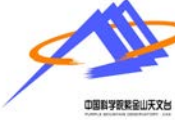


FLICOS: Flickering Cosmology

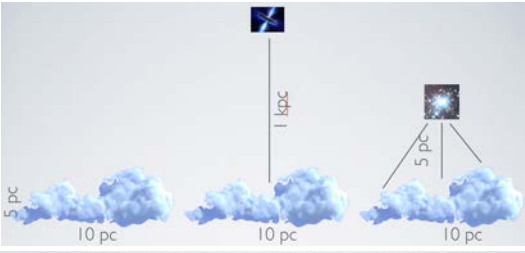
1 Mpc

Check Emission Lines (Ammonia, SiO, CO) after Flickers

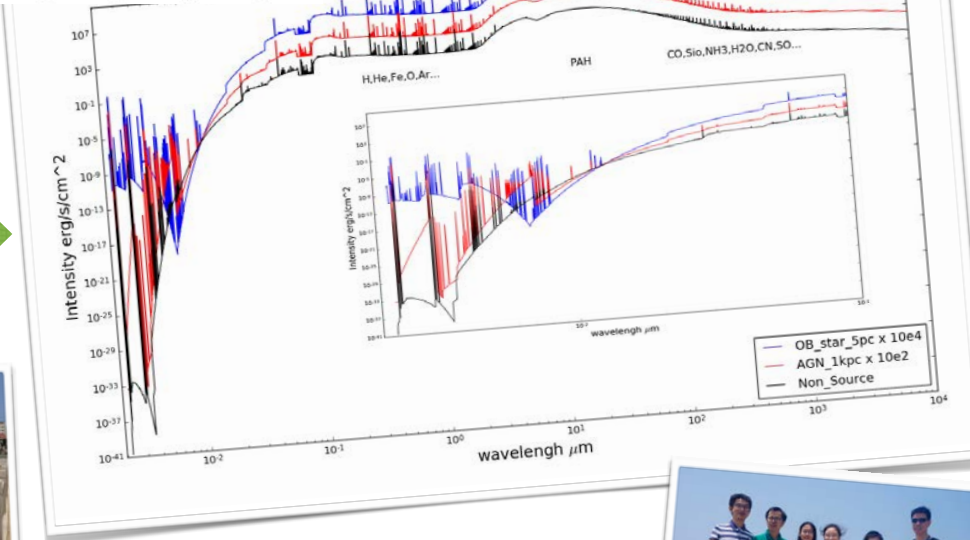
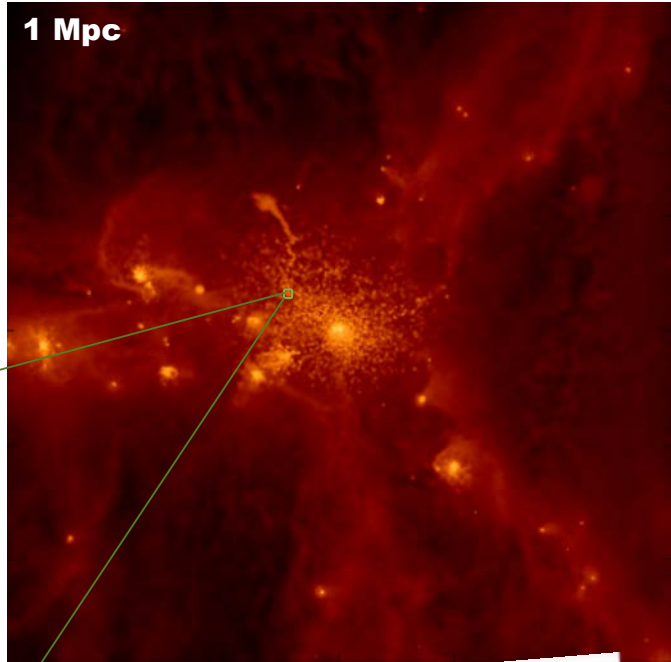
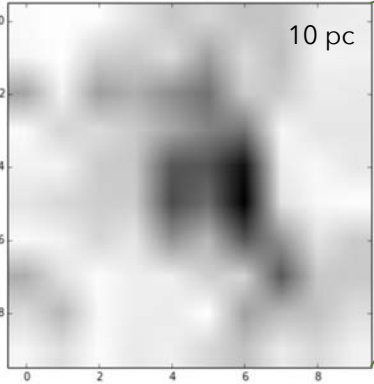
Tianwen Cao, Ningyu Tang, Chen Wang, Shen Wang, Shuinai Zhang, Ziwei Zhang, Fengyao Zhu



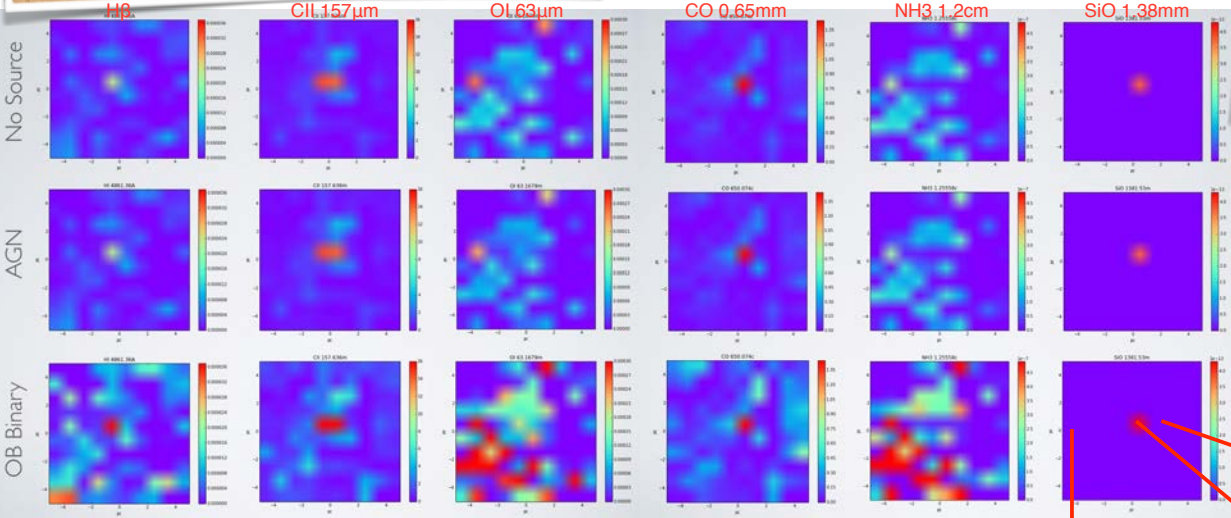
INTRODUCTION:
 Our universe is flickering. AGN come and go, OB stars are born and shining for a while. What will the emission lines be influenced? Based on a simulated 3D molecular gas, the emission under three cases (no source, AGN $\log L=43$, and OB binary) is investigated. The answer is that **the clouds are more easily be affected by OB stars!**



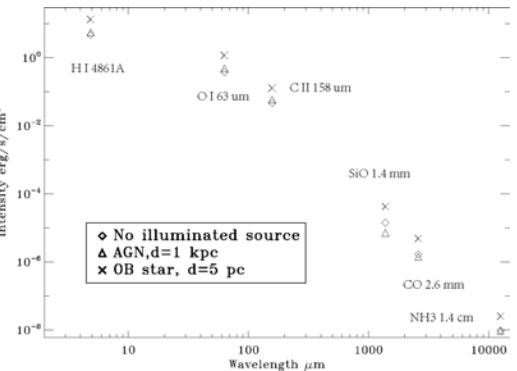
The largest difference in the three cases is the spectra on the shorter wavelength bands, such as UV and X-ray (see the right panel spectra). To be more clearly, OB association case has the spectrum enlarged 10^4 times and AGN case enlarged 10^2 times.



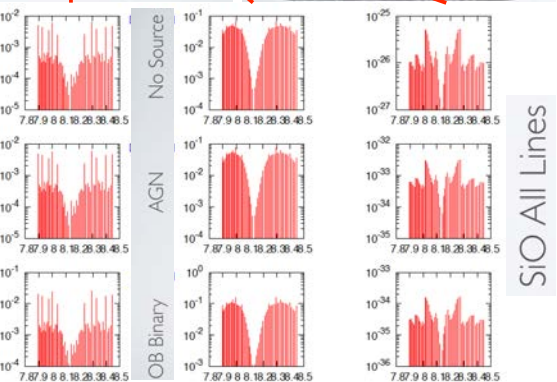
Cloudy 2016, Weihai



Different emission-line maps on the left cover from optical to radio rotational lines for the three cases. Most lines follow the density distribution above, while OI and NH3 are more sensitive to the temperature distribution. The intensities increase obviously due to a OB association at 5 pc away.



The 3 column of images are from 3 pixels. SiO fundamental band from hot gas, $v=1-0$, with no external radiation source, AGN radiation, and OB association radiation. Left panel shows result for typical hot gas, middle panel shows result high temperature and high density when the gas approaches LTE, right panel shows results for typical cold gas.



SiO All Lines