

KIC 012168280

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})
012168280-01	OBS	8297.01	229.943779	326.020834	355.0	5.434	8.9	8.1	2.06	6419	4.72	9.23

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
012168280-01	OBS	FP	0.14	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—CENT_SATURATED

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

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

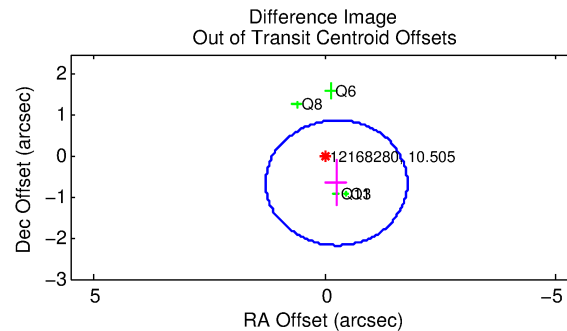
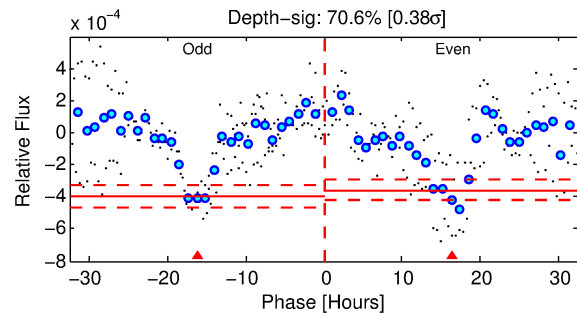
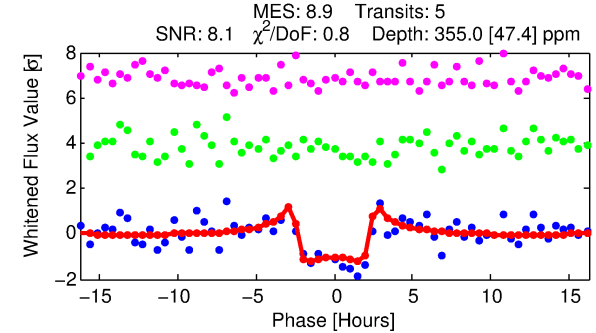
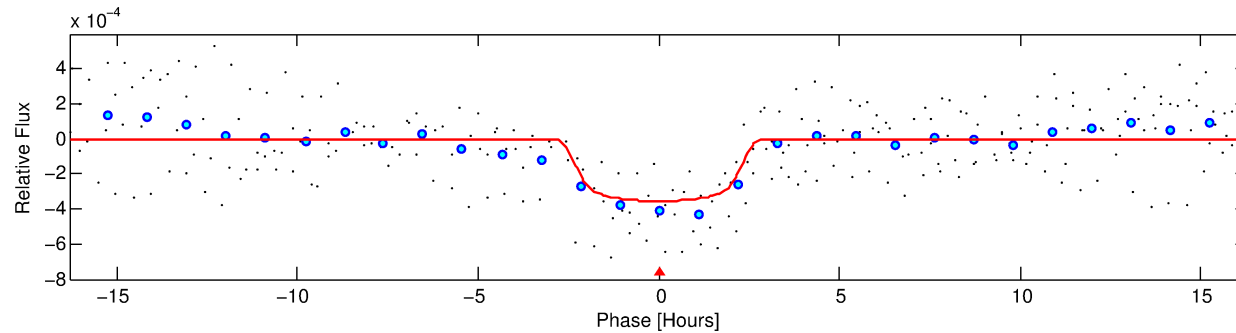
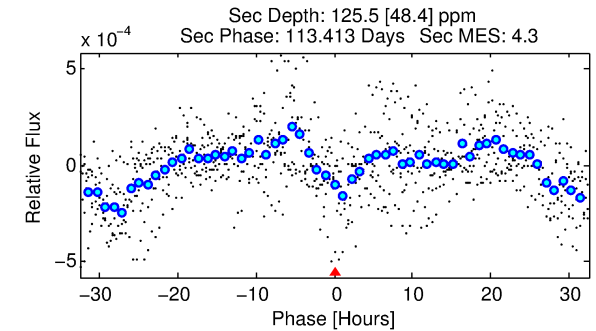
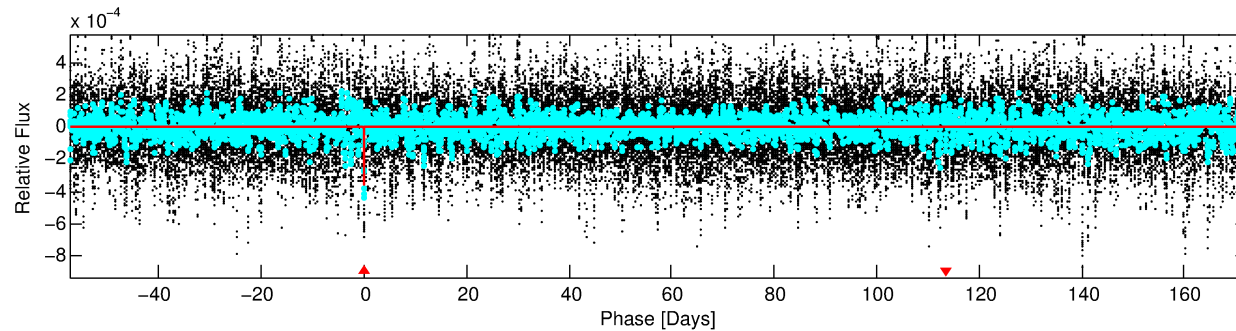
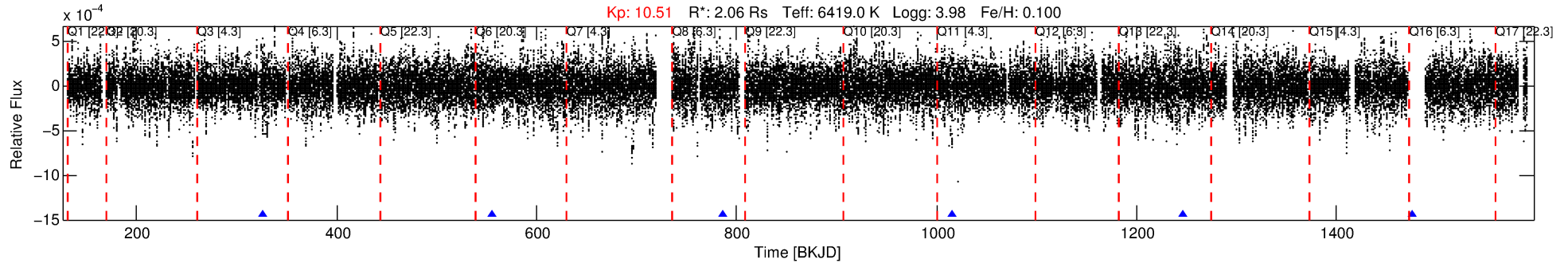
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 012168280-01

No Significant Match Found

DV One-Page Summary

KIC: 12168280 Candidate: 1 of 1 Period: 229.944 d



DV Fit Results:

Period = 229.94378 [0.00257] d
Epoch = 326.0208 [0.0055] BKJD
Rp/R* = 0.0211 [0.0018]
a/R* = 130.56 [28.33]
b = 0.94 [0.03]
Seff = 9.23 [3.18]
Teq = 445 [38] K
Rp = 4.73 [1.22] Re
a = 0.8348 [0.1844] AU
Ag = 2155.63 [1167.18] [1.85σ]
Teffp = 4683 [497] K [8.51σ]

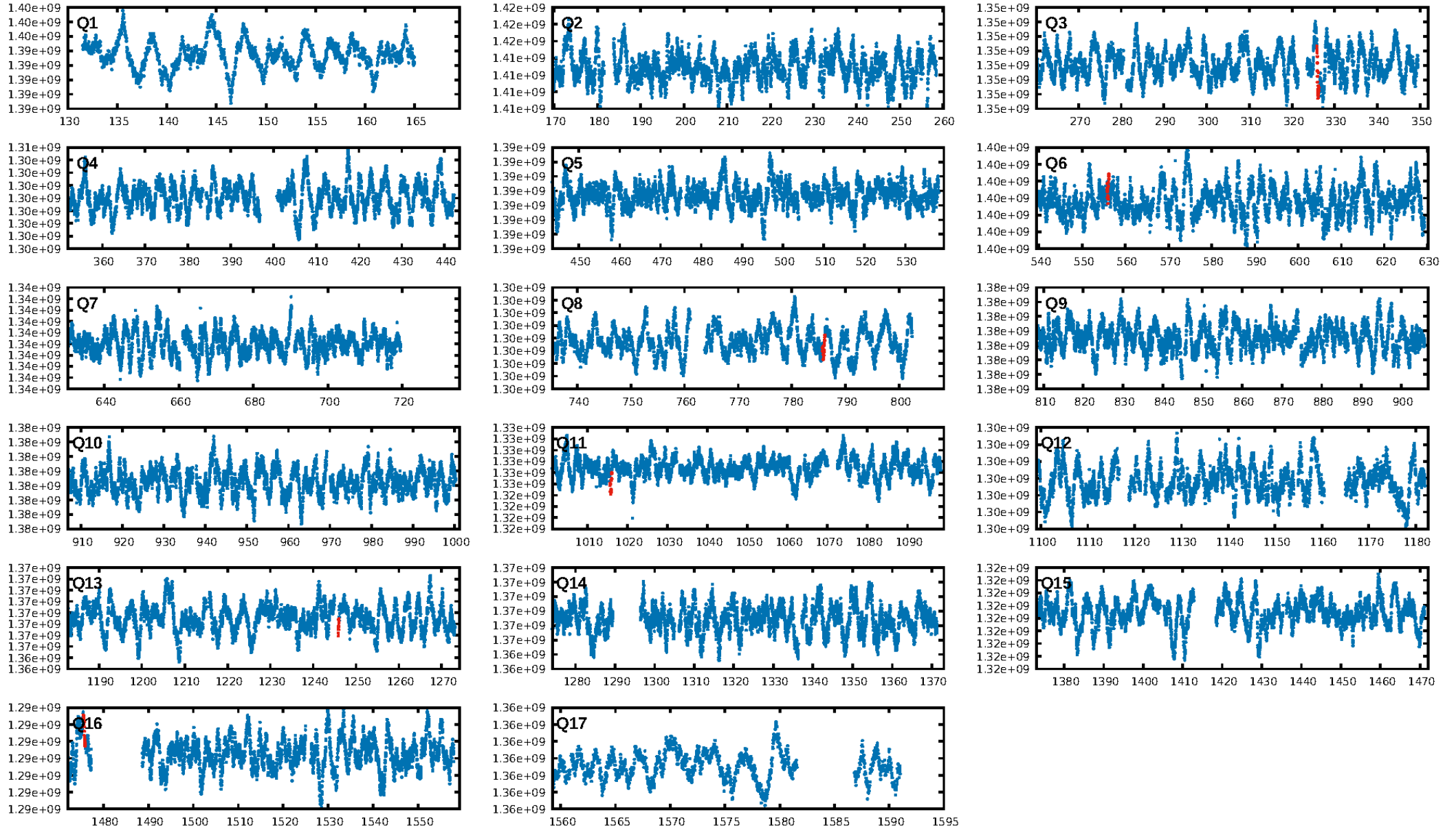
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 72.2%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 2.18e-12
RollingBand-fgt: 1.00 [5/5]
GhostDiagnostic-chr: N/A
Centroid-sig: 8.8%
Centroid-so: 1.212 arcsec [2.16σ]
OotOffset-rm: 0.695 arcsec [1.36σ]
KicOffset-rm: 0.940 arcsec [1.35σ]
OotOffset-st: 1/2/1/0 [4]
KicOffset-st: 1/2/1/0 [4]
DiffImageQuality-fgm: 1.00 [4/4]
DiffImageOverlap-fno: 1.00 [4/4]

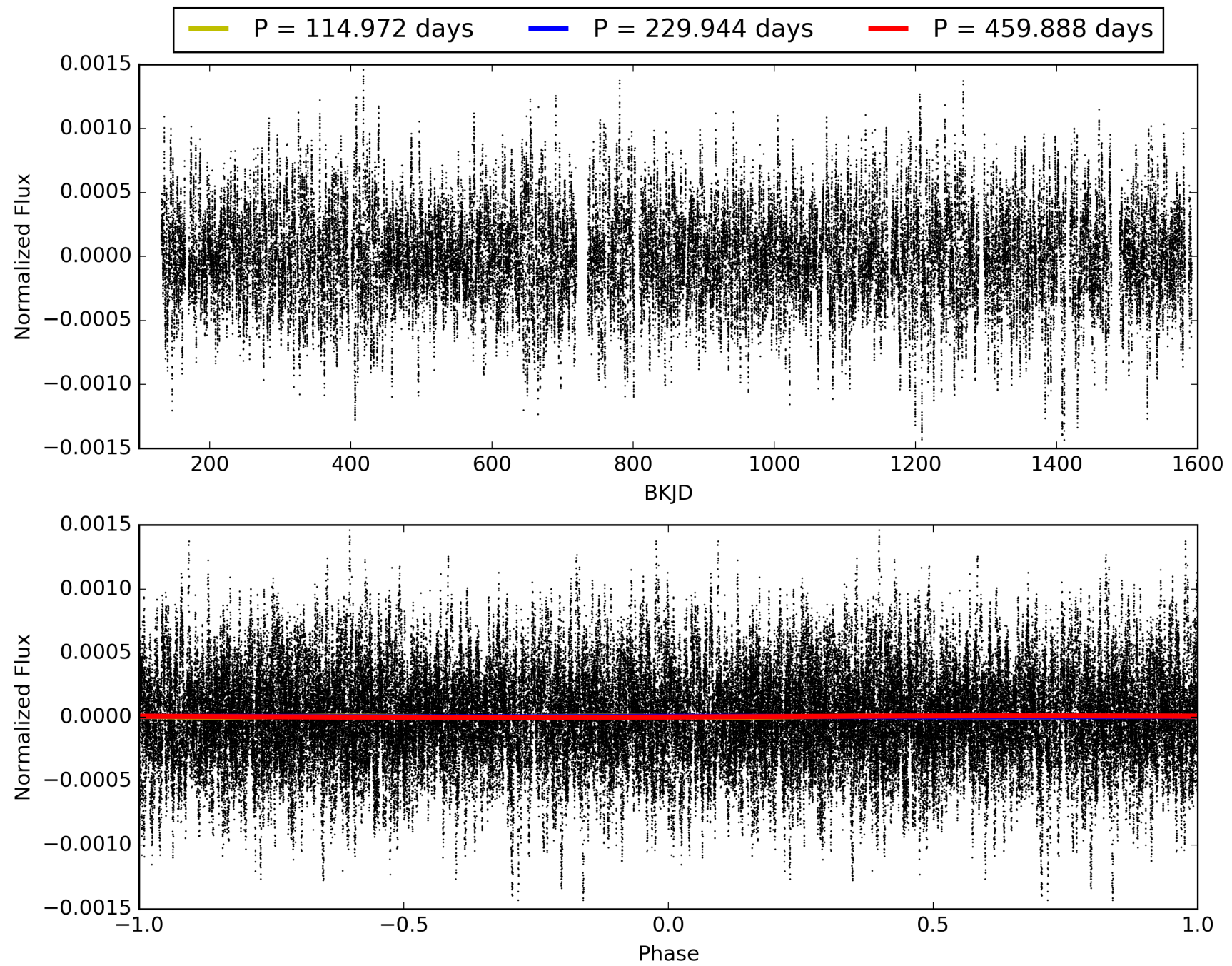
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 28-Jan-2016 21:09:38 Z

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

TCE 012168280-01, PDC Light Curves

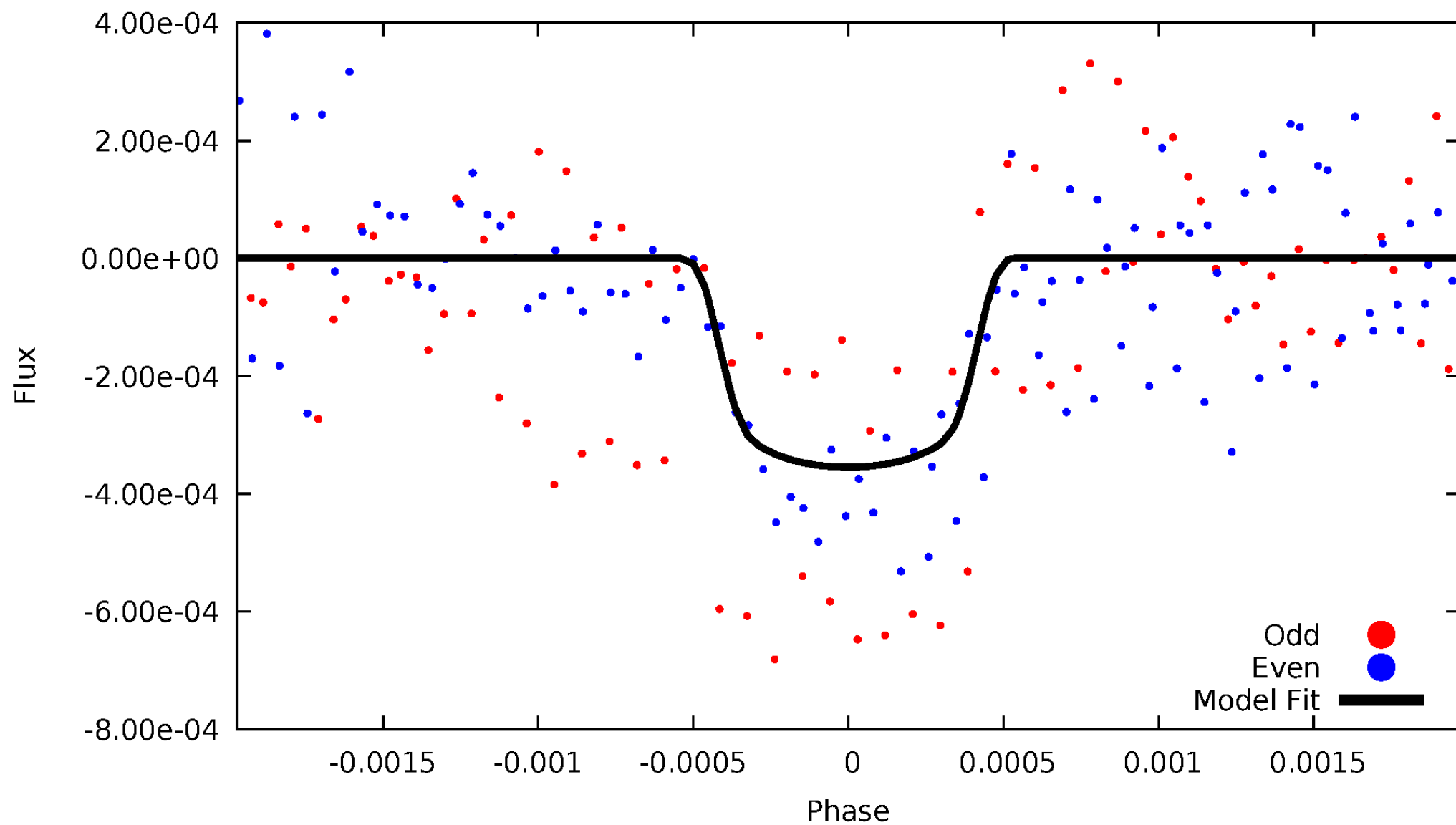


TCE 012168280-01



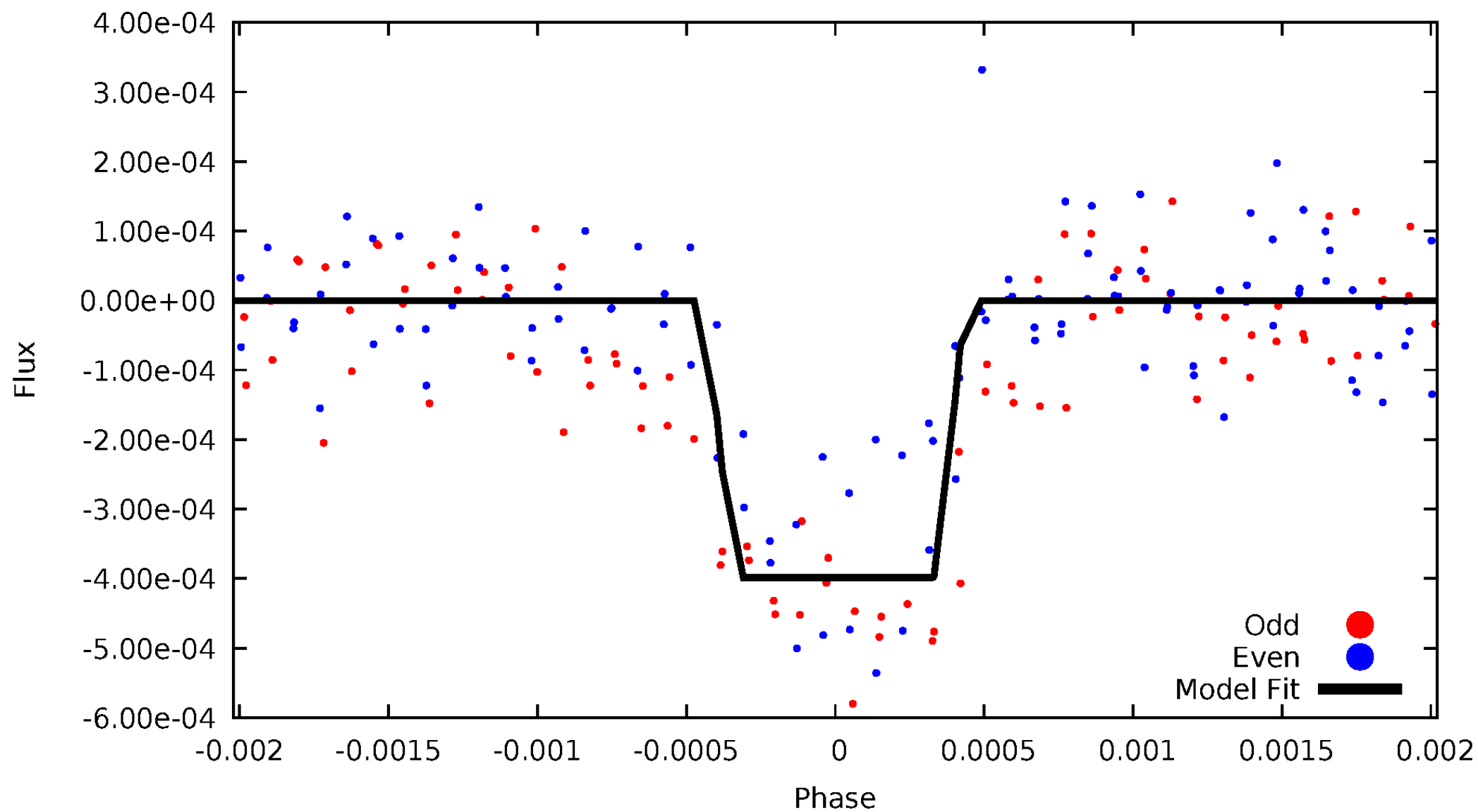
DV Odd/Even

TCE 012168280-01

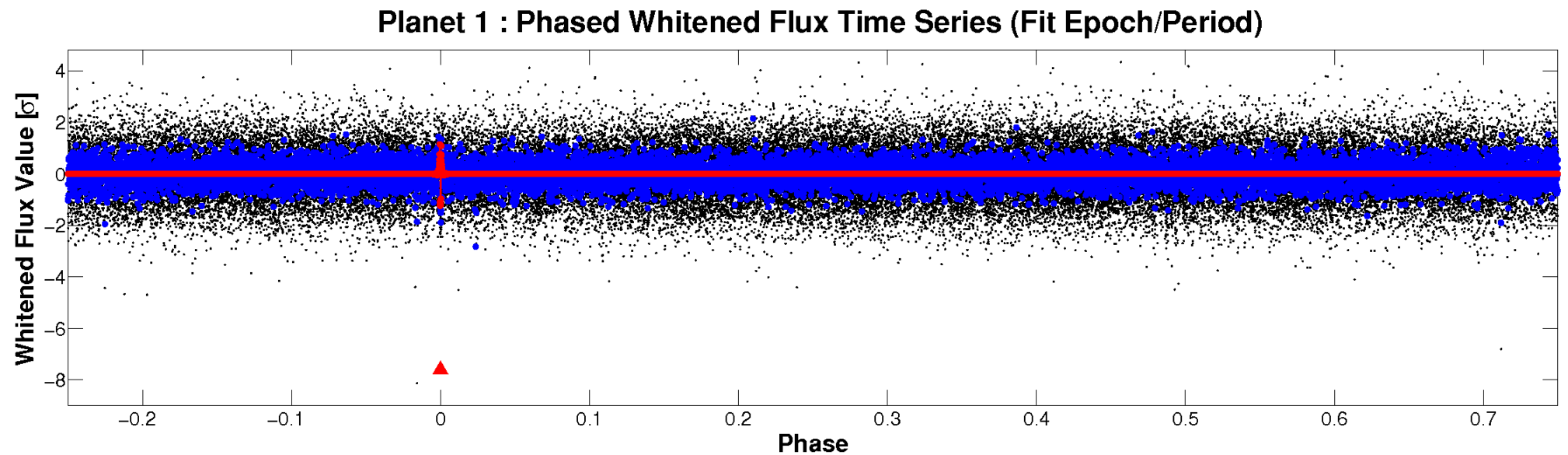
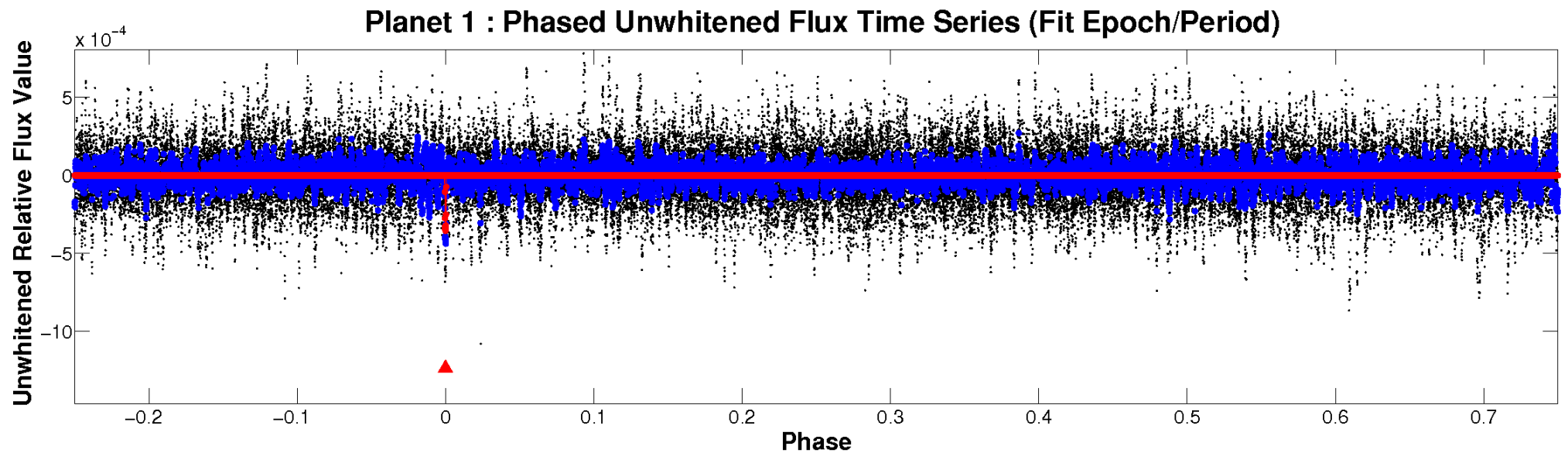


ALT Odd/Even

TCE 012168280-01

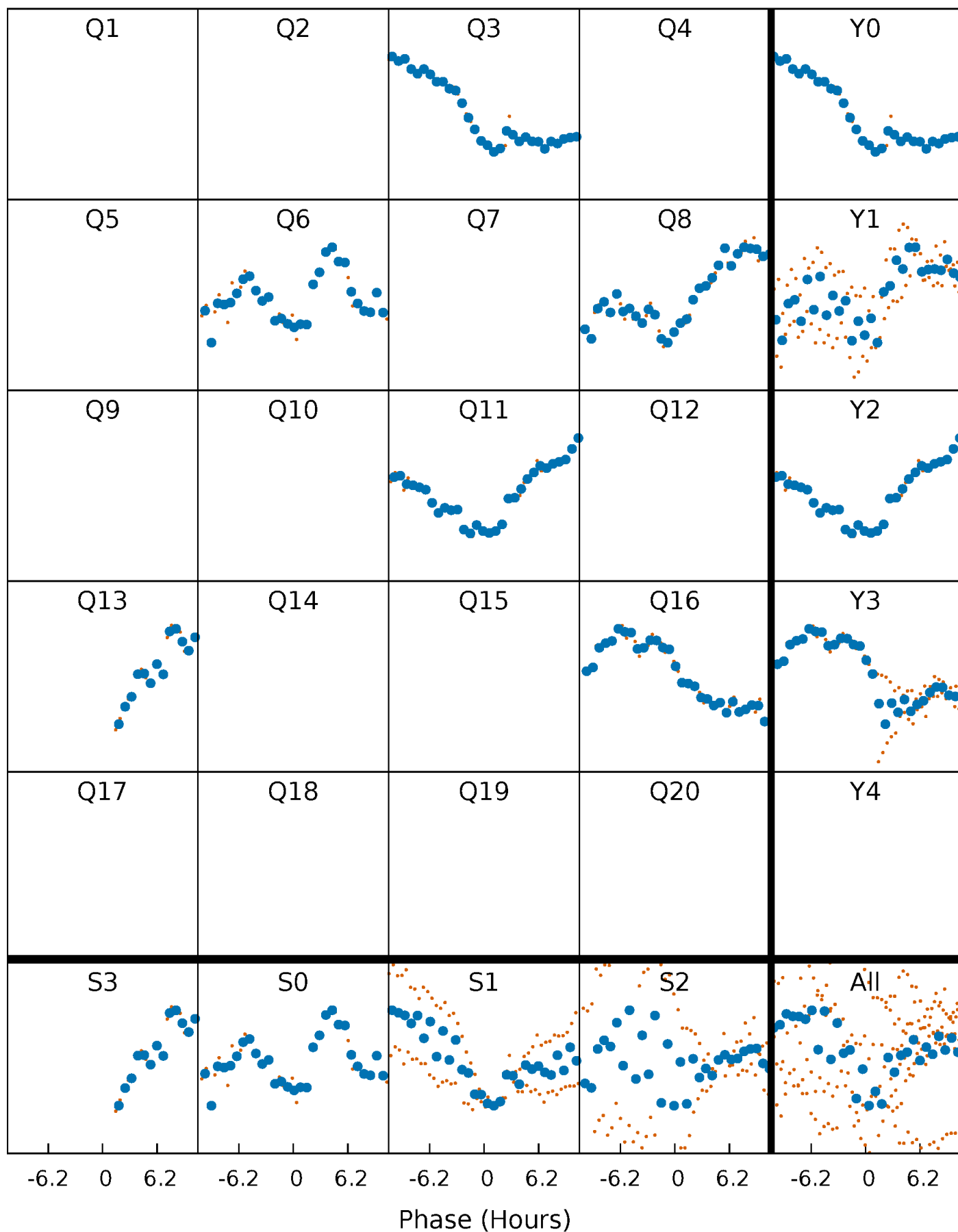


Non-Whitened Vs. Whitened Light Curve



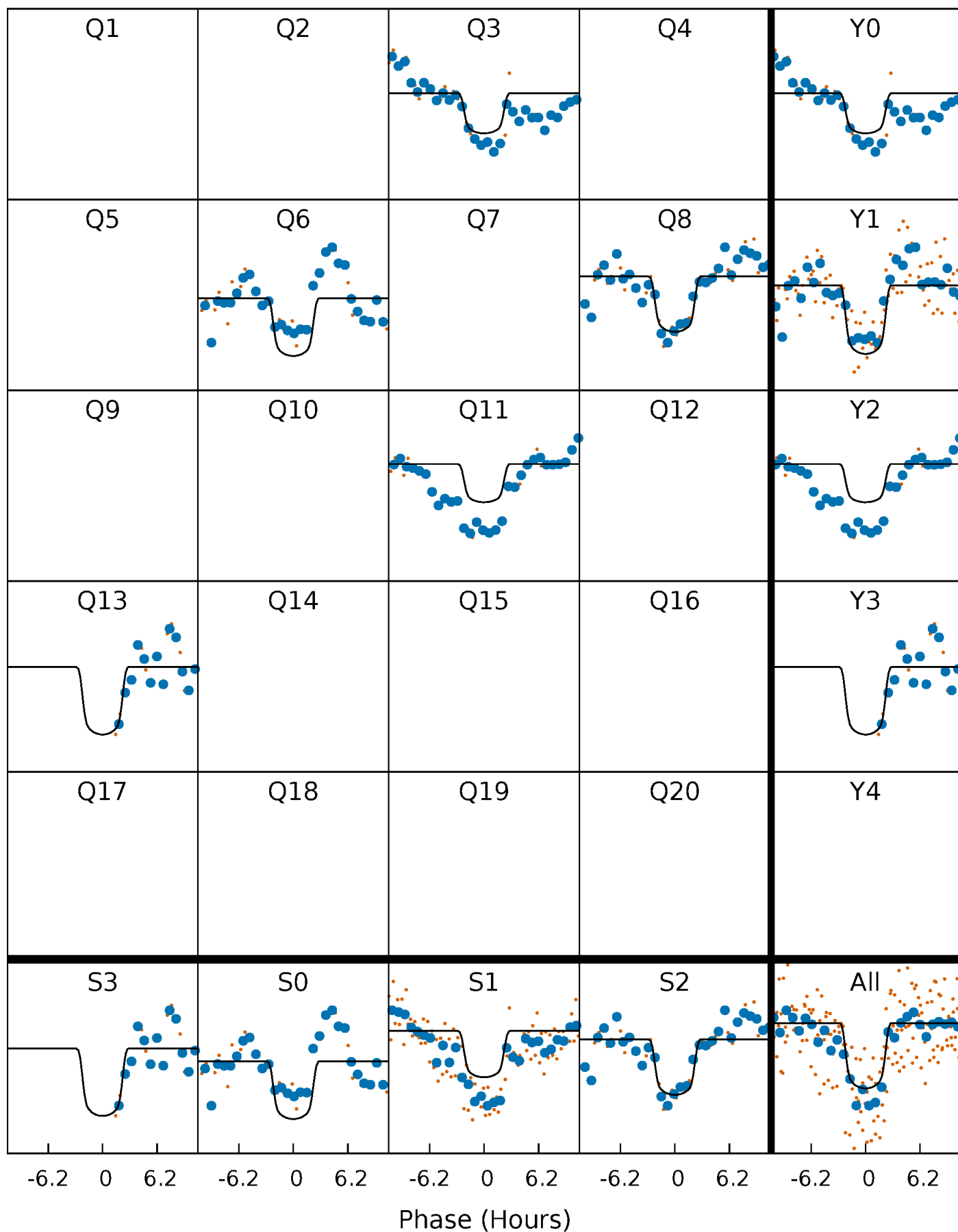
PDC Quarter-Phased Transit Curves

TCE 012168280-01 P=229.943779 Days $T_0=326.020834$ (BKJD)



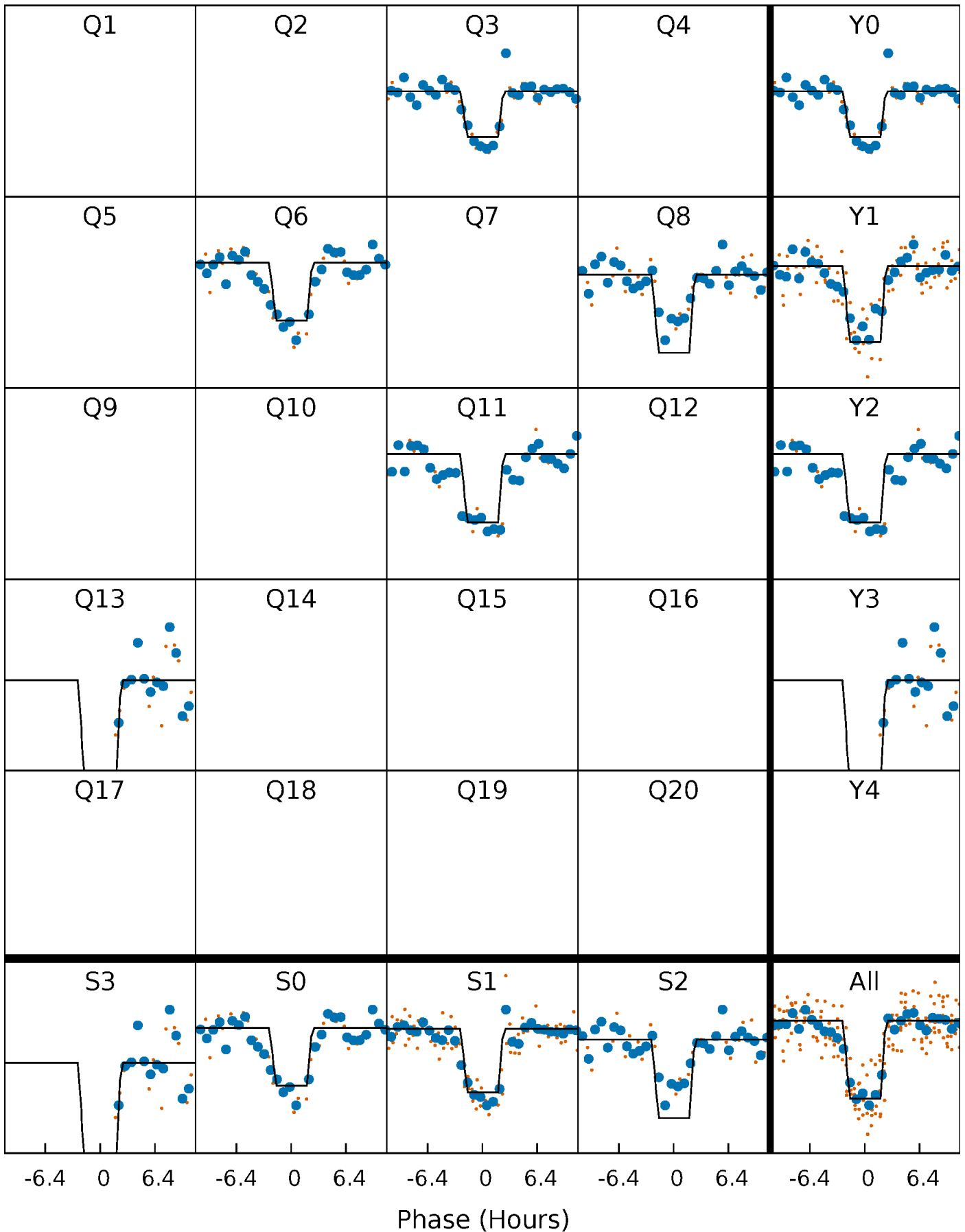
DV Quarter-Phased Transit Curves

TCE 012168280-01 P=229.943779 Days $T_0=326.020834$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

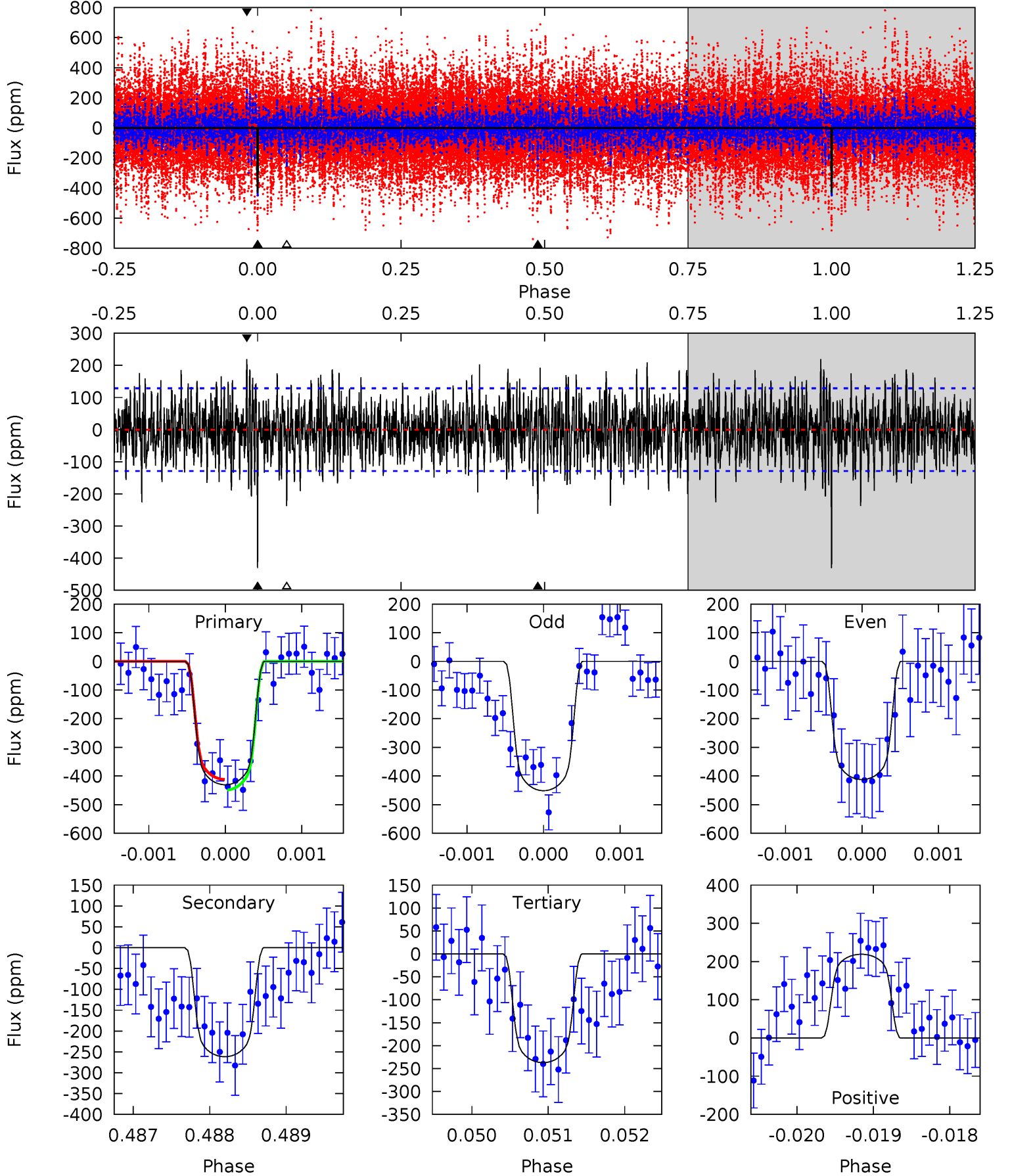
TCE 012168280-01 P=229.938600 Days $T_0=326.028195$ (BKJD)



DV Model-Shift Uniqueness Test

012168280-01, $P = 229.943779$ Days, $E = 96.077055$ Days

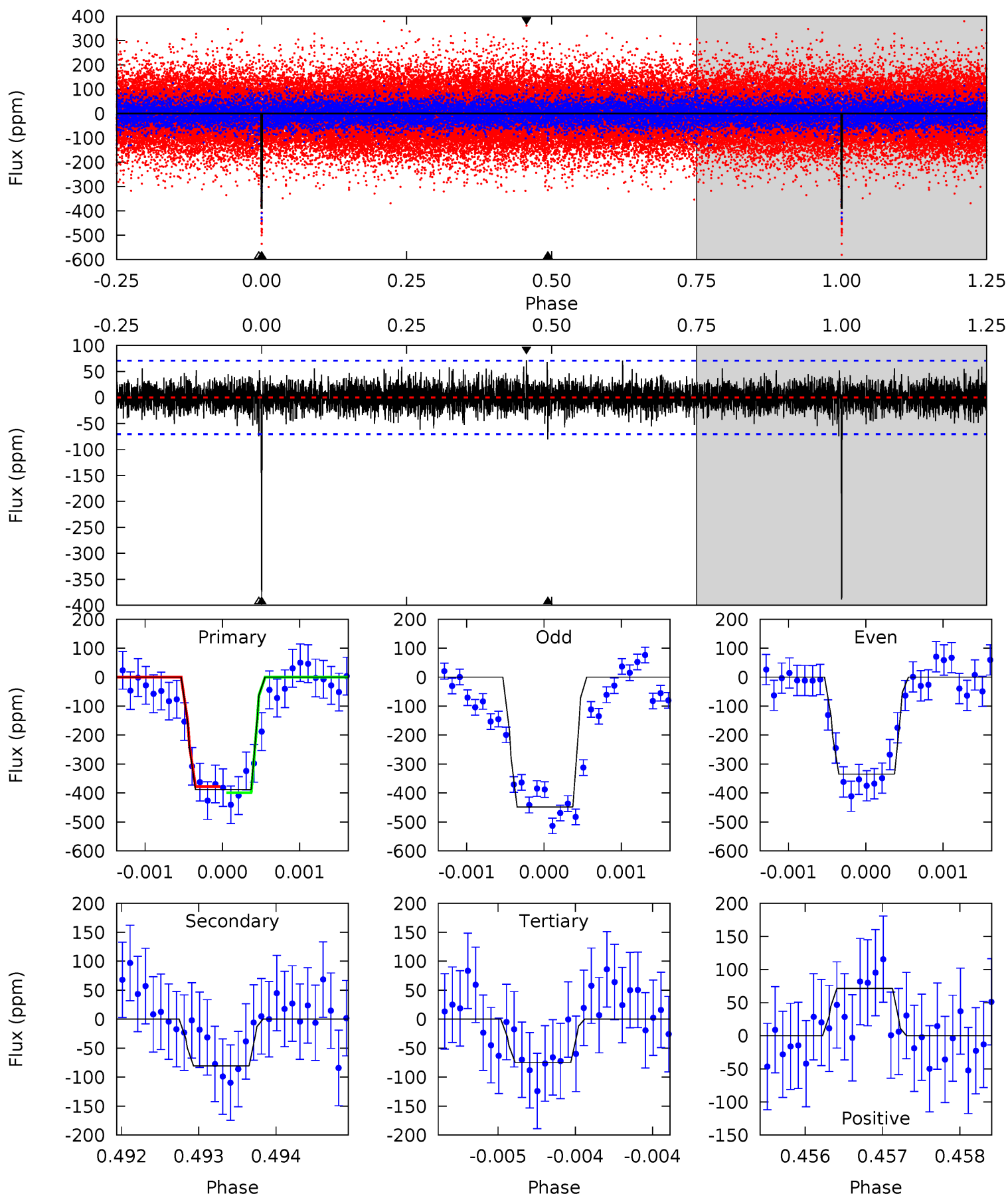
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
18.2	11.0	10.0	9.25	5.45	3.28	2.83	8.17	8.93	1.03	1.79	0.82	1.11	0.34	0.78



Alt Model-Shift Uniqueness Test

012168280-01, $P = 229.938600$ Days, $E = 96.089595$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
30.1	6.25	5.80	5.54	5.47	3.32	1.32	24.3	24.6	0.45	0.71	4.41	0.84	0.16	0.84



Stellar Parameters For KIC 012168280

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6419^{+77}_{-83}	$3.978^{+0.195}_{-0.120}$	$0.100^{+0.150}_{-0.150}$	$2.057^{+0.365}_{-0.501}$	$1.465^{+0.132}_{-0.181}$	$0.237^{+0.261}_{-0.078}$
	+1%/-1%	+5%/-3%	+150%/-150%	+18%/-24%	+9%/-12%	+110%/-33%
Source	SPE68	SPE68	SPE68	DSEP		

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

Secondary Eclipse Parameters for KIC 012168280-01 / KOI 8297.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-262 ± 24	$4.63^{+0.70}_{-0.70}$	618^{+34}_{-42}	5652^{+253}_{-259}	4722^{+1714}_{-1216}
Alt.	-81 ± 13	$4.43^{+0.64}_{-0.63}$	620^{+32}_{-40}	4481^{+231}_{-207}	1549^{+673}_{-452}

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 $A_{obs} \gg 1.0$

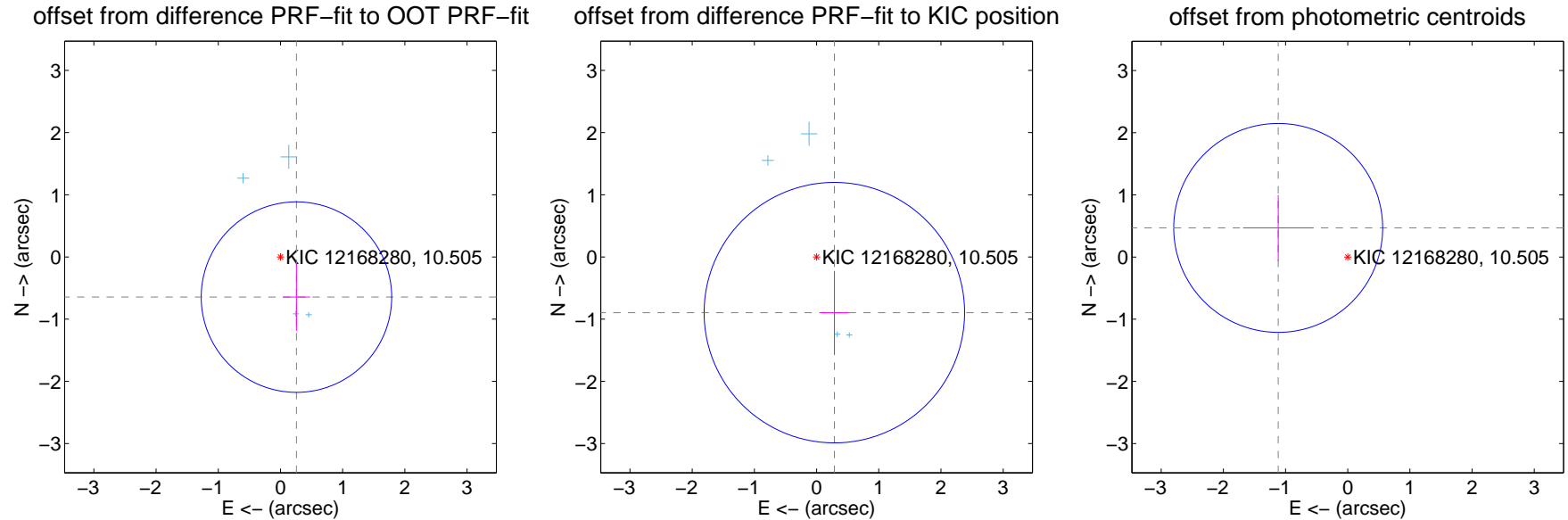
DV Centroid Data

Supplemental centroid analysis for 012168280-01. **Kepler magnitude: 10.51.** Transit SNR 8.12

There are 4 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.34 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.695 ± 0.510	1.36	-0.257 ± 0.219	-0.646 ± 0.543
PRF-fit source offset from KIC position	0.940 ± 0.698	1.35	-0.286 ± 0.231	-0.895 ± 0.671
photometric centroid source offset	1.21 ± 0.56	2.16	1.12 ± 0.57	0.47 ± 0.53



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.

Q1 no difference image



Q1 no OOT image



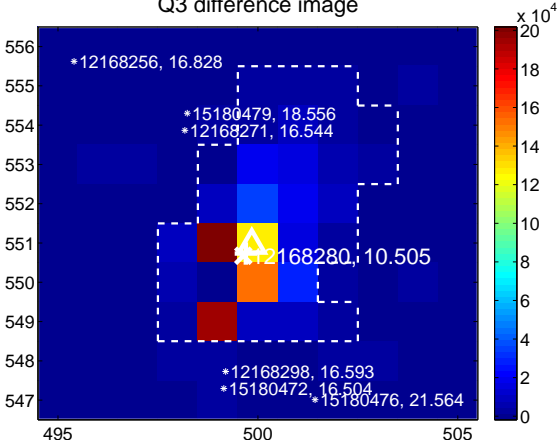
Q2 no difference image



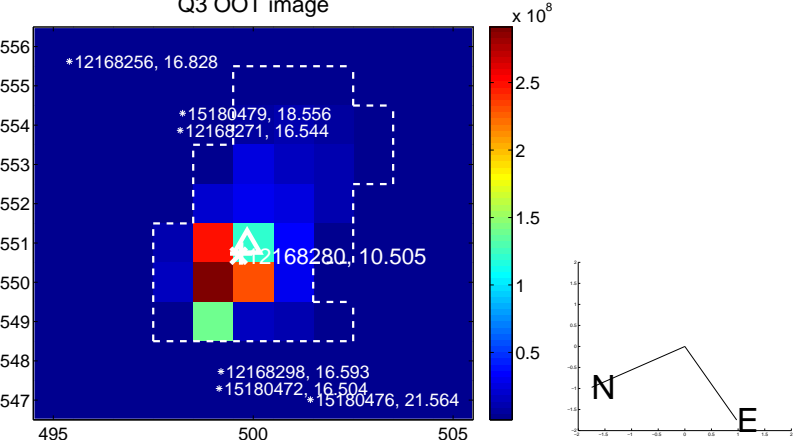
Q2 no OOT image



Q3 difference image



Q3 OOT image



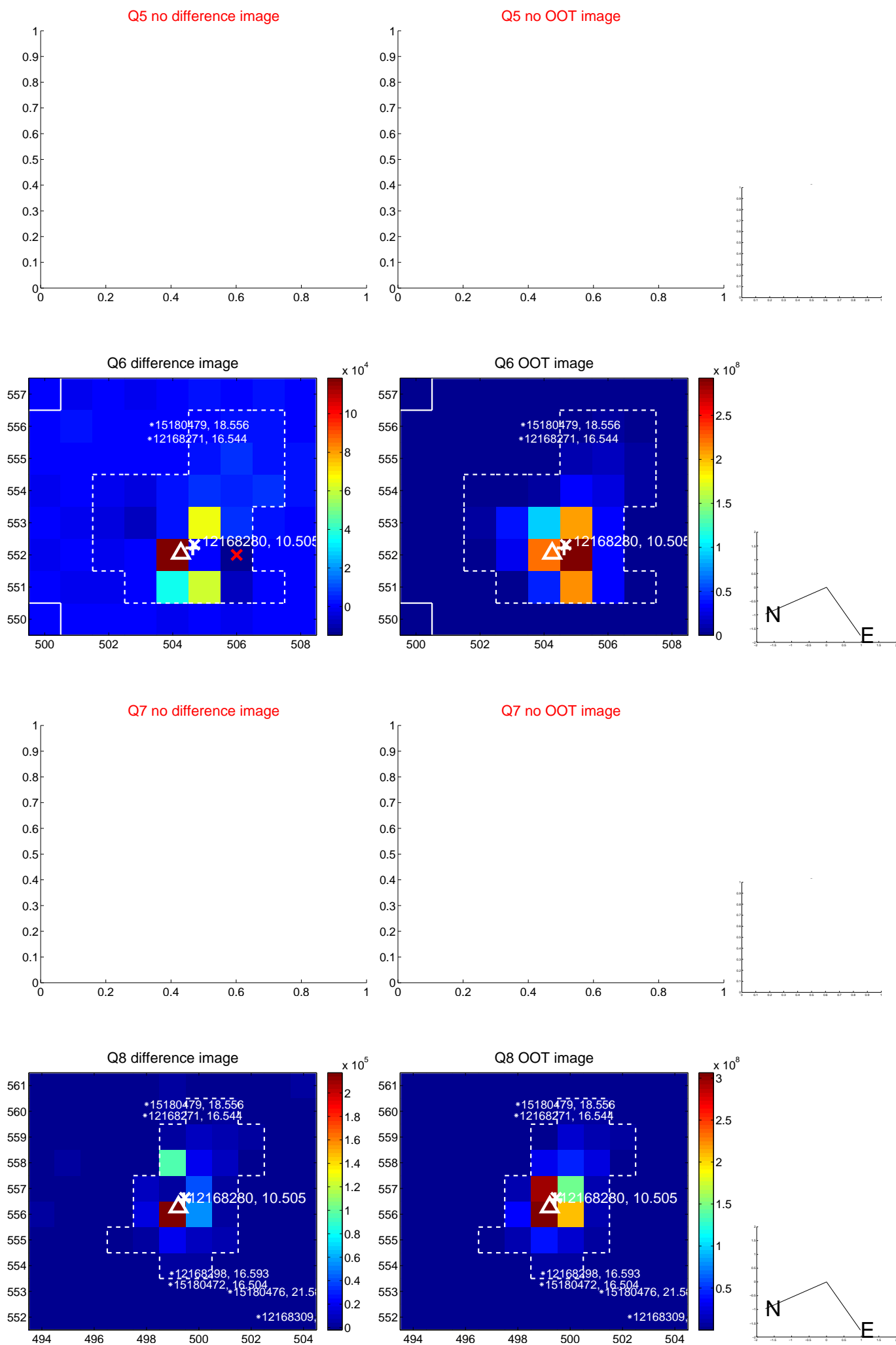
Q4 no difference image



Q4 no OOT image



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.

Q9 no difference image



Q9 no OOT image



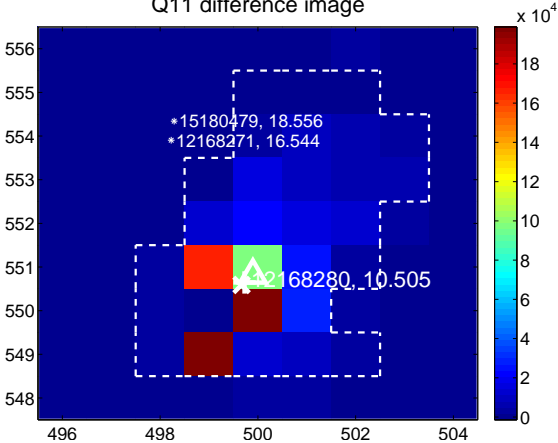
Q10 no difference image



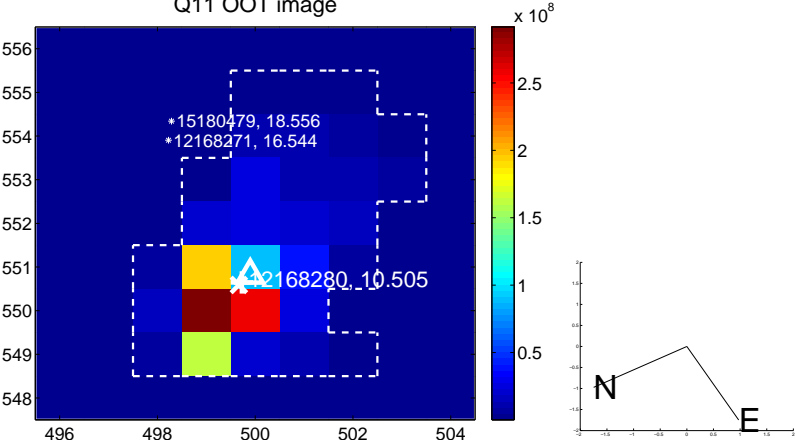
Q10 no OOT image



Q11 difference image



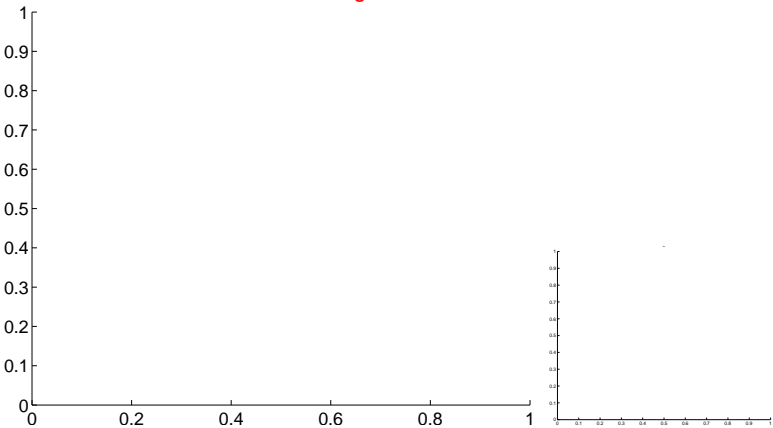
Q11 OOT image



Q12 no difference image



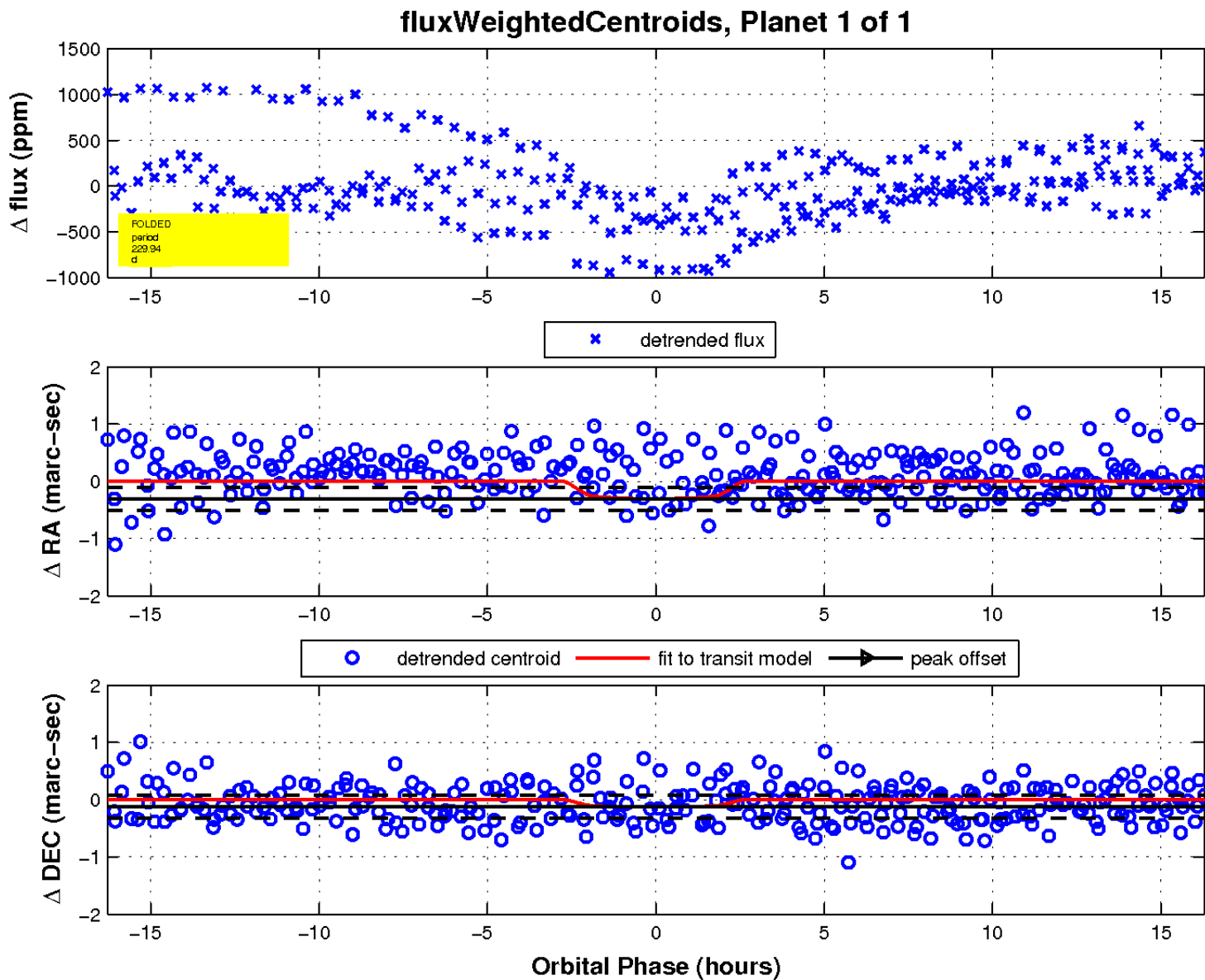
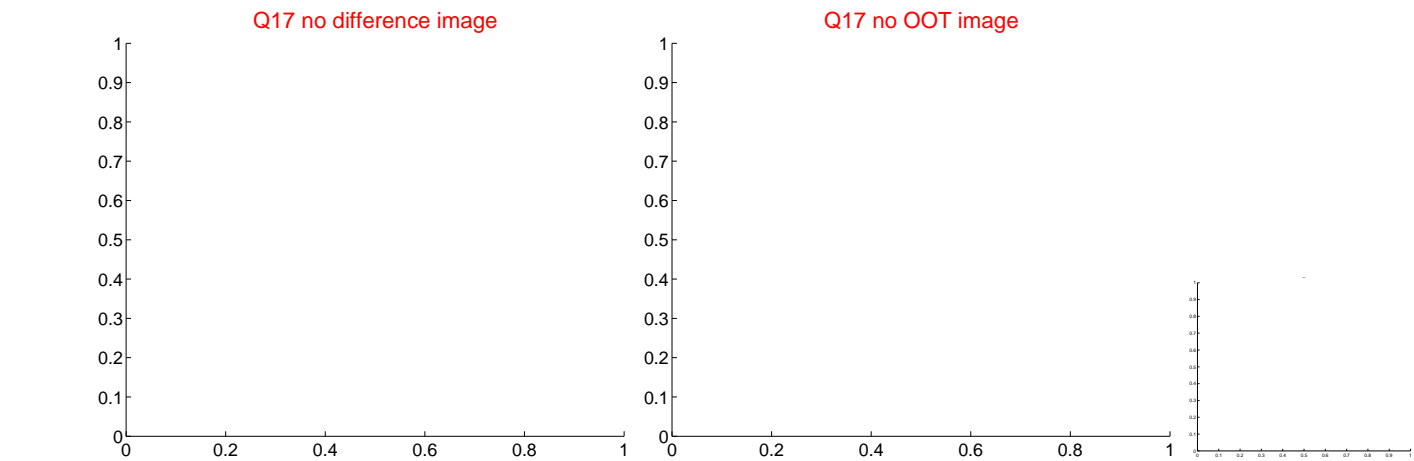
Q12 no OOT image



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.



UKIRT Image

Declination

