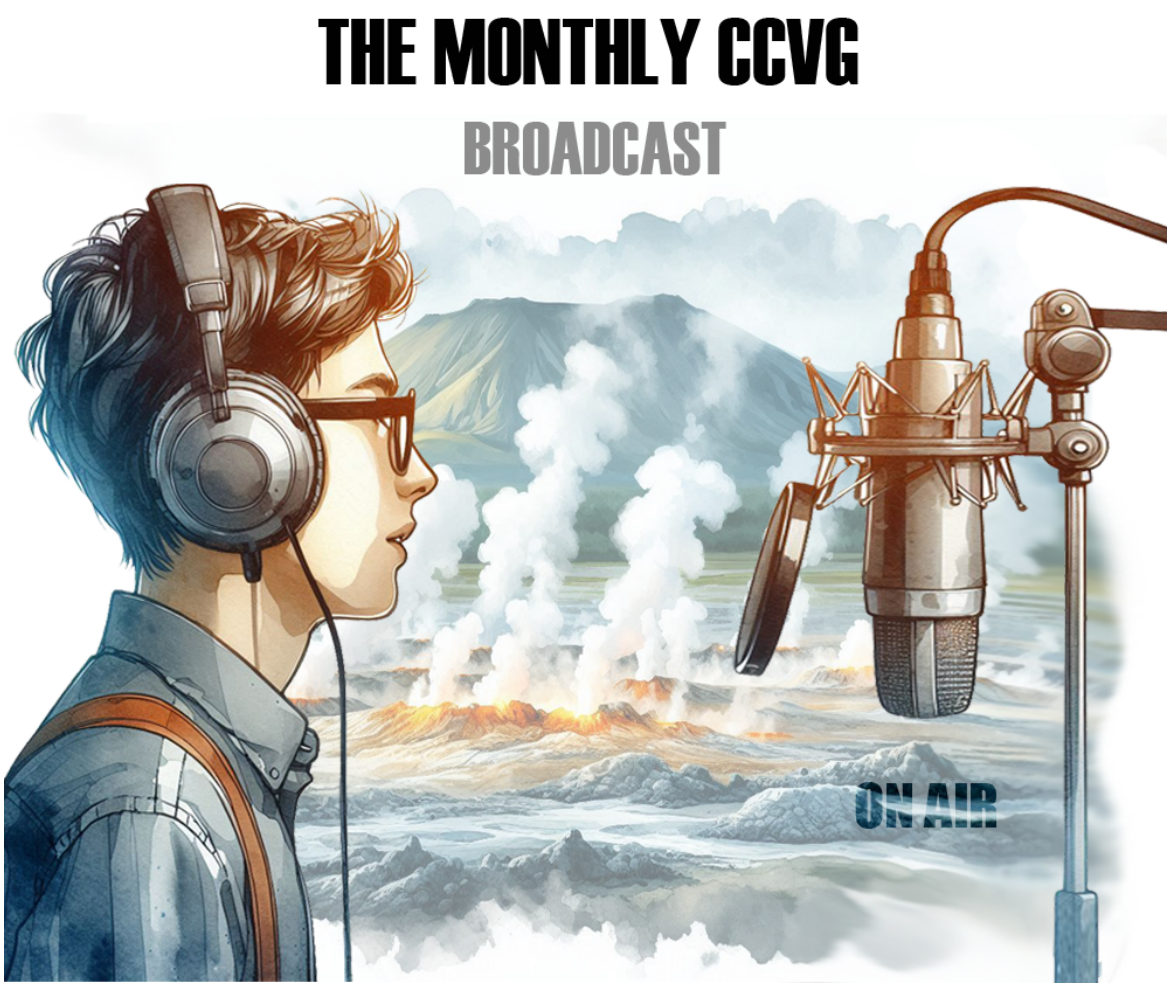
CCVG Broadcast - First episode: September 25 at 10 AM US Eastern Time



The IAVCEI Commission on the Chemistry of Volcanic Gases (CCVG) is starting a monthly virtual seminar series this fall. The topics are wide ranging around the theme of volcanoes and volatiles.

Our first talk was on September 25 at 10 AM US Eastern Time by Dr. **Yves Moussallam**, Assistant Professor at Columbia University.

Title: **Volcanic gases as real-time trackers of magma temperature**

Abstract: Deciphering the complex language of gas geochemistry has been a formidable challenge. In this seminar, I will present an innovative method for interpreting volcanic gas compositions, enabling us to track variations in the temperature and oxidation state of the source magma over time. To demonstrate the accuracy and potential of this approach, I will compare these findings with independent estimates obtained from the study of melt inclusions and glasses. Applying this method to a comprehensive global database of high-temperature volcanic gases, I will re-analyze extended gas geochemical time series from Unzen, Aso, and Asama volcanoes. The new approach reveals previously undetected but

significant changes in magma properties that preceded or coincided with shifts in volcanic activity. I will argue that critical processes such as magma chamber recharge events or second boiling can be deciphered from gas geochemistry, which, when analyzed in detail, could thus be used for improving our ability to forecast eruptions.

Bio: Yves Moussallam has a PhD in volcanology from Cambridge University and is currently an assistant professor at Columbia University. Yves' area of expertise is in Volcanic gas remote and in-situ sensing, high-pressure, high-temperature, ex- and in-situ petrological experiments, and melt inclusions, glass and mineral studies in volcanic deposits. Yves' research is a blend of theoretical, applied and expeditions-based science. The goals are (1) To interpret surface observations on volcanoes — and particularly measurements of gas emissions — to understand the unseen magmatic processes happening at depth and enhance our capacity to forecast future volcanic activity and (2) To understand the transfer of volatile elements from the mantle to the surface via magma ascent and degassing and better quantify volatile cycling at the planetary scale.