

KIC 007433457

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})
007433457-01	OBS	No	474.386162	405.151690	787.4	3.005	15.2	8.5	1.95	5173	5.94	1.94
007433457-02	OBS	No	388.074642	256.814684	272.2	3.403	11.8	2.9	1.95	5173	3.83	2.53
007433457-03	OBS	No	414.052209	256.460690	863.6	6.495	13.8	8.8	1.95	5173	6.06	2.32
007433457-04	OBS	No	377.340762	371.646257	681.4	4.481	10.1	7.8	1.95	5173	5.39	2.63
007433457-05	OBS	No	283.694549	220.849752	662.9	4.350	11.4	7.2	1.95	5173	5.52	3.85

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007433457-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS
007433457-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
007433457-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
007433457-04	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—HALO_GHOST
007433457-05	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST

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

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

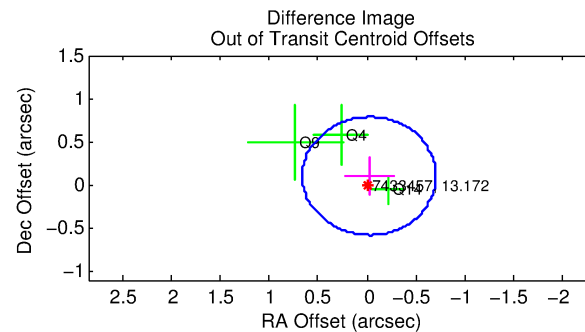
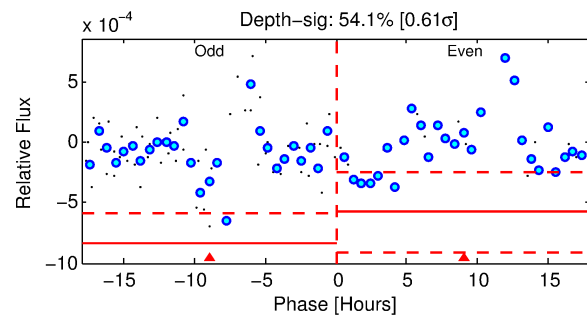
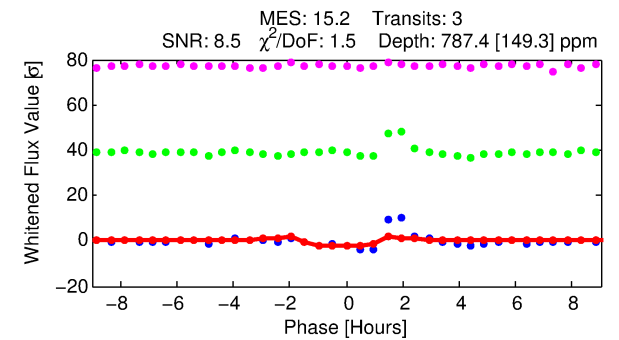
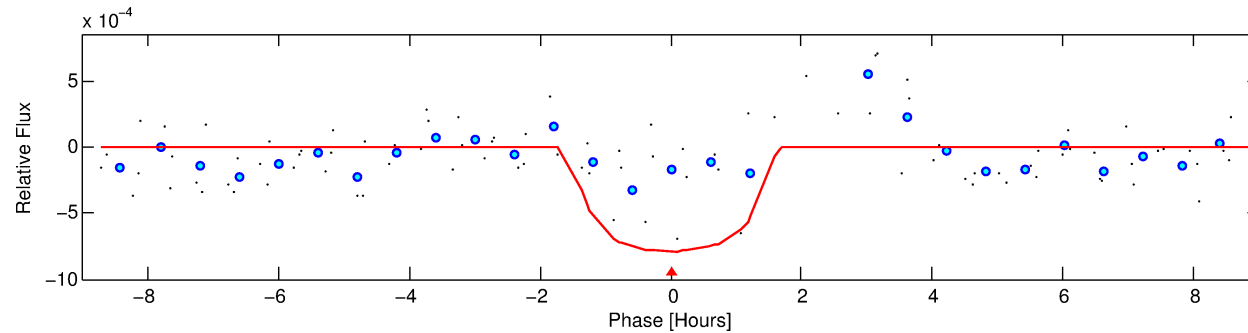
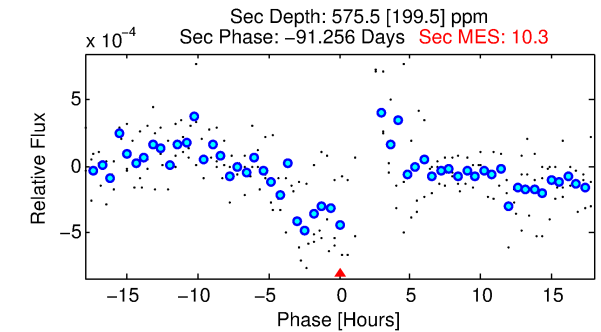
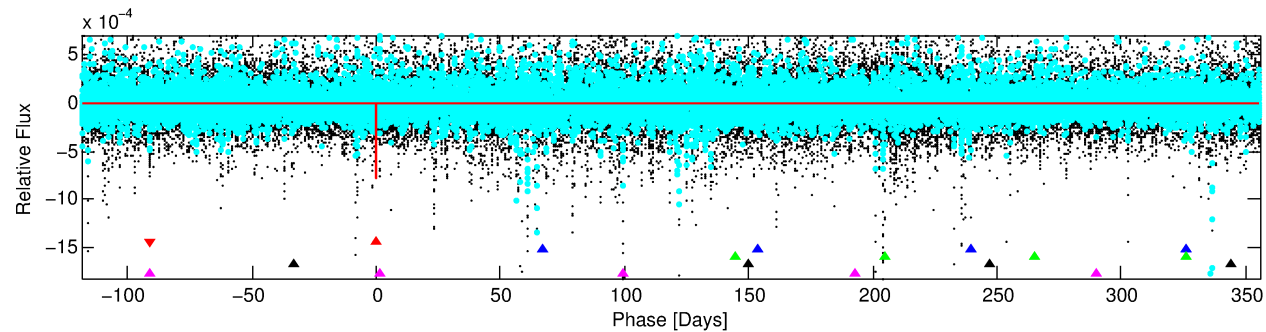
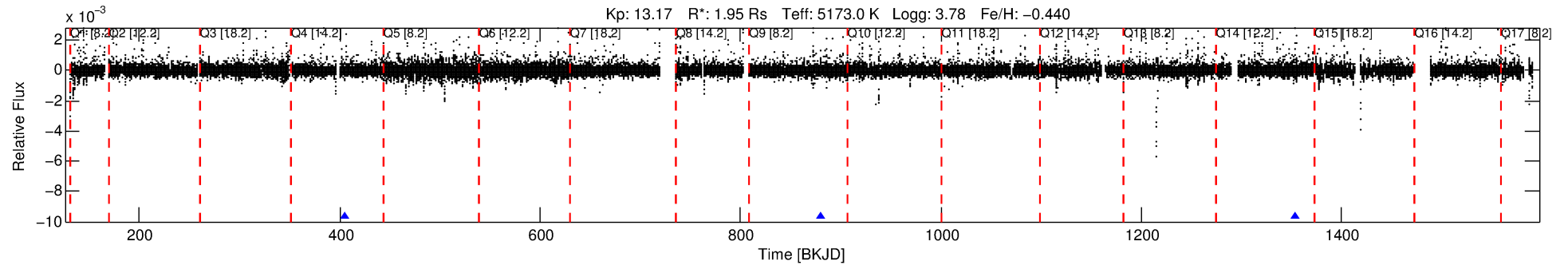
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007433457-01

No Significant Match Found

DV One-Page Summary

KIC: 7433457 Candidate: 1 of 5 Period: 474.386 d



DV Fit Results:

Period = 474.38616 [0.00524] d
Epoch = 405.1517 [0.0060] BKJD
Rp/R* = 0.0279 [0.0292]
a/R* = 860.23 [3458.96]
b = 0.74 [2.51]
Seff = 1.94 [2.76]
Teq = 301 [107] K
Rp = 5.94 [7.23] Re
a = 1.1228 [0.8930] AU
Ag = 11315.68 [28903.59] [0.39 σ]
Teffp = 4797 [2550] K [1.76 σ]

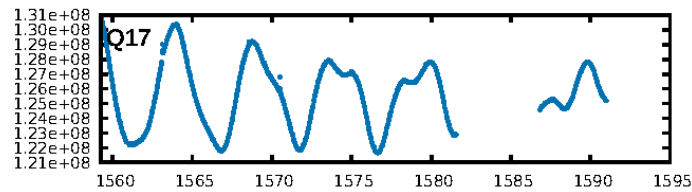
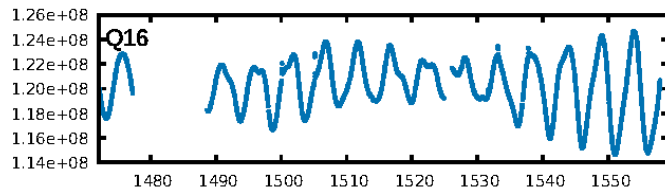
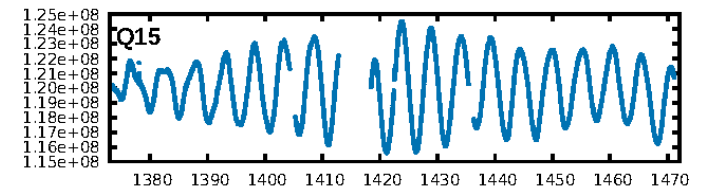
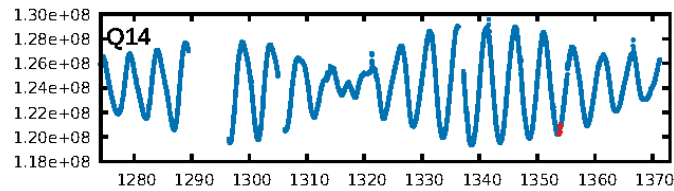
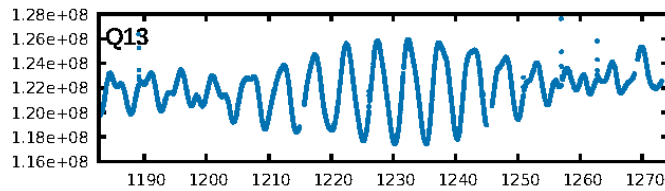
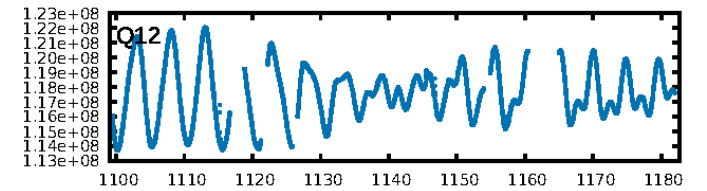
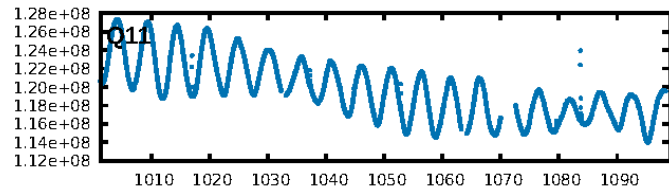
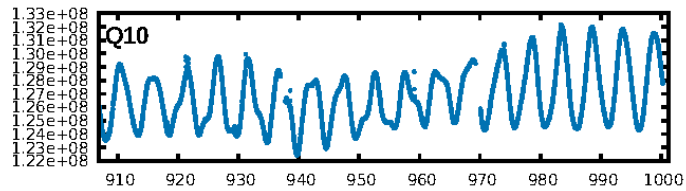
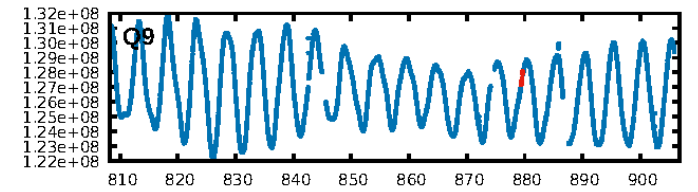
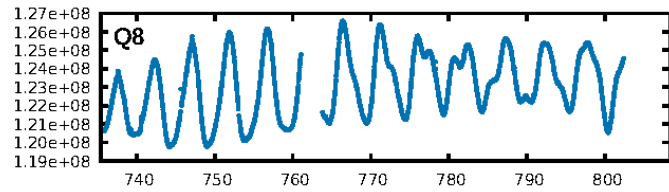
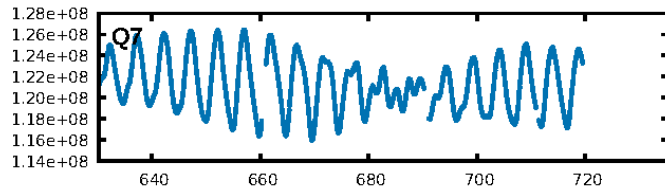
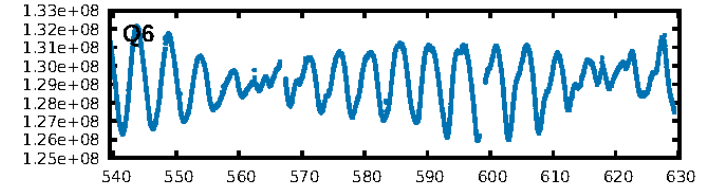
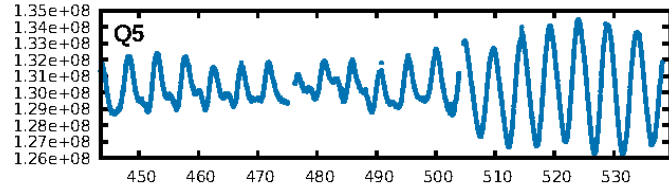
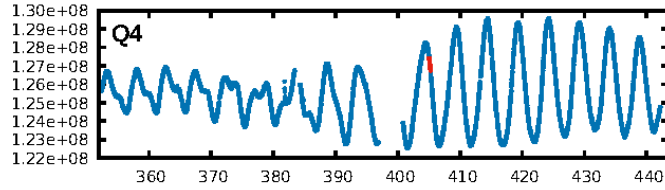
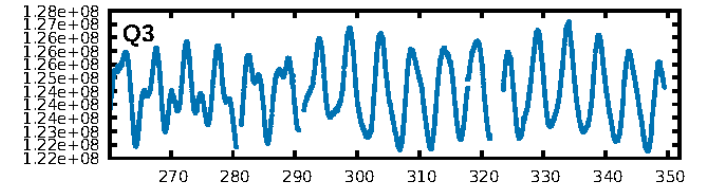
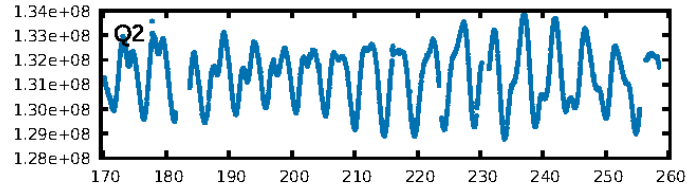
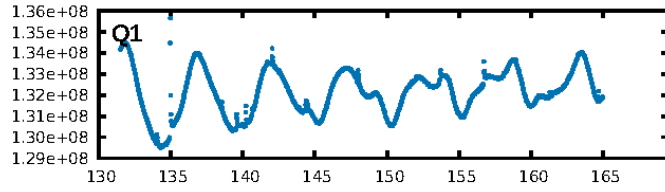
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [202.34 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 62.0%
ModelChiSquareGof-sig: 91.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 0.2776
Centroid-sig: 2.5%
Centroid-so: 1.186 arcsec [1.84 σ]
OotOffset-rm: 0.105 arcsec [0.46 σ]
OotOffset-st: 1/0/1/1 [3]
KicOffset-rm: 0.103 arcsec [0.41 σ]
KicOffset-st: 1/0/1/1 [3]
DiffImageQuality-fgm: 0.33 [1/3]
DiffImageOverlap-fno: 1.00 [3/3]

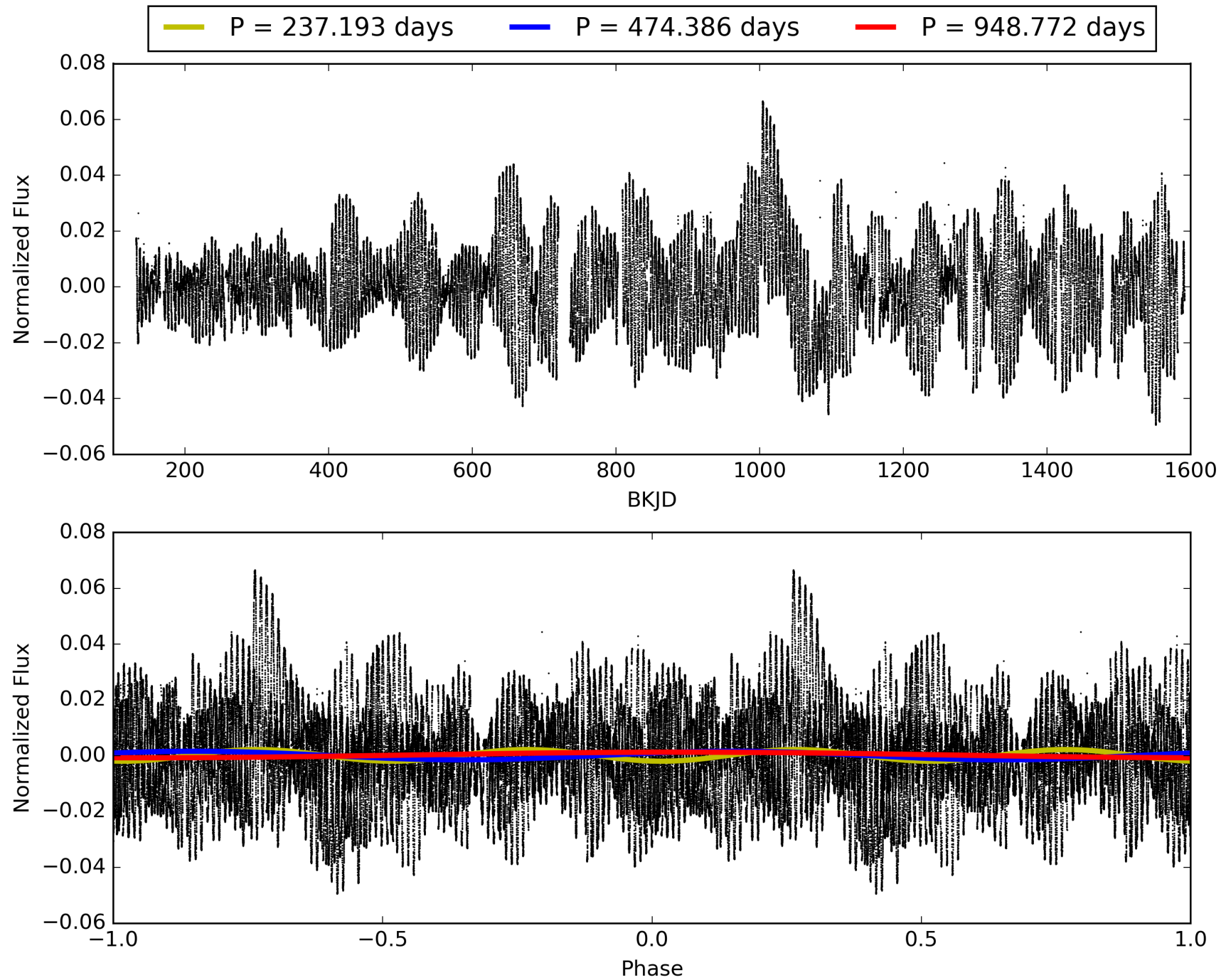
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 007433457-01, PDC Light Curves

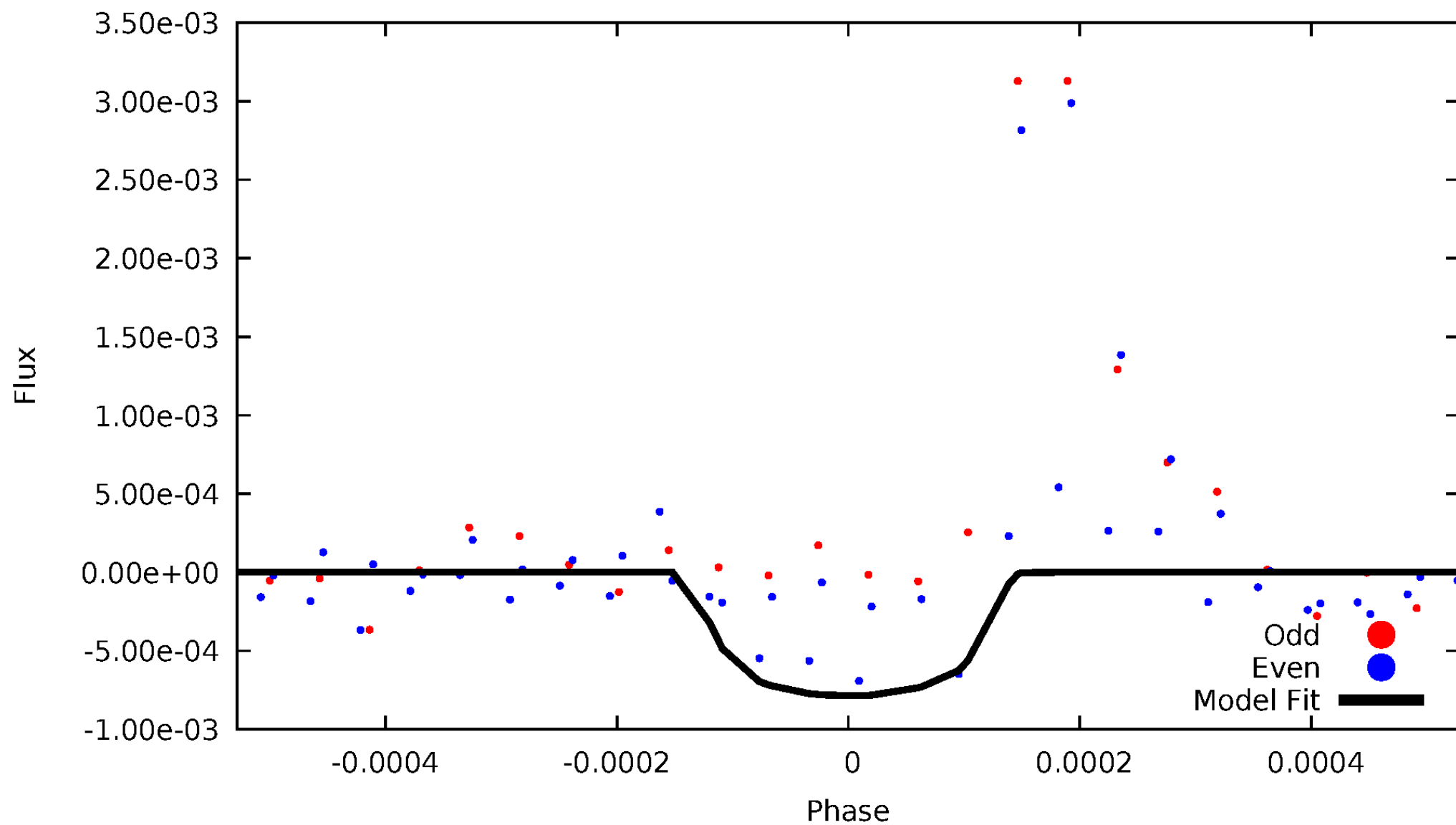


TCE 007433457-01



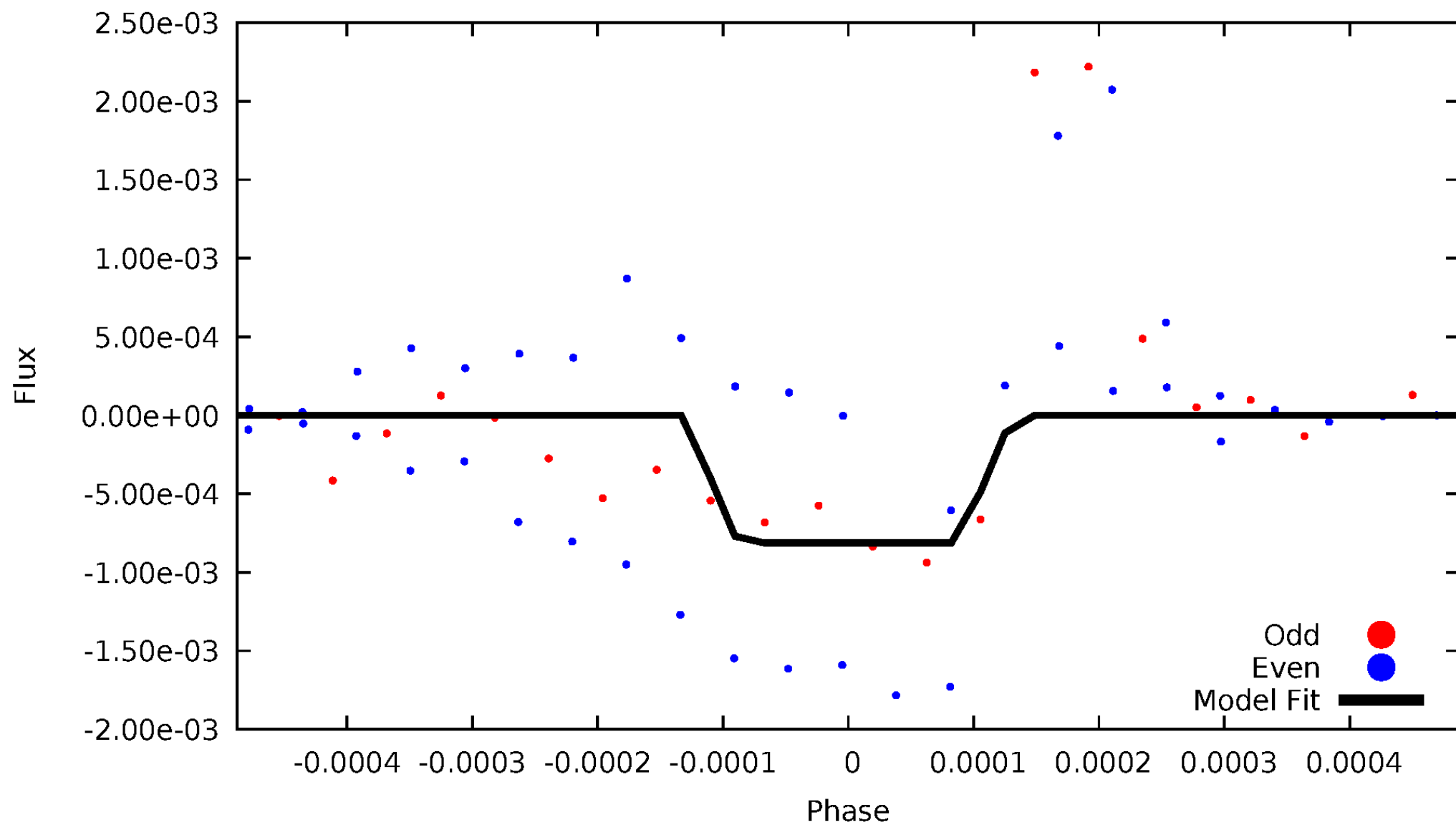
DV Odd/Even

TCE 007433457-01

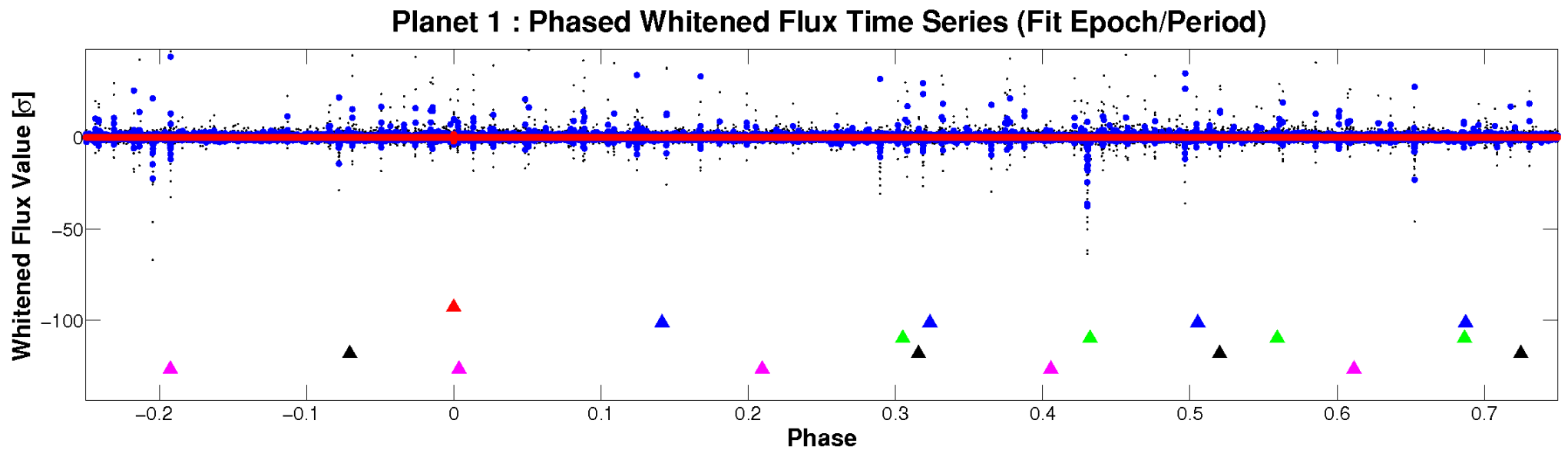
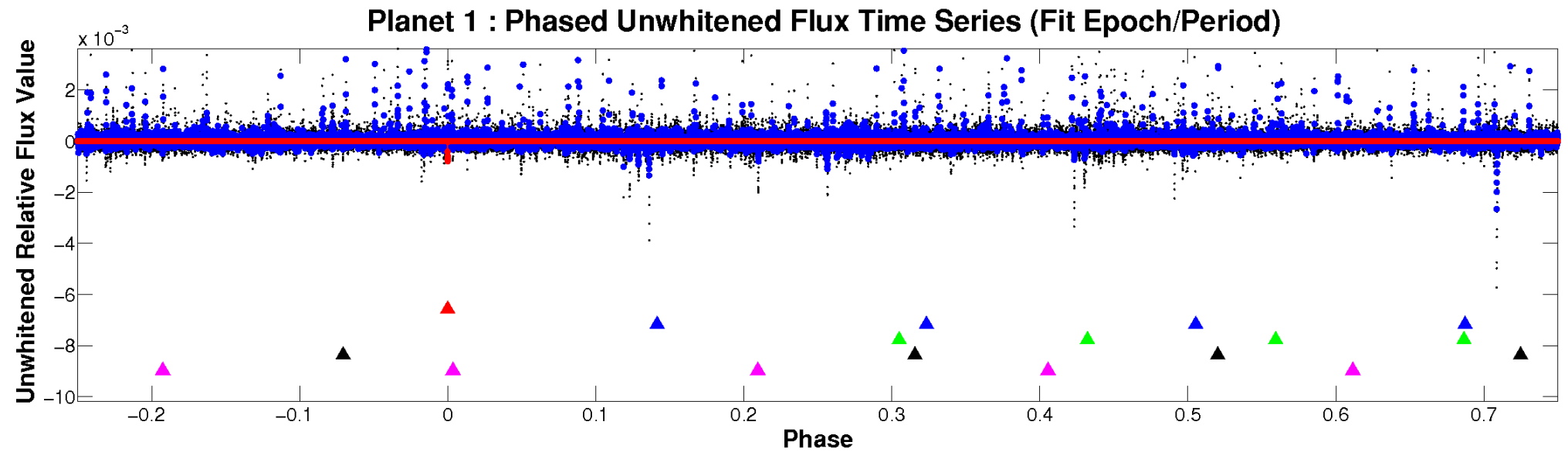


ALT Odd/Even

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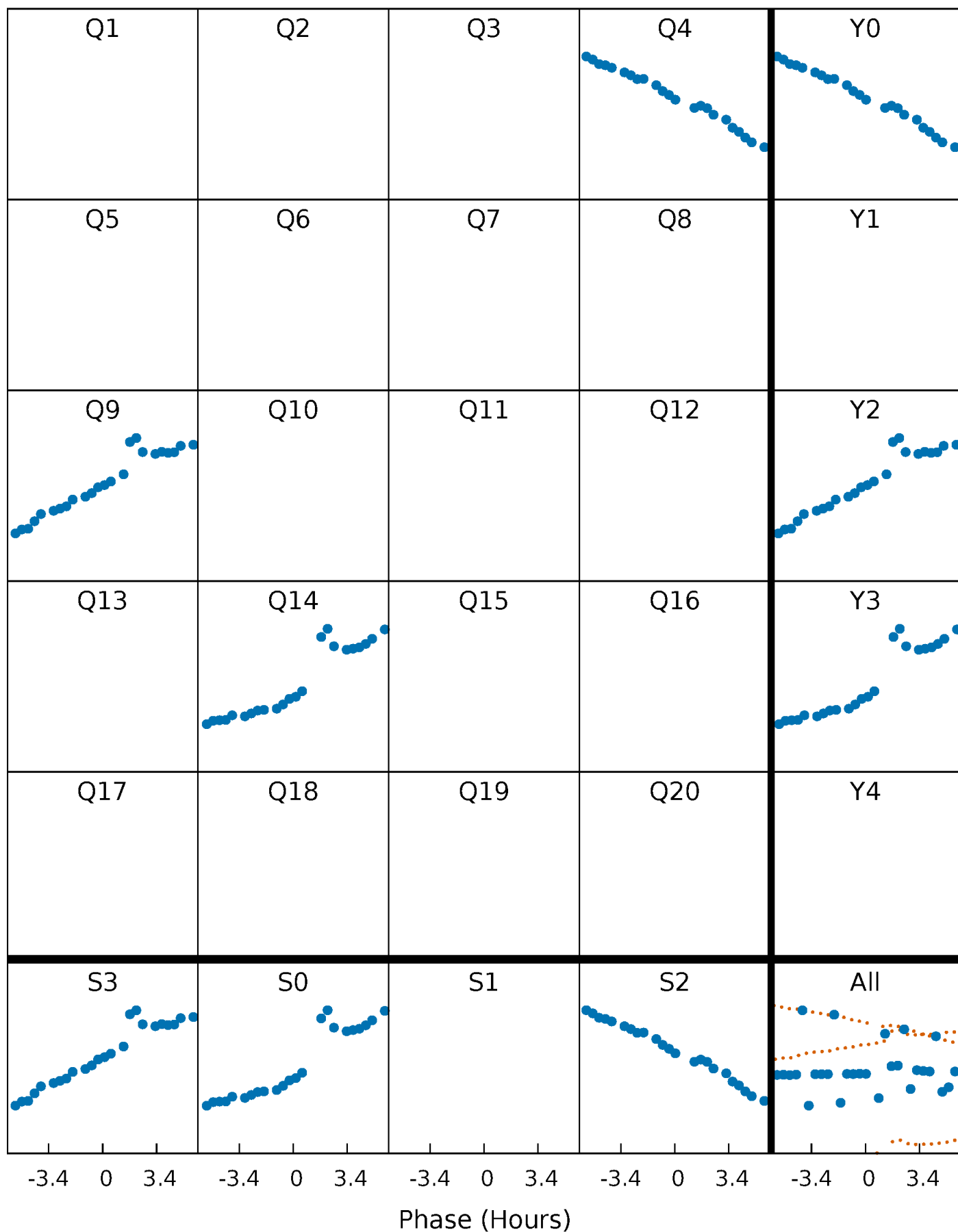


Non-Whitened Vs. Whitened Light Curve



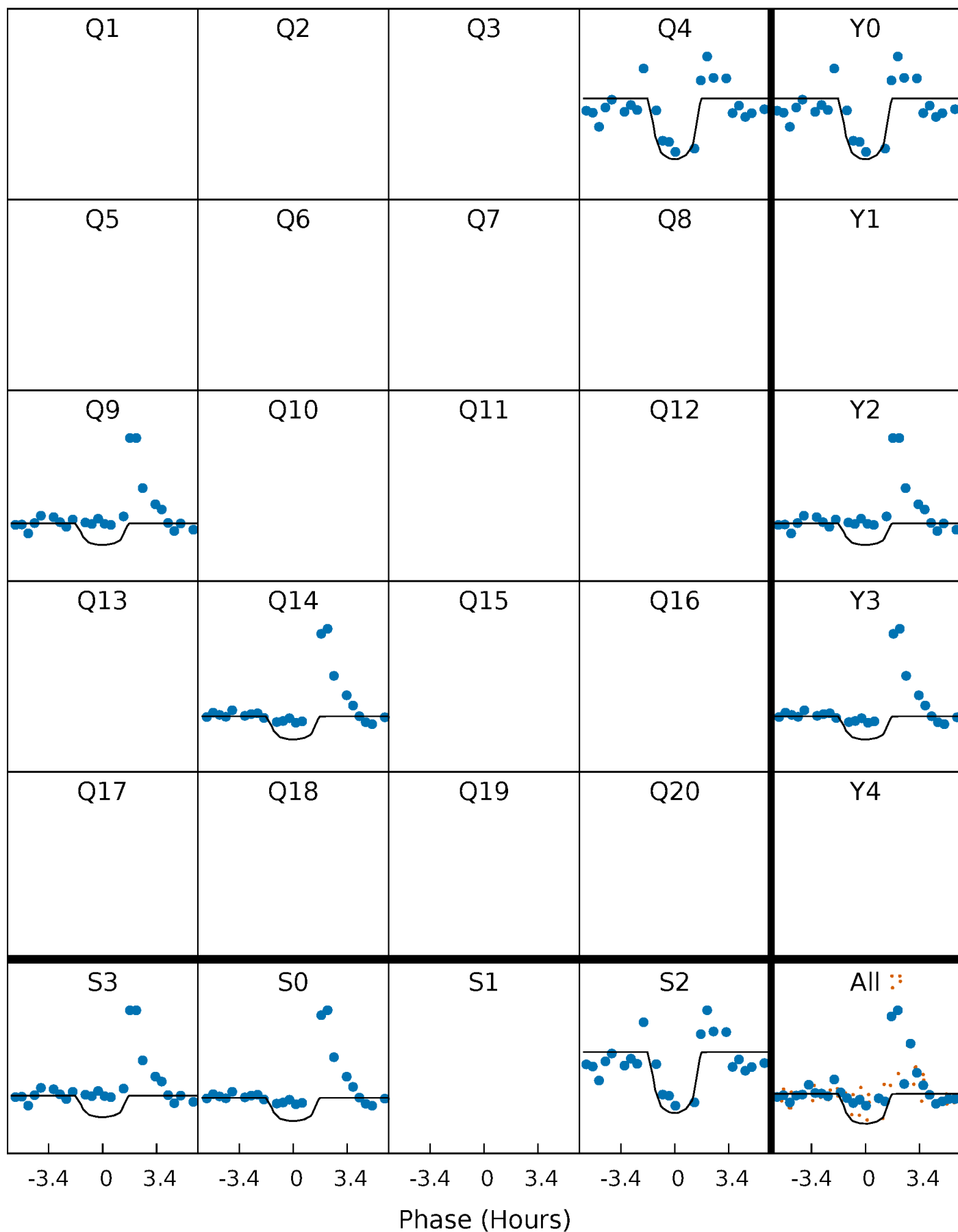
PDC Quarter-Phased Transit Curves

TCE 007433457-01 P=474.386162 Days $T_0=405.151690$ (BKJD)



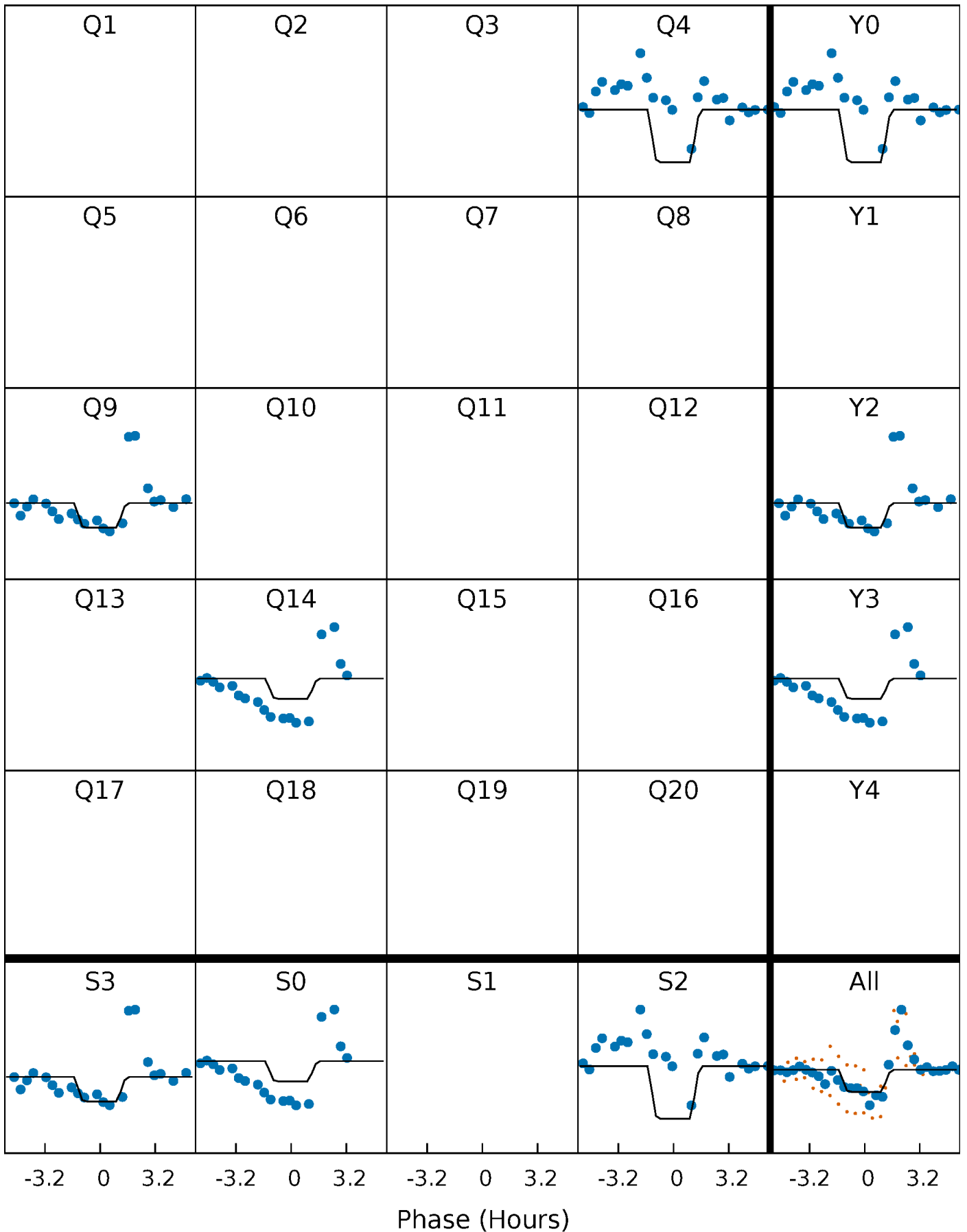
DV Quarter-Phased Transit Curves

TCE 007433457-01 P=474.386162 Days $T_0=405.151690$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

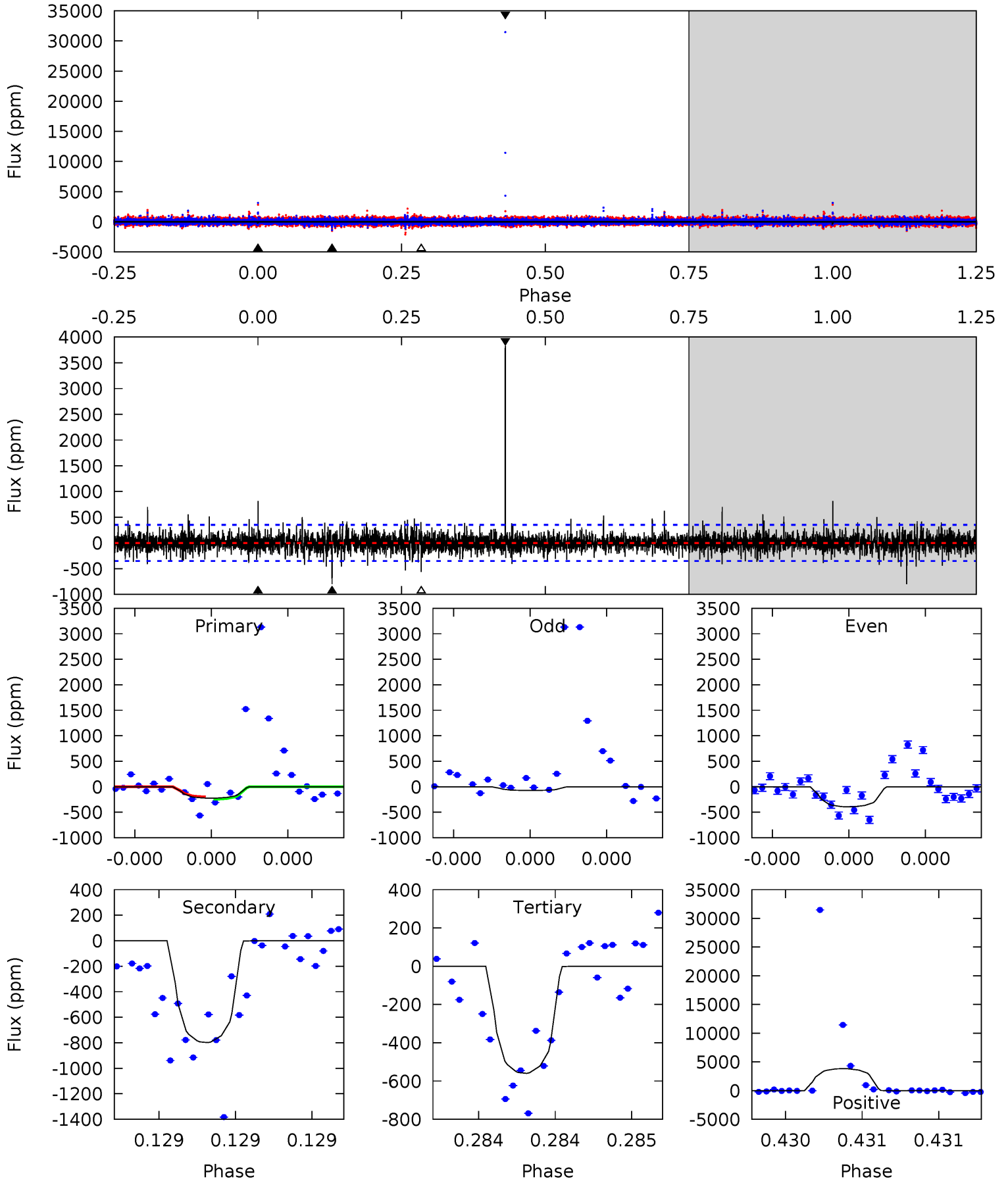
TCE 007433457-01 P=474.378718 Days $T_0=405.158077$ (BKJD)



DV Model-Shift Uniqueness Test

007433457-01, P = 474.386162 Days, E = 405.151690 Days

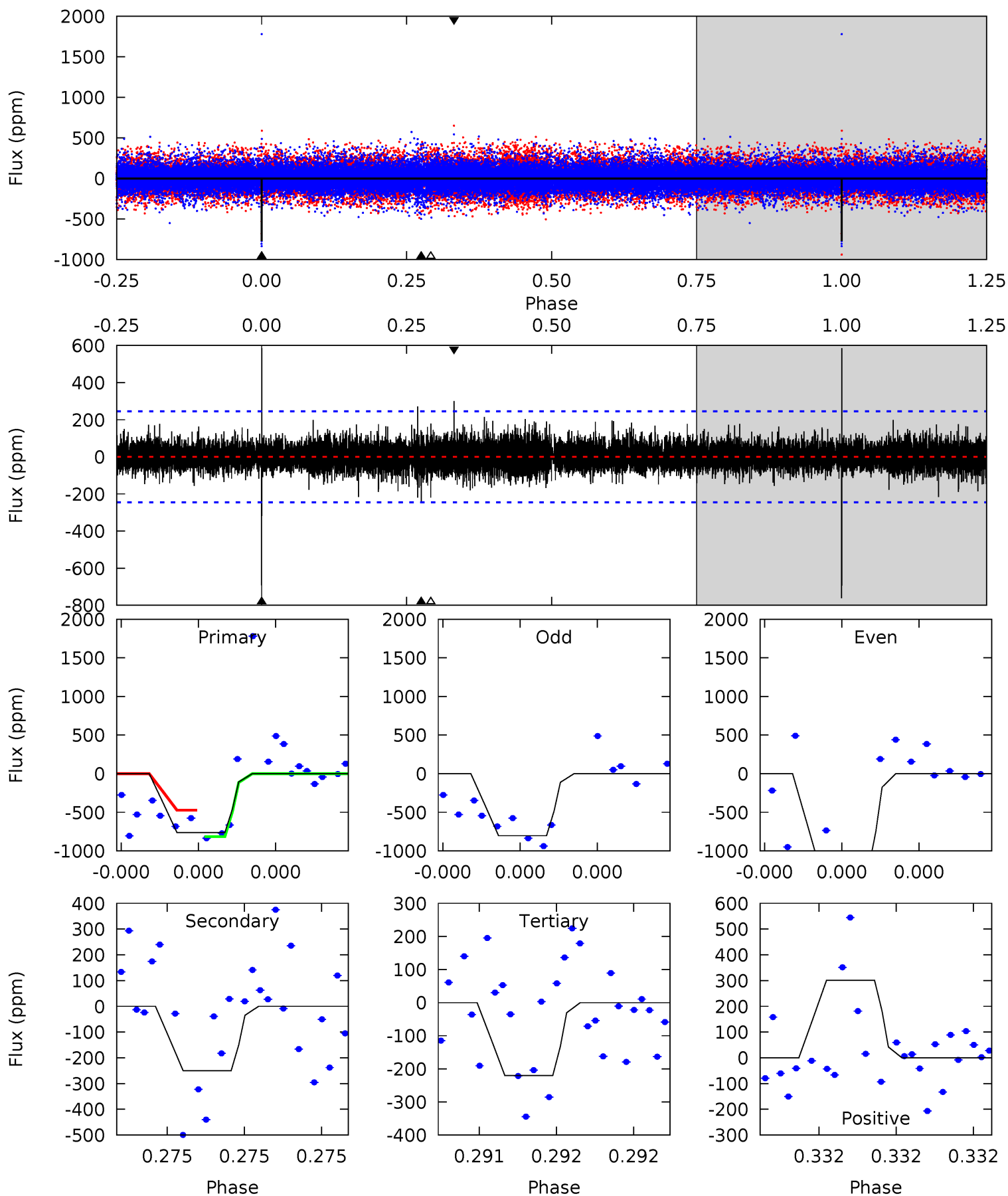
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3.59	12.8	9.00	61.5	5.66	3.61	1.81	-5.41	-57.9	3.84	-48.7	1.90	1.45	0.83	0.37



Alt Model-Shift Uniqueness Test

007433457-01, P = 474.378718 Days, E = 405.158077 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
17.7	5.83	5.13	7.01	5.70	3.67	0.99	12.6	10.7	0.70	-1.18	6.56	1.06	0.43	4.23



Stellar Parameters For KIC 007433457

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5173^{+138}_{-154}	$3.781^{+0.885}_{-0.295}$	$-0.440^{+0.250}_{-0.350}$	$1.951^{+1.090}_{-1.211}$	$0.839^{+0.166}_{-0.166}$	$0.159^{+3.255}_{-0.125}$
	+3%/-3%	+23%/-8%	+57%/-80%	+56%/-62%	+20%/-20%	+2045%/-79%
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 007433457-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-799 ± 62	$6.32^{+6.47}_{-4.19}$	409^{+66}_{-74}	4815^{+2904}_{-935}	$13825^{+102539}_{-10371}$
Alt.	-250 ± 43	$6.43^{+6.34}_{-4.38}$	409^{+64}_{-79}	3834^{+1769}_{-654}	4211^{+34315}_{-3148}

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 $A_{obs} \gg 1.0$

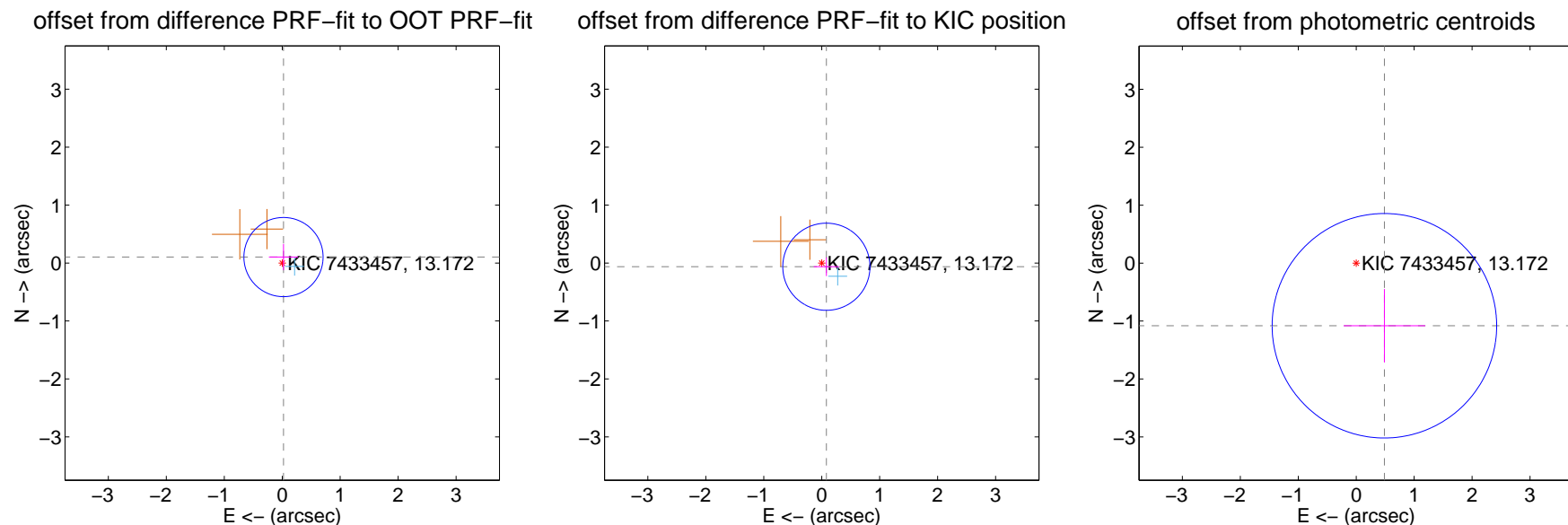
DV Centroid Data

Supplemental centroid analysis for 007433457-01. Kepler magnitude: 13.17. Transit SNR 8.46

There are 1 quarters with good PRF difference image offsets

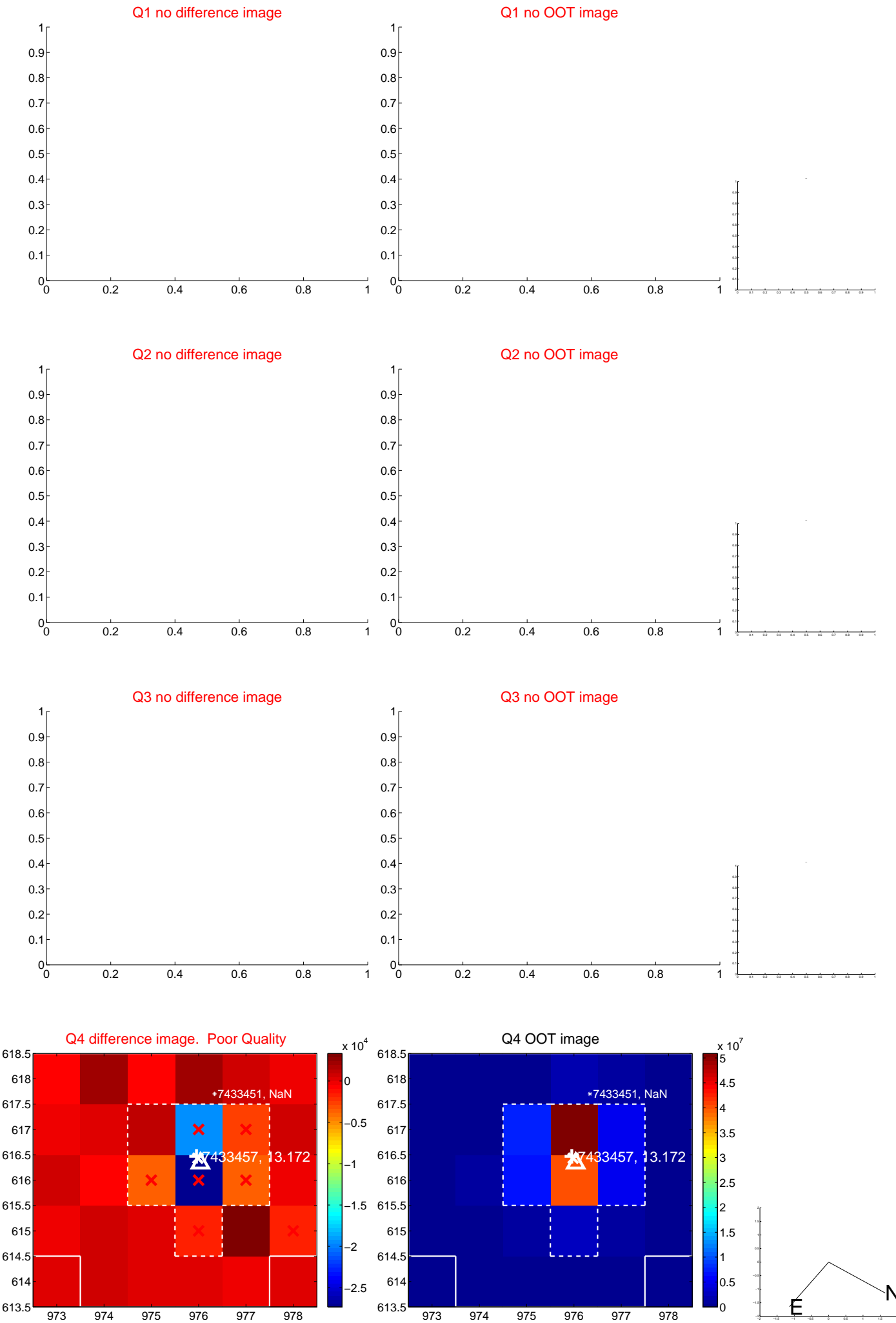
The direct PRF centroid is offset from the target star catalog position by about 0.18 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.105 ± 0.228	0.46	-0.022 ± 0.252	0.103 ± 0.227
PRF-fit source offset from KIC position	0.103 ± 0.251	0.41	-0.080 ± 0.218	-0.064 ± 0.160
photometric centroid source offset	1.19 ± 0.65	1.84	-0.49 ± 0.70	-1.08 ± 0.63



Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ . Red *: target star. Blue *: Other stars. Text next to a star gives its KIC ID and kepmag. KIC IDs > 15,000,000 are from the UKIRT catalog.

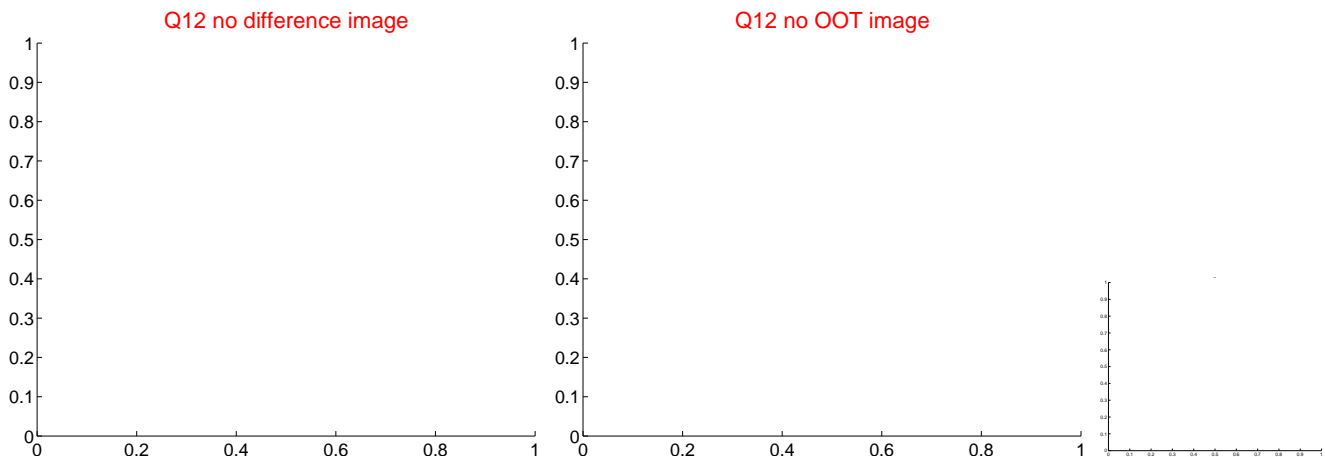
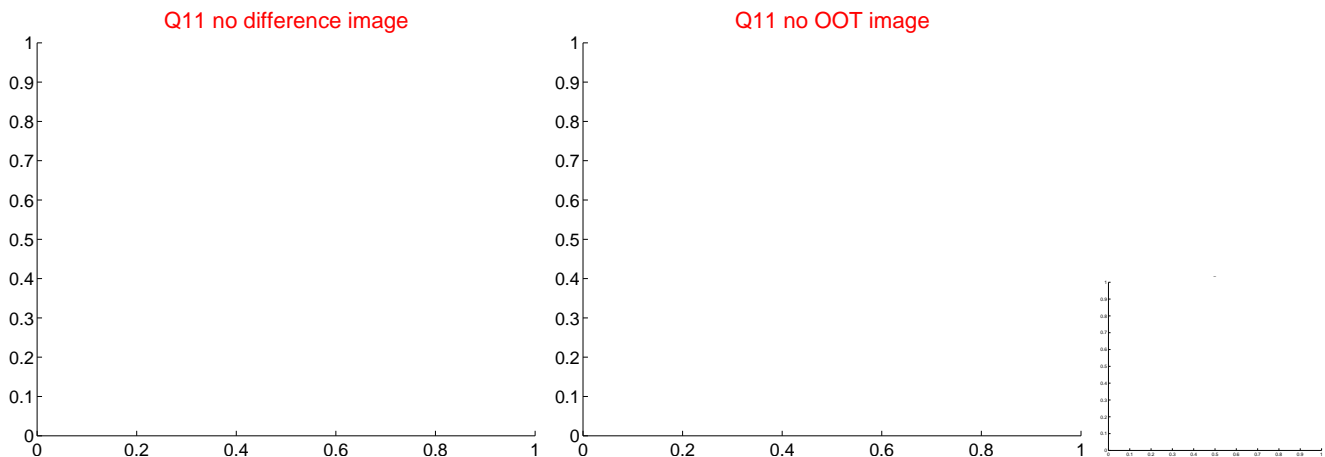
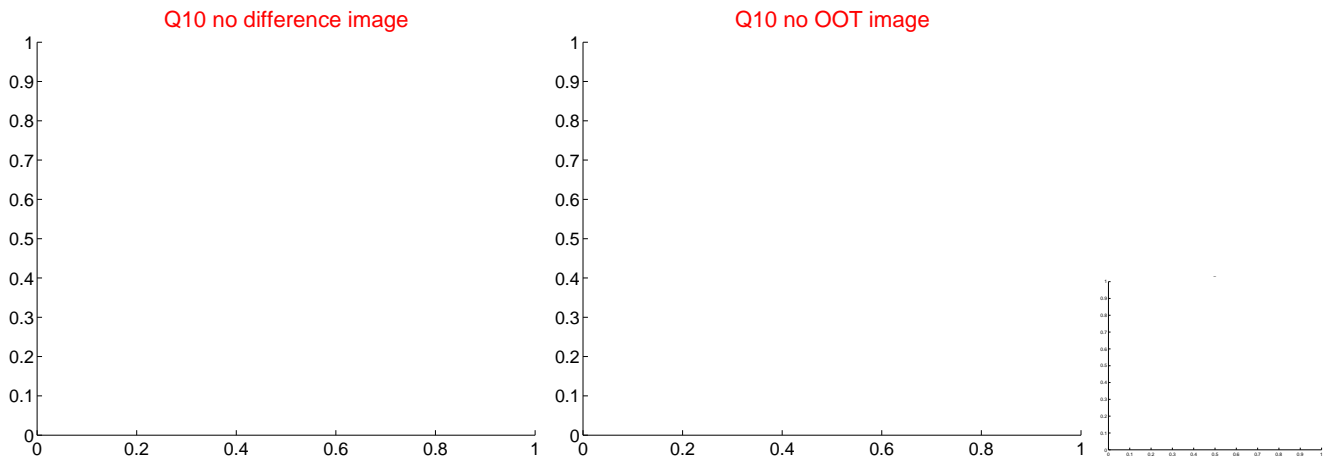
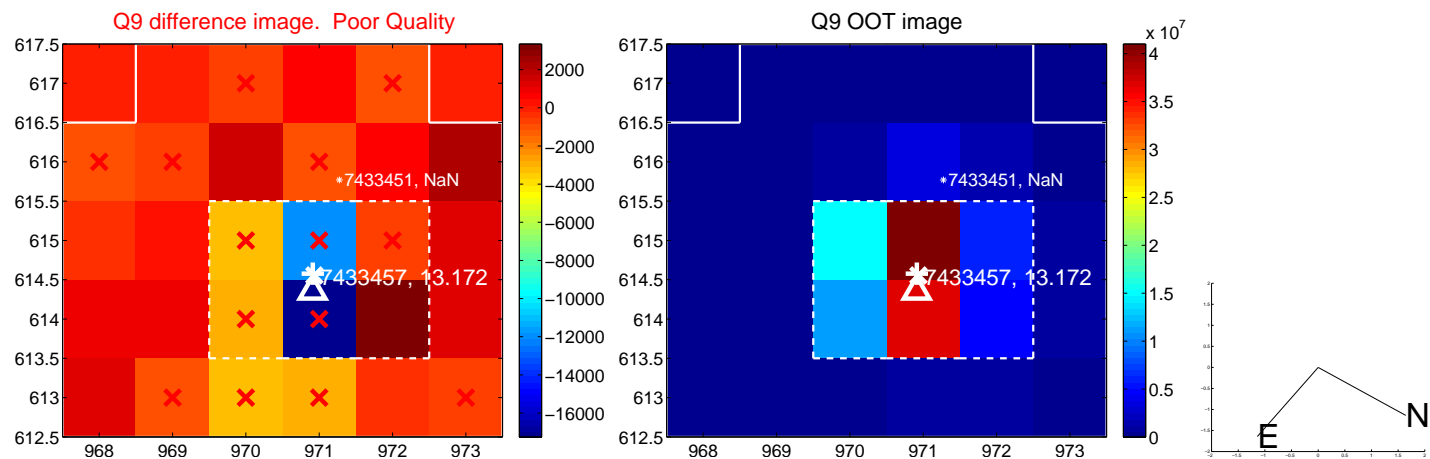
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



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



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

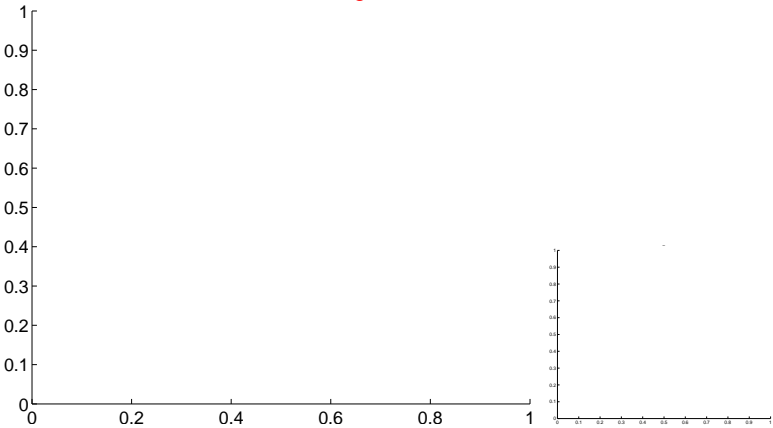


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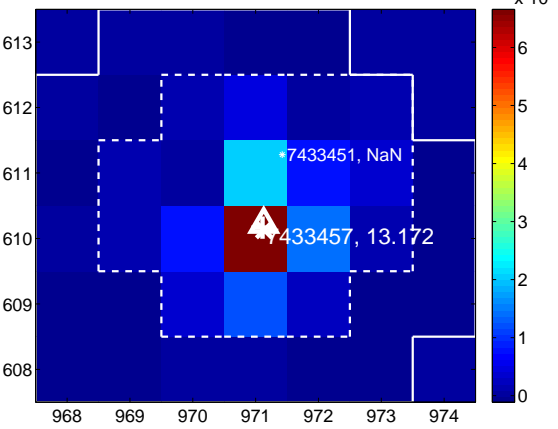
Q13 no difference image



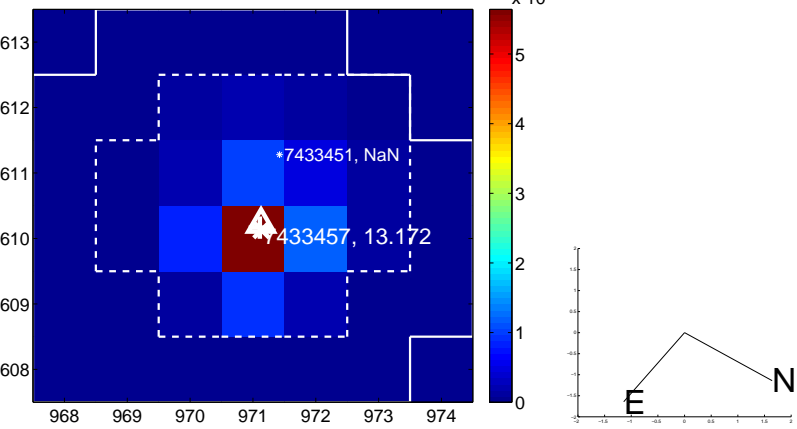
Q13 no OOT image



Q14 difference image



Q14 OOT image



Q15 no difference image



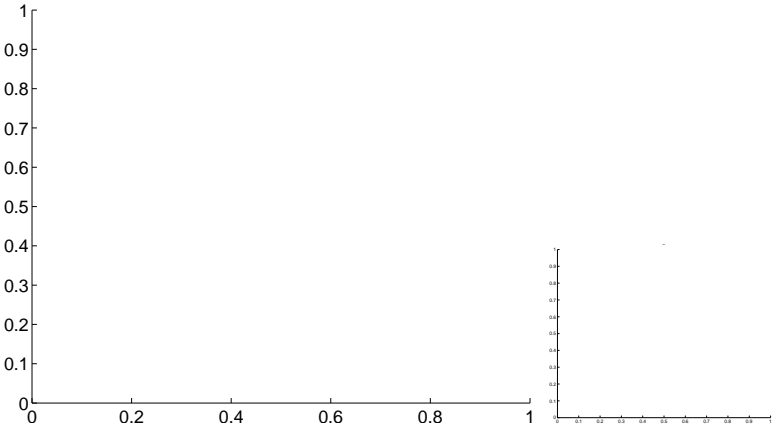
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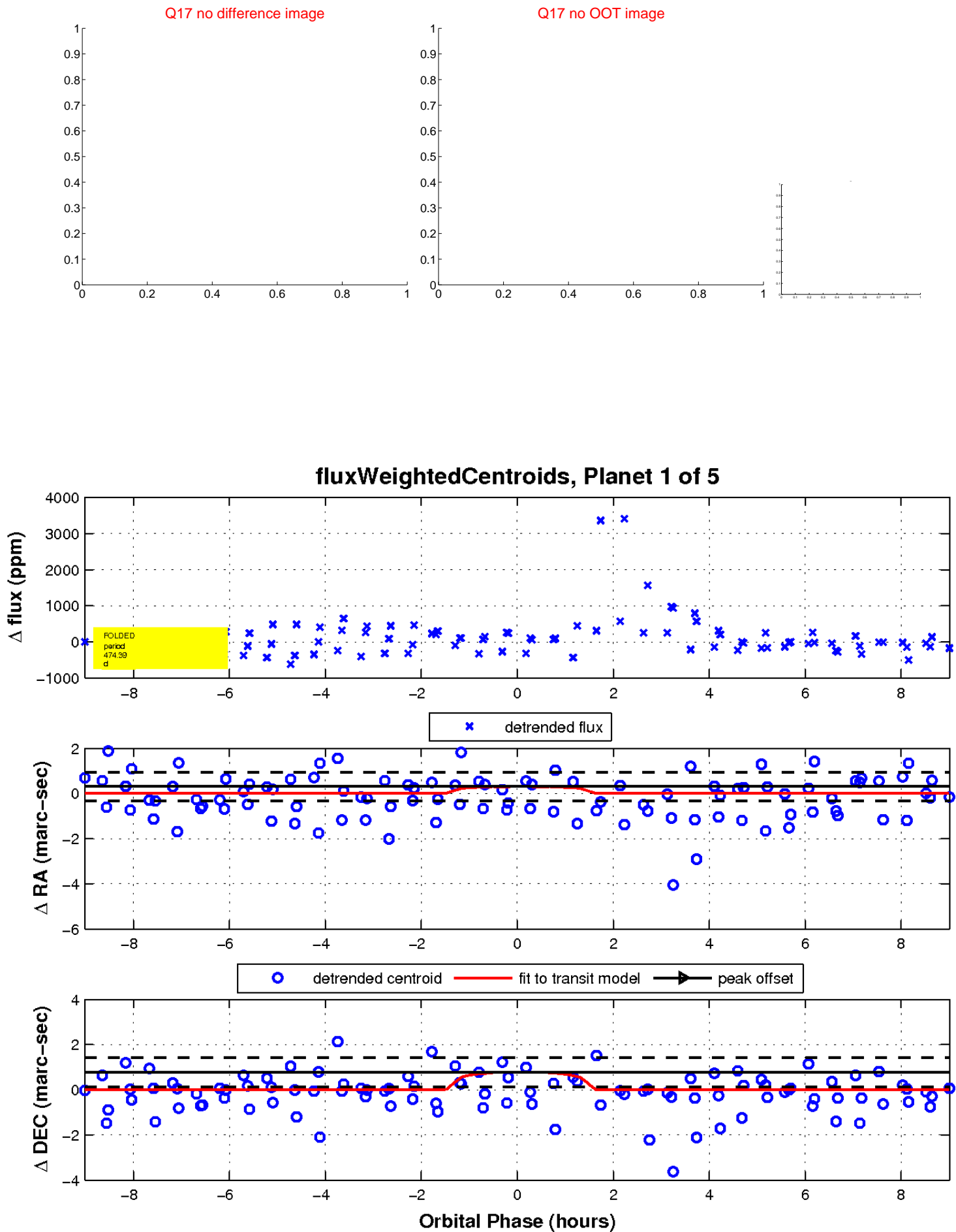
Q16 no difference image



Q16 no OOT image

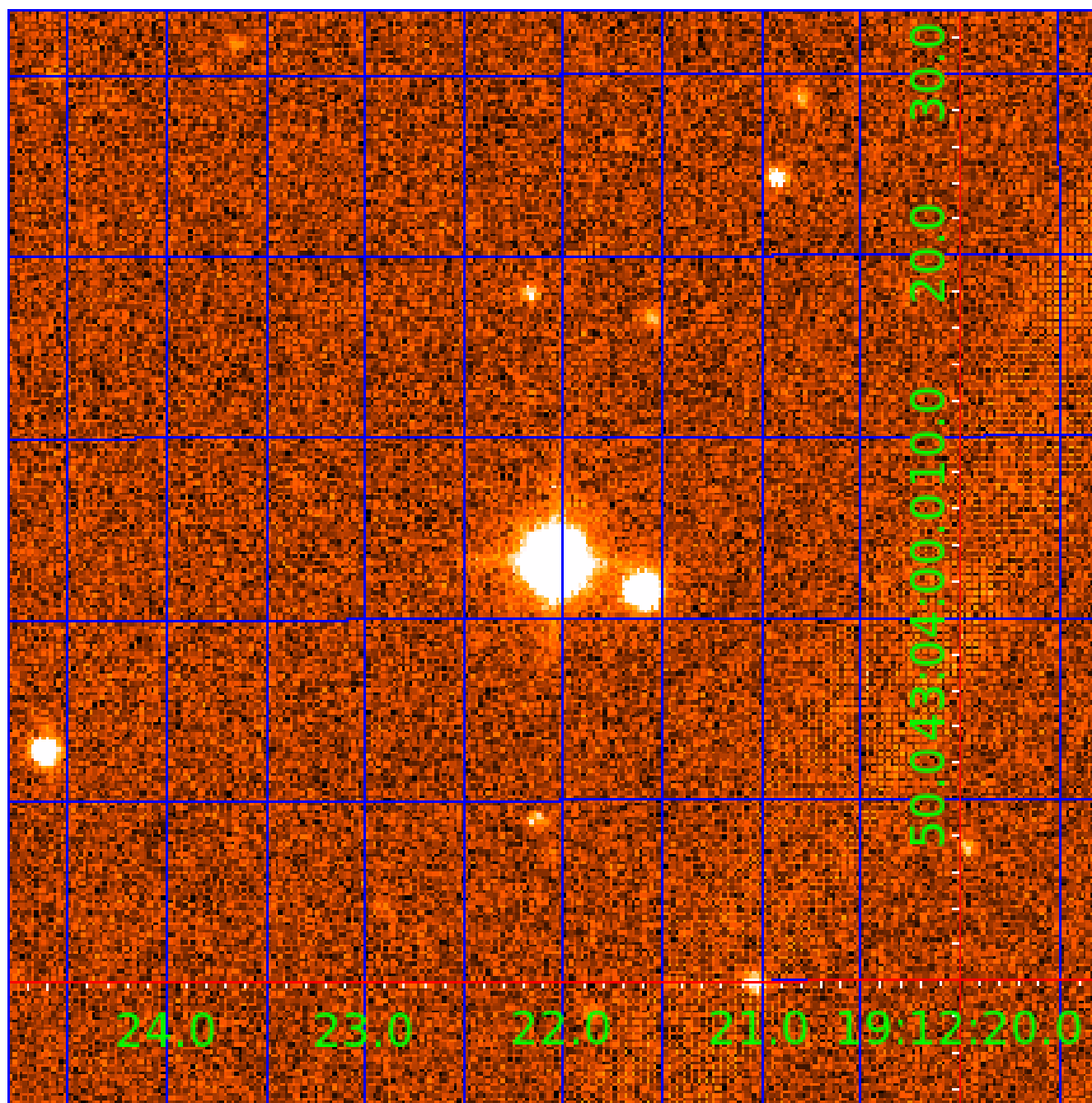


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 007433457

Q1-17 DR25 TCE Parameters

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007433457-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
007433457-04	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—HALO_GHOST
007433457-05	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST

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

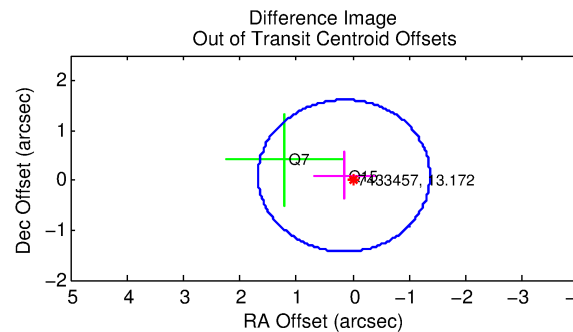
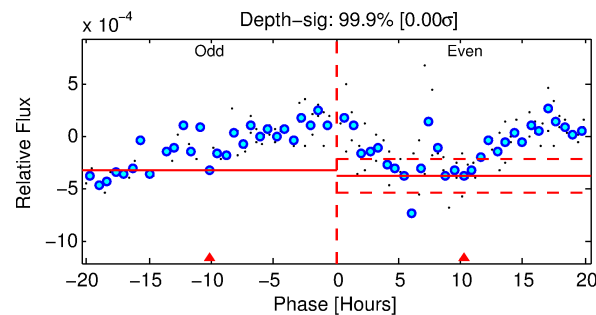
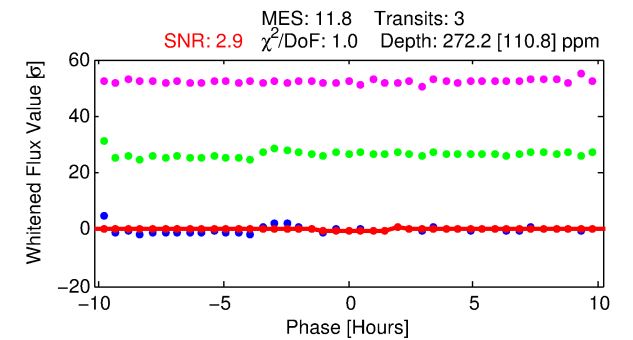
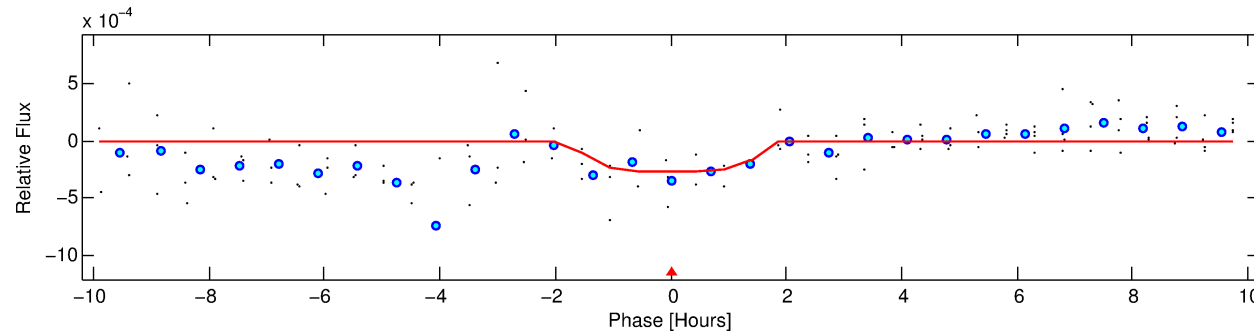
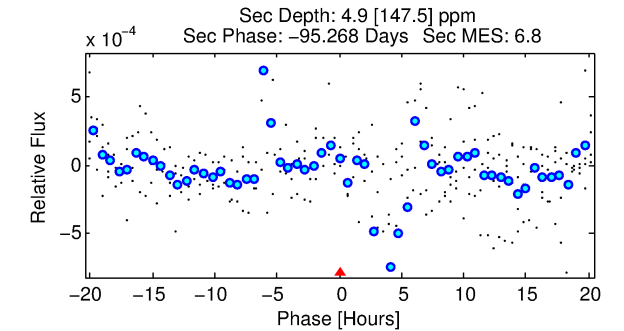
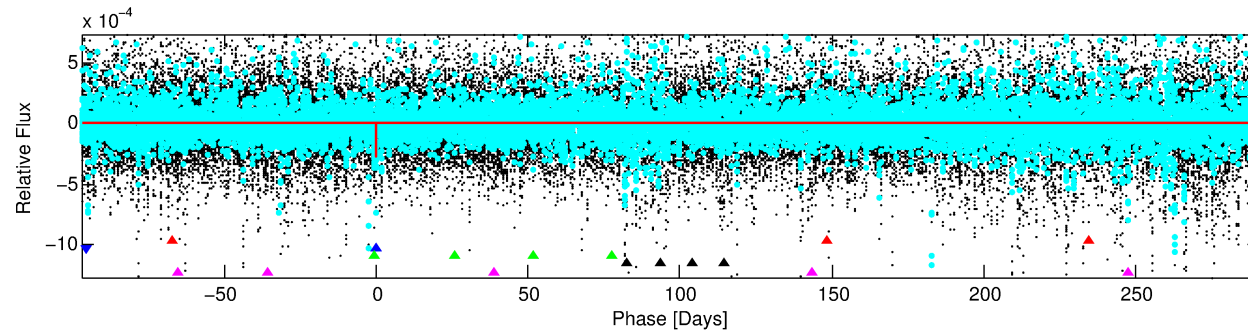
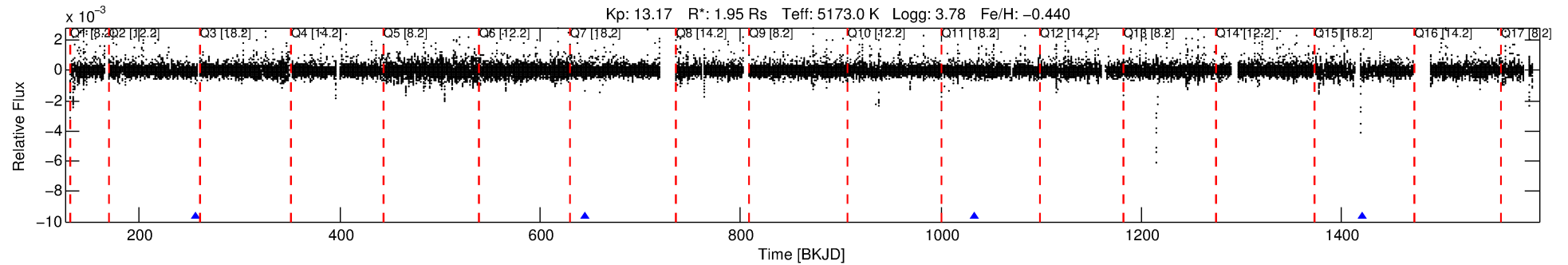
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007433457-02

No Significant Match Found

DV One-Page Summary

KIC: 7433457 Candidate: 2 of 5 Period: 388.075 d



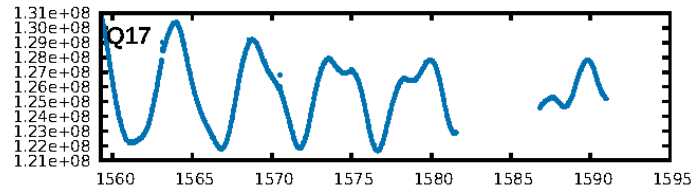
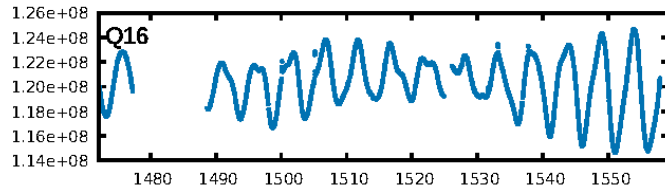
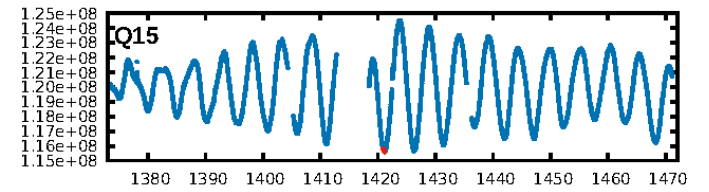
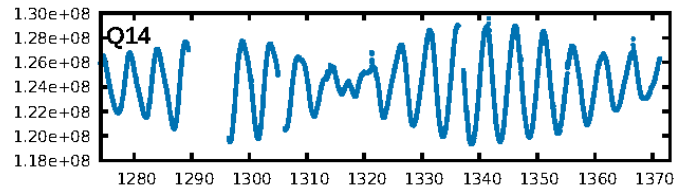
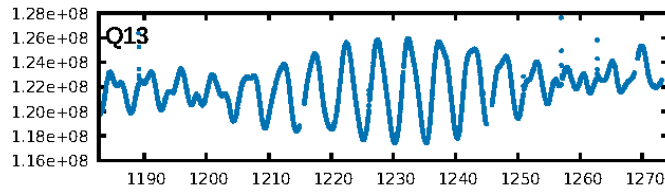
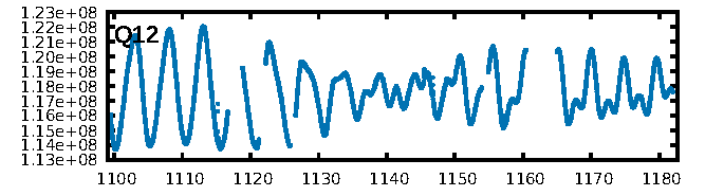
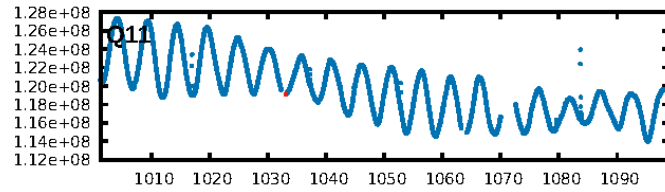
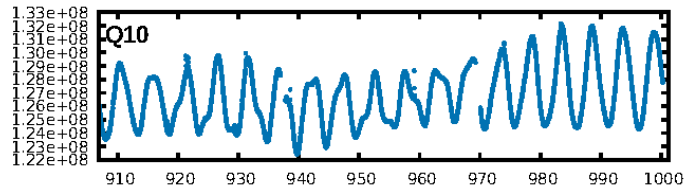
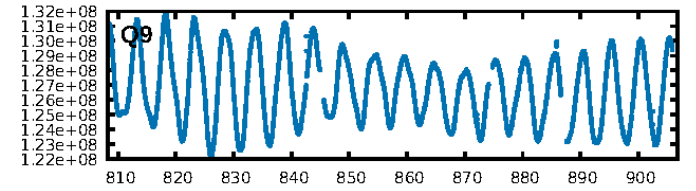
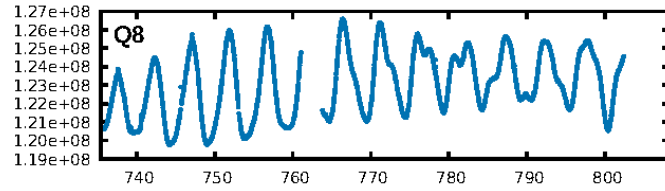
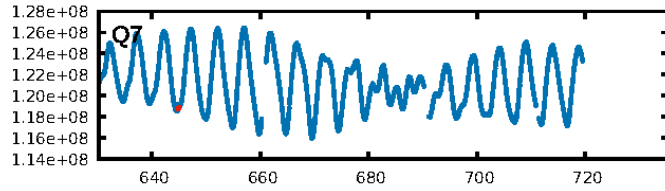
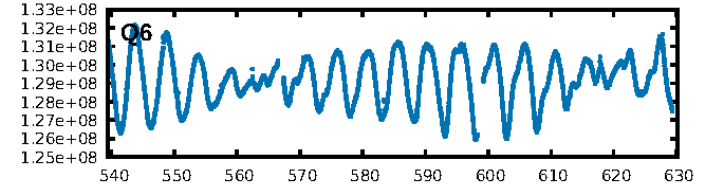
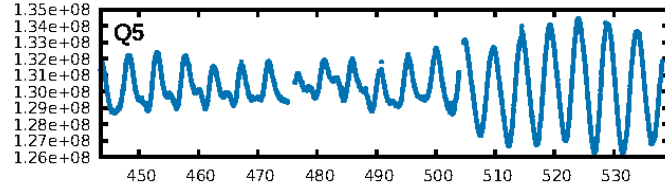
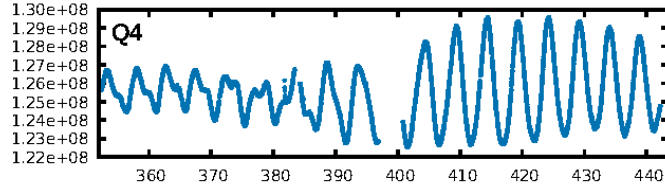
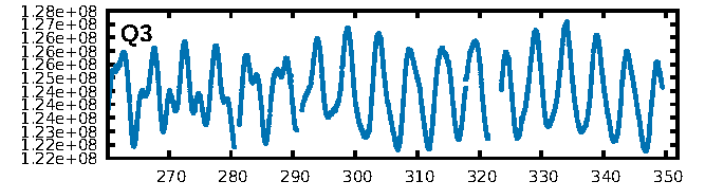
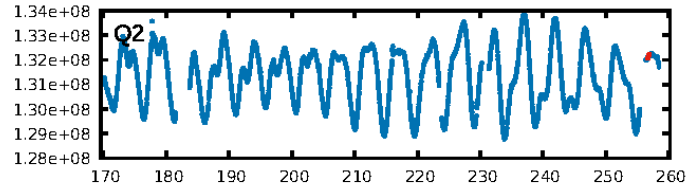
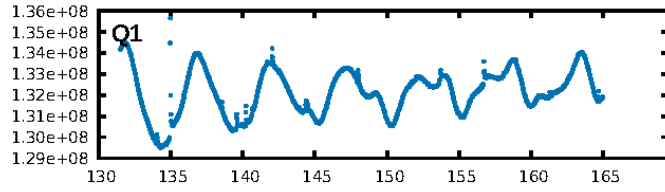
DV Fit Results:

Period = 388.07464 [0.00849] d
Epoch = 256.8147 [0.0132] BKJD
Rp/R* = 0.0180 [0.0315]
a/R* = 431.79 [3203.53]
b = 0.89 [1.77]
Seff = 2.53 [3.61]
Teq = 322 [115] K
Rp = 3.83 [7.11] Re
a = 0.9821 [0.7811] AU
Ag = 177.97 [5378.97] [0.03 σ]
Teffp = 1816 [13710] K [0.1 σ]

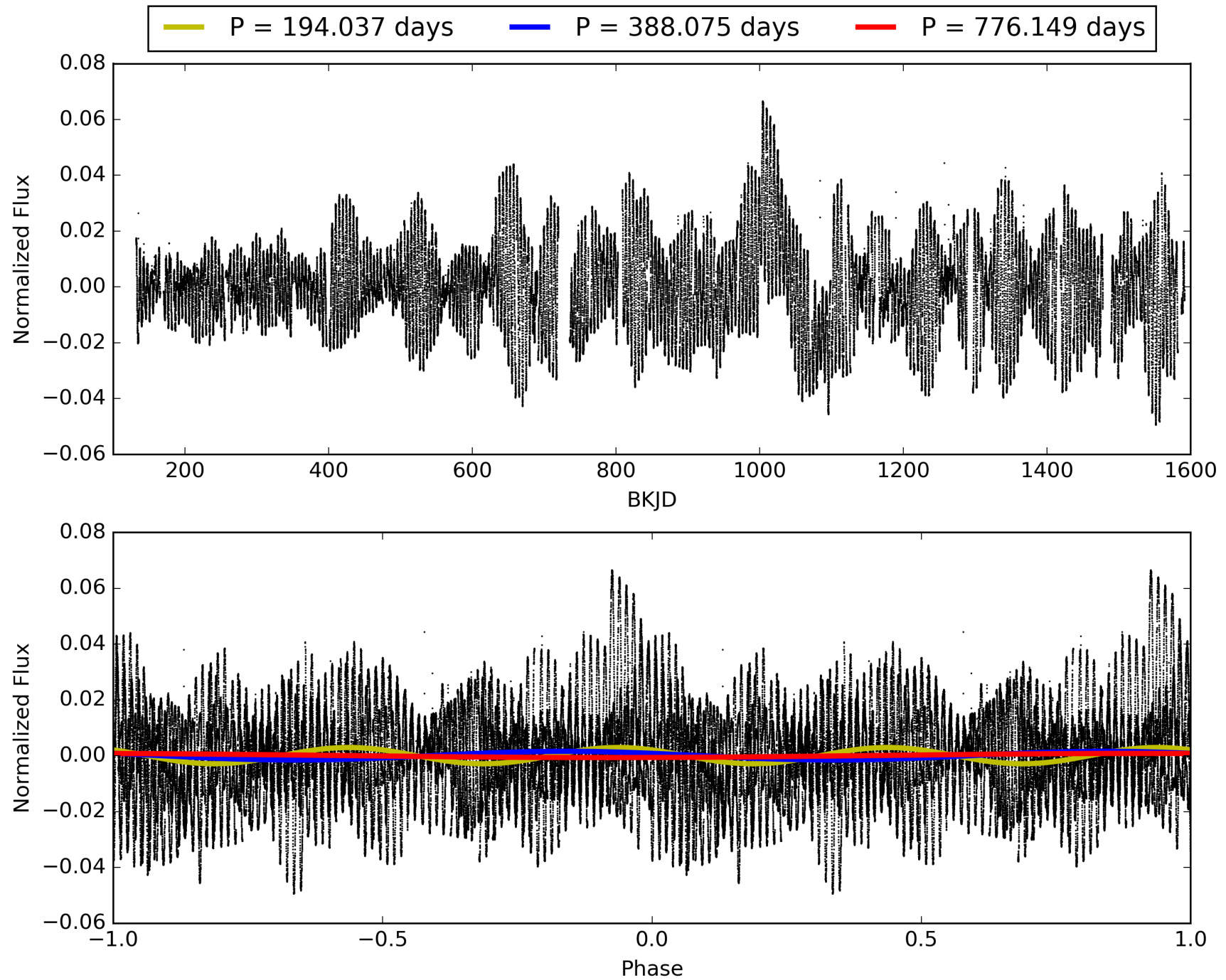
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [45.78 σ]
LongPeriod-sig: 100.0% [85.03 σ]
ModelChiSquare2-sig: 78.3%
ModelChiSquareGof-sig: 94.6%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: -0.4012
Centroid-sig: 19.3%
Centroid-so: 2.099 arcsec [1.00 σ]
OotOffset-rm: 0.178 arcsec [0.35 σ]
OotOffset-st: 0/2/0/0 [2]
KicOffset-rm: 0.054 arcsec [0.11 σ]
KicOffset-st: 0/2/0/0 [2]
DiffImageQuality-fgm: 1.00 [2/2]
DiffImageOverlap-fno: 0.67 [2/3]

TCE 007433457-02, PDC Light Curves

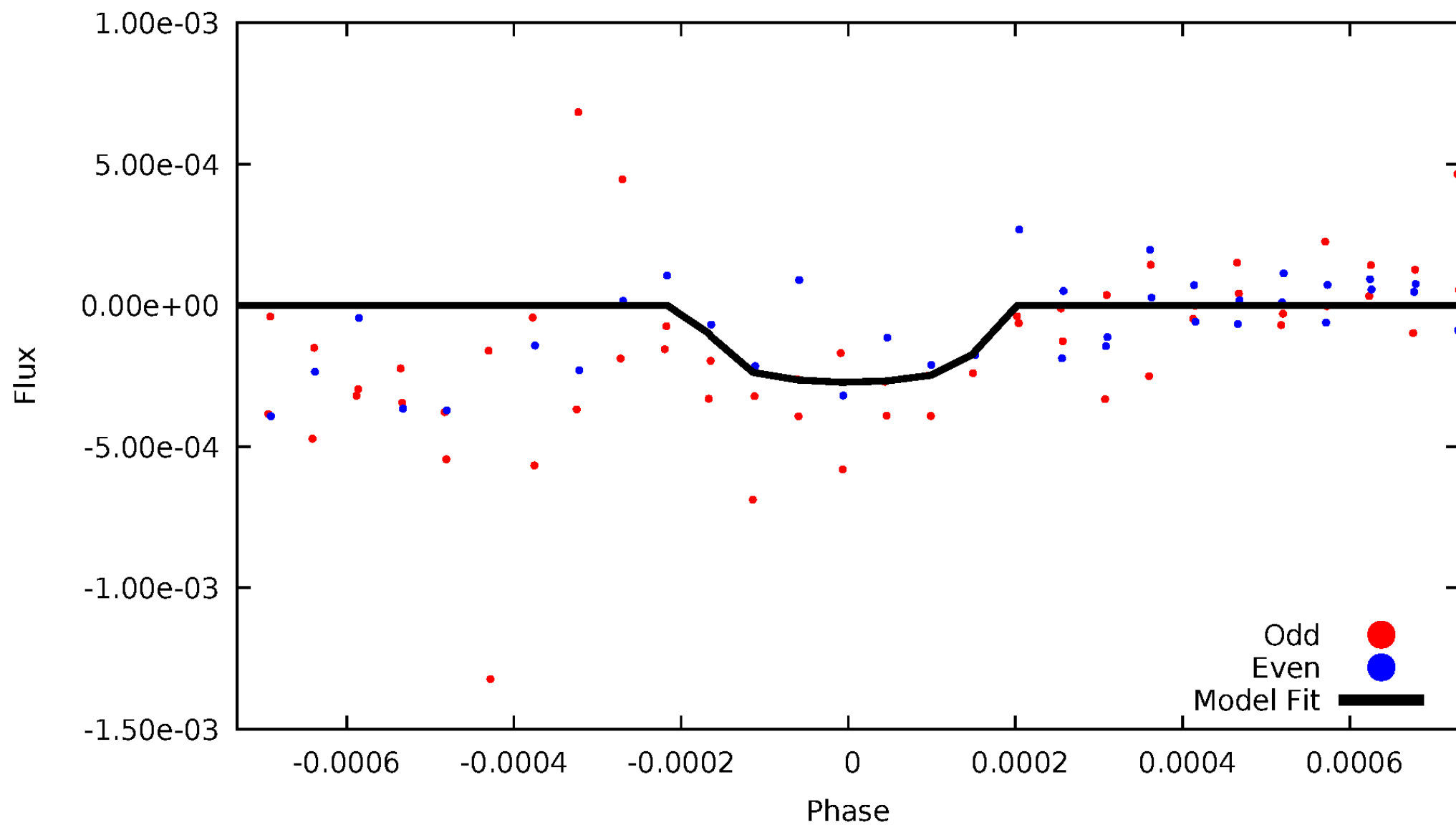


TCE 007433457-02



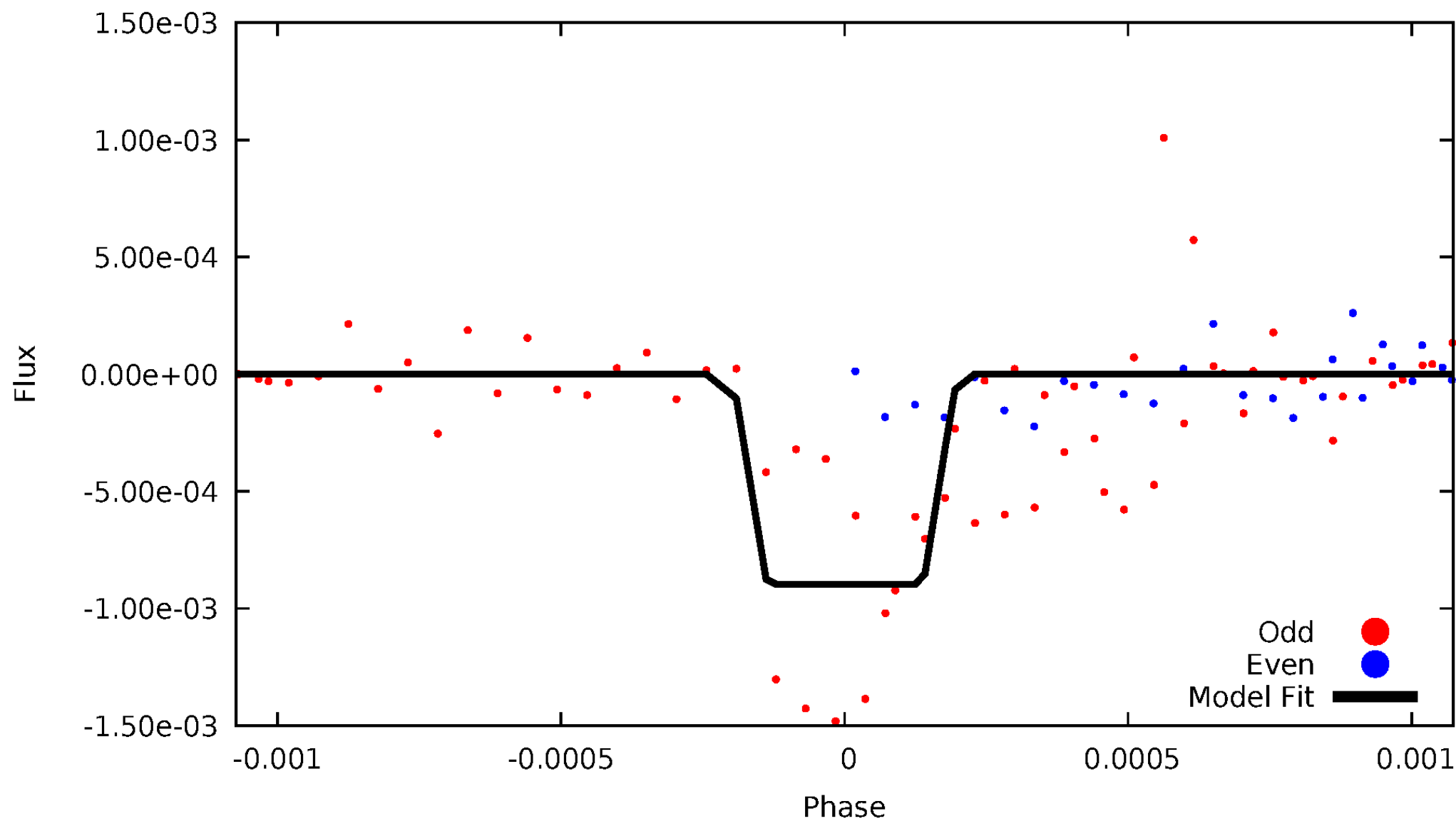
DV Odd/Even

TCE 007433457-02



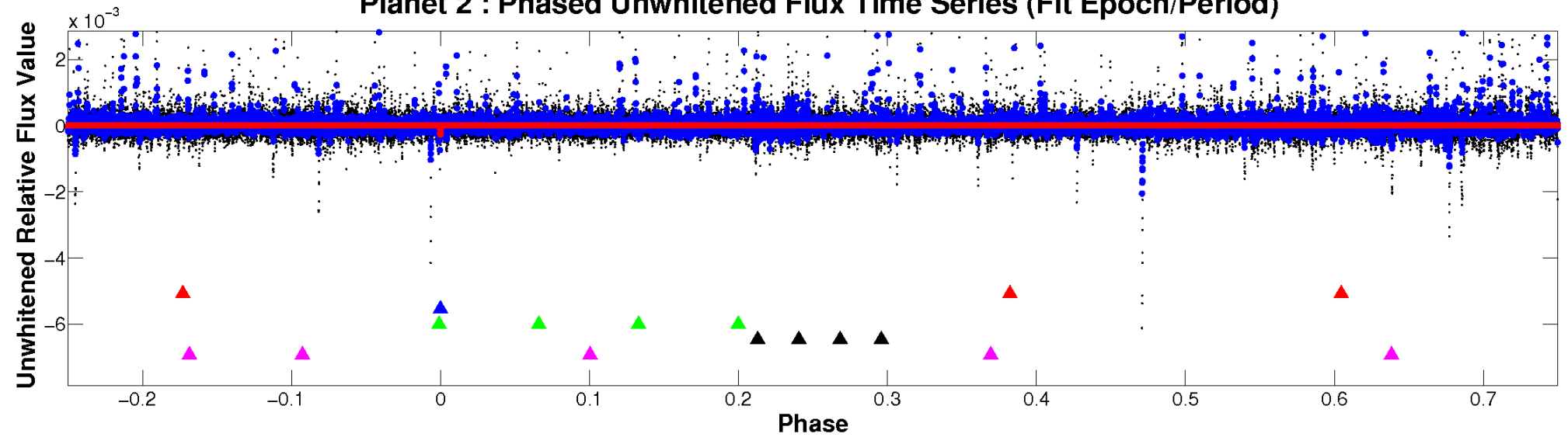
ALT Odd/Even

TCE 007433457-02

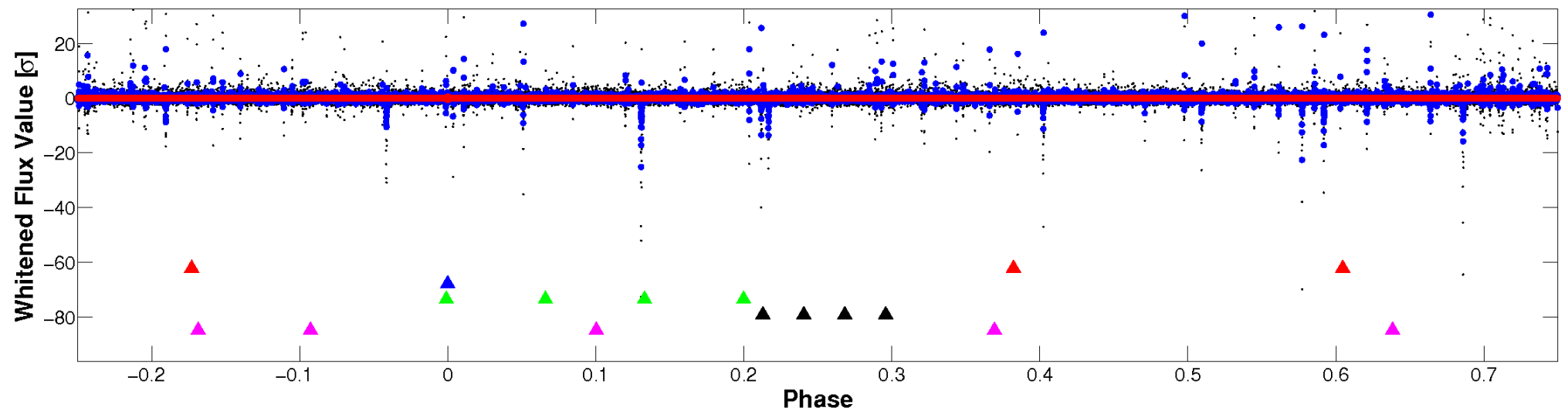


Non-Whitened Vs. Whitened Light Curve

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

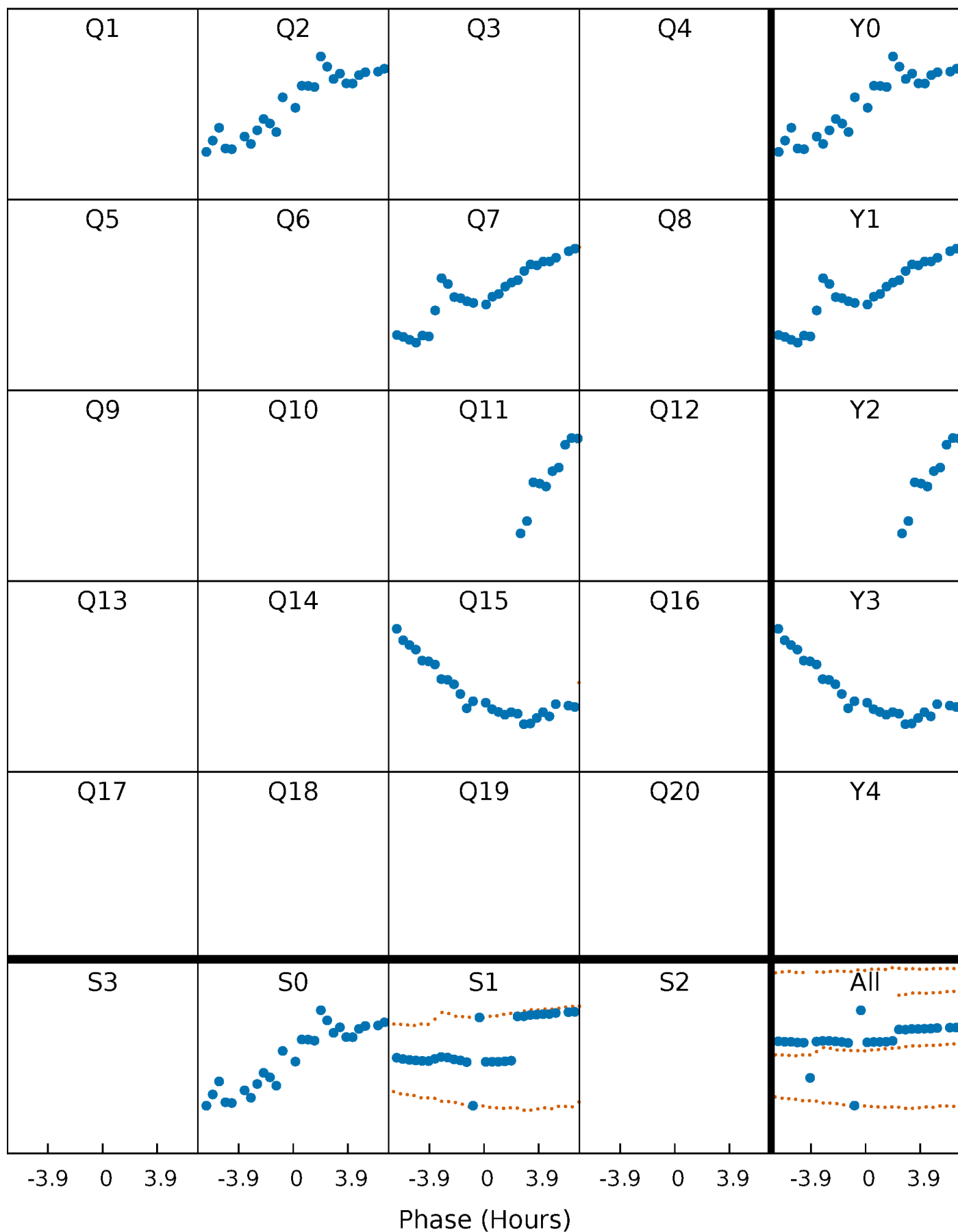


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



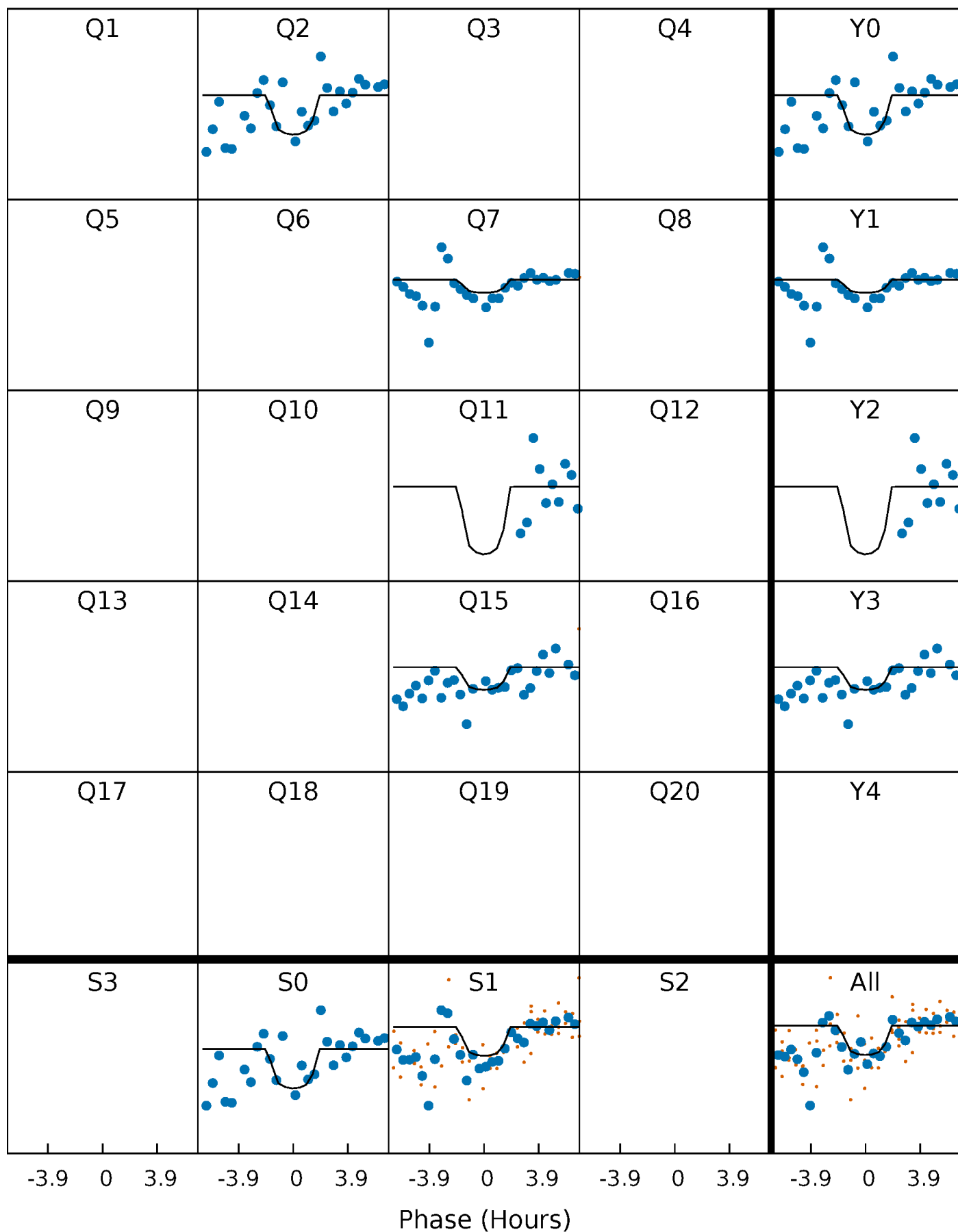
PDC Quarter-Phased Transit Curves

TCE 007433457-02 P=388.074642 Days $T_0=256.814684$ (BKJD)



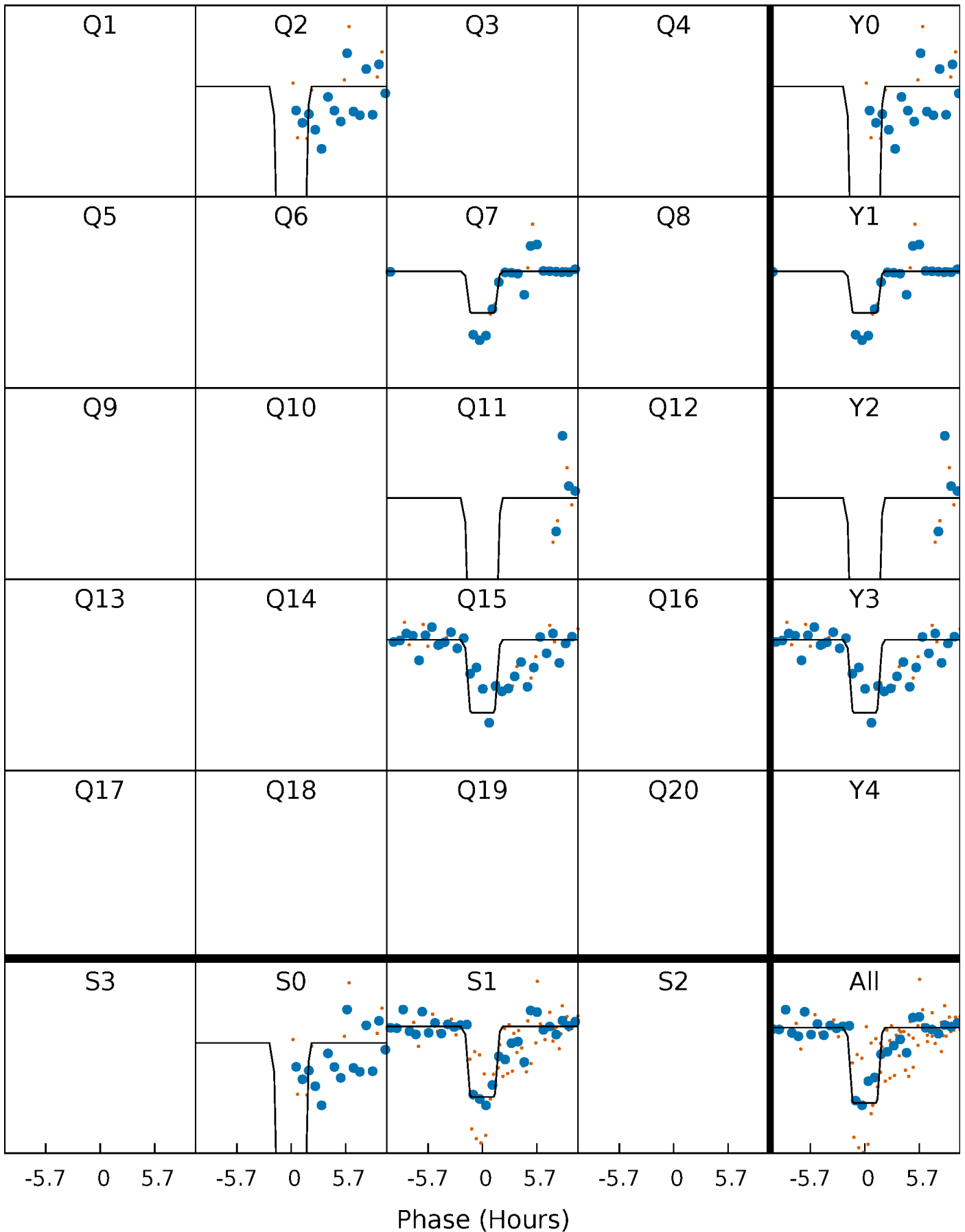
DV Quarter-Phased Transit Curves

TCE 007433457-02 P=388.074642 Days $T_0=256.814684$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

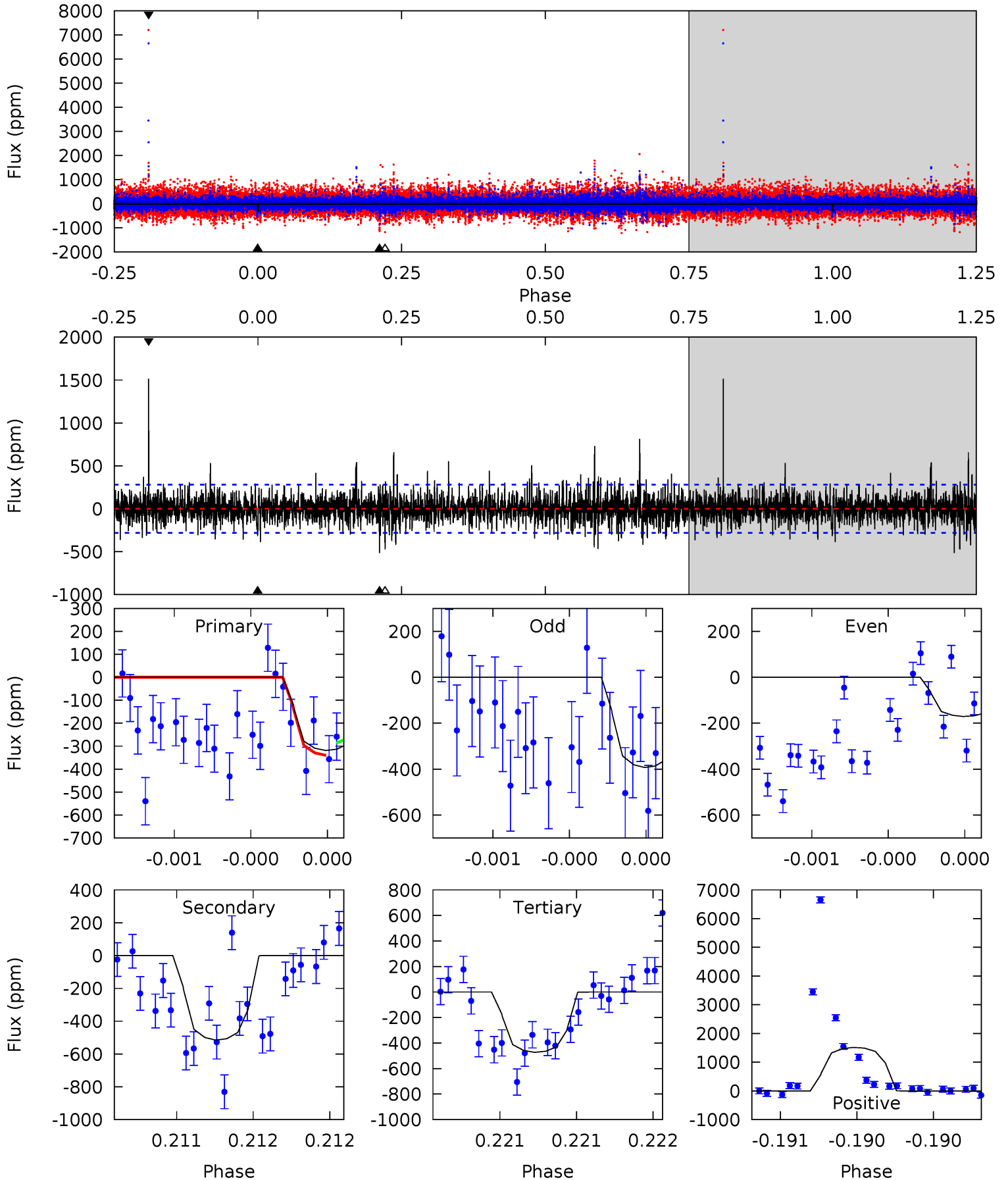
TCE 007433457-02 $P=388.210395$ Days $T_0=256.335105$ (BKJD)



DV Model-Shift Uniqueness Test

007433457-02, P = 388.074642 Days, E = 256.814684 Days

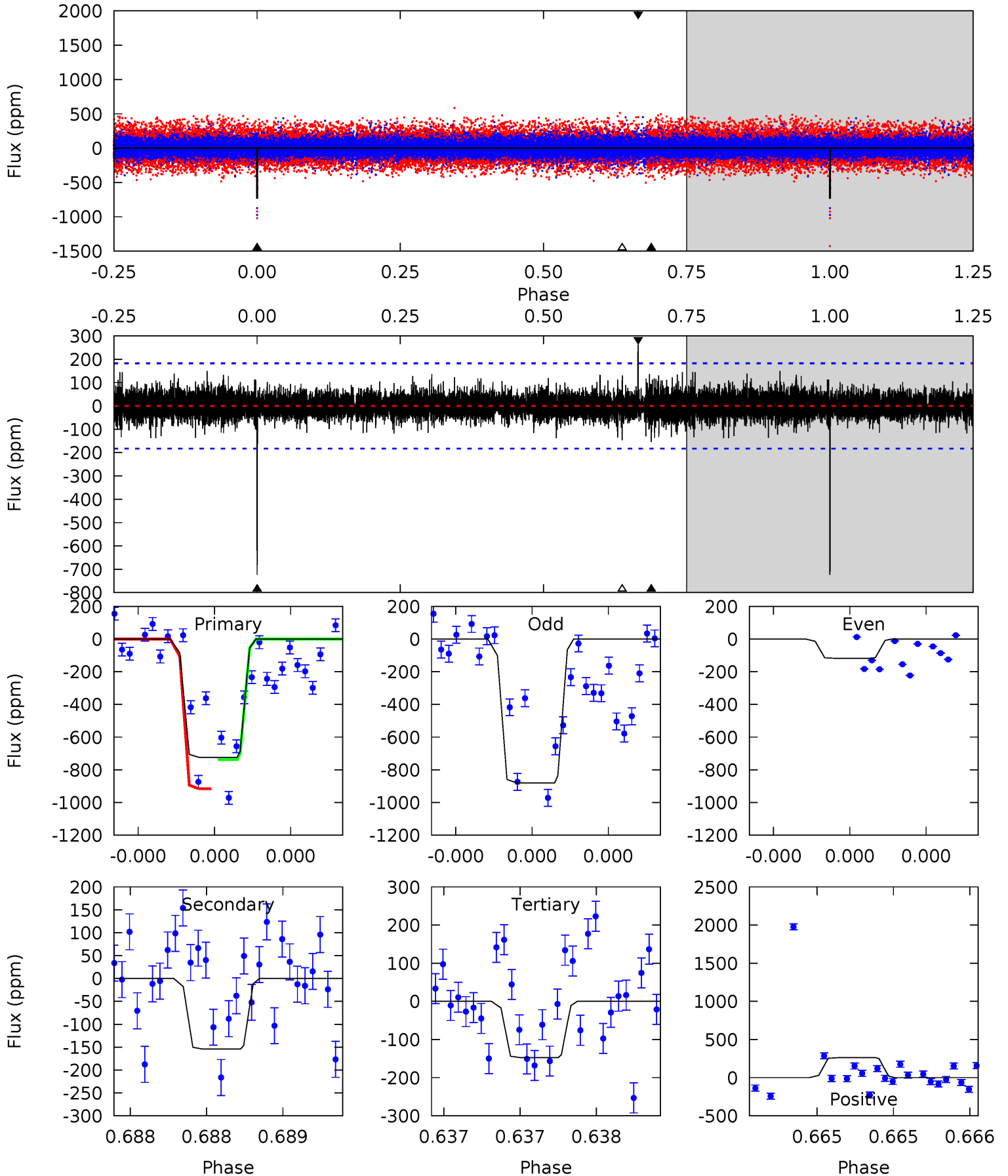
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.38	10.3	9.46	30.3	5.62	3.56	2.14	-3.08	-23.9	0.86	-20.0	1.79	0.90	0.75	0.53



Alt Model-Shift Uniqueness Test

007433457-02, P = 388.210395 Days, E = 256.335105 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
22.2	4.72	4.51	8.00	5.60	3.53	0.95	17.7	14.2	0.21	-3.28	11.6	1.11	0.27	2.50



Stellar Parameters For KIC 007433457

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5173^{+138}_{-154}	$3.781^{+0.885}_{-0.295}$	$-0.440^{+0.250}_{-0.350}$	$1.951^{+1.090}_{-1.211}$	$0.839^{+0.166}_{-0.166}$	$0.159^{+3.255}_{-0.125}$
	+3%/-3%	+23%/-8%	+57%/-80%	+56%/-62%	+20%/-20%	+2045%/-79%
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 007433457-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-515 ± 50	$5.70^{+6.84}_{-3.83}$	436^{+73}_{-78}	4569^{+2785}_{-918}	8278^{+65287}_{-6406}
Alt.	-154 ± 33	$6.87^{+6.95}_{-4.46}$	438^{+62}_{-84}	3449^{+1373}_{-552}	1706^{+11480}_{-1283}

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 $A_{obs} \gg 1.0$

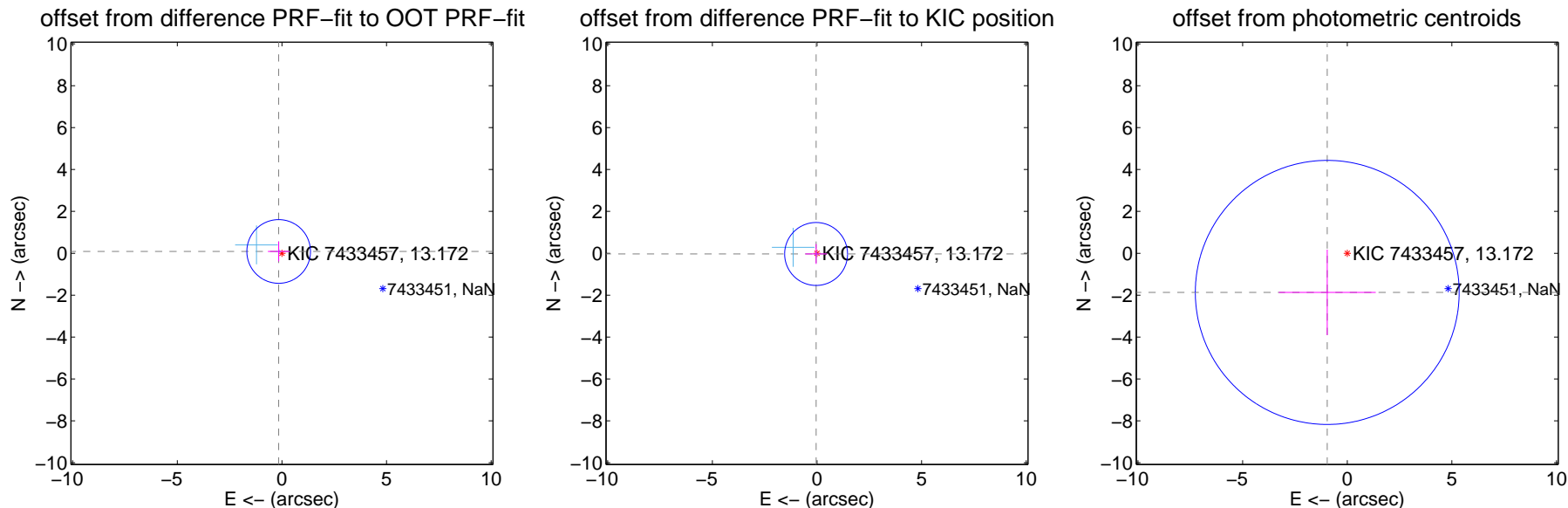
DV Centroid Data

Supplemental centroid analysis for 007433457-02. Kepler magnitude: 13.17. Transit SNR 2.91

There are 2 quarters with good PRF difference image offsets

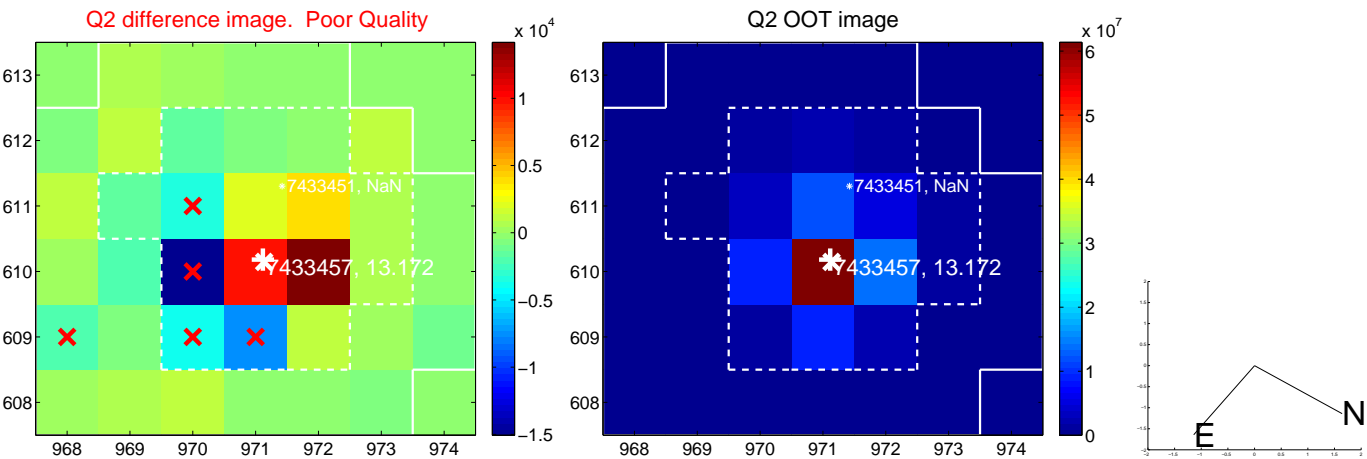
The direct PRF centroid is offset from the target star catalog position by about 0.17 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.178 ± 0.507	0.35	0.155 ± 0.517	0.087 ± 0.473
PRF-fit source offset from KIC position	0.054 ± 0.501	0.11	0.042 ± 0.517	-0.033 ± 0.473
photometric centroid source offset	2.10 ± 2.10	1.00	0.96 ± 2.32	-1.87 ± 2.04

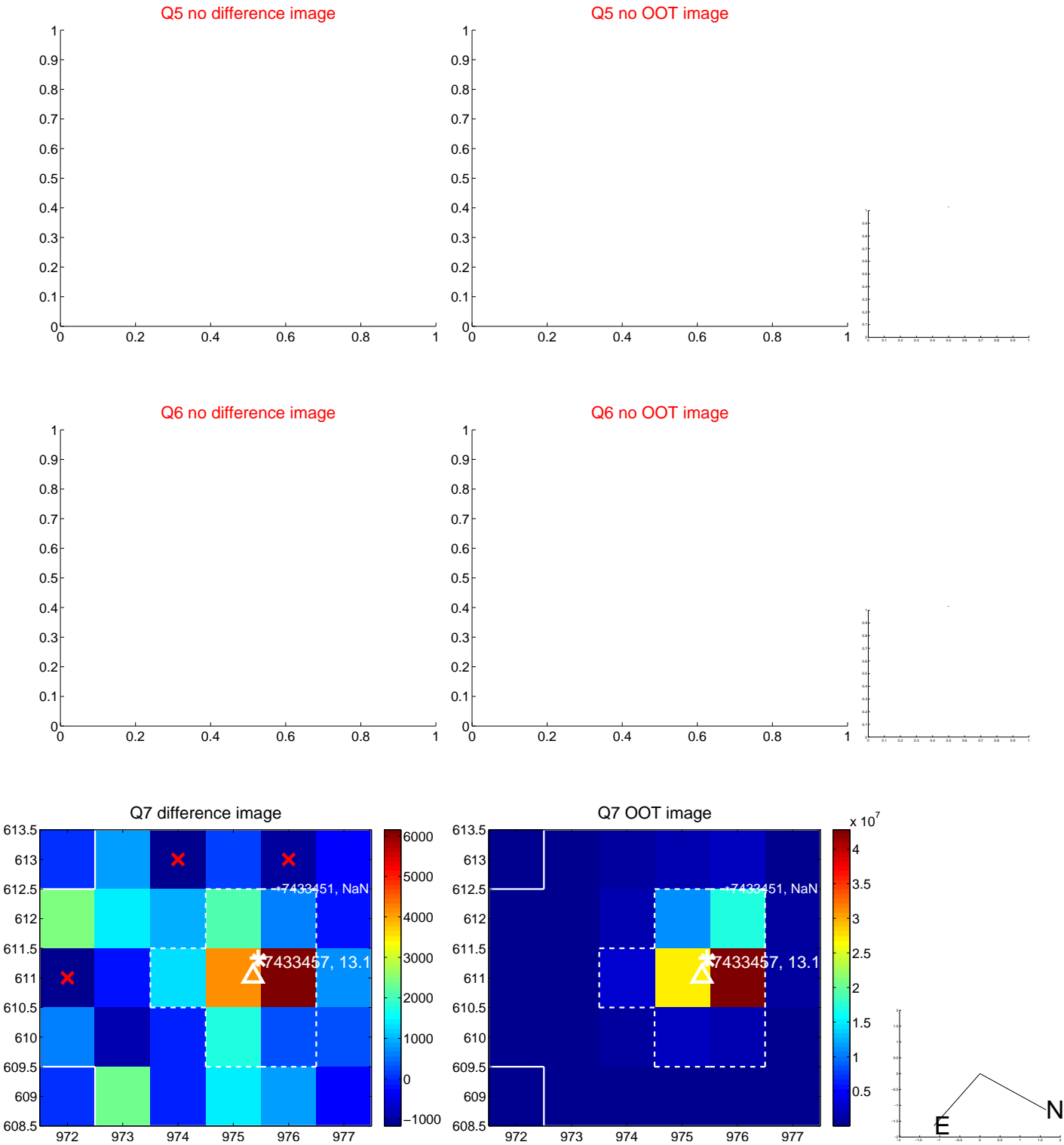


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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



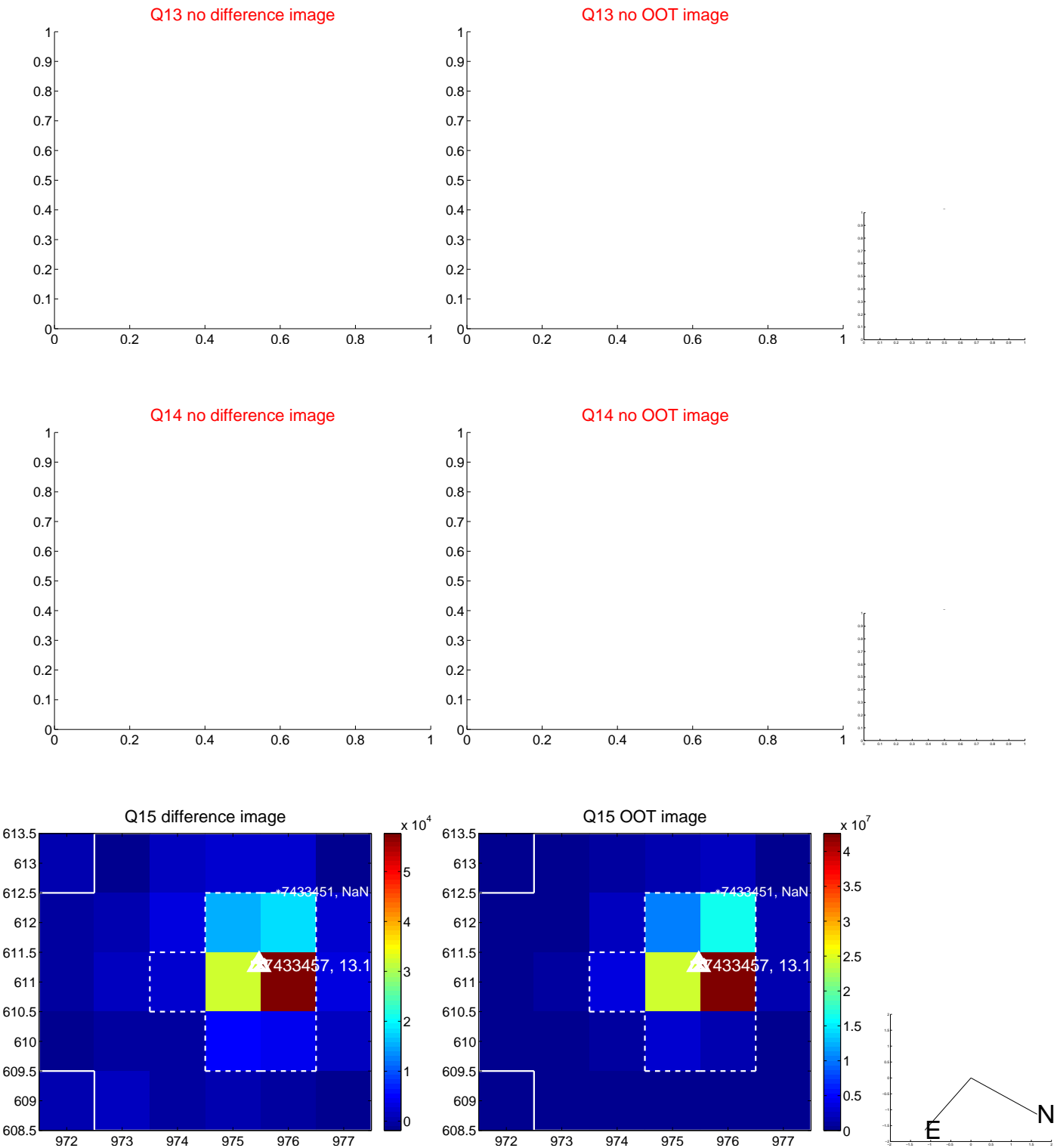
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



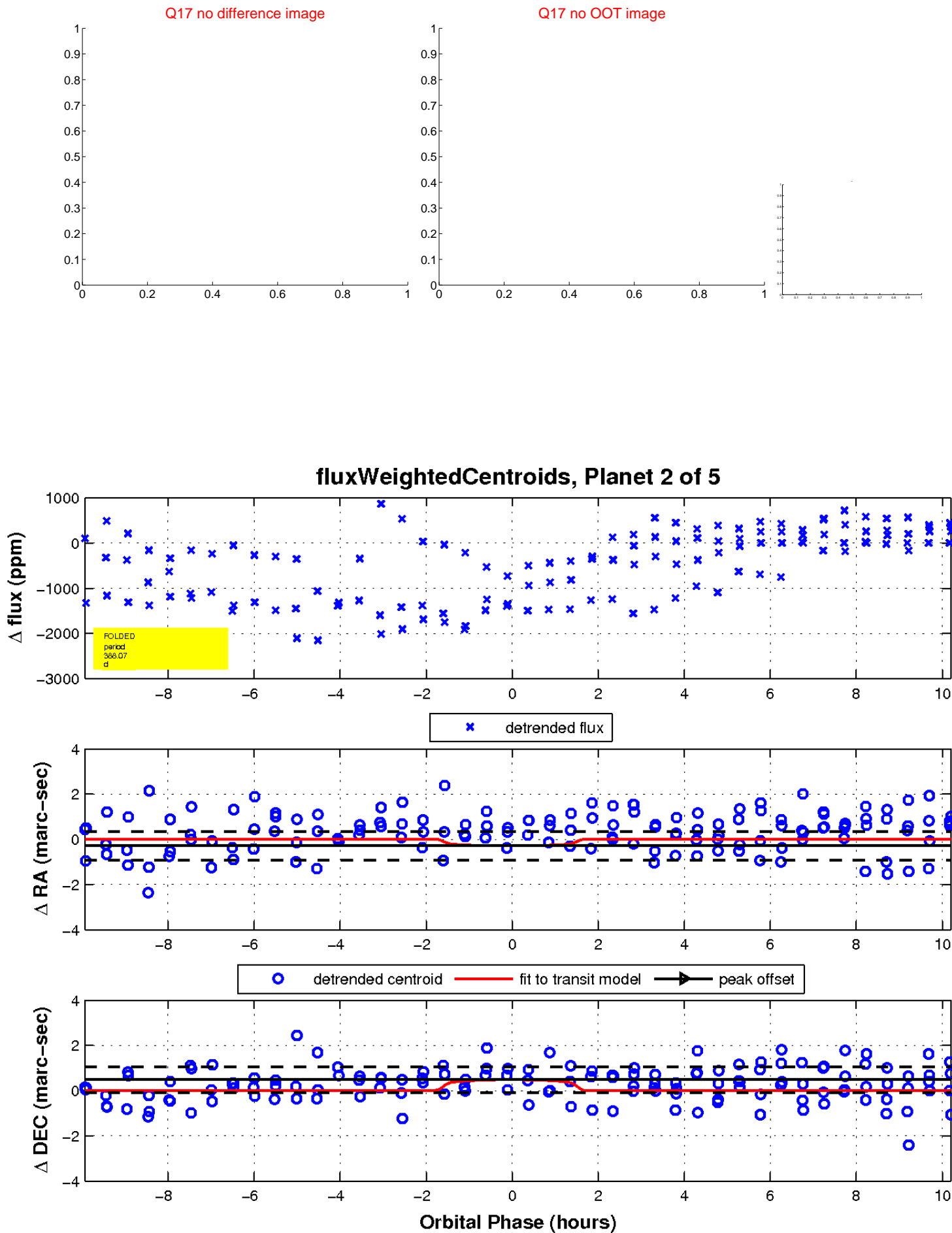
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

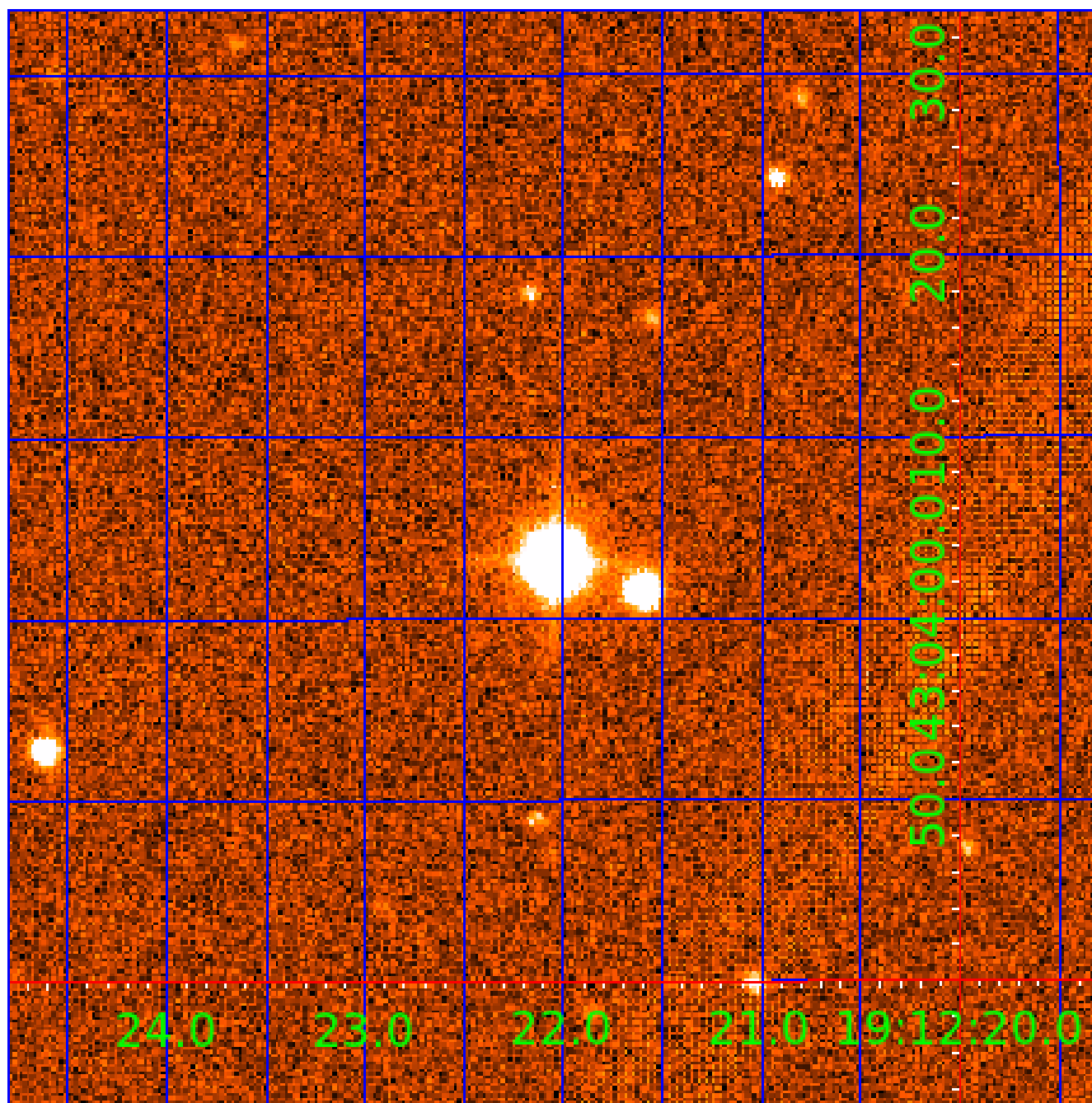


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 007433457

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})
007433457-01	OBS	No	474.386162	405.151690	787.4	3.005	15.2	8.5	1.95	5173	5.94	1.94
007433457-02	OBS	No	388.074642	256.814684	272.2	3.403	11.8	2.9	1.95	5173	3.83	2.53
007433457-03	OBS	No	414.052209	256.460690	863.6	6.495	13.8	8.8	1.95	5173	6.06	2.32
007433457-04	OBS	No	377.340762	371.646257	681.4	4.481	10.1	7.8	1.95	5173	5.39	2.63
007433457-05	OBS	No	283.694549	220.849752	662.9	4.350	11.4	7.2	1.95	5173	5.52	3.85

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007433457-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS
007433457-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
007433457-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
007433457-04	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—HALO_GHOST
007433457-05	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST

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

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

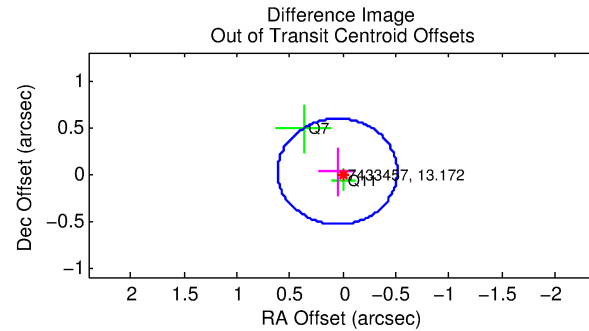
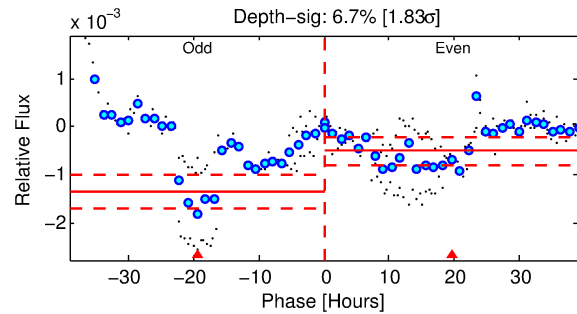
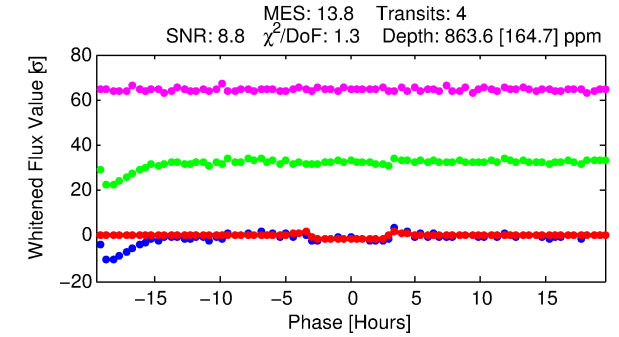
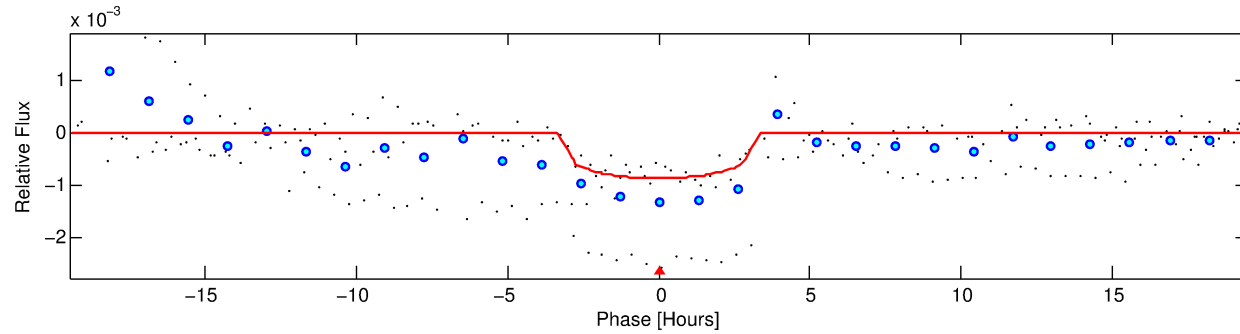
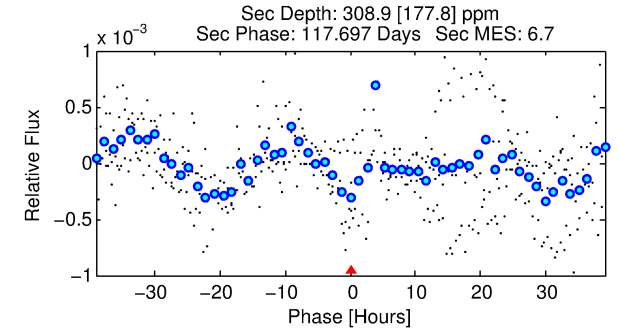
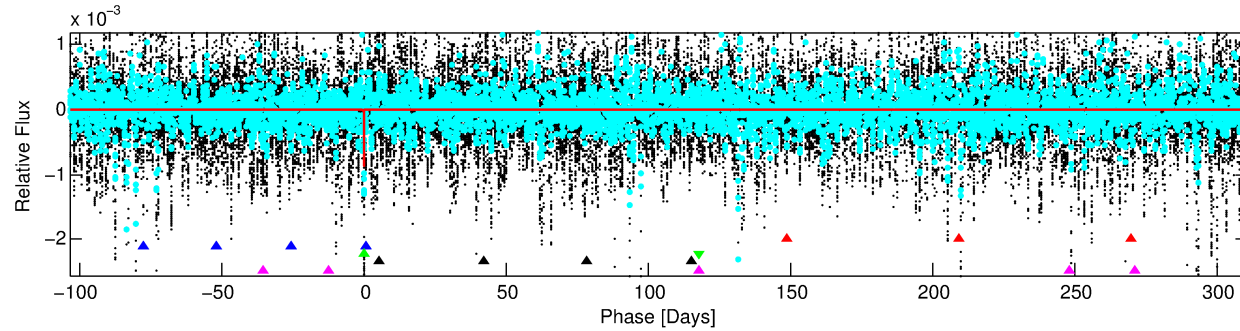
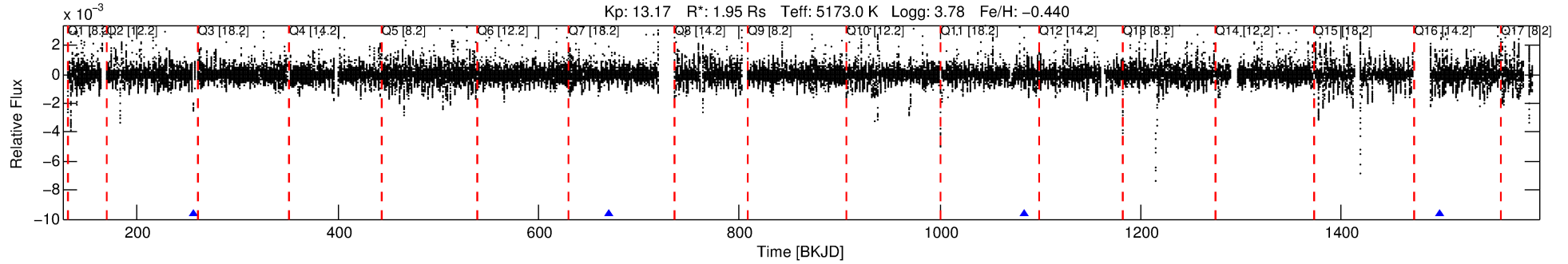
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007433457-03

No Significant Match Found

DV One-Page Summary

KIC: 7433457 Candidate: 3 of 5 Period: 414.052 d



DV Fit Results:

Period = 414.05221 [0.00396] d
Epoch = 256.4607 [0.0083] BKJD
Rp/R* = 0.0285 [0.0167]
a/R* = 378.03 [842.57]
b = 0.67 [1.82]
Seff = 2.32 [3.31]
Teq = 315 [112] K
Rp = 6.06 [5.18] Re
a = 1.0254 [0.8156] AU
Ag = 4858.21 [9382.57] [0.52 σ]
Teffp = 4063 [1335] K [2.80 σ]

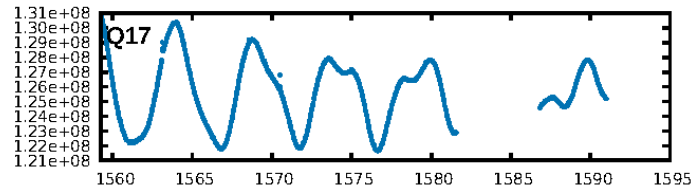
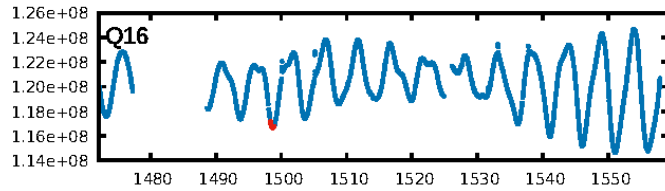
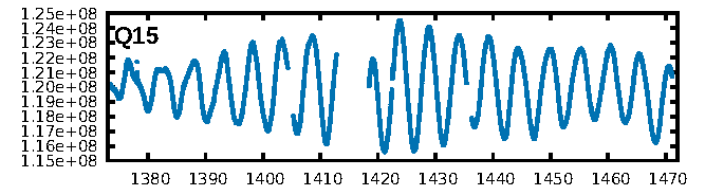
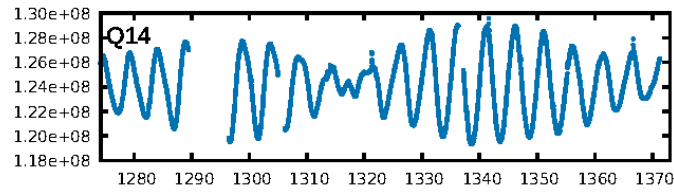
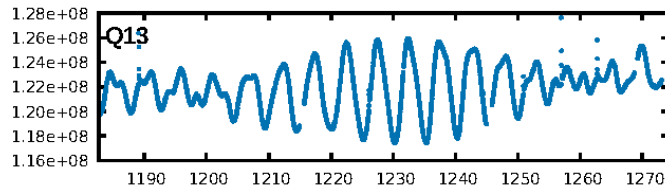
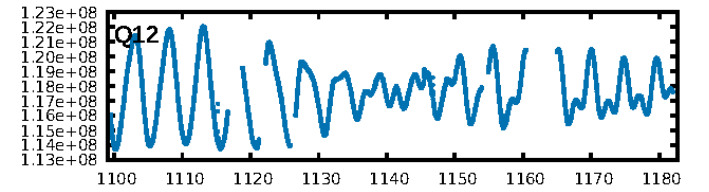
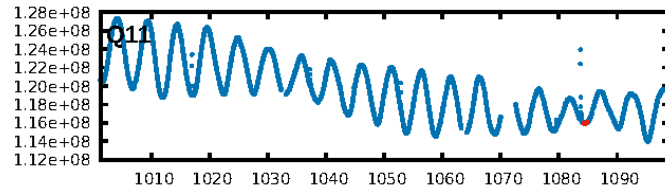
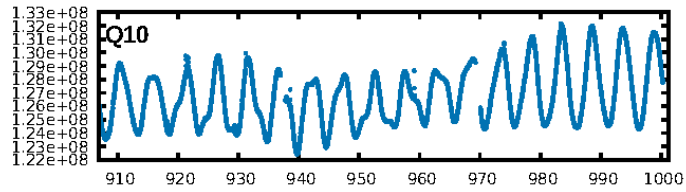
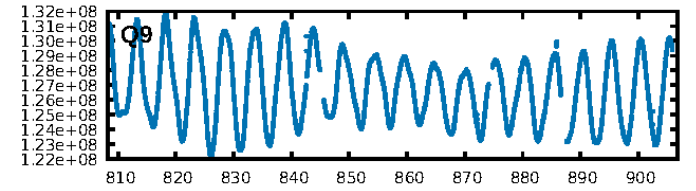
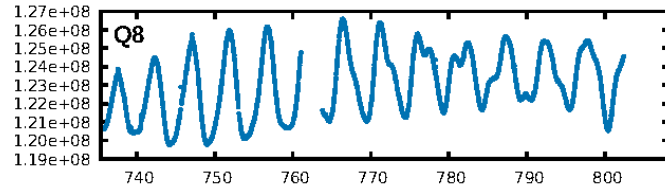
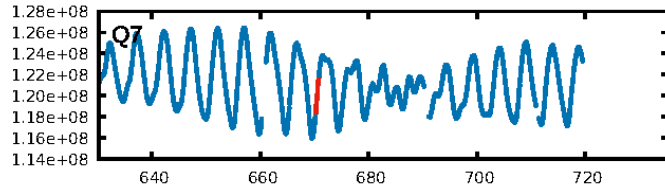
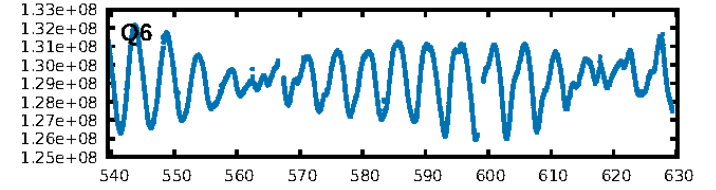
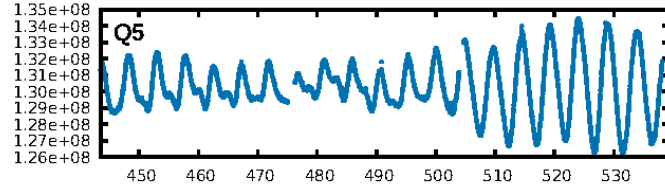
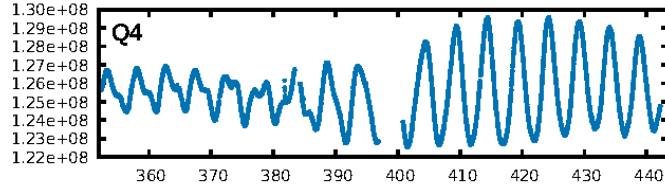
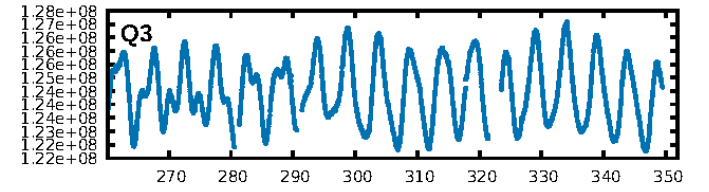
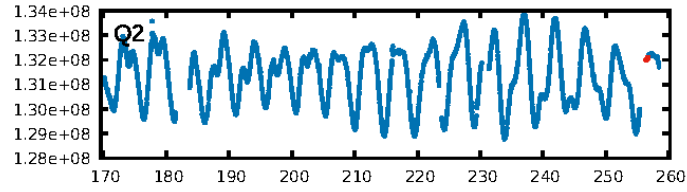
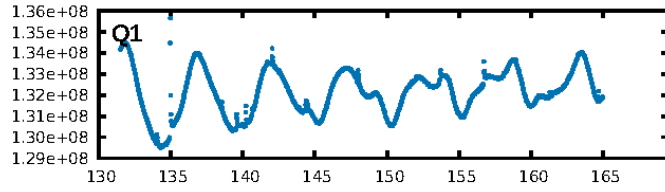
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [85.03 σ]
LongPeriod-sig: 100.0% [202.34 σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGoF-sig: 88.3%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: 1.098
Centroid-sig: 94.2%
Centroid-so: 0.186 arcsec [0.45 σ]
OotOffset-rm: 0.056 arcsec [0.30 σ]
KicOffset-rm: 0.075 arcsec [0.32 σ]
OotOffset-st: 0/2/0/0 [2]
KicOffset-st: 0/2/0/0 [2]
DiffImageQuality-fgm: 0.50 [1/2]
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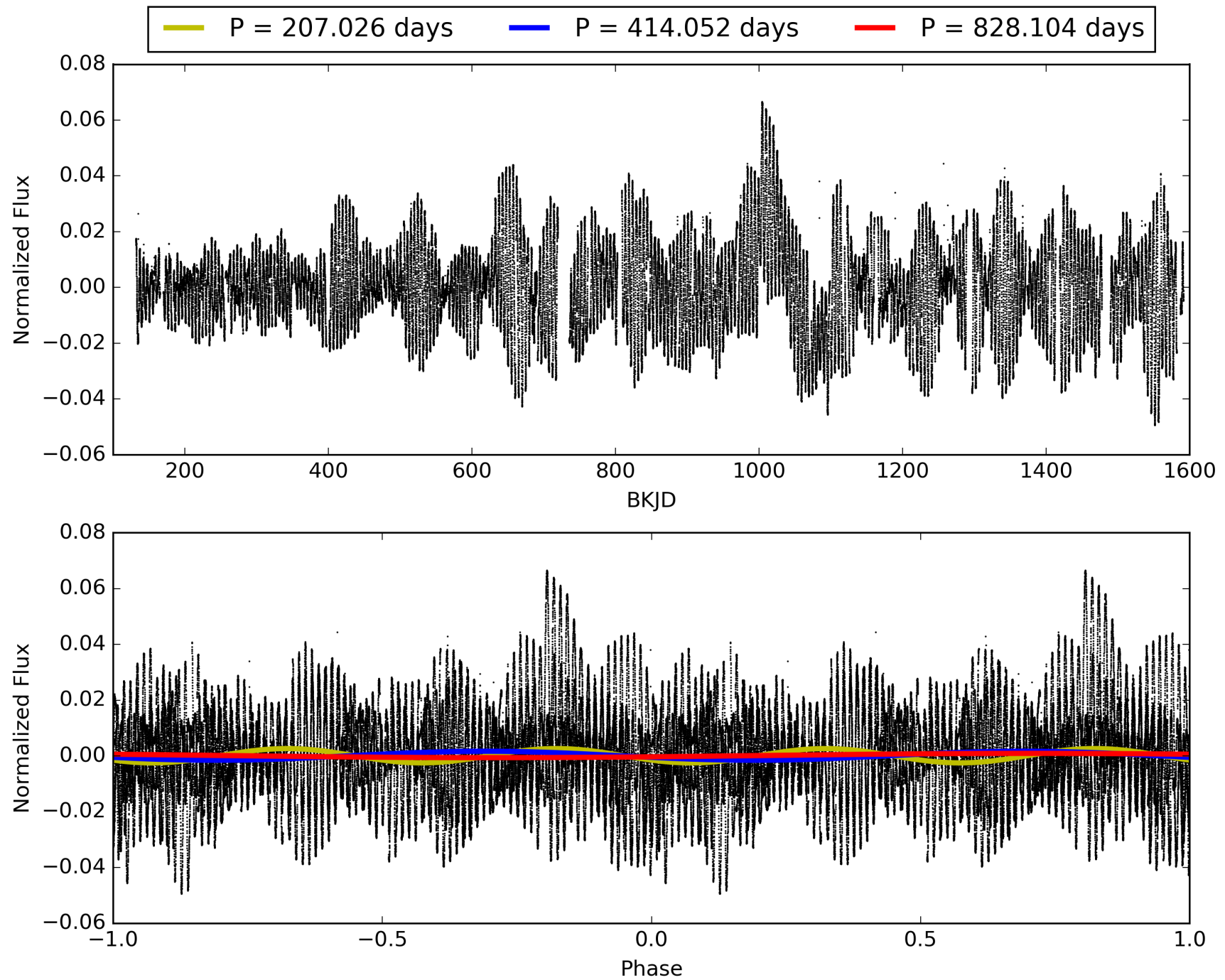
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 007433457-03, PDC Light Curves

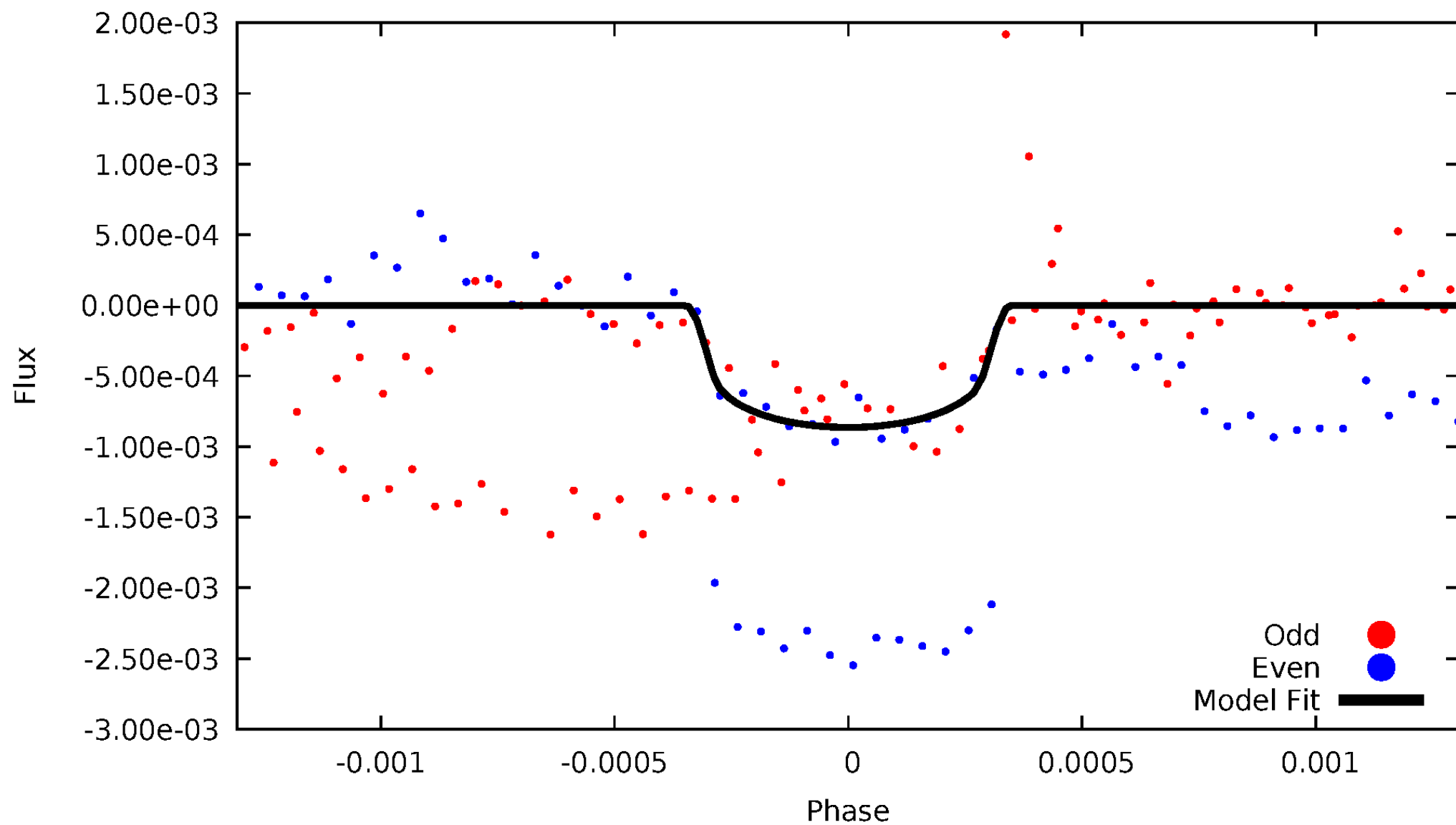


TCE 007433457-03



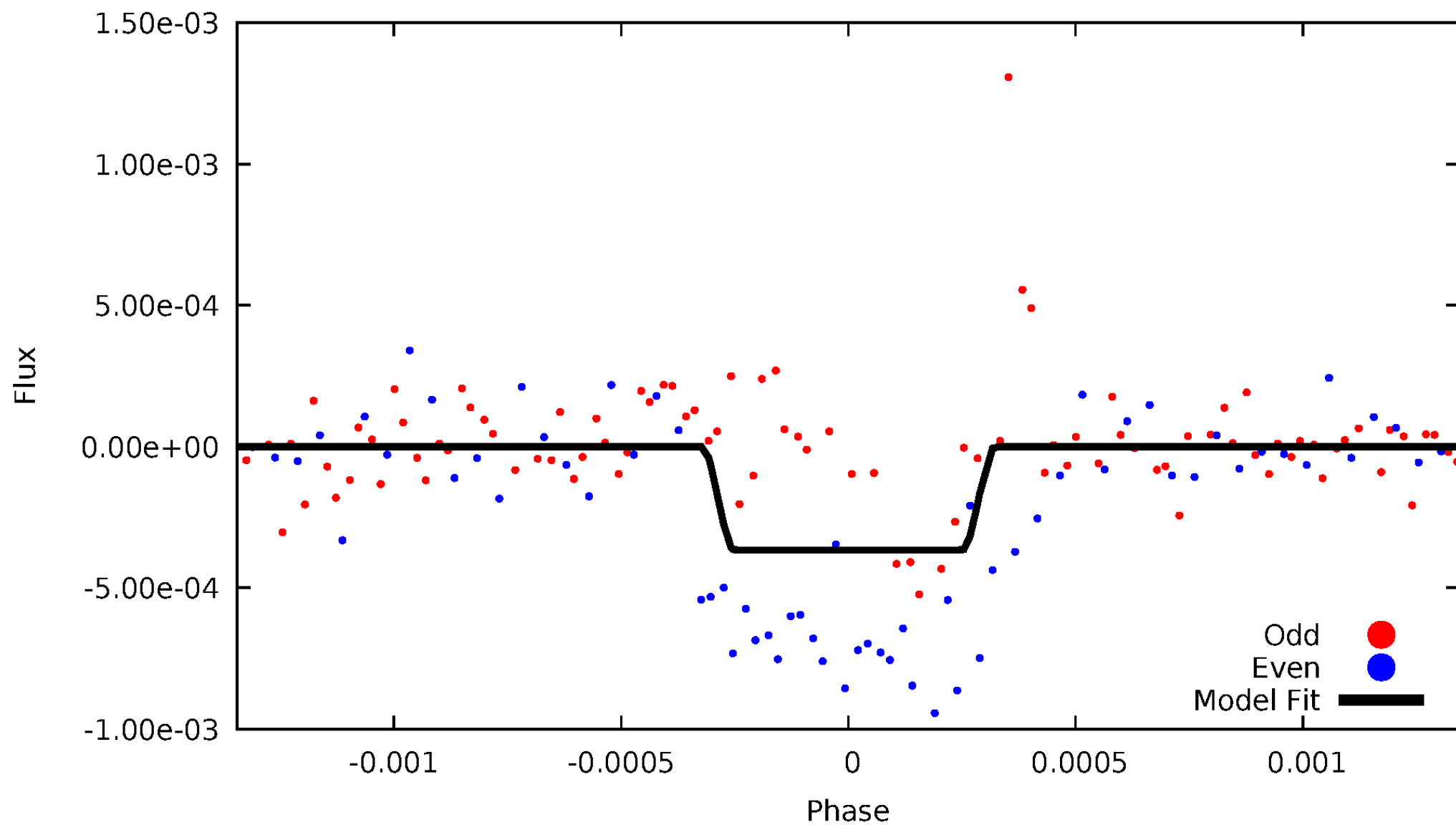
DV Odd/Even

TCE 007433457-03



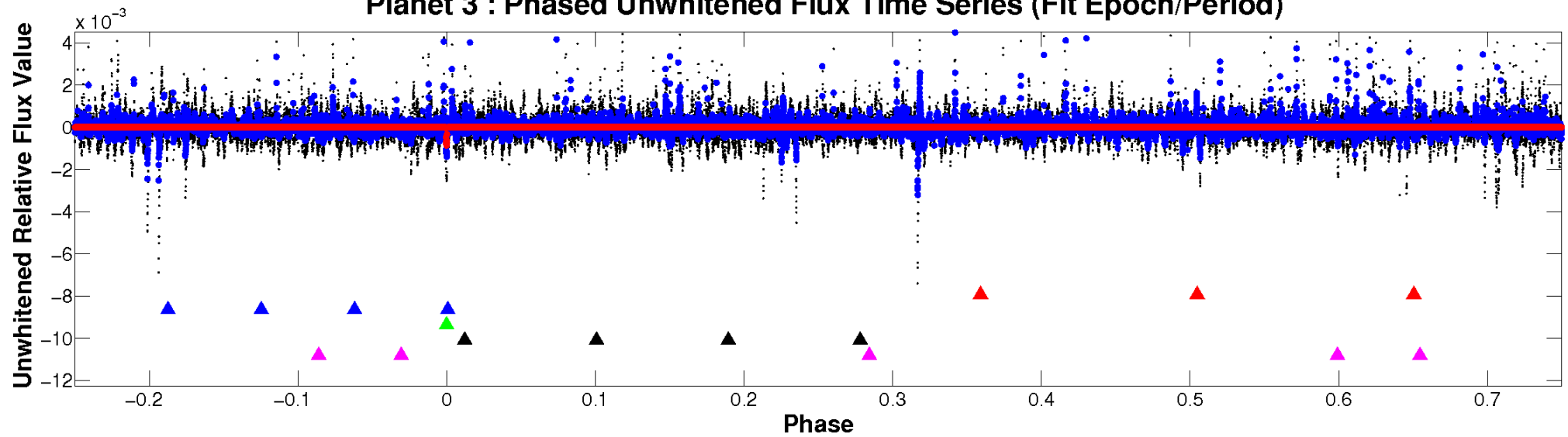
ALT Odd/Even

TCE 007433457-03

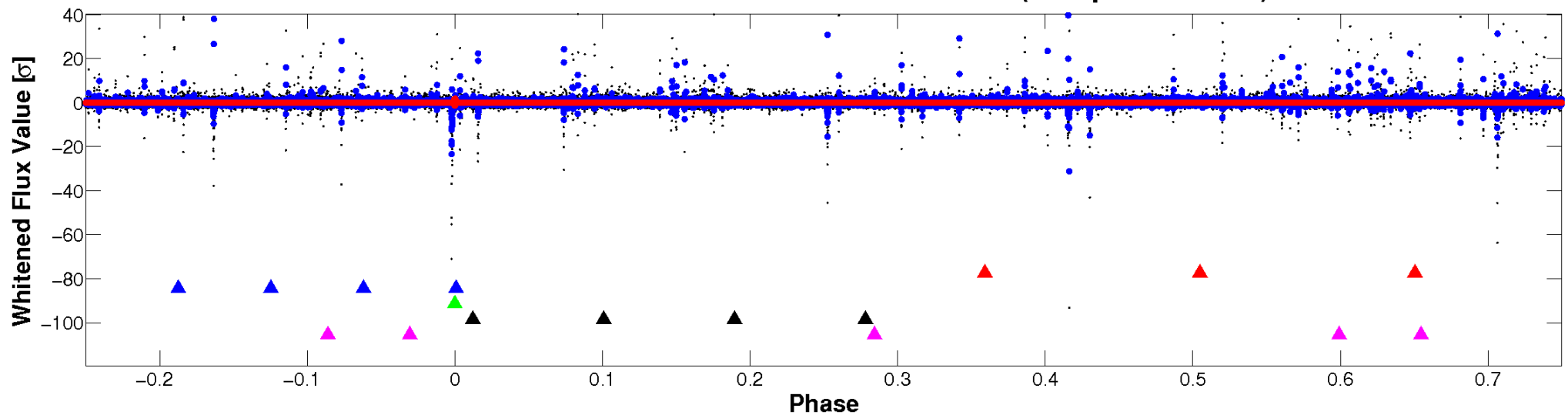


Non-Whitened Vs. Whitened Light Curve

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

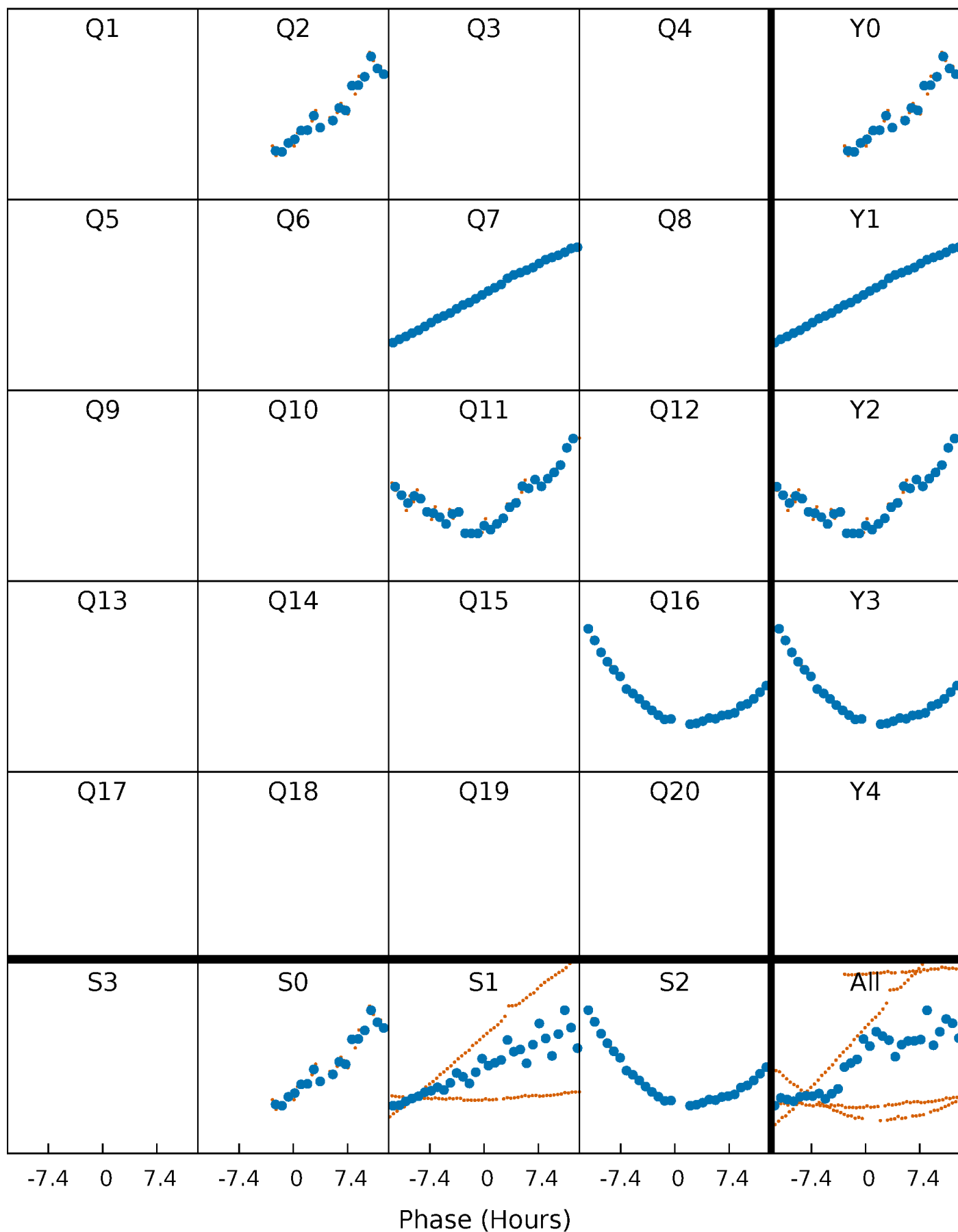


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



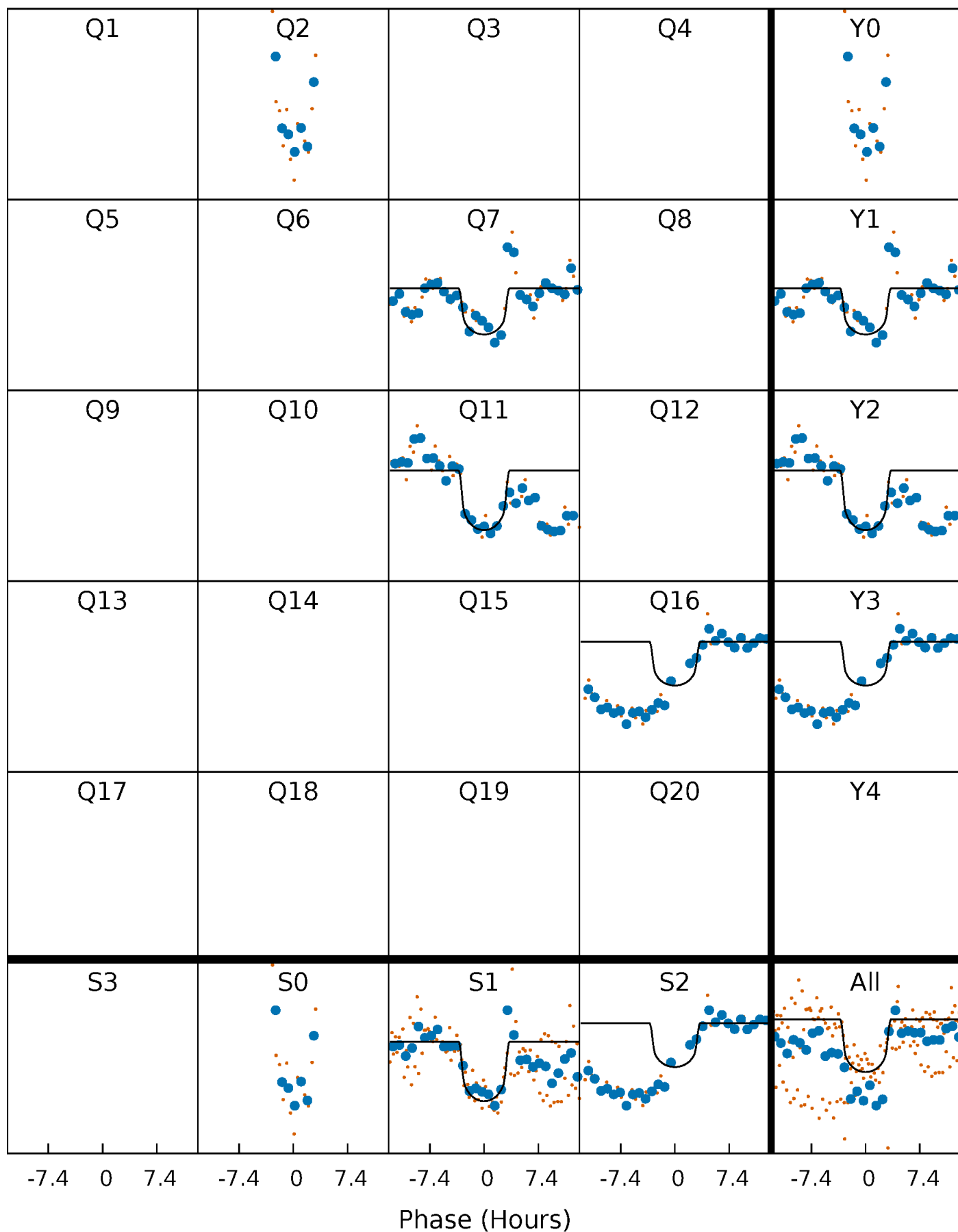
PDC Quarter-Phased Transit Curves

TCE 007433457-03 P=414.052209 Days $T_0=256.460690$ (BKJD)



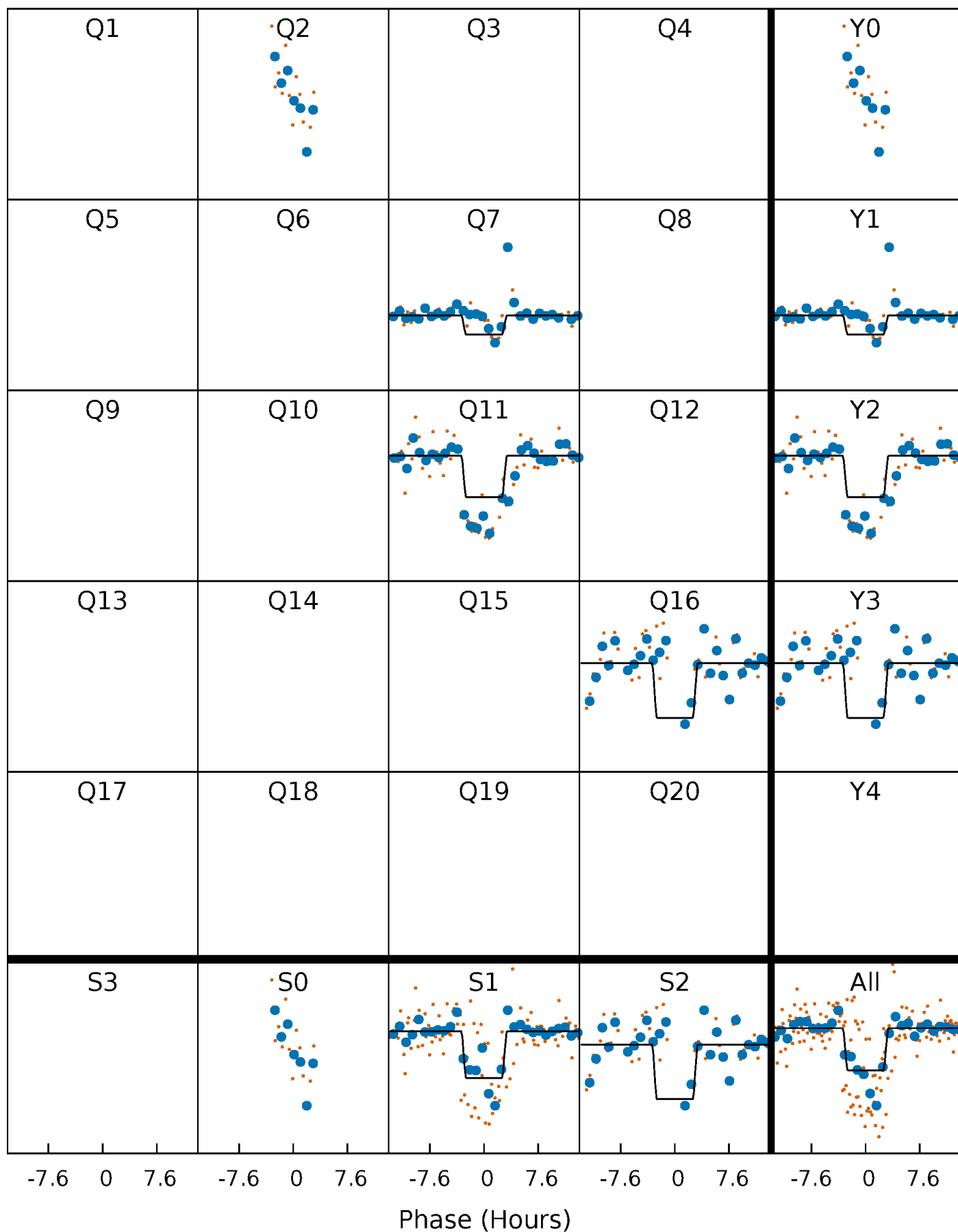
DV Quarter-Phased Transit Curves

TCE 007433457-03 $P=414.052209$ Days $T_0=256.460690$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

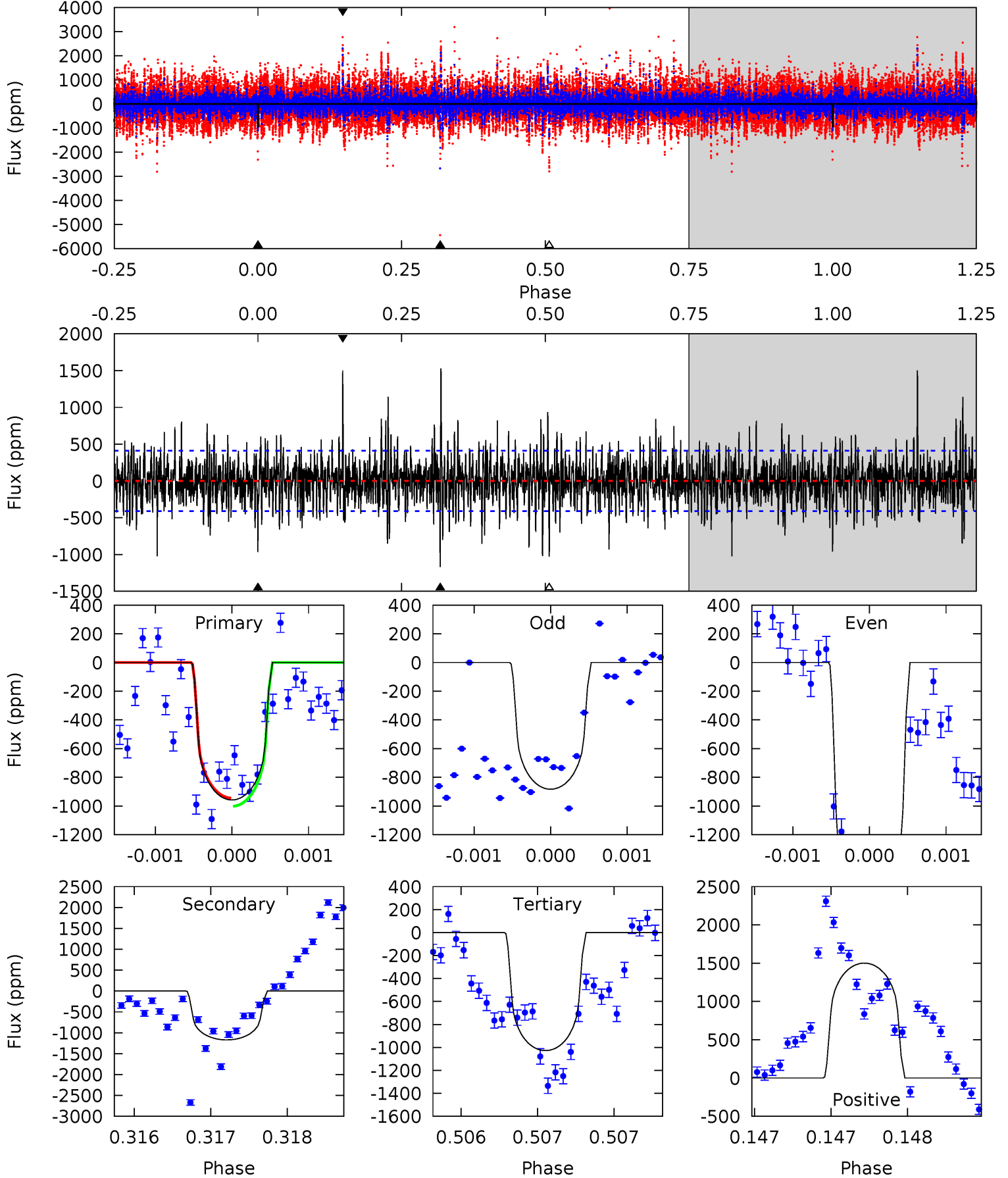
TCE 007433457-03 $P=414.058849$ Days $T_0=256.467928$ (BKJD)



DV Model-Shift Uniqueness Test

007433457-03, P = 414.052209 Days, E = 256.460690 Days

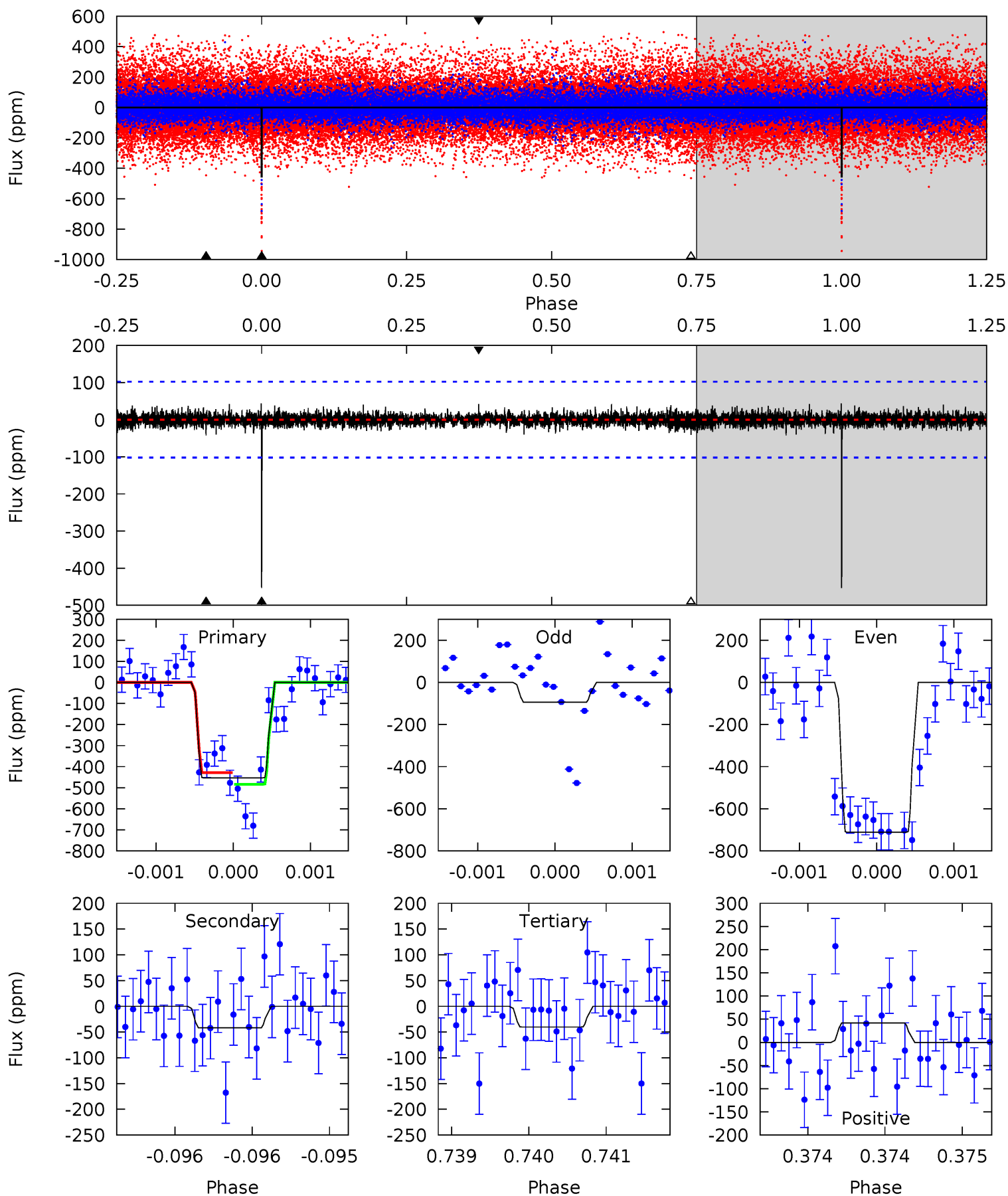
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.9	15.7	13.8	20.2	5.52	3.41	3.31	-0.94	-7.30	1.92	-4.44	5.43	1.38	0.57	0.38



Alt Model-Shift Uniqueness Test

007433457-03, P = 414.058849 Days, E = 256.467928 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
24.6	2.26	2.18	2.27	5.54	3.42	0.53	22.4	22.3	0.09	-0.01	17.3	1.08	0.09	1.47



Stellar Parameters For KIC 007433457

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5173^{+138}_{-154}	$3.781^{+0.885}_{-0.295}$	$-0.440^{+0.250}_{-0.350}$	$1.951^{+1.090}_{-1.211}$	$0.839^{+0.166}_{-0.166}$	$0.159^{+3.255}_{-0.125}$
	+3%/-3%	+23%/-8%	+57%/-80%	+56%/-62%	+20%/-20%	+2045%/-79%
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 007433457-03 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-1170 ± 74	$5.33^{+4.25}_{-3.10}$	423^{+65}_{-82}	5592^{+2562}_{-998}	$24155^{+113890}_{-16690}$
Alt.	-42 ± 18	$4.02^{+3.94}_{-2.67}$	426^{+66}_{-73}	3360^{+1363}_{-604}	1392^{+11305}_{-1066}

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 $A_{obs} \gg 1.0$

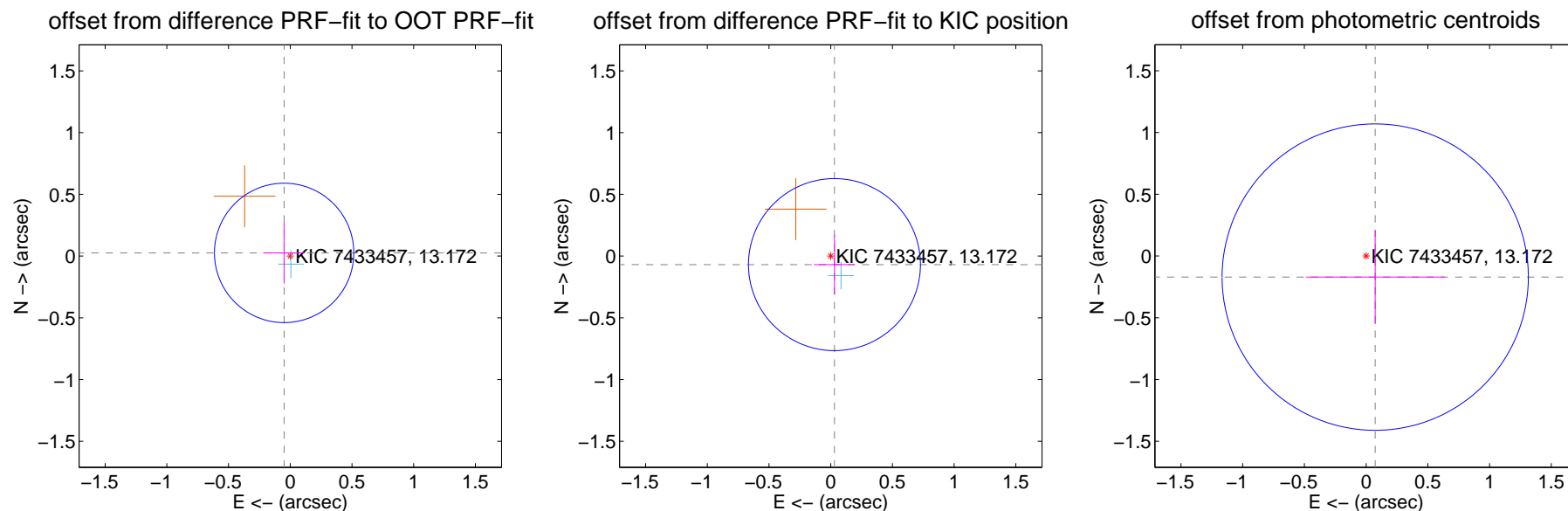
DV Centroid Data

Supplemental centroid analysis for 007433457-03. Kepler magnitude: 13.17. Transit SNR 8.81

There are 1 quarters with good PRF difference image offsets

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

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.056 ± 0.188	0.30	0.050 ± 0.169	0.026 ± 0.248
PRF-fit source offset from KIC position	0.075 ± 0.232	0.32	-0.030 ± 0.166	-0.069 ± 0.243
photometric centroid source offset	0.19 ± 0.41	0.45	-0.07 ± 0.56	-0.17 ± 0.38

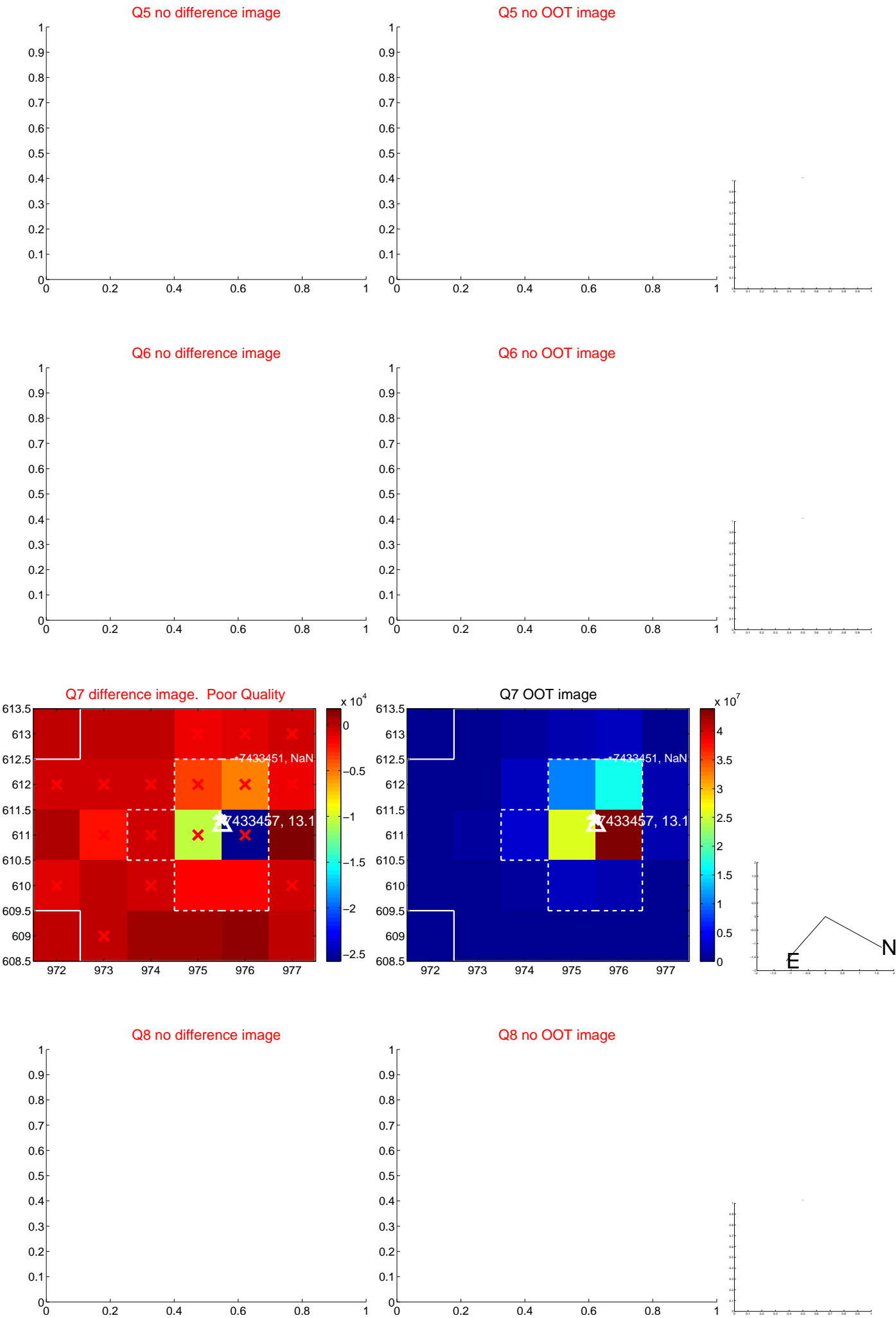


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

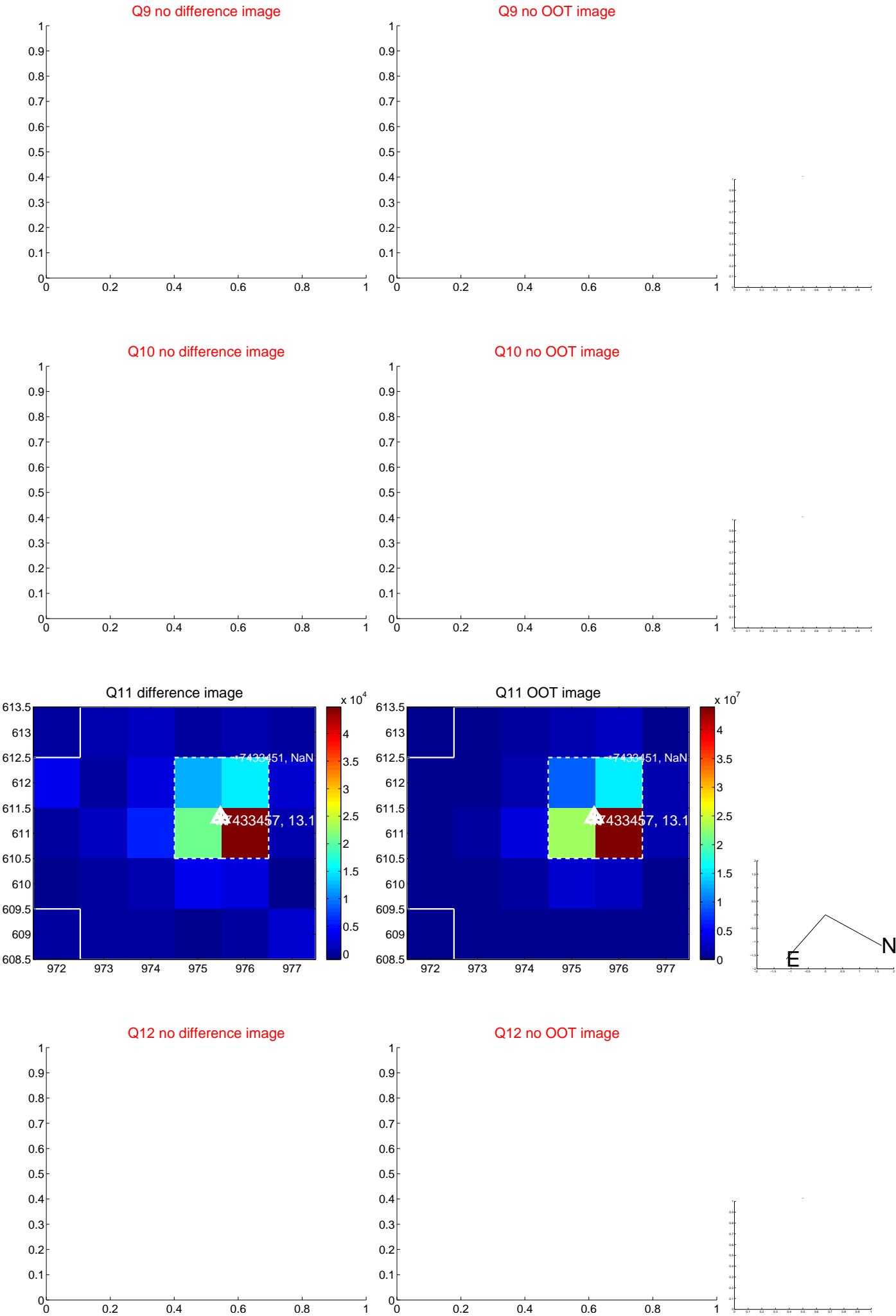
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



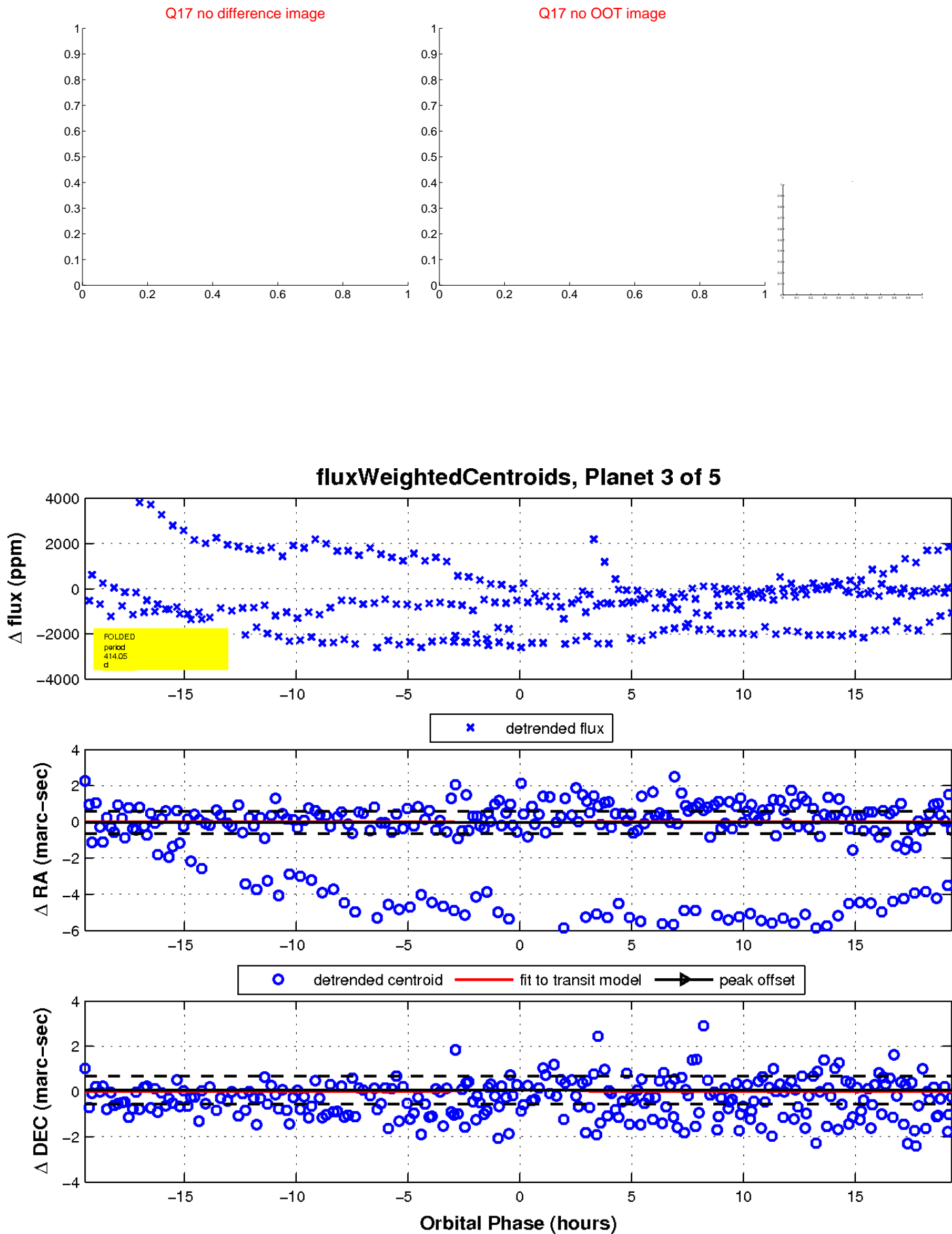
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

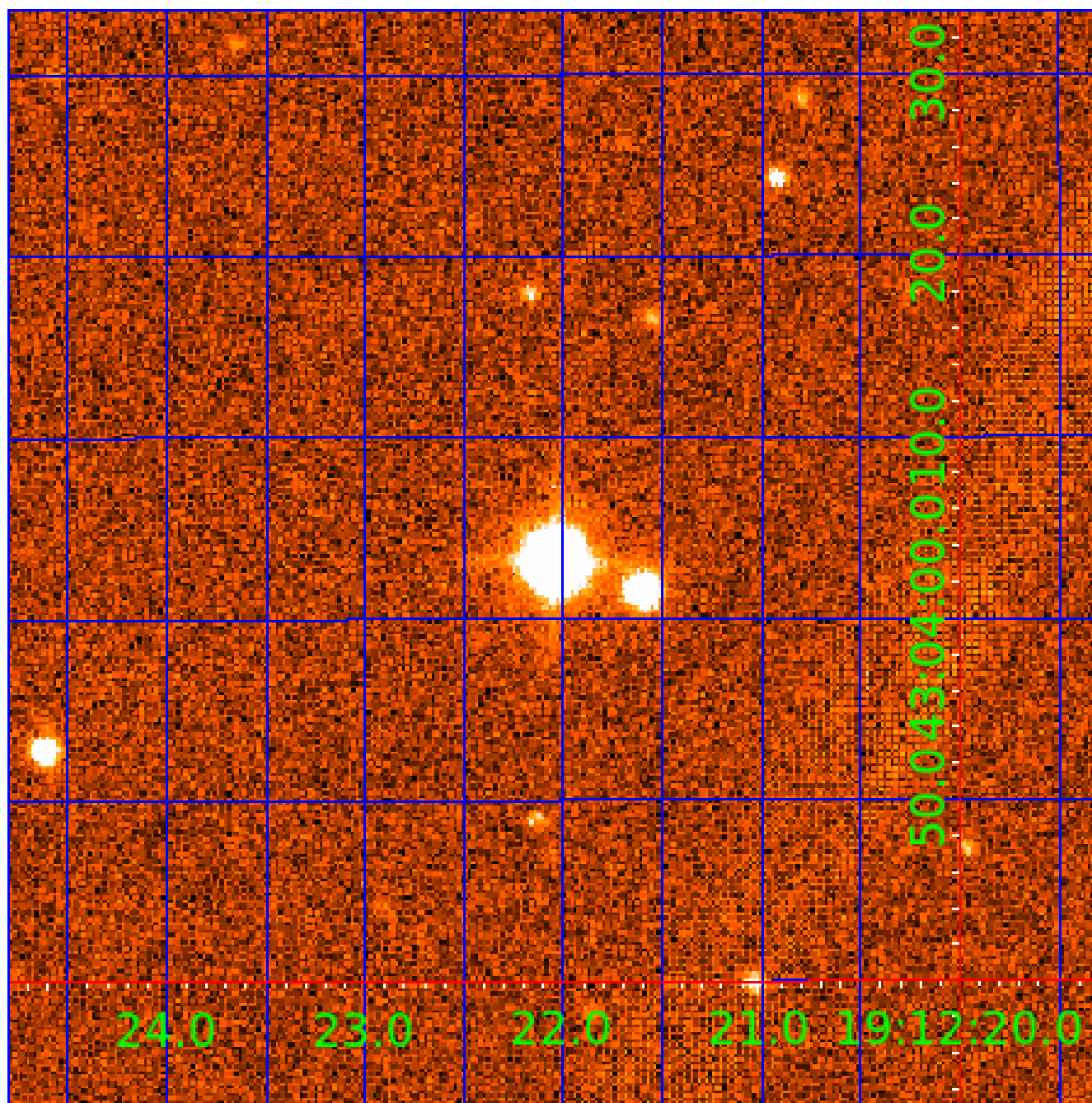


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 007433457

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})
007433457-01	OBS	No	474.386162	405.151690	787.4	3.005	15.2	8.5	1.95	5173	5.94	1.94
007433457-02	OBS	No	388.074642	256.814684	272.2	3.403	11.8	2.9	1.95	5173	3.83	2.53
007433457-03	OBS	No	414.052209	256.460690	863.6	6.495	13.8	8.8	1.95	5173	6.06	2.32
007433457-04	OBS	No	377.340762	371.646257	681.4	4.481	10.1	7.8	1.95	5173	5.39	2.63
007433457-05	OBS	No	283.694549	220.849752	662.9	4.350	11.4	7.2	1.95	5173	5.52	3.85

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007433457-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS
007433457-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
007433457-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
007433457-04	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—HALO_GHOST
007433457-05	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST

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

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

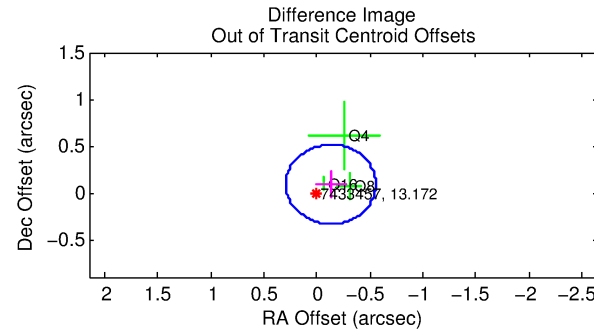
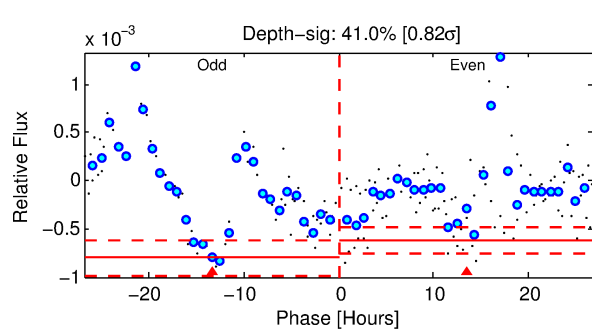
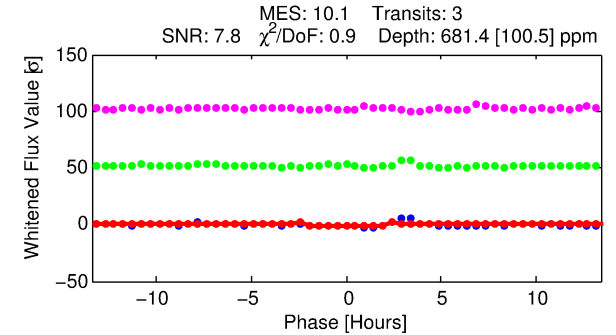
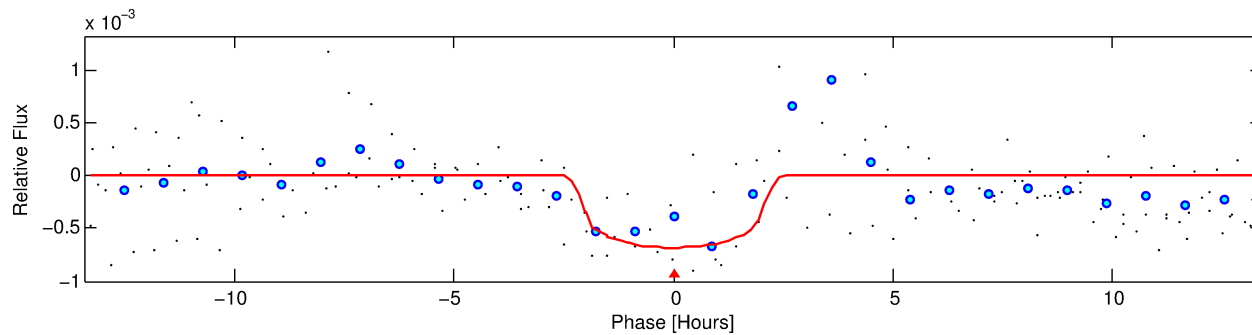
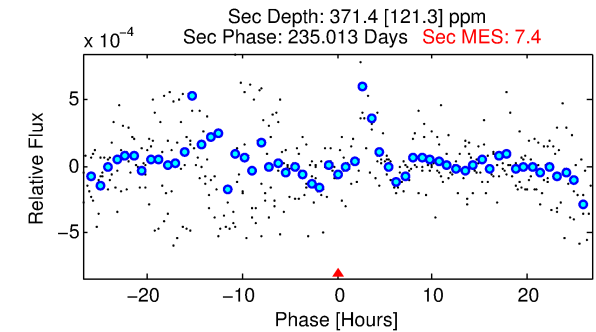
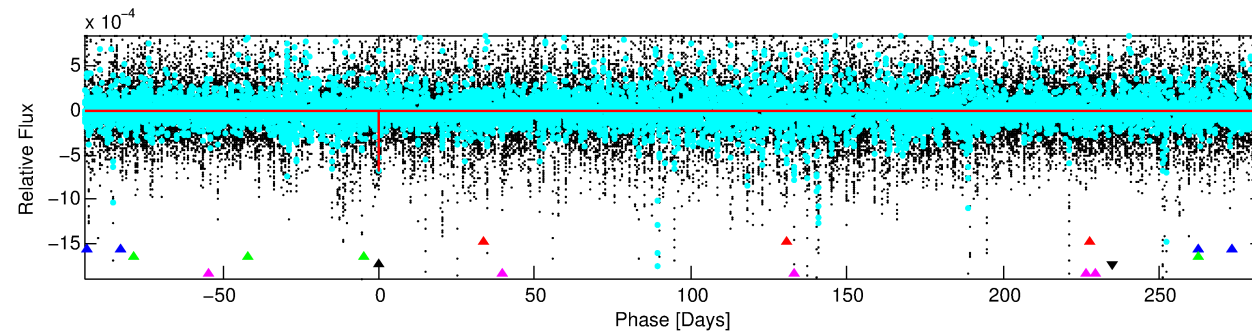
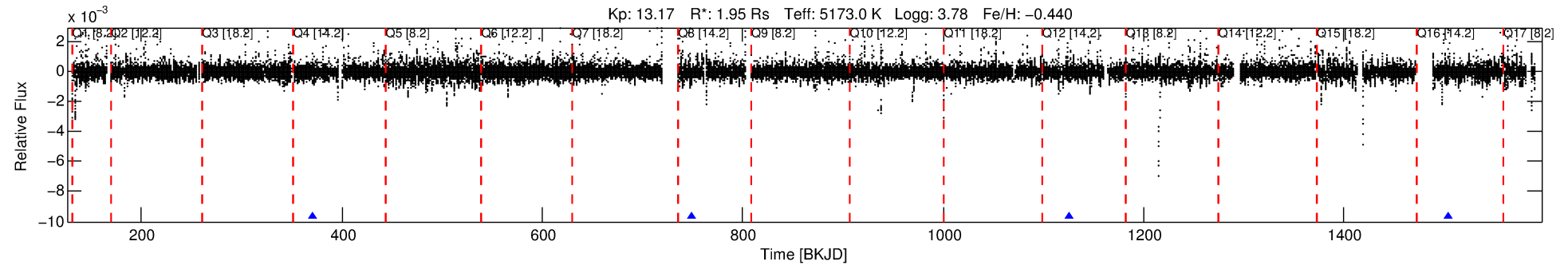
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007433457-04

No Significant Match Found

DV One-Page Summary

KIC: 7433457 Candidate: 4 of 5 Period: 377.341 d



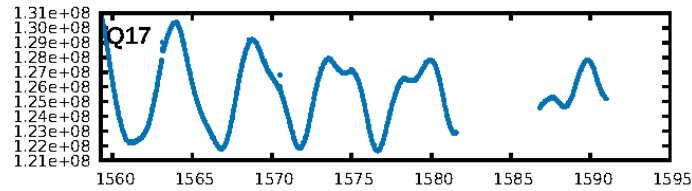
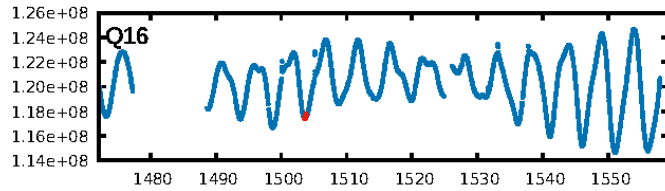
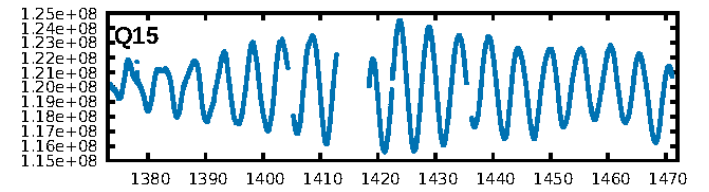
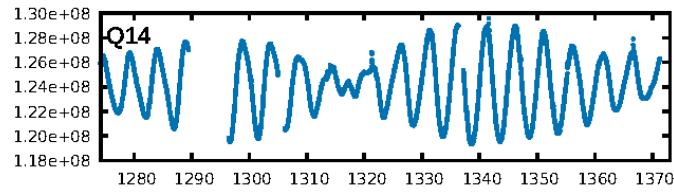
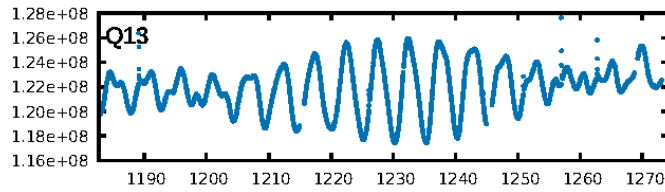
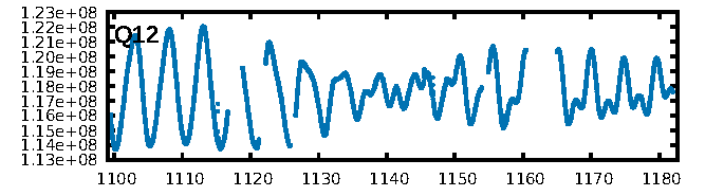
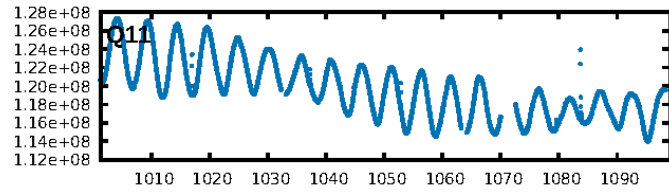
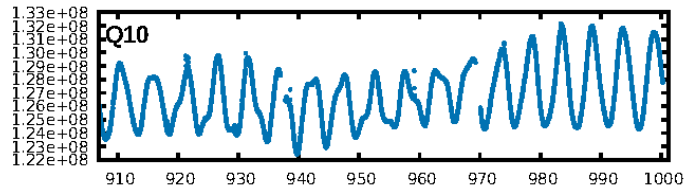
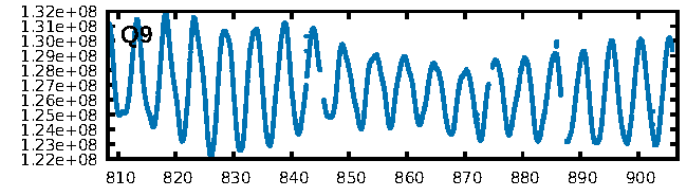
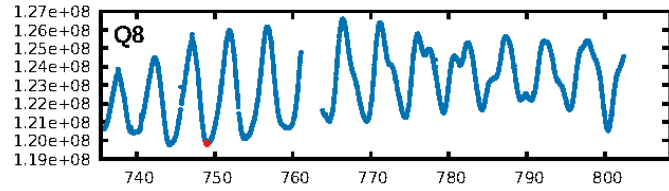
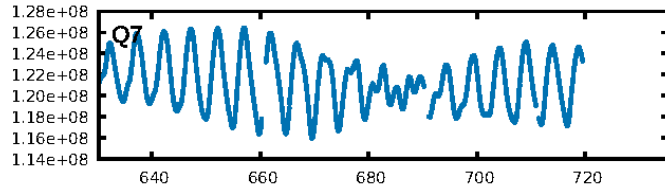
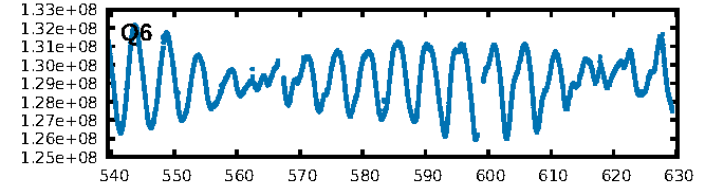
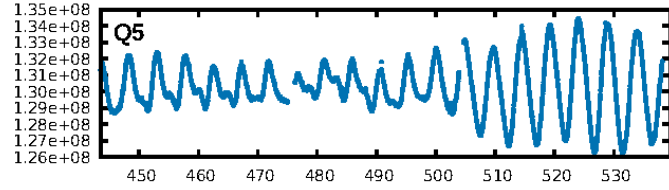
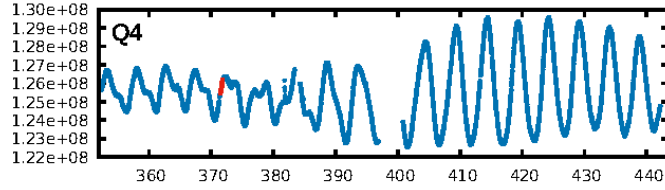
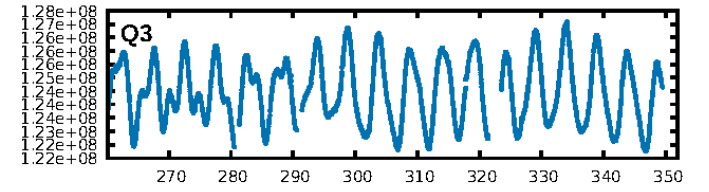
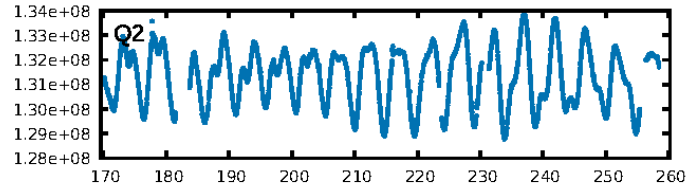
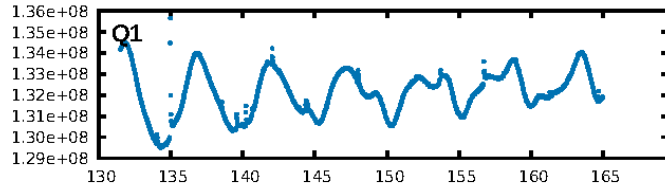
DV Fit Results:

Period = 377.34076 [0.00294] d
Epoch = 371.6463 [0.0043] BKJD
Rp/R* = 0.0253 [0.0177]
a/R* = 495.23 [1299.71]
b = 0.68 [2.13]
Seff = 2.63 [3.75]
Teq = 325 [116] K
Rp = 5.39 [5.04] Re
a = 0.9639 [0.7667] AU
Ag = 6527.81 [13188.68] [0.49 σ]
Teffp = 4512 [1627] K [2.57 σ]

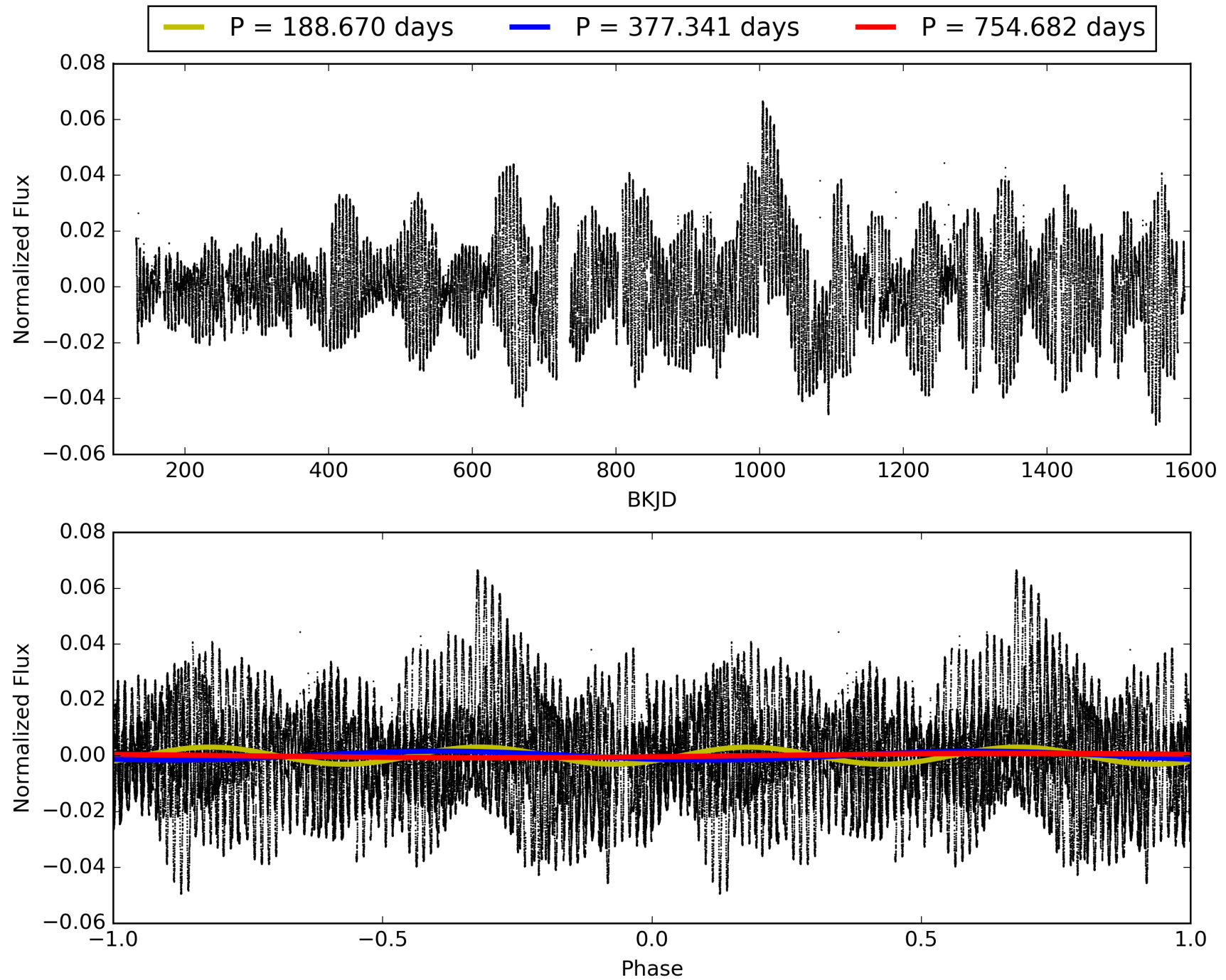
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [359.88 σ]
LongPeriod-sig: 100.0% [45.78 σ]
ModelChiSquare2-sig: 76.4%
ModelChiSquareGof-sig: 94.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 0.007751
Centroid-sig: 18.0%
Centroid-so: 0.659 arcsec [0.89 σ]
OotOffset-rm: 0.158 arcsec [1.12 σ]
OotOffset-st: 0/0/3/0 [3]
KicOffset-rm: 0.259 arcsec [1.86 σ]
KicOffset-st: 0/0/3/0 [3]
DiffImageQuality-fgm: 1.00 [3/3]
DiffImageOverlap-fno: 1.00 [3/3]

TCE 007433457-04, PDC Light Curves

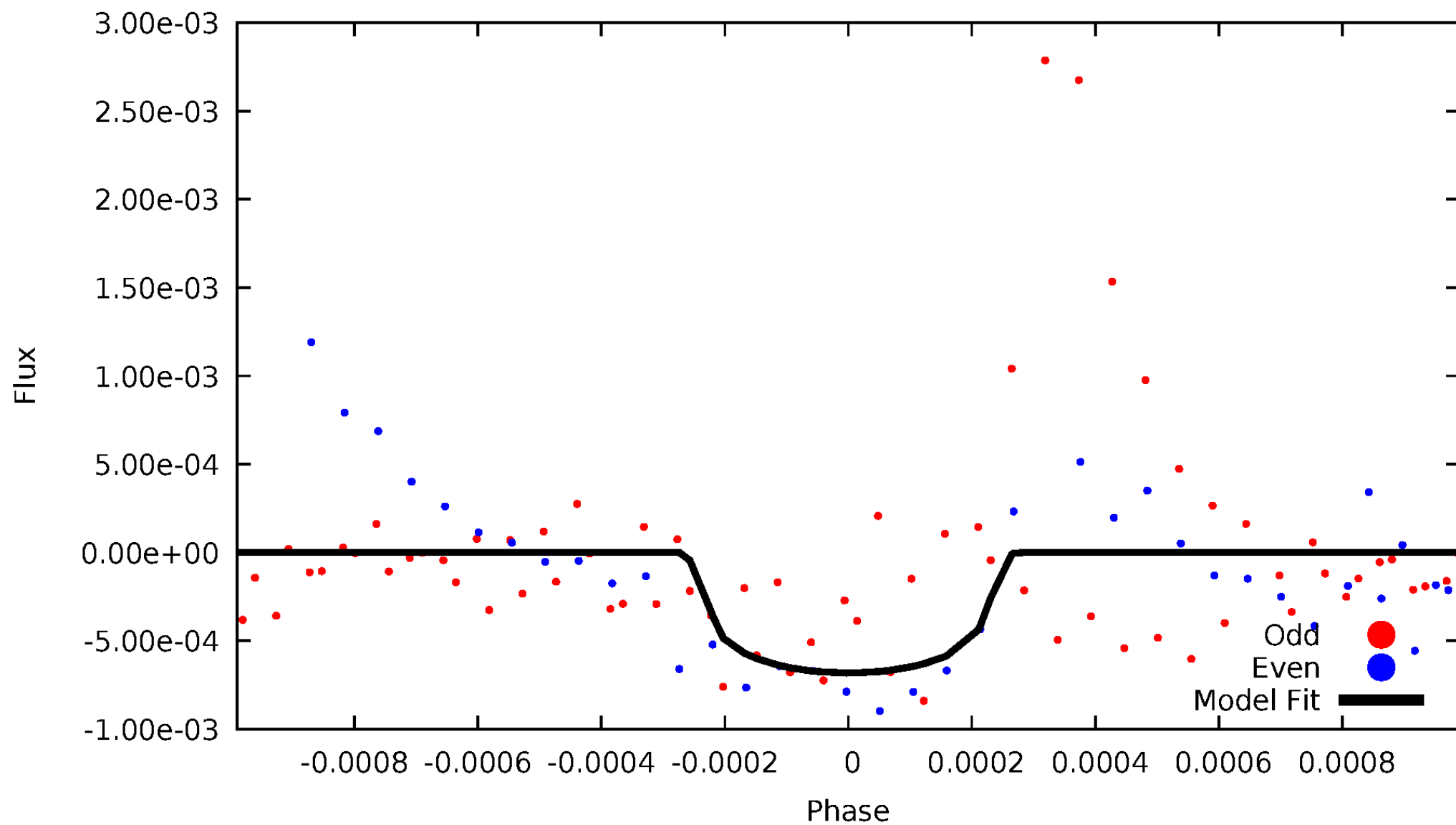


TCE 007433457-04



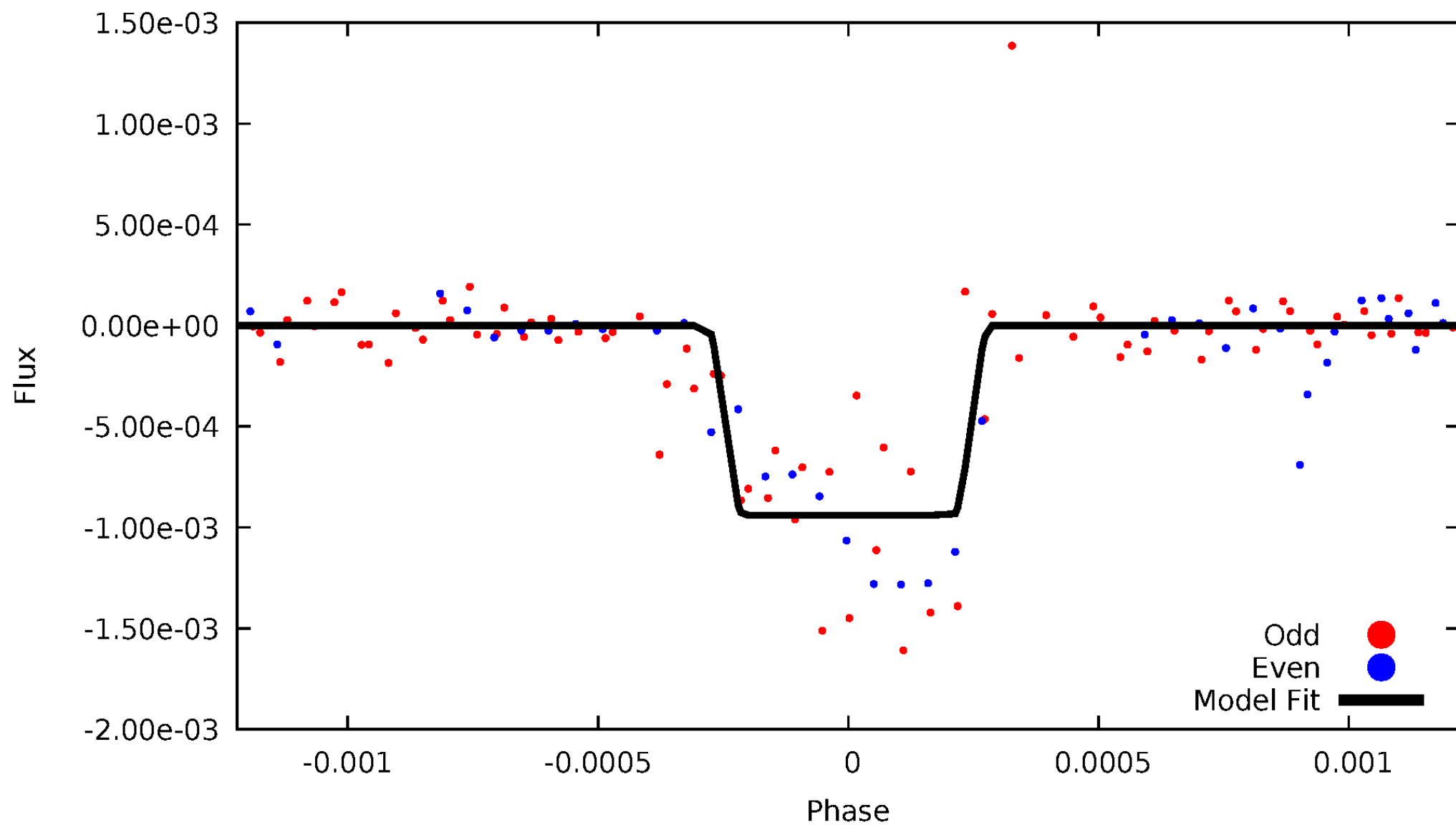
DV Odd/Even

TCE 007433457-04



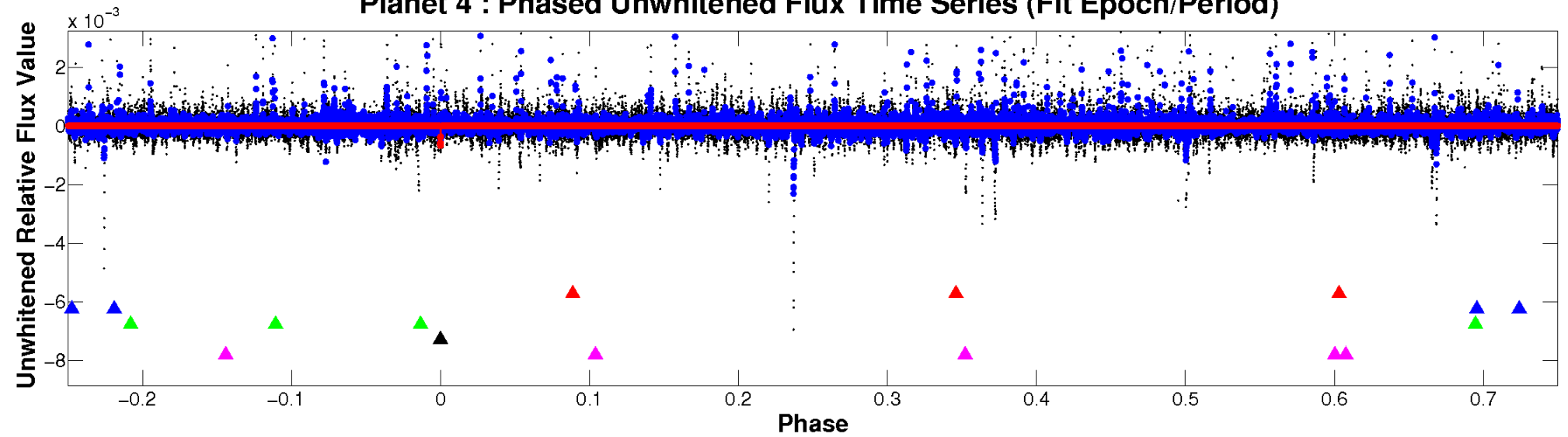
ALT Odd/Even

TCE 007433457-04

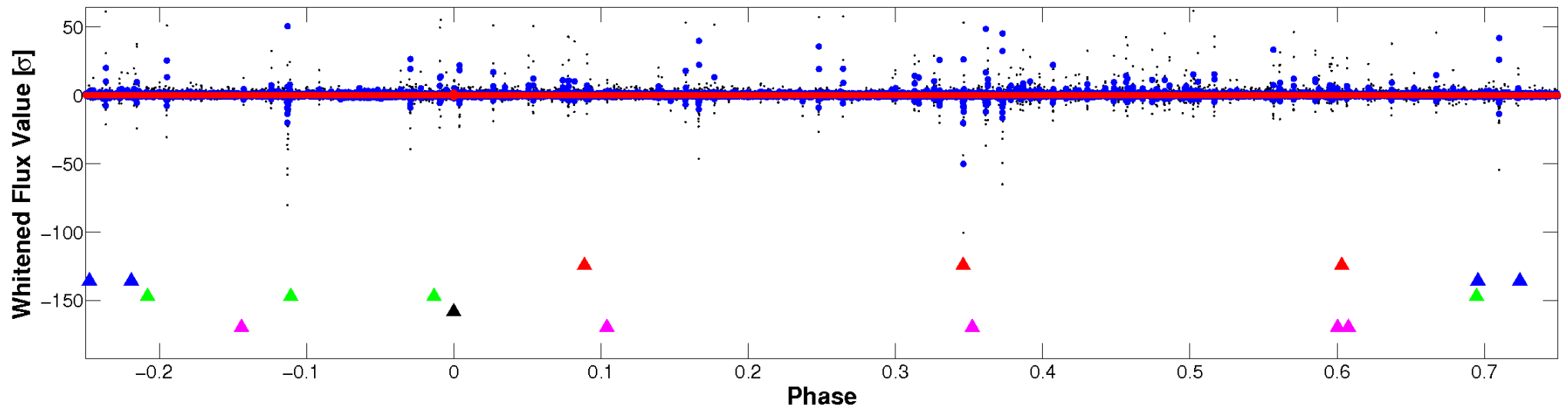


Non-Whitened Vs. Whitened Light Curve

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

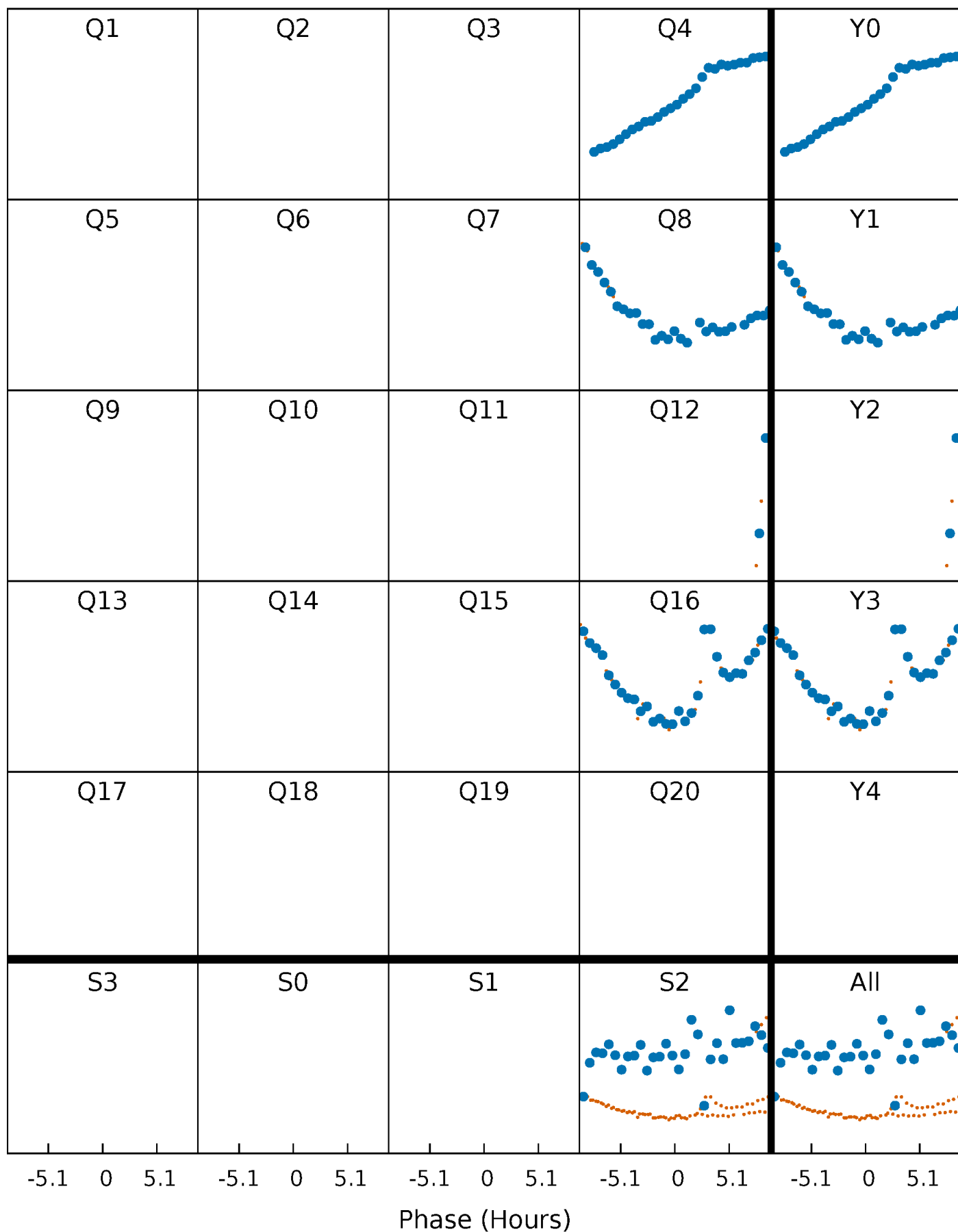


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



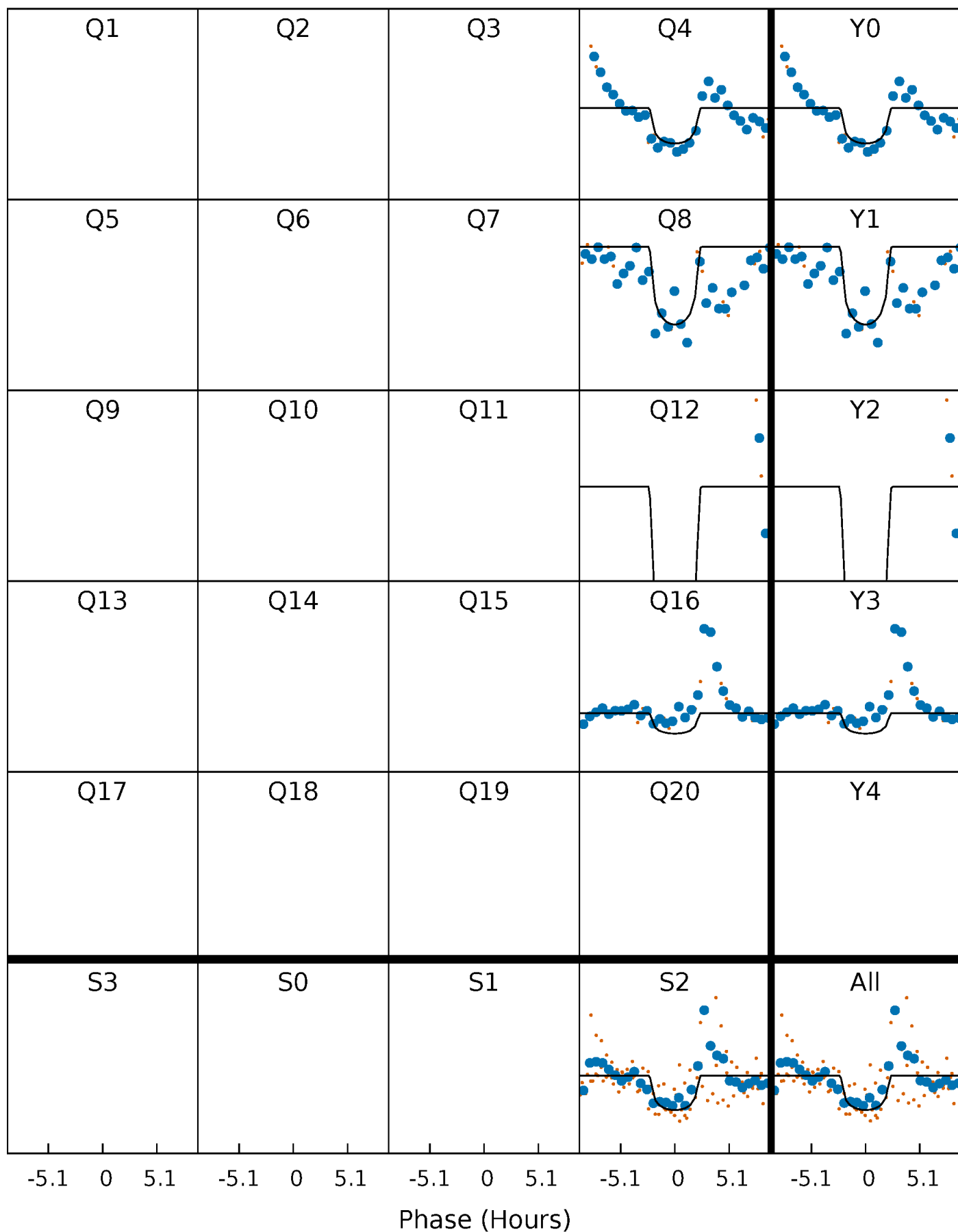
PDC Quarter-Phased Transit Curves

TCE 007433457-04 $P=377.340762$ Days $T_0=371.646257$ (BKJD)



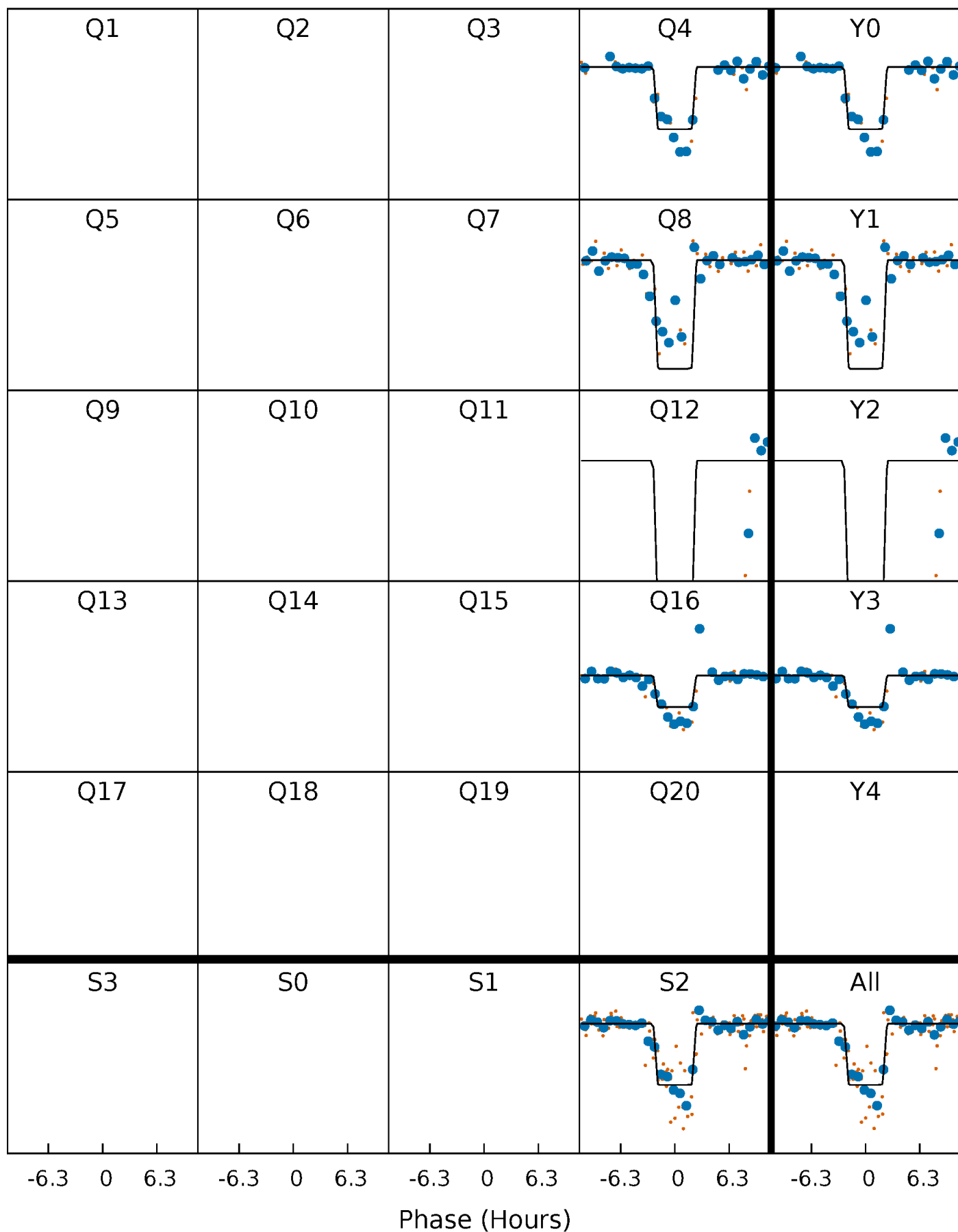
DV Quarter-Phased Transit Curves

TCE 007433457-04 P=377.340762 Days $T_0=371.646257$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

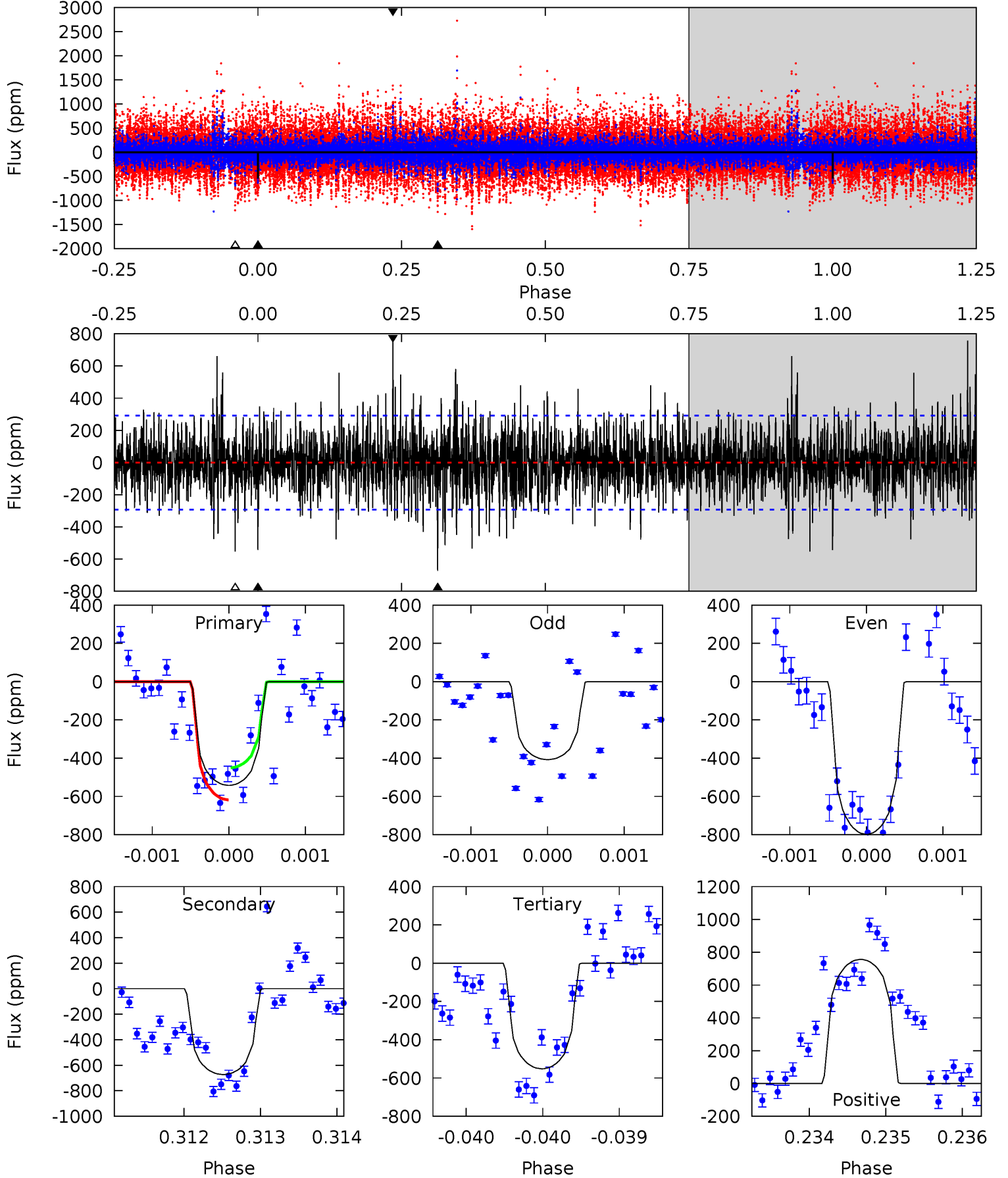
TCE 007433457-04 $P=377.339741$ Days $T_0=371.646324$ (BKJD)



DV Model-Shift Uniqueness Test

007433457-04, P = 377.340762 Days, E = 371.646257 Days

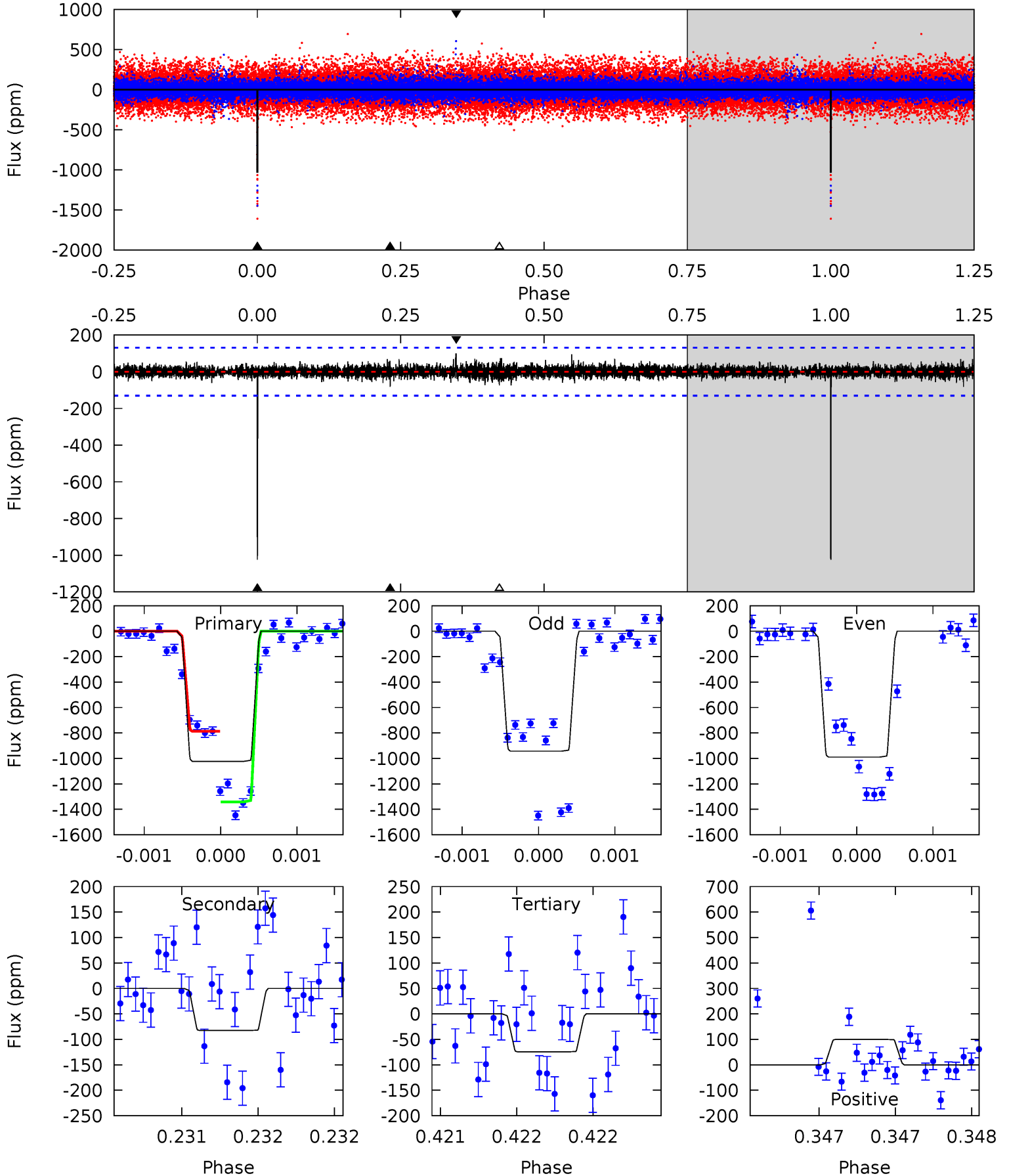
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.3	12.8	10.5	14.4	5.56	3.46	2.48	-0.18	-4.07	2.30	-1.59	3.02	0.79	0.53	1.60



Alt Model-Shift Uniqueness Test

007433457-04, P = 377.339741 Days, E = 371.646324 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
43.6	3.51	3.17	4.24	5.56	3.46	0.66	40.4	39.3	0.34	-0.73	0.99	0.95	0.09	11.7



Stellar Parameters For KIC 007433457

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5173^{+138}_{-154}	$3.781^{+0.885}_{-0.295}$	$-0.440^{+0.250}_{-0.350}$	$1.951^{+1.090}_{-1.211}$	$0.839^{+0.166}_{-0.166}$	$0.159^{+3.255}_{-0.125}$
	+3%/-3%	+23%/-8%	+57%/-80%	+56%/-62%	+20%/-20%	+2045%/-79%
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 007433457-04 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-673 ± 53	$5.00^{+4.19}_{-2.97}$	434^{+69}_{-86}	4981^{+2249}_{-821}	13410^{+67484}_{-9251}
Alt.	-82 ± 23	$5.88^{+4.68}_{-3.29}$	441^{+64}_{-84}	3272^{+835}_{-405}	1212^{+4818}_{-858}

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 $A_{\text{obs}} \gg 1.0$

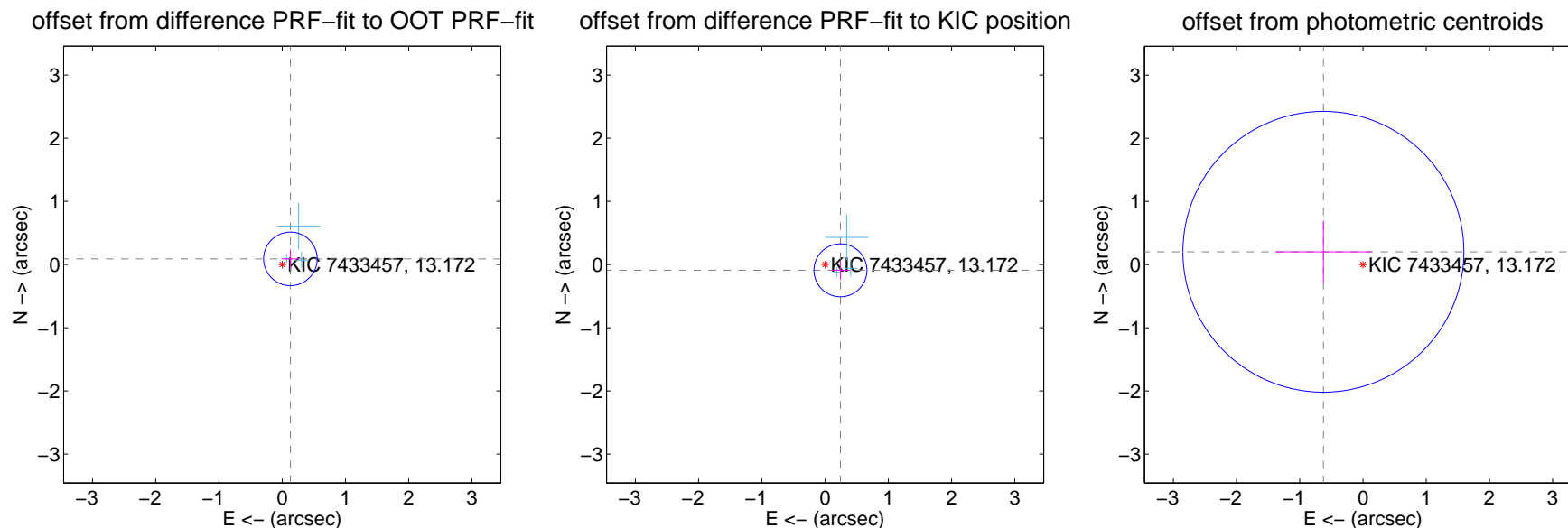
DV Centroid Data

Supplemental centroid analysis for 007433457-04. Kepler magnitude: 13.17. Transit SNR 7.79

There are 3 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.25 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.158 ± 0.141	1.12	-0.130 ± 0.139	0.089 ± 0.147
PRF-fit source offset from KIC position	0.259 ± 0.140	1.86	-0.243 ± 0.139	-0.091 ± 0.147
photometric centroid source offset	0.66 ± 0.74	0.89	0.63 ± 0.76	0.20 ± 0.49



Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ . Red *: target star. Blue *: Other stars. Text next to a star gives its KIC ID and kepmag. KIC IDs > 15,000,000 are from the UKIRT catalog.

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

Q1 no difference image



Q1 no OOT image



Q2 no difference image



Q2 no OOT image



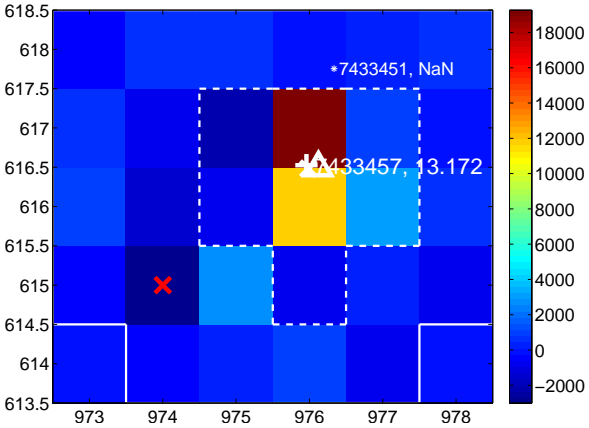
Q3 no difference image



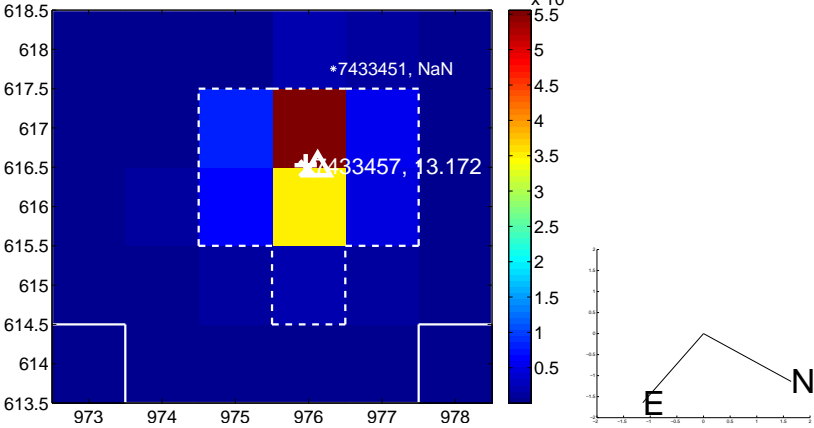
Q3 no OOT image



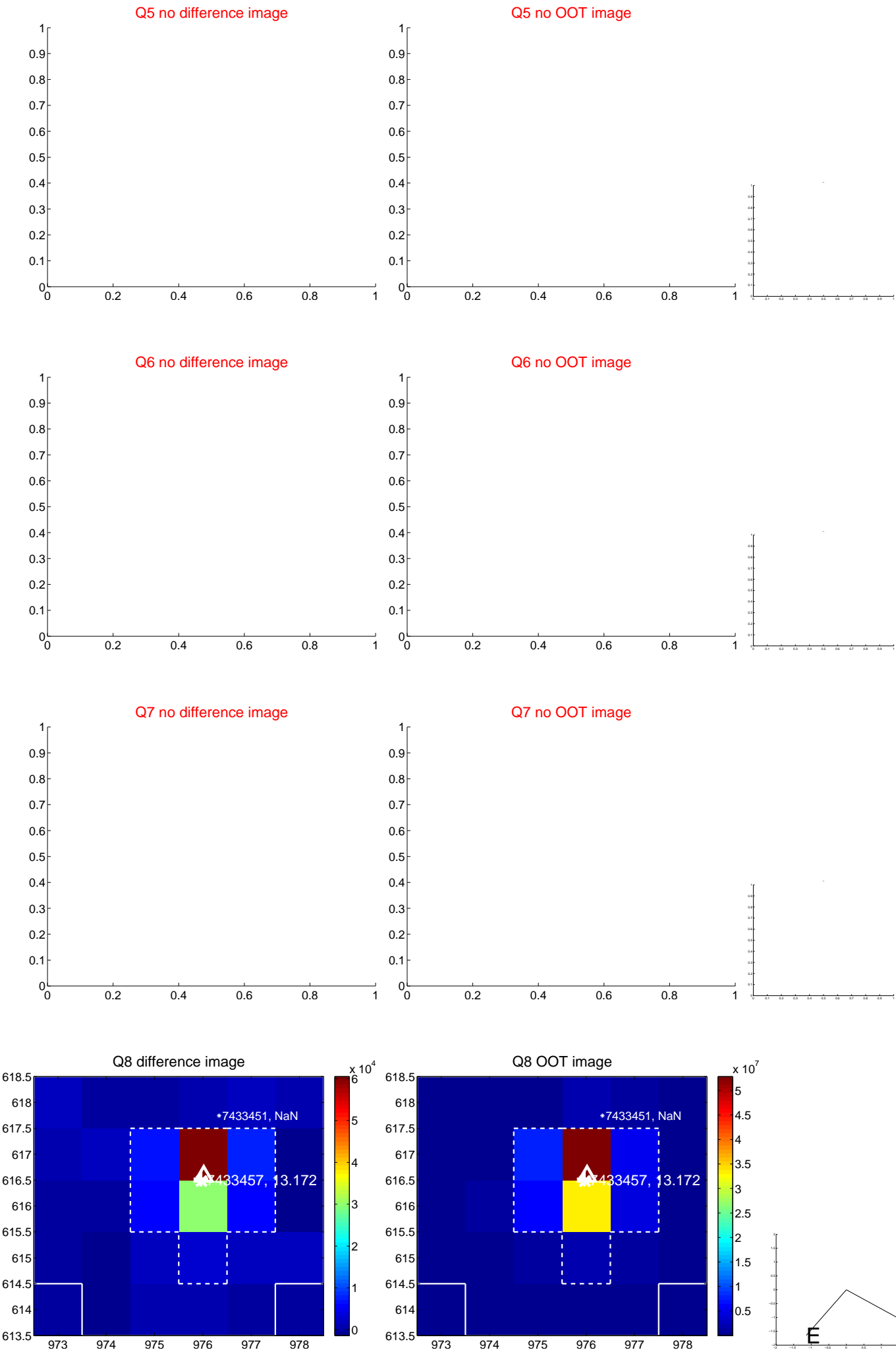
Q4 difference image



Q4 OOT image



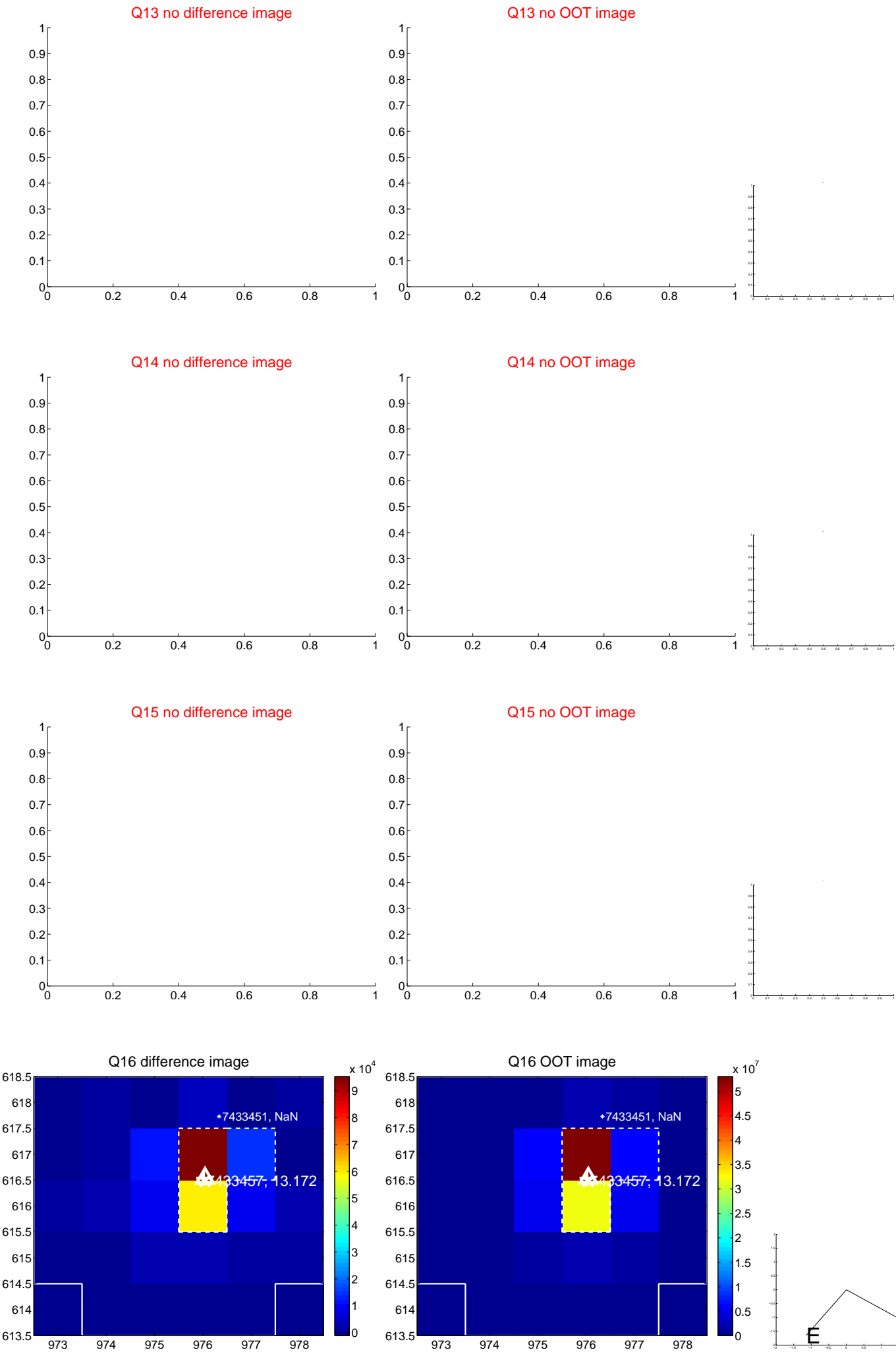
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



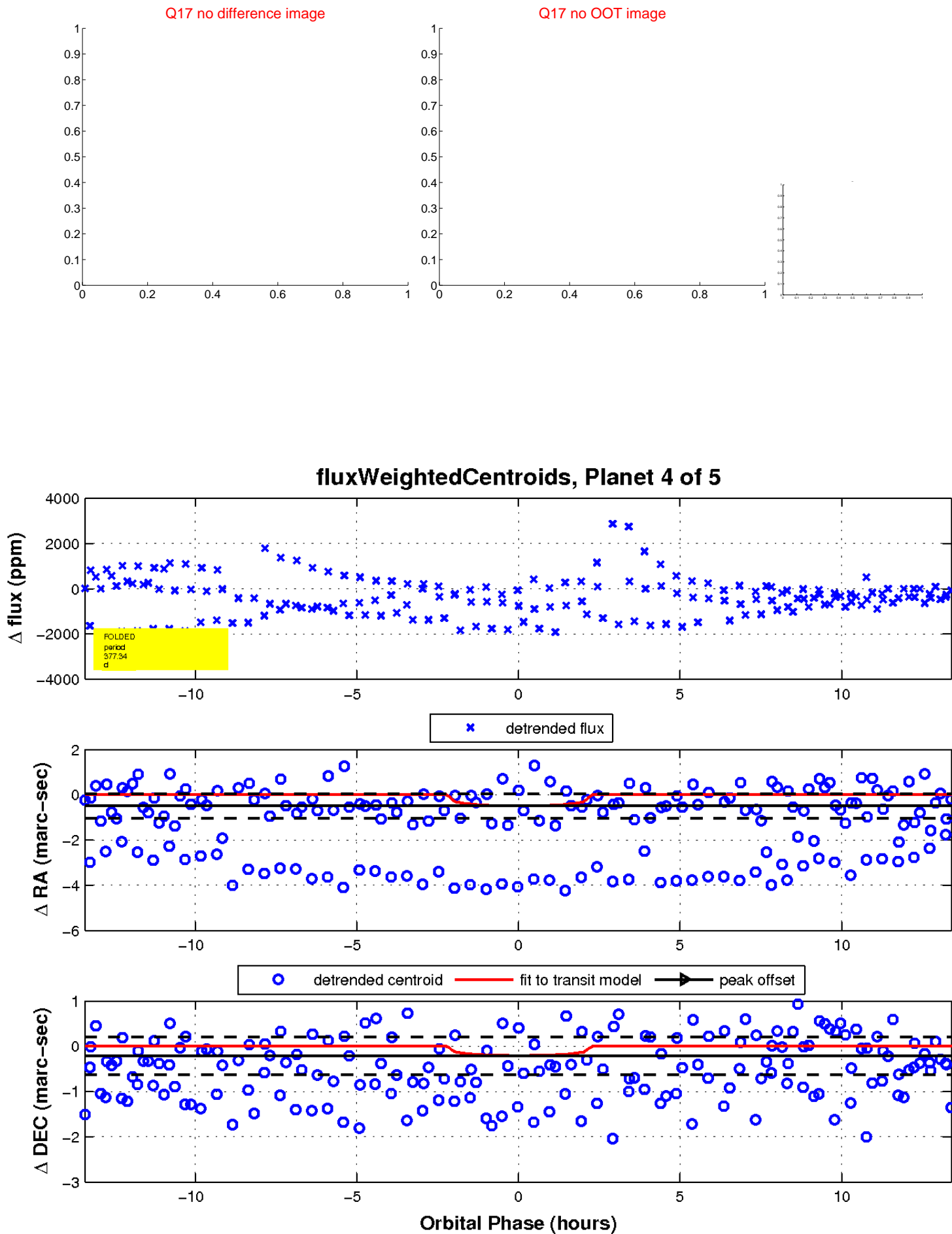
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

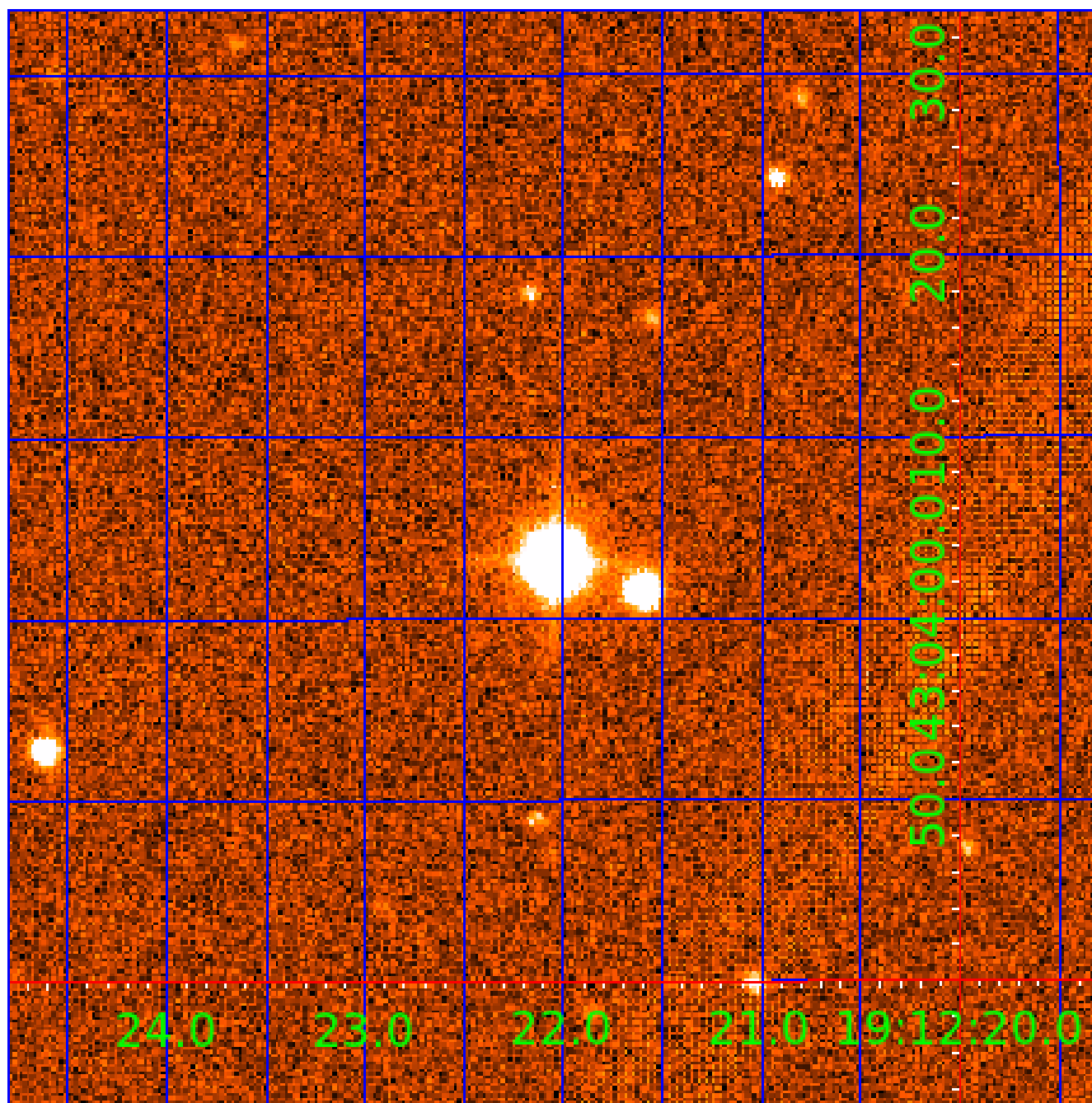


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 007433457

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})
007433457-01	OBS	No	474.386162	405.151690	787.4	3.005	15.2	8.5	1.95	5173	5.94	1.94
007433457-02	OBS	No	388.074642	256.814684	272.2	3.403	11.8	2.9	1.95	5173	3.83	2.53
007433457-03	OBS	No	414.052209	256.460690	863.6	6.495	13.8	8.8	1.95	5173	6.06	2.32
007433457-04	OBS	No	377.340762	371.646257	681.4	4.481	10.1	7.8	1.95	5173	5.39	2.63
007433457-05	OBS	No	283.694549	220.849752	662.9	4.350	11.4	7.2	1.95	5173	5.52	3.85

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007433457-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS
007433457-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
007433457-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
007433457-04	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—HALO_GHOST
007433457-05	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST

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

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

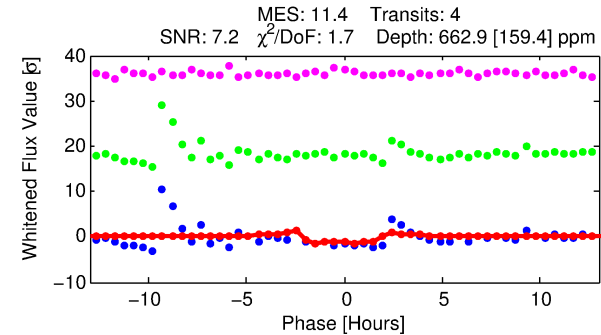
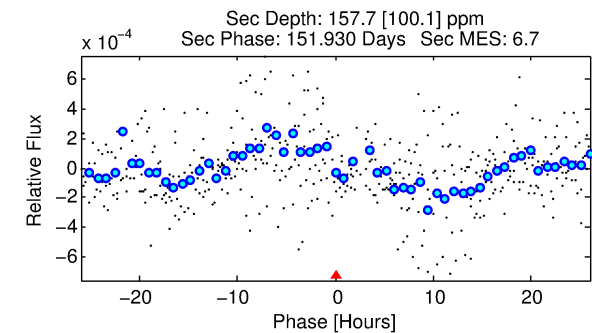
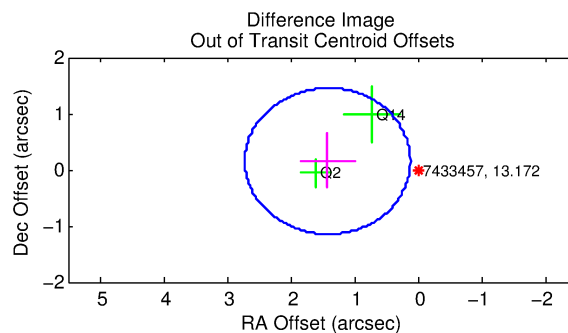
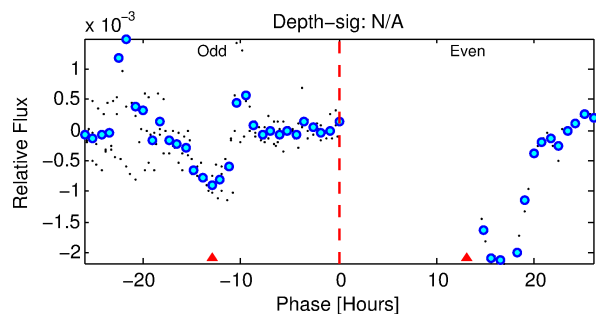
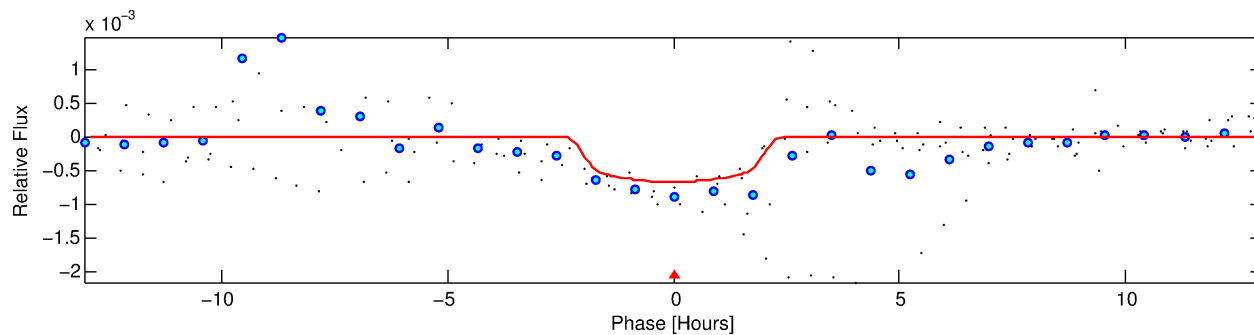
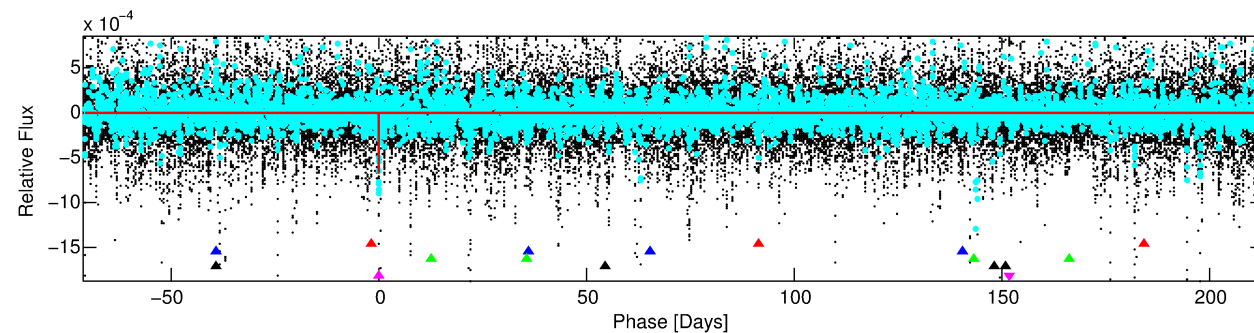
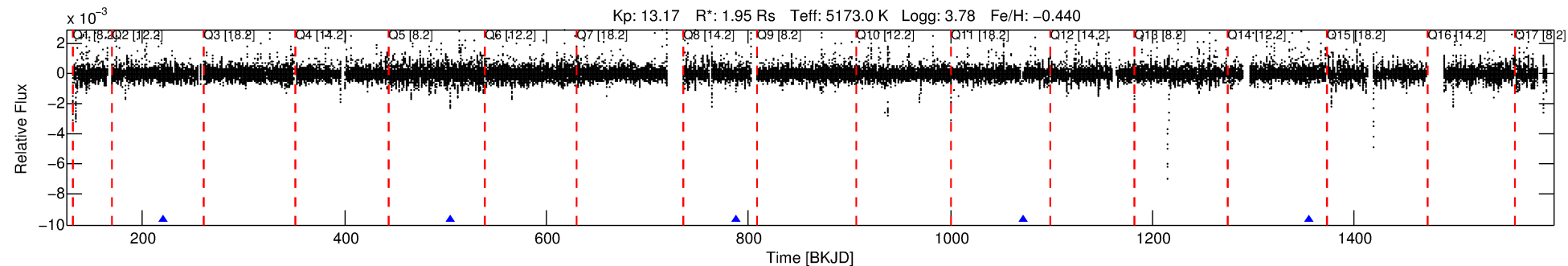
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007433457-05

No Significant Match Found

DV One-Page Summary

KIC: 7433457 Candidate: 5 of 5 Period: 283.695 d



DV Fit Results:

Period = 283.69455 [0.00326] d
Epoch = 220.8498 [0.0080] BKJD
Rp/R* = 0.0259 [0.0229]
a/R* = 335.82 [1169.56]
b = 0.77 [1.83]
Seff = 3.85 [5.48]
Teq = 357 [127] K
Rp = 5.52 [5.97] Re
a = 0.7970 [0.6339] AU
Ag = 1806.53 [4255.34] [0.42σ]
Teffp = 3599 [1694] K [1.91σ]

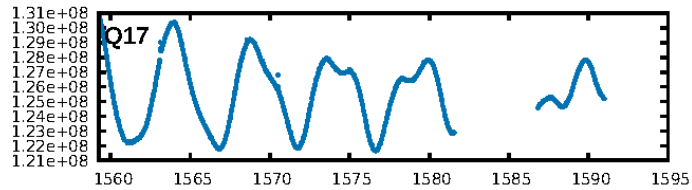
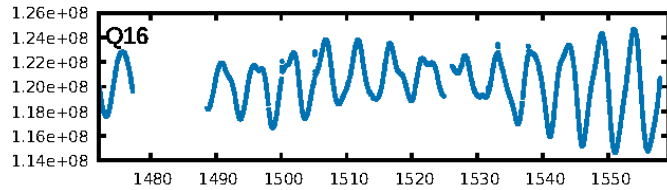
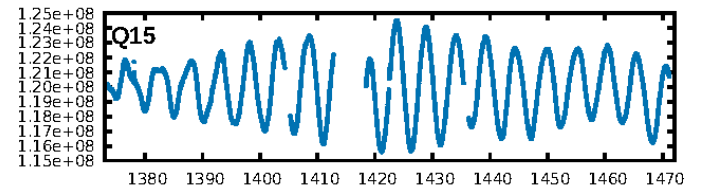
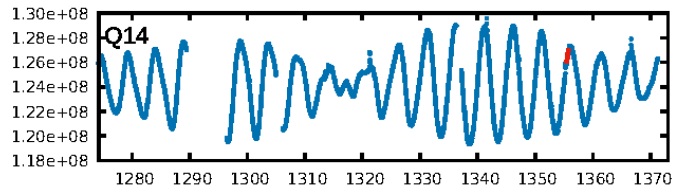
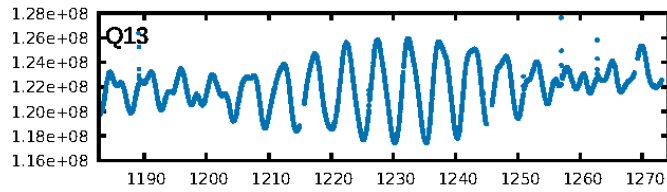
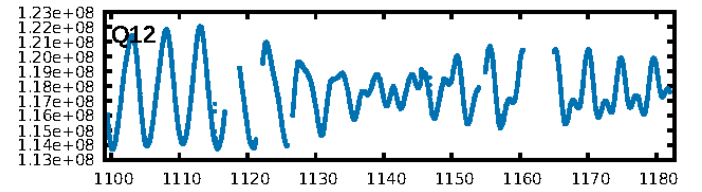
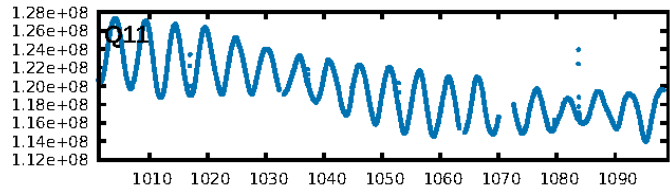
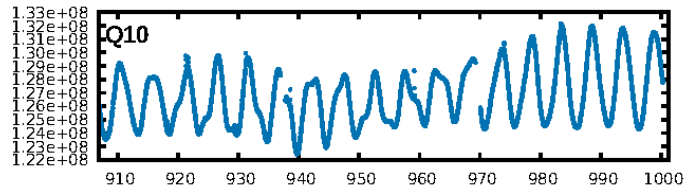
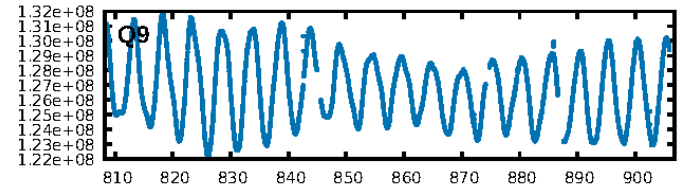
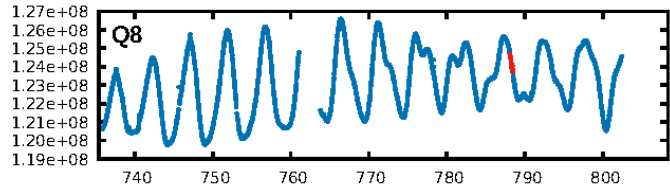
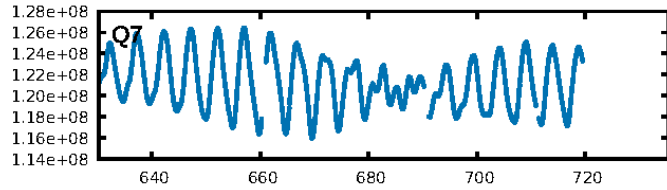
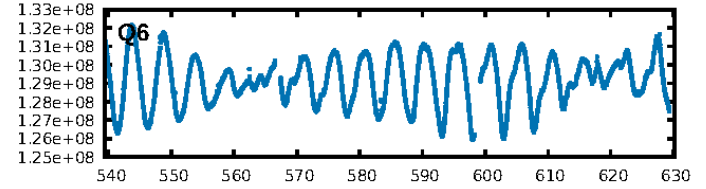
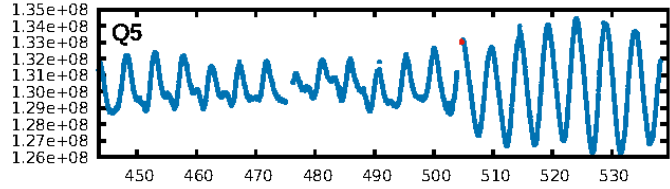
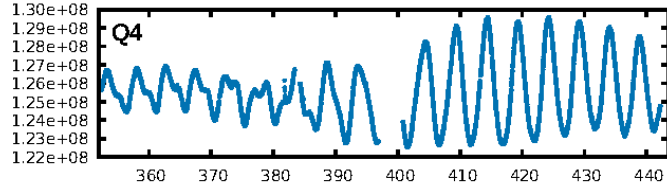
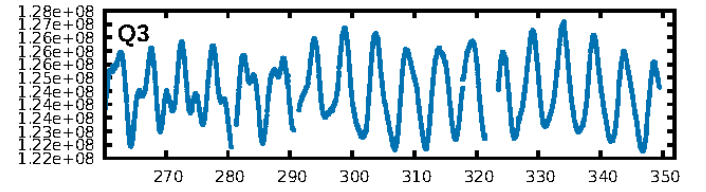
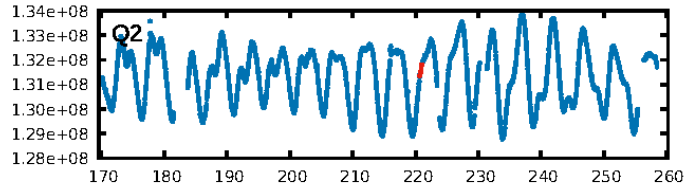
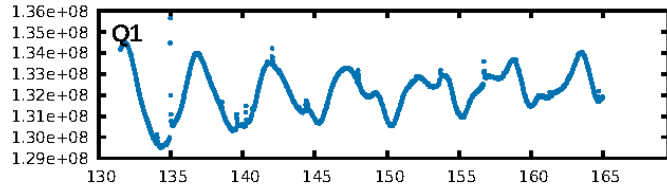
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [359.88σ]
ModelChiSquare2-sig: 69.3%
ModelChiSquareGof-sig: 99.9%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: 0.2071
Centroid-sig: 42.7%
Centroid-so: 0.414 arcsec [0.60σ]
OotOffset-rm: 1.425 arcsec [3.29σ]
KicOffset-rm: 1.360 arcsec [3.12σ]
OotOffset-st: 2/0/0/0 [2]
KicOffset-st: 2/0/0/0 [2]
DiffImageQuality-fgm: 0.00 [0/2]
DiffImageOverlap-fno: 1.00 [3/3]

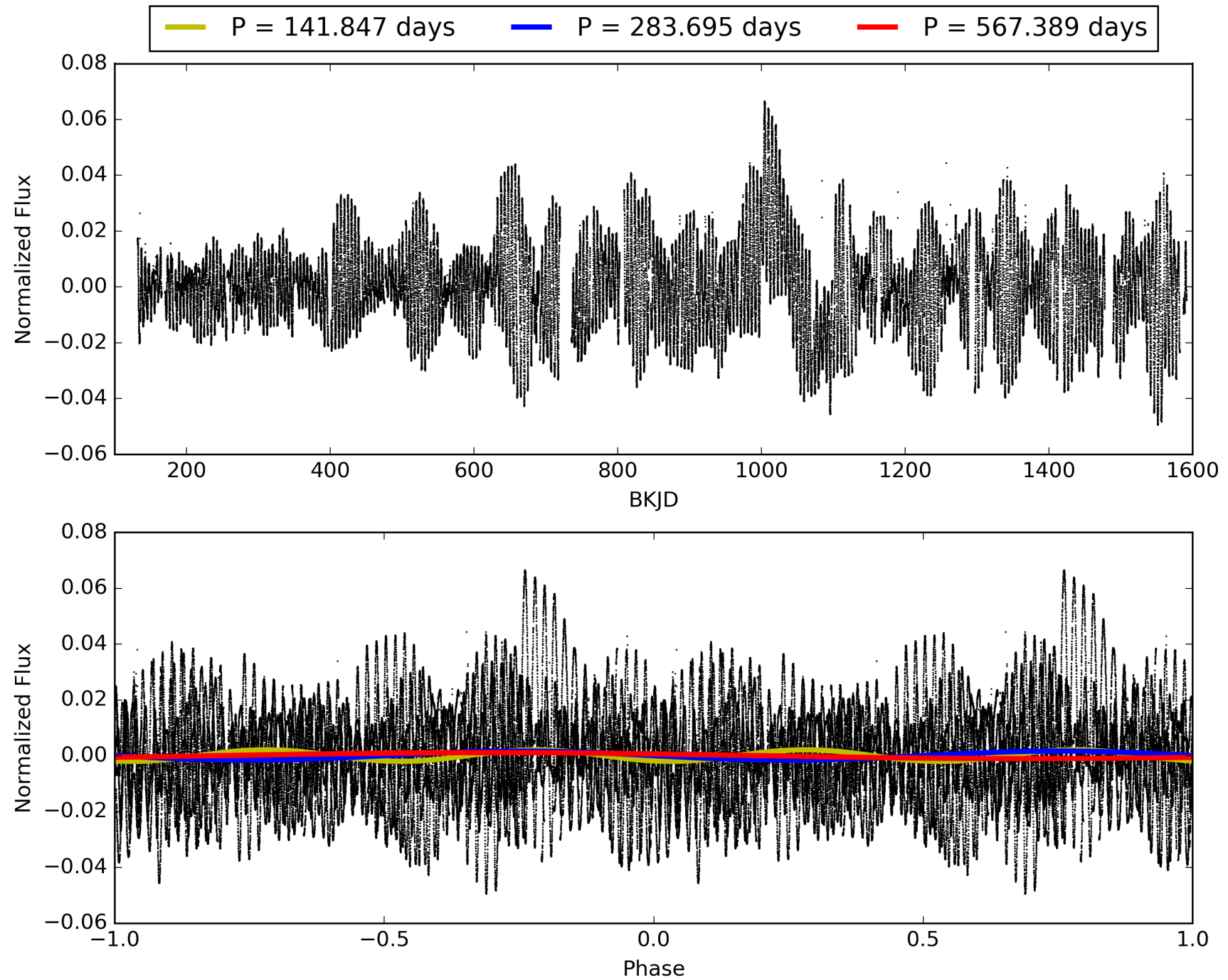
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 02-Feb-2016 00:39:42 Z

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

TCE 007433457-05, PDC Light Curves

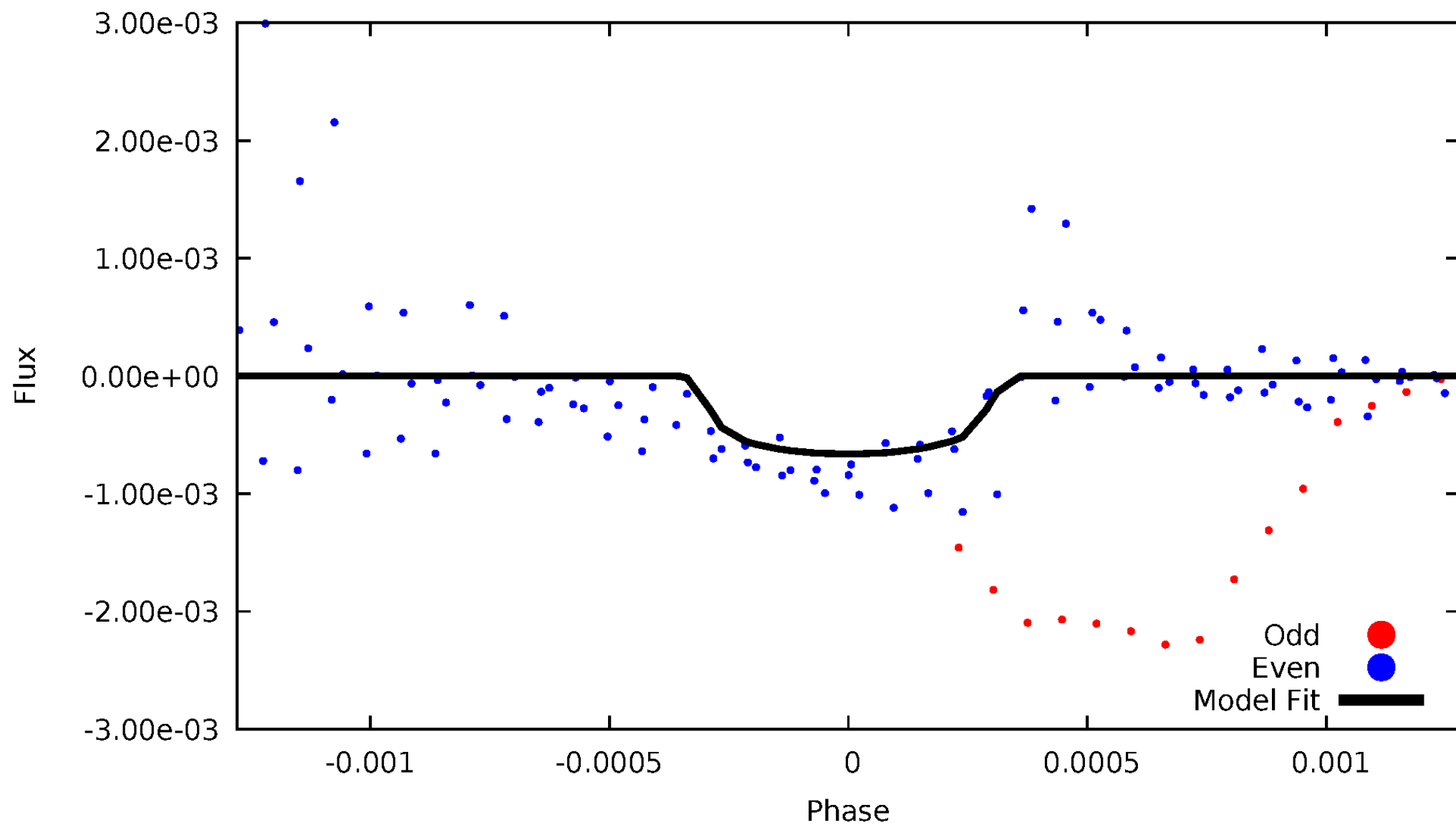


TCE 007433457-05



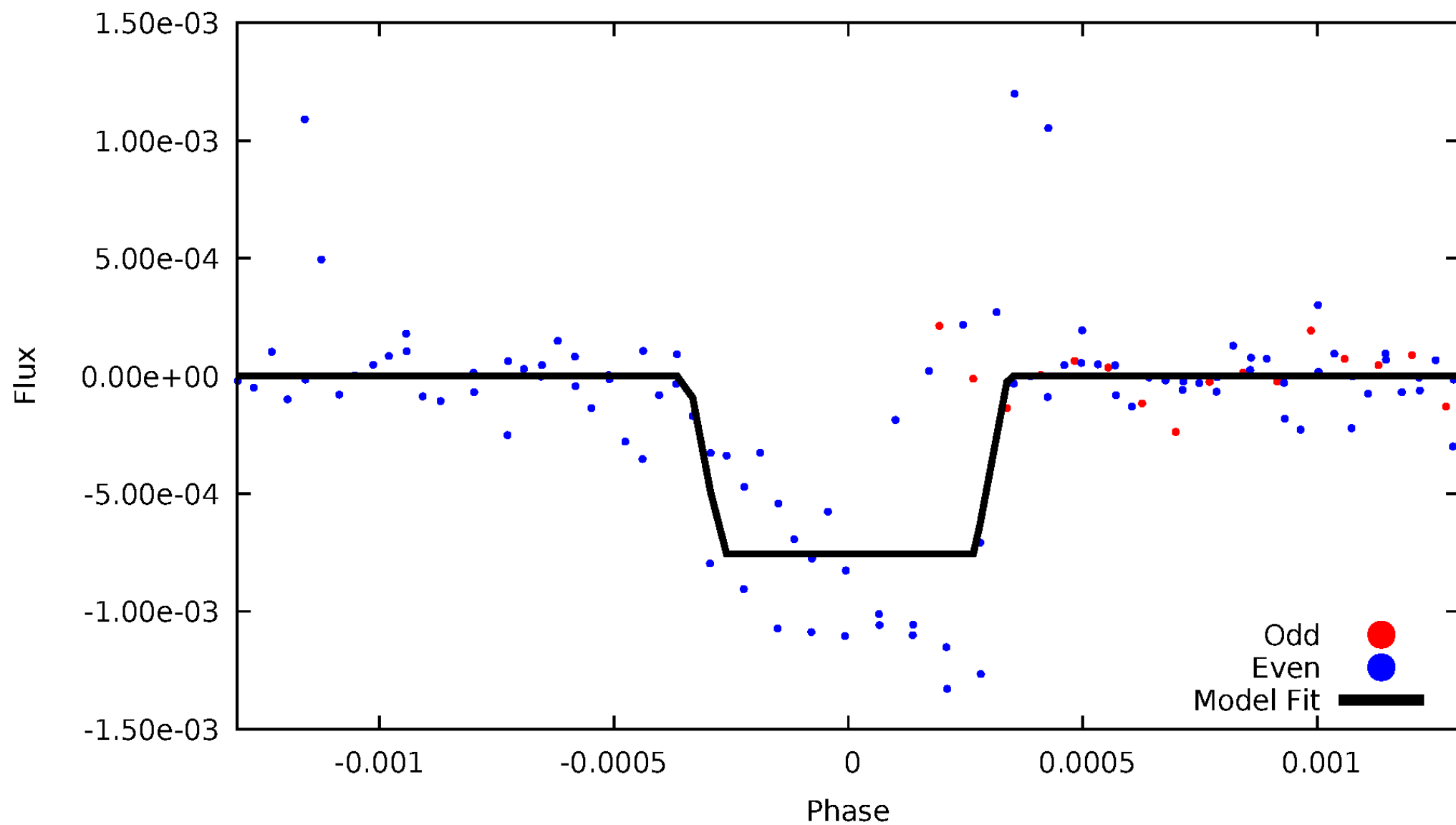
DV Odd/Even

TCE 007433457-05



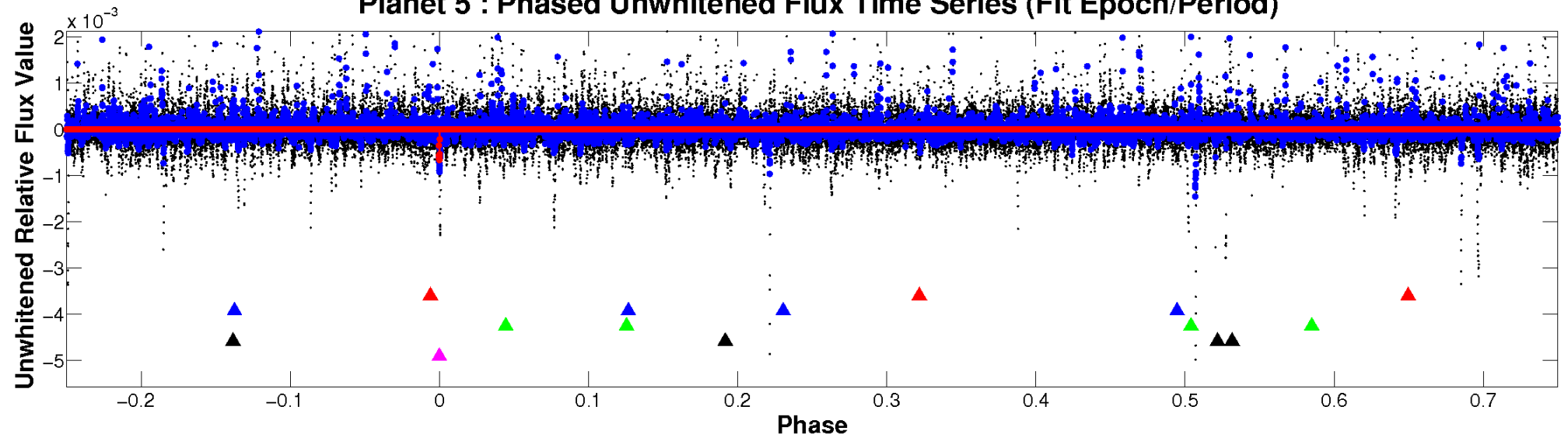
ALT Odd/Even

TCE 007433457-05

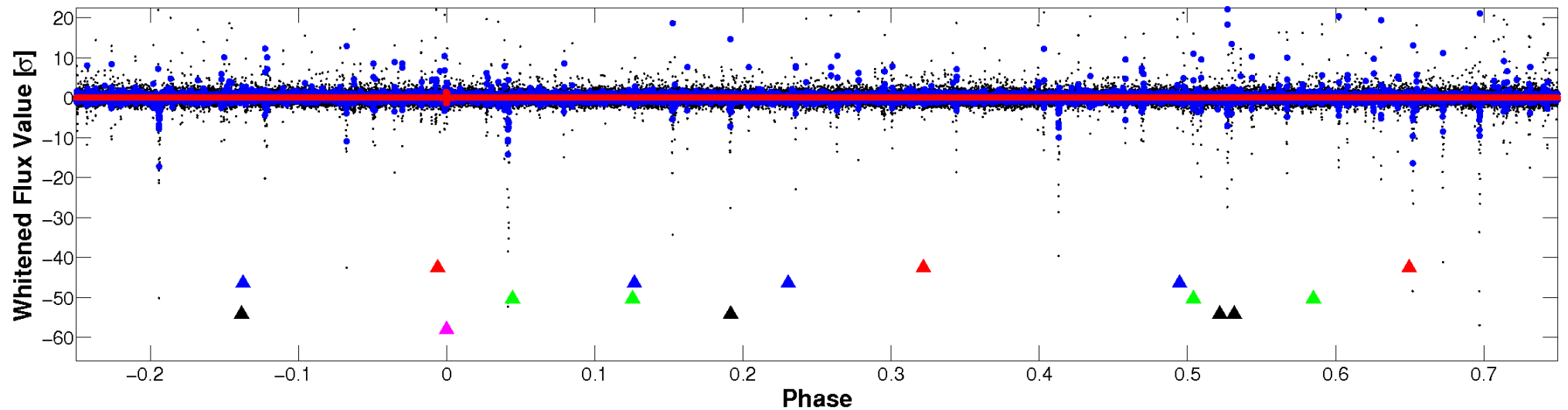


Non-Whitened Vs. Whitened Light Curve

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

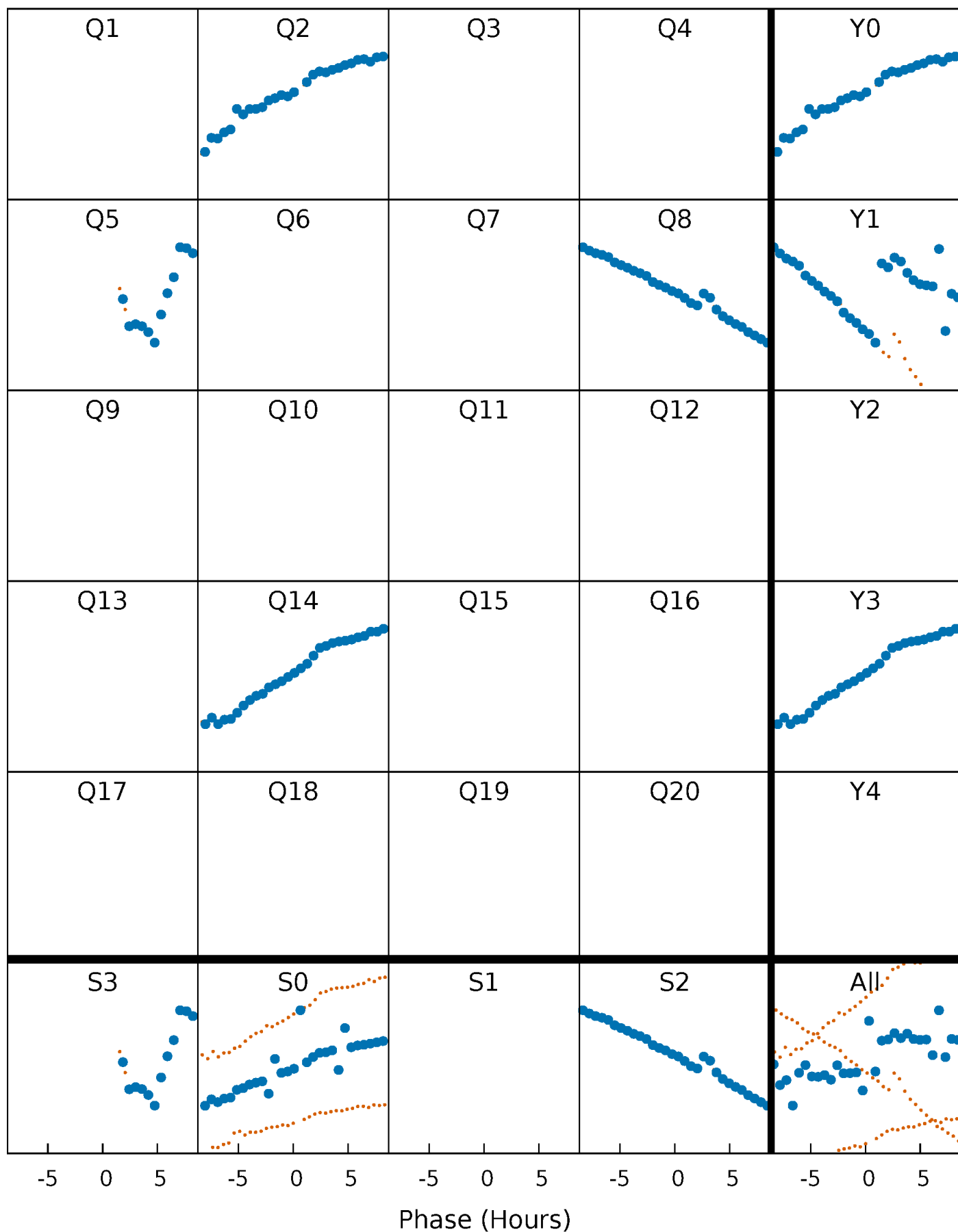


Planet 5 : Phased Whitened Flux Time Series (Fit Epoch/Period)



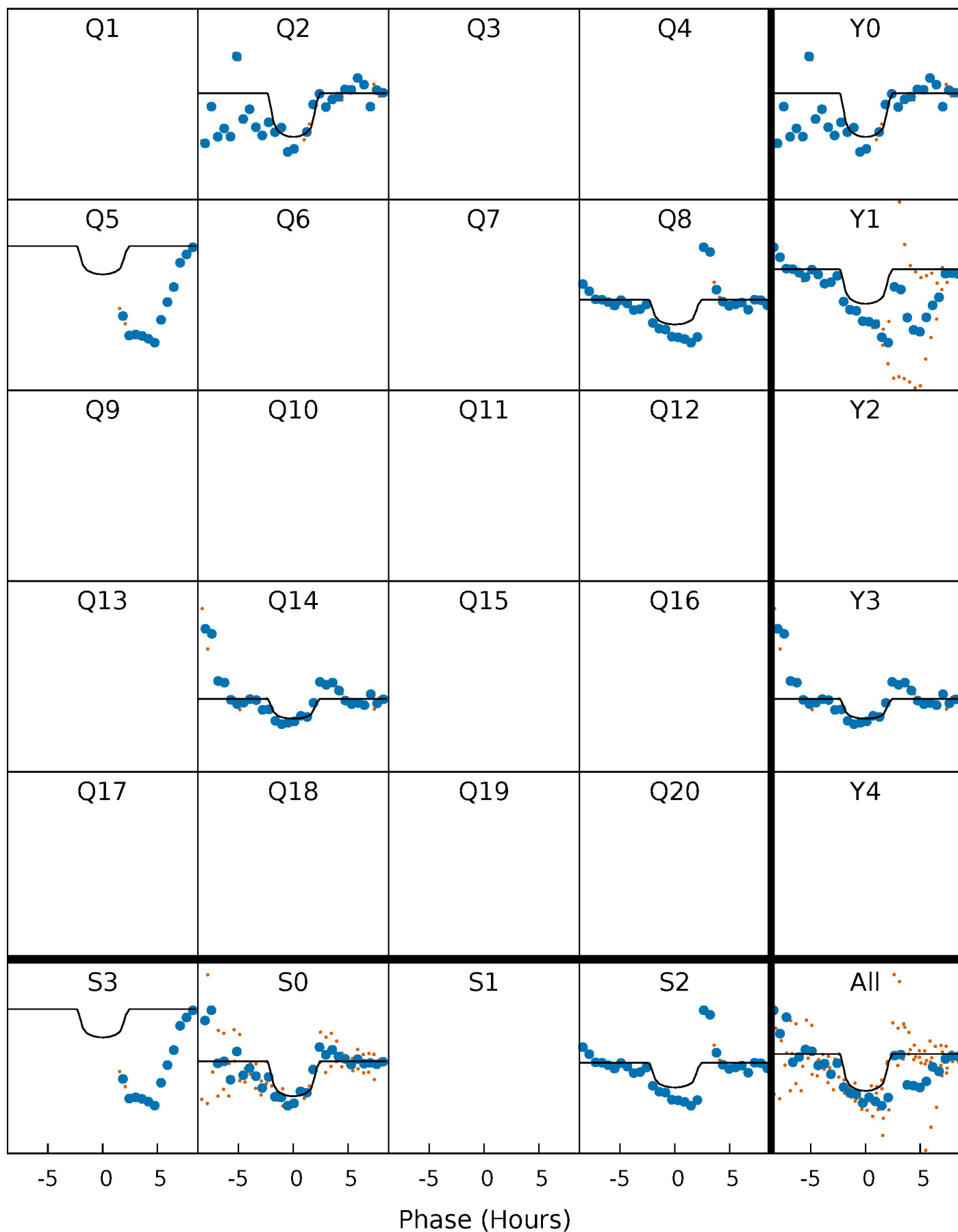
PDC Quarter-Phased Transit Curves

TCE 007433457-05 $P=283.694549$ Days $T_0=220.849752$ (BKJD)



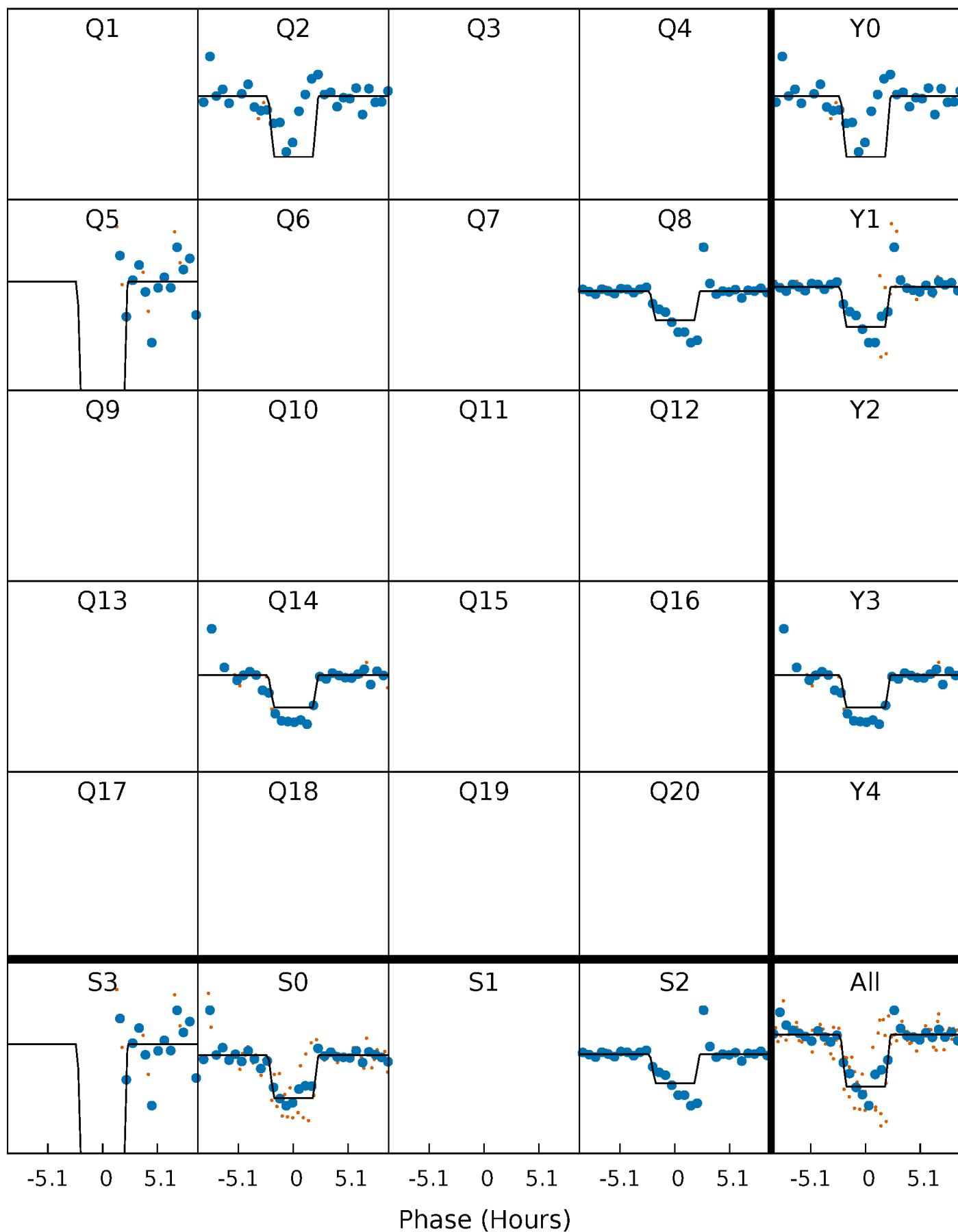
DV Quarter-Phased Transit Curves

TCE 007433457-05 $P=283.694549$ Days $T_0=220.849752$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

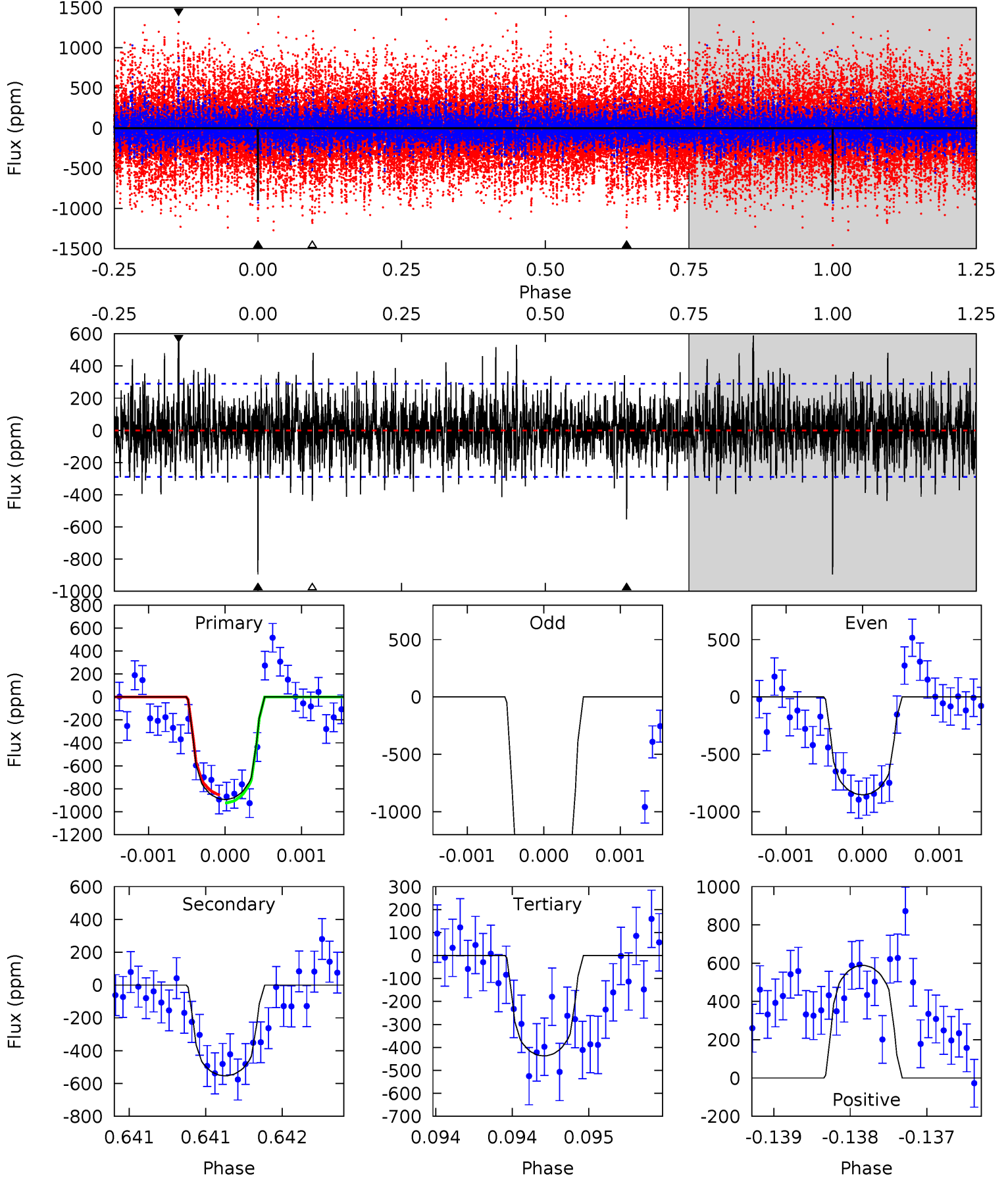
TCE 007433457-05 $P=283.692303$ Days $T_0=220.862332$ (BKJD)



DV Model-Shift Uniqueness Test

007433457-05, P = 283.694549 Days, E = 220.849752 Days

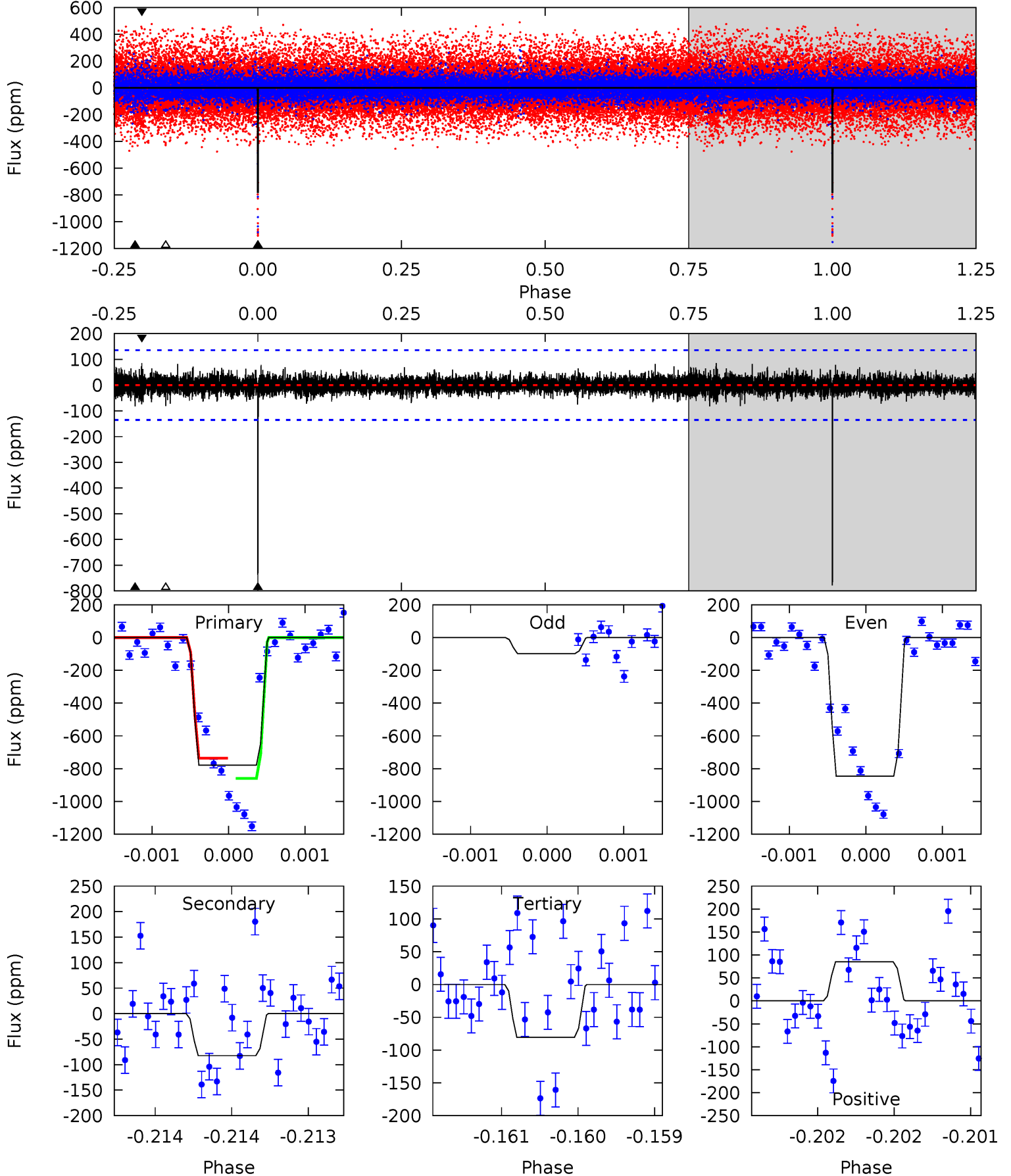
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
17.0	10.5	8.33	11.2	5.51	3.39	2.28	8.71	5.82	2.21	-0.68	4.55	1.33	0.40	0.65



Alt Model-Shift Uniqueness Test

007433457-05, P = 283.692303 Days, E = 220.862332 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
31.7	3.35	3.28	3.47	5.52	3.40	0.74	28.4	28.2	0.07	-0.12	8.52	0.91	0.10	2.40



Stellar Parameters For KIC 007433457

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5173^{+138}_{-154}	$3.781^{+0.885}_{-0.295}$	$-0.440^{+0.250}_{-0.350}$	$1.951^{+1.090}_{-1.211}$	$0.839^{+0.166}_{-0.166}$	$0.159^{+3.255}_{-0.125}$
	+3%/-3%	+23%/-8%	+57%/-80%	+56%/-62%	+20%/-20%	+2045%/-79%
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 007433457-05 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-553 ± 52	$5.53^{+5.73}_{-3.51}$	487^{+73}_{-93}	4725^{+2601}_{-908}	6584^{+41651}_{-4995}
Alt.	-82 ± 25	$5.49^{+5.31}_{-3.57}$	485^{+74}_{-94}	3324^{+1343}_{-494}	900^{+6429}_{-675}

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 $A_{obs} \gg 1.0$

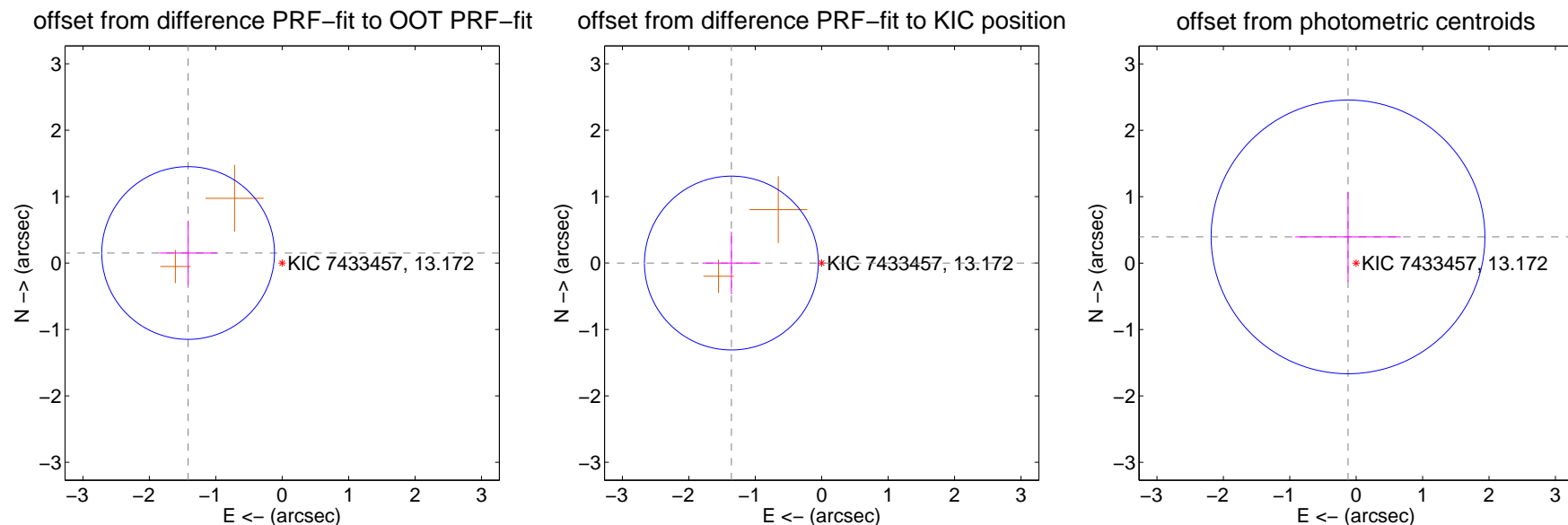
DV Centroid Data

Supplemental centroid analysis for 007433457-05. Kepler magnitude: 13.17. Transit SNR 7.19

There are 0 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.18 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.425 ± 0.433	3.29	1.417 ± 0.433	0.151 ± 0.482
PRF-fit source offset from KIC position	1.360 ± 0.436	3.12	1.360 ± 0.436	-0.000 ± 0.471
photometric centroid source offset	0.41 ± 0.69	0.60	0.12 ± 0.79	0.40 ± 0.68



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.

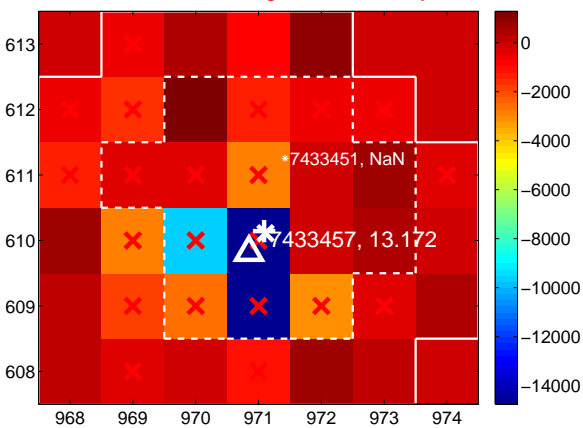
Q1 no difference image



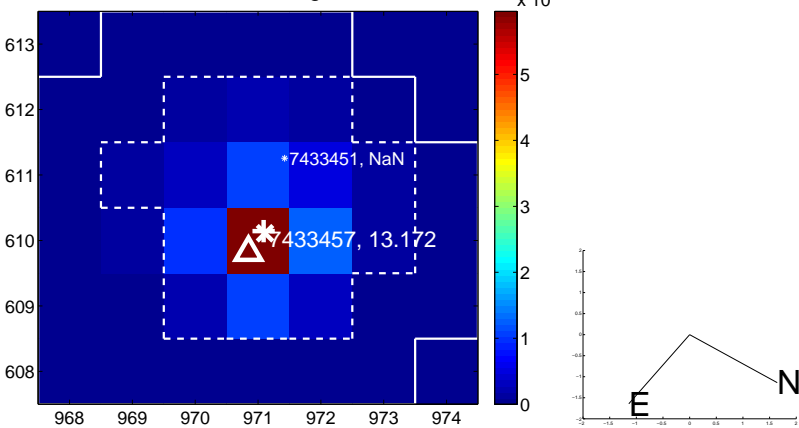
Q1 no OOT image



Q2 difference image. Poor Quality



Q2 OOT image



Q3 no difference image



Q3 no OOT image



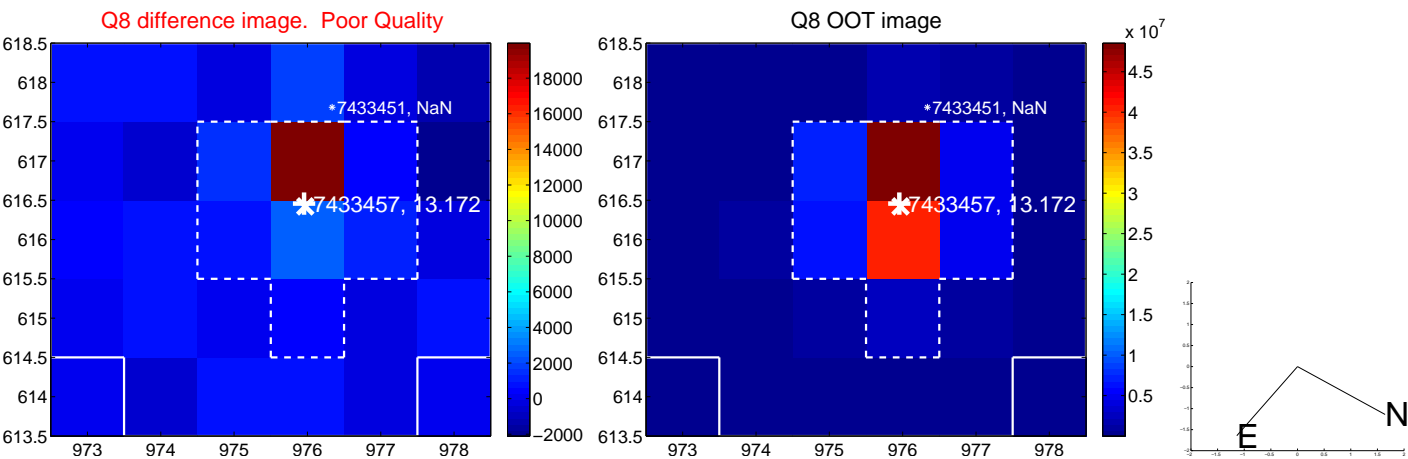
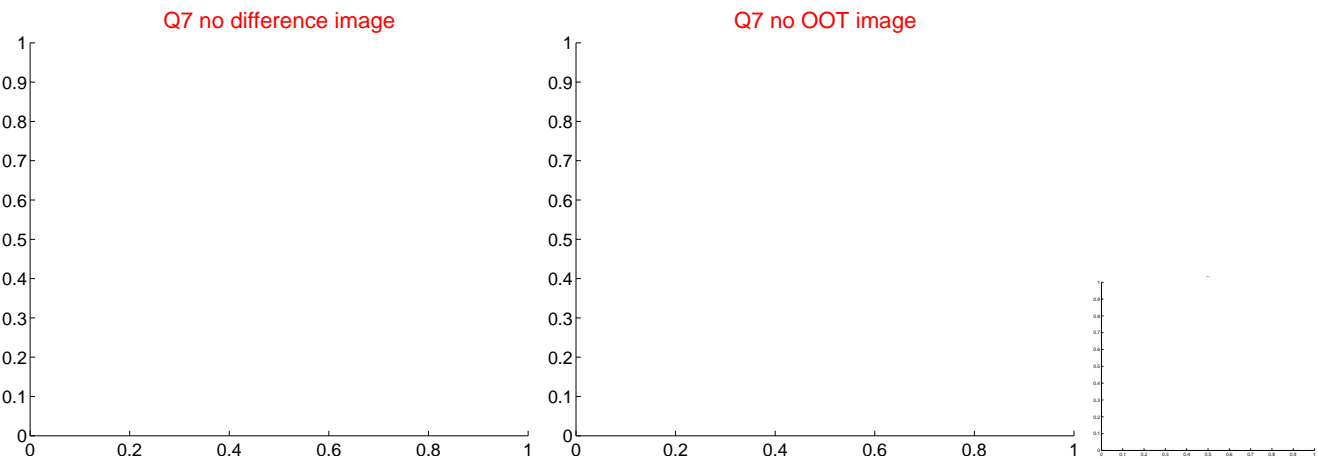
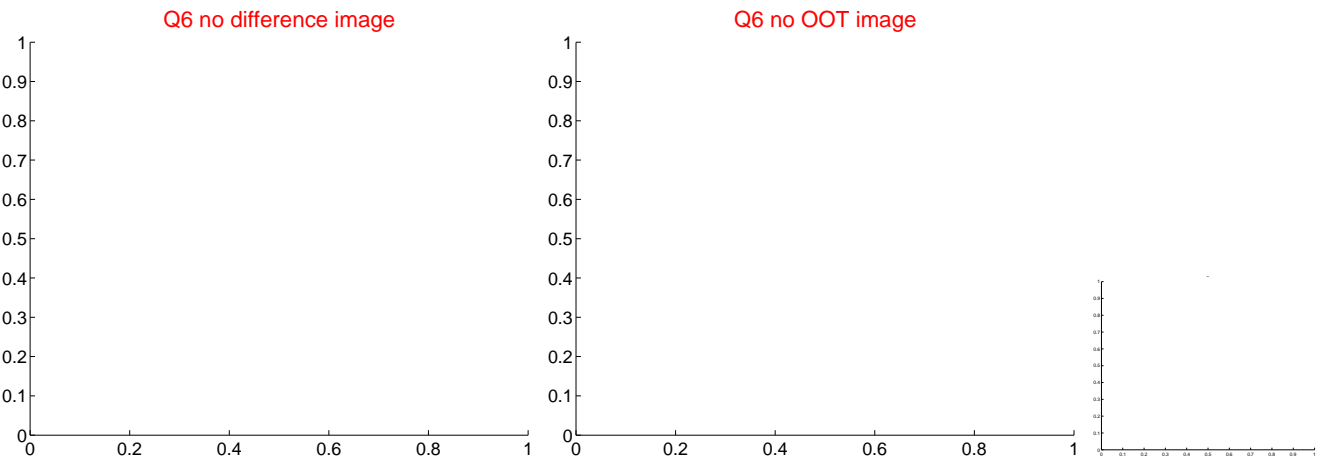
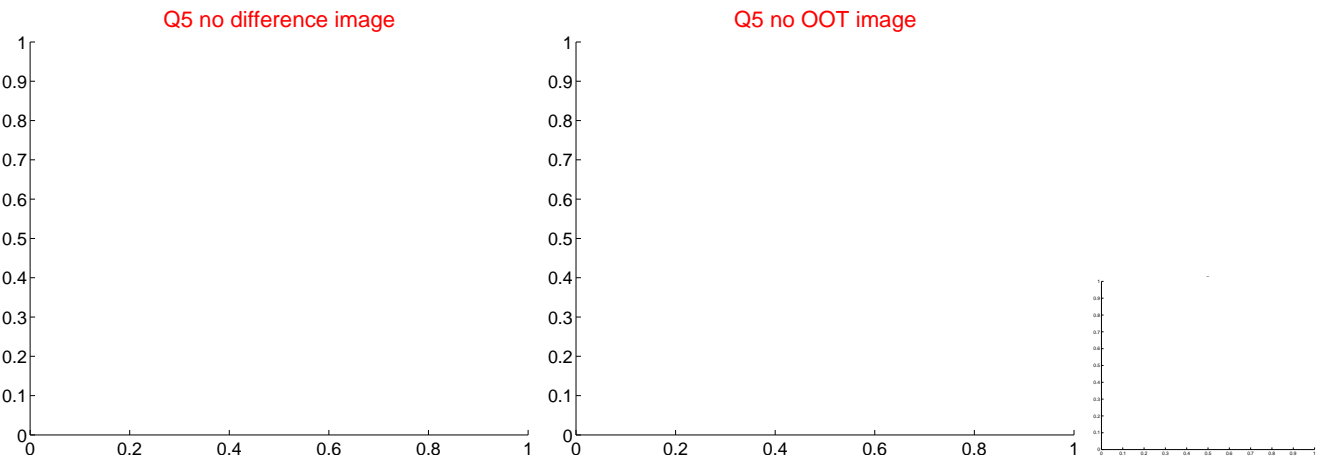
Q4 no difference image



Q4 no OOT image



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



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



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

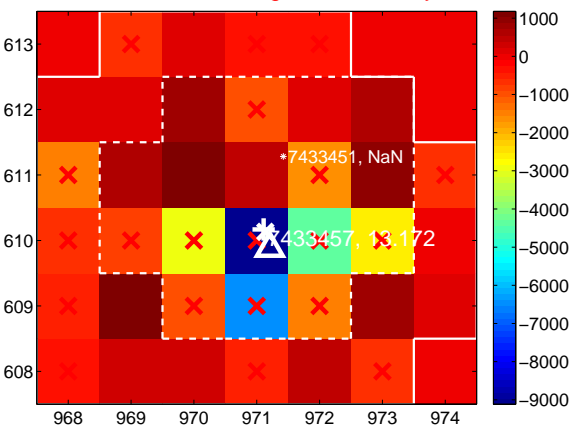
Q13 no difference image



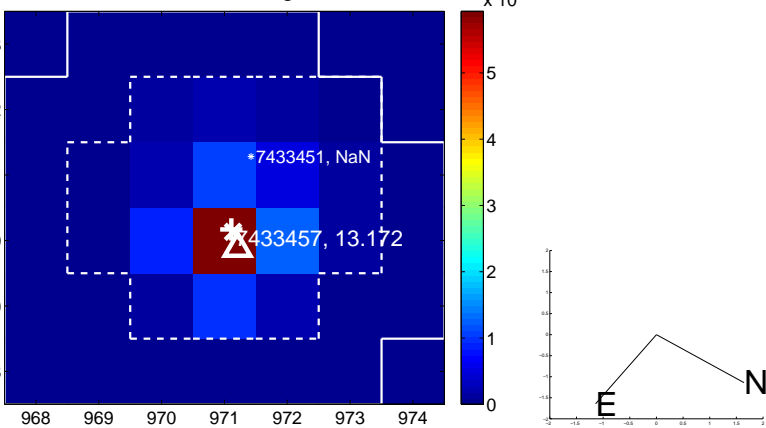
Q13 no OOT image



Q14 difference image. Poor Quality



Q14 OOT image



Q15 no difference image



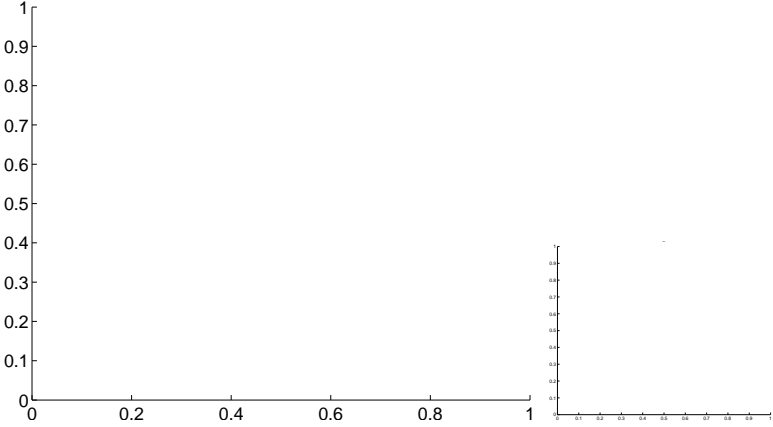
Q15 no OOT image



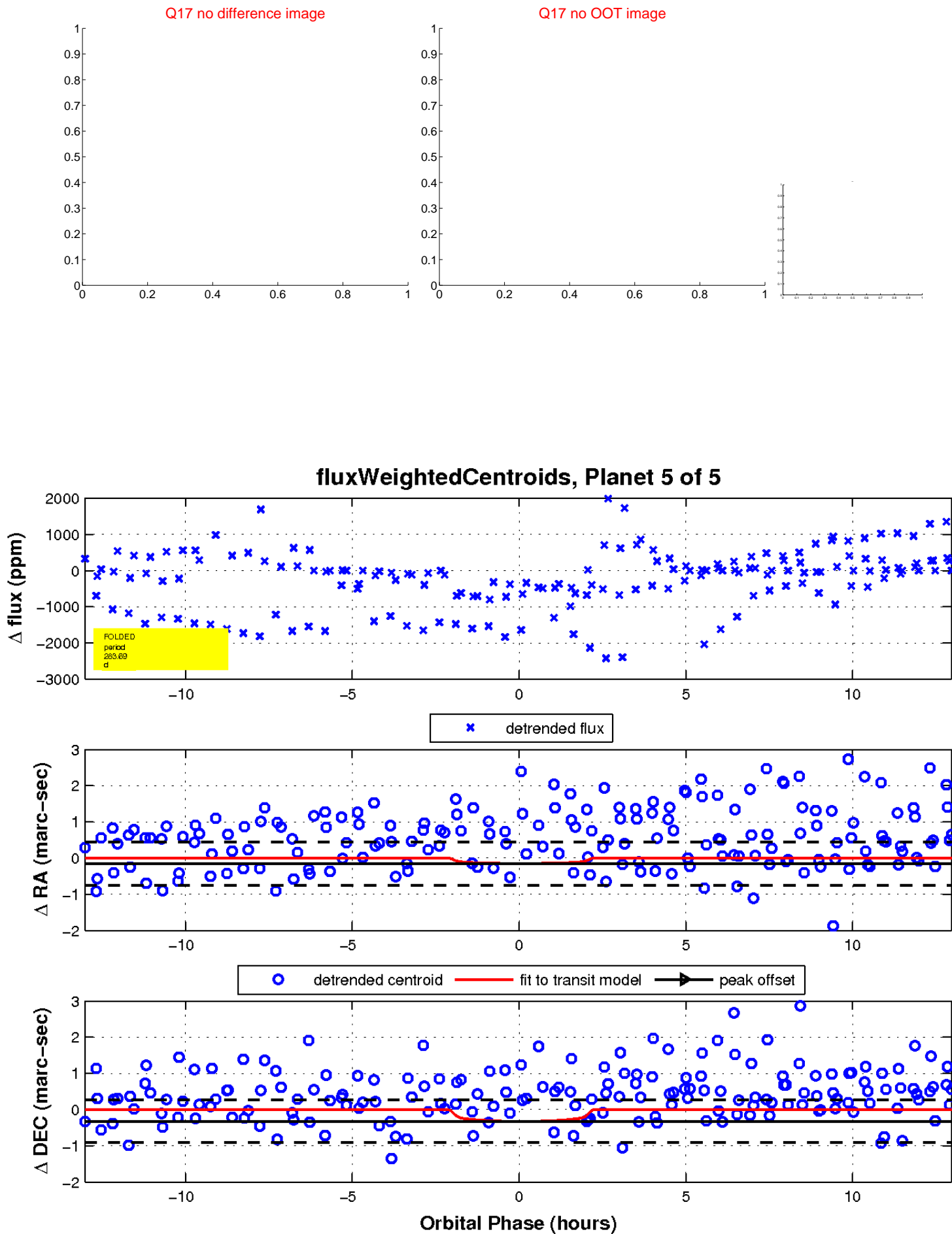
Q16 no difference image



Q16 no OOT image



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



UKIRT Image

Declination

