

REVISED ORBITAL ELEMENTS OF BINARY STAR ADS 13777

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SUMMARY: This paper presents the orbital elements of the visual binary star ADS 13777. The present orbit is a revision of the orbit which do not fit well the recent observations. For the considered the dynamical parallax, the mass, the absolute magnitudes, the measures, the (O–C) and the ephemerides are given.

The orbital elements of the binary star ADS 13777 have been computed by using the Thiele-Innes methods. The dynamical parallax was computed by use of the Baize and Romani method (1946) with magnitudes and spectral types taken from the Lick Index Catalogue of Visual Double Stars, 1961.0 (1963). The orbital elements with the dynamical par-

allax, the total mass, the absolute magnitudes and the major axe are given in Table I, the ephemerides in Table II, the measures and the comparasion with the measures in Table III.

The orbits by Costa-Morales (1975), P. Couteau (1986) and A. Tokovinin (1987) do not fit well the recent observations as evident from data next exposed.

t	Costa-Morales		P. Couteau		A. Tokovinin	
	(O–C) _P	(O–C) _ρ	(O–C) _P	(O–C) _ρ	(O–C) _P	(O–C) _ρ
1987.75	+22° 5	–0" 05	+12° 6	–0" 05	–3° 6	+0" 01
1990.52	+32° 2	–0" 04	+23° 6	–0" 05	–5° 6	+0" 02

Table I

Orbital elements

P = 142.18	$\pi_{\text{dyn}} = 0''.0045$	A = $-0''.1867$
n = $2^{\circ}532$	a = 46.0 (AU)	B = $+0''.0283$
T = 1977.61	$m_{\text{AB}} = 4.8 \odot$	F = $-0''.0767$
e = 0.485	$M_{\text{A}} = 1.5 \text{ abs.mag.}$	G = $-0''.1533$
a = $0''.207$	$M_{\text{B}} = 1.7 \text{ abs.mag.}$	C = $+0''.0855$
i = $44^{\circ}25$	$T_{\Omega} = 2081.00$	H = $-0''.1164$
$\Omega = 19^{\circ}1$		
$\omega = 143^{\circ}7$		

Table II

Ephemerides

t	P	ρ	t	P	ρ	t	P	ρ
1992.0	243 $^{\circ}$ 9	0''13	1996.0	259 $^{\circ}$ 1	0''14	2000.0	272 $^{\circ}$ 8	0''14
1993.0	247 $^{\circ}$ 8	0''13	1997.0	262 $^{\circ}$ 6	0''14	2001.0	276 $^{\circ}$ 0	0''15
1994.0	251 $^{\circ}$ 6	0''13	1998.0	266 $^{\circ}$ 1	0''14	2002.0	279 $^{\circ}$ 1	0''15
1995.0	255 $^{\circ}$ 4	0''14	1999.0	269 $^{\circ}$ 5	0''14	2003.0	282 $^{\circ}$ 1	0''15

Table III

Observations and residuals

t	P	ρ	mag.	n	Obs	(O-C)P	(O-C) ρ
1901.39	351 $^{\circ}$ 6	0''26	8.2-8.4	3	A	+4 $^{\circ}$ 8	-0''01
1915.69	359 $^{\circ}$ 5	0''31		5	Do0 3, A 2	+0 $^{\circ}$ 4	+0''02
1924.80	5 $^{\circ}$ 0	0''27		1	A	-1 $^{\circ}$ 5	-0''02
1934.01	10 $^{\circ}$ 8	0''27		3	VBs	-3 $^{\circ}$ 7	0''00
1953.56	38 $^{\circ}$ 1	0''16		3	VBs	-0 $^{\circ}$ 2	-0''04
1954.79	41 $^{\circ}$ 9	0''18		4	VBs	+1 $^{\circ}$ 3	-0''01
1957.61	51 $^{\circ}$ 0	0''15		3	VBs	+4 $^{\circ}$ 4	-0''02
1958.60	51 $^{\circ}$ 8	0''17		2	VBs	+2 $^{\circ}$ 8	+0''01
1958.62	49 $^{\circ}$ 4	0''21		3	Bos	+0 $^{\circ}$ 3	+0''05
1962.745	64 $^{\circ}$ 7	0''14		3	Wor	+2 $^{\circ}$ 7	+0''01
1983.716	198 $^{\circ}$ 2	0''114		1	McAl	-8 $^{\circ}$ 8	0''00
1985.741	213 $^{\circ}$ 3	0''115		1	Tok	-3 $^{\circ}$ 2	-0''01
1987.754	223 $^{\circ}$ 6	0''117		1	McAl	-1 $^{\circ}$ 8	-0''01
1990.52	240 $^{\circ}$ 5	0''135		4	Cou 2, Lin 2	+3 $^{\circ}$ 3	+0''01

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REFERENCES

- Aitken, R. G.: 1932, *New General Catalogue of Double Stars*, Washington 2, 1203.
- Costa-Morales: 1975, *Cir. Inf.* № 64.
- Couteau, P.: 1986, *Publ. Obs. de Nice, Cinquième catalogue d'éphémérides d'étoiles doubles visuelles*, 91.
- Couteau, P. and Ling, J.: 1991, *Astron. Astrophys. Suppl. Series*, 88, № 3, 501.
- McAlister, H. A.: 1988, *Second Catalog of interferometric measurements of Binary Stars*. Chara contr. N 2, 113.
- Tokovinin, A. A.: 1987, *Cir. Inf.* № 102.
- Van Biesbroeck, G.: 1936, *Publ. Yerkes Obs.* 8, pt 2.
- Van Biesbroeck, G.: 1960, *Publ. Yerkes Obs.* 9, pt 2.
- Van den Bos, W. H.: 1960, *Publ. Yerkes Obs.* 9, pt 1.
- Worley, C. E.: 1967, *Publ. U. S. Naval Obs.* 18, pt 6.

ПОБОЉШАЊЕ ПУТАЊСКИХ ЕЛЕМЕНАТА ДВОЈНЕ ЗВЕЗДЕ ADS 13777

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Претходно саопштење

Користећи нова микрометарска и интерферометриска мерења за систем ADS 13777 одређени су нови путањски елементи. Такође у раду је одре-

ђена паралакса и маса за наведени систем као и друге астрофизичке величине.