

**PRECISE ASTROMETRIC POSITIONS OF 16 MINOR PLANETS  
OBTAINED BY GPO TELESCOPE OF ESO - LA SILLA IN 1988**

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**SUMMARY:** During the mission in January 1988 at La Silla 252 precise astrometric positions of 16 minor planets were obtained. The objects were observed with the Grand Prism Objective (GPO) of La Silla Observatory, by H. Debehogne.

Ten new asteroids were discovered during this mission. The measurements were done with Ascorecord of the Observatoire Royal de Belgique. The reductions were performed using the dependance method by means of five reference stars.

## 1. INTRODUCTION

The results of photographic observations of 16 minor planets are presented. These objects were observed in January mission 1988 with GPO by H. Debehogne at the European Southern Observatory, La Silla, Chile. 252 precise positions are obtained. Ten new minor planets were discovered.

## 2. OBSERVATIONS, MEASUREMENTS AND REDUCTIONS

As usually, minor planet observations at La Silla were performed using the Kodak II-O plates. Three exposures on each plate were done. Five reference stars from SAO Catalogue were selected per plate.

All the plates were measured with the Ascorecord Zeiss measuring machine of the Observa-

toire Royal de Belgique by H. Debehogne.

The method of dependences was performed to obtain the precise positions. In deriving the residuals of star positions the Least Square Method was used.

Reductions were carried out in the Uccle Computing Centre using UNIVAC 9200 and the model of computation defined by H. Debehogne (Debehogne, H., 1982, 1984).

## 3. RESULTS

The results are presented in Tables 1 and 2. The first one contains derived topocentric coordinates of minor planets  $\alpha$  and  $\delta$  for the equinox 1950.0 and the residuals

For new asteroids the calculated positions only are given.

In the Table 2 the dependences are presented.

TABLE 1. POSITIONS.

NO	OBJECT	PLATE	DATE UT 1988		ALPHA 1950			DELTA 1950			RESIDUALS		
			MON.	DAY	H	M	S	°	'	"	M	"	
1	142 POLANA	11733	1	14.245833	10	4	33.623	+10	16	16.43	+	.4	+ 8
2	142 POLANA	11733	1	14.255556	10	4	33.358	+10	16	16.64	+	.4	+ 8
3	142 POLANA	11733	1	14.265278	10	4	33.094	+10	16	16.76	+	.4	+ 8
4	142 POLANA	11746	1	15.322569	10	4	4.590	+10	17	18.66	+	.4	+ 8
5	142 POLANA	11746	1	15.327430	10	4	4.429	+10	17	19.00	+	.4	+ 8
6	142 POLANA	11746	1	15.332292	10	4	4.295	+10	17	19.30	+	.4	+ 8
7	142 POLANA	11757	1	16.309722	10	3	36.317	+10	18	25.40	+	.3	+ 8
8	142 POLANA	11757	1	16.323611	10	3	35.873	+10	18	26.53	+	.3	+ 8
9	142 POLANA	11757	1	16.337500	10	3	35.456	+10	18	27.76	+	.3	+ 8
10	142 POLANA	11781	1	18.330555	10	2	33.021	+10	21	11.02	+	.2	+ 9
11	142 POLANA	11781	1	18.340278	10	2	32.717	+10	21	11.35	+	.2	+ 9
12	142 POLANA	11793	1	19.321875	10	1	59.364	+10	22	46.38	+	.1	+ 9
13	142 POLANA	11793	1	19.336458	10	1	58.829	+10	22	47.54	+	.1	+ 9
14	142 POLANA	11793	1	19.351042	10	1	58.301	+10	22	48.81	+	.1	+ 9
15	1144 ODA	11778	1	18.226389	9	16	5.361	+10	22	20.88	+	.0	- 1
16	1144 ODA	11778	1	18.236111	9	16	5.050	+10	22	22.86	+	.0	- 1
17	1144 ODA	11778	1	18.245833	9	16	4.736	+10	22	25.19	+	.0	- 1
18	1144 ODA	11790	1	19.246528	9	15	29.791	+10	26	09.34	-	.0	0
19	1144 ODA	11790	1	19.256250	9	15	29.452	+10	26	12.07	-	.0	0
20	1144 ODA	11814	1	21.168750	9	14	21.306	+10	33	33.21	-	.0	0
21	1144 ODA	11814	1	21.178472	9	14	20.953	+10	33	35.32	-	.0	0
22	1144 ODA	11814	1	21.188194	9	14	20.597	+10	33	37.37	-	.0	0
23	1144 ODA	11842	1	23.176389	9	13	7.659	+10	41	32.09	+	.0	0
24	1144 ODA	11842	1	23.186111	9	13	7.288	+10	41	34.51	+	.0	0
25	1144 ODA	11871	1	25.163889	9	11	53.087	+10	49	41.17	+	.0	0
26	1144 ODA	11871	1	25.173611	9	11	52.708	+10	49	43.52	+	.0	0
27	1144 ODA	11871	1	25.183333	9	11	52.326	+10	49	46.11	+	.0	0
28	1144 ODA	12898	1	27.259028	9	10	32.731	+10	58	31.64	+	.0	0
29	1144 ODA	12898	1	27.268750	9	10	32.353	+10	58	34.37	+	.0	0
30	1144 ODA	11929	1	29.265278	9	9	14.667	+11	07	12.36	-	.0	0
31	1144 ODA	11929	1	29.275000	9	9	14.297	+11	07	14.13	-	.0	0
32	1144 ODA	11943	1	30.262847	9	8	35.546	+11	11	34.64	-	.0	0
33	1673 VAN HOUTEN	11778	1	18.226389	9	20	3.776	+10	11	53.29	+	.1	- 1
34	1673 VAN HOUTEN	11778	1	18.236111	9	20	3.347	+10	11	54.76	+	.1	- 1
35	1673 VAN HOUTEN	11778	1	18.245833	9	20	2.918	+10	11	56.26	+	.1	- 1
36	1673 VAN HOUTEN	11790	1	19.246528	9	19	20.045	+10	14	50.05	+	.0	0
37	1673 VAN HOUTEN	11790	1	19.256250	9	19	19.661	+10	14	52.18	+	.0	0
38	1673 VAN HOUTEN	11842	1	23.176389	9	16	24.219	+10	27	08.48	+	.1	- 1
39	1673 VAN HOUTEN	11842	1	23.186111	9	16	23.809	+10	27	10.25	+	.1	- 1
40	1673 VAN HOUTEN	11871	1	25.163889	9	14	51.461	+10	33	53.49	+	.1	- 1
41	1673 VAN HOUTEN	11871	1	25.173611	9	14	51.012	+10	33	55.23	+	.1	- 1
42	1673 VAN HOUTEN	11871	1	25.183333	9	14	50.530	+10	33	57.27	+	.1	- 1
43	1673 VAN HOUTEN	12898	1	27.259028	9	13	11.263	+10	41	18.00	+	.0	0
44	1673 VAN HOUTEN	12898	1	27.268750	9	13	10.800	+10	41	20.46	+	.0	0
45	2103 1960 FL	11804	1	20.261806	9	29	54.701	+10	10	25.49	+	.0	0
46	2103 1960 FL	11804	1	20.271528	9	29	54.274	+10	10	25.62	+	.0	0
47	2103 1960 FL	11804	1	20.281250	9	29	53.850	+10	10	25.69	+	.0	0
48	2103 1960 FL	11815	1	21.202778	9	29	14.809	+10	10	04.00	+	.1	0
49	2103 1960 FL	11815	1	21.212500	9	29	14.361	+10	10	04.05	+	.1	0
50	2103 1960 FL	11843	1	23.199306	9	27	46.946	+10	09	37.16	+	.1	- 1

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TABLE 1. POSITIONS.

NO	OBJECT	PLATE	DATE UT 1988		ALPHA 1950			DELTA 1950			RESIDUALS		
			MON.	DAY	H	M	S	O	'	"	M	'	
51	2103 1960 FL	11843	1	23.209028	9	27	46.518	+10	09	37.26	+	.1	- 1
52	2103 1960 FL	11872	1	25.195139	9	26	15.137	+10	09	33.10	+	.2	- 1
53	2103 1960 FL	11872	1	25.204861	9	26	14.706	+10	09	33.34	+	.2	- 1
54	2103 1960 FL	11872	1	25.214583	9	26	14.290	+10	09	33.37	+	.2	- 1
55	2103 1960 FL	11886	1	26.272917	9	25	24.061	+10	09	39.51	+	.1	- 1
56	2103 1960 FL	11886	1	26.282639	9	25	23.555	+10	09	39.81	+	.1	- 1
57	2103 1960 FL	11915	1	28.287500	9	23	46.177	+10	10	07.27	+	.1	- 1
58	2103 1960 FL	11915	1	28.297222	9	23	45.672	+10	10	07.59	+	.1	- 1
59	2103 1960 FL	11944	1	30.284028	9	22	16.427	+10	10	54.25	-	.1	0
60	2103 1960 FL	11944	1	30.293750	9	22	15.959	+10	10	55.07	-	.1	0
61	3301 1978 CT	11733	1	14.245833	10	3	52.410	+11	36	25.54	+	.4	- 3
62	3301 1978 CT	11733	1	14.255556	10	3	52.157	+11	36	28.00	+	.4	- 3
63	3301 1978 CT	11733	1	14.265278	10	3	51.904	+11	36	30.68	+	.4	- 3
64	3301 1978 CT	11746	1	15.322569	10	3	23.046	+11	41	31.47	+	.4	- 2
65	3301 1978 CT	11746	1	15.327430	10	3	22.895	+11	41	32.88	+	.4	- 2
66	3301 1978 CT	11746	1	15.332292	10	3	22.747	+11	41	34.29	+	.4	- 2
67	3301 1978 CT	11757	1	16.309722	10	12	54.453	+11	46	22.39	+	.3	- 2
68	3301 1978 CT	11757	1	16.323611	10	12	54.000	+11	46	26.44	+	.3	- 2
69	3301 1978 CT	11757	1	16.337500	10	12	53.627	+11	46	30.48	+	.3	- 2
70	3301 1978 CT	11781	1	18.330555	10	1	50.396	+11	56	52.77	+	.2	- 1
71	3301 1978 CT	11781	1	18.340278	10	1	50.080	+11	56	55.82	+	.2	- 1
72	3301 1978 CT	11793	1	19.321875	10	1	16.351	+12	02	18.00	+	.1	- 1
73	3301 1978 CT	11793	1	19.336458	10	1	15.819	+12	02	22.90	+	.1	0
74	3301 1978 CT	11793	1	19.351042	10	1	15.285	+12	02	27.18	+	.1	0
75	3301 1978 CT	11820	1	21.327778	10	0	12.417	+12	13	47.16	+	.1	- 1
76	3301 1978 CT	11820	1	21.337500	10	0	2.034	+12	13	50.42	+	.1	- 1
77	1988 AJ5	11733	1	14.245833	10	1	1.827	+11	18	34.78			
78	1988 AJ5	11733	1	14.255556	10	1	1.566	+11	18	36.40			
79	1988 AJ5	11733	1	14.265278	10	1	1.316	+11	18	38.00			
80	1988 AJ5	11757	1	16.309722	10	0	6.828	+11	23	41.81			
81	1988 AJ5	11757	1	16.323611	10	0	6.455	+11	23	43.61			
82	1988 AJ5	11757	1	16.337500	10	0	6.084	+11	23	45.44			
83	1988 AJ5	11793	1	19.321875	9	58	37.765	+11	31	59.35			
84	1988 AJ5	11793	1	19.336458	9	58	37.269	+11	32	01.93			
85	1988 AJ5	11793	1	19.351042	9	58	36.812	+11	32	04.34			
86	1988 AJ5	11820	1	21.327778	9	57	32.718	+11	38	00.90			
87	1988 AJ5	11820	1	21.337500	9	57	32.401	+11	38	02.74			
88	1988 AJ5	11847	1	23.298611	9	56	24.767	+11	44	19.68			
89	1988 AJ5	11847	1	23.308333	9	56	24.439	+11	44	21.67			
90	1988 AJ5	11875	1	25.314583	9	55	11.068	+11	51	09.72			
91	1988 AJ5	11875	1	25.324306	9	55	10.736	+11	51	11.69			
92	1988 AJ5	11900	1	27.322917	9	53	53.890	+11	58	17.14			
93	1988 AJ5	11900	1	27.332639	9	53	53.567	+11	58	19.02			
94	1988 AJ5	11931	1	29.332639	9	52	33.158	+12	05	43.51			
95	1988 AJ5	11931	1	29.342361	9	52	32.814	+12	05	45.45			
96	3831	11733	1	14.245833	9	59	24.777	+10	19	39.50			
97	3831	11733	1	14.255556	9	59	24.425	+10	19	41.89			
98	3831	11733	1	14.265278	9	59	24.072	+10	19	44.39			
99	3831	11746	1	15.322569	9	58	46.623	+10	24	12.44			
100	3831	11746	1	15.327430	9	58	46.442	+10	24	13.71			

H. DEBEHOGNE, V. PROTIĆ - BENIŠEK

TABLE 1. POSITIONS.

NO	OBJECT	PLATE	DATE UT 1988		ALPHA 1950			DELTA 1950			
			MON.	DAY	H	M	S	0	'	''	
101	3831		11746	1	15.332292	9	58	46.255	+10	24	14.89
102	3831		11757	1	16.309722	9	58	10.224	+10	28	32.58
103	3831		11757	1	16.323611	9	58	9.670	+10	28	36.33
104	3831		11757	1	16.337500	9	58	9.122	+10	28	40.01
105	3831		11781	1	18.330555	9	56	50.636	+10	37	55.58
106	3831		11781	1	18.340278	9	56	50.246	+10	37	58.35
107	3831		11793	1	19.321875	9	56	9.345	+10	42	46.36
108	3831		11793	1	19.336458	9	56	8.687	+10	42	50.68
109	3831		11793	1	19.351042	9	56	8.041	+10	42	55.00
110	3831		11820	1	21.327778	9	54	41.127	+10	53	02.23
111	3831		11820	1	21.337500	9	54	40.661	+10	53	05.11
112	3831		11847	1	23.298611	9	53	8.856	+11	03	40.74
113	3831		11847	1	23.308333	9	53	8.388	+11	03	44.41
114	3831		11875	1	25.314583	9	51	28.844	+11	15	09.10
115	3831		11875	1	25.324306	9	51	28.354	+11	15	11.91
116	3831		11900	1	27.322917	9	49	44.170	+11	27	04.54
117	3831		11900	1	27.332639	9	49	43.678	+11	27	07.36
118	3831		11931	1	29.332639	9	47	54.713	+11	39	28.42
119	3831		11931	1	29.342361	9	47	54.182	+11	39	32.04
120	1981	RU3	11778	1	18.226389	9	15	57.538	+09	43	54.75
121	1981	RU3	11778	1	18.236111	9	15	57.105	+09	43	56.62
122	1981	RU3	11778	1	18.245833	9	15	56.676	+09	43	58.39
123	1981	RU3	11790	1	19.246528	9	15	12.251	+09	47	22.01
124	1981	RU3	11790	1	19.256250	9	15	11.807	+09	47	24.05
125	1981	RU3	11803	1	20.229167	9	14	27.861	+09	50	46.53
126	1981	RU3	11803	1	20.238889	9	14	27.432	+09	50	48.68
127	1981	RU3	11830	1	22.218055	9	12	55.723	+09	57	58.65
128	1981	RU3	11830	1	22.227778	9	12	55.319	+09	58	00.62
129	1981	RU3	11857	1	24.166667	9	11	22.902	+10	05	25.11
130	1981	RU3	11857	1	24.176389	9	11	22.448	+10	05	27.34
131	1981	RU3	11885	1	26.224305	9	9	42.331	+10	13	37.07
132	1981	RU3	11885	1	26.234028	9	9	41.868	+10	13	39.62
133	1981	RU3	11914	1	28.239583	9	8	1.822	+10	21	58.86
134	1981	RU3	11914	1	28.249305	9	8	1.336	+10	22	01.48
135	1981	RU3	11941	1	30.161111	9	6	24.724	+10	30	13.62
136	1988	BR3	11778	1	18.226389	9	18	21.467	+09	36	15.86
137	1988	BR3	11778	1	18.236111	9	18	21.026	+09	36	16.18
138	1988	BR3	11778	1	18.245833	9	18	20.583	+09	36	16.23
139	1988	BR3	11790	1	19.246528	9	17	35.041	+09	36	46.68
140	1988	BR3	11790	1	19.256250	9	17	34.591	+09	36	47.26
141	1988	BR3	11803	1	20.229167	9	16	49.515	+09	37	21.39
142	1988	BR3	11803	1	20.238889	9	16	49.063	+09	37	21.92
143	1988	BR3	11830	1	22.218055	9	15	15.298	+09	38	45.33
144	1988	BR3	11830	1	22.227778	9	15	14.853	+09	38	45.87
145	1988	BR3	11857	1	24.166667	9	13	40.483	+09	40	28.39
146	1988	BR3	11857	1	24.176389	9	13	40.017	+09	40	28.92
147	1988	BR3	11885	1	26.224305	9	11	57.896	+09	42	35.67
148	1988	BR3	11885	1	26.234028	9	11	57.390	+09	42	36.49
149	1988	BR3	11914	1	28.239583	9	10	15.556	+09	44	57.32
150	1988	BR3	11914	1	28.249305	9	10	15.065	+09	44	57.65

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NO	OBJECT	PLATE	DATE UT 1988		ALPHA 1950			DELTA 1950			
			MON.	DAY	H	M	S	D	'	''	
151	1988	BP3	11941	1	30.161111	9	8	36.759	+09	47	26.06
152	1988	BS3	11778	1	18.226389	9	18	58.735	+10	59	40.48
153	1988	BS3	11778	1	18.236111	9	18	58.245	+10	59	43.31
154	1988	BS3	11778	1	18.245833	9	18	57.746	+10	59	46.15
155	1988	BS3	11790	1	19.246528	9	18	7.378	+11	04	42.87
156	1988	BS3	11790	1	19.256250	9	18	6.877	+11	04	46.03
157	1988	BS3	11814	1	21.168750	9	16	26.865	+11	14	37.76
158	1988	BS3	11814	1	21.178472	9	16	26.377	+11	14	40.88
159	1988	BS3	11814	1	21.188194	9	16	25.863	+11	14	44.14
160	1988	BS3	11842	1	23.176389	9	14	36.830	+11	25	35.86
161	1988	BS3	11842	1	23.186111	9	14	36.321	+11	25	39.04
162	1988	BS3	11871	1	25.163889	9	12	43.477	+11	36	58.48
163	1988	BS3	11871	1	25.173611	9	12	42.917	+11	37	01.93
164	1988	BS3	11871	1	25.183333	9	12	42.357	+11	37	05.34
165	1988	BS3	12898	1	27.259028	9	10	39.479	+11	49	29.44
166	1988	BS3	12898	1	27.268750	9	10	38.904	+11	49	33.21
167	1988	BS3	11929	1	29.265278	9	8	37.397	+12	01	56.77
168	1988	BS3	11929	1	29.275000	9	8	36.846	+12	01	59.74
169	1988	BS3	11943	1	30.262847	9	7	35.700	+12	08	16.89
170	1988	BB4	11789	1	19.203819	9	14	58.371	+08	35	36.88
171	1988	BB4	11789	1	19.218403	9	14	57.562	+08	35	36.60
172	1988	BB4	11789	1	19.232986	9	14	56.757	+08	35	36.33
173	1988	BB4	11803	1	20.229167	9	14	3.448	+08	35	17.46
174	1988	BB4	11803	1	20.238889	9	14	2.902	+08	35	17.41
175	1988	BB4	11830	1	22.218055	9	12	13.255	+08	35	07.93
176	1988	BB4	11830	1	22.227778	9	12	12.677	+08	35	07.50
177	1988	BB4	11857	1	24.166667	9	10	21.099	+08	35	32.74
178	1988	BB4	11857	1	24.176389	9	10	20.503	+08	35	32.86
179	1988	BB4	11885	1	26.224305	9	8	18.385	+08	36	34.33
180	1988	BB4	11885	1	26.234028	9	8	17.809	+08	36	34.77
181	1988	BB4	11914	1	28.239583	9	6	15.109	+08	38	08.33
182	1988	BB4	11914	1	28.249305	9	6	14.480	+08	38	08.46
183	1988	BB4	11941	1	30.161111	9	4	15.512	+08	40	05.90
184	1988	BP3	11778	1	18.226389	9	14	20.200	+10	08	26.03
185	1988	BP3	11778	1	18.236111	9	14	19.775	+10	08	28.55
186	1988	BP3	11778	1	18.245833	9	14	19.349	+10	08	31.21
187	1988	BP3	11790	1	19.246528	9	13	34.569	+10	12	57.94
188	1988	BP3	11790	1	19.256250	9	13	34.115	+10	13	00.52
189	1988	BP3	11814	1	21.168750	9	12	6.367	+10	21	47.37
190	1988	BP3	11814	1	21.178472	9	12	5.921	+10	21	50.07
191	1988	BP3	11814	1	21.188194	9	12	5.472	+10	21	53.02
192	1988	BP3	11842	1	23.176389	9	10	31.120	+10	31	24.63
193	1988	BP3	11842	1	23.186111	9	10	30.653	+10	31	27.43
194	1988	BP3	11871	1	25.163889	9	8	54.313	+10	41	20.00
195	1988	BP3	11871	1	25.173611	9	8	53.842	+10	41	22.88
196	1988	BP3	11871	1	25.183333	9	8	53.362	+10	41	25.80
197	1988	BP3	12898	1	27.259028	9	7	9.560	+10	52	07.81
198	1988	BP3	12898	1	27.268750	9	7	9.093	+10	52	10.37
199	1988	BP3	11929	1	29.265278	9	5	27.632	+11	02	46.81
200	1988	BP3	11929	1	29.275000	9	5	27.079	+11	02	49.47

H. DEBEHOGNE, V. PROTIĆ - BENIŠEK

TABLE 1. POSITIONS.

NO	OBJECT	PLATE	DATE UT 1988		ALPHA 1950			DELTA 1950			
			MON.	DAY	H	M	S	0	'	''	
201	1988 BF3	11043	1	30.	262847	9	4	36.375	+11	08	11.00
202	1988 BF3	11778	1	18.	226389	9	14	33.874	+10	33	34.86
203	1988 BF3	11778	1	18.	236111	9	14	33.424	+10	33	38.00
204	1988 BF3	11778	1	18.	245833	9	14	32.953	+10	33	40.55
205	1988 BF3	11790	1	19.	246528	9	13	43.689	+10	38	23.92
206	1988 BF3	11790	1	19.	256250	9	13	43.219	+10	38	26.92
207	1988 BF3	11814	1	21.	168750	9	12	5.730	+10	47	56.34
208	1988 BF3	11814	1	21.	178472	9	12	5.221	+10	47	59.28
209	1988 BF3	11814	1	21.	188194	9	12	4.711	+10	48	02.00
210	1988 BF3	11842	1	23.	176389	9	10	18.381	+10	58	33.04
211	1988 BF3	11842	1	23.	186111	9	10	17.862	+10	58	36.26
212	1988 BF3	11871	1	25.	163889	9	8	27.994	+11	09	39.59
213	1988 BF3	11871	1	25.	173611	9	8	27.446	+11	09	42.84
214	1988 BF3	11871	1	25.	183333	9	8	26.901	+11	09	46.19
215	1988 BF3	12898	1	27.	259028	9	6	27.670	+11	21	54.91
216	1988 BF3	12898	1	27.	268750	9	6	27.173	+11	21	58.26
217	1988 BF3	11929	1	29.	265278	9	4	29.855	+11	34	06.55
218	1988 BF3	11929	1	29.	275000	9	4	29.283	+11	34	10.54
219	1988 BF3	11043	1	30.	262847	9	3	30.567	+11	40	20.45
220	1988 BF4	11804	1	20.	261806	9	26	49.993	+08	49	34.14
221	1988 BF4	11804	1	20.	271528	9	26	49.435	+08	49	33.31
222	1988 BF4	11804	1	20.	281250	9	26	48.893	+08	49	32.43
223	1988 BF4	11815	1	21.	202778	9	25	57.138	+08	48	27.31
224	1988 BF4	11815	1	21.	212500	9	25	56.570	+08	48	26.56
225	1988 BF4	11843	1	23.	199306	9	24	2.042	+08	46	25.43
226	1988 BF4	11843	1	23.	209028	9	24	1.454	+08	46	25.00
227	1988 BF4	11872	1	25.	195139	9	22	3.741	+08	44	49.47
228	1988 BF4	11872	1	25.	204861	9	22	3.140	+08	44	49.13
229	1988 BF4	11872	1	25.	214583	9	22	2.537	+08	44	48.75
230	1988 BF4	11886	1	26.	272917	9	20	58.505	+08	44	08.88
231	1988 BF4	11886	1	26.	282639	9	20	57.938	+08	44	08.56
232	1988 BF4	11915	1	28.	287500	9	18	55.123	+08	43	10.20
233	1988 BF4	11915	1	28.	297222	9	18	54.504	+08	43	09.84
234	1988 BF4	11944	1	30.	284028	9	16	51.057	+08	42	34.26
235	1988 BF4	11944	1	30.	293750	9	16	50.413	+08	42	34.06
236	1988 BF4	11804	1	20.	261806	9	26	12.410	+09	44	52.69
237	1988 BF4	11804	1	20.	271528	9	26	12.012	+09	44	55.92
238	1988 BF4	11804	1	20.	281250	9	26	11.619	+09	44	59.03
239	1988 BF4	11815	1	21.	202778	9	25	34.297	+09	50	33.88
240	1988 BF4	11815	1	21.	212500	9	25	33.893	+09	50	37.36
241	1988 BF4	11804	1	20.	261806	9	30	29.725	+09	39	30.38
242	1988 BF4	11804	1	20.	271528	9	30	29.356	+09	39	31.89
243	1988 BF4	11804	1	20.	281250	9	30	28.984	+09	39	33.46
244	1988 BF4	11815	1	21.	202778	9	29	52.053	+09	42	02.92
245	1988 BF4	11815	1	21.	212500	9	29	51.645	+09	42	04.51
246	1988 BF4	11843	1	23.	199306	9	28	30.018	+09	47	40.83
247	1988 BF4	11843	1	23.	209028	9	28	29.625	+09	47	42.15
248	1988 BF4	11872	1	25.	195139	9	27	5.634	+09	53	36.50
249	1988 BF4	11872	1	25.	204861	9	27	5.226	+09	53	38.24
250	1988 BF4	11872	1	25.	214583	9	27	4.816	+09	53	40.29
251	1988 BF4	11886	1	26.	272917	9	26	19.124	+09	56	55.08
252	1988 BF4	11886	1	26.	282639	9	26	18.685	+09	56	56.81

PRECISE ASTROMETRIC POSITIONS OF 16 MINOR PLANETS  
OBTAINED BY GPO TELESCOPE OF ESO - LA SILLA IN 1988

TABLE 2. STAR RESIDUALS, DEPENDENCES.

OBSERVATIONS	NO	SAO	POSITIONS USED	STAR RESIDUALS			DEPENDENCES					
				S	S	S						
1	2	3	98924	+53.655	28.91	-0.006	-0.21	-0.006	-0.21	+1.075328	+1.074819	+1.074331
			98905	+06.937	26.01	+0.011	+0.37	+0.011	+0.37	+0.098536	+0.098794	+0.099056
			98896	+25.047	31.69	-0.009	-0.41	-0.009	-0.41	-0.805938	-0.805075	-0.804229
			98933	+04.221	43.93	+0.009	+0.59	+0.009	+0.59	+0.074094	+0.073979	+0.073918
			98951	+04.000	20.34	-0.004	-0.33	-0.004	-0.33	+0.558040	+0.557482	+0.556924
4	5	6	98951	+04.000	20.34	-0.021	+0.52	-0.028	+0.12	+0.751068	+0.750629	+0.750275
			98931	+27.814	16.55	+0.028	-0.54	+0.036	-0.03	-0.214628	-0.214526	-0.214448
			98896	+25.047	31.69	-0.024	+0.28	-0.031	-0.14	-0.525849	-0.525305	-0.524835
			98915	+47.328	48.97	+0.008	+0.59	+0.006	+0.62	+0.333605	+0.333613	+0.333613
			98924	+53.655	28.91	+0.010	-0.85	+0.017	-0.57	+0.655804	+0.655588	+0.655397
7	8	9	98931	+27.814	16.55	+0.066	-0.52	+0.066	-0.52	-0.289323	-0.284849	-0.284379
			98951	+04.000	20.34	-0.053	+0.31	-0.053	+0.31	+0.464202	+0.463121	+0.462109
			98924	+53.655	28.91	+0.040	-0.40	+0.040	-0.40	+0.668180	+0.667866	+0.667545
			98896	+25.047	31.69	-0.053	+0.39	-0.053	+0.39	-0.316483	-0.315041	-0.313679
10	11		98933	+13.499	53.02	-0.001	+0.22	-0.001	+0.22	+0.469425	+0.468903	+0.468404
			98931	+27.814	16.55	+0.045	-0.40	+0.045	-0.40	-0.353551	-0.352872	
			98951	+04.000	20.34	-0.017	+0.42	-0.017	+0.42	+0.600361	+0.599103	
			98924	+53.655	28.91	+0.043	-0.59	+0.043	-0.59	+0.678723	+0.678181	
			98923	+43.691	46.29	-0.061	-0.06	-0.061	-0.06	+0.056435	+0.056761	
			98905	+06.937	26.01	-0.010	+0.63	-0.010	+0.63	+0.018032	+0.018827	
12	13	14	98931	+27.814	16.55	+0.015	-0.14	+0.015	-0.14	+0.021589	+0.021305	+0.021043
			98896	+25.047	31.69	+0.008	+0.08	+0.008	+0.08	-0.145658	-0.144728	-0.143903
			98821	+05.587	53.37	-0.016	-0.03	-0.016	-0.03	+0.048607	+0.049333	+0.050045
			98933	+13.499	53.02	-0.035	+0.24	-0.035	+0.24	+0.453732	+0.453002	+0.452278
15	16	17	98924	+53.655	28.91	+0.028	-0.15	+0.028	-0.15	+0.621730	+0.621138	+0.620536
			98462	+07.601	57.19	+0.006	+0.56	+0.006	+0.56	+0.201853	+0.202331	+0.202831
			117536	+11.751	03.82	+0.004	-0.28	+0.004	-0.28	+0.049204	+0.049742	+0.050262
			117685	+31.100	25.90	-0.015	-0.16	-0.015	-0.16	+0.077734	+0.077649	+0.077118
			117614	+42.088	07.21	+0.015	+0.29	+0.015	+0.29	+0.269174	+0.268514	+0.267845
			98487	+10.619	44.22	-0.011	-0.41	-0.011	-0.41	+0.402036	+0.401963	+0.401944
18	19		117570	+01.739	33.51	-0.004	-0.51	-0.004	-0.51	+0.113478	+0.113861	
			117614	+34.751	01.31	+0.004	+0.12	+0.004	+0.12	+0.043767	+0.043238	
			117614	+42.088	07.21	-0.002	+0.27	-0.002	+0.27	+0.134593	+0.133991	
			98487	+10.619	44.22	-0.001	-0.40	-0.001	-0.40	+0.381546	+0.381503	
20	21	22	98462	+07.601	57.19	+0.003	+0.51	+0.003	+0.51	+0.326616	+0.327407	
			98492	+33.021	31.76	-0.046	+0.55	-0.046	+0.55	+0.092708	+0.092464	+0.092208
			98487	+10.619	44.22	+0.028	-0.71	+0.028	-0.71	+0.464972	+0.463897	+0.462821
			98462	+07.601	57.19	+0.024	+0.48	+0.024	+0.48	+0.455189	+0.454701	+0.454222
			98440	+41.942	46.98	-0.037	-0.06	-0.037	-0.06	+0.277162	+0.277552	+0.277954
			98457	+32.640	23.46	+0.032	-0.26	+0.032	-0.26	-0.290031	-0.288614	-0.287206
			98476	+08.659	41.63	-0.012	+0.53	-0.012	+0.53	+0.276206	+0.275340	
			98451	+58.134	16.88	+0.011	+0.50	+0.011	+0.50	-0.169110	-0.167892	
			98437	+14.246	33.01	+0.001	-0.04	+0.001	-0.04	+0.023396	+0.024382	
			98440	+41.942	46.98	-0.016	-0.63	-0.016	-0.63	+0.280712	+0.280790	
			98462	+07.601	57.19	+0.016	+0.69	+0.016	+0.69	+0.588795	+0.587380	
25	26	27	98408	+34.626	47.32	+0.018	-0.07	+0.018	-0.07	-0.009740	-0.008595	-0.007439
			98438	+19.743	52.46	-0.038	+0.09	-0.038	+0.09	+0.075519	+0.075377	+0.075254
			98451	+58.134	16.88	+0.021	-0.01	+0.021	-0.01	+0.161104	+0.160297	+0.159509
			98440	+41.942	46.98	-0.008	+0.06	-0.008	+0.06	+0.370045	+0.370583	+0.371087
			98462	+07.601	57.19	+0.007	-0.07	+0.007	-0.07	+0.403072	+0.402338	+0.401588

TABLE 2. STAR RESIDUALS. DEPENDENCES.

OBSERVATIONS	NO. SAC	POSITIONS USED	STAR RESIDUALS			DEPENDENCES
			S	S	S	
28	29	98790	+27.661	+0.001	+0.36	+0.127964
		98400	+03.331	-0.021	-0.37	+0.097674
		98438	+19.743	+0.019	+0.19	+0.170690
		98462	+07.601	+0.029	+0.10	+0.331762
30	31	98440	+41.942	-0.031	-0.28	+0.271910
		98438	+19.743	+0.008	-0.03	+0.213117
		98437	+14.246	-0.012	-0.13	+0.464396
		98390	+27.661	+0.008	-0.31	+0.224713
32		98403	+06.574	+0.005	+0.64	+0.185986
		98382	+29.134	-0.010	-0.17	-0.088212
		98438	+19.743	-0.002	+0.04	-0.003876
		98427	+14.246	-0.003	-0.02	+0.488792
33	35	98403	+06.574	-0.003	+0.10	+0.342640
		98400	+03.331	+0.019	-0.15	+0.155768
		98382	+29.134	-0.011	+0.04	+0.016676
		117614	+42.088	+0.000	+0.18	+0.335076
36	37	98487	+10.619	-0.018	-0.43	-0.114896
		98538	+31.151	+0.002	-0.20	+0.643334
		98509	+47.495	-0.015	+0.17	+0.161444
		98494	+42.400	+0.032	+0.28	-0.024957
38	39	117614	+42.088	-0.001	-0.04	+0.746014
		98487	+10.619	-0.004	-0.22	+0.120346
		98460	+07.601	+0.004	+0.22	-0.254267
		98509	+47.495	+0.008	+0.51	+0.302775
40	42	98491	+16.876	-0.007	-0.46	+0.085132
		98476	+08.659	-0.001	-0.32	+0.039111
		98451	+58.134	+0.004	+0.28	-0.471048
		98440	+41.942	-0.018	-0.32	+0.145754
43	44	98460	+07.601	+0.025	+0.30	+0.493421
		98498	+55.807	-0.010	+0.06	+0.792762
		98438	+19.743	-0.018	-0.07	-0.429185
		98451	+58.134	+0.042	+0.51	-0.019103
45	47	98440	+41.942	-0.015	-0.54	+0.243627
		98460	+07.601	+0.011	+0.55	+0.654435
		98476	+08.659	-0.020	-0.45	+0.550225
		98390	+27.661	+0.001	+0.36	-0.138368
48	49	98400	+03.331	+0.021	-0.37	-0.117471
		98438	+19.743	-0.019	+0.19	+0.238102
		98460	+07.601	+0.029	+0.10	+0.644132
		98440	+41.942	-0.031	-0.28	+0.373606
49		98604	+08.547	-0.041	+0.68	-0.094704
		117741	+25.448	-0.039	-0.07	-0.117143
		117750	+13.193	+0.047	-0.29	+0.230343
		98633	+11.751	+0.001	+0.57	+0.682107
49		98621	+20.171	-0.043	-0.90	+0.299396
		98633	+11.751	+0.016	-0.04	+0.694114
		117750	+13.193	-0.037	-0.16	+0.244587
		117741	+25.448	+0.023	+0.30	-0.081601
49		117710	+17.841	-0.001	-0.27	-0.156474
		98579	+46.457	+0.000	+0.18	+0.299375
		98579	+46.457	+0.000	+0.18	+0.300307
		98579	+46.457	+0.000	+0.18	+0.300307



PRECISE ASTROMETRIC POSITIONS OF 16 MINOR PLANETS  
OBTAINED BY GPO TELESCOPE OF ESO - LA SILLA IN 1988

TABLE 2. STAR RESIDUALS. DEPENDENCES.

OBSERVATIONS	NO. SAC	POSITIONS USED	S	S	STAR RESIDUALS	DEPENDENCES
50	51	117750	+13.193	34.42	+0.033 +0.07 +0.033 +0.07	+0.211132 +0.210472
		117741	+25.448	44.87	-0.017 +0.22 -0.017 +0.22	+0.012895 +0.012379
		117684	+17.958	57.88	-0.010 -0.45 -0.010 -0.45	-0.082776 -0.081916
		98579	+46.457	08.03	+0.022 +0.66 +0.022 +0.66	+0.325642 +0.326250
		98621	+20.171	33.03	-0.028 -0.51 -0.028 -0.51	+0.533106 +0.532815
52	53	98604	+08.547	-02.41	+0.019 +0.01 +0.019 +0.01	+0.700445 +0.699226
	54	98562	+53.408	28.63	-0.020 -0.00 -0.020 -0.00	+0.347508 +0.348064
		117662	+52.766	44.20	+0.031 +0.04 +0.031 +0.04	-0.158528 -0.157473
		117702	+28.655	15.88	-0.029 -0.12 -0.029 -0.12	+0.054670 +0.054639
		117710	+17.040	32.33	-0.002 +0.07 -0.002 +0.07	+0.055986 +0.055544
55	56	117662	+52.766	44.20	+0.014 +0.39 +0.014 +0.39	+0.012488 +0.013379
		117702	+28.655	15.88	-0.006 -0.31 -0.006 -0.31	+0.139504 +0.139351
		98604	+08.547	-02.41	-0.031 -0.23 -0.031 -0.23	+0.380877 +0.379689
		98588	+25.751	10.13	+0.050 +0.57 +0.050 +0.57	+0.326397 +0.325906
		98553	+50.763	21.00	-0.028 -0.42 -0.028 -0.42	+0.140733 +0.141675
57	58	117720	+53.164	32.79	-0.021 +0.02 -0.021 +0.02	+0.129148 +0.128380
		117702	+28.655	15.88	+0.008 +0.03 +0.008 +0.03	+0.042131 +0.042112
		117675	+28.672	43.01	+0.017 -0.07 +0.017 -0.07	+0.103310 +0.104023
		98538	+31.151	25.25	-0.014 +0.04 -0.014 +0.04	+0.279848 +0.281066
		98588	+25.751	10.13	+0.010 -0.02 +0.010 -0.02	+0.445563 +0.444420
59	60	117684	+17.950	57.88	-0.019 +0.32 -0.019 +0.32	+0.078320 +0.077570
		117662	+52.766	44.20	+0.005 -0.25 +0.005 -0.25	+0.160151 +0.159963
		117614	+42.088	07.21	+0.038 -0.40 +0.038 -0.40	-0.032641 -0.031145
		98562	+53.407	28.63	+0.037 -0.40 +0.037 -0.40	+0.512722 +0.511664
		98576	+44.935	45.00	-0.061 +0.74 -0.061 +0.74	+0.281448 +0.281947
61	62	98924	+53.655	28.91	-0.006 -0.21 -0.006 -0.21	-0.312439 -0.3113440
	63	98965	+06.937	26.01	+0.011 +0.37 +0.011 +0.37	-0.132617 -0.132699
		98966	+25.047	31.69	-0.009 -0.41 -0.009 -0.41	+0.043948 +0.045102
		98933	+04.221	43.93	+0.009 +0.59 +0.009 +0.59	+0.481998 +0.482165
		98951	+04.000	20.34	-0.004 -0.33 -0.004 -0.33	+0.719039 +0.718639
64	65	98951	+04.000	20.34	-0.021 +0.52 -0.021 +0.52	+0.637554 +0.637078
	66	98931	+27.814	16.55	+0.028 -0.54 +0.028 -0.54	+0.451435 +0.451757
		98996	+25.047	31.69	-0.024 +0.28 -0.024 +0.28	-0.050717 -0.050203
		98915	+47.328	48.97	+0.008 +0.59 +0.008 +0.59	-0.074344 -0.074416
		98924	+53.655	28.91	+0.010 -0.85 +0.010 -0.85	+0.036072 +0.035785
67	68	98896	+25.047	31.69	-0.019 +0.15 -0.019 +0.15	-0.091437 -0.090227
	69	98935	+13.499	53.02	+0.054 -0.24 +0.054 -0.24	-0.027670 -0.029130
		98923	+43.691	46.29	-0.021 +0.01 -0.021 +0.01	+0.000831 +0.000613
		98931	+27.814	16.55	+0.030 -0.16 +0.030 -0.16	+0.663046 +0.664641
		98951	+04.000	20.34	-0.044 +0.25 -0.044 +0.25	+0.455231 +0.454103
70	71	98931	+27.814	16.55	+0.045 -0.40 +0.045 -0.40	+0.740427 +0.741606
		98951	+04.000	20.34	-0.017 +0.42 -0.017 +0.42	+0.219031 +0.217629
		98924	+53.655	28.91	+0.043 -0.59 +0.043 -0.59	-0.291510 -0.292497
		98923	+43.691	46.29	-0.061 -0.06 -0.061 -0.06	+0.260014 +0.260427
72	73	98900	+06.937	26.01	-0.010 +0.63 -0.010 +0.63	+0.072039 +0.072836
	74	98893	+49.636	18.09	+0.018 +0.48 +0.018 +0.48	+0.462861 +0.463981
		98931	+27.814	16.55	-0.016 -0.47 -0.016 -0.47	+0.599797 +0.599653
		98880	+58.991	59.48	-0.012 -0.24 -0.012 -0.24	-0.014090 -0.013441
		98681	+05.587	53.37	+0.001 -0.04 +0.001 -0.04	-0.235695 -0.235699
		98935	+13.499	53.02	+0.009 +0.28 +0.009 +0.28	+0.187127 +0.185506
						+0.465006
						+0.599447
						-0.012784
						-0.235628
						+0.183959

TABLE 2. STAP RESIDUALS. DEPENDENCES.

OBSERVATIONS	NO SAC	POSITIONS USED	STAP RESIDUALS			DEPENDENCES				
		S	S	S	S					
75	76	98885 +59.880	-0.009	-0.20	-0.009	-0.20	+0.387440	+0.387805		
		98876 +45.765	-0.019	+0.78	-0.019	+0.78	+0.060753	+0.061483		
		98879 +48.571	+0.012	-0.36	+0.012	-0.36	-0.595078	-0.594888		
		98897 +49.636	+0.023	-0.47	+0.023	-0.47	+0.648083	+0.648235		
		98927 +43.691	-0.008	+0.25	-0.008	+0.25	+0.498801	+0.497365		
77	78	79	98924 +53.655	-0.006	-0.21	-0.006	-0.21	-0.160849	-0.161682	-0.162484
			98905 +06.937	+0.011	+0.37	+0.011	+0.37	+0.100921	+0.101093	+0.101256
			98896 +25.047	-0.009	-0.41	-0.009	-0.41	+0.418010	+0.419072	+0.420092
			98933 +04.221	+0.009	+0.59	+0.009	+0.59	+0.342381	+0.342452	+0.342523
80	81	82	98951 +04.000	-0.004	-0.33	-0.004	-0.33	+0.299537	+0.299064	+0.298613
			98896 +25.047	-0.019	+0.15	-0.019	+0.15	+0.403674	+0.404693	+0.405705
			98935 +13.499	+0.054	-0.24	+0.054	-0.24	-0.026547	-0.027460	-0.028373
			98927 +43.691	-0.021	+0.01	-0.021	+0.01	+0.171697	+0.171651	+0.171602
			98931 +27.814	+0.030	-0.16	+0.030	-0.16	+0.440336	+0.441215	+0.442100
			98951 +04.000	-0.044	+0.25	-0.044	+0.25	+0.010840	+0.009900	+0.008966
83	84	85	98897 +49.636	+0.018	+0.48	+0.018	+0.48	+0.310903	+0.311651	+0.312344
			98971 +27.814	-0.016	-0.47	-0.016	-0.47	+0.259635	+0.259319	+0.259030
			98887 +58.991	-0.012	-0.24	-0.012	-0.24	+0.201867	+0.202487	+0.203058
			98881 +25.587	+0.001	-0.04	+0.001	-0.04	+0.125507	+0.125725	+0.125922
			98935 +13.499	+0.009	+0.28	+0.009	+0.28	+0.102088	+0.100819	+0.099646
86	87		98885 +59.880	+0.007	-0.37	+0.007	-0.37	+0.489082	+0.489132	
			98876 +45.765	+0.013	+0.60	+0.013	+0.60	+0.299377	+0.299954	
			98879 +48.571	+0.042	+0.28	+0.042	+0.28	-0.035046	-0.035290	
			98857 +00.755	-0.035	-0.41	-0.035	-0.41	-0.118805	-0.117825	
			98890 +25.047	-0.027	-0.10	-0.027	-0.10	+0.365391	+0.364029	
			98885 +50.080	-0.017	+0.21	-0.017	+0.21	+0.506288	+0.506335	
			98878 +45.765	+0.046	-0.07	+0.046	-0.07	+0.377708	+0.377860	
			98880 +58.991	-0.040	-0.35	-0.040	-0.35	+0.158396	+0.157525	
			98852 +41.876	+0.028	+0.30	+0.028	+0.30	-0.075335	-0.075991	
			98827 +43.618	-0.017	-0.09	-0.017	-0.09	+0.032943	+0.034271	
90	91		98891 +32.247	-0.014	+0.11	-0.014	+0.11	+0.355065	+0.355396	
			98897 +49.636	+0.037	+0.15	+0.037	+0.15	+0.235255	+0.234986	
			98880 +58.991	-0.057	-0.76	-0.057	-0.76	+0.046205	+0.045362	
			98852 +41.876	+0.043	+0.73	+0.043	+0.73	+0.043885	+0.043400	
			98827 +43.618	-0.010	-0.23	-0.010	-0.23	+0.319590	+0.320857	
92	93		98878 +45.765	+0.030	-0.02	+0.030	-0.02	+0.469295	+0.468502	
			98849 +04.534	-0.028	+0.10	-0.028	+0.10	+0.365532	+0.365764	
			98806 +07.888	+0.033	-0.09	+0.033	-0.09	+0.038991	+0.039714	
			98808 +16.062	-0.000	+0.15	-0.000	+0.15	-0.020198	-0.020174	
			98827 +43.618	-0.035	-0.14	-0.035	-0.14	+0.146380	+0.146194	
94	95		98849 +04.534	-0.012	+0.26	-0.012	+0.26	+0.657667	+0.657238	
			98825 +40.229	+0.005	-0.35	+0.005	-0.35	+0.412478	+0.411317	
			98808 +16.062	+0.024	+0.07	+0.024	+0.07	+0.080792	+0.080385	
			98794 +07.890	-0.042	+0.38	-0.042	+0.38	-0.113212	-0.112610	
			98806 +07.888	+0.026	-0.36	+0.026	-0.36	-0.037724	-0.036330	
96	97	98	98924 +53.655	-0.006	-0.21	-0.006	-0.21	+0.488368	+0.487196	+0.486000
			98905 +06.937	+0.011	+0.37	+0.011	+0.37	+0.400935	+0.401156	+0.401371
			98896 +25.047	-0.009	-0.41	-0.009	-0.41	+0.195733	+0.197199	+0.198680
			98937 +04.221	+0.009	+0.59	+0.009	+0.59	+0.008059	+0.008173	+0.008296
			98951 +04.000	-0.004	-0.33	-0.004	-0.33	-0.093095	-0.093724	-0.094347



TABLE 2. STAR RESIDUALS. DEPENDENCES.

OBSERVATIONS	NO SAO	POSITIONS USED	STAR RESIDUALS			DEPENDENCES				
			S	V	S					
123	124	11757C	+01.735	33.51	-0.004	-0.51	-0.004	-0.51	+0.471605	+0.472320
		11761C	+24.751	01.31	+0.004	+0.12	+0.004	+0.12	+0.202385	+0.201807
125	126	117614	+42.008	07.21	-0.002	+0.27	-0.002	+0.27	+0.049104	+0.048280
		98487	+10.619	44.22	-0.001	-0.40	-0.001	-0.40	-0.065510	-0.065844
		98462	+07.601	57.19	+0.003	+0.51	+0.003	+0.51	+0.342416	+0.343437
		11753C	+01.477	-01.38	+0.007	-0.34	+0.007	-0.34	+0.046671	+0.047119
		117576	+20.370	18.42	+0.004	+0.50	+0.004	+0.50	+0.097119	+0.096607
		11758F	+21.100	25.90	-0.013	+0.00	-0.013	+0.00	+0.042062	+0.041010
		117536	+21.751	03.82	-0.009	+0.21	-0.009	+0.21	+0.460338	+0.461751
		98495	+49.196	07.27	+0.011	-0.37	+0.011	-0.37	+0.353809	+0.353513
127	128	11758F	+21.109	25.90	+0.008	-0.05	+0.008	-0.05	+0.283364	+0.282246
		117536	+21.751	03.82	+0.007	-0.29	+0.007	-0.29	+0.608344	+0.608721
		117503	+28.174	32.00	-0.024	+0.61	-0.024	+0.61	+0.354904	+0.355760
		117522	+25.573	59.85	+0.050	-0.94	+0.050	-0.94	-0.089423	-0.089180
129	130	11754F	+09.782	08.83	-0.041	+0.68	-0.041	+0.68	-0.157189	-0.157547
		11753C	+01.477	-01.38	+0.041	+0.04	+0.041	+0.04	+0.110811	+0.110739
		117503	+28.174	32.00	-0.028	+0.11	-0.028	+0.11	+0.263153	+0.264019
		11757C	+01.735	33.51	-0.032	-0.17	-0.032	-0.17	+0.001040	-0.000485
		9844C	+41.942	46.98	-0.013	-0.27	-0.013	-0.27	+0.381074	+0.382073
		98462	+07.601	57.19	+0.032	+0.29	+0.032	+0.29	+0.243921	+0.243654
		11753C	+01.477	-01.38	-0.028	-0.20	-0.028	-0.20	-0.026953	-0.027573
		98431	+55.769	33.59	+0.053	+0.46	+0.053	+0.46	+0.250955	+0.251279
131	132	98411	+40.996	08.06	-0.003	-0.06	-0.003	-0.06	+0.335357	+0.336909
		117536	+31.751	03.82	+0.038	+0.24	+0.038	+0.24	+0.135048	+0.133971
		9844C	+41.942	46.98	-0.060	-0.43	-0.060	-0.43	+0.305593	+0.305414
		117503	+28.174	32.00	-0.035	-0.24	-0.035	-0.24	-0.109310	-0.110502
		11746C	+02.416	03.25	+0.031	+0.08	+0.031	+0.08	+0.276410	+0.277492
		98431	+55.769	33.59	+0.055	+0.52	+0.055	+0.52	+0.142656	+0.142138
		9844C	+41.942	46.98	-0.010	-0.18	-0.010	-0.18	+0.256473	+0.255777
		98401	+04.550	15.11	-0.040	-0.18	-0.040	-0.18	+0.433772	+0.435095
133	134	117446	+00.157	07.84	-0.018	+0.06	-0.018	+0.06	-0.049588	
		117482	+45.894	52.58	-0.001	-0.27	-0.001	-0.27	-0.101873	
		117433	+28.850	23.57	+0.016	-0.07	+0.016	-0.07	+0.298439	
		98404	+07.455	40.69	-0.025	-0.33	-0.025	-0.33	+0.557804	
		98411	+40.996	08.06	+0.027	+0.61	+0.027	+0.61	+0.295219	
		98462	+07.601	57.19	+0.006	+0.56	+0.006	+0.56	-0.108600	-0.108054
		117536	+21.751	03.82	+0.004	-0.28	+0.004	-0.28	-0.060532	-0.059600
		11758F	+21.109	25.90	-0.015	-0.16	-0.015	-0.16	+0.452694	+0.452620
135	137	117614	+42.008	07.21	+0.015	+0.29	+0.015	+0.29	+0.584656	+0.583754
		98487	+10.619	44.22	-0.011	-0.41	-0.011	-0.41	+0.131782	+0.131280
		11757C	+01.735	33.51	-0.004	-0.51	-0.004	-0.51	+0.238659	+0.239587
		117612	+34.751	01.31	+0.004	+0.12	+0.004	+0.12	+0.386762	+0.386288
		117614	+42.008	07.21	-0.002	+0.27	-0.002	+0.27	+0.314587	+0.313720
		98487	+10.619	44.22	-0.001	-0.40	-0.001	-0.40	+0.045941	+0.045335
		98462	+07.601	57.19	+0.003	+0.51	+0.003	+0.51	+0.014050	+0.015070
		11753C	+01.477	-01.38	+0.007	-0.34	+0.007	-0.34	-0.088053	-0.087318
141	142	117576	+20.370	18.42	+0.004	+0.50	+0.004	+0.50	+0.273701	+0.273303
		11758F	+21.109	25.90	-0.013	+0.00	-0.013	+0.00	+0.401007	+0.400102
		117536	+21.751	03.82	-0.009	+0.21	-0.009	+0.21	-0.025397	-0.024259
		98495	+49.196	07.27	+0.011	-0.37	+0.011	-0.37	+0.438741	+0.438172

PRECISE ASTROMETRIC POSITIONS OF 16 MINOR PLANETS  
OBTAINED BY GPO TELESCOPE OF ESO - LA SILLA IN 1988

TABLE 2. STAR RESIDUALS. DEPENDENCES.

OBSERVATIONS	NO. SAO POSITIONS USED	STAR RESIDUALS		DEPENDENCES	
		S	S		
143 144	117585	+31.109	25.90	+0.008 -0.05 +0.008 -0.05	+0.659789 +0.658518
	117536	+31.751	03.82	+0.007 -0.29 +0.007 -0.29	+0.412165 +0.412353
145 146	117503	+28.174	32.00	-0.024 +0.61 -0.024 +0.61	+0.032120 +0.032971
	117522	+25.573	59.85	+0.050 -0.94 +0.050 -0.94	-0.128146 -0.127720
	117545	+09.782	08.83	-0.041 +0.64 -0.041 +0.64	+0.024073 +0.023878
	117530	+01.477	-01.38	+0.041 +0.04 +0.041 +0.04	+0.232203 +0.232345
	117503	+28.174	32.00	-0.028 +0.11 -0.028 +0.11	+0.047729 +0.048726
	117570	+01.735	33.51	-0.032 -0.17 -0.032 -0.17	+0.488518 +0.486999
147 148	98440	+41.942	46.98	-0.013 -0.27 -0.013 -0.27	-0.000713 +0.000146
	98462	+07.601	57.19	+0.032 +0.29 +0.032 +0.29	+0.232263 +0.231785
	117530	+01.477	-01.38	-0.028 -0.20 -0.028 -0.20	+0.380310 +0.380036
	98431	+55.769	33.59	+0.053 +0.46 +0.053 +0.46	+0.135204 +0.135522
149 150	98411	+40.996	08.06	-0.003 -0.06 -0.003 -0.06	-0.062629 -0.060833
	117536	+31.751	03.82	+0.038 +0.24 +0.038 +0.24	+0.369650 +0.368329
	98440	+41.942	46.98	-0.060 -0.43 -0.060 -0.43	+0.177465 +0.176947
	117507	+28.174	32.00	-0.035 -0.24 -0.035 -0.24	+0.574322 +0.573667
151	117460	+02.416	03.25	+0.031 +0.08 +0.031 +0.08	+0.108923 +0.110226
	98431	+55.769	33.59	+0.055 +0.52 +0.055 +0.52	+0.268872 +0.268320
	98440	+41.942	46.98	-0.010 -0.18 -0.010 -0.18	+0.130041 +0.128837
	98401	+04.550	15.11	-0.040 -0.18 -0.040 -0.18	-0.082159 -0.081051
152 153 154	117446	+30.157	07.84	-0.018 +0.06 -0.018 +0.06	+0.006644
	117482	+45.894	52.58	-0.001 -0.27 -0.001 -0.27	+0.533865
	117423	+28.850	23.57	+0.016 -0.07 +0.016 -0.07	-0.160052
	98404	+07.455	40.69	-0.025 -0.33 -0.025 -0.33	+0.263649
155 156	98411	+40.996	08.06	+0.027 +0.61 +0.027 +0.61	+0.355894
	117614	+42.088	07.21	+0.000 +0.18 +0.000 +0.18	-0.206414 -0.205687
	98487	+10.619	44.22	-0.018 -0.43 -0.018 -0.43	-0.032740 -0.031353
	98538	+31.151	25.25	+0.002 -0.20 +0.002 -0.20	+0.560365 +0.558350
157 158 159	98509	+47.495	55.89	-0.015 +0.17 -0.015 +0.17	+0.486344 +0.485922
	98494	+42.400	53.09	+0.032 +0.28 +0.032 +0.28	+0.192445 +0.193138
	117614	+42.088	07.21	-0.001 -0.04 -0.001 -0.04	+0.126423 +0.125166
	98487	+10.619	44.22	-0.004 -0.22 -0.004 -0.22	+0.245263 +0.245420
160 161	98462	+07.601	57.19	+0.004 +0.22 +0.004 +0.22	-0.241368 -0.239937
	98509	+47.495	55.89	+0.008 +0.51 +0.008 +0.51	+0.528147 +0.527648
	98491	+16.876	40.45	-0.007 -0.46 -0.007 -0.46	+0.341535 +0.341703
	98492	+33.021	31.76	-0.046 +0.55 -0.046 +0.55	+0.498939 +0.498619
162 163 164	98487	+10.619	44.22	+0.028 -0.71 +0.028 -0.71	+0.435554 +0.434044
	98462	+07.601	57.19	+0.024 +0.48 +0.024 +0.48	+0.109476 +0.108771
	98440	+41.942	46.98	-0.037 -0.06 -0.037 -0.06	-0.139505 -0.138981
	98457	+32.040	23.46	+0.032 -0.26 +0.032 -0.26	+0.095536 +0.097547
166 167 168	98476	+08.659	41.63	-0.012 -0.53 -0.012 -0.53	+0.635635 +0.634442
	98451	+58.134	16.88	+0.011 +0.50 +0.011 +0.50	+0.139187 +0.140826
	98437	+14.246	33.01	+0.001 -0.04 +0.001 -0.04	-0.106916 -0.105571
	98440	+41.942	46.98	-0.016 -0.63 -0.016 -0.63	-0.023569 -0.023449
169 170 171	98462	+07.601	57.19	+0.016 +0.69 +0.016 +0.69	+0.355663 +0.353752
	98438	+19.743	52.46	-0.018 -0.07 -0.018 -0.07	+0.256849 +0.258465
	98451	+58.134	16.88	+0.042 +0.51 +0.042 +0.51	+0.256947 +0.257373
	98440	+41.942	46.98	-0.015 -0.54 -0.015 -0.54	+0.032903 +0.033393
172 173 174	98462	+07.601	57.19	+0.011 +0.55 +0.011 +0.55	+0.109654 +0.108668
	98476	+08.659	41.63	-0.020 -0.45 -0.020 -0.45	+0.343647 +0.342100
	98451	+58.134	16.88	+0.011 +0.55 +0.011 +0.55	+0.107687
	98440	+41.942	46.98	-0.020 -0.45 -0.020 -0.45	+0.340550

TABLE 2. STAP RESIDUALS. DEPENDENCES.

OBSERVATIONS	NO SAC	POSITIONS USED	STAP RESIDUALS			DEPENDENCES			
			S	S	S				
165	166	9839C	+27.661	+0.001	+0.36	+0.001	+0.36	-0.164897	-0.163939
		9840C	+03.331	+0.021	-0.37	+0.021	-0.37	+0.282481	+0.283261
		9843E	+19.743	-0.019	+0.19	-0.019	+0.19	+0.698740	+0.698504
		98462	+07.601	+0.029	+0.10	+0.029	+0.10	+0.223894	+0.222764
		9844C	+41.942	-0.031	-0.28	-0.031	-0.28	-0.040218	-0.040590
		98438	+19.743	+0.008	-0.03	+0.008	-0.03	+0.587892	+0.586958
		98437	+14.246	-0.012	-0.13	-0.012	-0.13	+0.052247	+0.051047
		9839C	+27.661	+0.008	-0.31	+0.008	-0.31	-0.104950	-0.104419
		98403	+06.574	+0.005	+0.64	+0.005	+0.64	+0.087912	+0.088241
		98382	+29.134	-0.010	-0.17	-0.010	-0.17	+0.376898	+0.378172
169		9843C	+19.743	-0.002	+0.04	-0.002	+0.04	+0.484073	
		98437	+14.246	-0.003	-0.02	-0.003	-0.02	-0.132783	
		98403	+06.574	-0.003	+0.10	-0.003	+0.10	+0.009708	
		98400	+03.331	+0.019	-0.15	+0.019	-0.15	+0.242613	
		98382	+29.134	-0.011	+0.04	-0.011	+0.04	+0.396389	
		117566	+50.399	+0.034	-0.24	+0.034	-0.24	+0.466730	+0.470573
		117578	+27.476	-0.031	+0.20	-0.031	+0.20	+0.352358	+0.353294
		117588	+50.015	+0.007	-0.03	+0.007	-0.03	+0.011708	+0.006561
		117585	+21.109	+0.005	-0.06	+0.005	-0.06	-0.111199	-0.113996
		117572	+07.113	-0.015	+0.14	-0.015	+0.14	+0.280402	+0.283568
175	174	117578	+27.476	-0.018	-0.00	+0.018	-0.00	+0.385759	+0.384586
		117545	+09.782	-0.021	+0.04	-0.021	+0.04	+0.393392	+0.393923
		11753C	+01.477	-0.012	-0.08	+0.012	-0.08	+0.156943	+0.158903
		117576	+20.37C	+0.001	+0.21	-0.001	+0.21	+0.022688	+0.022493
		117585	+21.109	-0.008	-0.16	-0.008	-0.16	+0.041218	+0.040095
		117585	+21.109	-0.008	-0.05	+0.008	-0.05	+0.051040	+0.049359
		117536	+21.751	+0.007	-0.29	+0.007	-0.29	-0.075145	-0.075058
		117503	+28.174	-0.024	+0.61	-0.024	+0.61	+0.150959	+0.152005
		117522	+25.573	+0.05C	-0.94	+0.050	-0.94	+0.434622	+0.435285
		117545	+09.782	-0.041	+0.68	-0.041	+0.68	+0.438524	+0.438409
177	178	117486	+19.61C	+0.024	+0.45	+0.024	+0.45	+0.457733	+0.459237
		117522	+25.573	-0.039	-0.85	-0.039	-0.85	+0.376666	+0.375371
		11753C	+01.477	+0.031	+0.74	+0.031	+0.74	+0.140681	+0.138520
		117503	+28.174	-0.006	-0.25	-0.006	-0.25	-0.077023	-0.077201
		117482	+45.894	-0.009	-0.10	-0.009	-0.10	+0.101943	+0.104072
		117453	+03.538	+0.005	+0.30	+0.005	+0.30	+0.611241	+0.612639
		117522	+25.573	-0.027	-0.68	-0.027	-0.68	+0.334452	+0.333798
		11753C	+01.477	+0.032	+0.57	+0.032	+0.57	+0.141142	+0.140184
		98431	+05.769	-0.013	+0.25	-0.013	+0.25	-0.110956	-0.111281
		98411	+40.996	+0.003	-0.45	+0.003	-0.45	+0.024121	+0.024660
181	182	117483	+03.538	-0.023	+0.08	-0.023	+0.08	+0.574105	+0.574978
		117446	+20.157	+0.015	+0.19	+0.015	+0.19	+0.450161	+0.451154
		117522	+25.573	-0.020	-0.42	+0.020	-0.42	+0.214448	+0.213352
		117503	+28.174	-0.026	+0.65	-0.026	+0.65	-0.138763	-0.139725
		117460	+02.416	+0.014	-0.49	+0.014	-0.49	-0.099952	-0.099759
		117415	+58.959	+0.016	+0.32	+0.016	+0.32	+0.555120	
		117453	+03.538	-0.007	-0.55	-0.007	-0.55	+0.324980	
		117446	+20.157	-0.027	+0.02	-0.027	+0.02	+0.210363	
		117482	+45.894	+0.015	+0.31	+0.015	+0.31	-0.027567	
		117437	+28.850	+0.004	-0.10	+0.004	-0.10	-0.062895	

PRECISE ASTROMETRIC POSITIONS OF 16 MINOR PLANETS  
OBTAINED BY GPO TELESCOPE OF ESO - LA SILLA IN 1988.

TABLE 2. STAR RESIDUALS. DEPENDENCES.

OBSERVATIONS	NO	SAC	POSITIONS USED	STAR RESIDUALS	DEPENDENCES
184	185	186	9846201 +07.601 57.19	+0.006 +0.56 +0.006 +0.56	+0.283587 +0.284230 +0.284883
			117536 +31.751 03.82	+0.004 -0.28 +0.004 -0.28	+0.331048 +0.331795 +0.332533
			117585 +31.109 25.90	-0.015 -0.16 -0.015 -0.16	+0.179488 +0.179123 +0.178737
			117614 +42.088 07.21	+0.015 +0.29 +0.015 +0.29	+0.067437 +0.066540 +0.065638
			98487 +10.619 44.22	-0.011 -0.41 -0.011 -0.41	+0.138440 +0.138313 +0.138209
187	188		117570 +01.735 33.51	-0.004 -0.51 -0.004 -0.51	+0.479328 +0.479987
			117612 +34.751 01.31	+0.004 +0.12 +0.004 +0.12	-0.006716 -0.007345
			117614 +42.088 07.21	-0.002 +0.27 -0.002 +0.27	-0.107855 -0.108684
			98487 +10.619 44.22	-0.001 -0.40 -0.001 -0.40	+0.057395 +0.057146
			98462 +07.601 57.19	+0.003 +0.51 +0.003 +0.51	+0.577848 +0.578896
189	190	191	98492 +33.021 31.76	-0.046 +0.55 -0.046 +0.55	-0.151081 -0.151386 -0.151669
			98487 +10.619 44.22	+0.028 -0.71 +0.028 -0.71	+0.246773 +0.245407 +0.244003
			98462 +07.601 57.19	+0.024 +0.48 +0.024 +0.48	+0.512383 +0.511758 +0.511091
			98440 +41.942 46.98	-0.037 -0.06 -0.037 -0.06	+0.557371 +0.557861 +0.558334
			98457 +32.640 23.46	+0.032 -0.26 +0.032 -0.26	-0.165445 -0.163640 -0.161758
192	193		98476 +08.659 41.63	-0.012 -0.53 -0.012 -0.53	-0.166080 -0.167181
			98451 +58.134 16.88	+0.011 +0.50 +0.011 +0.50	+0.042009 +0.043497
			98437 +14.246 33.01	+0.001 -0.04 +0.001 -0.04	+0.386217 +0.387451
			98440 +41.942 46.98	-0.016 -0.63 -0.016 -0.63	+0.457764 +0.457883
			98462 +07.601 57.19	+0.016 +0.69 +0.016 +0.69	+0.280089 +0.278349
194	195	196	98408 +34.626 47.32	+0.018 -0.07 +0.018 -0.07	+0.528626 +0.530048 +0.531500
			98438 +19.743 52.46	-0.038 +0.09 -0.038 +0.09	-0.144024 -0.144200 -0.144384
			98451 +58.134 16.88	+0.021 -0.01 +0.021 -0.01	-0.407355 -0.408357 -0.409384
			98446 +41.942 46.98	-0.008 +0.06 -0.008 +0.06	+0.894821 +0.895487 +0.896175
			98462 +07.601 57.19	+0.007 -0.07 +0.007 -0.07	+0.127933 +0.127021 +0.126093
197	198		98390 +27.661 32.05	+0.001 +0.36 +0.001 +0.36	+0.623435 +0.624259
			98400 +03.331 06.51	+0.021 -0.37 +0.021 -0.37	+0.266893 +0.267498
			98438 +19.743 52.46	-0.019 +0.19 -0.019 +0.19	-0.203586 -0.203860
			98462 +07.601 57.19	+0.029 +0.10 +0.029 +0.10	-0.001898 -0.002799
			98440 +41.942 46.98	-0.031 -0.28 -0.031 -0.28	+0.315156 +0.314903
			98390 +27.661 32.05	-0.000 -0.34 -0.000 -0.34	+0.320720 +0.319569
			98403 +06.574 43.07	-0.016 +0.47 -0.016 +0.47	+0.233211 +0.231771
			98382 +29.134 03.56	+0.014 -0.22 +0.014 -0.22	-0.036625 -0.036288
			98372 +28.647 35.56	+0.018 -0.10 +0.018 -0.10	+0.350897 +0.351146
			98354 +44.023 29.79	-0.016 +0.19 -0.016 +0.19	+0.131798 +0.133802
201			98403 +06.574 43.07	-0.019 +0.39	+0.203827
			98400 +03.331 06.51	+0.006 -0.24	+0.056455
			98382 +29.134 03.56	-0.010 -0.08	-0.029456
			98354 +44.023 29.79	-0.014 +0.20	+0.300223
202	203	204	98372 +28.647 35.56	+0.017 -0.27	+0.468950
			98462 +07.601 57.19	+0.006 +0.56	+0.347296 +0.347999 +0.348702
			117536 +31.751 03.82	+0.004 -0.28	+0.201025 +0.201786 +0.202624
			117585 +31.109 25.90	-0.015 -0.16	-0.018352 -0.018796 -0.019176
			117614 +42.088 07.21	+0.015 +0.29	+0.074265 +0.073309 +0.072319
			98487 +10.619 44.22	-0.011 -0.41	+0.395767 +0.395701 +0.395532
205	206		117570 +01.735 33.51	-0.004 -0.51	+0.249564 +0.250201
			117612 +34.751 01.31	+0.004 +0.12	-0.112860 -0.113534
			117614 +42.088 07.21	-0.002 +0.27	-0.056203 -0.057053
			98487 +10.619 44.22	-0.001 -0.40	+0.346943 +0.346745
			98462 +07.601 57.19	+0.003 +0.51	+0.572556 +0.573642

TABLE 2. STAP RESIDUALS. DEPENDENCES.

OBSERVATIONS	NO SAO	POSITIONS USED	STAP RESIDUALS			DEPENDENCES				
			S	S	S					
207	208	209	31.76	+0.046	+0.55	-0.046	+0.55	+0.004226	+0.003866	+0.003480
			44.22	+0.028	-0.71	+0.028	-0.71	+0.045118	+0.043580	+0.042066
			57.19	+0.024	+0.48	+0.024	+0.48	+0.258890	+0.258200	+0.257546
			46.98	-0.037	-0.06	-0.037	-0.06	+0.422420	+0.422989	+0.423581
			23.46	+0.032	-0.26	+0.032	-0.26	+0.269347	+0.271365	+0.273326
210	211		41.63	-0.012	-0.53	-0.012	-0.53	-0.122406	-0.123623	
			16.88	+0.011	+0.50	+0.011	+0.50	+0.370951	+0.372625	
			33.01	+0.001	-0.04	+0.001	-0.04	+0.470328	+0.471701	
			46.98	-0.016	-0.63	-0.016	-0.63	+0.323362	+0.323484	
			57.19	+0.016	+0.69	+0.016	+0.69	-0.042235	-0.044187	
			47.32	+0.018	-0.07	+0.018	-0.07	+0.610053	+0.611707	+0.613354
212	213	214	52.46	-0.038	+0.09	-0.038	+0.09	-0.007903	-0.008120	-0.008325
			16.88	+0.021	-0.01	+0.021	-0.01	-0.283414	-0.284592	-0.285752
			46.98	-0.008	+0.06	-0.008	+0.06	+0.672252	+0.673047	+0.673820
			57.19	+0.007	-0.07	+0.007	-0.07	+0.009012	+0.007958	+0.006903
			32.05	+0.001	+0.36	+0.001	+0.36	+0.555100	+0.556030	
215	216		06.51	-0.021	-0.37	-0.021	-0.37	+0.418152	+0.418881	
			52.46	-0.019	+0.19	-0.019	+0.19	+0.036114	+0.035854	
			57.19	+0.029	+0.10	+0.029	+0.10	-0.142895	-0.143962	
			46.98	-0.031	-0.28	-0.031	-0.28	+0.133530	+0.133197	
			32.05	-0.000	-0.34	-0.000	-0.34	+0.059246	+0.057948	
			43.07	-0.016	+0.47	-0.016	+0.47	+0.081719	+0.080232	
217	218		03.56	+0.014	-0.22	+0.014	-0.22	+0.340028	+0.340642	
			35.56	+0.018	-0.10	+0.018	-0.10	+0.142579	+0.143655	
			29.79	-0.016	+0.19	-0.016	+0.19	+0.375428	+0.377524	
			43.07	-0.019	+0.30	-0.019	+0.30	-0.131199	-0.131199	
219			06.51	+0.006	-0.24	+0.006	-0.24	+0.015513	+0.015513	
			03.56	+0.010	-0.08	+0.010	-0.08	+0.390490	+0.390490	
			29.79	-0.014	+0.20	-0.014	+0.20	+0.604731	+0.604731	
			35.56	+0.017	-0.27	+0.017	-0.27	+0.120465	+0.120465	
			57.88	+0.027	+0.62	+0.027	+0.62	+0.429312	+0.430184	+0.431039
220	221	222	47.01	-0.021	-0.52	-0.021	-0.52	-0.026528	-0.025708	-0.024917
			-02.41	+0.001	+0.15	+0.001	+0.15	-0.202903	-0.203407	-0.203910
			44.87	-0.032	-0.59	-0.032	-0.59	+0.552749	+0.558351	+0.557977
			34.42	+0.024	+0.35	+0.024	+0.35	+0.241369	+0.240579	+0.239812
			33.23	+0.016	-0.04	+0.016	-0.04	-0.331388	-0.332517	
			34.42	-0.037	-0.16	-0.037	-0.16	+0.166878	+0.166226	
			44.87	+0.023	+0.30	+0.023	+0.30	+0.527496	+0.527225	
			32.33	-0.001	-0.27	-0.001	-0.27	+0.579085	+0.580058	
			08.03	+0.000	+0.18	+0.000	+0.18	+0.057929	+0.059008	
			34.42	+0.033	+0.07	+0.033	+0.07	+0.044358	+0.043468	
			44.87	-0.017	+0.22	-0.017	+0.22	+0.331566	+0.330922	
			57.88	-0.010	-0.45	-0.010	-0.45	+0.750202	+0.751432	
			08.03	+0.022	+0.66	+0.022	+0.66	+0.167480	+0.168263	
			33.03	-0.028	-0.51	-0.028	-0.51	-0.293606	-0.294086	
			44.20	+0.016	-0.19	+0.016	-0.19	-0.061256	-0.059848	-0.058446
			15.88	-0.031	-0.08	-0.031	-0.08	+0.007576	+0.006591	+0.005599
			32.33	+0.019	+0.25	+0.019	+0.25	+0.116652	+0.114755	+0.112855
			42.49	+0.010	-0.58	+0.010	-0.58	+0.512401	+0.512610	+0.512827
			51.95	-0.015	+0.61	-0.015	+0.61	+0.424626	+0.425892	+0.427166



PRECISE ASTROMETRIC POSITIONS OF 16 MINOR PLANETS  
OBTAINED BY GPO TELESCOPE OF ESO - LA SILLA IN 1988

TABLE 2. STAR RESIDUALS. DEPENDENCES.

OBSERVATIONS	NO SAO	POSITIONS USED	STAR RESIDUALS			DEPENDENCES		
			S	S	S			
230 231	117666	+05.724	+0.020	-0.43	+0.020	-0.43	+0.491402	+0.490827
	117650	+03.912	-0.046	+0.43	-0.046	+0.43	+0.446787	+0.447509
	117637	+28.990	+0.039	+0.08	+0.039	+0.08	+0.250880	+0.252600
	117662	+52.706	-0.018	-0.30	-0.018	-0.30	-0.074489	-0.073911
	117702	+28.655	+0.005	+0.21	+0.005	+0.21	-0.114580	-0.117024
232 233	117612	+34.751	+0.004	+0.36	+0.004	+0.36	+0.814418	+0.816158
	117666	+05.724	-0.007	-0.41	-0.007	-0.41	+0.623871	+0.623957
	117702	+28.655	-0.003	+0.34	-0.003	+0.34	-0.216518	-0.218036
	117675	+28.672	+0.017	-0.01	+0.017	-0.01	-0.077496	-0.078051
	98538	+31.151	-0.011	-0.28	-0.011	-0.28	-0.144274	-0.144028
234 235	117585	+31.109	+0.013	+0.49	+0.013	+0.49	+0.757125	+0.758622
	117642	+41.635	+0.017	-0.63	+0.017	-0.63	+0.695955	+0.696232
	117684	+17.950	-0.022	+0.79	-0.022	+0.79	-0.098184	-0.099293
	117662	+52.706	+0.012	-0.40	+0.012	-0.40	-0.358725	-0.359651
	117614	+42.088	+0.006	-0.24	+0.006	-0.24	+0.003828	+0.004090
236 237 238	117684	+17.950	+0.027	+0.62	+0.027	+0.62	+0.031190	+0.031291
	117675	+28.672	-0.021	-0.52	-0.021	-0.52	+0.279680	+0.280546
	98604	+08.547	+0.001	+0.15	+0.001	+0.15	+0.443374	+0.443788
	117741	+25.448	-0.032	-0.59	-0.032	-0.59	+0.027132	+0.026278
	117750	+13.193	+0.024	+0.35	+0.024	+0.35	+0.218624	+0.218098
239 240	98633	+11.751	+0.016	-0.04	+0.016	-0.04	+0.136946	+0.136696
	117750	+13.193	-0.037	-0.16	-0.037	-0.16	+0.020822	+0.020232
	117741	+25.448	+0.023	+0.30	+0.023	+0.30	-0.052479	-0.053280
	117710	+17.841	-0.001	-0.27	-0.001	-0.27	+0.295573	+0.295917
	98579	+46.457	+0.000	+0.18	+0.000	+0.18	+0.599139	+0.600435
241 242 243	98604	+08.547	+0.034	+0.68	+0.034	+0.68	-0.356548	-0.354672
	117741	+25.448	-0.039	-0.07	-0.039	-0.07	+0.160988	+0.161095
	117750	+13.193	+0.047	-0.29	+0.047	-0.29	+0.418353	+0.417610
	98633	+11.751	+0.001	+0.57	+0.001	+0.57	+0.726911	+0.725151
	98621	+20.171	-0.043	-0.90	-0.043	-0.90	+0.050297	+0.050816
244 245	98633	+11.751	+0.016	-0.04	+0.016	-0.04	+0.532086	+0.531565
	117750	+13.193	-0.037	-0.16	-0.037	-0.16	+0.342705	+0.342170
	117741	+25.448	+0.023	+0.30	+0.023	+0.30	+0.198161	+0.197647
	117710	+17.841	-0.001	-0.27	-0.001	-0.27	-0.072126	-0.071610
	98579	+46.457	+0.000	+0.18	+0.000	+0.18	-0.000825	-0.000227
246 247	117750	+13.193	+0.033	+0.07	+0.033	+0.07	+0.324320	+0.323670
	117741	+25.448	-0.017	+0.22	-0.017	+0.22	+0.217889	+0.217271
	117684	+17.950	-0.010	-0.45	-0.010	-0.45	-0.071007	-0.070309
	98579	+46.457	+0.022	+0.66	+0.022	+0.66	+0.140631	+0.141305
	98621	+20.171	-0.028	-0.51	-0.028	-0.51	+0.388167	+0.388063
248 249 250	98604	+08.547	+0.019	+0.01	+0.019	+0.01	+0.745429	+0.744434
	98562	+53.408	-0.020	-0.00	-0.020	-0.00	+0.116048	+0.116846
	117662	+52.706	+0.031	+0.04	+0.031	+0.04	-0.239416	-0.238486
	117702	+28.655	-0.029	-0.12	-0.029	-0.12	+0.144394	+0.144225
	117710	+17.840	+0.002	+0.07	+0.002	+0.07	+0.233544	+0.232981
251 252	117662	+52.706	+0.014	+0.39	+0.014	+0.39	-0.009640	-0.009015
	117702	+28.655	-0.006	-0.31	-0.006	-0.31	+0.268170	+0.267813
	98604	+08.547	-0.031	-0.23	-0.031	-0.23	+0.503402	+0.502383
	98588	+25.751	+0.050	+0.57	+0.050	+0.57	+0.307618	+0.307336
	98553	+50.763	-0.028	-0.42	-0.028	-0.42	-0.069550	-0.068516

REFERENCES

Debehogne, H., 1982: *Astron. Astrophys. Suppl. Ser.* 49, 775 - 776.

Debehogne, H., R. R. de Freitas Mourao et al.: 1984, *Rev. Mex. Astron. Astrophys.*, 9, No 2, 139 - 140.

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ПРЕЦИЗНИ АСТРОМЕТРИЈСКИ ПОЛОЖАЈИ 16 МАЛИХ ПЛАНЕТА  
СНИМЉЕНИХ ГРО ТЕЛЕСКОПОМ ESO - LA SILLA 1988. ГОДИНЕ

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У току јануарске мисије 1988. године, реализоване на Европској јужној опсерваторији у Ла Сили (Чиле), H. Debehogne је посматрао 16 малих

планета и притом открио 10 нових објеката. У раду су дати 252 њихова прецизна положаја, резидуи и листа везника.