

KIC 003831523

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})
003831523-01	OBS	6361.01	1.528724	131.662091	25.3	4.053	11.7	11.3	2.27	6438	1.40	10022.27

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003831523-01	OBS	PC	0.78	0	0	0	0	CENT_SATURATED

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

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

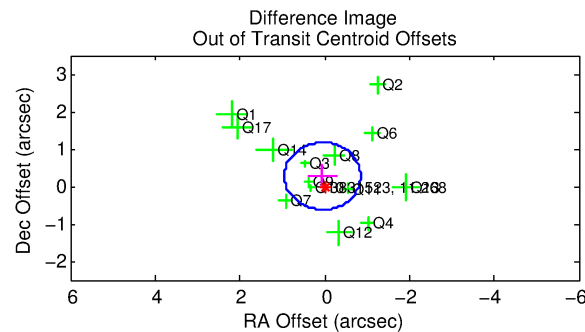
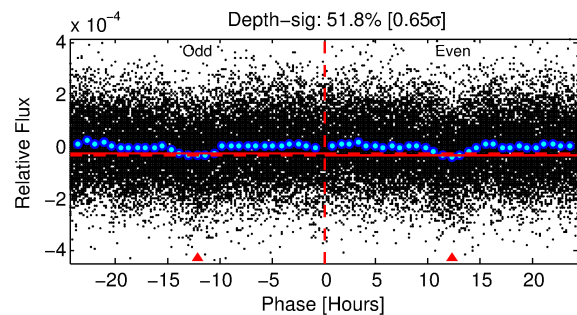
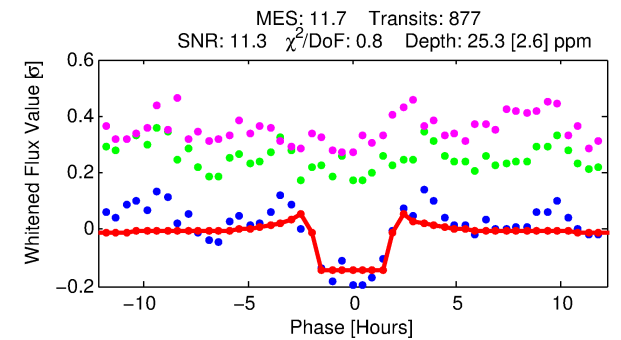
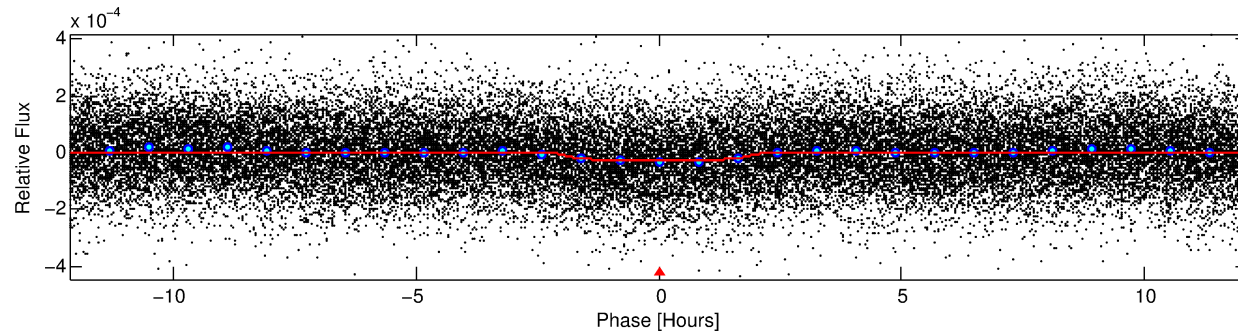
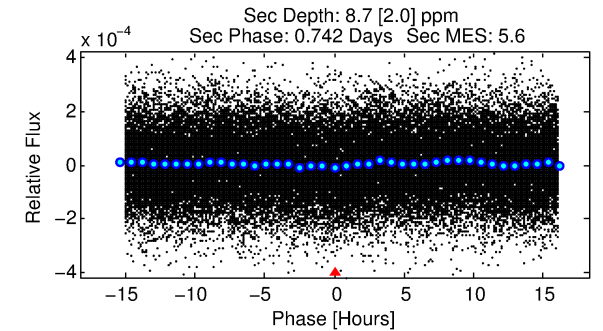
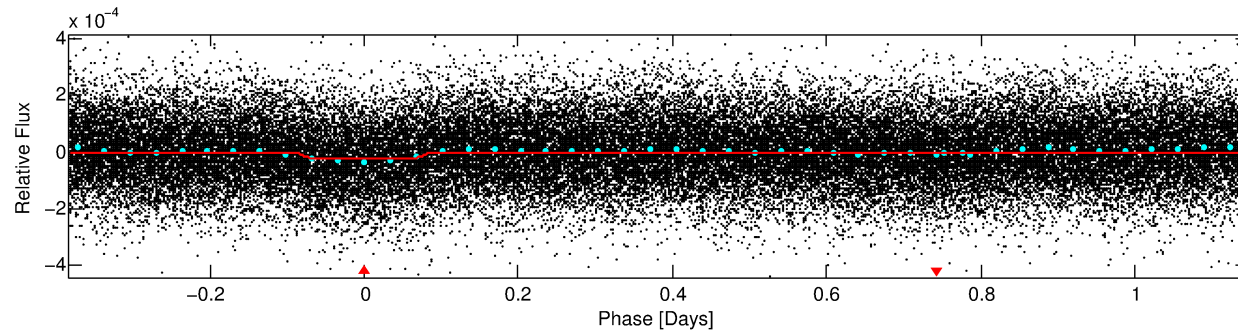
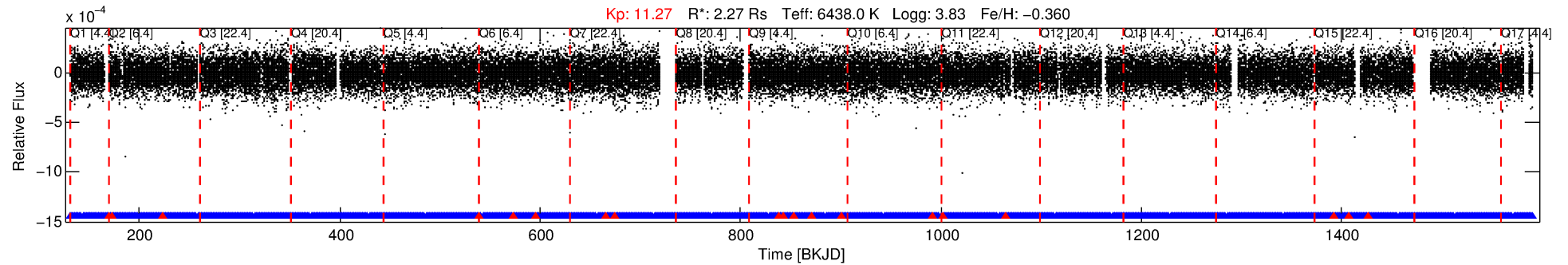
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 003831523-01

No Significant Match Found

DV One-Page Summary

KIC: 3831523 Candidate: 1 of 1 Period: 1.529 d
KOI: K06361.01 Corr: 0.786



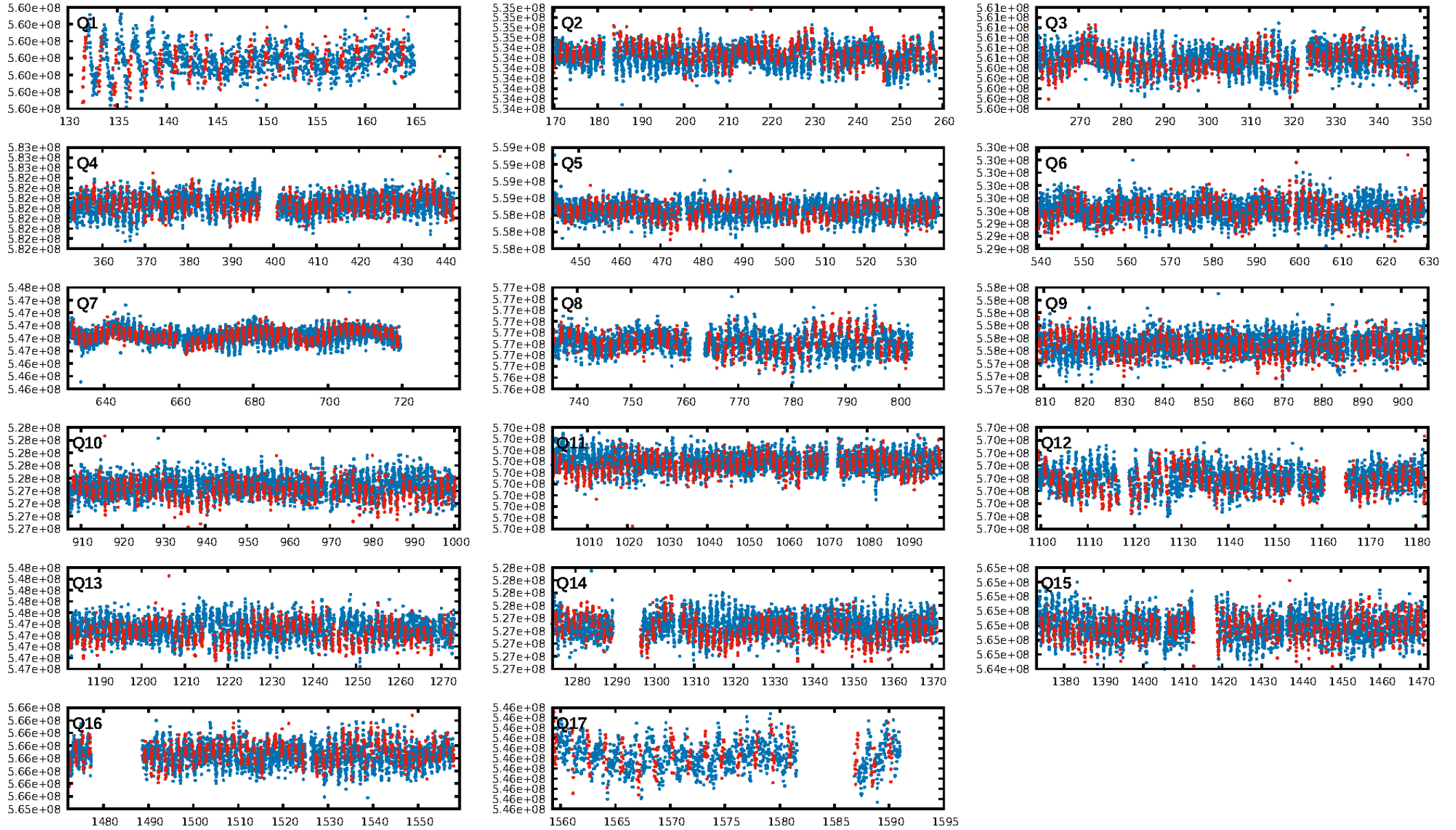
DV Fit Results:

Period = 1.52872 [0.00001] d
Epoch = 131.6621 [0.0027] BKJD
Rp/R* = 0.0057 [0.0010]
a/R* = 1.37 [0.66]
b = 0.95 [0.11]
Seff = 10022.27 [8608.16]
Teq = 2551 [548] K
Rp = 1.40 [0.73] Re
a = 0.0281 [0.0143] AU
Ag = 1.92 [1.82] [0.51σ]
Teffp = 4646 [520] K [2.77σ]

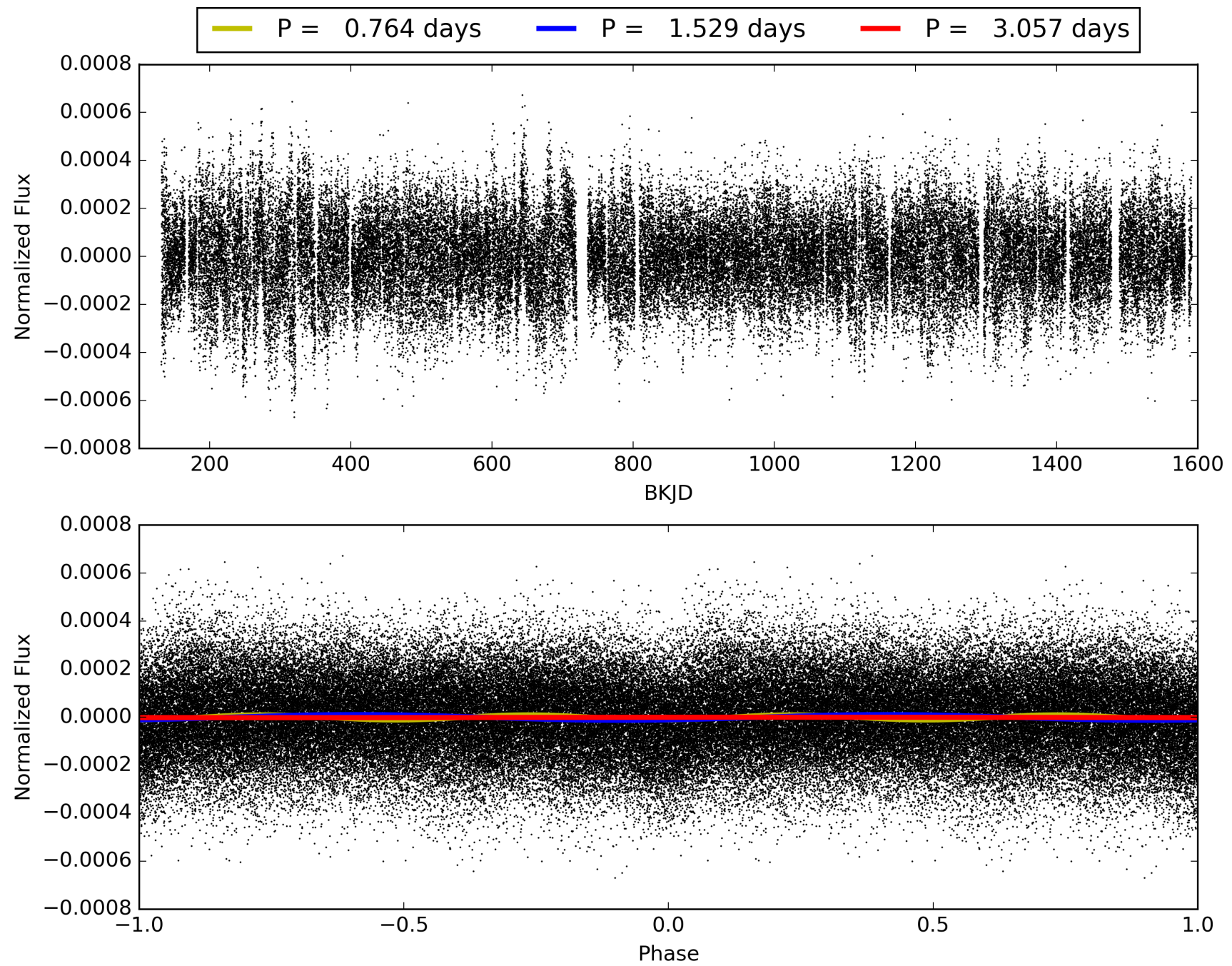
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 2.61e-26
RollingBand-fgt: 0.98 [818/837]
GhostDiagnostic-chr: 1.085
Centroid-sig: 74.0%
Centroid-so: 0.205 arcsec [0.49σ]
OotOffset-rm: 0.278 arcsec [0.93σ]
OotOffset-st: 4/3/3/4 [14]
KicOffset-rm: 0.516 arcsec [1.61σ]
KicOffset-st: 4/3/3/4 [14]
DiffImageQuality-fgm: 0.93 [13/14]
DiffImageOverlap-fno: 1.00 [17/17]

TCE 003831523-01, PDC Light Curves

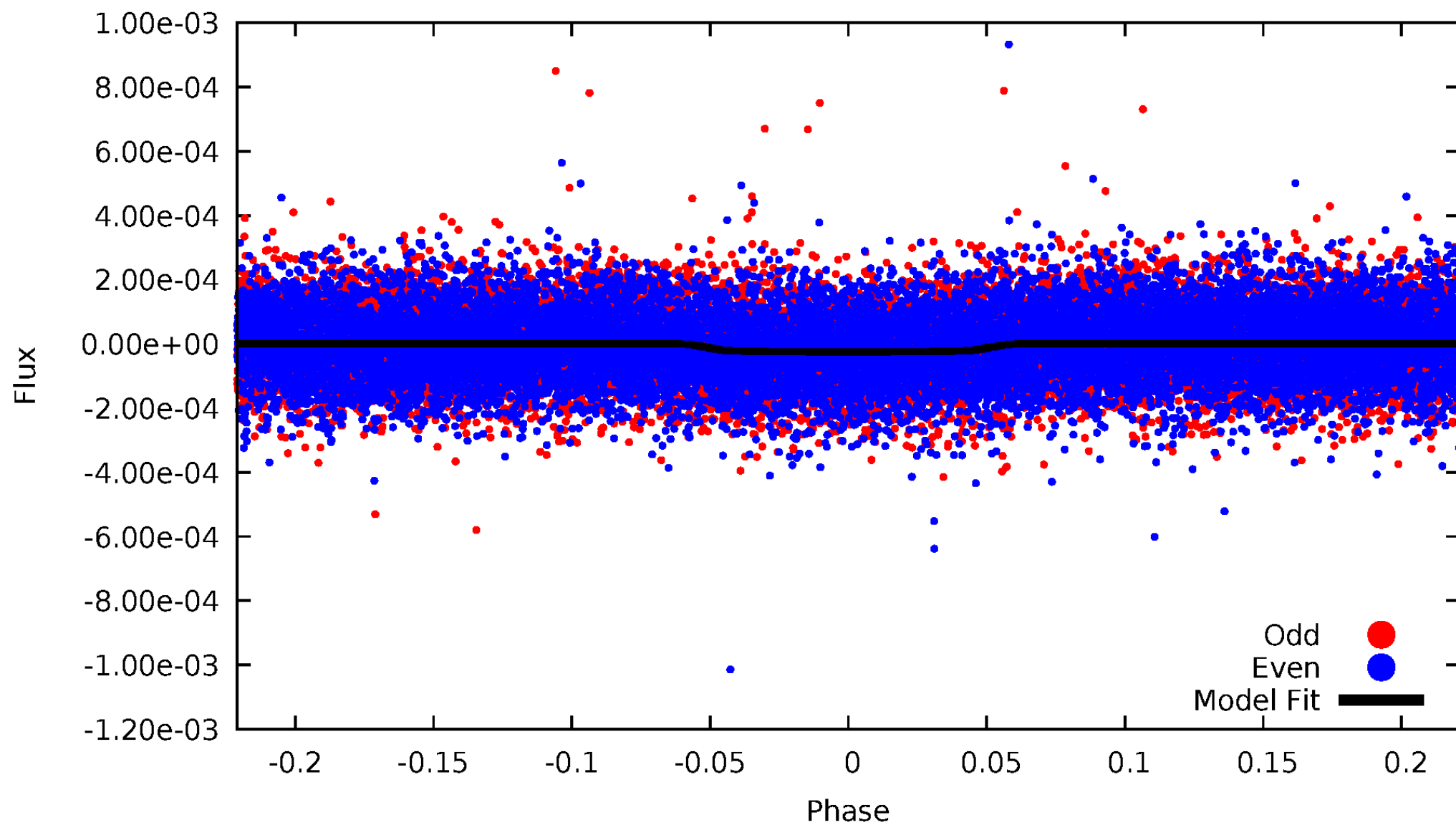


TCE 003831523-01



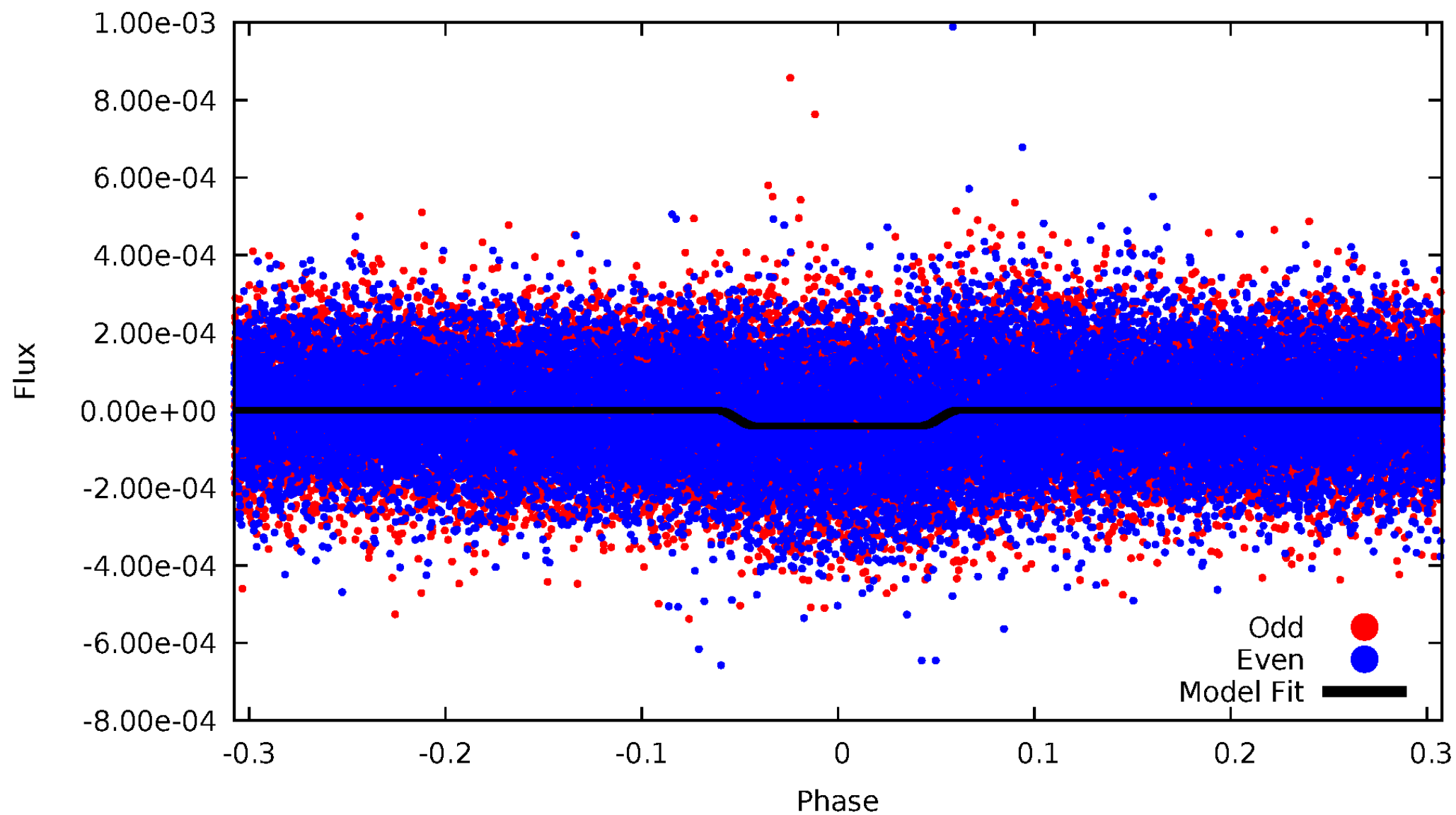
DV Odd/Even

TCE 003831523-01



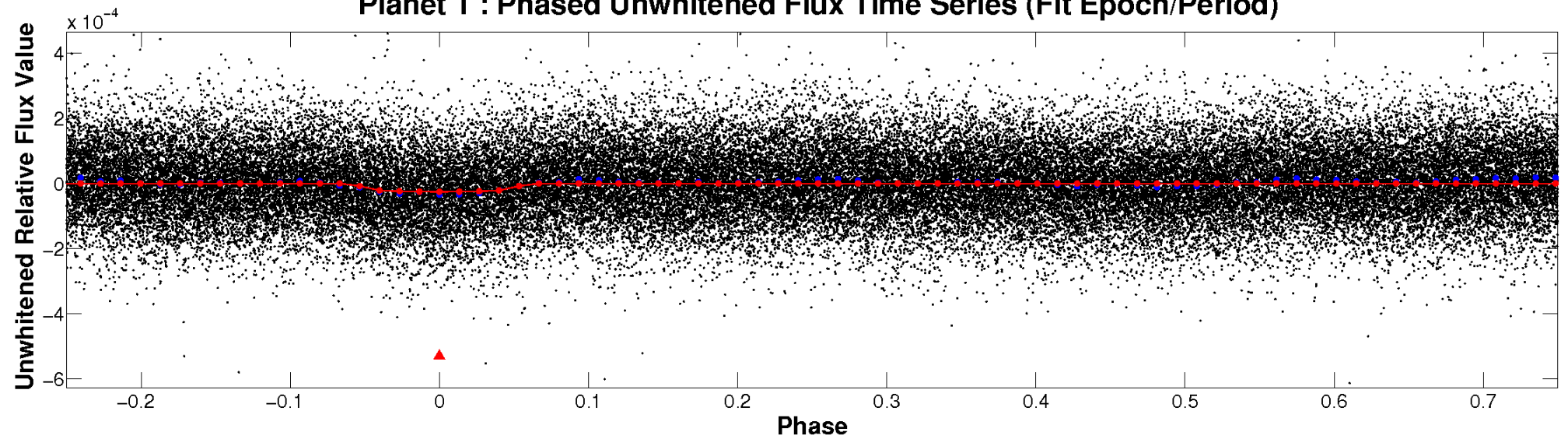
ALT Odd/Even

TCE 003831523-01

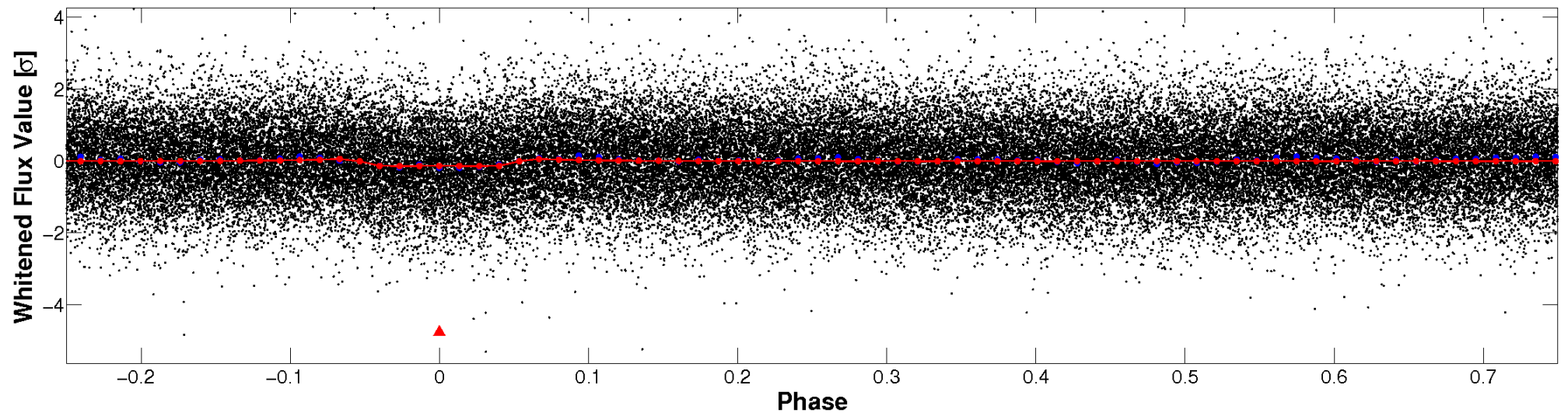


Non-Whitened Vs. Whitened Light Curve

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

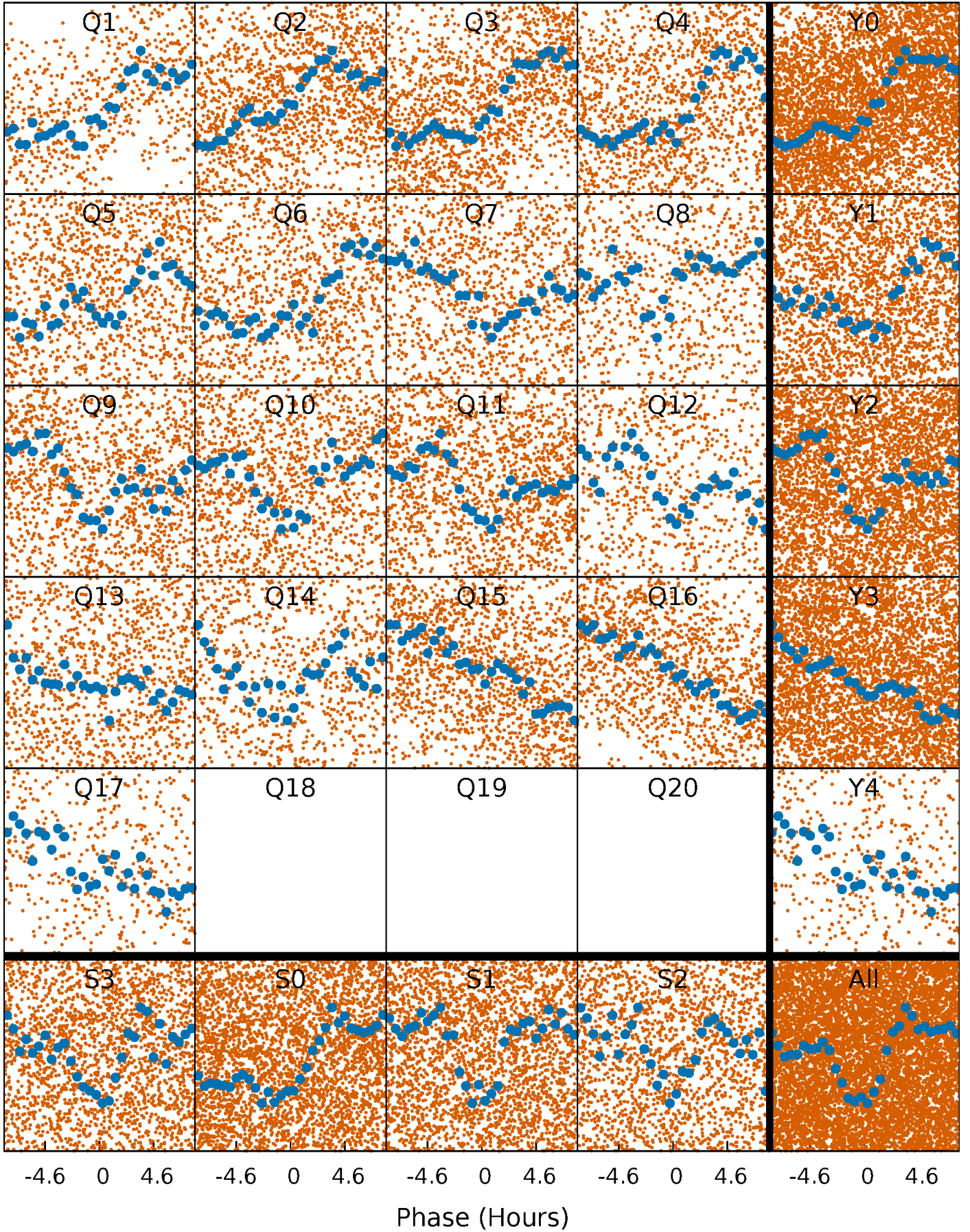


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



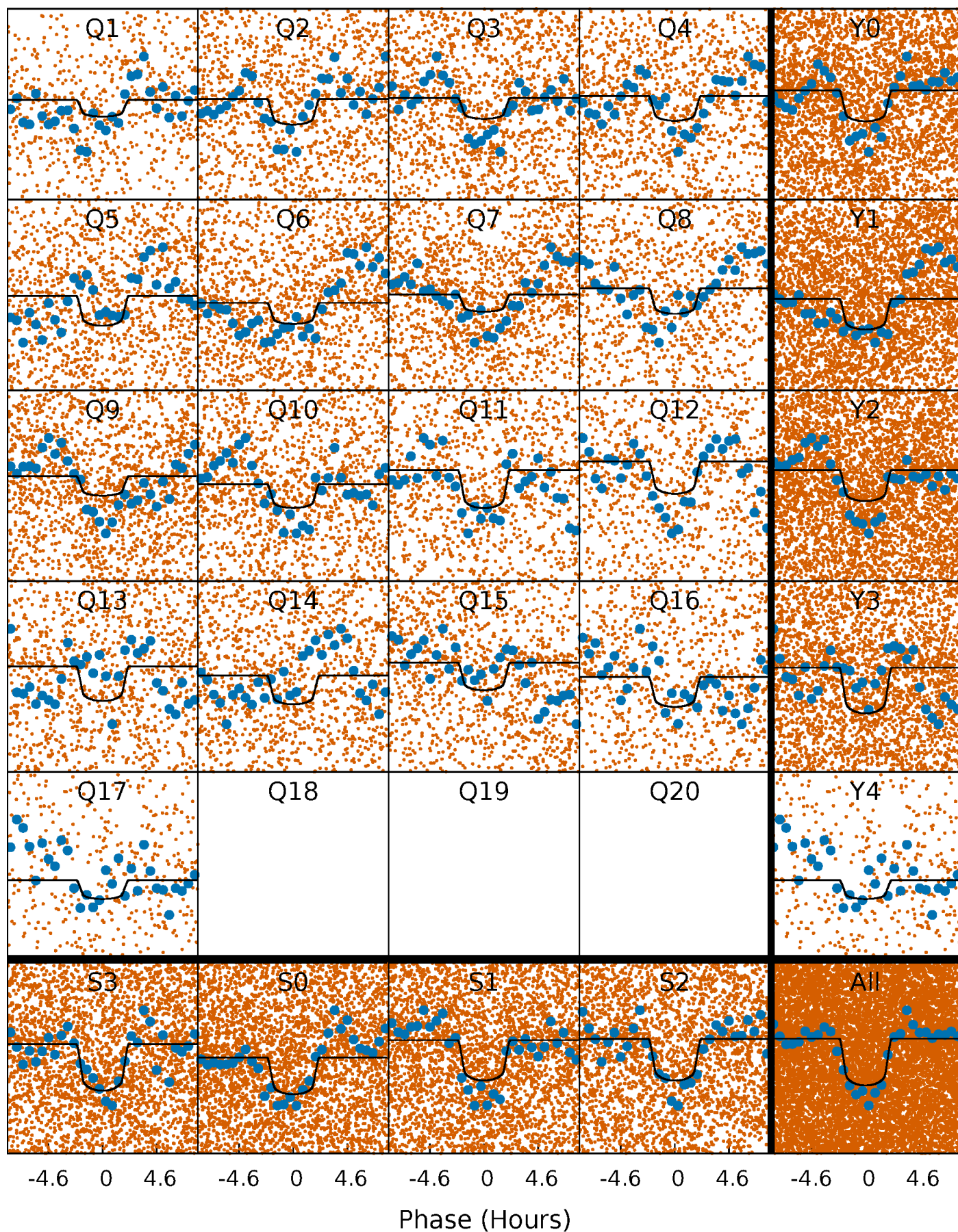
PDC Quarter-Phased Transit Curves

TCE 003831523-01 P= 1.528724 Days $T_0=131.662091$ (BKJD)



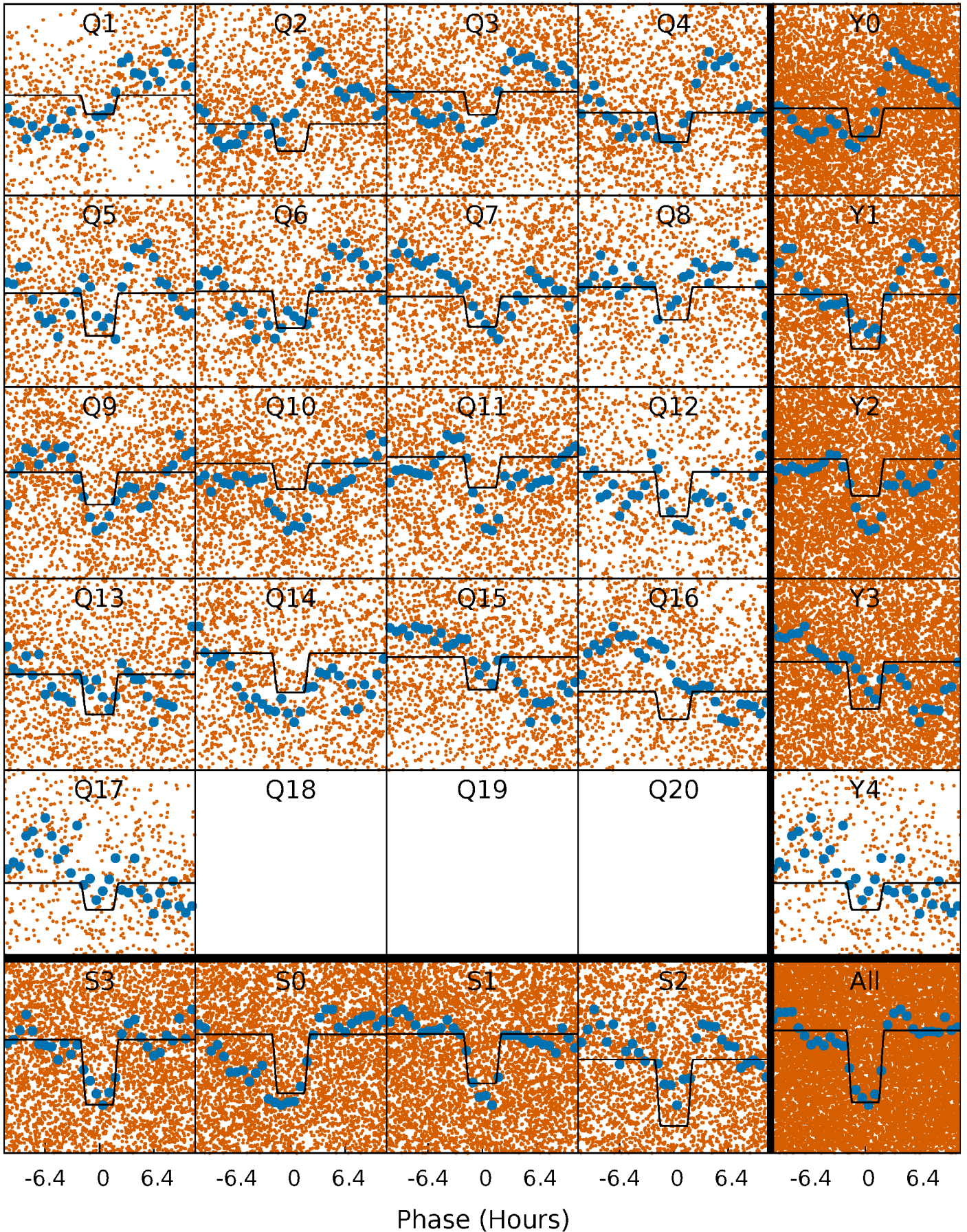
DV Quarter-Phased Transit Curves

TCE 003831523-01 P= 1.528724 Days $T_0=131.662091$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

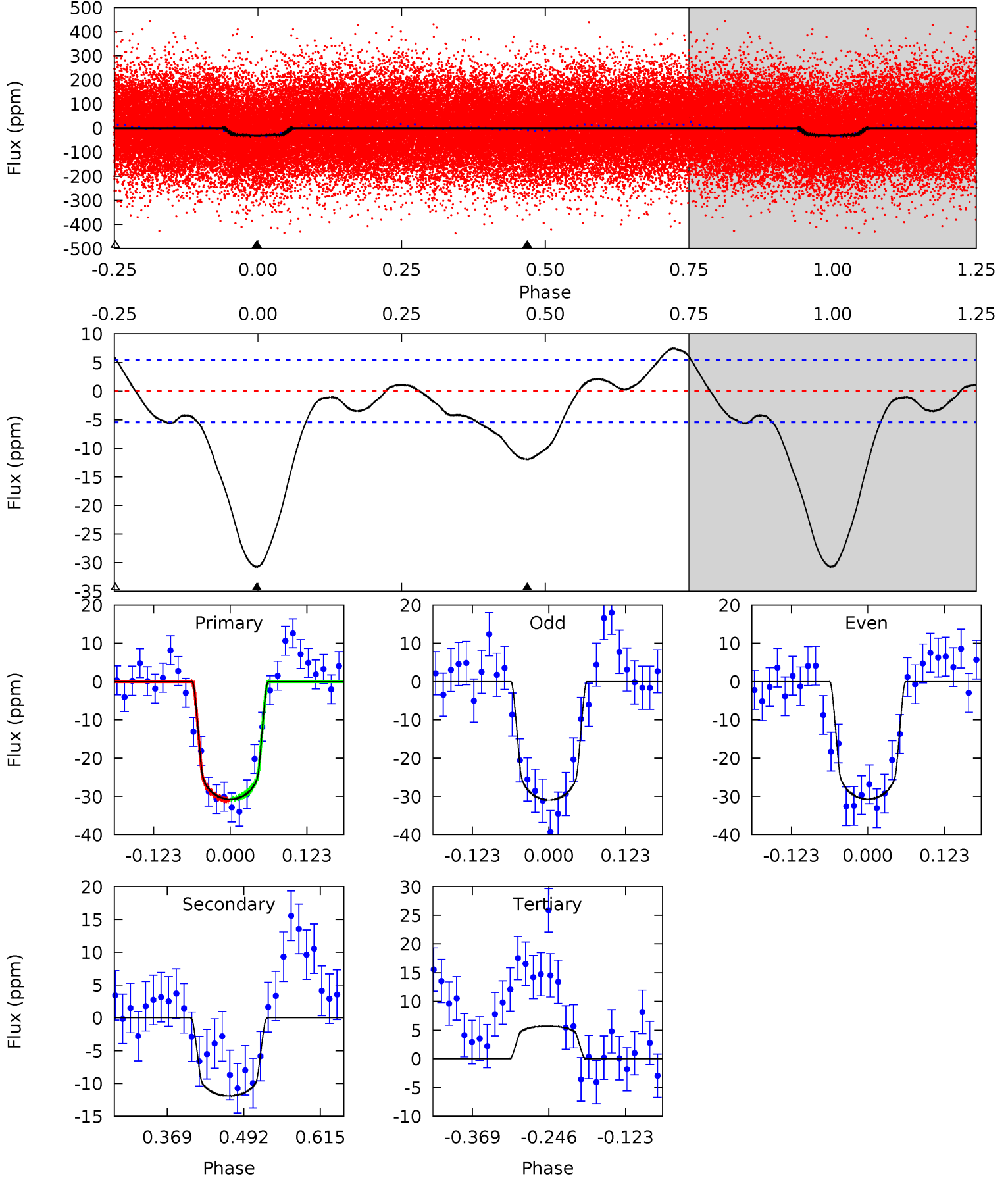
TCE 003831523-01 P= 1.528686 Days $T_0=131.665338$ (BKJD)



DV Model-Shift Uniqueness Test

003831523-01, P = 1.528724 Days, E = 130.133367 Days

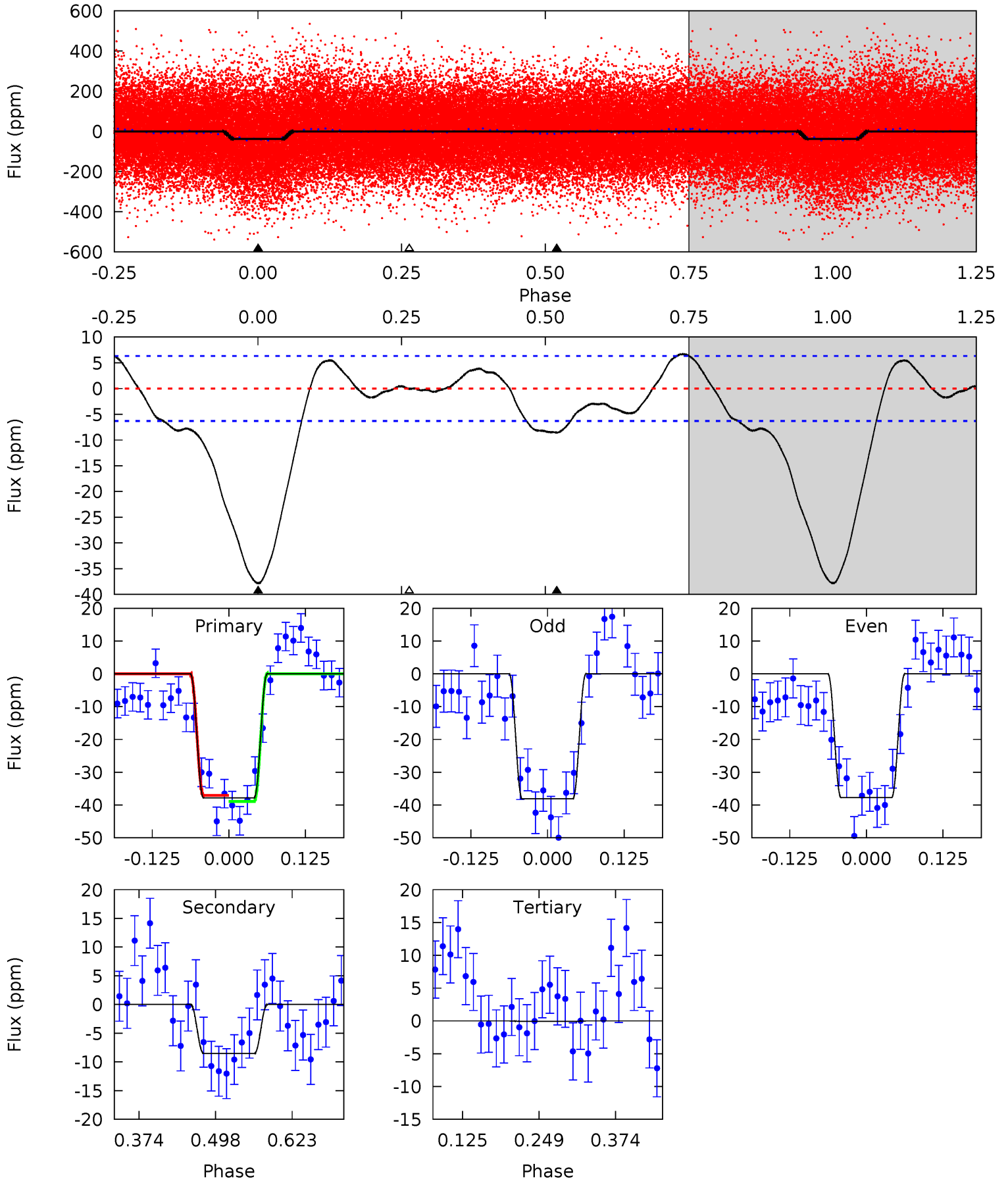
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
25.4	9.86	-4.74	0	4.52	1.54	2.89	30.2	25.4	14.6	9.86	0.10	0.99	0.19	0.15



Alt Model-Shift Uniqueness Test

003831523-01, P = 1.528686 Days, E = 130.136652 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
27.1	6.13	0.05	0	4.52	1.54	2.69	27.0	27.1	6.07	6.13	0.14	1.01	0.15	0.65



Stellar Parameters For KIC 003831523

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6438^{+181}_{-227}	$3.829^{+0.510}_{-0.120}$	$-0.360^{+0.300}_{-0.300}$	$2.266^{+0.472}_{-1.101}$	$1.263^{+0.193}_{-0.265}$	$0.153^{+0.744}_{-0.054}$
	+3%/-4%	+13%/-3%	+83%/-83%	+21%/-49%	+15%/-21%	+486%/-35%
Source	PHO54	PHO54	PHO54	DSEP		

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

Secondary Eclipse Parameters for KIC 003831523-01 / KOI 6361.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-12 ± 1	$1.27^{+0.36}_{-0.39}$	3455^{+275}_{-450}	5007^{+539}_{-437}	$3.216^{+3.145}_{-1.288}$
Alt.	-9 ± 1	$1.47^{+0.38}_{-0.42}$	3451^{+272}_{-445}	4358^{+382}_{-379}	$1.735^{+1.379}_{-0.646}$

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 $A_{\text{obs}} \gg 1.0$

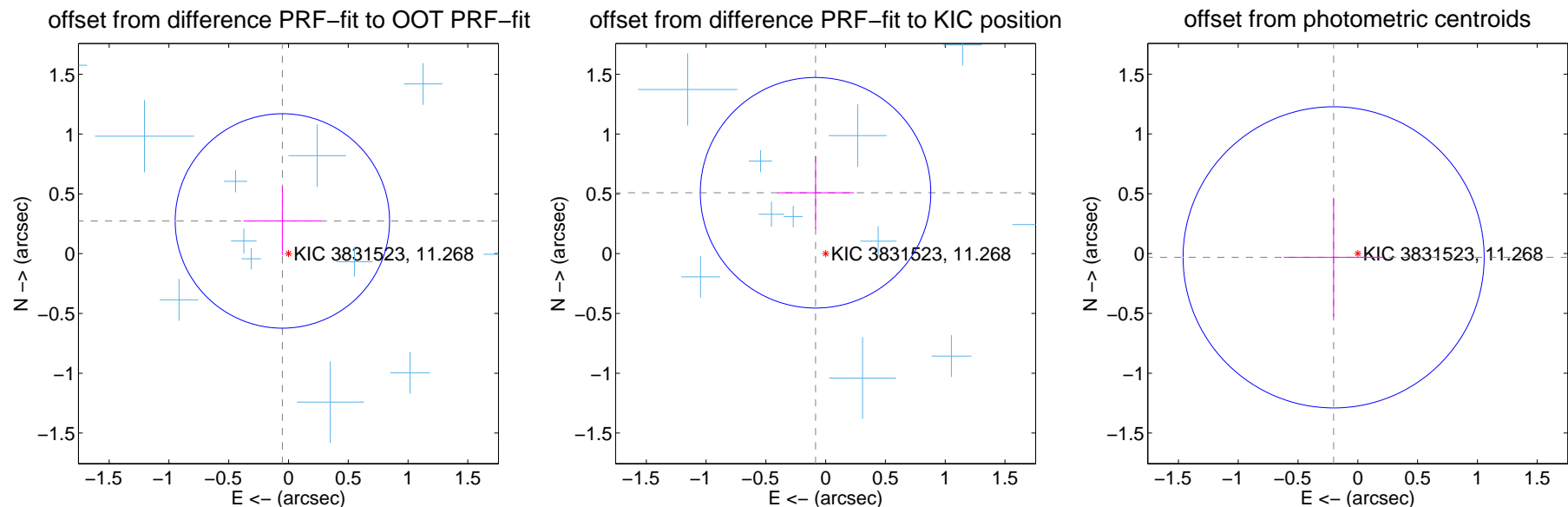
DV Centroid Data

Supplemental centroid analysis for 003831523-01. **Kepler magnitude: 11.27.** Transit SNR 11.34

There are 13 quarters with good PRF difference image offsets

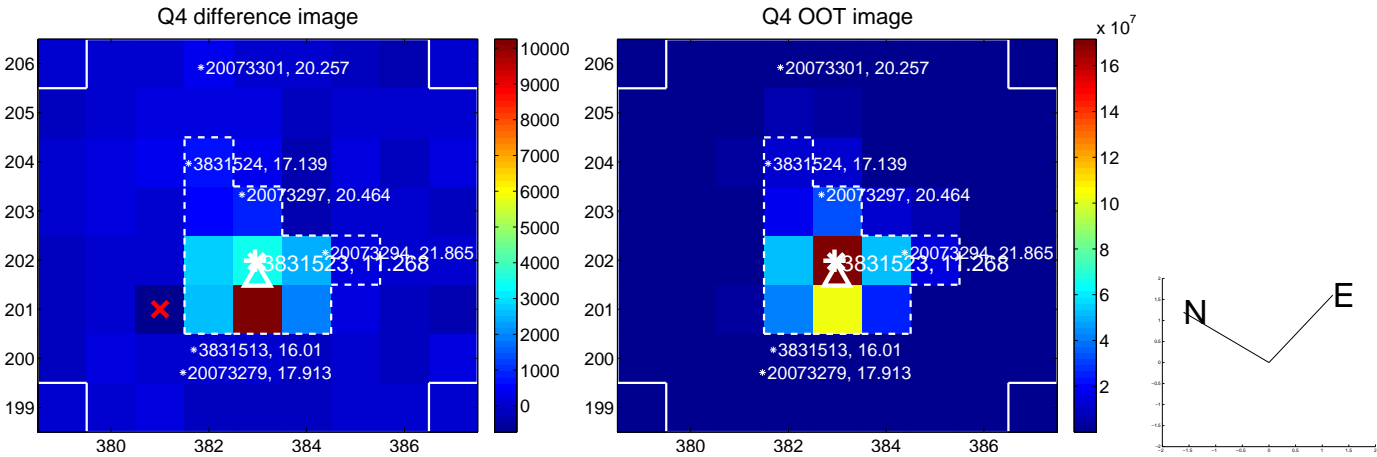
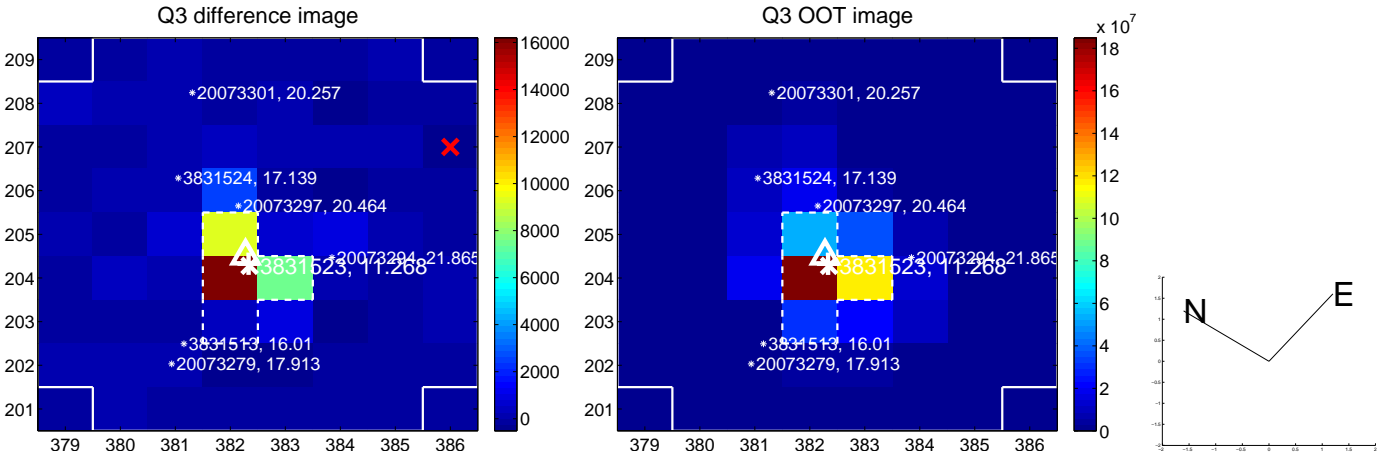
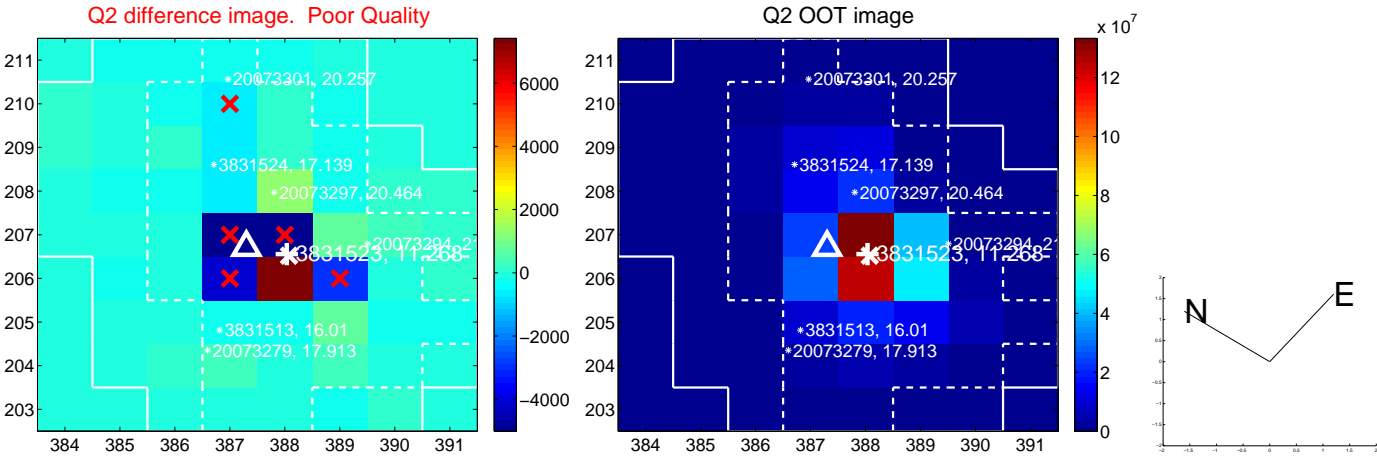
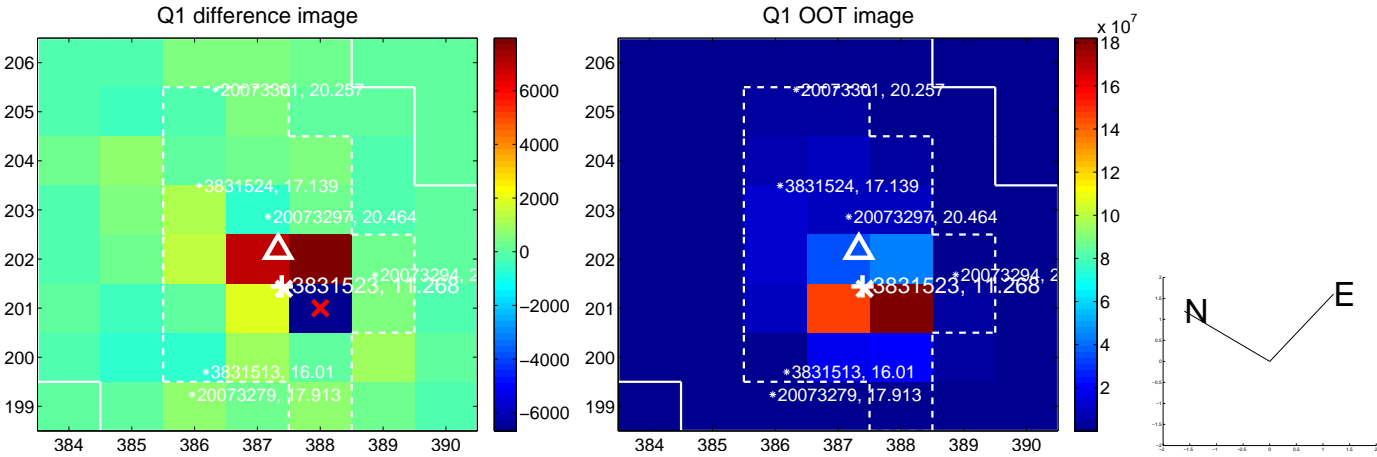
The direct PRF centroid is offset from the target star catalog position by about 0.26 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.278 ± 0.299	0.93	0.051 ± 0.324	0.273 ± 0.286
PRF-fit source offset from KIC position	0.516 ± 0.321	1.61	0.085 ± 0.321	0.509 ± 0.304
photometric centroid source offset	0.20 ± 0.42	0.49	0.20 ± 0.42	-0.03 ± 0.50

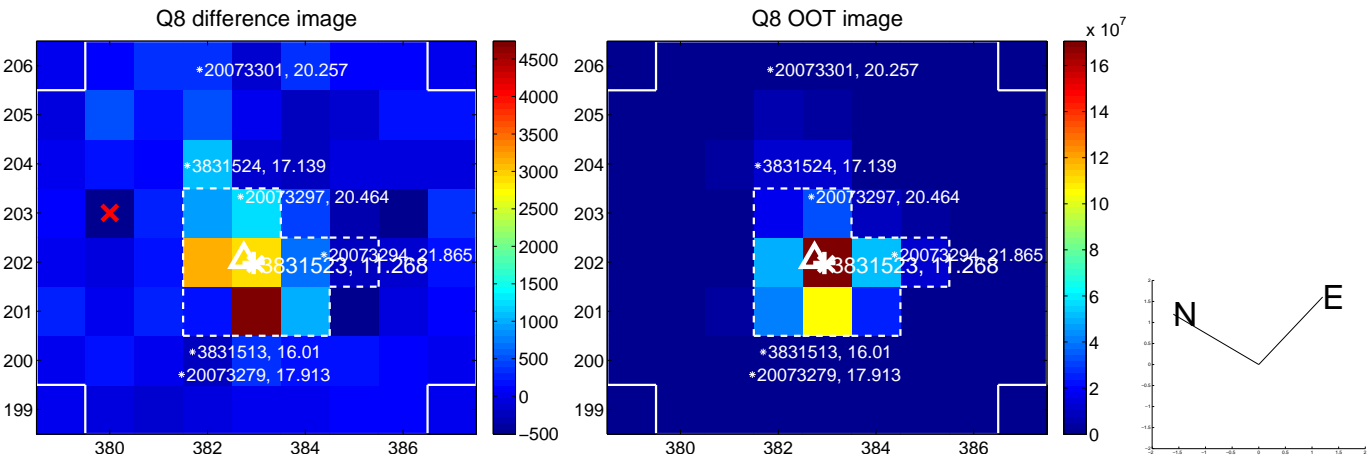
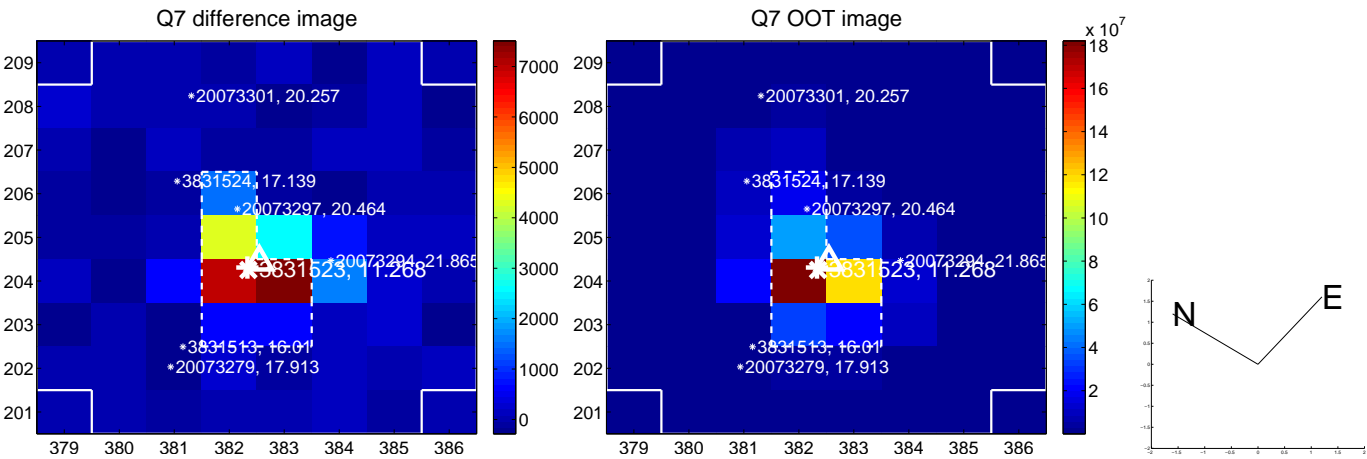
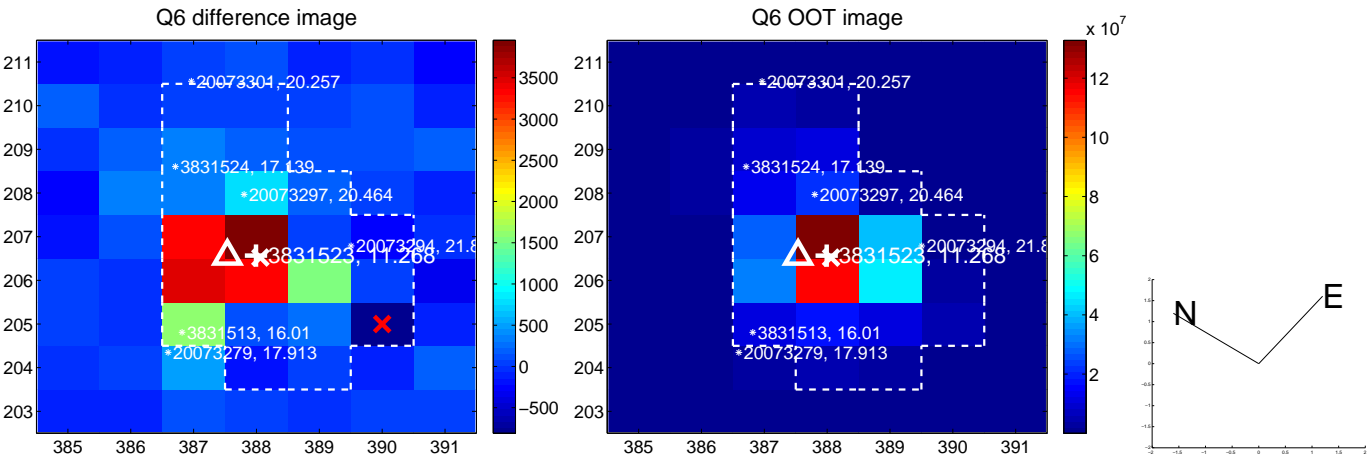
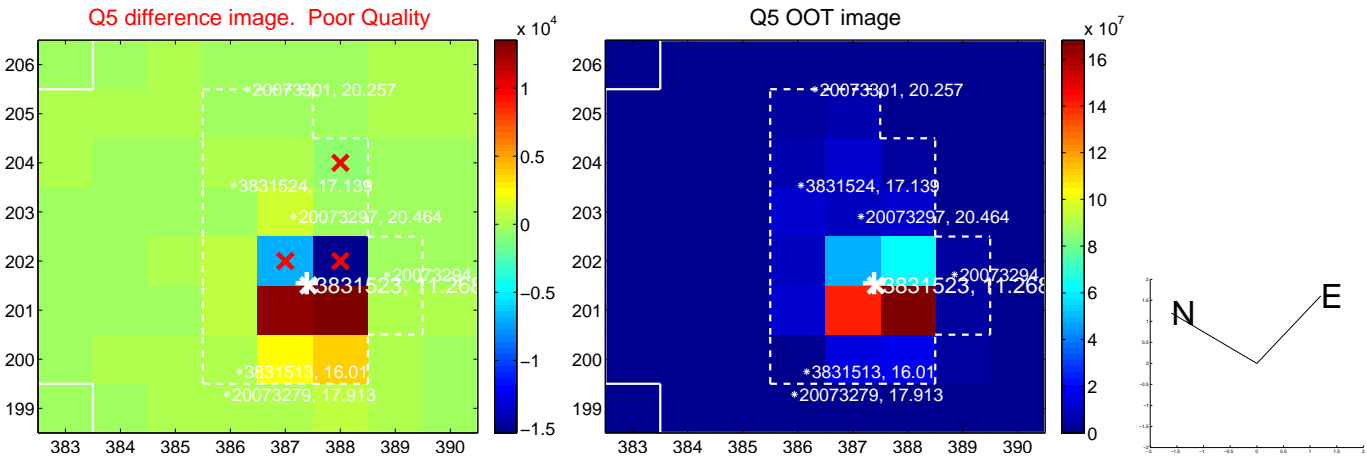


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

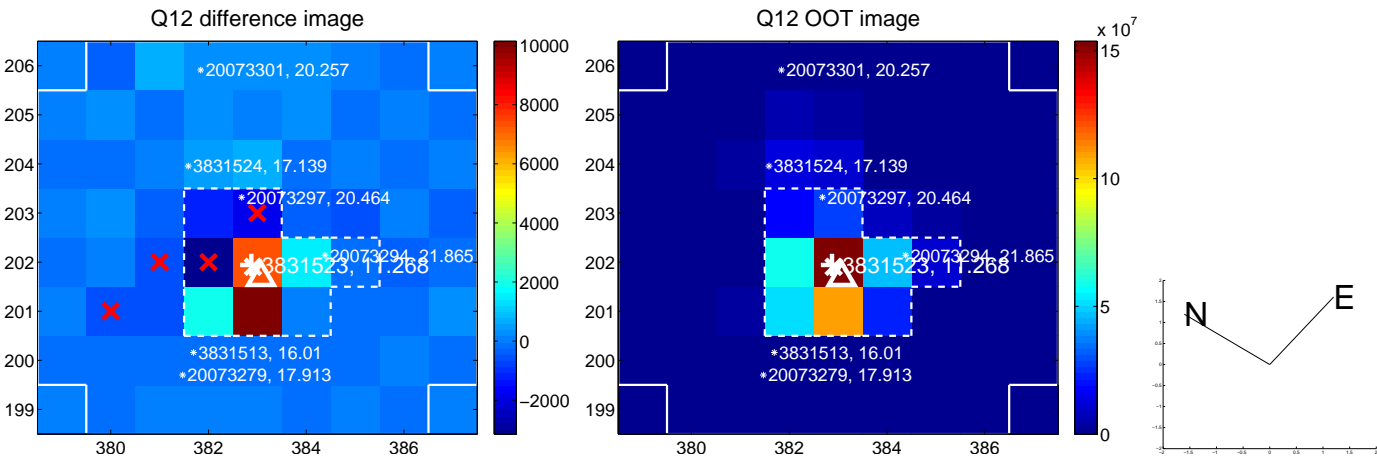
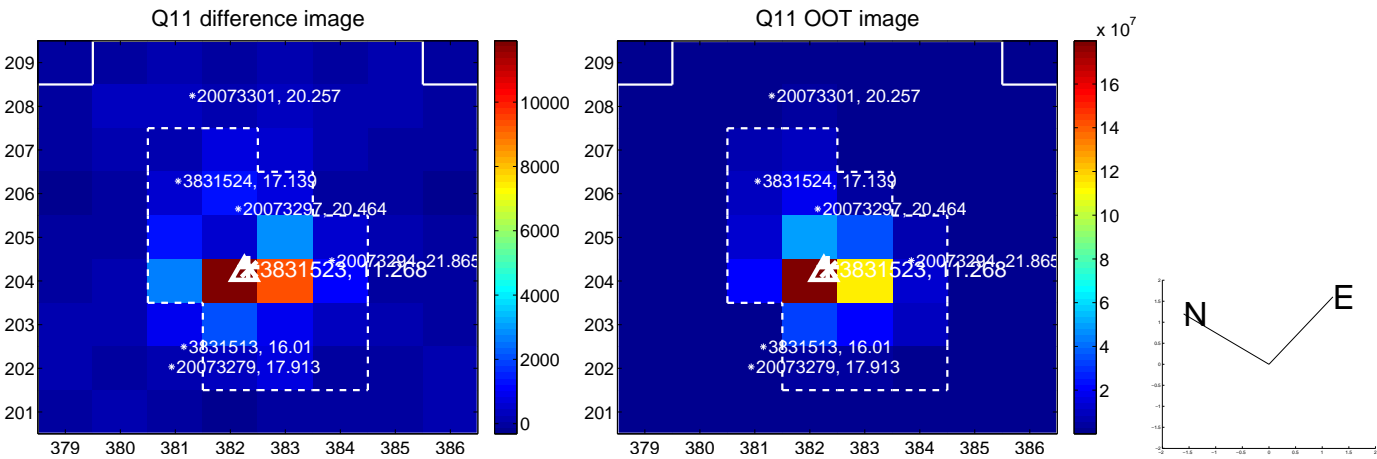
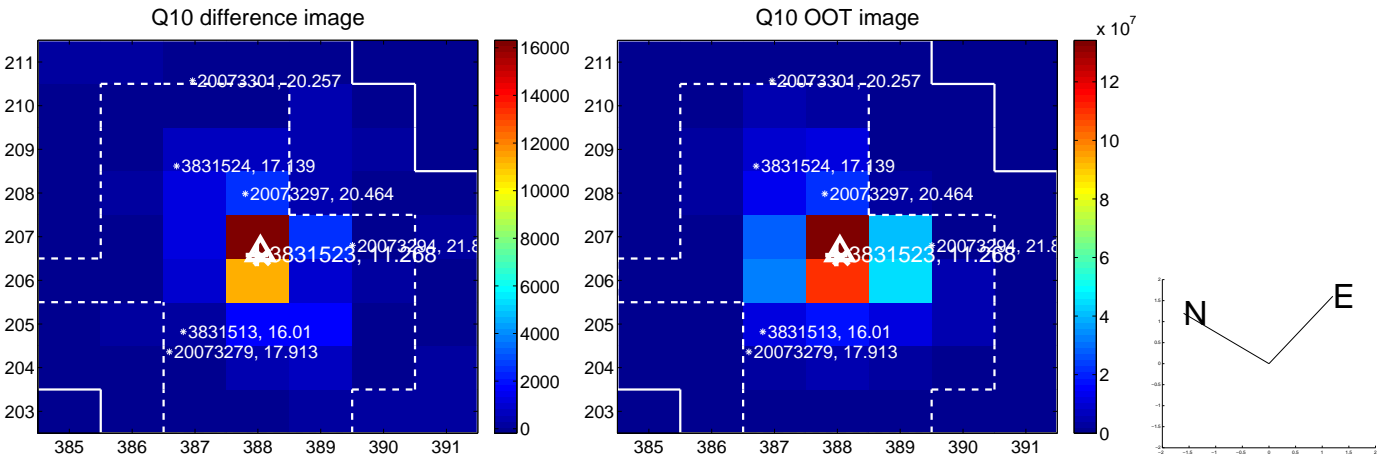
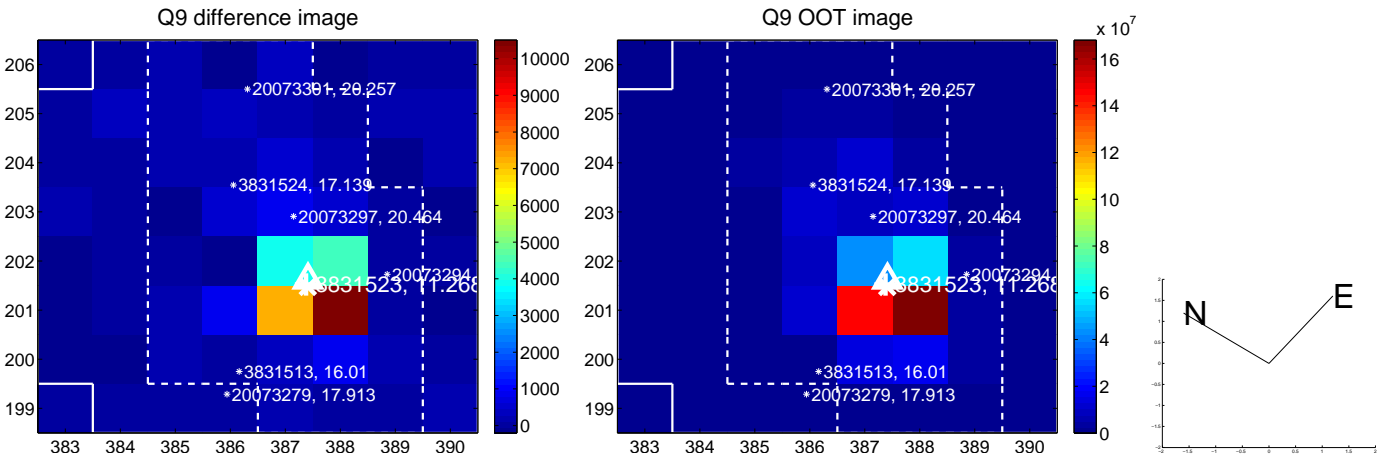
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



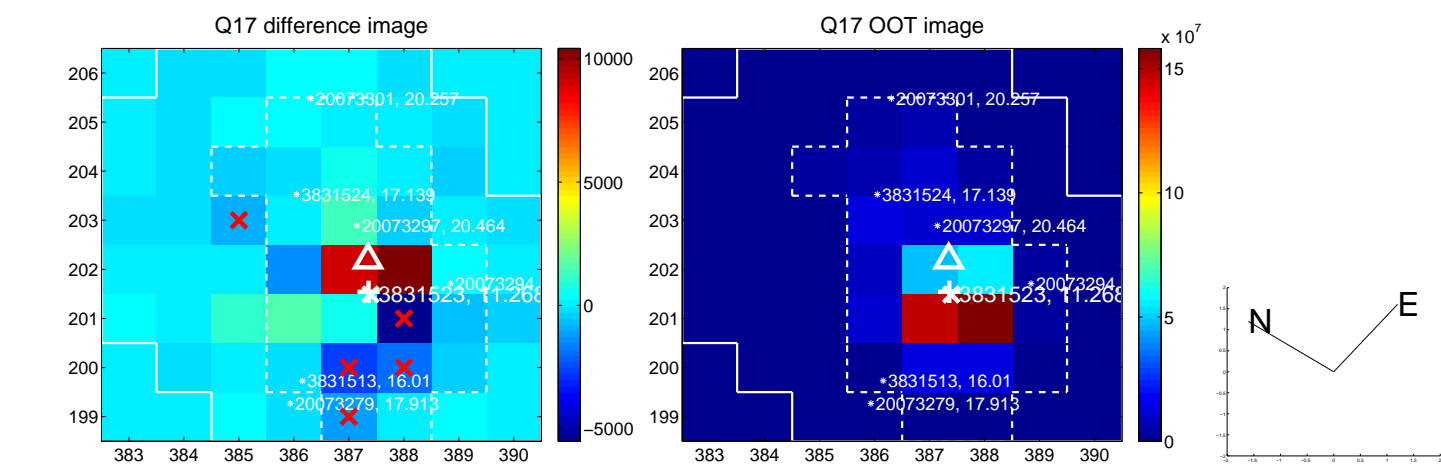
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



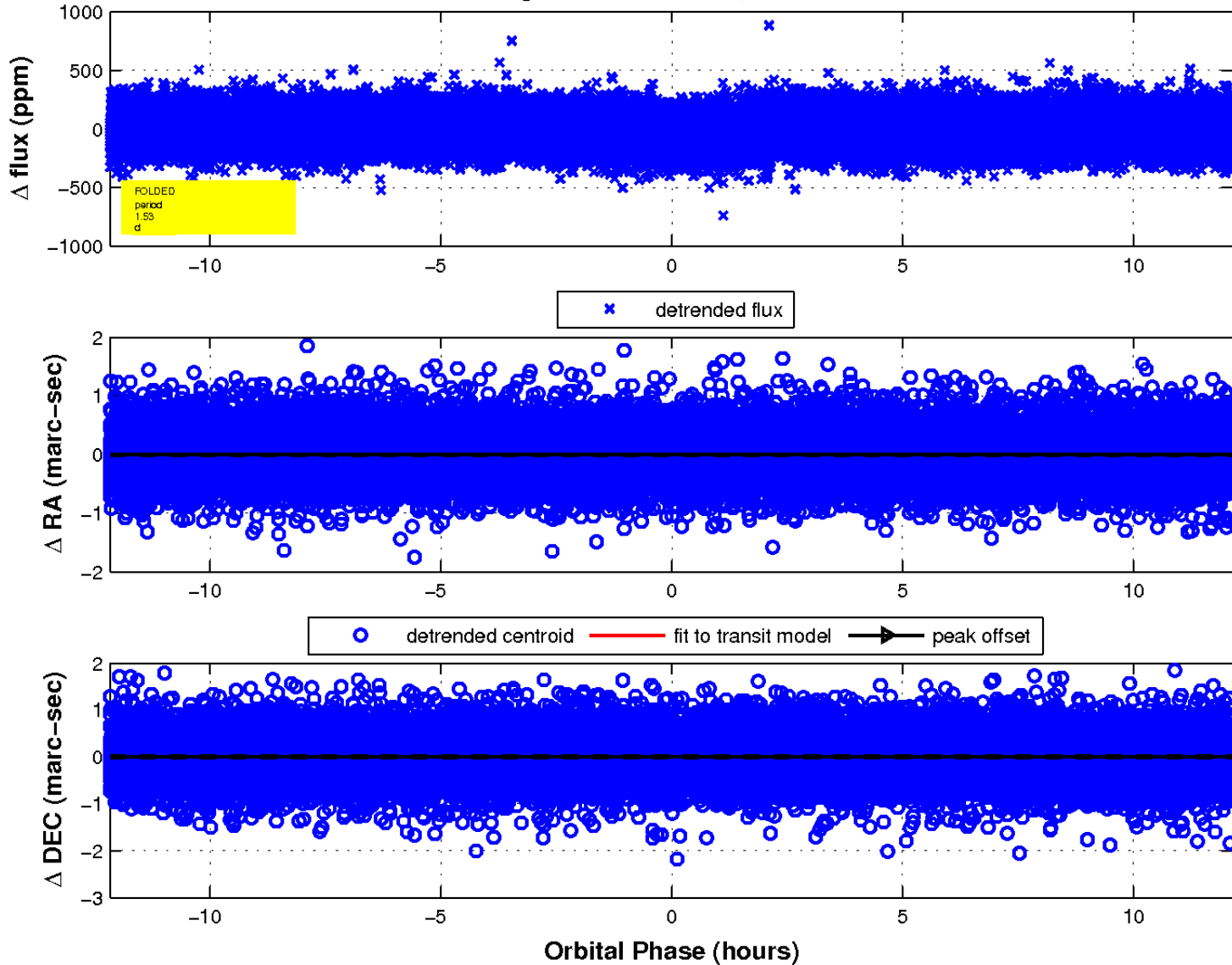
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

