

KIC 008009811

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})
008009811-01	OBS	5459.01	53.553893	160.417731	117.8	5.694	8.1	8.8	2.62	6039	3.19	82.94

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008009811-01	OBS	PC	0.94	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.

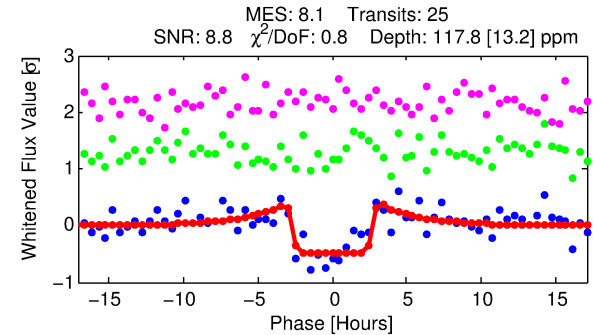
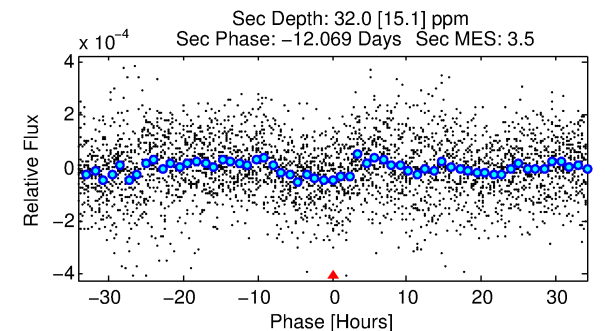
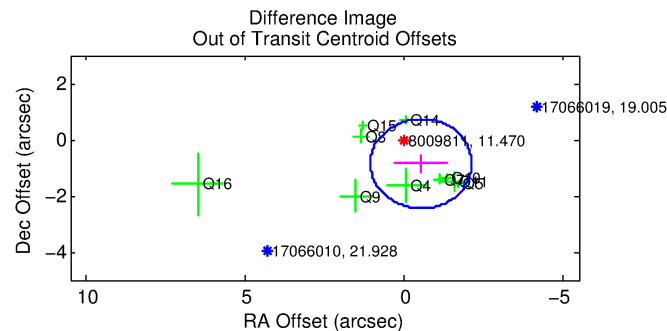
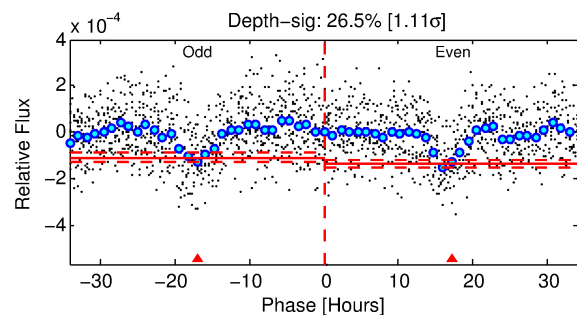
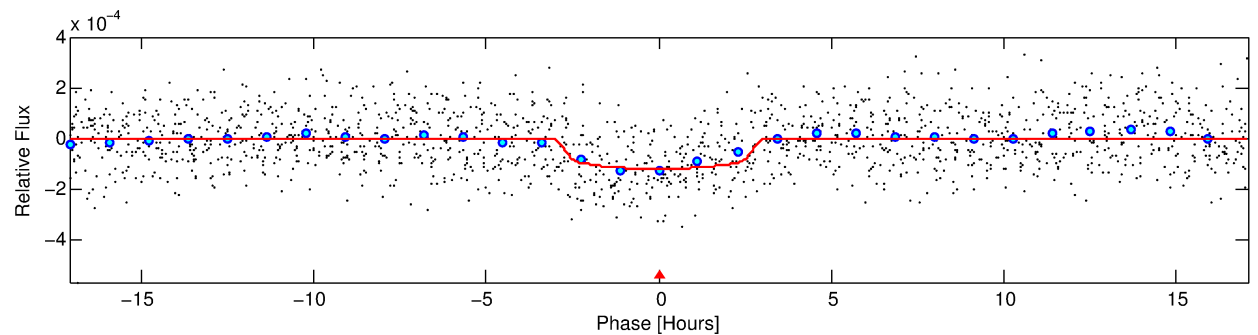
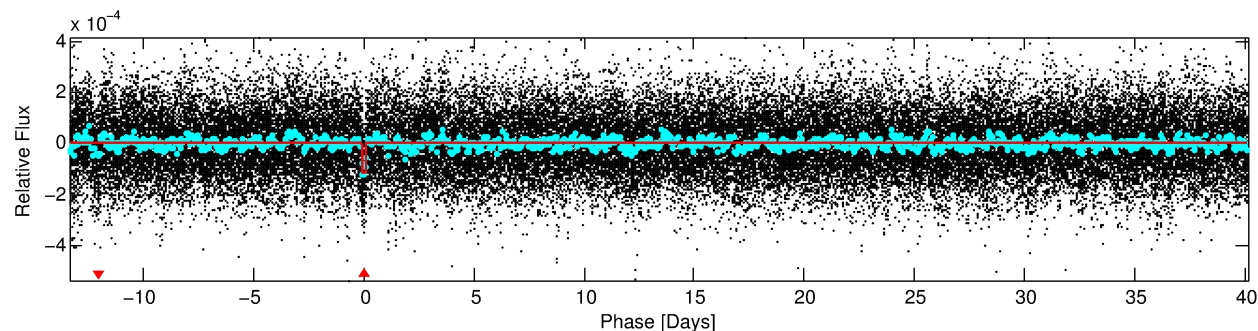
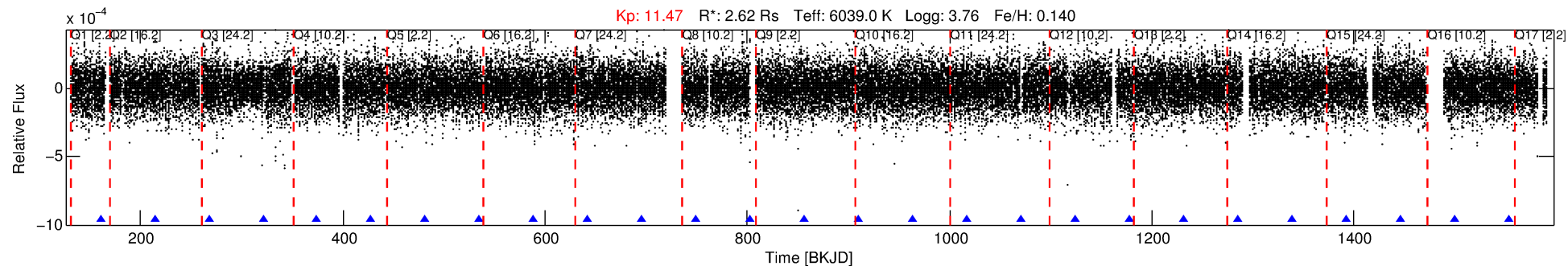
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008009811-01

No Significant Match Found

DV One-Page Summary

KIC: 8009811 Candidate: 1 of 1 Period: 53.554 d
KOI: K05459.01 Corr: 0.976



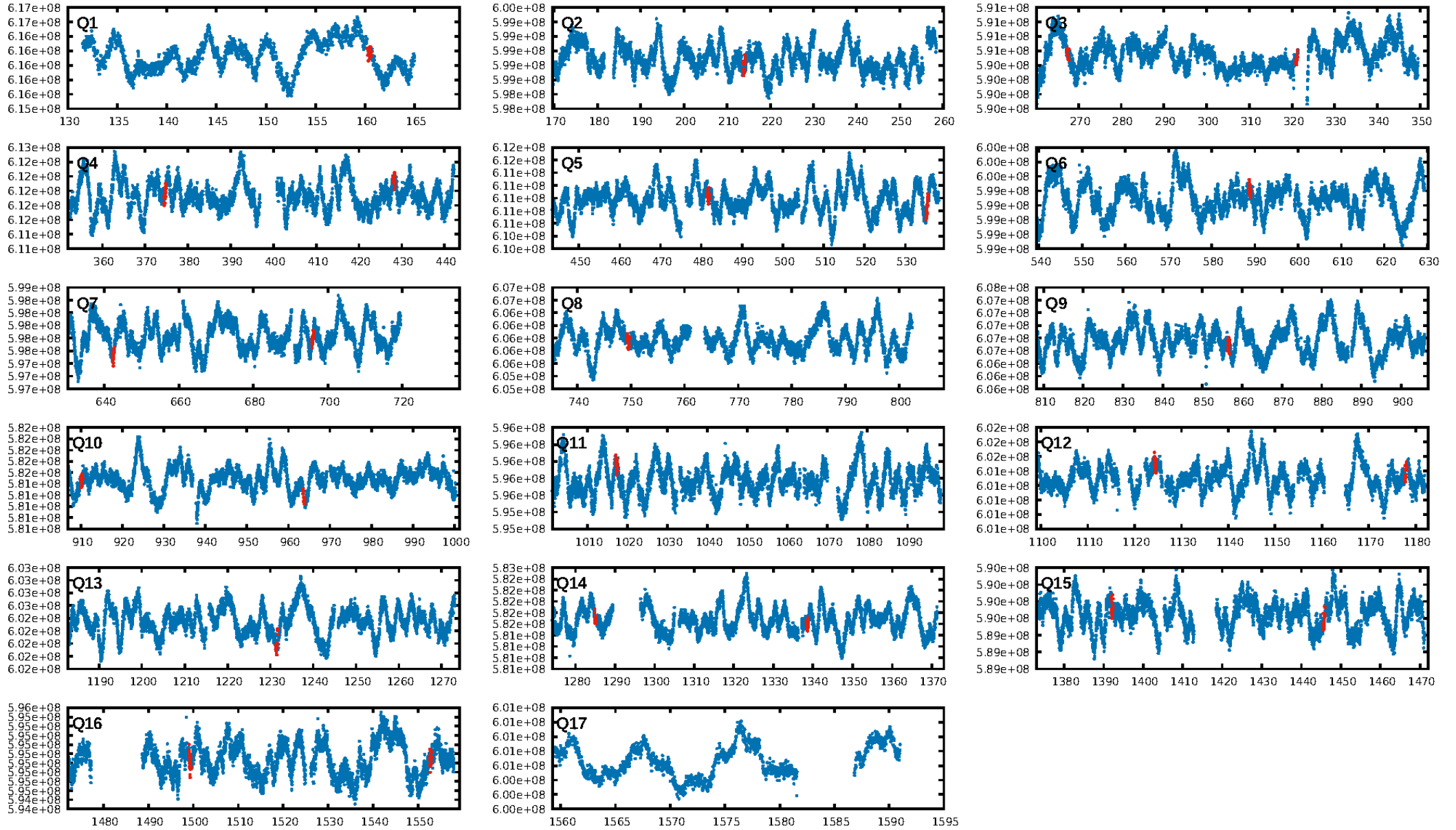
DV Fit Results:

Period = 53.55389 [0.00039] d
Epoch = 160.4177 [0.0059] BKJD
Rp/R* = 0.0112 [0.0049]
a/R* = 41.90 [91.26]
b = 0.83 [0.85]
Seff = 82.94 [42.69]
Teq = 770 [99] K
Rp = 3.19 [1.77] Re
a = 0.3143 [0.1008] AU
Ag = 170.38 [191.74] [0.88 σ]
Teffp = 4299 [1079] K [3.26 σ]

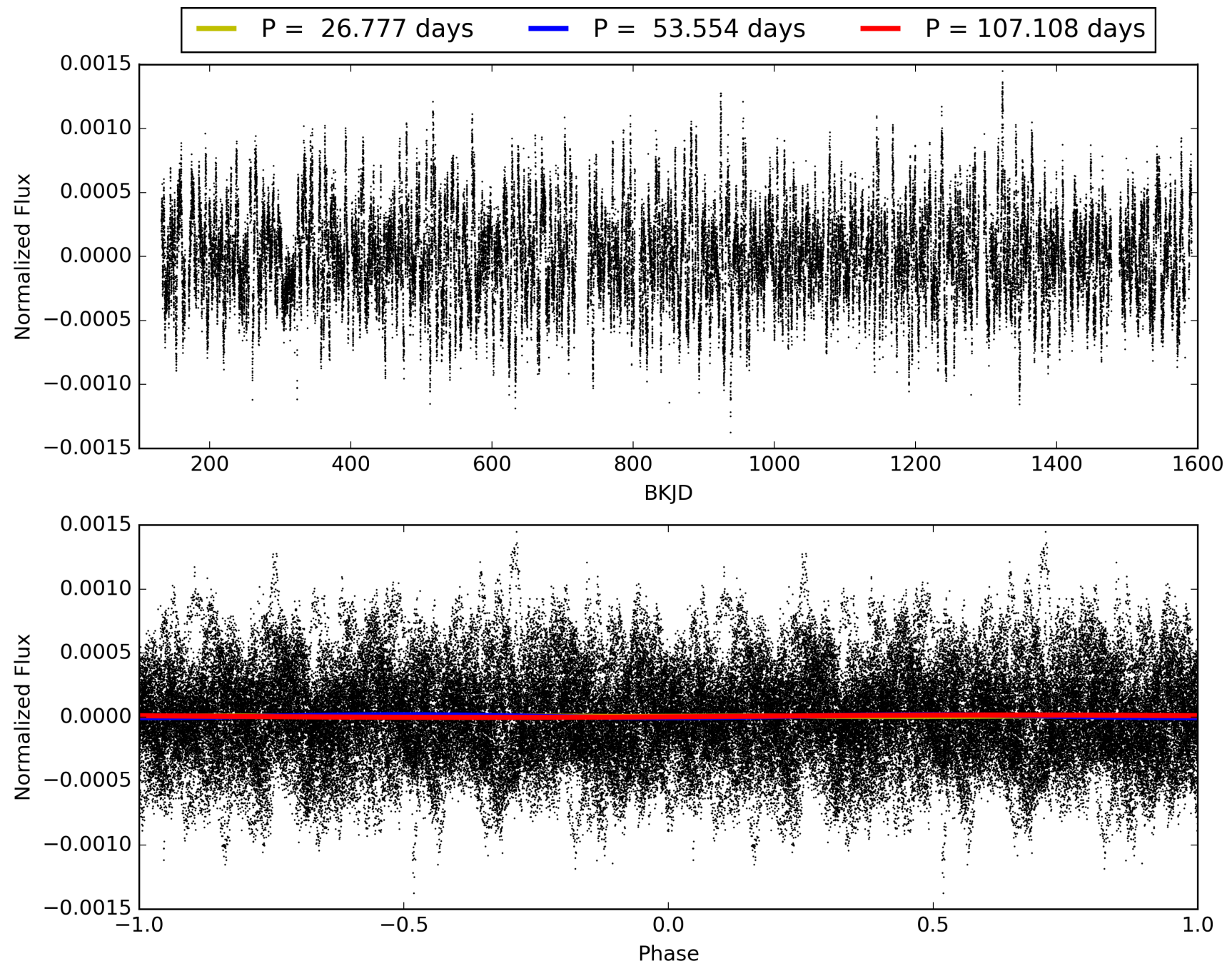
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 96.8%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.62e-15
RollingBand-fgt: 1.00 [24/24]
GhostDiagnostic-chr: -5.691
Centroid-sig: 59.5%
Centroid-so: 0.252 arcsec [0.42 σ]
OotOffset-rm: 1.008 arcsec [1.90 σ]
OotOffset-st: 2/3/3/2 [10]
KicOffset-rm: 0.856 arcsec [1.80 σ]
KicOffset-st: 2/3/3/2 [10]
DiffImageQuality-fgm: 0.90 [9/10]
DiffImageOverlap-fno: 1.00 [14/14]

TCE 008009811-01, PDC Light Curves

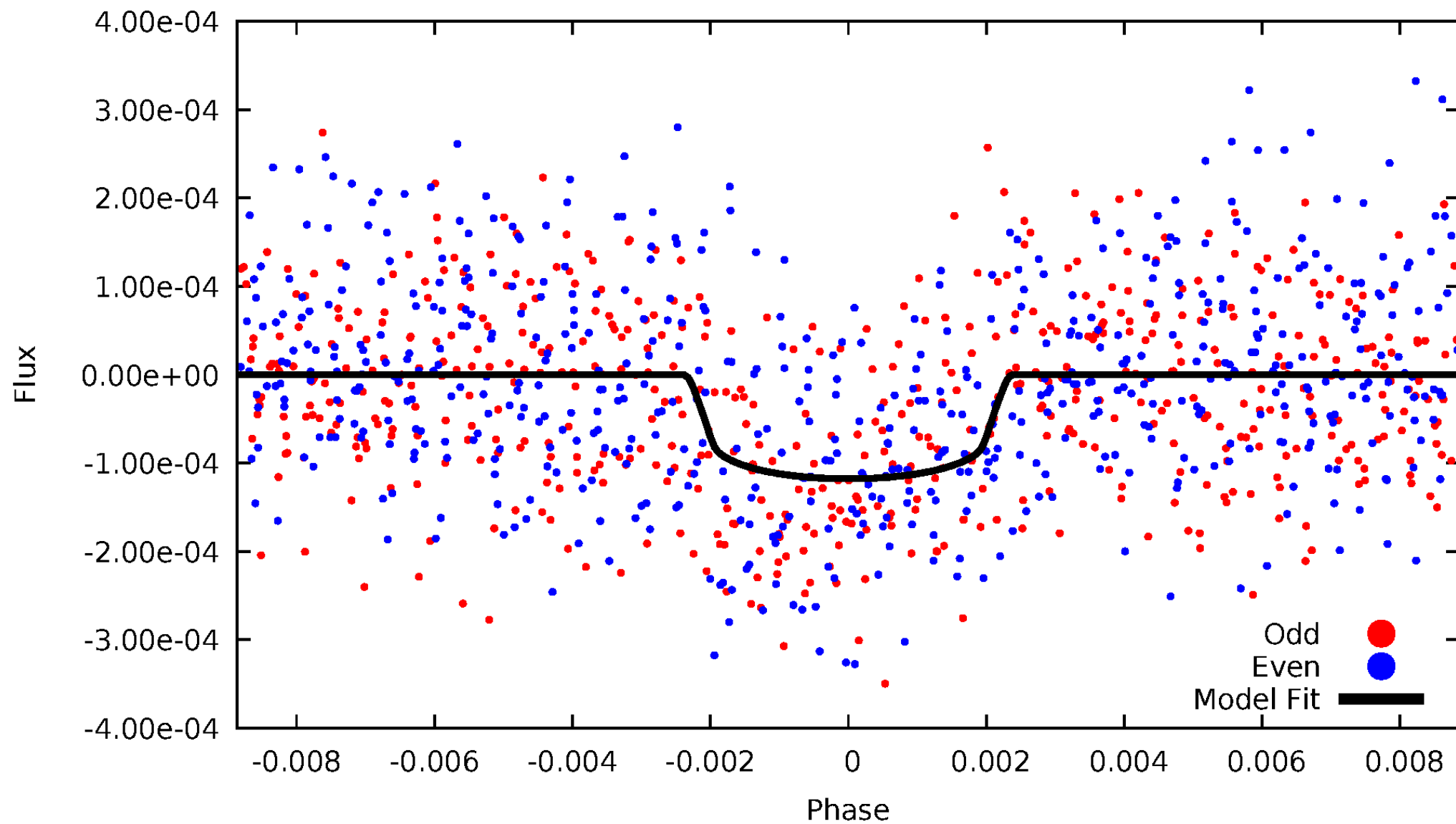


TCE 008009811-01



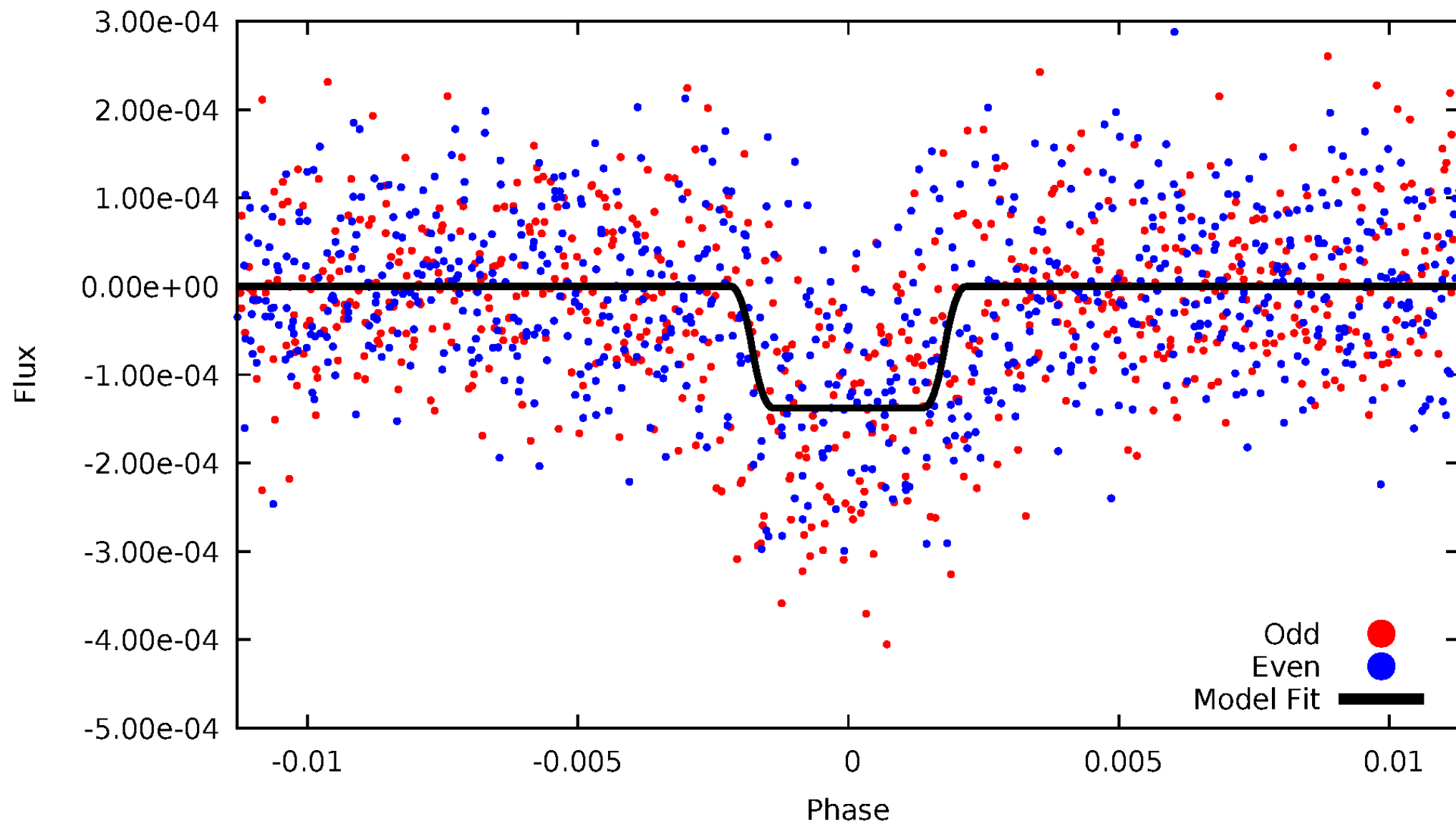
DV Odd/Even

TCE 008009811-01



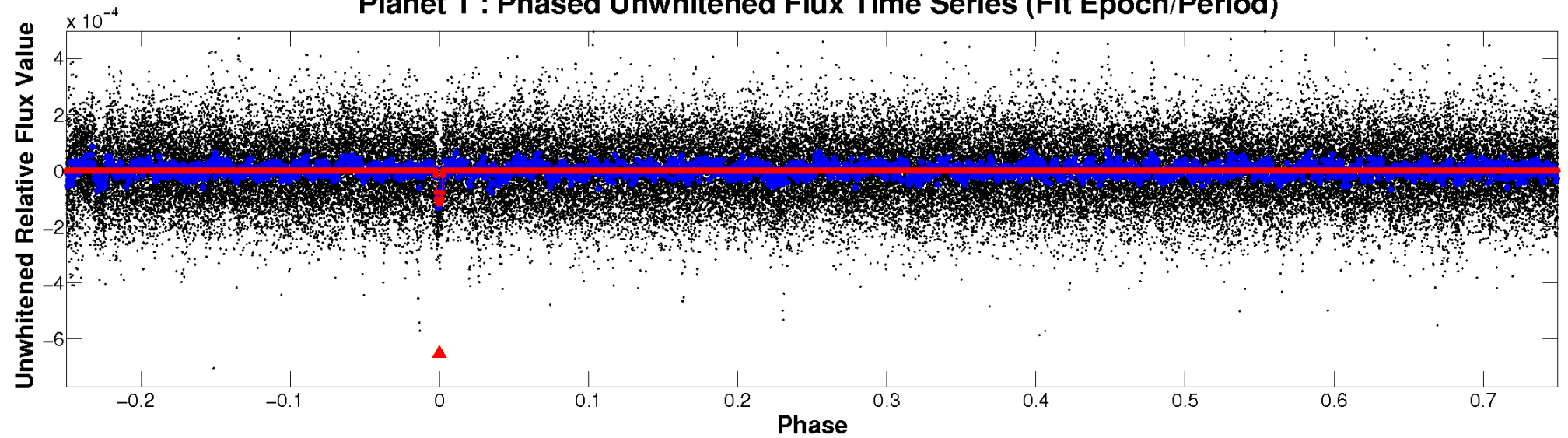
ALT Odd/Even

TCE 008009811-01

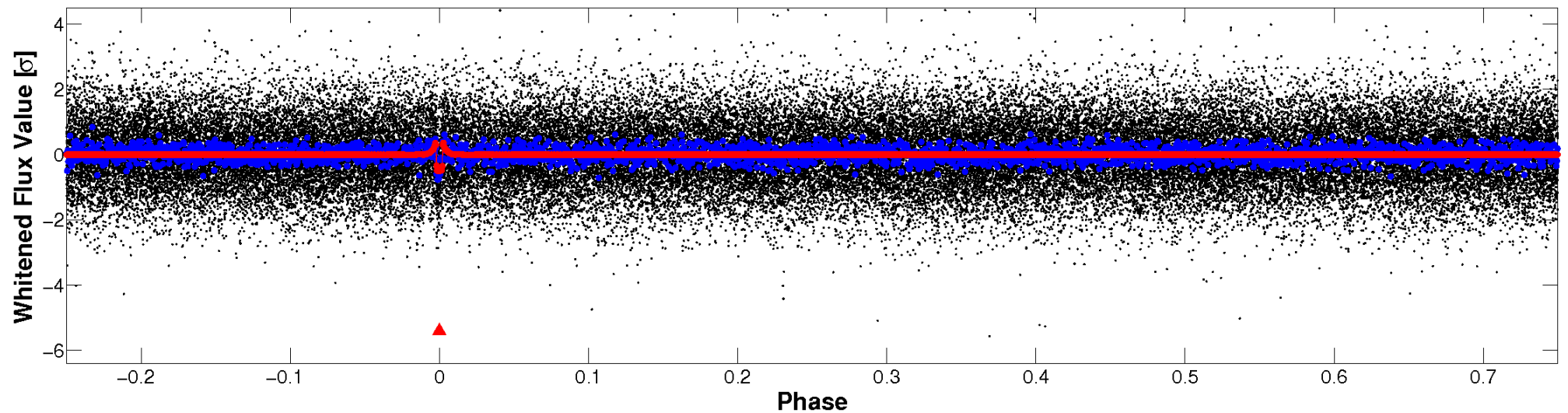


Non-Whitened Vs. Whitened Light Curve

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

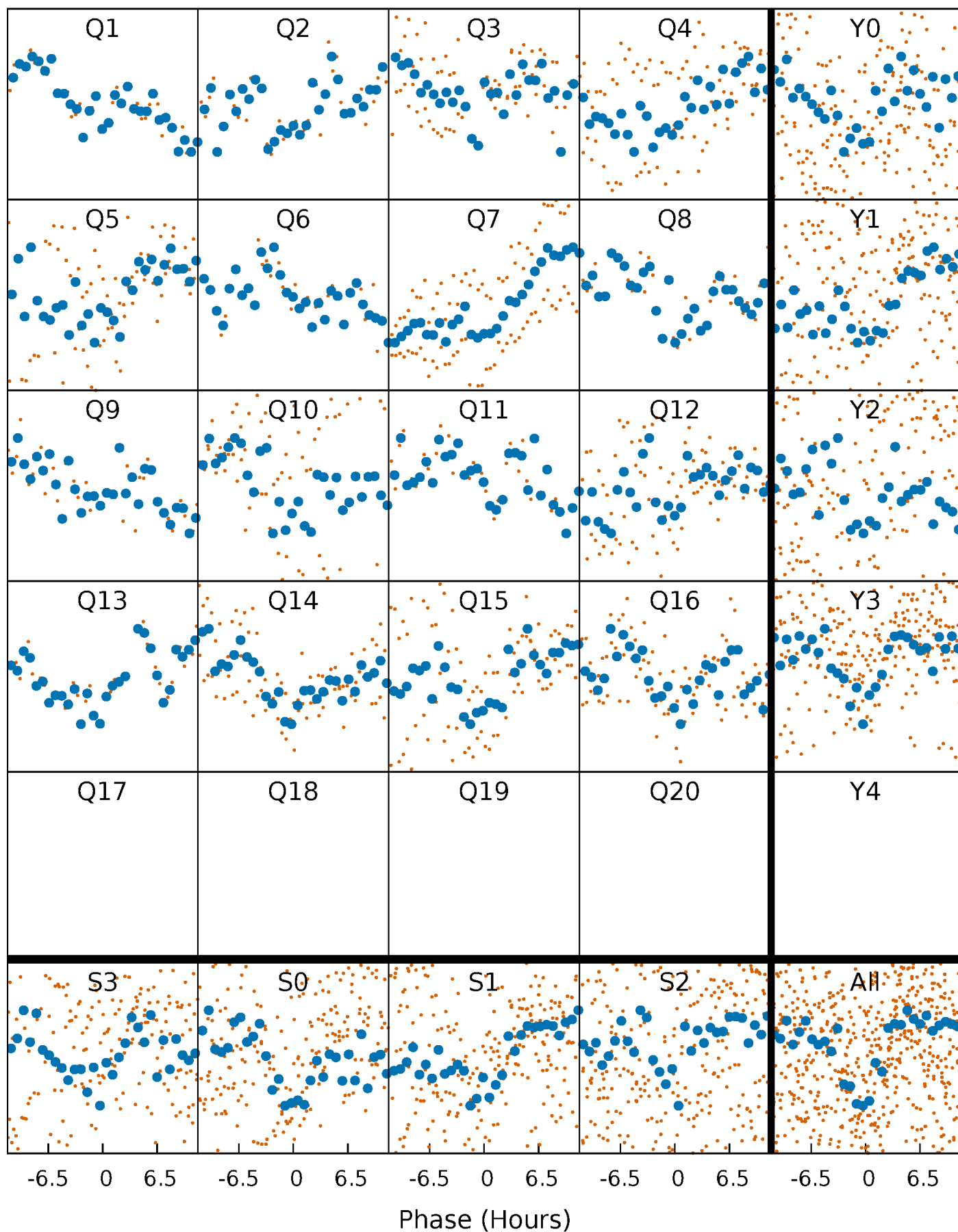


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



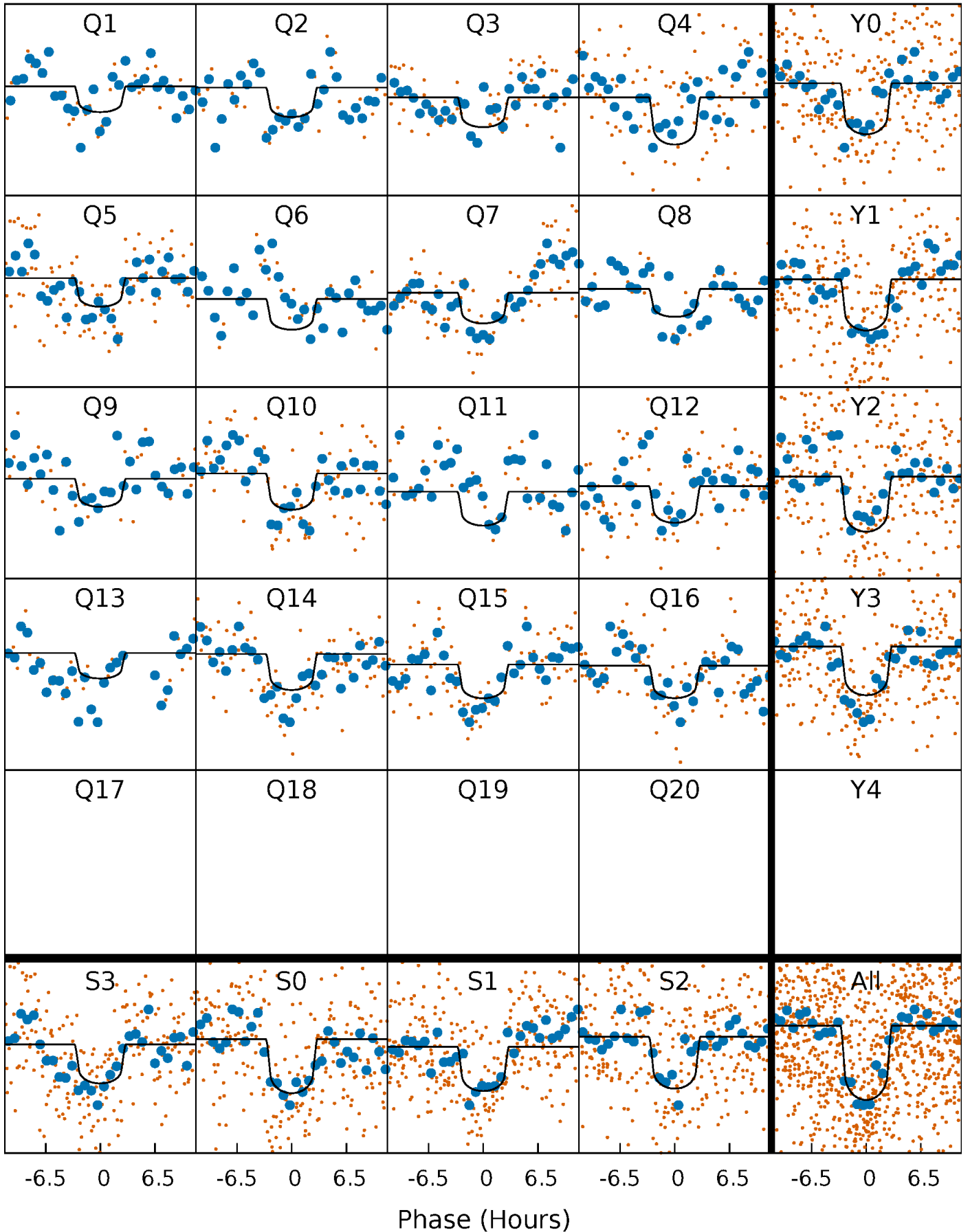
PDC Quarter-Phased Transit Curves

TCE 008009811-01 P= 53.553893 Days $T_0=160.417731$ (BKJD)



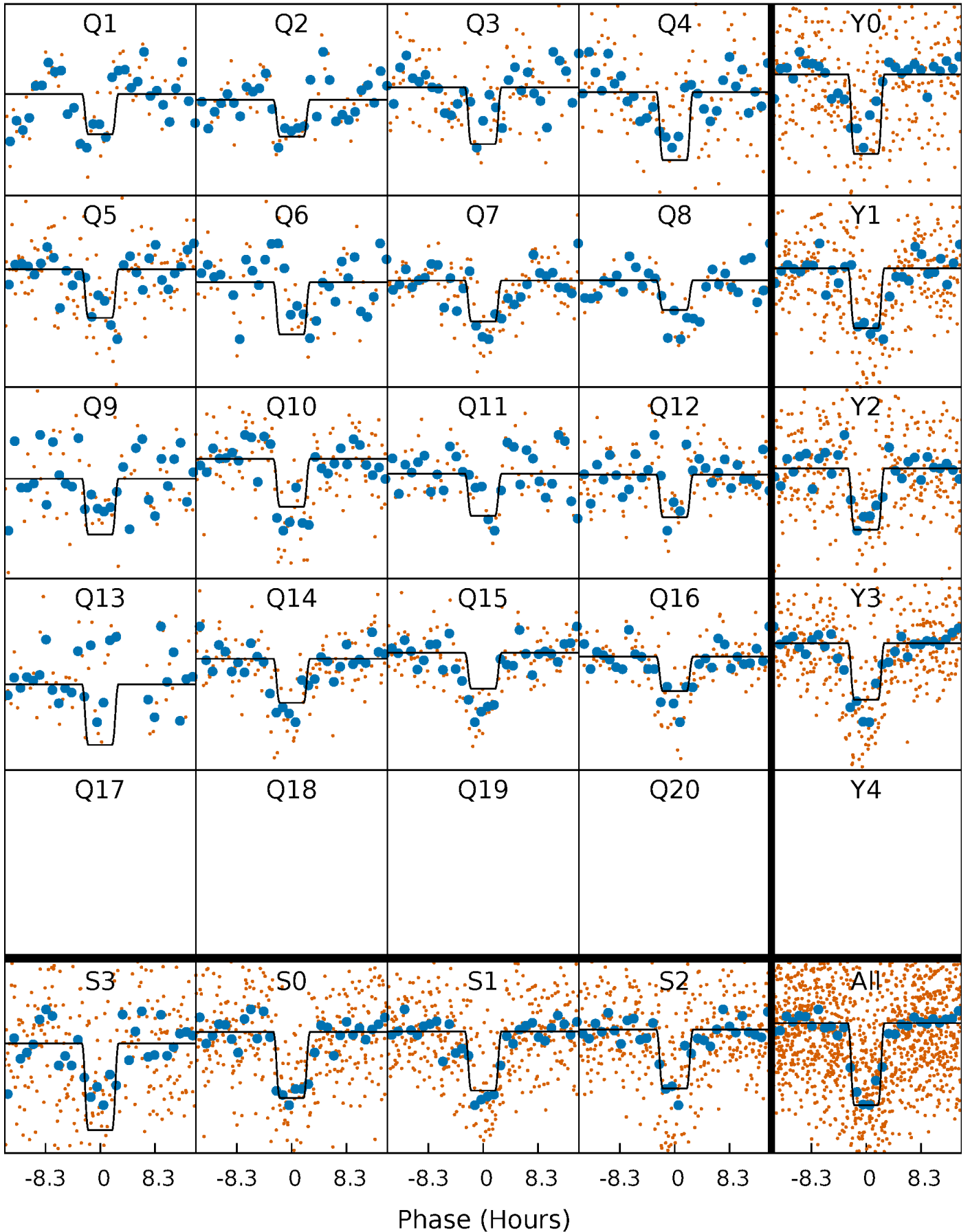
DV Quarter-Phased Transit Curves

TCE 008009811-01 P= 53.553893 Days $T_0=160.417731$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

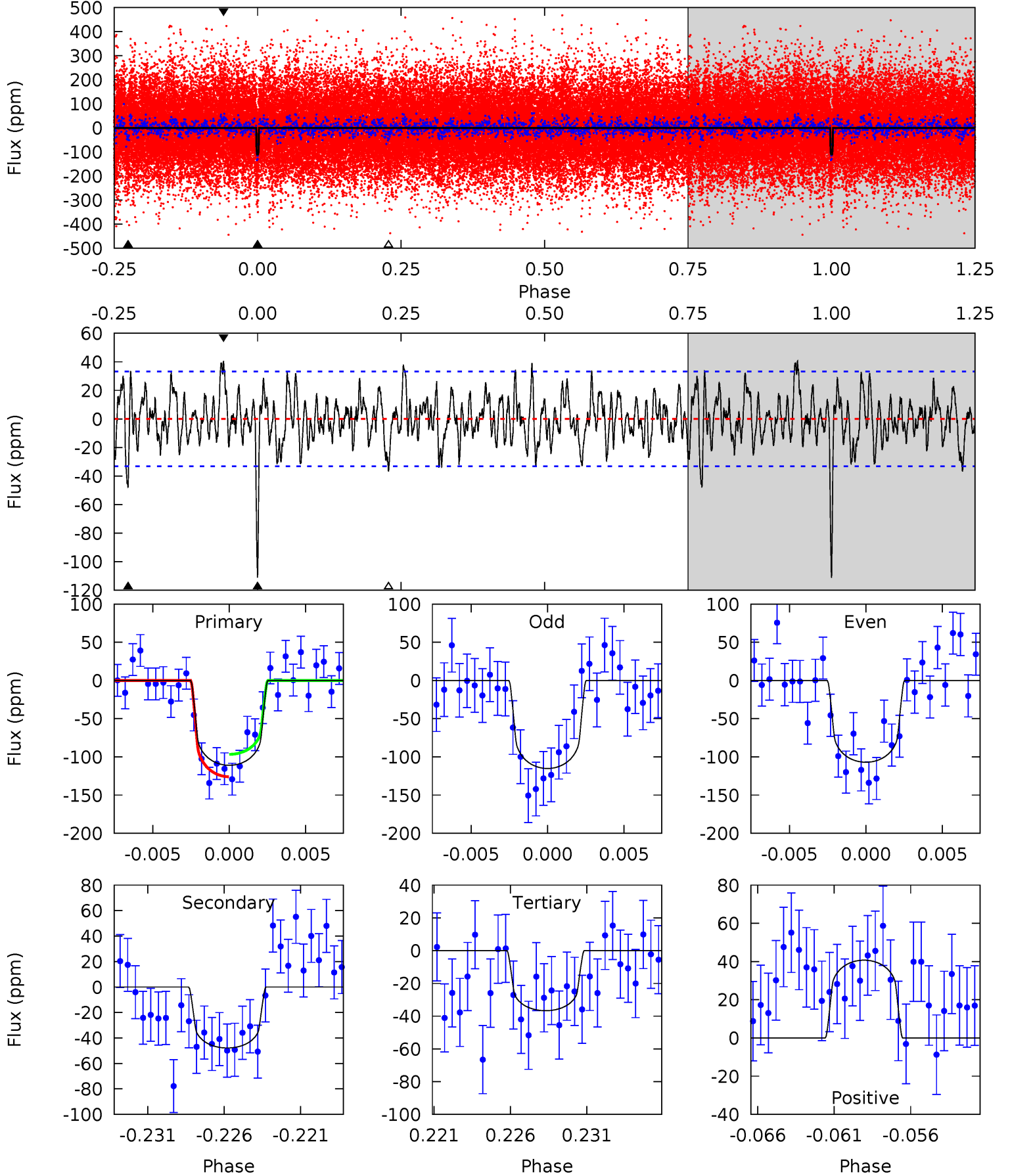
TCE 008009811-01 P= 53.554070 Days $T_0=160.403865$ (BKJD)



DV Model-Shift Uniqueness Test

008009811-01, P = 53.553893 Days, E = 106.863838 Days

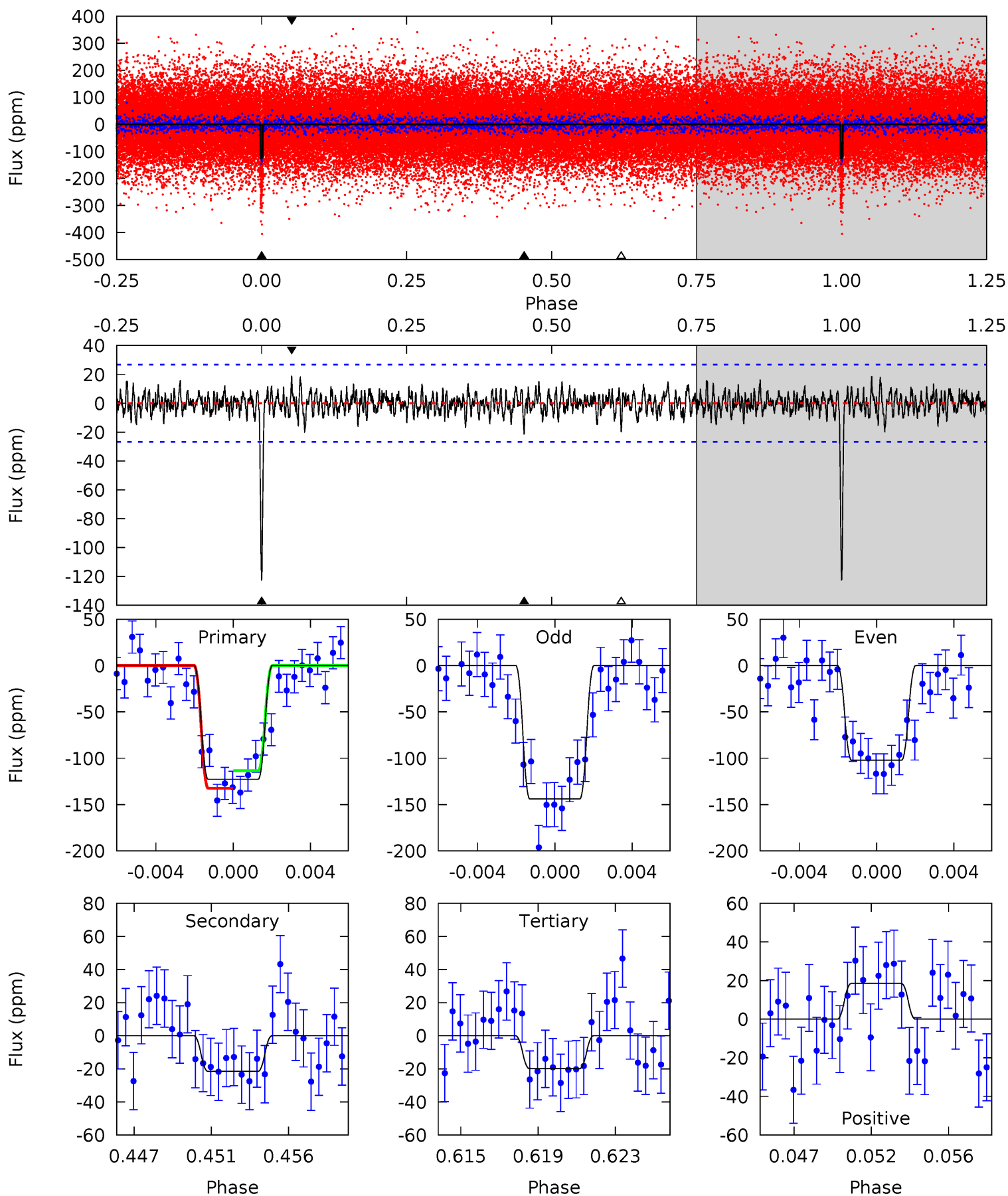
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
17.3	7.46	5.71	6.34	5.17	2.83	2.14	11.6	10.9	1.74	1.11	0.64	1.00	0.27	2.28



Alt Model-Shift Uniqueness Test

008009811-01, P = 53.554070 Days, E = 106.849795 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
23.8	4.18	3.87	3.60	5.19	2.86	1.13	19.9	20.2	0.31	0.59	4.06	1.07	0.13	1.83



Stellar Parameters For KIC 008009811

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6039^{+81}_{-81}	$3.760^{+0.300}_{-0.100}$	$0.140^{+0.150}_{-0.100}$	$2.622^{+0.377}_{-0.879}$	$1.442^{+0.132}_{-0.245}$	$0.113^{+0.225}_{-0.034}$
	+1%/-1%	+8%/-3%	+107%/-71%	+14%/-34%	+9%/-17%	+200%/-30%
Source	SPE90	FLK73	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 008009811-01 / KOI 5459.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-48 ± 6	$3.03^{+1.46}_{-1.28}$	1062^{+55}_{-87}	4874^{+1320}_{-685}	288^{+603}_{-160}
Alt.	-22 ± 5	$3.16^{+1.58}_{-1.38}$	1071^{+46}_{-95}	4077^{+973}_{-481}	115^{+231}_{-65}

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 $A_{obs} \gg 1.0$

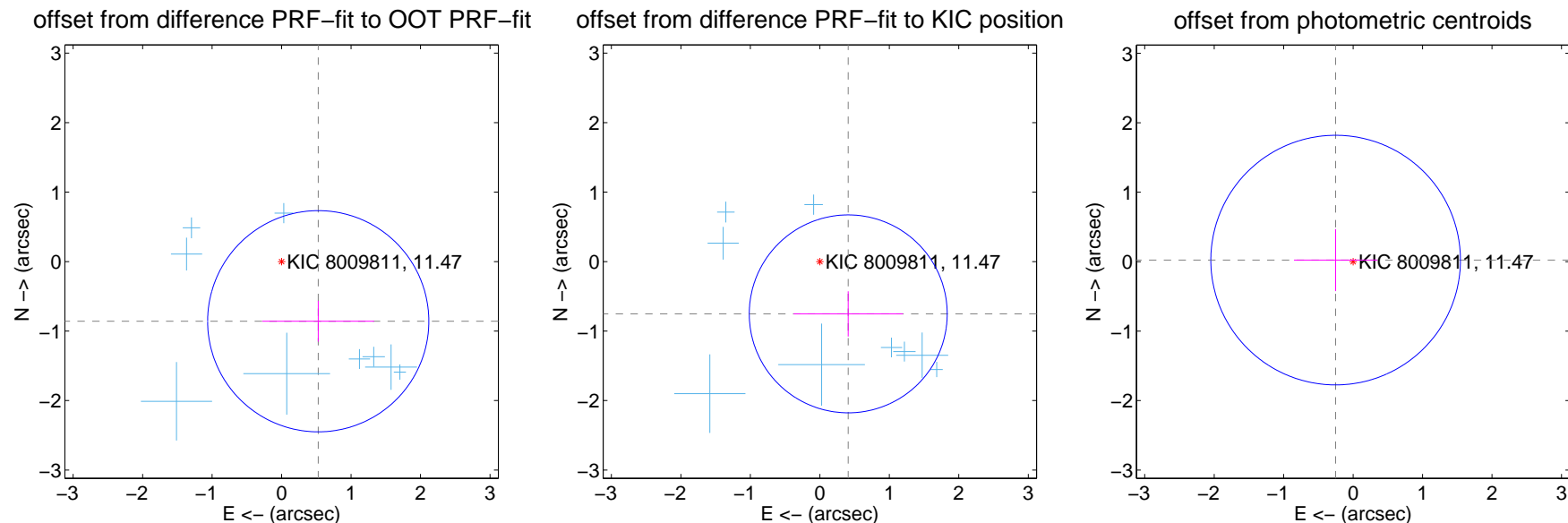
DV Centroid Data

Supplemental centroid analysis for 008009811-01. **Kepler magnitude: 11.47.** Transit SNR 8.79

There are 9 quarters with good PRF difference image offsets

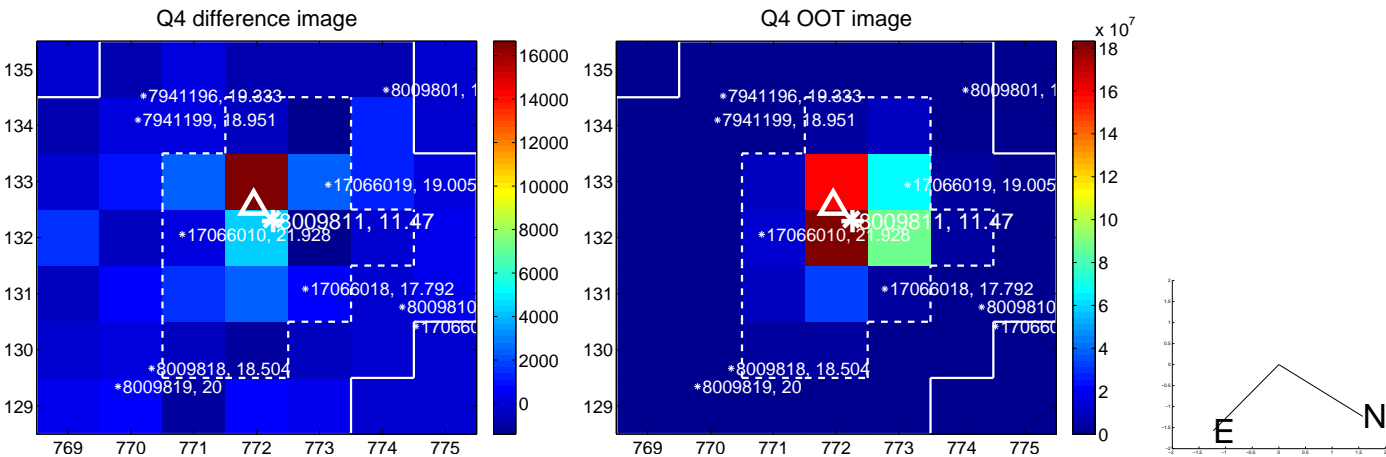
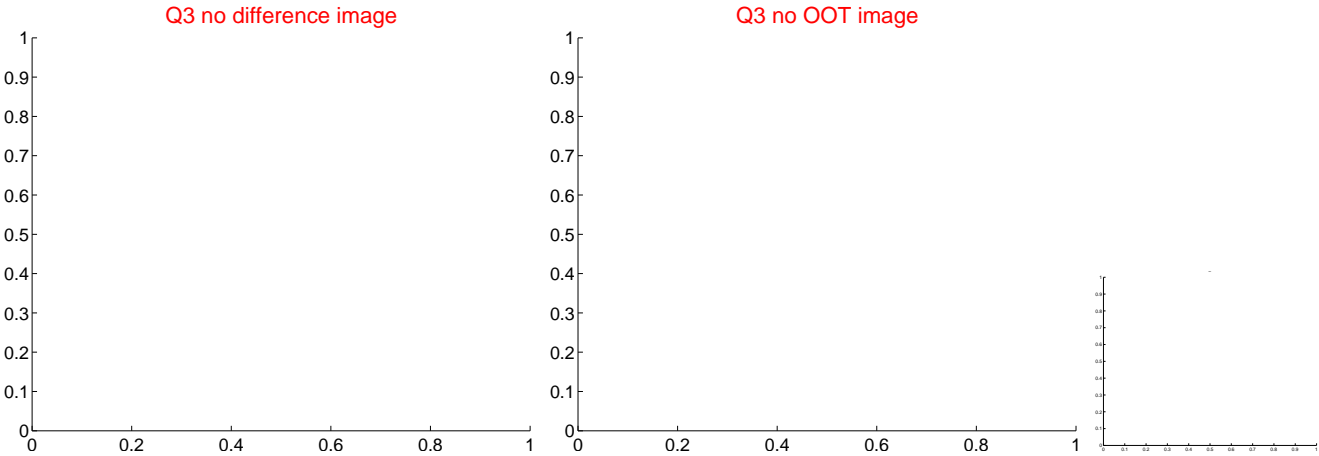
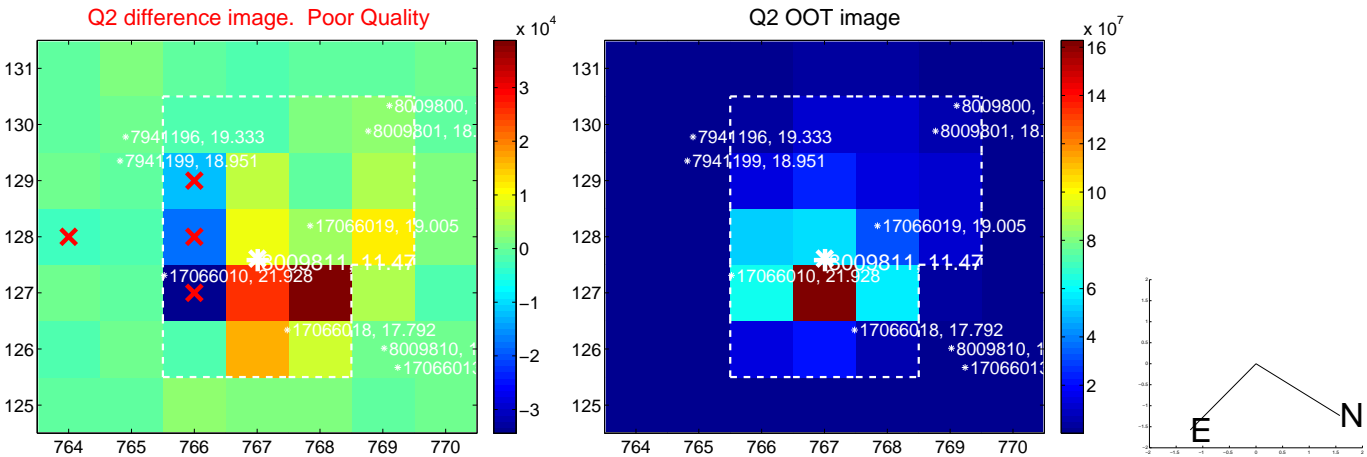
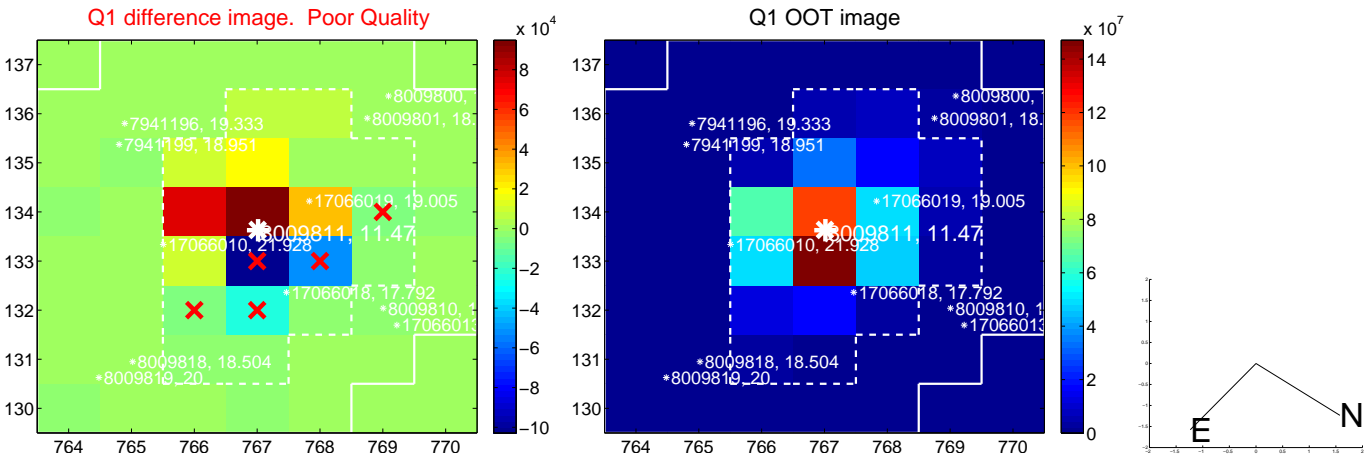
The direct PRF centroid is offset from the target star catalog position by about 0.20 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.008 ± 0.531	1.90	-0.527 ± 0.805	-0.858 ± 0.294
PRF-fit source offset from KIC position	0.856 ± 0.475	1.80	-0.409 ± 0.787	-0.752 ± 0.326
photometric centroid source offset	0.25 ± 0.60	0.42	0.25 ± 0.60	0.02 ± 0.45

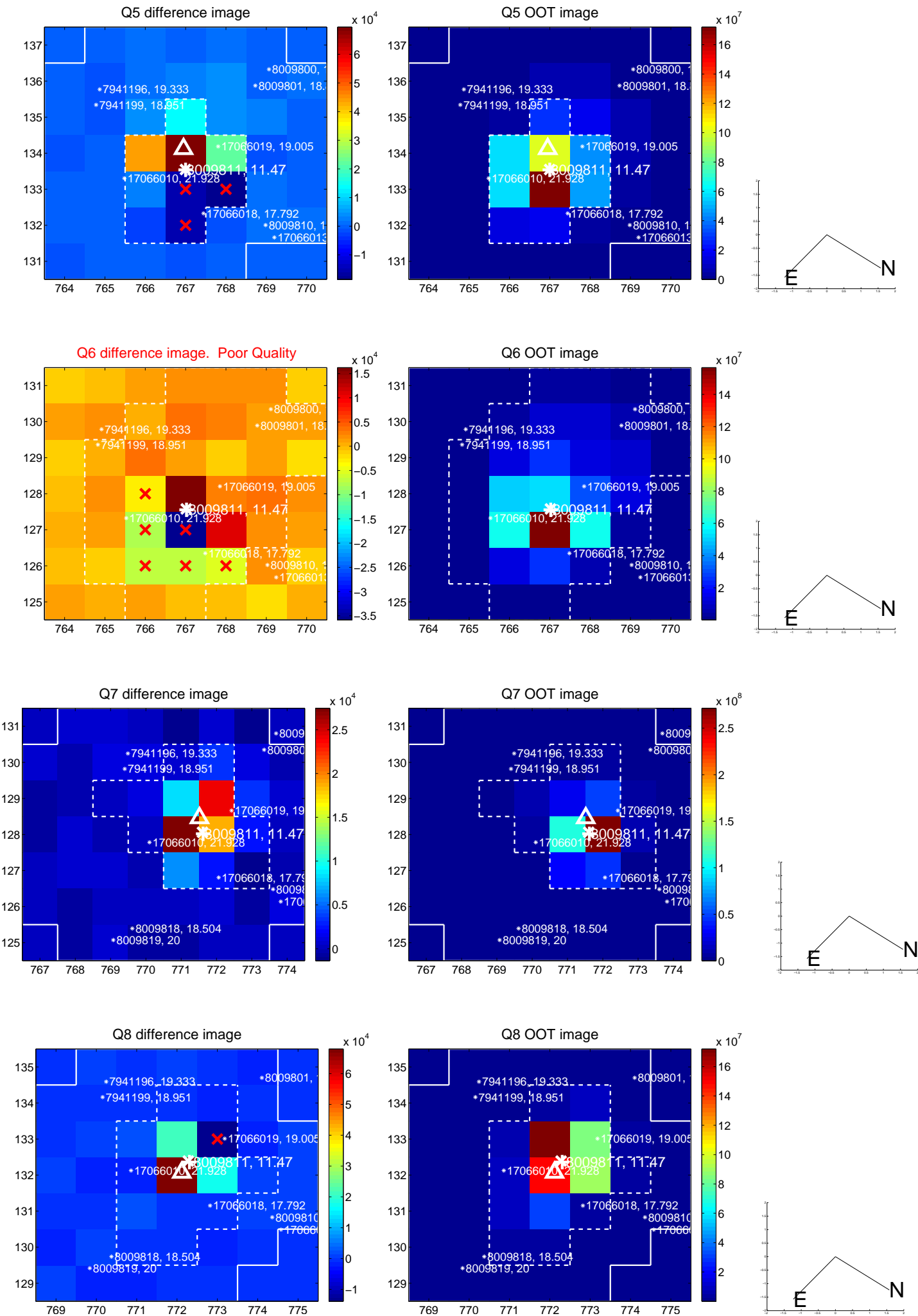


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

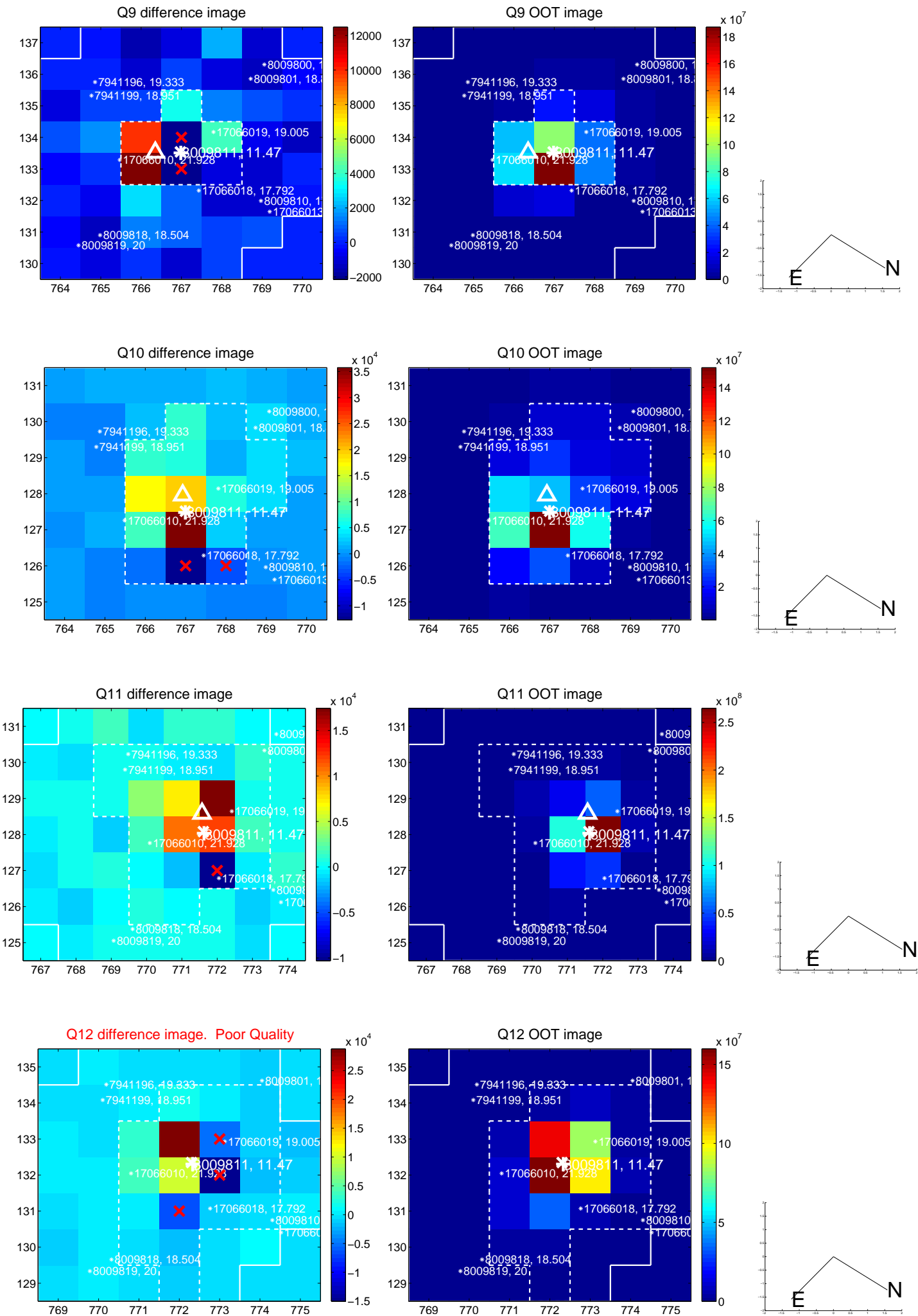
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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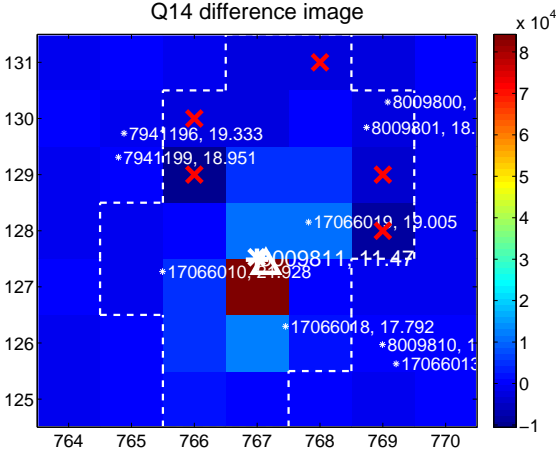
Q13 no difference image



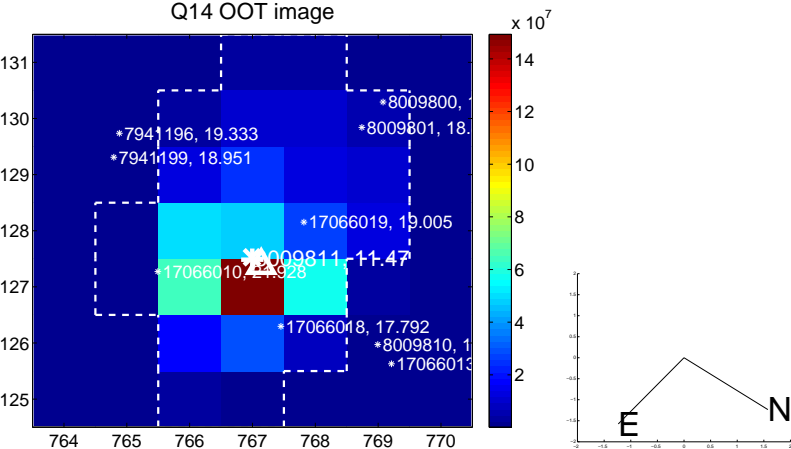
Q13 no OOT image



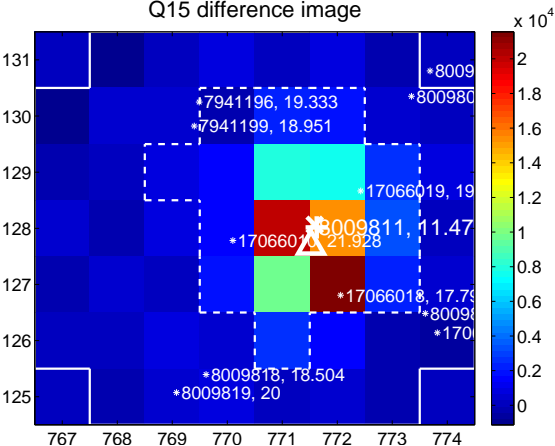
Q14 difference image



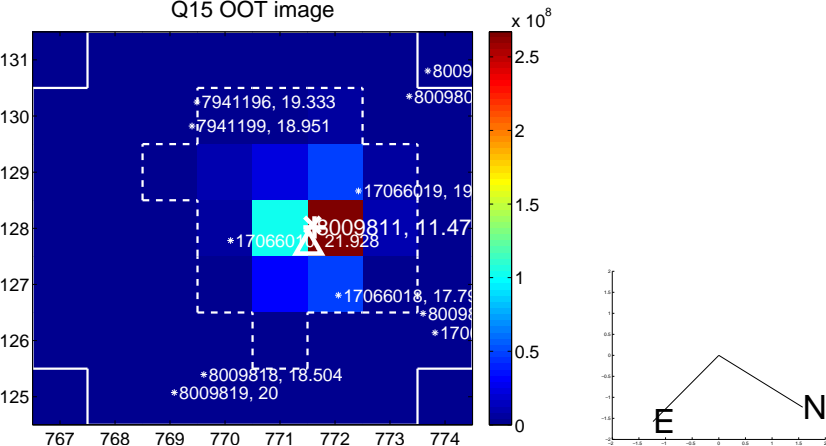
Q14 OOT image



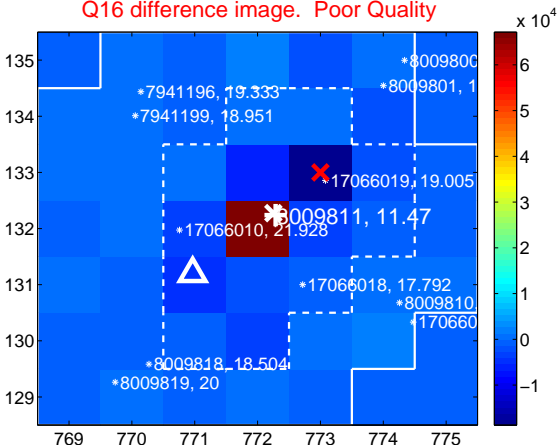
Q15 difference image



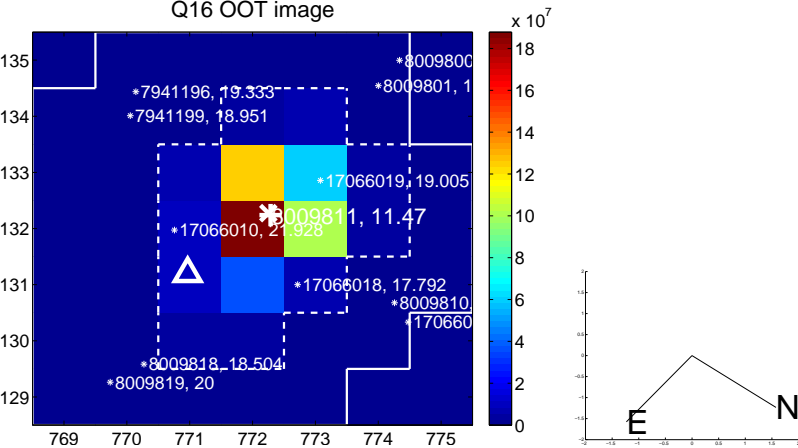
Q15 OOT image



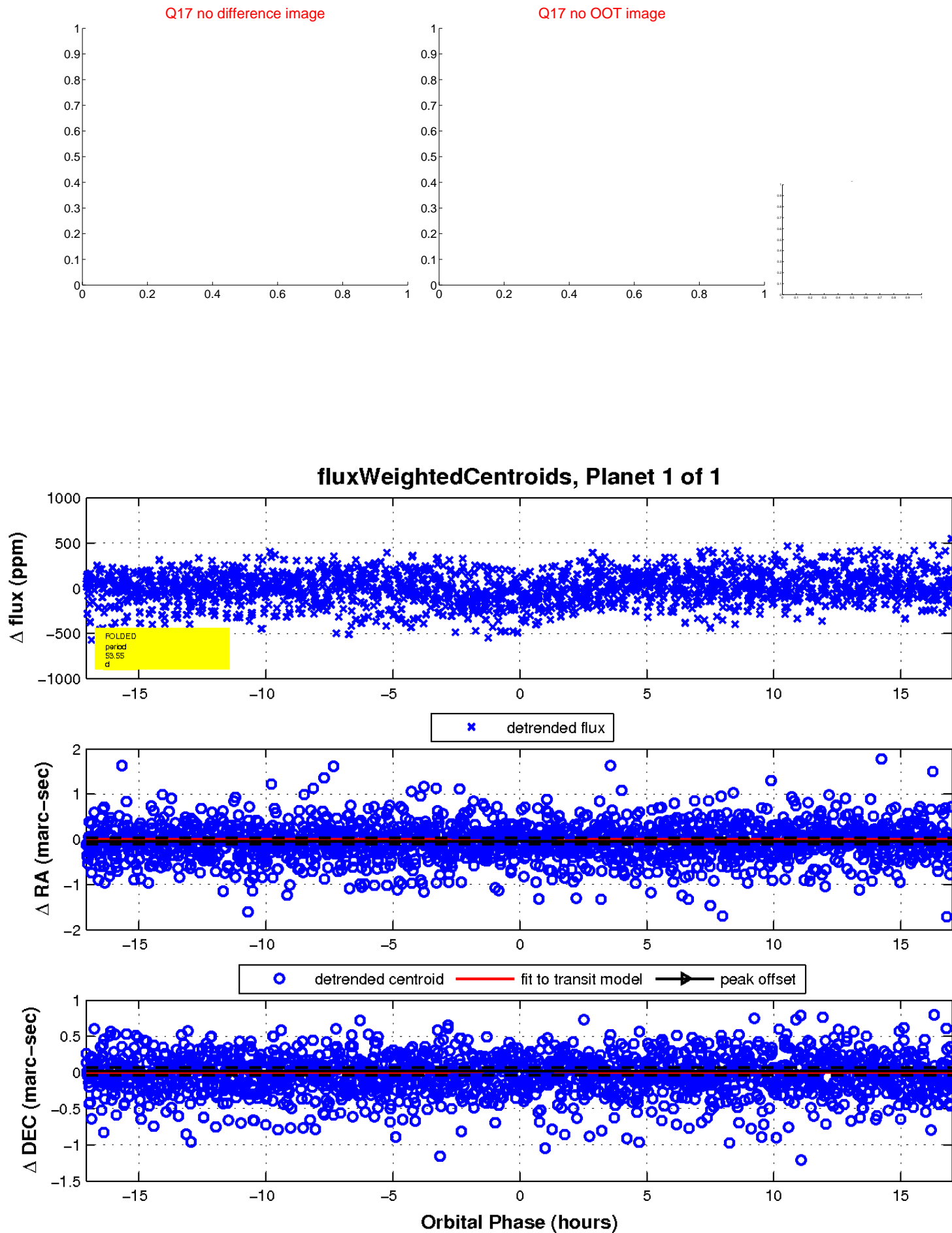
Q16 difference image. Poor Quality



Q16 OOT image



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



UKIRT Image

Declination

