

KIC 006233558

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})
006233558-02	OBS	No	416.470596	315.225437	758.6	8.921	14.4	9.8	6.83	4718	23.38	18.82
006233558-04	OBS	No	560.466671	224.247300	39.9	5.133	13.6	0.5	6.83	4718	4.25	12.67
006233558-05	OBS	No	224.625176	336.241611	414.9	4.005	14.7	8.3	6.83	4718	19.81	42.86
006233558-07	OBS	No	418.704519	479.954570	456.9	6.368	12.6	6.0	6.83	4718	15.73	18.68
006233558-08	OBS	No	604.892617	213.689275	682.4	11.601	12.2	8.5	6.83	4718	18.62	11.44

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006233558-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
006233558-04	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_MARSHALL_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
006233558-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—INCONSISTENT_TRANS—CENT_FEW_MEAS
006233558-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS
006233558-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_POS_DV

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

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

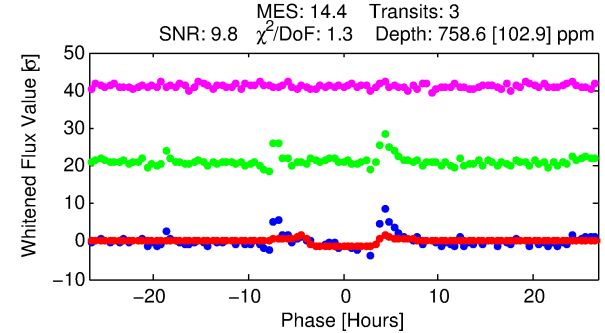
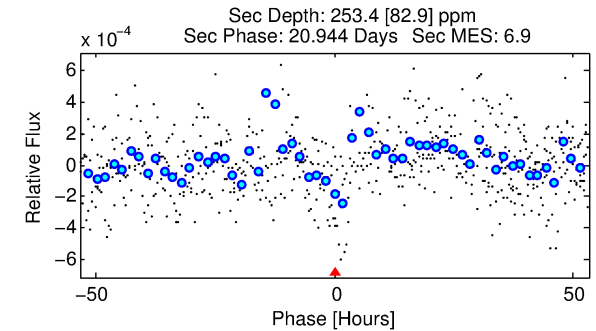
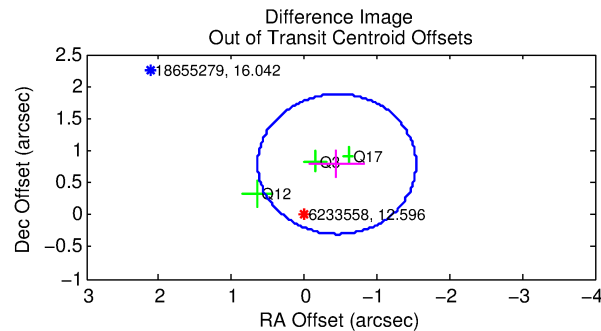
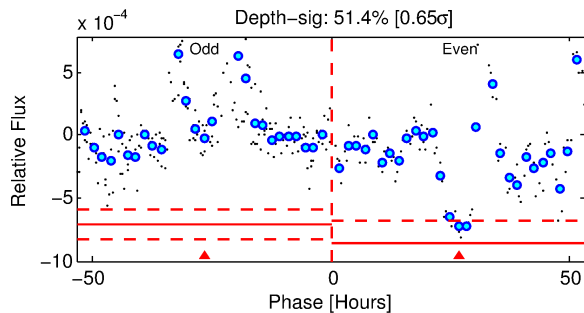
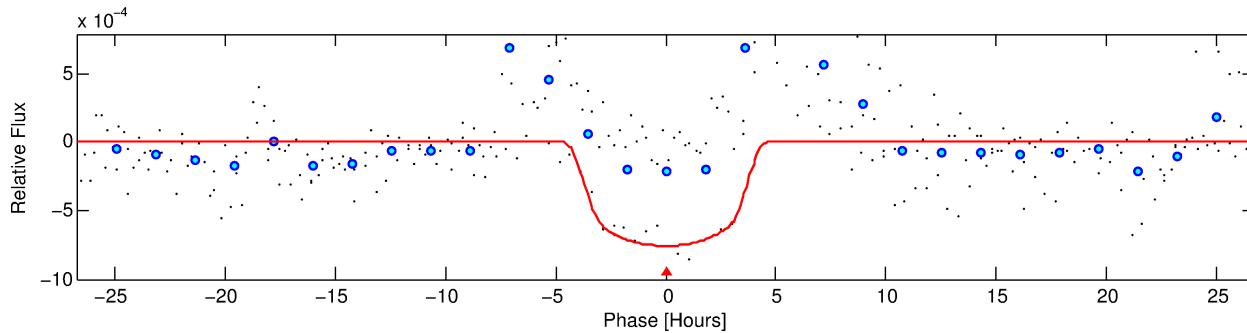
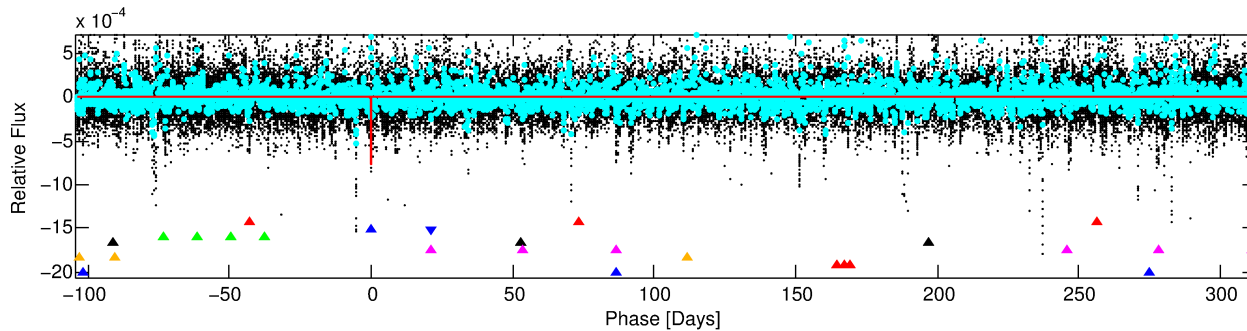
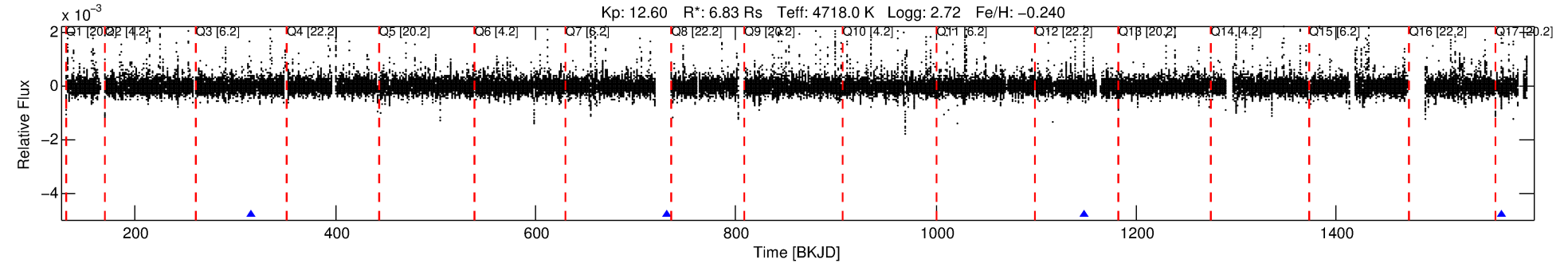
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 006233558-02

No Significant Match Found

DV One-Page Summary

KIC: 6233558 Candidate: 2 of 8 Period: 416.471 d



DV Fit Results:

Period = 416.47060 [0.00498] d
Epoch = 315.2254 [0.0107] BKJD
Rp/R* = 0.0314 [0.0028]
a/R* = 172.02 [32.35]
b = 0.91 [0.04]
Seff = 18.82 [6.12]
Teq = 531 [43] K
Rp = 23.38 [6.74] Re
a = 1.0484 [0.2355] AU
Ag = 280.44 [137.59] [2.03 σ]
Teffp = 3360 [318] K [8.81 σ]

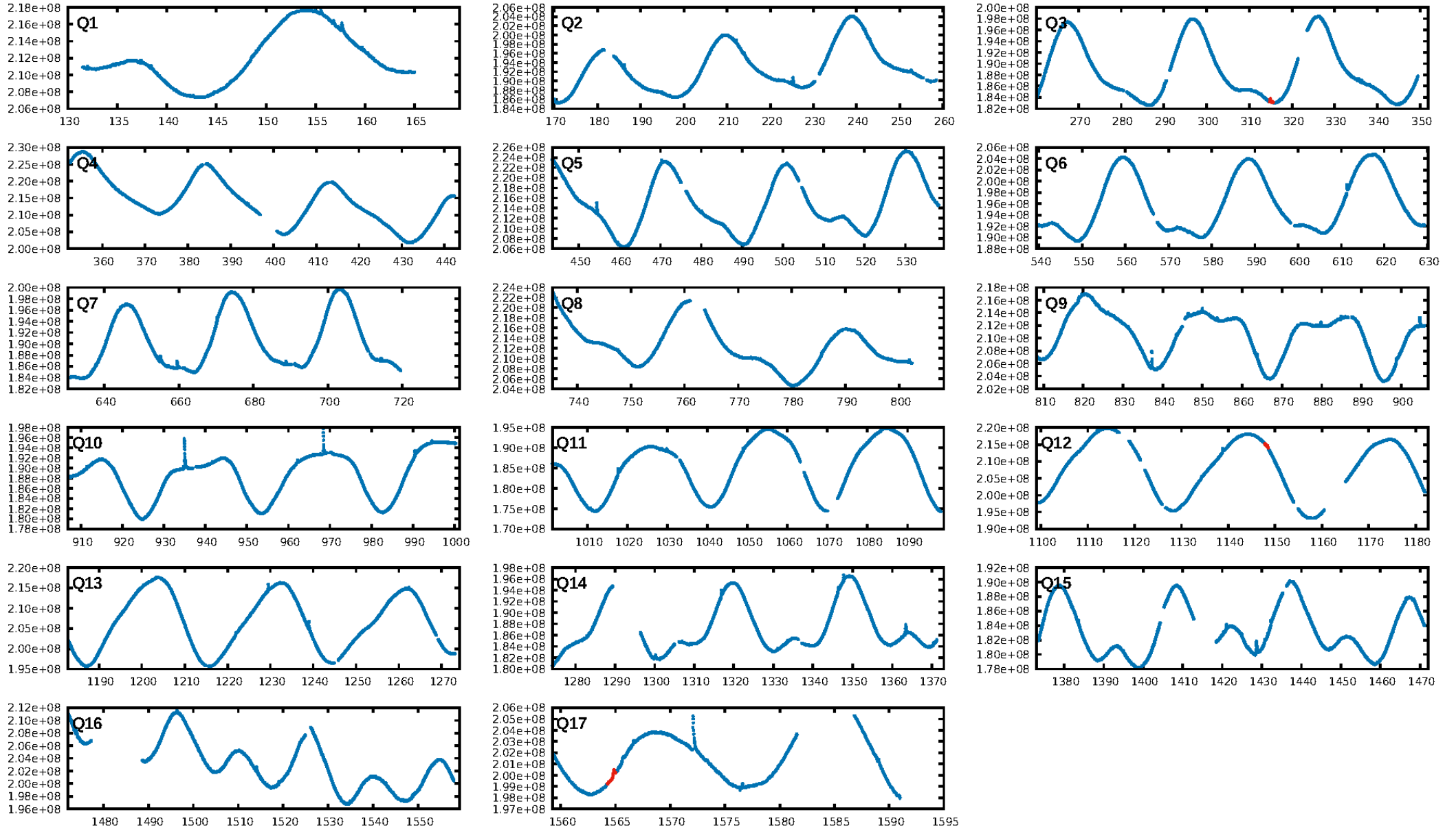
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [470.85 σ]
LongPeriod-sig: 100.0% [4.89 σ]
ModelChiSquare2-sig: 5.2%
ModelChiSquareGof-sig: 81.4%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [2/2]
GhostDiagnostic-chr: 6.614
Centroid-sig: N/A
Centroid-so: 1.892 arcsec [1.71 σ]
OotOffset-rm: 0.907 arcsec [2.50 σ]
KicOffset-rm: 0.944 arcsec [3.27 σ]
OotOffset-st: 0/1/1/1 [3]
KicOffset-st: 0/1/1/1 [3]
DiffImageQuality-fgm: 0.67 [2/3]
DiffImageOverlap-fno: 1.00 [3/3]

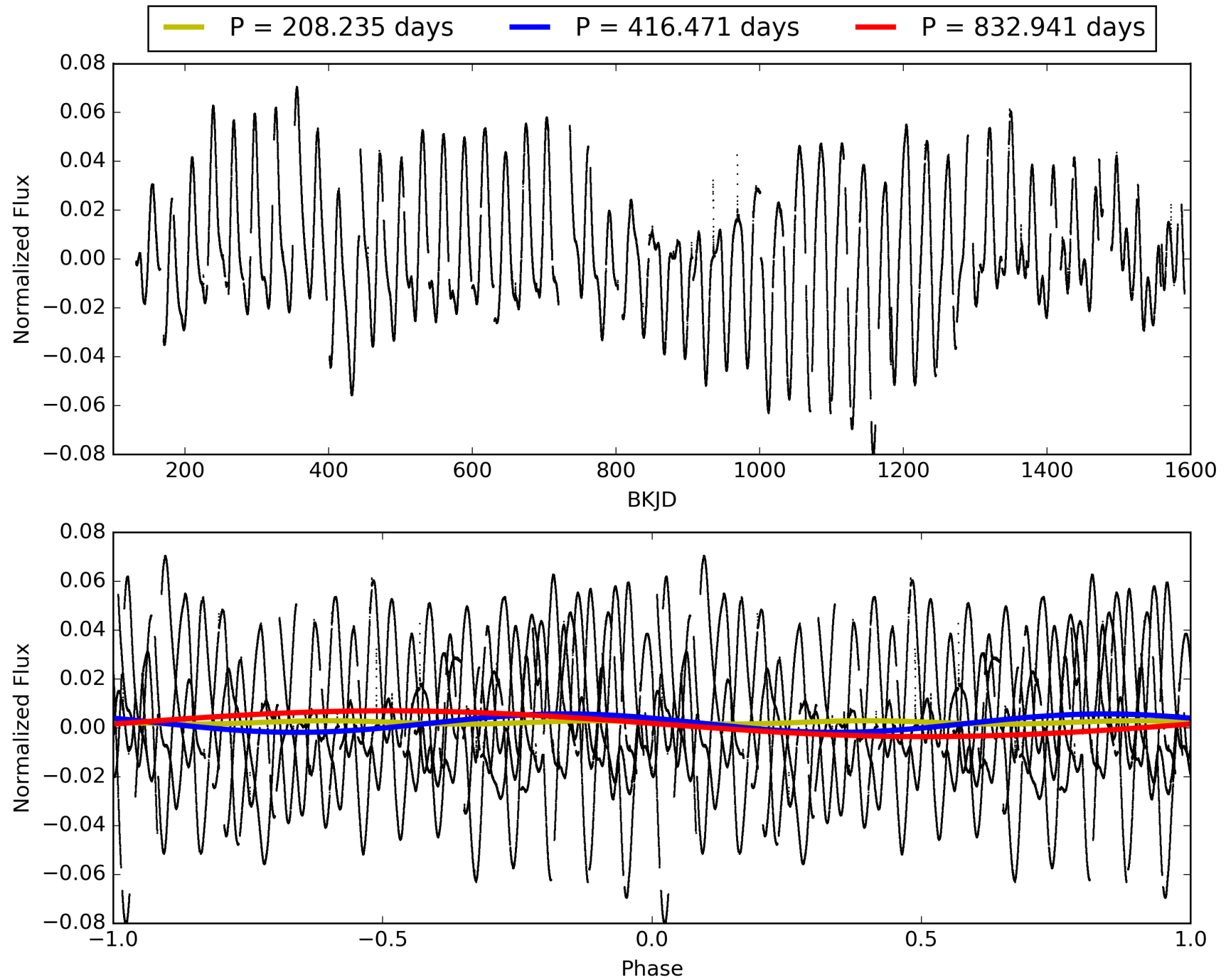
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 06:21:05 Z

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

TCE 006233558-02, PDC Light Curves

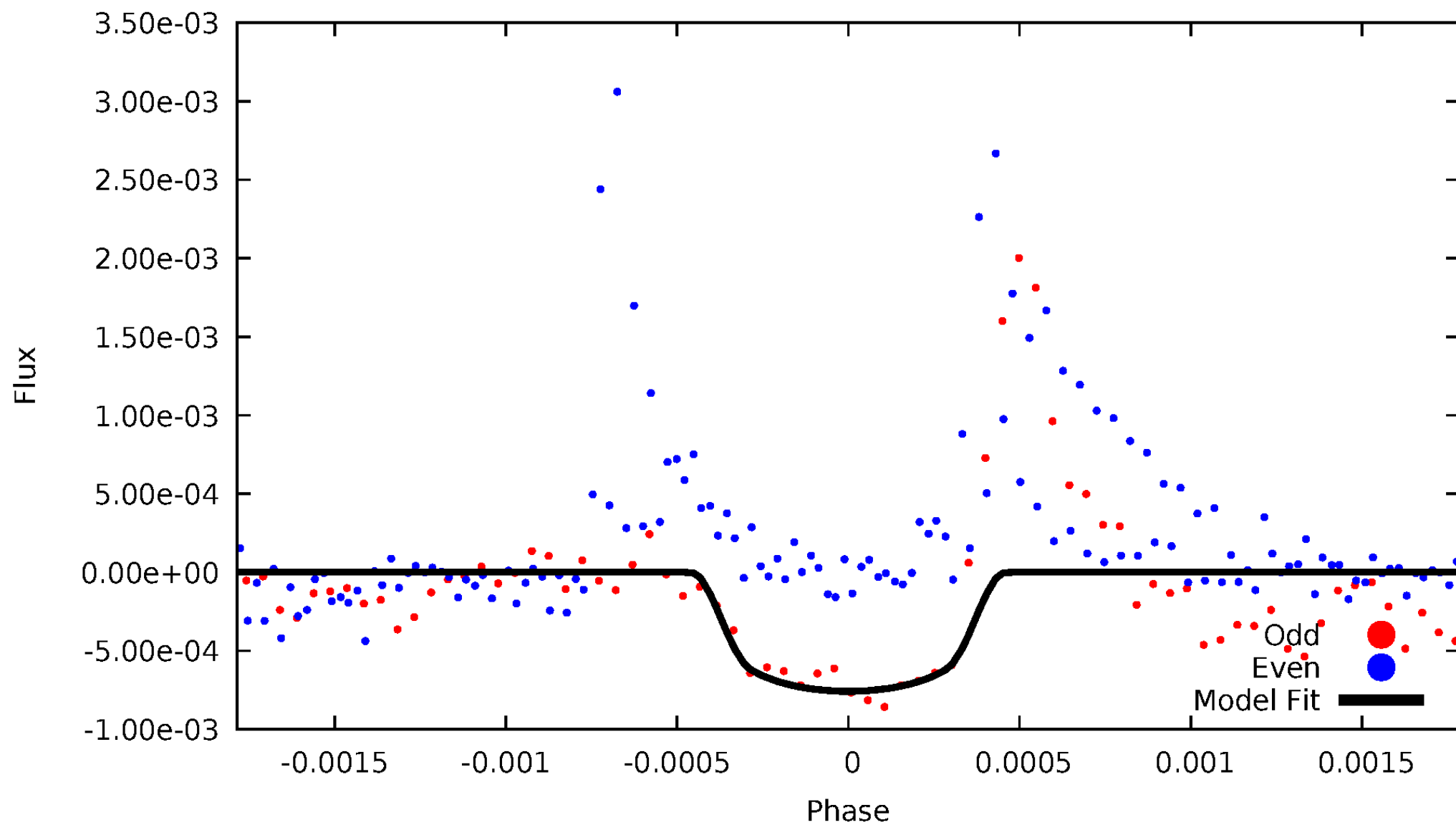


TCE 006233558-02



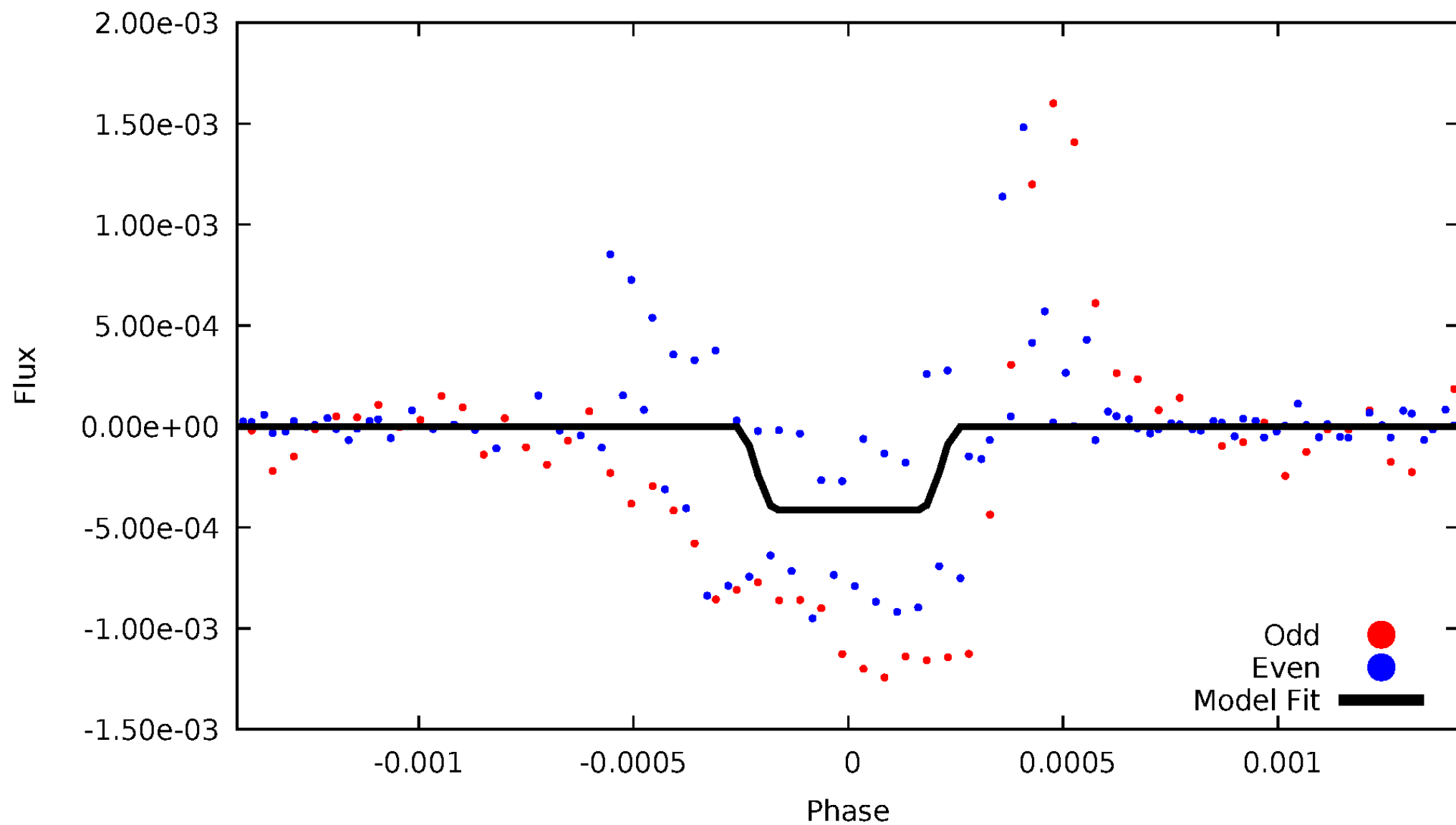
DV Odd/Even

TCE 006233558-02



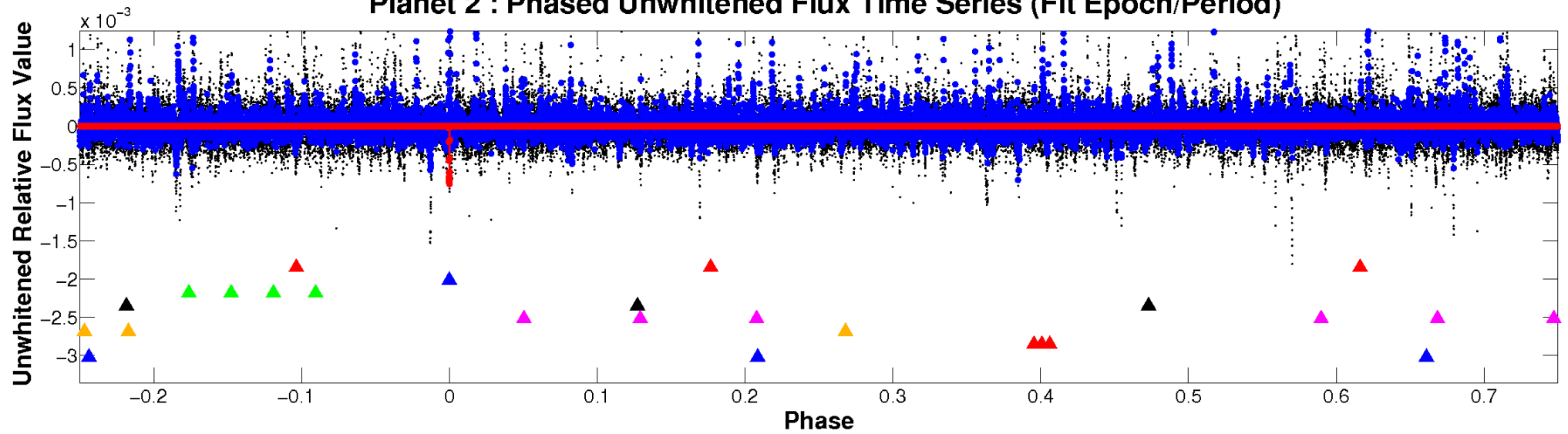
ALT Odd/Even

TCE 006233558-02

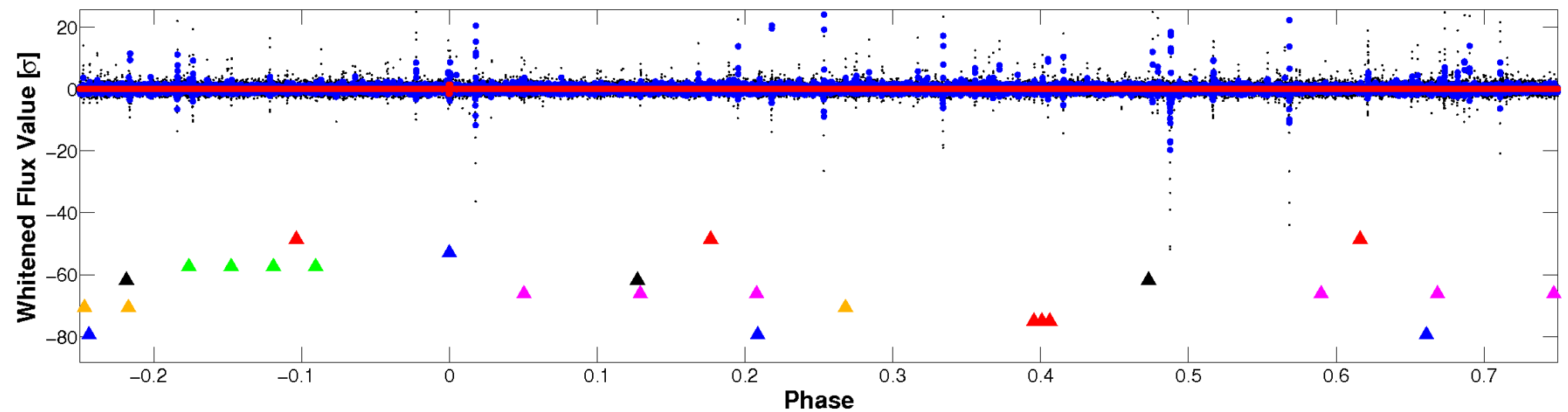


Non-Whitened Vs. Whitened Light Curve

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

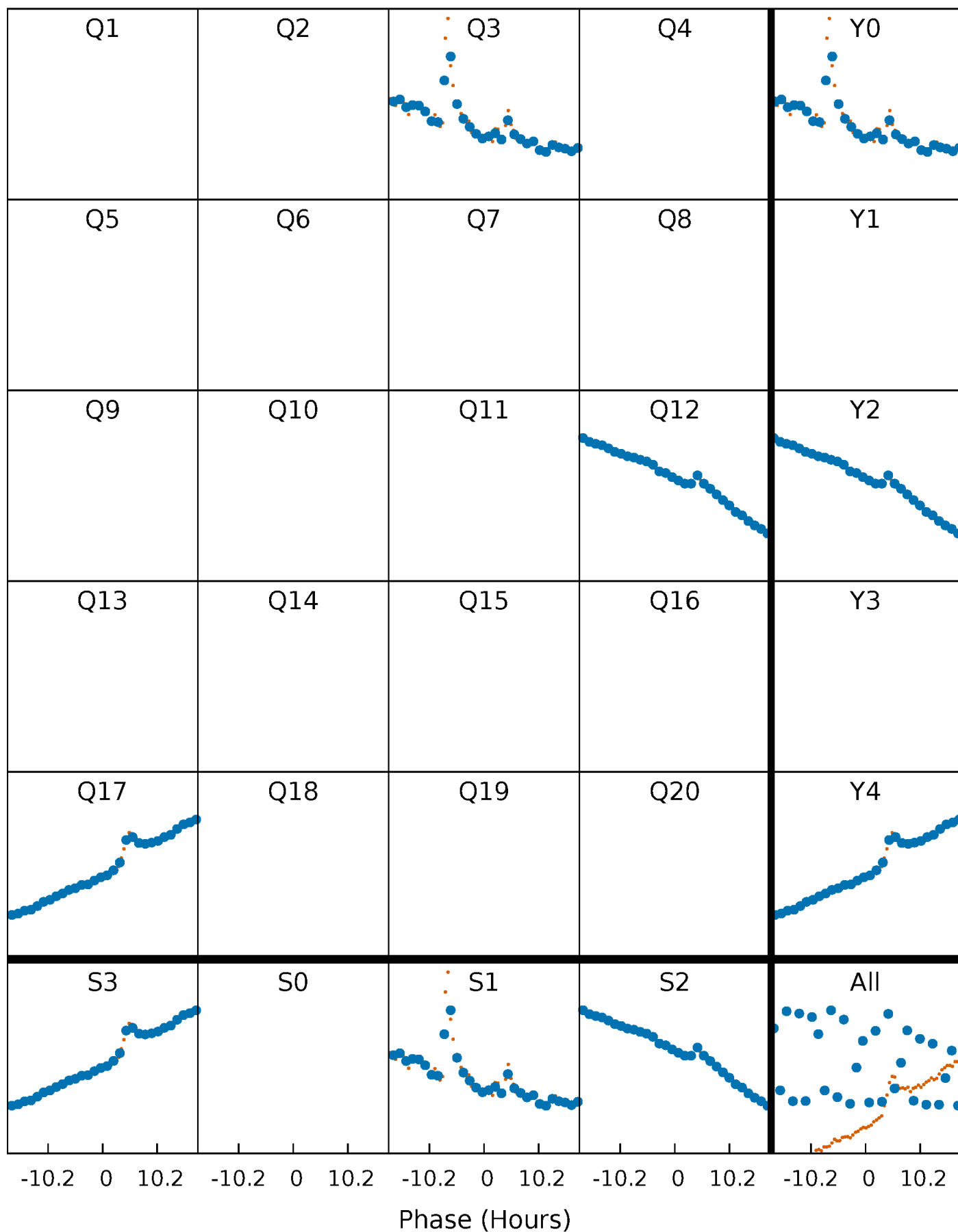


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



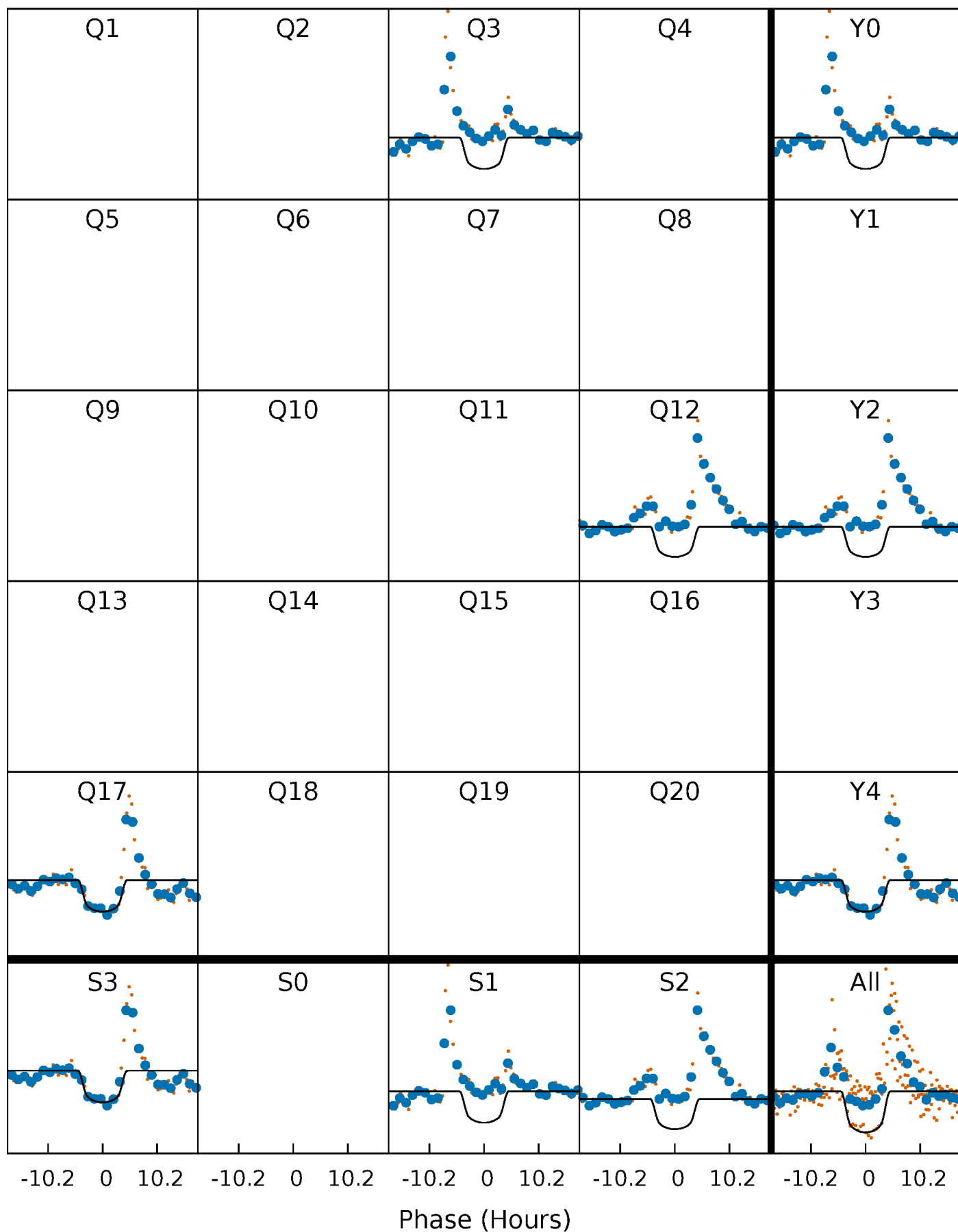
PDC Quarter-Phased Transit Curves

TCE 006233558-02 P=416.470596 Days $T_0=315.225437$ (BKJD)



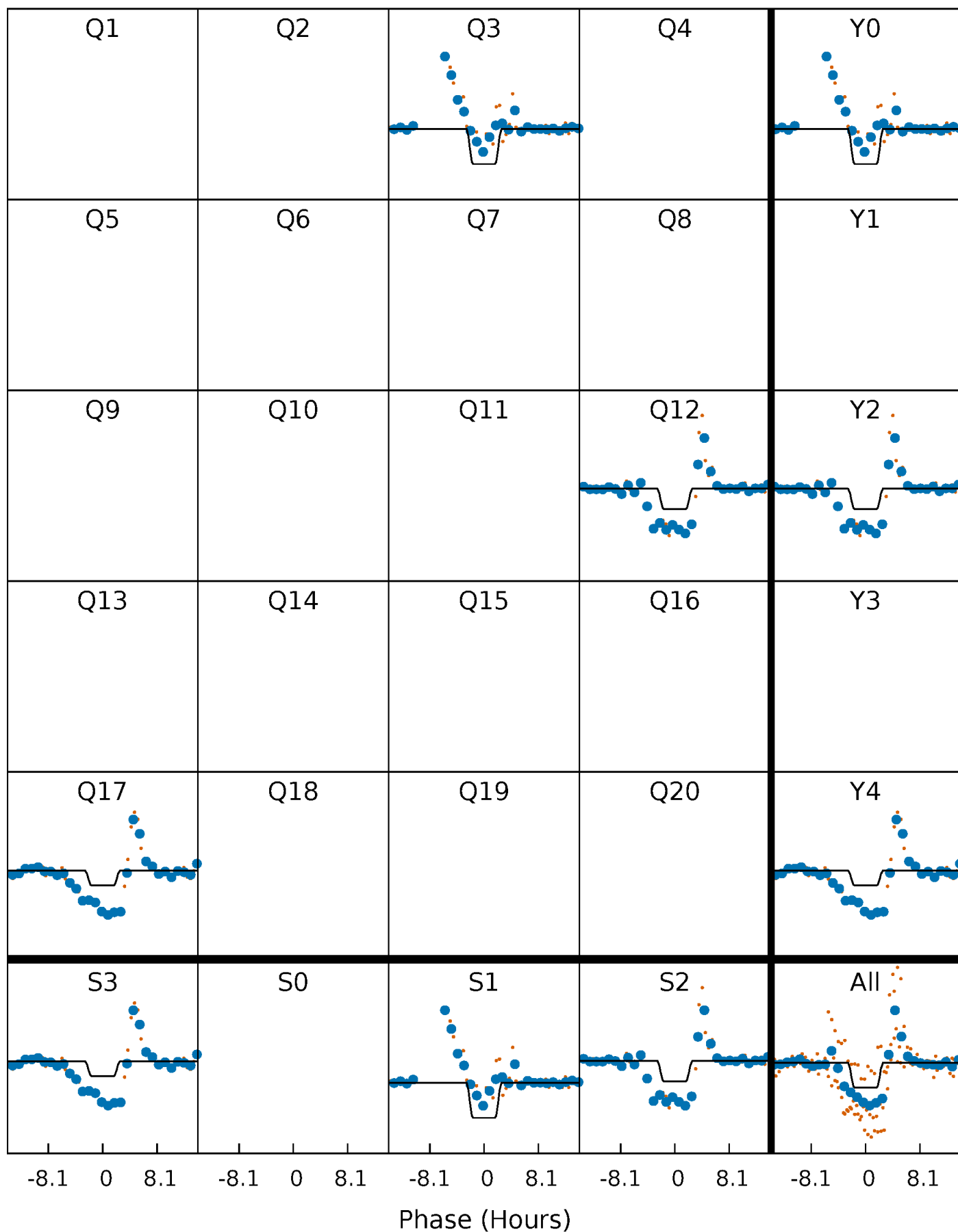
DV Quarter-Phased Transit Curves

TCE 006233558-02 P=416.470596 Days $T_0=315.225437$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

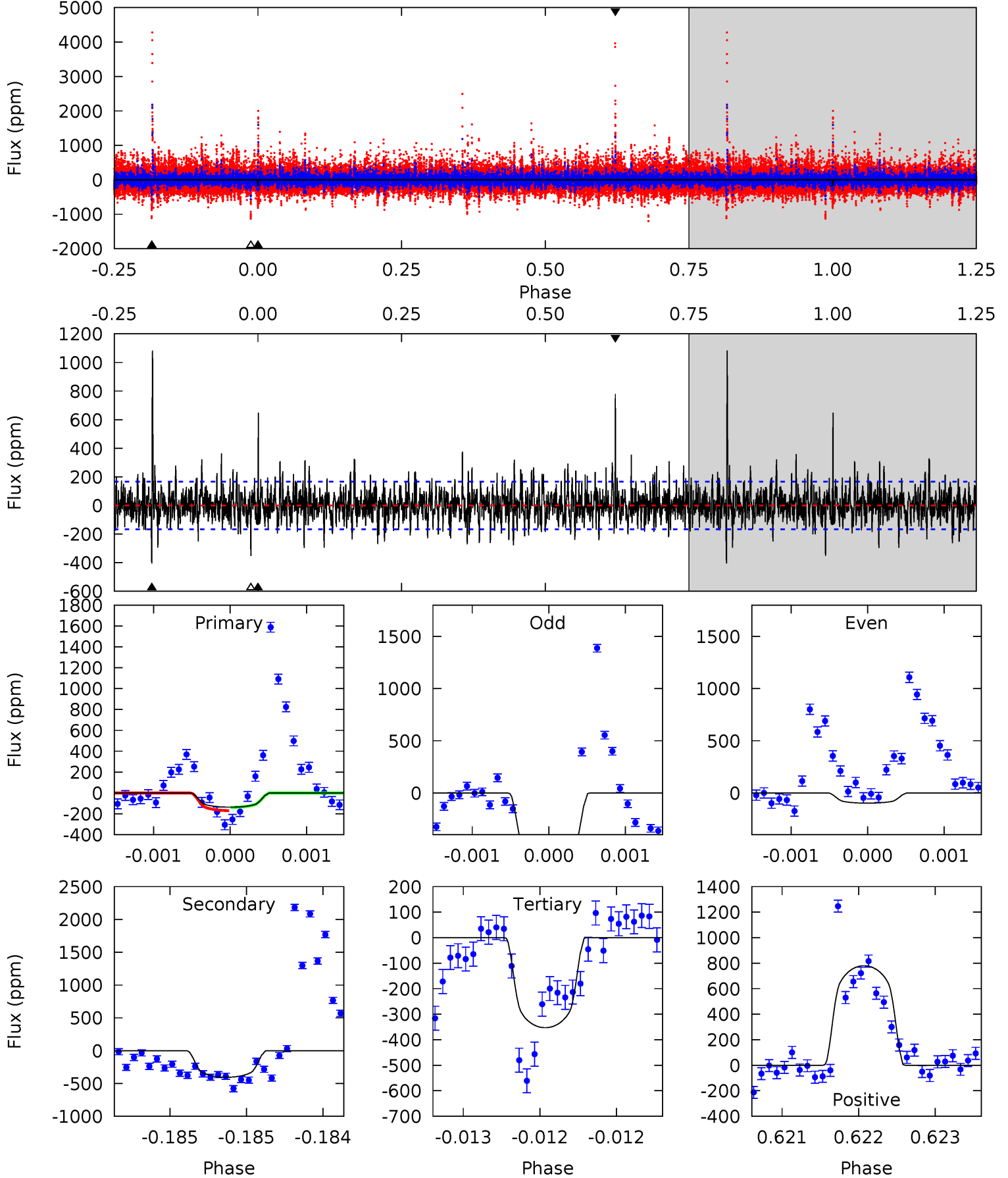
TCE 006233558-02 P=416.470009 Days $T_0=315.236245$ (BKJD)



DV Model-Shift Uniqueness Test

006233558-02, P = 416.470596 Days, E = 315.225437 Days

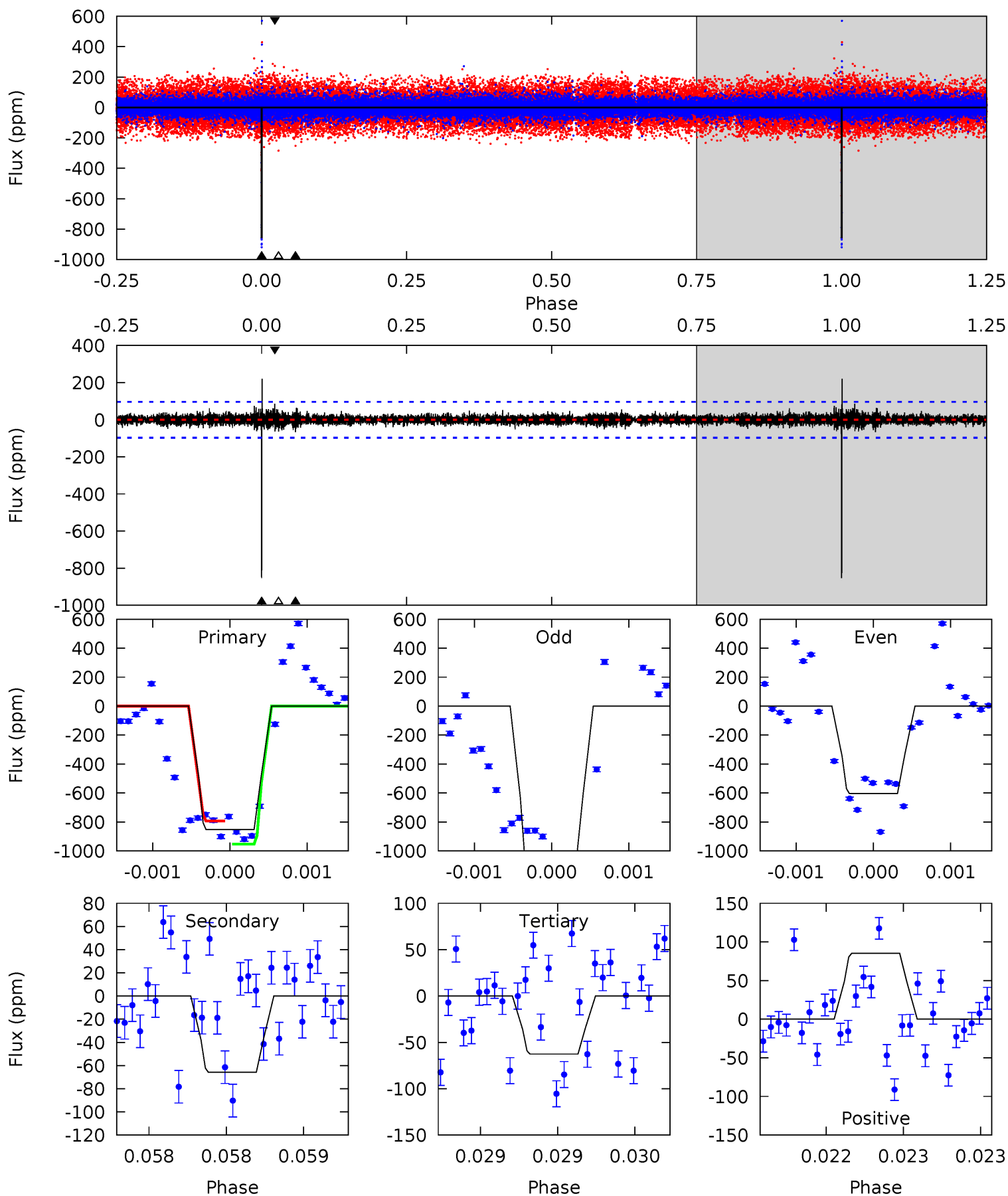
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.49	13.3	11.6	25.7	5.47	3.32	3.08	-7.12	-21.2	1.73	-12.3	4.76	-2.03	0.73	0.52



Alt Model-Shift Uniqueness Test

006233558-02, P = 416.470009 Days, E = 315.236245 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
49.1	3.79	3.60	4.91	5.57	3.47	0.73	45.5	44.2	0.19	-1.12	19.4	0.80	0.20	0



Stellar Parameters For KIC 006233558

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4718^{+78}_{-56}	$2.717^{+0.139}_{-0.170}$	$-0.240^{+0.150}_{-0.100}$	$6.826^{+1.872}_{-1.008}$	$0.886^{+0.183}_{-0.021}$	$0.004^{+0.003}_{-0.002}$
	+2%/-1%	+5%/-6%	+62%/-42%	+27%/-15%	+21%/-2%	+64%/-46%
Source	SPE74	SPE74	SPE74	DSEP		

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

Secondary Eclipse Parameters for KIC 006233558-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-405 ± 30	$23.90^{+3.83}_{-3.26}$	744^{+49}_{-37}	3995^{+158}_{-141}	445^{+153}_{-119}
Alt.	-66 ± 17	$15.59^{+3.22}_{-2.72}$	745^{+53}_{-37}	3402^{+231}_{-209}	167^{+98}_{-64}

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

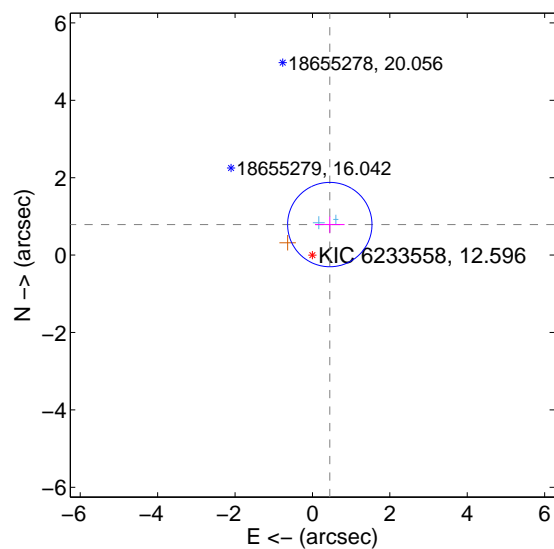
Supplemental centroid analysis for 006233558-02. Kepler magnitude: 12.60. Transit SNR 9.79

There are 2 quarters with good PRF difference image offsets

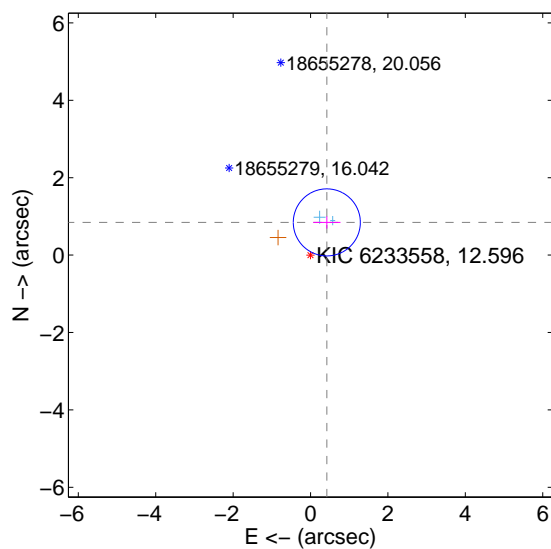
The direct PRF centroid is offset from the target star catalog position by about 0.04 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.907 ± 0.363	2.50	-0.448 ± 0.382	0.789 ± 0.209
PRF-fit source offset from KIC position	0.944 ± 0.289	3.27	-0.421 ± 0.352	0.845 ± 0.158
photometric centroid source offset	1.89 ± 1.11	1.71	-0.38 ± 0.90	1.85 ± 1.11

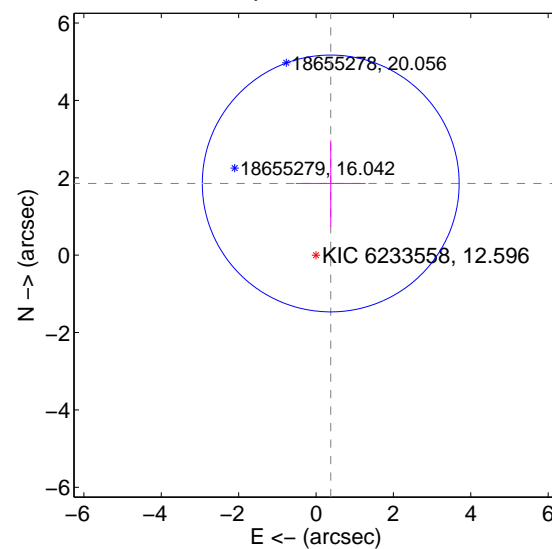
offset from difference PRF-fit to OOT PRF-fit



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.

Q1 no difference image



Q1 no OOT image



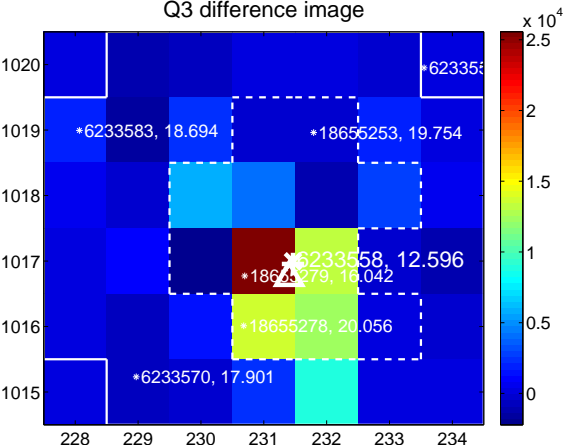
Q2 no difference image



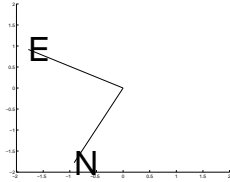
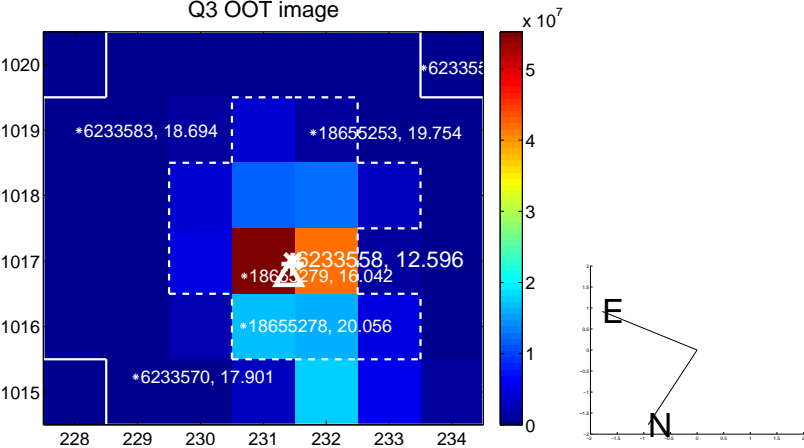
Q2 no OOT image



Q3 difference image



Q3 OOT image



Q4 no difference image



Q4 no OOT image



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



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

Q9 no difference image



Q9 no OOT image



Q10 no difference image



Q10 no OOT image



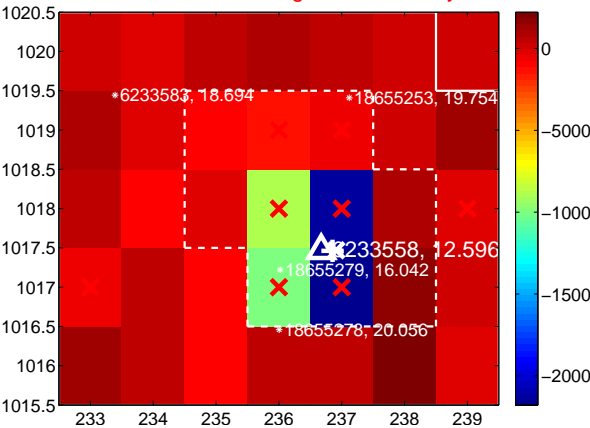
Q11 no difference image



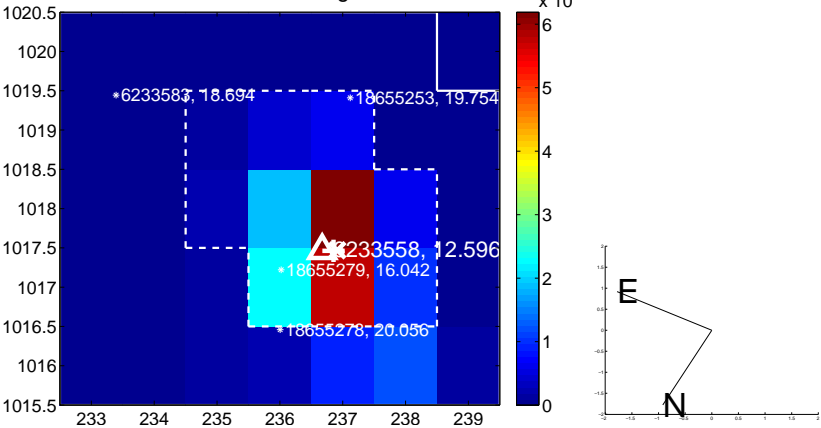
Q11 no OOT image



Q12 difference image. Poor Quality



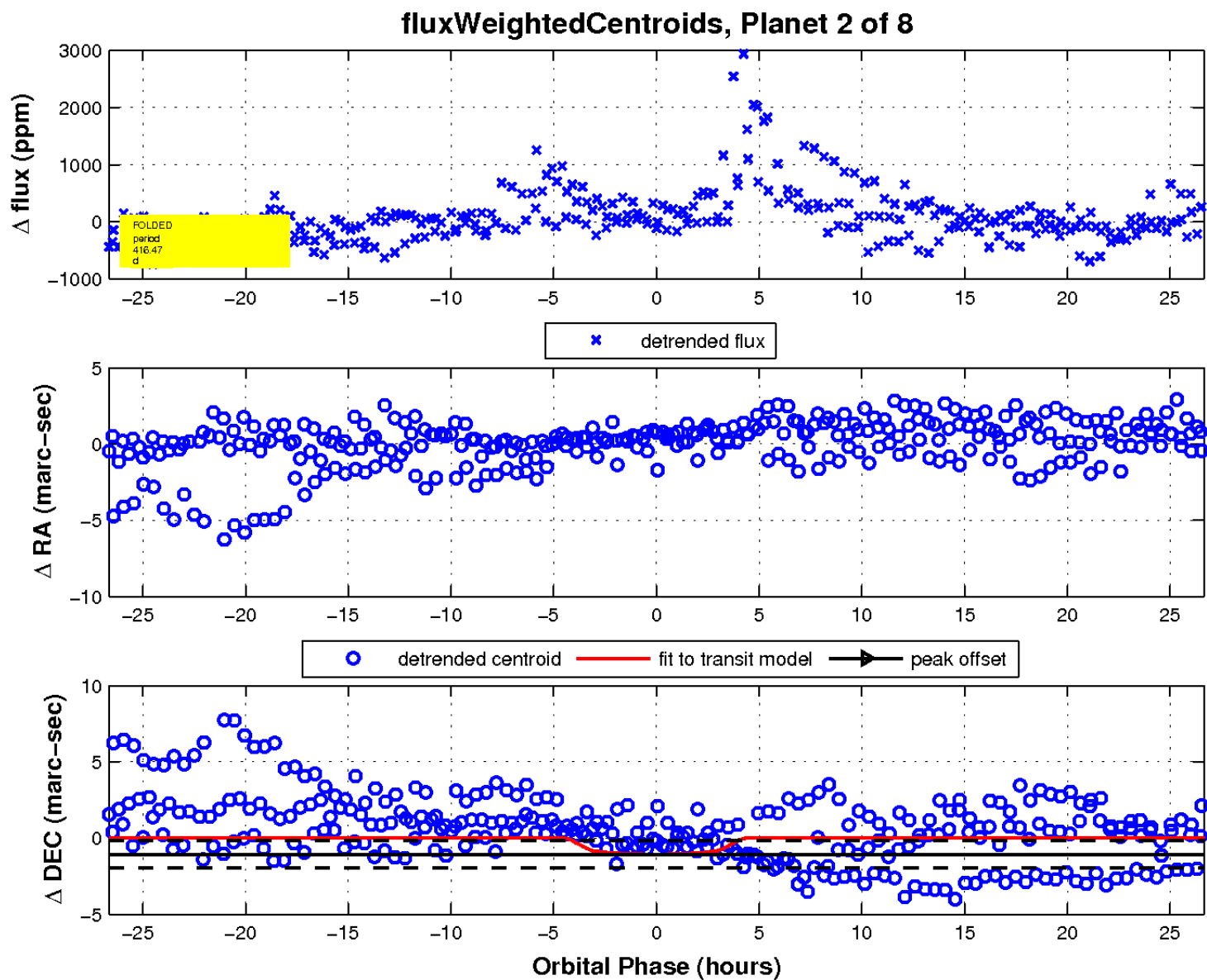
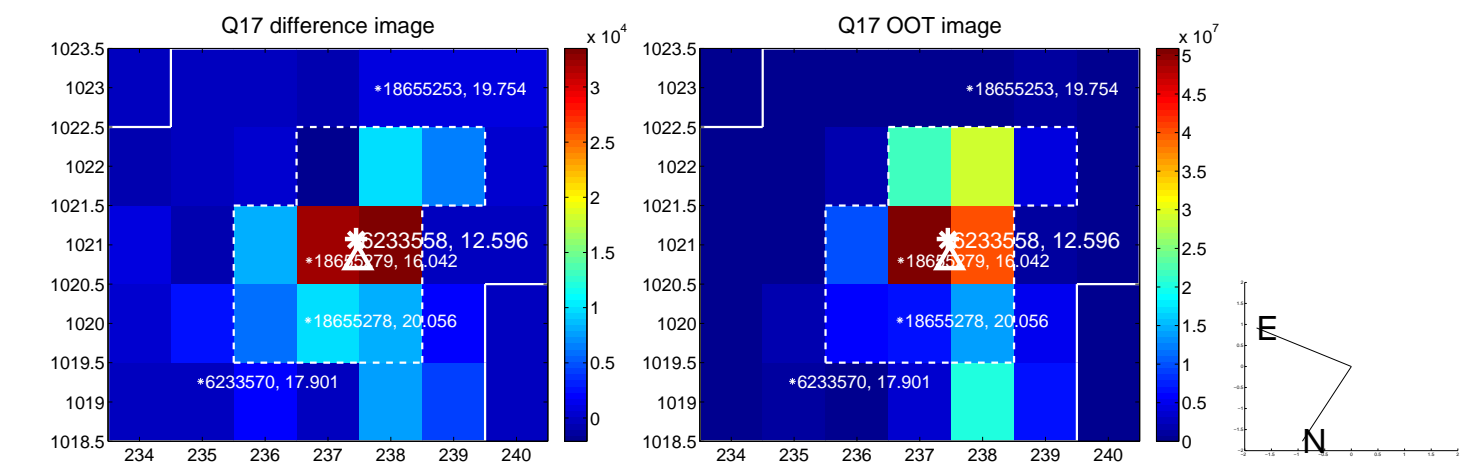
Q12 OOT image



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

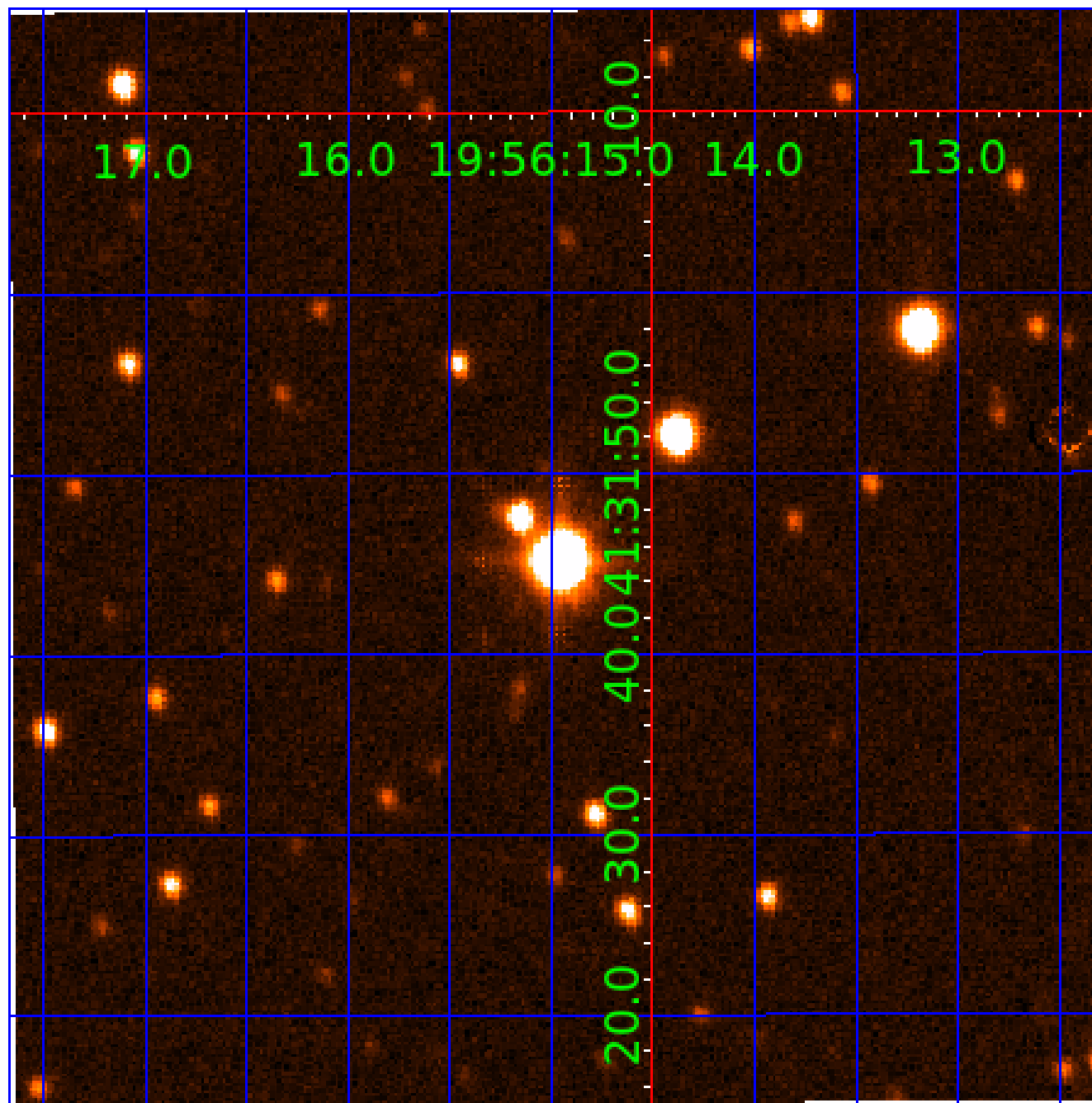


white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



UKIRT Image

Declination



KIC 006233558

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})
006233558-02	OBS	No	416.470596	315.225437	758.6	8.921	14.4	9.8	6.83	4718	23.38	18.82
006233558-04	OBS	No	560.466671	224.247300	39.9	5.133	13.6	0.5	6.83	4718	4.25	12.67
006233558-05	OBS	No	224.625176	336.241611	414.9	4.005	14.7	8.3	6.83	4718	19.81	42.86
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Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006233558-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
006233558-04	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_MARSHALL_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
006233558-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—INCONSISTENT_TRANS—CENT_FEW_MEAS
006233558-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS
006233558-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_POS_DV

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

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

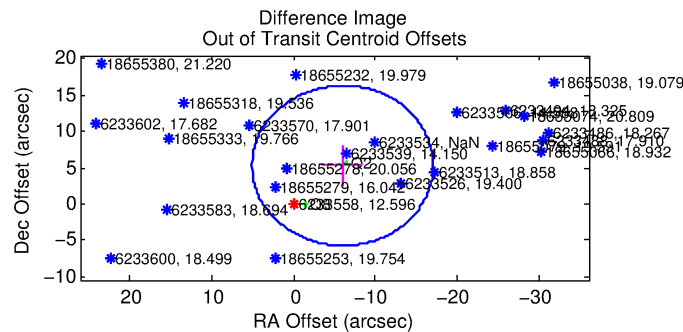
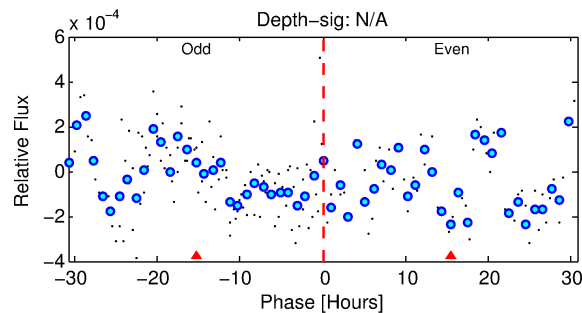
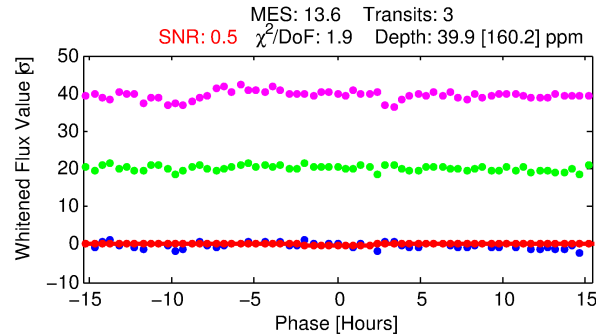
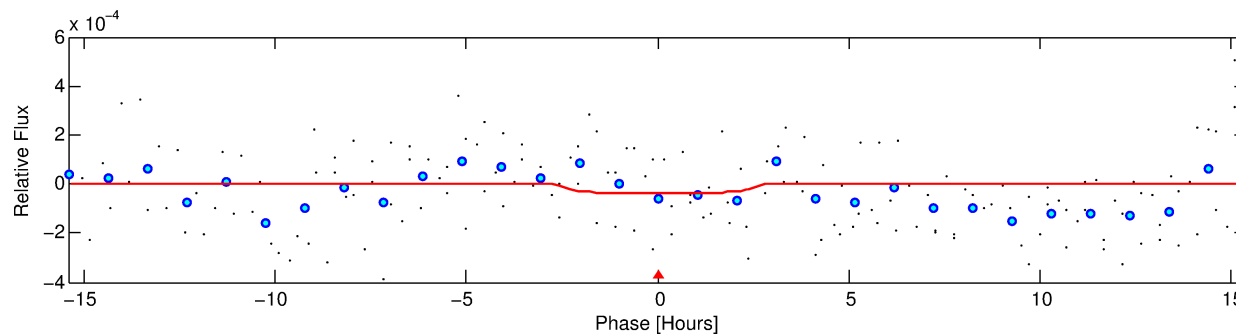
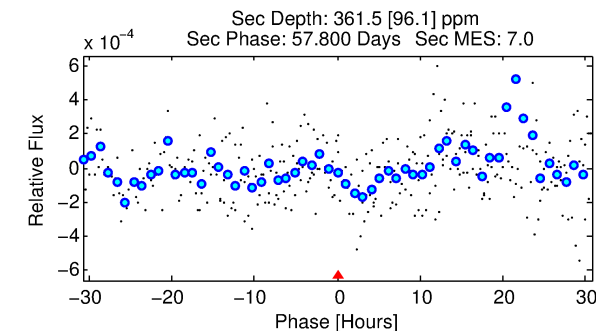
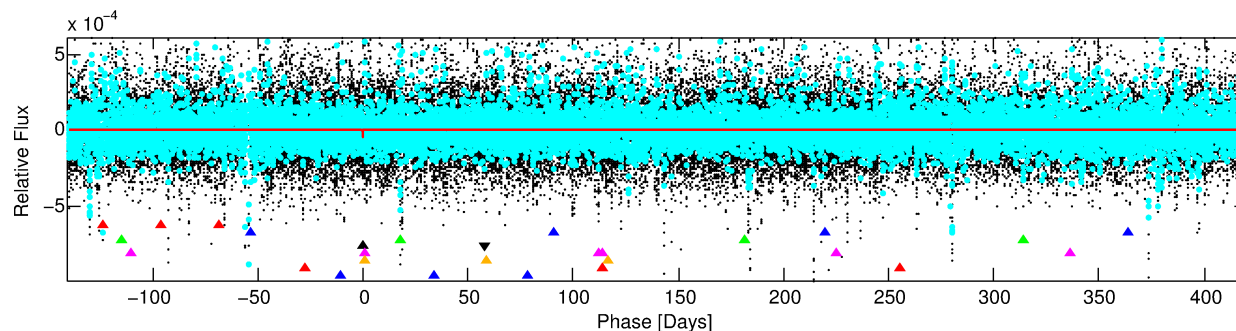
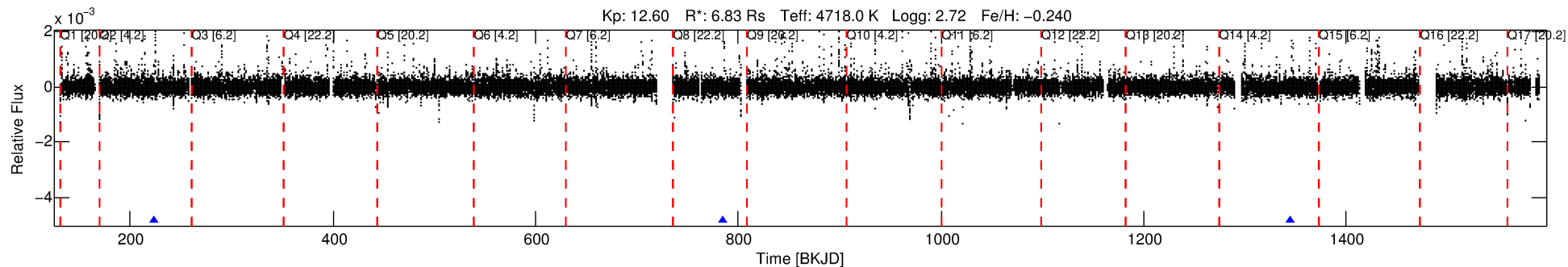
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 006233558-04

No Significant Match Found

DV One-Page Summary

KIC: 6233558 Candidate: 4 of 8 Period: 560.467 d



DV Fit Results:

Period = 560.46667 [0.27985] d
Epoch = 224.2473 [0.1672] BKJD
Rp/R* = 0.0057 [0.3155]
a/R* = 777.66 [136963.72]
b = 0.38 [410.72]
Seff = 12.67 [4.12]
Teq = 481 [39] K
Rp = 4.25 [235.01] Re
a = 1.2779 [0.2870] AU
Ag = 18014.18 [1994013.47] [0.01σ]
Teffp = 8616 [238441] K [0.03σ]

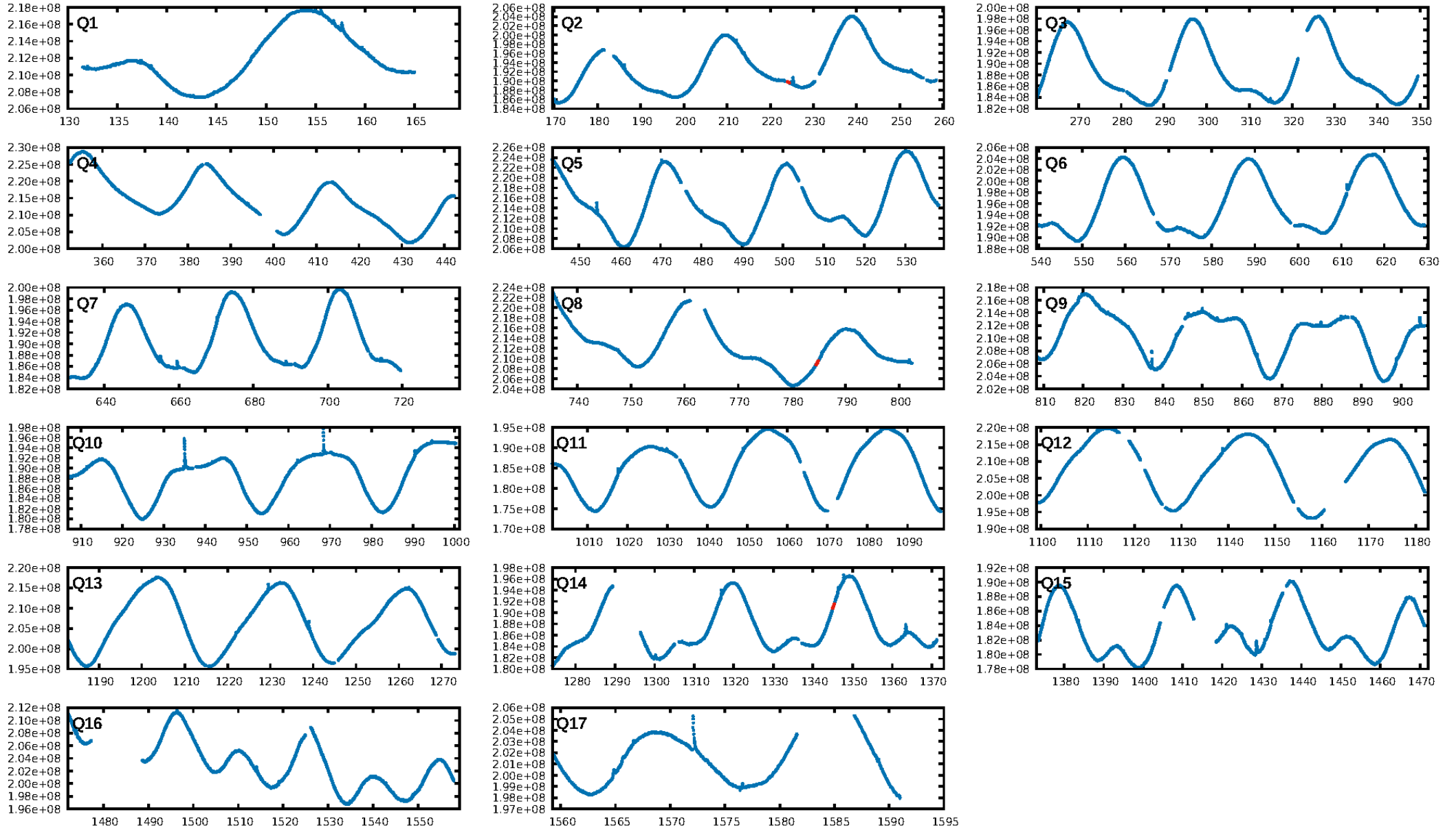
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [72.52σ]
LongPeriod-sig: 100.0% [84.05σ]
ModelChiSquare2-sig: 10.3%
ModelChiSquareGof-sig: 99.3%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: -0.1414
Centroid-sig: N/A
Centroid-so: 16.954 arcsec [0.95σ]
OotOffset-rm: 7.972 arcsec [2.17σ]
OotOffset-st: 1/0/1/0 [2]
KicOffset-rm: 7.956 arcsec [4.12σ]
KicOffset-st: 1/0/1/0 [2]
DiffImageQuality-fgm: 0.50 [1/2]
DiffImageOverlap-fno: 1.00 [3/3]

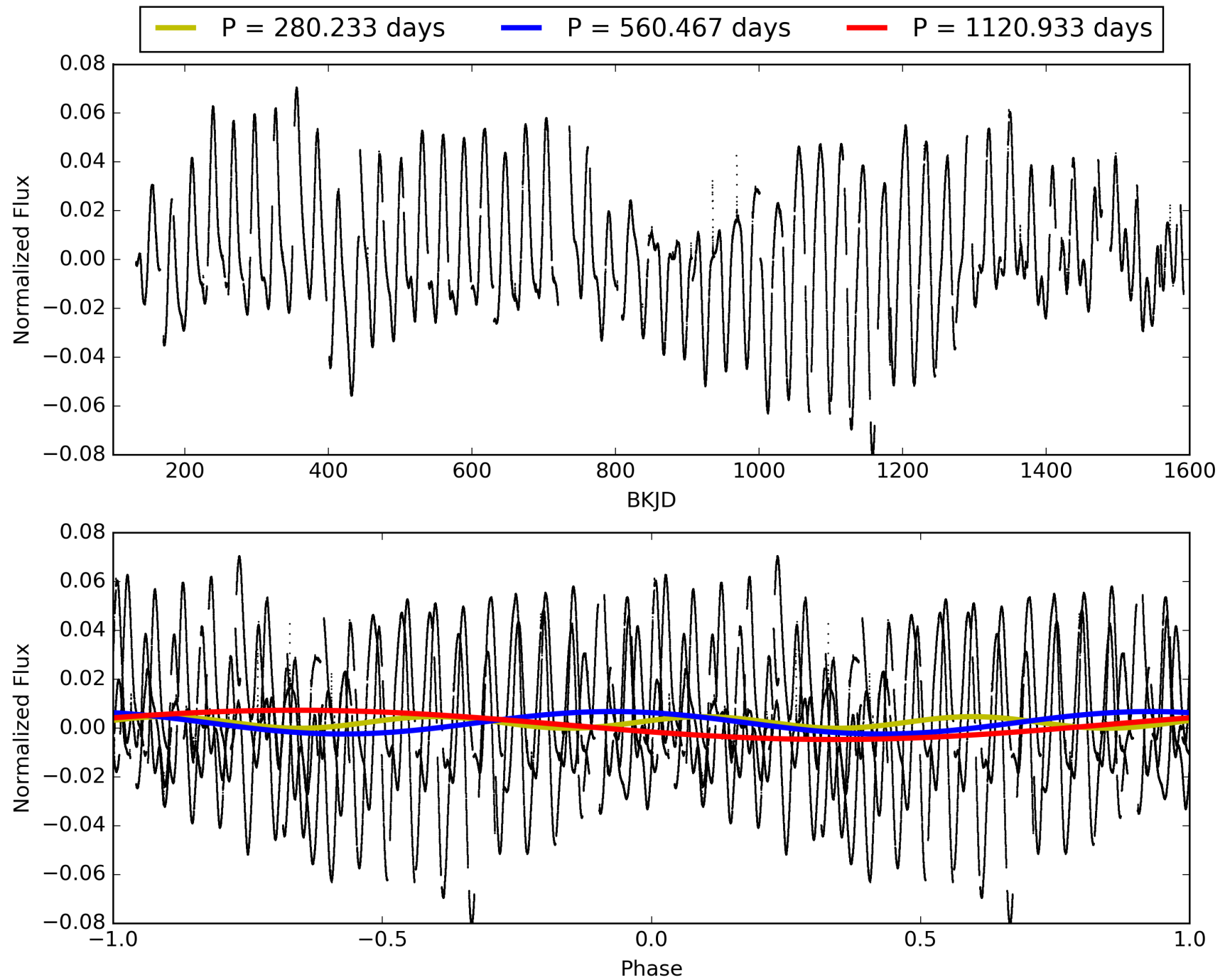
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 06:21:36 Z

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

TCE 006233558-04, PDC Light Curves

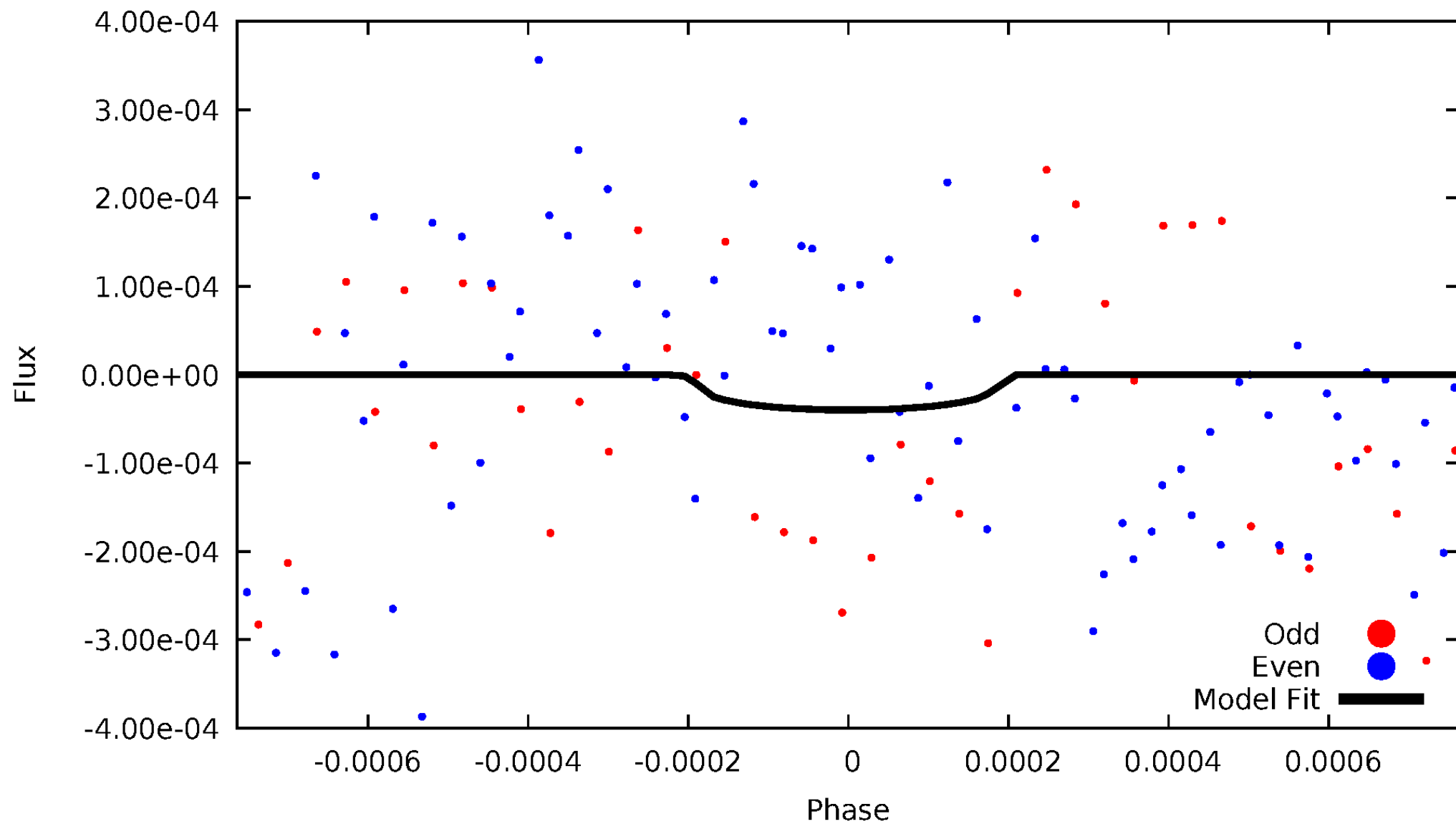


TCE 006233558-04



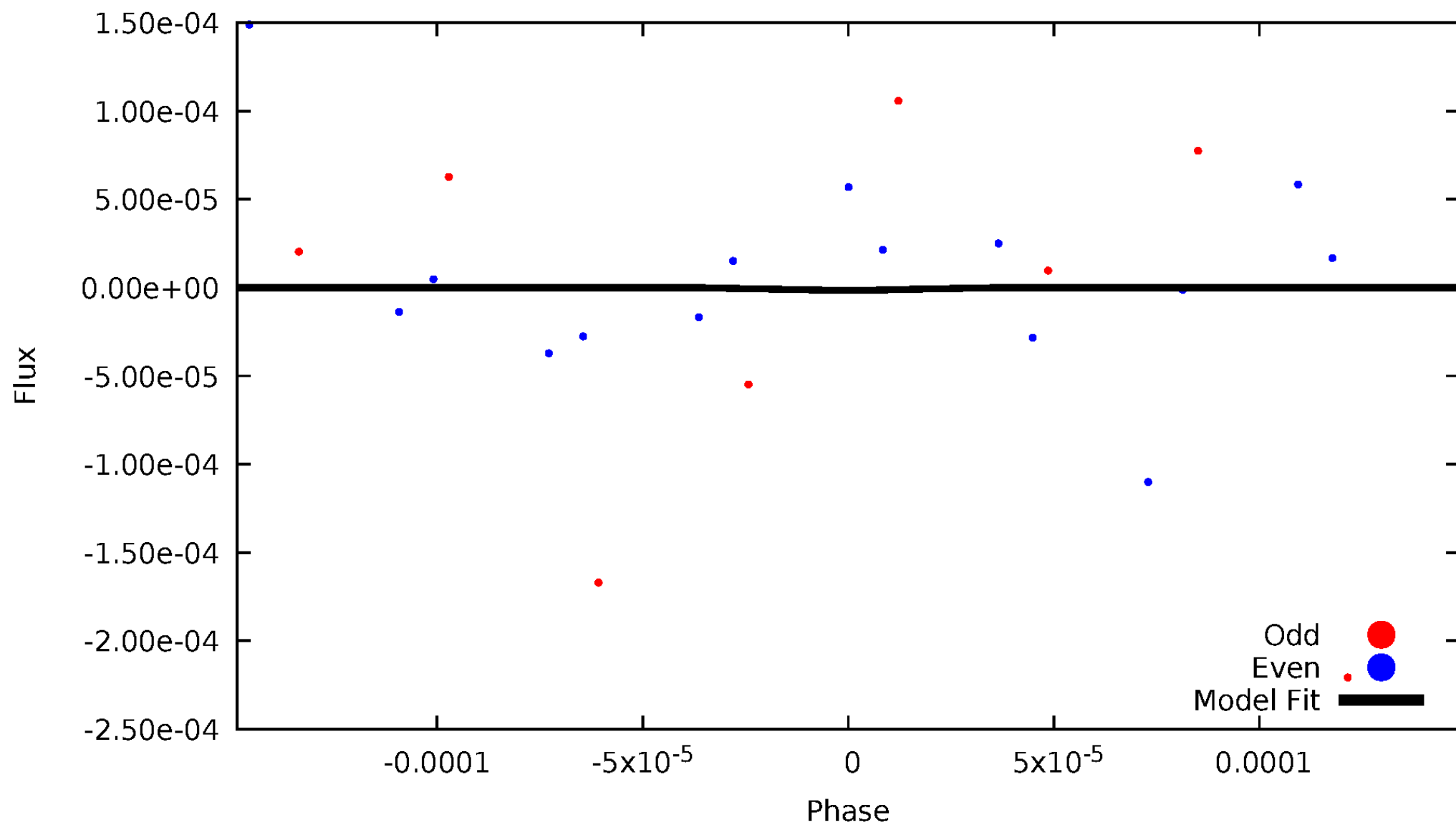
DV Odd/Even

TCE 006233558-04



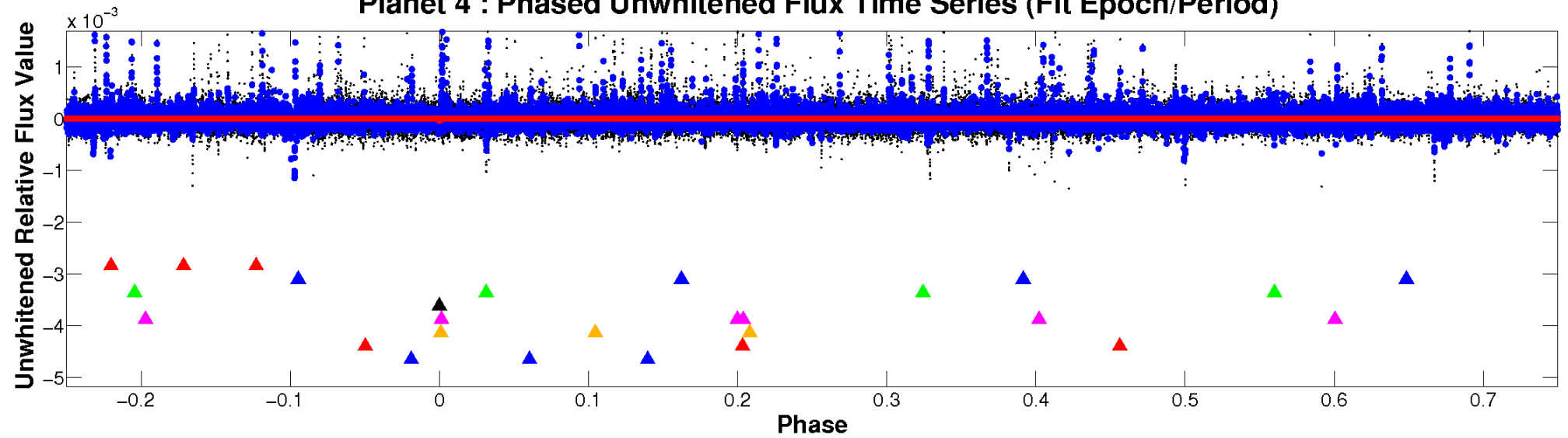
ALT Odd/Even

TCE 006233558-04

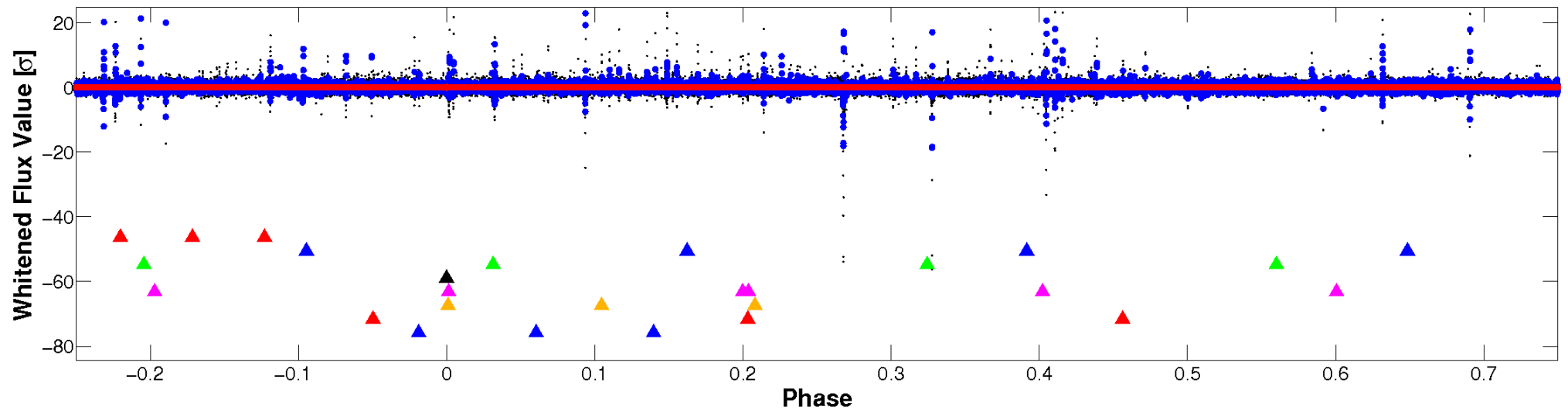


Non-Whitened Vs. Whitened Light Curve

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

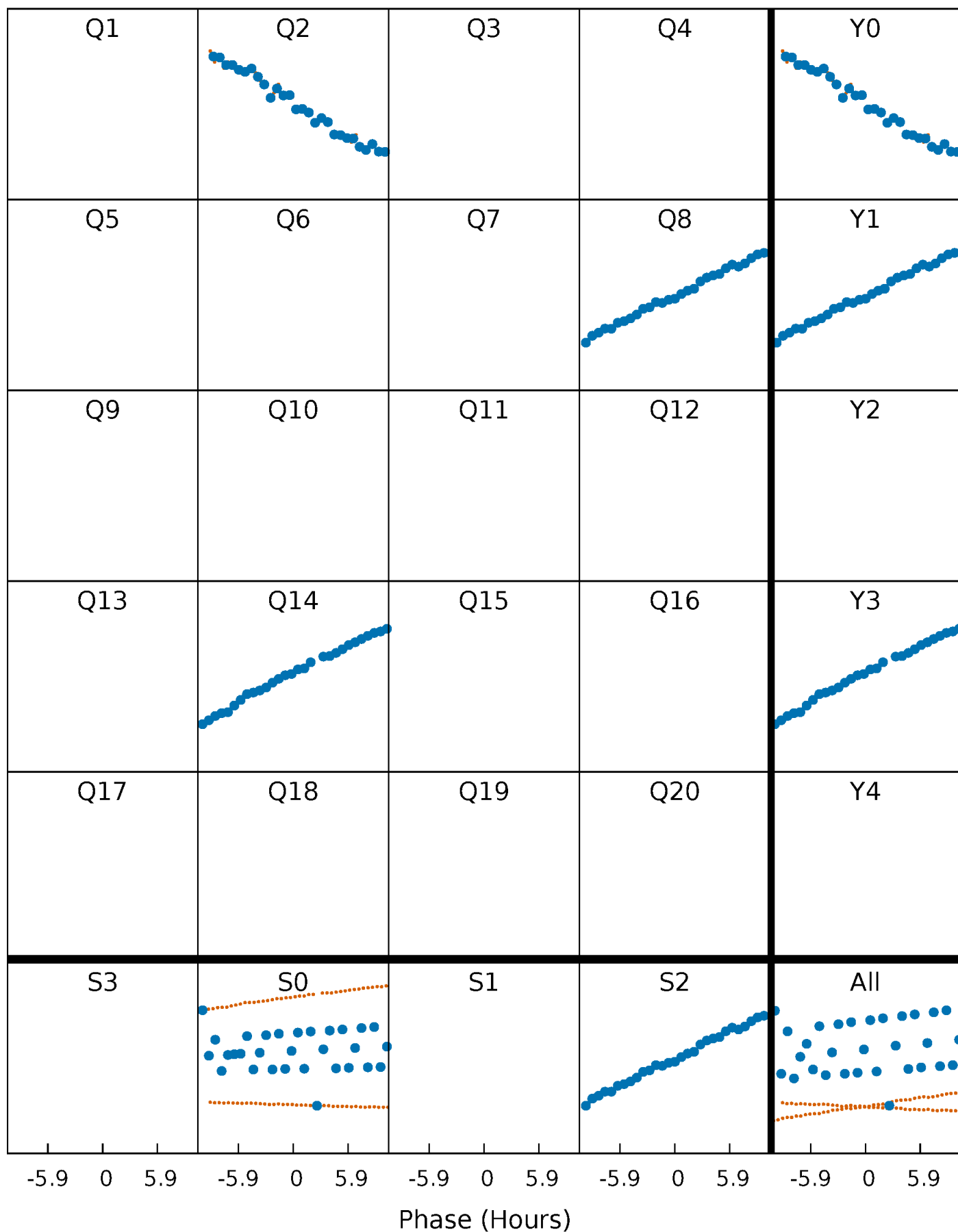


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



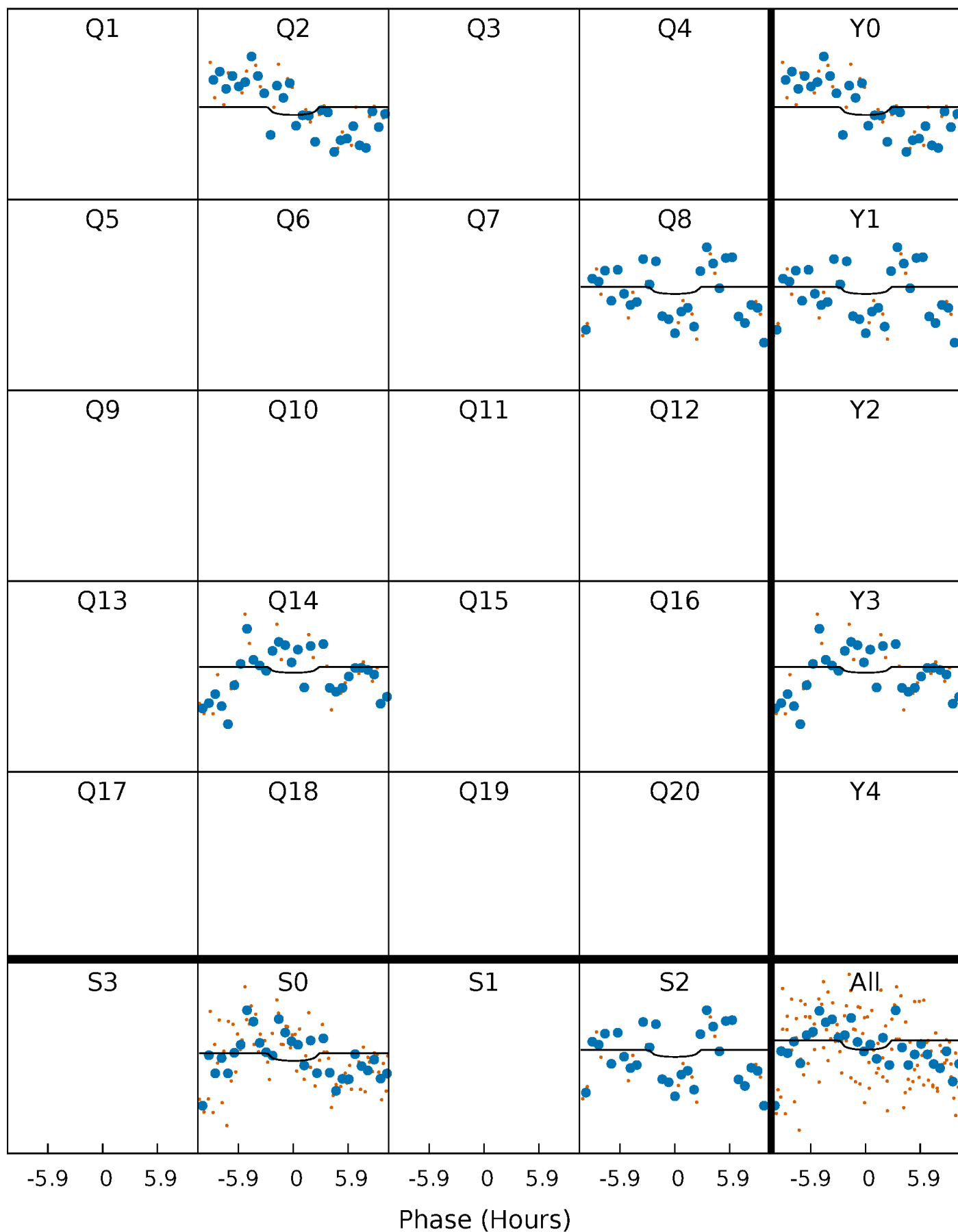
PDC Quarter-Phased Transit Curves

TCE 006233558-04 P=560.466671 Days $T_0=224.247300$ (BKJD)



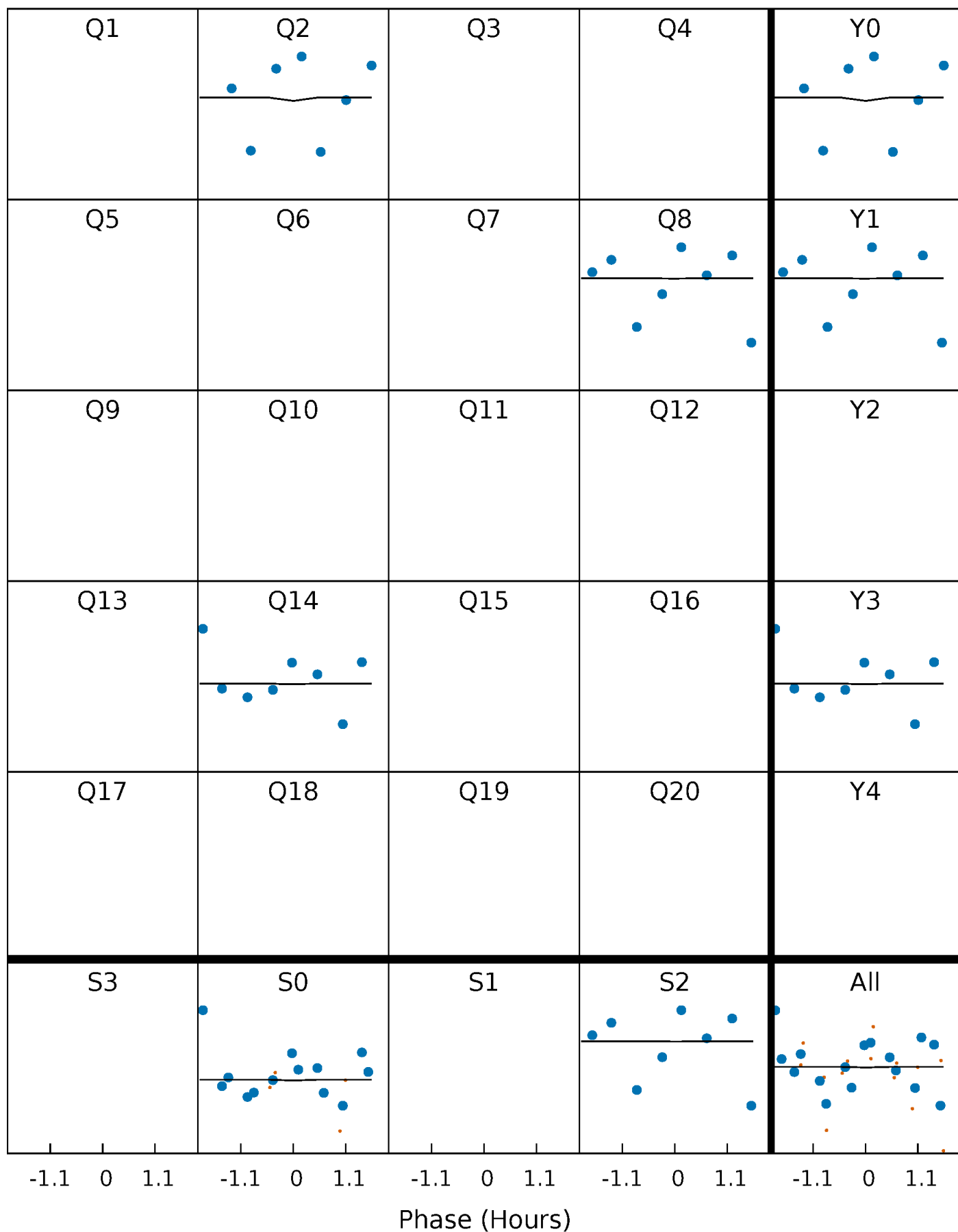
DV Quarter-Phased Transit Curves

TCE 006233558-04 P=560.466671 Days $T_0=224.247300$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

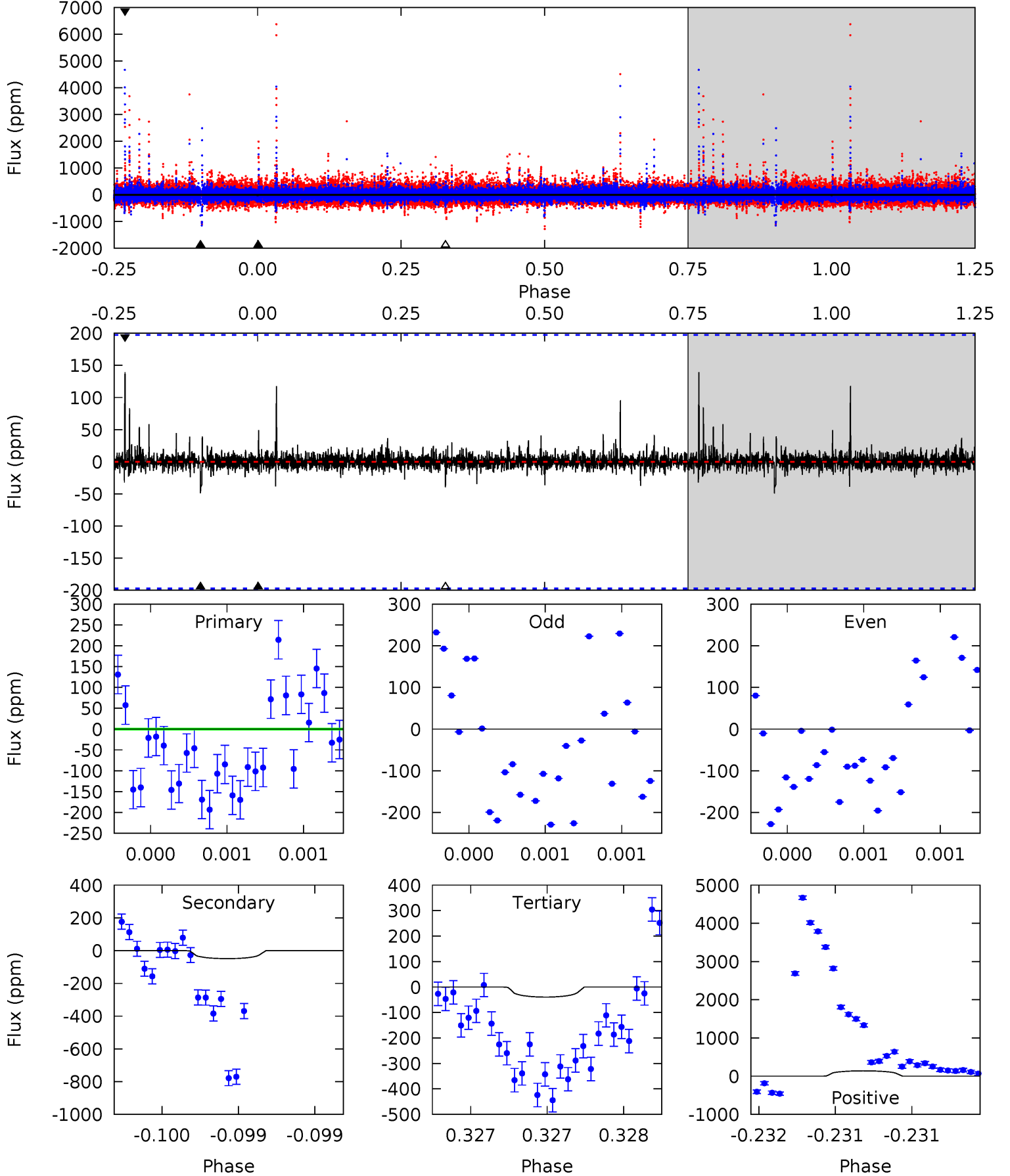
TCE 006233558-04 P=560.690075 Days $T_0=224.605435$ (BKJD)



DV Model-Shift Uniqueness Test

006233558-04, P = 560.466671 Days, E = 224.247300 Days

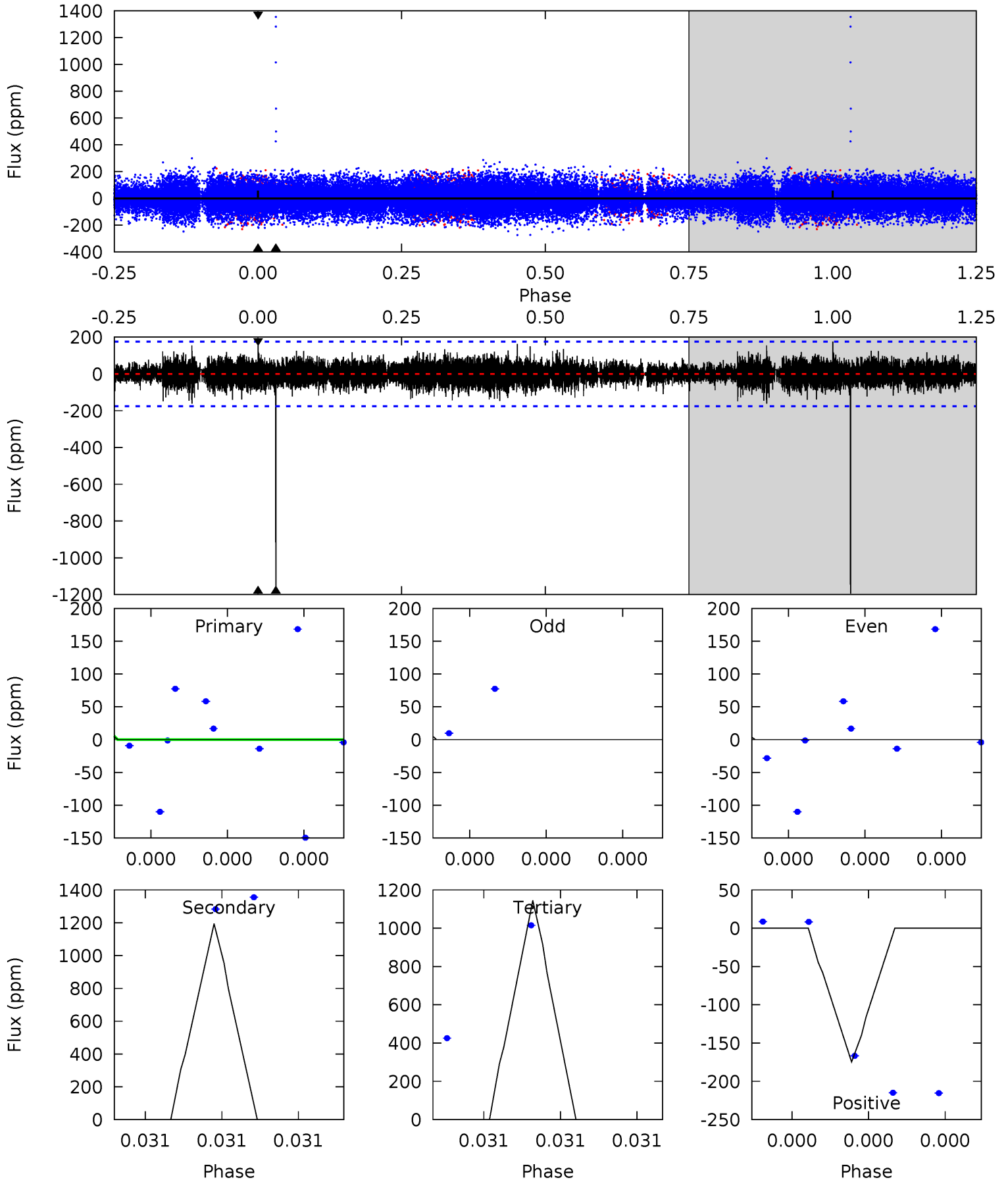
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0.42	1.39	1.12	3.96	5.61	3.53	0.25	-0.70	-3.53	0.27	-2.56	0.64	-0.88	0.74	0.48



Alt Model-Shift Uniqueness Test

006233558-04, P = 560.690075 Days, E = 224.605435 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1.94	40.2	38.6	5.89	5.92	4.00	1.01	-36.6	-3.95	1.66	34.4	0.32	1.00	0.13	0.67



Stellar Parameters For KIC 006233558

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	4718^{+78}_{-56}	$2.717^{+0.139}_{-0.170}$	$-0.240^{+0.150}_{-0.100}$	$6.826^{+1.872}_{-1.008}$	$0.886^{+0.183}_{-0.021}$	$0.004^{+0.003}_{-0.002}$
	+2%/-1%	+5%/-6%	+62%/-42%	+27%/-15%	+21%/-2%	+64%/-46%
Source	SPE74	SPE74	SPE74	DSEP		

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

Secondary Eclipse Parameters for KIC 006233558-04 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-49 ± 35	$172.08^{+196.06}_{-123.37}$	674^{+50}_{-34}	1761^{+581}_{-3260}	$1.271^{+16.167}_{-1.127}$
Alt.	-1194 ± 30	$179.58^{+177.75}_{-128.15}$	675^{+46}_{-35}	2606^{+1116}_{-408}	35^{+387}_{-27}

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 $A_{obs} \gg 1.0$

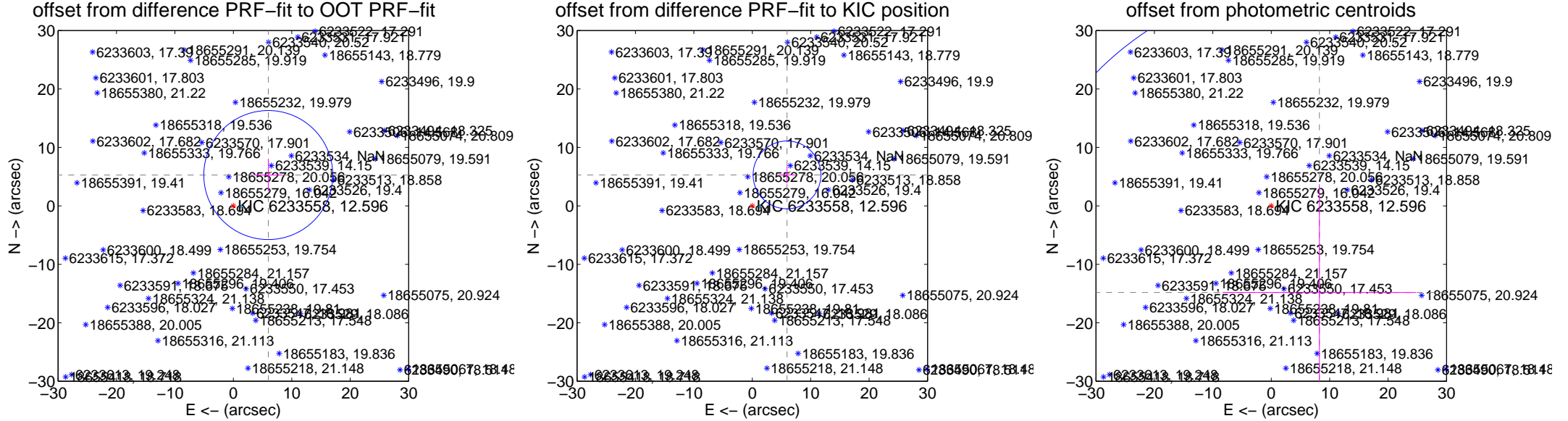
DV Centroid Data

Supplemental centroid analysis for 006233558-04. Kepler magnitude: 12.60. Transit SNR 0.50

There are 1 quarters with good PRF difference image offsets

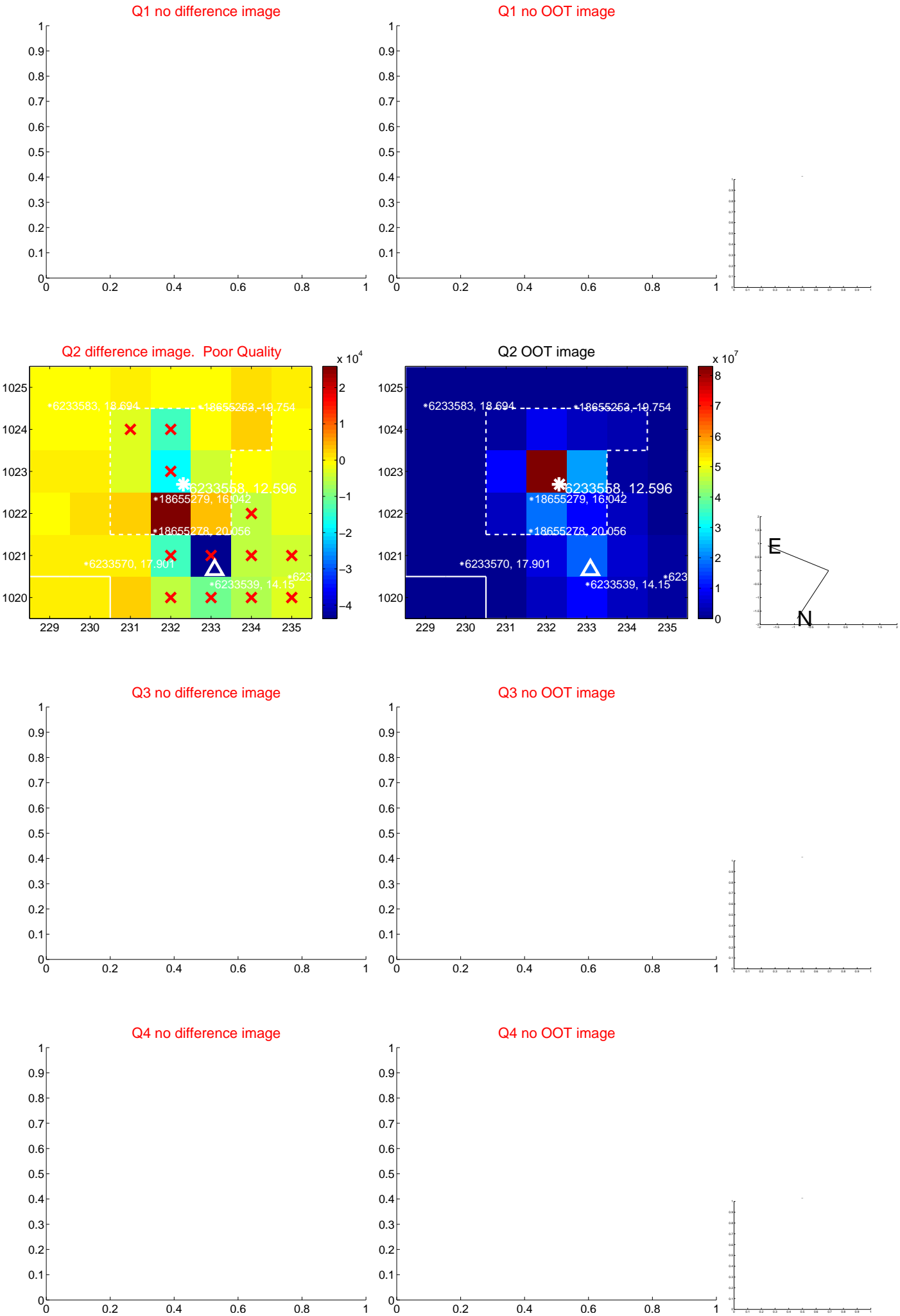
The direct PRF centroid is offset from the target star catalog position by about 0.06 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	7.972 ± 3.679	2.17	-5.980 ± 2.436	5.272 ± 2.800
PRF-fit source offset from KIC position	7.956 ± 1.933	4.12	-5.937 ± 1.276	5.295 ± 1.475
photometric centroid source offset	16.95 ± 17.87	0.95	-8.24 ± 16.58	-14.82 ± 18.25



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.

Q5 no difference image



Q5 no OOT image



Q6 no difference image



Q6 no OOT image



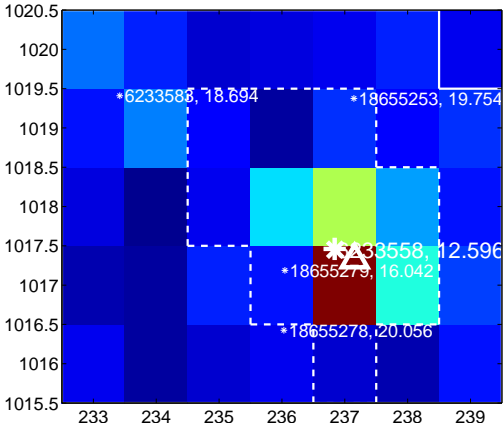
Q7 no difference image



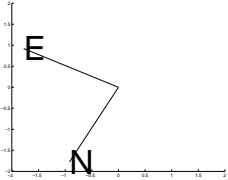
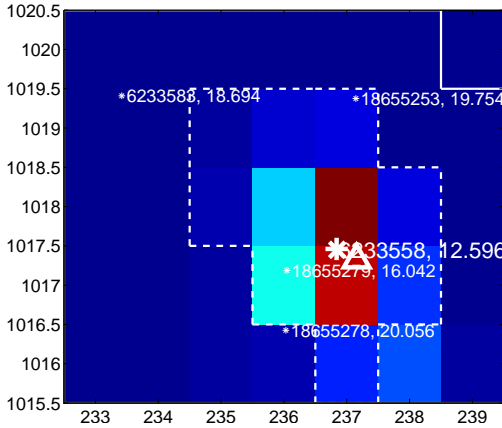
Q7 no OOT image



Q8 difference image



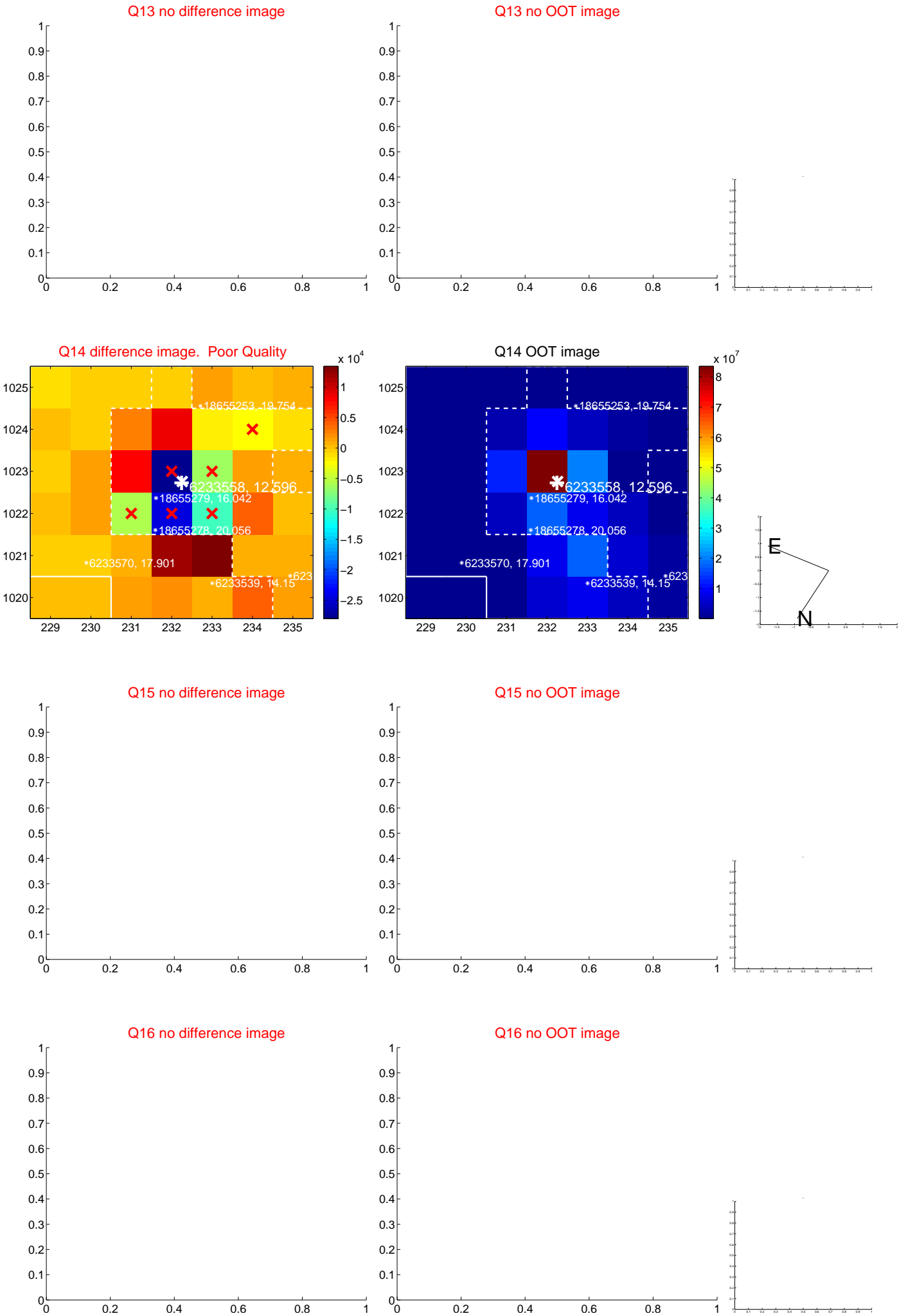
Q8 OOT image



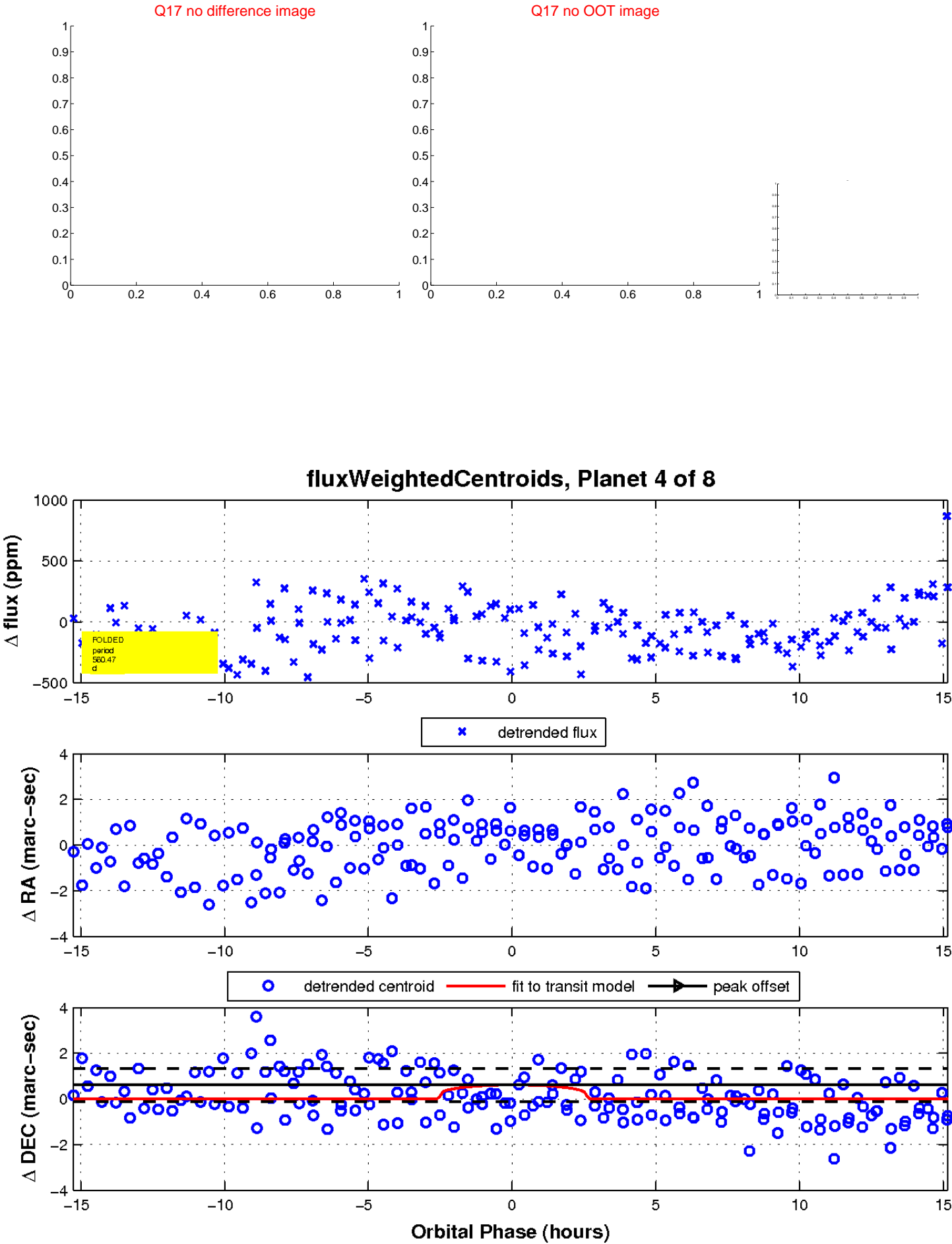
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

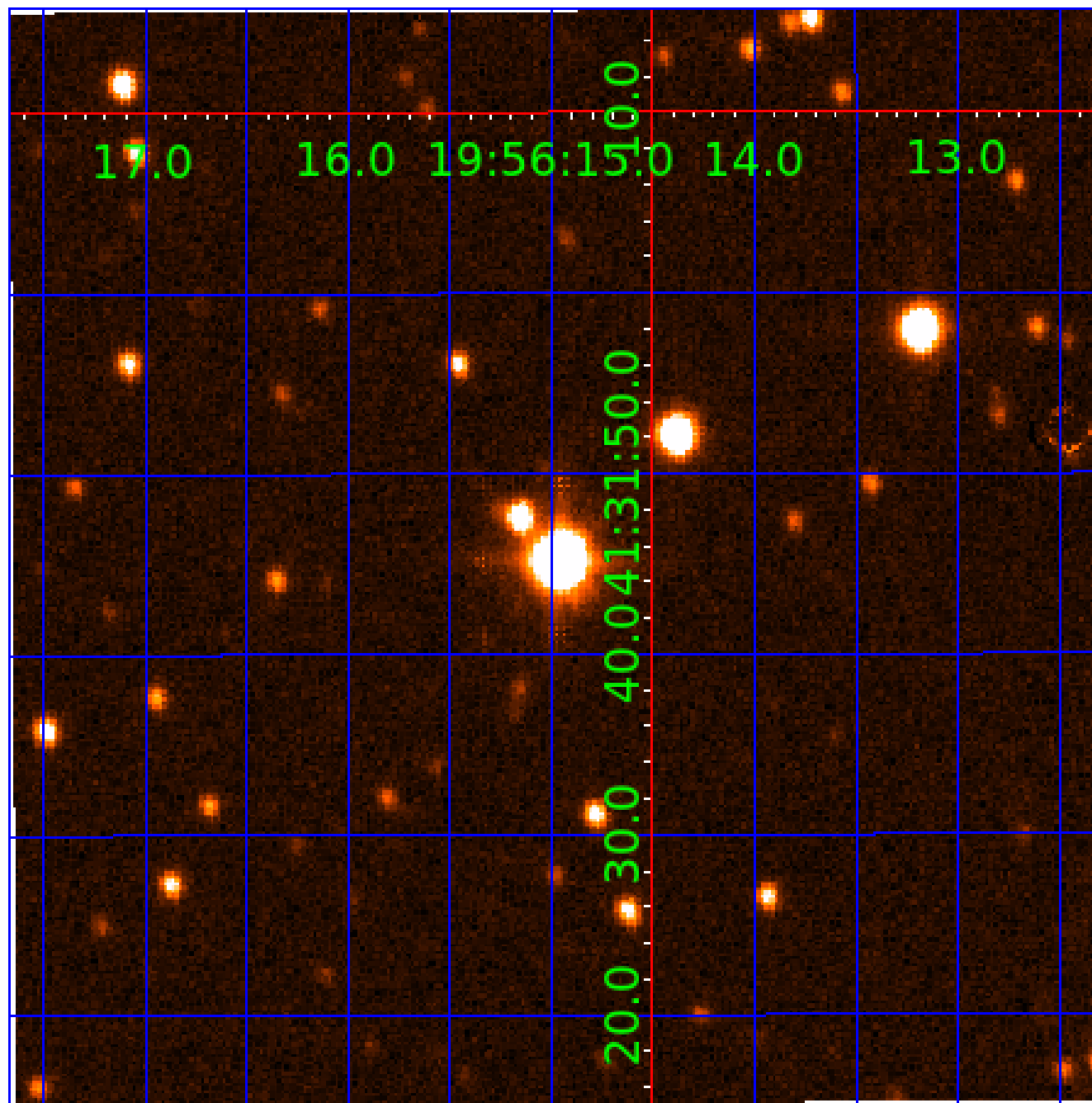


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 006233558

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})
006233558-02	OBS	No	416.470596	315.225437	758.6	8.921	14.4	9.8	6.83	4718	23.38	18.82
006233558-04	OBS	No	560.466671	224.247300	39.9	5.133	13.6	0.5	6.83	4718	4.25	12.67
006233558-05	OBS	No	224.625176	336.241611	414.9	4.005	14.7	8.3	6.83	4718	19.81	42.86
006233558-07	OBS	No	418.704519	479.954570	456.9	6.368	12.6	6.0	6.83	4718	15.73	18.68
006233558-08	OBS	No	604.892617	213.689275	682.4	11.601	12.2	8.5	6.83	4718	18.62	11.44

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006233558-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
006233558-04	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_MARSHALL_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
006233558-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—INCONSISTENT_TRANS—CENT_FEW_MEAS
006233558-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS
006233558-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_POS_DV

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

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

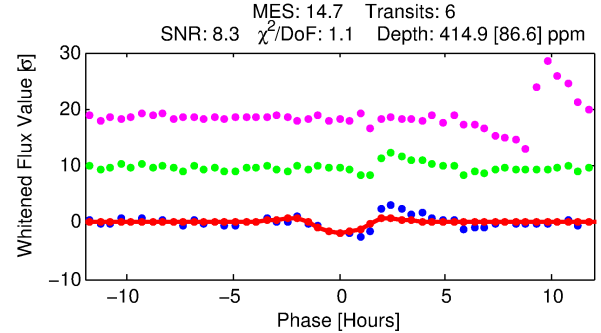
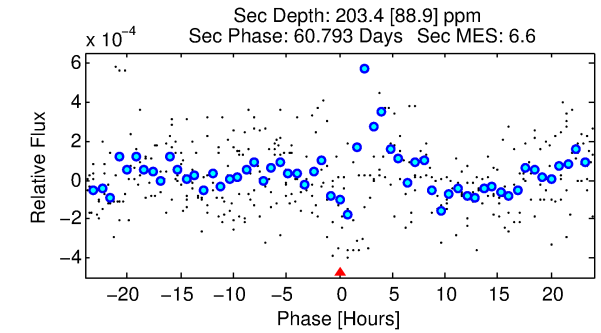
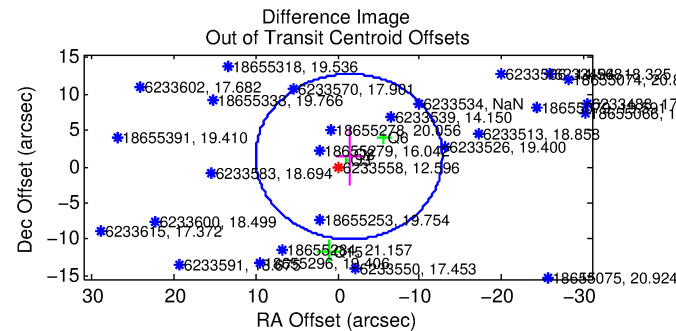
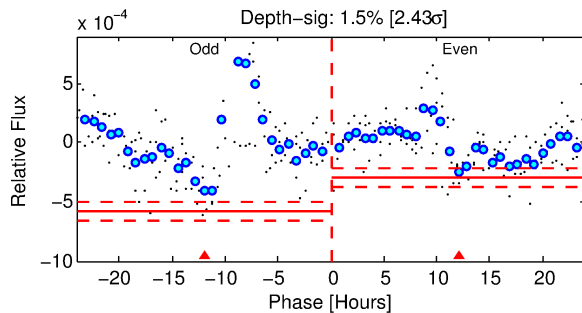
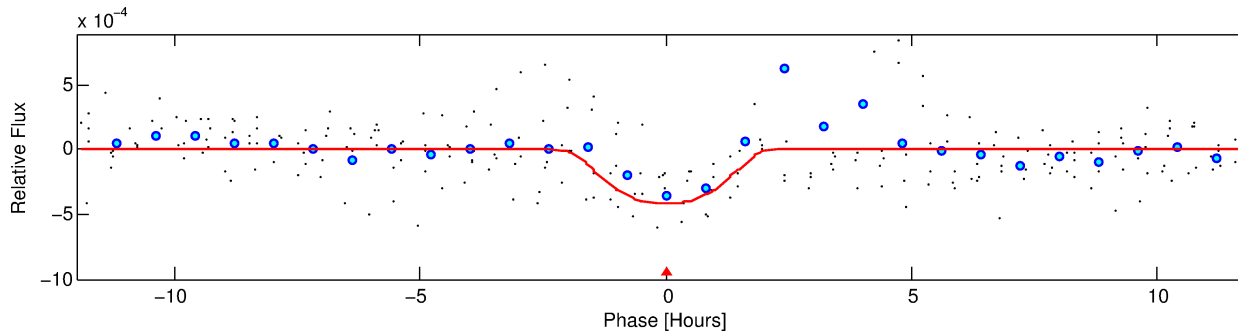
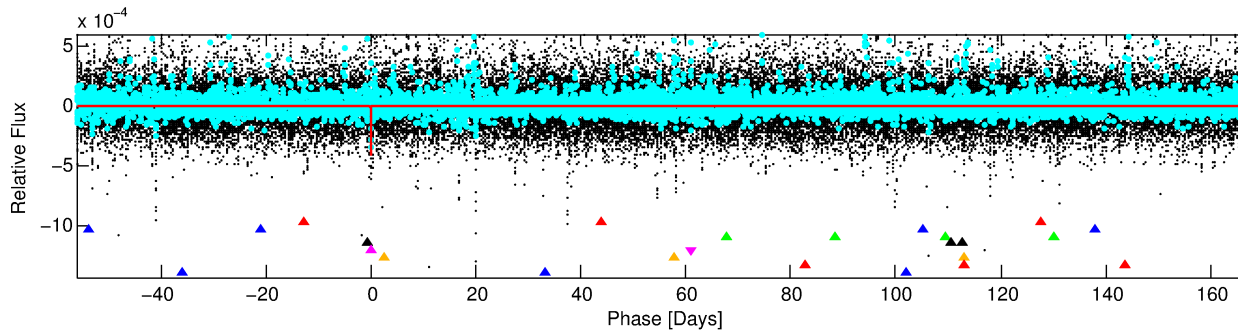
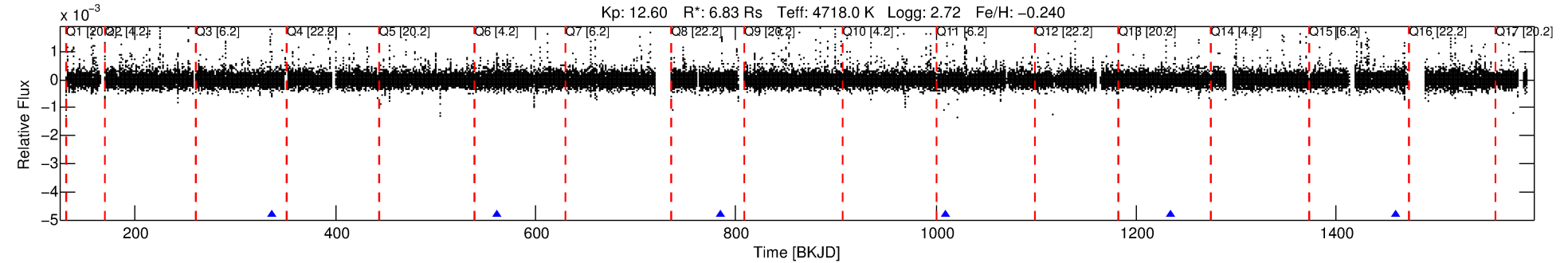
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 006233558-05

No Significant Match Found

DV One-Page Summary

KIC: 6233558 Candidate: 5 of 8 Period: 224.625 d



DV Fit Results:

Period = 224.62518 [0.00308] d
Epoch = 336.2416 [0.0089] BKJD
a/R* = 0.0266 [0.0042]
a/R* = 140.25 [29.16]
b = 0.97 [0.02]
Seff = 42.86 [13.95]
Teq = 652 [53] K
Rp = 19.81 [6.26] Re
a = 0.6947 [0.1560] AU
Ag = 137.55 [85.99] [1.59 σ]
Teffp = 3455 [468] K [5.95 σ]

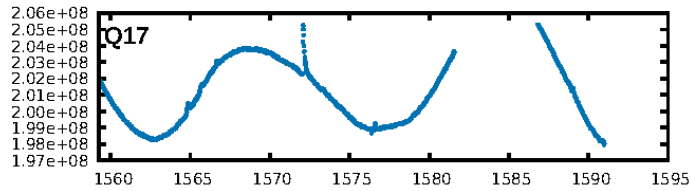
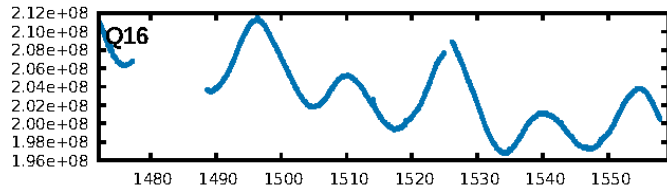
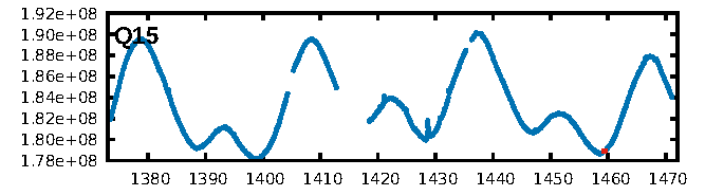
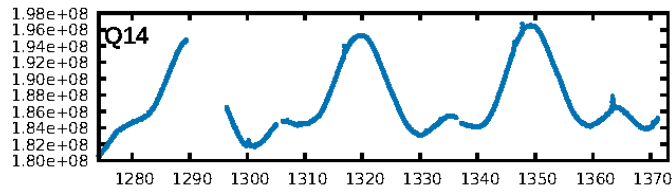
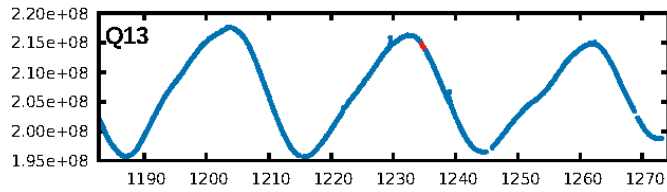
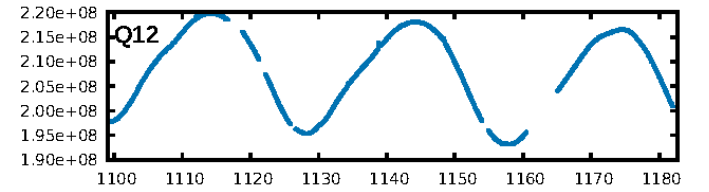
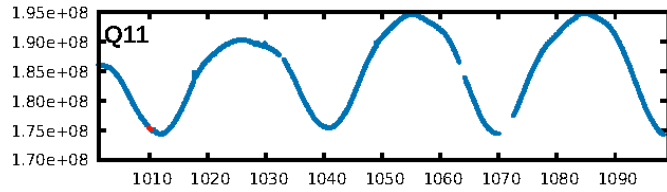
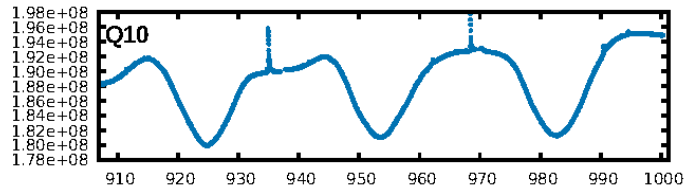
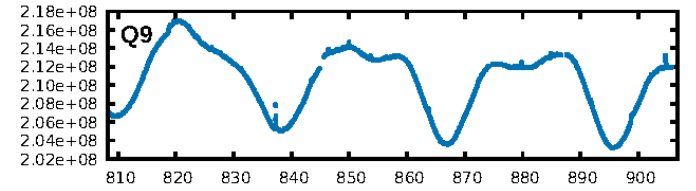
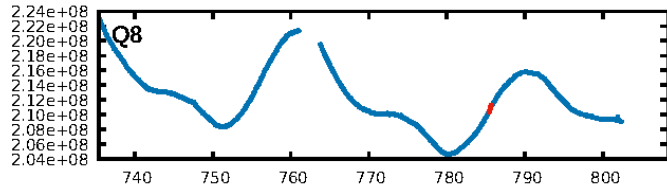
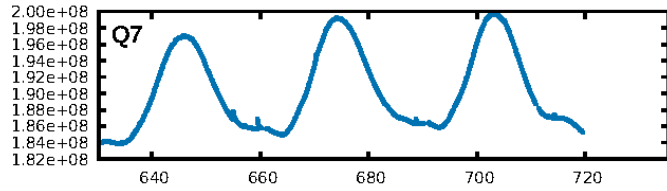
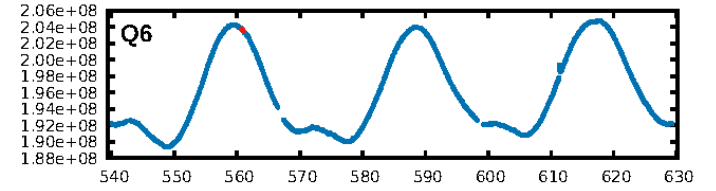
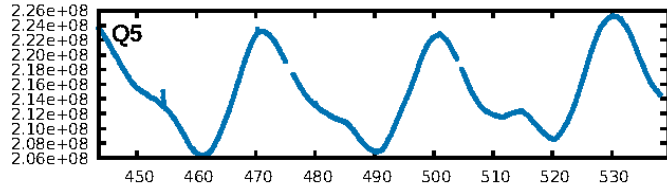
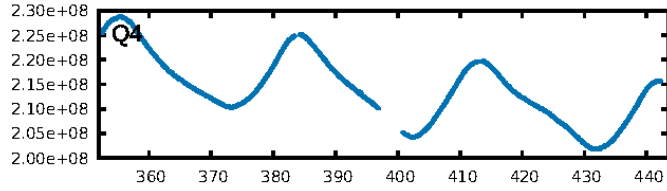
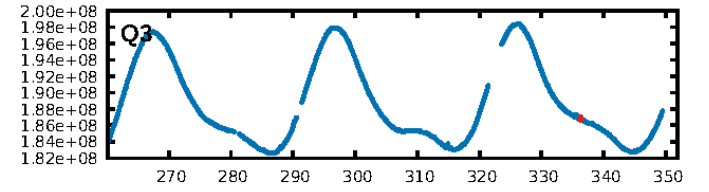
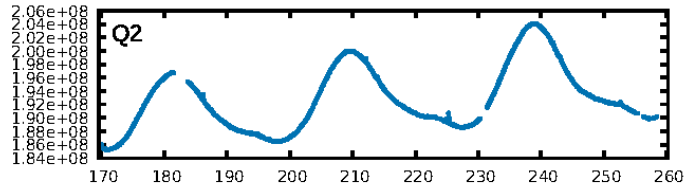
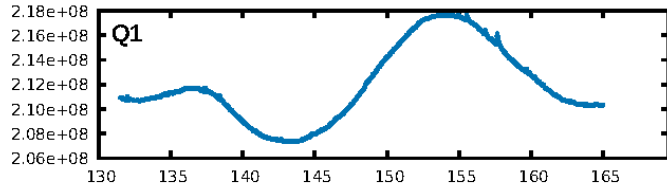
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [470.85 σ]
ModelChiSquare2-sig: 2.3%
ModelChiSquareGof-sig: 84.6%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [6/6]
GhostDiagnostic-chr: 1.194
Centroid-sig: N/A
Centroid-so: 1.090 arcsec [0.63 σ]
OotOffset-rm: 1.953 arcsec [0.51 σ]
KicOffset-rm: 1.976 arcsec [0.65 σ]
OotOffset-st: 1/2/1/0 [4]
KicOffset-st: 1/2/1/0 [4]
DiffImageQuality-fgm: 0.50 [2/4]
DiffImageOverlap-fno: 1.00 [6/6]

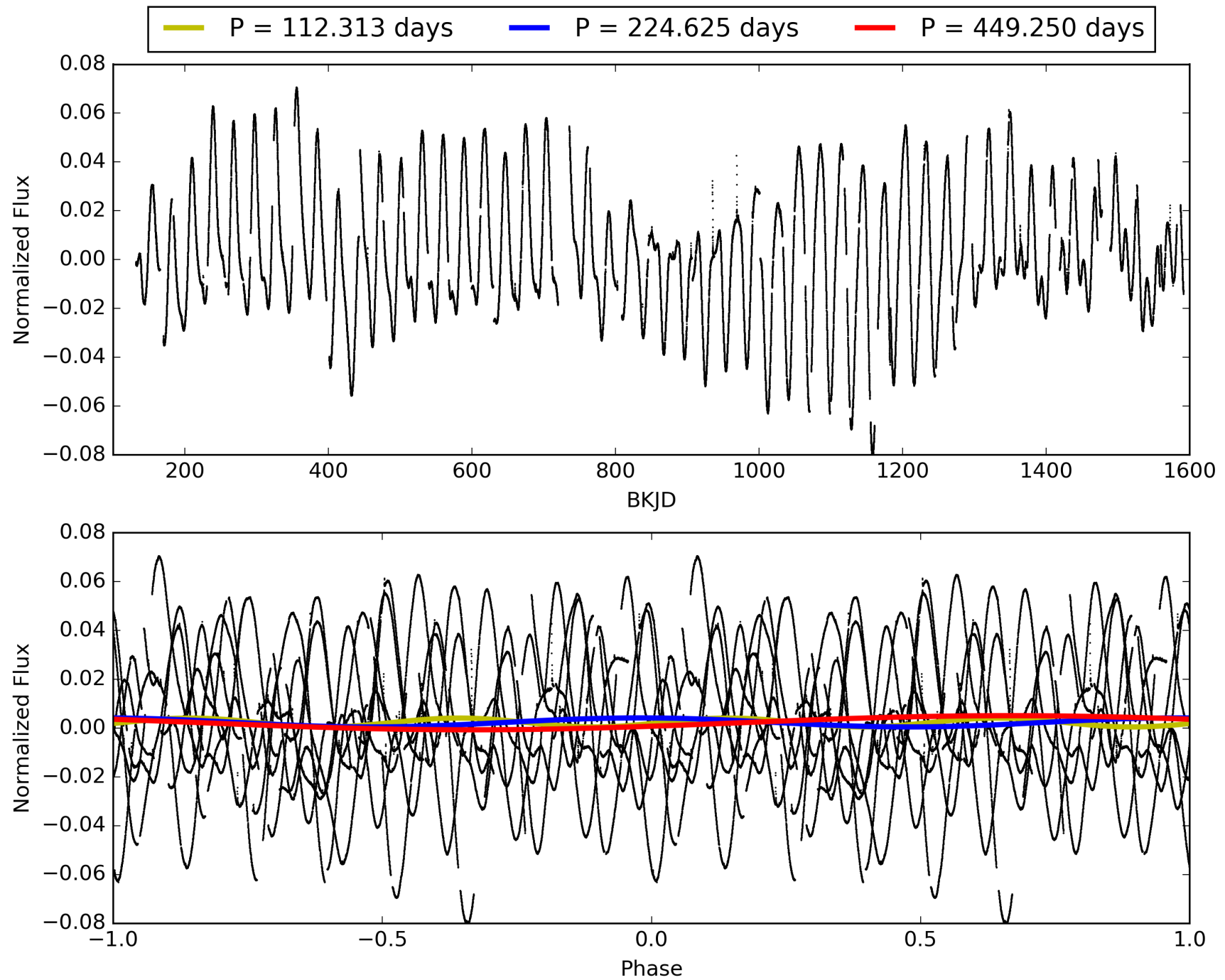
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 06:21:47 Z

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

TCE 006233558-05, PDC Light Curves

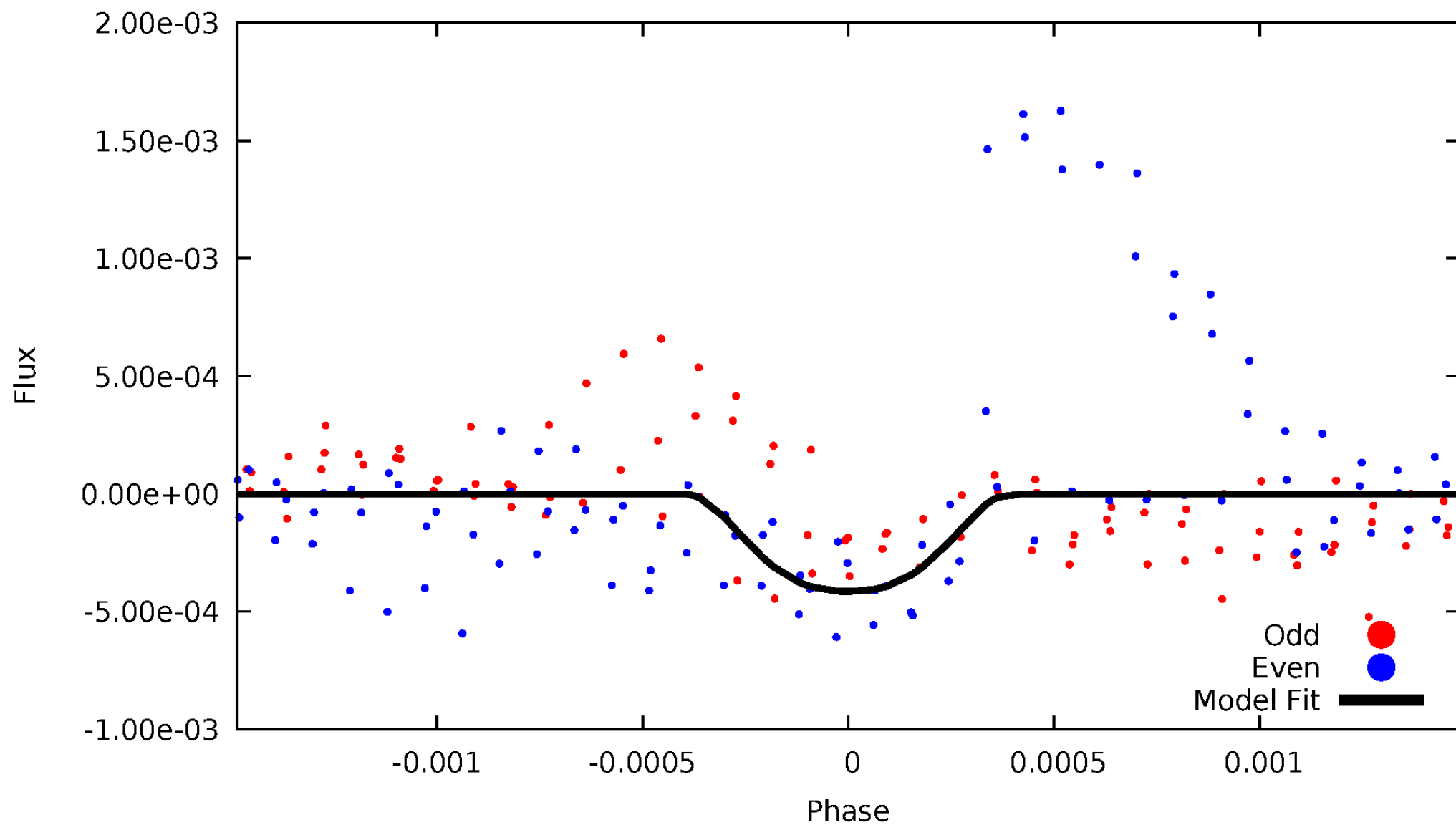


TCE 006233558-05



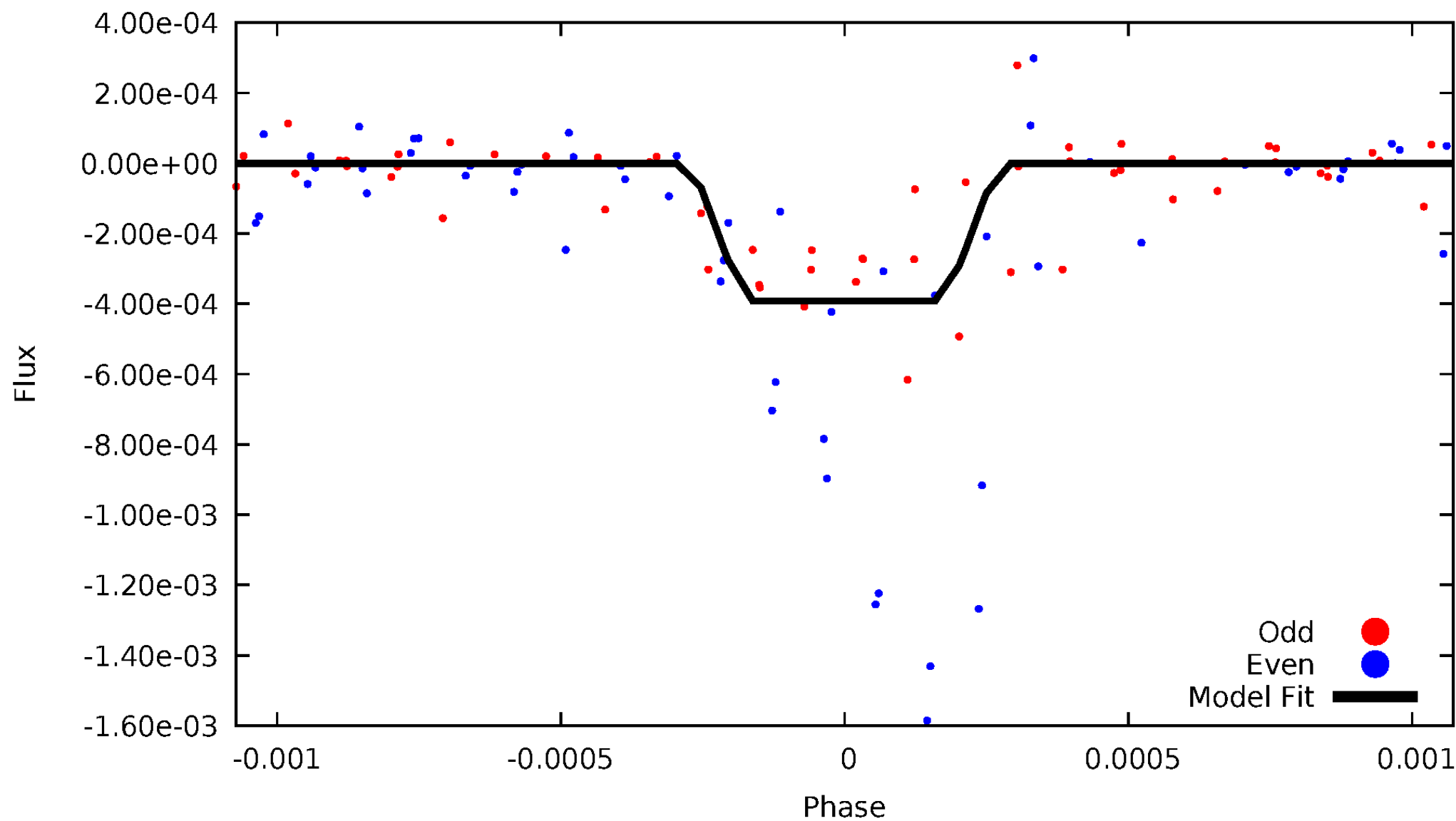
DV Odd/Even

TCE 006233558-05



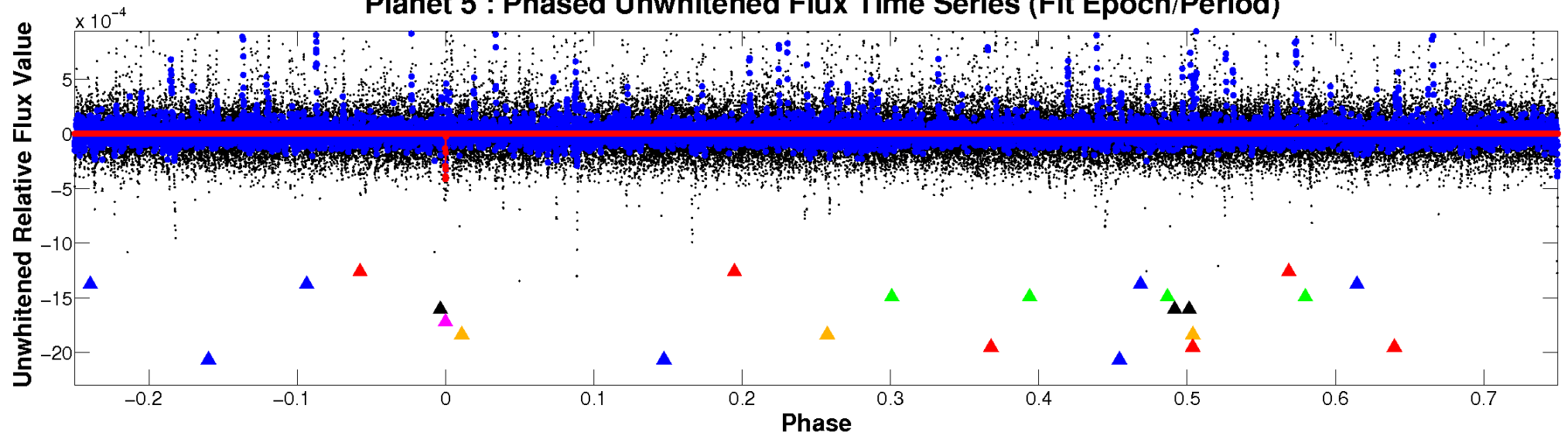
ALT Odd/Even

TCE 006233558-05

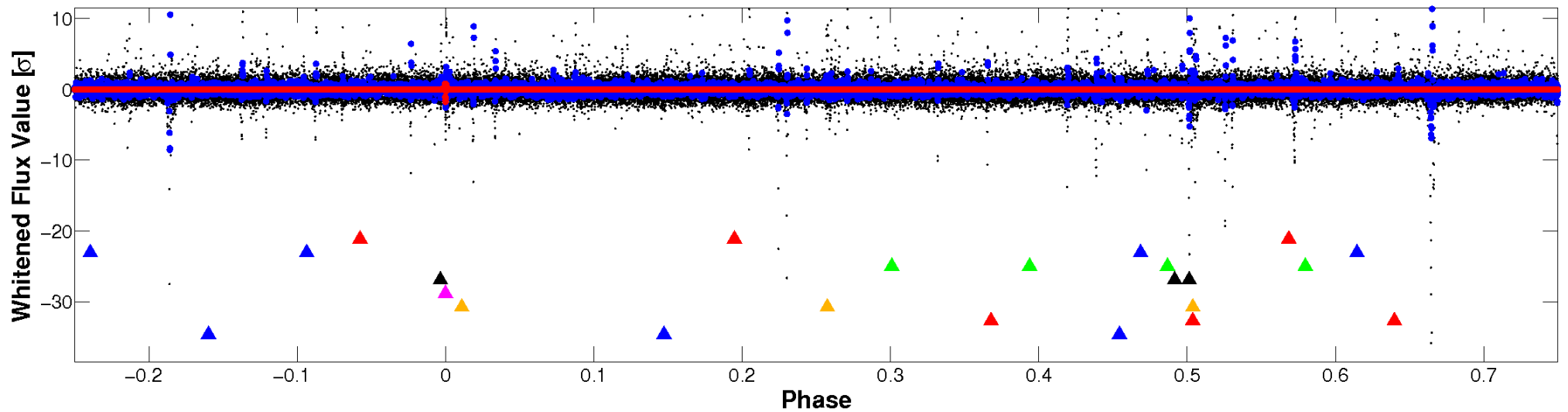


Non-Whitened Vs. Whitened Light Curve

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

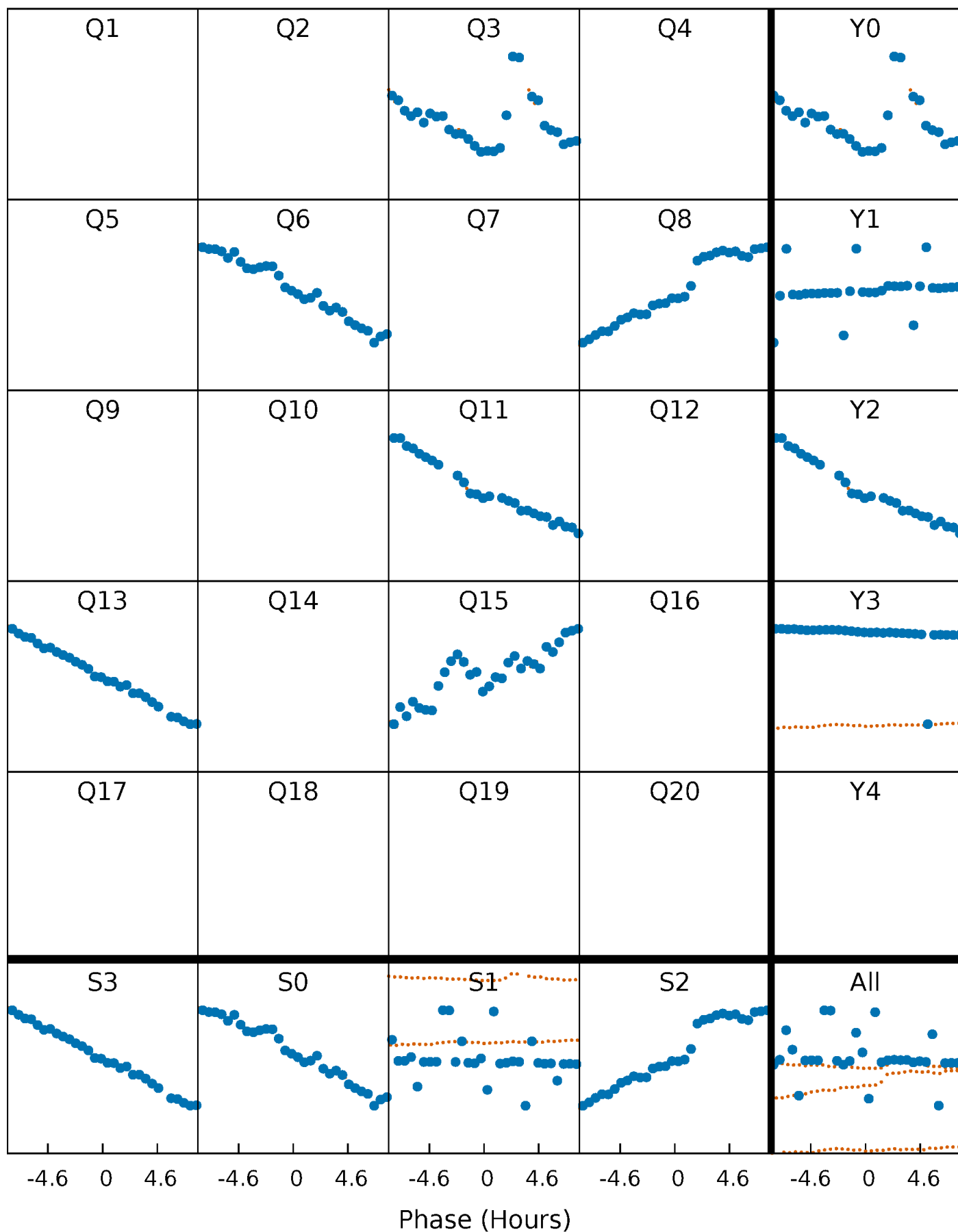


Planet 5 : Phased Whitened Flux Time Series (Fit Epoch/Period)



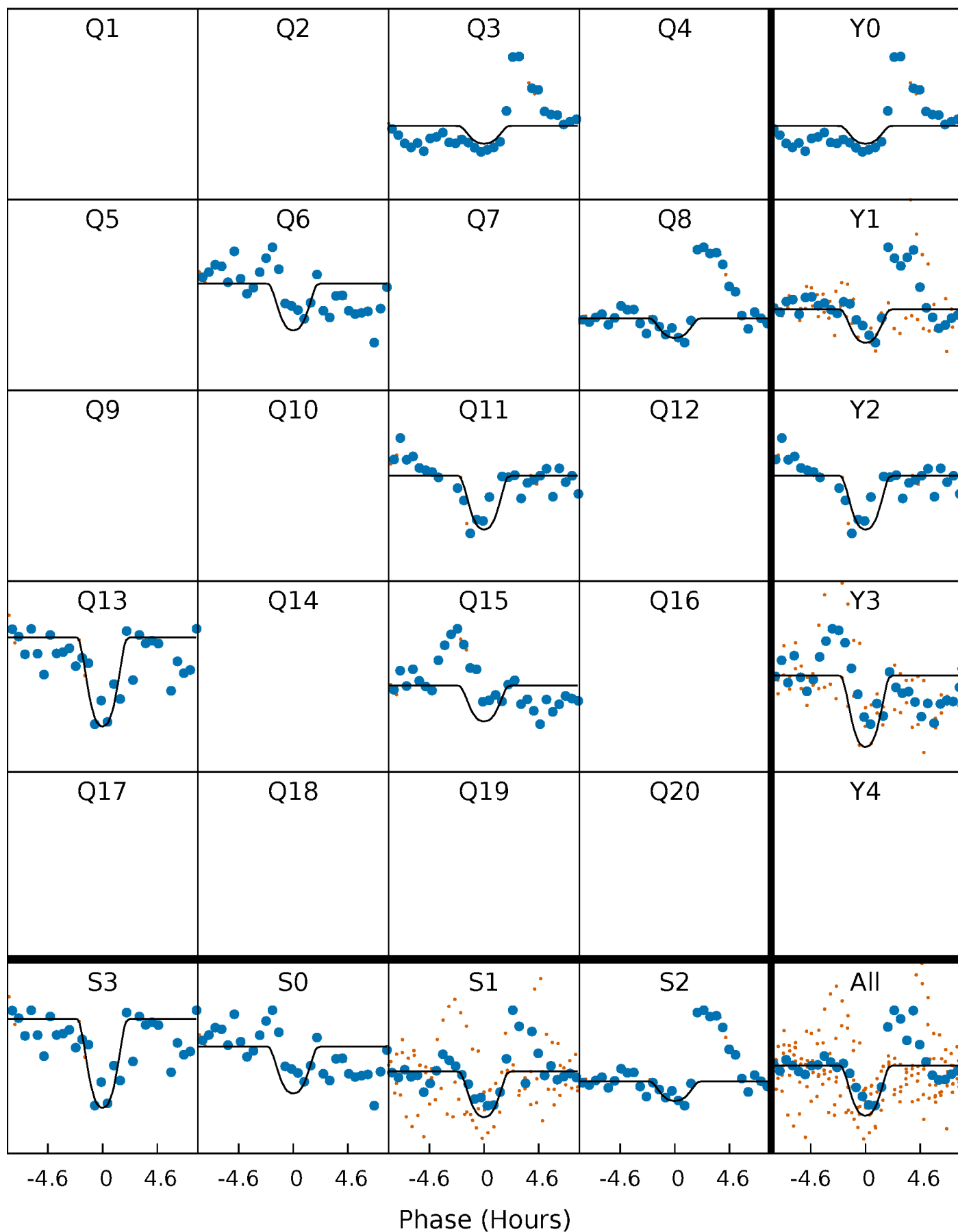
PDC Quarter-Phased Transit Curves

TCE 006233558-05 $P=224.625176$ Days $T_0=336.241611$ (BKJD)



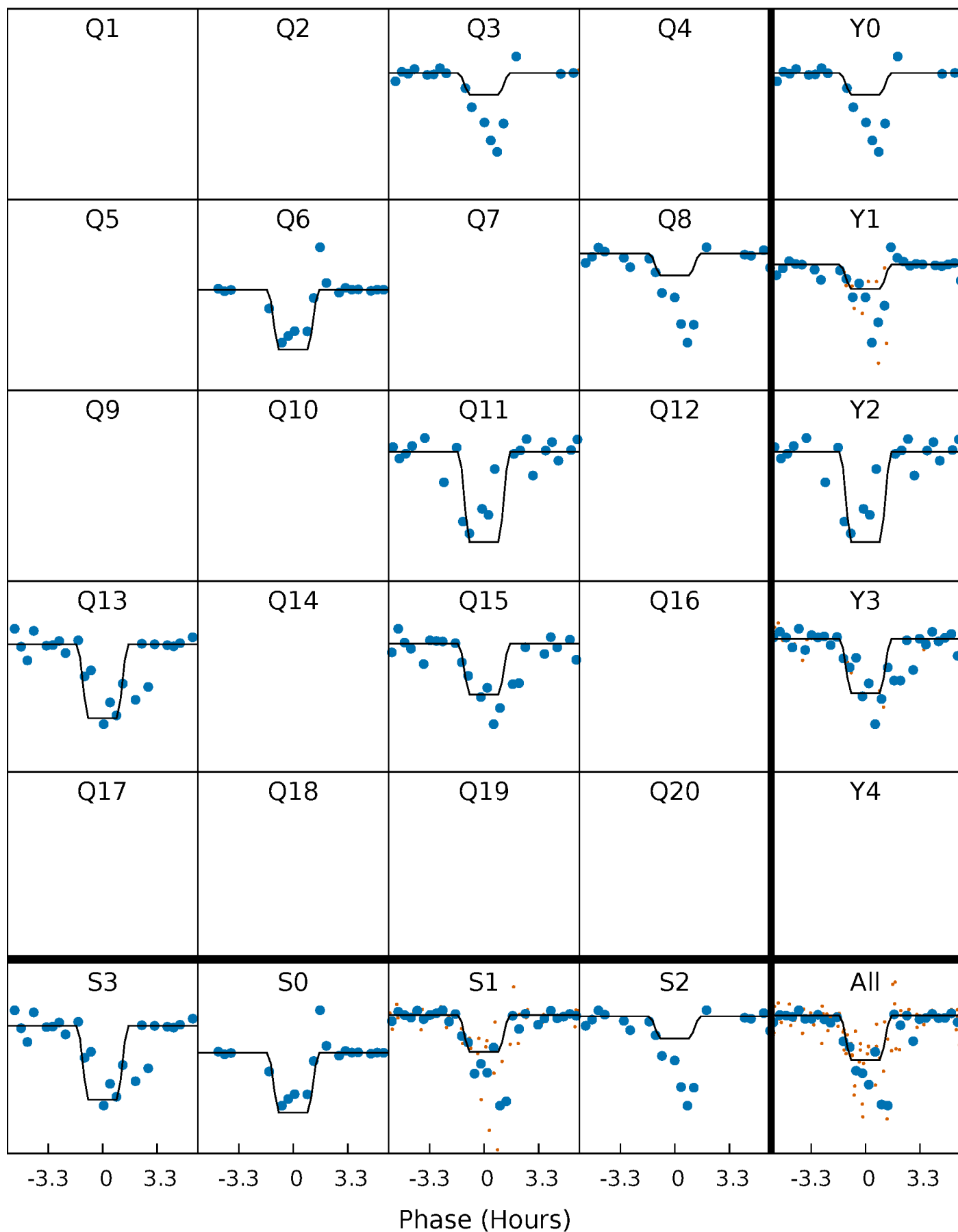
DV Quarter-Phased Transit Curves

TCE 006233558-05 $P=224.625176$ Days $T_0=336.241611$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

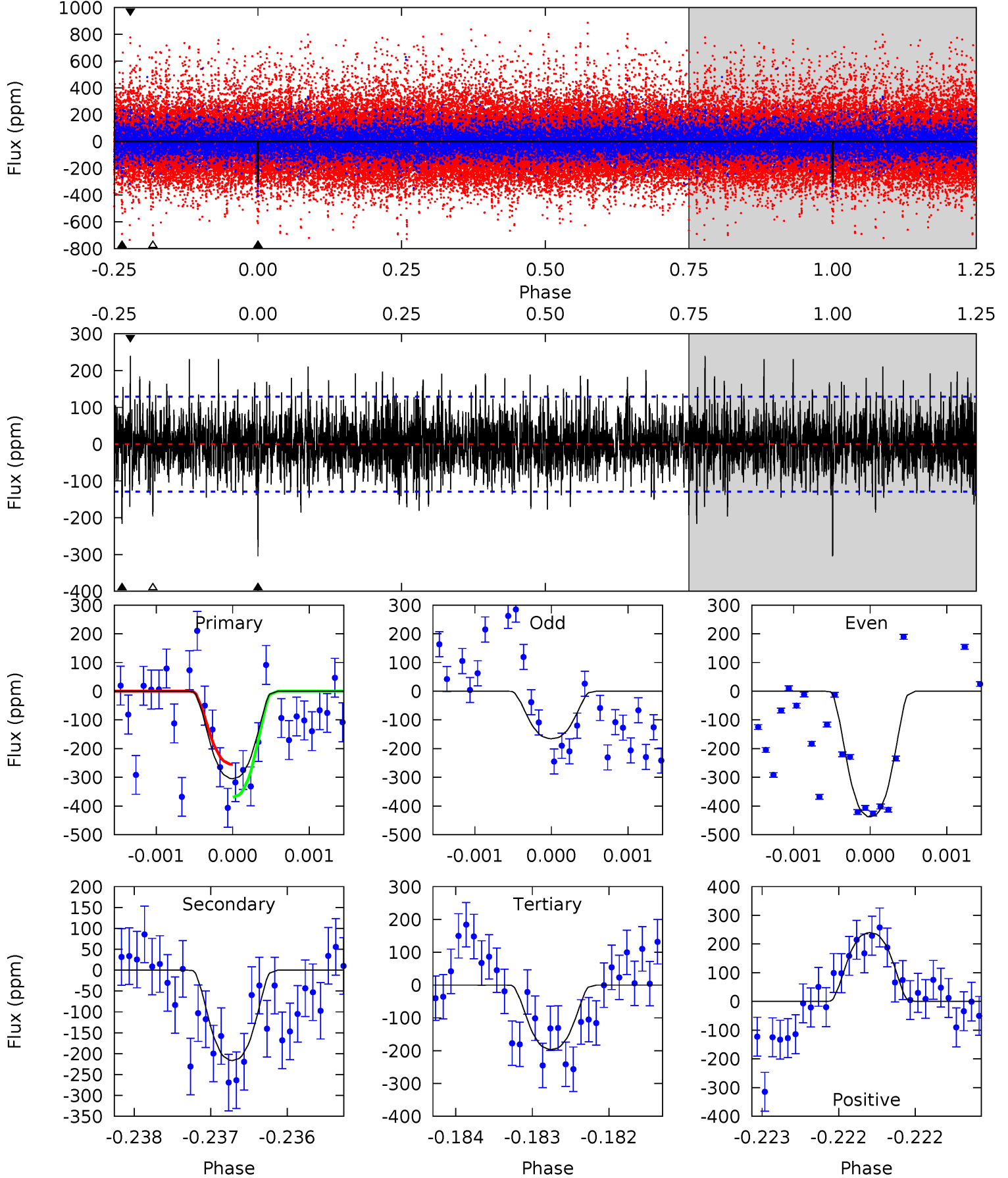
TCE 006233558-05 P=224.616030 Days $T_0=336.262360$ (BKJD)



DV Model-Shift Uniqueness Test

006233558-05, P = 224.625176 Days, E = 111.616435 Days

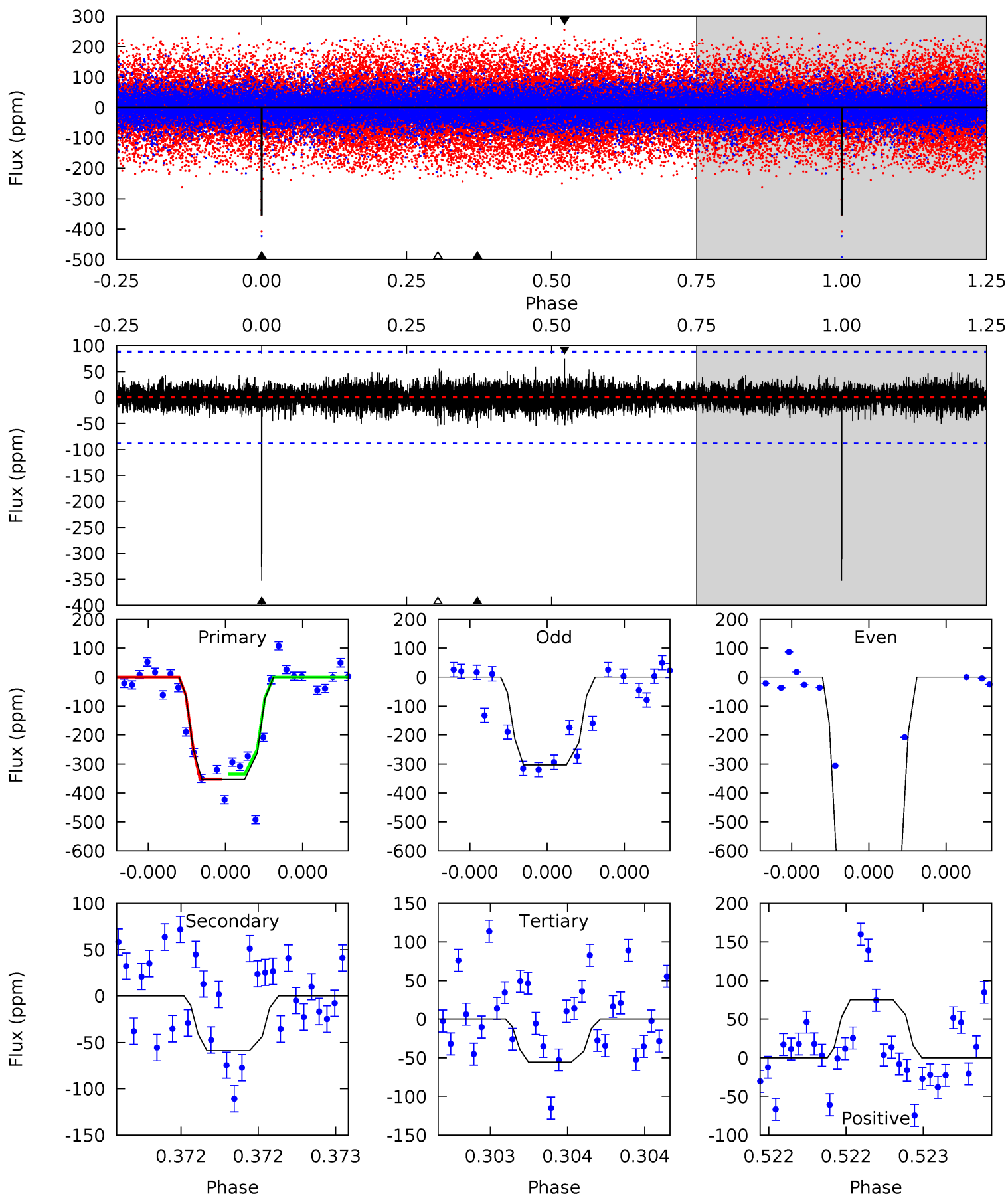
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.0	9.24	8.38	10.2	5.50	3.37	2.40	4.63	2.78	0.86	-0.99	5.54	0.89	0.44	2.44



Alt Model-Shift Uniqueness Test

006233558-05, P = 224.616030 Days, E = 111.646330 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
22.3	3.71	3.50	4.73	5.58	3.49	0.83	18.8	17.5	0.21	-1.02	22.5	1.53	0.18	0.55



Stellar Parameters For KIC 006233558

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	4718^{+78}_{-56}	$2.717^{+0.139}_{-0.170}$	$-0.240^{+0.150}_{-0.100}$	$6.826^{+1.872}_{-1.008}$	$0.886^{+0.183}_{-0.021}$	$0.004^{+0.003}_{-0.002}$
	+2%/-1%	+5%/-6%	+62%/-42%	+27%/-15%	+21%/-2%	+64%/-46%
Source	SPE74	SPE74	SPE74	DSEP		

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

Secondary Eclipse Parameters for KIC 006233558-05 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-216 ± 23	$20.24^{+4.50}_{-3.86}$	913^{+59}_{-43}	3796^{+268}_{-200}	146^{+76}_{-50}
Alt.	-59 ± 16	$15.13^{+3.76}_{-3.53}$	914^{+64}_{-46}	3378^{+301}_{-239}	69^{+55}_{-29}

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 $A_{obs} \gg 1.0$

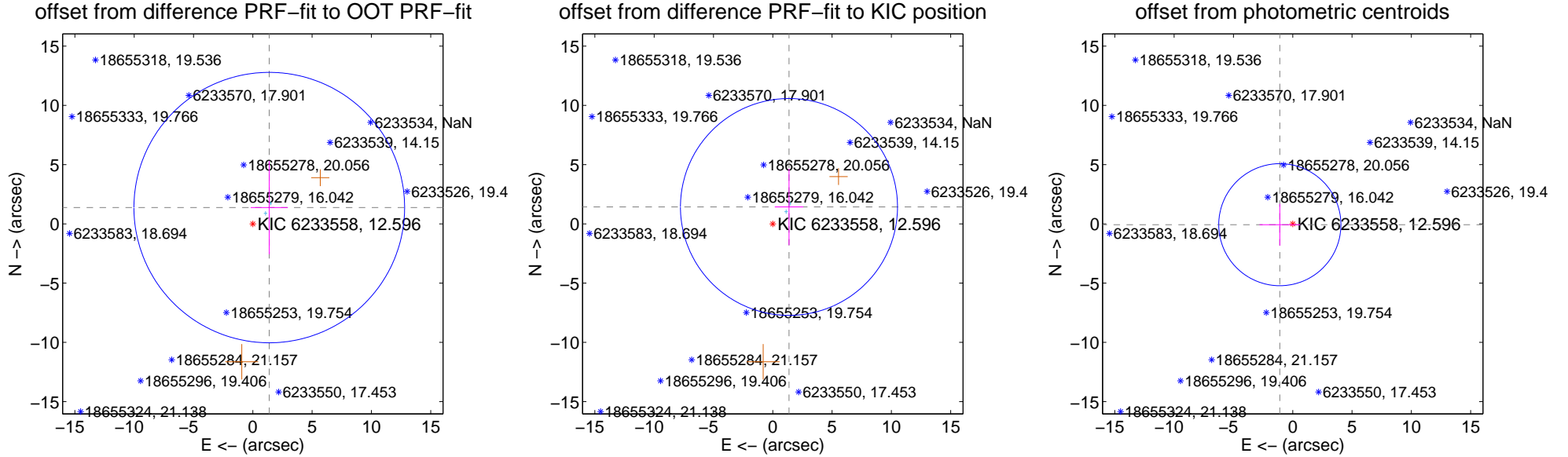
DV Centroid Data

Supplemental centroid analysis for 006233558-05. Kepler magnitude: 12.60. Transit SNR 8.32

There are 2 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.12 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.953 ± 3.803	0.51	-1.387 ± 1.567	1.375 ± 3.931
PRF-fit source offset from KIC position	1.976 ± 3.049	0.65	-1.366 ± 1.197	1.427 ± 3.225
photometric centroid source offset	1.09 ± 1.72	0.63	1.09 ± 1.72	-0.07 ± 1.76



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.

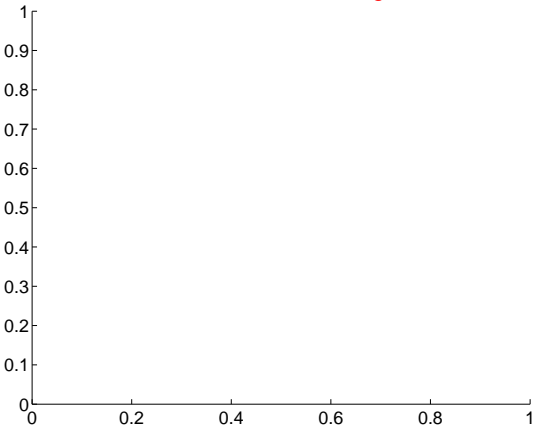
Q1 no difference image



Q1 no OOT image



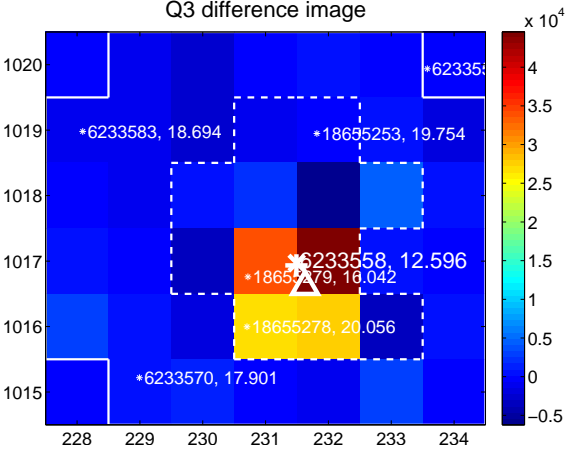
Q2 no difference image



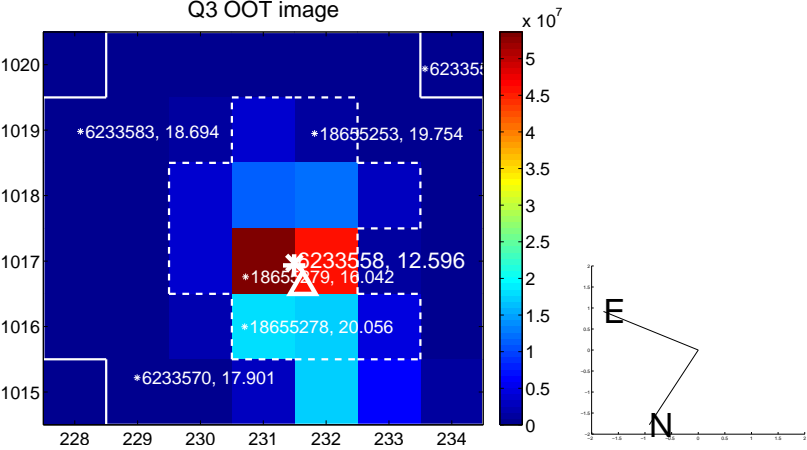
Q2 no OOT image



Q3 difference image



Q3 OOT image



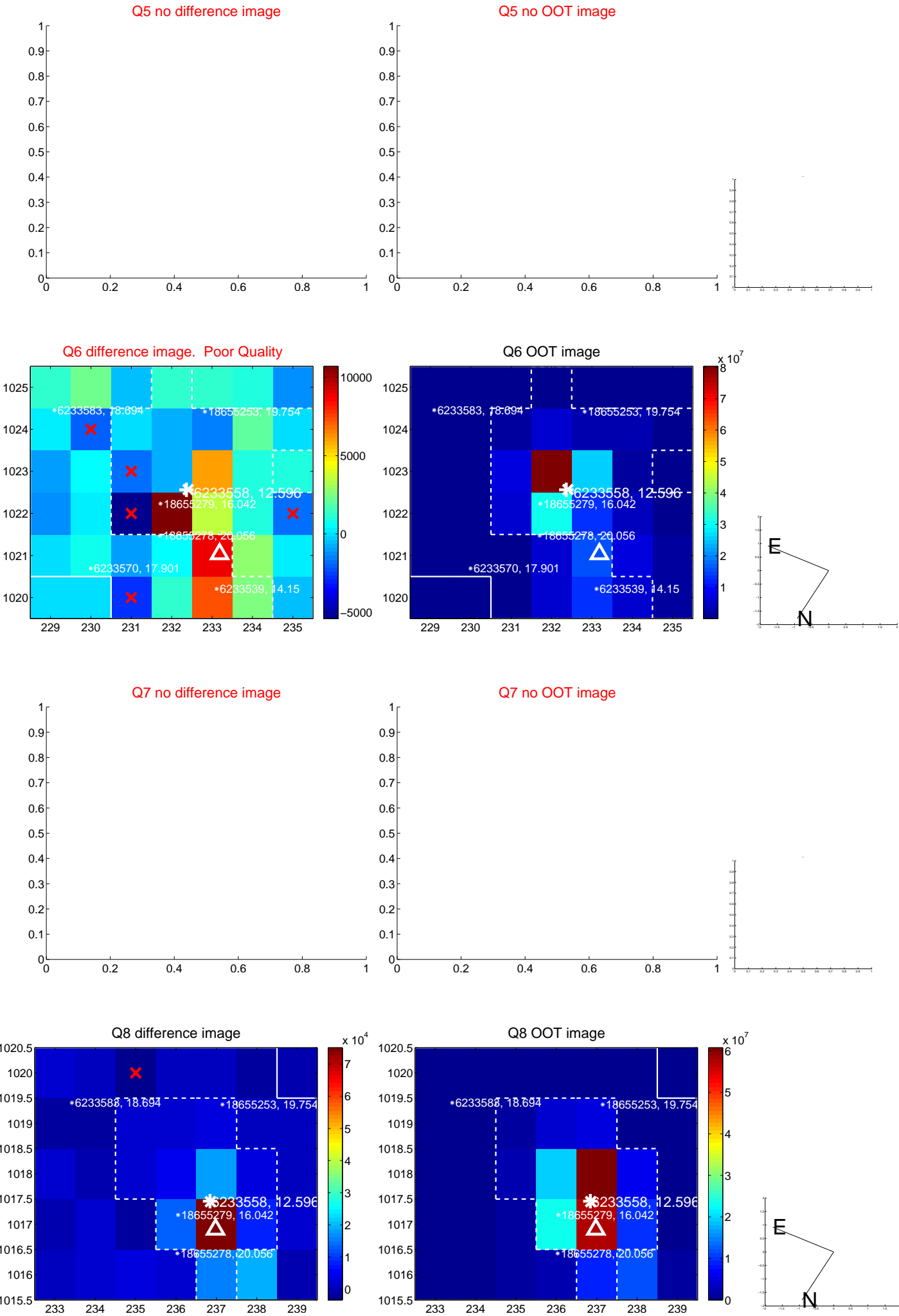
Q4 no difference image



Q4 no 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.

Q9 no difference image



Q9 no OOT image



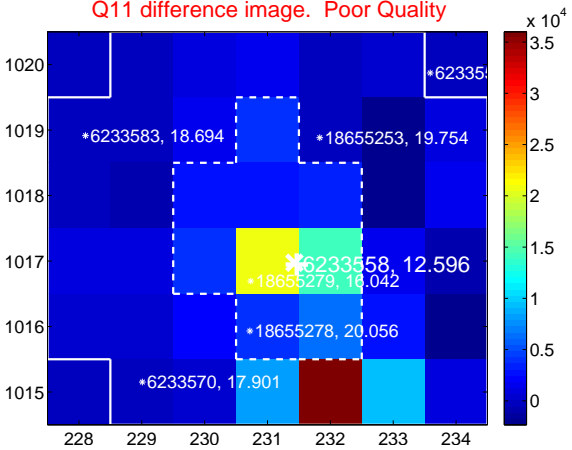
Q10 no difference image



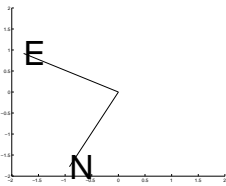
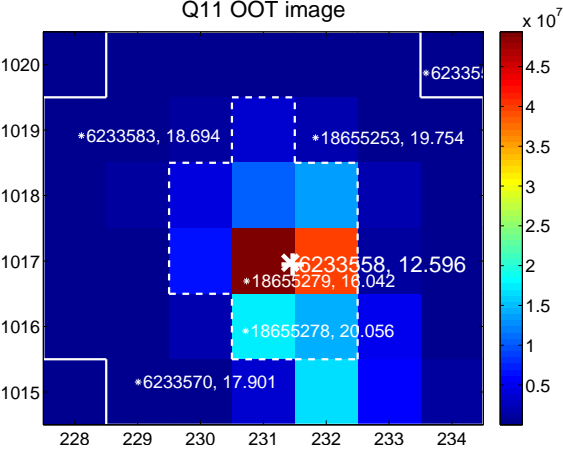
Q10 no OOT image



Q11 difference image. Poor Quality



Q11 OOT image



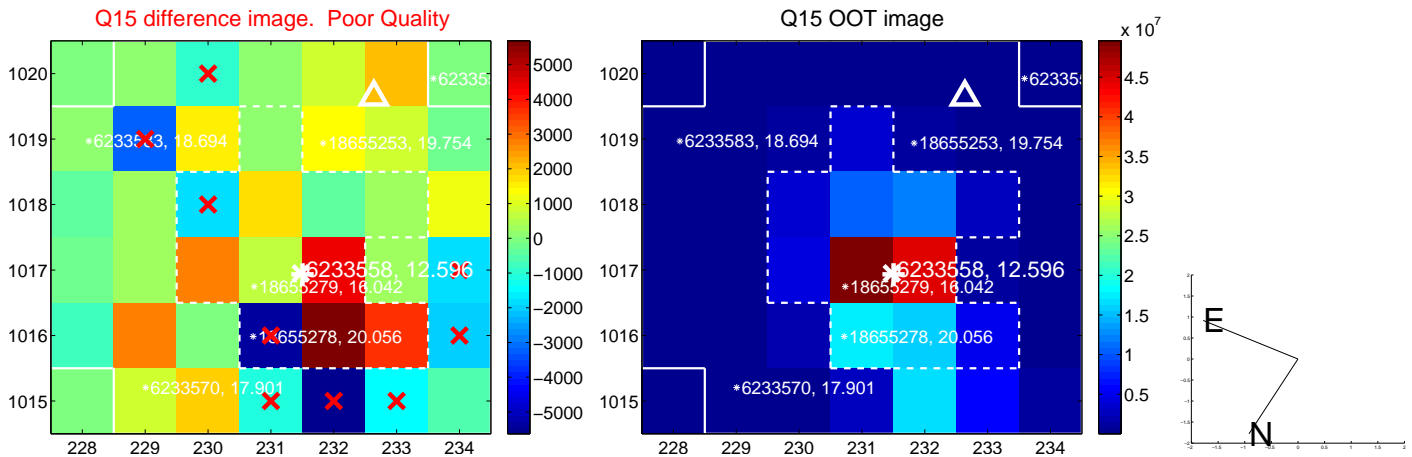
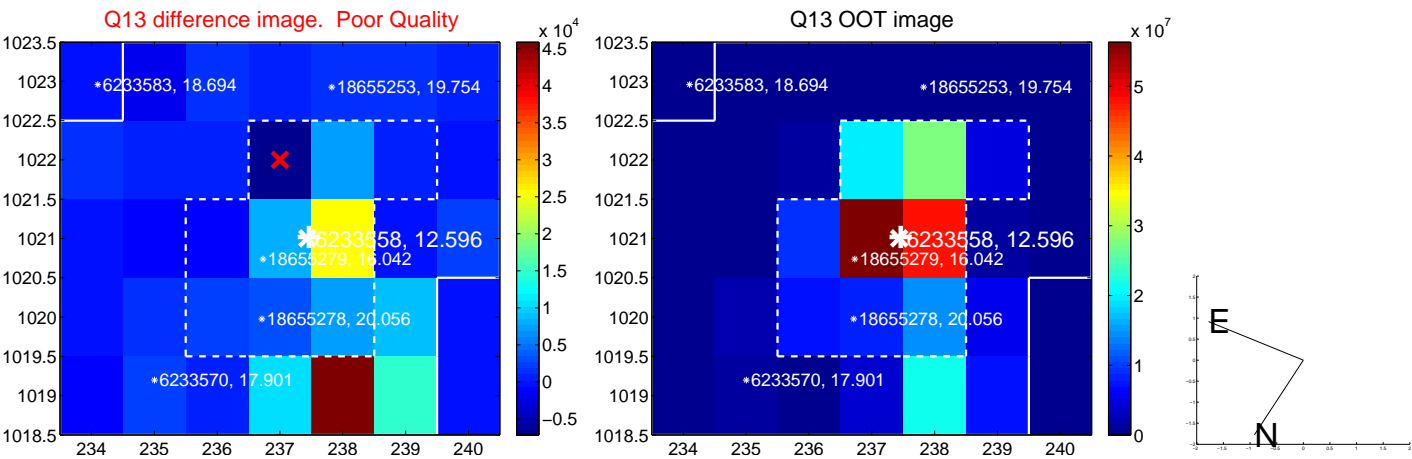
Q12 no difference image



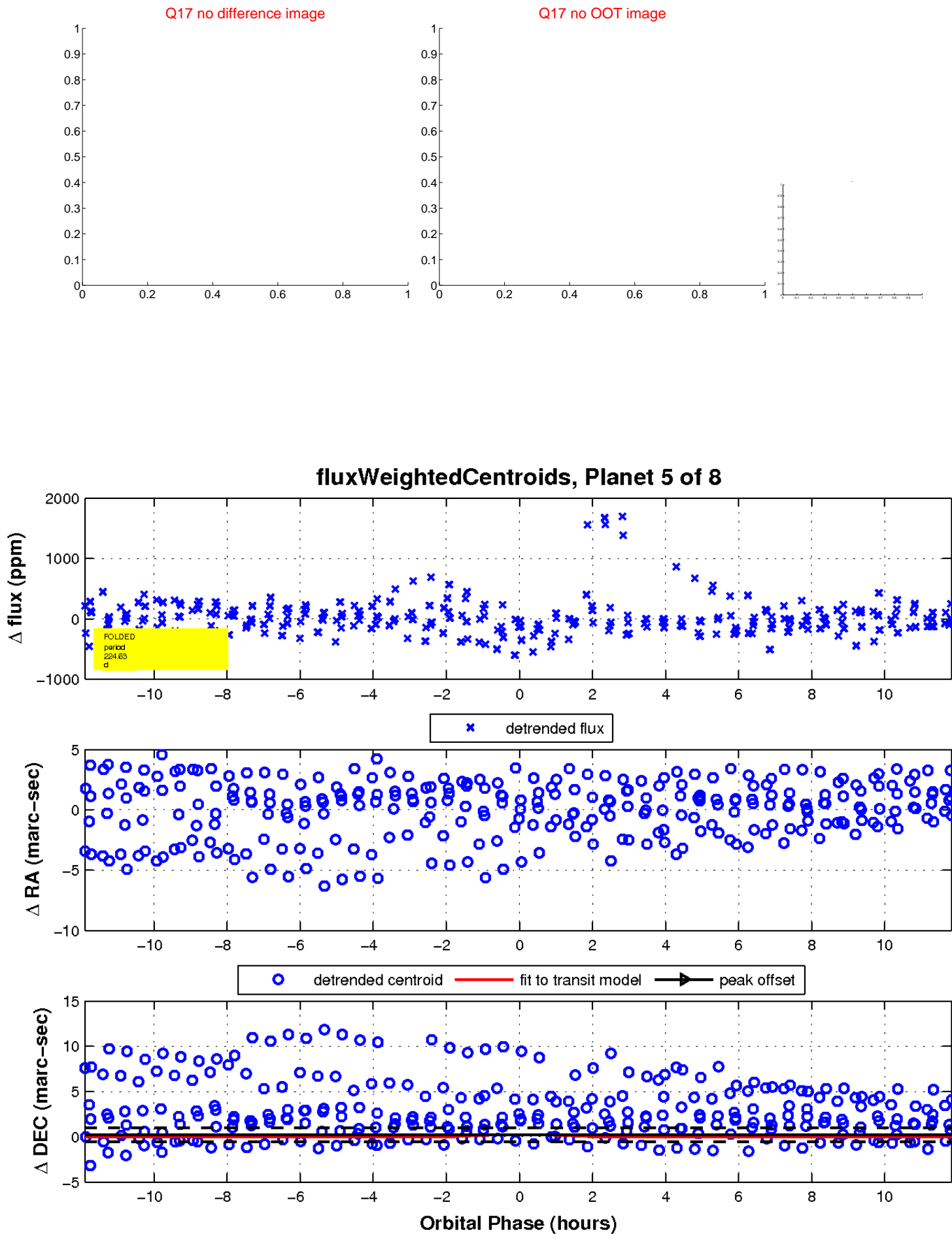
Q12 no OOT image



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

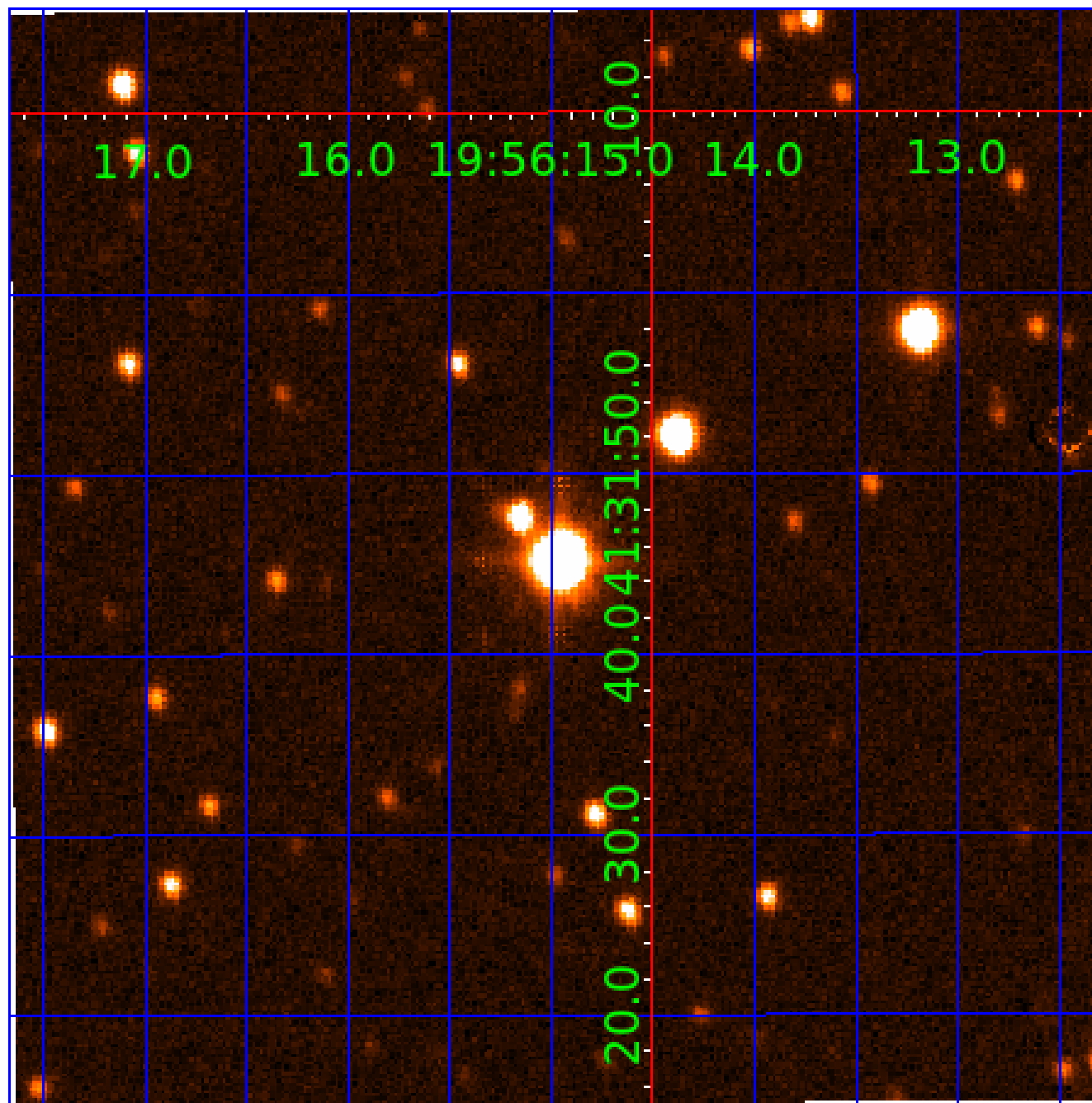


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 006233558

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})
006233558-02	OBS	No	416.470596	315.225437	758.6	8.921	14.4	9.8	6.83	4718	23.38	18.82
006233558-04	OBS	No	560.466671	224.247300	39.9	5.133	13.6	0.5	6.83	4718	4.25	12.67
006233558-05	OBS	No	224.625176	336.241611	414.9	4.005	14.7	8.3	6.83	4718	19.81	42.86
006233558-07	OBS	No	418.704519	479.954570	456.9	6.368	12.6	6.0	6.83	4718	15.73	18.68
006233558-08	OBS	No	604.892617	213.689275	682.4	11.601	12.2	8.5	6.83	4718	18.62	11.44

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006233558-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
006233558-04	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_MARSHALL_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
006233558-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—INCONSISTENT_TRANS—CENT_FEW_MEAS
006233558-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS
006233558-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_POS_DV

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

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

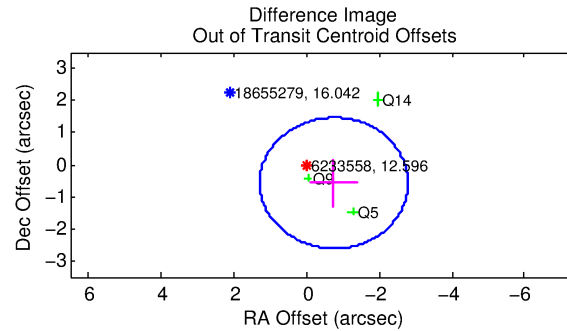
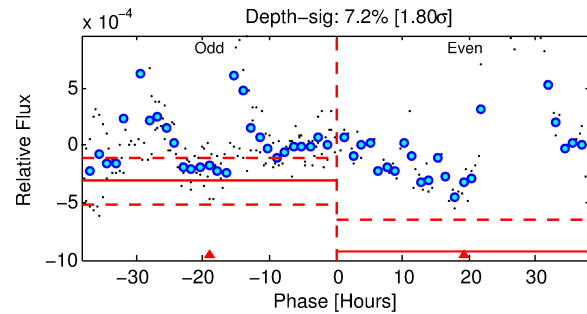
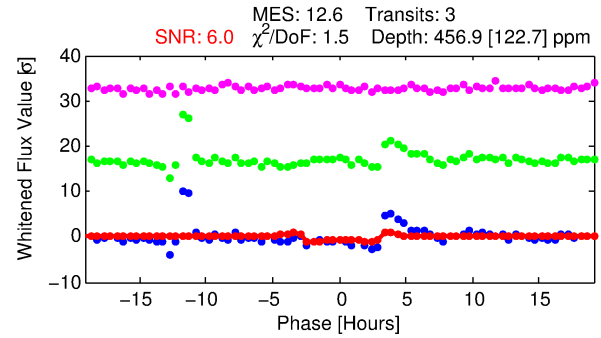
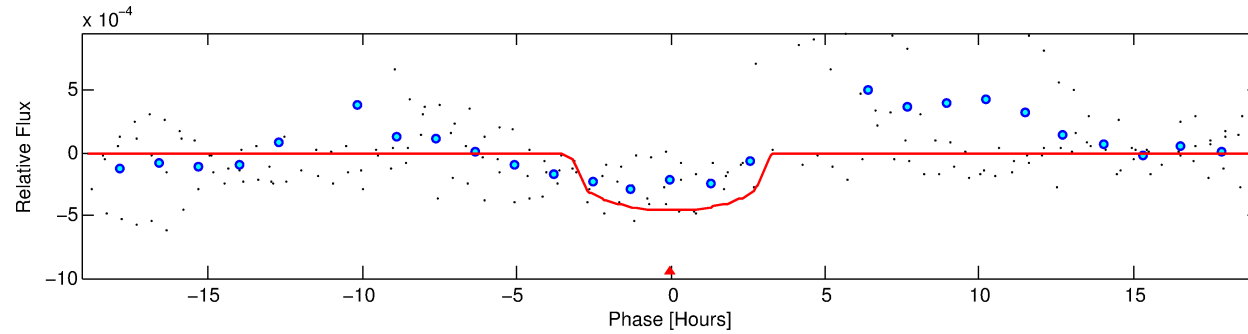
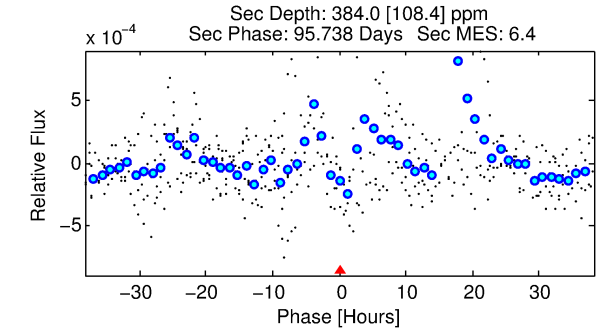
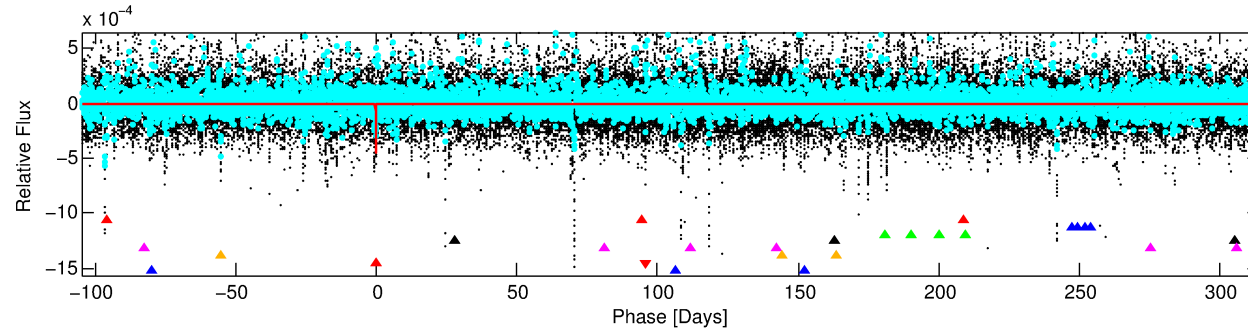
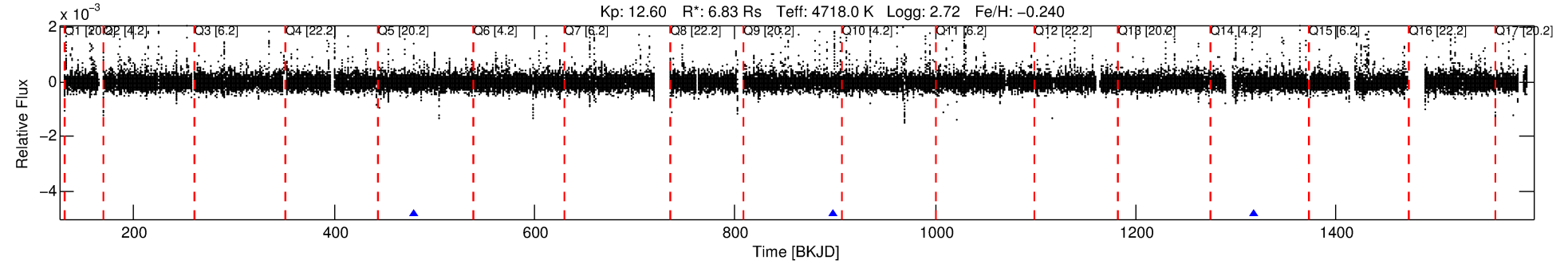
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 006233558-07

No Significant Match Found

DV One-Page Summary

KIC: 6233558 Candidate: 7 of 8 Period: 418.705 d



DV Fit Results:

Period = 418.70452 [0.00944] d
Epoch = 479.9546 [0.0135] BKJD
Rp/R* = 0.0211 [0.0206]
a/R* = 361.28 [1179.35]
b = 0.72 [2.18]
Seff = 18.69 [6.08]
Teq = 530 [43] K
Rp = 15.73 [15.95] Re
a = 1.0522 [0.2363] AU
Ag = 945.44 [1889.58] [0.50 σ]
Teffp = 4545 [2243] K [1.79 σ]

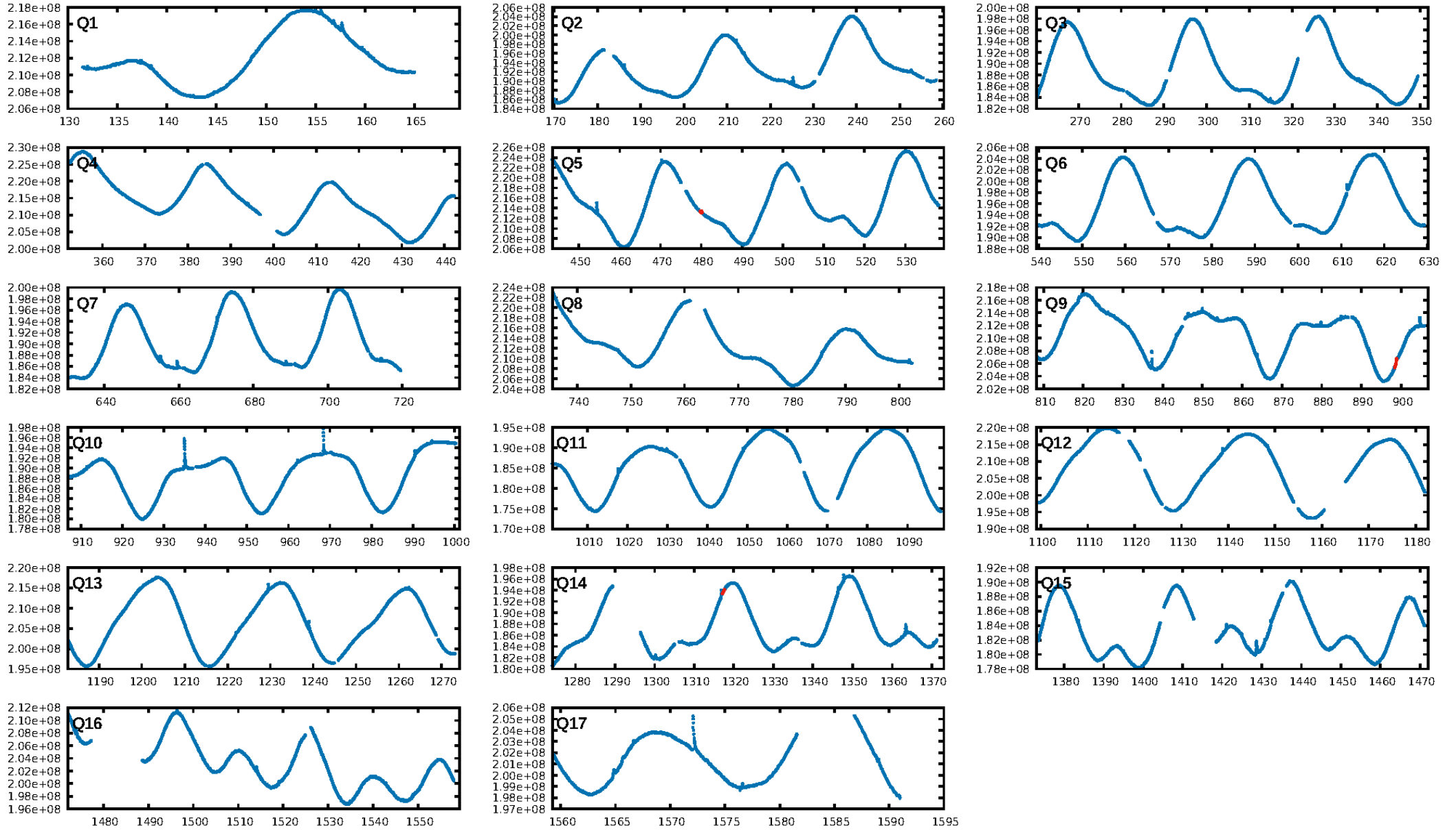
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [4.89 σ]
LongPeriod-sig: 100.0% [29.29 σ]
ModelChiSquare2-sig: 0.5%
ModelChiSquareGof-sig: 74.7%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 3.493
Centroid-sig: N/A
Centroid-so: 1.577 arcsec [0.71 σ]
OotOffset-rm: 0.946 arcsec [1.39 σ]
KicOffset-rm: 1.005 arcsec [1.40 σ]
OotOffset-st: 1/0/0/2 [3]
KicOffset-st: 1/0/0/2 [3]
DiffImageQuality-fgm: 0.67 [2/3]
DiffImageOverlap-fno: 1.00 [3/3]

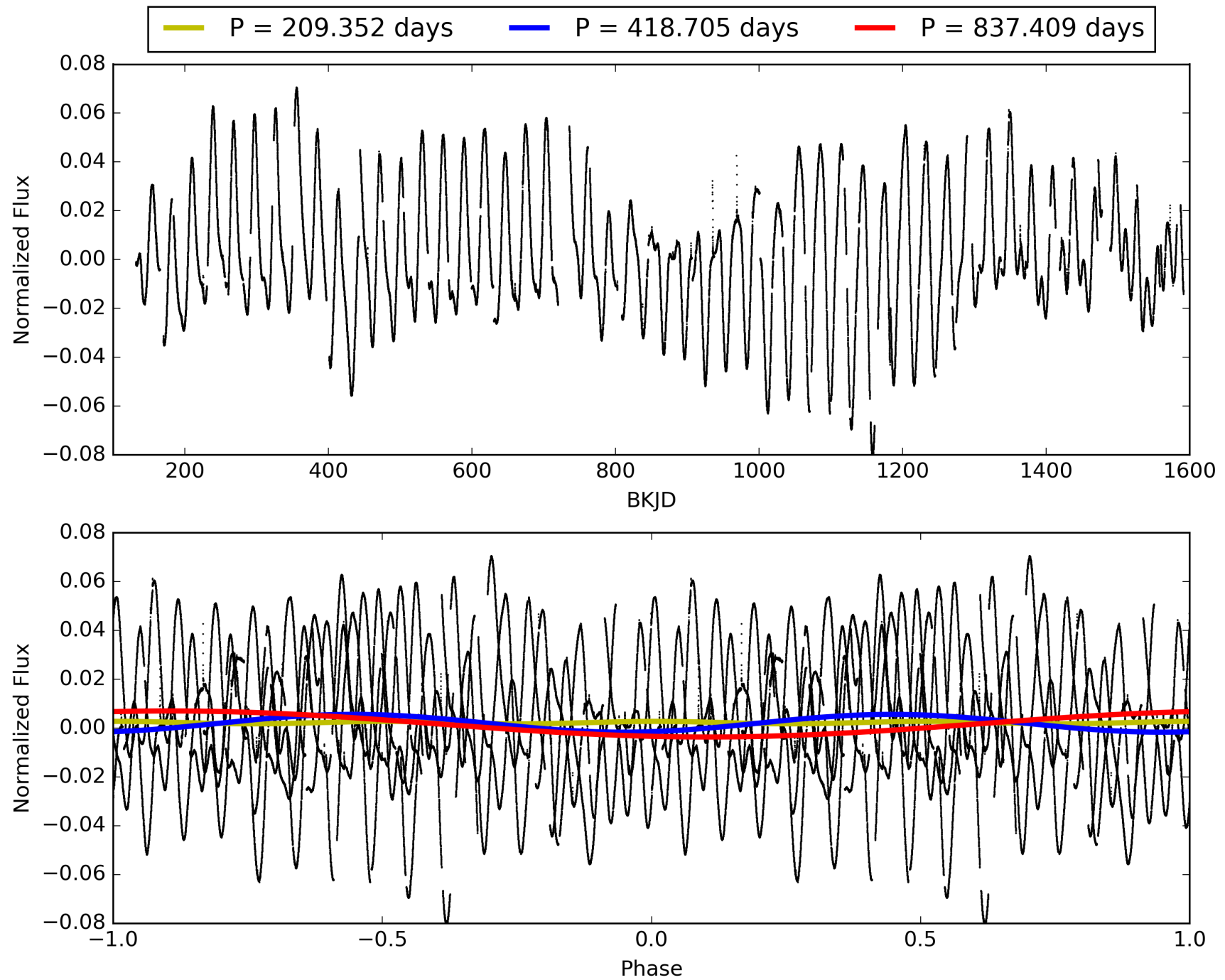
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 06:22:20 Z

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

TCE 006233558-07, PDC Light Curves

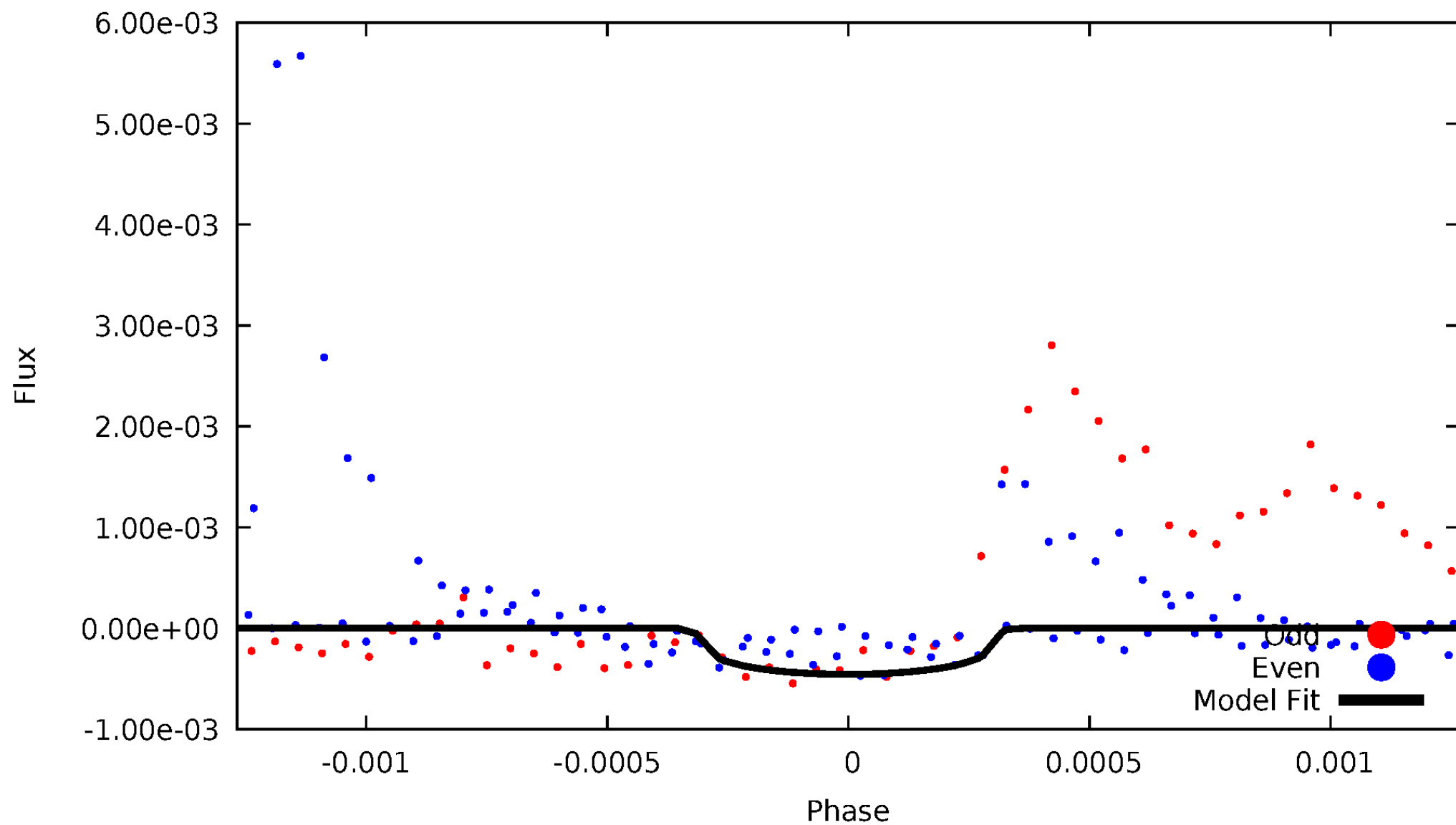


TCE 006233558-07



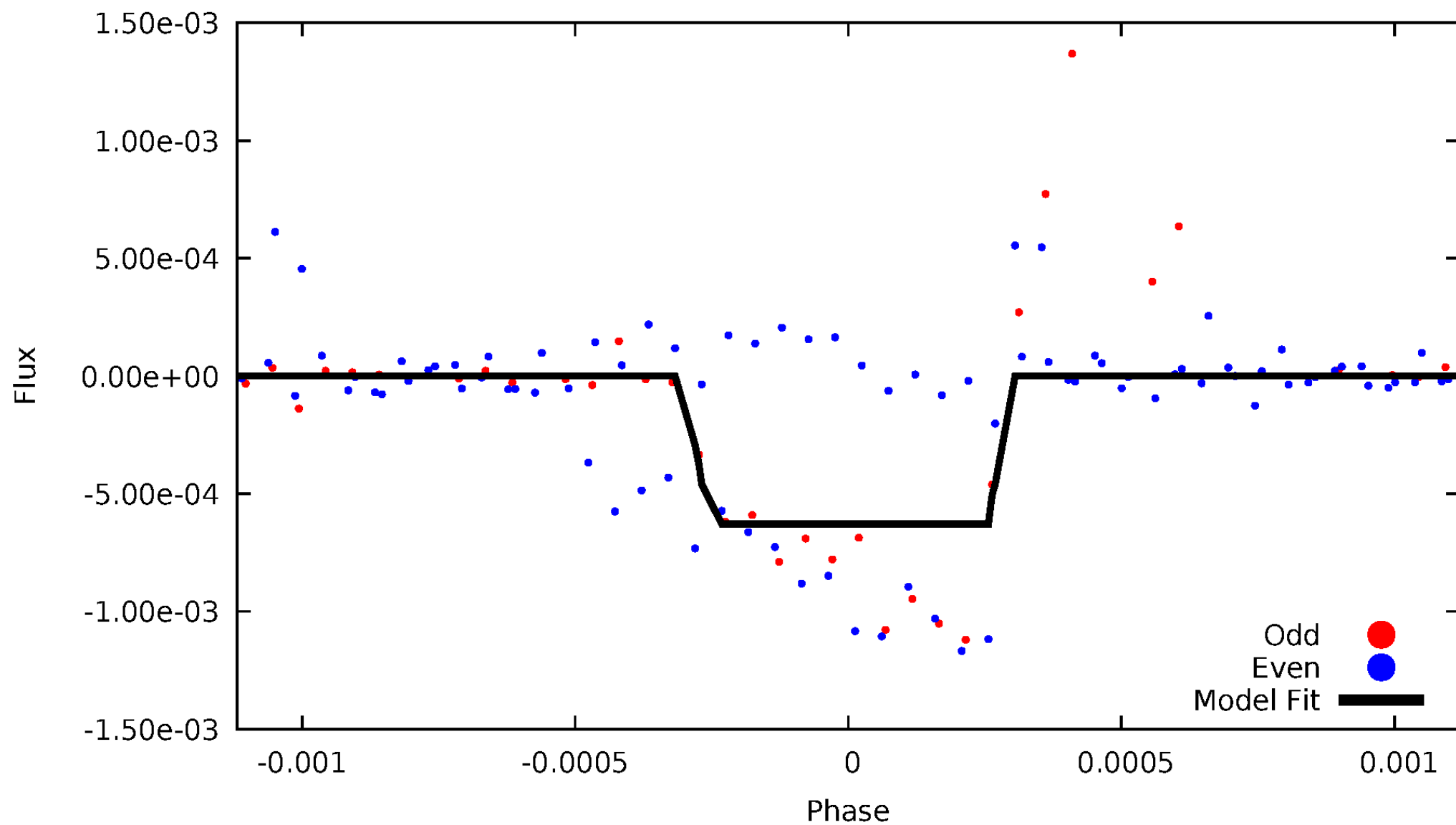
DV Odd/Even

TCE 006233558-07



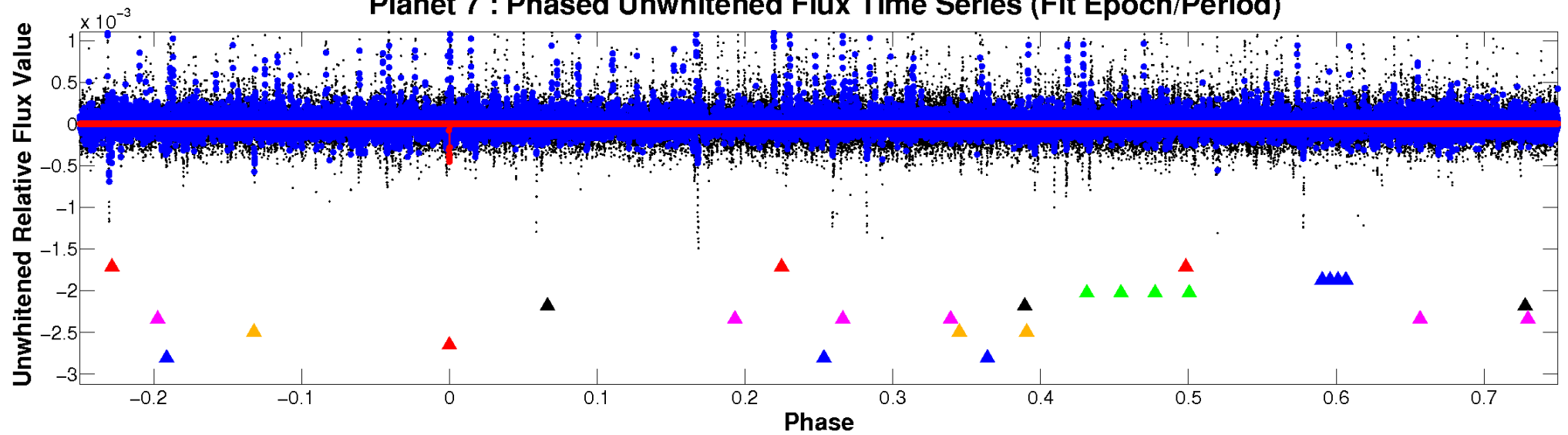
ALT Odd/Even

TCE 006233558-07

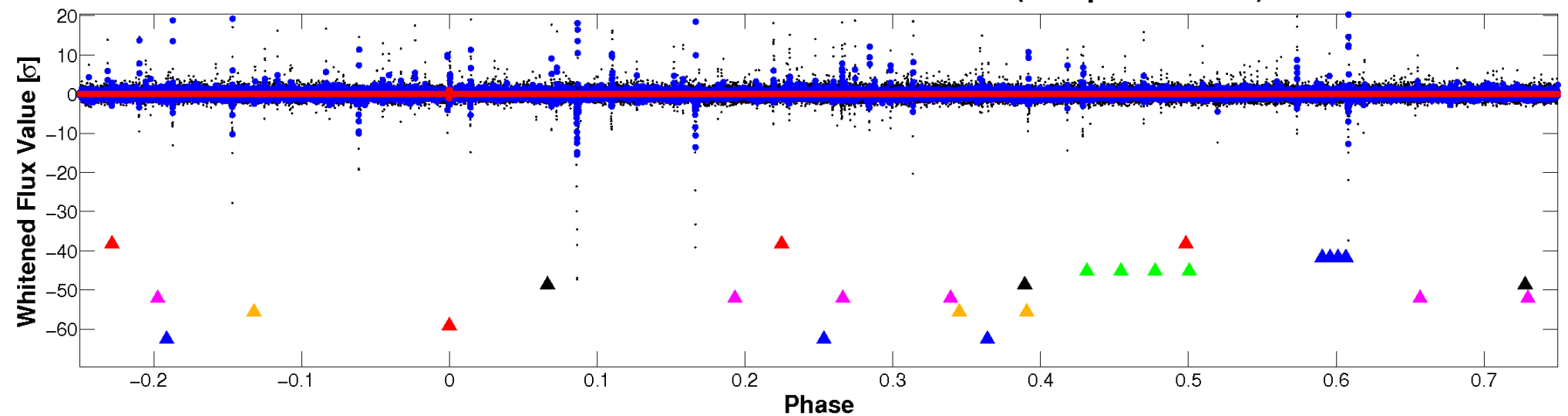


Non-Whitened Vs. Whitened Light Curve

Planet 7 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

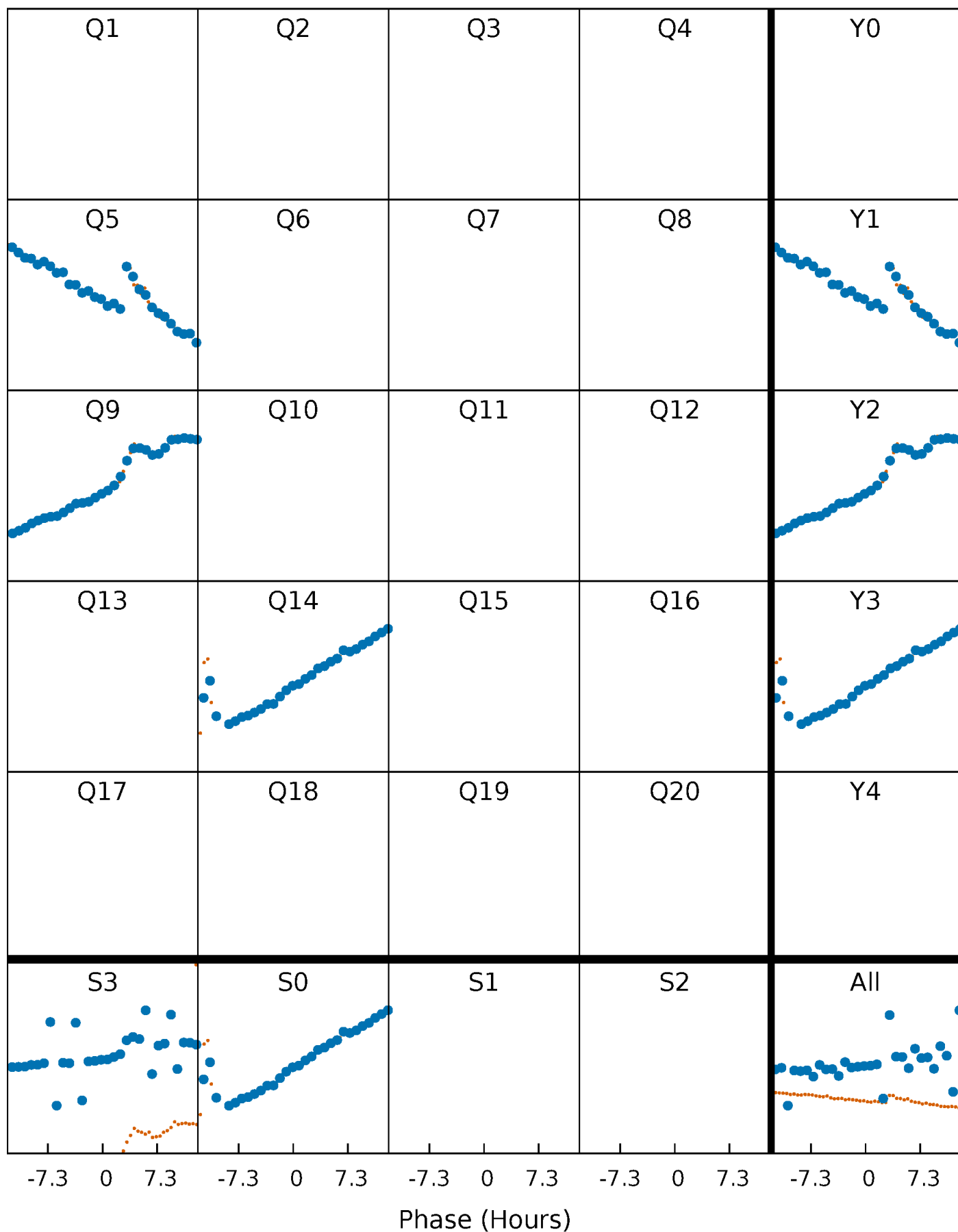


Planet 7 : Phased Whitened Flux Time Series (Fit Epoch/Period)



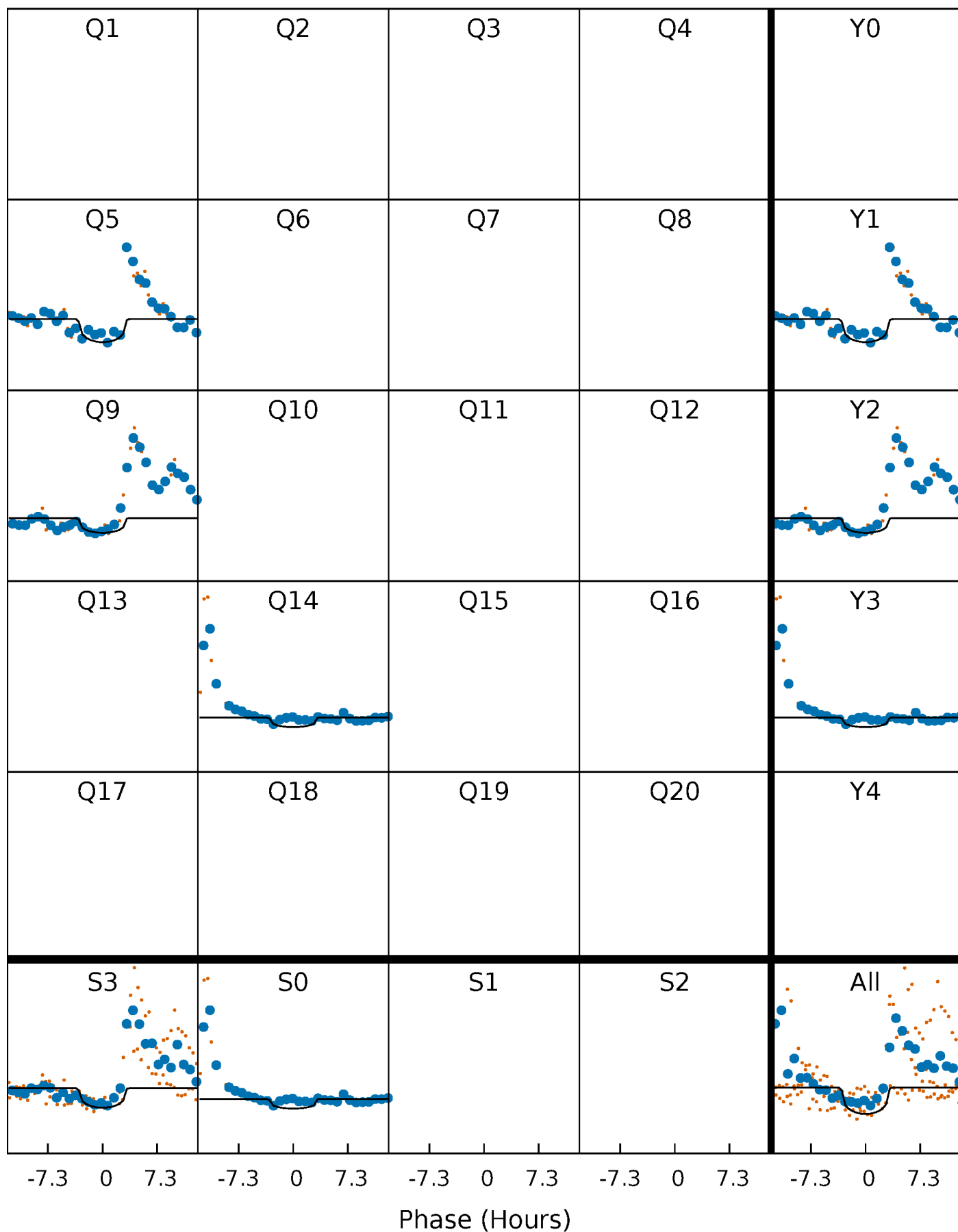
PDC Quarter-Phased Transit Curves

TCE 006233558-07 $P=418.704519$ Days $T_0=479.954570$ (BKJD)



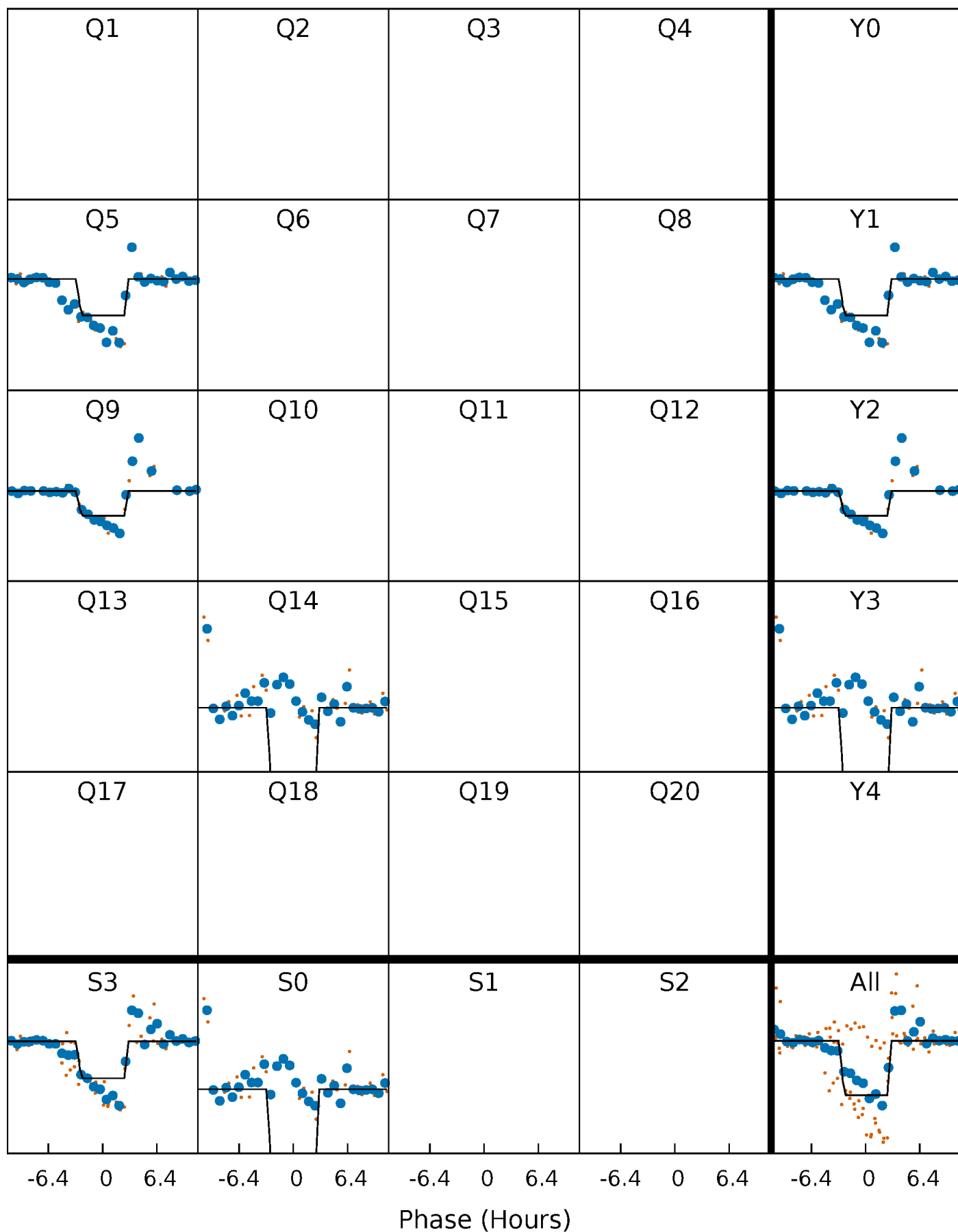
DV Quarter-Phased Transit Curves

TCE 006233558-07 $P=418.704519$ Days $T_0=479.954570$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

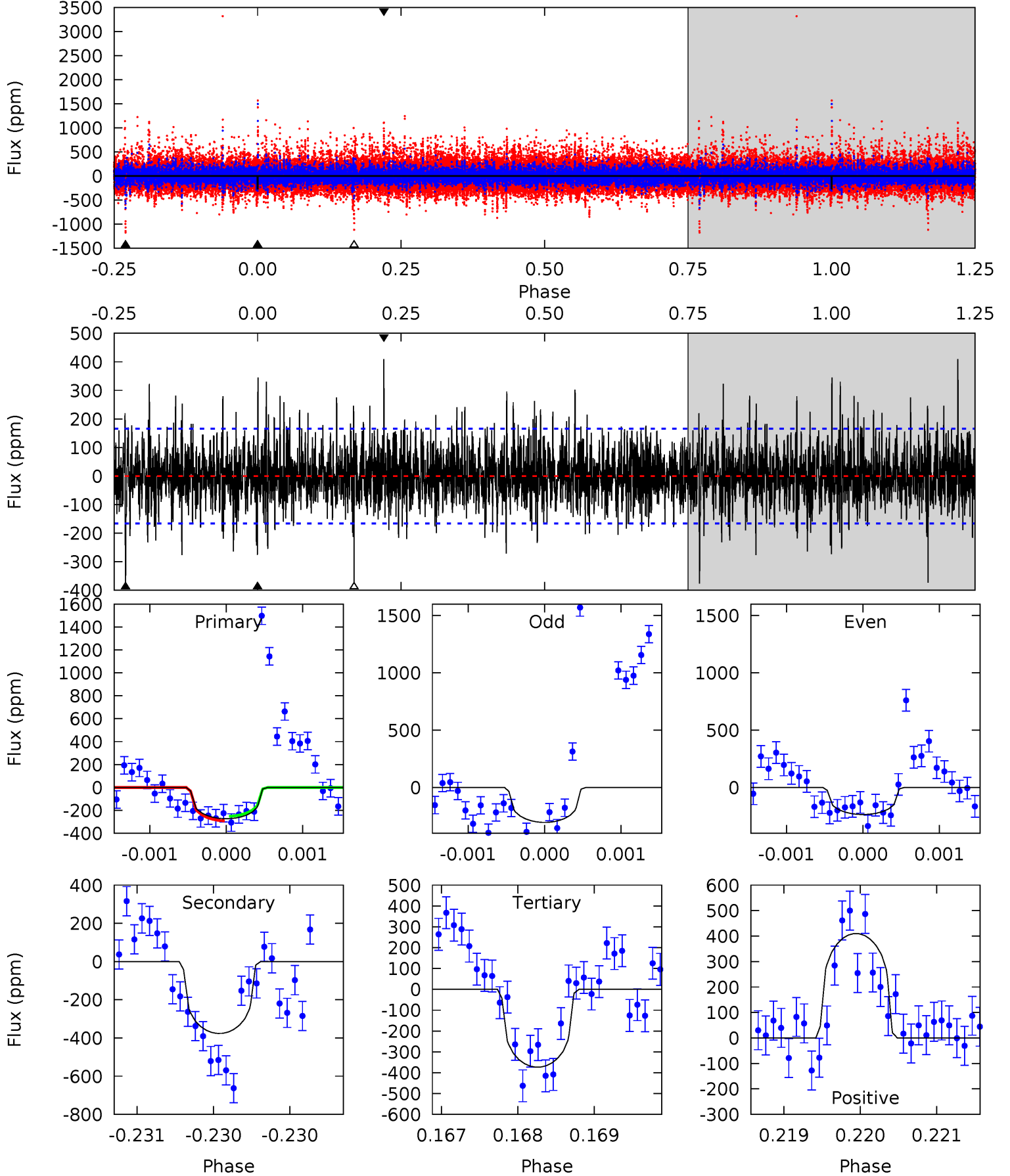
TCE 006233558-07 P=418.704078 Days $T_0=479.959916$ (BKJD)



DV Model-Shift Uniqueness Test

006233558-07, $P = 418.704519$ Days, $E = 61.250051$ Days

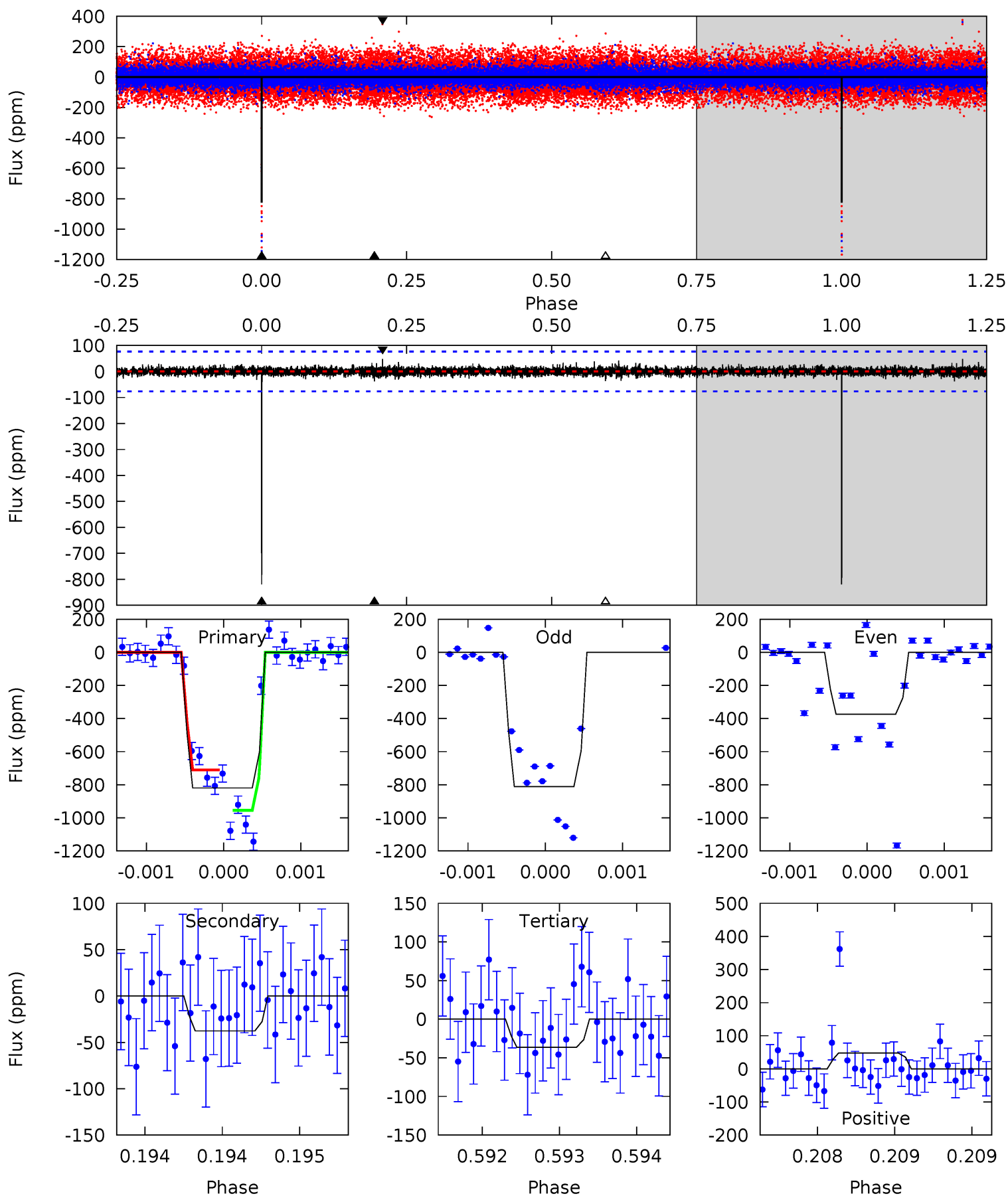
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.08	12.5	12.4	13.6	5.52	3.40	2.50	-3.34	-4.55	0.10	-1.12	0.44	0.83	0.52	0.66



Alt Model-Shift Uniqueness Test

006233558-07, P = 418.704078 Days, E = 61.255838 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
59.5	2.74	2.63	3.49	5.55	3.44	0.55	56.9	56.0	0.10	-0.75	18.4	0.70	0.06	0



Stellar Parameters For KIC 006233558

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4718^{+78}_{-56}	$2.717^{+0.139}_{-0.170}$	$-0.240^{+0.150}_{-0.100}$	$6.826^{+1.872}_{-1.008}$	$0.886^{+0.183}_{-0.021}$	$0.004^{+0.003}_{-0.002}$
	+2%/-1%	+5%/-6%	+62%/-42%	+27%/-15%	+21%/-2%	+64%/-46%
Source	SPE74	SPE74	SPE74	DSEP		

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

Secondary Eclipse Parameters for KIC 006233558-07 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-376 ± 30	$18.83^{+14.33}_{-11.58}$	743^{+49}_{-36}	4301^{+2244}_{-745}	674^{+3854}_{-458}
Alt.	-38 ± 14	$21.56^{+14.96}_{-12.62}$	740^{+49}_{-35}	2848^{+869}_{-373}	51^{+231}_{-35}

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

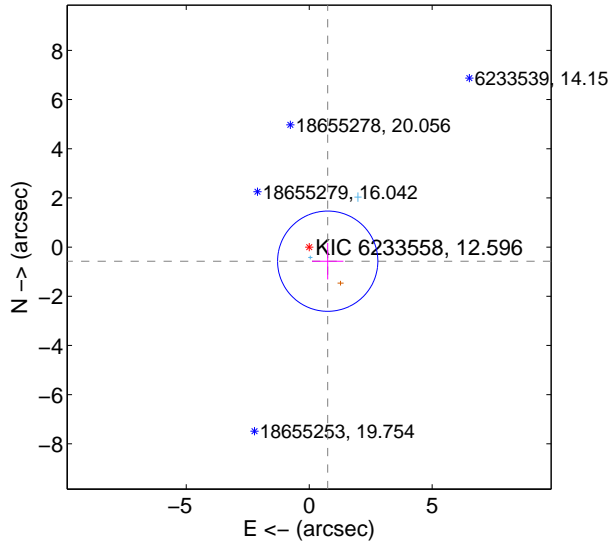
Supplemental centroid analysis for 006233558-07. Kepler magnitude: 12.60. Transit SNR 6.01

There are 2 quarters with good PRF difference image offsets

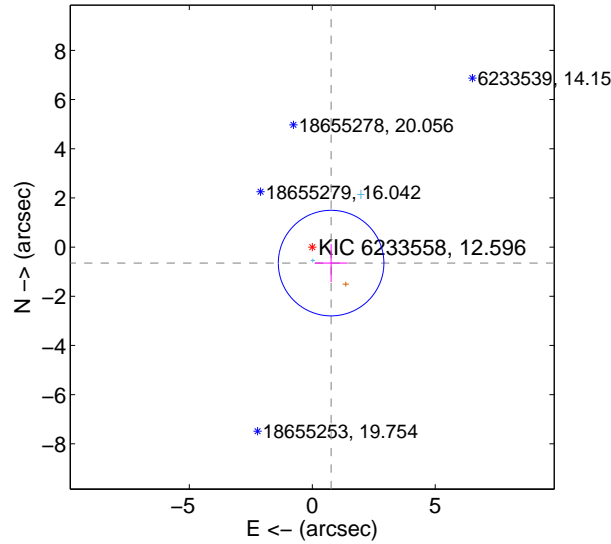
The direct PRF centroid is offset from the target star catalog position by about 0.11 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.946 ± 0.680	1.39	-0.753 ± 0.640	-0.573 ± 0.743
PRF-fit source offset from KIC position	1.005 ± 0.716	1.40	-0.766 ± 0.671	-0.650 ± 0.773
photometric centroid source offset	1.58 ± 2.21	0.71	1.30 ± 2.07	-0.89 ± 2.47

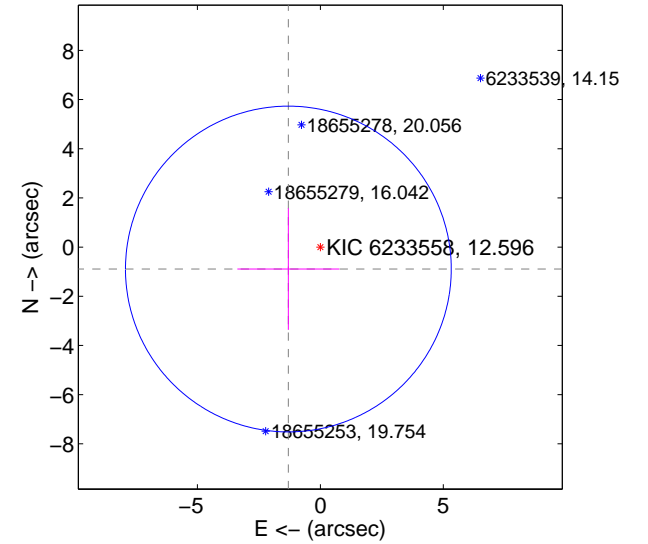
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position



offset from photometric centroids

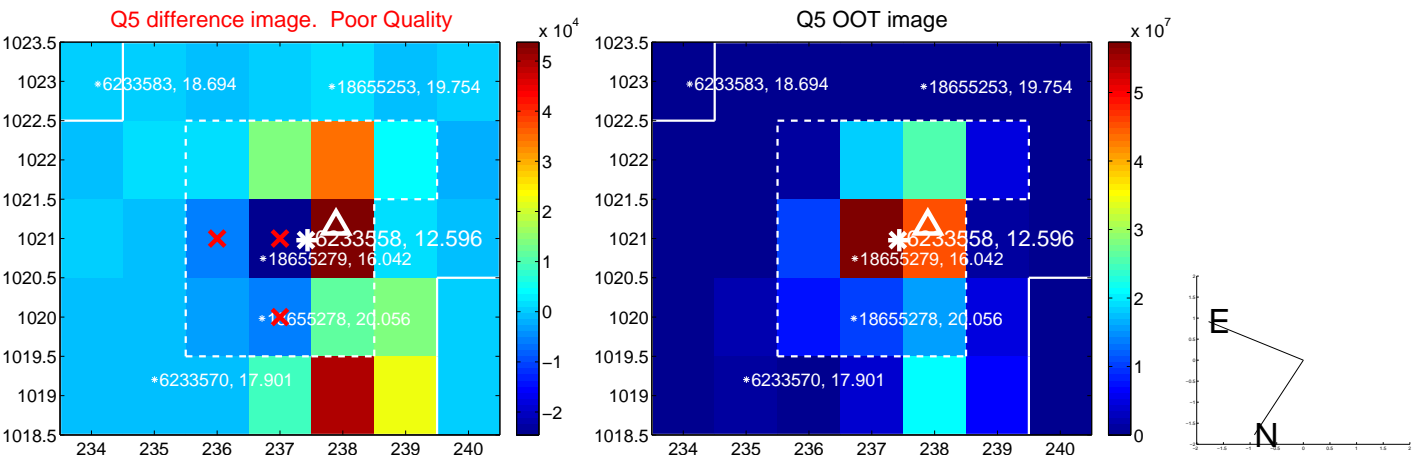


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

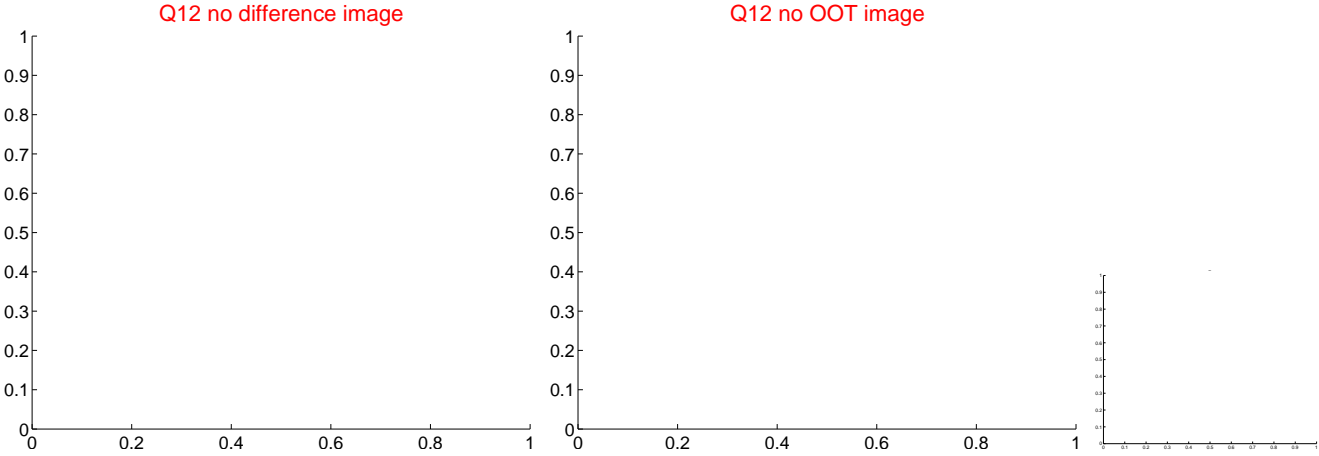
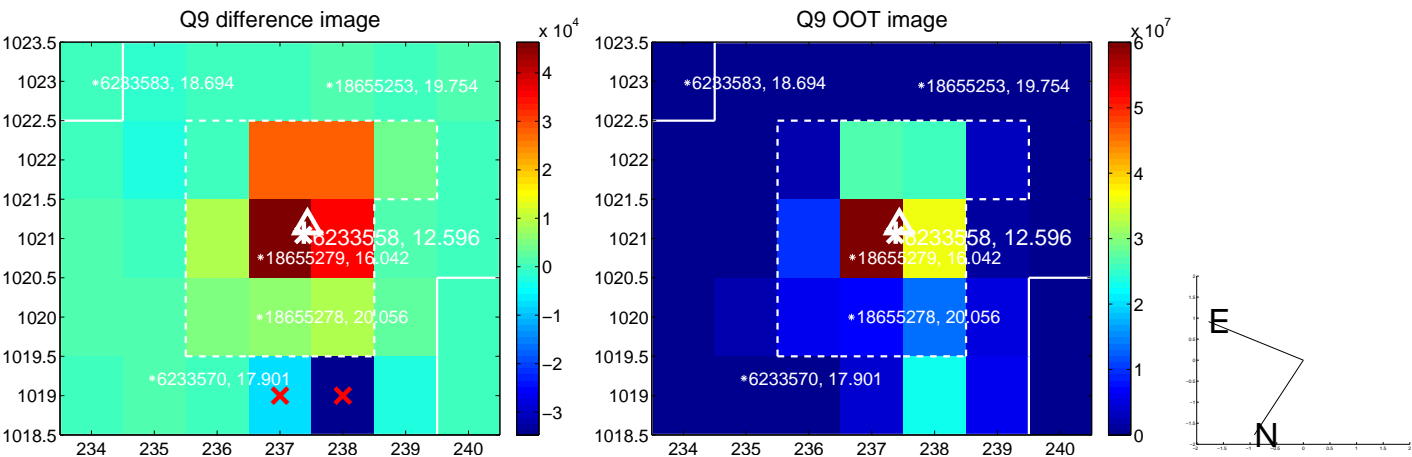
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



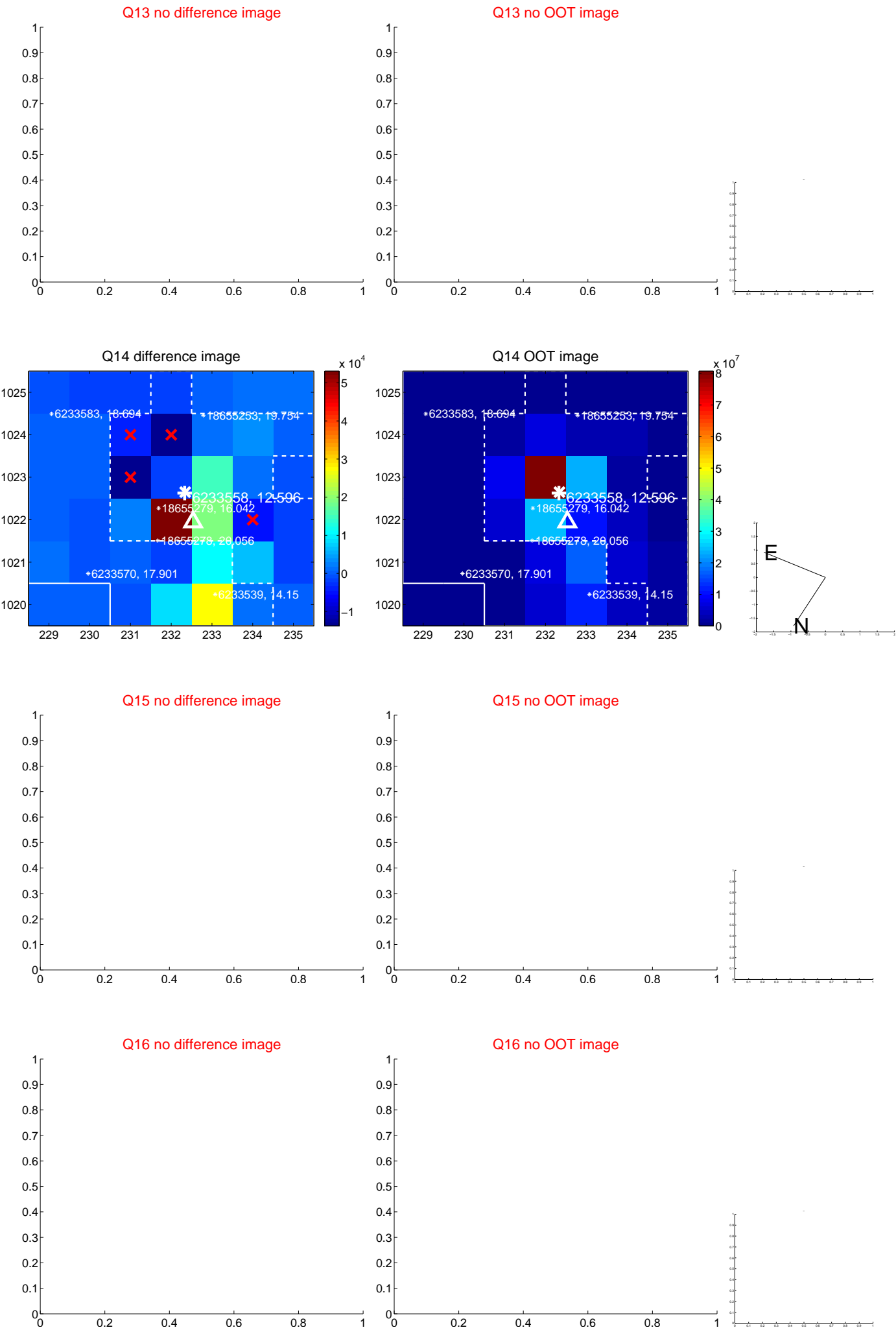
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



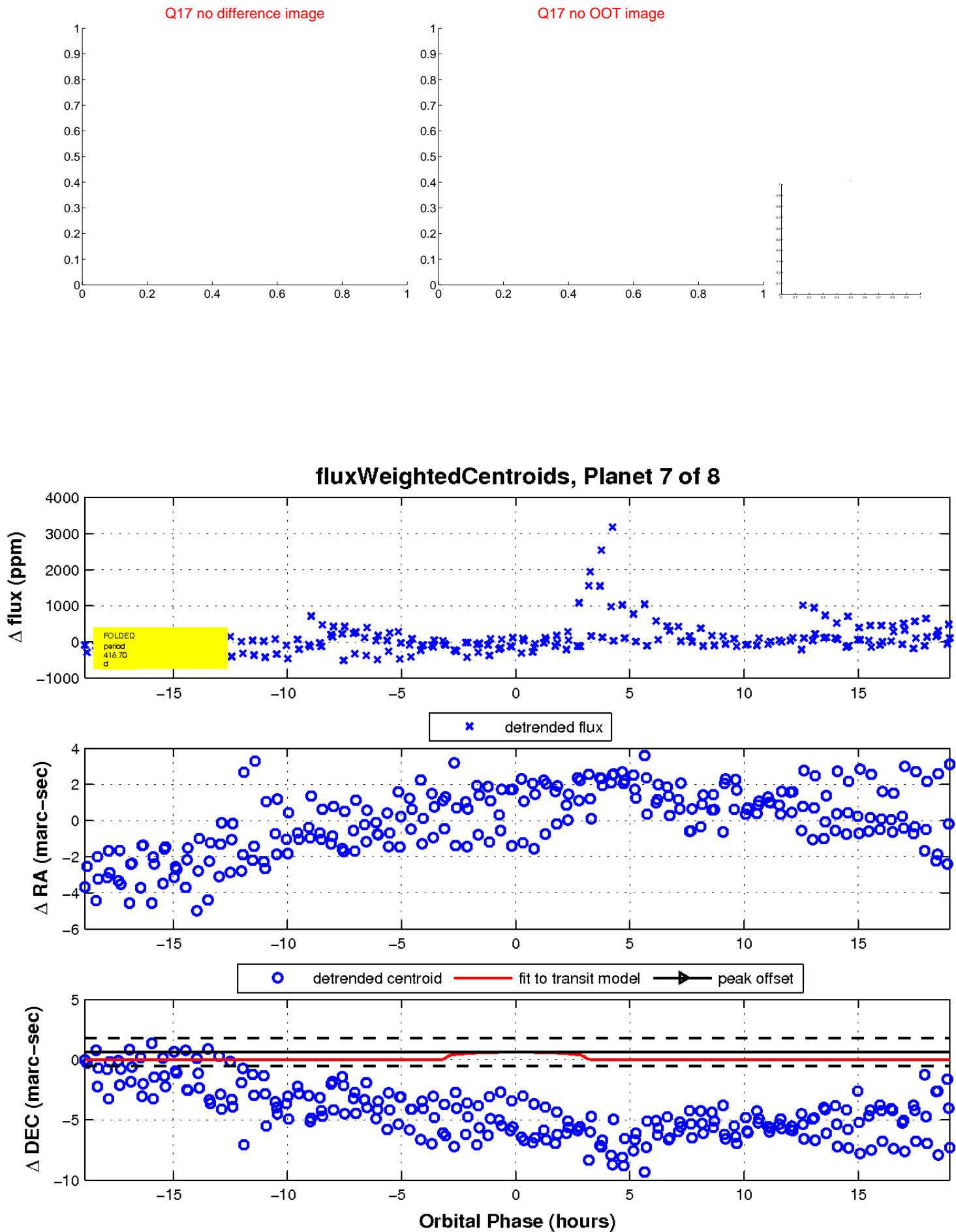
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

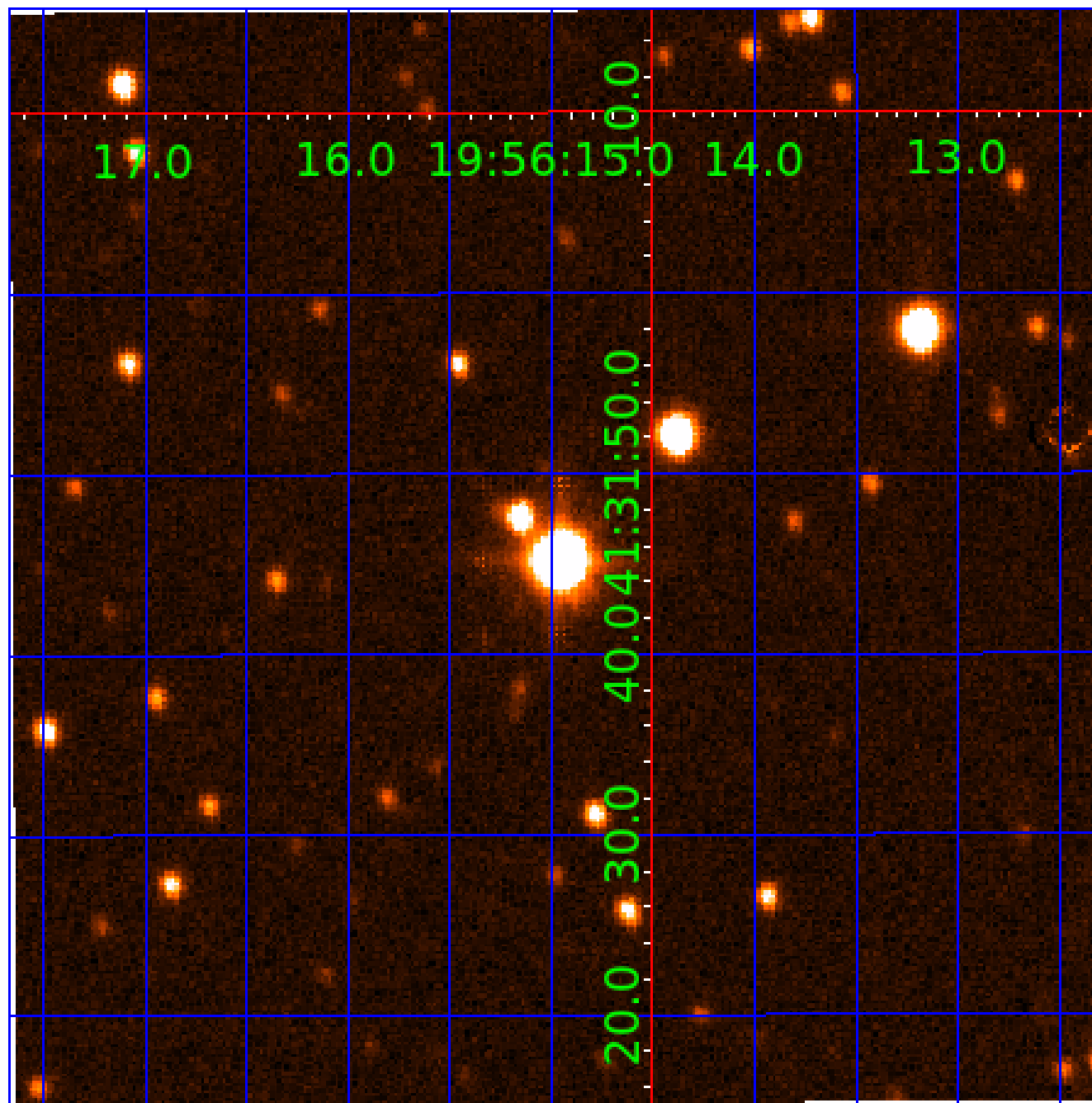


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 006233558

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})
006233558-02	OBS	No	416.470596	315.225437	758.6	8.921	14.4	9.8	6.83	4718	23.38	18.82
006233558-04	OBS	No	560.466671	224.247300	39.9	5.133	13.6	0.5	6.83	4718	4.25	12.67
006233558-05	OBS	No	224.625176	336.241611	414.9	4.005	14.7	8.3	6.83	4718	19.81	42.86
006233558-07	OBS	No	418.704519	479.954570	456.9	6.368	12.6	6.0	6.83	4718	15.73	18.68
006233558-08	OBS	No	604.892617	213.689275	682.4	11.601	12.2	8.5	6.83	4718	18.62	11.44

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006233558-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
006233558-04	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_MARSHALL_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
006233558-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—INCONSISTENT_TRANS—CENT_FEW_MEAS
006233558-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS
006233558-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_POS_DV

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

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

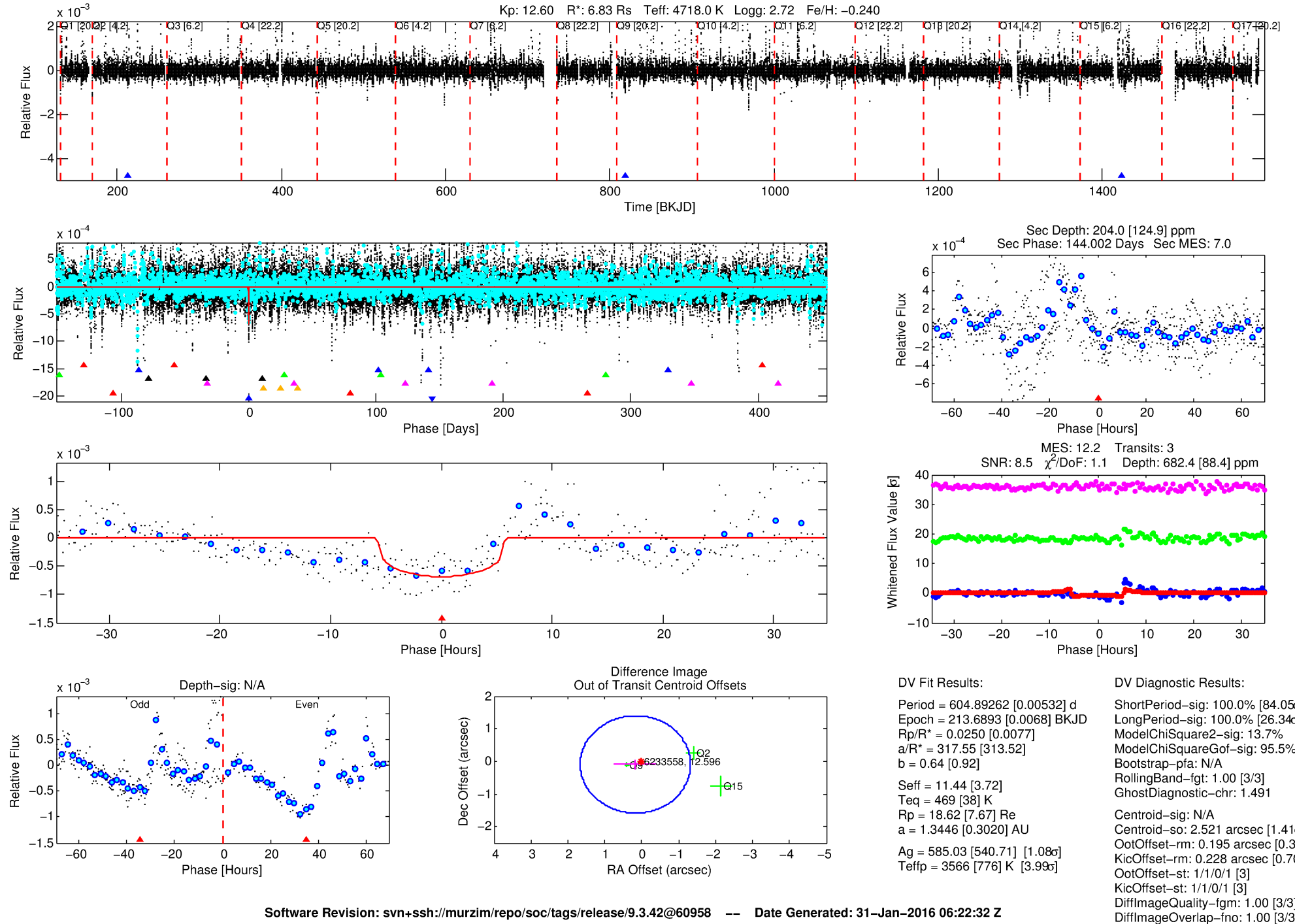
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 006233558-08

No Significant Match Found

DV One-Page Summary

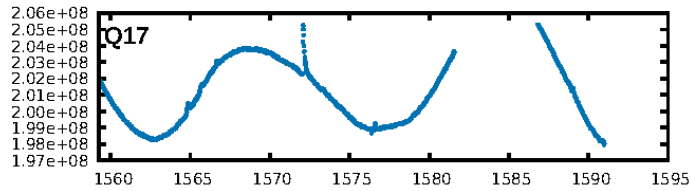
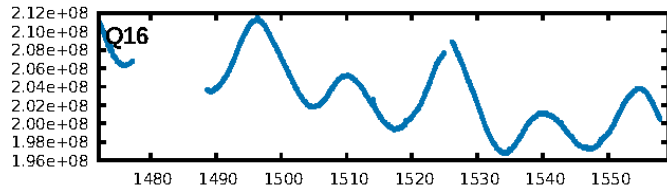
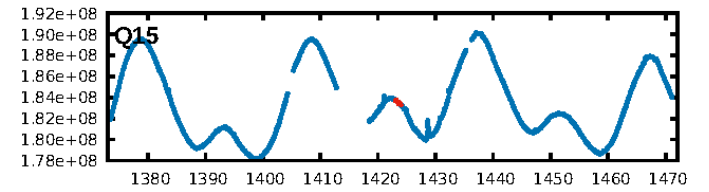
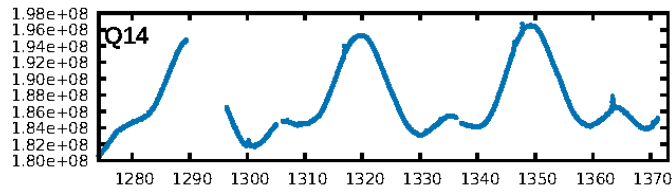
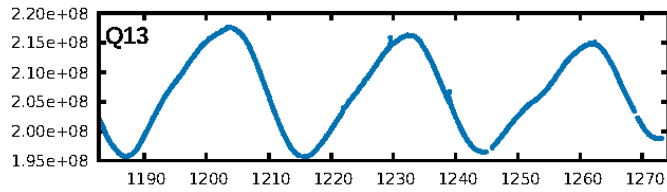
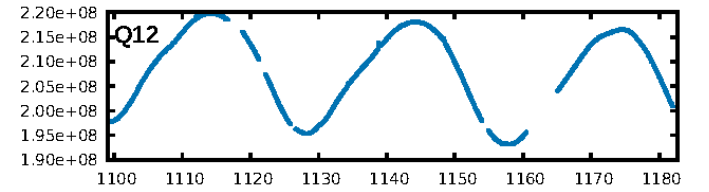
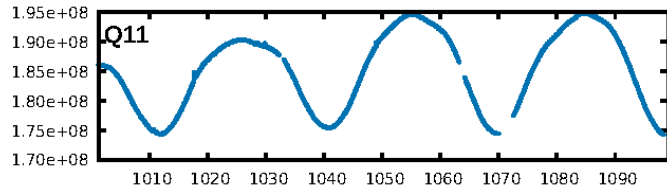
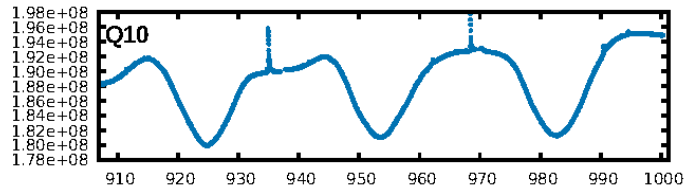
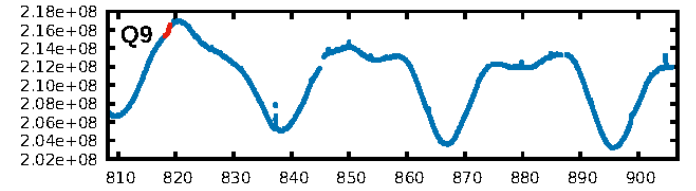
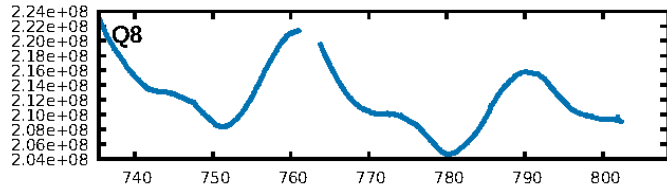
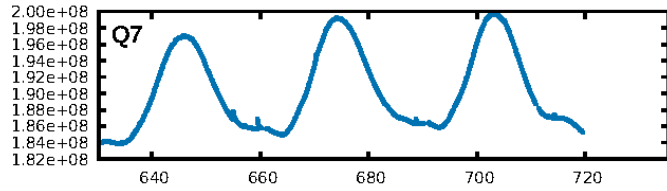
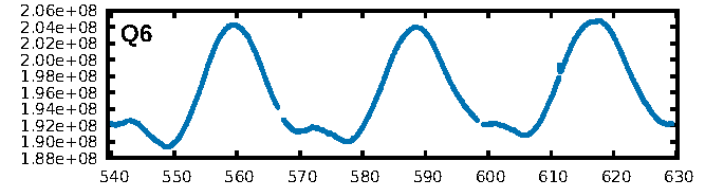
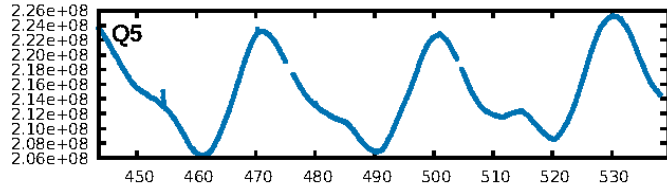
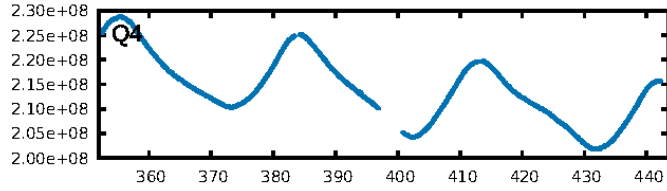
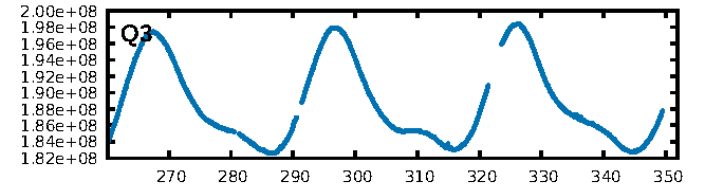
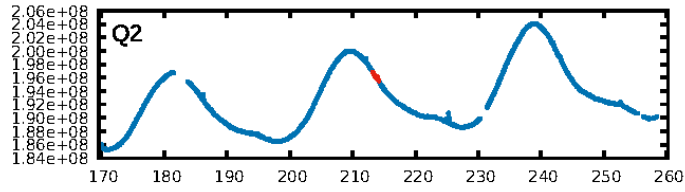
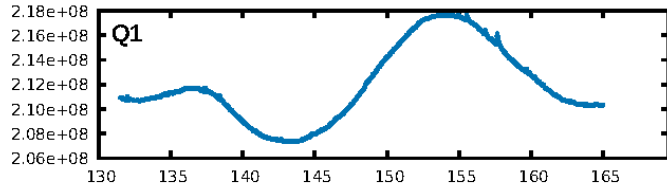
KIC: 6233558 Candidate: 8 of 8 Period: 604.893 d



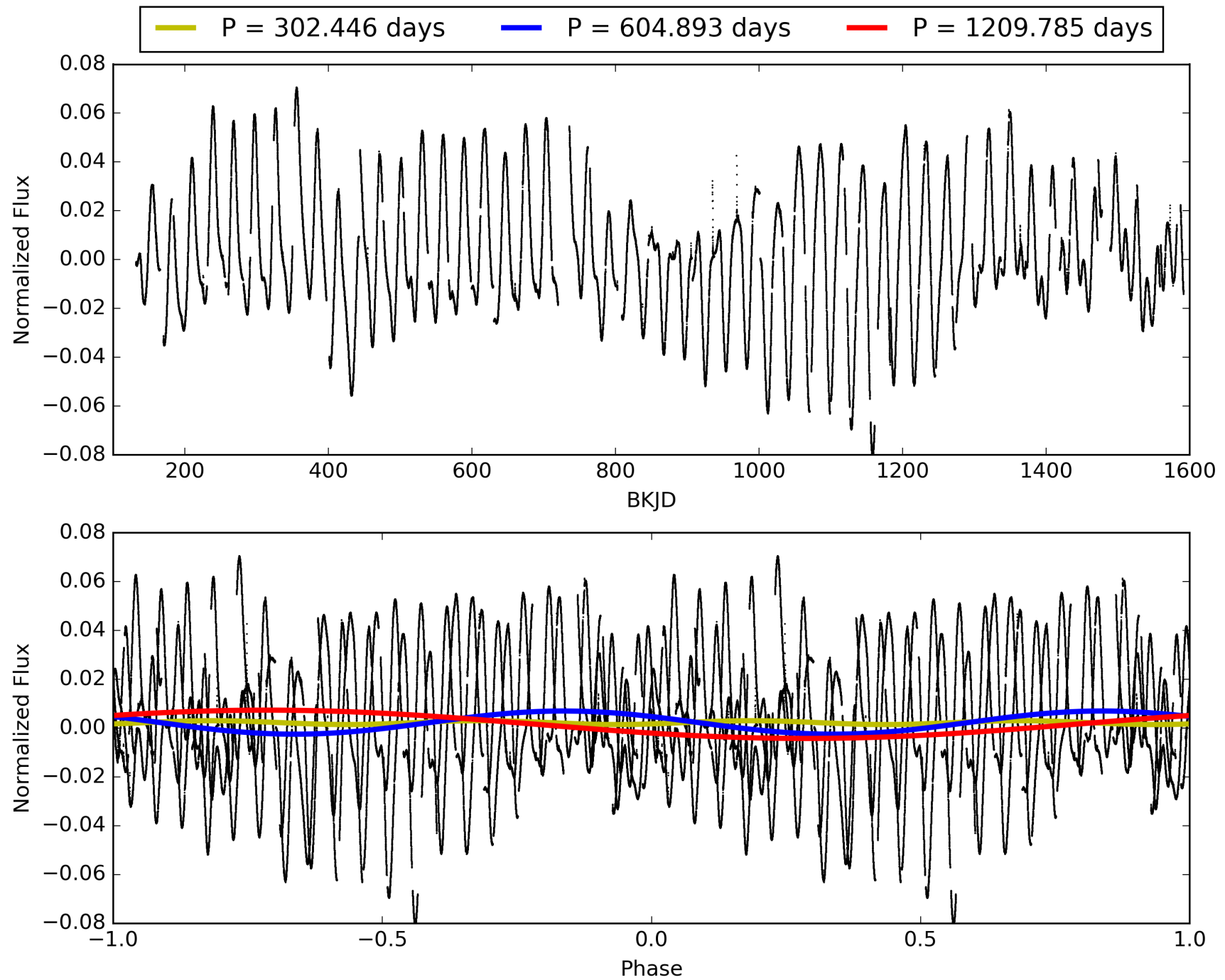
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 06:22:32 Z

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

TCE 006233558-08, PDC Light Curves

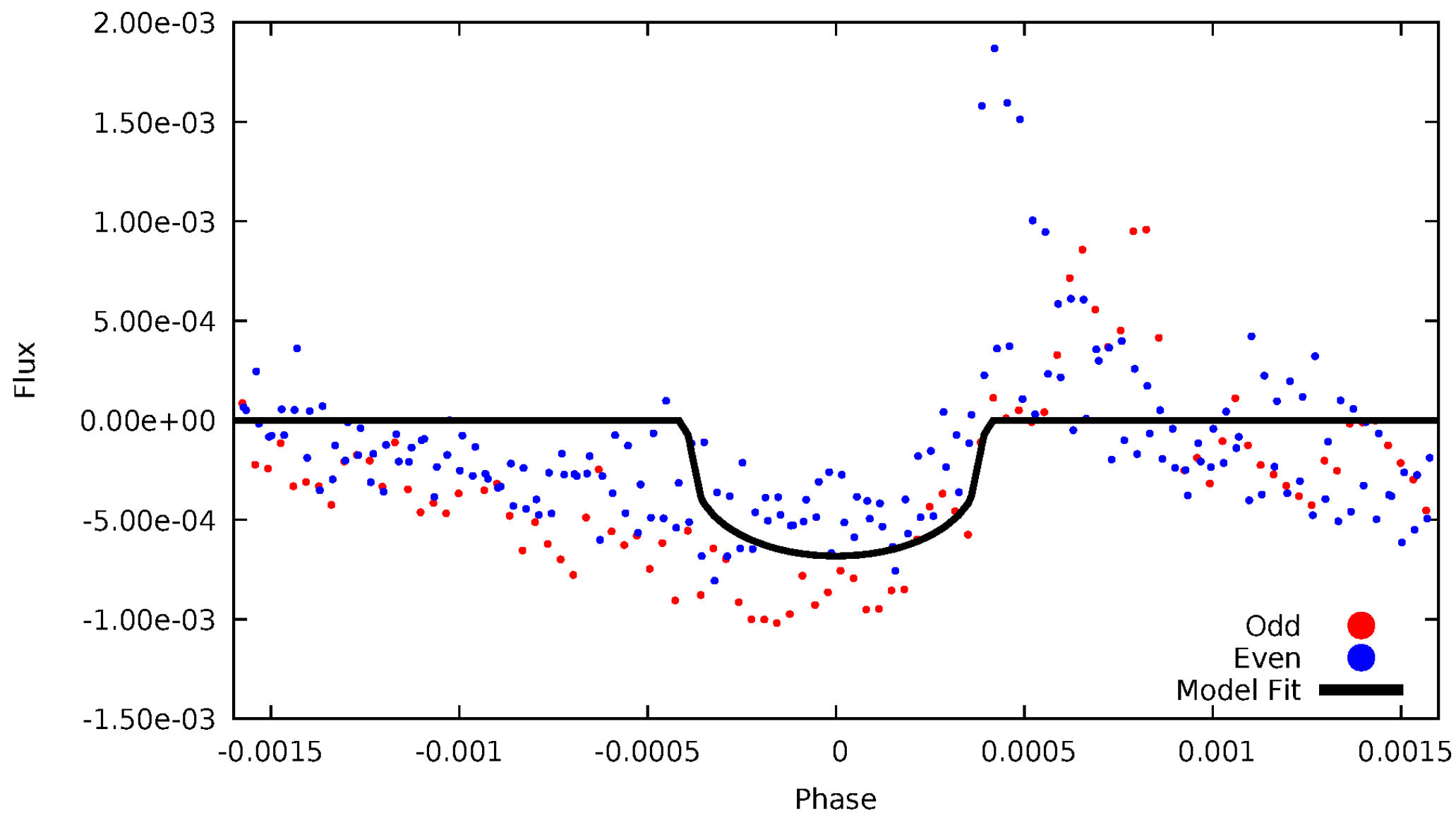


TCE 006233558-08



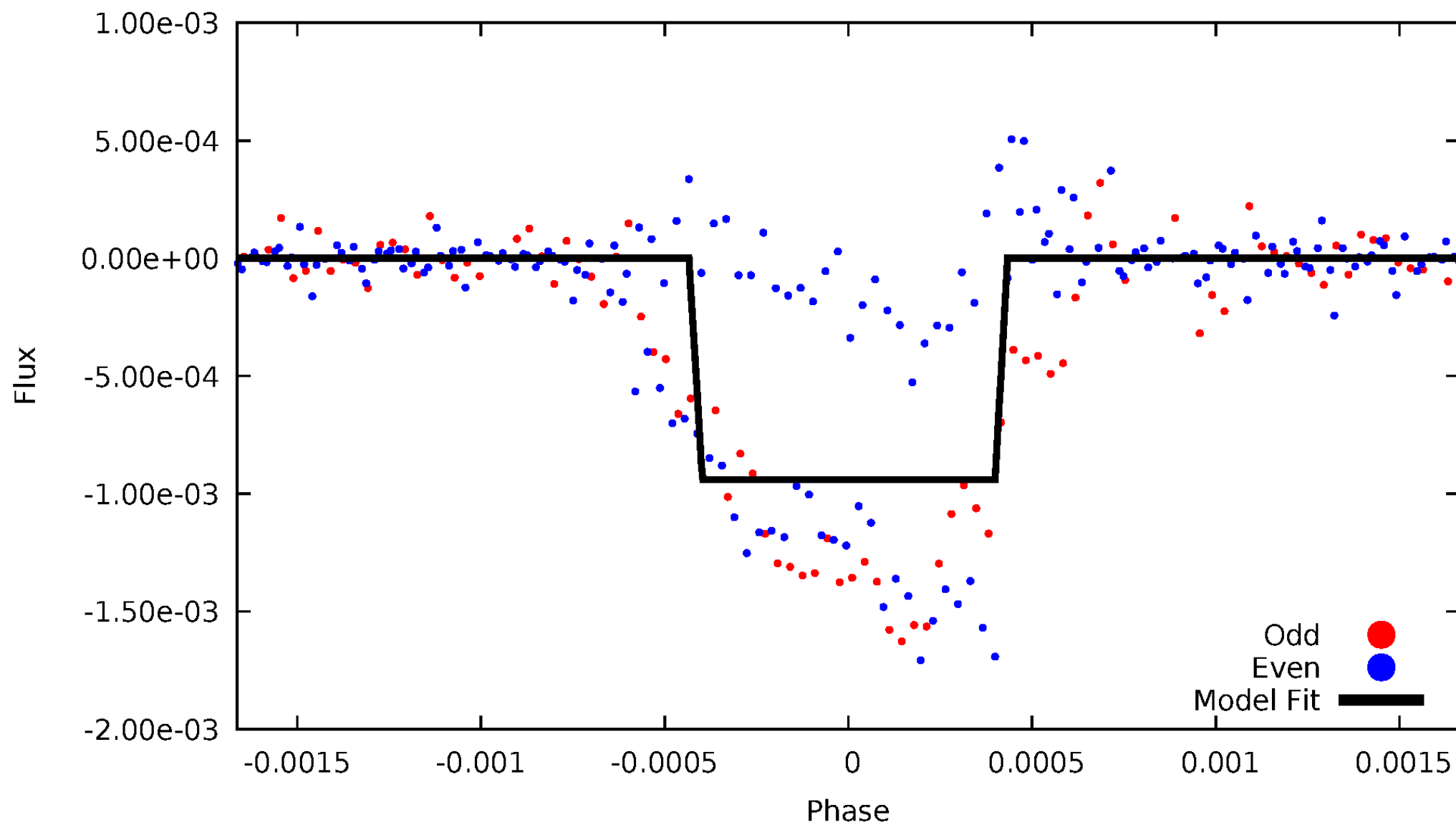
DV Odd/Even

TCE 006233558-08



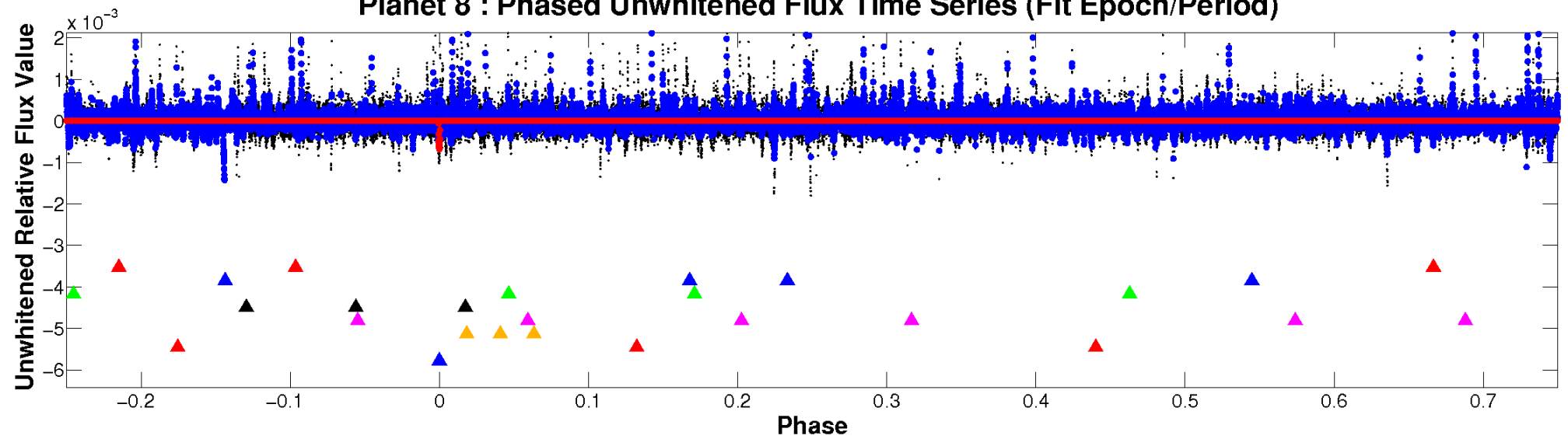
ALT Odd/Even

TCE 006233558-08

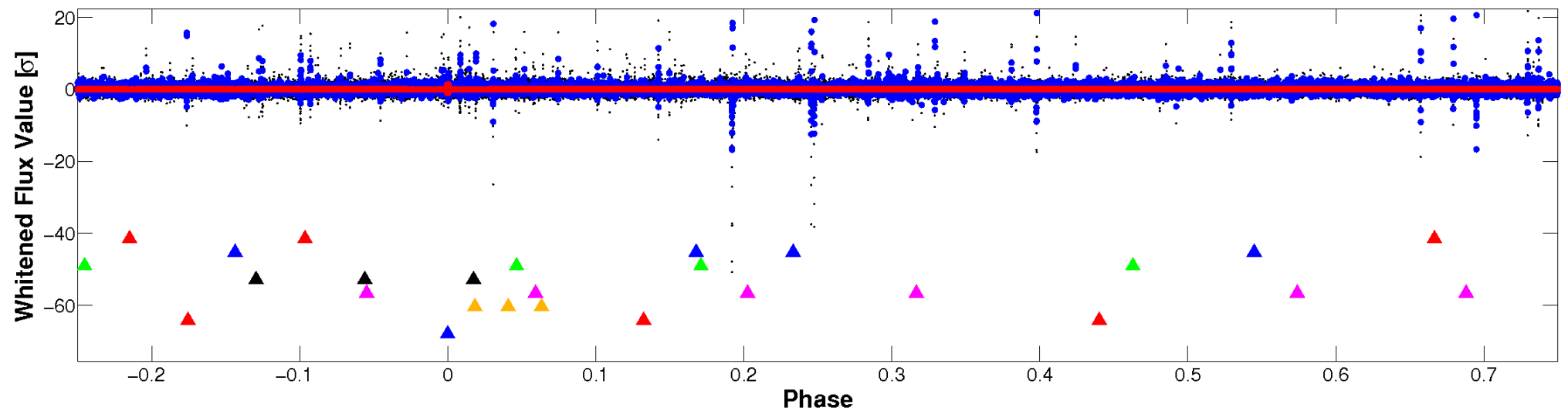


Non-Whitened Vs. Whitened Light Curve

Planet 8 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

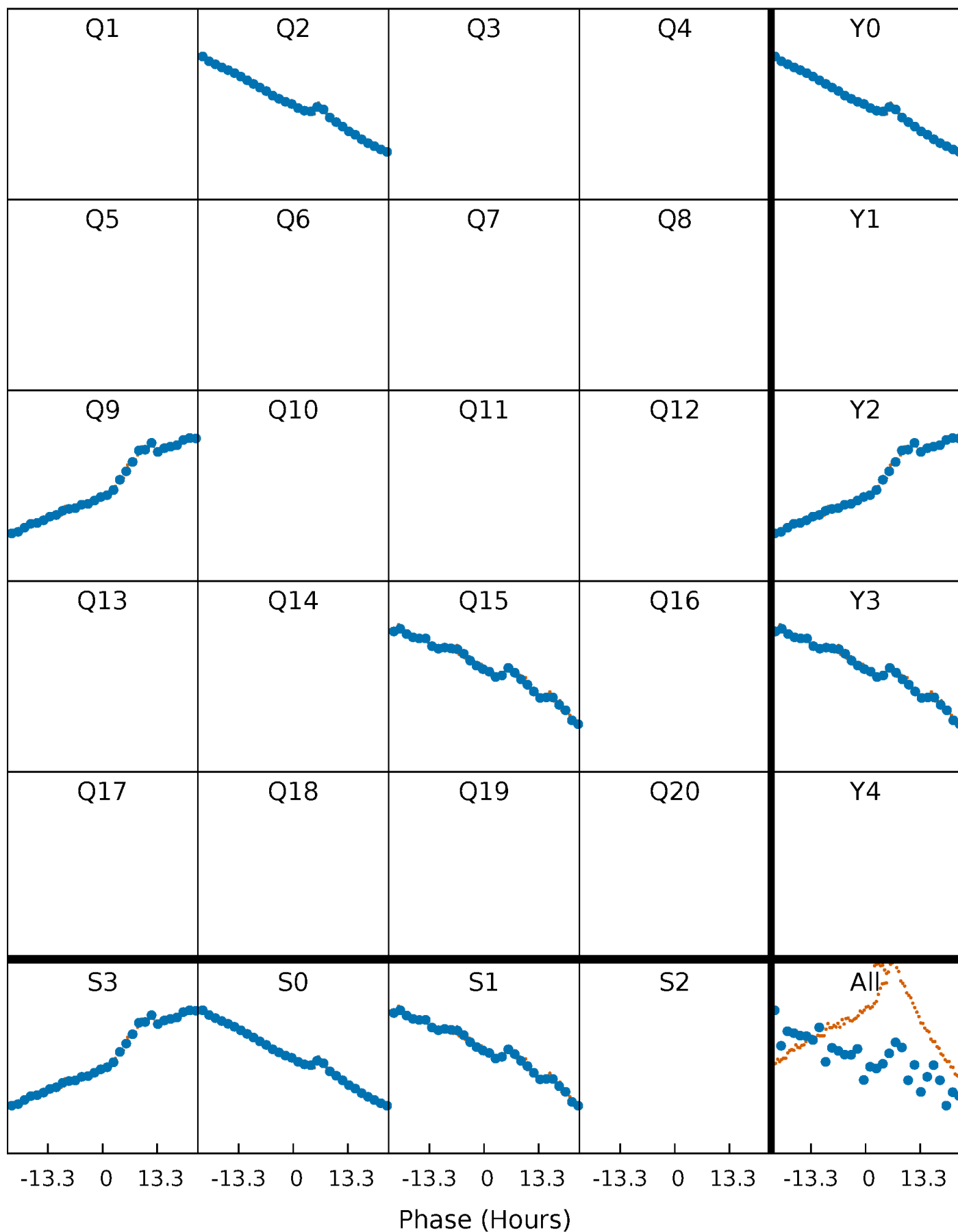


Planet 8 : Phased Whitened Flux Time Series (Fit Epoch/Period)



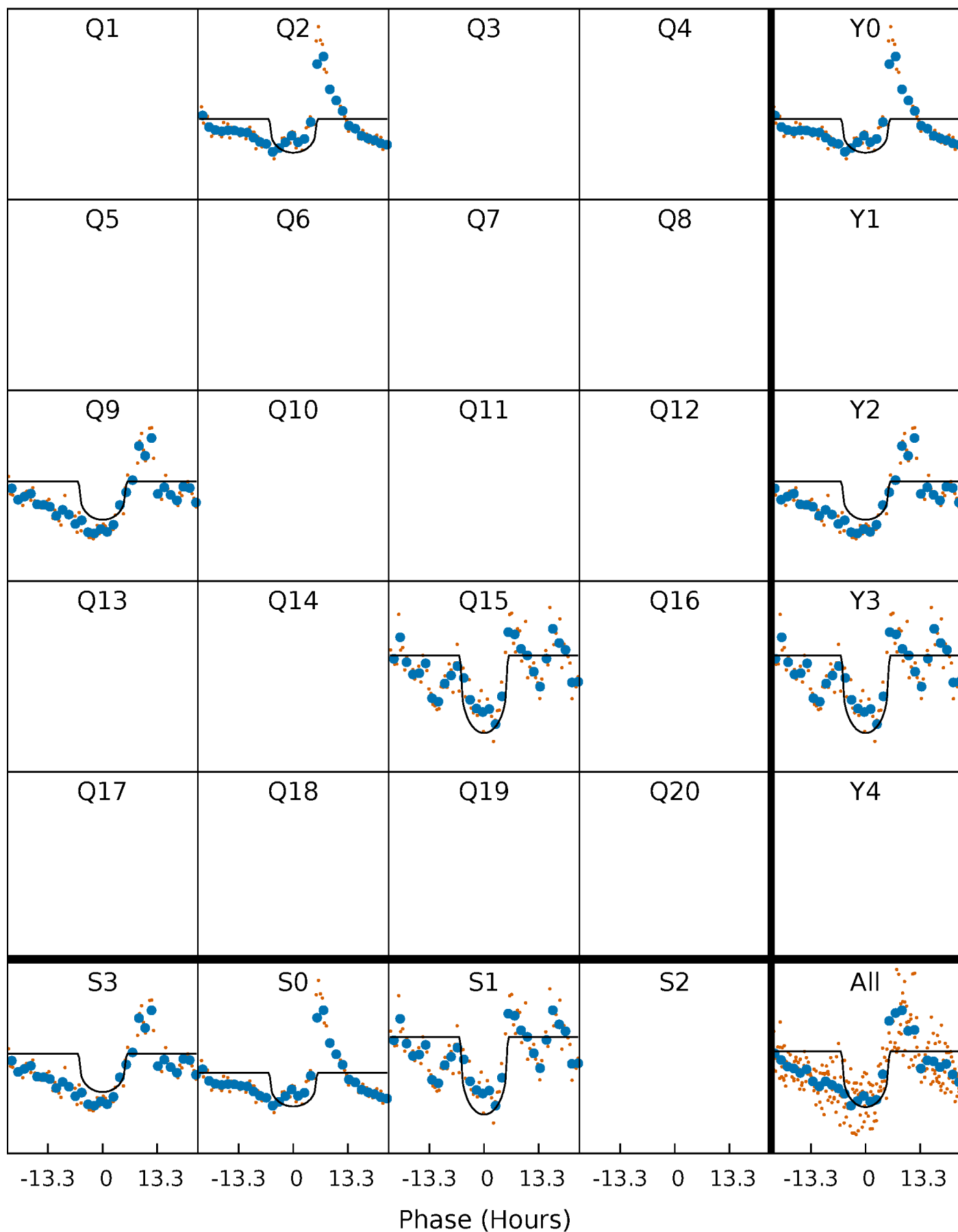
PDC Quarter-Phased Transit Curves

TCE 006233558-08 P=604.892618 Days $T_0=213.689275$ (BKJD)



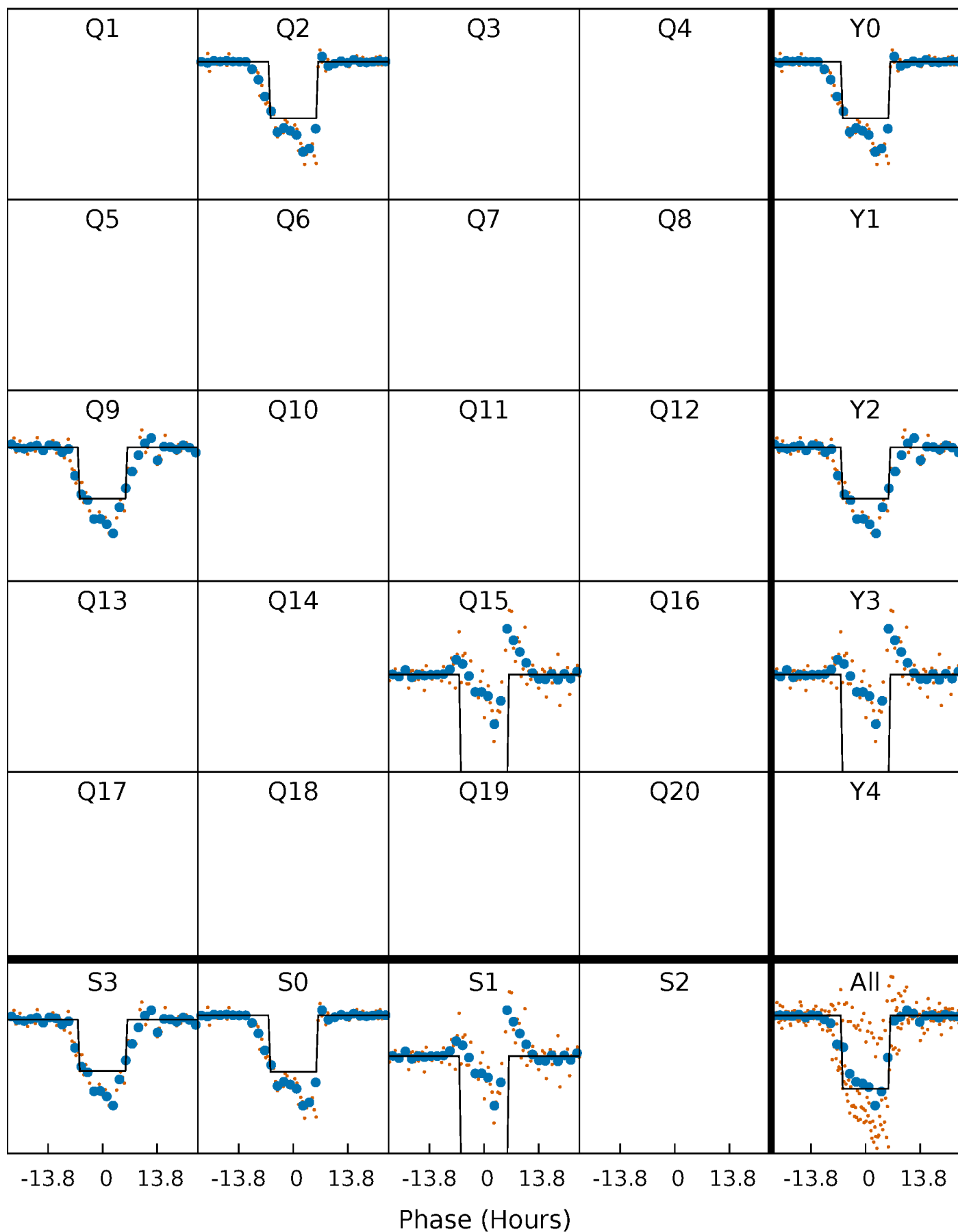
DV Quarter-Phased Transit Curves

TCE 006233558-08 $P=604.892618$ Days $T_0=213.689275$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

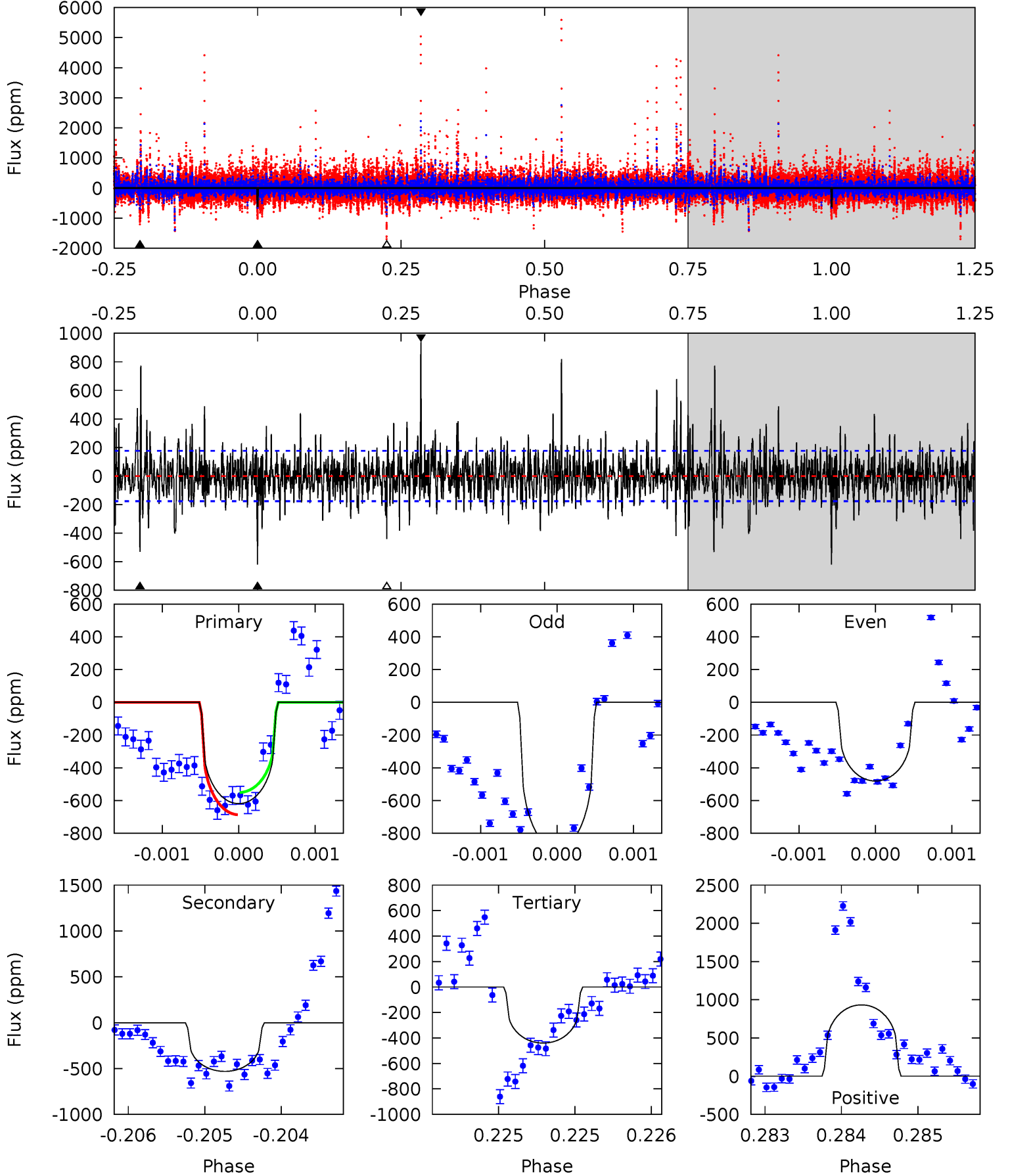
TCE 006233558-08 P=604.901488 Days $T_0=213.661259$ (BKJD)



DV Model-Shift Uniqueness Test

006233558-08, P = 604.892618 Days, E = 213.689275 Days

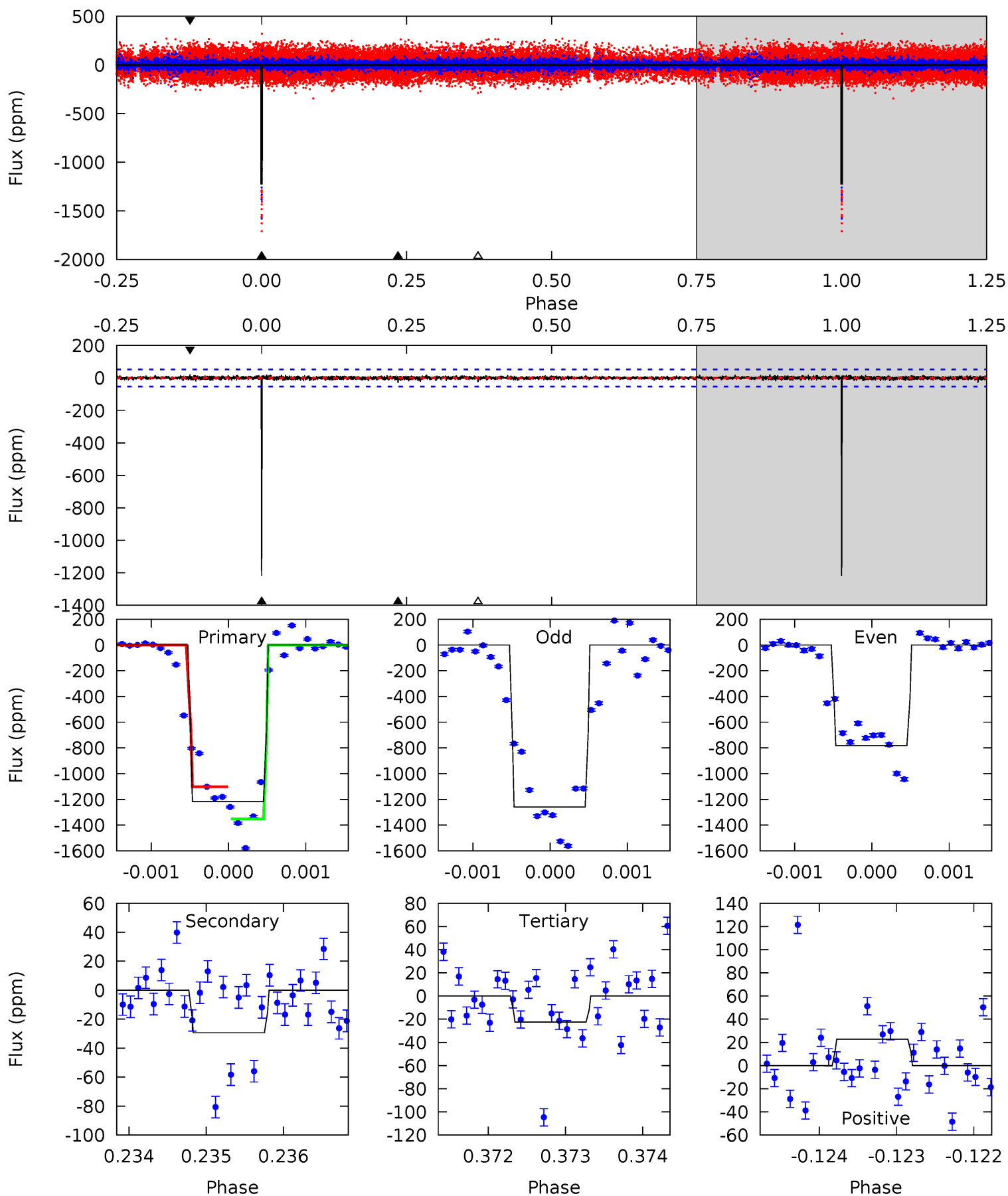
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
19.3	16.5	13.7	29.1	5.49	3.35	3.84	5.57	-9.79	2.83	-12.5	3.19	1.26	0.60	2.13



Alt Model-Shift Uniqueness Test

006233558-08, P = 604.901488 Days, E = 213.661259 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
126.0	3.04	2.32	2.35	5.48	3.34	0.47	123.7	123.7	0.71	0.69	27.4	0.71	0.02	12.6



Stellar Parameters For KIC 006233558

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	4718^{+78}_{-56}	$2.717^{+0.139}_{-0.170}$	$-0.240^{+0.150}_{-0.100}$	$6.826^{+1.872}_{-1.008}$	$0.886^{+0.183}_{-0.021}$	$0.004^{+0.003}_{-0.002}$
	+2%/-1%	+5%/-6%	+62%/-42%	+27%/-15%	+21%/-2%	+64%/-46%
Source	SPE74	SPE74	SPE74	DSEP		

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

Secondary Eclipse Parameters for KIC 006233558-08 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-531 ± 32	$19.48^{+6.25}_{-6.31}$	655^{+47}_{-32}	4561^{+723}_{-451}	1458^{+1721}_{-624}
Alt.	-29 ± 10	$22.94^{+7.67}_{-5.89}$	655^{+47}_{-31}	2704^{+264}_{-201}	56^{+54}_{-27}

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 $A_{obs} \gg 1.0$

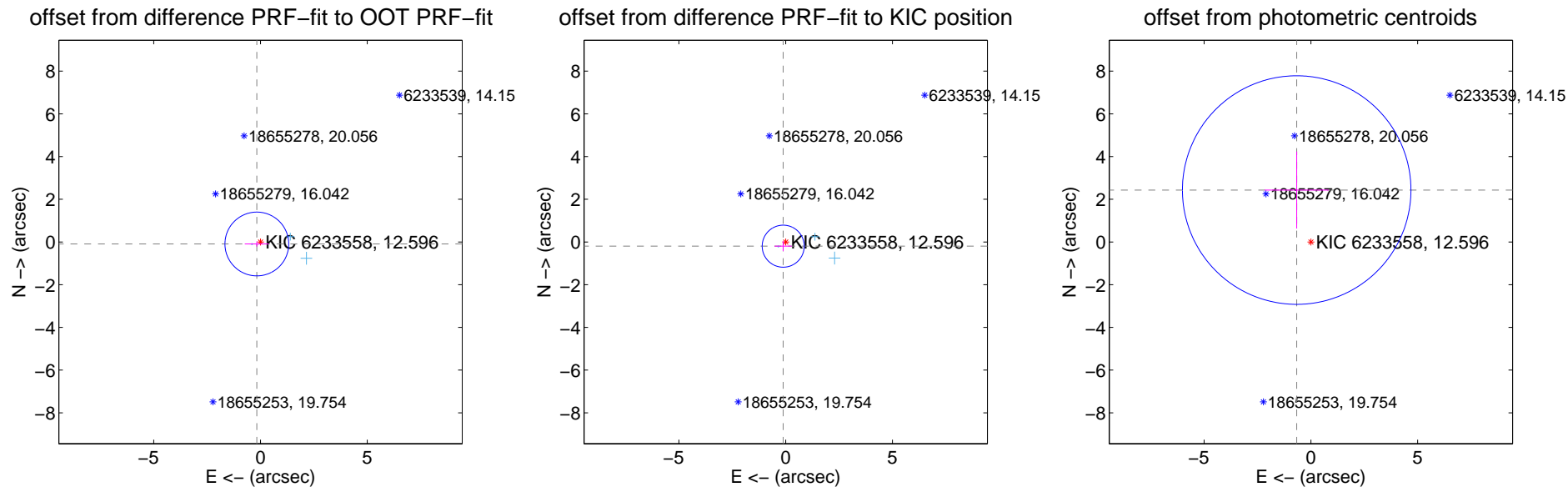
DV Centroid Data

Supplemental centroid analysis for 006233558-08. Kepler magnitude: 12.60. Transit SNR 8.50

There are 3 quarters with good PRF difference image offsets

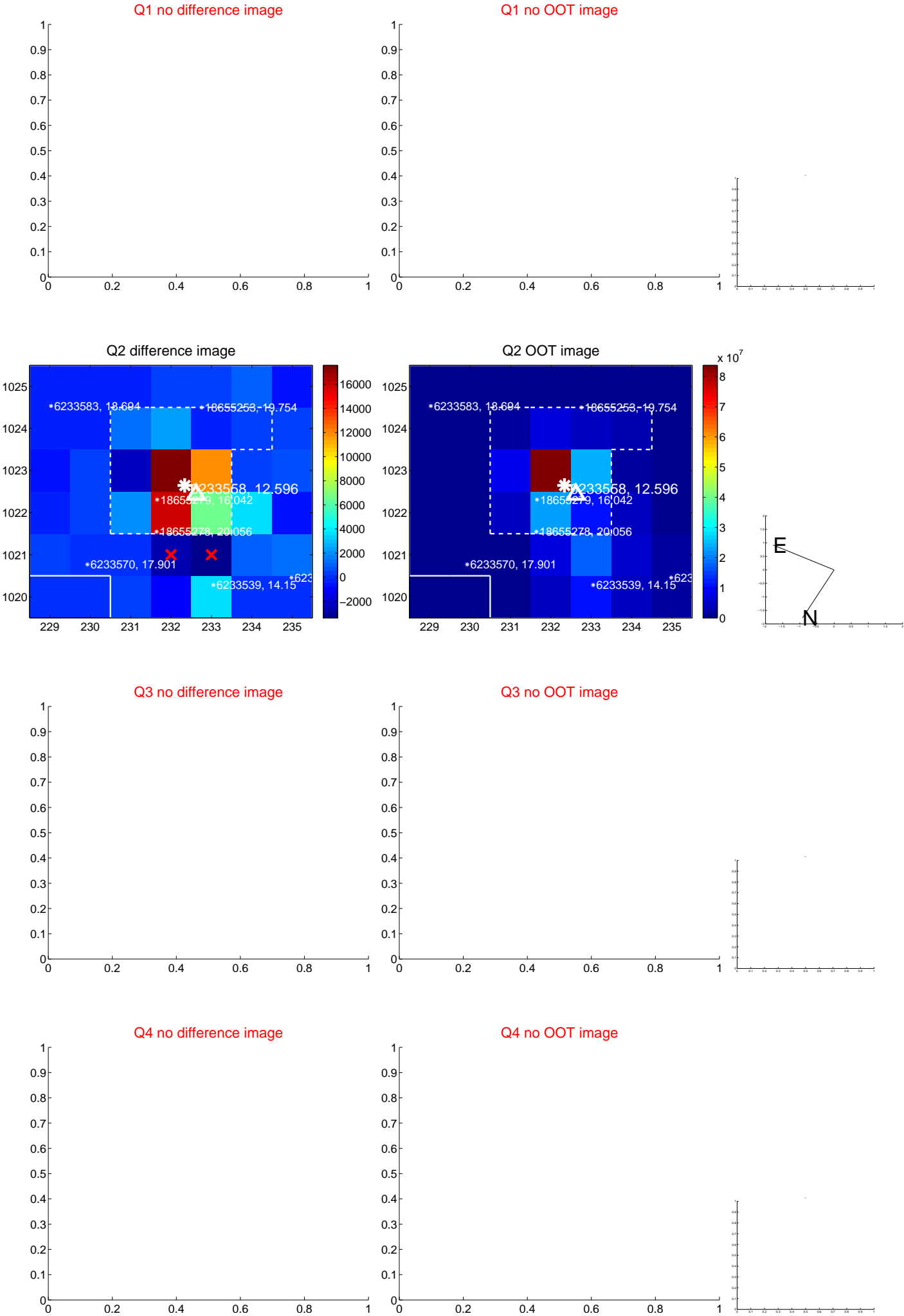
The direct PRF centroid is offset from the target star catalog position by about 0.14 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.195 ± 0.498	0.39	0.171 ± 0.563	-0.094 ± 0.124
PRF-fit source offset from KIC position	0.228 ± 0.328	0.70	0.117 ± 0.406	-0.197 ± 0.235
photometric centroid source offset	2.52 ± 1.78	1.41	0.67 ± 1.51	2.43 ± 1.80



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.

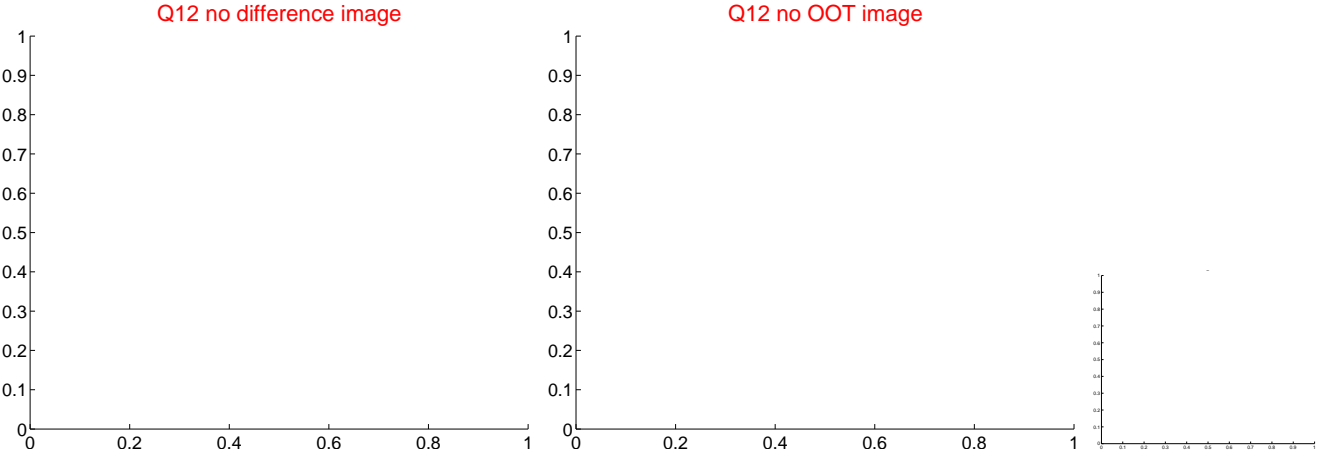
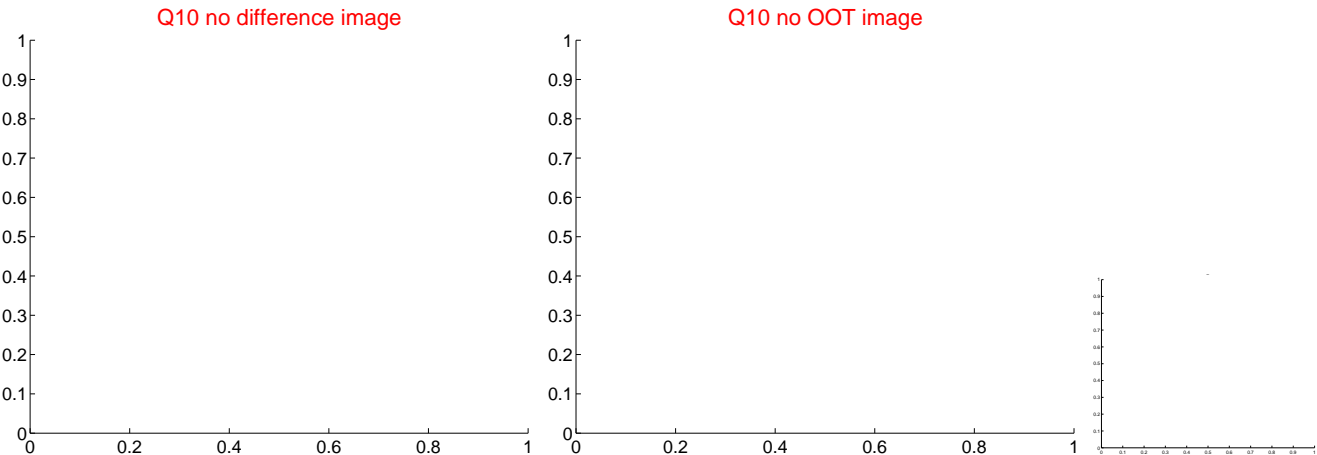
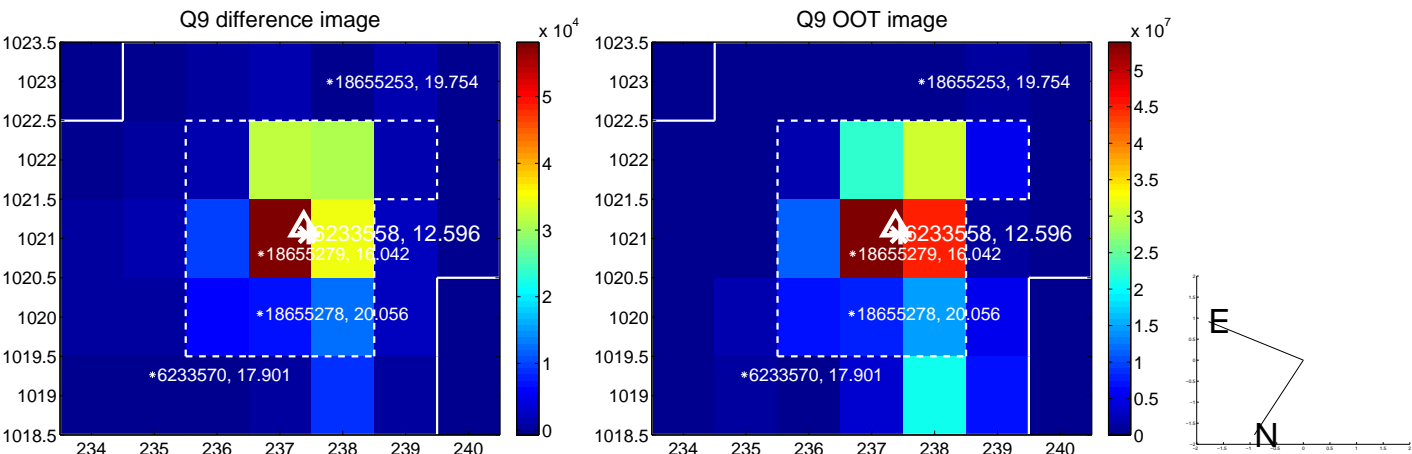
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



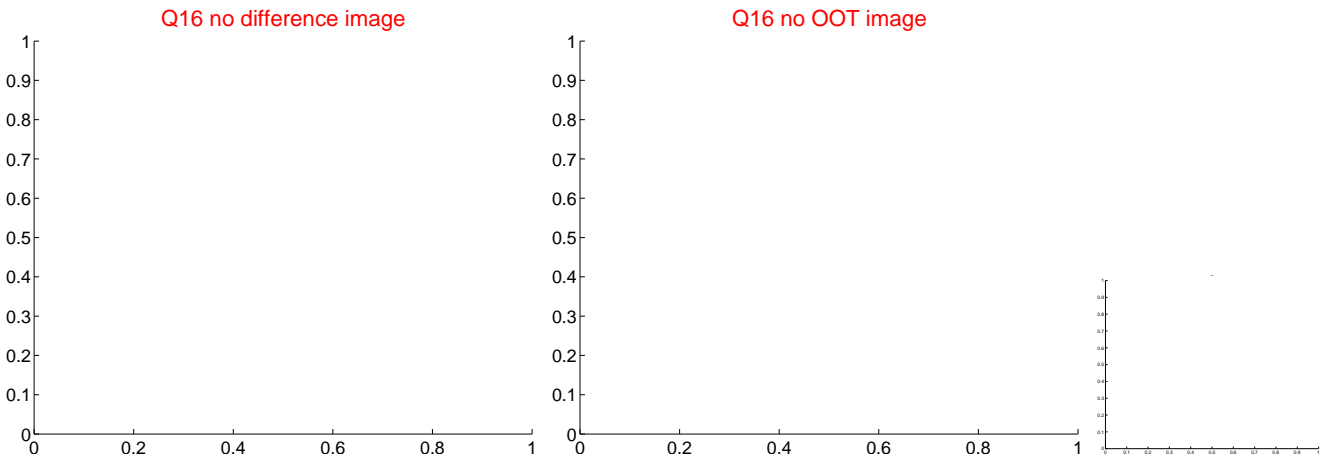
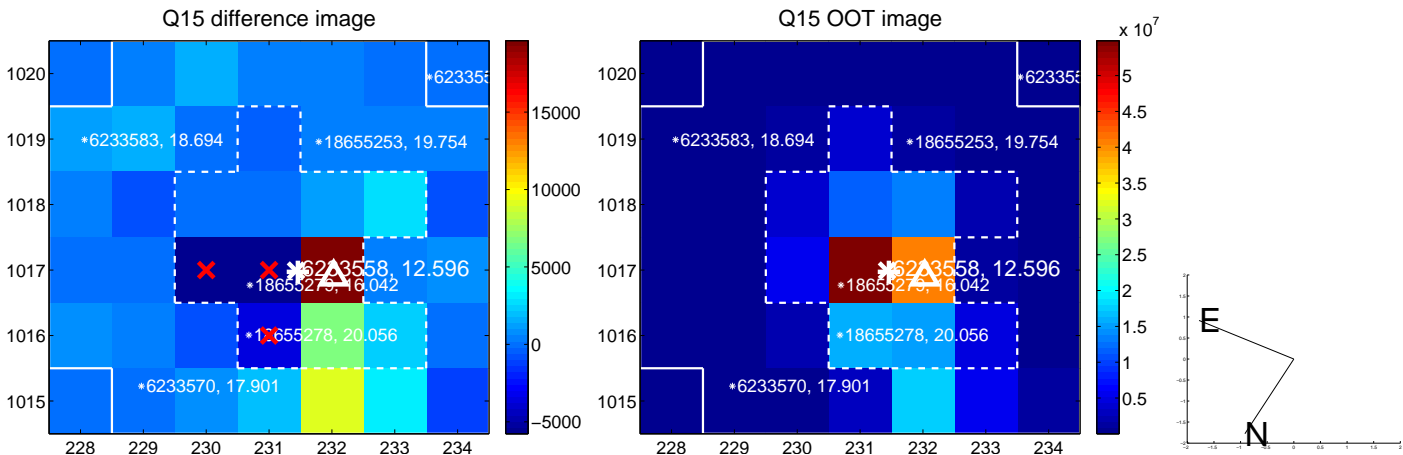
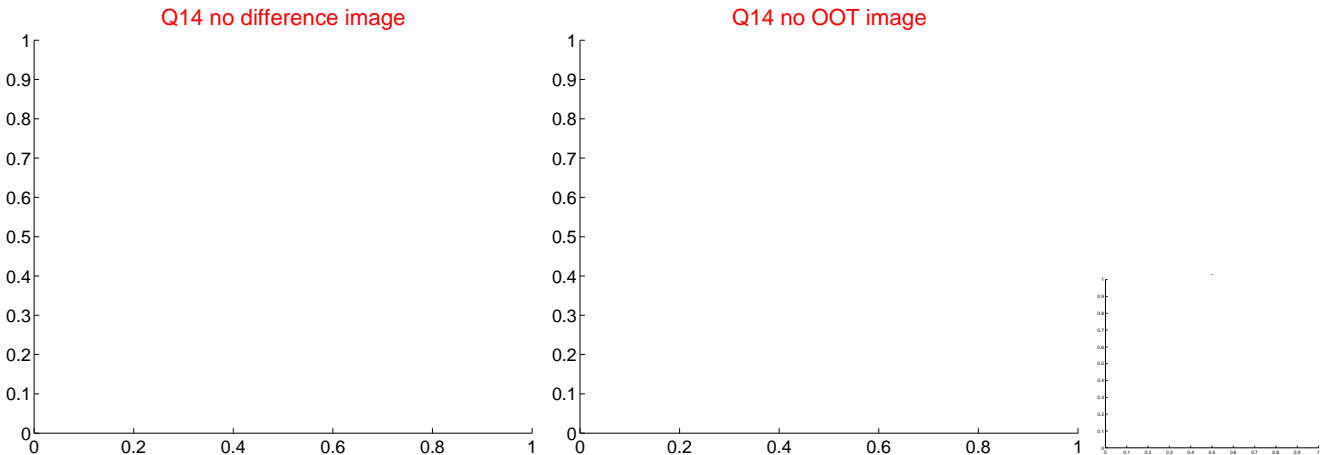
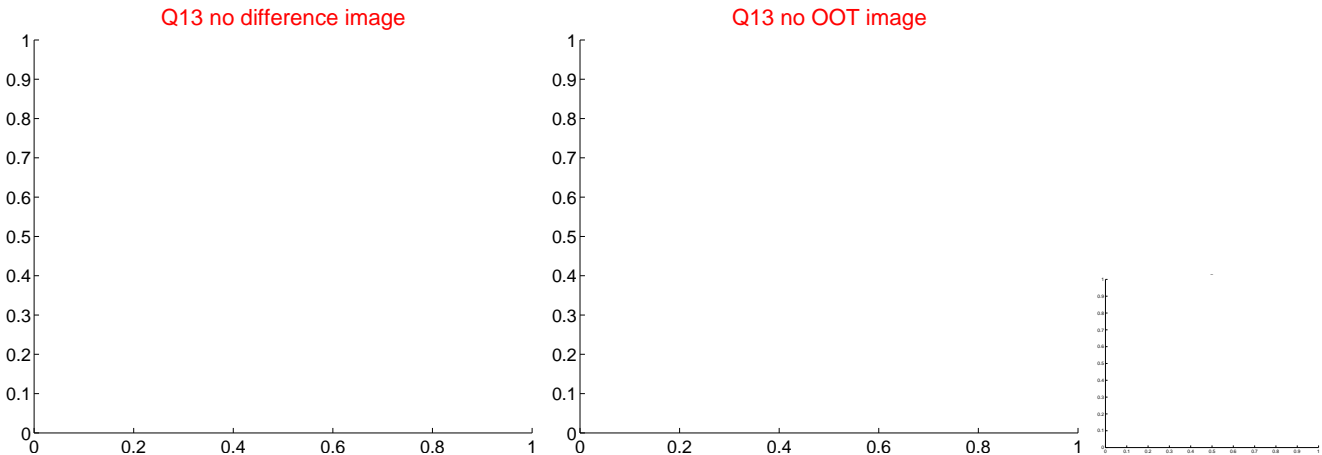
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



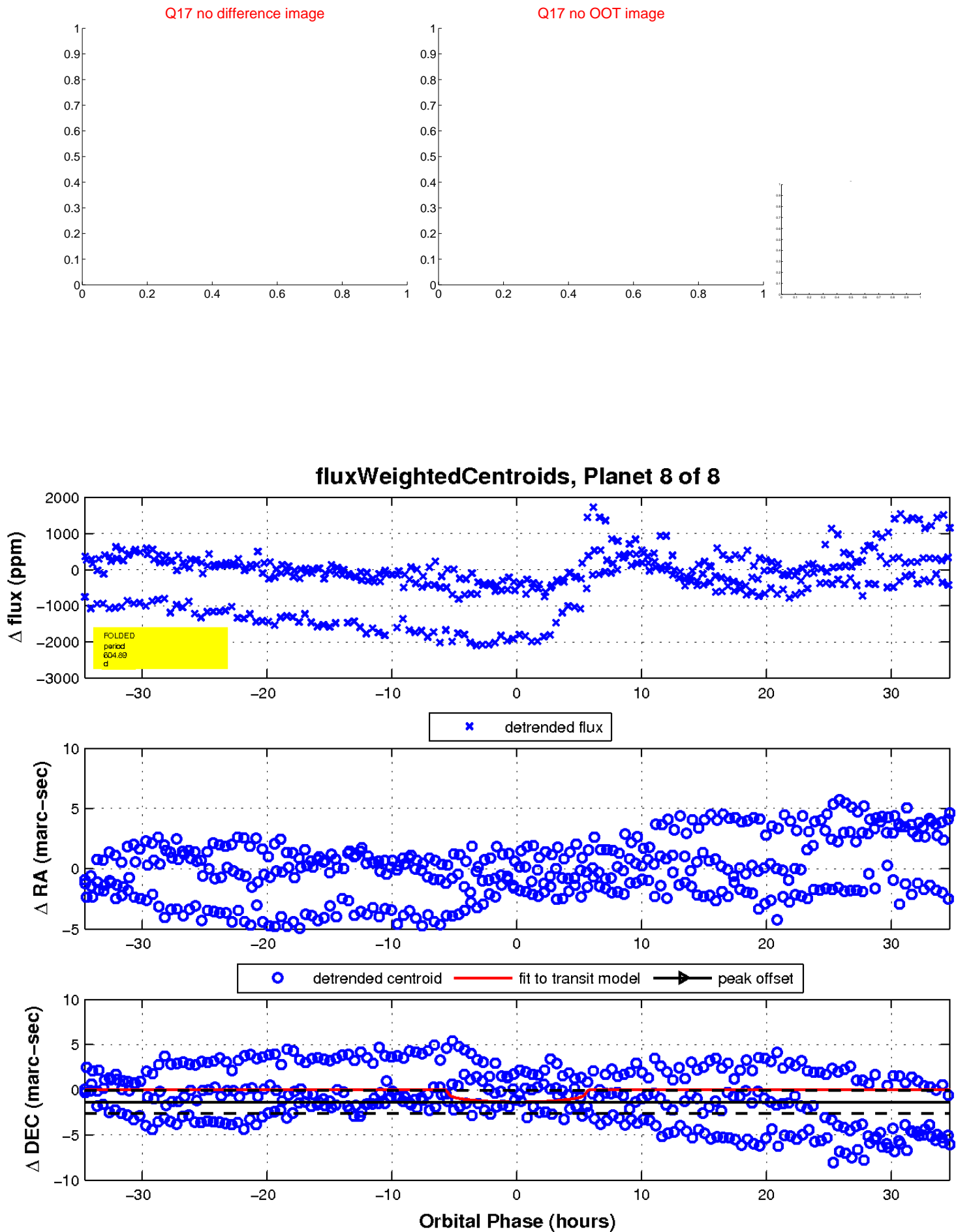
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

