

KIC 005038469

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})
005038469-01	OBS	No	0.546128	131.604351	222.8	1.118	11.7	14.7	2.77	8939	4.80	146203.42
005038469-02	OBS	No	0.546166	131.875643	150.3	1.323	9.1	10.4	2.77	8939	3.65	146189.72

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005038469-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_KIC_POS
005038469-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—SAME_NTL_PERIOD—CENT_KIC_POS

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.

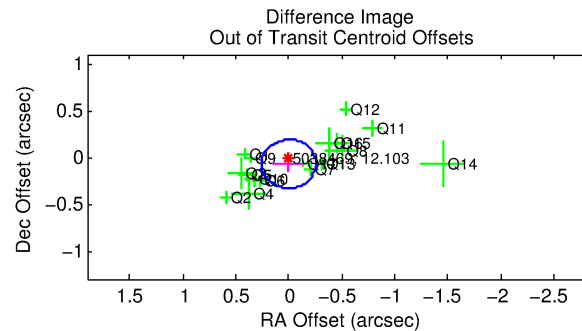
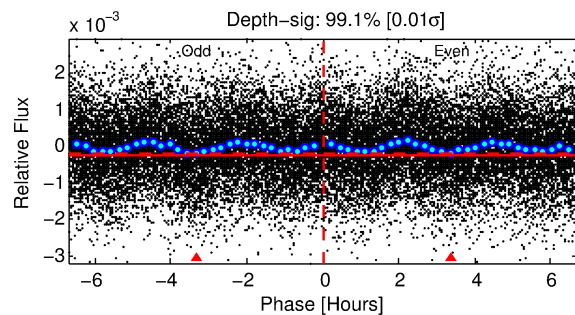
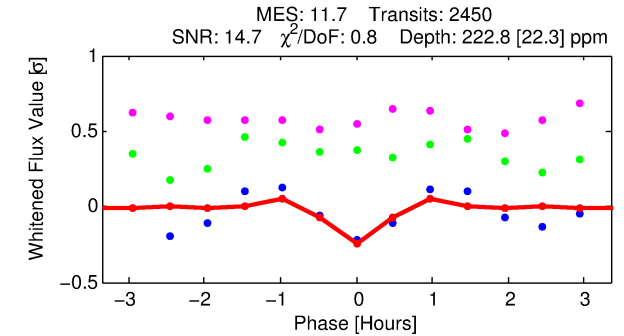
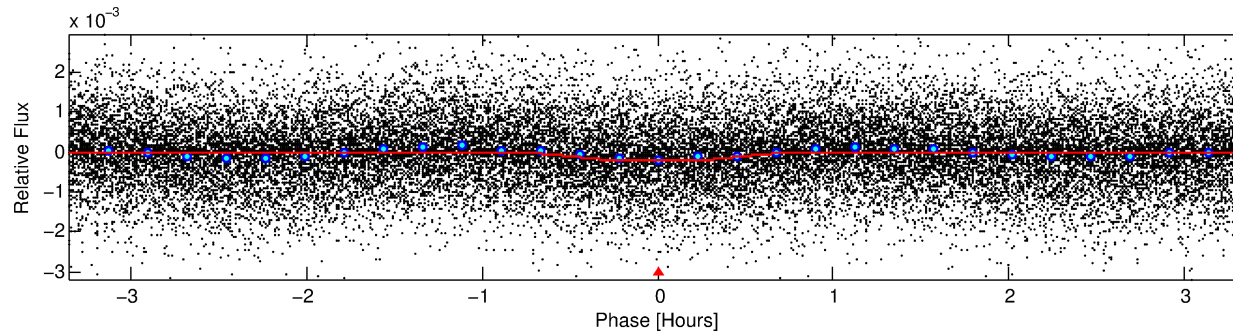
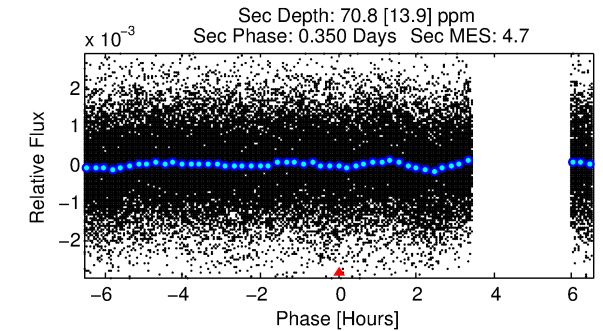
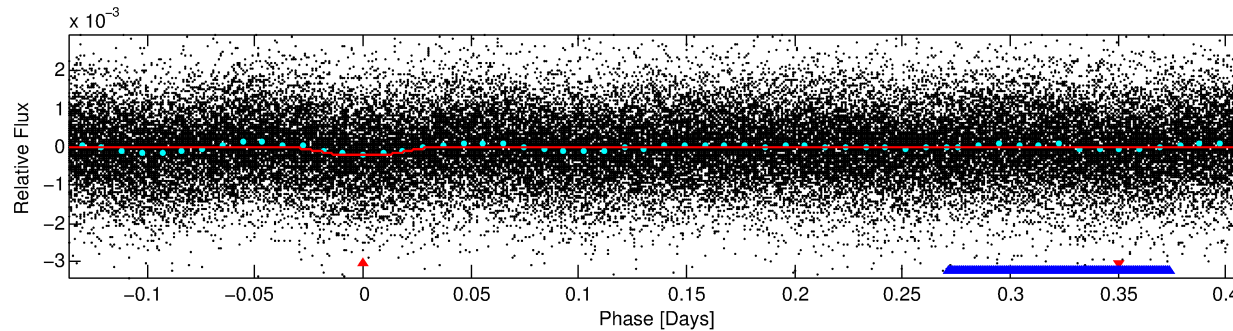
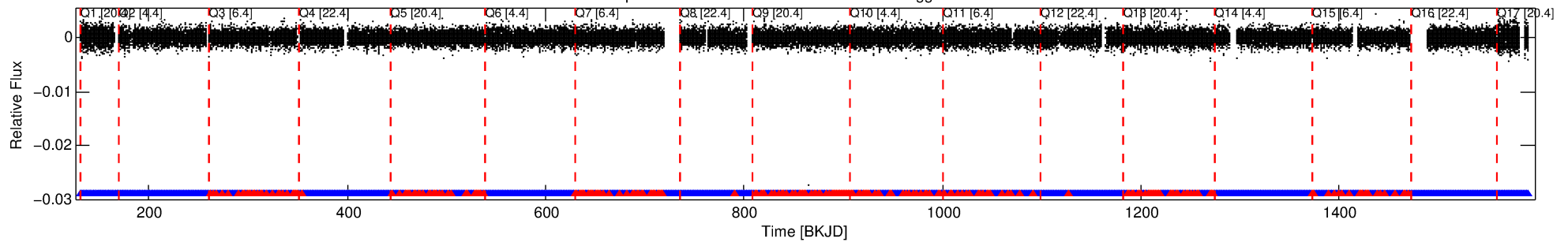
Ephemeris Match Information For 005038469-01

No Significant Match Found

DV One-Page Summary

KIC: 5038469 Candidate: 1 of 2 Period: 0.546 d
KOI: K06505 Corr: No Ephemeris Match

Kp: 12.10 R*: 2.77 Rs Teff: 8939.0 K Logg: 3.92 Fe/H: 0.070



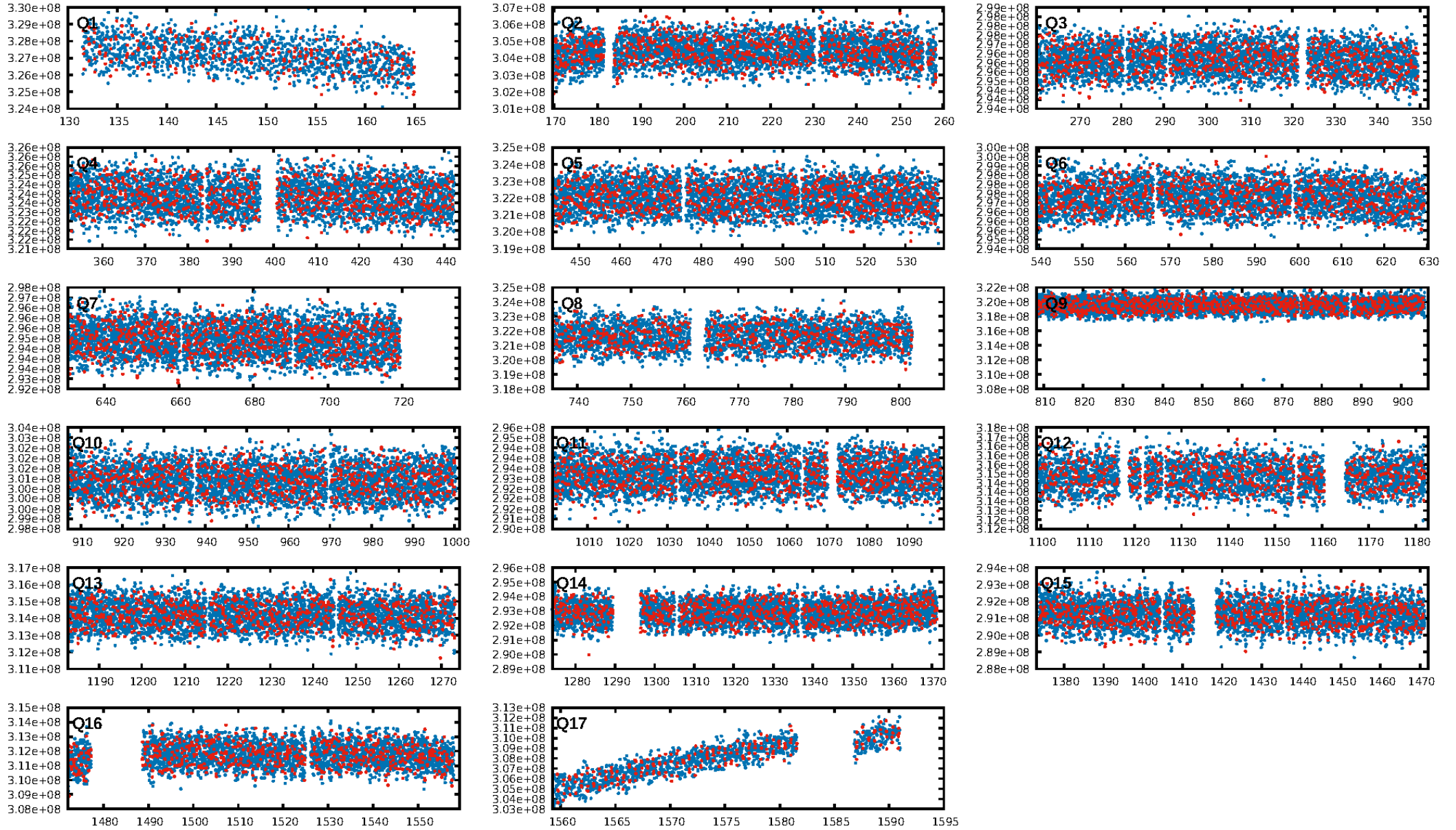
DV Fit Results:

Period = 0.54613 [0.00001] d
Epoch = 131.6044 [0.0009] BKJD
Rp/R* = 0.0159 [0.0030]
a/R* = 2.00 [1.96]
b = 0.90 [0.28]
Seff = 146203.42 [78849.53]
Teq = 4986 [672] K
Rp = 4.80 [2.02] Re
a = 0.0173 [0.0057] AU
Ag = 0.51 [0.33] [-1.47σ]
Teffp = 6511 [780] K [1.48σ]

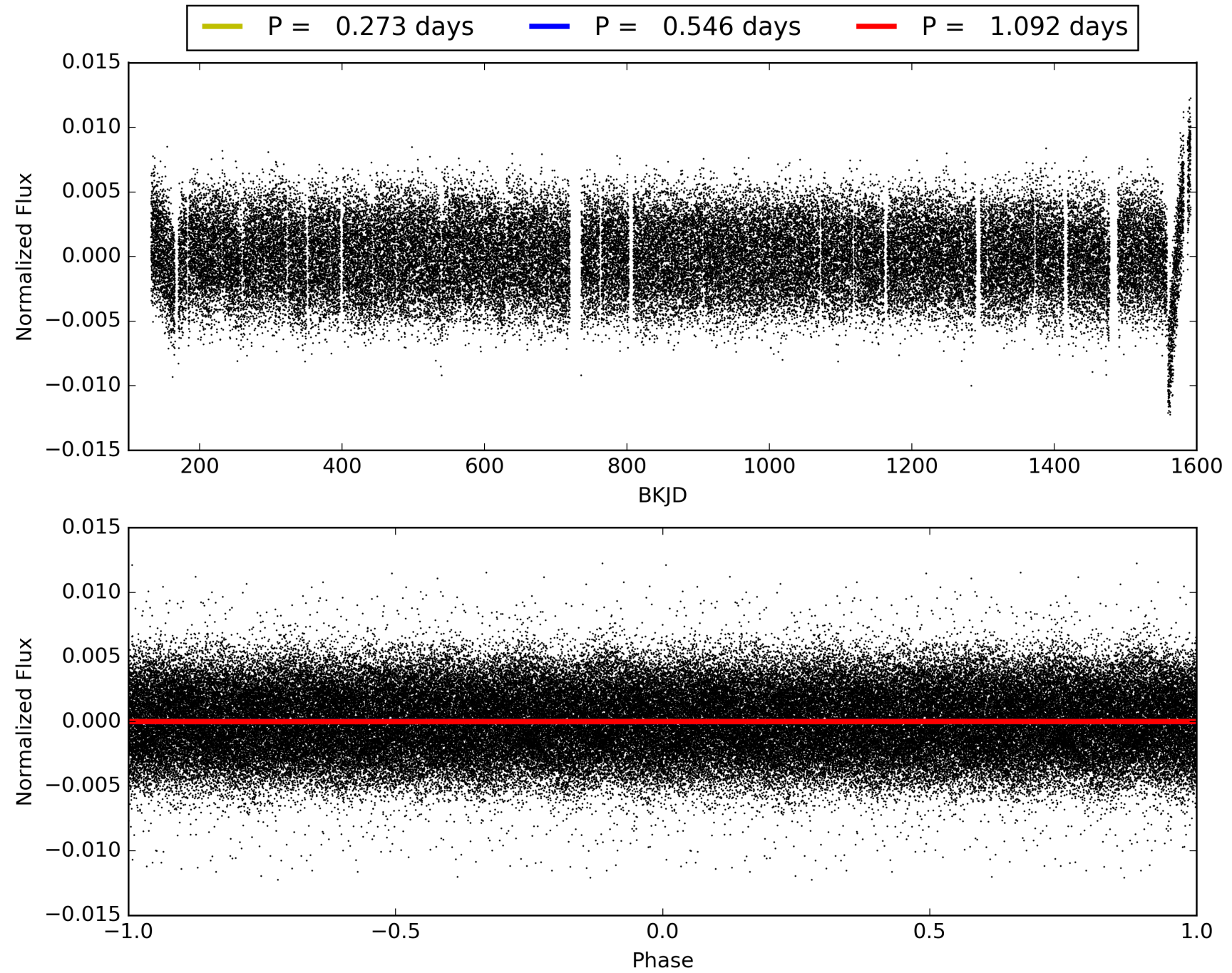
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 4.49e-22
RollingBand-fgt: 0.89 [2081/2339]
GhostDiagnostic-chr: 1.578
Centroid-sig: 0.0%
Centroid-so: 0.314 arcsec [2.87σ]
OotOffset-rm: 0.070 arcsec [0.82σ]
KicOffset-rm: 0.537 arcsec [5.53σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.82 [14/17]
DiffImageOverlap-fno: 0.29 [5/17]

TCE 005038469-01, PDC Light Curves

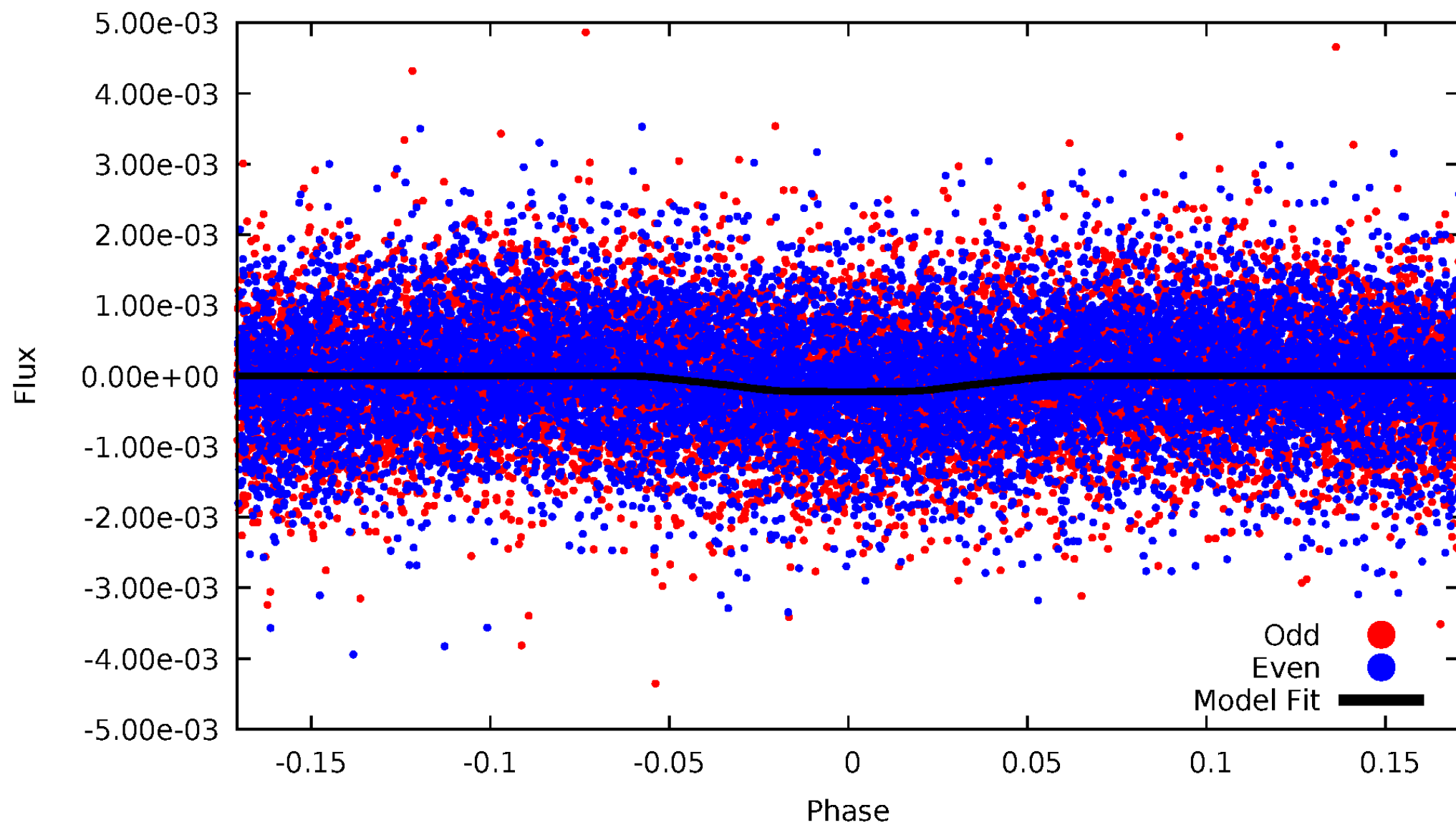


TCE 005038469-01



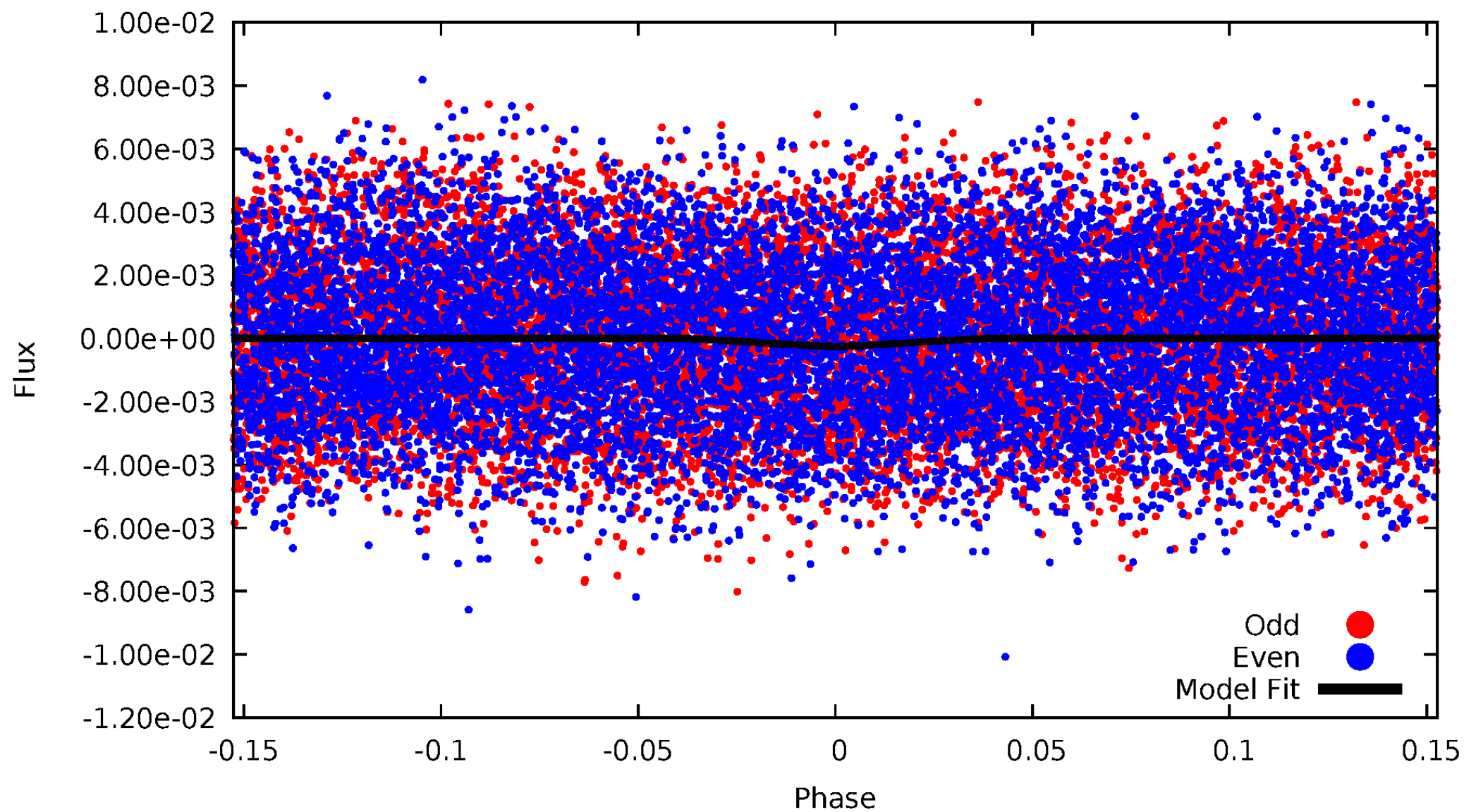
DV Odd/Even

TCE 005038469-01



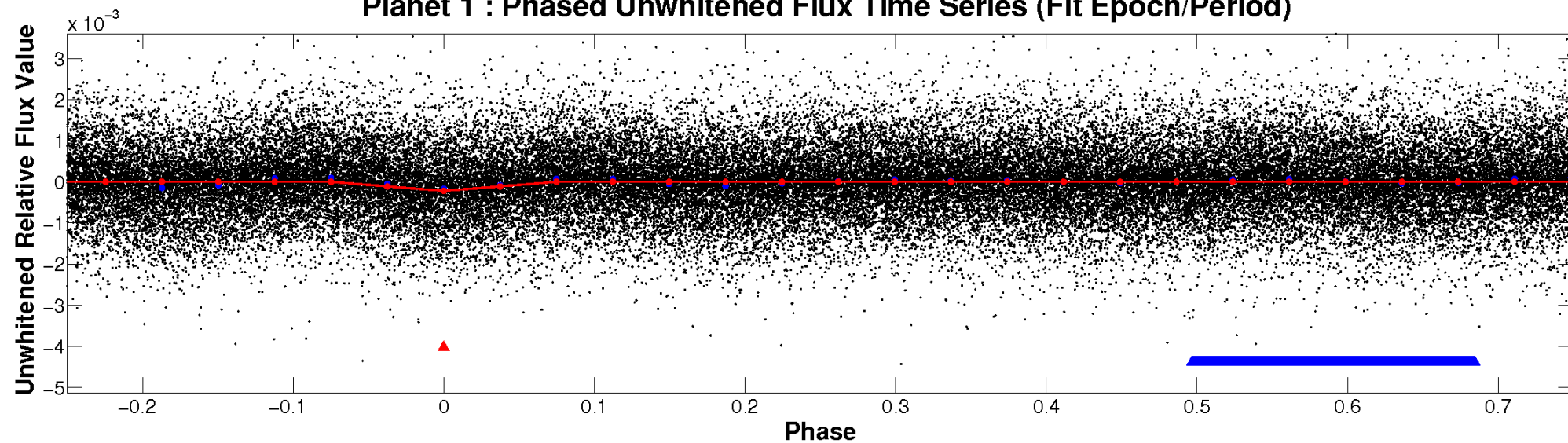
ALT Odd/Even

TCE 005038469-01

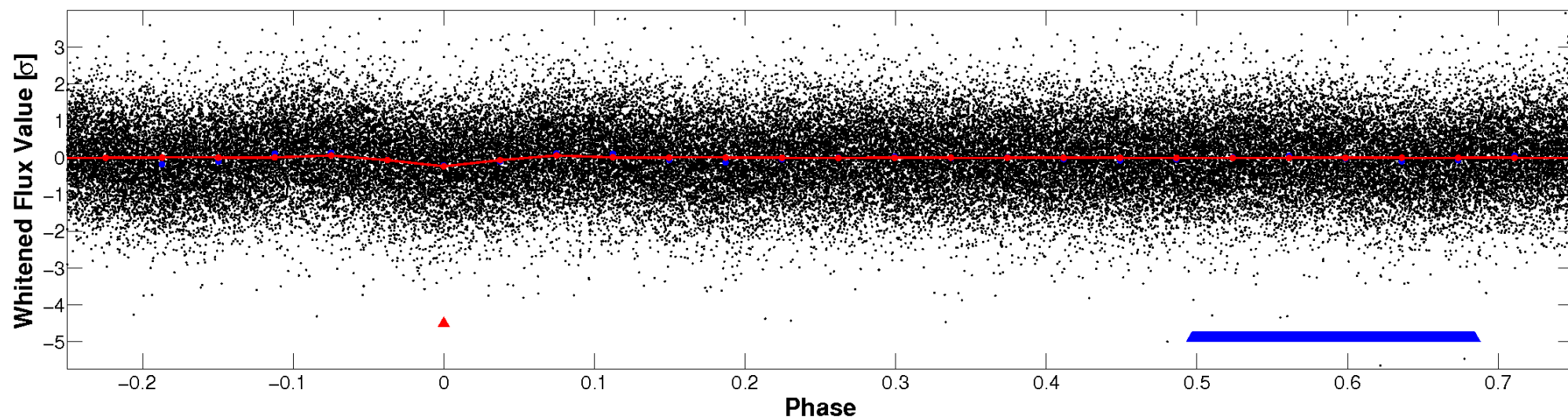


Non-Whitened Vs. Whitened Light Curve

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

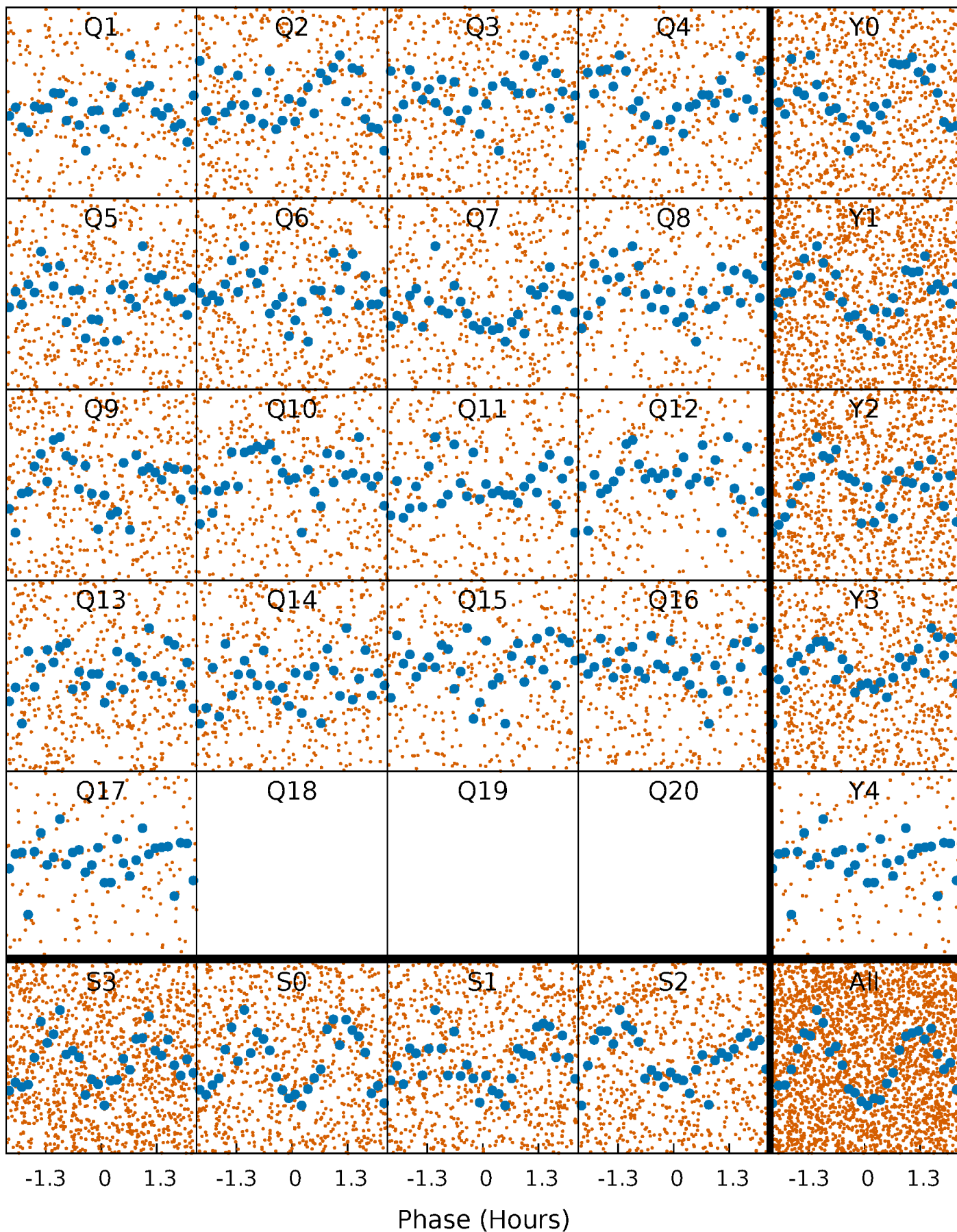


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



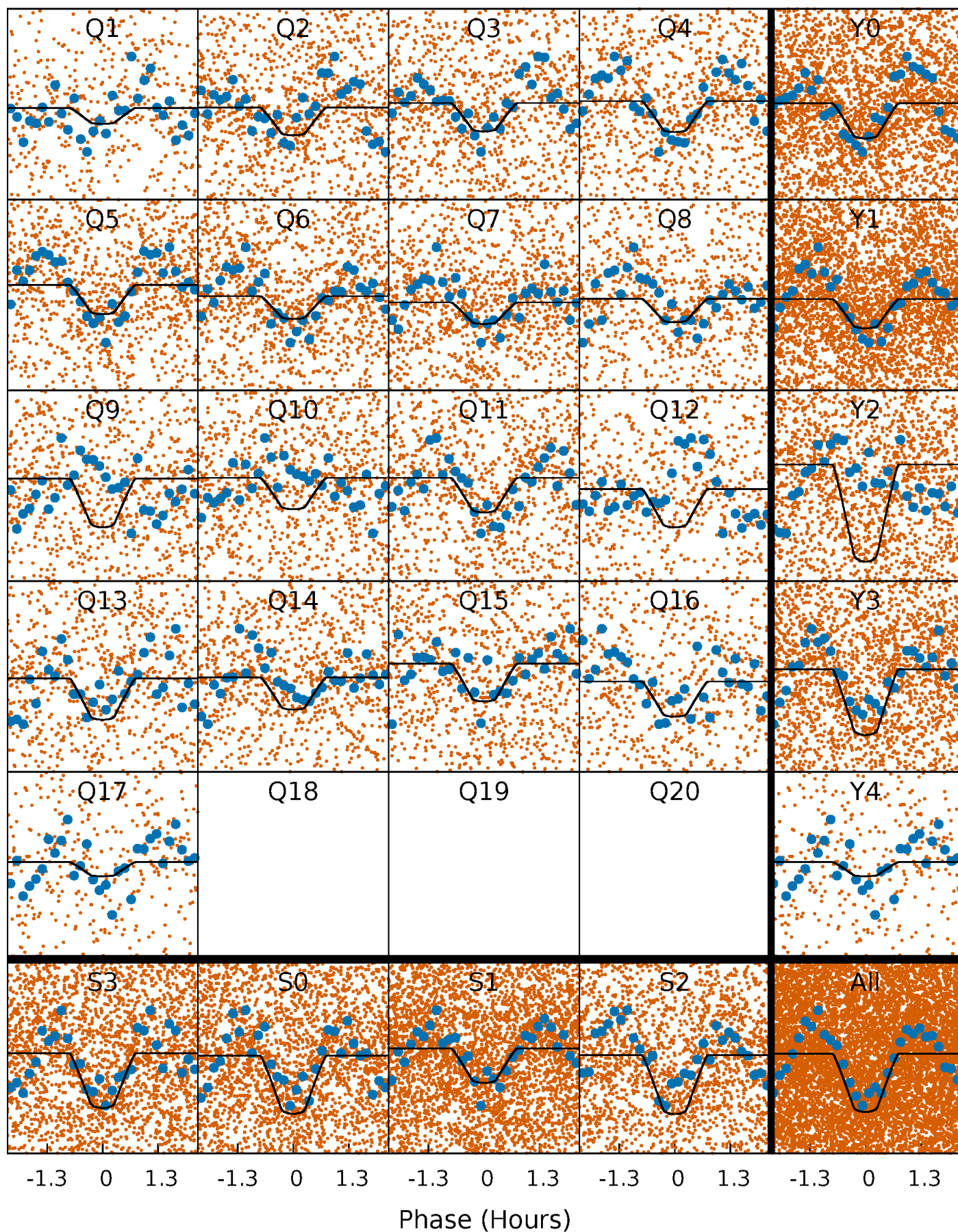
PDC Quarter-Phased Transit Curves

TCE 005038469-01 P= 0.546128 Days $T_0=131.604352$ (BKJD)



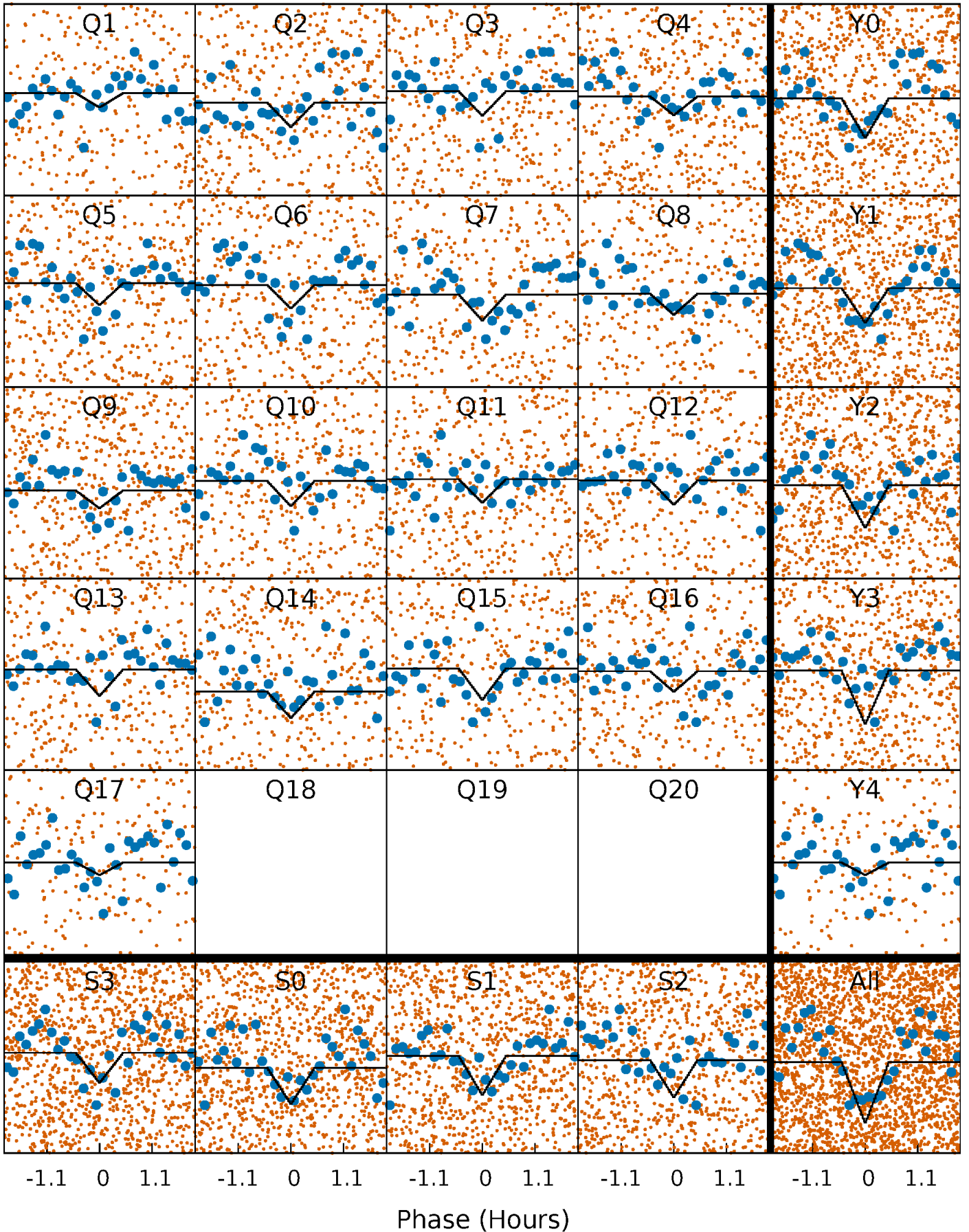
DV Quarter-Phased Transit Curves

TCE 005038469-01 P= 0.546128 Days $T_0=131.604352$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

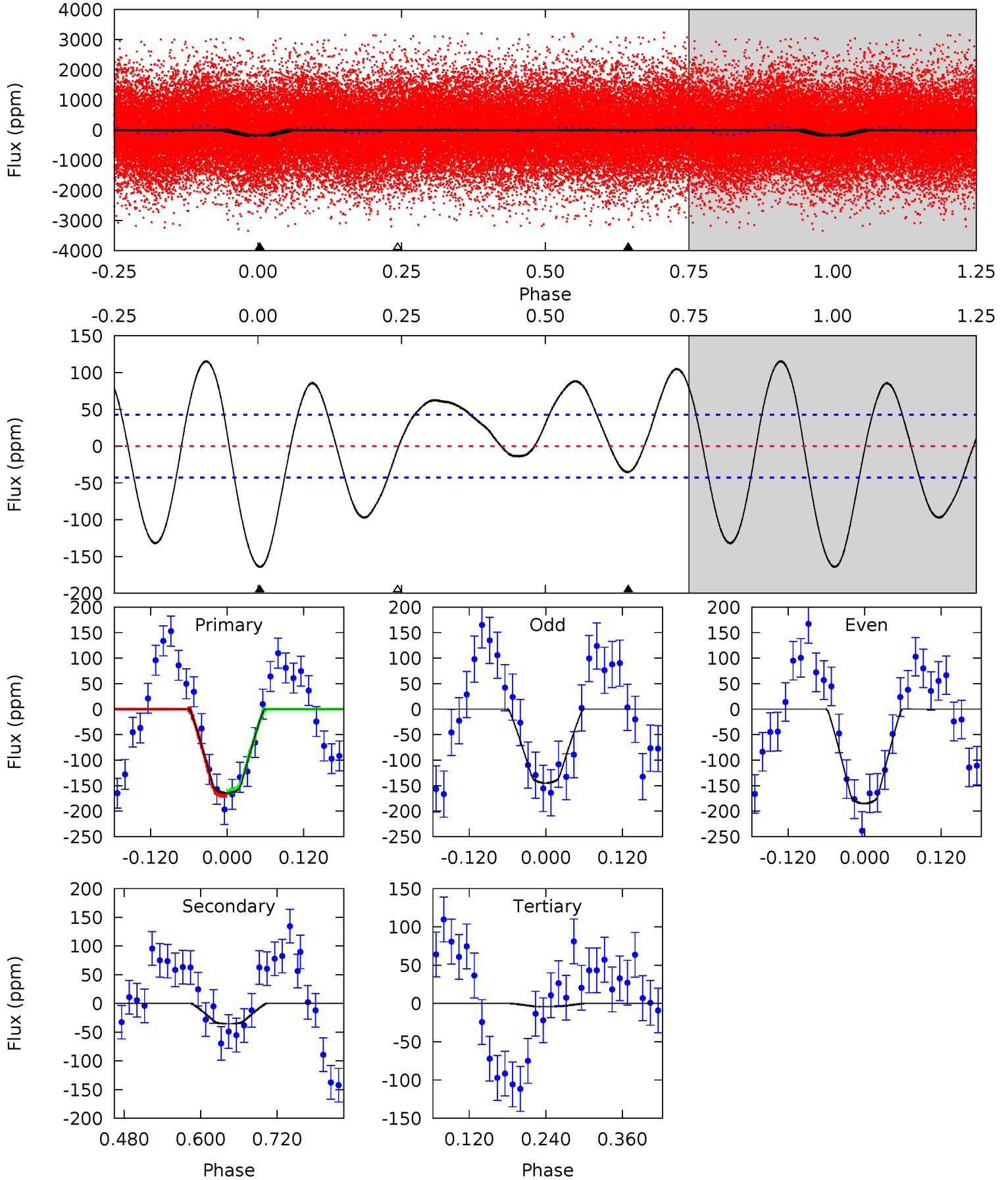
TCE 005038469-01 P= 0.546131 Days $T_0=131.604110$ (BKJD)



DV Model-Shift Uniqueness Test

005038469-01, P = 0.546128 Days, E = 131.058224 Days

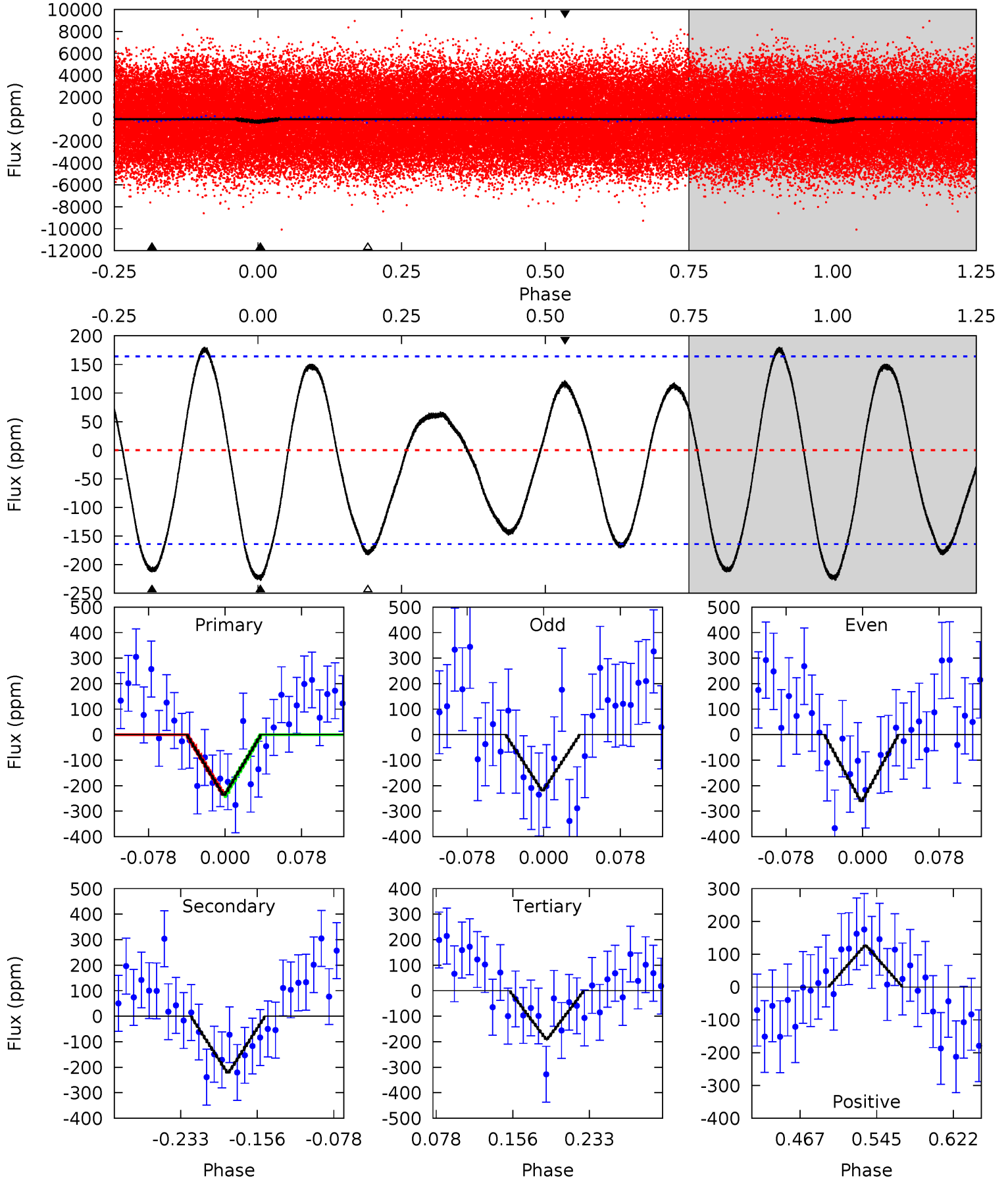
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
17.4	3.74	0.44	0	4.53	1.55	6.10	16.9	17.4	3.30	3.74	2.13	1.03	0.41	0.39



Alt Model-Shift Uniqueness Test

005038469-01, P = 0.546131 Days, E = 131.057979 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.43	6.01	5.16	3.45	4.62	1.76	2.84	1.27	2.98	0.85	2.56	0.57	0.76	0.44	0.25



Stellar Parameters For KIC 005038469

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	8939^{+215}_{-466}	$3.920^{+0.280}_{-0.151}$	$0.070^{+0.250}_{-0.650}$	$2.773^{+0.852}_{-1.041}$	$2.333^{+0.319}_{-0.744}$	$0.154^{+0.340}_{-0.073}$
	+2%/-5%	+7%/-4%	+357%/-929%	+31%/-38%	+14%/-32%	+220%/-48%
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 005038469-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-35 ± 9	$4.55^{+1.25}_{-1.23}$	6803^{+523}_{-671}	-3417^{+8076}_{-1305}	$0.270^{+0.231}_{-0.113}$
Alt.	-213 ± 36	$4.65^{+1.26}_{-1.23}$	6763^{+584}_{-656}	7703^{+1486}_{-1130}	$1.624^{+1.270}_{-0.667}$

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

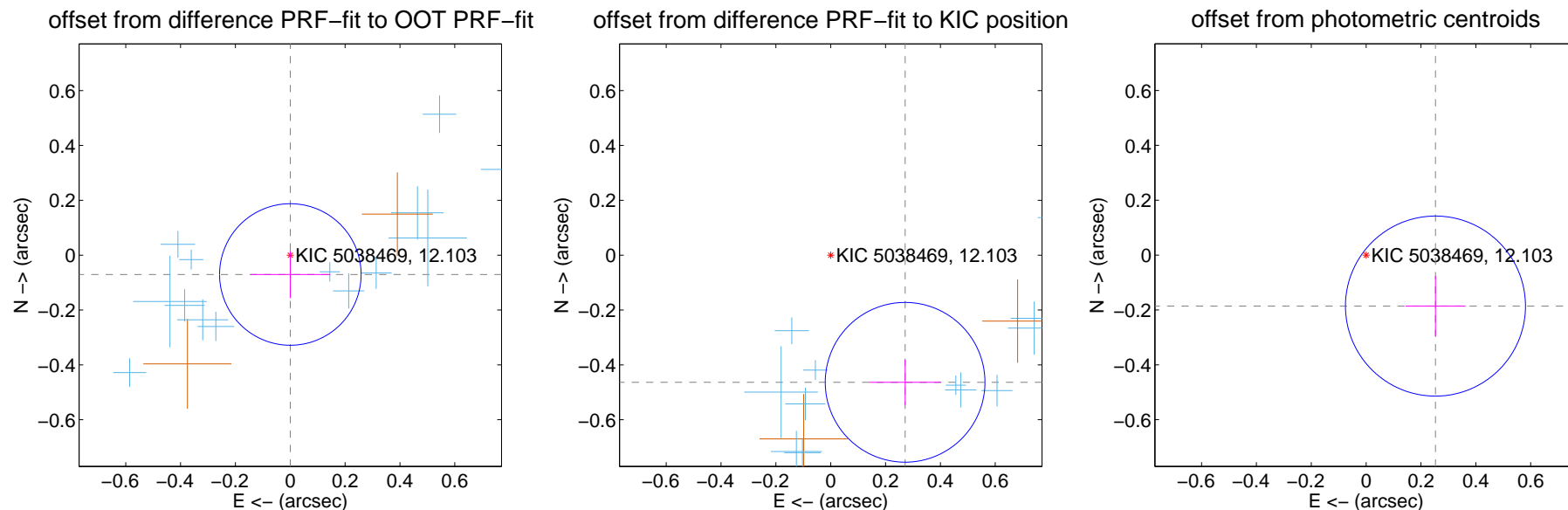
DV Centroid Data

Supplemental centroid analysis for 005038469-01. Kepler magnitude: 12.10. Transit SNR 14.73

There are 14 quarters with good PRF difference image offsets

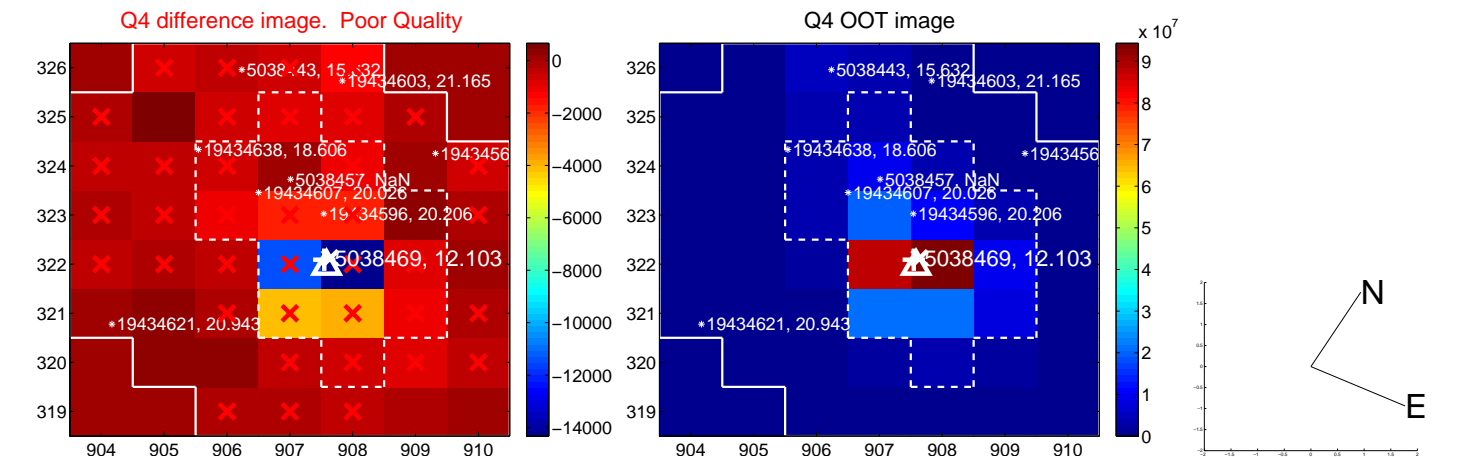
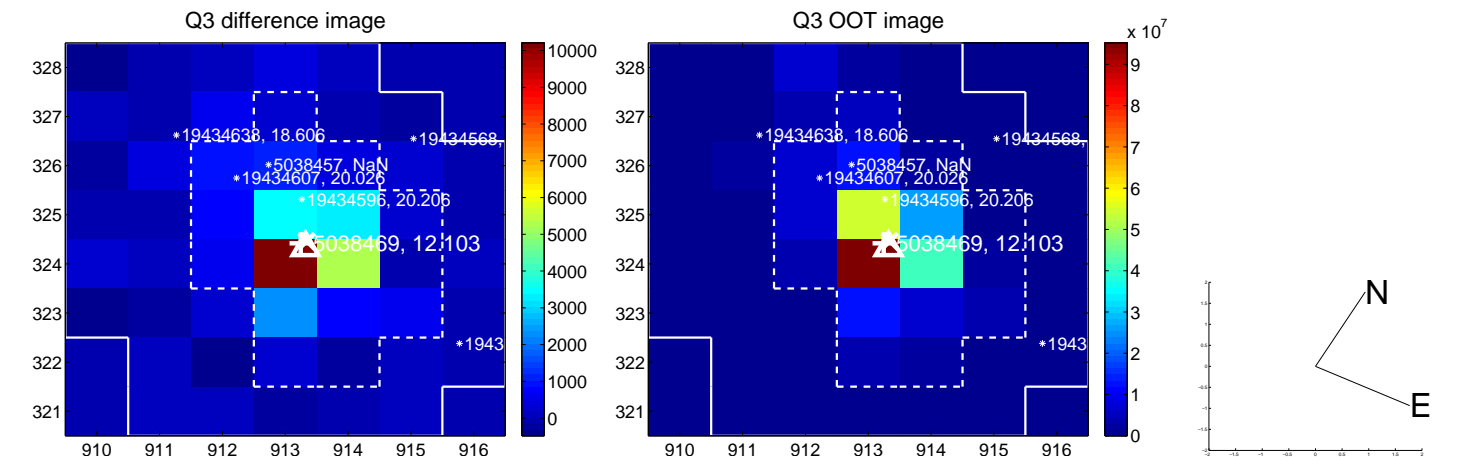
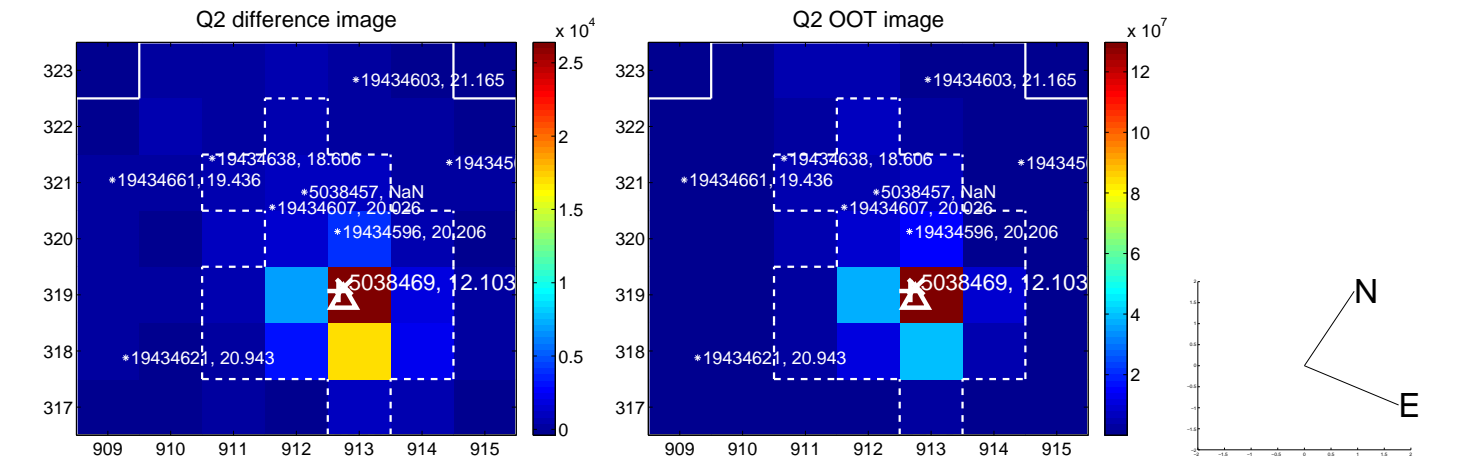
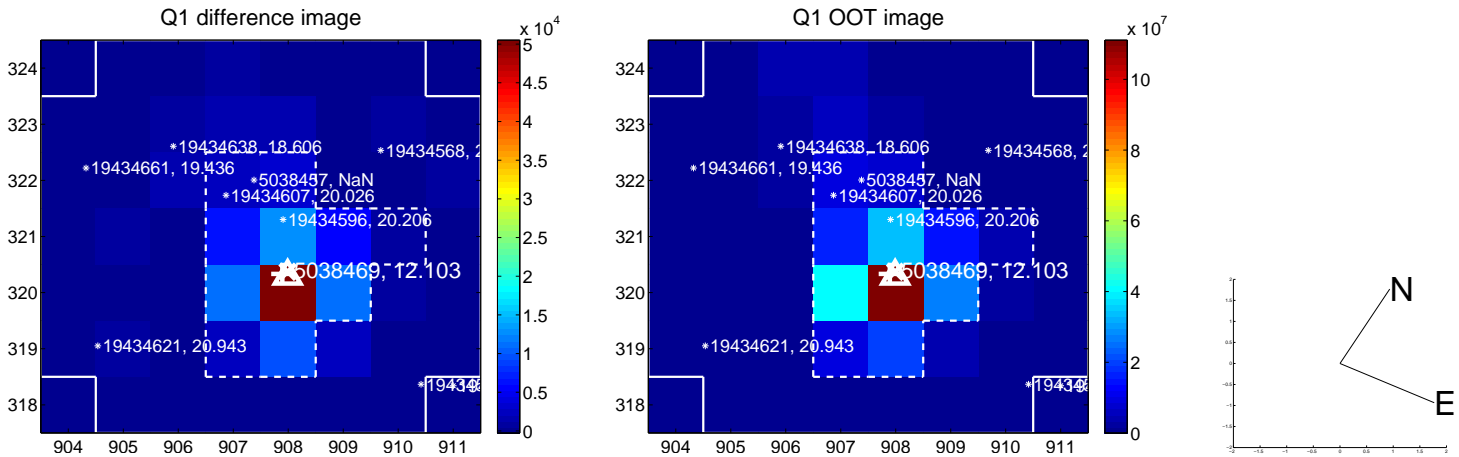
The direct PRF centroid is offset from the target star catalog position by about 0.52 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.070 ± 0.086	0.82	-0.000 ± 0.146	-0.070 ± 0.086
PRF-fit source offset from KIC position	0.537 ± 0.097	5.53	-0.271 ± 0.131	-0.464 ± 0.082
photometric centroid source offset	0.31 ± 0.11	2.87	-0.25 ± 0.11	-0.19 ± 0.11

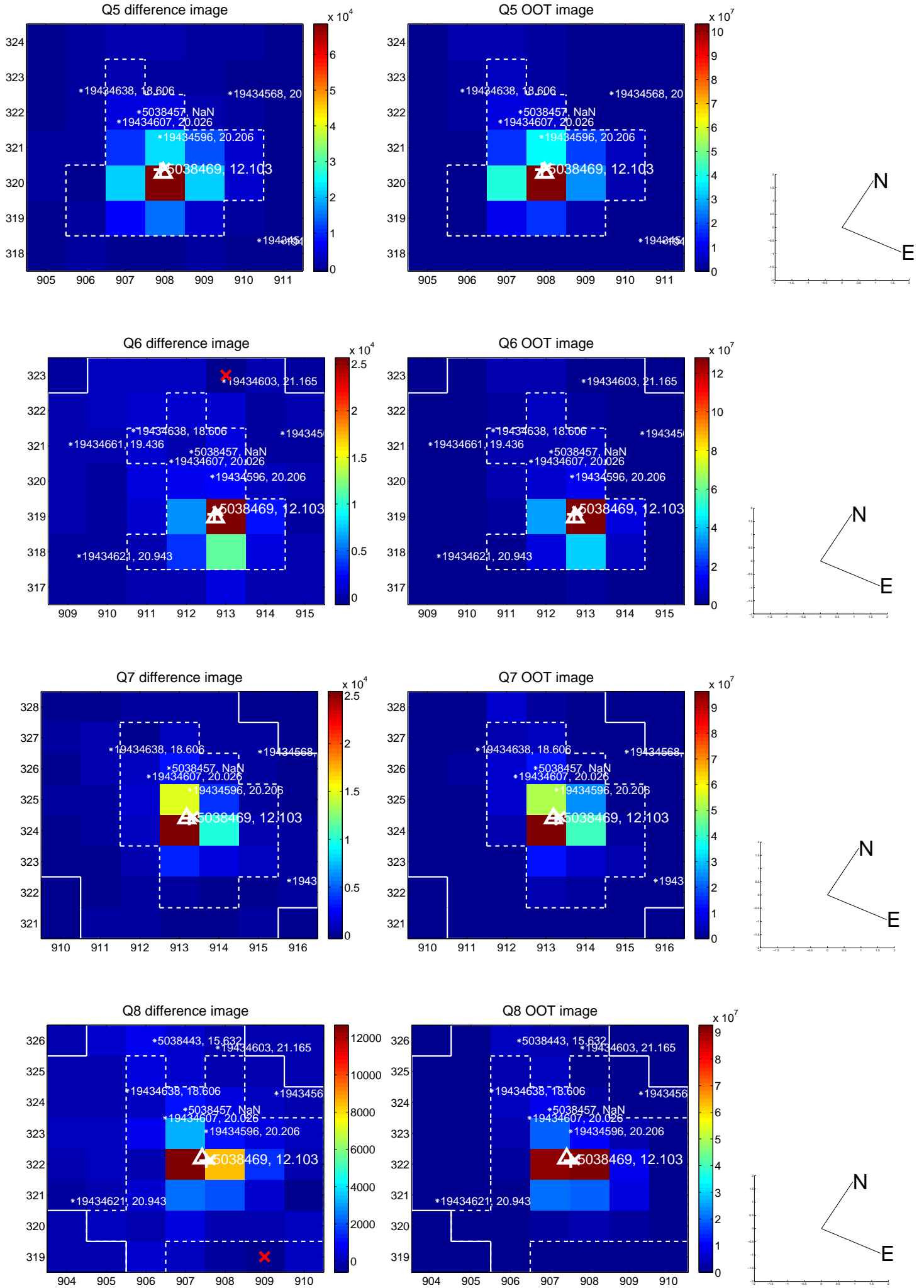


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

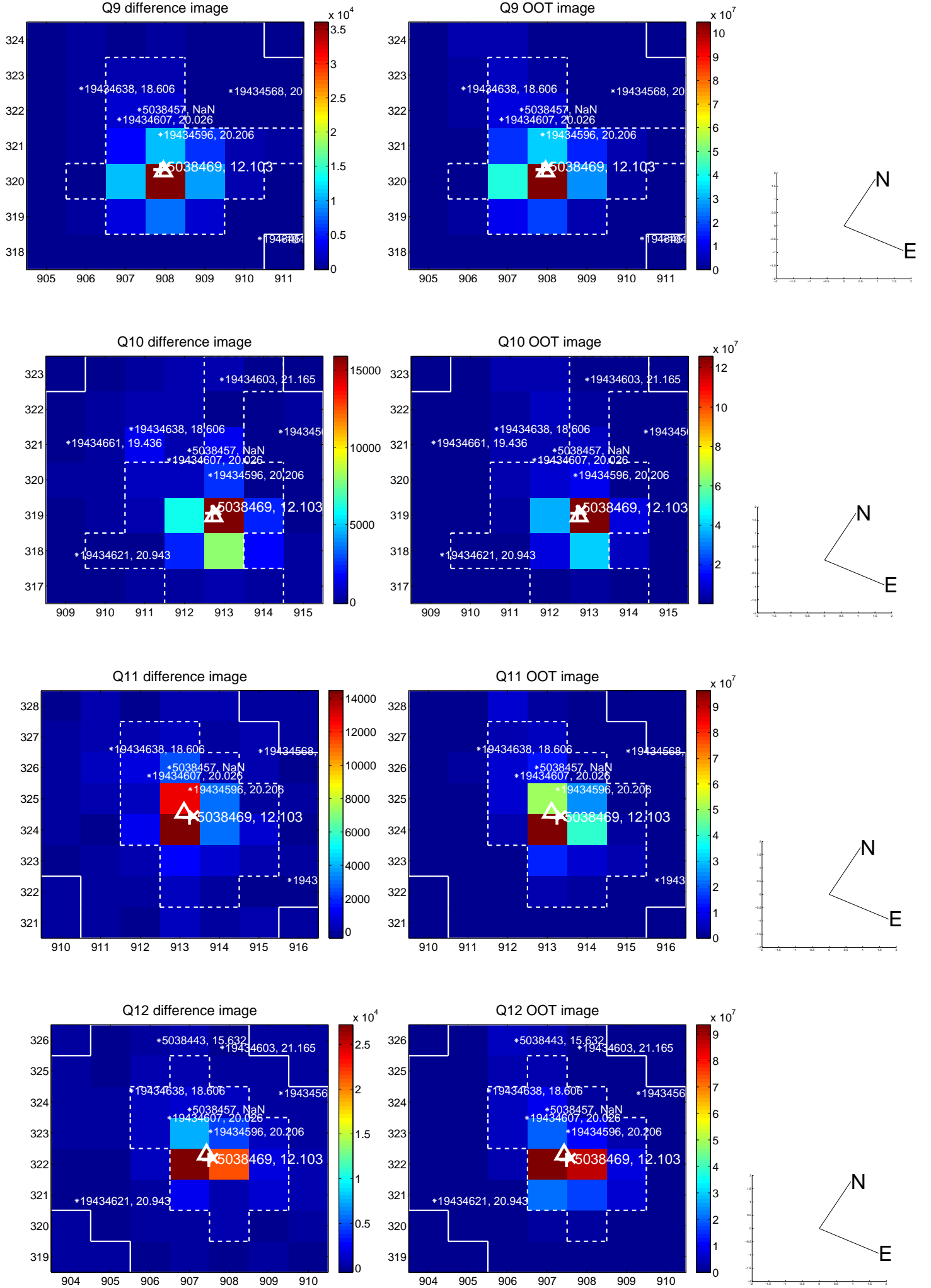
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



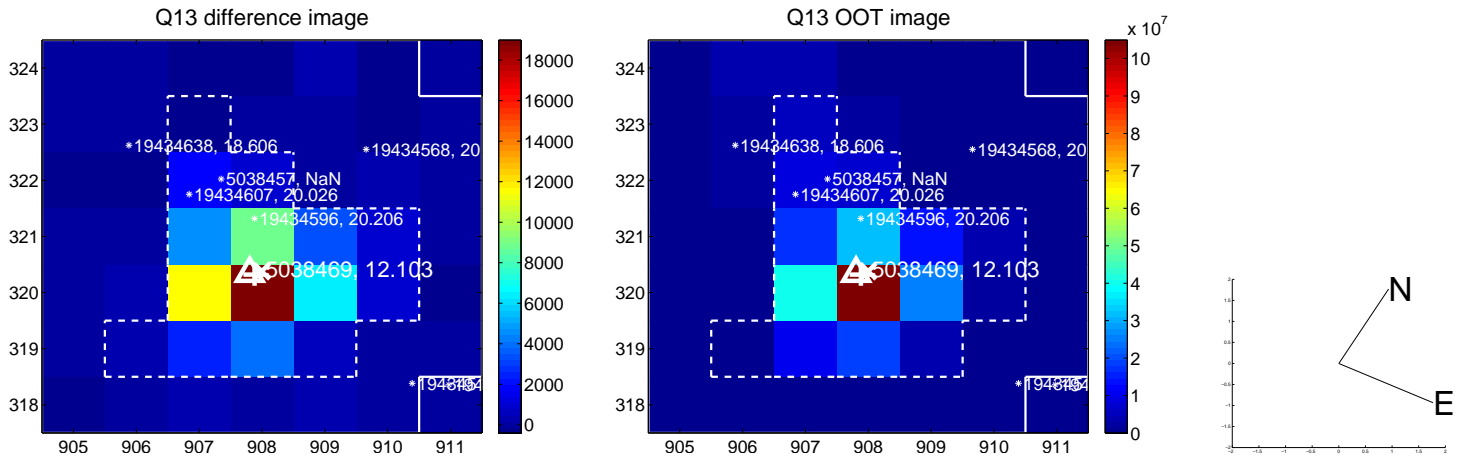
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



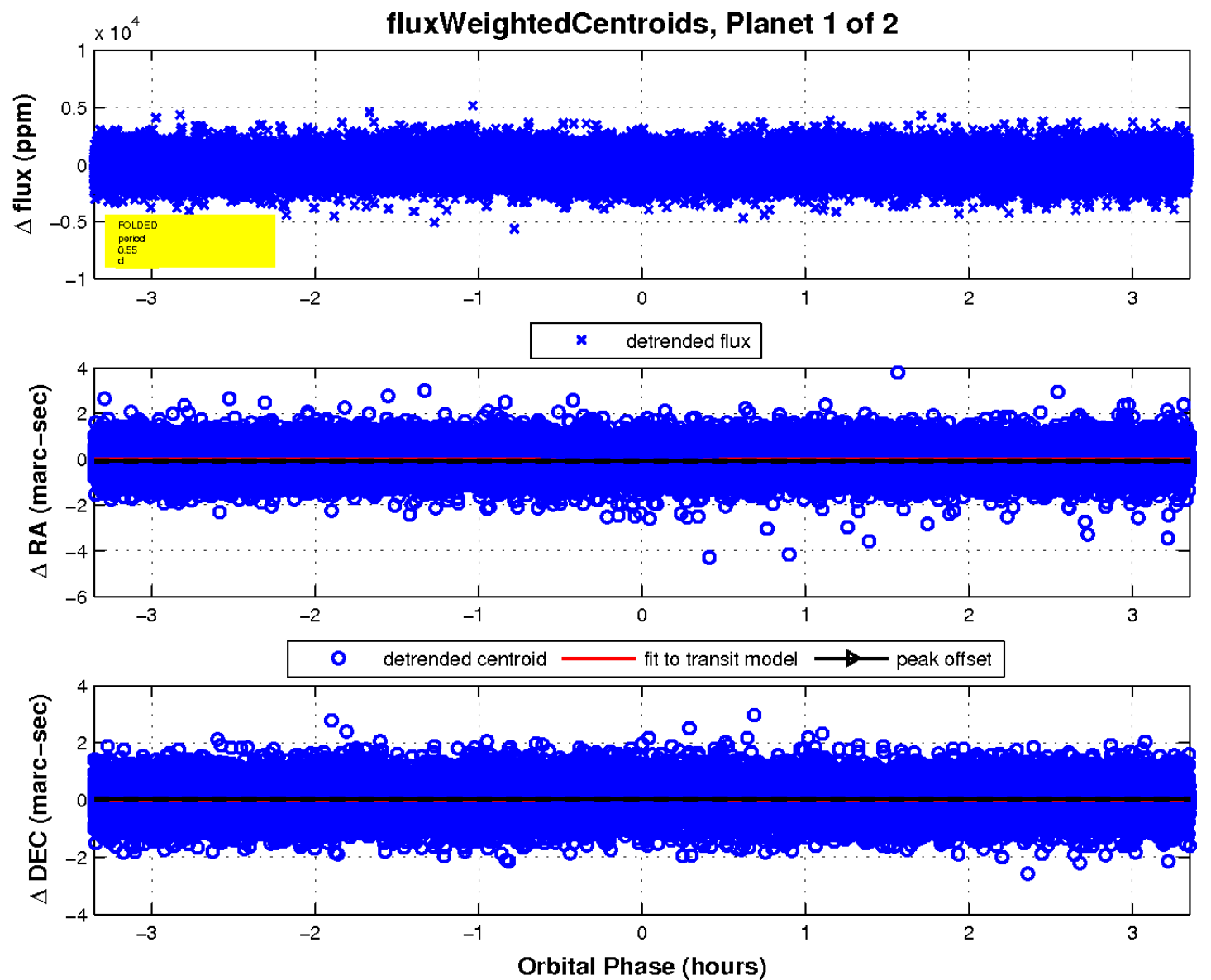
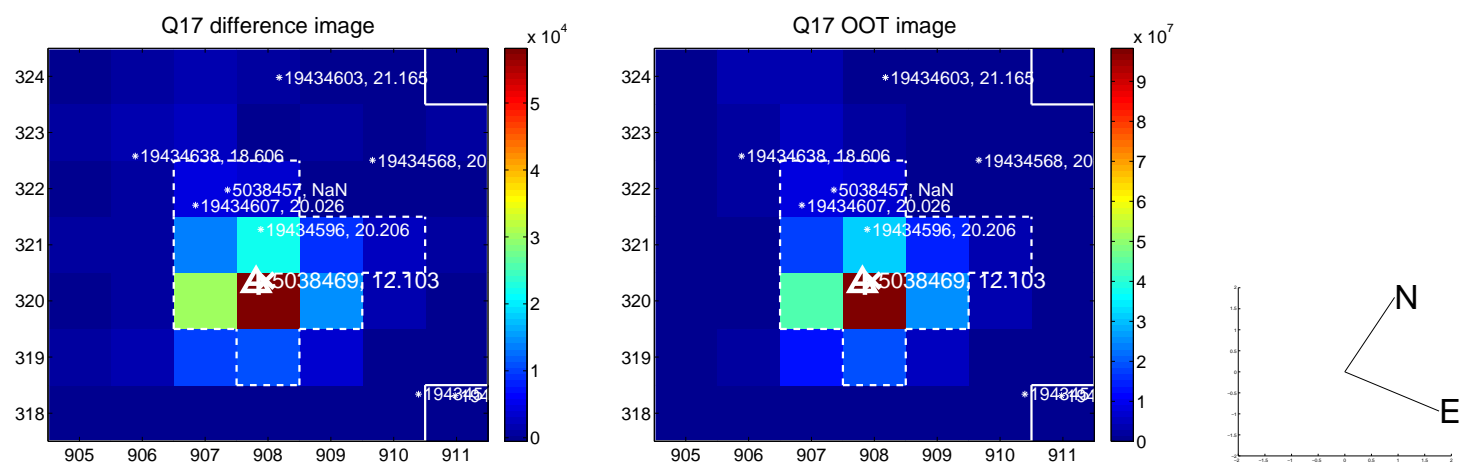
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

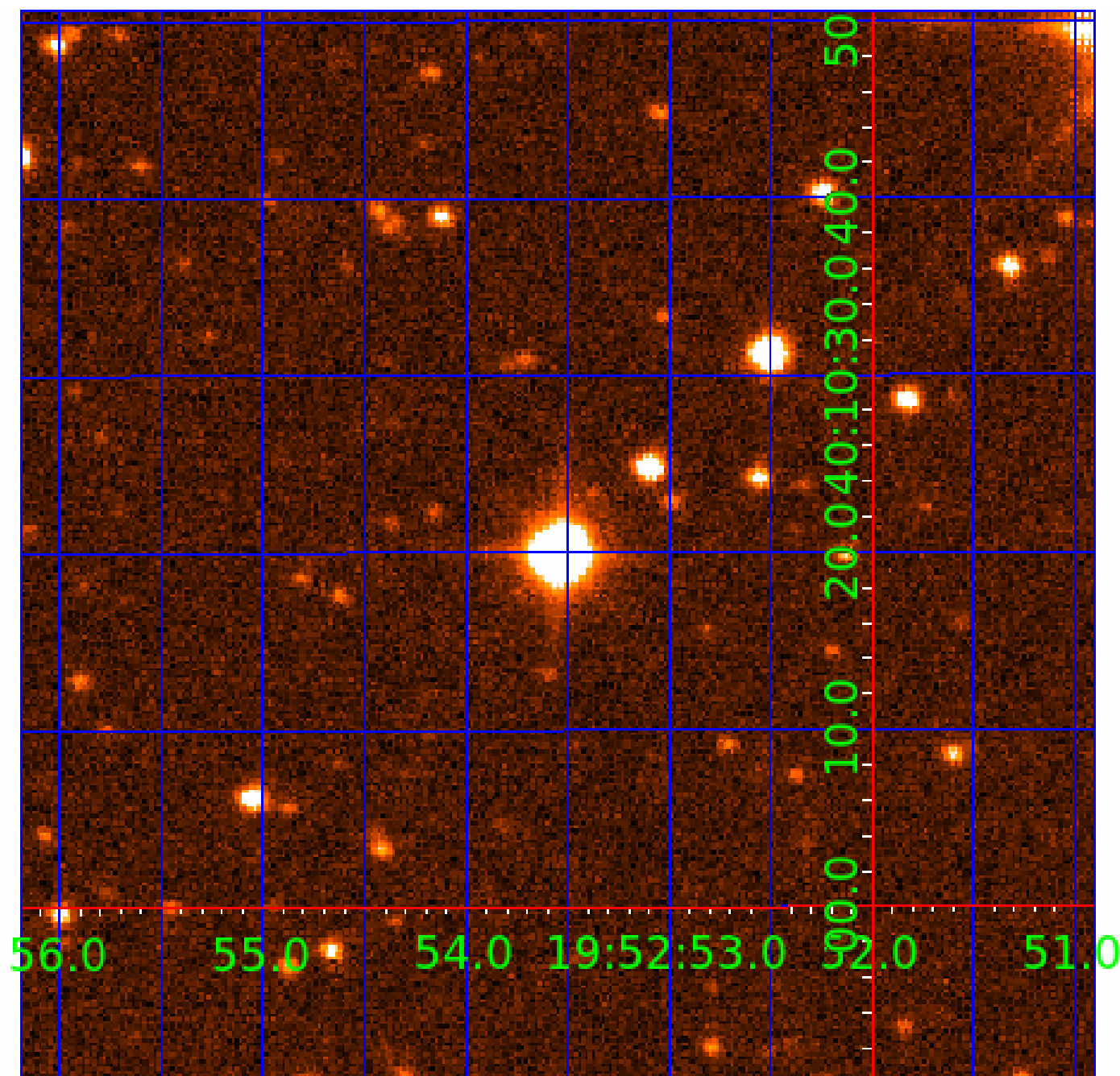


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 005038469

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})
005038469-01	OBS	No	0.546128	131.604351	222.8	1.118	11.7	14.7	2.77	8939	4.80	146203.42
005038469-02	OBS	No	0.546166	131.875643	150.3	1.323	9.1	10.4	2.77	8939	3.65	146189.72

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005038469-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_KIC_POS
005038469-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—SAME_NTL_PERIOD—CENT_KIC_POS

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.

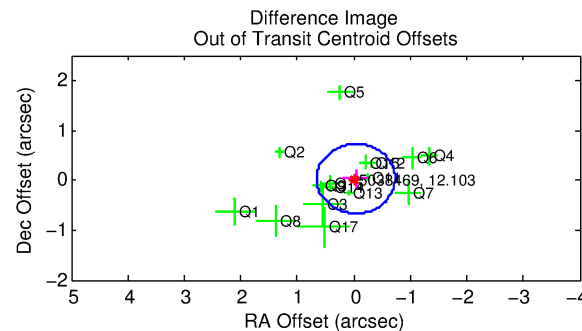
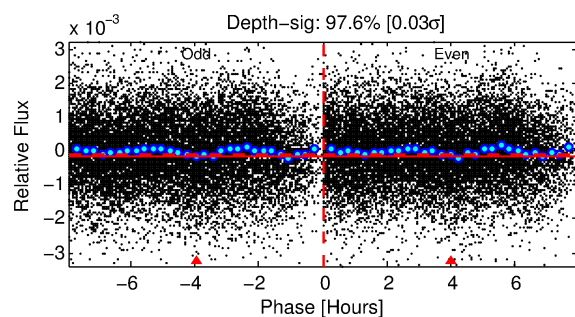
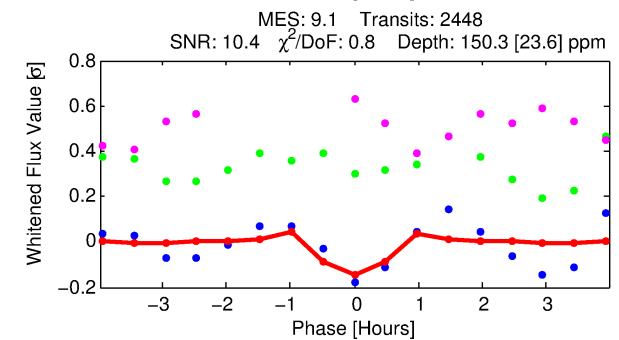
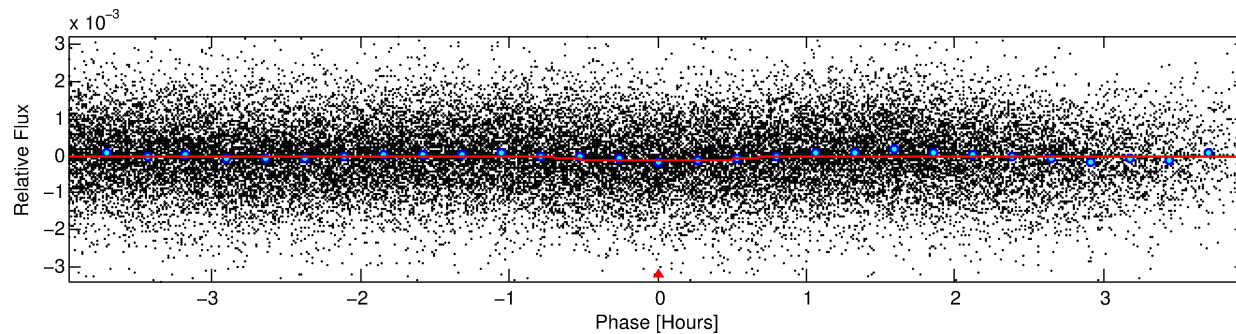
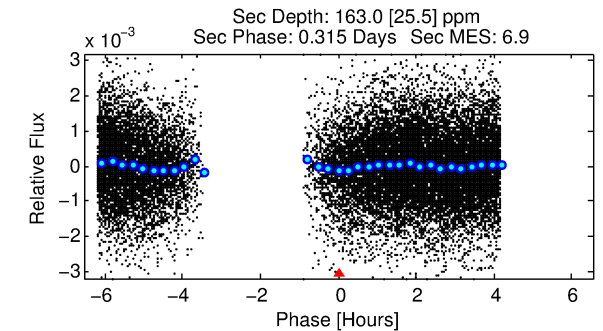
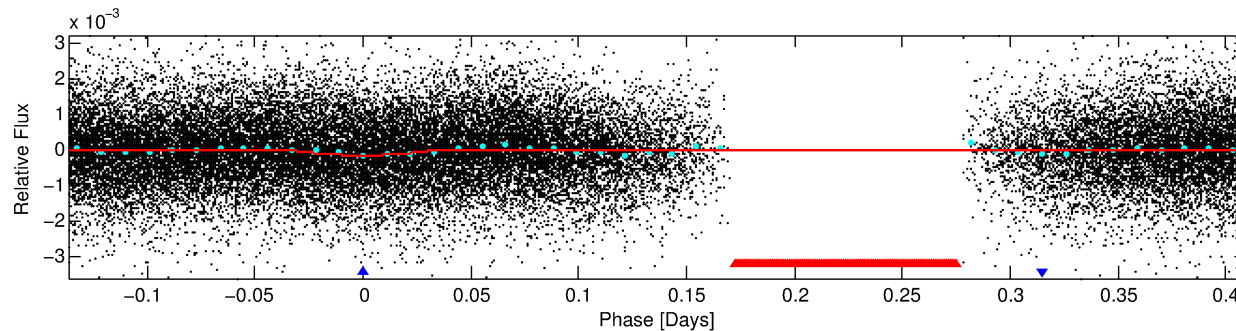
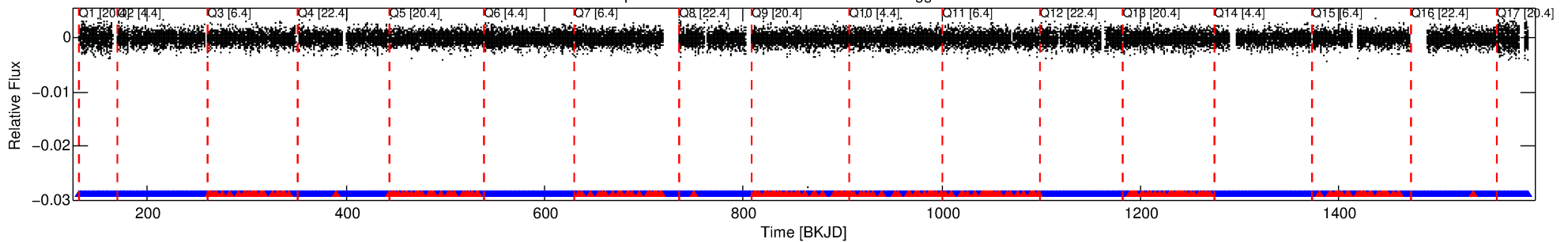
Ephemeris Match Information For 005038469-02

No Significant Match Found

DV One-Page Summary

KIC: 5038469 Candidate: 2 of 2 Period: 0.546 d
KOI: K06505 Corr: No Ephemeris Match

Kp: 12.10 R*: 2.77 Rs Teff: 8939.0 K Logg: 3.92 Fe/H: 0.070



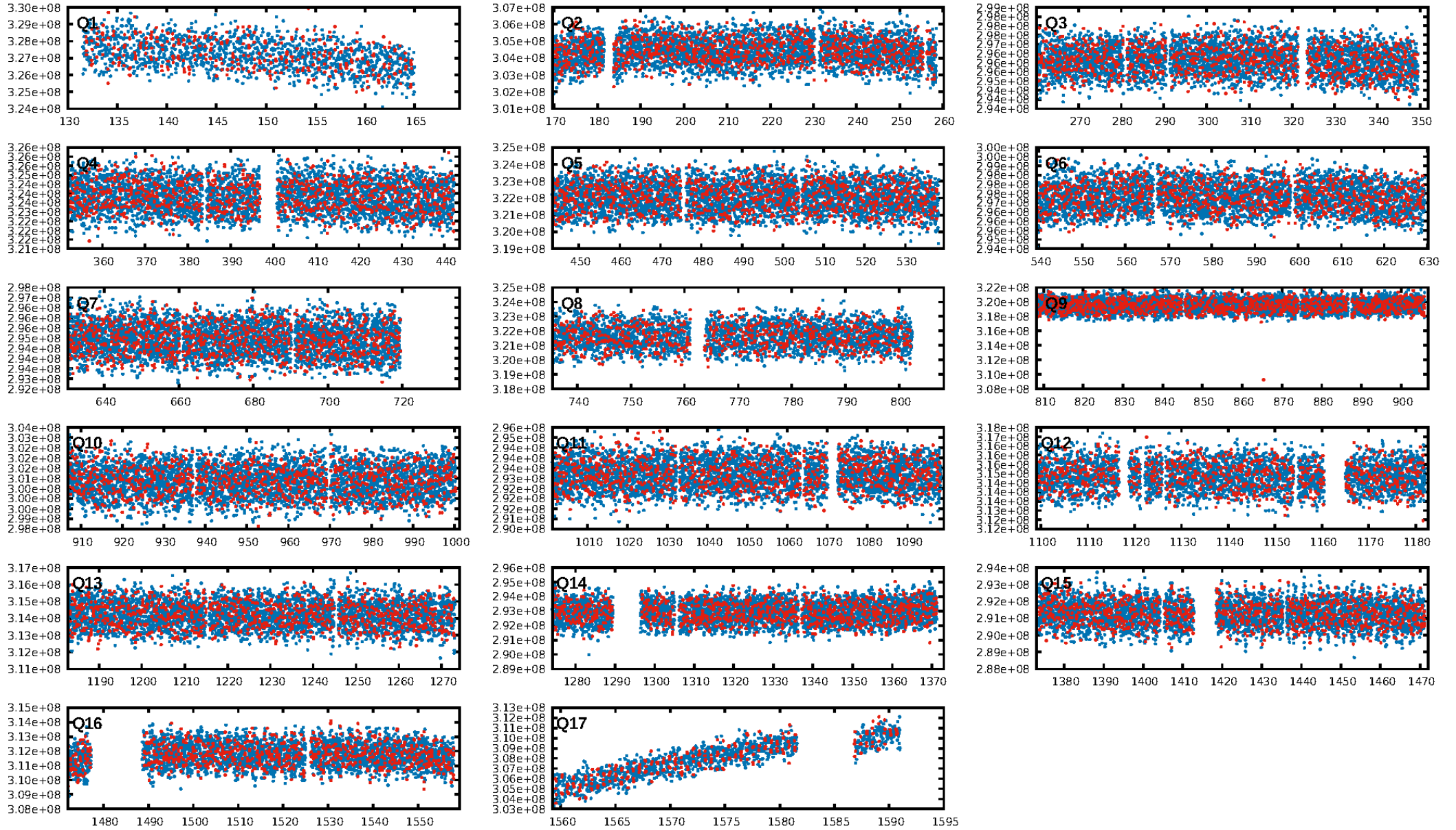
DV Fit Results:

Period = 0.54617 [0.00001] d
Epoch = 131.8756 [0.0014] BKJD
Rp/R* = 0.0120 [0.0030]
a/R* = 2.51 [3.21]
b = 0.68 [1.23]
Seff = 146189.72 [78842.14]
Teq = 4986 [672] K
Rp = 3.65 [1.63] Re
a = 0.0173 [0.0057] AU
Ag = 2.03 [1.45] [0.71σ]
Teffp = 9202 [1277] K [2.92σ]

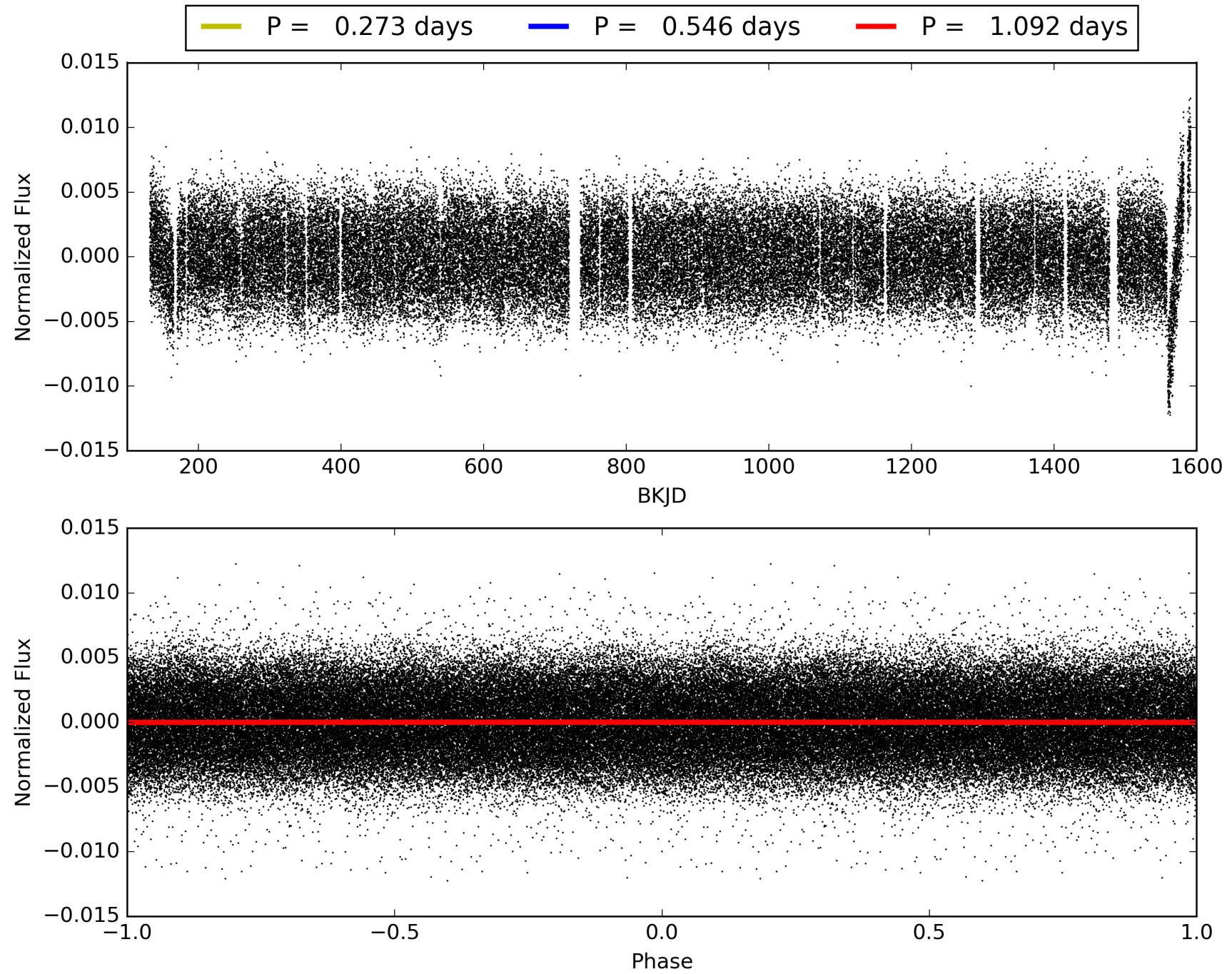
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 4.39e-14
RollingBand-fgt: 0.90 [2102/2338]
GhostDiagnostic-chr: 2.017
Centroid-sig: 2.6%
Centroid-so: 0.572 arcsec [3.88σ]
OotOffset-rm: 0.044 arcsec [0.19σ]
KicOffset-rm: 0.512 arcsec [3.21σ]
OotOffset-st: 3/4/4/5 [16]
KicOffset-st: 3/4/4/5 [16]
DiffImageQuality-fgm: 0.69 [11/16]
DiffImageOverlap-fno: 0.29 [5/17]

TCE 005038469-02, PDC Light Curves

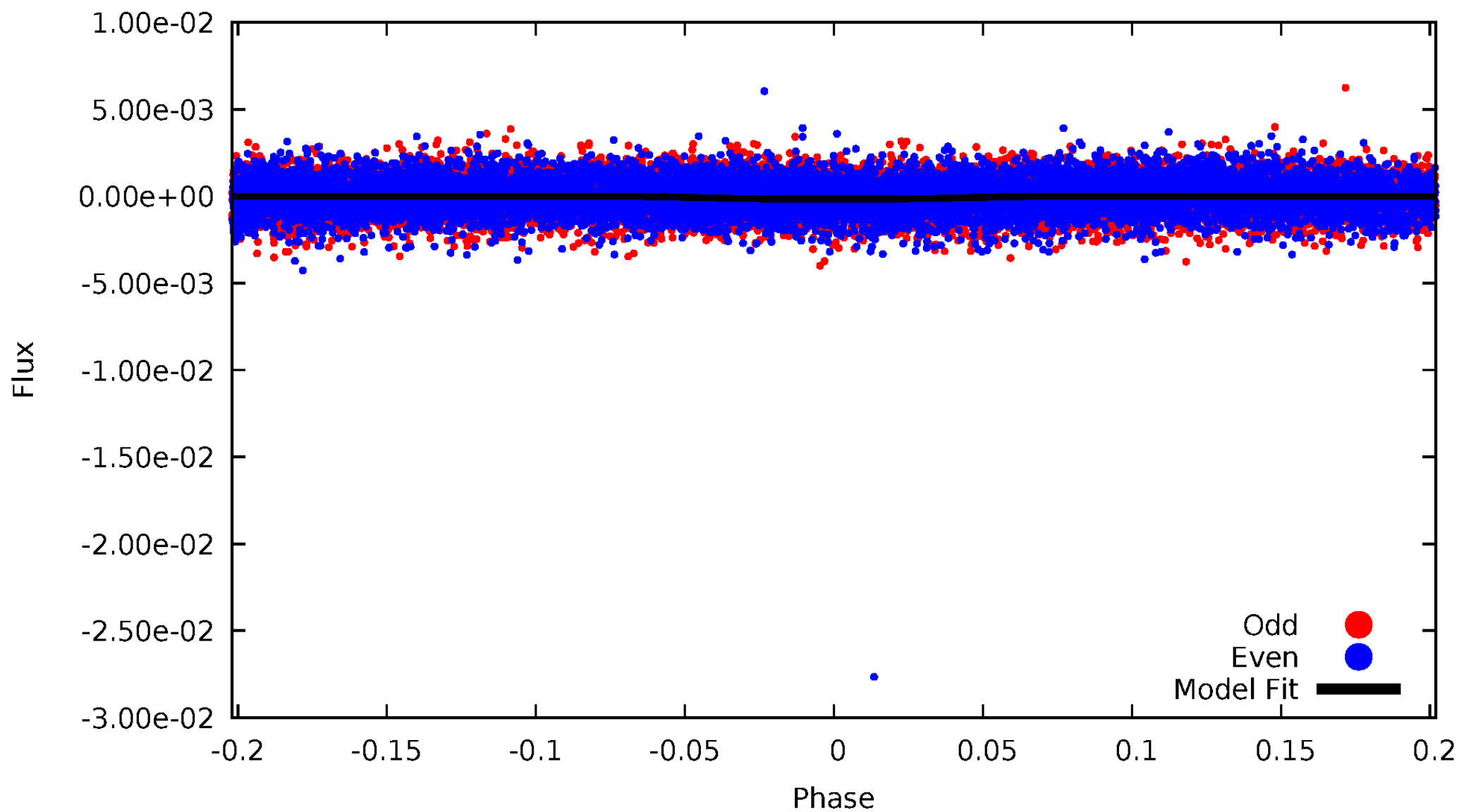


TCE 005038469-02



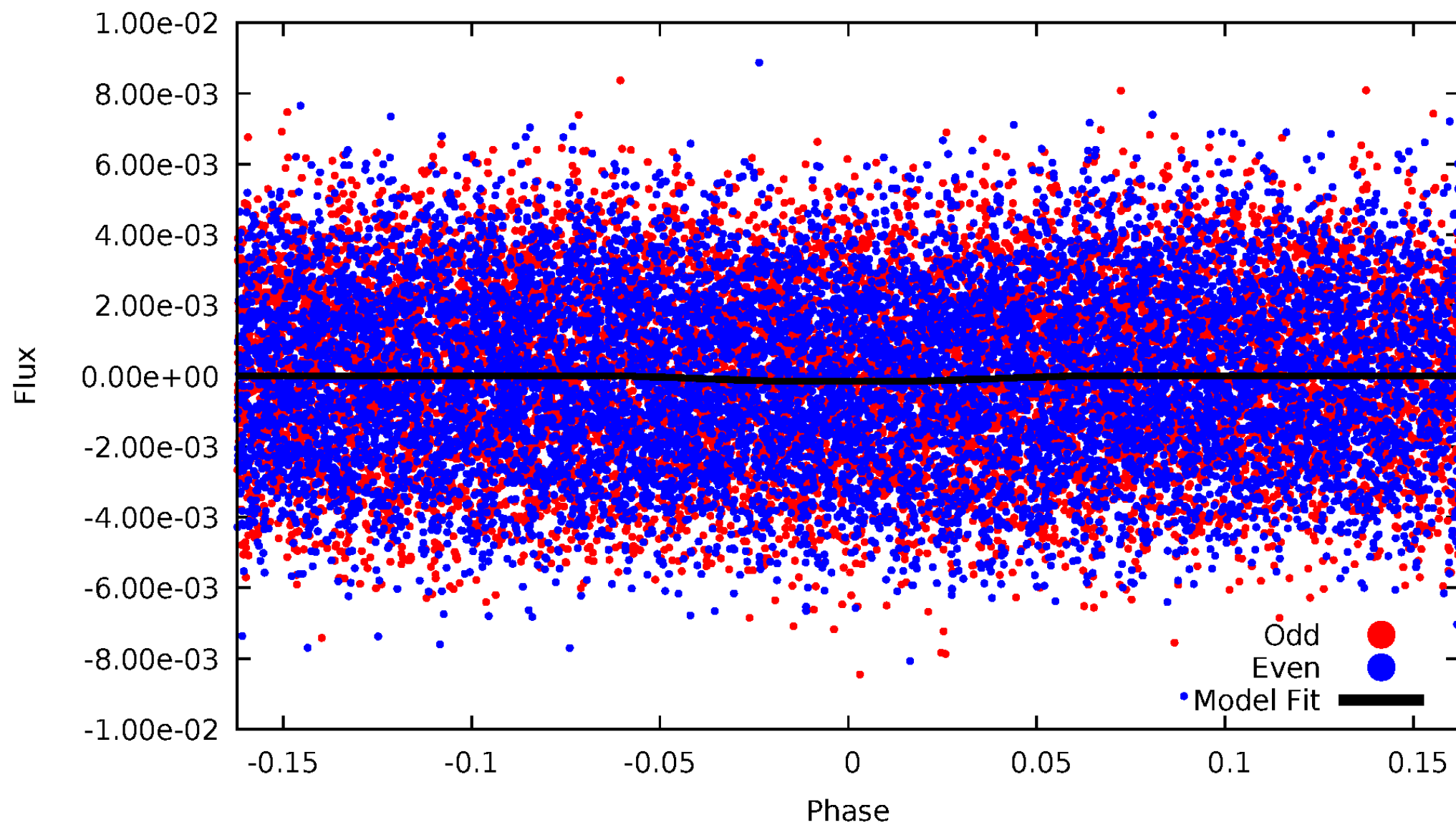
DV Odd/Even

TCE 005038469-02



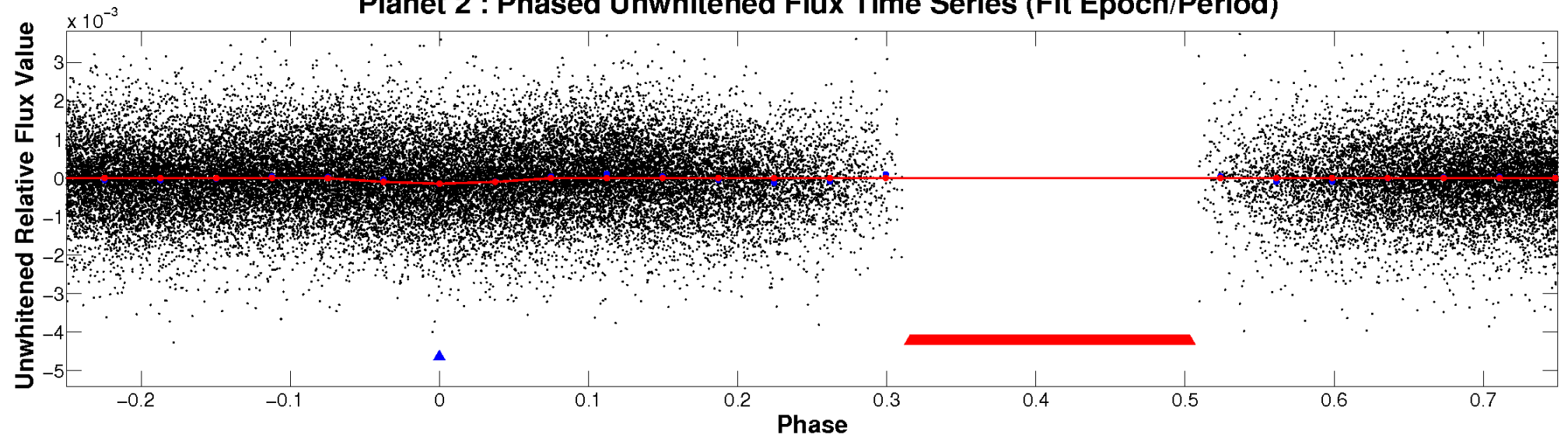
ALT Odd/Even

TCE 005038469-02

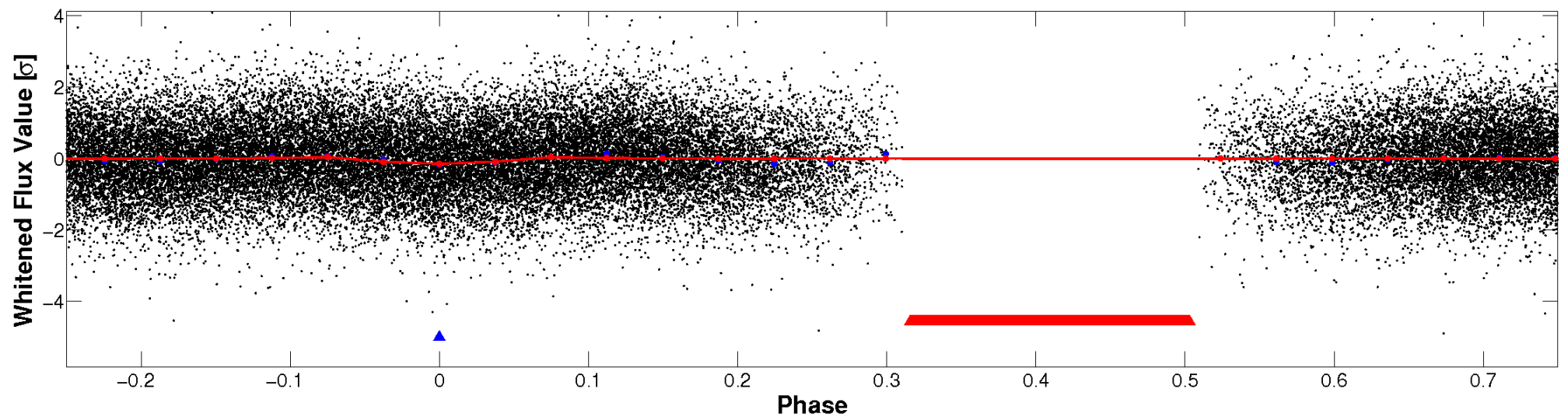


Non-Whitened Vs. Whitened Light Curve

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

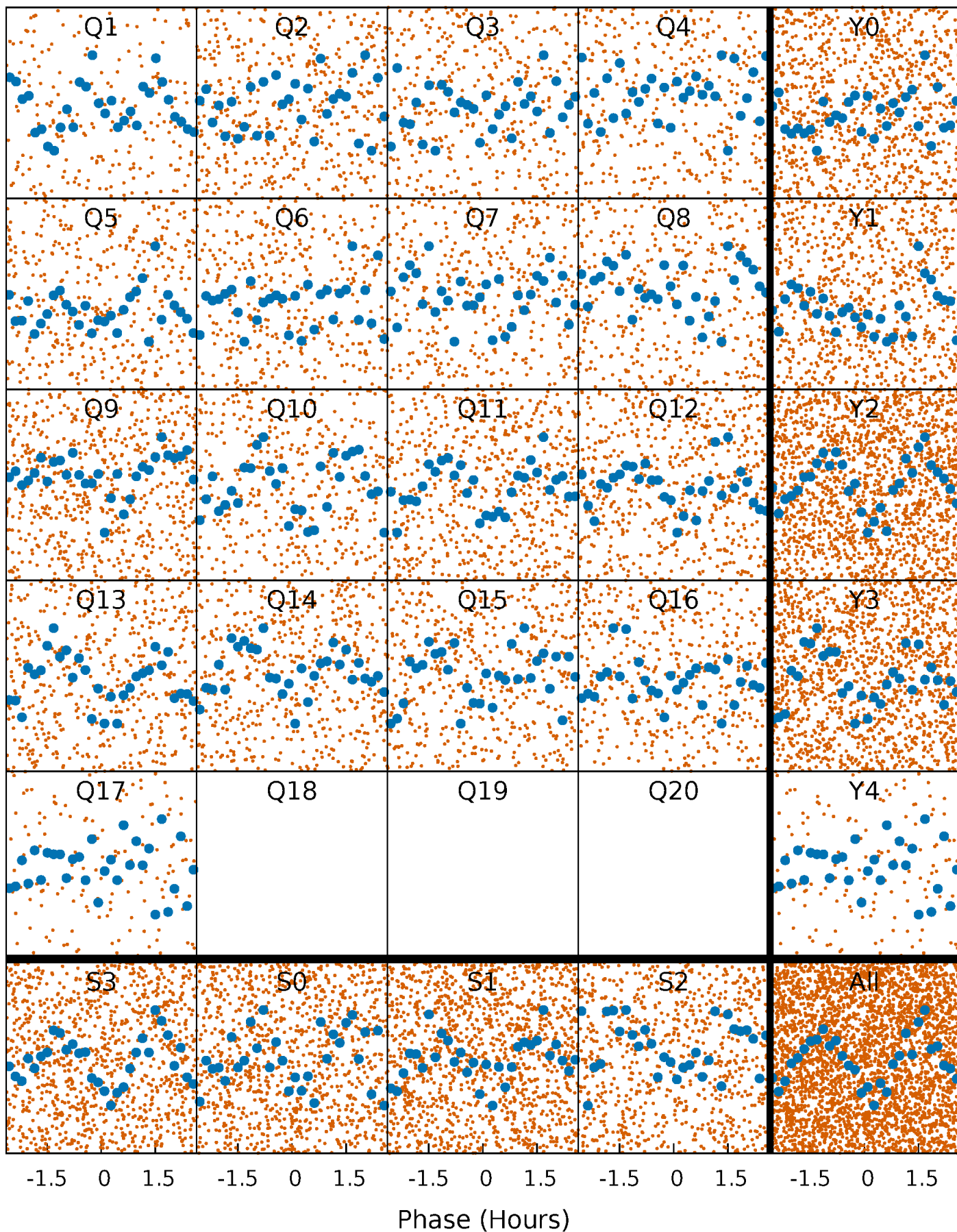


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



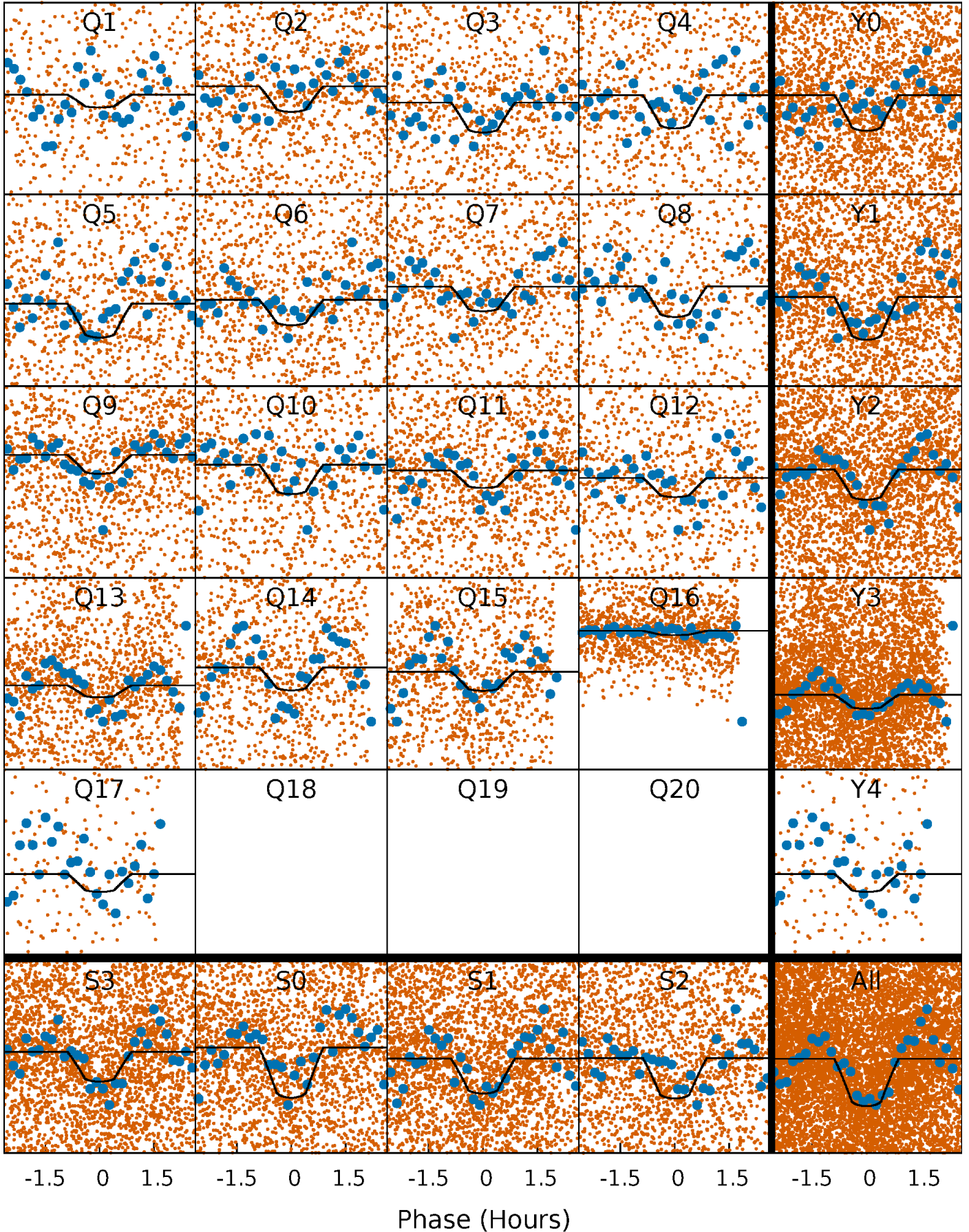
PDC Quarter-Phased Transit Curves

TCE 005038469-02 P= 0.546166 Days $T_0=131.875643$ (BKJD)



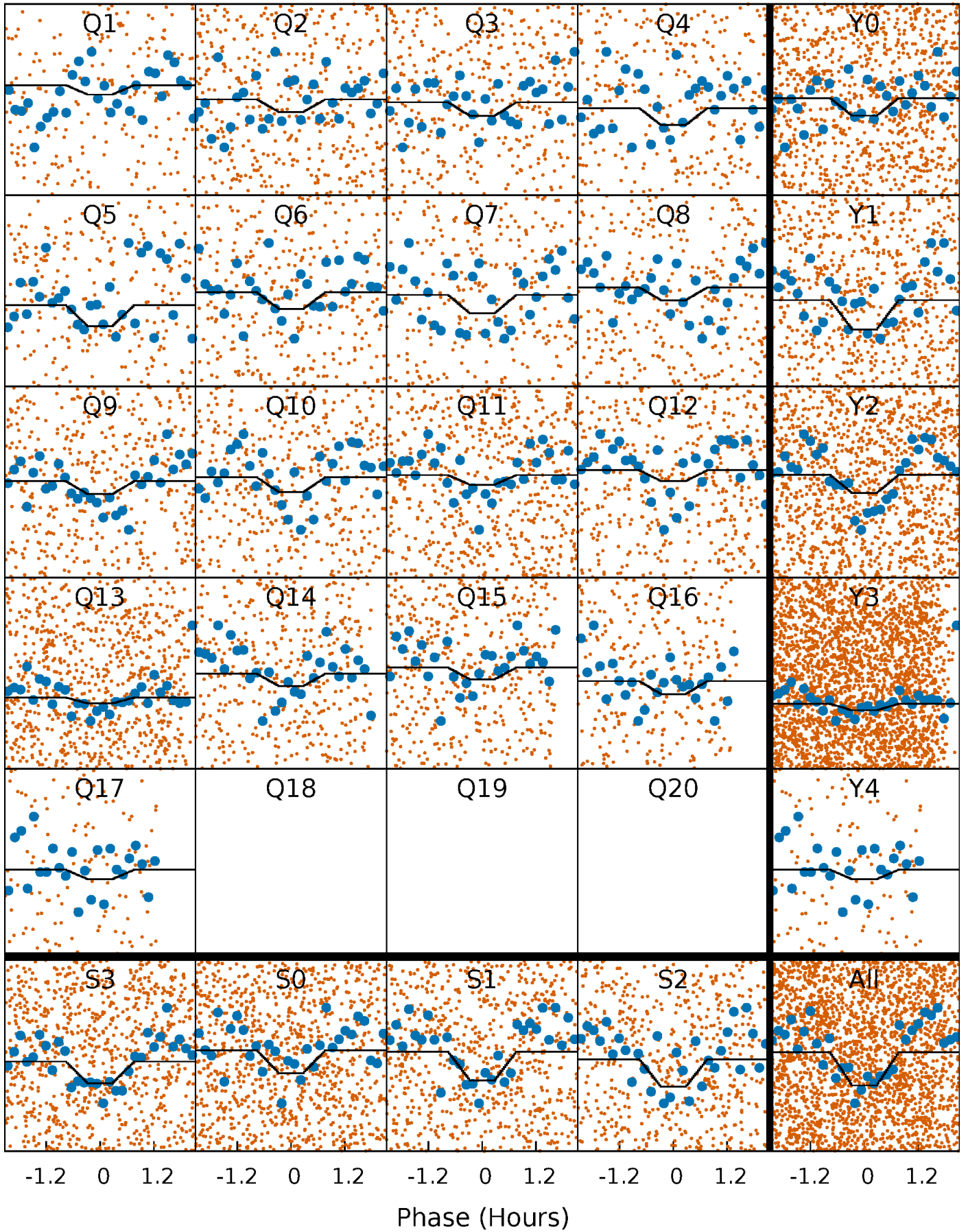
DV Quarter-Phased Transit Curves

TCE 005038469-02 P= 0.546166 Days $T_0=131.875643$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

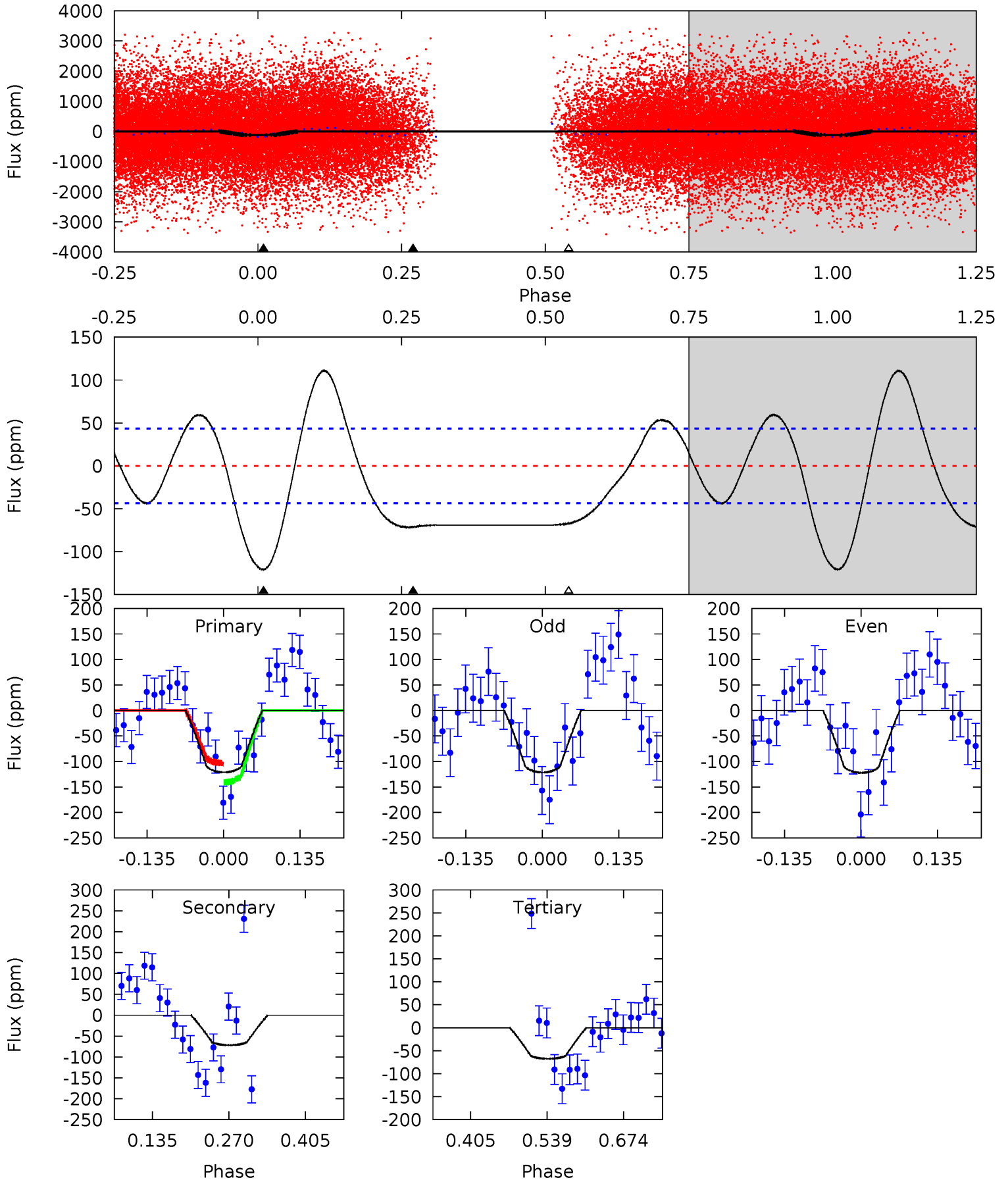
TCE 005038469-02 P= 0.546173 Days $T_0=131.875559$ (BKJD)



DV Model-Shift Uniqueness Test

005038469-02, P = 0.546166 Days, E = 131.329477 Days

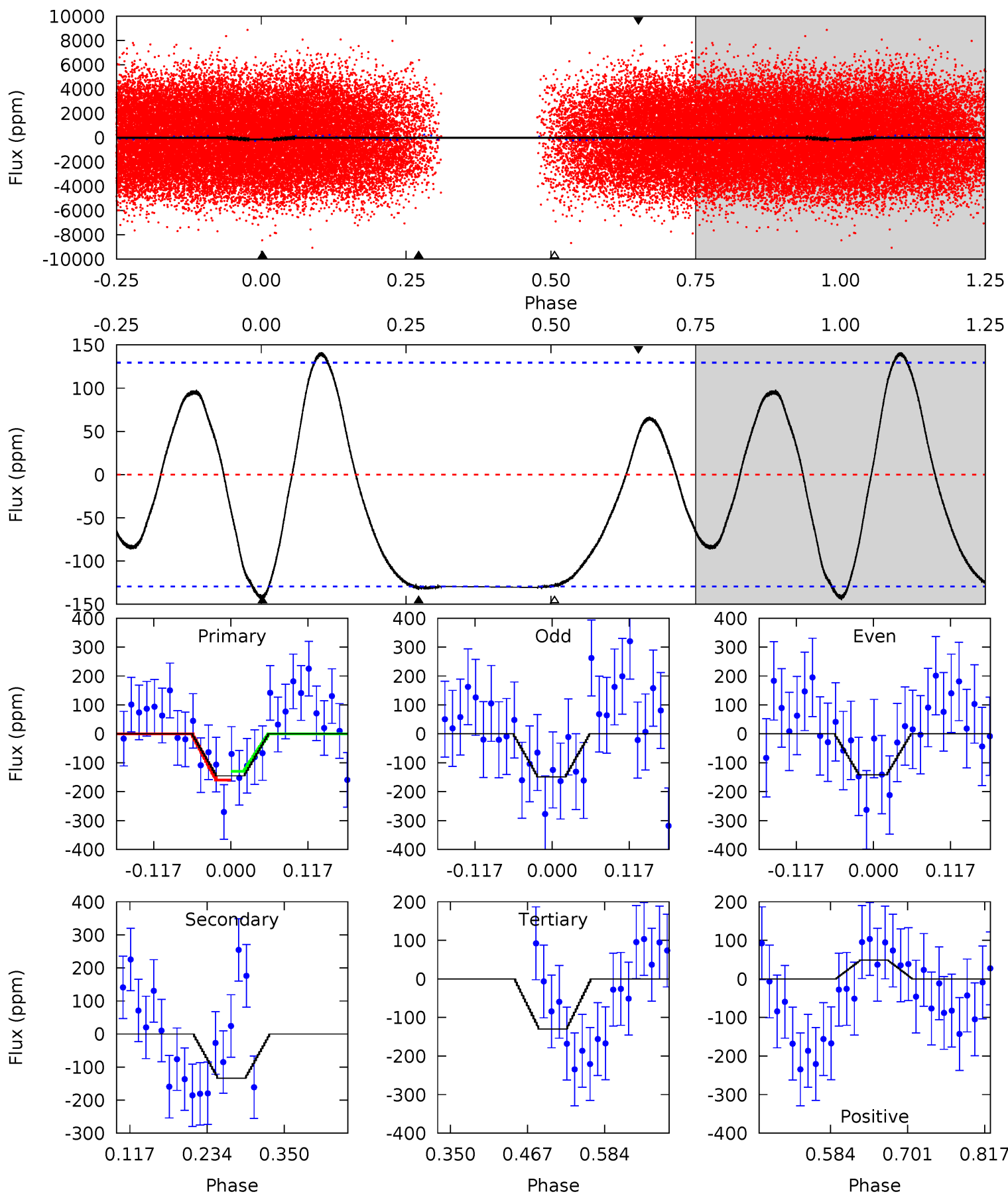
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.5	7.40	6.98	0	4.50	1.50	3.68	5.56	12.5	0.42	7.40	0.04	1.11	0.48	1.95



Alt Model-Shift Uniqueness Test

005038469-02, P = 0.546173 Days, E = 131.329386 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.09	4.68	4.54	1.70	4.53	1.57	2.28	0.55	3.38	0.13	2.97	0.12	0.74	0.49	0.51



Stellar Parameters For KIC 005038469

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$\rho_{\star} (\text{g}\cdot\text{cm}^{-3})$
	8939^{+215}_{-466}	$3.920^{+0.280}_{-0.151}$	$0.070^{+0.250}_{-0.650}$	$2.773^{+0.852}_{-1.041}$	$2.333^{+0.319}_{-0.744}$	$0.154^{+0.340}_{-0.073}$
	+2%/-5%	+7%/-4%	+357%/-929%	+31%/-38%	+14%/-32%	+220%/-48%
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 005038469-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-72 ± 10	$3.41^{+1.11}_{-1.00}$	6803^{+578}_{-660}	6469^{+1529}_{-1181}	$0.998^{+0.958}_{-0.448}$
Alt.	-134 ± 29	$3.42^{+1.23}_{-1.03}$	6800^{+585}_{-704}	8086^{+2223}_{-1523}	$1.818^{+1.844}_{-0.823}$

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

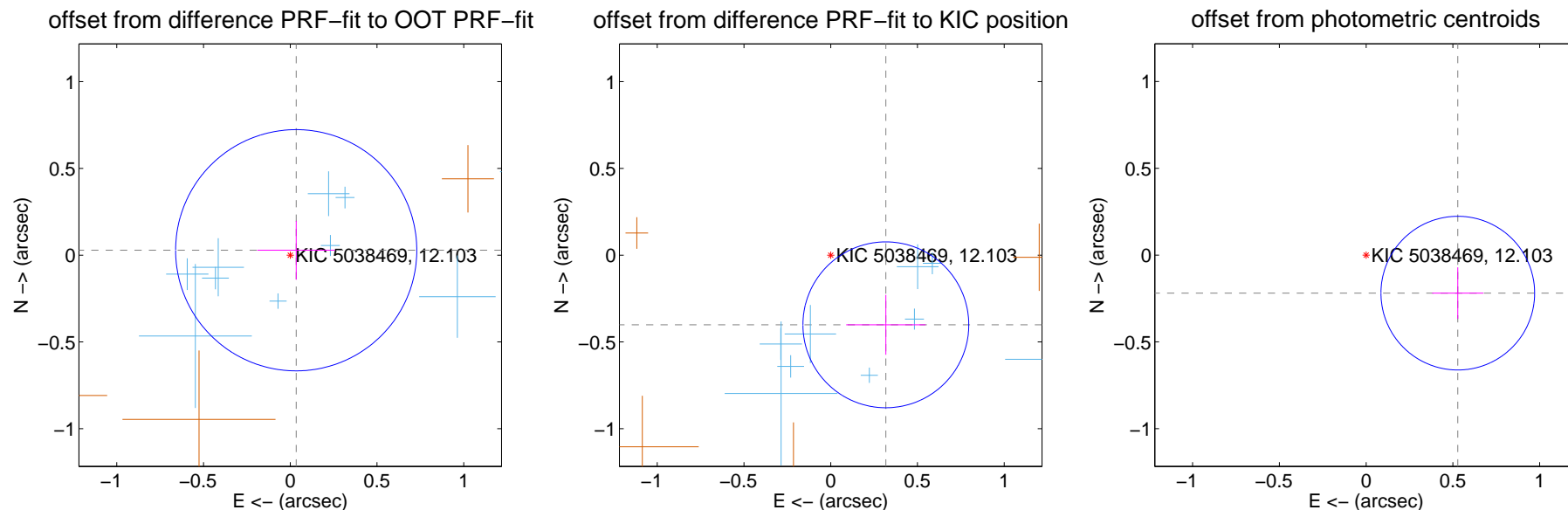
DV Centroid Data

Supplemental centroid analysis for 005038469-02. Kepler magnitude: 12.10. Transit SNR 10.36

There are 11 quarters with good PRF difference image offsets

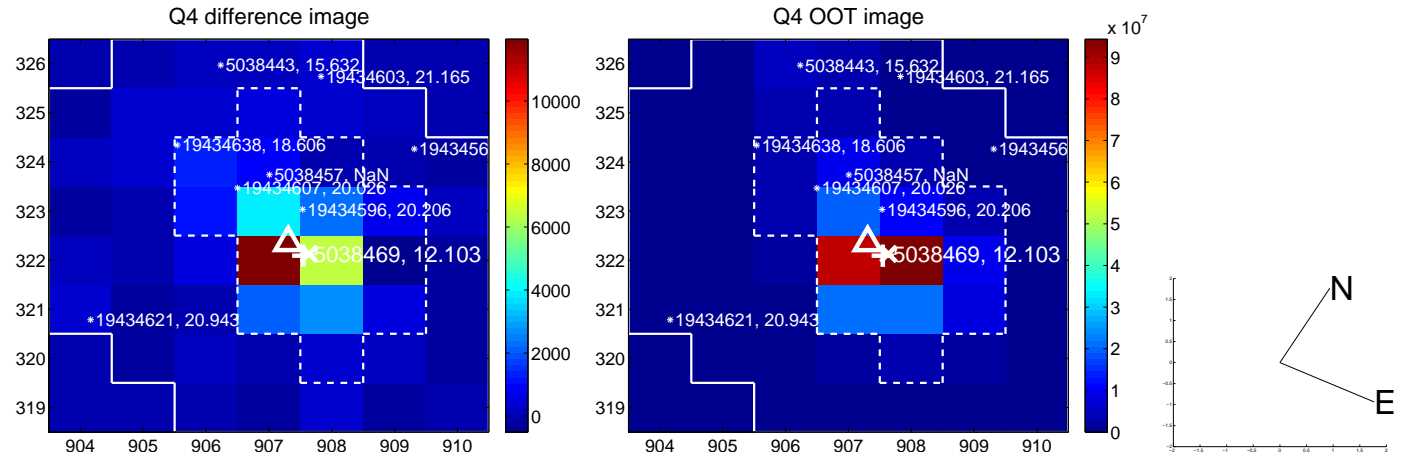
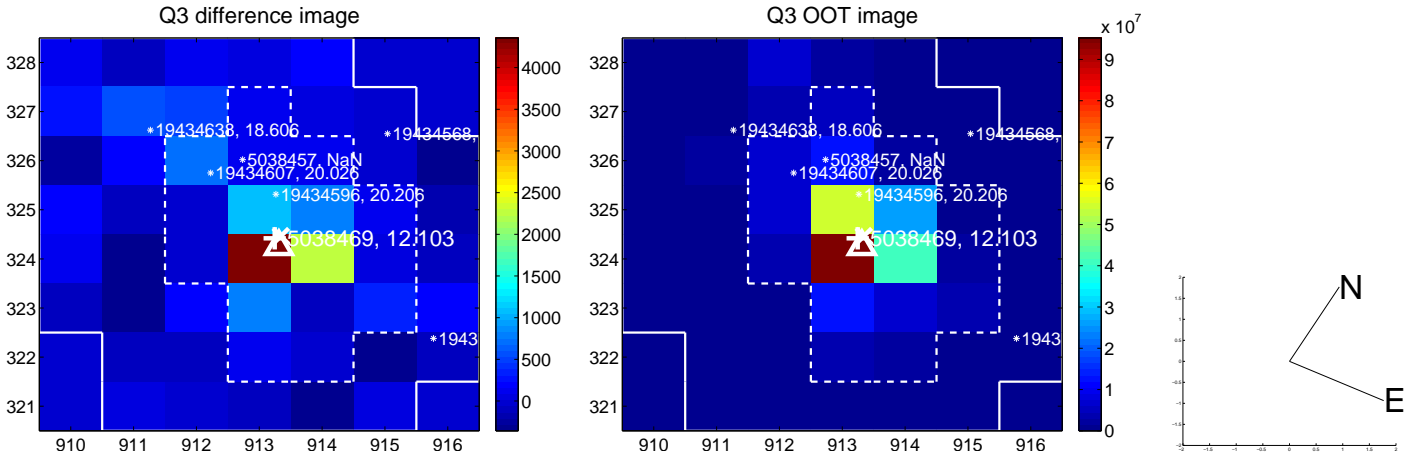
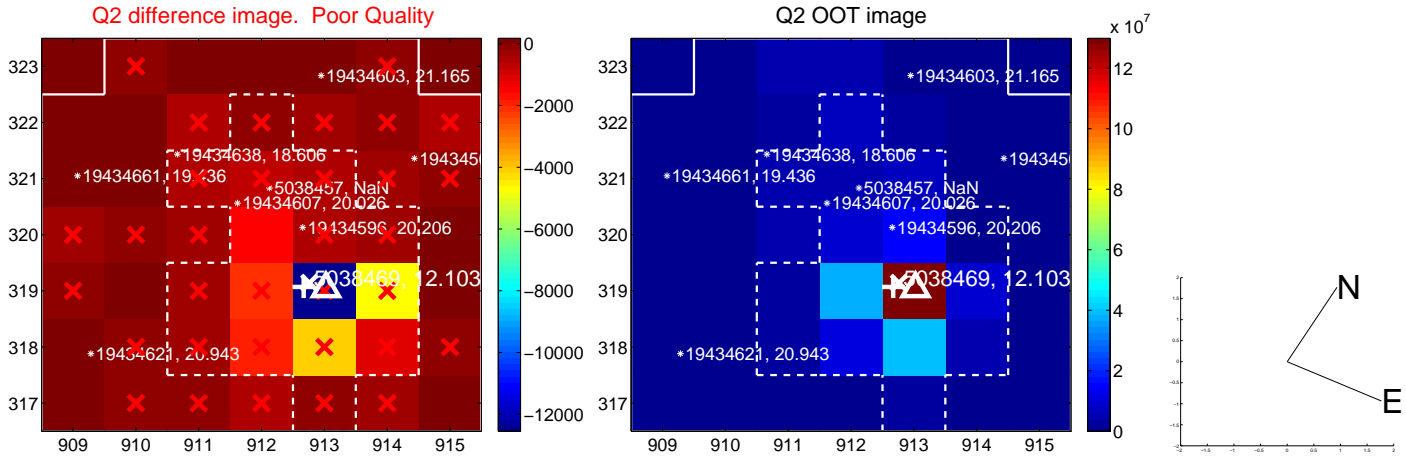
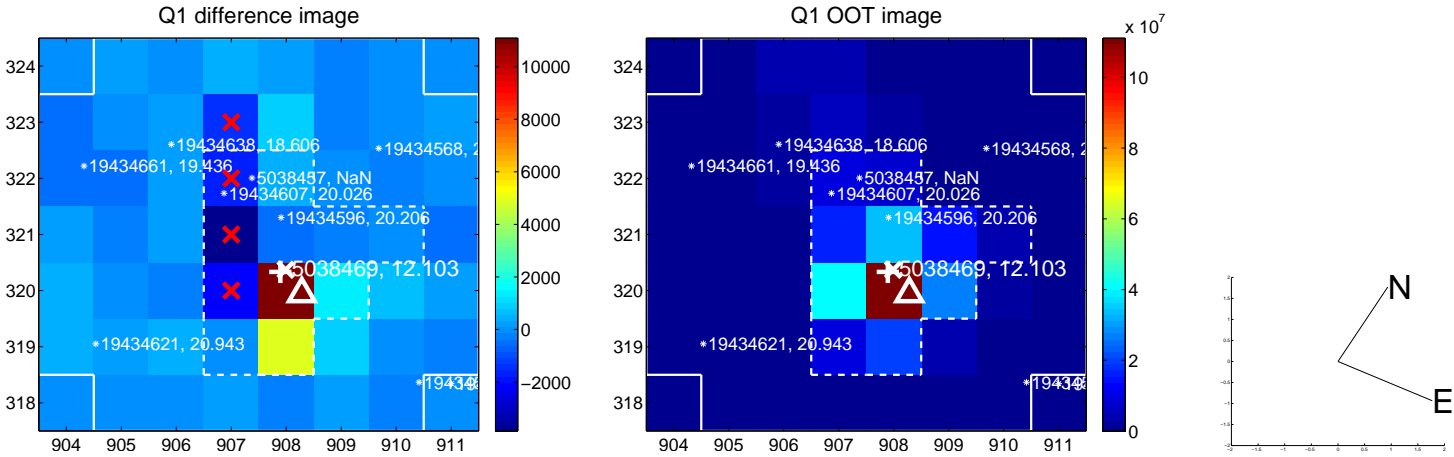
The direct PRF centroid is offset from the target star catalog position by about 0.52 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.044 ± 0.232	0.19	-0.034 ± 0.224	0.028 ± 0.170
PRF-fit source offset from KIC position	0.512 ± 0.159	3.21	-0.318 ± 0.229	-0.401 ± 0.173
photometric centroid source offset	0.57 ± 0.15	3.88	-0.53 ± 0.15	-0.22 ± 0.15

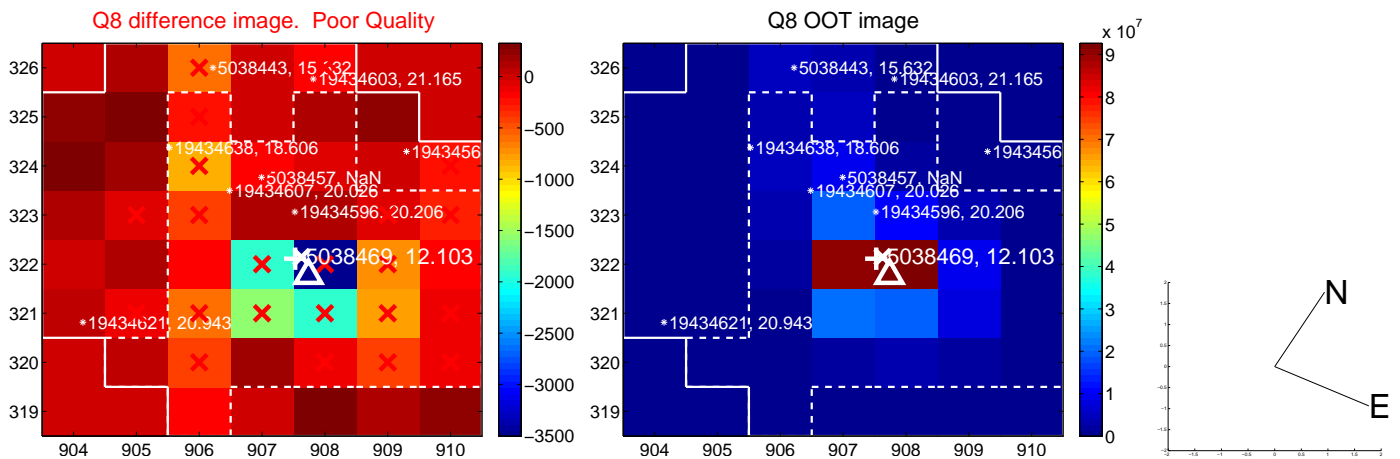
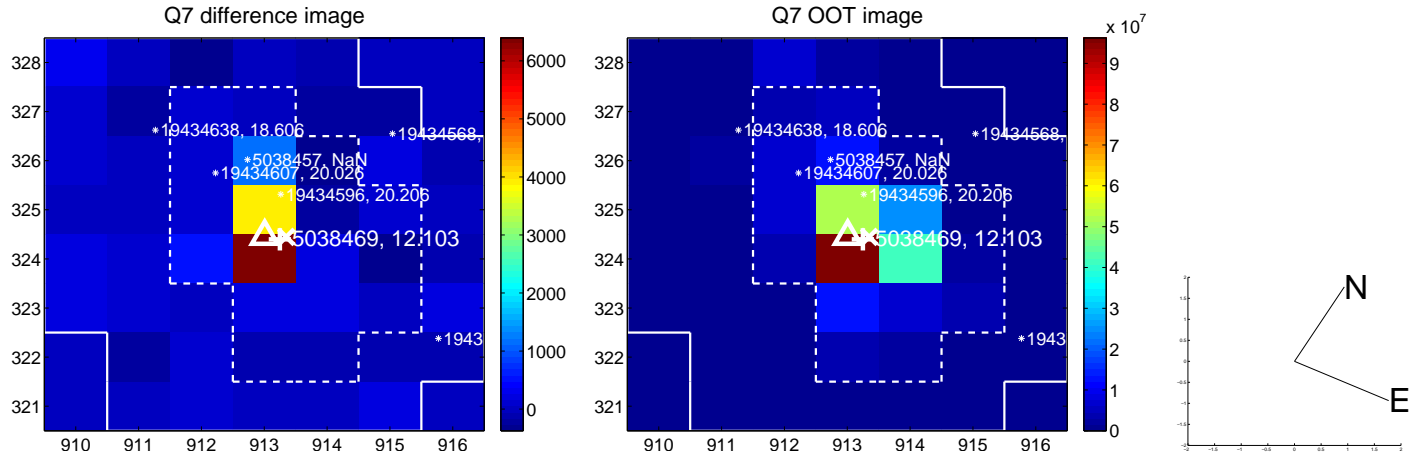
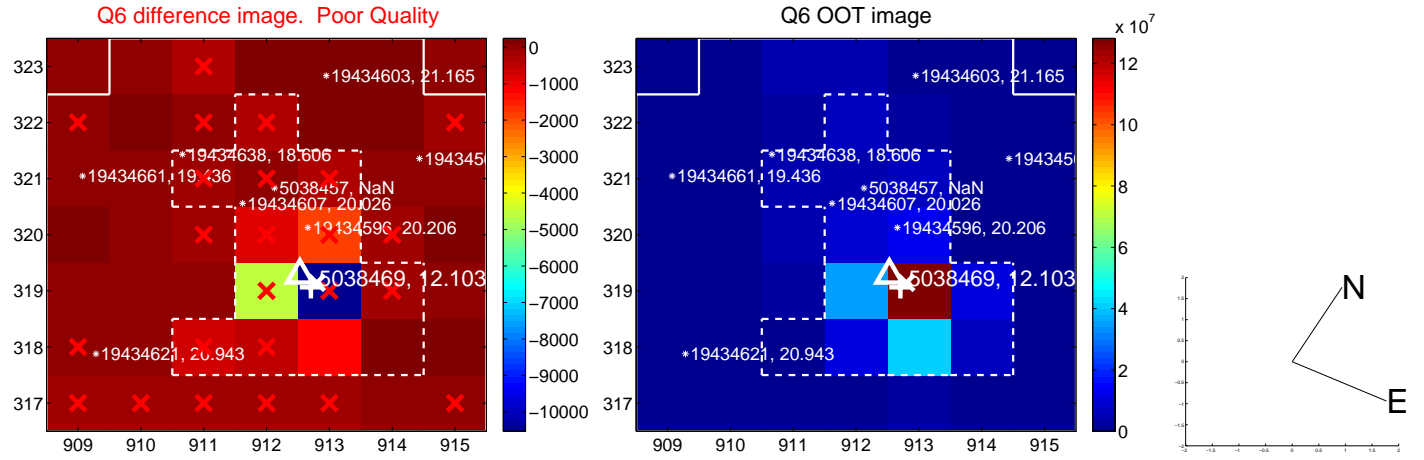
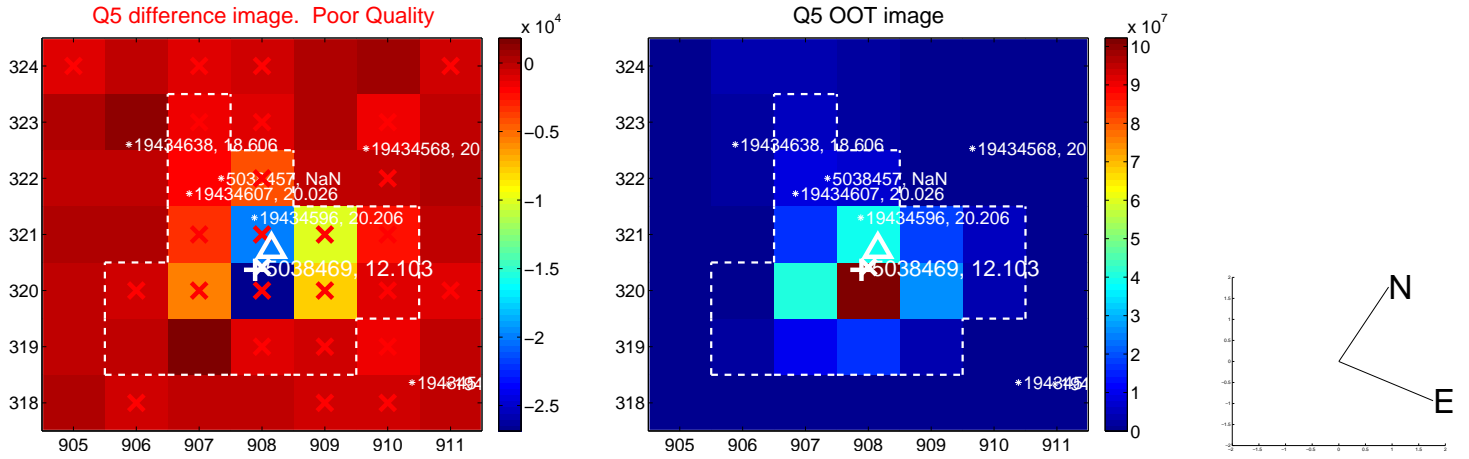


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

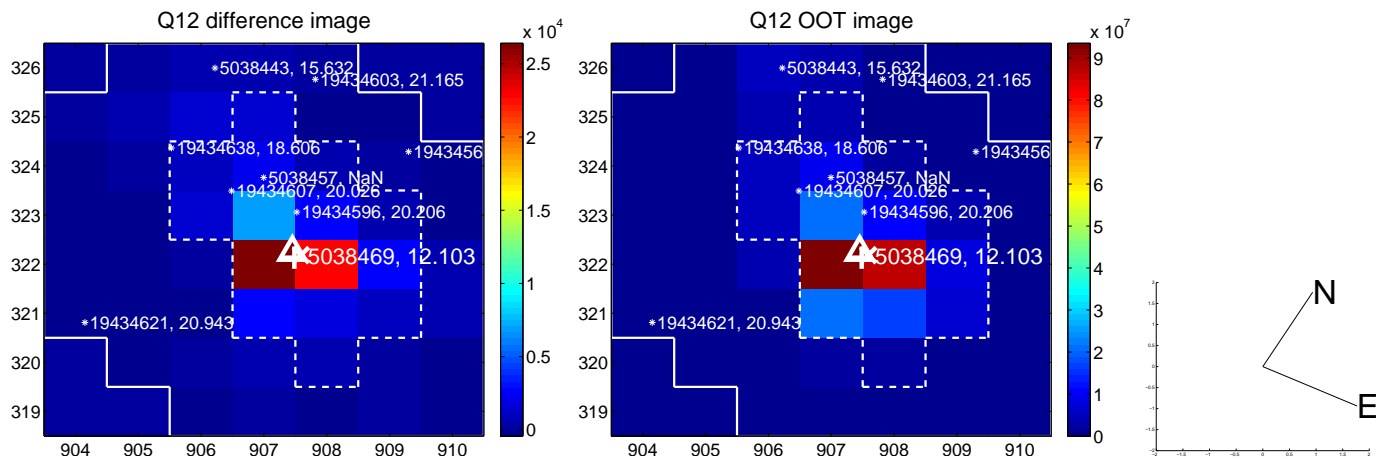
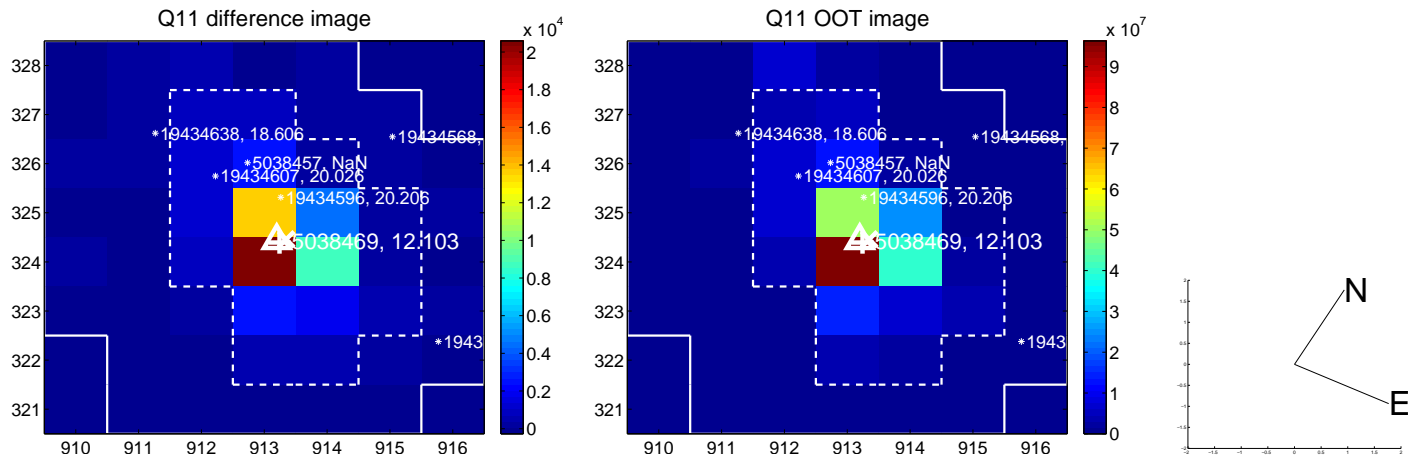
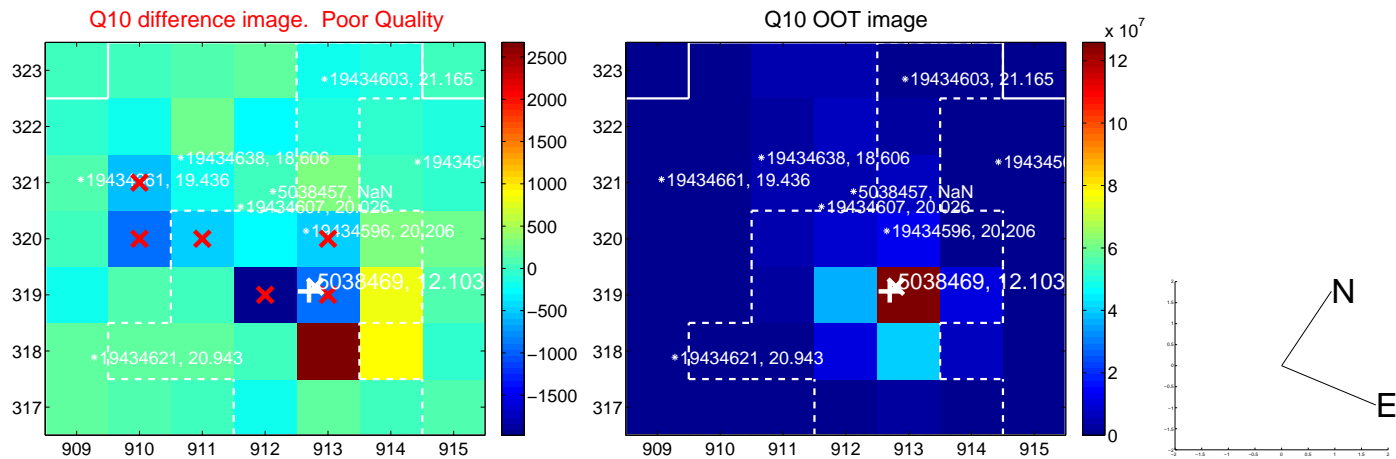
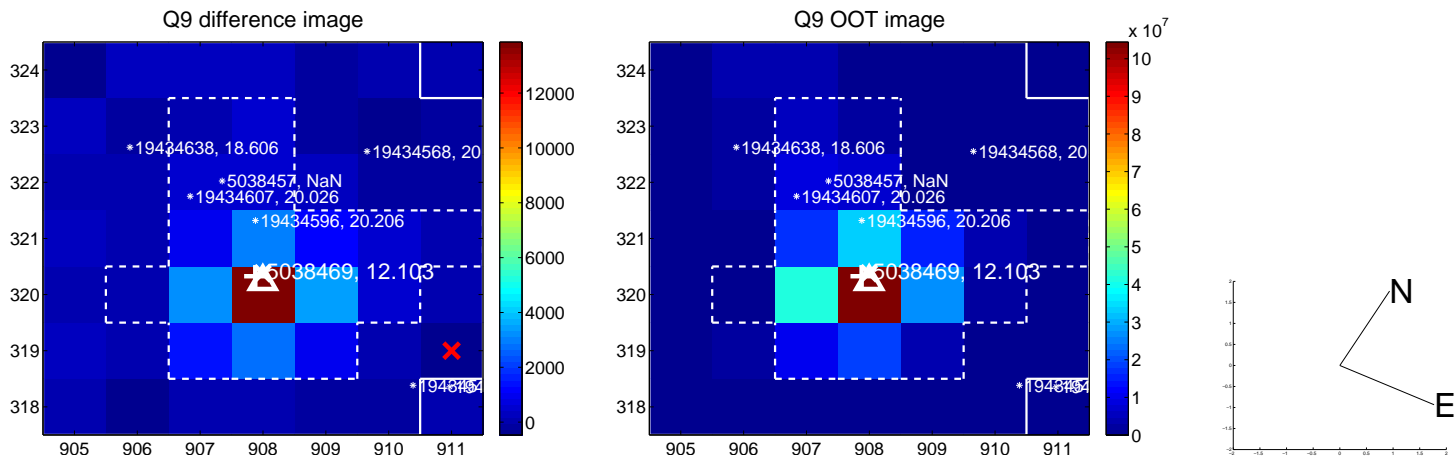
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



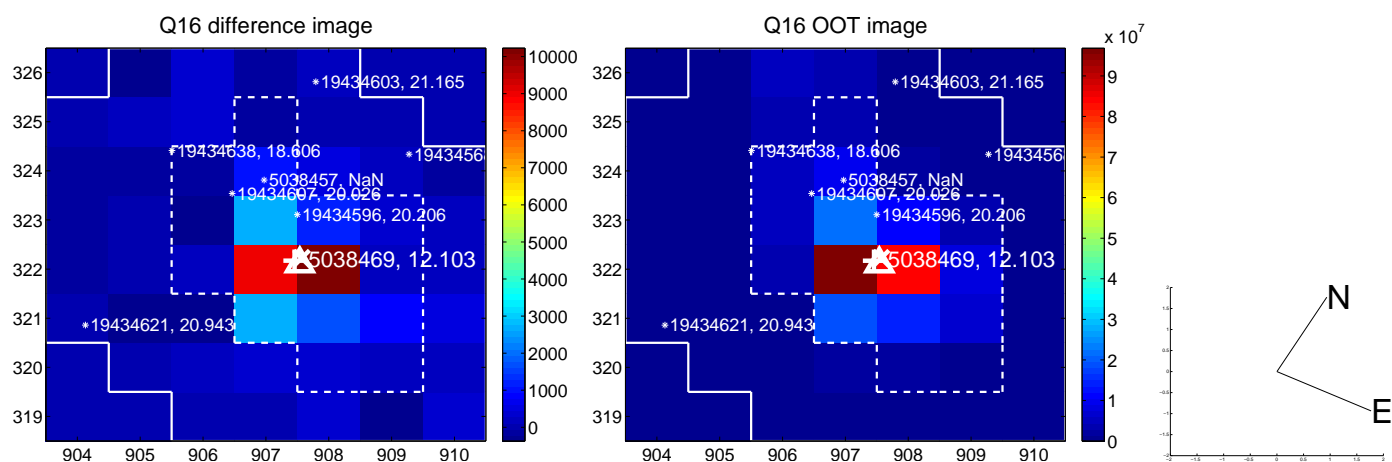
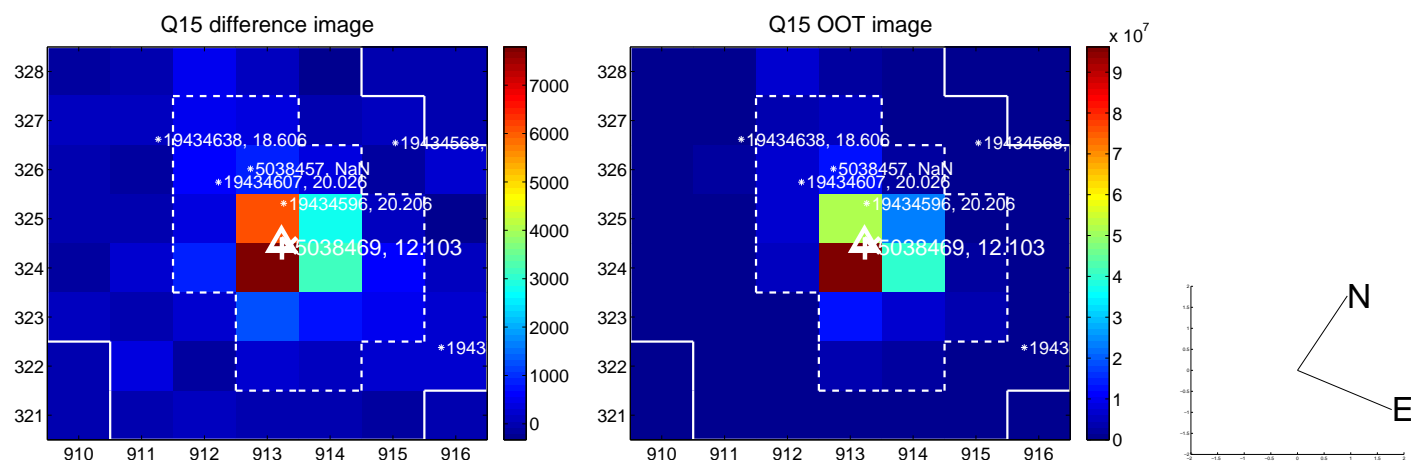
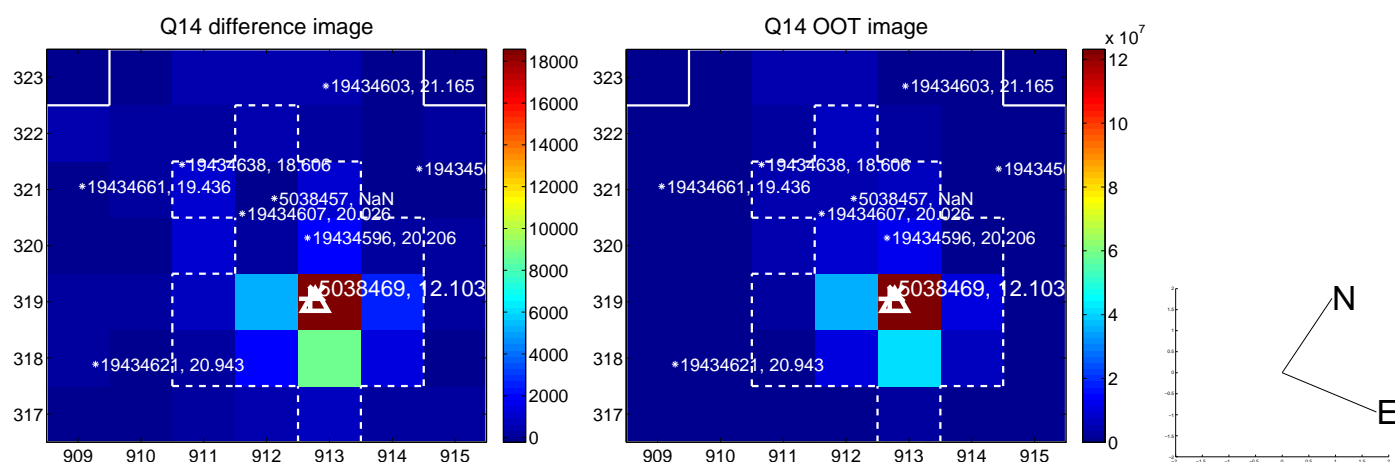
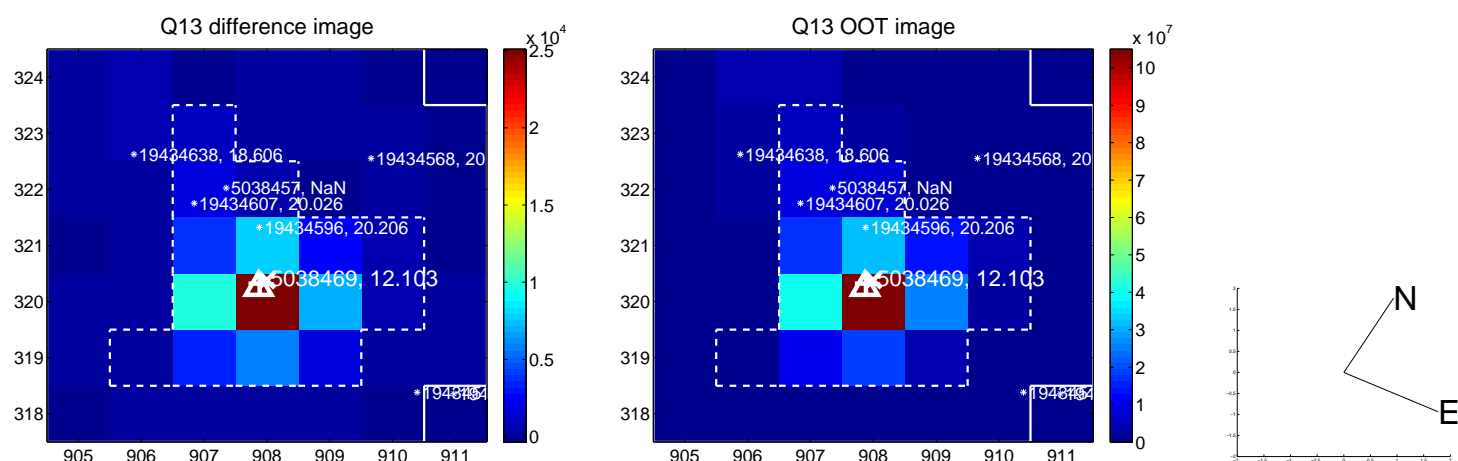
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



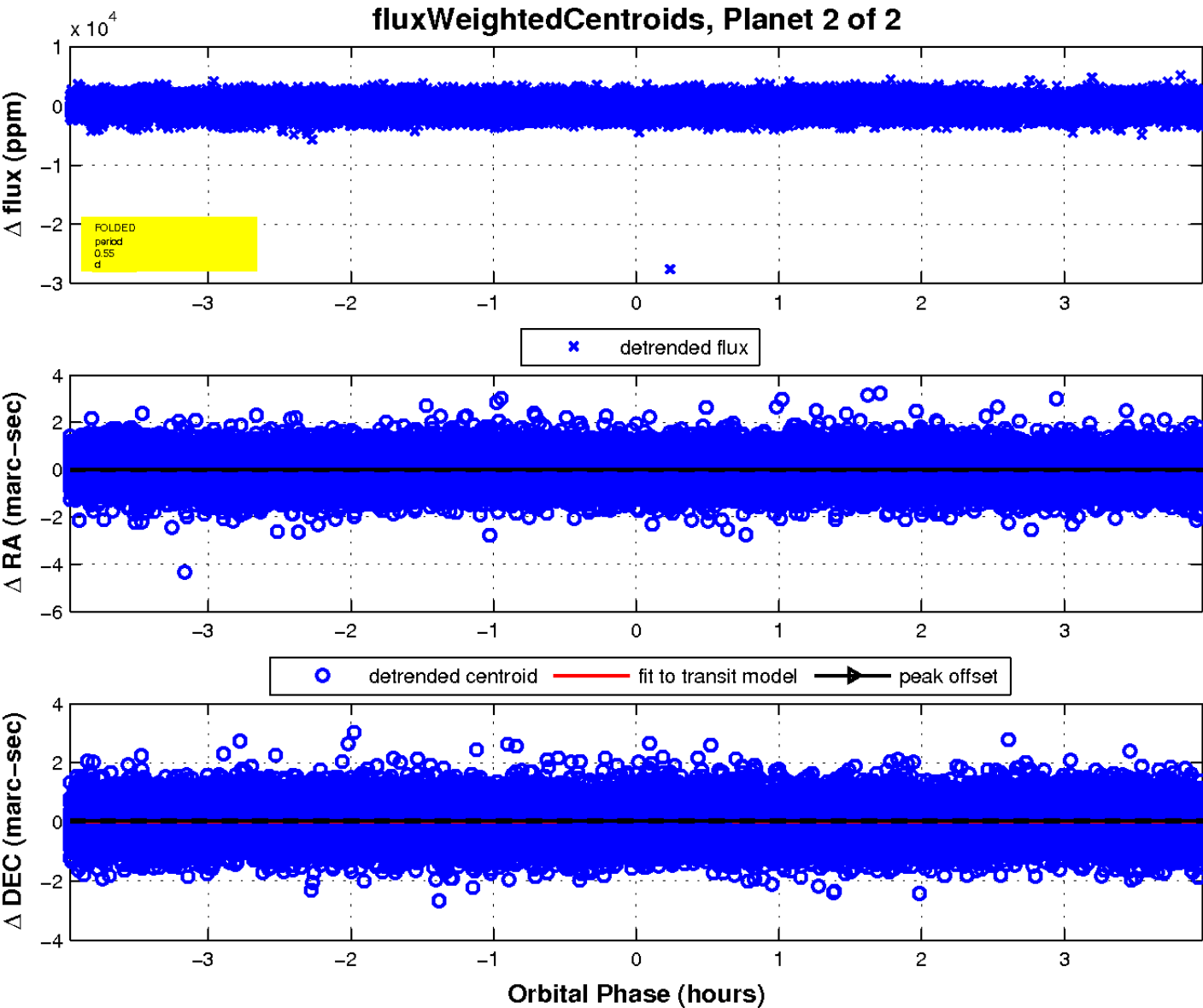
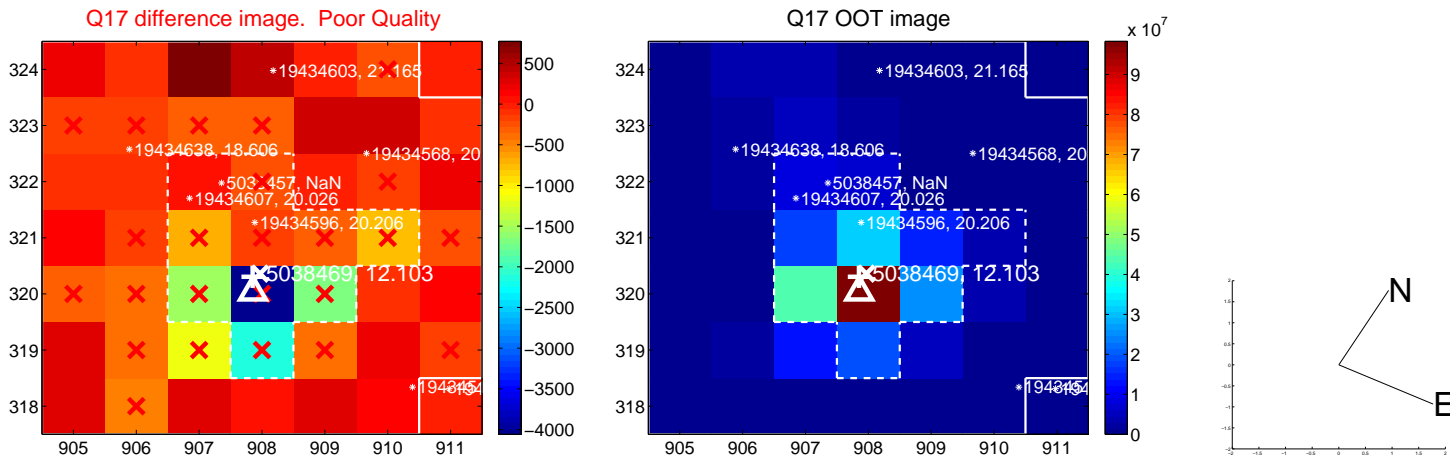
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

