

KIC 005215508

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})
005215508-01	OBS	No	2.660373	133.733480	42.3	9.615	16.0	17.7	1.53	6754	1.35	2469.62
005215508-02	OBS	No	2.659752	132.194268	13.7	17.422	15.1	6.1	1.53	6754	0.60	2470.39

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005215508-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—MOD_NONUNIQ_DV—CENT_SATURATED
005215508-02	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—SAME_NTL_PERIOD—CENT_SATURATED

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.

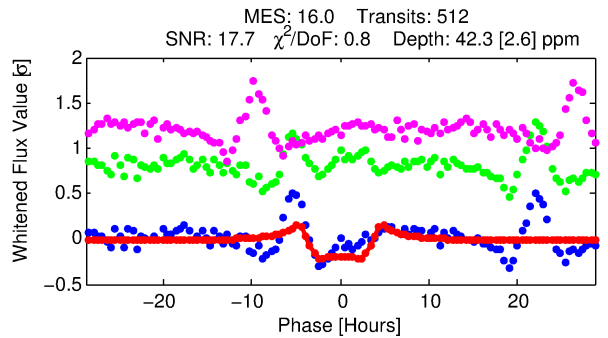
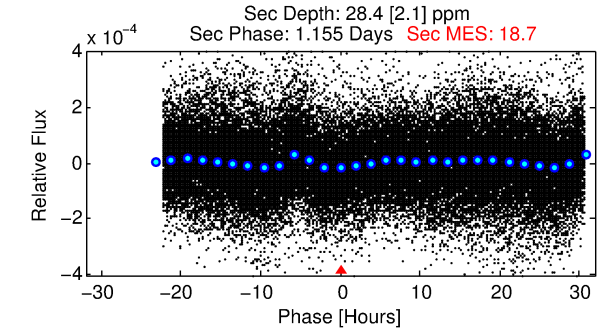
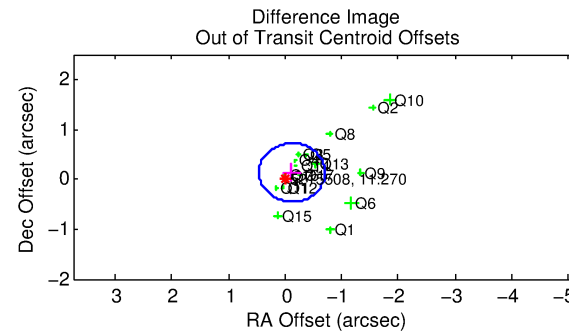
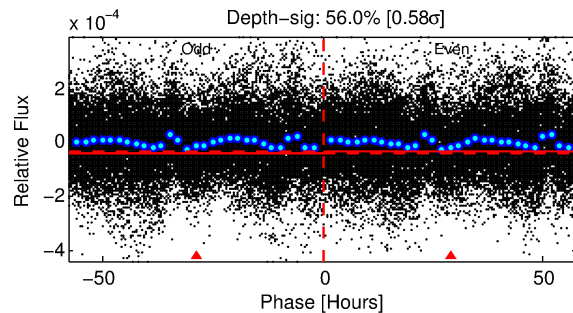
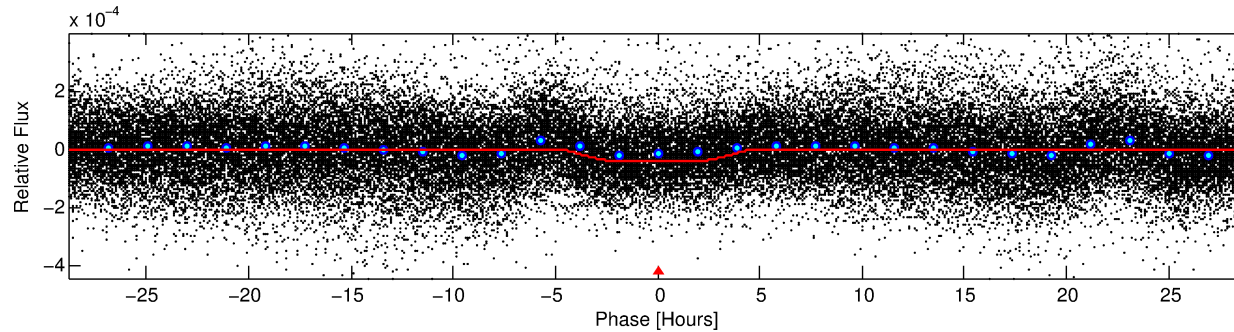
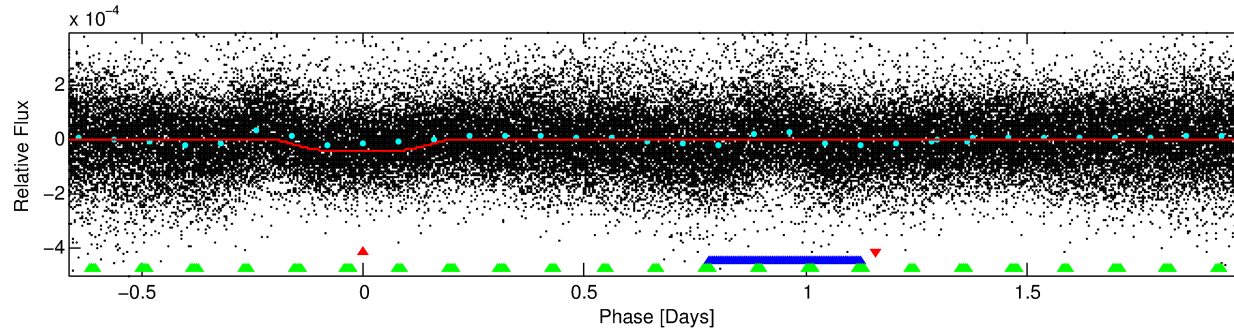
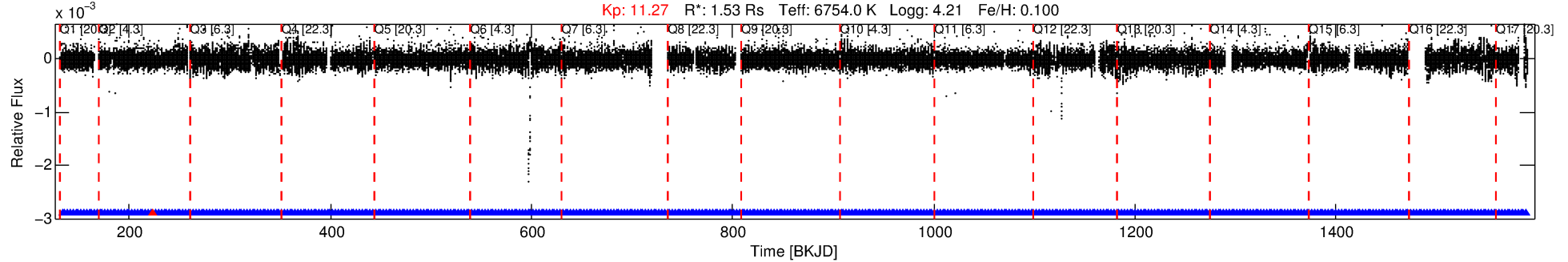
Ephemeris Match Information For 005215508-01

No Significant Match Found

DV One-Page Summary

KIC: 5215508 Candidate: 1 of 3 Period: 2.660 d
KOI: K06542 Corr: No Ephemeris Match

Kp: 11.27 R*: 1.53 Rs Teff: 6754.0 K Logg: 4.21 Fe/H: 0.100



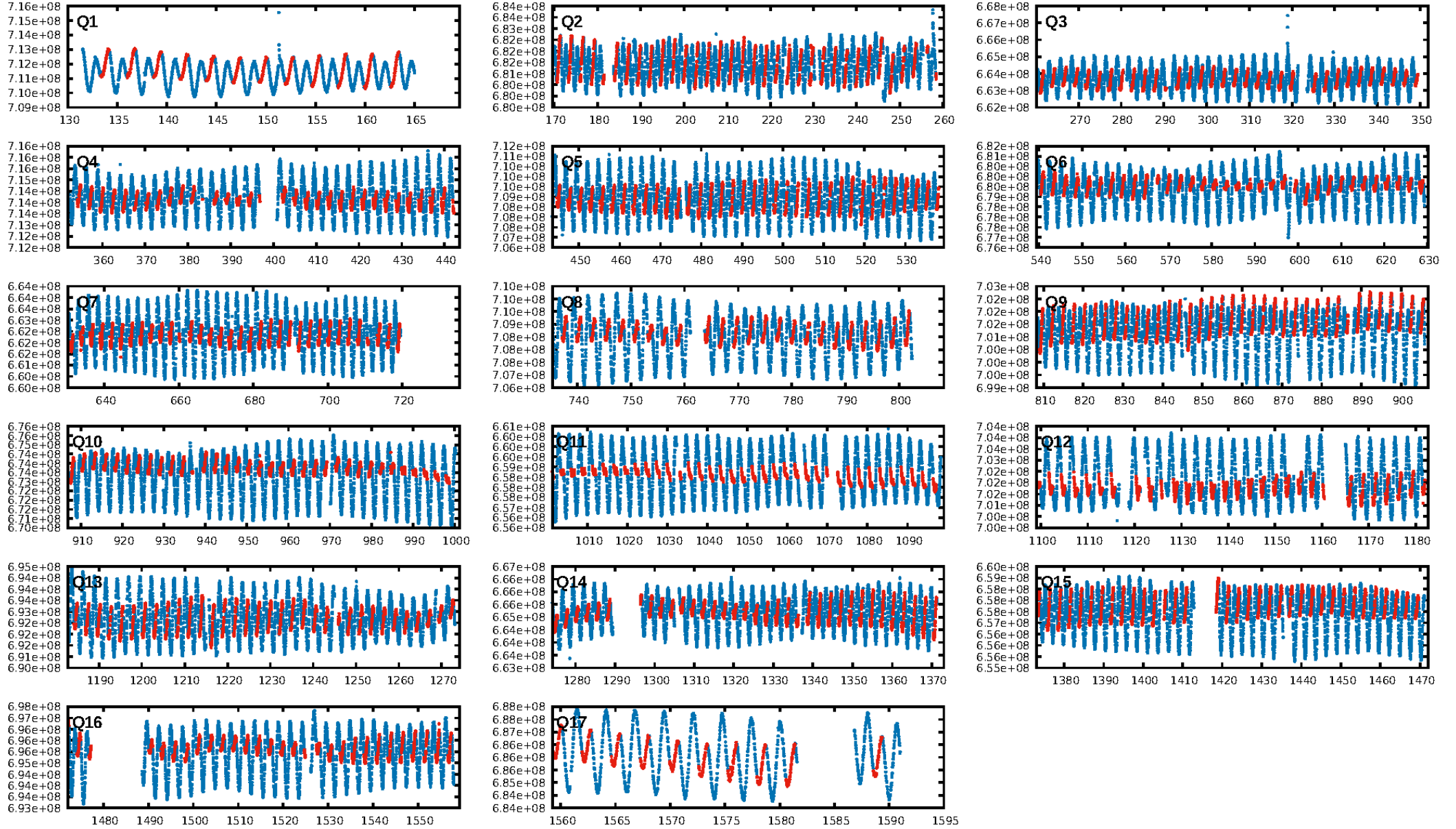
DV Fit Results:

Period = 2.66037 [0.00002] d
Epoch = 133.7335 [0.0059] BKJD
Rp/R* = 0.0081 [0.0003]
a/R* = 1.08 [0.01]
b = 0.99 [0.00]
Seff = 2469.62 [525.23]
Teq = 1798 [96] K
Rp = 1.35 [0.24] Re
a = 0.0420 [0.0061] AU
Ag = 15.01 [3.44] [4.08σ]
Teffp = 5471 [155] K [20.14σ]

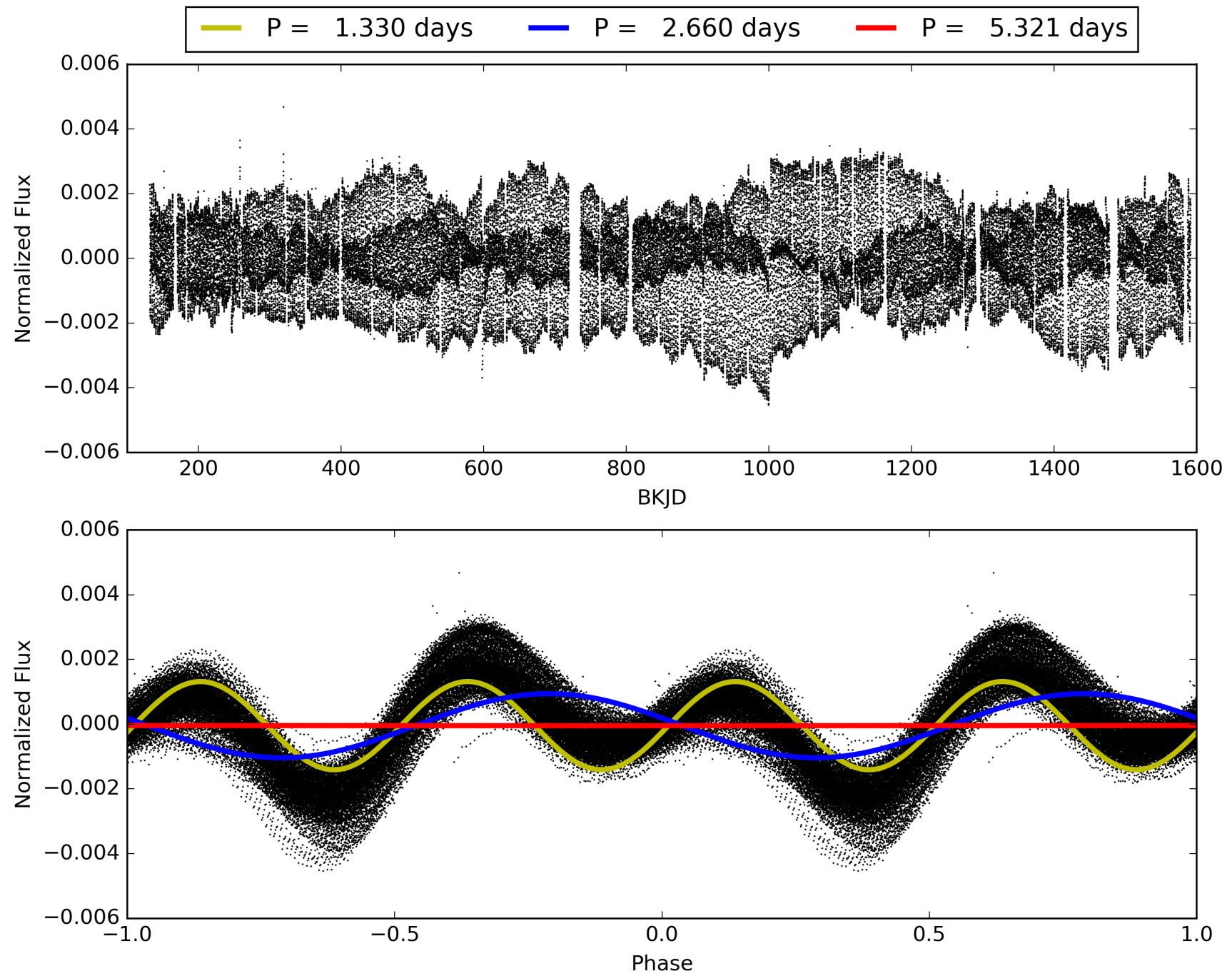
DV Diagnostic Results:

ShortPeriod-sig: 0.1% [0.00σ]
LongPeriod-sig: 100.0% [12.23σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 2.47e-53
RollingBand-fgt: 1.00 [489/490]
GhostDiagnostic-chr: 1.656
Centroid-sig: 0.1%
Centroid-so: 0.397 arcsec [0.91σ]
OotOffset-rm: 0.177 arcsec [0.91σ]
KicOffset-rm: 0.267 arcsec [1.74σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.82 [14/17]
DiffImageOverlap-fno: 0.12 [2/17]

TCE 005215508-01, PDC Light Curves

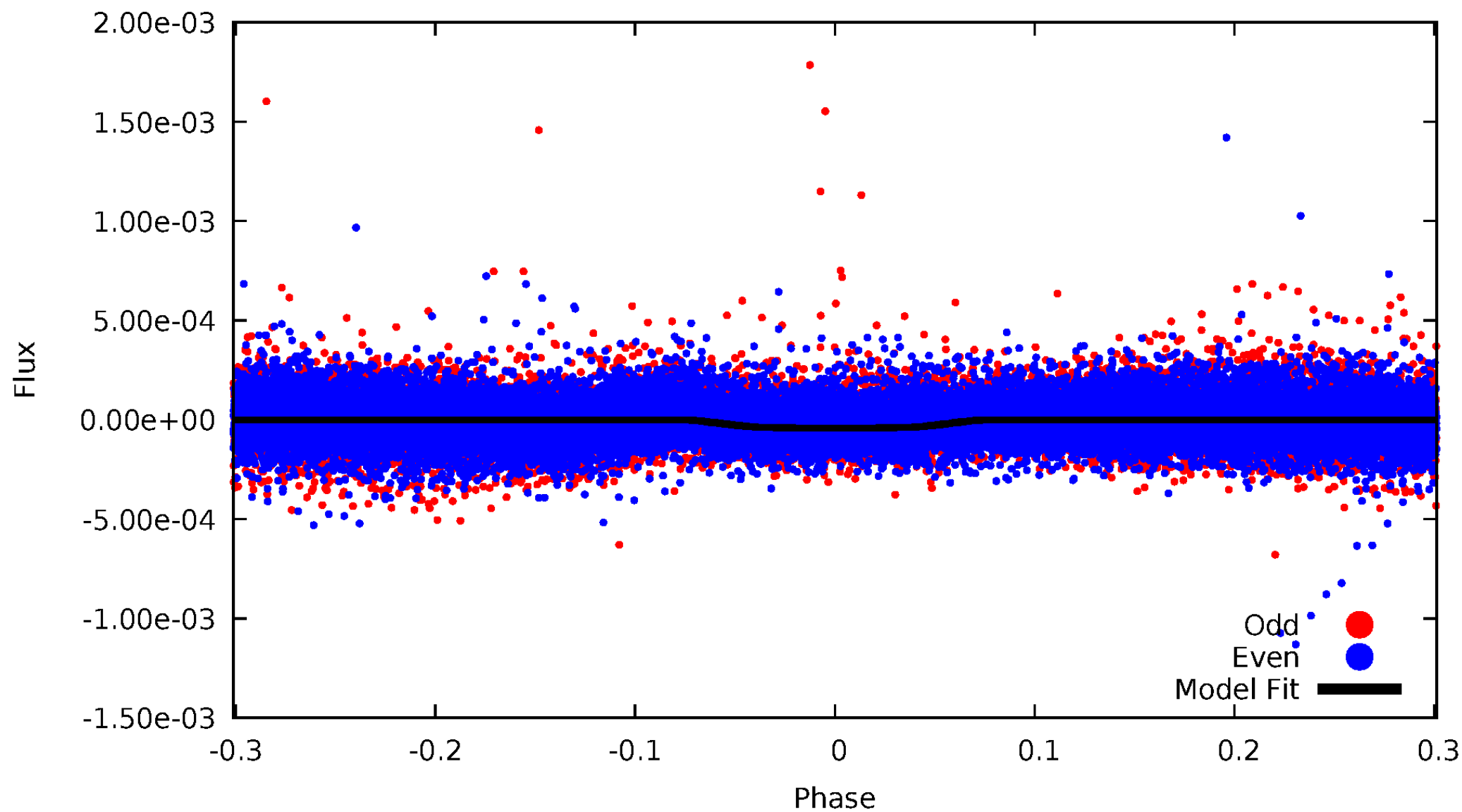


TCE 005215508-01



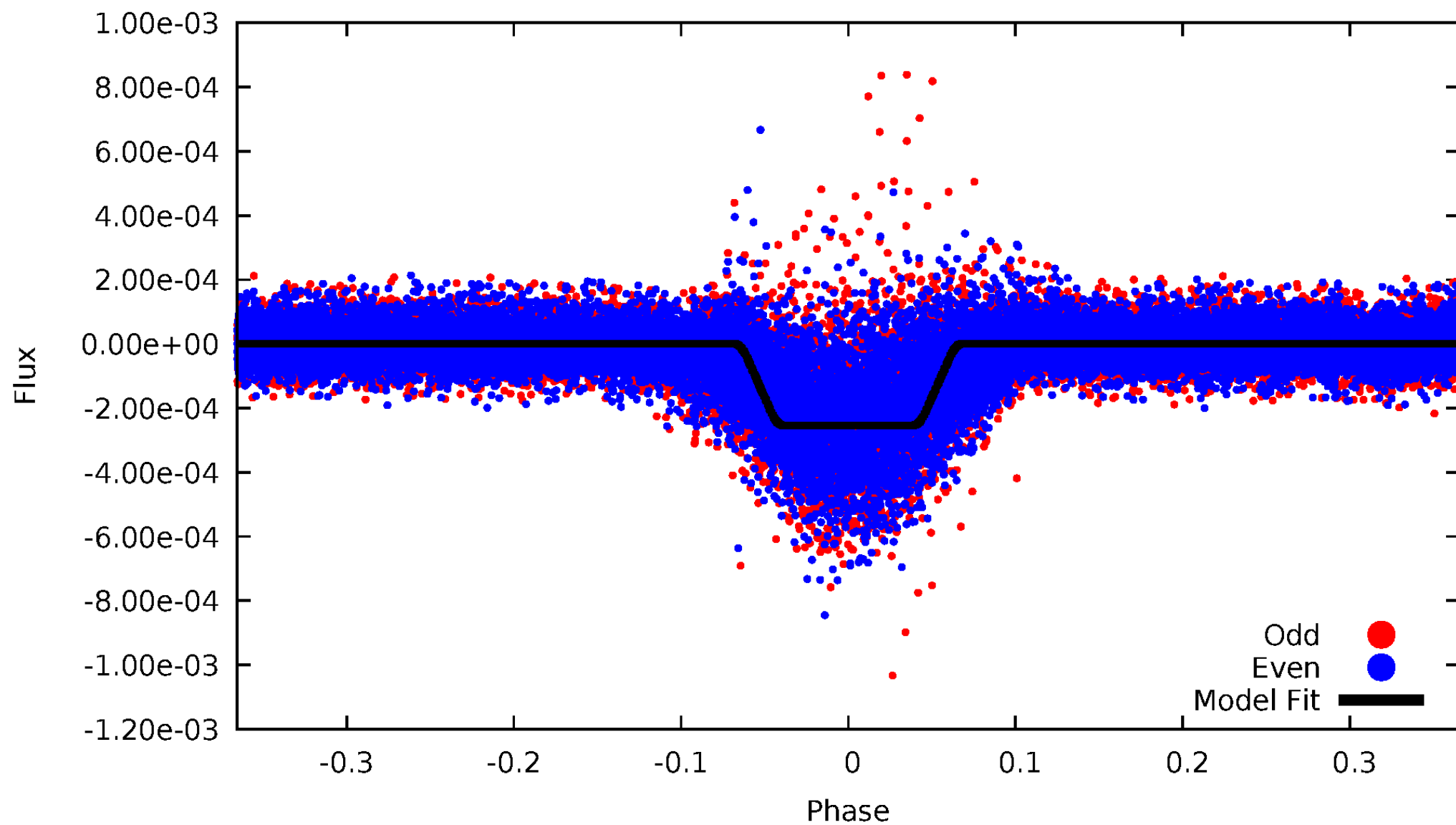
DV Odd/Even

TCE 005215508-01



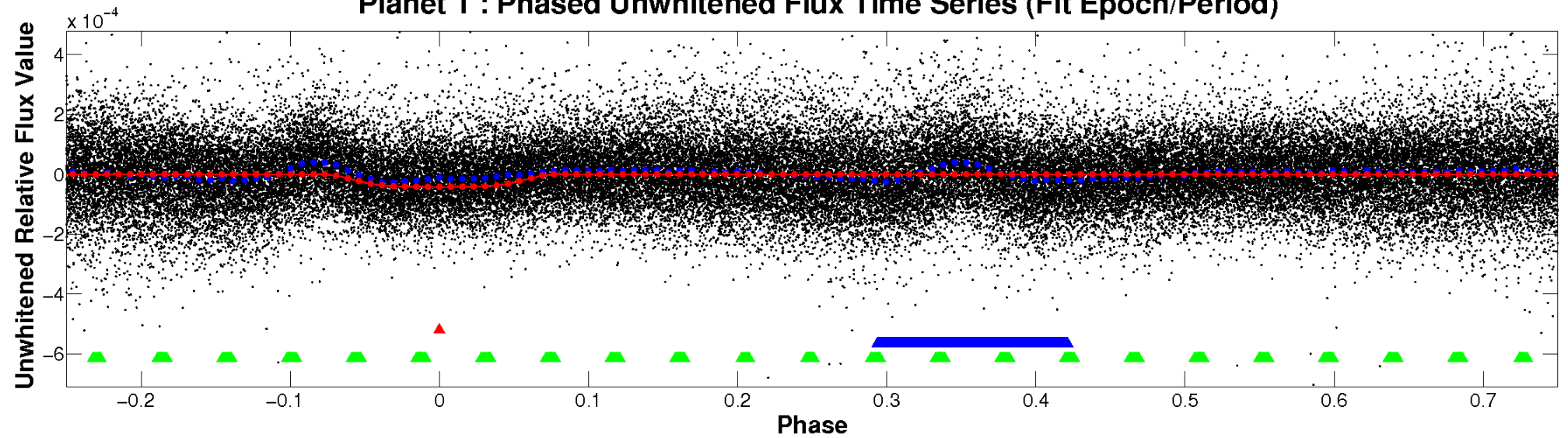
ALT Odd/Even

TCE 005215508-01

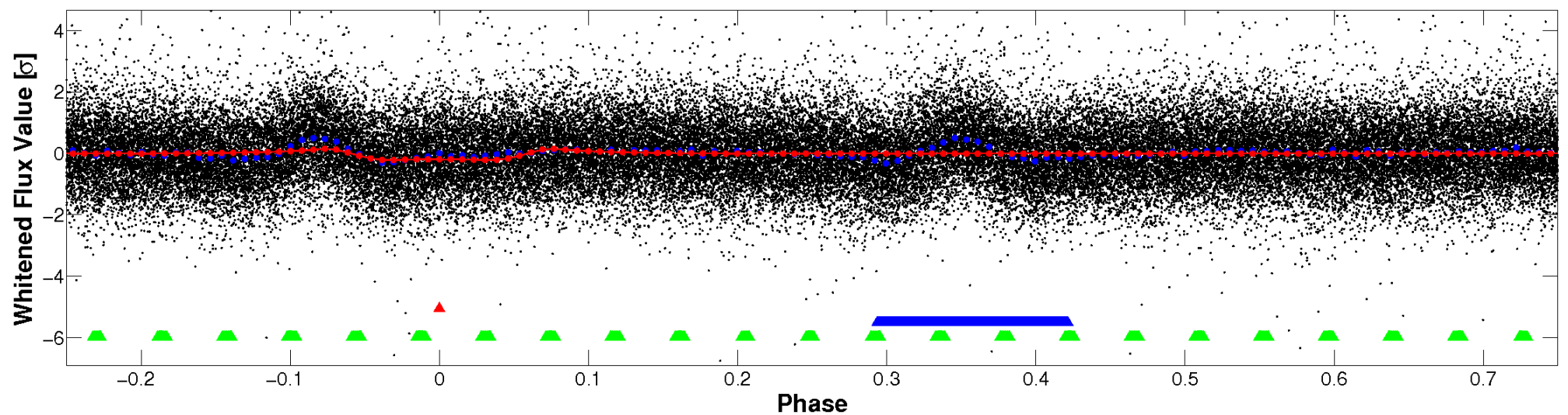


Non-Whitened Vs. Whitened Light Curve

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

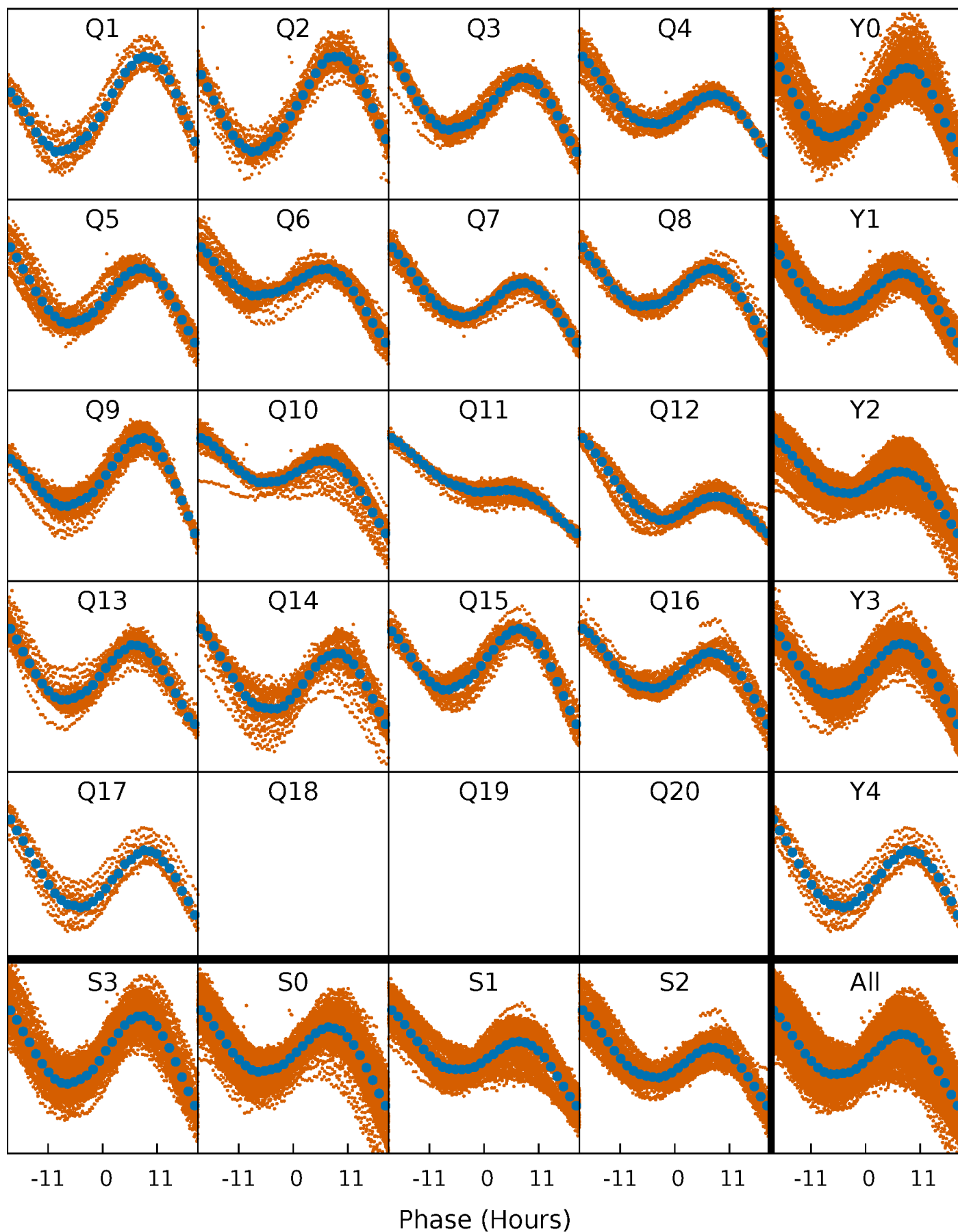


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



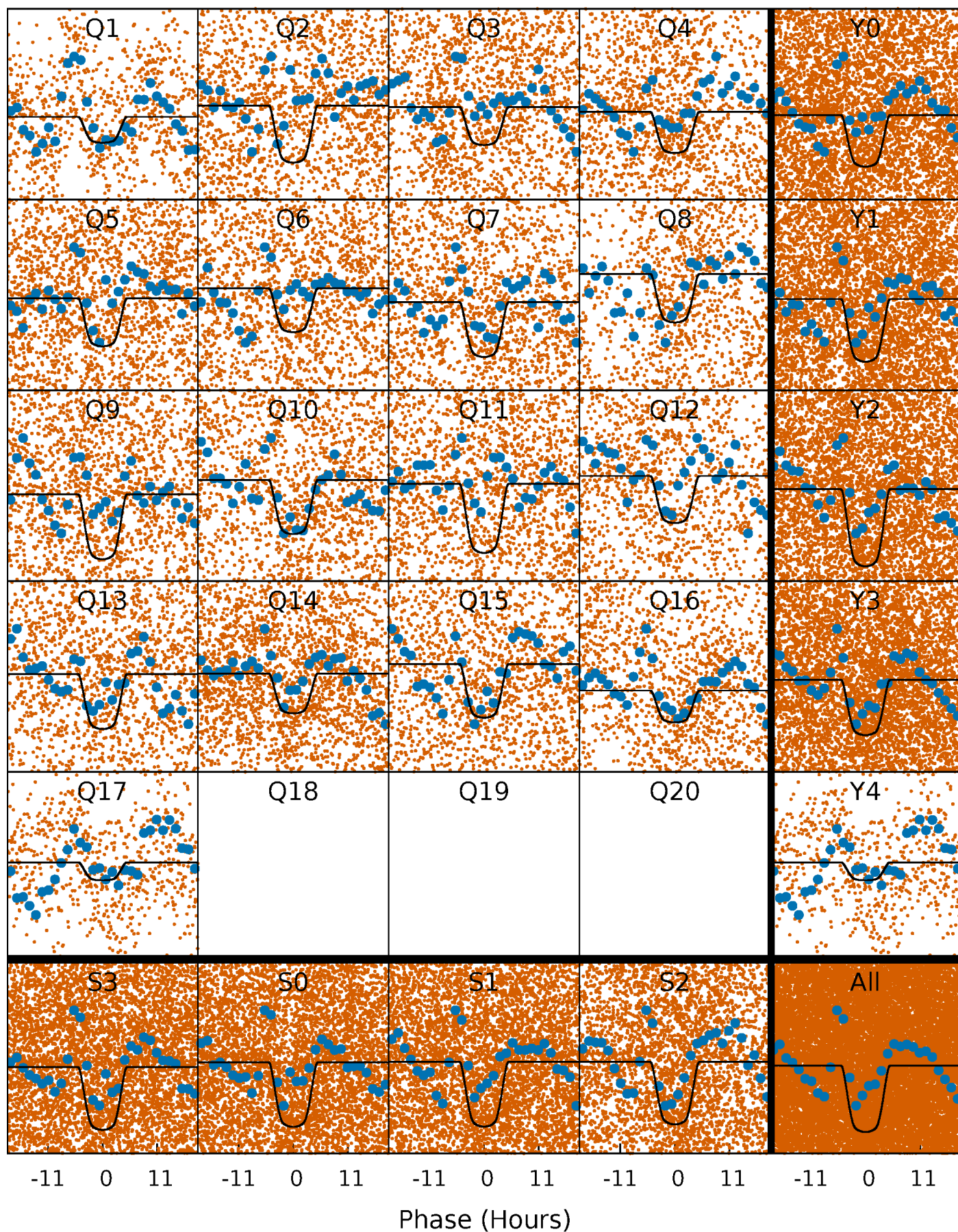
PDC Quarter-Phased Transit Curves

TCE 005215508-01 P= 2.660373 Days $T_0=133.733480$ (BKJD)



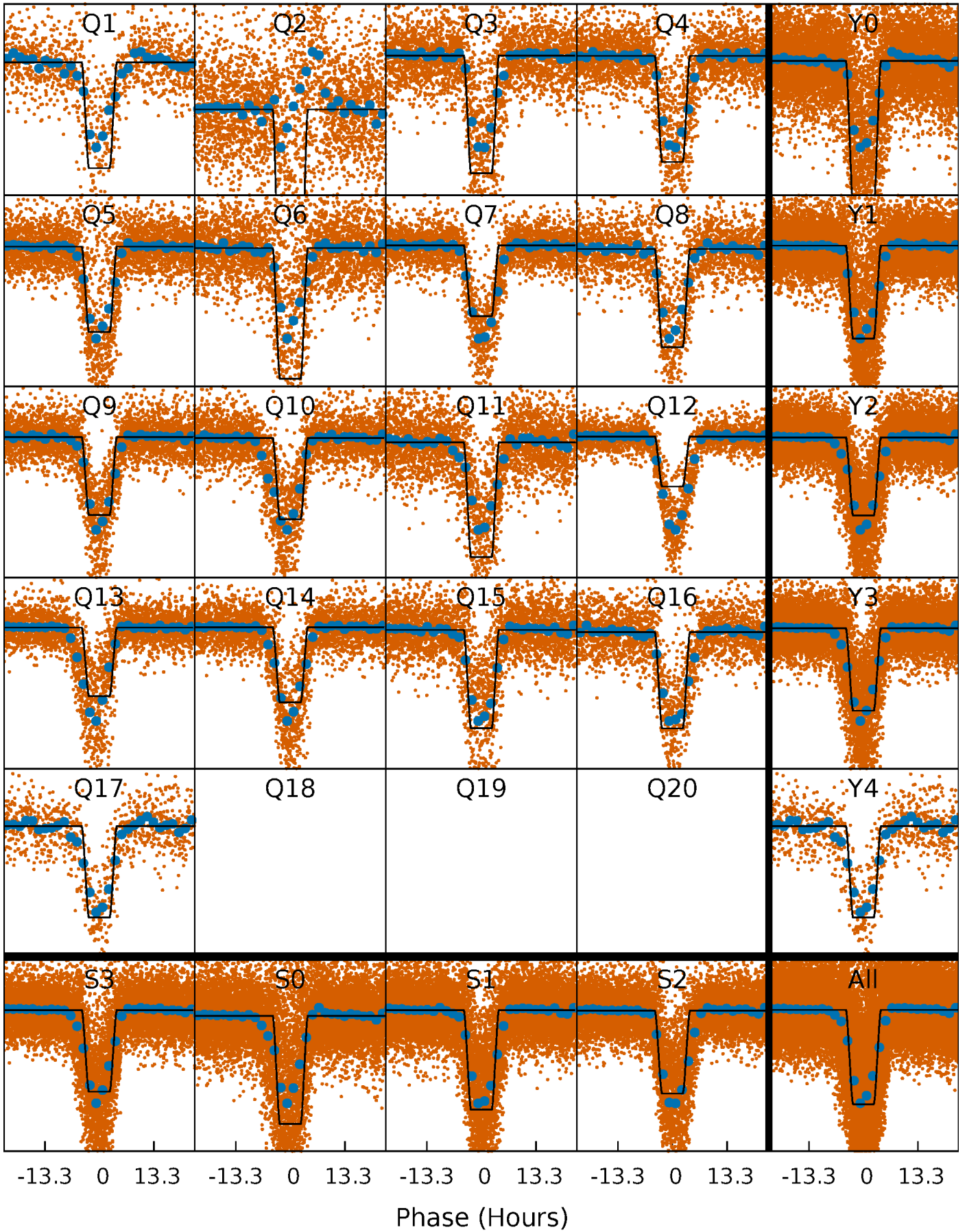
DV Quarter-Phased Transit Curves

TCE 005215508-01 P= 2.660373 Days $T_0=133.733480$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

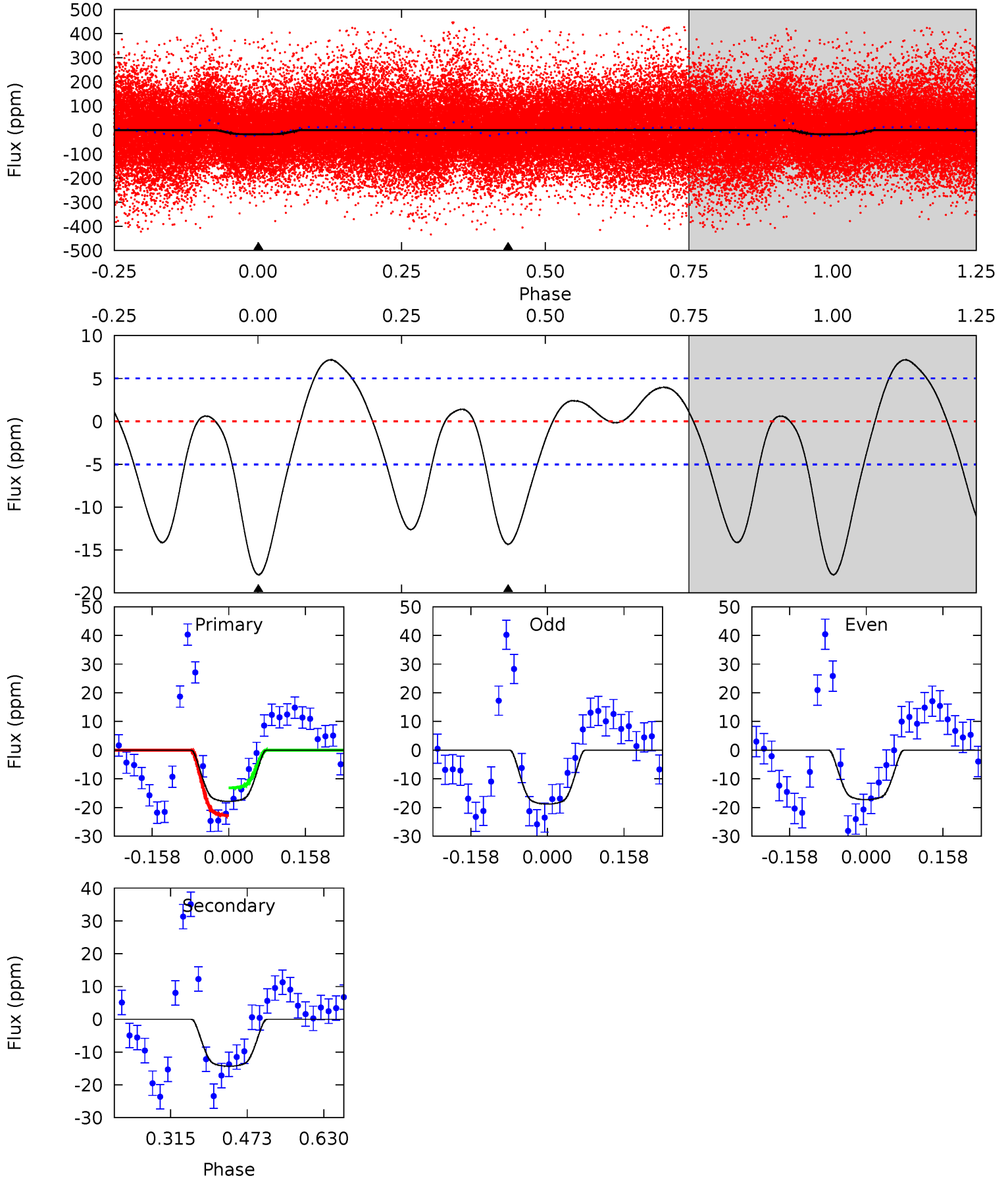
TCE 005215508-01 P= 2.660322 Days $T_0=133.700588$ (BKJD)



DV Model-Shift Uniqueness Test

005215508-01, P = 2.660373 Days, E = 131.073107 Days

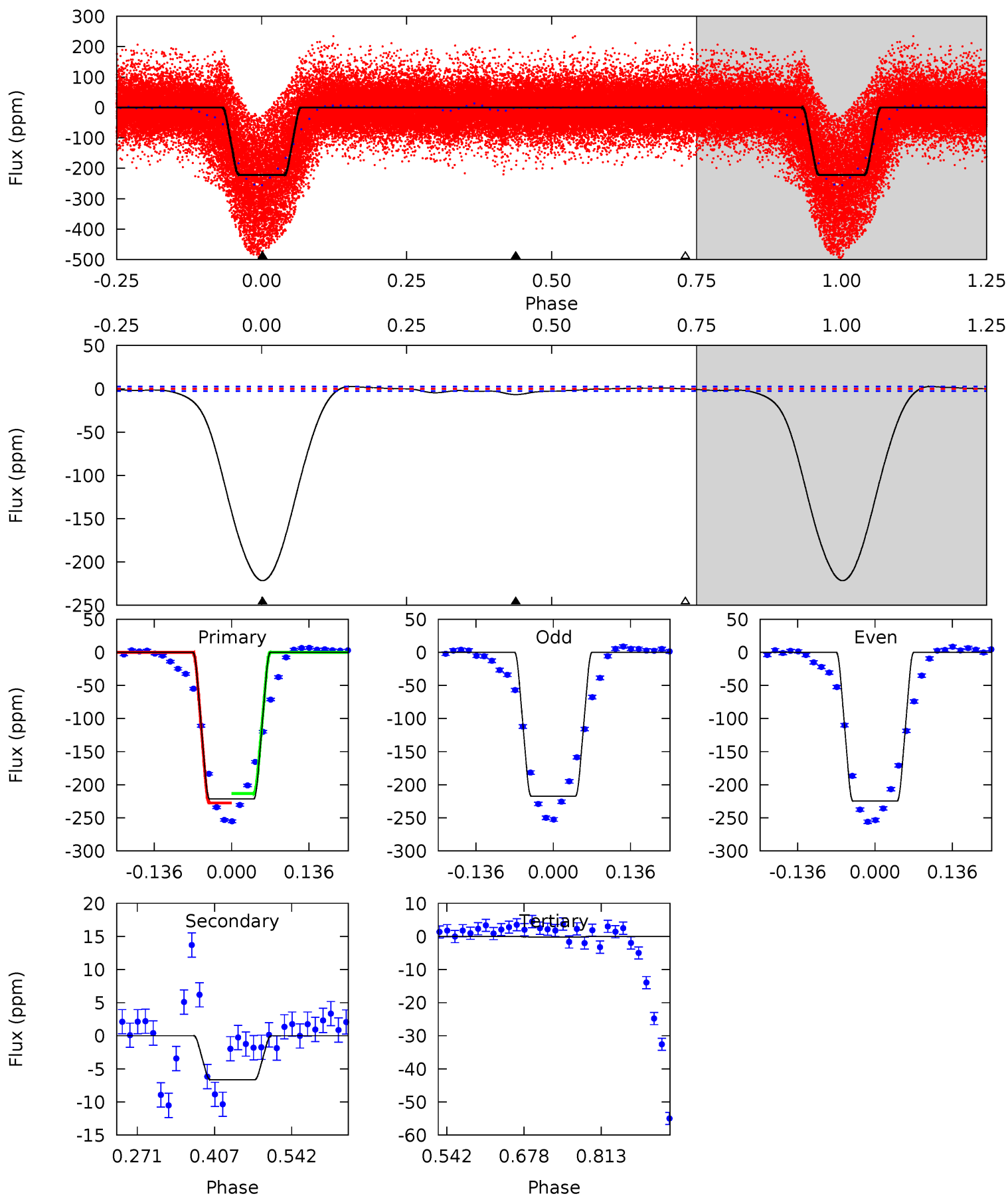
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.9	12.8	0	0	4.47	1.41	5.33	15.9	15.9	12.8	12.8	0.69	0.71	0.29	4.62



Alt Model-Shift Uniqueness Test

005215508-01, P = 2.660322 Days, E = 131.040266 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
384.4	11.5	0.32	0	4.50	1.49	3.28	384.0	384.4	11.2	11.5	6.29	0.98	0.01	12.2



Stellar Parameters For KIC 005215508

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (g \cdot \text{cm}^{-3})$
	6754^{+70}_{-90}	$4.214^{+0.059}_{-0.110}$	$0.100^{+0.150}_{-0.150}$	$1.528^{+0.270}_{-0.135}$	$1.396^{+0.109}_{-0.079}$	$0.551^{+0.140}_{-0.189}$
	+1%/-1%	+1%/-3%	+150%/-150%	+18%/-9%	+8%/-6%	+25%/-34%
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 005215508-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-14 ± 1	$1.37^{+0.13}_{-0.08}$	2524^{+104}_{-75}	4683^{+103}_{-115}	$7.324^{+1.202}_{-1.240}$
Alt.	-7 ± 1	$2.68^{+0.25}_{-0.14}$	2522^{+100}_{-73}	3076^{+73}_{-78}	$0.885^{+0.144}_{-0.140}$

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

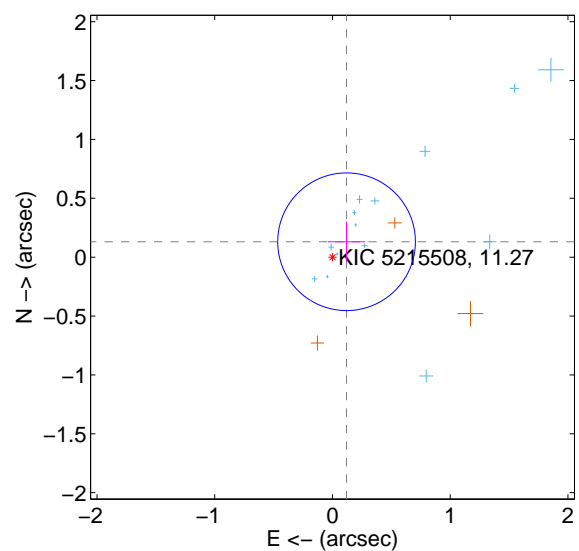
Supplemental centroid analysis for 005215508-01. **Kepler magnitude: 11.27.** Transit SNR 17.70

There are 14 quarters with good PRF difference image offsets

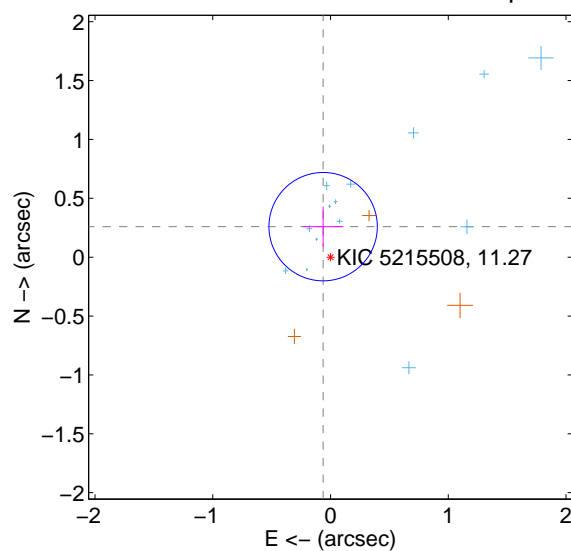
The direct PRF centroid is offset from the target star catalog position by about 0.29 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.177 ± 0.195	0.91	-0.120 ± 0.159	0.131 ± 0.169
PRF-fit source offset from KIC position	0.267 ± 0.153	1.74	0.063 ± 0.171	0.259 ± 0.170
photometric centroid source offset	0.40 ± 0.44	0.91	0.40 ± 0.44	-0.04 ± 0.45

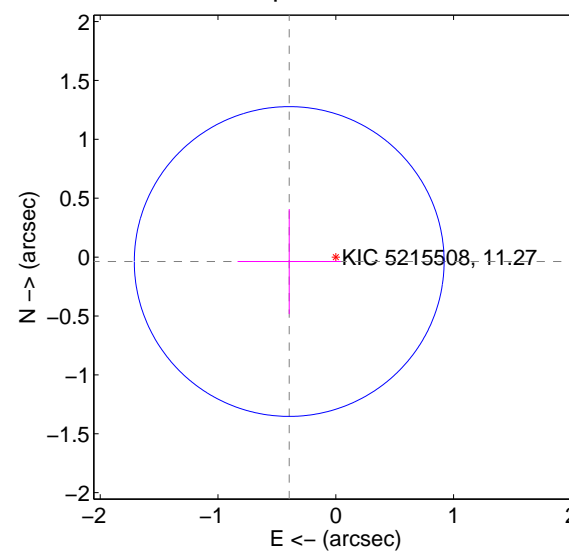
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

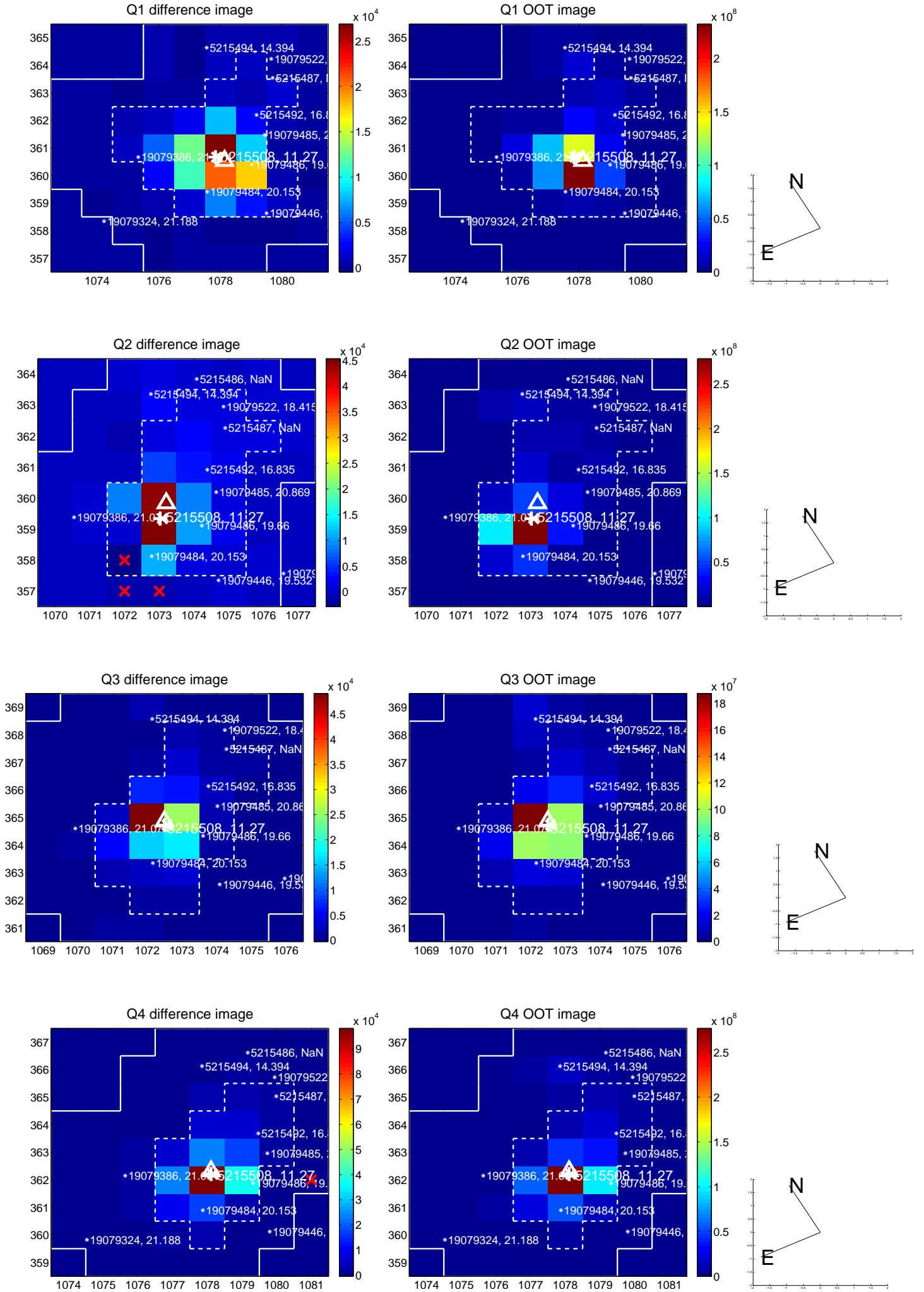


offset from photometric centroids

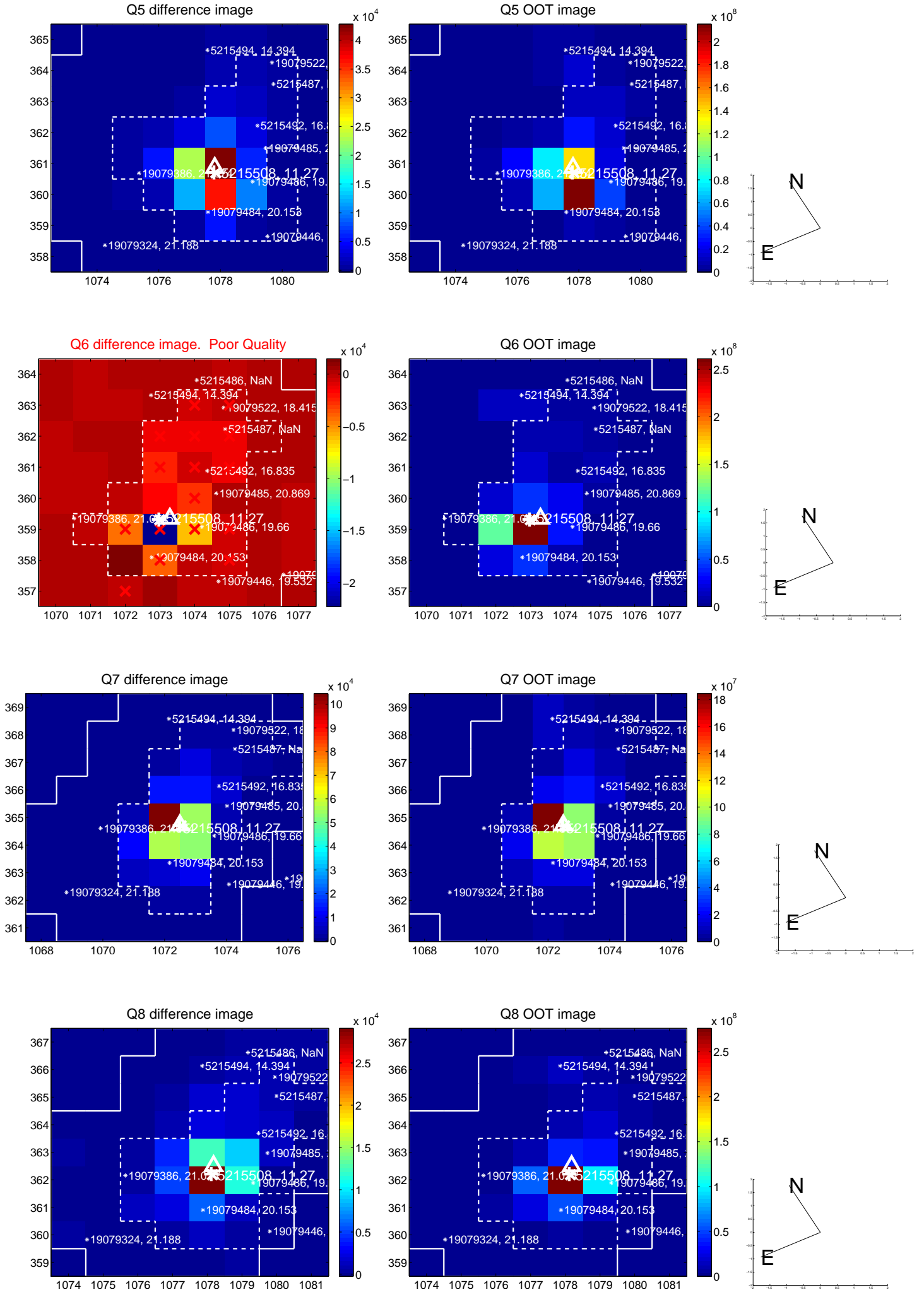


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

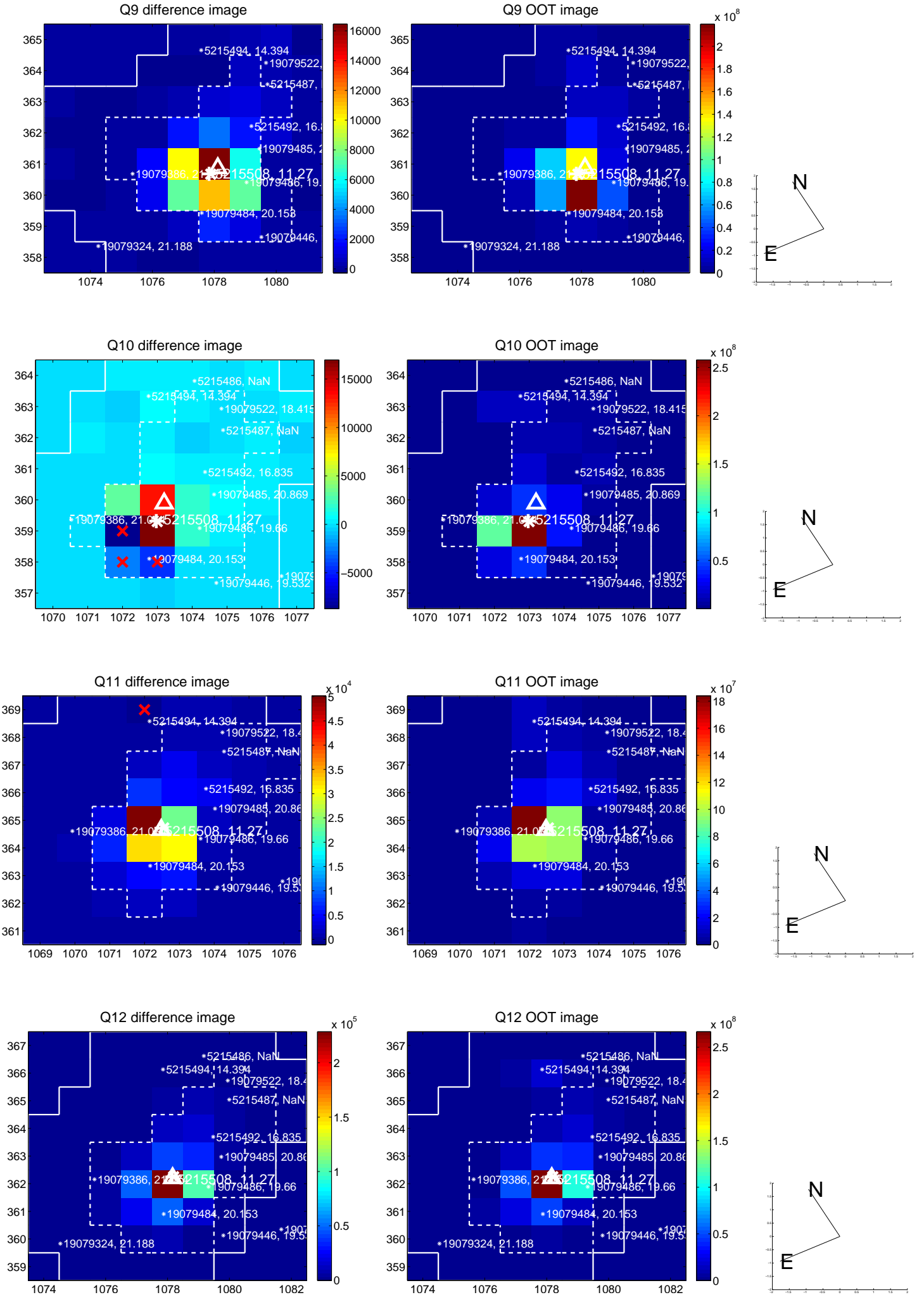
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



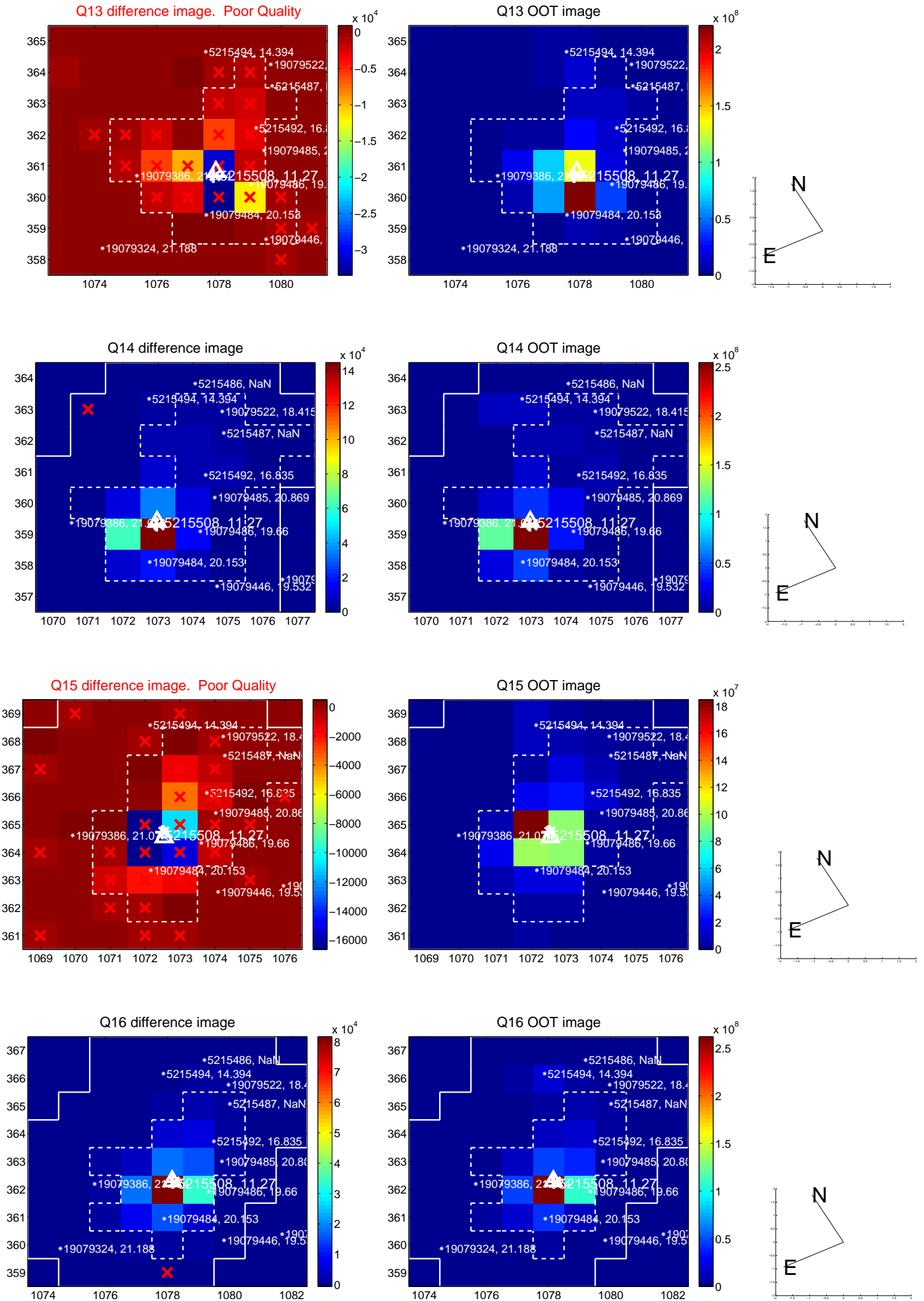
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



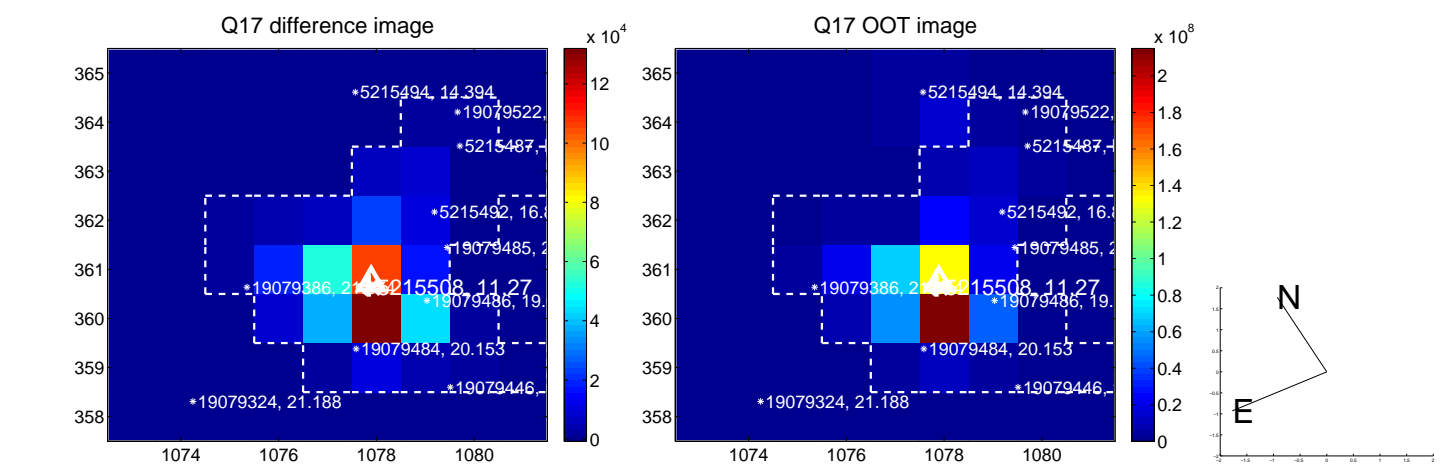
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



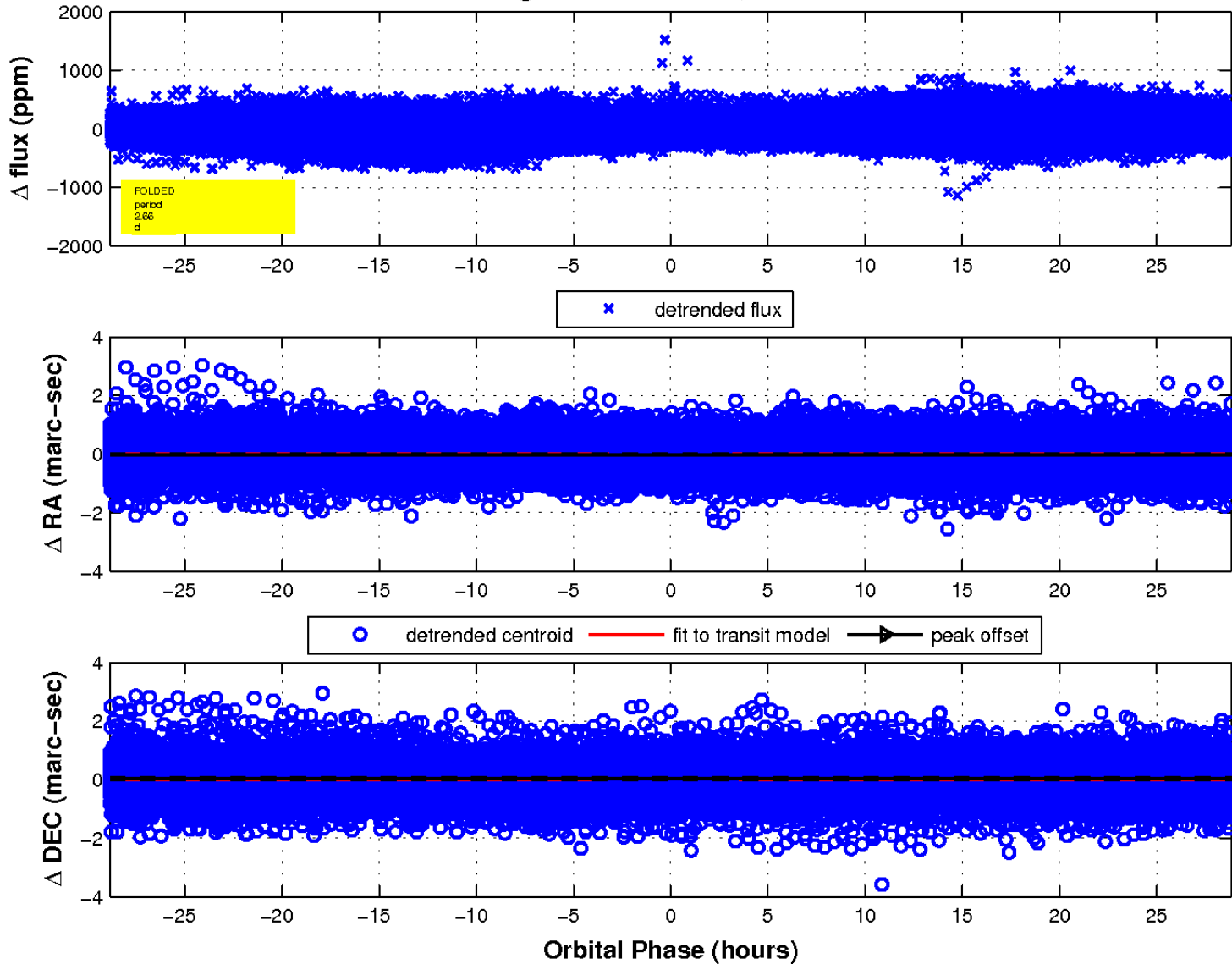
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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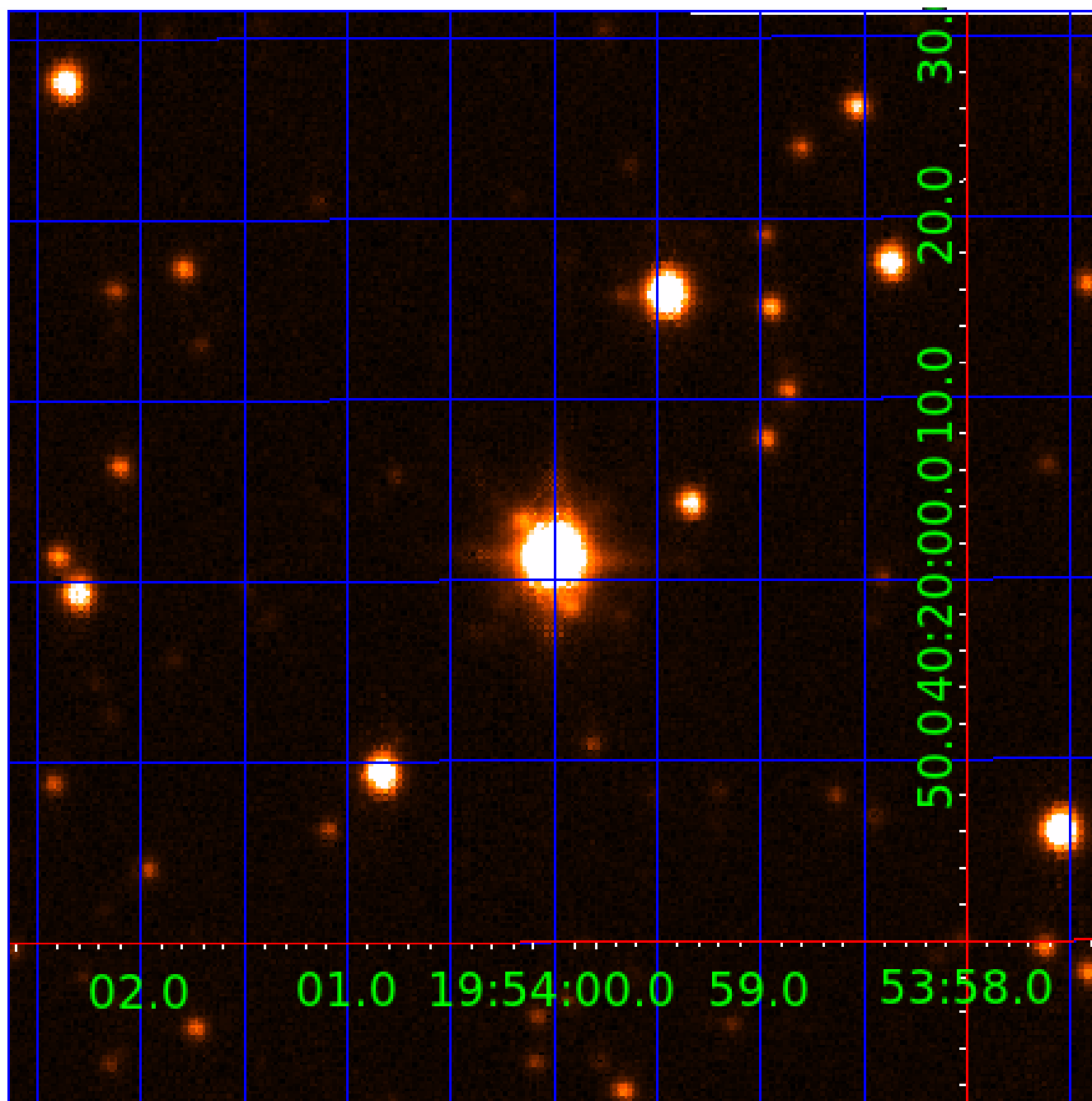


fluxWeightedCentroids, Planet 1 of 3



UKIRT Image

Declination



KIC 005215508

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})
005215508-01	OBS	No	2.660373	133.733480	42.3	9.615	16.0	17.7	1.53	6754	1.35	2469.62
005215508-02	OBS	No	2.659752	132.194268	13.7	17.422	15.1	6.1	1.53	6754	0.60	2470.39

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005215508-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—MOD_NONUNIQ_DV—CENT_SATURATED
005215508-02	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—SAME_NTL_PERIOD—CENT_SATURATED

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

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

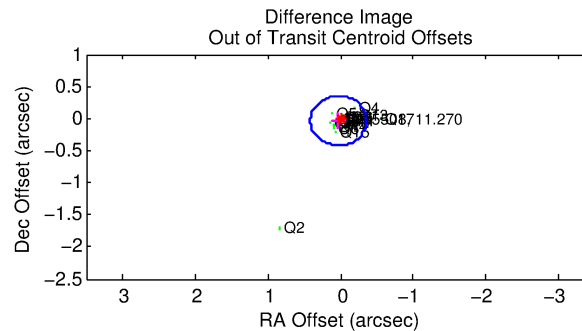
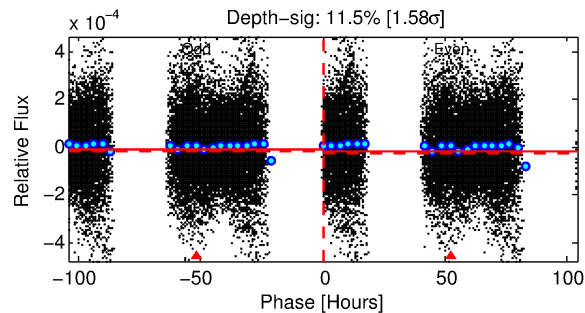
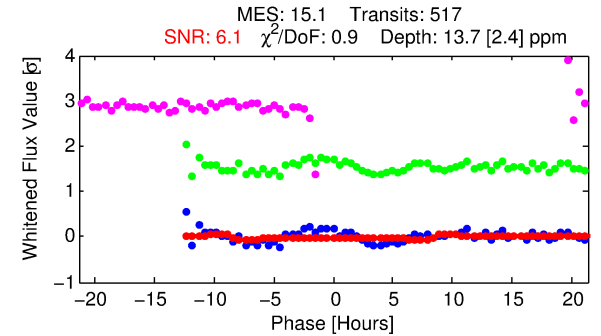
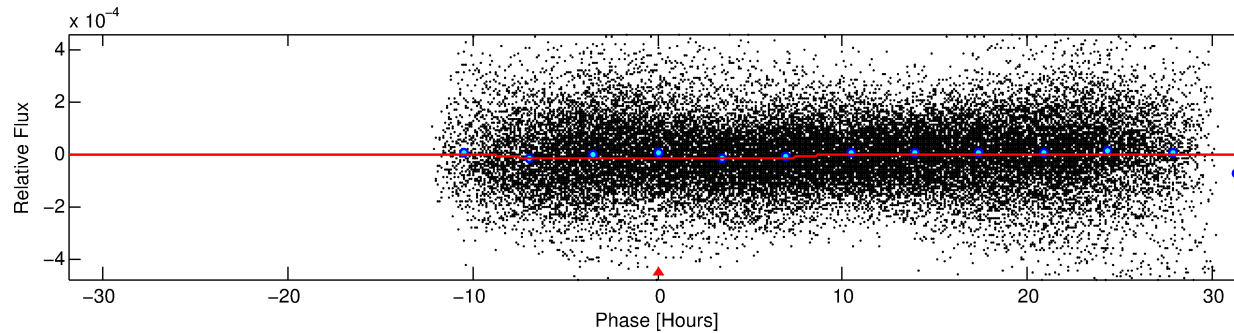
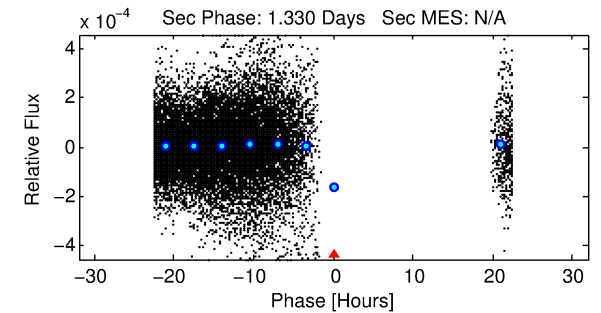
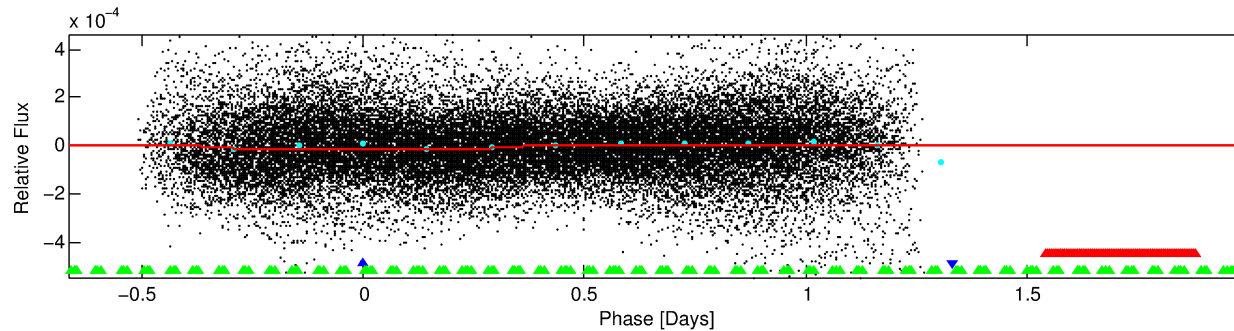
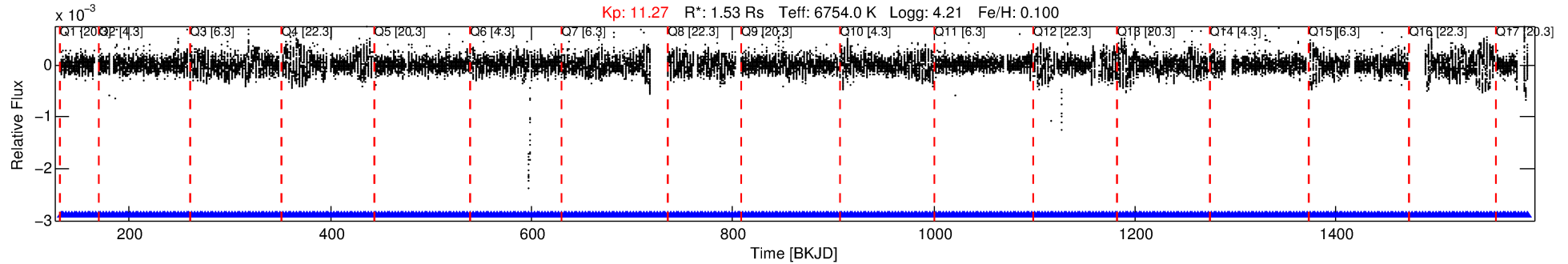
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005215508-02

No Significant Match Found

DV One-Page Summary

KIC: 5215508 Candidate: 2 of 3 Period: 2.660 d
KOI: K06542 Corr: No Ephemeris Match



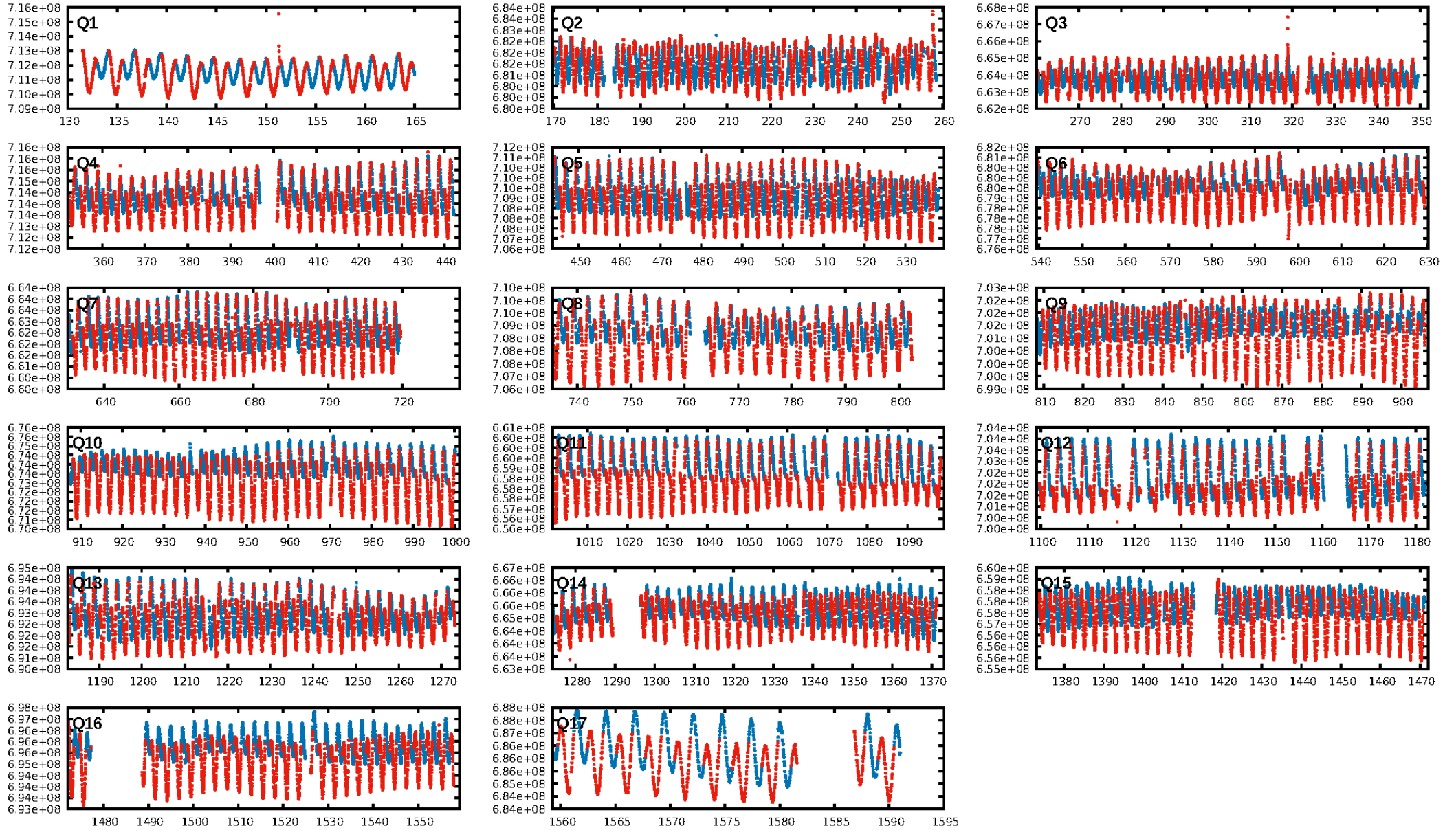
DV Fit Results:

Period = 2.65975 [0.00004] d
Epoch = 132.1943 [0.0084] BKJD
Rp/R* = 0.0036 [0.0014]
a/R* = 1.21 [0.84]
b = 0.64 [2.07]
Seff = 2470.39 [525.39]
Teq = 1798 [96] K
Rp = 0.60 [0.26] Re
a = 0.0420 [0.0061] AU

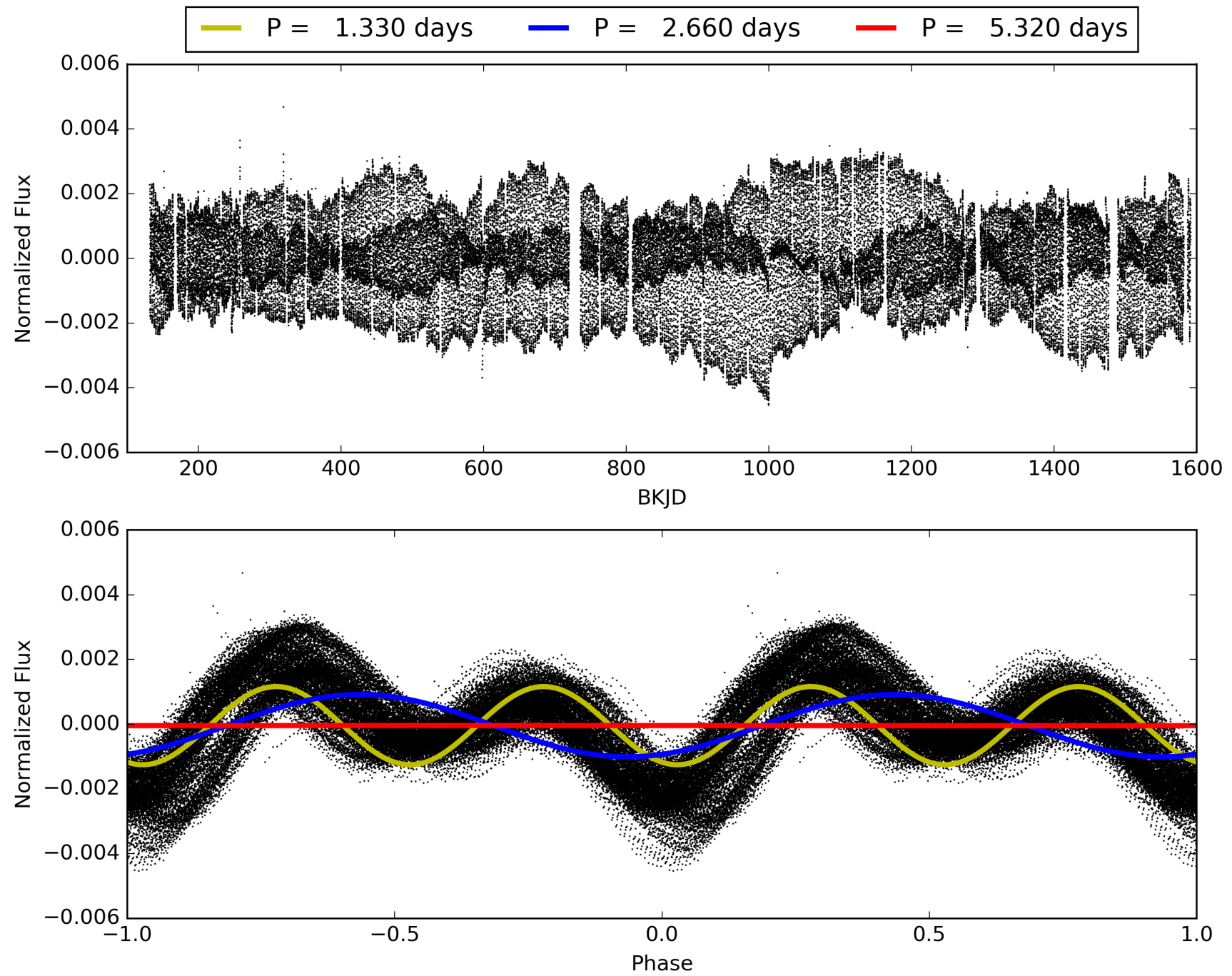
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.1% [0.00σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 5.53e-131
RollingBand-fgt: 1.00 [494/494]
GhostDiagnostic-chr: 0.9193
Centroid-sig: 0.0%
Centroid-so: 5.444 arcsec [4.93σ]
OotOffset-rm: 0.045 arcsec [0.35σ]
KicOffset-rm: 0.192 arcsec [2.55σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 1.00 [17/17]
DiffImageOverlap-fno: 0.00 [0/17]

TCE 005215508-02, PDC Light Curves

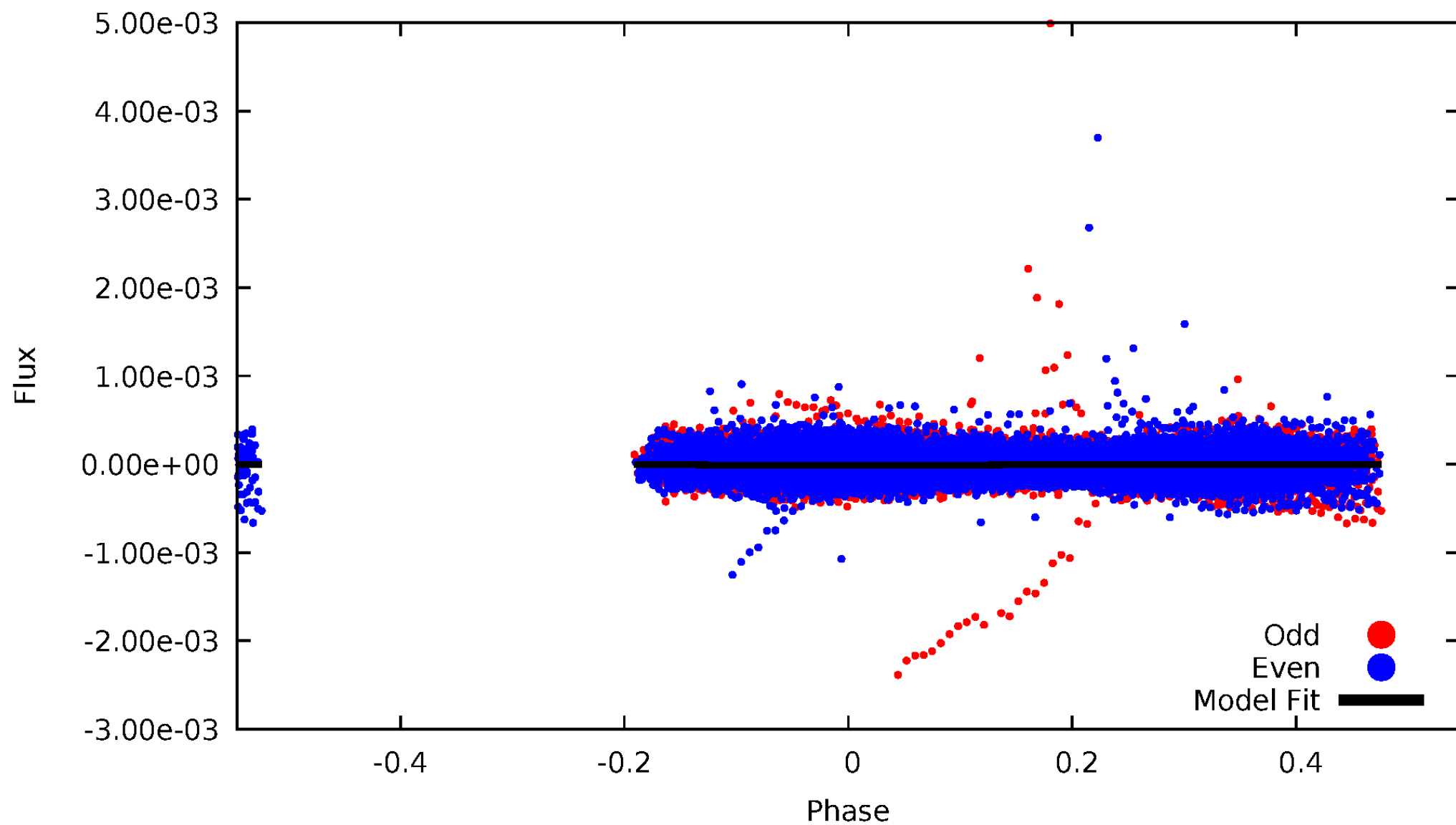


TCE 005215508-02



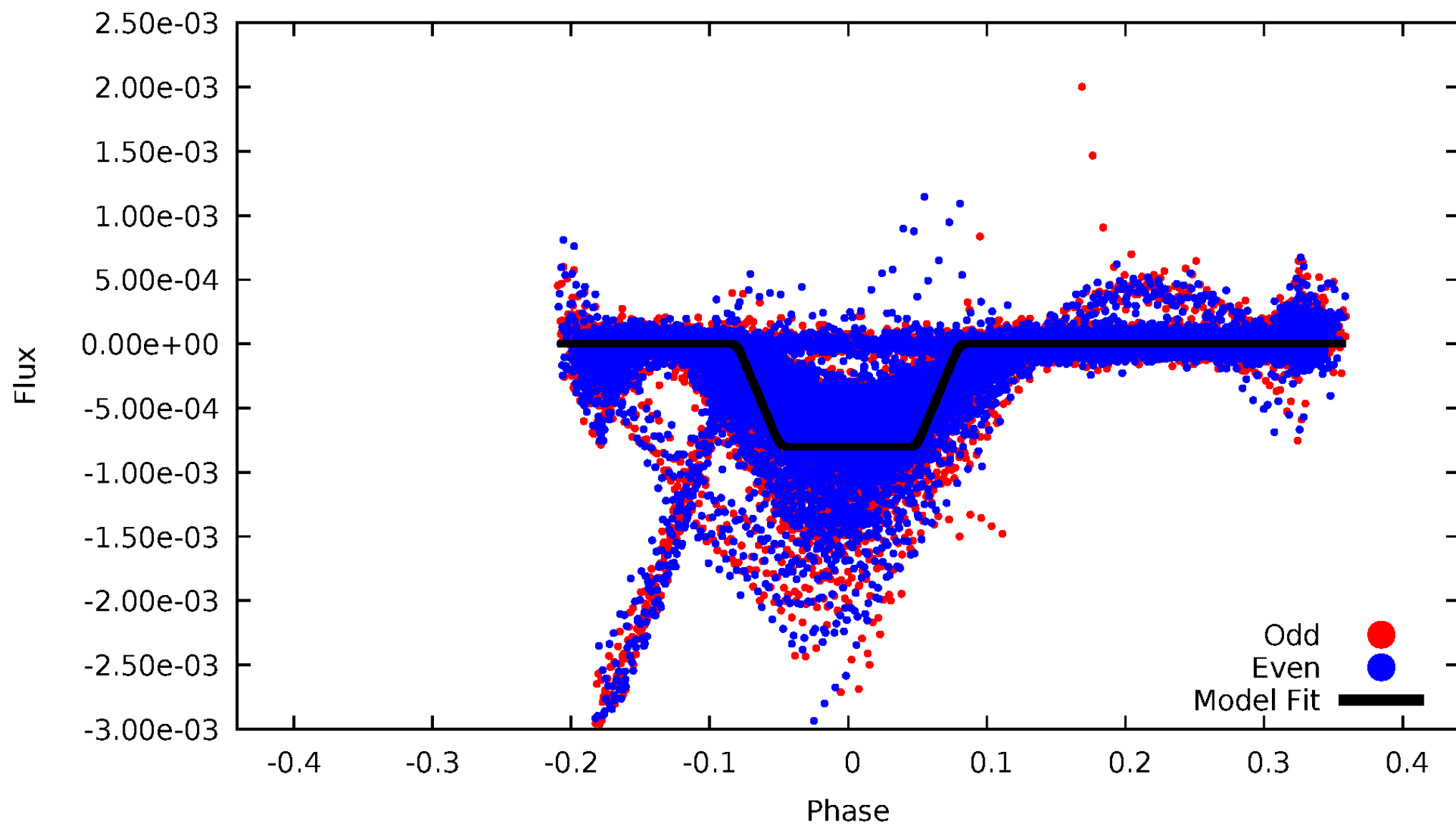
DV Odd/Even

TCE 005215508-02



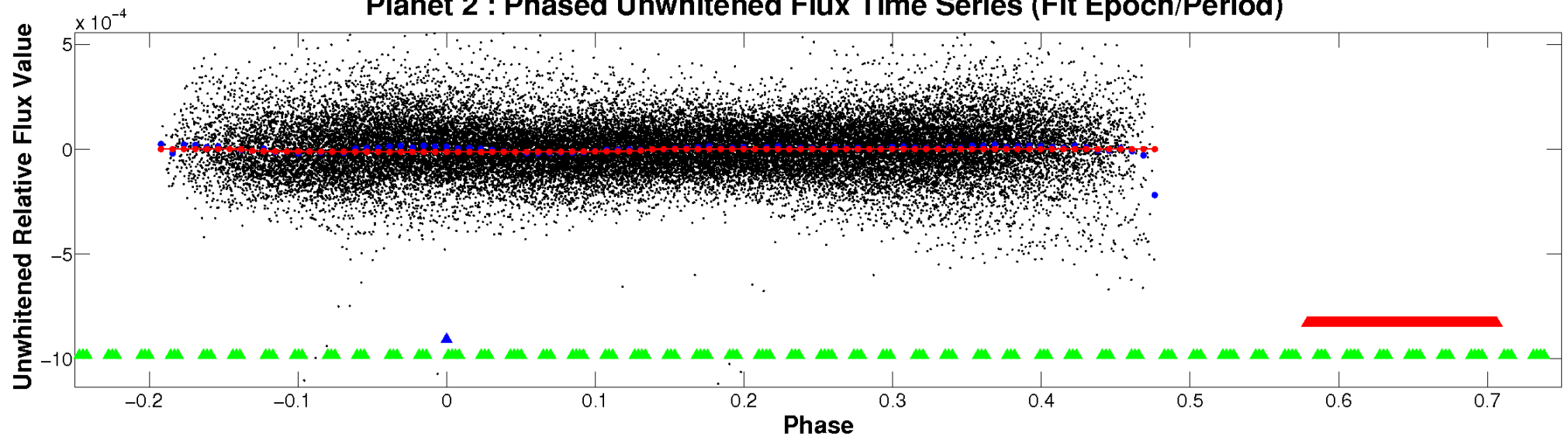
ALT Odd/Even

TCE 005215508-02

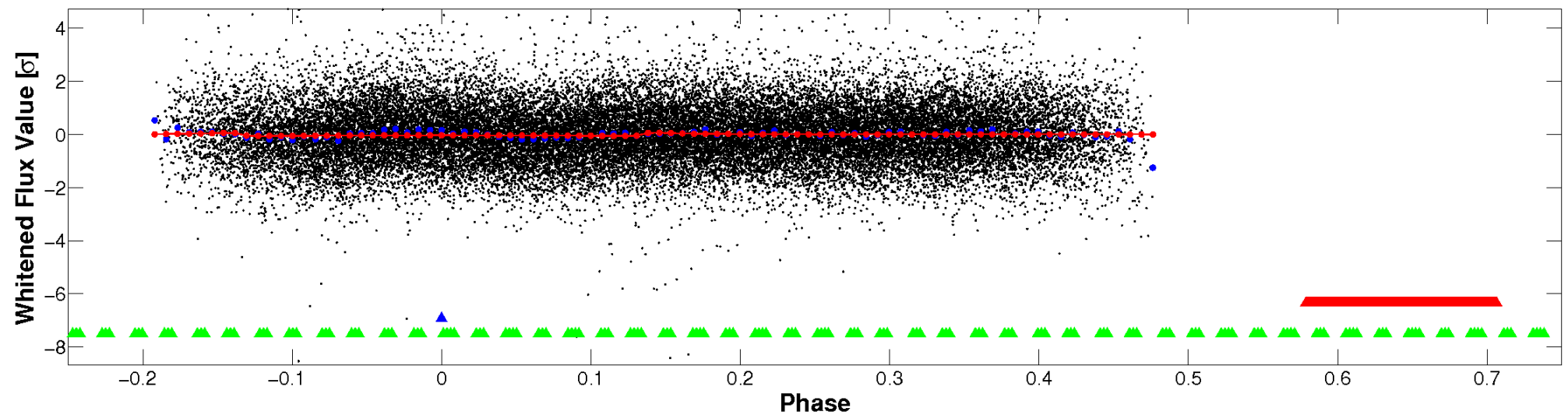


Non-Whitened Vs. Whitened Light Curve

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

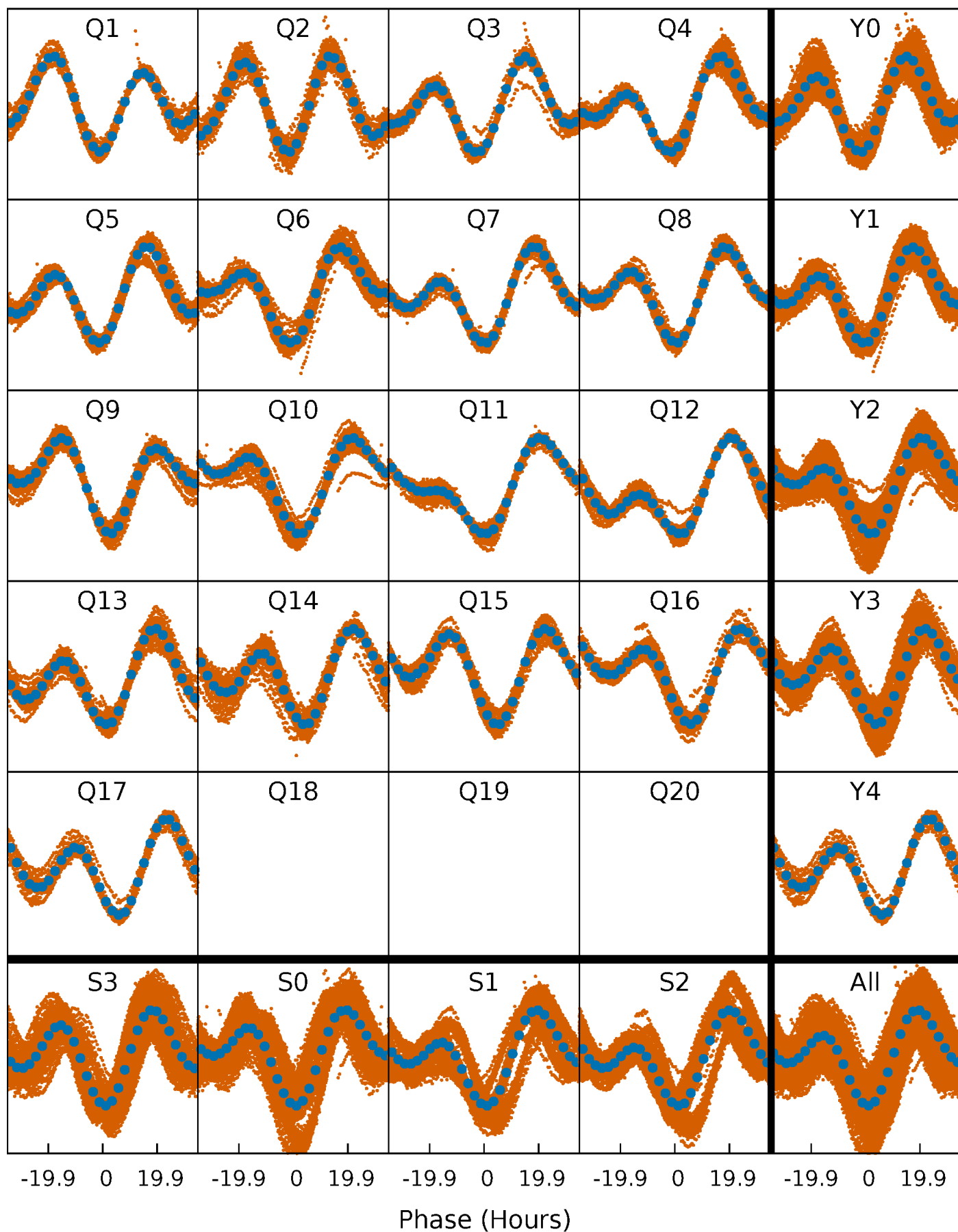


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



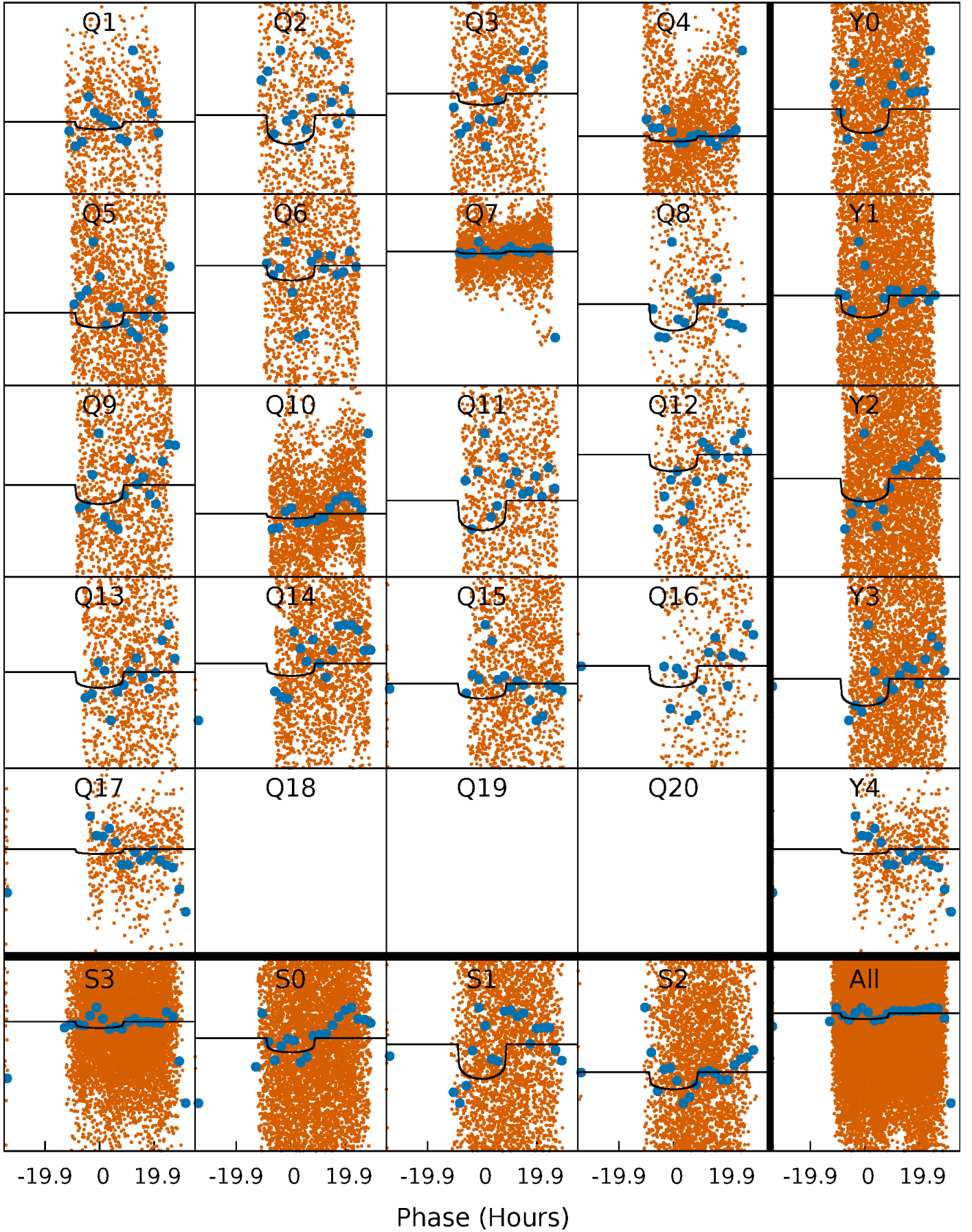
PDC Quarter-Phased Transit Curves

TCE 005215508-02 P= 2.659752 Days $T_0=132.194267$ (BKJD)



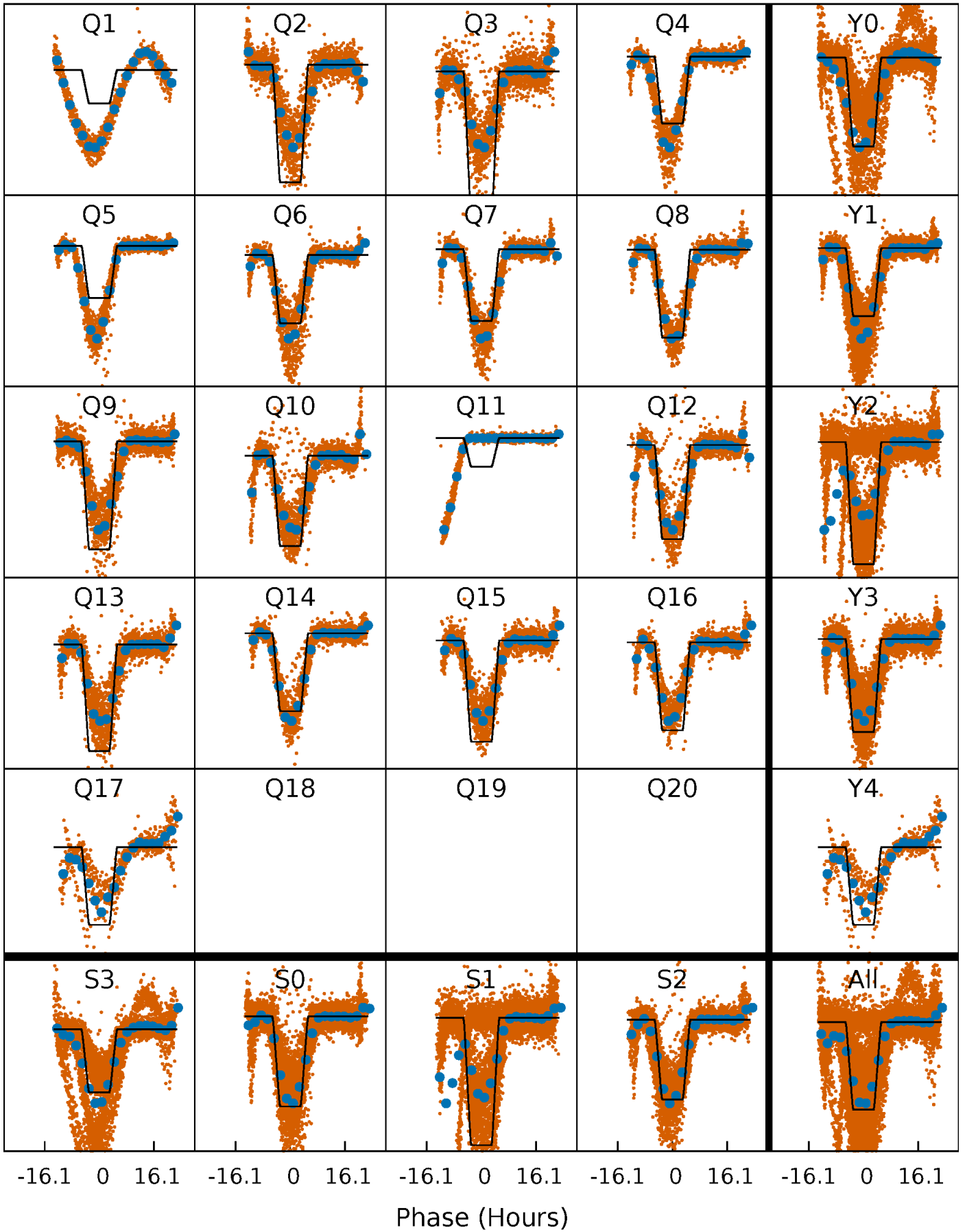
DV Quarter-Phased Transit Curves

TCE 005215508-02 P= 2.659752 Days $T_0=132.194267$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

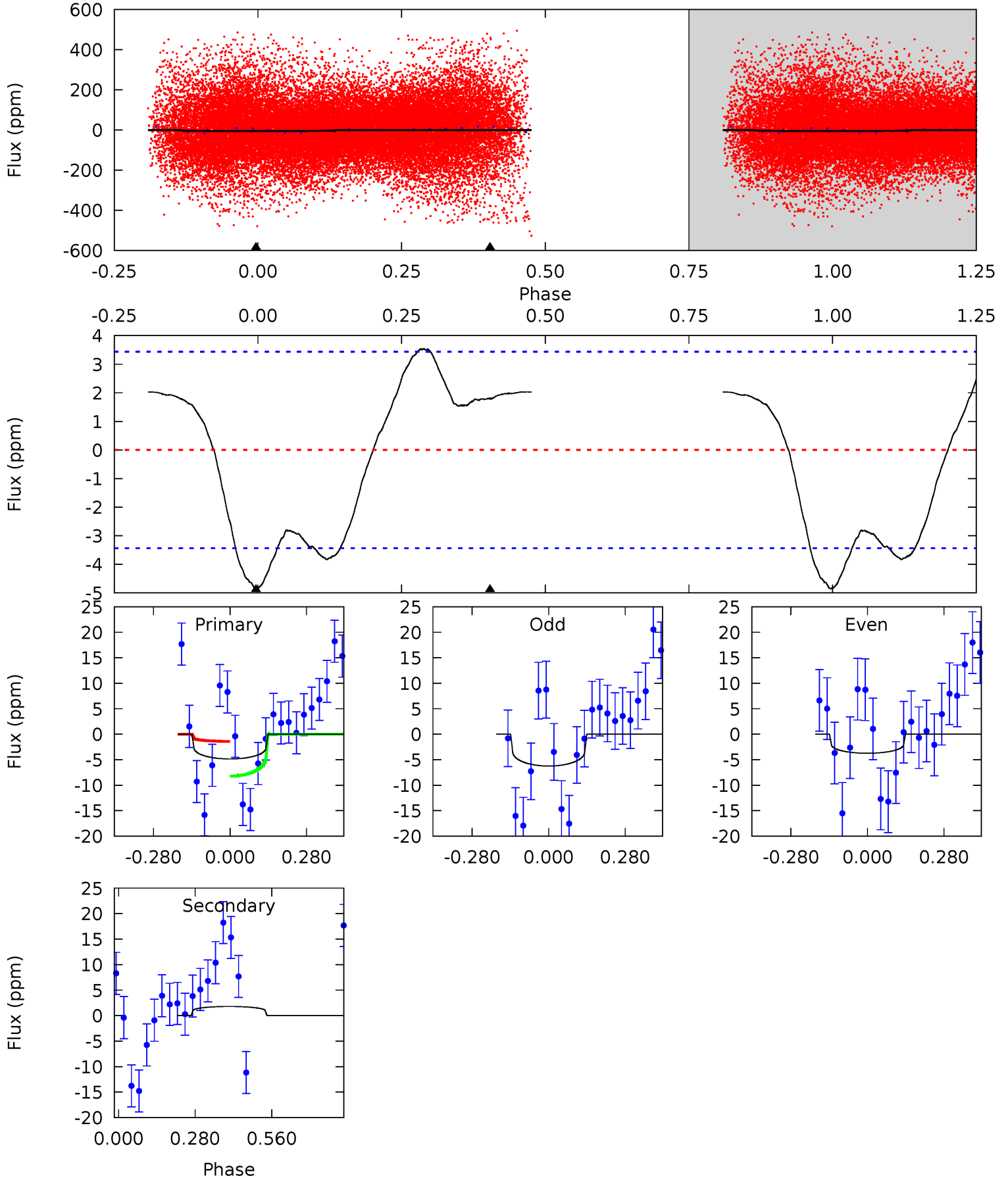
TCE 005215508-02 P= 2.660230 Days $T_0=132.242851$ (BKJD)



DV Model-Shift Uniqueness Test

005215508-02, P = 2.659752 Days, E = 129.534515 Days

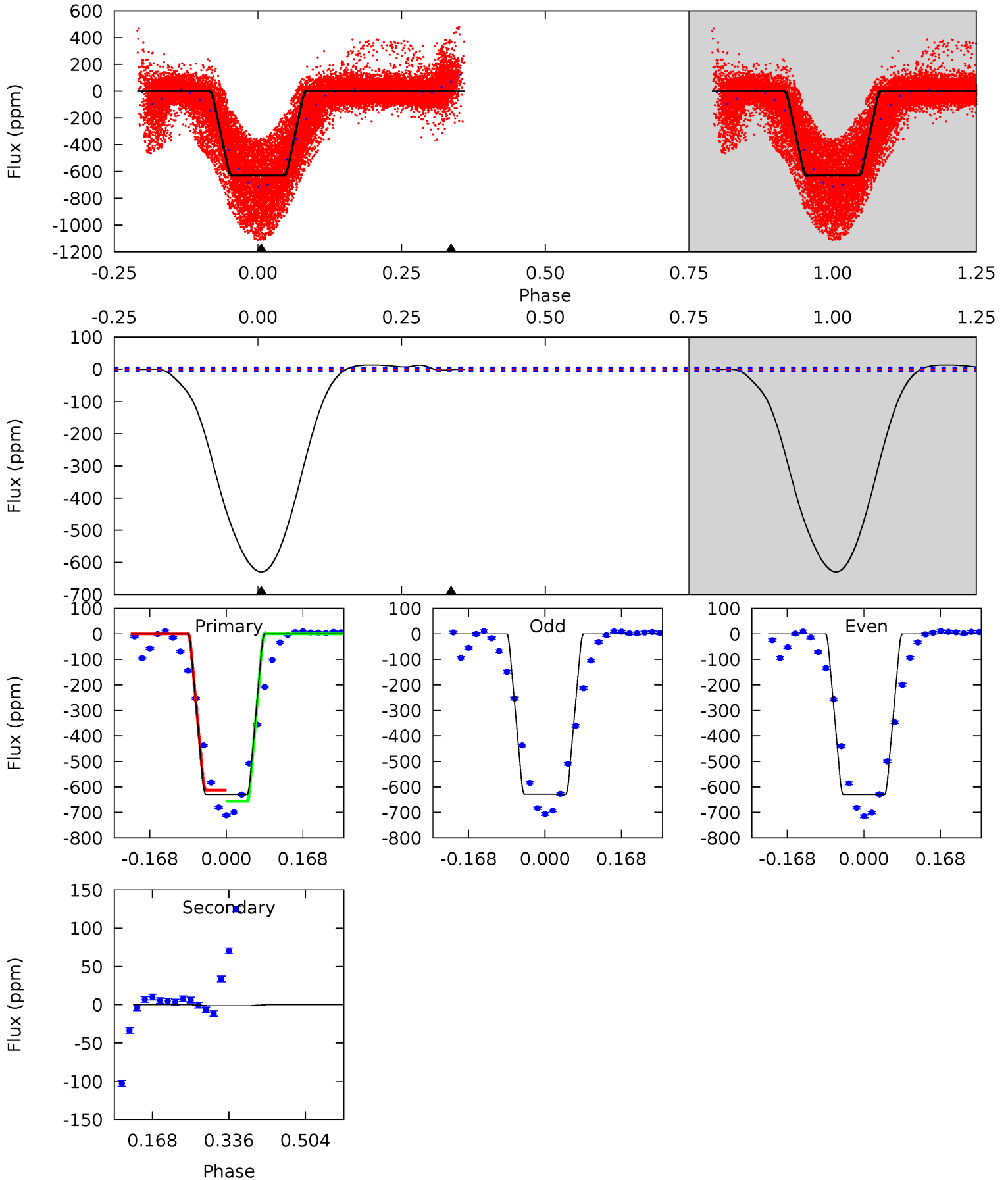
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.13	-2.27	0	0	4.34	1.08	1.11	6.13	6.13	-2.27	-2.27	1.33	0.62	0.42	3.48



Alt Model-Shift Uniqueness Test

005215508-02, P = 2.660230 Days, E = 129.582621 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
500.6	0.96	0	0	4.45	1.38	6.06	500.6	500.6	0.96	0.96	0.39	1.04	0.02	11.8



Stellar Parameters For KIC 005215508

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (g \cdot \text{cm}^{-3})$
	6754^{+70}_{-90}	$4.214^{+0.059}_{-0.110}$	$0.100^{+0.150}_{-0.150}$	$1.528^{+0.270}_{-0.135}$	$1.396^{+0.109}_{-0.079}$	$0.551^{+0.140}_{-0.189}$
	+1%/-1%	+1%/-3%	+150%/-150%	+18%/-9%	+8%/-6%	+25%/-34%
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 005215508-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	2 ± 1	$0.62^{+0.25}_{-0.25}$	2523^{+102}_{-69}	-4302^{+525}_{-1166}	$-4.199^{+2.375}_{-9.504}$
Alt.	-1 ± 1	$4.78^{+0.47}_{-0.37}$	2522^{+102}_{-76}	-2742^{+118}_{-99}	$0.051^{+0.061}_{-0.052}$

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 $A_{obs} \gg 1.0$

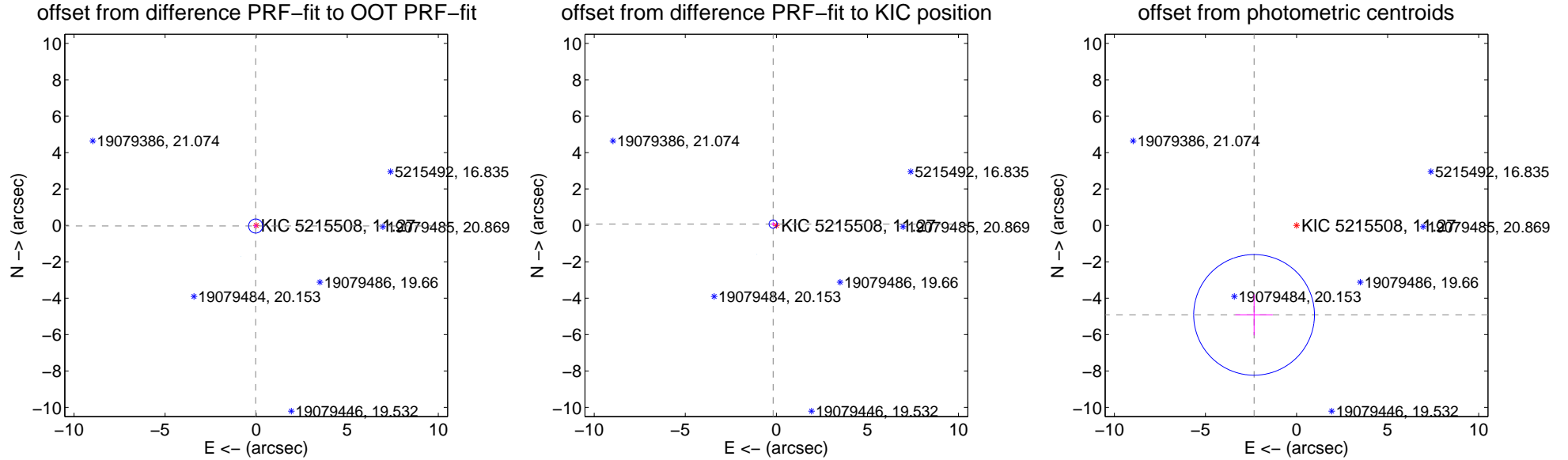
DV Centroid Data

Supplemental centroid analysis for 005215508-02. **Kepler magnitude: 11.27.** Transit SNR 6.09

There are 17 quarters with good PRF difference image offsets

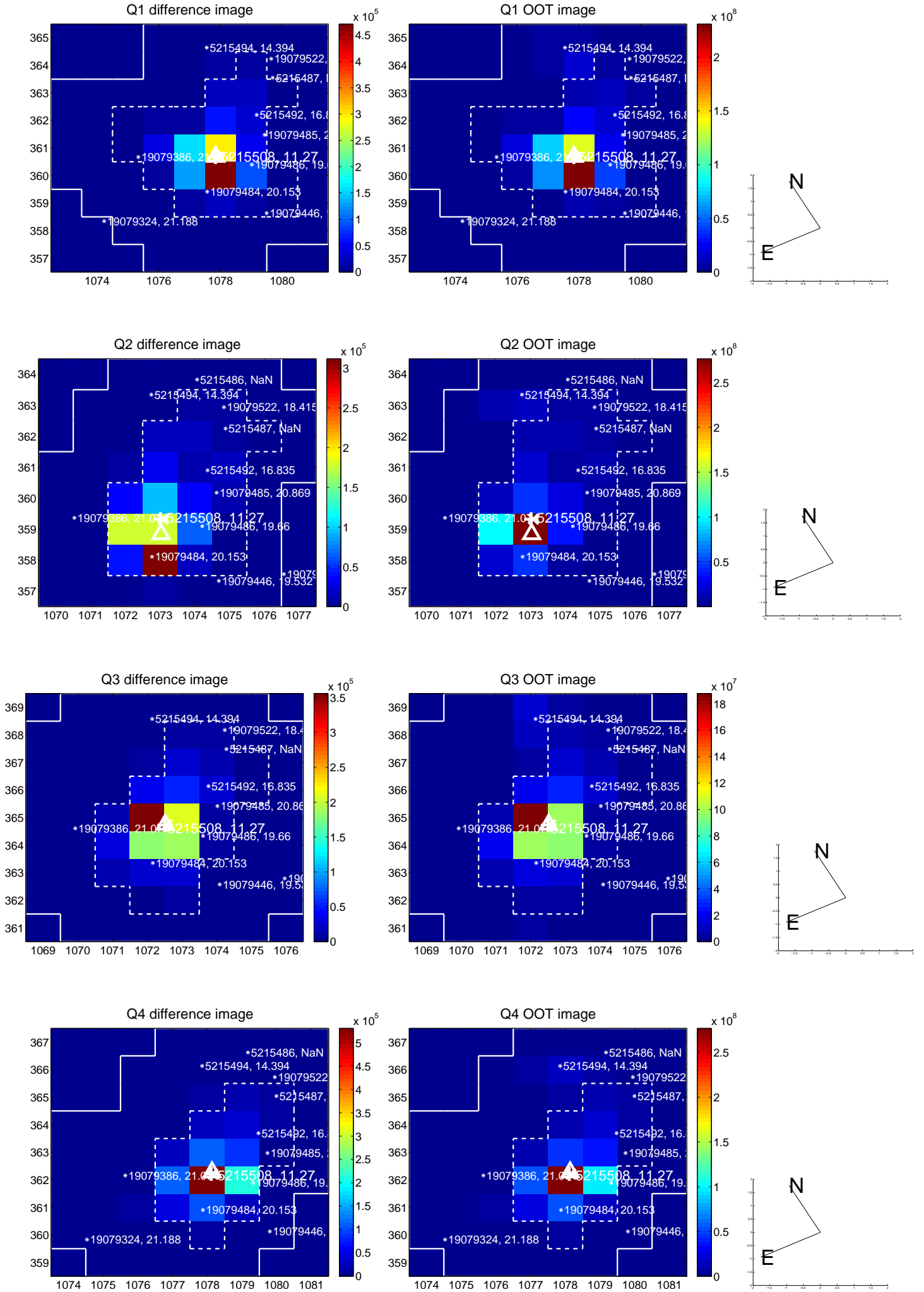
The direct PRF centroid is offset from the target star catalog position by about 0.29 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.045 ± 0.129	0.35	0.029 ± 0.092	-0.034 ± 0.118
PRF-fit source offset from KIC position	0.192 ± 0.075	2.55	0.176 ± 0.091	0.075 ± 0.114
photometric centroid source offset	5.44 ± 1.11	4.93	2.33 ± 1.03	-4.92 ± 1.12

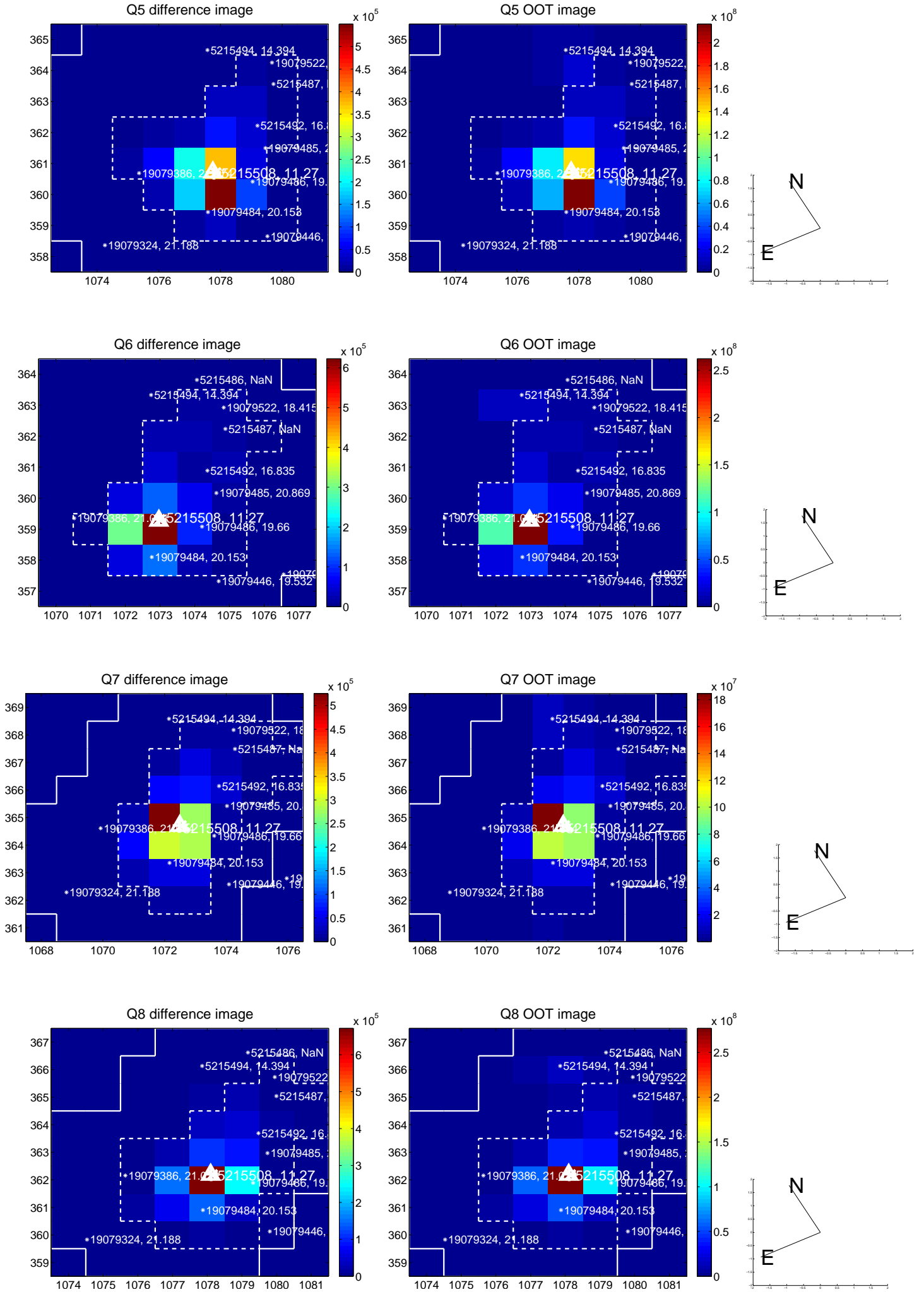


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

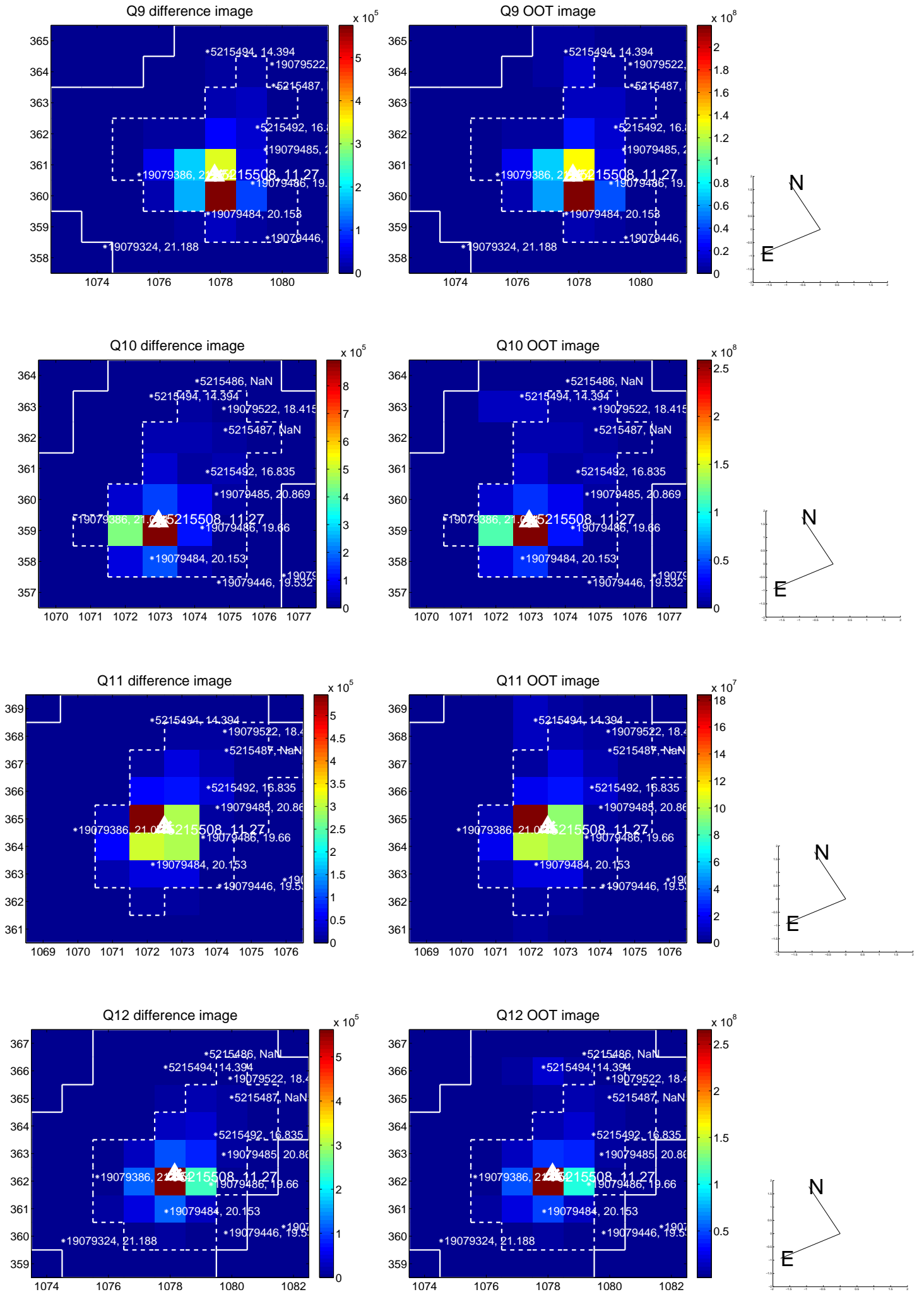
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



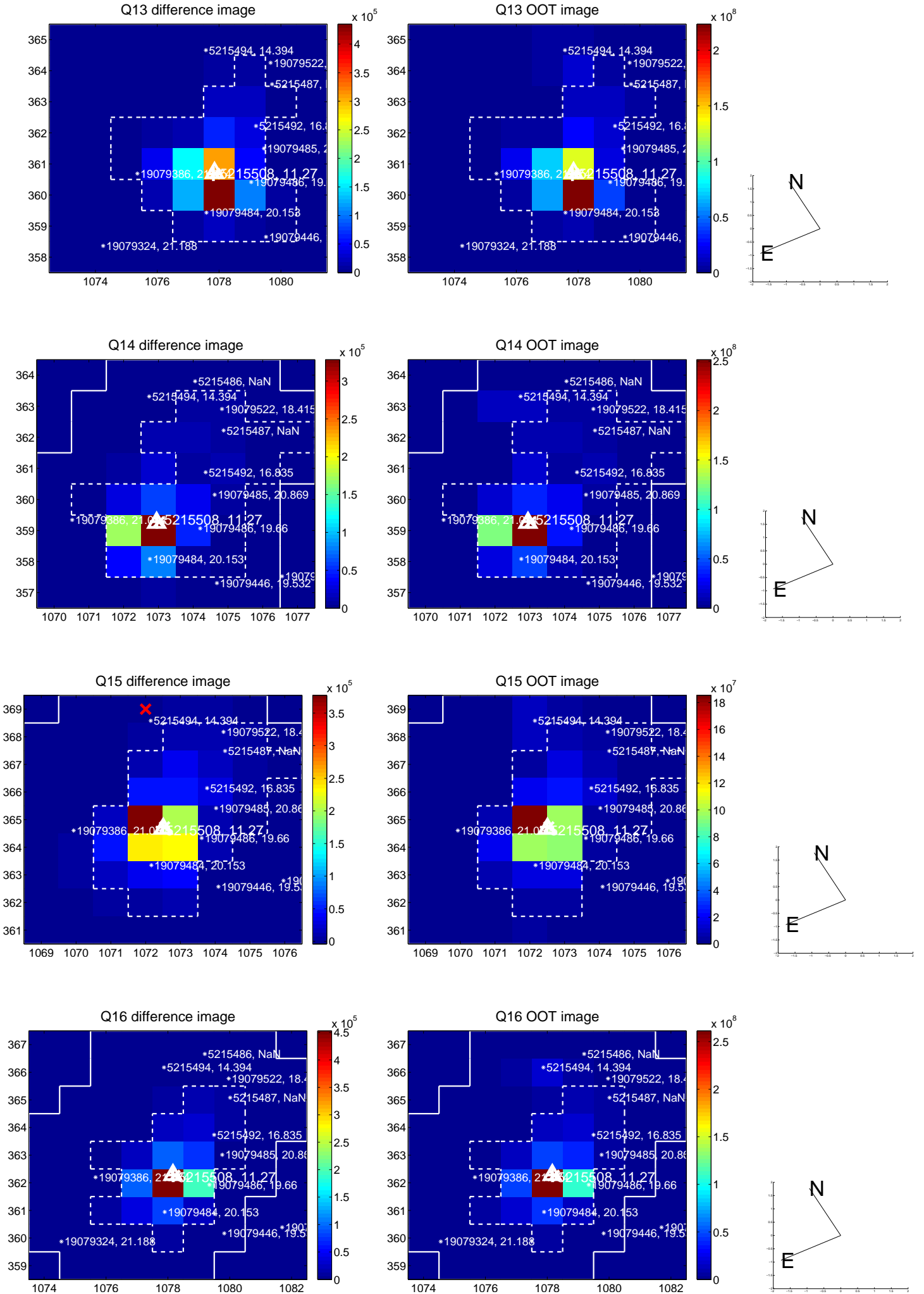
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



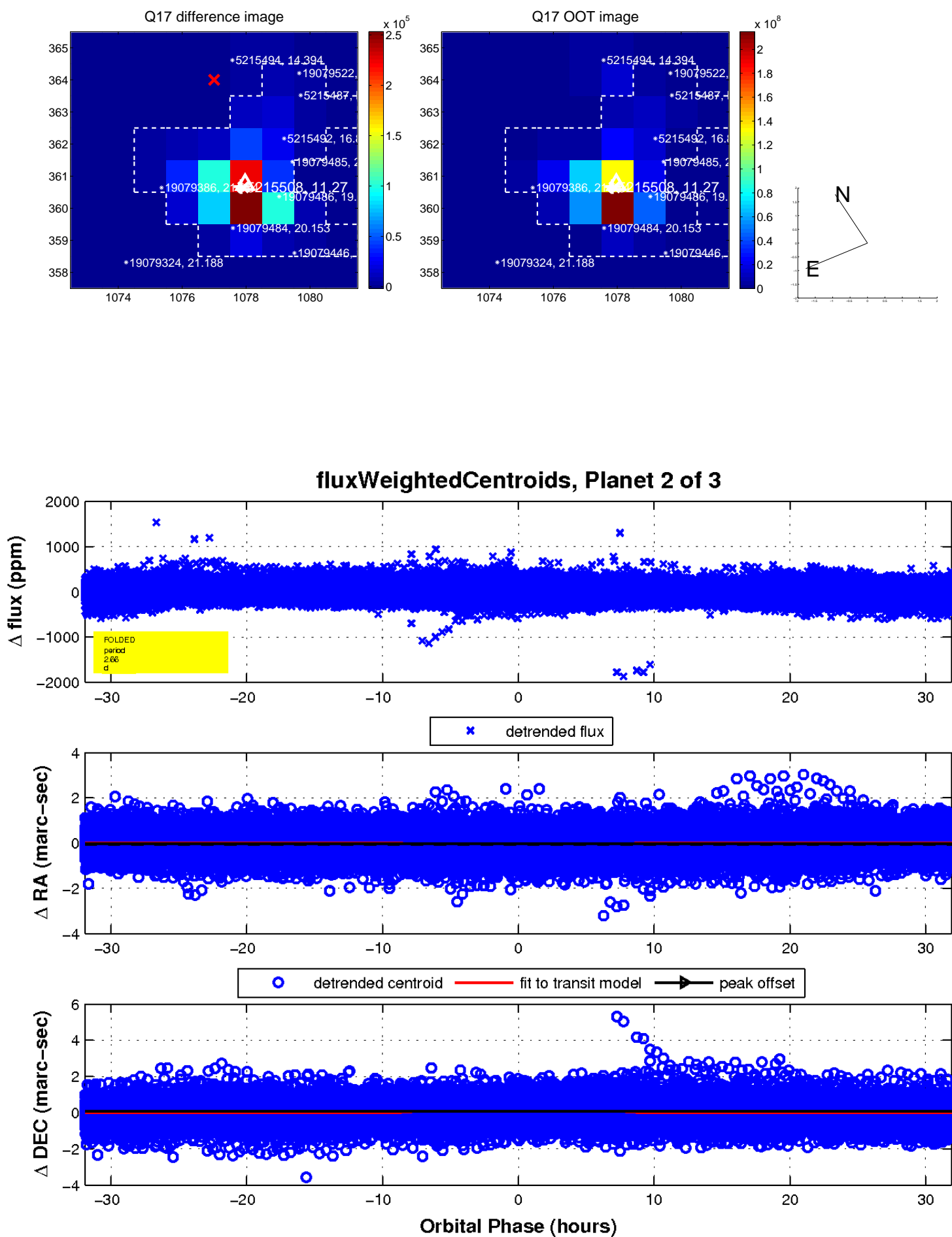
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

