PROVISIONAL ELEMENTS OF (599) [1906 UJ].

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This asteroid was discovered by METCALF at Taunton, Mass., on April 25, 1906. This preliminary orbit was computed from three observations made at Washington, using the method given by TISSERAND in his *Leçons sur la Détermination des Orbites*.

The observations are as follows:

Date.	Washington Mean Time.	Apparent α .	Apparent δ .	Log $p\Delta$.		Red. to 1906.0	
				α	δ	α	δ
1906	h m s	h m s	° ' "			s	"
Apr. 28	11 38 40	14 40 12.29	-13 10 54.4	8.873 _n	0.839	-0.28	-3.4
May 16	10 31 12	14 21 27.83	-13 14 22.7	8.474 _n	0.840	-0.44	-2.0
29	10 9 20	14 9 43.72	-13 24 22.9	8.734	0.840	-0.57	-1.1

Provisional Elements.

Epoch: 1906, May 16.5, Berlin Mean Time.

$$\begin{aligned}
 & \quad \quad \quad \circ \quad ' \quad '' \\
 M &= 283 \quad 43 \quad 19.5 \\
 \omega &= 288 \quad 49 \quad 31.8 \\
 \Omega &= 45 \quad 32 \quad 11.8 \\
 i &= 16 \quad 23 \quad 13.5 \\
 \varphi &= 17 \quad 28 \quad 25.4 \\
 \mu &= 764'' \cdot 318 \\
 \log a &= 0.444489 \\
 m_0 &= 12.4 \quad g = 8.8
 \end{aligned}
 \left. \begin{array}{l} \\ \\ \\ \\ \end{array} \right\} 1906.0$$

Heliocentric Coordinates 1906.0

$$\begin{aligned}
 & \quad \quad \quad \circ \quad ' \quad '' \\
 x &= r [9.991013] \sin (63 \quad 10 \quad 27.3 + v) \\
 y &= r [9.917185] \sin (341 \quad 13 \quad 33.7 + v) \\
 z &= r [9.776712] \sin (317 \quad 10 \quad 55.7 + v)
 \end{aligned}$$

B 97

Ephemeris for 1906.

Berlin Mean Midnight.	Apparent α .	Apparent δ .	Log d .	Aberr. Time.
1906	h m s	° ' "		m s
Apr. 28	14 40 26.28	-13 10 49.4	0.274640	15 38
8 May 2	14 36 15.40	13 11 13.4	0.271253	15 31
6	14 32 1.55	13 11 41.7	0.268937	15 26
10	14 27 48.45	13 12 23.9	0.267691	15 23
14	14 23 39.93	13 13 29.7	0.267511	15 23
18	14 19 39.77	13 15 9.4	0.268370	15 25
22	14 15 51.69	13 17 34.1	0.270227	15 29
26	14 12 19.03	13 20 54.6	0.273020	15 35
30	14 9 4.80	13 25 21.1	0.276672	15 43
June 3	14 6 11.23	13 31 2.0	0.281103	15 52
7	14 3 40.08	13 38 3.4	0.286217	16 4
11	14 1 32.61	13 46 29.5	0.291931	16 16
15	13 59 49.79	13 56 25.3	0.298151	16 31
19	13 58 32.34	14 7 52.9	0.304800	16 46
23	13 57 40.63	14 20 54.9	0.311793	17 2
27	13 57 14.65	14 35 32.1	0.319053	17 19
July 1	13 57 14.15	14 51 44.2	0.326499	17 37
5	13 57 38.36	15 9 27.6	0.334064	17 56
9	13 58 26.70	15 28 39.7	0.341695	18 15
13	13 59 38.41	15 49 17.5	0.349344	18 34
17	14 1 12.88	16 11 17.0	0.356969	18 54
21	14 3 9.49	16 34 35.5	0.364535	19 14
25	14 5 27.39	-16 59 8.3	0.371996	19 34

The observations at Washington in 1906 give the following corrections to this ephemeris:

Corrections to the Ephemeris.

Date.	O-C		Date.	O-C		Date	O-C	
	α	δ		α	δ		α	δ
1906	s	"	1906	s	"	1906	s	"
Apr. 28	-0.03	+0.1	May 18	-0.06	-5.0	June 25	-2.26	+22.3
29	-0.04	-0.8	20	+0.12	-0.6	July 6	-4.88	+41.7
May 3	-0.21	-0.9	22	+0.09	-1.3	12	-6.53	+52.1
4	-0.27	-1.4	24	-0.10	-2.3	13	-7.08	+55.1
9	-0.30	-1.7	29	-0.03	+0.3	19	-9.00	+68.8
10	-0.35	+1.6	June 11	-0.59	+6.4	21	-9.86	+72.6
16	-0.02	+0.1	22	-1.76	+19.4			