

Box 1: Spectral Lines Modeled in PDRT								
Species		Wavelength	Telescopes					
			ALMA	Herschel	JWST	Spitzer	SOFIA	SWAS
Currently Available	[C I]	370μm, 609μm		●			●	●
	[C II]	158μm		●			●	
	[O I]	63μm, 145μm		●			●	
	[Fe II] [†]	26μm			●	●	●	
	[Si II] [†]	35μm			●	●	●	
	H ₂ 0-0S(0) to S(3) [†]	28.2–9.7μm			●	●	●	
	H ₂ 6-4Q(1) [†]	1.6μm			●			
	H ₂ 1-0S(1) [†]	2.12μm			●			
	¹² CO J=1 to 14	2.6–0.2mm	●	●			●	
Proposed Additions	[¹³ C I] [‡]	370μm, 609μm		●			●	●
	[¹³ C II] [‡]	158μm		●			●	
	H ₂ S(4) to S(20) ^{‡ §}	8-1μm			●	●	●	
	¹² CO J=15 to 25 [‡]	0.2–0.1mm	●	●			●	
	¹³ CO J=1 to 25 [‡]	2.6–0.1mm	●	●			●	
	¹² CO v=1-0 [‡]	4.5-5μm			●			
	H ₂ O v=1-0 [‡]	6.7-7μm			●		●	
	[S I] [‡]	25.2 μm			●		●	
	[Fe II] [‡]	17.9 μm			●		●	
	[Fe I] [‡]	24.0 μm			●		●	
	[F I] [‡]	24.8μm			●		●	
	[Cl I] [‡]	11.3μm			●		●	

[†]metallicities Z=1,3 [‡]metallicities Z=0.1,0.3,1,3,5
[§]pure rotational and rovibrational transitions v(0)-v(6)

The PDR Toolbox reads in a set of diagnostic emission line observations, and returns the best fit model for the physical conditions – density, incident radiation field, and gas temperature – of the region. As currently implemented, PDRT uses pre-computed sets of PDR models. Our goals are to enhance and expand the existing parts while adding real-time accessible codes that can be tuned for specific objects by users, broadening its capability to analyze archival data products. To that end, we propose to:

- *Allow image data as inputs.* Currently PDRT finds model fits using data from a single beam. However, line images are now readily available, for example, from Herschel, SOFIA, and Spitzer. We will read in FITS images and output images of the best