

KIC 004450844

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})
004450844-01	OBS	3168.01	56.342898	163.440202	37.6	9.670	9.2	9.5	1.47	5843	1.03	28.02

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004450844-01	OBS	PC	1.00	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.

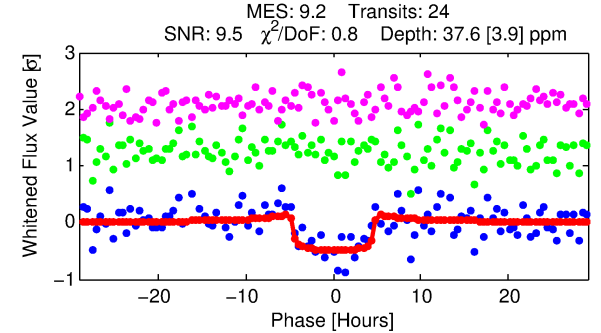
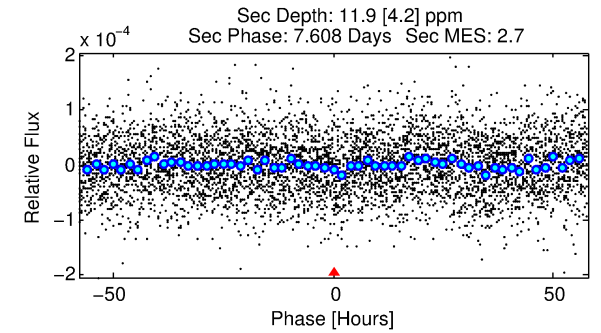
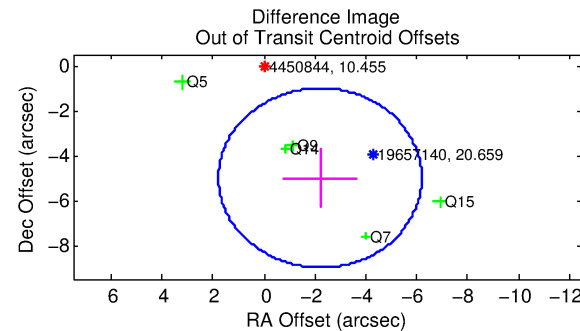
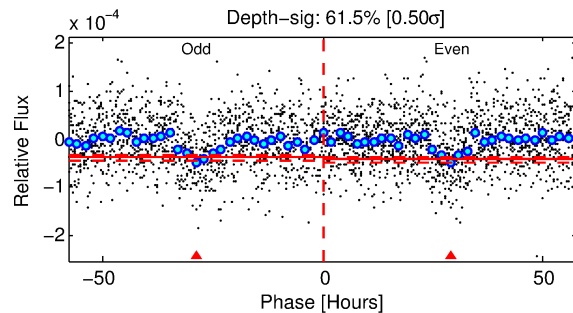
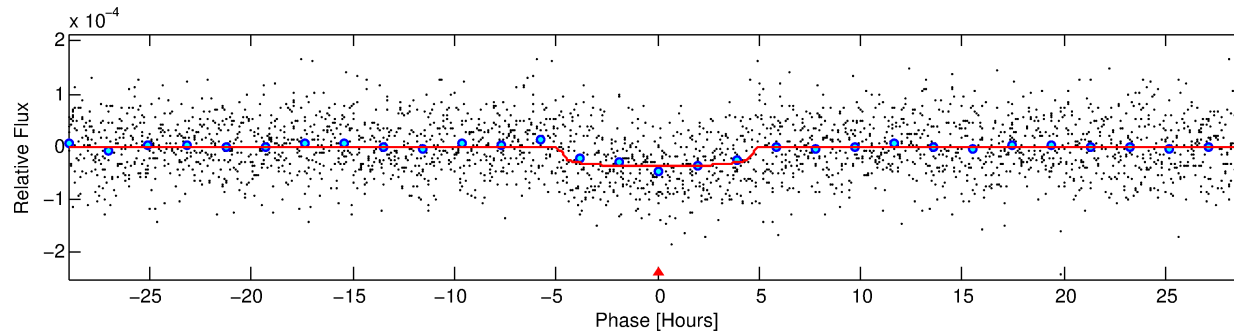
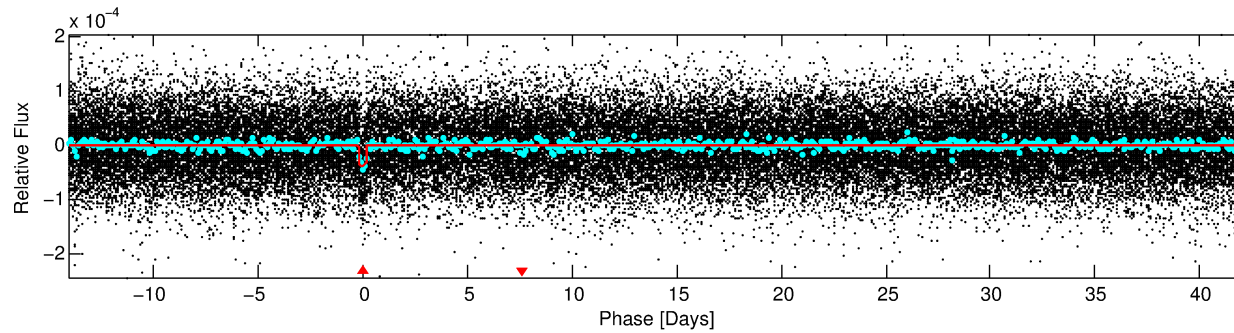
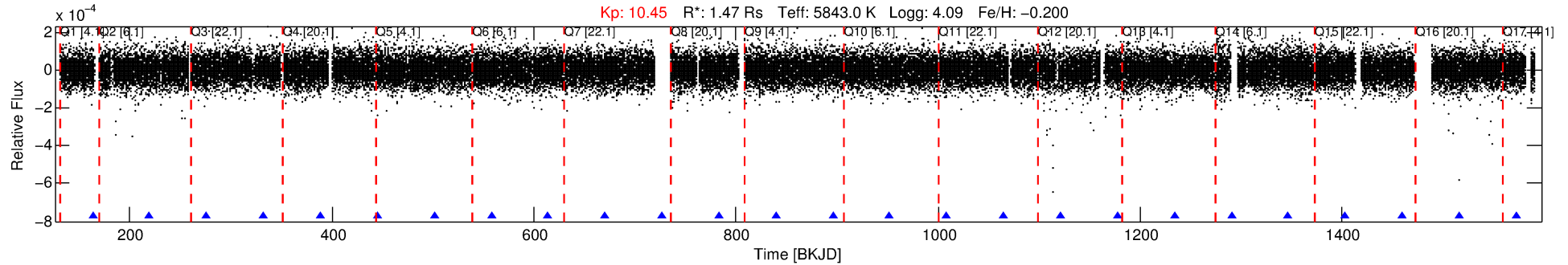
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 004450844-01

No Significant Match Found

DV One-Page Summary

KIC: 4450844 Candidate: 1 of 1 Period: 56.343 d
KOI: K03168.01 Corr: 0.905



DV Fit Results:

Period = 56.34290 [0.00086] d
Epoch = 163.4402 [0.0125] BKJD
Rp/R* = 0.0064 [0.0019]
a/R* = 23.44 [34.12]
b = 0.86 [0.45]
Seff = 28.02 [1.75]
Teq = 587 [9] K
Rp = 1.03 [0.31] Re
a = 0.2840 [0.0080] AU
Ag = 496.73 [346.25] [1.43σ]
Teffp = 4282 [748] K [4.94σ]

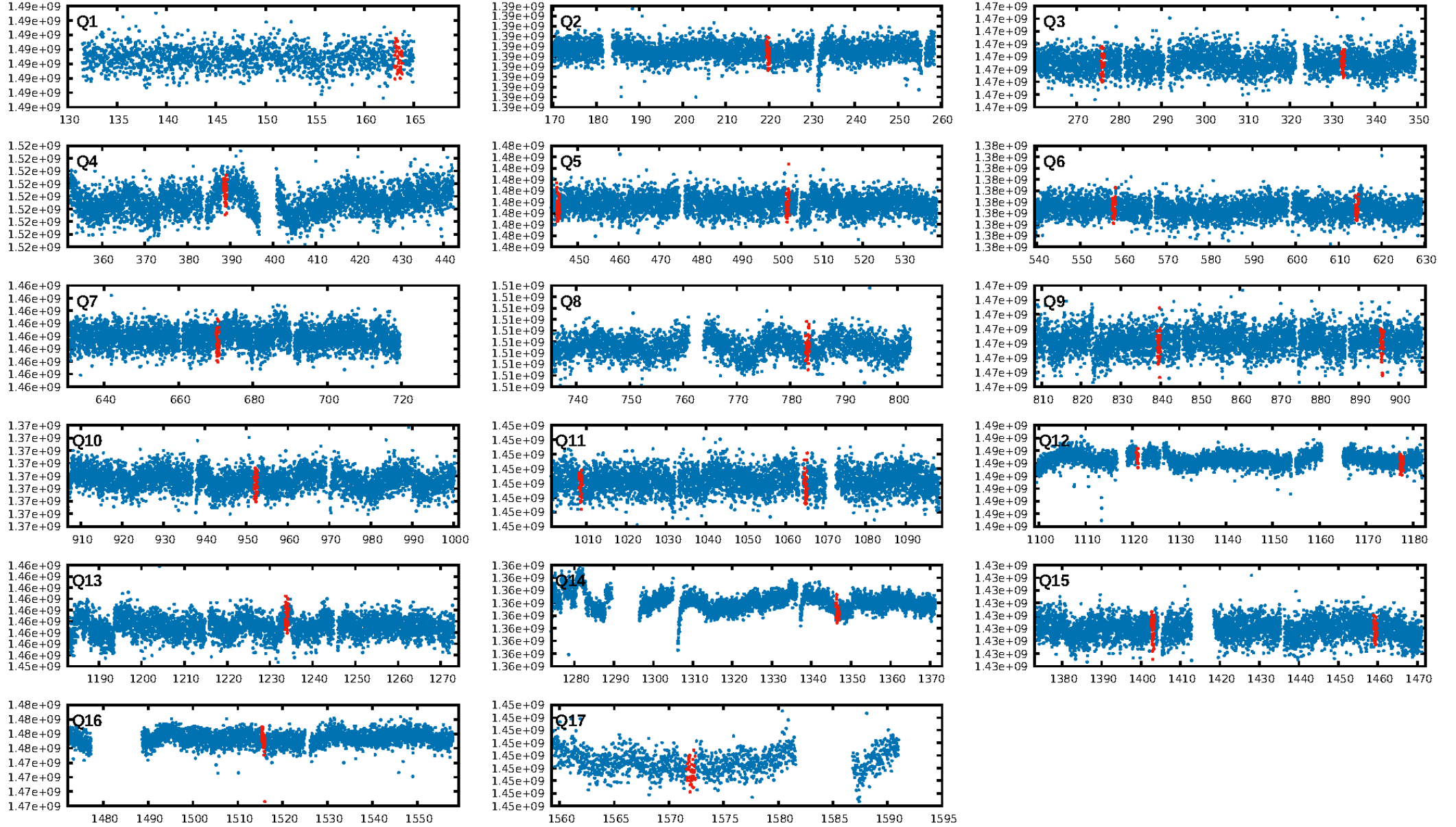
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 84.1%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.54e-17
RollingBand-fgt: 1.00 [22/22]
GhostDiagnostic-chr: 3.827
Centroid-sig: 15.1%
Centroid-so: 2.462 arcsec [1.19σ]
OotOffset-rm: 5.468 arcsec [4.11σ]
KicOffset-rm: 4.355 arcsec [2.76σ]
OotOffset-st: 1/2/0/2 [5]
KicOffset-st: 1/2/0/2 [5]
DiffImageQuality-fgm: 0.40 [2/5]
DiffImageOverlap-fno: 1.00 [14/14]

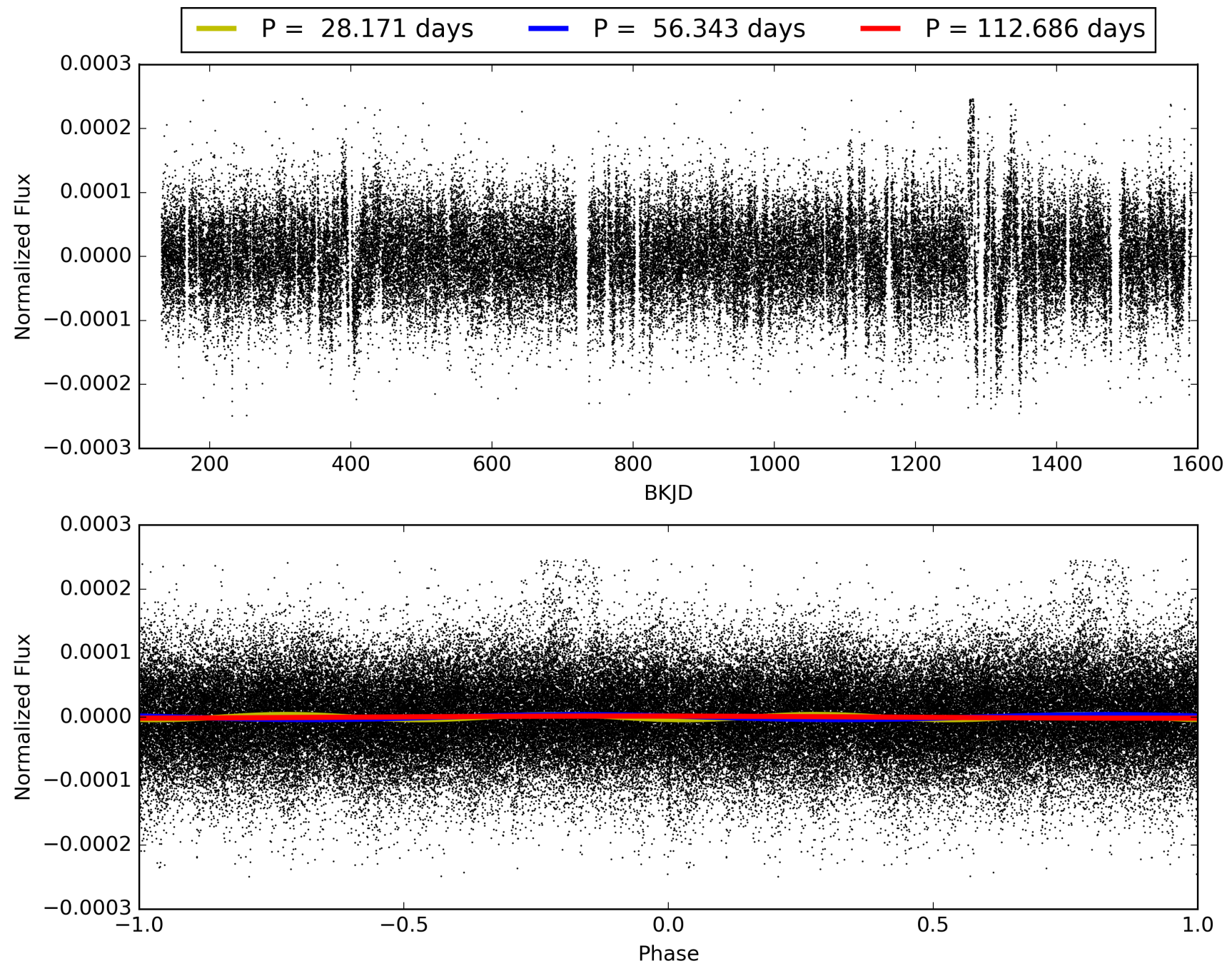
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 22:19:00 Z

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

TCE 004450844-01, PDC Light Curves

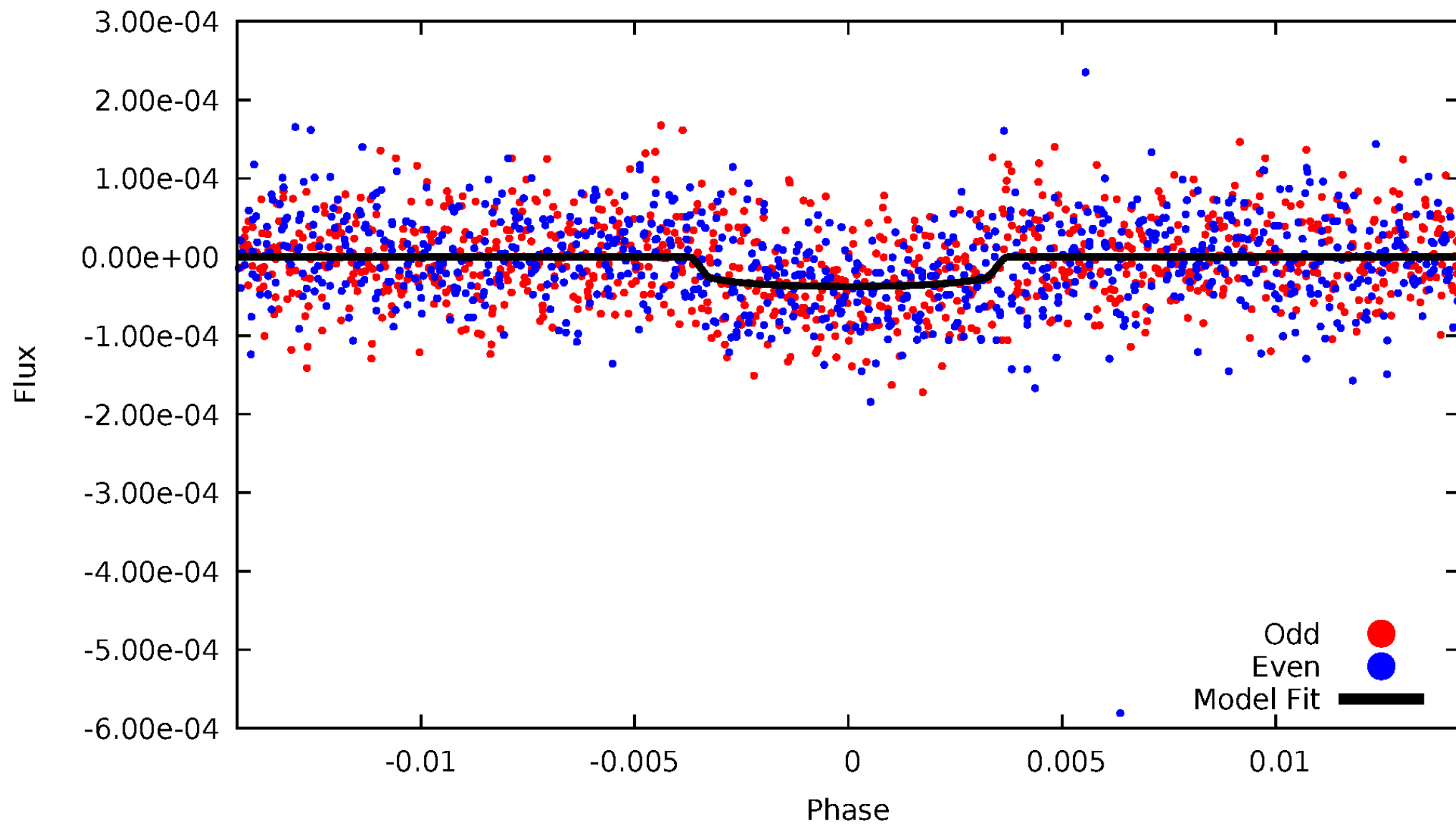


TCE 004450844-01



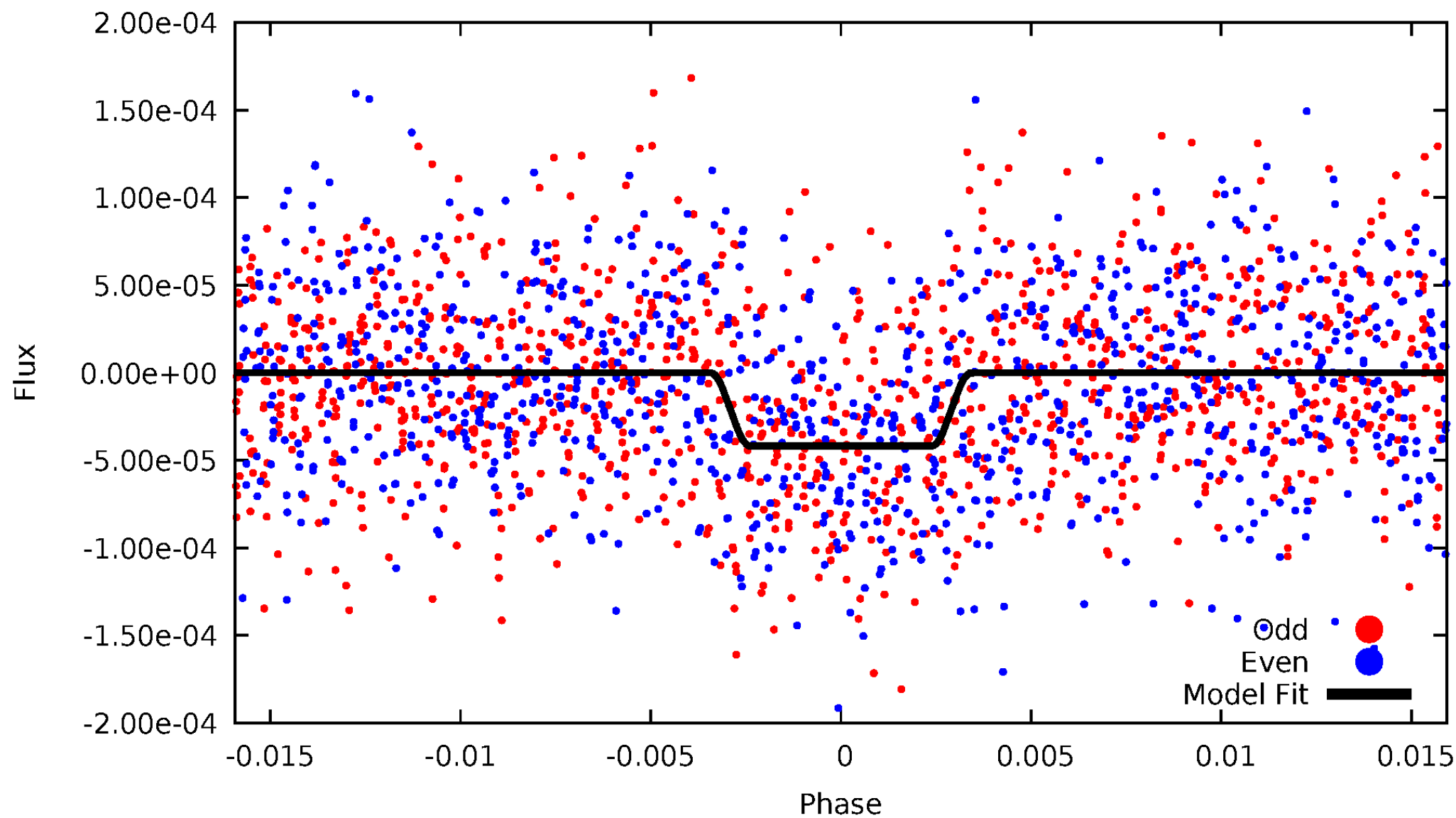
DV Odd/Even

TCE 004450844-01

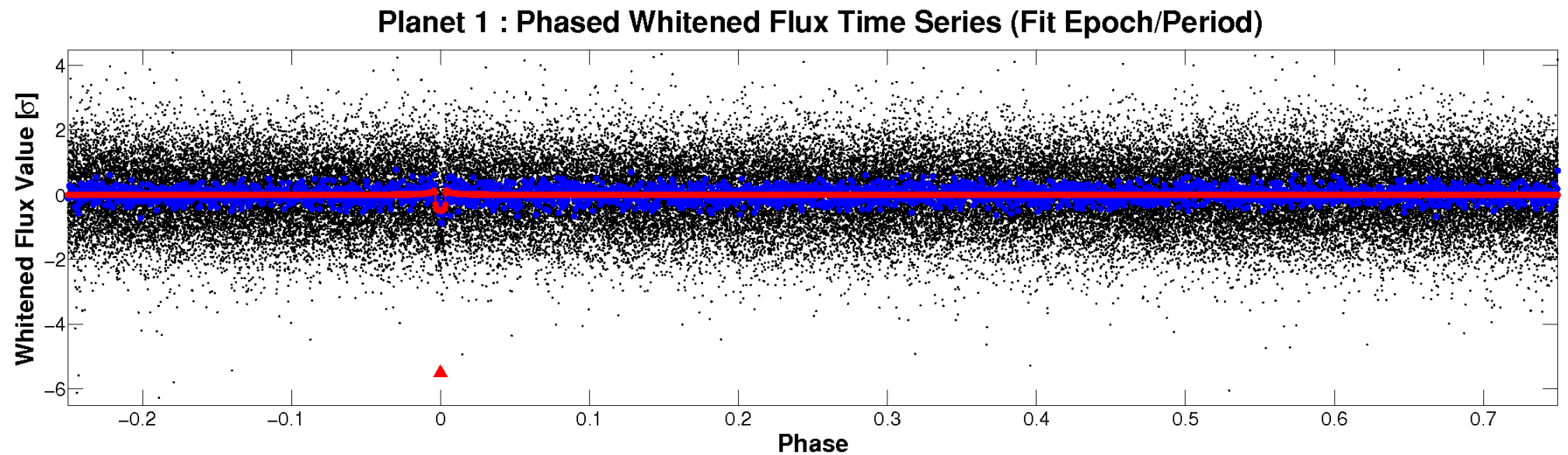
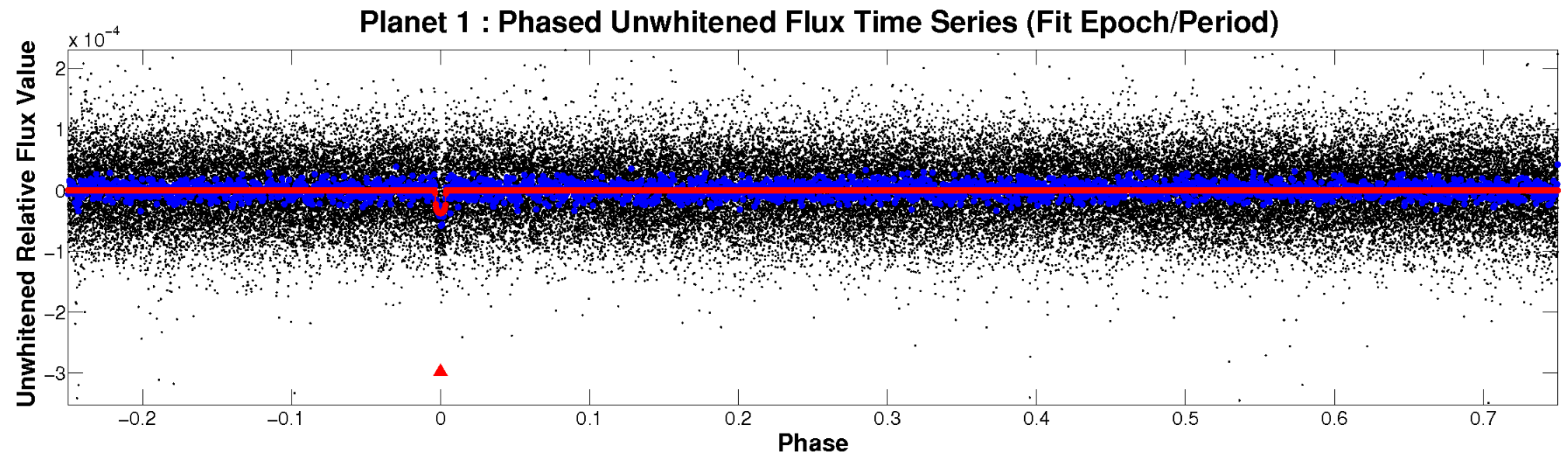


ALT Odd/Even

TCE 004450844-01

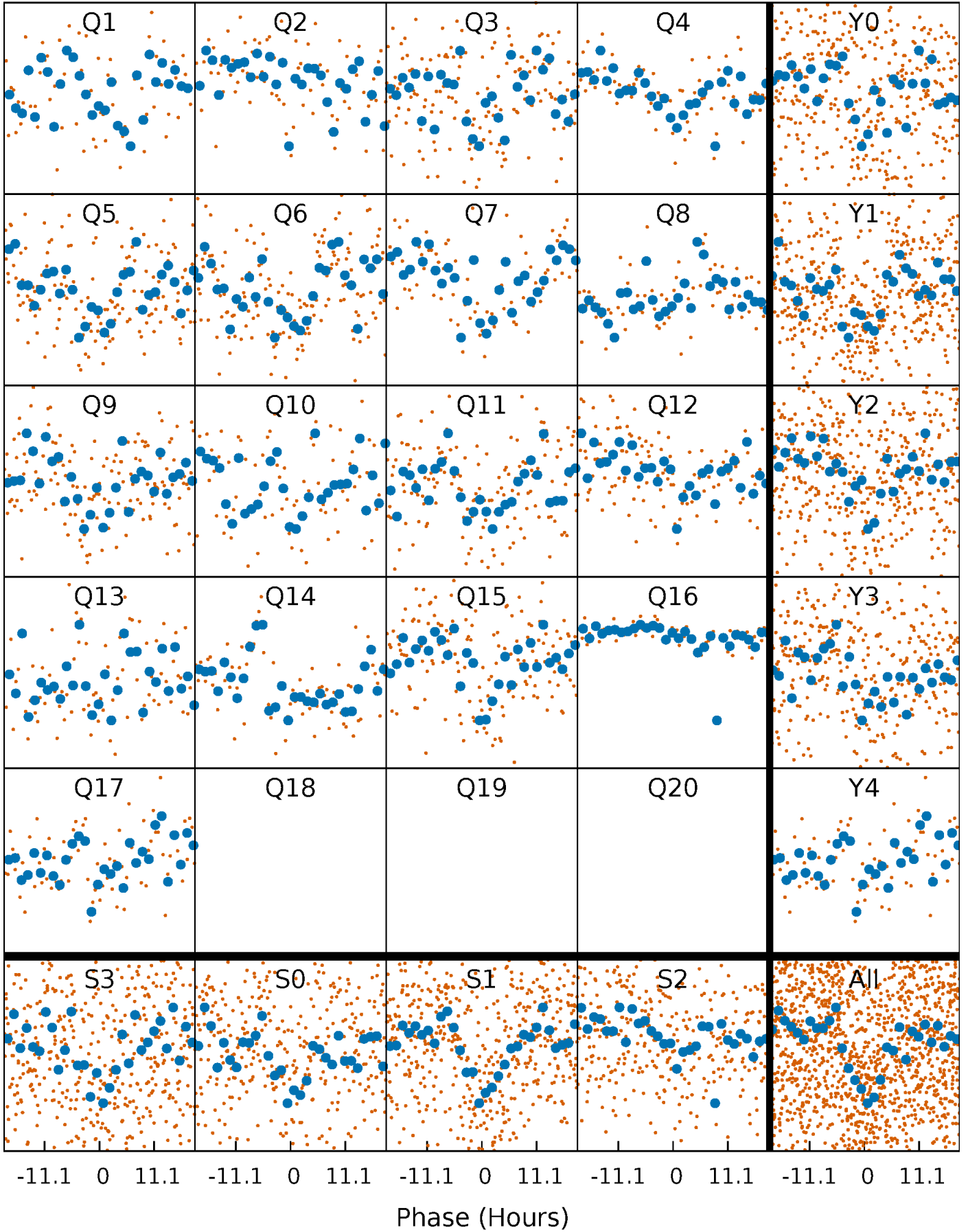


Non-Whitened Vs. Whitened Light Curve



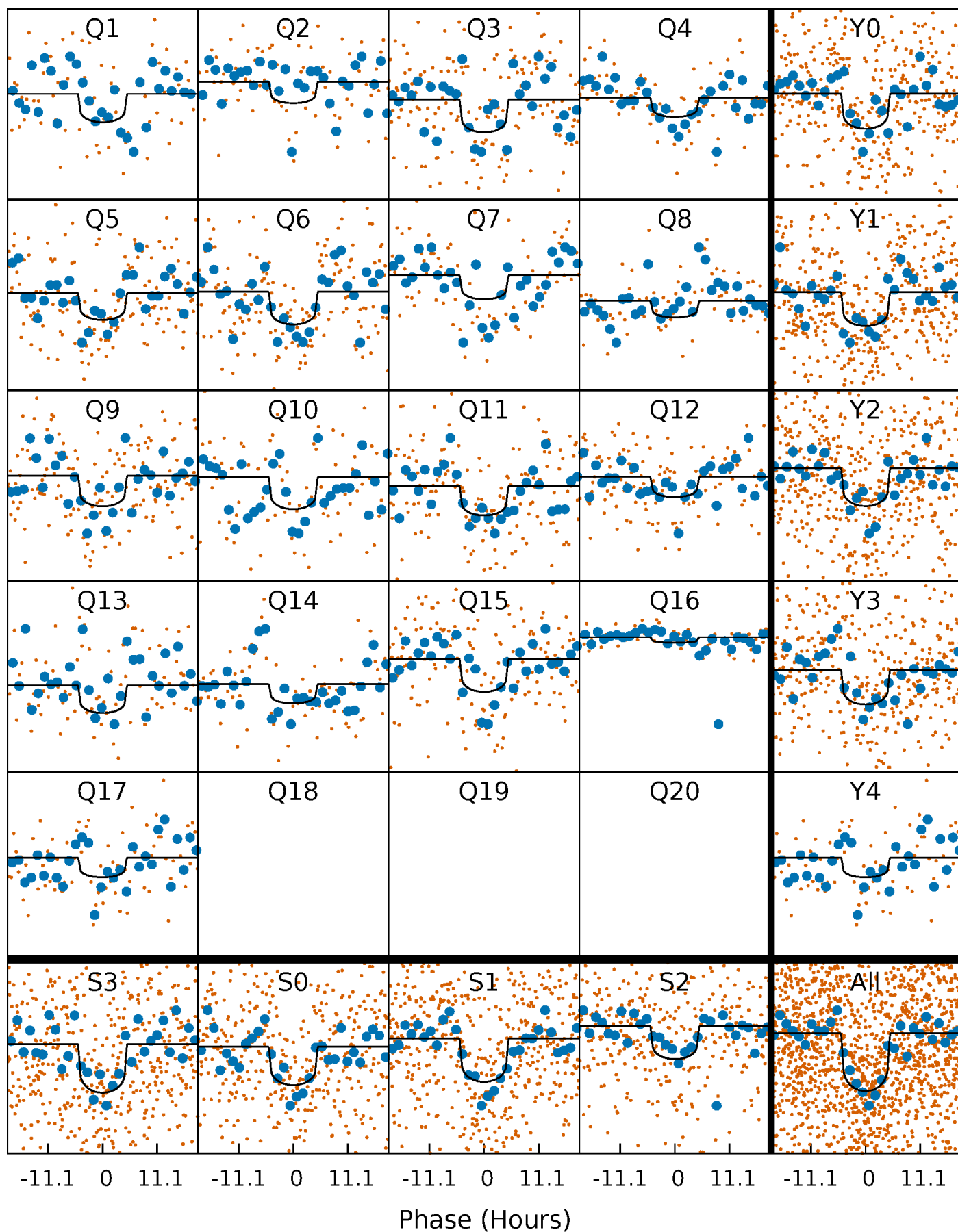
PDC Quarter-Phased Transit Curves

TCE 004450844-01 P= 56.342898 Days $T_0=163.440202$ (BKJD)



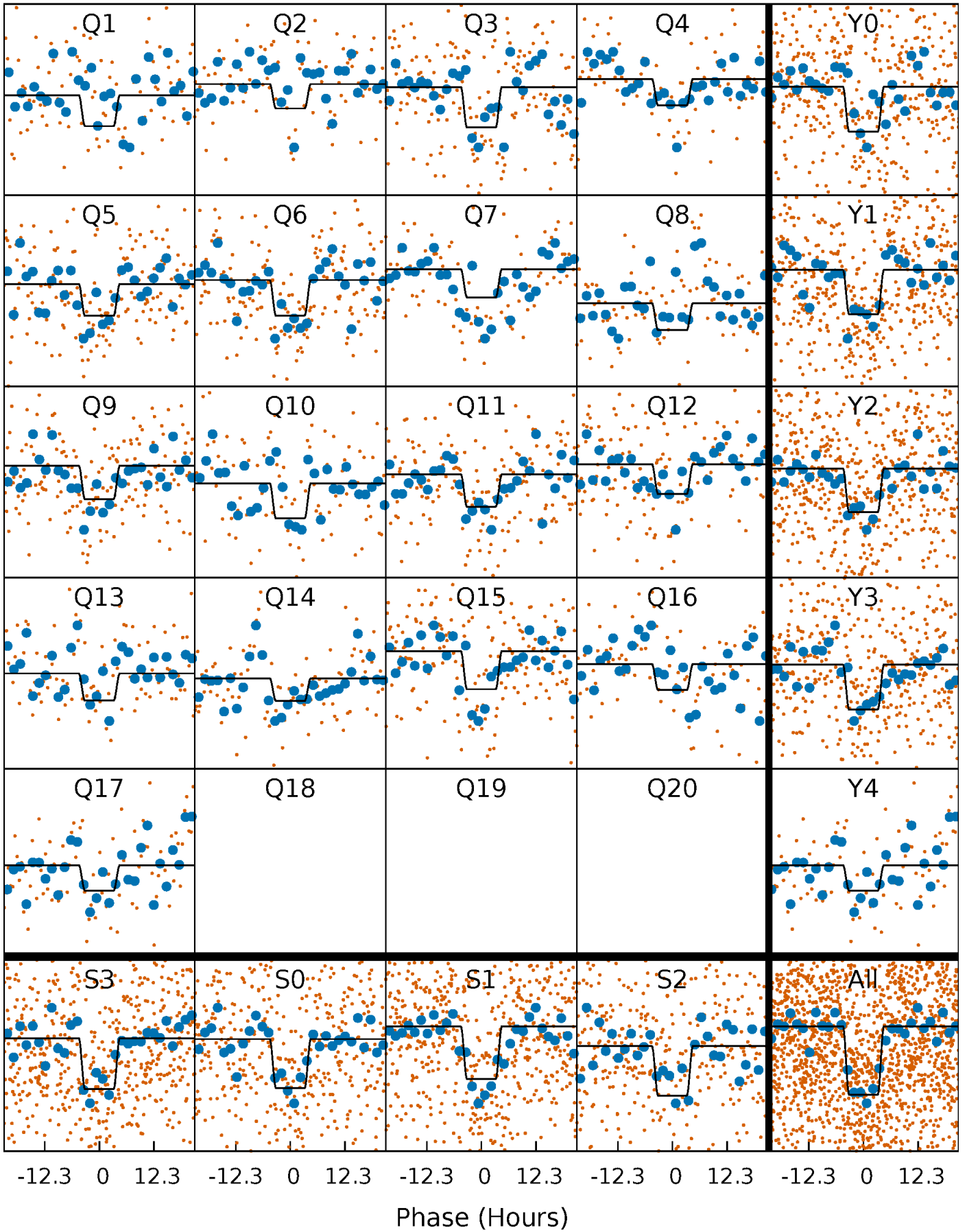
DV Quarter-Phased Transit Curves

TCE 004450844-01 P= 56.342898 Days $T_0=163.440202$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

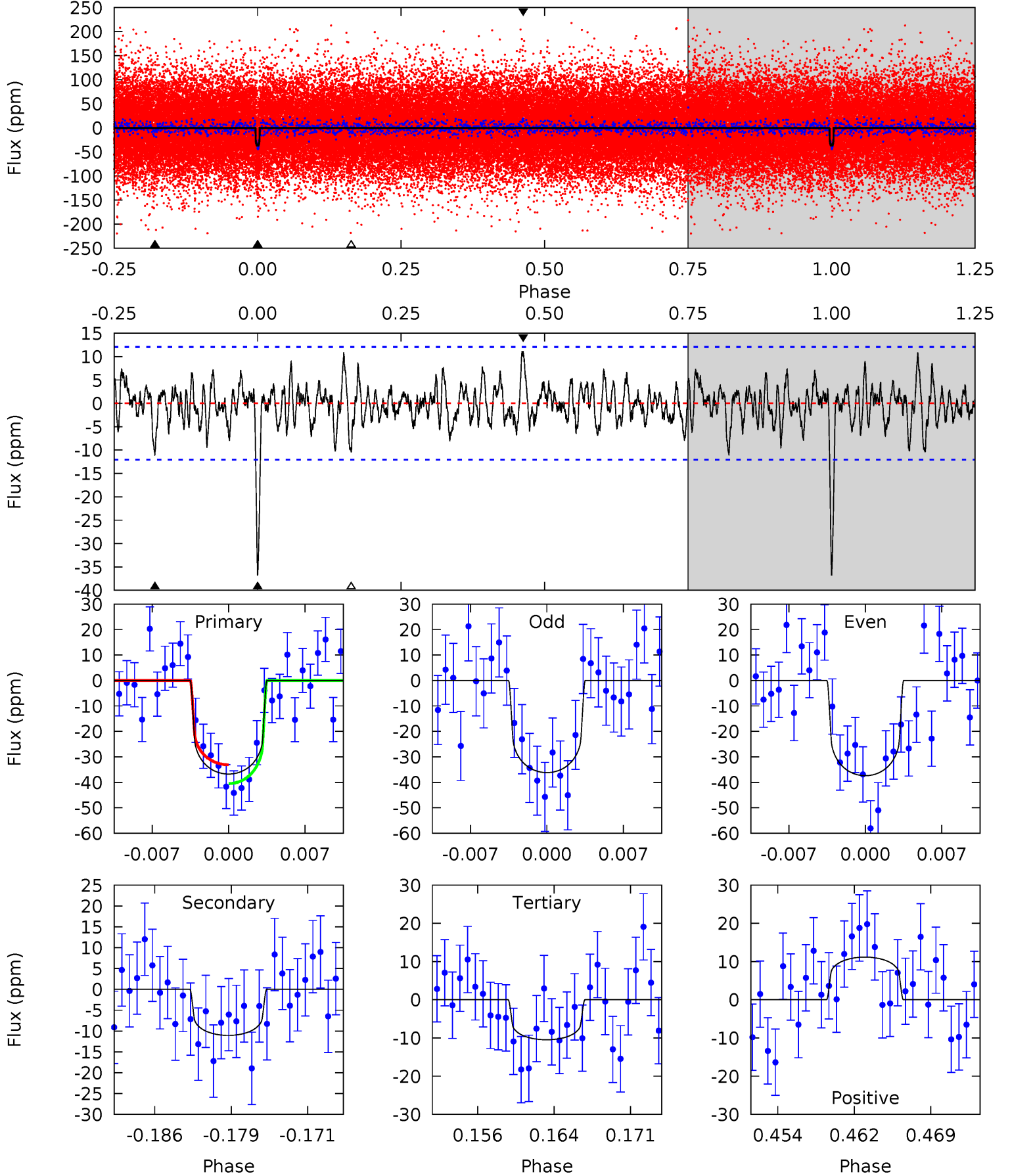
TCE 004450844-01 P= 56.345622 Days $T_0=163.413342$ (BKJD)



DV Model-Shift Uniqueness Test

004450844-01, $P = 56.342898$ Days, $E = 107.097304$ Days

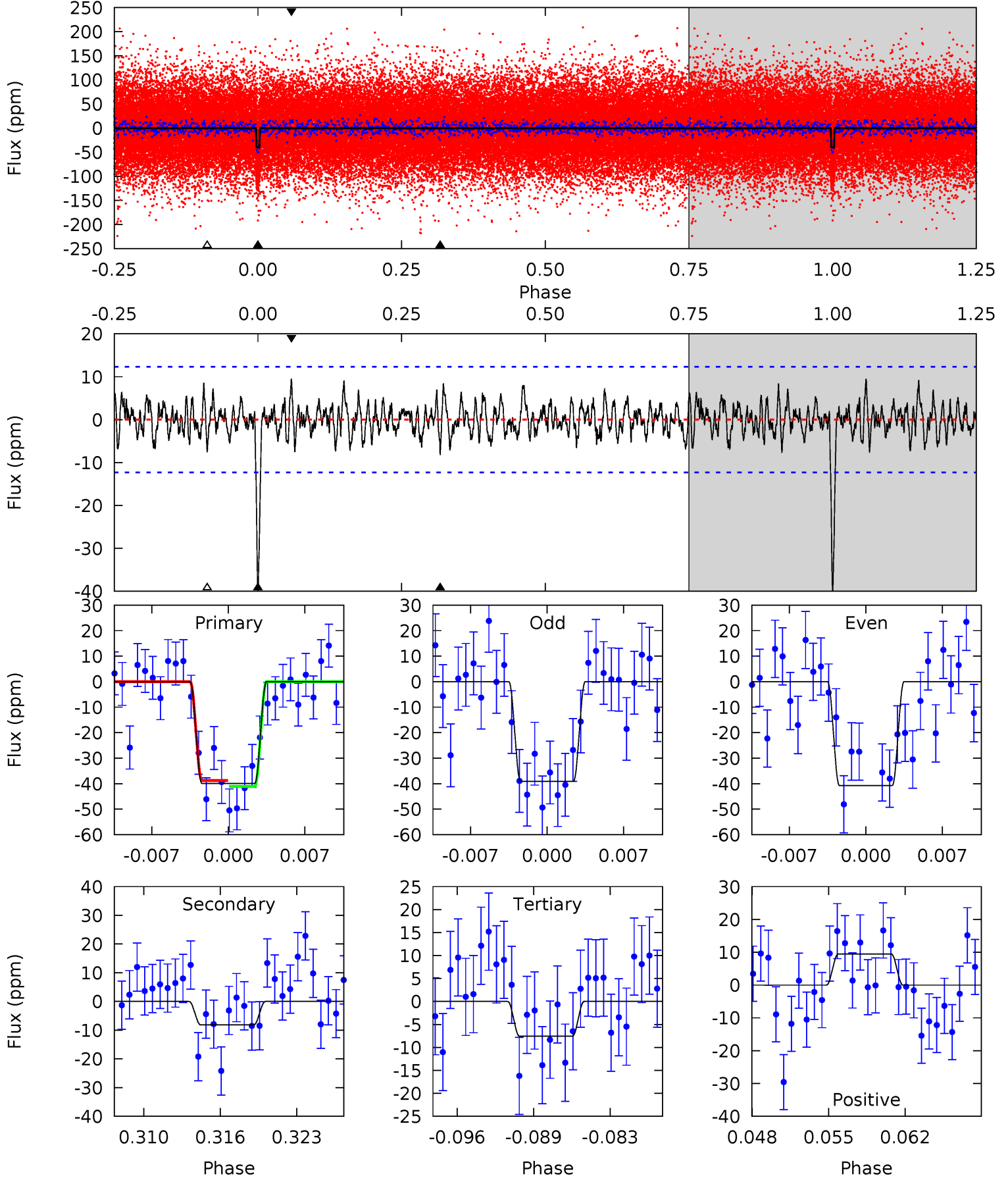
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.5	4.66	4.41	4.70	5.08	2.68	1.43	11.1	10.8	0.24	-0.04	0.25	1.02	0.23	1.56



Alt Model-Shift Uniqueness Test

004450844-01, P = 56.345622 Days, E = 107.067720 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
16.5	3.39	3.13	3.93	5.10	2.70	1.21	13.4	12.6	0.26	-0.54	0.33	0.98	0.19	0.49



Stellar Parameters For KIC 004450844

	$T_{\text{eff}}(K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5843^{+78}_{-78}	$4.086^{+0.012}_{-0.010}$	$-0.200^{+0.150}_{-0.150}$	$1.471^{+0.053}_{-0.059}$	$0.963^{+0.067}_{-0.067}$	$0.426^{+0.025}_{-0.019}$
	+1%/-1%	+0%/-0%	+75%/-75%	+4%/-4%	+7%/-7%	+6%/-4%
Source	SPE72	AST10	SPE72	DSEP		

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

Secondary Eclipse Parameters for KIC 004450844-01 / KOI 3168.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-11 ± 2	$1.03^{+0.32}_{-0.31}$	819^{+13}_{-13}	4379^{+748}_{-444}	446^{+511}_{-198}
Alt.	-8 ± 2	$1.04^{+0.31}_{-0.29}$	818^{+13}_{-12}	4146^{+626}_{-453}	333^{+357}_{-163}

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

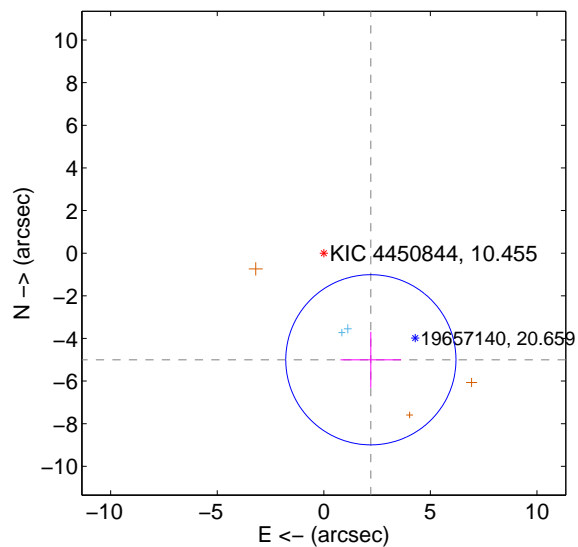
Supplemental centroid analysis for 004450844-01. **Kepler magnitude: 10.46.** Transit SNR 9.46

There are 2 quarters with good PRF difference image offsets

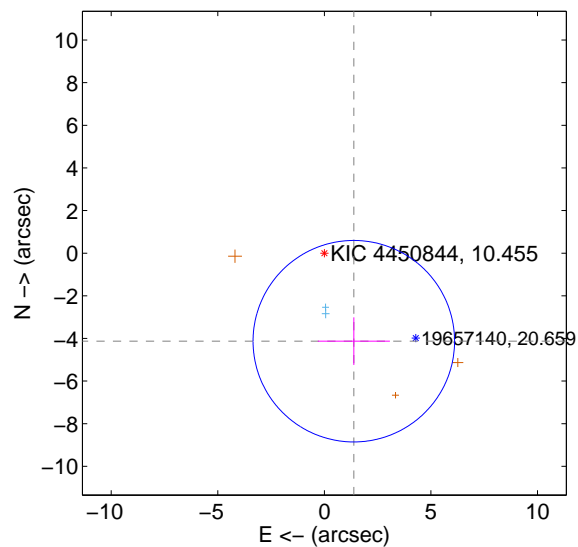
The direct PRF centroid is offset from the target star catalog position by about 1.15 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	5.468 ± 1.331	4.11	-2.208 ± 1.424	-5.002 ± 1.312
PRF-fit source offset from KIC position	4.355 ± 1.576	2.76	-1.382 ± 1.693	-4.130 ± 1.118
photometric centroid source offset	2.46 ± 2.07	1.19	-1.52 ± 2.19	1.94 ± 1.99

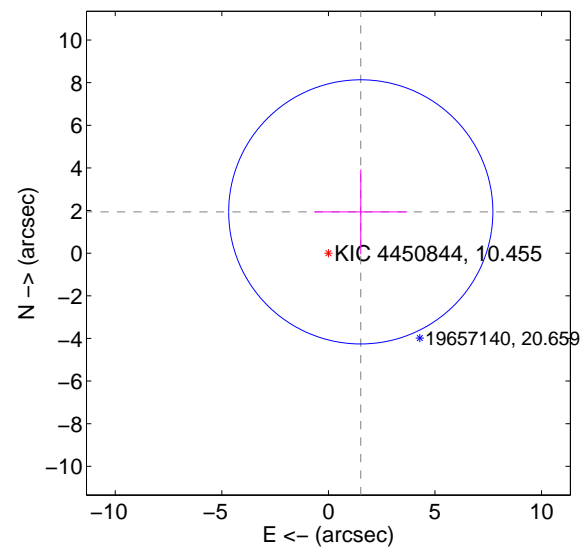
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

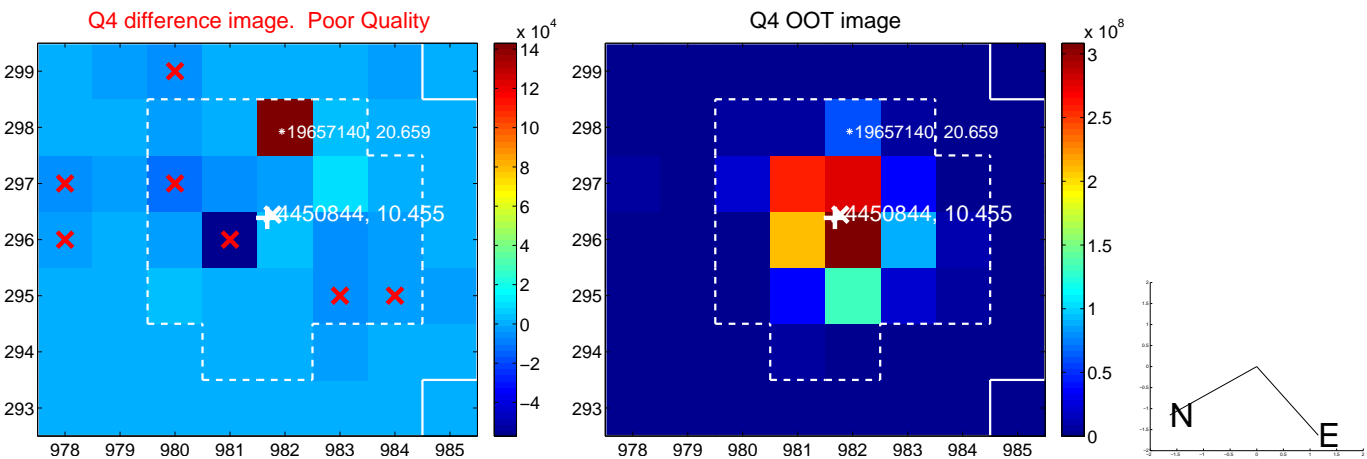
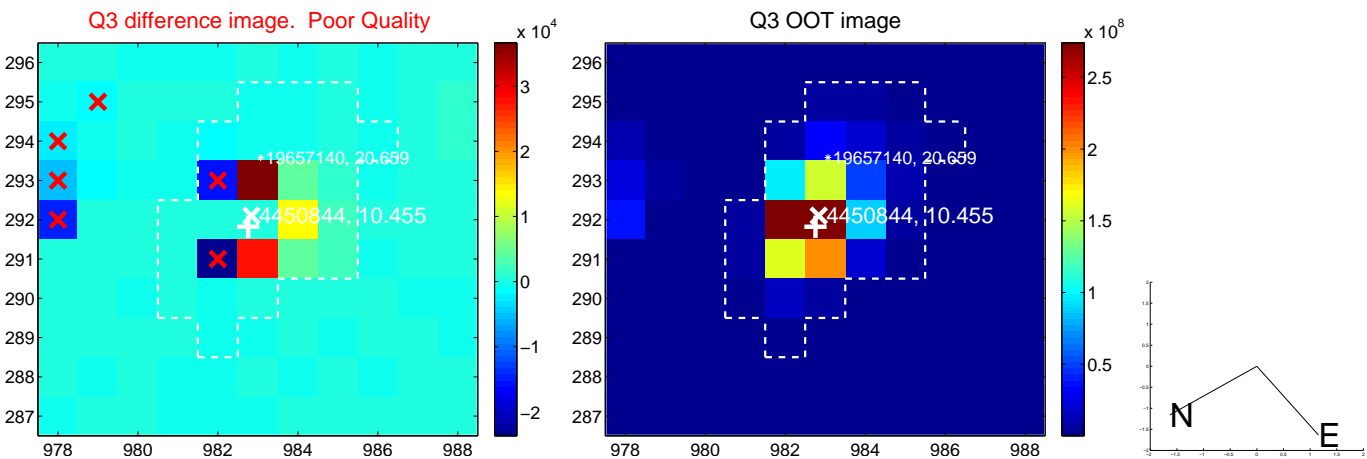
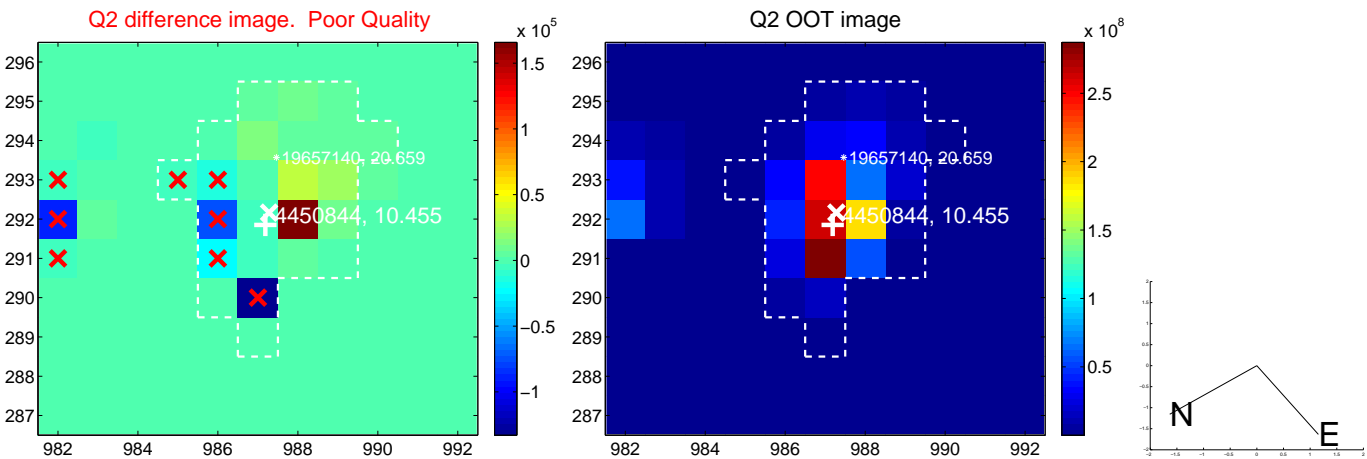
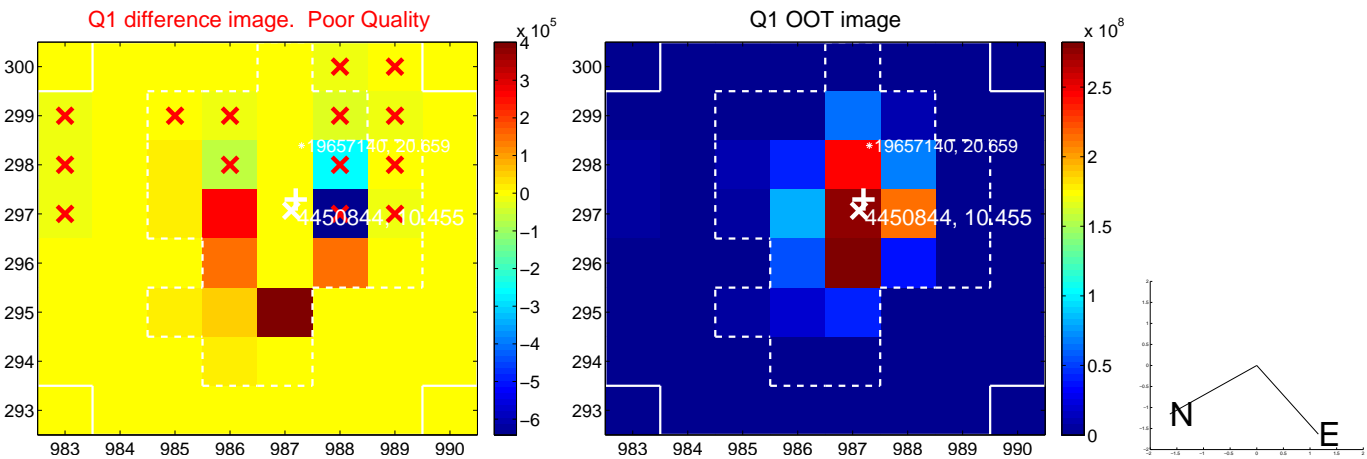


offset from photometric centroids

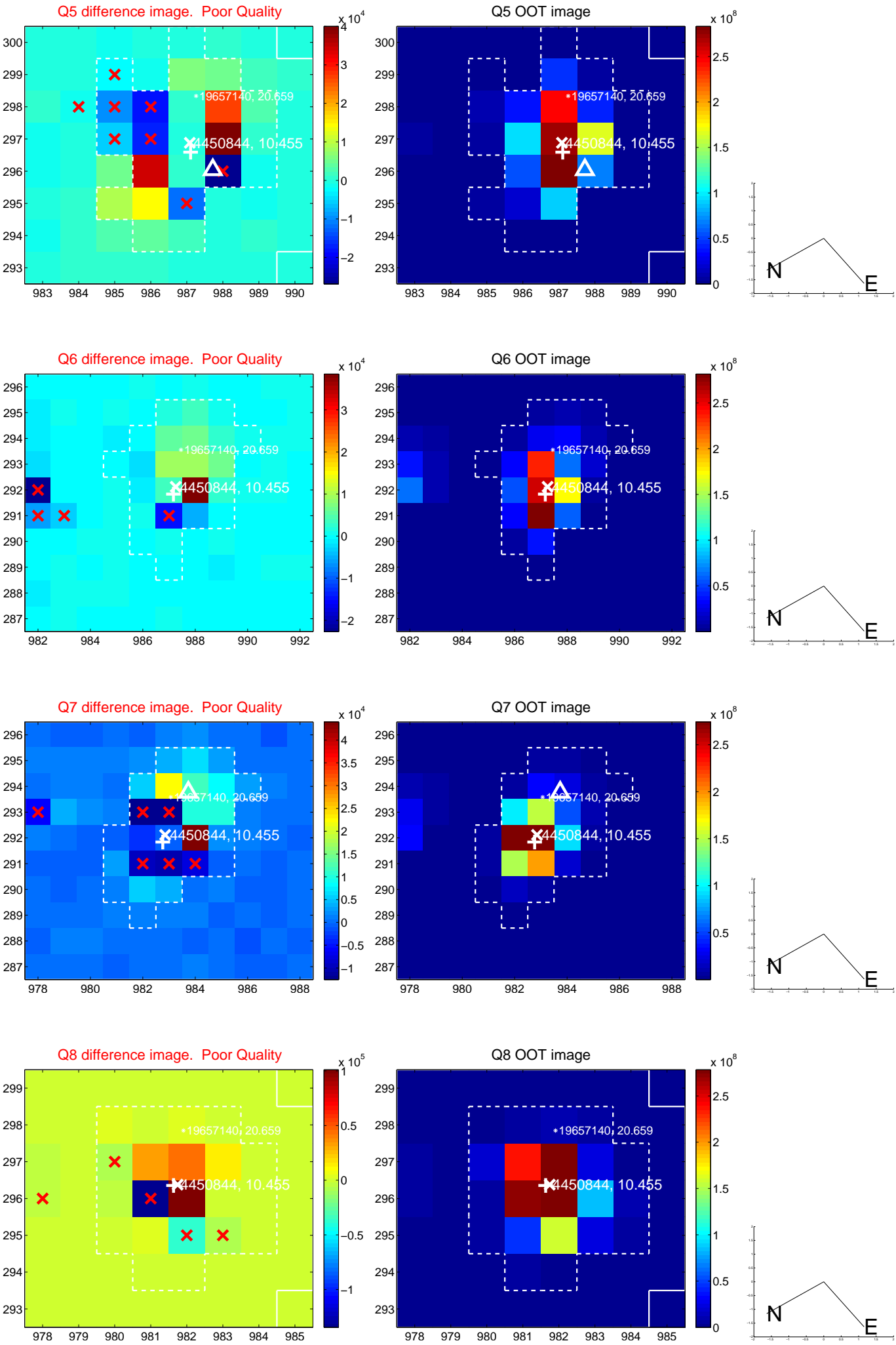


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

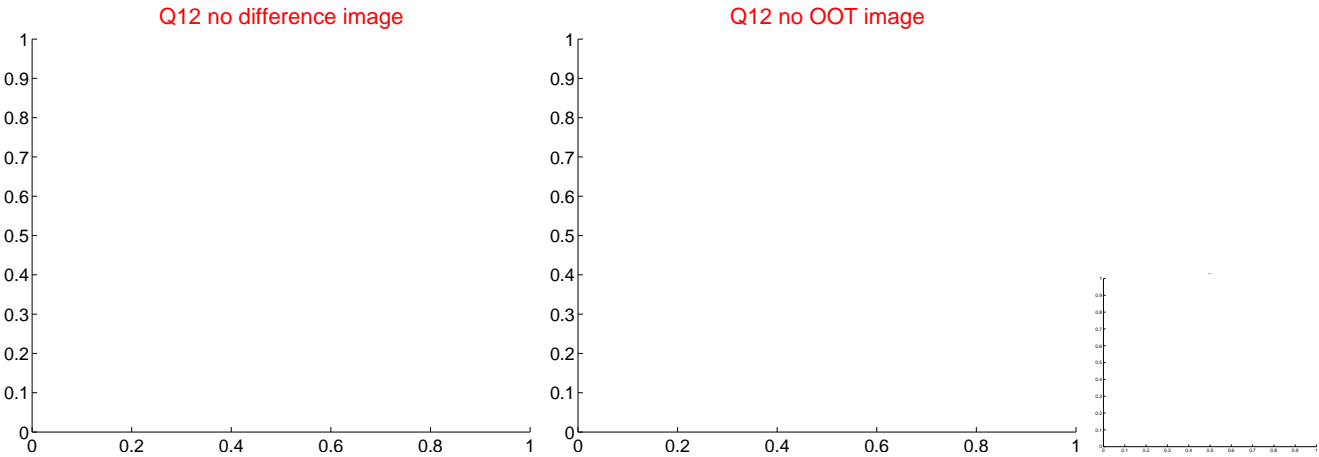
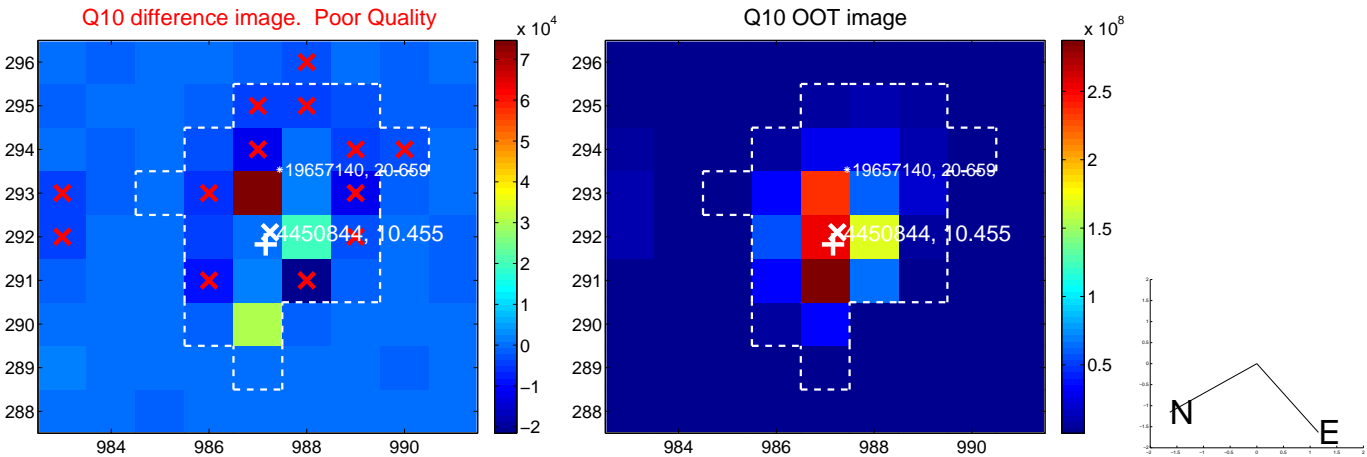
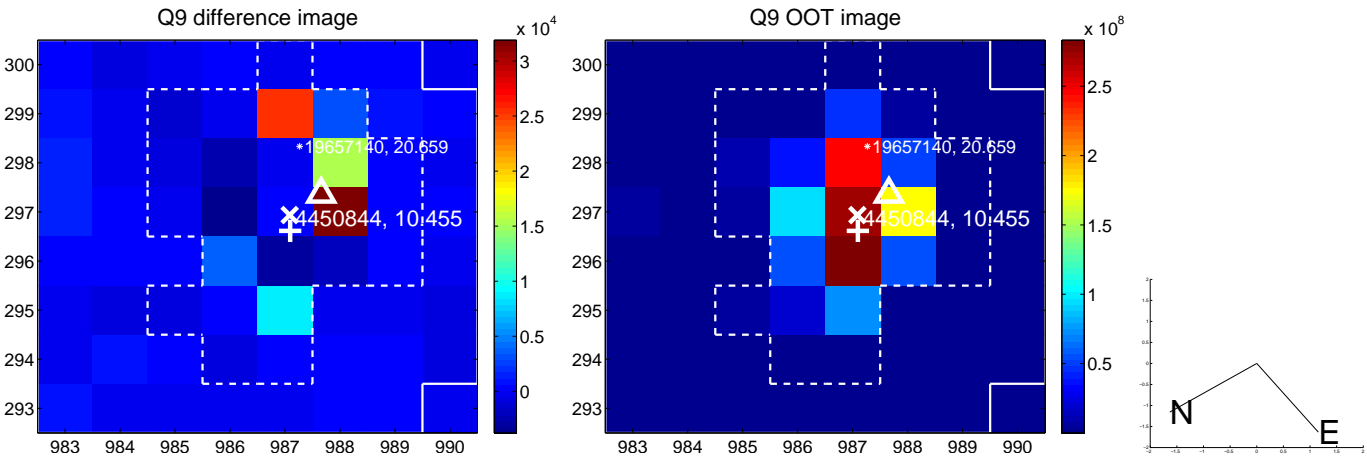
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



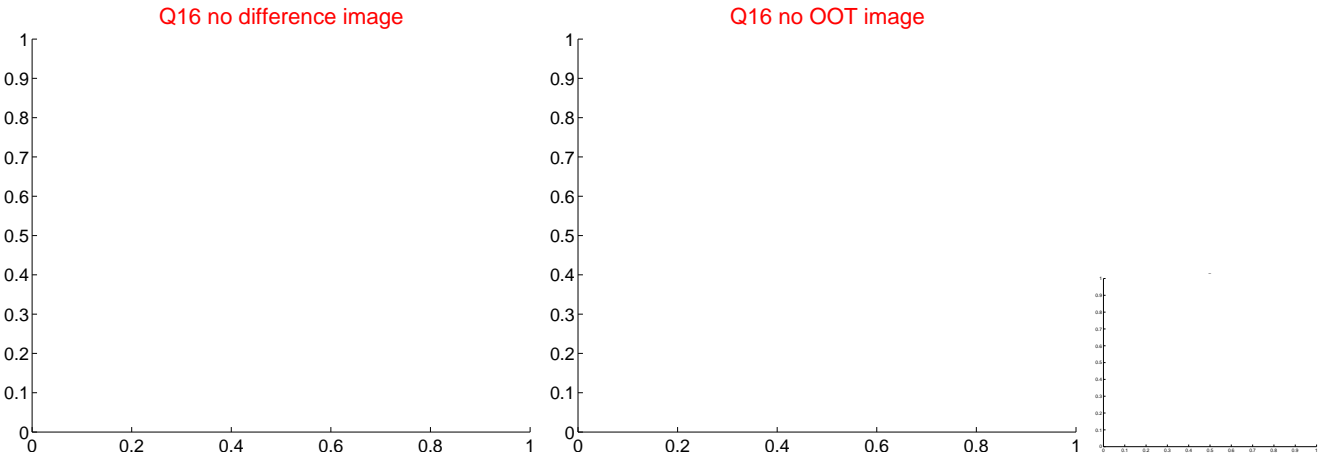
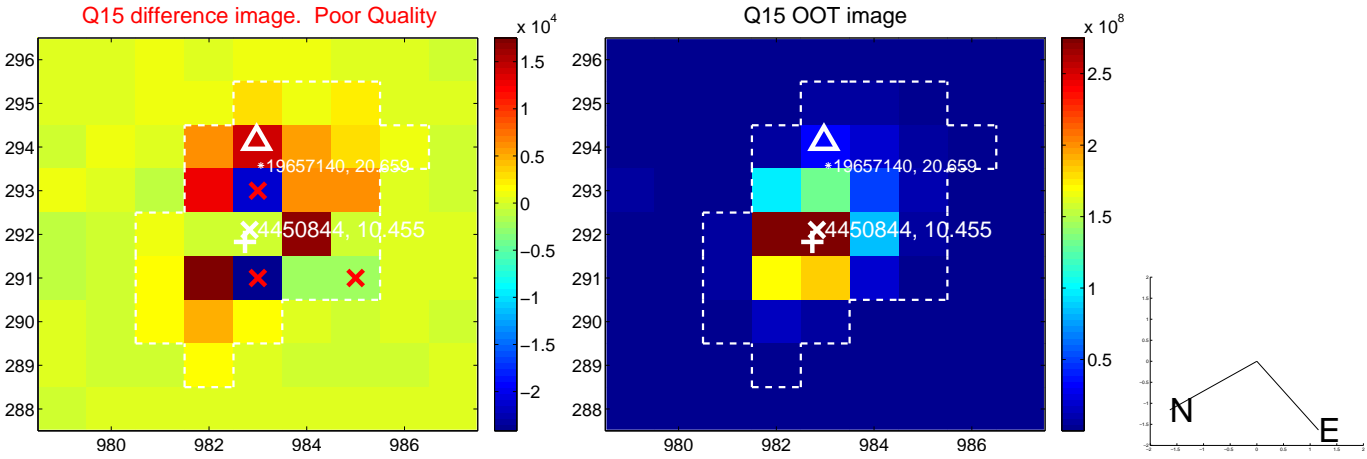
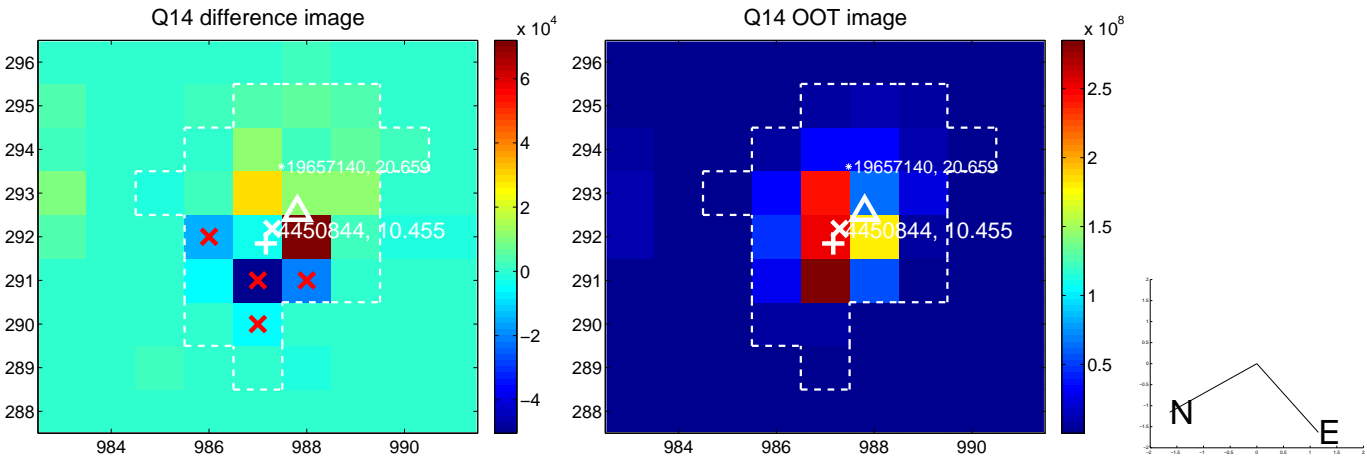
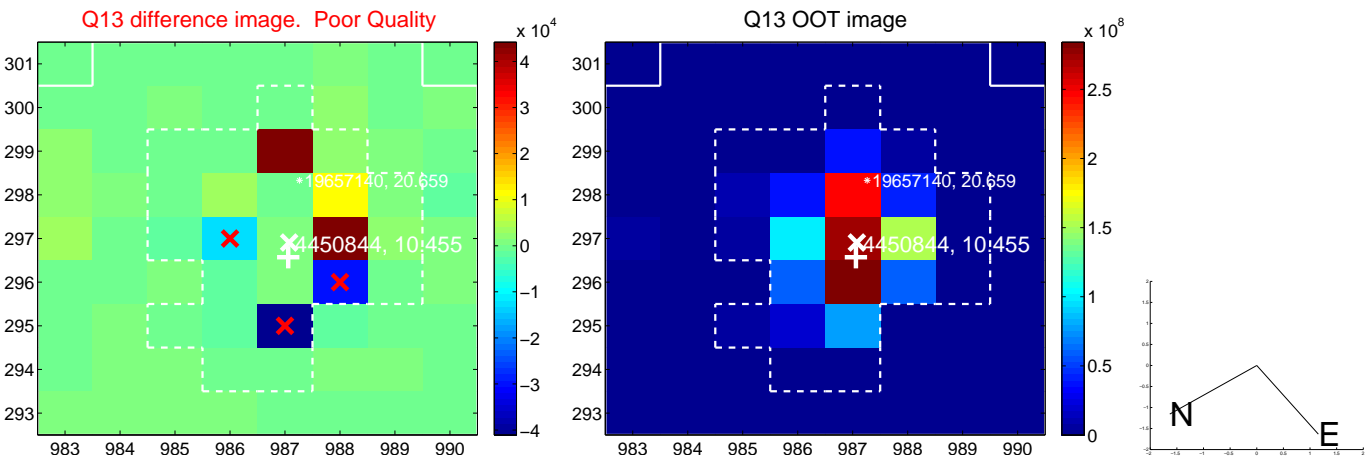
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



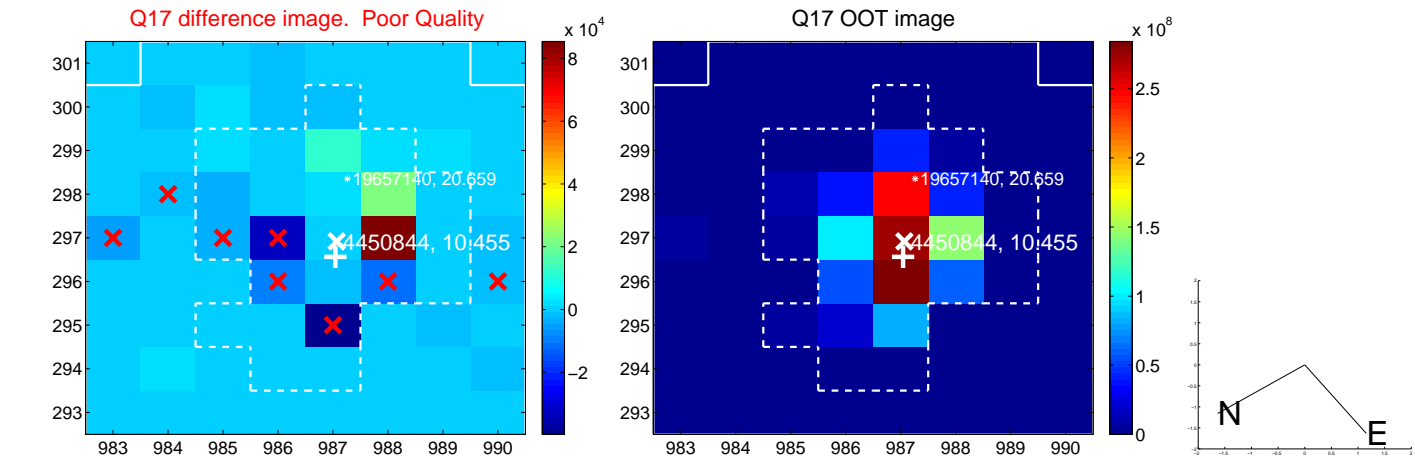
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



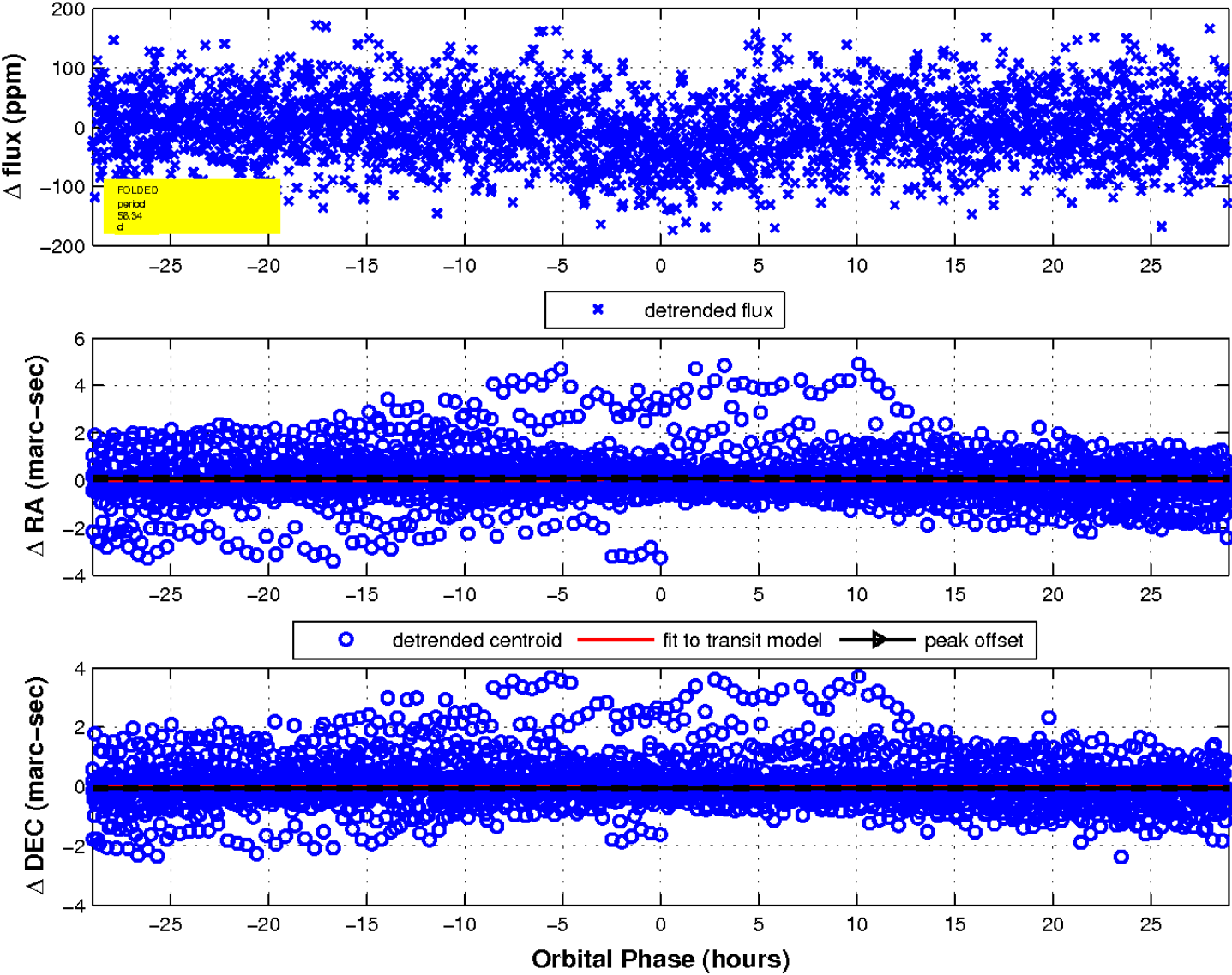
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

