



Universiteit
Leiden
The Netherlands

The orbits of five minor planets, discovered by H. van Gent (Errata: 6 184)

Pels, G.

Citation

Pels, G. (1931). The orbits of five minor planets, discovered by H. van Gent (Errata: 6 184). *Bulletin Of The Astronomical Institutes Of The Netherlands*, 6, 131. Retrieved from <https://hdl.handle.net/1887/6110>

Version: Not Applicable (or Unknown)

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

Downloaded from: <https://hdl.handle.net/1887/6110>

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

BULLETIN OF THE ASTRONOMICAL INSTITUTES OF THE NETHERLANDS.

1931 July 1

Volume VI.

No. 220.

COMMUNICATION FROM THE OBSERVATORY AT LEIDEN.

The orbits of five minor planets, discovered by H. van Gent, by *G. Pels*.

The five minor planets mentioned in this bulletin were found by Mr. VAN GENT on plates taken at Johannesburg with the 10-inch Franklin Adams telescope.

The plates were sent to Leiden and measured in the Repsold measuring machine of this observatory in four positions differing 90°. The planets were referred to three comparison stars, sometimes for control to

two sets of three stars. The comparison stars were taken from the Carte du Ciel catalogues, as faint as could be found and if these were not available, from the A. G. zones.

The numbers and dates of the plates and the comparison stars used are given in the following tables.

Plates	Date Gr. M. Astr. T.	I		II	III
6219/20	1930 Apr. 22'42102				CM 4812, 4825, 4827
6226/7	» 23'42525	SF. 13 24, —9 : 2, 10, 18		CM. 4798, 4801, 4811	» 4796, 4812, 4820
6270/1	» 26'36002	» 13 16, —9 : 205, 213, 228		» 4778, 4798, 4801	» 4796, 4800, 4806
6330/1	» 30'35122	» 13 12, —8 : 126, 146, 150		SF. 13 16, —9 : 195, 219, 223	» 4775, 4786, 4788
6350/1	May 5'35524	» 13 8, —9 : 153, 194, 198		» 13 16, —9 : 40, 61, 66	» 4751, 4763, 4765
6366/7	» 16'25040	» 13 4, —8 : 49, 55, 56			
6448/9	» 25'32416	» 12 56, —8 : 119, 120, 130		» 13 0, —9 : 97, 102, 106	» 4709, 4713, 4723
Plates	Date Gr. M. Astr. T.	IV	Plates	Date Gr. M. Astr. T.	V
6219/20	1930 Apr. 22'42102	CM. 4870, 4879, W. 4907	6247/8	1930 Apr. 24'47495	CM. 5466, 5482, 5484
6270/1	» 26'36002	SF. 13 40, —9 : 4, 16, 29	6524/5	May 30'45455	SF. 15 16, —7 : 1, 9, 24
6330/1	» 30'35122	» 13 32, —9 : 95, 105, 114	6633	June 26'40595	» 15 4, —6 : 17, 29, 30
6350/1	May 5'35524	» 13 32, —9 : 40, 54, 57	6673/6	» 29'34980	» 15 4, —6 : 19, 23, 26
6366/7	» 16'25040	» 13 28, —8 : 4, 23, 31			
6448/9	» 25'32416	» 13 24, —7 : 22, 26, 33			

The abbreviations used are: SF. = San Fernando; CM. = A. G. Cambridge (Mass); W. = A. G. Wien-Ottakring.

When proper motions and other catalogue positions of the stars were available, these were used to obtain improved positions. The reductions were executed according to the method of COMRIE (*J. B. A. A.*, Vol. 39, p. 203).

The magnitudes were estimated by Mr. VAN GENT. The orbit computations were made by the method GAUSS-ENCKE as modified for the use of calculating machines by VEITHEN-MERTON.

The places used are:

Date	I		II		III	
	α (1930)	δ (1930)	α (1930)	δ (1930)	α (1930)	δ (1930)
1930						
Apr. 23	200°56203	—9°00217	201°41272	—10°60889	201°96861	—12°63042
May 5	197°85978	8°42897	198°76167	9°84067	199°26956	12°45639
» 25	195°16297	8°07072	196°36453	9°17772	196°61136	12°47381

IV		V	
Date	α (1930) δ (1930)	Date	α (1930) δ (1930)
1930 Apr. 22	205°14875 — 10°63000	1930 Apr. 24	234°91156 — 11°81592
May 5	202°93558 9°03244	May 30	228°59539 7°49253
» 25	201°11936 7°29217	June 29	225°73981 5°95117

The elements are :

I, II, III and IV Epoch May 6°0 (Gr. M. Astr. Time);
V 1930 May 30°0.

	I	II	III	IV	V
M_0	302°25336	92°50487	44°03123	342°50136	317°43881
ω	264°86143	97°24407	140°97250	30°71687	92°66477
δ_0	24°71448	12°33651	17°53919	210°30128	205°49673
i	4°72997	3°10740	9°78851	5°35878	12°83617
q	11°31038	4°75255	6°13268	12°41527	11°92428
μ	912°230	1063°904	855°202	767°029	643°169
$\log a$	0°393269	0°348736	0°411959	0°443463	0°494455

The planet IV was identified by Dr. G. STRACKE with Nr. 821 (Fanny) which was observed with certainty only in its discovery opposition of 1916. The four others are new and their provisional designations are:

I = 1930 HD, II = 1930 HK, III = 1930 HL and V = 1930 HM.

The observed places, the residuals and the magnitudes are given in the following tables :

Date	I				
	α (1930)	O—C	δ (1930)	O—C	m
1930 Apr. 23	200° 33' 43" 3	— 0" 1	— 9° 0' 7" 8	— 0" 0	13' 5
» 26	199 51 1' 7	— 5	8 50 47' 5	+ 0" 9	13' 8
» 30	198 55 27' 1	— 2" 1	8 38 50' 7	+ 2" 2	14' 0
May 5	197 51 35' 2	— 1	8 25 44' 3	0	14' 0
» 16	196 2 38' 8	+ 3' 5	8 7 2' 5	— 2' 7	13' 8
» 25	195 9 46' 7	— 1	8 4 14' 6	+ 1	14' 0

Date	II				
	α (1930)	O—C	δ (1930)	O—C	m
1930 Apr. 23	201° 24' 45" 8	+ 0" 2	— 10° 36' 32" 0	— 0" 1	14' 5
» 26	200 41 57' 7	— 3' 5	10 24 17' 0	+ 1' 1	13' 8
» 30	199 47 15' 8	— 5	10 8 26' 8	— 4	14' 0
May 5	198 45 42' 0	0	9 50 26' 4	0	14' 0
» 25	196 21 52' 3	+ 1	9 10 39' 8	0	14' 0

Date	III				
	α (1930)	O—C	δ (1930)	O—C	m
1930 Apr. 22	202° 13' 17" 3	+ 7" 4	— 12° 38' 43" 3	+ 2" 2	13' 5
» 23	201 58 7' 0	0	12 37 49' 5	0	14' 0
» 26	201 15 8' 6	0	12 35 4' 8	— 1' 7	13' 8
» 30	200 19 37' 2	+ 1' 7	12 31 23' 6	— 1' 6	14' 2
May 5	199 16 10' 4	— 2	12 27 23' 0	+ 1	14' 2
» 25	196 36 40' 9	0	12 28 25' 7	— 1	14' 0

Date	IV				
	α (1930)	O—C	δ (1930)	O—C	m
1930 Apr. 22	205° 8' 55" 5	— 0" 1	— 10° 37' 48" 0	0" 0	13' 0
» 26	204 25 37' 7	— 1' 3	10 7 33' 3	— 1' 0	13' 0
» 30	203 43 49' 7	— 1' 8	9 37 35' 1	— 1	13' 5
May 5	202 56 8' 1	+ 1	9 1 56' 8	— 1	13' 8
» 16	201 38 15' 9	+ 2' 6	7 56 6' 5	+ 7	13' 8
» 25	201 7 9' 7	0	7 17 31' 8	0	13' 3

Date	V				
	α (1930)	O—C	δ (1930)	O—C	m
1930 Apr. 24	234° 54' 41" 6	— 0" 1	— 11° 48' 57" 3	0" 0	13' 0
May 30	228 35 43' 4	0	7 29 33' 1	0	13' 5
June 26	225 48 13' 7	— 3' 2	5 59 15' 6	+ 1' 6	13' 5
» 29	225 44 23' 3	— 2	5 57 4' 2	0	13' 5

The ephemerides for the next opposition are: (for midnight)

1931 I		1931 II		1931 III		1931 IV	
Date	α (1925) δ (1925)	Date	α (1925) δ (1925)	Date	α (1925) δ (1925)	Date	α (1925) δ (1925)
Sept. 24	2 19° 0' + 7 24'	Aug. 7	23 2' 7" — 9 50'	July 14	22 1' 1" — 26 10'	Aug. 23	23 49' 9" + 4 37'
Oct. 2	2 13' 4" 7 13	» 15	22 56' 9" 10 22	» 22	21 55' 8" 26 47'	» 31	44' 7" 3 59
» 10	2 6' 4" 7 4	» 23	22 49' 7" 11 0	» 30	21 49' 2" 27 23	Sept. 8	38' 7" 3 13
» 18	1 58' 4" 6 58	» 31	22 41' 8" 11 39	Aug. 7	21 41' 6" 27 55'	» 16	32' 3" 2 21
» 26	1 50' 2" 6 55	Sept. 8	22 33' 6" 12 16	» 15	21 33' 5" 28 19'	» 24	26' 1" 1 27
Nov. 3	1 42' 3" 6 55	» 16	22 25' 9" 12 46	» 23	21 25' 5" 28 32'	Oct. 2	20' 3" + 0 34
» 11	1 35' 3" 7 0	» 24	22 19' 2" 13 9	» 31	21 18' 1" 28 35'	» 10	15' 5" — 0 15
Oppos. Oct. 24, magn. 14' 2		Oppos. Sept. 1, magn. 13' 9		Oppos. Aug. 14, magn. 14' 2		Oppos. Sept. 16, magn. 14' 6	

1931 V		1931 V (continued)	
Date	α (1925) δ (1925)	Date	α (1925) δ (1925)
Aug. 23	0 15' 3" + 12 24'	Sept. 24	23 57' 2" + 8 43'
» 31	12' 0" 11 47'	Oct. 2	52' 0" 7 27'
Sept. 8	7' 7" 10 56'	» 10	47' 3" 6 11'
» 16	2' 6" 9 54'	Oppos. Sept. 23, magn. 13' 8	