

KIC 007384460

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})
007384460-01	OBS	No	0.903573	132.049411	9.8	4.146	7.6	6.1	2.11	4805	0.81	6587.33
007384460-03	OBS	No	128.247834	239.747561	128.7	15.000	11.1	-1.0	2.11	4805	2.30	8.90
007384460-04	OBS	No	192.619420	162.757944	165.5	12.886	10.0	4.5	2.11	4805	2.98	5.17
007384460-05	OBS	No	115.117648	184.498028	128.8	11.484	8.0	4.5	2.11	4805	2.58	10.28

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007384460-01	OBS	FP	0.00	1	0	0	0	LPP_DV—CENT_KIC_POS
007384460-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_NOFITS
007384460-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_KIC_POS
007384460-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—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.

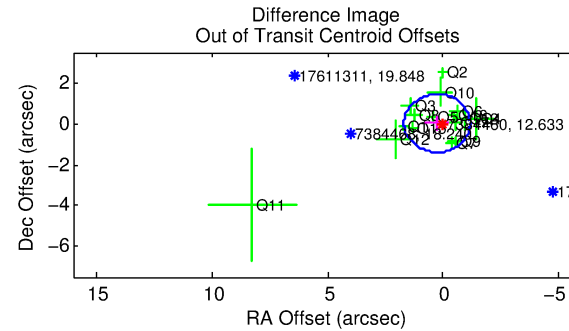
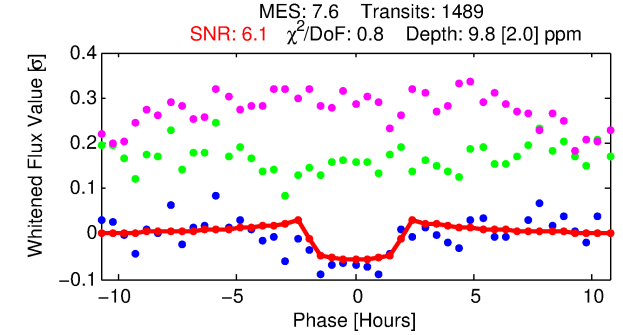
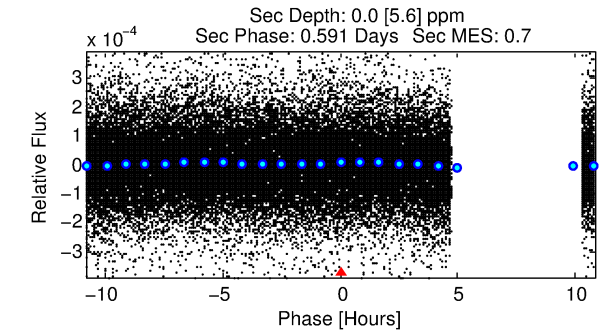
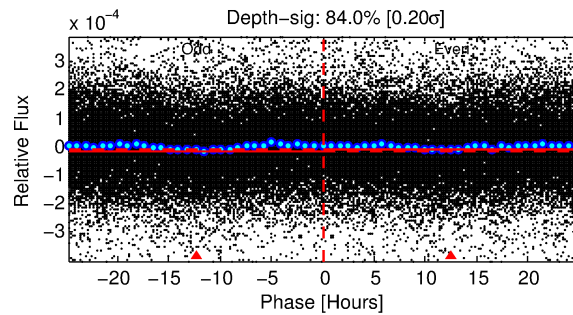
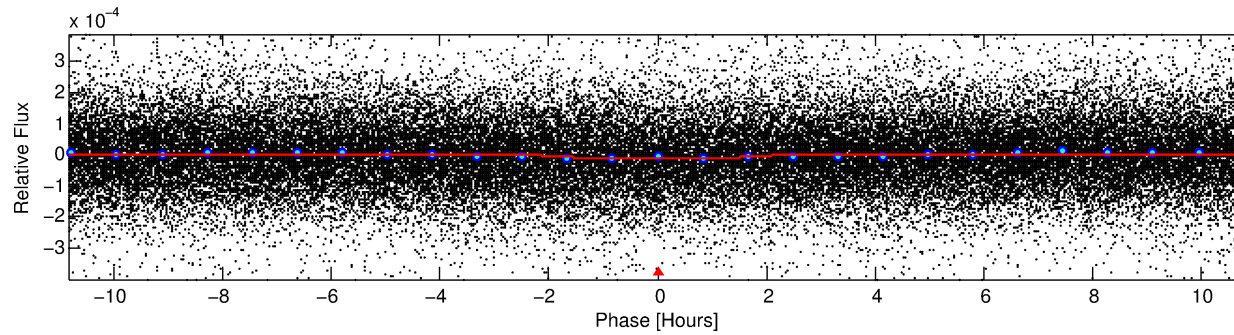
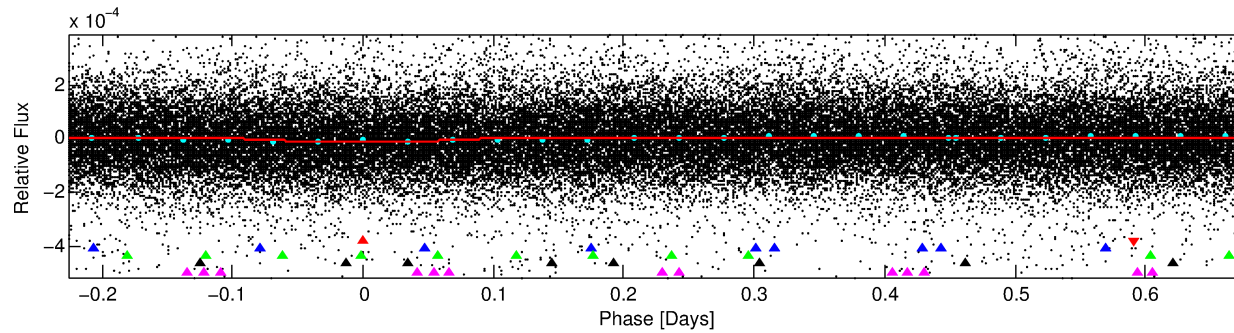
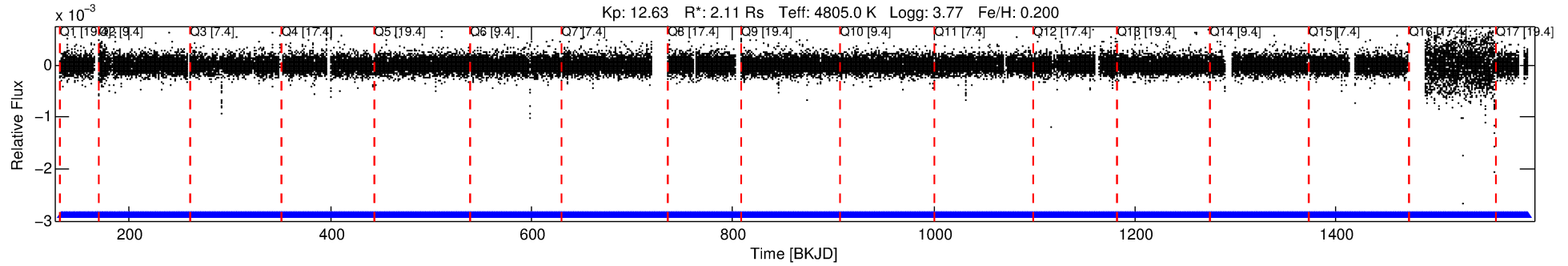
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007384460-01

No Significant Match Found

DV One-Page Summary

KIC: 7384460 Candidate: 1 of 5 Period: 0.904 d



DV Fit Results:

Period = 0.90357 [0.00002] d
Epoch = 132.0494 [0.0057] BKJD
Rp/R* = 0.0035 [0.0018]
a/R* = 1.19 [0.71]
b = 0.90 [0.43]
Seff = 6587.33 [9230.11]
Teq = 2297 [805] K
Rp = 0.81 [0.68] Re
a = 0.0180 [0.0144] AU
Ag = 0.01 [1.51] [-0.66 σ]
Teffp = 1000 [60077] K [-0.02 σ]

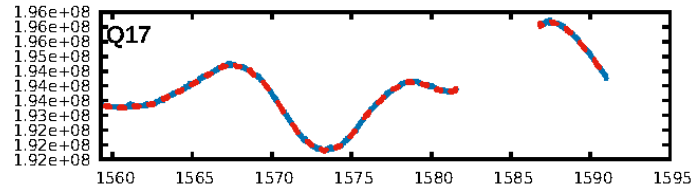
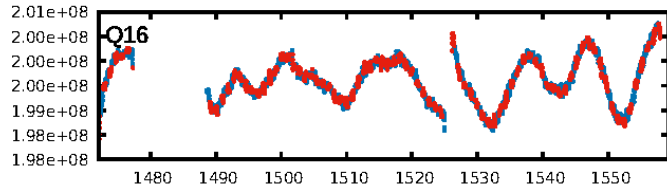
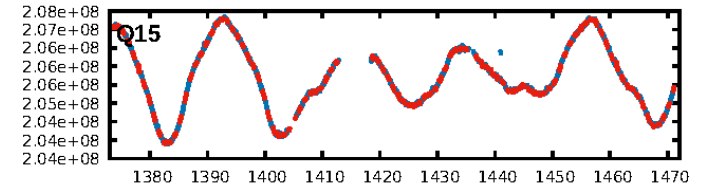
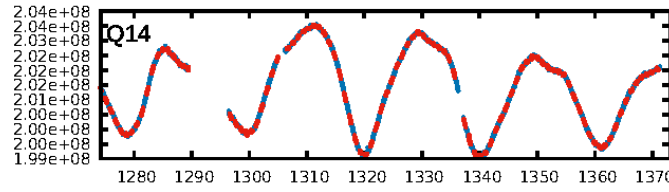
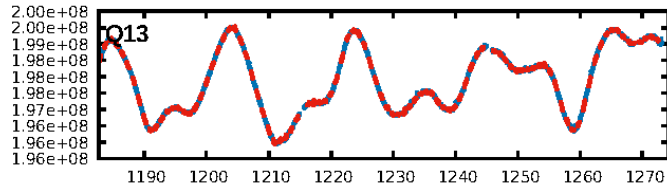
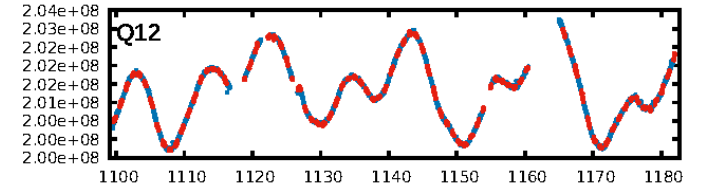
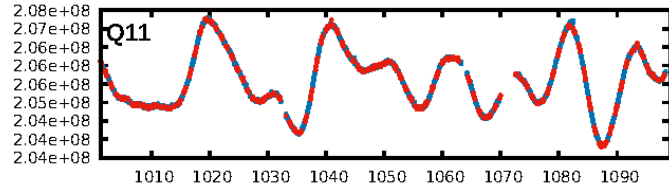
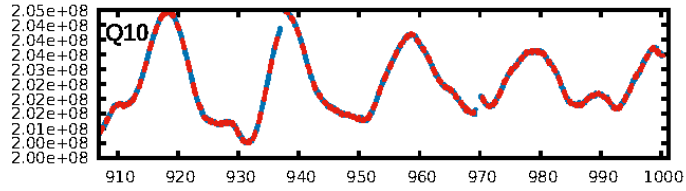
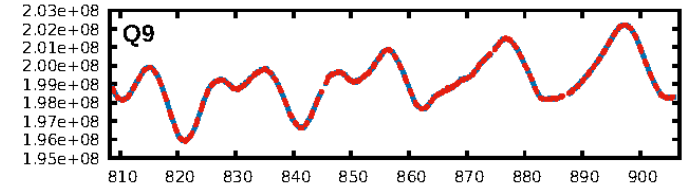
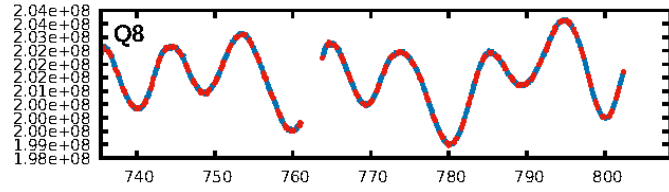
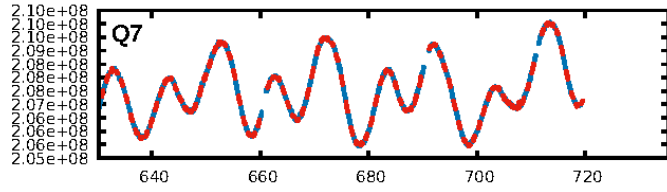
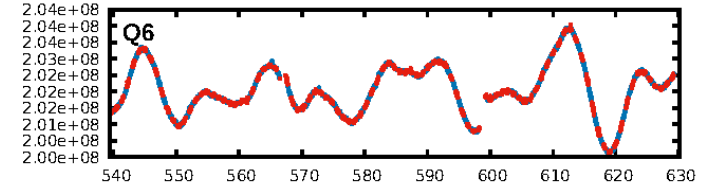
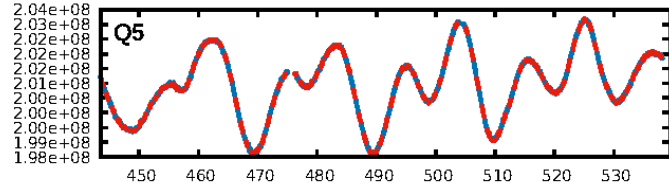
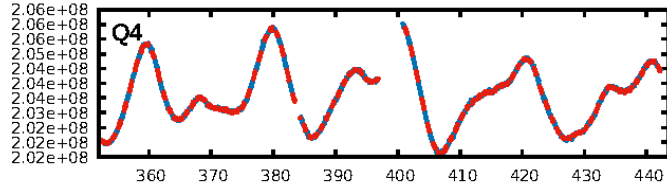
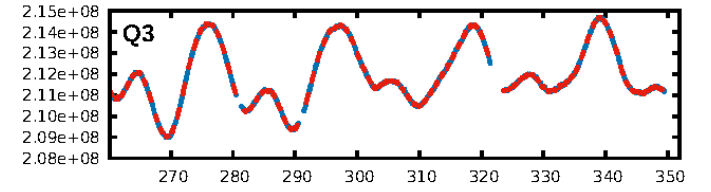
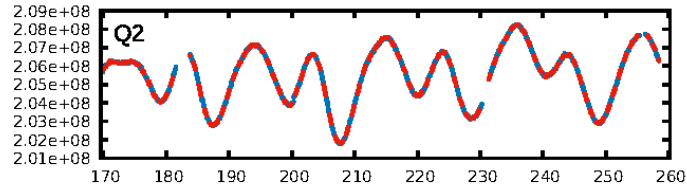
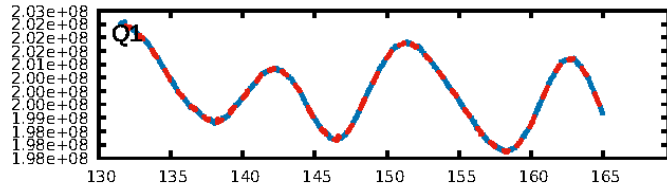
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [224.50 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.20e-11
RollingBand-fgt: 1.00 [1422/1422]
GhostDiagnostic-chr: -1.097
Centroid-sig: 0.1%
Centroid-so: 2.193 arcsec [1.83 σ]
OotOffset-rm: 0.270 arcsec [0.57 σ]
OotOffset-st: 3/4/4/5 [16]
KicOffset-rm: 0.452 arcsec [0.90 σ]
KicOffset-st: 3/4/4/5 [16]
DiffImageQuality-fgm: 0.75 [12/16]
DiffImageOverlap-fno: 1.00 [17/17]

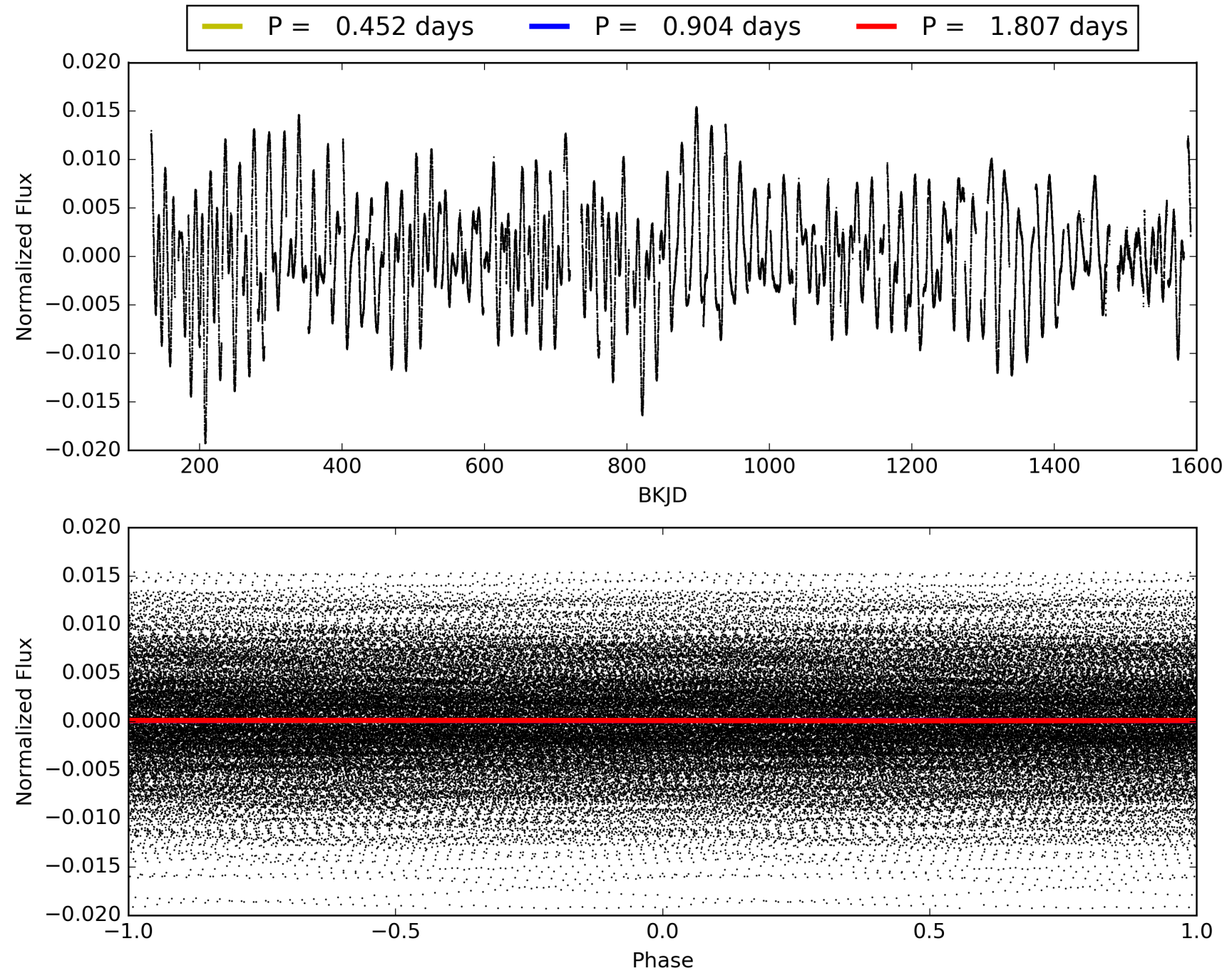
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 007384460-01, PDC Light Curves

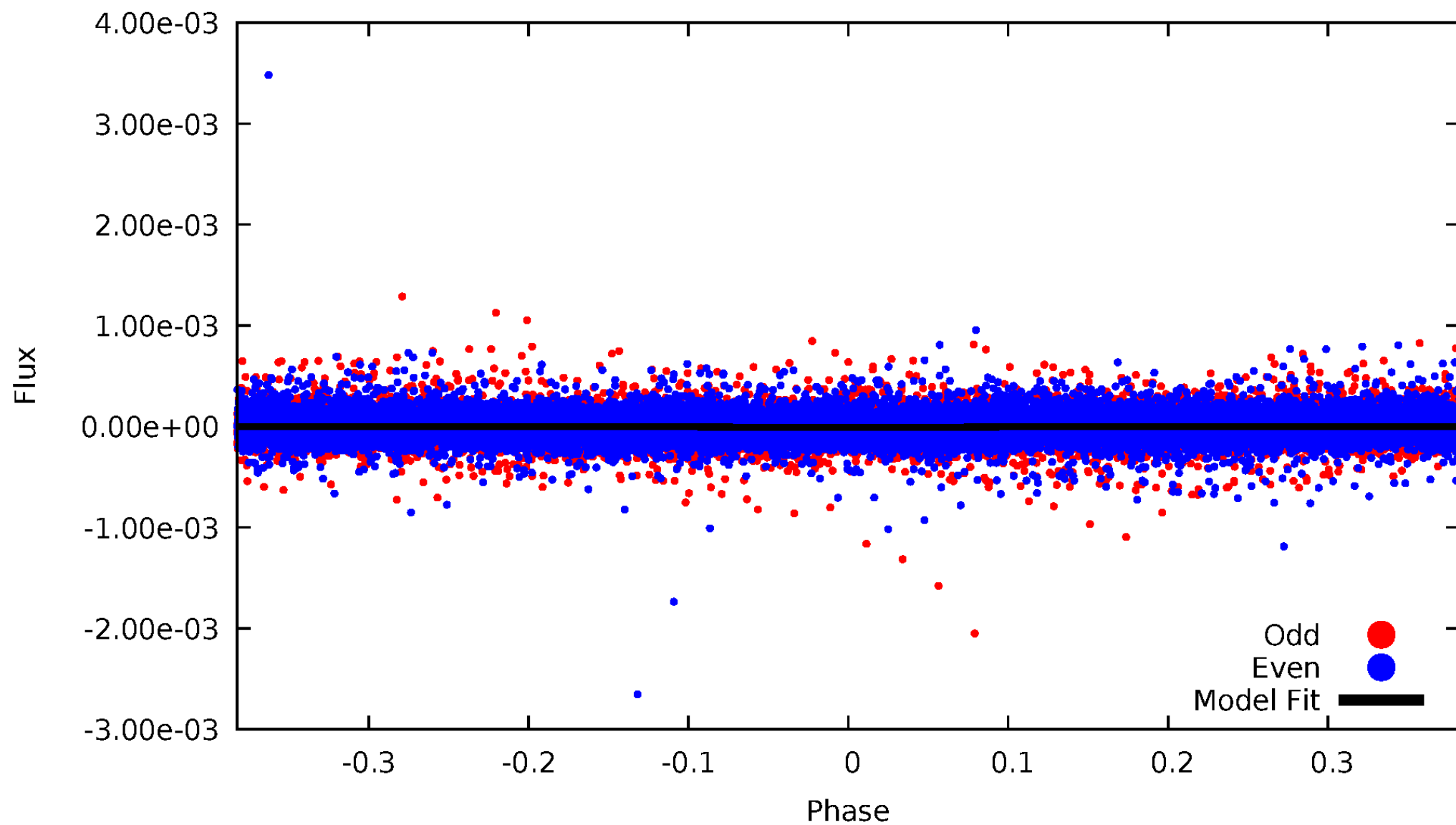


TCE 007384460-01



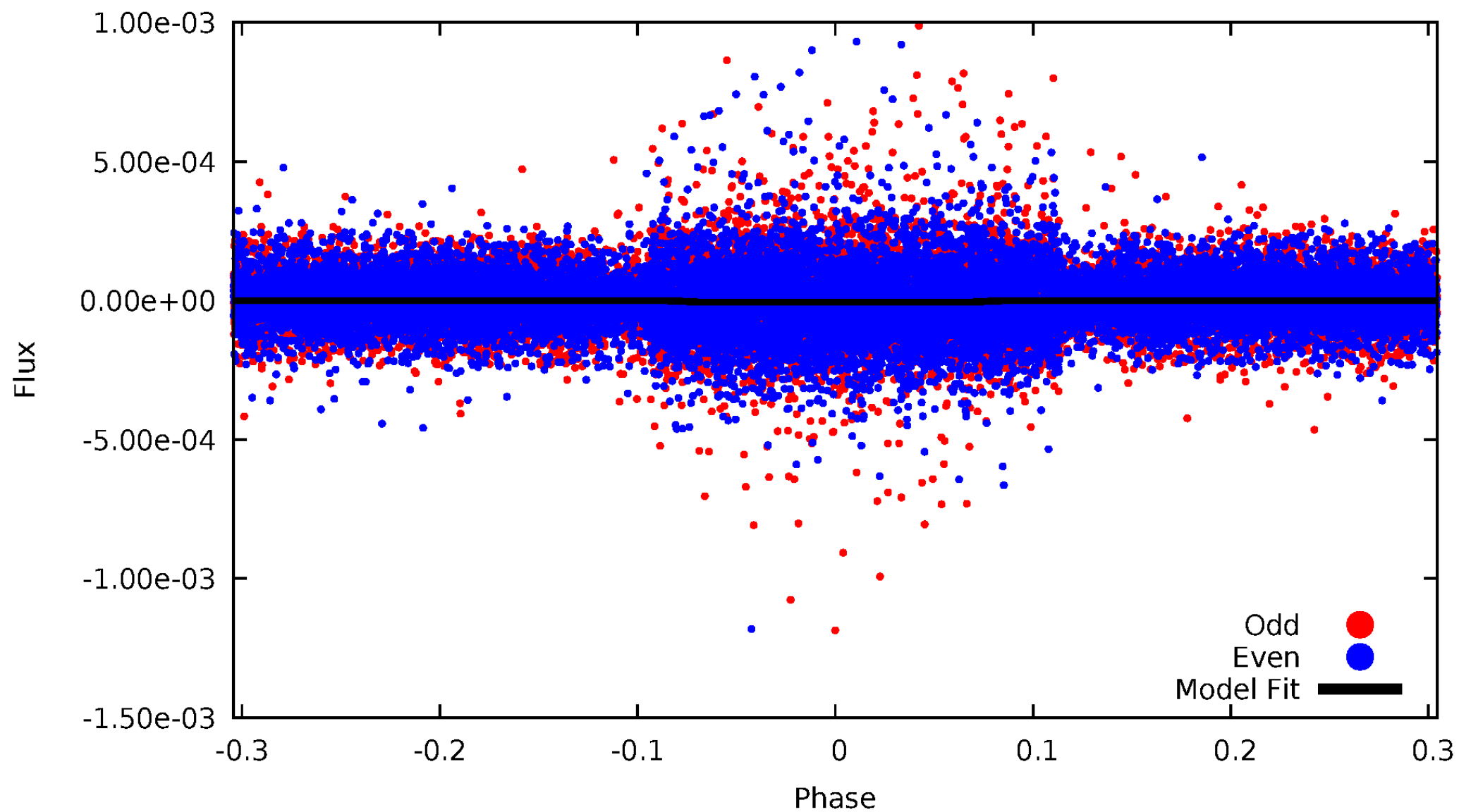
DV Odd/Even

TCE 007384460-01



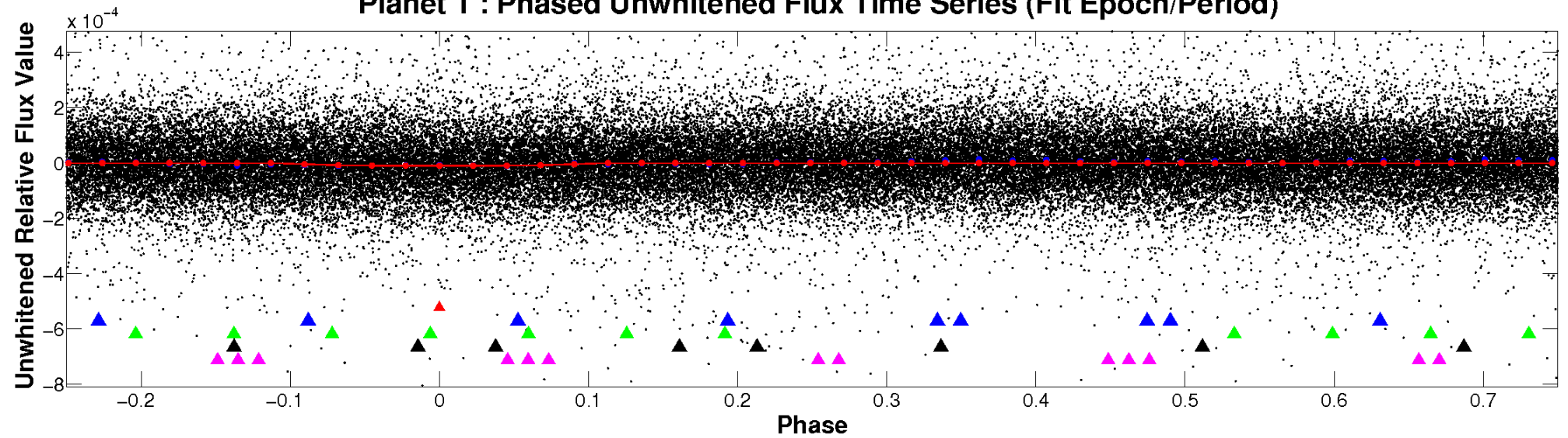
ALT Odd/Even

TCE 007384460-01

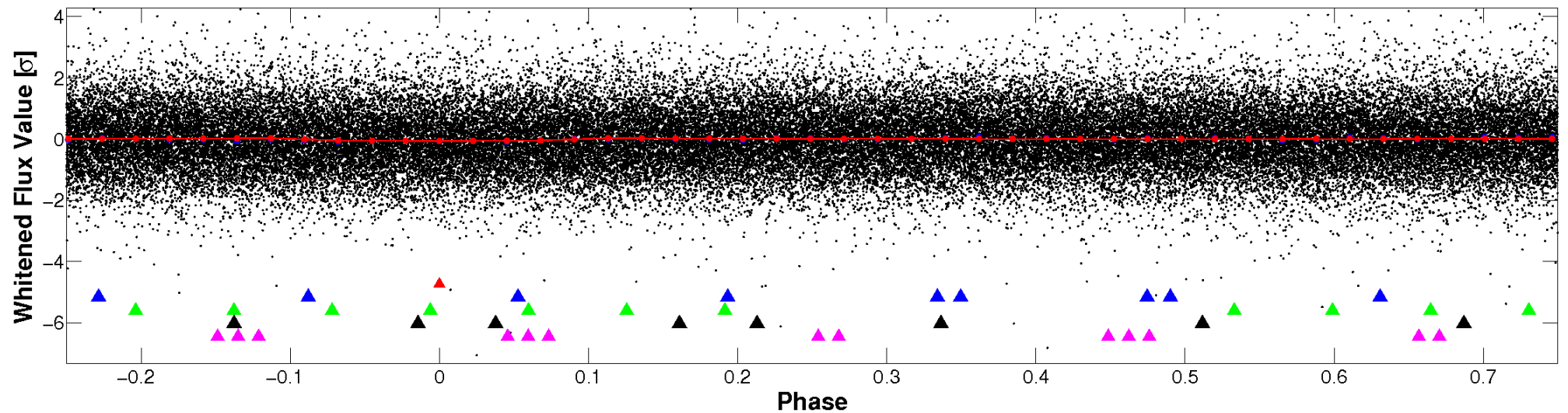


Non-Whitened Vs. Whitened Light Curve

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

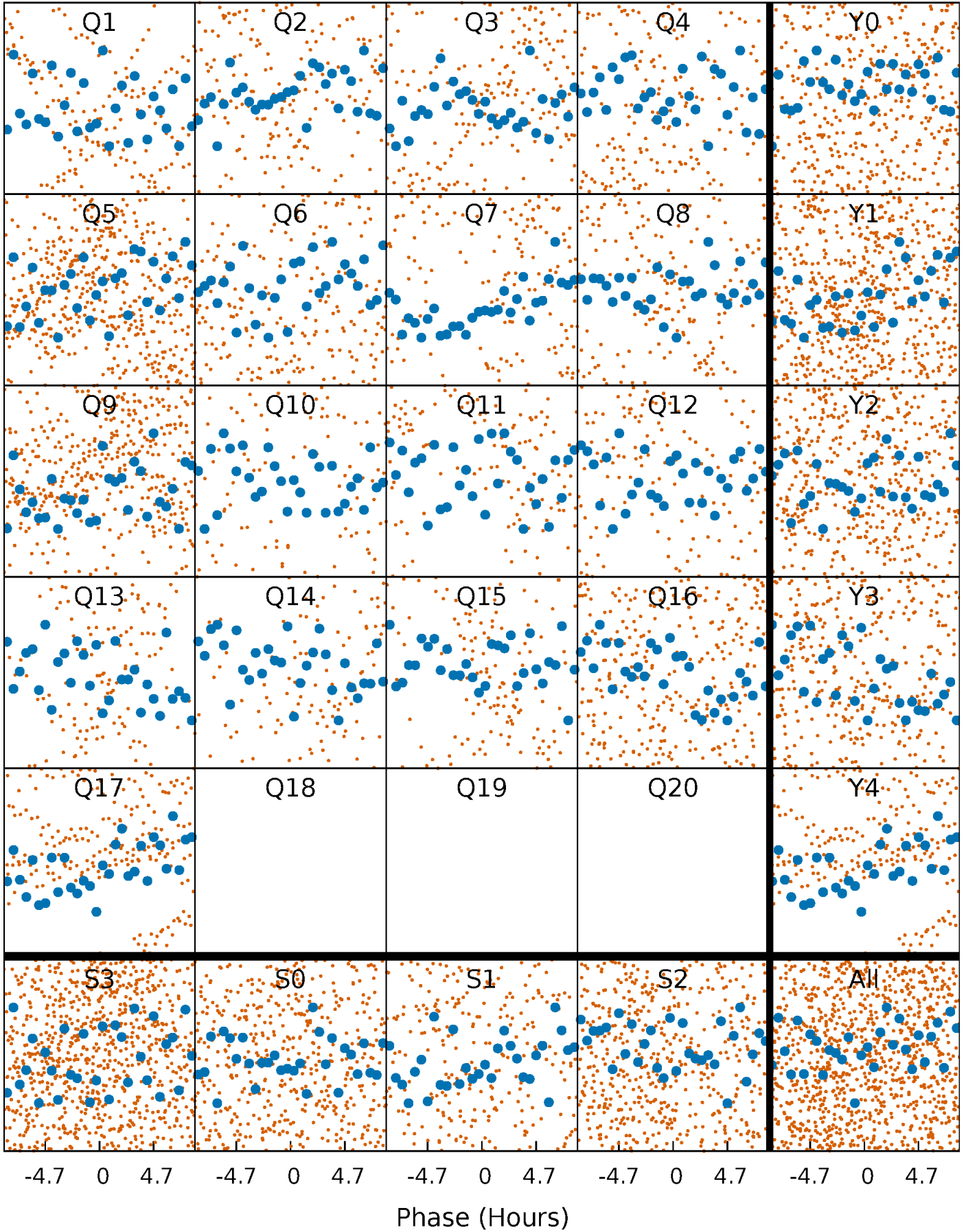


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



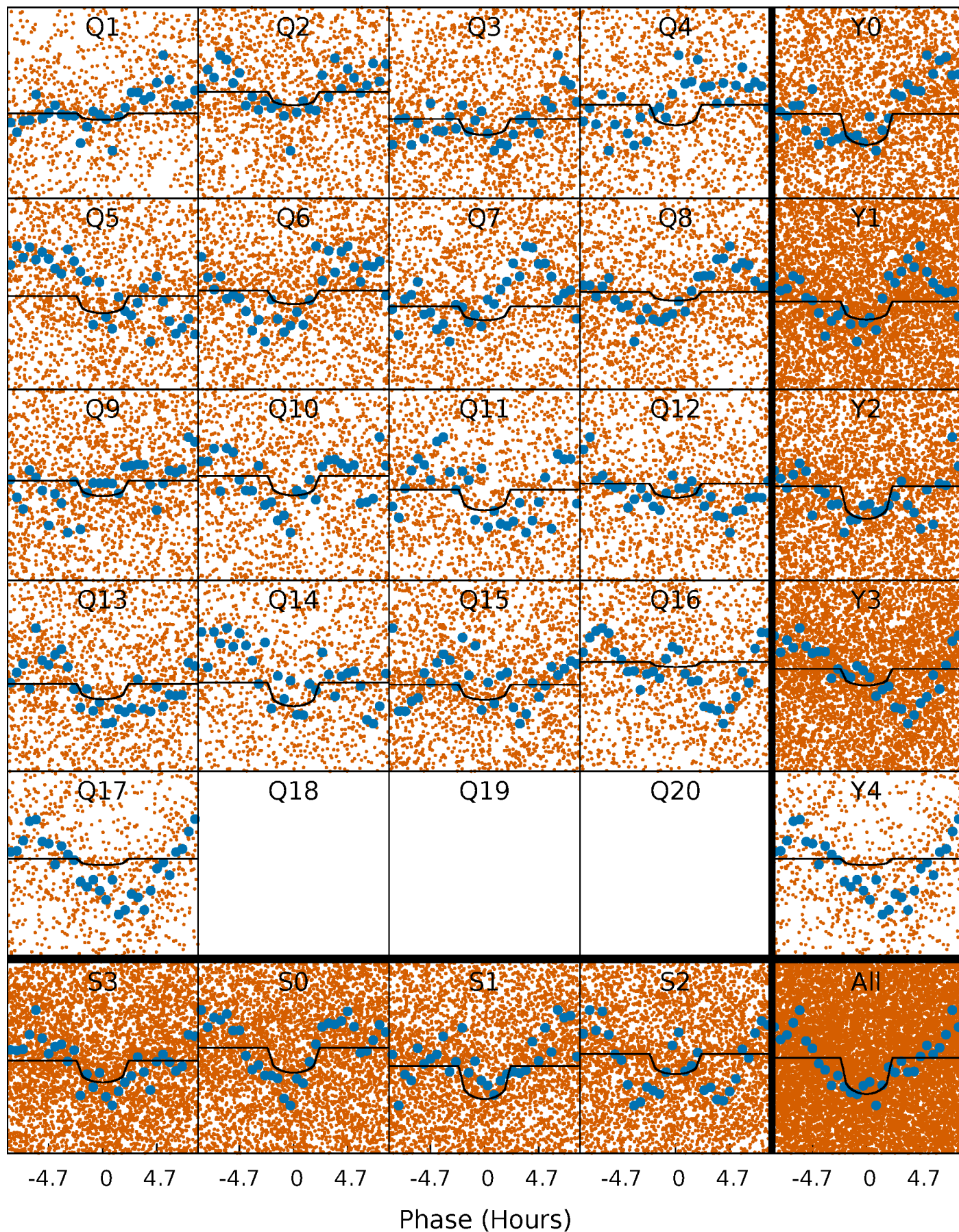
PDC Quarter-Phased Transit Curves

TCE 007384460-01 P= 0.903573 Days $T_0=132.049411$ (BKJD)



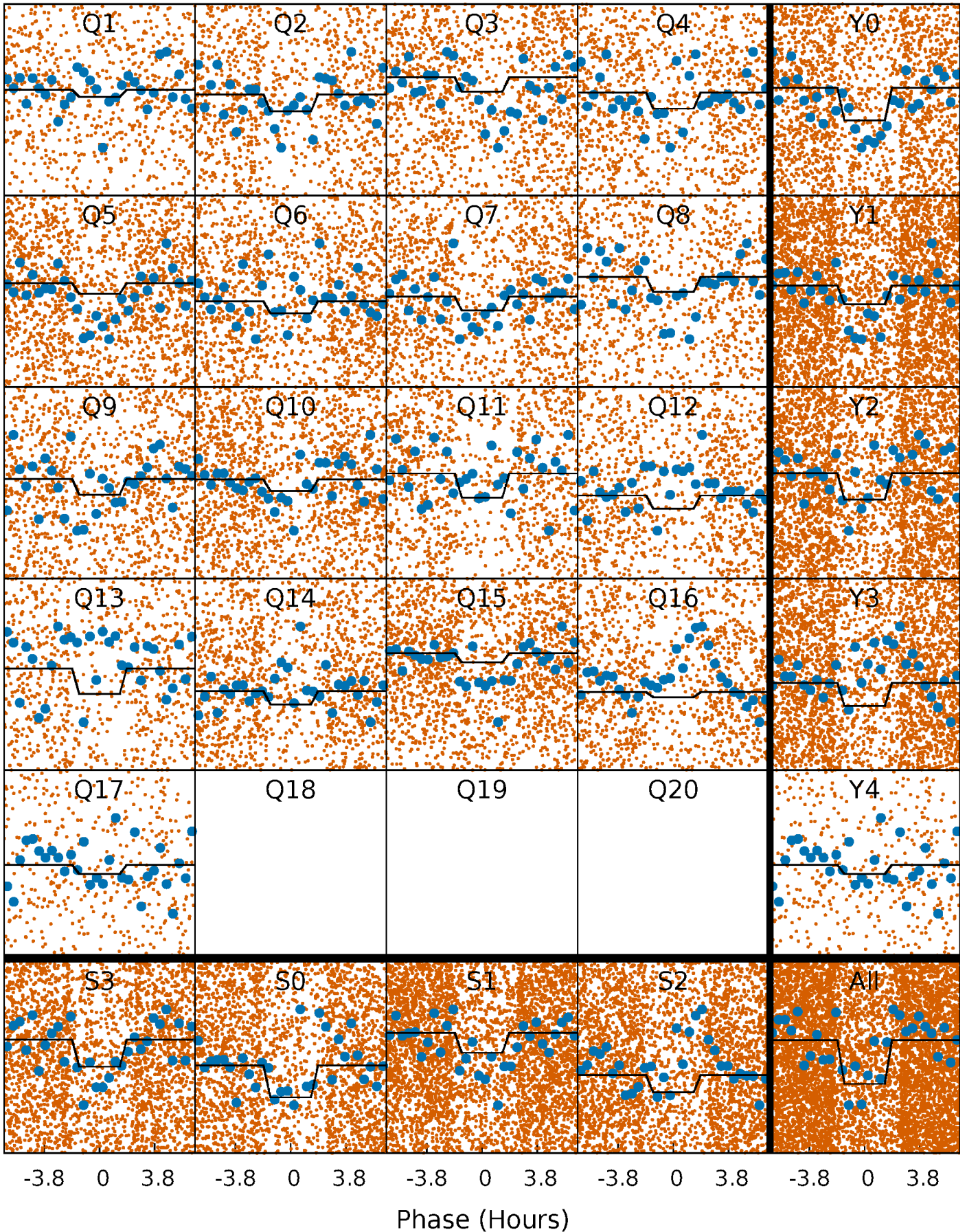
DV Quarter-Phased Transit Curves

TCE 007384460-01 P= 0.903573 Days $T_0=132.049411$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

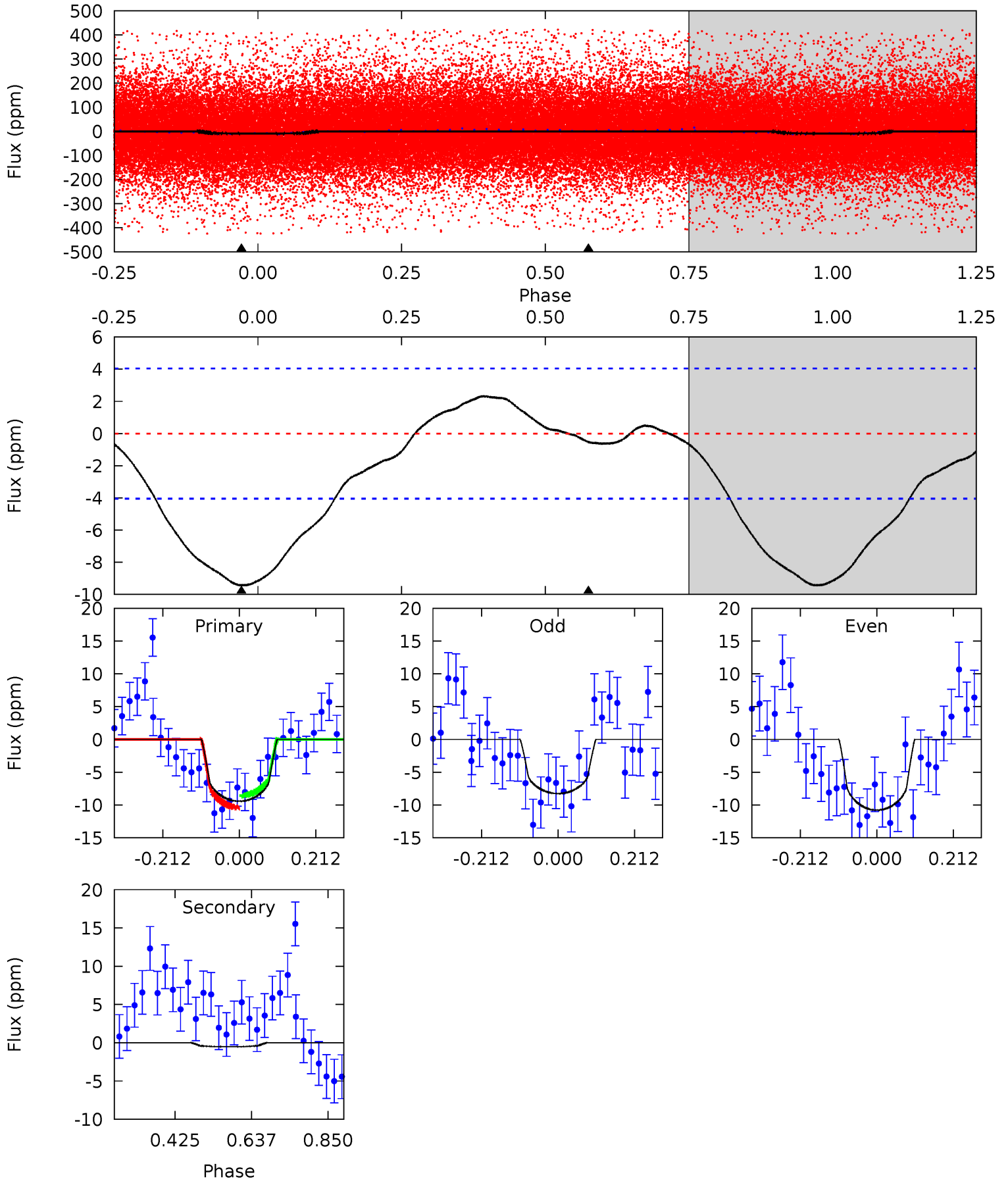
TCE 007384460-01 P= 0.903517 Days $T_0=132.074786$ (BKJD)



DV Model-Shift Uniqueness Test

007384460-01, P = 0.903573 Days, E = 131.145838 Days

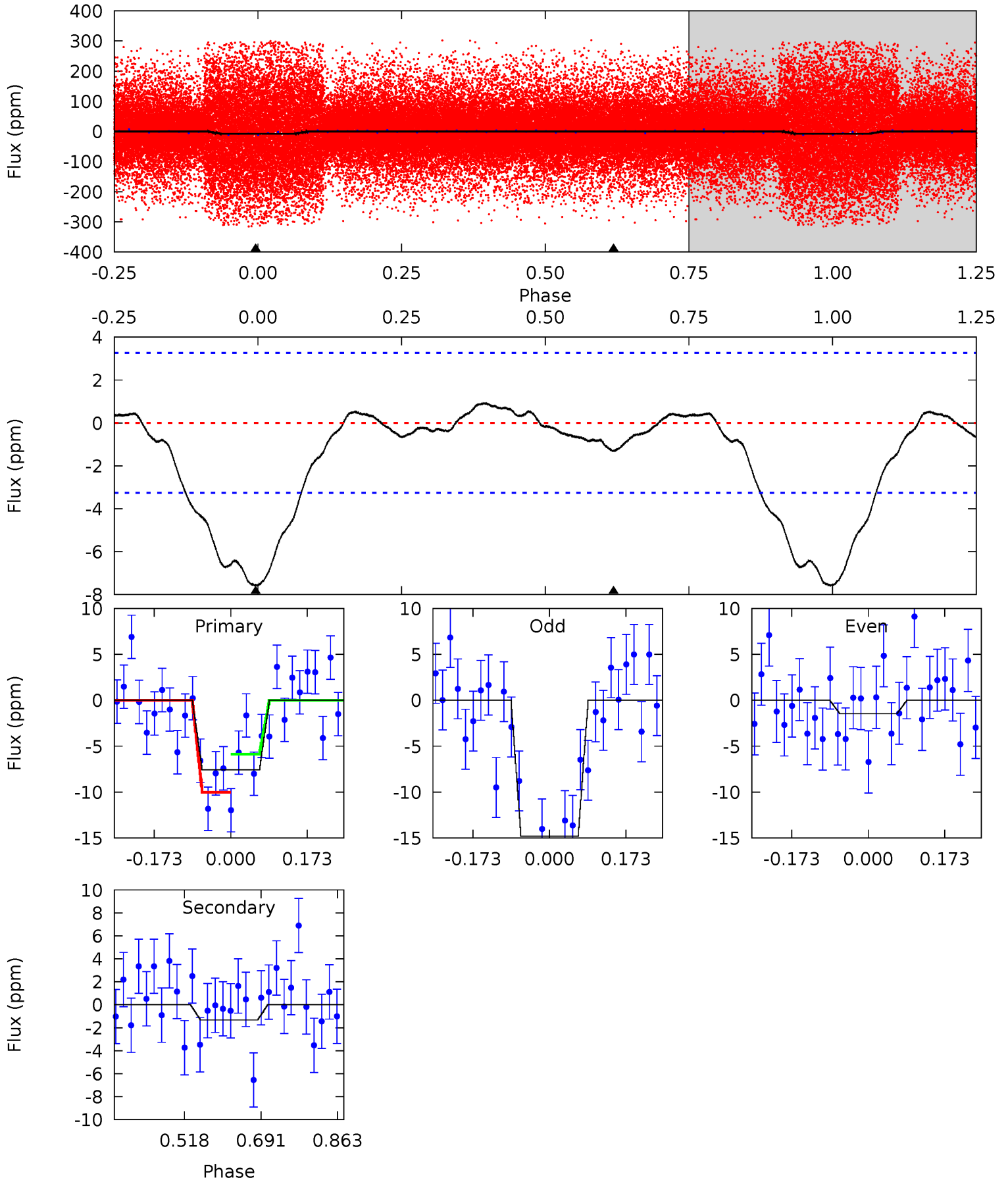
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.3	0.57	0	0	4.40	1.25	1.53	10.3	10.3	0.57	0.57	1.39	0.93	0.20	0.99



Alt Model-Shift Uniqueness Test

007384460-01, P = 0.903517 Days, E = 131.171269 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.4	1.81	0	0	4.45	1.36	0.68	10.4	10.4	1.81	1.81	9.13	1.31	0.11	2.81



Stellar Parameters For KIC 007384460

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4805^{+131}_{-107}	$3.766^{+0.862}_{-0.345}$	$0.200^{+0.200}_{-0.250}$	$2.111^{+1.161}_{-1.418}$	$0.948^{+0.215}_{-0.176}$	$0.142^{+2.795}_{-0.093}$
	+3%/-2%	+23%/-9%	+100%/-125%	+55%/-67%	+23%/-19%	+1968%/-66%
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 007384460-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-1 ± 1	$0.76^{+0.58}_{-0.42}$	3216^{+516}_{-616}	-2941^{+6142}_{-521}	$0.117^{+0.723}_{-0.225}$
Alt.	-1 ± 1	$0.57^{+0.47}_{-0.32}$	3177^{+494}_{-570}	3075^{+1468}_{-6041}	$0.625^{+3.049}_{-0.498}$

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 $A_{obs} \gg 1.0$

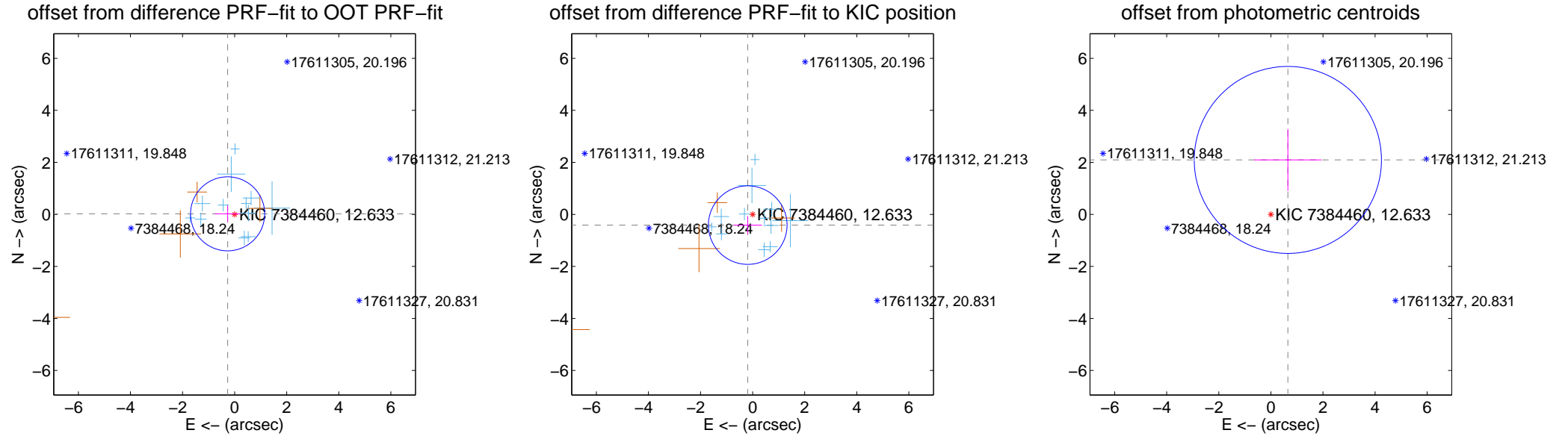
DV Centroid Data

Supplemental centroid analysis for 007384460-01. Kepler magnitude: 12.63. Transit SNR 6.09

There are 12 quarters with good PRF difference image offsets

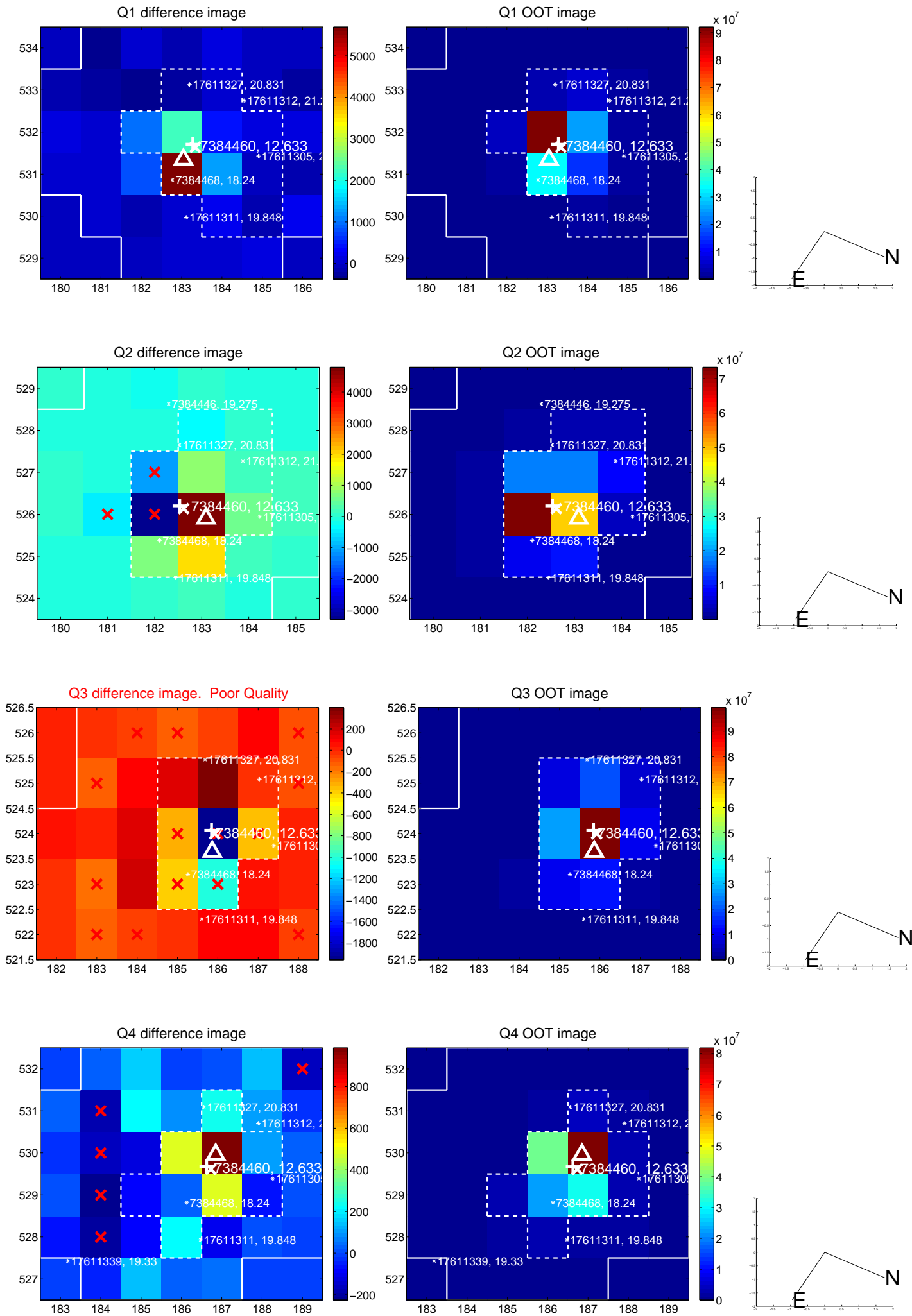
The direct PRF centroid is offset from the target star catalog position by about 0.51 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.270 ± 0.474	0.57	0.269 ± 0.491	0.022 ± 0.311
PRF-fit source offset from KIC position	0.452 ± 0.503	0.90	0.188 ± 0.548	-0.411 ± 0.347
photometric centroid source offset	2.19 ± 1.20	1.83	-0.65 ± 1.30	2.09 ± 1.19

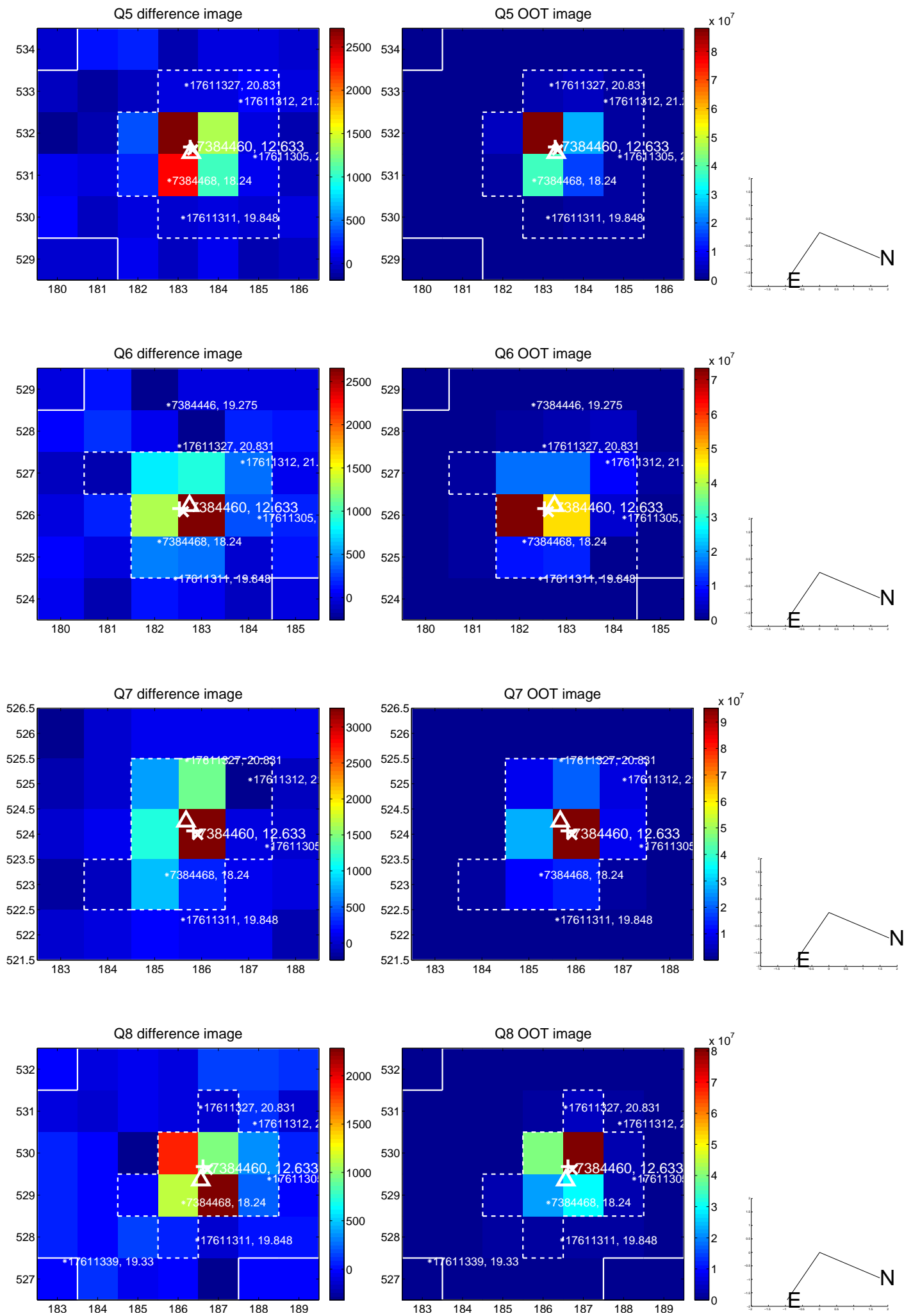


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

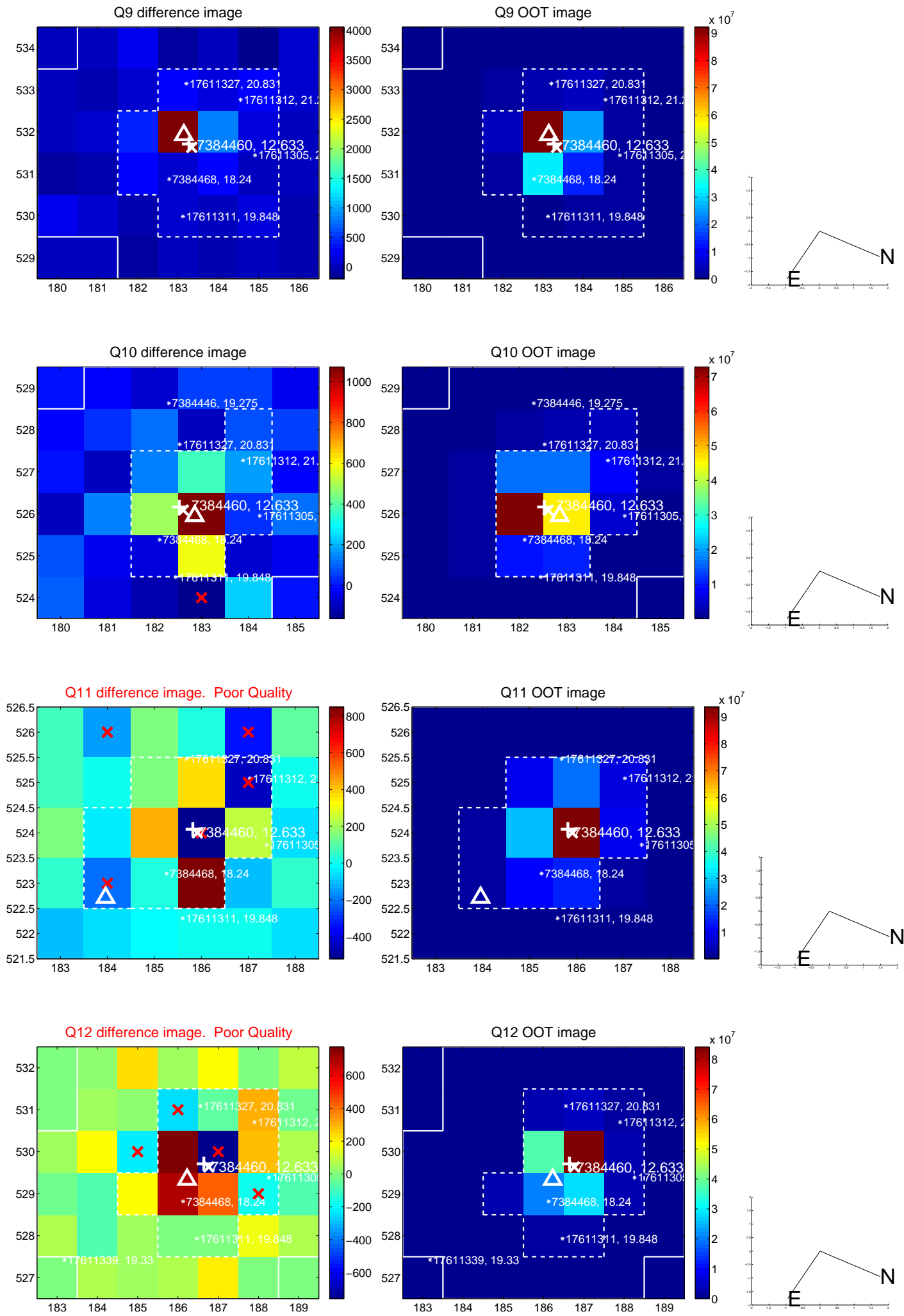
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



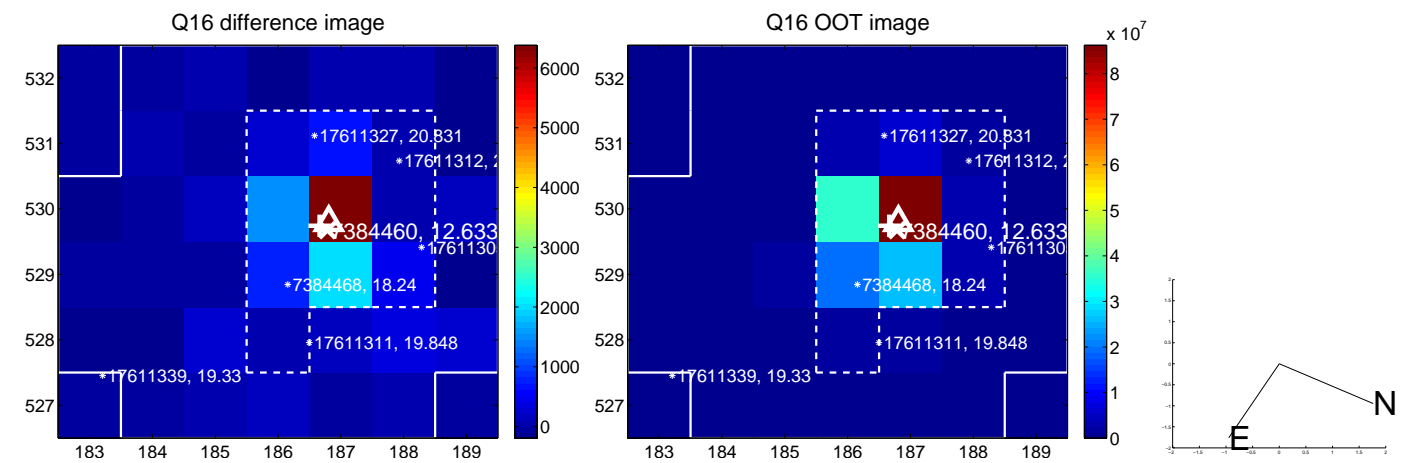
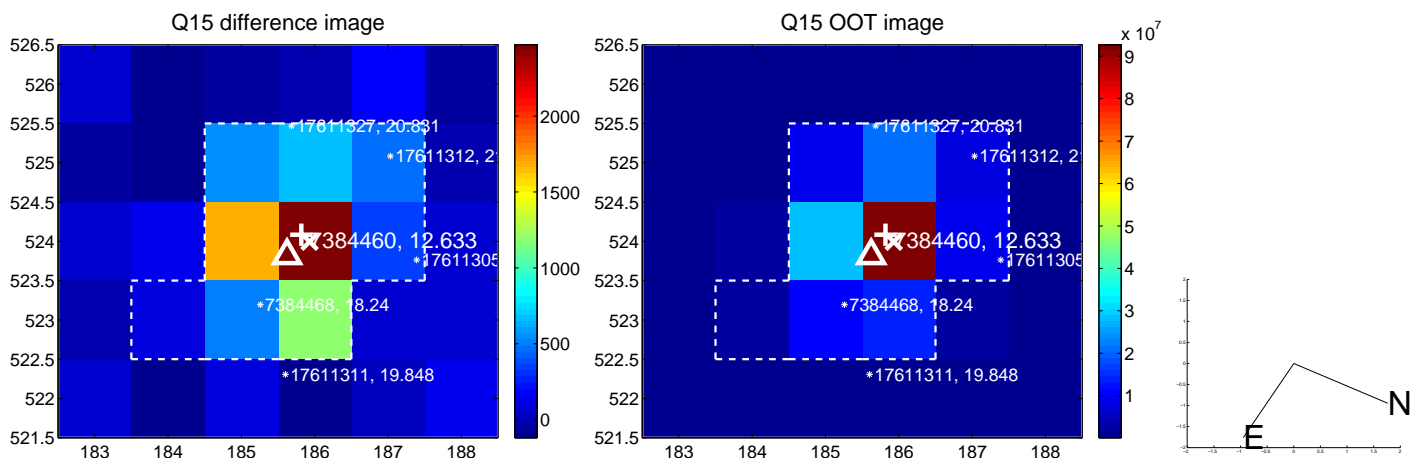
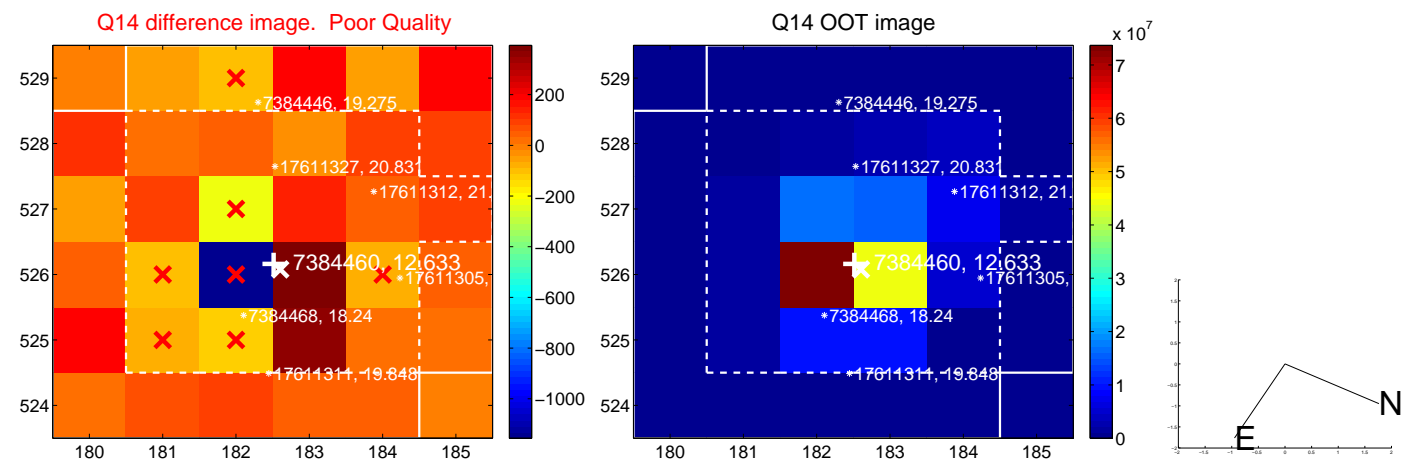
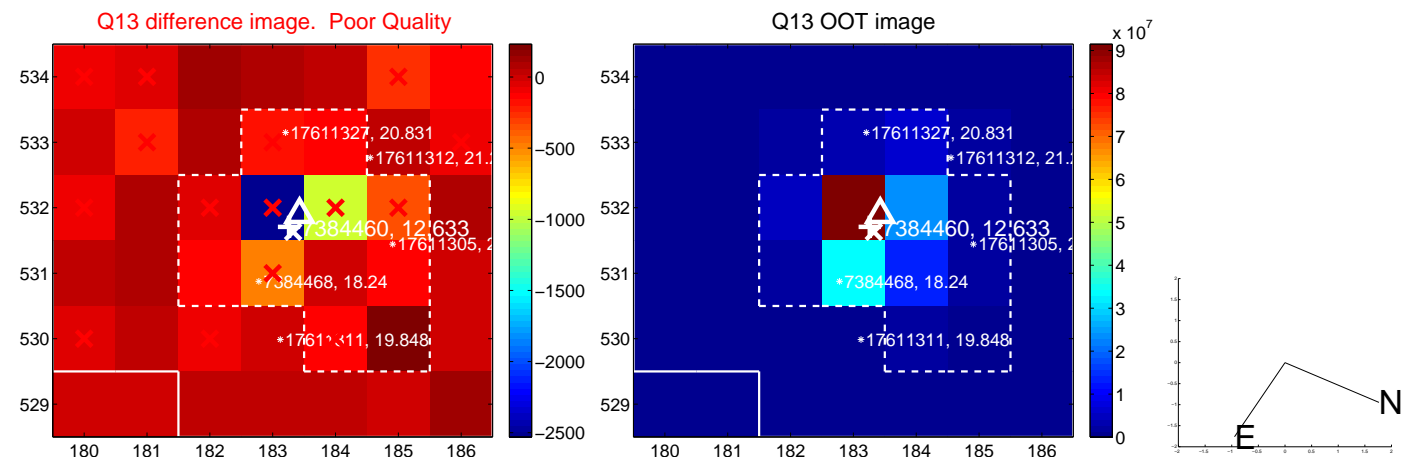
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



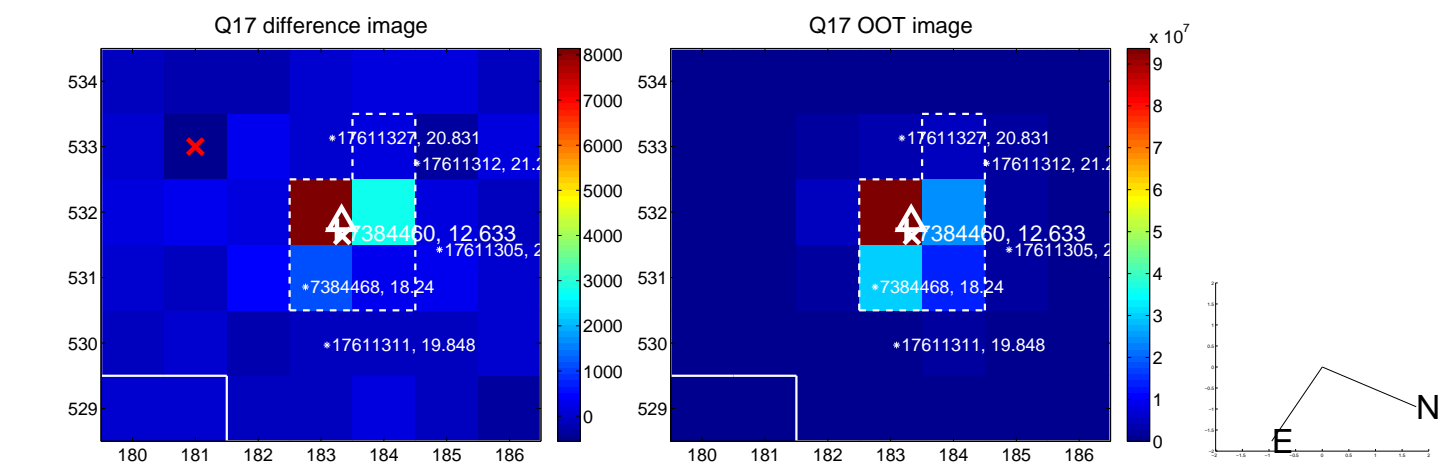
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



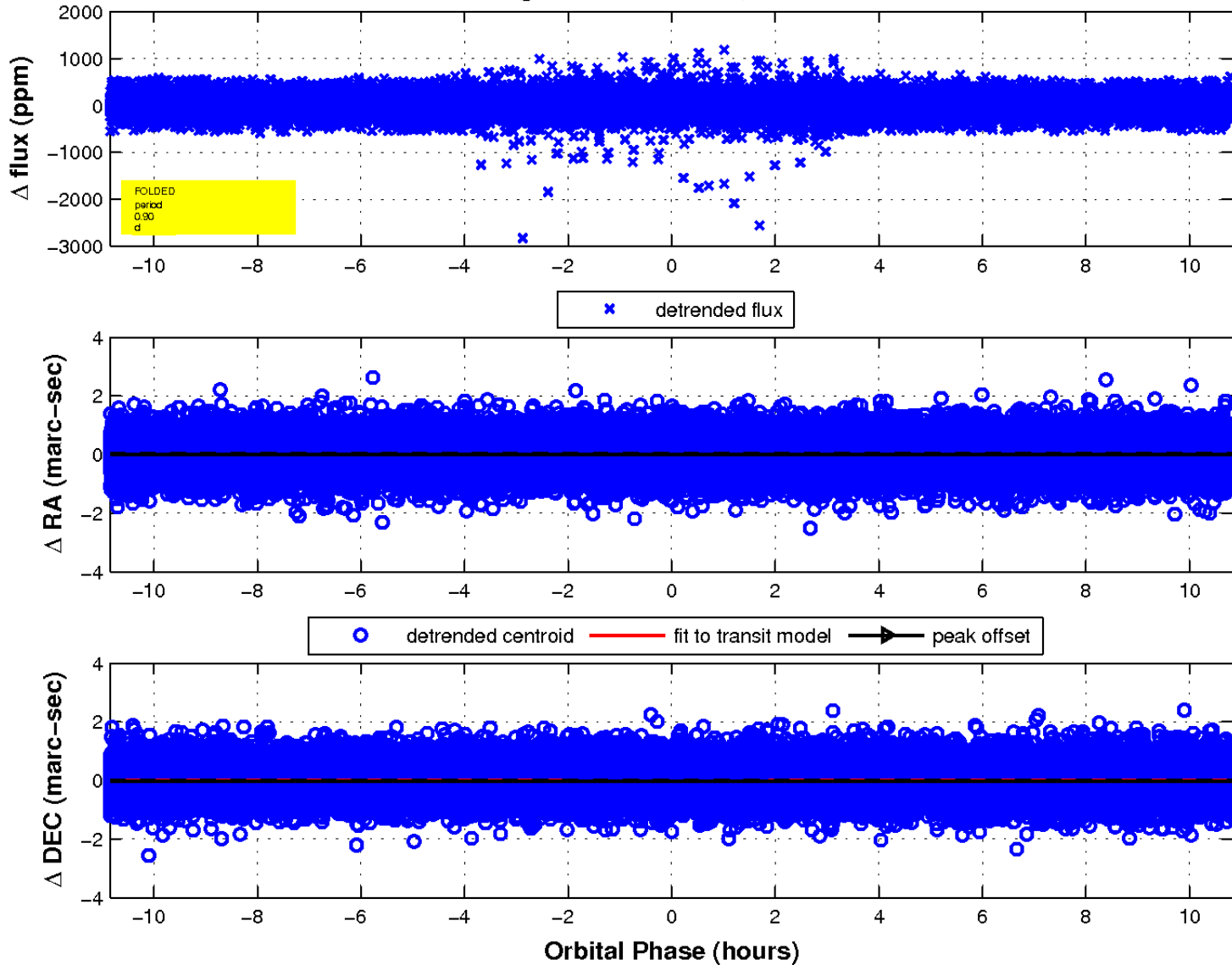
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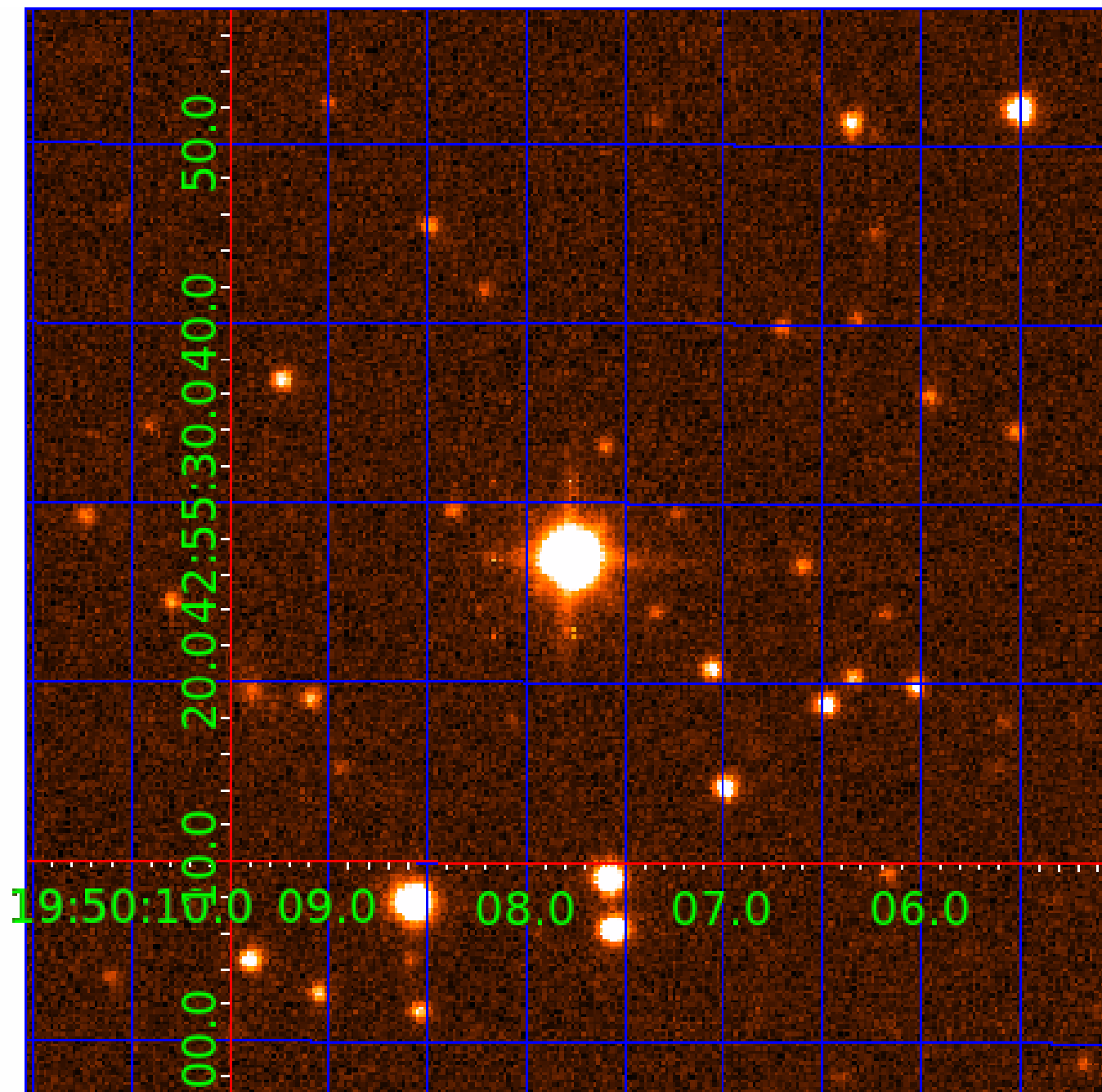


fluxWeightedCentroids, Planet 1 of 5



UKIRT Image

Declination



KIC 007384460

Q1-17 DR25 TCE Parameters

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007384460-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_KIC_POS
007384460-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—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.

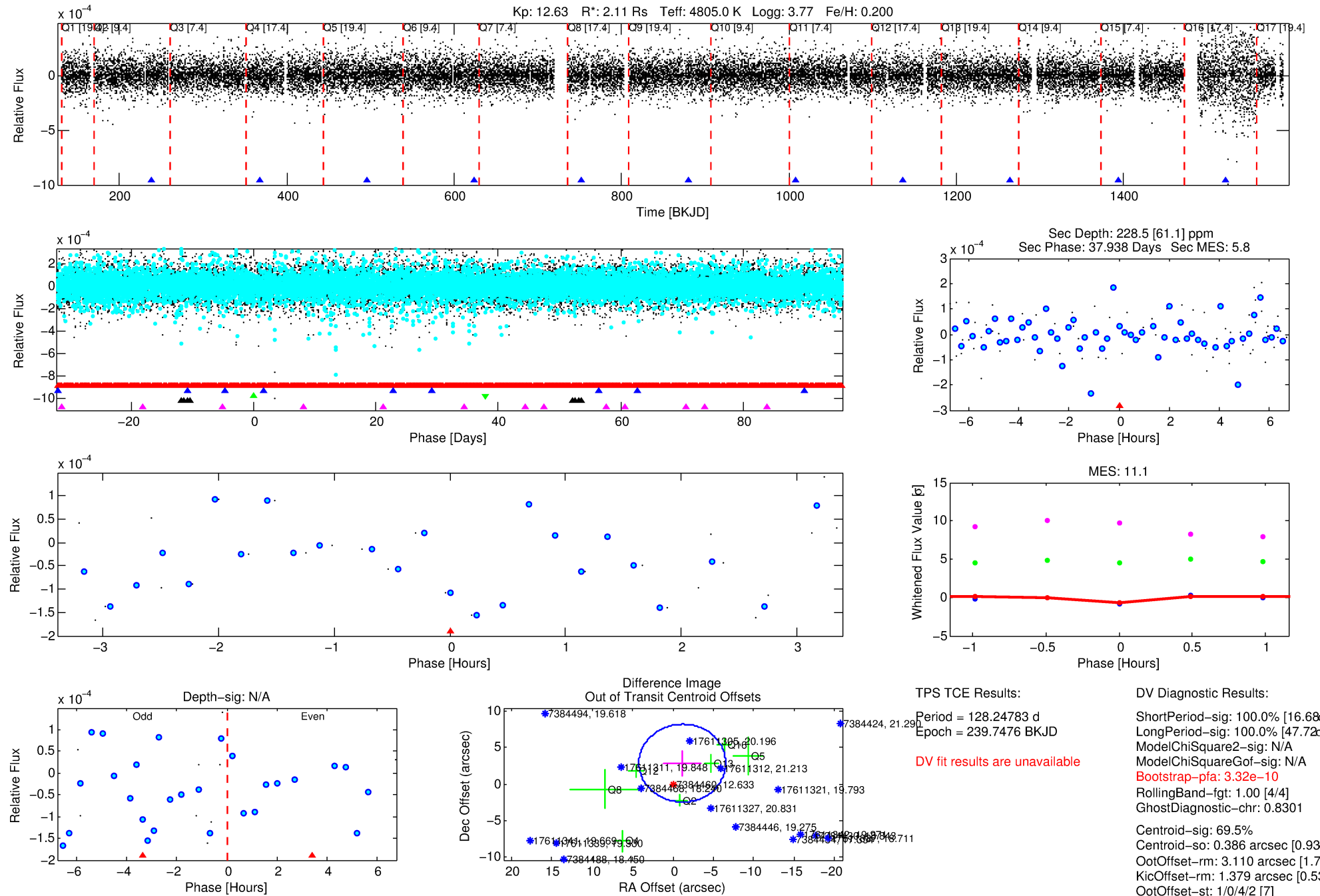
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007384460-03

No Significant Match Found

DV One-Page Summary

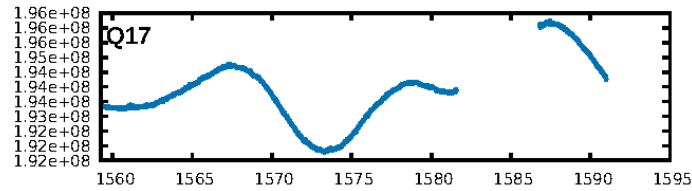
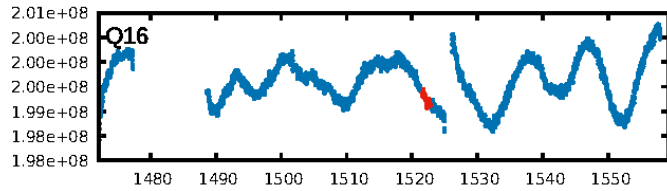
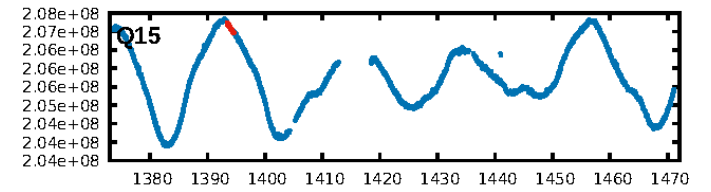
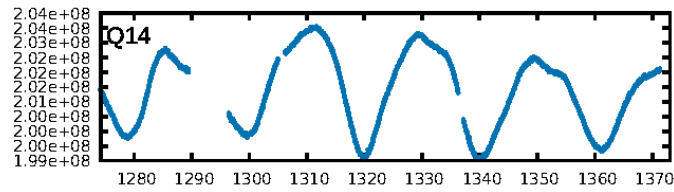
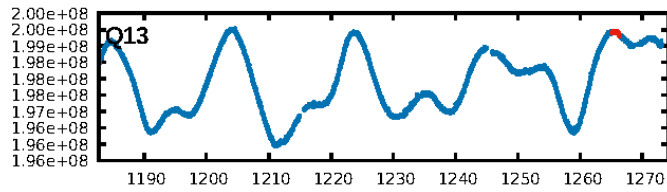
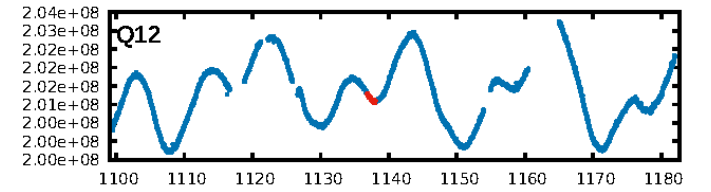
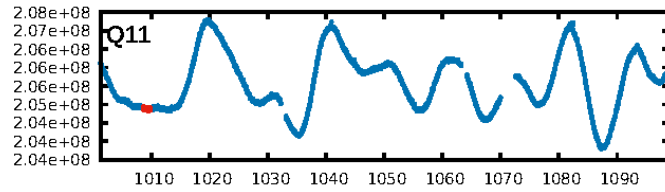
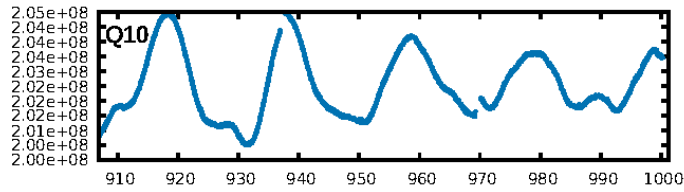
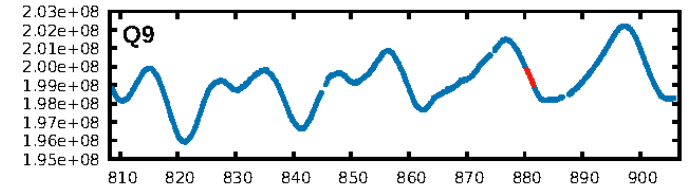
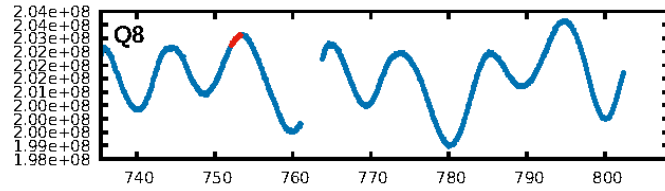
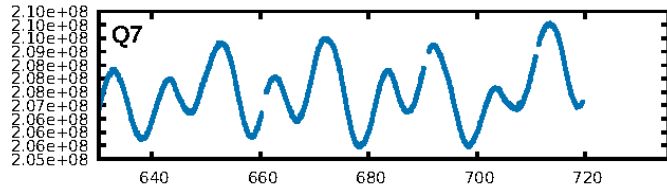
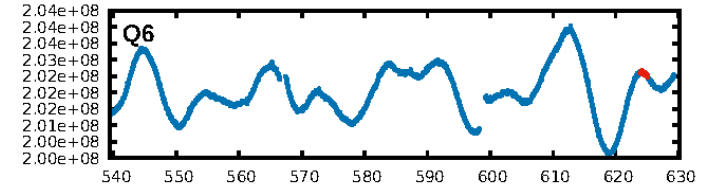
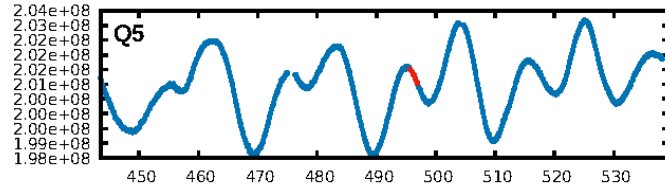
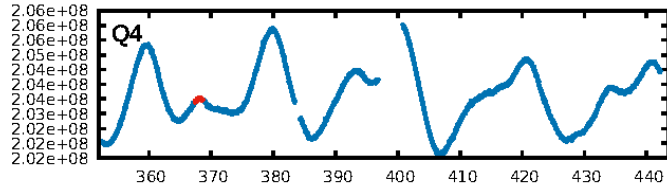
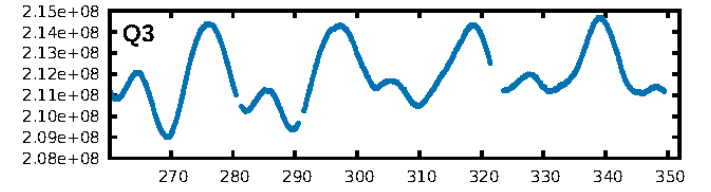
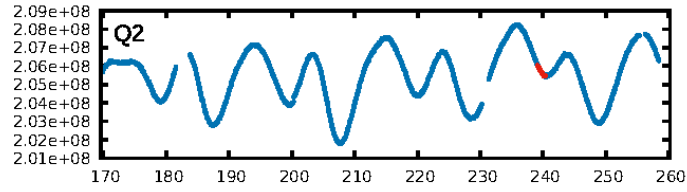
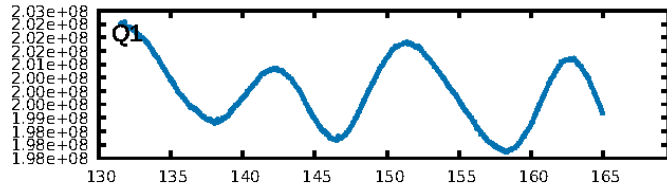
KIC: 7384460 Candidate: 3 of 5 Period: 128.248 d



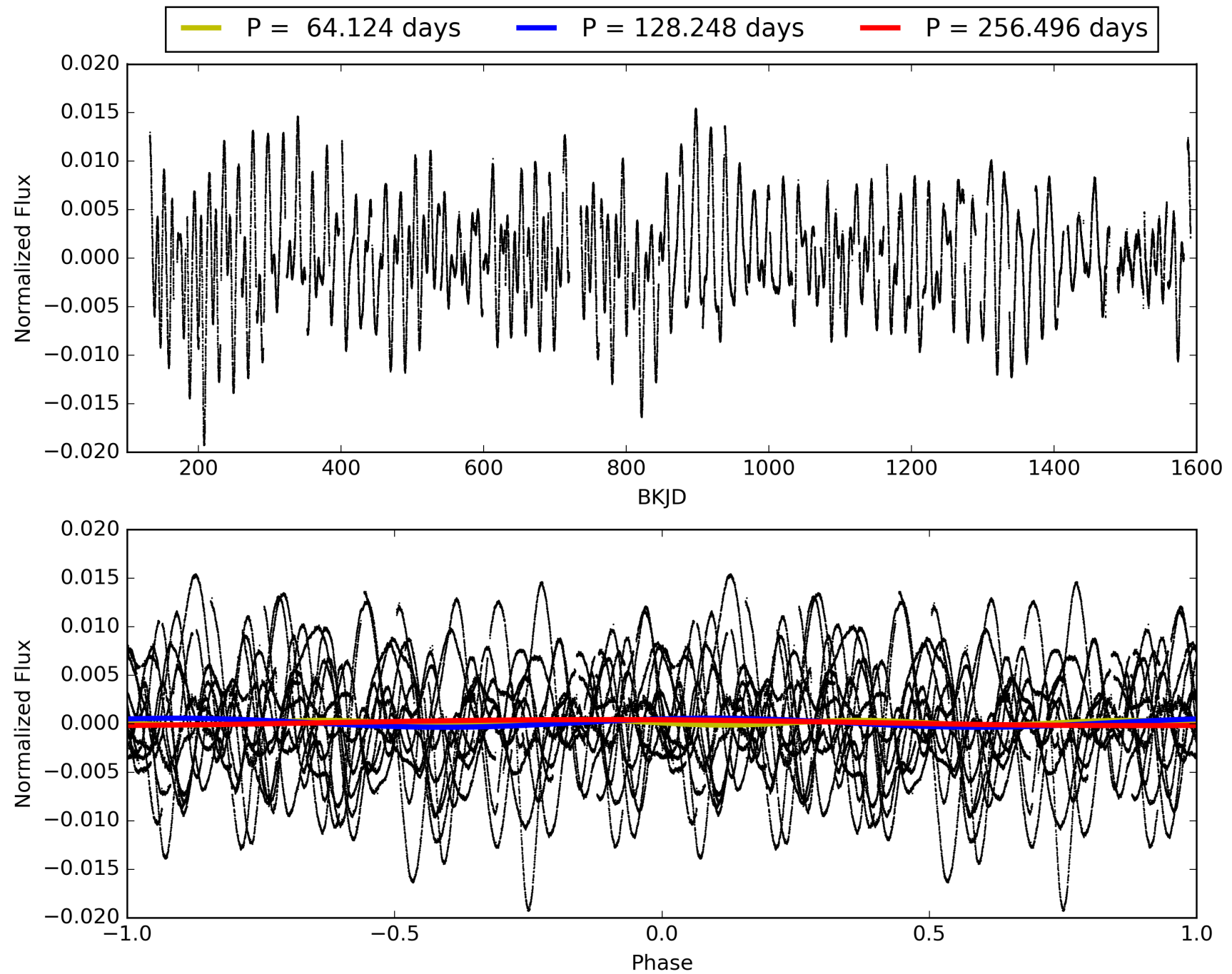
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 14:44:12 Z

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

TCE 007384460-03, PDC Light Curves

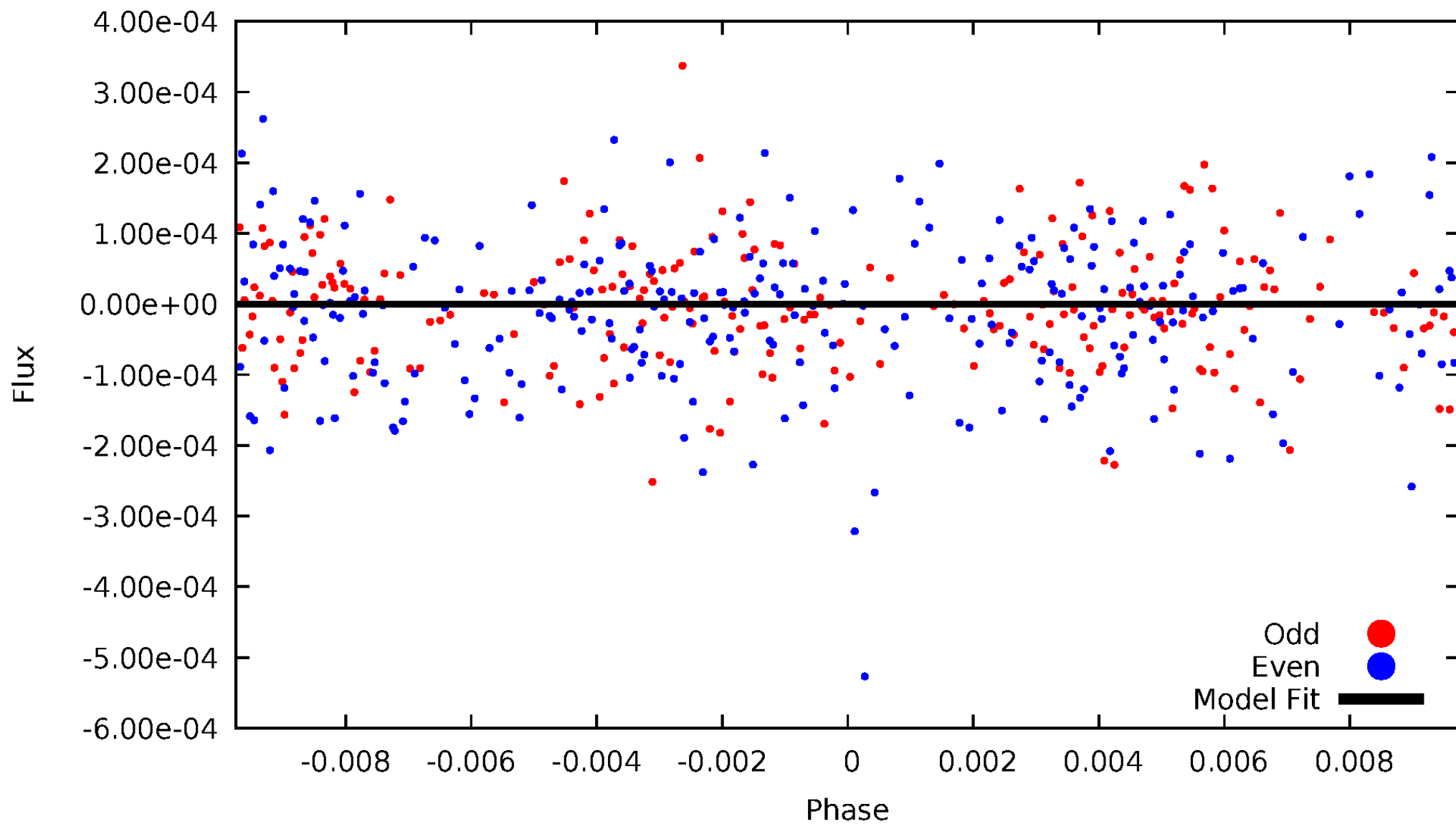


TCE 007384460-03



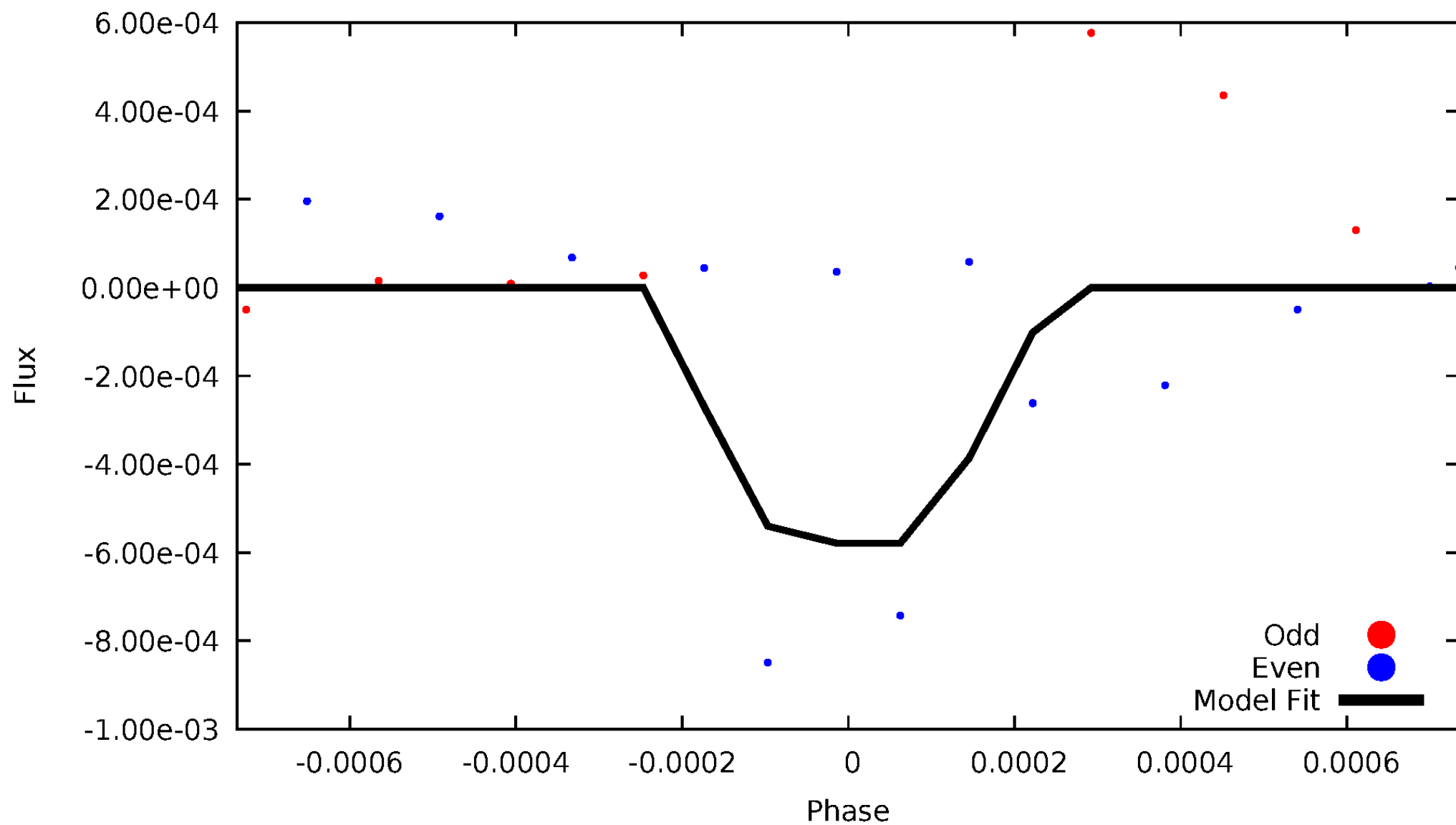
DV Odd/Even

TCE 007384460-03



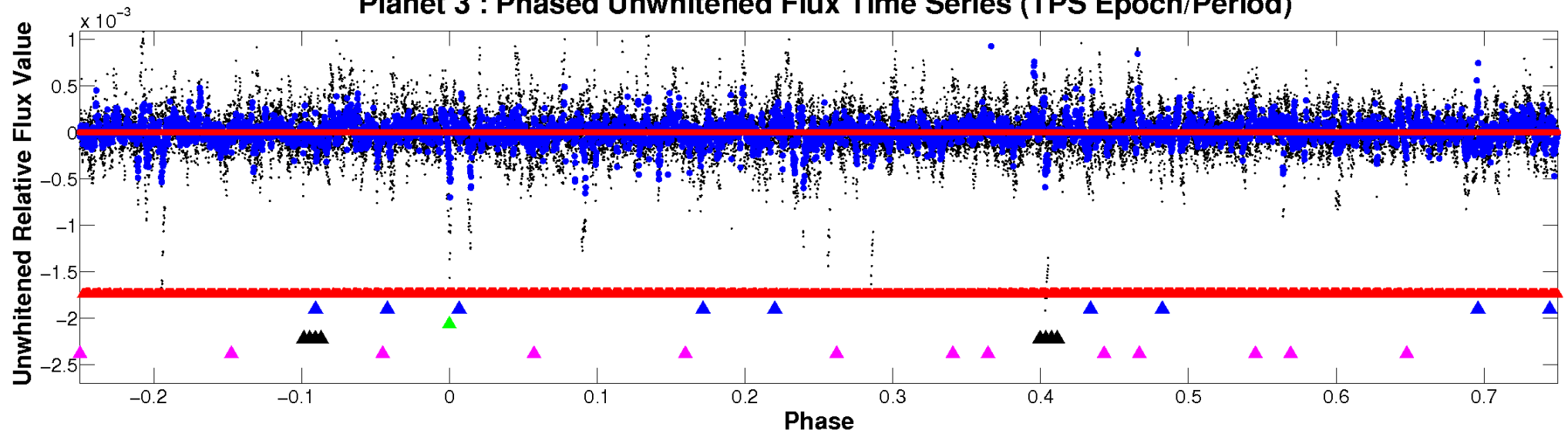
ALT Odd/Even

TCE 007384460-03

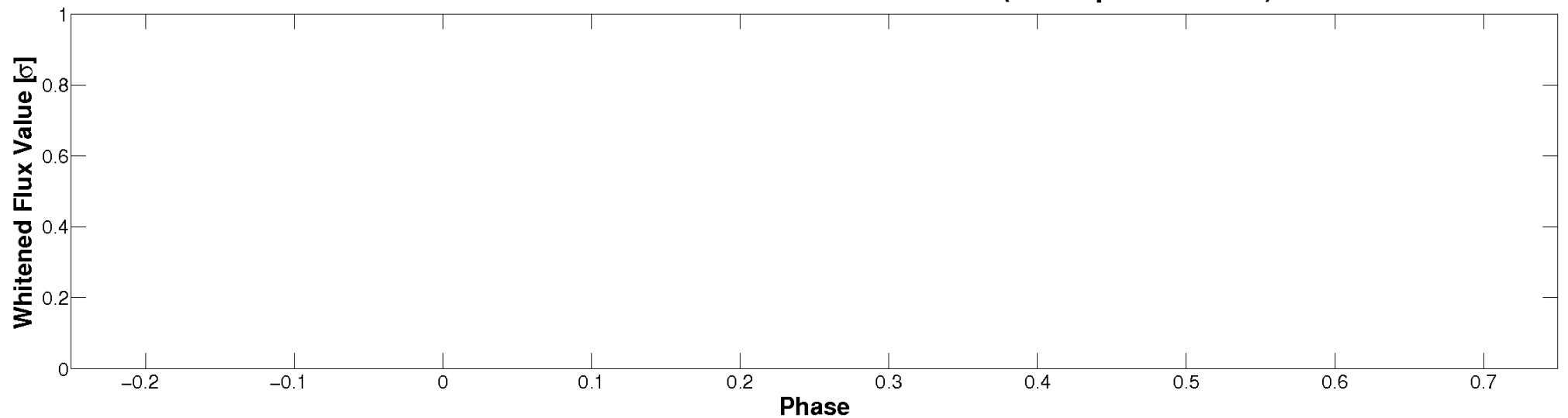


Non-Whitened Vs. Whitened Light Curve

Planet 3 : Phased Unwhitened Flux Time Series (TPS Epoch/Period)

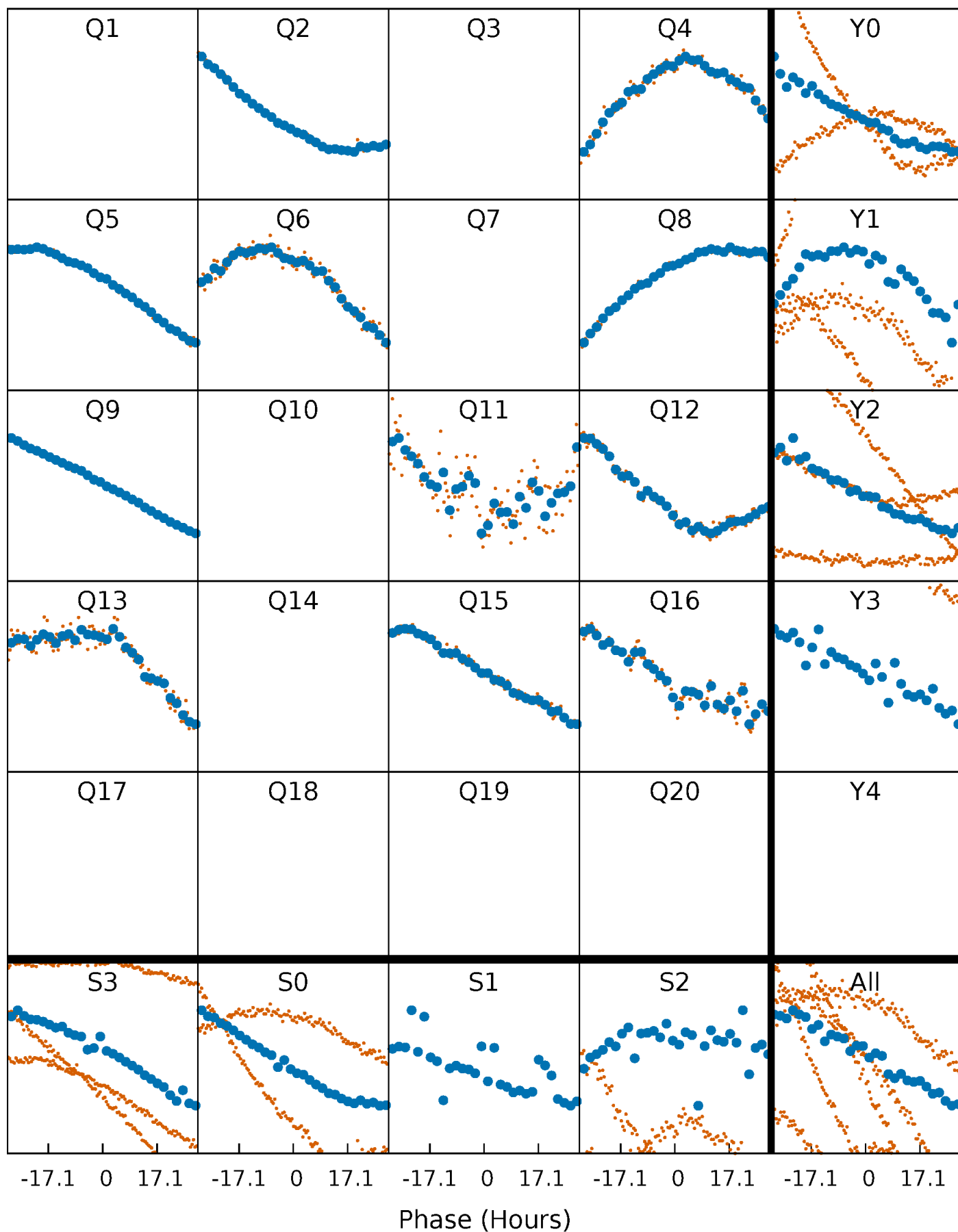


Planet 3 : Phased Whitened Flux Time Series (TPS Epoch/Period)



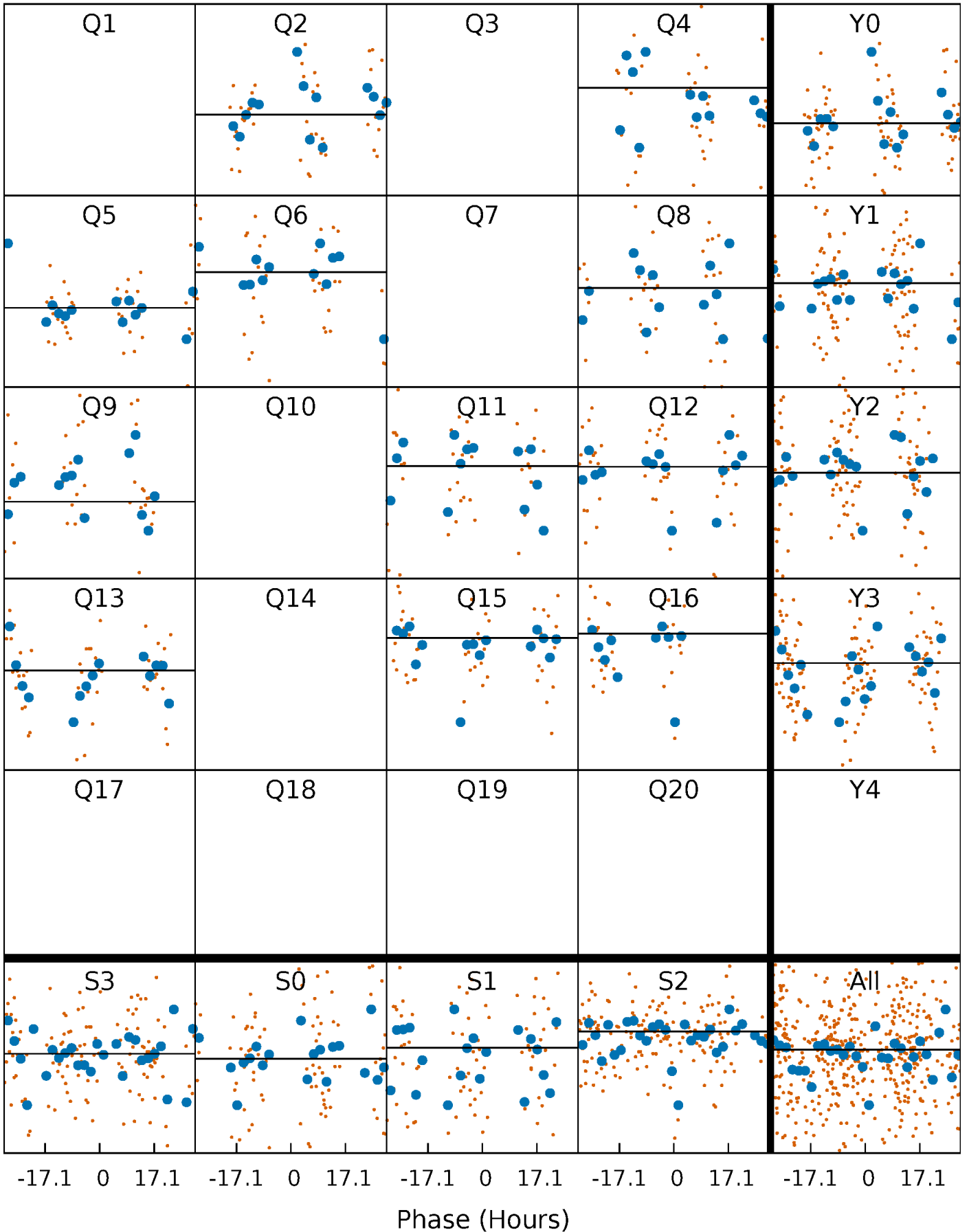
PDC Quarter-Phased Transit Curves

TCE 007384460-03 P=128.247834 Days $T_0=239.747561$ (BKJD)



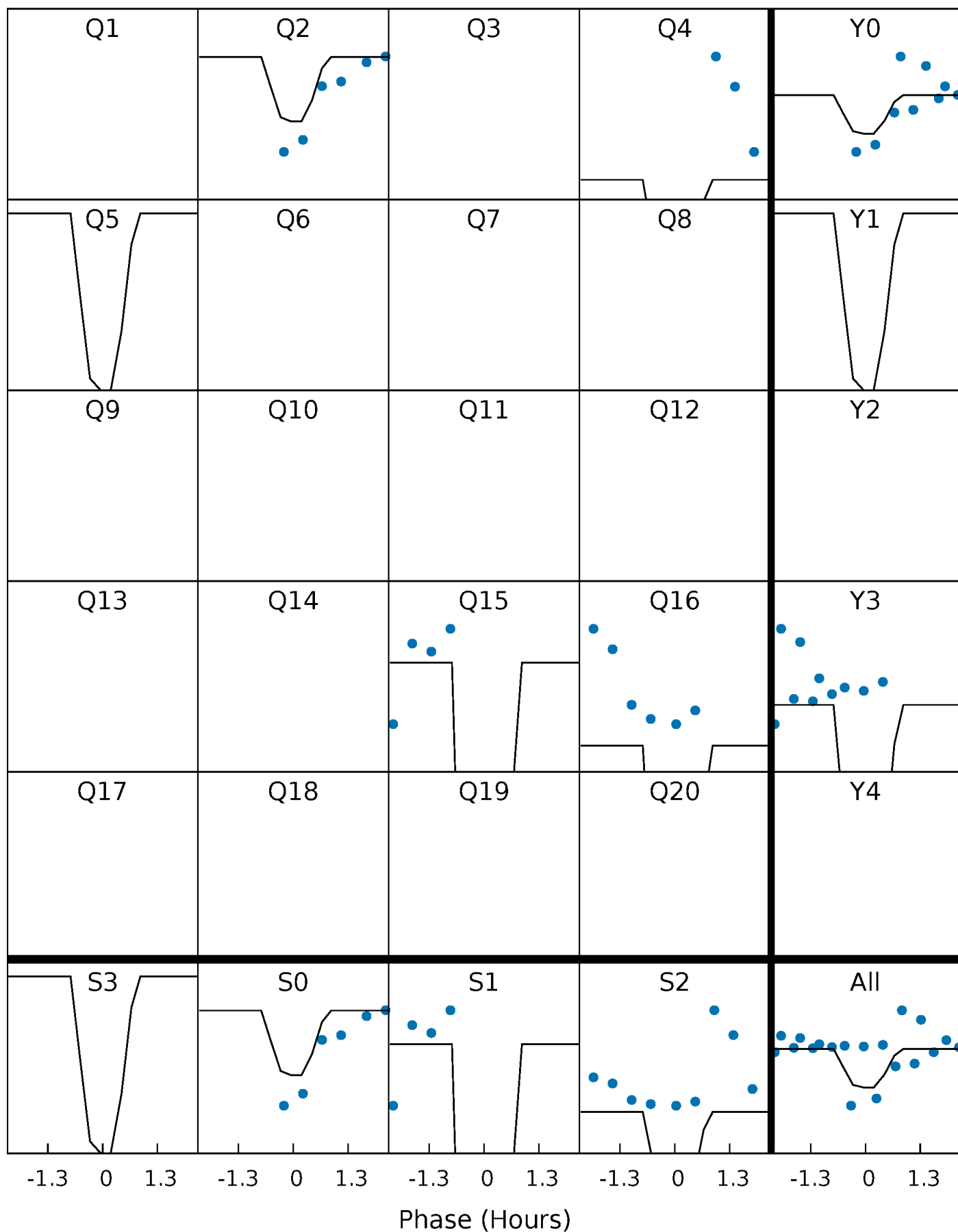
DV Quarter-Phased Transit Curves

TCE 007384460-03 $P=128.247834$ Days $T_0=239.747561$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

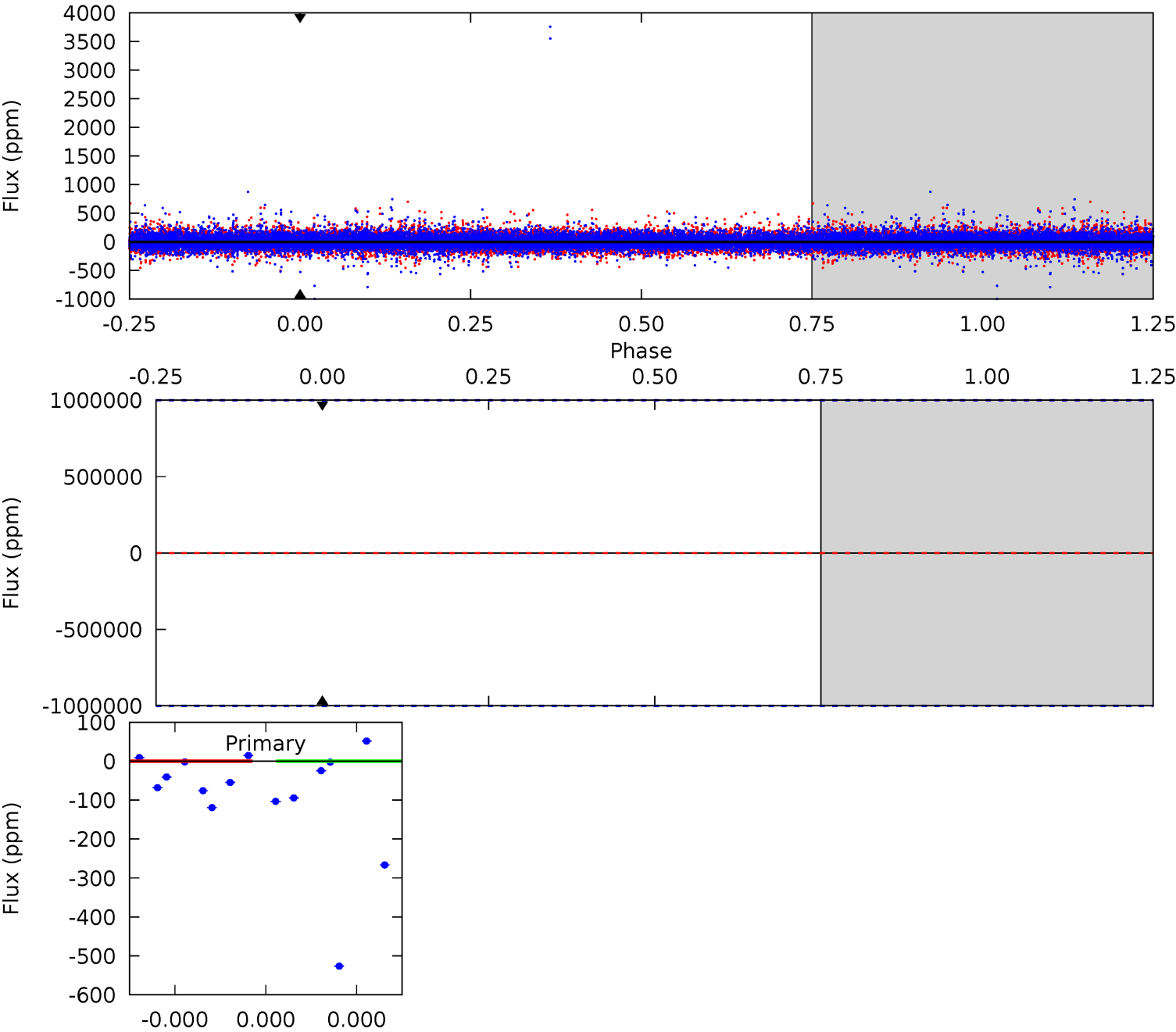
TCE 007384460-03 P=128.247834 Days $T_0=238.966713$ (BKJD)



DV Model-Shift Uniqueness Test

007384460-03, P = 128.247834 Days, E = 111.499727 Days

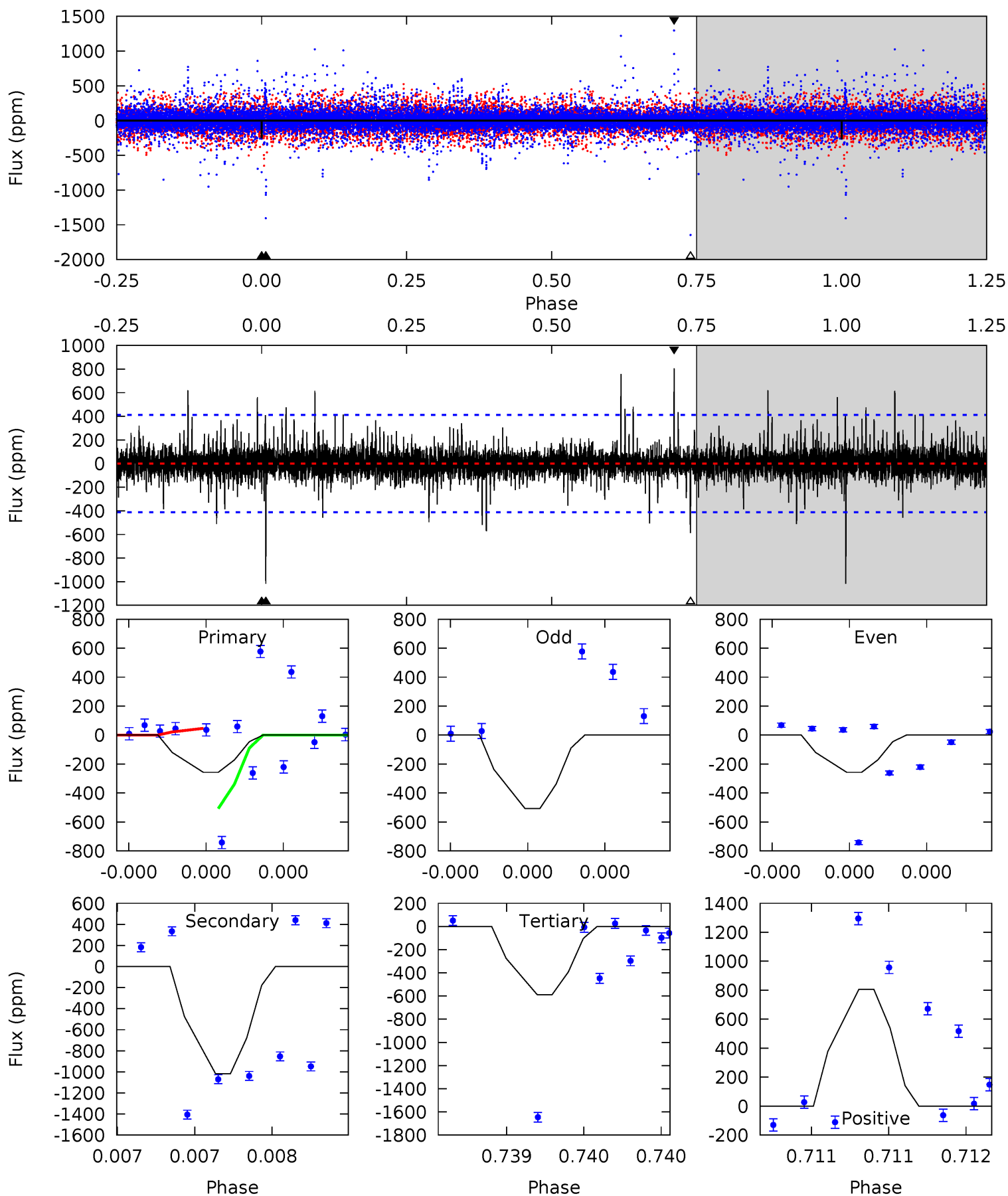
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



Alt Model-Shift Uniqueness Test

007384460-03, P = 128.247834 Days, E = 110.718879 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3.50	13.9	8.01	11.0	5.61	3.54	0.97	-4.51	-7.49	5.85	2.87	2.00	1.00	0.44	3.08



Stellar Parameters For KIC 007384460

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$\rho_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4805^{+131}_{-107}	$3.766^{+0.862}_{-0.345}$	$0.200^{+0.200}_{-0.250}$	$2.111^{+1.161}_{-1.418}$	$0.948^{+0.215}_{-0.176}$	$0.142^{+2.795}_{-0.093}$
	+3%/-2%	+23%/-9%	+100%/-125%	+55%/-67%	+23%/-19%	+1968%/-66%
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 007384460-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	0 ± 1000000	$14.63^{+20.65}_{-10.93}$	613^{+94}_{-120}	4060^{+13358}_{-16961}	$784^{+159171}_{-94209}$
Alt.	-1017 ± 73	$15.79^{+21.41}_{-11.07}$	611^{+93}_{-116}	3482^{+2100}_{-630}	552^{+5664}_{-457}

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

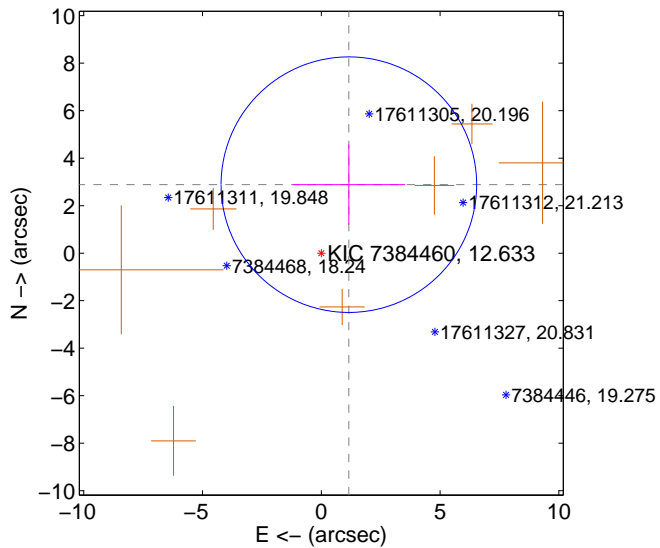
Supplemental centroid analysis for 007384460-03. Kepler magnitude: 12.63. Transit SNR -1.00

There are 0 quarters with good PRF difference image offsets

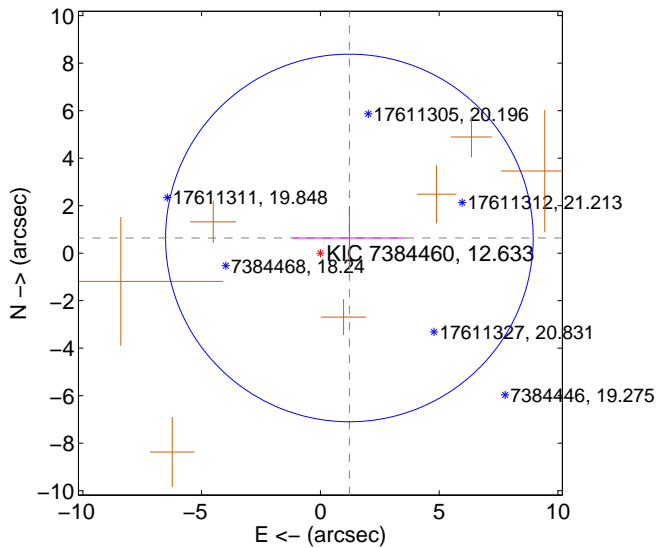
The direct PRF centroid is offset from the target star catalog position by about 0.55 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	3.110 ± 1.793	1.73	-1.161 ± 2.368	2.885 ± 1.682
PRF-fit source offset from KIC position	1.379 ± 2.580	0.53	-1.221 ± 2.389	0.640 ± 1.341
photometric centroid source offset	0.39 ± 0.41	0.93	0.09 ± 0.47	-0.38 ± 0.41

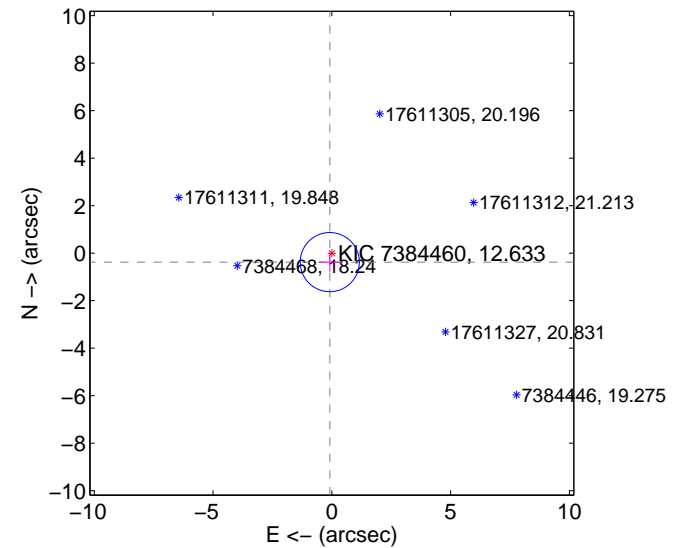
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

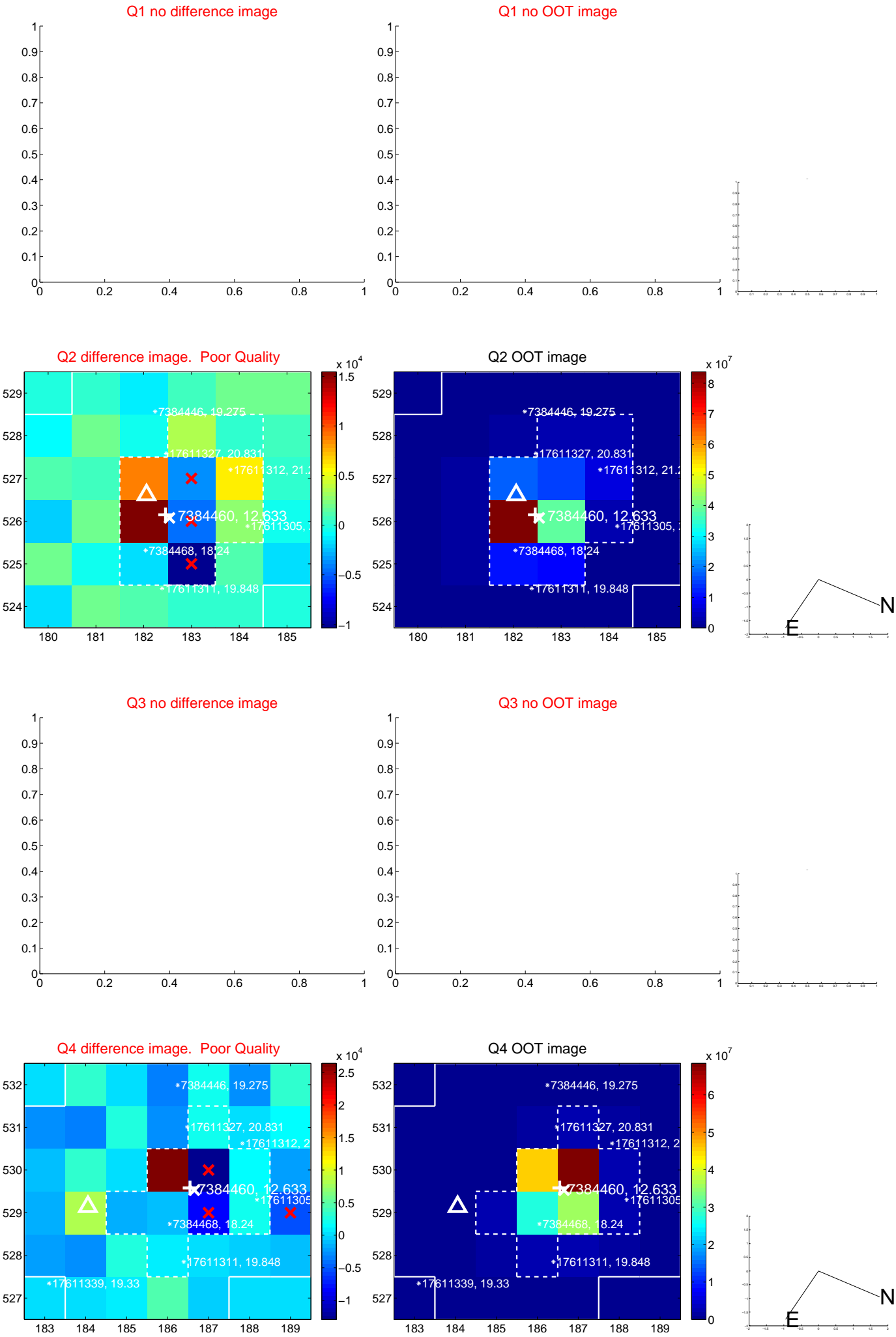


offset from photometric centroids

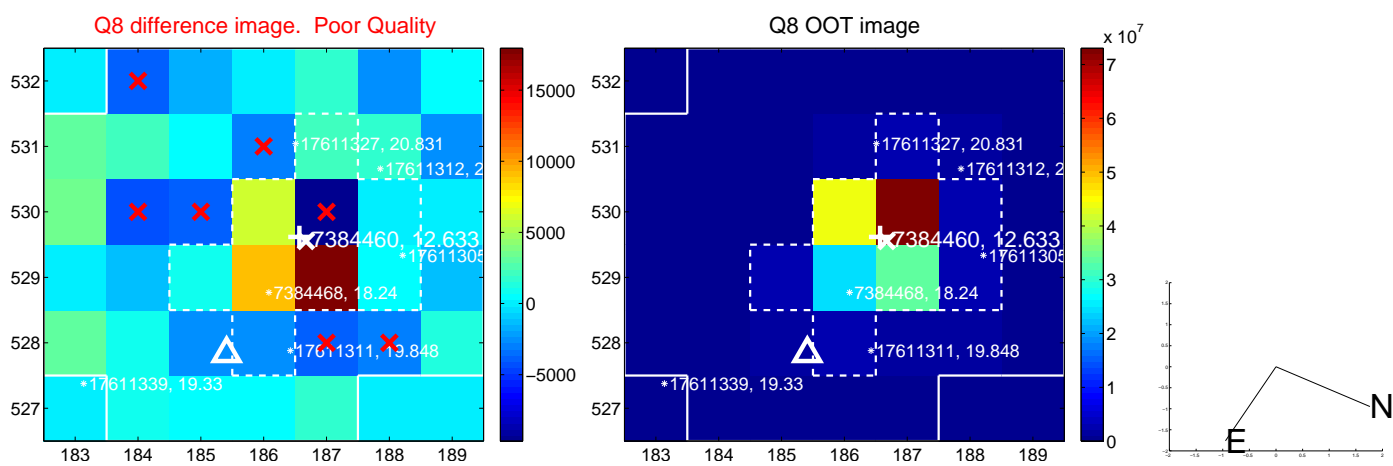
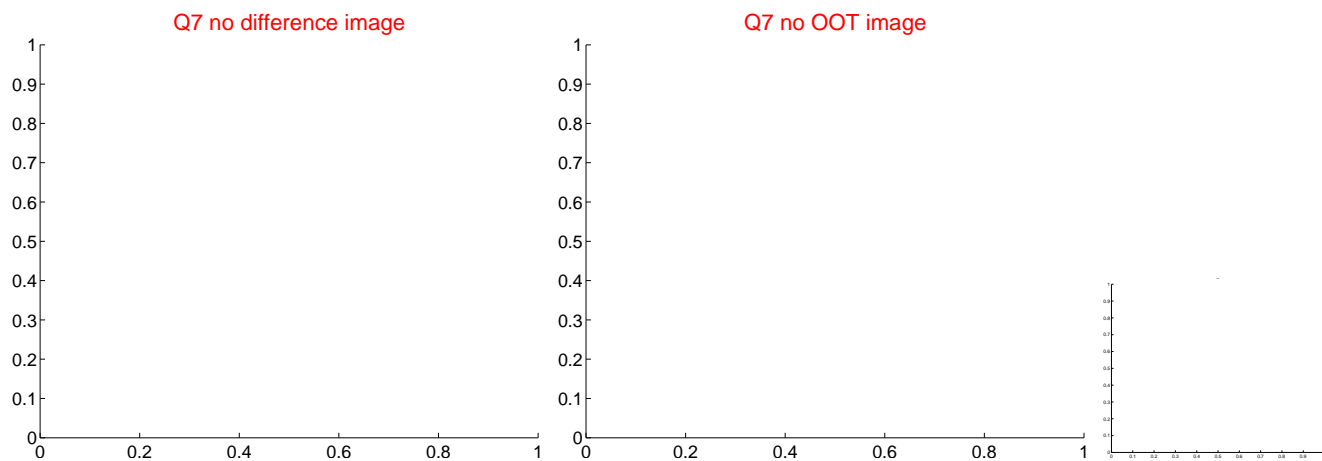
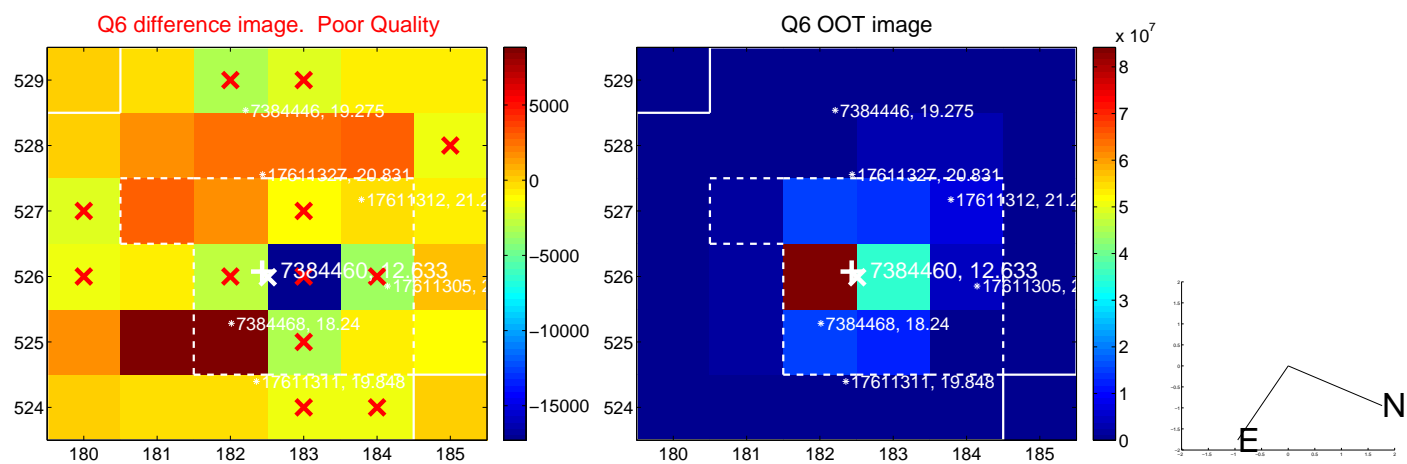
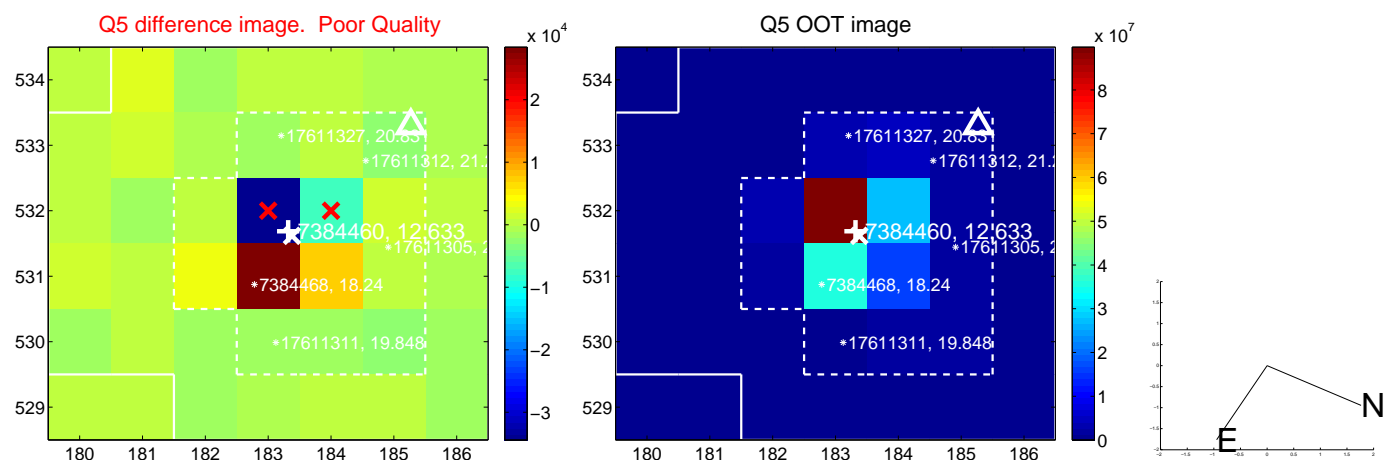


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

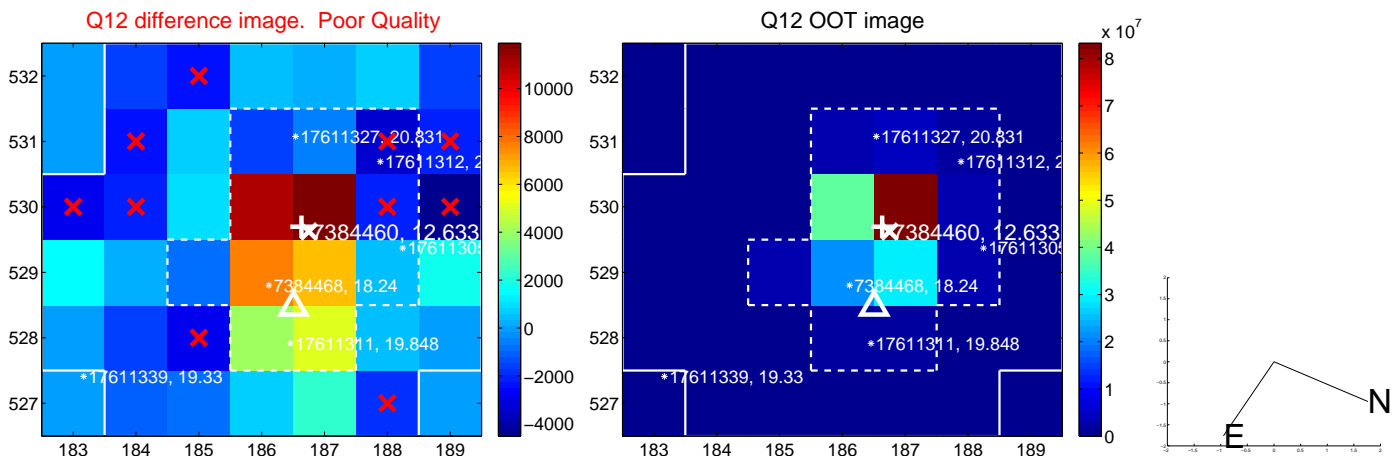
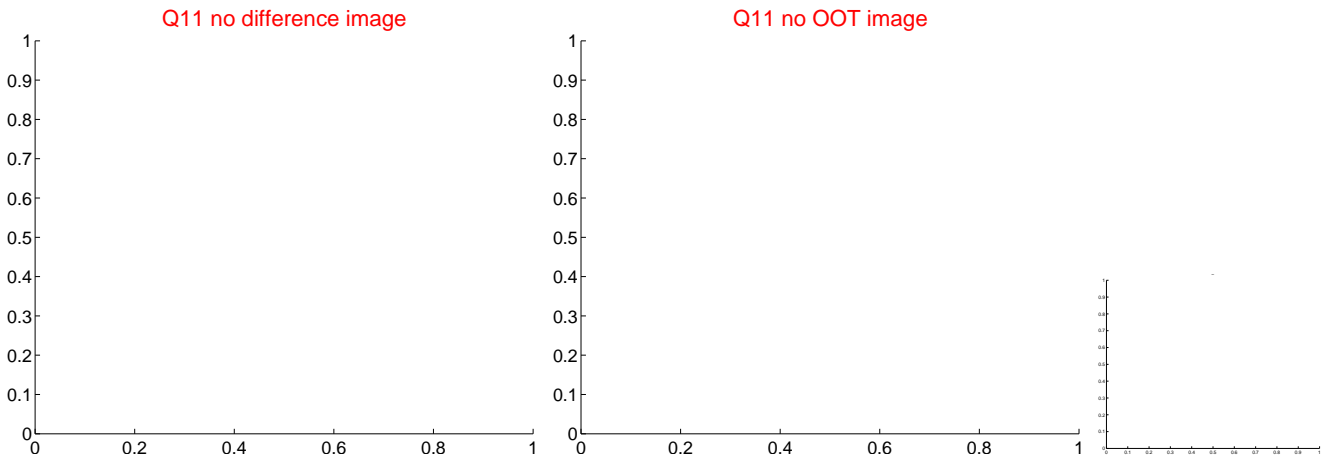
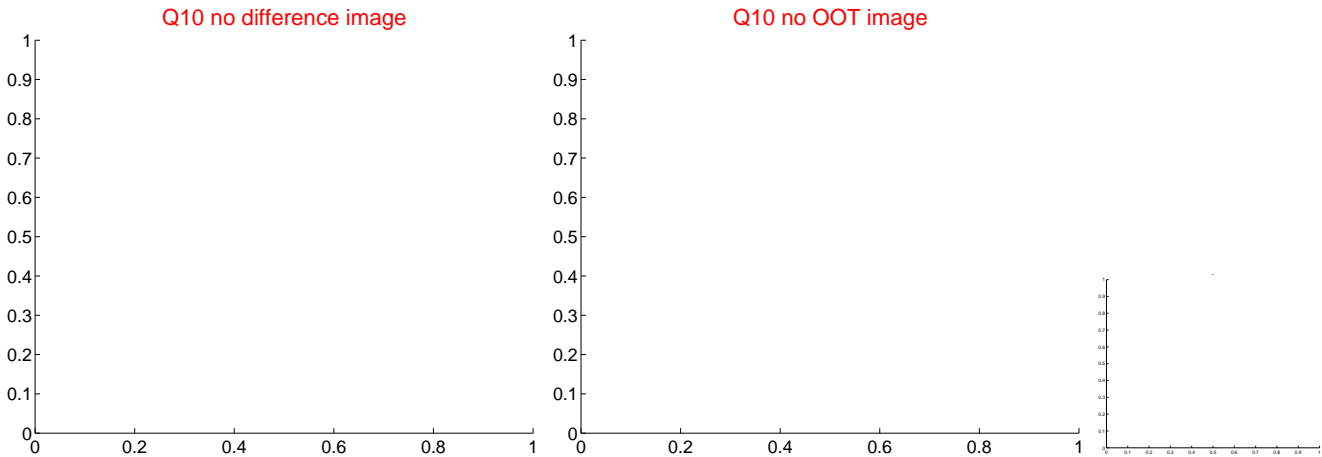
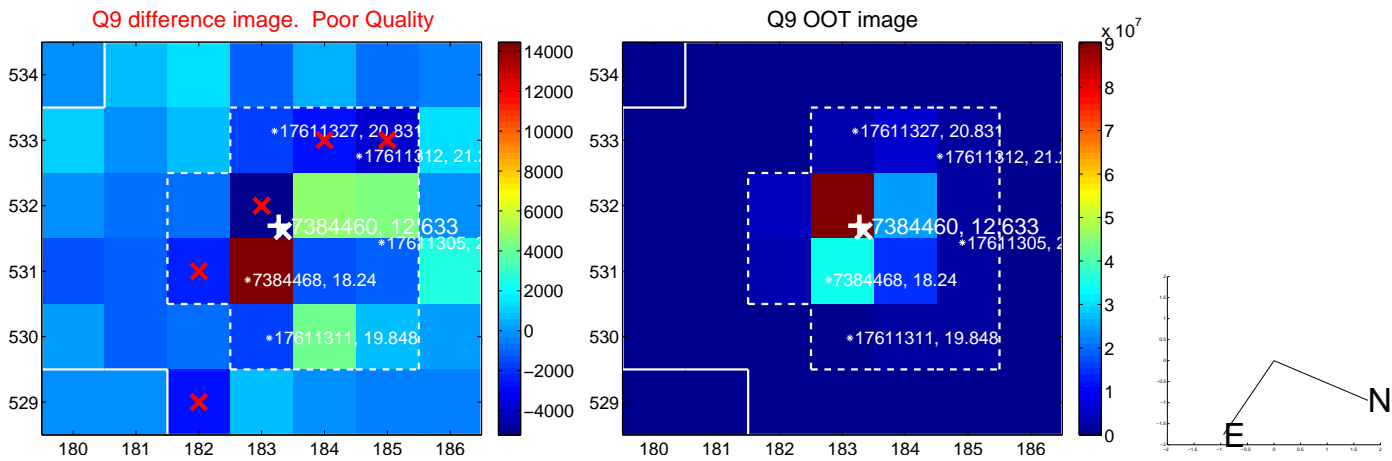
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



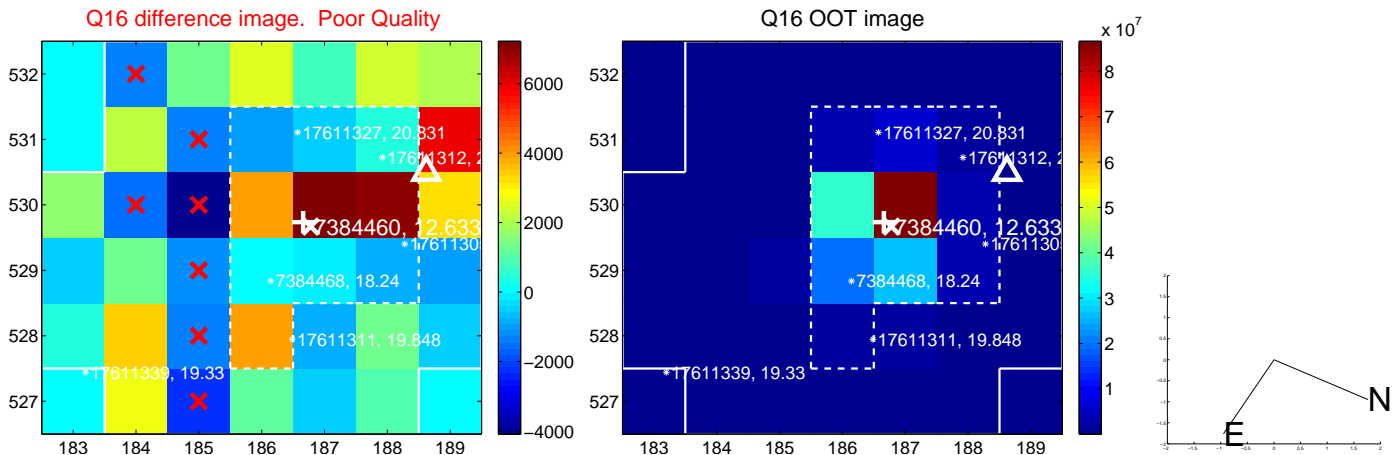
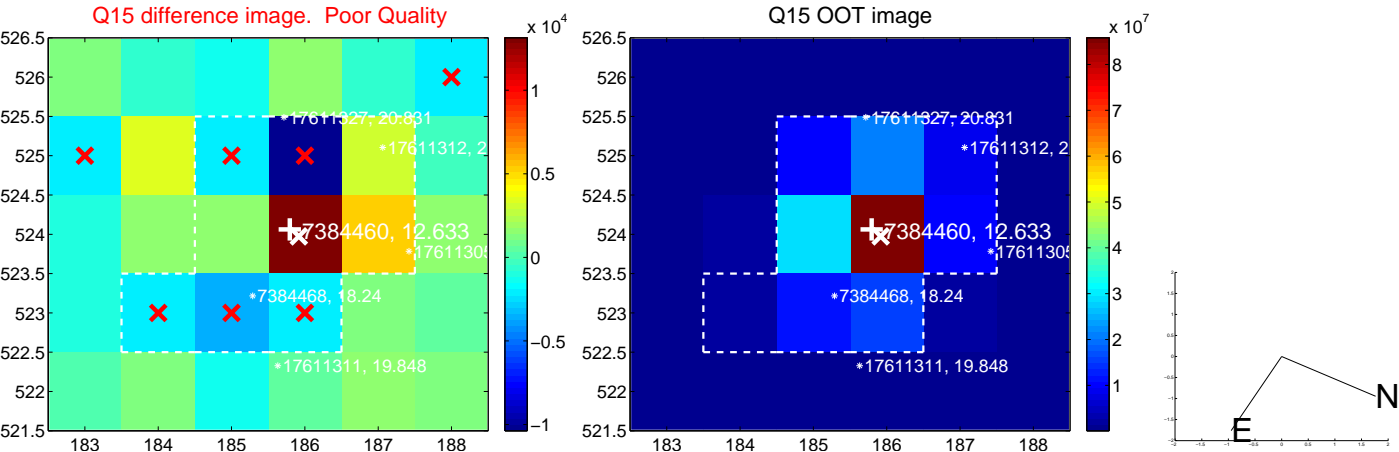
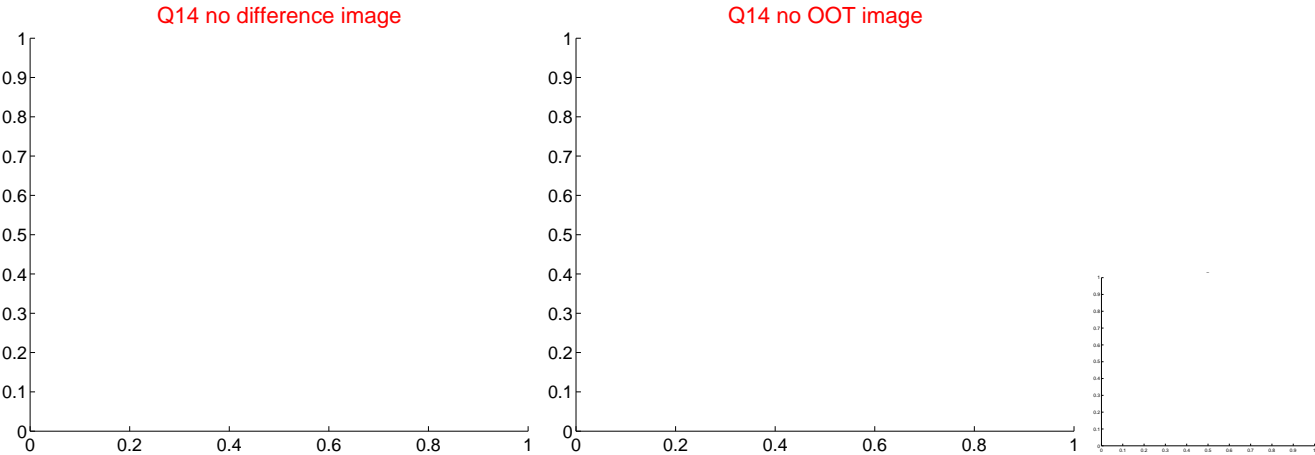
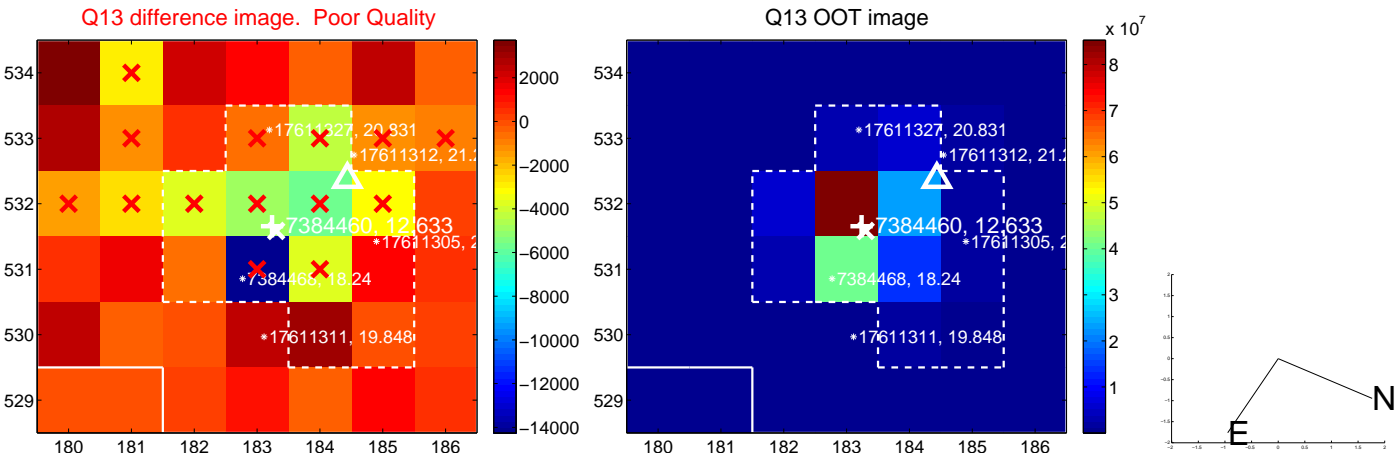
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



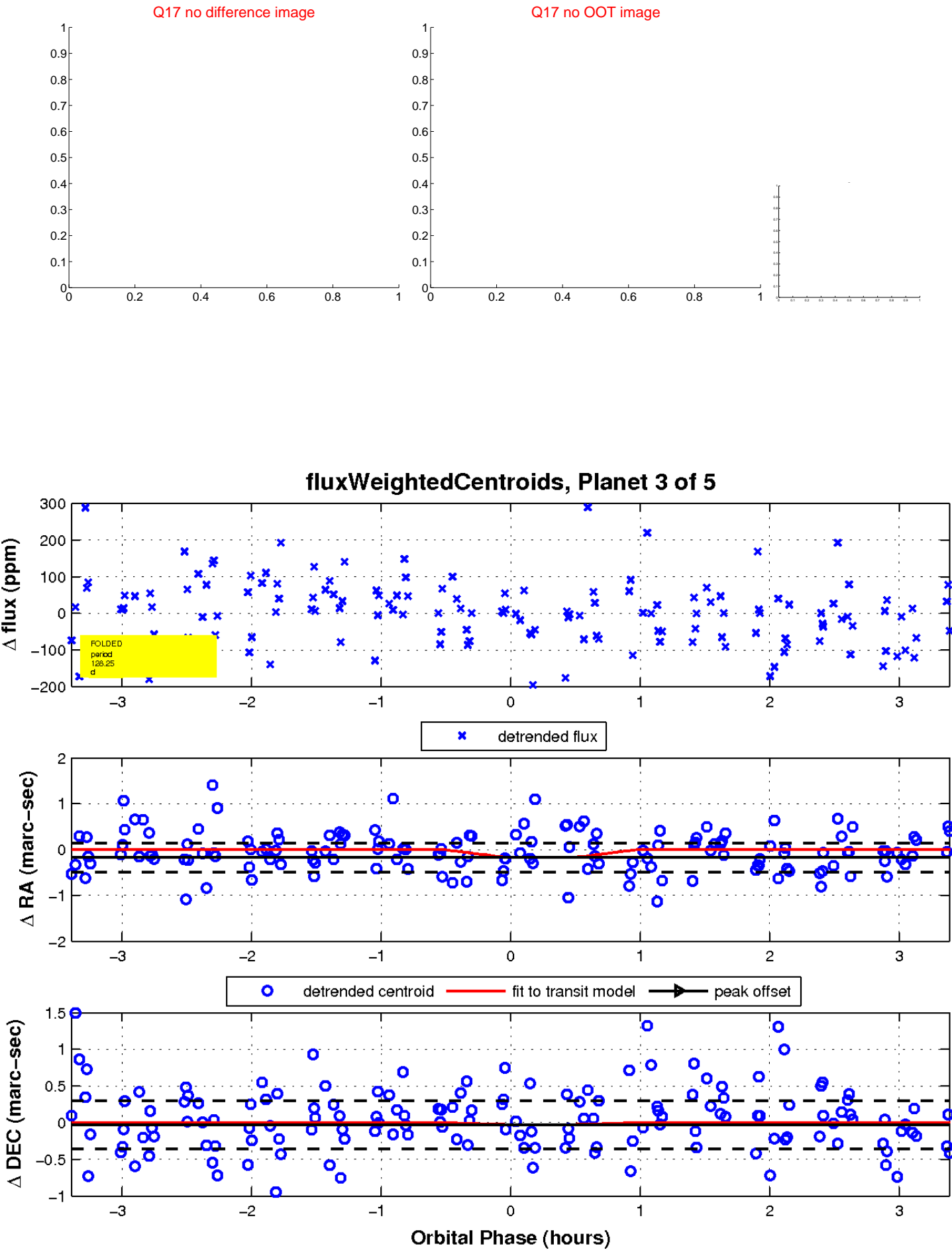
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

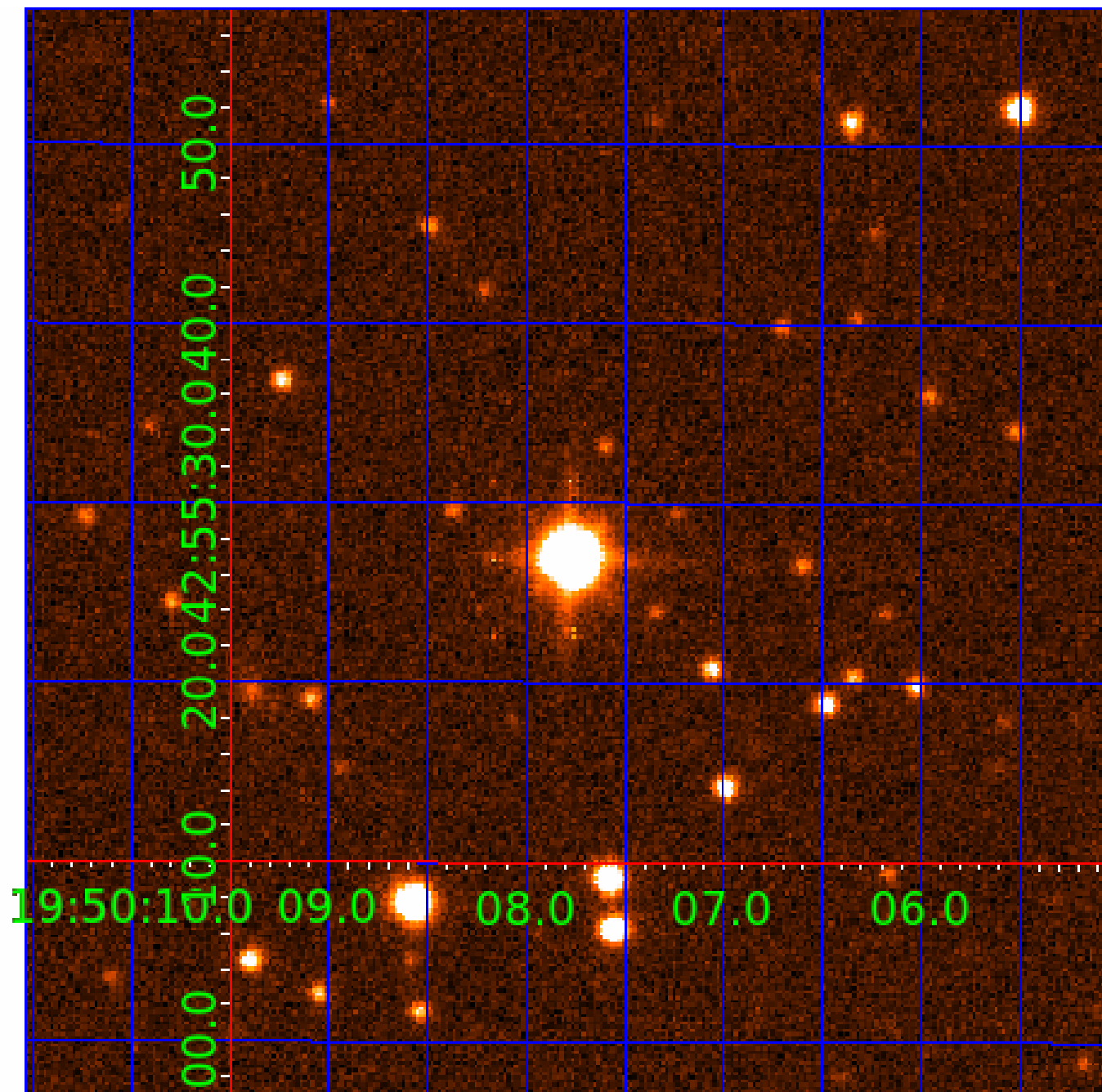


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 007384460

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})
007384460-01	OBS	No	0.903573	132.049411	9.8	4.146	7.6	6.1	2.11	4805	0.81	6587.33
007384460-03	OBS	No	128.247834	239.747561	128.7	15.000	11.1	-1.0	2.11	4805	2.30	8.90
007384460-04	OBS	No	192.619420	162.757944	165.5	12.886	10.0	4.5	2.11	4805	2.98	5.17
007384460-05	OBS	No	115.117648	184.498028	128.8	11.484	8.0	4.5	2.11	4805	2.58	10.28

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007384460-01	OBS	FP	0.00	1	0	0	0	LPP_DV—CENT_KIC_POS
007384460-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_NOFITS
007384460-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_KIC_POS
007384460-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—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.

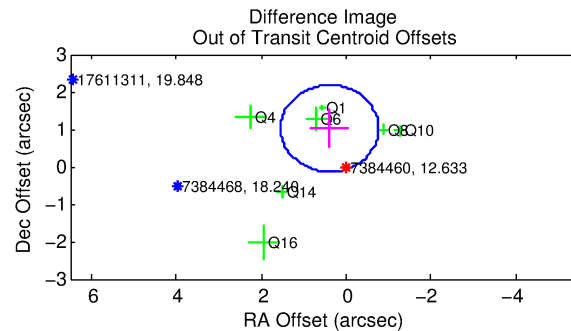
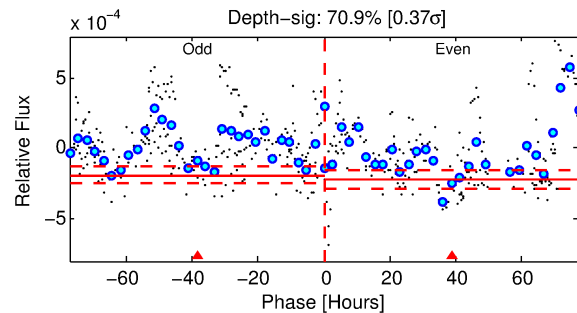
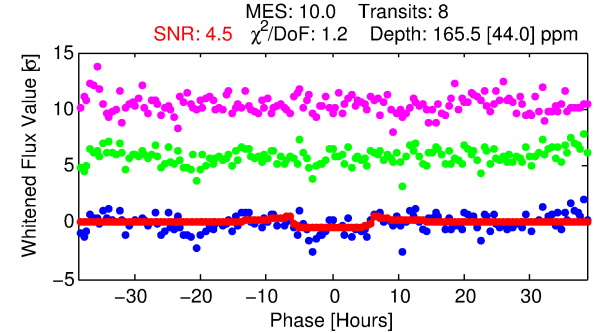
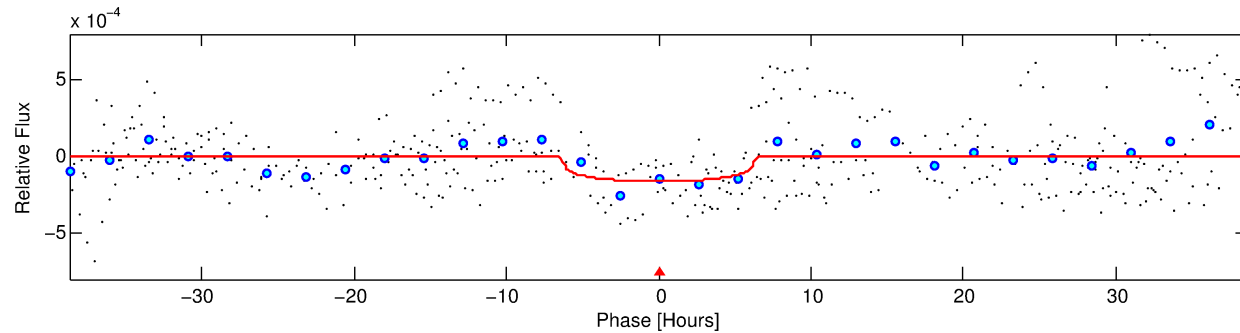
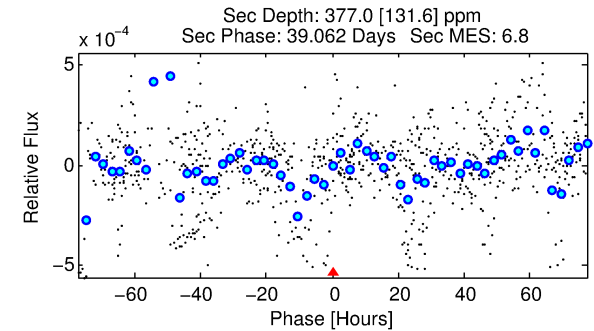
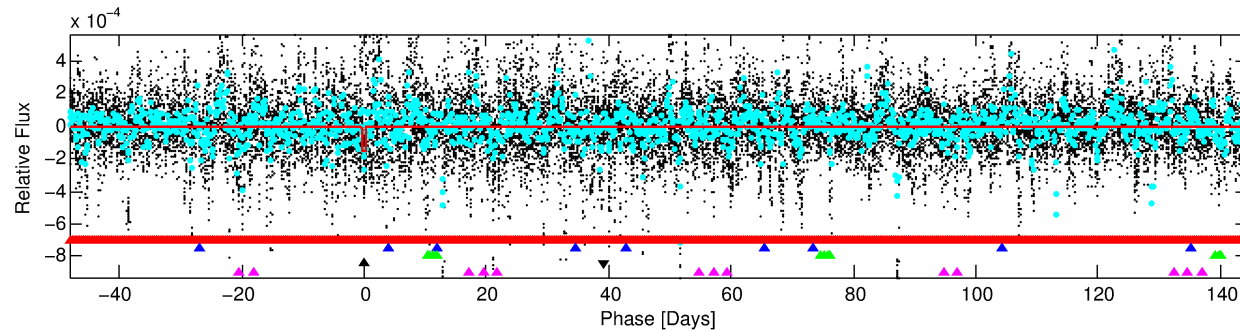
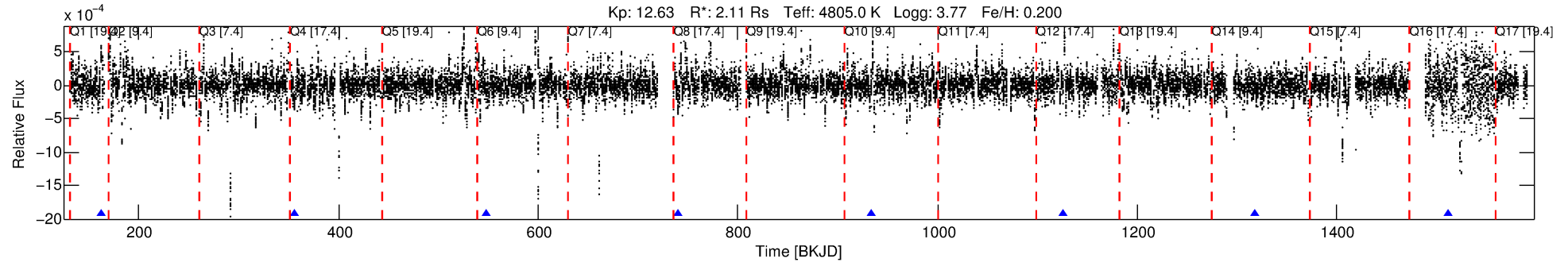
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007384460-04

No Significant Match Found

DV One-Page Summary

KIC: 7384460 Candidate: 4 of 5 Period: 192.619 d



DV Fit Results:

Period = 192.61942 [0.00579] d
Epoch = 162.7579 [0.0256] BKJD
Rp/R* = 0.0129 [0.0077]
a/R* = 76.67 [151.16]
b = 0.76 [1.11]
Seff = 5.17 [7.25]
Teff = 385 [135] K
Rp = 2.98 [2.67] Re
a = 0.6414 [0.5125] AU
Ag = 9631.18 [17964.87] [0.54σ]
Teffp = 5890 [1827] K [3.00σ]

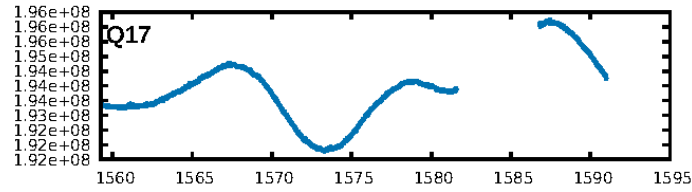
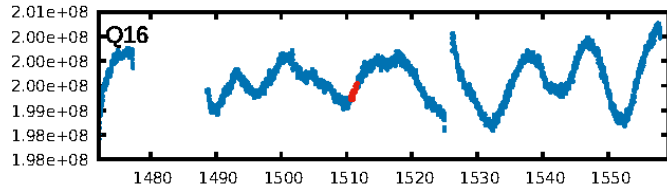
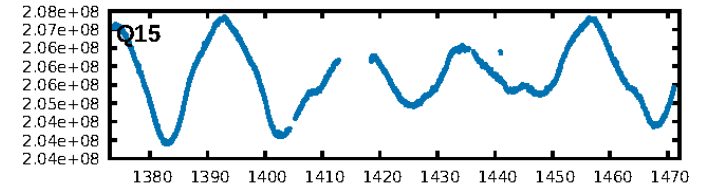
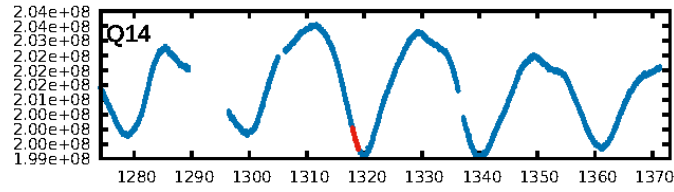
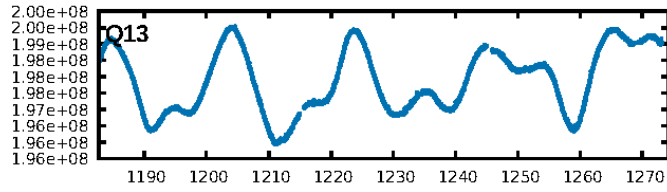
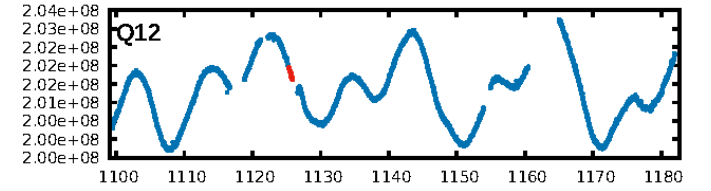
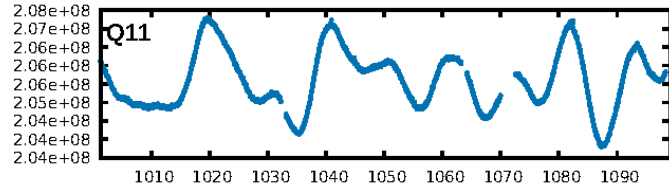
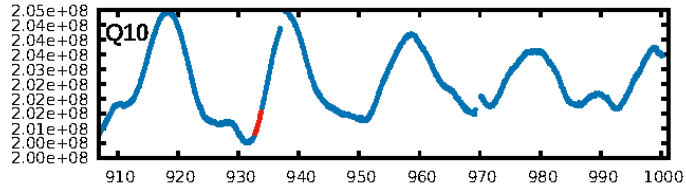
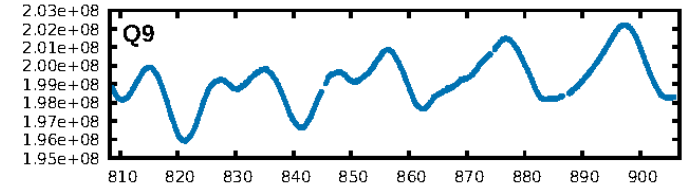
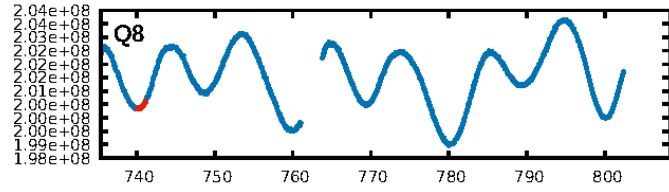
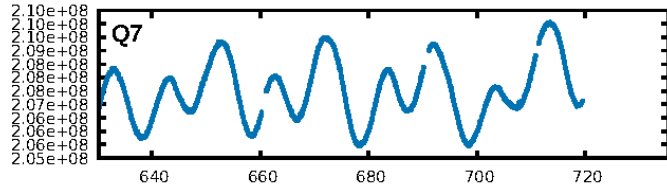
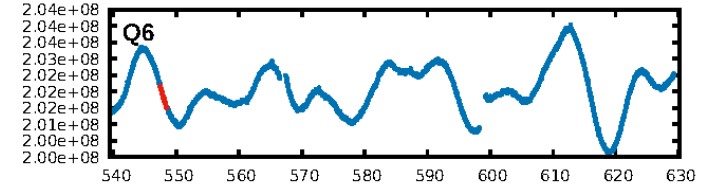
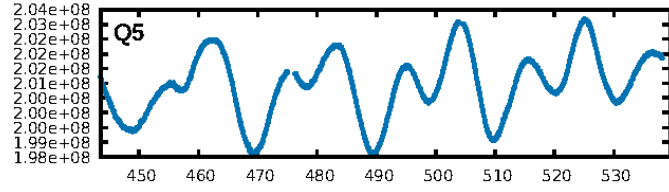
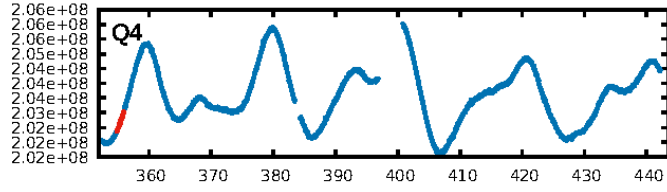
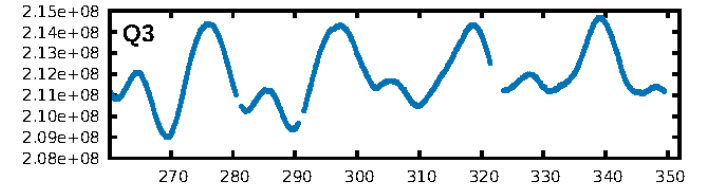
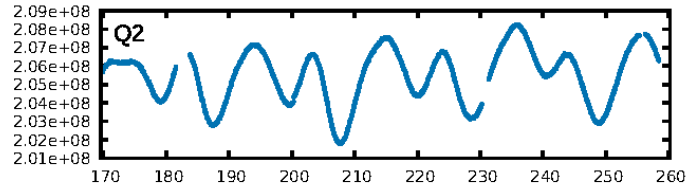
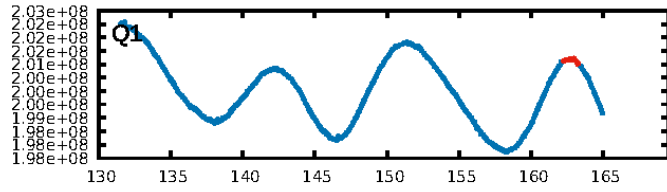
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [49.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 19.1%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 2.05e-08
RollingBand-fgt: 1.00 [7/7]
GhostDiagnostic-chr: 1.277
Centroid-sig: 73.7%
Centroid-so: 0.573 arcsec [0.73σ]
OotOffset-rm: 1.090 arcsec [2.82σ]
OotOffset-st: 3/0/3/1 [7]
KicOffset-rm: 0.615 arcsec [1.43σ]
KicOffset-st: 3/0/3/1 [7]
DiffImageQuality-fgm: 0.86 [6/7]
DiffImageOverlap-fno: 0.00 [0/7]

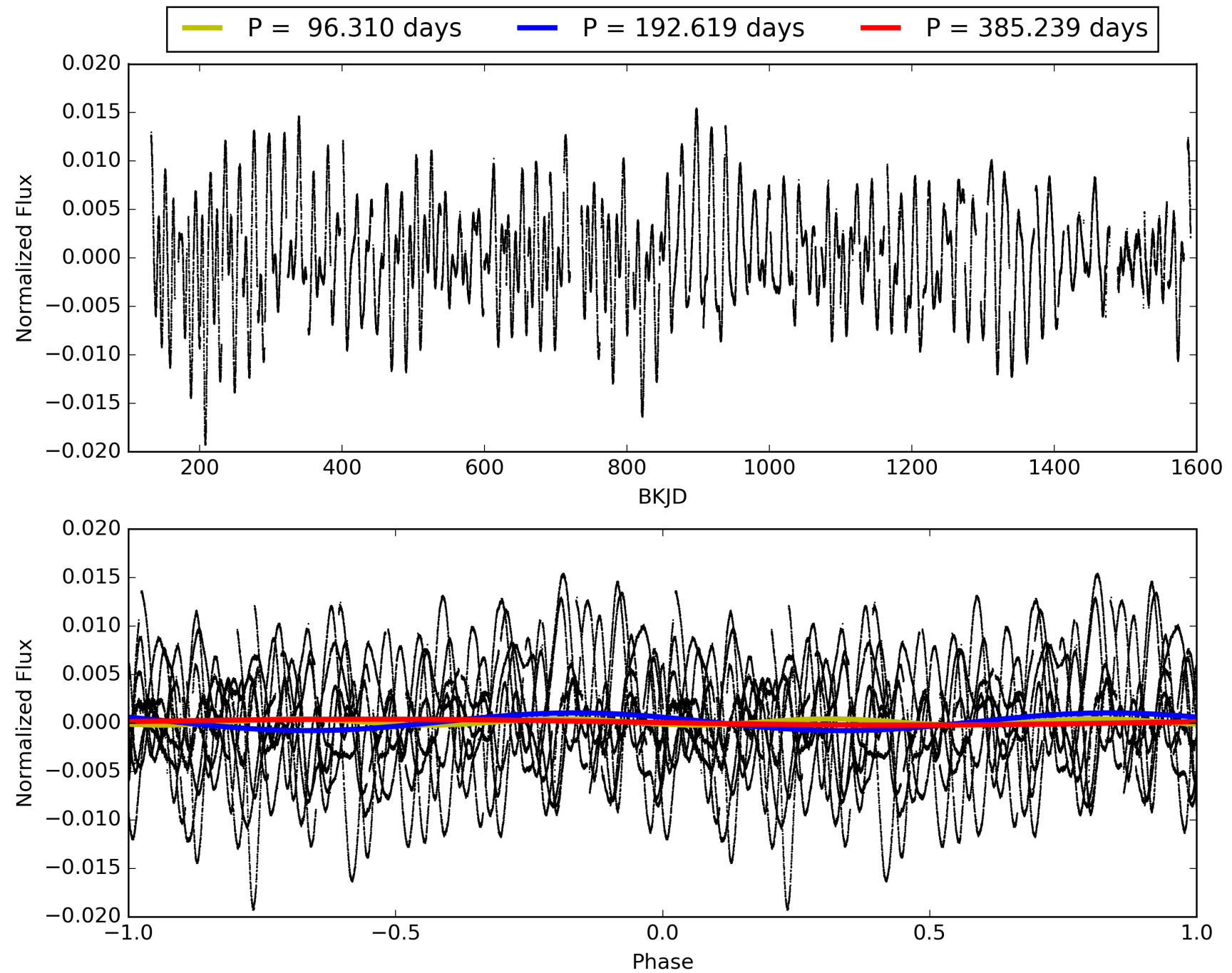
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 14:44:17 Z

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

TCE 007384460-04, PDC Light Curves

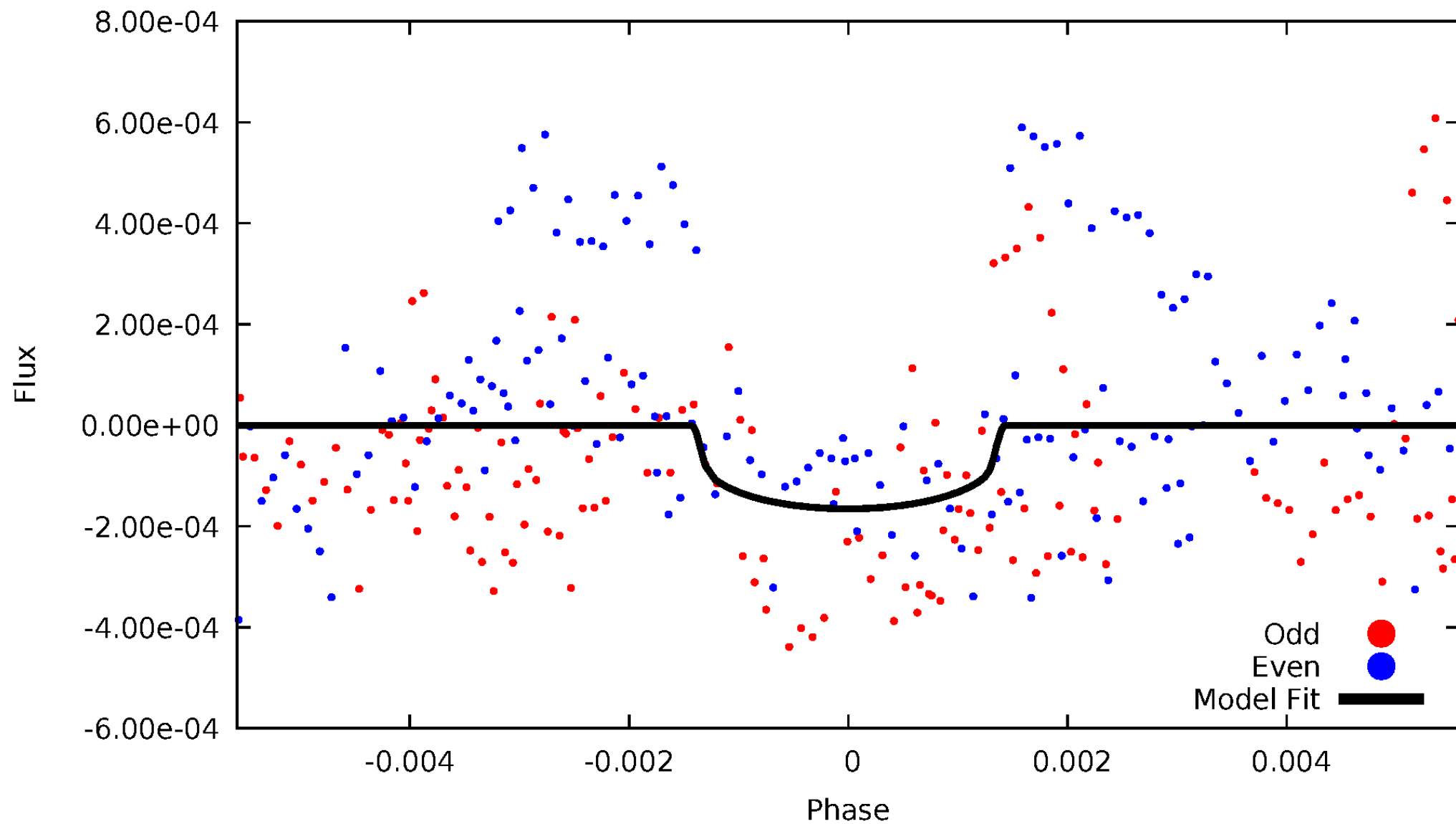


TCE 007384460-04



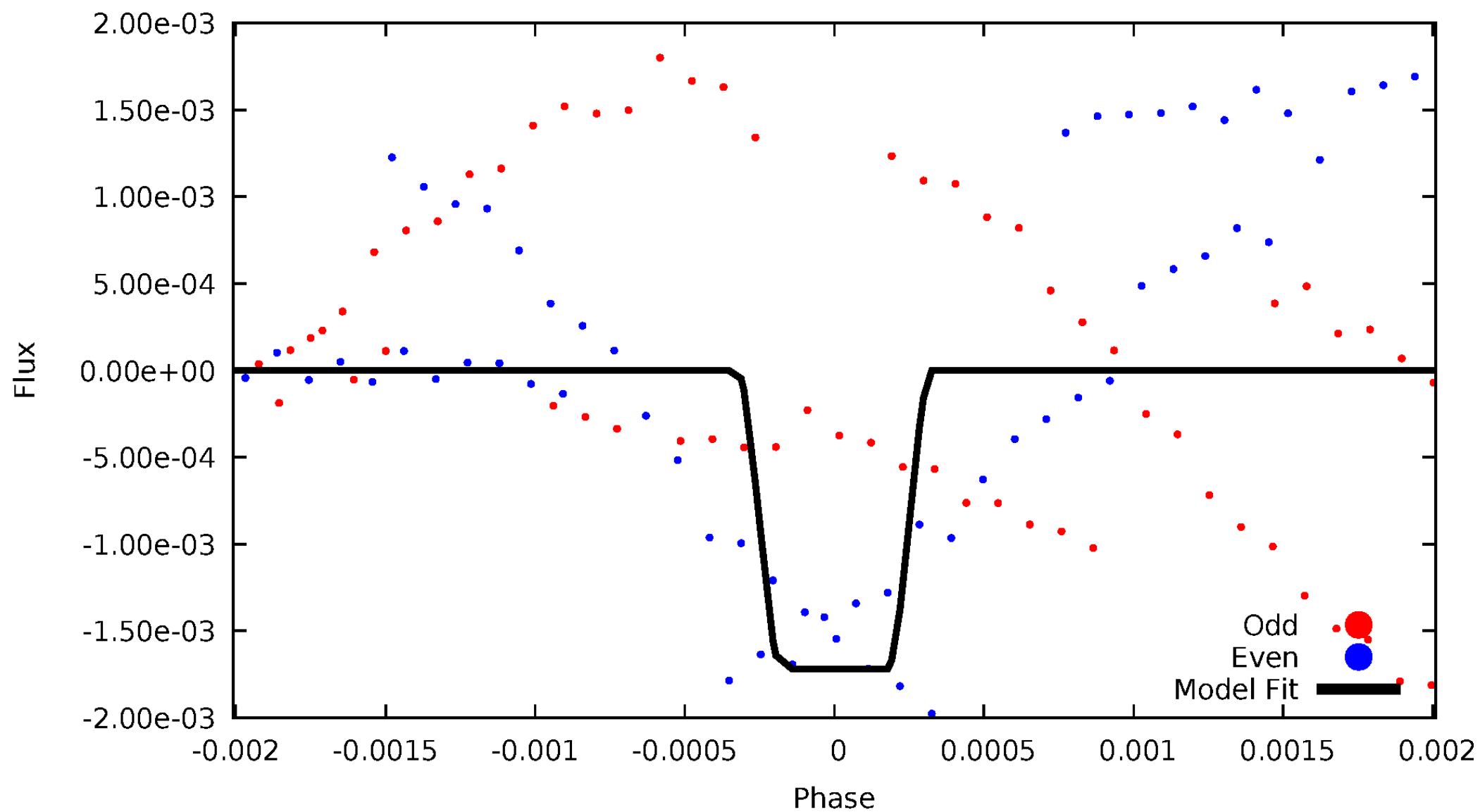
DV Odd/Even

TCE 007384460-04



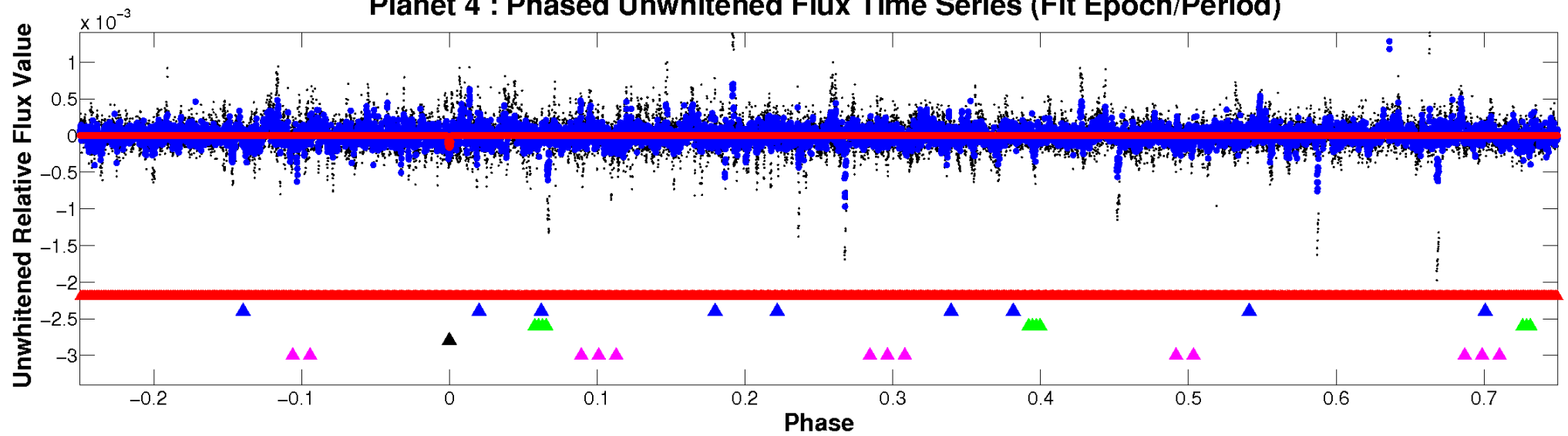
ALT Odd/Even

TCE 007384460-04

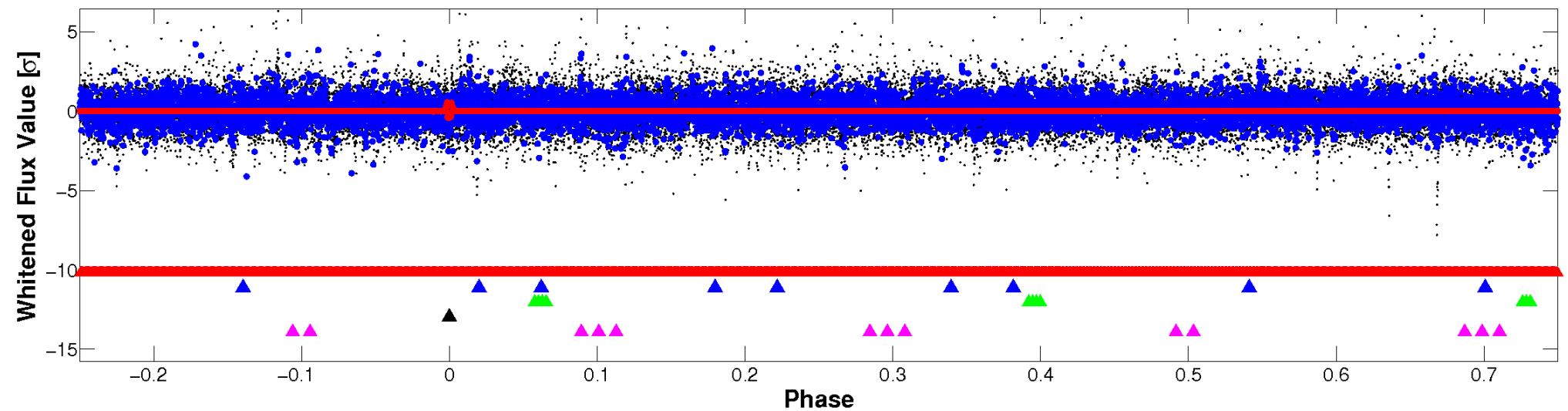


Non-Whitened Vs. Whitened Light Curve

Planet 4 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

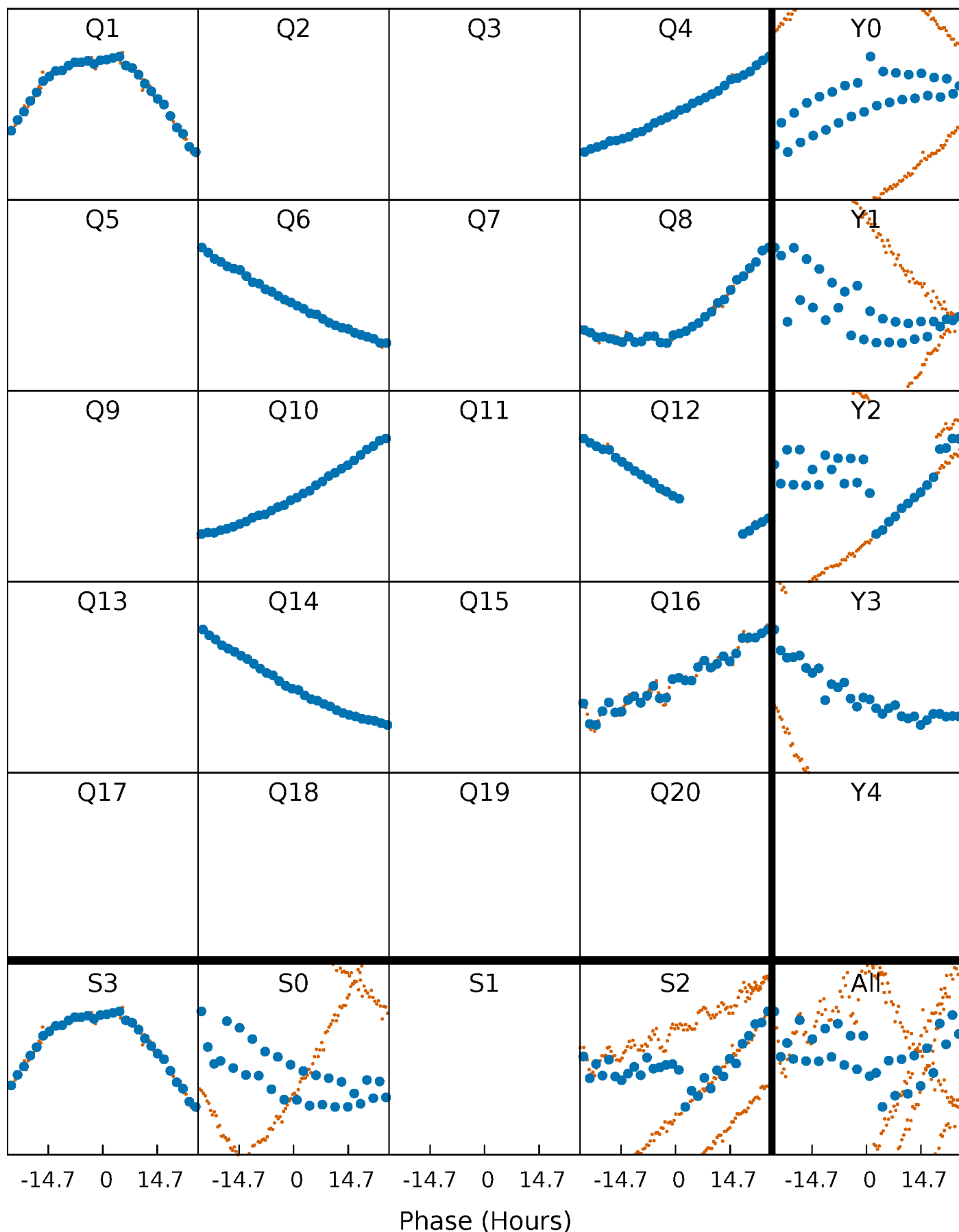


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



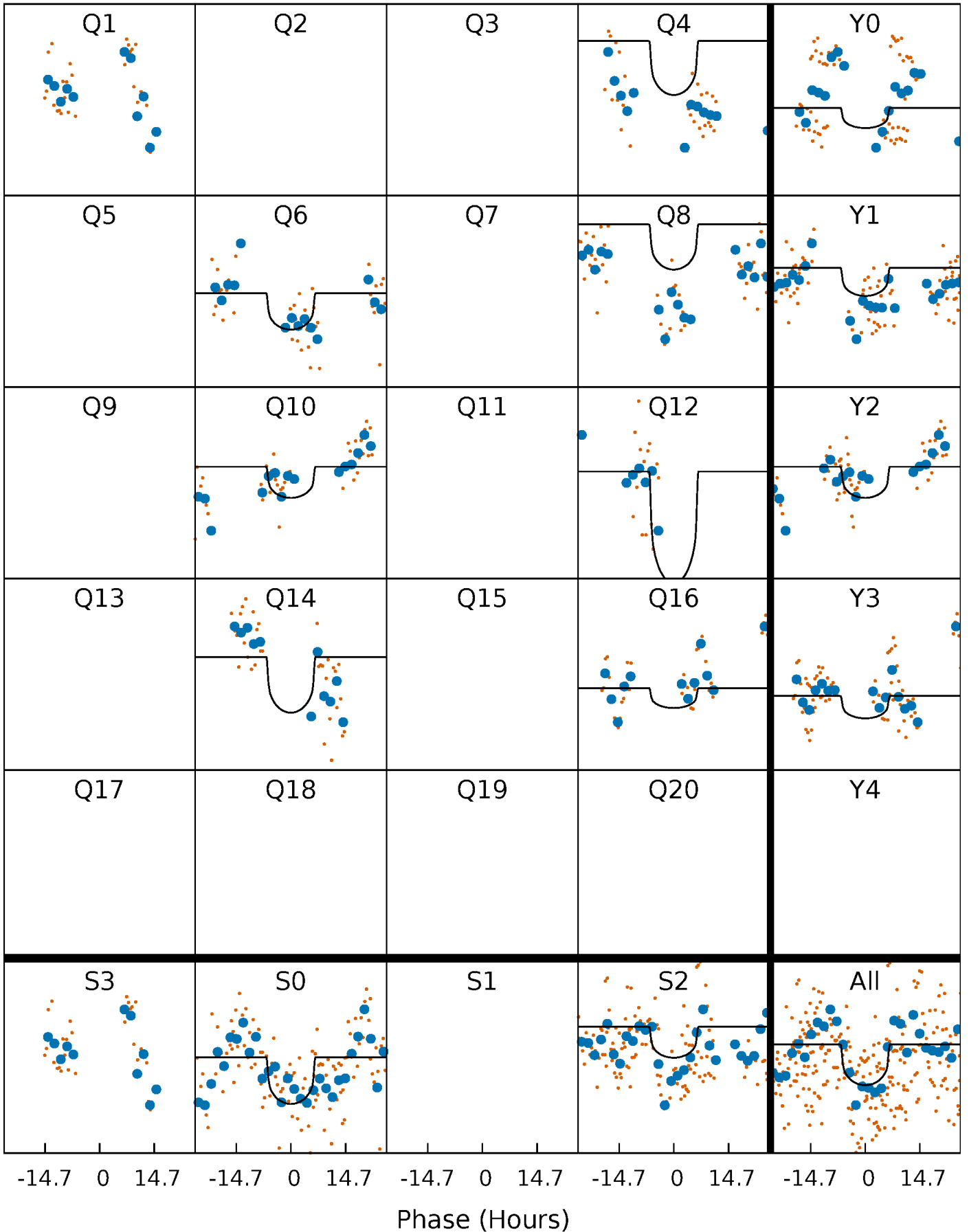
PDC Quarter-Phased Transit Curves

TCE 007384460-04 P=192.619420 Days $T_0=162.757944$ (BKJD)



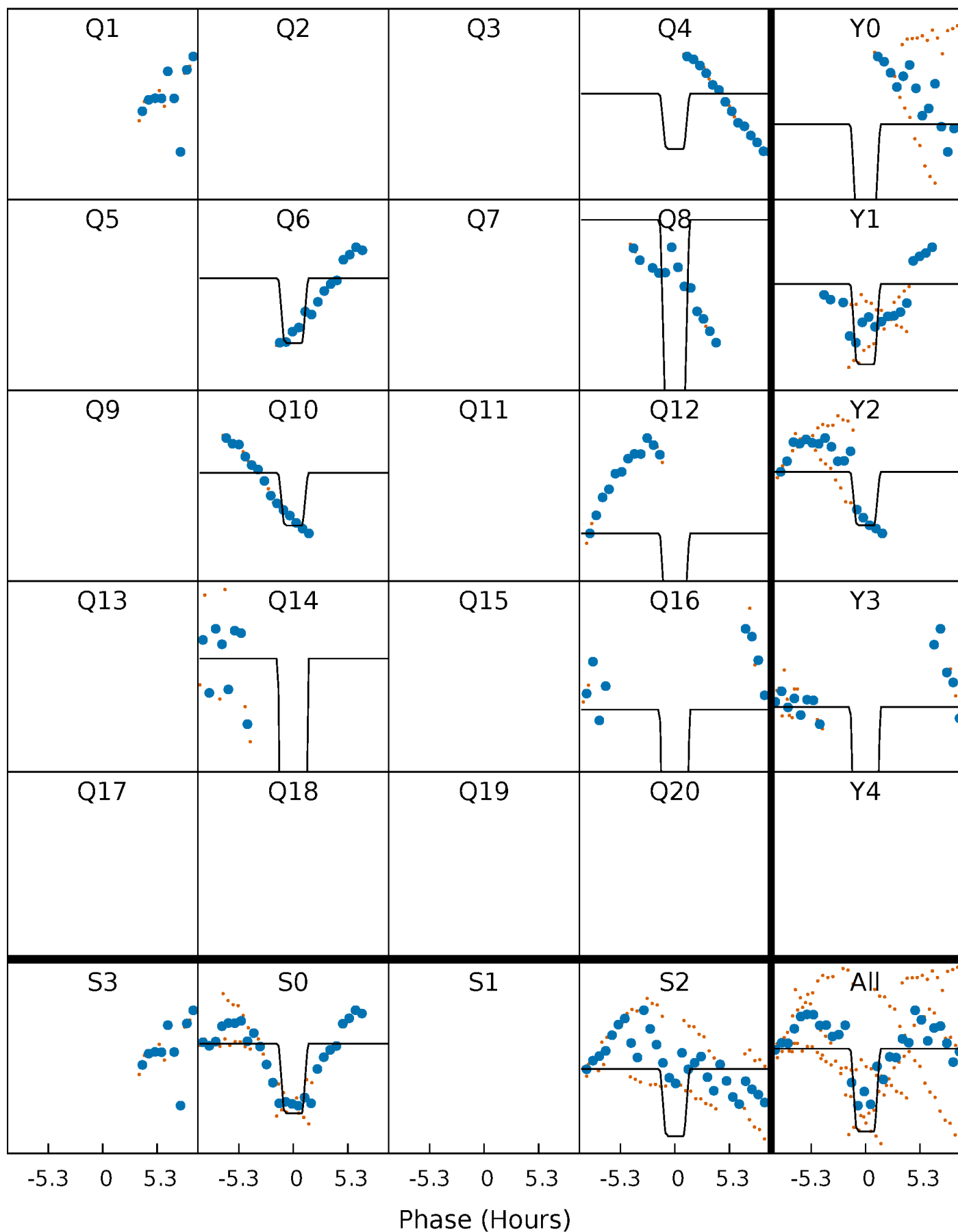
DV Quarter-Phased Transit Curves

TCE 007384460-04 $P=192.619420$ Days $T_0=162.757944$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

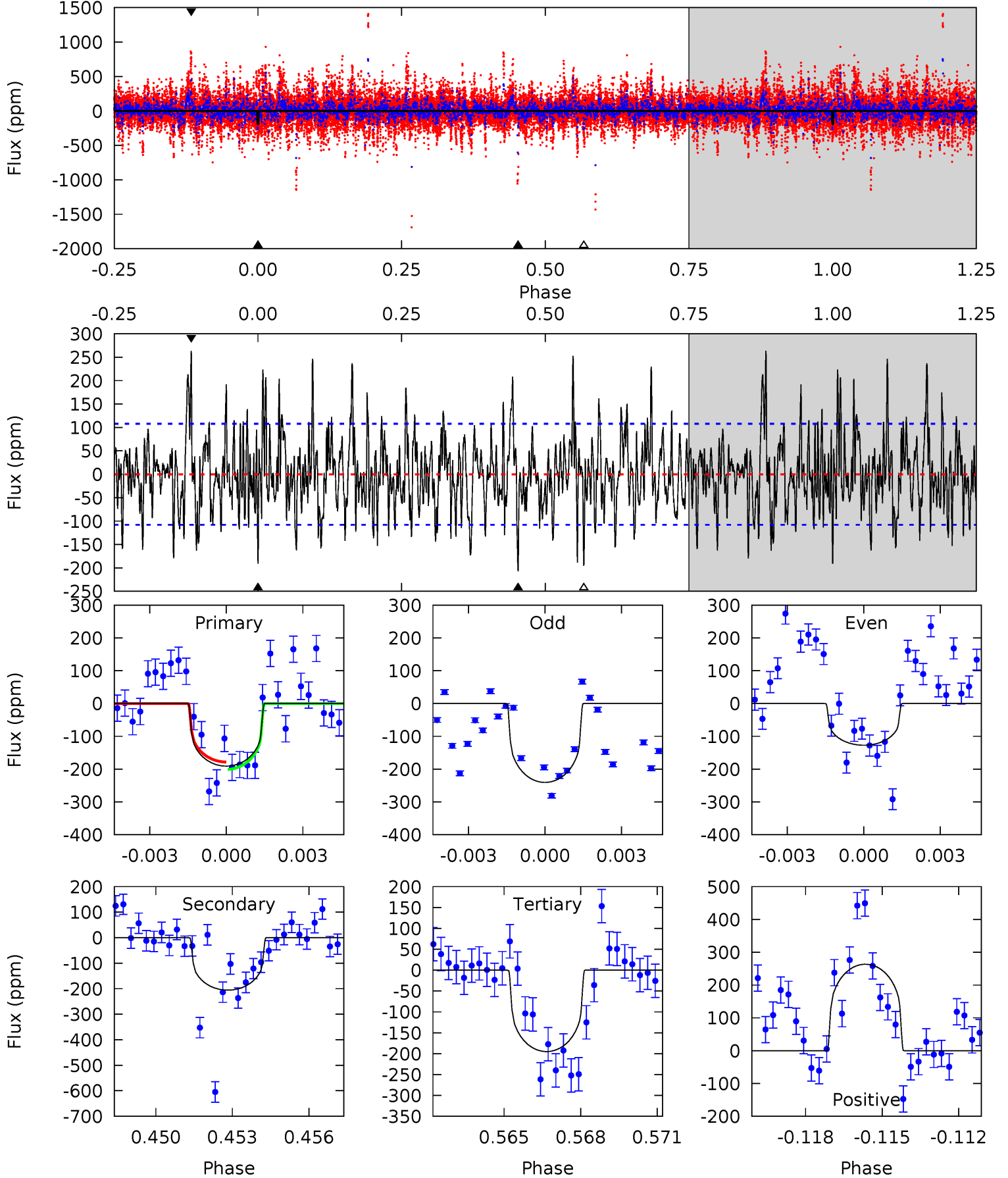
TCE 007384460-04 P=192.572681 Days $T_0=162.893474$ (BKJD)



DV Model-Shift Uniqueness Test

007384460-04, P = 192.619420 Days, E = 162.757944 Days

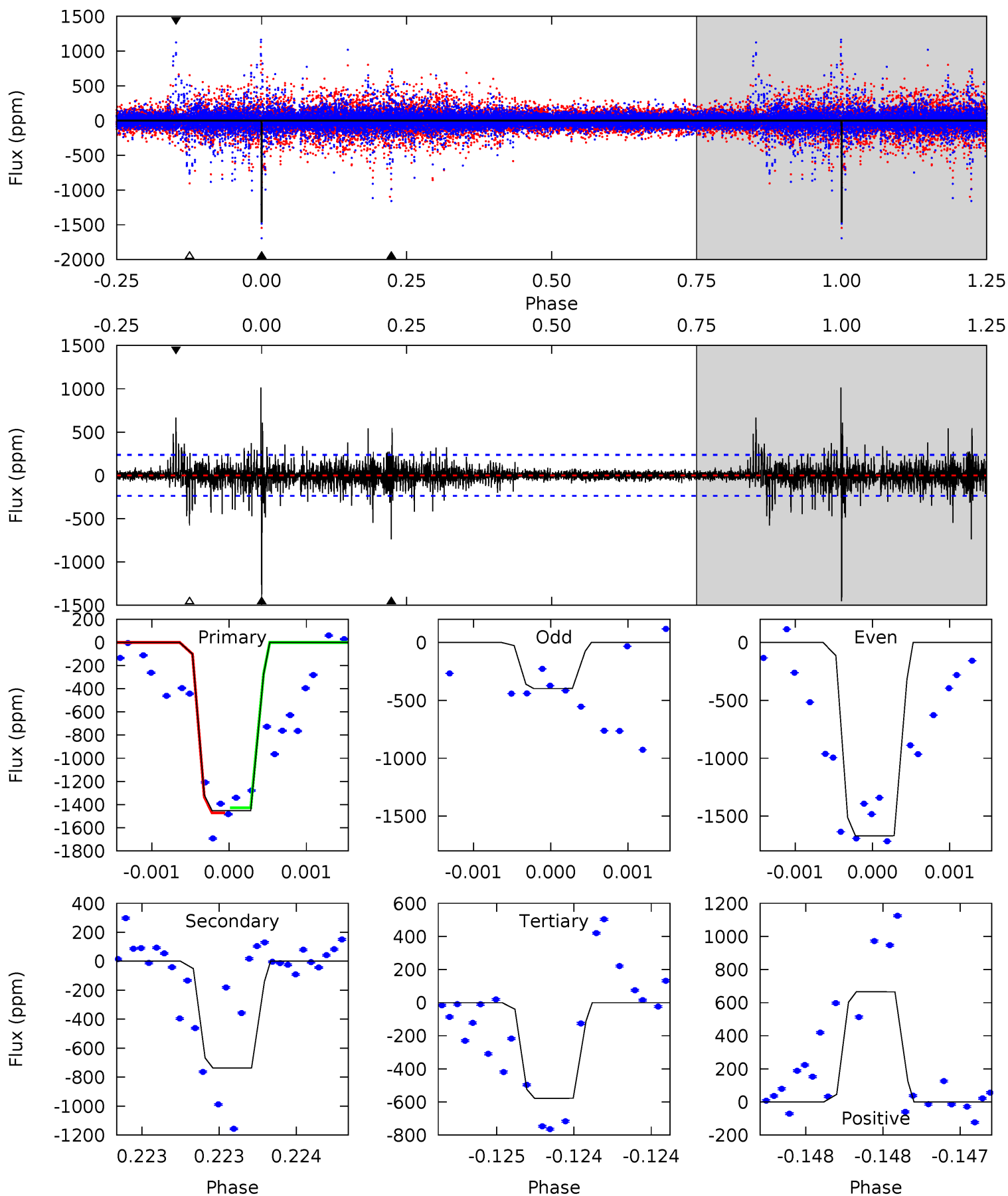
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.30	10.0	9.50	12.8	5.26	2.98	3.33	-0.20	-3.53	0.52	-2.81	2.62	1.27	0.56	0.55



Alt Model-Shift Uniqueness Test

007384460-04, P = 192.572681 Days, E = 162.893474 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
33.8	17.2	13.5	15.5	5.53	3.42	1.64	20.4	18.3	3.71	1.68	13.7	0.56	0.41	0.49



Stellar Parameters For KIC 007384460

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4805^{+131}_{-107}	$3.766^{+0.862}_{-0.345}$	$0.200^{+0.200}_{-0.250}$	$2.111^{+1.161}_{-1.418}$	$0.948^{+0.215}_{-0.176}$	$0.142^{+2.795}_{-0.093}$
	+3%/-2%	+23%/-9%	+100%/-125%	+55%/-67%	+23%/-19%	+1968%/-66%
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 007384460-04 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-206 ± 21	$2.73^{+2.15}_{-1.53}$	536^{+77}_{-101}	5010^{+2329}_{-839}	6263^{+25902}_{-4259}
Alt.	-737 ± 43	$9.20^{+3.98}_{-3.35}$	531^{+86}_{-95}	4097^{+333}_{-274}	1987^{+2850}_{-987}

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 $A_{obs} \gg 1.0$

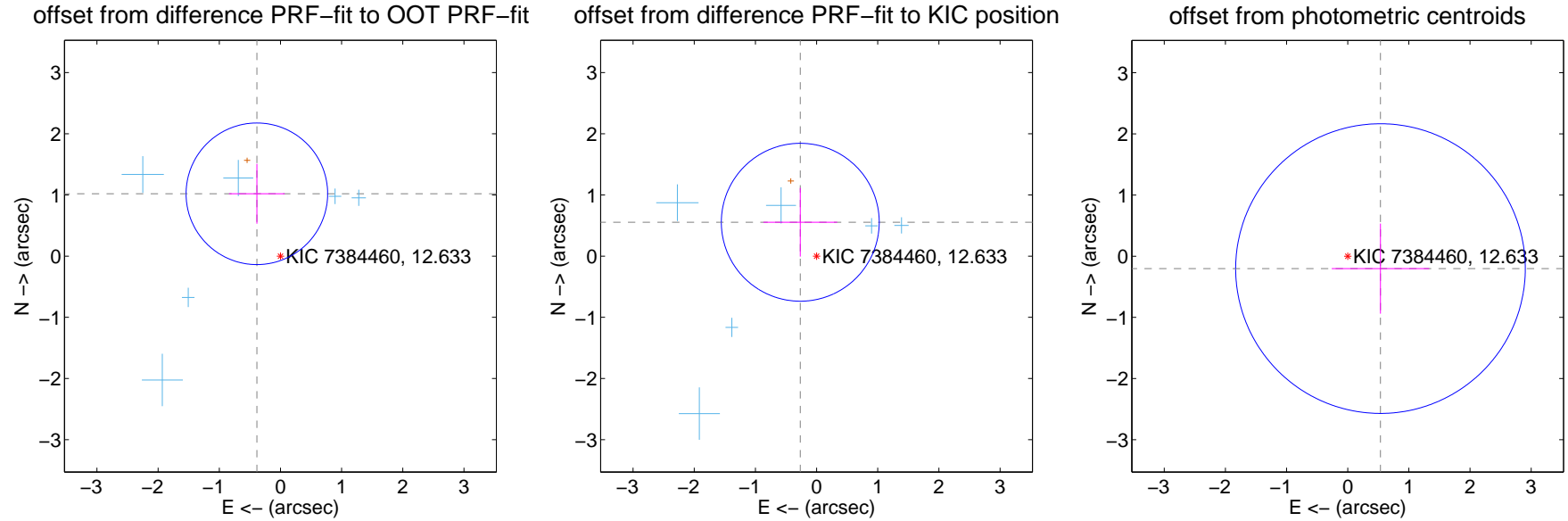
DV Centroid Data

Supplemental centroid analysis for 007384460-04. Kepler magnitude: 12.63. Transit SNR 4.50

There are 6 quarters with good PRF difference image offsets

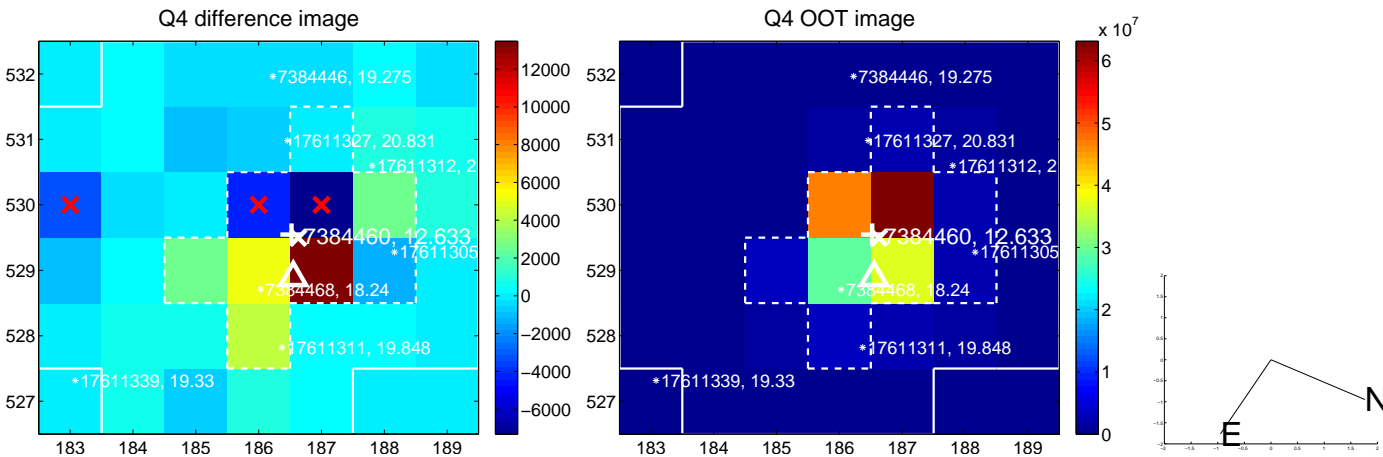
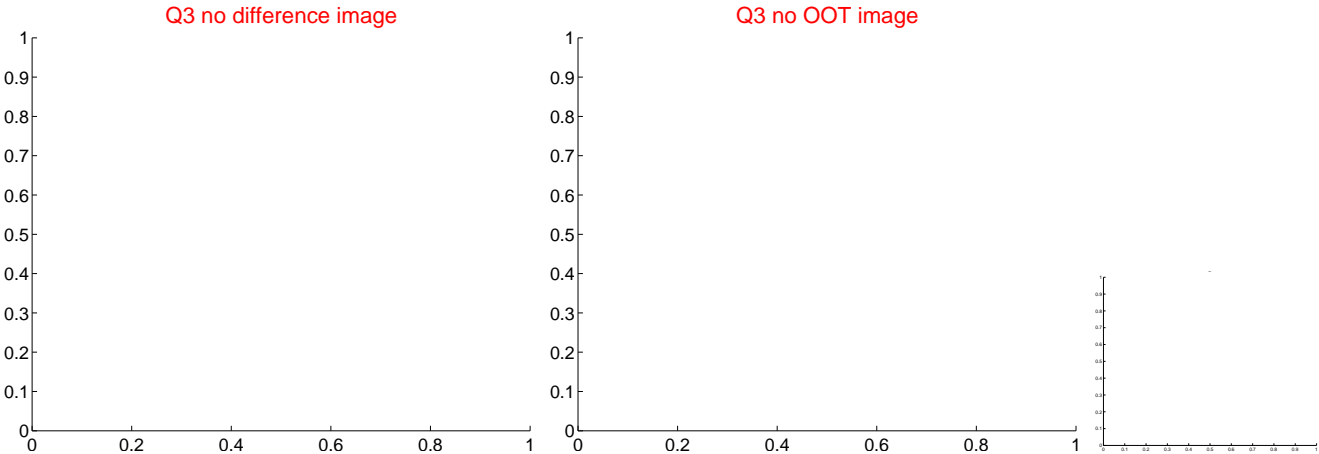
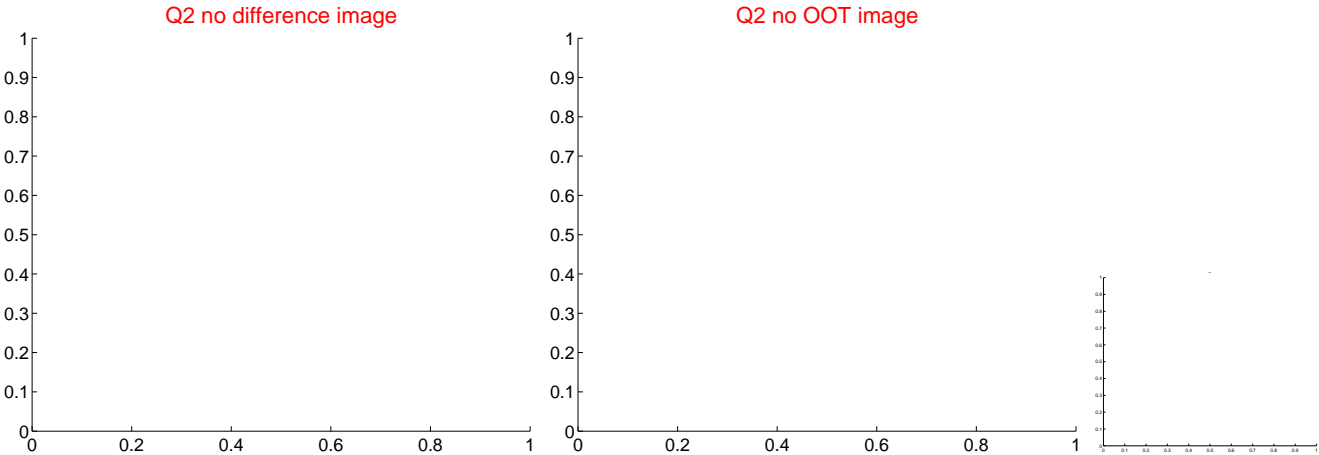
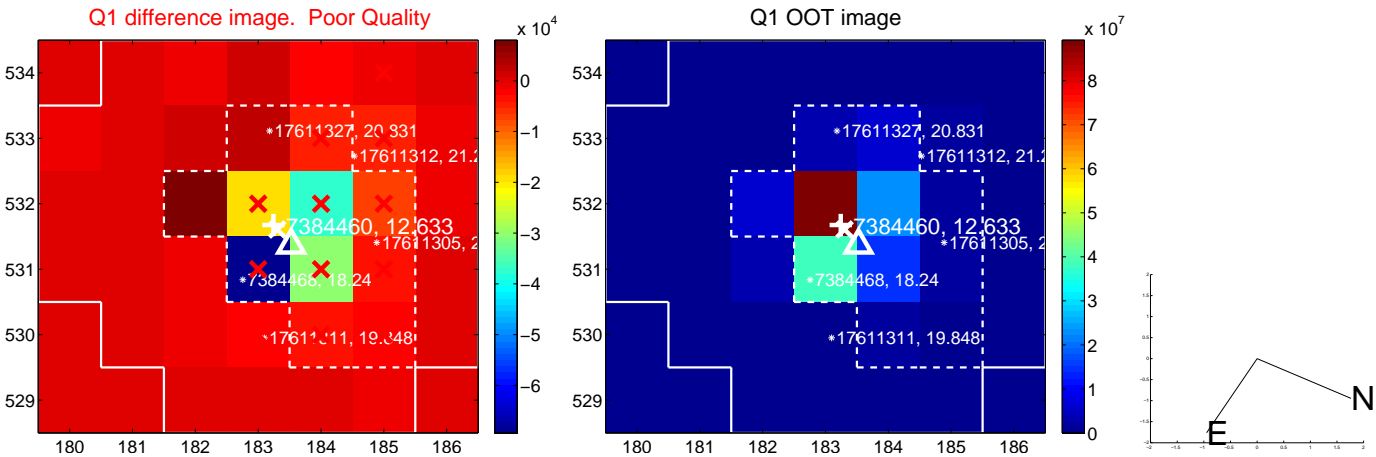
The direct PRF centroid is offset from the target star catalog position by about 0.55 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.090 ± 0.386	2.82	0.386 ± 0.455	1.019 ± 0.489
PRF-fit source offset from KIC position	0.615 ± 0.430	1.43	0.267 ± 0.603	0.554 ± 0.562
photometric centroid source offset	0.57 ± 0.79	0.73	-0.54 ± 0.80	-0.20 ± 0.74



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.

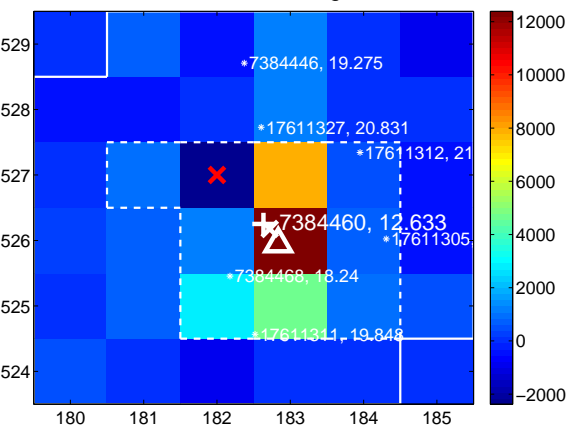
Q5 no difference image



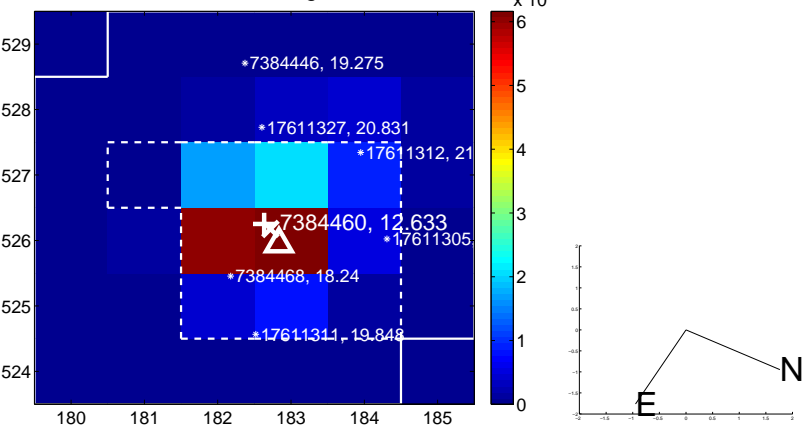
Q5 no OOT image



Q6 difference image



Q6 OOT image



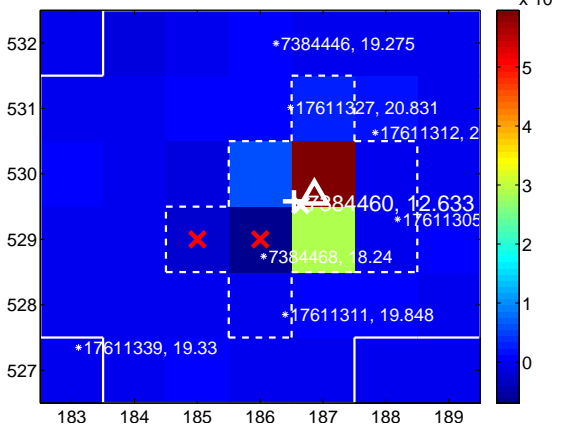
Q7 no difference image



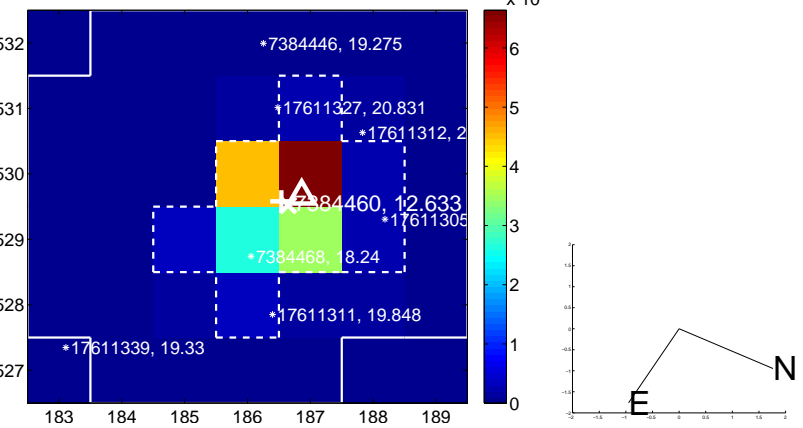
Q7 no OOT image



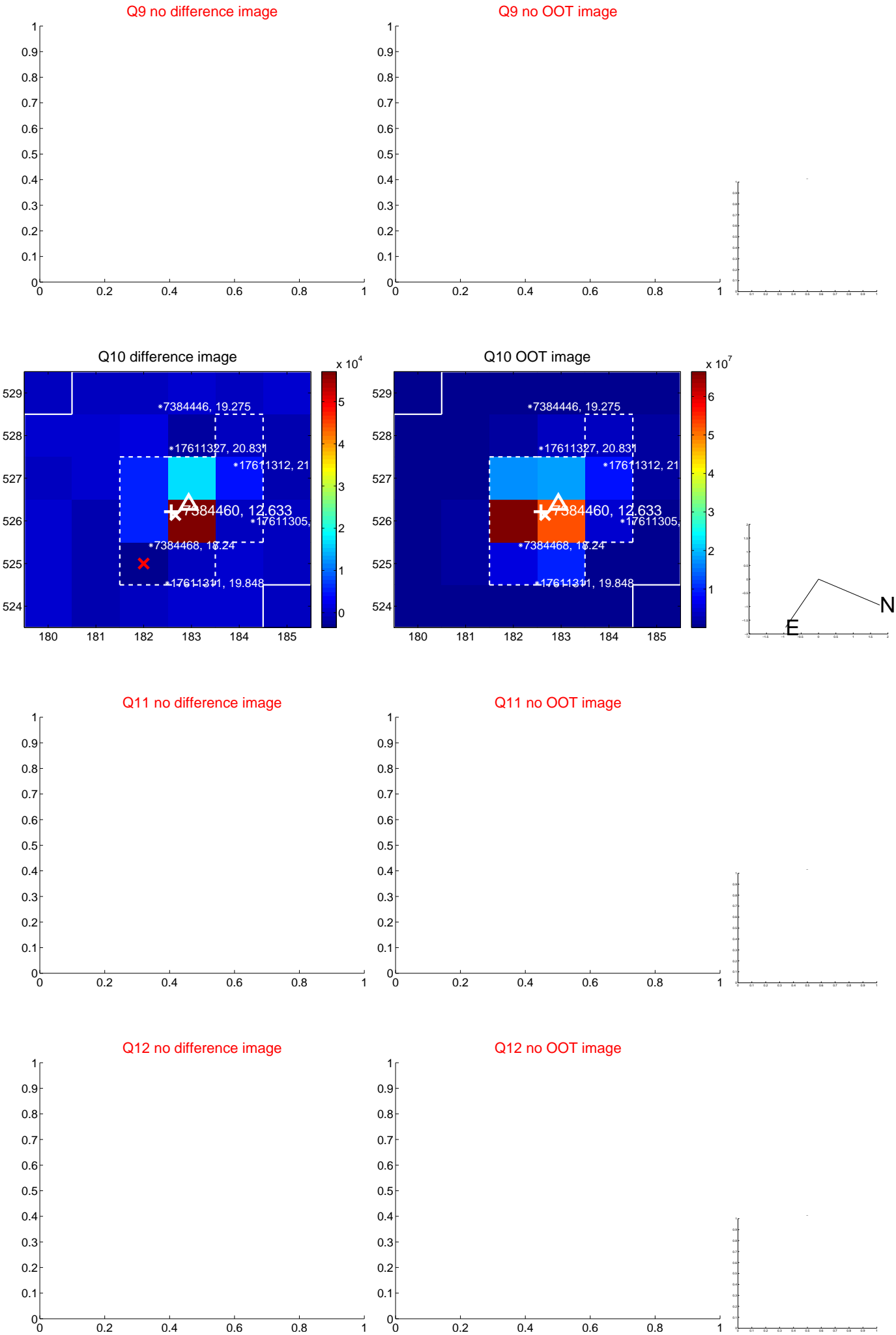
Q8 difference image



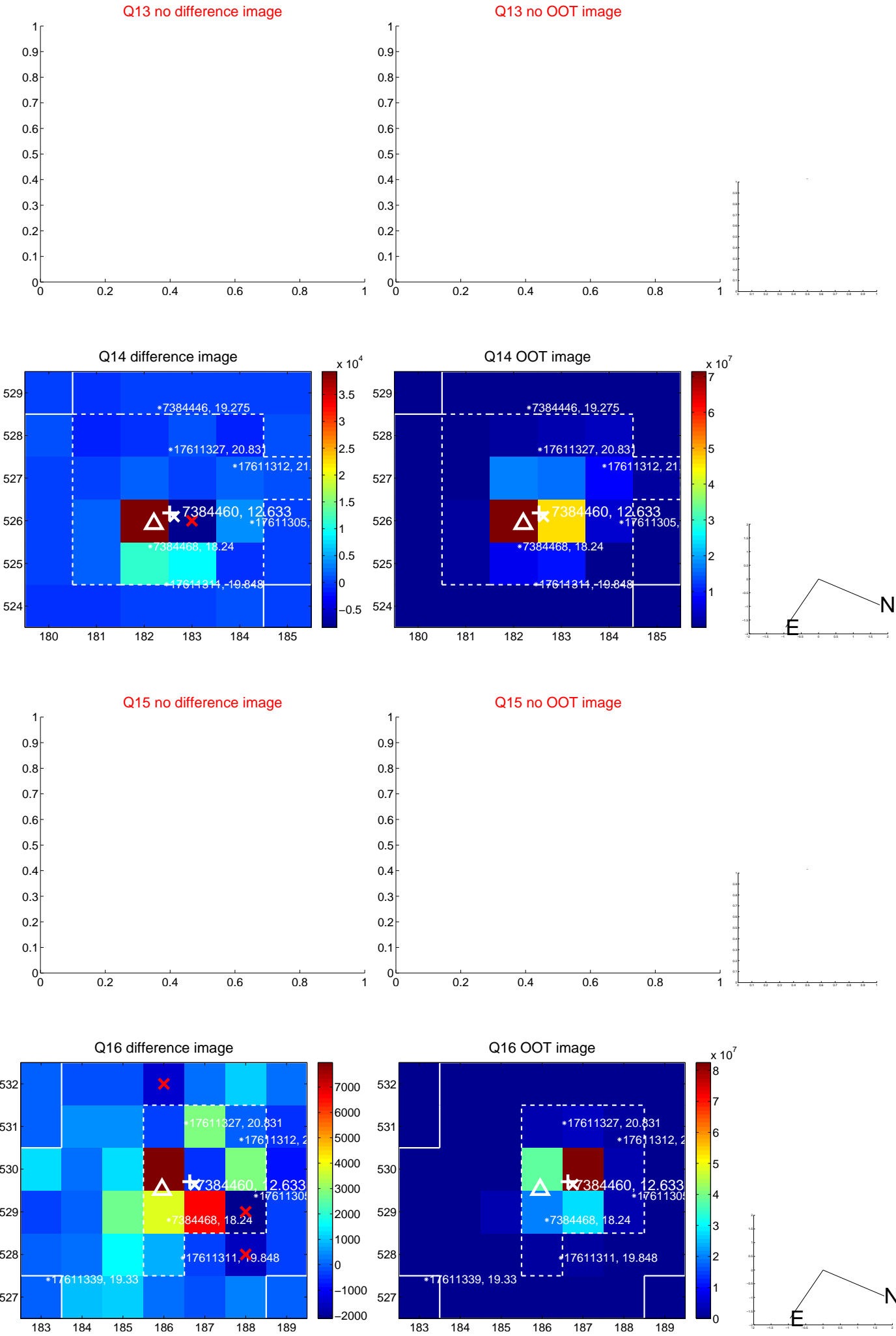
Q8 OOT image



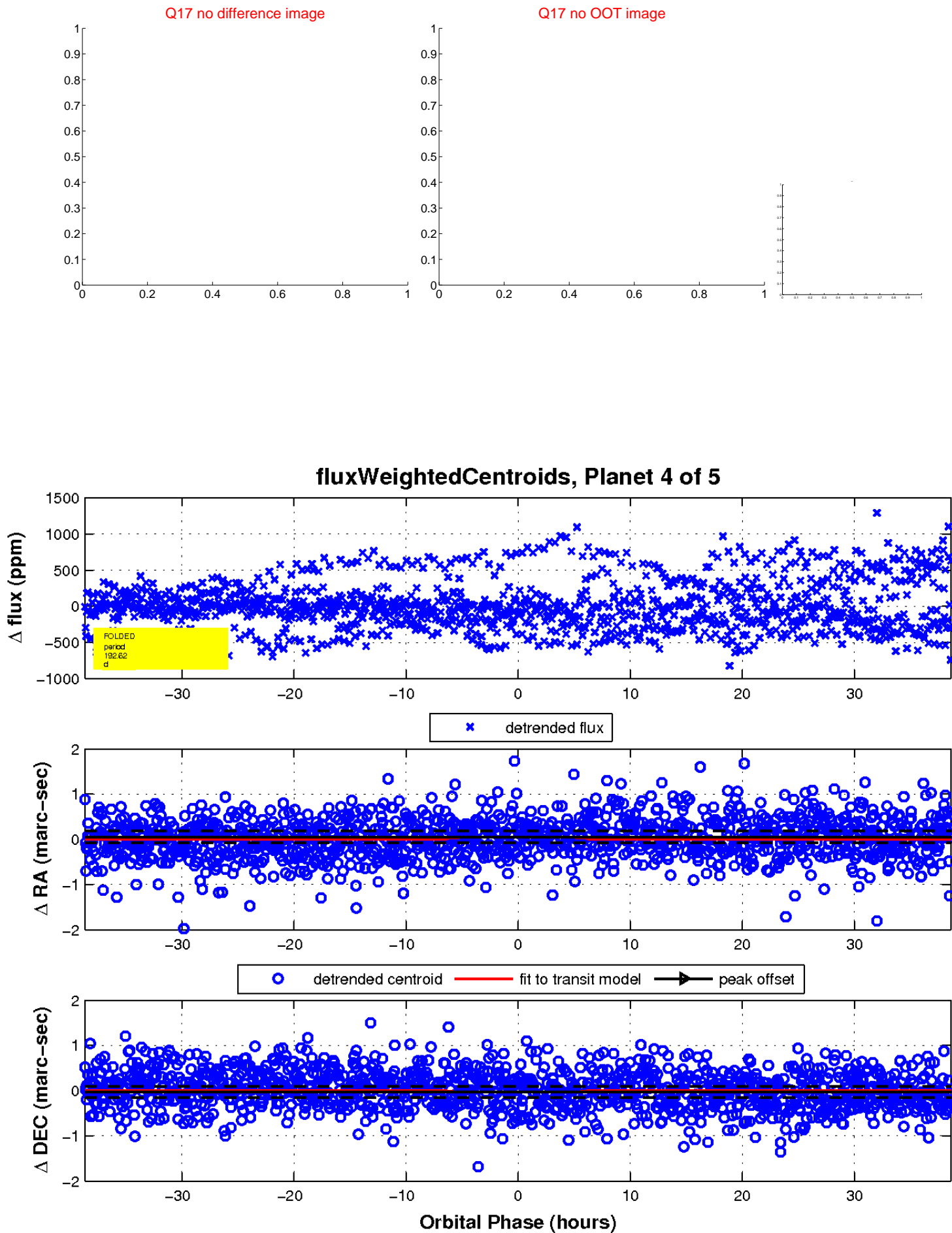
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

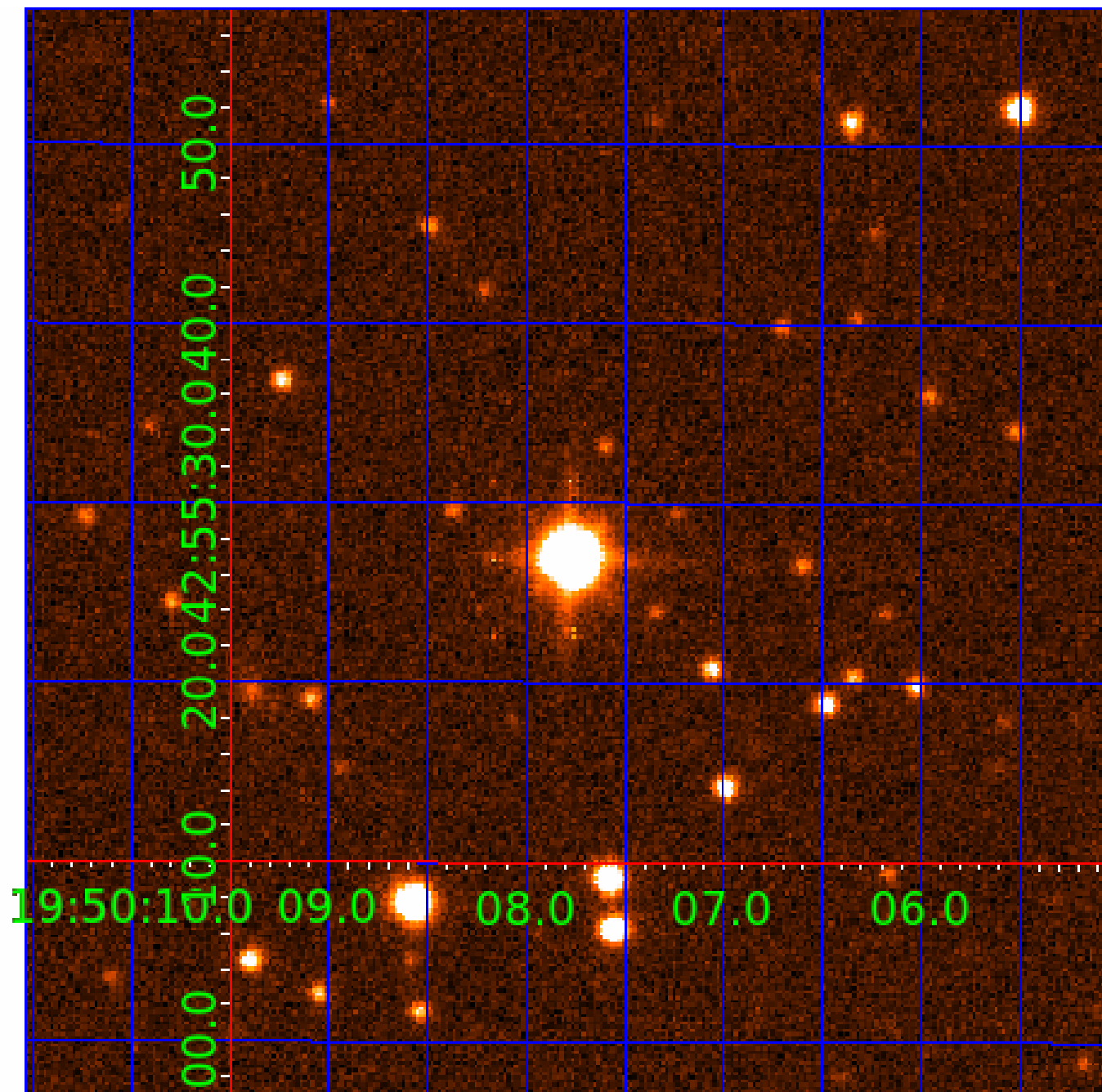


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 007384460

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})
007384460-01	OBS	No	0.903573	132.049411	9.8	4.146	7.6	6.1	2.11	4805	0.81	6587.33
007384460-03	OBS	No	128.247834	239.747561	128.7	15.000	11.1	-1.0	2.11	4805	2.30	8.90
007384460-04	OBS	No	192.619420	162.757944	165.5	12.886	10.0	4.5	2.11	4805	2.98	5.17
007384460-05	OBS	No	115.117648	184.498028	128.8	11.484	8.0	4.5	2.11	4805	2.58	10.28

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007384460-01	OBS	FP	0.00	1	0	0	0	LPP_DV—CENT_KIC_POS
007384460-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_NOFITS
007384460-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_KIC_POS
007384460-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—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.

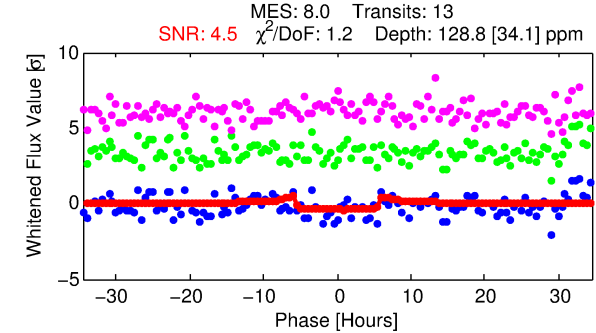
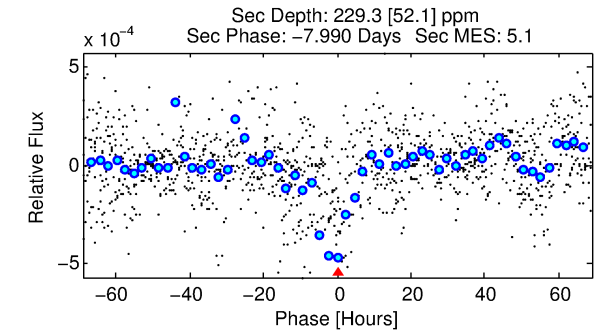
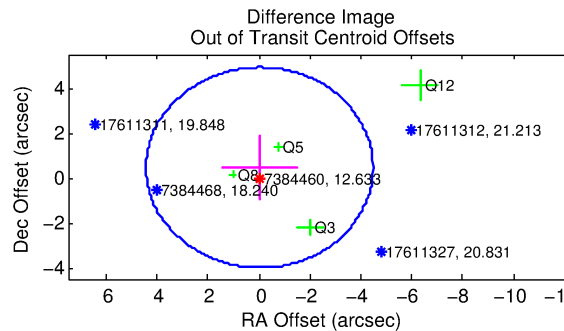
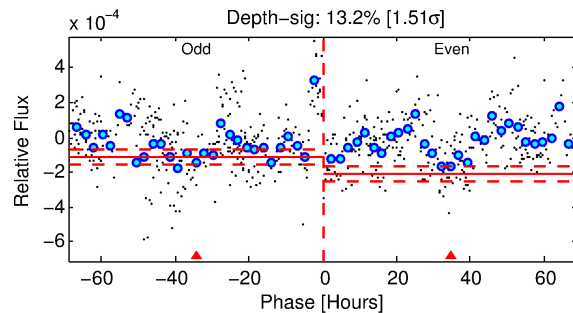
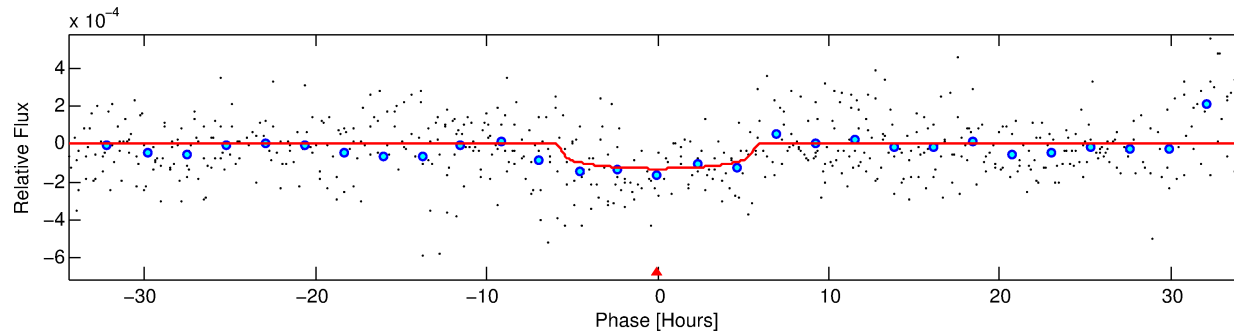
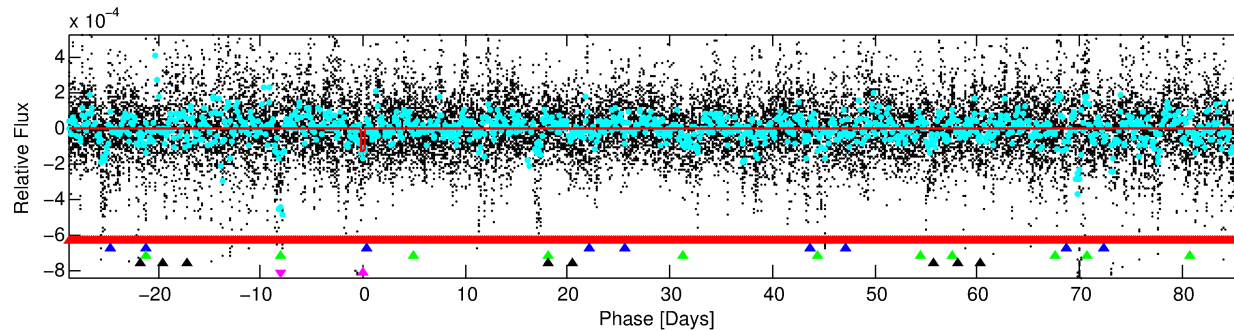
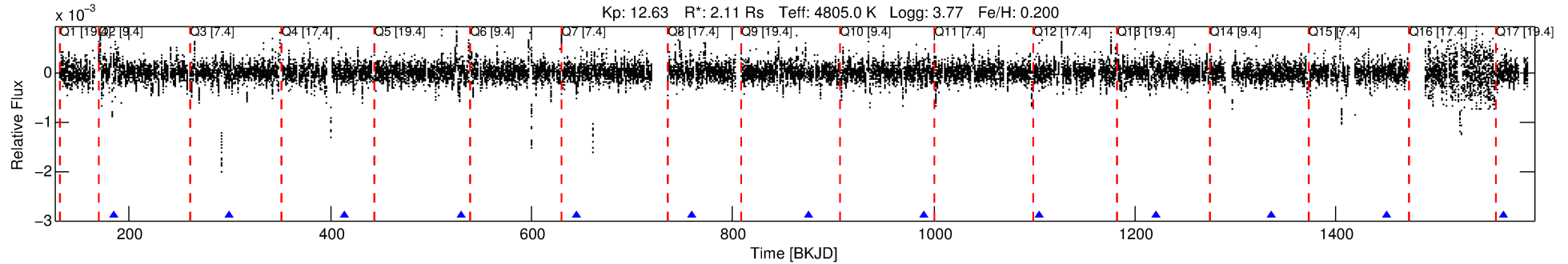
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007384460-05

No Significant Match Found

DV One-Page Summary

KIC: 7384460 Candidate: 5 of 5 Period: 115.118 d



DV Fit Results:

Period = 115.11765 [0.00315] d
Epoch = 184.4980 [0.0231] BKJD
Rp/R* = 0.0112 [0.0084]
a/R* = 53.87 [134.49]
b = 0.73 [1.64]
Seff = 10.28 [14.40]
Teq = 457 [160] K
Rp = 2.58 [2.60] Re
a = 0.4551 [0.3636] AU
Ag = 3914.35 [8062.89] [0.49 σ]
Teffp = 5583 [2118] K [2.41 σ]

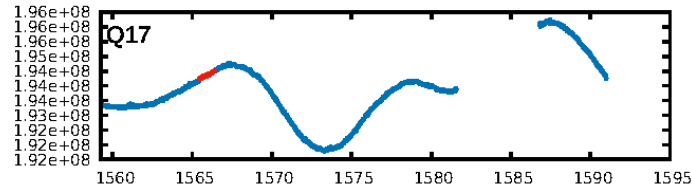
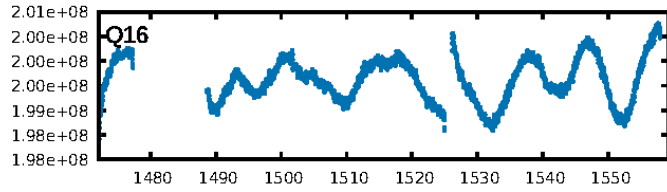
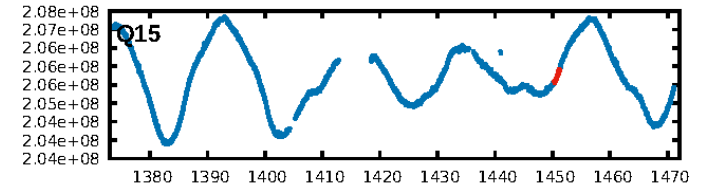
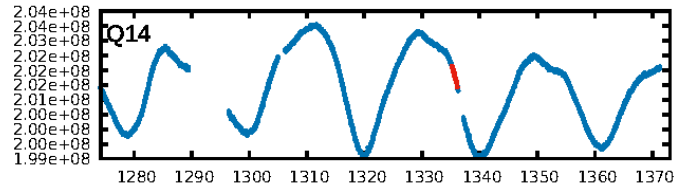
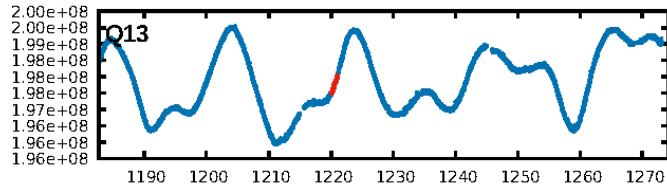
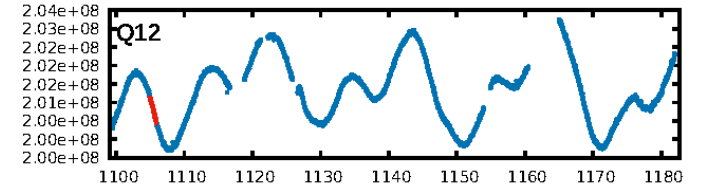
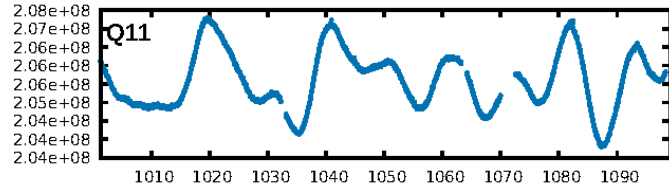
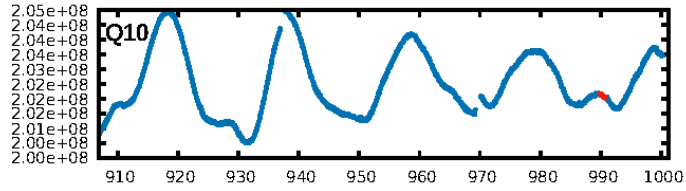
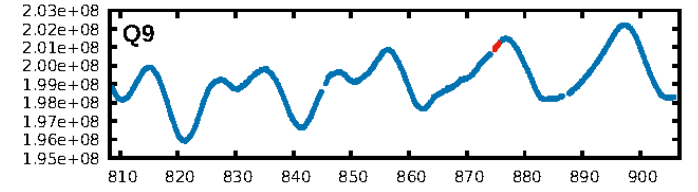
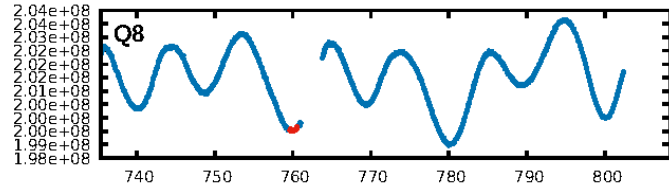
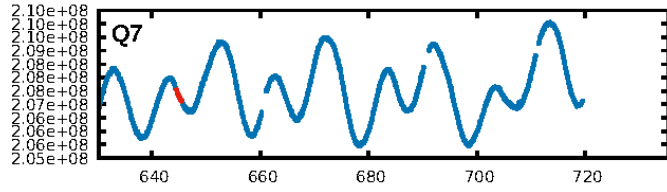
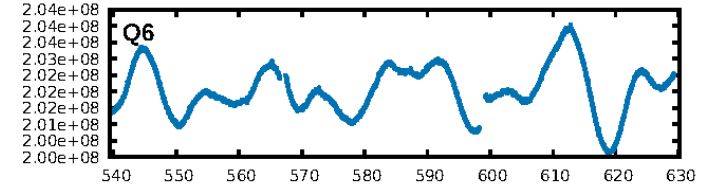
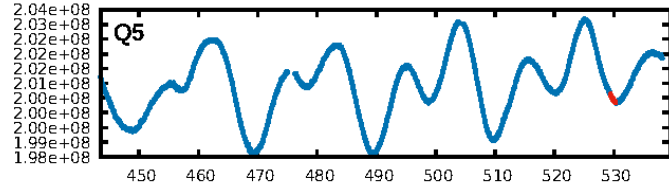
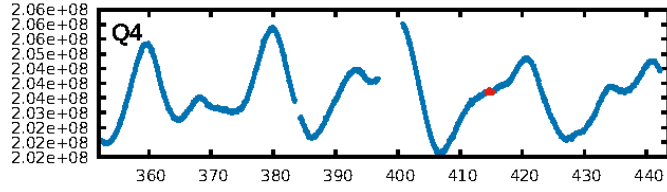
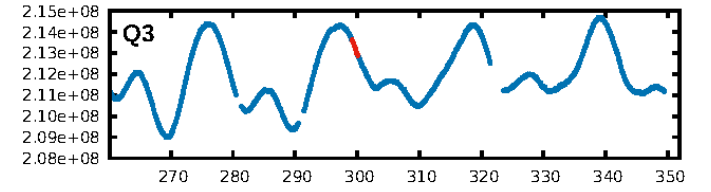
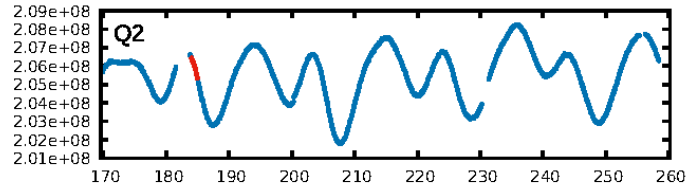
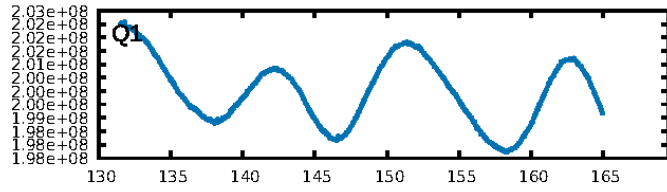
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [224.50 σ]
LongPeriod-sig: 100.0% [16.68 σ]
ModelChiSquare2-sig: 47.7%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 3.37e-07
RollingBand-fgt: 1.00 [12/12]
GhostDiagnostic-chr: -213.2
Centroid-sig: 4.0%
Centroid-so: 1.389 arcsec [1.99 σ]
OotOffset-rm: 0.460 arcsec [0.31 σ]
KicOffset-rm: 0.102 arcsec [0.06 σ]
OotOffset-st: 0/1/2/1 [4]
KicOffset-st: 0/1/2/1 [4]
DiffImageQuality-fgm: 0.50 [2/4]
DiffImageOverlap-fno: 0.00 [0/7]

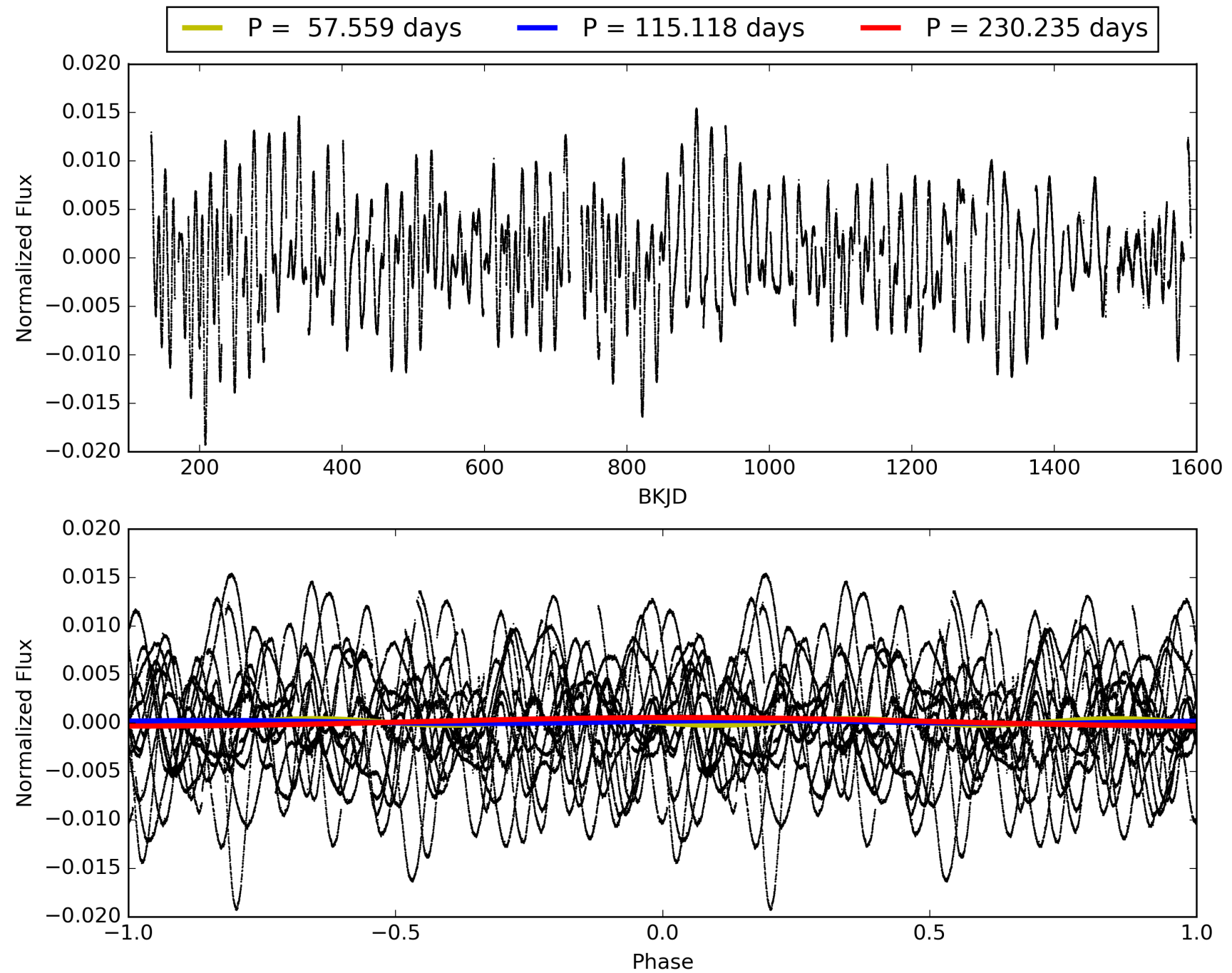
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 14:44:22 Z

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

TCE 007384460-05, PDC Light Curves

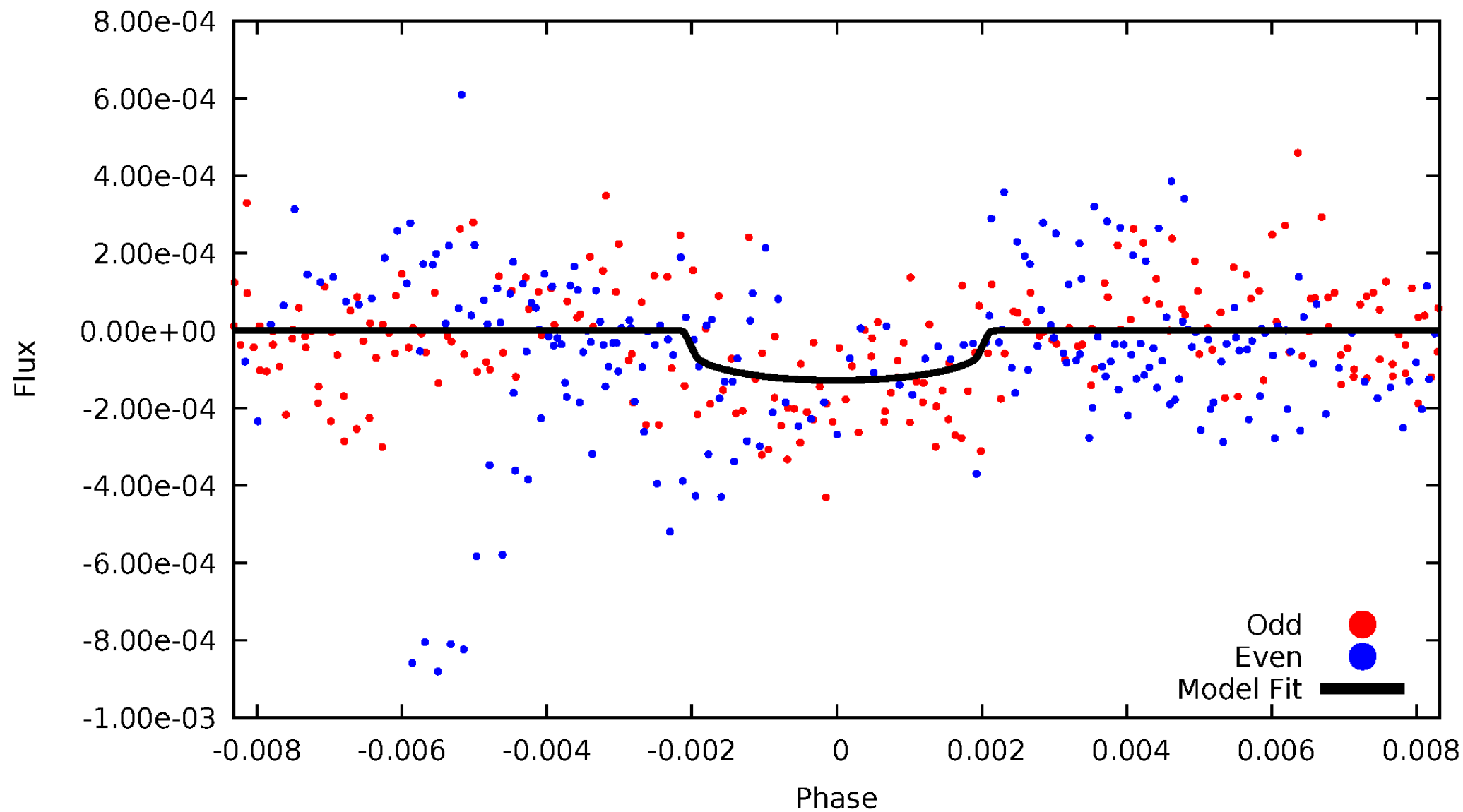


TCE 007384460-05



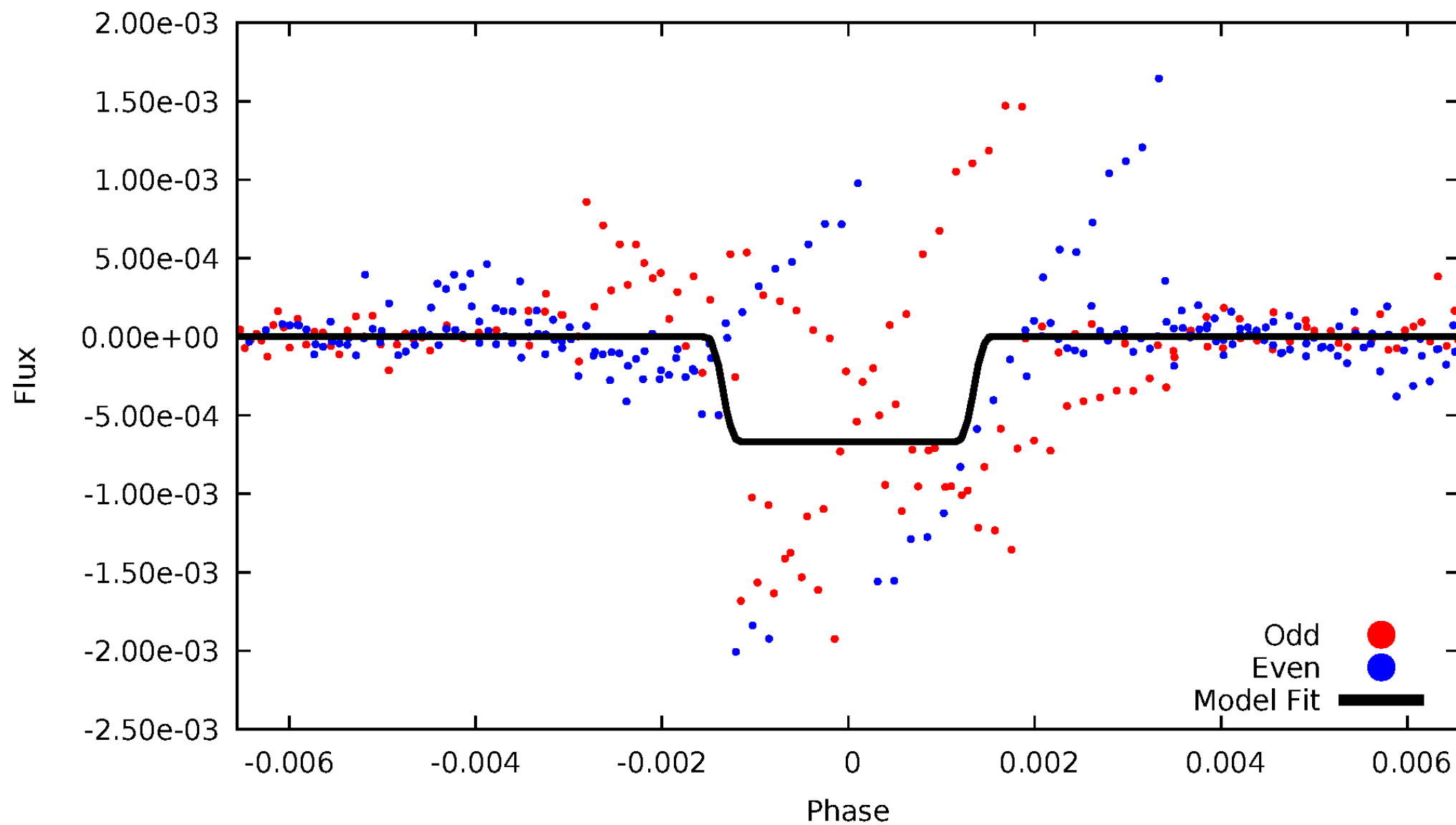
DV Odd/Even

TCE 007384460-05



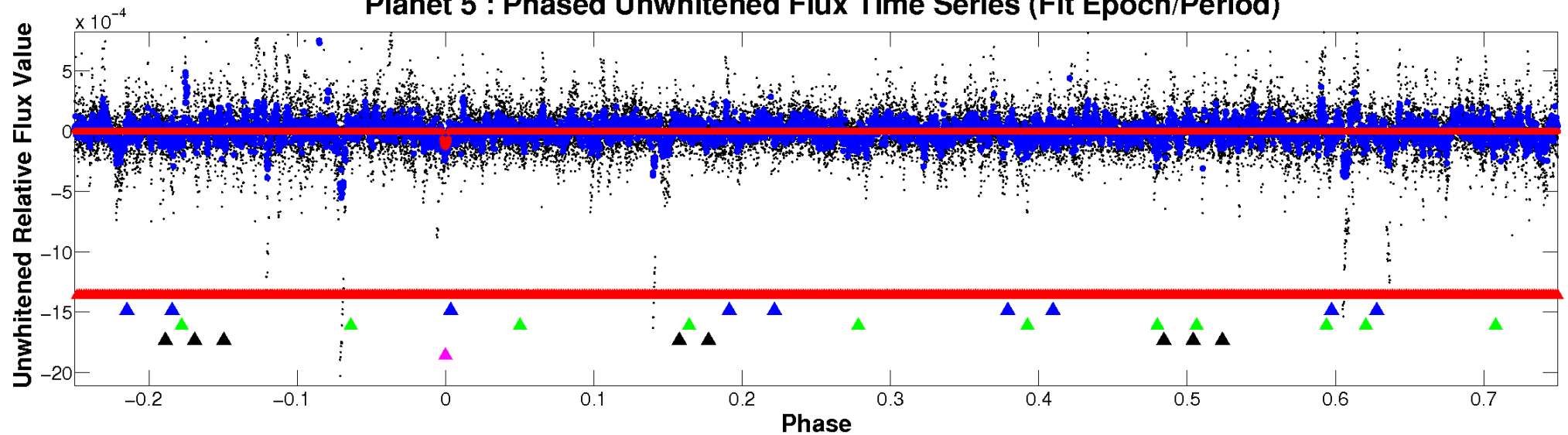
ALT Odd/Even

TCE 007384460-05

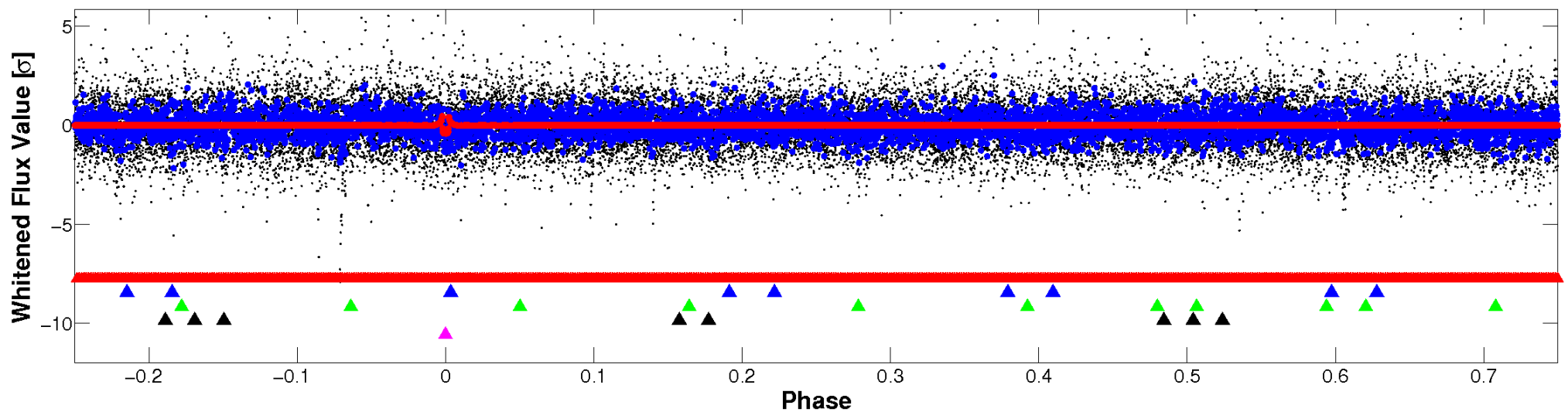


Non-Whitened Vs. Whitened Light Curve

Planet 5 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

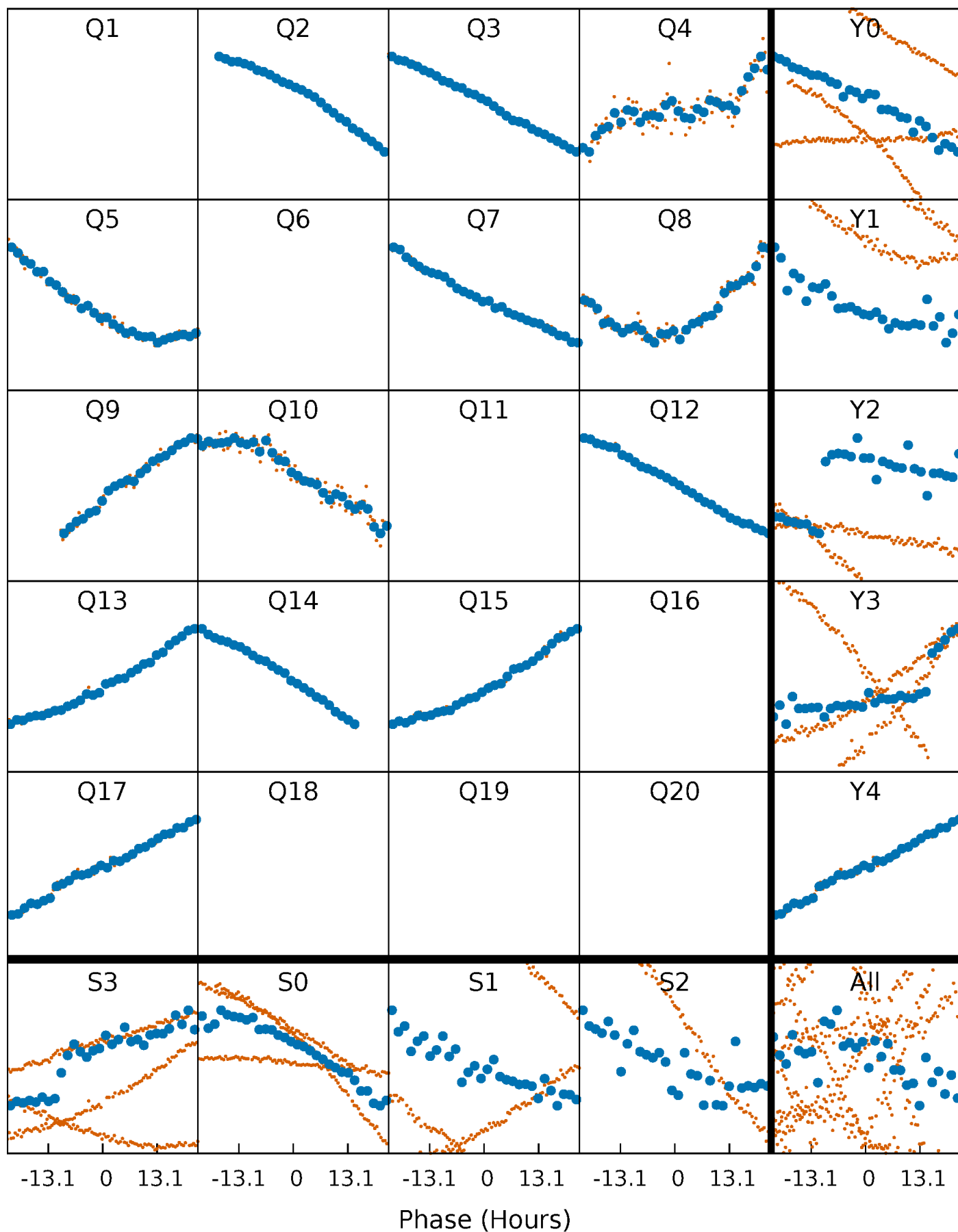


Planet 5 : Phased Whitened Flux Time Series (Fit Epoch/Period)



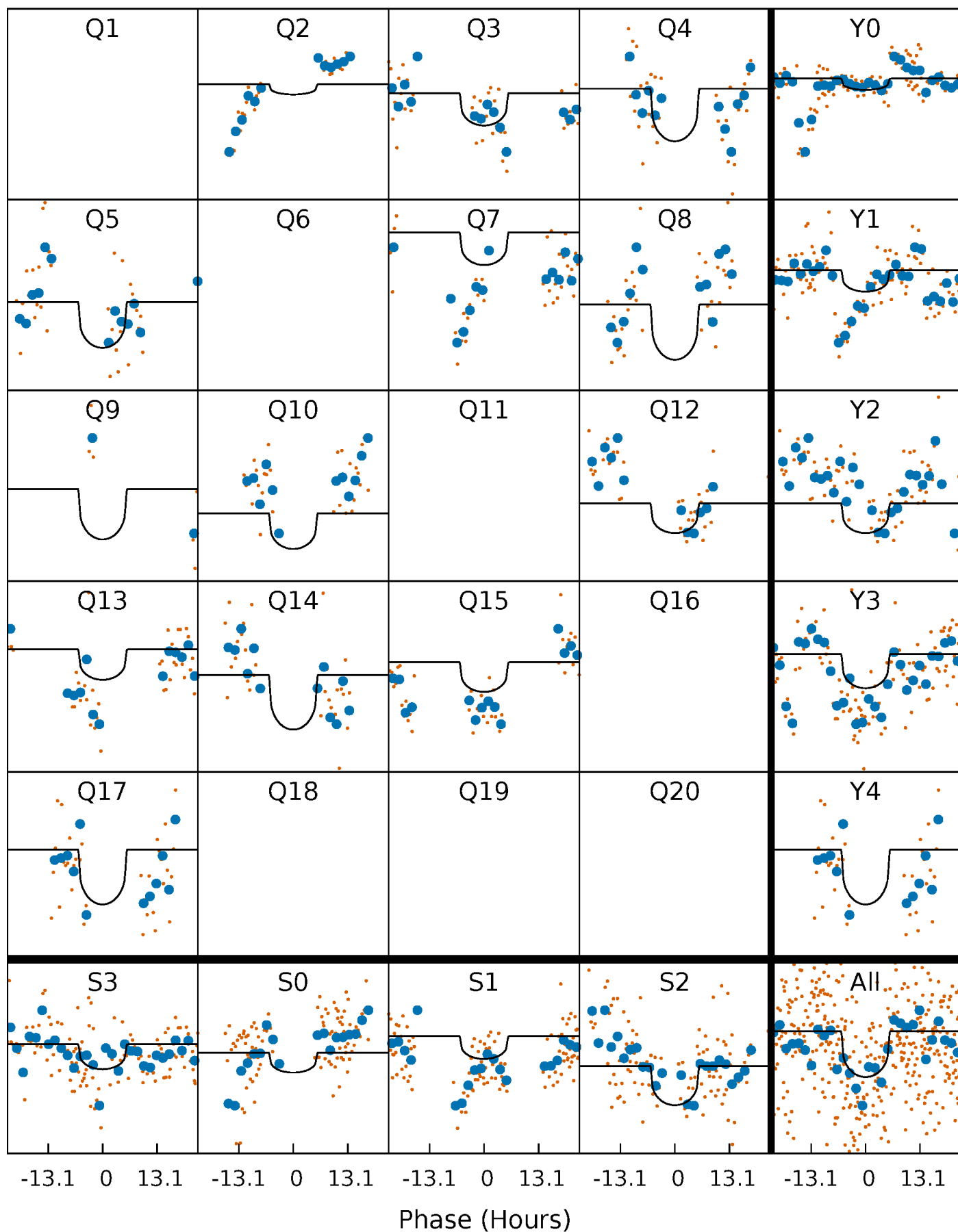
PDC Quarter-Phased Transit Curves

TCE 007384460-05 $P=115.117649$ Days $T_0=184.498028$ (BKJD)



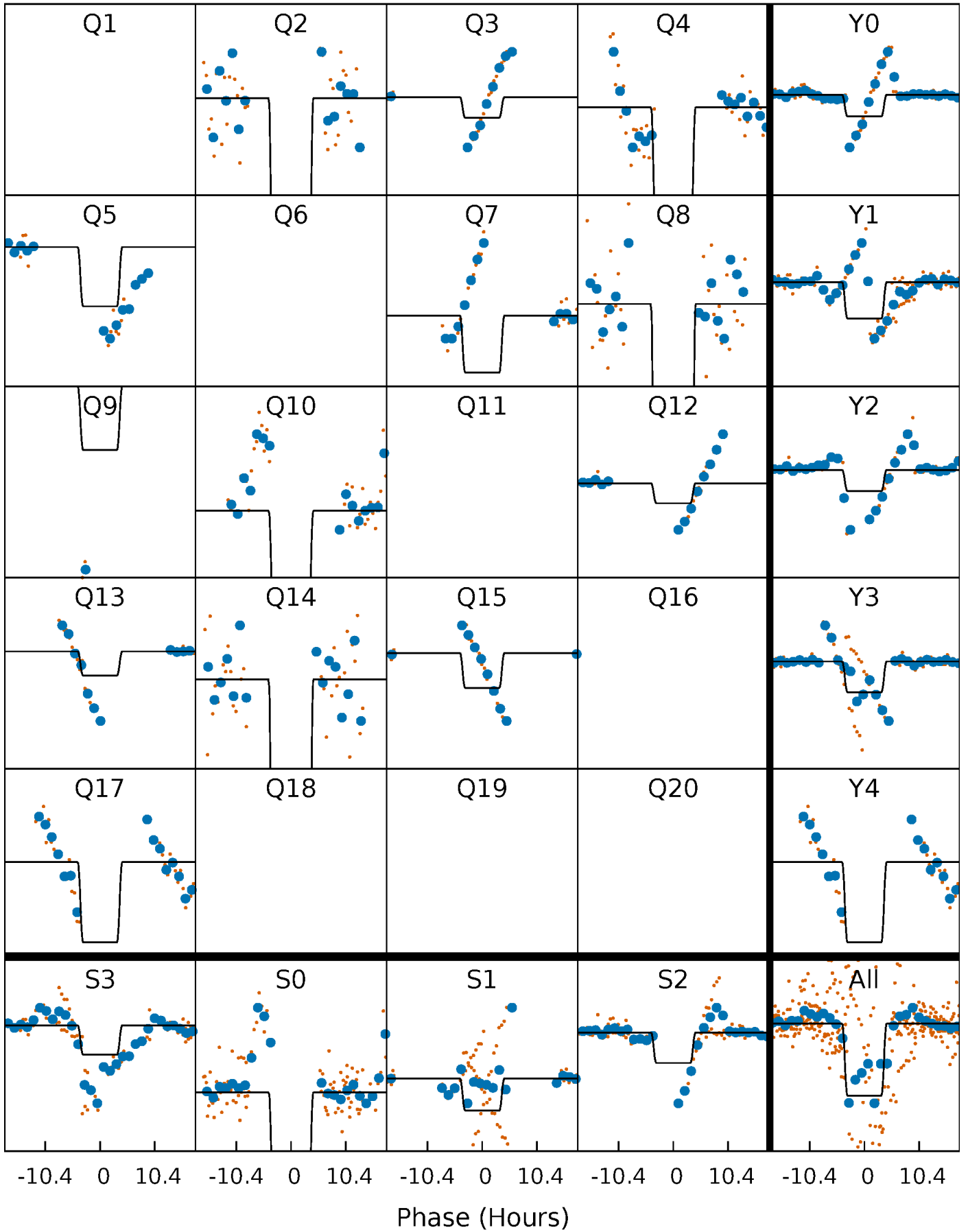
DV Quarter-Phased Transit Curves

TCE 007384460-05 $P=115.117649$ Days $T_0=184.498028$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

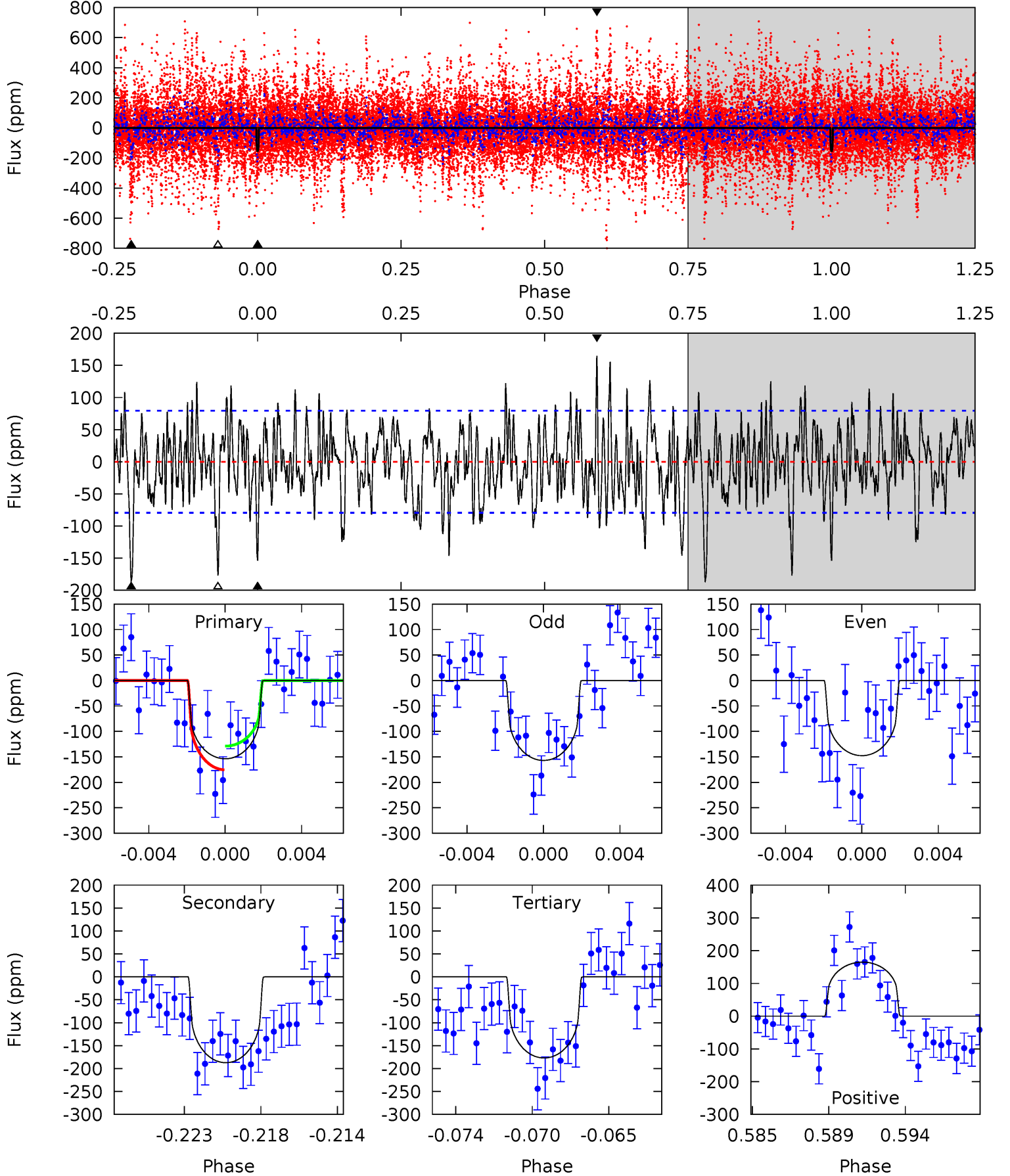
TCE 007384460-05 $P=115.115866$ Days $T_0=184.513992$ (BKJD)



DV Model-Shift Uniqueness Test

007384460-05, P = 115.117649 Days, E = 69.380379 Days

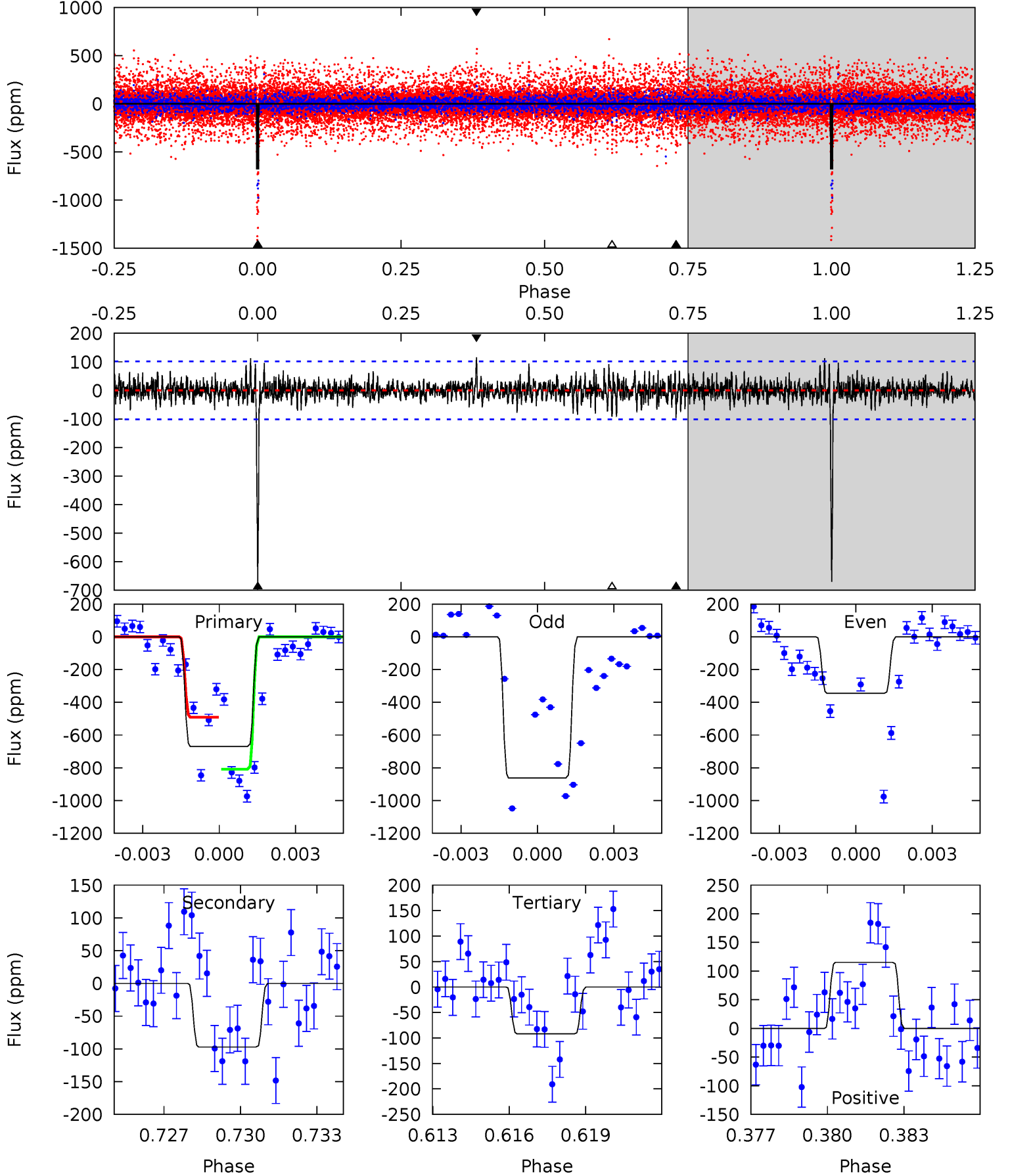
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.0	12.2	11.6	10.8	5.18	2.85	3.18	-1.52	-0.73	0.67	1.46	0.29	0.92	0.47	1.52



Alt Model-Shift Uniqueness Test

007384460-05, $P = 115.115866$ Days, $E = 69.398126$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
34.7	5.04	4.76	5.97	5.25	2.97	1.26	29.9	28.7	0.27	-0.94	12.8	0.98	0.15	8.16



Stellar Parameters For KIC 007384460

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4805^{+131}_{-107}	$3.766^{+0.862}_{-0.345}$	$0.200^{+0.200}_{-0.250}$	$2.111^{+1.161}_{-1.418}$	$0.948^{+0.215}_{-0.176}$	$0.142^{+2.795}_{-0.093}$
	+3%/-2%	+23%/-9%	+100%/-125%	+55%/-67%	+23%/-19%	+1968%/-66%
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 007384460-05 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-187 ± 15	$2.50^{+2.34}_{-1.52}$	631^{+99}_{-112}	5063^{+2790}_{-933}	3433^{+16534}_{-2523}
Alt.	-97 ± 19	$5.42^{+3.30}_{-2.28}$	630^{+99}_{-117}	3417^{+473}_{-319}	356^{+799}_{-209}

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

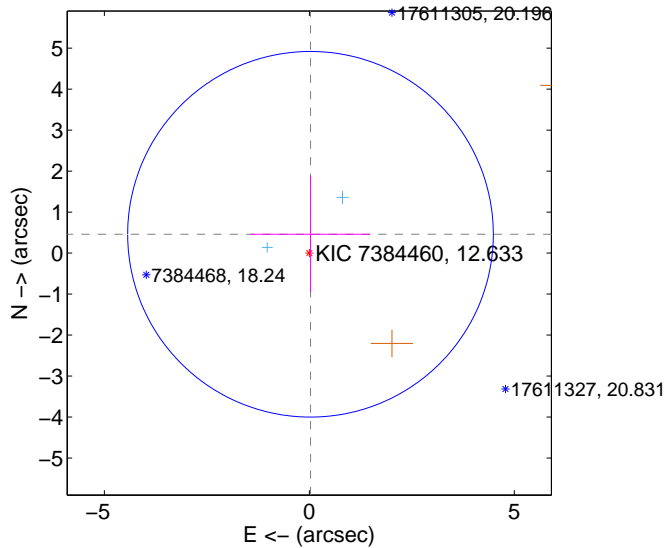
Supplemental centroid analysis for 007384460-05. Kepler magnitude: 12.63. Transit SNR 4.54

There are 2 quarters with good PRF difference image offsets

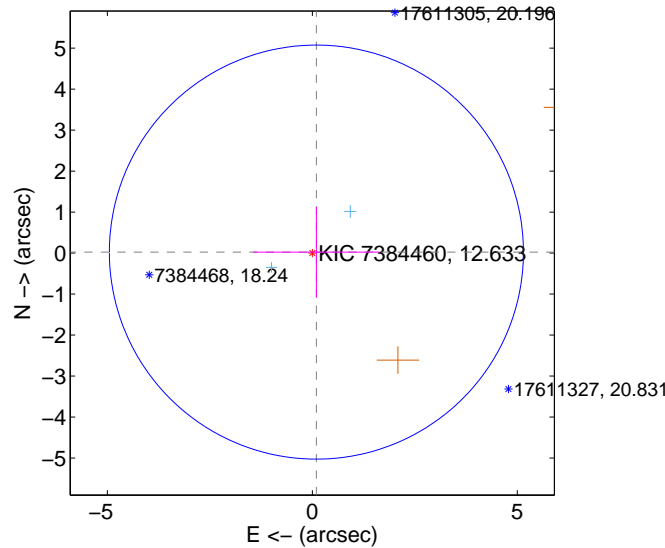
The direct PRF centroid is offset from the target star catalog position by about 0.54 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.460 ± 1.486	0.31	-0.028 ± 1.455	0.459 ± 1.415
PRF-fit source offset from KIC position	0.102 ± 1.683	0.06	-0.100 ± 1.543	0.024 ± 1.109
photometric centroid source offset	1.39 ± 0.70	1.99	0.07 ± 0.81	-1.39 ± 0.70

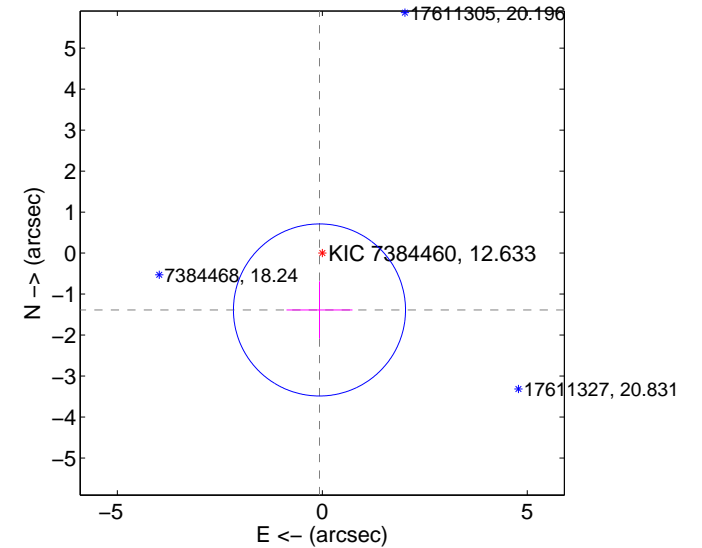
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

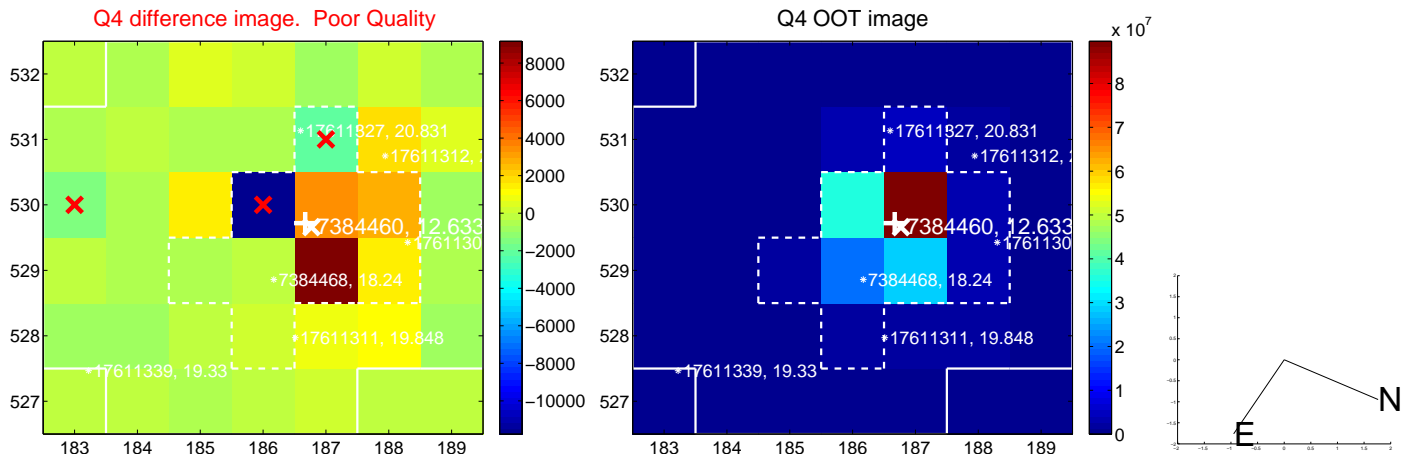
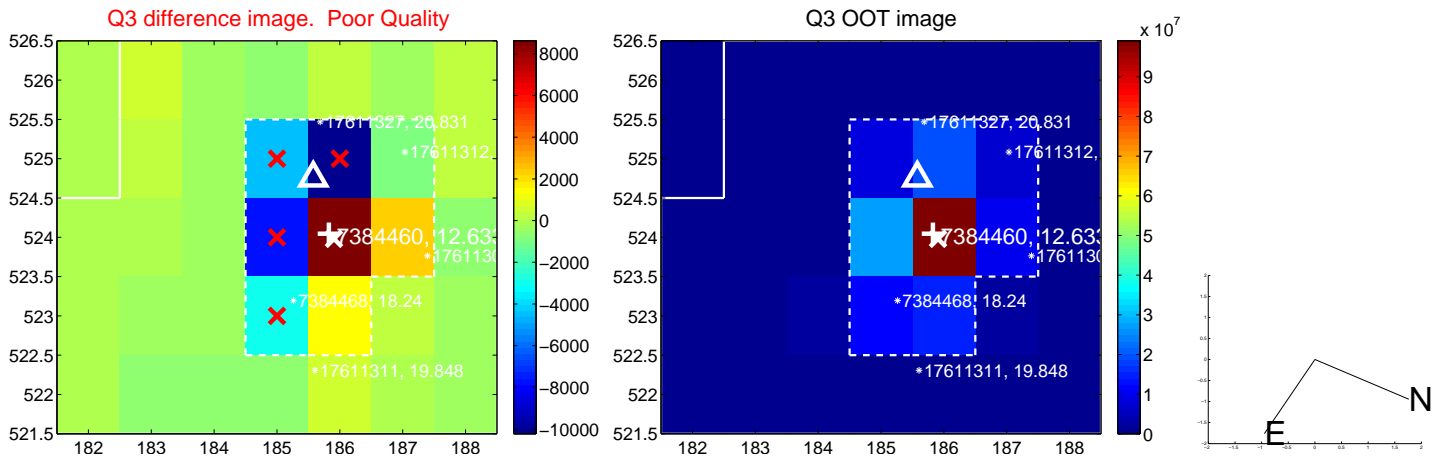
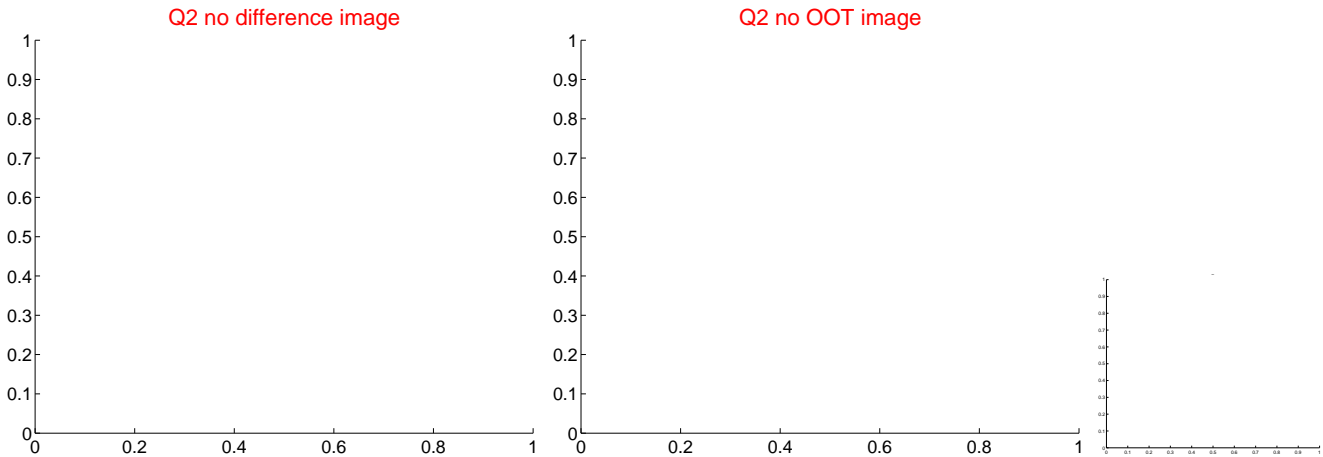
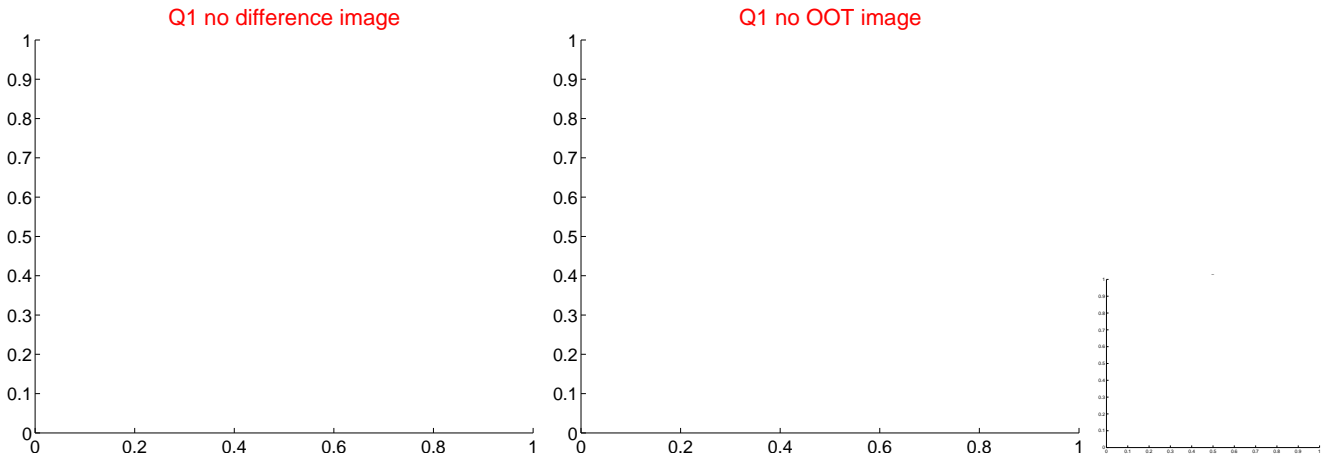


offset from photometric centroids

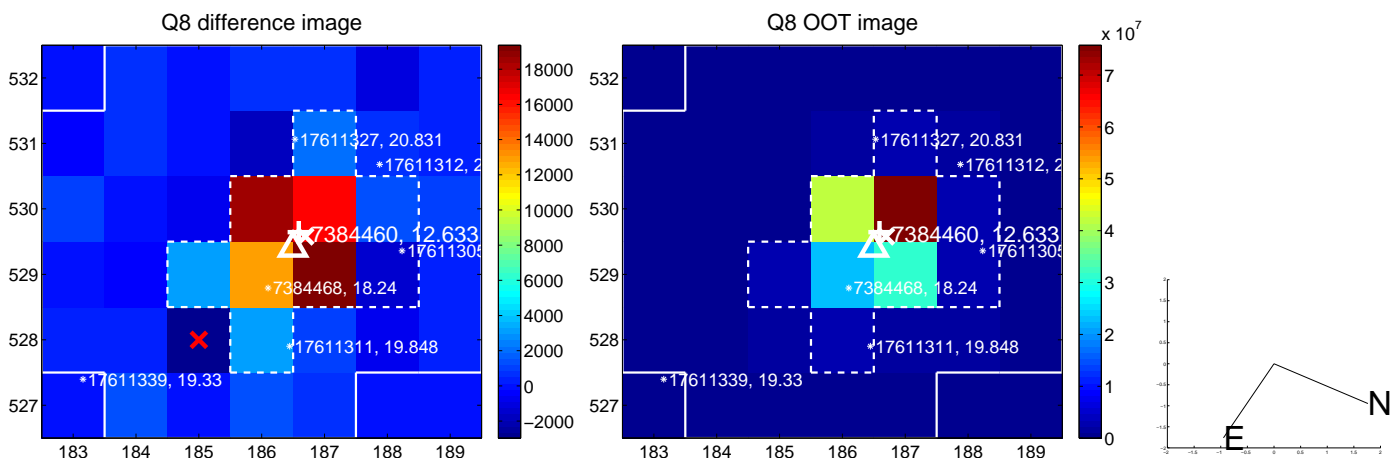
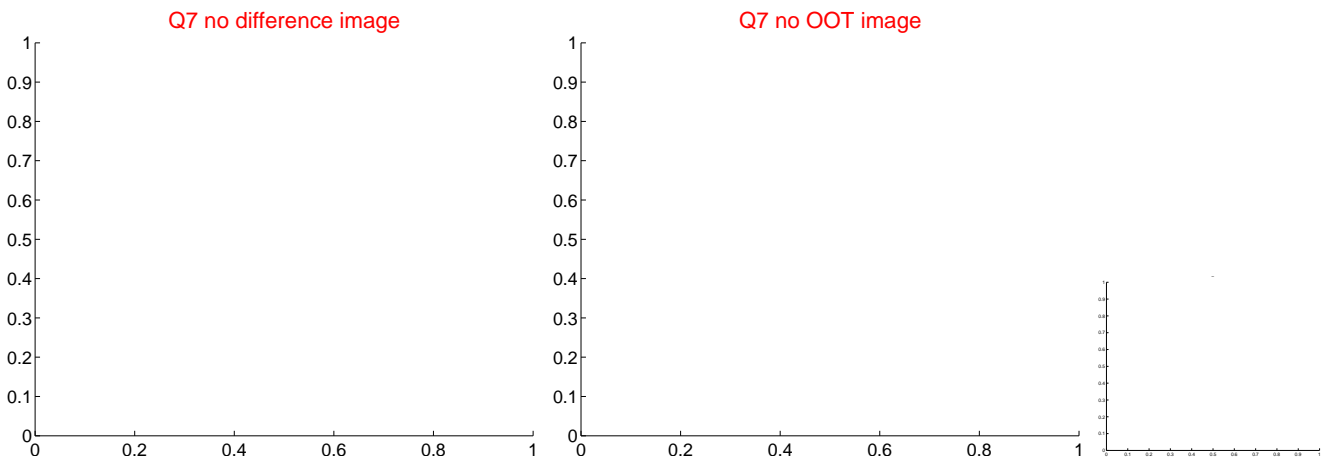
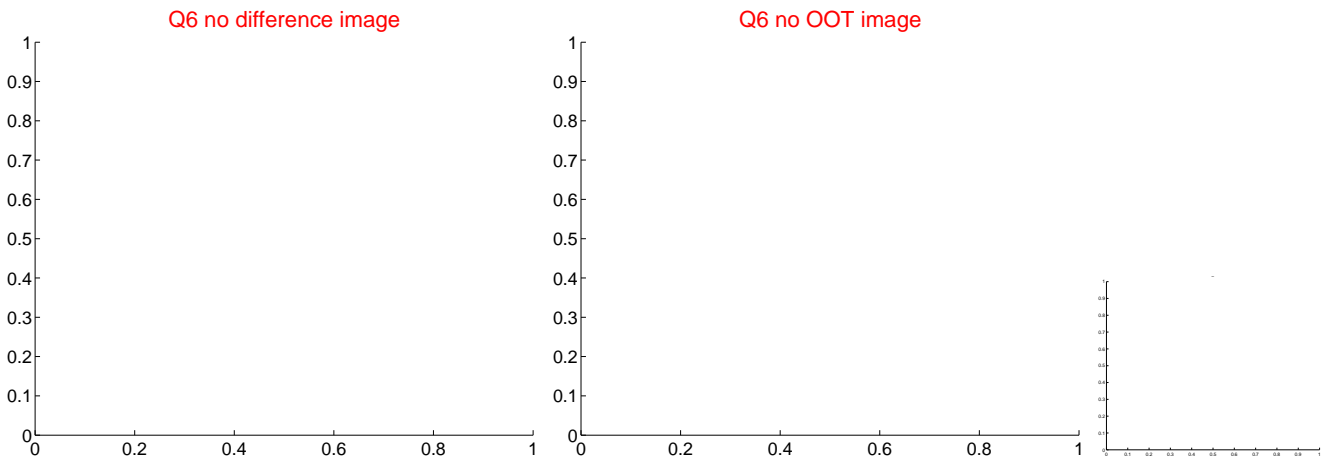
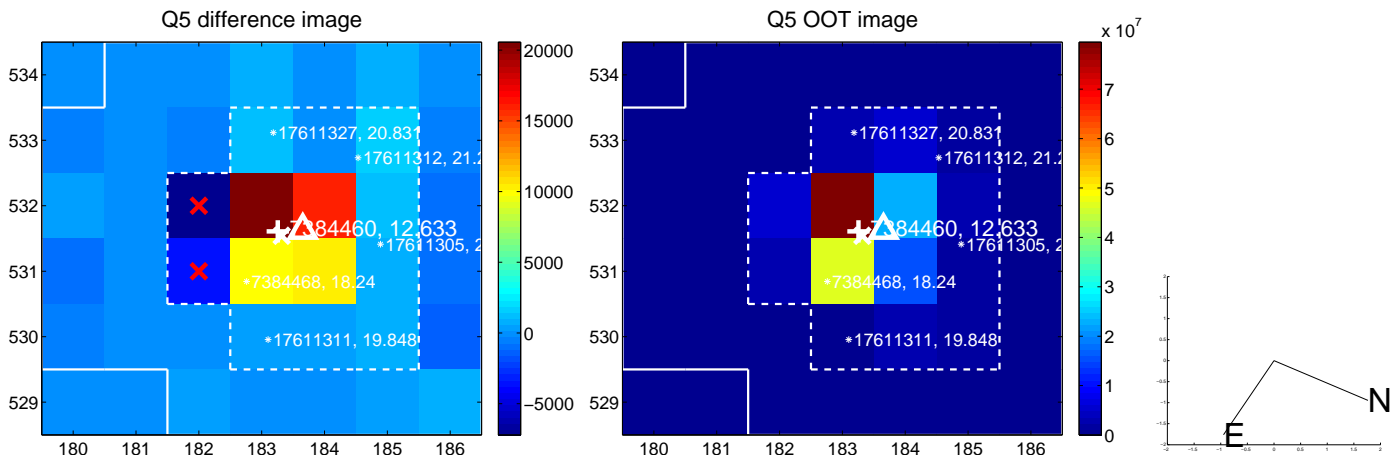


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

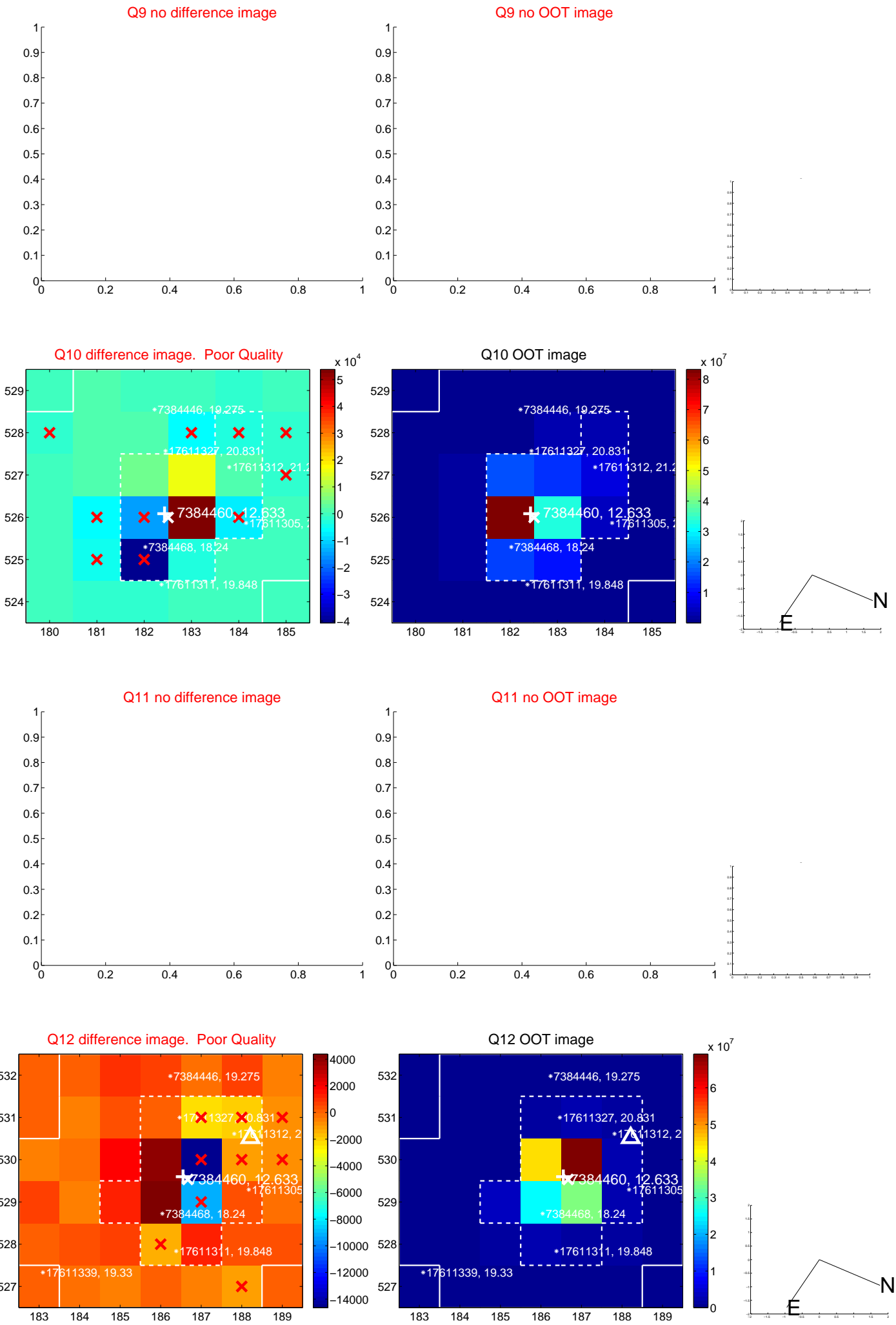
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



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



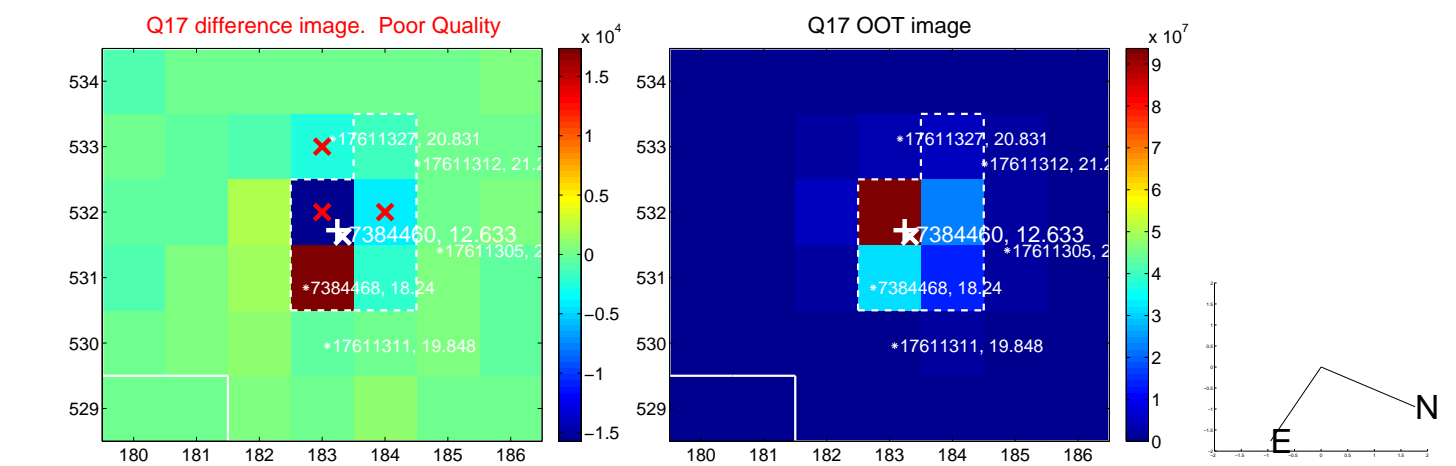
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



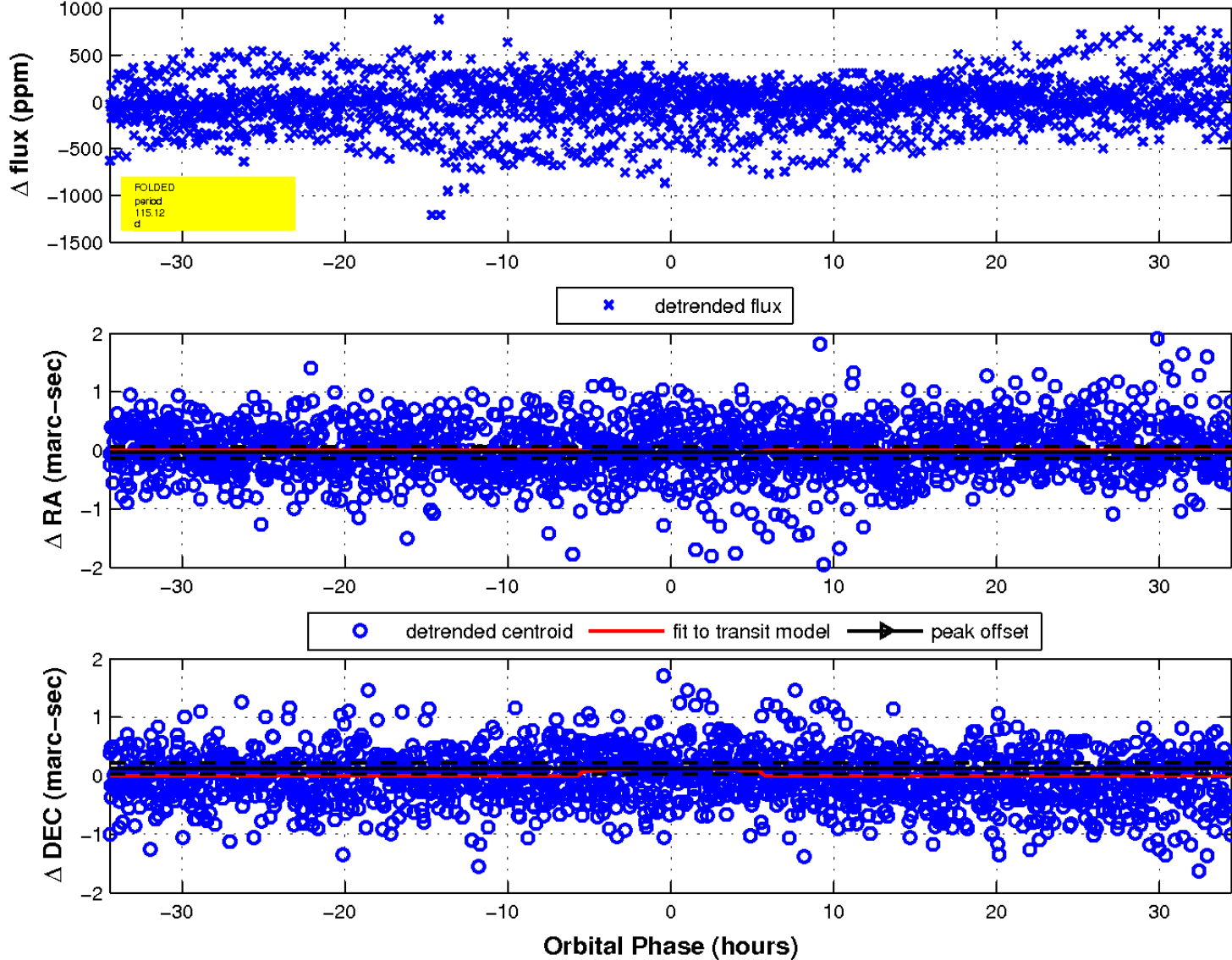
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 5 of 5



UKIRT Image

Declination

