



Universiteit
Leiden
The Netherlands

Remarks on the photo-electric magnitudes of Margarete Güssow

Hertzsprung, E.

Citation

Hertzsprung, E. (1942). Remarks on the photo-electric magnitudes of Margarete Güssow. *Bulletin Of The Astronomical Institutes Of The Netherlands*, 9, 282. Retrieved from <https://hdl.handle.net/1887/5846>

Version: Not Applicable (or Unknown)

License: [Leiden University Non-exclusive license](#)

Downloaded from: <https://hdl.handle.net/1887/5846>

Note: To cite this publication please use the final published version (if applicable).

J.D. hel.	phase	$m'_v - m'_c$ + '20	intensity of	
			fog	image
d	P	m	m	m
24595'302	'983	'07	1'1	1'6
4642'348	'405	'57	'5	'5
374	'416	'42	'5	2'7
48'240	'838	'20	'4	1'4
24918'438	'387	'39	'8	'5
465	'398	'45	'8	1'4
25038'240	'847	'36	1'0	2'1
265	'857	'44	'8	2'0
43'241	'911	'15	1'5	2'4
67'224	'812	'20	'8	1'3
241	'819	'12	'7	1'4
257	'826	'26	'8	1'7
273	'832	'30	1'3	1'4
289	'839	'34	1'3	1'3
305	'846	'39	1'4	1'7
78'221	'352	'06	1'3	1'2
244	'361	'08	2'5	1'7
263	'369	'16	2'7	2'0
25319'330	'892	'27	'4	1'0
30'244	'398	'31	'8	1'1
270	'409	'50	'8	'7
77'299	'824	'28	'2	1'2
322	'834	'42	'2	1'4
82'338	'905	'14	'2	1'6
362	'914	'13	'1	1'1
83'410	'347	'06	'2	'7
25406'227	'767	—'01	'1	1'5
25561'553	'892	'20	'3	1'4
575	'901	'16	'4	2'0
25640'327	'413	'50	'9	1'2
41'413	'862	'49	1'6	1'6
483	'890	'34	1'3	1'5
504	'899	'14	1'3	1'3
573	'928	'10	1'3	1'6
52'545	'458	'25	'3	1'2
567	'466	'12	'3	1'6
86'256	'375	'12	'3	1'3
277	'384	'12	'2	1'2
25686'301	'394	'28	'2	'6
323	'403	'42	'2	1'3
345	'412	'50	'2	1'4
369	'421	'62	'2	1'4
25709'257	'871	'48	'2	1'7
302	'889	'28	'2	1'3
348	'908	'08	'2	1'4
370	'917	'08	'2	1'3
16'478	'852	'60	'2	1'3
501	'861	'58	'3	1'6
31'204	'931	'05	'3	1'6
32'202	'343	'00	'4	2'0
255	'365	'01	'1	1'9
38'198	'819	'29	'5	1'5
273	'850	'50	'2	1'5
341	'878	'38	'2	1'6
363	'887	'26	'2	1'5
59'192	'486	'06	'5	1'3
60'189	'898	'20	'8	1'5
245	'921	'04	'1	1'2
267	'930	—'03	'1	1'4
288	'939	—'02	'1	1'3
61'291	'353	'00	'1	1'5
345	'375	'00	'2	1'3
367	'384	'11	'4	1'4
66'196	'377	'14	1'3	1'6
72'326	'908	'25	'1	1'0
339	'913	'24	'0	'8
351	'919	'09	'1	1'0
77'236	'935	'06	'7	1'5
89'200	'874	'39	'2	1'3
25922'560	'931	'00	'8	'8
582	'940	'00	1'8	1'3
23'552	'340	—'05	'8	'9
573	'349	—'02	'9	'2
50'478	'457	'38	'6	'8
499	'466	'21	'6	1'1
521	'475	'17	'6	'9
543	'484	'07	'7	'3
565	'493	'01	'5	'9
26007'357	'939	—'06	'6	1'0
379	'948	—'08	'6	'7
30'387	'447	'51	'8	'8
409	'456	'42	'7	'9
36'342	'905	'10	'7	1'0
364	'914	—'04	'7	1'1
26122'206	'353	—'07	'5	'9
228	'362	—'11	'5	'8
23'300	'805	'14	'5	1'2
322	'814	'24	'6	1'0
26363'446	'947	'03	'3	1'5
468	'957	—'04	'3	1'6
64'443	'359	'08	'3	1'1
465	'368	'06	'3	'9
26420'403	'462	'32	'6	1'7
21'358	'856	'54	'6	1'5
23'572	'770	'03	'8	1'6
49'294	'389	'18	'5	'2
317	'399	'14	'5	1'8
26828'285	'853	'58	'6	1'4
307	'862	'47	'6	1'6
84'226	'948	'00	'5	1'5
27426'568	'849	'48	'7	1'4
27533'263	'898	'13	'5	1'1
330	'925	—'01	'5	1'3
352	'934	—'06	'7	1'1
27619'197	'375	'07	1'1	1'1
28308'249	'845	'22	'5	1'4
262	'850	'28	'1	2'8
290	'862	'39	'6	1'2
313	'871	'52	'6	1'6
41'242	'465	'08	'4	1'5
263	'474	'04	'5	1'1
42'238	'877	'50	'7	1'5
259	'885	'46	'7	1'3
29105'210	'864	'26	'4	1'8

Remarks on the photoelectric magnitudes of Margarete Güssow, by *Ejnar Hertzsprung*.

In *Zeitschr. f. Astrophysik* 20, 25 Dr. MARGARETE Güssow has published photoelectric magnitudes of 94 stars, for two different colours. The two effective wavelengths are given as 4203 and 4488 Å.

I have compared Frl. Güssow's blue filter and yellow filter magnitudes, m_b and m_g , for 22 stars

$$\begin{aligned}
 m_b - m_g &= -\cdot 216 + \cdot 658 (m_{2'384} - m_{2'236}) + \cdot 011 (m_{2'384} + m_{2'236}) \\
 &\quad \pm \cdot 026 \quad \pm \cdot 005 \text{ (m.e.)} \\
 m_b + m_g &= +4\cdot 104 - \cdot 061 (m_{2'384} - m_{2'236}) + \cdot 989 (m_{2'384} + m_{2'236}) \\
 &\quad \pm \cdot 118 \quad \pm \cdot 023 \text{ (m.e.)}
 \end{aligned}$$

According to these formulae the magnitudes m_b and m_g correspond to the effective wavelengths 4248 and 4434 respectively. The interval in reciprocal wavelength is $2'354 - 2'256 = \cdot 098$ while Frl. Güssow assumed $2'379 - 2'228 = \cdot 151$ or about one and a half time as much.

with the smoothed monochromatic magnitudes at $1/\lambda = 2'236$ and $2'384$ contained in KIENLE's Table 15 in *ZS. f. Astroph.* 16, 265. The star γ Cas was not included because of its variability. The least squares solutions gave:

There is no marked difference between the magnitude scales of KIENLE and Frl. Güssow. If the magnitudes of KIENLE are supposed to be correct the mean error of $m_b - m_g$ is found to be $\pm \cdot 033$ and of $m_b + m_g$ to be $\pm \cdot 145$.