

KIC 006205468

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})
006205468-01	OBS	1037.01	3.722852	134.630294	1283.5	10.492	94.5	97.6	0.86	5873	3.63	369.69
006205468-02	OBS	No	640.068039	286.713387	760.2	7.818	8.9	6.8	0.86	5873	2.64	0.39

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006205468-01	OBS	FP	0.00	0	1	1	1	MOD_SEC_ALT—CENT_UNRESOLVED_OFFSET—HALO_GHOST—EPHEM_MATCH
006205468-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_SKYE—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS

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

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

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

Ephemeris Match Information For 006205468-01

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
006205468-01	6205468	006205460-pri	6205460	1:1	17.6	-4	0	12.75	15.52	485.42	Direct-PRF	0	0.29	0.30

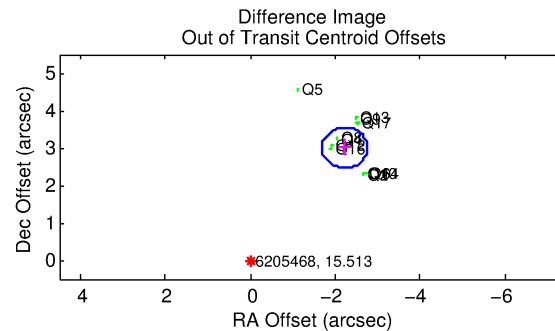
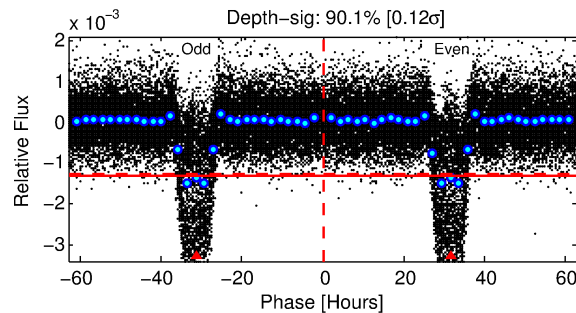
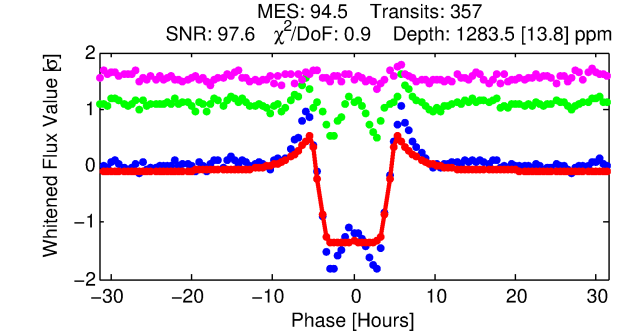
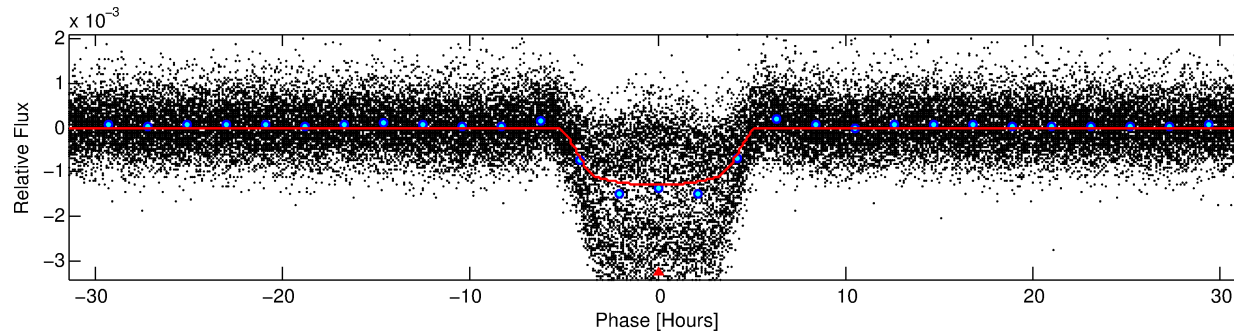
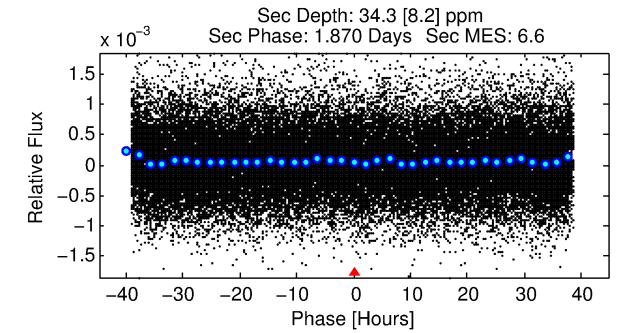
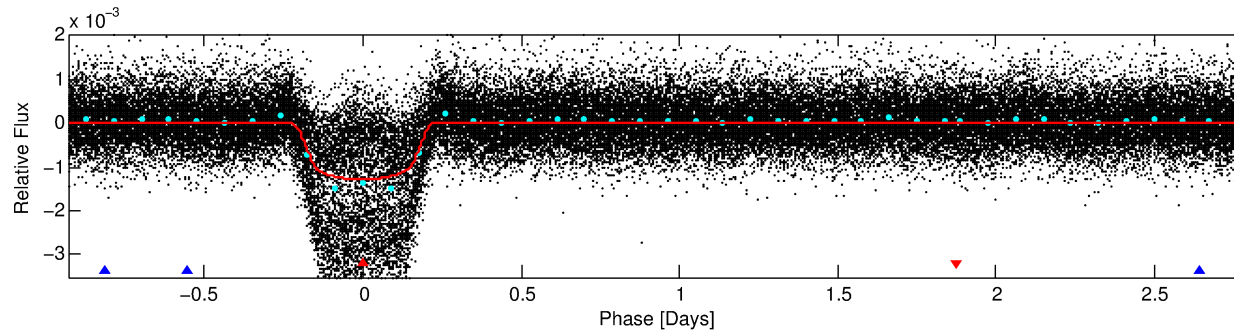
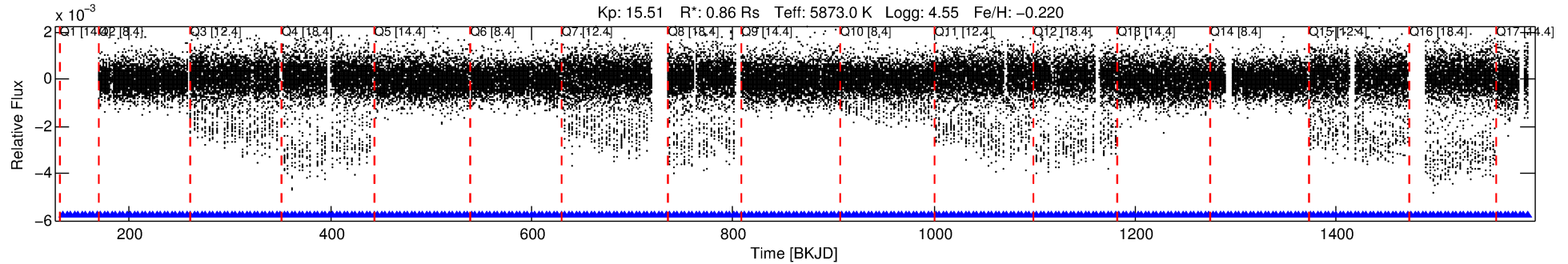
Notes: P₁:P₂ is the period ratio. Dist is the distance in arcseconds. Δ Row and Δ Col are the number of pixels apart in row and column. m₂ and m₁ are the magnitudes of the parent and child. D₂/D₁ is the parent's transit depth divided by the child's. σ_P and σ_T are the significance of the match in period 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: 6205468 Candidate: 1 of 2 Period: 3.723 d

KOI: K01037.01 Corr: 0.935

Kp: 15.51 R*: 0.86 Rs Teff: 5873.0 K Logg: 4.55 Fe/H: -0.220



DV Fit Results:

Period = 3.72285 [0.00001] d
Epoch = 134.6303 [0.0015] BKJD
Rp/R* = 0.0386 [0.0003]
a/R* = 1.72 [0.03]
b = 0.89 [0.01]
Seff = 369.69 [116.87]
Teq = 1118 [88] K
Rp = 3.63 [0.86] Re
a = 0.0463 [0.0093] AU
Ag = 3.07 [1.16] [1.79σ]
Teff = 2289 [153] K [6.62σ]

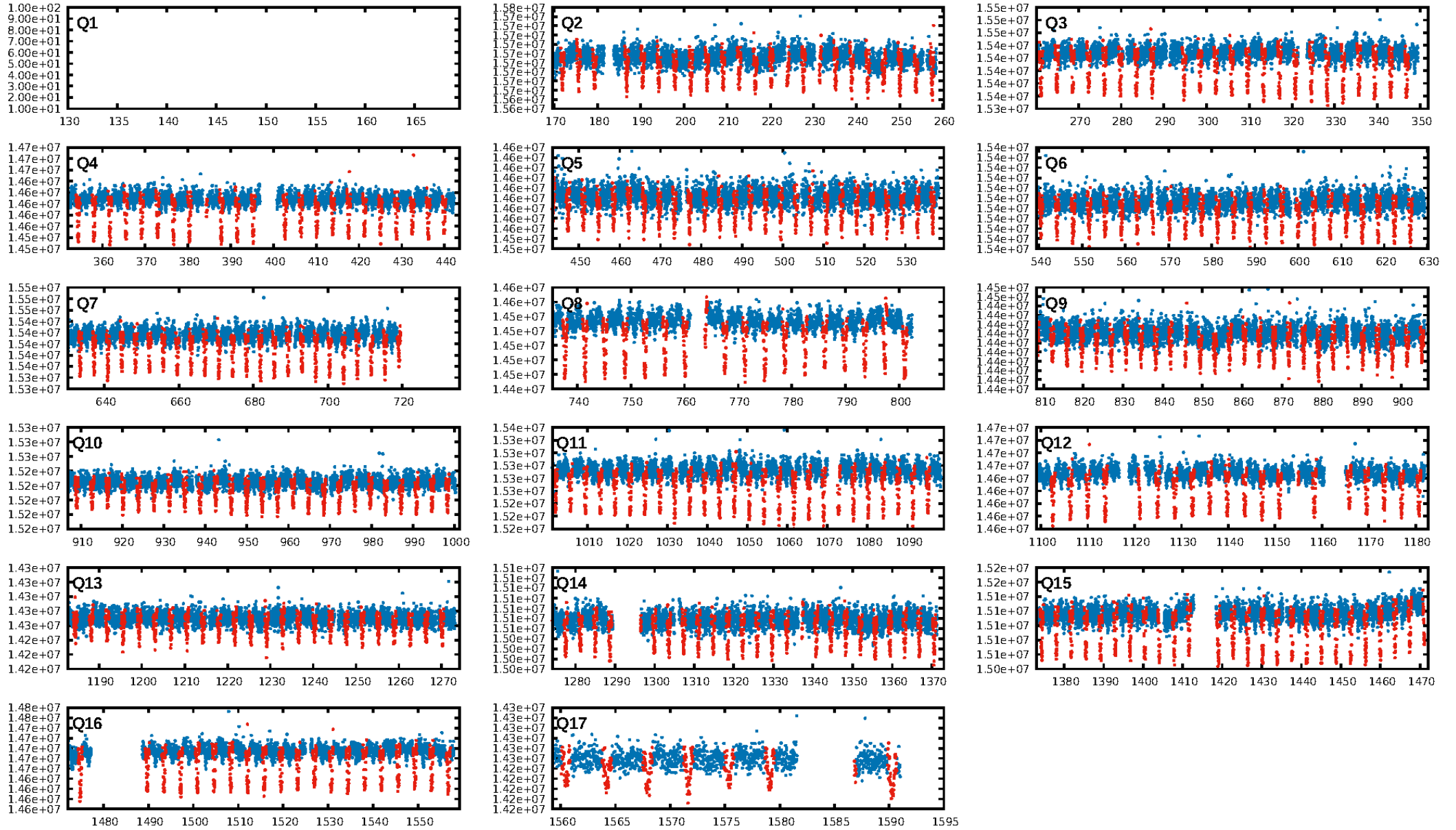
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [1167.21σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 1.00 [350/350]
GhostDiagnostic-chr: -0.121
Centroid-sig: N/A
Centroid-so: 15.451 arcsec [118.77σ]
OotOffset-rm: 3.744 arcsec [20.77σ]
KicOffset-rm: 3.731 arcsec [19.28σ]
OotOffset-st: 4/0/4/4 [12]
KicOffset-st: 4/0/4/4 [12]
DiffImageQuality-fgm: 0.83 [10/12]
DiffImageOverlap-fno: 1.00 [16/16]

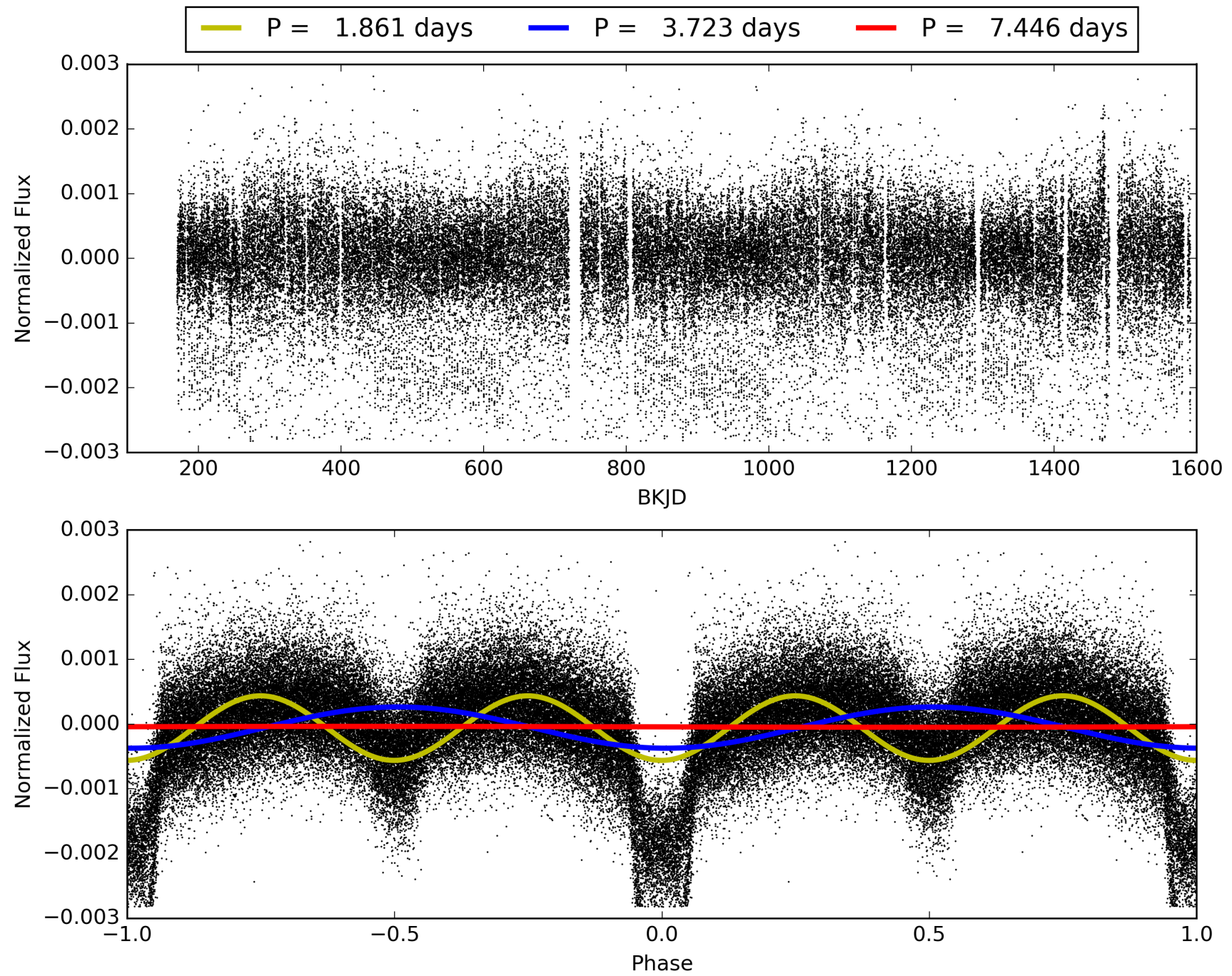
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 09:41:55 Z

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

TCE 006205468-01, PDC Light Curves

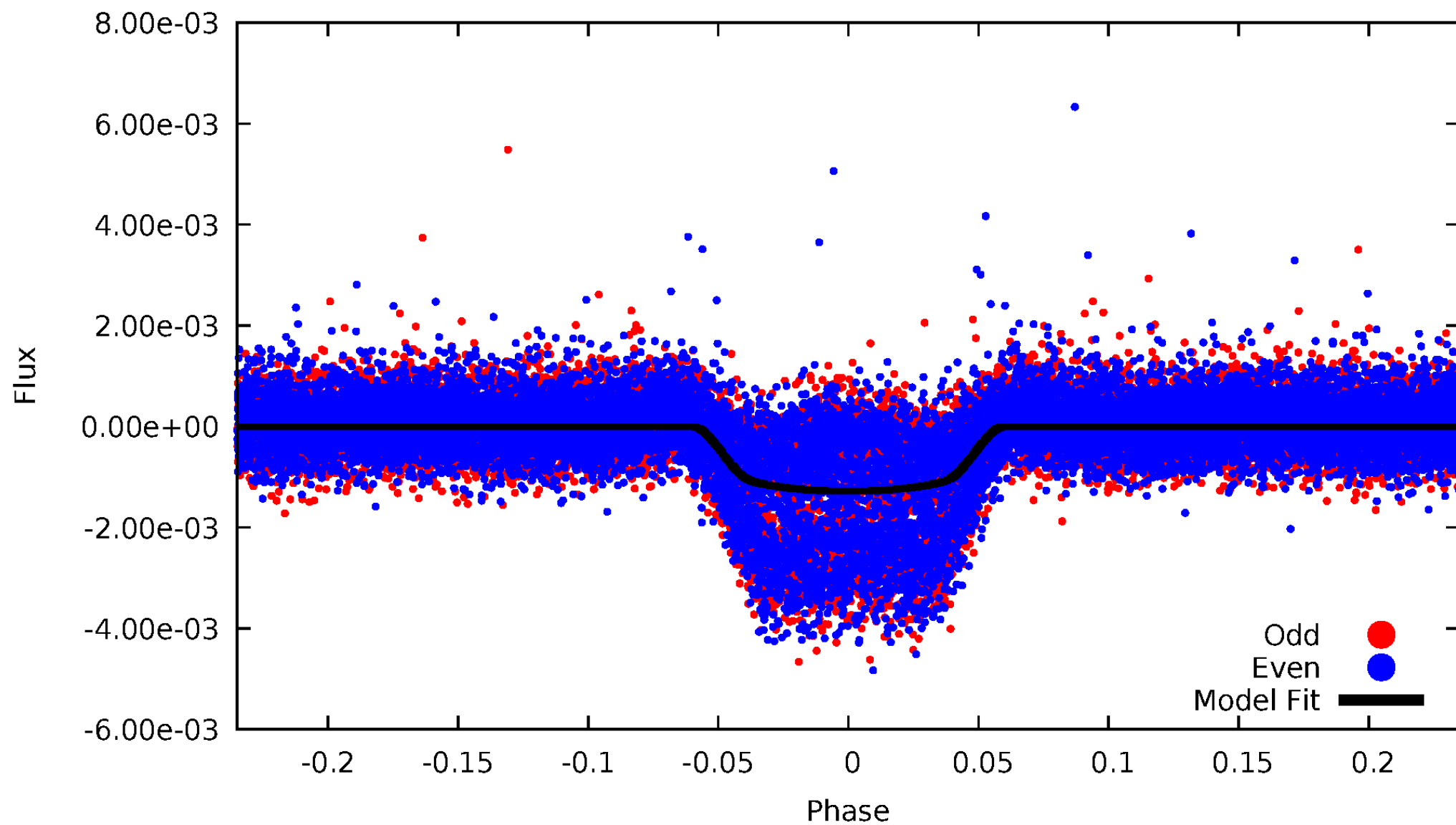


TCE 006205468-01



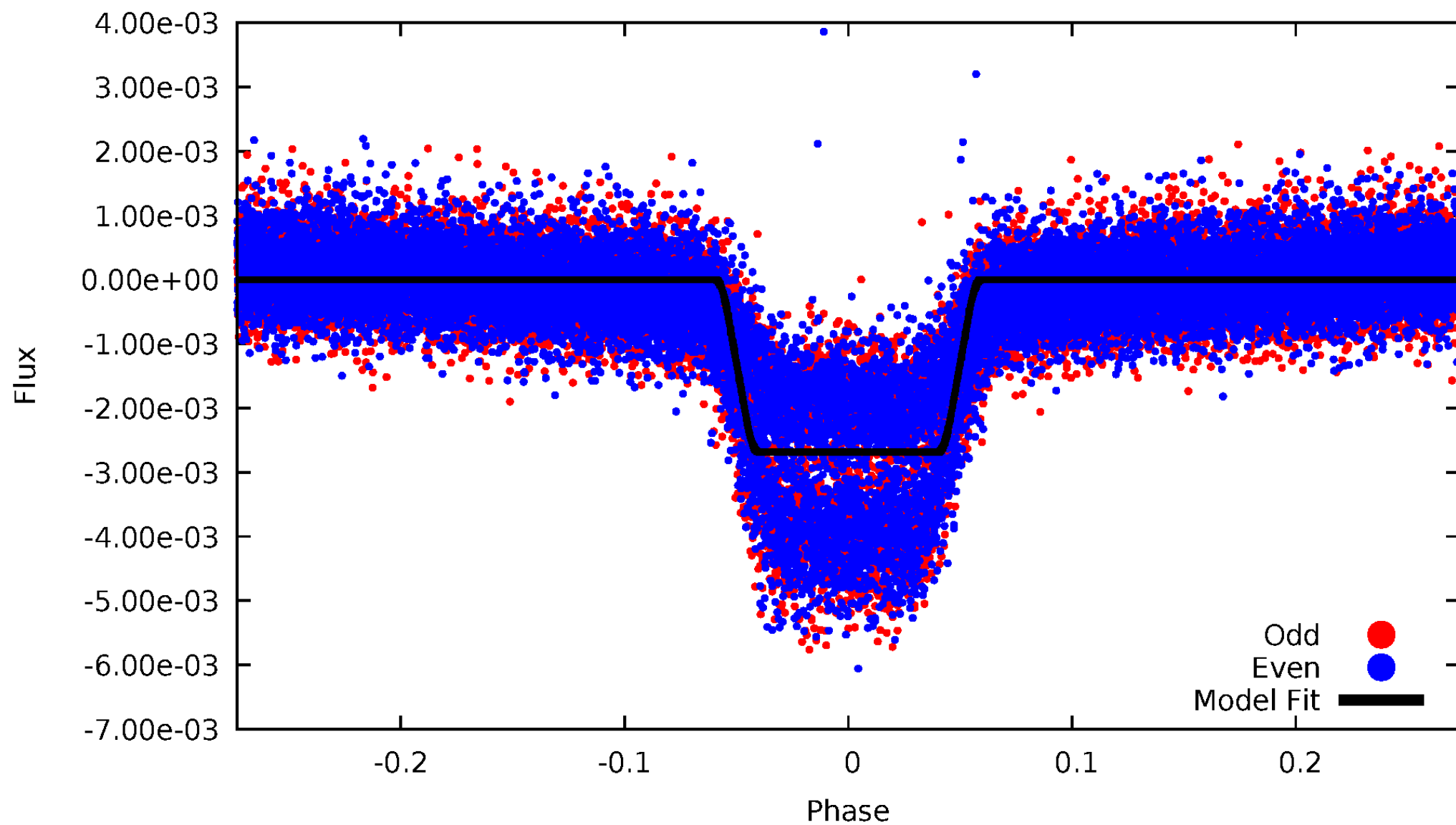
DV Odd/Even

TCE 006205468-01



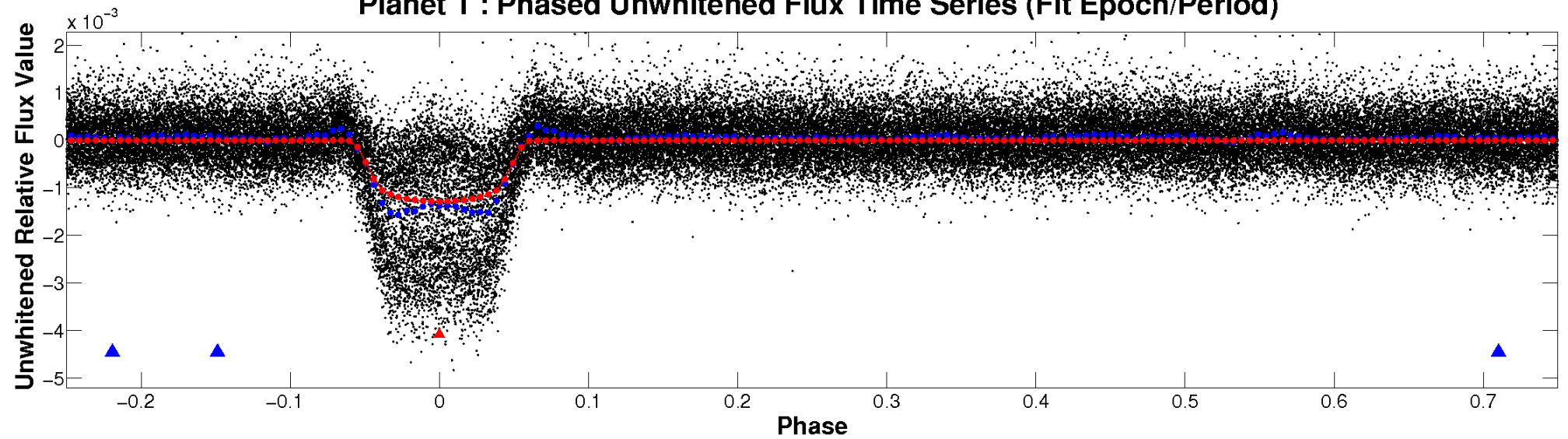
ALT Odd/Even

TCE 006205468-01

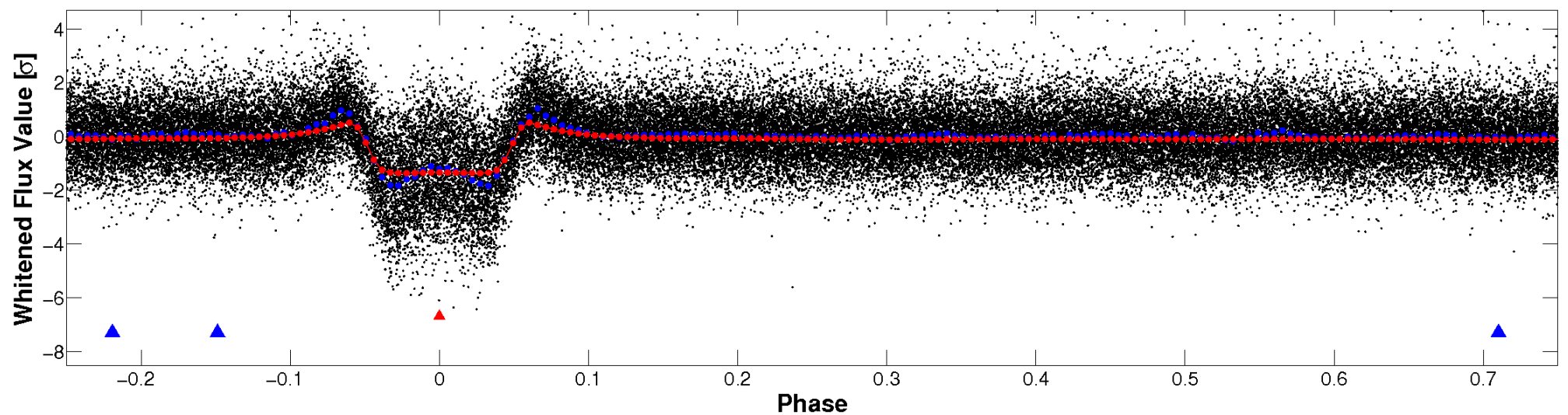


Non-Whitened Vs. Whitened Light Curve

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

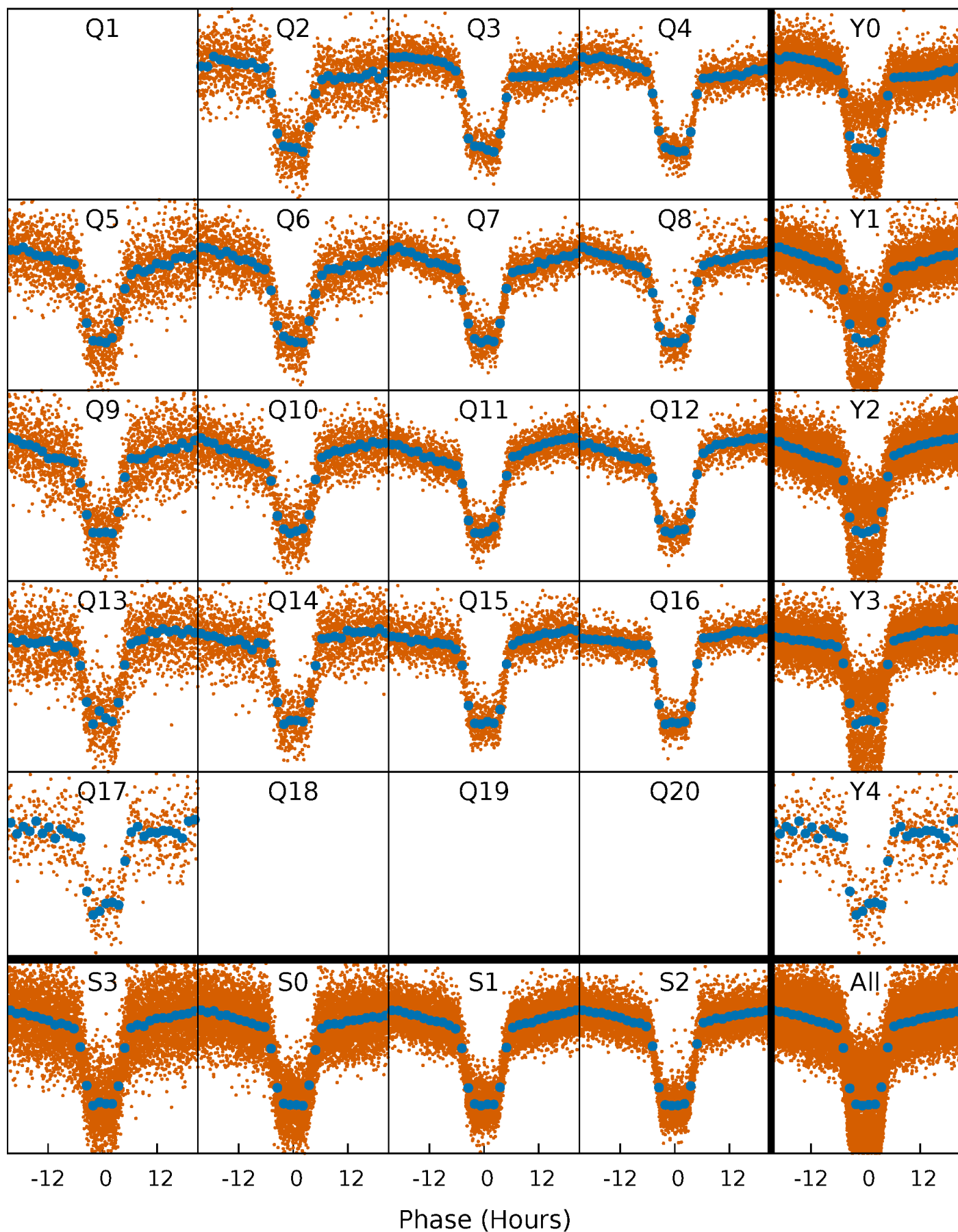


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



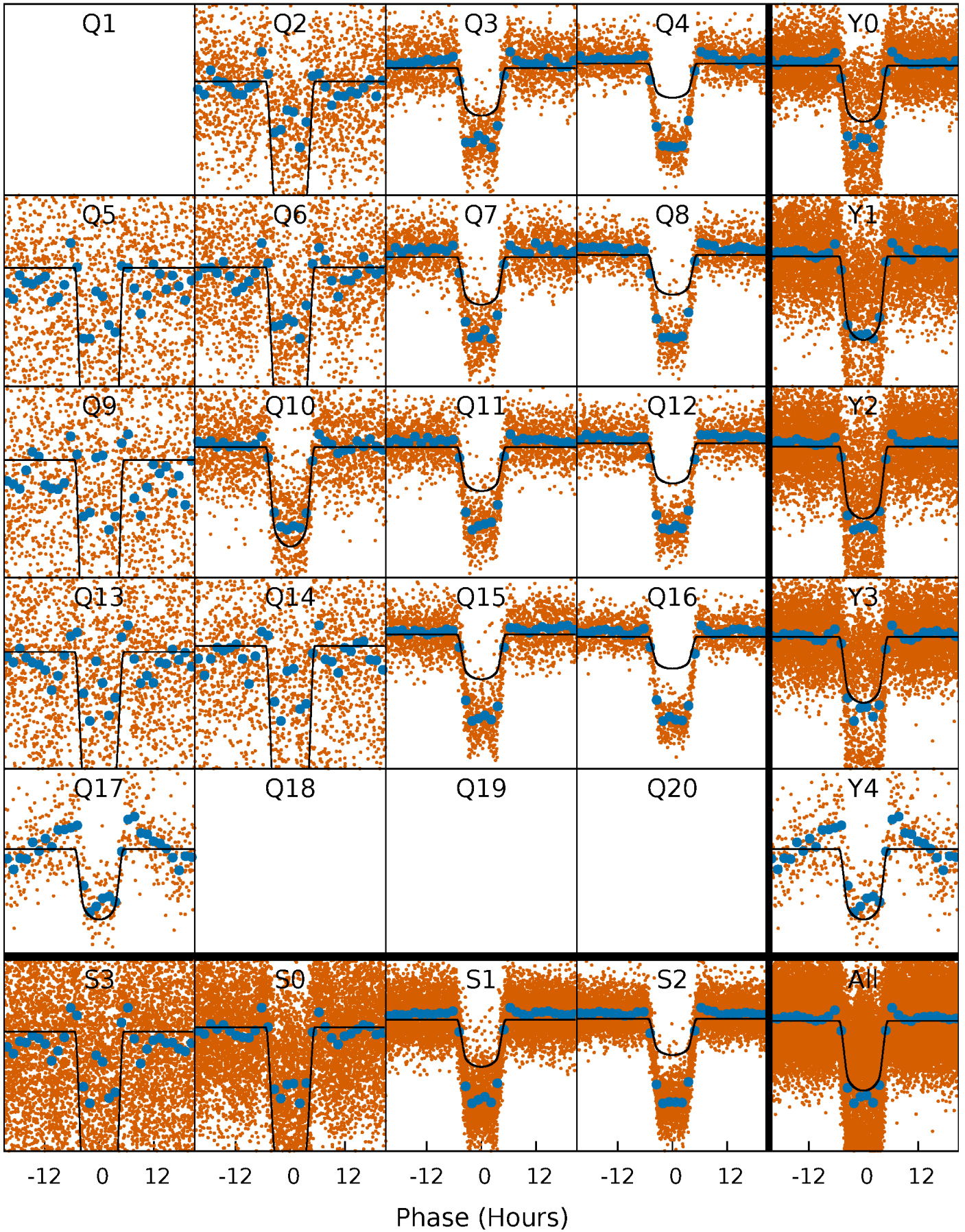
PDC Quarter-Phased Transit Curves

TCE 006205468-01 P= 3.722852 Days $T_0=134.630294$ (BKJD)



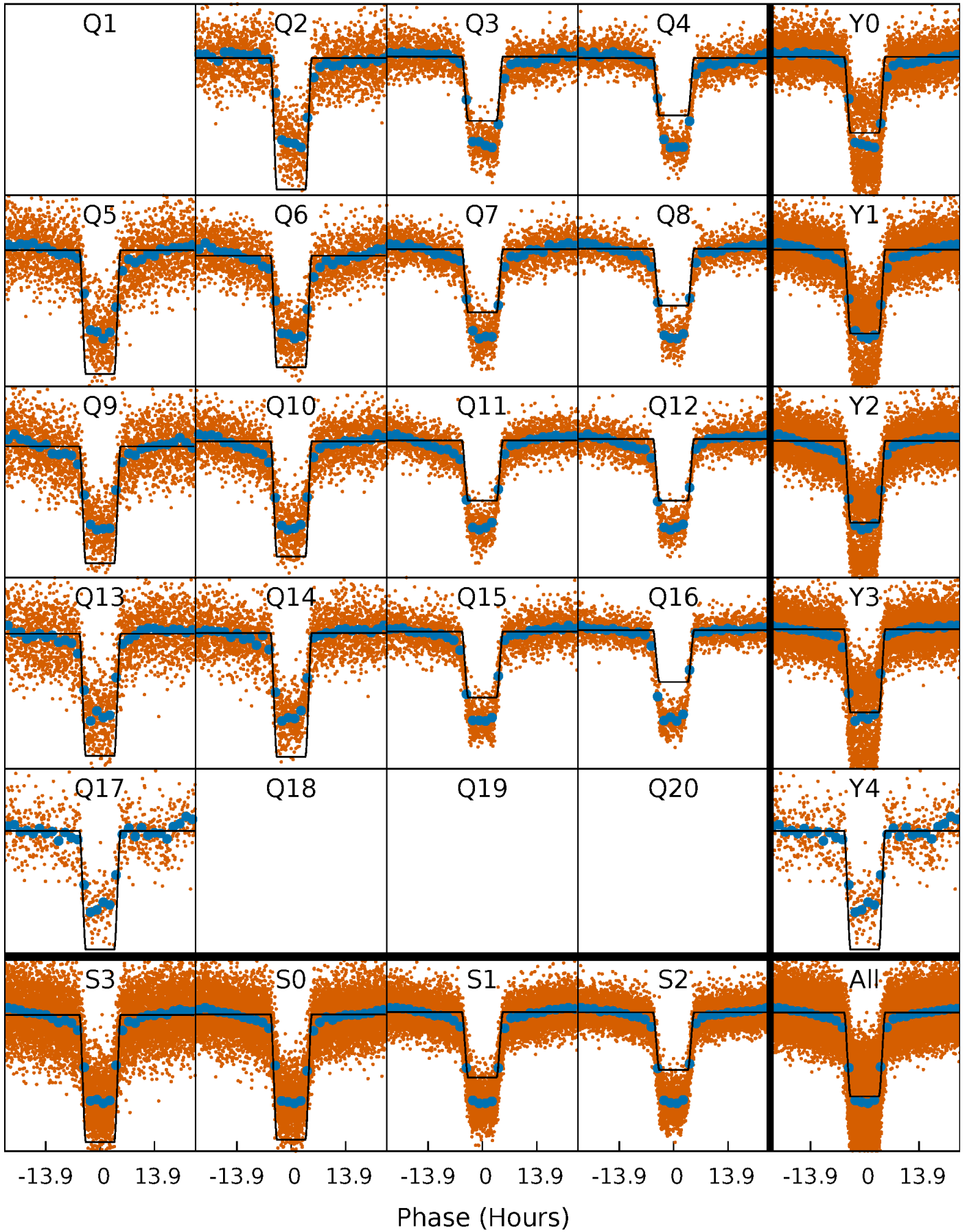
DV Quarter-Phased Transit Curves

TCE 006205468-01 P= 3.722852 Days $T_0=134.630294$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

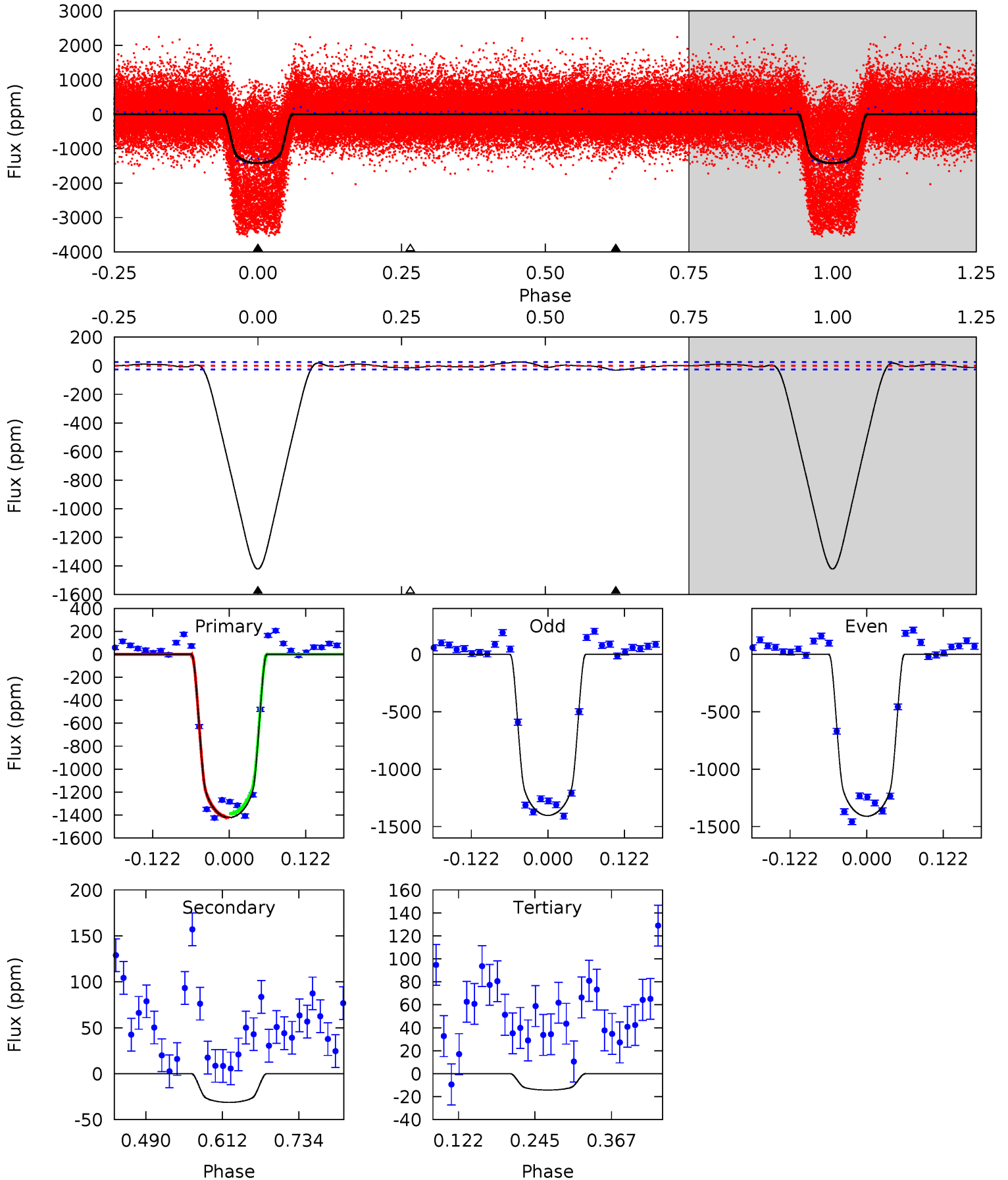
TCE 006205468-01 P= 3.722973 Days $T_0=134.604880$ (BKJD)



DV Model-Shift Uniqueness Test

006205468-01, P = 3.722852 Days, E = 134.630294 Days

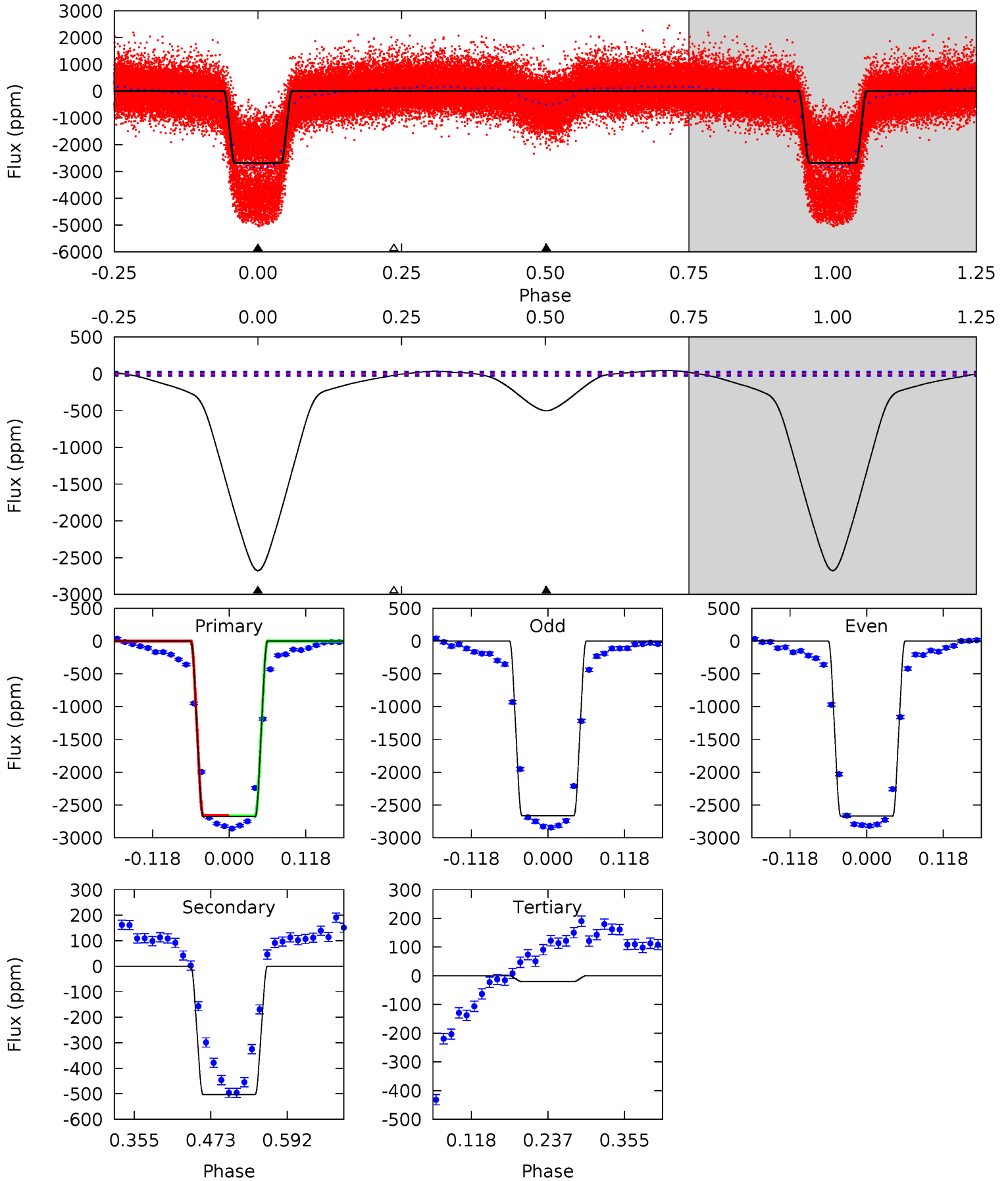
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
249.8	5.49	2.50	0	4.52	1.54	1.82	247.3	249.8	2.99	5.49	0.64	1.29	0.02	2.95



Alt Model-Shift Uniqueness Test

006205468-01, P = 3.722973 Days, E = 134.604880 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
466.0	87.6	3.47	0	4.53	1.56	14.2	462.5	466.0	84.1	87.6	0.64	1.26	0.02	0.55



Stellar Parameters For KIC 006205468

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5873^{+141}_{-177}	$4.547^{+0.040}_{-0.160}$	$-0.220^{+0.300}_{-0.300}$	$0.863^{+0.205}_{-0.068}$	$0.954^{+0.110}_{-0.110}$	$2.094^{+0.444}_{-0.966}$
	+2%/-3%	+1%/-4%	+136%/-136%	+24%/-8%	+12%/-12%	+21%/-46%
Source	PHO1	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 006205468-01 / KOI 1037.01

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-31 ± 6	$3.68^{+0.44}_{-0.21}$	1587^{+87}_{-63}	2876^{+91}_{-99}	$2.589^{+0.606}_{-0.641}$
Alt.	-503 ± 6	$4.95^{+0.61}_{-0.29}$	1590^{+80}_{-64}	4137^{+71}_{-94}	24^{+2}_{-4}

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 $A_{obs} \gg 1.0$

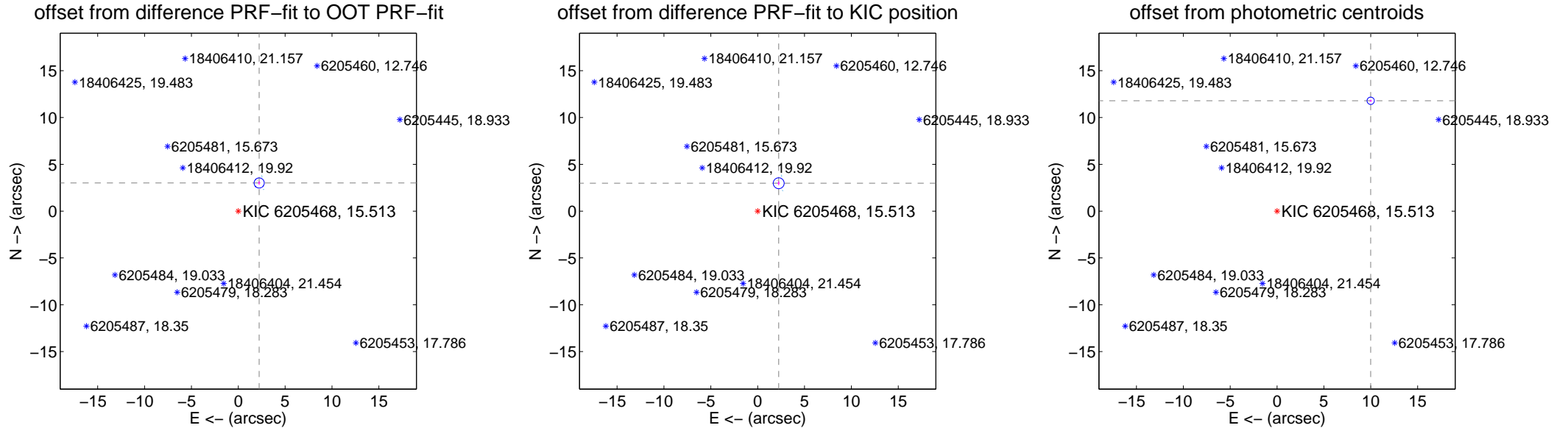
DV Centroid Data

Supplemental centroid analysis for 006205468-01. Kepler magnitude: 15.51. Transit SNR 97.59

There are 10 quarters with good PRF difference image offsets

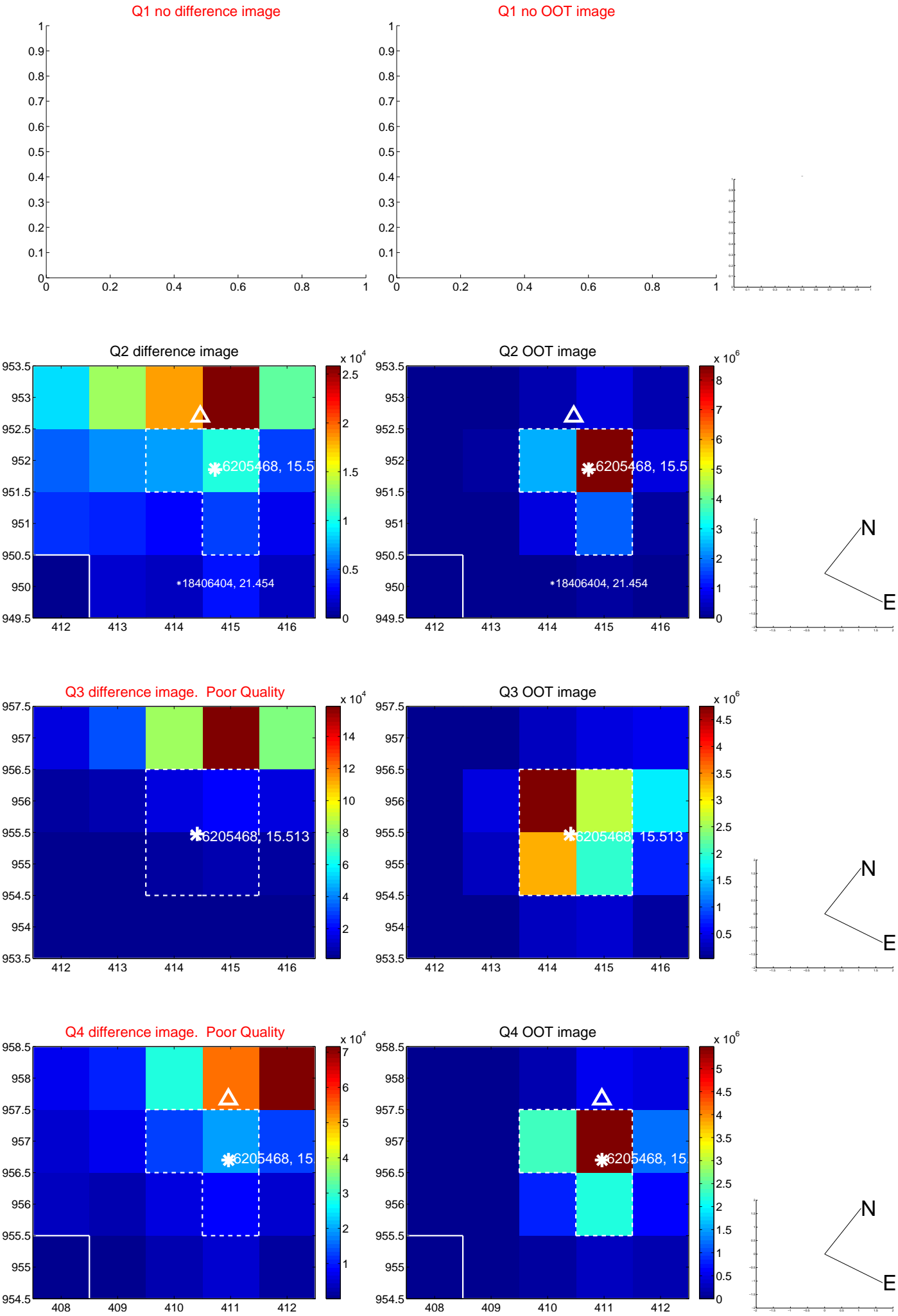
The direct PRF centroid is offset from the target star catalog position by about 0.07 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	3.744 ± 0.180	20.77	-2.230 ± 0.136	3.007 ± 0.201
PRF-fit source offset from KIC position	3.731 ± 0.194	19.28	-2.246 ± 0.129	2.979 ± 0.222
photometric centroid source offset	15.45 ± 0.13	118.77	-9.99 ± 0.13	11.79 ± 0.13

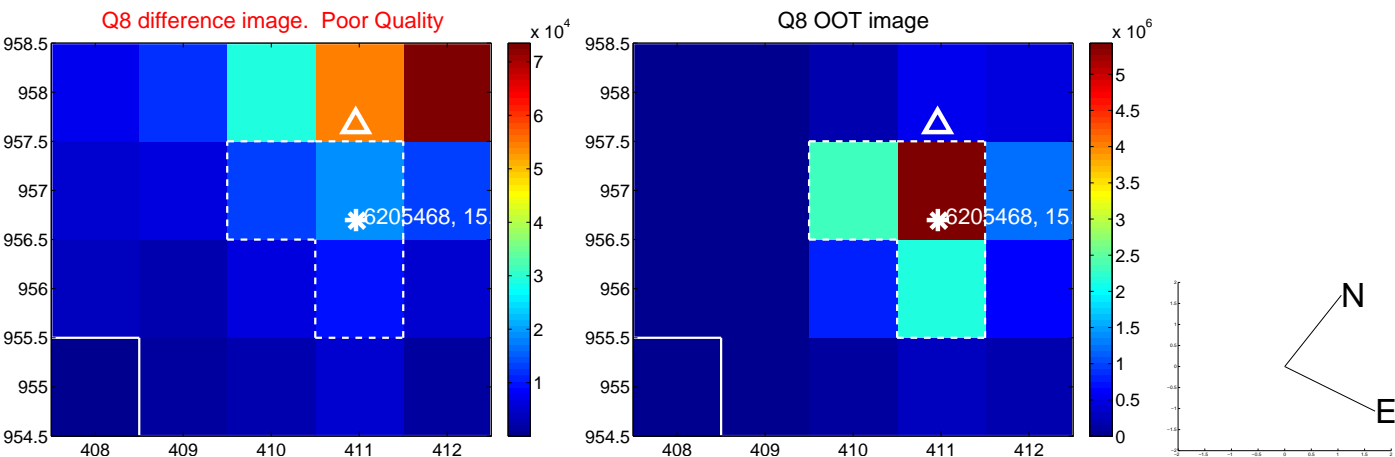
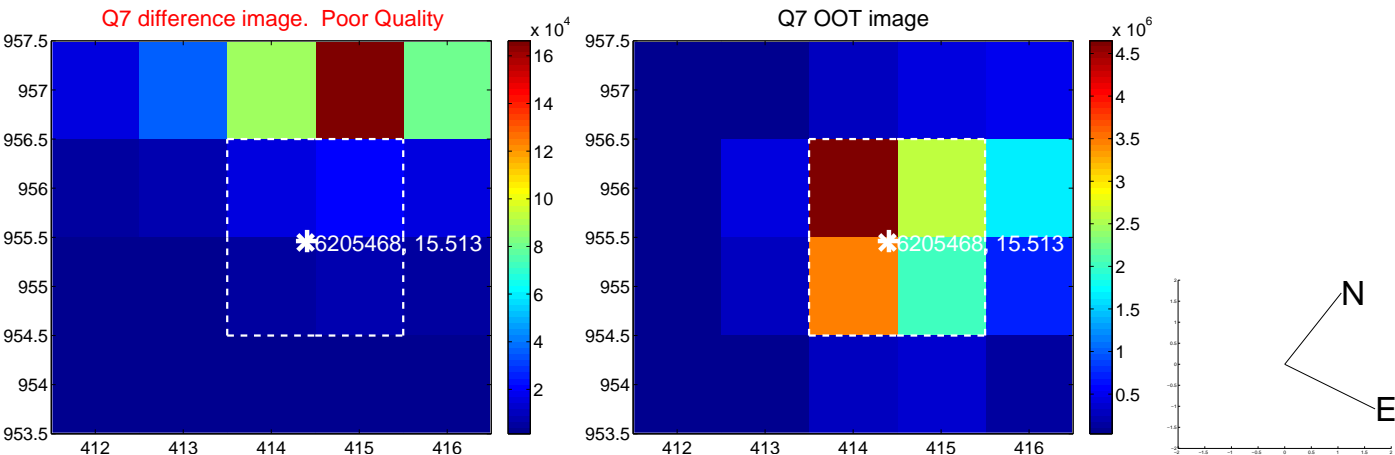
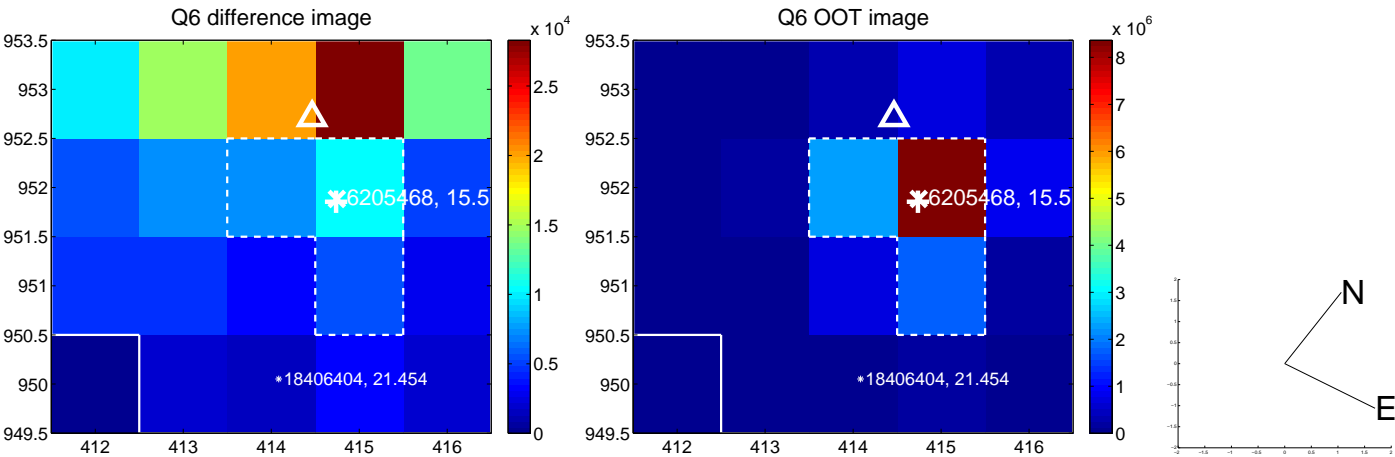
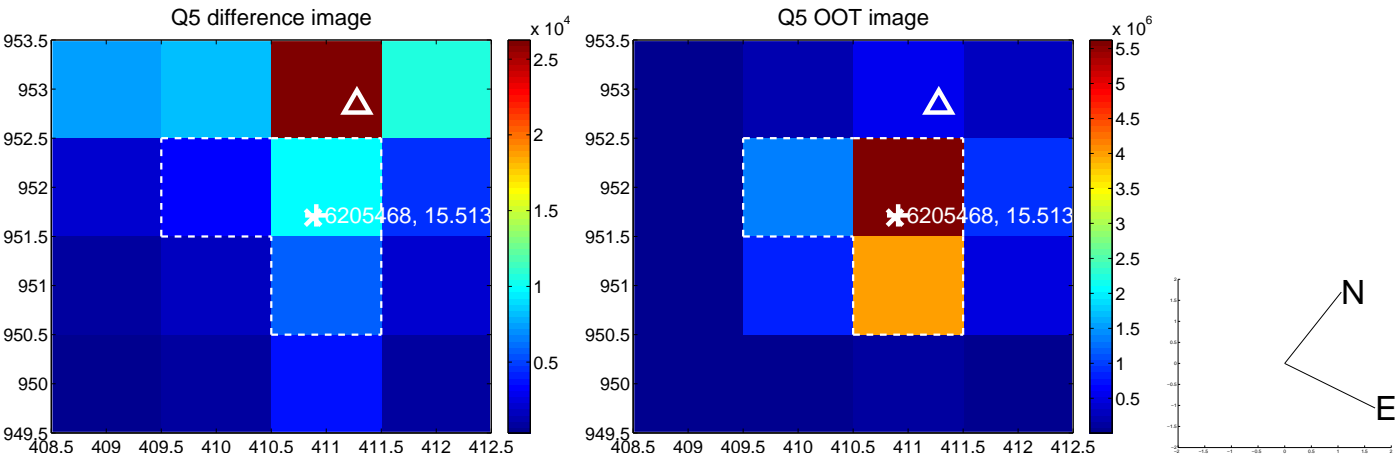


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

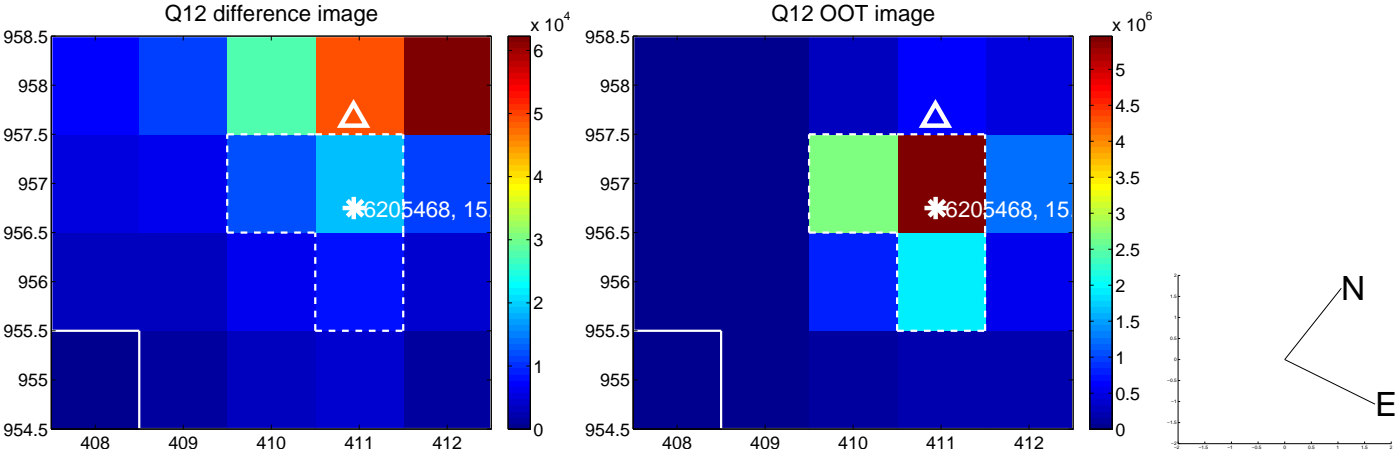
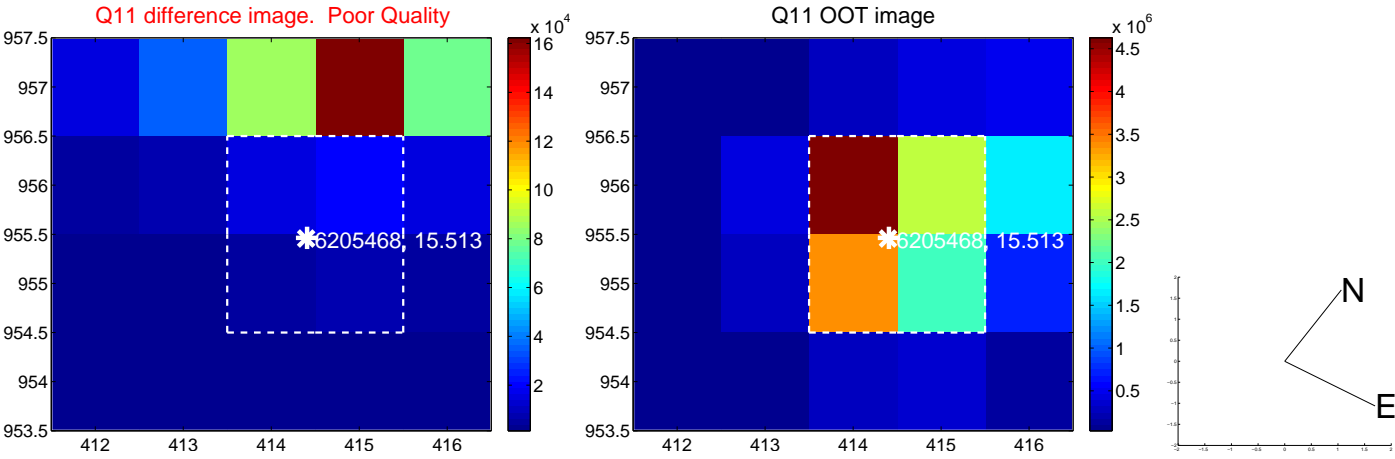
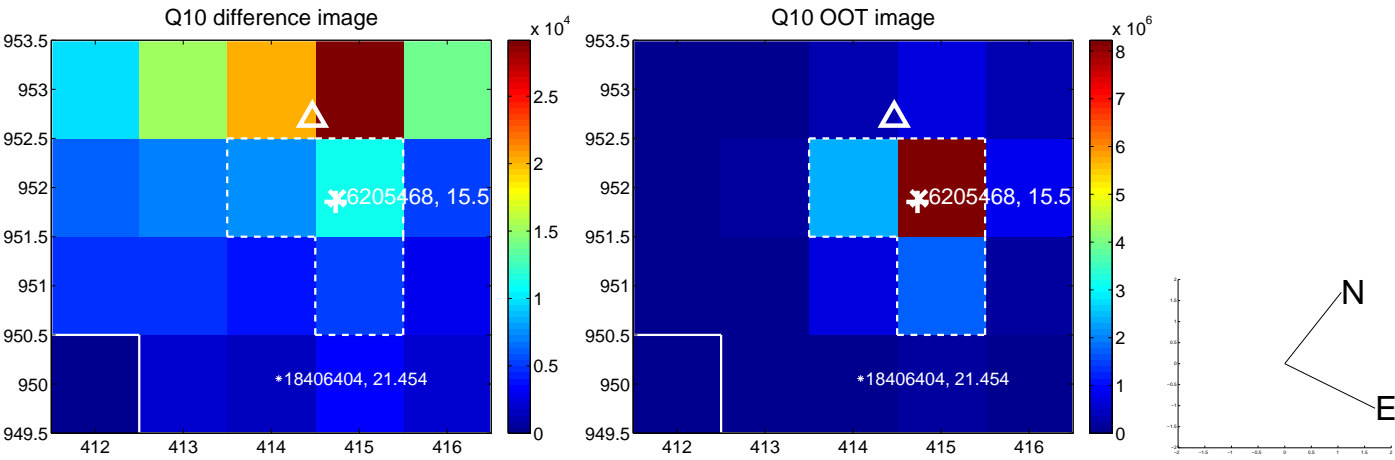
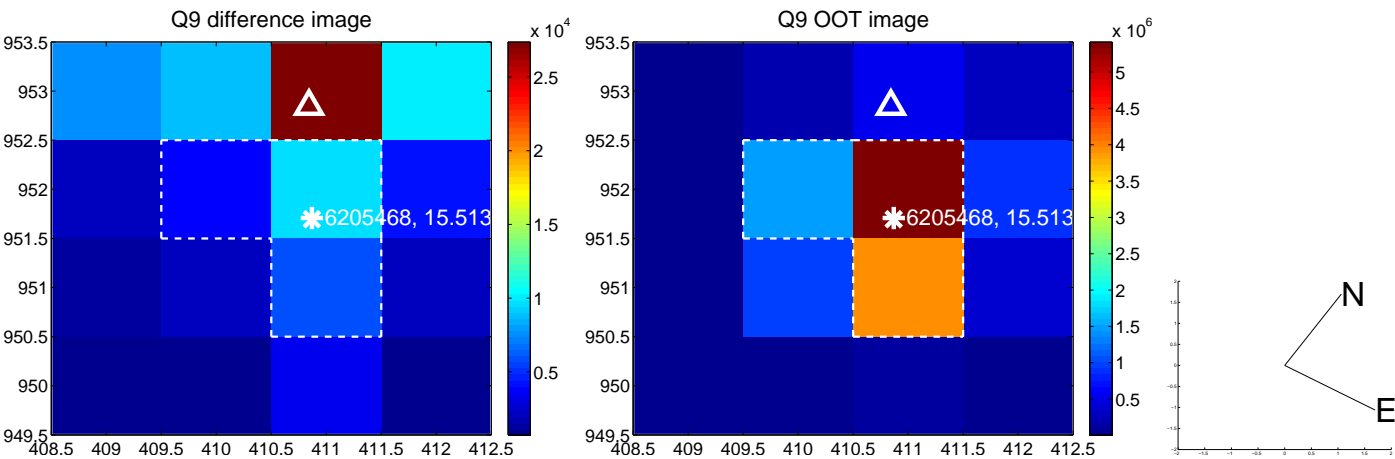
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



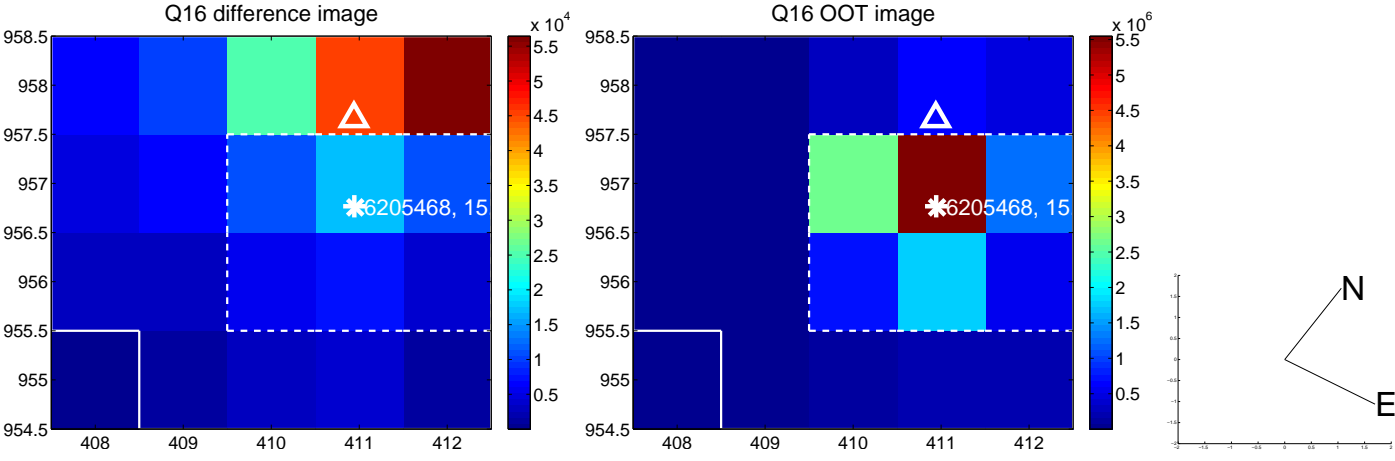
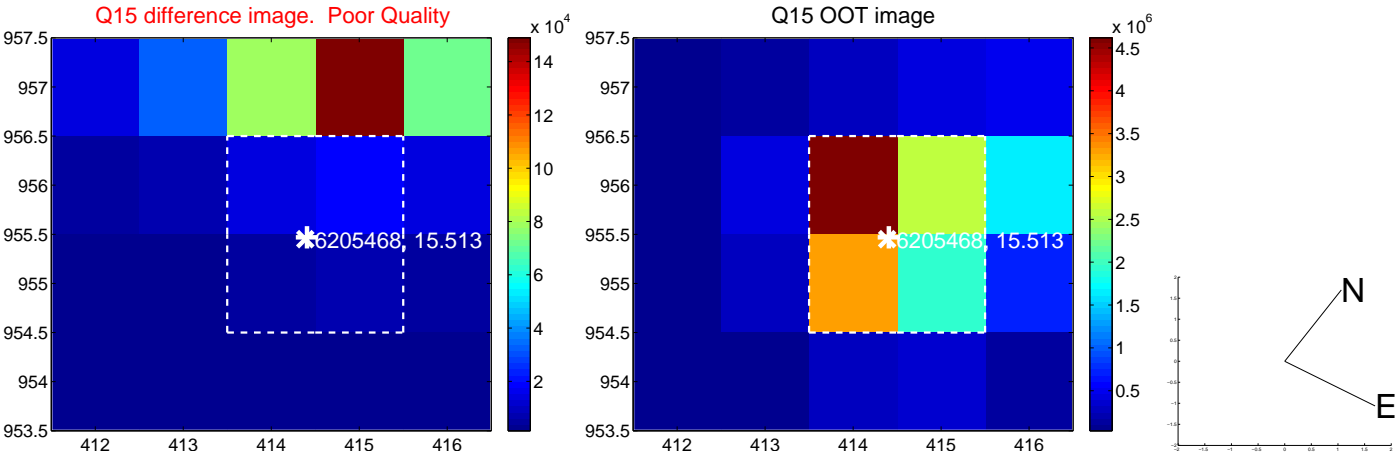
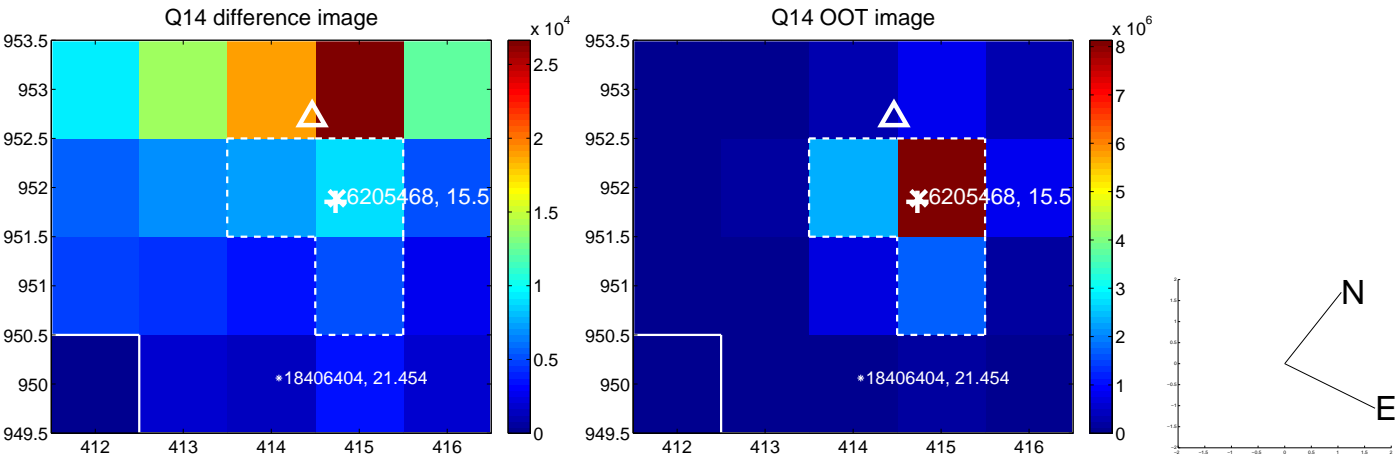
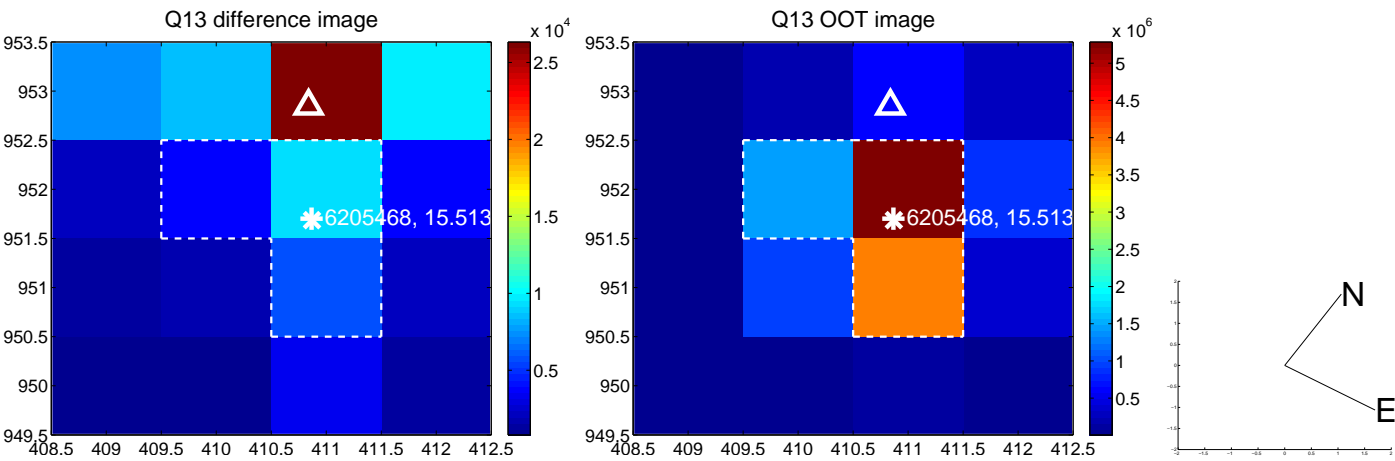
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



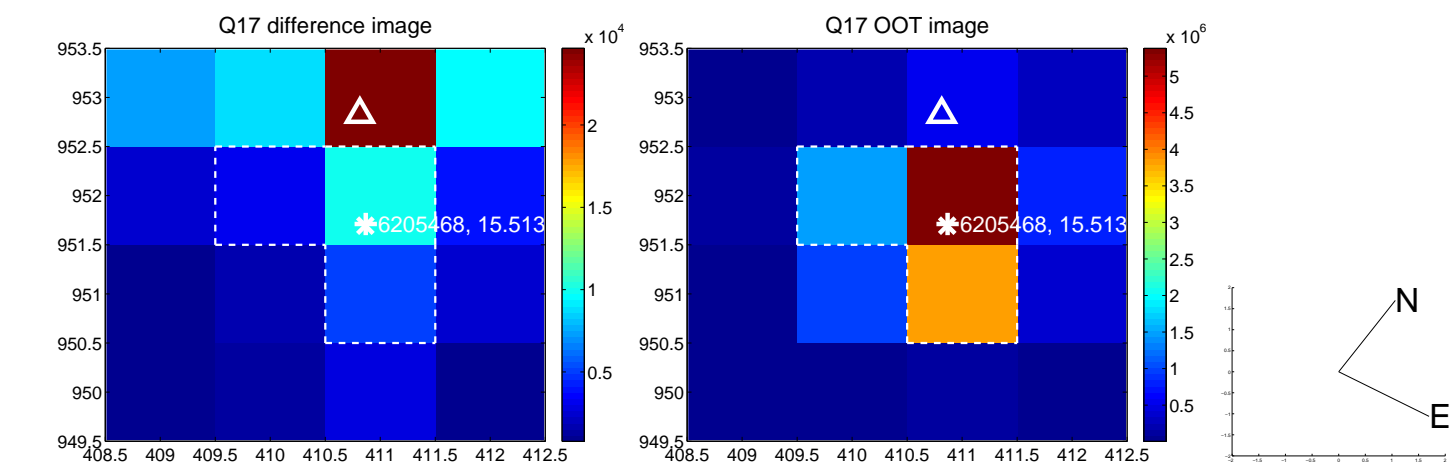
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



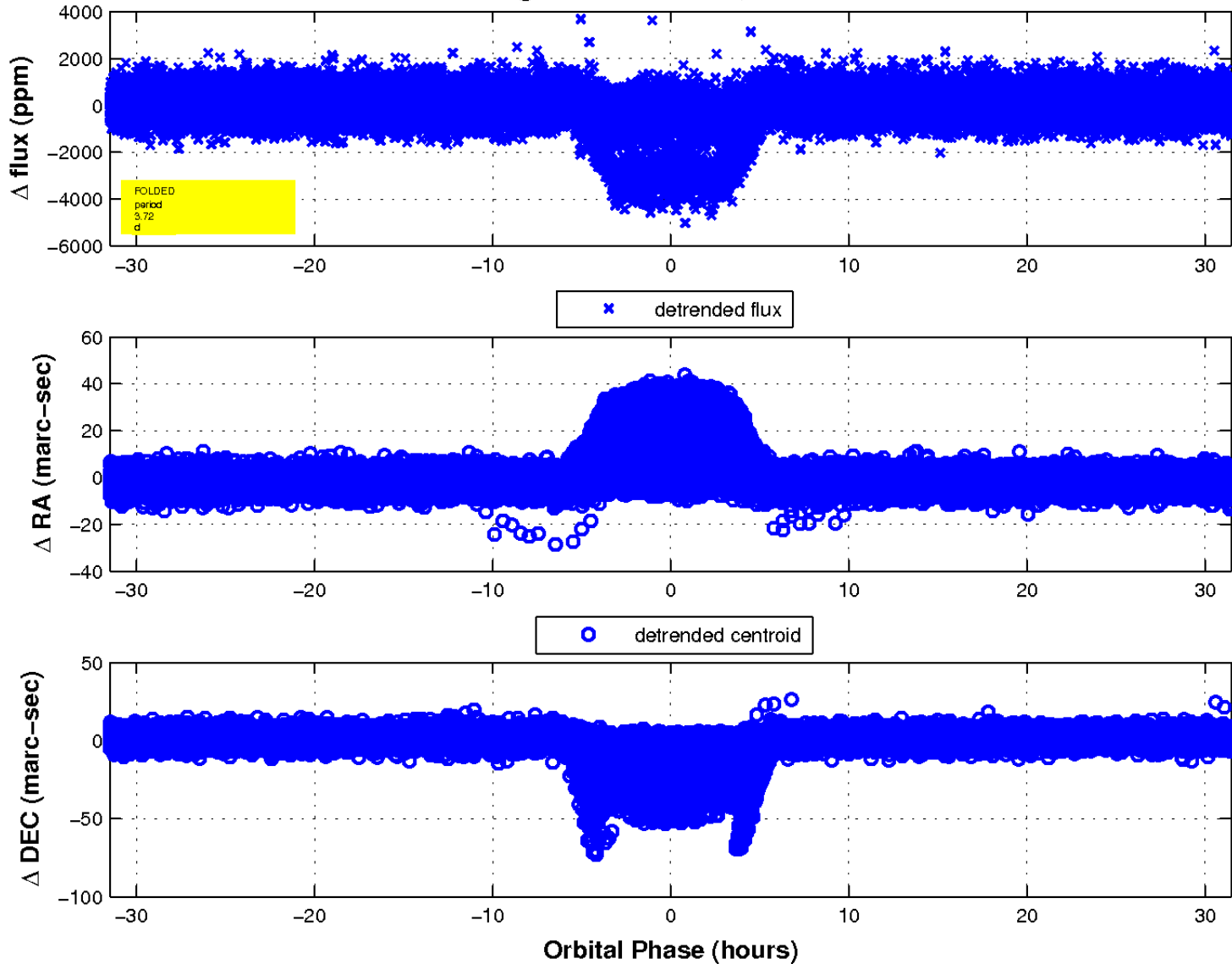
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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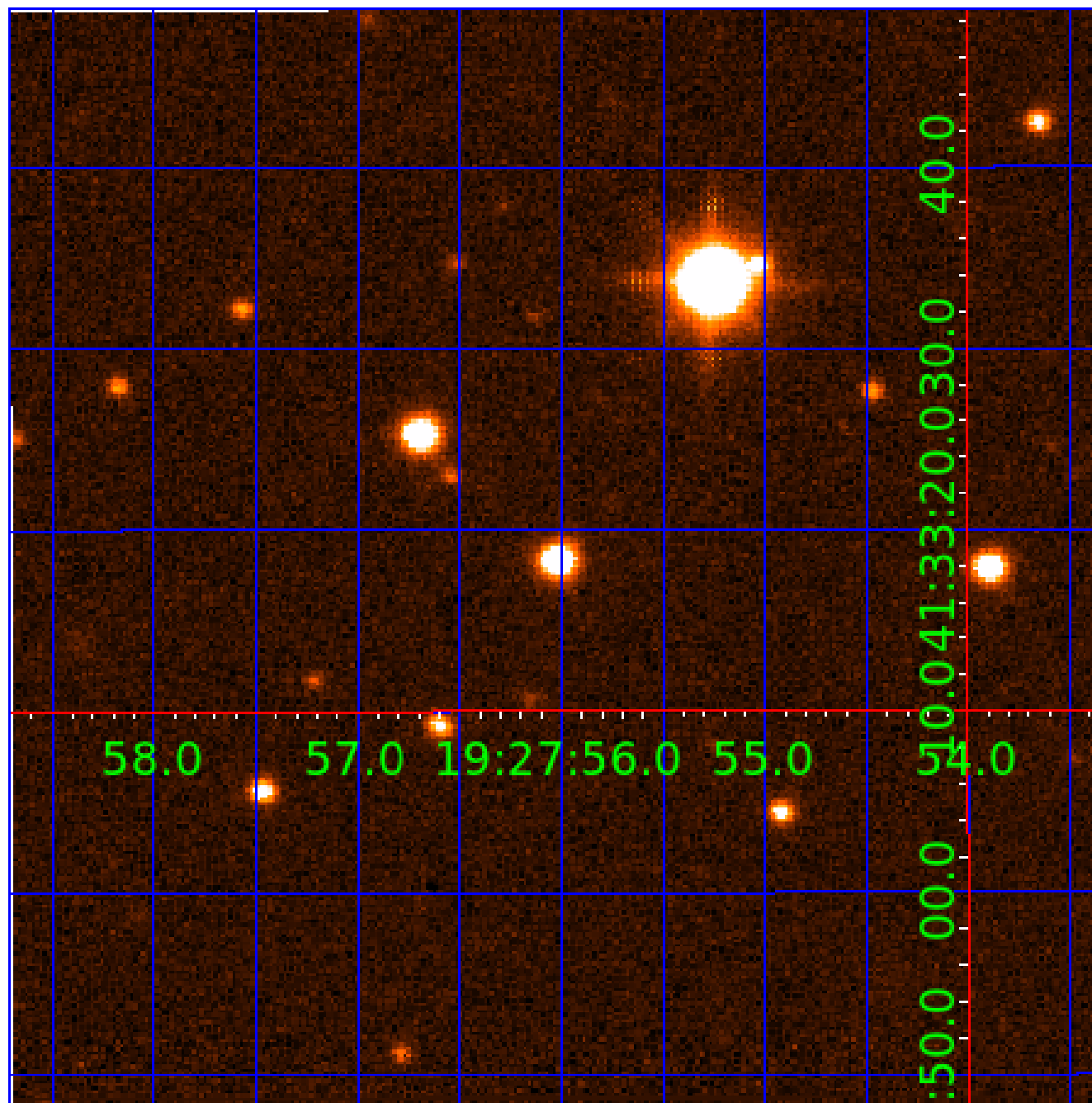


fluxWeightedCentroids, Planet 1 of 2



UKIRT Image

Declination



KIC 006205468

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})
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006205468-02	OBS	No	640.068039	286.713387	760.2	7.818	8.9	6.8	0.86	5873	2.64	0.39

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
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006205468-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_SKYE—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT— INCONSISTENT_TRANS—CENT_FEW_DIFFS

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

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

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

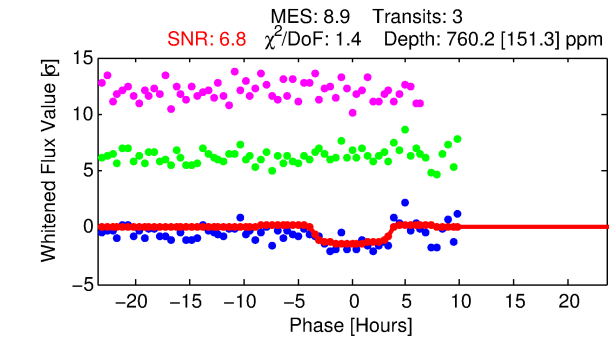
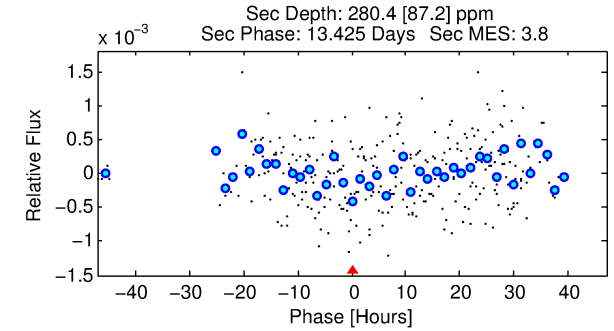
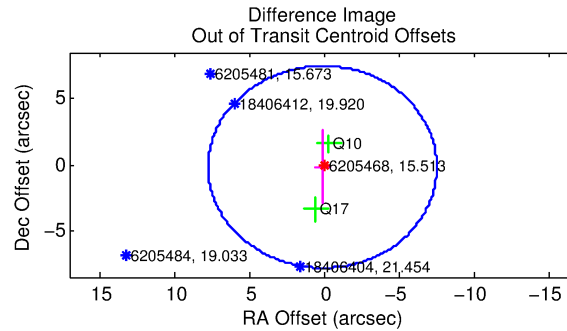
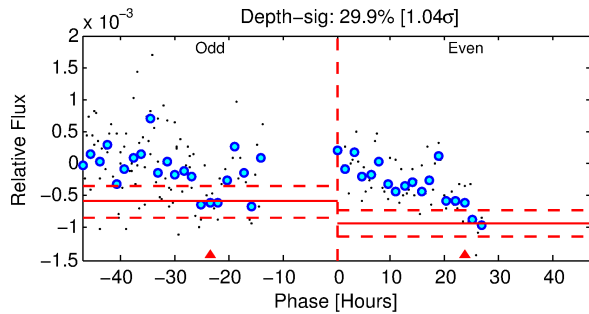
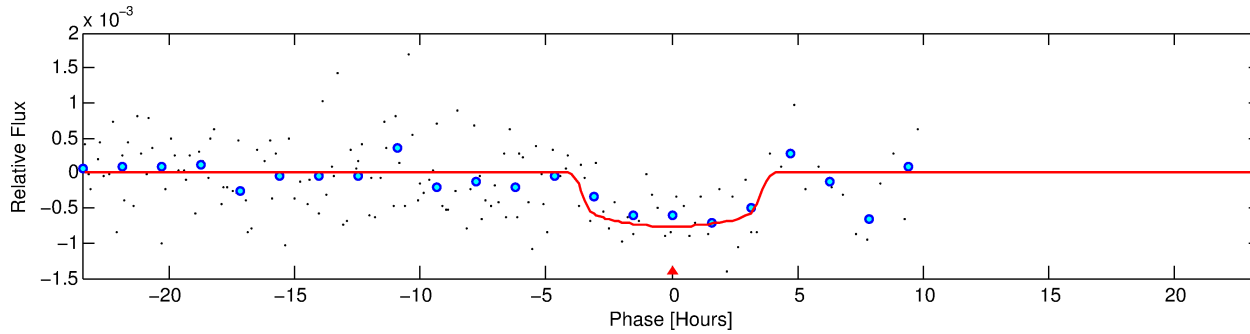
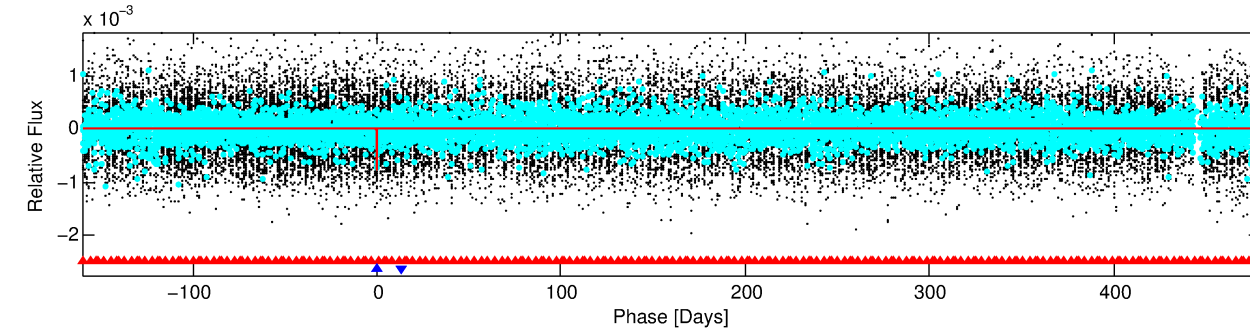
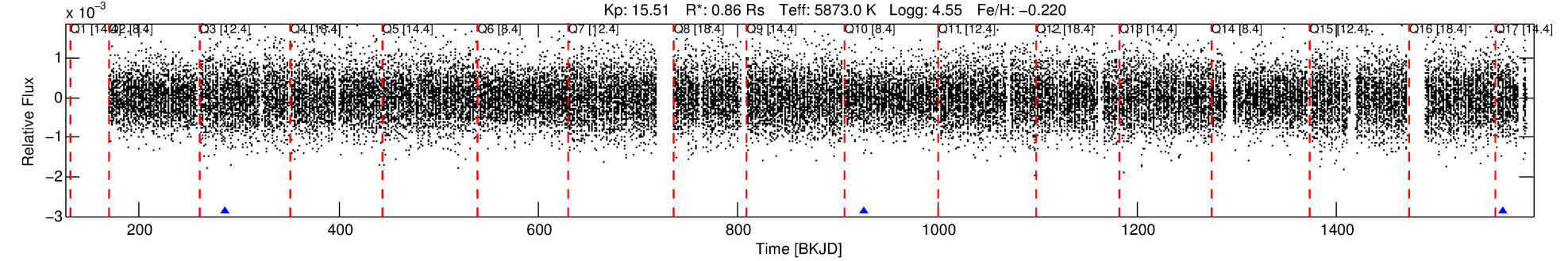
Ephemeris Match Information For 006205468-02

No Significant Match Found

DV One-Page Summary

KIC: 6205468 Candidate: 2 of 2 Period: 640.068 d
KOI: K01037 Corr: No Ephemeris Match

Kp: 15.51 R*: 0.86 Rs Teff: 5873.0 K Logg: 4.55 Fe/H: -0.220



DV Fit Results:

Period = 640.06804 [0.02145] d
Epoch = 286.7134 [0.0363] BKJD
Rp/R* = 0.0281 [0.0130]
a/R* = 400.31 [831.04]
b = 0.80 [0.93]
Seff = 0.39 [0.12]
Teq = 201 [16] K
Rp = 2.64 [1.37] Re
a = 1.4328 [0.2871] AU
Ag = 45356.16 [46201.22] [0.98σ]
Teffp = 4537 [1115] K [3.89σ]

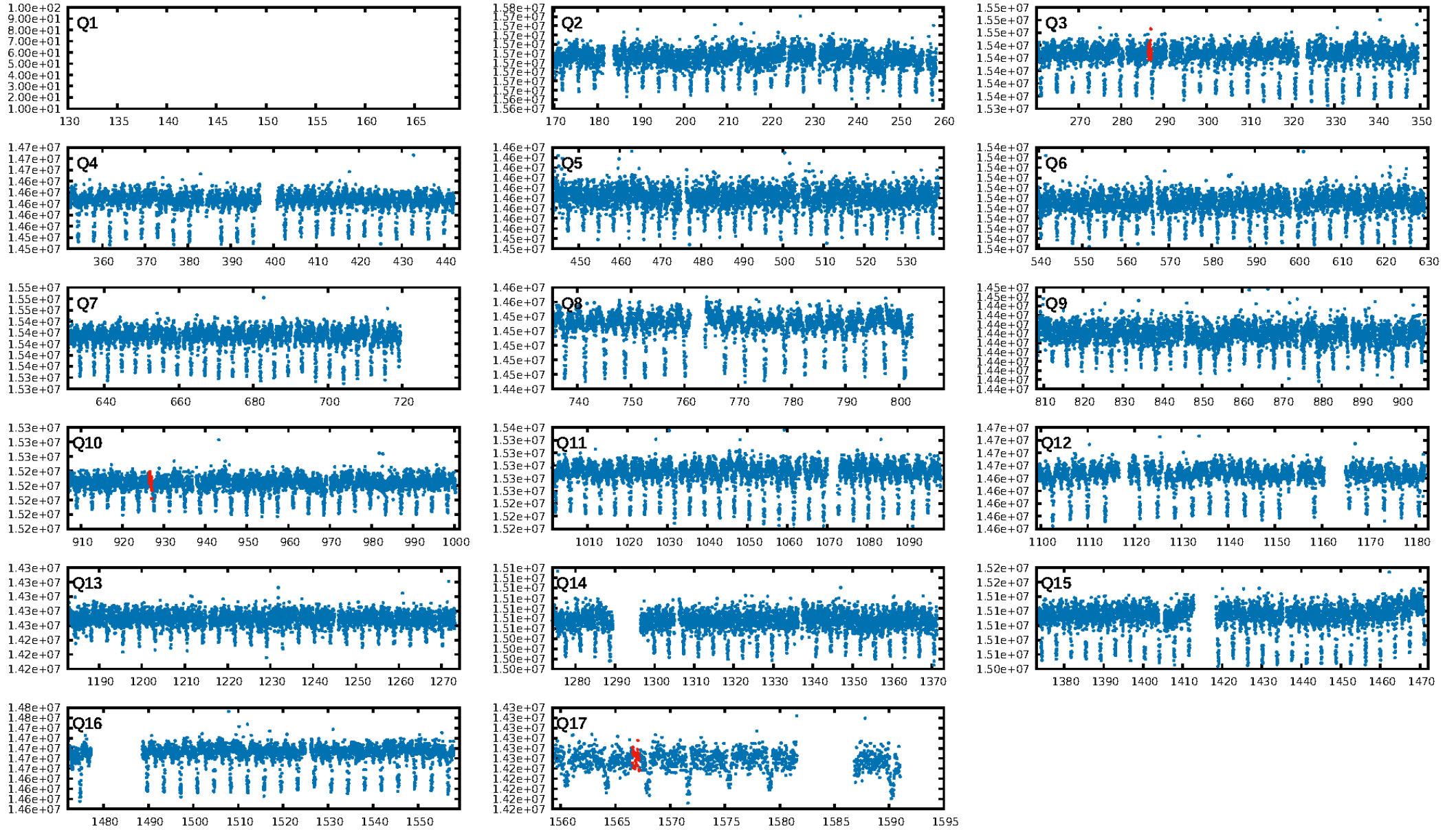
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [1167.21σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 8.7%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.47e-22
RollingBand-fgt: 1.00 [2/2]
GhostDiagnostic-chr: 1.825
Centroid-sig: N/A
Centroid-so: 0.112 arcsec [0.04σ]
OotOffset-rm: 0.197 arcsec [0.08σ]
KicOffset-rm: 0.239 arcsec [0.09σ]
OotOffset-st: 1/0/0/1 [2]
KicOffset-st: 1/0/0/1 [2]
DiffImageQuality-fgm: 0.00 [0/2]
DiffImageOverlap-fno: 0.33 [1/3]

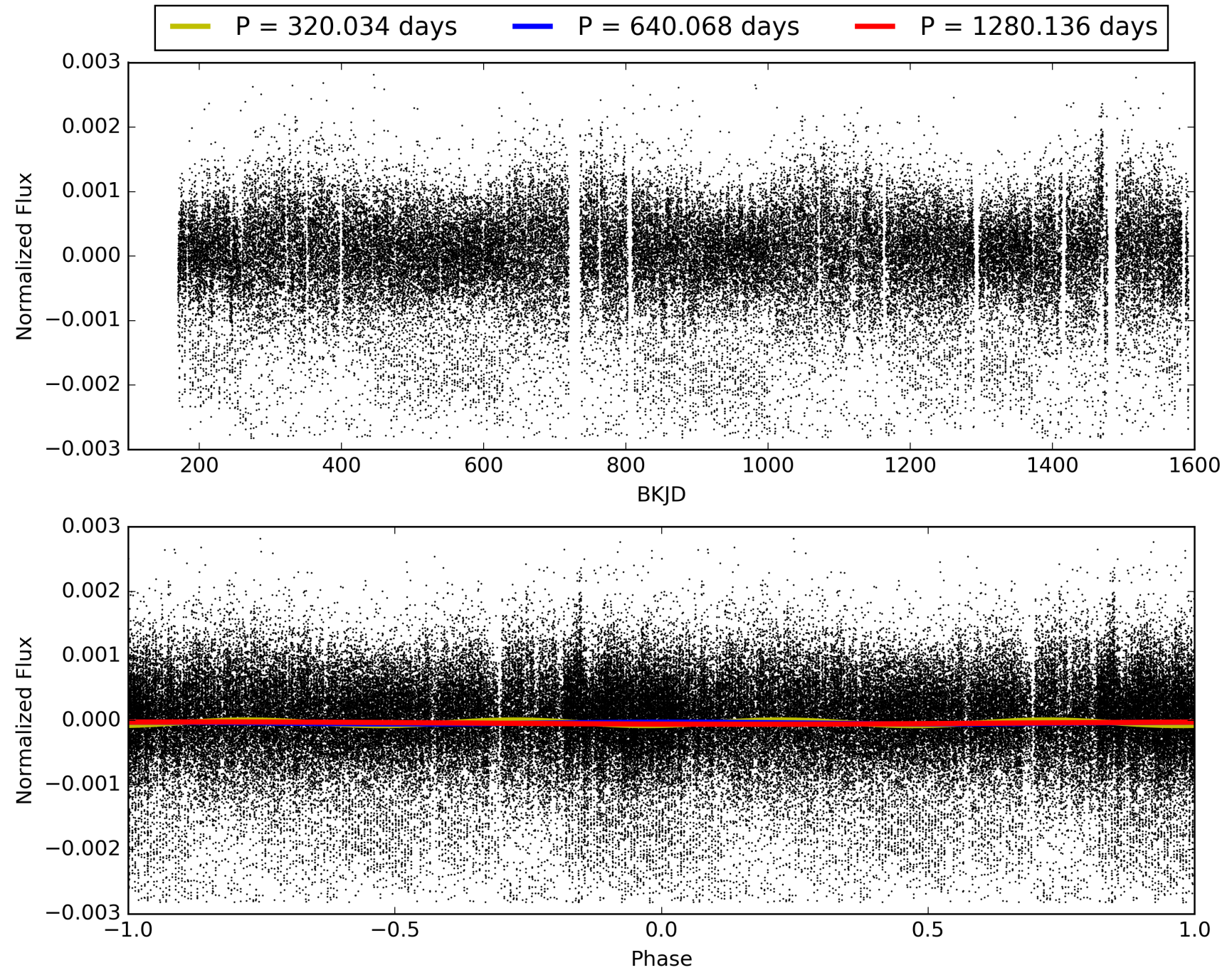
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 09:42:09 Z

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TCE 006205468-02, PDC Light Curves

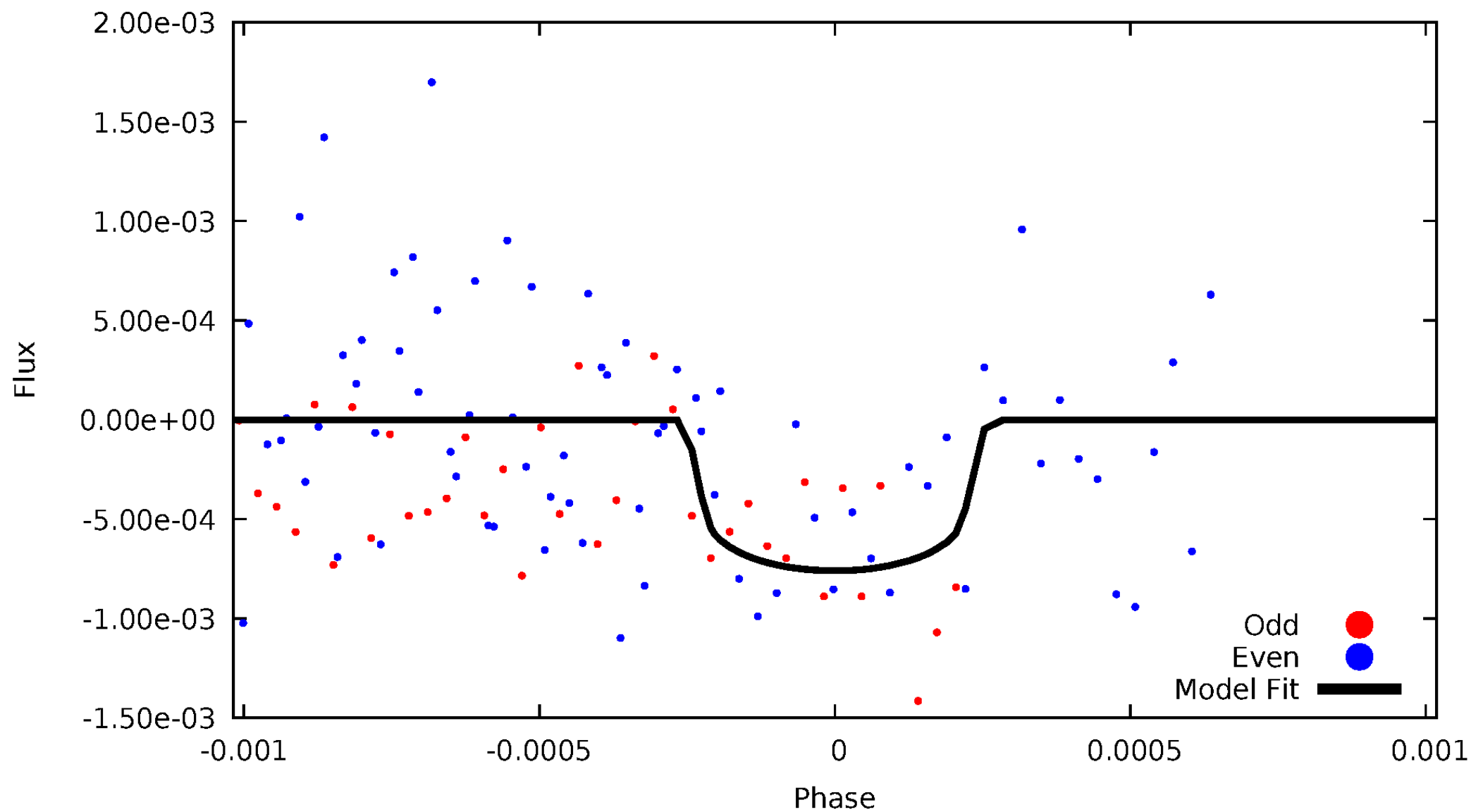


TCE 006205468-02



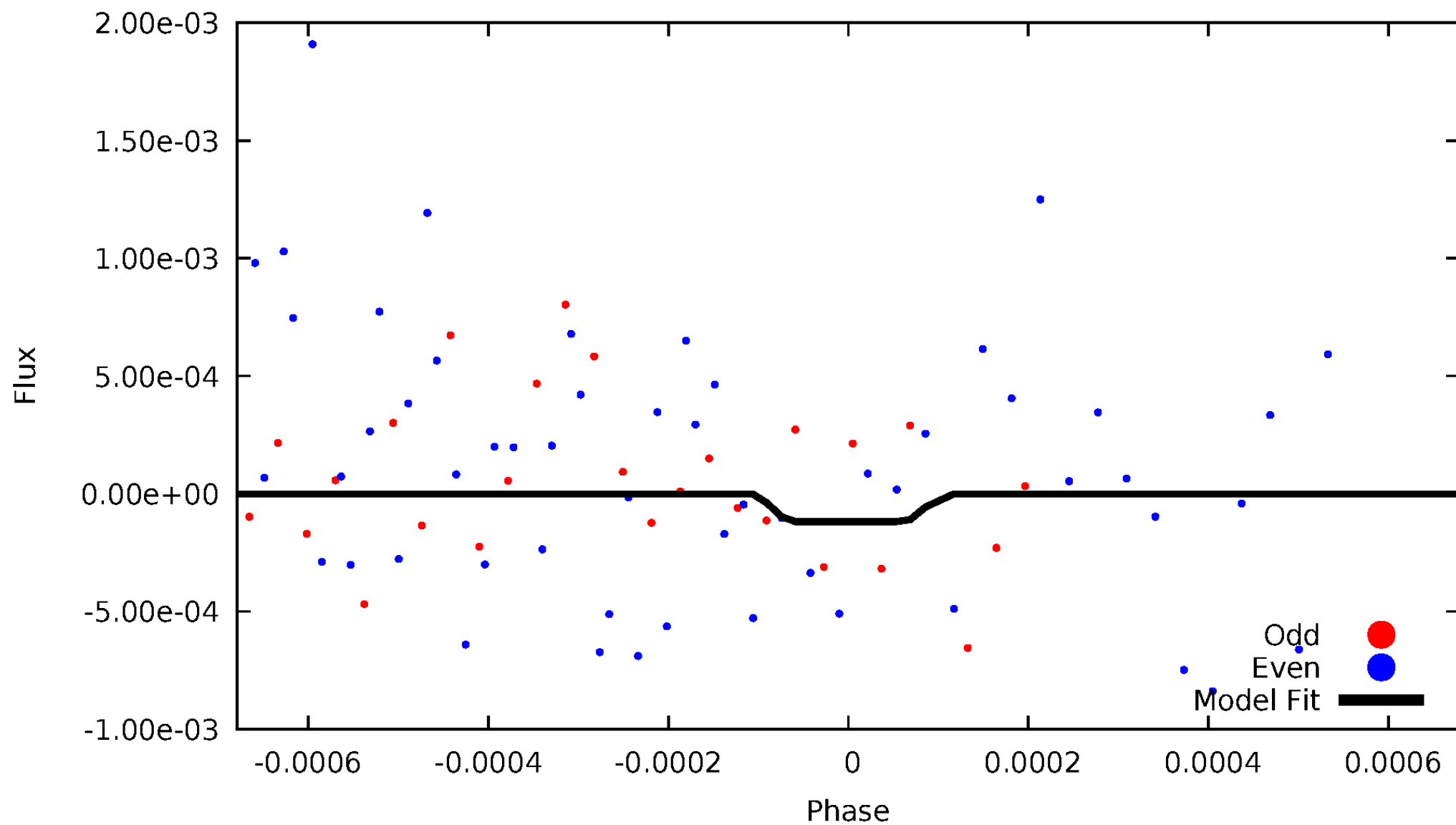
DV Odd/Even

TCE 006205468-02



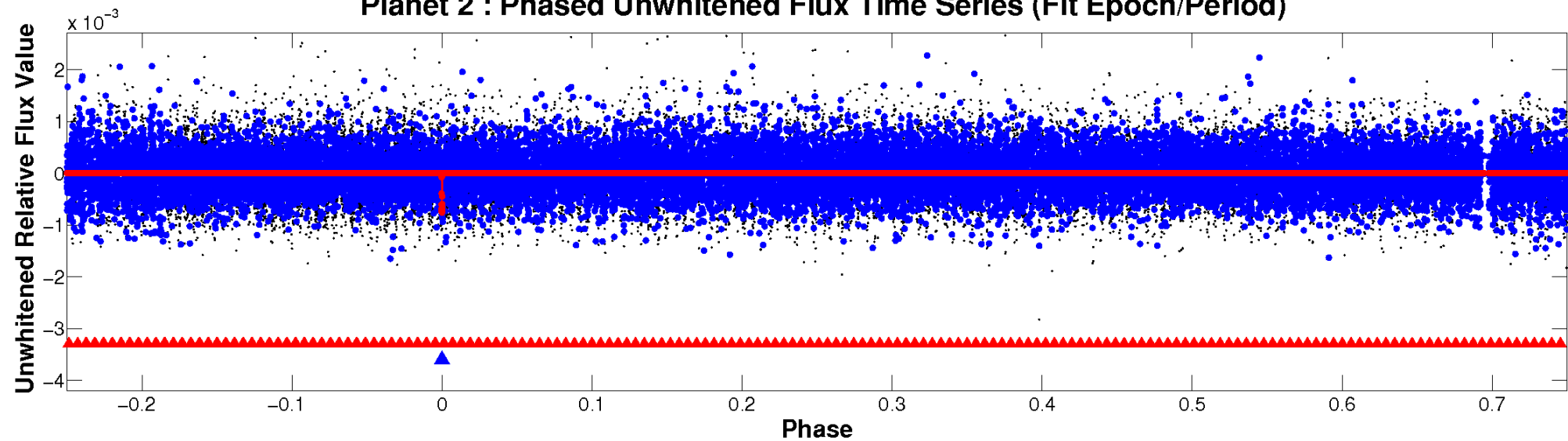
ALT Odd/Even

TCE 006205468-02

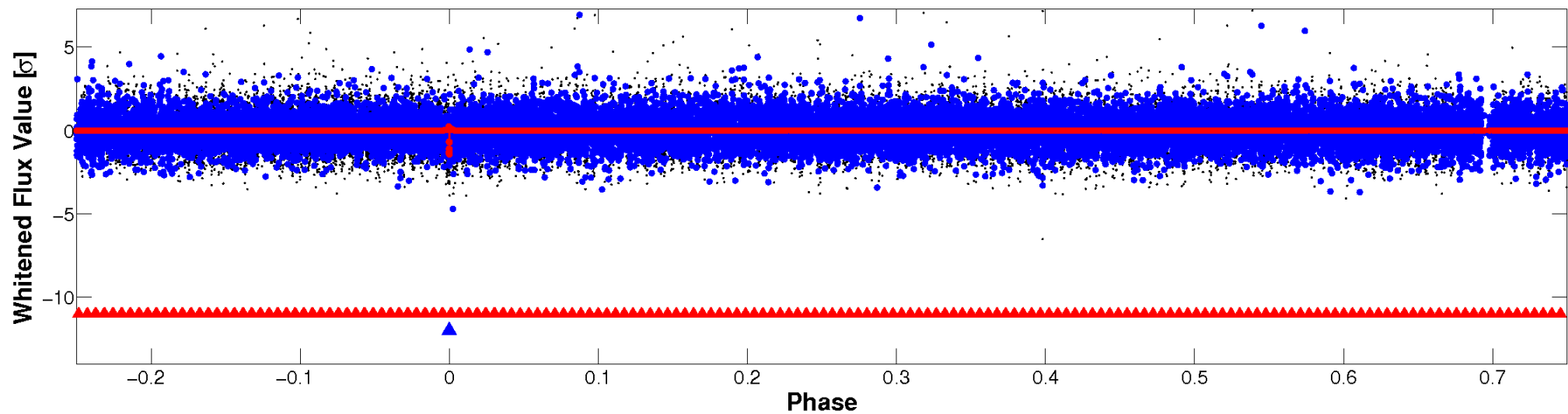


Non-Whitened Vs. Whitened Light Curve

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

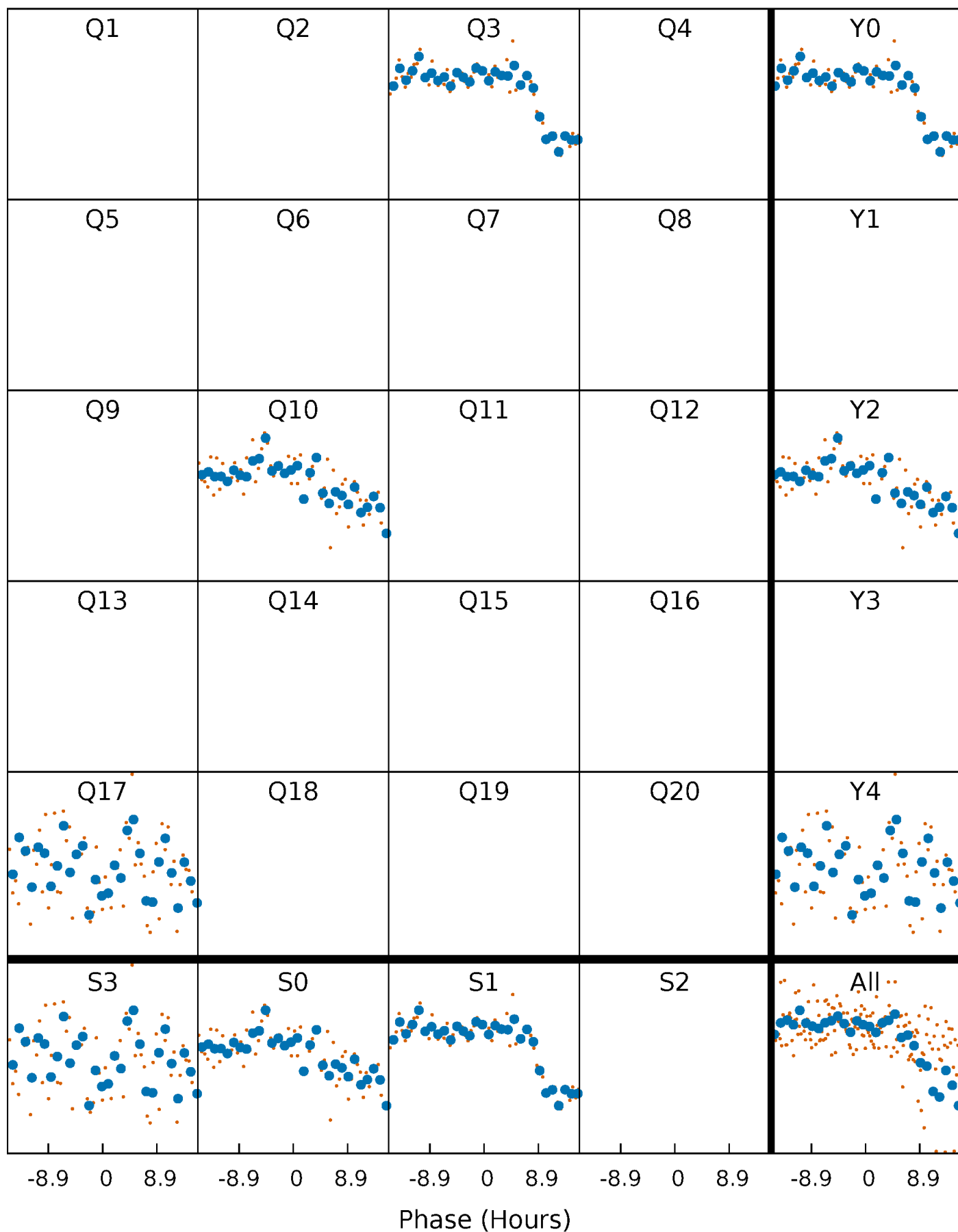


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



PDC Quarter-Phased Transit Curves

TCE 006205468-02 $P=640.068039$ Days $T_0=286.713387$ (BKJD)



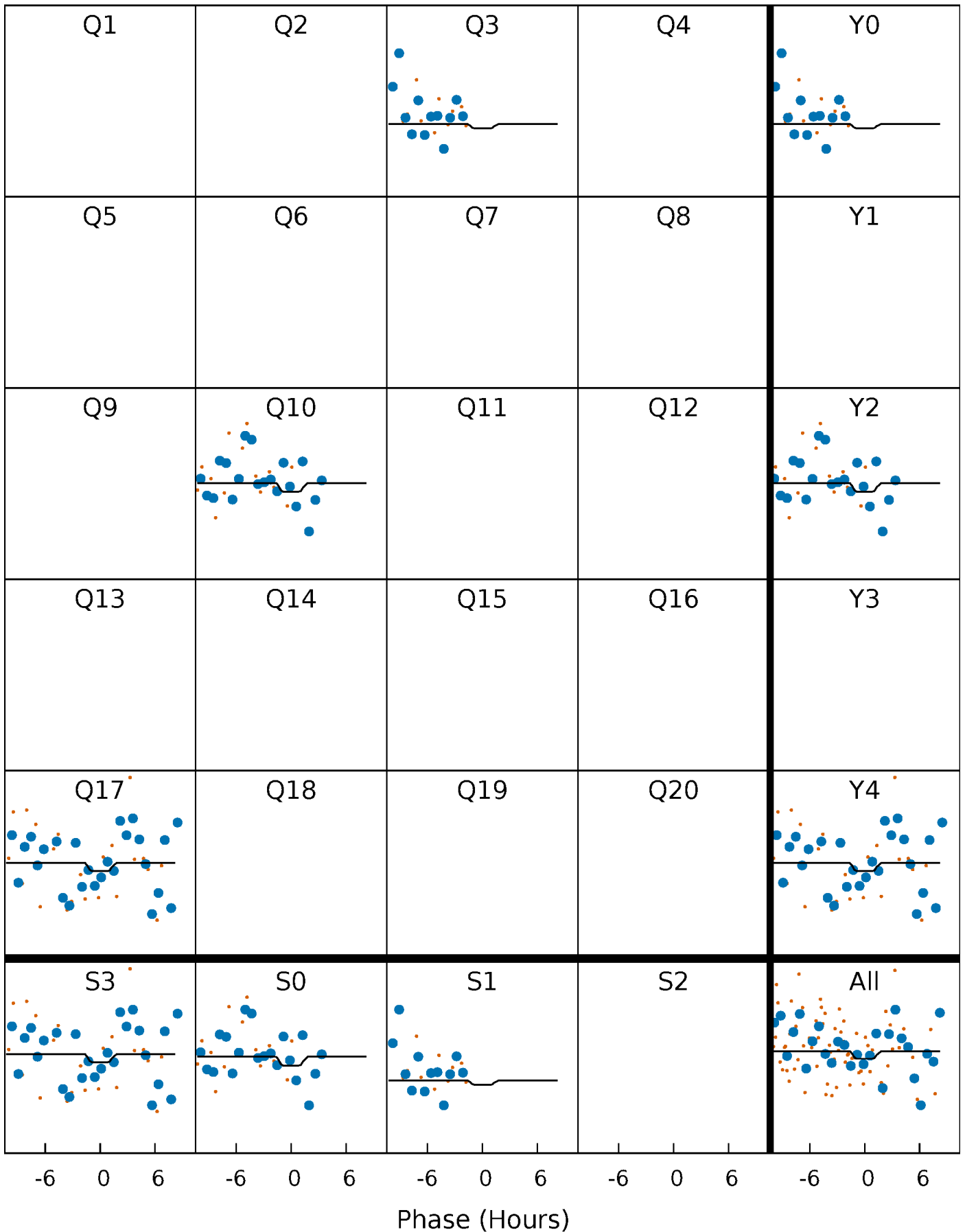
DV Quarter-Phased Transit Curves

TCE 006205468-02 P=640.068039 Days $T_0=286.713387$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

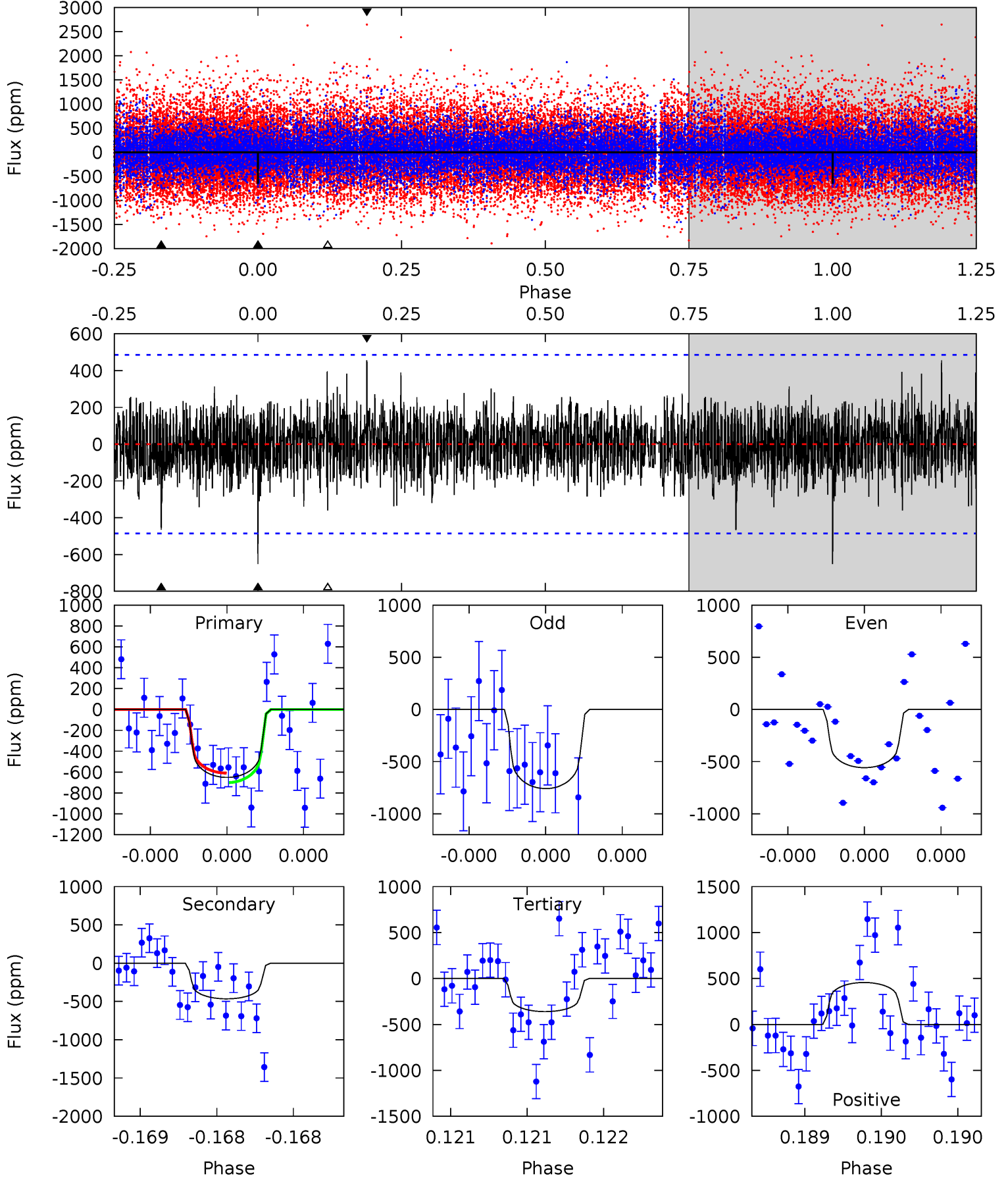
TCE 006205468-02 P=640.128945 Days $T_0=286.657783$ (BKJD)



DV Model-Shift Uniqueness Test

006205468-02, P = 640.068039 Days, E = 286.713387 Days

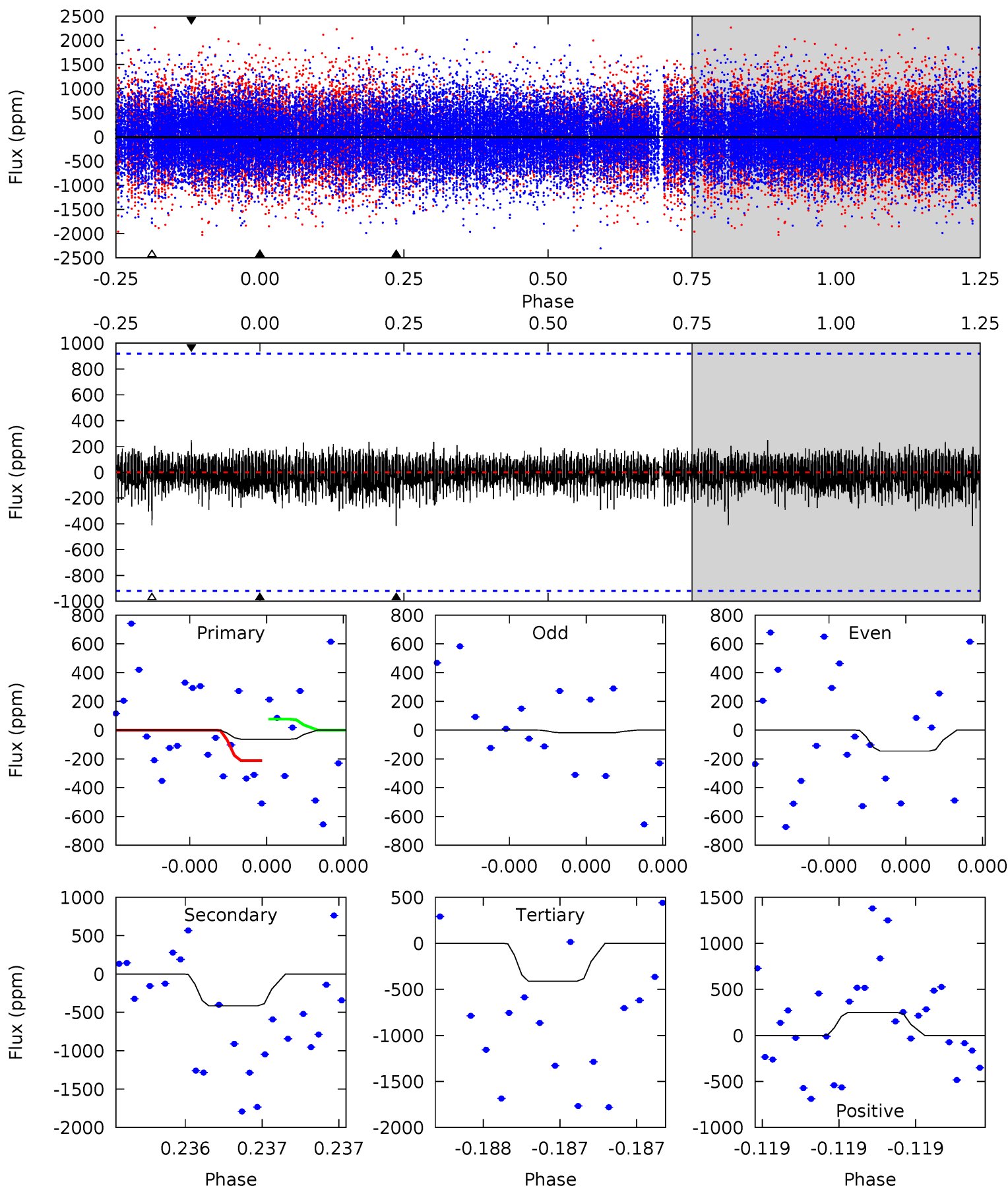
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.47	5.35	4.13	5.24	5.57	3.48	1.12	3.34	2.24	1.21	0.11	1.14	0.99	0.41	0.52



Alt Model-Shift Uniqueness Test

006205468-02, P = 640.128945 Days, E = 286.657783 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0.40	2.60	2.57	1.56	5.75	3.75	0.47	-2.18	-1.17	0.03	1.04	0.40	1.00	0.38	0.42



Stellar Parameters For KIC 006205468

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5873^{+141}_{-177}	$4.547^{+0.040}_{-0.160}$	$-0.220^{+0.300}_{-0.300}$	$0.863^{+0.205}_{-0.068}$	$0.954^{+0.110}_{-0.110}$	$2.094^{+0.444}_{-0.966}$
	+2%/-3%	+1%/-4%	+136%/-136%	+24%/-8%	+12%/-12%	+21%/-46%
Source	PHO1	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 006205468-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-466 ± 87	$2.77^{+1.25}_{-1.26}$	285^{+17}_{-12}	5180^{+1605}_{-761}	$68035^{+147155}_{-37007}$
Alt.	-415 ± 160	$1.29^{+1.14}_{-0.79}$	285^{+16}_{-11}	7169^{+7676}_{-2017}	$248630^{+1591271}_{-181770}$

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

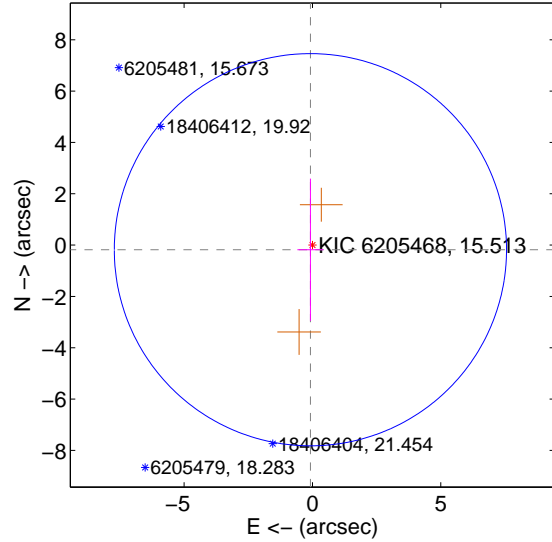
Supplemental centroid analysis for 006205468-02. Kepler magnitude: 15.51. Transit SNR 6.82

There are 0 quarters with good PRF difference image offsets

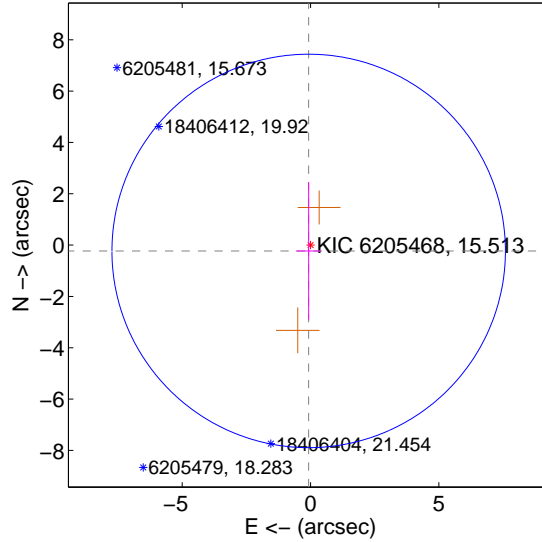
The direct PRF centroid is offset from the target star catalog position by about 0.07 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.197 ± 2.547	0.08	0.079 ± 0.510	-0.180 ± 2.772
PRF-fit source offset from KIC position	0.239 ± 2.555	0.09	0.072 ± 0.491	-0.228 ± 2.675
photometric centroid source offset	0.11 ± 2.58	0.04	-0.00 ± 2.41	-0.11 ± 2.58

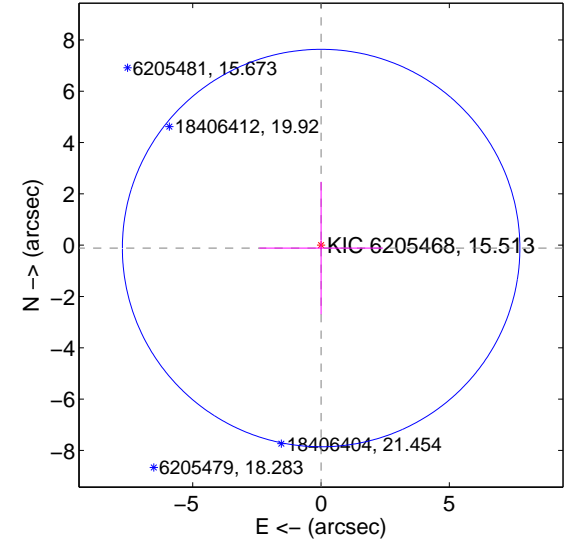
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

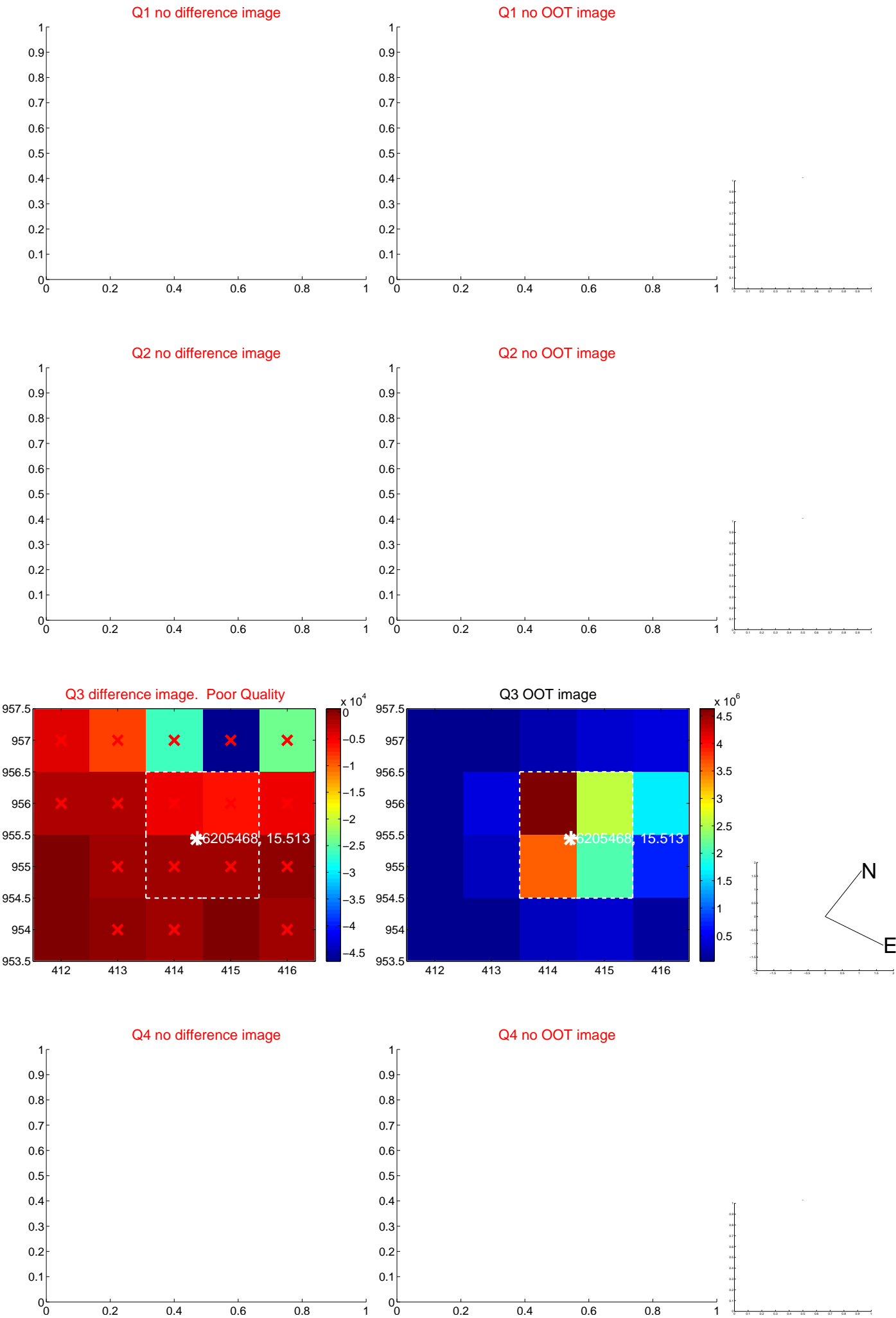


offset from photometric centroids



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.

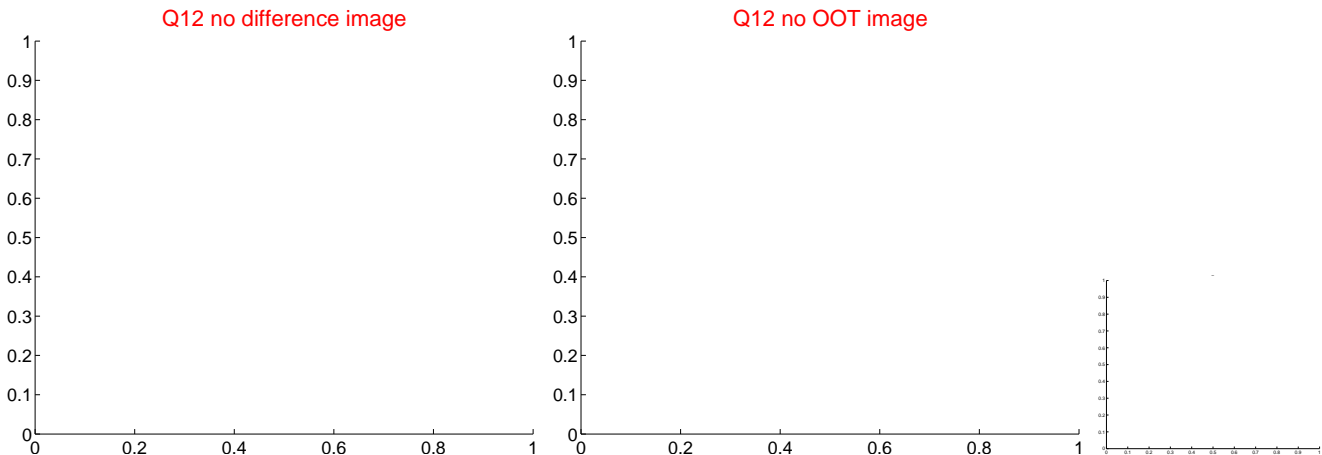
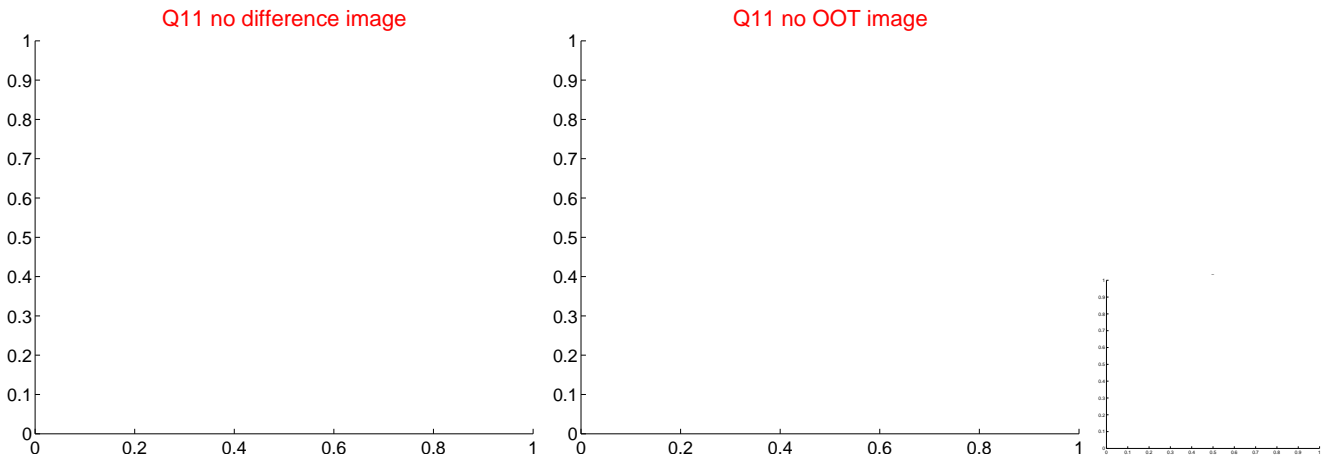
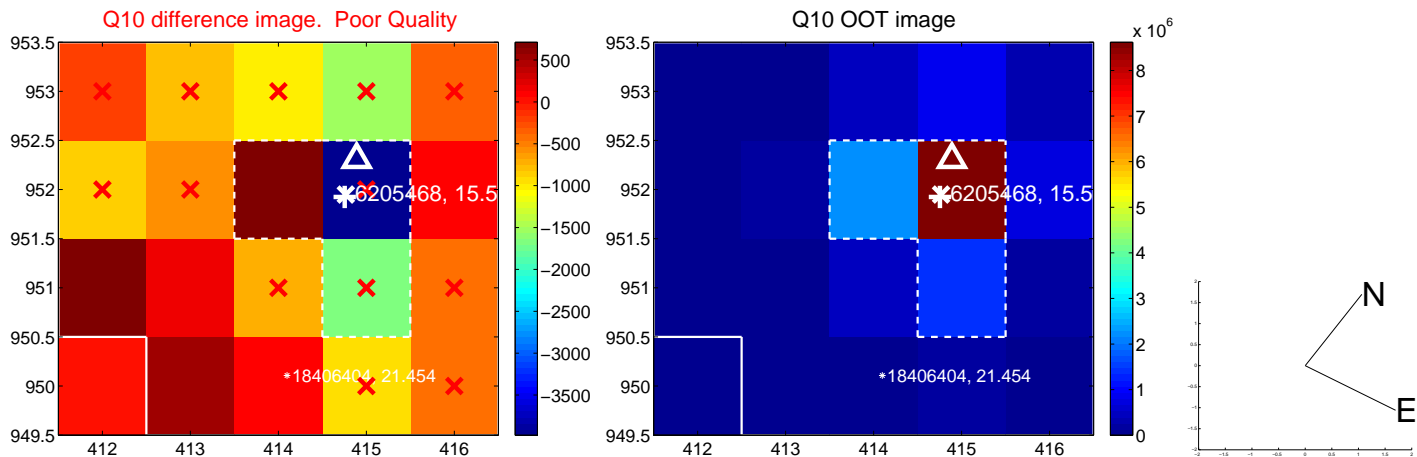
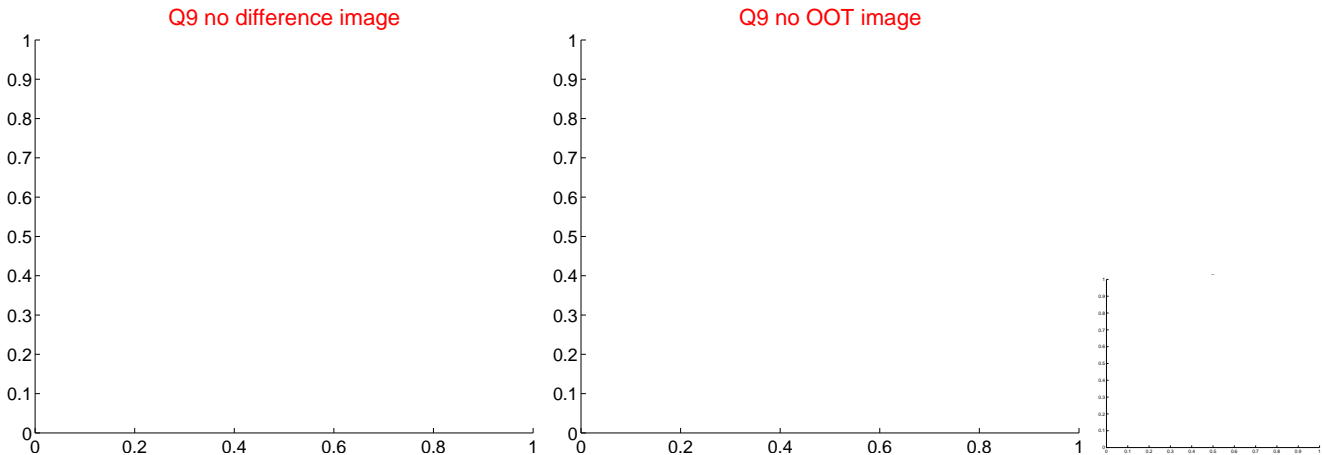
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



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



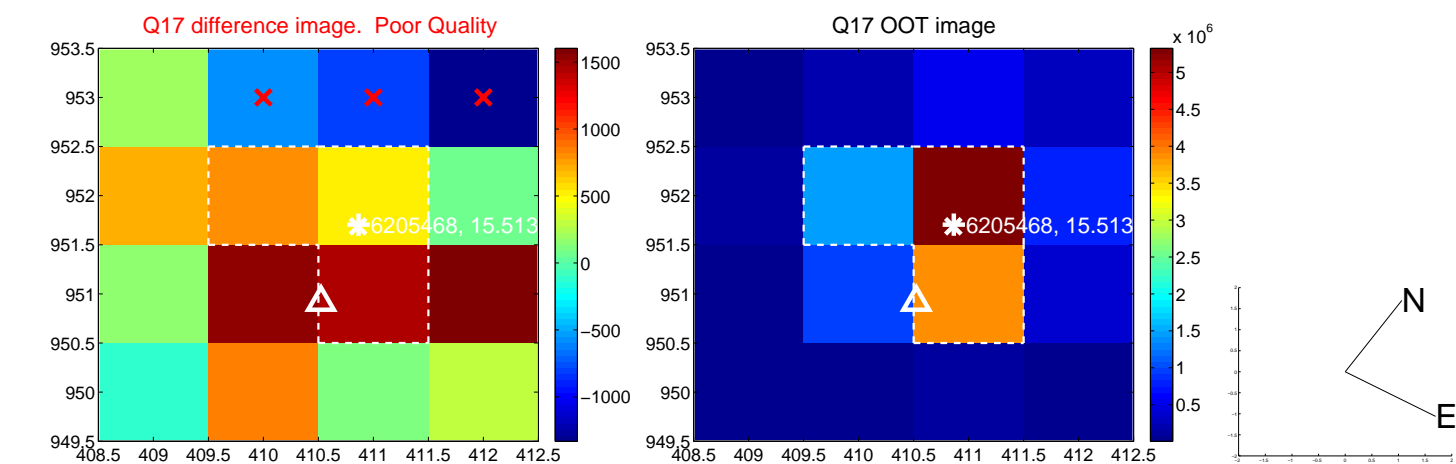
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



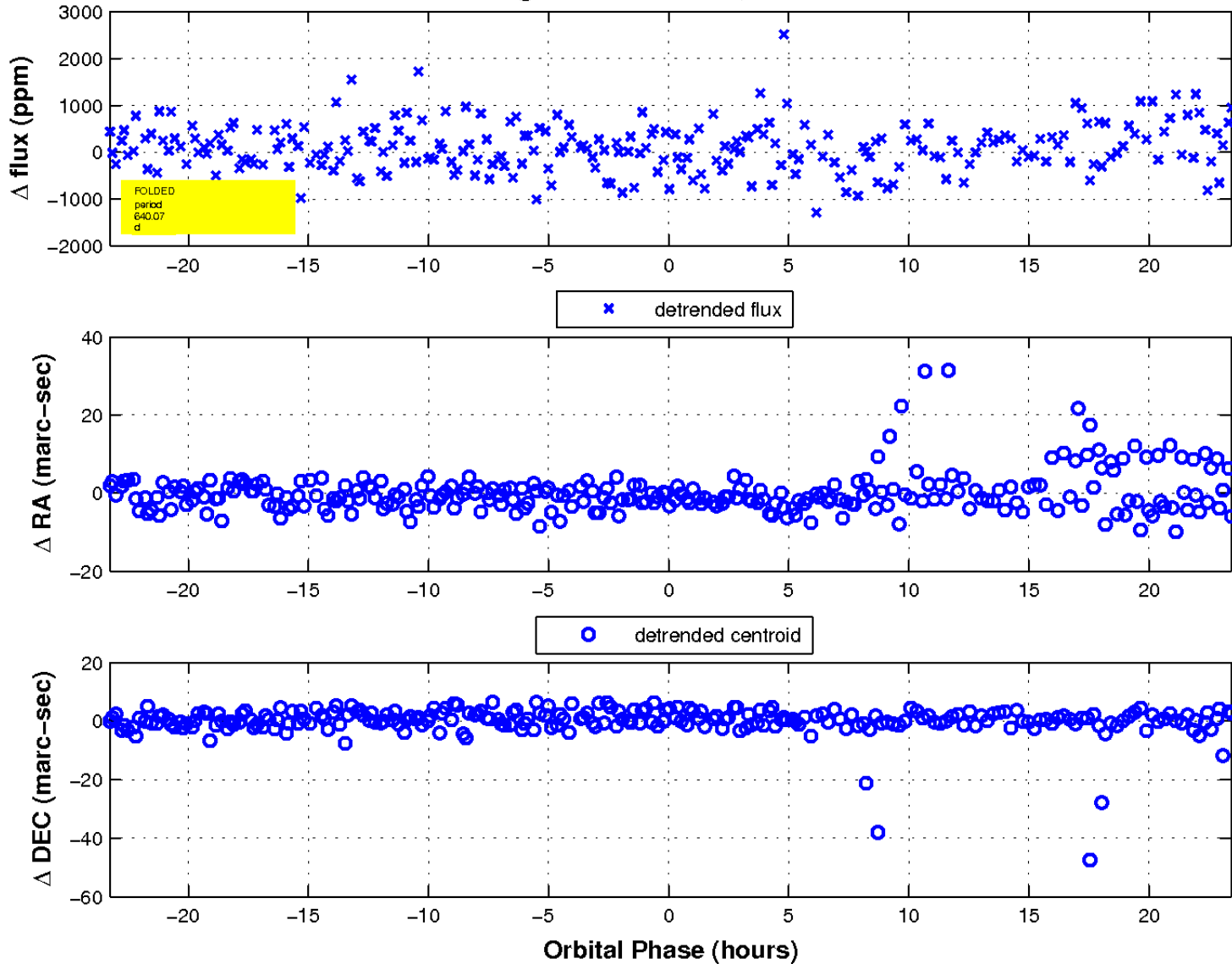
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 2 of 2



UKIRT Image

Declination

