

Table for results of the paper by Vicuña et al.

”Joint Bayesian inference in hierarchical stellar systems using relative
astrometry and radial velocity observations”

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LHS 1070

Parameter	Estimate
$P_{B_a B_b} [yr]$	$17.296^{+0.011}_{-0.013}$
$T_{B_a B_b} [yr]$	$2040.92^{+0.41}_{-0.35}$
$e_{B_a B_b}$	$0.0139^{+0.0016}_{-0.0008}$
$a_{B_a B_b} ['']$	$0.4661^{+0.0011}_{-0.001}$
$w_{ABaBb} [^\circ]$	$200.2^{+9.0}_{-7.0}$
$\Omega_{B_a B_b} [^\circ]$	$13.55^{+0.13}_{-0.22}$
$i_{B_a B_b} [^\circ]$	$62.87^{+0.16}_{-0.14}$
$q_{B_a B_b}$	$0.98^{+0.014}_{-0.017}$
$P_{AB} [yr]$	$79.4^{+5.1}_{-2.8}$
$T_{AB} [yr]$	2057^{+15}_{-6}
e_{AB}	$0.050^{+0.019}_{-0.019}$
$a_{AB} ['']$	$1.540^{+0.068}_{-0.037}$
$w_{AB} [^\circ]$	241^{+53}_{-18}
$\Omega_{AB} [^\circ]$	$12.81^{+0.61}_{-0.46}$
$i_{AB} [^\circ]$	$62.54^{+0.79}_{-0.44}$
q_{AB}	$1.406^{+0.032}_{-0.039}$
$\phi [^\circ]$	$0.74^{+0.49}_{-0.58}$

HIP 51966

Without Hipparcos Data

<i>Parameter</i>	<i>Estimate</i>
$P_{A_{a1}A_{a2}}[yr]$	$0.466218^{+4.1e-05}_{-5.2e-05}$
$T_{A_{a1}A_{a2}}[yr]$	$2025.2011^{+0.0038}_{-0.0051}$
$e_{A_{a1}A_{a2}}$	$0.134^{+0.008}_{-0.011}$
$a_{A_{a1}A_{a2}}['']$	$0.01801^{+0.00024}_{-0.00032}$
$w_{A_{a1}A_{a2}}[^\circ]$	$296.3^{+3.4}_{-3.8}$
$\Omega_{A_{a1}A_{a2}}[^\circ]$	255^{+17}_{-21}
$i_{A_{a1}A_{a2}}[^\circ]$	115^{+14}_{-26}
$q_{A_{a1}A_{a2}}$	$0.341^{+0.059}_{-0.061}$
$m_{A_{a1}}[M_\odot]$	$0.55^{+0.12}_{-0.06}$
$m_{A_{a2}}[M_\odot]$	$0.187^{+0.036}_{-0.029}$
$L_{A_{a1}A_{a2}}$	$0.84^{+0.16}_{-0.11}$
$P_{A_aA_b}[yr]$	$8.812^{+0.027}_{-0.017}$
$T_{A_aA_b}[yr]$	$2027.375^{+0.065}_{-0.057}$
$e_{A_aA_b}$	$0.133^{+0.007}_{-0.011}$
$a_{A_aA_b}['']$	$0.1481^{+0.0012}_{-0.0025}$
$w_{A_aA_b}[^\circ]$	$262.5^{+2.3}_{-2.8}$
$\Omega_{A_aA_b}[^\circ]$	$49.65^{+0.89}_{-0.9987}$
$i_{A_aA_b}[^\circ]$	$57.63^{+0.82}_{-0.9982}$
$q_{A_aA_b}$	$0.556^{+0.021}_{-0.038}$
$m_{A_a}[M_\odot]$	$0.73^{+0.14}_{-0.08}$
$m_{A_b}[M_\odot]$	$0.408^{+0.05}_{-0.033}$
$L_{A_aA_b}$	$0.023^{+0.035}_{-0.023}$
$P_{AB}[yr]$	212^{+9}_{-11}
$T_{AB}[yr]$	$2043.2^{+1.7}_{-2.2}$
e_{AB}	$0.287^{+0.034}_{-0.013}$
$a_{AB}['']$	$1.312^{+0.027}_{-0.013}$
$w_{AB}[^\circ]$	$210.0^{+8.4}_{-5.6}$
$\Omega_{AB}[^\circ]$	$60.8^{+1.3}_{-2.2}$
$i_{AB}[^\circ]$	$50.4^{+2.2}_{-1.1}$
q_{AB}	$0.2^{+0.16}_{-0.04}$
$m_A[M_\odot]$	$1.14^{+0.18}_{-0.12}$
$m_B[M_\odot]$	$0.23^{+0.19}_{-0.05}$
$\phi_{A_{a1}A_{a2},A_aA_b}[^\circ]$	157^{+16}_{-21}
$\phi_{A_aA_b,AB}[^\circ]$	$11.6^{+1.1}_{-2.3}$
$V_0[\frac{km}{s}]$	$21.61^{+0.41}_{-0.1}$
$\pi[mas]$	$33.2^{+1.0}_{-1.7993}$

With Hipparcos Data

<i>Parameter</i>	<i>Estimate</i>
$P_{A_{a1}A_{a2}}[yr]$	$0.466225^{+3.1e-05}_{-6.3e-05}$
$T_{A_{a1}A_{a2}}[yr]$	$2025.2002^{+0.004}_{-0.0048}$
$e_{A_{a1}A_{a2}}$	$0.133^{+0.011}_{-0.007}$
$a_{A_{a1}A_{a2}}['']$	$0.01805^{+0.00023}_{-0.00032}$
$w_{A_{a1}A_{a2}}[^\circ]$	$295.7^{+3.6}_{-3.5}$
$\Omega_{A_{a1}A_{a2}}[^\circ]$	251^{+18}_{-18}
$i_{A_{a1}A_{a2}}[^\circ]$	121^{+13}_{-29}
$q_{A_{a1}A_{a2}}$	$0.309^{+0.066}_{-0.058}$
$m_{A_{a1}}[M_\odot]$	$0.81^{+0.05}_{-0.14}$
$m_{A_{a2}}[M_\odot]$	$0.251^{+0.027}_{-0.055}$
$L_{A_{a1}A_{a2}}$	$0.85^{+0.15}_{-0.16}$
$P_{A_aA_b}[yr]$	$8.844^{+0.01}_{-0.029}$
$T_{A_aA_b}[yr]$	$2027.429^{+0.044}_{-0.08}$
$e_{A_aA_b}$	$0.137^{+0.003}_{-0.015}$
$a_{A_aA_b}['']$	$0.1469^{+0.0017}_{-0.0019}$
$w_{A_aA_b}[^\circ]$	$262.7^{+2.3}_{-2.6}$
$\Omega_{A_aA_b}[^\circ]$	$49.74^{+0.95}_{-0.91}$
$i_{A_aA_b}[^\circ]$	$56.64^{+0.96}_{-0.84}$
$q_{A_aA_b}$	$0.498^{+0.031}_{-0.013}$
$m_{A_a}[M_\odot]$	$1.06^{+0.04}_{-0.16}$
$m_{A_b}[M_\odot]$	$0.53^{+0.012}_{-0.057}$
$L_{A_aA_b}$	$0.068^{+0.013}_{-0.016}$
$P_{AB}[yr]$	$211.7^{+10.0}_{-8.7}$
$T_{AB}[yr]$	$2042.4^{+2.0}_{-1.8}$
e_{AB}	$0.303^{+0.013}_{-0.029}$
$a_{AB}['']$	$1.327^{+0.016}_{-0.025}$
$w_{AB}[^\circ]$	$211.0^{+5.0}_{-7.7}$
$\Omega_{AB}[^\circ]$	$59.6^{+2.3}_{-1.1}$
$i_{AB}[^\circ]$	$51.2^{+1.0}_{-1.9}$
q_{AB}	$0.29^{+0.07}_{-0.11}$
$m_A[M_\odot]$	$1.59^{+0.04}_{-0.22}$
$m_B[M_\odot]$	$0.46^{+0.09}_{-0.19}$
$\phi_{A_{a1}A_{a2},A_aA_b}[^\circ]$	162^{+11}_{-23}
$\phi_{A_aA_b,AB}[^\circ]$	$9.7^{+2.3}_{-0.9339}$
$V_0[\frac{km}{s}]$	$21.95^{+0.15}_{-0.34}$
$\pi[mas]$	$29.4^{+1.4}_{-0.3412}$

Comparison Table

<i>Parameter</i>	<i>Estimate</i> <i>w/o</i> <i>Hipparcos</i>	<i>Interval</i> <i>Length</i>	<i>Estimate</i> <i>w/o</i> <i>Hipparcos</i>	<i>Interval</i> <i>Length</i>	<i>Absolute</i> <i>Gain</i>	<i>Relative</i> <i>Gain</i>
$PA_{a1Aa2} [yr]$	$0.466218^{+4.1e-05}_{-5.2e-05}$	$9.3e-05$	$0.466225^{+3.1e-05}_{-6.3e-05}$	$9.4e-05$	-0.0000013	-1.4%
$TA_{a1Aa2} [yr]$	$2025.2011^{+0.0038}_{-0.0031}$	0.0089	$2025.2002^{+0.004}_{-0.0048}$	0.0088	0.0001	1.1%
e_{Aa1Aa2}	$0.134^{+0.008}_{-0.011}$	0.019	$0.133^{+0.011}_{-0.007}$	0.019	0.00036	1.9%
$a_{Aa1Aa2} ['']$	$0.01801^{+0.00024}_{-0.00032}$	0.00056	$0.01805^{+0.00023}_{-0.00032}$	0.00055	0.0000081	1.4%
$w_{Aa1Aa2} [^\circ]$	$296.3^{+3.4}_{-3.8}$	7.2	$295.7^{+3.6}_{-3.5}$	7.1	0.091	1.3%
$\Omega_{Aa1Aa2} [^\circ]$	255^{+17}_{-21}	37	251^{+18}_{-18}	36	1.3	3.6%
$i_{Aa1Aa2} [^\circ]$	115^{+14}_{-26}	40	121^{+13}_{-29}	42	-1.6	-4%
q_{Aa1Aa2}	$0.341^{+0.059}_{-0.061}$	0.12	$0.309^{+0.066}_{-0.058}$	0.12	-0.0045	-3.8%
$m_{Aa1} [M_\odot]$	$0.55^{+0.12}_{-0.06}$	0.18	$0.81^{+0.05}_{-0.14}$	0.18	-0.0024	-1.3%
$m_{Aa2} [M_\odot]$	$0.187^{+0.036}_{-0.029}$	0.065	$0.251^{+0.027}_{-0.055}$	0.082	-0.017	-26%
L_{Aa1Aa2}	$0.84^{+0.16}_{-0.11}$	0.27	$0.85^{+0.15}_{-0.16}$	0.31	-0.047	-18%
$PA_{AaAb} [yr]$	$8.812^{+0.027}_{-0.017}$	0.044	$8.844^{+0.01}_{-0.029}$	0.039	0.0044	10%
$TA_{AaAb} [yr]$	$2027.375^{+0.065}_{-0.057}$	0.12	$2027.429^{+0.044}_{-0.08}$	0.12	-0.0021	-1.7%
e_{AaAb}	$0.133^{+0.007}_{-0.011}$	0.018	$0.137^{+0.003}_{-0.015}$	0.018	0.00017	0.93%
$a_{AaAb} ['']$	$0.1481^{+0.0012}_{-0.0025}$	0.0036	$0.1469^{+0.0017}_{-0.0019}$	0.0036	0.000015	0.42%
$w_{AaAb} [^\circ]$	$262.5^{+2.3}_{-2.8}$	5	$262.7^{+2.3}_{-2.6}$	5	0.088	1.7%
$\Omega_{AaAb} [^\circ]$	$49.65^{+0.89}_{-0.9987}$	1.9	$49.74^{+0.95}_{-0.91}$	1.9	0.029	1.6%
$i_{AaAb} [^\circ]$	$57.63^{+0.82}_{-0.9982}$	1.8	$56.64^{+0.96}_{-0.84}$	1.8	0.018	1%
q_{AaAb}	$0.556^{+0.021}_{-0.038}$	0.06	$0.498^{+0.031}_{-0.013}$	0.045	0.015	25%
$m_{Aa} [M_\odot]$	$0.73^{+0.14}_{-0.08}$	0.22	$1.06^{+0.04}_{-0.16}$	0.2	0.018	8.2%
$m_{Ab} [M_\odot]$	$0.408^{+0.05}_{-0.033}$	0.083	$0.53^{+0.012}_{-0.057}$	0.069	0.014	17%
L_{AaAb}	$0.023^{+0.035}_{-0.023}$	0.058	$0.068^{+0.013}_{-0.016}$	0.028	0.03	51%
$PA_{AB} [yr]$	212^{+9}_{-11}	20	$211.7^{+10.0}_{-8.7}$	19	1.6	7.9%
$TA_{AB} [yr]$	$2043.2^{+1.7}_{-2.2}$	3.9	$2042.4^{+2.0}_{-1.8}$	3.8	0.15	3.8%
e_{AB}	$0.287^{+0.034}_{-0.013}$	0.047	$0.303^{+0.013}_{-0.029}$	0.042	0.0051	11%
$a_{AB} ['']$	$1.312^{+0.027}_{-0.013}$	0.04	$1.327^{+0.016}_{-0.025}$	0.041	-0.00099	-2.5%
$w_{AB} [^\circ]$	$210.0^{+8.4}_{-5.6}$	14	$211.0^{+5.0}_{-7.7}$	13	1.4	9.9%
$\Omega_{AB} [^\circ]$	$60.8^{+1.3}_{-2.2}$	3.5	$59.6^{+2.3}_{-1.1}$	3.4	0.043	1.2%
$i_{AB} [^\circ]$	$50.4^{+2.2}_{-1.1}$	3.2	$51.2^{+1.0}_{-1.9}$	2.9	0.31	9.6%
q_{AB}	$0.2^{+0.16}_{-0.04}$	0.2	$0.29^{+0.07}_{-0.11}$	0.18	0.019	9.5%
$m_A [M_\odot]$	$1.14^{+0.18}_{-0.12}$	0.3	$1.59^{+0.04}_{-0.22}$	0.26	0.033	11%
$m_B [M_\odot]$	$0.23^{+0.19}_{-0.05}$	0.24	$0.46^{+0.09}_{-0.19}$	0.28	-0.036	-15%
$\phi_{Aa1Aa2, AaAb} [^\circ]$	157^{+16}_{-21}	36	162^{+11}_{-23}	34	2.2	6.1%
$\phi_{AaAb, AB} [^\circ]$	$11.6^{+1.1}_{-2.3}$	3.4	$9.7^{+2.3}_{-0.9339}$	3.2	0.18	5.4%
$V_0 [\frac{km}{s}]$	$21.61^{+0.41}_{-0.1}$	0.51	$21.95^{+0.15}_{-0.34}$	0.5	0.017	3.3%
$\pi [mas]$	$33.2^{+1.0}_{-1.7993}$	2.8	$29.4^{+1.4}_{-0.3412}$	1.7	1.1	39%

HIP 101955

Without Hipparcos Data

Parameter	Estimate
$P_{A_a A_b} [yr]$	$2.5079^{+0.001}_{-0.0009}$
$T_{A_a A_b} [yr]$	$2025.609^{+0.009}_{-0.012}$
$e_{A_a A_b}$	$0.5804^{+0.0092}_{-0.0063}$
$a_{A_a A_b} ['']$	$0.1216^{+0.0012}_{-0.0009}$
$w_{A_a A_b} [^\circ]$	$114.3^{+2.2}_{-4.0}$
$\Omega_{A_a A_b} [^\circ]$	$142.6^{+4.0}_{-2.3}$
$i_{A_a A_b} [^\circ]$	$17.1^{+1.0}_{-1.1378}$
$q_{A_a A_b}$	$0.855^{+0.05}_{-0.04}$
$m_{A_a} [M_\odot]$	$0.369^{+0.076}_{-0.06}$
$m_{A_b} [M_\odot]$	$0.315^{+0.064}_{-0.045}$
$L_{A_a A_b}$	$0.094^{+0.02}_{-0.019}$
$P_{AB} [yr]$	$38.877^{+0.026}_{-0.054}$
$T_{AB} [yr]$	$2054.97^{+0.14}_{-0.13}$
e_{AB}	$0.1172^{+0.0041}_{-0.003}$
$a_{AB} [''']$	$0.8538^{+0.0017}_{-0.0024}$
$w_{AB} [^\circ]$	$232.1^{+1.8}_{-1.2}$
$\Omega_{AB} [^\circ]$	$127.5^{+0.18}_{-0.09}$
$i_{AB} [^\circ]$	$87.38^{+0.11}_{-0.09}$
q_{AB}	$0.441^{+0.034}_{-0.04}$
$m_A [M_\odot]$	$0.68^{+0.14}_{-0.11}$
$m_B [M_\odot]$	$0.301^{+0.046}_{-0.042}$
$\phi [^\circ]$	$70.9^{+1.2}_{-0.9089}$
$V_* [\frac{km}{s}]$	$-40.81^{+0.11}_{-0.12}$
$\varpi [mas]$	$74.8^{+3.8}_{-4.3}$

With Hipparcos Data

Parameter	Estimate
$P_{A_a A_b} [yr]$	$2.50655^{+0.00099}_{-0.00071}$
$T_{A_a A_b} [yr]$	$2025.598^{+0.011}_{-0.009}$
$e_{A_a A_b}$	$0.5843^{+0.0051}_{-0.0094}$
$a_{A_a A_b} ["]$	$0.1224^{+0.0009}_{-0.00092}$
$w_{A_a A_b} [^\circ]$	$117.2^{+2.7}_{-3.0}$
$\Omega_{A_a A_b} [^\circ]$	$139.1^{+3.0}_{-2.6}$
$i_{A_a A_b} [^\circ]$	$15.65^{+0.48}_{-0.96}$
$q_{A_a A_b}$	$0.819^{+0.046}_{-0.037}$
$m_{A_a} [M_\odot]$	$0.547^{+0.074}_{-0.038}$
$m_{A_b} [M_\odot]$	$0.448^{+0.06}_{-0.025}$
$L_{A_a A_b}$	$0.149^{+0.026}_{-0.014}$
$P_{AB} [yr]$	$38.901^{+0.053}_{-0.027}$
$T_{AB} [yr]$	$2054.84^{+0.15}_{-0.13}$
e_{AB}	$0.1161^{+0.0037}_{-0.003}$
$a_{AB} ["]$	$0.8526^{+0.0015}_{-0.0027}$
$w_{AB} [^\circ]$	$230.6^{+1.5}_{-1.6}$
$\Omega_{AB} [^\circ]$	$127.45^{+0.13}_{-0.14}$
$i_{AB} [^\circ]$	$87.35^{+0.1}_{-0.1}$
q_{AB}	$0.403^{+0.028}_{-0.033}$
$m_A [M_\odot]$	$1.0^{+0.13}_{-0.06}$
$m_B [M_\odot]$	$0.402^{+0.045}_{-0.024}$
$\phi [^\circ]$	$72.04^{+1.0}_{-0.4808}$
$V_* [\frac{km}{s}]$	$-40.89^{+0.1}_{-0.12}$
$\varpi [mas]$	$66.4^{+1.1}_{-2.6}$

Comparison Table

Param.	Estimate w/o Hipp	IL	Estimate w/Hipp	IL	Abs. Gain	Rel. Gain
$PA_a A_b$ [yr]	$2.5079^{+0.001}_{-0.0009}$	0.0019	$2.50655^{+0.00099}_{-0.00071}$	0.0017	0.0002	11%
$TA_a A_b$ [yr]	$2025.609^{+0.009}_{-0.012}$	0.021	$2025.598^{+0.011}_{-0.009}$	0.02	0.0012	5.5%
$e A_a A_b$	$0.5804^{+0.0092}_{-0.0063}$	0.015	$0.5843^{+0.0051}_{-0.0094}$	0.014	0.00094	6.1%
$a A_a A_b$ [']	$0.1216^{+0.0012}_{-0.0009}$	0.0021	$0.1224^{+0.0009}_{-0.00092}$	0.0018	0.00026	13%
$w A_a A_b$ [°]	$114.3^{+2.2}_{-4.0}$	6.2	$117.2^{+2.7}_{-3.0}$	5.6	0.6	9.6%
$\Omega A_a A_b$ [°]	$142.6^{+4.0}_{-2.3}$	6.3	$139.1^{+3.0}_{-2.6}$	5.5	0.76	12%
$i A_a A_b$ [°]	$17.1^{+1.0}_{-1.1378}$	2.1	$15.65^{+0.48}_{-0.96}$	1.4	0.64	31%
$q A_a A_b$	$0.855^{+0.05}_{-0.04}$	0.09	$0.819^{+0.046}_{-0.037}$	0.082	0.0072	8%
$m A_a$ [$M_\odot$]	$0.369^{+0.076}_{-0.06}$	0.14	$0.547^{+0.074}_{-0.038}$	0.11	0.025	18%
$m A_b$ [$M_\odot$]	$0.315^{+0.064}_{-0.045}$	0.11	$0.448^{+0.06}_{-0.025}$	0.085	0.025	23%
$L A_a A_b$	$0.094^{+0.02}_{-0.019}$	0.039	$0.149^{+0.026}_{-0.014}$	0.04	-0.00062	-1.6%
P_{AB} [yr]	$38.877^{+0.026}_{-0.054}$	0.08	$38.901^{+0.053}_{-0.027}$	0.08	-0.000094	-0.12%
T_{AB} [yr]	$2054.97^{+0.14}_{-0.13}$	0.27	$2054.84^{+0.15}_{-0.13}$	0.29	-0.013	-4.8%
e_{AB}	$0.1172^{+0.0041}_{-0.003}$	0.007	$0.1161^{+0.0037}_{-0.003}$	0.0067	0.0003	4.3%
a_{AB} [']	$0.8538^{+0.0017}_{-0.0024}$	0.0041	$0.8526^{+0.0015}_{-0.0027}$	0.0041	-0.00004	-0.98%
w_{AB} [°]	$232.1^{+1.8}_{-1.2}$	3	$230.6^{+1.5}_{-1.6}$	3.1	-0.085	-2.8%
Ω_{AB} [°]	$127.5^{+0.18}_{-0.09}$	0.27	$127.45^{+0.13}_{-0.14}$	0.27	0.0024	0.88%
i_{AB} [°]	$87.38^{+0.11}_{-0.09}$	0.2	$87.35^{+0.1}_{-0.1}$	0.2	-0.0013	-0.67%
q_{AB}	$0.441^{+0.034}_{-0.04}$	0.075	$0.403^{+0.028}_{-0.033}$	0.061	0.014	18%
$m A$ [$M_\odot$]	$0.68^{+0.14}_{-0.11}$	0.24	$1.0^{+0.13}_{-0.06}$	0.19	0.054	22%
$m B$ [$M_\odot$]	$0.301^{+0.046}_{-0.042}$	0.088	$0.402^{+0.045}_{-0.024}$	0.069	0.019	21%
ϕ [°]	$70.9^{+1.2}_{-0.9089}$	2.1	$72.04^{+1.0}_{-0.4808}$	1.5	0.58	28%
V_* [$\frac{km}{s}$]	$-40.81^{+0.11}_{-0.12}$	0.23	$-40.89^{+0.1}_{-0.12}$	0.22	0.0054	2.4%
ϖ [mas]	$74.8^{+3.8}_{-4.3}$	8	$66.4^{+1.1}_{-2.6}$	3.7	4.4	55%

HIP 101966

Without Hipparcos Data, original data

<i>Parameter</i>	<i>Estimate</i>
$P_{A_a A_b} [yr]$	$3.6282^{+0.0076}_{-0.0096}$
$T_{A_a A_b} [yr]$	$1984.651^{+0.066}_{-0.080}$
$e_{A_a A_b}$	$0.508^{+0.022}_{-0.023}$
$a_{A_a A_b} ['']$	$0.07185^{+0.00016}_{-0.00022}$
$w_{A_a A_b} [^\circ]$	$116.5^{+3.3}_{-7.0}$
$\Omega_{A_a A_b} [^\circ]$	-26^{+58}_{-23}
$i_{A_a A_b} [^\circ]$	145^{+11}_{-40}
$m_{A_a} [M_\odot]$	$1.1119^{+0.0032}_{-0.0009}$
$m_{A_b} [M_{Jup}]$	$3.7^{+0.7}_{-1.6}$
$q_{A_a A_b}$	$0.0031^{+0.0006}_{-0.0014}$
$P_{AB} [yr]$	$67.9^{+1.3}_{-0.5}$
$T_{AB} [yr]$	$1982.94^{+0.18}_{-0.29}$
e_{AB}	$0.427^{+0.006}_{-0.011}$
$a_{AB} ['']$	$0.5742^{+0.0075}_{-0.0034}$
$w_{AB} [^\circ]$	$230.3^{+1.1}_{-0.5}$
$\Omega_{AB} [^\circ]$	$79.73^{+0.17}_{-0.43}$
$i_{AB} [^\circ]$	$120.95^{+0.22}_{-0.53}$
$m_B [M_\odot]$	$0.5096^{+0.0049}_{-0.0021}$
q_{AB}	$0.4569^{+0.0046}_{-0.0021}$
$\phi [^\circ]$	73^{+13}_{-24}
$V_0 [\frac{km}{s}]$	$-32.064^{+0.014}_{-0.033}$
$\pi [mas]$	$29.343^{+0.044}_{-0.060}$

Without Hipparcos Data, but with new data

Parameter	Estimate
$P_{A_a A_b} [yr]$	$3.63^{+0.007}_{-0.011}$
$T_{A_a A_b} [yr]$	$1984.657^{+0.096}_{-0.047}$
$e_{A_a A_b}$	$0.487^{+0.018}_{-0.023}$
$a_{A_a A_b} ['']$	$0.07202^{+0.00019}_{-0.00023}$
$w_{A_a A_b} [^\circ]$	$119.3^{+5.3}_{-2.6}$
$\Omega_{A_a A_b} [^\circ]$	32^{+13}_{-5}
$i_{A_a A_b} [^\circ]$	$140.7^{+4.1}_{-5.9}$
$m_{A_a} [M_\odot]$	$1.1145^{+0.0062}_{-0.0035}$
$m_{A_b} [M_{Jup}]$	$3.40^{+0.32}_{-0.37}$
$q_{A_a A_b}$	$0.00291^{+0.00028}_{-0.00031}$
$P_{AB} [yr]$	$71.2^{+0.4}_{-1.1}$
$T_{AB} [yr]$	$2053.52^{+0.34}_{-0.91}$
e_{AB}	$0.402^{+0.0095}_{-0.0035}$
$a_{AB} ['']$	$0.5937^{+0.0024}_{-0.0066}$
$w_{AB} [^\circ]$	$233.16^{+0.46}_{-0.96}$
$\Omega_{AB} [^\circ]$	$79.23^{+0.28}_{-0.15}$
$i_{AB} [^\circ]$	$119.77^{+0.41}_{-0.17}$
$m_B [M_\odot]$	$0.5078^{+0.0019}_{-0.0028}$
q_{AB}	$0.4543^{+0.0022}_{-0.0029}$
$\phi [^\circ]$	$40.8^{+3.7}_{-8.8}$
$V_0 [\frac{km}{s}]$	$-32.107^{+0.024}_{-0.012}$
$\varpi [mas]$	$29.384^{+0.048}_{-0.050}$

Gains from latest Data, without Hipparcos

<i>Parameter</i>	<i>Estimate w/Old Data</i>	<i>Interval Length</i>	<i>Estimate w/New Data</i>	<i>Interval Length</i>	<i>Absolute Gain</i>	<i>Relative Gain</i>
P_{AaAb} [yr]	$3.6282^{+0.0076}_{-0.0096}$	0.017	$3.63^{+0.007}_{-0.011}$	0.018	-0.00049	-2.8%
T_{AaAb} [yr]	$1984.651^{+0.066}_{-0.08}$	0.15	$1984.657^{+0.096}_{-0.047}$	0.14	0.0039	2.7%
e_{AaAb}	$0.508^{+0.022}_{-0.023}$	0.044	$0.487^{+0.018}_{-0.023}$	0.041	0.0027	6.2%
a_{AaAb} ["]	$0.07185^{+0.00016}_{-0.00022}$	0.00038	$0.07202^{+0.00019}_{-0.00023}$	0.00042	-0.000041	-11%
w_{AaAb} [°]	$116.5^{+3.3}_{-7.0}$	10	$119.3^{+5.3}_{-2.6}$	7.9	2.3	23%
Ω_{AaAb} [°]	-26^{+58}_{-23}	81	32^{+13}_{-5}	18	62	77%
i_{AaAb} [°]	145^{+11}_{-40}	52	$140.7^{+4.1}_{-5.9}$	10	42	81%
m_{Aa} [$M_{\odot}$]	$1.1119^{+0.0032}_{-0.0009}$	0.0041	$1.1145^{+0.0062}_{-0.0035}$	0.0096	-0.0055	-1.3e + 02%
m_{Ab} [M_{Jup}]	$3.7^{+0.7}_{-1.6341}$	2.3	$3.40^{+0.32}_{-0.37}$	0.68	1.6	71%
q_{AaAb}	$0.0031^{+0.0006}_{-0.0014}$	0.002	$0.00291^{+0.00028}_{-0.00031}$	0.00059	0.0014	71%
P_{AB} [yr]	$67.9^{+1.3}_{-0.5334}$	1.8	$71.2^{+0.4}_{-1.0509}$	1.4	0.42	23%
T_{AB} [yr]	$1982.94^{+0.18}_{-0.29}$	0.47	$2053.52^{+0.34}_{-0.91}$	1.3	-0.78	-1.6e + 02%
e_{AB}	$0.427^{+0.006}_{-0.011}$	0.017	$0.402^{+0.0095}_{-0.0035}$	0.013	0.004	24%
a_{AB} ["]	$0.5742^{+0.0075}_{-0.0034}$	0.011	$0.5937^{+0.0024}_{-0.0066}$	0.009	0.0018	17%
w_{AB} [°]	$230.3^{+1.1}_{-0.4721}$	1.5	$233.16^{+0.46}_{-0.96}$	1.4	0.13	8.4%
Ω_{AB} [°]	$79.73^{+0.17}_{-0.43}$	0.6	$79.23^{+0.28}_{-0.15}$	0.44	0.16	27%
i_{AB} [°]	$120.95^{+0.22}_{-0.53}$	0.75	$119.77^{+0.41}_{-0.17}$	0.58	0.17	22%
m_B [$M_{\odot}$]	$0.5096^{+0.0049}_{-0.0021}$	0.007	$0.5078^{+0.0019}_{-0.0028}$	0.0046	0.0024	34%
q_{AB}	$0.4569^{+0.0046}_{-0.0021}$	0.0067	$0.4543^{+0.0022}_{-0.0029}$	0.0051	0.0016	24%
ϕ [°]	73^{+13}_{-24}	37	$40.8^{+3.7}_{-8.8}$	13	25	66%
V_0 [$\frac{km}{s}$]	$-32.064^{+0.014}_{-0.033}$	0.046	$-32.107^{+0.024}_{-0.012}$	0.035	0.011	24%
ϖ [mas]	$29.343^{+0.044}_{-0.06}$	0.1	$29.384^{+0.048}_{-0.05}$	0.097	0.0066	6.4%

With new data and Hipparcos

<i>Parameter</i>	<i>Estimate</i>
$P_{A_a A_b} [yr]$	$3.623^{+0.01}_{-0.008}$
$T_{A_a A_b} [yr]$	$1984.736^{+0.059}_{-0.09}$
$e_{A_a A_b}$	$0.494^{+0.016}_{-0.024}$
$a_{A_a A_b} ['']$	$0.07166^{+0.00046}_{-0.00027}$
$w_{A_a A_b} [^\circ]$	$124.9^{+3.8}_{-4.6}$
$\Omega_{A_a A_b} [^\circ]$	$35.3^{+5.5}_{-4.3}$
$i_{A_a A_b} [^\circ]$	$23.5^{+4.6}_{-1.4}$
$m_{A_a} [M_\odot]$	$1.179^{+0.057}_{-0.068}$
$m_{A_b} [M_{Jup}]$	$5.65^{+0.33}_{-0.97}$
$q_{A_a A_b}$	$0.00458^{+0.00023}_{-0.00073}$
$P_{AB} [yr]$	$68.6^{+1.1}_{-0.4728}$
$T_{AB} [yr]$	$1982.54^{+0.14}_{-0.05}$
e_{AB}	$0.426^{+0.005}_{-0.011}$
$a_{AB} ['']$	$0.5752^{+0.0083}_{-0.0035}$
$w_{AB} [^\circ]$	$230.4^{+1.4}_{-0.5769}$
$\Omega_{AB} [^\circ]$	$80.0^{+0.16}_{-0.43}$
$i_{AB} [^\circ]$	$121.02^{+0.26}_{-0.65}$
$m_B [M_\odot]$	$0.525^{+0.015}_{-0.018}$
q_{AB}	$0.444^{+0.012}_{-0.01}$
$\phi [^\circ]$	$103.3^{+1.9}_{-5.1}$
$V_0 [\frac{km}{s}]$	$-32.048^{+0.011}_{-0.031}$
$\pi [mas]$	$28.71^{+0.55}_{-0.39}$

Comparison with and without Hipparcos

<i>Parameter</i>	<i>Estimatew/OldData</i>	<i>IntervalLength</i>	<i>Estimatew/NewData</i>	<i>IntervalLength</i>	<i>AbsoluteGain</i>	<i>RelativeGain</i>
$PA_a A_b$ [yr]	$3.63^{+0.007}_{-0.011}$	0.018	$3.623^{+0.01}_{-0.008}$	0.018	-0.00037	-2.1%
$TA_a A_b$ [yr]	$1984.657^{+0.096}_{-0.047}$	0.14	$1984.736^{+0.059}_{-0.09}$	0.15	-0.0069	-4.9%
$e A_a A_b$	$0.487^{+0.018}_{-0.023}$	0.041	$0.494^{+0.016}_{-0.024}$	0.04	0.0013	3.1%
$a A_a A_b$ ["]	$0.07202^{+0.00019}_{-0.00023}$	0.00042	$0.07166^{+0.00046}_{-0.00027}$	0.00073	-0.00031	-75%
$w A_a A_b$ [°]	$119.3^{+5.3}_{-2.6}$	7.9	$124.9^{+3.8}_{-4.6}$	8.4	-0.45	-5.7%
$\Omega A_a A_b$ [°]	32^{+13}_{-5}	18	$35.3^{+5.5}_{-4.3}$	9.8	8.4	46%
$i A_a A_b$ [°]	$140.7^{+4.1}_{-5.9}$	10	$23.5^{+4.6}_{-1.4}$	6.1	3.9	39%
$m A_a$ [$M_\odot$]	$1.1145^{+0.0062}_{-0.0035}$	0.0096	$1.179^{+0.057}_{-0.068}$	0.12	-0.11	-1.2e + 03%
$m A_b$ [M_{Jup}]	$3.4^{+0.32}_{-0.37}$	0.68	$5.65^{+0.33}_{-0.97}$	1.3	-0.62	-91%
$q A_a A_b$	$0.00291^{+0.00028}_{-0.00031}$	0.00059	$0.00458^{+0.00023}_{-0.00073}$	0.00096	-0.00037	-63%
P_{AB} [yr]	$71.2^{+0.4}_{-1.0509}$	1.4	$68.6^{+1.1}_{-0.4728}$	1.5	-0.13	-8.9%
T_{AB} [yr]	$2053.52^{+0.34}_{-0.91}$	1.3	$1982.54^{+0.14}_{-0.05}$	0.19	1.1	85%
$e AB$	$0.402^{+0.0095}_{-0.0035}$	0.013	$0.426^{+0.005}_{-0.011}$	0.015	-0.0025	-19%
$a AB$ ["]	$0.5937^{+0.0024}_{-0.0066}$	0.009	$0.5752^{+0.0083}_{-0.0035}$	0.012	-0.0027	-30%
$w AB$ [°]	$233.16^{+0.46}_{-0.96}$	1.4	$230.4^{+1.4}_{-0.5769}$	2	-0.53	-37%
ΩAB [°]	$79.23^{+0.28}_{-0.15}$	0.44	$80.0^{+0.16}_{-0.43}$	0.59	-0.15	-34%
$i AB$ [°]	$119.77^{+0.41}_{-0.17}$	0.58	$121.02^{+0.26}_{-0.65}$	0.91	-0.33	-57%
$m B$ [$M_\odot$]	$0.5078^{+0.0019}_{-0.0028}$	0.0046	$0.525^{+0.015}_{-0.018}$	0.034	-0.029	-6.2e + 02%
$q AB$	$0.4543^{+0.0022}_{-0.0029}$	0.0051	$0.444^{+0.012}_{-0.01}$	0.021	-0.016	-3.2e + 02%
ϕ [°]	$40.8^{+3.7}_{-8.8}$	13	$103.3^{+1.9}_{-5.1}$	7.1	5.5	44%
V_0 [$\frac{km}{s}$]	$-32.107^{+0.024}_{-0.012}$	0.035	$-32.048^{+0.011}_{-0.031}$	0.042	-0.0071	-20%
π [mas]	$29.384^{+0.048}_{-0.05}$	0.097	$28.71^{+0.55}_{-0.39}$	0.94	-0.84	-8.6e + 02%

HIP 103987

Parameter	Estimate
$P_{A_a A_b} [yr]$	$1.03474^{+0.00016}_{-0.00012}$
$T_{A_a A_b} [yr]$	$2026.005^{+0.022}_{-0.012}$
$e_{A_a A_b}$	$0.093^{+0.005}_{-0.011}$
$a_{A_a A_b} ["]$	$0.02755^{+0.00024}_{-0.00032}$
$w_{A_a A_b} [^\circ]$	$125.8^{+7.7}_{-3.8}$
$\Omega_{A_a A_b} [^\circ]$	113^{+11}_{-10}
$i_{A_a A_b} [^\circ]$	$54.7^{+9.3}_{-8.8}$
$q_{A_a A_b}$	$0.51^{+0.11}_{-0.07}$
$m_{A_a} [M_\odot]$	$1.05^{+0.09}_{-0.16}$
$m_{A_b} [M_\odot]$	$0.536^{+0.068}_{-0.071}$
$L_{A_a A_b}$	$0.035^{+0.055}_{-0.035}$
$P_{AB} [yr]$	$19.4^{+0.1}_{-0.1}$
$T_{AB} [yr]$	$2025.54^{+0.13}_{-0.27}$
e_{AB}	$0.1582^{+0.0059}_{-0.0096}$
$a_{AB} ["]$	$0.2182^{+0.0023}_{-0.0019}$
$w_{AB} [^\circ]$	$15.9^{+2.4}_{-5.0}$
$\Omega_{AB} [^\circ]$	$103.88^{+0.89}_{-0.62}$
$i_{AB} [^\circ]$	$65.04^{+0.73}_{-0.85}$
q_{AB}	$0.413^{+0.035}_{-0.012}$
$m_A [M_\odot]$	$1.59^{+0.11}_{-0.19}$
$m_B [M_\odot]$	$0.655^{+0.048}_{-0.045}$
$\phi [^\circ]$	$13.0^{+9.4}_{-9.2}$
$V_* [\frac{km}{s}]$	$-2.03^{+0.14}_{-0.04}$
$\varpi [mas]$	$23.09^{+0.87}_{-0.59}$

HIP 111805

Without Hipparcos Data

Parameter	Estimate
$P_{B_a B_b} [yr]$	$1.50126^{+0.00081}_{-0.00085}$
$T_{B_a B_b} [yr]$	$2025.39^{+0.13}_{-0.07}$
$e_{B_a B_b}$	$0.07^{+0.007}_{-0.039}$
$a_{B_a B_b} ['']$	$0.03777^{+0.00042}_{-0.00043}$
$w_{B_a B_b} [^\circ]$	298^{+31}_{-14}
$\Omega_{B_a B_b} [^\circ]$	$338.6^{+3.0}_{-5.5}$
$i_{B_a B_b} [^\circ]$	$86.1^{+3.7}_{-5.4}$
$q_{B_a B_b}$	$0.698^{+0.051}_{-0.058}$
$m_{B_a} [M_\odot]$	$1.05^{+0.2}_{-0.12}$
$m_{B_b} [M_\odot]$	$0.732^{+0.083}_{-0.039}$
$L_{B_a B_b}$	$0.084^{+0.067}_{-0.055}$
$P_{AB} [yr]$	$30.001^{+0.064}_{-0.053}$
$T_{AB} [yr]$	$2039.98^{+0.09}_{-0.11}$
e_{AB}	$0.303^{+0.008}_{-0.011}$
$a_{AB} [''']$	$0.3342^{+0.0015}_{-0.0022}$
$w_{AB} [^\circ]$	$263.76^{+0.48}_{-0.78}$
$\Omega_{AB} [^\circ]$	$334.49^{+0.22}_{-0.31}$
$i_{AB} [^\circ]$	$88.02^{+0.26}_{-0.29}$
q_{AB}	$1.36^{+0.11}_{-0.07}$
$m_A [M_\odot]$	$1.31^{+0.17}_{-0.11}$
$m_B [M_\odot]$	$1.78^{+0.29}_{-0.15}$
$\phi [^\circ]$	$4.5^{+3.9}_{-3.6}$
$V_* [\frac{km}{s}]$	$-22.7^{+0.23}_{-0.13}$
$\varpi [mas]$	$23.8^{+0.7}_{-1.0938}$

With Hipparcos Data

Parameter	Estimate
$P_{B_a B_b} [yr]$	$1.50157^{+0.00074}_{-0.00088}$
$T_{B_a B_b} [yr]$	$2025.438^{+0.09}_{-0.097}$
$e_{B_a B_b}$	$0.058^{+0.019}_{-0.026}$
$a_{B_a B_b} ['']$	$0.0376^{+0.00059}_{-0.00028}$
$w_{B_a B_b} [^\circ]$	308^{+19}_{-24}
$\Omega_{B_a B_b} [^\circ]$	$339.2^{+2.5}_{-5.7}$
$i_{B_a B_b} [^\circ]$	$83.8^{+6.0}_{-3.4}$
$q_{B_a B_b}$	$0.762^{+0.048}_{-0.054}$
$m_{B_a} [M_\odot]$	$0.88^{+0.13}_{-0.08}$
$m_{B_b} [M_\odot]$	$0.67^{+0.059}_{-0.029}$
$L_{B_a B_b}$	$0.11^{+0.063}_{-0.057}$
$P_{AB} [yr]$	$29.989^{+0.069}_{-0.052}$
$T_{AB} [yr]$	$2039.97^{+0.11}_{-0.1}$
e_{AB}	$0.304^{+0.01}_{-0.008}$
$a_{AB} [''']$	$0.3343^{+0.002}_{-0.0017}$
$w_{AB} [^\circ]$	$263.73^{+0.66}_{-0.57}$
$\Omega_{AB} [^\circ]$	$334.39^{+0.31}_{-0.21}$
$i_{AB} [^\circ]$	$87.92^{+0.38}_{-0.19}$
q_{AB}	$1.31^{+0.13}_{-0.05}$
$m_A [M_\odot]$	$1.18^{+0.1}_{-0.1}$
$m_B [M_\odot]$	$1.55^{+0.19}_{-0.11}$
L_{AB}	$0.16^{+0.3}_{-0.13}$
$\phi [^\circ]$	$6.3^{+2.2}_{-5.3}$
$V_* [\frac{km}{s}]$	$-22.76^{+0.2}_{-0.15}$
$\varpi [mas]$	$24.78^{+0.61}_{-0.78}$

Comparison Table

Param.	Estimate w/o Hipp	IL	Estimate w/Hipp	IL	Abs. Gain	Rel. Gain
$P_{B_a B_b} [yr]$	$1.50126^{+0.00081}_{-0.00085}$	0.0017	$1.50157^{+0.00074}_{-0.00088}$	0.0016	0.000033	2%
$T_{B_a B_b} [yr]$	$2025.39^{+0.13}_{-0.07}$	0.2	$2025.438^{+0.09}_{-0.097}$	0.19	0.012	5.9%
$e_{B_a B_b}$	$0.07^{+0.007}_{-0.039}$	0.045	$0.058^{+0.019}_{-0.026}$	0.044	0.001	2.2%
$a_{B_a B_b} ['']$	$0.03777^{+0.00042}_{-0.00043}$	0.00085	$0.0376^{+0.00059}_{-0.00028}$	0.00087	-0.000017	-2%
$w_{B_a B_b} [^\circ]$	298^{+31}_{-14}	44	308^{+19}_{-24}	43	1.8	4%
$\Omega_{B_a B_b} [^\circ]$	$338.6^{+3.0}_{-5.5}$	8.5	$339.2^{+2.5}_{-5.7}$	8.2	0.33	3.8%
$i_{B_a B_b} [^\circ]$	$86.1^{+3.7}_{-5.4}$	9.1	$83.8^{+6.0}_{-3.4}$	9.4	-0.28	-3%
$q_{B_a B_b}$	$0.698^{+0.051}_{-0.058}$	0.11	$0.762^{+0.048}_{-0.054}$	0.1	0.0078	7.1%
$m_{B_a} [M_\odot]$	$1.05^{+0.2}_{-0.12}$	0.32	$0.88^{+0.13}_{-0.08}$	0.21	0.11	34%
$m_{B_b} [M_\odot]$	$0.732^{+0.083}_{-0.039}$	0.12	$0.67^{+0.059}_{-0.029}$	0.088	0.034	28%
$L_{B_a B_b}$	$0.084^{+0.067}_{-0.055}$	0.12	$0.11^{+0.063}_{-0.057}$	0.12	0.0016	1.3%
$P_{AB} [yr]$	$30.001^{+0.064}_{-0.053}$	0.12	$29.989^{+0.069}_{-0.052}$	0.12	-0.003	-2.5%
$T_{AB} [yr]$	$2039.98^{+0.09}_{-0.11}$	0.2	$2039.97^{+0.11}_{-0.1}$	0.21	-0.0072	-3.6%
e_{AB}	$0.303^{+0.008}_{-0.011}$	0.019	$0.304^{+0.01}_{-0.008}$	0.018	0.00021	1.1%
$a_{AB} ['']$	$0.3342^{+0.0015}_{-0.0022}$	0.0037	$0.3343^{+0.002}_{-0.0017}$	0.0037	-0.000019	-0.52%
$w_{AB} [^\circ]$	$263.76^{+0.48}_{-0.78}$	1.3	$263.73^{+0.66}_{-0.57}$	1.2	0.024	1.9%
$\Omega_{AB} [^\circ]$	$334.49^{+0.22}_{-0.31}$	0.52	$334.39^{+0.31}_{-0.21}$	0.52	0.0016	0.3%
$i_{AB} [^\circ]$	$88.02^{+0.26}_{-0.29}$	0.55	$87.92^{+0.38}_{-0.19}$	0.56	-0.011	-1.9%
q_{AB}	$1.36^{+0.11}_{-0.07}$	0.19	$1.31^{+0.13}_{-0.05}$	0.18	0.00082	0.45%
$m_A [M_\odot]$	$1.31^{+0.17}_{-0.11}$	0.28	$1.18^{+0.1}_{-0.1}$	0.2	0.081	29%
$m_B [M_\odot]$	$1.78^{+0.29}_{-0.15}$	0.44	$1.55^{+0.19}_{-0.11}$	0.29	0.14	33%
$\phi [^\circ]$	$4.5^{+3.9}_{-3.6}$	7.5	$6.3^{+2.2}_{-5.3}$	7.6	-0.048	-0.64%
$V_* [\frac{km}{s}]$	$-22.7^{+0.23}_{-0.13}$	0.36	$-22.76^{+0.2}_{-0.15}$	0.35	0.011	3%
$\varpi [mas]$	$23.8^{+0.7}_{-1.0938}$	1.8	$24.78^{+0.61}_{-0.78}$	1.4	0.37	21%