

KIC 012120484

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})
012120484-01	OBS	2407.01	17.292174	135.760464	198.1	7.441	18.6	19.2	1.30	5936	2.22	101.42

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
012120484-01	OBS	PC	0.99	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.

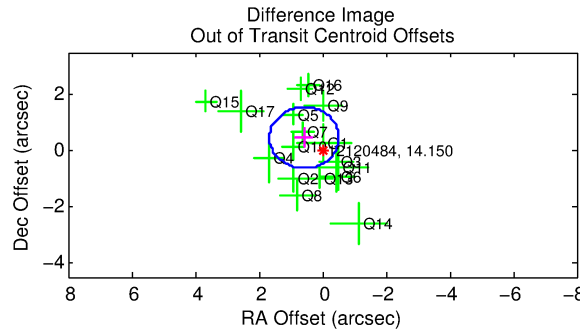
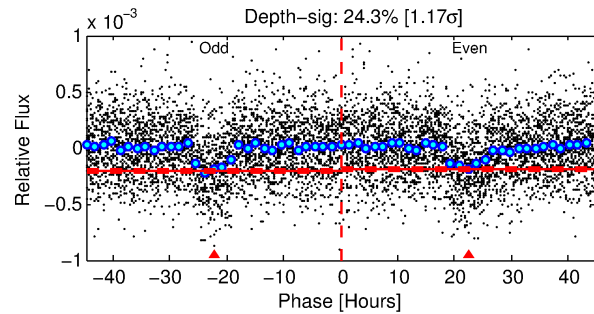
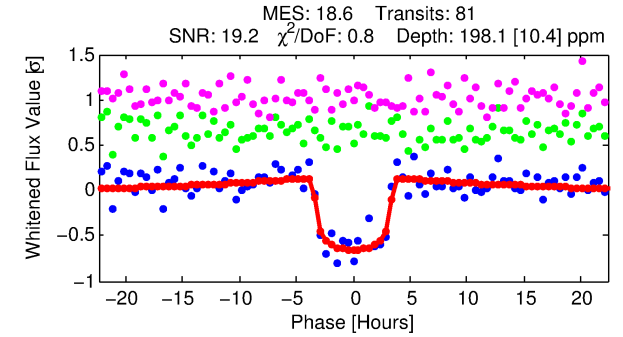
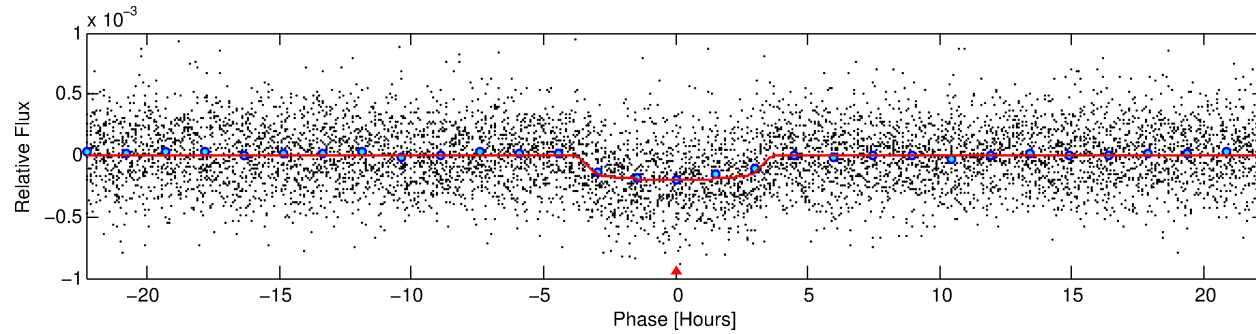
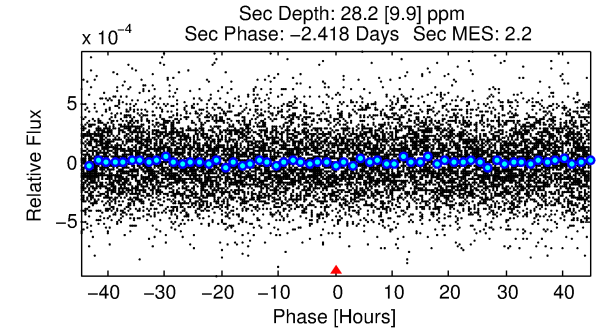
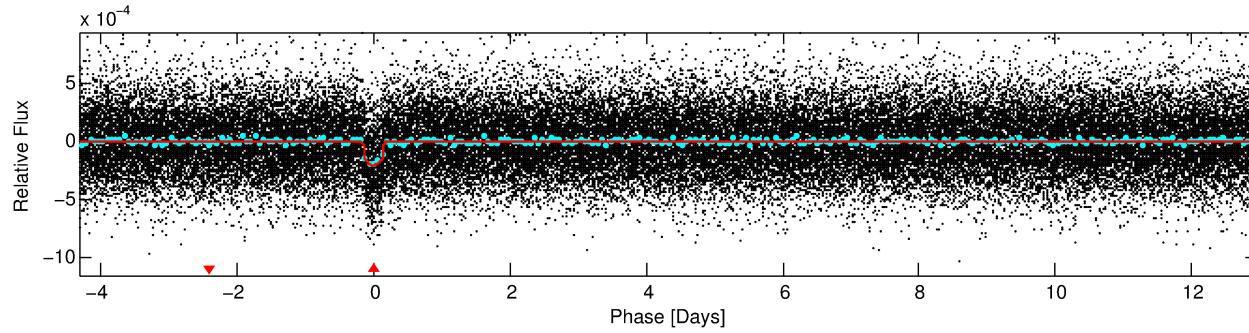
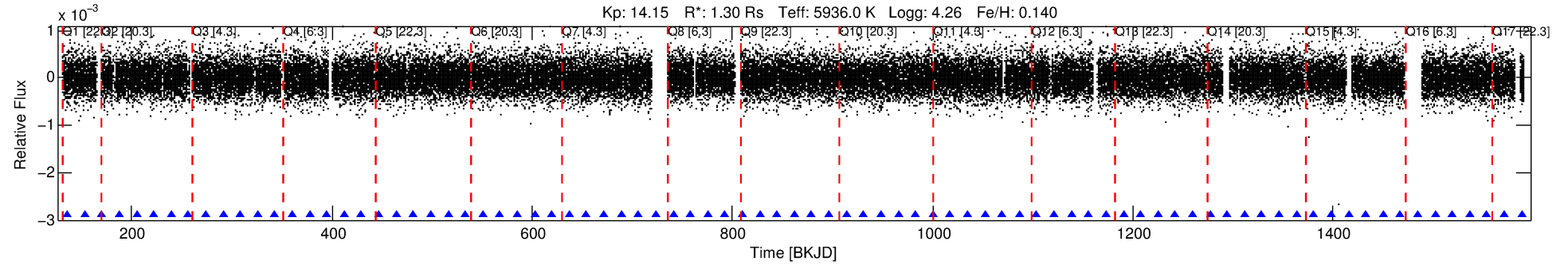
Ephemeris Match Information For 012120484-01

No Significant Match Found

DV One-Page Summary

KIC: 12120484 Candidate: 1 of 1 Period: 17.292 d

KOI: K02407.01 Corr: 0.951



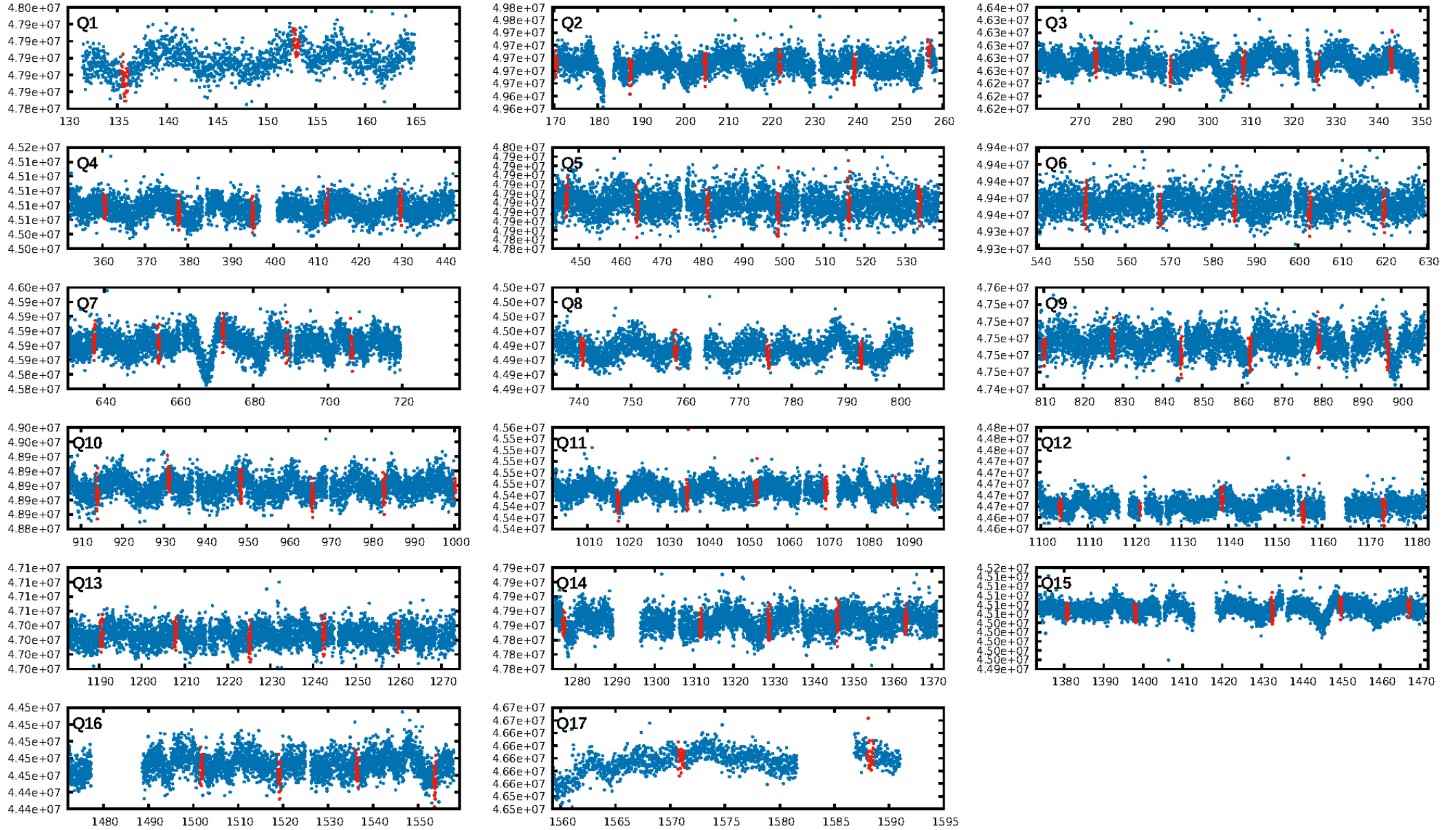
DV Fit Results:

Period = 17.29217 [0.00014] d
Epoch = 135.7605 [0.0065] BKJD
Rp/R* = 0.0157 [0.0012]
a/R* = 7.58 [2.65]
b = 0.92 [0.06]
Seff = 101.42 [24.55]
Teff = 809 [49] K
Rp = 2.22 [0.40] Re
a = 0.1360 [0.0204] AU
Ag = 58.30 [26.29] [2.18σ]
Teffp = 3457 [335] K [7.82σ]

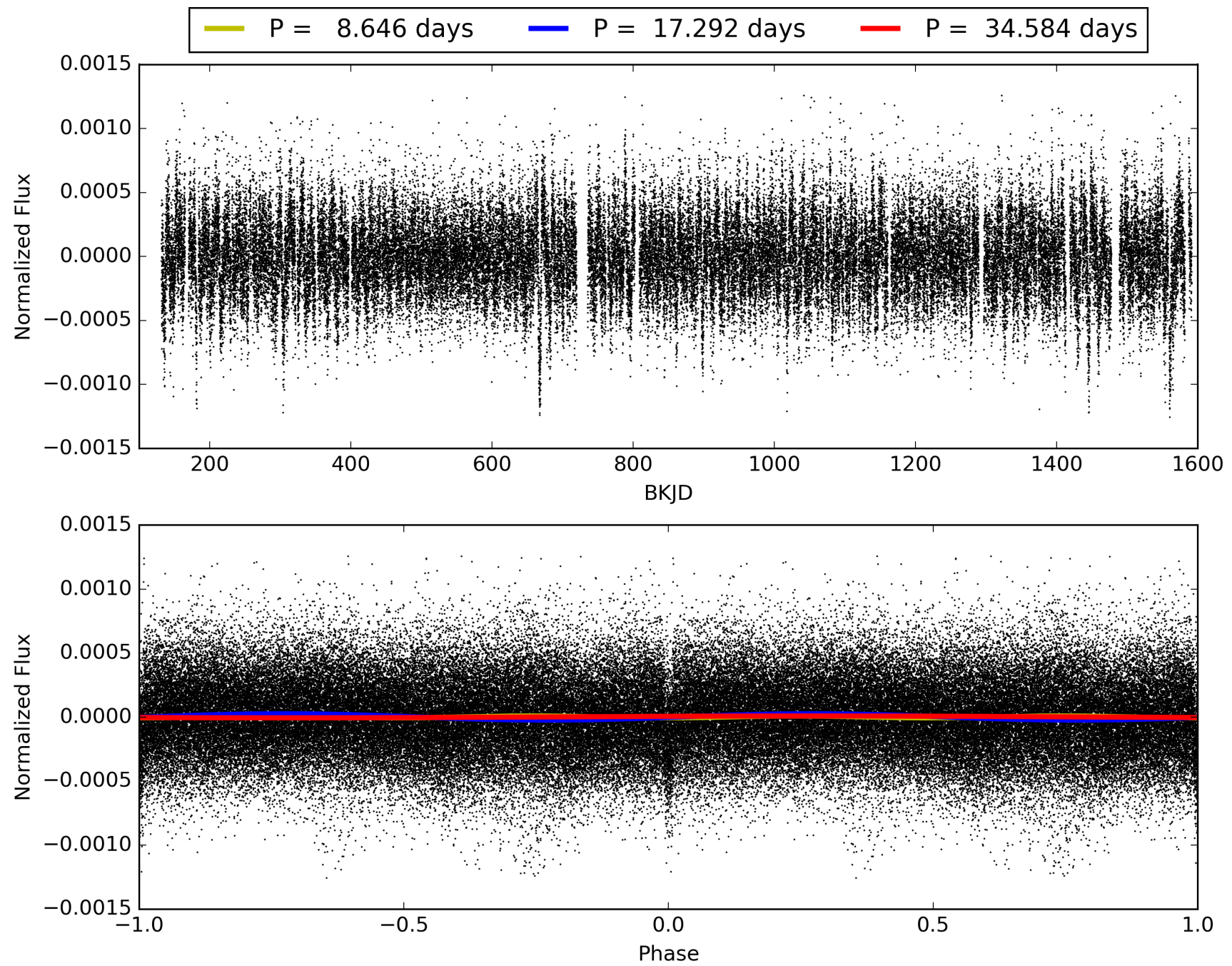
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 100.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 3.74e-77
RollingBand-fgt: 1.00 [77/77]
GhostDiagnostic-chr: 10.69
Centroid-sig: 84.5%
Centroid-so: 0.595 arcsec [0.83σ]
OotOffset-rm: 0.739 arcsec [2.04σ]
KicOffset-rm: 0.678 arcsec [1.83σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.88 [15/17]
DiffImageOverlap-fno: 1.00 [17/17]

TCE 012120484-01, PDC Light Curves

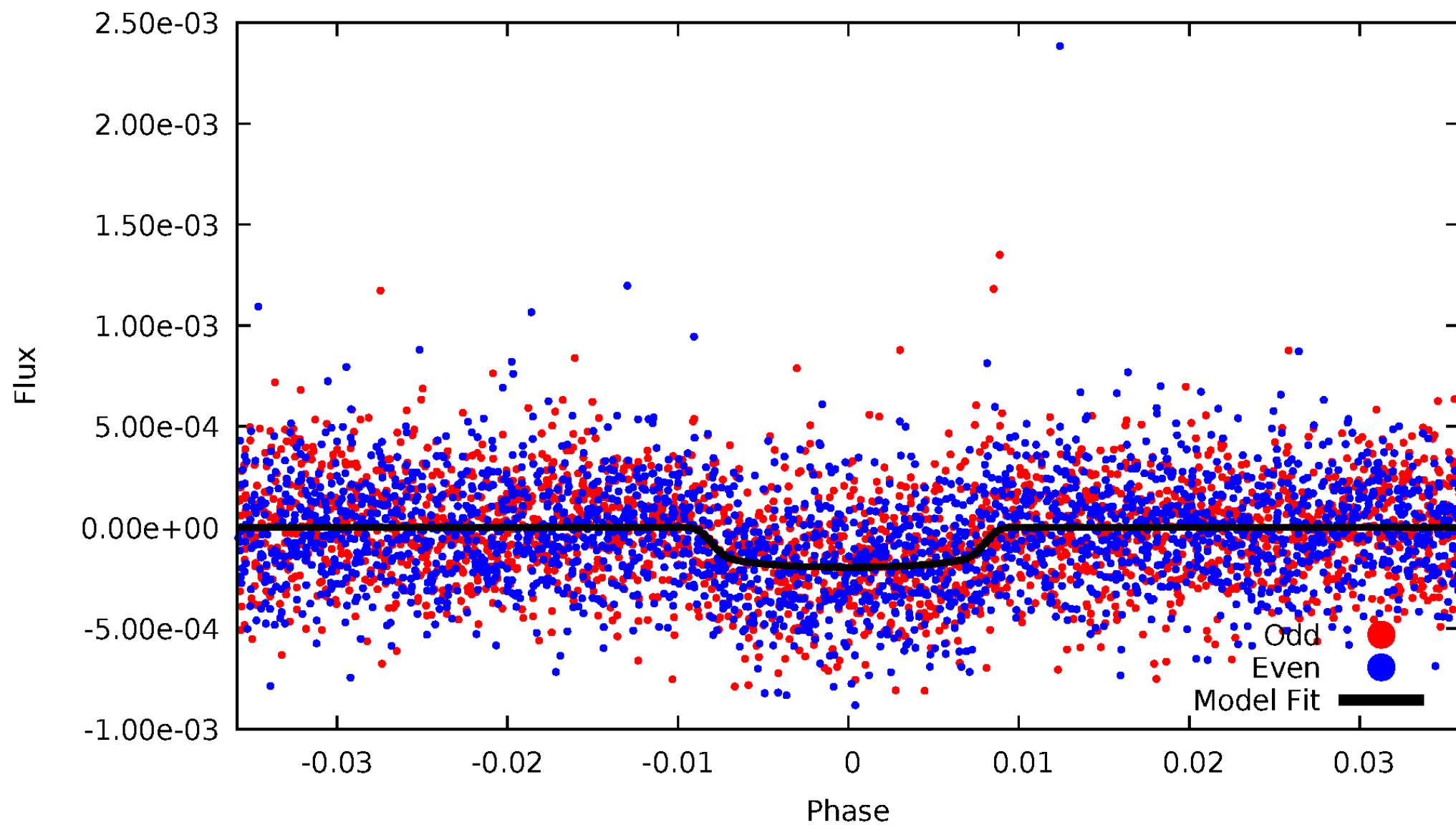


TCE 012120484-01



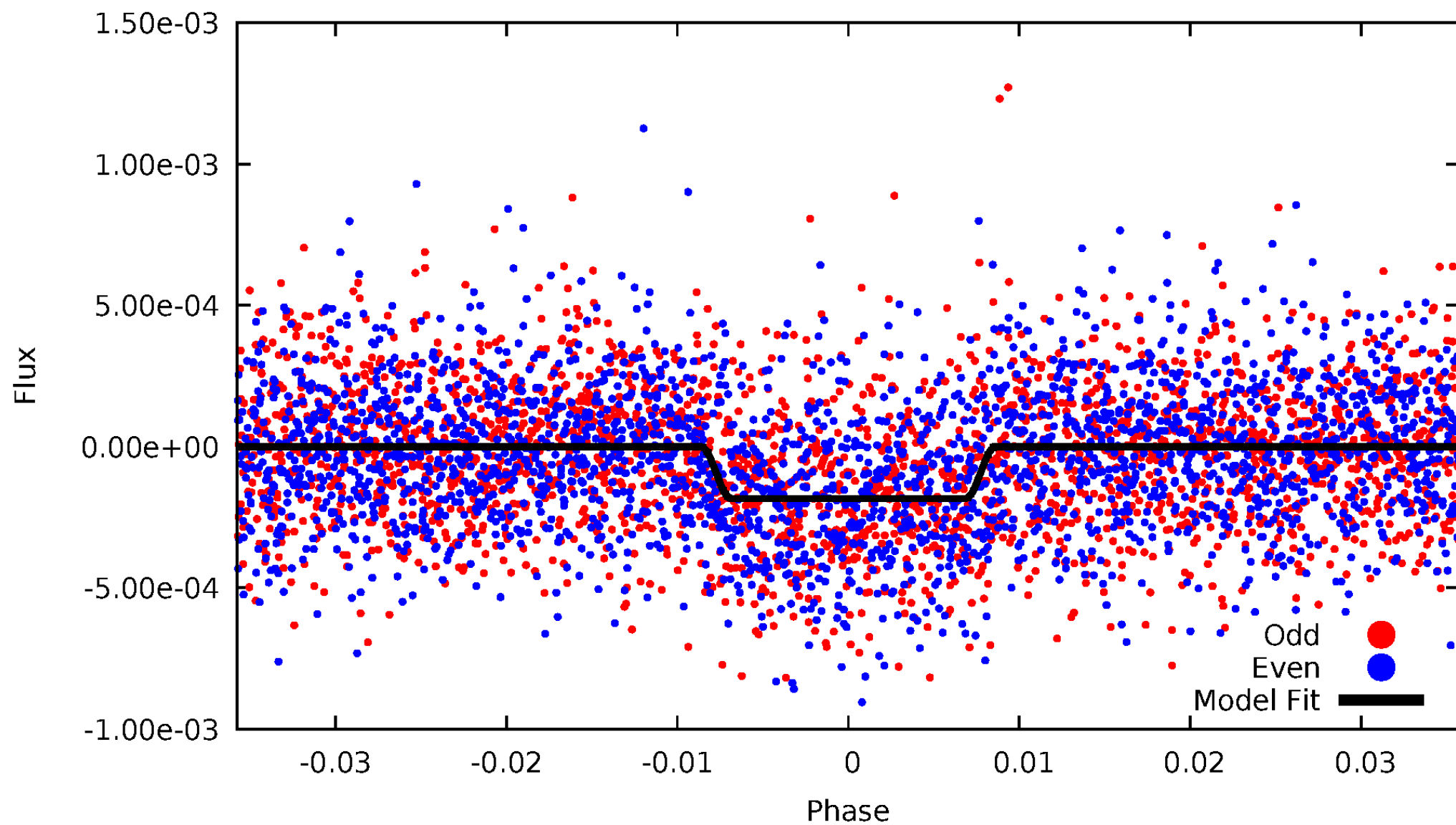
DV Odd/Even

TCE 012120484-01

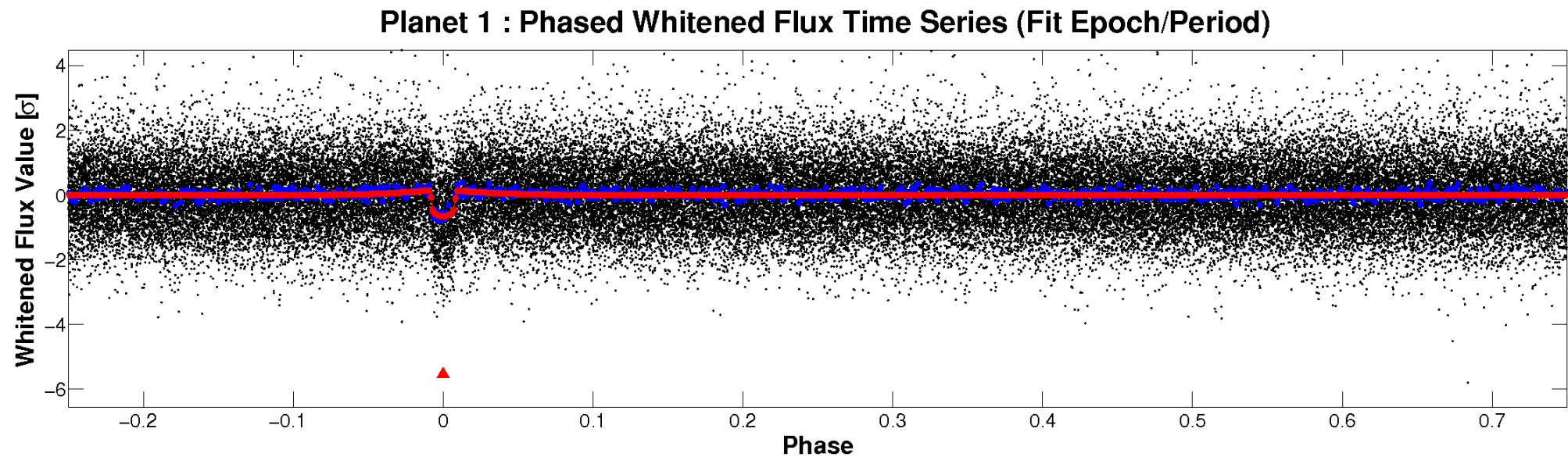
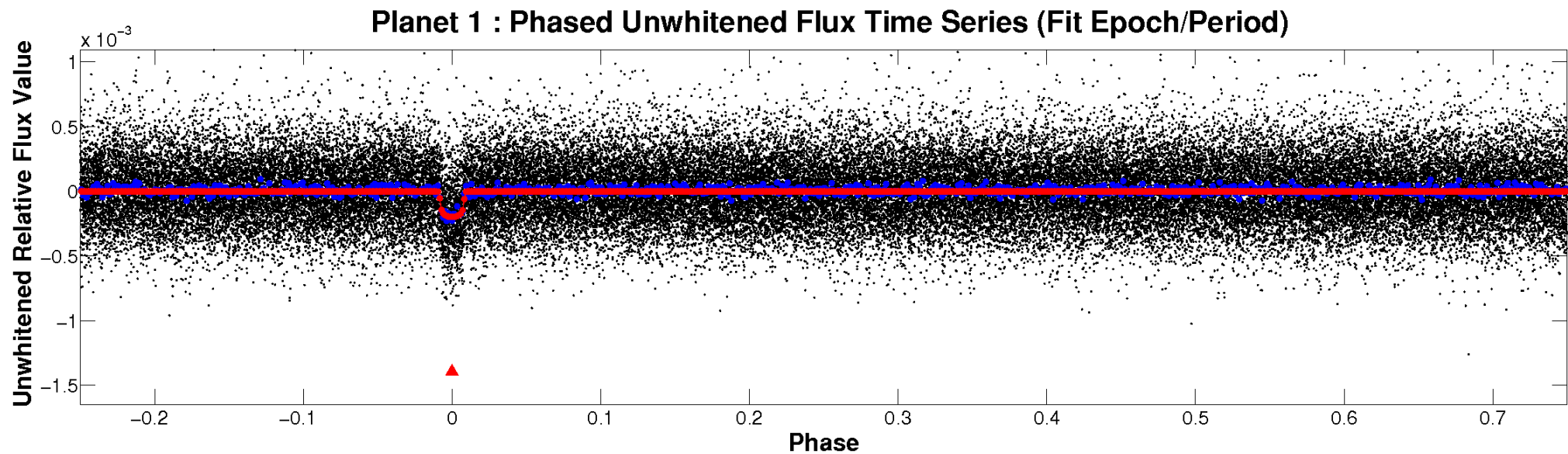


ALT Odd/Even

TCE 012120484-01

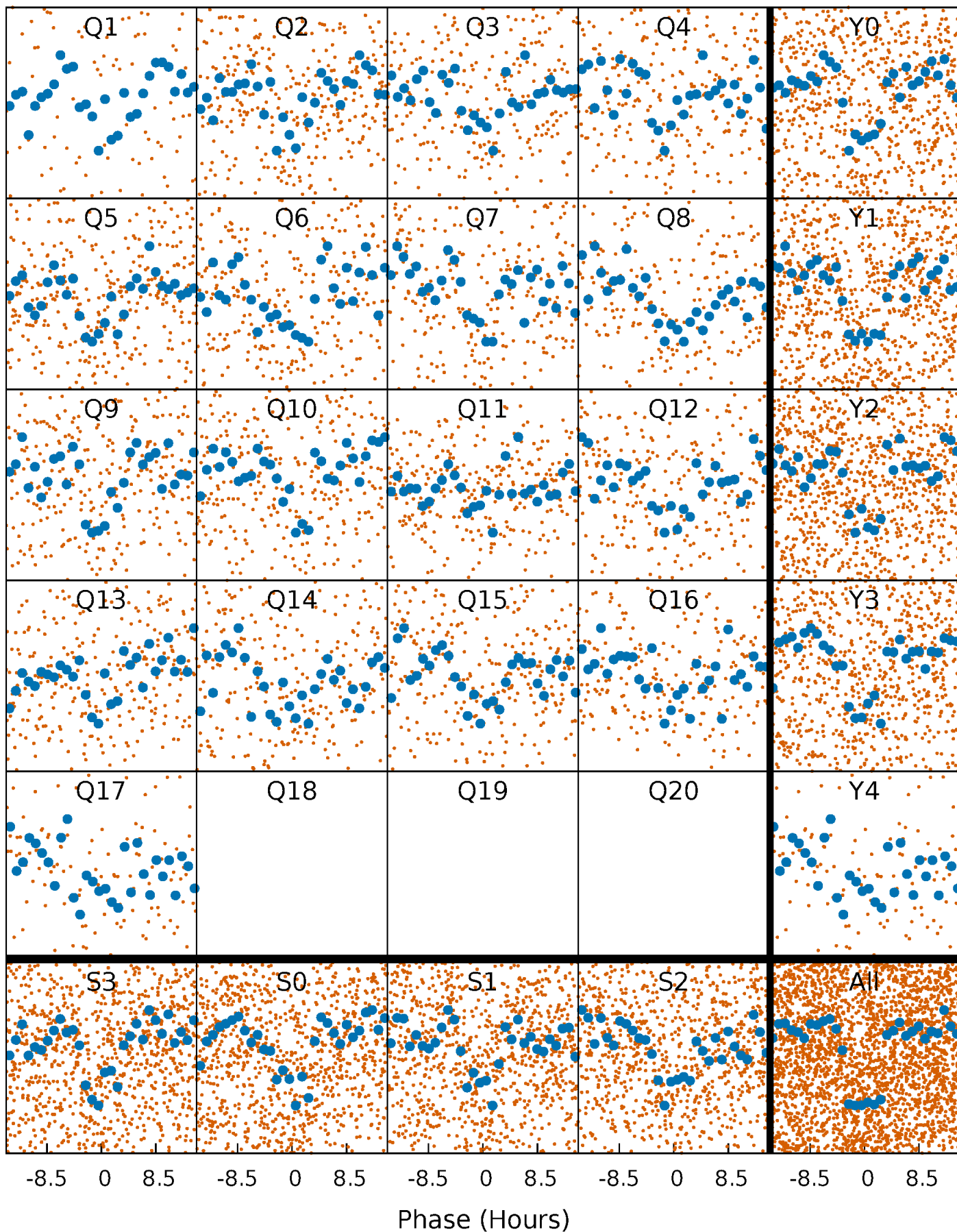


Non-Whitened Vs. Whitened Light Curve



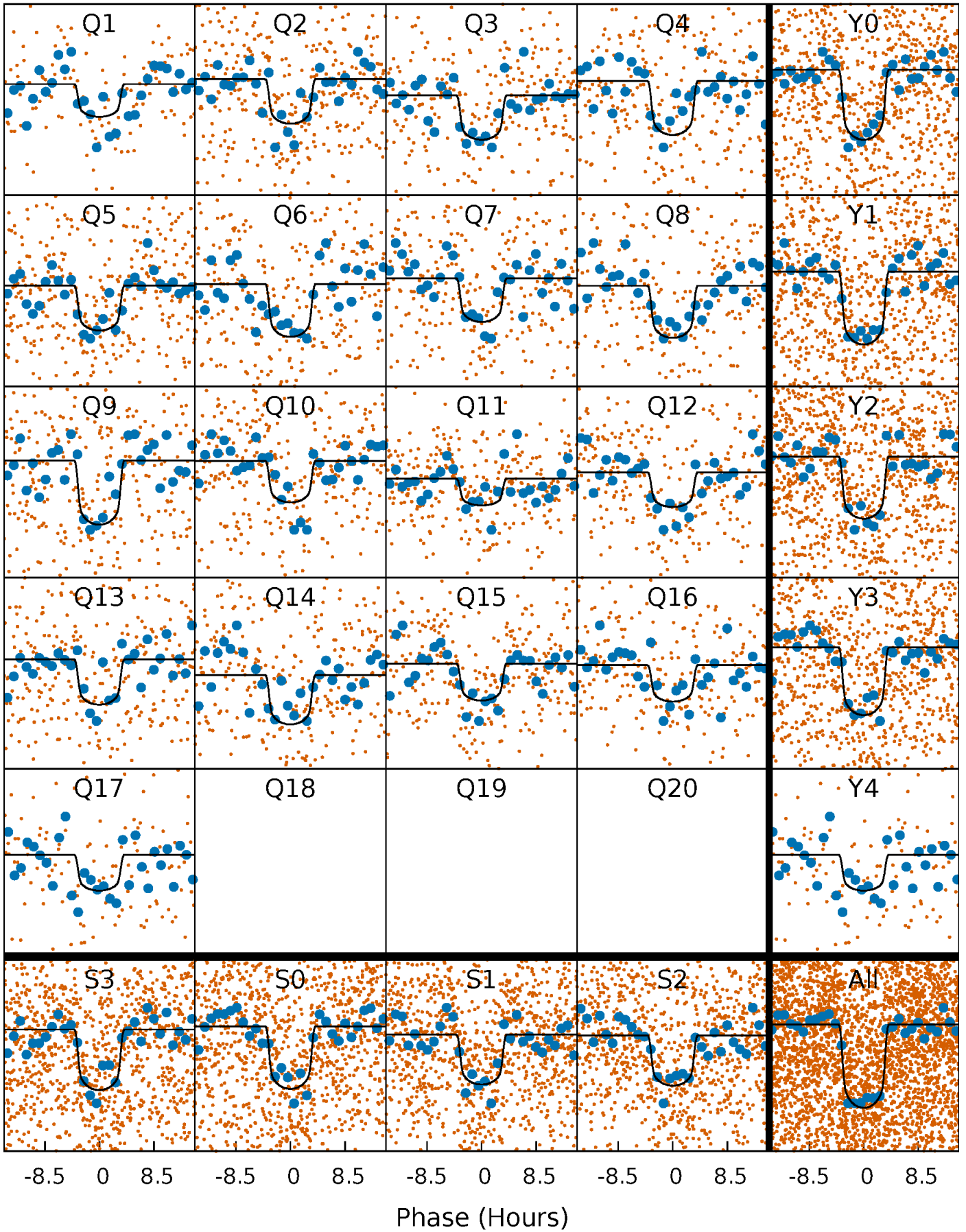
PDC Quarter-Phased Transit Curves

TCE 012120484-01 P= 17.292174 Days $T_0=135.760464$ (BKJD)



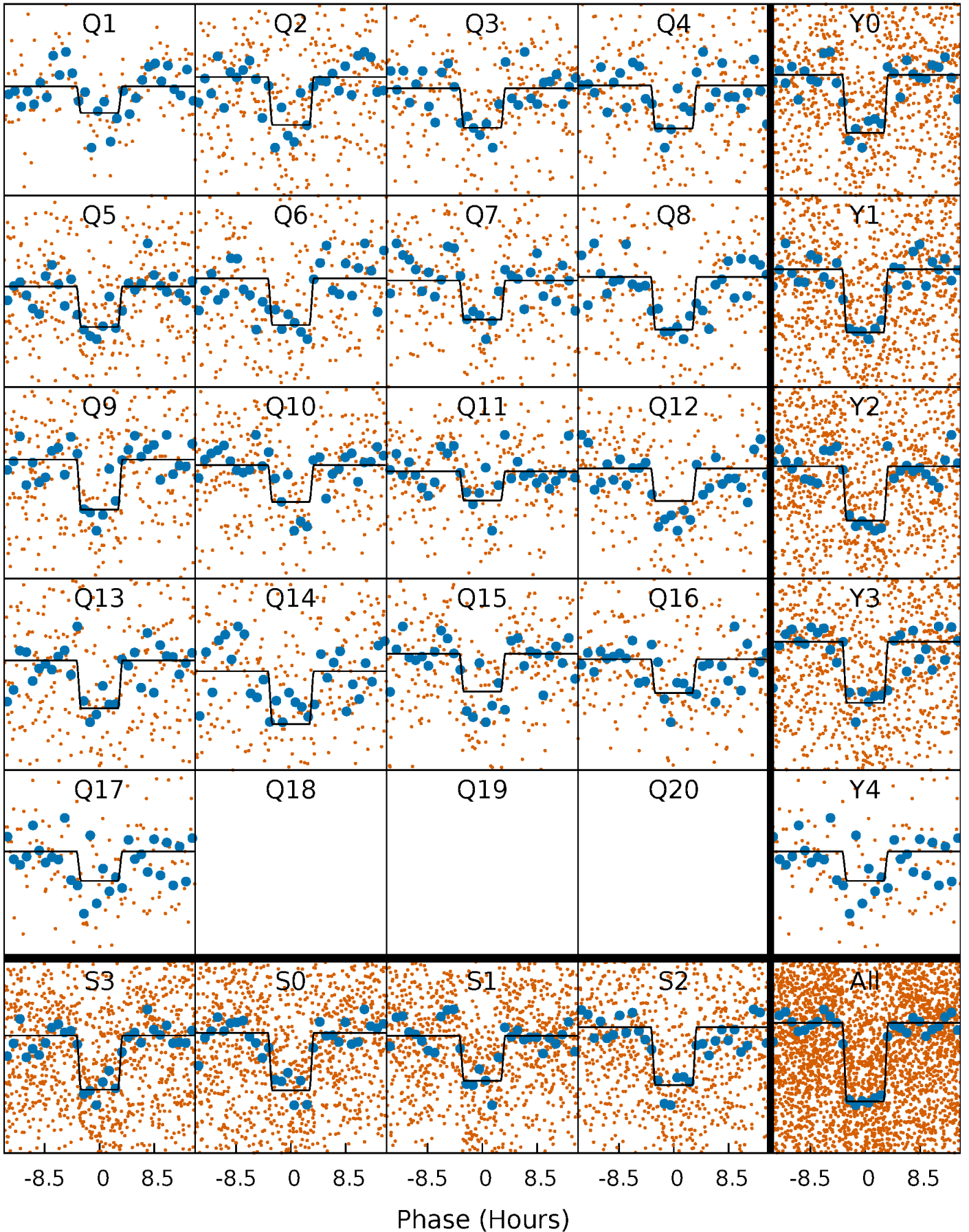
DV Quarter-Phased Transit Curves

TCE 012120484-01 P= 17.292174 Days $T_0=135.760464$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

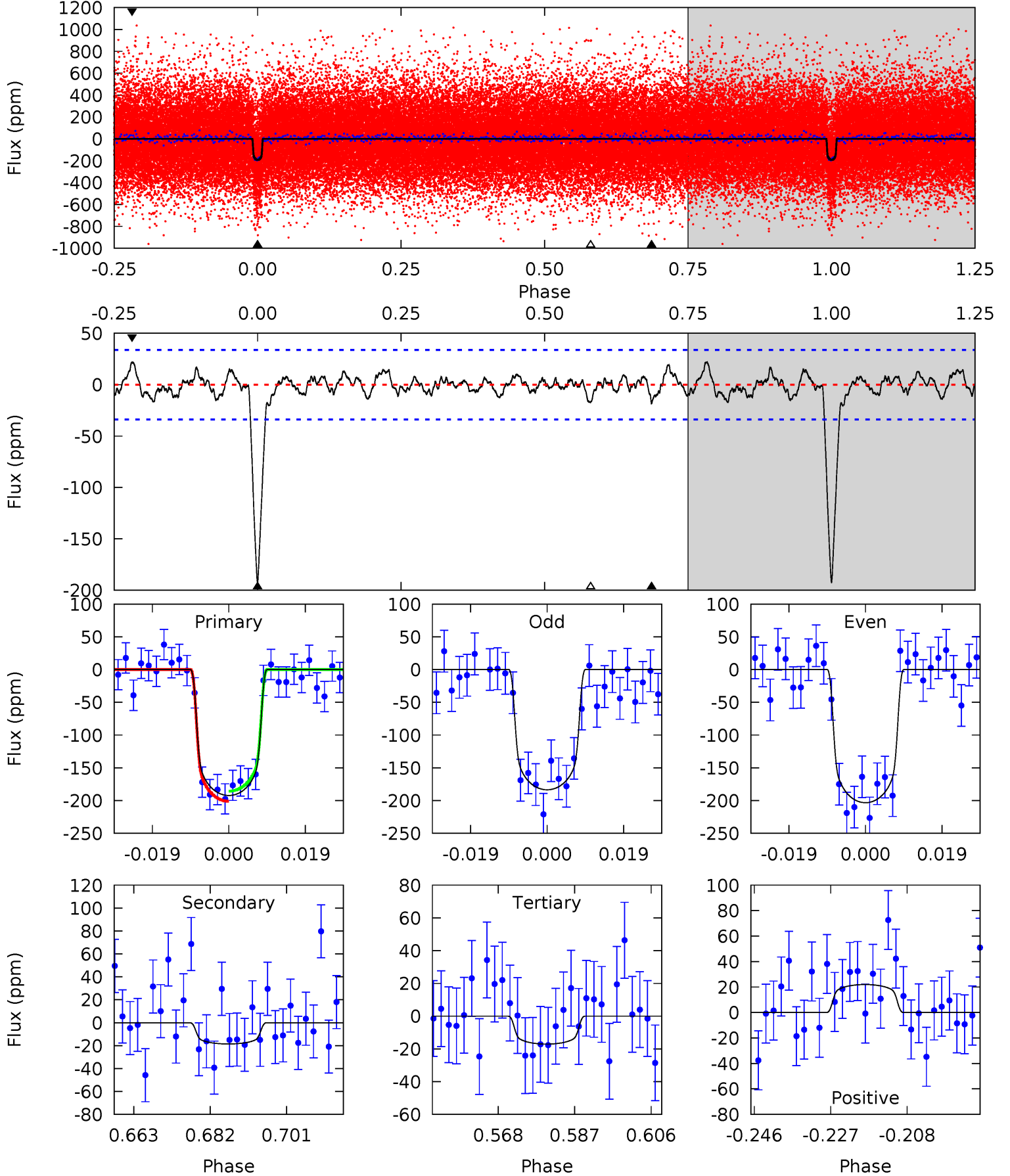
TCE 012120484-01 P= 17.291814 Days $T_0=135.773806$ (BKJD)



DV Model-Shift Uniqueness Test

012120484-01, $P = 17.292174$ Days, $E = 118.468290$ Days

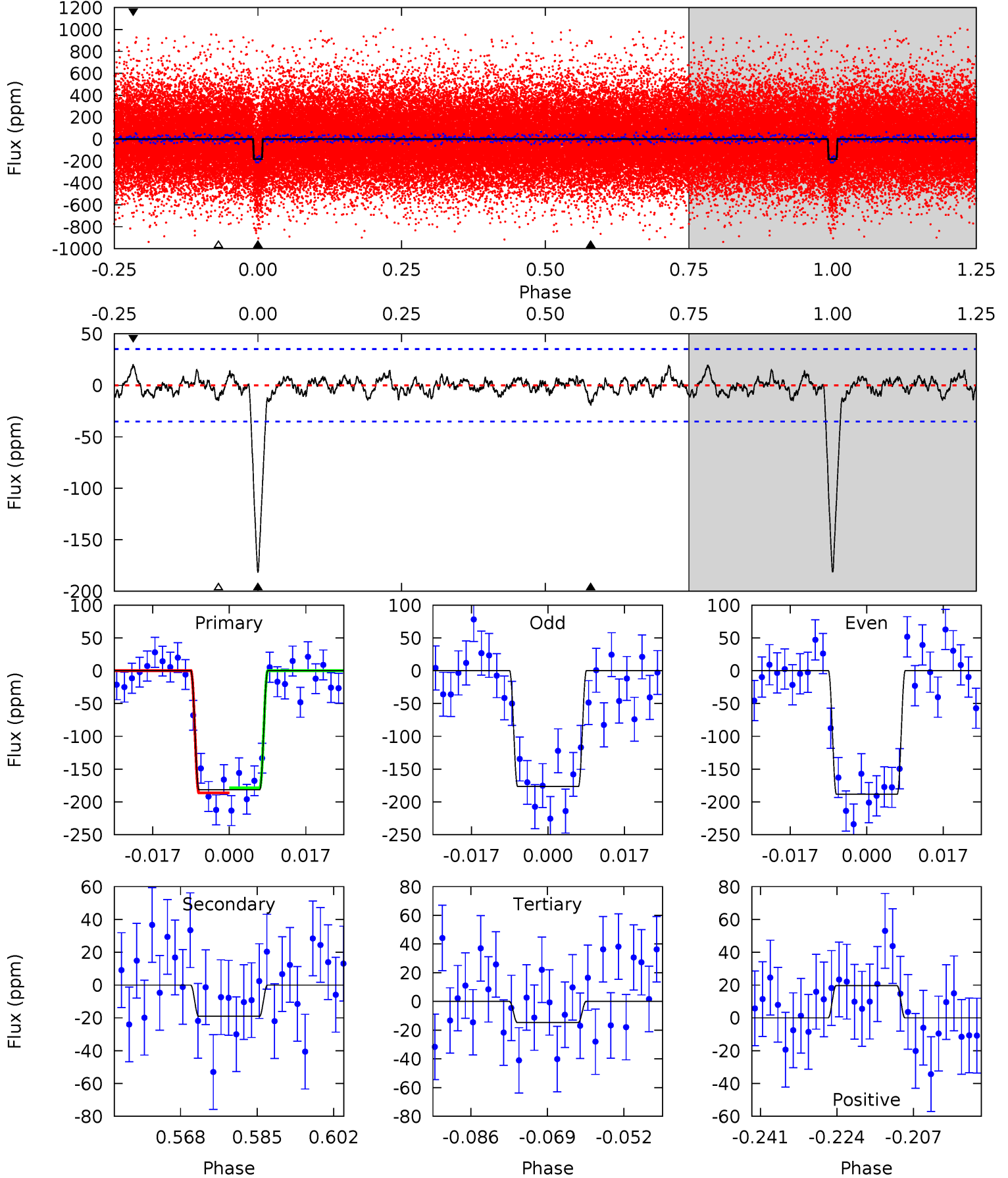
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
27.9	2.69	2.48	3.18	4.90	2.35	1.03	25.4	24.7	0.21	-0.49	1.43	1.00	0.10	1.12



Alt Model-Shift Uniqueness Test

012120484-01, P = 17.291814 Days, E = 118.481992 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	2.66	2.05	2.75	4.92	2.38	0.84	23.3	22.6	0.61	-0.09	0.82	1.02	0.10	0.54



Stellar Parameters For KIC 012120484

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5936^{+71}_{-79}	$4.261^{+0.137}_{-0.112}$	$0.140^{+0.150}_{-0.150}$	$1.299^{+0.209}_{-0.209}$	$1.122^{+0.079}_{-0.088}$	$0.722^{+0.410}_{-0.240}$
	+1%/-1%	+3%/-3%	+107%/-107%	+16%/-16%	+7%/-8%	+57%/-33%
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 012120484-01 / KOI 2407.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-19 ± 7	$2.20^{+0.28}_{-0.25}$	1126^{+53}_{-50}	3566^{+217}_{-260}	39^{+19}_{-16}
Alt.	-19 ± 7	$1.92^{+0.26}_{-0.27}$	1127^{+52}_{-50}	3771^{+242}_{-300}	53^{+28}_{-22}

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 $A_{obs} \gg 1.0$

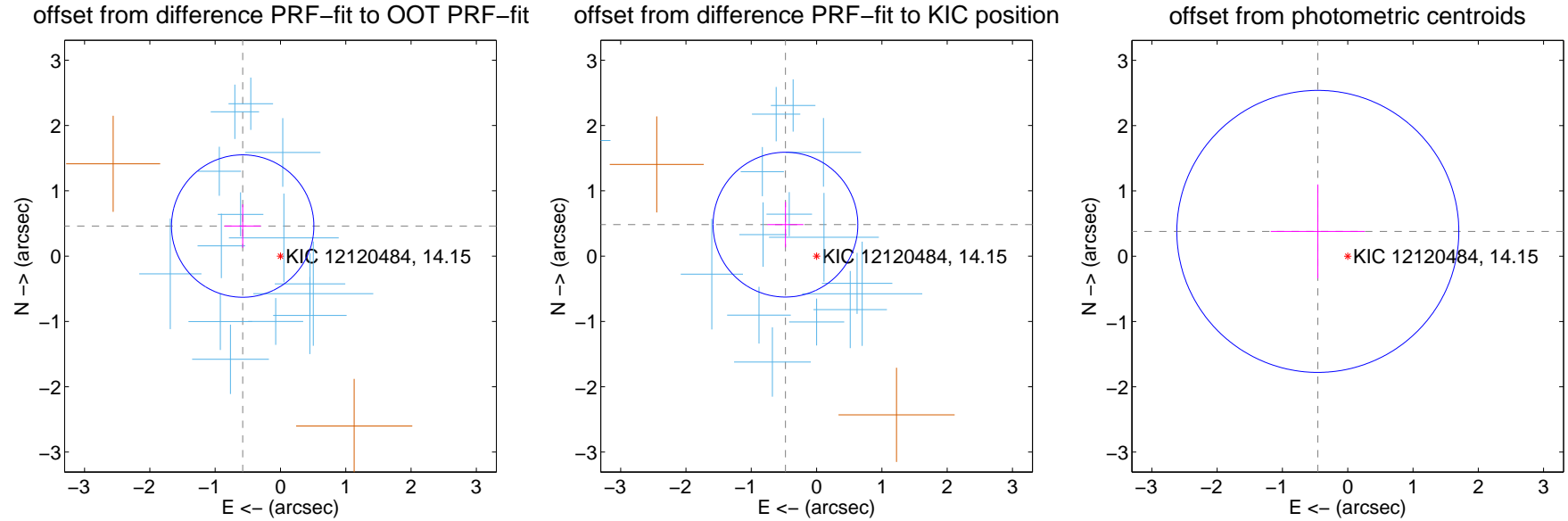
DV Centroid Data

Supplemental centroid analysis for 012120484-01. Kepler magnitude: 14.15. Transit SNR 19.17

There are 15 quarters with good PRF difference image offsets

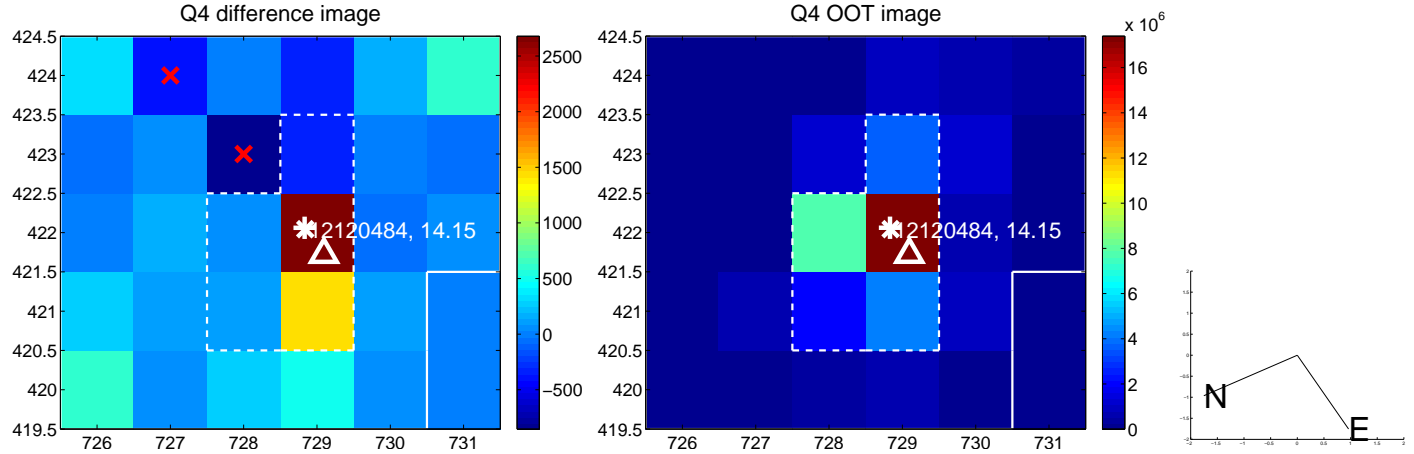
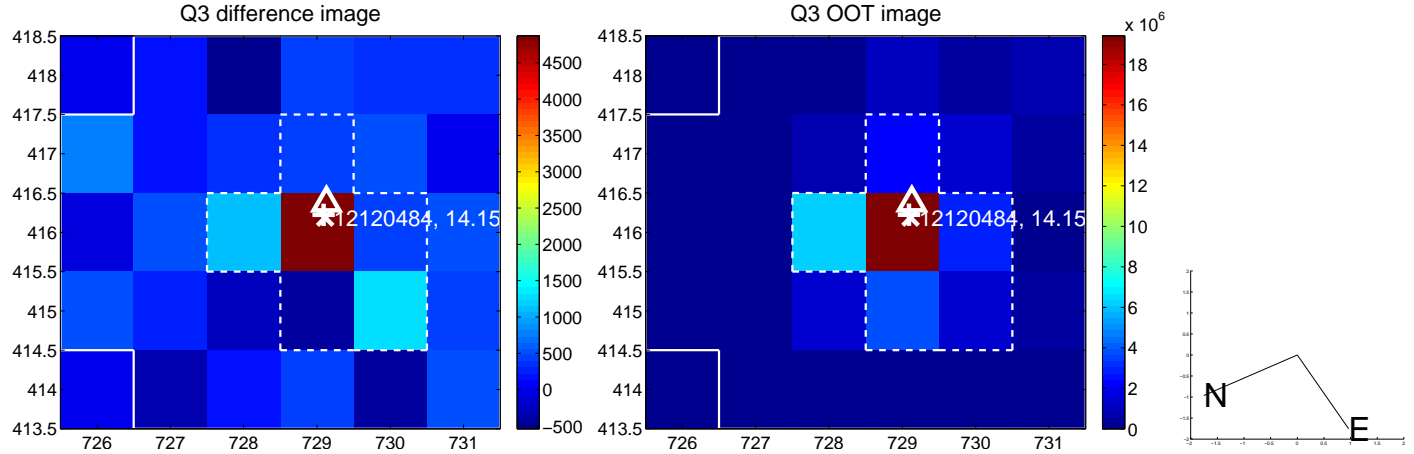
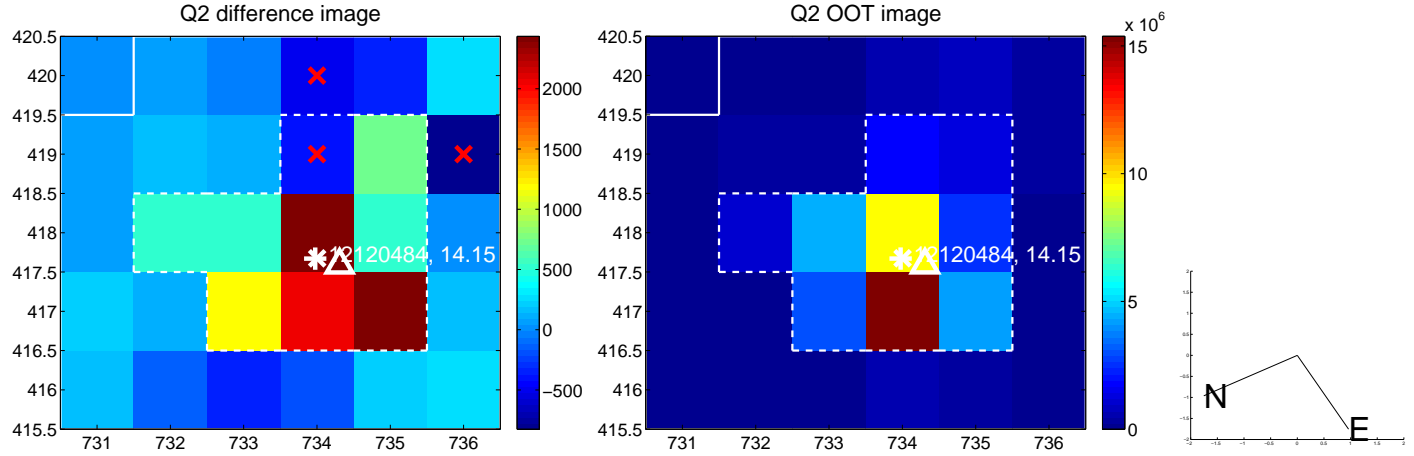
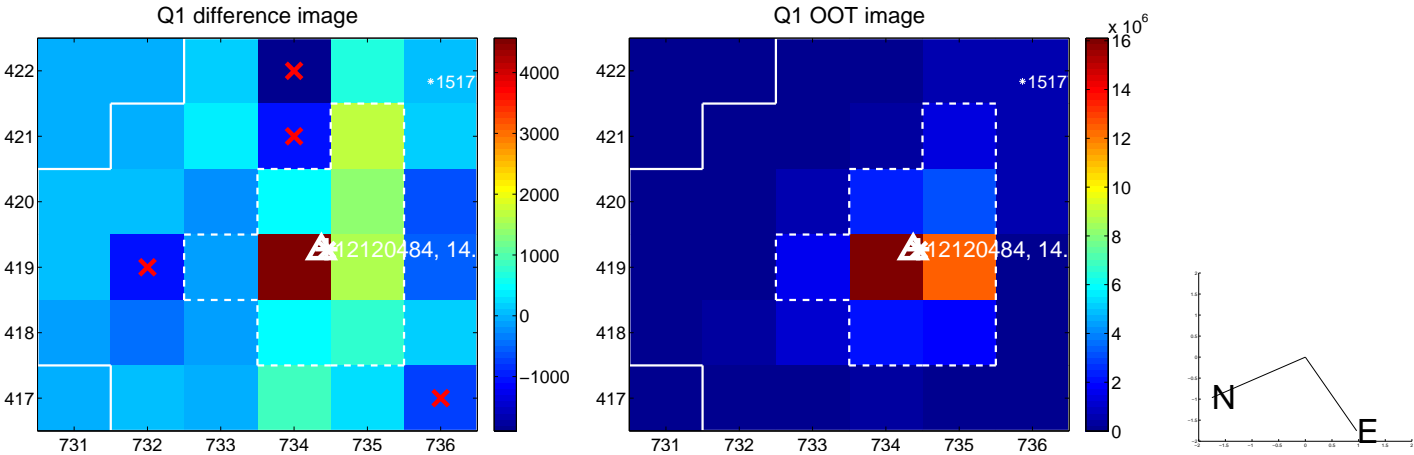
The direct PRF centroid is offset from the target star catalog position by about 0.11 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.739 ± 0.363	2.04	0.579 ± 0.277	0.461 ± 0.332
PRF-fit source offset from KIC position	0.678 ± 0.369	1.83	0.476 ± 0.275	0.482 ± 0.347
photometric centroid source offset	0.59 ± 0.72	0.83	0.46 ± 0.72	0.38 ± 0.72

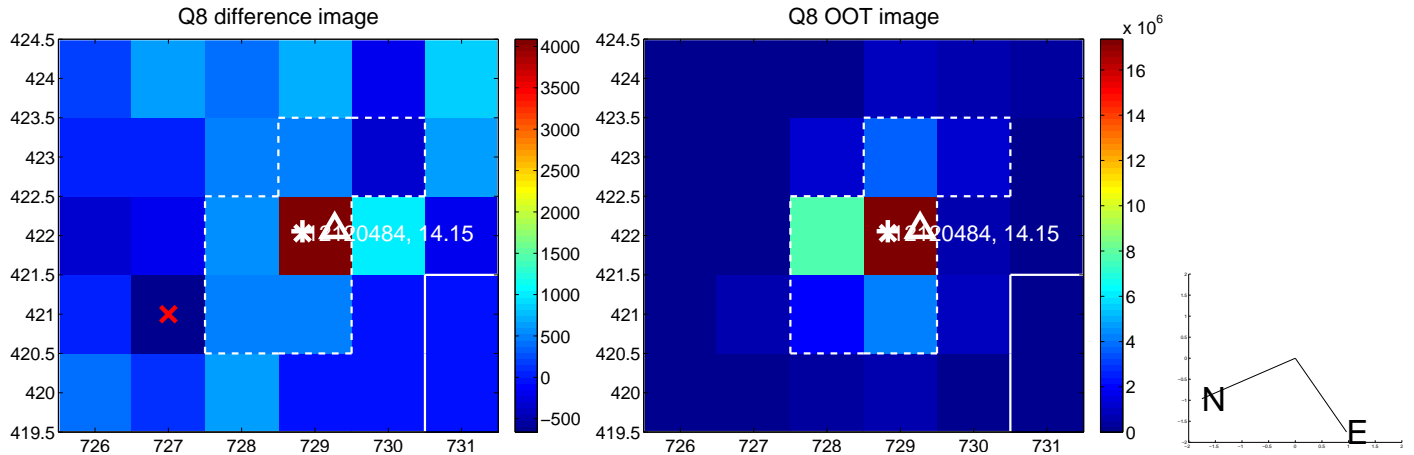
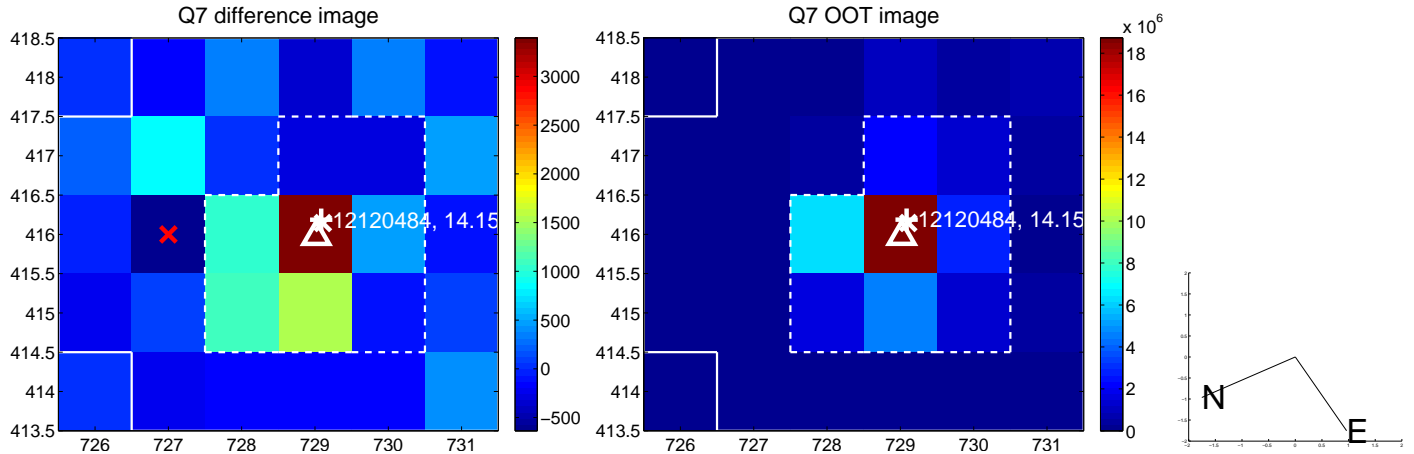
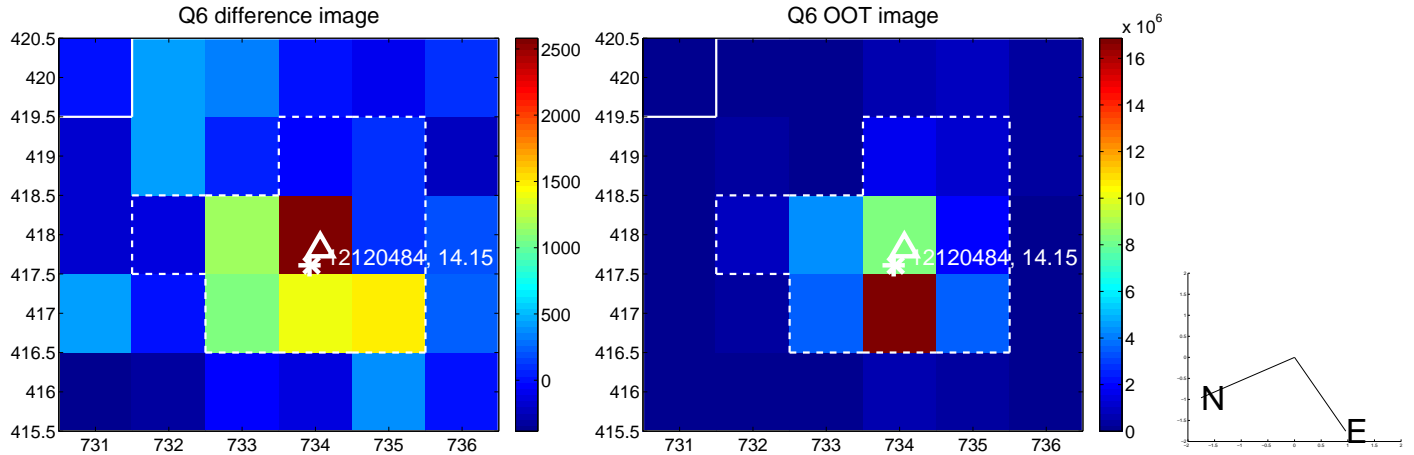
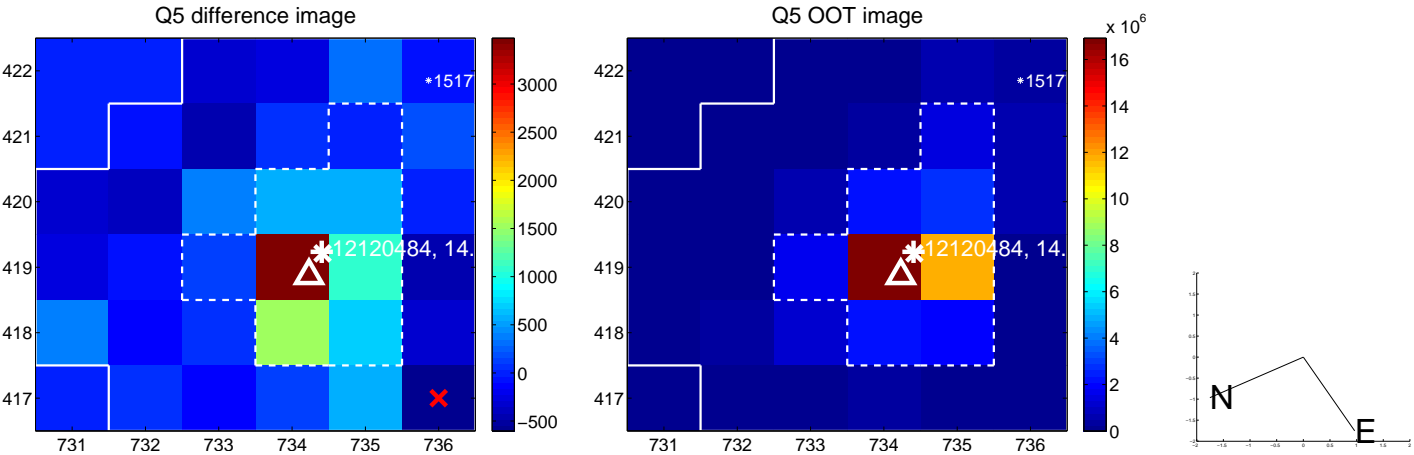


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

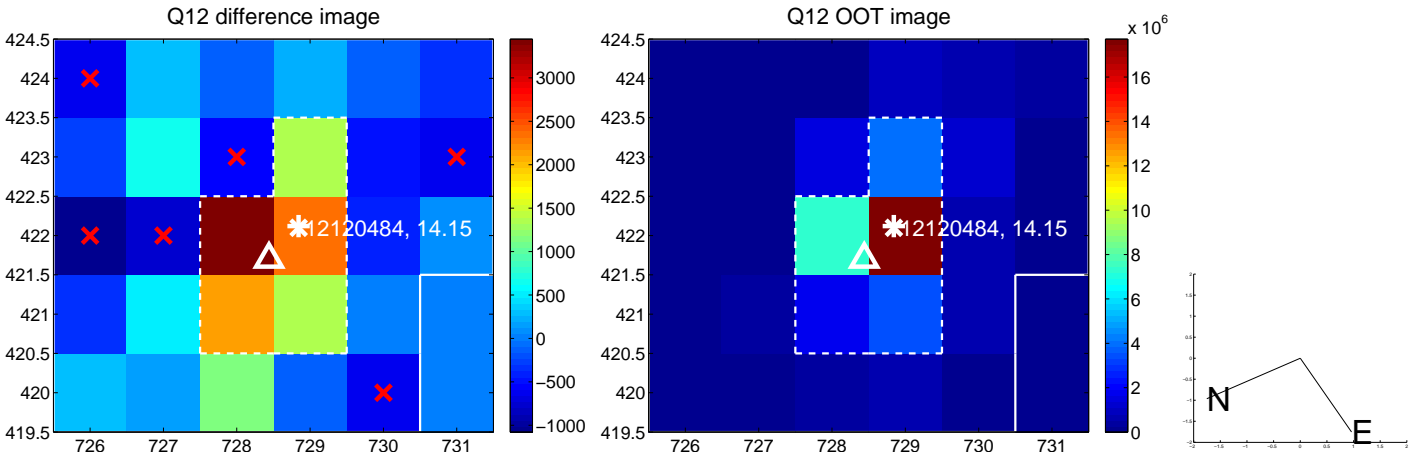
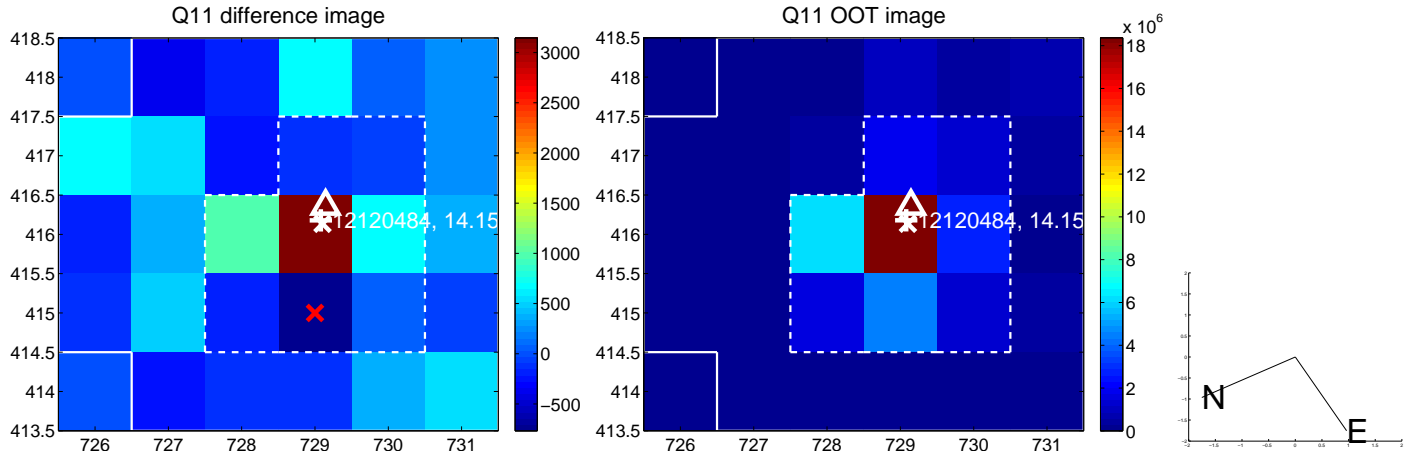
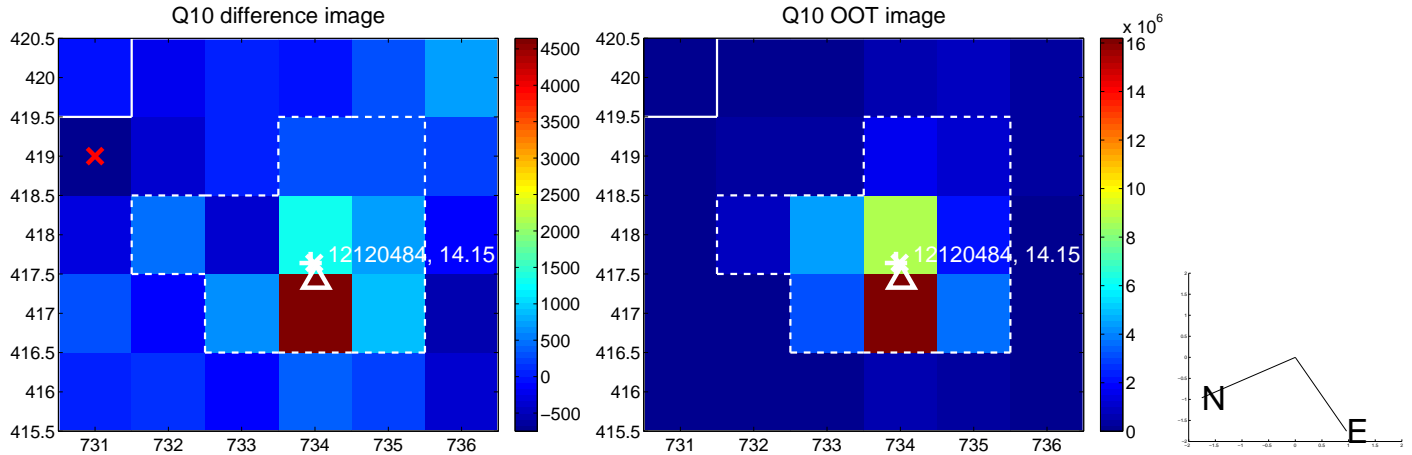
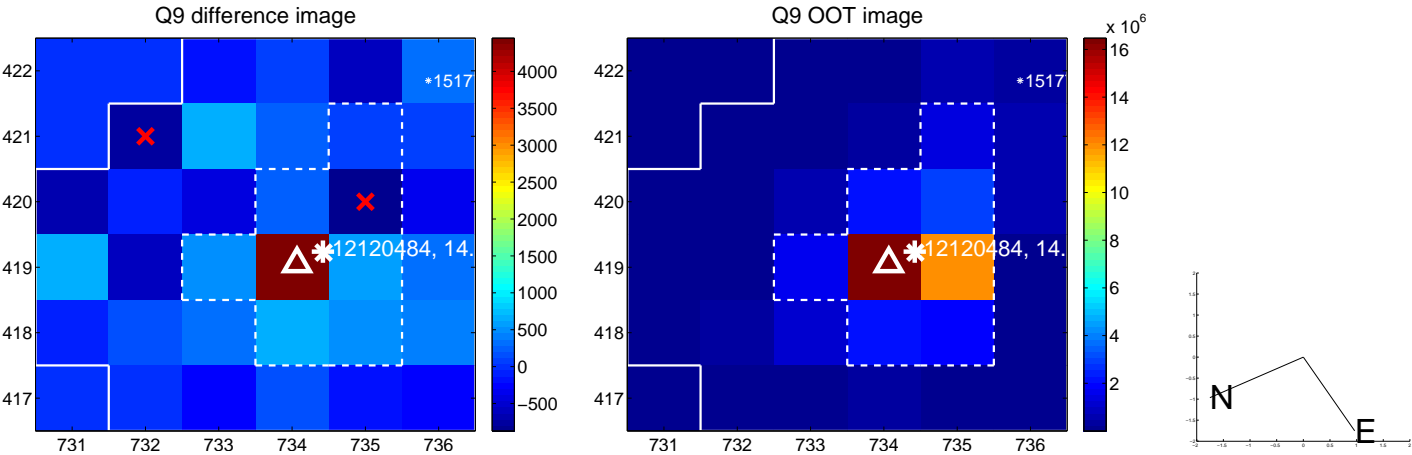
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



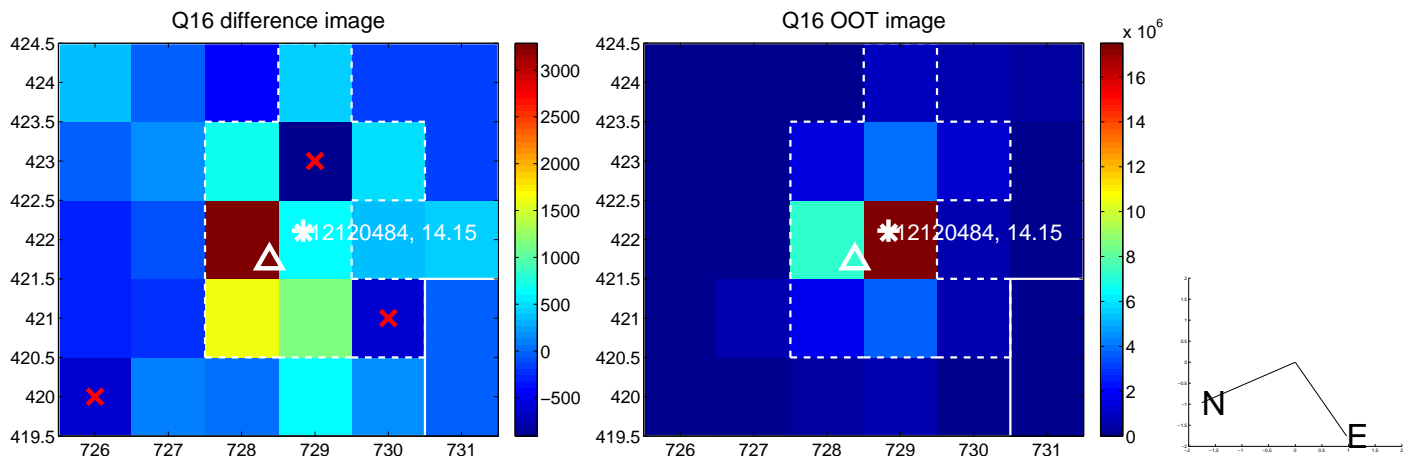
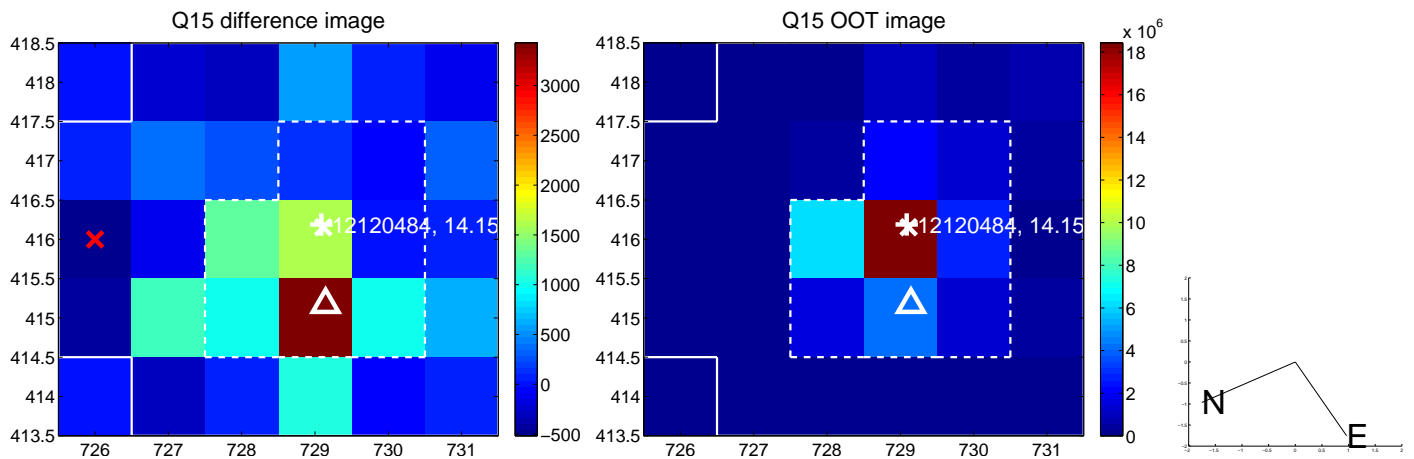
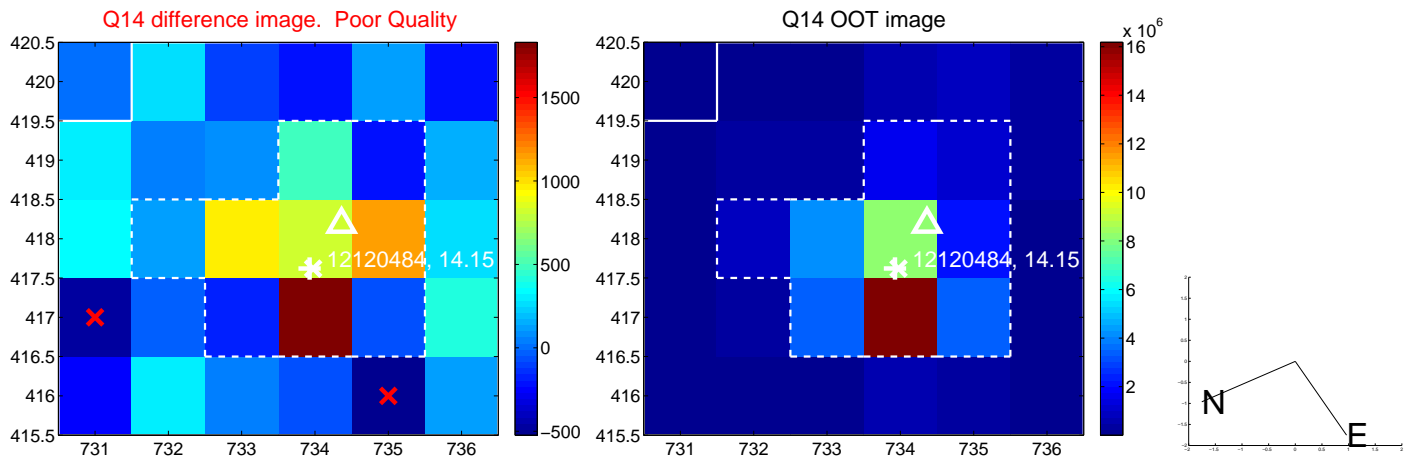
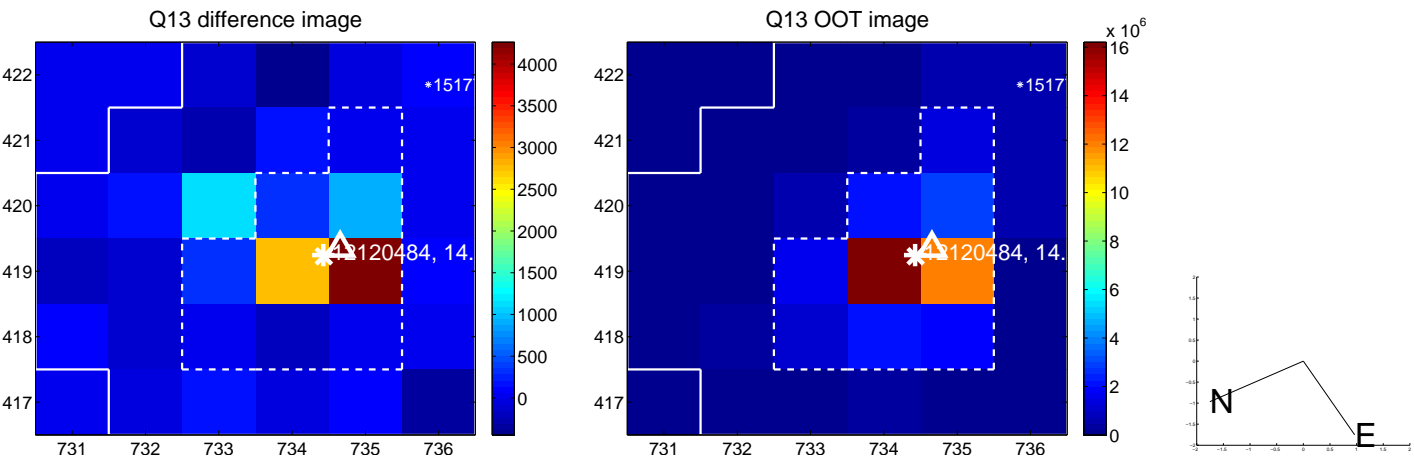
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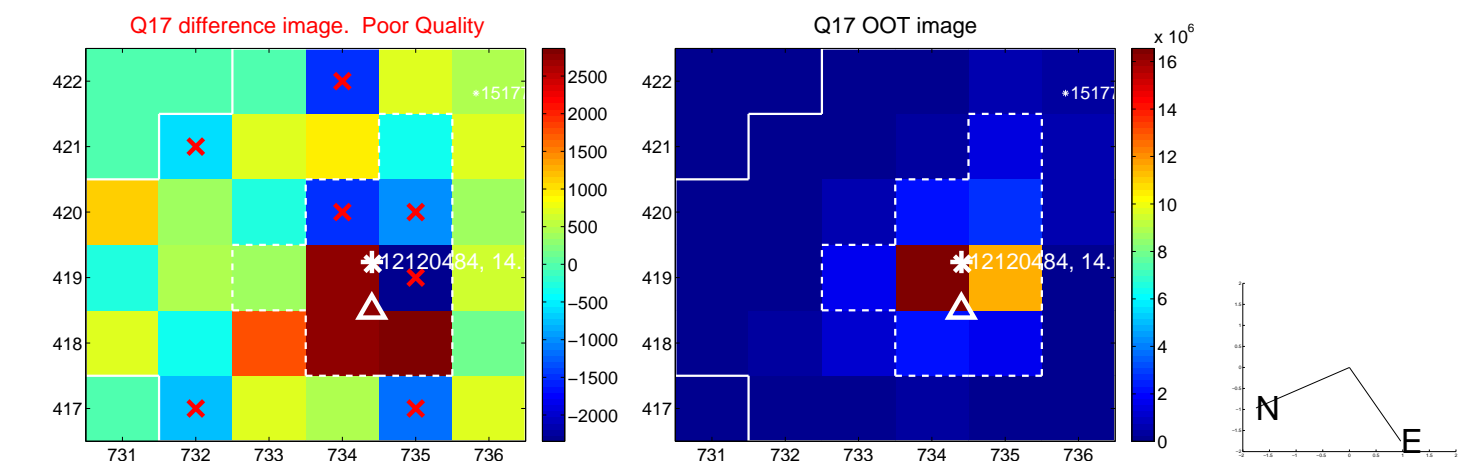
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



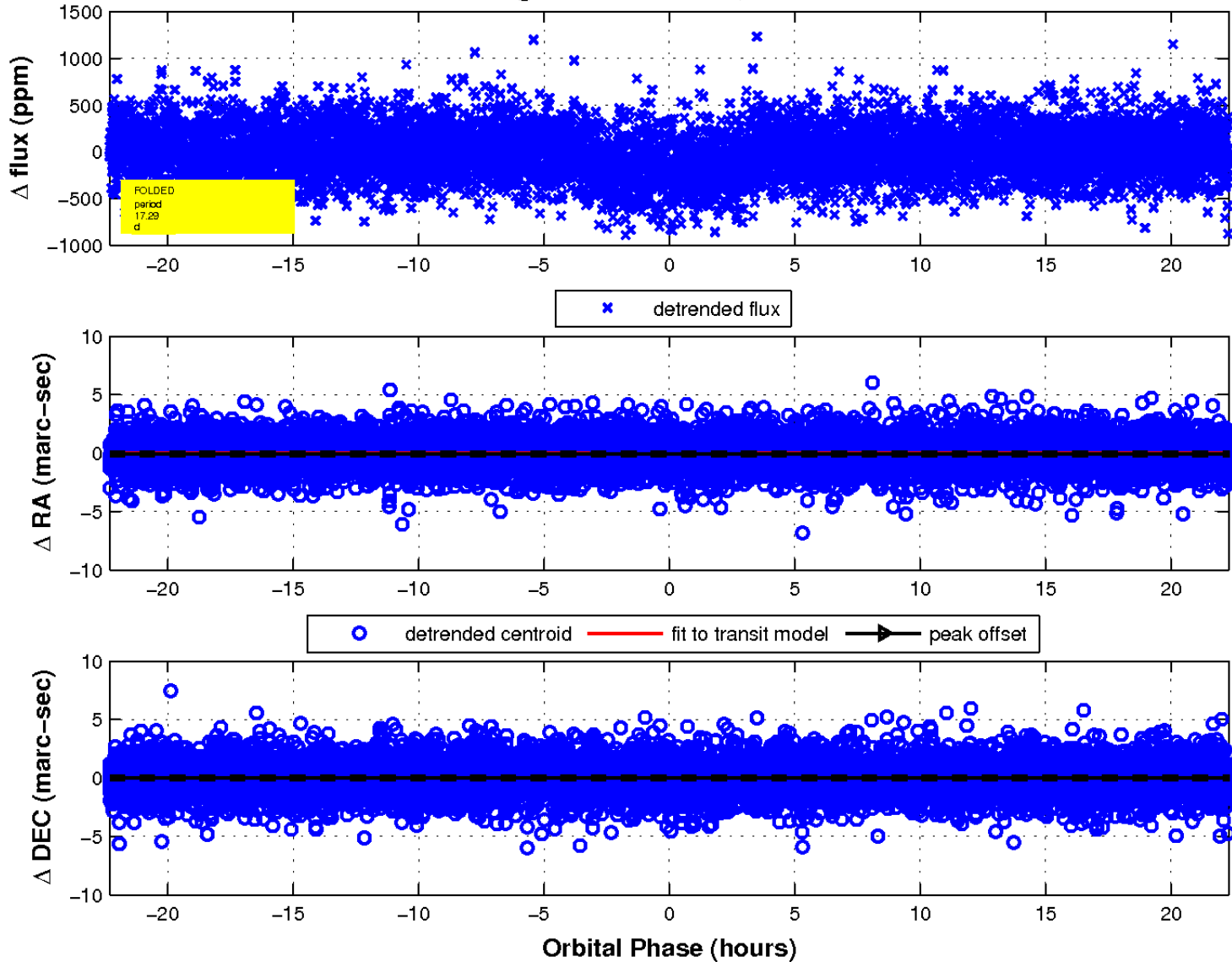
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

