

KIC 006277594

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})
006277594-01	OBS	5255.01	3.660760	133.907235	20.3	15.891	10.7	10.1	1.31	6356	0.72	1094.64
006277594-02	OBS	No	435.731372	303.418478	213.6	16.284	14.0	9.1	1.31	6356	2.20	1.87

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006277594-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV
006277594-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_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.

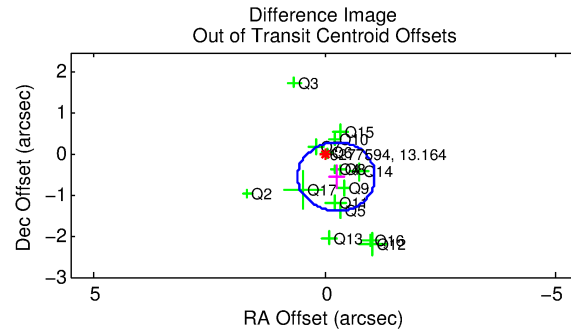
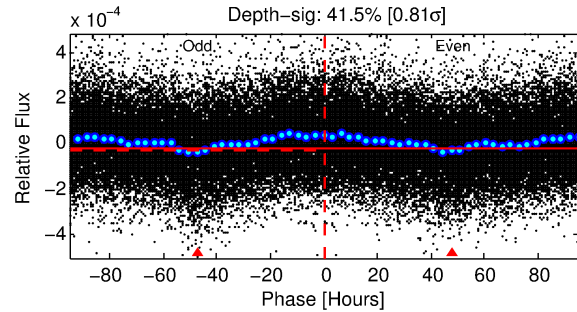
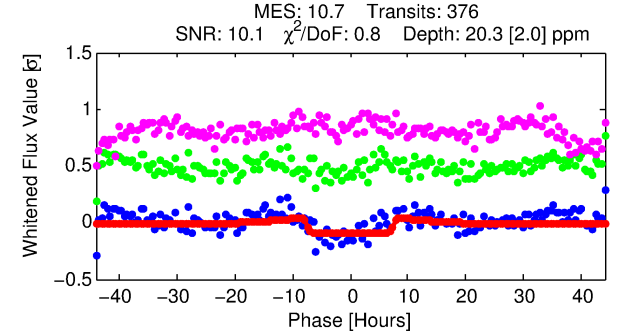
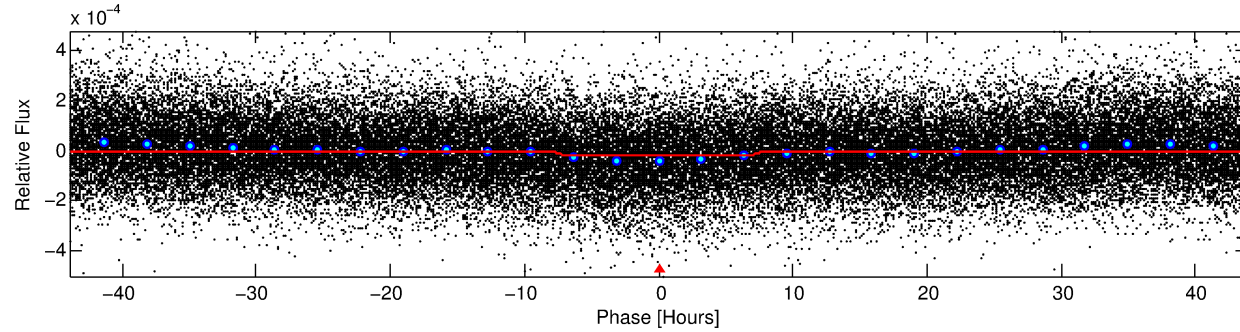
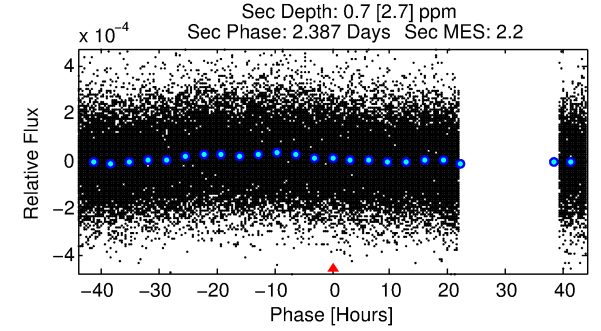
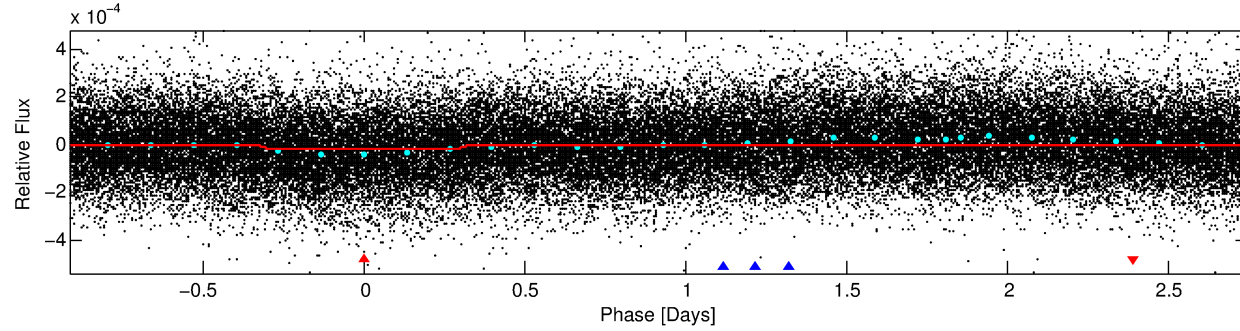
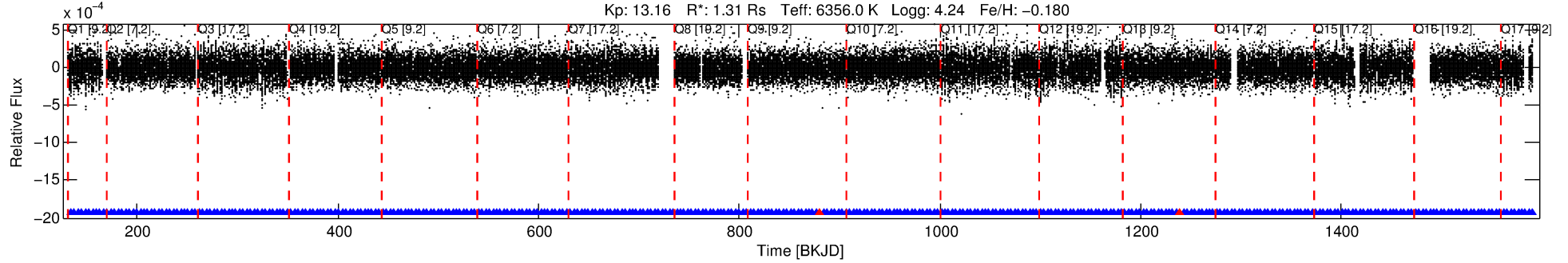
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 006277594-01

No Significant Match Found

DV One-Page Summary

KIC: 6277594 Candidate: 1 of 2 Period: 3.661 d
KOI: K05255.01 Corr: 0.860



DV Fit Results:

Period = 3.66076 [0.00006] d
Epoch = 133.9072 [0.0115] BKJD
Rp/R* = 0.0050 [0.0006]
a/R* = 1.16 [0.17]
b = 0.94 [0.08]
Seff = 1094.65 [308.75]
Teq = 1467 [103] K
Rp = 0.72 [0.18] Re
a = 0.0478 [0.0086] AU
Ag = 1.84 [6.75] [0.12σ]
Teffp = 2640 [2422] K [0.48σ]

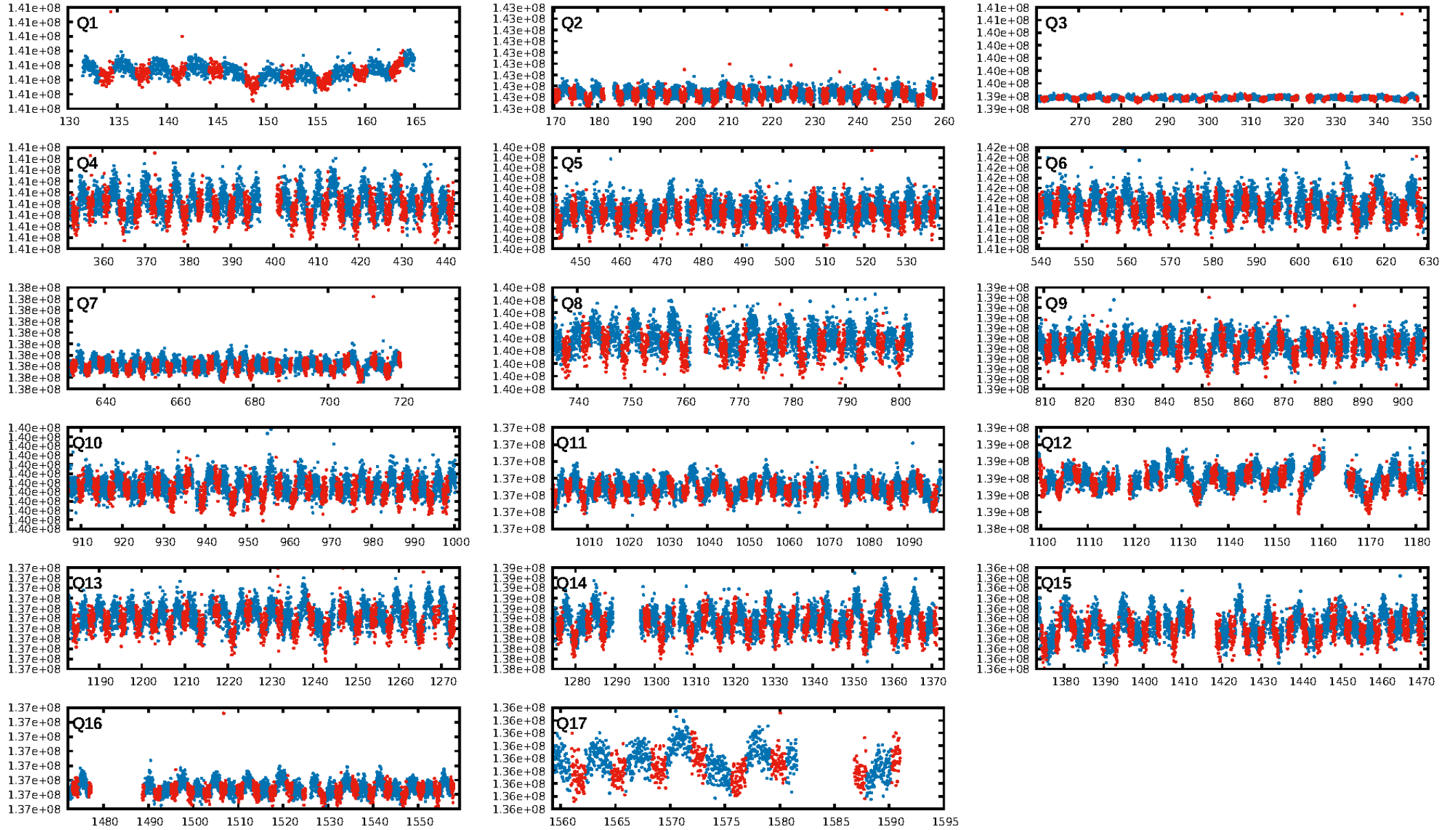
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [455.75σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.17e-21
RollingBand-fgt: 0.99 [357/359]
GhostDiagnostic-chr: 4.466
Centroid-sig: 77.2%
Centroid-so: 0.530 arcsec [0.53σ]
OotOffset-rm: 0.600 arcsec [2.14σ]
KicOffset-rm: 0.694 arcsec [2.67σ]
OotOffset-st: 4/4/4/4 [16]
KicOffset-st: 4/4/4/4 [16]
DiffImageQuality-fgm: 0.88 [14/16]
DiffImageOverlap-fno: 1.00 [17/17]

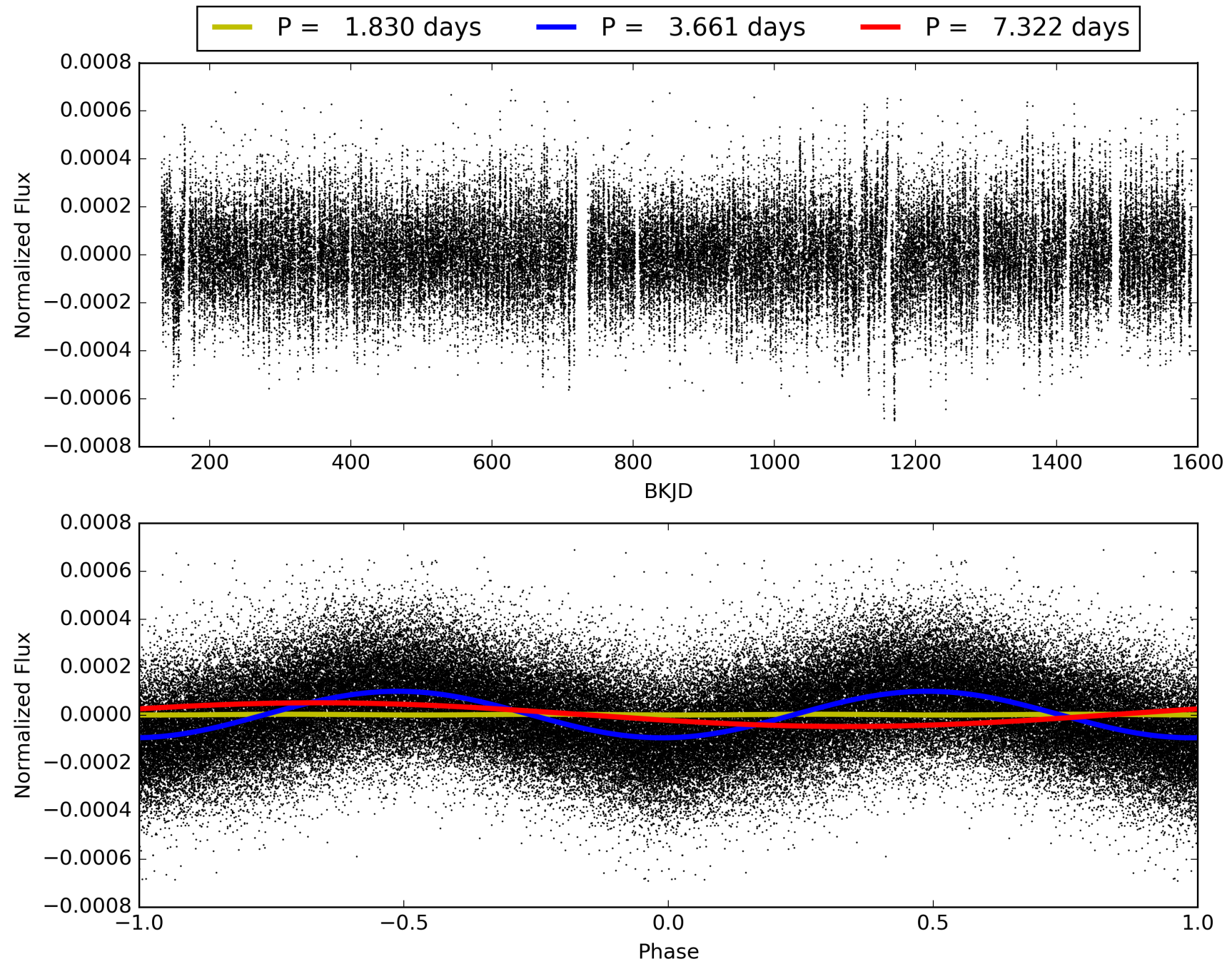
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 21:25:02 Z

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

TCE 006277594-01, PDC Light Curves

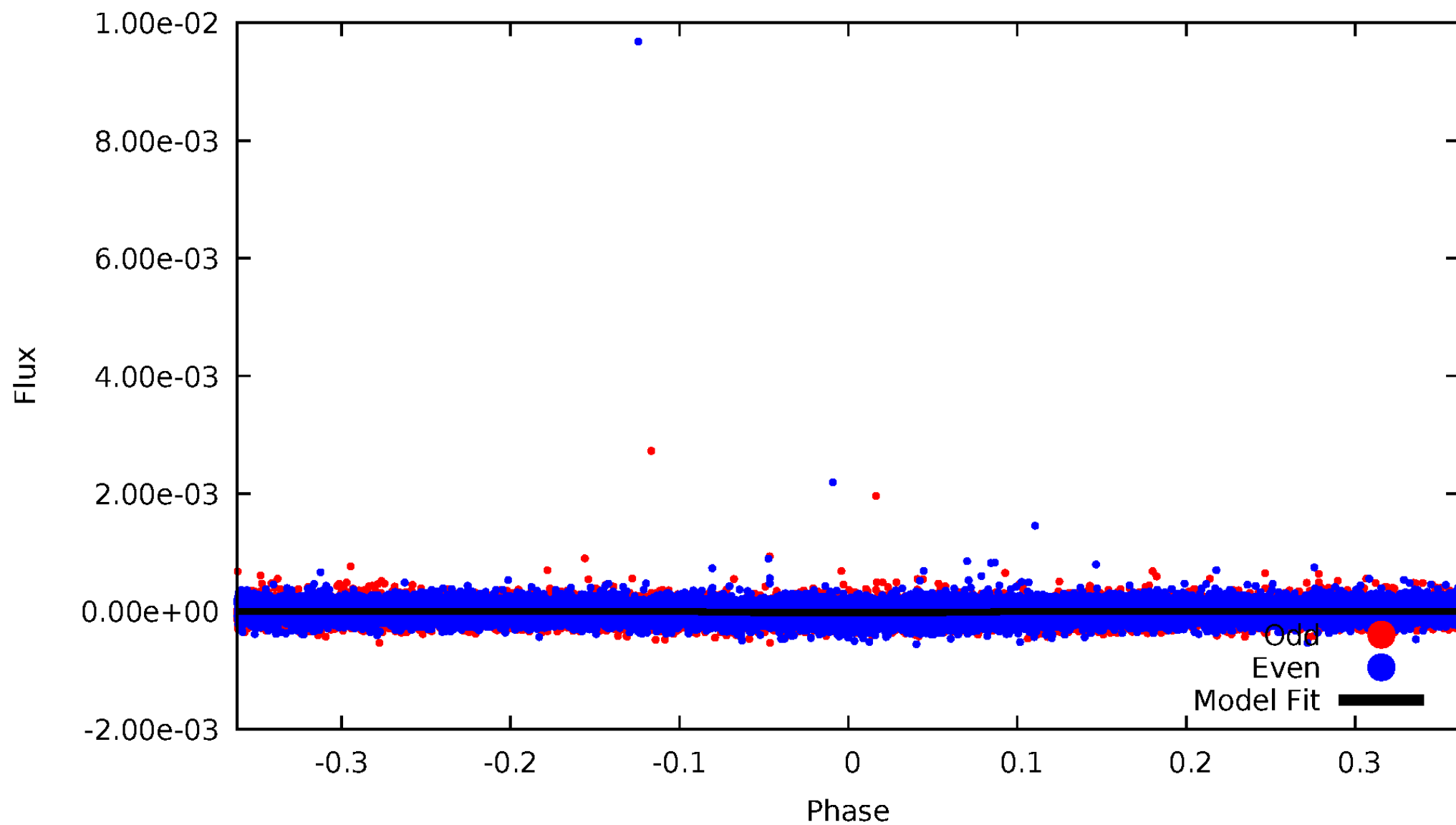


TCE 006277594-01



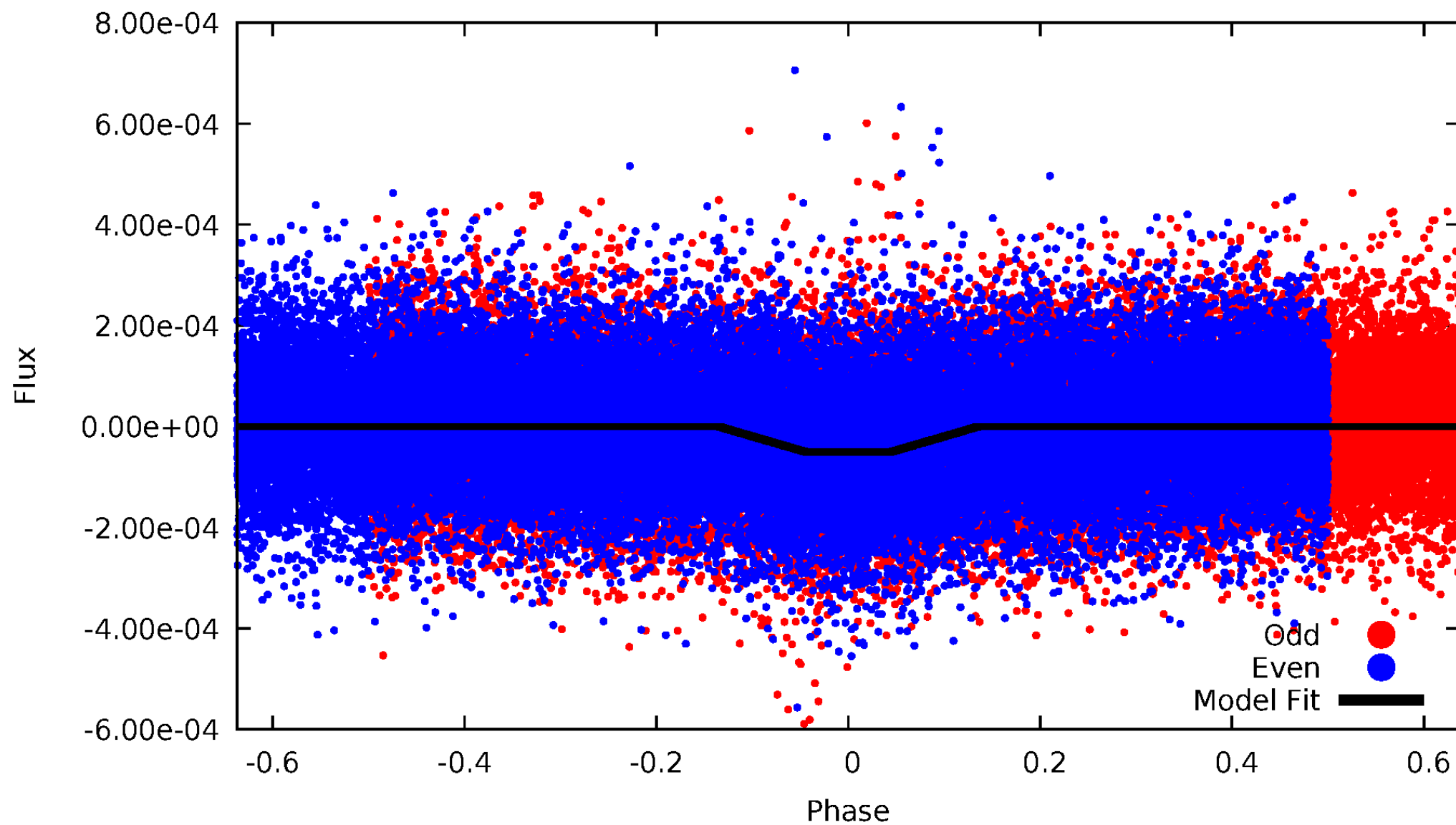
DV Odd/Even

TCE 006277594-01

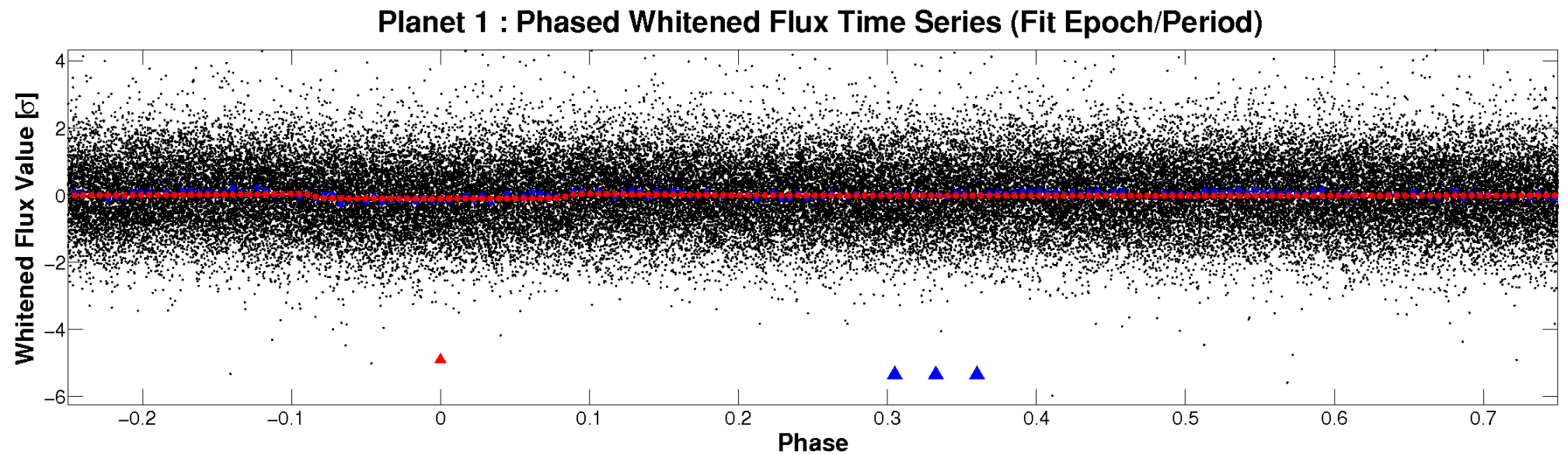
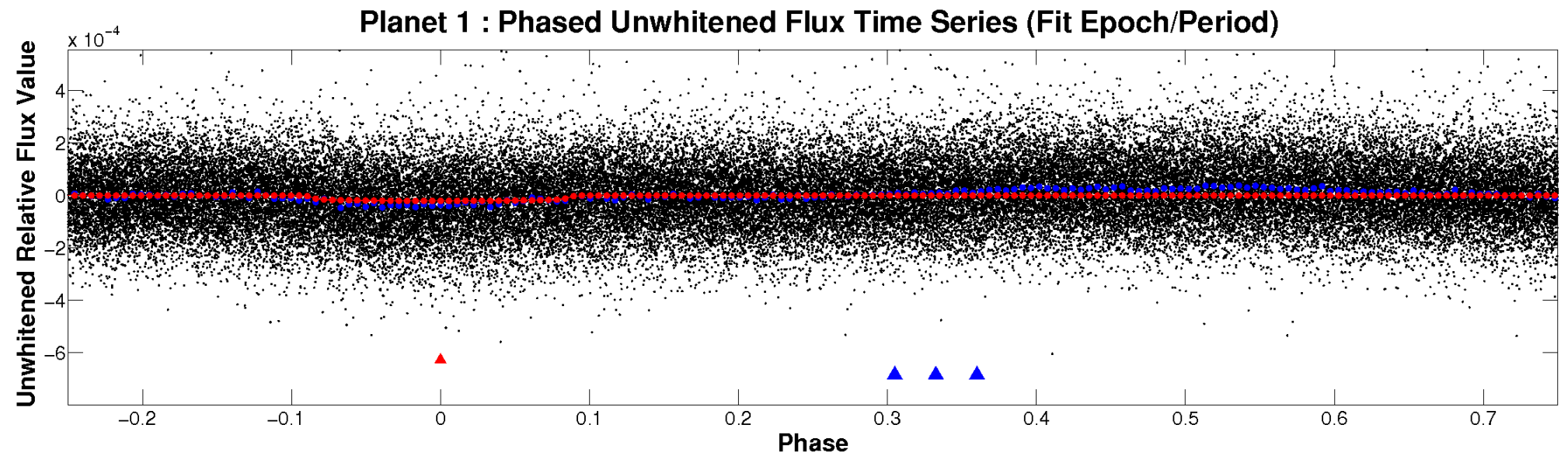


ALT Odd/Even

TCE 006277594-01

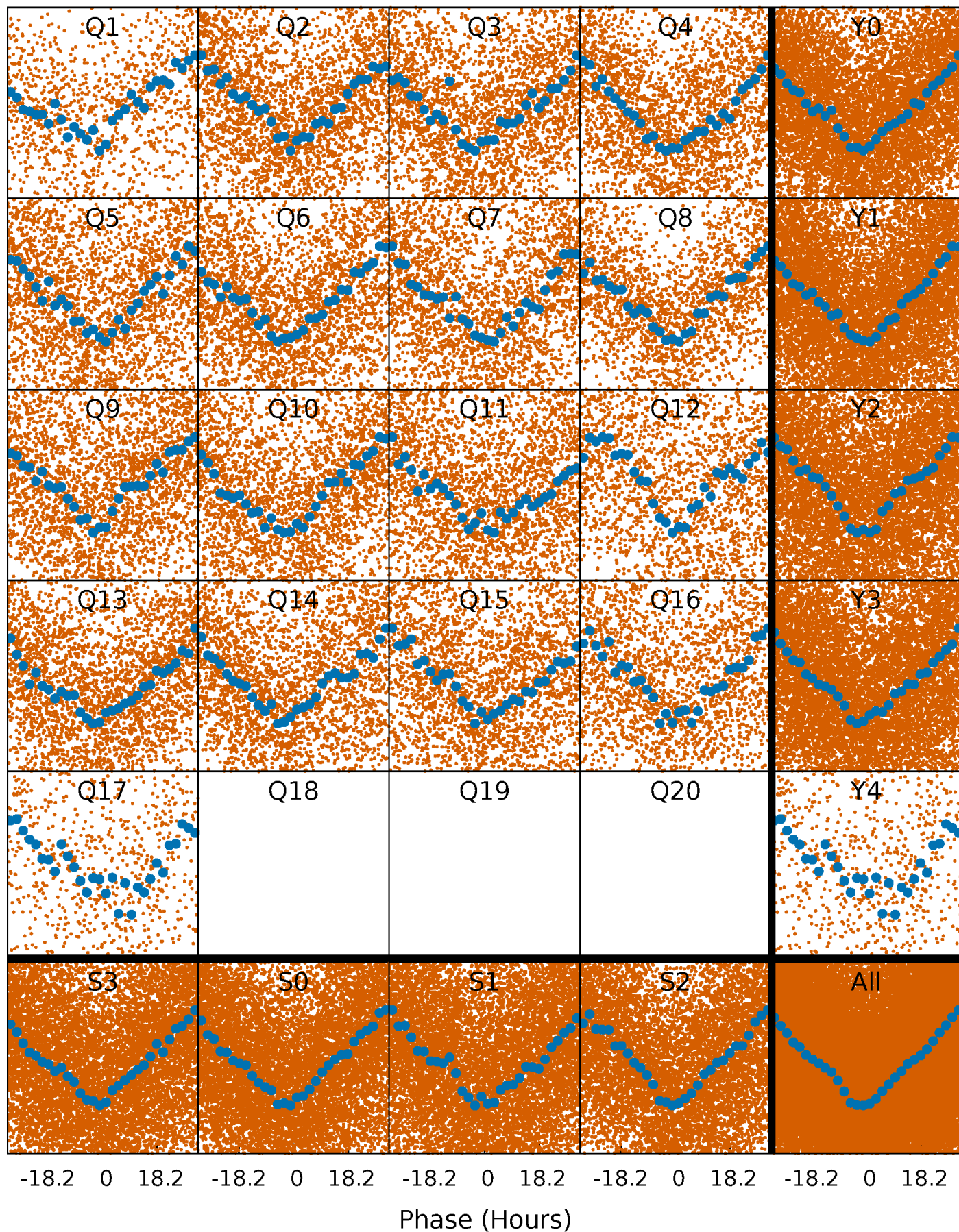


Non-Whitened Vs. Whitened Light Curve



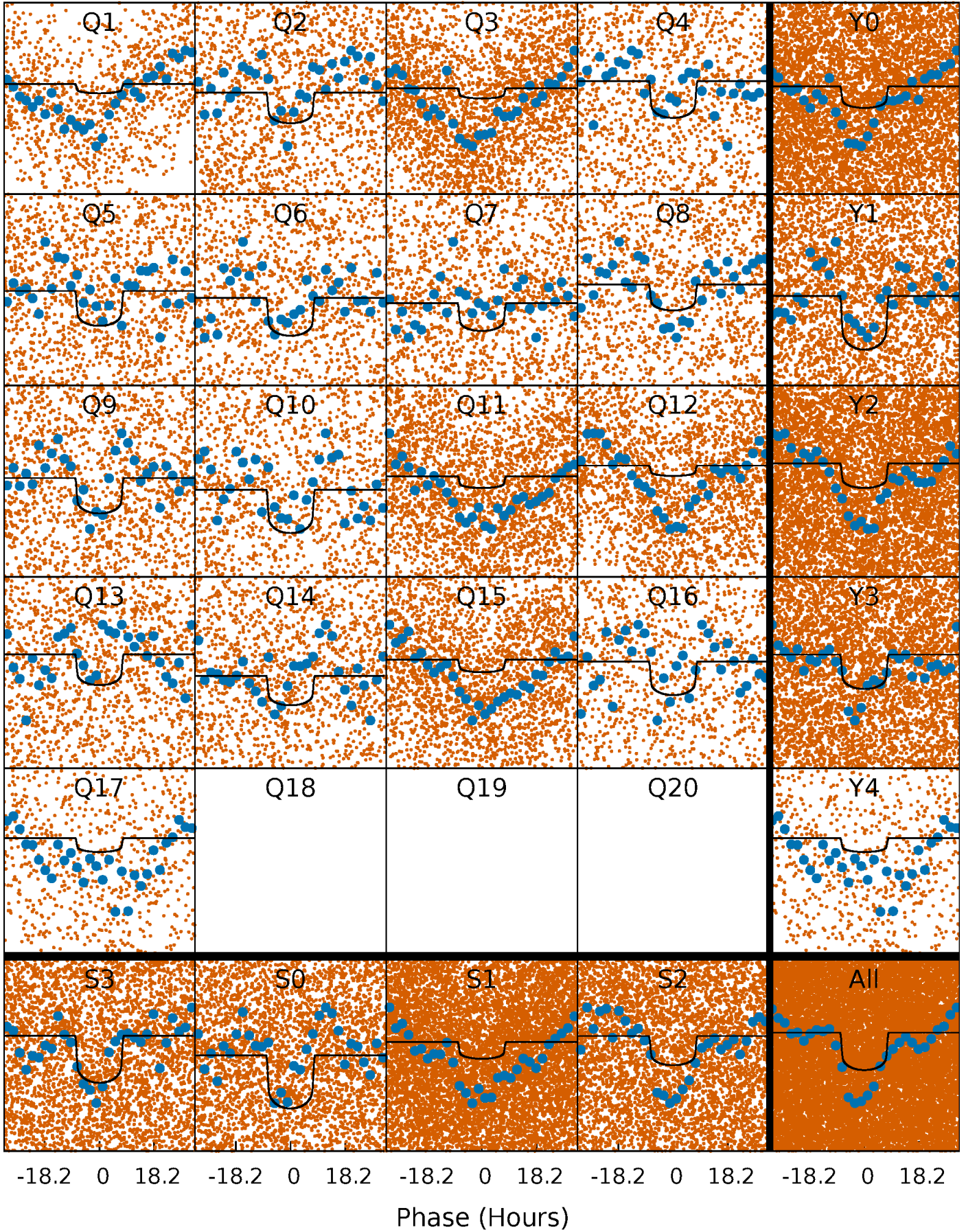
PDC Quarter-Phased Transit Curves

TCE 006277594-01 P= 3.660760 Days $T_0=133.907235$ (BKJD)



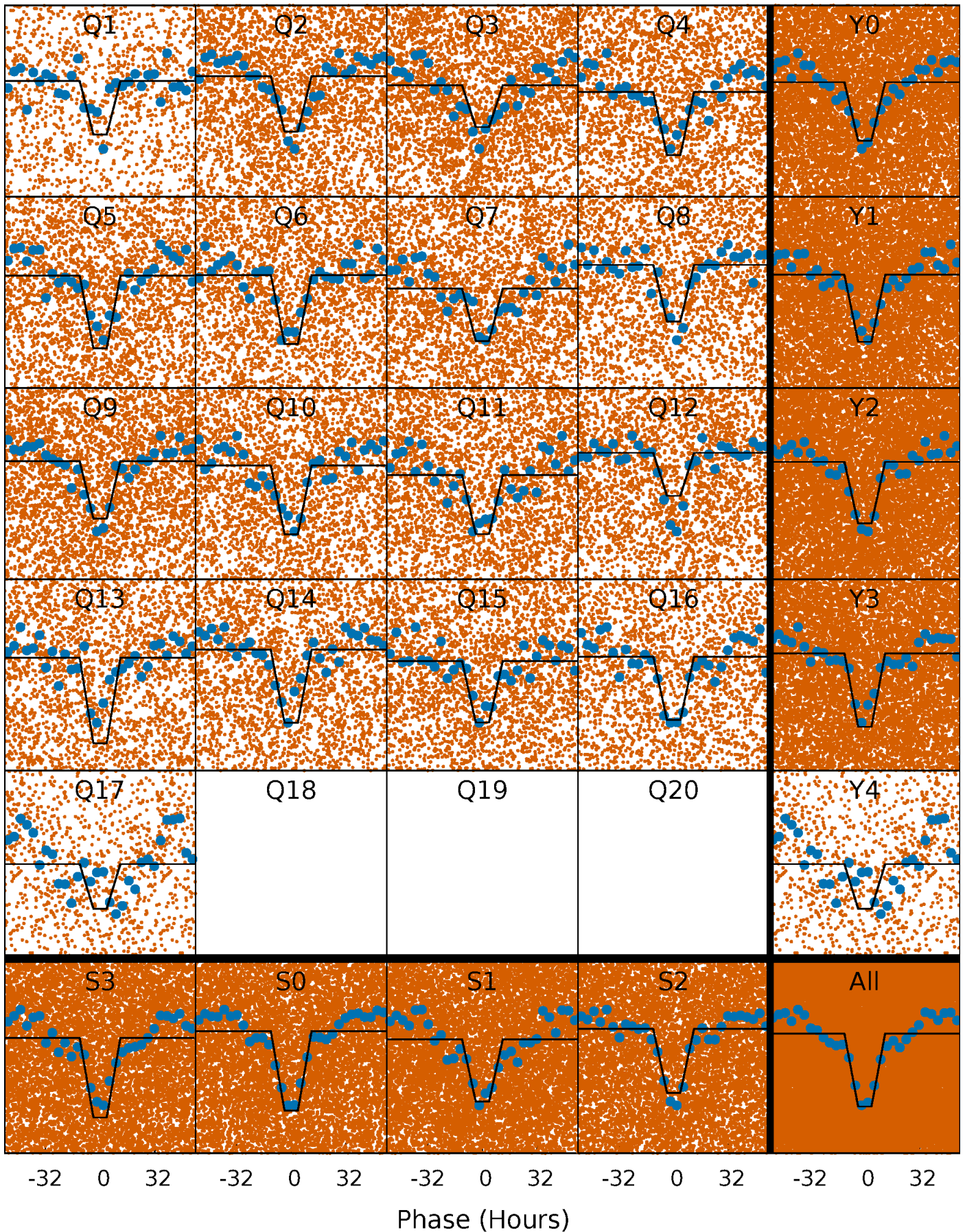
DV Quarter-Phased Transit Curves

TCE 006277594-01 P= 3.660760 Days $T_0=133.907235$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

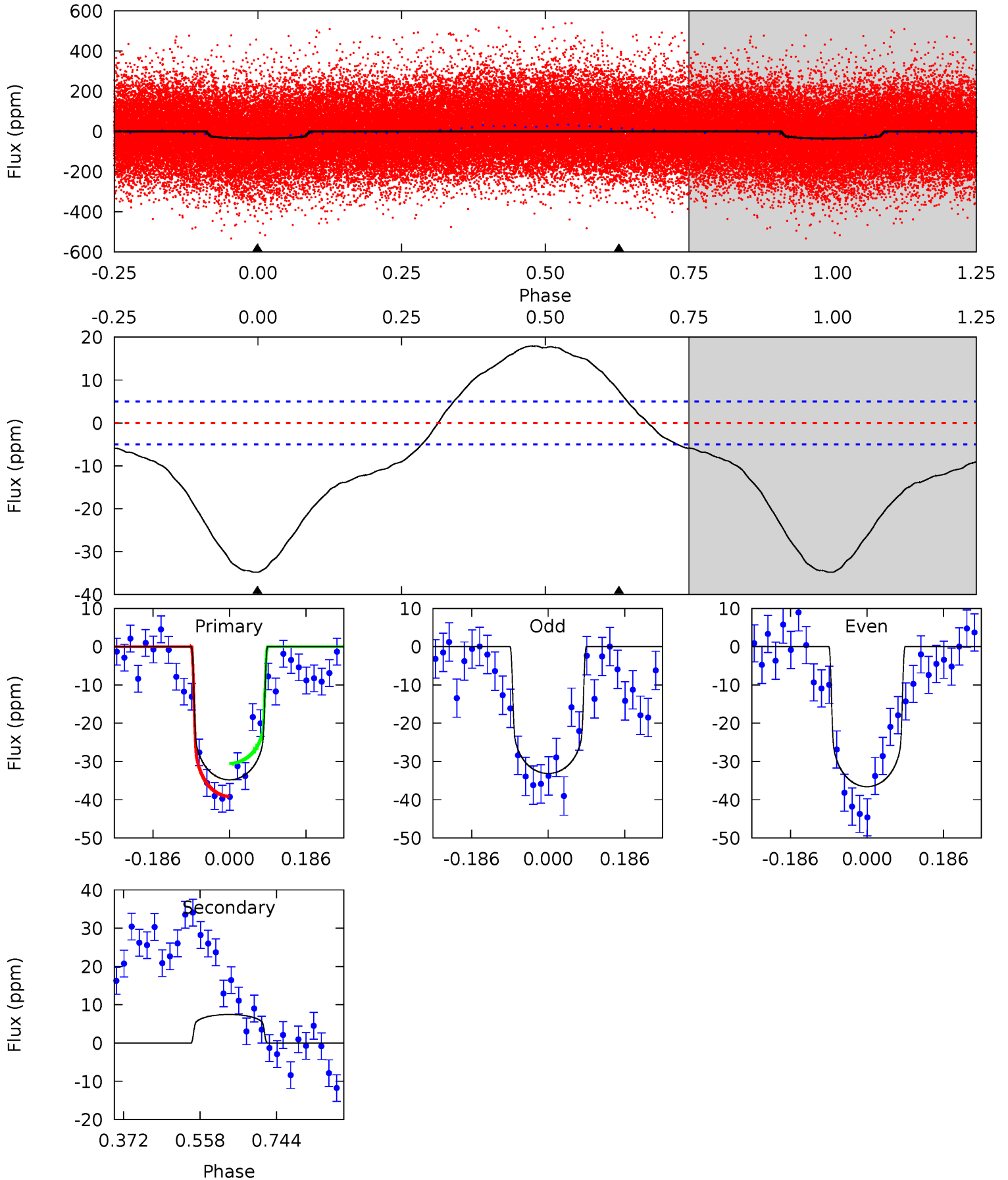
TCE 006277594-01 P= 3.660954 Days $T_0=133.810969$ (BKJD)



DV Model-Shift Uniqueness Test

006277594-01, P = 3.660760 Days, E = 130.246475 Days

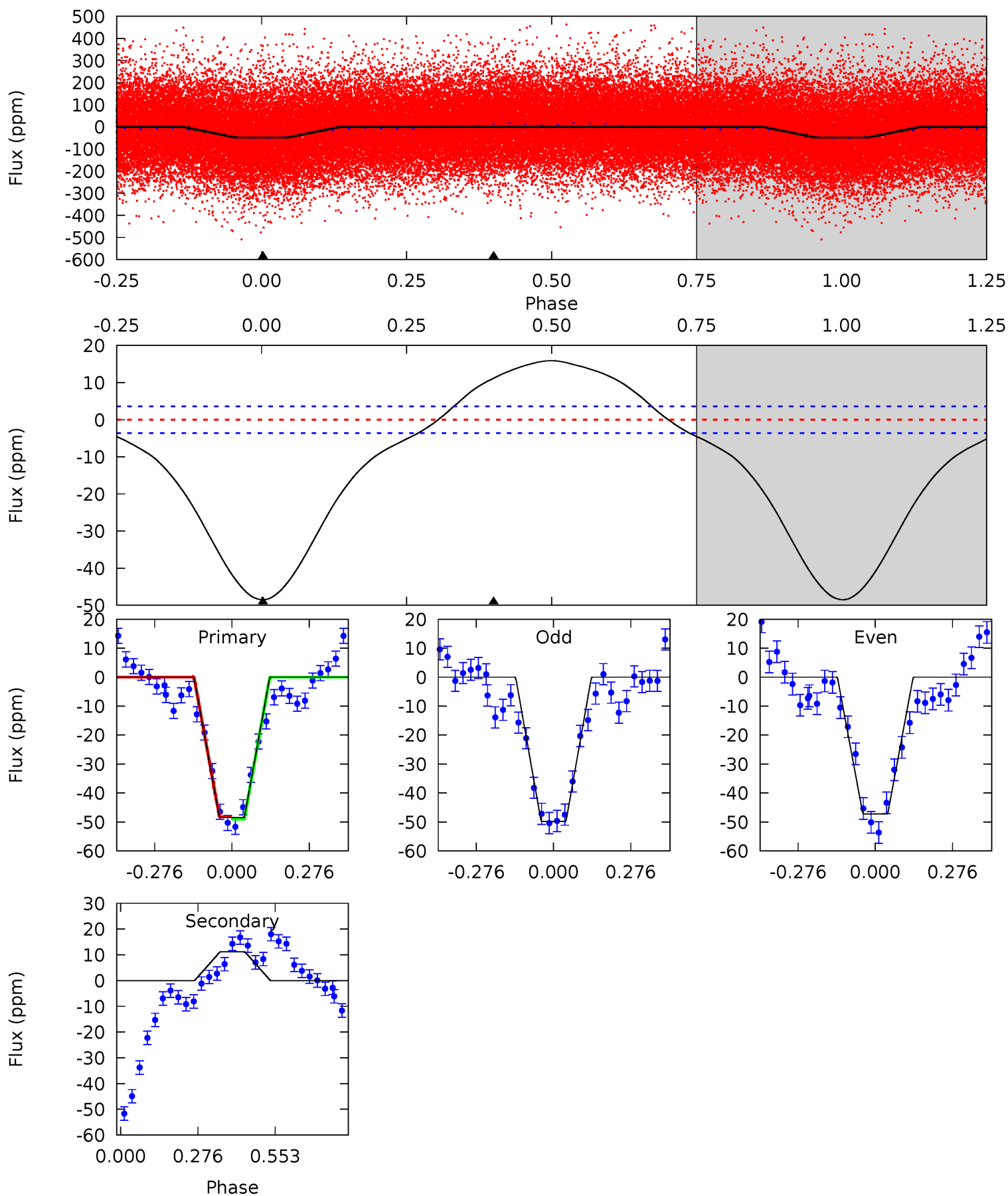
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
30.9	-6.63	0	0	4.43	1.32	8.51	30.9	30.9	-6.63	-6.63	1.53	1.19	0.34	3.91



Alt Model-Shift Uniqueness Test

006277594-01, P = 3.660954 Days, E = 130.150015 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
58.6	-13.5	0	0	4.35	1.09	4.04	58.6	58.6	-13.5	-13.5	1.57	0.97	0.25	0.48



Stellar Parameters For KIC 006277594

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6356^{+160}_{-176}	$4.241^{+0.140}_{-0.140}$	$-0.180^{+0.250}_{-0.300}$	$1.308^{+0.285}_{-0.233}$	$1.085^{+0.159}_{-0.116}$	$0.683^{+0.447}_{-0.269}$
	+3%/-3%	+3%/-3%	+139%/-167%	+22%/-18%	+15%/-11%	+65%/-39%
Source	PHO1	FLK73	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 006277594-01 / KOI 5255.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	7 ± 1	$0.72^{+0.13}_{-0.11}$	2044^{+125}_{-115}	-4821^{+274}_{-286}	$-18.310^{+5.569}_{-7.283}$
Alt.	11 ± 1	$1.01^{+0.15}_{-0.12}$	2052^{+111}_{-121}	-4556^{+184}_{-192}	$-13.700^{+3.230}_{-4.042}$

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

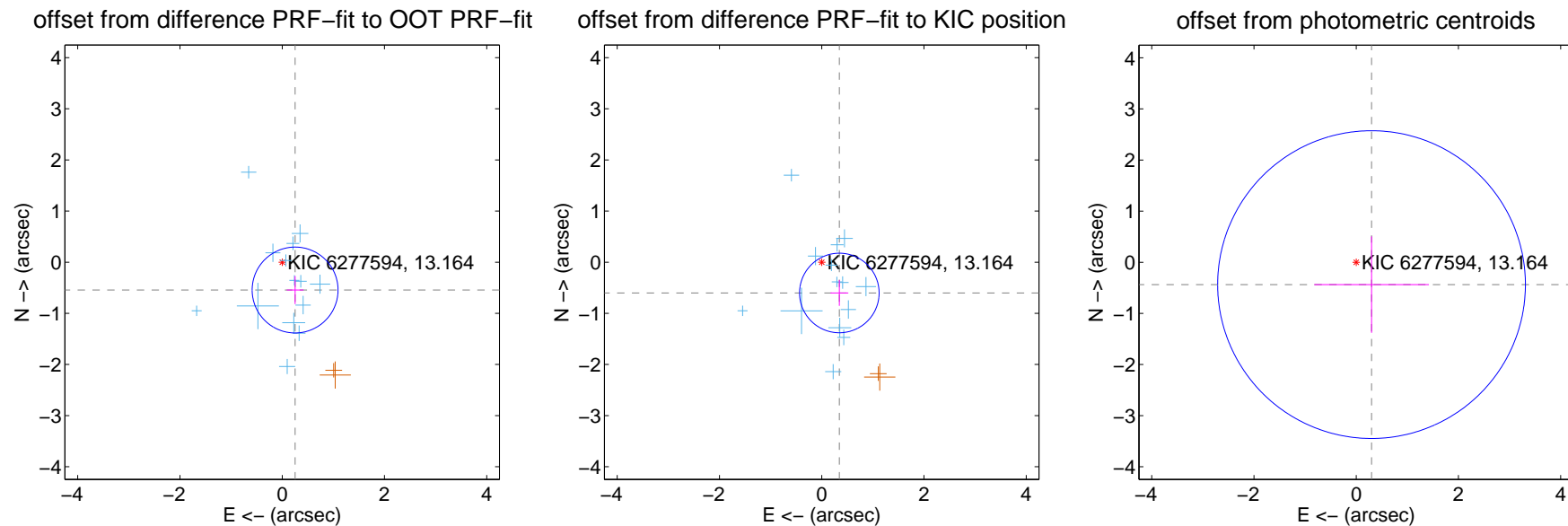
DV Centroid Data

Supplemental centroid analysis for 006277594-01. Kepler magnitude: 13.16. Transit SNR 10.06

There are 14 quarters with good PRF difference image offsets

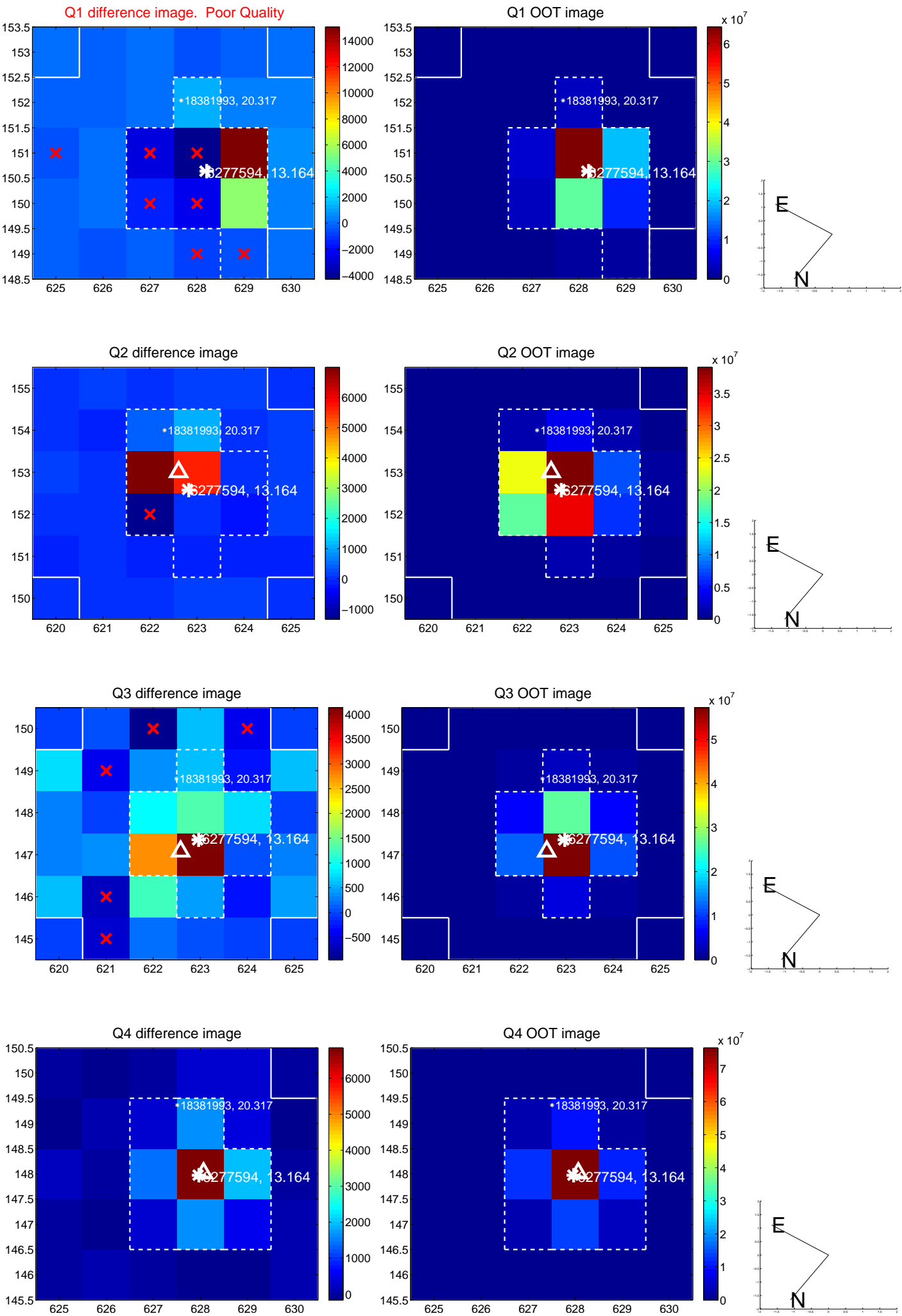
The direct PRF centroid is offset from the target star catalog position by about 0.13 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.600 ± 0.280	2.14	-0.252 ± 0.165	-0.544 ± 0.275
PRF-fit source offset from KIC position	0.694 ± 0.259	2.67	-0.344 ± 0.175	-0.602 ± 0.252
photometric centroid source offset	0.53 ± 1.00	0.53	-0.30 ± 1.12	-0.44 ± 0.94

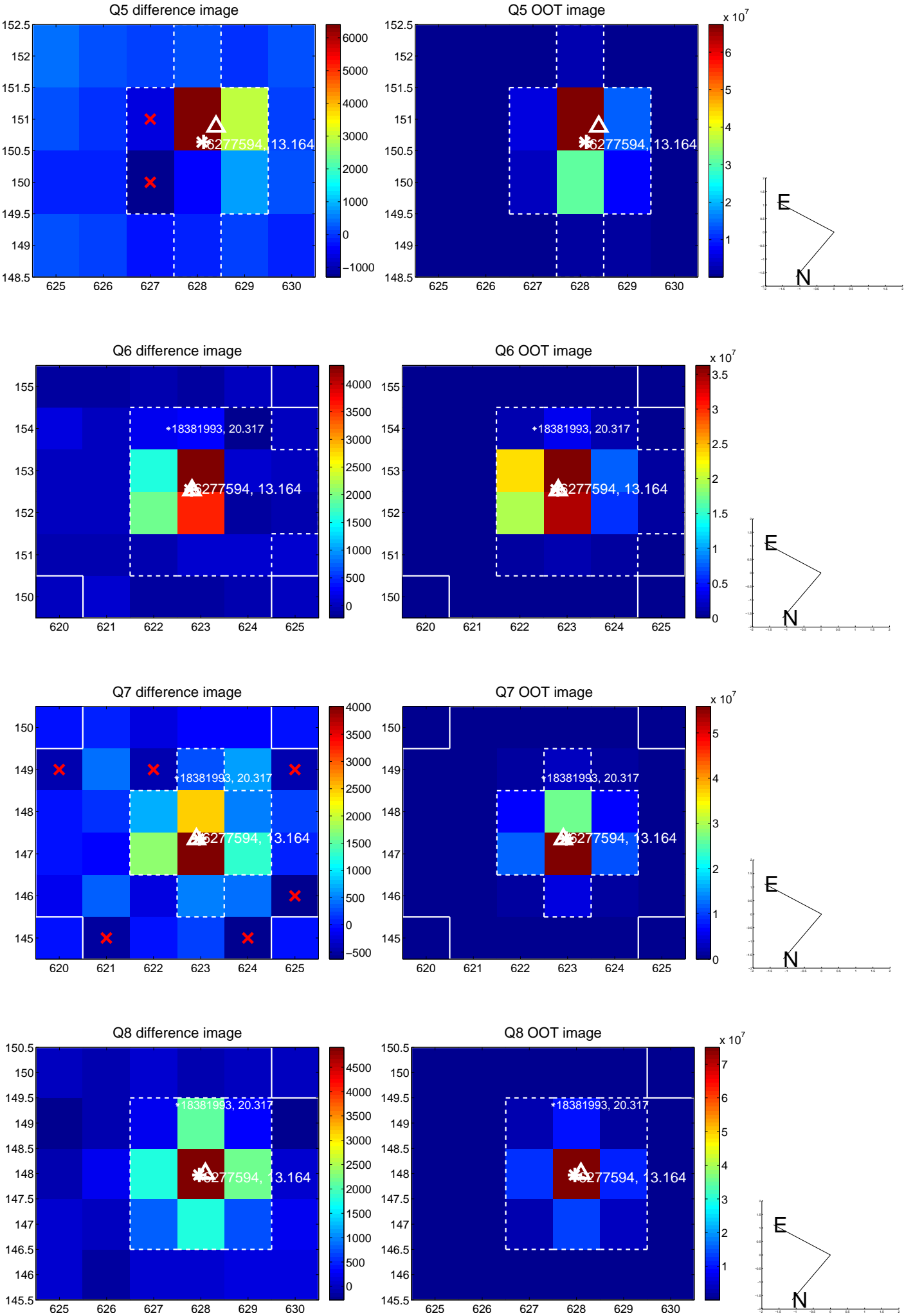


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

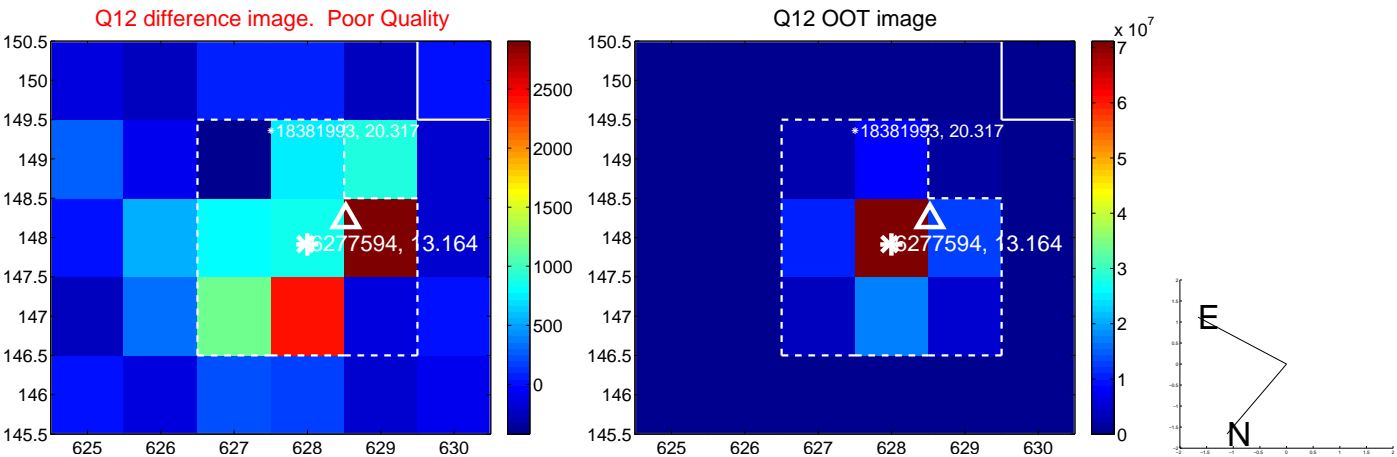
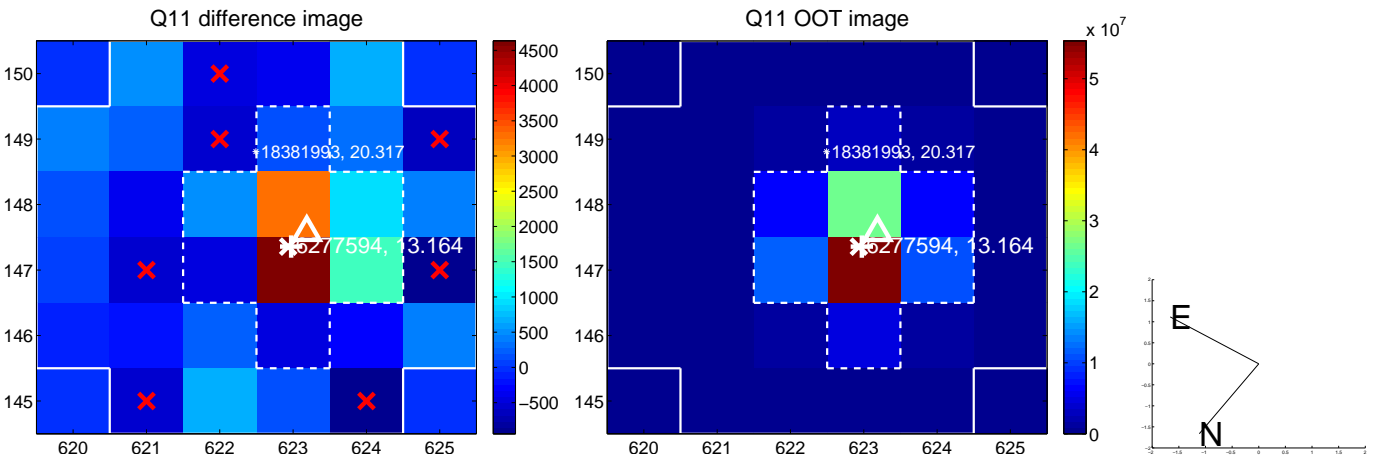
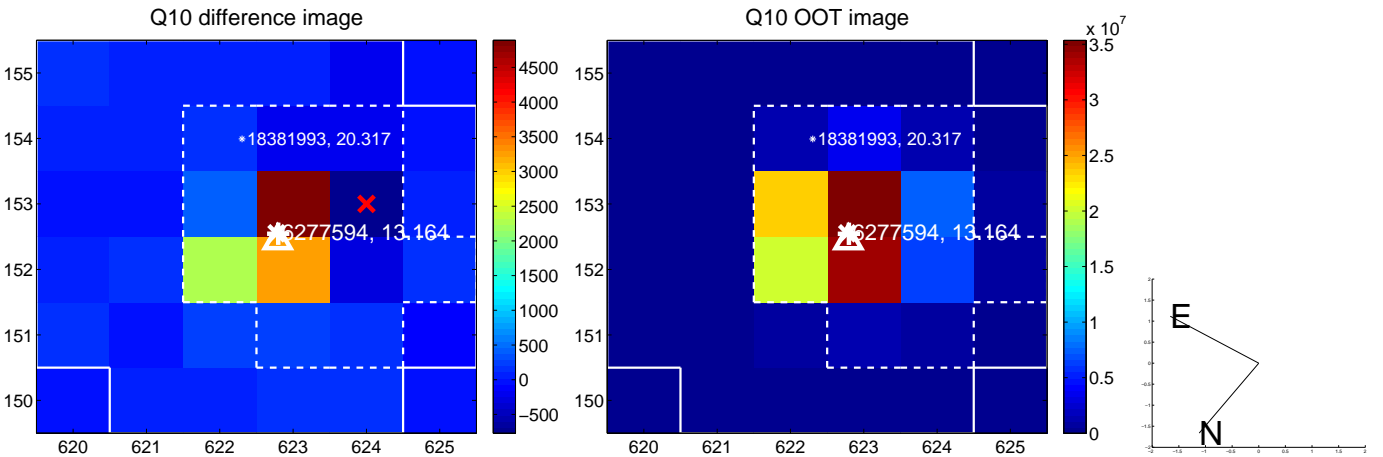
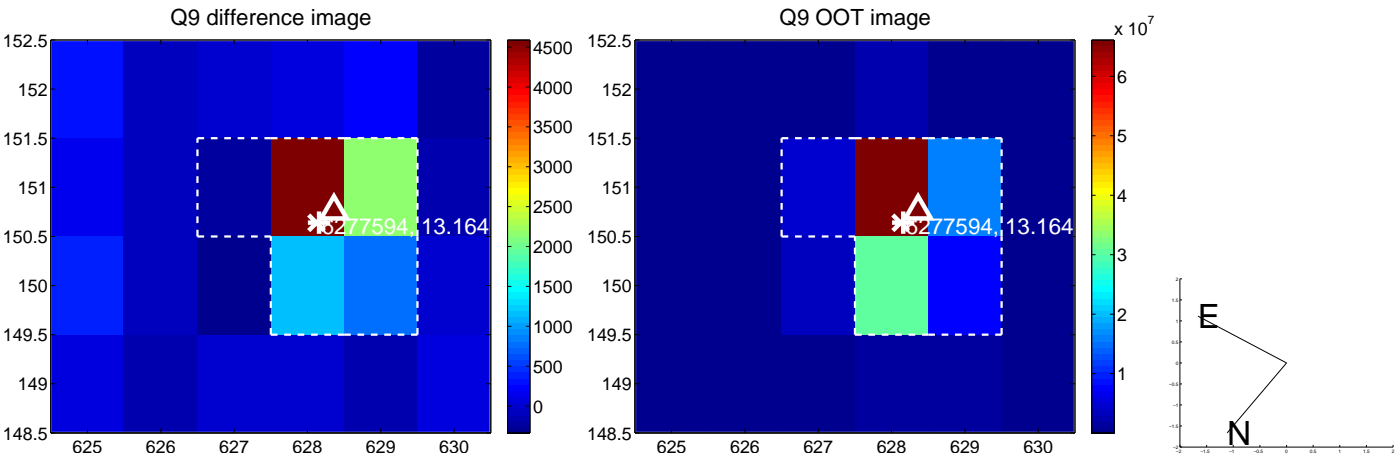
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



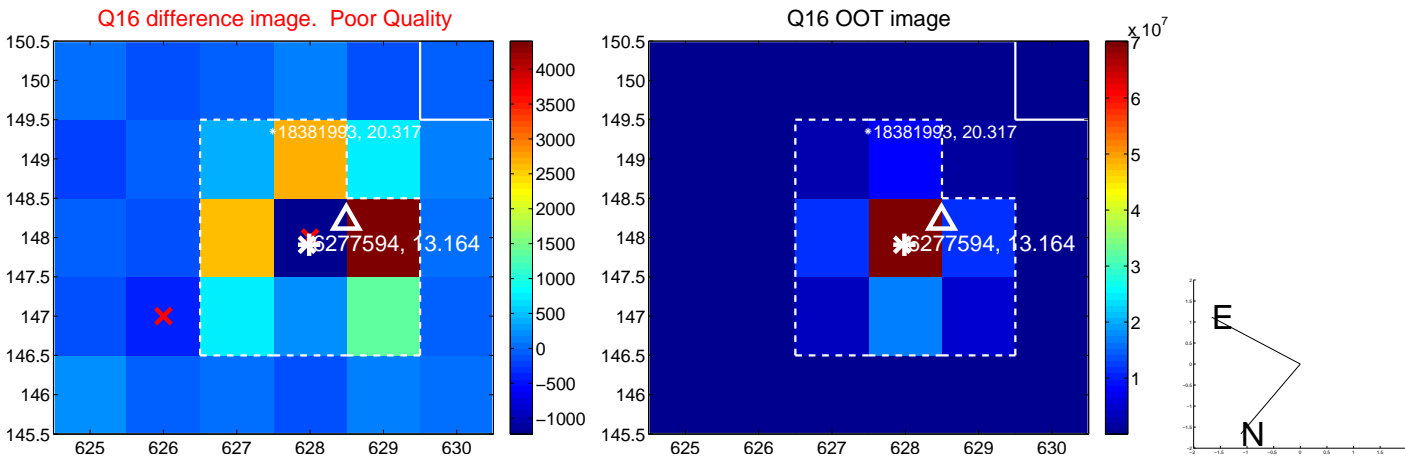
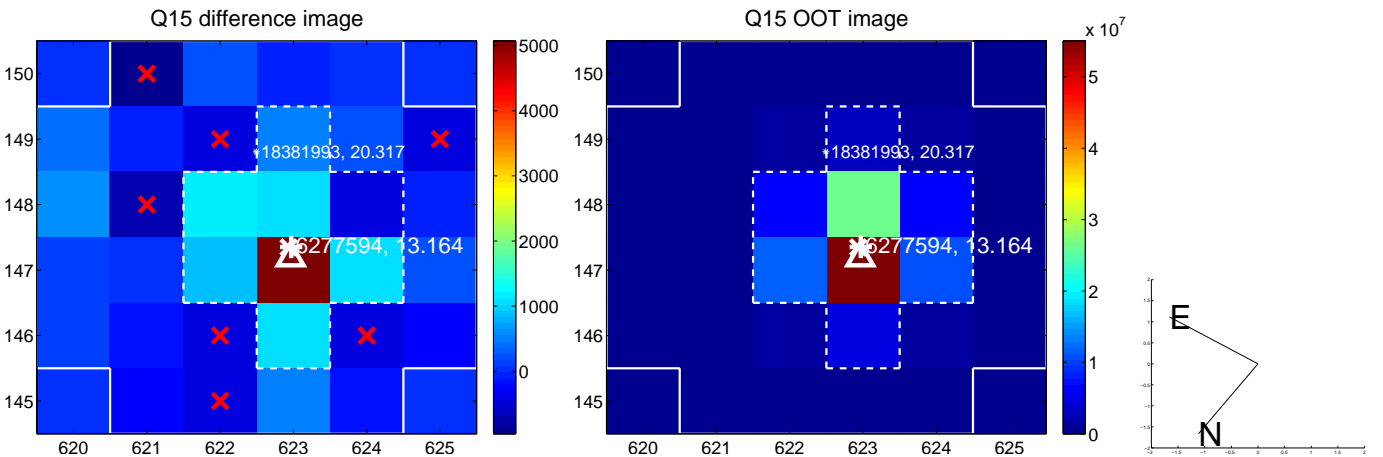
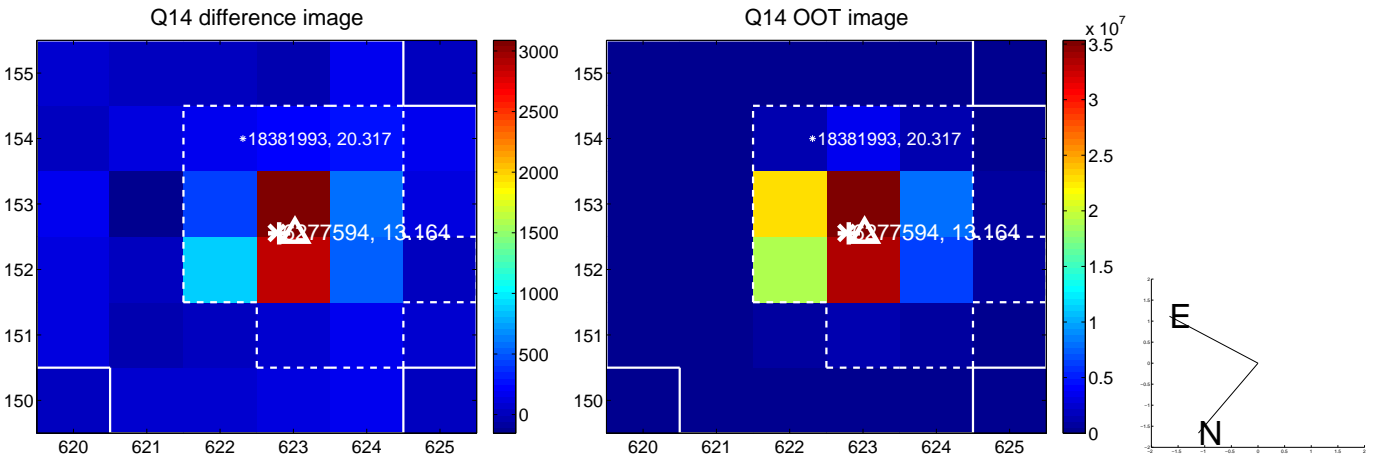
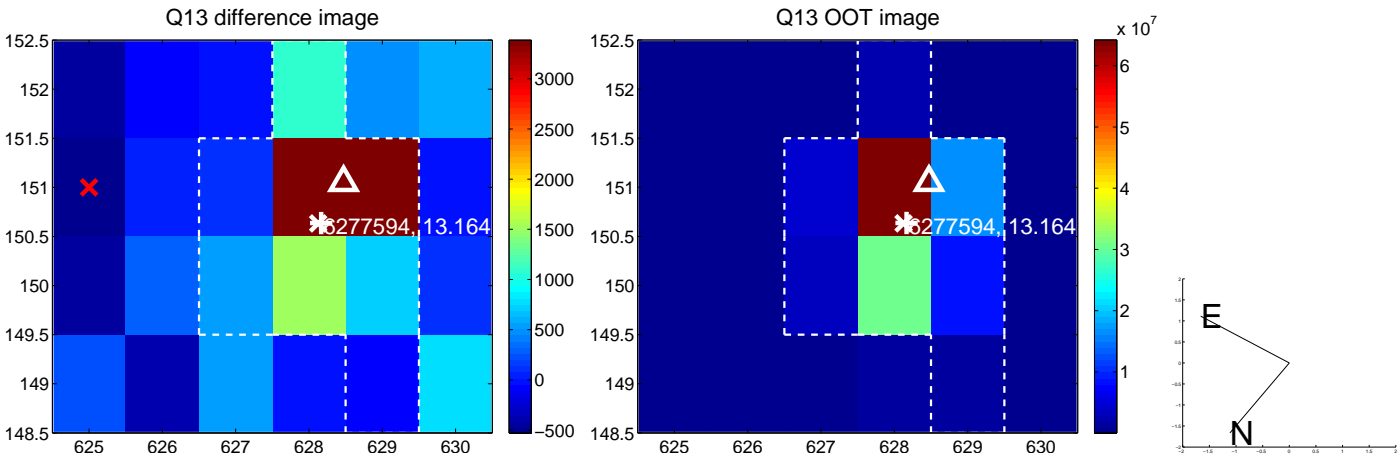
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



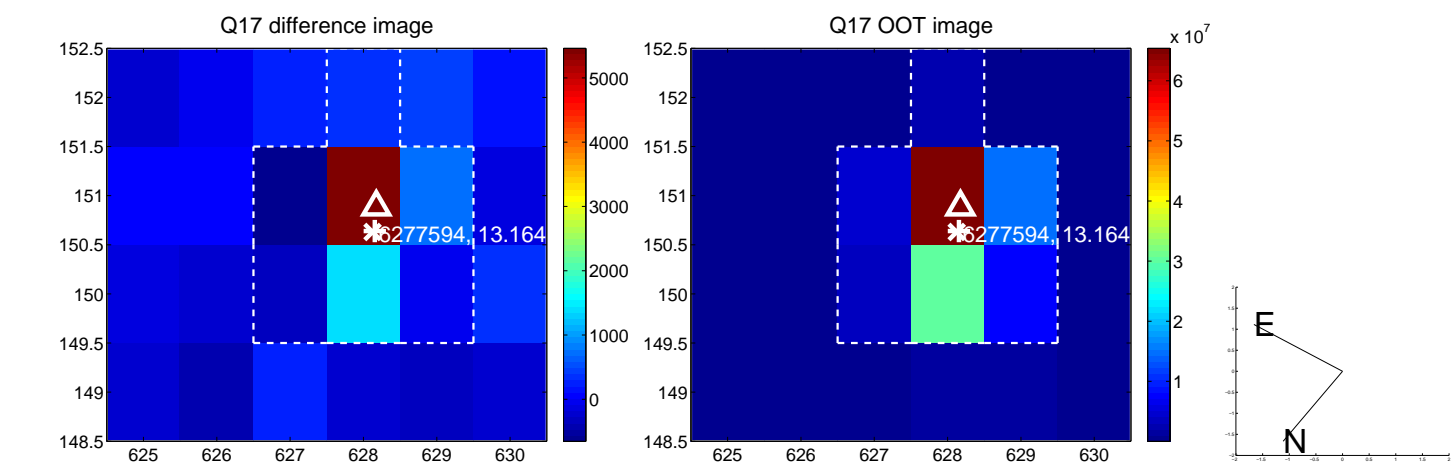
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



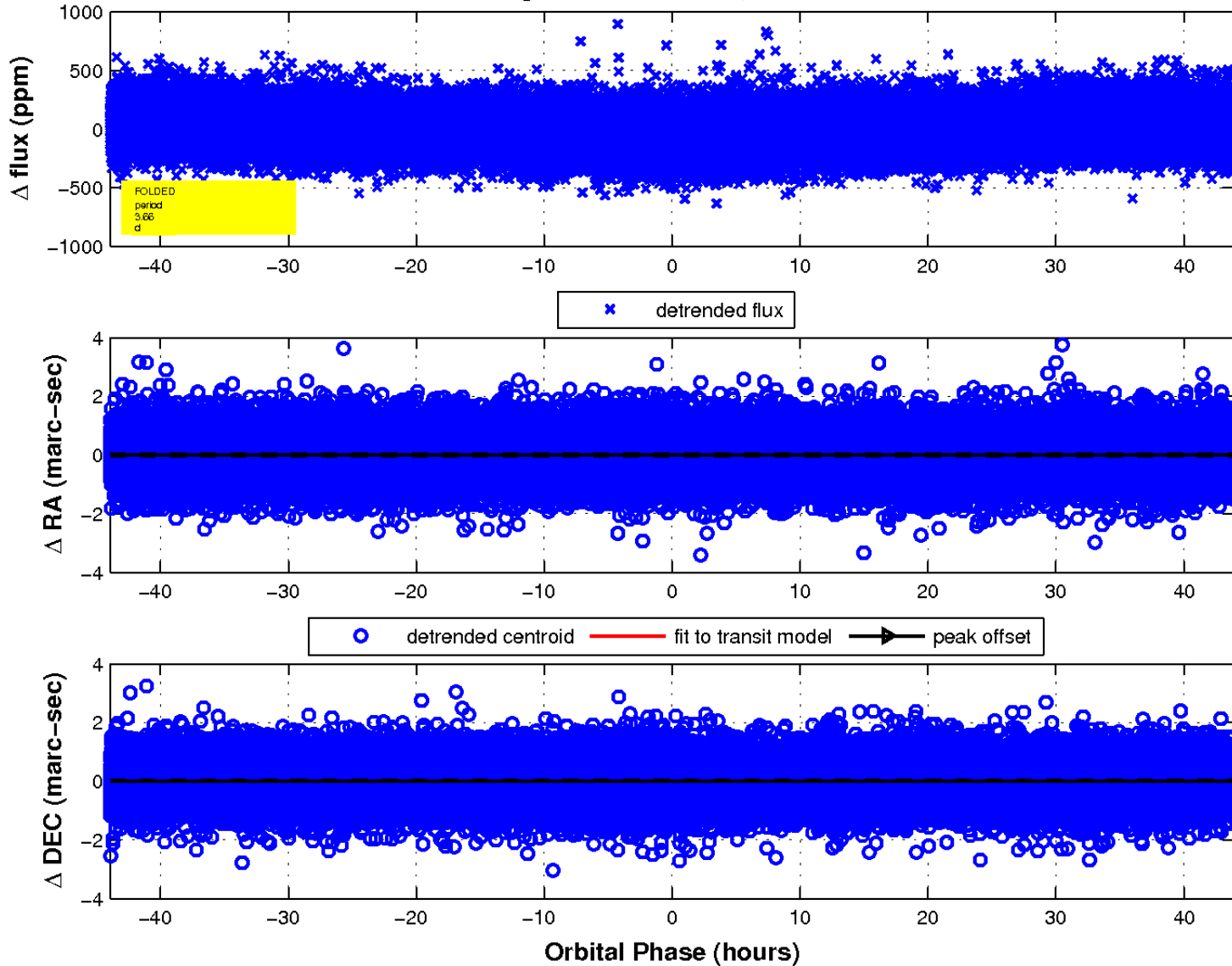
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



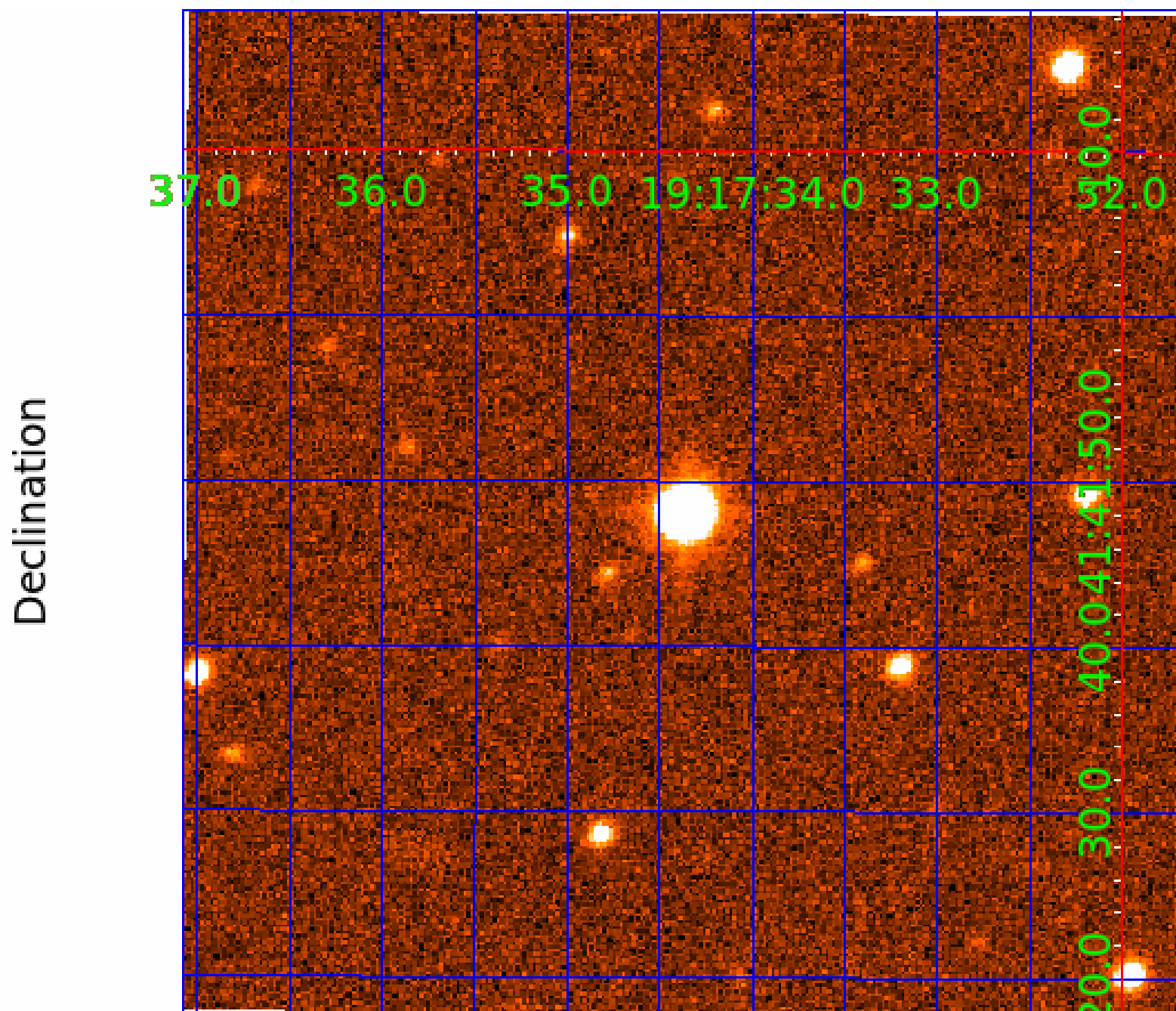
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



fluxWeightedCentroids, Planet 1 of 2



UKIRT Image



KIC 006277594

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})
006277594-01	OBS	5255.01	3.660760	133.907235	20.3	15.891	10.7	10.1	1.31	6356	0.72	1094.64
006277594-02	OBS	No	435.731372	303.418478	213.6	16.284	14.0	9.1	1.31	6356	2.20	1.87

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006277594-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV
006277594-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_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 006277594-02

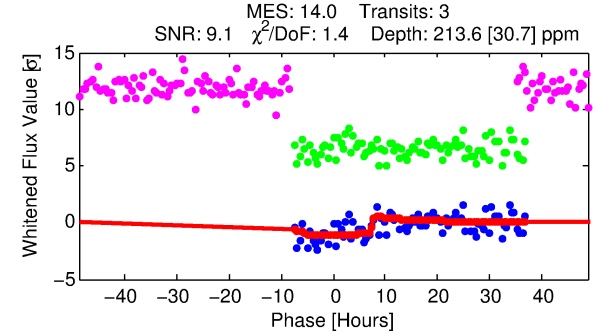
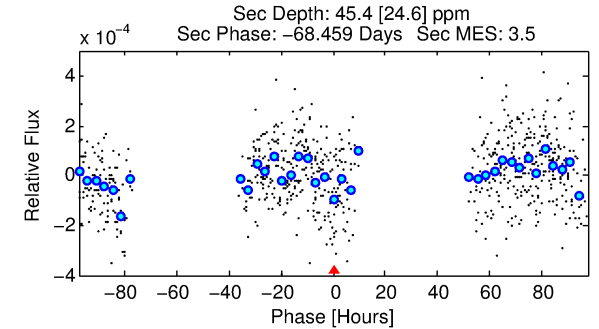
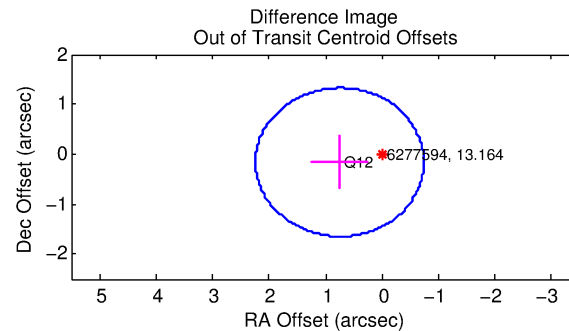
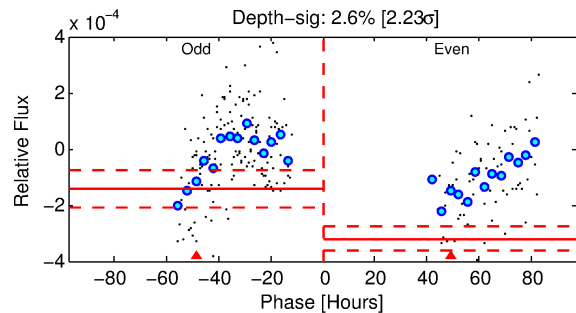
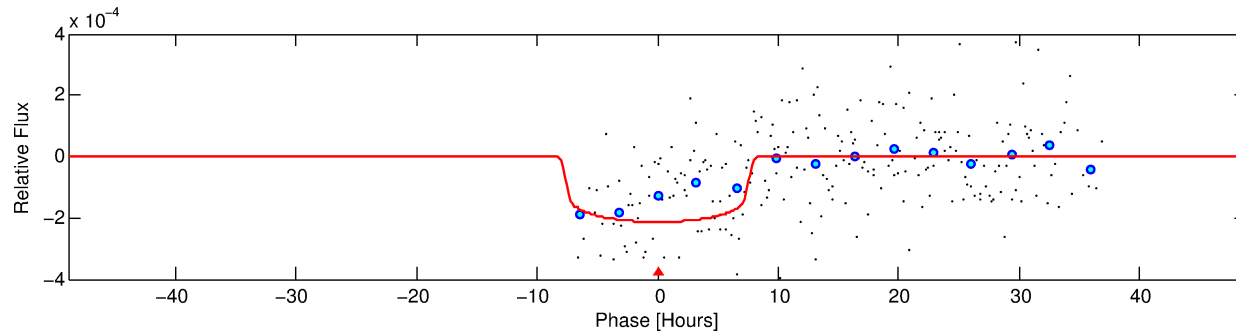
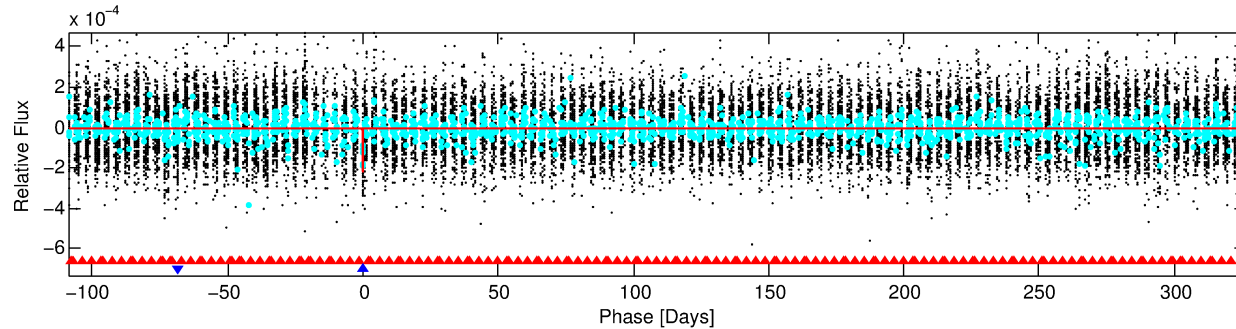
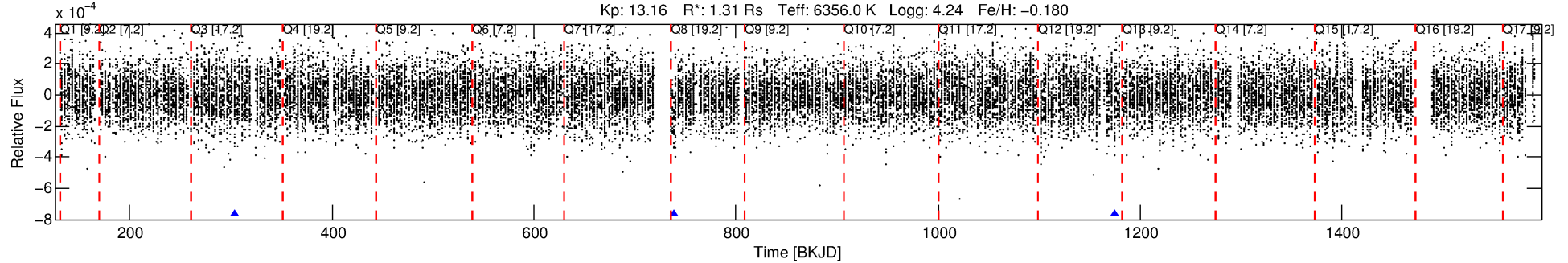
No Significant Match Found

DV One-Page Summary

KIC: 6277594 Candidate: 2 of 2 Period: 435.731 d

KOI: K05255 Corr: No Ephemeris Match

Kp: 13.16 R*: 1.31 Rs Teff: 6356.0 K Logg: 4.24 Fe/H: -0.180



DV Fit Results:

Period = 435.73137 [0.01982] d
Epoch = 303.4185 [0.0461] BKJD
Rp/R* = 0.0154 [0.0029]
a/R* = 103.95 [97.78]
b = 0.88 [0.23]
Seff = 1.87 [0.53]
Teq = 298 [21] K
Rp = 2.20 [0.63] Re
a = 1.1568 [0.2090] AU
Ag = 6887.08 [4867.40] [1.41σ]
Teff = 4200 [700] K [5.57σ]

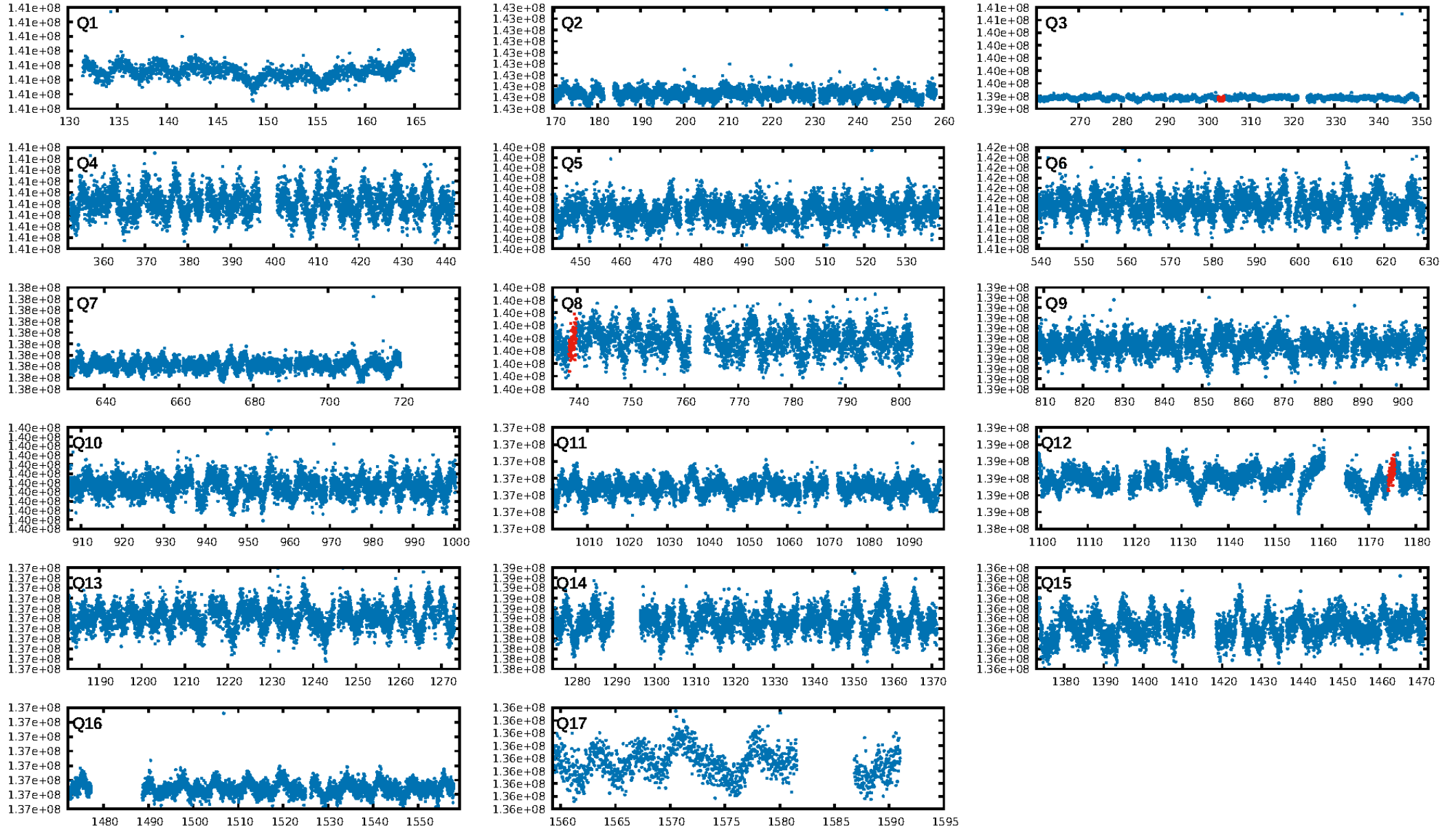
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [455.75σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 62.9%
Bootstrap-pfa: 2.14e-25
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: -1.209
Centroid-sig: 35.2%
Centroid-so: 1.151 arcsec [0.94σ]
OotOffset-rm: 0.768 arcsec [1.55σ]
KicOffset-rm: 0.696 arcsec [1.40σ]
OotOffset-st: 0/0/1/0 [1]
KicOffset-st: 0/0/1/0 [1]
DiffImageQuality-fgm: 0.00 [0/1]
DiffImageOverlap-fno: 0.00 [0/3]

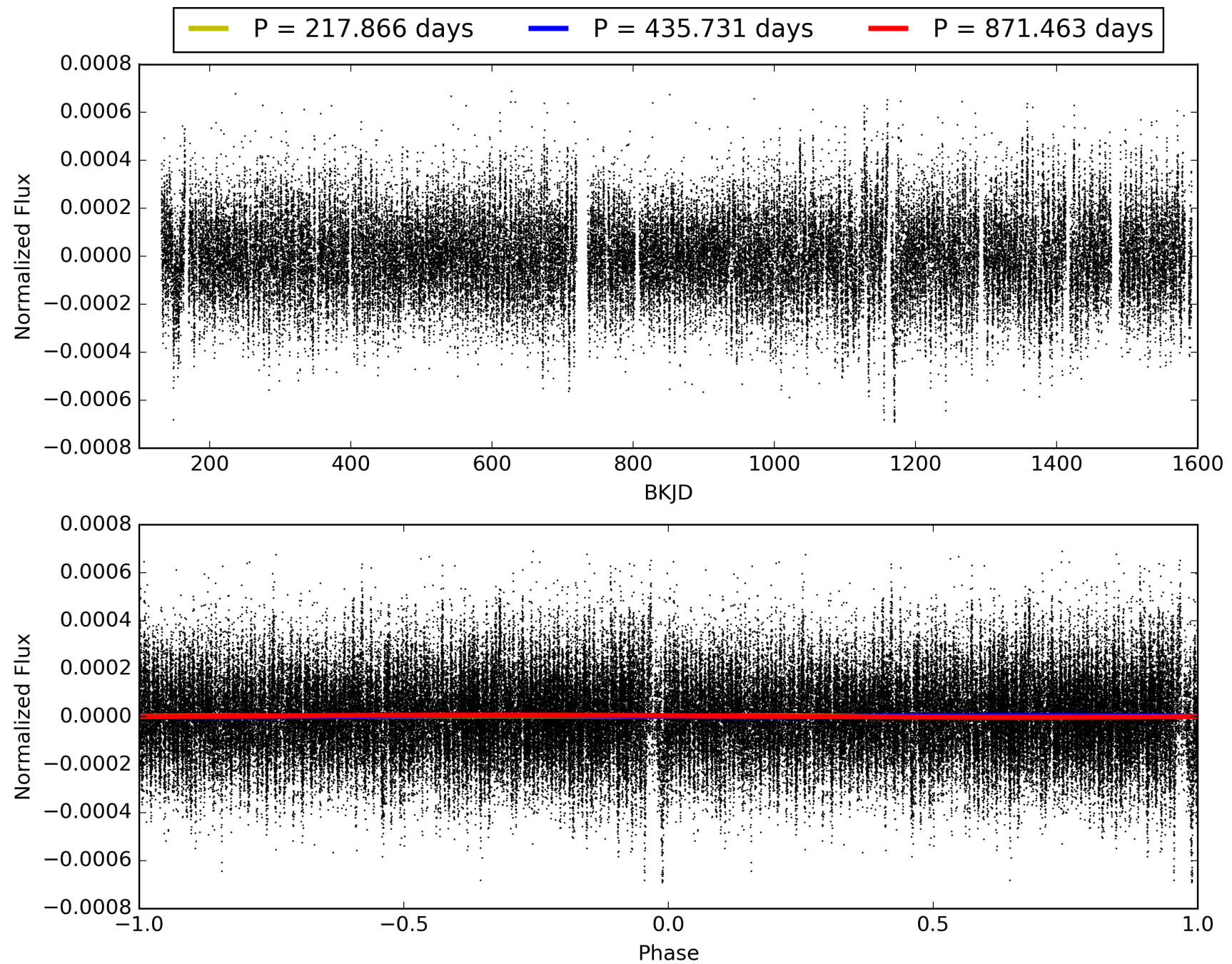
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TCE 006277594-02, PDC Light Curves

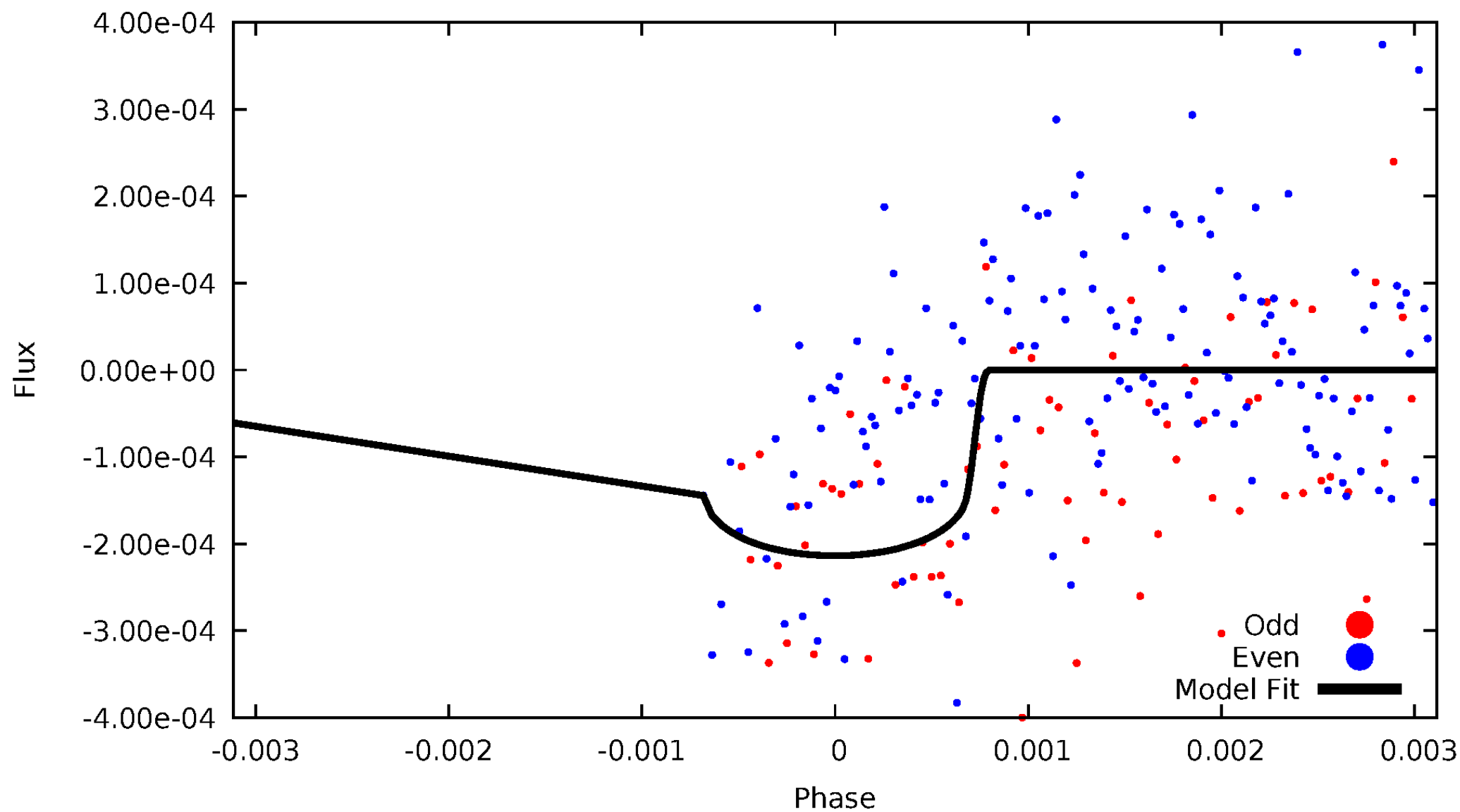


TCE 006277594-02



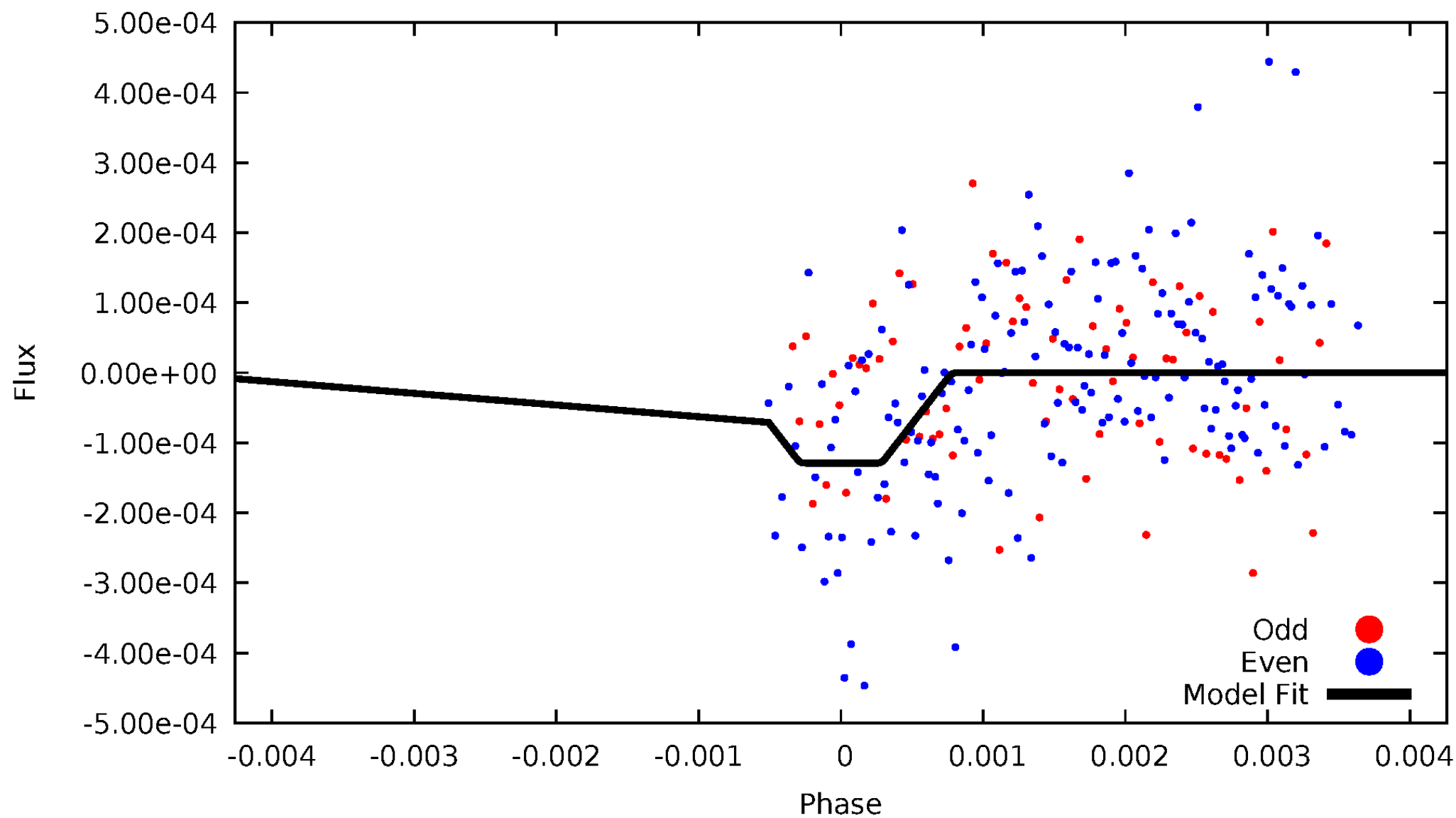
DV Odd/Even

TCE 006277594-02



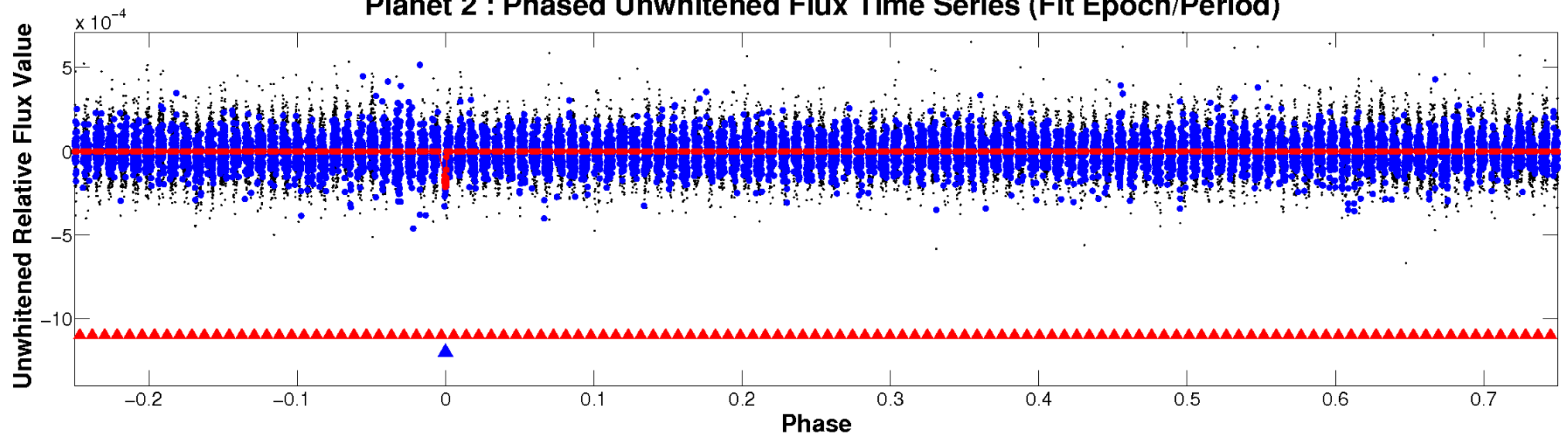
ALT Odd/Even

TCE 006277594-02

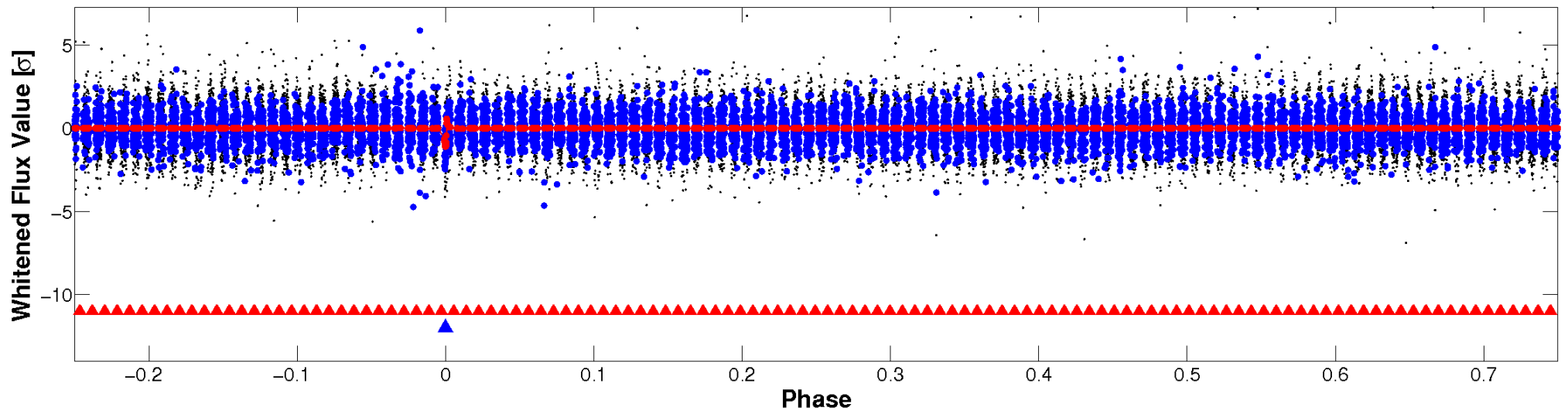


Non-Whitened Vs. Whitened Light Curve

Planet 2 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

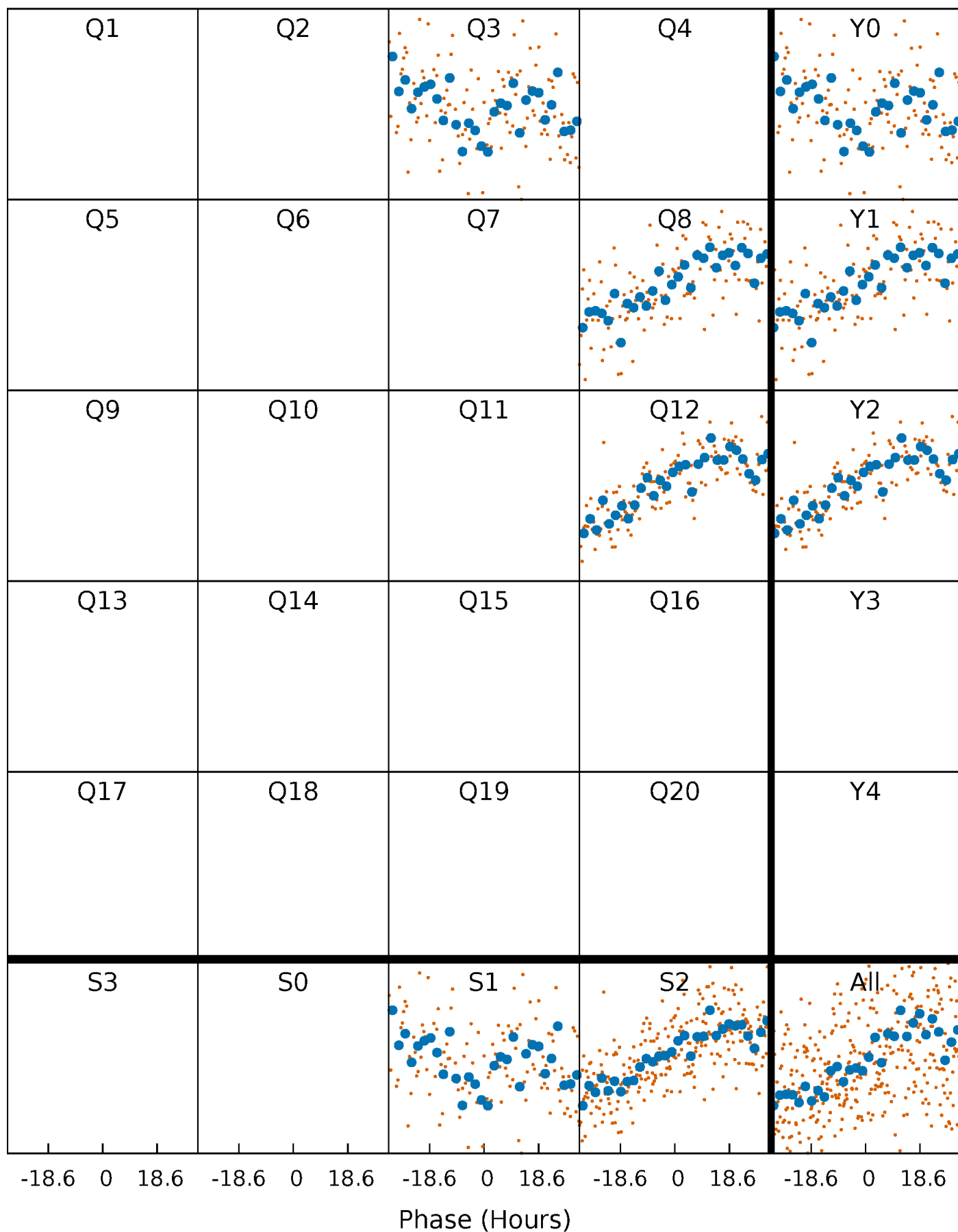


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



PDC Quarter-Phased Transit Curves

TCE 006277594-02 P=435.731372 Days $T_0=303.418478$ (BKJD)



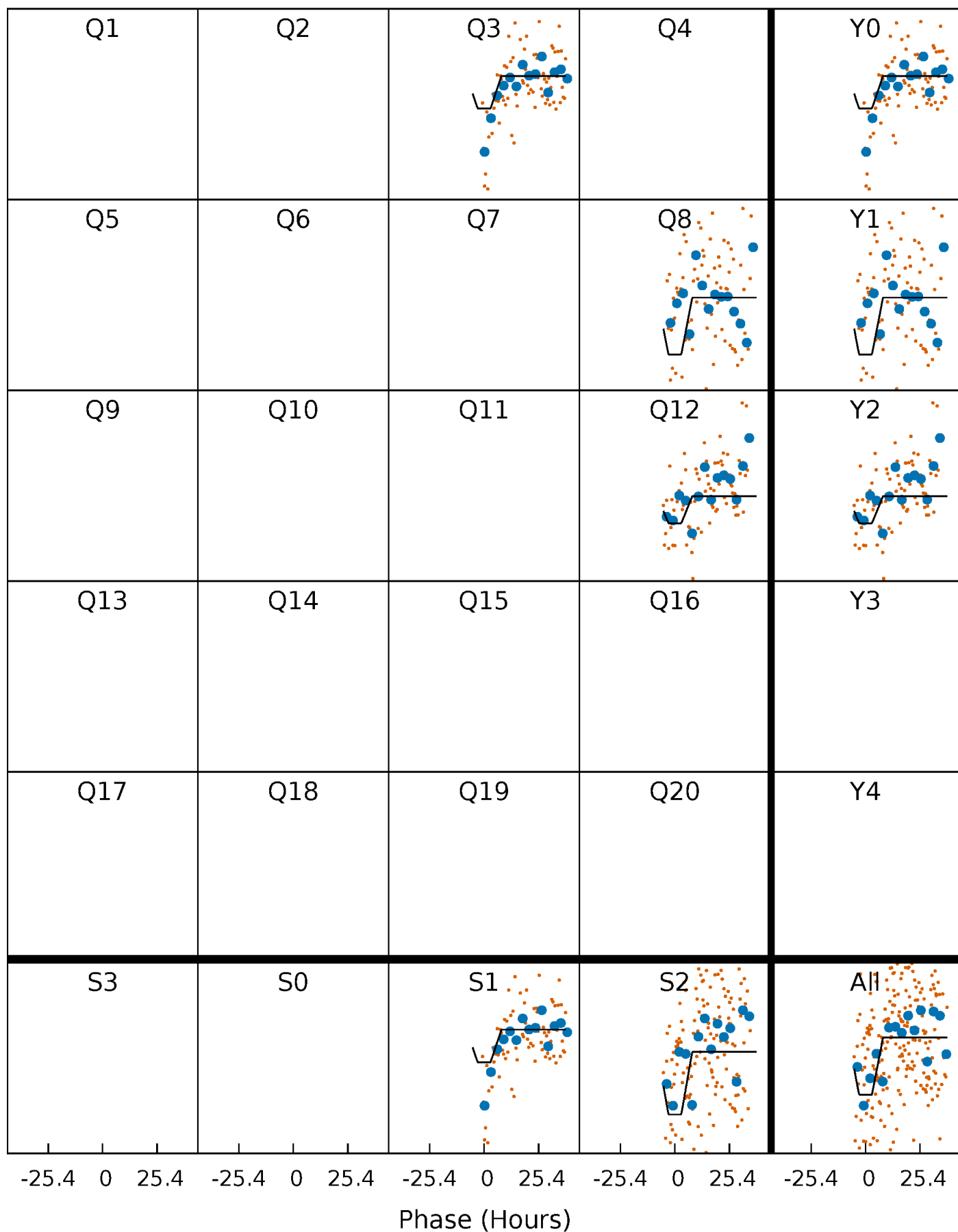
DV Quarter-Phased Transit Curves

TCE 006277594-02 P=435.731372 Days $T_0=303.418478$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

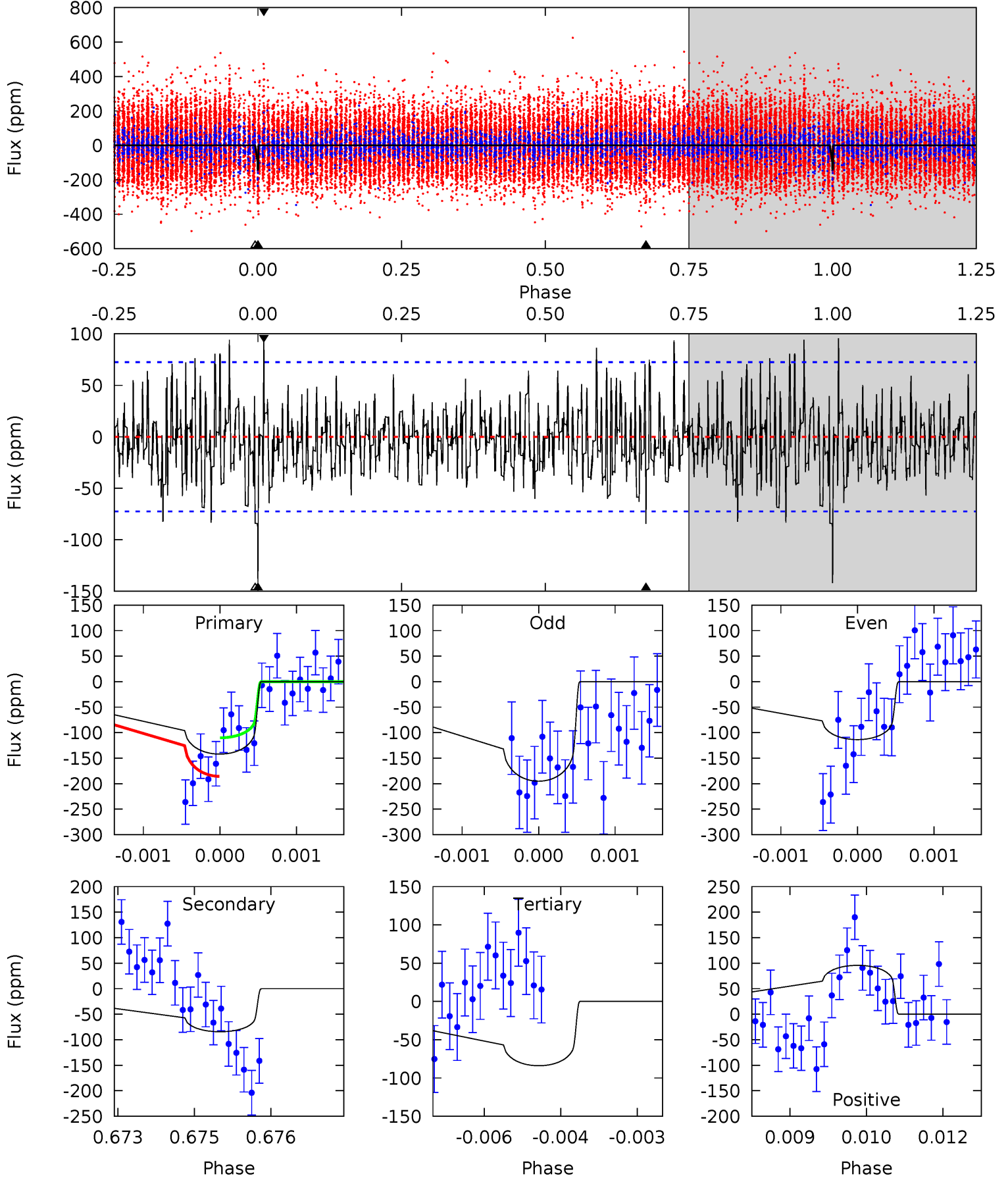
TCE 006277594-02 P=435.718422 Days $T_0=303.368164$ (BKJD)



DV Model-Shift Uniqueness Test

006277594-02, P = 435.731372 Days, E = 303.418478 Days

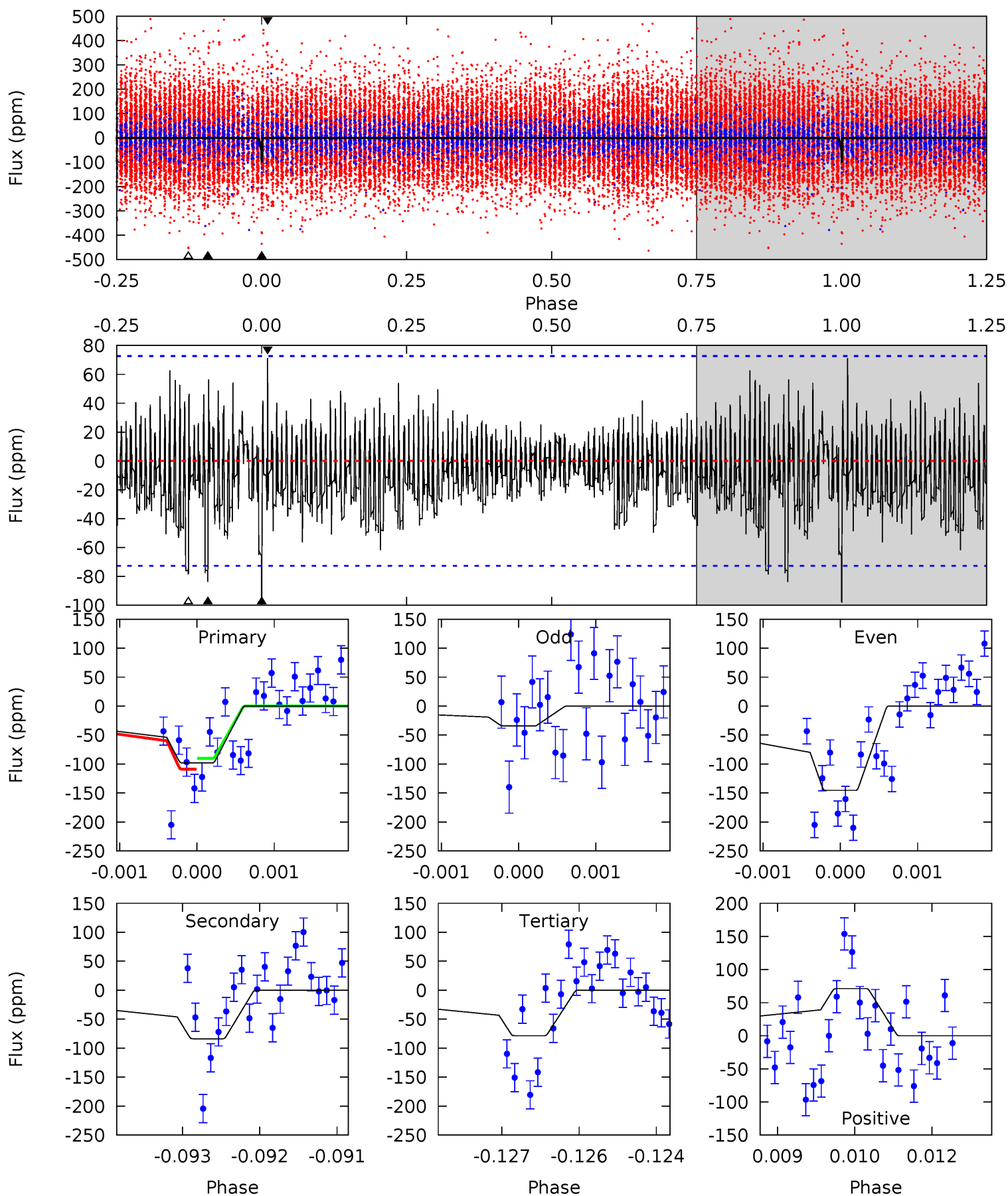
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.5	6.26	6.23	7.11	5.38	3.18	2.06	4.31	3.44	0.03	-0.85	2.90	1.08	0.40	2.70



Alt Model-Shift Uniqueness Test

006277594-02, P = 435.718422 Days, E = 303.368164 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.30	6.24	5.84	5.30	5.41	3.22	1.34	1.45	2.00	0.39	0.94	3.99	1.70	0.42	0.63



Stellar Parameters For KIC 006277594

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6356^{+160}_{-176}	$4.241^{+0.140}_{-0.140}$	$-0.180^{+0.250}_{-0.300}$	$1.308^{+0.285}_{-0.233}$	$1.085^{+0.159}_{-0.116}$	$0.683^{+0.447}_{-0.269}$
	+3%/-3%	+3%/-3%	+139%/-167%	+22%/-18%	+15%/-11%	+65%/-39%
Source	PHO1	FLK73	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 006277594-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-84 ± 13	$2.19^{+0.52}_{-0.43}$	418^{+25}_{-25}	5009^{+512}_{-415}	12681^{+7577}_{-4294}
Alt.	-84 ± 13	$1.63^{+0.45}_{-0.45}$	415^{+26}_{-23}	5709^{+916}_{-603}	22989^{+22448}_{-9122}

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

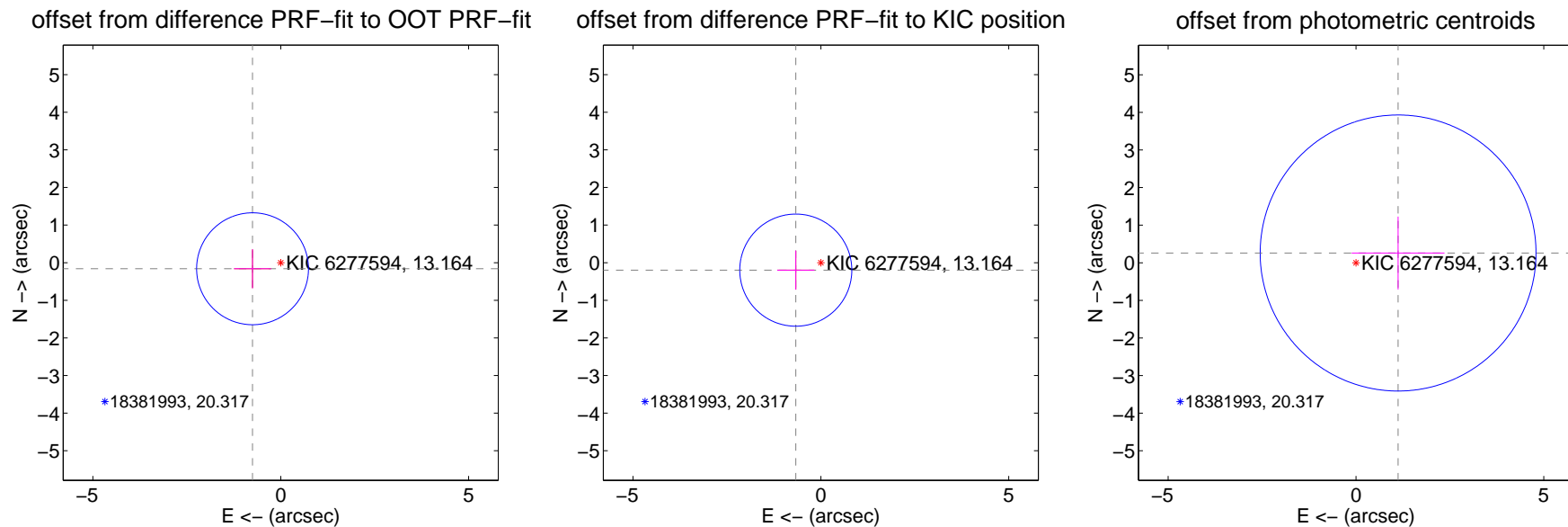
DV Centroid Data

Supplemental centroid analysis for 006277594-02. Kepler magnitude: 13.16. Transit SNR 9.06

There are 0 quarters with good PRF difference image offsets

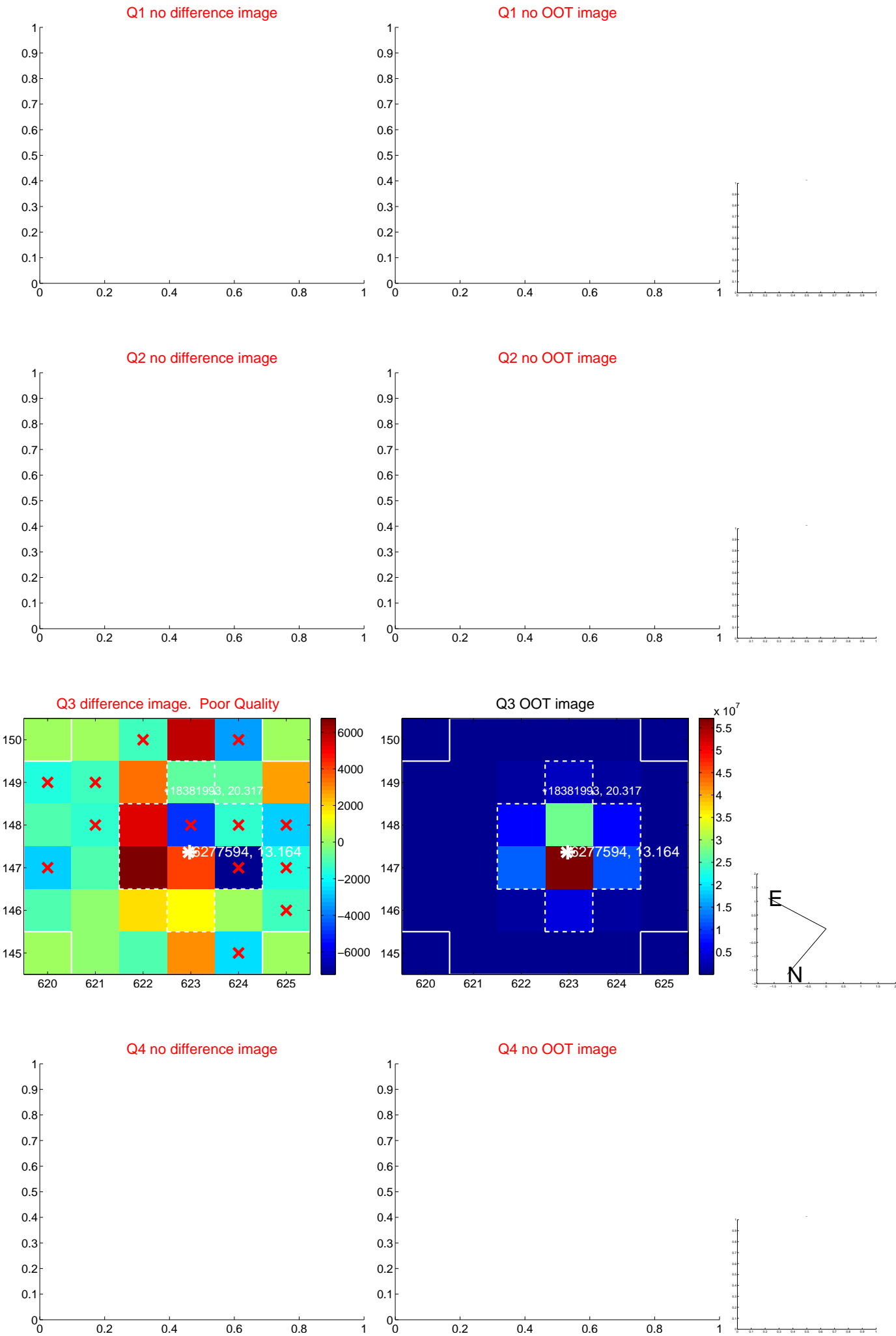
The direct PRF centroid is offset from the target star catalog position by about 0.09 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.768 ± 0.496	1.55	0.750 ± 0.495	-0.162 ± 0.520
PRF-fit source offset from KIC position	0.696 ± 0.497	1.40	0.667 ± 0.495	-0.198 ± 0.520
photometric centroid source offset	1.15 ± 1.22	0.94	-1.12 ± 1.24	0.26 ± 0.97

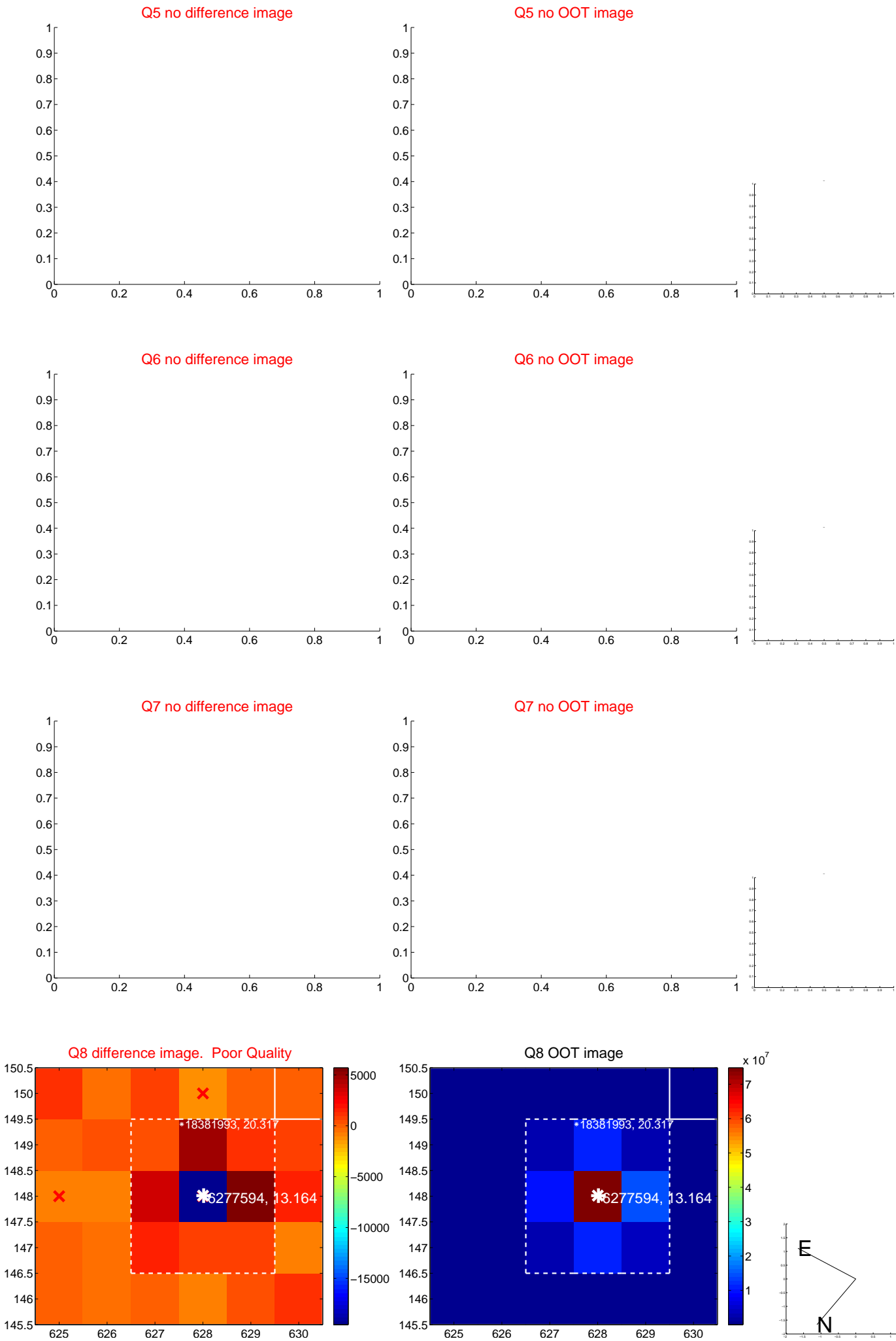


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

Q9 no difference image



Q9 no OOT image



Q10 no difference image



Q10 no OOT image



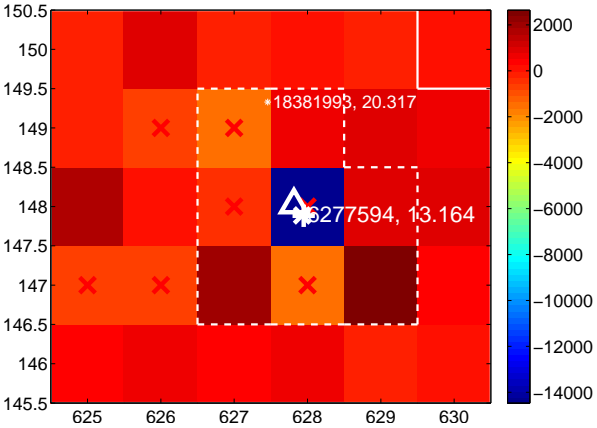
Q11 no difference image



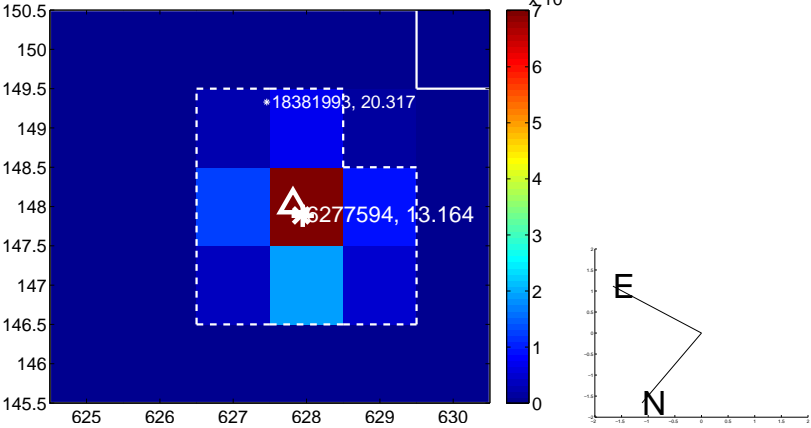
Q11 no OOT image



Q12 difference image. Poor Quality



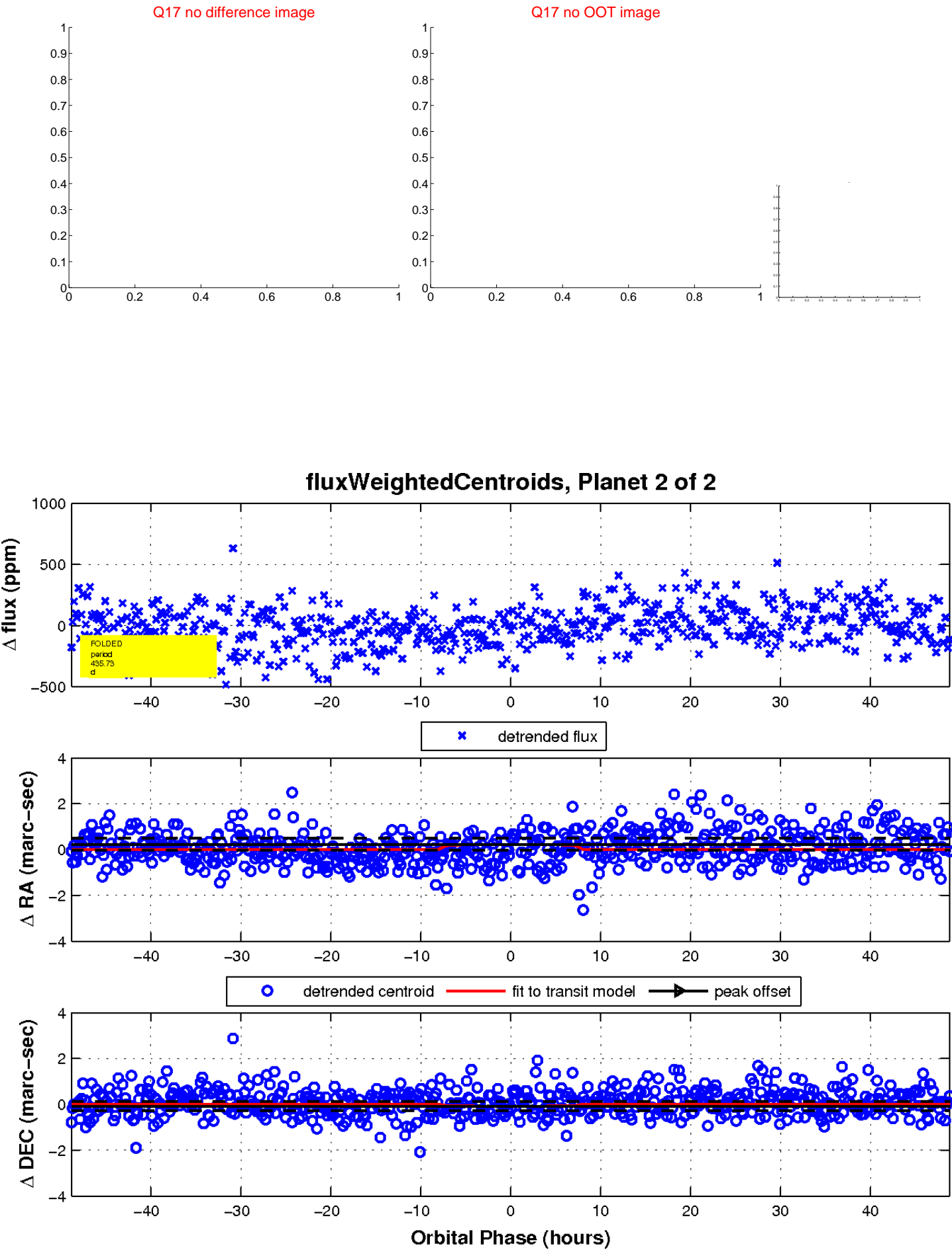
Q12 OOT image



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

