ASTRONOMISCHE NACHRICHTEN.

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20.

Proper Motions of some Stars of the Paris Catalogue.

By *J. G. Porter.*

In the preface of the second volume of the great Paris Catalogue, pages [88] to [97], there is given a list of stars showing discordant positions, most of which are due to errors in Lalande. But in a few cases M. Bossert has indicated the possible or probable existence of proper motion. These stars were put upon my observing list two years ago, and while the observations are not yet entirely completed, the results obtained have been sufficient to show in nearly every case whether the motion is real or not.

I have thought that the early publication of these investigations would be of interest. The designation »no motion« indicates that the proper motion is too small and uncertain to render a computation worth while. The positions have been reduced to the A.G. system by the application of the systematic corrections given in Auwers' tables (A. N. 3195-96). The computations were made by the method of least squares.

Cat.	Ep.	α 1900.0	P. M. appl.	Obs.	Ep.	δ 1900.0	P. M. appl.
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Paris 7576, 7650, 7805.

No motion.

Paris 8085 = Lal. 12867.

		$6^h 38^m$				$+39^\circ 28'$	
Lalande	91.8	14 ^s 74	—	1	91.8	38 ^s 0	22 ^s 3
Weisse	32.1	14.41	—	1	32.1	28.8	18.9
Paris	75.0	14.57	—	2	71.6	24.0	19.9
Lund	80.1	14.56	—	2	80.1	24.0	21.1
Cinc.	96.6	14.54	—	2	96.6	22.1	21.6

P. M. 0^s000 — 0^s145.

Paris 8112, 8158.

No motion.

Paris 8309 = Lal. 13279-80.

		$6^h 48^m$				$+24^\circ 22'$	
Lalande	97.2	37 ^s 49	36 ^s 87	2	97.2	32 ^s 8	22 ^s 5
Bonn	58.3	37.21	36.96	1	58.3	26.2	22.0
Paris	75.8	37.27	37.13	4.3	76.4	24.0	21.6
Berlin	82.0	37.04	36.93	3	82.0	24.3	22.5
Cinc.	96.6	36.90	36.88	2	96.6	22.5	22.2

P. M. — 0^s006 — 0^s10.

Cat.	Ep.	α 1900.0	P. M. appl.	Obs.	Ep.	δ 1900.0	P. M. appl.
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Paris 8436 = Lal. 13425.

		$6^h 52^m$				$+28^\circ 47'$	
Lalande	94.2	36 ^s 36	—	1	94.2	58 ^s 2	45 ^s 2
Weisse	30.1	36.17	—	2	30.1	54.3	45.7
Paris	81.1	35.98	—	1	81.1	47.4	45.1
Cinc.	96.6	36.10	—	2	96.6	46.0	45.6

P. M. 0^s000 — 0^s123.

Paris 8567.

No motion.

Paris 8660 = Lal. 13759.

		$7^h 1^m$				$+8^\circ 52'$	
Lalande	96.2	15 ^s 39	15 ^s 91	1	96.2	32 ^s 9	18 ^s 4
Paris	59.1	15.49	15.69	1	59.1	23.7	18.0
Paris	81.1	15.84	15.93	1	81.1	19.6	16.9
Cinc.	96.7	15.82	15.84	2	96.7	18.8	18.3

P. M. + 0^s005 — 0^s14.

Paris 8718 = Lal. 13809.

		$7^h 3^m$				$+26^\circ$	
Lalande	95.1	28 ^s 85	—	1	95.1	41 ^s 12 ^s 3	2 ^s 9
Weisse	32.2	28.14	—	1	32.2	5.8	59.7
Paris	81.1	28.46	—	1	81.1	40 59.9	58.2
Cinc.	96.7	28.43	—	2	96.7	41 2.5	2.2

P. M. 0^s000 — 0^s09.

Paris 8882 = Lal. 14000.

		$7^h 9^m$				$+36^\circ 57'$	
Lalande	96.2	7 ^s 95*	—	1	96.2	45 ^s 2	34 ^s 0
Weisse	29.2	8.14†	—	1	29.2	41.9	34.3
Paris	61.1	8.18	—	2.1	63.1	38.4	34.5
Paris	79.2	8.11	—	1	79.2	34.2	32.0
Lund	80.1	8.02	—	2	80.1	35.4	33.3
Cinc.	96.7	7.96	—	2	96.7	35.4	35.0

P. M. 0^s000 — 0^s108.

* Last wire corrected +1^s.

† Corrected —10^s.

Cat.	Ep.	α 1900.0	P. M. appl.	Obs.	Ep.	δ 1900.0	P. M. appl.
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Paris 9192.

No motion.

Paris 9643 = D'Agelet 1404-5.

		$7^h 47^m$				$+26^\circ 49'$	
D'Agelet	83.2	$37^s 10$	$37^s 68$	2	83.2	$59'' 1$	$41'' 3$
Lalande	95.2	$37^s 57$	38.09	1	95.2	54.7	38.8
Weisse	26.2	37.36	37.73	1	26.2	53.1	41.9
Paris	71.9	37.78	37.92	3.4	72.0	45.3	41.0
Berlin	74.0	37.53	37.66	2	74.0	44.1	40.1
Cinc.	95.7	37.83	37.85	2	95.7	42.1	41.4

P. M. $+0^s 0050 - 0'' 152$.

Paris 9833 = Lal. 15682.

		$7^h 55^m$				$-16^\circ 45'$	
Lalande	97.2	$57^s 96$	—	1	97.2	$19'' 1$	$30'' 4$
AWe.	51.1	58.18	—	2	51.1	26.8	32.2
Paris	59.7	58.49	—	2	61.6	28.8	33.0
Cinc.	96.7	58.14	—	2	96.7	30.2	30.6

P. M. $0^s 0000 - 0'' 11$.

Paris 10430 = Lal. 16688-90.

		$8^h 24^m$				-15°	
Lalande	97.2	$17^s 14$	$18^s 49$	2	97.2	$31' 49'' 6$	$3'' 5$
Bonn	53.2	18.03	18.64	1	53.2	56.5	2.8
Paris	59.2	18.06	18.60	1	59.2	56.3	1.8
Paris	79.2	18.12	18.39	1	79.2	59.8	$2' 6$
Cinc.	96.7	18.47	18.51	2	96.7	$32' 2.8$	3.2

P. M. $+0^s 0131 - 0'' 135$.

Paris 10598.

No motion.

Paris 10599 = Lal. 17008.

		$8^h 32^m$				$-6^\circ 27'$	
Lalande	97.2	$58^s 48$	$56^s 63$	1	97.2	$39'' 6$	$31'' 5$
Weisse	24.3	58.76	57.40	1	24.3	36.0	30.2
München	53.2	57.94	57.10	2	53.2	37.4	33.8
Paris	60.2	58.12	57.40	1	60.2	33.8	30.7
Cordoba	77.1	57.51	57.10	4	77.1	33.1	31.3
Paris	77.6	57.55	57.15	3	77.6	32.9	31.2
Armagh ₂	78.5	57.77	57.38	5.7	78.5	35.0	33.3
Radcliffe	86.2	57.32	57.07	3	86.2	33.4	32.3
Cinc.	96.7	57.20	57.14	2	96.7	31.7	31.4

P. M. $-0^s 0180 + 0'' 077$.

Paris 11238 = Lal. 18024.

		$9^h 3^m$				$+8^\circ 1'$	
Lalande	97.2	$18^s 20$	$18^s 71$	1	97.2	$43'' 8$	$32'' 3$
Weisse	22.2	18.77	19.16	1	22.2	44.5	36.0
Paris	73.7	18.60	18.73	2	73.7	37.8	34.9
Cinc.	96.7	18.81	18.83	2	96.7	34.5	34.1

P. M. $+0^s 0005 - 0'' 112$.

Cat.	Ep.	α 1900.0	P. M. appl.	Obs.	Ep.	δ 1900.0	P. M. appl.
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Paris 11312 = Lal. 18132.

		$9^h 7^m$				$+21^\circ 5'$	
Lalande	96.2	$1^s 28$	$1^s 03$	1	96.2	$19'' 8$	$9'' 4$
Weisse	25.2	1.17	0.99	1	25.2	16.0	8.5
Paris	61.2	1.10	1.01	4.3	62.2	11.5	7.7
Paris	70.3	1.16	1.09	1	70.3	11.8	8.8
Berlin	80.7	1.04	0.99	2	80.7	11.0	9.1
Cinc.	96.8	1.03	1.02	2	96.8	10.2	9.9

P. M. $-0^s 0024 - 0'' 100$.

Paris 11475 = Lal. 18359.

		$9^h 14^m$				$+34^\circ 11'$	
Lalande	96.2	$28^s 35$	$28^s 85$	1	96.2	$20'' 0$	$5'' 7$
Weisse	30.3	28.52	28.86	1	30.3	16.9	7.3
Bonn	63.2	28.86	29.04	2	63.2	9.6	4.5
Paris	75.2	28.63	28.75	2.1	80.2	10.1	7.4
Cinc.	96.7	28.82	28.84	2	96.7	7.2	6.7

P. M. $+0^s 0049 - 0'' 138$.

Paris 11620 = Lal. 18563.

		$9^h 20^m$				$+26^\circ 47'$	
Lalande	95.3	$54^s 11$	—	1	95.3	$32'' 5$	$15'' 0$
Weisse	26.2	53.61	—	1	26.2	25.0	12.7
Paris	71.7	53.72	—	4	71.7	18.5	13.8
Cinc.	96.7	53.66	—	2	96.7	15.0	14.4

P. M. $0^s 0000 - 0'' 167$.

Paris 11640 = Lal. 18600, dipl. med.

		$9^h 22^m$				$+6^\circ 40'$	
Lalande	97.2	$2^s 43$	$1^s 18$	1	97.2	$30'' 3$	$14'' 9$
Weisse	22.2	2.59	1.64	2	22.2	26.2	14.5
Pos. Med.	24.1	1.95	1.02	6	24.1	26.5	15.1
Pulkowa	56.2	1.64	1.11	4	56.2	21.7	15.1
Bruxelles	63.6	1.58	1.14	10.6	69.0	19.1	14.5
Paris	71.5	1.39	1.04	3	71.5	19.1	14.8
Romberg	75.5	1.34	1.04	4	75.5	19.1	15.4
Cinc.	96.7	1.16	1.12	2	96.7	15.2	14.7

P. M. $-0^s 0122 - 0'' 150$.

Paris 11648 = Lal. 18593.

		$9^h 22^m$				$+41^\circ$	
Lalande	96.2	$51^s 71$	$49^s 97$	1	96.2	$34' 5'' 9$	$56'' 1$
Weisse	29.3	51.35	50.16	1	29.3	4.4	57.8
Paris	68.2	50.49	49.96	2	68.2	$33' 57.4$	54.4
Bonn	70.7	50.42	49.93	2	70.7	59.1	56.4
Cinc.	96.8	50.15	50.10	2	96.8	57.8	57.5

P. M. $-0^s 0168 - 0'' 094$.

Cat.	Ep.	α 1900.0	P. M. appl.	Obs.	Ep.	δ 1900.0	P. M. appl.
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Paris 11655 = Lal. 18613.

		9 ^h 23 ^m				+13°	
Lalande	96.2	1 ^s 99	1 ^s 15	1	96.2	6' 59 ^s 5	46 ^o 0
Lal. suppl.	01.3	2.04	1.24	1	01.3	7 4.1	51.3
Weisse	23.2	1.94	1.32	1	23.2	1.3	51.3
Paris	58.1	1.51	1.17	1.0	—	—	—
Glasgow	68.9	1.57	1.32	3.4	71.2	6 50.7	47.0
Paris	79.5	1.42	1.25	3	79.9	51.9	49.3
Cinc.	95.5	1.30	1.26	4	95.5	50.5	49.9

P. M. -0^s0081 -0^o13.

Paris 11681 = Lal. 18672-3.

		9 ^h 24 ^m				+ 6° 5'	
Lalande	97.8	45 ^s 91	42 ^s 12	2	97.8	10 ^o 8	23 ^o 4
Weisse	22.2	45 57	42.68	1	22.2	15.6	25.2
Paris	—	—	—	0.1	59.1	19.9	24.9
Berlin	65.0	43.48	42.18	1	65.0	19.7	24.0
Glasgow	69.2	43.52	42.38	3	72.1	18.2	21.6
Paris	80.0	43.17	42.43	4	80.0	20.8	23.3
Cinc.	96.7	42.53	42.41	2	96.7	23.6	24.0

P. M. -0^s0371 +0^o123.

Paris 11728 = Lal. 18718.

		9 ^h 27 ^m				+37°	
Lalande	94.3	7 ^s 43	6 ^s 80	1	94.3	6' 16 ^s 5*	[51 ^o 1]
Weisse	28.3	6.96	6.53	1	28.3	0.1	42.9
Paris	75.5	6.77	6.62	3.2	77.7	5 49.1	43.8
Lund	80.2	6.84	6.72	2	80.2	49.0	44.2
Cinc.	96.7	6.79	6.77	2	96.7	44.1	43.3

P. M. -0^s0060 -0^o24.

* Only full minute given in Histoire Céleste.

Paris 11788 = Lal. 18802.

		9 ^h 29 ^m				+43° 24'	
Lalande	94.2	48 ^s 85	47 ^s 47	1	94.2	49 ^o 8	—
Weisse	30.7	48.38	47.48	2	30.7	46.4	—
Bonn	71.5	47.78	47.41	3	71.5	47.8	—
Paris	80.2	47.63	47.37	2	80.2	48.7	—
Cinc.	95.7	47.60	47.54	2	95.7	48.1	—

P. M. -0^s0130 0^o000.

Paris 11866 = Lal. 18939.

		9 ^h 32 ^m				-17° 59'	
Lalande	97.3	41 ^s 10	41 ^s 92	1	97.3	20 ^o 6	18 ^o 5
AWe.	52.2	41.61	41.99	1	52.2	23.6	22.6
Bonn	53.2	41.84	42.22	1	53.2	21.8	20.9
Paris	—	—	—	0.1	59.2	21.0	20.2
Paris	81.2	41.97	42.12	1	81.2	21.5	21.1
Dunsink	84.2	41.91	42.04	1	84.2	21.3	21.0
Cinc.	96.7	41.95	41.98	2	96.7	20.3	20.2

P. M. +0^s0008 +0^o02.

Cat.	Ep.	α 1900.0	P. M. appl.	Obs.	Ep.	δ 1900.0	P. M. appl.
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Paris 11889 = Lal. 18916.

		9 ^h 34 ^m				+53° 4'	
Lalande	91.1	14 ^s 34	12 ^s 92	1	91.1	35 ^o 0	23 ^o 6
AOe.	42.3	13.56	12.81	1	42.3	29.1	23.0
Paris	81.2	13.01	12.77	1.0	—	—	—
Harvard	84.2	13.19	12.98	2	84.2	25.4	23.7
Cinc.	96.7	12.90	12.86	2	96.7	23.6	23.3

P. M. -0^s0132 -0^o105.

Paris 11962 = Lal. 19080.

		9 ^h 38 ^m				+13° 54'	
Lalande	96.2	9 ^s 64	10 ^s 06	1	96.2	12 ^o 6	3 ^o 7
Lal. suppl.	01.3	9.86	10.26	1	01.3	6.7	58.2
Weisse	23.2	10.18	10.49	1	23.2	10.6	4.0
Paris	37.7	9.96	10.21	4.0	—	—	—
Glasgow	68.8	10.09	10.21	3	68.8	5.1	2.4
Paris	79.7	10.09	10.17	2	79.7	4.3	2.5
Cinc.	96.8	10.16	10.17	2	96.8	3.1	2.8

P. M. +0^s0004 -0^o086.

Paris 11964 = Lal. 19084.

		9 ^h 38 ^m				+10° 58'	
Lalande	96.2	12 ^s 95	13 ^s 47	1	96.2	56 ^o 1	44 ^o 0
Paris	—	—	—	0.1	58.0	52.1	47.2
Armagh ₂	69.6	13.04	13.19	6	69.6	51.7	48.1
Paris	80.2	13.25	13.35	2	80.2	48.9	46.6
Cinc.	96.8	13.29	13.31	2	96.8	45.6	45.2

P. M. +0^s0005 -0^o117.

Paris 11988 = Lal. 19107-9.

		9 ^h 39 ^m				+40° 19'	
Lalande	95.6	58 ^s 63	56 ^s 33	3	95.6	53 ^o 0	—
Weisse	29.2	58.02	56.46	1	29.2	54.5	—
Rümker	36.0	57.45	56.04	1	36.0	53.4	—
Bonn	77.8	56.80	56.31	4	77.8	52.3	—
Paris	80.2	56.81	56.37	1	80.2	53.2	—
Cinc.	96.7	56.41	56.34	2	96.7	53.4	—

P. M. -0^s0220 0^o000.

Paris 12049 = Lal. 19218.

		9 ^h 43 ^m				+42° 1'	
Lalande	96.2	40 ^s 64	—	1	96.2	16 ^o 1	59 ^o 1
Weisse	29.3	40.97	—	1	29.3	12.3	0.7
Bonn	71.7	40.50	—	4	71.7	4.1	59.5
Paris	80.3	40.53	—	2	80.3	3.4	0.2
Cinc.	96.7	40.56	—	2	96.7	0.4	59.9

P. M. 0^s0000 -0^o164.

Cat.	Ep.	α 1900.0	P. M. appl.	Obs.	Ep.	δ 1900.0	P. M. appl.
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Paris 12070 = Lal. 19271.

		9 ^h 44 ^m				-18° 50'	
Lalande	97.3	4 ^s 72	5 ^s 03	1	97.3	45 ^s 4	51 ^s 6
Bonn	53.4	5.05	5.19	1	53.4	49.8	52.6
Paris	56.2	5.03	5.16	1.0	—	—	—
Paris	80.2	5.05	5.11	1	80.2	51.9	53.1
Radcliffe	89.1	5.07	5.10	3	89.1	51.3	52.0
Cinc.	96.8	5.07	5.07	2	96.8	51.7	51.9

P. M. +0^s003 -0^s06.

Paris 12155.

No motion.

Paris 12192 = Lal. 19409.

		9 ^h 50 ^m				+39° 27'	
Lalande	94.3	44 ^s 56	42 ^s 76	1	94.3	7 ^s 5	6 ^s 2
Weisse	29.2	43.64	42.44	1	29.2	7.6	6.8
Lund	80.2	42.97	42.63	2	80.2	7.2	7.0
Paris	81.3	42.87	42.55	1	81.3	6.3	6.1
Cinc.	96.7	42.82	42.76	2	96.7	6.6	6.6

P. M. -0^s0170 -0^s012.

Paris 12202, 12244, 12312.

No motion.

Paris 12325 = Lal. 19593.

		9 ^h 57 ^m				+15°	
Lalande	96.3	2 ^s 67	3 ^s 71	1	96.3	3 ^s 0 ^s 3	42 ^s 0
Paris	56.2	3.13	3.57	1.2	56.1	2 50.1	42.4
Berlin	70.3	3.29	3.59	2	70.3	48.4	43.2
Paris	72.2	3.51	3.79	1	72.2	46.5	41.6
Cinc.	96.8	3.67	3.70	2	96.8	42.4	41.8

P. M. +0^s0100 -0^s176.

Paris 12362.

No motion.

Paris 12452 = Lal. 19783-4.

		10 ^h 4 ^m				+18° 41'	
Lalande	96.2	39 ^s 18	—	2	96.2	36 ^s 4	8 ^s 4
Weisse	28.2	39.65	—	2	28.2	22.7	3.3
Bonn	63.2	39.53	—	2	63.2	17.7	7.7
Berlin	70.3	39.47	—	2	70.3	14.6	6.6
Paris	73.7	39.55	—	2	73.7	13.2	6.1
Cinc.	96.8	39.45	—	2	96.8	7.9	7.0

P. M. 0^s000 -0^s270.

Paris 12503 = Lal. 19853.

		10 ^h 7 ^m				+27° 55'	
Lalande	95.2	29 ^s 34	—	1	95.2	11 ^s 0	58 ^s 4
Lal. suppl.	01.3	30.00	—	1	01.3	13.6	1.8
Weisse	32.3	30.02	—	1	32.3	12.0	3.9
Paris	63.2	29.54	—	1.0	—	—	—
Bruxelles	68.8	29.77	—	4.3	68.6	6.0	2.2
Paris	73.5	29.85	—	4	73.5	5.0	1.8
Cinc.	96.8	29.71	—	2	96.8	2.4	2.0

P. M. 0^s000 -0^s120.

Cat.	Ep.	α 1900.0	P. M. appl.	Obs.	Ep.	δ 1900.0	P. M. appl.
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Paris 12567 = Lal. 19915.

		10 ^h 10 ^m				+47° 48'	
Lalande	90.3	47 ^s 96	—	1	90.3	53 ^s 7	37 ^s 2
AOe.	43.2	47.23 +1 ^s ?	—	1	43.2	43.2	34.7
Paris	73.5	48.37	—	4.3	72.9	39.2	35.1
Bonn	76.6	48.25	—	3	76.6	39.1	35.6
Cinc.	96.7	48.27	—	2	96.7	37.2	36.7

P. M. 0^s000? -0^s150.

Paris 12792 = Lal. 20223.

		10 ^h 21 ^m				+27° 9'	
Lalande	94.3	21 ^s 87	23 ^s 35	1	94.3	21 ^s 2*	9 ^s 6
Weisse	32.3	22.69	23.64	1	32.3	16.3	8.8
Paris	76.6	23.11	23.44	3	76.6	12.1	9.5
Cinc.	96.3	23.36	23.41	3	96.3	9.7	9.3

P. M. +0^s014 -0^s11.

* Corrected +10".

Paris 12991 = Lal. 20510.

		10 ^h 31 ^m				+22° 7'	
Lalande	95.3	18 ^s 00	15 ^s 91	1	95.3	39 ^s 9	27 ^s 9
Weisse	29.2	17.31	15.89	1	29.2	32.0	23.9
Radcliffe	68.2	16.52	15.88	1	68.3	28.8	25.2
Paris	72.0	16.38	15.82	3.1	70.3	30.7	27.3
Berlin	80.2	16.21	15.81	3	80.2	29.4	27.1
Glasgow ₂	92.0	16.03	15.85	3.2	92.0	26.6	25.7
Cinc.	95.3	16.02	15.93	3	95.3	27.9	27.4

P. M. -0^s0200 -0^s115.

Paris 12993 = Lal. 20516.

		10 ^h 31 ^m				+11° 32'	
Lalande	96.2	24 ^s 35	25 ^s 08	1	96.2	39 ^s 1	32 ^s 9
Paris	59.7	24.68	24.96	2.1	61.2	35.5	33.2
Paris	77.5	24.93	25.09	4	77.5	34.5	33.2
Cinc.	96.3	24.99	25.02	3	96.3	33.5	33.3

P. M. +0^s007 -0^s06.

Paris 13098.

No motion.

Paris 13141 = Lal. 20674.

		10 ^h 37 ^m				+29° 12'	
Lalande	94.3	57 ^s 89	—	1	94.3	55 ^s 4	44 ^s 8
Weisse	27.3	58.04	—	2	27.3	51.7	44.4
Paris	62.5	58.01	—	4	61.5	47.5	43.7
Paris	70.3	58.00	—	1.0	—	—	—
Cinc.	96.8	57.91	—	2	96.8	45.6	45.3

P. M. 0^s000 -0^s10.

Cat.	Ep.	α 1900.0	P. M. appl.	Obs.	Ep.	δ 1900.0	P. M. appl.
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Paris 13202 = Lal. 20755.

		$10^h 41^m$				$+11^\circ$	
Lalande	96.3	21 ^s 27	20 ^s 85	1	96.3	43' 3"2	49"7
Weisse	22.3	20.91	20.60	2	22.3	3.1	53.0
München	45.3	20.65	20.43	1	45.3	42 56.7	49.6
Paris	72.3	20.87	20.76	3.2	72.3	53.4	49.8
Cinc.	96.3	20.75	20.74	3	96.3	52.9	52.4

P. M. $-0^s004 -0^s13$.

Paris 13439.

No motion.

Paris 13499 = Lal. 21157.

		$10^h 56^m$				$+20^\circ$	
Lalande	96.3	39 ^s 52*	37 ^s 55	1	96.3	3' 5"7	52"4
Weisse	31.3	38.93	37.63	1	31.3	1.9	53.1
Paris	73.2	38.02	37.51	3	73.2	2 55.5	52.1
Berlin	80.5	37.91	37.54	3	80.5	54.8	52.3
Cinc.	96.3	37.70	37.63	3	96.3	53.4	52.9

P. M. $-0^s0190 -0^s128$.* Corrected $+1^s$.

Paris 13958 = Lal. 21740-1.

		$11^h 20^m$				$+20^\circ 33'$	
Lalande	97.3	27 ^s 85	26 ^s 21	2	97.3	24"2	15"6
Weisse	30.3	27.32	26.20	2	30.3	19.7	13.9
Paris	63.2	26.84	26.25	1.0	—	—	—
Paris	70.3	26.62	26.14	2	70.3	17.6	15.1
Berlin	80.5	26.45	26.14	3	80.5	16.5	14.9
Cinc.	96.4	26.25	26.19	3	96.4	15.3	15.0

P. M. $-0^s0160 -0^s084$.

Paris 14030 = Lal. 21854.

		$11^h 23^m$				$+16^\circ$	
Lalande	95.2	57 ^s 52	56 ^s 68	1	95.2	56' 5"2	55"3
Weisse	27.3	57.44	56.86	2	27.3	7.9	1.1
Rümker	36.0	56.91	56.40	1	36.0	3.1	57.1
Paris	61.3	57.15	56.84	1	61.3	2.0	58.4
Berlin	70.0	56.92	56.68	4	69.9	2.4	59.6
Wien	73.3	56.93	56.72	2	73.3	55 59.2	56.7
Paris	79.3	57.06	56.89	2	79.8	56 0.8	58.9
Cinc.	96.4	56.88	56.85	3	96.4	55 59.8	59.5

P. M. $-0^s0080 -0^s094$.

Paris 14082 = Lal. 21907.

		$11^h 27^m$				$+29^\circ$	
Lalande	94.3	8 ^s 69	—	1	94.3	36' 10"6	59"0
Weisse	26.3	9.22	—	1	26.3	6.1	58.0
Paris	74.6	8.47	—	3	74.6	1.1	58.3
Cinc.	96.4	8.52	—	3	96.4	35 58.9	58.5

P. M. $0^s000 -0^s11$.

Cat.	Ep.	α 1900.0	P. M. appl.	Obs.	Ep.	δ 1900.0	P. M. appl.
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Paris 14089 = Lal. 21914. dpl. n. f.

		$11^h 27$				$+24^\circ 52'$	
Lalande	94.3	22 ^s 13	—	1	94.3	43"0	35"3
Weisse	31.3	21.88	—	1	31.3	41.1	36.1
Pos. Med.	31.3	21.74	—	1	31.3	39.4	34.4
Paris	72.5	21.83	—	4	72.5	36.8	34.8
Romberg	75.3	21.73	—	6.5	75.4	37.1	35.3
Berlin	80.2	21.76	—	2	80.2	36.1	34.7
Cinc.	95.8	21.82	—	2	95.8	35.2	34.9

P. M. $0^s000 -0^s073$.

Paris 14163 = Lal. 21992.

		$11^h 30^m$				$+28^\circ 27'$	
Lalande	94.3	47 ^s 05	—	1	94.3	31"6	24"2
Weisse	29.3	47.47	—	2	29.3	29.4	24.5
Paris	74.7	47.44	—	7.6	75.5	25.7	24.0
Cinc.	95.8	47.40	—	2	95.8	25.1	24.8

P. M. $0^s000 -0^s07$.

Paris 14167.

No motion.

Paris 14479 = Lal. 22379.

		$11^h 46^m$				$+19^\circ 19'$	
Lalande	96.3	58 ^s 82	—	1	96.3	35"8*	11"2
Weisse	31.3	58.66	—	1	31.3	28.8	12.5
Paris	60.2	58.71	—	2.1	62.3	23.8	14.9
Berlin	70.1	58.70	—	3	70.1	20.7	13.6
Paris	70.3	58.68	—	5	70.3	20.1	13.1
Cinc.	95.8	58.72	—	2	95.8	12.7	11.7

P. M. $0^s000 -0^s237$.* Corrected $+30''$.

Paris 14491 = Lal. 22395.

		$11^h 47^m$				$+30^\circ$	
Lalande	94.3	33 ^s 39	32 ^s 60	1	94.3	48' 6"0	53"0
Weisse	26.3	32.93	32.38	1	26.3	1.4	52.3
Leiden	72.3	32.72	32.51	2	72.3	47 56.1	52.7
Paris	80.0	32.65	32.50	3.2	80.3	55.1	52.7
Cinc.	95.8	32.63	32.60	2	95.8	53.4	52.9

P. M. $-0^s0075 -0^s123$.

Paris 14570 = Lal. 22489.

		$11^h 51^m$				$+27^\circ 14'$	
Lalande	94.3	13 ^s 62	12 ^s 25	1	94.3	6"3	—
Lal. suppl.	01.3	13.96	12.68	1	01.3	6.6	—
Weisse	32.3	13.50	12.62	1	32.3	6.1	—
Paris	58.3	12.89	12.35	1	58.3	9.1	—
Bonn	64.3	12.91	12.45	2	64.3	8.9	—
Paris	70.2	12.91	12.52	1	70.2	9.0	—
Armagh ₂	77.5	12.53	12.24	5.6	75.6	7.4	—
Cinc.	96.4	12.63	12.58	3	96.4	8.6	—

P. M. $-0^s0130 0^s001$.

Cat.	Ep.	α 1900.0	P. M. appl.	Obs.	Ep.	δ 1900.0	P. M. appl.
Paris 14583 = Lal. 22502.							
		11 ^h 51 ^m				-13° 11'	
Lalande	98.3	49° 03	—	1	98.3	24° 4	38° 8
Weisse	24.2	49.68	—	1	24.2	26.9	37.7
Paris	47.2	49.57	—	2.0	—	—	—
Paris	57.2	49.33	—	1	57.2	33.3	39.4
Gött ₂	58.3	49.41	—	1	58.3	28.5	34.4
Cordoba	77.3	49.41	—	4	77.3	34.4	37.6
Paris	79.3	49.45	—	1	79.3	35.3	38.2
Radcliffe	81.3	49.55	—	4	81.3	35.4	38.1
Cinc.	96.4	49.44	—	3	96.4	37.7	38.2

P. M. 0° 000 - 0° 142.

Paris 14620 = Lal. 22546.							
		11 ^h 53 ^m				-14° 33'	
Lalande	98.3	26° 78	—	1	98.3	24° 1	33° 3
Weisse	24.3	26.68	—	1	24.3	27.5	34.3
Santini	58.4	26.57	—	2	58.4	31.0	34.7
Paris	—	—	—	0.2	59.3	31.5	35.2
Paris	80.3	26.71	—	2	80.3	33.3	35.1
Radcliffe	92.3	26.62	—	3	92.3	33.0	33.7
Cinc.	96.4	26.74	—	3	96.4	32.7	33.0

P. M. 0° 000 - 0° 091.

Paris 14680 = Lal. 22599.							
		11 ^h 56 ^m				+31° 11'	
Lalande	94.3	7° 45	6° 12	1	94.3	54° 7	46° 2
Weisse	28.3	7.15	6.25	1	28.3	52.3	46.6
Paris	69.3	6.57	6.18	2	69.3	48.9	46.5
Leiden	72.3	6.46	6.11	2	72.3	47.6	45.4
Cinc.	95.8	6.25	6.20	2	95.8	47.2	46.9

P. M. -0° 0126 - 0° 080.

Cincinnati Observatory, June 1897.

Cat.	Ep.	α 1900.0	P. M. appl.	Obs.	Ep.	δ 1900.0	P. M. appl.
Paris 14757 = Lal. 22696.							
		11 ^h 59 ^m				+31° 23'	
Lalande	94.3	60° 27	59° 74	1	94.3	35° 1	24° 5
Weisse	28.3	59.95	59.59	1	28.3	34.6	27.4
Leiden	72.3	59.72	59.58	2	72.3	26.9	24.1
Paris	73.3	59.74	59.61	2	73.3	28.0	25.3
Cinc.	96.8	59.79	59.77	2	96.8	26.5	26.2

P. M. -0° 005 - 0° 10.

It will be noticed that in the majority of cases the fact of motion is corroborated, although the amount often differs considerably from that given in the Paris Catalogue.

The motion of the following stars was found to have been previously computed.

	$\Delta\alpha$	$\Delta\delta$	Authority
Paris 11889	-0° 0078	-0° 080	Rogers
» 12325	+0.0088	-0.211	Auwers
» 12452	-0.0012	-0.259	Auwers
» 12991	-0.0201	-0.101	Grant
» 13499	-0.012	-0.14	Becker
» 13958	-0.017	-0.08	Becker
» 14089	-0.001	-0.08	Becker
» 14479	+0.0007	-0.248	Auwers

The divergence in the case of No. 13499 is due to the fact that I have corrected Lalande's right ascension +1°. I think an inspection of the data will show that this correction is justified.

J. G. Porter.

Sur le réglage de la monture parallactique.

Par S. Blajko, assistant à l'observatoire de Moscou.

Le large développement de la photographie céleste fait sentir de plus en plus le manque d'un procédé simple et rigoureux de régler les instruments parallactiques.

Les erreurs d'orientation s'accroissent fortement dans des expositions prolongées, particulièrement lorsqu'on photographie les régions polaires, car alors l'influence de ces erreurs, vu la grandeur de la plaque, varie selon les points de la plaque et ne peut pas être éliminée au moyen d'une étoile de contrôle, qui se trouve au milieu du champ de vision.

Par cette raison, le procédé classique de la détermination des erreurs d'orientation au moyen de cercles est souvent impraticable, car les instruments actuels ne sont pas toujours munis de cercles divisés assez exactement.

Quelques méthodes nouvelles ont été proposées et nous en donnons encore une, qui, étant simple dans l'application et exacte dans les résultats, n'exige ni cercles divisés, ni

mouvement d'horlogerie et ne demande qu'un micromètre filaire, qui, en cas de lunette photographique, peut être remplacé parfaitement par la plaque elle-même. Voici l'exposition de cette méthode.

On choisit trois étoiles circompolaires dont les AR. sont: α , $\alpha + 6^h \pm$, $\alpha + 12^h \pm$ et dont les NPD. diffèrent peu. On dirige la lunette sur la première étoile quand elle est dans sa culmination supérieure et on fait coïncider avec cette étoile le fil mobile disposé d'après le mouvement horaire; soit a la lecture du micromètre. Puis, tournant la lunette autour de l'axe horaire de 180°, sans en changer la déclinaison, on amène dans le champ de vision la troisième étoile choisie, quand elle est dans sa culmination inférieure, et on fait coïncider avec elle le fil du micromètre; soit b la lecture du micromètre. Ensuite, en gardant toujours la même déclinaison de la lunette, on la dirige sur la seconde étoile quand son angle horaire est égal à 18^h,