nature astronomy

SUPPLEMENTARY INFORMATION
https://doi.org/10.1038/s41550-019-0738-7

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Polarized reflected light from the Spica binary system

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Supplementary Information

Supplementary References

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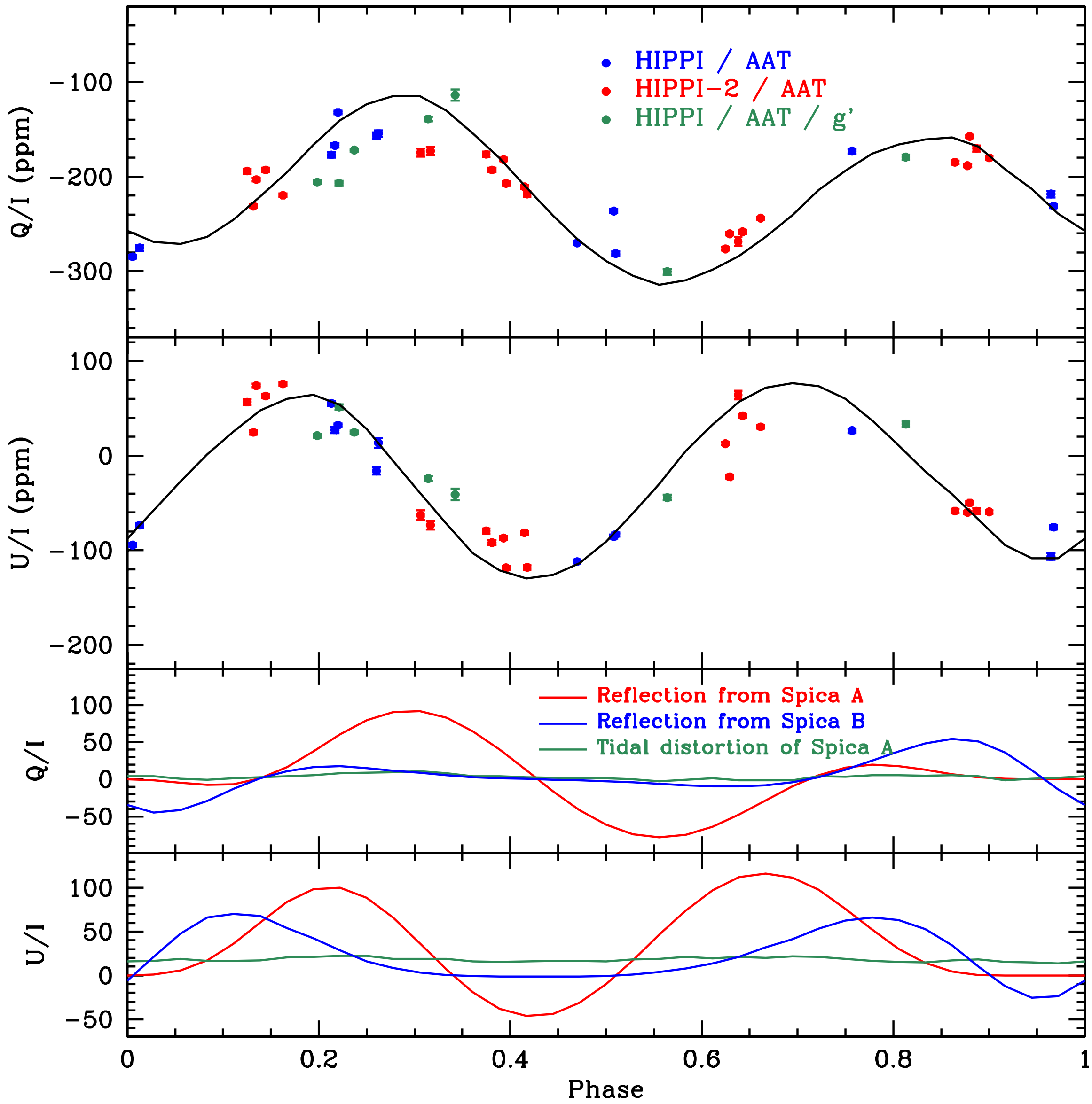
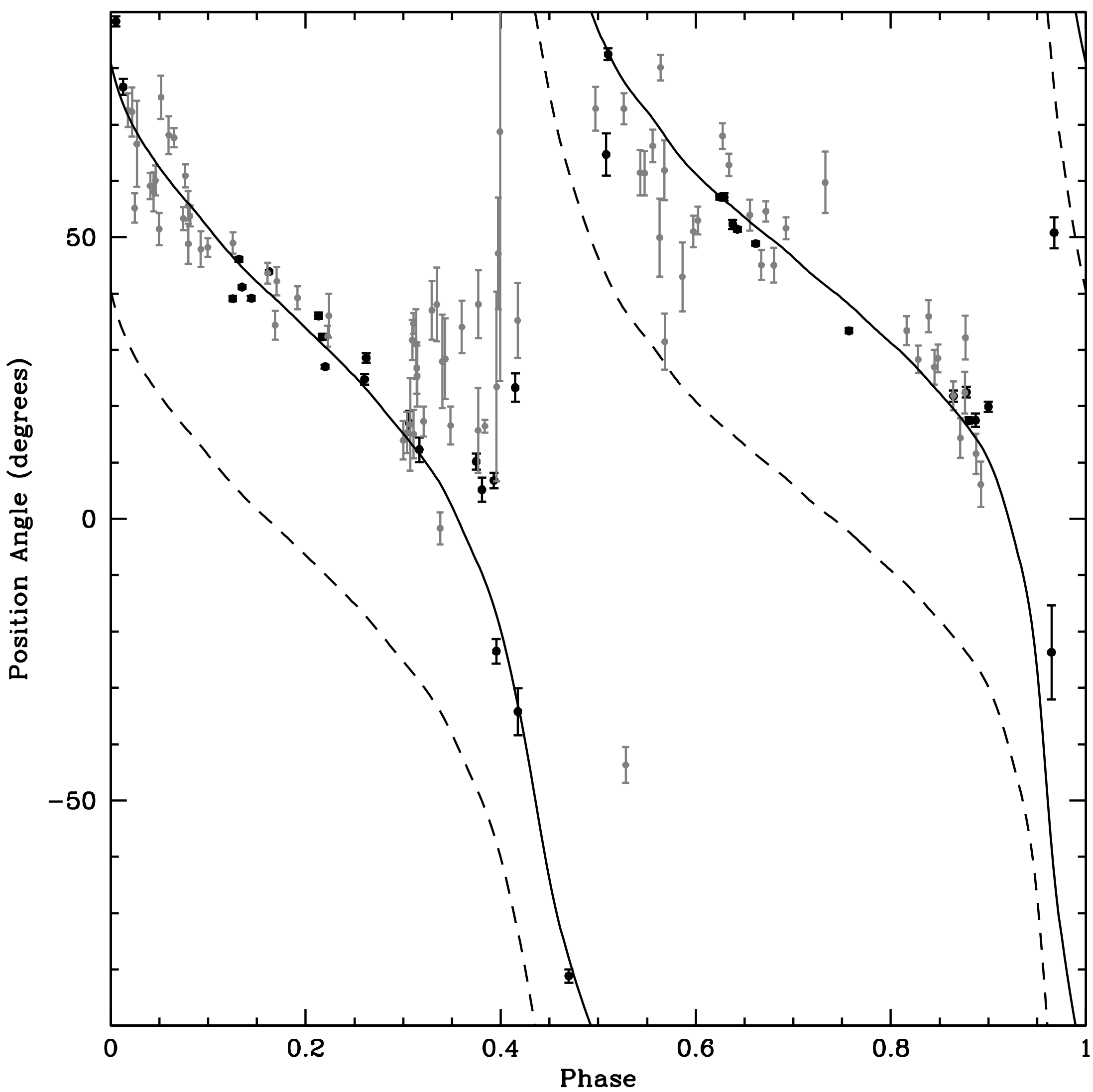
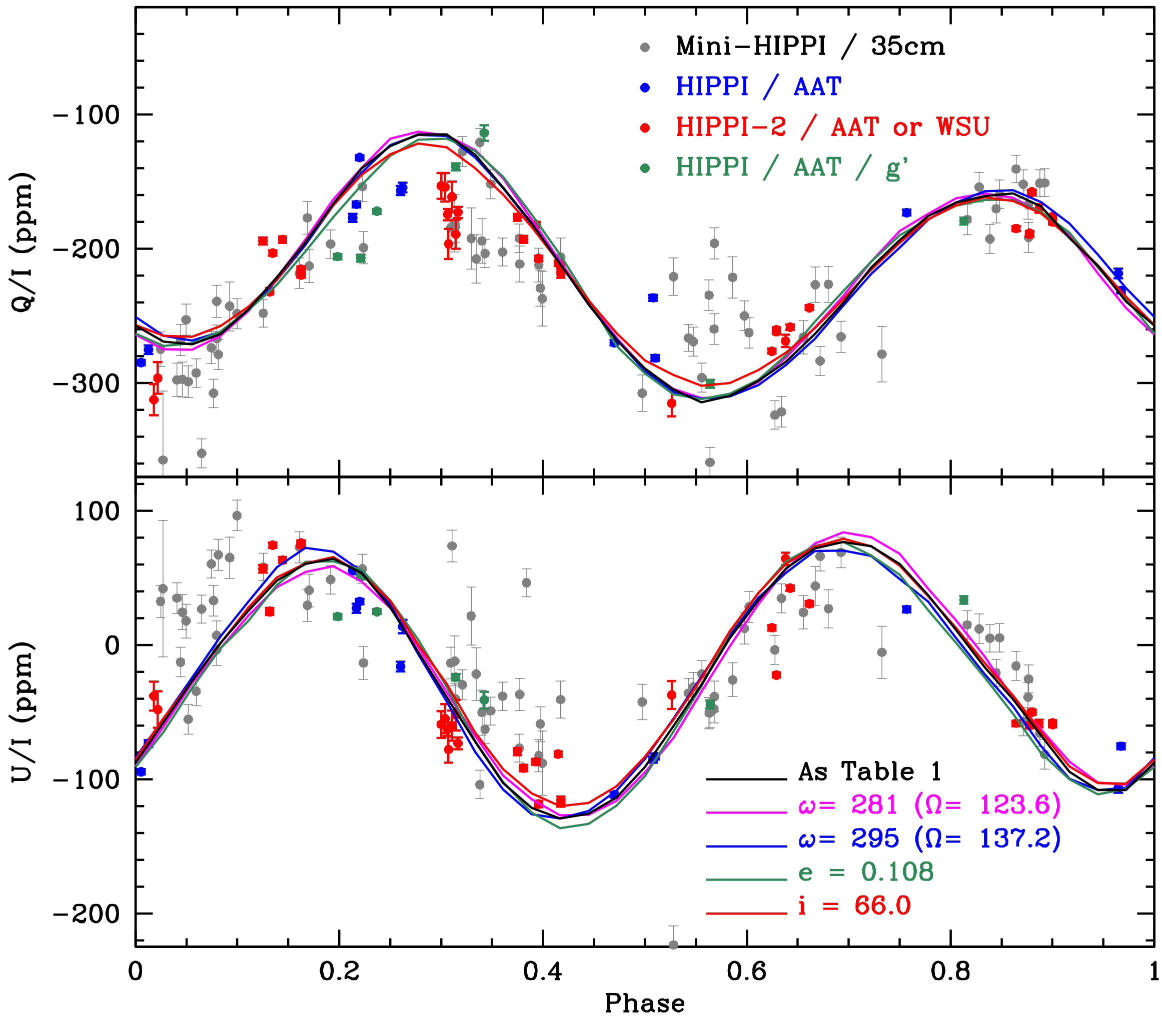


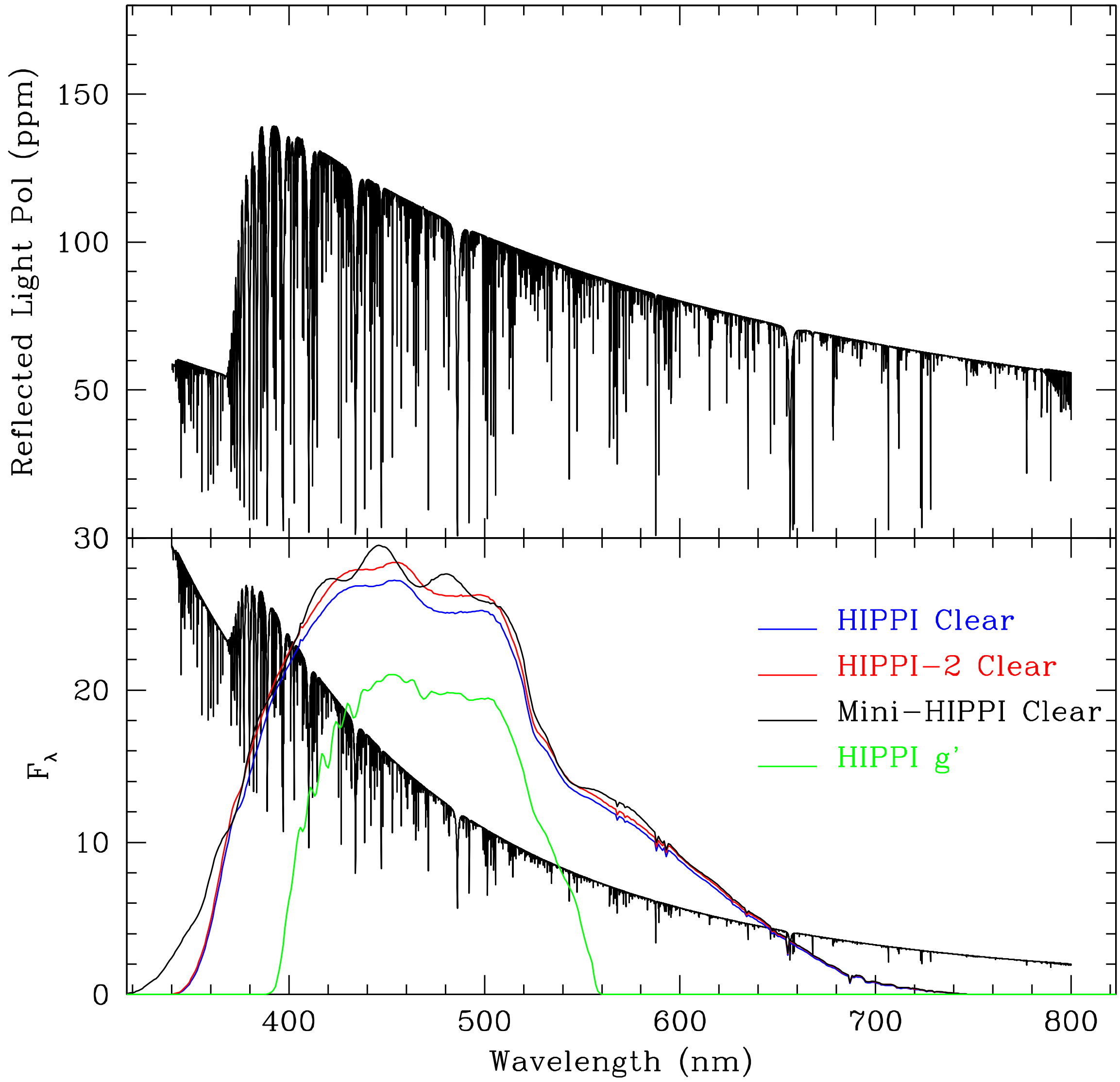
Supplementary Figure 1 | AAT Observations. As Fig. 1 but showing only the AAT observations which have higher precision than those on the smaller telescopes. It can be seen that the AAT observations show better agreement with the model curve.



Supplementary Figure 2 | Position Angle Variations. The points show the observed polarization position angle of Spica after correcting for the zero point offsets listed in Table 1. Larger dots are AAT observations. Error bars are one-sigma internal standard errors derived from the statistics of the data. The position angle decreases with phase implying a clockwise sense of orbital motion. The dashed line is the modelled position angle – where the model is calculated with the line of nodes along the x-axis corresponding to Ω = 90 degrees. The solid line shows the best fit, which is obtained by rotating the model by +40.4 degrees in position angle giving an actual position angle of the line of nodes of Ω = 130.4 degrees. Larger error bars and greater scatter are seen near phase 0.4 where the degree of polarization is close to zero and the position angle is not well defined.



Supplementary Figure 3 | Effect of Orbital Parameters. The linear polarization data points are as for Fig. 1. The nominal model fit based on the parameters given in Table 1 is shown as the black line. Other curves show the result of adjusting the orbital parameters. The two values for the argument of periastron ω are the ± 7 degree points given by the uncertainty[21] in the apsidal motion. These values result in a reasonable fit to the data provided the values of the polarization offsets and Ω are redetermined. The effects of changing eccentricity and inclination to more extreme values[21] are also shown. Changes comparable with the spread of values in the literature do not significantly change the results.



Supplementary Figure 4 | Wavelength Dependence. Modelled wavelength dependence of the reflected light polarization from the primary as a fraction of the total light from the system. The phase is 0.222, the same as that shown in Fig. 3. The lower panel shows the total flux for the same model, and the instrument plus atmosphere (for airmass 1) response for the various instrument/filter combinations.

Supplementary Table 1 | Modulator Performance Characteristics.

Mod[a]	Era[b]	Run(s)	λ_0[c]	Cd[d]
BNS	1	2015MAY, 2015JUN	494.8	1.738E7
BNS	2	2016FEB, 2016JUN, 2017JUN, 2017AUG	506.3	1.758E7
BNS	3	2018FEBB, 2018FEBC, 2018FEBD, 2018MAR, 2018MAY	513.4	2.319E7
BNS	4	2018JUL	520.6	2.127E7
BNS	5	2018AUG (HJD: 58346.37939 – 58352.39406)	546.8	2.213E7
BNS	6	2018AUG (HJD: 58357.38917)	562.7	2.319E7
BNS	7	2018AUG (HJD: 58359.37215 – 58363.36297)	595.4	1.615E7
MT		M2016MAY, M2016JUN, M2016JUL, M2016OCT, M2018JAN	505.0	1.750E7

Notes:

[a] Mod indicates either the Boulder Nonlinear Systems (BNS) or Micron Technologies (MT) modulator. Data for the MT modulator comes from ref [8].
[b] The performance era of the BNS modulator.
[c] The wavelength in nm of peak modulation efficiency.
[d] C is a parameter describing the dispersion in birefringence of the FLC material and d is the thickness of the FLC layer; these two terms are treated as one constant (see ref [8]).

Supplementary Table 2 | Telescope Polarization Measurements.

Run(s)	Configuration		Adopted TP[c]		Standards Observed[d]						
	Tel[a]/ Instr	Fil[b]	Q/I (ppm)	U/I (ppm)	HD 2151	HD 10700	HD 49815	HD 102647	HD 102870	HD 128620J	HD 140573
2015MAY, 2015JUN	AAT/ HIPPI	g′	−35.6 ± 1.3	4.9 ± 1.3			2	1			4
2016FEB, 2016JUN	AAT/ HIPPI	g′	−20.4 ± 1.8	4.2 ± 1.9	2		4		3		
2017JUN, 2017AUG	AAT/ HIPPI	Cl	−14.8 ± 1.2	0.9 ± 1.2	6		5	3	2		
2018FEBB	AAT*/ HIPPI2	Cl	−189.8 ± 1.1	8.8 ± 1.0			2	1			
2018FEBC, 2018FEBD	AAT*/ HIPPI2	Cl	−178.7 ± 0.8	14.2 ± 0.8			5	3	1		
2018MAR	AAT/ HIPPI2	Cl	130.3 ± 0.7	5.2 ± 0.7			4	4	3		5
2018MAY	WSU/ HIPPI2	Cl	−26.5 ± 2.0	−2.8 ± 2.0			6	5			
2018JUL, 2018AUG	AAT/ HIPPI2	Cl	−9.9 ± 1.0	3.7 ± 0.9	3	3	2	2	2		2
M2016MAY	UNSW/ MHIPPI	Cl	−93.8 ± 4.0	−0.3 ± 4.0			4				
M2016JUN	UNSW/ MHIPPI	Cl	−61.9 ± 4.1	−7.3 ± 4.3			5	1			
M2016JUL, M2016OCT	UNSW/ MHIPPI	Cl	−69.4 ± 3.0	−9.5 ± 3.0	4		14	6	1		1
M2018JAN	UNSW/ MHIPPI	Cl	−58.0 ± 2.0	16.3 ± 2.0			9			3	

Notes:

[a] Telescopes are: UNSW, 35 cm Schmidt Cassegrain telescope at UNSW Observatory, Sydney; WSU, Western Sydney University’s 60 cm Ritchey Chretien Telescope at Penrith Observatory; AAT, 3.9 m Anglo-Australian Telescope.
[b] Cl denoting clear (no filter) or SDSS g’ filter.
[c] The adopted TP is the mean of all low polarization standard observations during the run(s).
[d] The observed standards have been shown previously to have very low polarizations, ~5 ppm or less: HD 2151[10], HD 10700[26] HD 49815[10], HD 102647[35], HD 102870[35], HD 140573[35]. On small telescopes we have also used HD 128620J, which has a measured polarization magnitude of ~10 ppm[9], owing to its brightness.
* Indicates AAT f/15, all other AAT observations are f/8.

Supplementary Table 3 | PA Calibration Observations.

Run	ΔPA[a,b] (degrees)	Standards Observed								
		HD 80558	HD 84810	HD 111613	HD 147084	HD 149757	HD 154445	HD 160529	HD 187929	HD 203532
2015MAY	0.2				4		1			
2015JUN	0.1				1		1			
2016FEB	0.3	1			1					
2016JUN	0.2				1		1			
2017JUN	1.1				1		1	1		
2017AUG	0.5				1		1		1	
2018FEBB	–	1								
2018FEBC	0.1	2								
2018FEBD	–	1								
2018MAR	0.3	1		1	1					
2018MAY	0.1				2					
2018JUL[c]	1.6				1		1	1	1	1*
2018AUG[c]	0.9				3			3	5	
M2016MAY	0.1		4							
M2016JUN	0.4		2		1					
M2016JUL	0.4		1		1		1	1	1	
M2016OCT	0.1		2		1					
M2018JAN	0.5				3	2				

Notes:

[a] The standard deviation in PA from multiple measurements, using g' and clear filters only.
[b] The position angle is calibrated against the position angles of polarized standards known from the literature: HD 80558[35], HD 84810[36,37], HD 111613[36], HD 147084[38,39], HD 149757[40], HD 154445 [36,37,39], HD 160529[36,37], HD 187929[36], HD 203532[41]. The typical error in the literature determinations is of order a degree.

[c] A PA correction was applied to clear observations during these runs based on the effective wavelength (λ) according to:

July 2018: For $\lambda > 462$ nm, DPA = $-0.00460905\,\lambda^2 + 3.91925794\,\lambda - 827.0236$
Aug 2018: For $\lambda > 467$ nm, DPA = $-0.00496338\,\lambda^2 + 4.27806721\,\lambda - 915.5104$

* The standard deviation in PA determination is larger than usual for 2018JUL, this is mainly due to the measurement for HD 203532 being 2.8 degrees greater than the determined mean.

Supplementary Table 4 | Linear Polarization Observations of Spica.

Modified Julian Date[a]	Orbital Phase	Telescope[b]/ Instrument	Run	Fil[c]	λ_{eff}[d] (nm)	Eff.[e]	Q/I (ppm)	U/I (ppm)
57166.46191	0.23704	AAT/HIPPI	2015MAY	g′	462	0.887	–172.0 ± 1.8	24.8 ± 1.8
57202.43786	0.19834	AAT/HIPPI	2015JUN	g′	462	0.887	–205.8 ± 2.0	21.2 ± 1.9
57202.52971	0.22122	AAT/HIPPI	2015JUN	g′	463	0.890	–206.9 ± 2.6	51.4 ± 2.8
57445.78081	0.81299	AAT/HIPPI	2016FEB	g′	462	0.859	–179.4 ± 2.7	33.5 ± 2.7
57447.79340	0.31430	AAT/HIPPI	2016FEB	g′	462	0.860	–139.0 ± 2.4	–24.1 ± 2.5
57448.79605	0.56406	AAT/HIPPI	2016FEB	g′	462	0.860	–300.5 ± 2.9	–44.2 ± 2.9
57564.32900	0.34233	AAT/HIPPI	2016FEB	g′	462	0.860	–113.8 ± 5.7	–41.0 ± 6.1
57525.50647	0.67197	UNSW/MHIPPI	M2016MAY	Cl	451	0.741	–283.5 ± 10.8	66.0 ± 10.8
57525.58860	0.69242	UNSW/MHIPPI	M2016MAY	Cl	453	0.748	–265.5 ± 11.7	68.9 ± 11.4
57527.50765	0.17045	UNSW/MHIPPI	M2016MAY	Cl	451	0.741	–212.8 ± 12.3	40.6 ± 12.3
57549.52778	0.65547	UNSW/MHIPPI	M2016JUN	Cl	453	0.748	–265.8 ± 12.4	24.2 ± 12.4
57549.62670	0.68011	UNSW/MHIPPI	M2016JUN	Cl	465	0.794	–226.5 ± 13.4	27.0 ± 14.1
57551.58819	0.16870	UNSW/MHIPPI	M2016JUN	Cl	458	0.770	–177.0 ± 12.3	29.5 ± 12.1
57552.45161	0.38377	UNSW/MHIPPI	M2016JUN	Cl	451	0.741	–4.1 ± 11.1	46.2 ± 10.3
57553.43005	0.62749	UNSW/MHIPPI	M2016JUN	Cl	451	0.741	–323.8 ± 10.7	–3.7 ± 10.7
57533.45623	0.63401	UNSW/MHIPPI	M2016JUN	Cl	451	0.741	–321.4 ± 11.4	34.7 ± 10.9
57554.42968	0.87649	UNSW/MHIPPI	M2016JUN	Cl	451	0.741	–191.6 ± 11.1	–25.4 ±10.4
57555.42920	0.12546	UNSW/MHIPPI	M2016JUN	Cl	451	0.741	–248.1 ± 10.3	57.9 ± 10.2
57568.41542	0.36022	UNSW/MHIPPI	M2016JUL	Cl	451	0.741	–202.5 ± 10.4	–38.2 ± 10.7
57568.55855	0.39587	UNSW/MHIPPI	M2016JUL	Cl	461	0.781	–212.1 ± 12.5	–82.5 ± 12.1
57570.43872	0.86420	UNSW/MHIPPI	M2016JUL	Cl	452	0.745	–140.6 ± 10.3	–15.7 ± 10.8
57583.39922	0.09256	UNSW/MHIPPI	M2016JUL	Cl	452	0.745	-242.8 ± 18.2	65.0 ± 15.4
57586.43275	0.84818	UNSW/MHIPPI	M2016JUL	Cl	453	0.751	–159.5 ± 10.6	5.3 ± 10.5
57592.37949	0.32947	UNSW/MHIPPI	M2016JUL	Cl	452	0.745	–192.3 ± 22.9	21.6 ± 21.5
57592.39991	0.33455	UNSW/MHIPPI	M2016JUL	Cl	453	0.748	–207.6 ± 17.9	–21.7 ± 19.5
57592.42179	0.34000	UNSW/MHIPPI	M2016JUL	Cl	453	0.751	–221.3 ± 15.5	–26.0 ± 12.6
57594.38092	0.82800	UNSW/MHIPPI	M2016JUL	Cl	452	0.745	–154.1 ± 11.1	11.9 ± 11.0
57595.37046	0.07449	UNSW/MHIPPI	M2016JUL	Cl	452	0.745	–273.7 ± 12.0	60.3 ± 10.4
57595.39123	0.07966	UNSW/MHIPPI	M2016JUL	Cl	453	0.748	–267.0 ± 10.1	7.0 ± 10.7
57608.37321	0.31336	UNSW/MHIPPI	M2016JUL	Cl	453	0.751	–181.0 ± 21.5	–12.0 ± 18.6
57611.39051	0.06495	UNSW/MHIPPI	M2016JUL	Cl	455	0.758	–352.3 ± 10.9	26.7 ± 10.3
57613.36112	0.55581	UNSW/MHIPPI	M2016JUL	Cl	453	0.751	–295.9 ± 10.7	–21.7 ± 10.2
57614.40666	0.81624	UNSW/MHIPPI	M2016JUL	Cl	458	0.770	–178.2 ± 11.2	14.9 ± 10.5
57615.38367	0.05961	UNSW/MHIPPI	M2016JUL	Cl	456	0.761	–292.5 ± 10.5	–34.5 ± 10.9
57616.39161	0.31068	UNSW/MHIPPI	M2016JUL	Cl	457	0.764	–161.8 ± 11.9	73.7 ± 11.8
57627.36589	0.04428	UNSW/MHIPPI	M2016JUL	Cl	457	0.767	–268.0 ± 11.6	–12.8 ± 11.0
57627.38814	0.04982	UNSW/MHIPPI	M2016JUL	Cl	461	0.778	–252.9 ± 11.6	17.9 ± 12.6
57631.36631	0.04075	UNSW/MHIPPI	M2016JUL	Cl	459	0.773	–297.7 ± 12.4	34.9 ± 11.5
57631.38739	0.04600	UNSW/MHIPPI	M2016JUL	Cl	463	0.786	–297.3 ± 13.1	24.4 ± 13.0
57647.36959	0.02703	UNSW/MHIPPI	M2016JUL	Cl	474	0.821	–357.3 ± 51.2	41.9 ± 50.9
57745.73181	0.52822	UNSW/MHIPPI	M2016OCT	Cl	456	0.761	–220.7 ± 14.0	–223.4 ± 14.3
57747.72490	0.02468	UNSW/MHIPPI	M2016OCT	Cl	456	0.761	–274.7 ± 12.8	32.4 ± 12.1
57769.69524	0.49730	UNSW/MHIPPI	M2016OCT	Cl	453	0.751	–307.6 ± 13.7	–42.4 ± 13.2
57780.64131	0.22387	UNSW/MHIPPI	M2016OCT	Cl	456	0.761	–199.2 ± 12.0	–13.4 ± 12.3
57788.66614	0.22279	UNSW/MHIPPI	M2016OCT	Cl	453	0.748	–153.8 ± 11.1	56.7 ± 10.6
57804.59949	0.19165	UNSW/MHIPPI	M2016OCT	Cl	454	0.754	–196.5 ± 10.6	48.6 ± 10.6
57853.51894	0.37707	UNSW/MHIPPI	M2016OCT	Cl	452	0.745	–211.4 ± 13.3	–36.8 ± 12.1
57857.53274	0.37687	UNSW/MHIPPI	M2016OCT	Cl	451	0.741	–192.2 ± 10.6	–76.9 ± 10.5
57871.43060	0.83871	UNSW/MHIPPI	M2016OCT	Cl	453	0.751	–192.8 ± 10.8	5.0 ± 10.3

57871.45456	0.84468	UNSW/MHIPPI	M2016OCT	Cl	453	0.748	−170.2 ± 10.4	−20.8 ± 10.1
57871.62367	0.88747	UNSW/MHIPPI	M2016OCT	Cl	452	0.745	−151.3 ± 10.1	−65.7 ± 10.1
57871.64560	0.89227	UNSW/MHIPPI	M2016OCT	Cl	453	0.748	−151.0 ± 10.4	−81.5 ± 10.9
57873.43497	0.33798	UNSW/MHIPPI	M2016OCT	Cl	453	0.748	−120.8 ± 10.3	−104.0 ± 10.6
57873.45557	0.34311	UNSW/MHIPPI	M2016OCT	Cl	452	0.745	−203.5 ± 10.4	−62.8 ± 10.6
57873.47763	0.34861	UNSW/MHIPPI	M2016OCT	Cl	452	0.745	−151.8 ± 10.8	−49.1 ± 10.4
57878.35289	0.56299	UNSW/MHIPPI	M2016OCT	Cl	458	0.770	−234.6 ± 11.5	−50.7 ± 11.6
57878.37269	0.56793	UNSW/MHIPPI	M2016OCT	Cl	456	0.761	−259.8 ± 11.5	−47.8 ± 10.3
57880.41484	0.07661	UNSW/MHIPPI	M2016OCT	Cl	453	0.748	−307.6 ± 10.6	33.0 ± 11.5
57880.43407	0.08140	UNSW/MHIPPI	M2016OCT	Cl	452	0.745	−278.7 ± 11.1	67.1 ± 11.4
57881.34954	0.30943	UNSW/MHIPPI	M2016OCT	Cl	457	0.767	−184.3 ± 11.7	−13.5 ± 11.9
57881.36751	0.31391	UNSW/MHIPPI	M2016OCT	Cl	456	0.761	−183.7 ± 11.5	−40.0 ± 11.0
57881.39578	0.32095	UNSW/MHIPPI	M2016OCT	Cl	453	0.751	−127.7 ± 11.1	−29.7 ± 11.2
57883.60520	0.87130	UNSW/MHIPPI	M2016OCT	Cl	453	0.748	−151.9 ± 10.6	−57.0 ± 10.5
57883.62388	0.87595	UNSW/MHIPPI	M2016OCT	Cl	453	0.751	−167.1 ± 10.7	−38.9 ± 10.9
57888.45664	0.07975	UNSW/MHIPPI	M2016OCT	Cl	451	0.741	−239.1 ± 11.9	−3.6 ± 11.5
57888.53652	0.09965	UNSW/MHIPPI	M2016OCT	Cl	451	0.741	−248.3 ± 11.3	96.3 ± 11.4
57894.41463	0.56384	UNSW/MHIPPI	M2016OCT	Cl	452	0.745	−359.0 ± 11.2	−50.4 ± 11.2
57894.43238	0.56826	UNSW/MHIPPI	M2016OCT	Cl	451	0.741	−196.0 ± 11.6	−38.4 ± 11.4
57896.37331	0.05173	UNSW/MHIPPI	M2016OCT	Cl	453	0.748	−299.0 ± 11.7	−55.4 ± 11.1
57898.34524	0.54292	UNSW/MHIPPI	M2016OCT	Cl	454	0.754	−266.5 ± 10.0	−35.9 ± 11.0
57898.36339	0.54744	UNSW/MHIPPI	M2016OCT	Cl	453	0.748	−269.2 ± 10.9	−31.2 ± 10.6
57898.56452	0.59754	UNSW/MHIPPI	M2016OCT	Cl	453	0.748	−249.9 ± 11.0	12.3 ± 11.6
57898.58278	0.60209	UNSW/MHIPPI	M2016OCT	Cl	453	0.751	−262.5 ± 11.4	28.3 ± 11.7
57928.33420	0.01291	AAT/HIPPI	2017JUN	Cl	454	0.754	−275.2 ± 3.1	−73.3 ± 2.6
57929.33512	0.26223	AAT/HIPPI	2017JUN	Cl	454	0.754	−145.4 ± 3.6	13.7 ± 5.0
57930.33052	0.51020	AAT/HIPPI	2017JUN	Cl	454	0.754	−281.4 ± 2.2	−83.0 ± 2.1
57933.34190	0.26029	AAT/HIPPI	2017JUN	Cl	454	0.754	−156.7 ± 3.5	−16.0 ± 3.6
57934.33678	0.50810	AAT/HIPPI	2017JUN	Cl	454	0.754	−236.5 ± 2.1	−85.5 ± 2.1
57935.33618	0.75704	AAT/HIPPI	2017JUN	Cl	454	0.754	−173.1 ± 2.3	26.5 ± 2.3
57936.33393	0.00558	AAT/HIPPI	2017JUN	Cl	454	0.754	−284.7 ± 1.9	−94.4 ± 1.9
57977.34096	0.22007	AAT/HIPPI	2017AUG	Cl	455	0.757	−132.1 ± 1.9	32.3 ± 2.0
57978.34354	0.46981	AAT/HIPPI	2017AUG	Cl	455	0.759	−270.0 ± 2.0	−111.7 ± 1.9
57980.34119	0.96741	AAT/HIPPI	2017AUG	Cl	455	0.759	−231.0 ± 2.2	−75.4 ± 2.3
57981.34299	0.21695	AAT/HIPPI	2017AUG	Cl	455	0.759	−167.0 ± 2.3	27.3 ± 3.3
57984.34479	0.96467	AAT/HIPPI	2017AUG	Cl	456	0.761	−218.4 ± 3.5	−106.5 ± 3.4
57985.34279	0.21326	AAT/HIPPI	2017AUG	Cl	456	0.761	−177.0 ± 3.1	55.3 ± 2.8
58152.69840	0.90011	AAT*/HIPPI2	2018FEBB	Cl	454	0.686	−180.1 ± 2.0	−59.2 ± 1.9
58153.75202	0.16256	AAT*/HIPPI2	2018FEBD	Cl	453	0.683	−219.7 ± 1.8	75.9 ± 1.8
58154.77591	0.41760	AAT*/HIPPI2	2018FEBD	Cl	453	0.683	−218.5 ± 3.2	−117.8 ± 2.6
58200.79225	0.87988	AAT/HIPPI2	2018MAR	Cl	462	0.726	−157.6 ± 1.7	−49.8 ± 1.6
58201.80348	0.13177	AAT/HIPPI2	2018MAR	Cl	463	0.731	−231.0 ± 1.8	24.8 ± 2.5
58203.79980	0.62904	AAT/HIPPI2	2018MAR	Cl	463	0.731	−260.4 ± 1.9	−22.3 ± 1.8
58204.79716	0.87747	AAT/HIPPI2	2018MAR	Cl	463	0.731	−188.4 ± 1.8	−59.8 ± 1.7
58207.79703	0.62471	AAT/HIPPI2	2018MAR	Cl	463	0.733	−276.3 ± 1.8	12.8 ± 1.9
58210.53357	0.30636	AAT/HIPPI2	2018MAR	Cl	459	0.717	−176.4 ± 4.2	−62.7 ± 4.9
58210.57468	0.31660	AAT/HIPPI2	2018MAR	Cl	459	0.714	−172.8 ± 4.2	−73.3 ± 4.5
58212.77341	0.86429	AAT/HIPPI2	2018MAR	Cl	463	0.731	−184.9 ± 1.9	−58.3 ± 2.0
58242.62498	0.30006	WSU/HIPPI2	2018MAY	Cl	461	0.723	−153.2 ± 9.6	−59.1 ± 10.0
58242.64011	0.30383	WSU/HIPPI2	2018MAY	Cl	461	0.725	−154.1 ± 10.5	−54.9 ± 10.9
58242.65395	0.30727	WSU/HIPPI2	2018MAY	Cl	462	0.728	−196.4 ± 11.1	−77.9 ± 8.9
58242.66768	0.31069	WSU/HIPPI2	2018MAY	Cl	463	0.731	−161.2 ± 11.2	−60.0 ± 11.3
58242.68237	0.31435	WSU/HIPPI2	2018MAY	Cl	463	0.733	−189.2 ± 10.9	−52.3 ± 11.3
58247.54748	0.52621	WSU/HIPPI2	2018MAY	Cl	460	0.717	−315.0 ± 9.8	−37.3 ± 10.4
58249.52182	0.01800	WSU/HIPPI2	2018MAY	Cl	460	0.717	−312.4 ± 11.7	−38.0 ± 10.7
58249.53773	0.02196	WSU/HIPPI2	2018MAY	Cl	460	0.717	−296.3 ± 11.8	−48.0 ± 13.7
58284.50760	0.73266	UNSW/MHIPPI	M2018JAN	Cl	453	0.748	−278.5 ± 20.5	−5.5 ± 19.3

58311.33394	0.41487	AAT/HIPPI2	2018JUL	Cl	459	0.703	−210.8 ± 2.1	−81.3 ± 1.9
58316.33830	0.66142	AAT/HIPPI2	2018JUL	Cl	459	0.703	−243.9 ± 1.8	30.6 ± 1.9
58328.40509	0.66715	UNSW/MHIPPI	M2018JAN	Cl	453	0.751	−226.7 ± 13.2	43.9 ± 14.3
58334.40236	0.16102	UNSW/MHIPPI	M2018JAN	Cl	454	0.754	−218.2 ± 11.3	72.7 ± 11.7
58335.35876	0.39925	UNSW/MHIPPI	M2018JAN	Cl	453	0.748	−237.1 ± 20.4	−88.0 ± 24.0
58335.43132	0.41732	UNSW/MHIPPI	M2018JAN	Cl	457	0.767	−206.1 ± 14.0	−40.7 ± 13.9
58343.38059	0.39742	UNSW/MHIPPI	M2018JAN	Cl	455	0.758	−229.3 ± 13.5	−58.9 ± 13.0
58346.37939	0.14439	AAT/HIPPI2	2018AUG	Cl	462	0.626	−193.0 ± 2.4	63.2 ± 2.1
58347.38759	0.39553	AAT/HIPPI2	2018AUG	Cl	462	0.629	−207.1 ± 2.0	−118.5 ± 2.3
58348.36094	0.63798	AAT/HIPPI2	2018AUG	Cl	461	0.620	−268.6 ± 4.7	64.2 ± 4.6
58350.35545	0.13480	AAT/HIPPI2	2018AUG	Cl	461	0.620	−203.1 ± 2.0	74.2 ± 1.9
58351.39224	0.39305	AAT/HIPPI2	2018AUG	Cl	463	0.635	−182.0 ± 1.9	−87.0 ± 2.2
58352.39406	0.64260	AAT/HIPPI2	2018AUG	Cl	464	0.638	−258.4 ± 2.1	42.3 ± 2.1
58357.38917	0.88684	AAT/HIPPI2	2018AUG	Cl	465	0.582	−170.1 ± 3.2	−58.4 ± 2.7
58359.37215	0.38078	AAT/HIPPI2	2018AUG	Cl	463	0.535	−193.0 ± 2.5	−91.7 ± 2.5
58362.36071	0.12520	AAT/HIPPI2	2018AUG	Cl	463	0.535	−194.1 ± 2.7	56.7 ± 2.7
58363.36297	0.37486	AAT/HIPPI2	2018AUG	Cl	464	0.538	−176.5 ± 2.7	−79.3 ± 2.6

Notes:

[a] Heliocentric modified Julian Date (= JD – 2400000.5) of mid point of observation.
[b] Telescopes are: UNSW, 35 cm Schmidt Cassegrain telescope at UNSW Observatory, Sydney; WSU, Western Sydney University's 60 cm Ritchey Chretien Telescope at Penrith Observatory; AAT, 3.9 m Anglo-Australian Telescope.
[c] Cl denoting clear (no filter) or SDSS g' filter.
[d] The effective wavelength of the observation in nm.
[e] The efficiency correction – the raw value is divided by this number to give the tabulated values.
* Indicates AAT f/15, all other AAT observations are f/8.