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CCD photometric study of the puzzling W-UMa type binary TZ Boo

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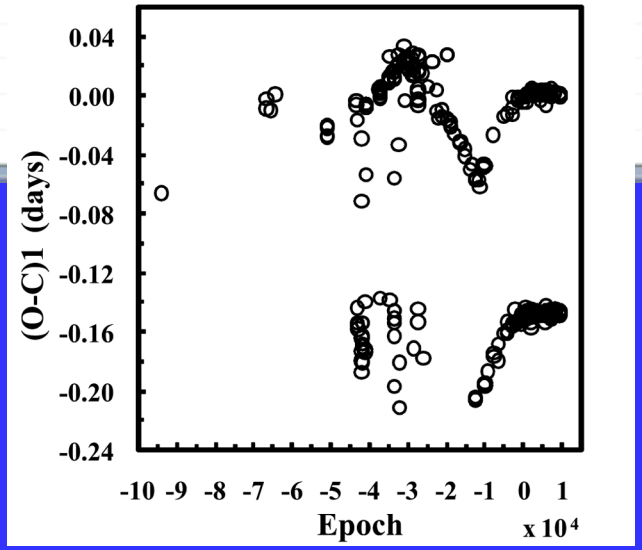
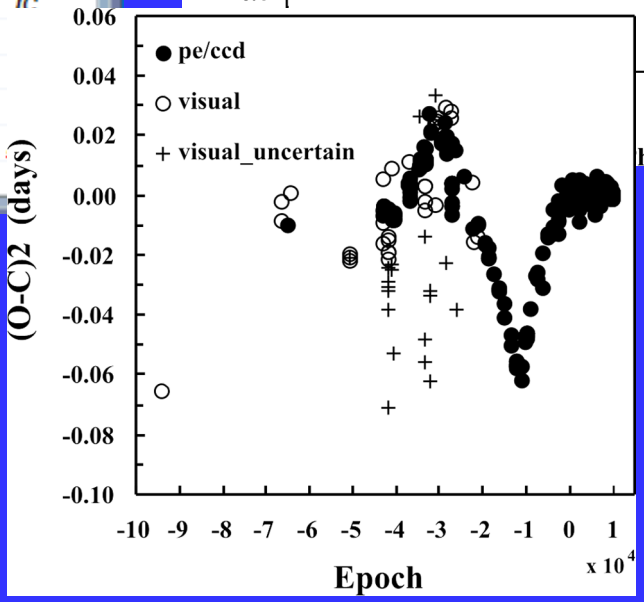
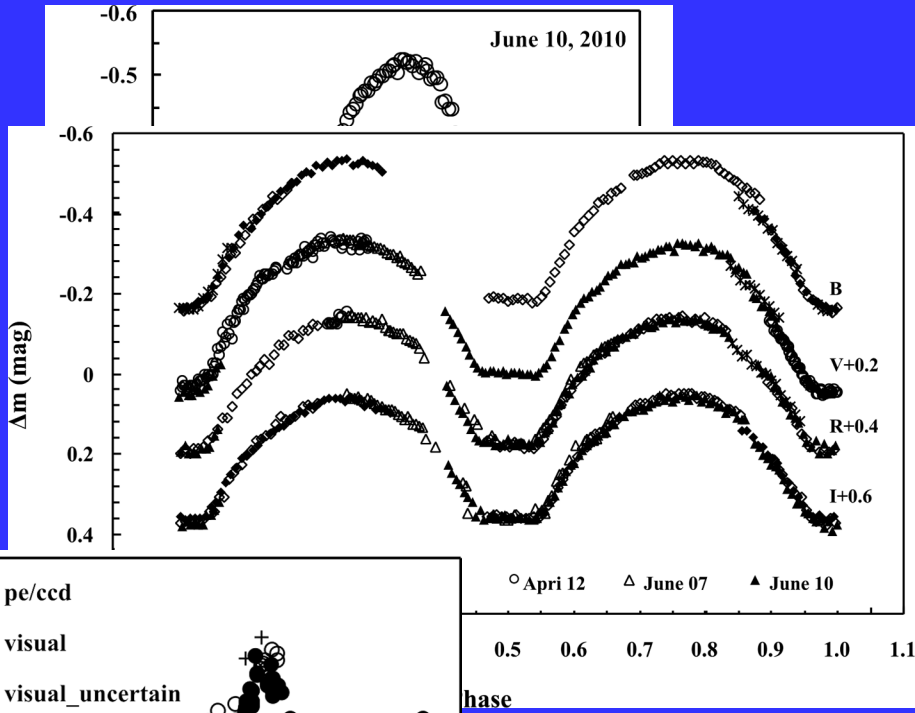
New Times of Light Minimum for TZ Boo derived from our observations

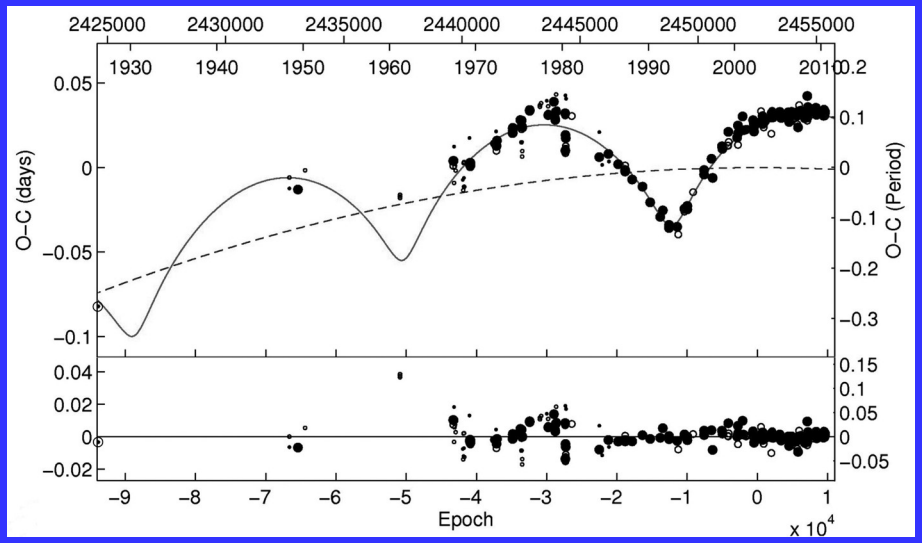
No	JD (Hel)	Min	Error	Band
1	2455299.43755	I	±0.0006	*Rc*
	2455299.43796	I	±0.0006	*V*
2	2455343.41756	I	±0.0005	*B*
	2455343.41776	I	±0.0005	*V*
	2455343.41726	I	±0.0006	*Rc*
3	2455355.45272	II	±0.0008	*V*
	2455355.45315	II	±0.0008	*Rc*
	2455355.45388	II	±0.0010	*Ic*
4	2455358.42656	II	±0.0001	*V*
	2455358.42607	II	±0.0001	*Rc*
	2455358.42609	II	±0.0001	*Ic*
5	2455358.57411	I	±0.0002	*V*
	2455358.57425	I	±0.0008	*Rc*
	2455358.57457	I	±0.0001	*Ic*
6				
7				







Kang, Y. W., Oh, K.-D., Kim, C.-H., et al. 2002, MNRAS, 331,



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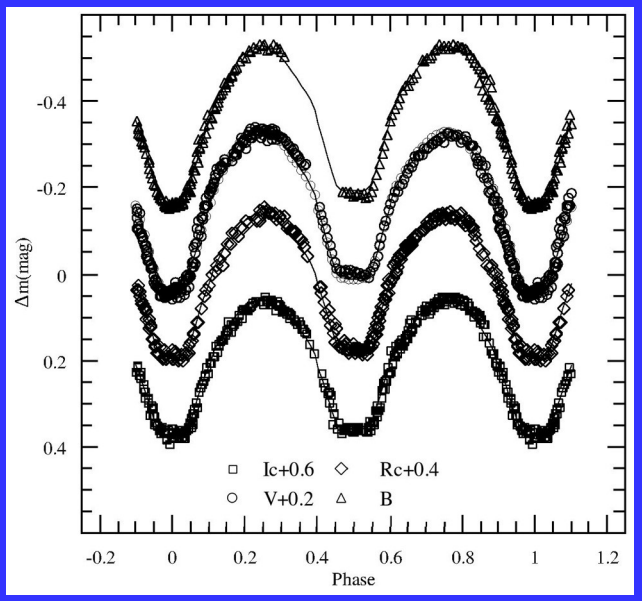
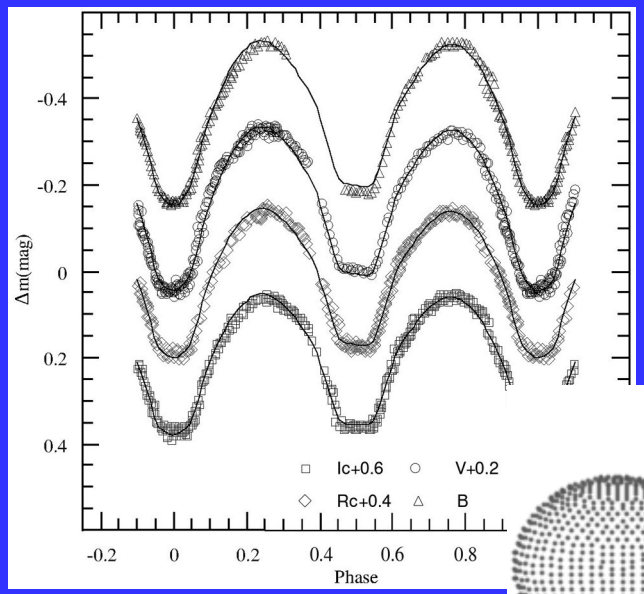
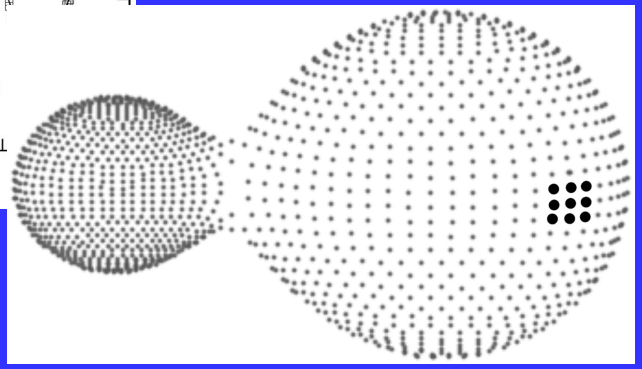
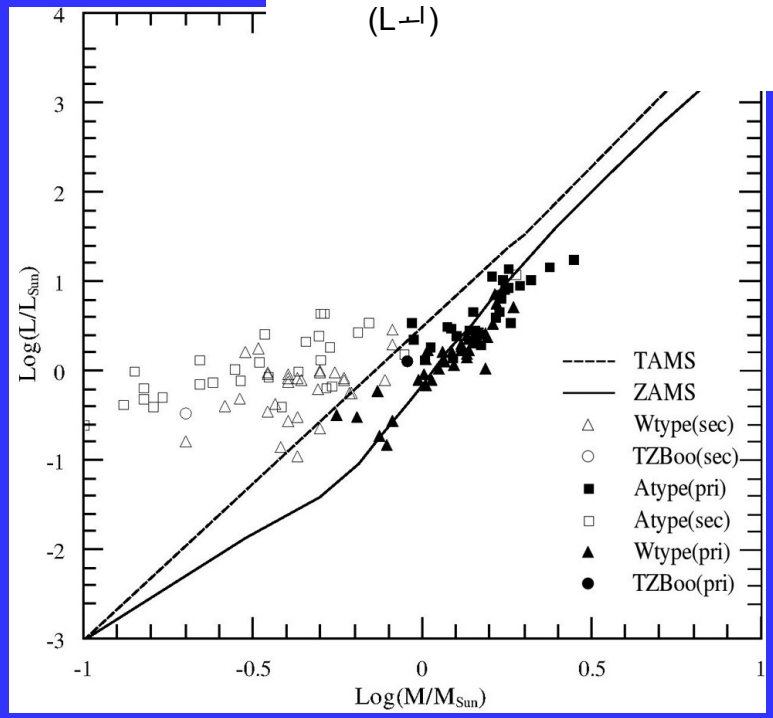






Parameters	*Value*
T_o *(HJD)*	2452500.1608 (±0.0017)
P (days)	0.29715993 (±1.6 x 10^{-7})
dP/dE (days/cycle)	-0.17 x 10^{-10}(±0.08 x 10^{-10})
$a_{12}sini_3$ *(AU)*	5.7985 (± 0.19043)
e_3	0.6344(±0.0593)
ω_3*(deg)*	274.8(±5.2)
P_3 *(yr)*	31.1
T_p *(HJD)*	2448
A (days)	0.03
$f(m_3)$ $(M_\odot)$	0.20

M1+M2 (M⊥)	1.20 (± 0.03)
M3min (M⊥)	0.98 ((±0.0005)
M1 (M⊥), M2	0.99(±0.03), 0.21 (±0.01)
(M⊥)	1.08 (±0.05), 0.56 (±0.02)
R1 (R⊥), R2	1.26(±0.12), 0.33 (±0.02)
(R⊥)	
L1 (L⊥), L2	
(L⊥)	



Parameters	Unspotted solution	Spotted solution
i(o)	84.21 (±0.36)	85.45(±0.54)
q=M2/M1	0.207 (±0.005) Pribulla et al. 2009	
g1=g2	0.32	
A1=A2	0.5	
T1(K)	5890	
T2(K)	5926 (±10)	5873(±10)
Ω1=Ω2	2.19609(±0.0020)	2.18084(±0.0018)
f(%)	40.9(±1.5)	52.5(±1.4)
L1B (%)	63.20 (±7.22)	61.79 (±7.32)
L1V (%)	67.54 (±5.90)	65.58 (±6.03)
L1R (%)	64.00 (±6.02)	62.40 (±6.07)
L1I (%)	63.30(±5.60)	61.69(±5.66)
L3B (%)	20.64(± 0.61)	22.45 (± 0.74)
L3V (%)	15.10(± 0.51)	17.65 (± 0.64)
L3R (%)	19.59(± 0.51)	21.64 (± 0.67)
L3I (%)	20.27(±0.48)	22.60 (± 0.63)
r1(pole)	0.497	0.501
r1(side)	0.545	0.550
r1(back)	0.572	0.579
r2(pole)	0.250	0.254
r2(side)	0.262	0.267
r2(back)	0.310	0.322
σB (mag)	0.011	0.012
σV (mag)	0.016	0.015
σR (mag)	0.010	0.010
σI (mag)	0.010	0.010
Colatitude(deg)	-	90.5
Longitude (deg)	-	134.6
Radius (deg)	-	9.2
Tspot/Tlocal	-	0.85

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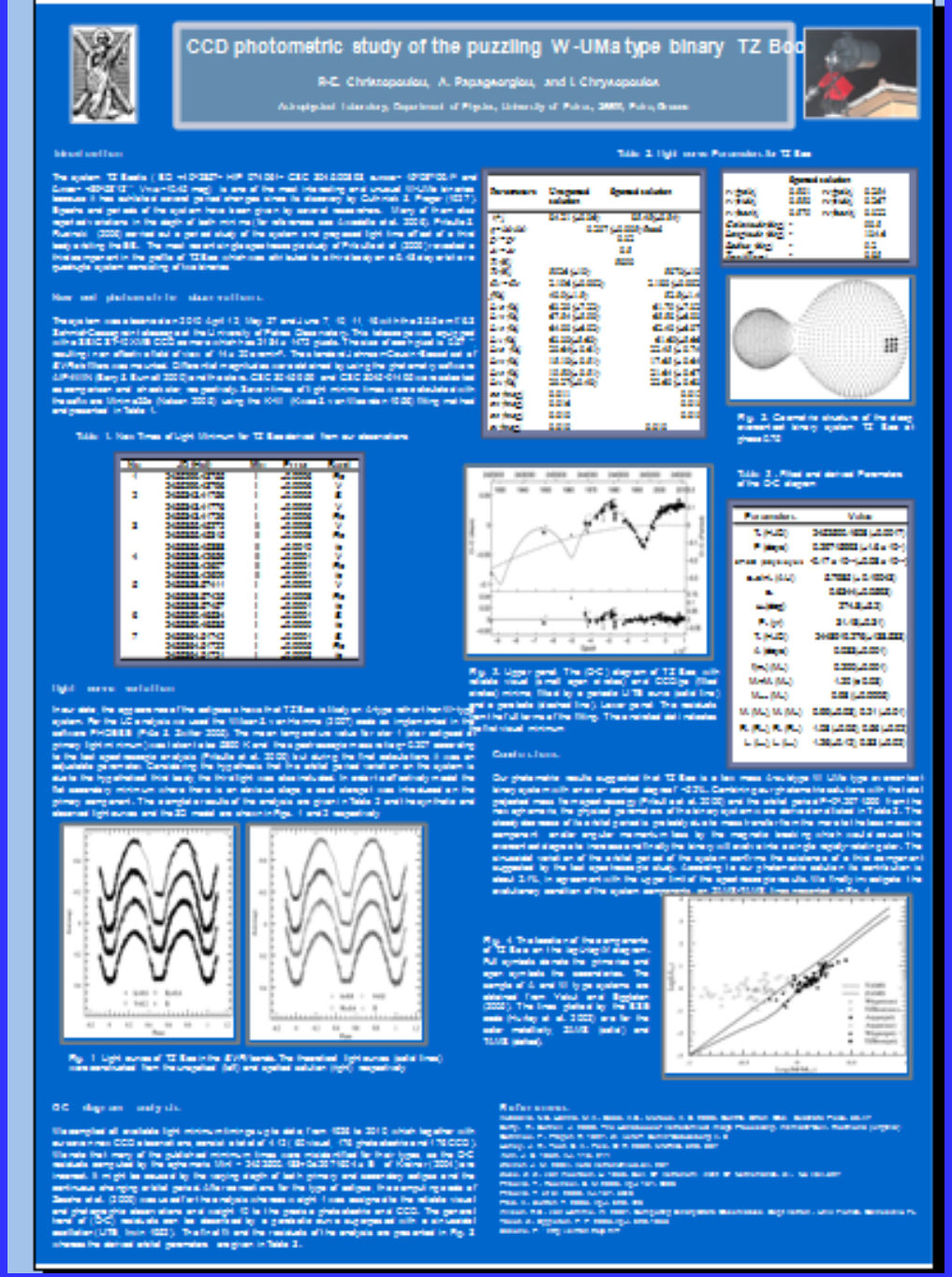

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