

KIC 003549993

Q1-17 DR25 TCE Parameters

TCE	Run Type	KOI?	Period (Days)	Epoch (BKJD)	Depth (ppm)	Duration (Hours)	MES	SNR	R_{\star} (R_{\odot})	T_{\star} (K)	R_p (R_{\oplus})	S_p (S_{\oplus})
003549993-01	OBS	No	0.694363	131.935709	2192.7	0.948	81.6	95.1	0.81	5616	7.73	2667.74

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003549993-01	OBS	FP	0.00	1	0	1	1	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—CENT_RESOLVED_OFFSET—EPHEM_MATCH

Notes: OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

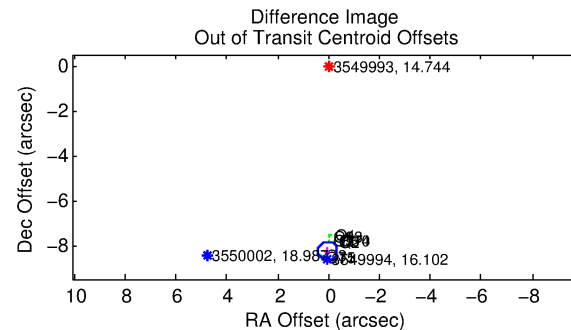
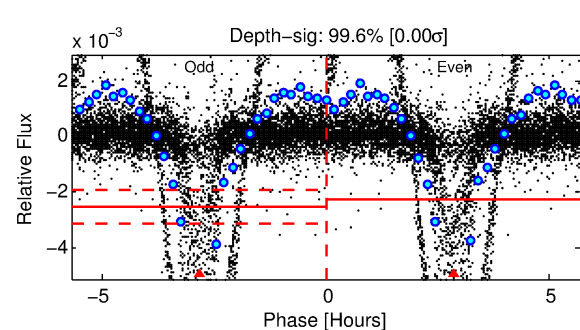
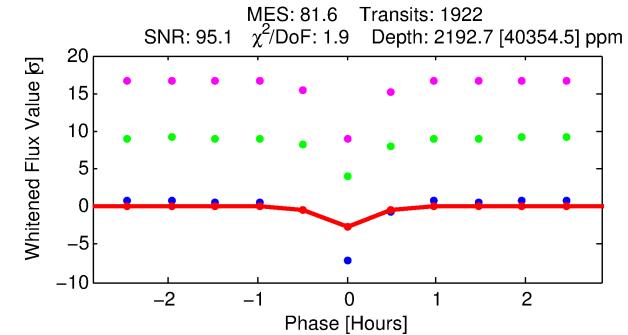
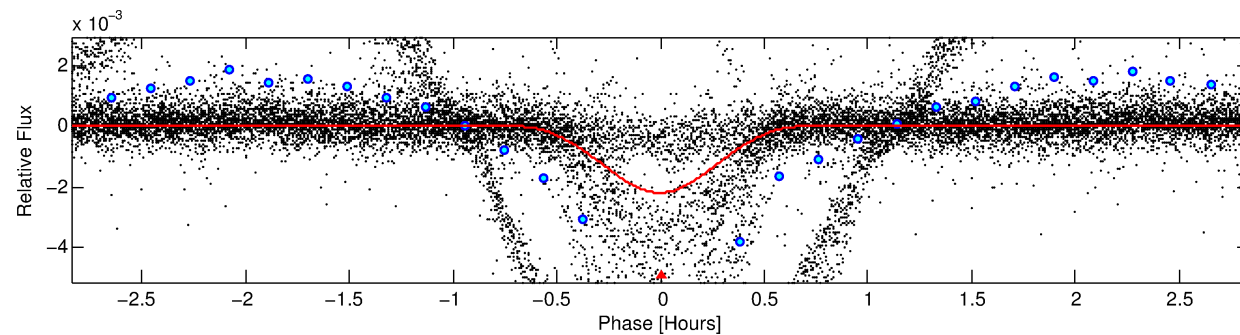
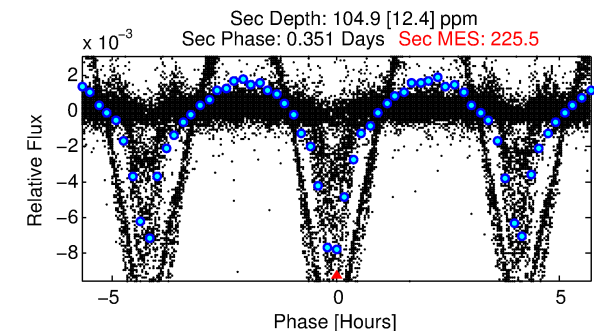
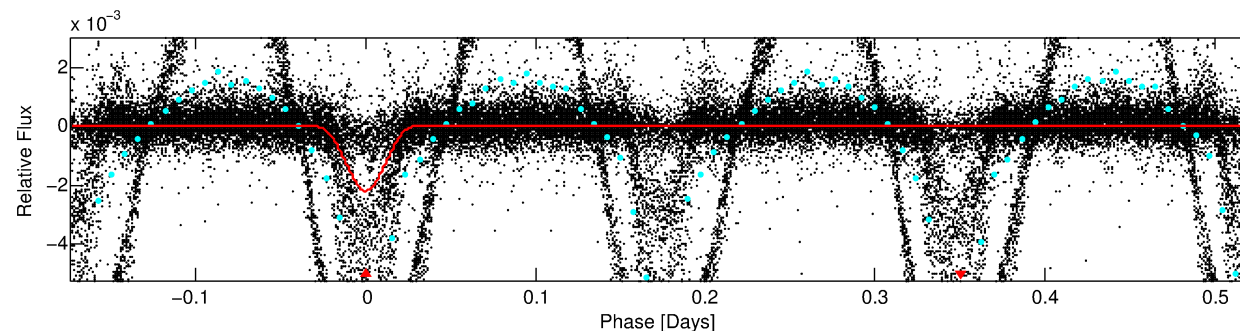
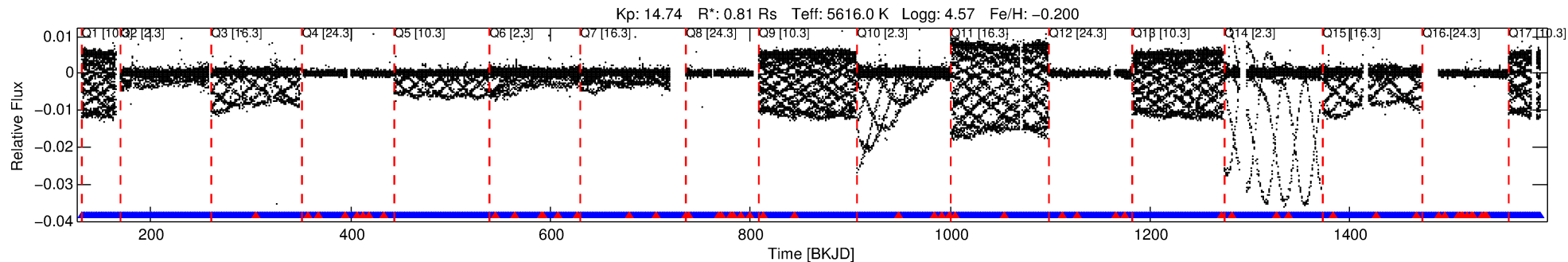
Ephemeris Match Information For 003549993-01

TCE (1)	KIC	Parent (2)	Parent KIC	P ₁ :P ₂	Dist ($''$)	Δ Row	Δ Col	m ₂	m ₁	D ₂ /D ₁	Mechanism	Flag	σ_P	σ_T
003549993-01	3549993	003549994-pri	3549994	2:1	8.6	2	-1	16.10	14.74	198.95	Direct-PRF	0	0.04	0.02

Notes: P₁:P₂ is the period ratio. Dist is the distance in arcseconds. Δ Row and Δ Col are the number of pixels apart in row and column. m₂ and m₁ are the magnitudes of the parent and child. D₂/D₁ is the parent's transit depth divided by the child's. σ_P and σ_T are the significance of the match in period and epoch. For a match to be considered significant $\sigma_P < 5.0$ and $\sigma_T < 5.0$. Matches which have σ_P and σ_T very close to this cutoff should receive extra scrutiny, especially if the period ratio is very large.

DV One-Page Summary

KIC: 3549993 Candidate: 1 of 1 Period: 0.694 d



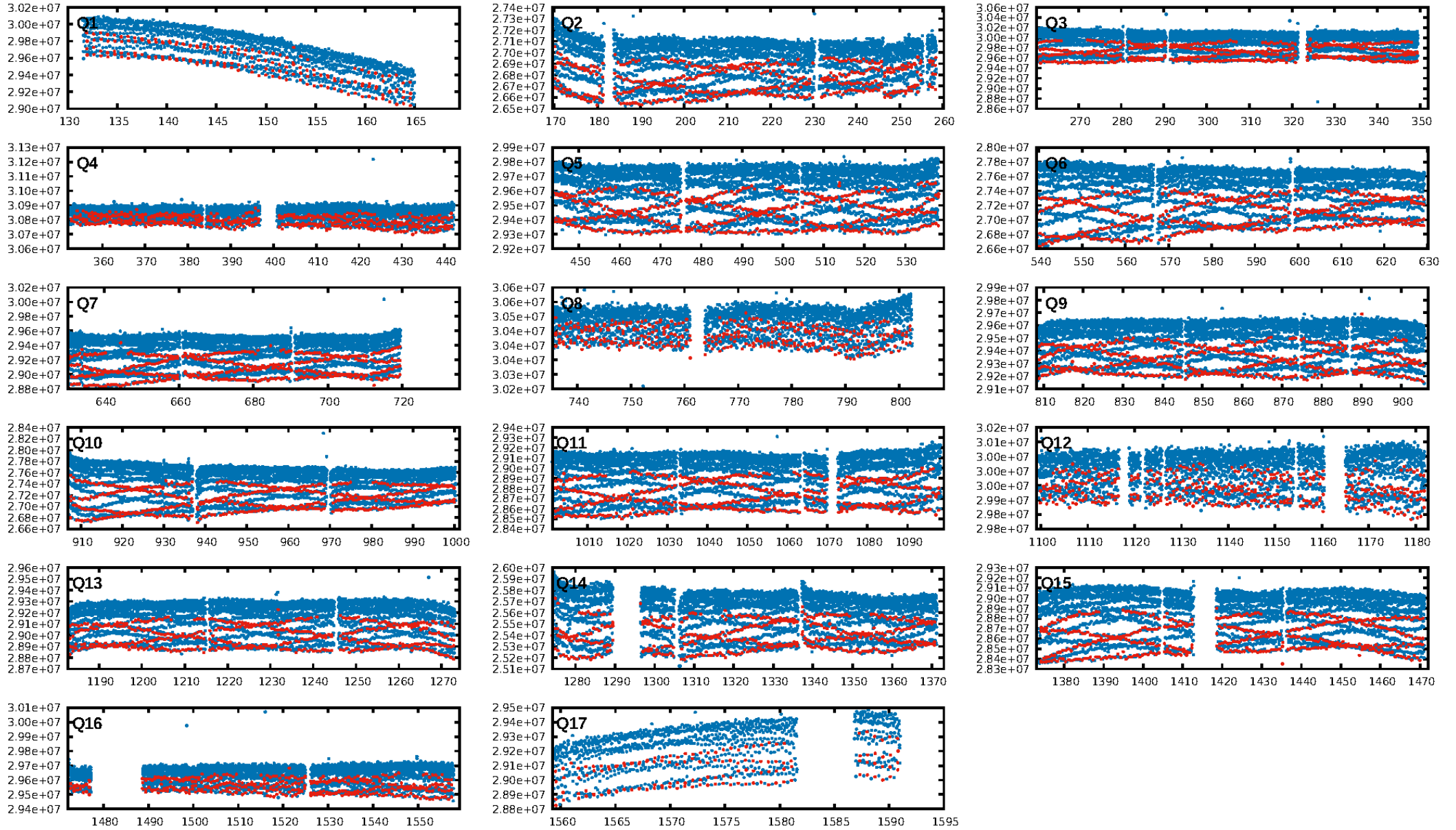
DV Fit Results:

Period = 0.69436 [0.00000] d
Epoch = 131.9357 [0.0002] BKJD
Rp/R* = 0.0874 [0.2548]
a/R* = 2.60 [1.17]
b = 1.00 [0.61]
Seff = 2667.74 [769.88]
Teff = 1833 [132] K
Rp = 7.73 [22.58] Re
a = 0.0148 [0.0027] AU
Ag = 0.21 [1.24] [-0.64σ]
Teffp = 1922 [2802] K [0.03σ]

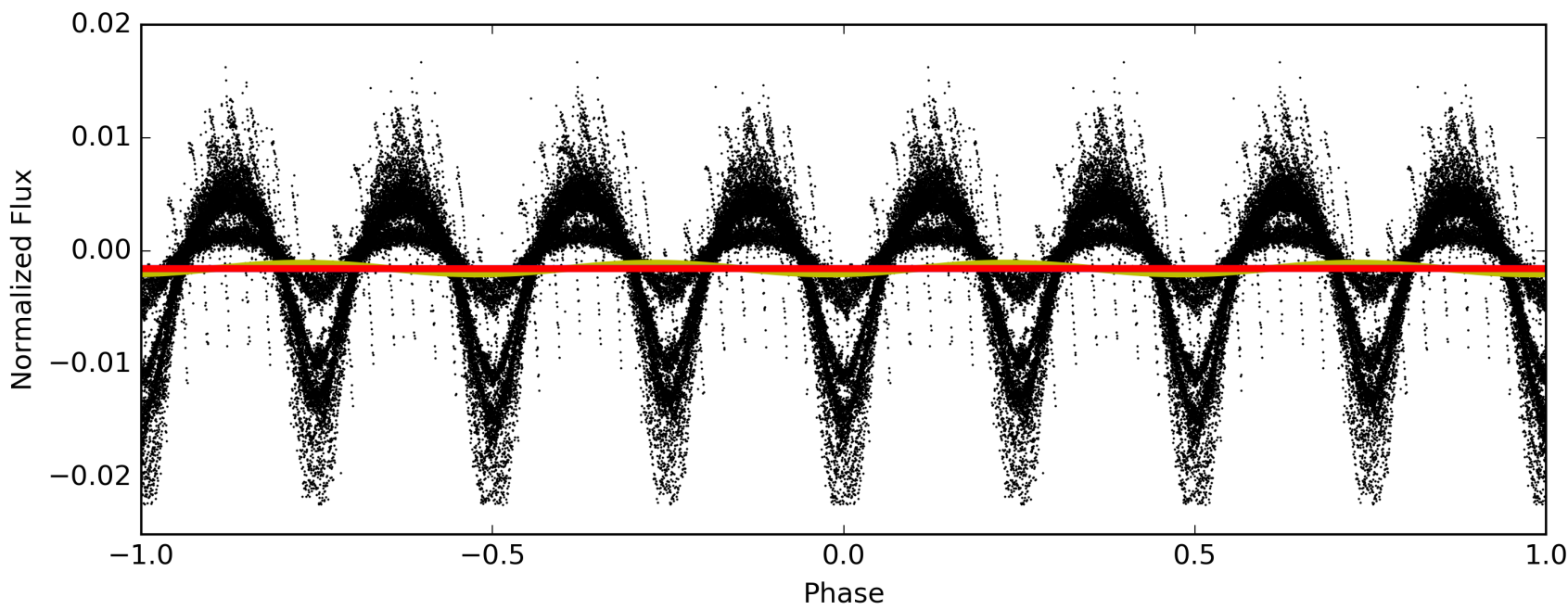
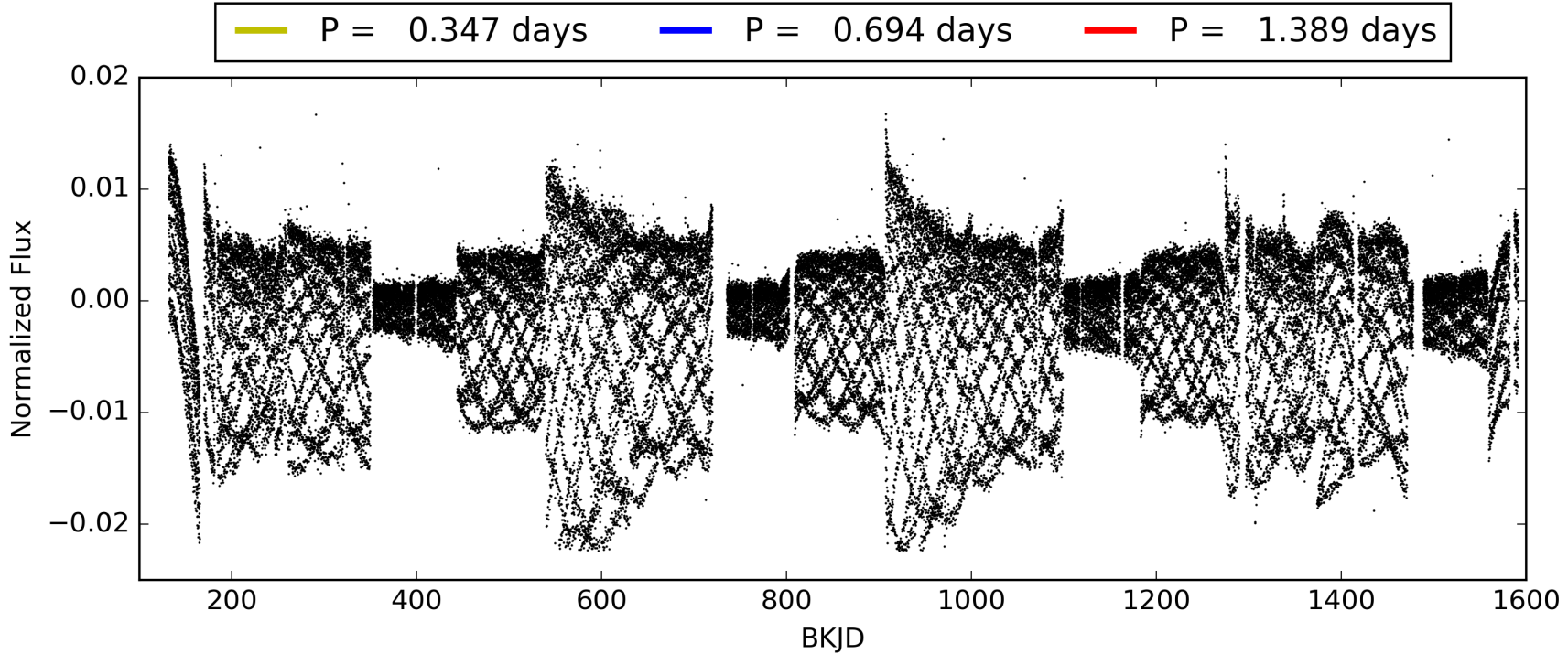
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.04e-107
RollingBand-fgt: 0.97 [1780/1836]
GhostDiagnostic-chr: N/A
Centroid-sig: 0.0%
Centroid-so: 7.515 arcsec [23.33σ]
OotOffset-rm: 8.253 arcsec [63.13σ]
KicOffset-rm: 8.408 arcsec [58.72σ]
OotOffset-st: 4/4/0/5 [13]
KicOffset-st: 4/4/0/5 [13]
DiffImageQuality-fgm: 1.00 [13/13]
DiffImageOverlap-fno: 1.00 [17/17]

TCE 003549993-01, PDC Light Curves

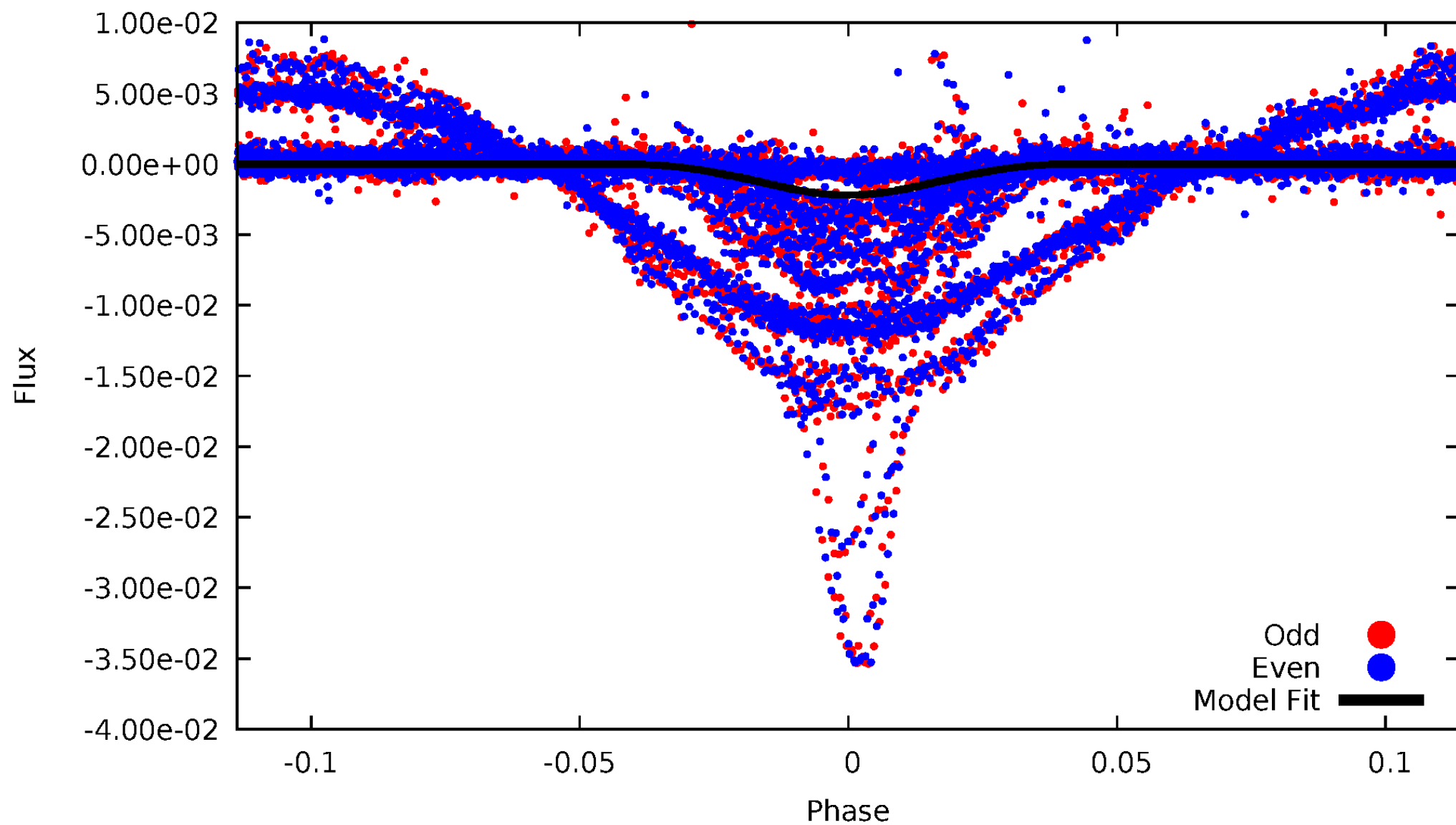


TCE 003549993-01



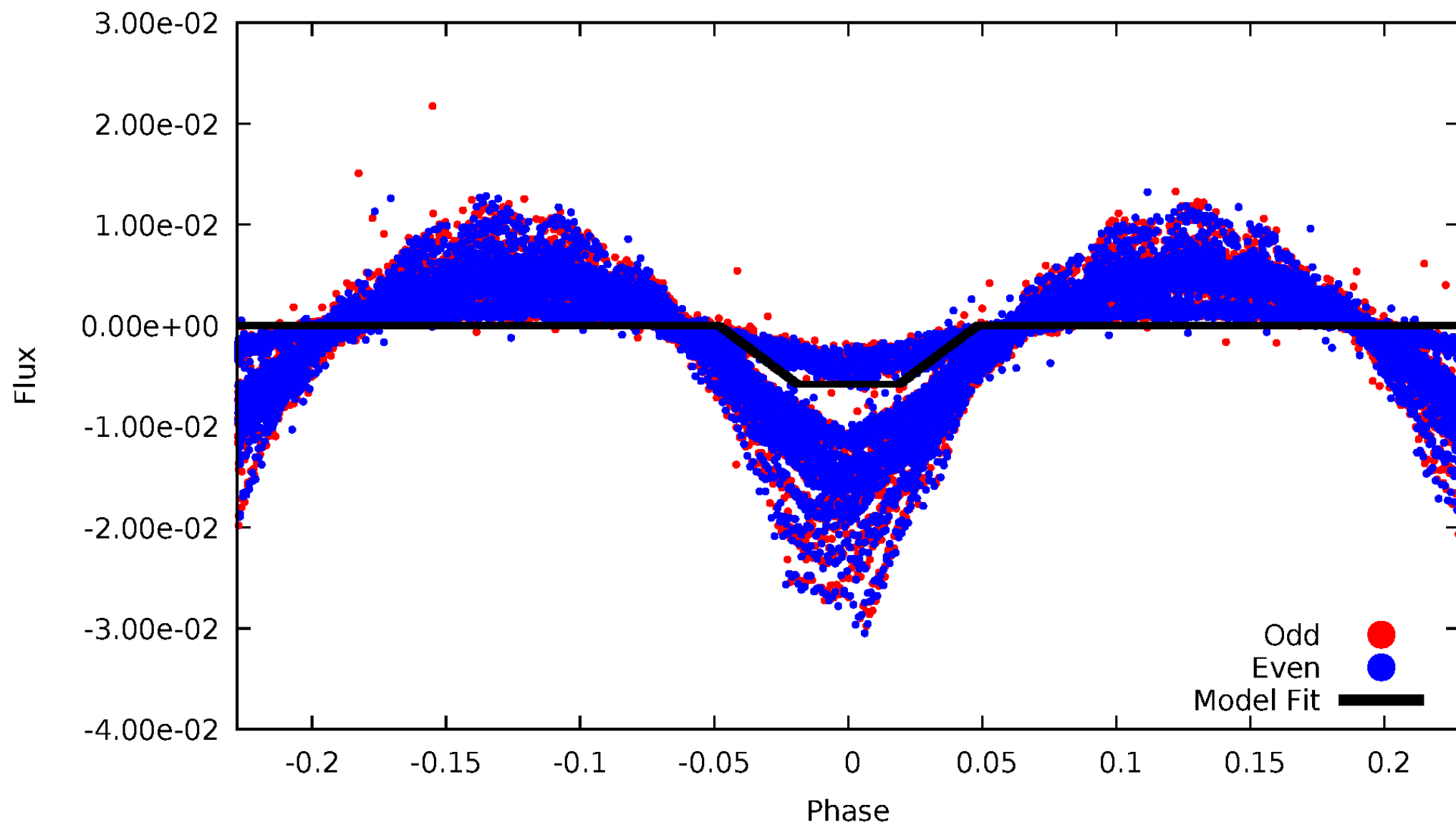
DV Odd/Even

TCE 003549993-01



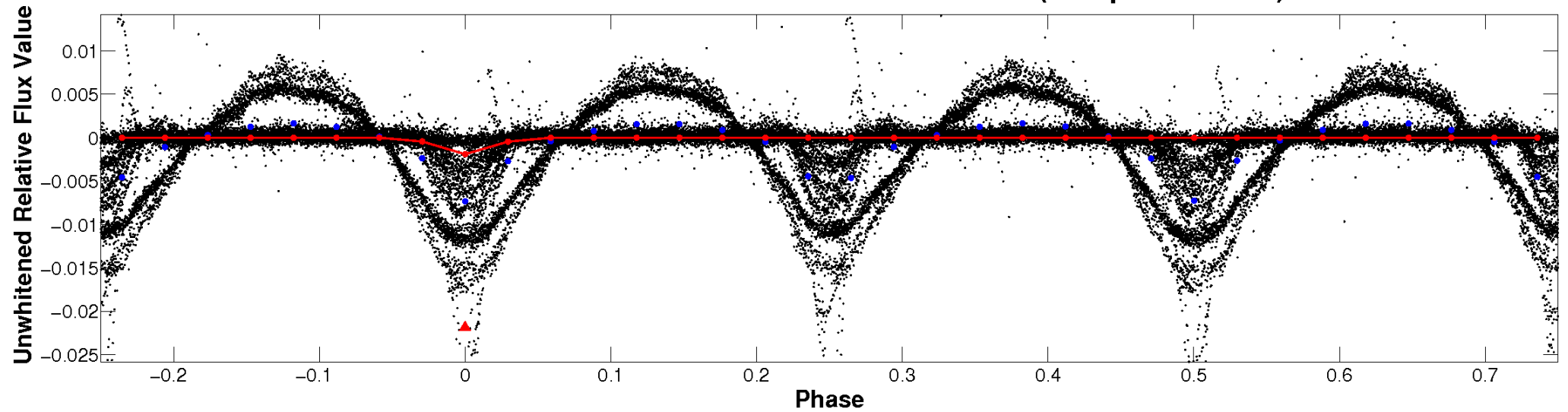
ALT Odd/Even

TCE 003549993-01

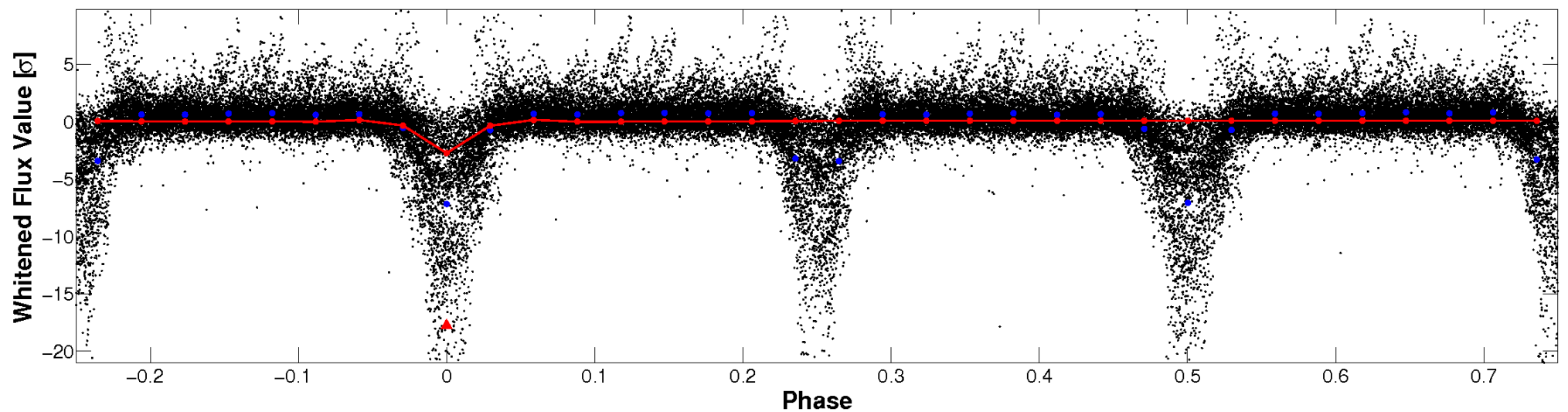


Non-Whitened Vs. Whitened Light Curve

Planet 1 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

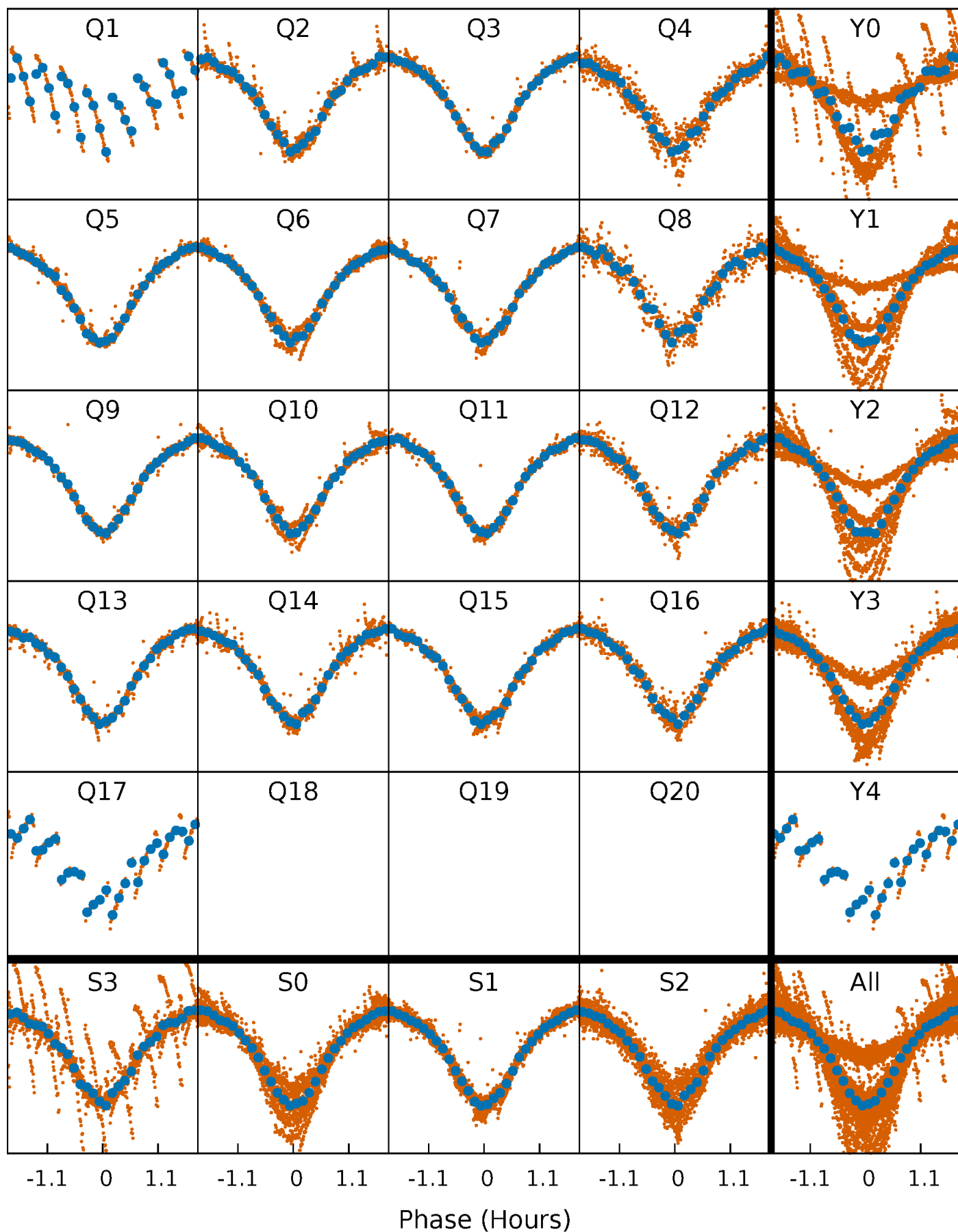


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



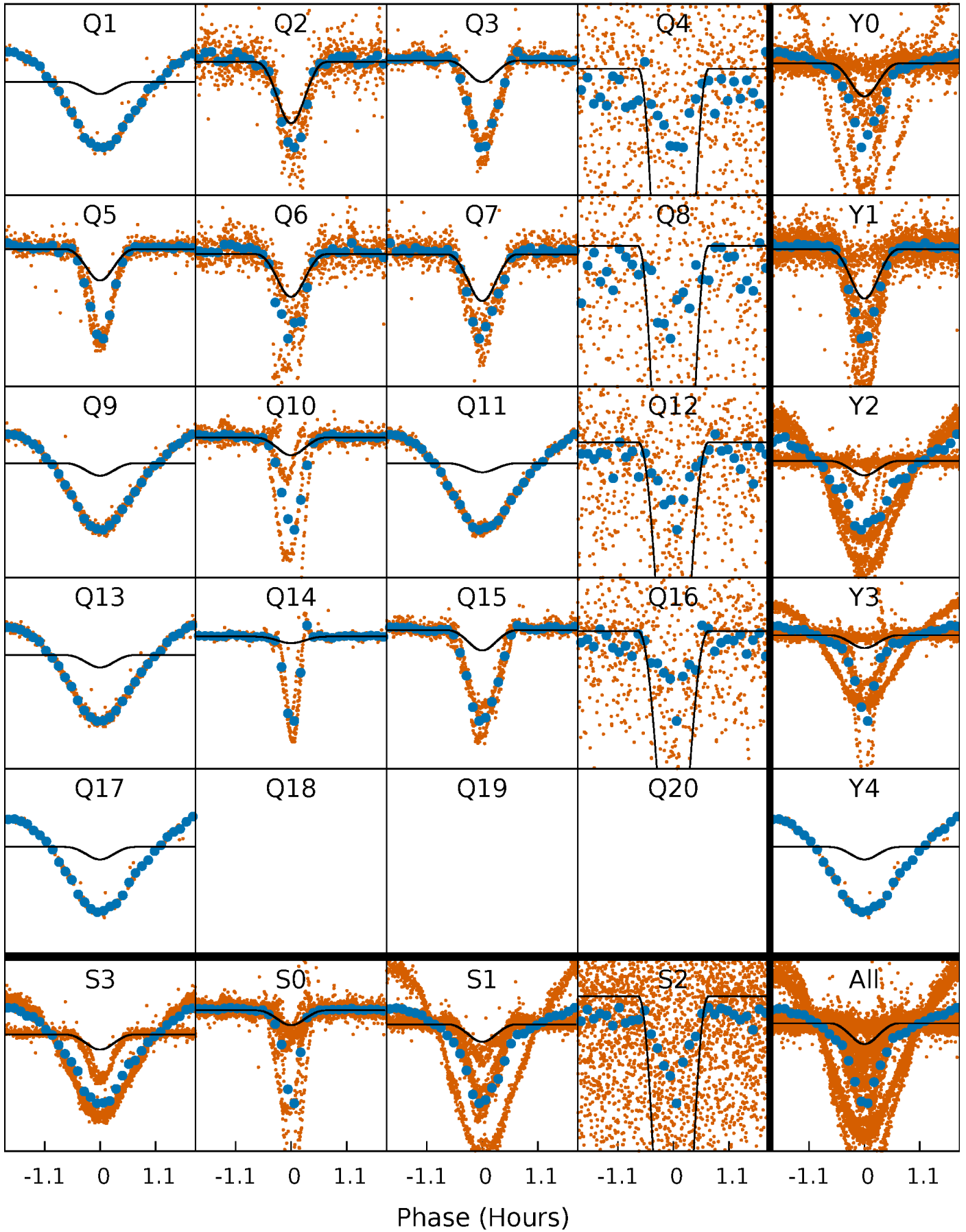
PDC Quarter-Phased Transit Curves

TCE 003549993-01 P= 0.694363 Days $T_0=131.935709$ (BKJD)



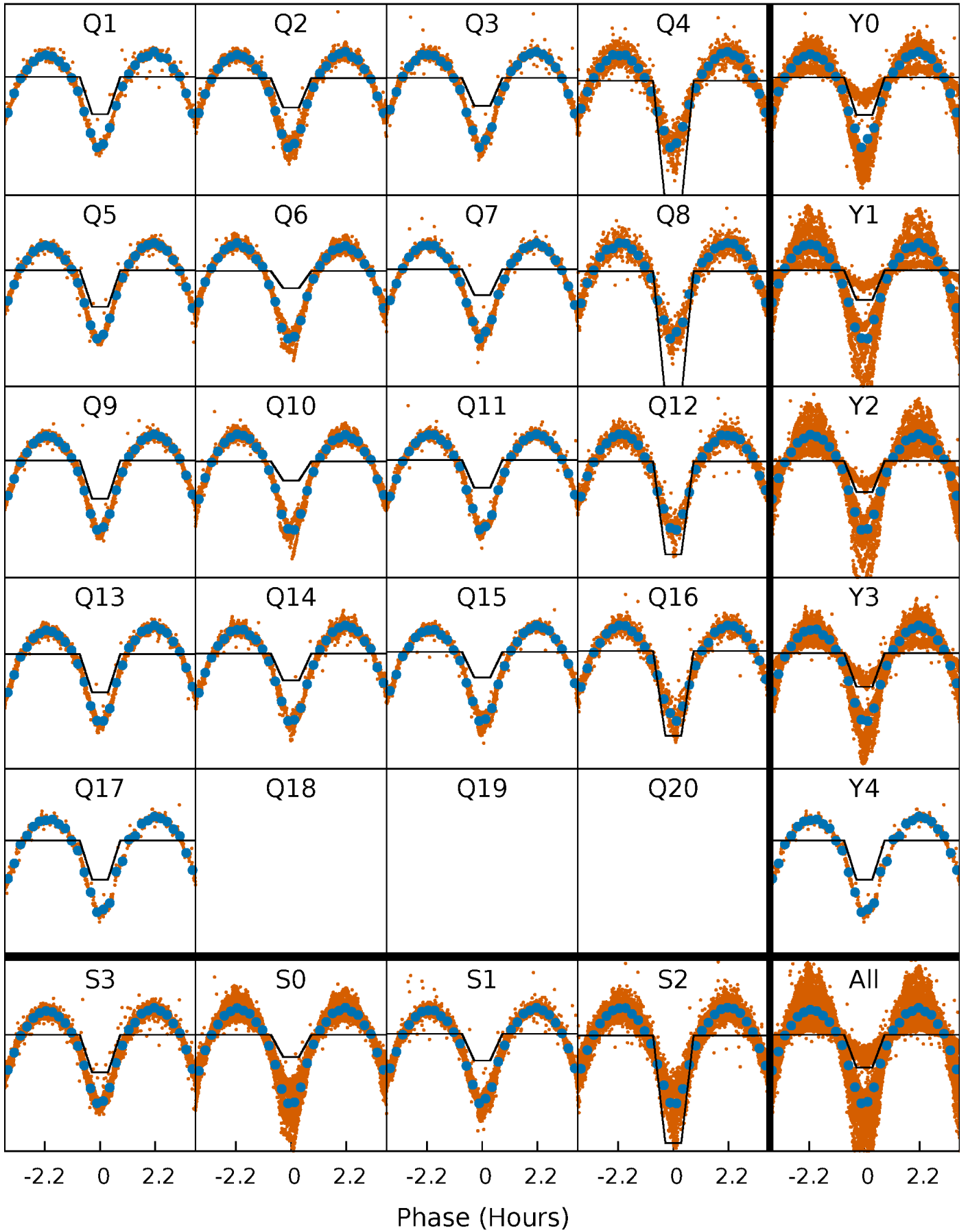
DV Quarter-Phased Transit Curves

TCE 003549993-01 P= 0.694363 Days $T_0=131.935709$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

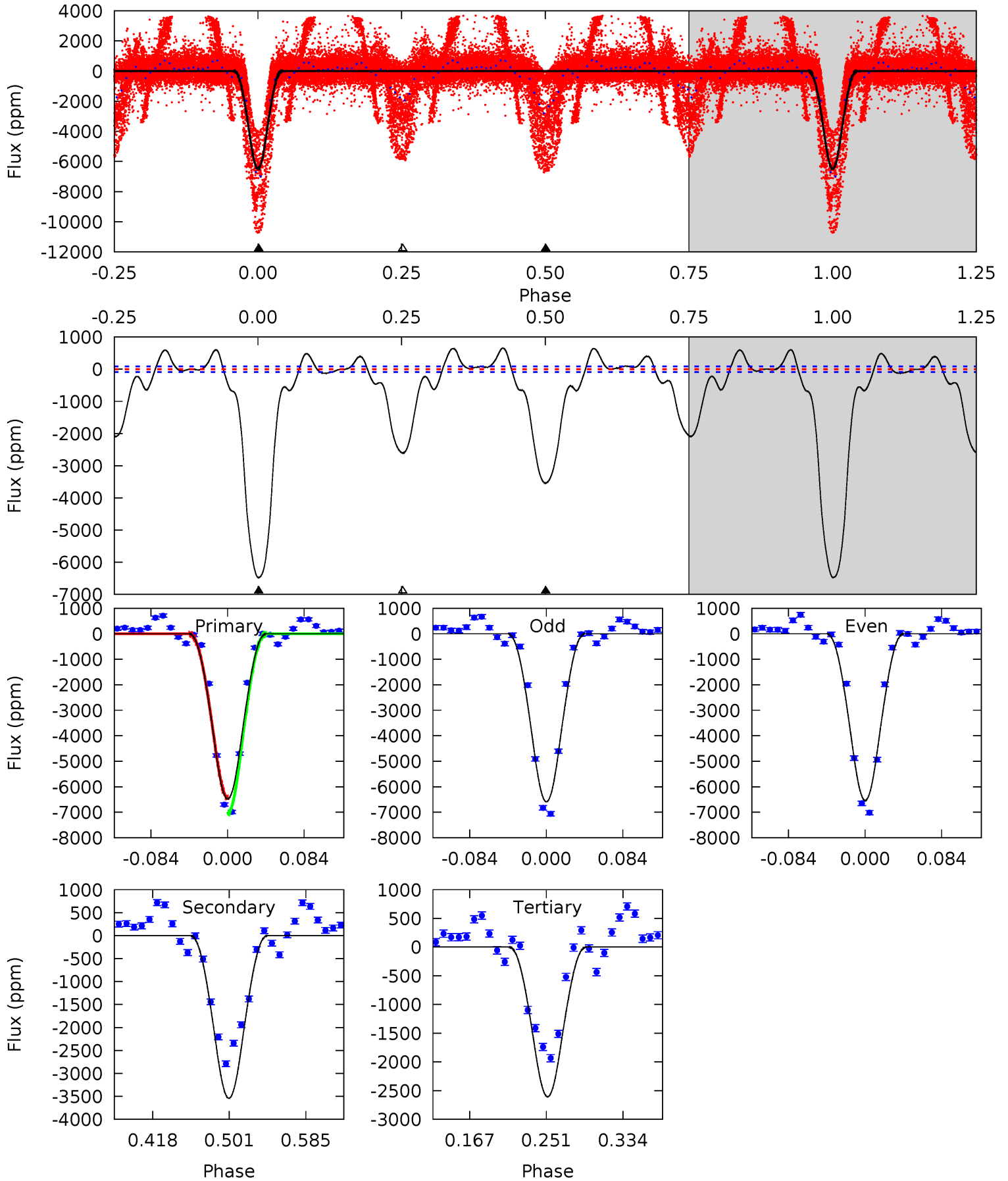
TCE 003549993-01 P= 0.694361 Days $T_0=131.937900$ (BKJD)



DV Model-Shift Uniqueness Test

003549993-01, P = 0.694363 Days, E = 131.241346 Days

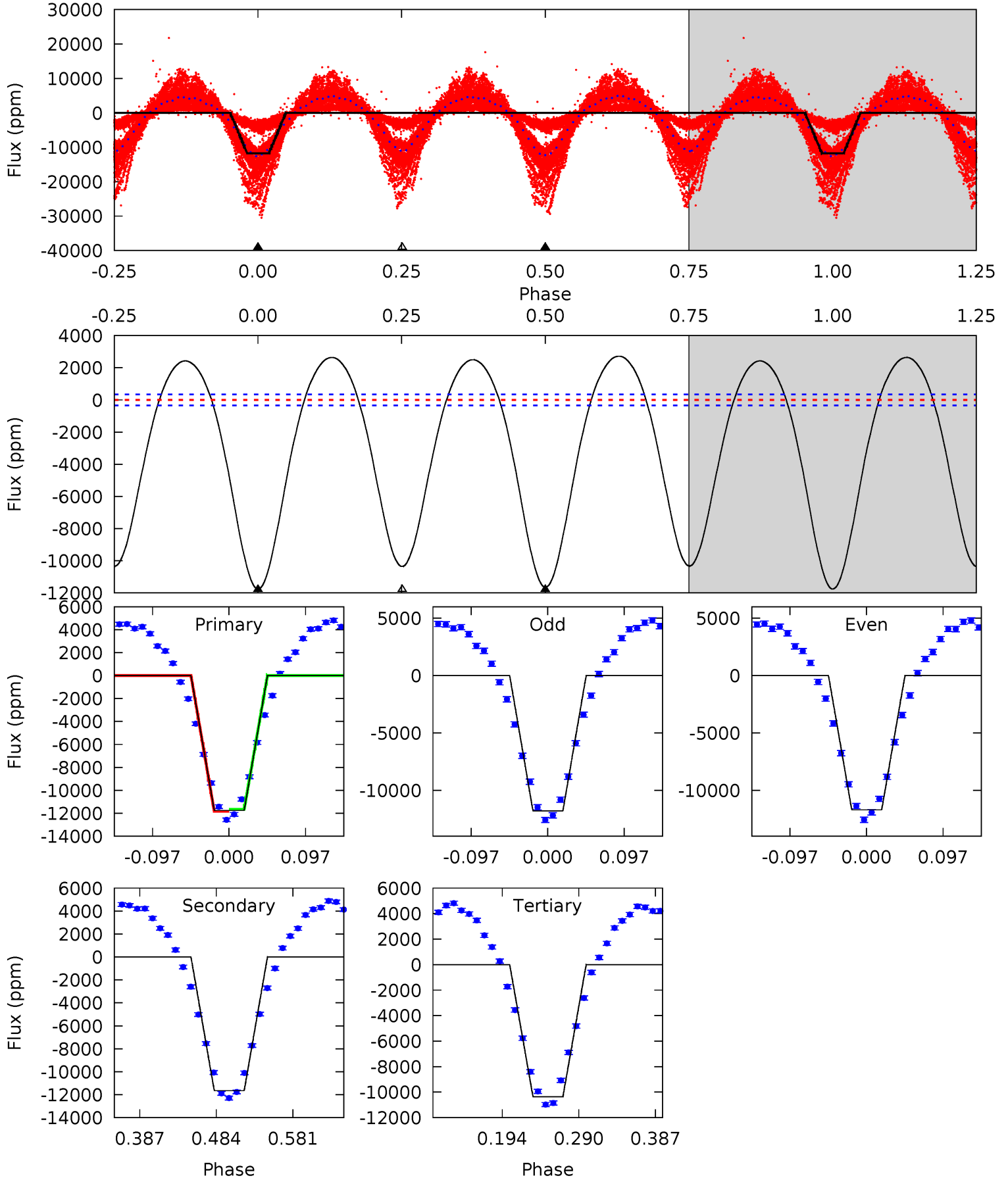
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
340.7	186.3	137.1	0	4.60	1.73	35.2	203.6	340.7	49.2	186.3	1.44	1.34	0.09	16.7



Alt Model-Shift Uniqueness Test

003549993-01, P = 0.694361 Days, E = 131.243539 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
157.4	156.0	138.7	0	4.57	1.66	61.2	18.7	157.4	17.3	156.0	0.61	0.98	0.19	1.18



Stellar Parameters For KIC 003549993

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5616^{+150}_{-167}	$4.574^{+0.036}_{-0.144}$	$-0.200^{+0.300}_{-0.300}$	$0.810^{+0.173}_{-0.069}$	$0.905^{+0.082}_{-0.109}$	$2.400^{+0.462}_{-0.929}$
	+3%/-3%	+1%/-3%	+150%/-150%	+21%/-9%	+9%/-12%	+19%/-39%
Source	PHO1	KIC0	KIC0	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 003549993-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-3542 ± 19	$19.52^{+18.49}_{-13.04}$	2609^{+135}_{-105}	3274^{+1917}_{-5157}	$1.084^{+8.905}_{-0.791}$
Alt.	-11647 ± 75	$18.62^{+18.56}_{-12.72}$	2606^{+135}_{-103}	4255^{+2882}_{-1005}	$3.985^{+37.043}_{-2.978}$

T_{max} = Theoretical Maximum Planetary Temperature

T_{obs} = Observed Planetary Temperature (Assuming $A=0.3$)

A_{obs} = Observed Albedo (Assuming $T=0$)

If a secondary eclipse is present, the system is likely an EB if $T_{\text{obs}} \gg T_{\text{max}}$ AND $A_{\text{obs}} \gg 1.0$

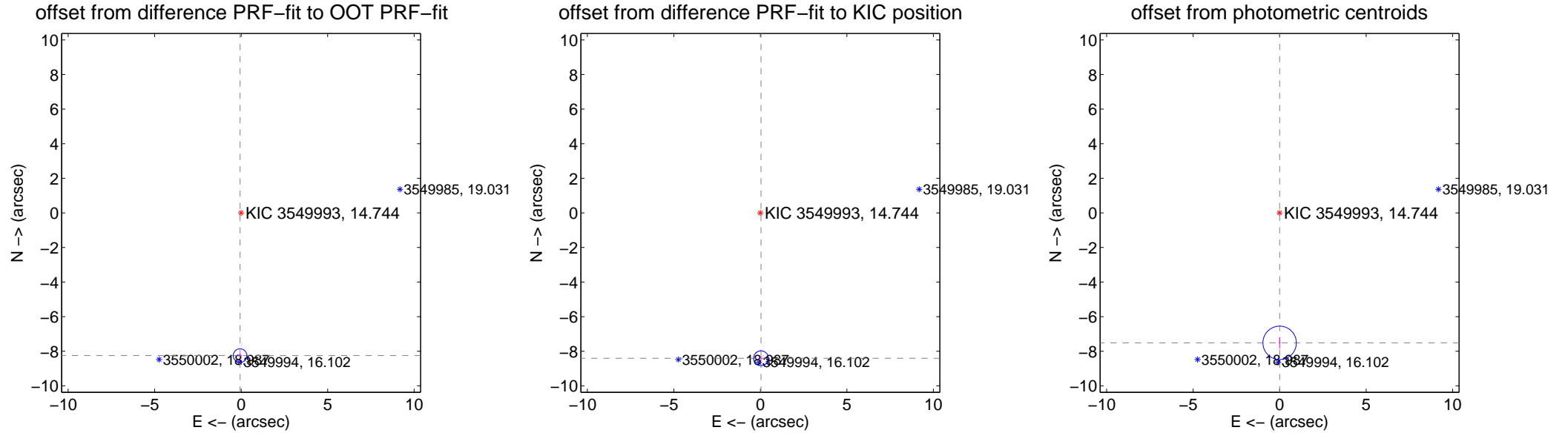
DV Centroid Data

Supplemental centroid analysis for 003549993-01. Kepler magnitude: 14.74. Transit SNR 95.07

There are 13 quarters with good PRF difference image offsets

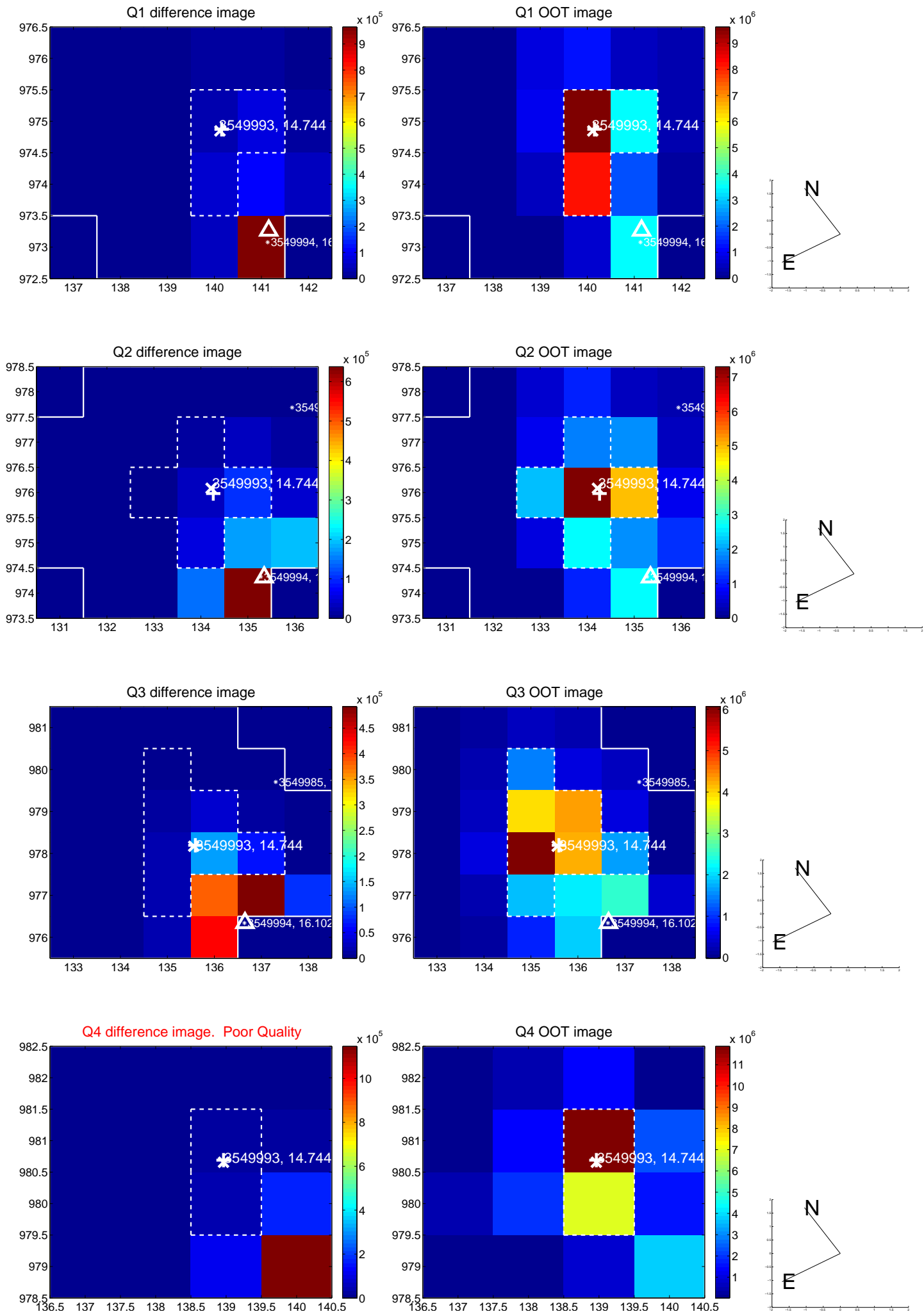
The direct PRF centroid is offset from the target star catalog position by about 0.16 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	8.253 ± 0.131	63.13	0.063 ± 0.105	-8.253 ± 0.131
PRF-fit source offset from KIC position	8.408 ± 0.143	58.72	-0.035 ± 0.075	-8.408 ± 0.143
photometric centroid source offset	7.51 ± 0.32	23.33	-0.00 ± 0.05	-7.51 ± 0.32

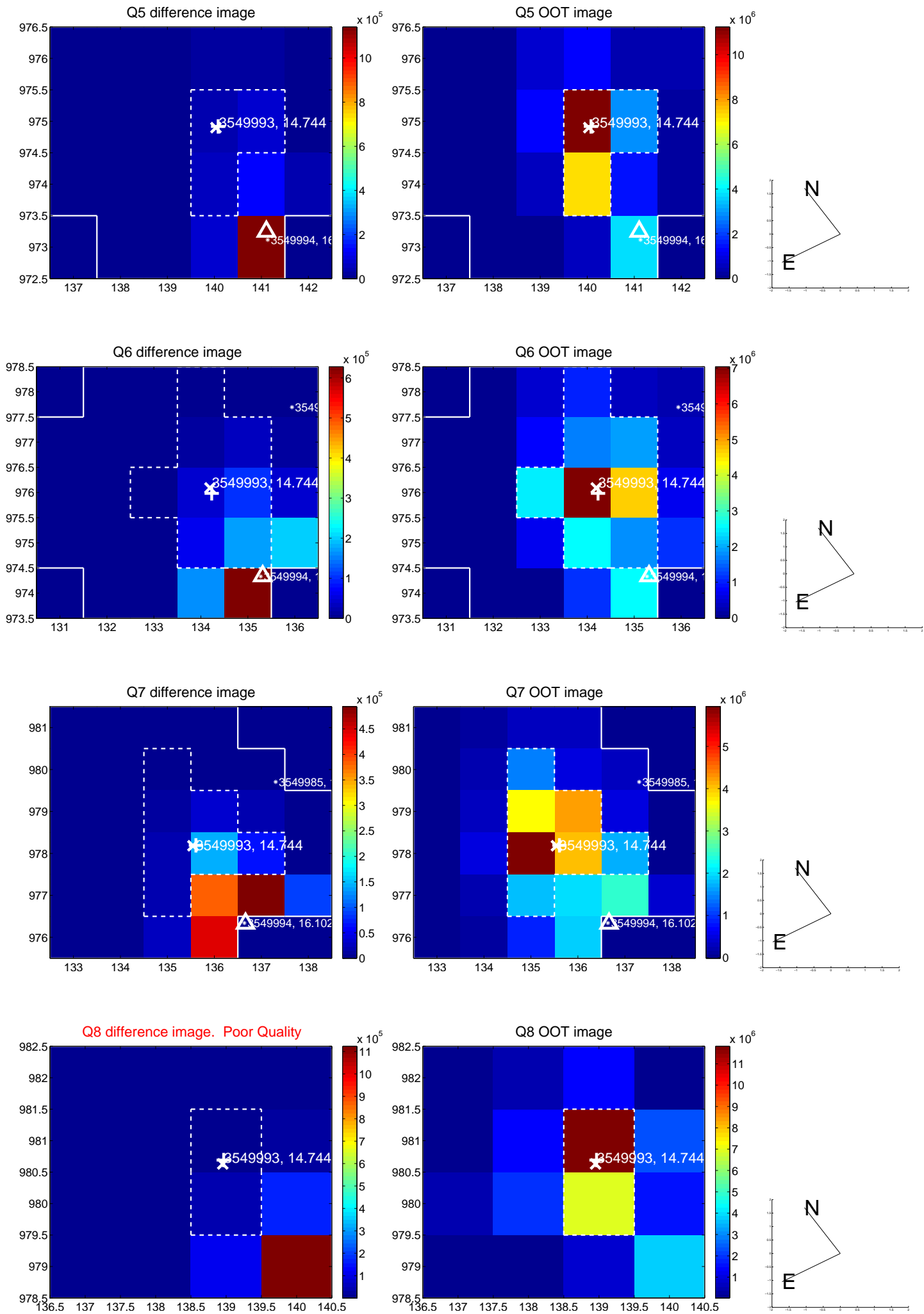


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ . Red *: target star. Blue *: Other stars. Text next to a star gives its KIC ID and kepmag. KIC IDs > 15,000,000 are from the UKIRT catalog.

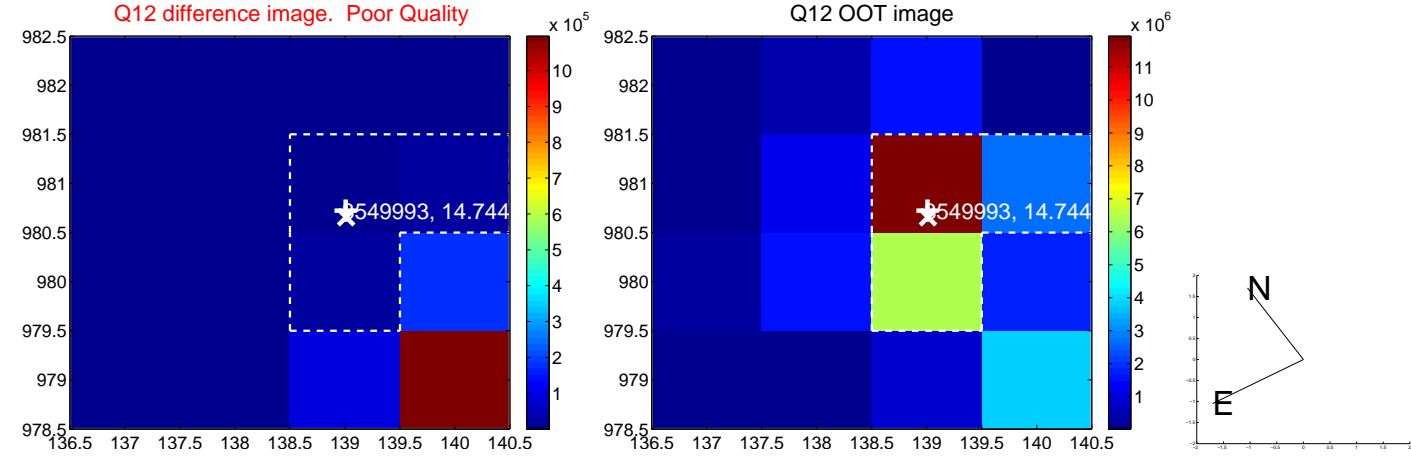
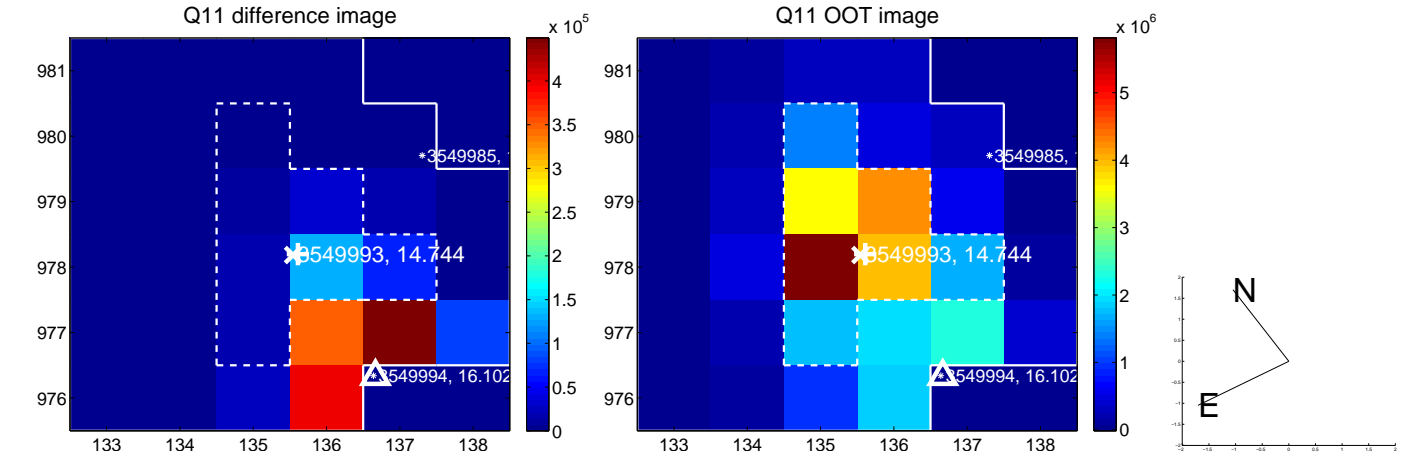
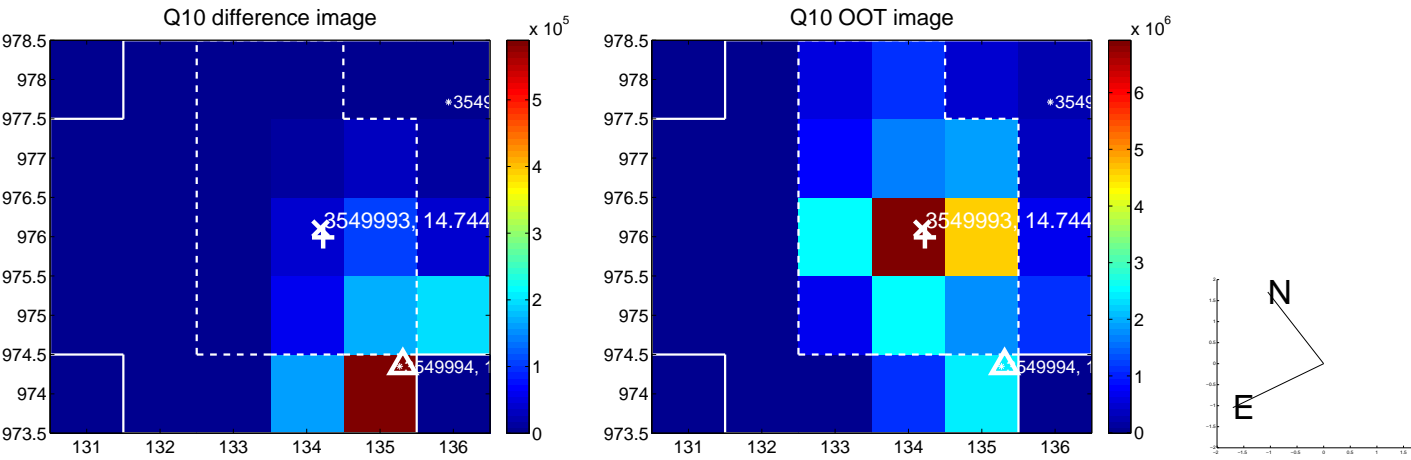
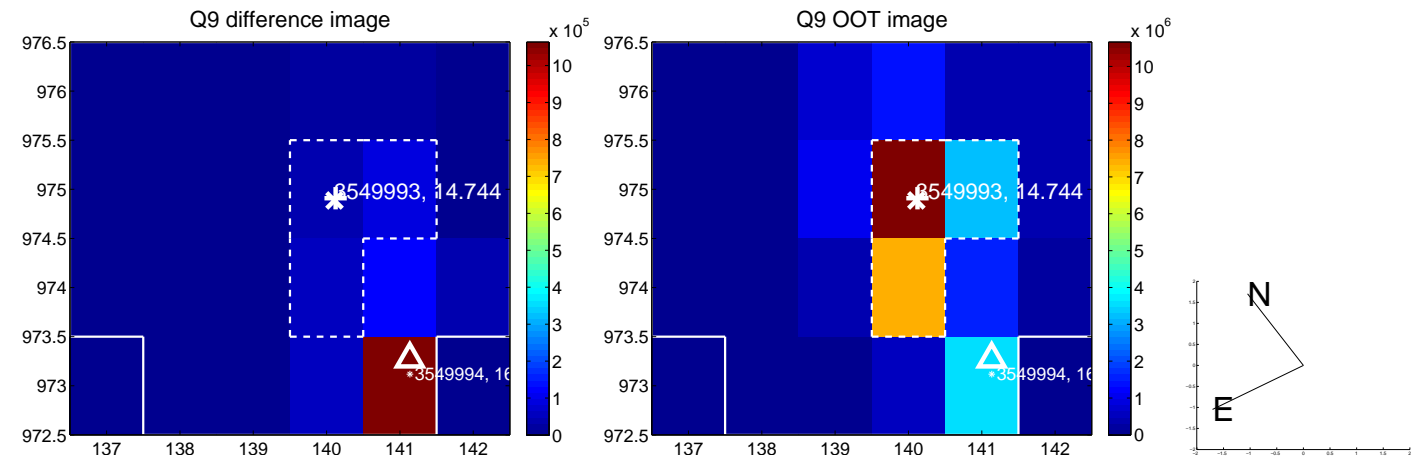
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



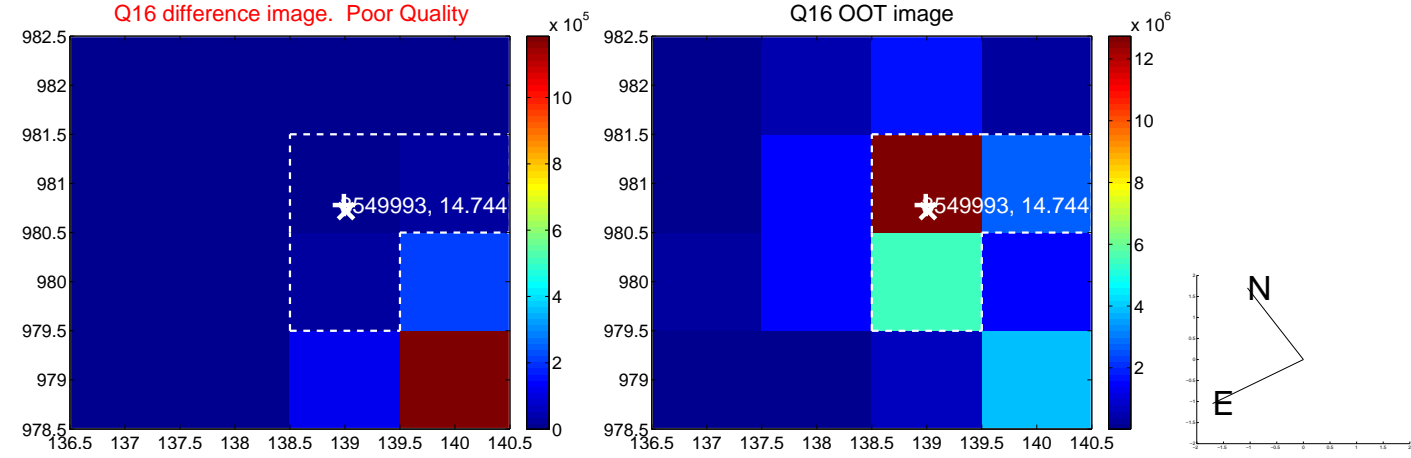
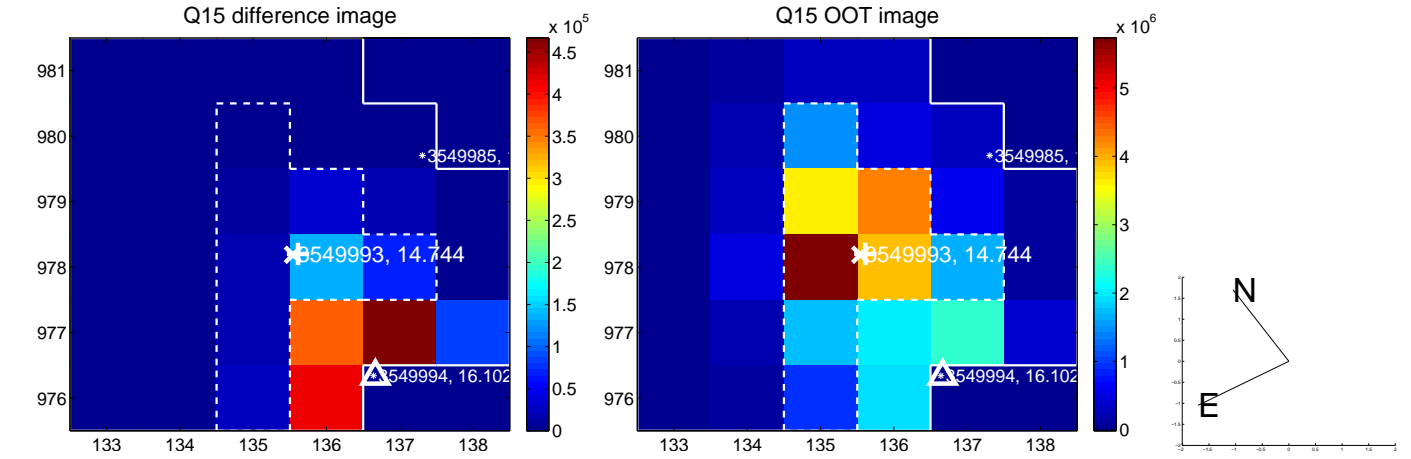
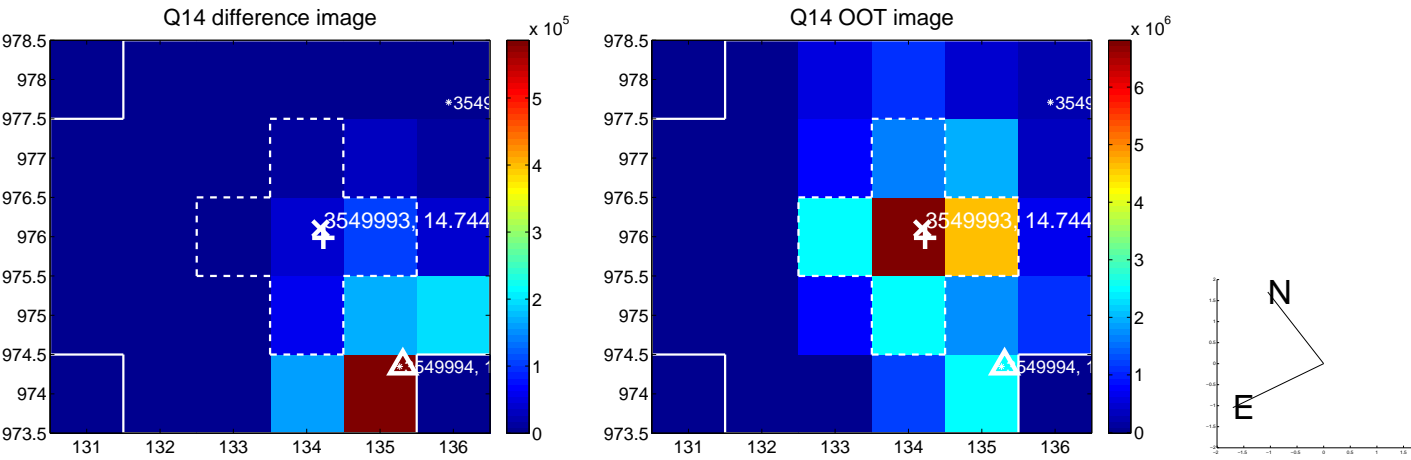
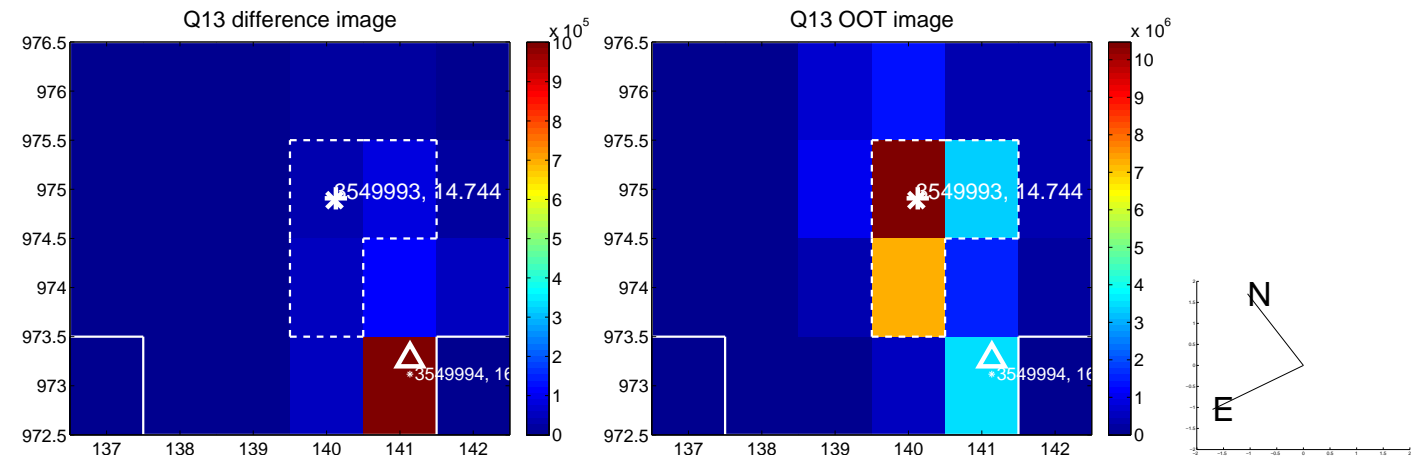
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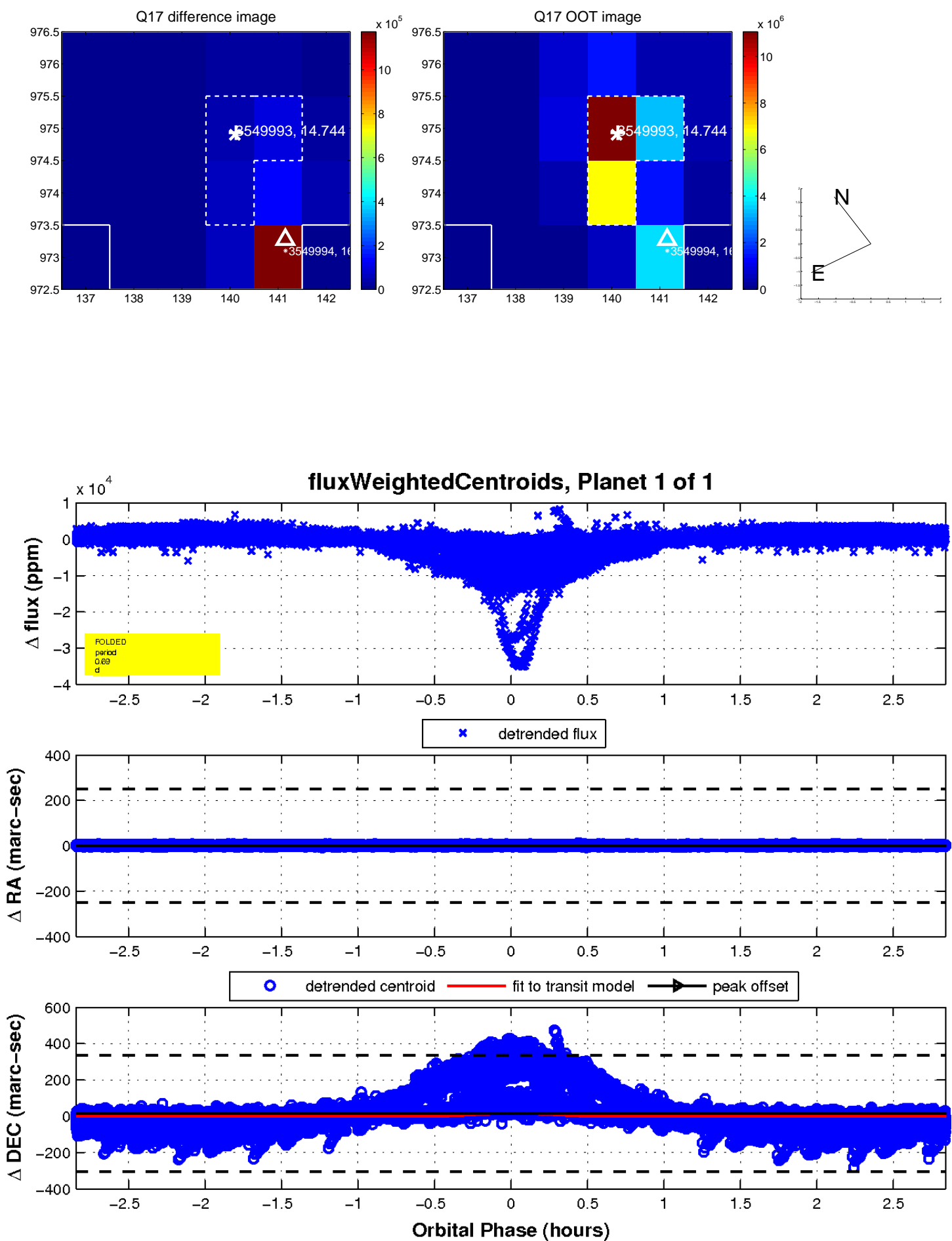
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UKIRT Image

Declination

