

KIC 005036037

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})
005036037-01	OBS	No	0.544645	131.852736	387.9	1.131	11.9	15.7	3.11	7872	6.27	117173.69
005036037-02	OBS	No	0.544645	131.578821	291.1	1.064	10.6	11.7	3.11	7872	6.21	117173.89

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005036037-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
005036037-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD

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

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

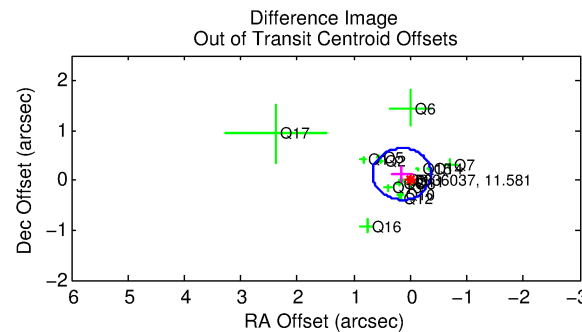
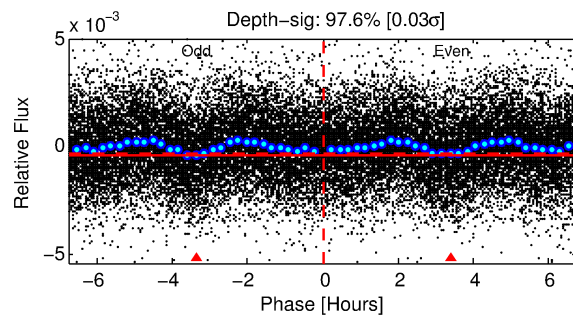
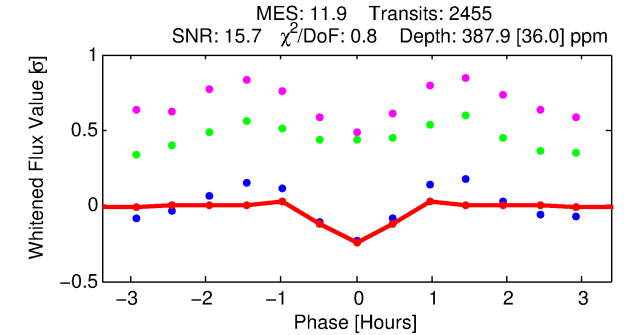
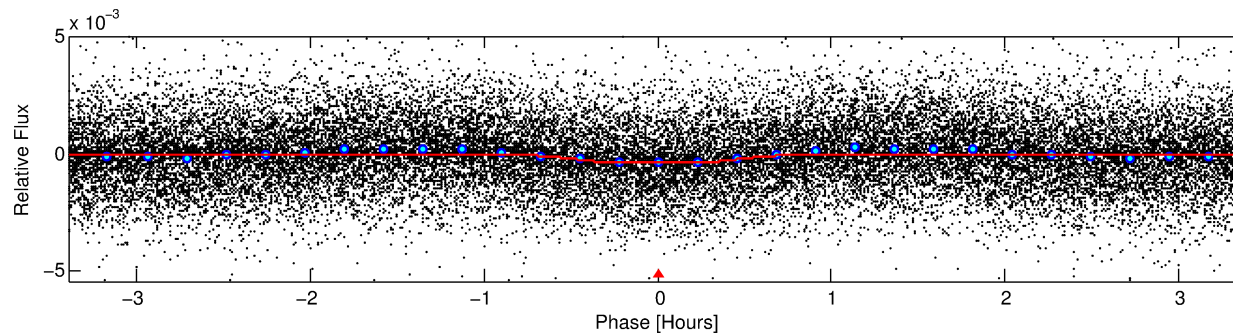
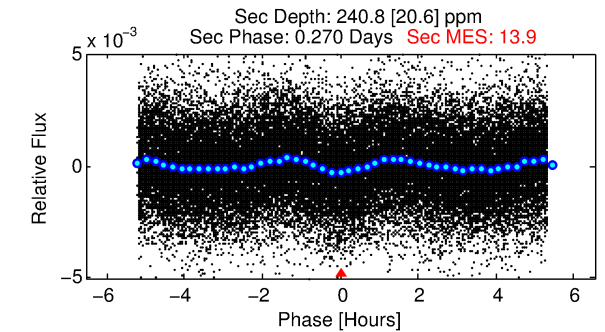
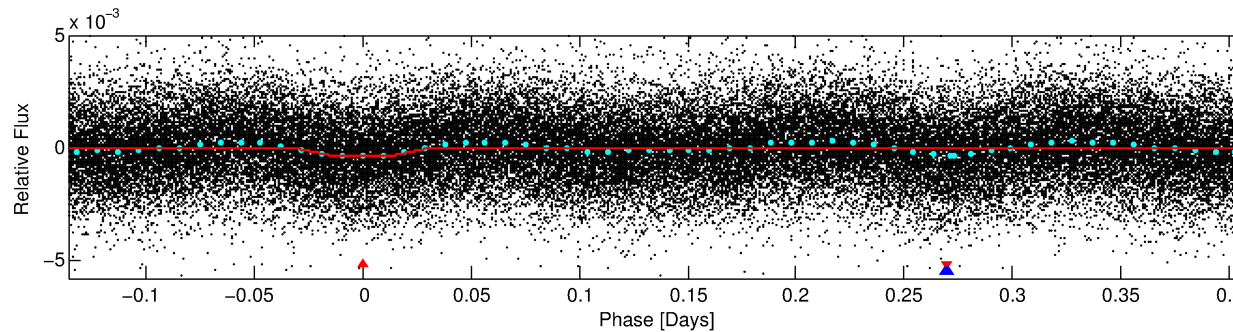
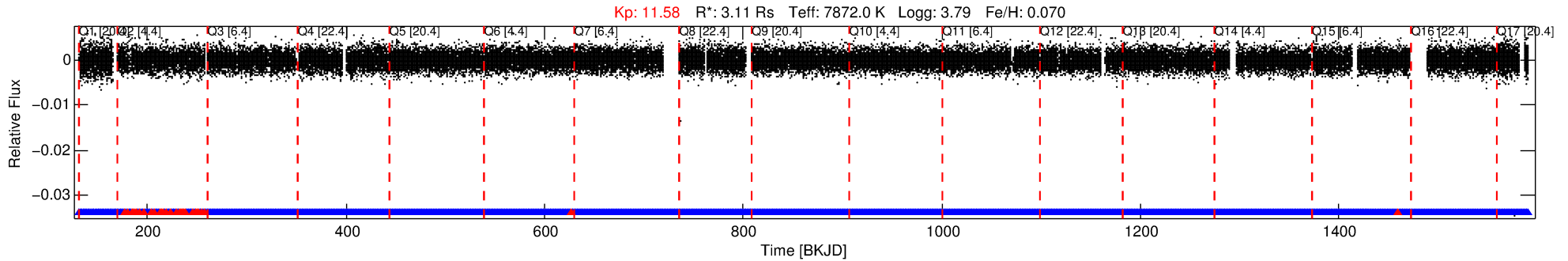
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005036037-01

No Significant Match Found

DV One-Page Summary

KIC: 5036037 Candidate: 1 of 2 Period: 0.545 d



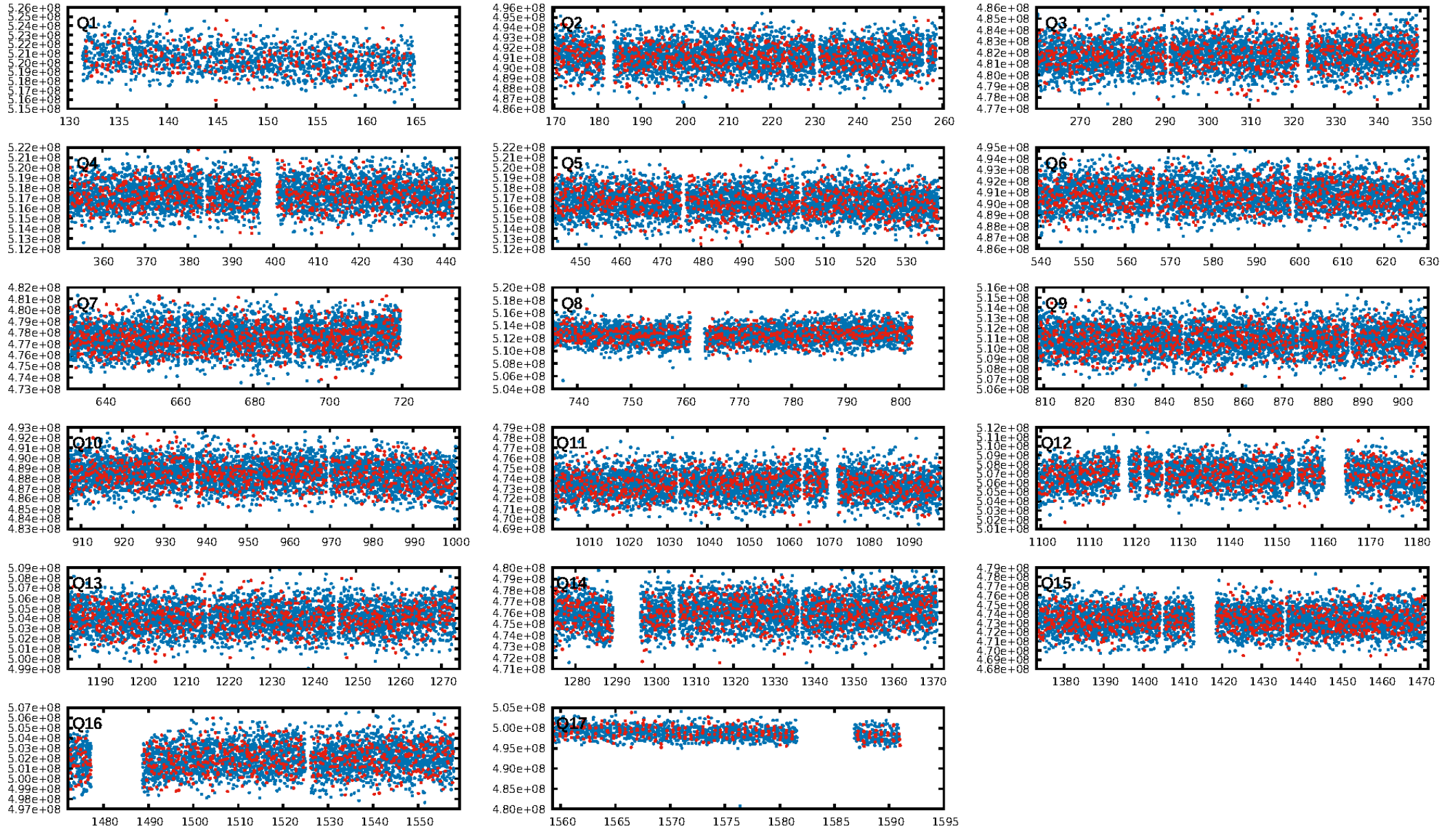
DV Fit Results:

Period = 0.54465 [0.00001] d
Epoch = 131.8527 [0.0011] BKJD
Rp/R* = 0.0185 [0.0081]
a/R* = 3.64 [8.34]
b = 0.30 [7.66]
Seff = 117173.69 [72118.32]
Teff = 4718 [726] K
Rp = 6.27 [3.66] Re
a = 0.0168 [0.0062] AU
Ag = 0.96 [1.01] [-0.04σ]
Teffp = 7213 [1618] K [1.41σ]

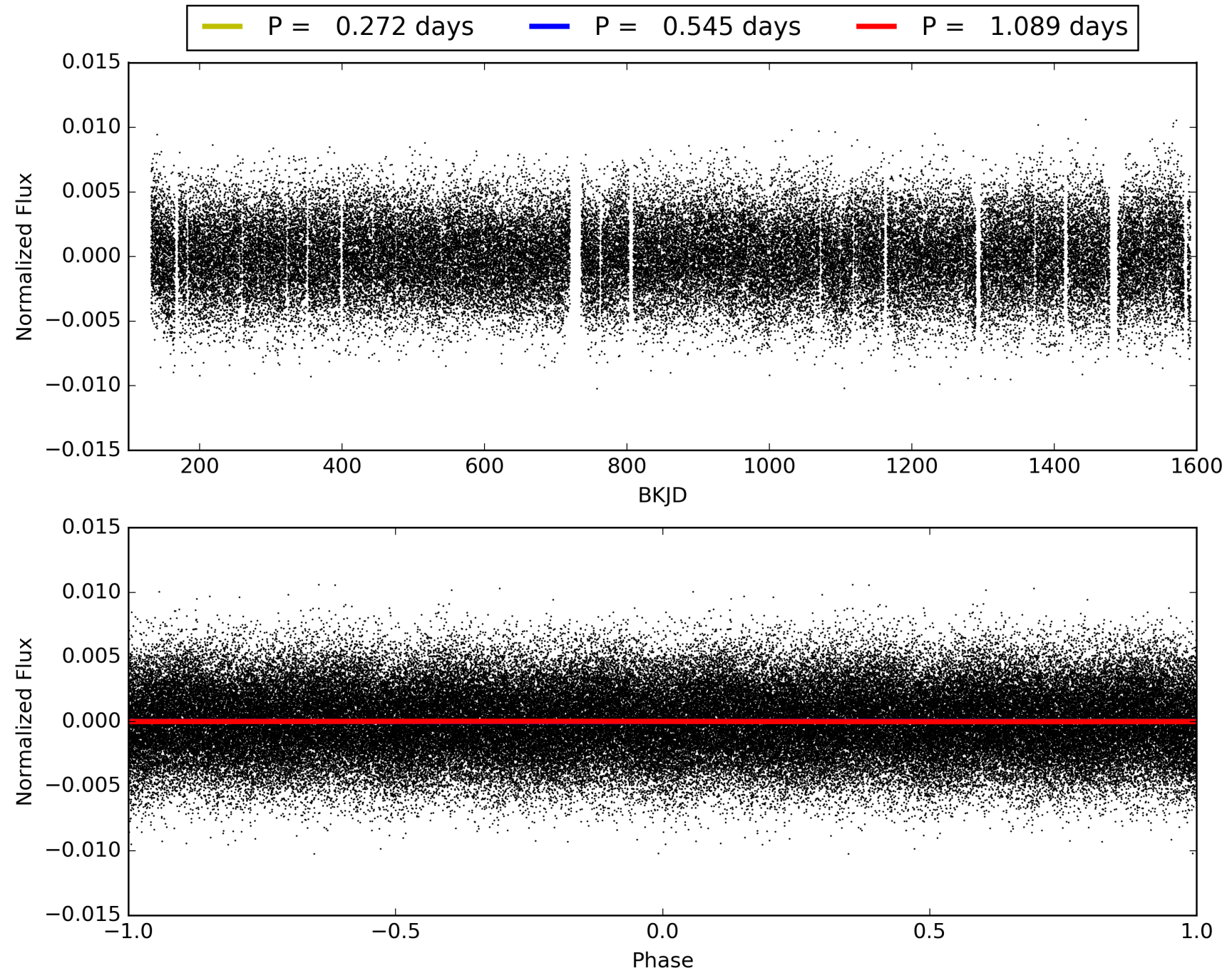
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.06e-18
RollingBand-fgt: 0.99 [2310/2345]
GhostDiagnostic-chr: 1.076
Centroid-sig: 0.0%
Centroid-so: 0.198 arcsec [4.92σ]
OotOffset-rm: 0.196 arcsec [1.14σ]
KicOffset-rm: 0.180 arcsec [1.04σ]
OotOffset-st: 4/4/3/5 [16]
KicOffset-st: 4/4/3/5 [16]
DiffImageQuality-fgm: 0.88 [14/16]
DiffImageOverlap-fno: 1.00 [17/17]

TCE 005036037-01, PDC Light Curves

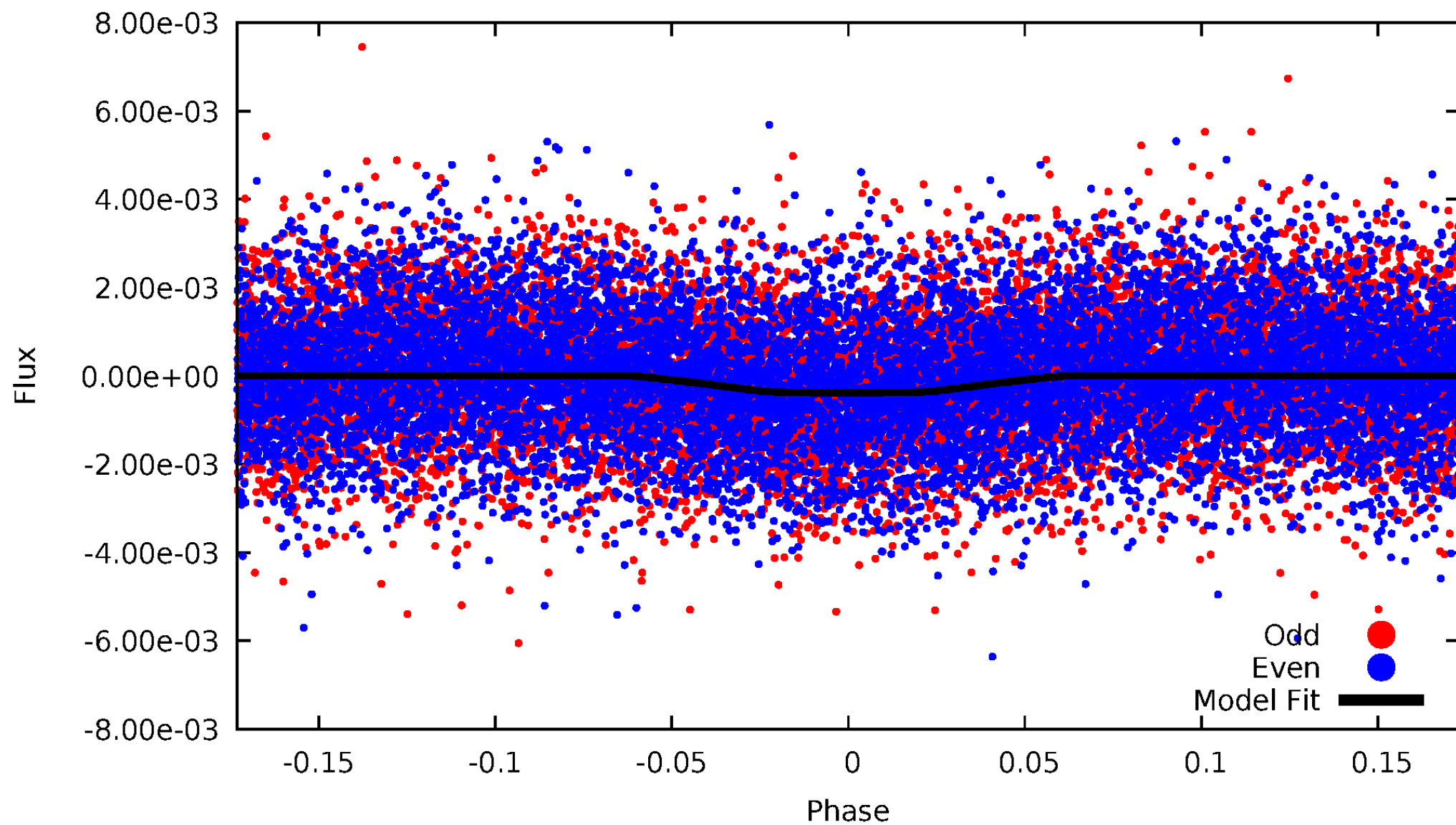


TCE 005036037-01



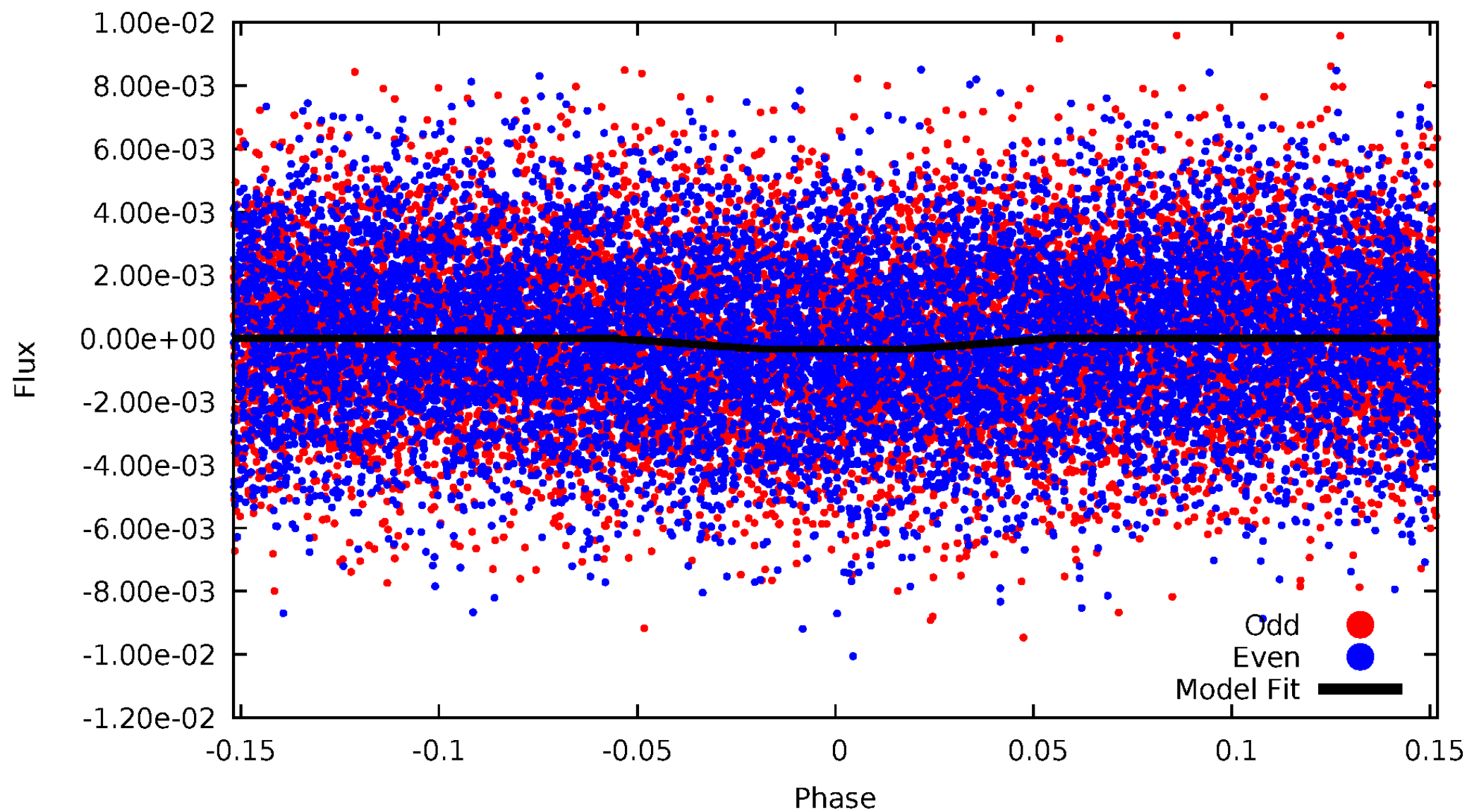
DV Odd/Even

TCE 005036037-01

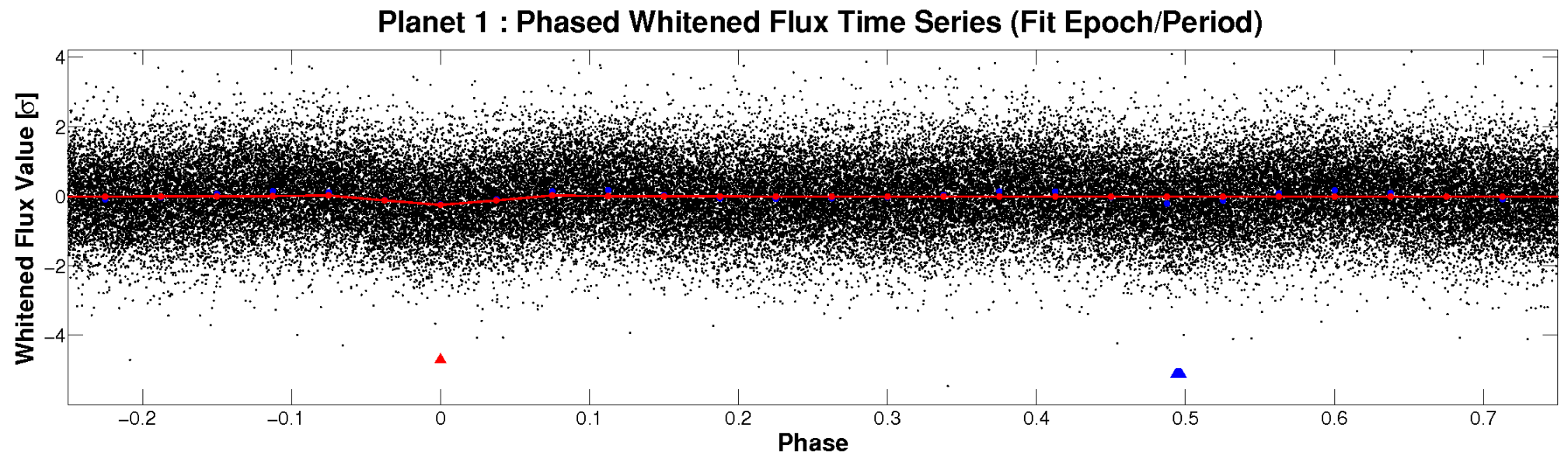
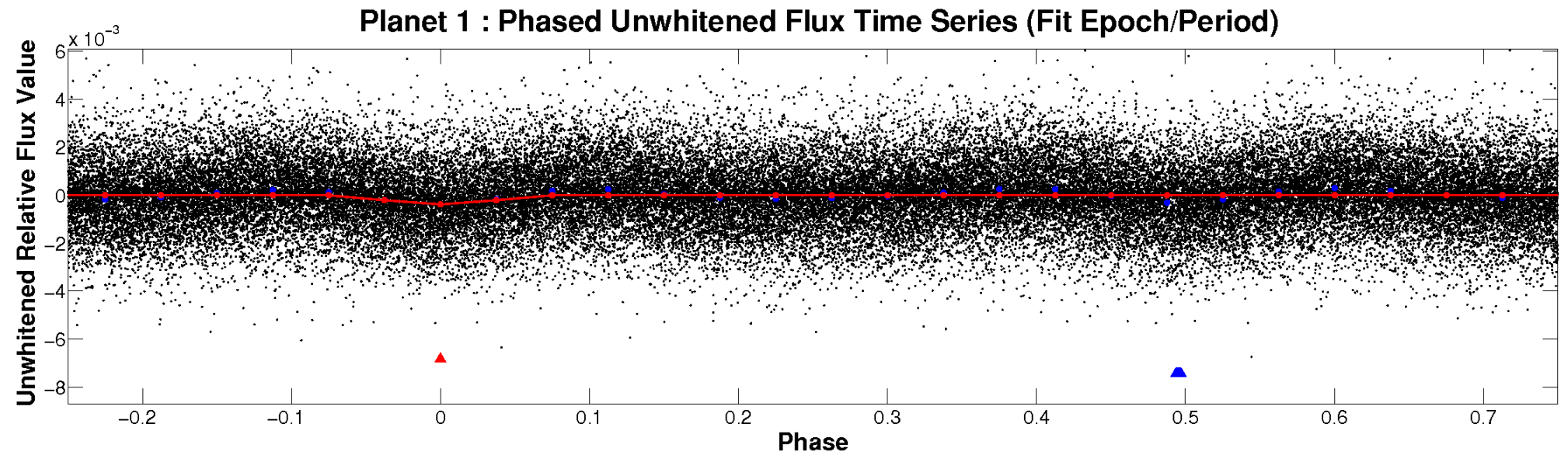


ALT Odd/Even

TCE 005036037-01

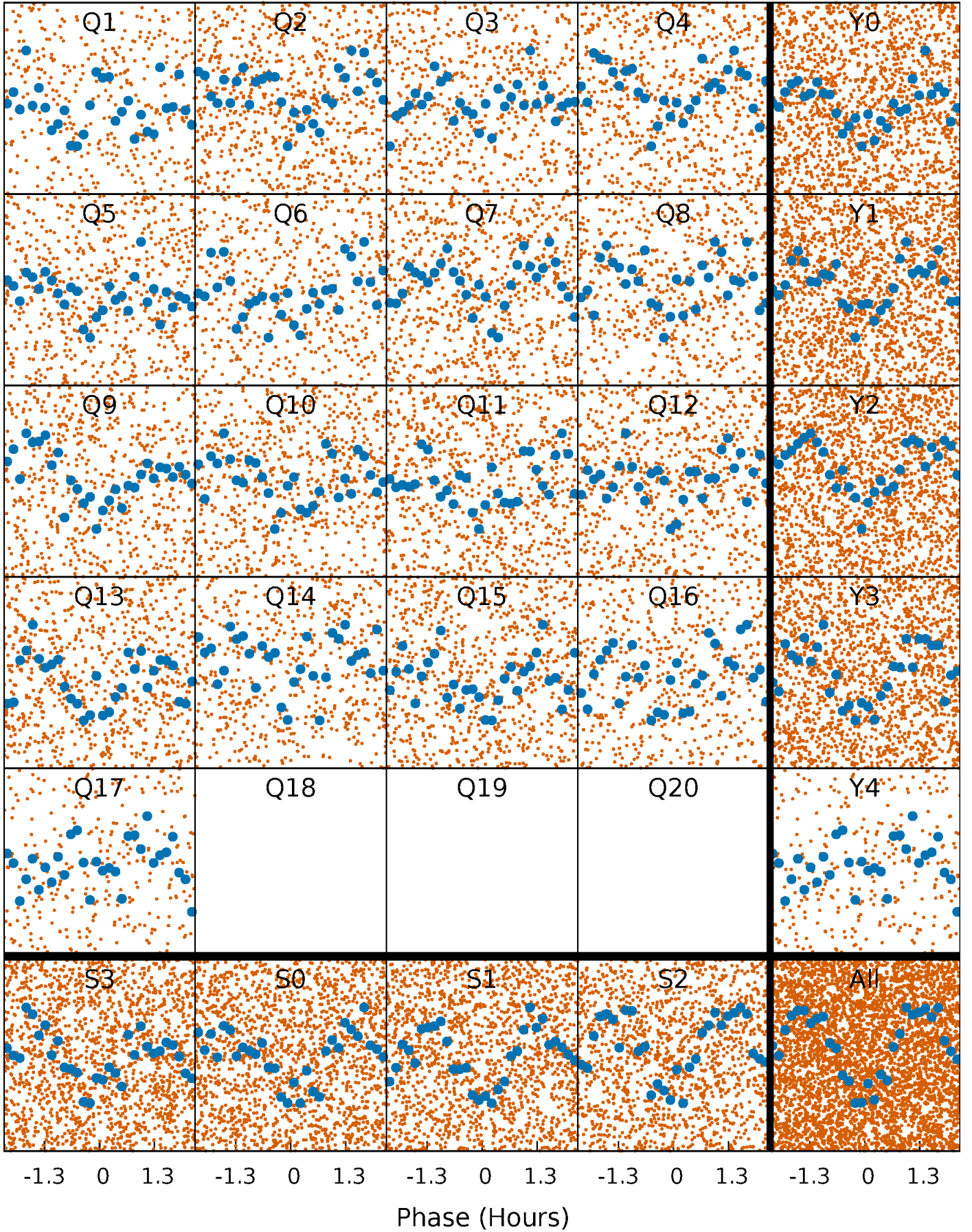


Non-Whitened Vs. Whitened Light Curve



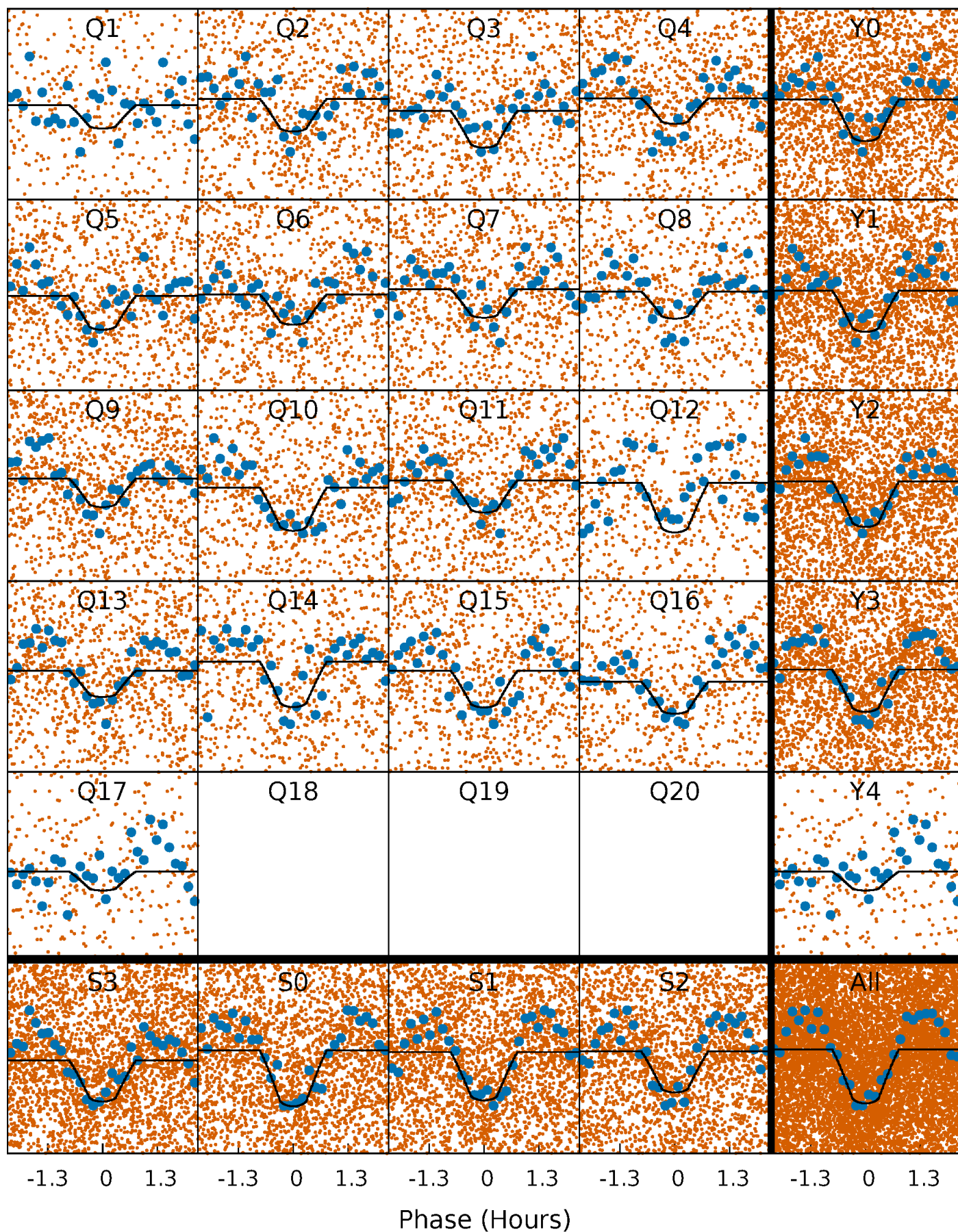
PDC Quarter-Phased Transit Curves

TCE 005036037-01 P= 0.544645 Days $T_0=131.852736$ (BKJD)



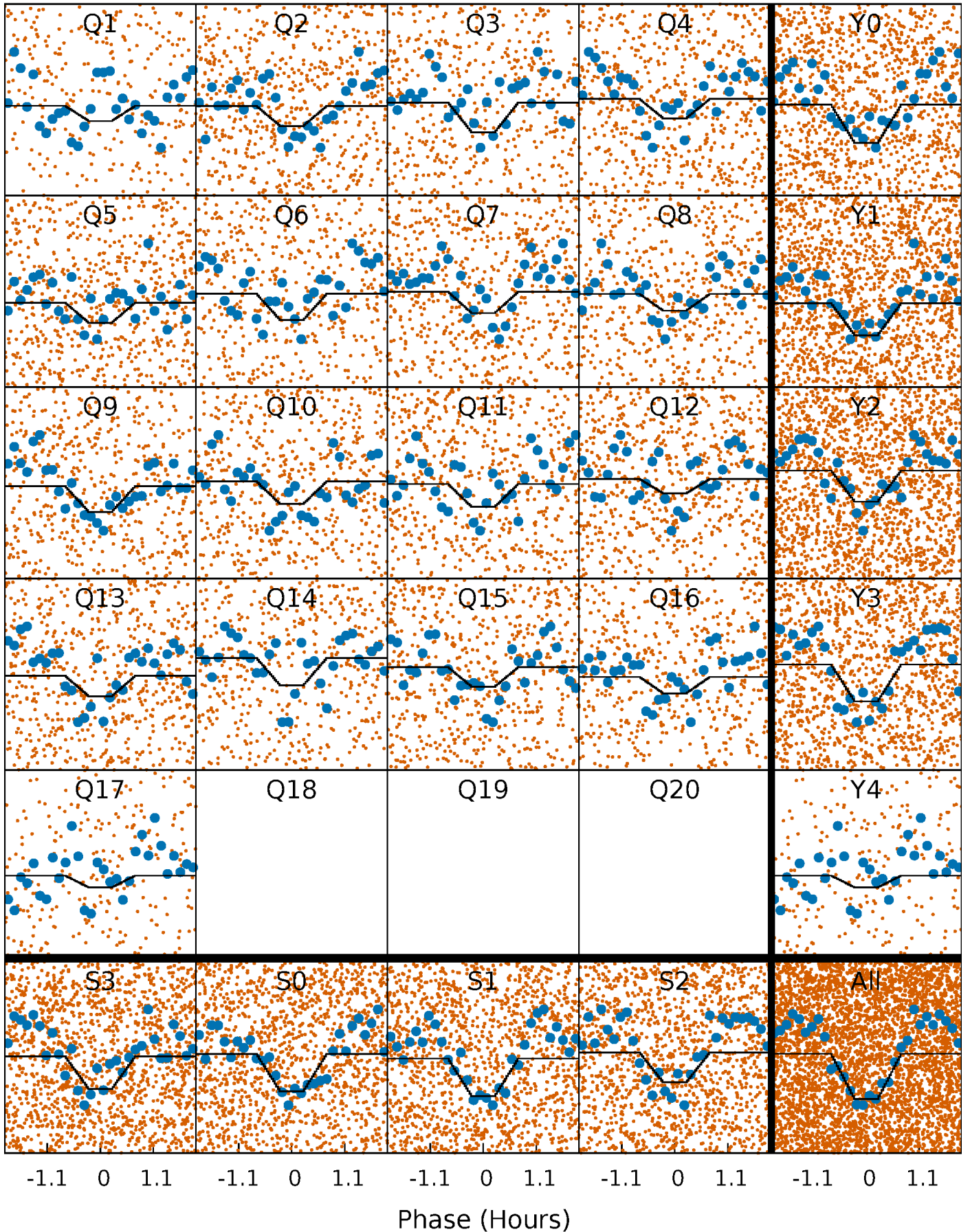
DV Quarter-Phased Transit Curves

TCE 005036037-01 P= 0.544645 Days $T_0=131.852736$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

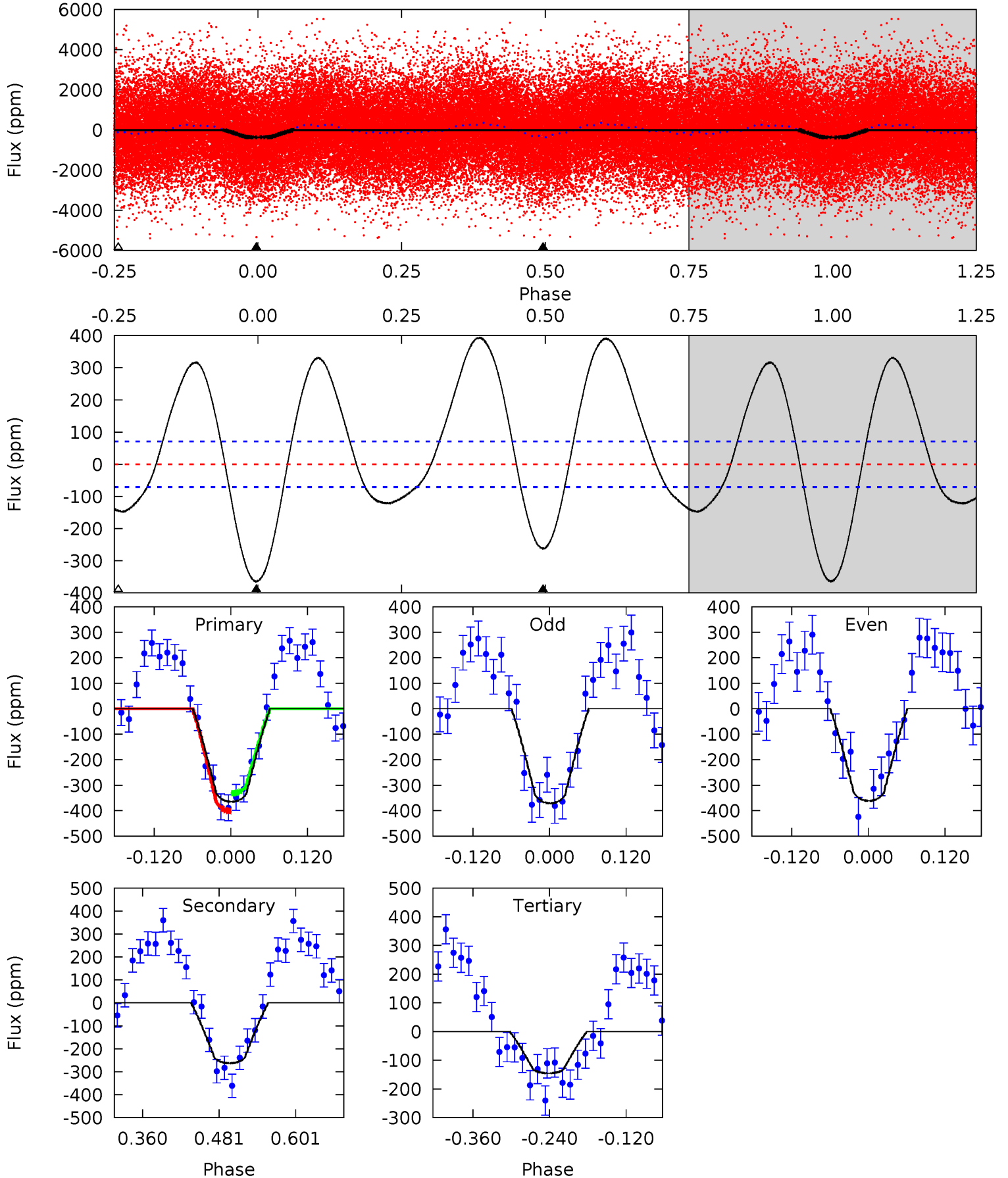
TCE 005036037-01 P= 0.544645 Days $T_0=131.852750$ (BKJD)



DV Model-Shift Uniqueness Test

005036037-01, P = 0.544645 Days, E = 131.308091 Days

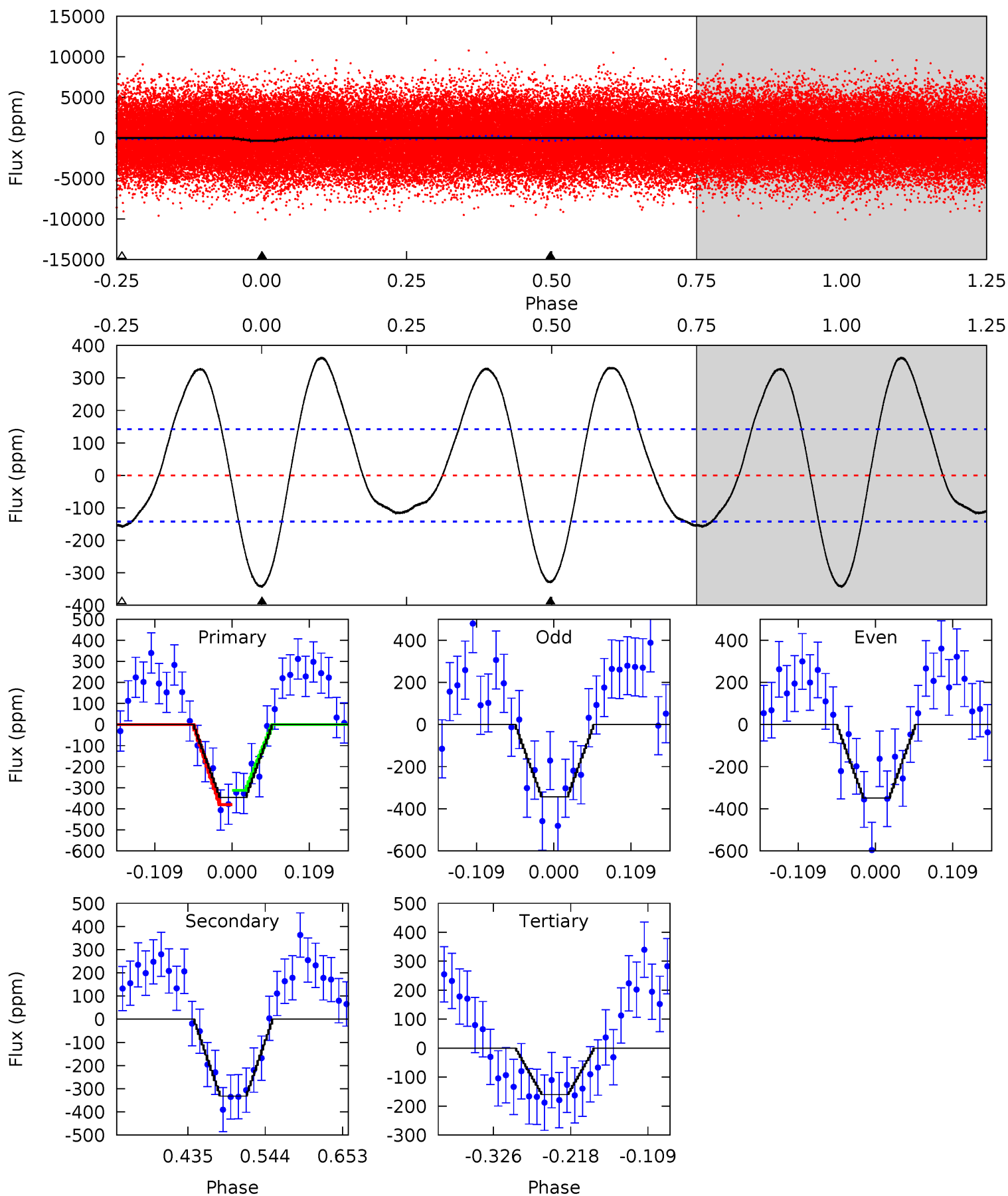
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
23.3	16.8	9.29	0	4.53	1.55	10.2	14.0	23.3	7.51	16.8	0.30	0.92	0.52	2.25



Alt Model-Shift Uniqueness Test

005036037-01, P = 0.544645 Days, E = 131.308105 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.1	10.6	5.13	0	4.55	1.60	5.23	5.93	11.1	5.50	10.6	0.09	0.94	0.51	1.08



Stellar Parameters For KIC 005036037

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$\rho_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7872^{+218}_{-354}	$3.785^{+0.345}_{-0.115}$	$0.070^{+0.250}_{-0.350}$	$3.109^{+0.699}_{-1.198}$	$2.150^{+0.284}_{-0.527}$	$0.101^{+0.262}_{-0.038}$
	+3%/-4%	+9%/-3%	+357%/-500%	+22%/-39%	+13%/-25%	+260%/-37%
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 005036037-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-263 ± 16	$5.61^{+2.89}_{-2.22}$	6450^{+461}_{-670}	6736^{+2902}_{-1614}	$1.261^{+2.167}_{-0.697}$
Alt.	-332 ± 31	$5.83^{+2.80}_{-2.31}$	6401^{+489}_{-642}	7089^{+3387}_{-1556}	$1.469^{+2.806}_{-0.771}$

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

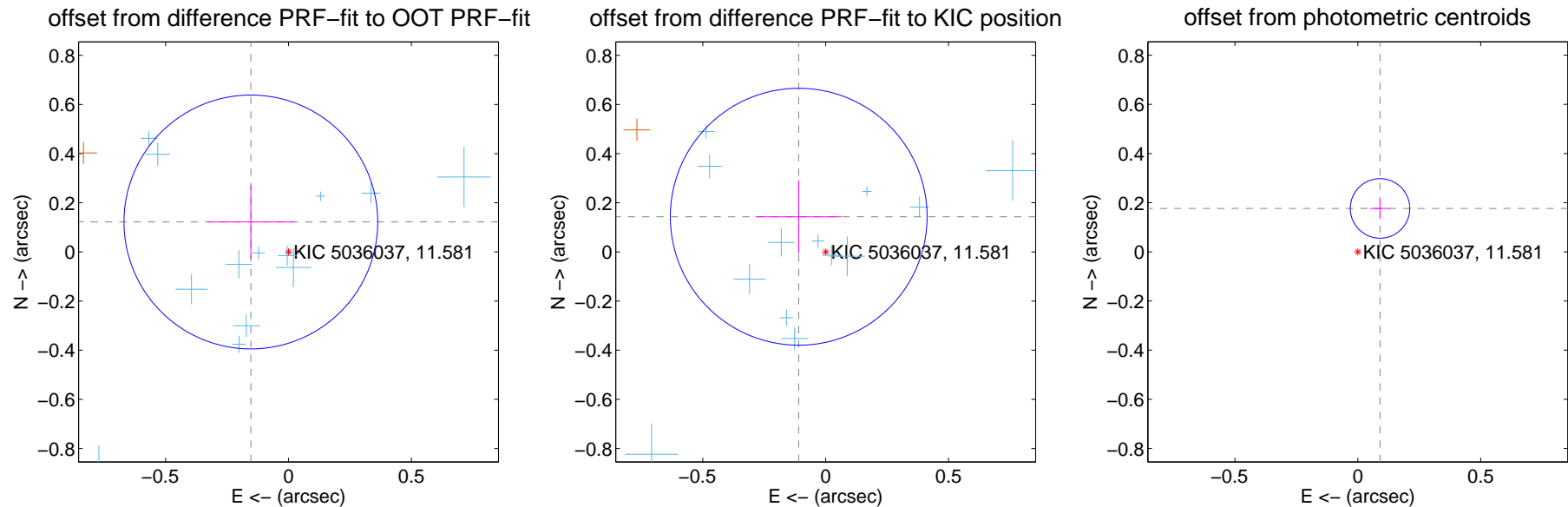
DV Centroid Data

Supplemental centroid analysis for 005036037-01. **Kepler magnitude: 11.58.** Transit SNR 15.75

There are 14 quarters with good PRF difference image offsets

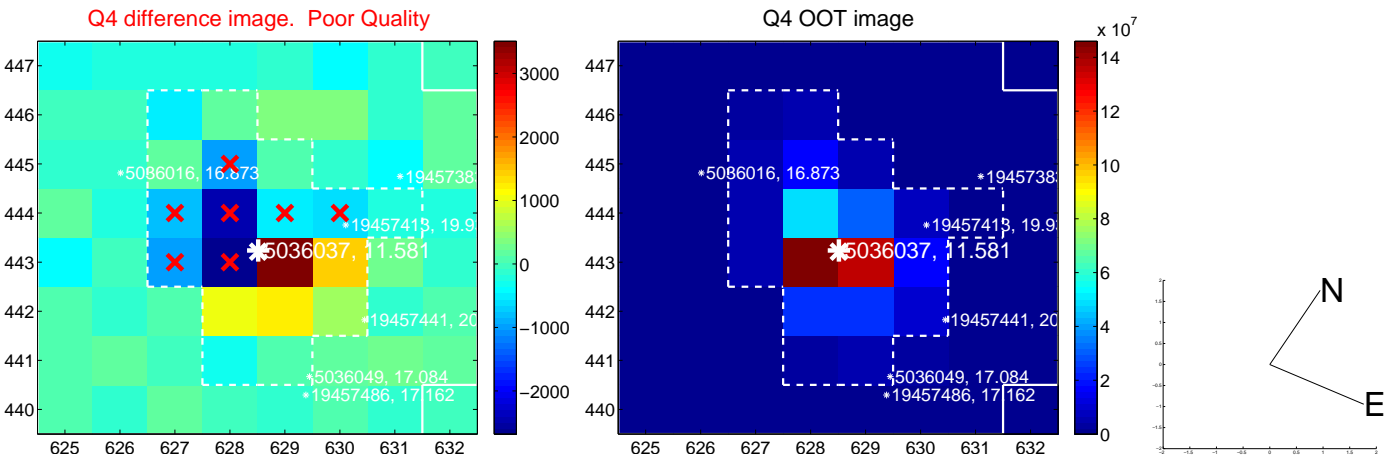
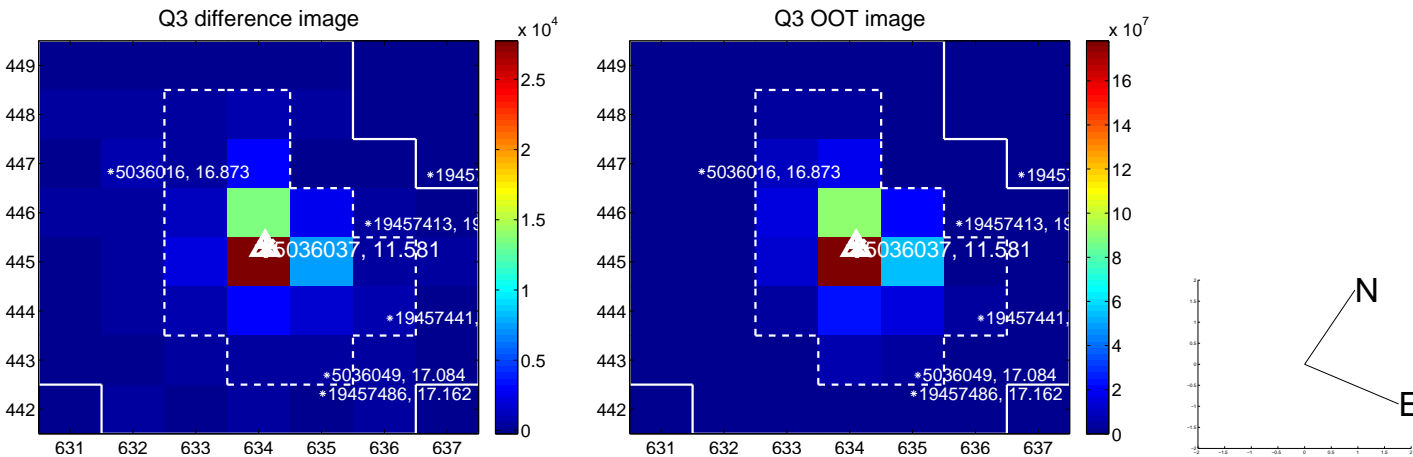
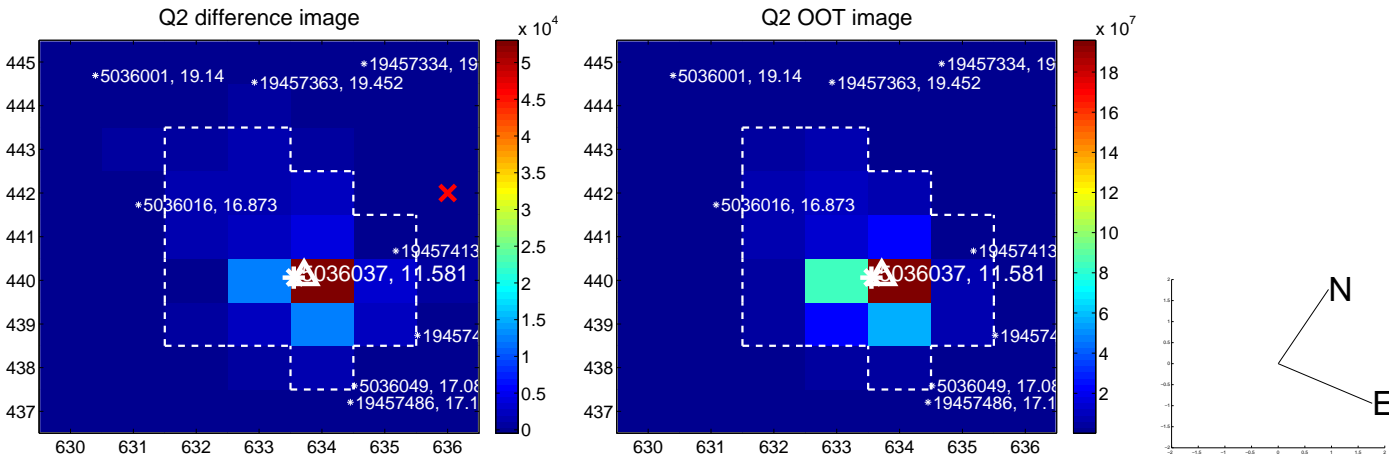
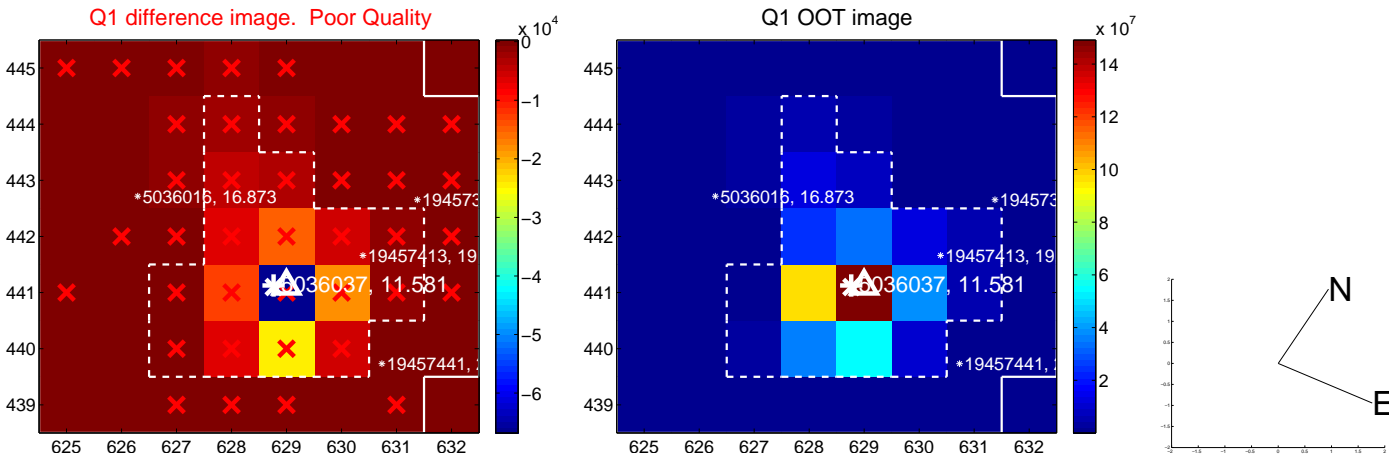
The direct PRF centroid is offset from the target star catalog position by about 0.10 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.196 ± 0.172	1.14	0.153 ± 0.177	0.122 ± 0.151
PRF-fit source offset from KIC position	0.180 ± 0.174	1.04	0.110 ± 0.175	0.143 ± 0.150
photometric centroid source offset	0.20 ± 0.04	4.92	-0.09 ± 0.04	0.18 ± 0.04

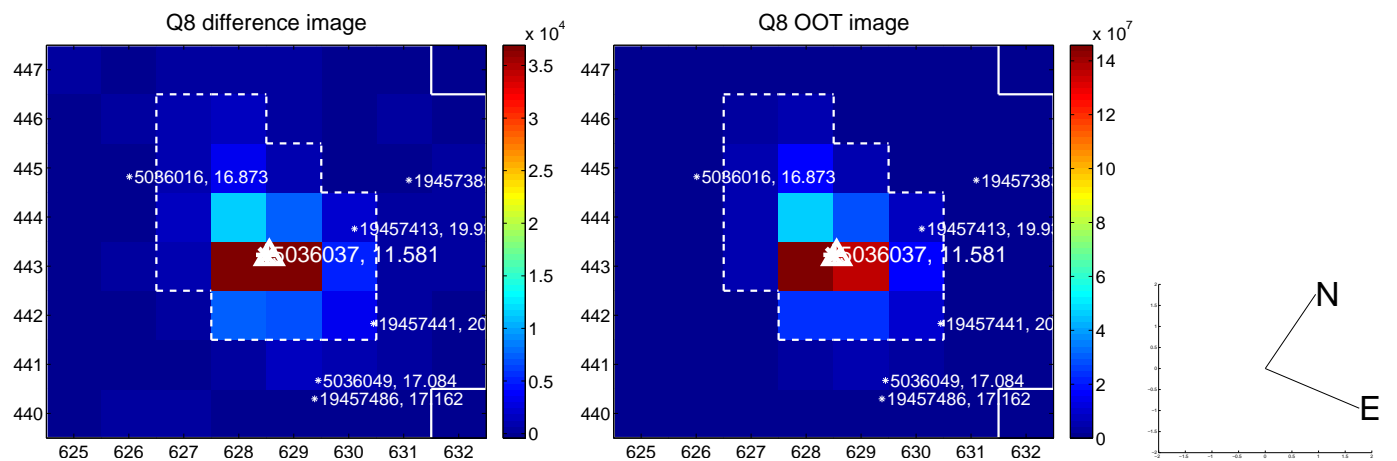
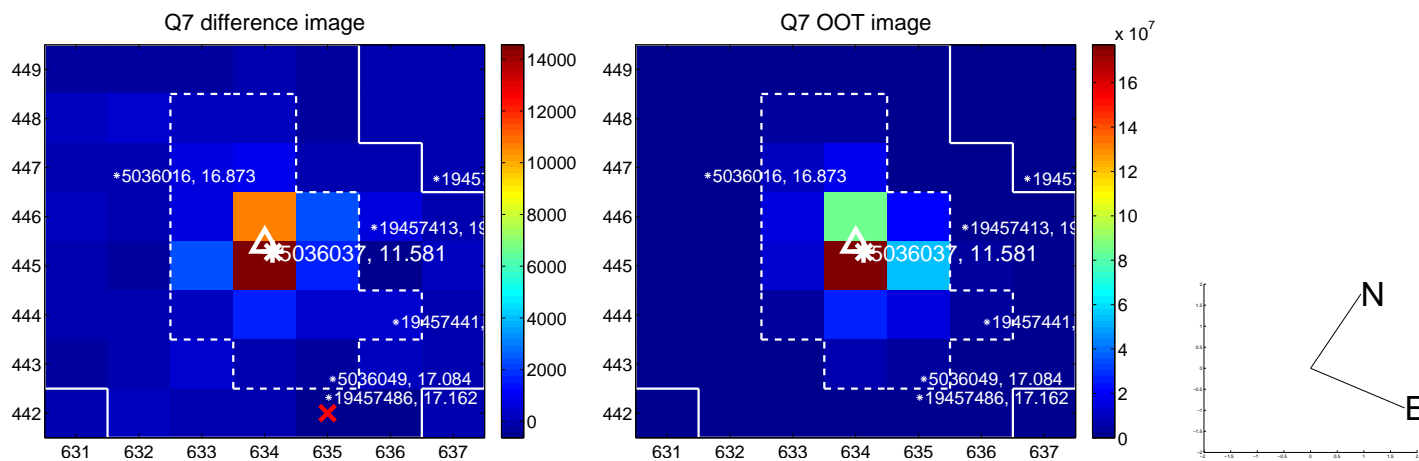
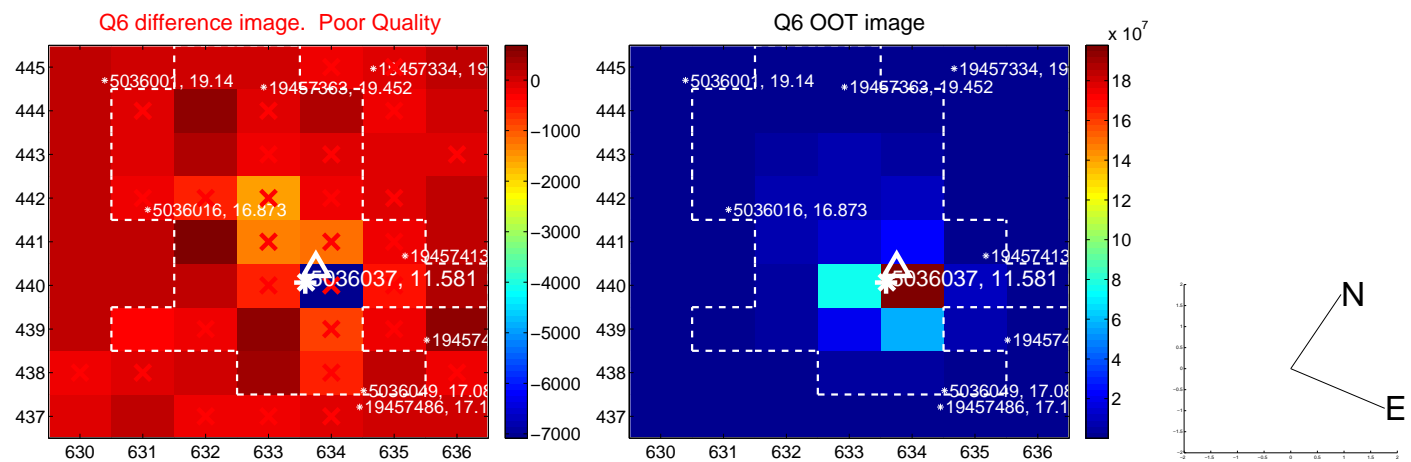
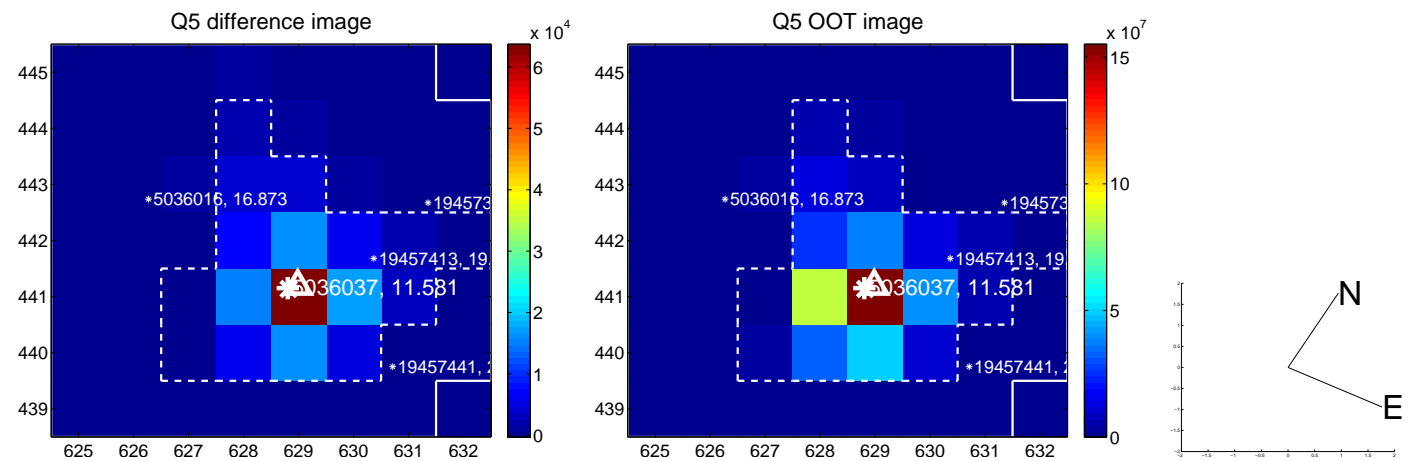


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

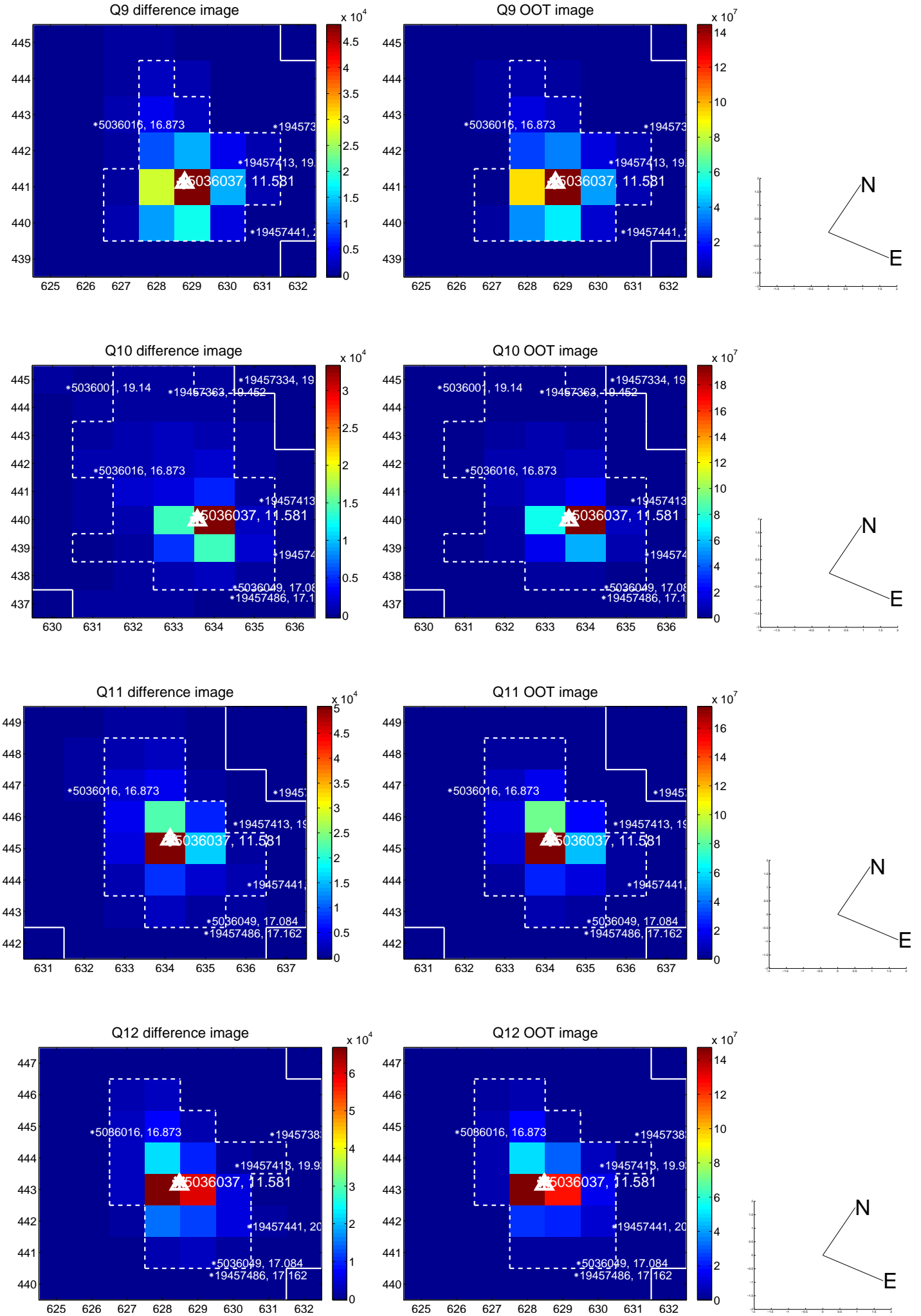
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



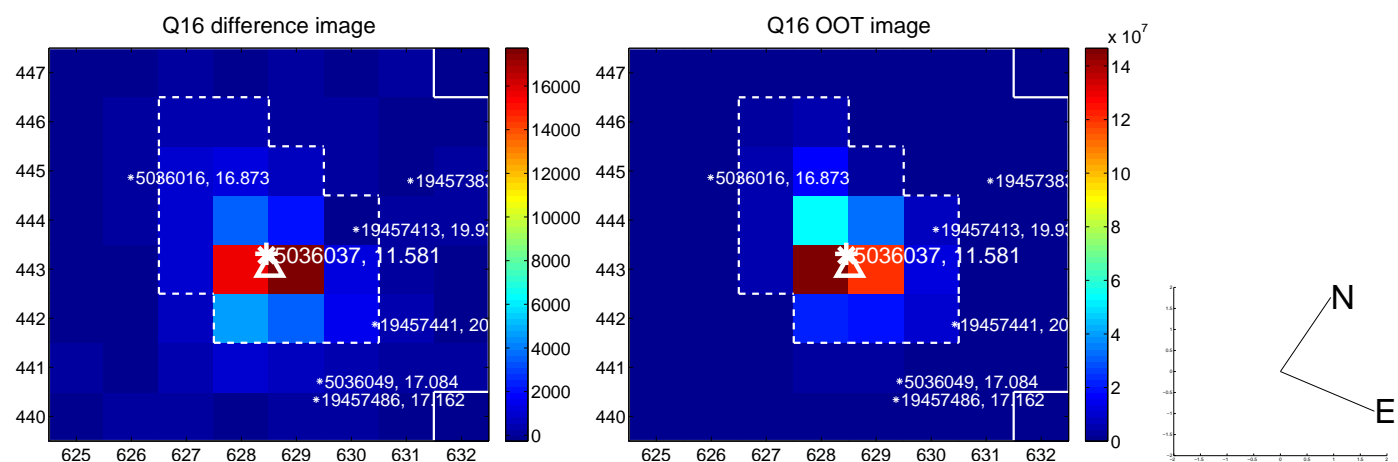
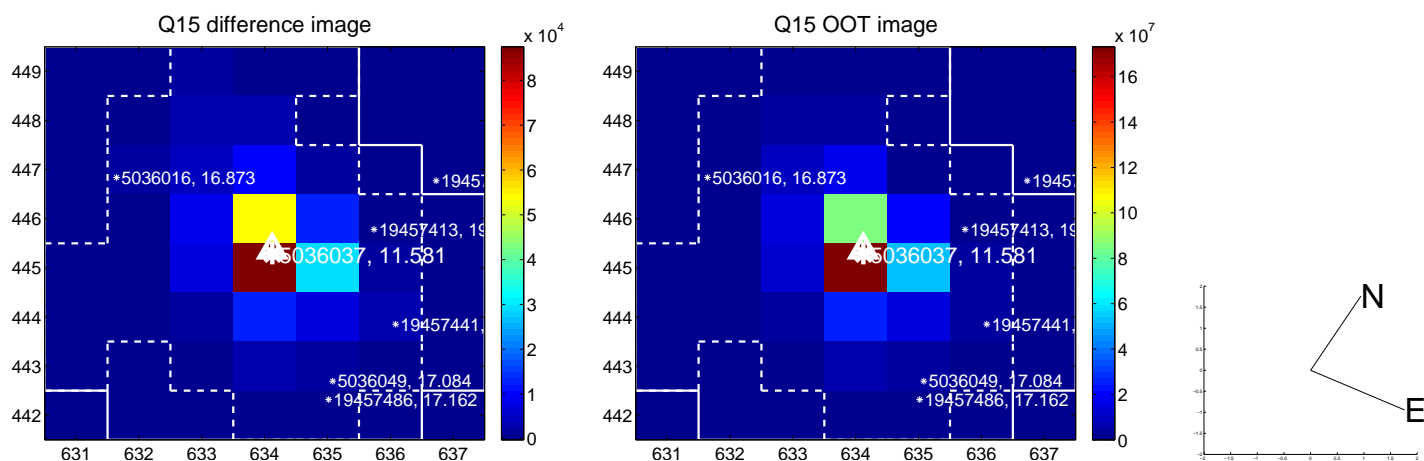
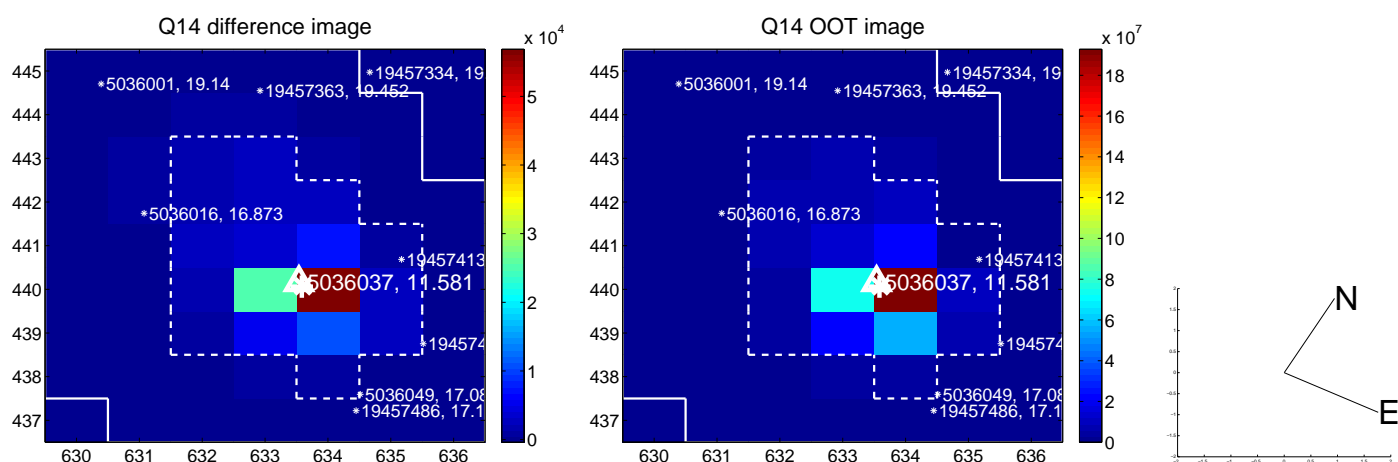
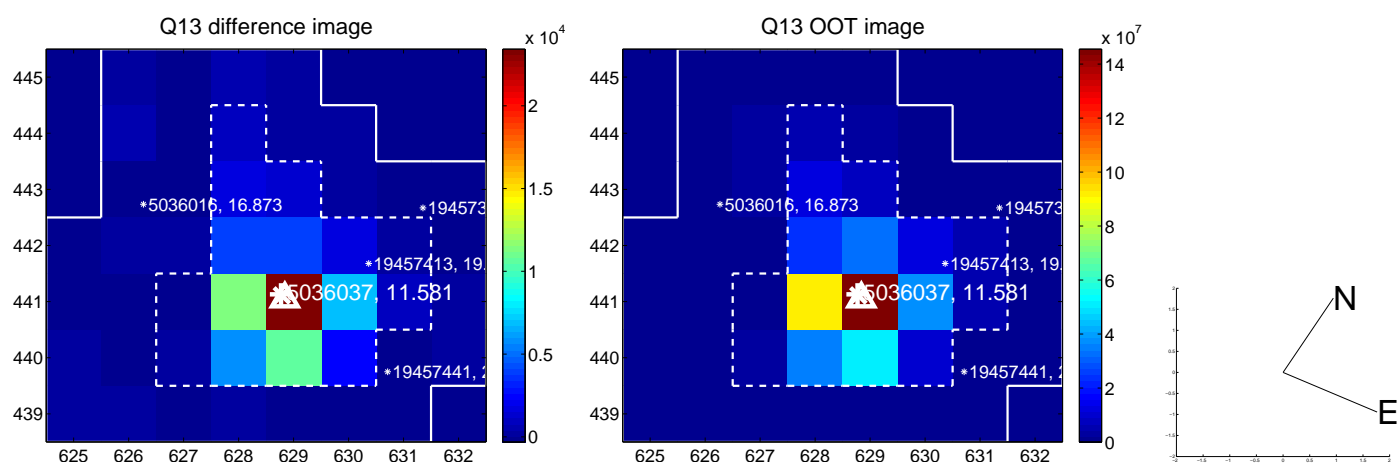
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



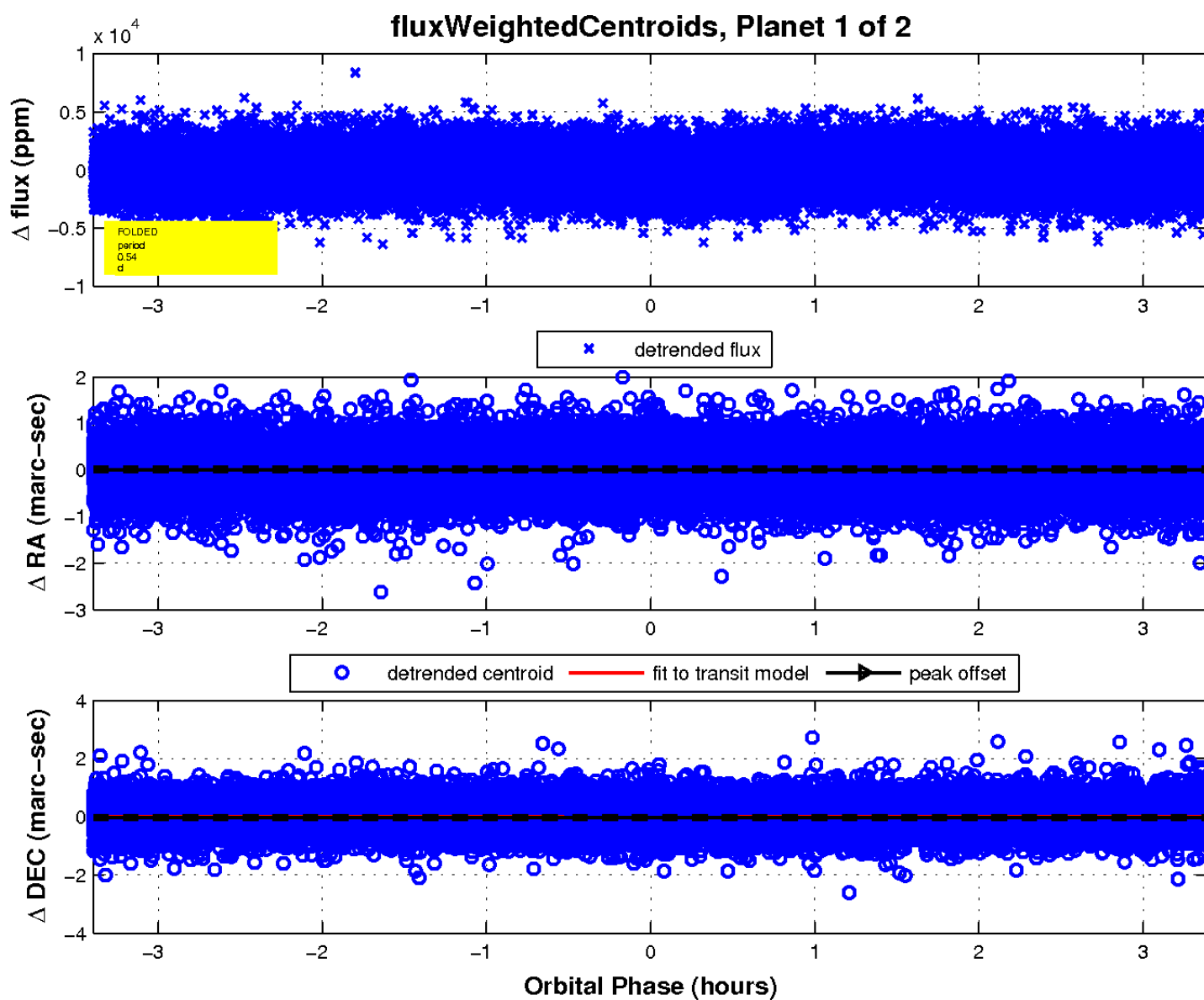
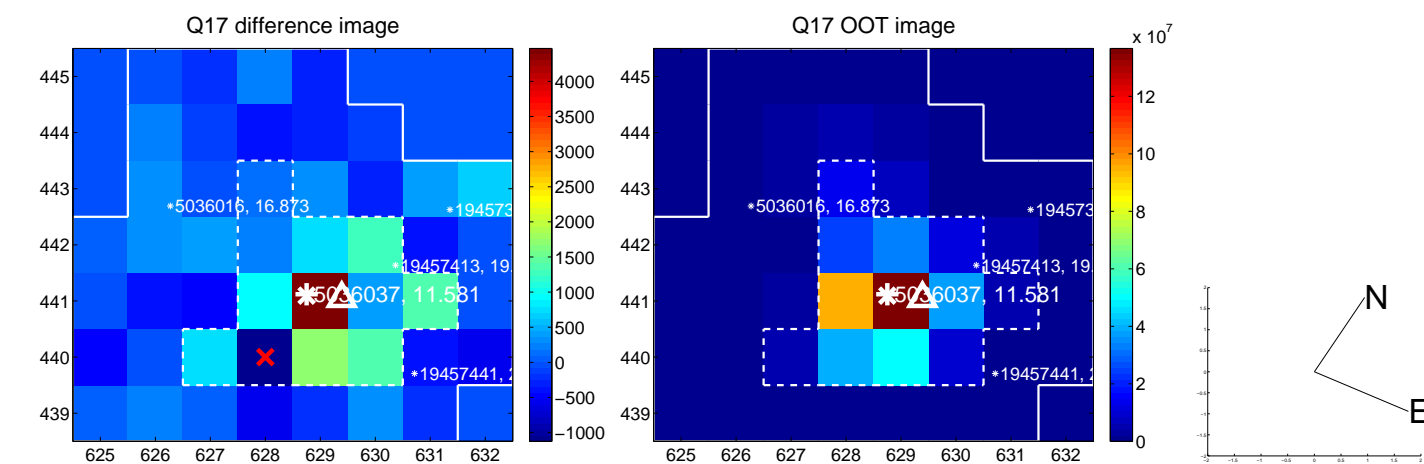
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

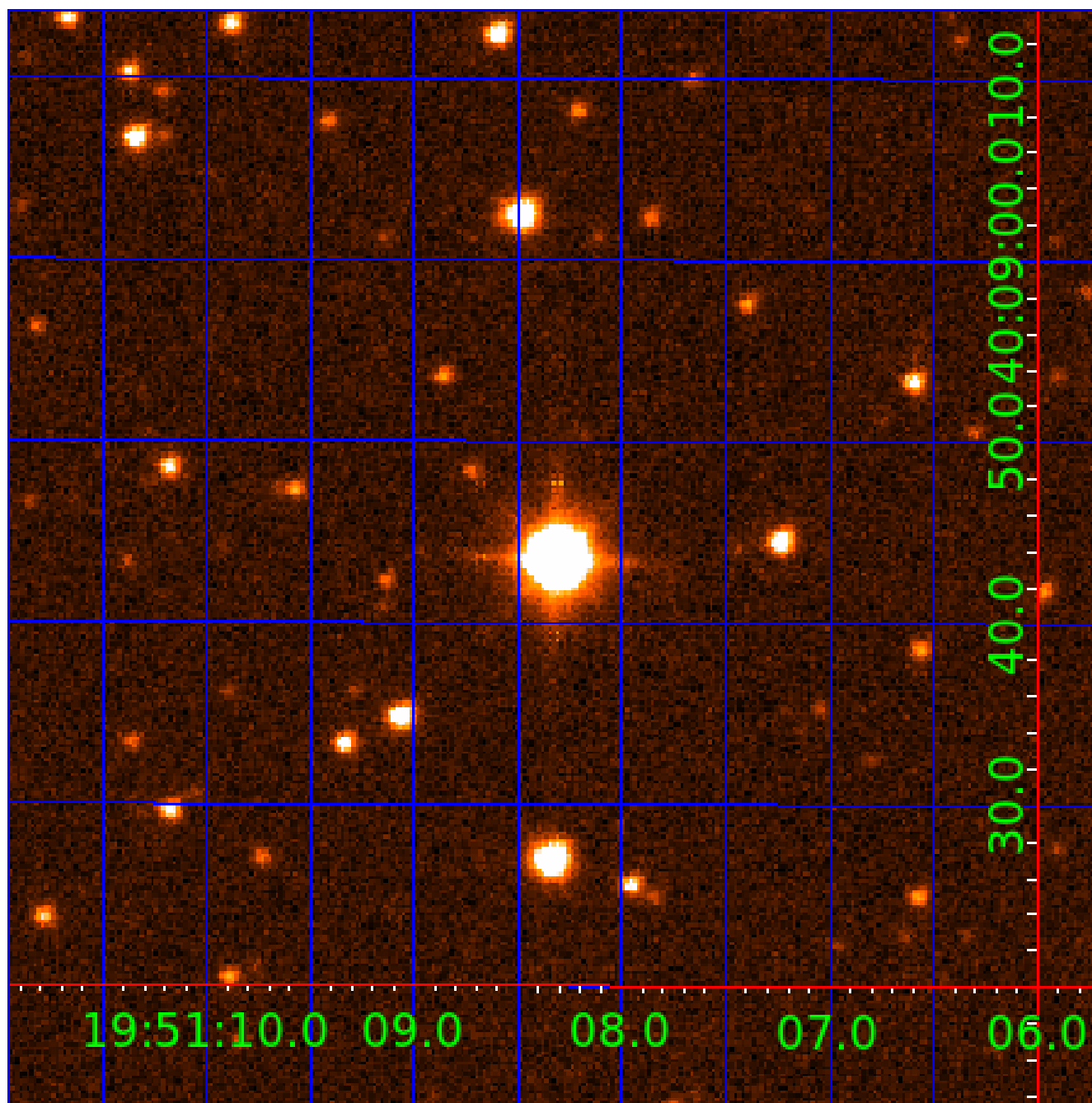


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 005036037

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})
005036037-01	OBS	No	0.544645	131.852736	387.9	1.131	11.9	15.7	3.11	7872	6.27	117173.69
005036037-02	OBS	No	0.544645	131.578821	291.1	1.064	10.6	11.7	3.11	7872	6.21	117173.89

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005036037-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
005036037-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD

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

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

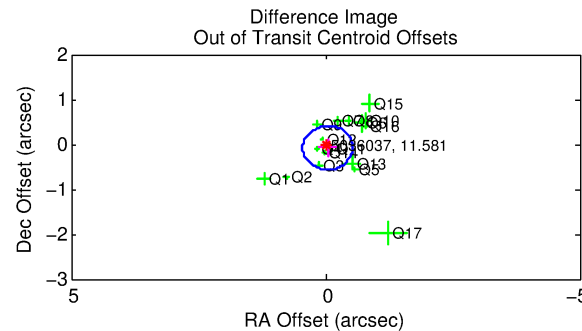
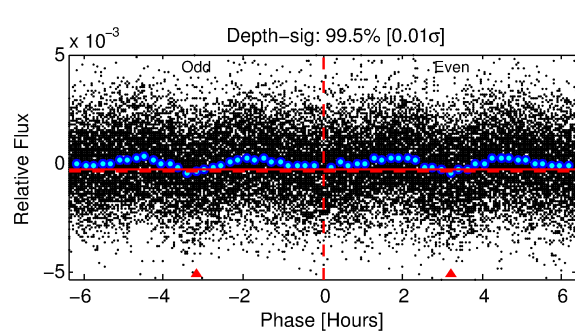
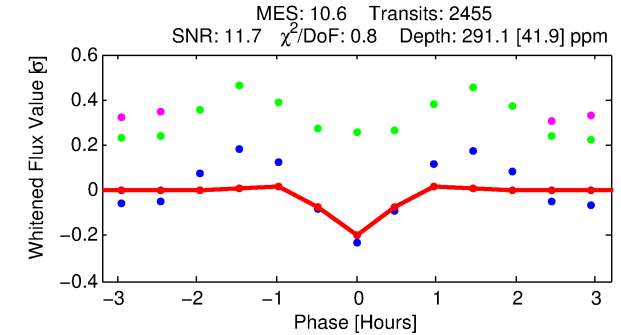
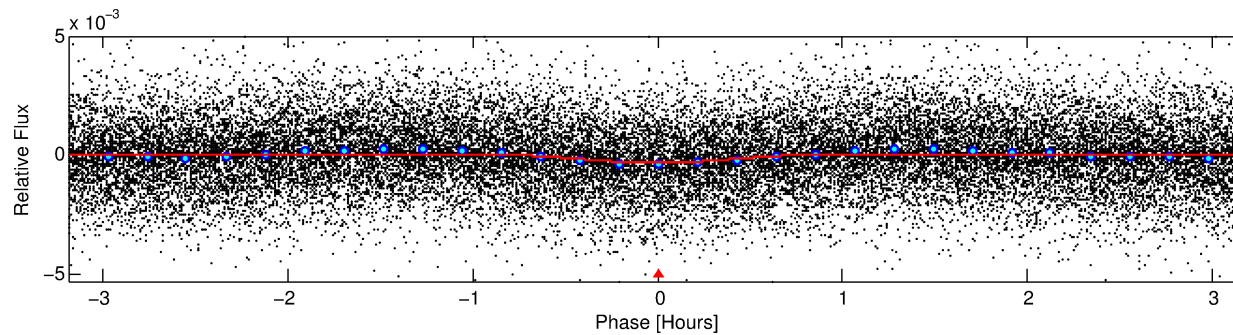
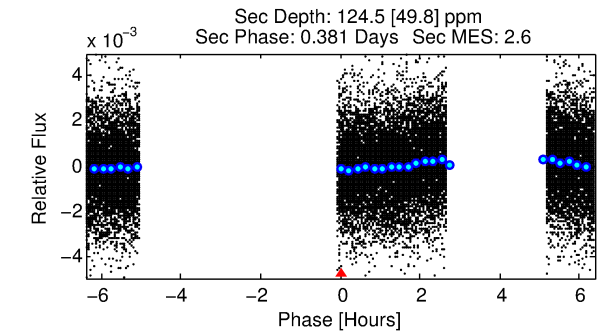
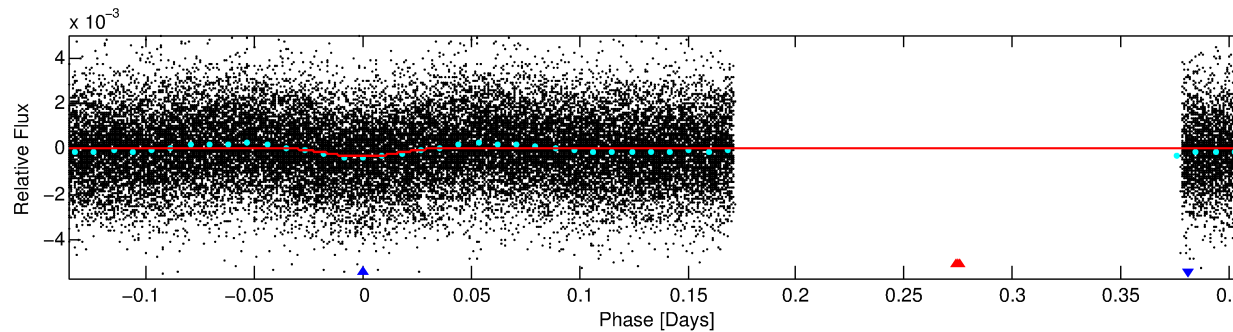
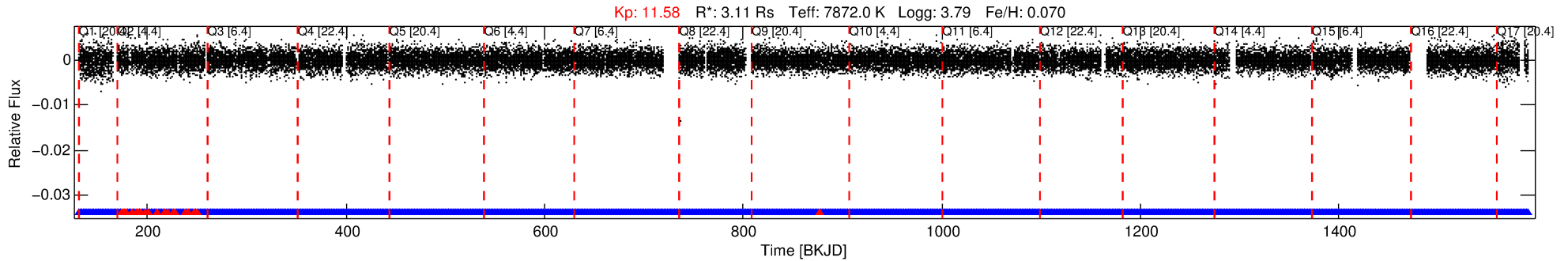
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005036037-02

No Significant Match Found

DV One-Page Summary

KIC: 5036037 Candidate: 2 of 2 Period: 0.545 d



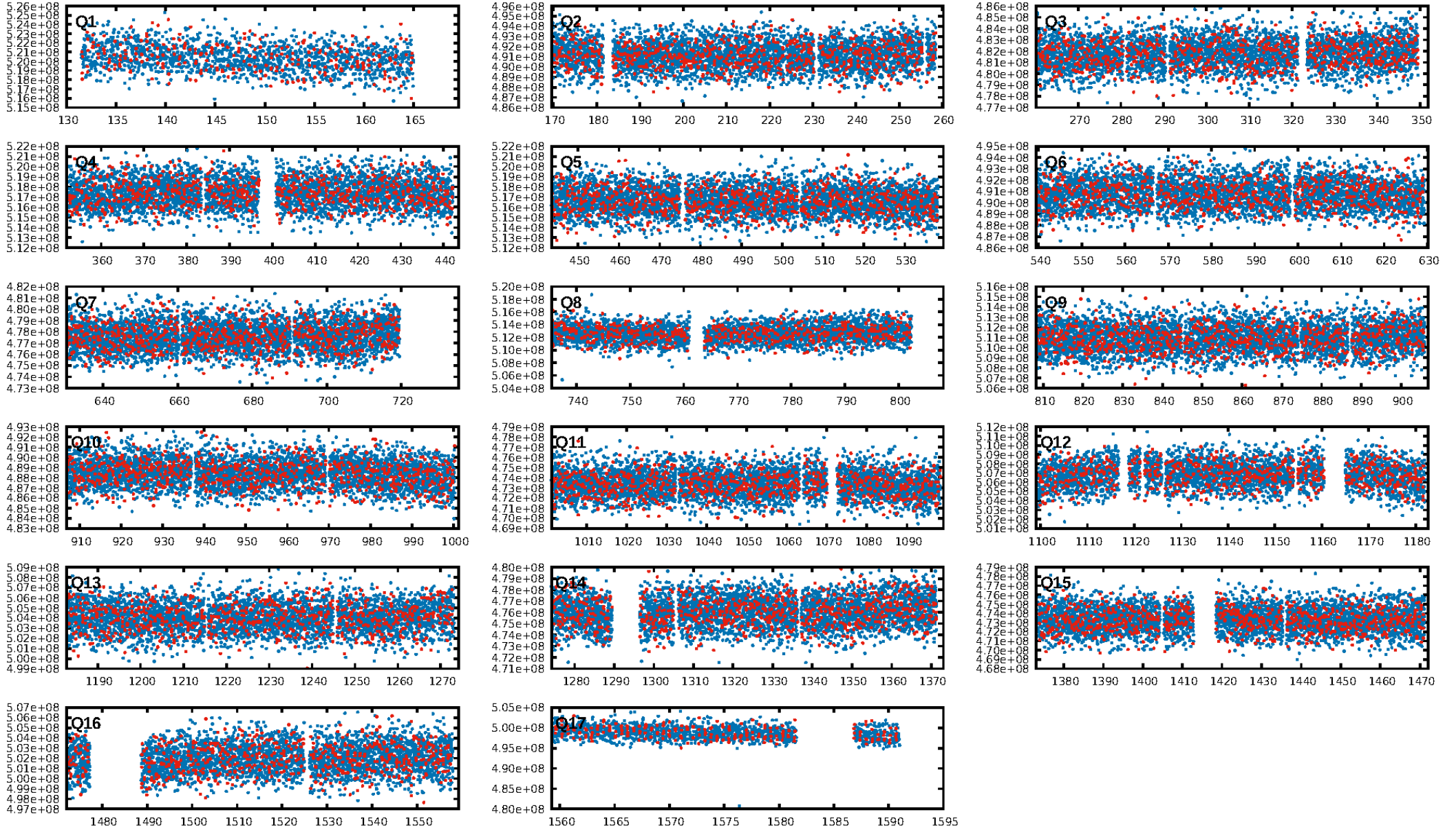
DV Fit Results:

Period = 0.54464 [0.00001] d
Epoch = 131.5788 [0.0014] BKJD
Rp/R* = 0.0183 [0.0080]
a/R* = 2.09 [4.16]
b = 0.90 [0.56]
Seff = 117173.89 [72118.44]
Teff = 4718 [726] K
Rp = 6.21 [3.61] Re
a = 0.0168 [0.0062] AU
Ag = 0.50 [0.57] [-0.88 σ]
Teffp = 6145 [1494] K [0.86 σ]

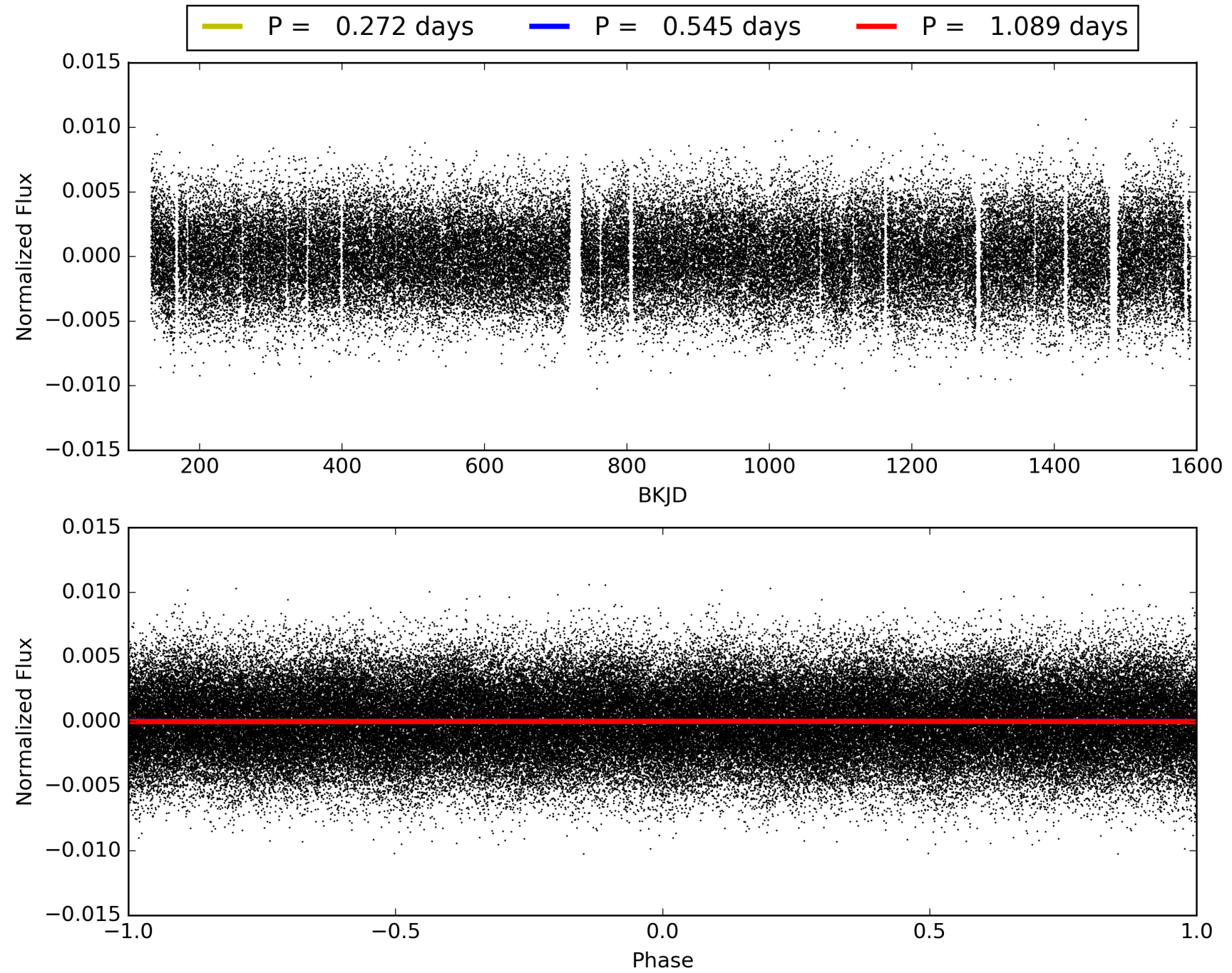
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.85e-14
RollingBand-fgt: 0.99 [2320/2344]
GhostDiagnostic-chr: 0.4741
Centroid-sig: 0.0%
Centroid-so: 0.371 arcsec [6.46 σ]
OotOffset-rm: 0.090 arcsec [0.55 σ]
KicOffset-rm: 0.092 arcsec [0.60 σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.94 [16/17]
DiffImageOverlap-fno: 1.00 [17/17]

TCE 005036037-02, PDC Light Curves

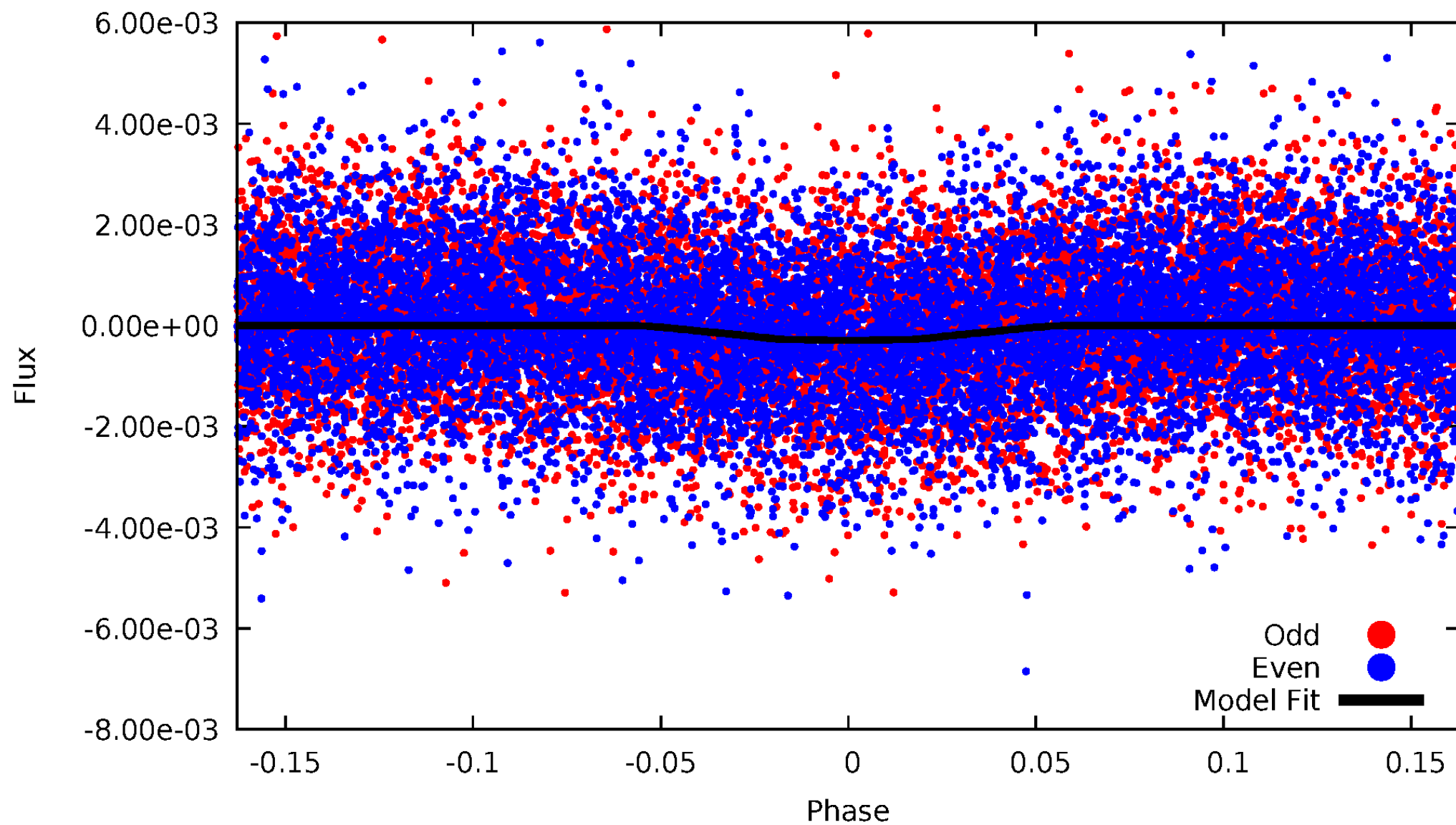


TCE 005036037-02



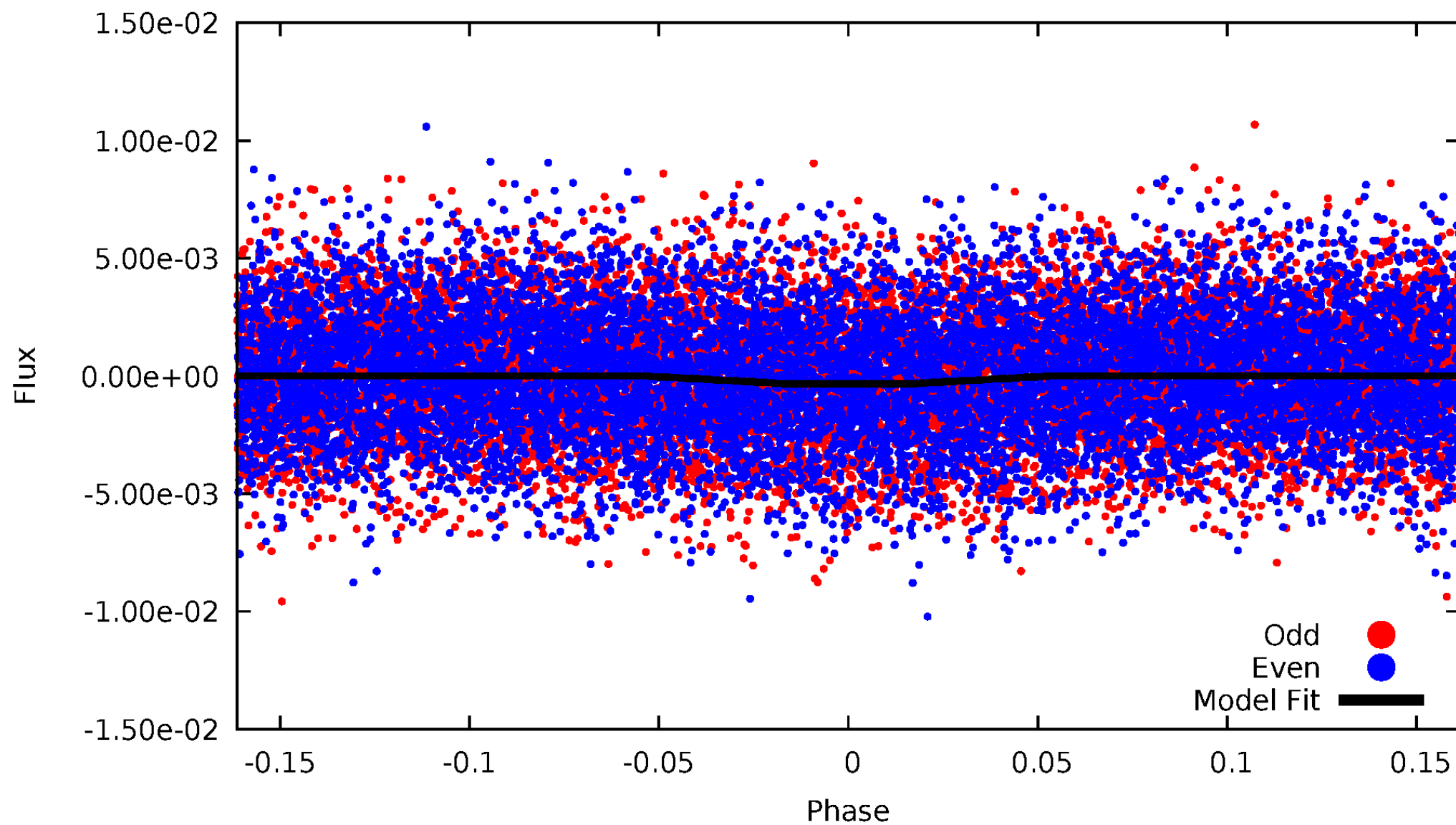
DV Odd/Even

TCE 005036037-02



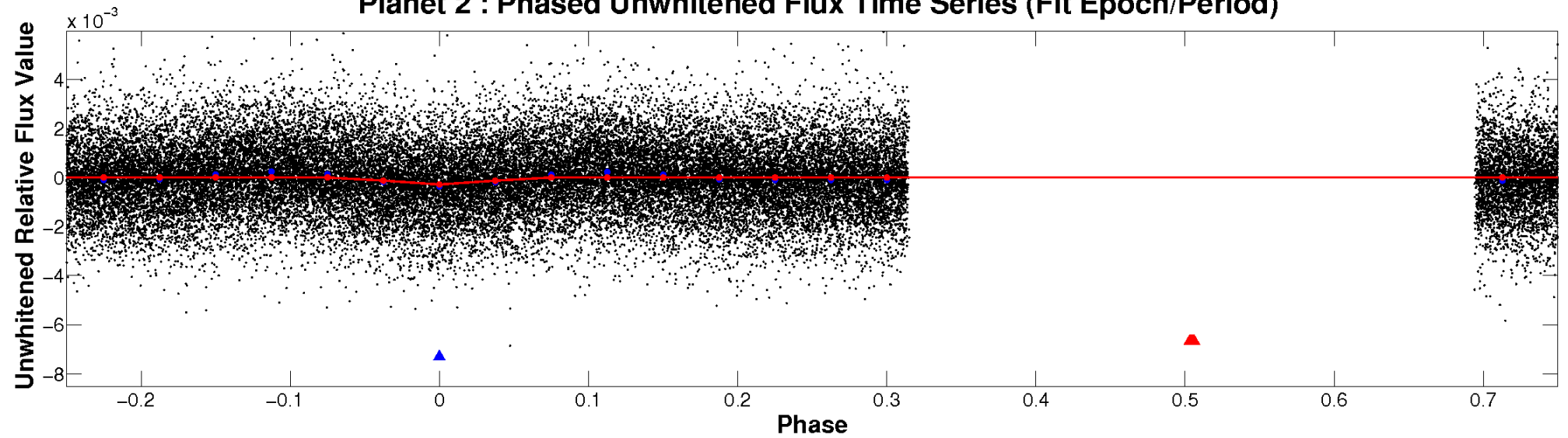
ALT Odd/Even

TCE 005036037-02

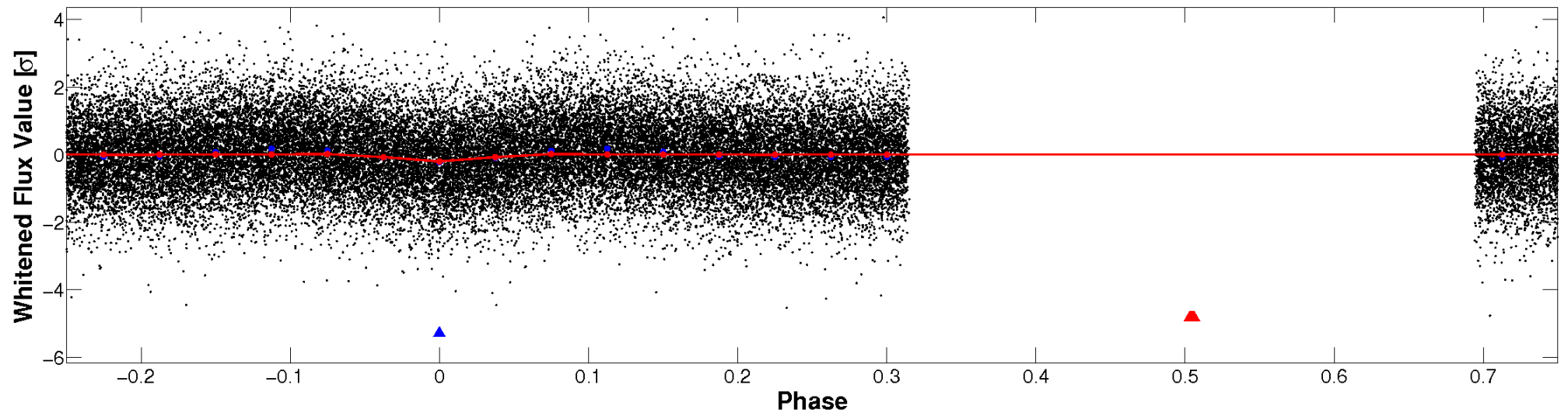


Non-Whitened Vs. Whitened Light Curve

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

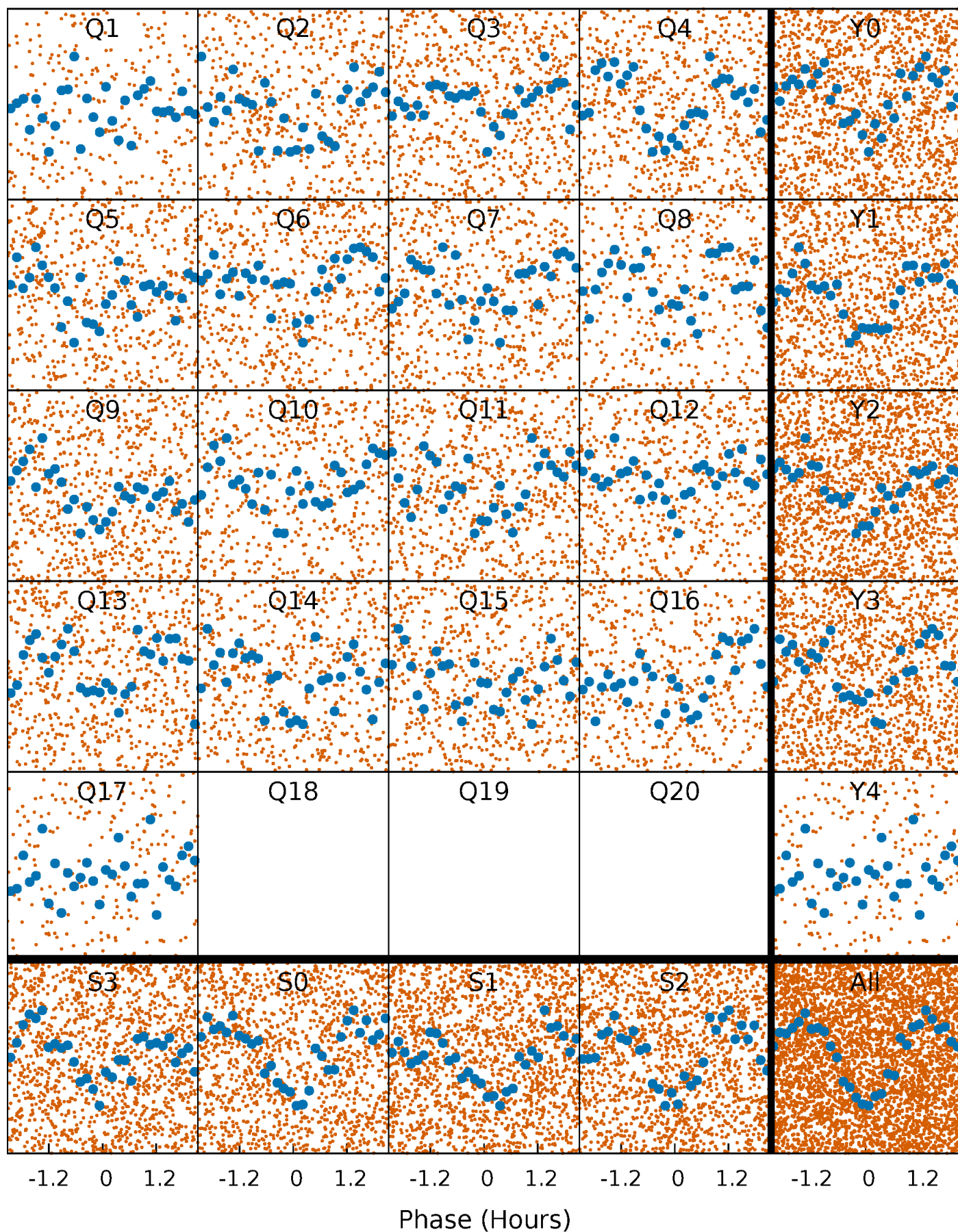


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



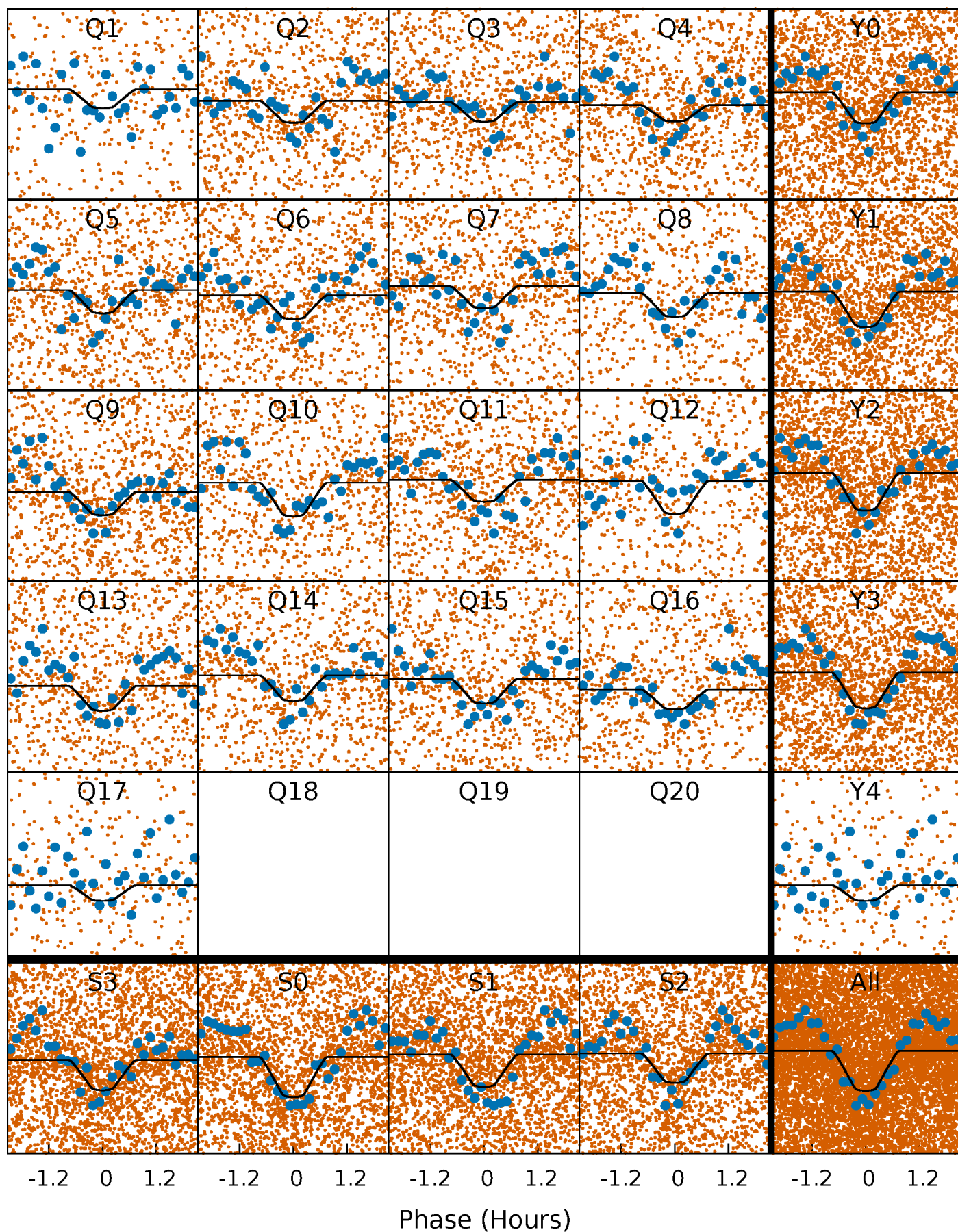
PDC Quarter-Phased Transit Curves

TCE 005036037-02 $P = 0.544645$ Days $T_0 = 131.578821$ (BKJD)



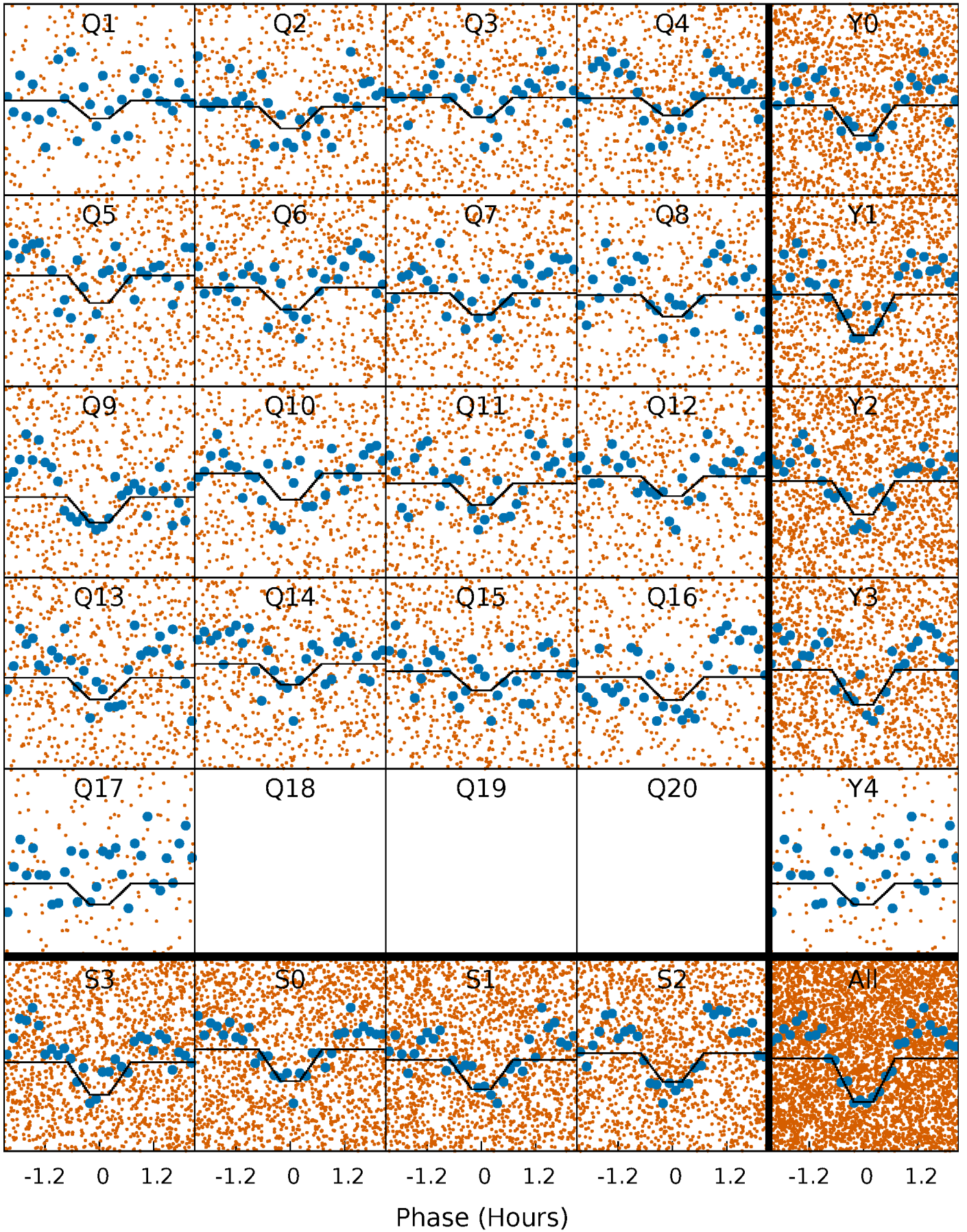
DV Quarter-Phased Transit Curves

TCE 005036037-02 P= 0.544645 Days $T_0=131.578821$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

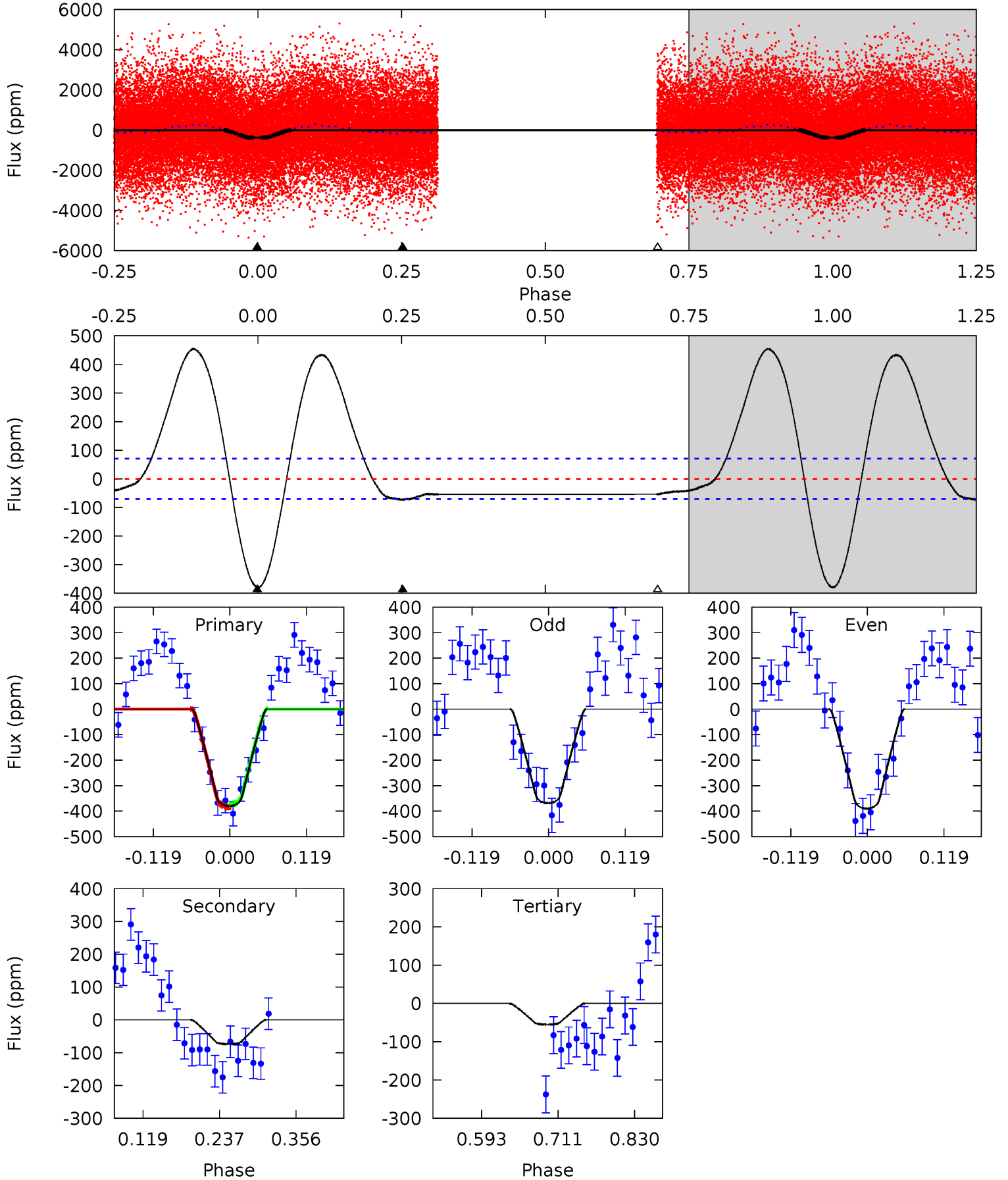
TCE 005036037-02 P= 0.544645 Days $T_0=131.578809$ (BKJD)



DV Model-Shift Uniqueness Test

005036037-02, P = 0.544645 Days, E = 131.034176 Days

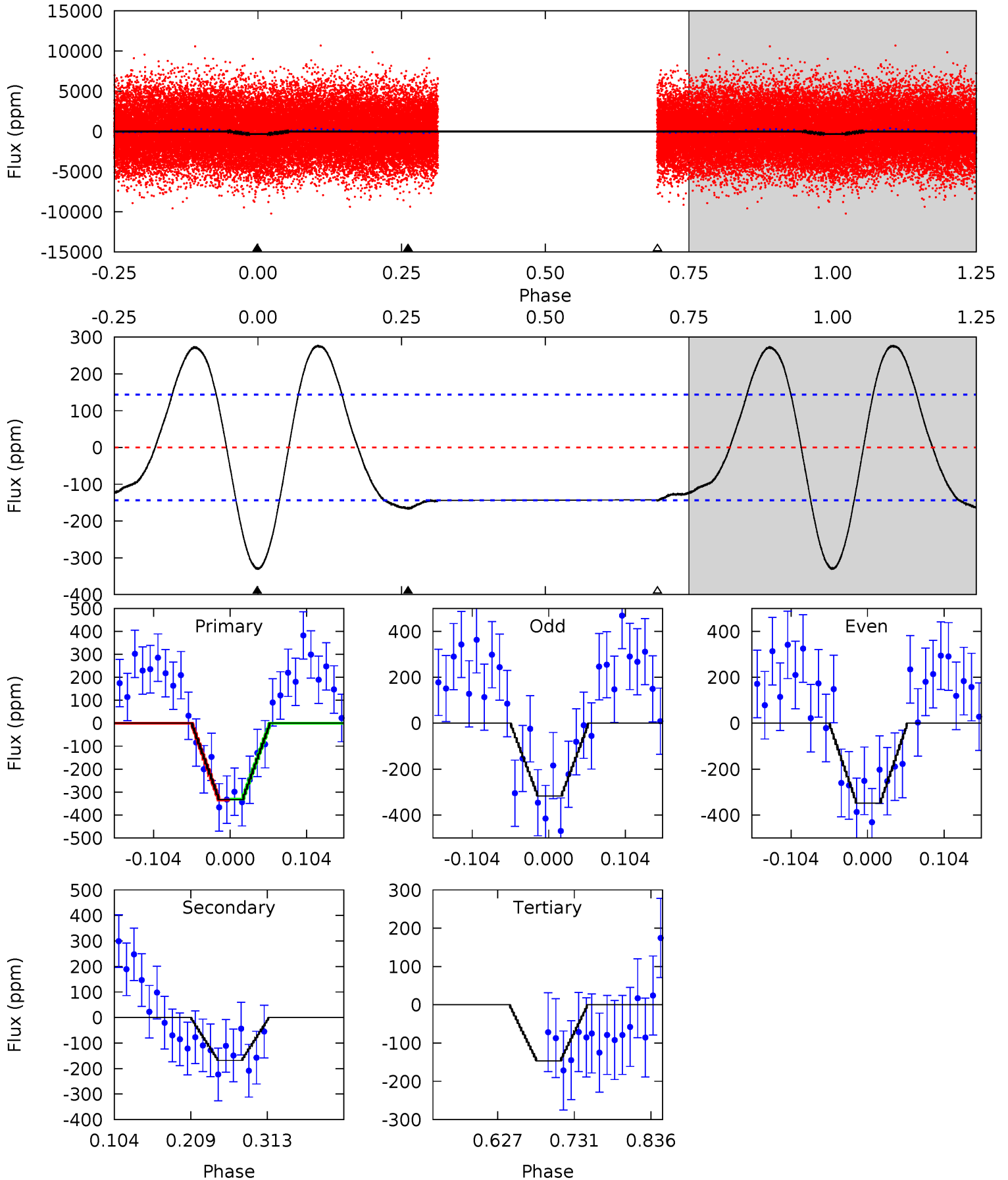
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
24.3	4.73	3.53	0	4.53	1.56	11.2	20.7	24.3	1.21	4.73	0.68	1.04	0.54	0.31



Alt Model-Shift Uniqueness Test

005036037-02, P = 0.544645 Days, E = 131.034164 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	5.34	4.65	0	4.56	1.62	4.97	5.90	10.5	0.69	5.34	0.50	1.12	0.46	0.07



Stellar Parameters For KIC 005036037

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7872^{+218}_{-354}	$3.785^{+0.345}_{-0.115}$	$0.070^{+0.250}_{-0.350}$	$3.109^{+0.699}_{-1.198}$	$2.150^{+0.284}_{-0.527}$	$0.101^{+0.262}_{-0.038}$
	+3%/-4%	+9%/-3%	+357%/-500%	+22%/-39%	+13%/-25%	+260%/-37%
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 005036037-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-74 ± 16	$5.69^{+2.96}_{-2.71}$	6389^{+479}_{-676}	3519^{+3056}_{-8133}	$0.340^{+0.890}_{-0.196}$
Alt.	-168 ± 32	$5.68^{+3.20}_{-2.59}$	6387^{+507}_{-691}	5669^{+2894}_{-2243}	$0.822^{+1.849}_{-0.493}$

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

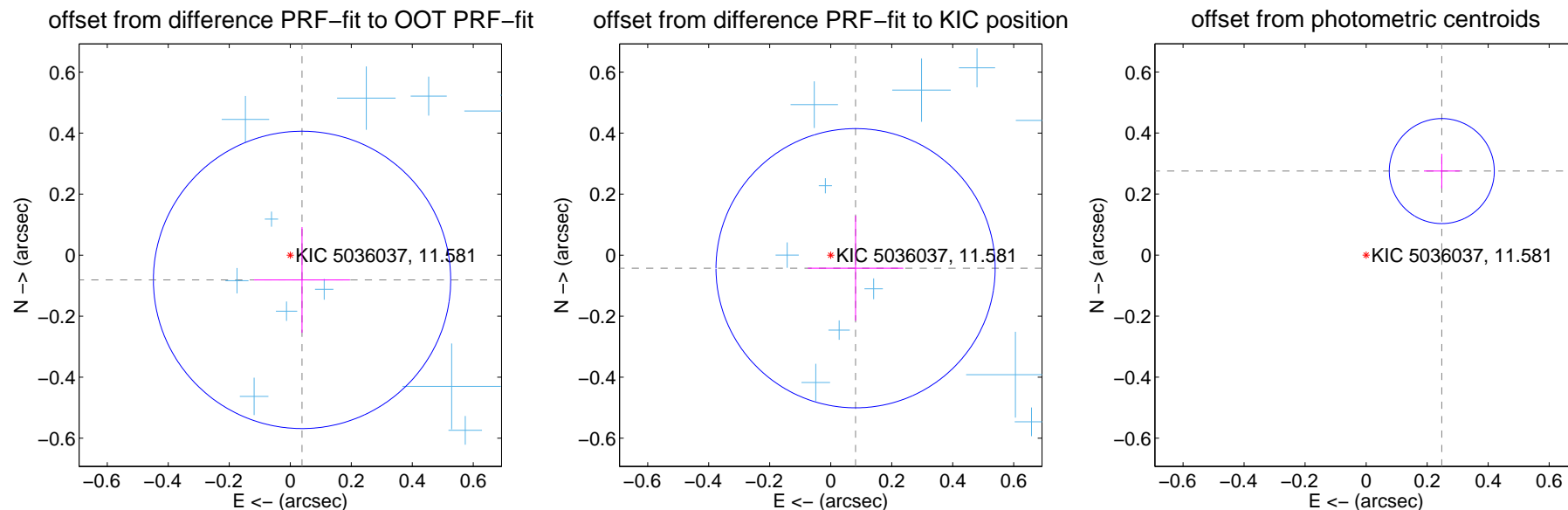
DV Centroid Data

Supplemental centroid analysis for 005036037-02. **Kepler magnitude: 11.58.** Transit SNR 11.69

There are 16 quarters with good PRF difference image offsets

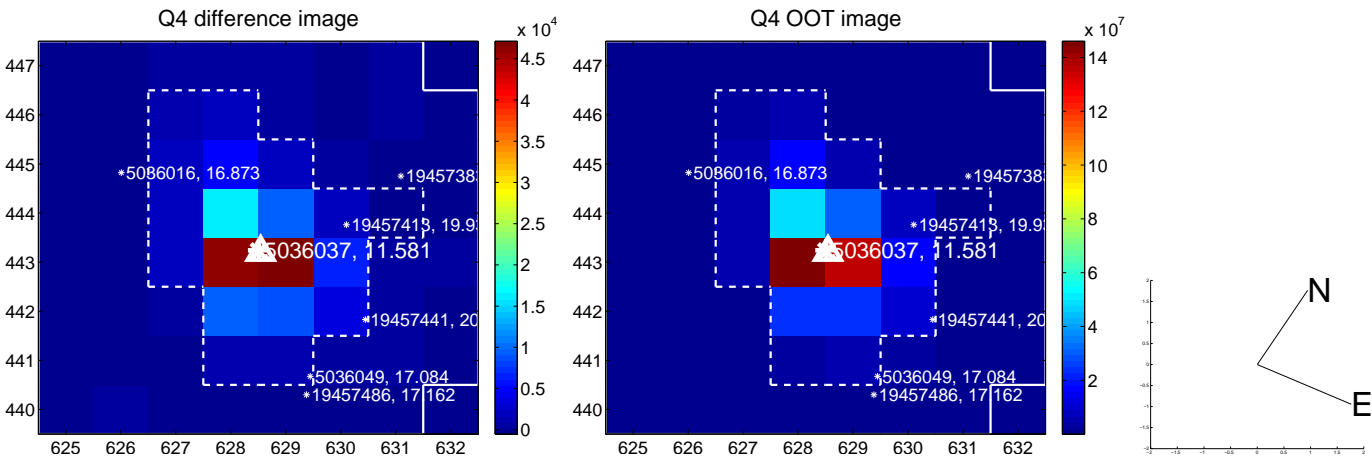
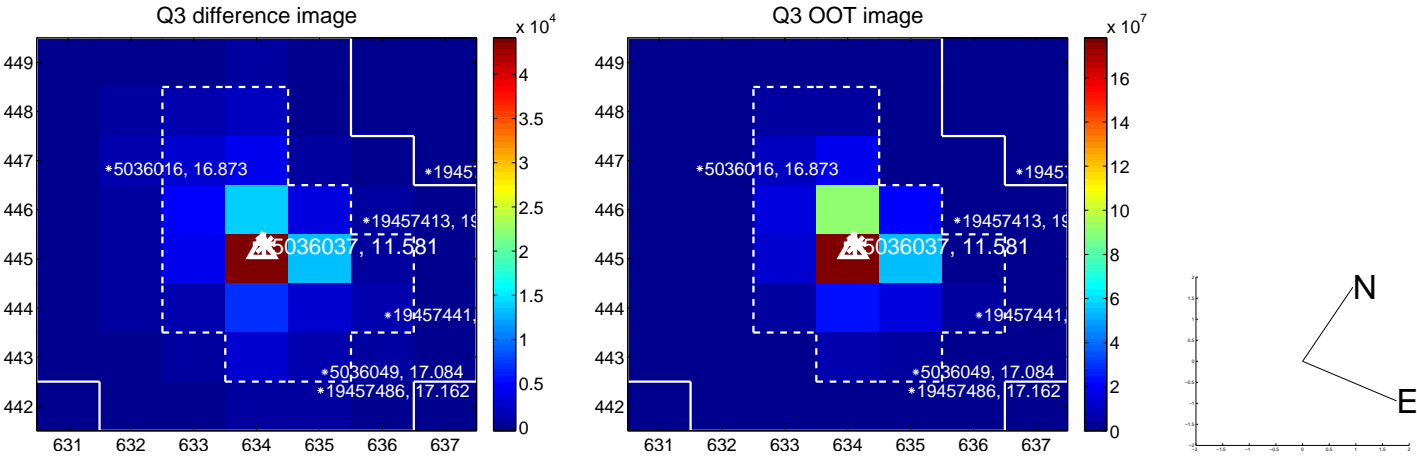
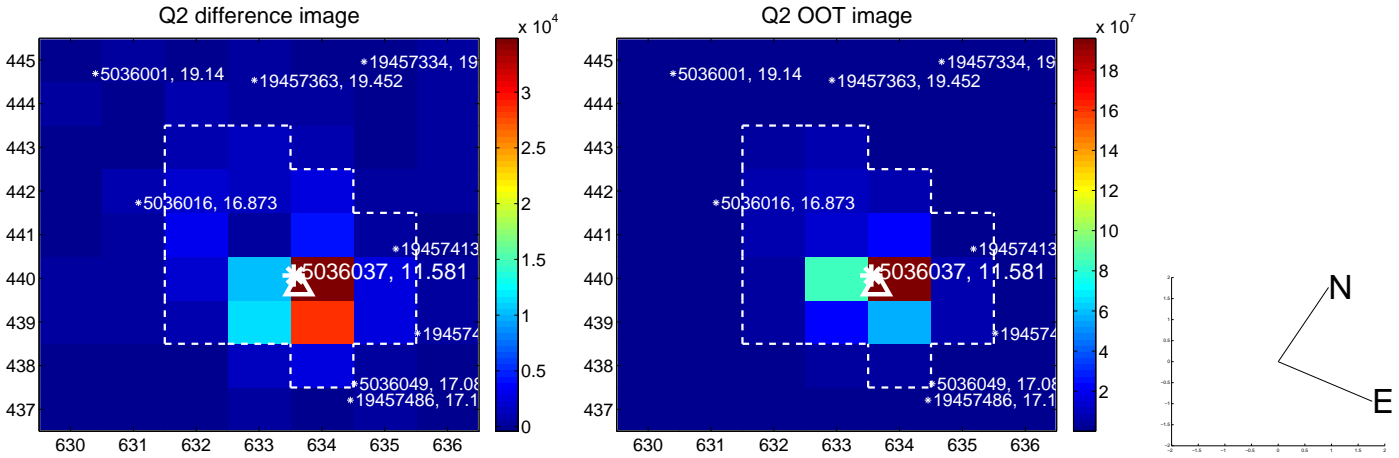
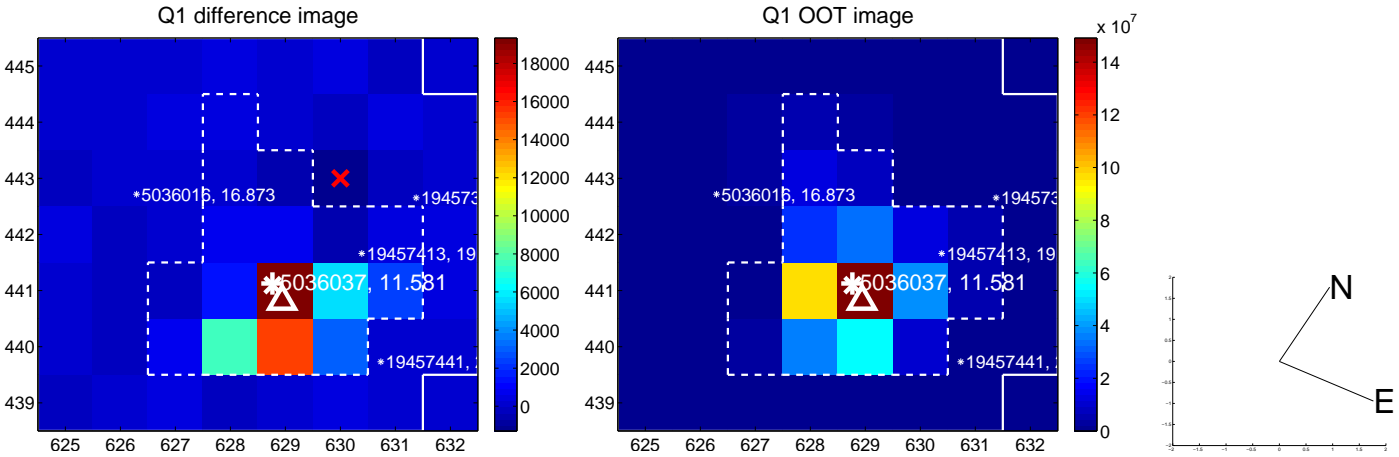
The direct PRF centroid is offset from the target star catalog position by about 0.10 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.090 ± 0.162	0.55	-0.039 ± 0.157	-0.081 ± 0.173
PRF-fit source offset from KIC position	0.092 ± 0.153	0.60	-0.082 ± 0.156	-0.043 ± 0.172
photometric centroid source offset	0.37 ± 0.06	6.46	-0.25 ± 0.06	0.28 ± 0.06

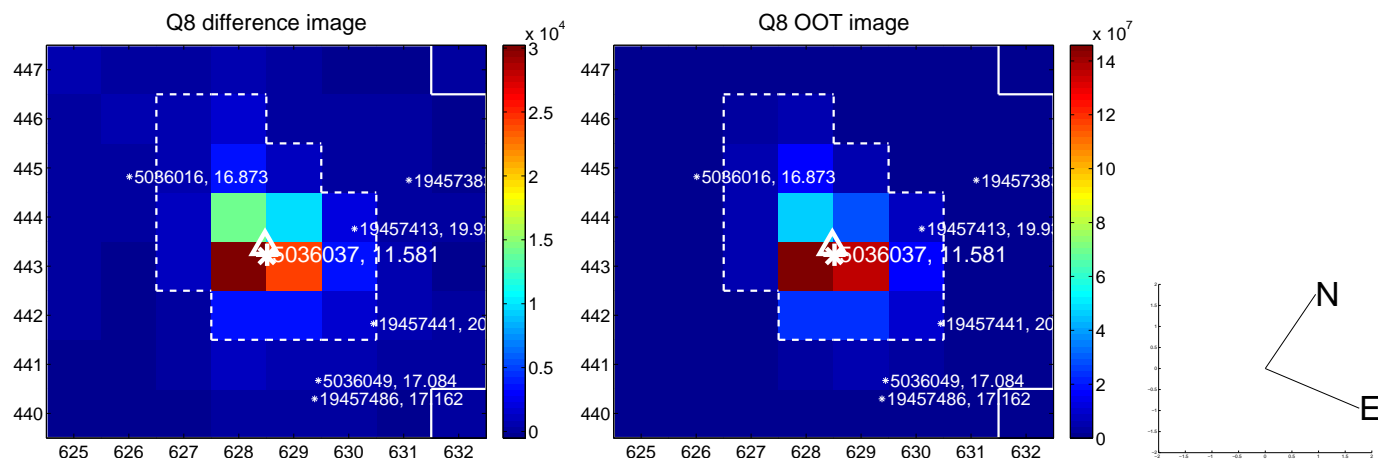
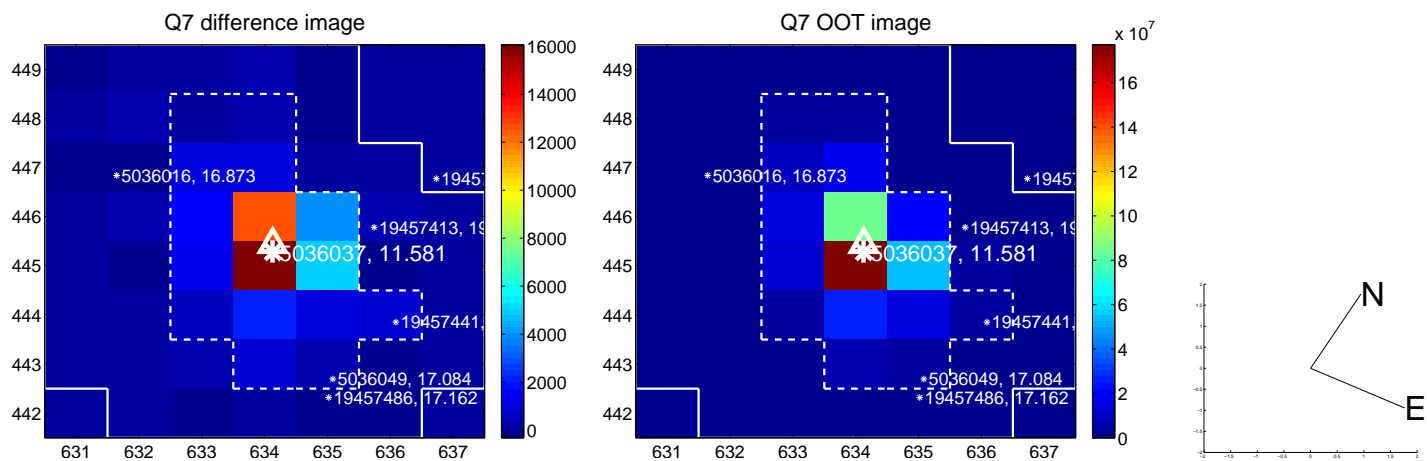
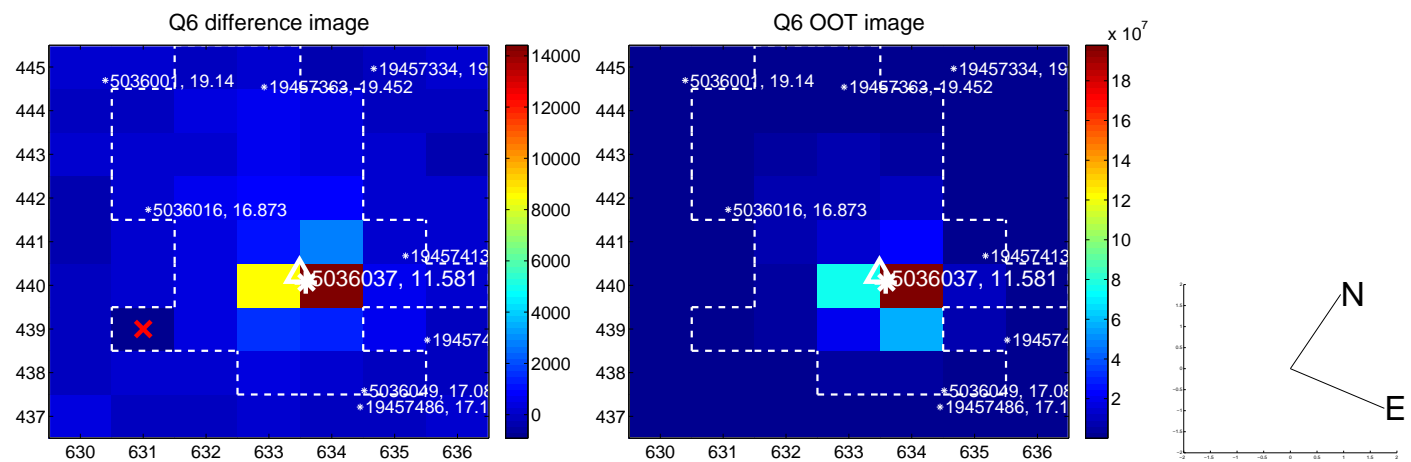
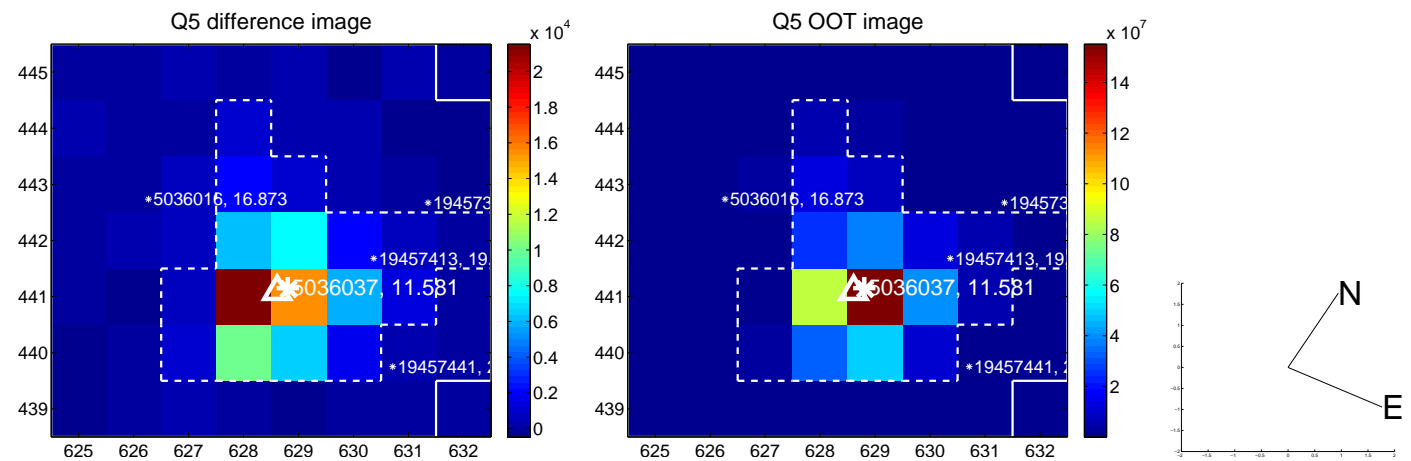


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

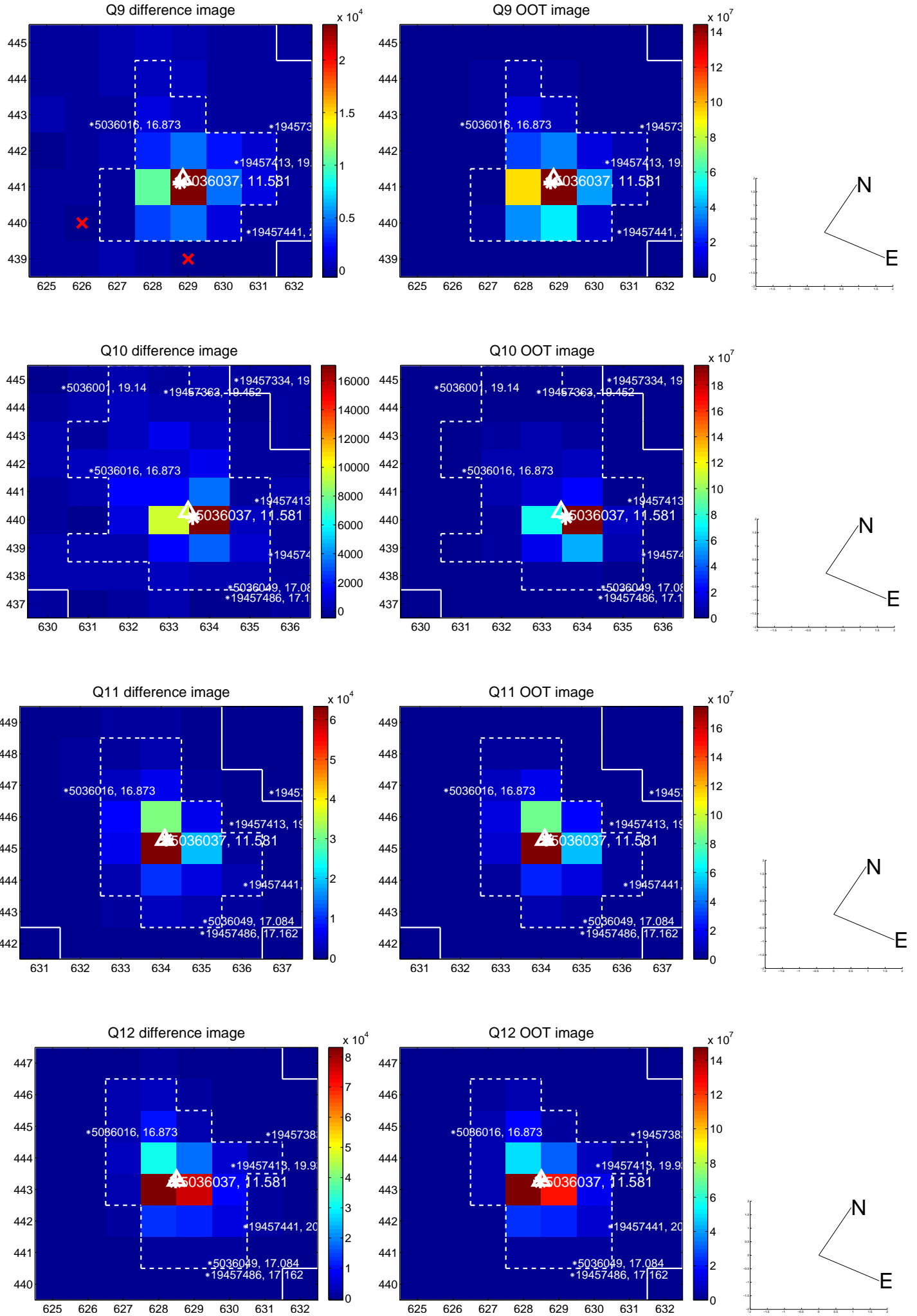
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



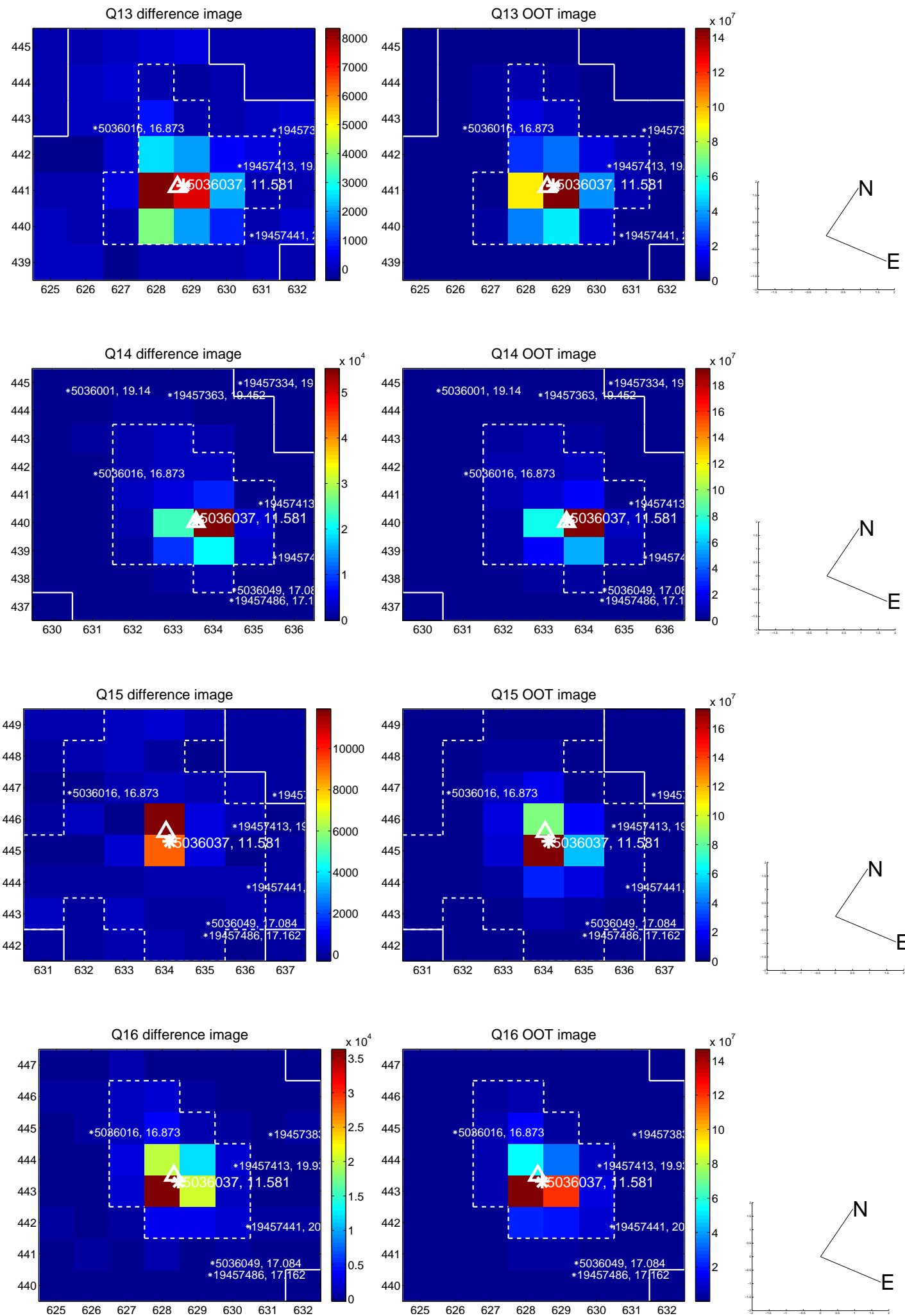
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



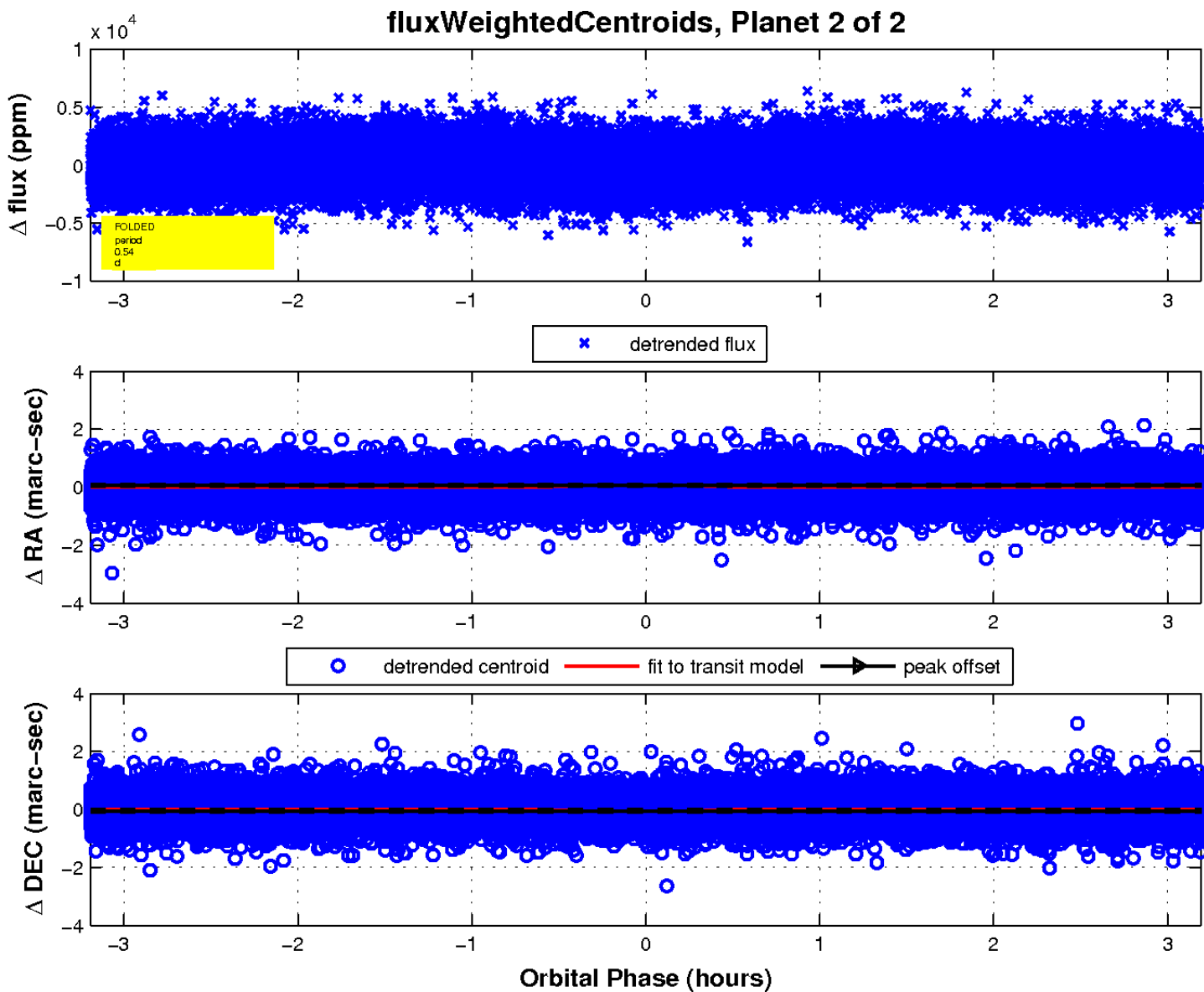
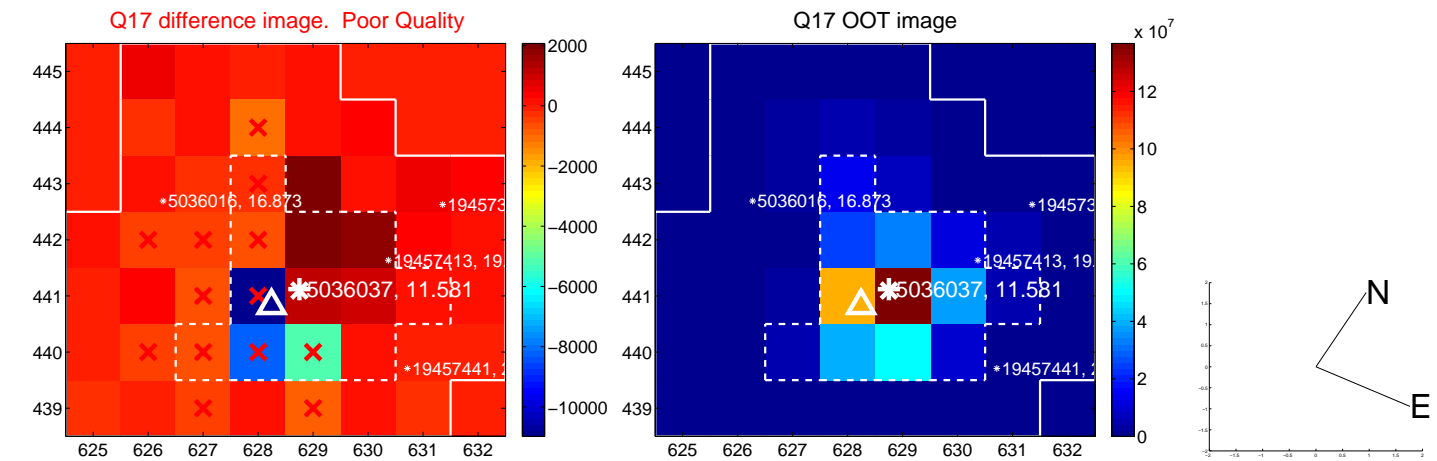
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



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



UKIRT Image

Declination

