LICK OBSERVATORY BULLETIN

NUMBER 249

SEARCH FOR ASTEROID 1911 MT (719), ALBERT

Efforts were made in February and March of the present year to locate the interesting asteroid 1911 MT (719), Albert by means of photographs made with the Crossley Reflector, but without success. Ephemerides based upon Orbits V and VI (*Lick Observatory Bulletin* No. 220) were furnished me by the Students' Observatory, Berkeley, for the purposes of the search, and there was also available the ephemeris by von Tolnay in the *Berliner Jahrbuch* for 1914. The positions given by these ephemerides differ only slightly, as shown by the following comparison for February 9.5, Berlin Mean Time:

	α	δ
Orbit V	9h 05m 6	+5° 18'
Orbit VI	9 06.6	+5 15
Tolnay	9 04.1	+5 21

Search was made throughout an area 45' wide and extending along the orbit about one degree each way from the positions given by the ephemerides; search was also made in the position given by Orbit VII. The motion of the asteroid was compensated for by means of the moving wire system in the guiding eyepiece.

The calculated magnitude for 1911 MT at the opposition of 1913 was 19.5, and the search should have shown an object of this brightness. There was, however, considerable uncertainty as to its apparent magnitude, and if as faint as magnitude 20 it would doubtless have escaped detection. Accordingly the failure to pick it up may mean only that it was considerably fainter than calculated, rather than any lack of accuracy in the computed elements.

Three very faint asteroids were found close to the computed position of 1911 MT. That three such bodies should have been found in this restricted area throws an interesting side-light on the large number of faint asteroids discoverable in long exposures with powerful reflectors. For each of these three bodies several plates had to be taken before a definite decision as to the possibility of identity with MT could be made by Dr. Haynes, after correcting the earlier orbits. Orbits for all three objects were computed by Messrs. Haynes, Kiess, and Pitman, and are given below. Time was not available, however, to follow the bodies further with the Crossley, and their recovery in the near future seems unlikely. The positions of these faint asteroids are given herewith as a matter of record:

ASTEROID A. ESTIMATED MAGNITUDE 18.

Plate	Exposure	G.M.T. of mid-exposure	App. α	App. δ
2734	1h 40m	1913, Feb. 5d 20h 13m 00s	9h 08m 45s.2	+5° 10' 54"
2735	1 40	5 22 11 00	9 08 41.2	+5 11 16
2736	1 40	9 19 12 00	9 05 47.0	+5 30 01
2737	1 40	9 21 03 00	9 05 43.5	+5 30 25
2738	1 20	10 20 15 00	9 05 0.4	+5 35 15

ASTEROID B. ESTIMATED MAGNITUDE 19.5

Plate	Exposure	G.M.T. of mid-exposure	App. α	App. δ
2739	1h 50m	1913, Feb. 10d 22h 11m 00s	9h 02m 39s.2	+5° 30' 25"
2740	2 16	11 19 29 00	9 01 58.3	+5 35 09
2741	2 20	11 21 55 00	9 01 53.5	+5 35 42
2742	2 20	12 20 48 00	9 01 10.0	+5 40 51

ASTEROID C. ESTIMATED MAGNITUDE 18

Plate	Exposure	G.M.T. of mid-exposure			App. α			App. δ		
2739	1 ^h 50 ^m	1913, Feb.	10 ^d 22 ^h 11 ^m 00 ^s		9 ^h 02 ^m 32 ^s .2			+5° 38' 34"		
2740	2 16		11 19 29 00		9 01 45.2			+5 44 10		
2741	2 20		11 21 55 00		9 01 39.8			+5 44 50		
2742	2 20		12 20 48 00		9 00 49.7			+5 51 00		

March 25, 1913.

HEBER D. CURTIS.

ELEMENTS OF THREE ASTEROIDS DISCOVERED IN THE SEARCH FOR 1911 MT (719), ALBERT

The following elements have been derived from the observations given above of the three asteroids discovered by Dr. H. D. Curtis in his search for the asteroid 1911 MT (719), Albert. The details of the

investigations which have led to the identification of these asteroids as new objects will be printed at a later date in connection with the investigations on the orbit of Asteroid (719), Albert.

ASTEROID A		ASTEROID B		ASTEROID C	
Epoch, 1913 Gr.M.T. = Feb. 9.7875		Feb. 11.9050		Feb. 11.9071	
$M = 299^{\circ} 2' 22''$		30 14 57		330 37 06	
$\Omega = 192 44 49$	} 1913.0	216 23 00	} 1913.0	200 10 34	} 1913.0
$\omega = 25 31 00$		226 10 49		349 09 21	
$i = 9 00 30$		6 33 46		6 21 01	
$\log e = 9.24300$		9.49733		9.42622	
$\mu = 581''0$		647''8		868''74	
$\log a = 0.52930$		0.49236		0.40742	
Computers: C. C. Kiess, J. H. Pitman.		E. S. Haynes, J. H. Pitman.		C. C. Kiess, J. H. Pitman.	

BERKELEY ASTRONOMICAL DEPARTMENT,
April 2, 1913.

E. S. HAYNES.

Issued December 17, 1913.