

KIC 009834731

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})
009834731-01	OBS	3043.01	3.089323	134.237908	78.2	3.099	11.2	11.4	1.10	6137	1.15	811.49

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009834731-01	OBS	PC	1.00	0	0	0	0	NO_COMMENT

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

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

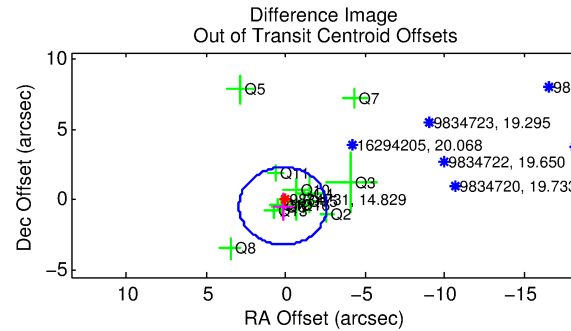
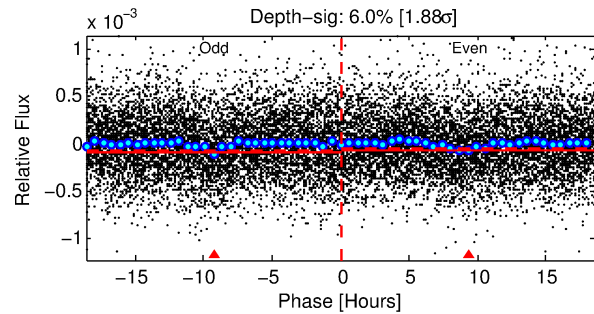
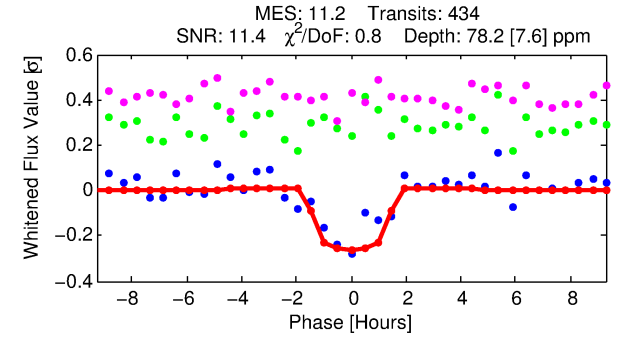
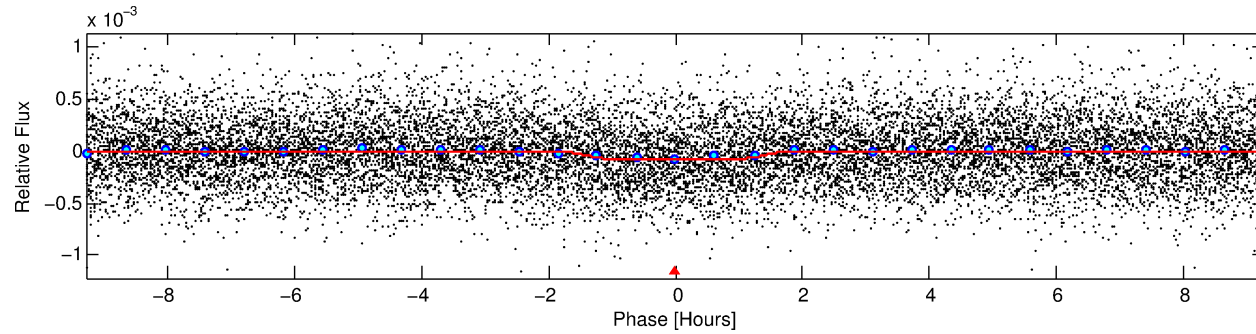
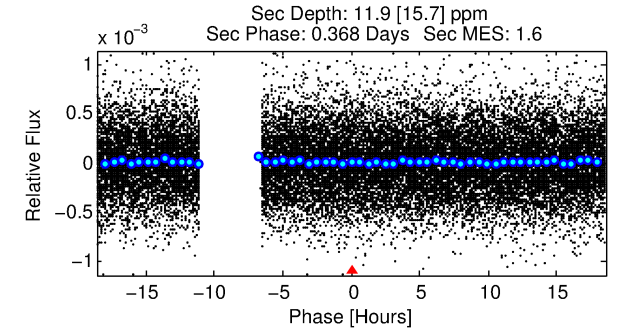
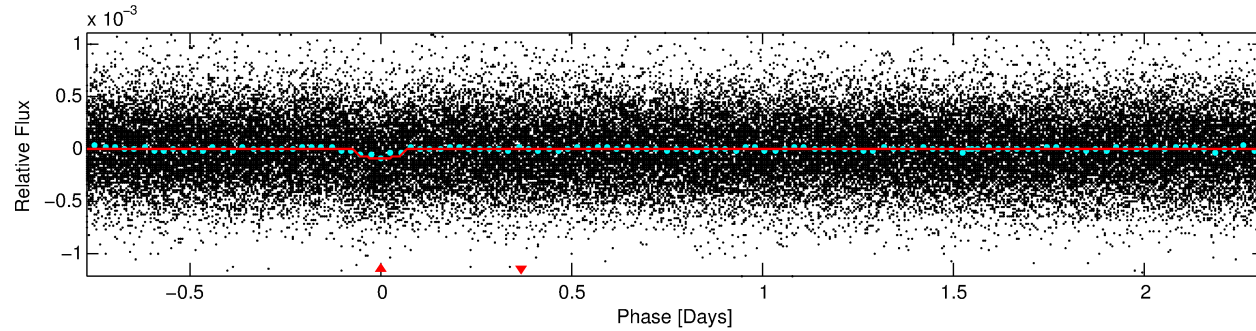
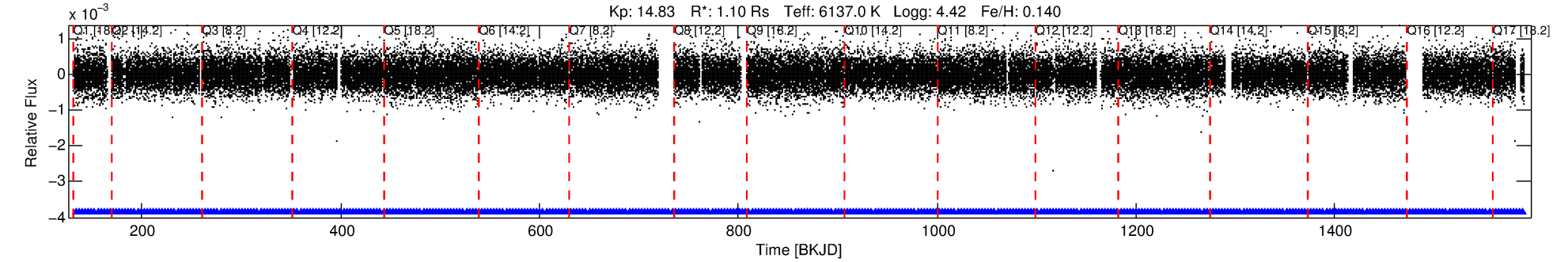
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009834731-01

No Significant Match Found

DV One-Page Summary

KIC: 9834731 Candidate: 1 of 1 Period: 3.089 d
KOI: K03043.01 Corr: 0.892



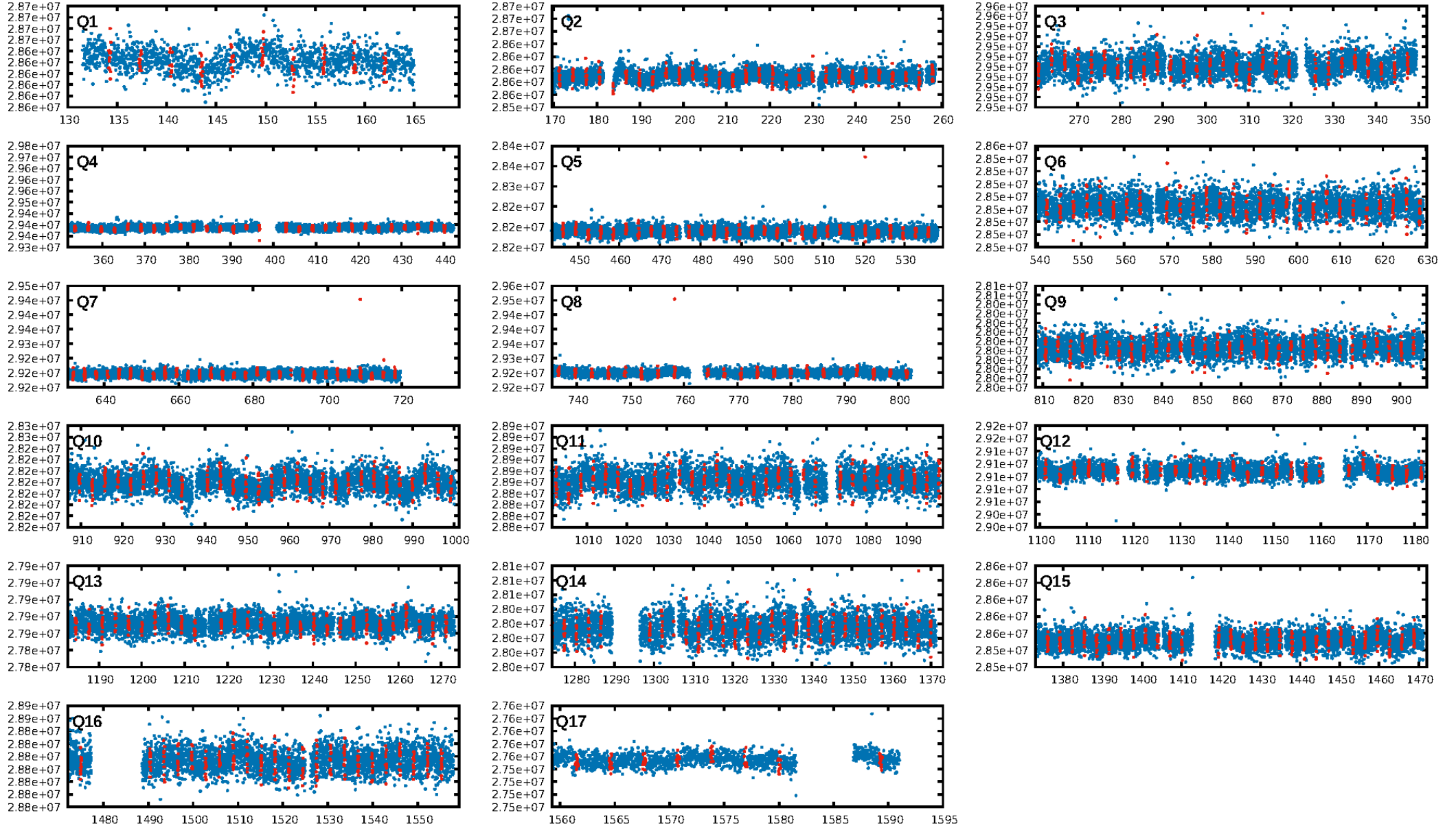
DV Fit Results:

Period = 3.08932 [0.00002] d
Epoch = 134.2379 [0.0043] BKJD
Rp/R* = 0.0095 [0.0054]
a/R* = 3.66 [9.89]
b = 0.90 [0.65]
Seff = 811.49 [162.92]
Teff = 1361 [68] K
Rp = 1.15 [0.67] Re
a = 0.0437 [0.0058] AU
Ag = 9.50 [16.57] [0.51σ]
Teffp = 3694 [1602] K [1.46σ]

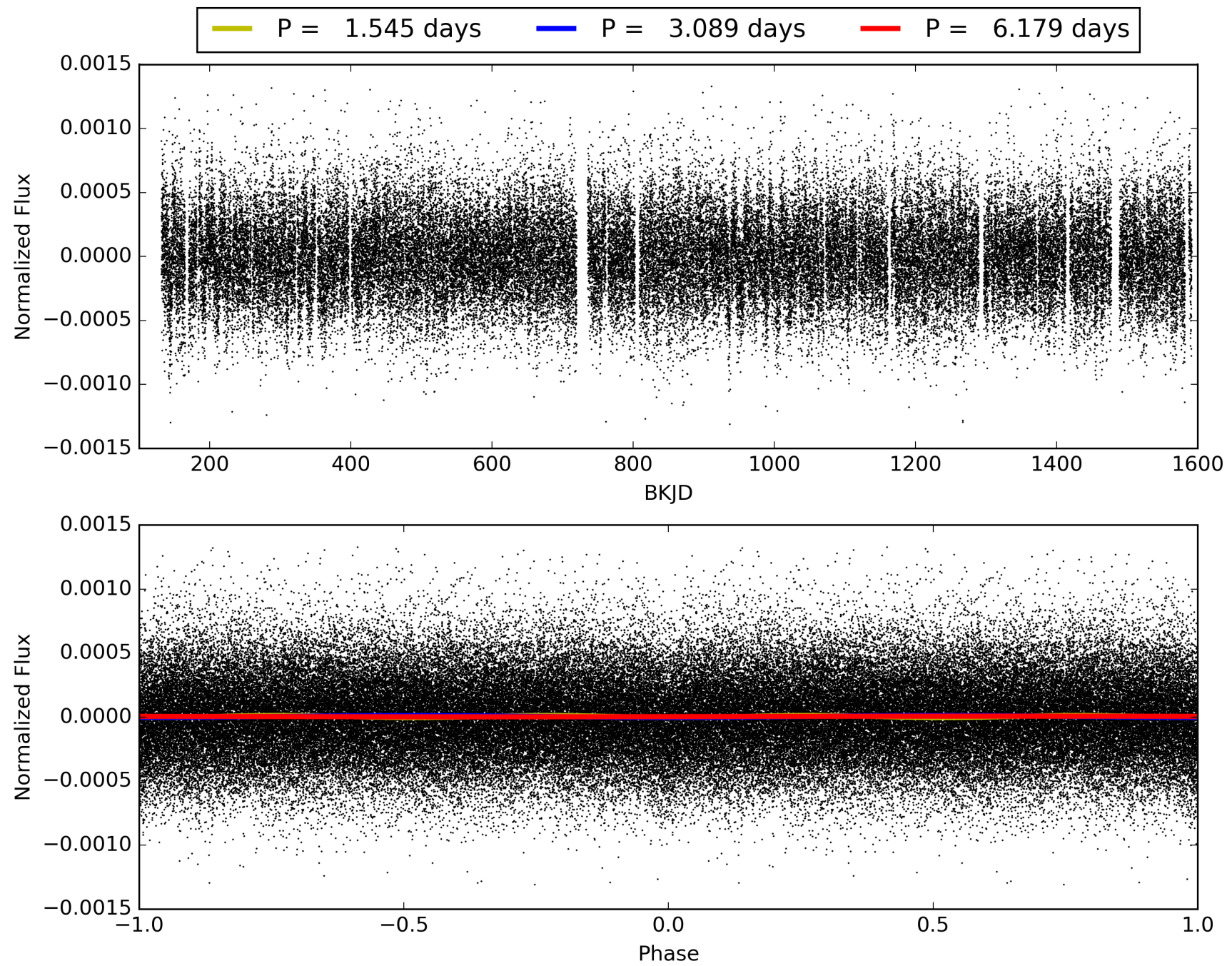
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.97e-29
RollingBand-fgt: 1.00 [416/416]
GhostDiagnostic-chr: -34
Centroid-sig: 62.9%
Centroid-so: 1.104 arcsec [0.91σ]
OotOffset-rm: 0.485 arcsec [0.53σ]
KicOffset-rm: 0.562 arcsec [0.69σ]
OotOffset-st: 3/4/3/3 [13]
KicOffset-st: 3/4/3/3 [13]
DiffImageQuality-fgm: 0.54 [7/13]
DiffImageOverlap-fno: 1.00 [17/17]

TCE 009834731-01, PDC Light Curves

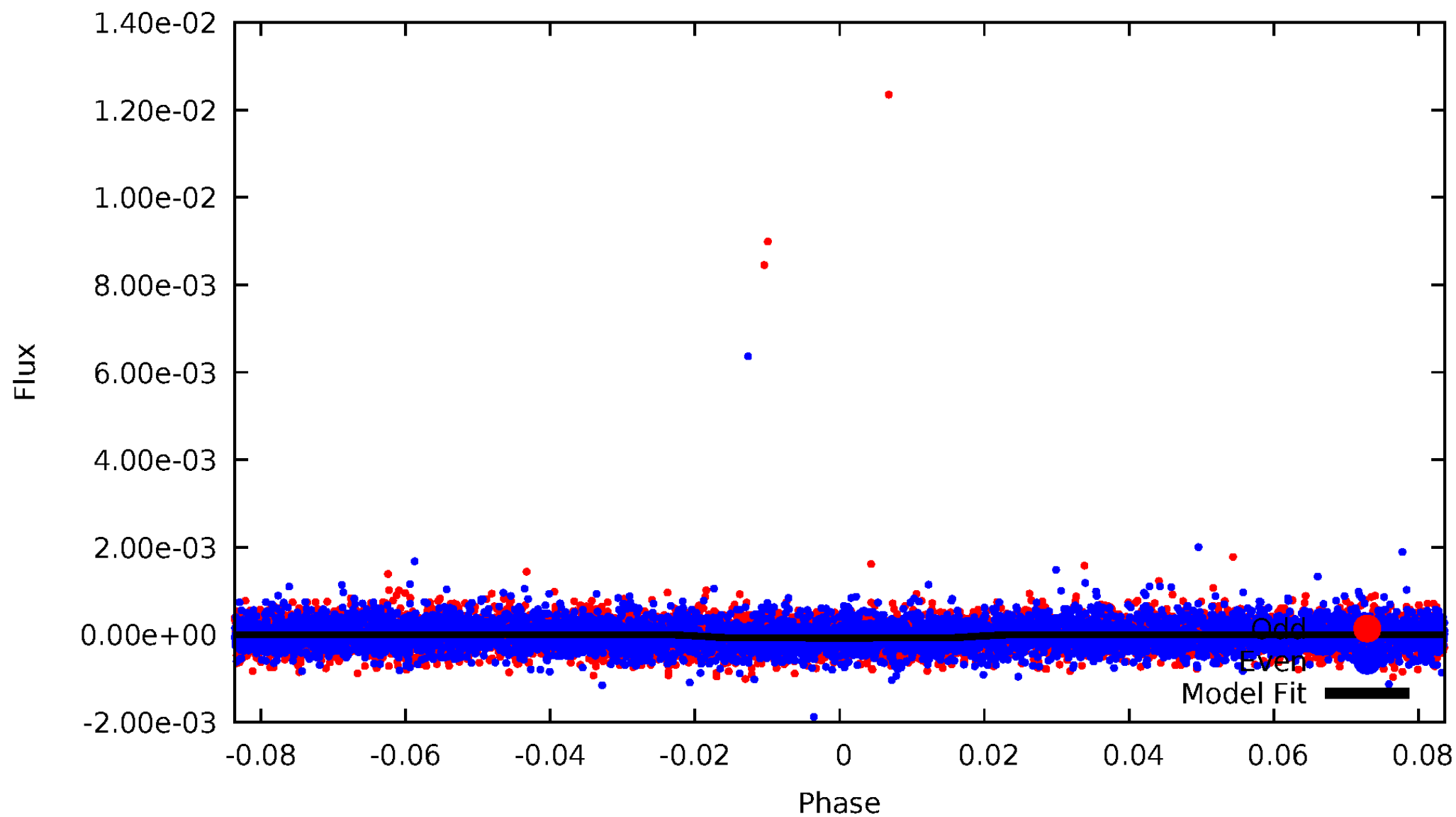


TCE 009834731-01



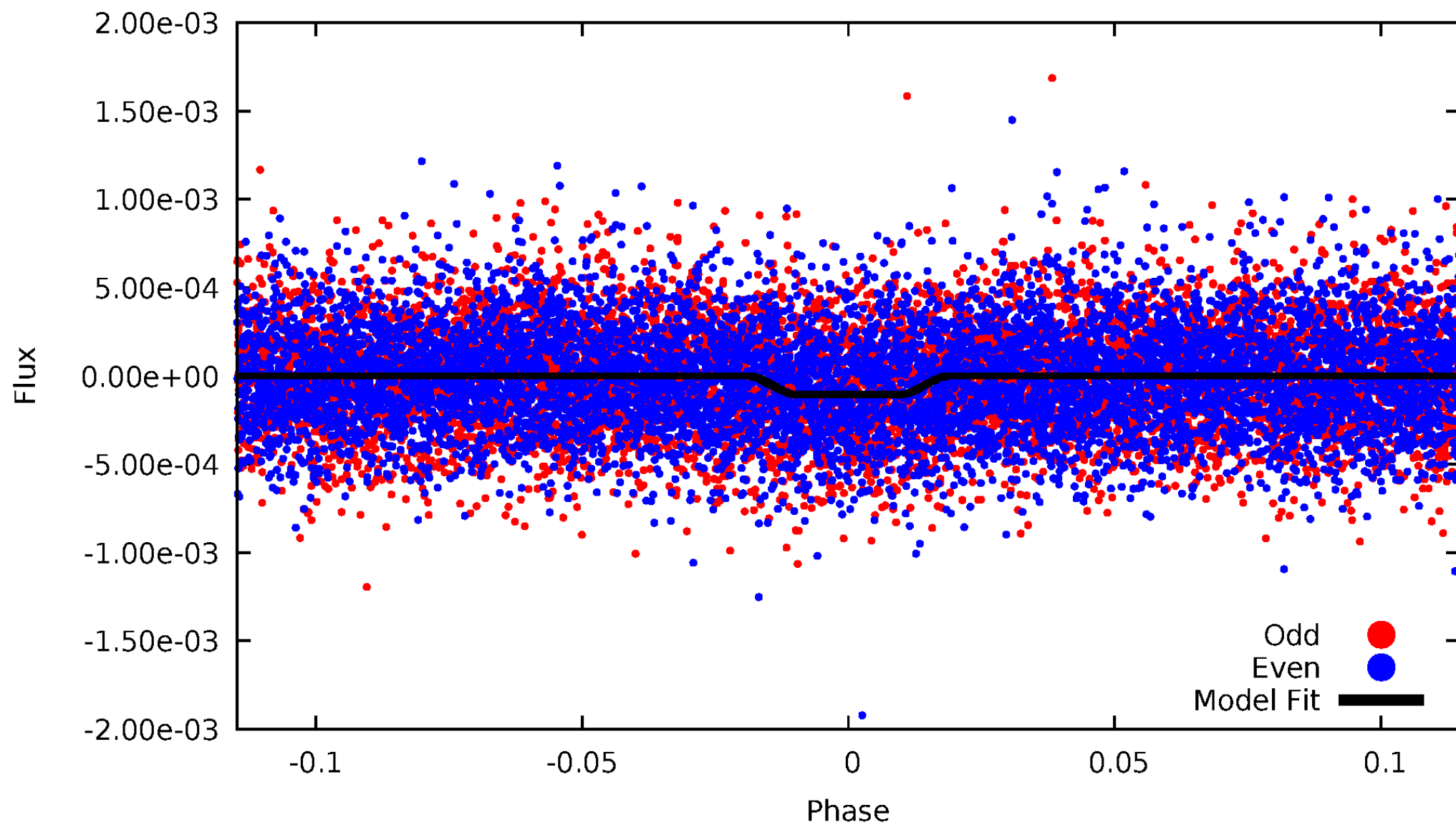
DV Odd/Even

TCE 009834731-01

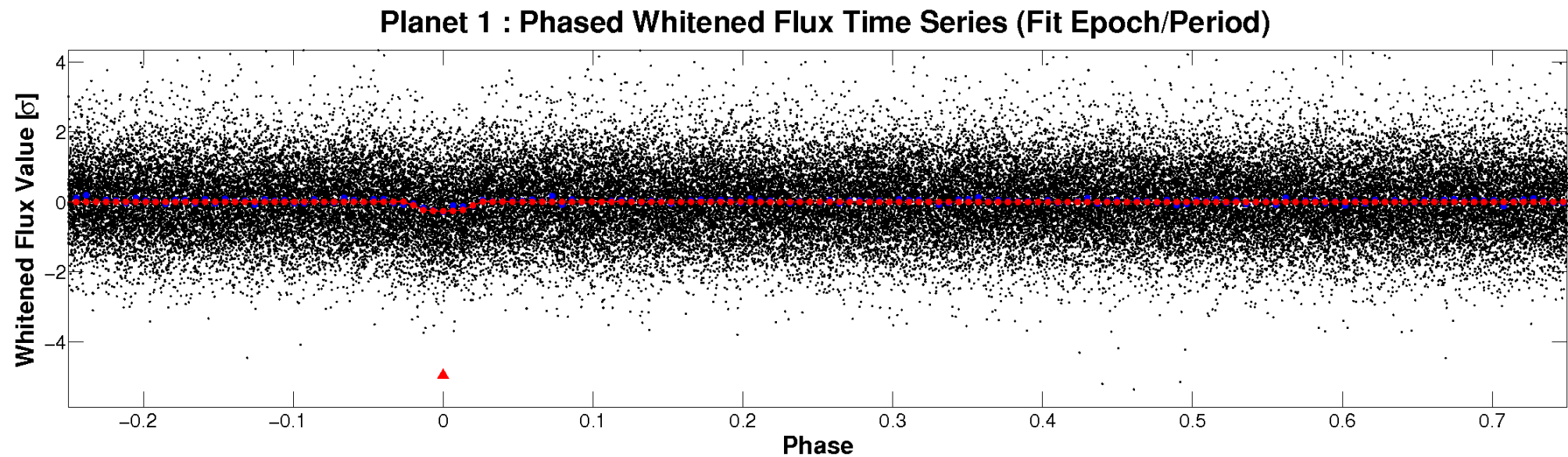
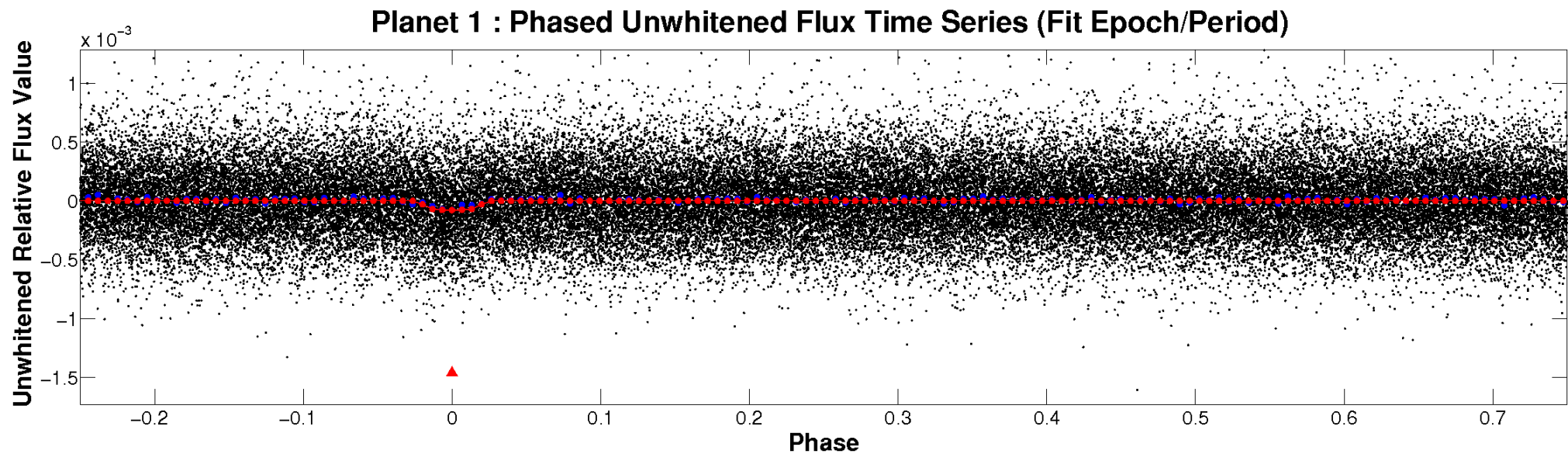


ALT Odd/Even

TCE 009834731-01

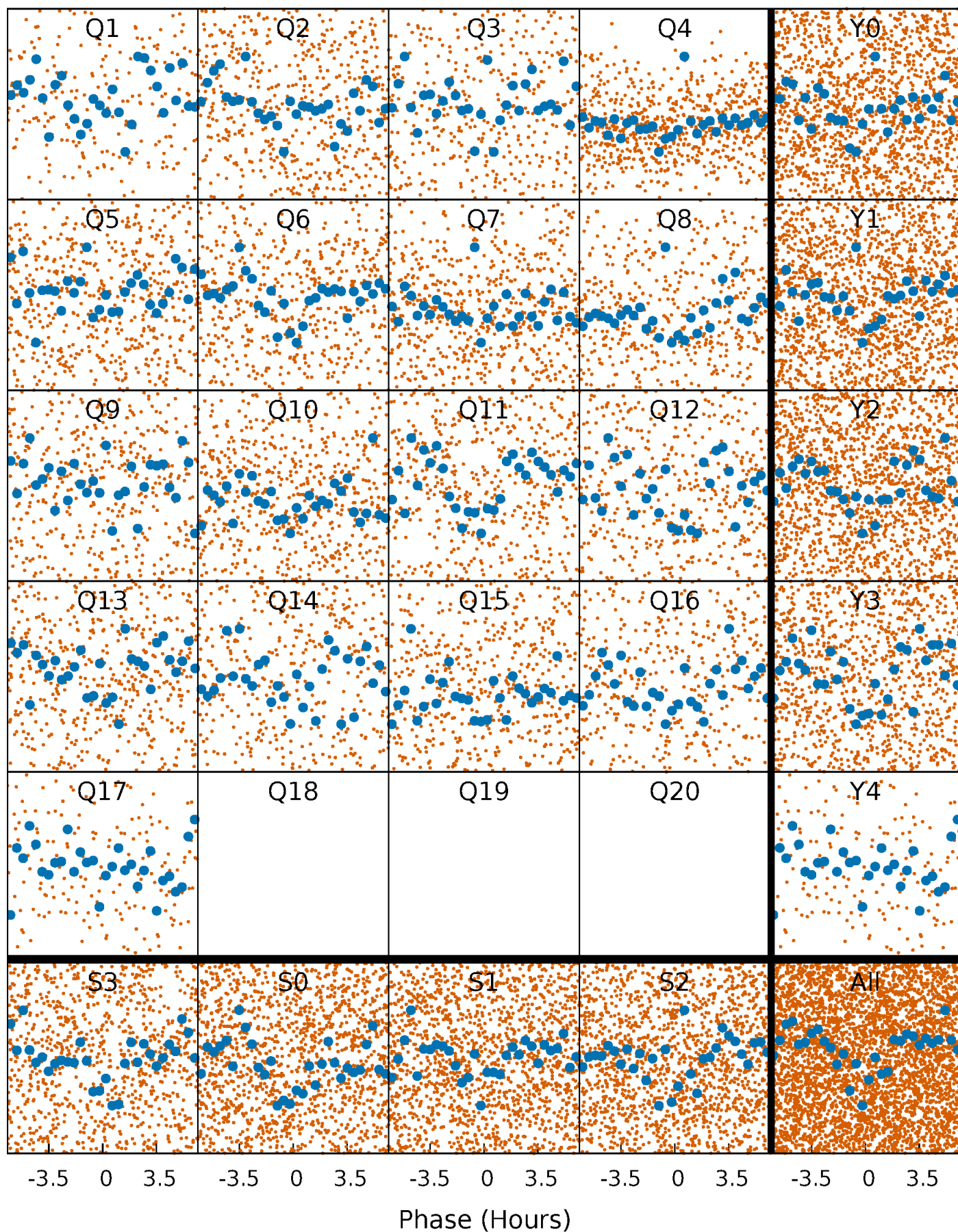


Non-Whitened Vs. Whitened Light Curve



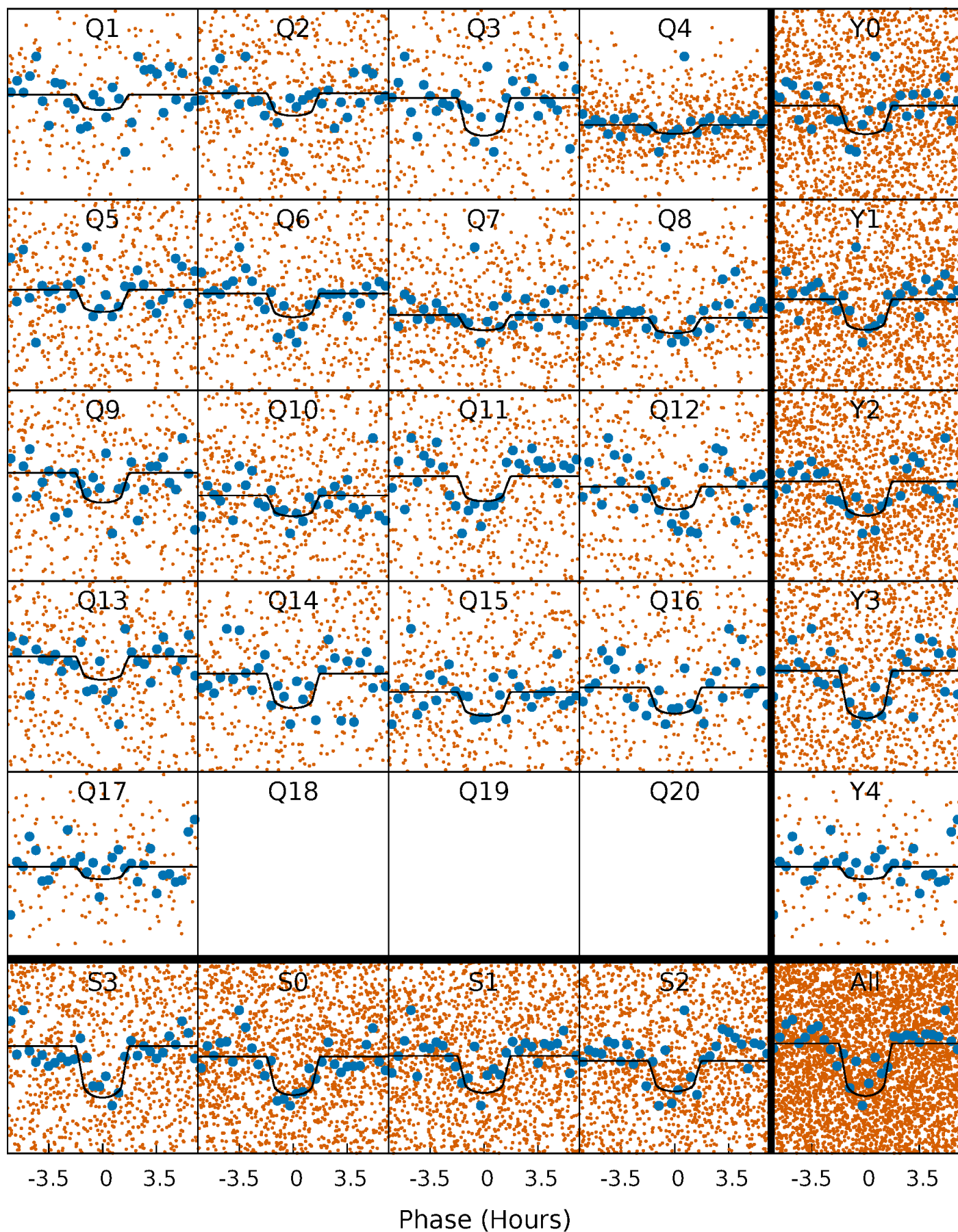
PDC Quarter-Phased Transit Curves

TCE 009834731-01 P= 3.089323 Days $T_0=134.237908$ (BKJD)



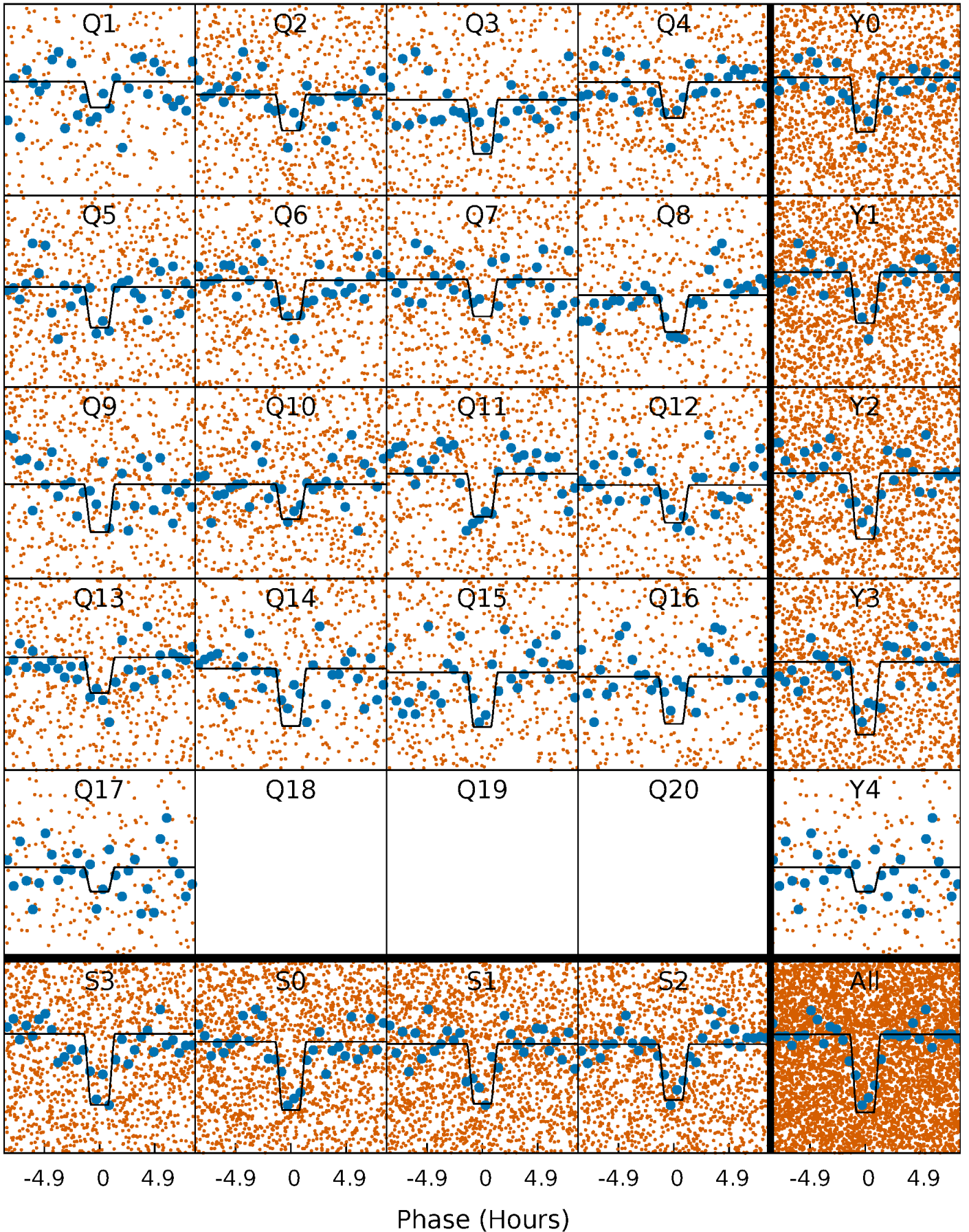
DV Quarter-Phased Transit Curves

TCE 009834731-01 P= 3.089323 Days $T_0=134.237908$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

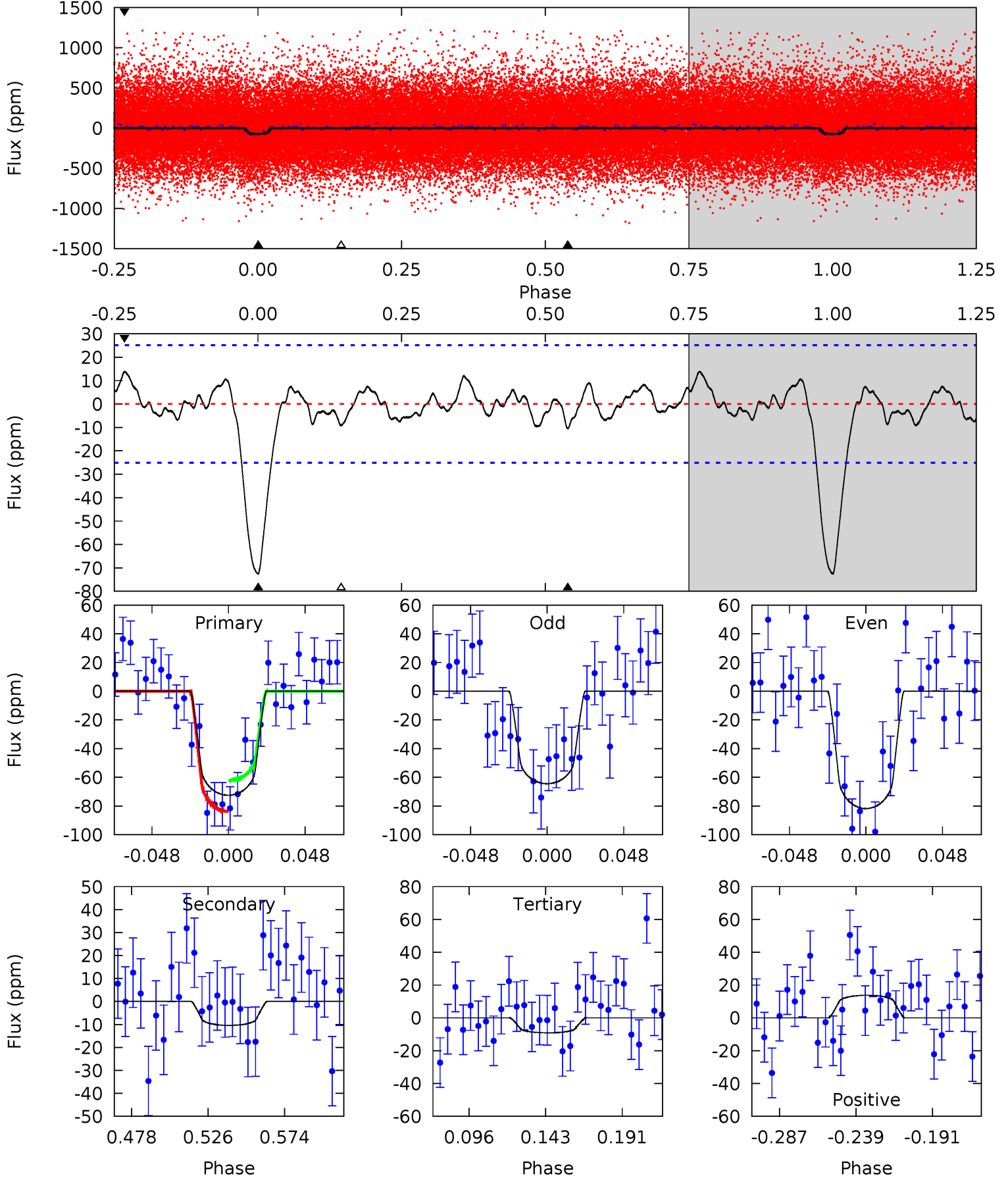
TCE 009834731-01 P= 3.089375 Days $T_0=134.214288$ (BKJD)



DV Model-Shift Uniqueness Test

009834731-01, P = 3.089323 Days, E = 131.148585 Days

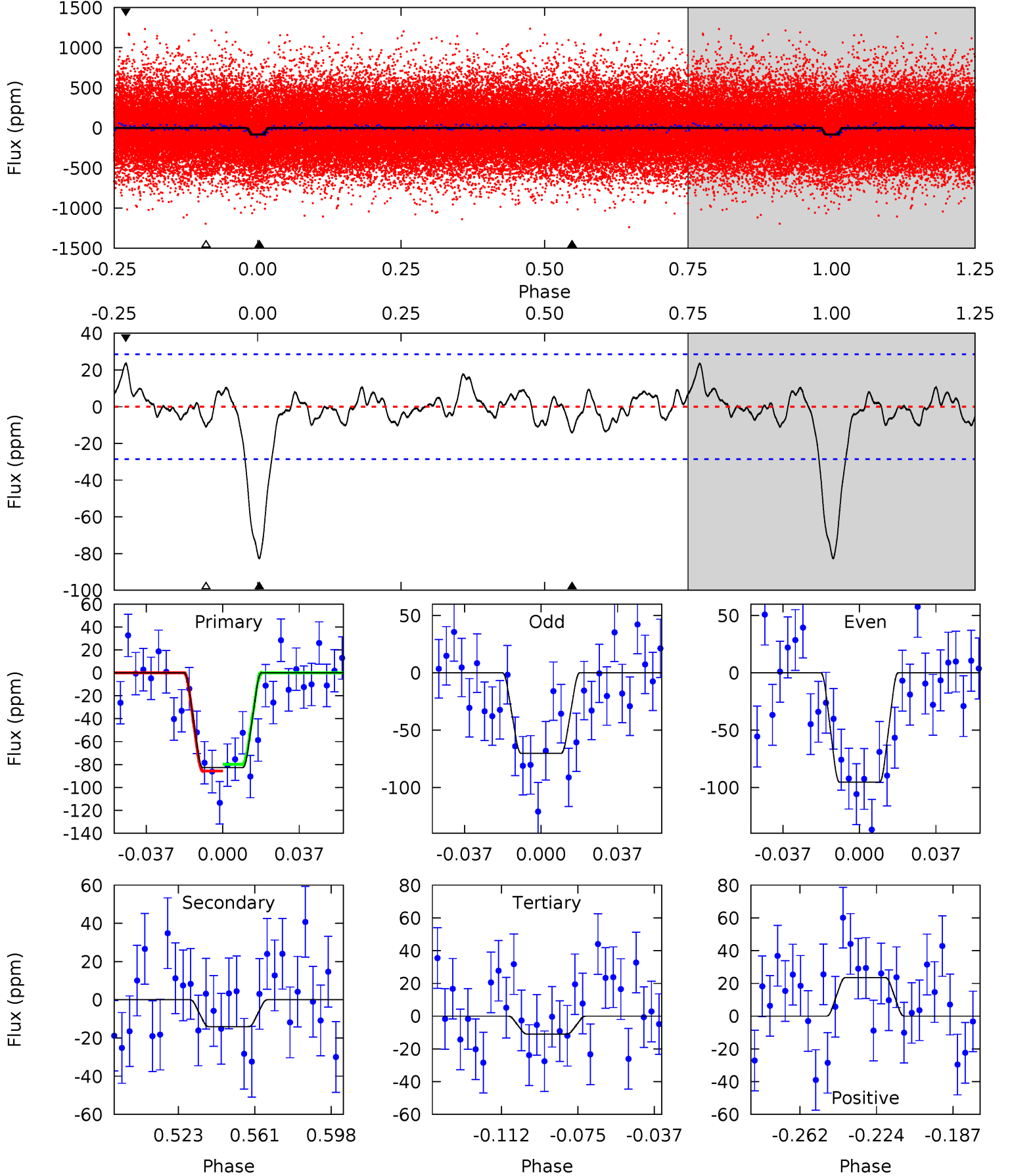
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.6	1.96	1.71	2.59	4.72	1.98	0.95	11.9	11.0	0.25	-0.63	1.63	0.91	0.16	2.03



Alt Model-Shift Uniqueness Test

009834731-01, P = 3.089375 Days, E = 131.124913 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.8	2.35	1.82	3.93	4.77	2.08	1.10	12.0	9.87	0.53	-1.58	2.09	1.07	0.22	0.49



Stellar Parameters For KIC 009834731

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (g \cdot \text{cm}^{-3})$
	6137^{+80}_{-86}	$4.418^{+0.028}_{-0.105}$	$0.140^{+0.150}_{-0.150}$	$1.103^{+0.175}_{-0.062}$	$1.165^{+0.066}_{-0.091}$	$1.222^{+0.156}_{-0.389}$
	+1%/-1%	+1%/-2%	+107%/-107%	+16%/-6%	+6%/-8%	+13%/-32%
Source	SPE90	SPE90	SPE90	DSEP		

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

Secondary Eclipse Parameters for KIC 009834731-01 / KOI 3043.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-10 ± 5	$1.18^{+0.70}_{-0.57}$	1919^{+72}_{-44}	3816^{+1247}_{-665}	$7.000^{+22.450}_{-4.618}$
Alt.	-14 ± 6	$1.33^{+0.63}_{-0.66}$	1923^{+64}_{-46}	3932^{+1172}_{-668}	$7.730^{+24.174}_{-4.876}$

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 $T_{obs} \gg T_{max}$ AND $A_{obs} \gg 1.0$

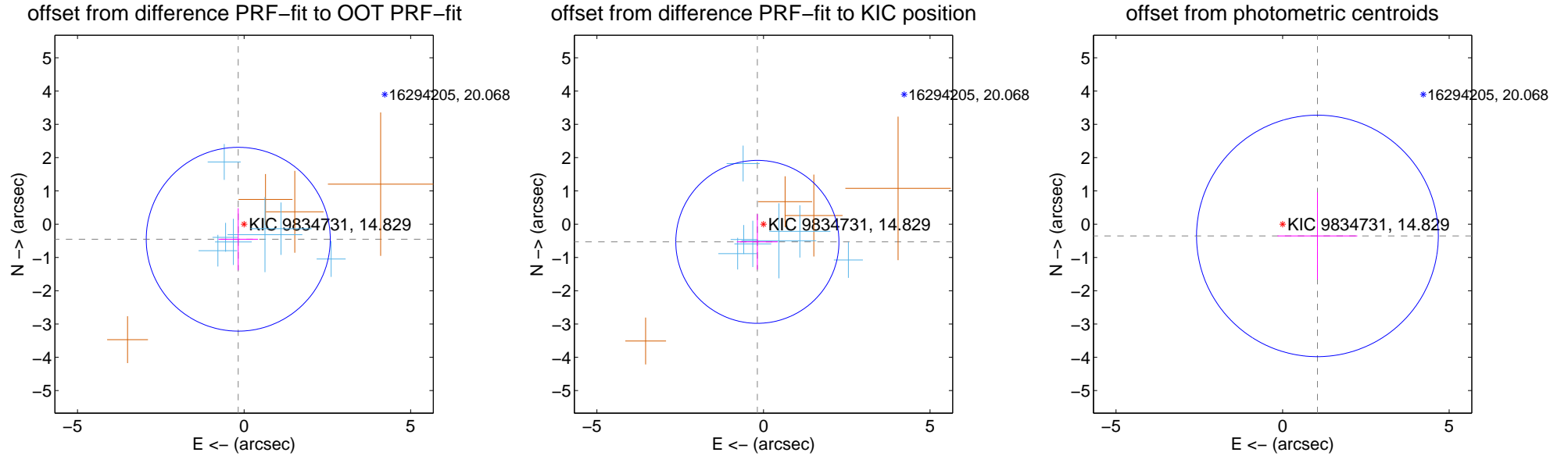
DV Centroid Data

Supplemental centroid analysis for 009834731-01. Kepler magnitude: 14.83. Transit SNR 11.41

There are 7 quarters with good PRF difference image offsets

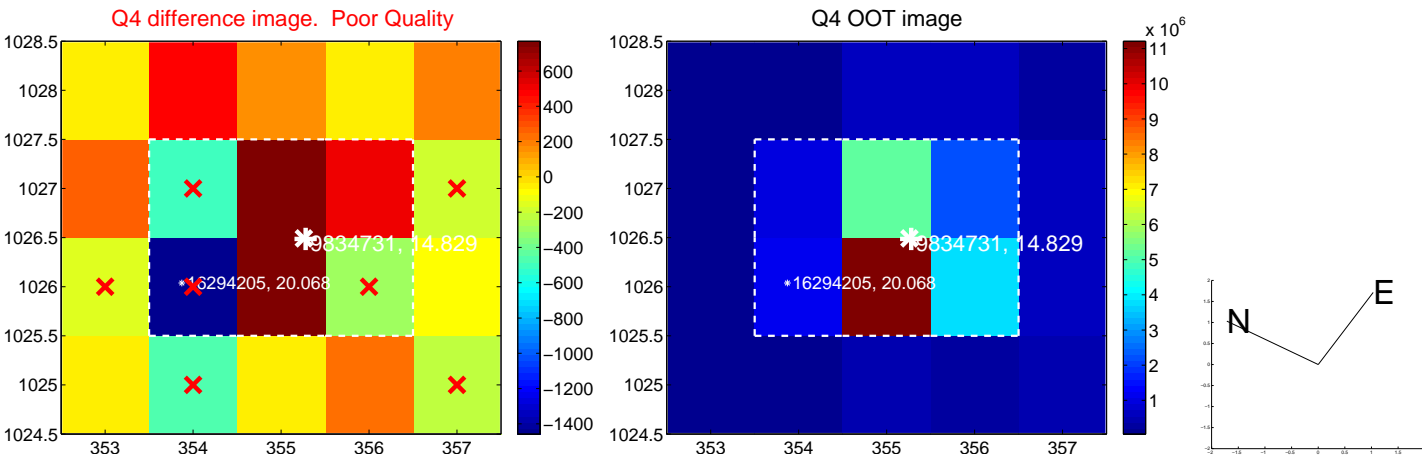
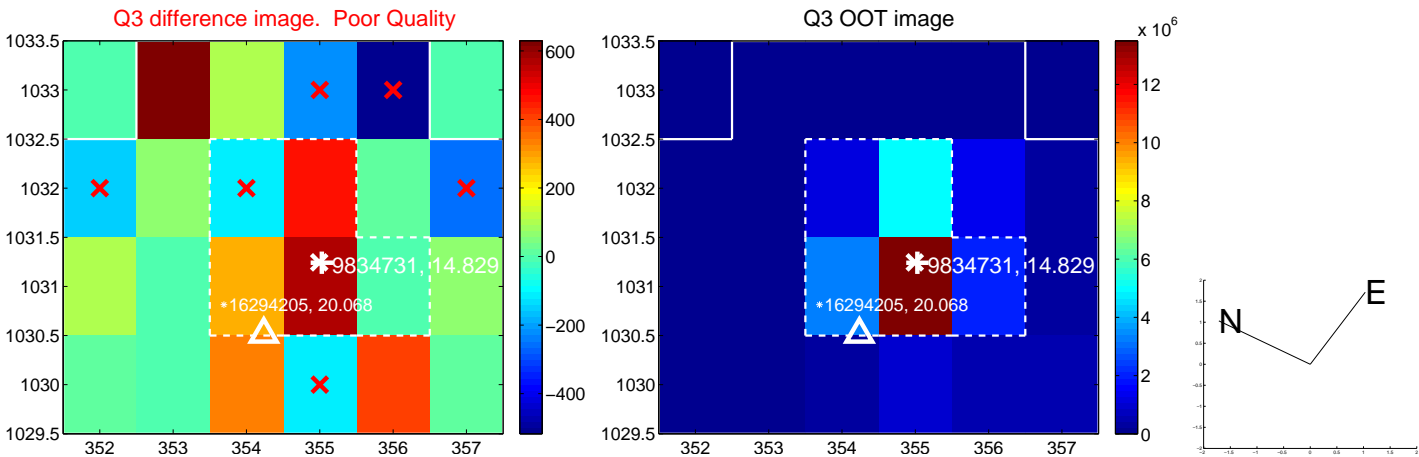
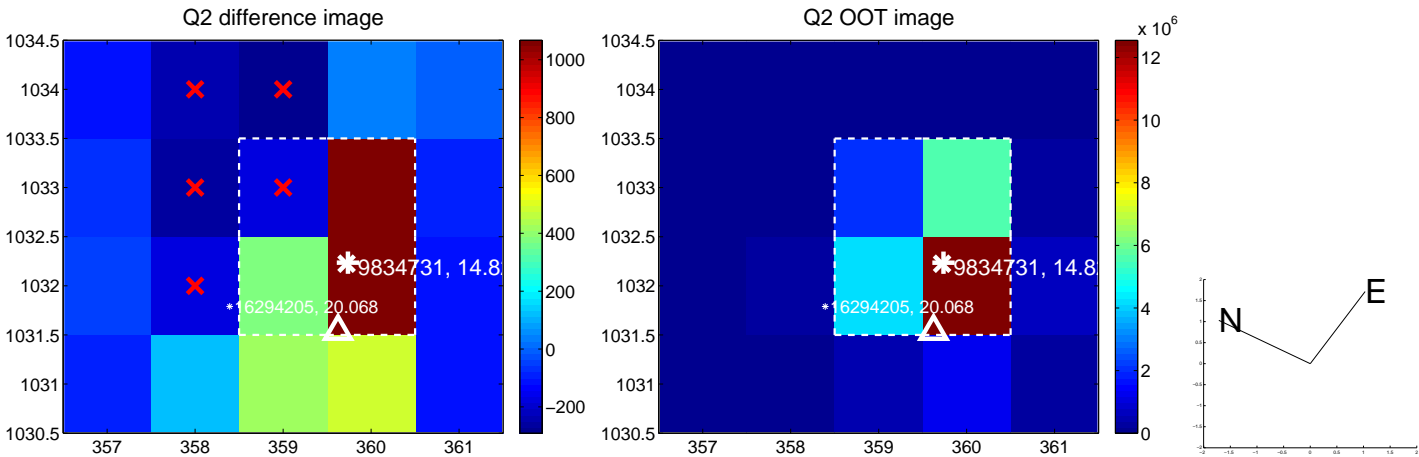
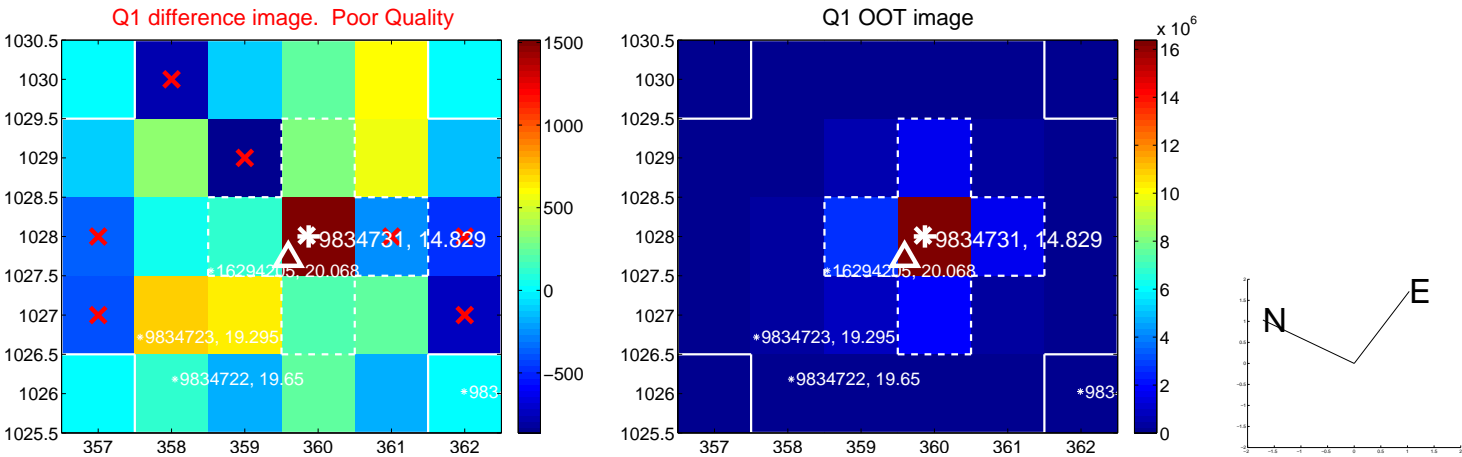
The direct PRF centroid is offset from the target star catalog position by about 0.25 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.485 ± 0.921	0.53	0.175 ± 0.592	-0.452 ± 0.932
PRF-fit source offset from KIC position	0.562 ± 0.816	0.69	0.183 ± 0.616	-0.531 ± 0.834
photometric centroid source offset	1.10 ± 1.21	0.91	-1.05 ± 1.20	-0.35 ± 1.31

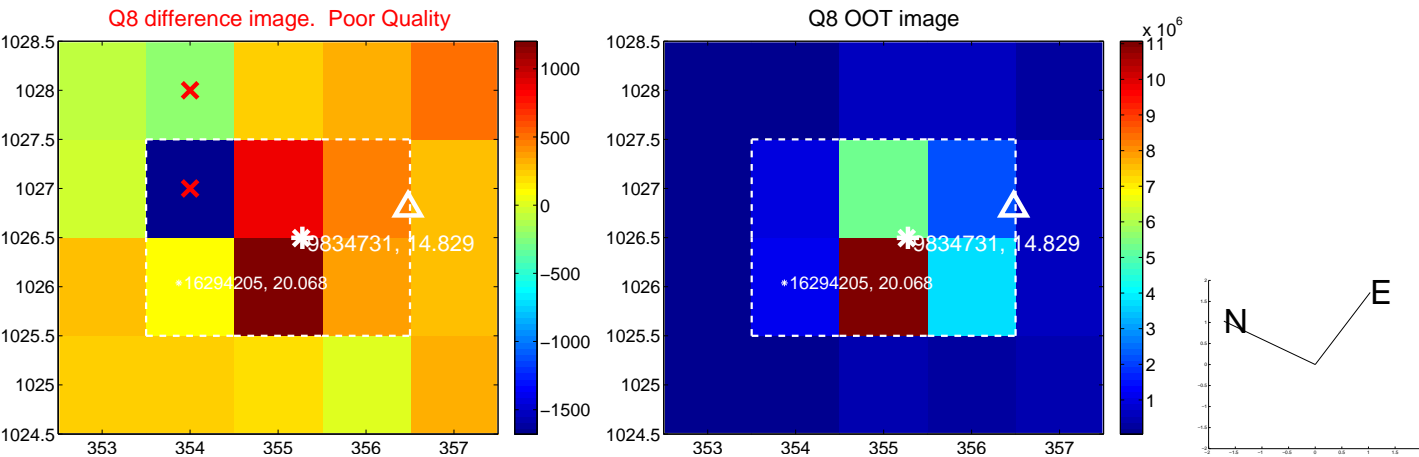
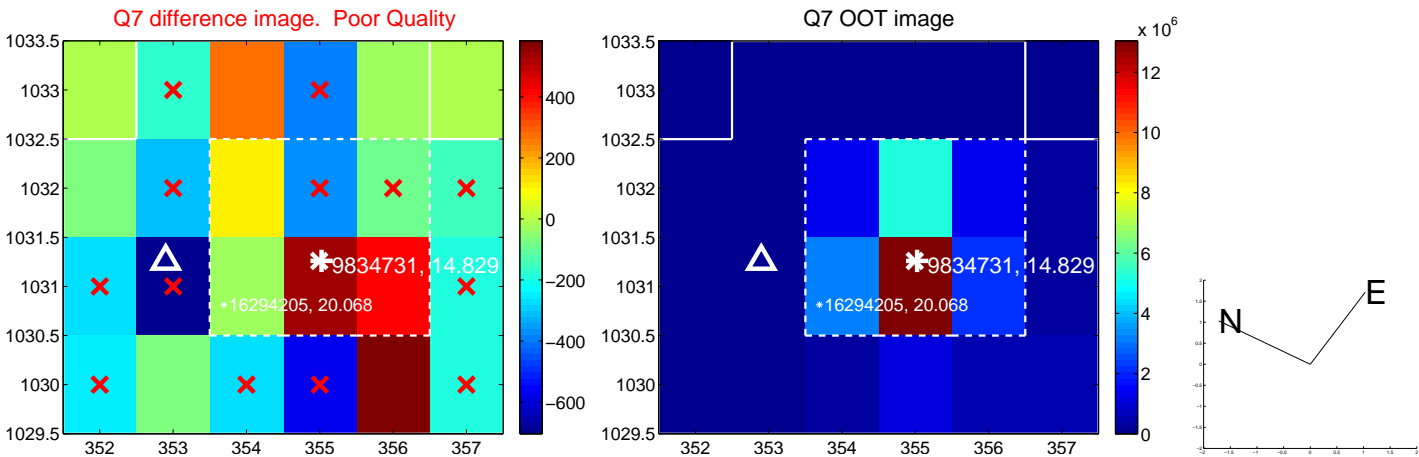
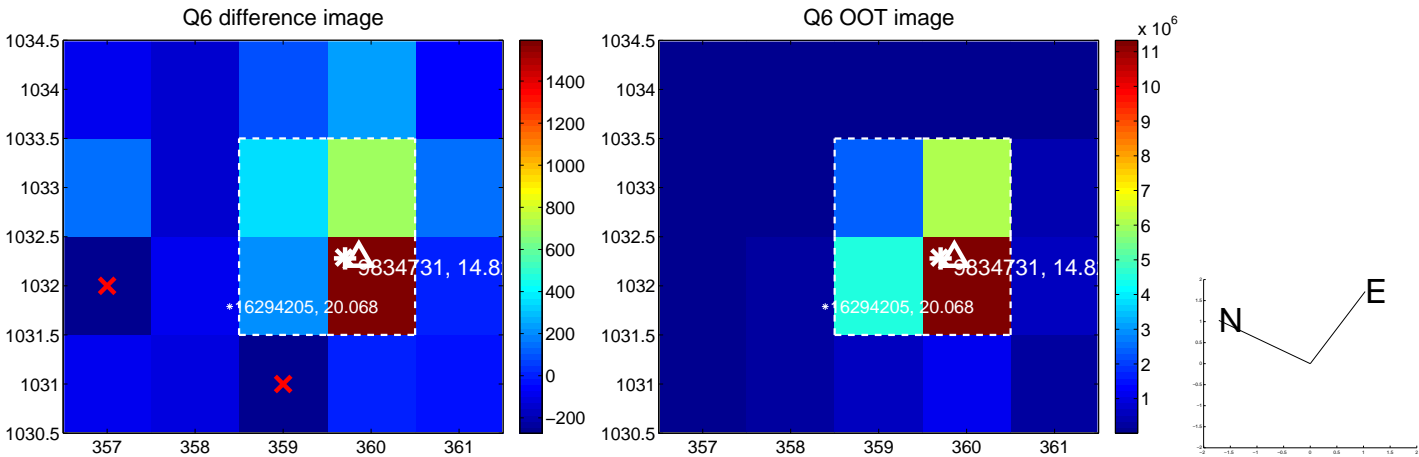
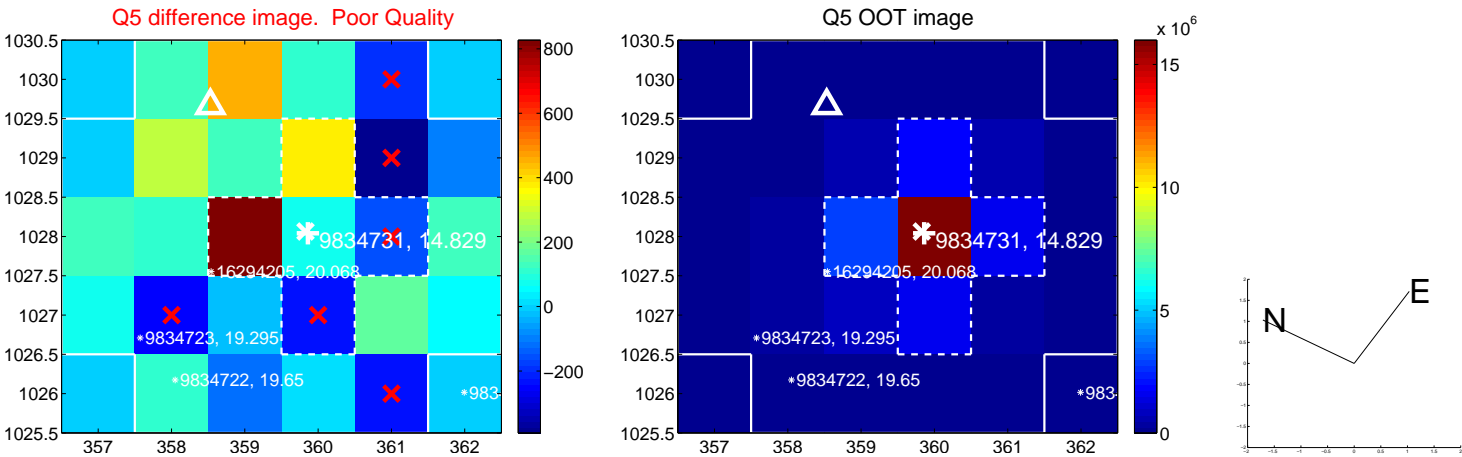


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- 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.

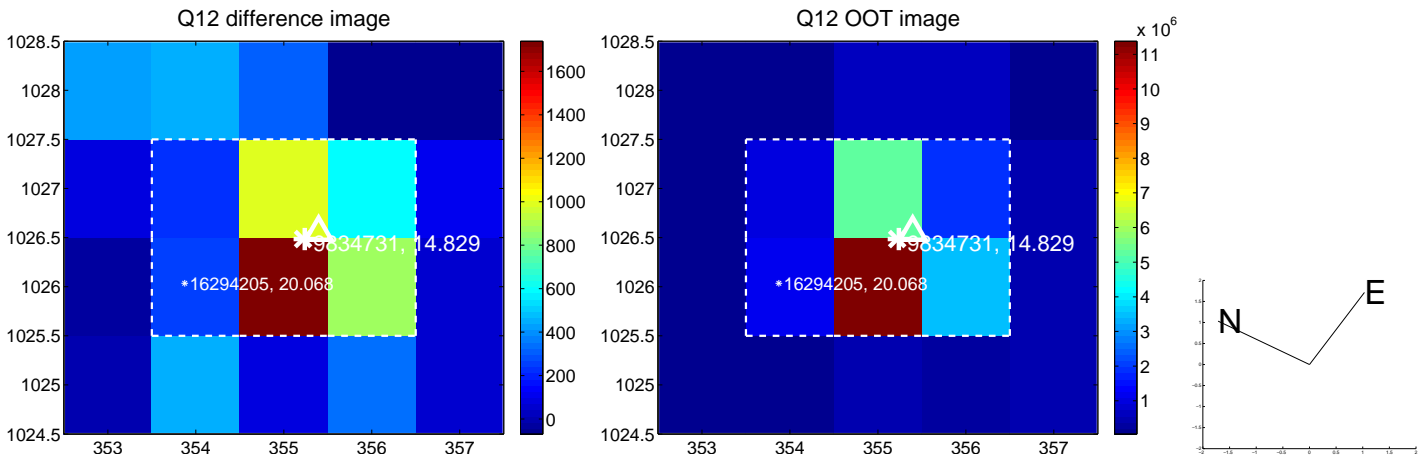
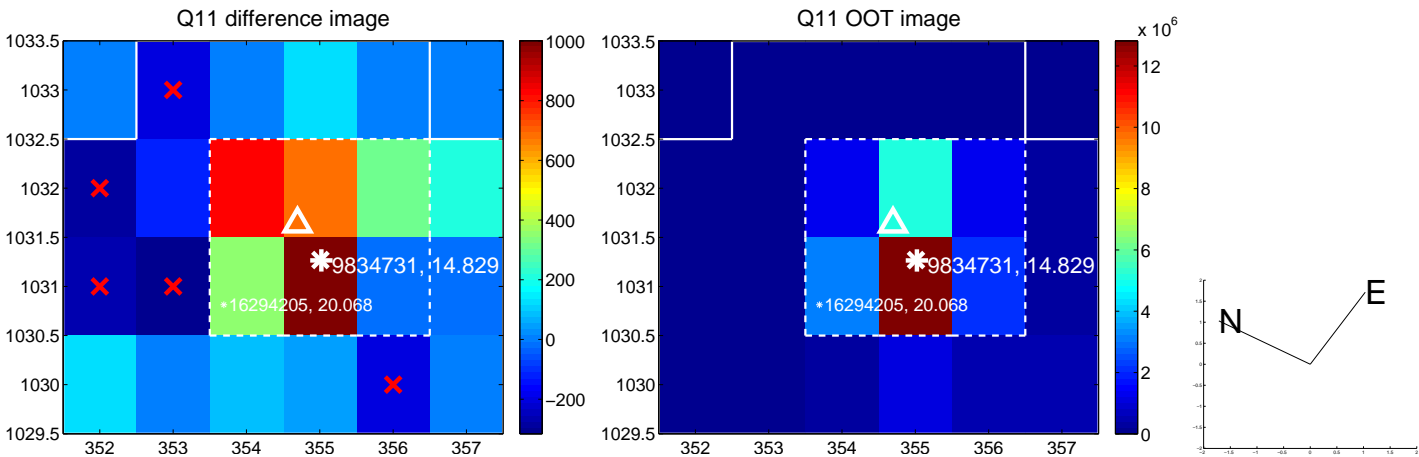
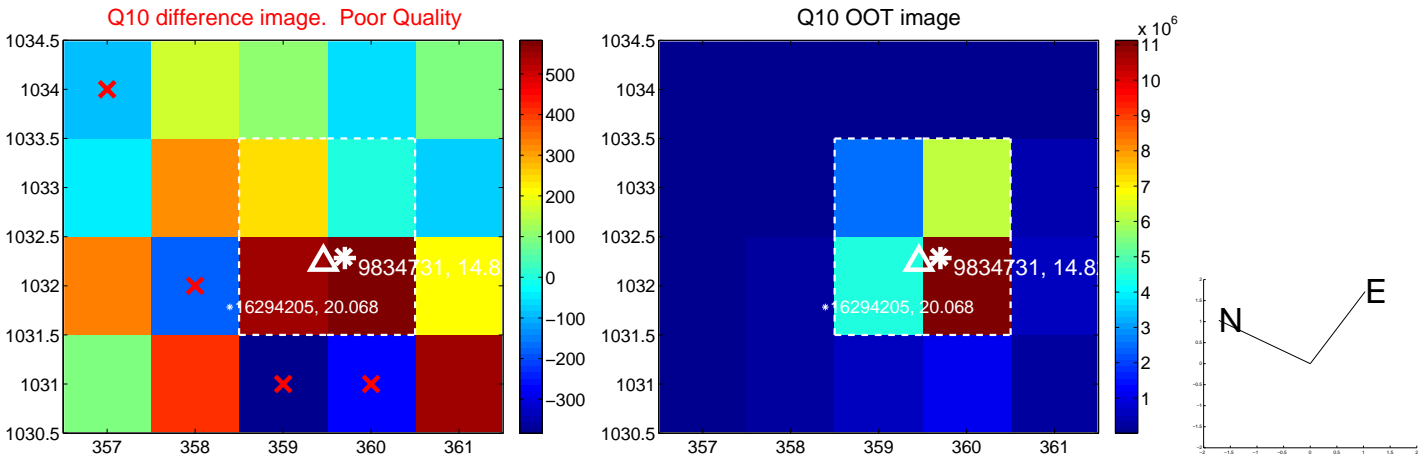
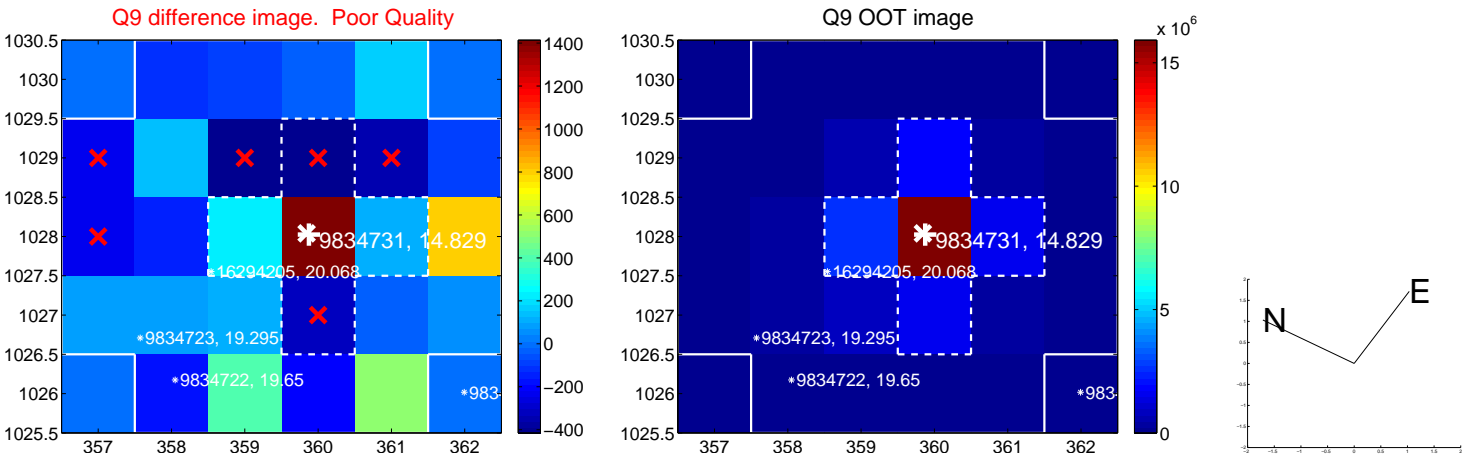
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



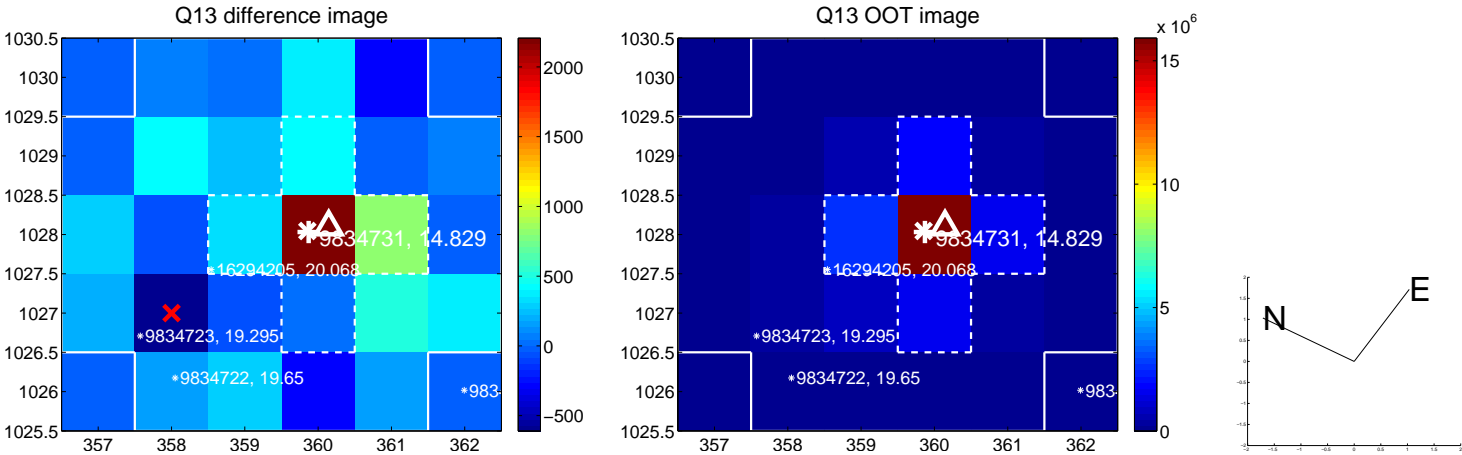
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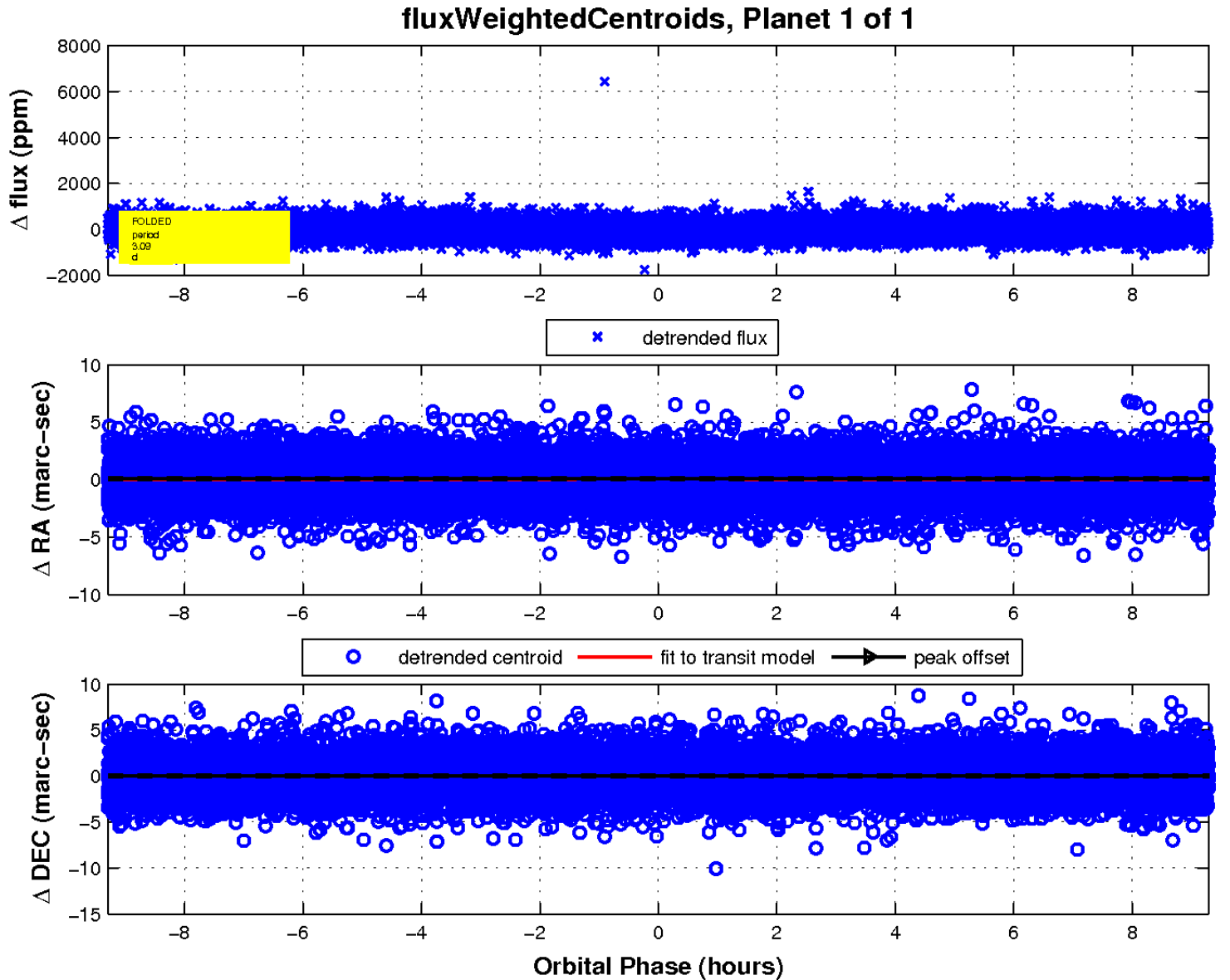
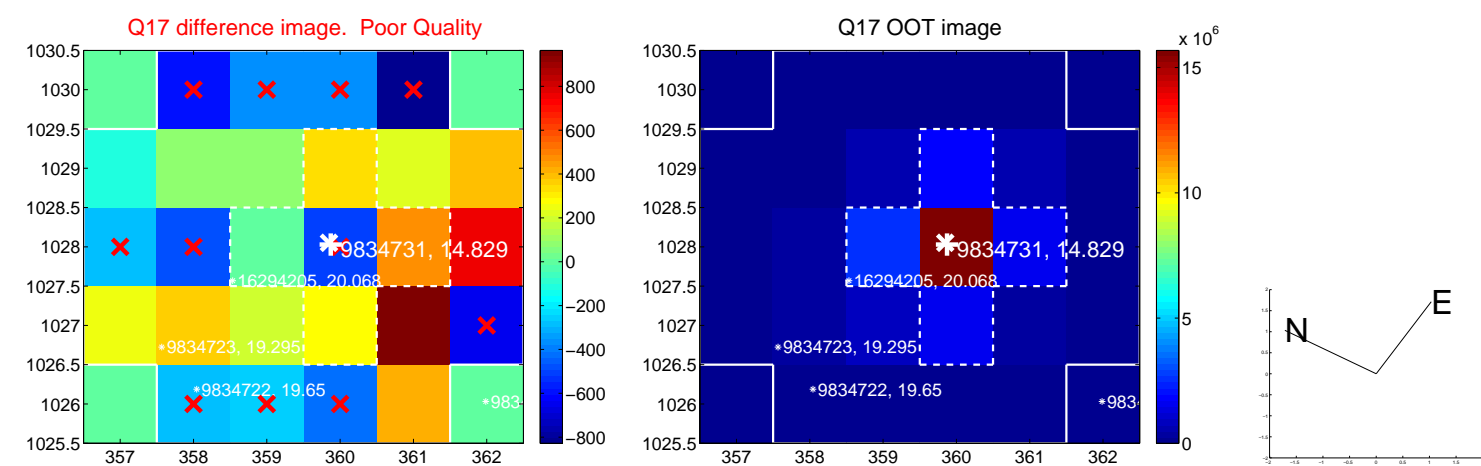
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UKIRT Image

Declination

