

KIC 011509504

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})
011509504-01	OBS	4232.01	2.615734	131.986441	109.1	2.767	13.1	13.2	0.96	6088	1.18	855.55

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011509504-01	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.

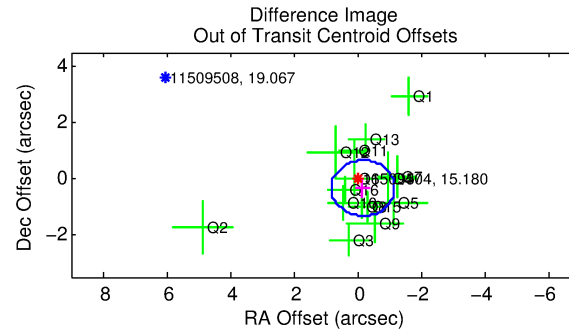
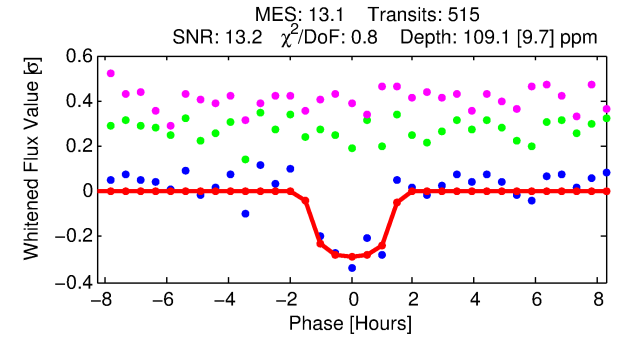
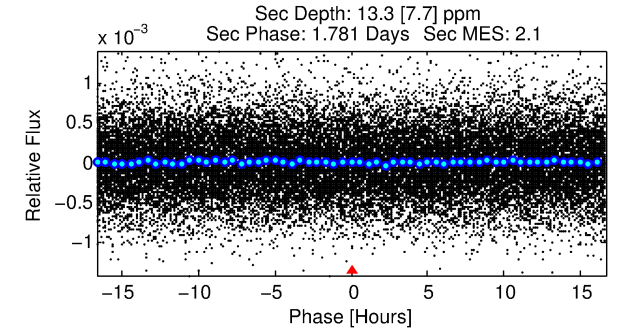
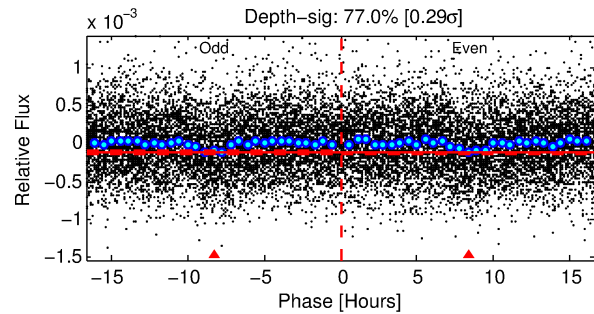
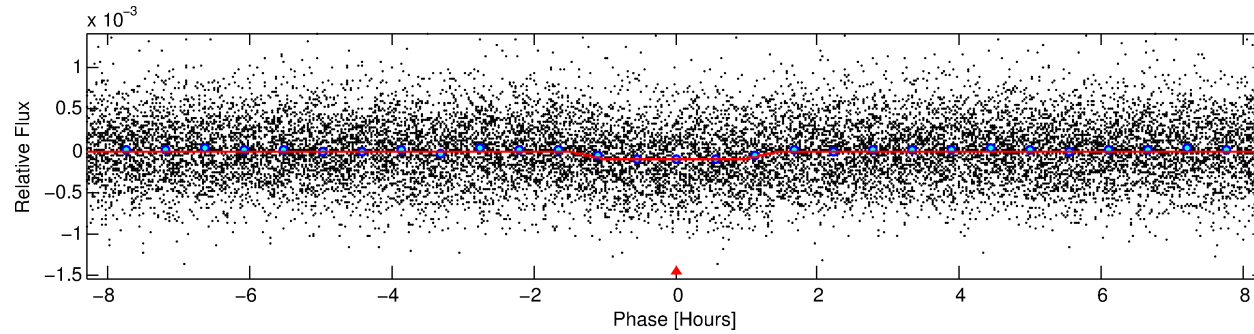
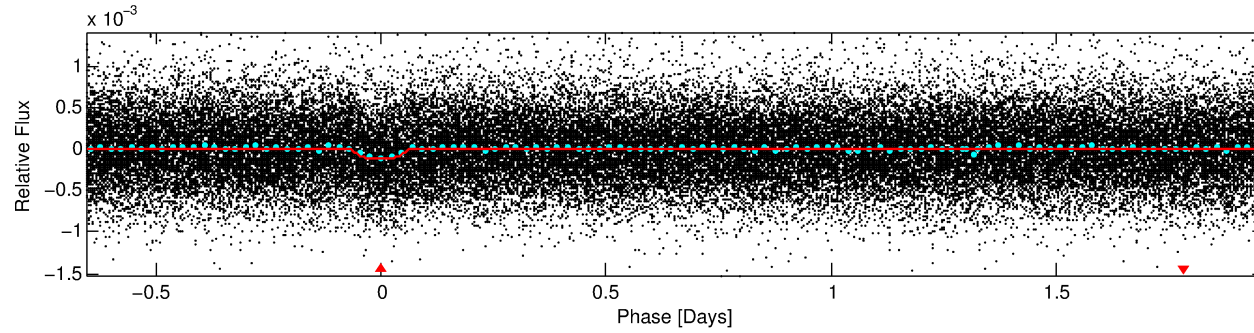
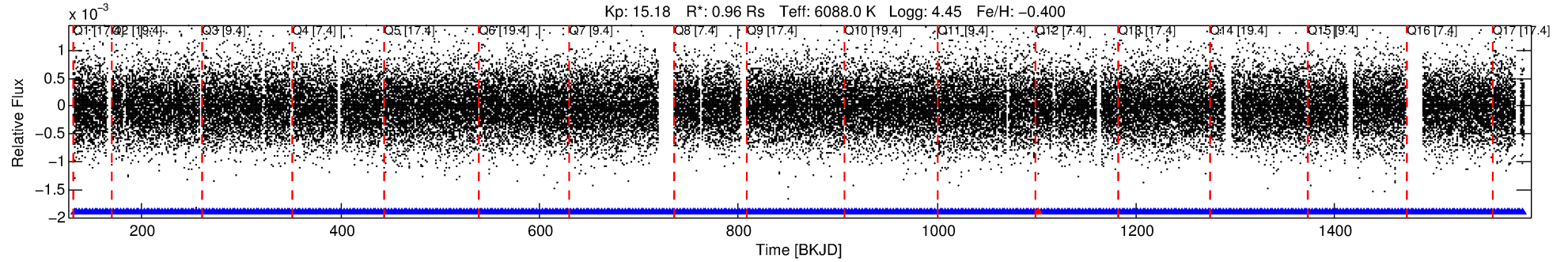
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 011509504-01

No Significant Match Found

DV One-Page Summary

KIC: 11509504 Candidate: 1 of 1 Period: 2.616 d
KOI: K04232.01 Corr: 0.966



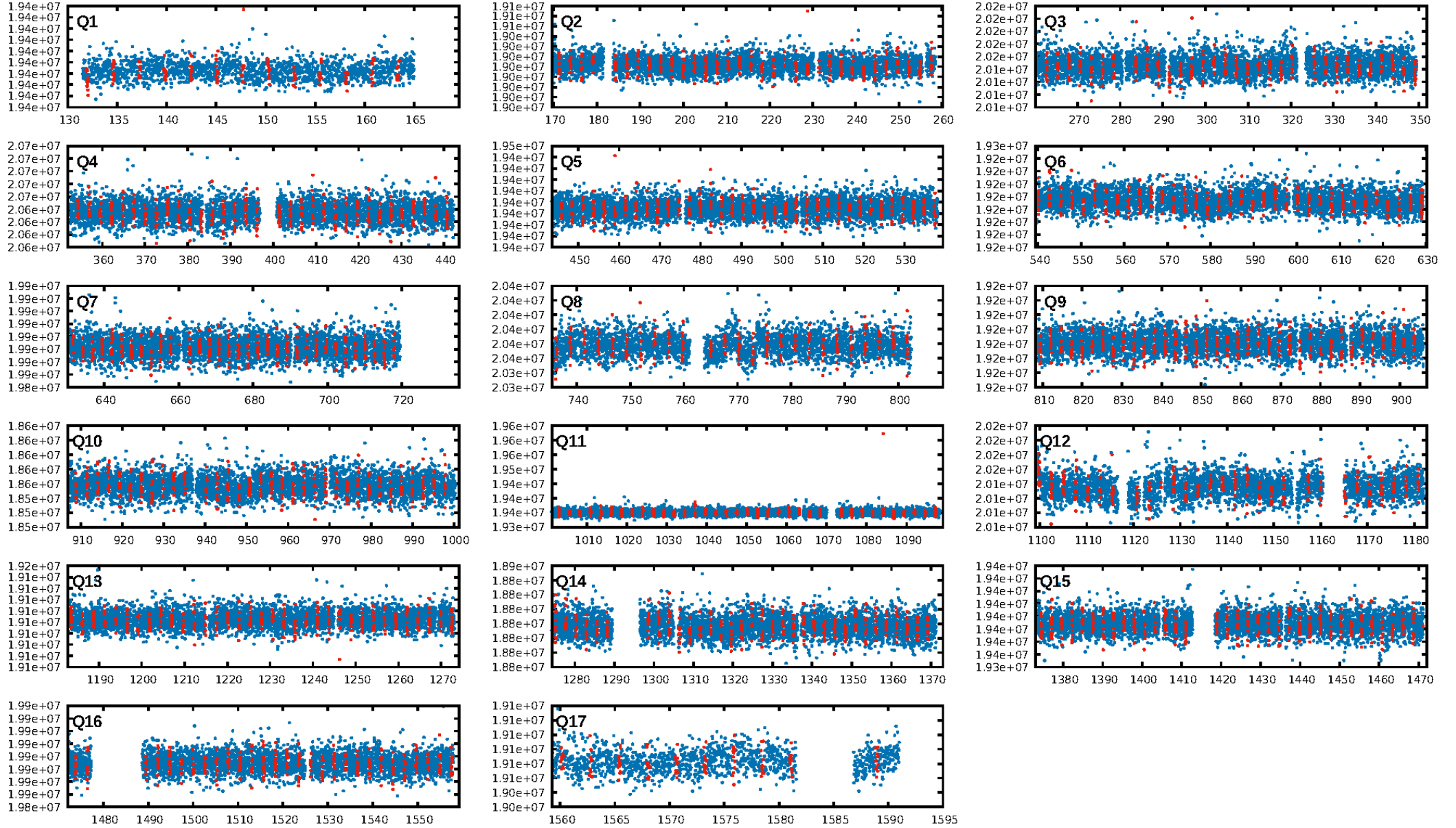
DV Fit Results:

Period = 2.61573 [0.00001] d
Epoch = 131.9864 [0.0033] BKJD
Rp/R* = 0.0113 [0.0055]
a/R* = 3.41 [8.29]
b = 0.90 [0.55]
Seff = 855.55 [326.83]
Teff = 1379 [132] K
Rp = 1.18 [0.67] Re
a = 0.0363 [0.0089] AU
Ag = 6.95 [8.23] [0.72 σ]
Teffp = 3462 [984] K [2.10 σ]

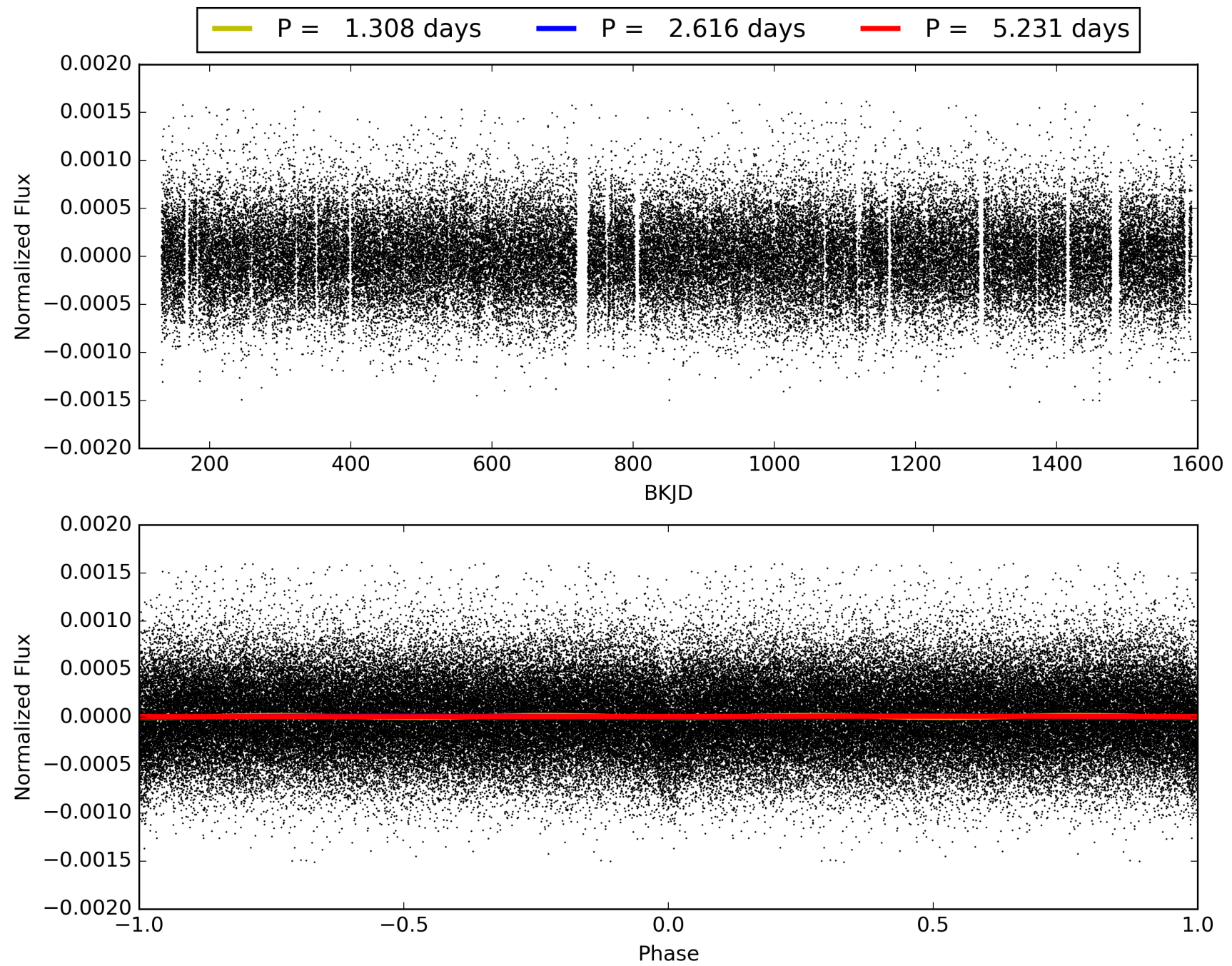
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.48e-38
RollingBand-fgt: 1.00 [491/492]
GhostDiagnostic-chr: 4.911
Centroid-sig: 3.0%
Centroid-so: 2.028 arcsec [1.83 σ]
OotOffset-rm: 0.378 arcsec [1.14 σ]
KicOffset-rm: 0.427 arcsec [1.32 σ]
OotOffset-st: 3/4/4/4 [15]
KicOffset-st: 3/4/4/4 [15]
DiffImageQuality-fgm: 0.87 [13/15]
DiffImageOverlap-fno: 1.00 [17/17]

TCE 011509504-01, PDC Light Curves

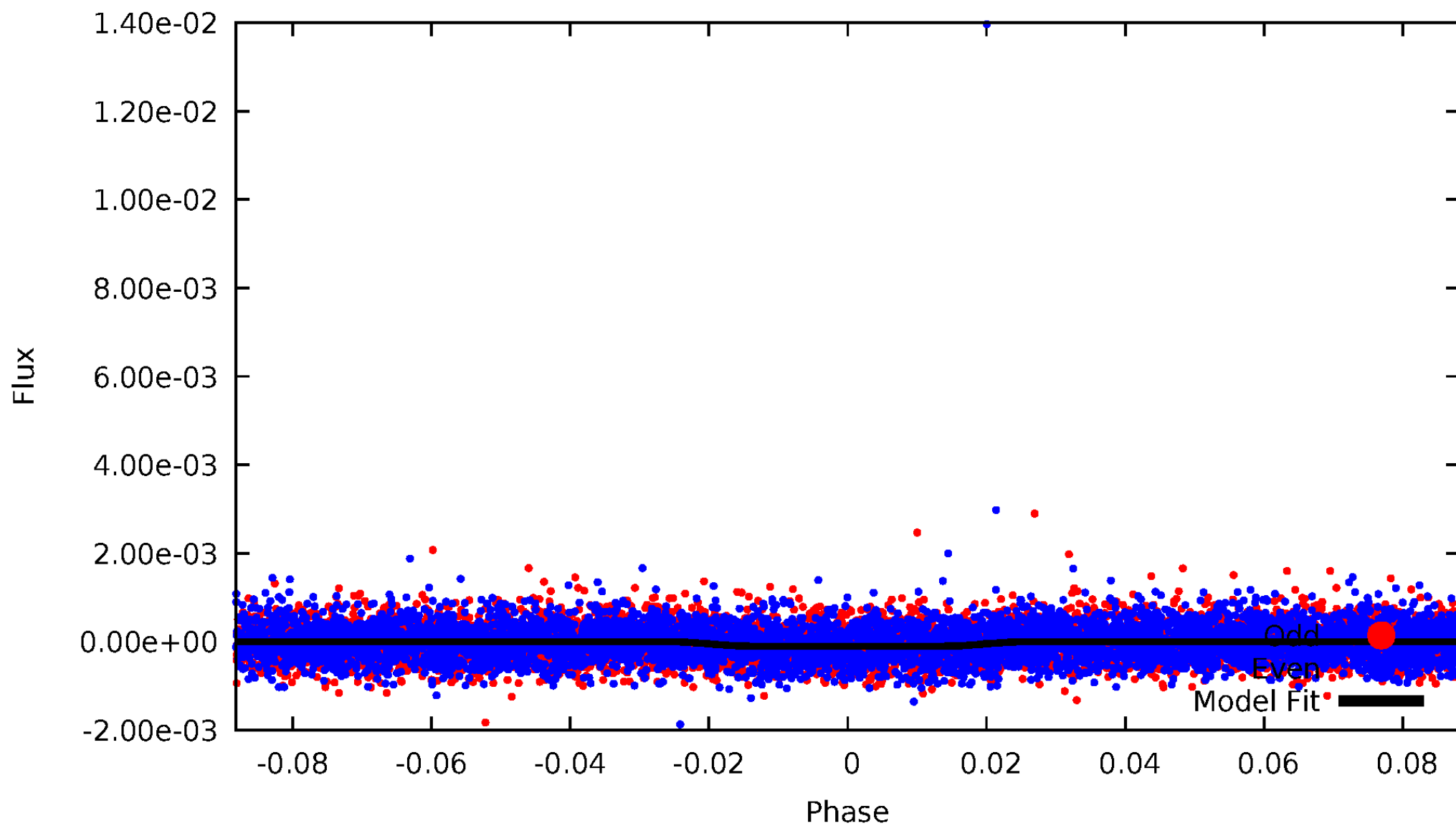


TCE 011509504-01



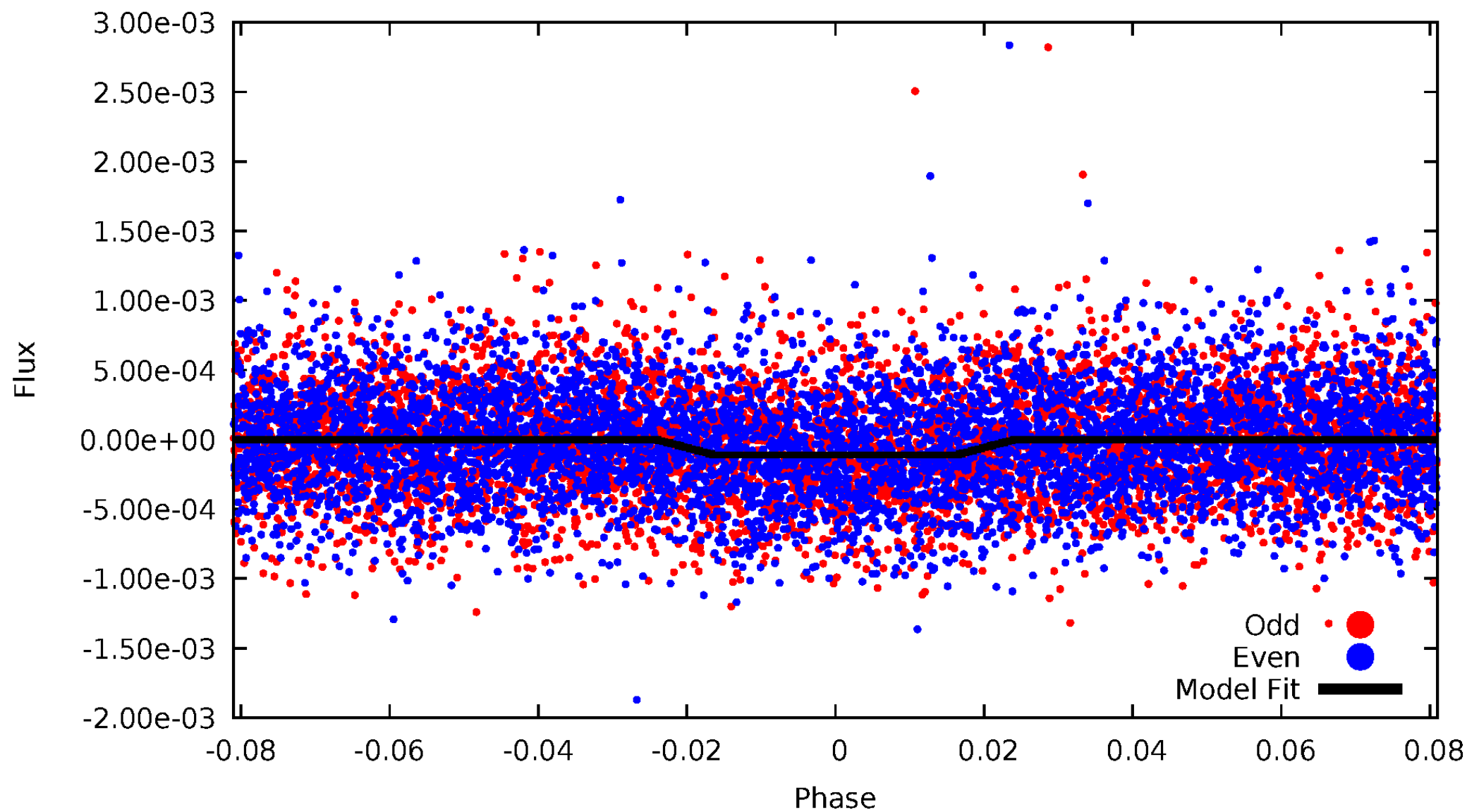
DV Odd/Even

TCE 011509504-01



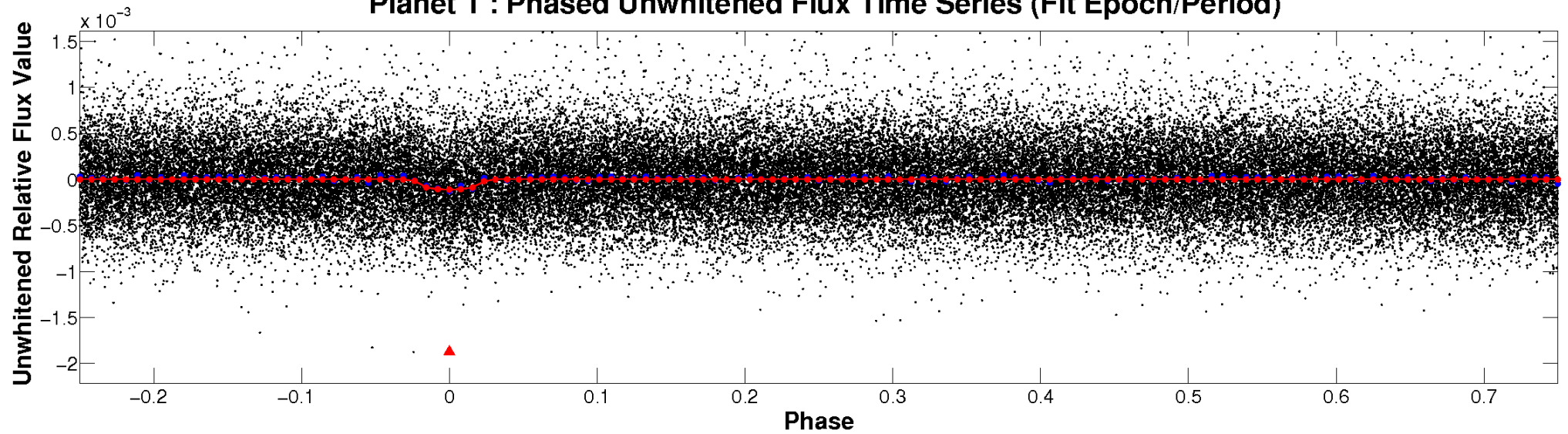
ALT Odd/Even

TCE 011509504-01

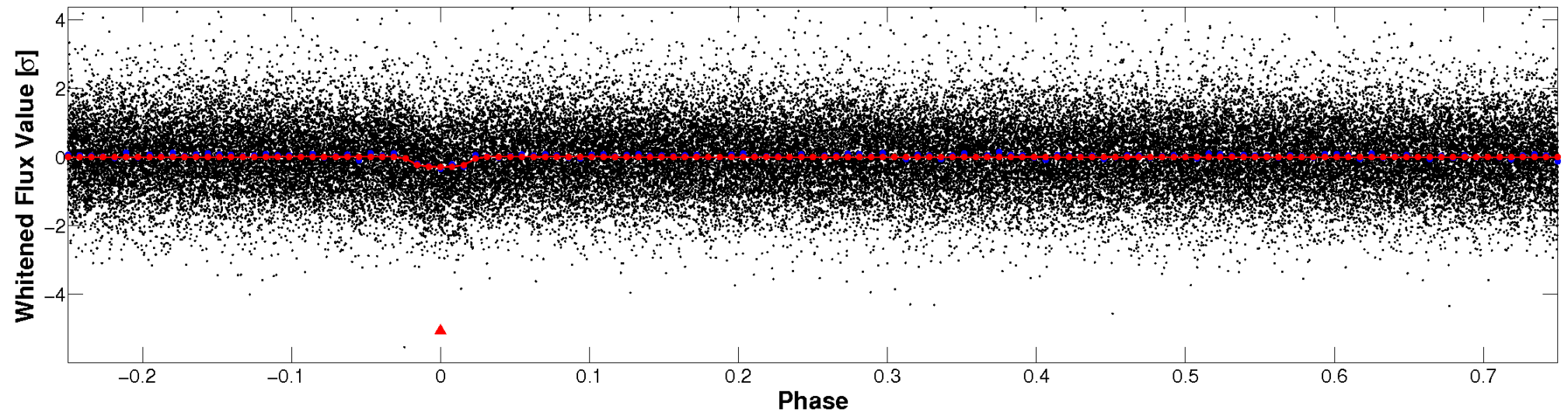


Non-Whitened Vs. Whitened Light Curve

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

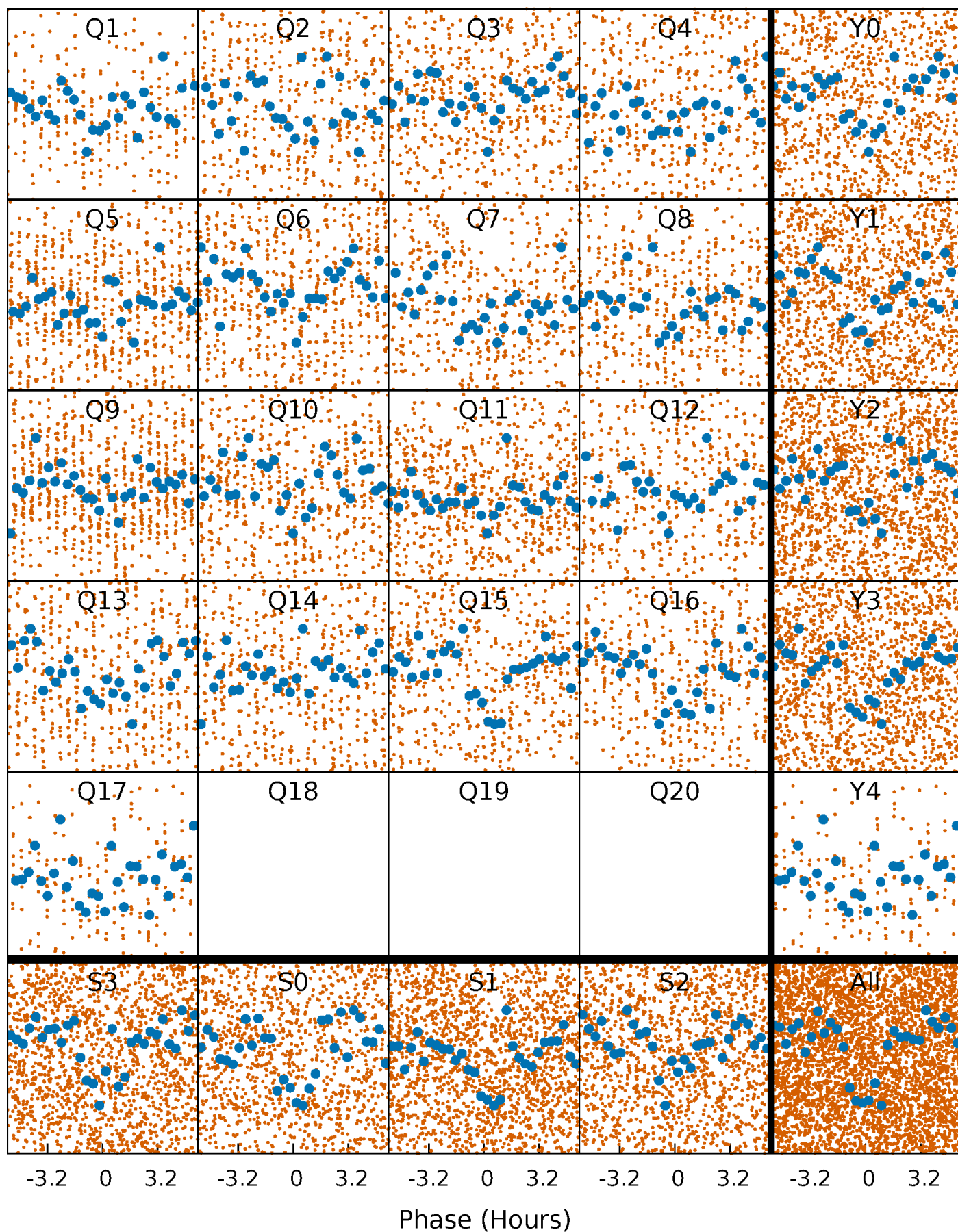


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



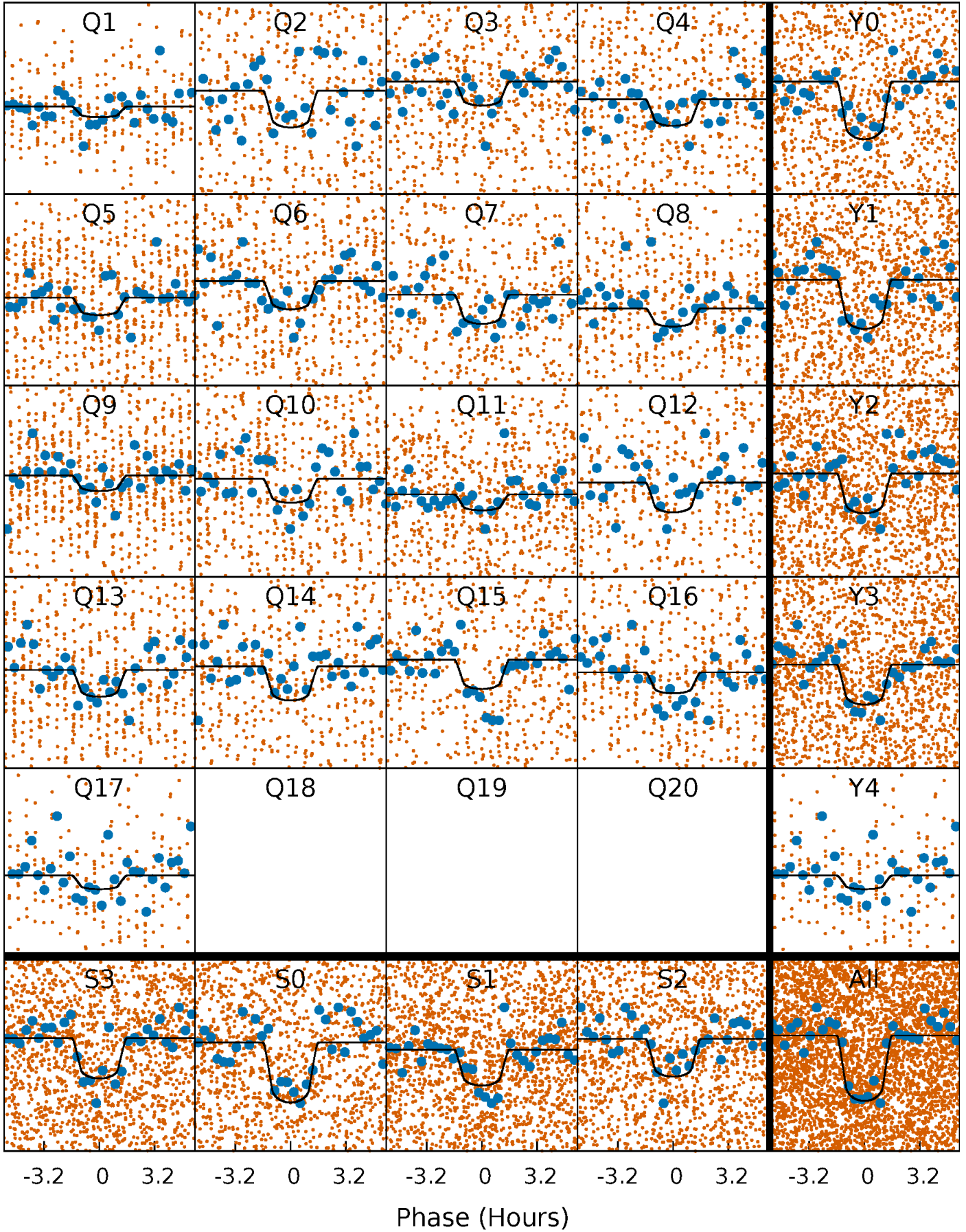
PDC Quarter-Phased Transit Curves

TCE 011509504-01 P= 2.615734 Days $T_0=131.986441$ (BKJD)



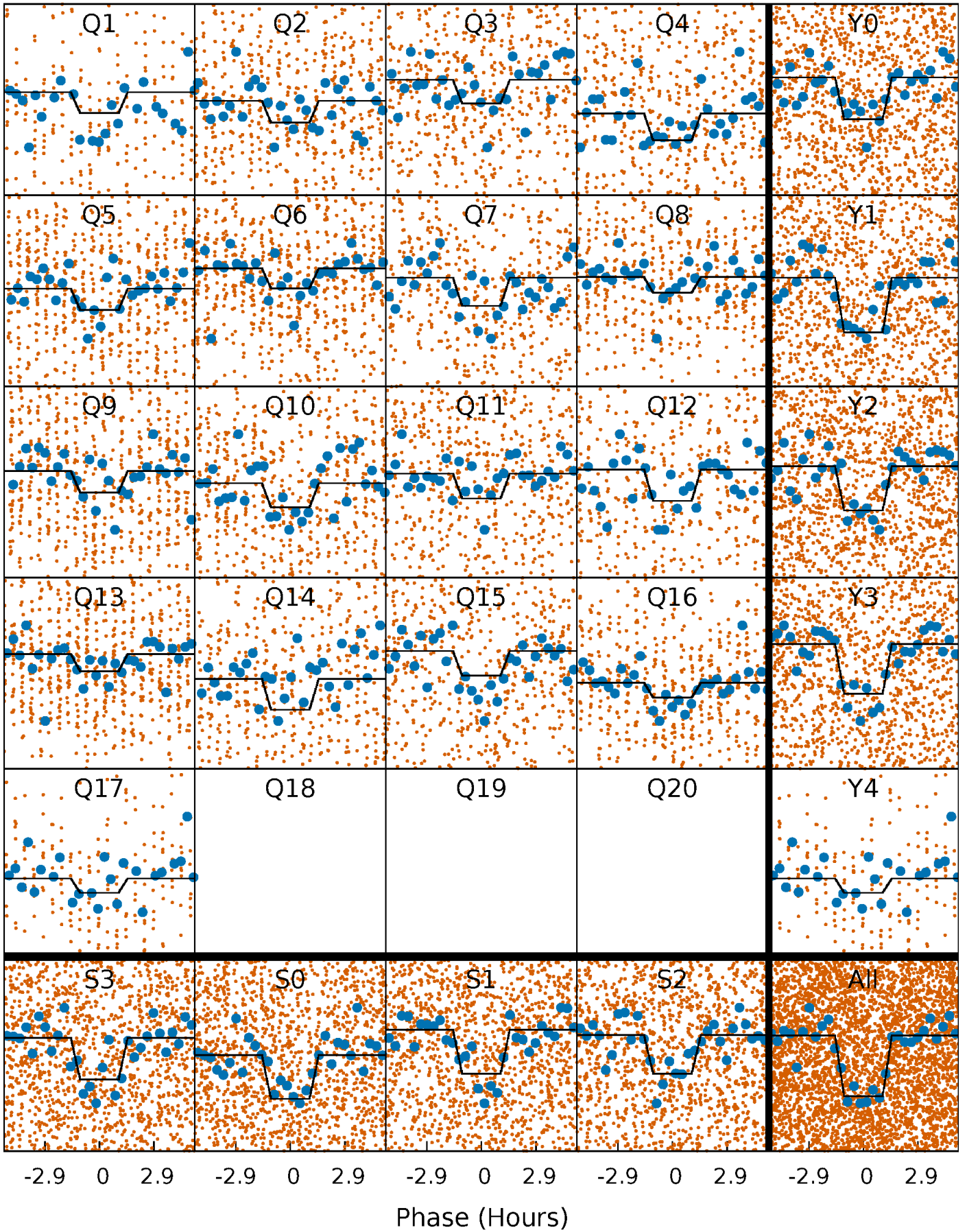
DV Quarter-Phased Transit Curves

TCE 011509504-01 P= 2.615734 Days $T_0=131.986441$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

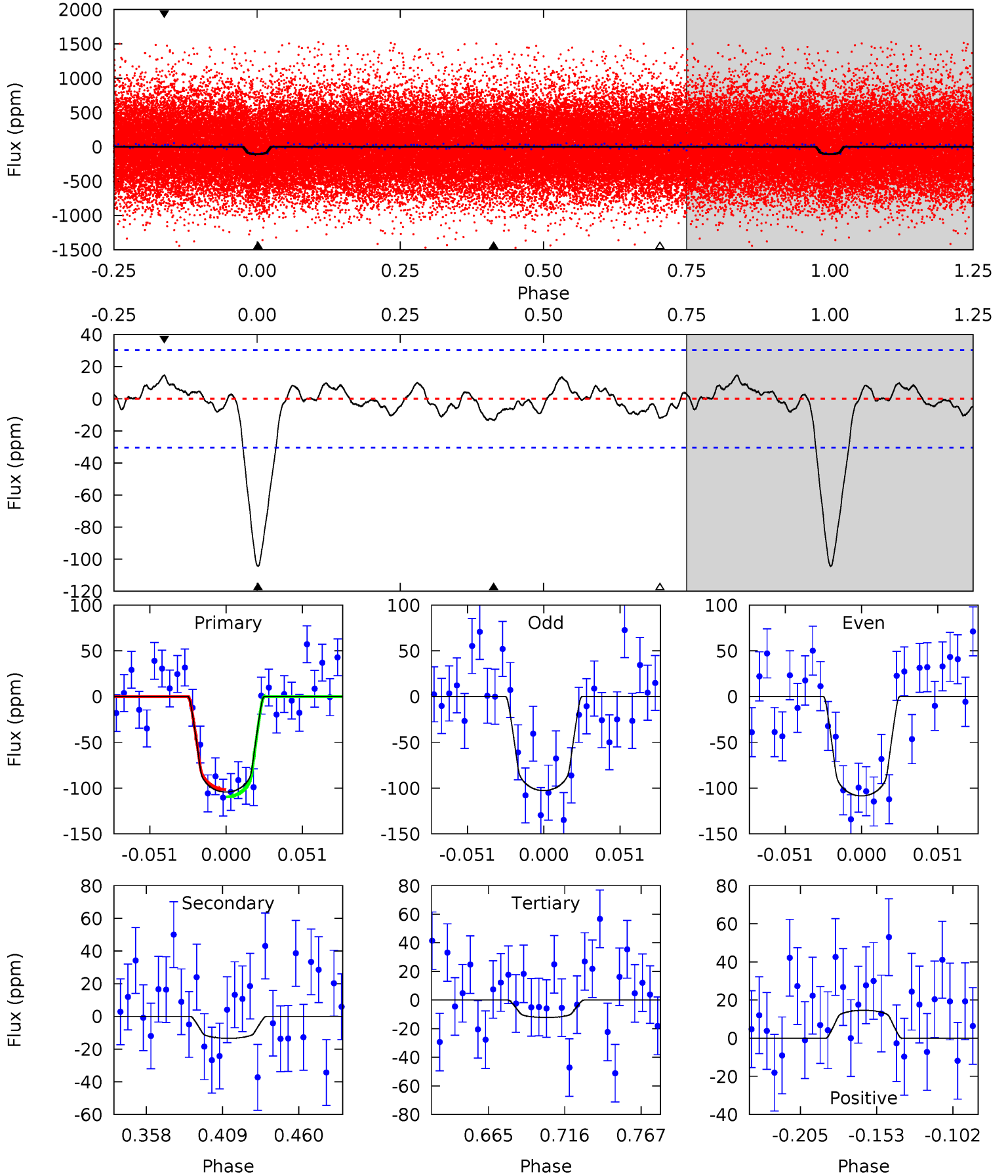
TCE 011509504-01 P= 2.615763 Days $T_0=131.980900$ (BKJD)



DV Model-Shift Uniqueness Test

011509504-01, P = 2.615734 Days, E = 129.370707 Days

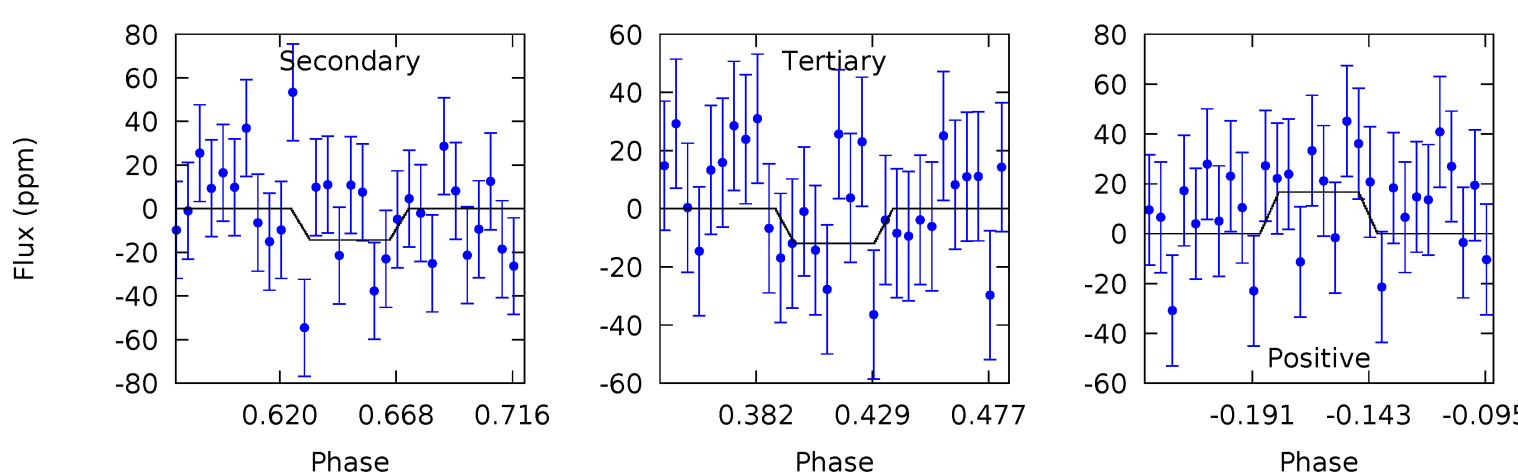
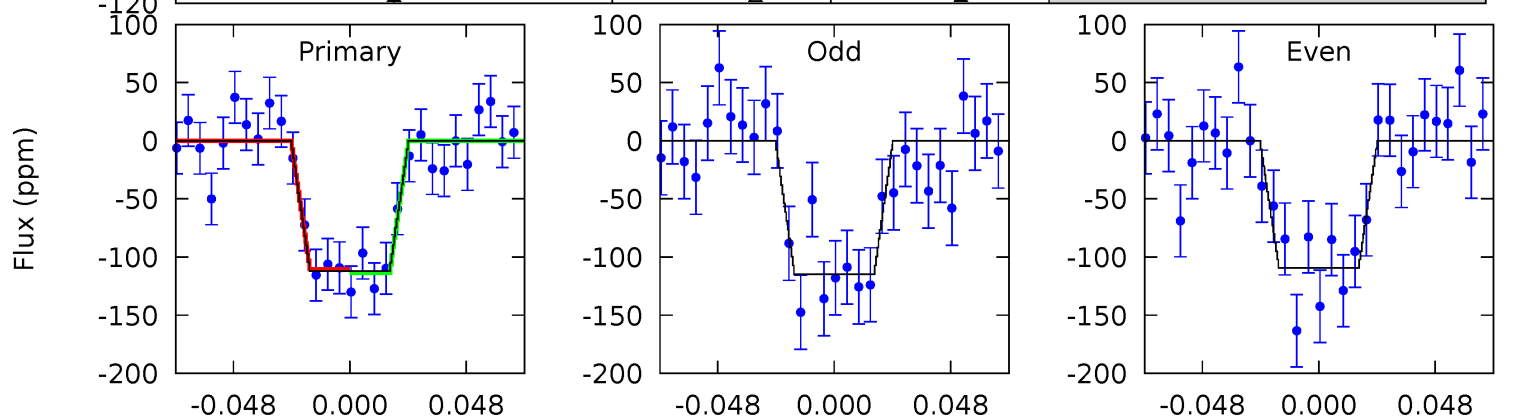
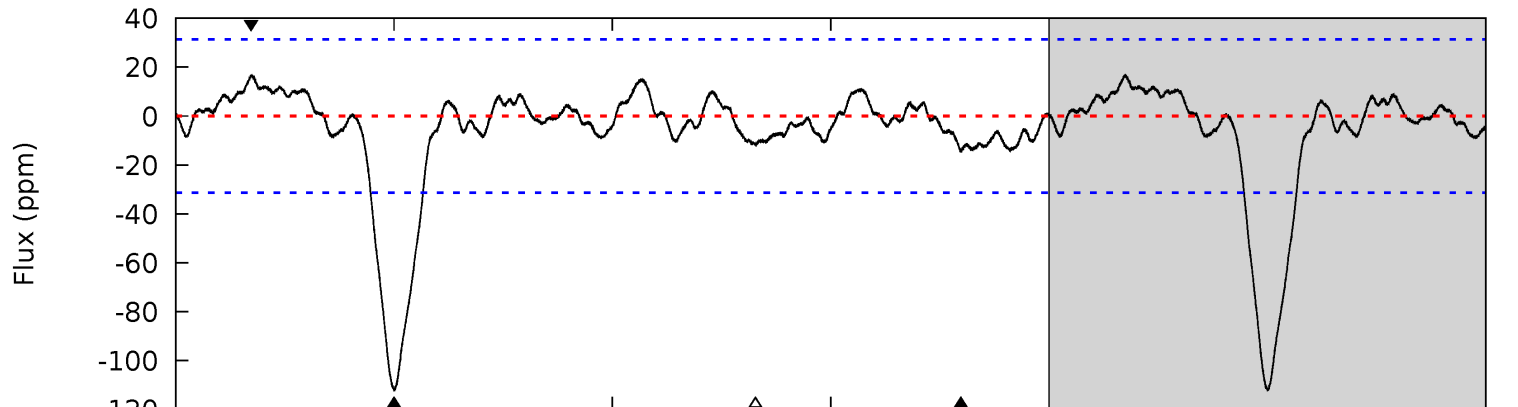
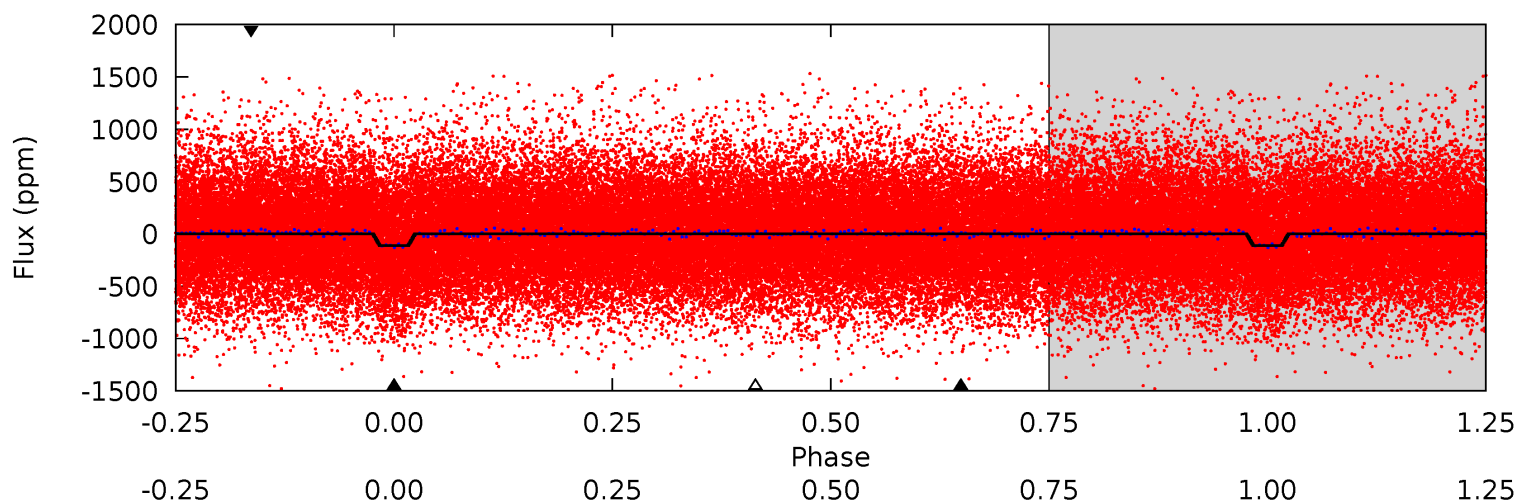
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
16.1	2.07	1.89	2.26	4.70	1.95	0.94	14.2	13.9	0.18	-0.19	0.45	0.94	0.12	0.63



Alt Model-Shift Uniqueness Test

011509504-01, P = 2.615763 Days, E = 129.365137 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
16.9	2.15	1.79	2.51	4.72	1.98	1.04	15.1	14.4	0.36	-0.36	0.41	1.01	0.13	0.27



Stellar Parameters For KIC 011509504

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6088^{+165}_{-201}	$4.446^{+0.084}_{-0.196}$	$-0.400^{+0.300}_{-0.300}$	$0.958^{+0.280}_{-0.120}$	$0.934^{+0.119}_{-0.108}$	$1.496^{+0.553}_{-0.743}$
	+3%/-3%	+2%/-4%	+75%/-75%	+29%/-13%	+13%/-12%	+37%/-50%
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 011509504-01 / KOI 4232.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-13 ± 6	$1.23^{+0.58}_{-0.55}$	1952^{+137}_{-102}	3743^{+1006}_{-603}	$5.885^{+14.065}_{-3.768}$
Alt.	-14 ± 7	$1.17^{+0.63}_{-0.54}$	1957^{+138}_{-110}	3850^{+1145}_{-625}	$6.870^{+18.985}_{-4.480}$

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

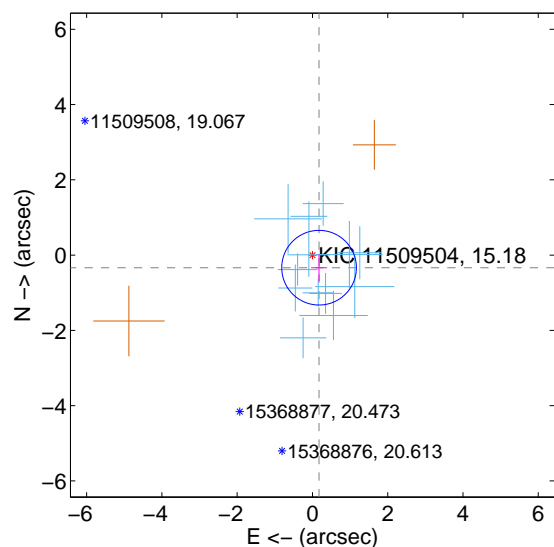
Supplemental centroid analysis for 011509504-01. Kepler magnitude: 15.18. Transit SNR 13.17

There are 13 quarters with good PRF difference image offsets

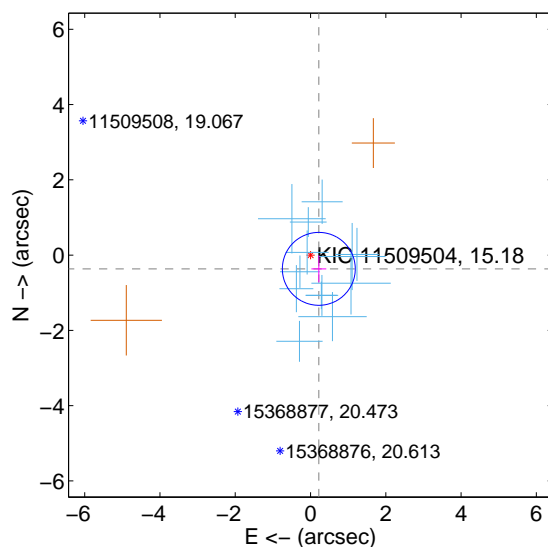
The direct PRF centroid is offset from the target star catalog position by about 0.12 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.378 ± 0.331	1.14	-0.176 ± 0.212	-0.335 ± 0.356
PRF-fit source offset from KIC position	0.427 ± 0.323	1.32	-0.220 ± 0.199	-0.365 ± 0.357
photometric centroid source offset	2.03 ± 1.11	1.83	-1.74 ± 1.07	1.05 ± 1.20

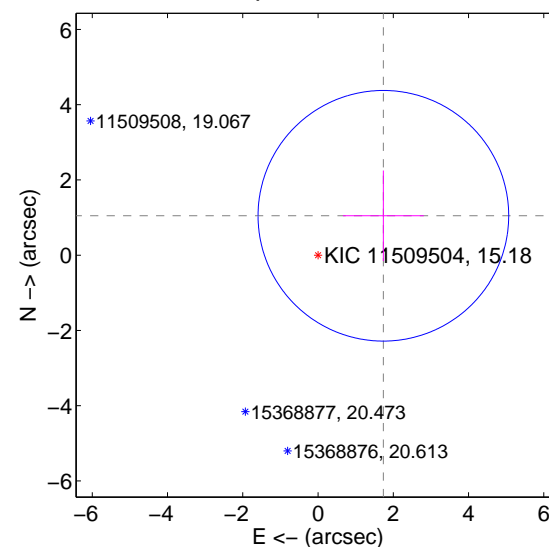
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

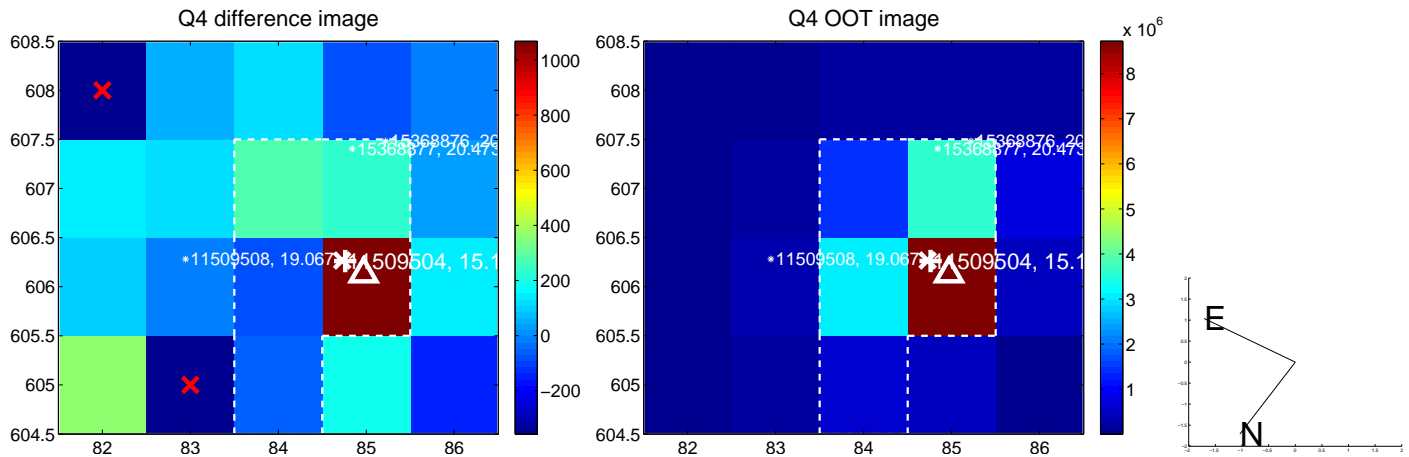
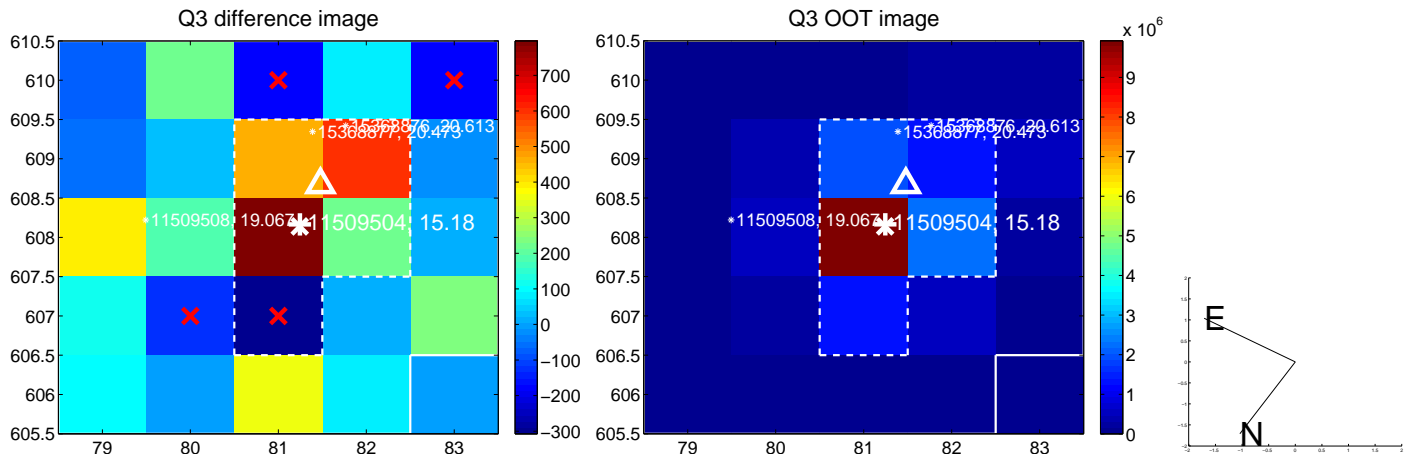
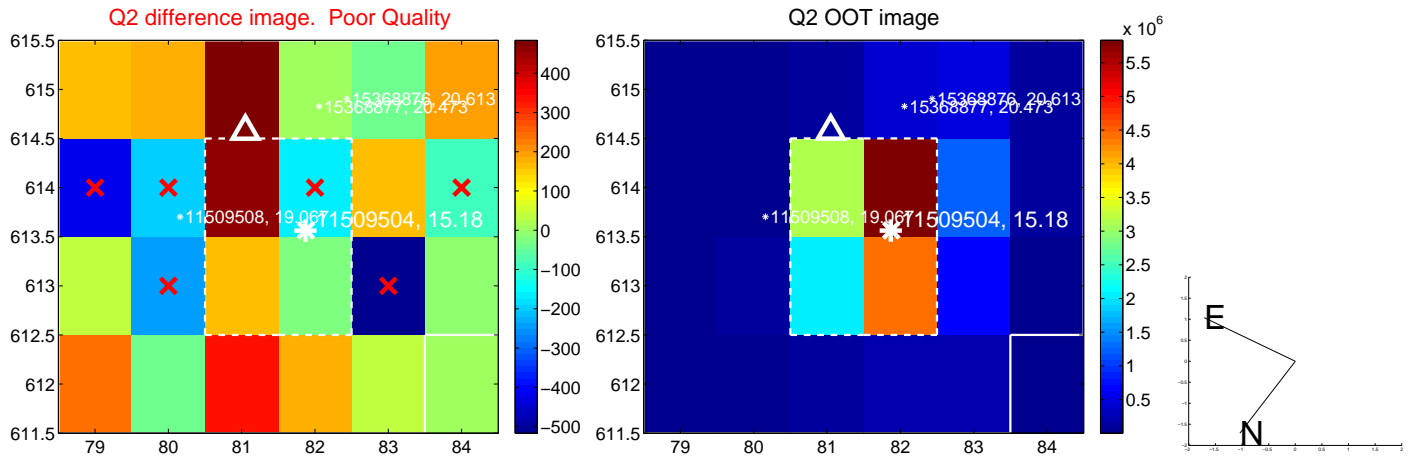
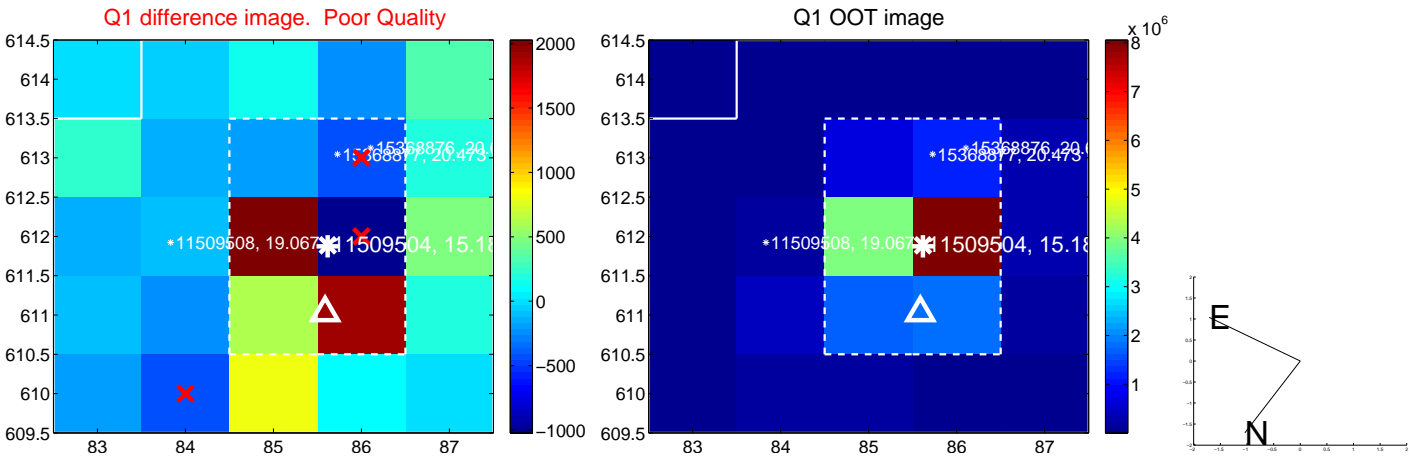


offset from photometric centroids

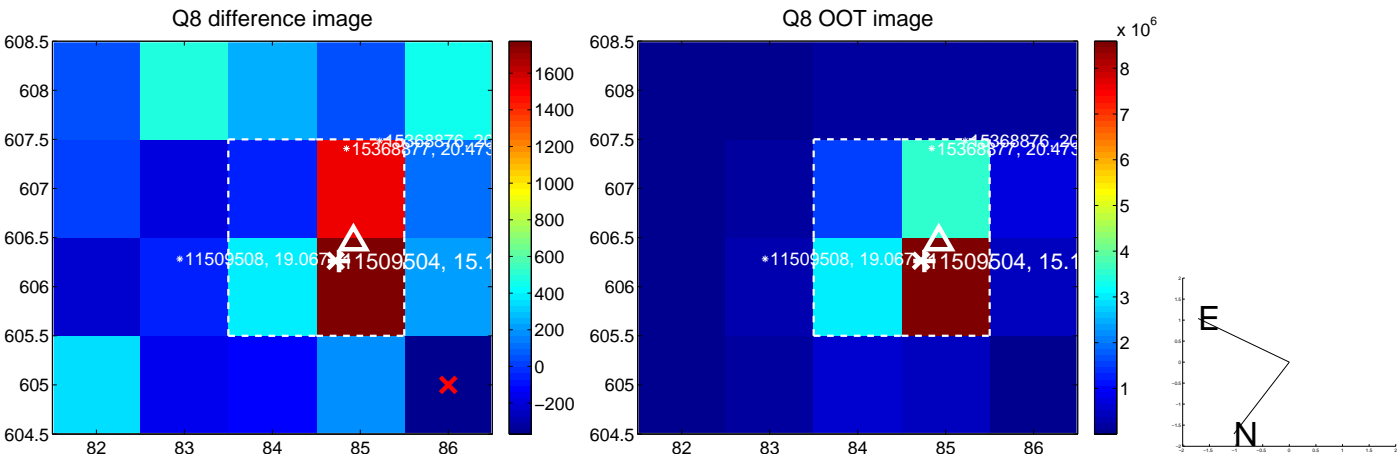
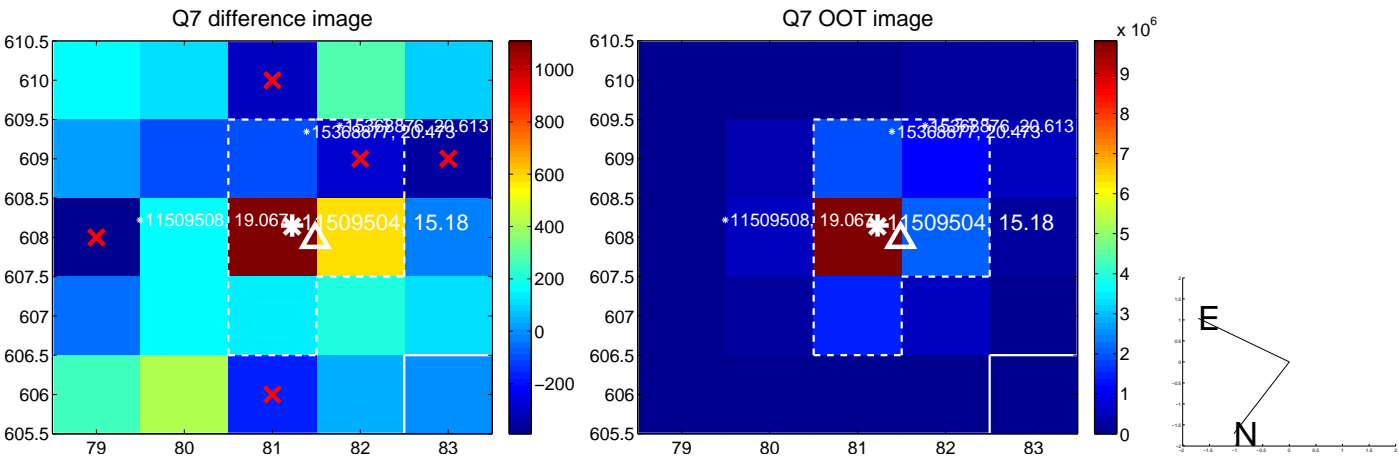
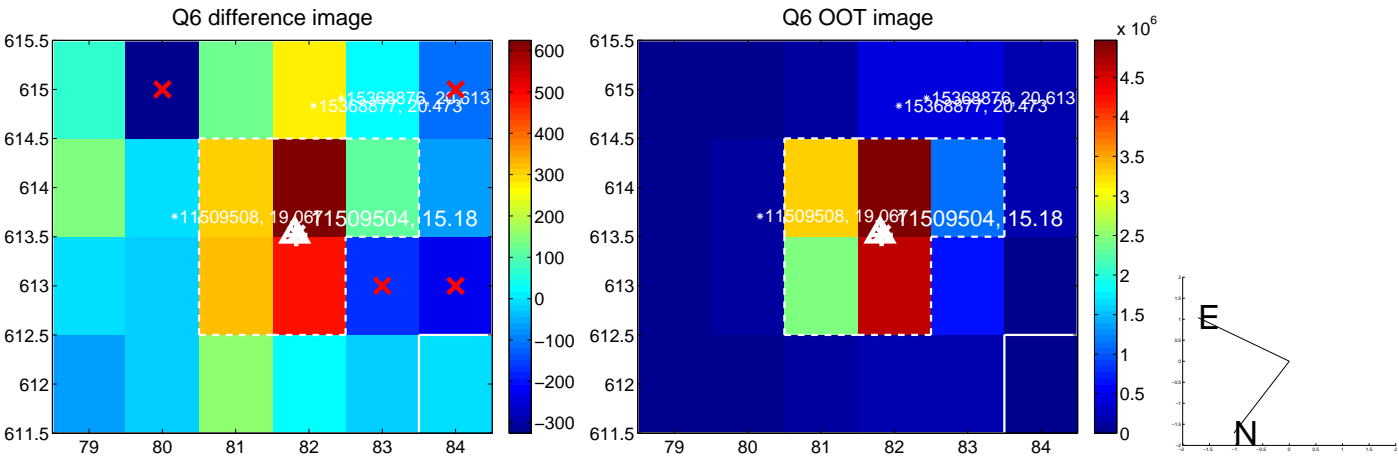
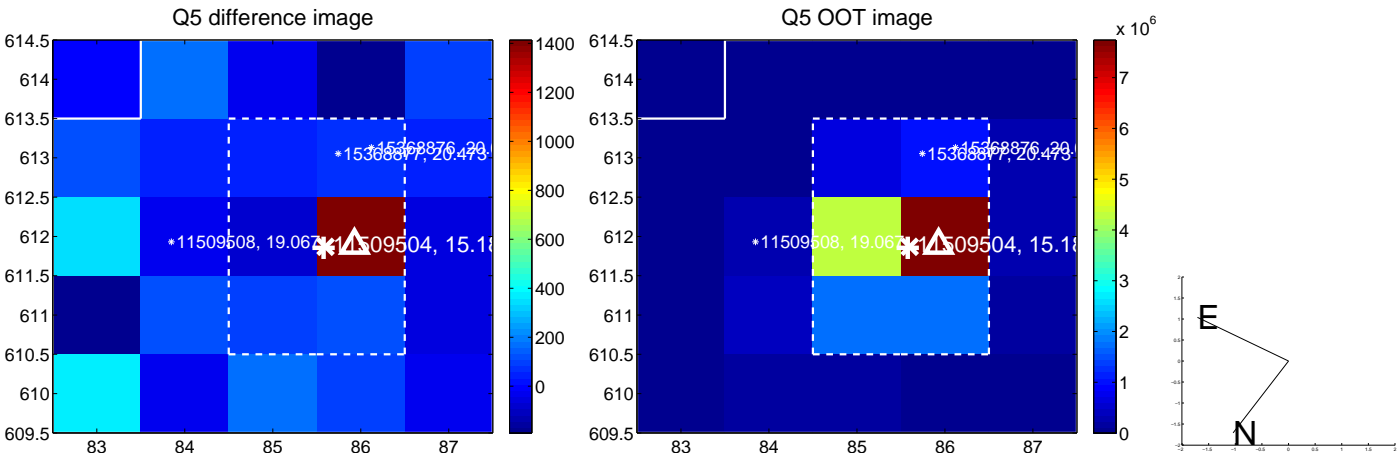


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

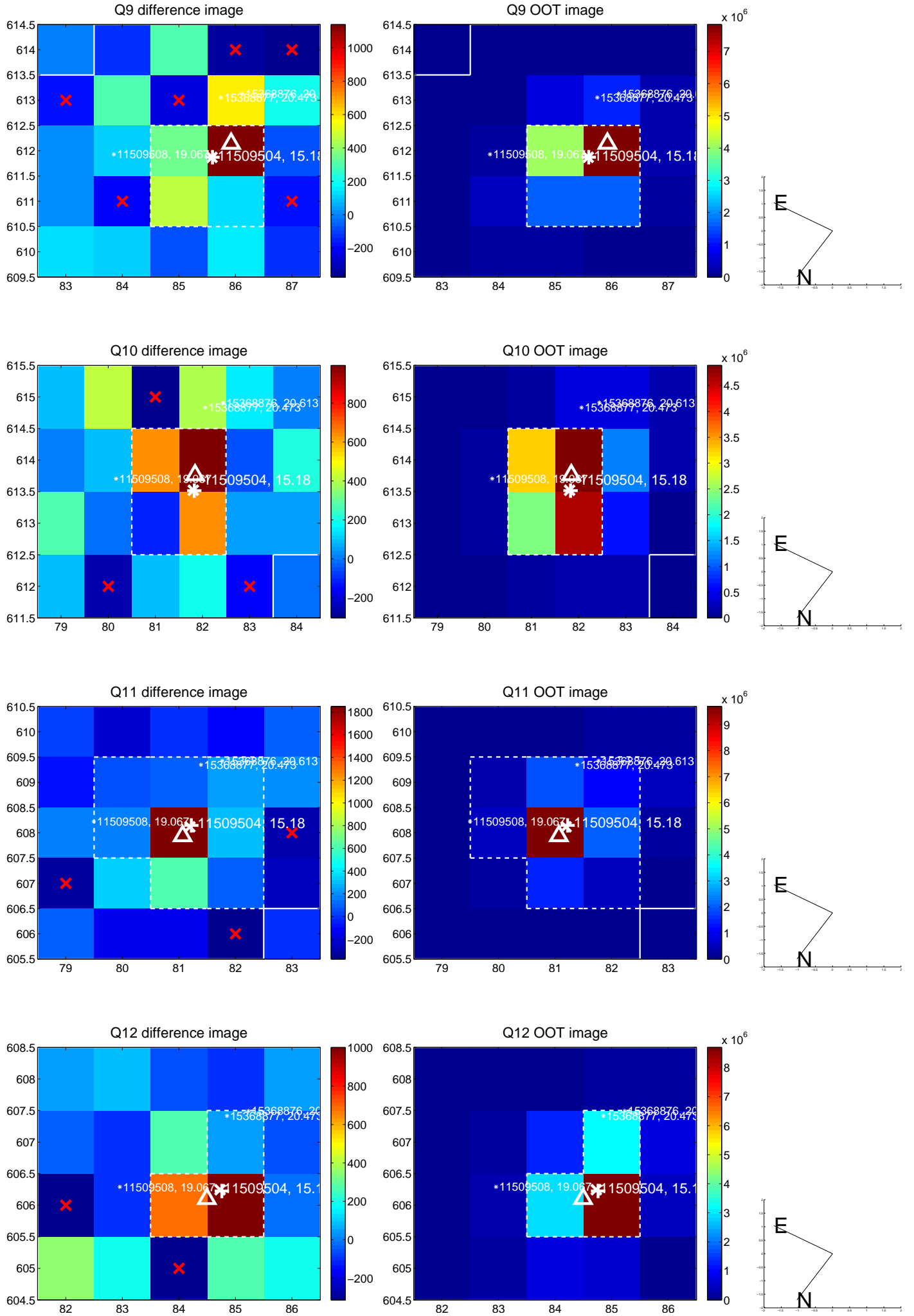
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



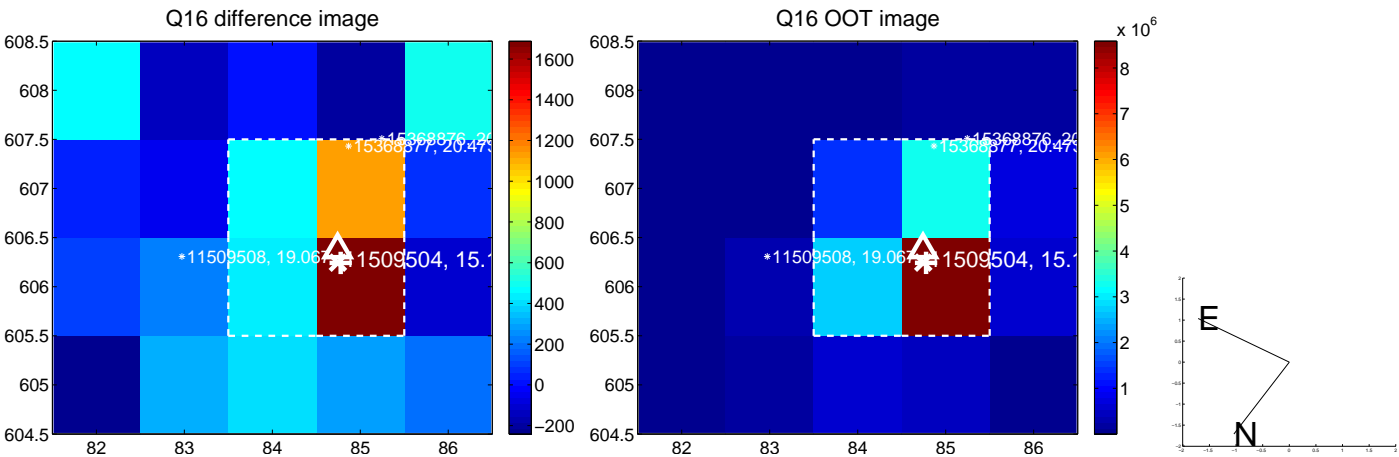
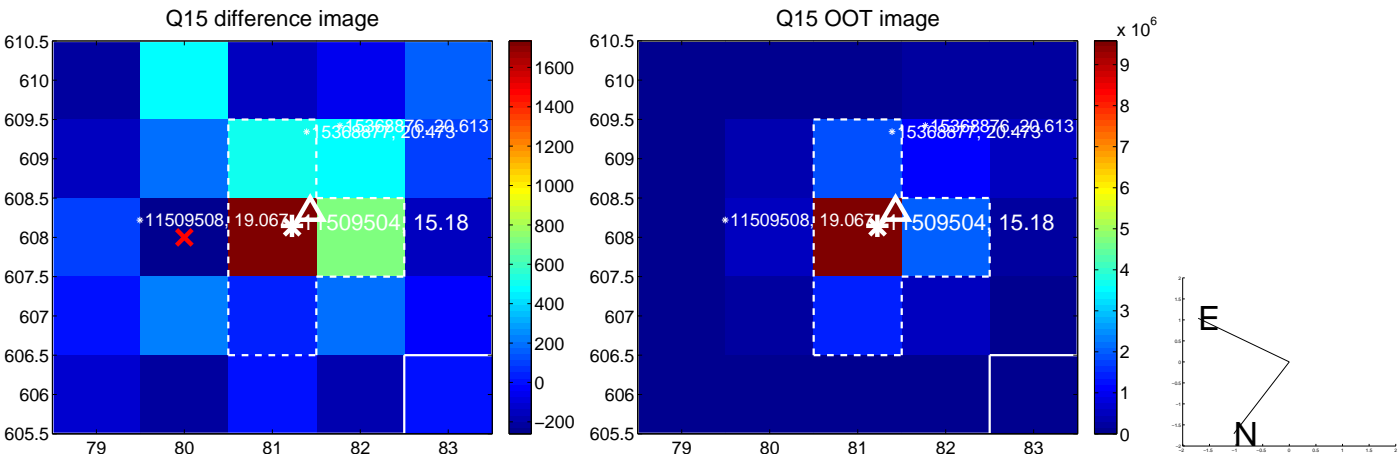
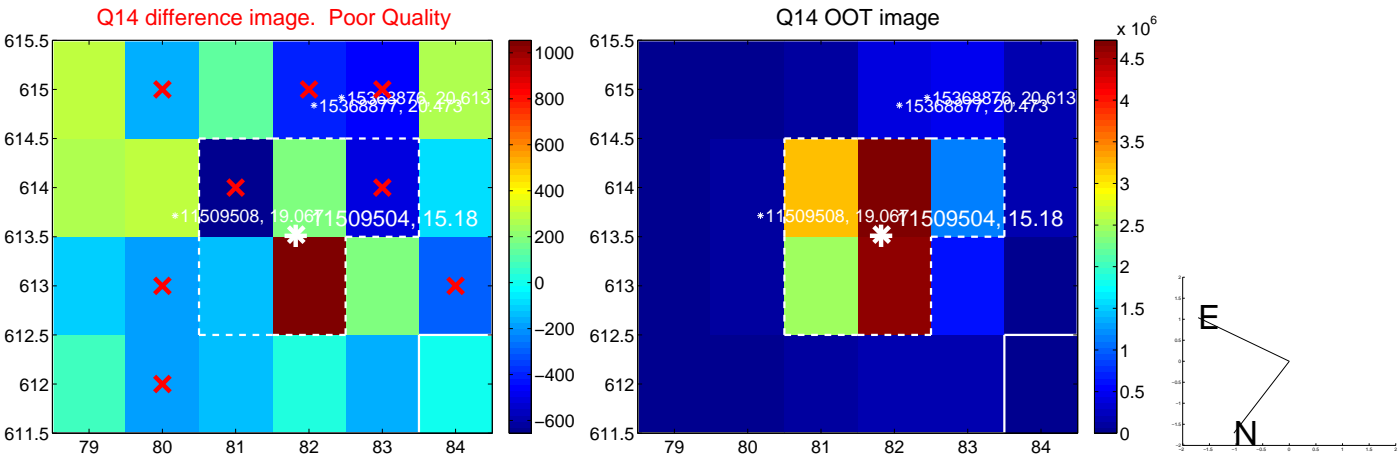
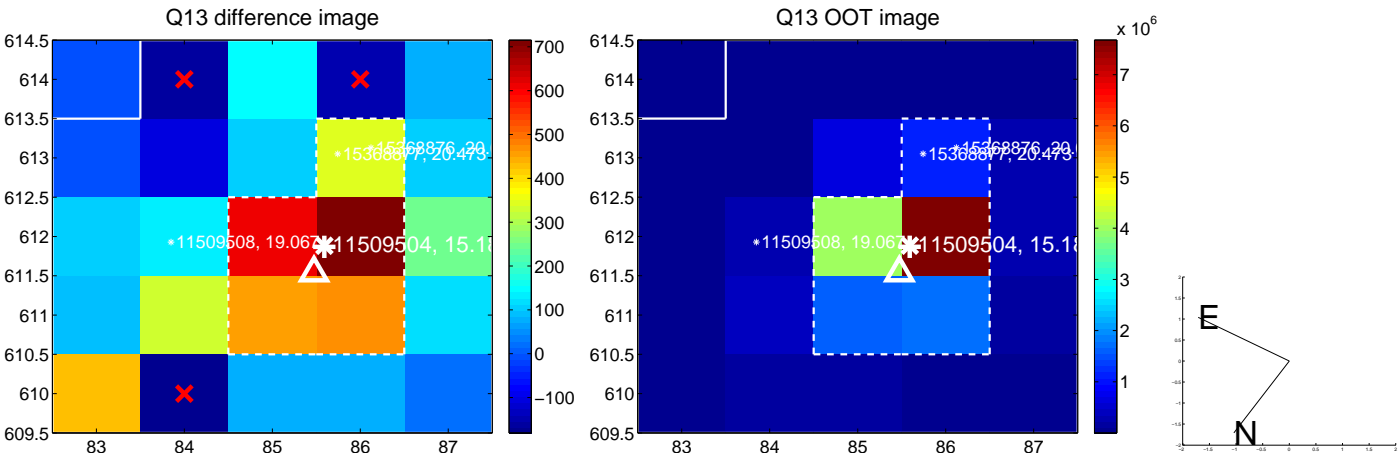
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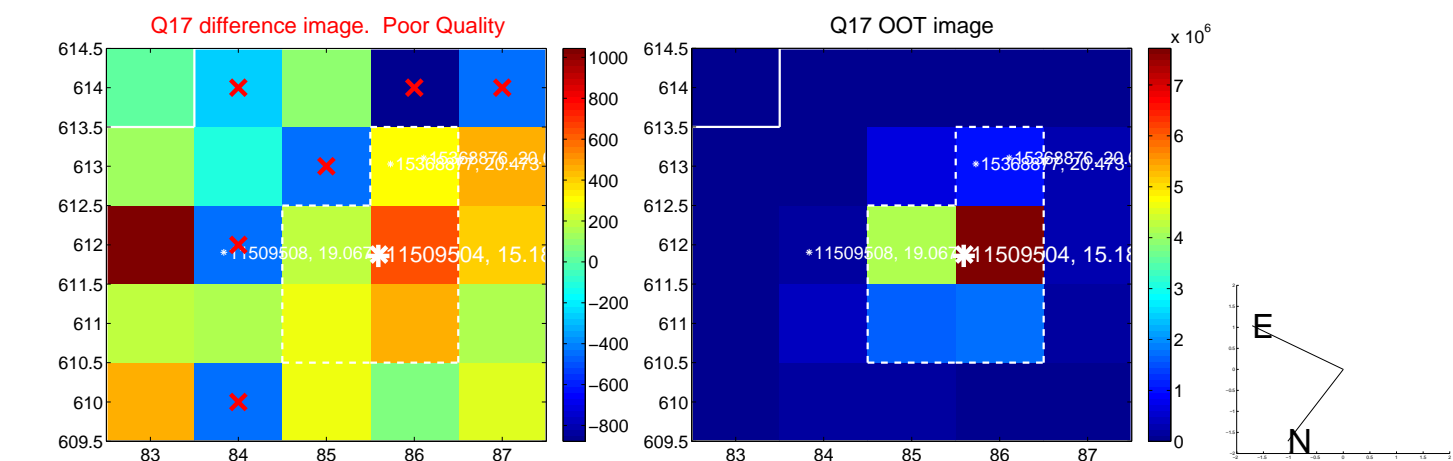
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



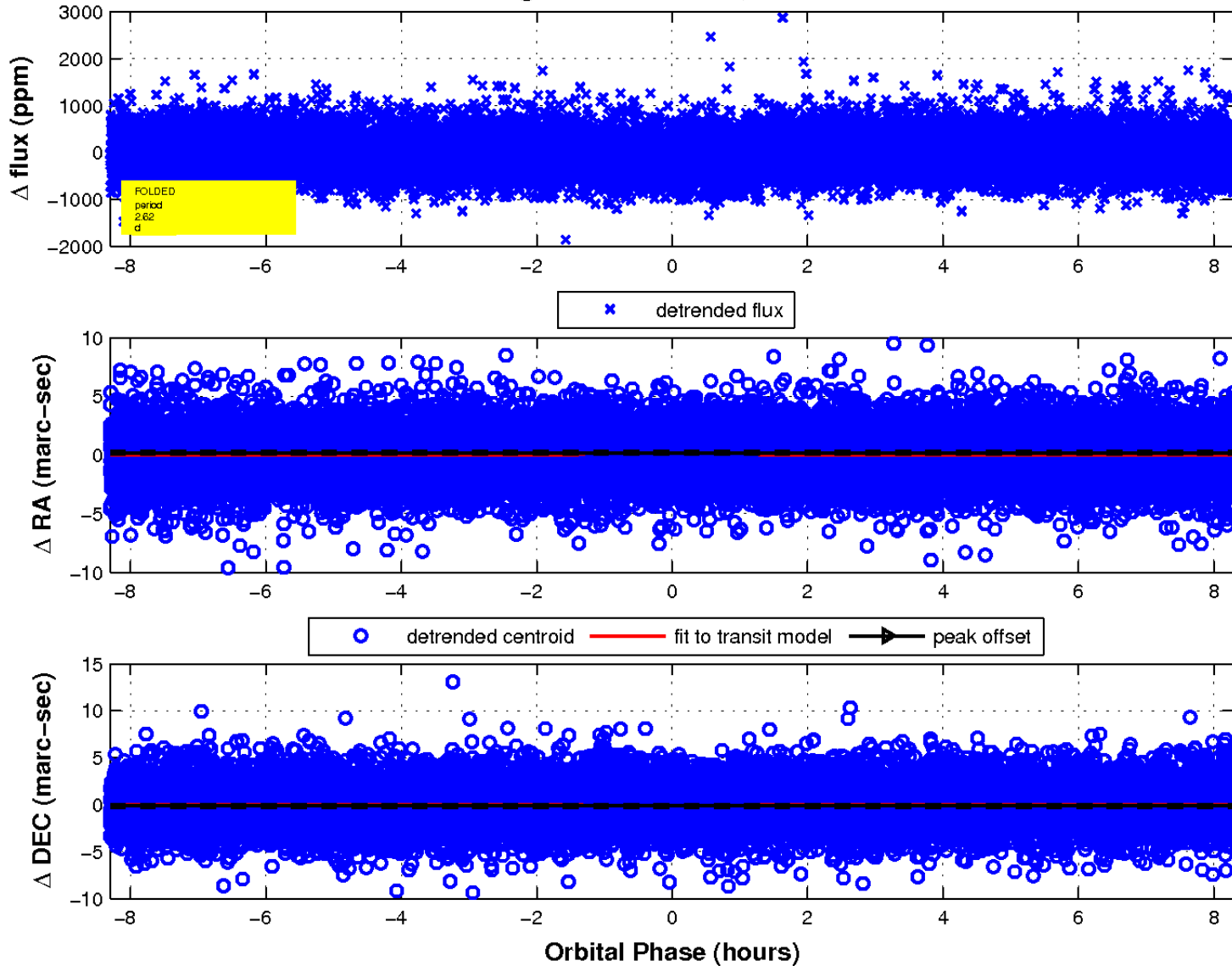
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

