

Table 5. Photon energies ( $E_p$ 's) are used to calculate the Uranian protosatellite disk temperatures ( $T$ 's). The  $T$ 's and orbital radii ( $R_u$ 's) are used to construct the complete Uranian TD in Fig.11. All  $T$ 's are calculated from Eq. (3) with  $C_1 = 2.315\text{K}\cdot\text{cm}$  and  $C_2 = -3720\text{ cm}^{-1}$ .

Satellite	$i$	$E_p(\text{cm}^{-1})^a$	$T(K)$	$R_u^b$
Ring 6	11&12	4826	2560	1.637
Ring 5	13&14	4712	2296	1.652
Ring 4	15	4642	2134	1.666
Ring $\alpha$	15	4642	2134	1.750
Ring $\beta$	13&14	4712	2296	1.786
Ring $\eta$	11&12	4826	2560	1.846
Ring $\gamma$	10	4917	2771	1.863
Ring $\delta$	9	4990	2939	1.900
Cordelia	7	5108	3213	1.948
Ring $\lambda$	5&6	5144	3296	1.957
Ring $\epsilon$	3&4	5285	3623	2.006
Ophelia	1	5397	3882	2.105
Bianca	1	5397	3882	2.316
Cressida	3&4	5285	3623	2.418
Desdemona	5&6	5144	3296	2.453
Juliet	7	5108	3213	2.520
Portia	9	4990	2939	2.586
Rosalind	10	4917	2771	2.735
Cupid				2.911
Belinda	11	4841	2596	2.946
Perdita	12	4823	2553	2.990
Puck	13&14	4712	2296	3.365
Mab	15	4642	2134	3.824
Miranda	16	4543	1904	5.082
Ariel	17	4498	1800	7.469
Umbriel	18	4449	1688	10.410
Titania	19	4372	1510	17.070
Oberon	20	4265	1262	22.830

<sup>a</sup>Black van Dishoeck (1987). Some  $E_p$ 's are weighted averages.

<sup>b</sup>NASA (2021)