

KIC 008766268

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})
008766268-01	OBS	8168.01	5.297533	135.515909	155.2	4.098	7.3	7.9	0.88	5815	1.39	226.81
008766268-02	OBS	No	302.356672	172.139744	1319.6	3.308	8.6	6.9	0.88	5815	3.61	1.03

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008766268-01	OBS	FP	0.00	0	0	1	1	HALO_GHOST—EPHEM_MATCH
008766268-02	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_RESOLVED_OFFSET

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.

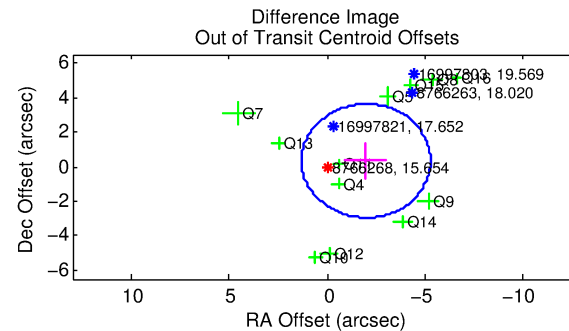
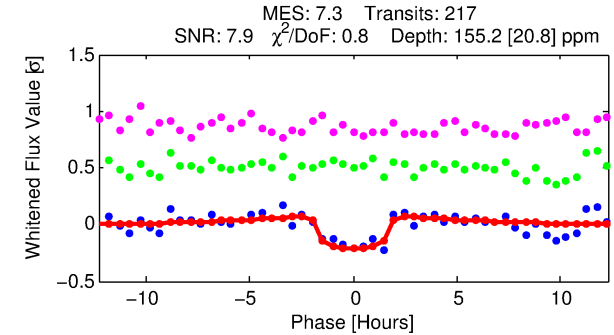
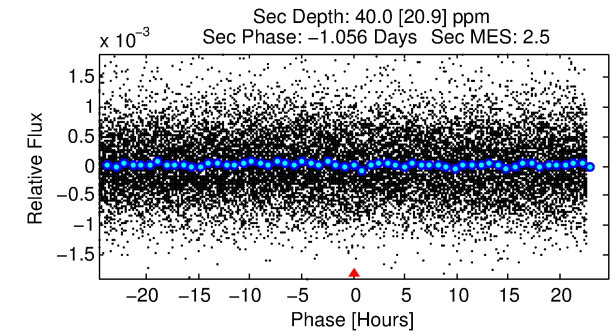
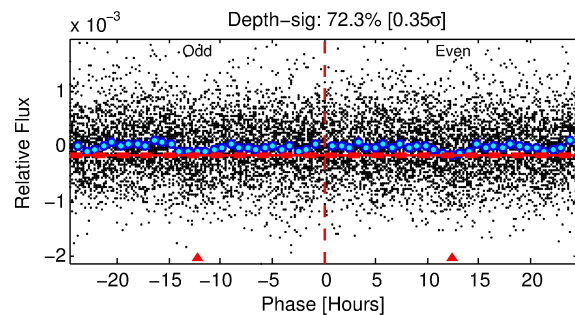
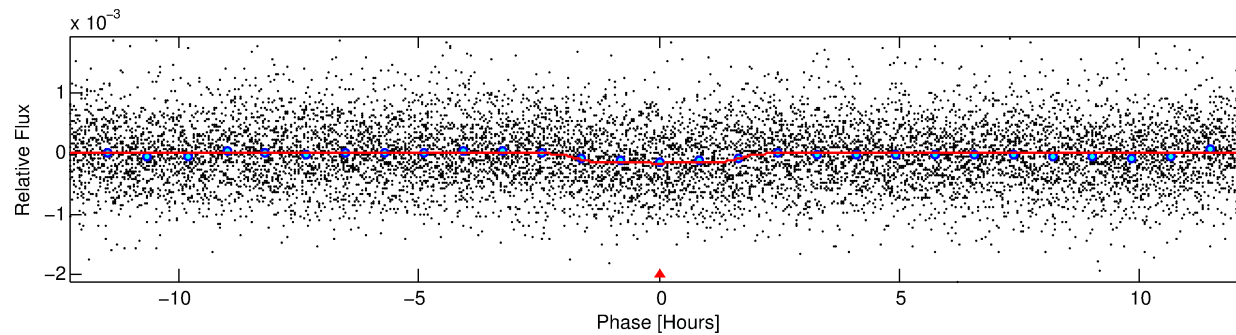
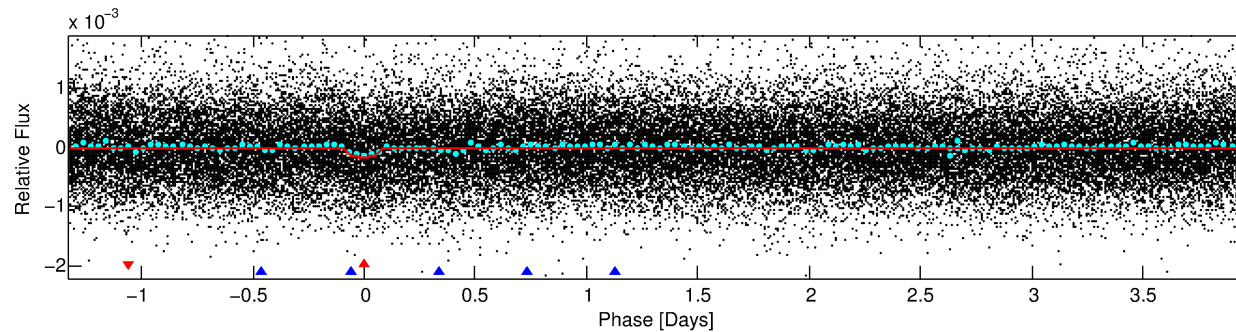
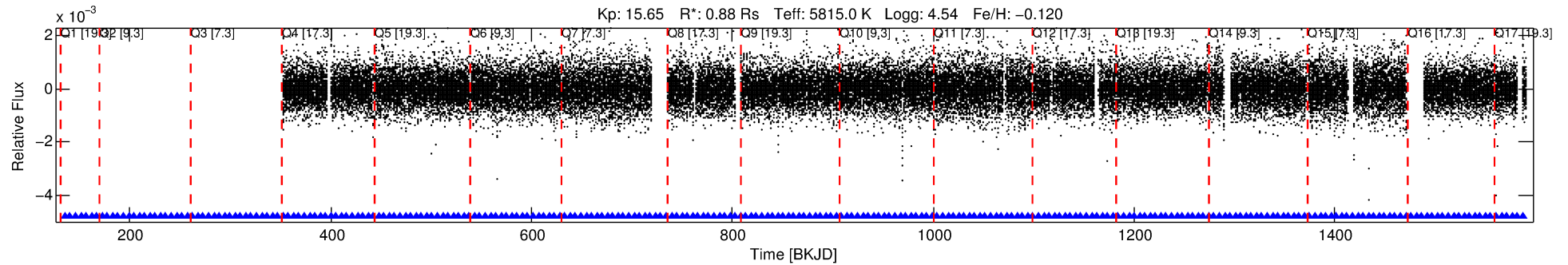
Ephemeris Match Information For 008766268-01

TCE (1)	KIC	Parent (2)	Parent KIC	P ₁ :P ₂	Dist (″)	Δ Row	Δ Col	m ₂	m ₁	D ₂ /D ₁	Mechanism	Flag	σ_P	σ_T
008766268-01	8766268	008766222-01	8766222	1:1	81.9	-21	-3	13.85	15.65	9.59	Direct-PRF	1	2.56	2.11

Notes: P₁:P₂ is the period ratio. Dist is the distance in arcseconds. Δ Row and Δ Col are the number of pixels apart in row and column. m₂ and m₁ are the magnitudes of the parent and child. D₂/D₁ is the parent's transit depth divided by the child's. σ_P and σ_T are the significance of the match in period and epoch. For a match to be considered significant $\sigma_P < 5.0$ and $\sigma_T < 5.0$. Matches which have σ_P and σ_T very close to this cutoff should receive extra scrutiny, especially if the period ratio is very large.

DV One-Page Summary

KIC: 8766268 Candidate: 1 of 2 Period: 5.298 d



DV Fit Results:

Period = 5.29753 [0.00006] d
Epoch = 135.5159 [0.0083] BKJD
Rp/R* = 0.0145 [0.0026]
a/R* = 3.59 [2.77]
b = 0.95 [0.08]
Seff = 226.81 [93.86]
Teff = 990 [102] K
Rp = 1.39 [0.50] Re
a = 0.0589 [0.0157] AU
Ag = 39.72 [29.45] [1.31 σ]
Teffp = 3841 [621] K [4.53 σ]

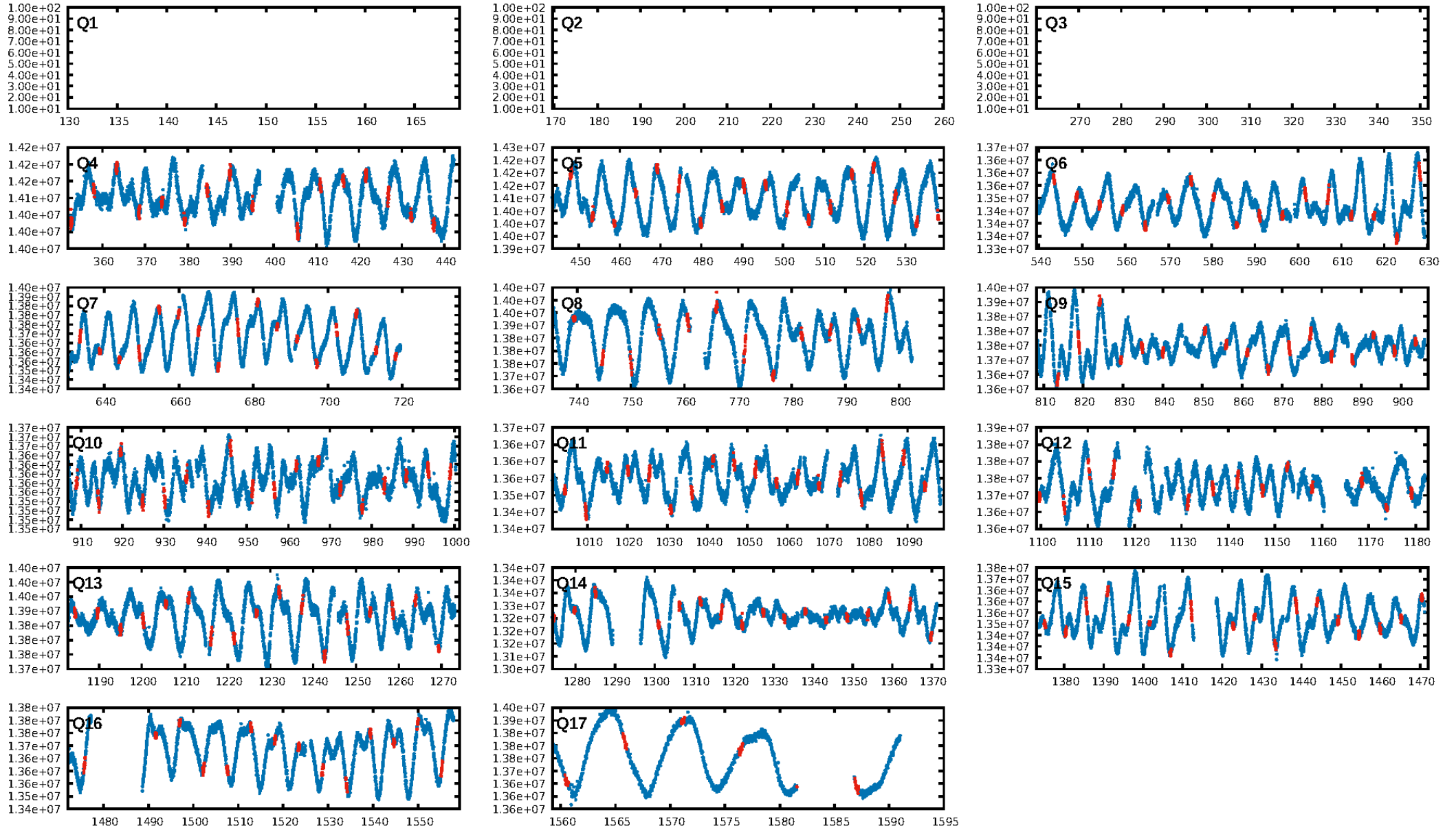
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [1353.72 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 5.58e-13
RollingBand-fgt: 1.00 [212/212]
GhostDiagnostic-chr: 0.0176
Centroid-sig: 0.0%
Centroid-so: 3.719 arcsec [2.82 σ]
OotOffset-rm: 2.013 arcsec [1.83 σ]
KicOffset-rm: 2.148 arcsec [2.06 σ]
OotOffset-st: 2/3/4/3 [12]
KicOffset-st: 2/3/4/3 [12]
DiffImageQuality-fgm: 0.25 [3/12]
DiffImageOverlap-fno: 1.00 [14/14]

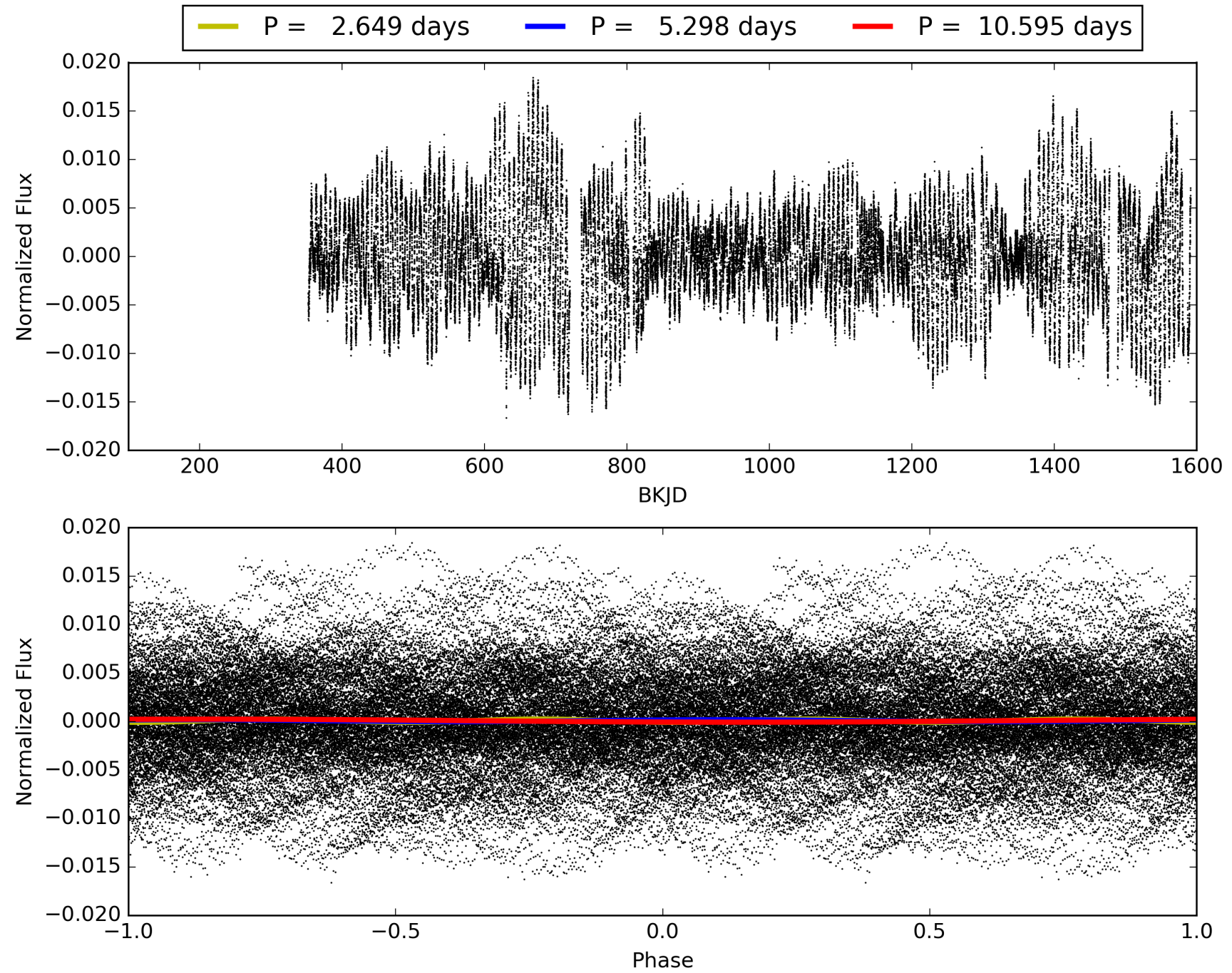
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 008766268-01, PDC Light Curves

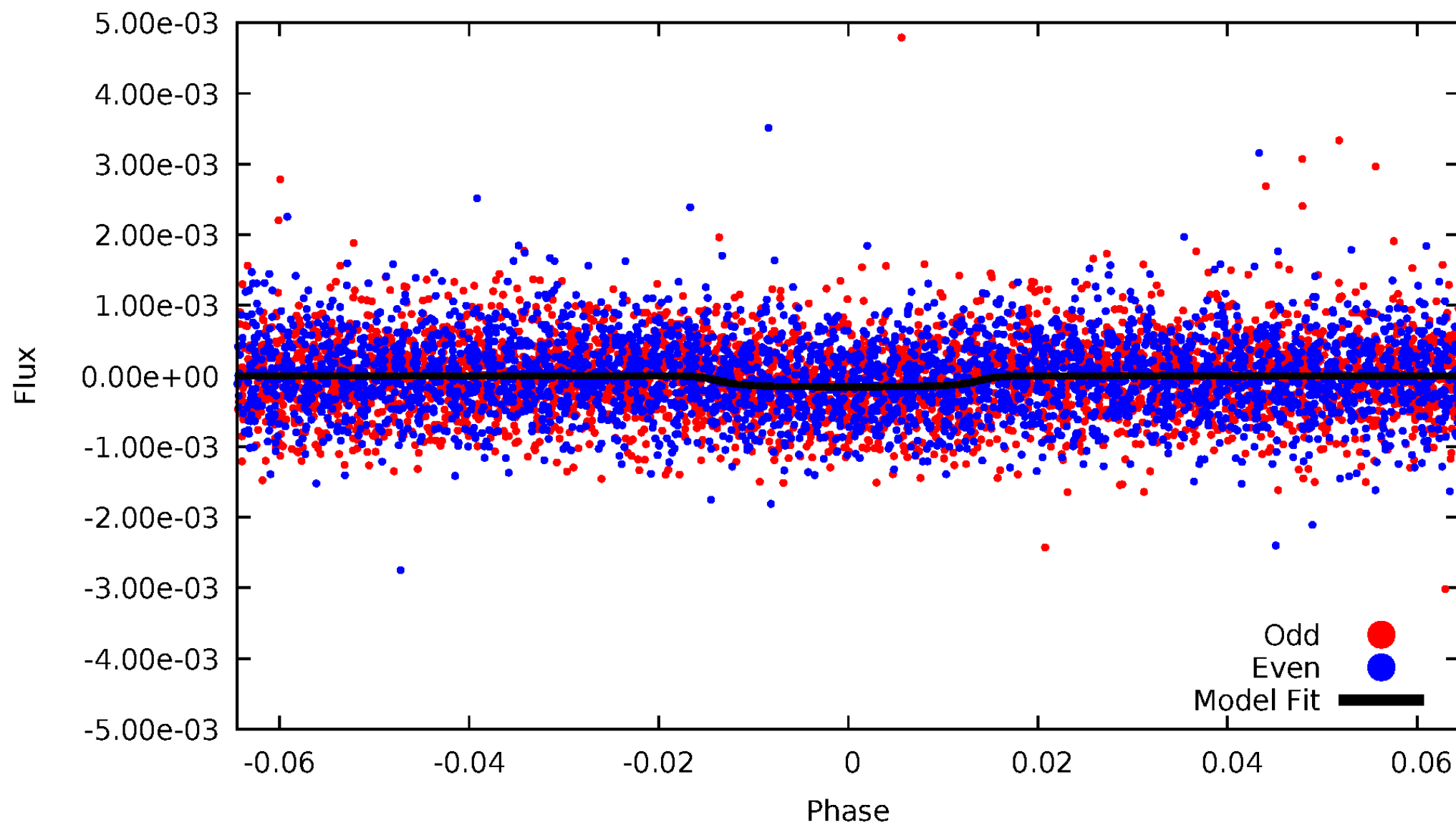


TCE 008766268-01



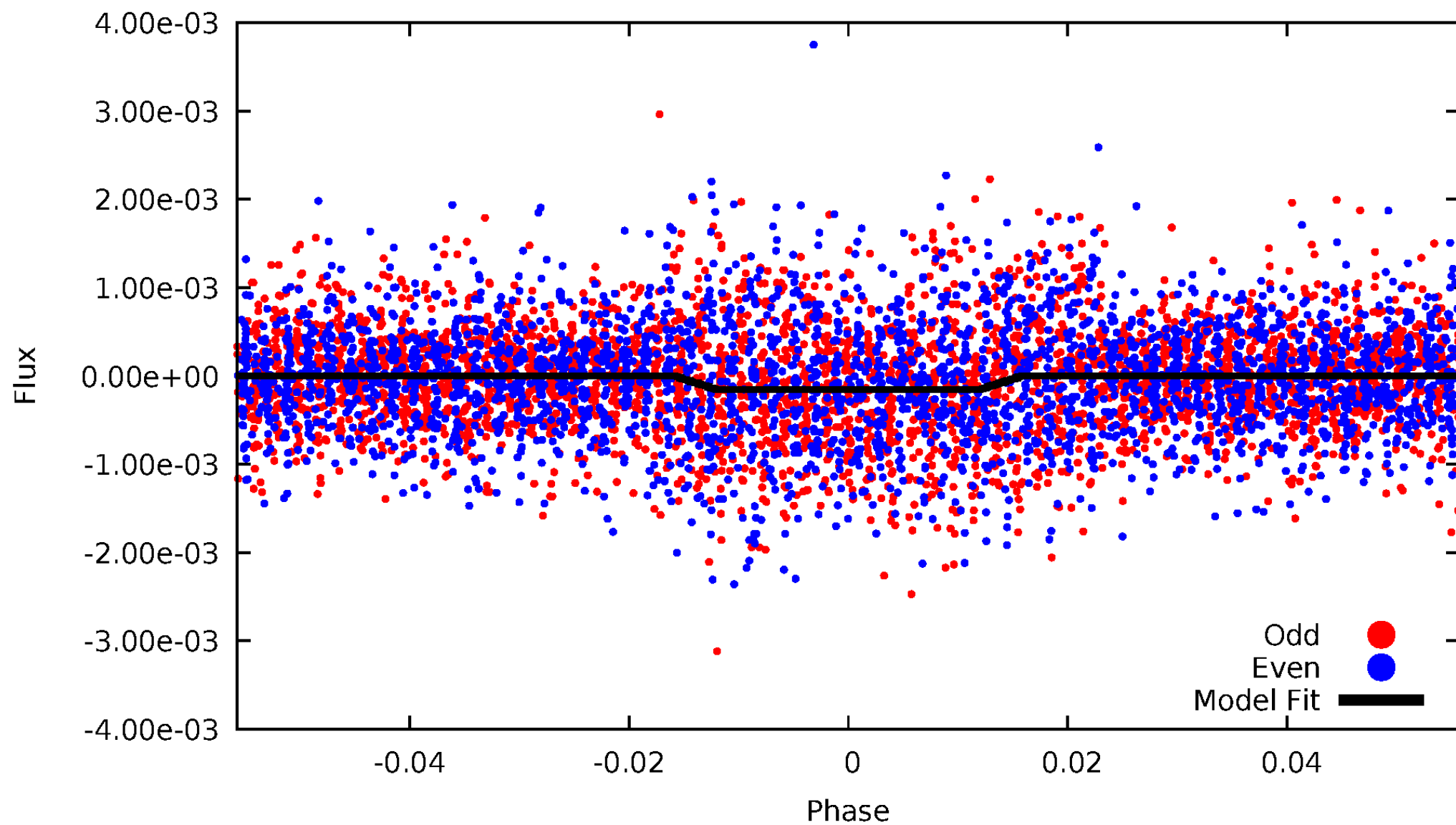
DV Odd/Even

TCE 008766268-01

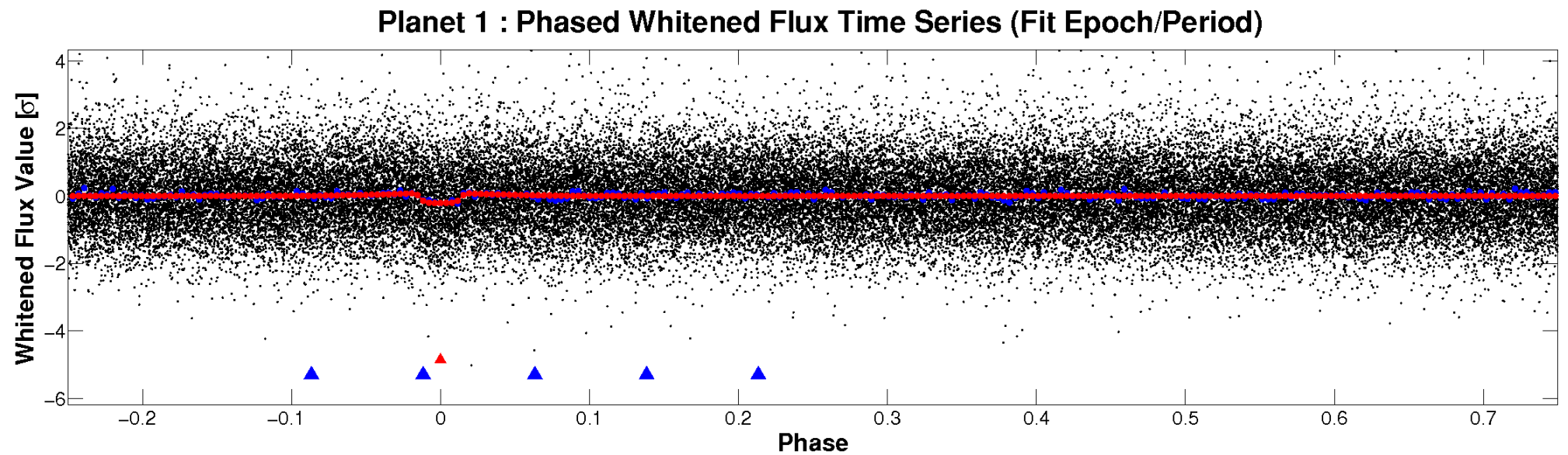
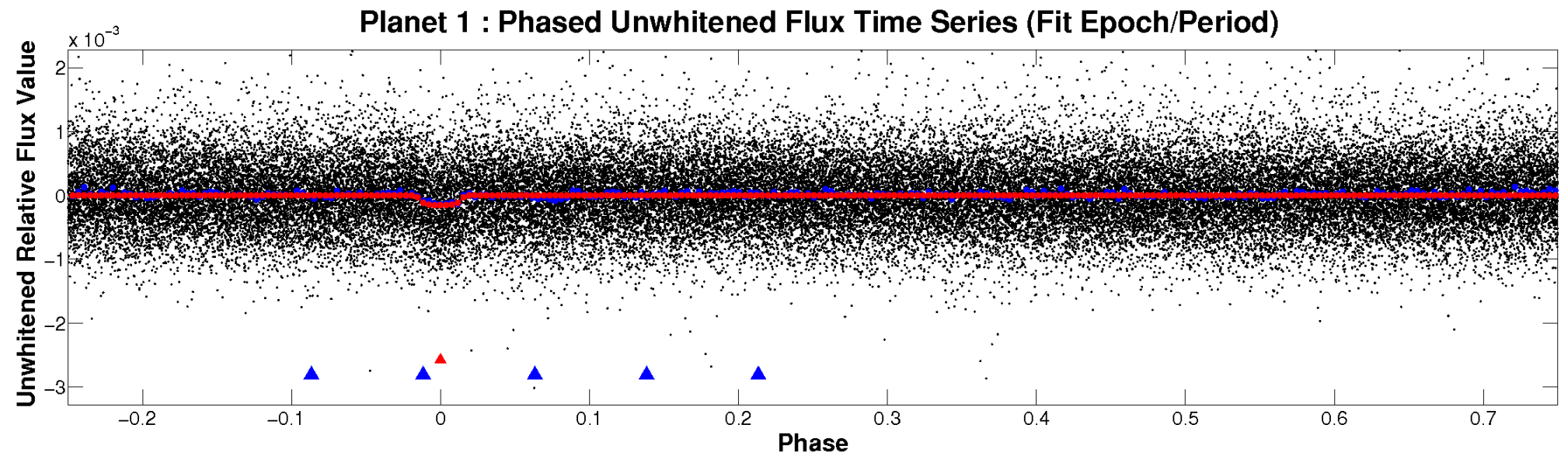


ALT Odd/Even

TCE 008766268-01

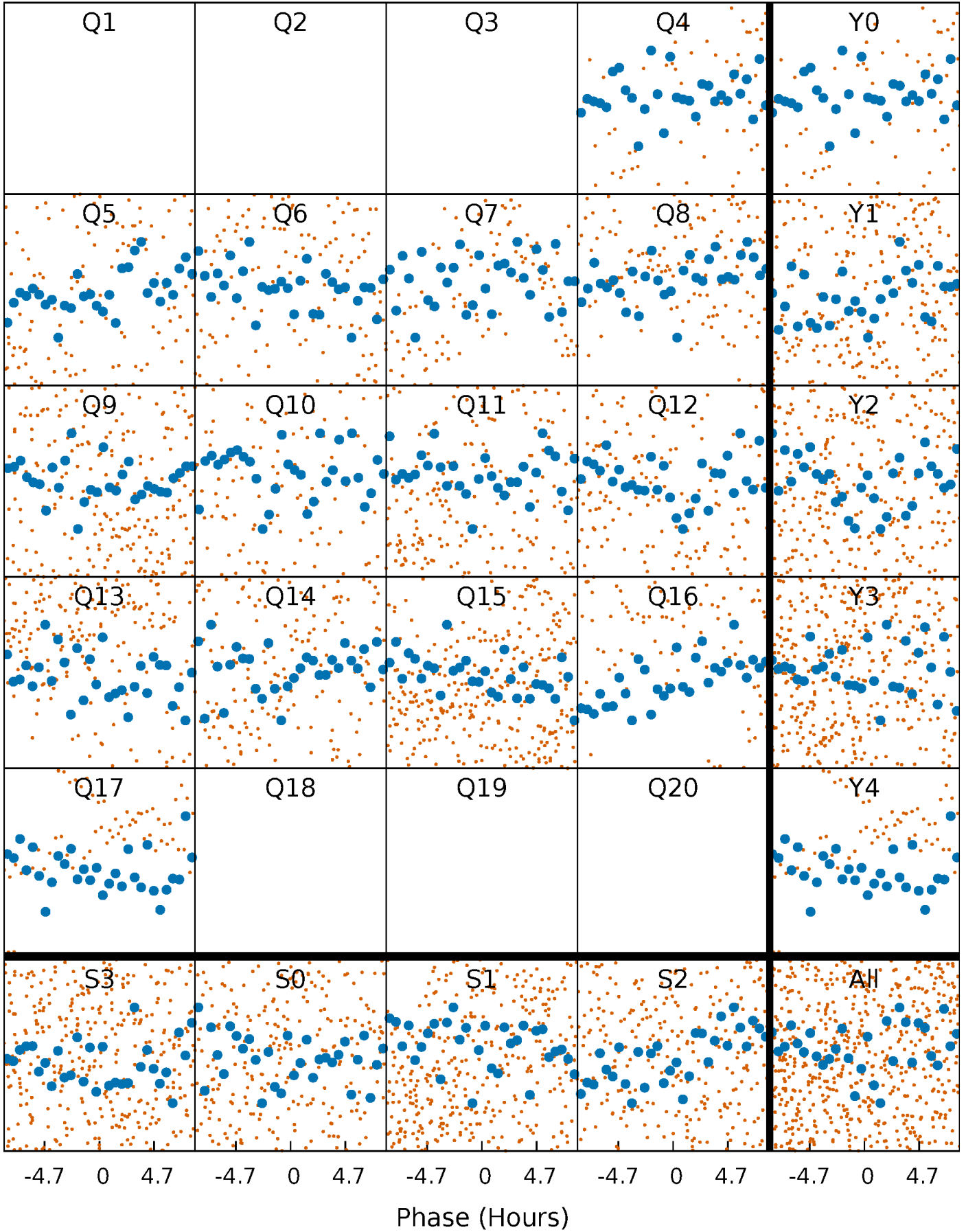


Non-Whitened Vs. Whitened Light Curve



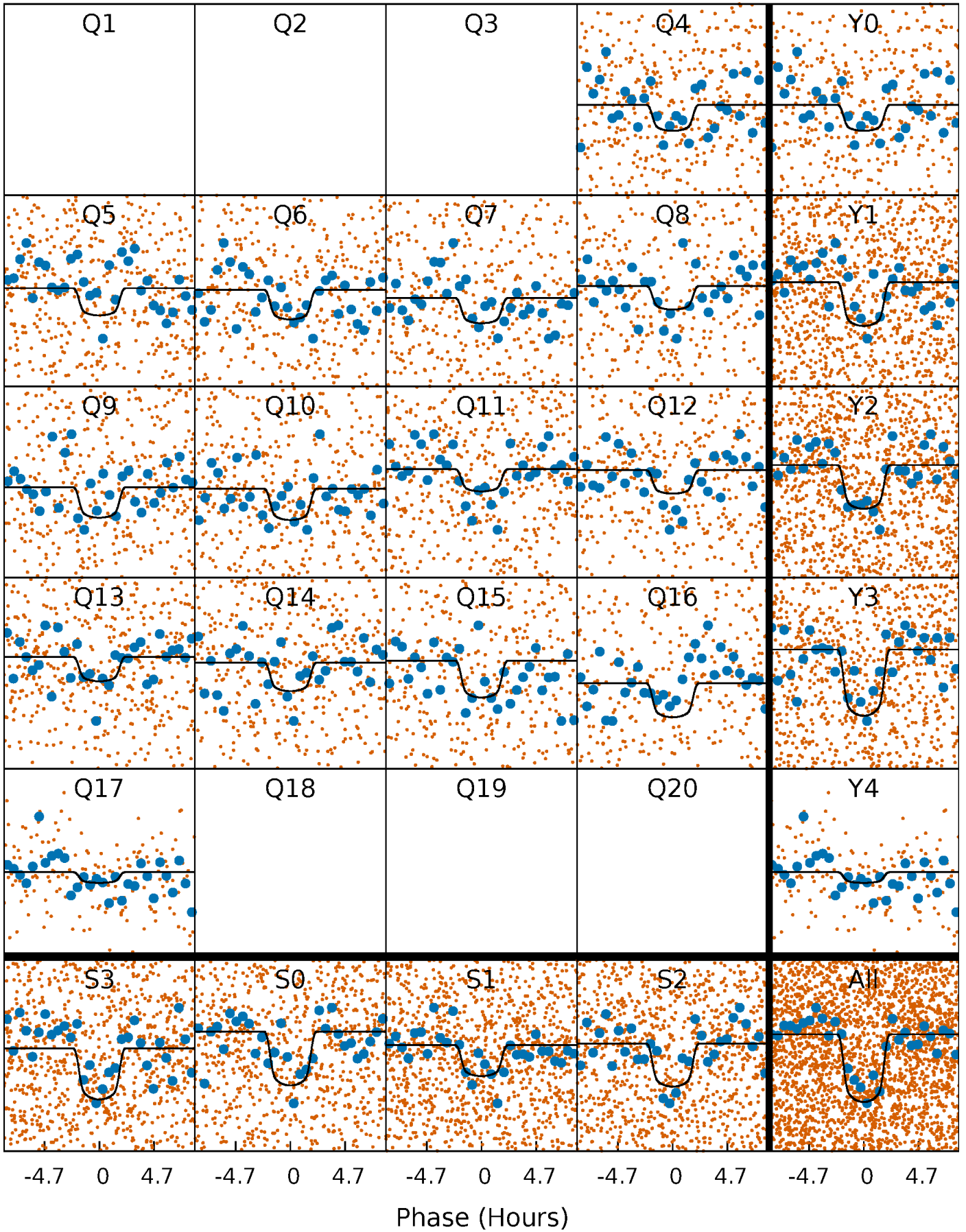
PDC Quarter-Phased Transit Curves

TCE 008766268-01 P= 5.297533 Days $T_0=135.515909$ (BKJD)



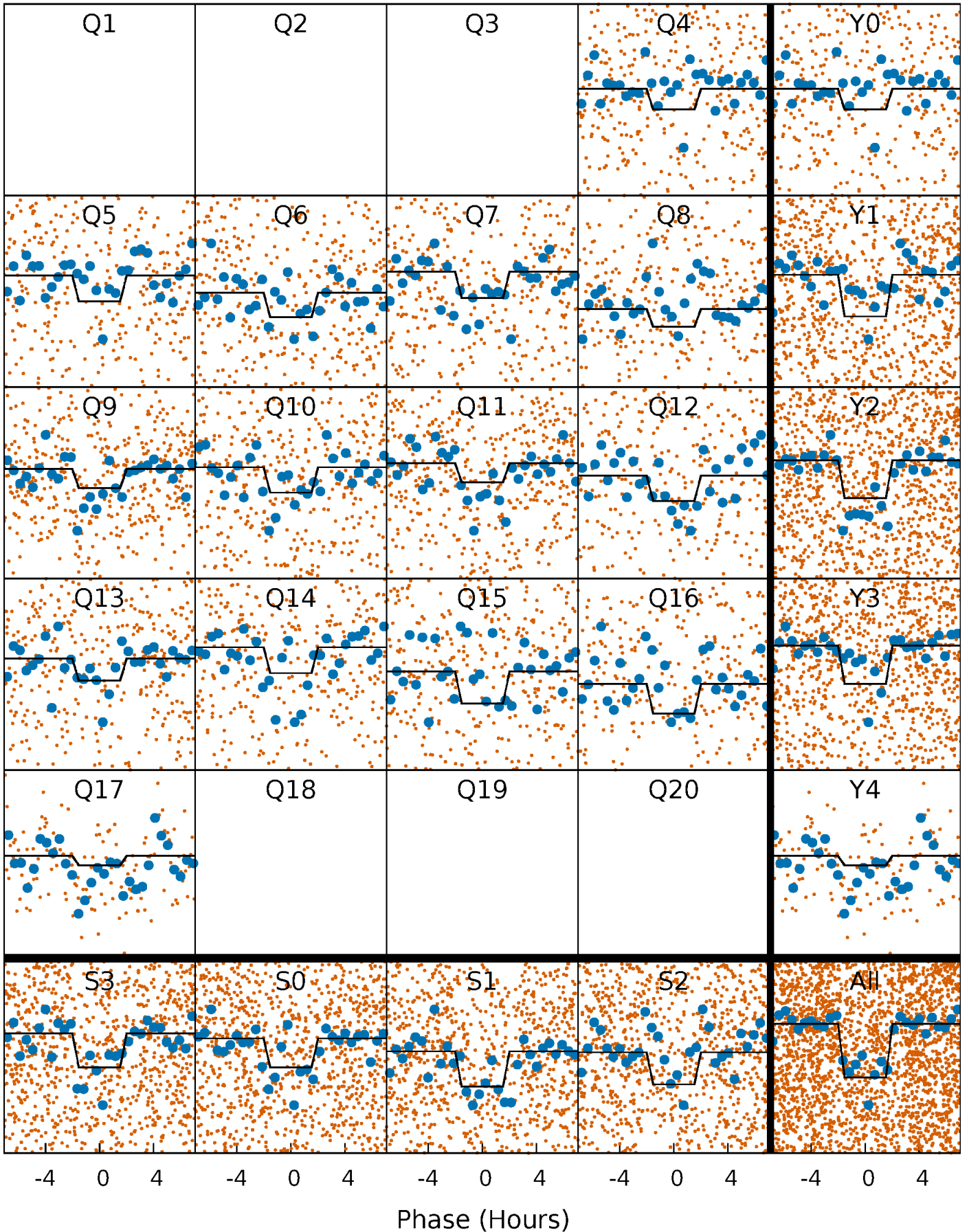
DV Quarter-Phased Transit Curves

TCE 008766268-01 P= 5.297533 Days $T_0=135.515909$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

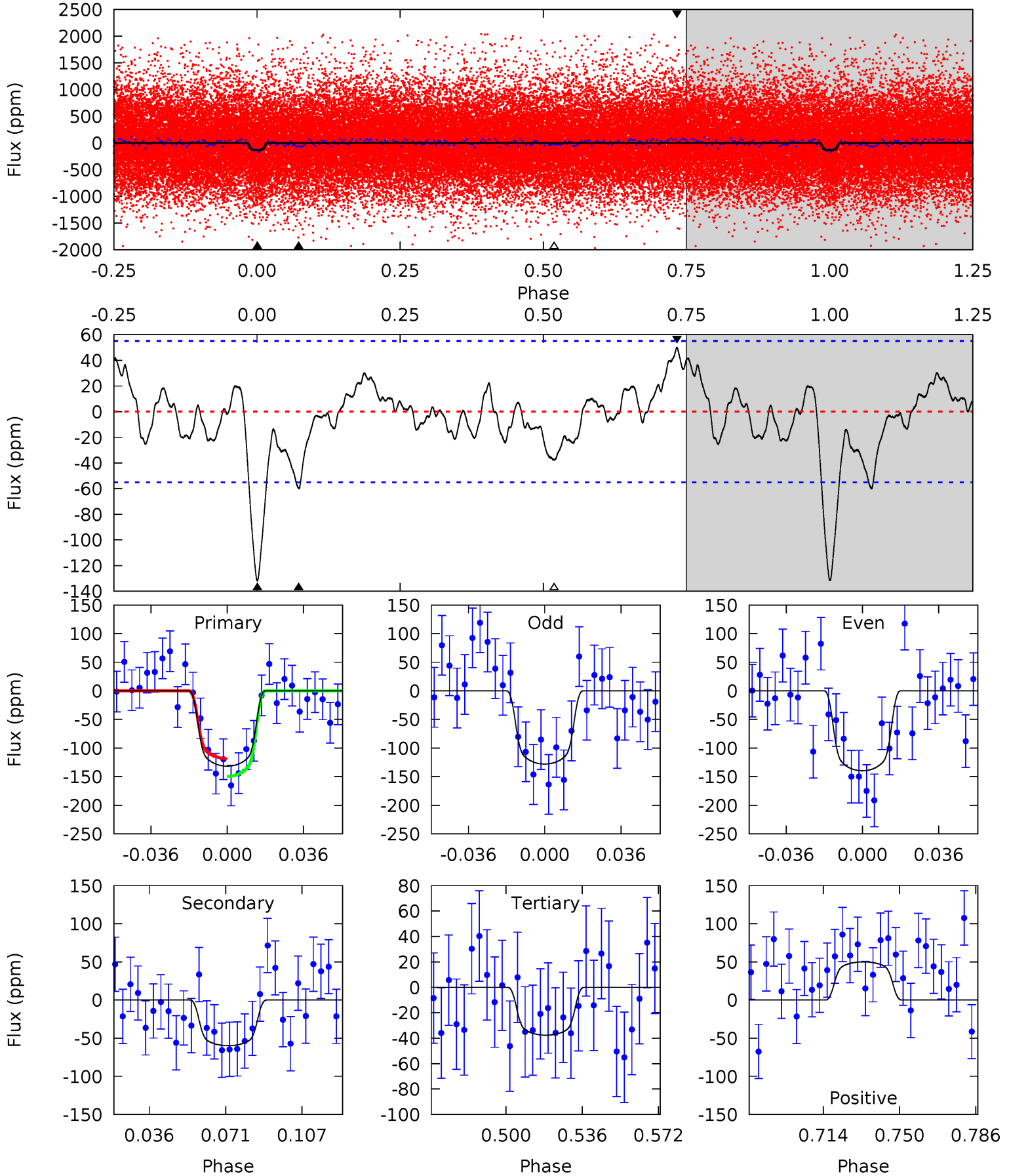
TCE 008766268-01 P= 5.297278 Days $T_0=135.545279$ (BKJD)



DV Model-Shift Uniqueness Test

008766268-01, P = 5.297533 Days, E = 135.515909 Days

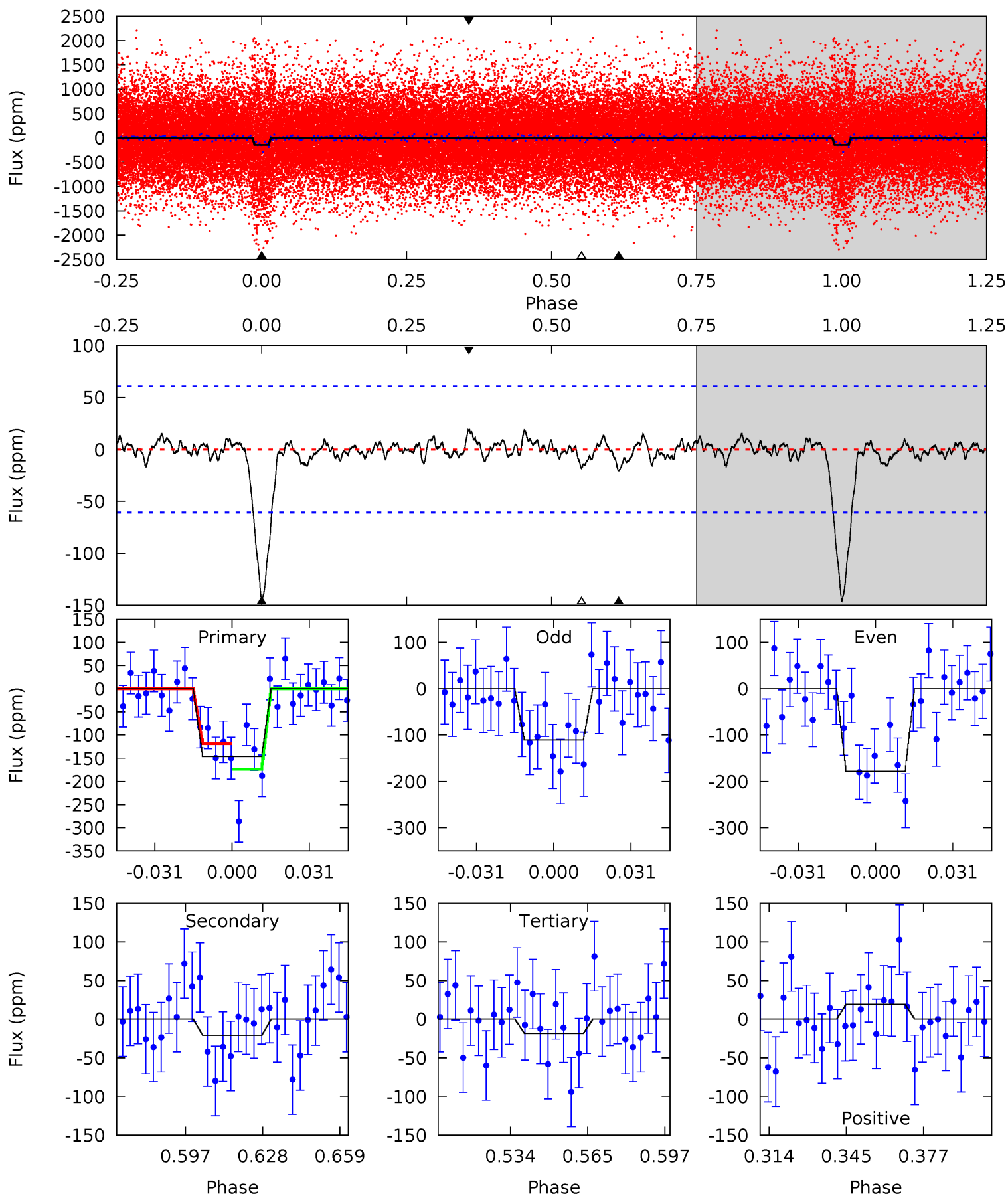
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.4	5.19	3.26	4.34	4.78	2.10	1.52	8.16	7.08	1.93	0.85	0.51	0.83	0.28	1.35



Alt Model-Shift Uniqueness Test

008766268-01, P = 5.297278 Days, E = 135.545279 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.6	1.66	1.46	1.53	4.80	2.15	0.52	10.1	10.0	0.20	0.13	2.67	0.99	0.12	2.19



Stellar Parameters For KIC 008766268

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5815^{+184}_{-204}	$4.540^{+0.037}_{-0.213}$	$-0.120^{+0.300}_{-0.300}$	$0.877^{+0.278}_{-0.087}$	$0.973^{+0.116}_{-0.116}$	$2.032^{+0.420}_{-1.071}$
	+3%/-4%	+1%/-5%	+250%/-250%	+32%/-10%	+12%/-12%	+21%/-53%
Source	KIC0	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 008766268-01 / KOI 8168.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-60 ± 12	$1.47^{+0.33}_{-0.27}$	1418^{+110}_{-64}	4444^{+376}_{-348}	51^{+30}_{-18}
Alt.	-21 ± 13	$1.25^{+0.32}_{-0.27}$	1421^{+104}_{-72}	3883^{+525}_{-540}	24^{+25}_{-15}

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 $A_{obs} \gg 1.0$

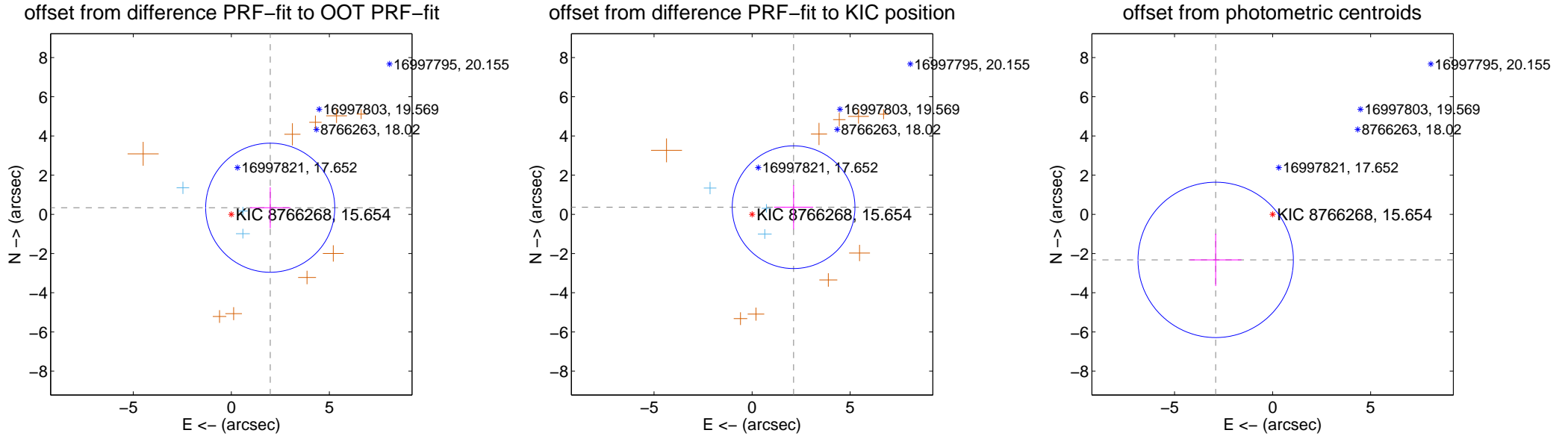
DV Centroid Data

Supplemental centroid analysis for 008766268-01. Kepler magnitude: 15.65. Transit SNR 7.91

There are 3 quarters with good PRF difference image offsets

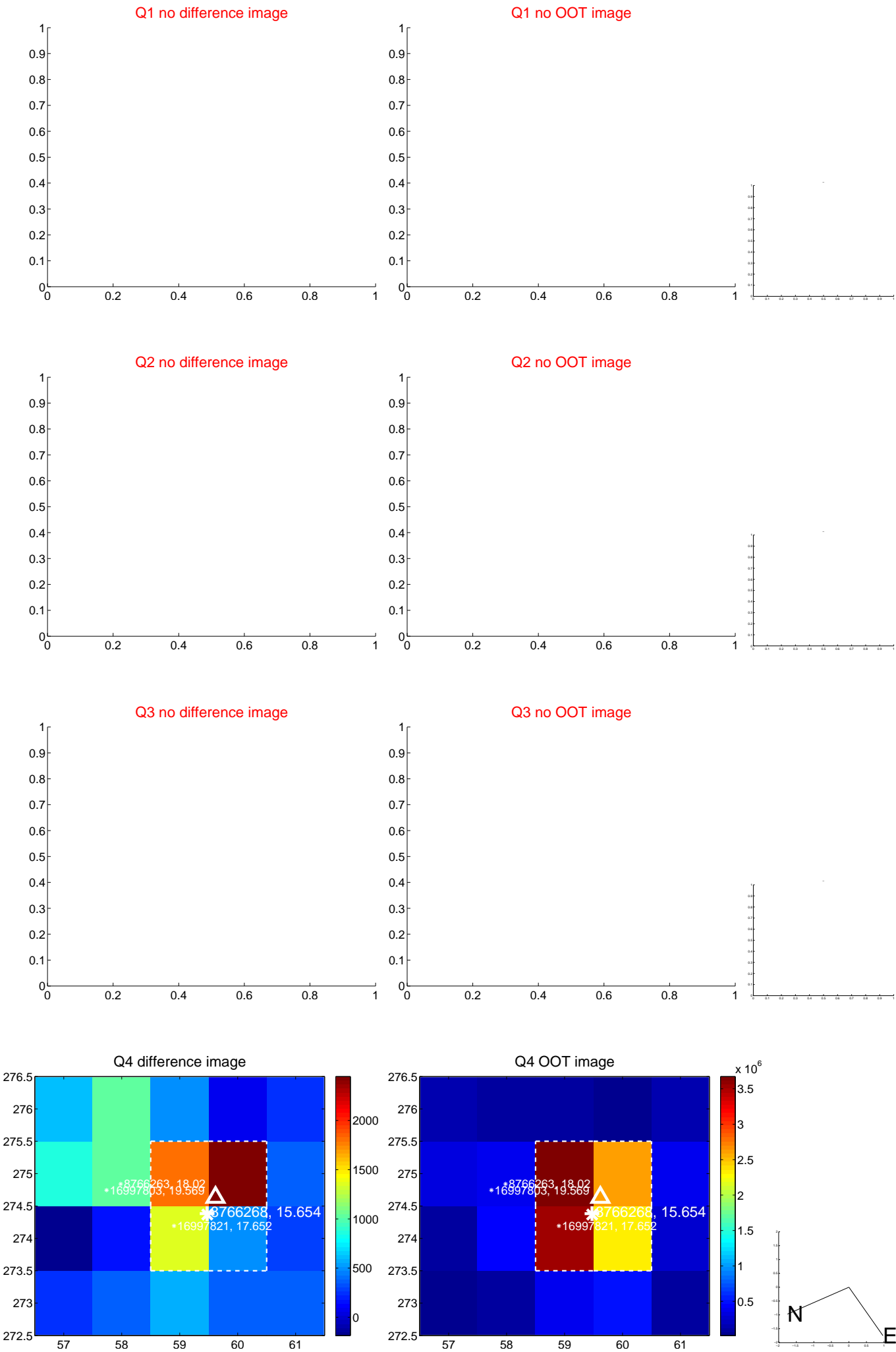
The direct PRF centroid is offset from the target star catalog position by about 0.08 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.013 ± 1.097	1.83	-1.985 ± 1.030	0.337 ± 1.048
PRF-fit source offset from KIC position	2.148 ± 1.043	2.06	-2.117 ± 0.998	0.365 ± 1.124
photometric centroid source offset	3.72 ± 1.32	2.82	2.90 ± 1.31	-2.32 ± 1.33

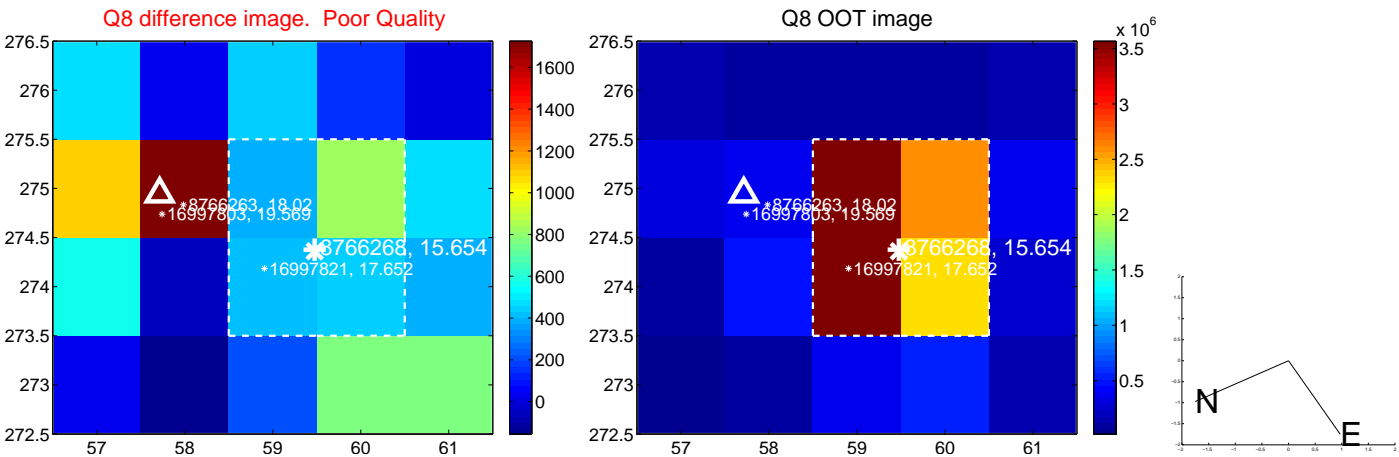
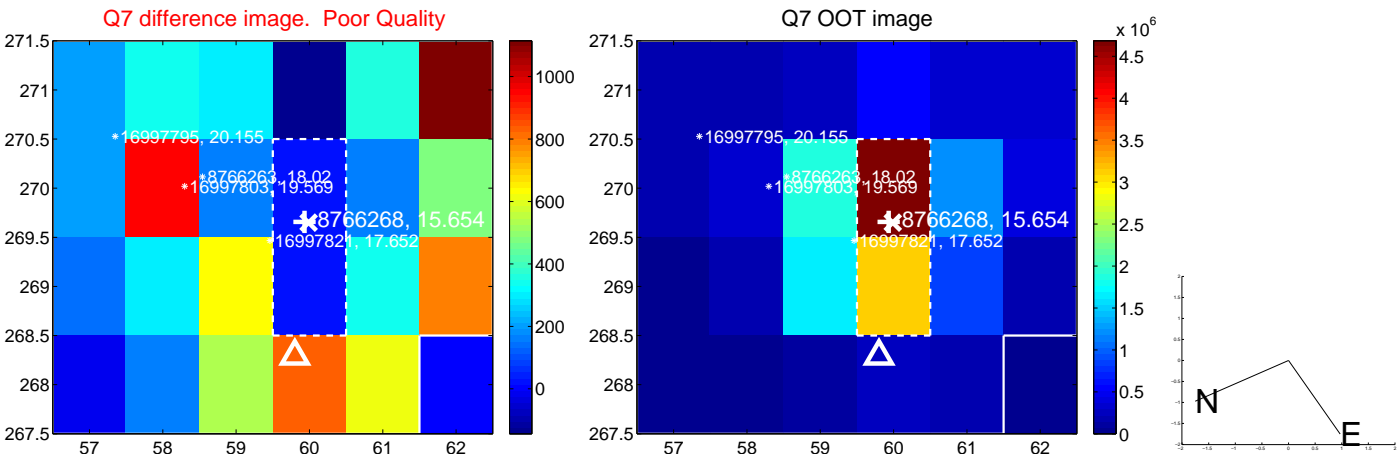
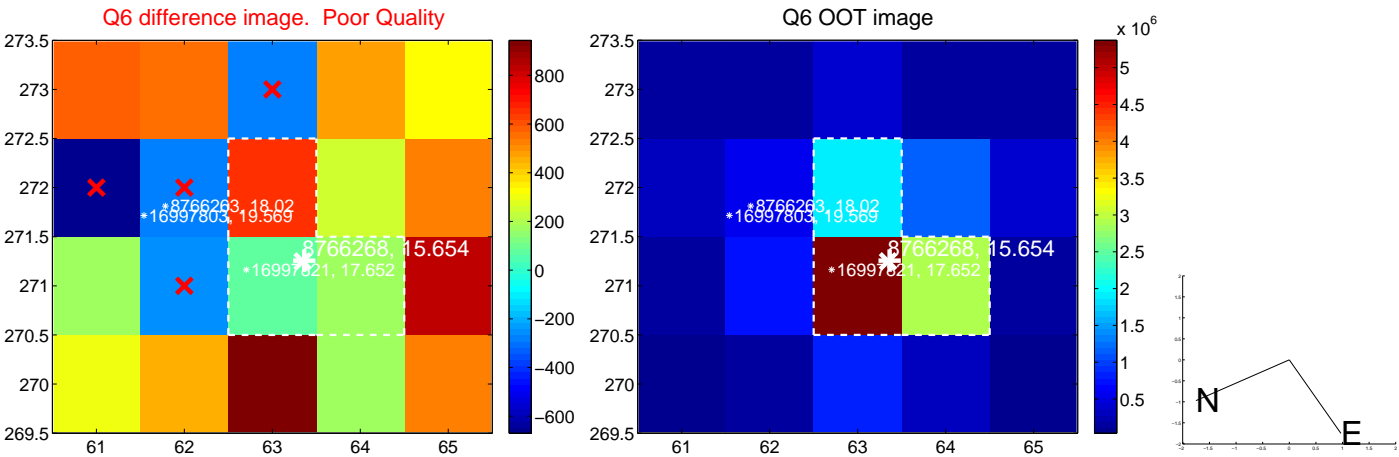
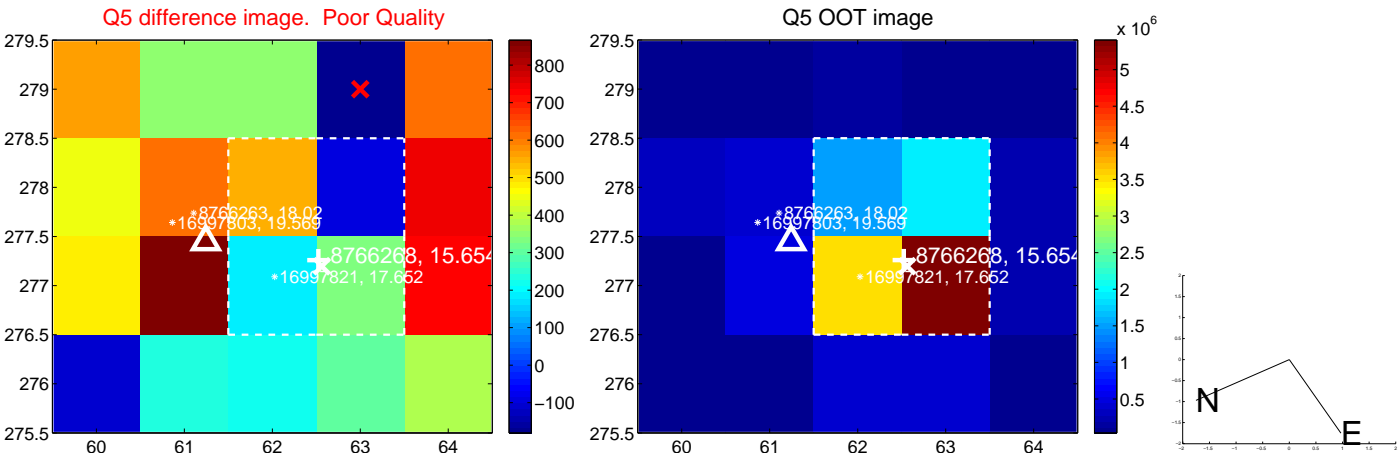


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

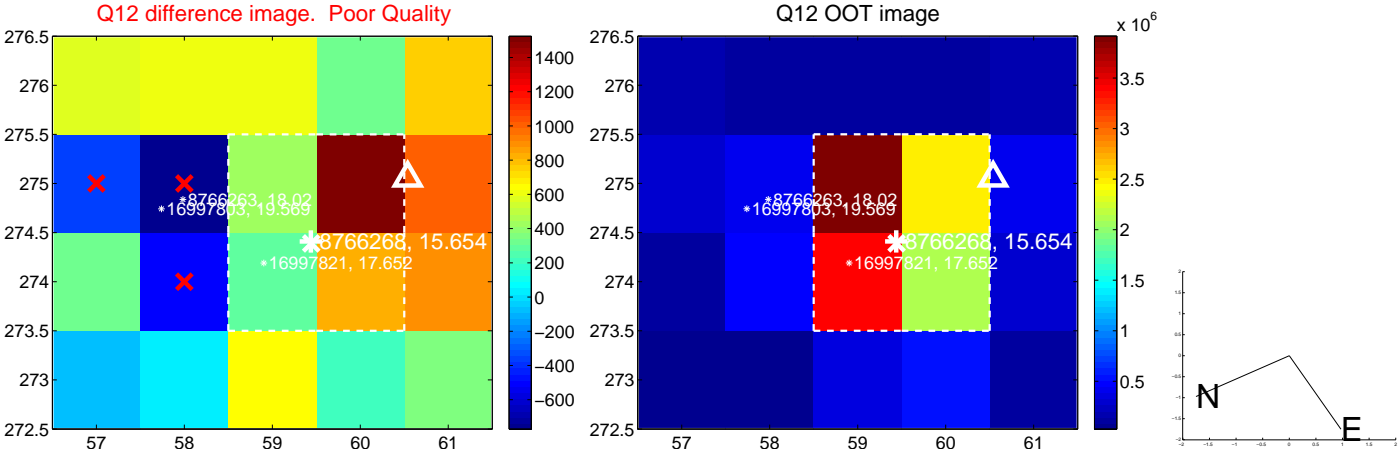
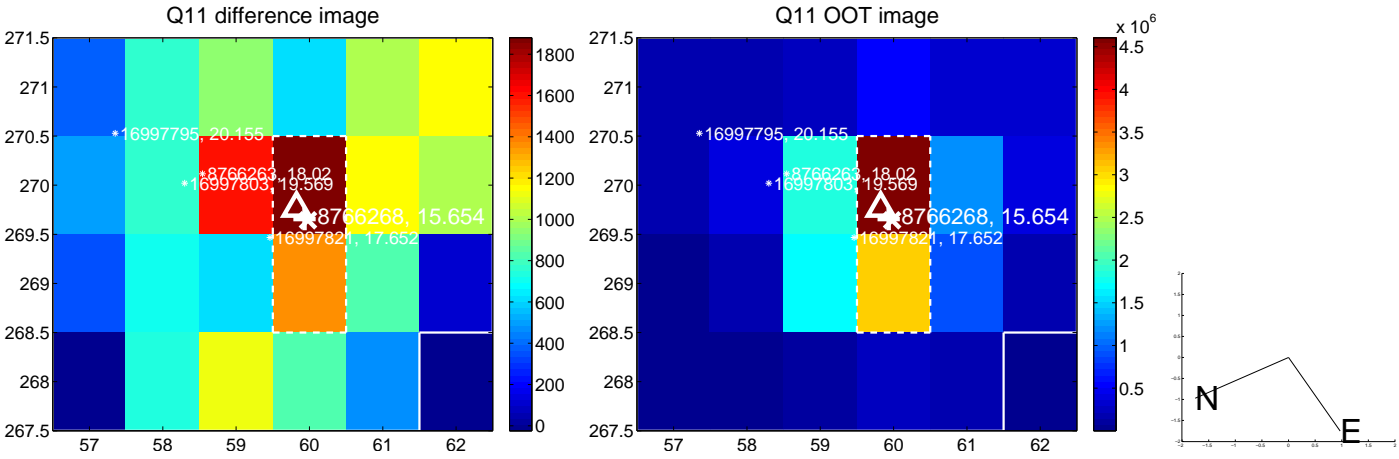
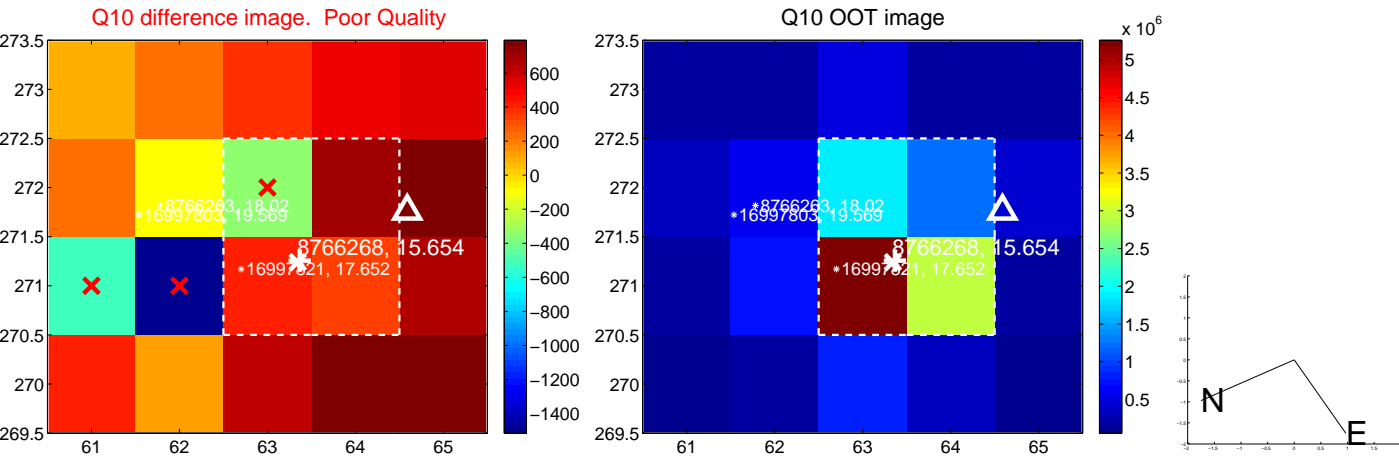
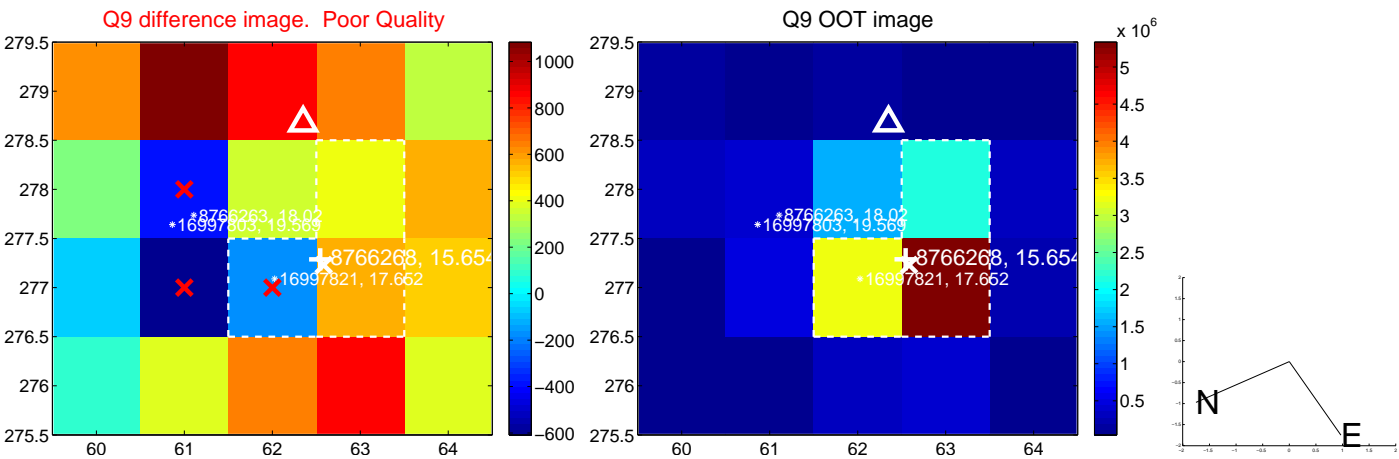
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



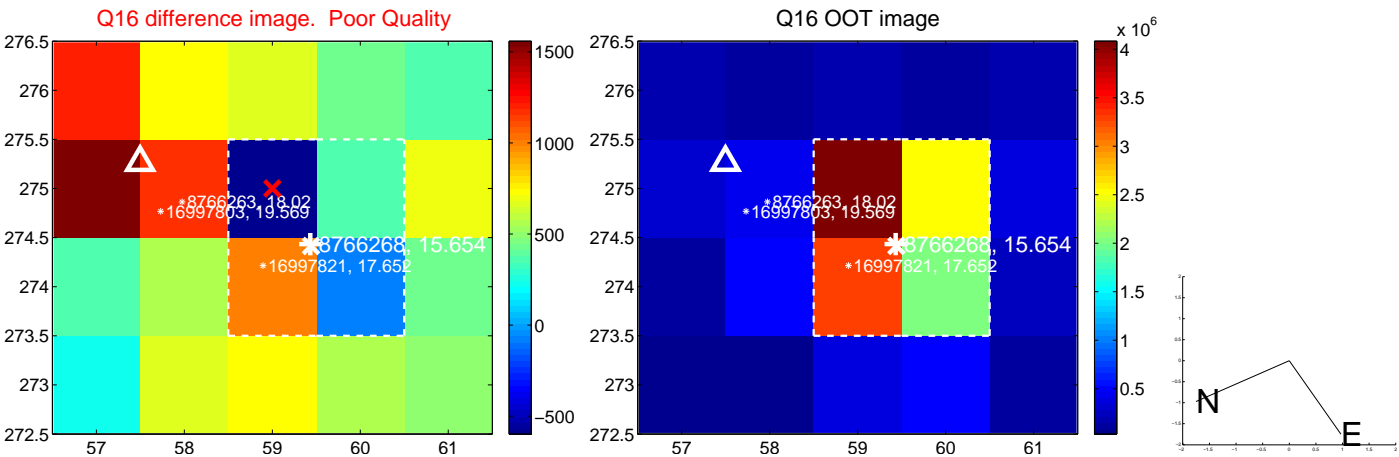
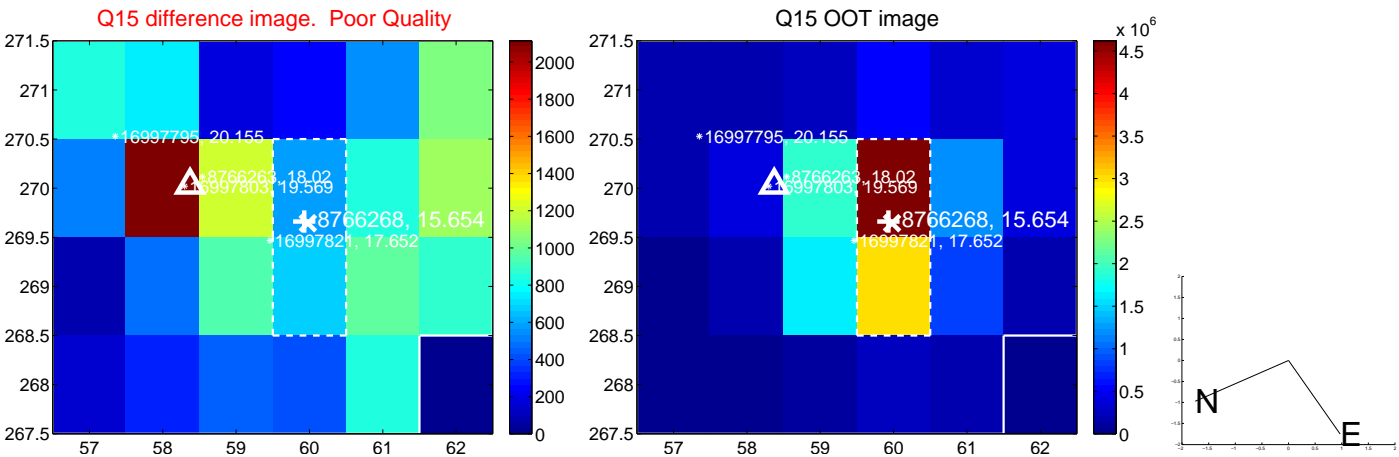
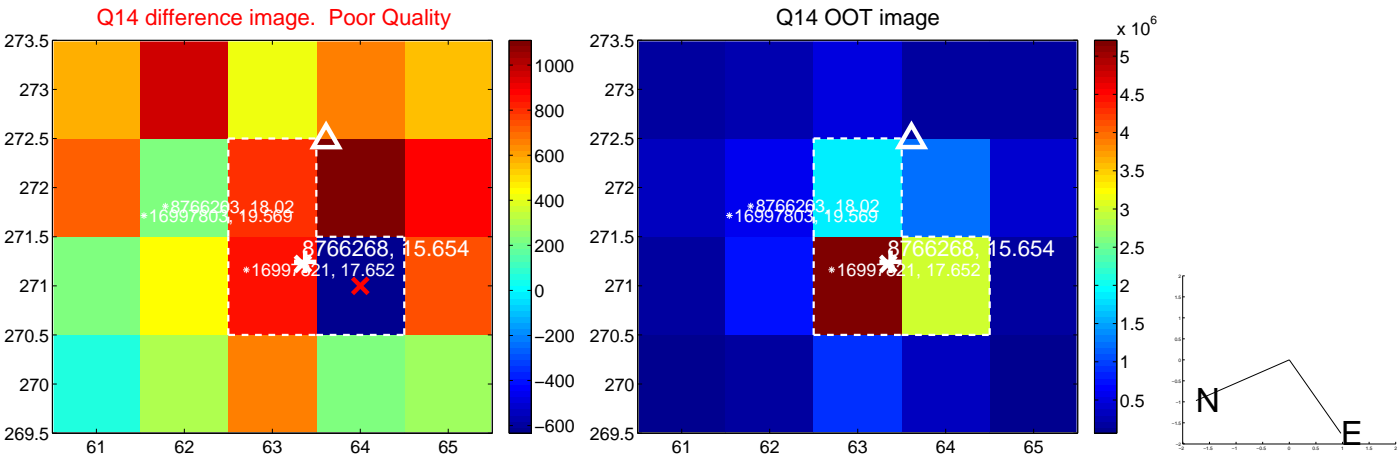
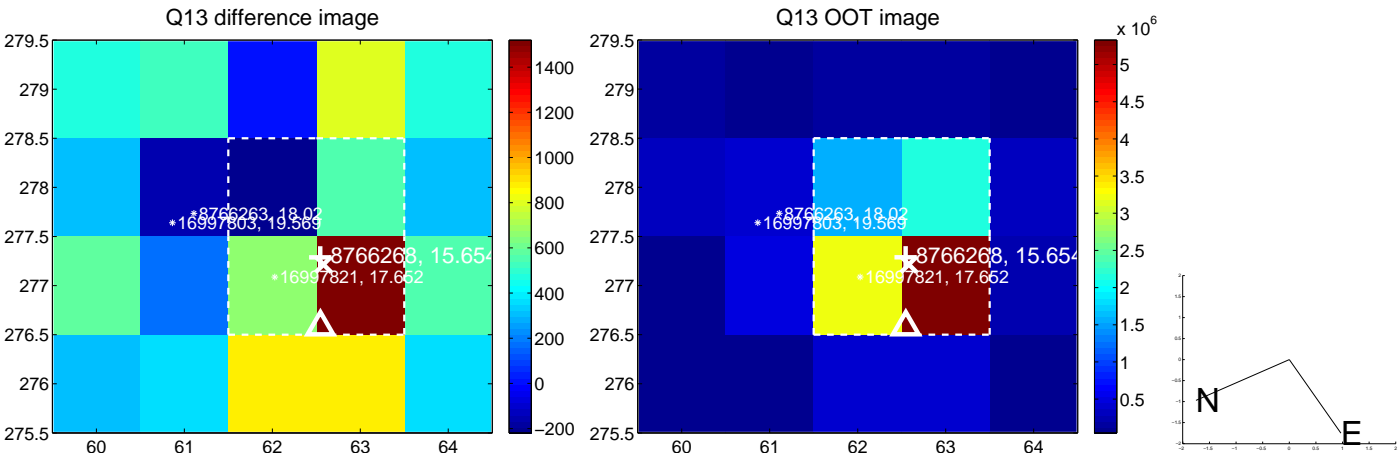
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



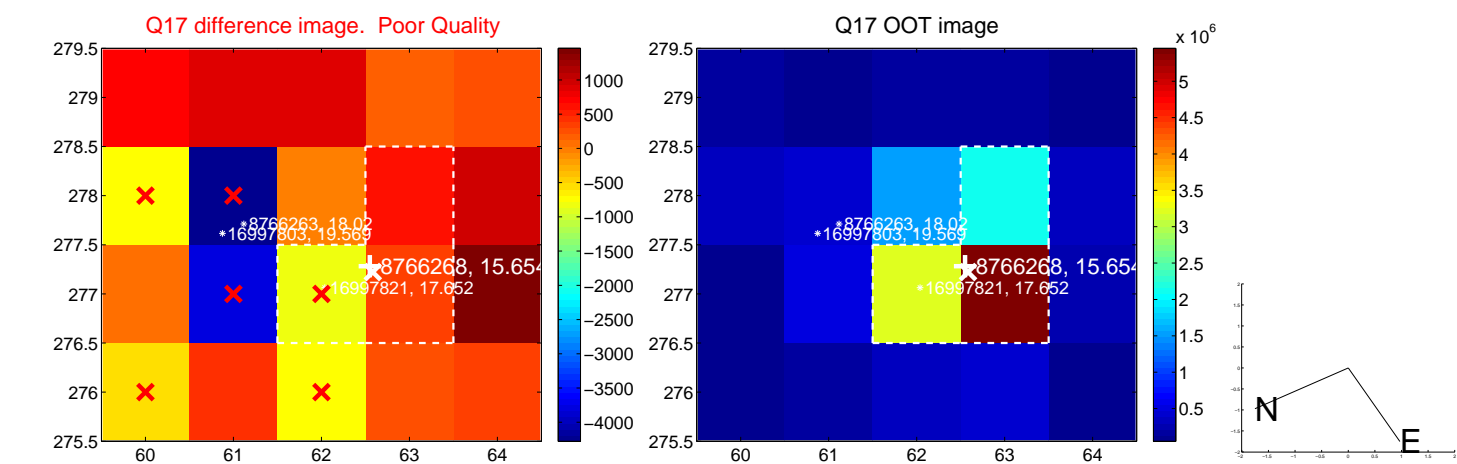
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



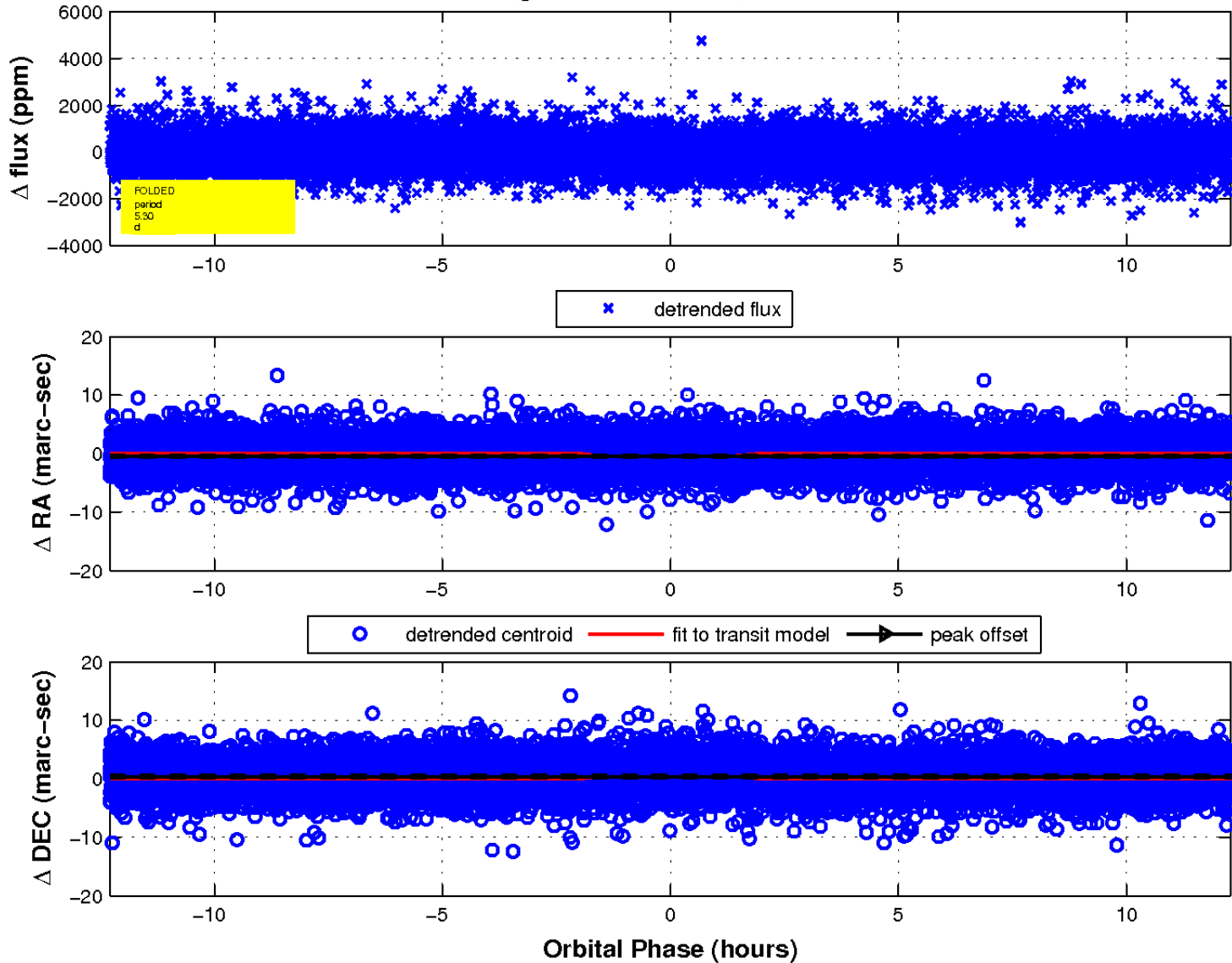
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

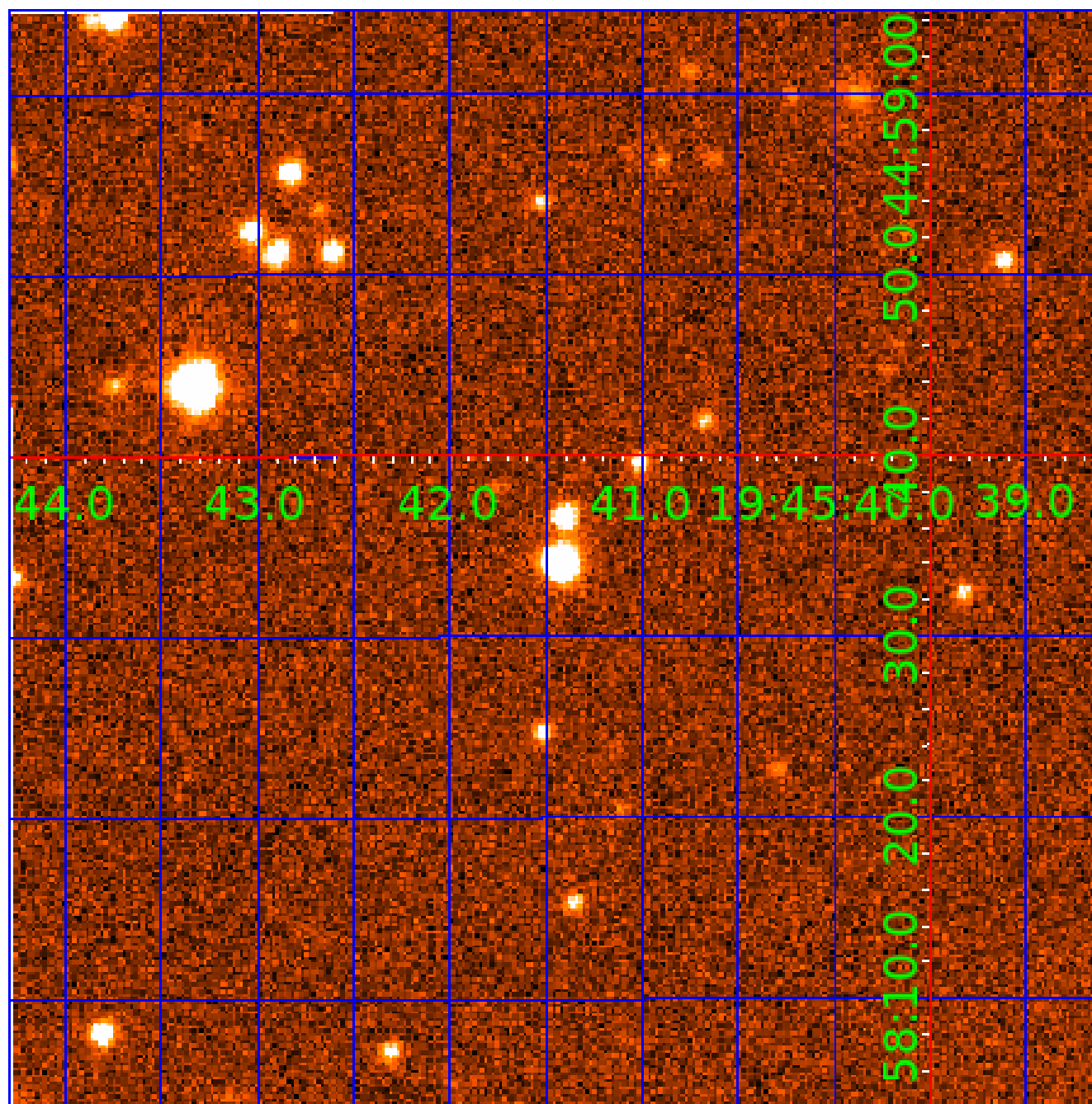


fluxWeightedCentroids, Planet 1 of 2



UKIRT Image

Declination



KIC 008766268

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})
008766268-01	OBS	8168.01	5.297533	135.515909	155.2	4.098	7.3	7.9	0.88	5815	1.39	226.81
008766268-02	OBS	No	302.356672	172.139744	1319.6	3.308	8.6	6.9	0.88	5815	3.61	1.03

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008766268-01	OBS	FP	0.00	0	0	1	1	HALO_GHOST—EPHEM_MATCH
008766268-02	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_RESOLVED_OFFSET

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

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

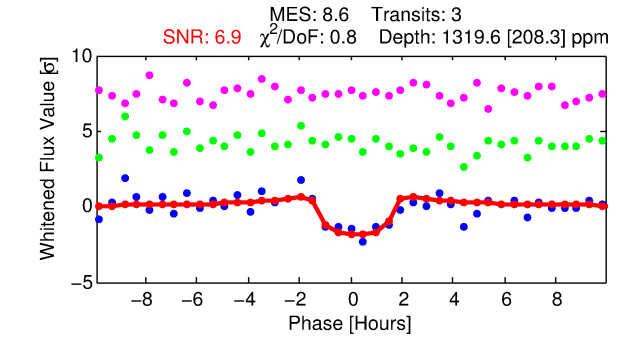
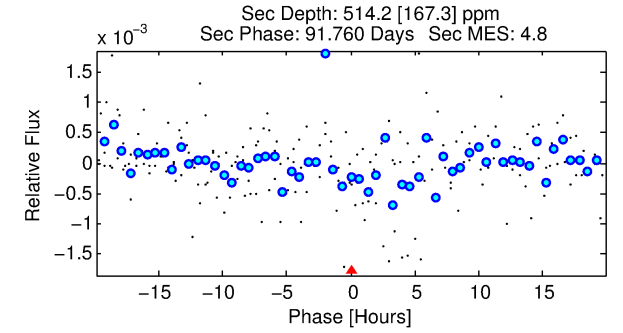
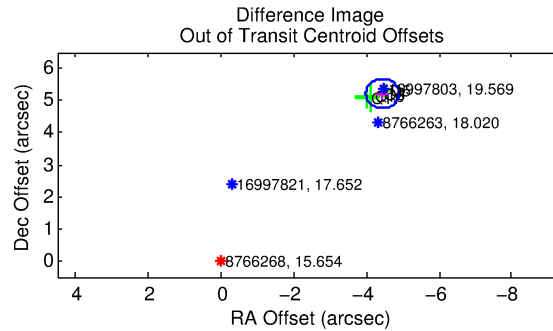
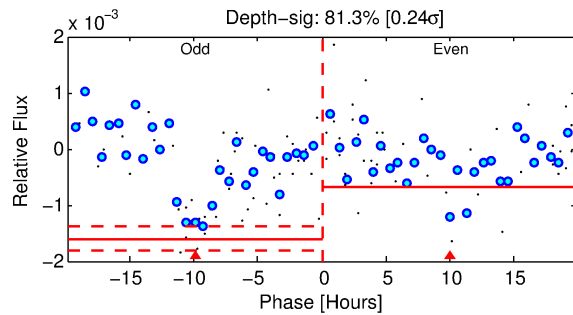
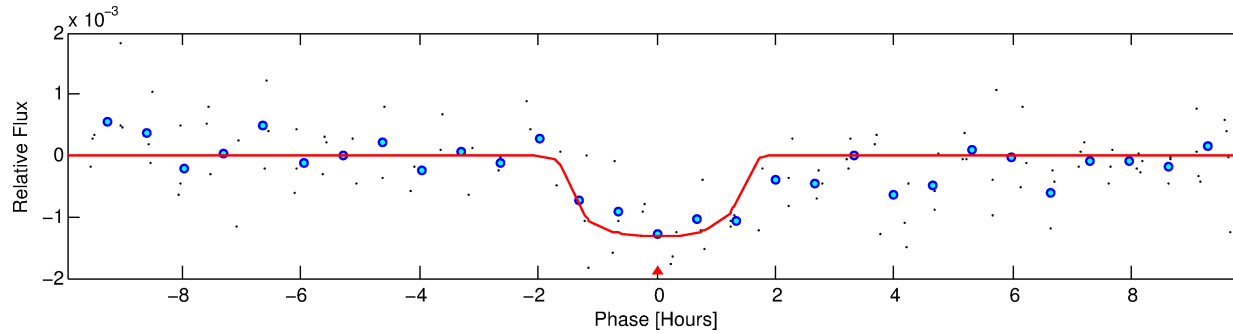
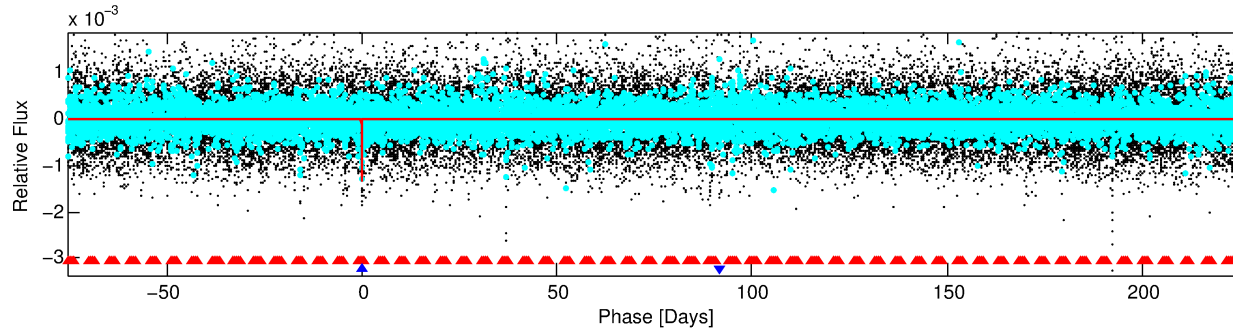
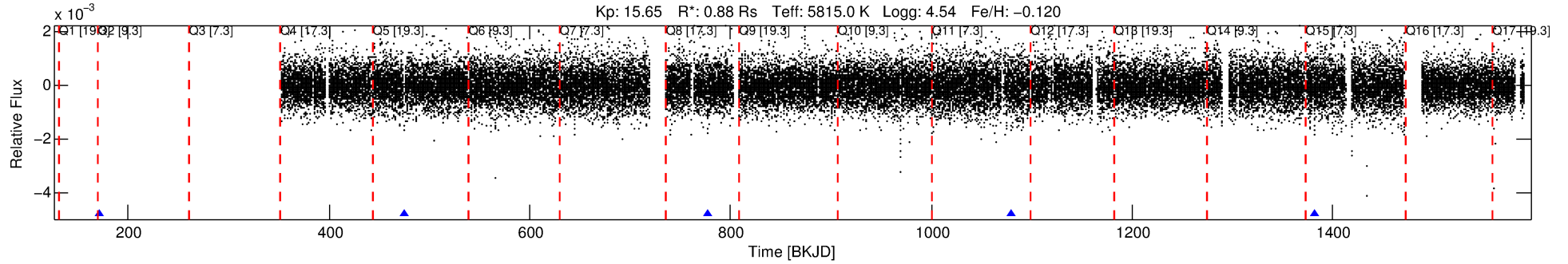
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008766268-02

No Significant Match Found

DV One-Page Summary

KIC: 8766268 Candidate: 2 of 2 Period: 302.357 d



DV Fit Results:

Period = 302.35667 [0.00679] d
Epoch = 172.1397 [0.0218] BKJD
Rp/R* = 0.0377 [0.0179]
a/R* = 428.97 [905.61]
b = 0.84 [0.76]
Seff = 1.03 [0.43]
Teq = 257 [27] K
Rp = 3.61 [2.06] Re
a = 0.8737 [0.2334] AU
Ag = 16589.42 [17866.62] [0.93 σ]
Teff = 4510 [1143] K [3.72 σ]

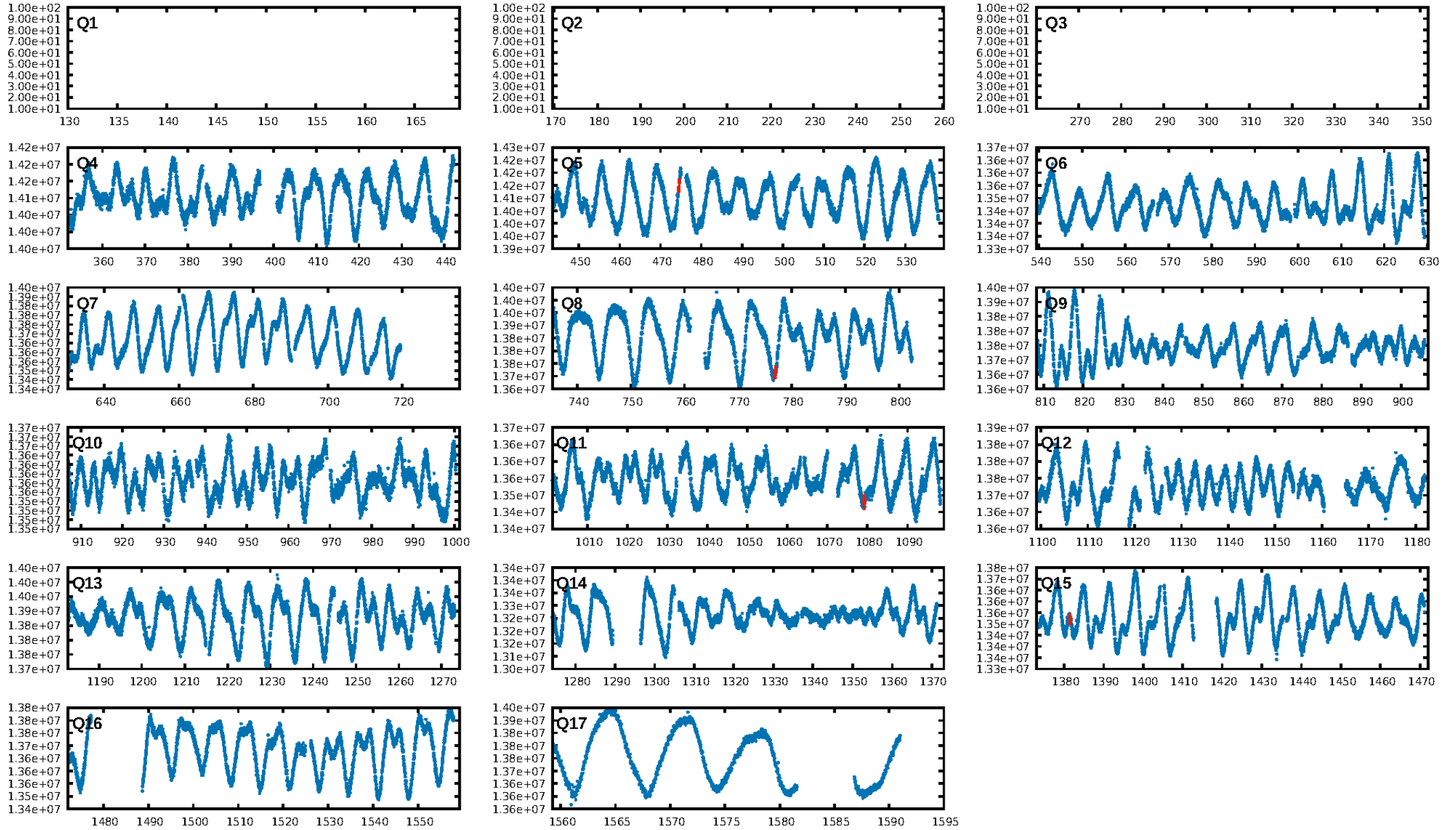
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [1353.72 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 6.8%
ModelChiSquareGof-sig: 97.8%
Bootstrap-pfa: 4.33e-11
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: -1.003
Centroid-sig: 94.5%
Centroid-so: 0.261 arcsec [0.23 σ]
OotOffset-rm: 6.847 arcsec [44.95 σ]
KicOffset-rm: 6.924 arcsec [45.48 σ]
OotOffset-st: 0/2/1/1 [4]
KicOffset-st: 0/2/1/1 [4]
DiffImageQuality-fgm: 1.00 [4/4]
DiffImageOverlap-fno: 0.50 [2/4]

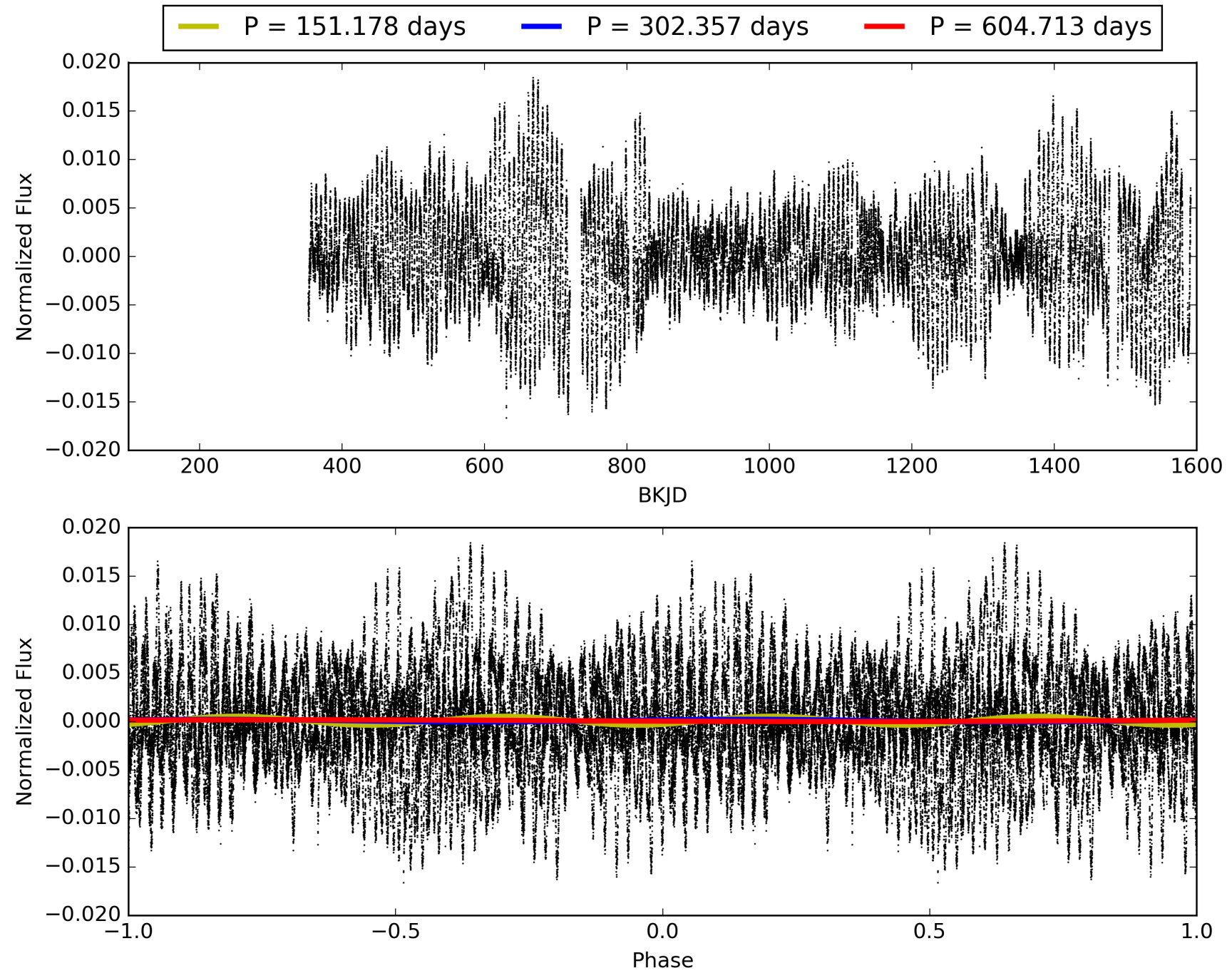
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 008766268-02, PDC Light Curves

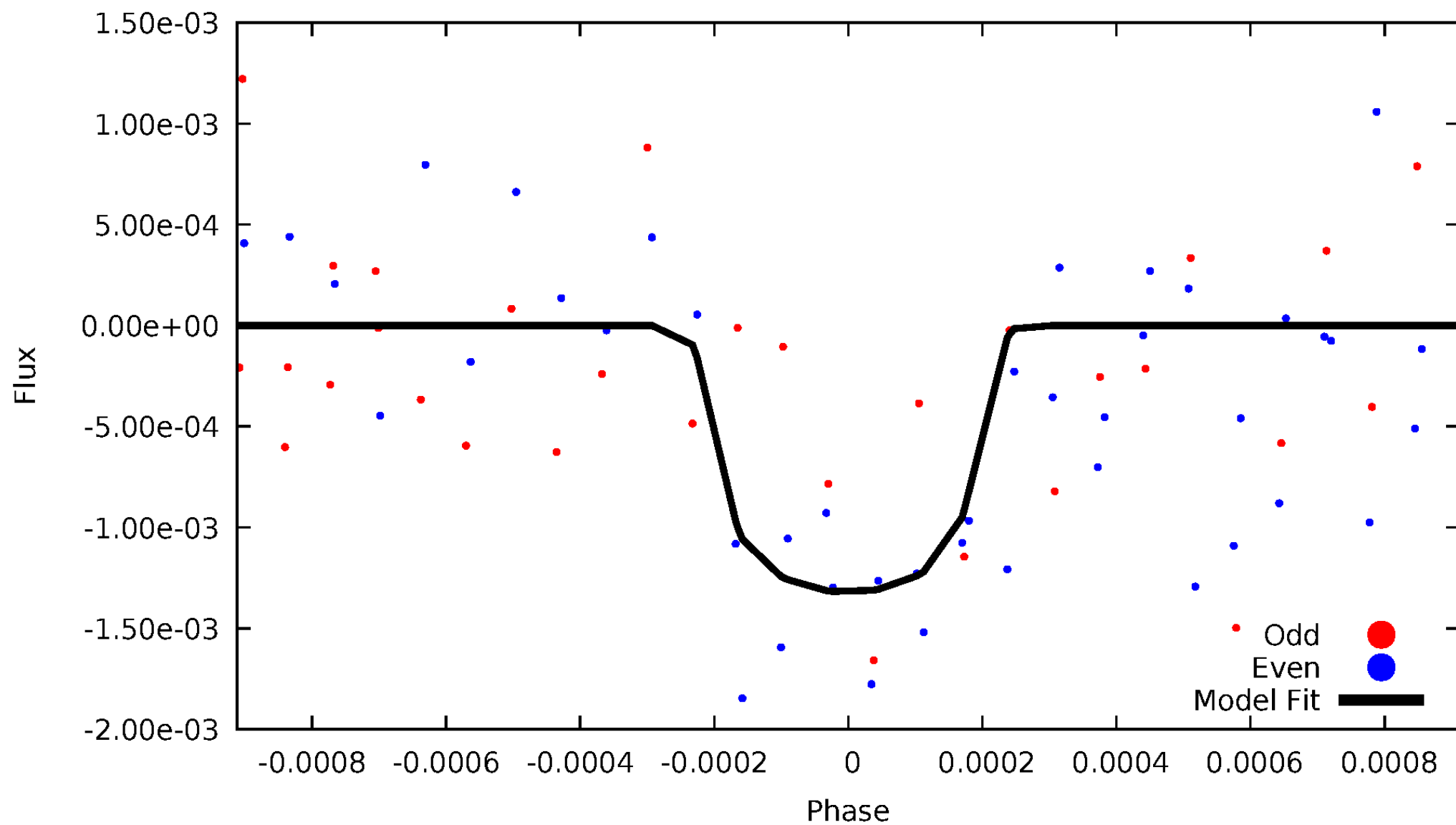


TCE 008766268-02



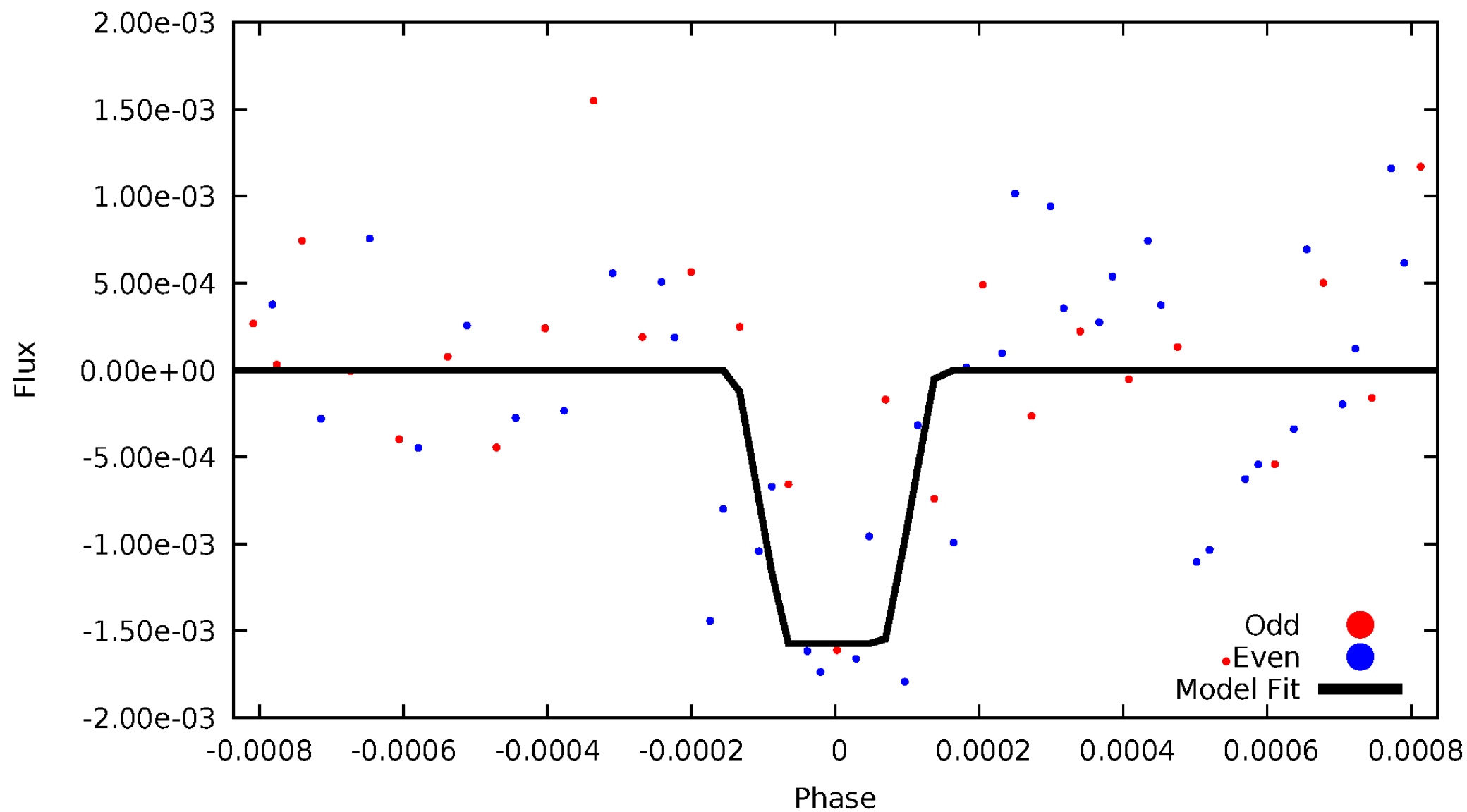
DV Odd/Even

TCE 008766268-02



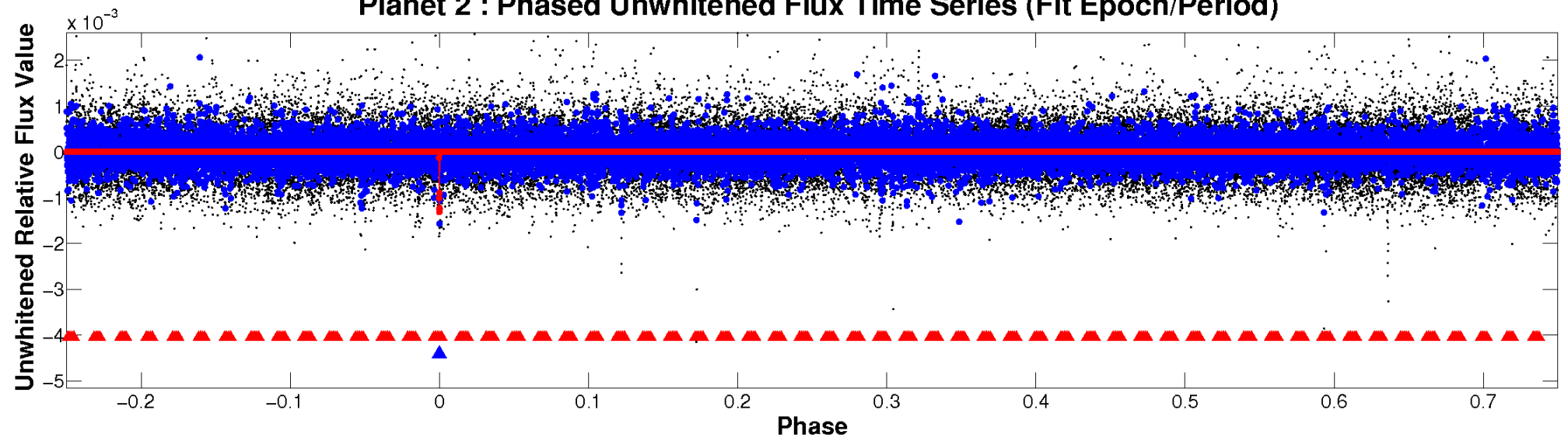
ALT Odd/Even

TCE 008766268-02

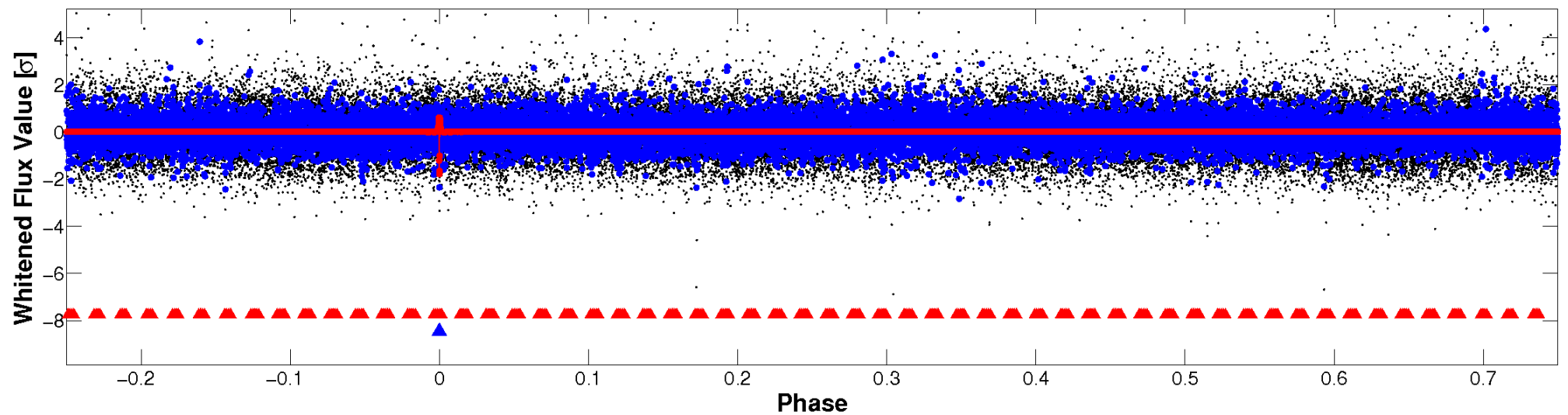


Non-Whitened Vs. Whitened Light Curve

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

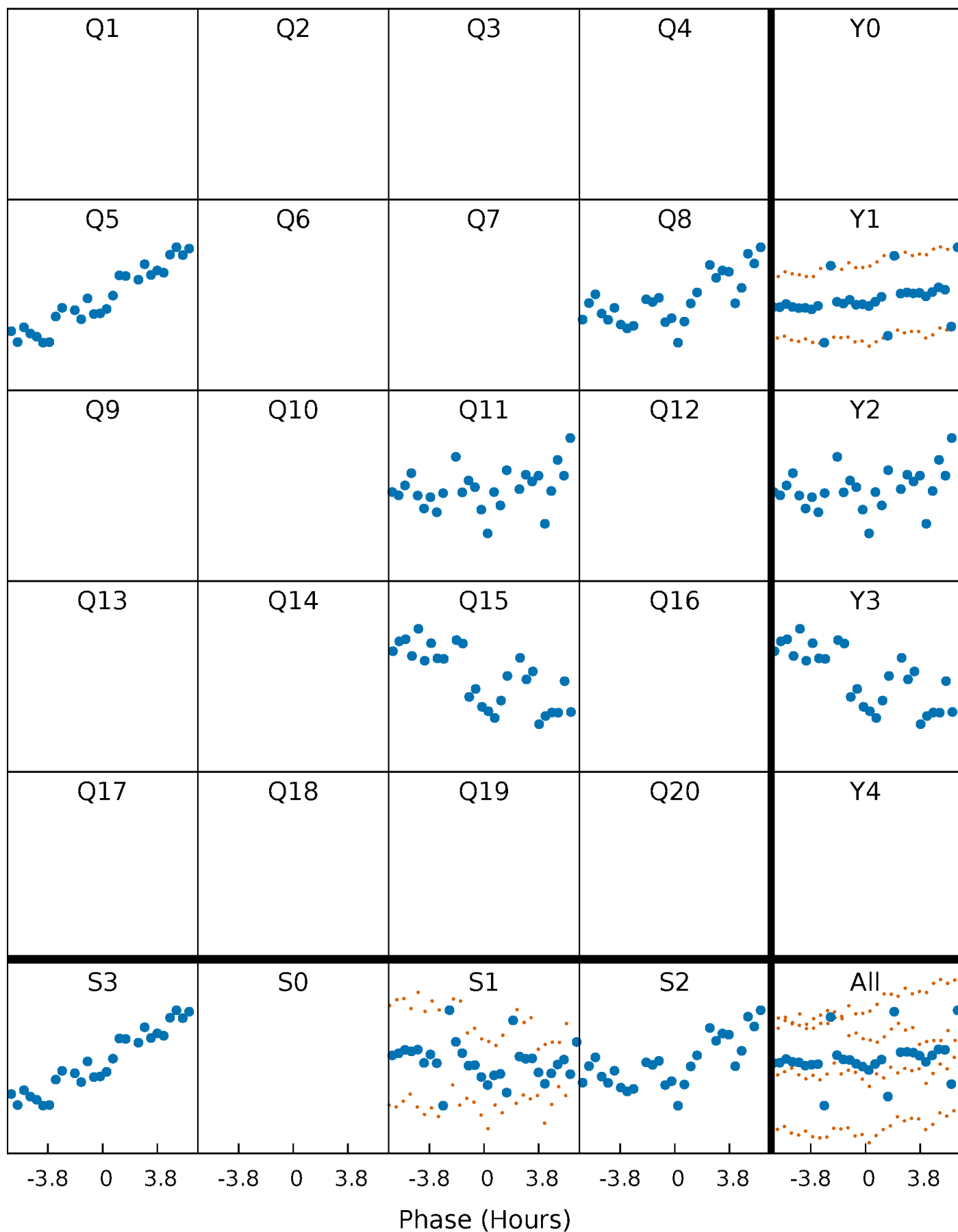


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



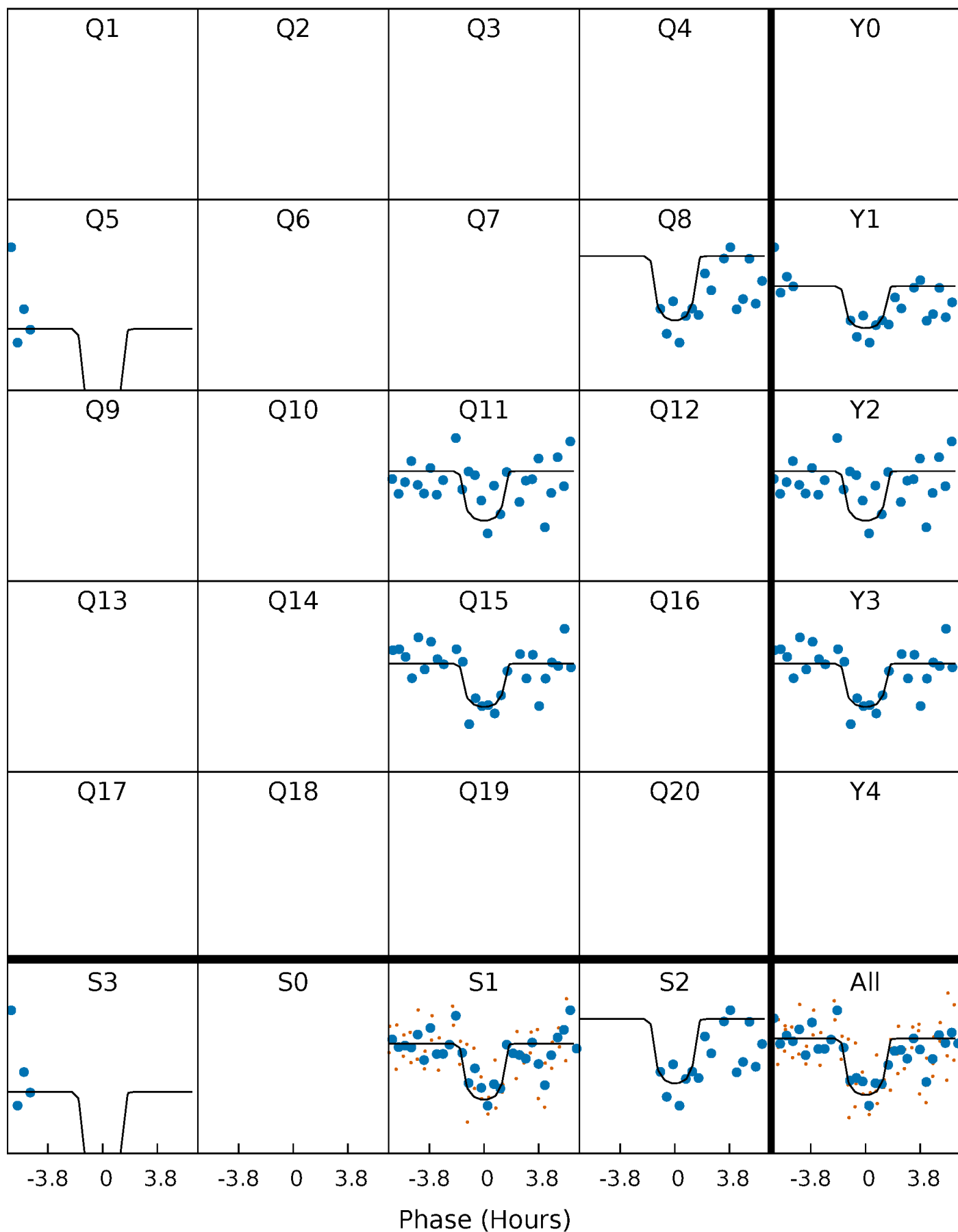
PDC Quarter-Phased Transit Curves

TCE 008766268-02 $P=302.356672$ Days $T_0=172.139744$ (BKJD)



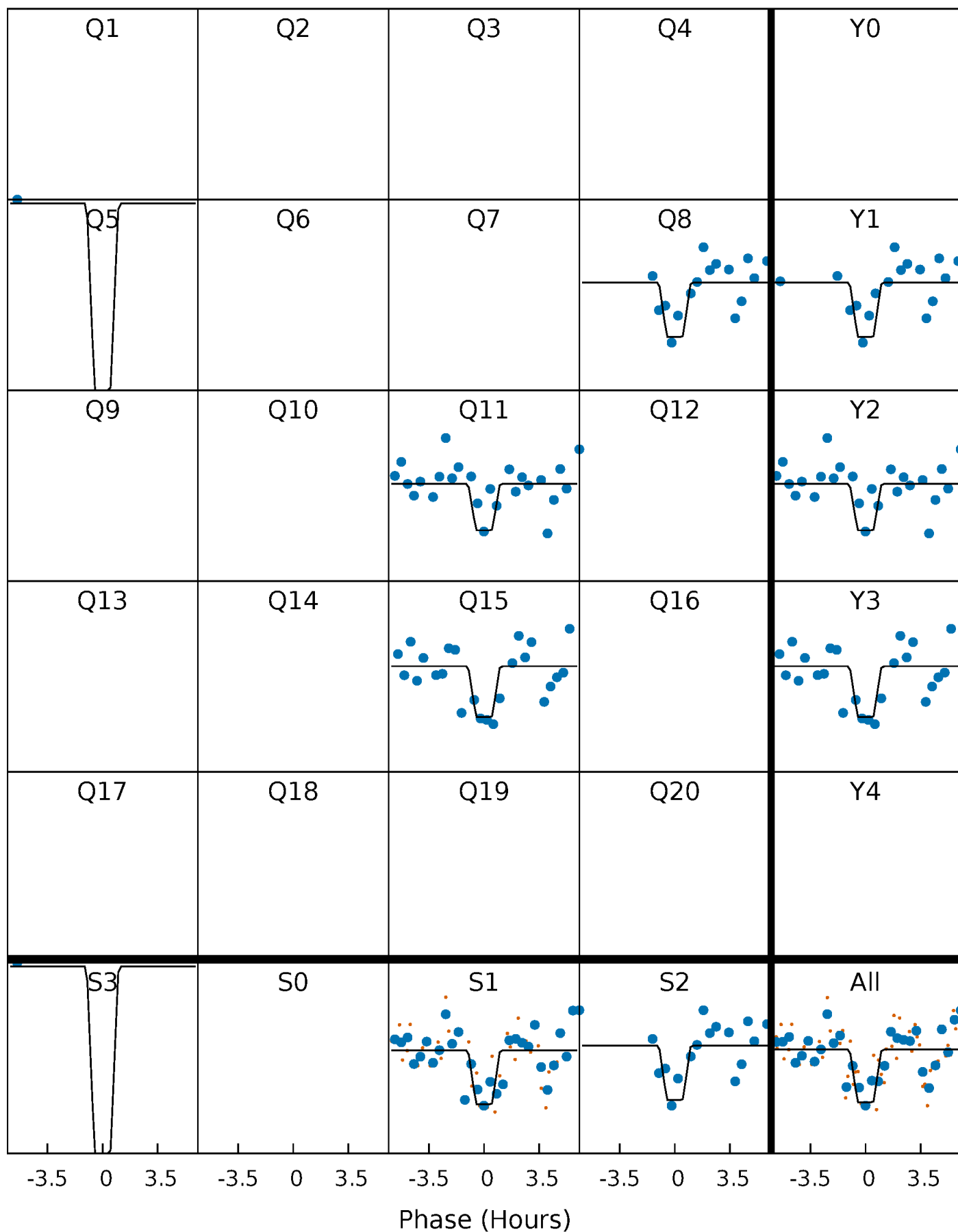
DV Quarter-Phased Transit Curves

TCE 008766268-02 $P=302.356672$ Days $T_0=172.139744$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

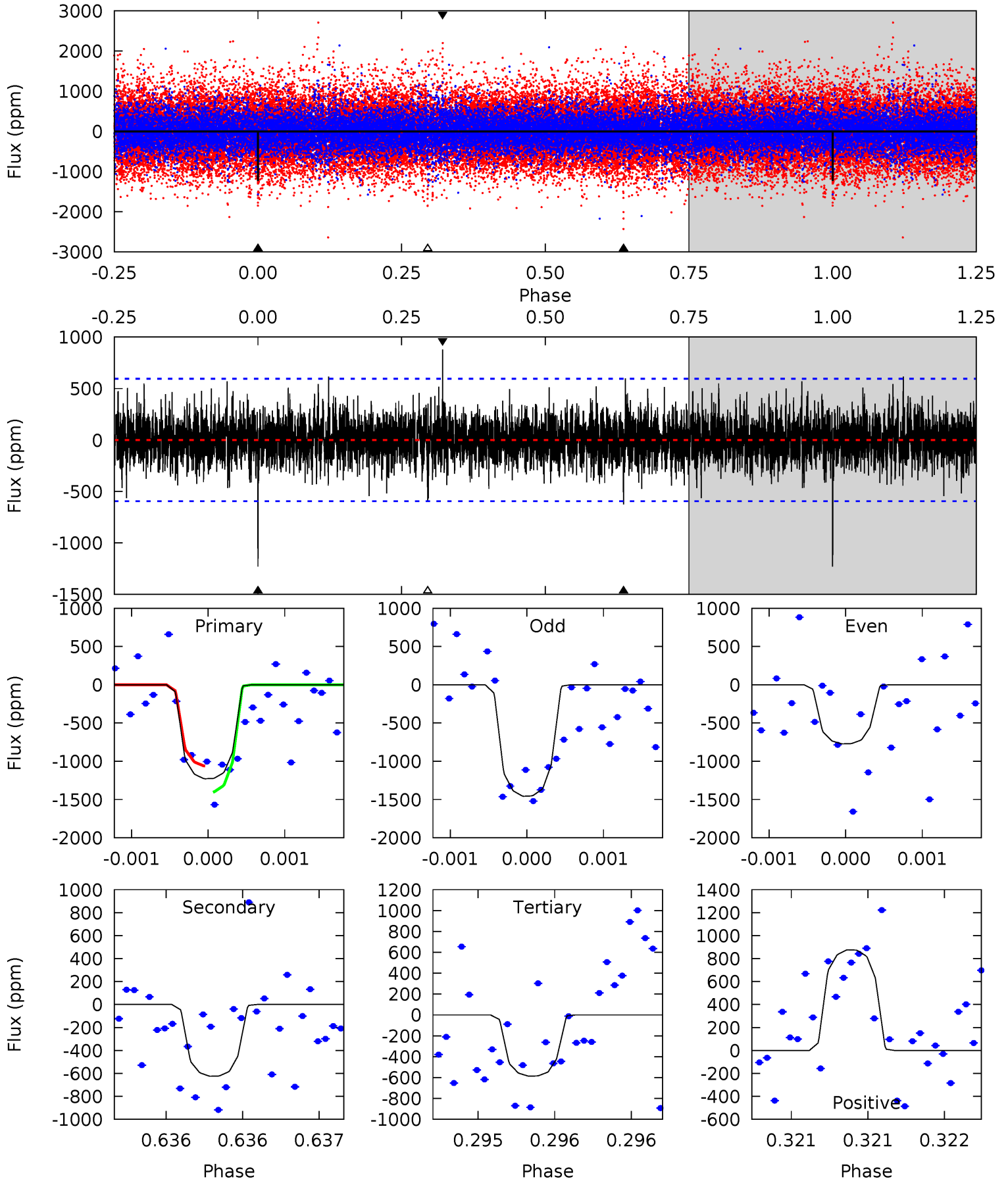
TCE 008766268-02 P=302.350732 Days $T_0=172.168350$ (BKJD)



DV Model-Shift Uniqueness Test

008766268-02, P = 302.356672 Days, E = 172.139744 Days

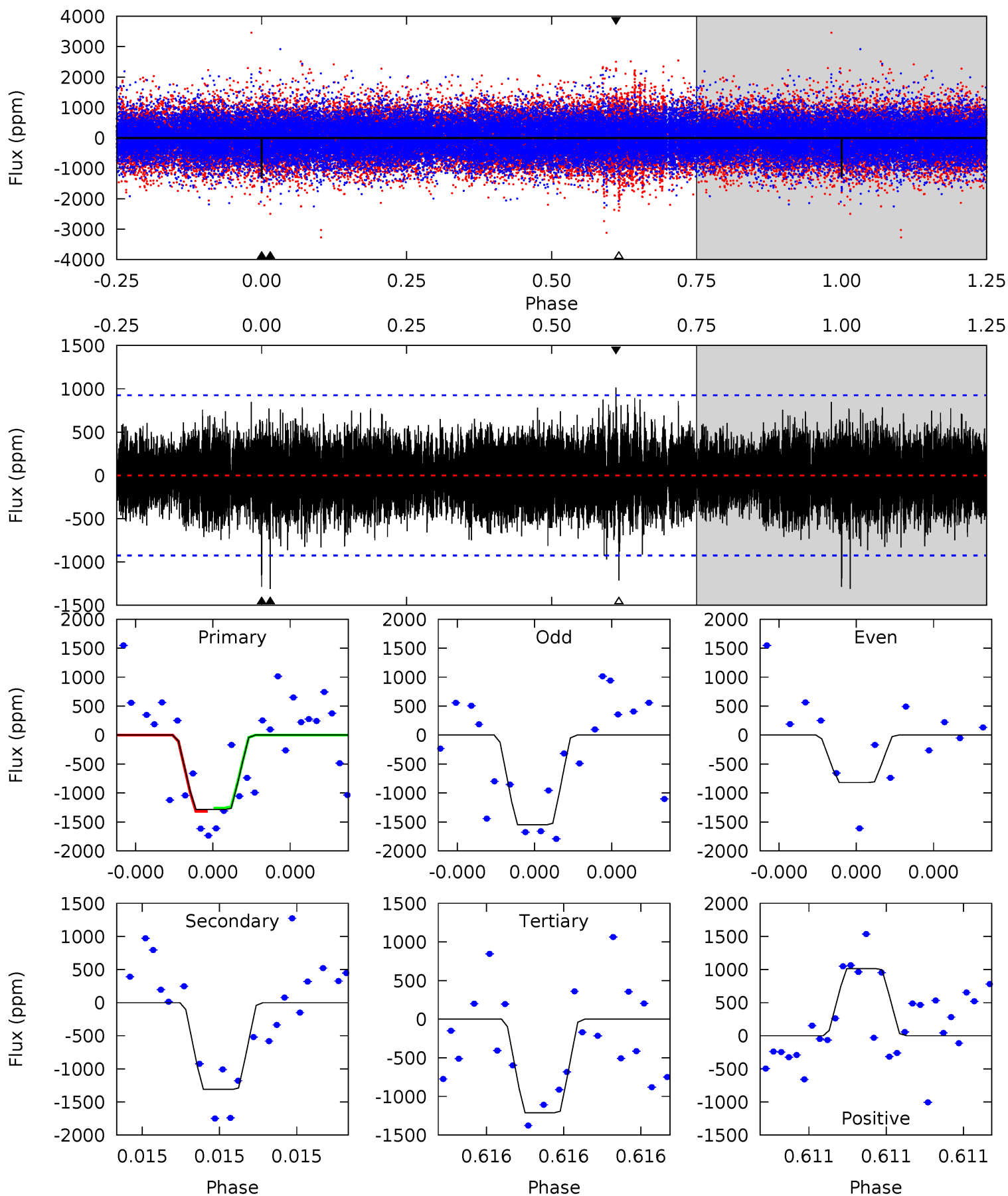
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.5	5.84	5.48	8.20	5.56	3.46	1.36	6.01	3.29	0.36	-2.36	3.13	0.85	0.42	1.59



Alt Model-Shift Uniqueness Test

008766268-02, P = 302.350732 Days, E = 172.168350 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.87	8.02	7.42	6.21	5.66	3.62	1.68	0.46	1.67	0.61	1.82	2.07	1.06	0.44	0.17



Stellar Parameters For KIC 008766268

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5815^{+184}_{-204}	$4.540^{+0.037}_{-0.213}$	$-0.120^{+0.300}_{-0.300}$	$0.877^{+0.278}_{-0.087}$	$0.973^{+0.116}_{-0.116}$	$2.032^{+0.420}_{-1.071}$
	+3%/-4%	+1%/-5%	+250%/-250%	+32%/-10%	+12%/-12%	+21%/-53%
Source	KIC0	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 008766268-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-625 ± 107	$3.99^{+1.79}_{-1.96}$	371^{+27}_{-20}	4791^{+1549}_{-648}	15866^{+43755}_{-8029}
Alt.	-1311 ± 163	$4.03^{+2.09}_{-1.82}$	369^{+28}_{-18}	5576^{+1943}_{-855}	32780^{+76428}_{-18484}

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

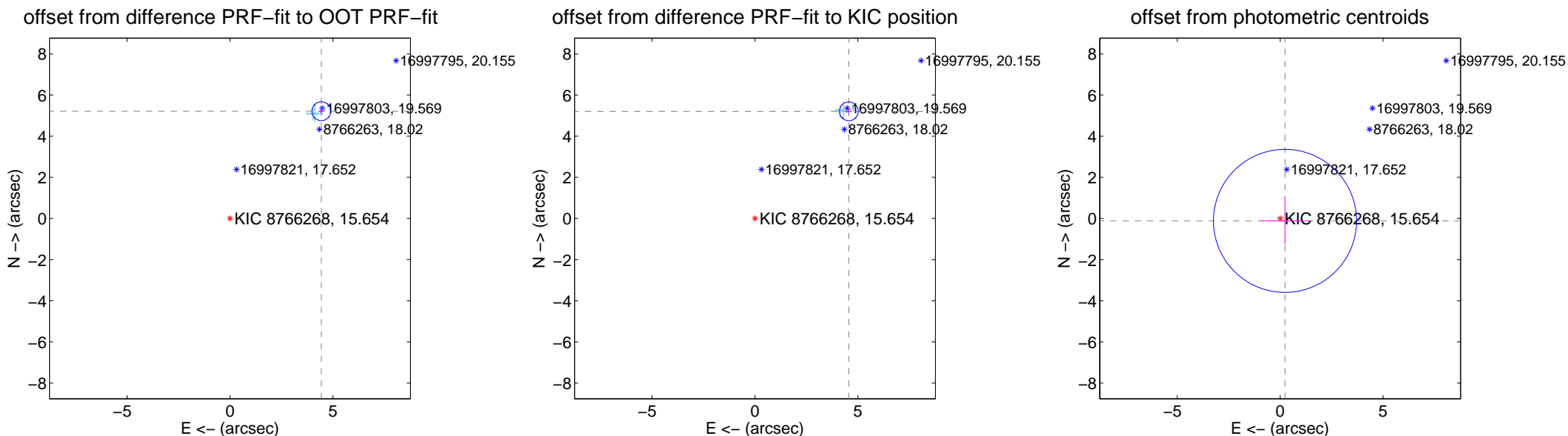
DV Centroid Data

Supplemental centroid analysis for 008766268-02. Kepler magnitude: 15.65. Transit SNR 6.86

There are 4 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.25 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	6.847 ± 0.152	44.95	-4.437 ± 0.150	5.215 ± 0.154
PRF-fit source offset from KIC position	6.924 ± 0.152	45.48	-4.561 ± 0.150	5.210 ± 0.154
photometric centroid source offset	0.26 ± 1.16	0.23	-0.23 ± 1.16	-0.12 ± 1.14

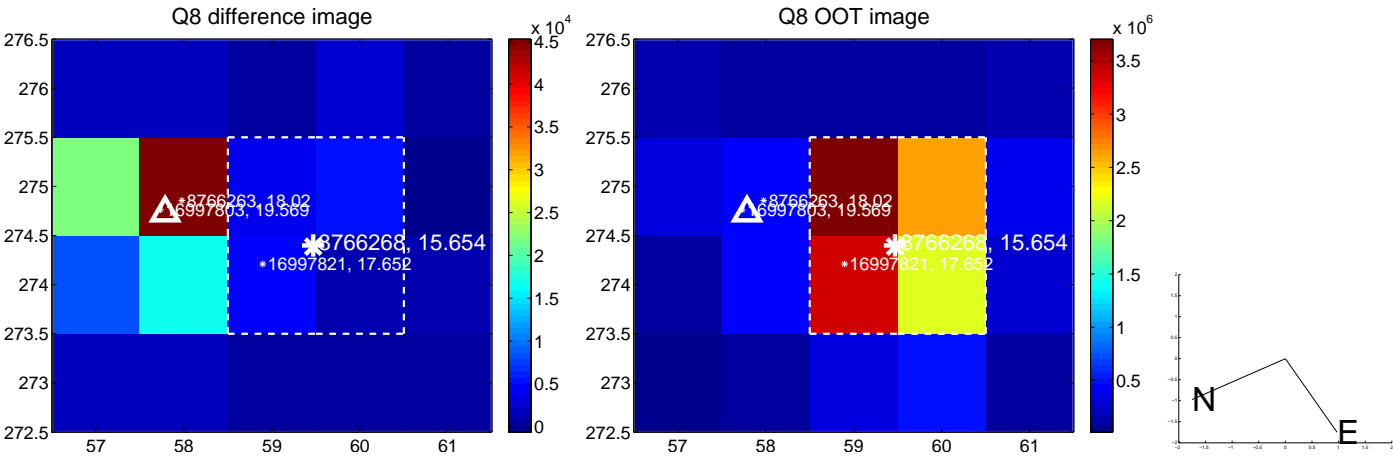
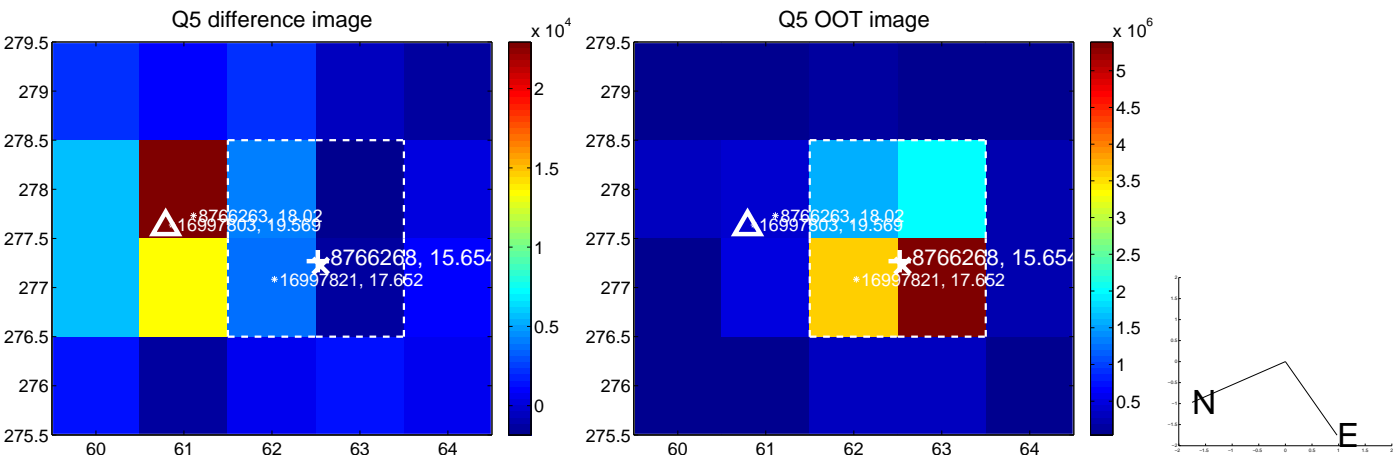


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

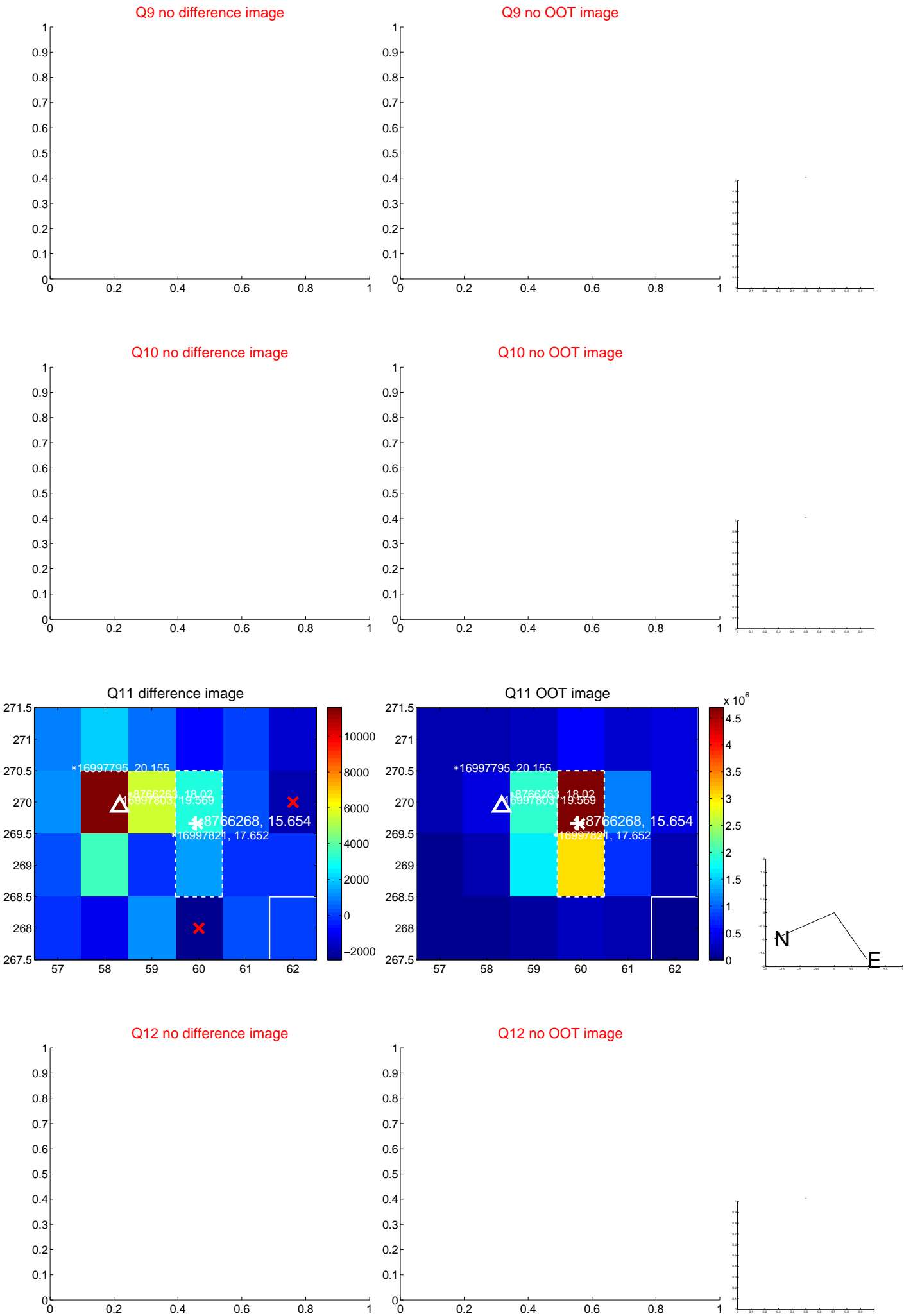
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



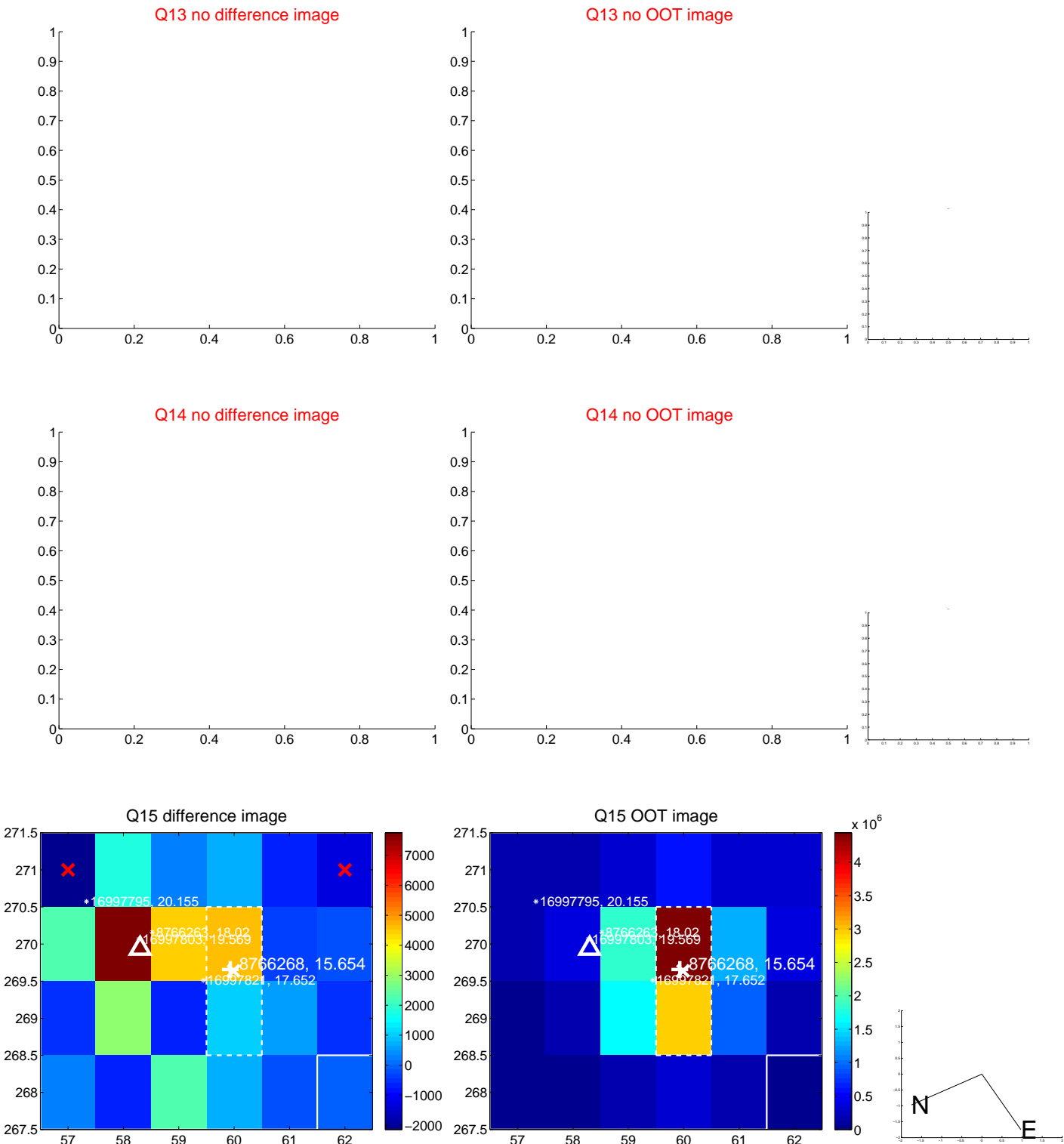
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



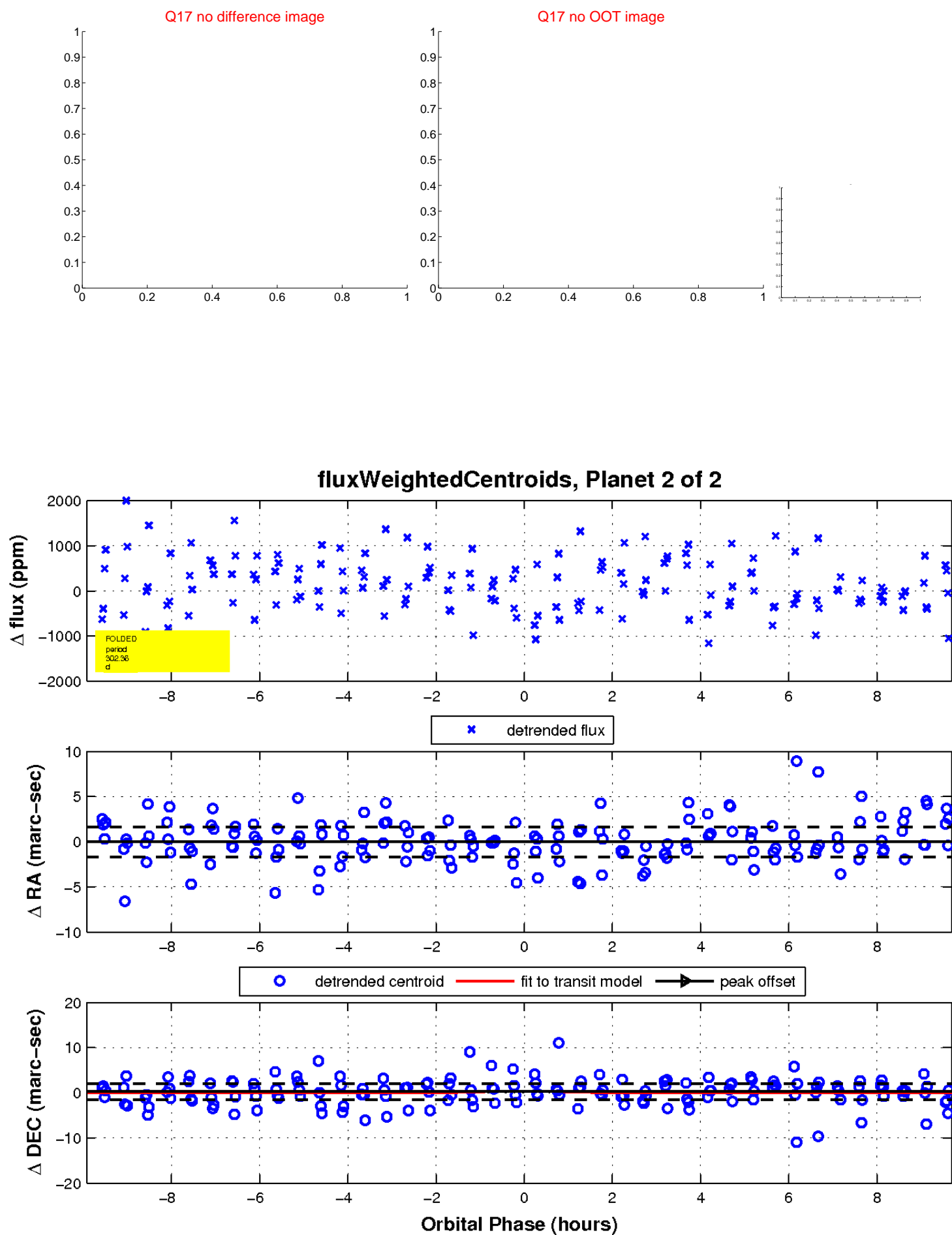
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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.



UKIRT Image

Declination

