

OBSERVED ASTEROIDS AT THE GPO, LA SILLA, CHILE SEPTEMBER 1983

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and

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SUMÁRIO

Dando continuidade ao programa observacional iniciado em 1978 no ESO, La Silla, Chile, E.R. Netto, do Observatório do Valongo (UFRJ) e H. Debehogne (O.R.B.), no período de 25 de agosto a 20 de setembro de 1983 obtiveram placas fotográficas para a determinação da posição de asteroídes selecionados na Ephemeridi Malik Planet -1983 e para a possível descoberta de novos corpos celestes ou, ainda, para a re-identificação de planetóides tidos como perdidos ou mal observados durante os últimos anos. A avaliação das placas que couberam ao Observatório do Valongo revelou 12 asteroídes da efeméride russa e 09 que não se encontram relacionados na mencionada efeméride. O telescópio utilizado foi o G.P.O. (D = 40 cm; F = 4 m).

ABSTRACT

Continuing the observational program which was started in 1978 at the ESO, La Silla, Chile, E.R. Netto, from the Valongo Observatory (UFRJ) and H. Debehogne (O.R.B.), during August 25 to September 20, 1983, have obtained photographic plates for the determination of the positions of asteroids selected by Ephemeridi Malik Planet-1983, and for the possible discovery of new celestial bodies, and also for possible reidentification of lost asteroids, or badly observed ones during the last years. Avaliation of the Valongo plates have revealed 12 asteroids from the Russian ephemeris, and 9 which were not mentioned in this source. The G.P.O. telescope (D = 40 cm; F = 4 m) was used.

Key words: MINOR PLANETS – POSITIONS – DEPENDENCE

I. INTRODUCTION

The present paper contains photographic observations of 9 undetected and 12 selected minor planets (Ephemeridi Malik Southern Observatory) ESO, La Silla, Chile during September 1983, by Debehogne (Observatoire Royal de Belgique) and Netto (Observatório do Valongo, Universidade Federal do Rio de Janeiro). The newly detected asteroids are here named with provisional designations, beginning with the capital letter E followed by four digits. This paper presents 60 positions (R.A. and Dec.) for 1950.0 and the respective dependences.

II. METHOD

All plates were measured on the Ascorecord coordinate graph of the Observatório do Valongo (UFRJ) by Netto, Caldeira, Vieira and Machado, as already described (Debehogne *et al.* 1979). The positions were computed by means of dependences and of least squares, with the computer Burroughs B6700 of the Núcleo de Computação Eletrônica-NCE/UFRJ. The *SAO Star Catalogue* 1966, was used for positions and proper motions of the comparison (basis) stars; five reference stars were used.

III. RESULTS

a) Table 1 presents the ordinal number of each position, the ordinal number of the plate, date (UT), positions (at 1950.0) and rough residuals (for identification only) for the 12 known minor planets (*Ephemeridi Malik Planet* 1983).

b) Table 2 contains the identification number of each position, to connect Tables 1 and 2, the *SAO* star number, the positions used (proper motions added) and the dependences (to permit future improvements on reference stars and objects positions, as well as proper motion corrections).

ESO provided total financial support to Debehogne and lodging to Netto. Grants from FINEP (Contract No. 4.3.83.0290.00) and FUJB (Contract No. 605/83) covered the payment of the Rio-Santiago-Rio air ticket of Netto and supported the reduction of the observations.

REFERENCES

- Smithsonian Astrophysical Observatory, 1966 *Star Catalog* (Washington: Smithsonian Institution).
- Debehogne, H. and Machado, L.E. 1979, *Astr. and Ap. Suppl.*, **36**, 313.
- Ephemeridi Malik Planet, 1983, I.T.A. (Leningrad USSR).

TABLE 1

POSITIONS

No.	Object	Plate Date UT 1983		Alpha 1950			Delta 1950			Residuals		
		Mon	Day	H	M	S	°	'	"	M	'	
1	24 THEMIS	6491	9	10.21819	22	30	15.72	-10	21	3.7	0.0	0
2	24 THEMIS	491	9	10.22373	22	30	15.47	-10	21	5.4	0.0	0
3	24 THEMIS	491	9	10.22927	22	30	15.19	-10	21	6.5	0.0	0
4	24 THEMIS	565	9	18.27460	22	24	50.00	-10	51	2.3	0.1	1
5	24 THEMIS	565	9	18.27876	22	24	49.80	-10	51	3.3	0.1	1
6	24 THEMIS	566	9	18.29192	22	24	49.27	-10	51	6.1	0.1	1
7	24 THEMIS	6566	9	18.29677	22	24	49.09	-10	51	7.1	0.1	1
8	151 ABUNDANTIA	6392	9	1.41694	0	12	47.20	-6	34	20.0	-0.1	0
9	151 ABUNDANTIA	6392	9	1.42179	0	12	46.99	-6	34	20.8	-0.1	0
10	151 ABUNDANTIA	6392	9	1.42664	0	12	46.79	-6	34	22.0	-0.1	0
11	151 ABUNDANTIA	6422	9	3.38834	0	11	21.57	-6	42	39.6	0.0	0
12	151 ABUNDANTIA	6422	9	3.39382	0	11	21.29	-6	42	41.2	0.0	0
13	151 ABUNDANTIA	6422	9	3.39936	0	11	21.05	-6	42	42.6	0.0	0
14	187 LAMBERTA	6392	9	1.41694	0	13	6.36	-6	36	18.1	-0.1	0
15	187 LAMBERTA	6392	9	1.42179	0	13	6.15	-6	36	19.4	-0.1	0
16	187 LAMBERTA	6392	9	1.42664	0	13	5.95	-6	36	20.7	-0.1	0
17	187 LAMBERTA	6422	9	3.38834	0	11	34.71	-6	43	13.7	0.0	0
18	187 LAMBERTA	6422	9	3.39382	0	11	34.44	-6	43	14.9	0.0	0
19	187 LAMBERTA	6422	9	3.39936	0	11	34.19	-6	43	16.1	0.0	0
20	206 HERSILIA	6491	9	10.21819	22	33	1.26	-10	45	16.5	0.0	1
21	206 HERSILIA	6491	9	10.22373	22	33	0.99	-10	45	18.2	0.0	1
22	206 HERSILIA	6491	9	10.22927	22	33	0.75	-10	45	19.9	0.0	1
23	206 HERSILIA	6566	9	18.29192	22	27	7.00	-11	28	47.6	0.2	1
24	206 HERSILIA	6566	9	18.29677	22	27	6.83	-11	28	49.1	0.2	1
25	288 GLAUKE	6465	9	8.18002	22	17	10.79	-14	36	33.3	0.1	1
26	288 GLAUKE	6465	9	8.18833	22	17	10.39	-14	36	35.7	0.1	1
27	288 GLAUKE	6465	9	8.19664	22	17	10.00	-14	36	38.4	0.1	1
28	723 HAMMONIA	6389	9	1.35466	23	27	13.50	-3	59	49.0	-0.1	-1
29	723 HAMMONIA	6389	9	1.35946	23	27	13.32	-3	59	50.7	-0.1	-1
30	723 HAMMONIA	6389	9	1.36431	23	27	13.11	-3	59	52.9	-0.1	-1
31	744 AGUNTINA	6382	9	1.19221	21	30	45.15	-15	17	59.8	0.1	1
32	744 AGUNTINA	6382	9	1.19913	21	30	44.89	-15	18	2.0	0.1	1
33	744 AGUNTINA	6382	9	1.20606	21	30	44.61	-15	18	4.0	0.1	1
34	744 AGUNTINA	6410	9	3.06140	21	29	34.53	-15	26	41.5	0.0	0
35	744 AGUNTINA	6410	9	3.06844	21	29	34.22	-15	26	43.4	0.0	0
36	744 AGUNTINA	6410	9	3.07525	21	29	33.97	-15	26	45.7	0.0	0
37	755 QUINTILLA	6389	9	1.35466	23	27	25.17	-2	41	57.8	-0.1	0
38	755 QUINTILLA	6389	9	1.35946	23	27	24.94	-2	41	59.3	-0.1	0
39	755 QUINTILLA	6389	9	1.36431	23	27	24.78	-2	42	1.2	-0.1	0
40	893 LEOPOLDINA	6382	9	1.19221	21	34	23.09	-15	36	42.7	0.1	1
41	893 LEOPOLDINA	6382	9	1.19913	21	34	22.82	-15	36	46.7	0.1	1
42	893 LEOPOLDINA	6382	9	1.20606	21	34	22.53	-15	36	50.6	0.1	1
43	893 LEOPOLDINA	6410	9	3.06140	21	33	13.74	-15	54	36.5	0.0	0
44	893 LEOPOLDINA	6410	9	3.06844	21	33	13.49	-15	54	40.5	0.0	0
45	893 LEOPOLDINA	6410	9	3.07525	21	33	13.21	-15	54	44.4	0.0	0
46	952 CAIA	6392	9	1.41694	0	11	9.68	-7	49	23.9	-0.2	-1
47	952 CAIA	6392	9	1.42179	0	11	9.50	-7	49	24.1	-0.2	-1
48	952 CAIA	6392	9	1.42664	0	11	9.31	-7	49	24.5	-0.2	-1
49	952 CAIA	6422	9	3.38834	0	9	49.59	-7	50	39.1	0.0	-1
50	952 CAIA	6422	9	3.39382	0	9	49.35	-7	50	39.4	0.0	-1
51	952 CAIA	6422	9	3.39936	0	9	49.11	-7	50	39.5	0.0	-1
52	1742 SCHAIFERS	6389	9	1.35466	23	29	51.41	-4	19	33.2	-0.1	-1
53	1742 SCHAIFERS	6389	9	1.35946	23	29	51.18	-4	19	34.7	-0.1	-1
54	1742 SCHAIFERS	6389	9	1.36431	23	29	50.99	-4	19	37.0	-0.1	-1
55	2457 1975 TU ₂	6382	9	1.19221	21	33	52.81	-15	40	19.0	0.1	0
56	2457 1975 TU ₂	6382	9	1.19913	21	33	52.53	-15	40	21.7	0.1	0
57	2457 1975 TU ₂	6382	9	1.20606	21	33	52.28	-15	40	24.1	0.1	0
58	2457 1975 TU ₂	6410	9	3.06140	21	32	32.26	-15	50	58.0	0.0	0
59	2457 1975 TU ₂	6410	9	3.06844	21	32	31.95	-15	51	0.3	0.0	0
60	2457 1975 TU ₂	6410	9	3.07525	21	32	31.61	-15	51	2.9	0.0	0
61	E4000	6465	9	8.18002	22	12	47.65	-14	34	17.4		
62	E4000	6465	9	8.18833	22	12	47.12	-14	34	18.3		
63	E4000	6465	9	8.19664	22	12	46.55	-14	34	18.8		

TABLE 1 (CONTINUED)

No.	Object	Plate Date UT 1983		Alpha 1950			Delta 1950			Residuals	
		Mon	Day	H	M	S	°	'	"	M	'
64	E4001	6465	9	8.18002	22	15	57.99	-14	2	55.3	
65	E4001	6465	9	8.18833	22	15	57.55	-14	2	57.3	
66	E4001	6465	9	8.19664	22	15	57.13	-14	2	59.6	
67	E4002	6465	9	8.18002	22	16	50.01	-15	6	49.0	
68	E4002	6465	9	8.18833	22	16	49.67	-15	6	50.6	
69	E4002	6465	9	8.19664	22	16	49.33	-15	6	53.1	
70	E4003	6465	9	8.18002	22	19	11.85	-15	3	30.3	
71	E4003	6465	9	8.18833	22	19	11.45	-15	3	34.9	
72	E4003	6465	9	8.19664	22	19	11.17	-15	3	38.9	
73	E4004	6465	9	8.18002	22	19	39.02	-14	49	57.6	
74	E4004	6465	9	8.18833	22	19	38.58	-14	49	58.4	
75	E4004	6465	9	8.19664	22	19	38.19	-14	49	59.4	
76	E4005	6541	9	16.13601	21	51	13.54	-26	29	19.0	
77	E4005	6541	9	16.14848	21	51	13.09	-26	29	19.3	
78	E4006	6541	9	16.13601	21	52	24.42	-26	7	31.0	
79	E4006	6541	9	16.14848	21	52	23.94	-26	7	33.4	
80	E4007	6541	9	16.13601	21	48	46.47	-25	45	25.9	
81	E4007	6541	9	16.14848	21	48	46.10	-25	45	26.1	
82	E4008	6541	9	16.13601	21	52	48.18	-25	17	37.1	
83	E4008	6541	9	16.14848	21	52	48.10	-25	17	37.6	

TABLE 2

DEPENDENCES

Observations			No. <i>SAO</i>	Positions	Used	Dependences		
				s	"			
1	2	3	146134	38.70	-20.5	0.387691	0.388596	0.389454
			146148	20.65	-50.0	0.032776	0.032320	0.031977
			146161	28.65	-1.2	0.047813	0.047258	0.046796
			165160	2.61	-46.6	0.480613	0.481446	0.482247
			165189	1.09	-49.4	0.051107	0.050380	0.049526
	4	5	165081	10.27	-50.7	0.469158	0.469921	
			165091	37.89	-57.0	0.326631	0.326980	
			165109	14.06	-9.1	0.060280	0.060180	
			165118	4.72	-2.7	0.204593	0.204231	
			165126	36.11	-6.2	-0.060662	-0.061311	
	6	7	165081	10.27	-50.7	0.720401	0.720712	
			165080	9.67	-16.8	0.132418	0.132962	
			165100	52.11	-52.2	-0.069958	-0.069873	
			165125	24.11	-37.2	-0.120106	-0.120437	
			165126	36.11	-6.2	0.337244	0.336637	
8	9	10	128641	20.61	-22.8	0.306276	0.306931	0.307519
			128657	7.37	-33.6	-0.059743	-0.059665	-0.059481
			128662	42.93	-58.0	0.454656	0.454801	0.454911
			128675	20.51	-11.7	-0.003866	-0.004217	-0.004581
			128686	15.05	-59.2	0.302676	0.302151	0.301632
11	12	13	128641	20.61	-22.8	0.273104	0.274198	0.275159
			128645	46.38	-14.3	0.374344	0.374706	0.375017
			128657	7.37	-33.6	0.063547	0.063927	0.064259
			128662	42.93	-58.0	0.237159	0.236366	0.235651
			128672	48.51	-27.8	0.051846	0.050803	0.049914

TABLE 2 (CONTINUED)

				Positions	Used			
Observations	No. <i>SAO</i>			s	"	Dependences		
14	15	16	128641	20.61	-22.8	0.239964	0.240596	0.241160
			128657	7.37	-33.6	-0.043226	-0.043082	-0.042891
			128662	42.93	-58.0	0.417190	0.417280	0.417360
			128675	20.51	-11.7	0.050202	0.049877	0.049547
			128686	15.05	-59.2	0.335869	0.335328	0.334823
17	18	19	128641	20.61	-22.8	0.226686	0.227727	0.228677
			128645	46.38	-14.3	0.347061	0.347430	0.347773
			128657	7.37	-33.6	0.061232	0.061555	0.061850
			128662	42.93	-58.0	0.263254	0.262518	0.261838
			128672	48.51	-27.8	0.101766	0.100769	0.099863
20	21	22	165160	2.61	-46.6	0.414318	0.414919	0.415524
			165162	13.15	-55.9	0.112927	0.113426	0.113880
			165189	1.09	-49.4	0.673567	0.672864	0.672176
			146161	28.65	-1.2	-0.215751	-0.215323	-0.214994
			146197	9.26	-10.6	0.014939	0.014115	0.013413
	23	24	165091	37.89	-57.0	0.018946	0.019373	
			165100	52.11	-52.2	0.508315	0.508878	
			165142	32.43	-17.1	0.452924	0.452712	
			165126	36.11	-6.2	-0.011085	-0.011345	
			165139	27.33	-47.3	0.030900	0.030381	
25	26	27	164989	24.52	-54.0	0.079418	0.081384	0.083421
			164992	54.23	-3.4	0.018159	0.019873	0.021552
			165003	6.48	-19.9	0.543250	0.541385	0.539376
			165006	27.21	-35.5	0.066609	0.066324	0.066165
			165012	48.68	-23.6	0.292565	0.291034	0.289486
28	29	30	146723	4.14	-30.7	0.257089	0.257895	0.258849
			146732	47.62	-15.6	0.283325	0.283775	0.284254
			146741	38.22	-56.7	0.246550	0.246551	0.246528
			146746	20.73	-28.0	0.085472	0.084994	0.084485
			146754	57.85	-57.4	0.127564	0.126785	0.125885
31	32	33	164462	39.65	-12.3	0.367987	0.368472	0.368975
			164469	18.29	-22.8	0.287294	0.287750	0.288187
			164497	28.92	-20.8	0.308782	0.308251	0.307894
			164499	32.20	-31.4	0.059324	0.059550	0.059729
			164538	29.69	-9.3	-0.023387	-0.024024	-0.024784
34	35	36	164462	39.65	-12.3	0.455850	0.456245	0.456508
			164463	40.10	-52.4	0.330783	0.331911	0.332992
			164480	8.84	-58.6	0.365484	0.364917	0.364271
			164506	7.56	-13.7	-0.053366	-0.053449	-0.053358
			164517	11.77	-19.6	-0.098750	-0.099624	-0.100413
37	38	39	146716	31.45	-4.9	0.399429	0.399635	0.399666
			146720	52.83	-43.4	0.277284	0.277564	0.277750
			146743	43.20	-57.0	0.027505	0.027838	0.028174
			146757	34.36	-15.4	-0.051903	-0.051874	-0.051618
			146776	7.27	-15.3	0.347685	0.346837	0.346027
40	41	42	164499	32.20	-31.4	0.262513	0.263137	0.263854
			164506	7.56	-13.7	0.204307	0.205348	0.206379
			164538	29.69	-9.3	0.263886	0.262385	0.260912
			164542	49.94	-32.4	0.128588	0.128735	0.128839
			164545	14.93	-41.2	0.140706	0.140396	0.140015
43	44	45	164462	39.65	-12.3	-0.059717	-0.059544	-0.059346
			164463	40.10	-52.4	0.226849	0.228285	0.229845
			164480	8.84	-58.6	-0.109903	-0.111073	-0.112249
			164506	7.56	-13.7	0.512132	0.512502	0.512748
			164517	11.77	-19.6	0.430638	0.429831	0.429002
46	47	48	128635	32.17	-1.0	0.081277	0.081596	0.081927
			128636	32.73	-49.2	0.368530	0.368871	0.369265
			128641	20.61	-22.8	0.013139	0.013311	0.013460
			128657	7.37	-33.6	0.405547	0.405295	0.405040
			128672	48.51	-27.8	0.131507	0.130928	0.130307
49	50	51	128627	35.67	-16.1	0.206187	0.207229	0.208284
			128635	32.17	-1.0	0.046876	0.047204	0.047624
			128636	32.73	-49.2	0.353194	0.353511	0.353788
			128643	34.90	-39.4	0.326356	0.325838	0.325340
			128650	36.92	-37.6	0.067387	0.066217	0.064963

TABLE 2 (CONTINUED)

Observations			No. <i>SAO</i>	Positions	Used	Dependences		
				s	"			
52	53	54	146746	20.73	-28.0	0.322985	0.323341	0.323793
			146751	50.61	-37.5	0.403655	0.404026	0.404497
			146754	57.85	-57.4	-0.037802	-0.037606	-0.037777
			146787	31.68	-39.6	0.221618	0.221226	0.220974
			146792	52.87	-1.0	0.089544	0.089013	0.088512
55	56	57	164499	32.20	-31.4	0.348828	0.349582	0.350259
			164506	7.56	-13.7	0.286190	0.287044	0.287795
			164538	29.69	-9.3	0.186133	0.185140	0.184250
			164542	49.94	-32.4	0.097819	0.097676	0.097556
			164545	14.93	-41.2	0.081030	0.080557	0.080140
58	59	60	164462	39.65	-12.3	0.030317	0.030728	0.031137
			164463	40.10	-52.4	0.268931	0.270124	0.271519
			164480	8.84	-58.6	-0.048165	-0.048855	-0.049643
			164506	7.56	-13.7	0.421616	0.421619	0.421573
			164517	11.77	-19.6	0.327300	0.326385	0.325415
61	62	63	164968	44.12	-40.7	0.667339	0.668059	0.668948
			164972	3.68	-46.4	0.515235	0.516320	0.517376
			165005	26.86	-4.5	0.001146	0.001145	0.001093
			165014	8.20	-50.2	0.050844	0.049992	0.049087
			165024	27.00	-9.0	-0.234564	-0.235517	-0.236503
64	65	66	164968	44.12	-40.7	0.551176	0.551649	0.552073
			164972	3.68	-46.4	-0.009952	-0.008897	-0.007882
			165005	26.86	-4.5	-0.199412	-0.199281	-0.199116
			165014	8.20	-50.2	0.599895	0.598983	0.598064
			165024	27.00	-9.0	0.058293	0.057546	0.056862
67	68	69	164990	49.10	-49.7	0.200430	0.202375	0.204527
			164992	54.23	-3.4	0.287808	0.288286	0.288523
			165005	26.86	-4.5	0.107821	0.108458	0.109469
			165006	27.21	-35.5	0.226724	0.225532	0.224128
			165016	19.54	-14.3	0.177215	0.175349	0.173353
70	71	72	165006	27.21	-35.5	-0.056746	-0.053474	-0.051098
			165012	48.68	-23.6	-0.047998	-0.047901	-0.048093
			165016	19.54	-14.3	0.276225	0.278113	0.279830
			165019	52.44	-34.1	0.232472	0.228786	0.225885
			165024	27.00	-9.0	0.596047	0.594477	0.593477
73	74	75	165006	27.21	-35.5	-0.342665	-0.339642	-0.337103
			165012	48.68	-23.6	0.068924	0.070272	0.071230
			165016	19.54	-14.3	-0.039388	-0.038978	-0.038151
			165019	52.44	-34.1	0.718954	0.716762	0.714830
			165024	27.00	-9.0	0.594175	0.591587	0.589194
	76	77	190699	45.00	-39.4	0.286310	0.287900	
			190719	5.12	-47.6	0.132032	0.132447	
			190721	13.88	-13.4	0.359587	0.360154	
			190744	12.41	-45.9	0.207951	0.206828	
			190745	14.25	-53.5	0.014120	0.012672	
	78	79	190699	45.00	-39.4	0.072454	0.074127	
			190719	5.12	-47.6	0.304828	0.304796	
			190721	13.88	-13.4	-0.042230	-0.041095	
			190744	12.41	-45.9	0.184830	0.183935	
			190745	14.25	-53.5	0.480118	0.478236	
	80	81	190679	6.21	-4.4	0.380240	0.380890	
			190688	45.85	-8.2	0.293062	0.293413	
			190699	45.00	-39.4	0.344924	0.345256	
			190743	7.68	-34.9	-0.059282	-0.059997	
			190745	14.25	-53.5	0.041056	0.040437	
	82	83	190679	6.21	-4.4	0.008539	0.008610	
			190688	45.85	-8.2	0.204815	0.204949	
			190699	45.00	-39.4	-0.173231	-0.173094	
			190743	7.68	-34.9	0.672750	0.672480	
			190745	14.25	-53.5	0.287126	0.287055	

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