

lar spectrum would hide any stellar lines of the same wave lengths.

Visual observations of the nova at the Cassegrain focus of the 100-inch reflector with excellent seeing clearly showed the elongation of the nebula in P.A. 135° , but no duplicity was noted.

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MOUNT WILSON OBSERVATORY

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THE SPECTRUM OF P CYGNI IN THE REGION λ 3000– λ 3300

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The spectrum of P Cygni from λ 3000 to λ 3300 has recently been photographed with the quartz spectrograph of the McDonald Observatory. The average dispersion in this region is 15 A/mm. The lines are shown in Table I.

The first line, λ 3013, is a strong feature; there may also be a bright line of shorter wave length, at λ 3008, due to *Fe* III, but this is not certain. The spectrum of P Cygni below λ 3300

TABLE I
SPECTRUM OF P CYGNI IN THE REGION $\lambda < 3300$

λ	Intensity	Identification		
		Element	λ	Intensity
3011.93	4A	<i>Fe</i> III	3013.12	20
3012.98	4E			
3023.63	1E	<i>Fe</i> III	3023.85	8
3085.33	6A	<i>Si</i> III	3086.22	7
3092.52	5A	<i>Si</i> III	3093.42	6
3095.85	2A	<i>Si</i> III	3096.79	4
3108.90	1A	<i>Fe</i> III	3110.05	10
3110.64	1A	<i>Fe</i> III	3111.61	8
3117.48	1A	<i>Fe</i> III	3118.75	5
3131.46	1A	?O III	3132.86	6
3134.96	3A	<i>Fe</i> III	3136.43	10
3136.28	3E			
3165.46	1A	<i>Si</i> IV	3165.72	8
3168.27	1A	<i>Fe</i> III	3169.4	3
3172.91	2A	<i>Fe</i> III	3174.09	10
3173.67	2E			
3174.94	2A	<i>Fe</i> III	3176.00	10
3175.66	2E			

TABLE I (*continued*)

λ	Intensity	Identification		
		Element	λ	Intensity
3176.96	2A	<i>Fe</i> III	3178.03	10
3177.85	2E			
3183.41	0A	<i>Si</i> III	3185.16	3
3184.76	1E			
3185.94	10A	<i>He</i> I	3187.74	8
3187.42	10E			
3203.30	1A	<i>Fe</i> III	3204.76	6
3204.47	1E			
3210.48	1A	<i>Fe</i> III	3212.05	10
3212.00	1E			
3214.07	1A	<i>Fe</i> III	3215.60	8
3215.31	1E			
3260.98	0A	<i>Fe</i> III	3262.44	6
3265.12	10A			
3266.60	10E	<i>Fe</i> III	3266.88	20
3274.52	8A			
3276.13	8E	<i>Fe</i> III	3276.08	15
3280.78	0E			
3287.21	6A	<i>Fe</i> III	3288.81	15
3288.51	6E			
3290.62	2A	<i>Fe</i> III	3292.04	8
3291.75	2E			

consists of one strong line of *He* I (λ 3188; $2s^3S - 4p^3P^o$), four lines of *Si* III ($3d^3D - 4p^3P^o$ and $4p^1P^o - 5s^1S$) and nineteen lines of *Fe* III (mostly a $^5F - z^5F^o$; a $^3F - z^3D^o$; a $^3F - z^3G^o$; a $^5F - z^5G^o$). All the strong observed lines of *Fe* III have metastable lower levels. *He* I (λ 3188) also has a lower metastable level. The *Si* III lines observed in this region confirm and complete the peculiar selectivity observed in other spectral regions:¹ all the observed transitions of *Si* III, for which the term $4p^{1,3}P^o$ is the upper level, are present in absorption; whereas those transitions for which this term $4p^{1,3}P^o$ is the lower level are in emission. This selectivity has been discussed previously.¹

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¹ O. Struve and F. E. Roach, *Ap. J.*, **90**, 727, 1939; P. Swings and O. Struve; *ibid.*, **91**, 574, 1940.