

KIC 005534476

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})
005534476-01	OBS	No	2.153858	133.490056	38.5	2.626	13.3	14.3	1.71	6862	1.26	4386.09
005534476-02	OBS	6595.01	1.025437	131.608677	15.8	3.422	10.4	9.0	1.71	6862	0.79	11798.35

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005534476-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_MEAS
005534476-02	OBS	FP	0.00	1	0	0	1	LPP_DV—LPP_ALT—EPHEM_MATCH

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

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

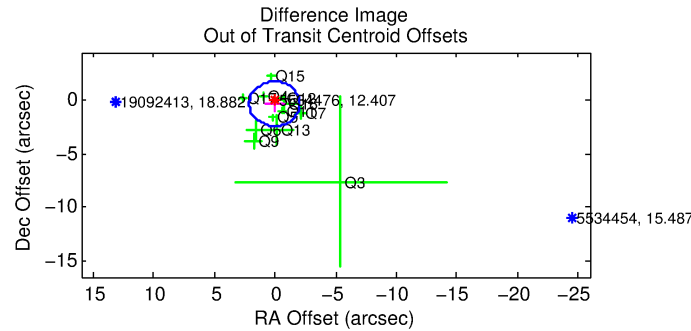
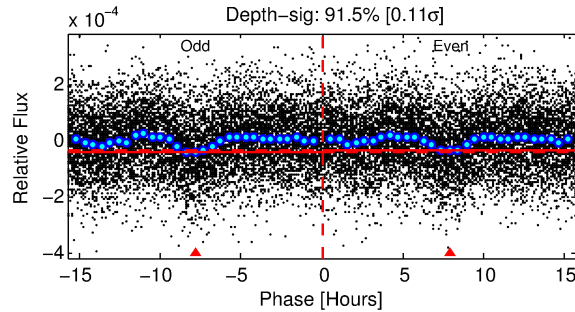
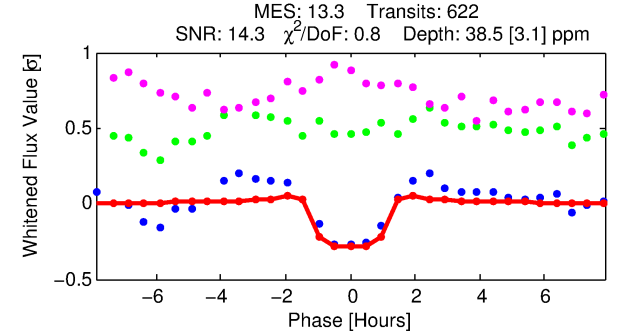
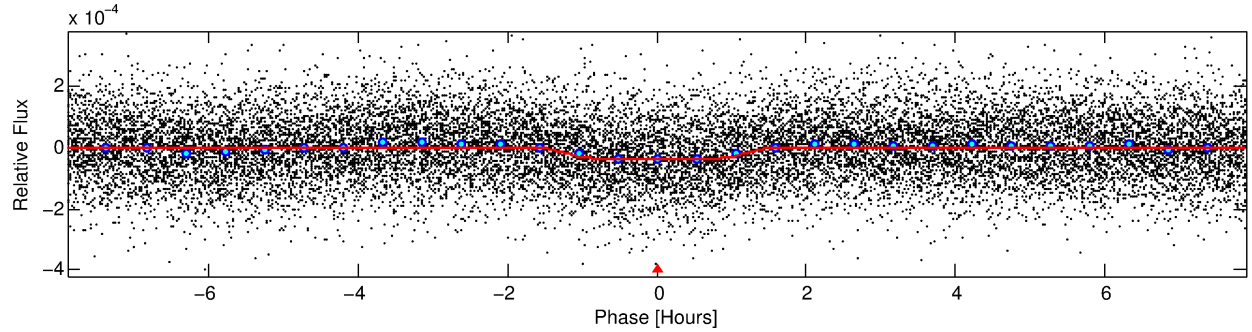
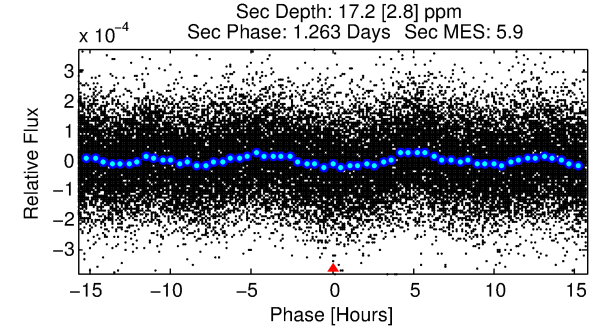
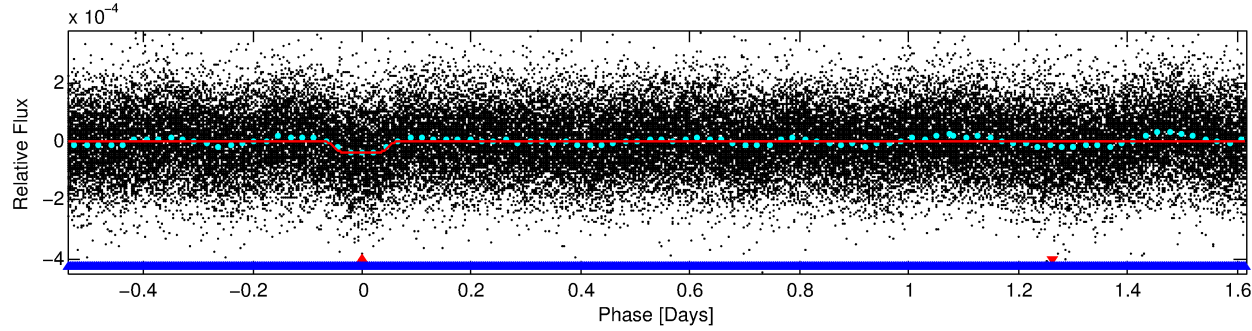
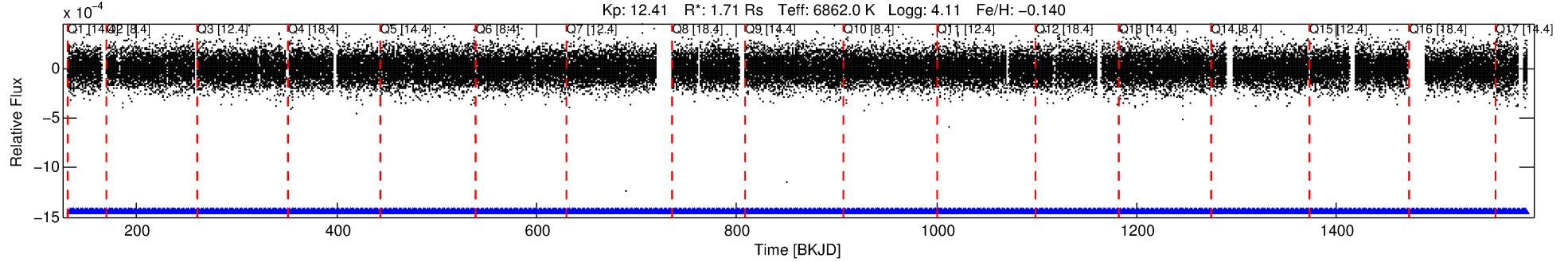
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005534476-01

No Significant Match Found

DV One-Page Summary

KIC: 5534476 Candidate: 1 of 2 Period: 2.154 d
KOI: K06595 Corr: No Ephemeris Match



DV Fit Results:

Period = 2.15386 [0.00001] d
Epoch = 133.4901 [0.0020] BKJD
Rp/R* = 0.0067 [0.0016]
a/R* = 2.73 [3.45]
b = 0.92 [0.25]
Seff = 4386.09 [1035.50]
Teq = 2075 [122] K
Rp = 1.26 [0.36] Re
a = 0.0364 [0.0054] AU
Ag = 7.94 [4.40] [1.58σ]
Teffp = 5385 [683] K [4.77σ]

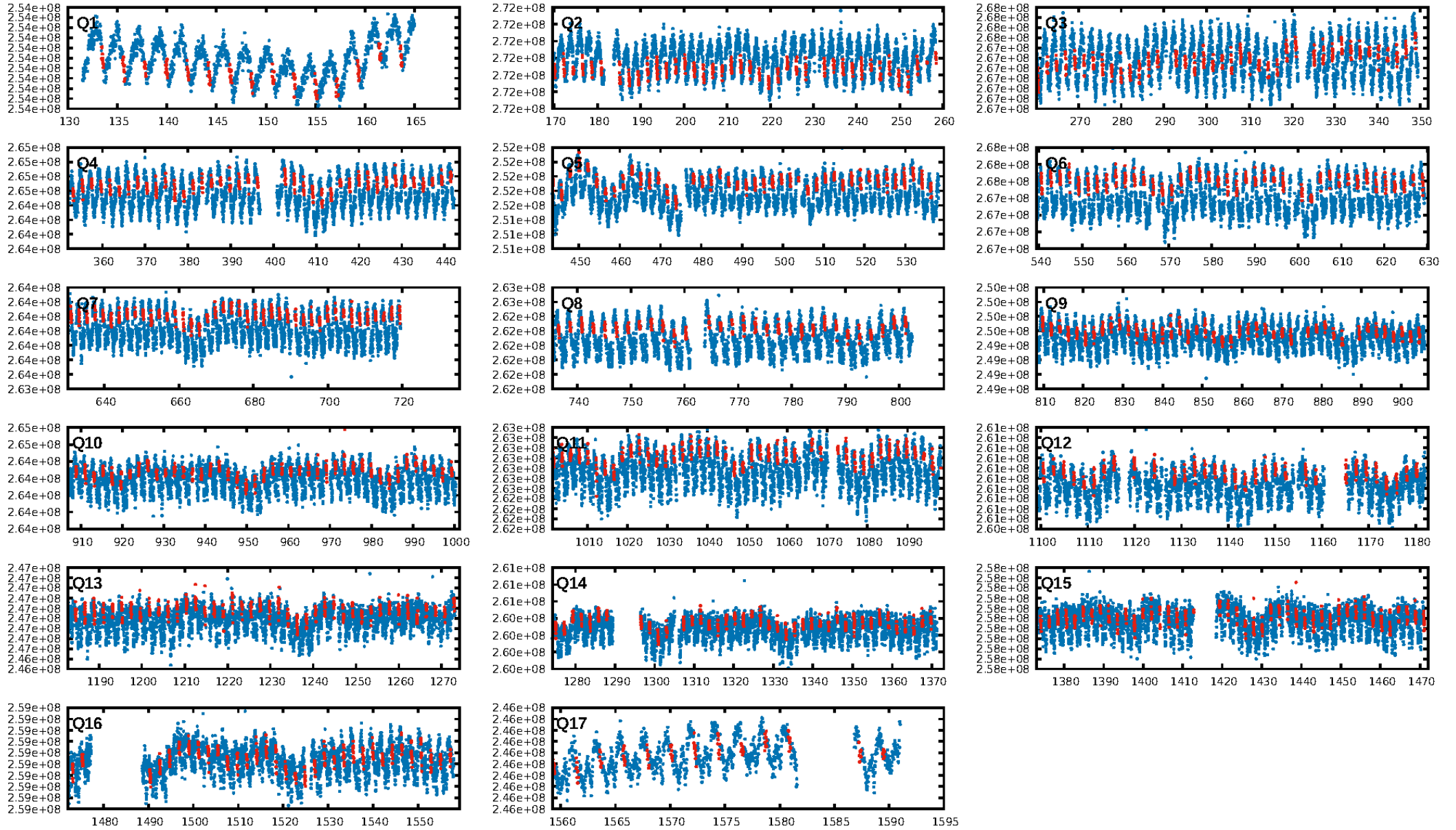
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [6.28σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.00e-31
RollingBand-fgt: 1.00 [594/594]
GhostDiagnostic-chr: 4.415
Centroid-sig: 0.0%
Centroid-so: 1.678 arcsec [3.24σ]
OotOffset-rm: 0.314 arcsec [0.45σ]
KicOffset-rm: 0.358 arcsec [0.52σ]
OotOffset-st: 1/4/3/4 [12]
KicOffset-st: 1/4/3/4 [12]
DiffImageQuality-fgm: 0.25 [3/12]
DiffImageOverlap-fno: 1.00 [17/17]

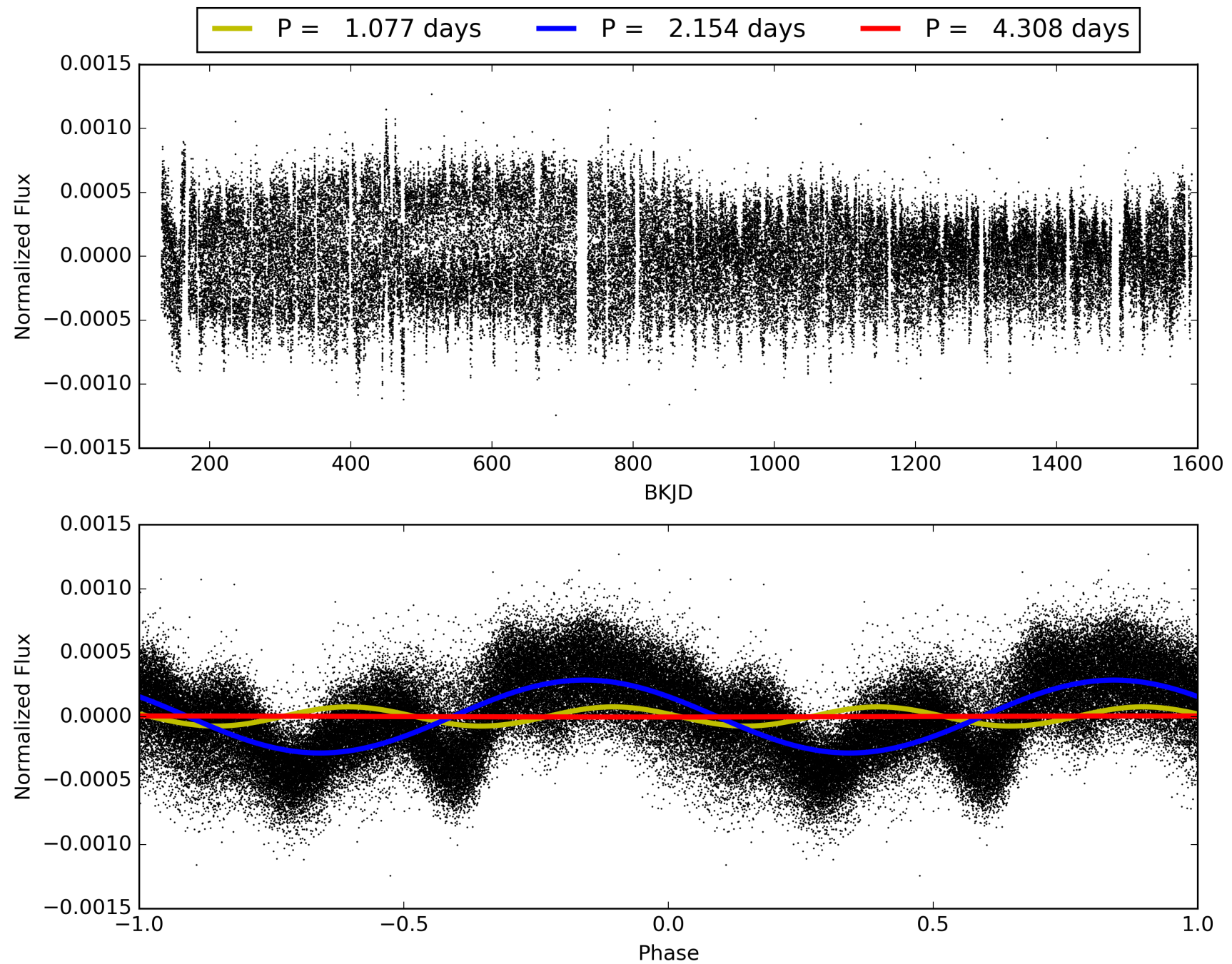
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 02:02:13 Z

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

TCE 005534476-01, PDC Light Curves

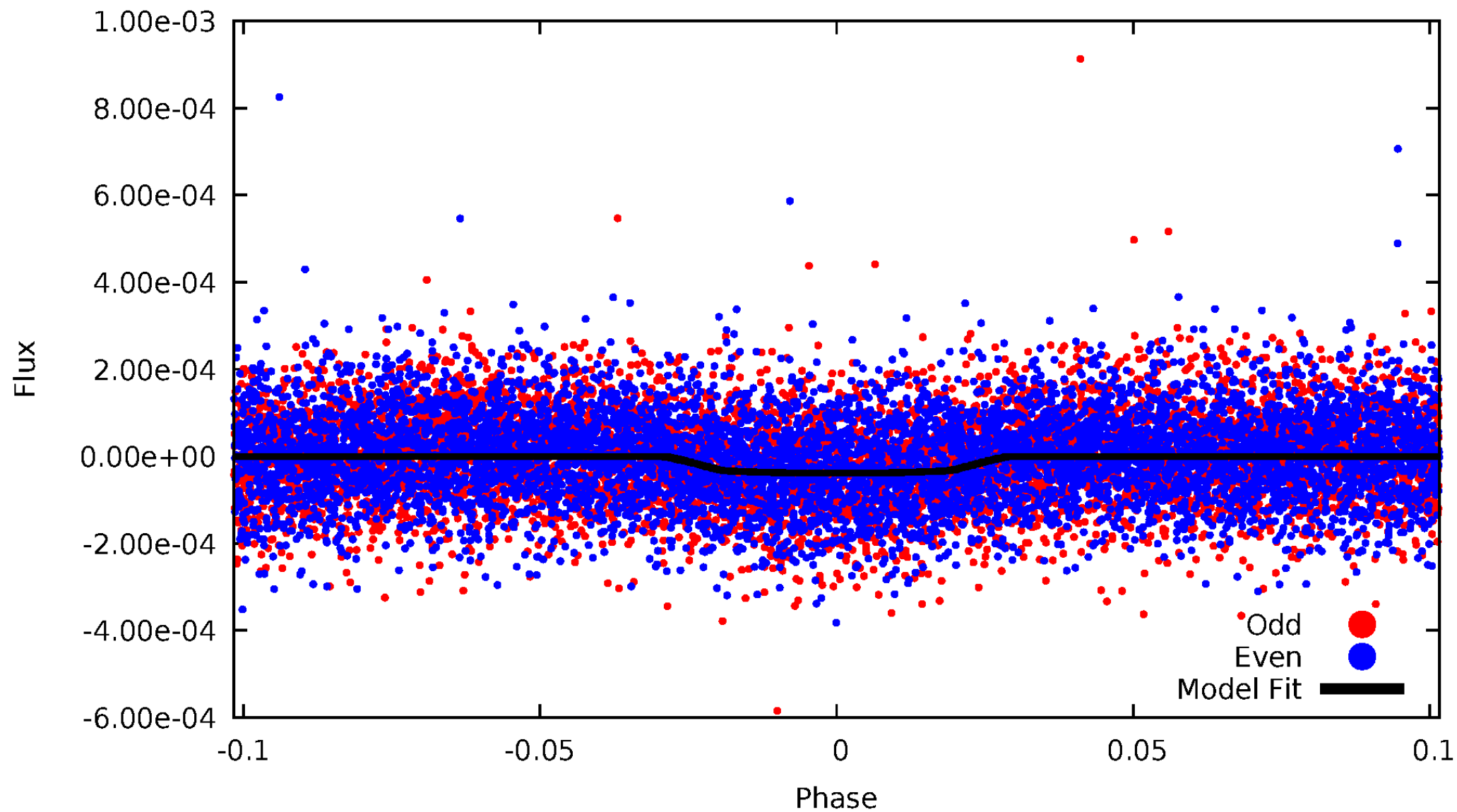


TCE 005534476-01



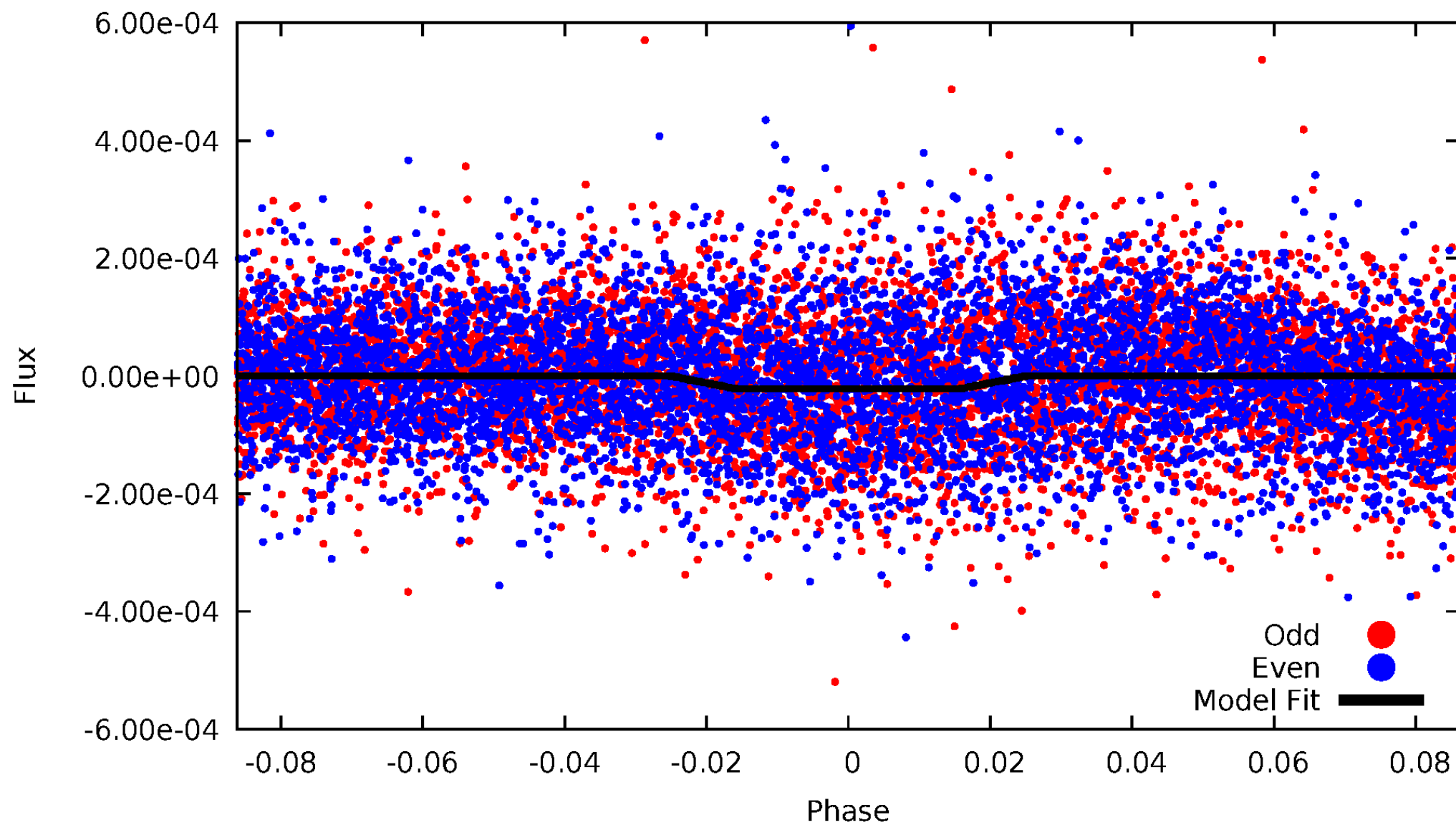
DV Odd/Even

TCE 005534476-01



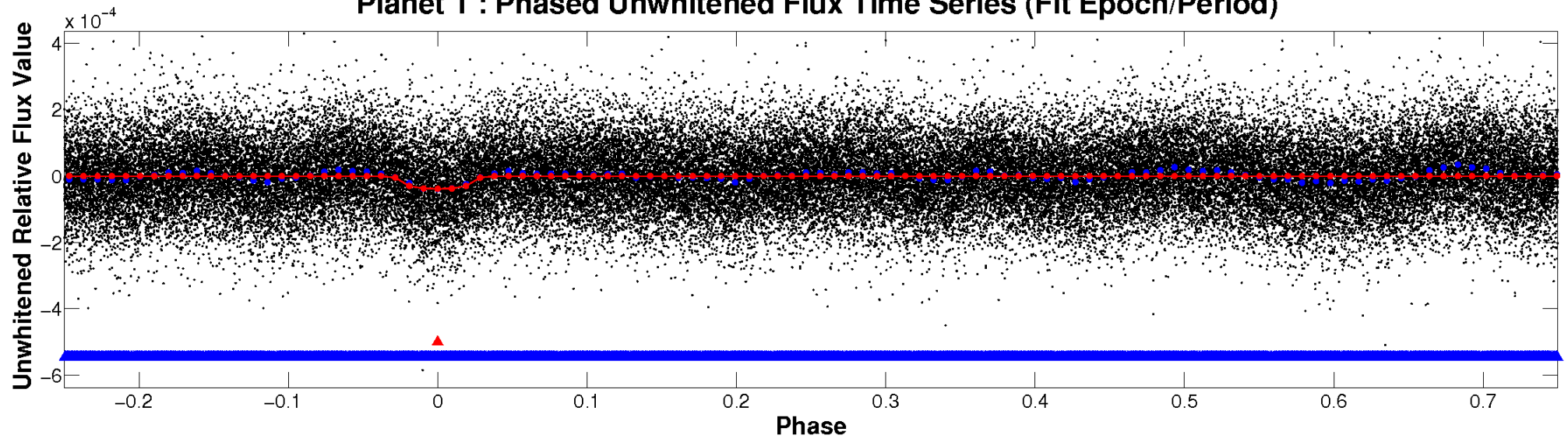
ALT Odd/Even

TCE 005534476-01

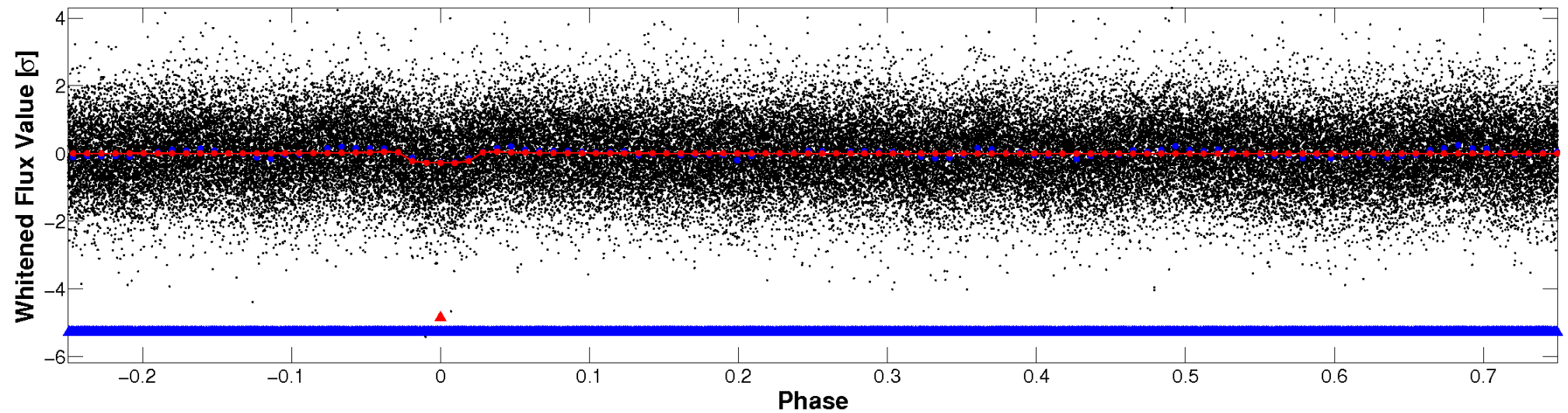


Non-Whitened Vs. Whitened Light Curve

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

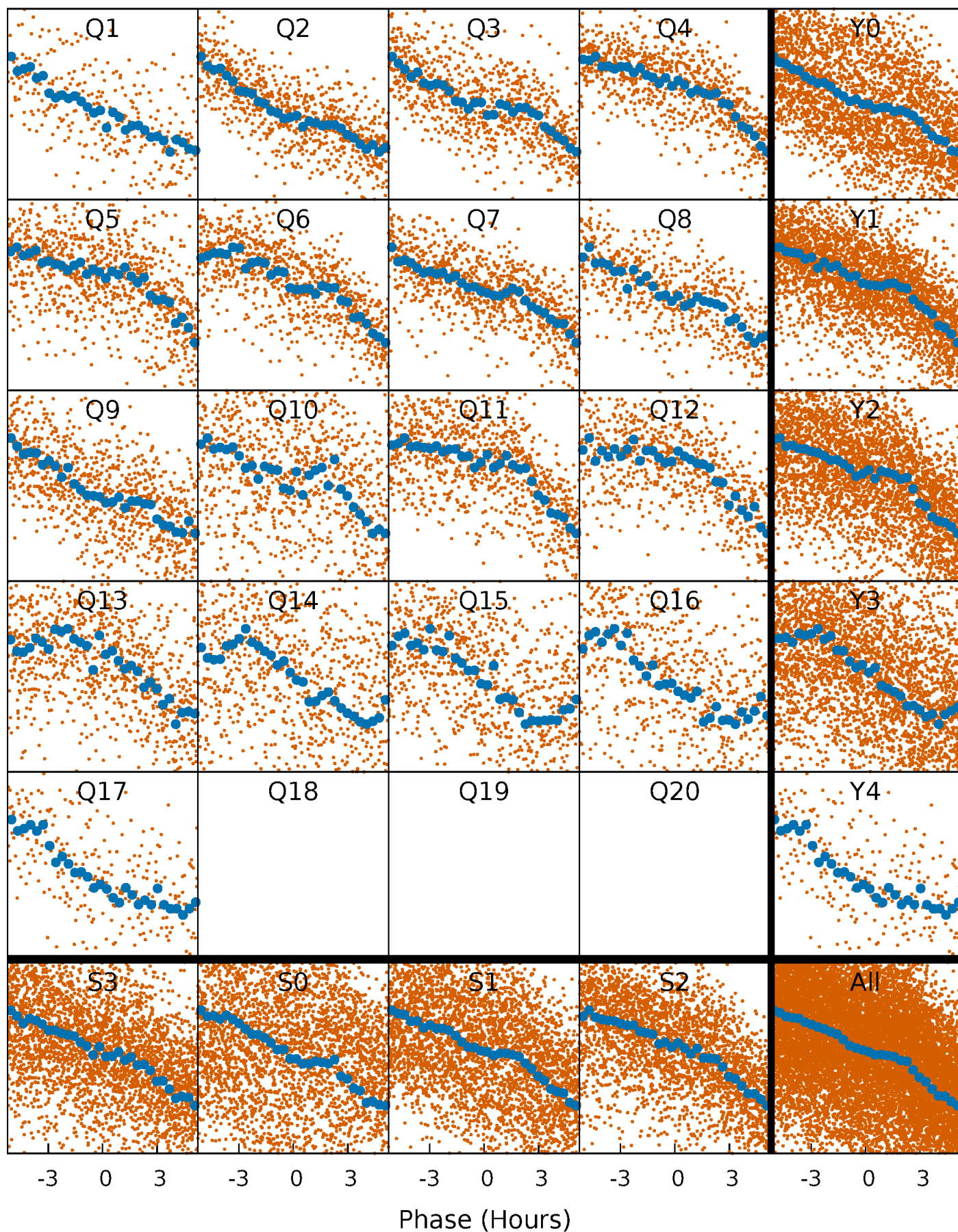


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



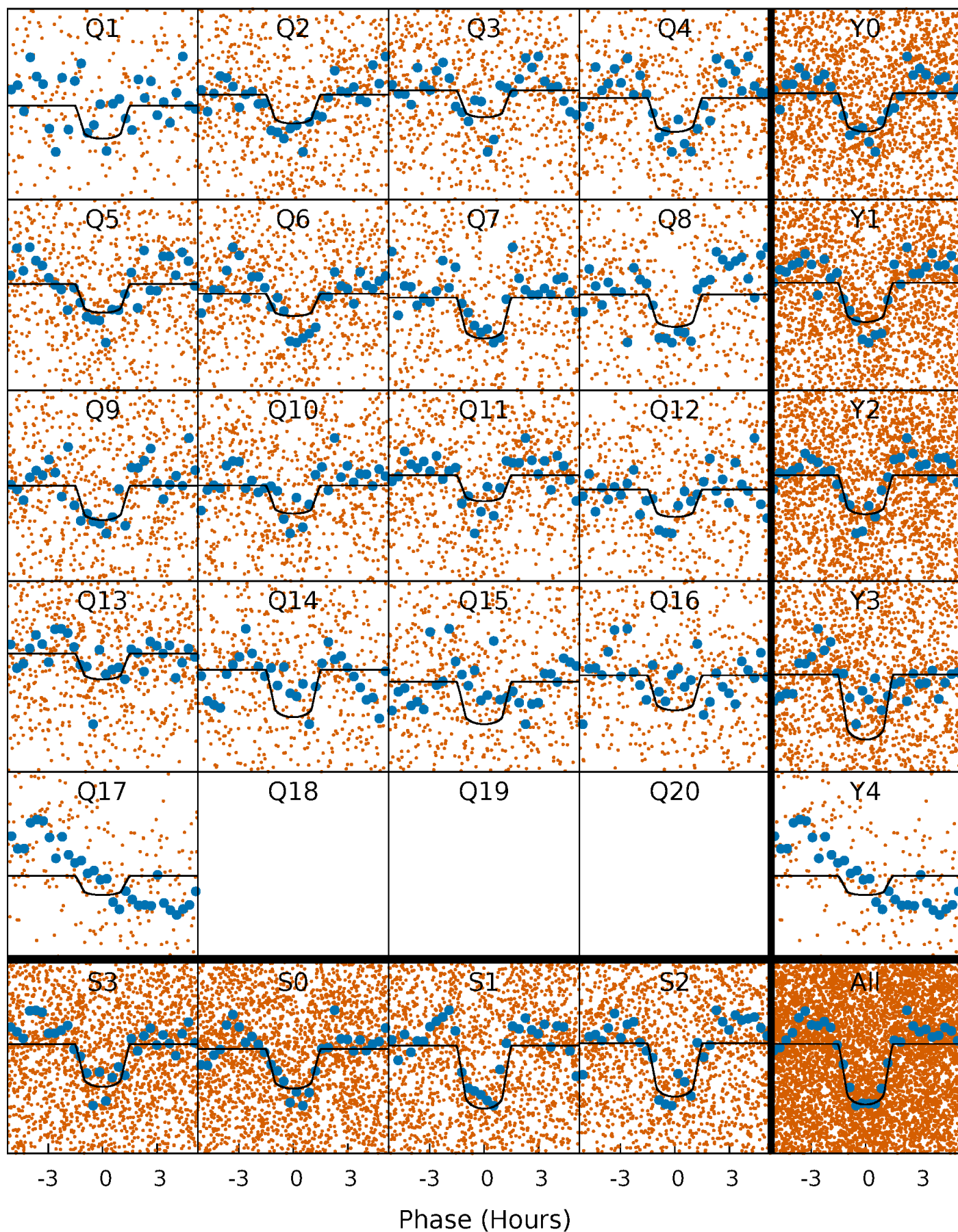
PDC Quarter-Phased Transit Curves

TCE 005534476-01 P= 2.153858 Days $T_0=133.490056$ (BKJD)



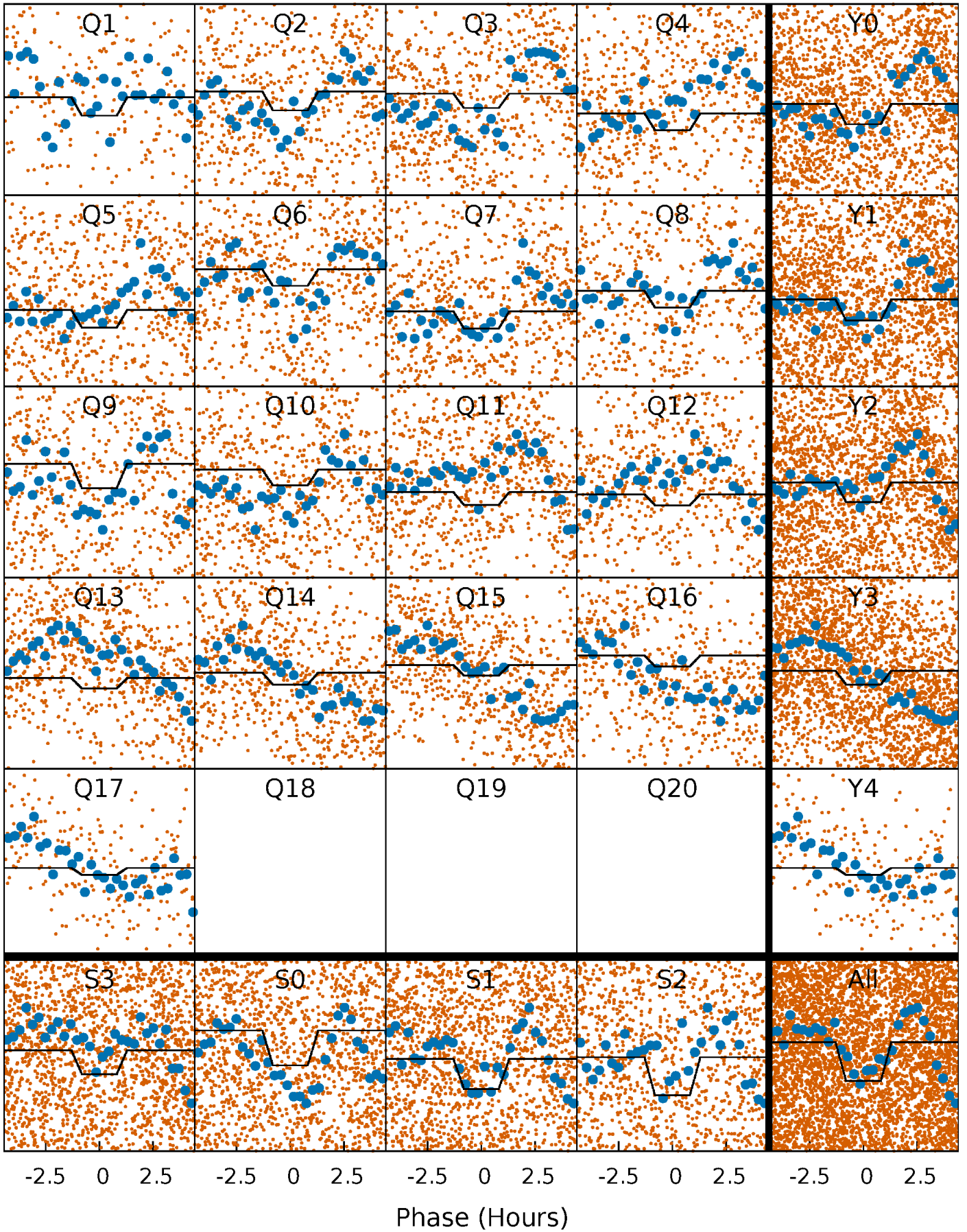
DV Quarter-Phased Transit Curves

TCE 005534476-01 P= 2.153858 Days $T_0=133.490056$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

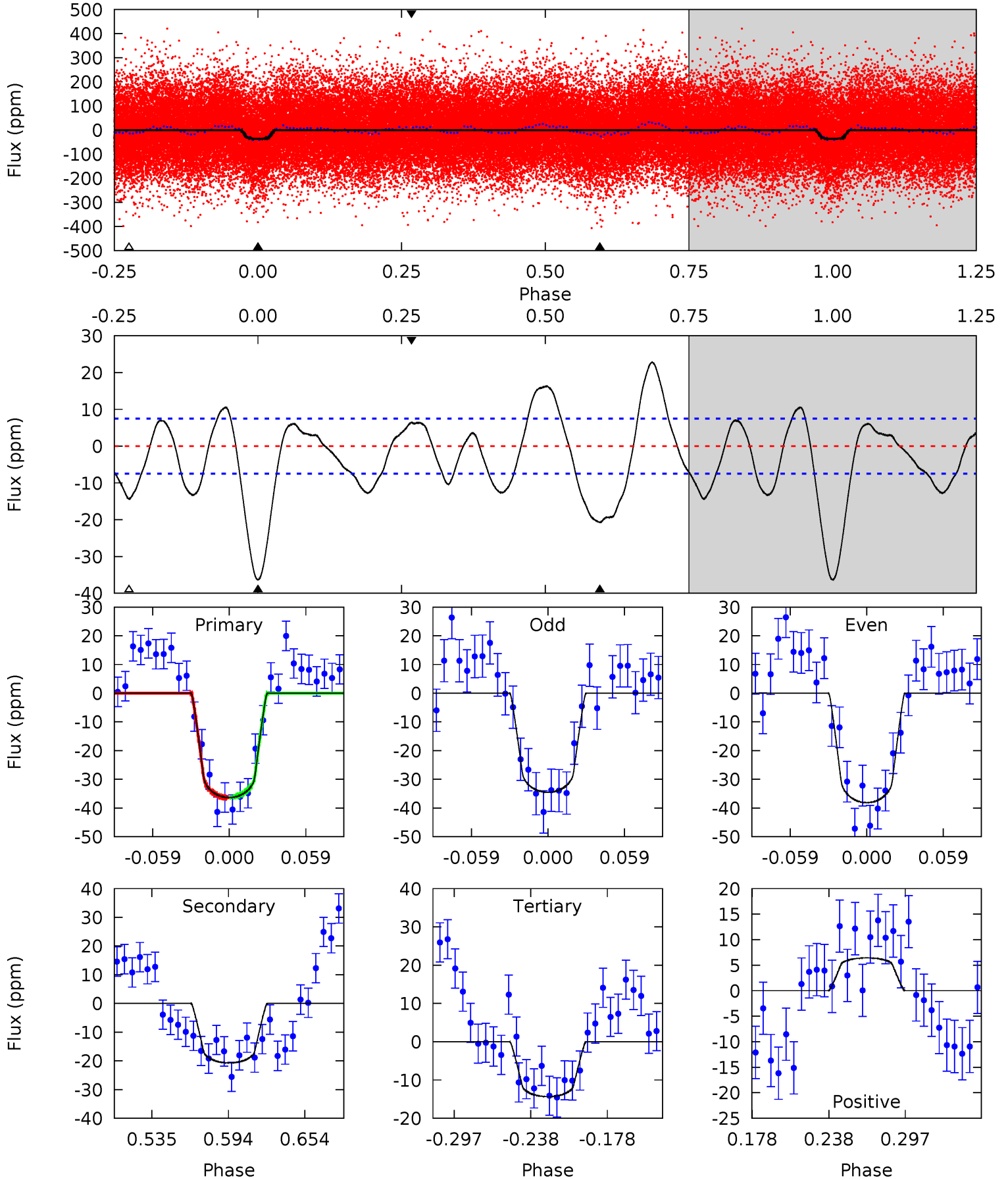
TCE 005534476-01 P= 2.153857 Days $T_0=133.472966$ (BKJD)



DV Model-Shift Uniqueness Test

005534476-01, P = 2.153858 Days, E = 131.336198 Days

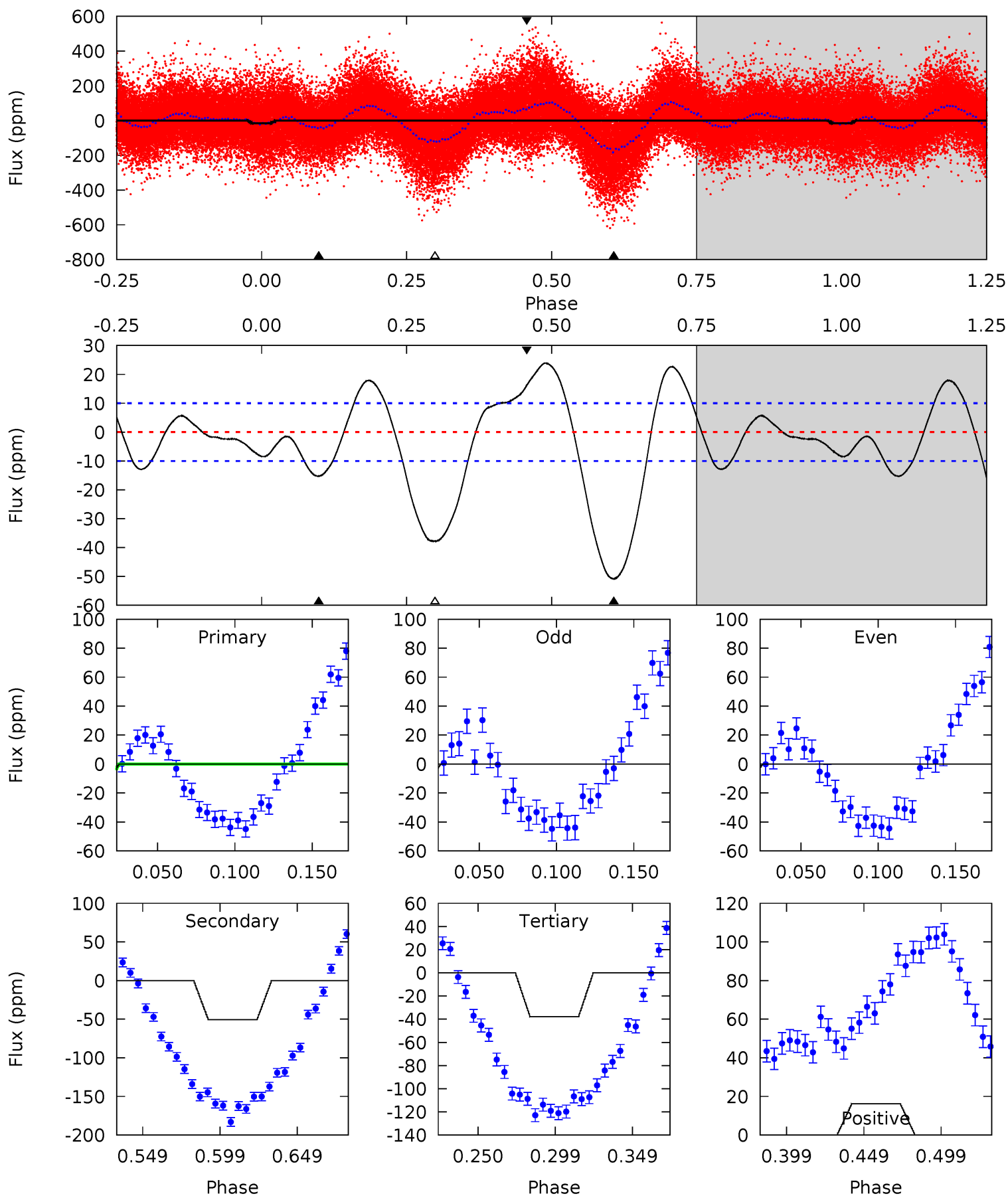
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
22.7	12.9	8.94	4.00	4.67	1.89	5.58	13.7	18.6	3.96	8.90	1.12	0.93	0.39	0.08



Alt Model-Shift Uniqueness Test

005534476-01, P = 2.153857 Days, E = 131.319109 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.18	23.8	17.8	7.60	4.71	1.96	7.17	-10.6	-0.42	6.08	16.2	0.54	0.77	0.32	0.30



Stellar Parameters For KIC 005534476

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6862^{+72}_{-92}	$4.114^{+0.132}_{-0.108}$	$-0.140^{+0.150}_{-0.200}$	$1.712^{+0.279}_{-0.279}$	$1.395^{+0.099}_{-0.108}$	$0.392^{+0.251}_{-0.130}$
	+1%/-1%	+3%/-3%	+107%/-143%	+16%/-16%	+7%/-8%	+64%/-33%
Source	SPE68	SPE68	SPE68	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 005534476-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-21 ± 2	$1.27^{+0.32}_{-0.33}$	2897^{+120}_{-132}	5562^{+809}_{-562}	$9.357^{+7.737}_{-3.495}$
Alt.	-51 ± 2	$0.85^{+0.32}_{-0.29}$	2889^{+123}_{-119}	8882^{+2947}_{-1536}	51^{+64}_{-24}

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 $A_{obs} \gg 1.0$

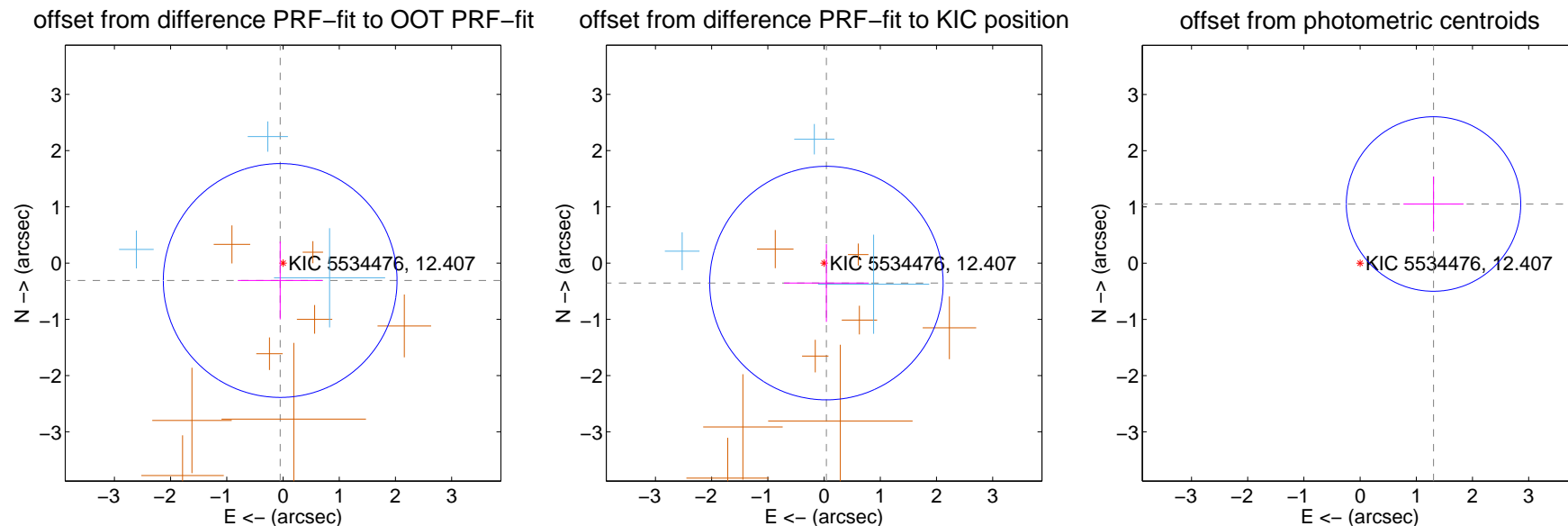
DV Centroid Data

Supplemental centroid analysis for 005534476-01. Kepler magnitude: 12.41. Transit SNR 14.30

There are 3 quarters with good PRF difference image offsets

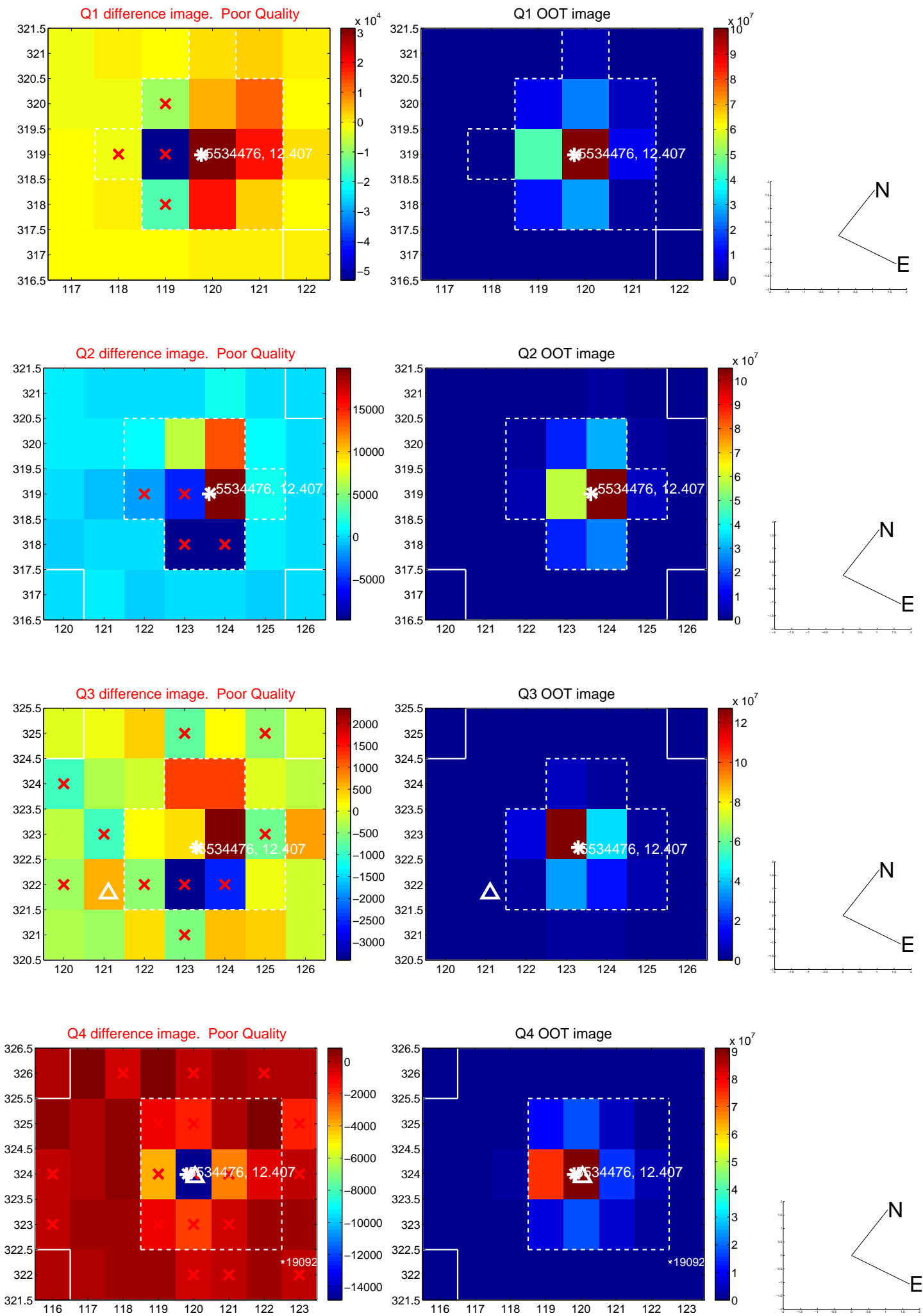
The direct PRF centroid is offset from the target star catalog position by about 0.09 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.314 ± 0.693	0.45	0.051 ± 0.755	-0.310 ± 0.691
PRF-fit source offset from KIC position	0.358 ± 0.692	0.52	-0.041 ± 0.755	-0.356 ± 0.691
photometric centroid source offset	1.68 ± 0.52	3.24	-1.31 ± 0.53	1.05 ± 0.49

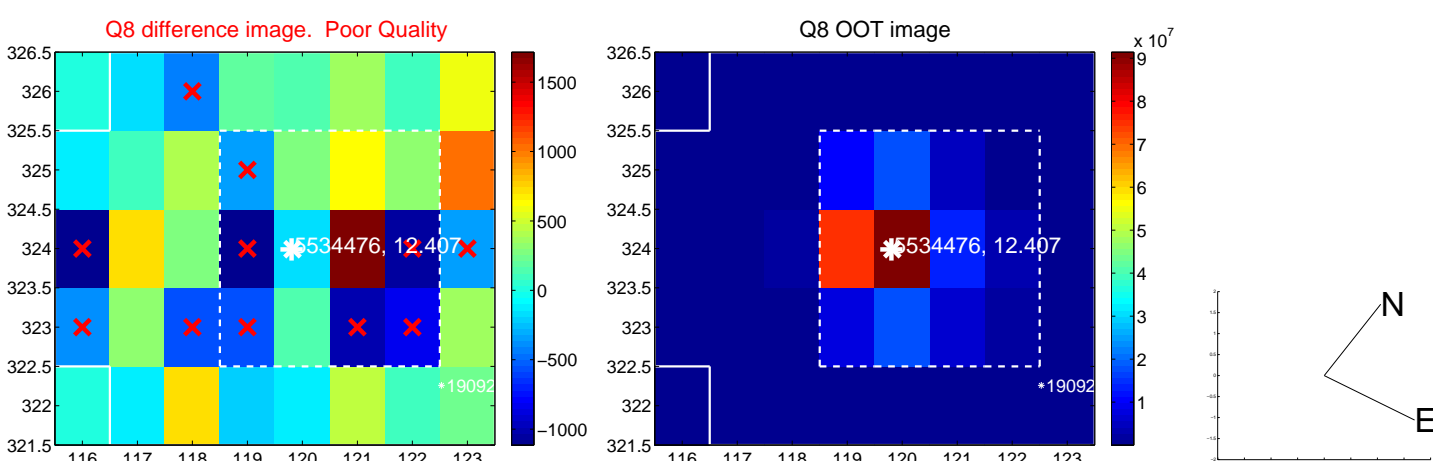
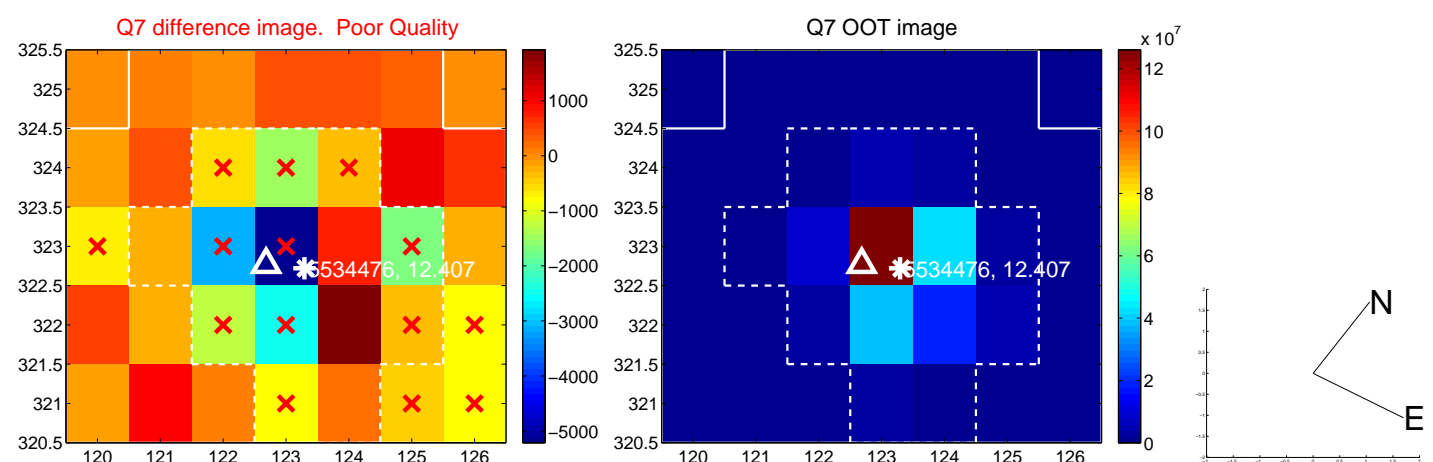
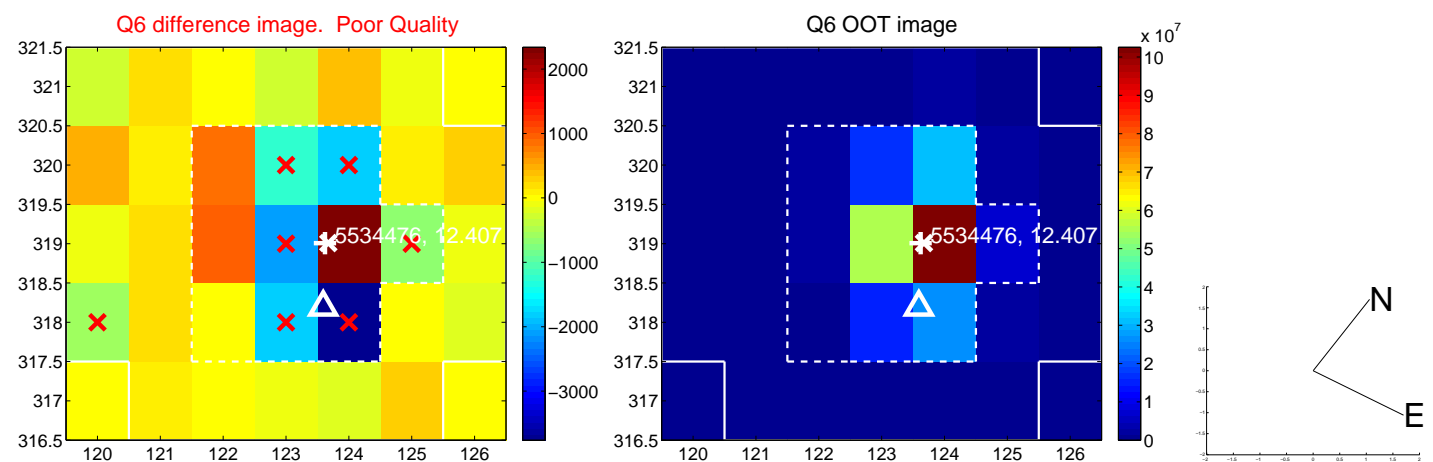
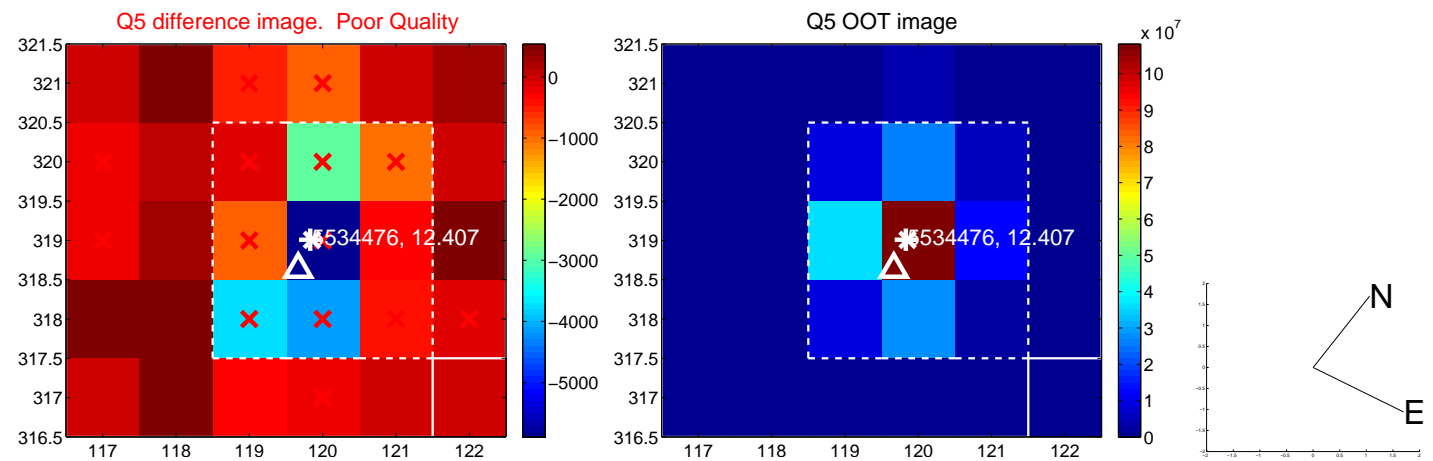


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

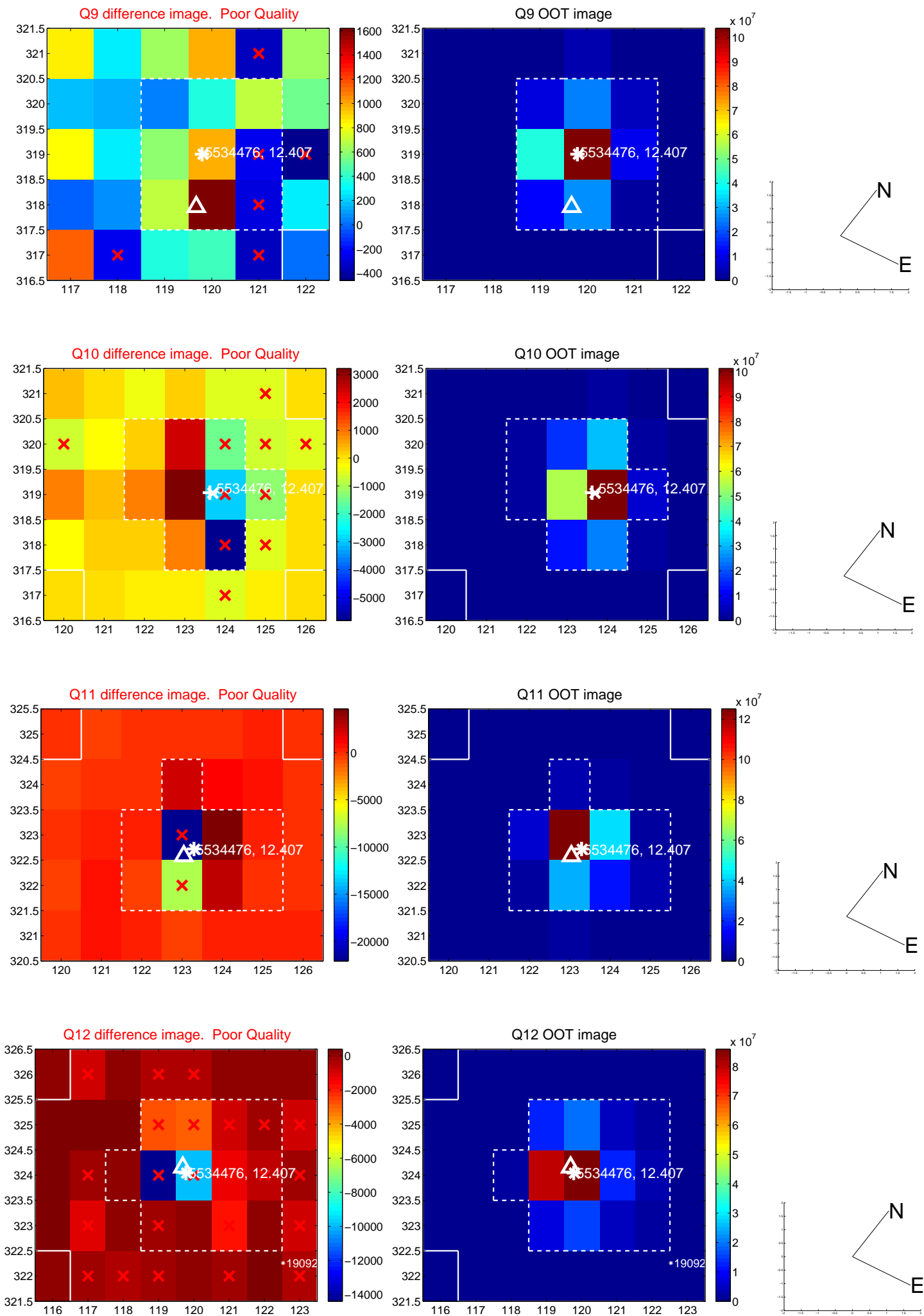
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



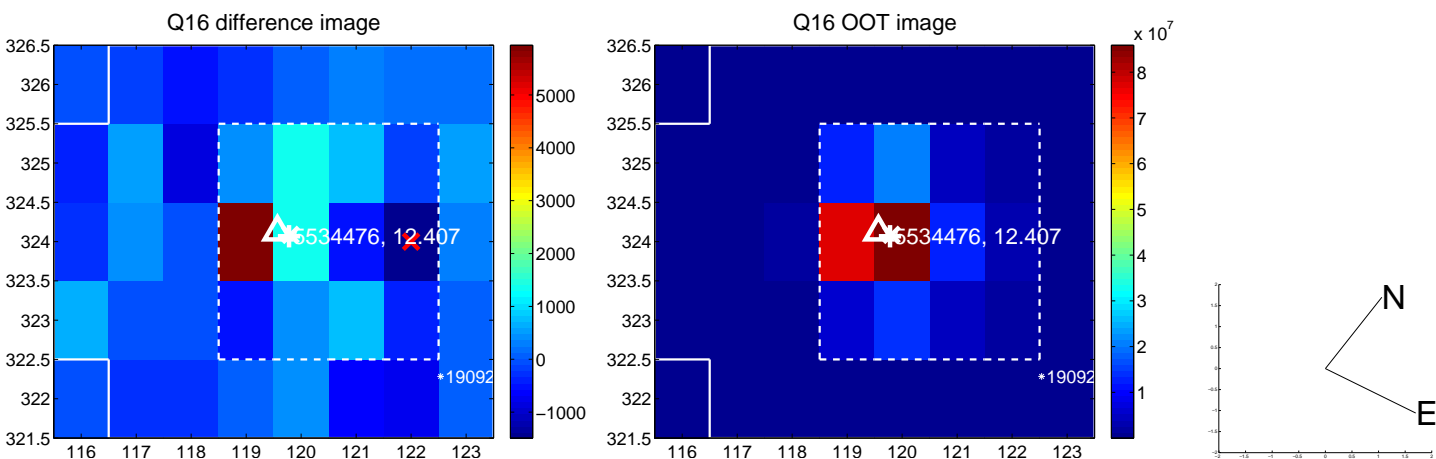
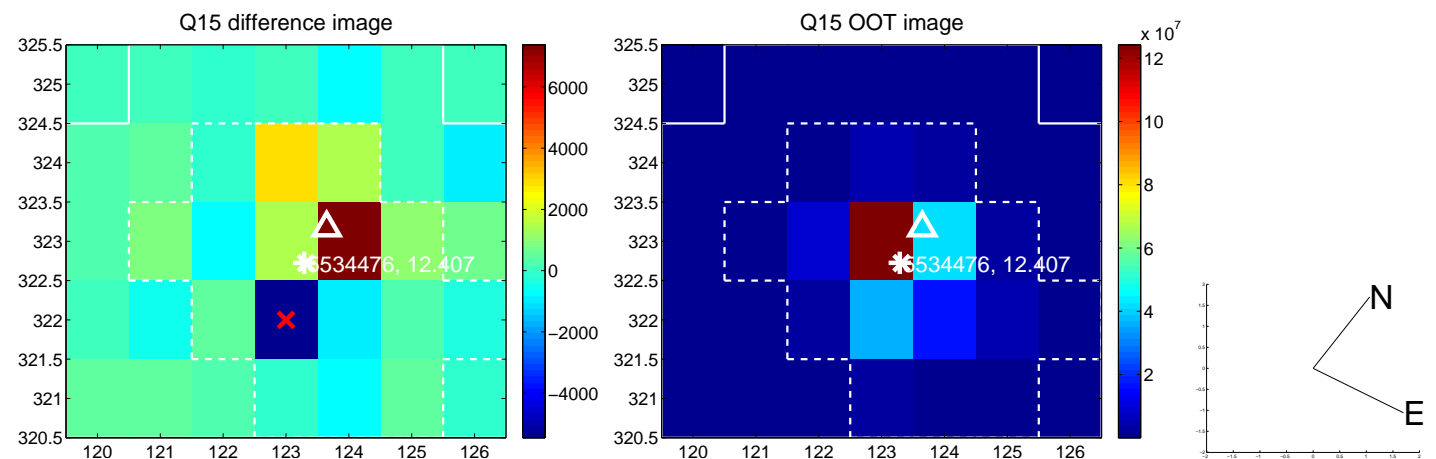
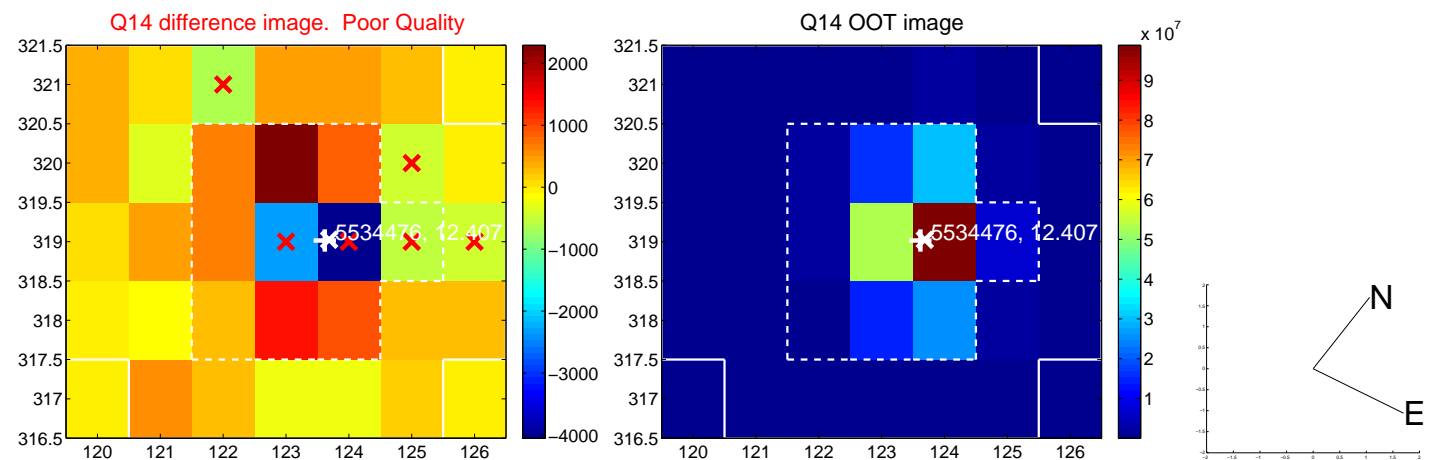
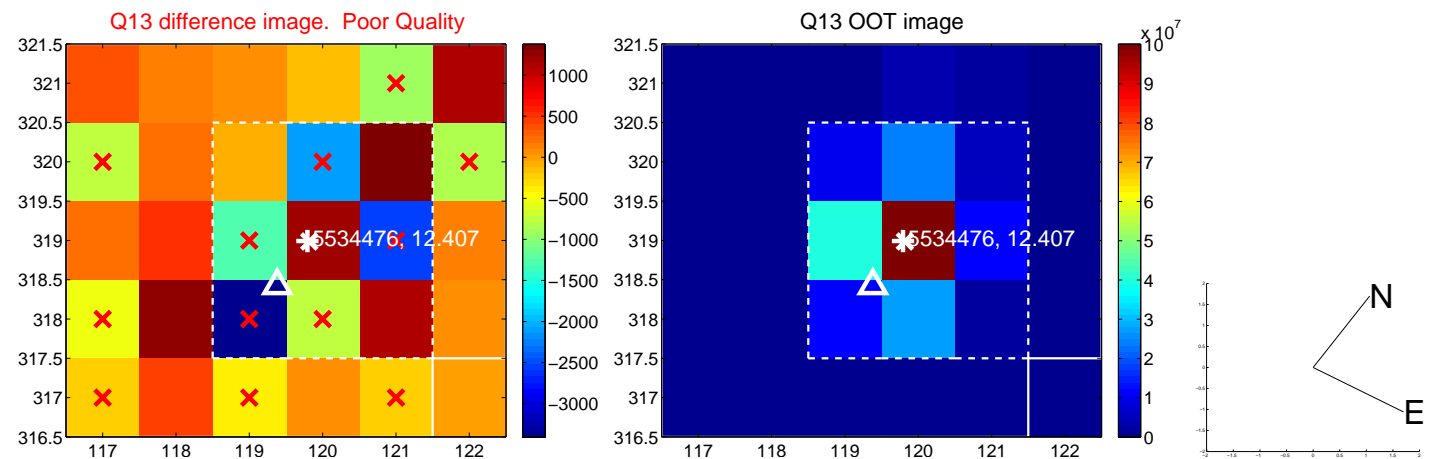
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



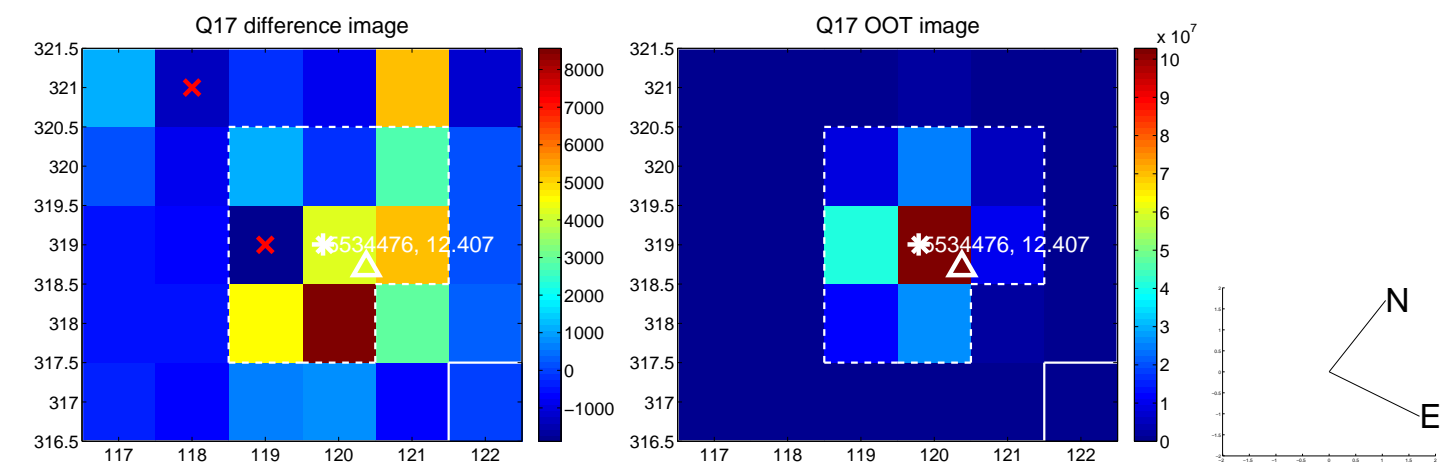
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



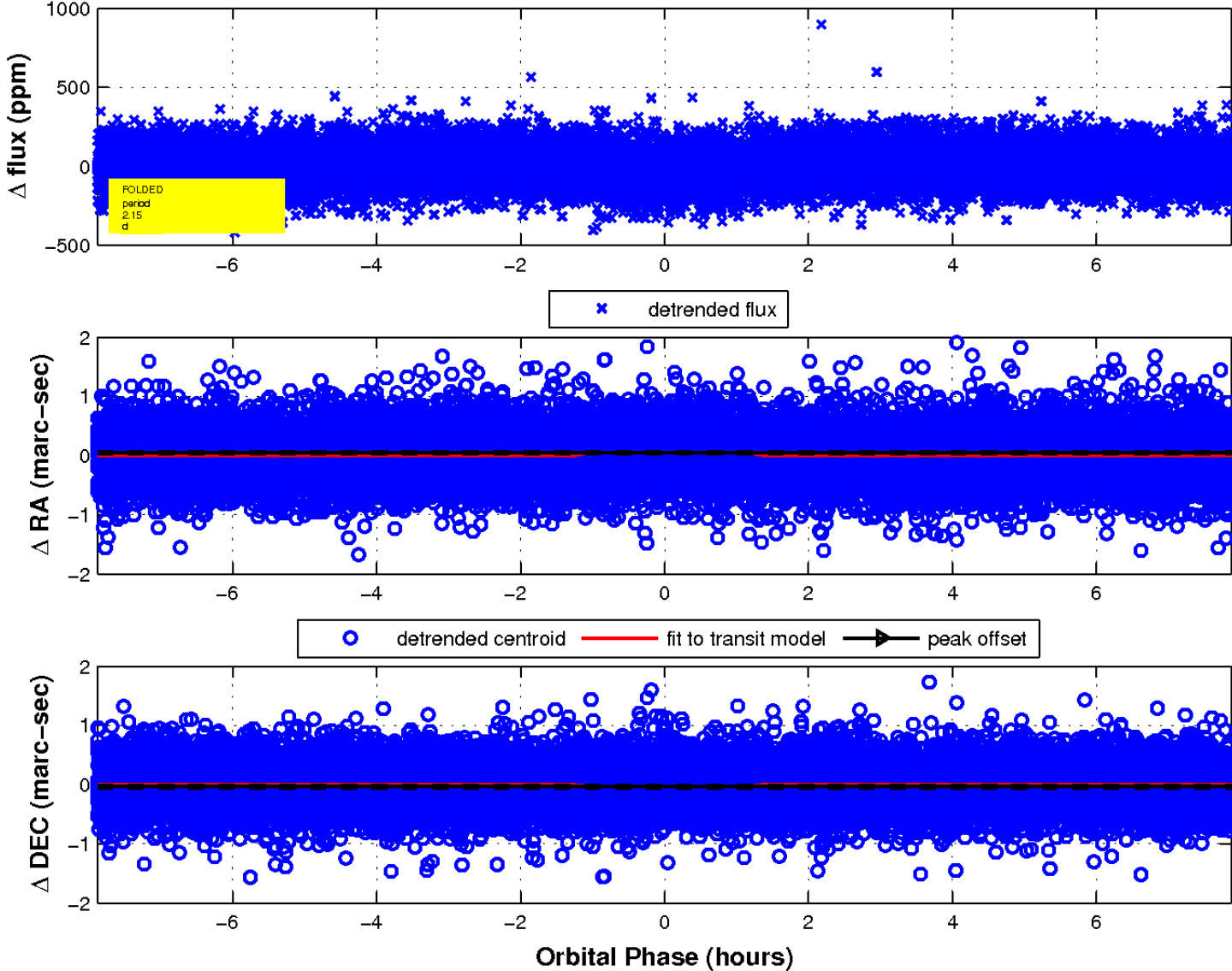
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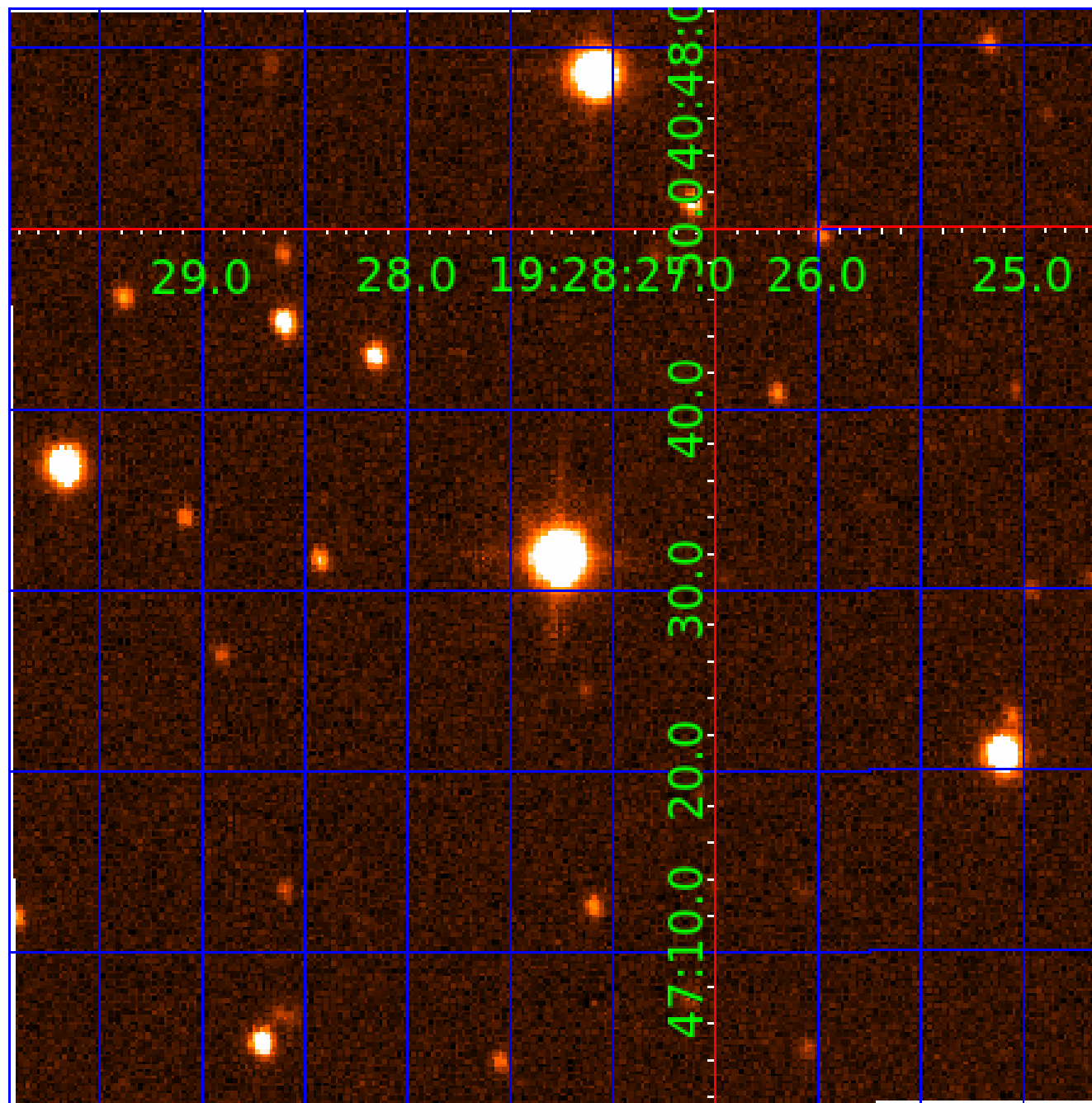


fluxWeightedCentroids, Planet 1 of 2



UKIRT Image

Declination



KIC 005534476

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})
005534476-01	OBS	No	2.153858	133.490056	38.5	2.626	13.3	14.3	1.71	6862	1.26	4386.09
005534476-02	OBS	6595.01	1.025437	131.608677	15.8	3.422	10.4	9.0	1.71	6862	0.79	11798.35

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005534476-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_MEAS
005534476-02	OBS	FP	0.00	1	0	0	1	LPP_DV—LPP_ALT—EPHEM_MATCH

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 005534476-02

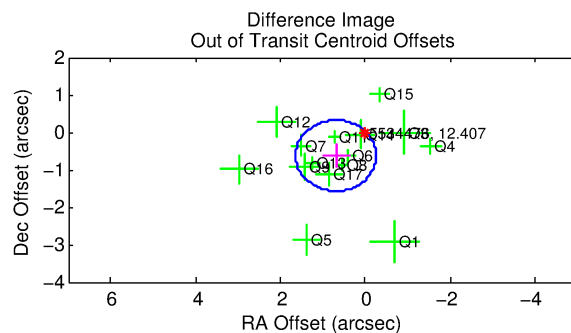
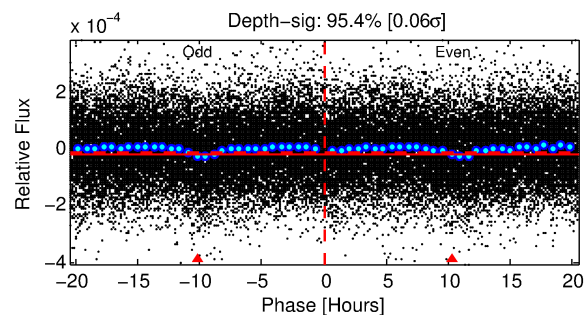
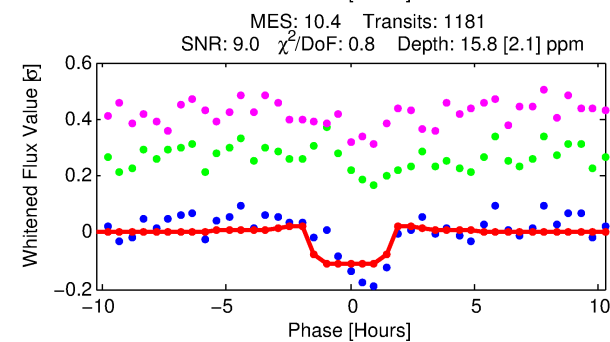
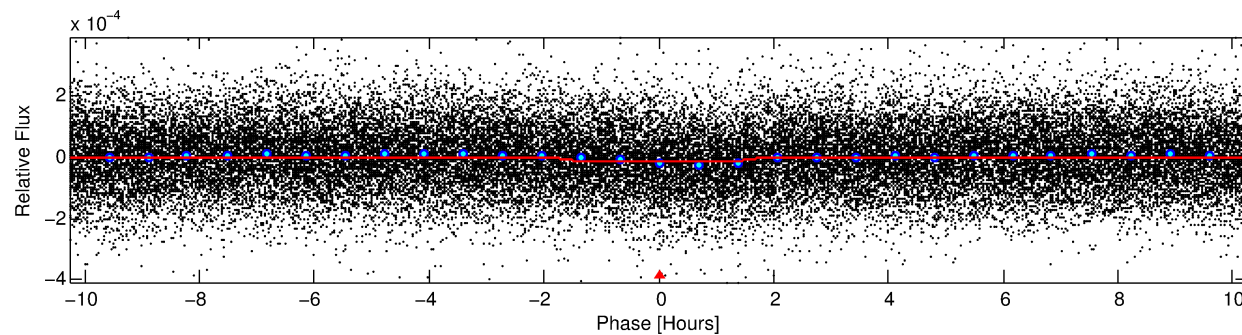
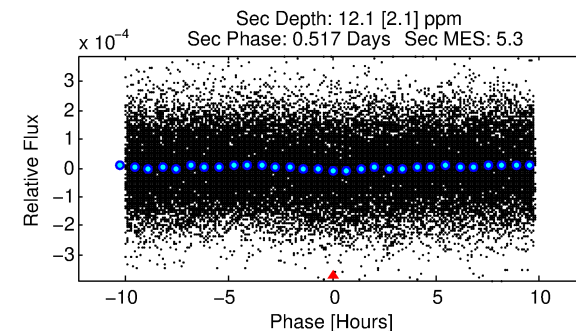
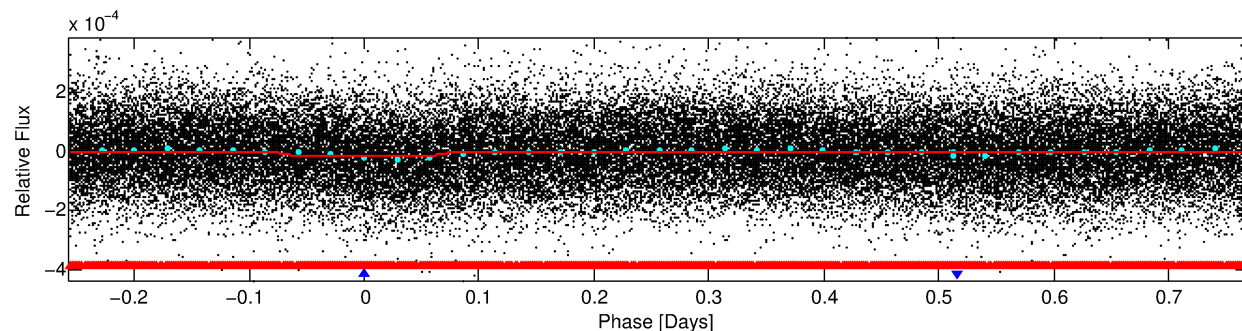
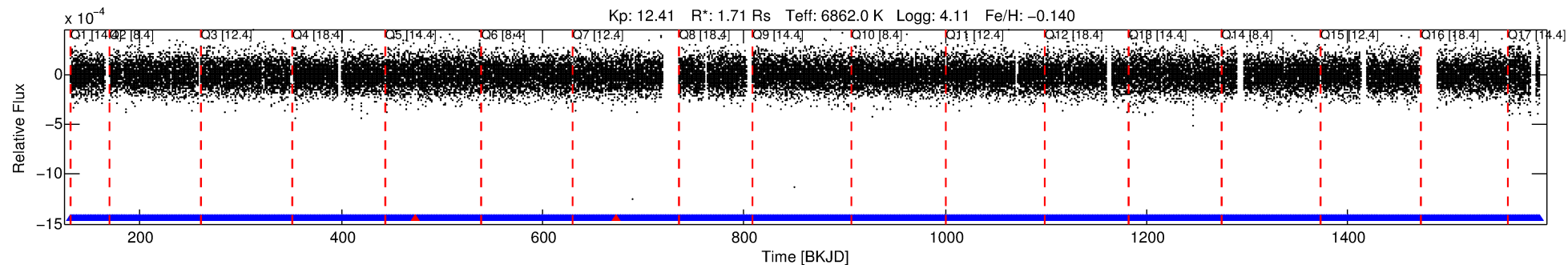
TCE (1)	KIC	Parent (2)	Parent KIC	$P_1:P_2$	Dist ($''$)	Δ Row	Δ Col	m_2	m_1	D_2/D_1	Mechanism	Flag	σ_P	σ_T
005534476-02	5534476	005534702-pri	5534702	1:1	360.2	90	0	13.82	12.41	10144.00	Col-Anomaly	0	2.60	0.03

Notes: $P_1:P_2$ is the period ratio. Dist is the distance in arcseconds. Δ Row and Δ Col are the number of pixels apart in row and column. m_2 and m_1 are the magnitudes of the parent and child. D_2/D_1 is the parent's transit depth divided by the child's. σ_P and σ_T are the significance of the match in period and epoch. For a match to be considered significant $\sigma_P < 5.0$ and $\sigma_T < 5.0$. Matches which have σ_P and σ_T very close to this cutoff should receive extra scrutiny, especially if the period ratio is very large.

DV One-Page Summary

KIC: 5534476 Candidate: 2 of 2 Period: 1.025 d

KOI: K06595 Corr: No Ephemeris Match



DV Fit Results:

Period = 1.02544 [0.00001] d
Epoch = 131.6087 [0.0035] BKJD
Rp/R* = 0.0043 [0.0011]
a/R* = 1.38 [1.03]
b = 0.90 [0.33]
Seff = 11798.35 [2785.45]
Teff = 2658 [157] K
Rp = 0.79 [0.25] Re
a = 0.0222 [0.0033] AU
Ag = 5.21 [3.13] [1.35σ]
Teffp = 6208 [865] K [4.04σ]

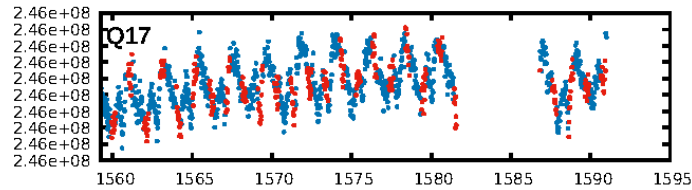
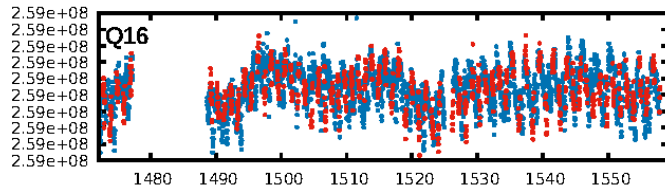
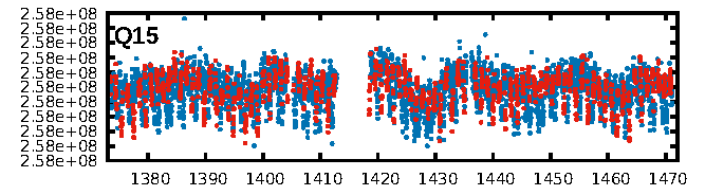
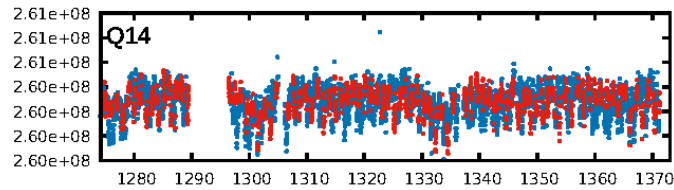
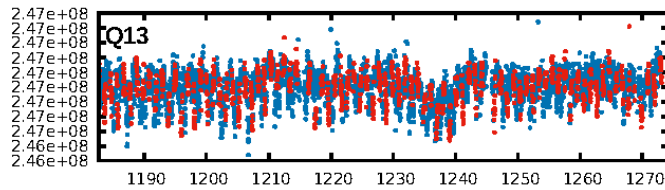
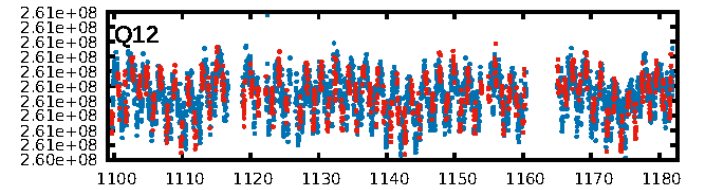
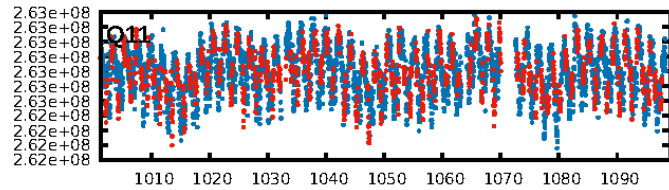
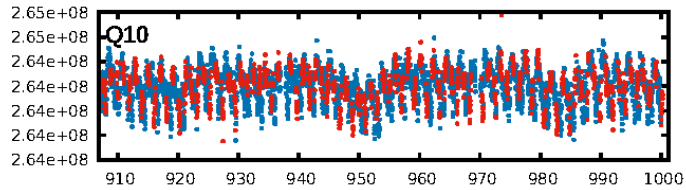
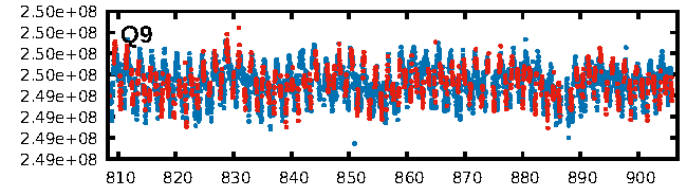
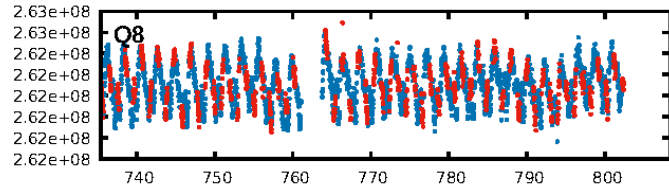
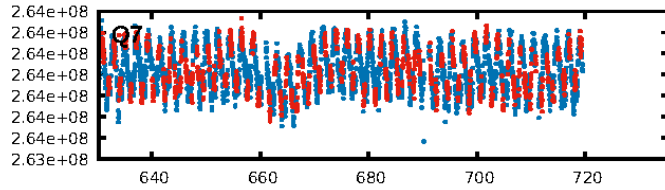
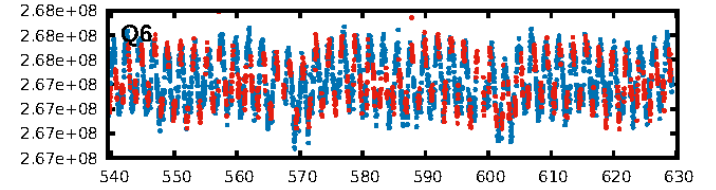
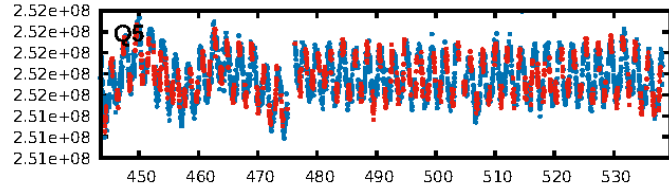
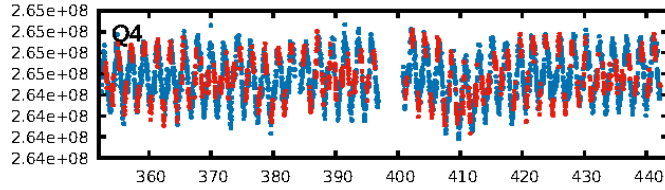
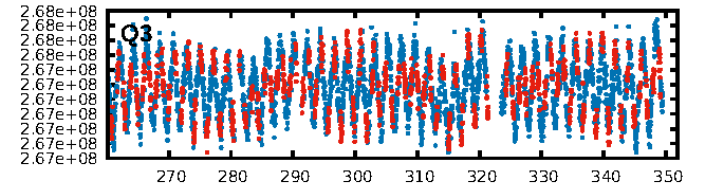
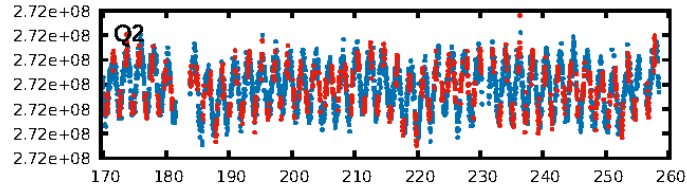
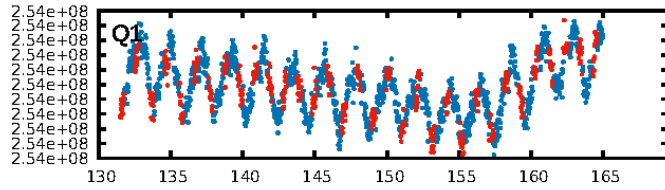
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [6.28σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 2.79e-21
RollingBand-fgt: 1.00 [1126/1128]
GhostDiagnostic-chr: 2.436
Centroid-sig: 0.0%
Centroid-so: 2.279 arcsec [3.06σ]
OotOffset-rm: 0.933 arcsec [2.96σ]
KicOffset-rm: 0.912 arcsec [3.05σ]
OotOffset-st: 2/4/4/5 [15]
KicOffset-st: 2/4/4/5 [15]
DiffImageQuality-fgm: 0.87 [13/15]
DiffImageOverlap-fno: 1.00 [17/17]

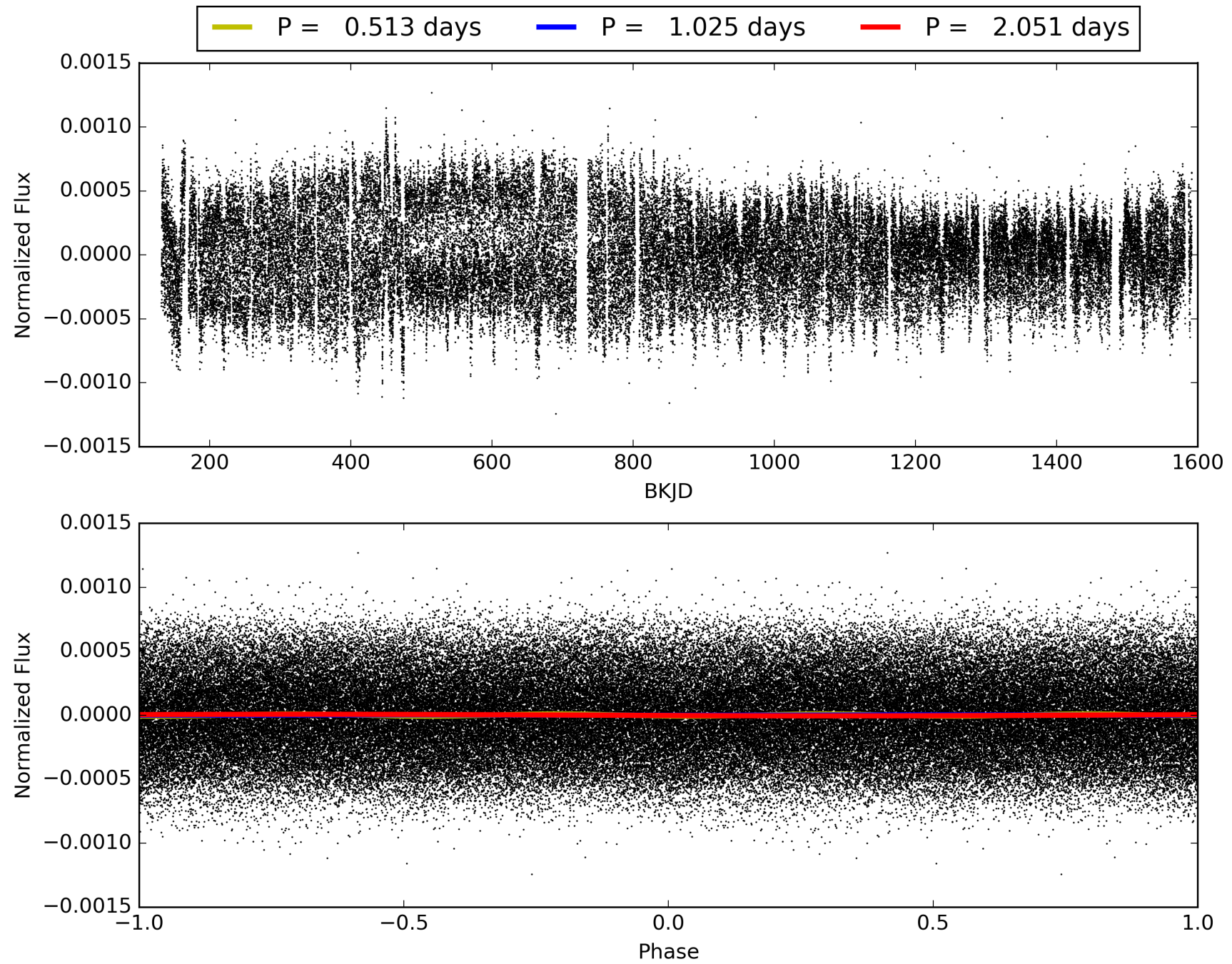
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 02:02:23 Z

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

TCE 005534476-02, PDC Light Curves

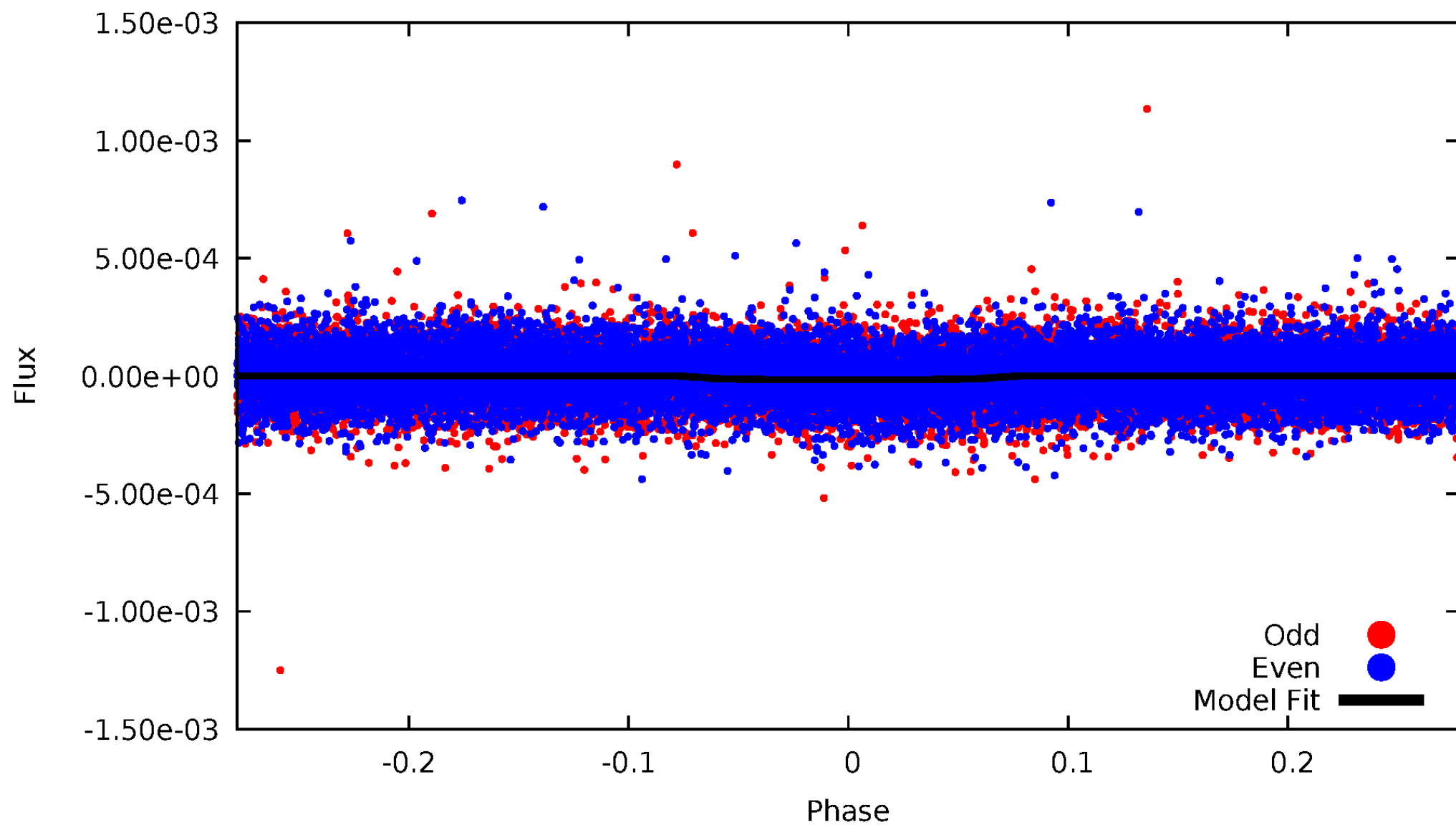


TCE 005534476-02



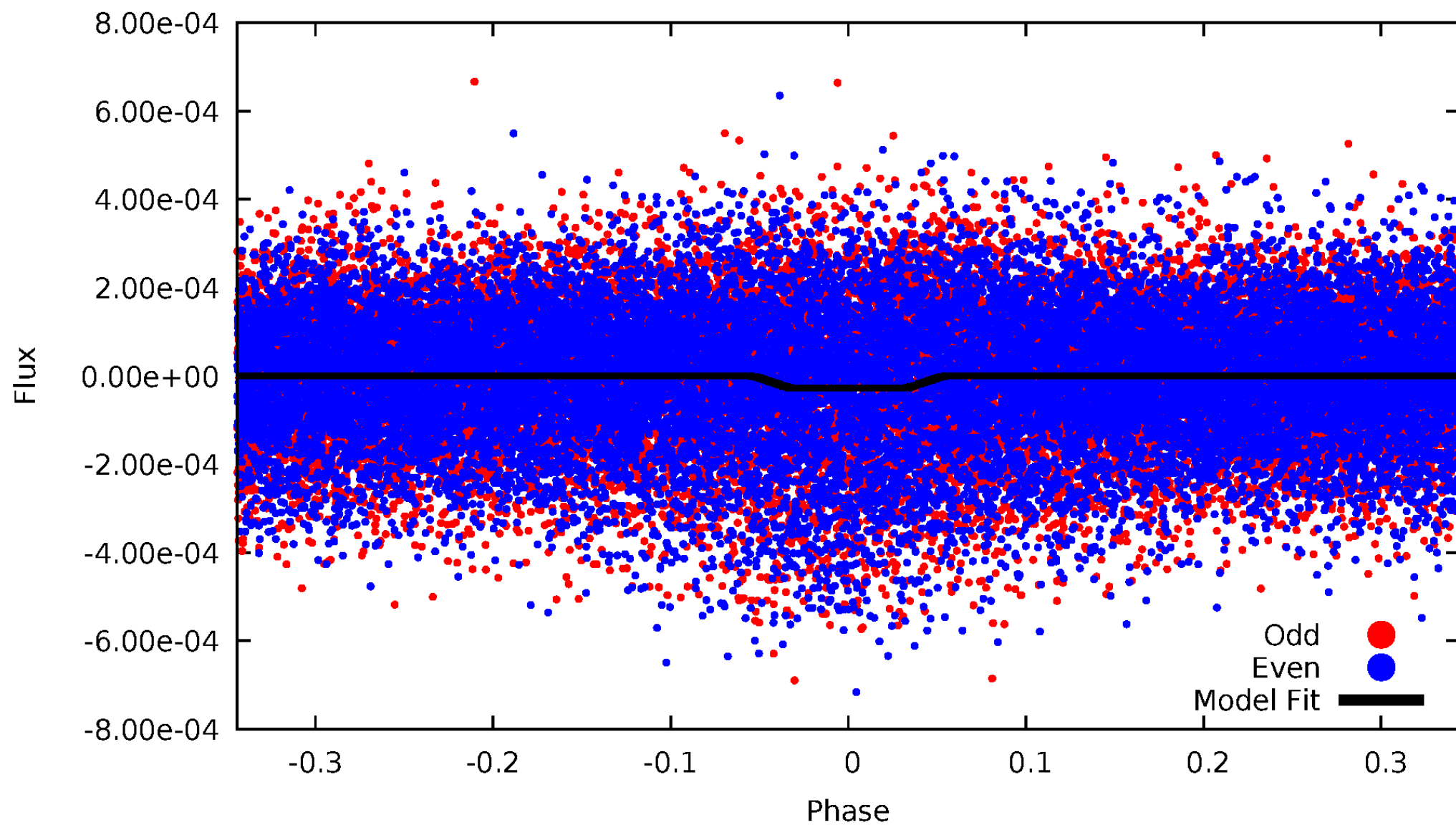
DV Odd/Even

TCE 005534476-02



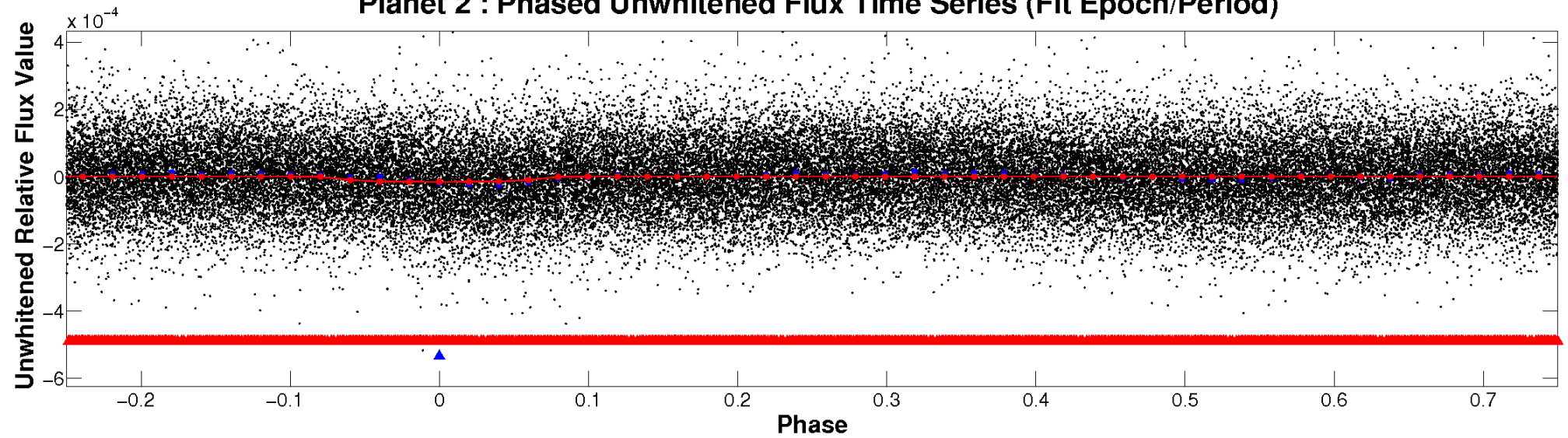
ALT Odd/Even

TCE 005534476-02

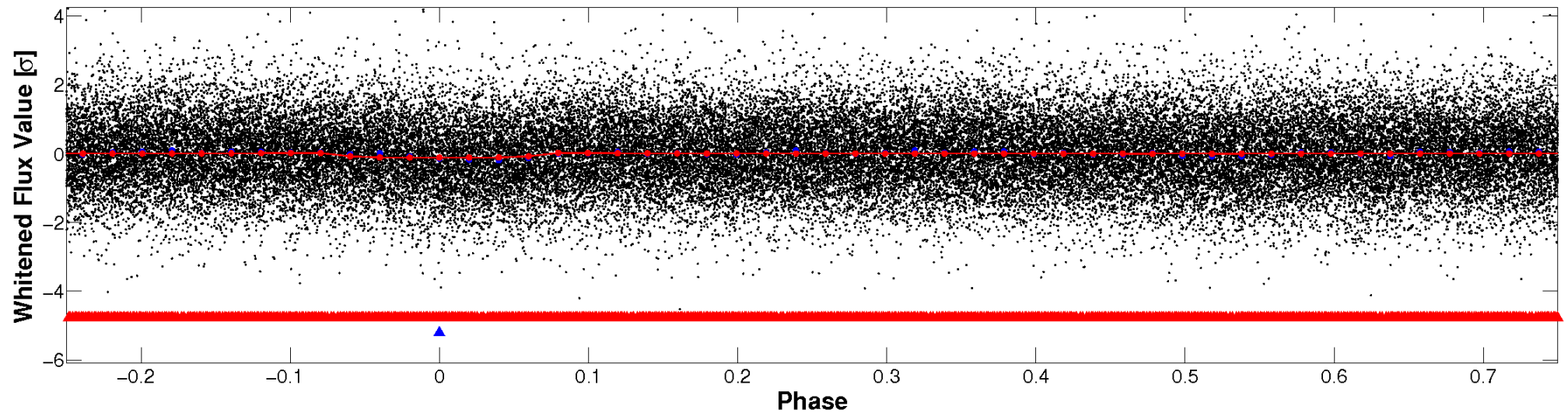


Non-Whitened Vs. Whitened Light Curve

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

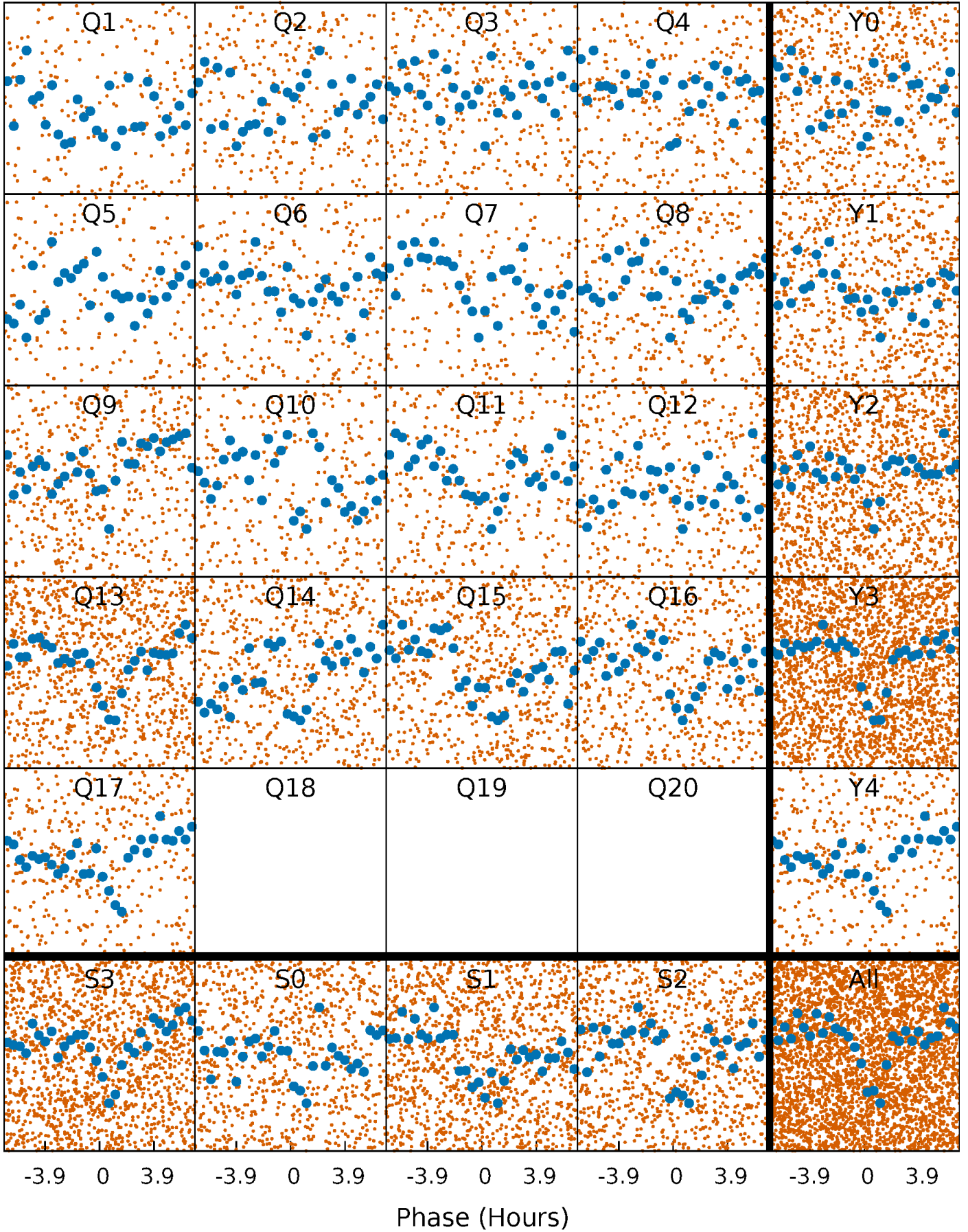


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



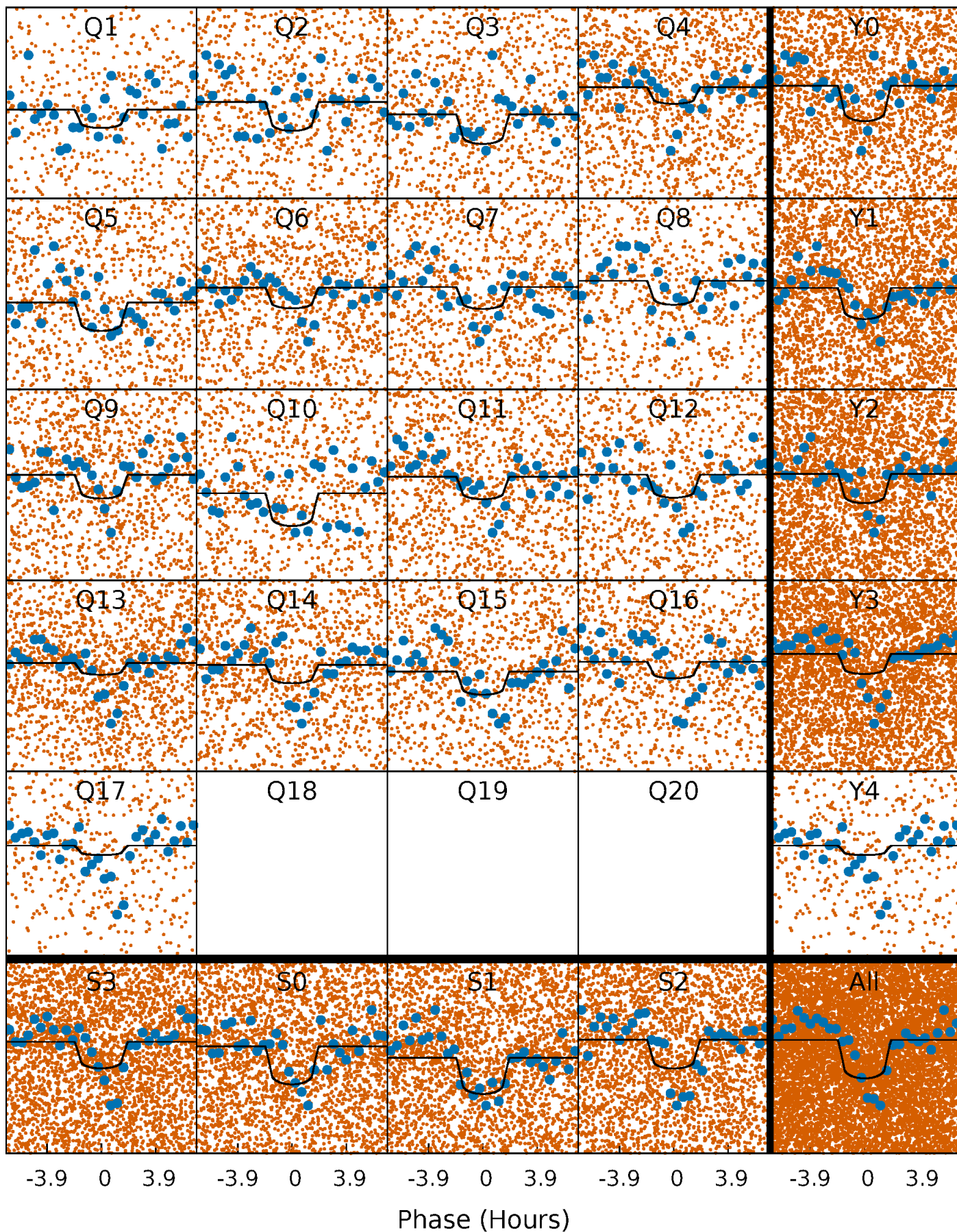
PDC Quarter-Phased Transit Curves

TCE 005534476-02 P= 1.025437 Days $T_0=131.608677$ (BKJD)



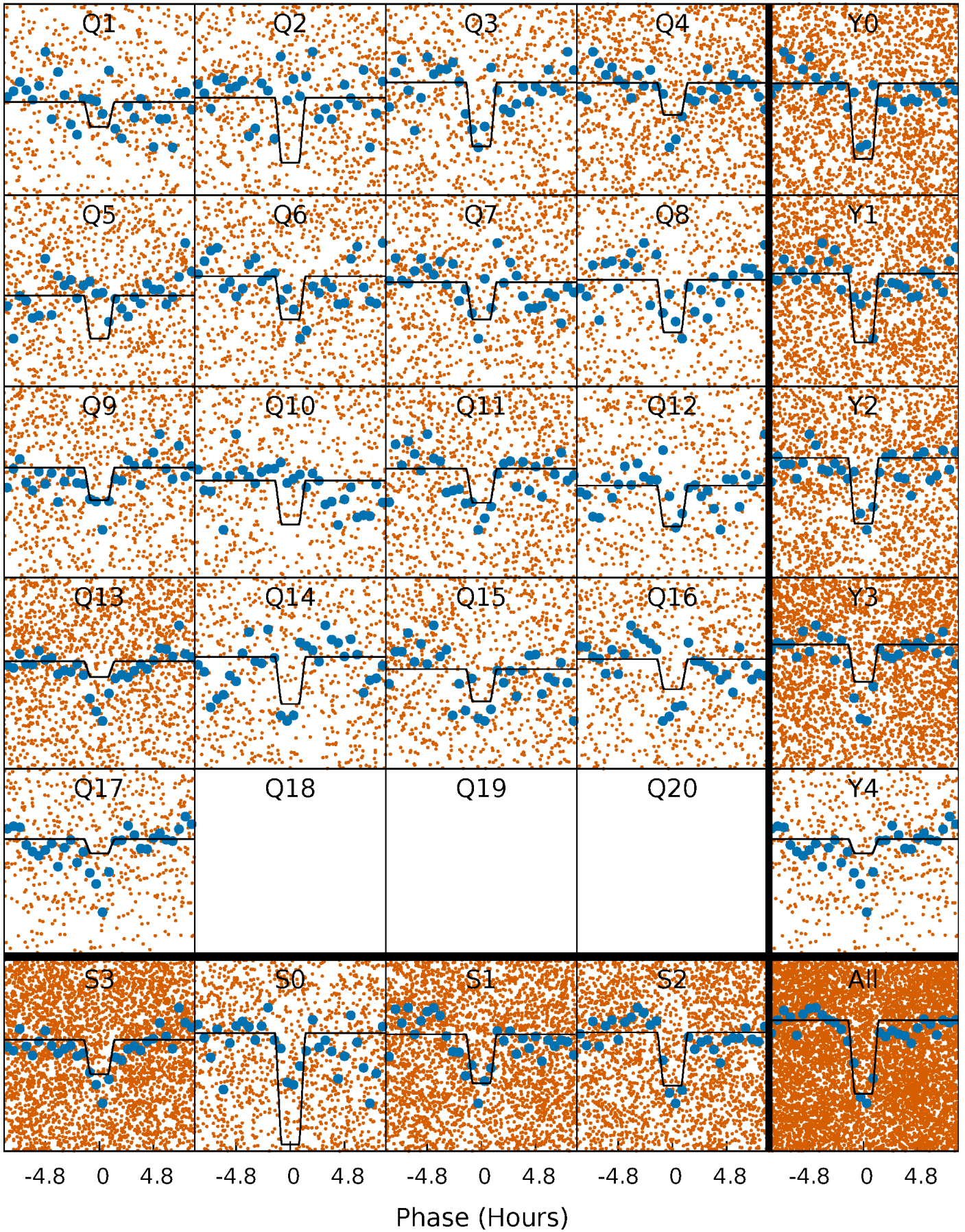
DV Quarter-Phased Transit Curves

TCE 005534476-02 P= 1.025437 Days $T_0=131.608677$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

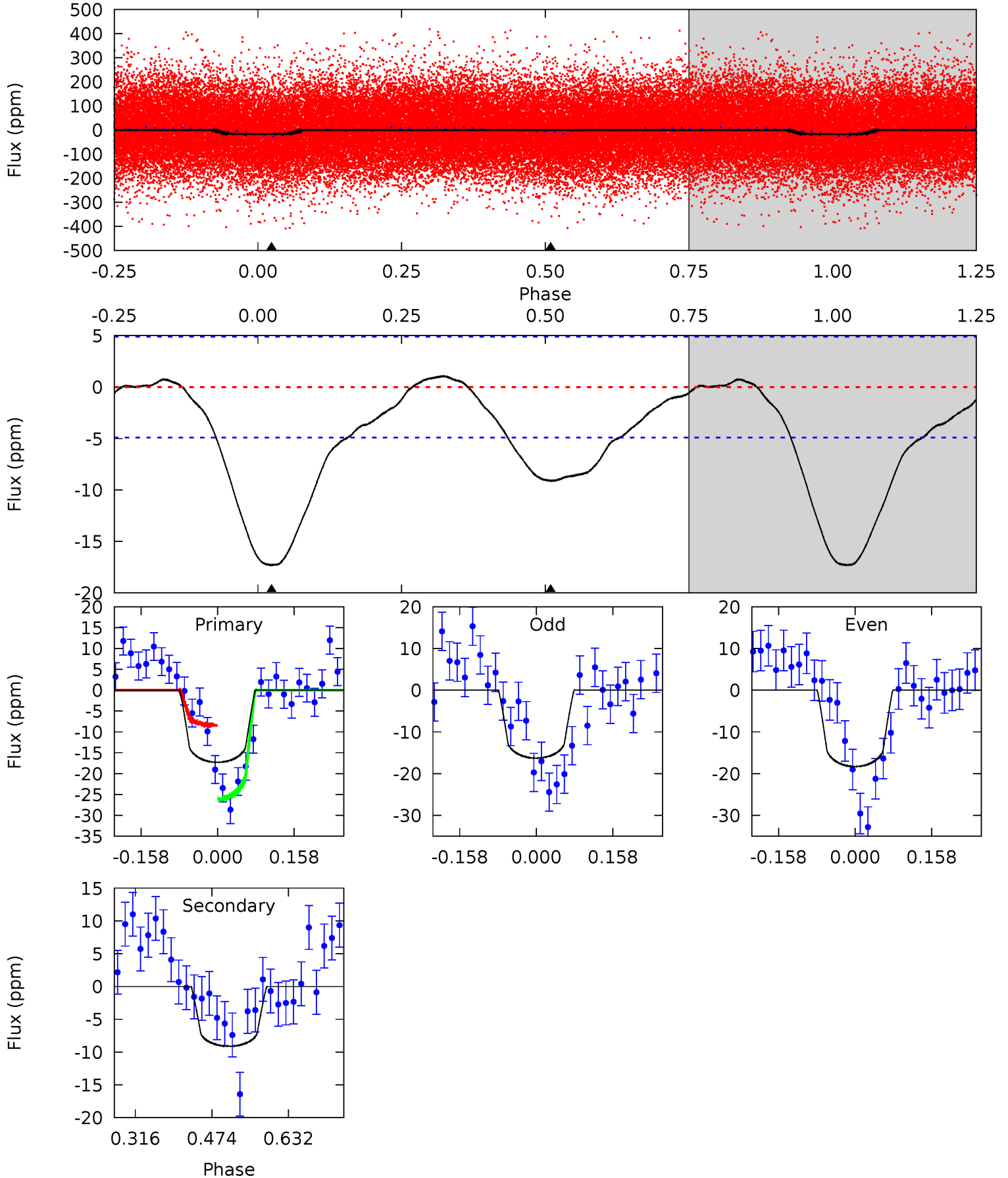
TCE 005534476-02 P= 1.025477 Days $T_0=131.596145$ (BKJD)



DV Model-Shift Uniqueness Test

005534476-02, P = 1.025437 Days, E = 130.583240 Days

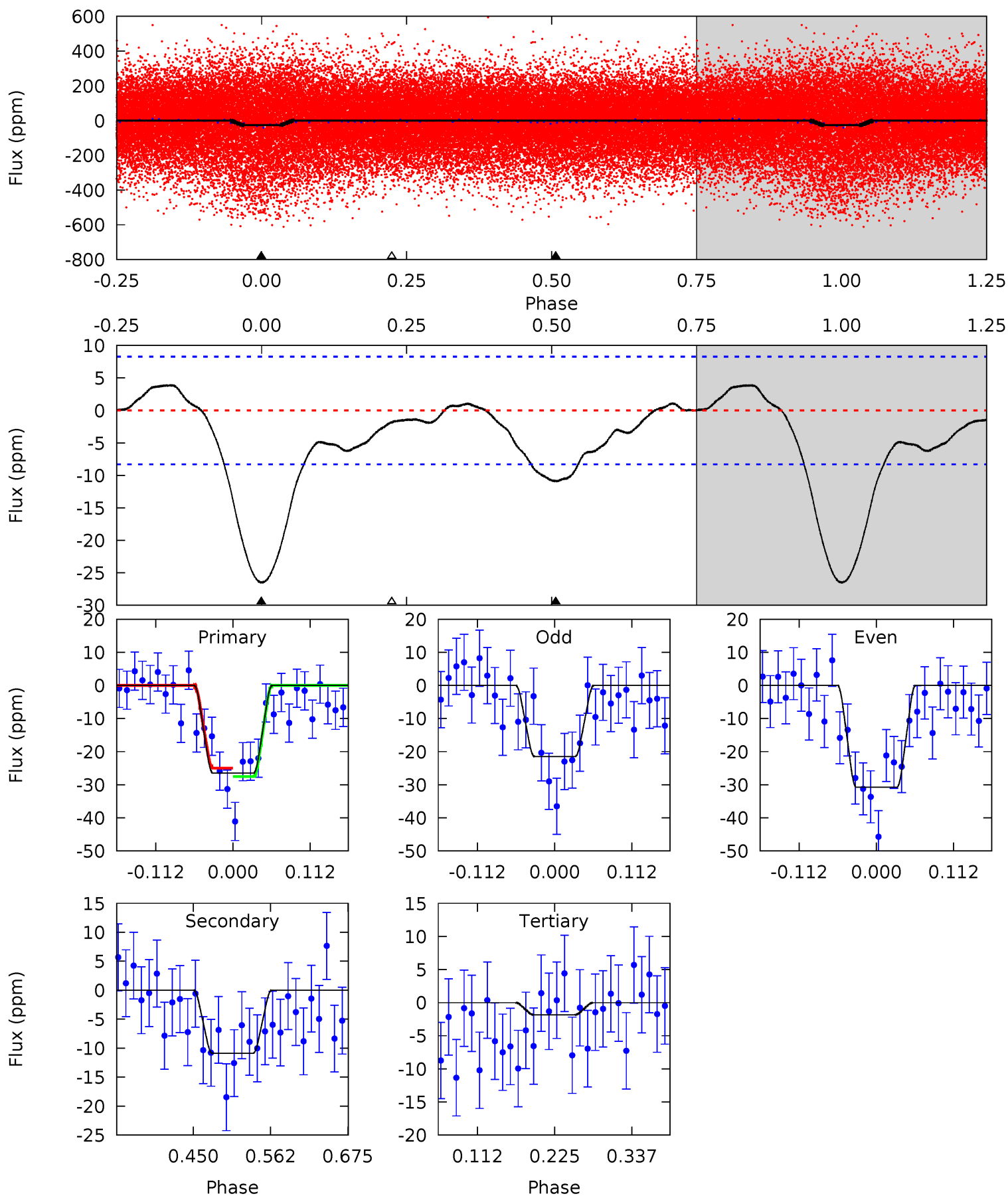
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.7	8.30	0	0	4.47	1.41	1.25	15.7	15.7	8.30	8.30	0.92	0.95	0.06	8.02



Alt Model-Shift Uniqueness Test

005534476-02, P = 1.025477 Days, E = 130.570668 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14.5	5.96	1.02	0	4.54	1.59	1.45	13.5	14.5	4.94	5.96	2.54	129.5	0.13	0.70



Stellar Parameters For KIC 005534476

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6862^{+72}_{-92}	$4.114^{+0.132}_{-0.108}$	$-0.140^{+0.150}_{-0.200}$	$1.712^{+0.279}_{-0.279}$	$1.395^{+0.099}_{-0.108}$	$0.392^{+0.251}_{-0.130}$
	+1%/-1%	+3%/-3%	+107%/-143%	+16%/-16%	+7%/-8%	+64%/-33%
Source	SPE68	SPE68	SPE68	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 005534476-02 / KOI 6595.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-9 ± 1	$0.78^{+0.23}_{-0.21}$	3707^{+148}_{-170}	5628^{+1073}_{-633}	$3.902^{+3.843}_{-1.533}$
Alt.	-11 ± 2	$0.99^{+0.21}_{-0.25}$	3707^{+154}_{-176}	5261^{+752}_{-488}	$2.974^{+2.309}_{-1.041}$

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 $A_{obs} \gg 1.0$

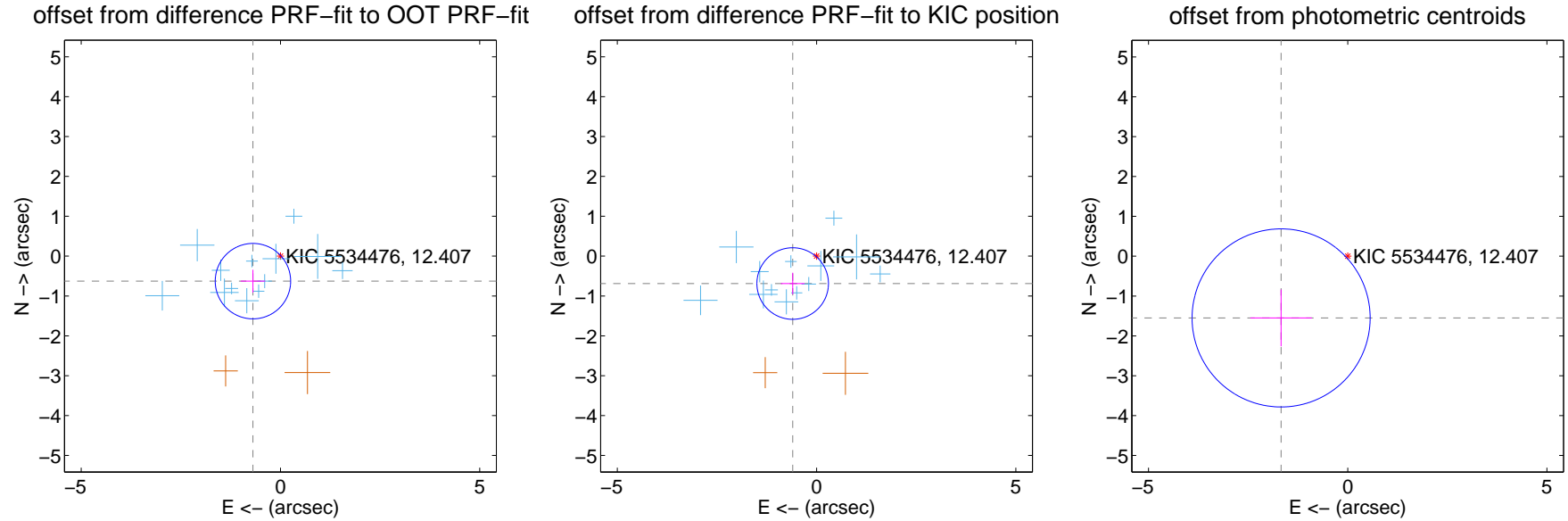
DV Centroid Data

Supplemental centroid analysis for 005534476-02. Kepler magnitude: 12.41. Transit SNR 8.97

There are 13 quarters with good PRF difference image offsets

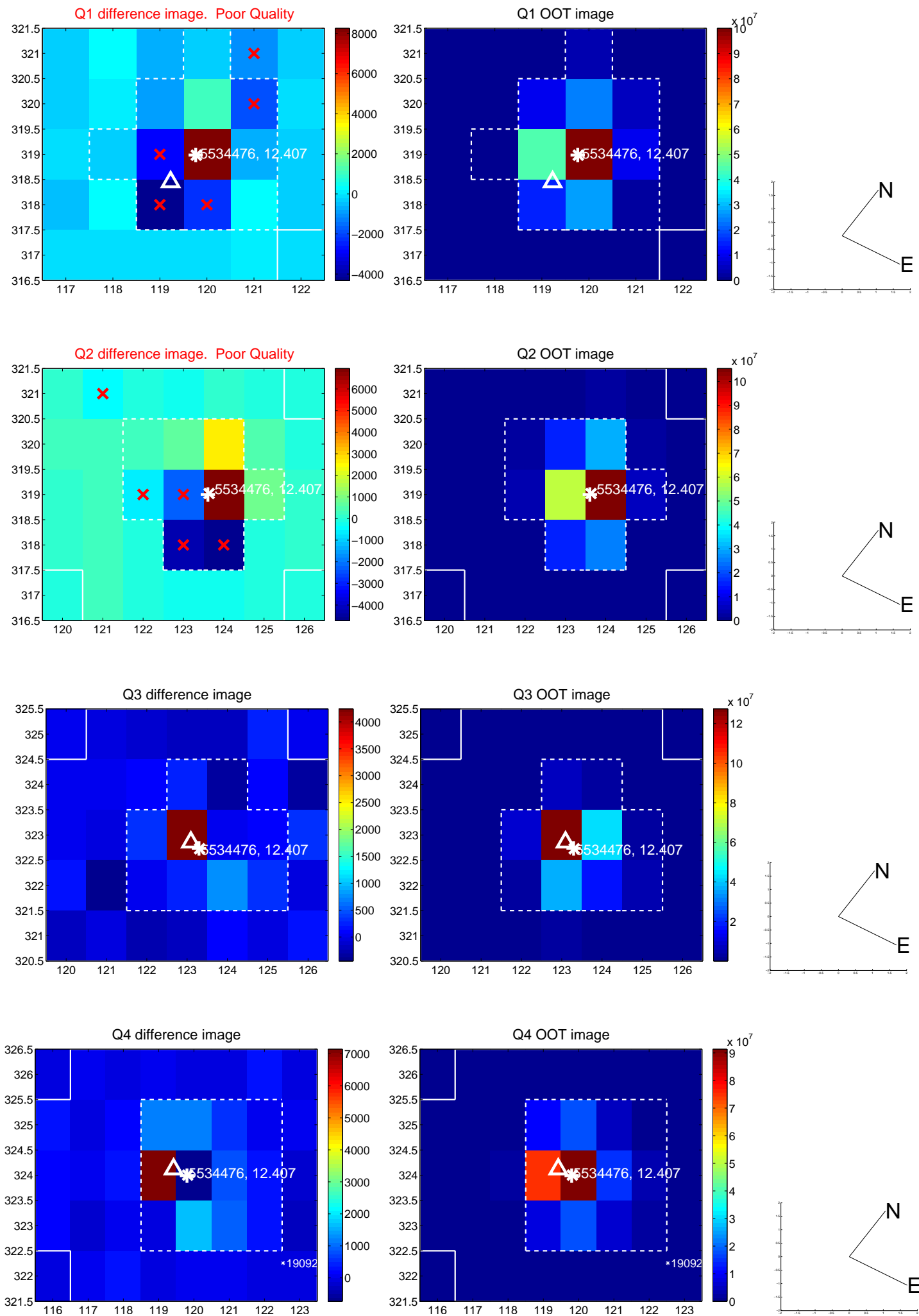
The direct PRF centroid is offset from the target star catalog position by about 0.09 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.933 ± 0.315	2.96	0.691 ± 0.309	-0.628 ± 0.285
PRF-fit source offset from KIC position	0.912 ± 0.299	3.05	0.600 ± 0.296	-0.688 ± 0.270
photometric centroid source offset	2.28 ± 0.74	3.06	1.67 ± 0.77	-1.55 ± 0.71

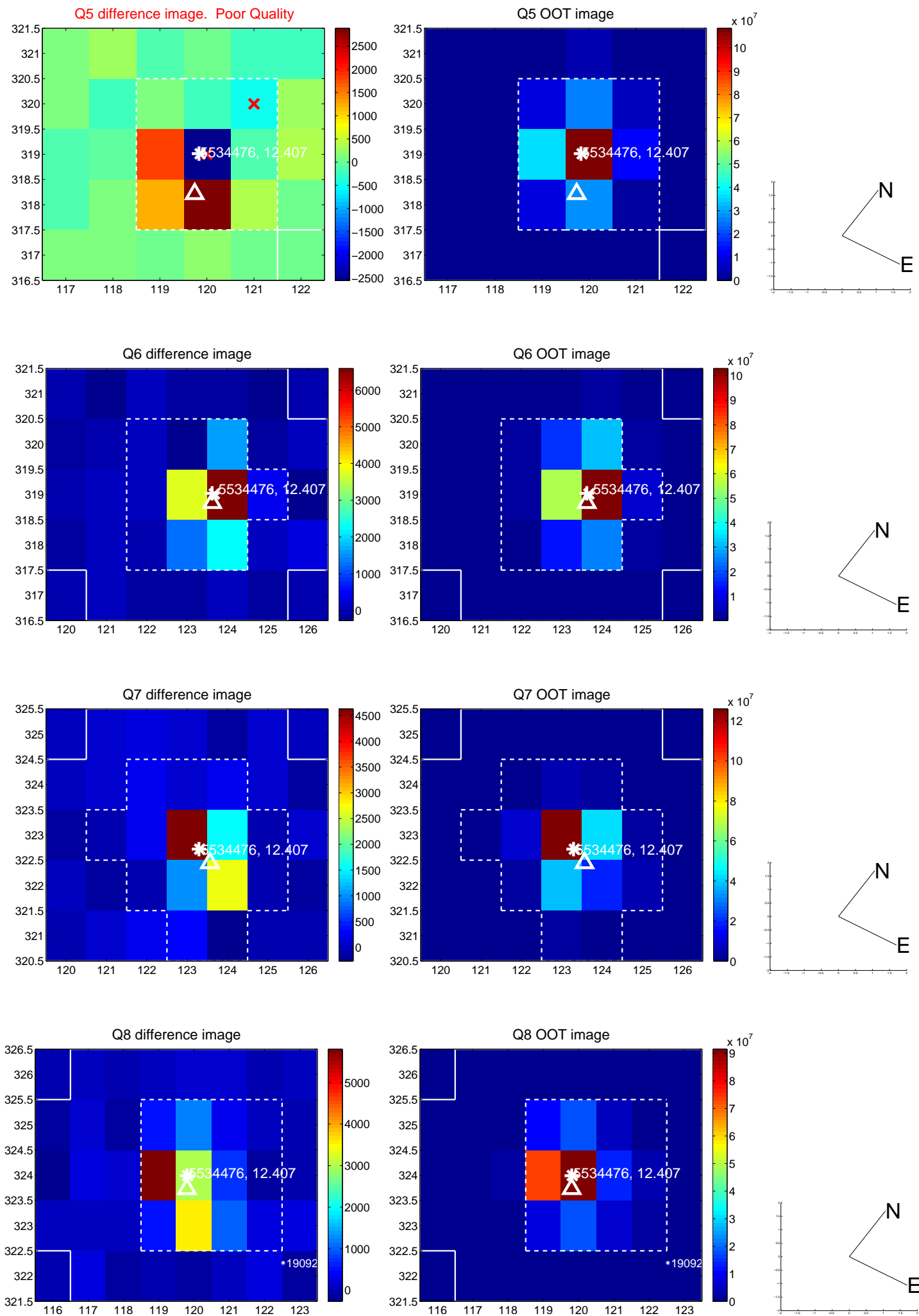


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

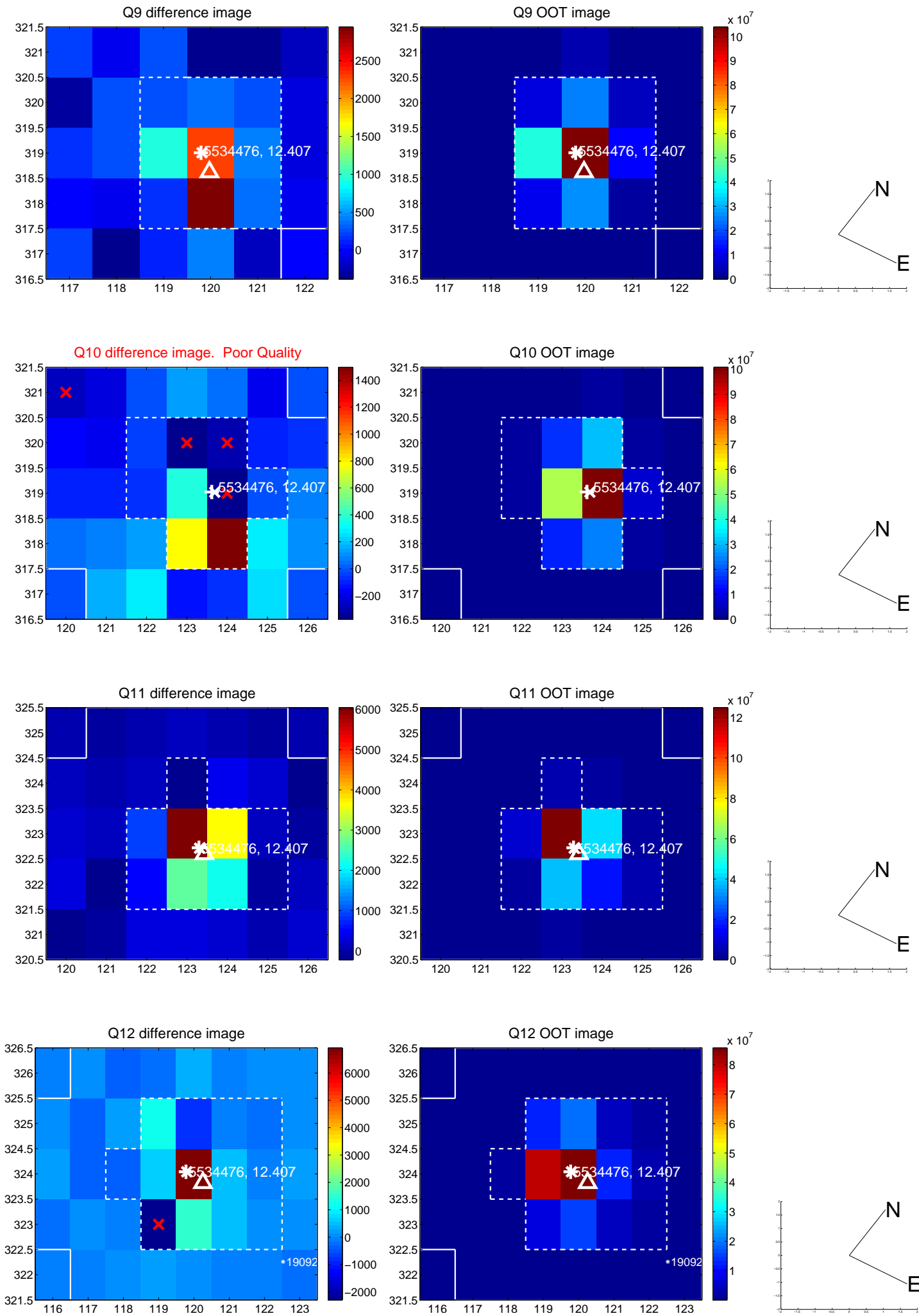
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



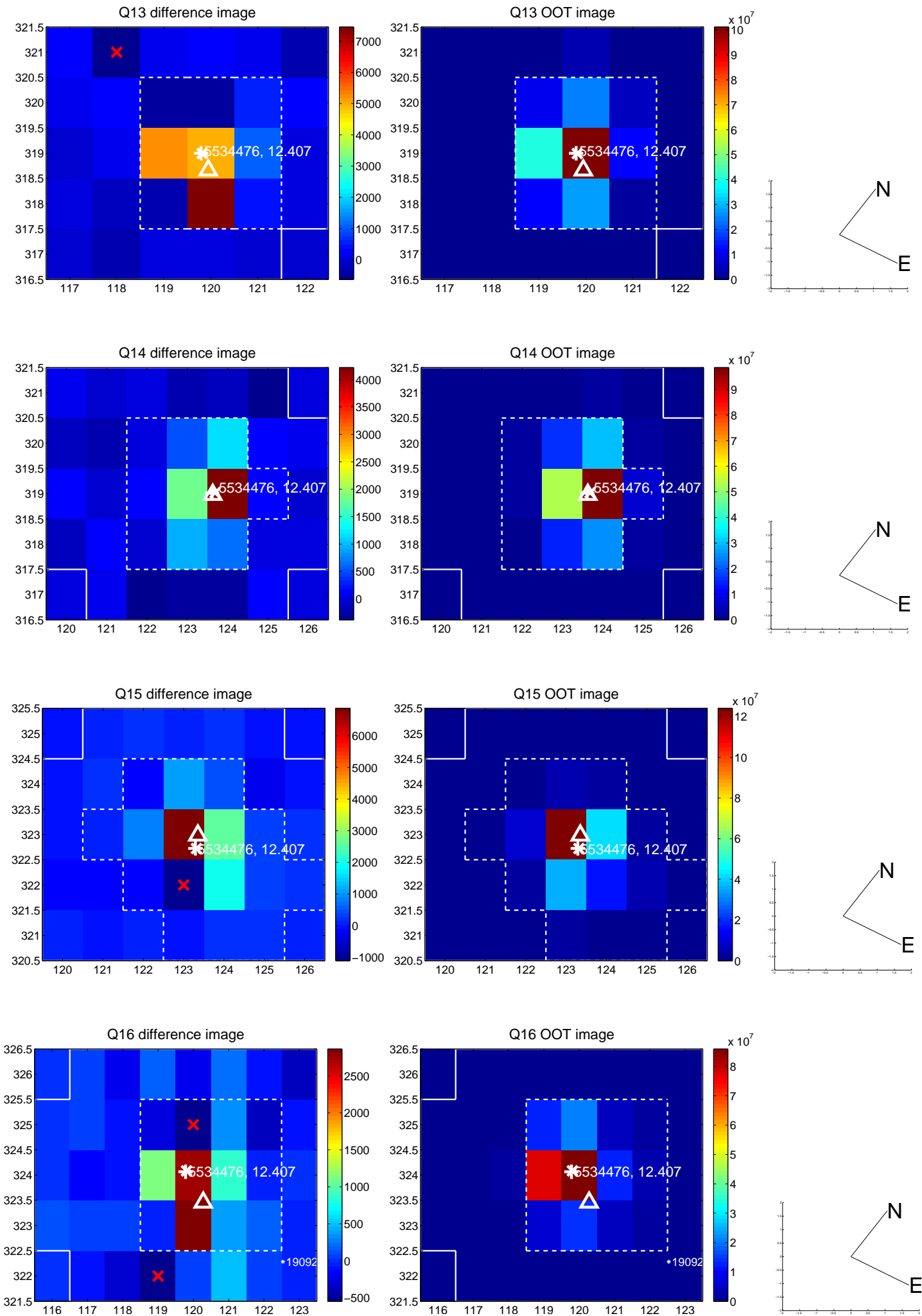
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



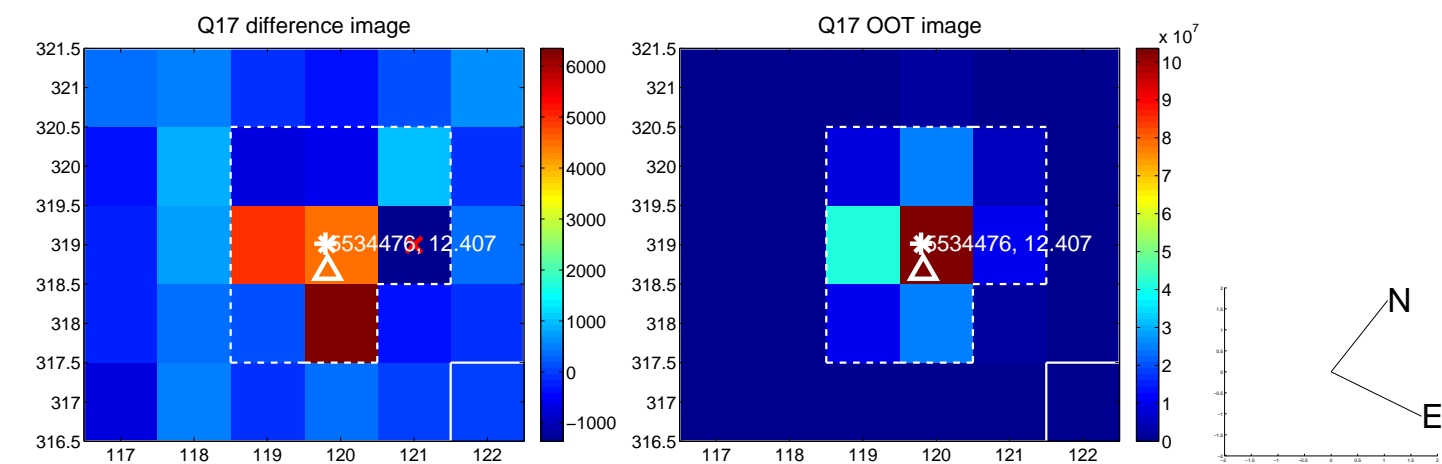
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



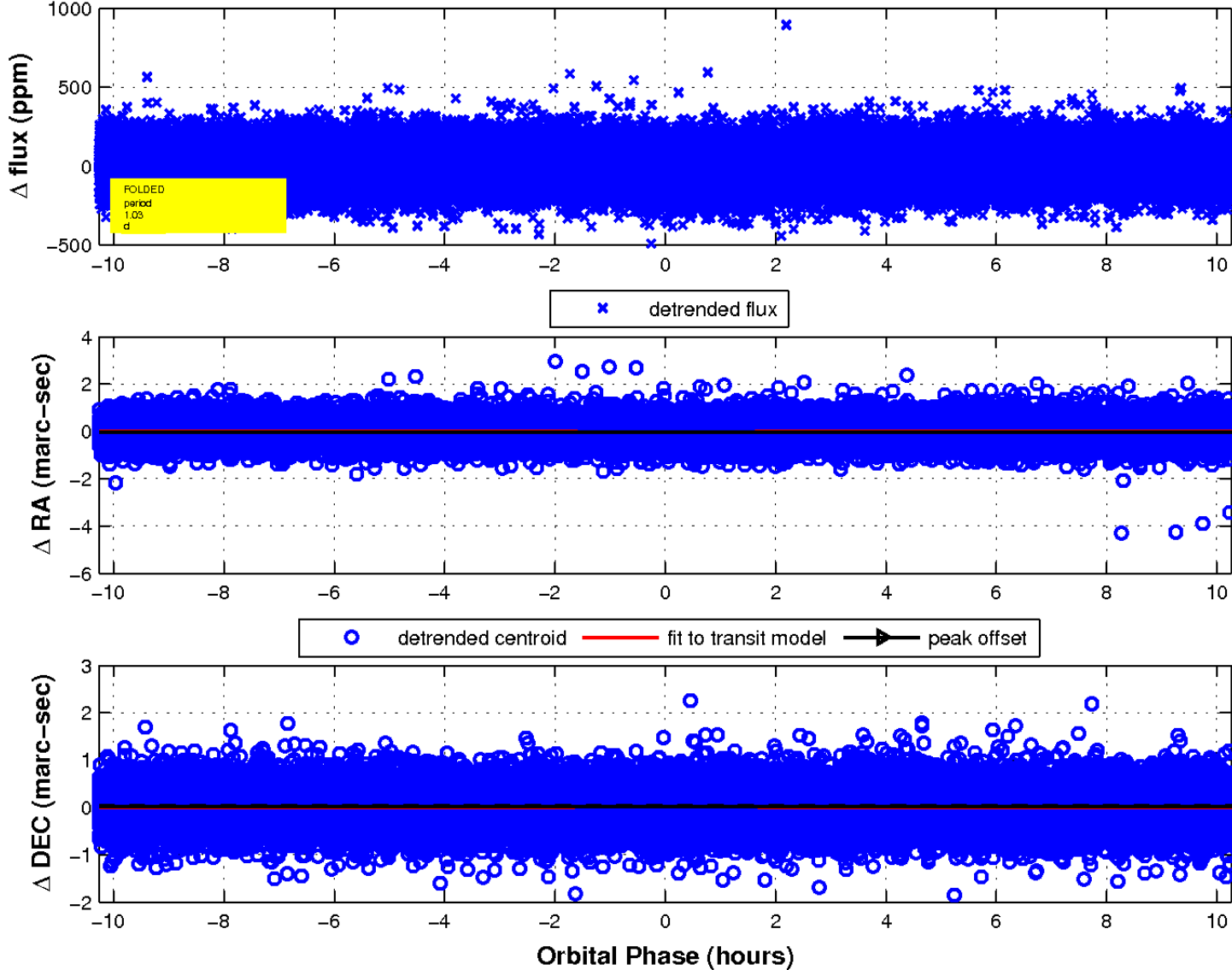
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 2 of 2



UKIRT Image

Declination

