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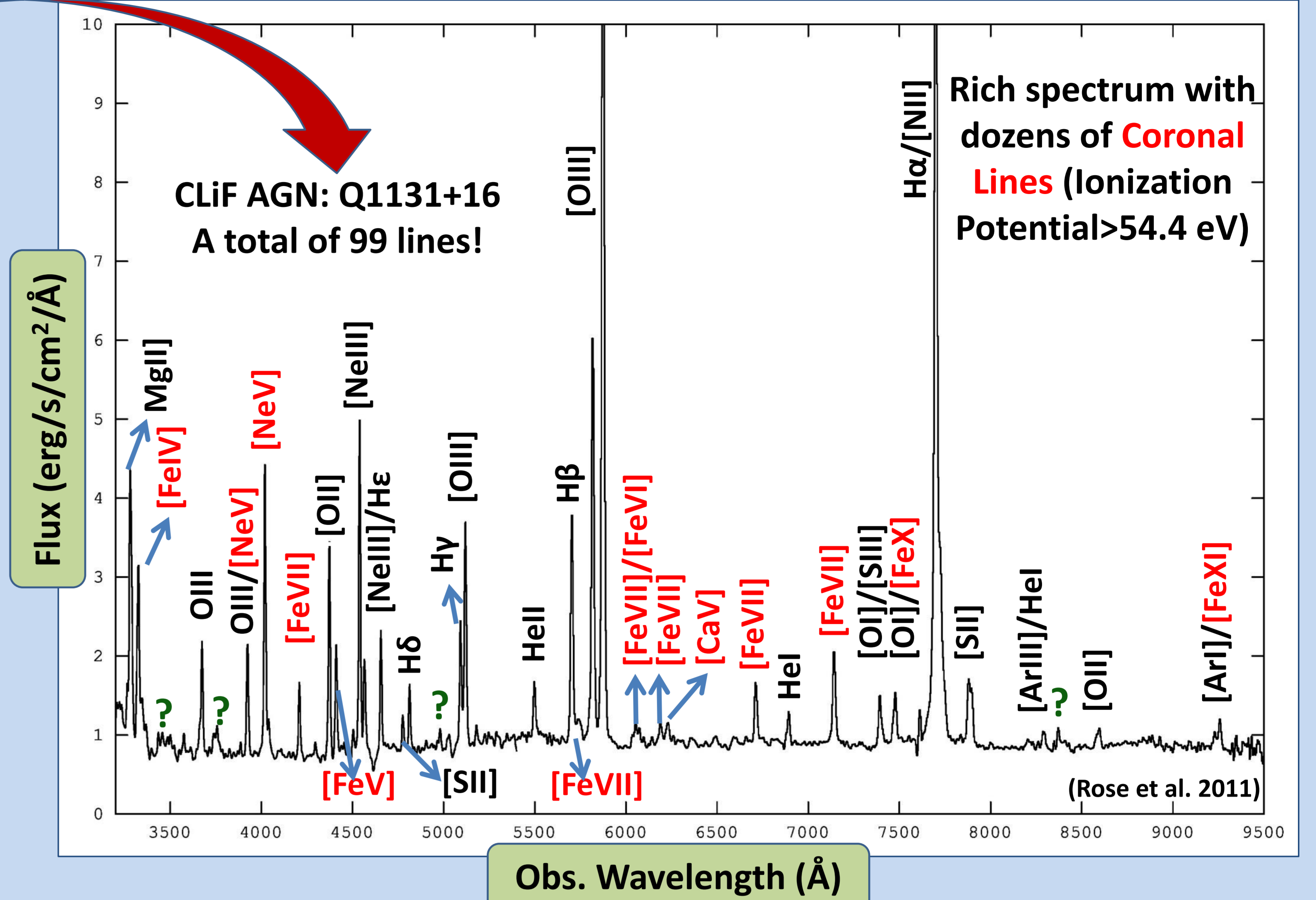
CLiF Notes

(Rose et al. 2015)

- A NEW CLASS OF AGN HAS BEEN DISCOVERED!
- Dozens of **Coronal Lines (CLs)** emitted from high density ($n_H > 10^{6.0} \text{ cm}^{-3}$) region
- Extremely rare, 0.01% of the combined SDSS quasar and galaxy catalogs (just 15)
- Lack broad ($>1000 \text{ km s}^{-1}$) emission lines = Type 2
- Dozens of **unidentified lines!**
Please help! Ask for a line list

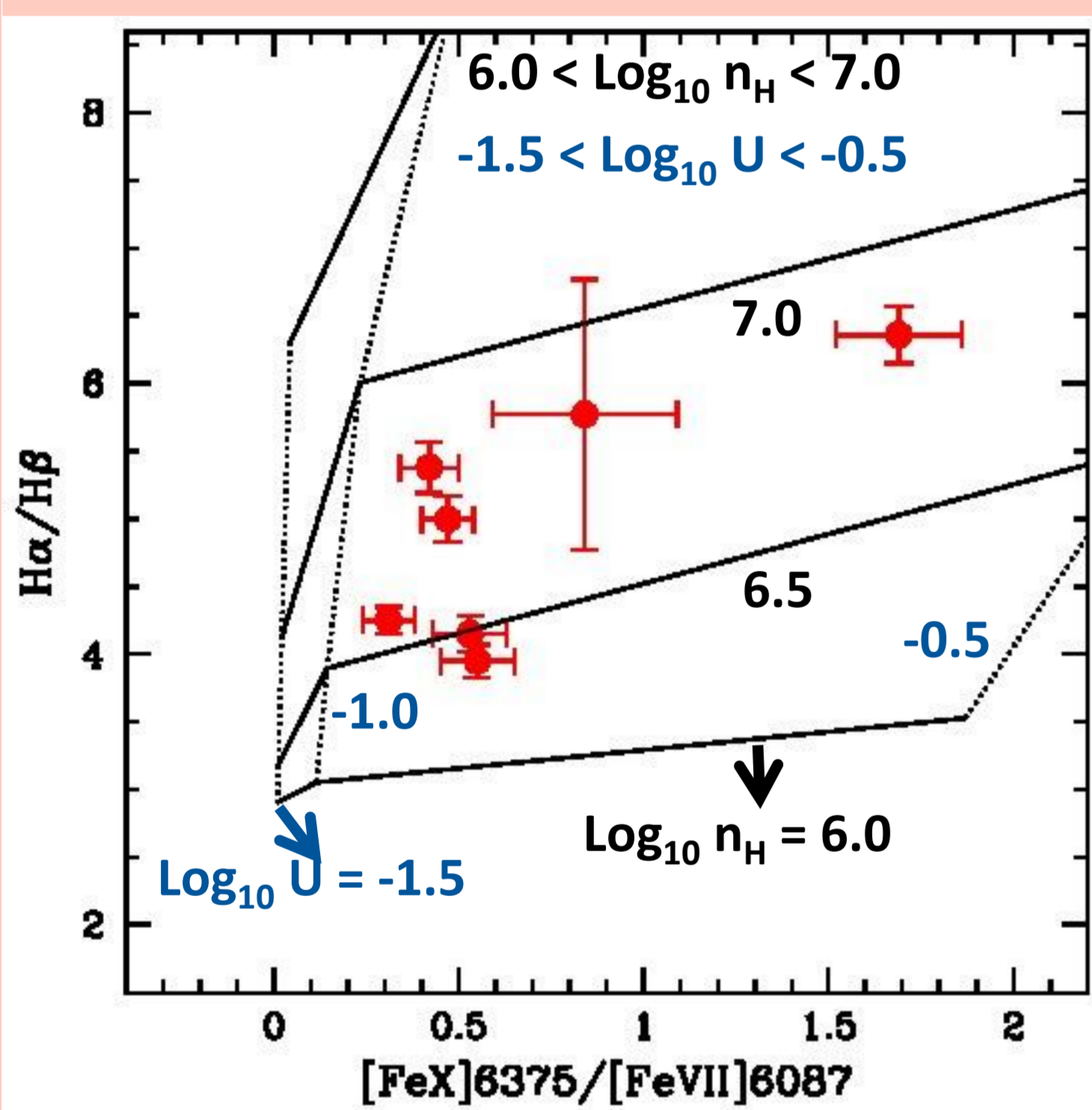


What is happening?



Coronal Line Region Properties are consistent with the Inner Torus

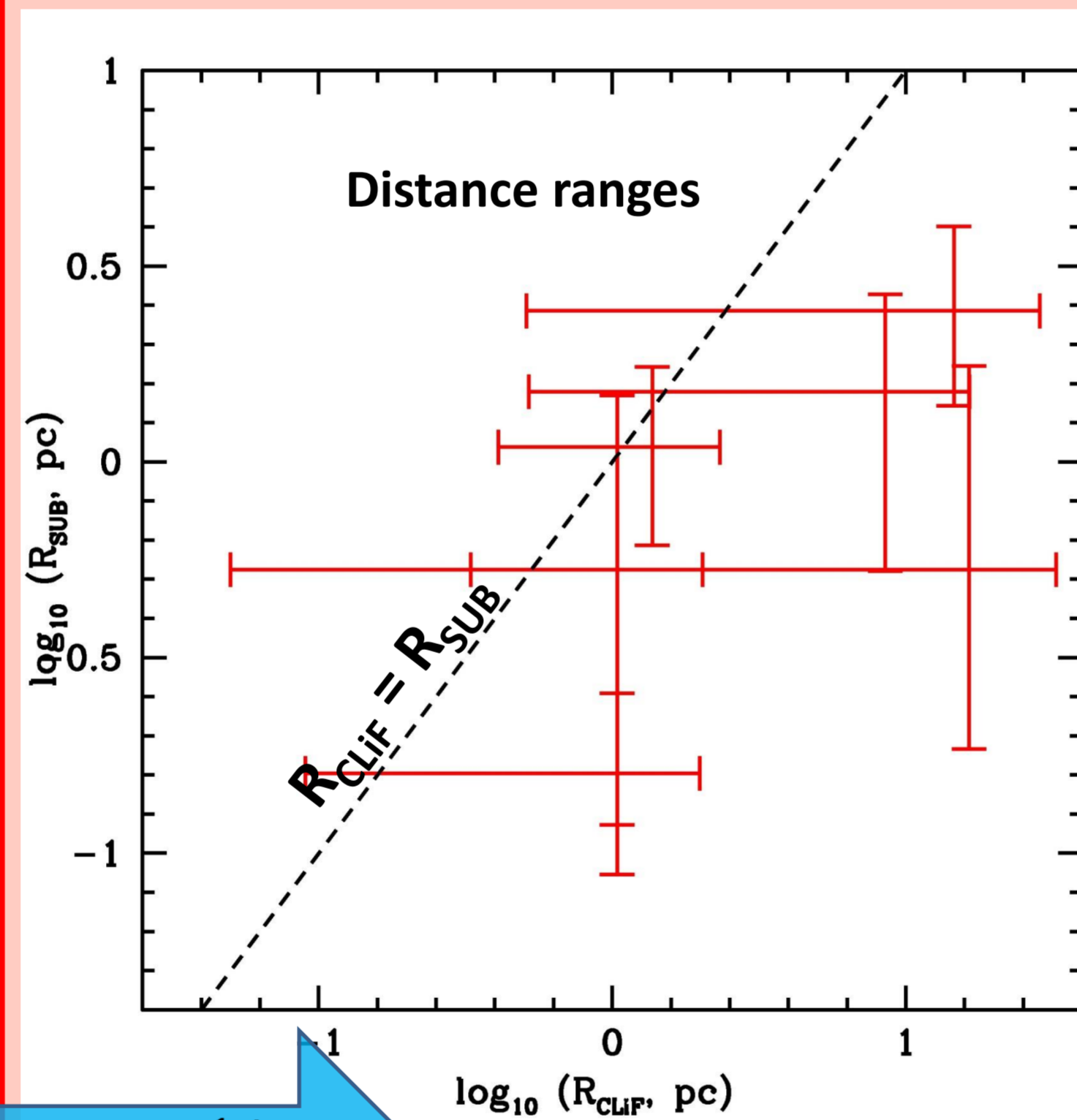
High Density! High Ionization Parameter



CLOUDY Models

$$R_{\text{CLiF}} = \left(\frac{L_{\text{ION}}}{4\pi n_H c (h\nu)} \right)^{1/2}$$

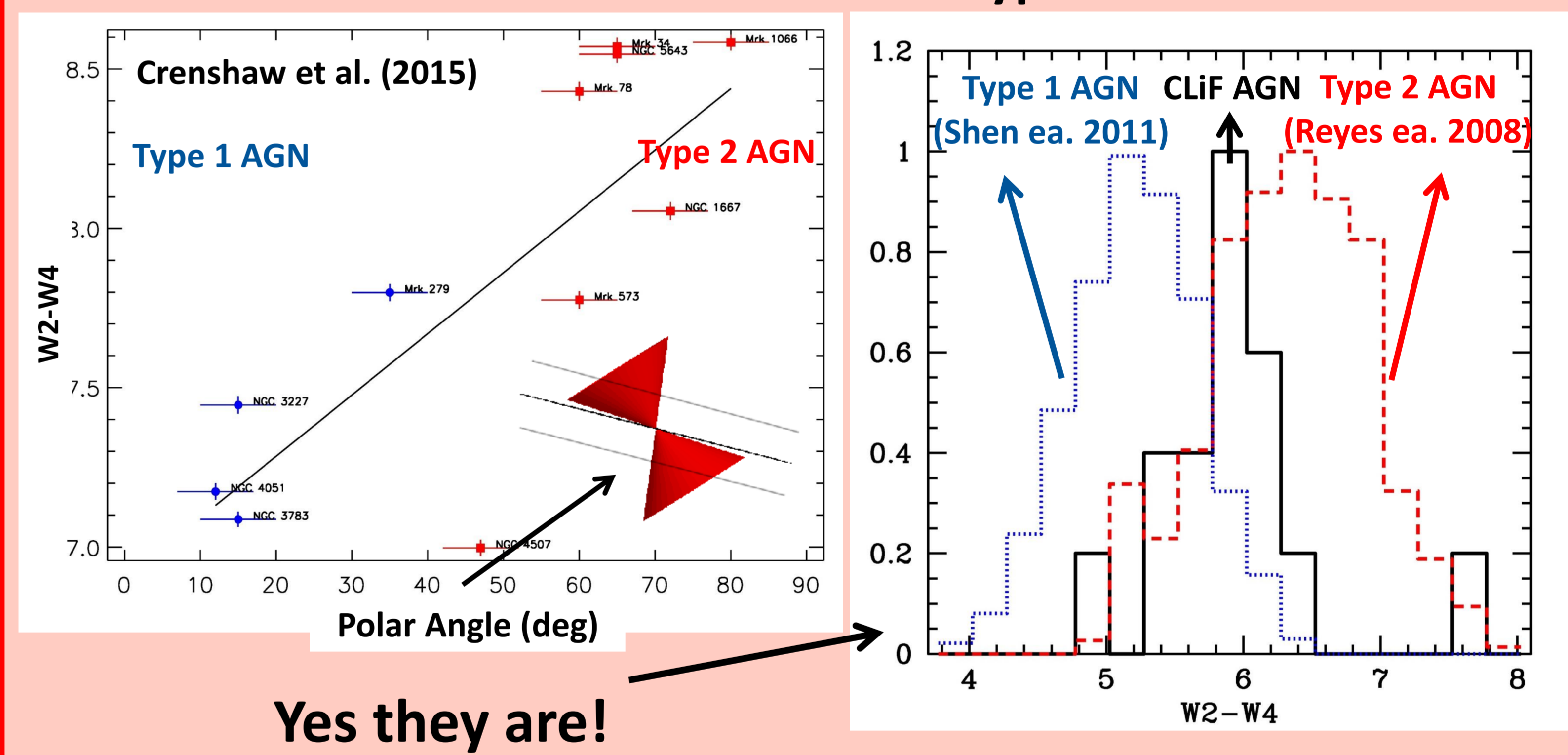
Radial Distance \approx Dust Sublimation Radius



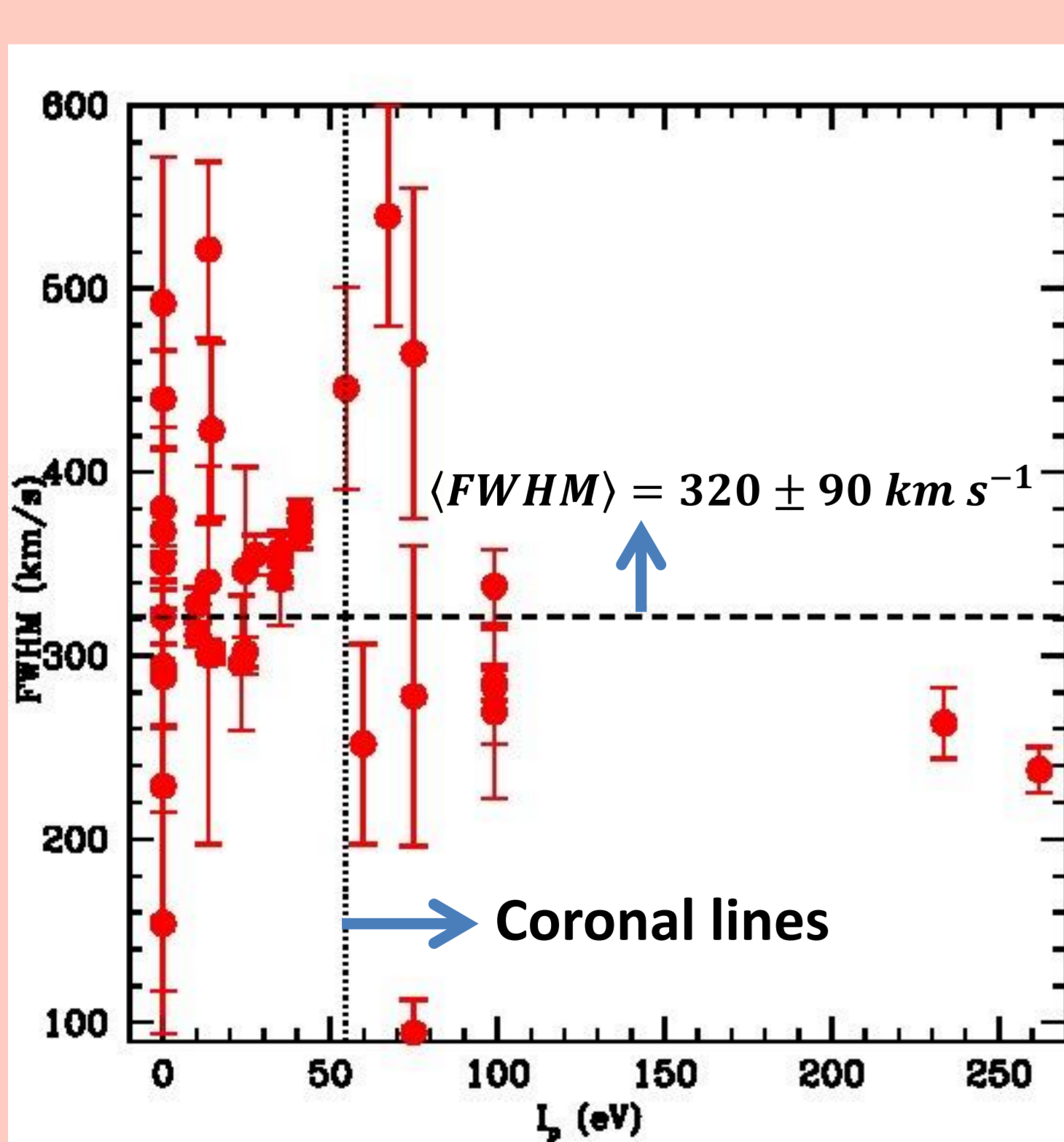
Test the Torus Hypothesis with WISE!

Intermediate Inclination?

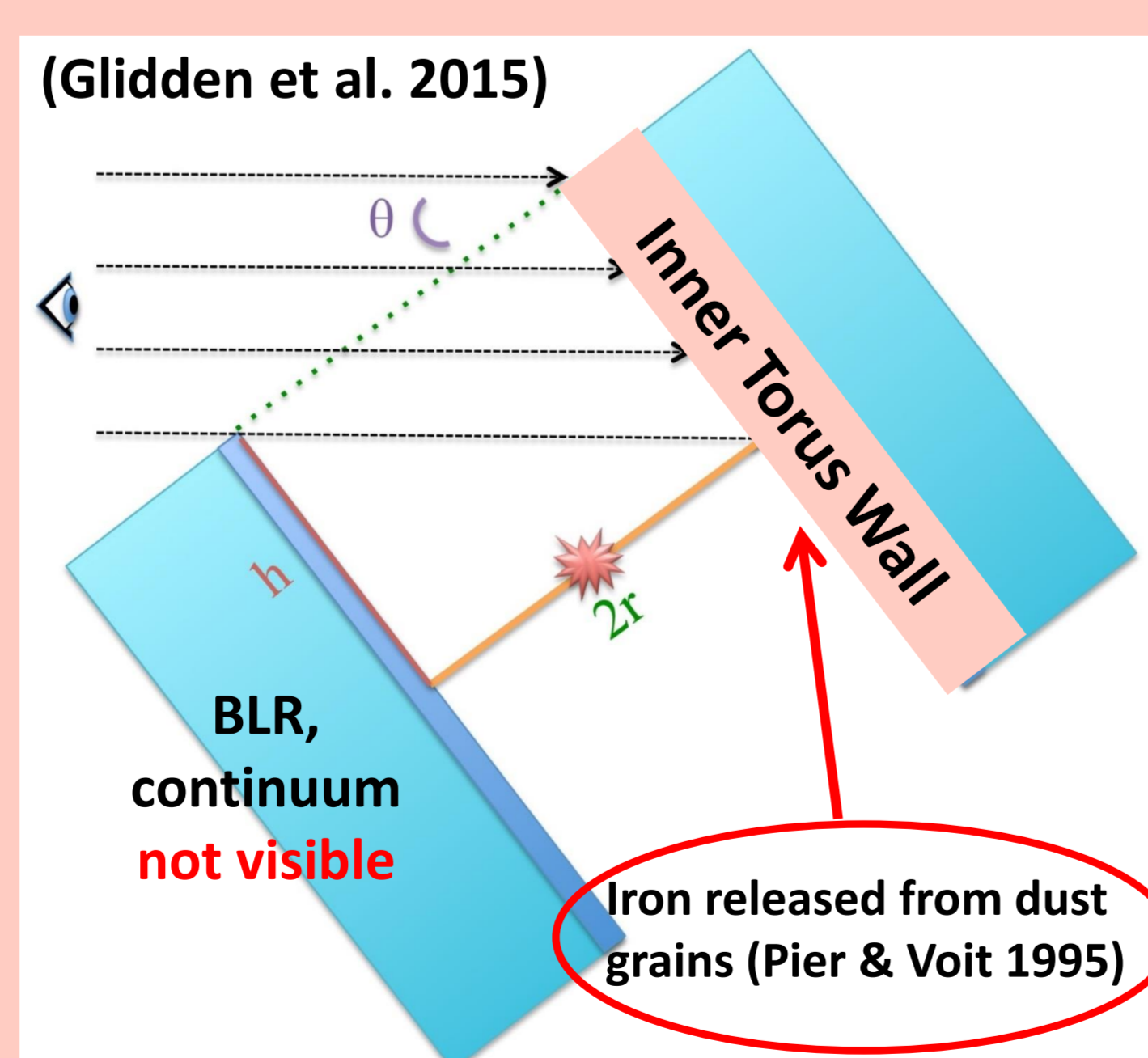
Type 1 AGN have bluer W2-W4 colors when compared to type 2 AGN (Crenshaw et al. 2015) \rightarrow see more hot dust in type 1 AGN!
Are CLiF AGN WISE colors *distinct* from type 1 and 2 AGN?



CL Kinematics = NLR Kinematics



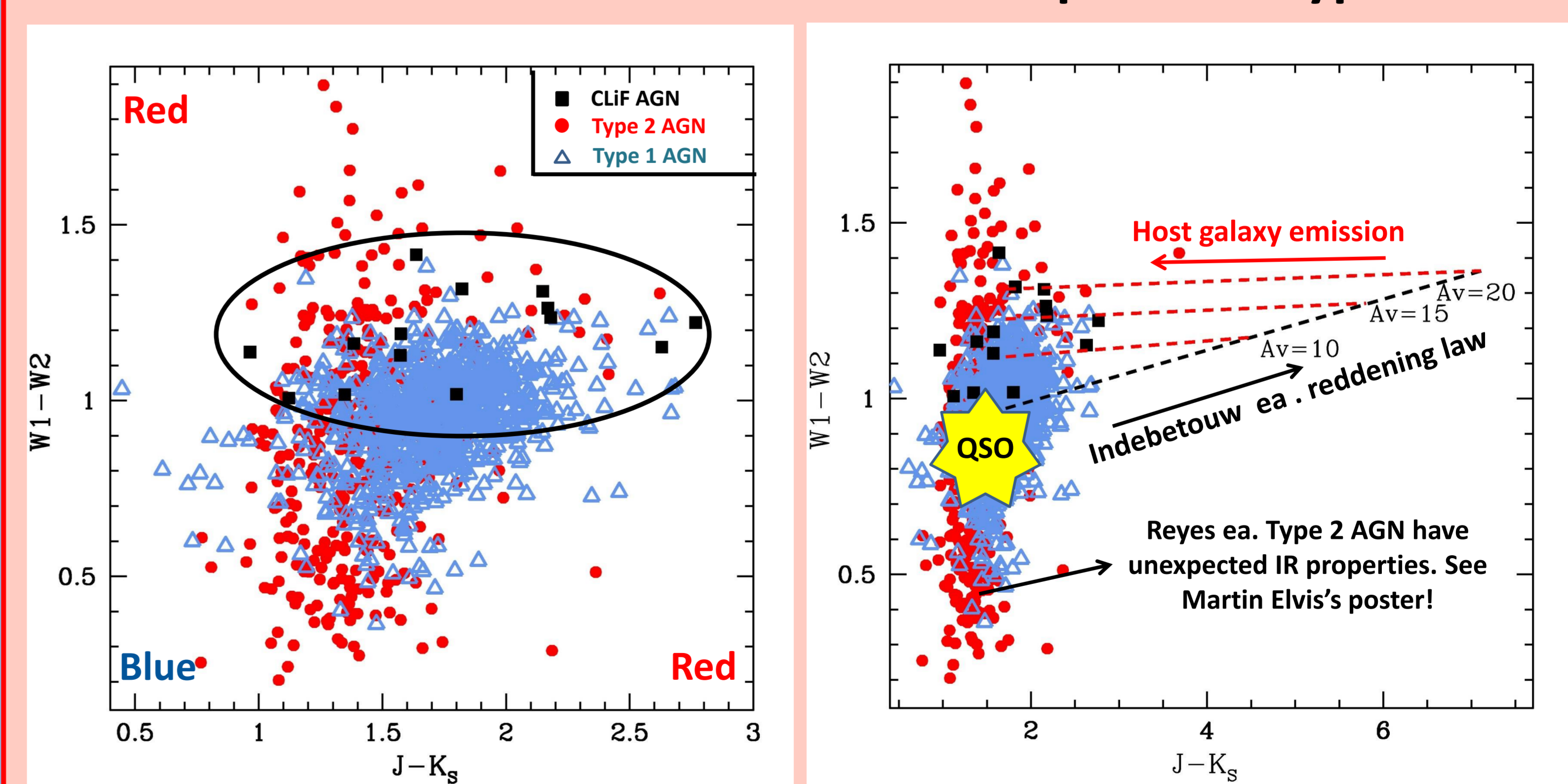
Maximal view of inner torus wall?



Can we test this? **Yes!**
With WISE!

Torus Obscuration of AGN Continuum?

CLiF AGN have redder W1-W2 colors compared to type 1 AGN



'Genuine' type 2 AGN? (Rose 2013)

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