

KIC 004545570

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})
004545570-01	OBS	4506.01	5.604711	131.633600	231.1	2.966	10.7	12.2	0.78	5401	1.41	133.15

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004545570-01	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 004545570-01

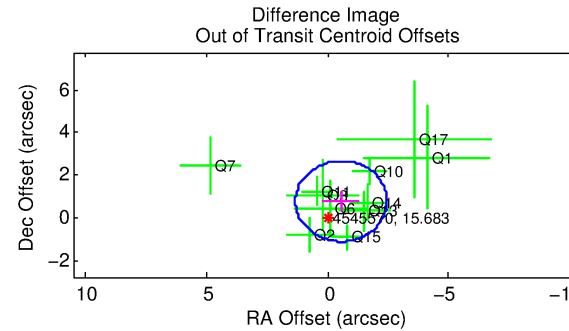
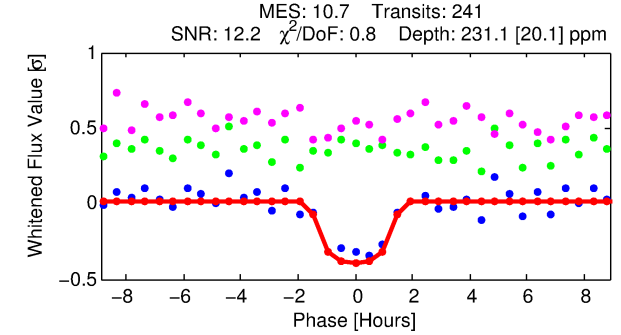
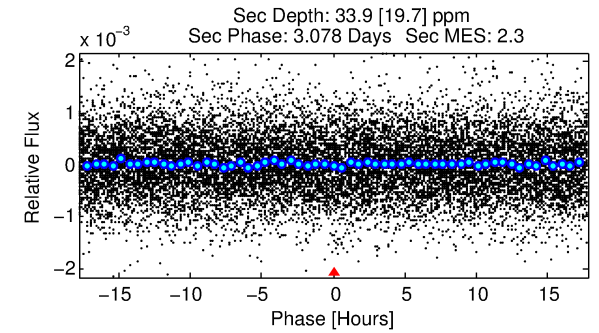
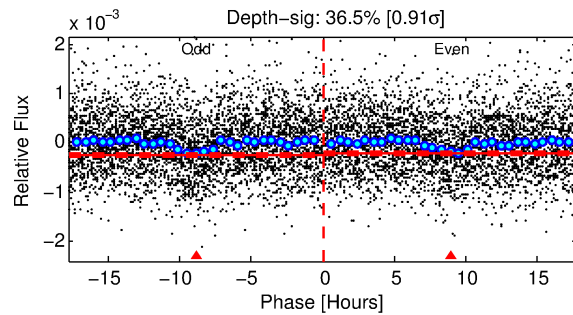
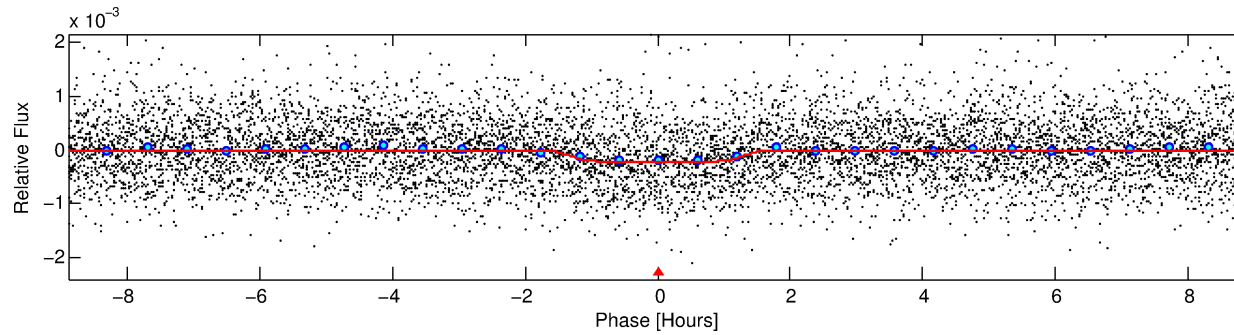
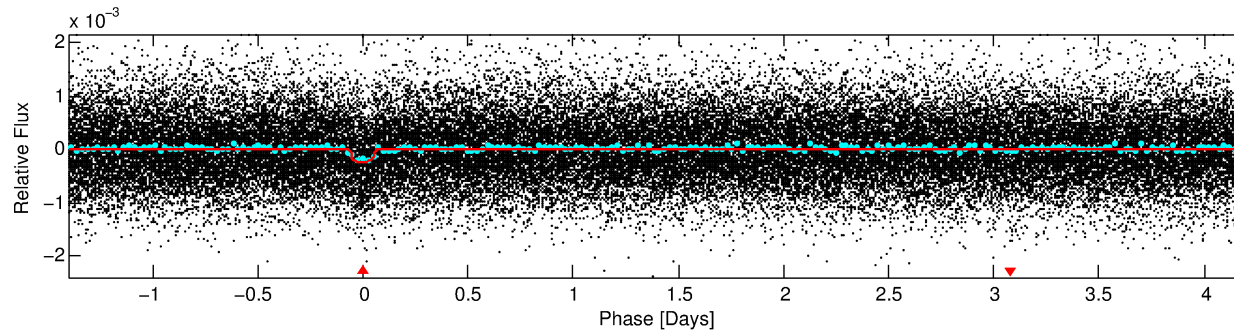
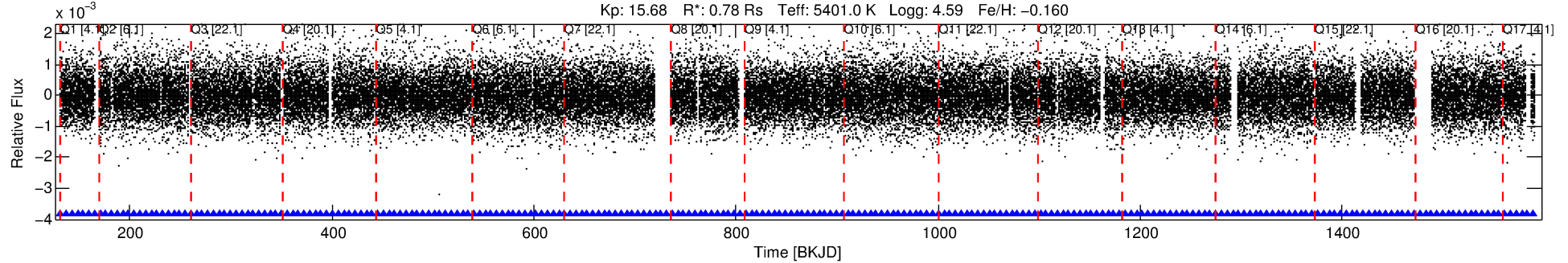
No Significant Match Found

DV One-Page Summary

KIC: 4545570 Candidate: 1 of 1 Period: 5.605 d

KOI: K04506.01 Corr: 0.974

Kp: 15.68 R*: 0.78 Rs Teff: 5401.0 K Logg: 4.59 Fe/H: -0.160



DV Fit Results:

Period = 5.60471 [0.00003] d
Epoch = 131.6336 [0.0045] BKJD
Rp/R* = 0.0166 [0.0084]
a/R* = 7.01 [15.26]
b = 0.90 [0.50]
Seff = 133.15 [31.58]
Teq = 866 [51] K
Rp = 1.41 [0.75] Re
a = 0.0588 [0.0084] AU
Ag = 32.34 [38.31] [0.82σ]
Teff = 3194 [936] K [2.48σ]

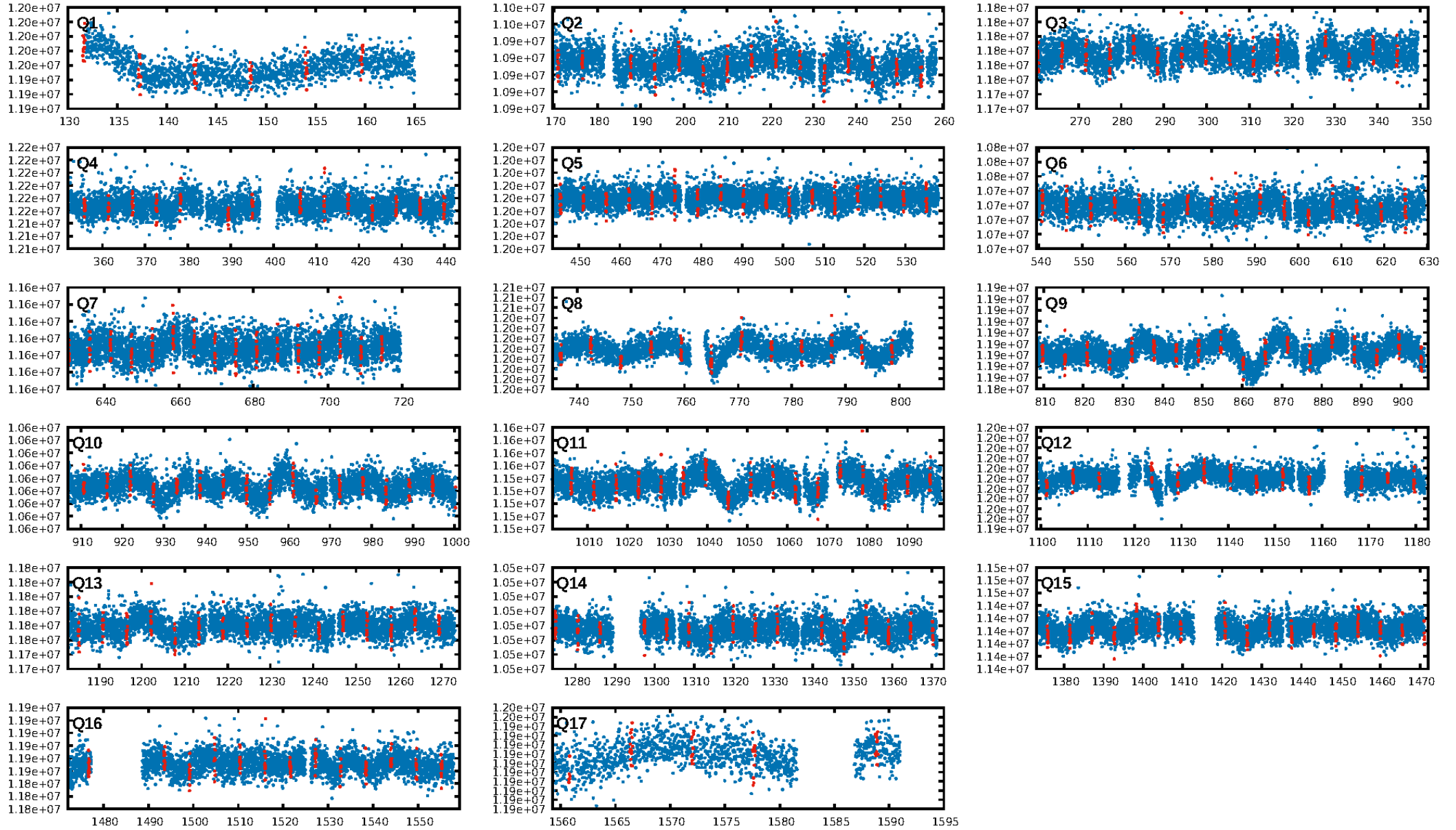
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 4.34e-26
RollingBand-fgt: 1.00 [230/230]
GhostDiagnostic-chr: 4.564
Centroid-sig: 1.1%
Centroid-so: 2.335 arcsec [1.98σ]
OotOffset-rm: 0.966 arcsec [1.54σ]
KicOffset-rm: 0.759 arcsec [1.08σ]
OotOffset-st: 4/4/0/3 [11]
KicOffset-st: 4/4/0/3 [11]
DiffImageQuality-fgm: 0.64 [7/11]
DiffImageOverlap-fno: 1.00 [17/17]

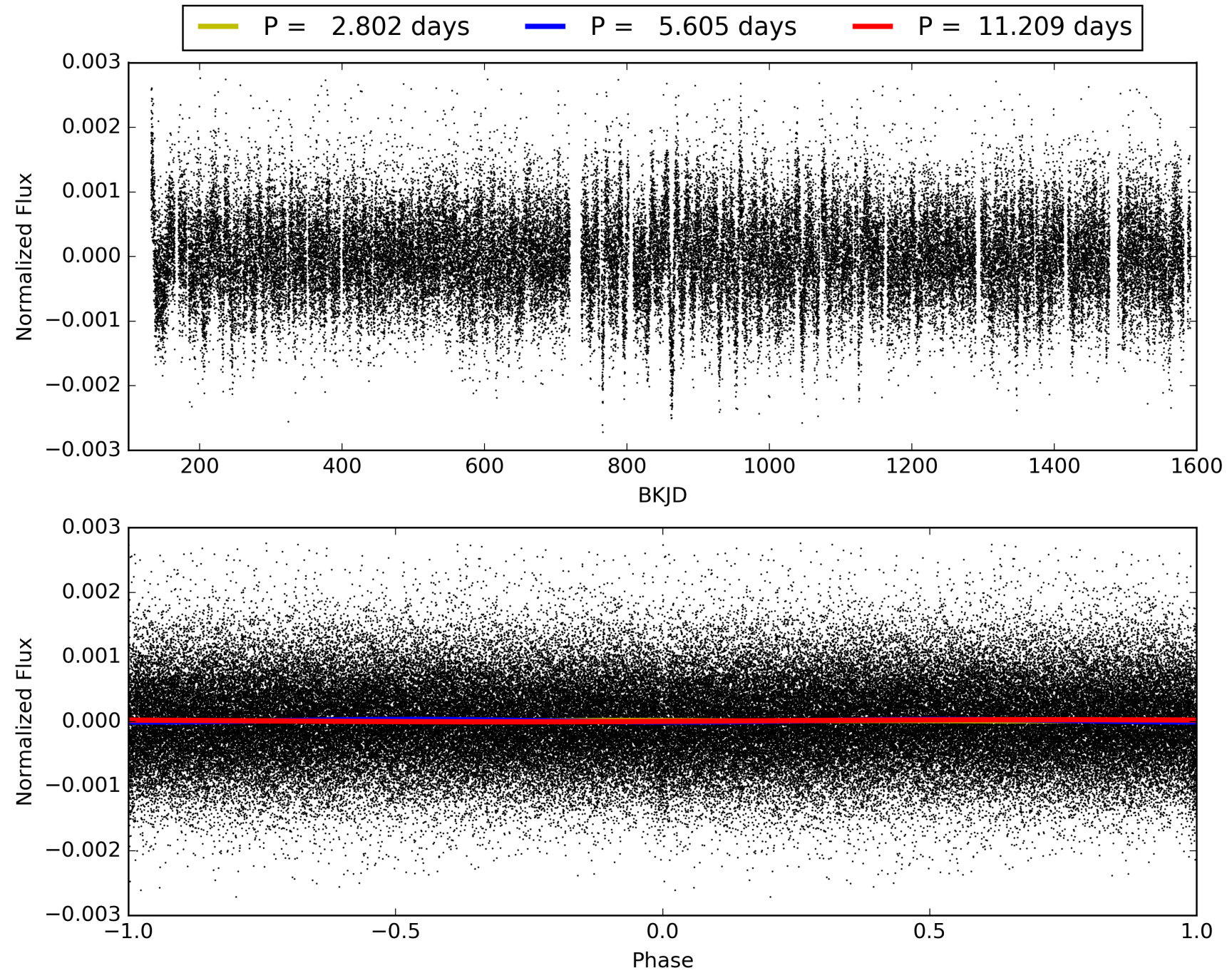
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 22:58:35 Z

This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 004545570-01, PDC Light Curves

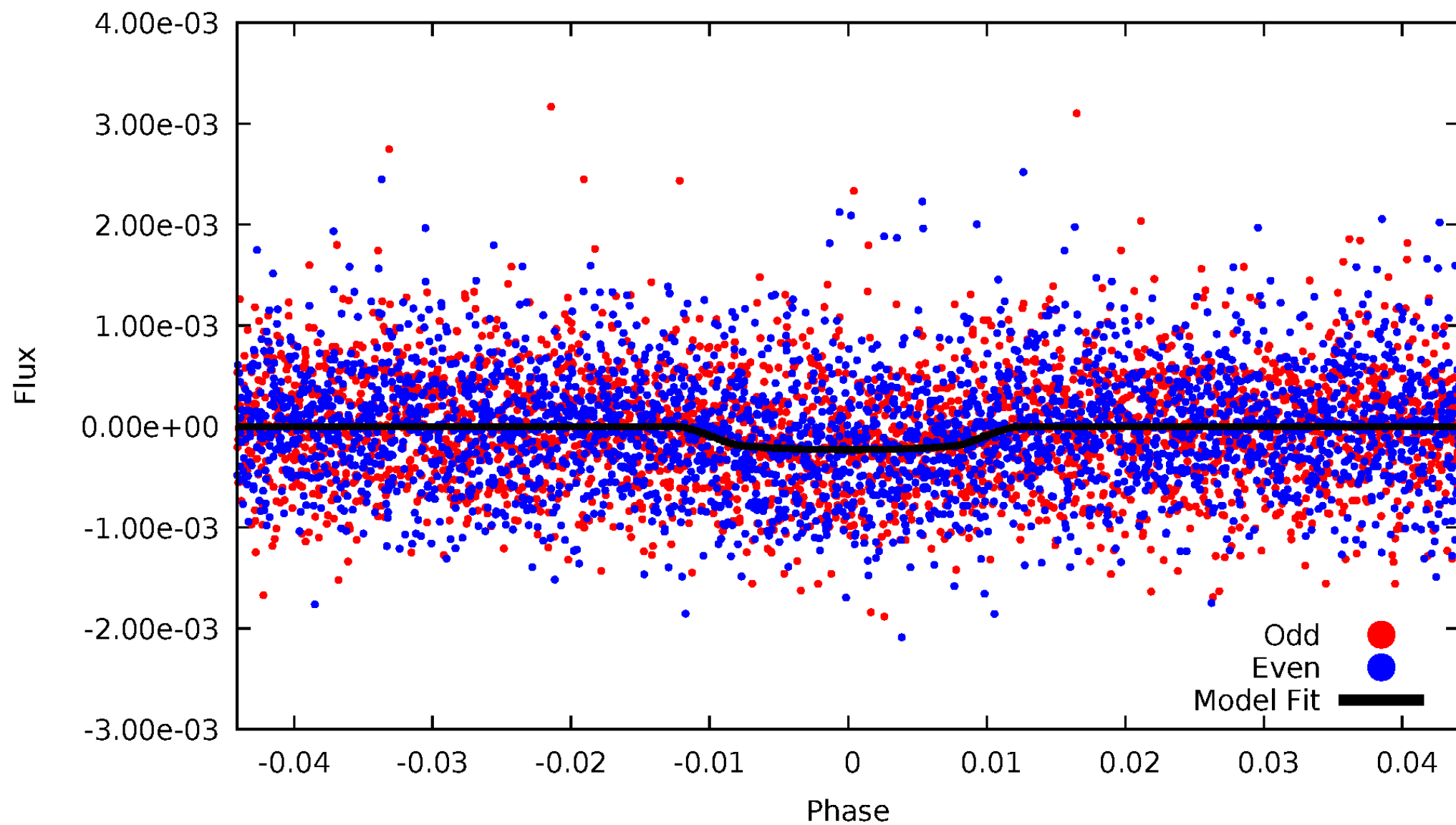


TCE 004545570-01



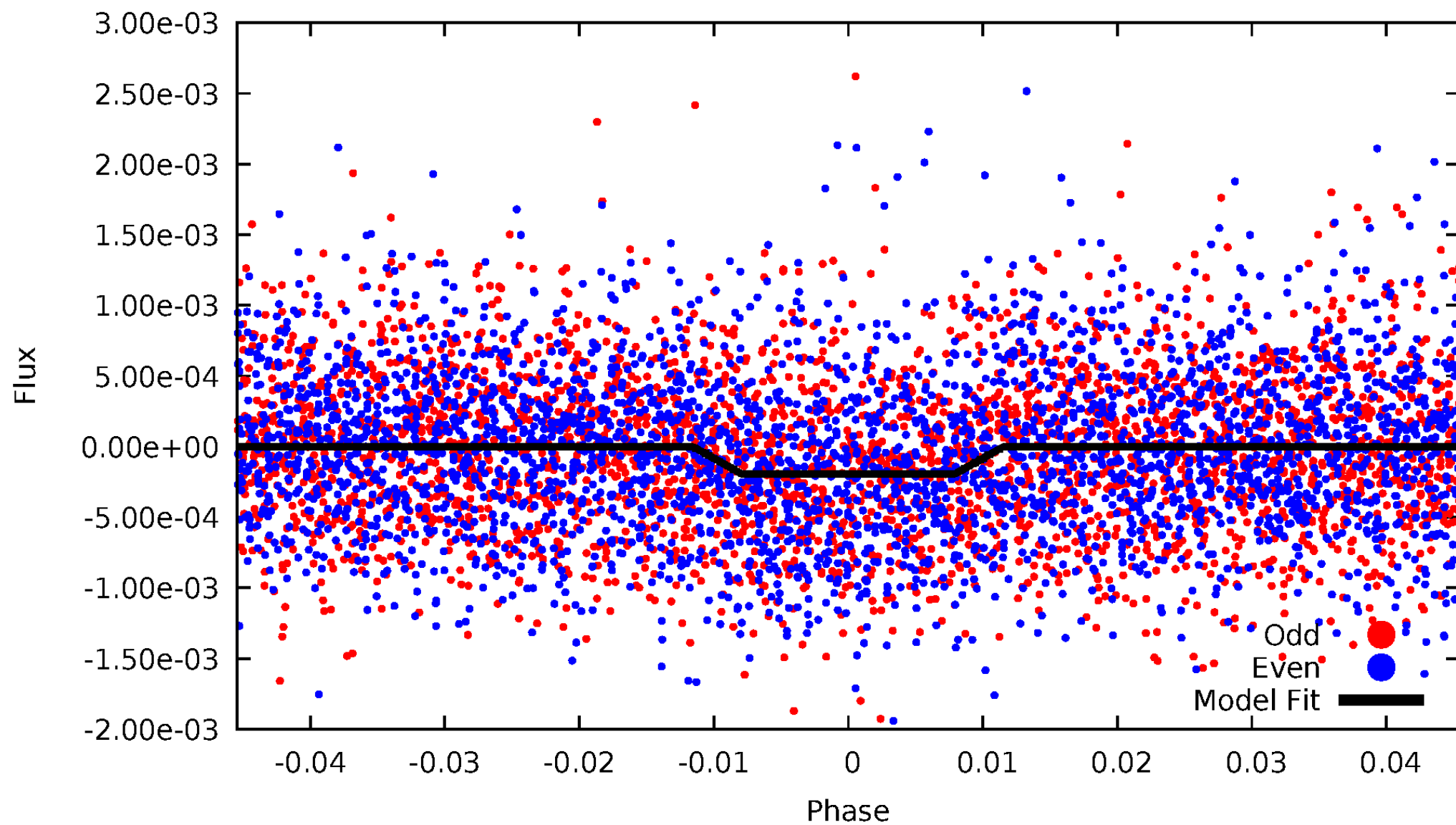
DV Odd/Even

TCE 004545570-01



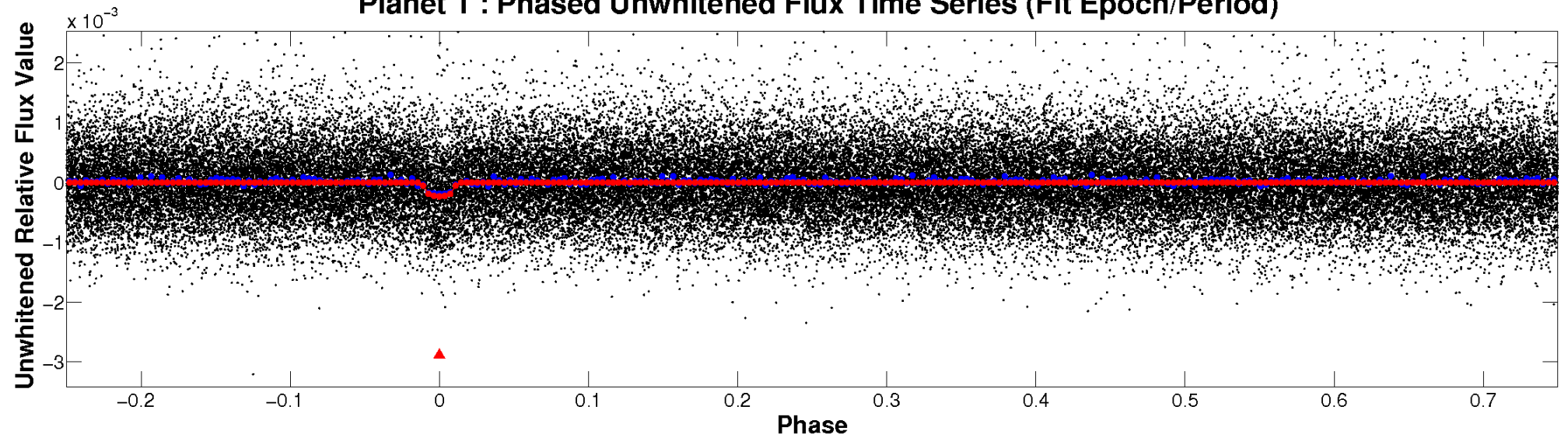
ALT Odd/Even

TCE 004545570-01

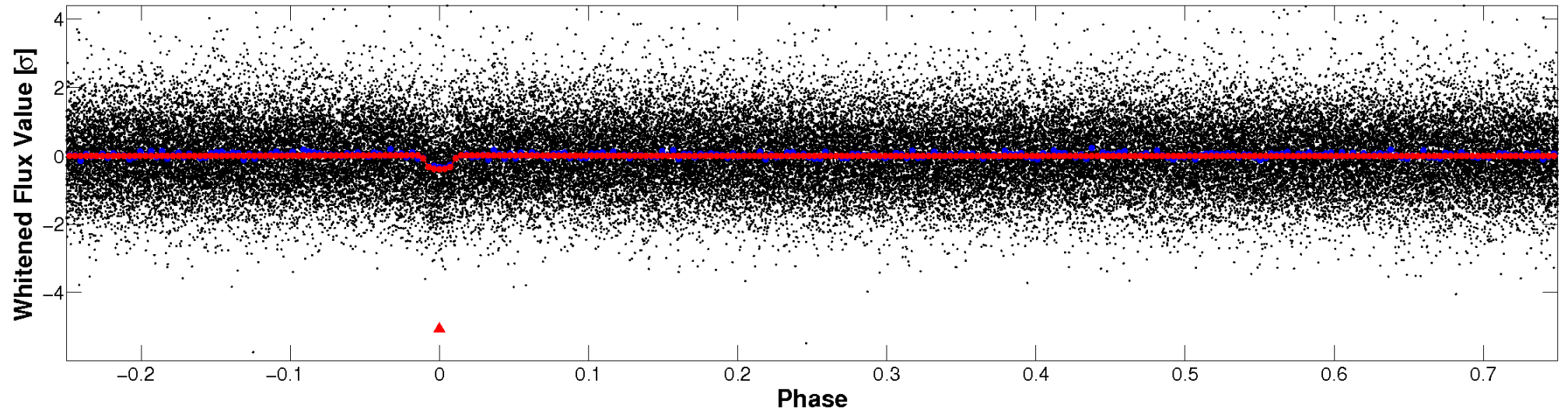


Non-Whitened Vs. Whitened Light Curve

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

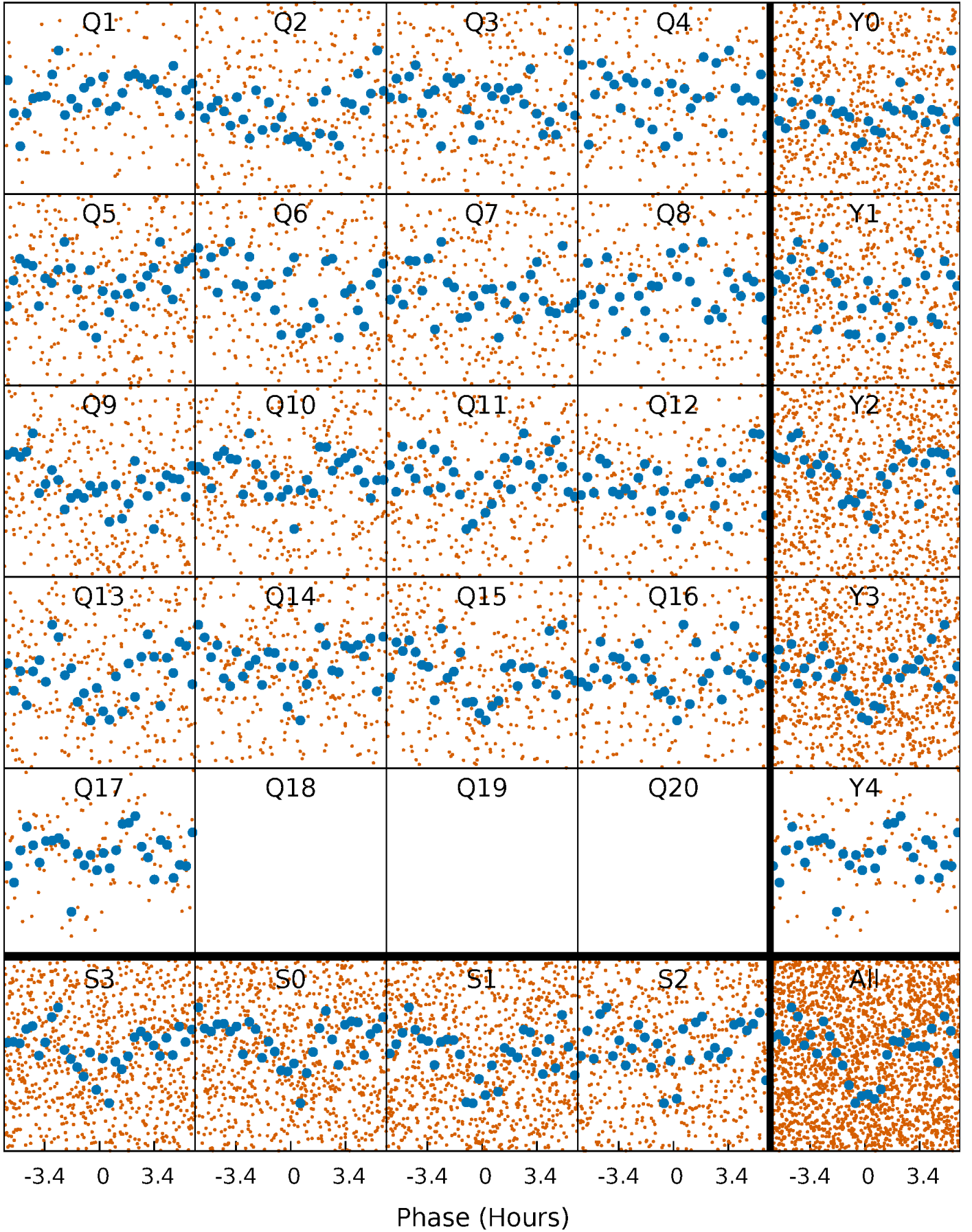


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



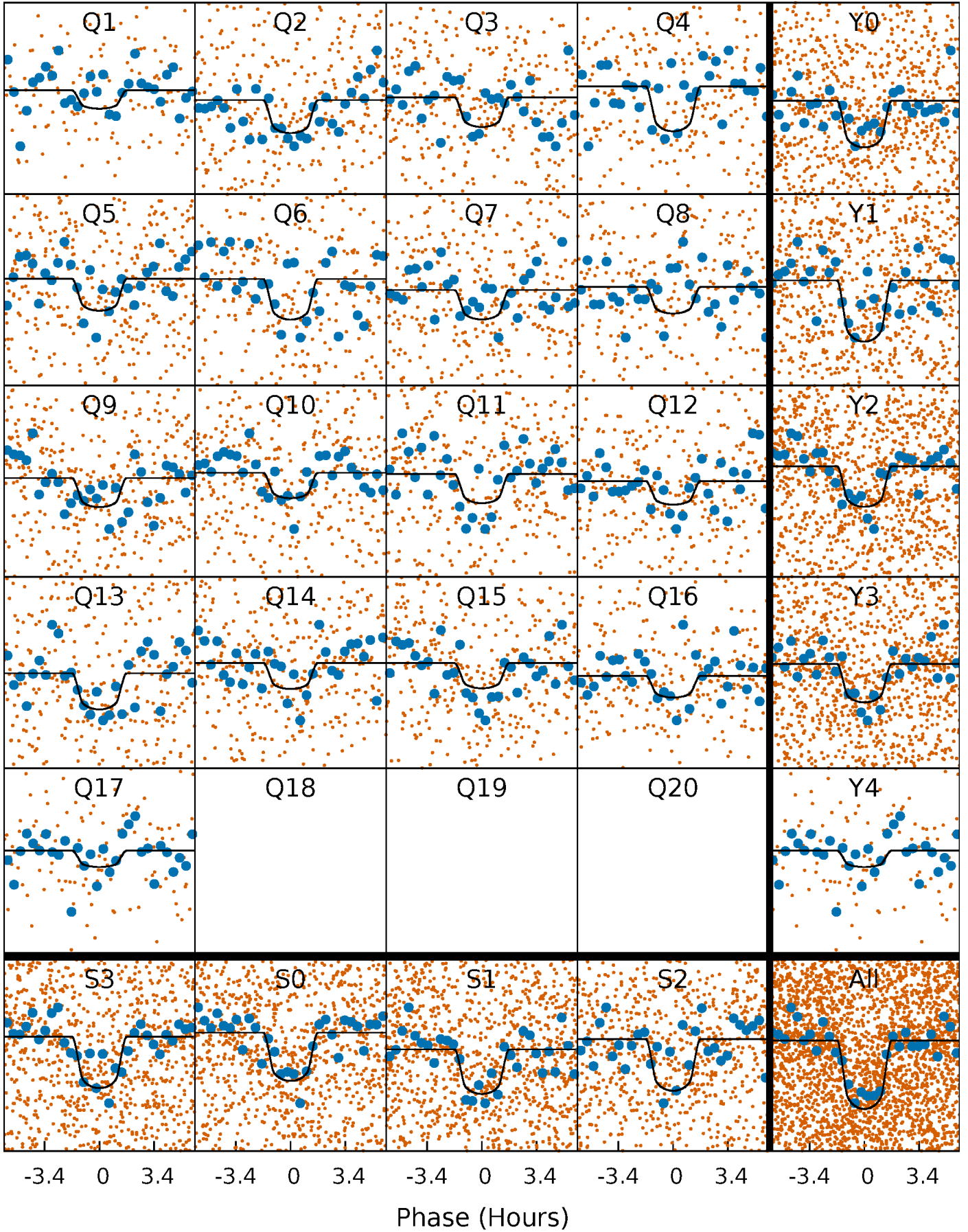
PDC Quarter-Phased Transit Curves

TCE 004545570-01 P= 5.604711 Days $T_0=131.633600$ (BKJD)



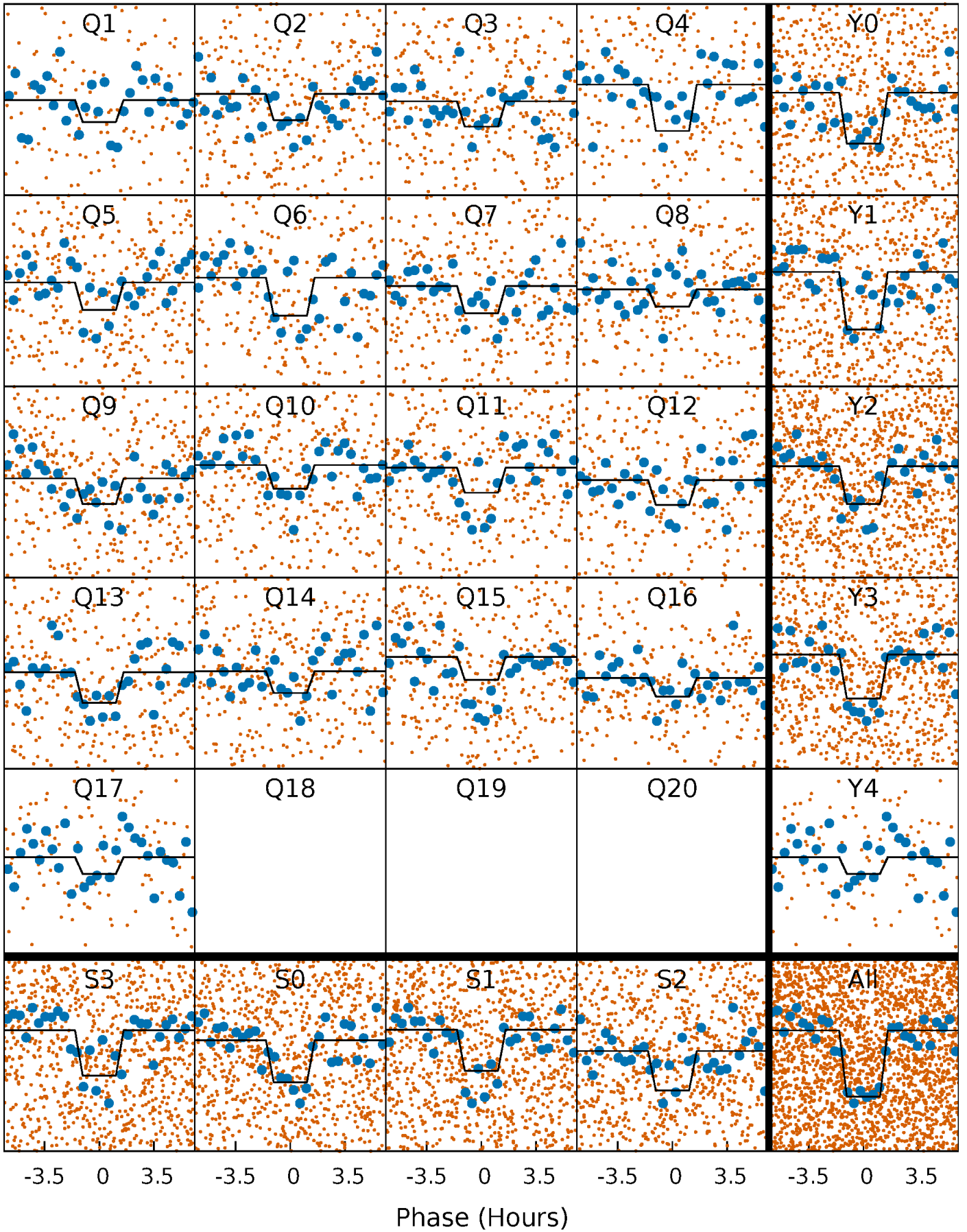
DV Quarter-Phased Transit Curves

TCE 004545570-01 P= 5.604711 Days $T_0=131.633600$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

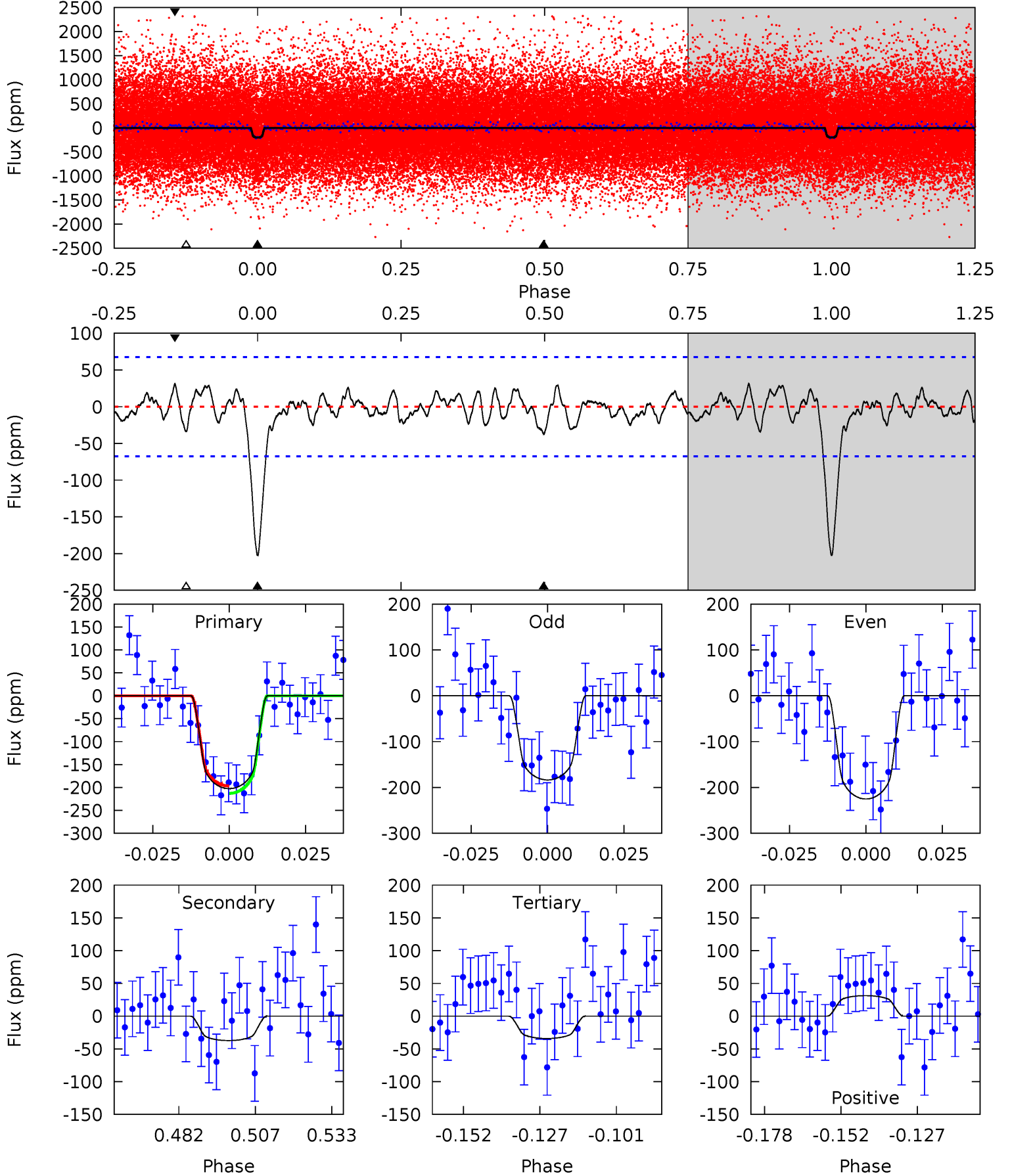
TCE 004545570-01 P= 5.604751 Days $T_0=131.628128$ (BKJD)



DV Model-Shift Uniqueness Test

004545570-01, P = 5.604711 Days, E = 126.028889 Days

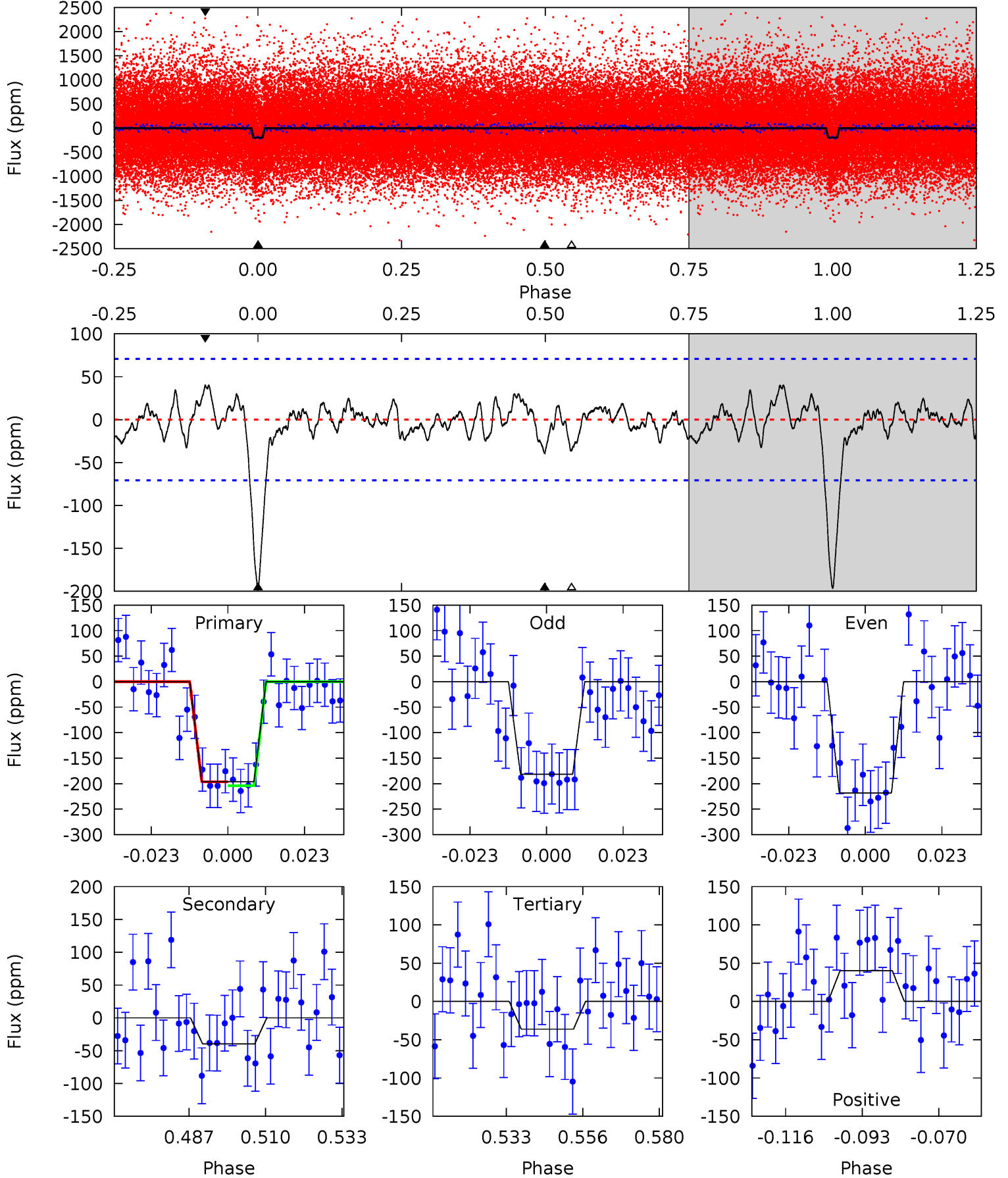
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14.5	2.67	2.45	2.24	4.84	2.24	0.96	12.1	12.3	0.23	0.43	1.49	1.06	0.13	0.58



Alt Model-Shift Uniqueness Test

004545570-01, P = 5.604751 Days, E = 126.023377 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.5	2.72	2.49	2.77	4.86	2.27	0.98	11.0	10.7	0.23	-0.05	1.26	1.15	0.17	0.26



Stellar Parameters For KIC 004545570

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5401^{+159}_{-159}	$4.593^{+0.035}_{-0.112}$	$-0.160^{+0.300}_{-0.300}$	$0.777^{+0.132}_{-0.066}$	$0.871^{+0.070}_{-0.104}$	$2.616^{+0.493}_{-0.867}$
	+3%/-3%	+1%/-2%	+188%/-188%	+17%/-8%	+8%/-12%	+19%/-33%
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 004545570-01 / KOI 4506.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-37 ± 14	$1.45^{+0.82}_{-0.65}$	1225^{+59}_{-45}	3608^{+882}_{-482}	31^{+72}_{-19}
Alt.	-40 ± 15	$1.30^{+0.69}_{-0.67}$	1229^{+59}_{-48}	3843^{+1198}_{-548}	43^{+149}_{-26}

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

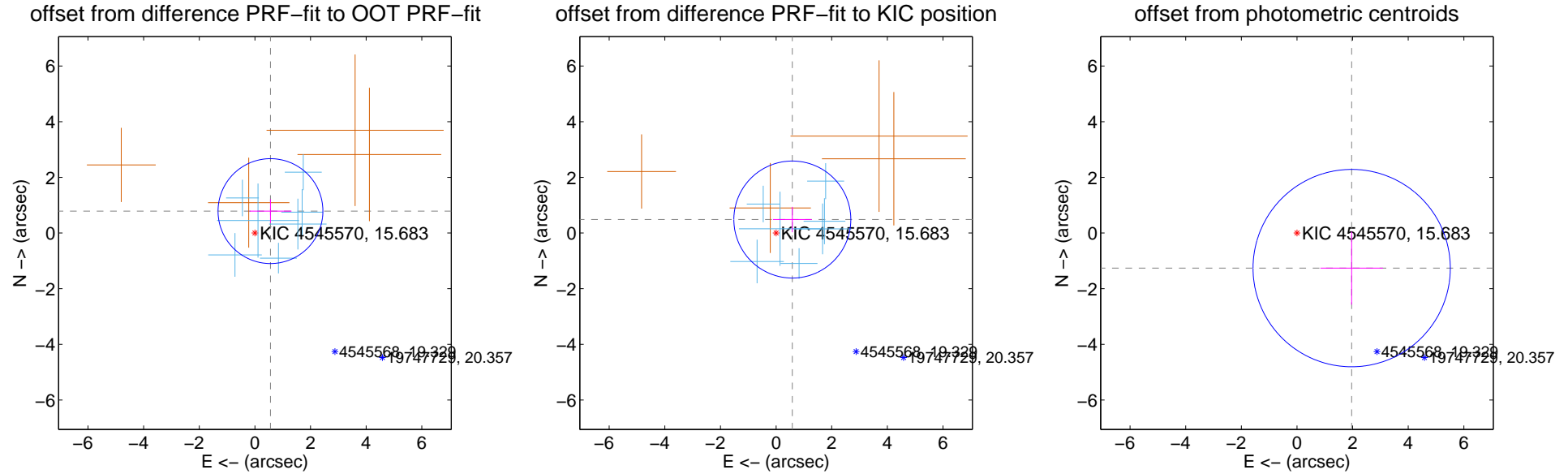
DV Centroid Data

Supplemental centroid analysis for 004545570-01. Kepler magnitude: 15.68. Transit SNR 12.16

There are 7 quarters with good PRF difference image offsets

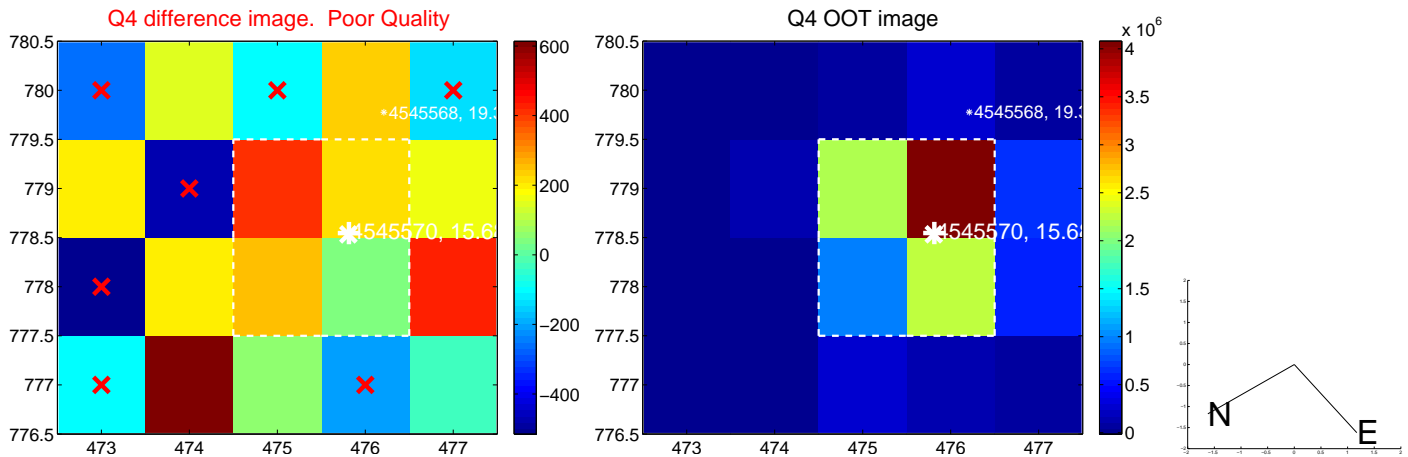
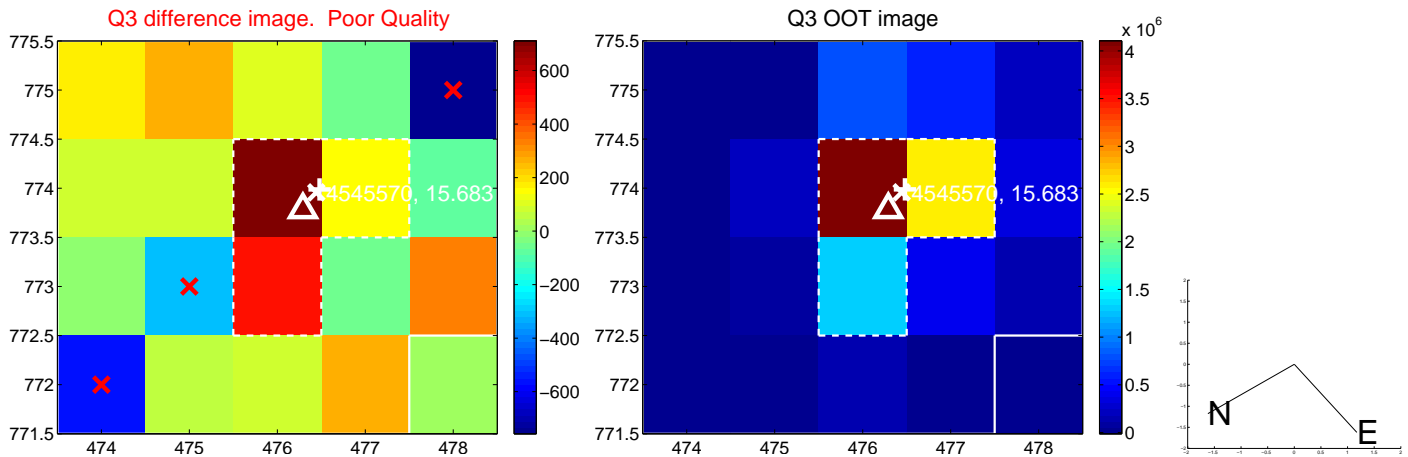
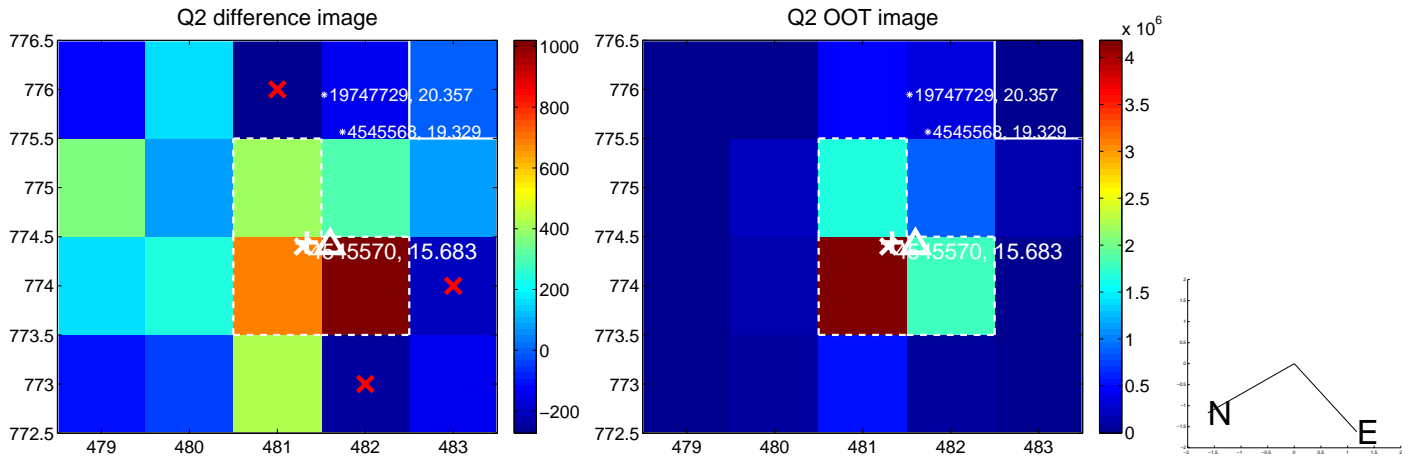
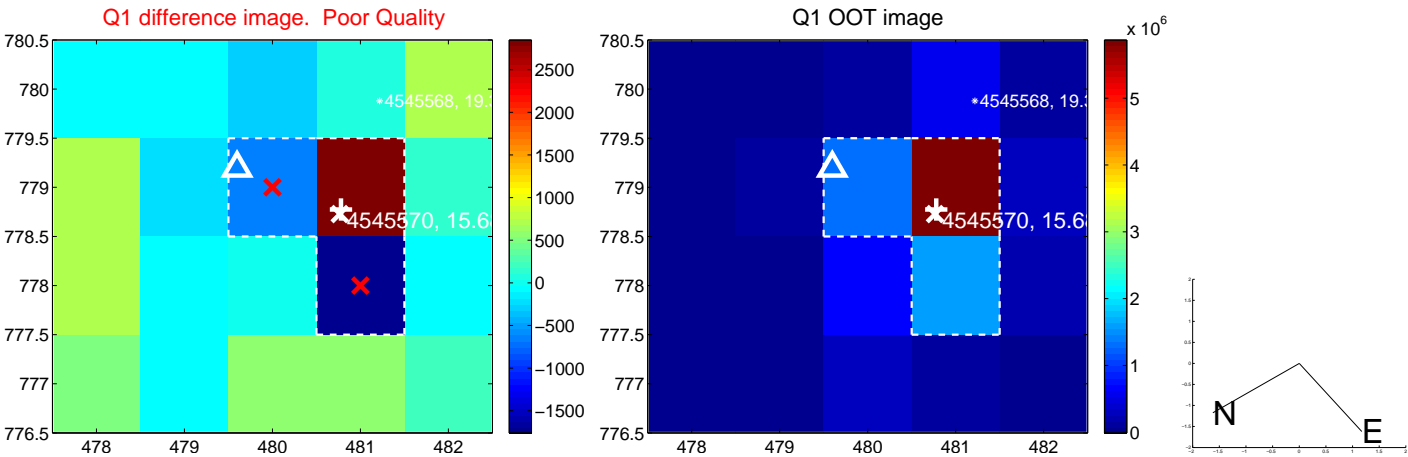
The direct PRF centroid is offset from the target star catalog position by about 0.23 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.966 ± 0.628	1.54	-0.560 ± 0.753	0.787 ± 0.426
PRF-fit source offset from KIC position	0.759 ± 0.701	1.08	-0.584 ± 0.695	0.484 ± 0.456
photometric centroid source offset	2.33 ± 1.18	1.98	-1.97 ± 1.12	-1.26 ± 1.31

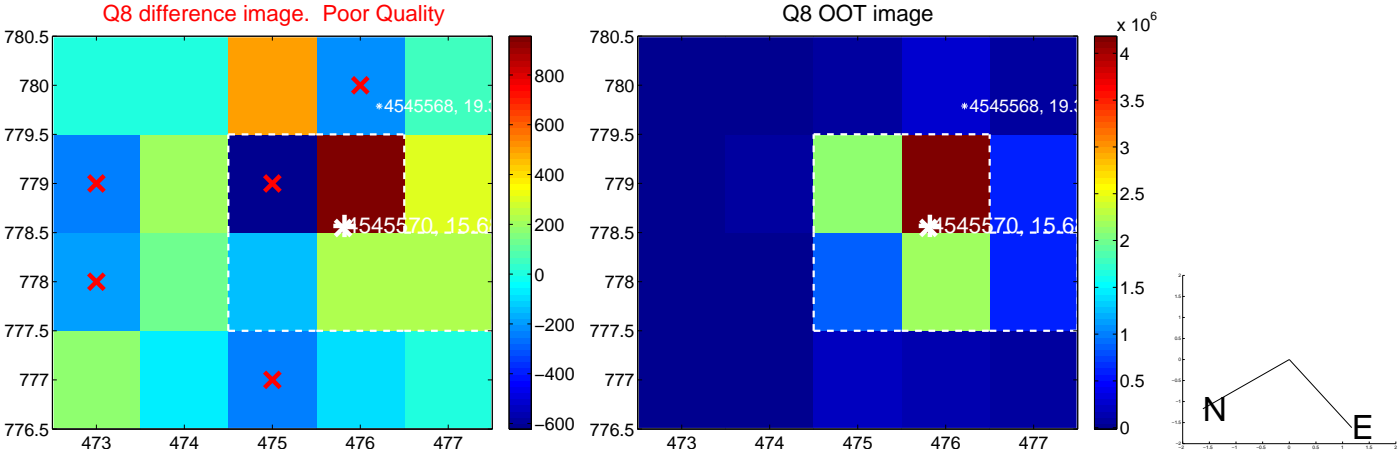
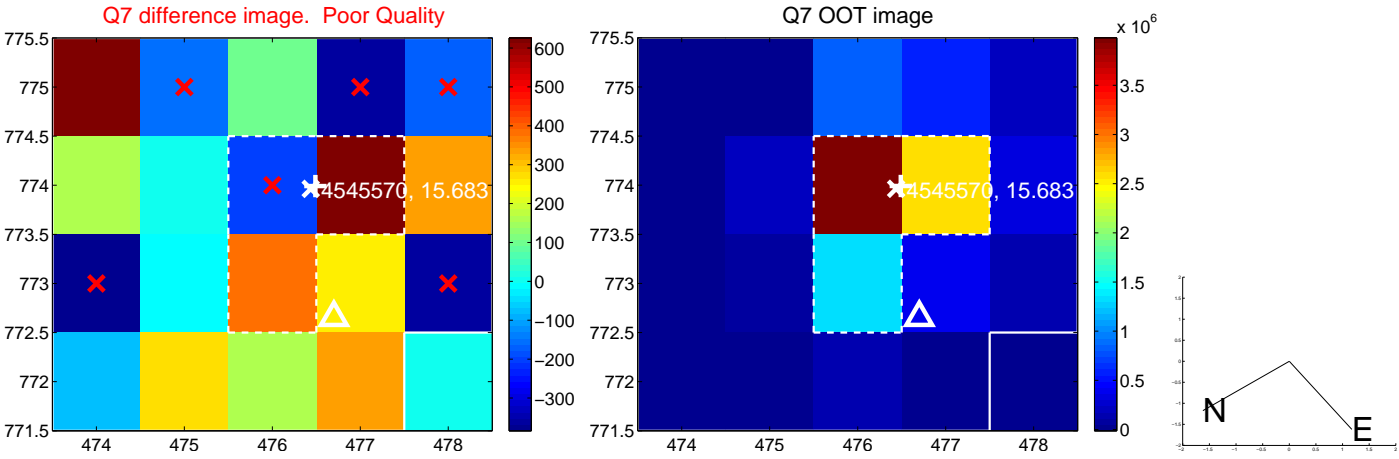
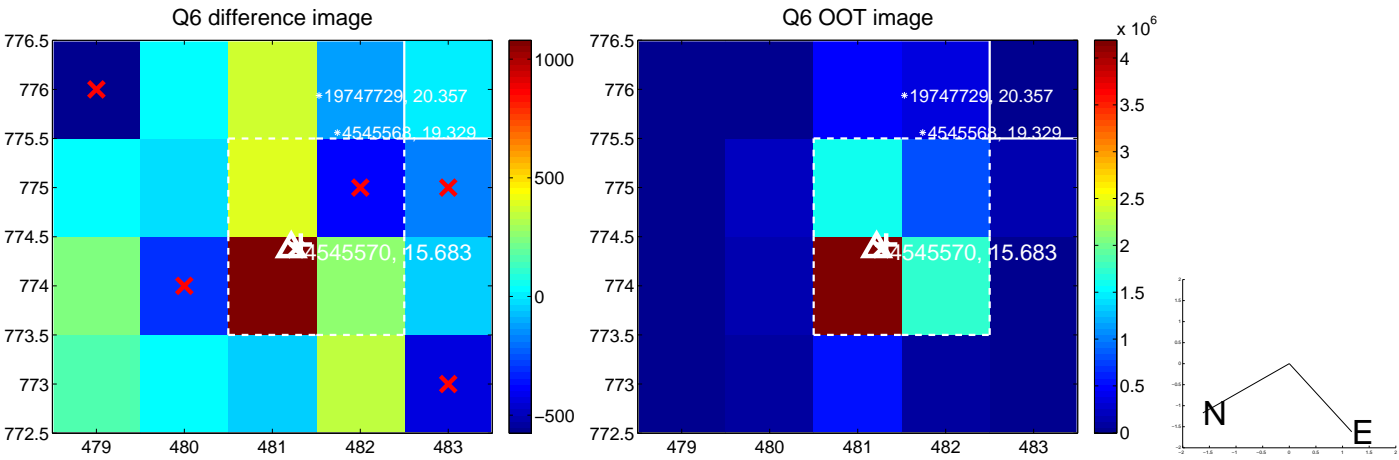
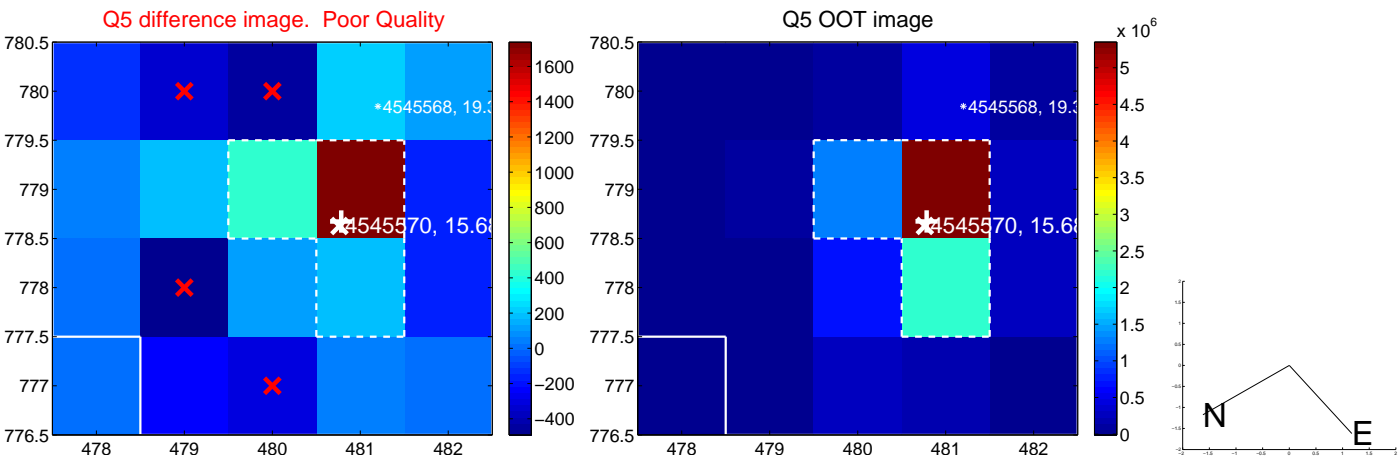


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

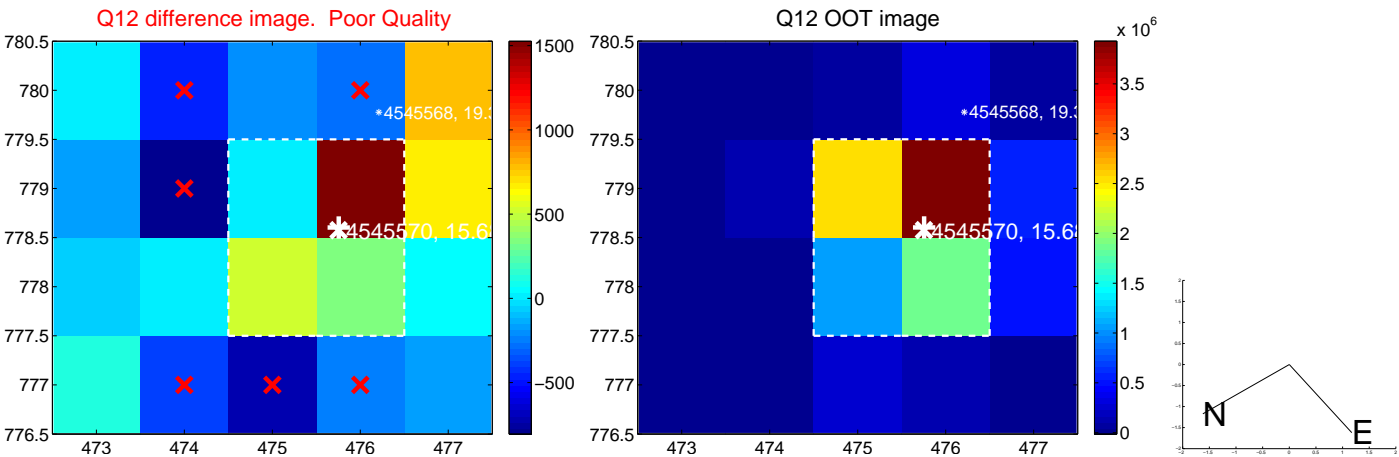
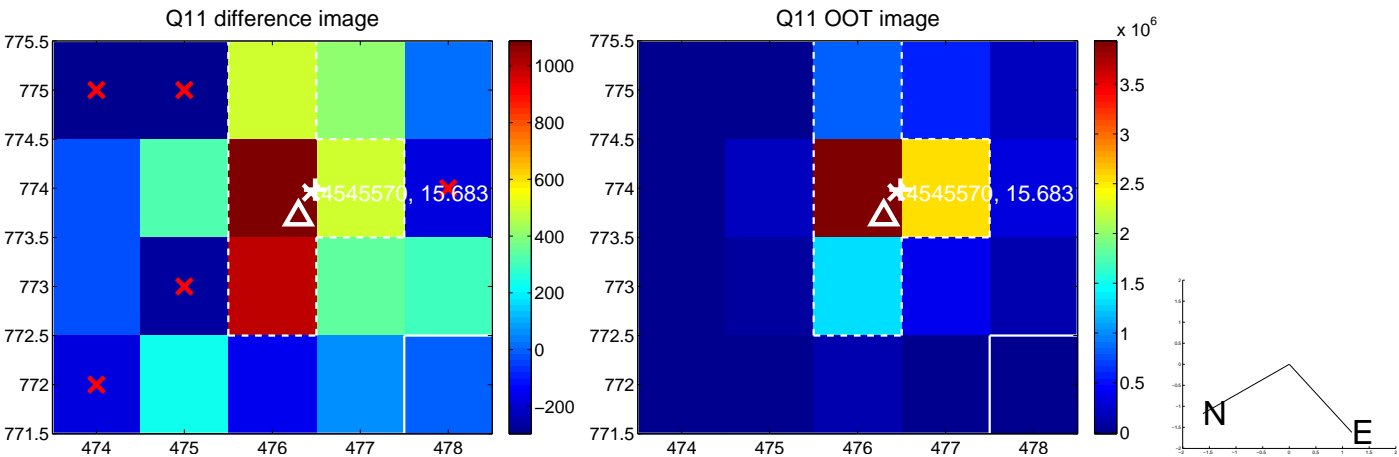
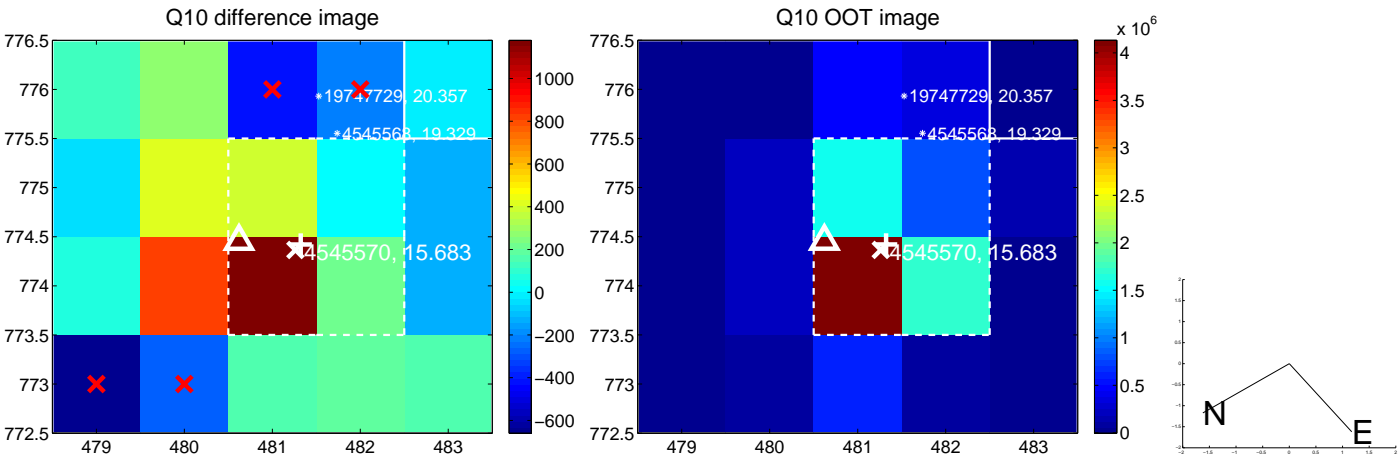
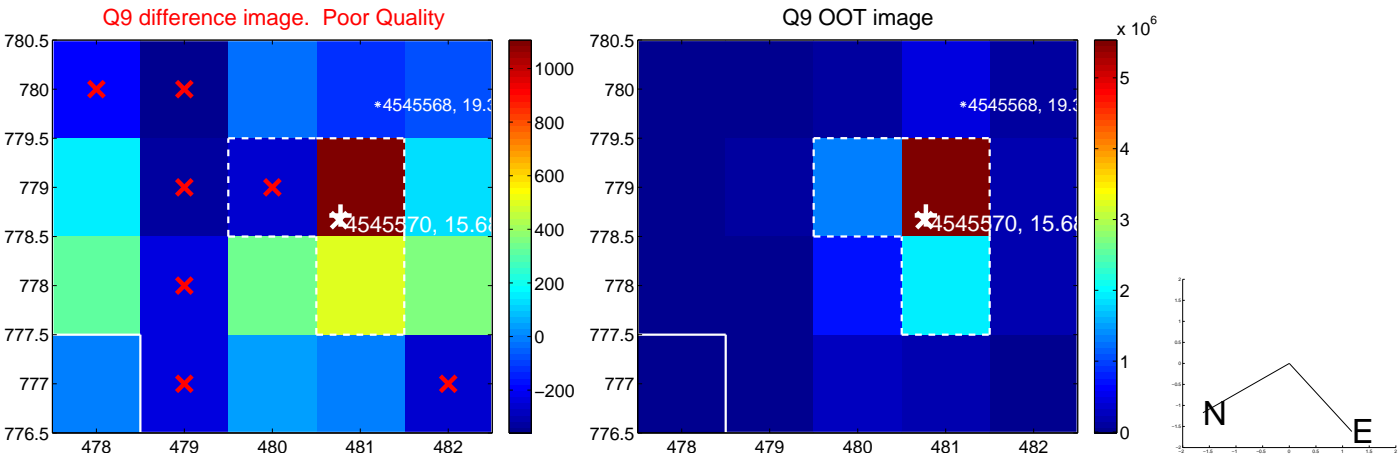
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



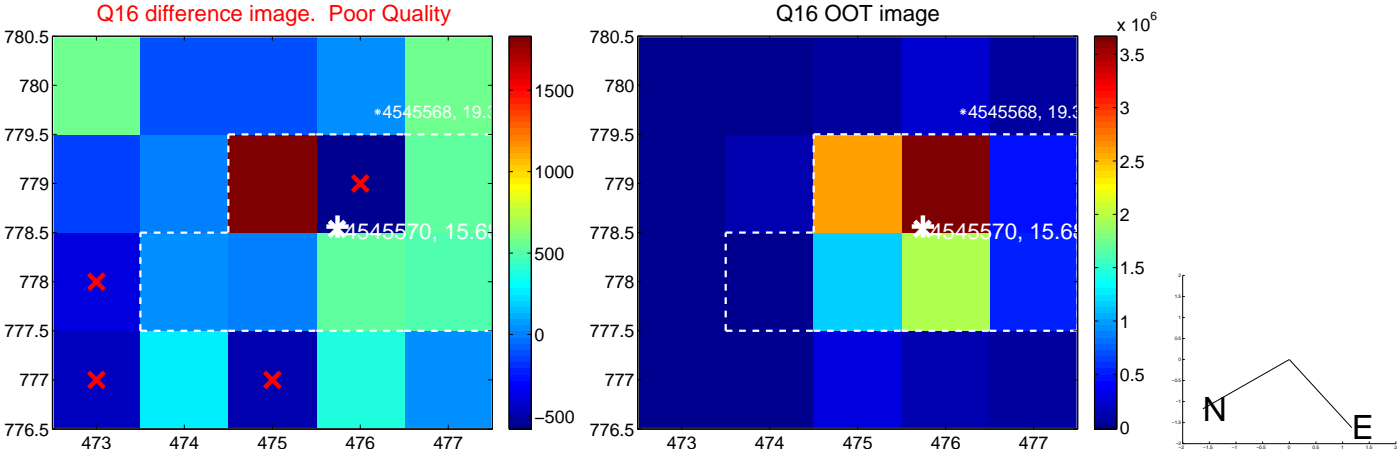
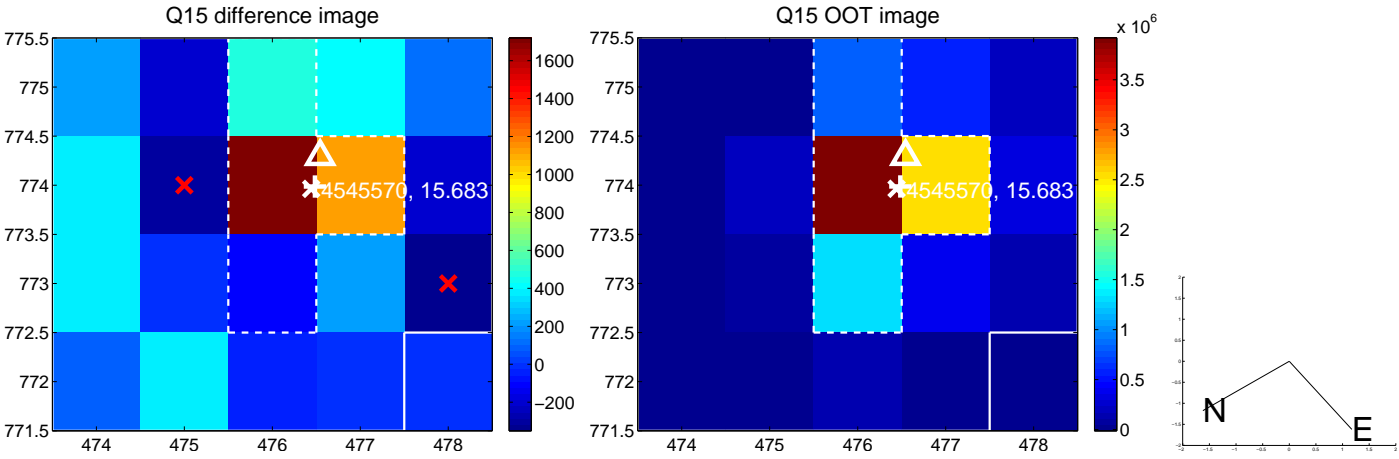
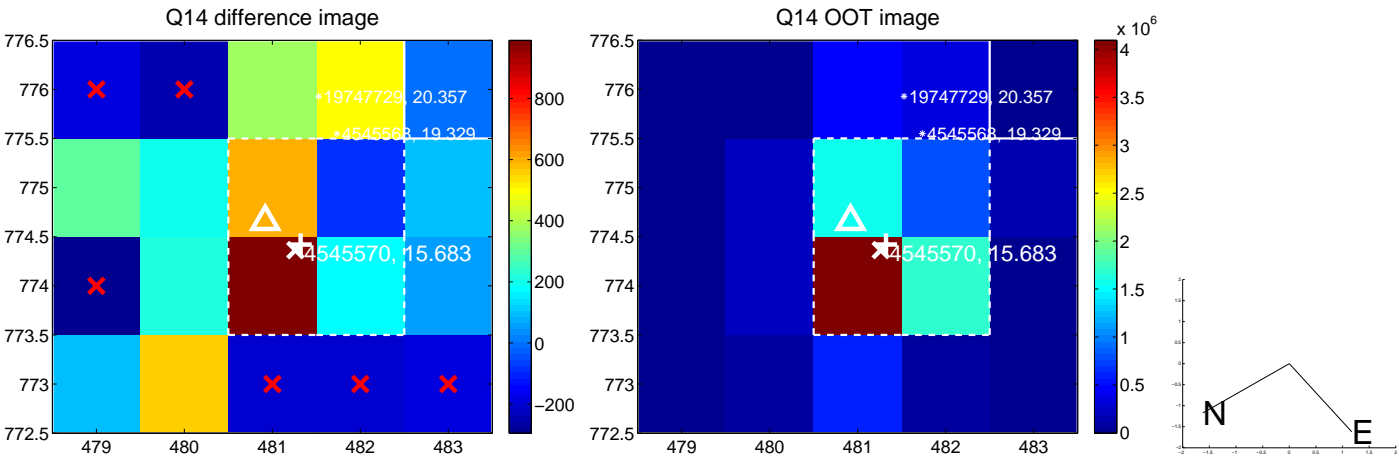
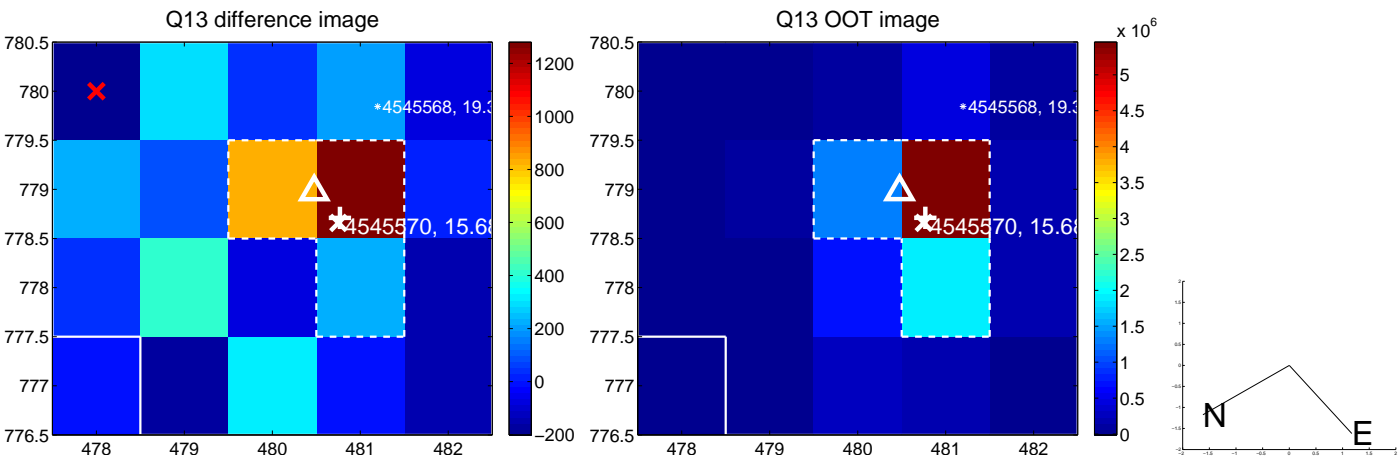
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



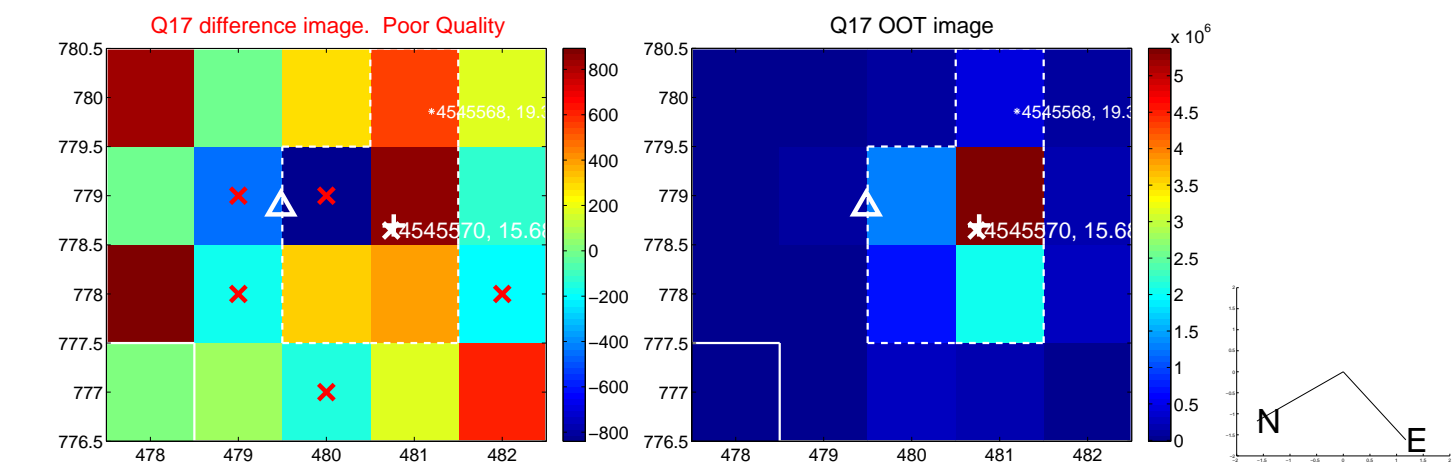
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



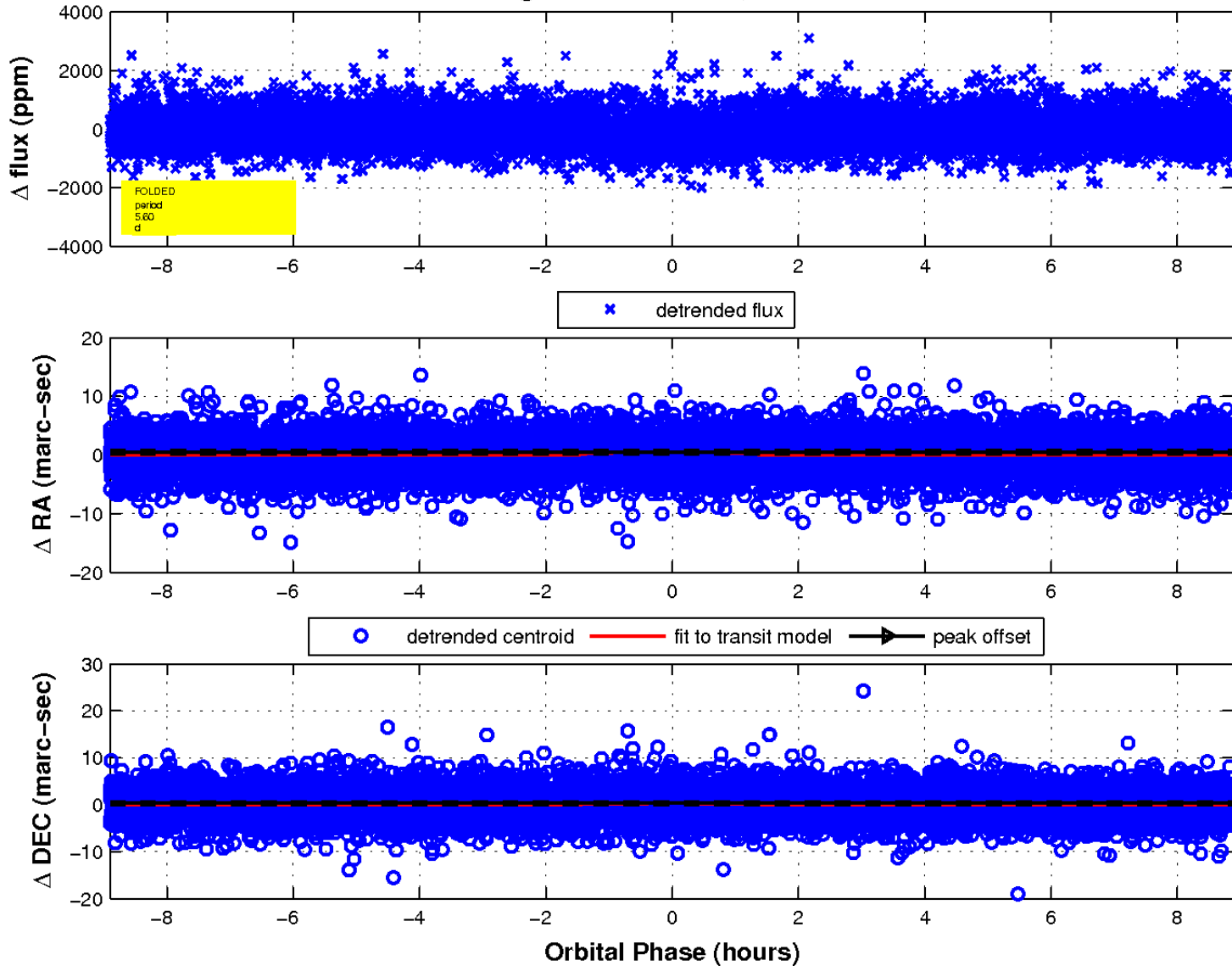
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

