these tables and discussion might live more happily in an Appendix. It's up to the authors, but they should take a step back from this tome of data and be sure that the primary takeaways stand out from the details, taking care to only include tables that are relevant to the main messages.*

We agree with the suggestion. We have moved tables 4, 5, 6, 8, 9, 11, 12, 13 and 14 to the appendix. We summarized the content of tables 11, 12, 13 and 14 in a table, which now has the number 6. Sections 5.1.1 and 5.1.2 have also been moved to the appendix. We removed the development of the t^2 formalism in Section 6 and instead we have referred to the articles that discuss it in higher detail. In the same section, we have preserved the discussion made based on the “combined cuts’’ spectrum, which will serve for the discussion of Section 7. The discussion in Section 8 has also been modified, cutting some paragraphs, keeping the information that interests us most. In section 8.1.3 we have referred to the destruction of dust found in non-photoionized HH objects, such as HH32 (2020 AJ 160, 165).

*(\*) An important assumption that underlies this entire analysis is that a single temperature and density, with some fluctuations, characterizes the emitting gas. This assumption is only true if the cooling zone behind the shock does not emit enough to alter the spectrum, so the shock merely serves to create a dense blob that can be photoionized by the ambient radiation. However, this point is not really made until the first paragraph in section 11 on page 24, with a quick reference to Henney 2002. There is then a reference to compression ~ M^2, but this is for the non-magnetic case, and even a small seed field changes that in HH shocks (see 2015 ApJ 811, 12).*

*I feel that this issue warrants discussion much earlier. I would mention it in the introduction at the level it is mentioned in section 11, and then make a new subsection that would go in front of section 4.1, and be a bit more pedagogical. A radiative shock wave is not amenable to standard Te/Ne analysis because there is no single Te, Ne.*

*That's why so little information exists on abundances in HH objects. As radiation increases the first effect is to ionize the preshock gas, which can increase flux in some lines (e.g. HH 47D has strong [O II] because zeta Pup and gamma Vel ionize O to O+, so a weak shock shows [O II]). The next level up in ionization is that ionization enhances forbidden lines by kicking out electrons in the cooling zone. Then as ionization increases, the sheaths of jets get photoionized, like in Carina, and finally you photoionize the whole thing so that nothing goes below about 8000K. After that there is some point where you just don't see the cooling zone at all.*

*The paper should argue based on some rough numbers that the radiation field is high enough in Orion that you are in the last category. Are we really sure that the enhanced OIII abundance in HH 529 doesn't arise in some way from the shocked cooling zone? At some point if you move HH 529 away from the photoionizing sources it's going to look more like a preionized shock with a cooling zone, like HH 47D. Note, a shock can be 'fully ionized' in the sense that it has no OI, yet still be affected by the cooling zone behind the shock in that it will enhance OIII relative to OII. I have to wonder if this also affects the ADF in HH 529.*

In the introduction we mentioned that the emission of HH529II and HH529III is dominated by the radiation field of the massive stars in the Orion Nebula, so the impact of the shock contributes little to the total emission. We also mentioned this at the beginning of section 4, referring to Section 11 which now contains a broader and more pedagogical development that supports our analysis. In the aforementioned Section 11, the previous content referring to the flow angle of HH529 with respect to the plane of the sky has been moved to section 10. The new version of this Section 11 now contains 2 subsections. In Section 11.1 we describe the compression and heating of the gas in the presence of a shock, also mentioning the effects of the possible presence of a magnetic field, that for the case of a shock propagating in the environment of an HII region, it would have a negligible contribution by magnetic cushioning since the Alfvén speed should be ~2 km/s (MNRAS, 414, 1747), small compared with the sound speed in the ionized gas. In Section 11.2 we compare the shock contribution to the line emission from the working surface. We do this by comparing the emission flux due to the kinetic energy of the shock and the radiative flux from the cooled equilibrium gas. The results are of the order of 10% for HH529III and less for HH529II. This value in HH529III assumes that it is an external working surface. In case this is not true, this value would be considerably smaller. In this sense, it can be considered as an upper limit to the real contribution. With non-equilibrium Cloudy simulations, we analyzed the impact that a shock-contribution of 10% would have in our optical data. We found that under these conditions, the cooling zone would reach temperatures of ~70000K, whose cooling would be carried out through lines in the far ultraviolet wavelengths, being the optical lines minor coolants. In addition, we tested some line indicators that are used to distinguish between star forming regions and objects ionized by shock energy, being all consistent with normal HII regions.

*Some minor comments*

*Fig 1 caption: The labeling is unclear. It took a while for me to realize that I, II, and III were roman numerals and not |, ||, ||| indicative of slit positions or something.*

*The authors need to move the labels a bit away from the objects and then mark them with arrows, e.g. II ----> (points to object)*

Done.

*p 2: add a reference to Fig 1 inside the parentheses for the O'Dell/Henney reference: \citep[][; Fig~1]{odellhenney08} so the reader knows the objects are labeled in the figure.*

Done.

*p13: Table 10 should note these are logarithmic abundances with n(H) defined to be 12.*

Done.

*p25: The compression really gives the magnetosonic Mach number. Some inclusion of magnetic field discussion is needed here.*

This has been included in Section 11.1

*Finally, some discussion of Fe destruction in HH shocks is needed. A paper just out sees evidence for it in the Mach disk component of HH 32 (2020 AJ 160, 165), and references in that paper will guide to some other attempts to measure this.*

This has been included in Section 8.1.3