

KIC 006057750

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})
006057750-01	OBS	6657.01	1.603745	131.954222	24.5	6.789	13.3	13.2	2.51	6400	1.25	9136.51
006057750-02	OBS	No	400.603806	155.947882	202.8	22.539	10.3	7.3	2.51	6400	4.13	5.81

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006057750-01	OBS	FP	0.18	1	0	0	0	LPP_DV
006057750-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_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.

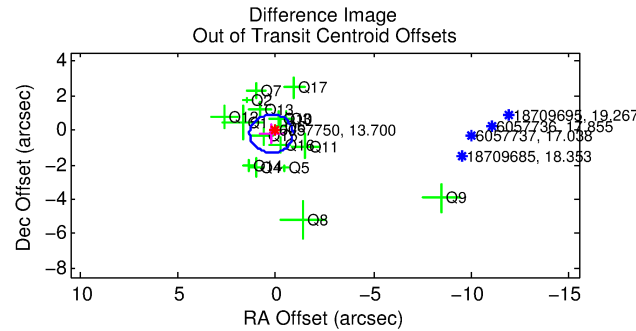
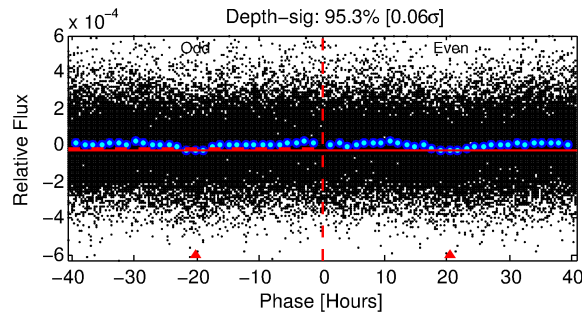
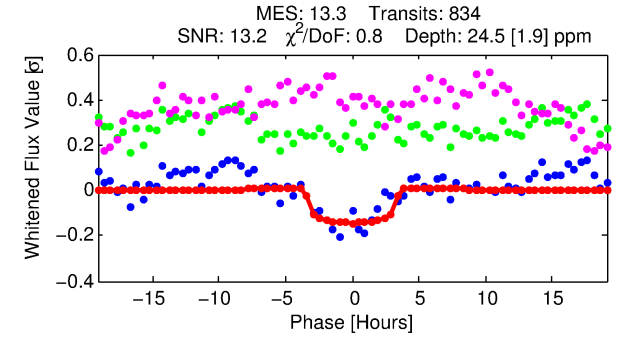
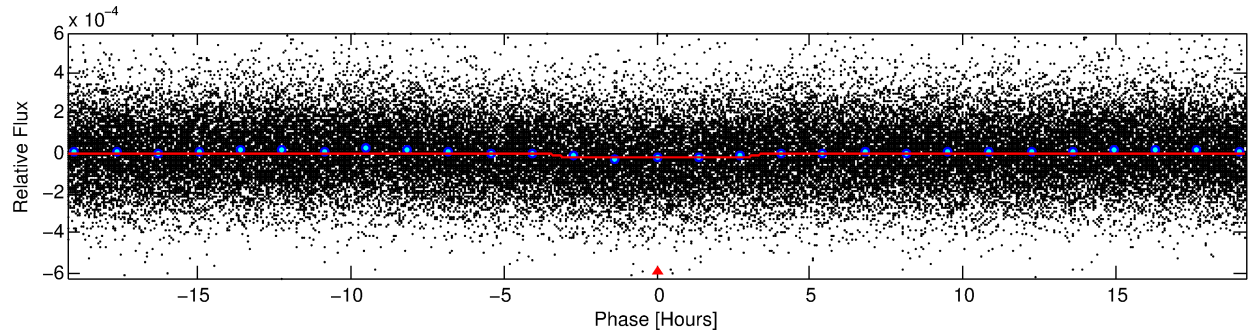
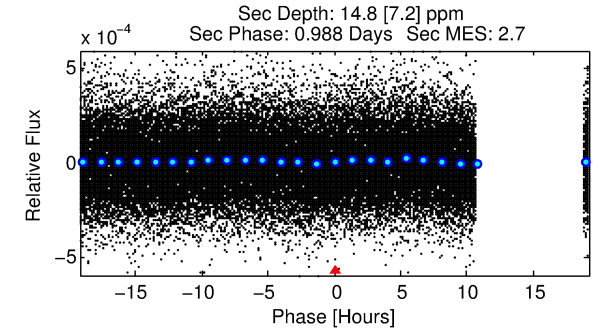
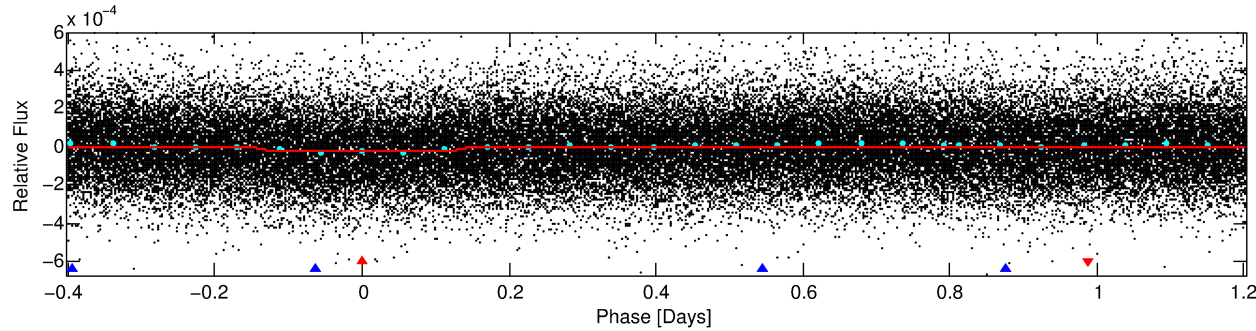
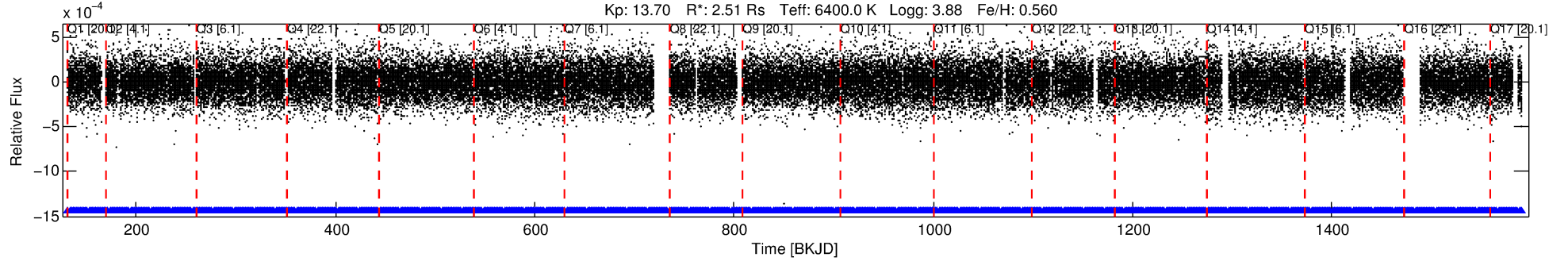
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 006057750-01

No Significant Match Found

DV One-Page Summary

KIC: 6057750 Candidate: 1 of 2 Period: 1.604 d
KOI: K06657.01 Corr: 0.928



DV Fit Results:

Period = 1.60374 [0.00002] d
Epoch = 131.9542 [0.0055] BKJD
Rp/R* = 0.0045 [0.0036]
a/R* = 1.88 [5.23]
b = 0.21 [17.59]
Seff = 9136.51 [2766.43]
Teq = 2493 [189] K
Rp = 1.25 [1.03] Re
a = 0.0322 [0.0065] AU
Ag = 5.42 [9.15] [0.48σ]
Teffp = 5881 [2444] K [1.38σ]

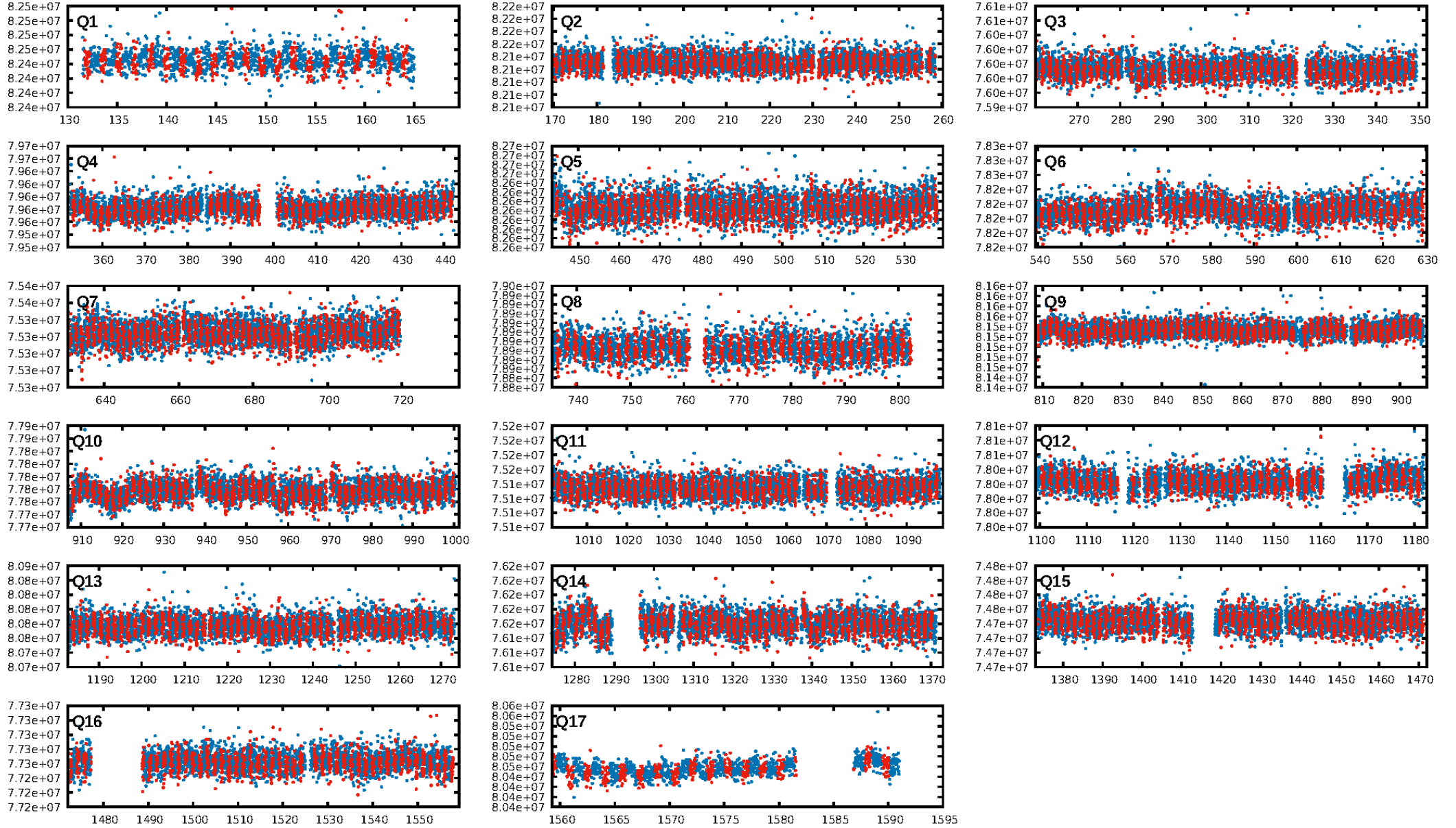
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [406.82σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 2.35e-36
RollingBand-fgt: 1.00 [797/797]
GhostDiagnostic-chr: 3.044
Centroid-sig: 22.1%
Centroid-so: 0.868 arcsec [0.95σ]
OotOffset-rm: 0.306 arcsec [0.83σ]
KicOffset-rm: 0.509 arcsec [1.26σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.82 [14/17]
DiffImageOverlap-fno: 1.00 [17/17]

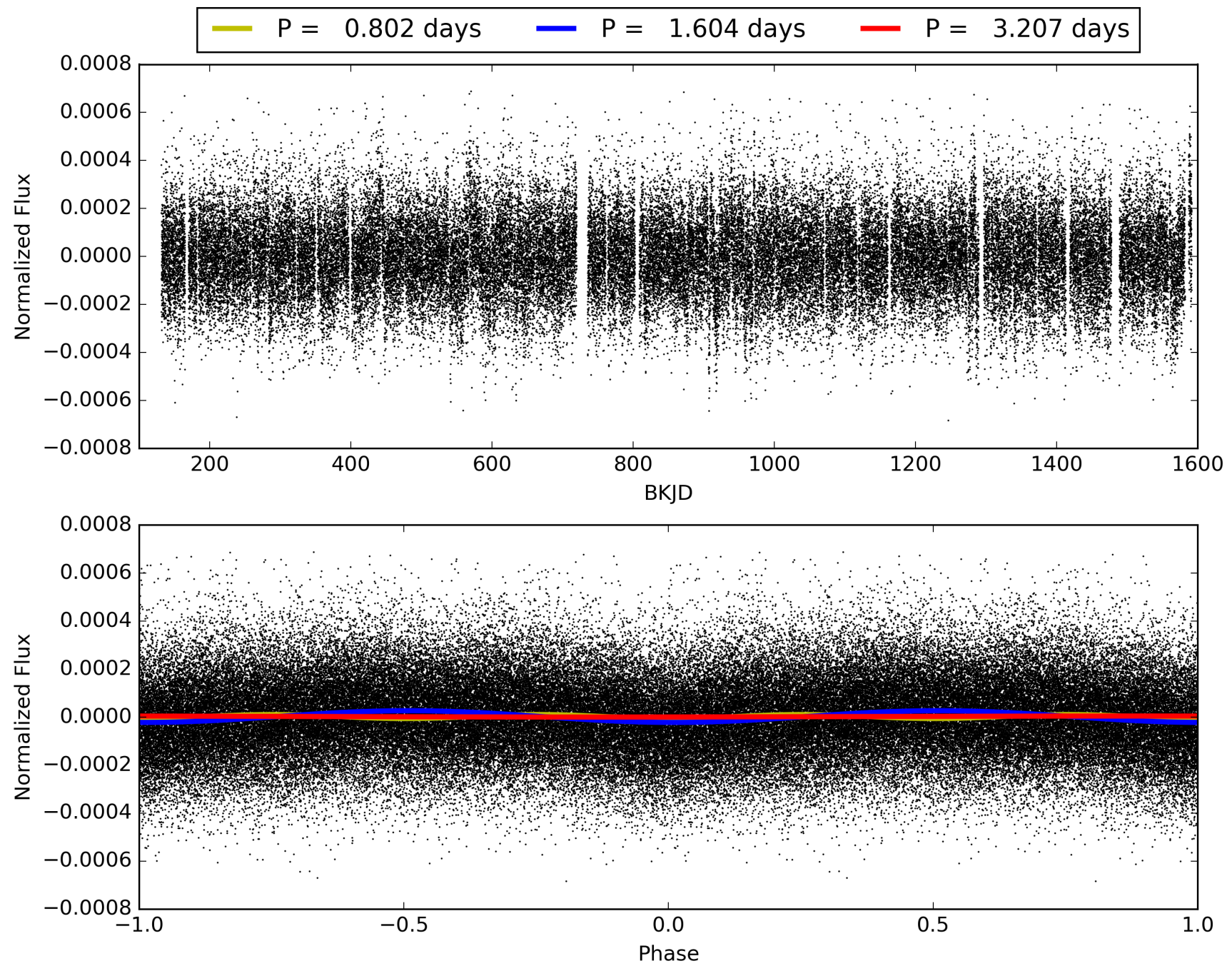
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 17:16:07 Z

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

TCE 006057750-01, PDC Light Curves

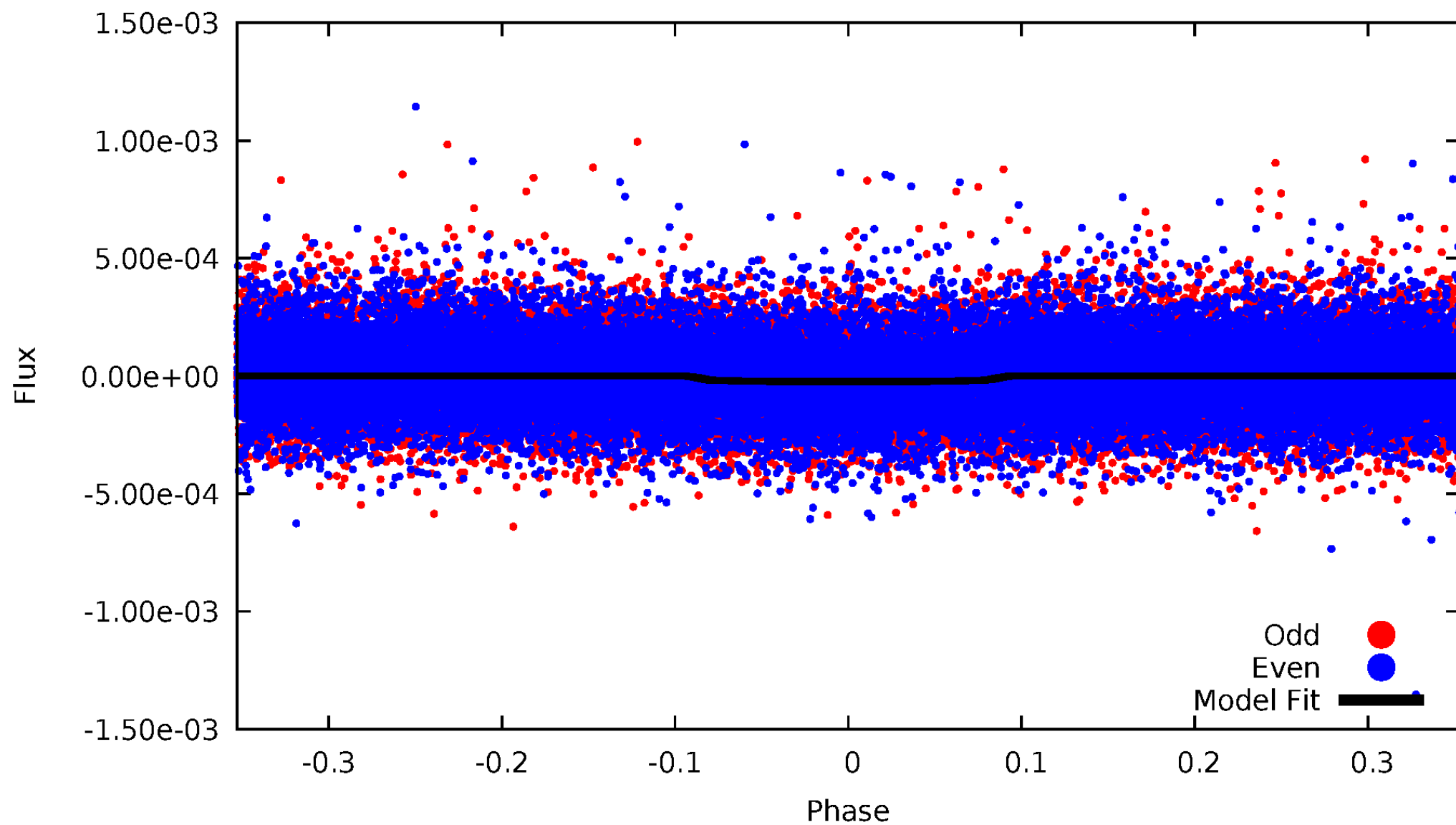


TCE 006057750-01



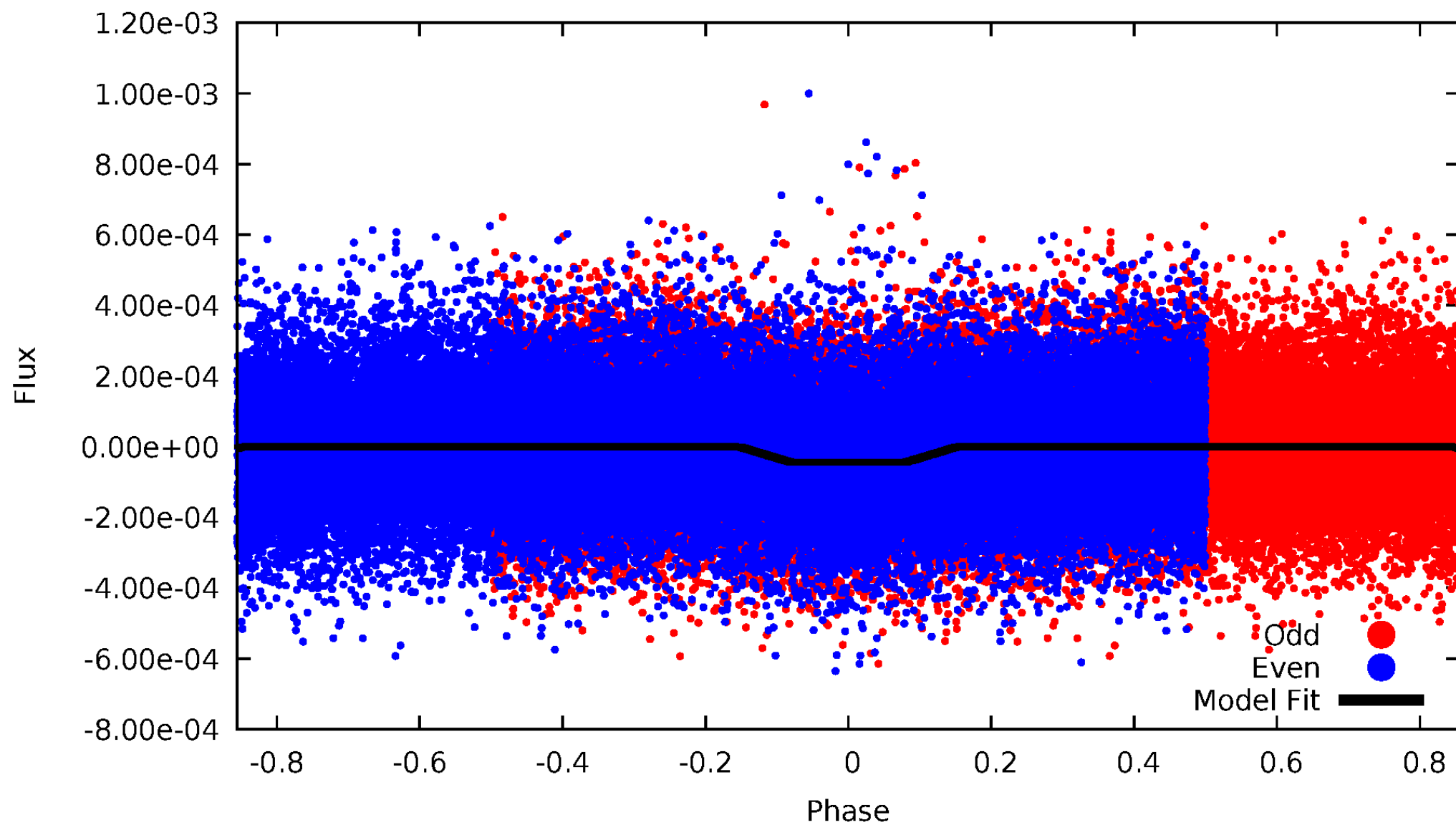
DV Odd/Even

TCE 006057750-01



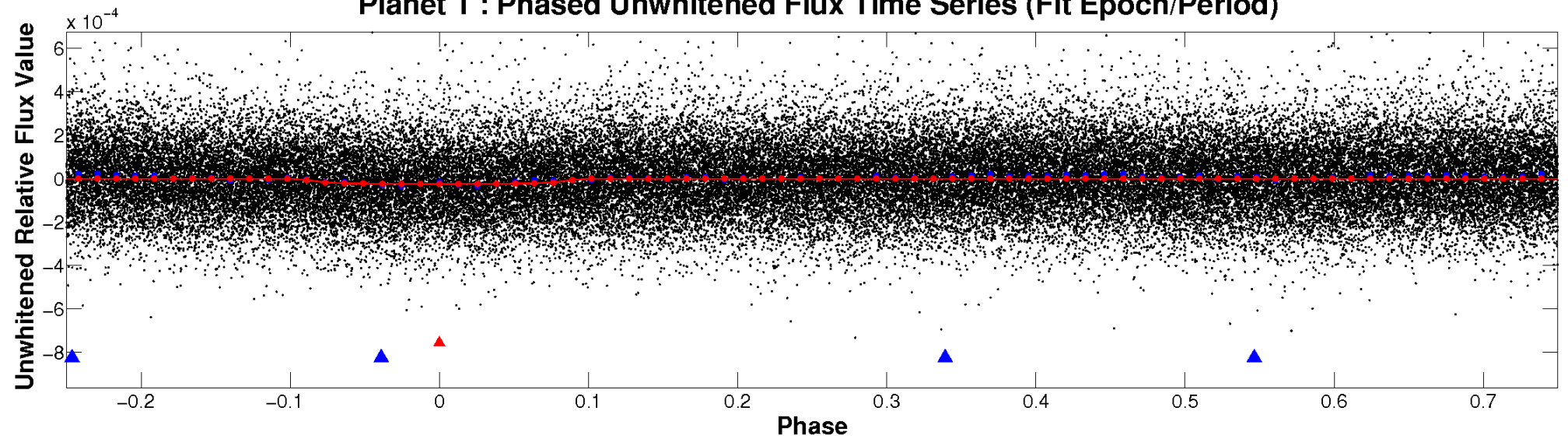
ALT Odd/Even

TCE 006057750-01

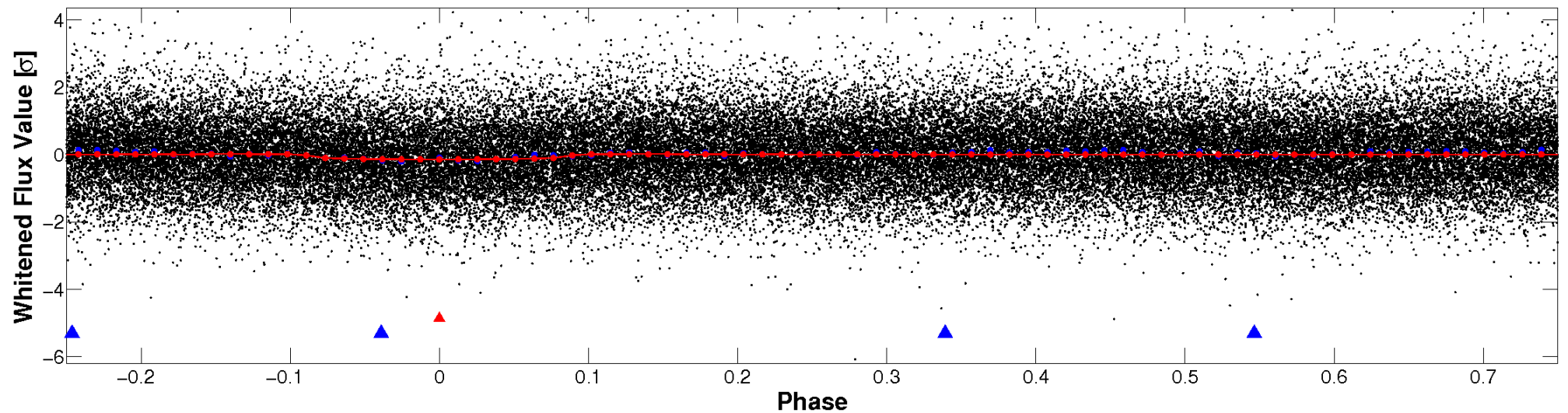


Non-Whitened Vs. Whitened Light Curve

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

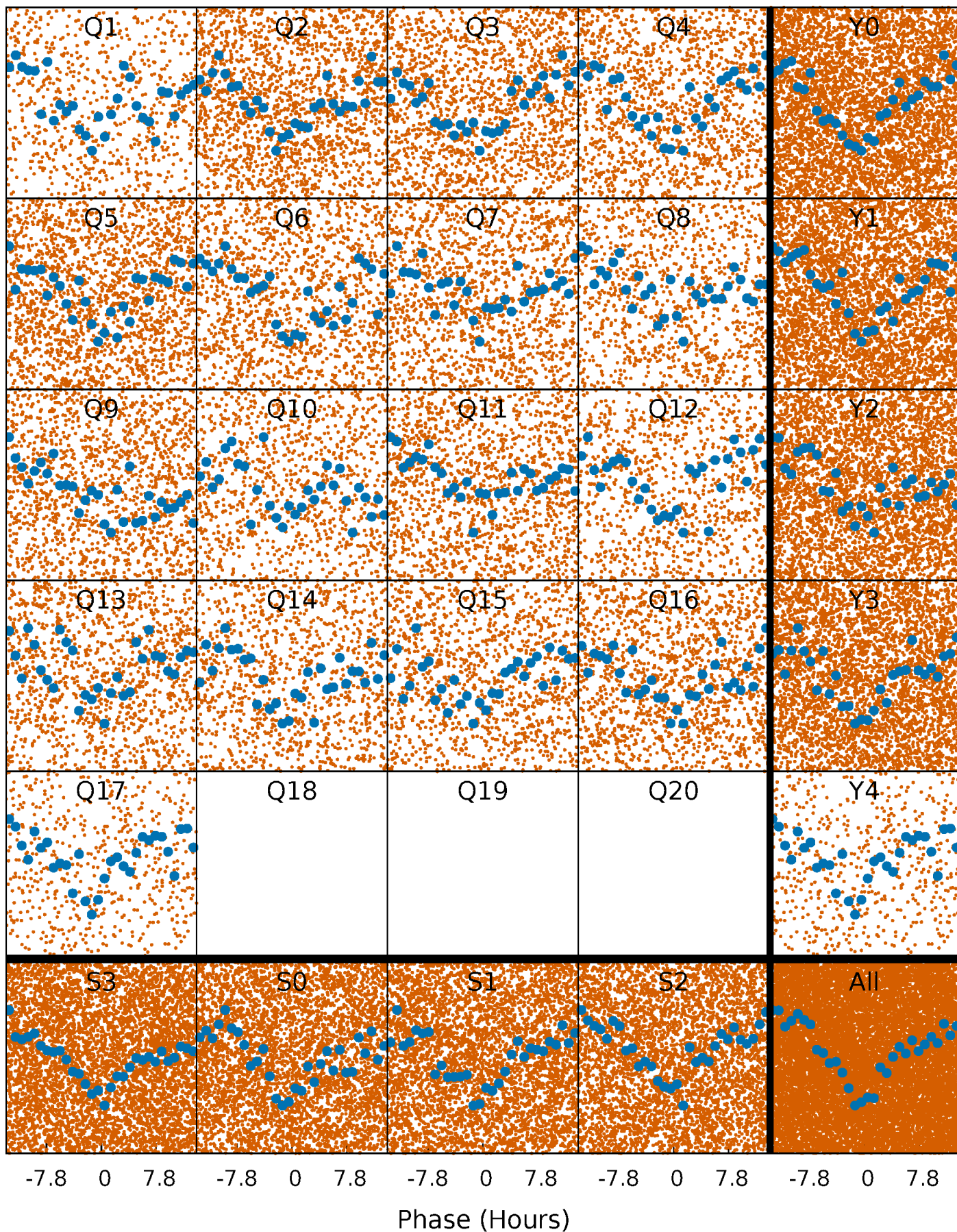


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



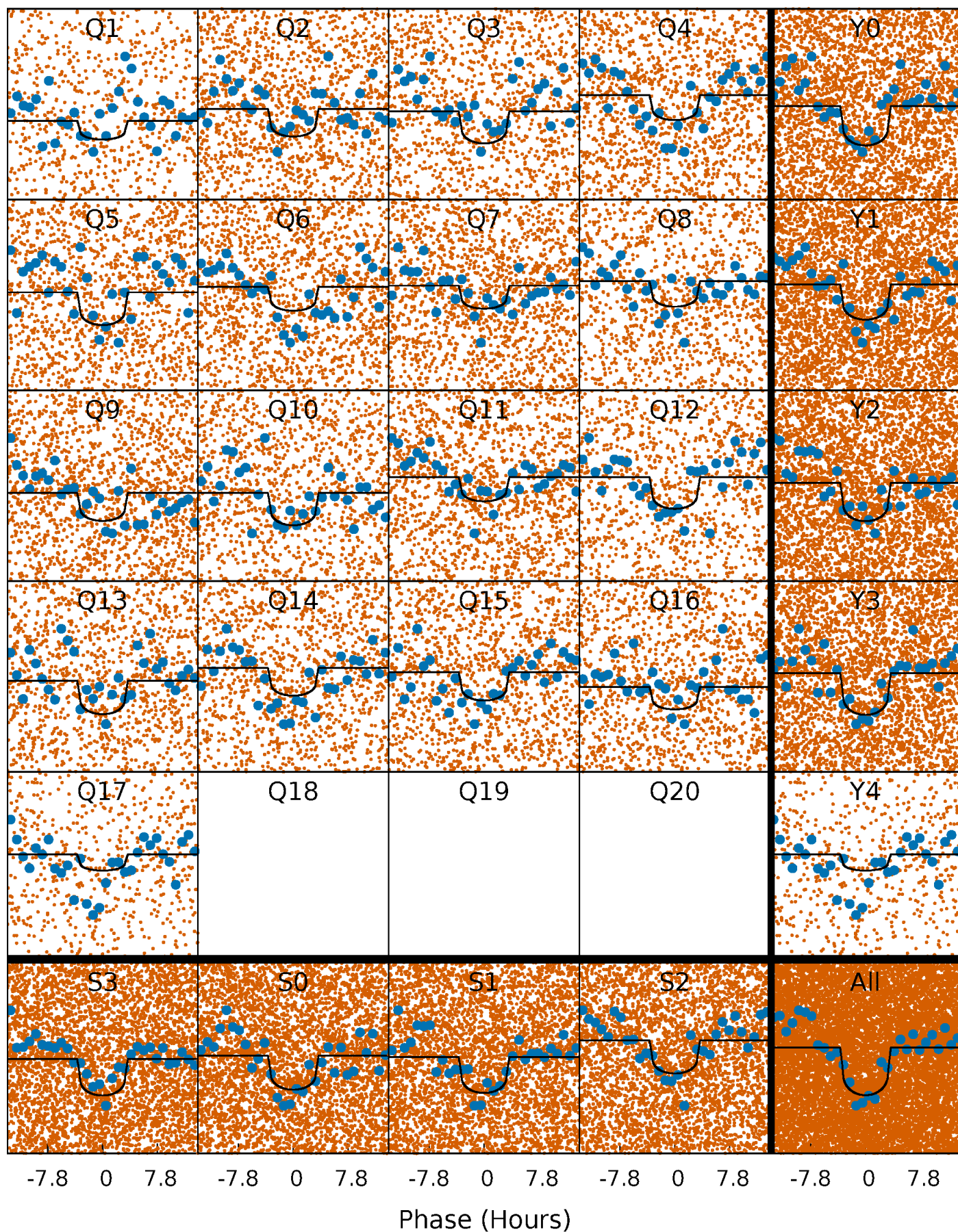
PDC Quarter-Phased Transit Curves

TCE 006057750-01 P= 1.603745 Days $T_0=131.954222$ (BKJD)



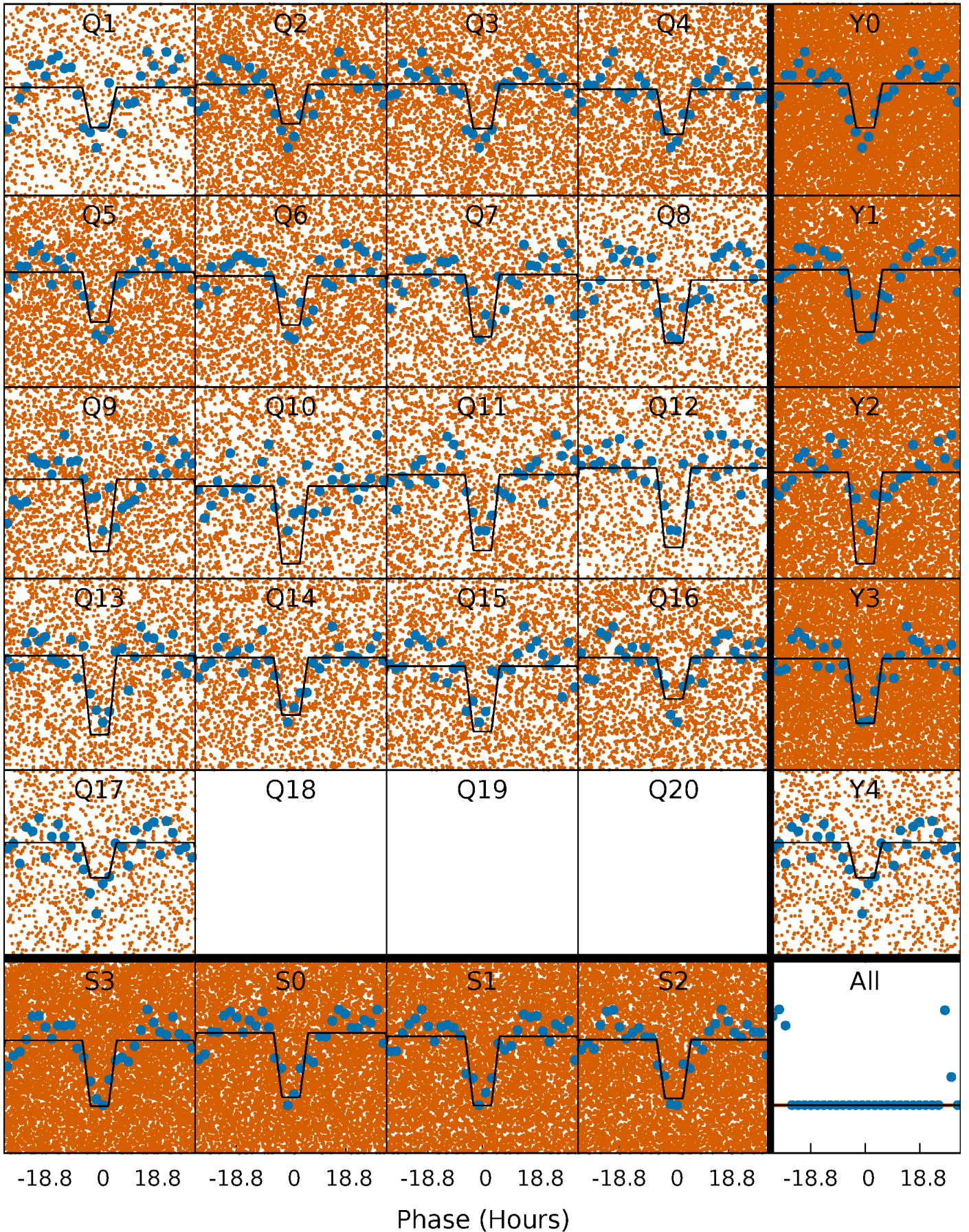
DV Quarter-Phased Transit Curves

TCE 006057750-01 P= 1.603745 Days $T_0=131.954222$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

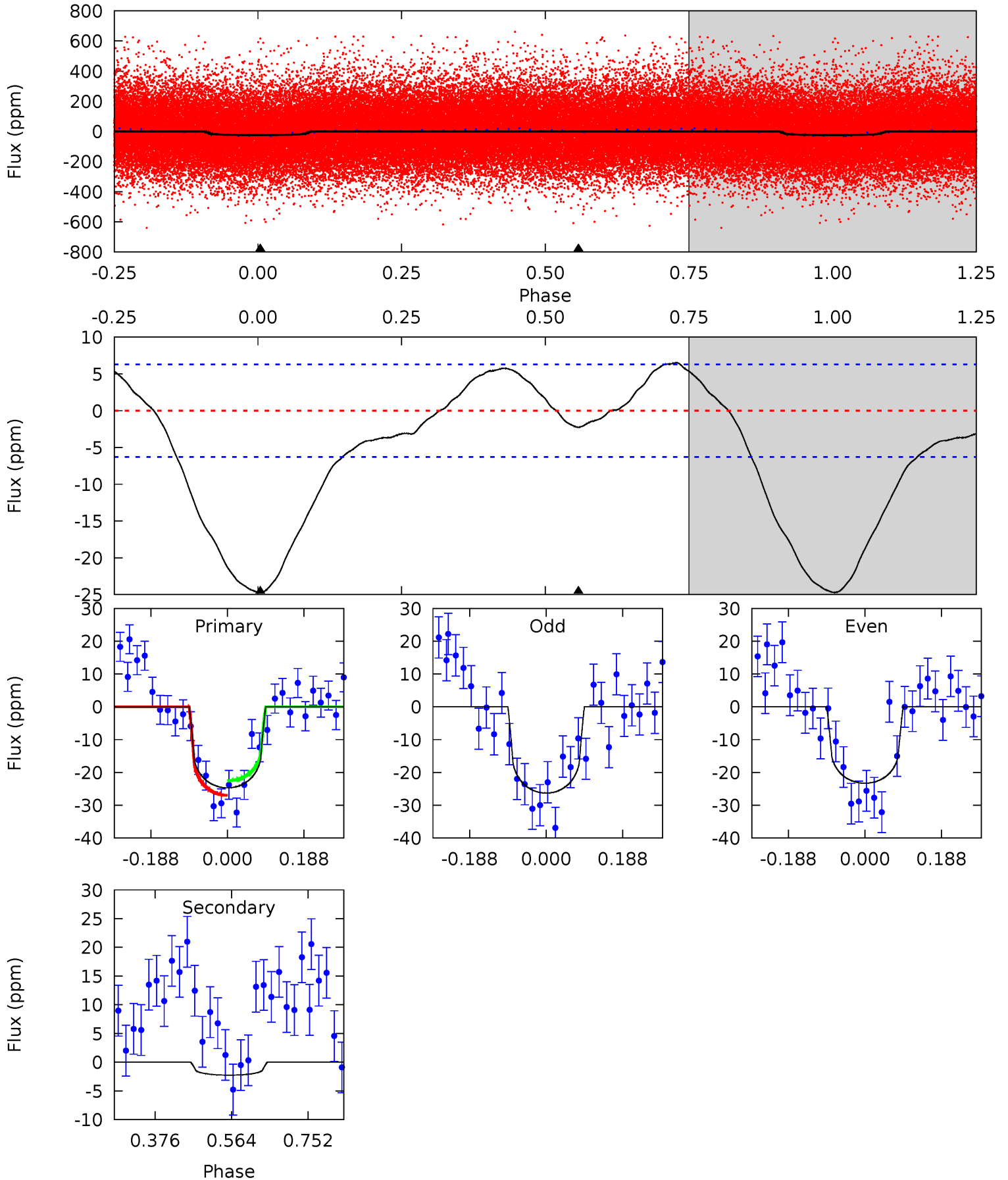
TCE 006057750-01 P= 1.603747 Days $T_0=131.946799$ (BKJD)



DV Model-Shift Uniqueness Test

006057750-01, P = 1.603745 Days, E = 130.350477 Days

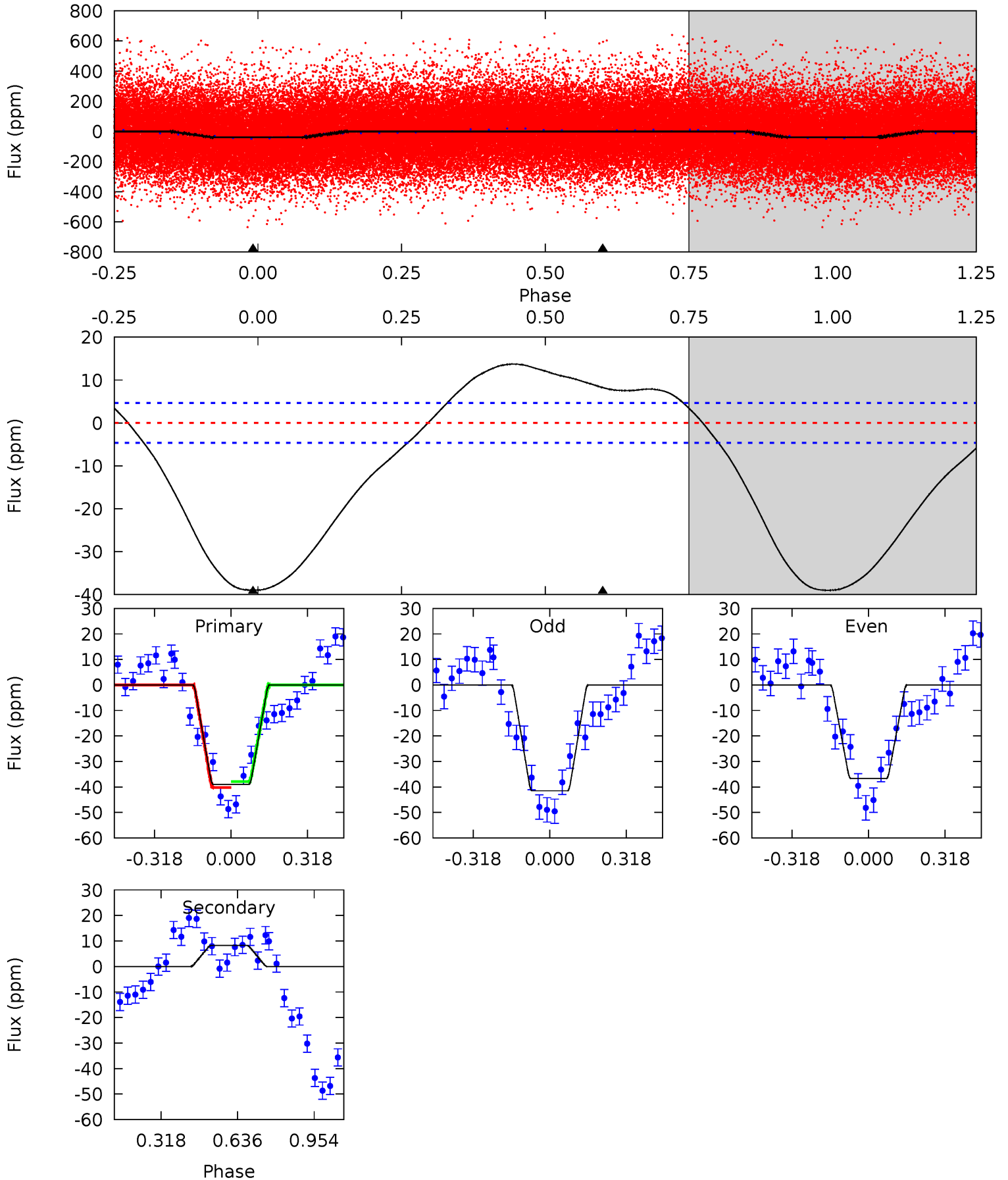
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
17.4	1.59	0	0	4.43	1.32	2.07	17.4	17.4	1.59	1.59	1.06	1.03	0.21	1.56



Alt Model-Shift Uniqueness Test

006057750-01, P = 1.603747 Days, E = 130.343052 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
36.2	-7.64	0	0	4.32	1.00	3.61	36.2	36.2	-7.64	-7.64	2.24	1.01	0.26	1.08



Stellar Parameters For KIC 006057750

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6400^{+76}_{-76}	$3.877^{+0.165}_{-0.135}$	$0.560^{+0.050}_{-0.150}$	$2.512^{+0.599}_{-0.544}$	$1.732^{+0.172}_{-0.190}$	$0.154^{+0.141}_{-0.064}$
	+1%/-1%	+4%/-3%	+9%/-27%	+24%/-22%	+10%/-11%	+92%/-42%
Source	SPE90	SPE90	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 006057750-01 / KOI 6657.01

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-2 ± 1	$1.40^{+0.96}_{-0.86}$	3463^{+200}_{-188}	3326^{+1952}_{-6437}	$0.579^{+3.242}_{-0.446}$
Alt.	8 ± 1	$1.89^{+1.01}_{-0.93}$	3481^{+197}_{-215}	-4504^{+484}_{-1385}	$-1.324^{+0.772}_{-3.578}$

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 $A_{obs} \gg 1.0$

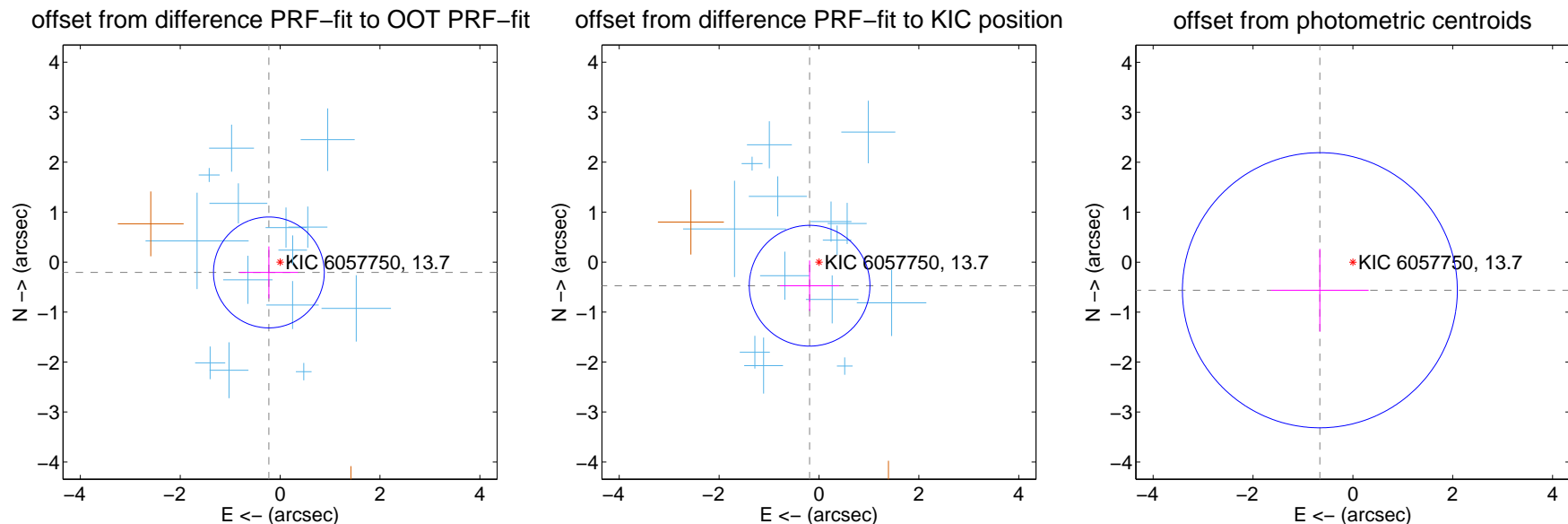
DV Centroid Data

Supplemental centroid analysis for 006057750-01. Kepler magnitude: 13.70. Transit SNR 13.20

There are 14 quarters with good PRF difference image offsets

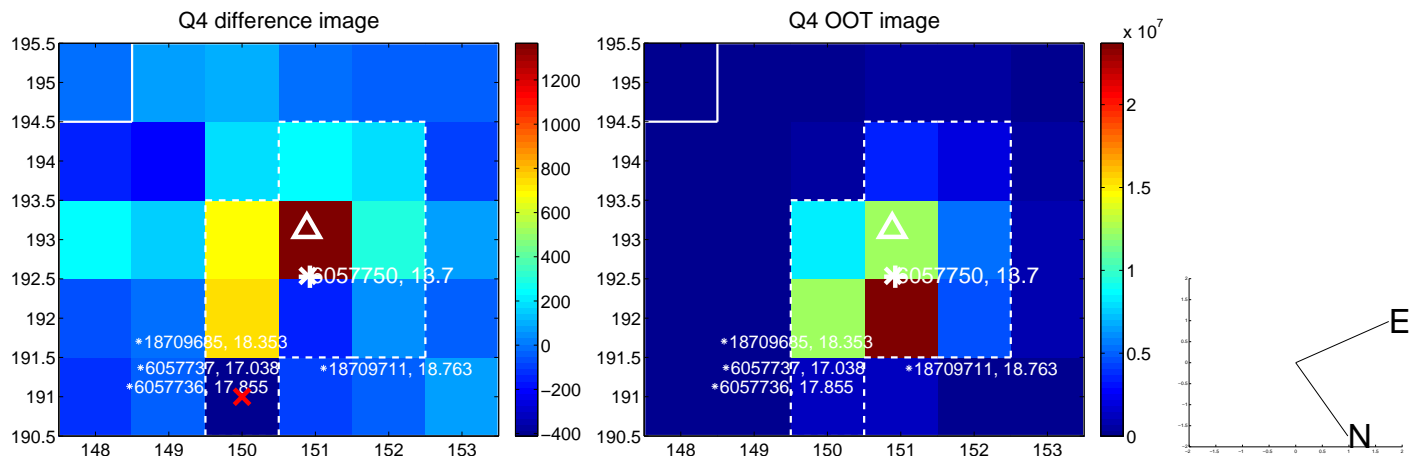
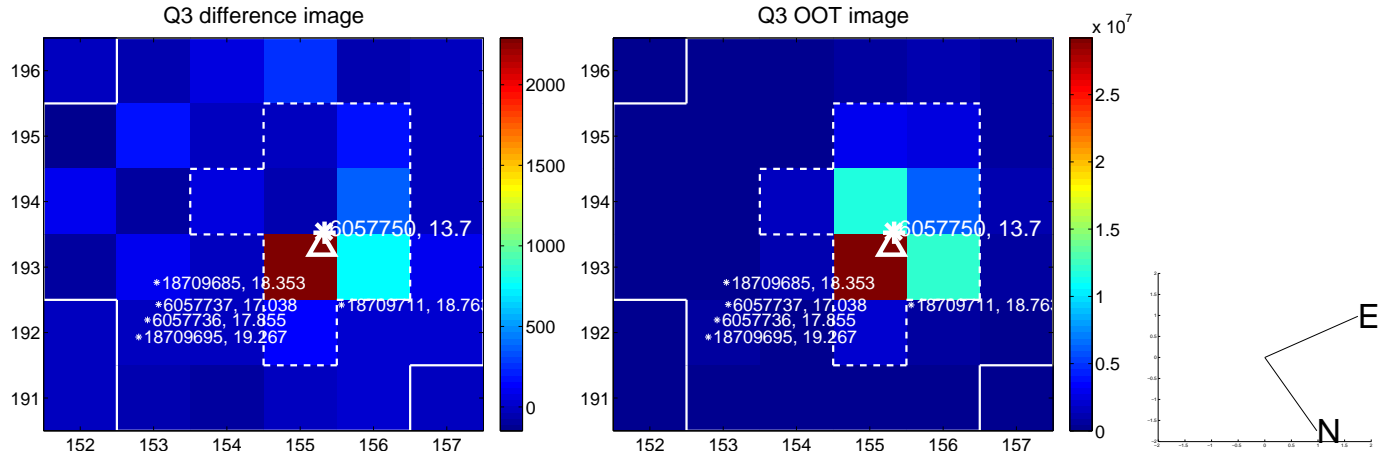
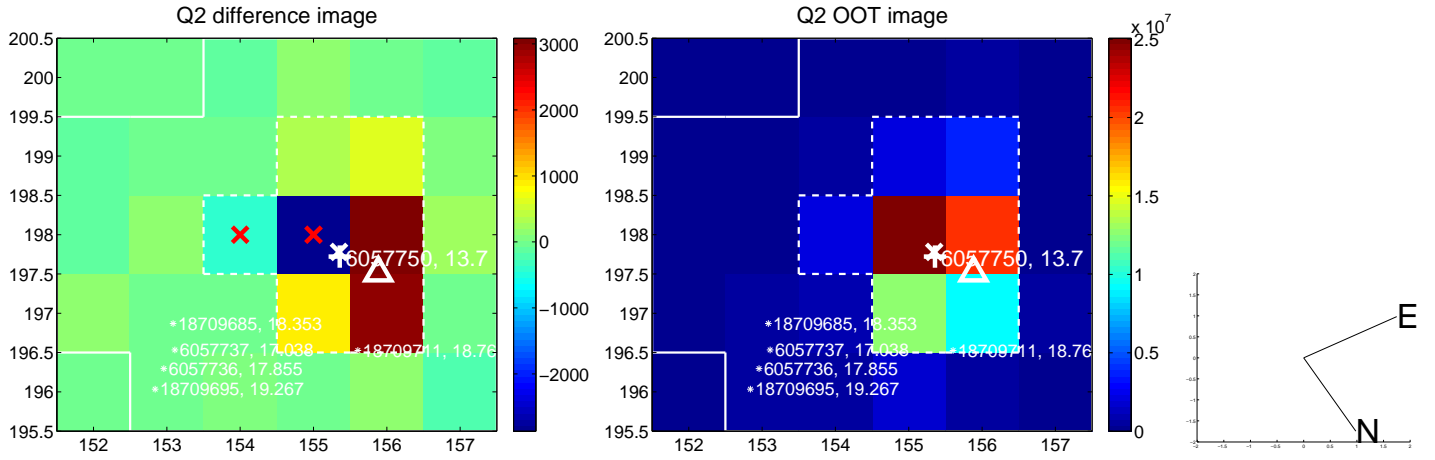
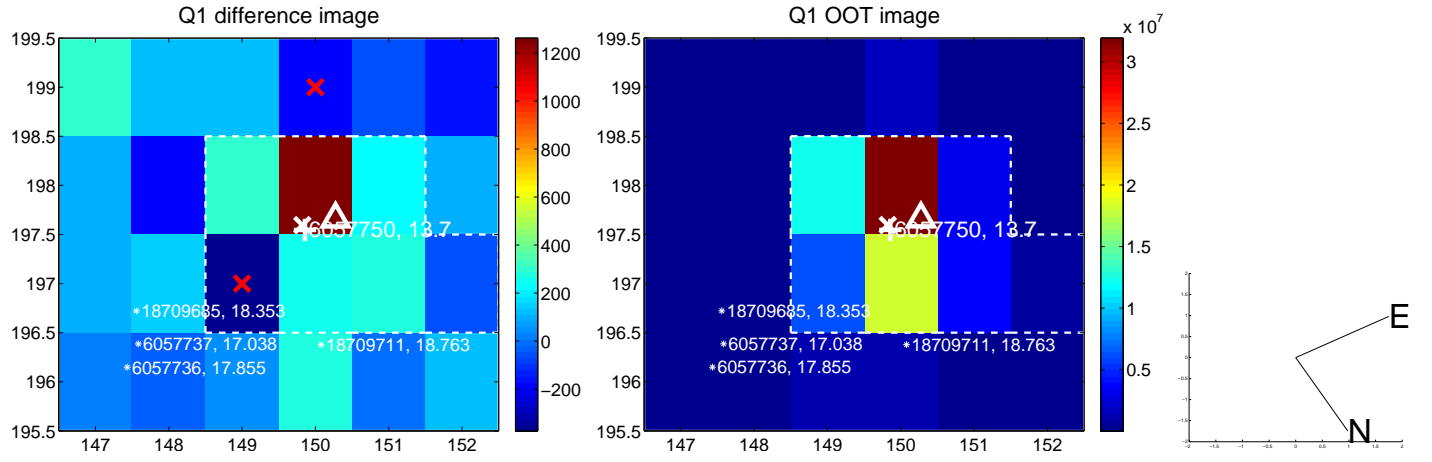
The direct PRF centroid is offset from the target star catalog position by about 0.16 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.306 ± 0.370	0.83	0.225 ± 0.584	-0.207 ± 0.520
PRF-fit source offset from KIC position	0.509 ± 0.403	1.26	0.188 ± 0.589	-0.473 ± 0.505
photometric centroid source offset	0.87 ± 0.92	0.95	0.66 ± 0.98	-0.56 ± 0.83

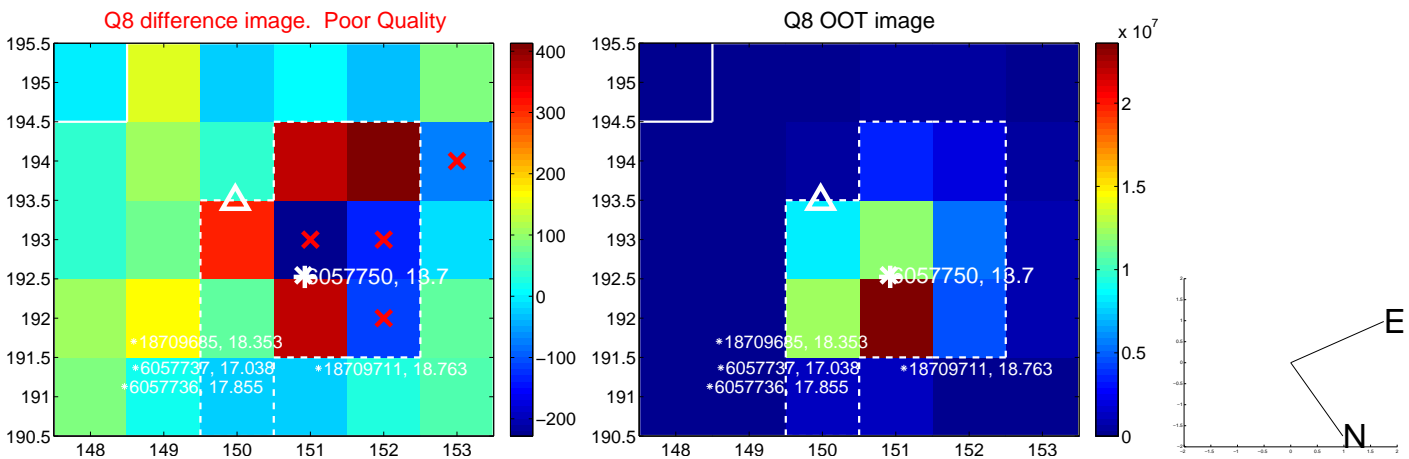
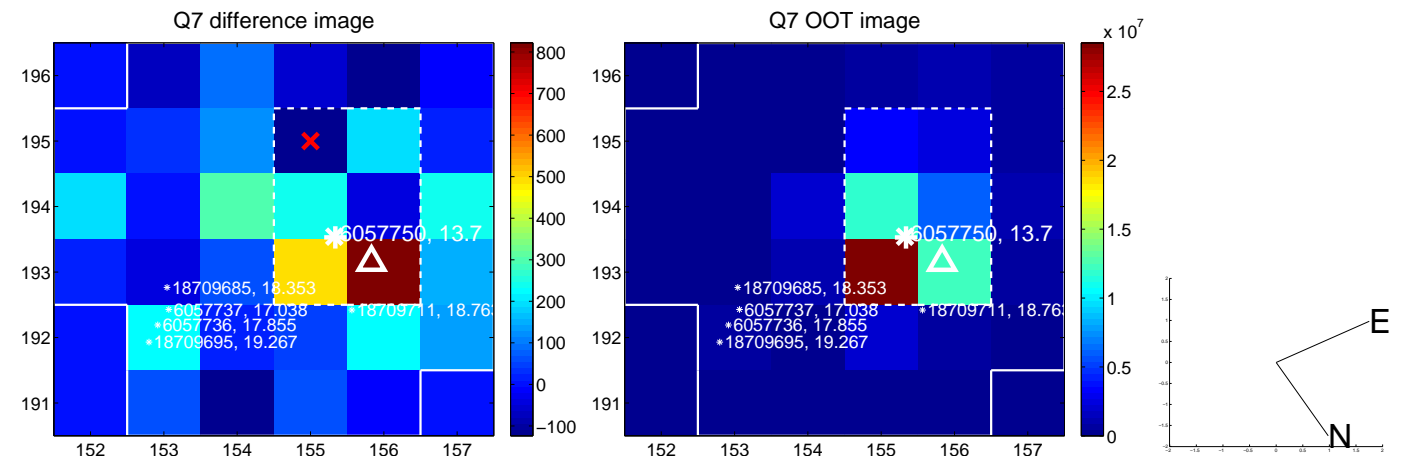
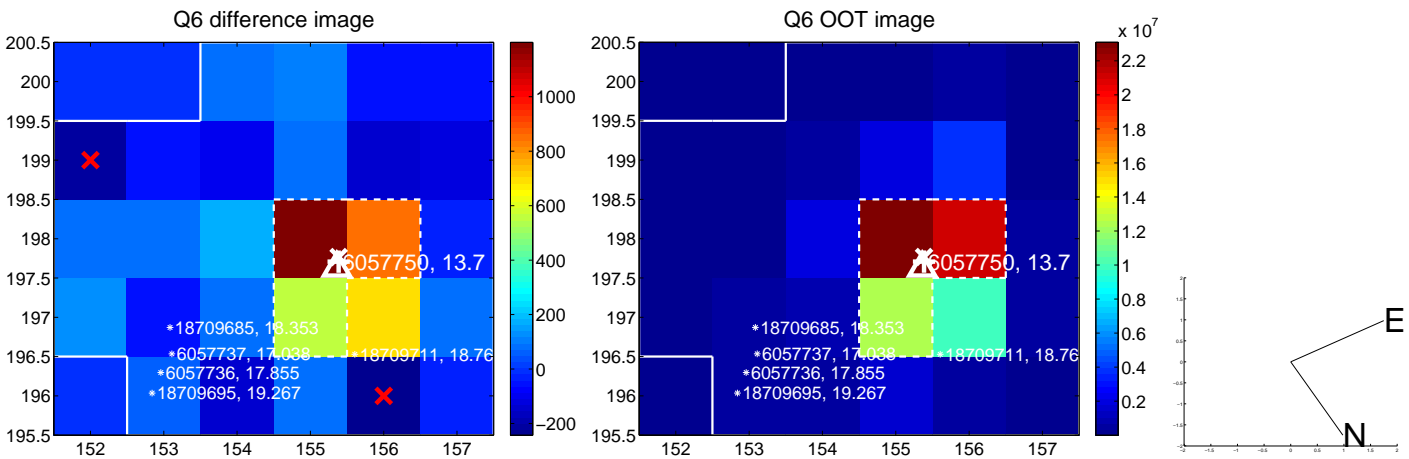
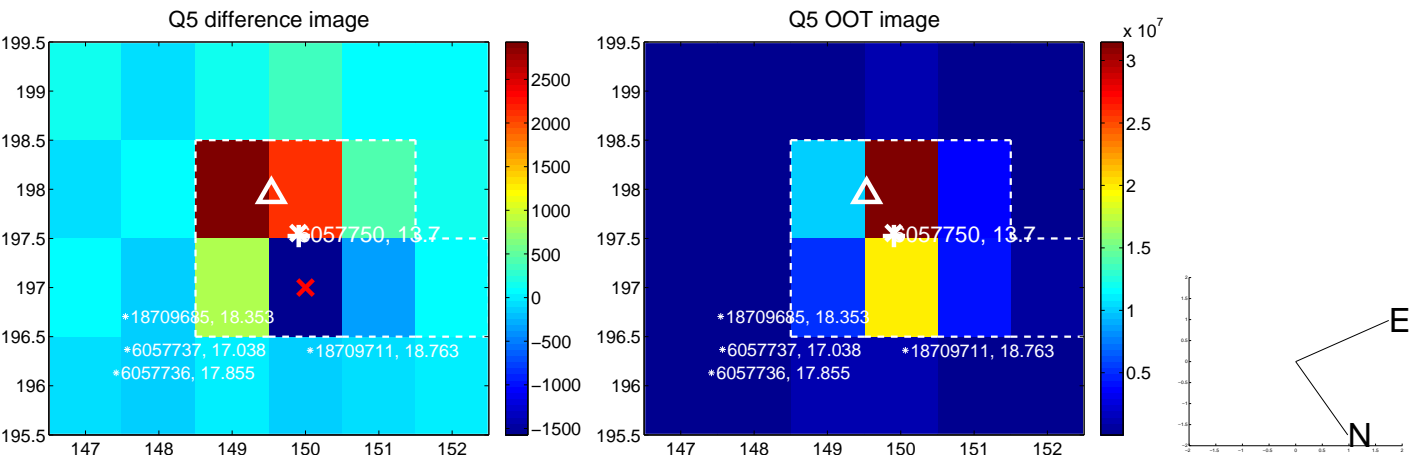


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

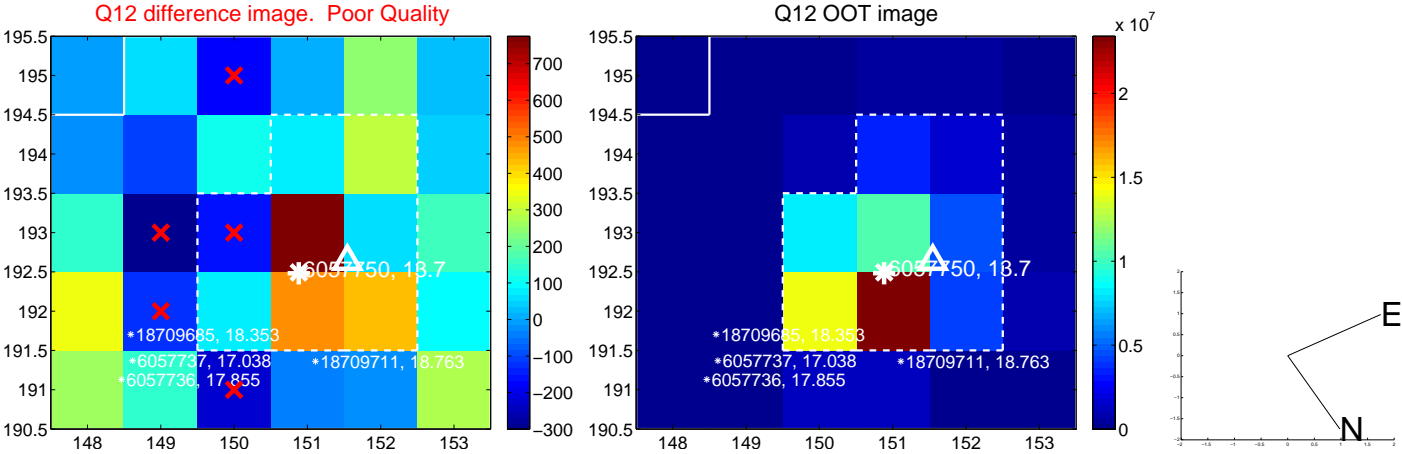
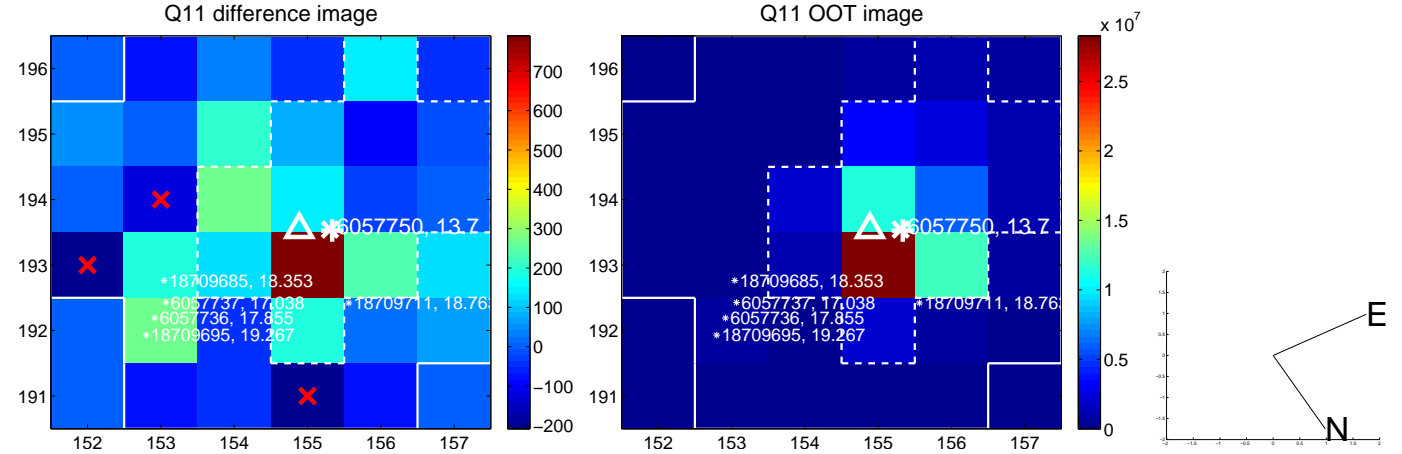
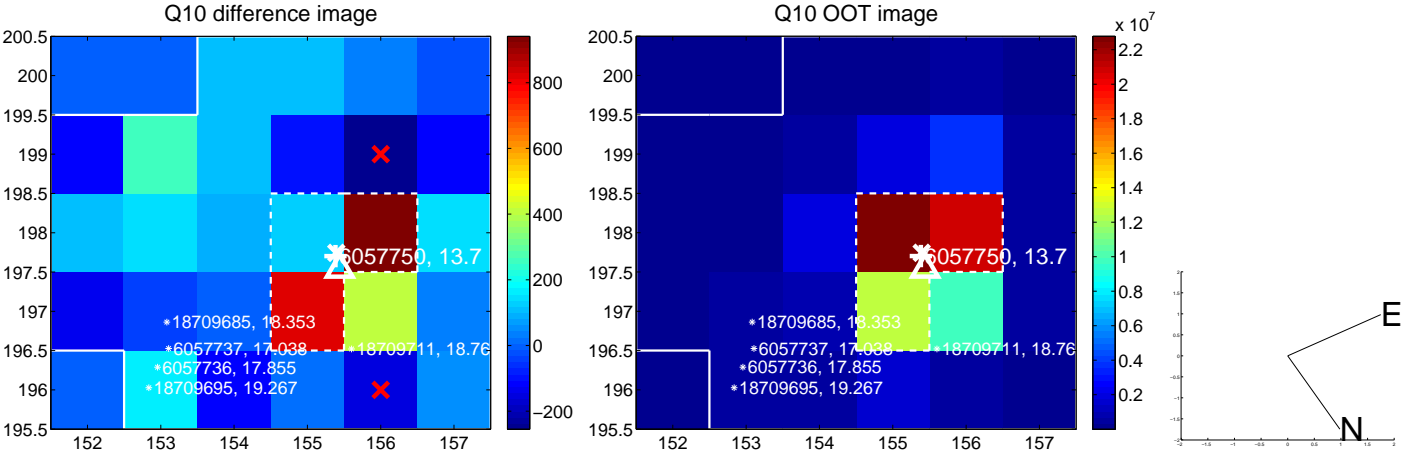
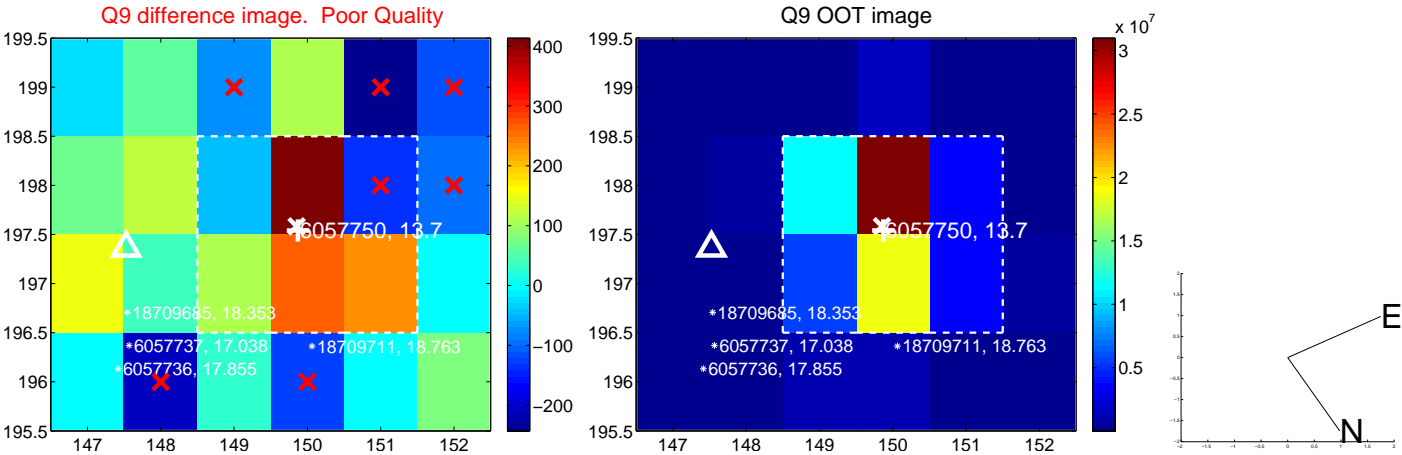
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



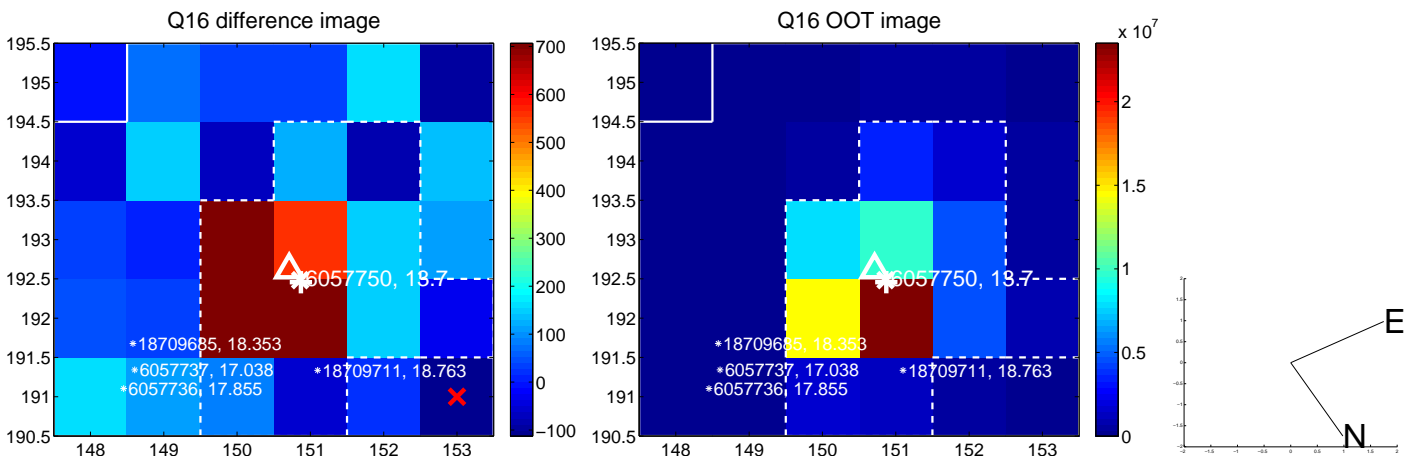
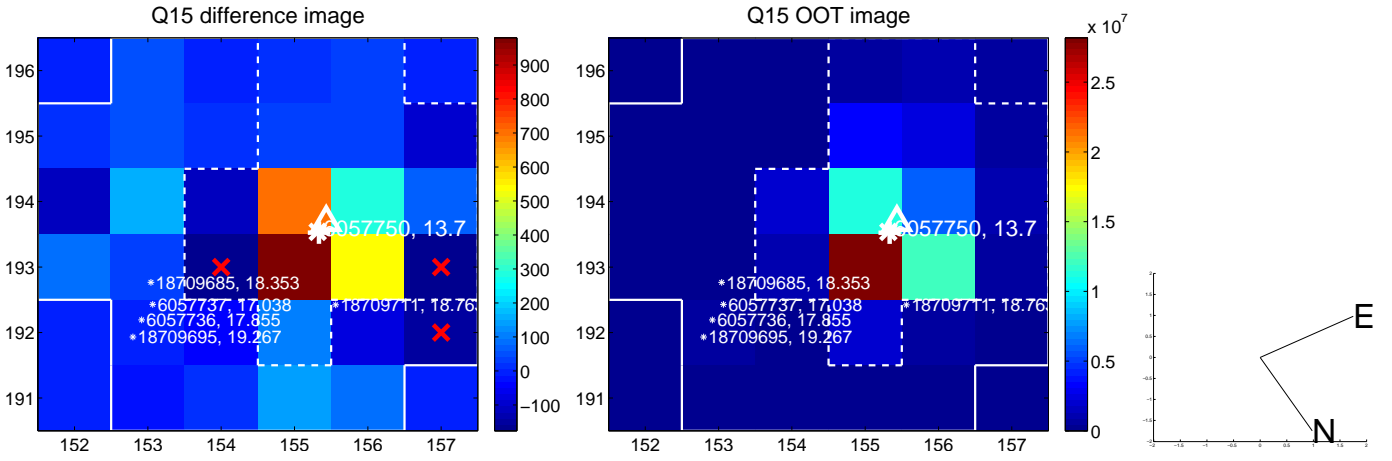
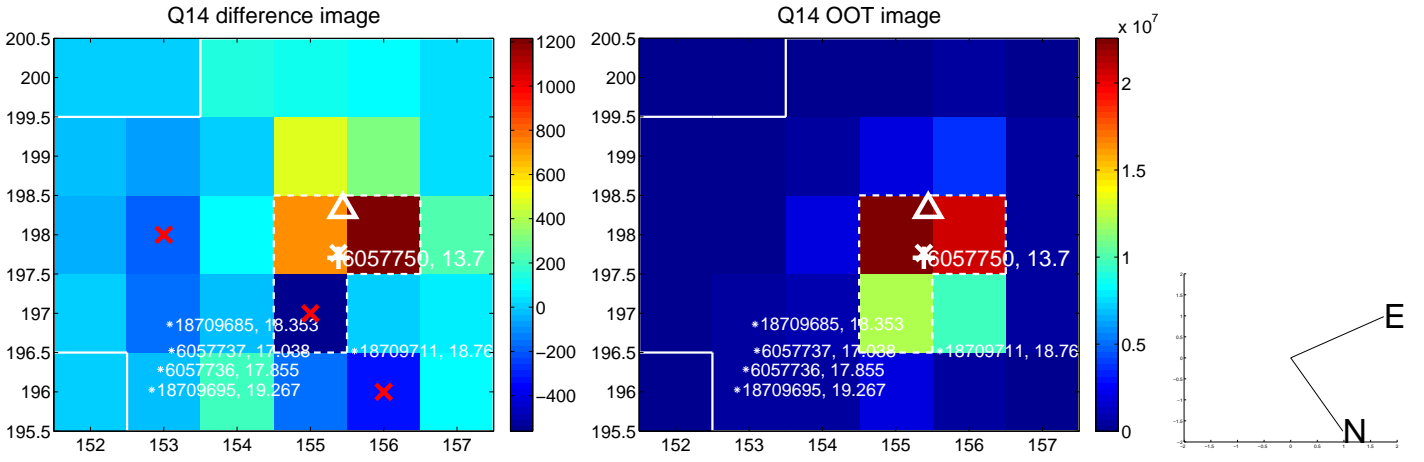
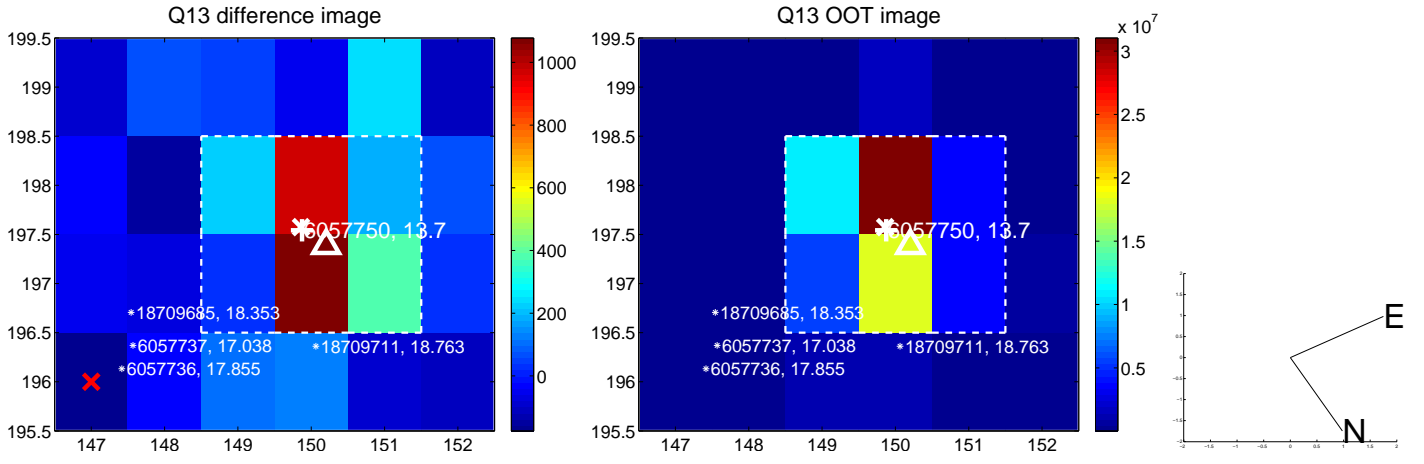
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



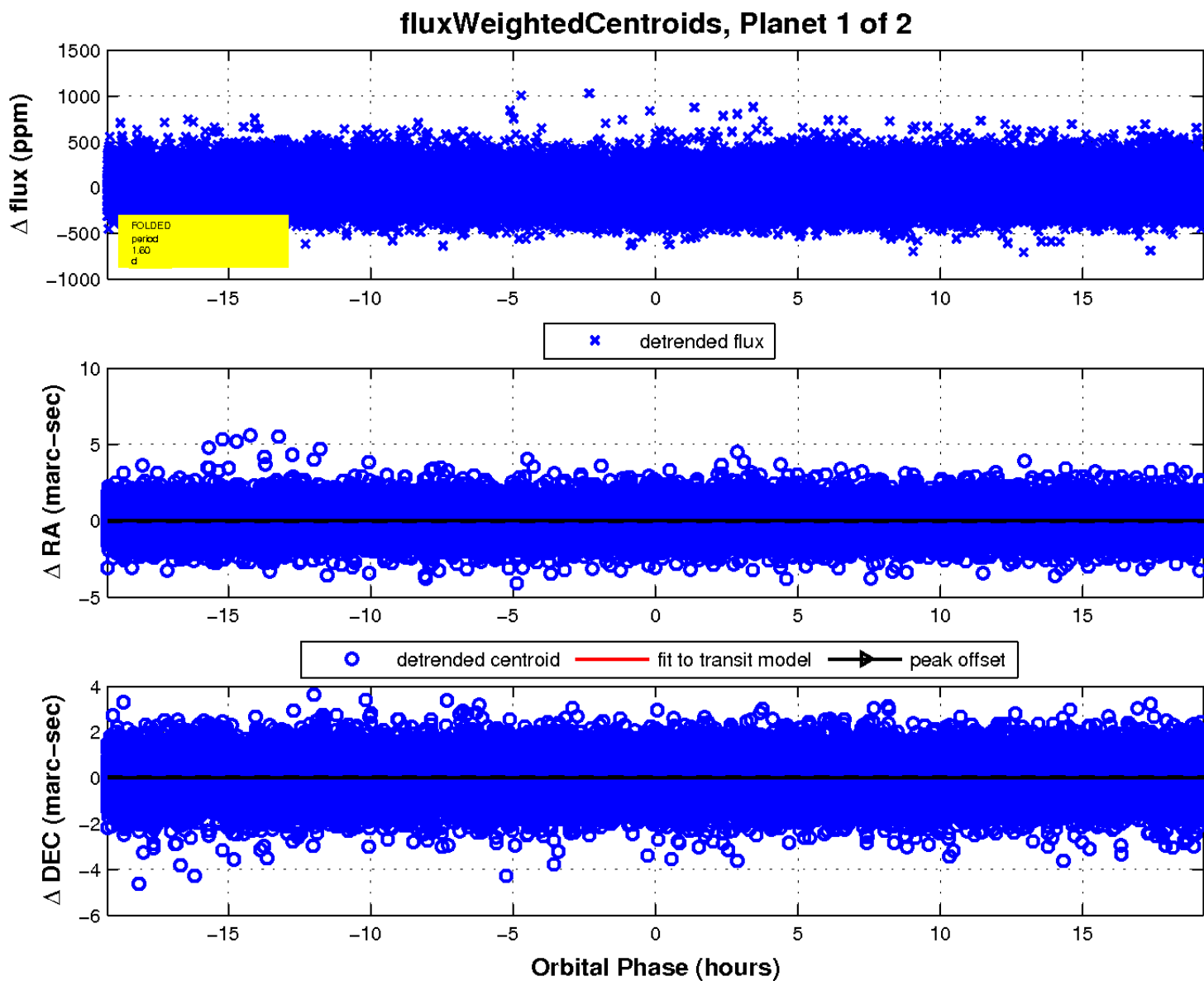
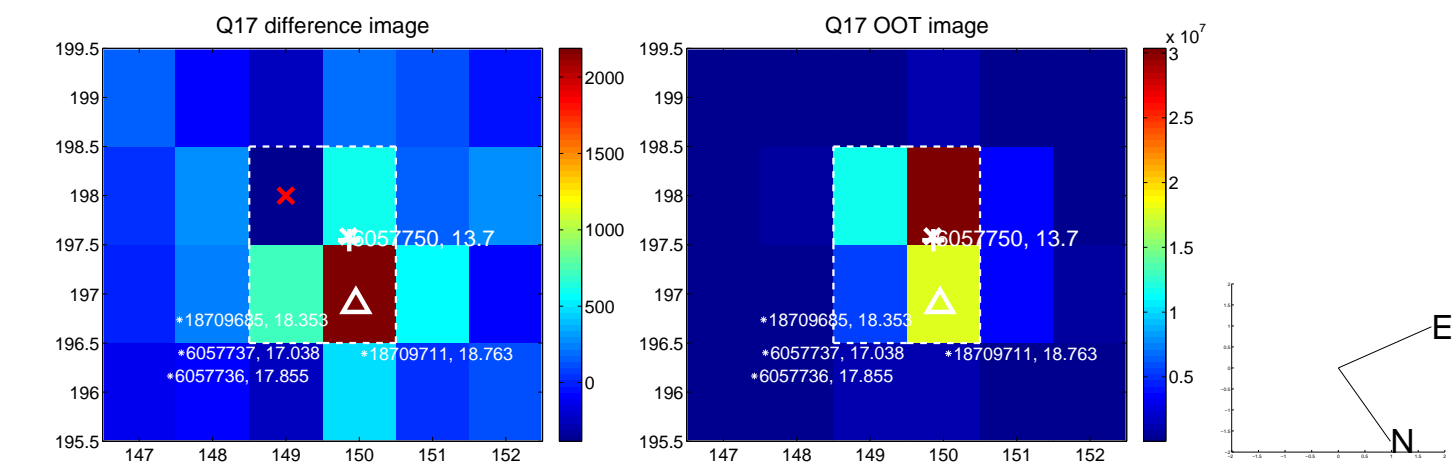
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

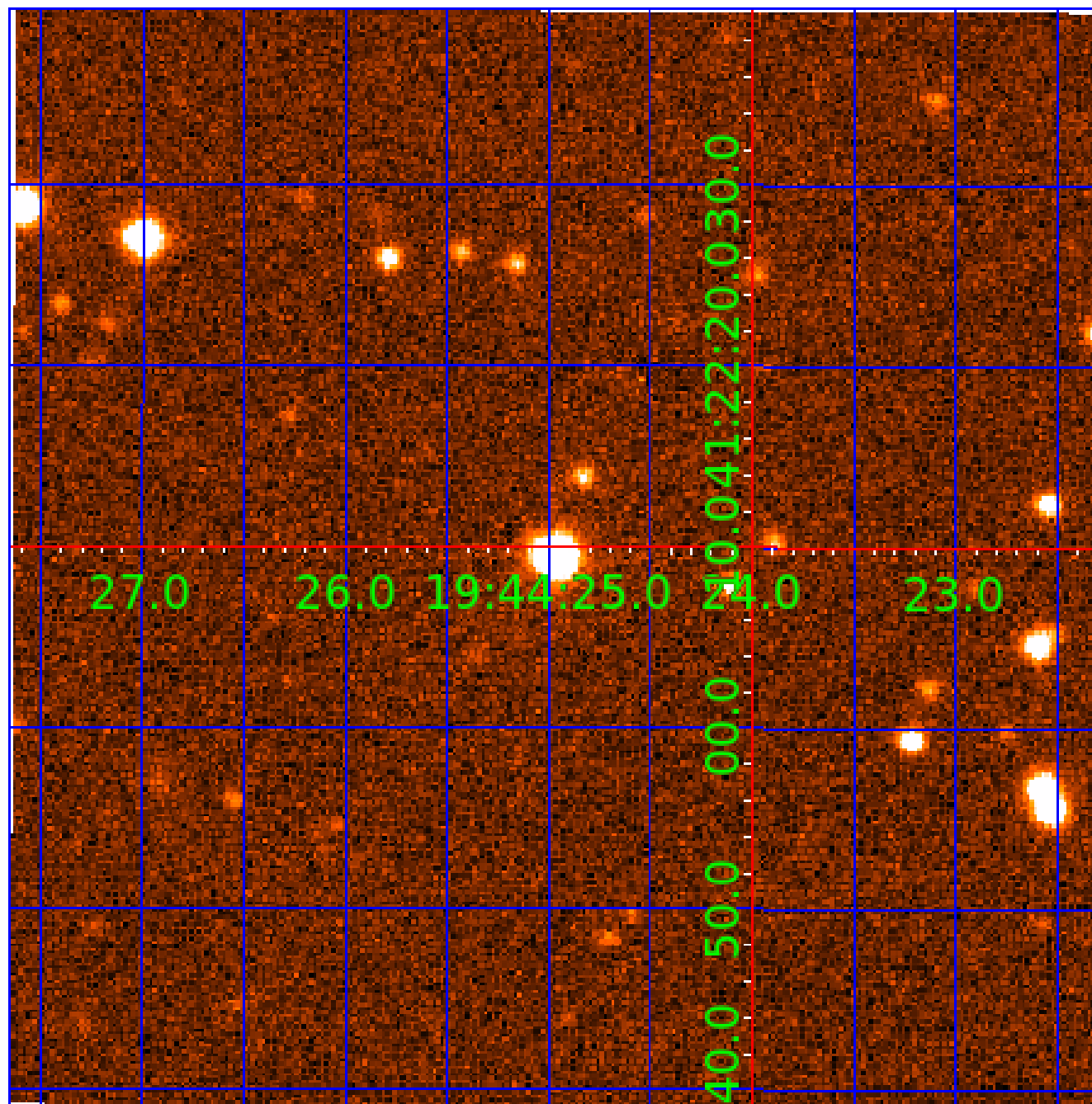


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 006057750

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})
006057750-01	OBS	6657.01	1.603745	131.954222	24.5	6.789	13.3	13.2	2.51	6400	1.25	9136.51
006057750-02	OBS	No	400.603806	155.947882	202.8	22.539	10.3	7.3	2.51	6400	4.13	5.81

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006057750-01	OBS	FP	0.18	1	0	0	0	LPP_DV
006057750-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_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.

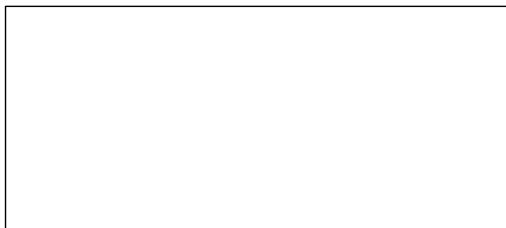
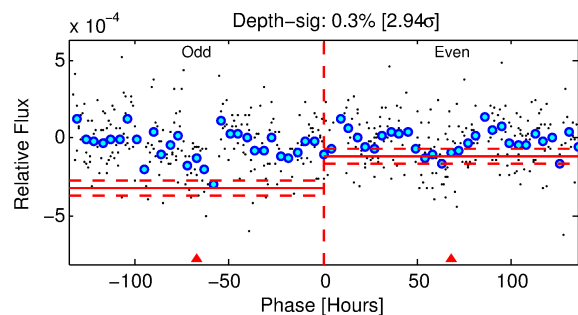
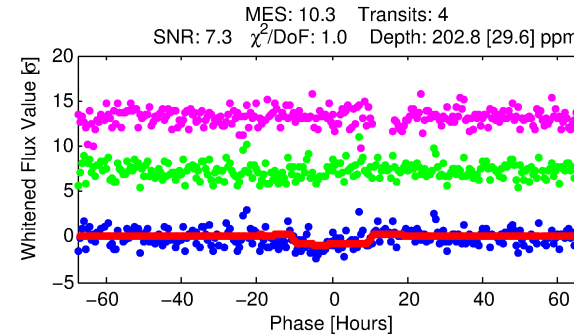
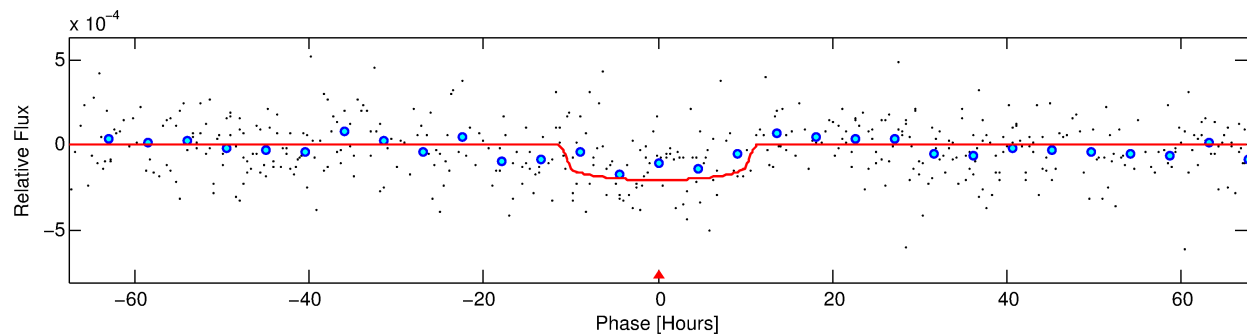
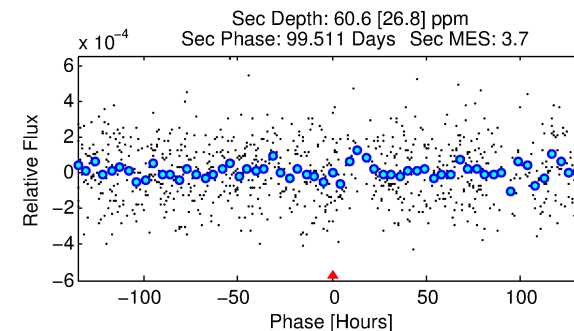
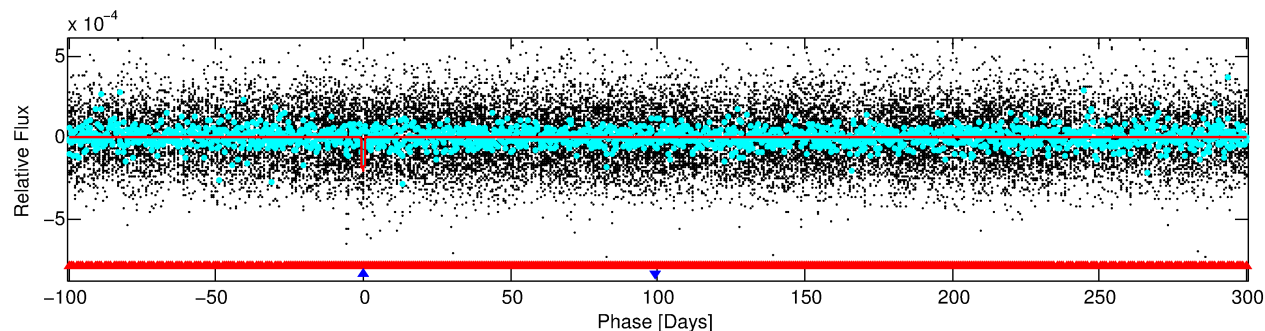
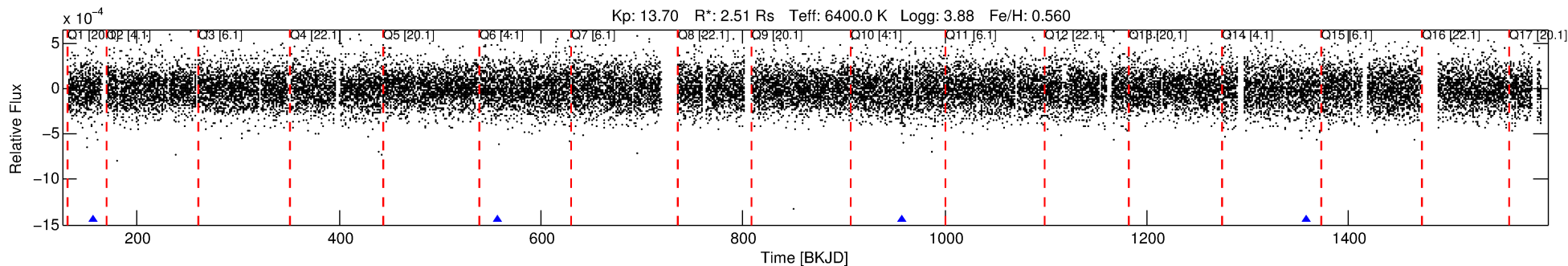
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 006057750-02

No Significant Match Found

DV One-Page Summary

KIC: 6057750 Candidate: 2 of 2 Period: 400.604 d
KOI: K06657 Corr: No Ephemeris Match



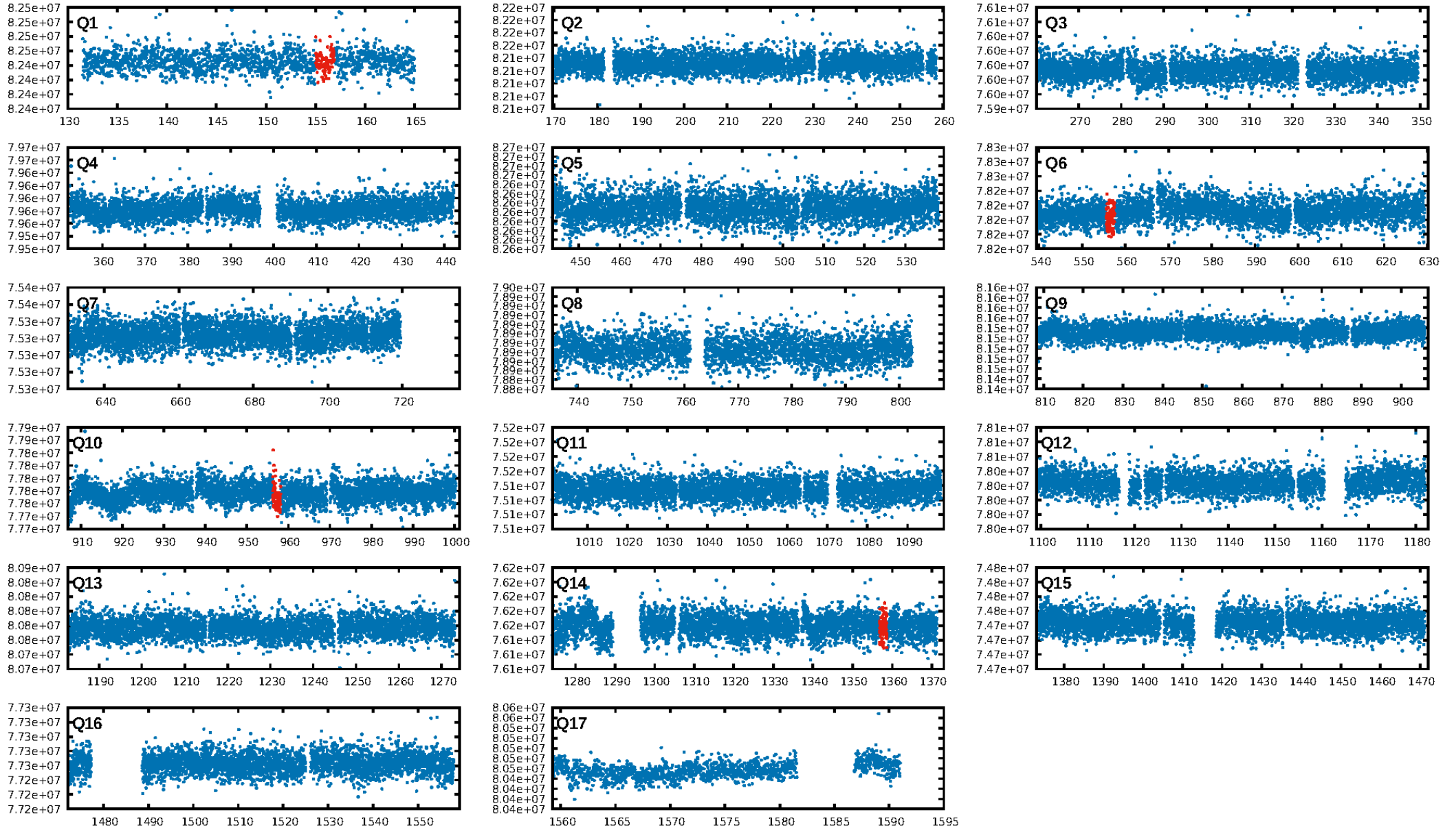
DV Fit Results:

Period = 400.60381 [0.03025] d
Epoch = 155.9479 [0.0617] BKJD
Rp/R* = 0.0151 [0.0028]
a/R* = 69.45 [59.99]
b = 0.88 [0.23]
Seff = 5.81 [1.76]
Teq = 396 [30] K
Rp = 4.13 [1.25] Re
a = 1.2780 [0.2597] AU
Ag = 3191.90 [2072.71] [1.54 σ]
Teffp = 4600 [665] K [6.31 σ]

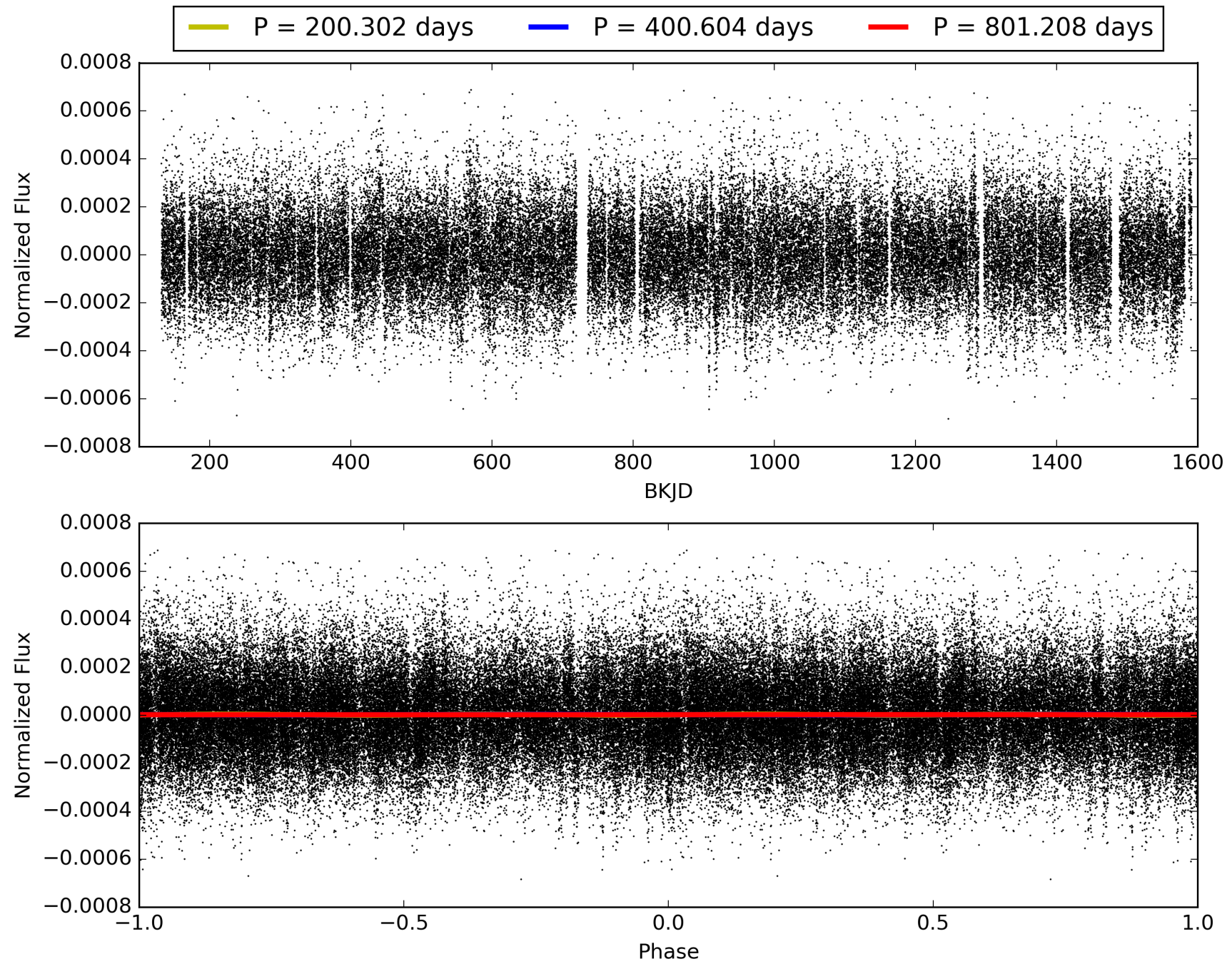
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [406.82 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.5%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.76e-17
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 0.3937
Centroid-sig: 1.5%
Centroid-so: 1.543 arcsec [1.63 σ]
OotOffset-rm: N/A
KicOffset-rm: N/A
OotOffset-st: 0/0/0 [0]
KicOffset-st: 0/0/0 [0]
DiffImageQuality-fgm: N/A
DiffImageOverlap-fno: 0.00 [0/4]

TCE 006057750-02, PDC Light Curves

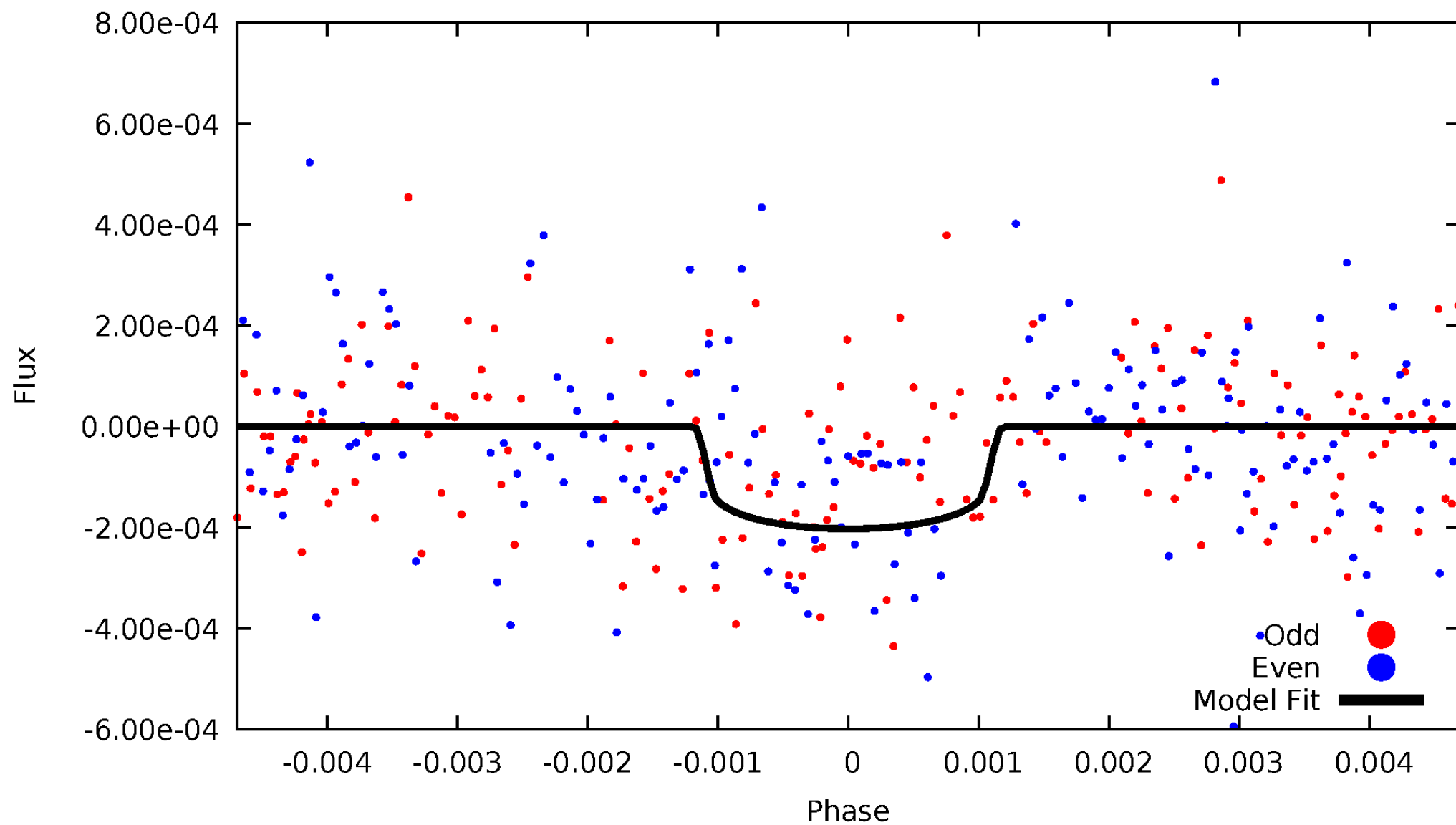


TCE 006057750-02



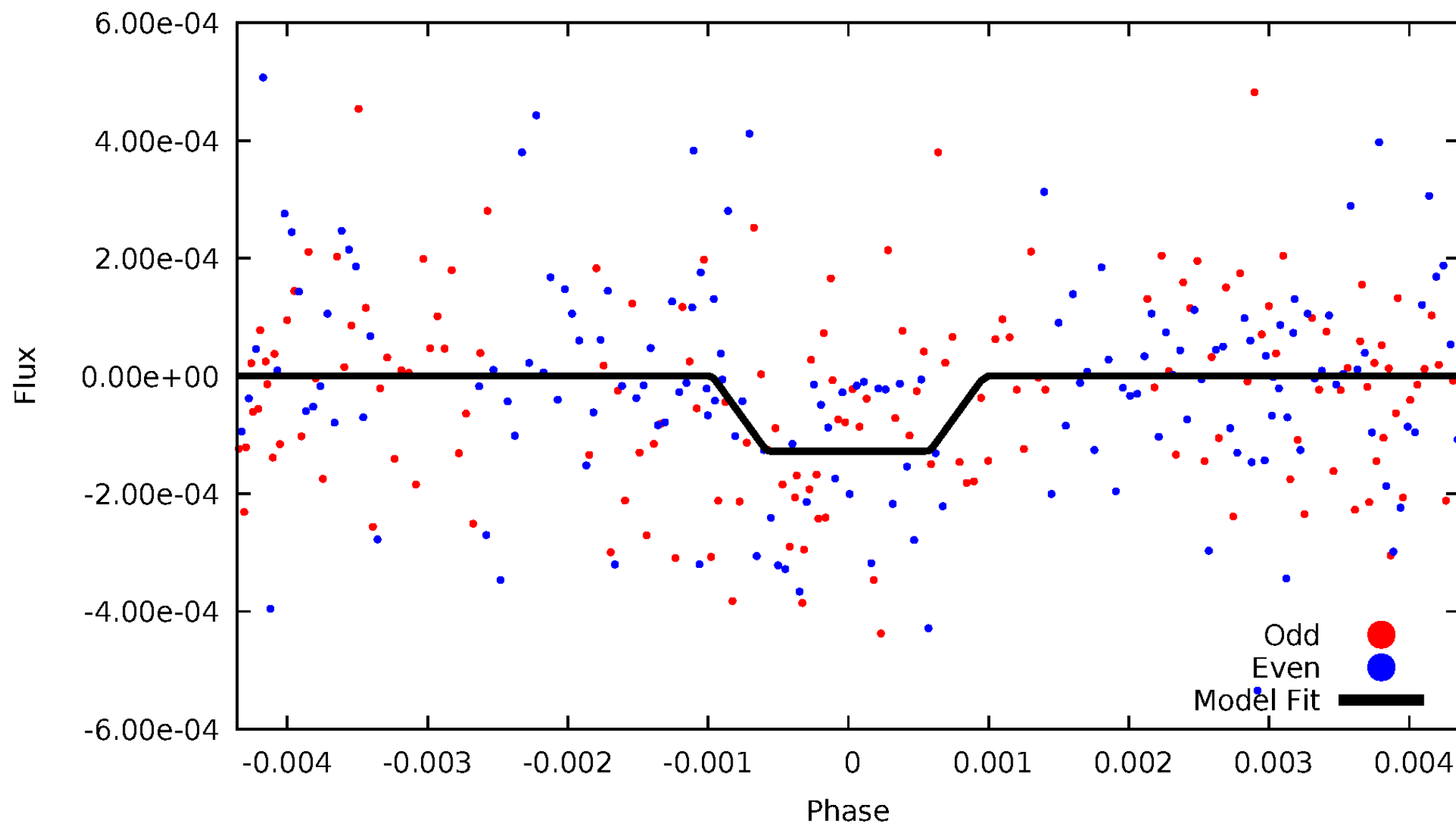
DV Odd/Even

TCE 006057750-02



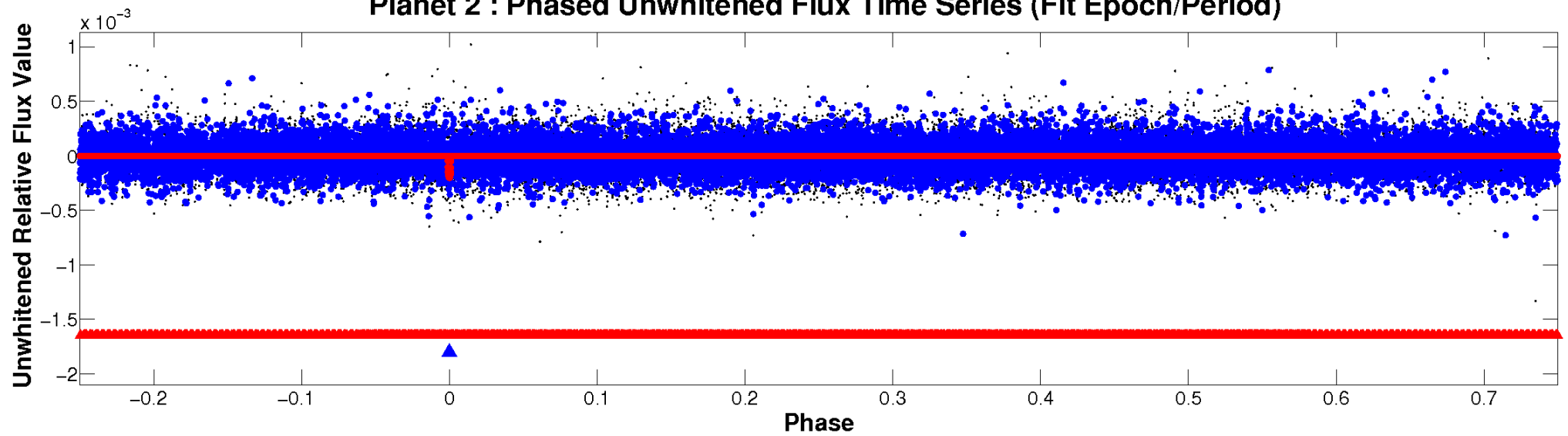
ALT Odd/Even

TCE 006057750-02

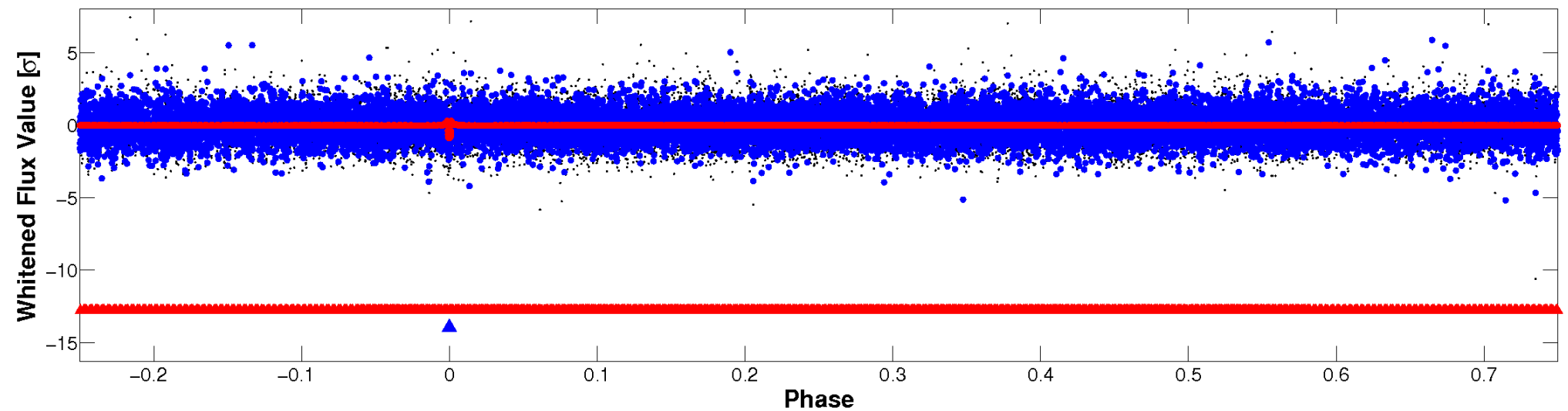


Non-Whitened Vs. Whitened Light Curve

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



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



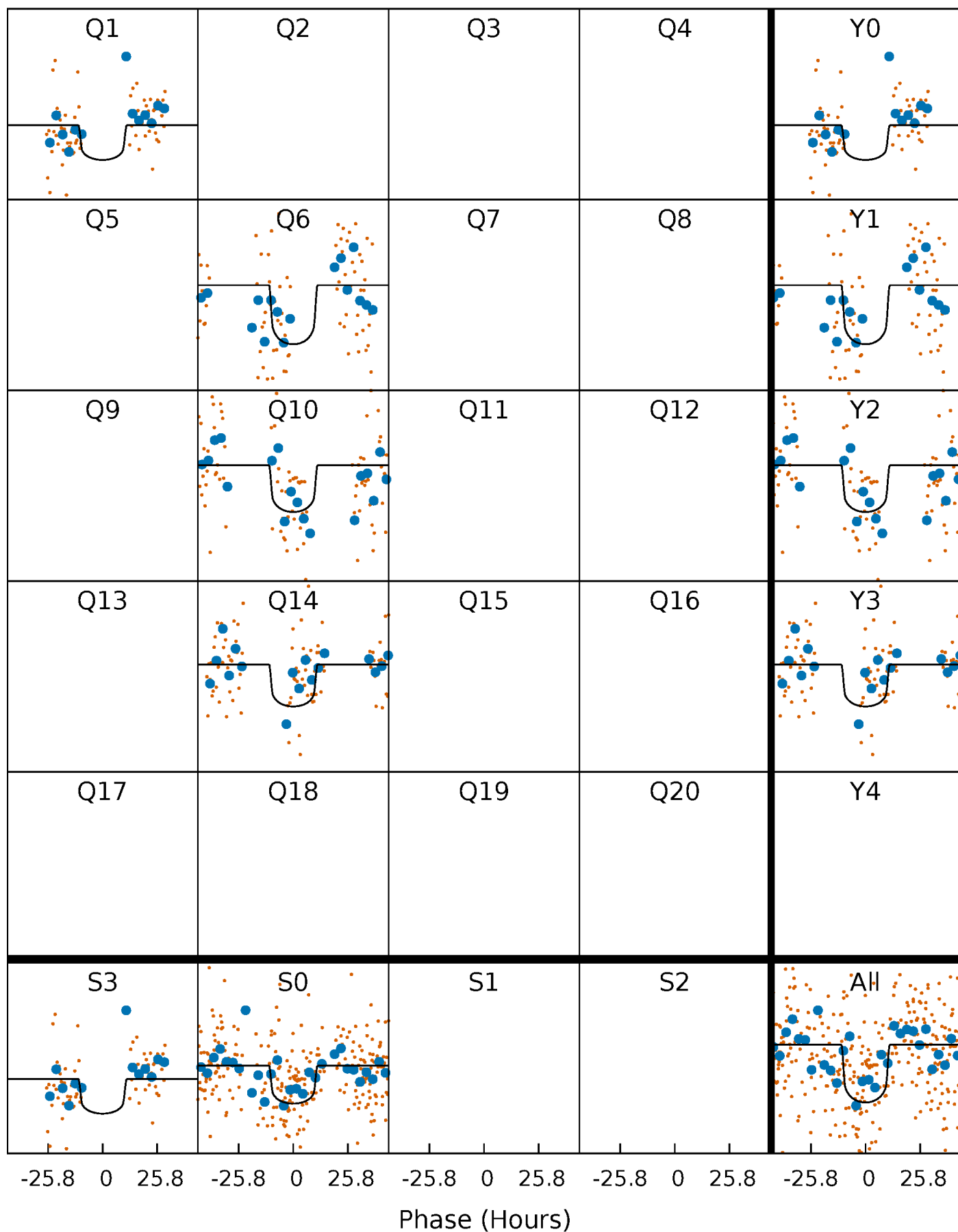
PDC Quarter-Phased Transit Curves

TCE 006057750-02 $P=400.603806$ Days $T_0=155.947882$ (BKJD)



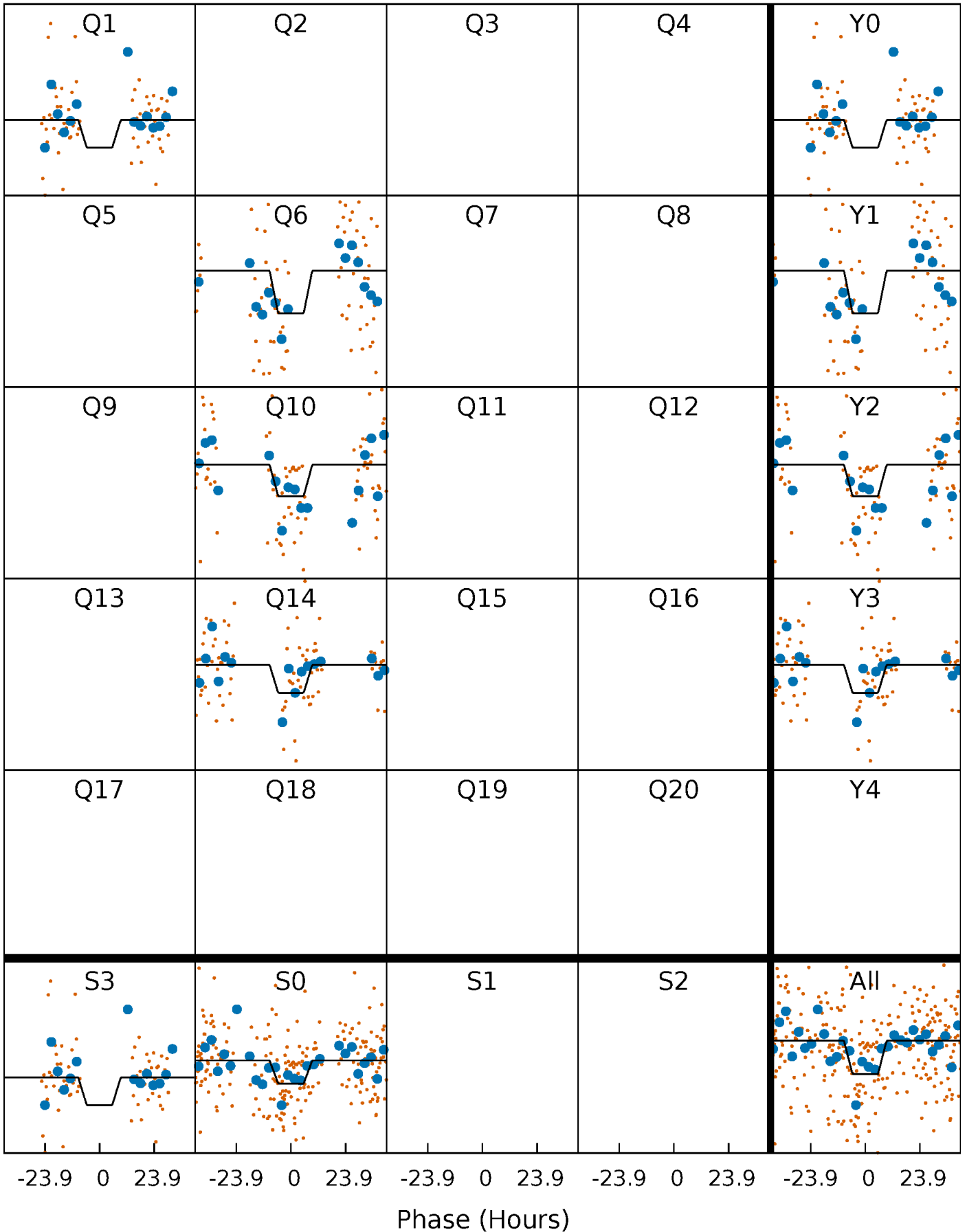
DV Quarter-Phased Transit Curves

TCE 006057750-02 P=400.603806 Days $T_0=155.947882$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

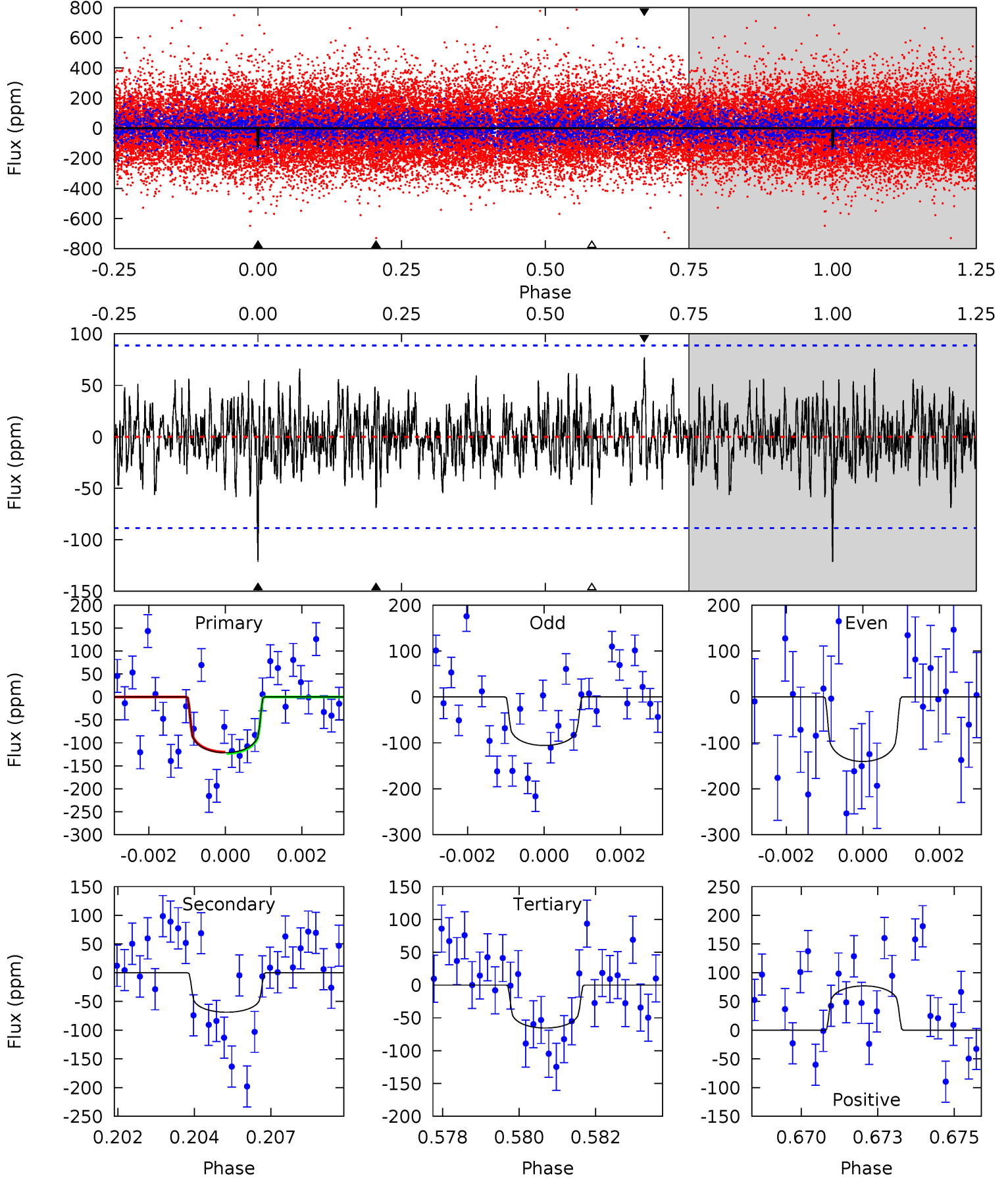
TCE 006057750-02 $P=400.634000$ Days $T_0=155.903179$ (BKJD)



DV Model-Shift Uniqueness Test

006057750-02, P = 400.603806 Days, E = 155.947882 Days

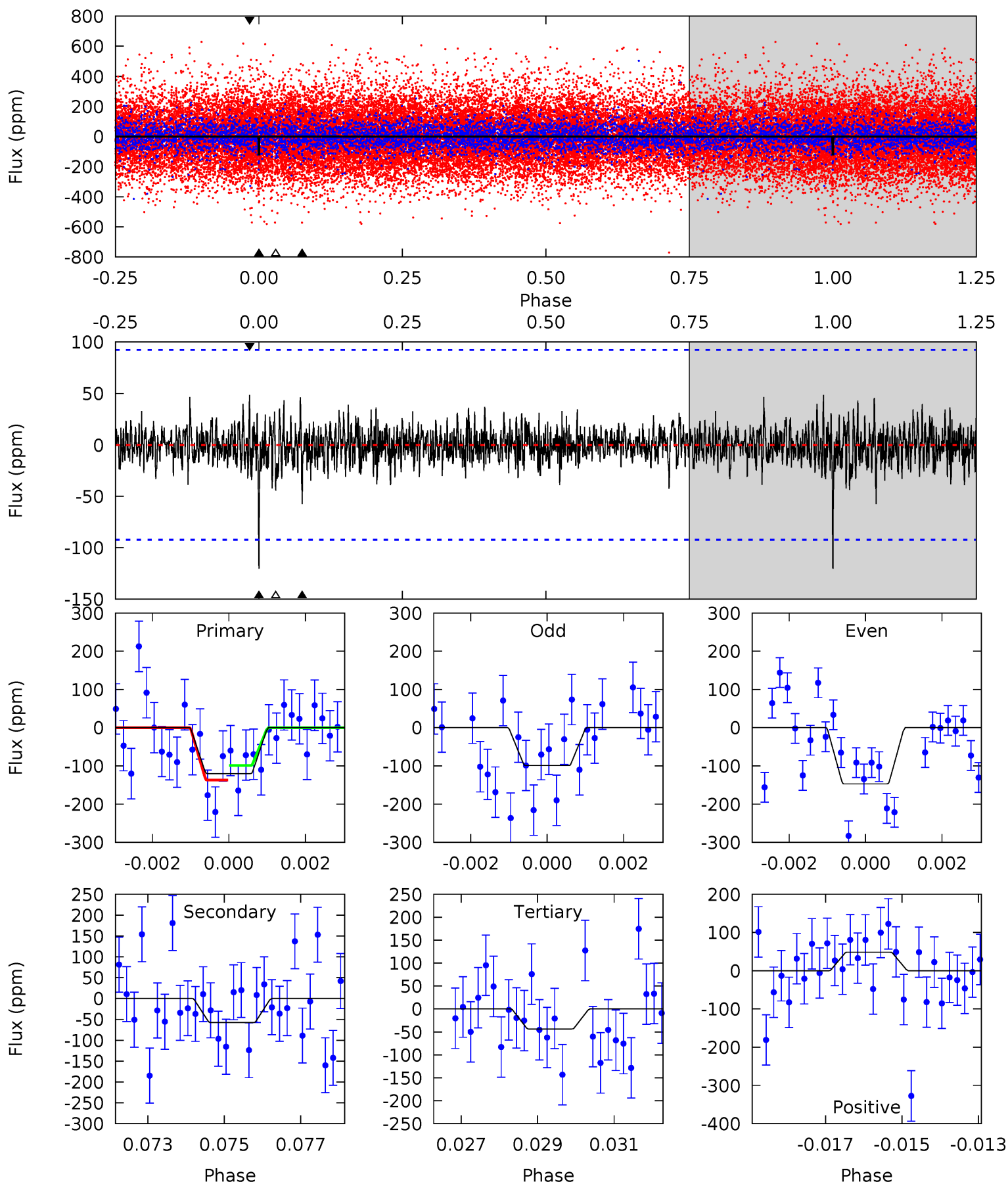
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.26	4.11	3.91	4.60	5.30	3.04	1.25	3.35	2.65	0.20	-0.50	1.04	0.90	0.39	0.09



Alt Model-Shift Uniqueness Test

006057750-02, $P = 400.634000$ Days, $E = 155.903179$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.94	3.32	2.52	2.80	5.33	3.10	0.73	4.43	4.15	0.80	0.52	1.40	0.97	0.29	1.08



Stellar Parameters For KIC 006057750

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6400^{+76}_{-76}	$3.877^{+0.165}_{-0.135}$	$0.560^{+0.050}_{-0.150}$	$2.512^{+0.599}_{-0.544}$	$1.732^{+0.172}_{-0.190}$	$0.154^{+0.141}_{-0.064}$
	+1%/-1%	+4%/-3%	+9%/-27%	+24%/-22%	+10%/-11%	+92%/-42%
Source	SPE90	SPE90	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 006057750-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-69 ± 17	$4.10^{+0.89}_{-0.86}$	552^{+30}_{-31}	4852^{+518}_{-426}	3712^{+2354}_{-1496}
Alt.	-57 ± 17	$3.11^{+0.85}_{-0.85}$	552^{+32}_{-31}	5273^{+786}_{-596}	5377^{+4936}_{-2531}

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 $A_{obs} \gg 1.0$

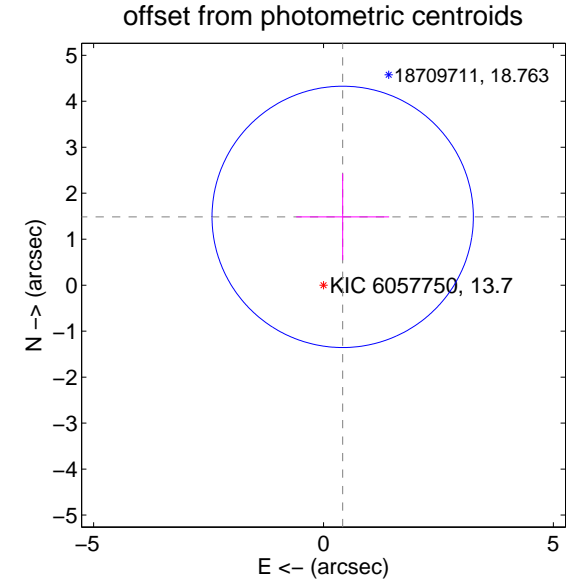
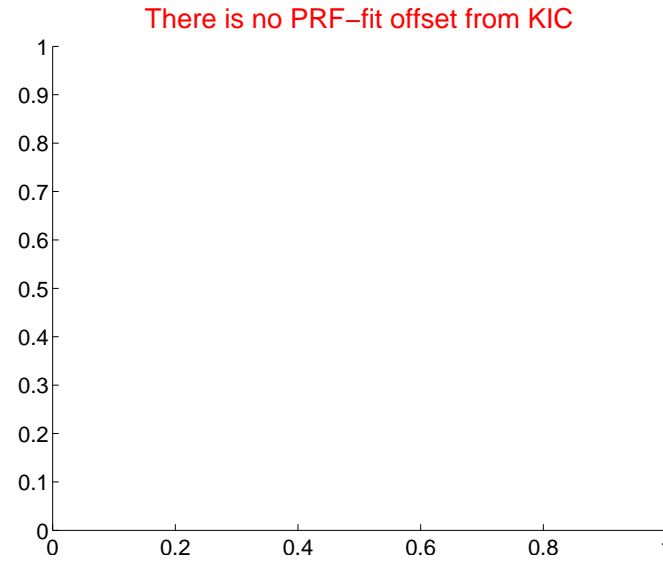
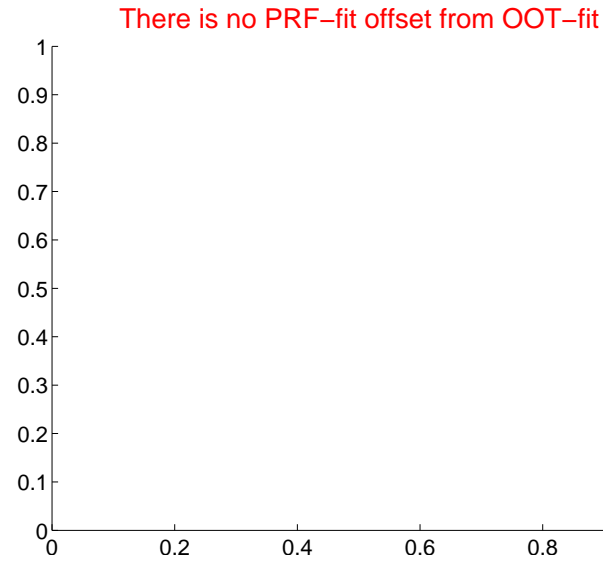
DV Centroid Data

Supplemental centroid analysis for 006057750-02. Kepler magnitude: 13.70. Transit SNR 7.33

There are 0 quarters with good PRF difference image offsets

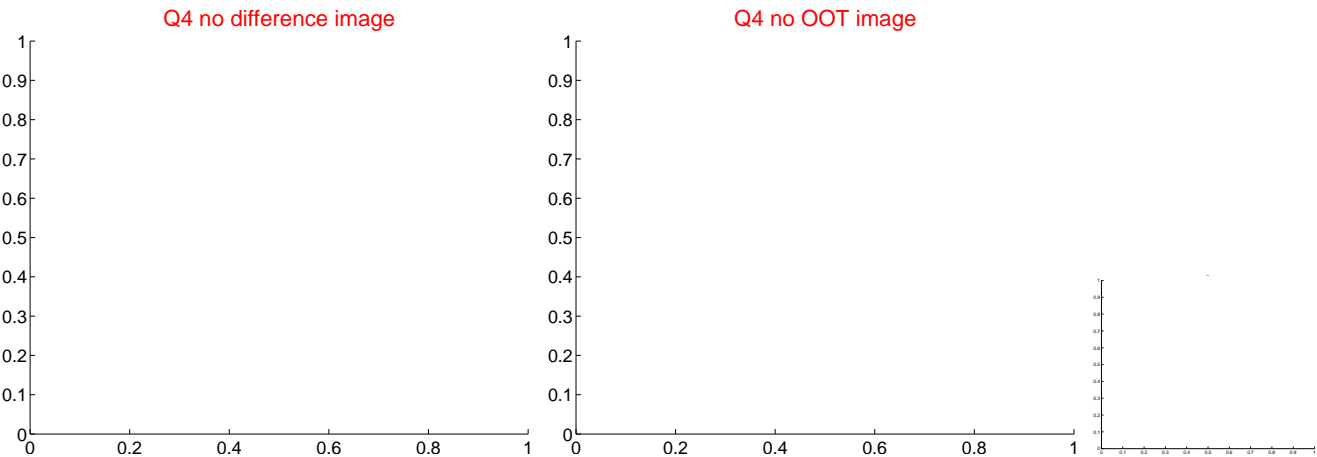
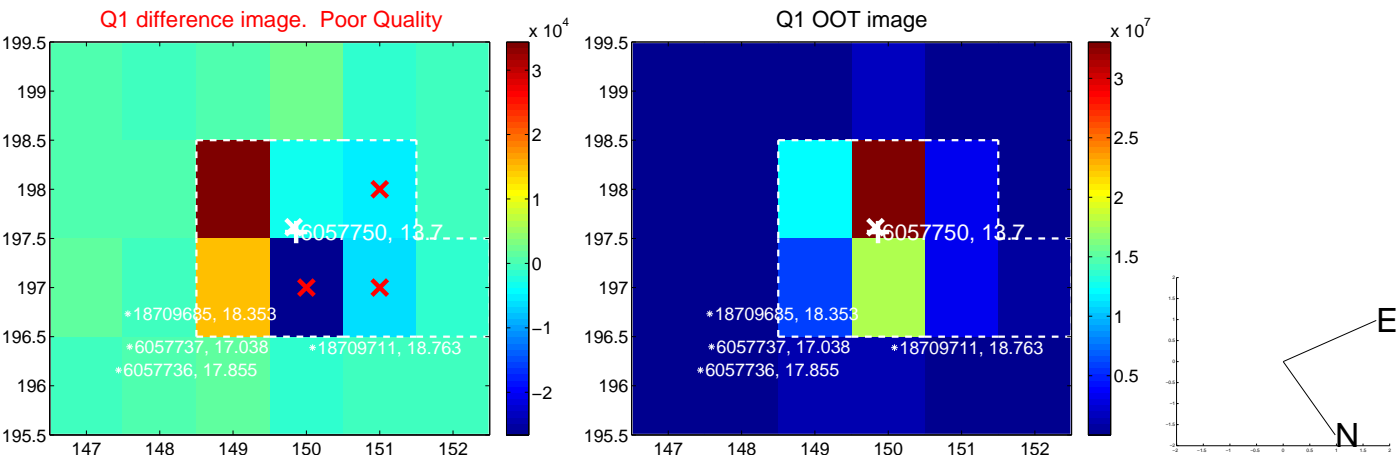
The direct PRF centroid is offset from the target star catalog position by about NaN arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	—	—	—	—
PRF-fit source offset from KIC position	—	—	—	—
photometric centroid source offset	1.54 ± 0.95	1.63	-0.42 ± 1.01	1.49 ± 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.

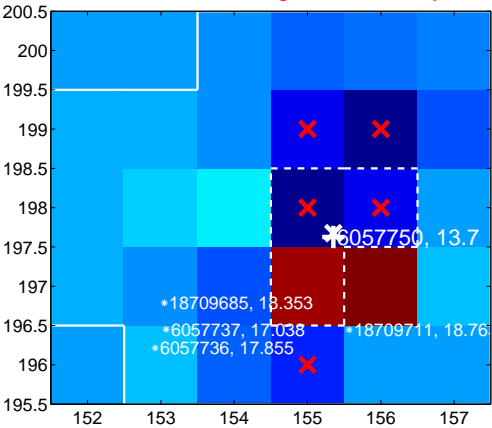
Q5 no difference image



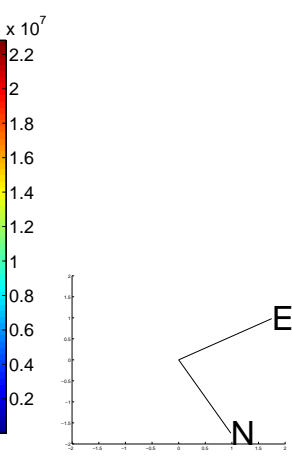
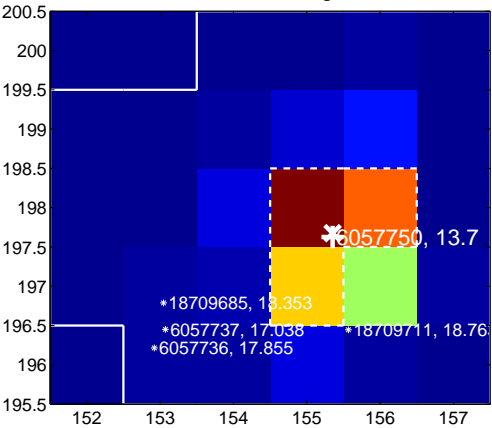
Q5 no OOT image



Q6 difference image. Poor Quality



Q6 OOT image



Q7 no difference image



Q7 no OOT image



Q8 no difference image



Q8 no OOT image



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

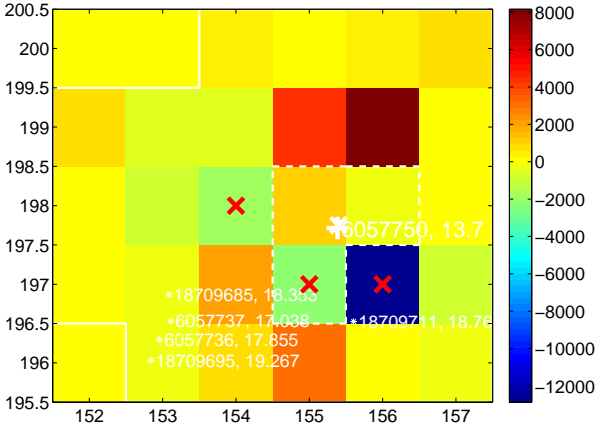
Q9 no difference image



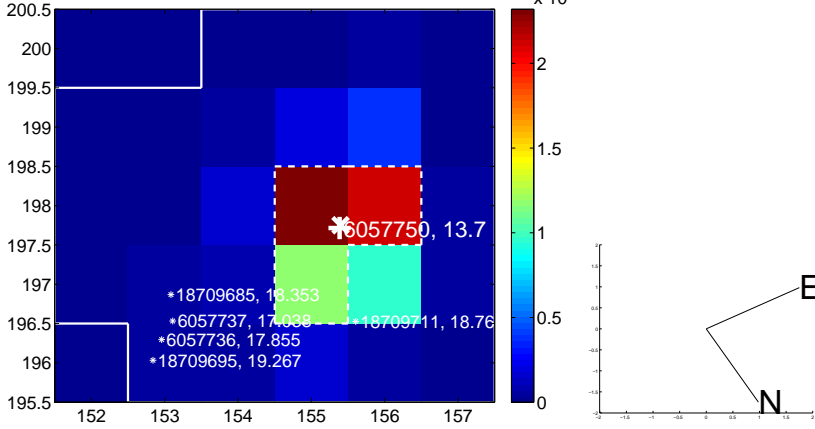
Q9 no OOT image



Q10 difference image. Poor Quality



Q10 OOT image



Q11 no difference image



Q11 no OOT image



Q12 no difference image

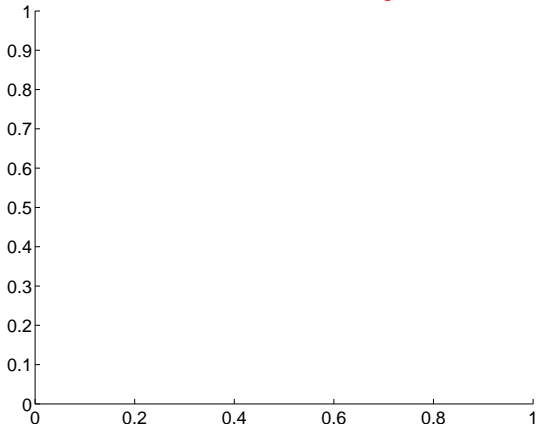


Q12 no OOT image



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

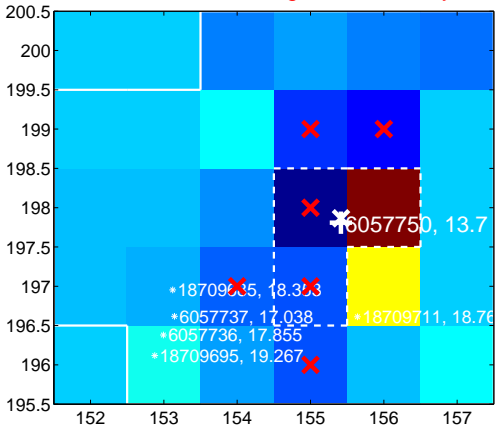
Q13 no difference image



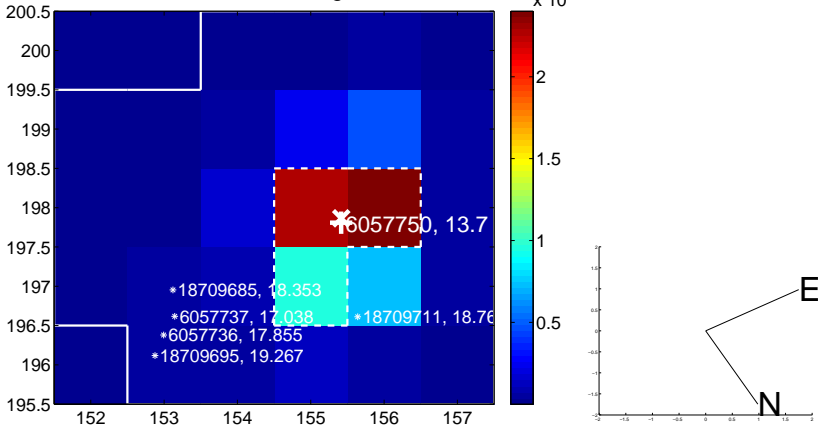
Q13 no OOT image



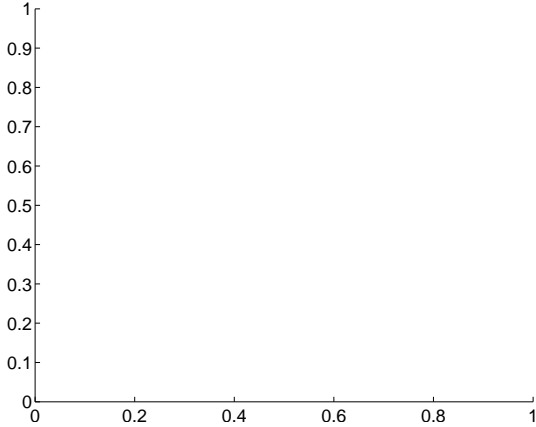
Q14 difference image. Poor Quality



Q14 OOT image



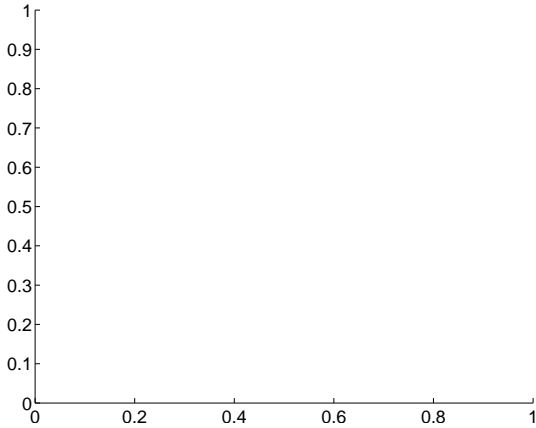
Q15 no difference image



Q15 no OOT image



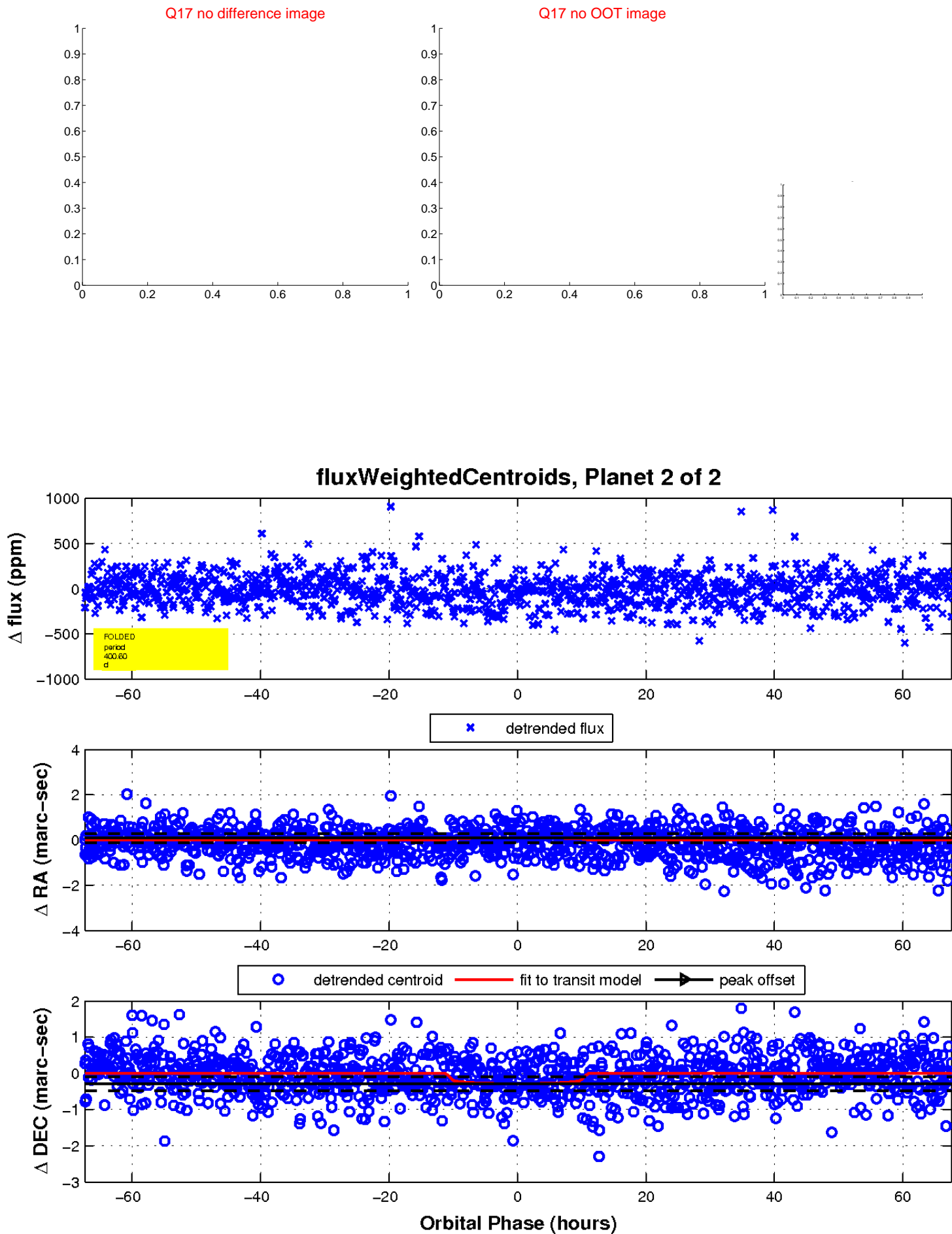
Q16 no difference image



Q16 no OOT image



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



UKIRT Image

Declination

