

*Lengths of Axes and Position Angles of 52 Oval Nebulae.*

By Dr. Max Wolf.

Professor Turner has suggested the question whether there is a relation between the apparent form and the situation of oval nebulae of the type of the Andromeda nebula, viz. Is the ratio of the two axes of the ellipse, visible to us in projection, connected by some rule with the position angle of the major axis?

I have made a first trial with the oval nebulae of my last catalogue,\* putting these together in the following list. The lengths of the two axes  $a$  and  $b$  are estimated on the plates by a scale in the eye-piece of my microscope; the position angles are estimated with the aid of a cardboard circle at the same.

The visible dimensions of such diffused objects depend in a high degree upon the exposure, the darkness of the plate, the illumination, and the position on the plate, so that the lengths of the axes are affected with some uncertainty. Notwithstanding, there is no doubt that some simple rule, if it exists, must be perceivable from these numbers.

The distribution of the position angles themselves has a maximum at about  $30^\circ$ , and a second fainter at about  $160^\circ$ .

Kgst. Liste		N.G.C.		$\alpha$ 1875.			N.P.D. 1875.			Pos. Angle.	$a$	$b$
No.	No.	h	m	s	°	'	"	°	"	"	"	
111	3935	11	45	55.2	56	54	0	110	45	20		
130	new	47	13	9	56	32	0	40	20	15		
132	"	47	15	6	60	3	3	105	45	20		
138	"	47	22	5	55	56	12	130	60	30		
154	"	47	49	7	56	26	35	160	45	12		
173	"	48	51	5	56	9	34	160	20	6		
177	"	48	57	2	56	10	38	80	20	8		
193	"	49	19	4	59	21	47	40	60	15		
213	"	49	53	7	57	52	51	10	60	15		
216	"	49	56	2	57	15	55	135	45	15		
232	3986	50	17	2	57	17	0	100	100	20		
255	new	51	2	1	58	13	6	165	30	12		
257	"	51	3	8	56	58	12	30	45	10		
258	3991	51	5	2	56	57	55	15	15	10		
263	3994	51	10	3	57	1	40	10	30	15		
271	3995	51	17	2	57	0	37	(?) 30	90	30		
303	4020	52	30	8	58	53	23	15	80	20		
318	new	52	47	1	58	34	15	140	30	15		
346	"	53	42	6	56	10	0	35	30	12		
352	"	11	53	50.7	58	4	44	45	40	15		

\* *Königstuhl Nebel-Liste* No. 8, Publ. iii.

Kgst. Liste 8. No.	N.G.C. No.	<i>a</i> 1875.			N.P.D. 1875.			Pos. Angle.	<i>a</i> "	<i>b</i> "
		h	m	s	°	'	"			
380	new	11	54	39'0	58	27	28	60	30	20
391	"		54	52'5	58	1	28	35	30	6
444	"		55	46'5	58	21	11	15	20	6
452	"		55	58'1	59	26	30	70	75	15
455	"		56	1'2	59	50	6	60	45	20
483	"		56	57'4	59	53	1	55	90	20
498	"		57	25'8	59	35	23	150	60	15
502	"		57	32'6	58	11	44	10	45	15
510	4062		57	40'2	57	24	25	100	180	60
529	new		58	10'4	58	36	47	30	30	8
541	"		58	21'9	58	8	41	160	20	12
545	"		58	24'4	56	48	29	5	45	8
548	"		58	26'4	57	2	30	30	45	(?) 5
582	"		59	26'2	59	14	18	60	30	15
584	"		59	28'1	58	15	27	170	20	8
593	"		59	34'9	57	57	22	45	22	7
607	"	11	59	44'9	56	24	27	120	30	12
680	"	12	0	45'0	58	14	36	30	30	15
682	"		0	46'4	56	18	28	70	40	15
699	"		1	12'4	56	28	13	110	30	6
711	? 4122		1	39'8	56	21	53	160	20	12
715	new		1	46'3	55	47	52	5	30	15
719	"		1	58'2	56	42	39	175	30	12
725	"		2	21'3	55	40	27	40	30	15
726	"		2	21'8	57	7	59	80	30	15
737	4132		2	39'6	60	3	4	30	45	20
740	new		2	44'4	54	59	56	175	30	12
741	4134		2	47'8	60	7	39	150	90	45
743	new		2	50'4	58	23	47	25	75	20
764	4150		4	12'8	58	54	8	150	90	45
769	new		4	57'2	56	42	35	65	45	30
770	"	12	5	44'4	56	34	10	150	45	30

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1900 July 2.*

[By the courtesy of the secretaries, the above very interesting measures have been included in the present number, but there was not time to prepare any discussion of them. A very rough

preliminary analysis indicates that the measures lend some support to the hypothesis of a systematic orientation of axes parallel to the Galaxy (see *M.N.*, lxvii. p. 333 and p. 498), but a complete discussion must be deferred.—H. H. TURNER.]

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*Erratum.*

In *Monthly Notices*, vol. lxvii. p. 321 (Baxendell's Observations of U Geminorum),

for 1858 Nov. 14 read 1858 Nov. 15 (as on p. 324).