

KIC 010591578

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})
010591578-01	OBS	No	568.658936	224.283330	567.6	5.864	9.3	7.6	0.65	4444	1.71	0.11

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010591578-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—LPP_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS

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 010591578-01

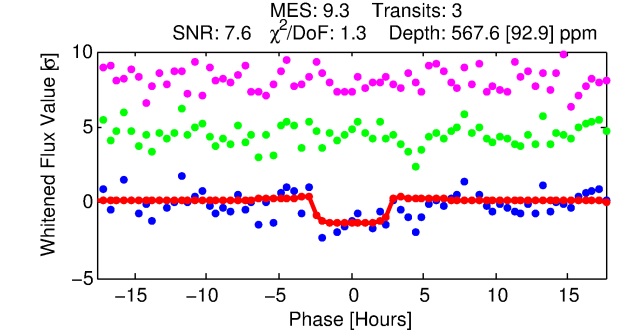
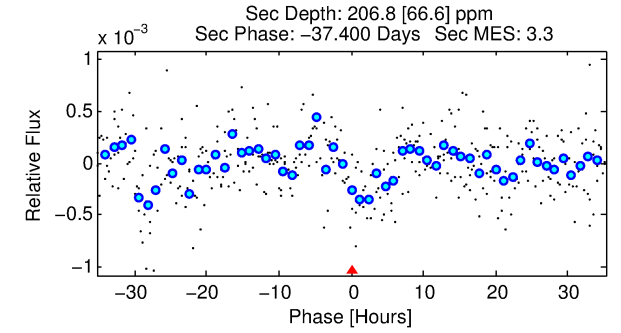
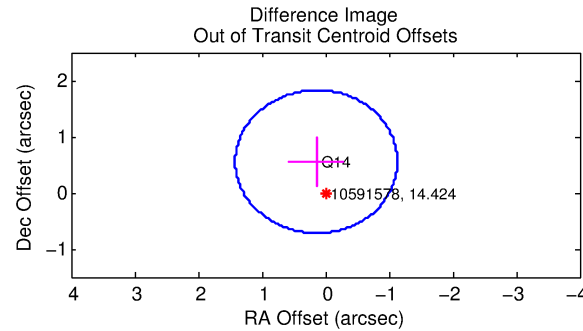
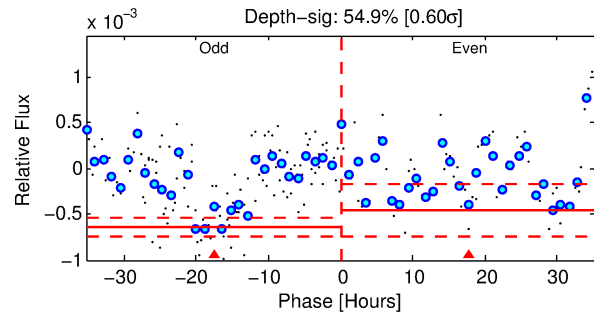
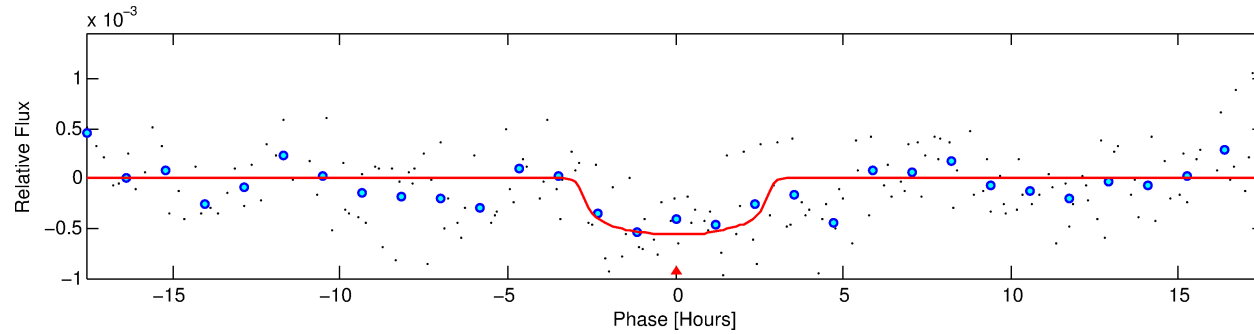
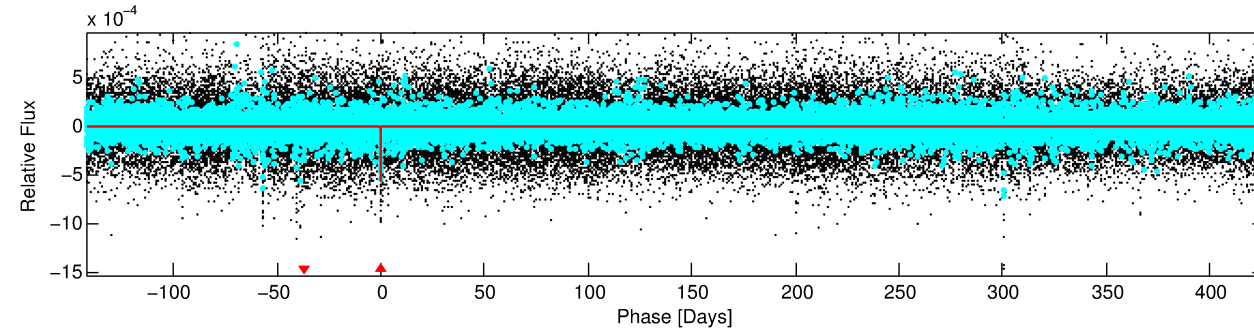
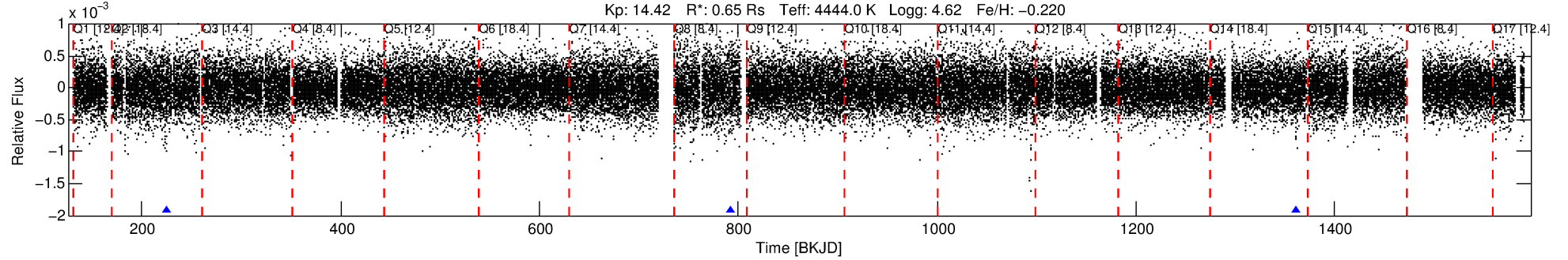
No Significant Match Found

DV One-Page Summary

KIC: 10591578 Candidate: 1 of 1 Period: 568.659 d

KOI: K05811 Corr: No Ephemeris Match

Kp: 14.42 R*: 0.65 Rs Teff: 4444.0 K Logg: 4.62 Fe/H: -0.220



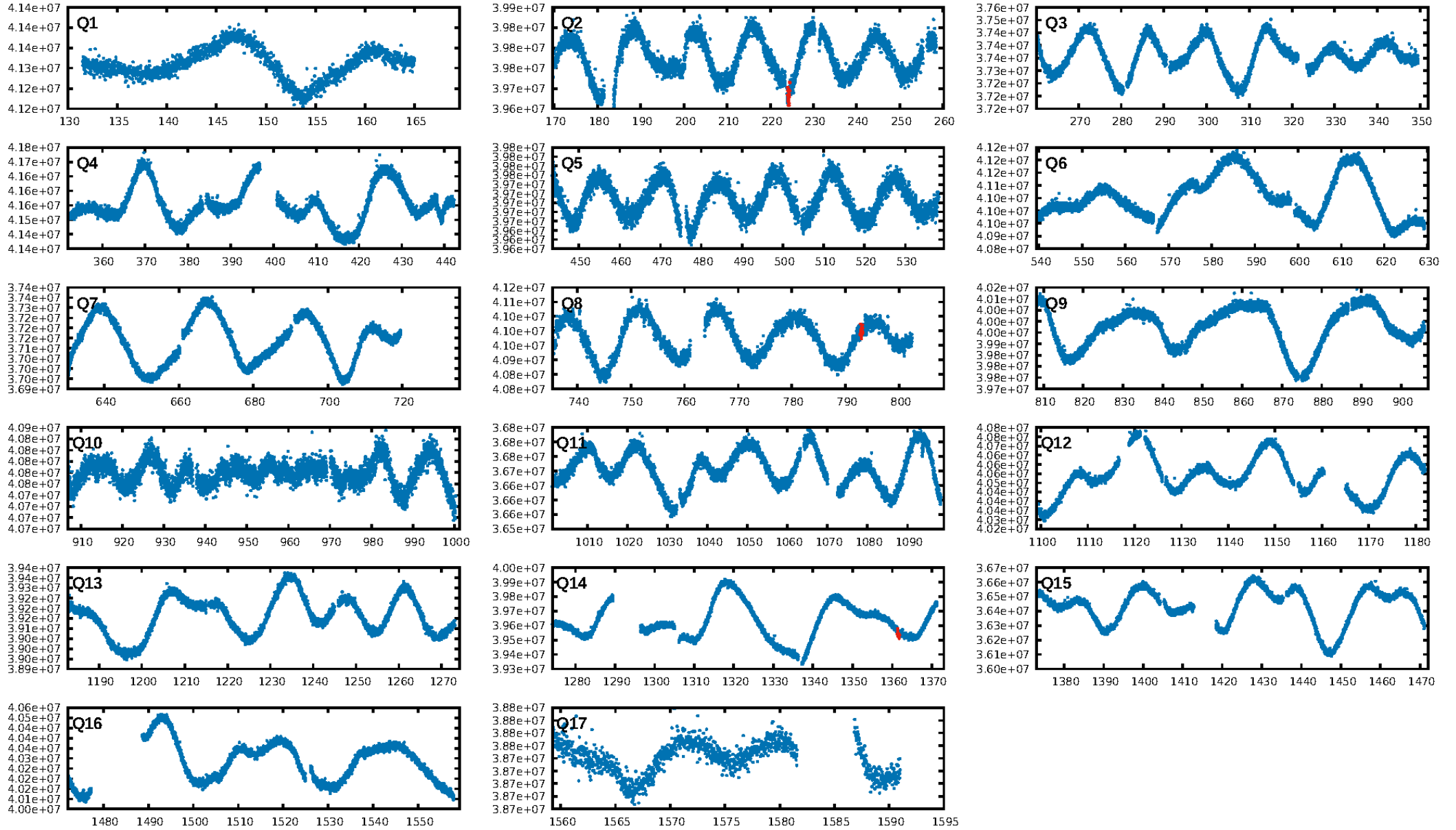
DV Fit Results:

Period = 568.65894 [0.00960] d
Epoch = 224.2833 [0.0145] BKJD
Rp/R* = 0.0243 [0.0162]
a/R* = 485.03 [1106.82]
b = 0.79 [1.12]
Seff = 0.11 [0.02]
Teq = 147 [6] K
Rp = 1.71 [1.15] Re
a = 1.1525 [0.0820] AU
Ag = 51504.91 [70708.80] [0.73σ]
Teff = 3416 [1174] K [2.79σ]

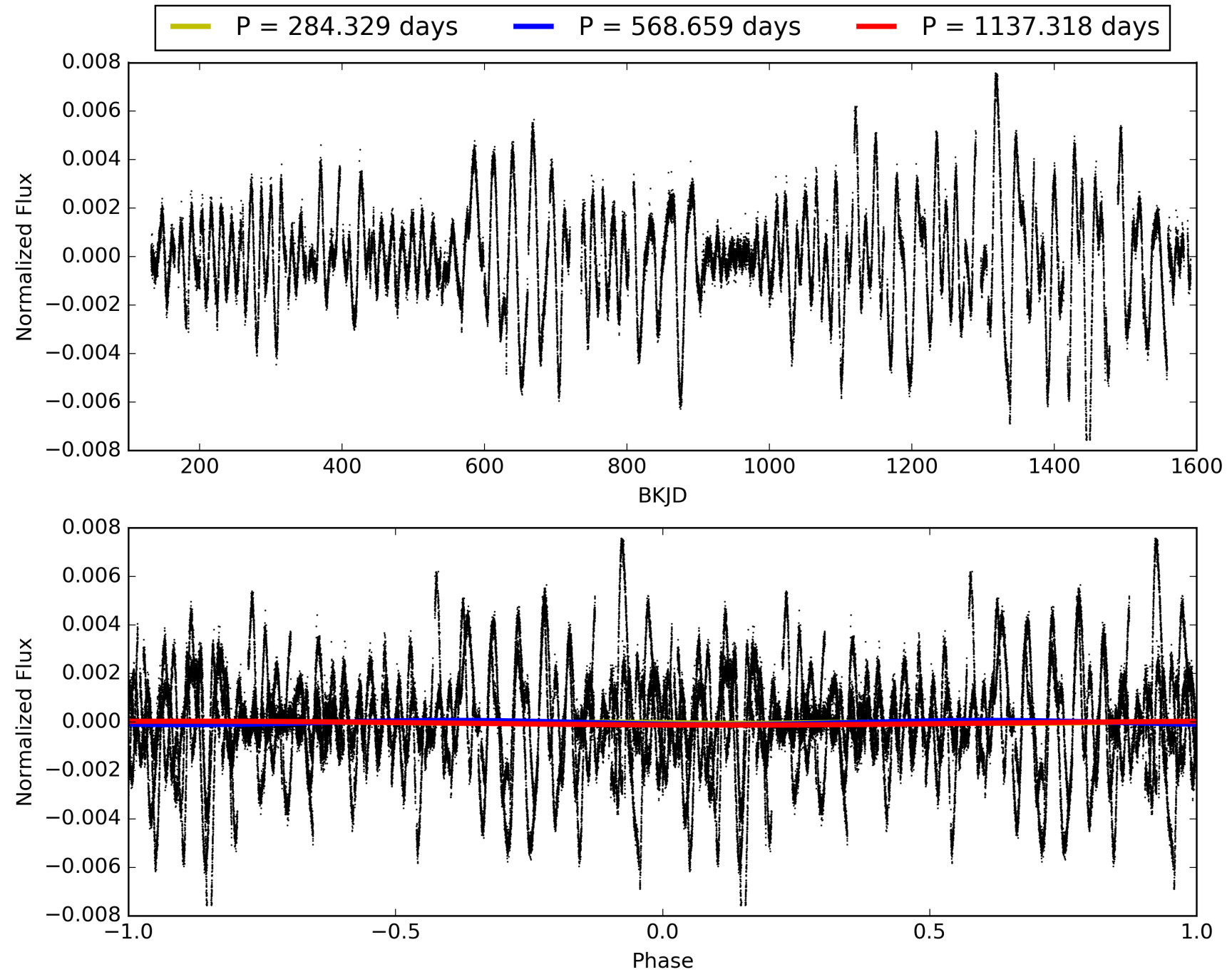
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 9.5%
ModelChiSquareGof-sig: 74.5%
Bootstrap-pfa: 4.13e-16
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: -1.643
Centroid-sig: 0.4%
Centroid-so: 1.819 arcsec [1.41σ]
OotOffset-rm: 0.571 arcsec [1.34σ]
KicOffset-rm: 0.321 arcsec [0.75σ]
OotOffset-st: 1/0/0/0 [1]
KicOffset-st: 1/0/0/0 [1]
DiffImageQuality-fgm: 1.00 [1/1]
DiffImageOverlap-fno: 1.00 [2/2]

TCE 010591578-01, PDC Light Curves

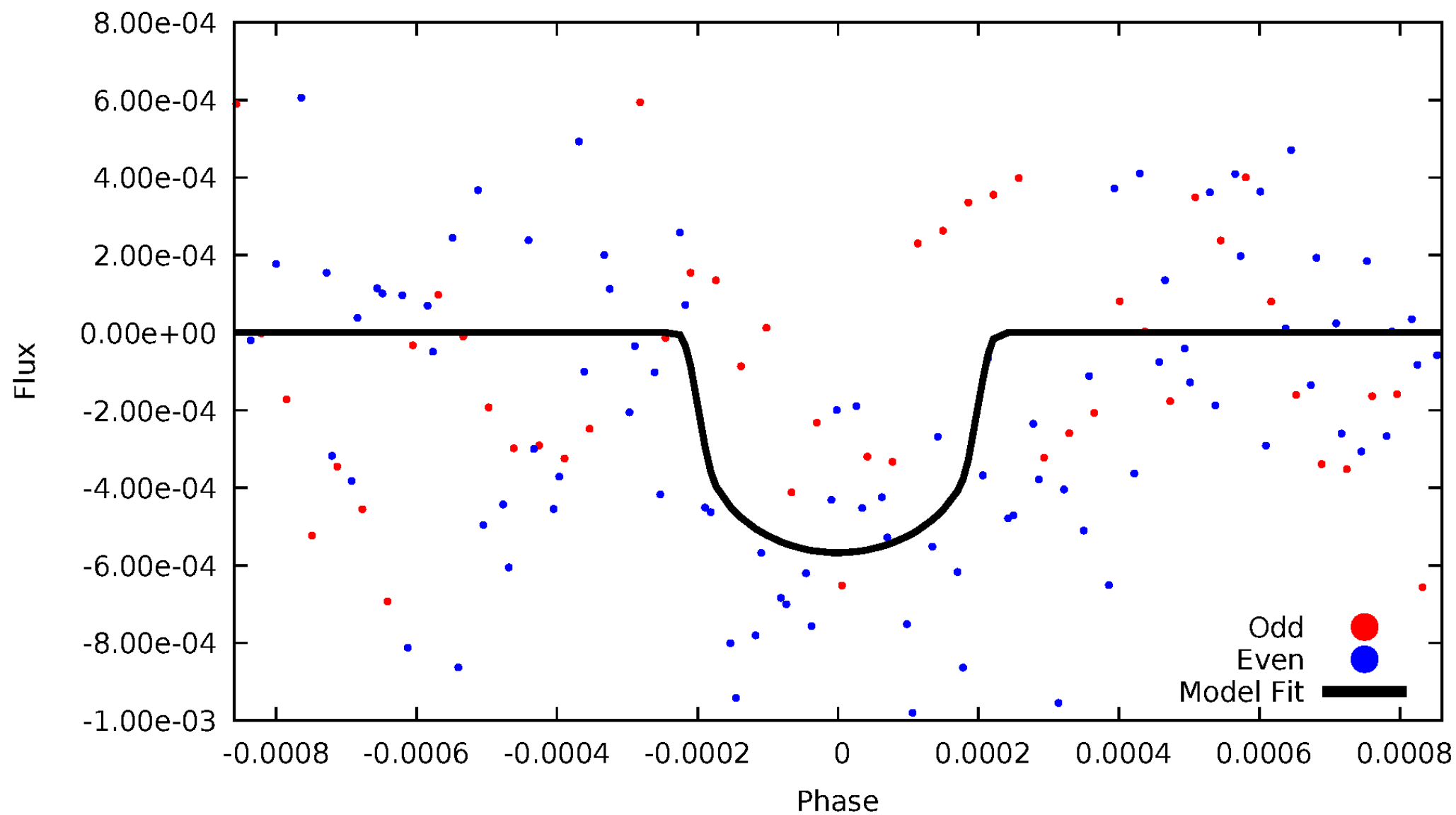


TCE 010591578-01



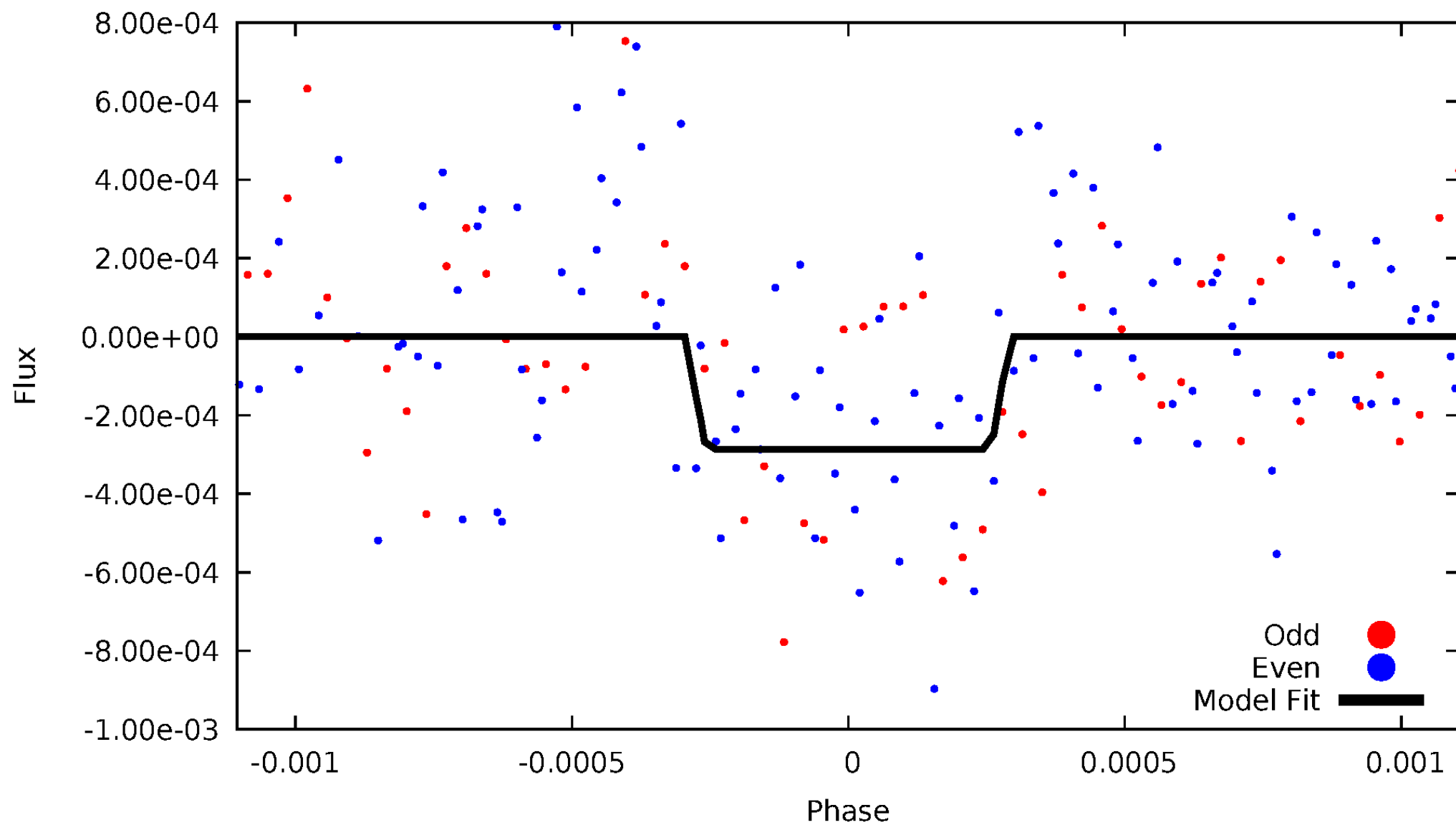
DV Odd/Even

TCE 010591578-01

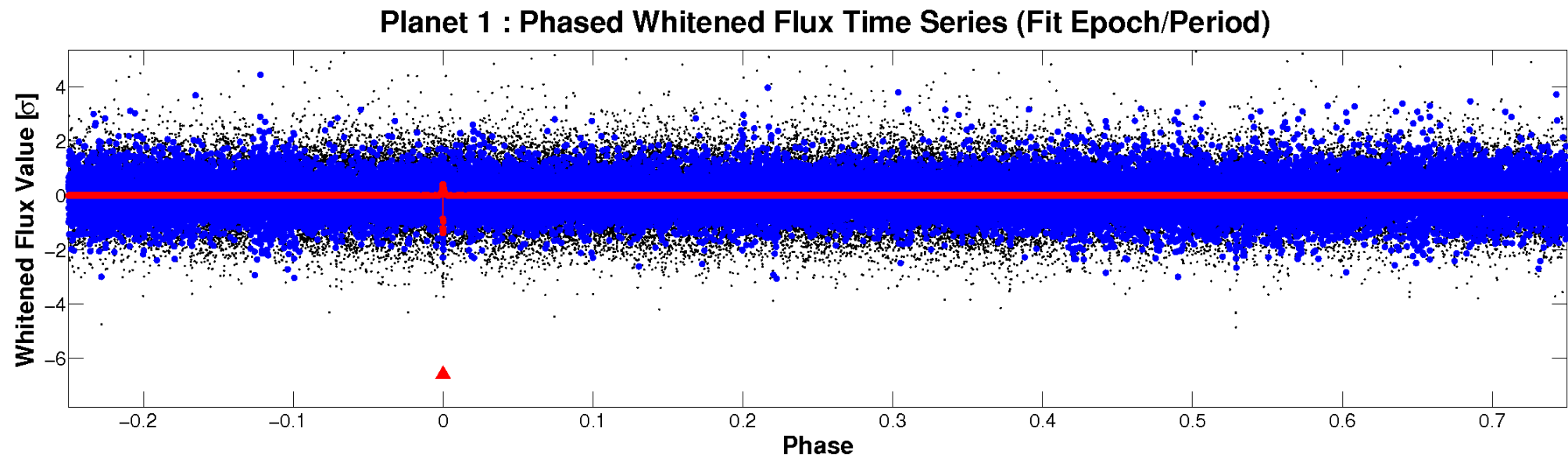
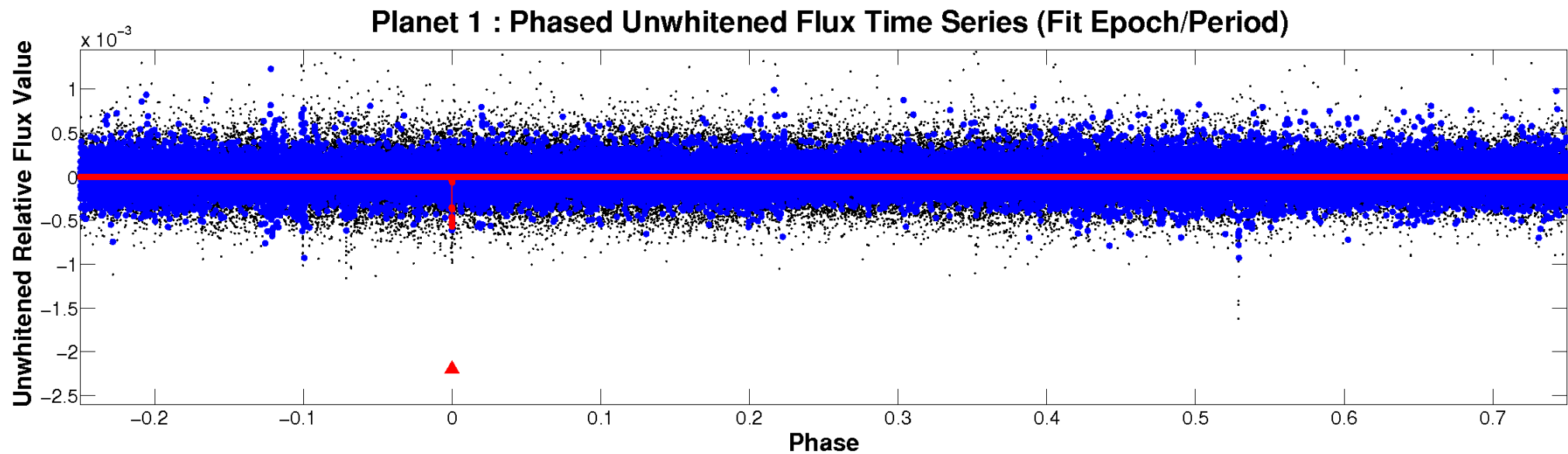


ALT Odd/Even

TCE 010591578-01

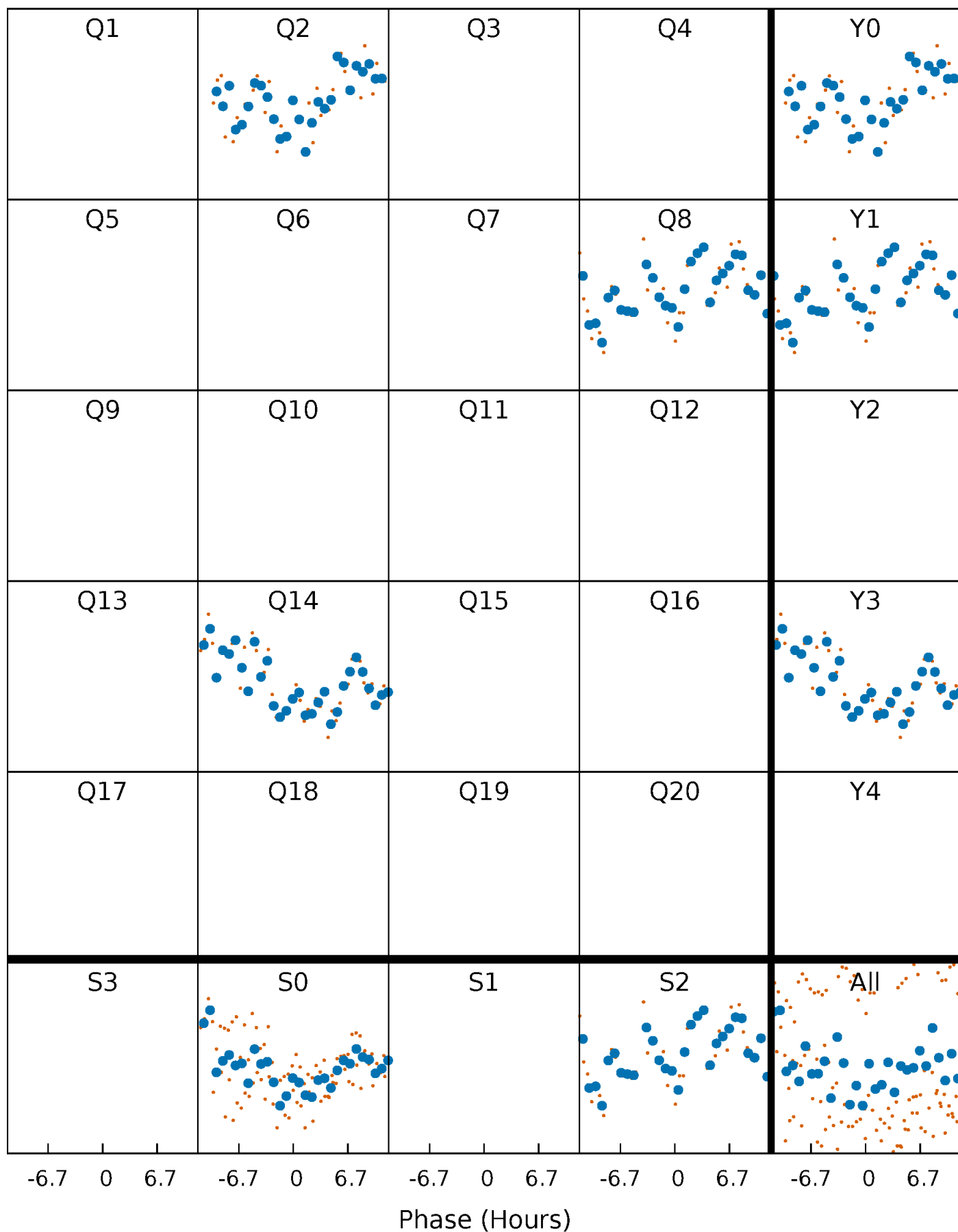


Non-Whitened Vs. Whitened Light Curve



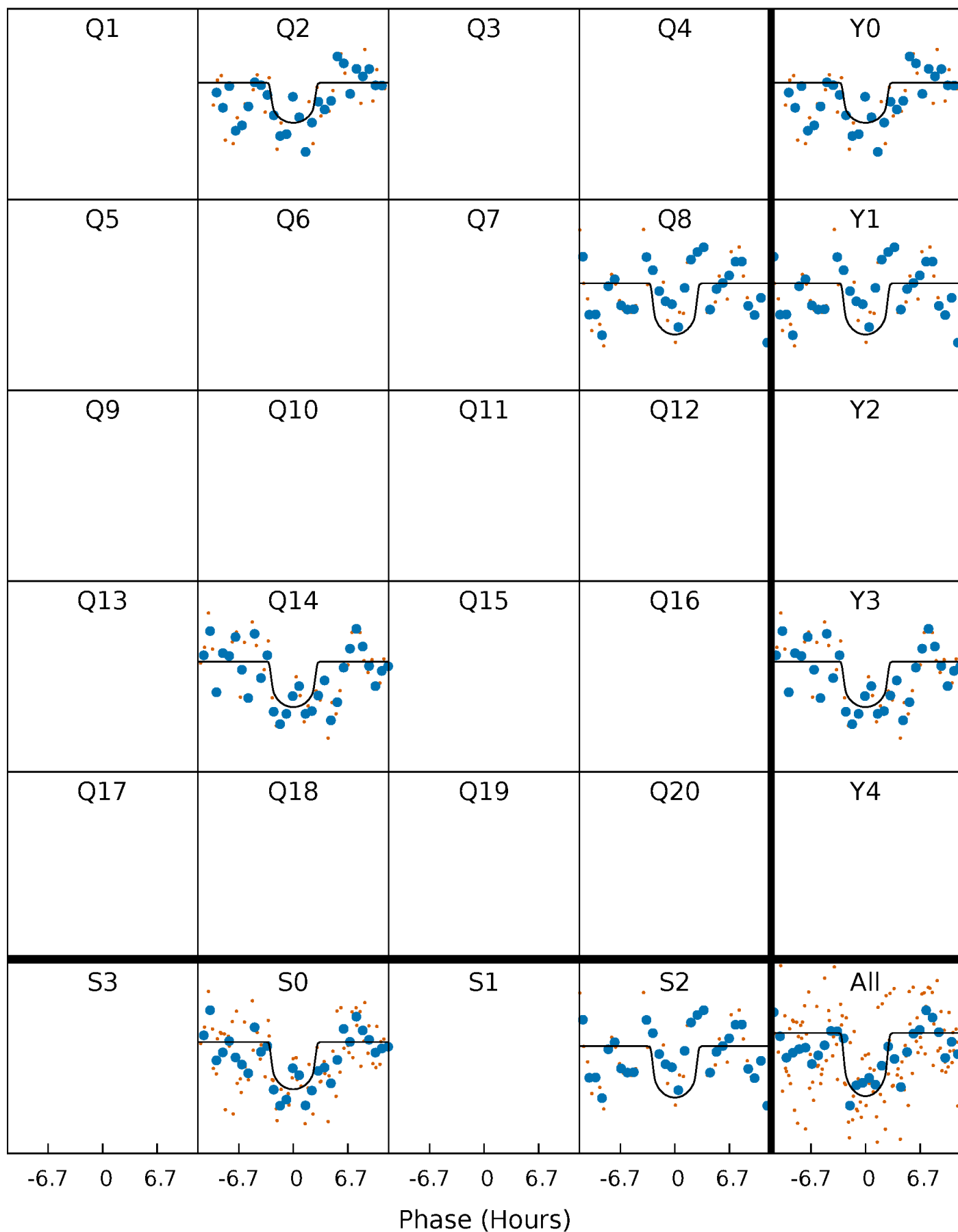
PDC Quarter-Phased Transit Curves

TCE 010591578-01 P=568.658936 Days $T_0=224.283330$ (BKJD)



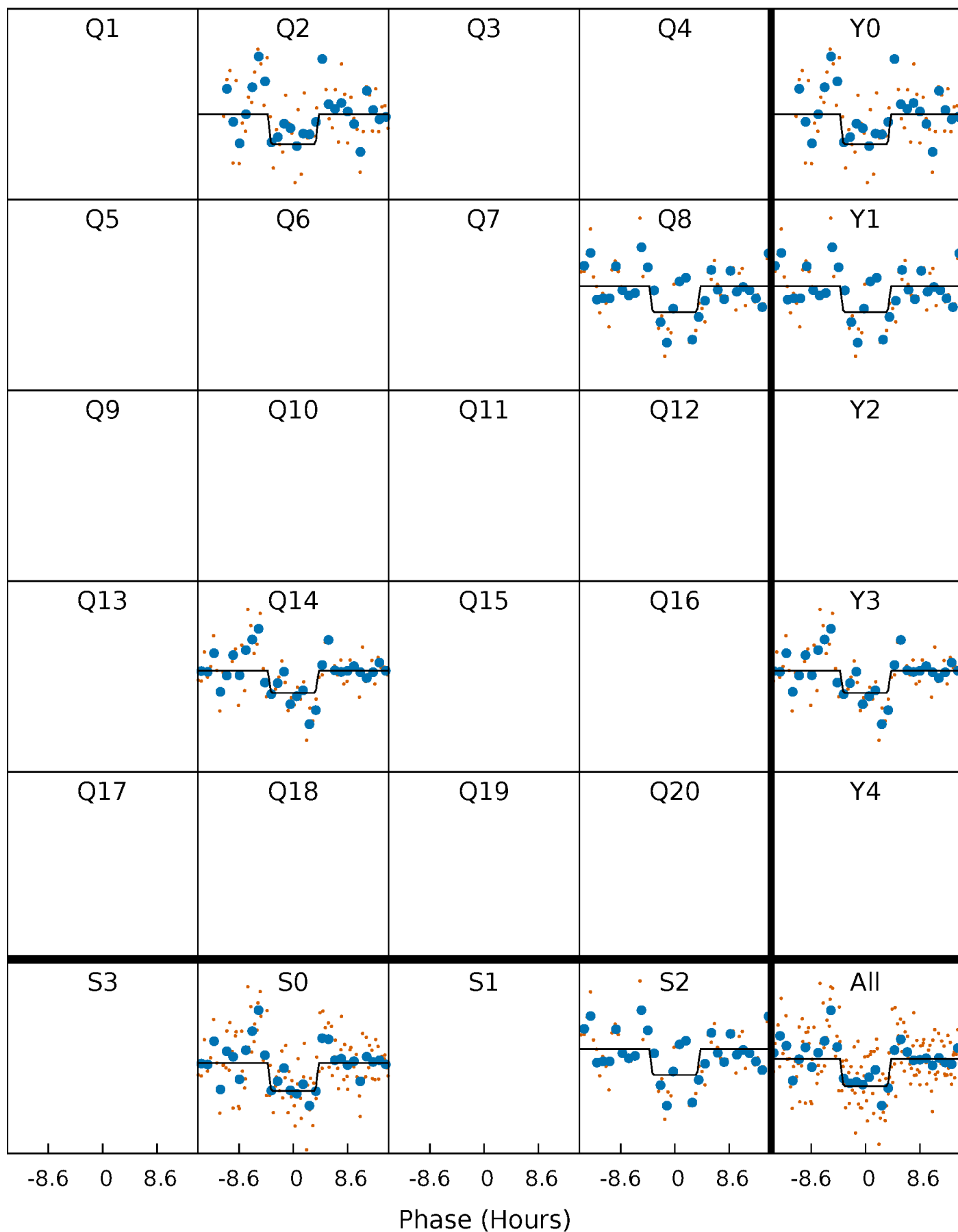
DV Quarter-Phased Transit Curves

TCE 010591578-01 P=568.658936 Days $T_0=224.283330$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

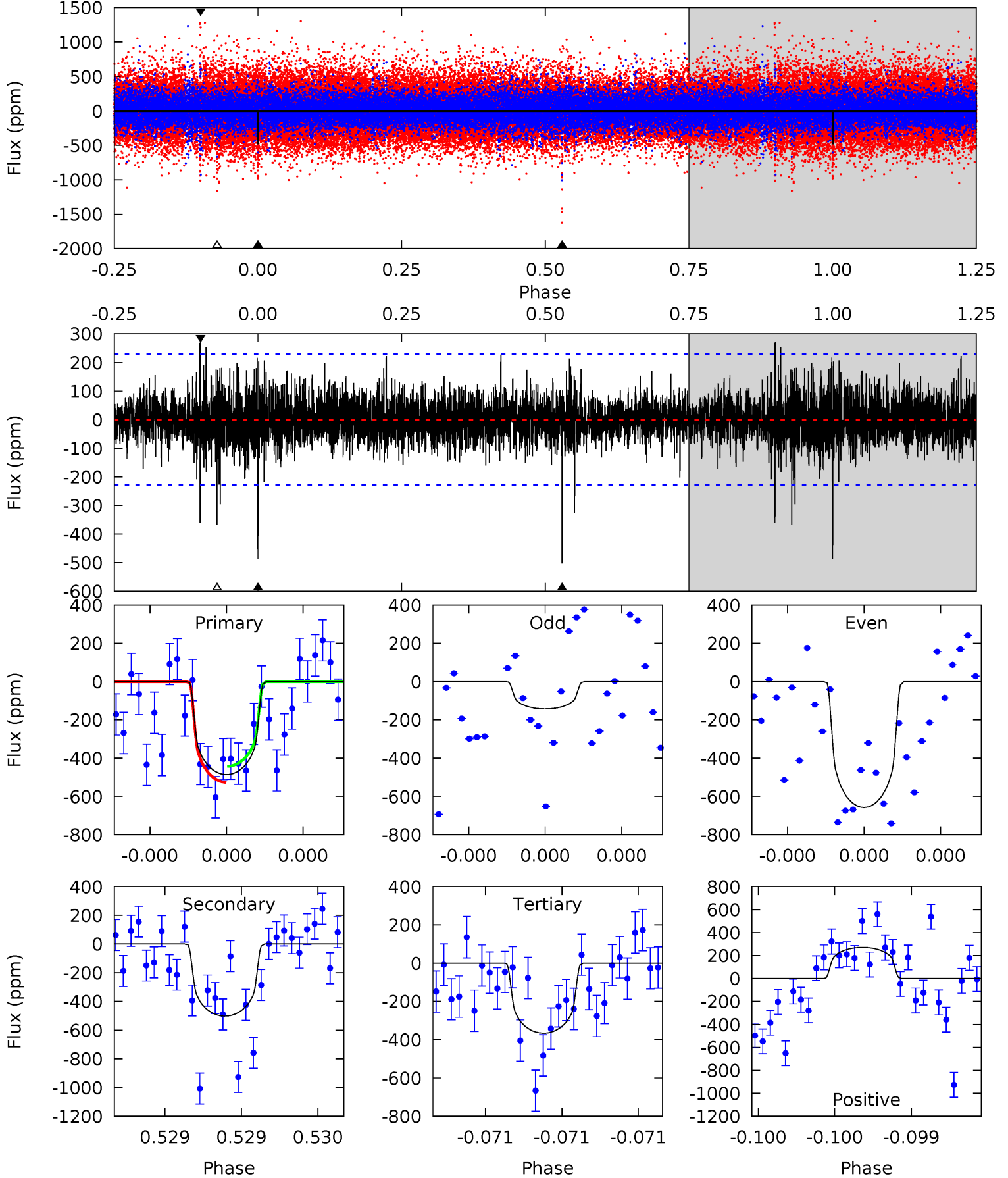
TCE 010591578-01 P=568.679597 Days $T_0=224.332013$ (BKJD)



DV Model-Shift Uniqueness Test

010591578-01, P = 568.658936 Days, E = 224.283330 Days

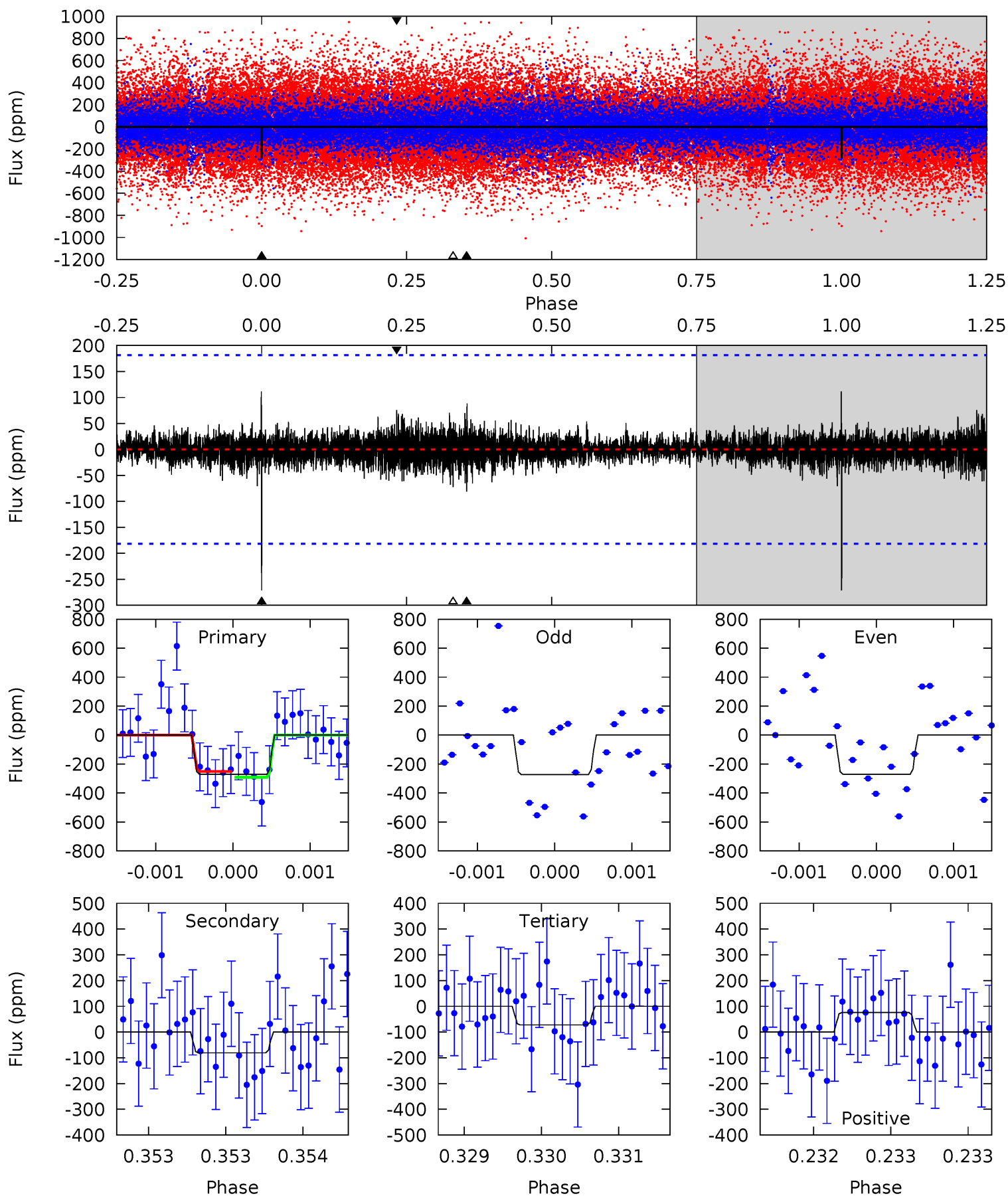
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.9	12.2	8.92	6.61	5.59	3.50	1.39	2.93	5.24	3.32	5.63	5.86	0.76	0.35	1.01



Alt Model-Shift Uniqueness Test

010591578-01, P = 568.679597 Days, E = 224.332013 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.31	2.47	2.21	2.32	5.56	3.45	0.49	6.09	5.98	0.26	0.15	0.04	0.99	0.29	0.63



Stellar Parameters For KIC 010591578

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (g \cdot \text{cm}^{-3})$
	4444^{+119}_{-133}	$4.619^{+0.052}_{-0.024}$	$-0.220^{+0.300}_{-0.300}$	$0.645^{+0.046}_{-0.057}$	$0.632^{+0.070}_{-0.051}$	$3.311^{+0.763}_{-0.377}$
	+3%/-3%	+1%/-1%	+136%/-136%	+7%/-9%	+11%/-8%	+23%/-11%
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 010591578-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-502 ± 41	$1.83^{+1.03}_{-1.05}$	203^{+7}_{-7}	4164^{+1825}_{-601}	$108940^{+499979}_{-63642}$
Alt.	-81 ± 33	$1.33^{+1.09}_{-0.83}$	204^{+6}_{-7}	3393^{+1414}_{-548}	$32010^{+192102}_{-22801}$

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

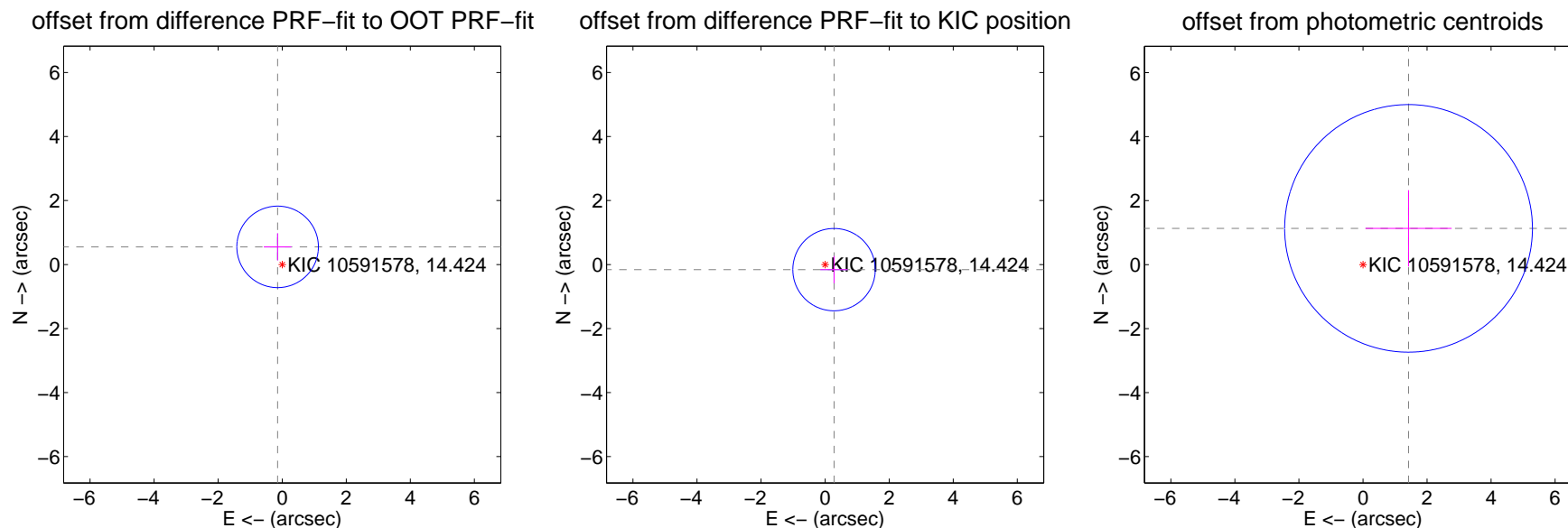
DV Centroid Data

Supplemental centroid analysis for 010591578-01. Kepler magnitude: 14.42. Transit SNR 7.56

There are 1 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.83 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.571 ± 0.425	1.34	0.143 ± 0.430	0.552 ± 0.424
PRF-fit source offset from KIC position	0.321 ± 0.429	0.75	-0.278 ± 0.430	-0.159 ± 0.424
photometric centroid source offset	1.82 ± 1.29	1.41	-1.42 ± 1.35	1.13 ± 1.19

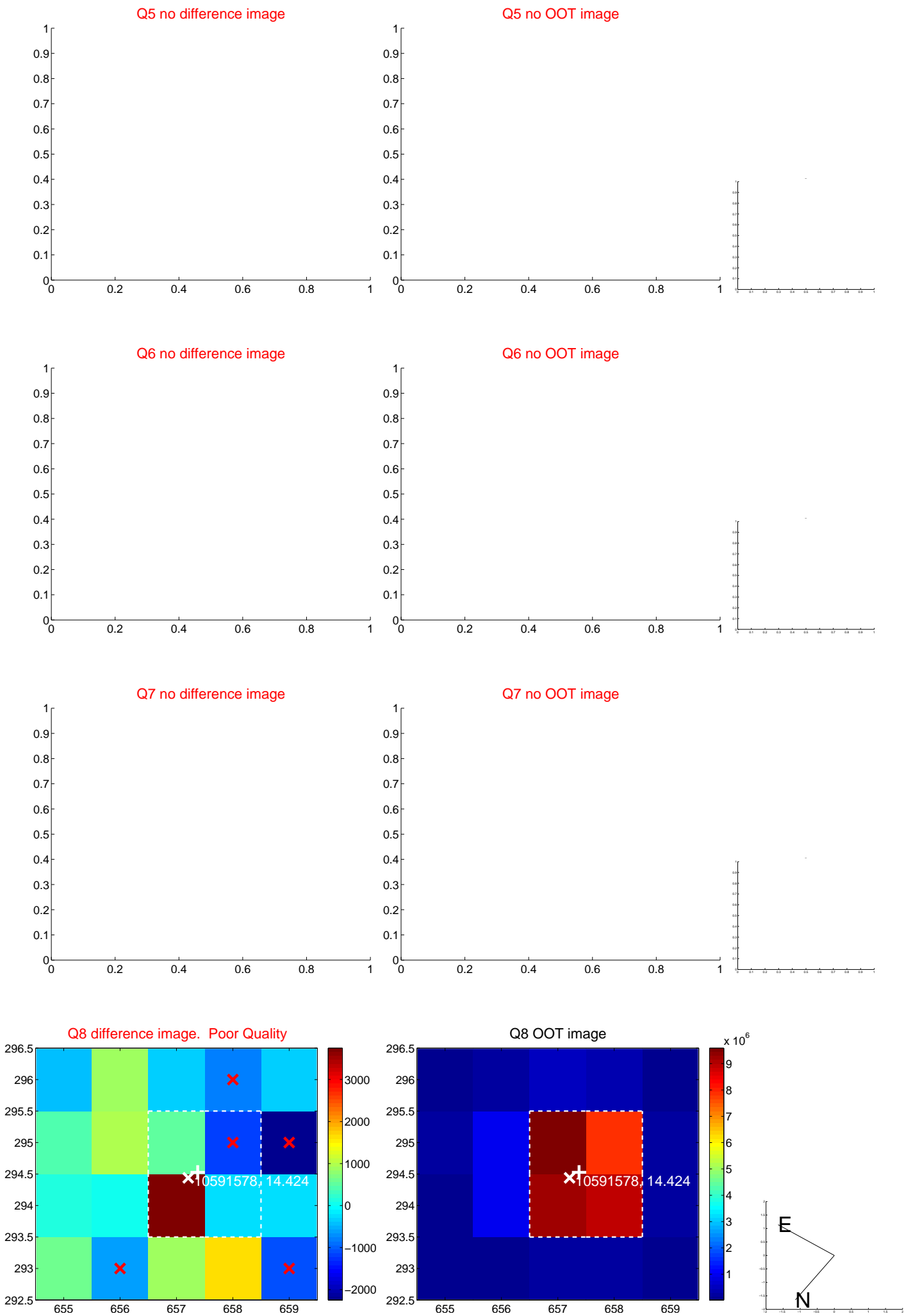


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

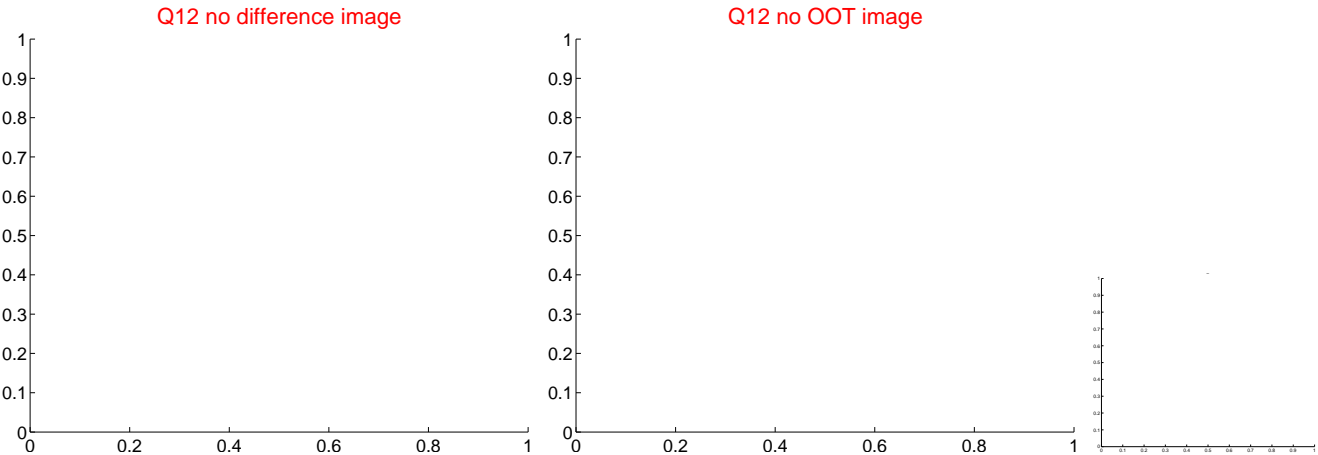
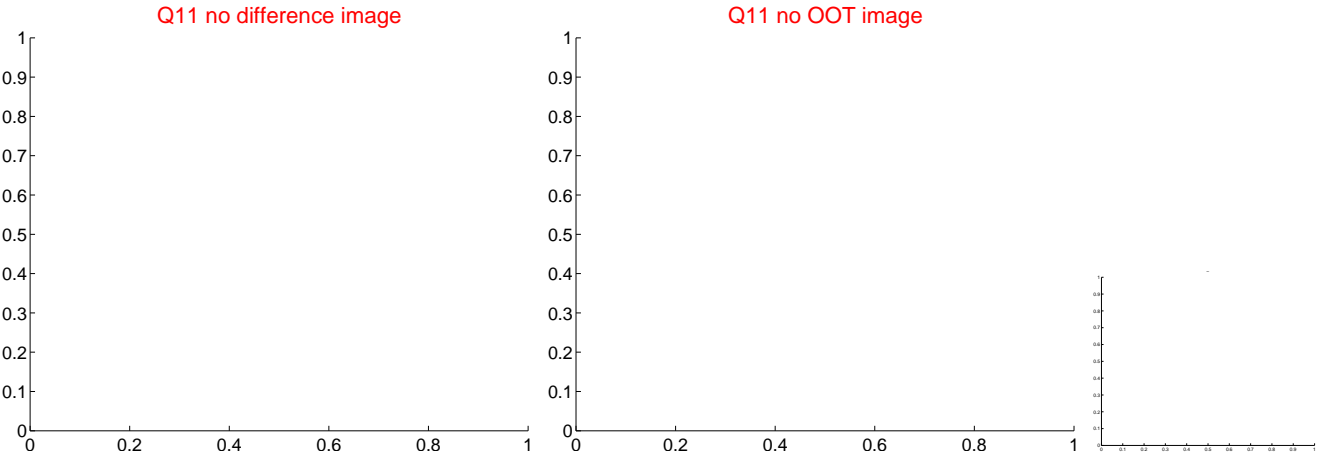
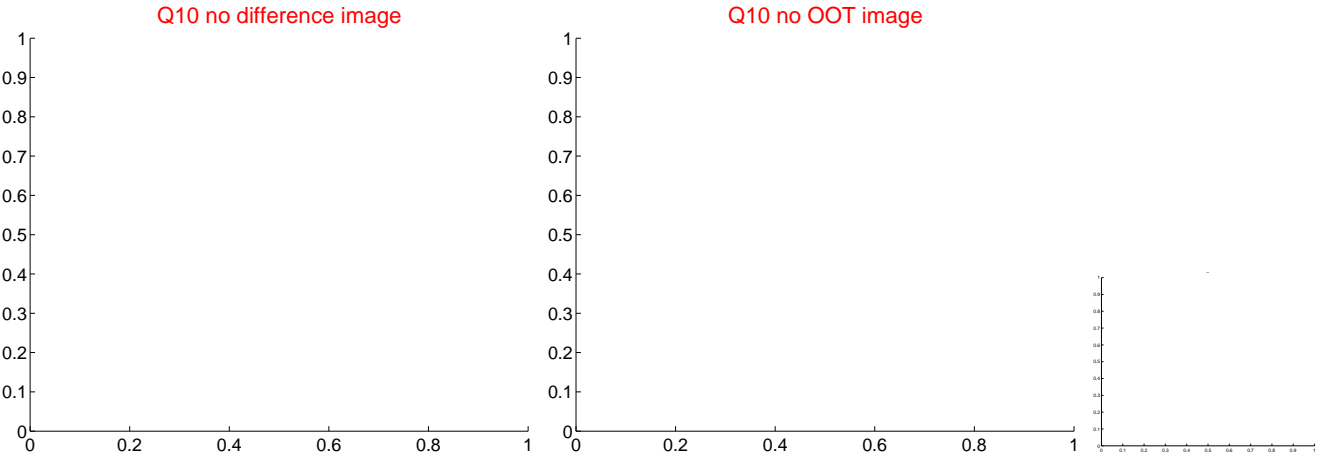
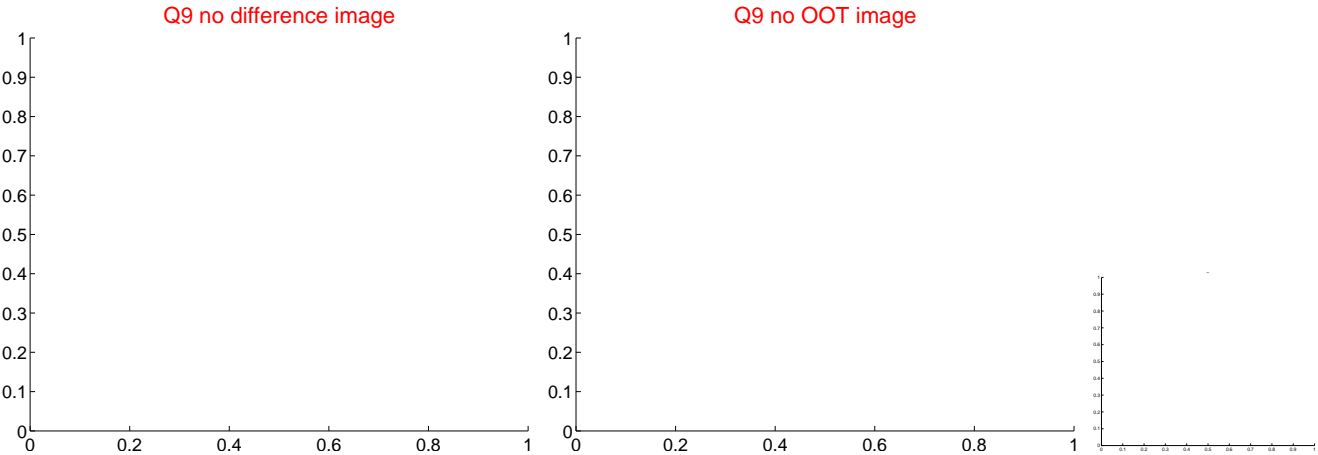
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



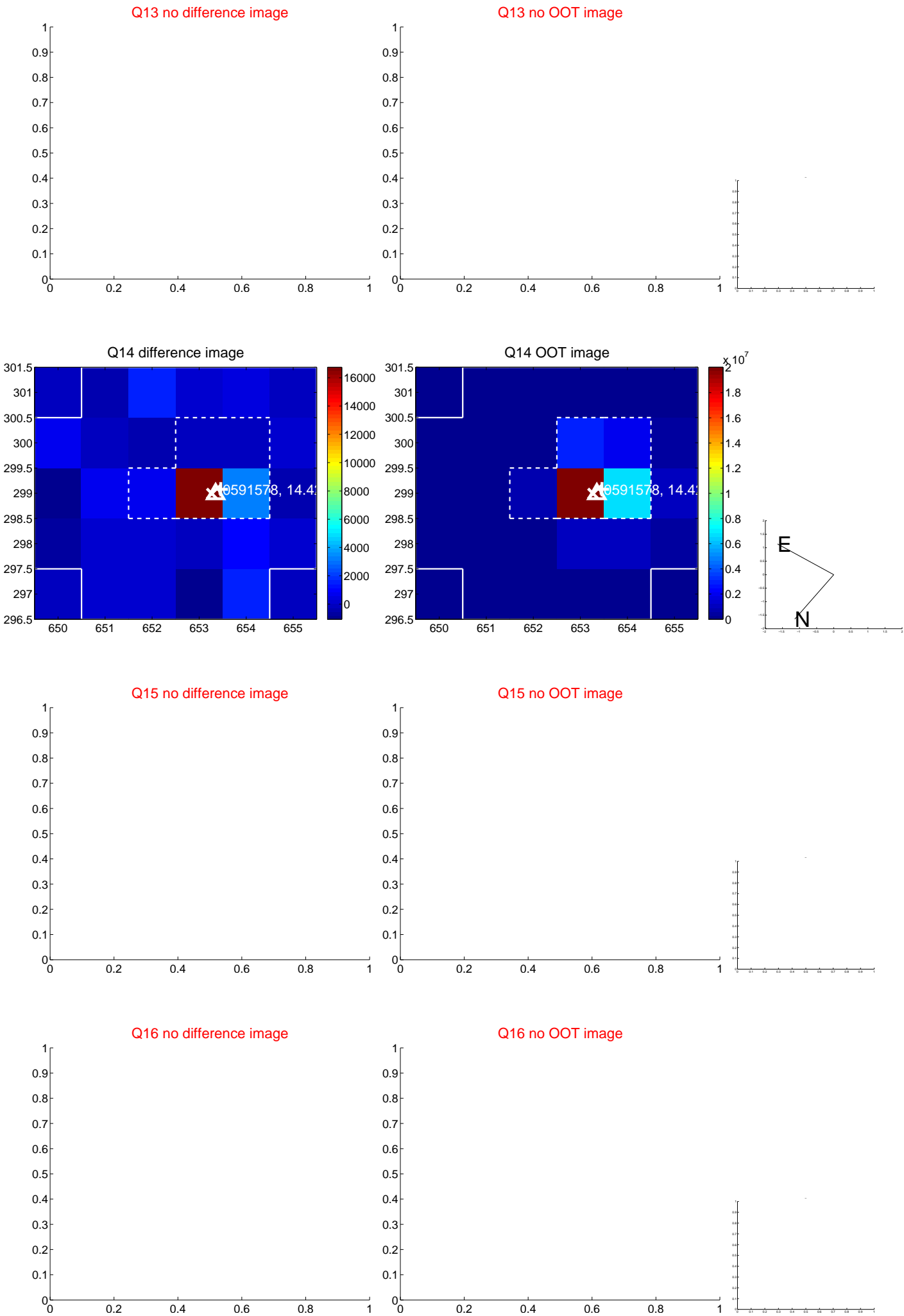
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



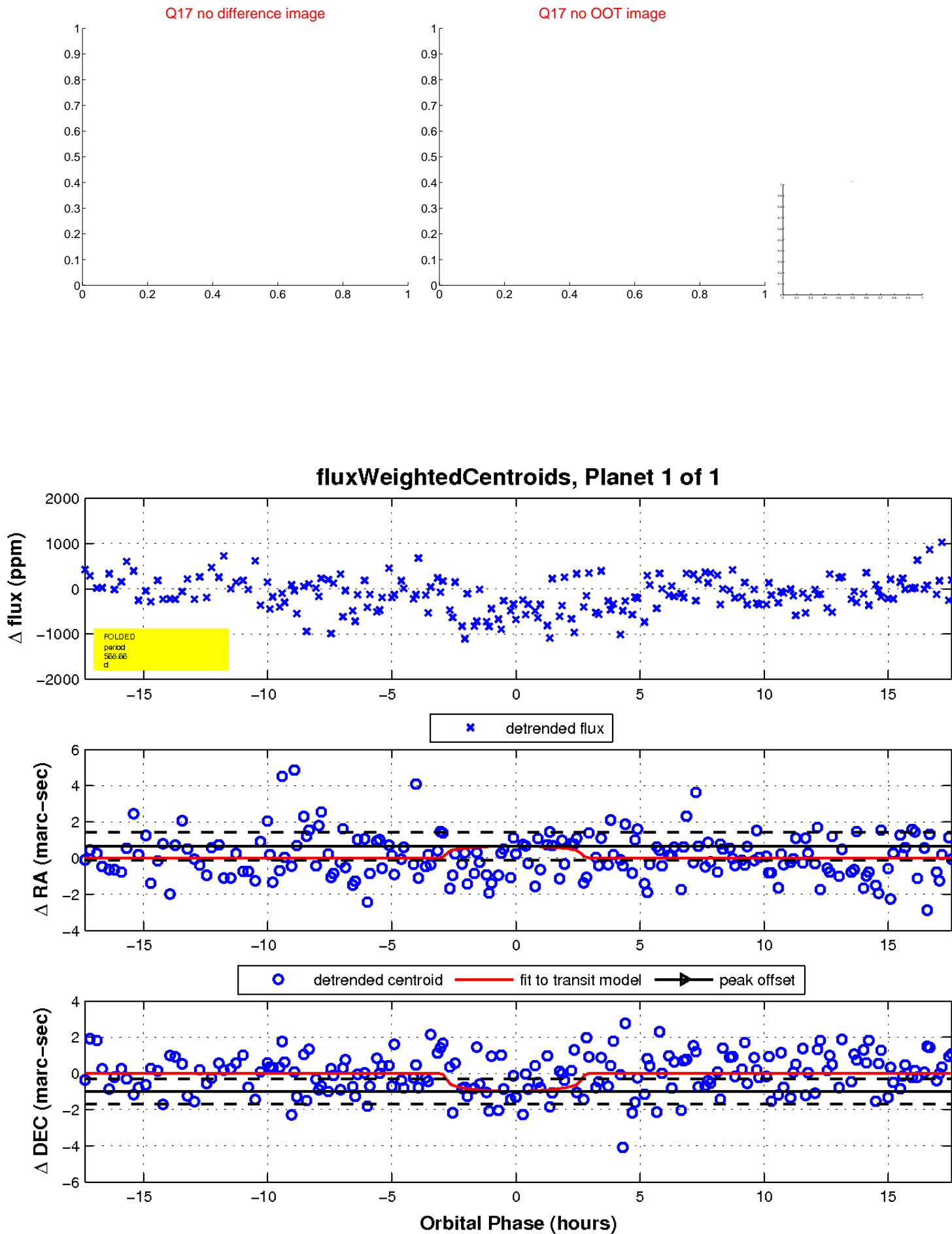
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white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination

