*	α 1906.0	δ 1906.0	Autorität
233	3h58m12s88	+19° 11′ 51″0	BB. VI +19°650
234	3 56 39.56	+18 41 36.7	A. N. 133.331
235	4 6 41.90	+20 30 10.3	AG. Berlin B 1352
236	4 0 30.44	+20 9 27.4	BD. +20°697, Anschl. an
	4 1 9.36	+20 3 0.7	Kf. 122
237	3 42 43.64	+19 35 14.2	BD. +19°596, Anschl. an
	3 39 26.86	+19 32 6.8	AG. Berlin A 1002
238	3 38 20.92	+19 22 6.9	» » » 996
239	3 13 47.26	+16 33 44.9	Toul. ph. Kat. 329.76
240	5 51 10.12	+35 45 53.9	AG. Lund 3020
241	11 37 15.65	+ 1 46 11.3	AG. Albany 4335
242	16 18 7.71	+50 0 55.3	AG. Harv. 4969, AG. Bonn 10484
243	16 18 46.99	+51 33 4.7	AG. Harvard 4974
244	23 45 40.16	−13 37 59.6	Rad_3 6367, AG. Wash.
245	0 14 0.55	−11 28 13.4	$Yarn_3$ 124
246	5 25 50.21	+15 42 55.0	AG. Berlin A 1554
247	22 25 47.07	+ 5 50 51.1	10m, Anschluß an
	22 23 5.64	+ 5 51 0.4	Bonn Vf. 4
248	8 28 49.83	+22 49 48.6	AG. Berlin B 3425

Die Vergleichsterne Nr. 2, 32, 63, 98, 99, 100, 101, 106, 108, 109, 118, 127, 128, 134, 170, 187, 190, 203 sind von Herrn Dr. *J. Rheden* am Fadenmikrometer des Zwölfzöllers bestimmt worden.

*	α 1906.0	δ 1906.0	Autorität
249	1h32m21s32	+17° 22′ 7″2	10m, Anschluß an
	1 35 27.71	+17 23 43.4	AG. Berlin A 476
250	5 11 17.87	+15 18 48.3	BD. +15°778, Anschl. an
	5 10 2.75	+15 31 23.8	AG. Berlin A 1438
251	5 19 36.43	+15 56 23.8	11m, Anschluß an
	5 16 58.92	+16 1 58.9	AG. Berlin A 1487
252	5 20 26.11	+15 51 48.5	11m, Anschluß an
	5 22 5.66	+15 57 37.4	AG. Berlin A 1528
253	9 5 39.90	+ 3 36 57.4	BD. +3°2157, Anschl. an
	9 3 29.66	+ 3 33 3.5	AG. Alb. 3676, Bonn Vf. 4
254	12 7 32.91	+15 20 23.0	BD. +15°2425, Anschl. an
	12 4 26.58	+15 21 16.6	AG. Berlin A 4606
255	23 59 56.15	− 7 0 36.1	BD. −7°6143, Anschl. an
	0 3 54.92	− 7 2 53.6	A. N. 131.23

Außerdem wurden noch von Herrn Dr. *J. Rheden* am Zwölfzöller die folgenden Sterne angeschlossen:

und von mir am 27-Zöller:

256	4 3 49.21	+19 3 57.8	BD. +18°588, Anschl. an 54
257	10 30 54.89	+ 5 51 44.7	BD. +6°2321, Anschl. an 81
258	12 34 47.88	+12 4 41.3	10m, Anschluß an 50

Bemerkungen.

Komet 1905 IV. März 5. Der Komet gleicht einem Stern 11m, der von einer 15–20″ großen Koma umgeben ist. — März 7. Der Komet erscheint heller als März 5.

Komet 1905 VI. Januar 28. Der Komet hat einen kleinen, gut pointierbaren Kern 12m; Gesamthelligkeit 10m; Komadurchmesser 3′; Luft sehr schlecht. — Januar 29. Komet heller als gestern; zeigt ein granuliertes Aussehen; Kern exzentrisch; Koma 3–4′ Durchmesser; Luft sehr schlecht.

Finlayscher Komet 1905 d. Juli 17. Der Komet stand lange Zeit in dem Dunstkreise der Stadt und erschien deshalb als ein sehr schwacher Nebel, der jedoch einen deutlichen Kern aufwies. — Juli 21. Dämmerung bereits begonnen. — Aug. 28. Der Komet macht einen Gesamteindruck eines Sterns 8m. Die Koma mißt 5′ im Durchmesser. Der Komet besitzt einen sehr gut ausgeprägten Kern von der Helligkeit 10m

Nebel NGC. 2599. Das Objekt ist ein Stern 11m5 von einer sehr kleinen 10–15″ großen Nebelhülle umgeben.

Die Witterungsverhältnisse in dem Jahre 1906 sind als sehr ungünstige zu bezeichnen. In der Mehrzahl der Fälle schönen Wetters trat dasselbe erst in später Nachtstunde ein, worauf auch die Beobachtungszeiten hinweisen. In den wenigen Fällen, wo es bereits in den ersten Nachtstunden schön war, lagerte in der Regel von Südwest bis Ost und bis zu sehr beträchtlichen Höhen eine starke Dunstschicht, die sich jetzt um so fühlbarer macht, als sie durch die elektrische Beleuchtung der Stadt Wien erhellt wird. Dieses und der Umstand, daß die Heidelberger Entdeckungen neuer Planeten in einzelnen Monaten sich besonders stark häuften, brachten es mit sich, daß ich von mehr als der Hälfte der Neuentdeckungen nicht die zur Bahnbestimmung genügende Anzahl von Beobachtungen erhalten konnte. Ich muß dabei bemerken, daß ich bei dem Mangel von ersten Bahnberechnungen in der Regel versuchte, aus den Beobachtungen selbst eine Ephemeride zu extrapolieren, was sich um so unsicherer gestaltete, je weniger Beobachtungen vorlagen und je weiter der Planet von der Ekliptik abstand. So ist es gekommen, daß mir viele heitere Stunden mit erfolglosem Suchen verloren gingen.

Wien, 1907 Februar 1. *J. Palisa.*

The Variable Star 120.1906 Persei.

BD. +47°692 $\alpha = 2^h38^m59^s$ $\delta = +47°43'3$ 1900.0 8^m0-10^m3.

Since I have published a determination of the period of the variable star 120.1906 Persei in A. J. 591, I have read the notice of Prof. A. A. Nijland on the same star in A. N. 4150. His period is 20^d596 and he suggested that it will be decided whether the period is $^1/_3 \times 20^d596$, i. e. 6^d865 by the observation on Jan. 16, Febr. 19 or Febr. 26.

It is followed soon by a note written in A. N. 4153 by Prof. Hartwig, in which he considered $10^d.319$ as the period of this star. *) Thus, three different periods were proposed for the same star.

For my part, the period $6^d.85$ is so determined that all the observations at Moscow as well as my observations before Dec. 8 1906 are satisfied. My observations on Nov. 18 and other dates exclude the possibility of period of $3^d.43$ (one half of my period) or multiples of $6^d.85$.

Prof. Nijland's observations on Jan. 2 and my observations on Jan. 9, Febr. 19 and 26 show that a minimum occurred on each of these days. Thus, there is no doubt that $6^d.865$ or $6^d.85$ may be the period.

If Prof. Hartwig's statement were correct, it would follow that $3^d.43$ must be the true period. Although the estimates on Nov. 18 established my period, still I decided to observe the star on Febr. 22 in order to fully establish the period. A minimum would take place on Febr. 22 $19^h.8$ if $3^d.43$ is the period. My estimates on Febr. 22 are

Febr. 22	$15^h.5$	$8^m.1$	Febr. 22	$18^h.0$	$8^m.1$
22	16.9	8.1	22	19.8	8.1

This shows that the period cannot be $3^d.43$ days. Thus, I think we can safely conclude that the true period of this star is about seven days.

The further observations since Dec. 10 gave me a more accurate period $6^d.862$, but the last figure is still uncertain.

I have obtained 96 observations of this star and followed it through its minimum on two nights, i. e. Dec. 19 and Febr. 5. On the other six nights, i. e. Nov. 8, 28; Jan. 8, 22; Febr. 19 and 26, the minimum was observed partially. The comparison stars were as follows:

1	BD. $+47°681$	$2^h 32^m 58^s$	$+47° 44'$	$8^m.0$	$19^s.2$
2	$+47\ 686$	2 34 35	$+47\ 44$	9.3	6.7
3	$+47\ 687$	2 34 51	$+47\ 20$	9.5	2.7
4	—	2 35.5	$+47.4$	—	0.0
5	$+47\ 691$	2 35 51	$+47\ 54$	9.1	5.8
6	$+47\ 695$	2 37 28	$+47\ 28$	8.9	7.9
7	$+47\ 698$	2 38 20	$+47\ 35$	7.8	16.4
8	$+47\ 699$	2 38 39	$+47\ 26$	8.0	15.3

The positions are for 1855.0 and those for the star 4 are only approximate. The last column represents their brightness in the terms of steps. The preceding column shows BD. magnitudes. I note here that the star 7 was estimated always a few steps fainter than the star 1 although the former is brighter according to BD.

The following table contains all my observations up to date. The last column is calculated by taking $2417520^d.039$ as the initial epoch and $6^d.862$ as the period.

1906	G. M. T	Jul. Day	Brightness	Phase
		2417		
Nov. 8	$14^h.33$	$523^d.597$	$5^s.9$	$3^d.56$
8	15.94	523.664	6.9	3.63
8	16.75	523.698	11.9	3.66
9	14.72	524.613	21.9	4.57
10	17.92	525.749	18.8	5.71
13	12.08	528.503	22.4	1.60
15	17.88	530.745	20.6	3.84
18	12.42	533.518	20.2	6.62
18	15.00	533.625	18.2	6.72
18	16.35	533.681	18.2	6.78
22	13.40	537.558	20.2	3.80
22	15.72	537.655	20.2	3.89
23	12.67	538.528	20.2	4.77
24	11.97	539.499	20.2	5.74
27	12.04	542.502	18.2	1.88
28	11.45	543.477	17.8	2.85
28	12.30	543.513	17.5	2.89
28	17.32	543.722	16.2	3.10
28	20.14	543.839	9.0	3.21
28	21.18	543.881	8.9	3.26
28	21.44	543.893	8.9	3.27
28	22.10	543.921	6.9	3.30
28	23.22	543.967	1.8	3.34
Dec. 1	12.72	546.540	18.9	5.91
8	12	553.50	18.2	6.02
19	12.90	564.538	5.9	3.33
19	13.52	564.563	5.5	3.35
19	14.03	564.585	2.1	3.37

1906-07	G. M. T.	Jul. Day	Brightness	Phase
		2417		
Dec. 19	$14^h.27$	$564^d.595$	$1^s.7$	$3^d.38$
19	14.47	564.603	0.8	3.39
19	14.87	564.620	0.9	3.41
19	15.10	564.629	2.1	3.42
19	15.59	564.650	2.5	3.44
19	15.90	564.663	2.5	3.45
19	16.27	564.678	1.7	3.47
19	16.80	564.700	1.8	3.49
19	17.23	564.718	2.3	3.51
19	17.72	564.738	2.0	3.53
19	18.22	564.759	2.8	3.55
19	18.23	564.760	2.5	3.55
19	18.87	564.786	4.1	3.58
19	18.88	564.787	3.8	3.58
19	19.42	564.809	5.1	3.60
19	19.88	564.828	6.0	3.62
19	20.53	564.855	10.5	3.64
19	21.25	564.885	12.4	3.67
19	21.83	564.910	13.4	3.70
19	21.85	564.910	12.2	3.70
19	24.73	565.030	18.3	3.82
Jan. 8	21.35	584.890	16.2	3.09
8	22.35	584.931	15.2	3.13
8	23.00	584.958	15.2	3.16
22	11.92	598.497	17.9	2.98
22	12.12	598.505	16.7	2.98
22	12.67	598.528	17.1	3.01
22	13.33	598.555	17.7	3.03

1907	G. M. T.	Jul. Day	Brightness	Phase
		2417		
Jan. 22	$14^h.47$	$598^d.603$	$16^s.1$	$3^d.08$
22	15.83	598.660	15.9	3.14
Febr. 5	11.95	612.498	11.0	3.25
5	12.42	612.518	8.5	3.27
5	12.82	612.534	7.5	3.29
5	13.33	612.555	6.5	3.31
5	13.77	612.574	5.8	3.32
5	14.27	612.594	5.0	3.35
5	14.85	612.619	4.2	3.37
5	15.10	612.629	4.0	3.38
5	15.23	612.635	3.3	3.39
5	15.47	612.645	3.4	3.40
5	15.80	612.658	0.9	3.41
5	15.90	612.663	0.9	3.42
5	16.15	612.673	0.9	3.43
5	16.33	612.680	0.9	3.44
5	16.75	612.698	1.4	3.45
5	17.33	612.722	0.9	3.48
5	17.87	612.745	0.4	3.50
5	18.38	612.766	1.1	3.52
5	18.93	612.789	0.9	3.54
5	19.38	612.808	1.1	3.56
5	19.95	612.831	1.1	3.58
5	20.30	612.846	2.6	3.60
5	20.75	612.865	5.3	3.62
5	21.20	612.883	6.2	3.64
19	13.00	626.542	3.8	3.57
19	14.02	626.584	6.1	3.62

*) Die zweite Mitteilung in A. N. 4156, in der Prof. *Hartwig* zu wesentlich anderen Schlüssen kommt, konnte bei der Absendung des Artikels noch nicht in den Händen des Verfassers sein. *Kr.*

1907	G. M. T.	Jul. Day 2417	Bright-ness	Phase
Febr. 19	$14^h.75$	$626^d.615$	$10^s.4$	$3^d.65$
19	15.43	626.643	12.3	3.67
19	16.33	626.680	14.5	3.71
22	15.50	629.646	18.1	6.68
Febr. 22	$16^h.92$	$629^d.705$	$18^s.5$	$6^d.74$
22	18.03	629.751	18.2	6.78
22	19.83	629.826	18.2	6.86
26	12.73	633.530	11.4	3.70
Febr. 26	$13^h.47$	$633^d.561$	$14^s.7$	$3^d.73$
26	14.15	633.590	14.6	3.76
26	14.90	633.621	15.6	3.79
26	15.97	633.666	17.4	3.84

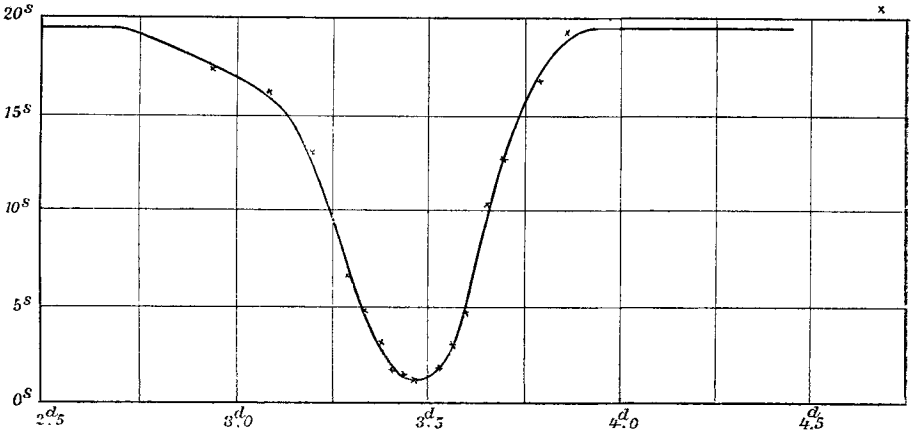
Now, if we arrange the observations in the order of the phase and group into several parts such that each group contains about five estimates, then their means give the following results.

Phase	Number	Brightn.
$1^d.74$	2	$20^s.3$
2.94	5	17.4
3.09	5	16.3
3.20	5	12.0
3.29	5	6.7
3.34	5	4.8
3.38	5	3.1
$3^d.41$	5	$1^s.6$
3.44	5	1.5
3.47	5	1.2
3.53	5	1.8
3.57	6	3.1
3.60	5	4.6
3.65	5	10.3
$3^d.70$	5	$12^s.8$
3.78	5	16.7
3.86	3	19.4
4.67	2	21.1
5.78	4	19.0
6.69	4	18.8
6.81	3	18.2

These values being plotted, we obtain the accompanying mean light-curve of this star. The study of the curve shows that the decreasing and increasing branches are not quite similar, the former covers nearly two-thirds of a day and the first ten hours show very slow decrease; then the light begins to decrease quickly and the star becomes about two magnitudes fainter. The increasing branch covers about eleven hours and the rate of change is a little greater than that of the other.

If I take BD. magnitude 8.0 for the comparison star 1, my value of a step, $1^s.0 = 0^m.128$, gives the normal brightness $8^m.0$ and the minimum $10^m.3$. The range of variation is $2^m.3$.

Light-curve of 120.1906 Persei.



The corrected formula for the minimum will be

$$1906 \text{ Nov. } 8\ 12^h23^m + 6^d20^h41^m.4\,E$$

or

$$2417523^d.516 + 6^d.862\,E.$$

Finally, we have the following times for the minimum on Jan. 2 as well as Jan. 22 from this formula:

$$2417578^d.412 = 1907 \text{ Jan. } 2\ 9^h.9$$
$$2417598^d.998 = 1907 \text{ Jan. } 23\ 0^h.0.$$

Yerkes Observatory, 1907 Mar. 2.

Comparing the former with the result by Prof. Nijland, there is the difference $1^h.6$. If Prof. Hartwig's note on the point be correct, the difference becomes $6^h.6$; i. e. my formula gives the time about seven hours earlier than the middle of eclipse. Further, Prof. Hartwig stated that he observed this star on Jan. 23 with Dr. Pracka and a minimum occurred at Jan. 23 7^h45^m G. M. T. Again comparing this with the above value, my formula gives the time of minimum about eight hours earlier.

Naozo Ichinohe.

Standard stellar magnitudes.

(Harvard College Observatory Circular No. 125).

A simple method of determining the photographic magnitudes of the stars, on a uniform scale, even if they are widely apart, has been in use here for several years. A brief description of it is given in Circular 108, A.N. 171.21. Its advantages are that no special apparatus is required, and that the results obtained by it in practice are very satisfactory.

A determination by this method of a large number of standards of photographic magnitude, uniformly distributed throughout the sky, is now in progress. A full description of the method and the resulting magnitudes is in preparation for publication in the Annals. The object of the present publication is to place in the hands of astronomers a means of determining promptly photographic magnitudes on the scale adopted here.

A standard sequence of comparison stars near the North Pole was selected, and their photometric magnitudes