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COMMUNICATION FROM THE OBSERVATORY AT LEIDEN

PHOTOGRAPHIC OBSERVATIONS OF COMETS IN 1947 AND 1948,

BY G. PELS

The observations were made with the 13-inch photographic refractor of the Leiden Observatory. The plates used were mostly Eastman Spectroscopic 103a-O, but occasionally Ilford Zenith; the sizes were 9×12 and 16×16 cm.

As for the positions of the reference stars, in many cases modern positions could be found and proper motions were applied. Unfortunately there remained still some other cases in which old AG plates had to

be used. Sometimes, e.g. when the comet was too far from the centre of the plate, positions were taken from the astrographic catalogues. The numbers in the eighth column of the tables of the positions of the comets refer to the table of the positions actually used for the comparison stars with their dependences.

The remarks printed in roman type relate to the observation, those in italics to the measurement.

Comet 1946 h (JONES)

Plate number	Date U. T.	exp. time	α_{1947}	ρ_{α}^{Δ}	δ_{1947}	ρ_{δ}^{Δ}	dependences	Remarks
	1947		h m s	s	° ' "	" "		
7150	Apr. 12 ^h 15 ^m 98 ^s 7	360 ^s	20 3 1'39	- 0'253	+ 25 43 2'8	+ 4'41	1	nearly in daylight; nucleus with
7159	18 ^h 10 ^m 93 ^s 2	540	20 5 18'51	- 0'322	+ 27 49 50'1	+ 4'57	2	<i>irregular nebulosity; uncertain.</i>
	18 ^h 11 ^m 56 ^s 0	540	20 5 18'68	- 0'312	+ 27 49 58'3	+ 4'49	2	
7163	20 ^h 11 ^m 21 ^s 0	480	20 6 4'18	- 0'312	+ 28 33 34'8	+ 4'39	3	
	20 ^h 11 ^m 77 ^s 0	480	20 6 4'32	- 0'302	+ 28 33 40'6	+ 4'32	3	
7175	25 ^h 07 ^m 66 ^s 3	720	20 7 32'21	- 0'353	+ 30 20 23'2	+ 4'50	4	
	25 ^h 08 ^m 49 ^s 9	720	20 7 32'27	- 0'341	+ 30 20 33'0	+ 4'38	4	
7182	27 ^h 07 ^m 32 ^s 5	600	20 7 57'01	- 0'353	+ 31 2 37'6	+ 4'40	5	
	27 ^h 08 ^m 02 ^s 3	600	20 7 57'06	- 0'342	+ 31 2 46'2	+ 4'30	5	
7186	29 ^h 05 ^m 53 ^s 2	720	20 8 15'77	- 0'373	+ 31 44 4'4	+ 4'52	6	<i>somewhat uncertain, especially in δ,</i>
	29 ^h 06 ^m 36 ^s 9	720	20 8 15'89	- 0'362	+ 31 44 13'5	+ 4'39	6	<i>close to star.</i>
7191	May 8 ^h 02 ^m 66 ^s 9	900	20 8 24'17	- 0'391	+ 34 45 2'6	+ 4'28	7	clouds.
	8 ^h 03 ^m 71 ^s 4	900	20 8 24'15	- 0'377	+ 34 45 15'2	+ 4'10	7	
7200	14 ^h 05 ^m 63 ^s 8	900	20 7 17'75	- 0'324	+ 36 39 24'7	+ 3'31	8	
7209	25 ^h 02 ^m 06 ^s 8	1080	20 2 45'58	- 0'343	+ 39 48 25'9	+ 2'95	9	hazy.
	25 ^h 03 ^m 32 ^s 0	1080	20 2 45'12	- 0'317	+ 39 48 36'2	+ 2'76	9	
7213	27 ^h 99 ^m 39 ^s 1	1080	20 0 59'04	- 0'381	+ 40 34 47'5	+ 3'15	10	hazy.
	28 ^h 00 ^m 64 ^s 4	1080	20 0 58'58	- 0'357	+ 40 34 57'4	+ 2'93	10	
7215	28 ^h 09 ^m 50 ^s 0	1080	20 0 19'76	- 0'374	+ 40 49 43'9	+ 3'04	11	
	29 ^h 00 ^m 75 ^s 2	1080	20 0 19'30	- 0'350	+ 40 49 55'0	+ 2'83	11	
7220	30 ^h 02 ^m 58 ^s 0	1080	19 59 37'77	- 0'304	+ 41 4 58'2	+ 2'47	12	
	30 ^h 03 ^m 83 ^s 3	1080	19 59 37'31	- 0'274	+ 41 5 7'9	+ 2'30	12	
7224	30 ^h 07 ^m 03 ^s 3	1080	19 58 58'18	- 0'329	+ 41 18 35'0	+ 2'60	13	
	30 ^h 08 ^m 28 ^s 6	1080	19 58 57'57	- 0'301	+ 41 18 46'3	+ 2'41	13	
7232	June 1 ^h 01 ^m 90 ^s 3	900	19 58 12'50	- 0'307	+ 41 33 34'7	+ 2'41	14	
	1 ^h 02 ^m 94 ^s 7	900	19 58 11'95	- 0'282	+ 41 33 44'0	+ 2'26	14	
7240	11 ^h 99 ^m 13 ^s 9	1080	19 48 44'74	- 0'296	+ 43 49 33'9	+ 1'97	15	<i>close to star.</i>
	11 ^h 99 ^m 97 ^s 6	360	19 48 44'27	- 0'275	+ 43 49 39'4	+ 1'86	15	<i>very faint.</i>
7253	18 ^h 01 ^m 84 ^s 8	960	19 42 31'86	- 0'166	+ 44 47 42'7	+ 1'31	16	
	18 ^h 02 ^m 96 ^s 2	960	19 42 31'18	- 0'132	+ 44 47 47'7	+ 1'23	16	
7259	24 ^h 98 ^m 77 ^s 9	960	19 34 42'21	- 0'188	+ 45 39 4'9	+ 1'23	17	
	24 ^h 99 ^m 89 ^s 2	960	19 34 41'52	- 0'153	+ 45 39 9'3	+ 1'14	17	
7265	28 ^h 02 ^m 91 ^s 0	960	19 31 8'70	- 0'023	+ 45 56 5'6	+ 0'93	18	
	28 ^h 04 ^m 02 ^s 4	960	19 31 7'90	+ 0'013	+ 45 56 8'1	+ 0'92	18	
7273	July 8 ^h 02 ^m 97 ^s 3	1080	19 19 13'80	+ 0'096	+ 46 28 51'6	+ 0'91	19	clouds.
	8 ^h 04 ^m 22 ^s 6	1080	19 19 12'98	+ 0'136	+ 46 28 53'0	+ 0'97	19	

Comet 1946 h (JONES) (continued)

Plate number	Date U. T.	exp. time	α_{1947}	$p_{\alpha}^{\circ} \Delta$	δ_{1947}	$p_{\delta}^{\circ} \Delta$	dependences	Remarks
	1947							
7282	July	12 ^s 96032	1080 ^s	h m s	s	° ' "	"	
		12 ^s 97284	1080	19 13 26 ^s 35	- 0 ^s 075	+ 46 [°] 32' 25 ["] 2	+ 0 ["] 87	20
		15 ^s 06116	1080	19 13 25 ^s 52	- 0 ^s 033	+ 46 32 24 ["] 6	+ 0 ["] 84	20
7291		16 ^s 04804	1080	19 11 1 ^s 71	+ 0 ^s 269	+ 46 31 27 ["] 9	+ 1 ["] 39	21
7297		16 ^s 06056	1080	19 9 54 ^s 48	+ 0 ^s 241	+ 46 30 32 ["] 0	+ 1 ["] 27	22
		19 ^s 00590	960	19 9 53 ^s 71	+ 0 ^s 277	+ 46 30 30 ["] 6	+ 1 ["] 43	22
7302		19 ^s 01704	960	19 6 37 ^s 76	+ 0 ^s 143	+ 46 25 56 ["] 7	+ 1 ["] 00	23
		22 ^s 97211	1080	19 6 36 ^s 06	+ 0 ^s 178	+ 46 25 55 ["] 7	+ 1 ["] 08	23
7309		24 ^s 99504	960	19 2 34 ^s 67	+ 0 ^s 078	+ 46 12 55 ["] 8	+ 0 ["] 92	24
7312		25 ^s 00617	960	19 0 21 ^s 45	+ 0 ^s 174	+ 46 8 46 ["] 4	+ 1 ["] 11	25
		26 ^s 93971	1080	19 0 20 ^s 64	+ 0 ^s 208	+ 46 8 44 ["] 4	+ 1 ["] 21	25
7317		26 ^s 95223	1080	18 58 27 ^s 19	+ 0 ^s 018	+ 46 1 7 ["] 7	+ 0 ["] 91	26
		3 ^s 93291	1110	18 58 26 ^s 48	+ 0 ^s 059	+ 46 1 3 ["] 3	+ 0 ["] 94	26
7329	Aug.	3 ^s 94575	1105	18 51 22 ^s 45	+ 0 ^s 082	+ 45 19 58 ["] 6	+ 1 ["] 06	27
		8 ^s 94158	1200	18 51 22 ^s 01	+ 0 ^s 122	+ 45 19 54 ["] 4	+ 1 ["] 13	27
7337		8 ^s 95549	1200	18 47 37 ^s 71	+ 0 ^s 158	+ 44 47 22 ["] 2	+ 1 ["] 39	28
		10 ^s 93057	1080	18 47 37 ^s 18	+ 0 ^s 200	+ 44 47 15 ["] 8	+ 1 ["] 40	28
7345		13 ^s 05582	1080	18 46 17 ^s 81	+ 0 ^s 143	+ 44 33 11 ["] 4	+ 1 ["] 29	29
		13 ^s 06835	1080	18 46 17 ^s 45	+ 0 ^s 181	+ 44 33 7 ["] 6	+ 1 ["] 39	29
7360		16 ^s 00555	1200	18 44 58 ^s 39	+ 0 ^s 453	+ 44 17 18 ["] 8	+ 1 ["] 29	30
		16 ^s 01946	1200	18 44 58 ^s 00	+ 0 ^s 469	+ 44 17 12 ["] 6	+ 1 ["] 57	30
7377		18 ^s 04424	1440	18 42 50 ^s 56	+ 0 ^s 379	+ 43 51 30 ["] 9	+ 2 ["] 54	31
		18 ^s 06092	1440	18 42 49 ^s 58	+ 0 ^s 406	+ 43 51 25 ["] 1	+ 2 ["] 60	31
7393		22 ^s 00546	1440	18 42 17 ^s 08	+ 0 ^s 453	+ 43 37 32 ["] 4	+ 3 ["] 45	32
		22 ^s 02212	1440	18 42 16 ^s 75	+ 0 ^s 472	+ 43 37 25 ["] 3	+ 3 ["] 82	32
7413		29 ^s 00670	1800	18 40 33 ^s 30	+ 0 ^s 408	+ 43 3 50 ["] 9	+ 2 ["] 98	33
		29 ^s 02546	1440	18 40 32 ^s 87	+ 0 ^s 435	+ 43 3 40 ["] 6	+ 3 ["] 31	33
7455		29 ^s 02546	1440	18 38 24 ^s 65	+ 0 ^s 435	+ 42 0 58 ["] 4	+ 3 ["] 53	34
		3 ^s 94536	1800	18 38 24 ^s 37	+ 0 ^s 457	+ 42 0 47 ["] 3	+ 3 ["] 93	34
7479	Sep.	3 ^s 96412	1440	18 37 26 ^s 58	+ 0 ^s 354	+ 41 5 28 ["] 3	+ 2 ["] 82	35
		5 ^s 93592	1770	18 37 26 ^s 41	+ 0 ^s 389	+ 41 5 20 ["] 1	+ 3 ["] 15	35
7500		5 ^s 95283	1140	18 37 17 ^s 27	+ 0 ^s 344	+ 40 46 33 ["] 6	+ 2 ["] 80	36
			1140	18 37 17 ^s 11	+ 0 ^s 377	+ 40 46 26 ["] 2	+ 3 ["] 08	36

Comet 1947 j (REINMUTH)

Plate number	Date U. T.	exp. time	α_{1947}	$p_{\alpha}^{\circ} \Delta$	δ_{1947}	$p_{\delta}^{\circ} \Delta$	dependences	Remarks
	1947							
7508	Sep.	15 ^s 99619	1080 ^s	h m s	s	° ' "	"	
		16 ^s 00872	1080	23 23 51 ^s 17	+ 0 ^s 040	+ 9 55 21 ["] 1	+ 5 ["] 89	37
7544	Oct.	4 ^s 99497	1200	23 23 50 ^s 64	+ 0 ^s 068	+ 9 55 22 ["] 7	+ 5 ["] 90	37
		5 ^s 00885	1200	23 15 18 ^s 51	+ 0 ^s 164	+ 9 23 27 ["] 9	+ 6 ["] 04	38
			1200	23 15 18 ^s 58	+ 0 ^s 192	+ 9 23 26 ["] 4	+ 6 ["] 07	38

Comet 1947 i (ENCKE)

Plate number	Date U. T.	exp. time	α_{1947}	$p_{\alpha}^{\circ} \Delta$	δ_{1947}	$p_{\delta}^{\circ} \Delta$	dependences	Remarks
	1947							
7547	Oct.	5 ^s 05401	1080 ^s	h m s	s	° ' "	"	
		5 ^s 06659	1090	6 44 10 ^s 91	- 0 ^s 477	+ 47 5 35 ["] 6	+ 2 ["] 99	39
7563		20 ^s 13565	1200	6 44 16 ^s 79	- 0 ^s 458	+ 47 5 39 ["] 9	+ 2 ["] 71	39
		20 ^s 14956	1200	10 22 4 ^s 85	- 0 ^s 446	+ 38 45 6 ["] 2	+ 4 ["] 49	40
			1200	10 22 13 ^s 17	- 0 ^s 433	+ 38 44 6 ["] 7	+ 4 ["] 21	40

Comet 1947 f (FAYE)

Plate number	Date U. T.	exp. time	α_{1947}	$p_{\alpha}^{\circ} \Delta$	δ_{1947}	$p_{\delta}^{\circ} \Delta$	dependences	Remarks
	1947							
7573	Oct.	26 ^s 03755	1200 ^s	h m s	s	° ' "	"	
		26 ^s 05146	1200	6 14 39 ^s 52	- 0 ^s 248	+ 12 38 43 ["] 1	+ 5 ["] 87	41
		6 ^s 13219	1260	6 14 40 ^s 32	- 0 ^s 223	+ 12 38 35 ["] 2	+ 5 ["] 80	41
7596	Dec.	6 ^s 14679	1260	6 25 16 ^s 92	+ 0 ^s 180	+ 4 41 45 ["] 5	+ 6 ["] 51	42
			1260	6 25 16 ^s 49	+ 0 ^s 208	+ 4 41 39 ["] 1	+ 6 ["] 53	42

Comet 1948 a (MRKOS)

Plate number	Date U. T.	exp. time	α_{1948}	$p_{\alpha}^s \cdot \Delta$	δ_{1948}	$p_{\delta}'' \cdot \Delta$	dependences	Remarks
	1948							
		^s	^{h m s}	^s	^{° ' "}	["]		
7620	Jan. 27 ^h 16069	905	17 13 53 ^m .45	- 0 ^s .352	+ 14 44 33 ^o .5	+ 6 ^o .24	43	<i>very faint and uncertain.</i>
		900	17 13 55 ^m .86	- 0 ^s .343	+ 14 44 42 ^o .7	+ 6 ^o .15	43	
7629	Feb. 4 ^h 17099	900	17 45 29 ^m .24	- 0 ^s .353	+ 19 44 17 ^o .4	+ 5 ^o .80	44	<i>idem.</i>
		900	17 45 32 ^m .03	- 0 ^s .342	+ 19 44 42 ^o .0	+ 5 ^o .60	44	
7693	March 12 ^h 17365	1080	20 30 53 ^m .06	- 0 ^s .444	+ 39 48 56 ^o .4	+ 4 ^o .18	45	<i>idem.</i>
		1080	20 30 56 ^m .48	- 0 ^s .431	+ 39 49 13 ^o .6	+ 3 ^o .93	45	
7699	14 ^h 15572	1200	20 39 50 ^m .51	- 0 ^s .464	+ 40 32 20 ^o .8	+ 4 ^o .51	46	<i>idem.</i>
		1200	20 39 54 ^m .27	- 0 ^s .453	+ 40 32 30 ^o .9	+ 4 ^o .21	46	
7715	27 ^h 11375	900	21 35 41 ^m .42	- 0 ^s .502	+ 44 15 10 ^o .2	+ 5 ^o .22	47	<i>idem.</i>
		900	21 35 43 ^m .38	- 0 ^s .504	+ 44 15 18 ^o .8	+ 4 ^o .97	47	
7721	28 ^h 11829	900	21 39 47 ^m .40	- 0 ^s .505	+ 44 28 36 ^o .7	+ 5 ^o .10	48	
		900	21 39 49 ^m .71	- 0 ^s .505	+ 44 28 43 ^o .7	+ 4 ^o .85	48	

Comet 1947 k (BESTER)

Plate number	Date U. T.	exp. time	α_{1948}	$p_{\alpha}^s \cdot \Delta$	δ_{1948}	$p_{\delta}'' \cdot \Delta$	dependences	Remarks
	1948							
		^s	^{h m s}	^s	^{° ' "}	["]		
7682	March 7 ^h 21641	125	20 13 23 ^m .80	- 0 ^s .302	- 6 52 29 ^o .9	+ 7 ^o .23	49	<i>hardly measurable; uncertain.</i>
		120	20 13 23 ^m .07	- 0 ^s .300	- 6 52 32 ^o .1	+ 7 ^o .23	49	
7694	12 ^h 20308	150	20 7 4 ^m .93	- 0 ^s .293	- 1 20 3 ^o .5	+ 6 ^o .99	50	
		150	20 7 4 ^m .81	- 0 ^s .291	- 1 19 56 ^o .1	+ 6 ^o .99	50	
7700	14 ^h 19041	120	20 4 21 ^m .94	- 0 ^s .300	+ 1 11 48 ^o .7	+ 6 ^o .85	51	
		120	20 4 21 ^m .82	- 0 ^s .298	+ 1 11 55 ^o .4	+ 6 ^o .85	51	
7710	25 ^h 09070	300	19 44 46 ^m .03	- 0 ^s .372	+ 19 24 3 ^o .0	+ 6 ^o .11	52	
		300	19 44 45 ^m .58	- 0 ^s .370	+ 19 24 27 ^o .0	+ 6 ^o .06	52	
7714	27 ^h 08356	300	19 39 40 ^m .37	- 0 ^s .382	+ 23 38 9 ^o .4	+ 5 ^o .81	53	
		300	19 39 39 ^m .82	- 0 ^s .380	+ 23 38 35 ^o .7	+ 5 ^o .76	53	
7720	28 ^h 09820	300	19 36 47 ^m .26	- 0 ^s .374	+ 25 53 58 ^o .8	+ 5 ^o .37	54	
		300	19 36 46 ^m .57	- 0 ^s .371	+ 25 54 28 ^o .3	+ 5 ^o .32	54	
7726	April 6 ^h 07490	300	18 56 50 ^m .30	- 0 ^s .460	+ 48 1 27 ^o .8	+ 2 ^o .52	55	<i>uncertain.</i>
		300	18 56 48 ^m .99	- 0 ^s .453	+ 48 2 0 ^o .0	+ 2 ^o .44	55	<i>clouds during 2nd exp.</i>

Comet 1948 d (PAJDUSAKOVA—MRKOS)

Plate number	Date U. T.	exp. time	α_{1948}	$p_{\alpha}^s \cdot \Delta$	δ_{1948}	$p_{\delta}'' \cdot \Delta$	dependences	Remarks
	1948							
		^s	^{h m s}	^s	^{° ' "}	["]		
7709	March 25 ^h 04511	900	18 36 54 ^m .22	- 0 ^s .384	+ 24 21 17 ^o .5	+ 5 ^o .77	56	
		905	18 36 54 ^m .73	- 0 ^s .377	+ 24 21 43 ^o .6	+ 5 ^o .62	56	
7713	27 ^h 05626	900	18 38 44 ^m .66	- 0 ^s .378	+ 25 56 24 ^o .2	+ 5 ^o .43	57	
		900	18 38 45 ^m .22	- 0 ^s .369	+ 25 56 55 ^o .1	+ 5 ^o .29	57	
7719	28 ^h 06346	900	18 39 39 ^m .07	- 0 ^s .372	+ 26 44 52 ^o .8	+ 5 ^o .23	58	
		960	18 39 39 ^m .67	- 0 ^s .361	+ 26 45 23 ^o .3	+ 5 ^o .08	58	<i>image of comet of 2nd exp. uncertain.</i>
7727	April 6 ^h 09337	600	18 47 13 ^m .58	- 0 ^s .332	+ 34 20 46 ^o .6	+ 3 ^o .72	59	
		600	18 47 13 ^m .88	- 0 ^s .319	+ 34 21 7 ^o .5	+ 3 ^o .63	59	
7730	10 ^h 03273	600	18 50 9 ^m .38	- 0 ^s .424	+ 37 49 28 ^o .0	+ 4 ^o .23	60	
		600	18 50 9 ^m .62	- 0 ^s .416	+ 37 49 48 ^o .4	+ 4 ^o .09	60	
7734	13 ^h 07670	600	18 52 13 ^m .47	- 0 ^s .363	+ 40 33 28 ^o .5	+ 2 ^o .98	61	
		600	18 52 13 ^m .92	- 0 ^s .349	+ 40 33 52 ^o .0	+ 2 ^o .87	61	
7739	26 ^h 04277	600	18 58 50 ^m .65	- 0 ^s .600	+ 53 7 32 ^o .3	+ 3 ^o .85	62	
		600	18 58 50 ^m .64	- 0 ^s .597	+ 53 7 52 ^o .8	+ 3 ^o .66	62	
7743	May 3 ^h 06378	600	18 59 37 ^m .46	- 0 ^s .670	+ 59 16 36 ^o .9	+ 2 ^o .07	63	
		600	18 59 37 ^m .49	- 0 ^s .660	+ 59 16 58 ^o .4	+ 1 ^o .88	63	
7747	8 ^h 05669	600	18 58 31 ^m .54	- 0 ^s .754	+ 63 26 48 ^o .5	+ 1 ^o .36	64	
		600	18 58 31 ^m .41	- 0 ^s .741	+ 63 27 9 ^o .0	+ 1 ^o .17	64	
7750	13 ^h 05165	600	18 55 27 ^m .65	- 0 ^s .852	+ 67 23 39 ^o .4	+ 0 ^o .56	65	
		600	18 55 27 ^m .37	- 0 ^s .834	+ 67 23 57 ^o .9	+ 0 ^o .37	65	
7751	14 ^h 0450	600	18 54 35 ^m .59	- 0 ^s .956	+ 68 7 9 ^o .5	+ 1 ^o .79	66	
		600	18 54 35 ^m .21	- 0 ^s .949	+ 68 7 28 ^o .9	+ 1 ^o .58	66	
7756	15 ^h 05717	600	18 53 30 ^m .75	- 0 ^s .875	+ 68 54 29 ^o .9	+ 0 ^o .02	67	
		600	18 53 30 ^m .23	- 0 ^s .852	+ 68 54 48 ^o .0	- 0 ^o .17	67	

	Star numbers	α_{1947}	δ_{1947}	dependences		Star numbers	α_{1947}	δ_{1947}	dependences			
1	BD 25 4085 25 4090 25 4103	^{h m s} 20 1 56 ^s .63 20 2 41 ^s .54 20 4 31 ^s .88	^{° ' "} +25 38 24 ["] .0 +25 54 29 ["] .6 +25 31 53 ["] .9	'292729 '408596 '298075	19	BD 46 2668 45 2879 46 2675	^{h m s} 19 18 39 ^s .51 19 18 57 ^s .09 19 21 29 ^s .39	^{° ' "} +46 50 1 ["] .3 +46 8 16 ["] .9 +46 11 6 ["] .9	'481509 '354475 '164016	'482418 '358846 '158736		
2	BD 27 3613 27 3621 27 3624	^{h m s} 20 3 57 ^s .33 20 5 16 ^s .62 20 5 58 ^s .06	^{° ' "} +27 58 22 ["] .6 +27 33 45 ["] .0 +28 3 53 ["] .8	'178529 '433960 '387511	'178705 '429403 '391894	20	BD 46 2640 46 2652 46 2653	^{h m s} 19 10 12 ^s .14 19 14 30 ^s .57 19 14 41 ^s .23	^{° ' "} +46 33 56 ["] .4 +46 54 28 ["] .0 +46 23 29 ["] .2	'270746 '194971 '534283	'273890 '193566 '532544	
3	BD 28 3623 28 3632 28 3642	^{h m s} 20 4 50 ^s .07 20 5 50 ^s .87 20 7 8 ^s .24	^{° ' "} +28 41 56 ["] .4 +28 24 58 ["] .6 +28 31 2 ["] .7	'347355 '208132 '444513	'351310 '199338 '449352	21	Helsingfors +46 [°] ,19 ^h 10 ^m	α_{1900} δ_{1900} 212 215 239	^{h m s} 19 9 18 ^s .49 19 9 28 ^s .06 19 9 53 ^s .11	^{° ' "} +46 28 19 ["] .2 +46 21 1 ["] .5 +46 28 31 ["] .5	'198057 '235413 '566530	
4	BD 29 3910 30 3920 29 3930	^{h m s} 20 6 31 ^s .47 20 7 29 ^s .33 20 9 2 ^s .76	^{° ' "} +30 10 53 ["] .4 +30 33 37 ["] .8 +30 11 34 ["] .6	'345585 '409632 '244784	'340672 '416882 '242446			α_{1947} δ_{1947}				
5	BD 30 3919 30 3922 30 3924	^{h m s} 20 7 11 ^s .37 20 8 0 ^s .61 20 8 18 ^s .94	^{° ' "} +31 2 29 ["] .4 +31 4 10 ["] .4 +30 59 43 ["] .4	'177582 '541547 '280871	'166222 '580981 '252797	22	BD 46 2637 46 2640 46 2641	^{h m s} 19 8 2 ^s .36 19 10 12 ^s .14 19 10 32 ^s .48	^{° ' "} +46 19 40 ["] .0 +46 33 56 ["] .4 +46 13 55 ["] .0	'145996 '787467 '060538	'151557 '784728 '063714	
6	BD 31 3964 31 3972 31 3986	^{h m s} 20 6 32 ^s .88 20 7 47 ^s .29 20 10 7 ^s .95	^{° ' "} +31 23 13 ["] .8 +31 58 46 ["] .2 +31 41 40 ["] .7	'252550 '411040 '336410	'248847 '415838 '335315	23	BD 46 2620 46 2629 46 2637	^{h m s} 19 5 11 ^s .15 19 6 22 ^s .70 19 8 2 ^s .36	^{° ' "} +46 23 16 ["] .5 +46 46 59 ["] .8 +46 19 40 ["] .0	'391434 '177078 '431488	'396875 '175715 '427410	
7	BD 34 3888 34 3896 34 3910	^{h m s} 20 7 22 ^s .70 20 8 4 ^s .29 20 10 16 ^s .59	^{° ' "} +34 33 34 ["] .9 +34 54 30 ["] .2 +34 41 35 ["] .5	'301747 '453088 '245165	'293451 '464112 '242437	24	BD 46 2599 45 2825 46 2615	^{h m s} 18 59 26 ^s .86 19 3 0 ^s .24 19 4 8 ^s .70	^{° ' "} +46 24 47 ["] .2 +45 50 25 ["] .1 +46 20 34 ["] .8	'263522 '290590 '445888		
8	BD 36 3892 36 3914 36 3916	^{h m s} 20 6 12 ^s .73 20 8 1 ^s .89 20 8 3 ^s .65	^{° ' "} +36 30 57 ["] .2 +36 32 37 ["] .0 +36 49 15 ["] .8	'410771 '140811 '448418		25	BD 46 2599 45 2819 46 2609	^{h m s} 18 59 26 ^s .86 19 0 28 ^s .00 19 2 55 ^s .69	^{° ' "} +46 24 47 ["] .2 +45 46 37 ["] .6 +46 42 2 ["] .5	'402011 '475496 '122493	'406430 '474726 '118844	
9	BD 39 4017 39 4028 39 4027	^{h m s} 20 1 10 ^s .52 20 3 24 ^s .25 20 3 25 ^s .58	^{° ' "} +40 1 24 ["] .8 +40 2 54 ["] .1 +39 17 46 ["] .4	'293199 '395445 '311356	'296618 '395975 '307408	26	BD 45 2805 45 2814 46 2599	^{h m s} 18 56 27 ^s .75 18 58 55 ^s .98 18 59 26 ^s .86	^{° ' "} +45 49 7 ["] .0 +45 44 42 ["] .6 +46 24 47 ["] .2	'271712 '349125 '379163	'276006 '347143 '376852	
10	BD 40 3979 40 3981 40 3994	^{h m s} 19 59 29 ^s .43 19 59 45 ^s .94 20 1 36 ^s .64	^{° ' "} +40 21 27 ["] .8 +40 44 40 ["] .4 +40 35 32 ["] .2	'157081 '158954 '683905	'151936 '169039 '679025	27	BD 45 2783 45 2790 45 2792	^{h m s} 18 50 33 ^s .00 18 52 16 ^s .74 18 52 48 ^s .40	^{° ' "} +45 9 43 ["] .4 +45 21 2 ["] .5 +45 45 1 ["] .2	'592701 '172644 '234656	'596630 '169754 '233016	
11	BD 40 3977 40 3979 40 3992	^{h m s} 19 59 20 ^s .31 19 59 29 ^s .43 20 1 17 ^s .92	^{° ' "} +40 56 38 ["] .3 +40 21 27 ["] .8 +41 7 39 ["] .4	'172306 '347225 '480469	'181941 '340950 '477108	28	BD 44 2987 45 2779 44 2999	^{h m s} 18 43 33 ^s .89 18 47 34 ^s .10 18 49 10 ^s .15	^{° ' "} +45 0 18 ["] .4 +45 15 33 ["] .6 +44 19 23 ["] .1	'169761 '373386 '456853	'172435 '369554 '458011	
12	BD 40 3971 40 3977 40 3984	^{h m s} 19 58 10 ^s .83 19 59 20 ^s .31 20 0 3 ^s .87	^{° ' "} +41 8 2 ["] .0 +40 56 38 ["] .3 +41 8 3 ["] .8	'126405 '270950 '602645	'135908 '256829 '607264	29	BD 44 2985 44 2995 44 2999	^{h m s} 18 43 14 ^s .07 18 48 16 ^s .61 18 49 10 ^s .15	^{° ' "} +44 54 15 ["] .8 +44 15 9 ["] .9 +44 19 23 ["] .1	'434329 '346136 '219535	'433777 '356562 '209661	
13	BD 40 3967 41 3574 40 3984	^{h m s} 19 57 39 ^s .23 19 59 46 ^s .86 20 0 3 ^s .87	^{° ' "} +41 3 24 ["] .5 +41 32 25 ["] .4 +41 8 3 ["] .8	'393343 '506295 '100362	'396584 '514641 '088775	30	BD 43 3069 44 2989 44 2995	^{h m s} 18 44 41 ^s .97 18 45 7 ^s .25 18 48 16 ^s .61	^{° ' "} +44 5 28 ["] .4 +44 37 36 ["] .4 +44 15 9 ["] .9	'607607 '357828 '034565	'611844 '355095 '033061	
14	BD 41 3551 41 3566 41 3574	^{h m s} 19 56 40 ^s .72 19 59 2 ^s .50 19 59 46 ^s .86	^{° ' "} +41 29 20 ["] .9 +41 50 21 ["] .7 +41 32 25 ["] .4	'472405 '143418 '384177	'473231 '152233 '374536	31	BD 43 3054 43 3058 43 3059	^{h m s} 18 42 14 ^s .16 18 42 59 ^s .37 18 43 9 ^s .65	^{° ' "} +43 47 25 ["] .6 +43 46 38 ["] .1 +43 54 24 ["] .5	'329308 '076867 '593825	'347721 '072681 '579598	
15	BD 43 3368 43 3382 43 3393	^{h m s} 19 46 31 ^s .41 19 49 16 ^s .55 19 51 0 ^s .87	^{° ' "} +43 36 48 ["] .1 +44 11 18 ["] .4 +43 51 21 ["] .8	'421315 '214149 '364536	'421256 '218741 '360003	32	BD 43 3047 43 3054 43 3060	^{h m s} 18 39 58 ^s .16 18 42 14 ^s .16 18 43 13 ^s .98	^{° ' "} +43 29 51 ["] .7 +43 47 25 ["] .6 +43 30 22 ["] .7	'161105 '423826 '415069	'164885 '417017 '418098	
16	Helsingfors +44 [°] ,19 ^h 40 ^m	α_{1900} 393 398 427	δ_{1900} 19 40 43 ^s .08 19 40 53 ^s .62 19 41 17 ^s .09	δ_{1900} +44 45 21 ["] .7 +44 36 42 ["] .8 +44 38 47 ["] .8	'351008 '065176 '583816	'365908 '072445 '561647	33	BD 42 3132 42 3146 43 3055	^{h m s} 18 38 42 ^s .86 18 42 0 ^s .52 18 42 21 ^s .44	^{° ' "} +43 4 33 ["] .1 +42 47 3 ["] .4 +43 25 10 ["] .4	'465089 '309109 '225803	'466743 '312713 '220543
17	BD 45 2925 45 2930 45 2932	α_{1947} 19 33 10 ^s .13 19 34 58 ^s .15 19 35 10 ^s .39	δ_{1947} +45 30 6 ["] .4 +46 0 12 ["] .1 +45 37 4 ["] .7	'218396 '152044 '629560	'223626 '156787 '619587	34	BD 41 3103 41 3120 42 3140	^{h m s} 18 35 48 ^s .51 18 40 1 ^s .77 18 41 11 ^s .12	^{° ' "} +41 47 40 ["] .8 +41 53 21 ["] .8 +42 19 55 ["] .0	'487203 '125948 '386848	'486359 '133937 '379704	
18	BD 45 2918 45 2919 45 2920	^{h m s} 19 31 0 ^s .18 19 31 6 ^s .59 19 31 33 ^s .03	^{° ' "} +45 56 8 ["] .5 +45 59 35 ["] .7 +45 55 24 ["] .8	'709256 '038917 '251825	'728286 '045568 '226145	35	BD 40 3428 41 3117 40 3461	^{h m s} 18 34 30 ^s .35 18 39 51 ^s .64 18 40 1 ^s .13	^{° ' "} +40 59 21 ["] .6 +41 20 13 ["] .6 +40 47 48 ["] .6	'455700 '378870 '165430	'456356 '374416 '169228	

	Star numbers	α_{1947}	δ_{1947}	dependences		Star numbers	α_{1950}	δ_{1950}	dependences
36	BD 40 3428 40 3443 40 3461	^{h m s} 18 34 30.35 18 37 12.58 18 40 1.13	+40 59 21.6 +40 39 0.9 +40 47 48.6	.251406 .247394 .479489 .488291 .269105 .264316	52	BD 19 4147 18 4238 19 4153	^{h m s} 19 44 37.82 19 44 46.60 19 45 56.55	+19 36 24.1 +19 3 23.5 +19 14 8.0	.588734 .602364 .270053 .261079 .141214 .136557
37	BD 9 5215 10 4936 8 5062	23 22 8.85 23 24 23.33 23 24 36.68	+10 13 50.0 +10 48 12.0 + 9 27 9.6	.291945 .295732 .179654 .177802 .528400 .526465	53	BD 23 3734 23 3739 23 3745	^{α_{1875}} 19 35 29.58 19 36 22.22 19 37 30.62	^{δ_{1875}} +23 26 31.7 +23 47 42.2 +23 10 8.4	.256097 .253120 .364304 .377318 .379599 .369563
38	BD 8 5039 9 5195 8 5041	23 15 19.06 23 15 19.28 23 16 15.90	+ 9 12 50.3 + 9 36 3.6 + 9 8 32.7	.555986 .555641 .455481 .454635 -011467 -010276	54	BD 25 3898 25 3900 25 3909	19 32 41.69 19 32 47.23 19 34 13.06	+25 30 57.2 +25 44 7.0 +25 47 53.8	.200235 .159811 .100055 .151054 .699710 .689135
39	Catania +47° 6' 35"m	^{α_{1900}} 6 40 9.11 6 40 32.11 6 41 22.96	^{δ_{1900}} +47 8 37.8 +47 18 22.6 +47 7 0.2	.546072 .452662 .051708 .071815 .402220 .475522	55	BD 48 2796 47 2730 48 2806	18 52 40.87 18 54 57.18 18 55 46.42	+48 20 35.2 +47 40 8.3 +48 15 0.3	.144675 .155206 .580794 .566971 .274531 .277822
40	Hyderabad +39° 10' 15"m	10 18 11.14 10 19 54.61 10 20 11.94	+39 13 26.5 +39 6 38.2 +38 43 44.0	.418304 .340807 .138819 .196170 .442877 .463023	56	BD 24 3480 24 3482 24 3484	18 33 32.69 18 33 39.76 18 34 6.45	+24 32 20.0 +24 11 47.7 +24 16 6.8	.162467 .178487 .280145 .239718 .557387 .581795
41	BD 12 1084 12 1091 12 1105	^{α_{1947}} 6 13 28.01 6 14 25.34 6 16 7.38	^{δ_{1947}} +12 17 13.3 +12 54 31.8 +12 46 8.8	.348703 .350261 .315951 .305725 .335346 .344014	57	BD 25 3594 26 3330 25 3606	18 34 30.90 18 36 9.08 18 37 40.90	+25 46 14.3 +26 15 56.9 +25 39 8.3	.467896 .457090 .270945 .286968 .261159 .255942
42	BD 4 1254 4 1264 4 1276	6 23 50.62 6 25 3.27 6 26 47.66	+ 4 52 2.7 + 4 49 48.7 + 4 30 18.2	.485921 .502499 .045309 .021364 .468770 .476137	58	BD 26 3325 26 3330 27 3083	18 35 33.53 18 36 9.08 18 37 12.12	+26 28 45.3 +26 15 57.0 +27 1 57.8	-002307 -000932 .460939 .448901 .541368 .552031
43	BD 14 3206 15 3141 14 3213	^{α_{1948}} 17 11 57.81 17 13 3.95 17 14 11.10	^{δ_{1948}} +14 36 39.1 +14 58 8.1 +14 43 56.8	.087973 .069329 .088167 .089258 .823860 .841413	59	BD 34 3323 34 3326 34 3329	18 44 6.58 18 44 28.89 18 45 0.46	+34 18 16.0 +34 23 49.1 +34 6 43.1	.275426 .246512 .352342 .392080 .372232 .361406
44	BD 19 3423 19 3432 20 3574	17 43 21.64 17 46 4.46 17 46 52.95	+19 44 40.0 +19 5 6.3 +20 9 41.7	.335370 .322448 .263748 .262404 .400882 .415148	60	BD 37 3246 37 3254 37 3269	^{α_{1948}} 18 47 49.28 18 48 43.78 18 51 22.14	^{δ_{1948}} +37 41 43.1 +37 55 2.8 +37 52 49.0	.313334 .289061 .037623 .068718 .649043 .642221
45	BD 39 4223 39 4227 39 4238	20 29 42.08 20 30 49.05 20 31 52.70	+39 42 10.8 +39 53 50.0 +39 45 50.5	.219248 .183574 .486898 .506402 .293854 .310024	61	Helsingfors +40° 18' 50"m 204 233	^{α_{1900}} 18 49 12.78 18 50 30.45 18 51 36.87	^{δ_{1900}} +40 26 0.1 +40 34 54.4 +40 21 51.1	.134240 .114391 .573695 .609886 .292065 .275723
46	BD 40 4273 40 4279 40 4290	20 38 46.44 20 39 29.84 20 41 16.59	+40 26 36.6 +40 43 29.2 +40 26 27.4	.329778 .298224 .342820 .352024 .327402 .349752	62	BD 53 2161 52 2317 52 2321	^{α_{1875}} 18 55 33.55 18 56 14.29 18 58 10.26	^{δ_{1875}} +53 20 59.7 +52 54 38.4 +53 0 18.3	.139468 .151498 .314195 .297821 .546337 .550681
47	BD 43 3985 43 3986 43 3999	^{α_{1875}} 21 31 27.48 21 32 0.41 21 34 49.16	^{δ_{1875}} +43 45 23.1 +44 0 47.1 +43 52 33.4	.158402 .144650 .497781 .502662 .343817 .352688	63	Vaticano +59° 18' 54"m 48304 48332 48285	^{α_{1900}} 18 57 54.69 18 58 44.83 18 59 28.46	^{δ_{1900}} +59 13 52.6 +59 17 32.5 +59 8 46.6	.230328 .203618 .291854 .348279 .477818 .448103
48	BD 44 3903 43 4010 43 4026	21 36 26.98 21 36 33.05 21 38 42.21	+44 27 20.3 +43 54 17.4 +43 58 12.9	.411229 .412533 .374745 .355650 .214026 .231816	64	BD 63 1471 62 1671 63 1475	^{α_{1975}} 18 56 24.50 18 58 25.77 18 58 33.25	^{δ_{1975}} +63 37 27.9 +62 50 14.6 +63 31 25.6	.275905 .277026 .301743 .293585 .422352 .429390
49	BD 7 5224 7 5237 6 5427	^{α_{1950}} 20 11 50.14 20 14 12.66 20 14 16.10	^{δ_{1950}} - 6 49 34.9 - 6 59 34.3 - 6 40 4.5	.303218 .308217 .470285 .469761 .226497 .222022	65	BD 66 1141 67 1103 66 1146	18 52 39.72 18 55 42.35 18 58 11.04	+66 51 28.0 +67 35 42.3 +66 56 49.0	.228336 .225618 .570296 .577799 .201368 .196583
50	BD 1 3902 1 3903 1 3909	^{α_{1875}} 20 2 55.48 20 2 56.74 20 4 26.76	^{δ_{1875}} - 1 38 17.7 - 1 20 23.0 - 1 28 11.9	.580051 .573712 .169615 .177333 .250334 .248955	66	BD 67 1097 68 1033 67 1101	^{α_{1948}} 18 48 14.93 18 55 5.98 18 55 8.32	^{δ_{1948}} +68 5 50.5 +68 13 6.5 +67 45 46.8	.075025 .075863 .725872 .737042 .199103 .187095
51	Alger +1° 20' 4"m 76 77 96	^{α_{1900}} 20 1 39.00 20 1 40.47 20 2 15.20	^{δ_{1900}} + 1 4 36.3 + 1 1 6.3 + 1 4 8.2	.326231 .359850 .226211 .194975 .447558 .445175	67	Greenwich +69° 18' 50"m 7060 7070 7071	^{α_{1900}} 18 53 6.79 18 53 26.70 18 54 30.29	^{δ_{1900}} +68 47 42.2 +68 54 27.1 +68 50 32.7	.321859 .287763 .293268 .345519 .384873 .366718

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Photographic Observations of Comets in 1947 and 1948, by *G. Pels*. II