

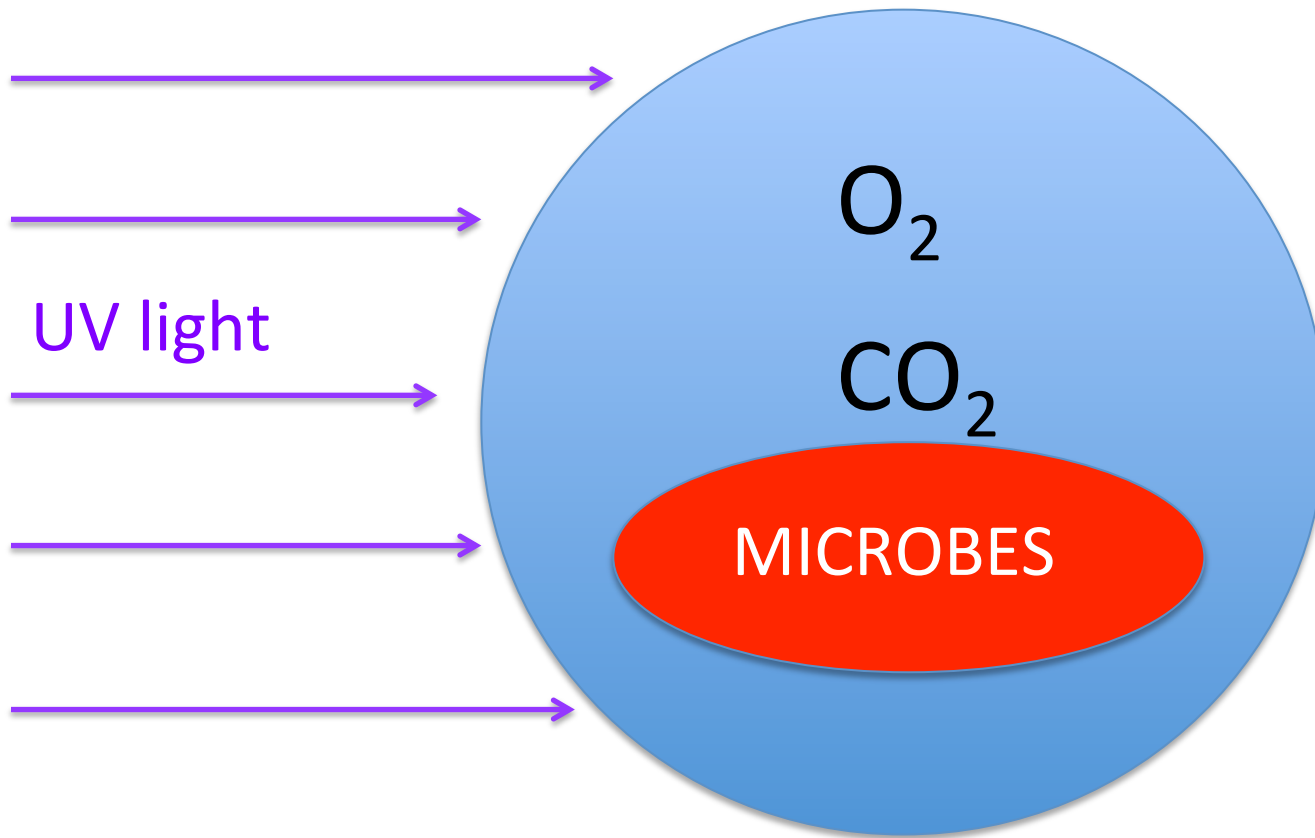
On the Detection of CO as an Anti-biosignature

Kyle Sheppard

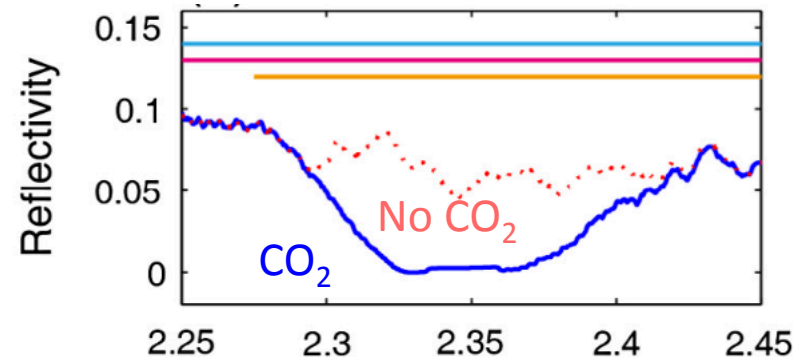
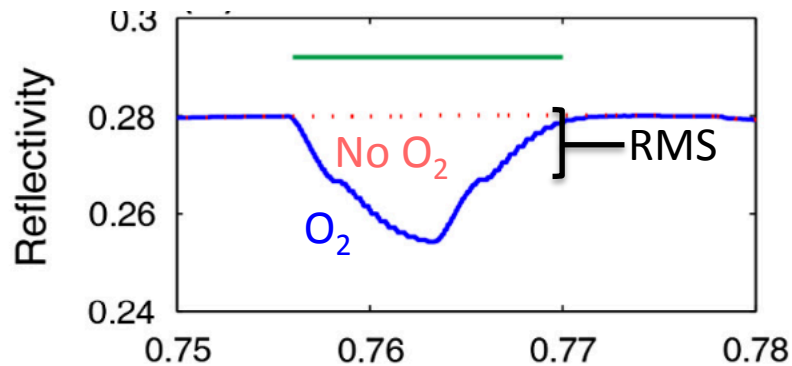
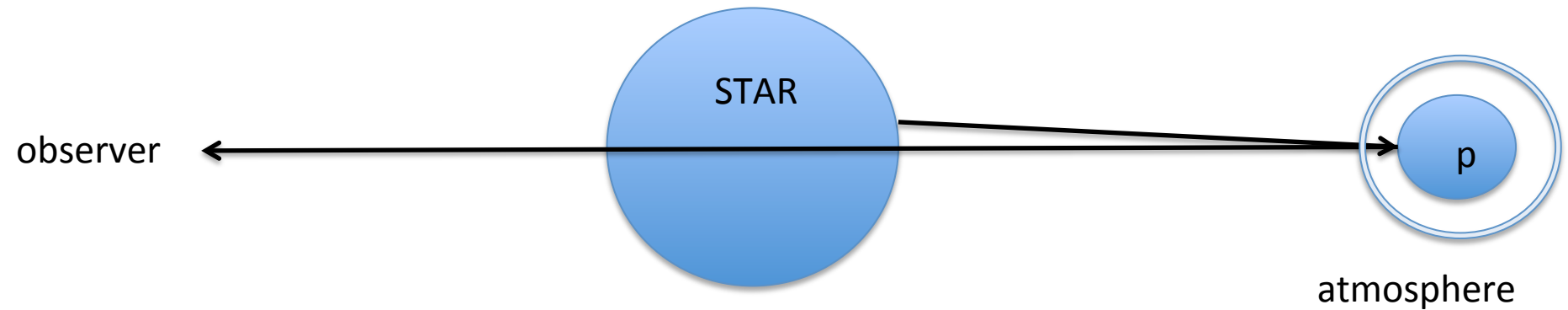


Y. Wang et al., 2016

Why is CO an anti-biosignature?



Detection via reflectivity spectrum



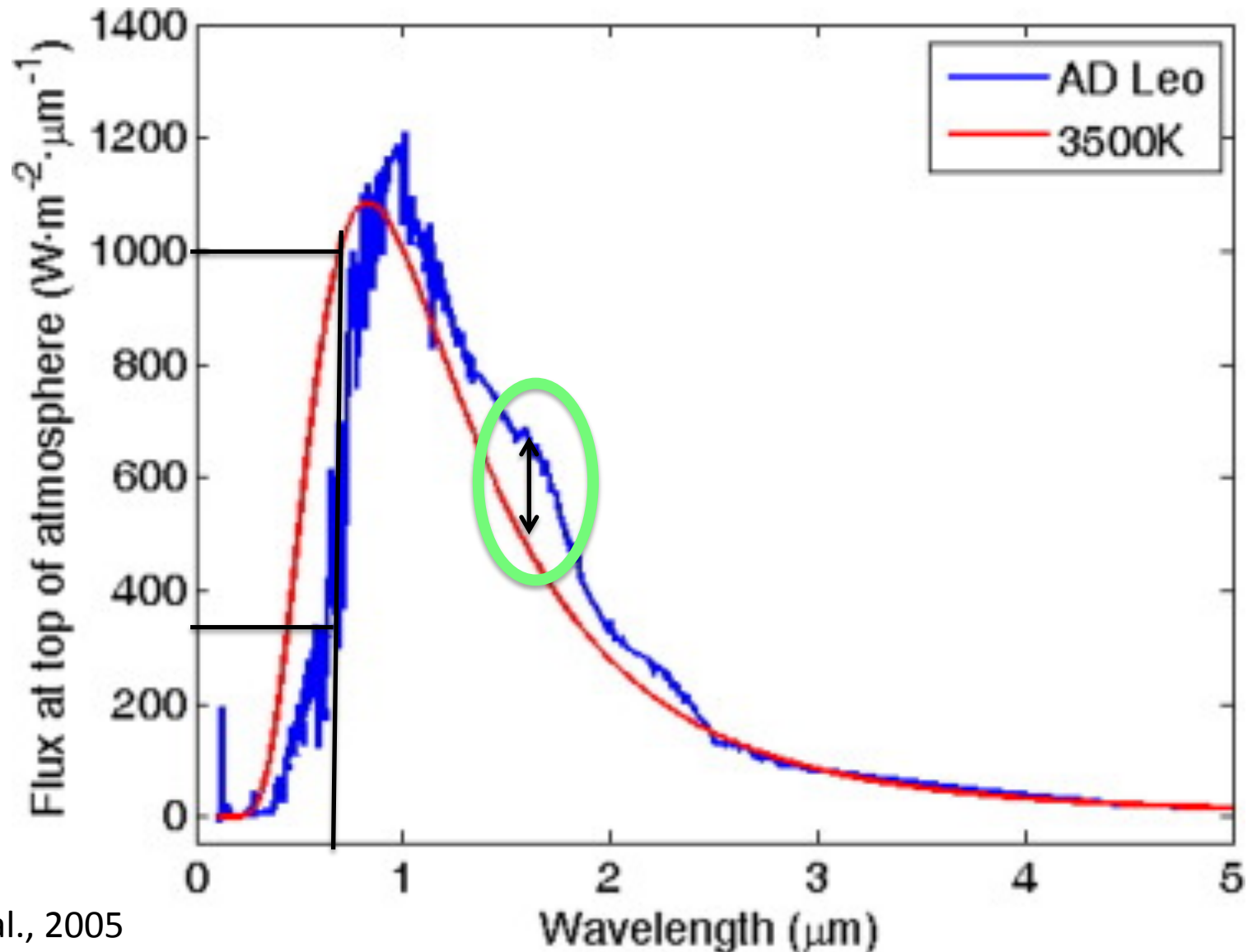
CO is easier to detect than O₂

Table 2

Observation time for detection of O₂ and CO.

Exoplanets with Earth-like climate				
λ (μm)	A with O ₂	A without O ₂	SNR	Δt (h)
0.69	0.274	0.279	112	148
0.76	0.254	0.28	22	4.3
1.27	0.253	0.255	255	329
λ (μm)	A with CO	A without CO	SNR	Δt (h)
1.58	0.175	0.2	16	1.7
2.34	0.01	0.08	3	0.1
4.67	0.03	0.66	3	0.024

Deviation from a blackbody



Effect of ignoring idealistic noise assumptions

