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Draft email:

Hi Professor Baker,

I am Cheryl Wang from MSI working with Eve and Nick on the early formation of Mars. Nick mentioned that you are the local expert on the dissolution of gasses into magmas and I wondered if you could provide some insights on the total volatile content in Earth's mantle.

My current project focuses on the birth of Mars through identifying the most likely conditions of solar system protoplanetary disk. This is to account for the volatile content of Martian mantle measured from isotopic analysis from Dauphas (2011), that indicated Mars grew before the dissipation of nebular gas. In addition, we are also motivated by Curtis (2019), which showed that 20Ne/22Ne isotopes ratio of Earth's mantle is indistinguishable from that of the nebular gas. Hence, it is interesting to see if we could apply similar results to Mars.

Right now, we have modeled Mars and Earth's atmospheres to compute their surface pressures and temperatures. Hence, it would be helpful if we could know if under those conditions enough gases could be dissolved to form isotopes, especially those of noble gas which does not react easily.

Thanks!

Best,

Cheryl