

KIC 007369224

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})
007369224-01	OBS	No	600.585081	345.428100	1887.9	3.290	25.8	12.0	0.72	5427	3.24	0.27
007369224-02	OBS	No	646.244436	272.003648	2020.3	3.024	17.4	16.9	0.72	5427	3.41	0.25
007369224-03	OBS	No	398.412126	173.735645	534.2	8.363	16.9	3.7	0.72	5427	1.70	0.47
007369224-04	OBS	No	538.312423	375.689869	1200.7	4.213	12.5	9.2	0.72	5427	2.55	0.31
007369224-05	OBS	No	348.548227	321.755669	757.6	9.331	14.3	5.1	0.72	5427	2.11	0.56
007369224-06	OBS	No	477.666047	176.378270	1223.2	8.633	13.7	6.7	0.72	5427	3.69	0.37
007369224-07	OBS	No	431.223783	192.974688	1059.0	3.904	16.4	8.2	0.72	5427	2.56	0.42

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007369224-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
007369224-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_POS_DV—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS
007369224-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
007369224-04	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—CENT_FEW_DIFFS
007369224-05	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS
007369224-06	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_SKYE_ZUMA—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
007369224-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS

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

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

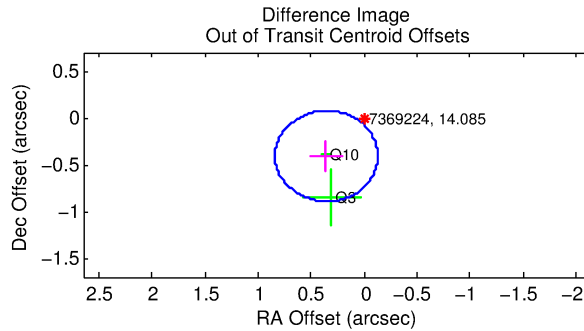
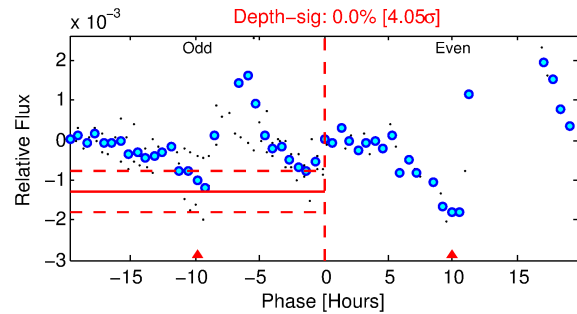
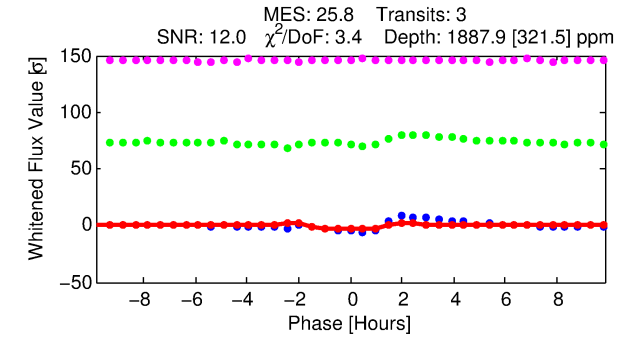
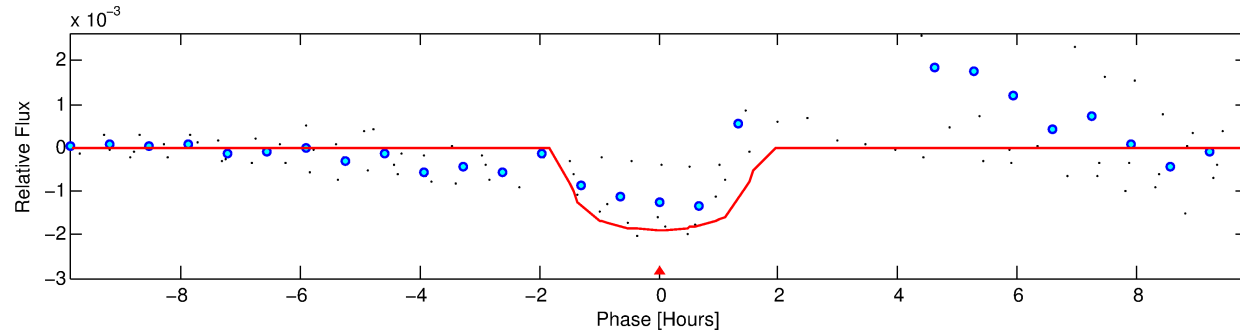
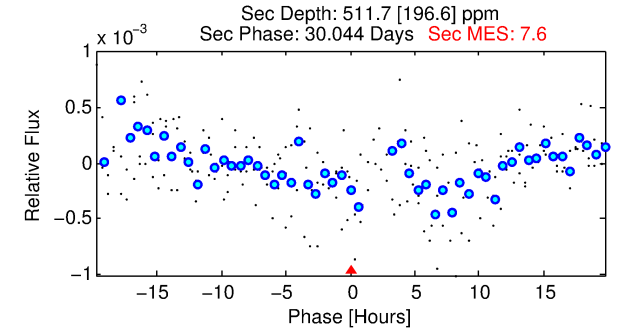
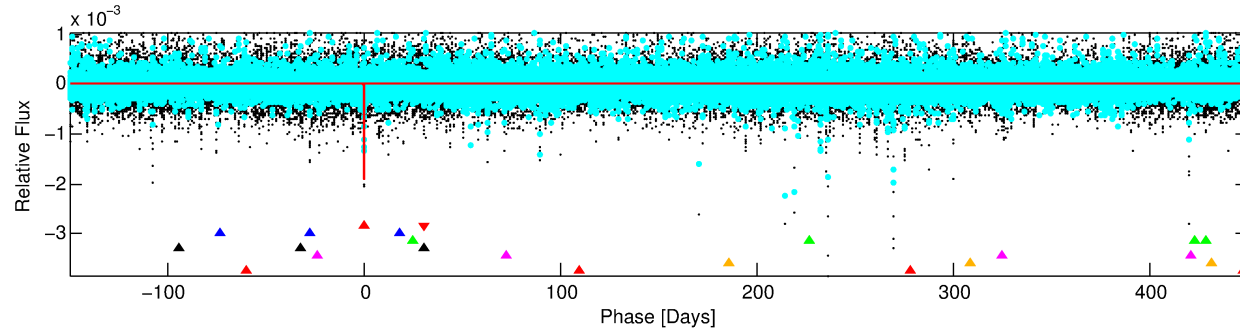
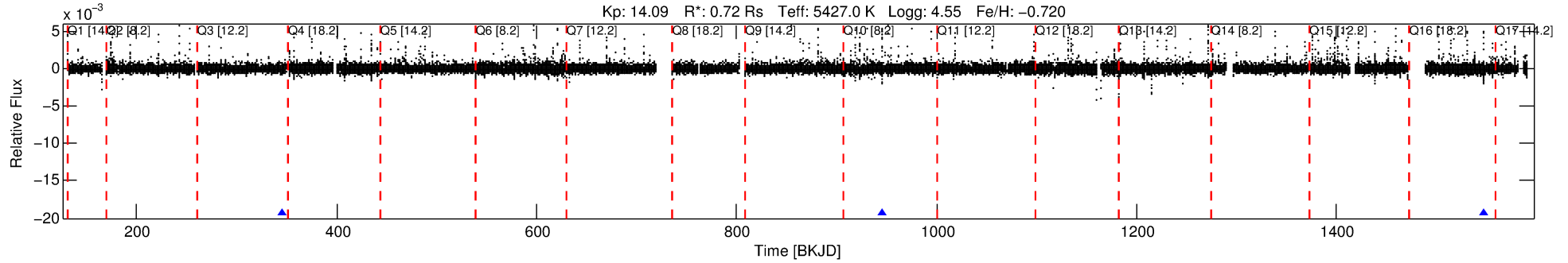
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007369224-01

No Significant Match Found

DV One-Page Summary

KIC: 7369224 Candidate: 1 of 7 Period: 600.585 d



DV Fit Results:

Period = 600.58508 [0.00478] d
Epoch = 345.4281 [0.0077] BKJD
Rp/R* = 0.0410 [0.1463]
a/R* = 1246.10 [19643.90]
b = 0.53 [21.34]
Seff = 0.27 [0.06]
Teq = 184 [10] K
Rp = 3.24 [11.58] Re
a = 1.2264 [0.1361] AU
Ag = 40315.60 [288455.99] [0.14 σ]
Teffp = 4033 [7213] K [0.53 σ]

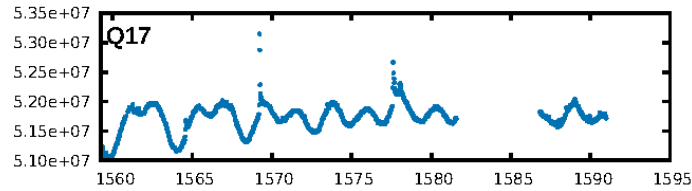
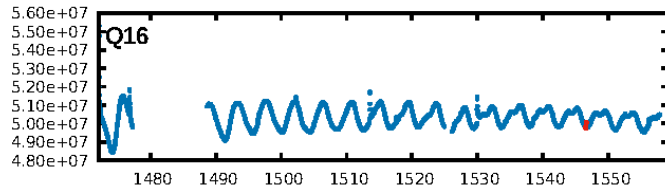
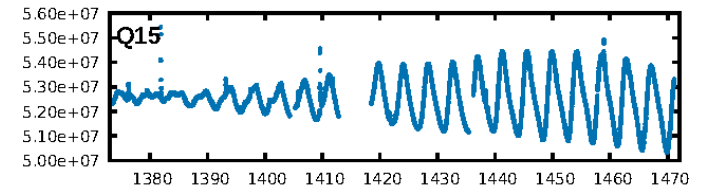
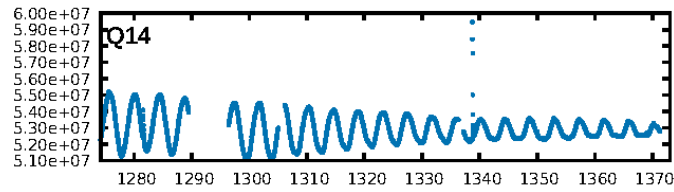
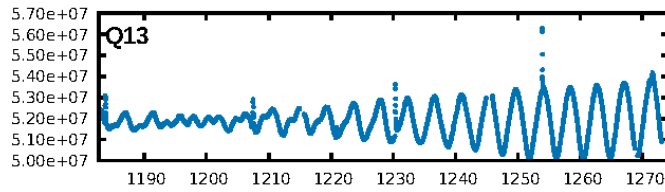
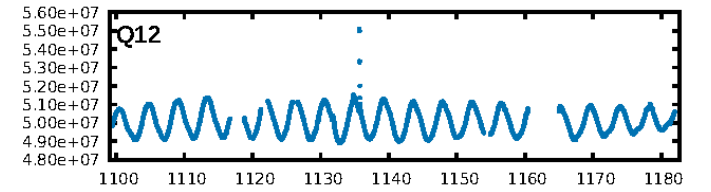
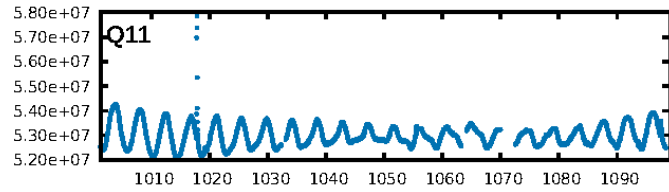
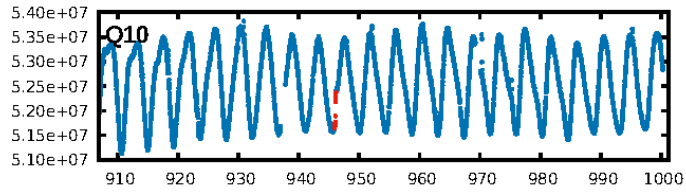
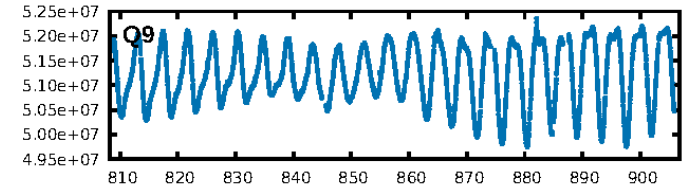
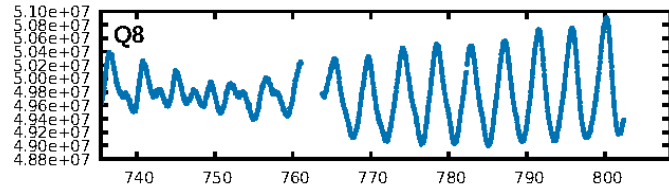
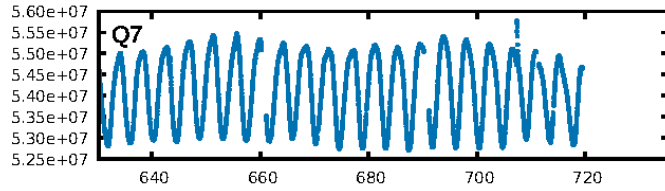
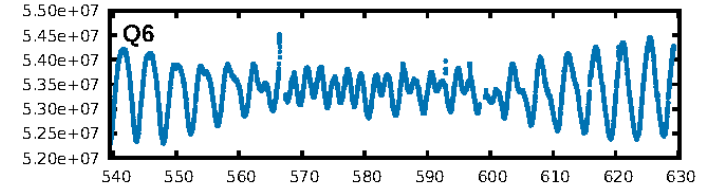
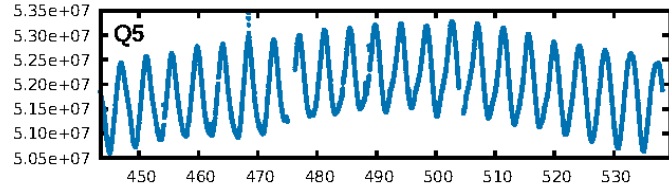
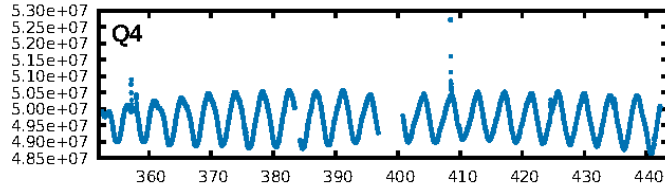
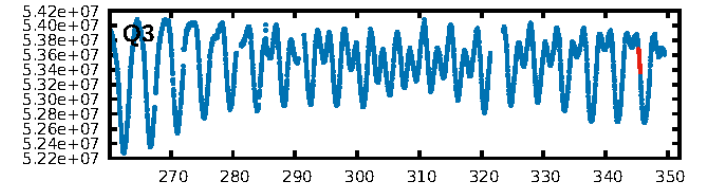
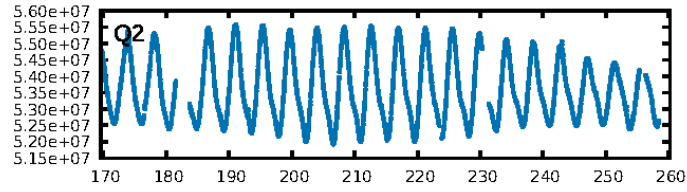
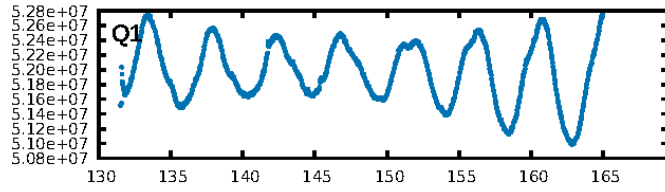
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [279.59 σ]
LongPeriod-sig: 100.0% [245.22 σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 0.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 1.218
Centroid-sig: N/A
Centroid-so: 0.151 arcsec [0.41 σ]
OotOffset-rm: 0.542 arcsec [3.36 σ]
KicOffset-rm: 0.501 arcsec [3.07 σ]
OotOffset-st: 1/1/0/0 [2]
KicOffset-st: 1/1/0/0 [2]
DiffImageQuality-fgm: 0.50 [1/2]
DiffImageOverlap-fno: 1.00 [2/2]

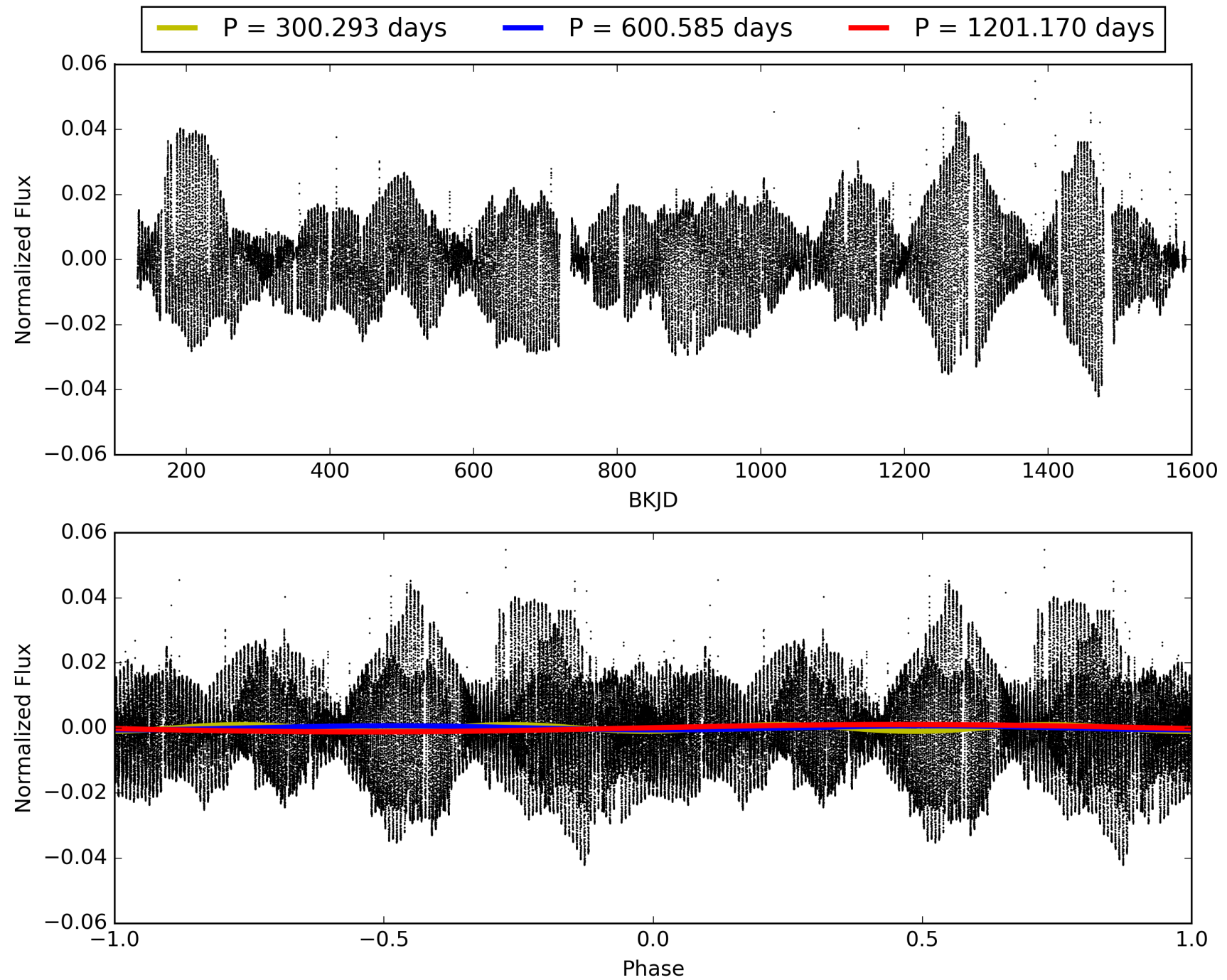
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 007369224-01, PDC Light Curves

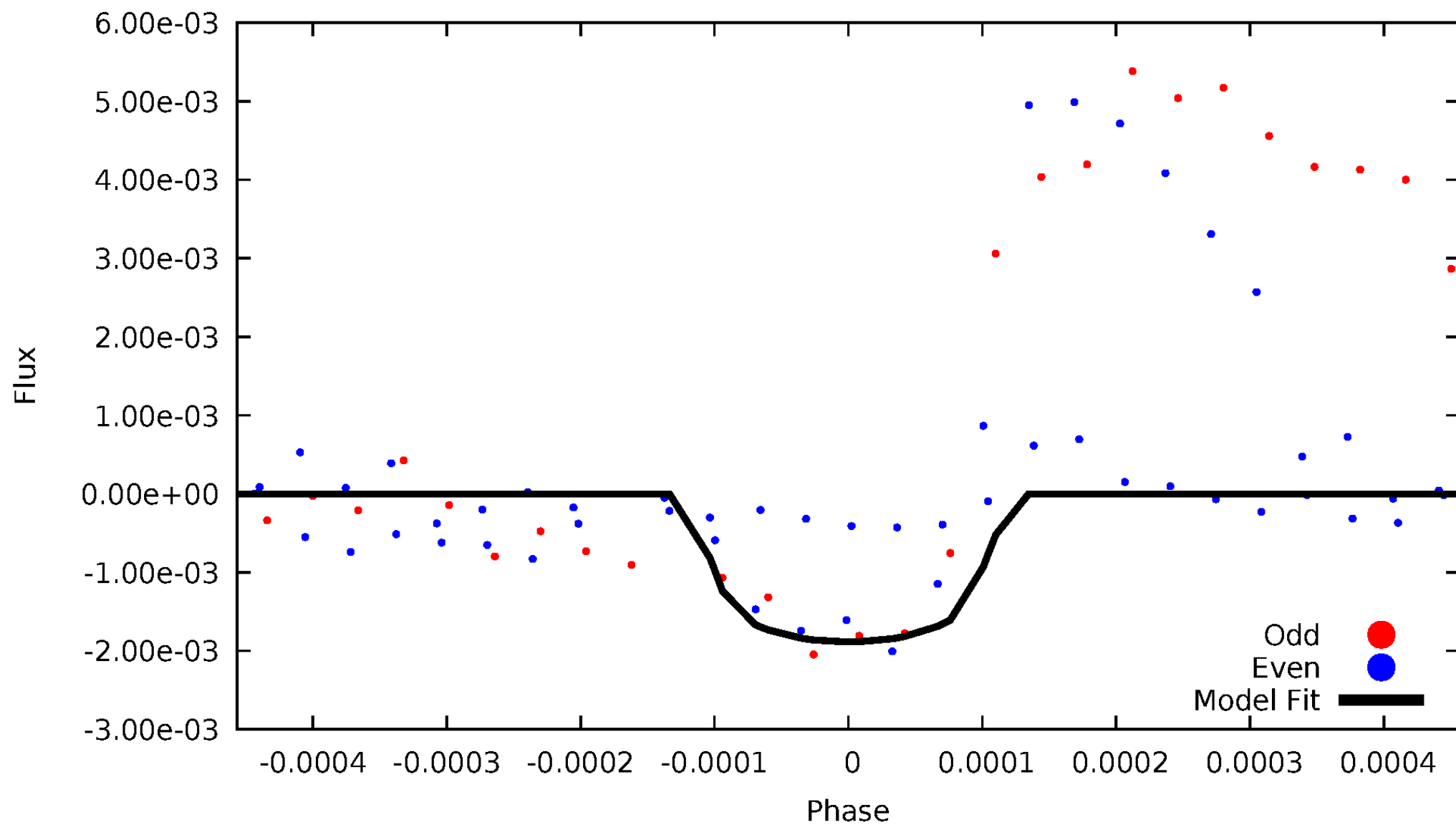


TCE 007369224-01



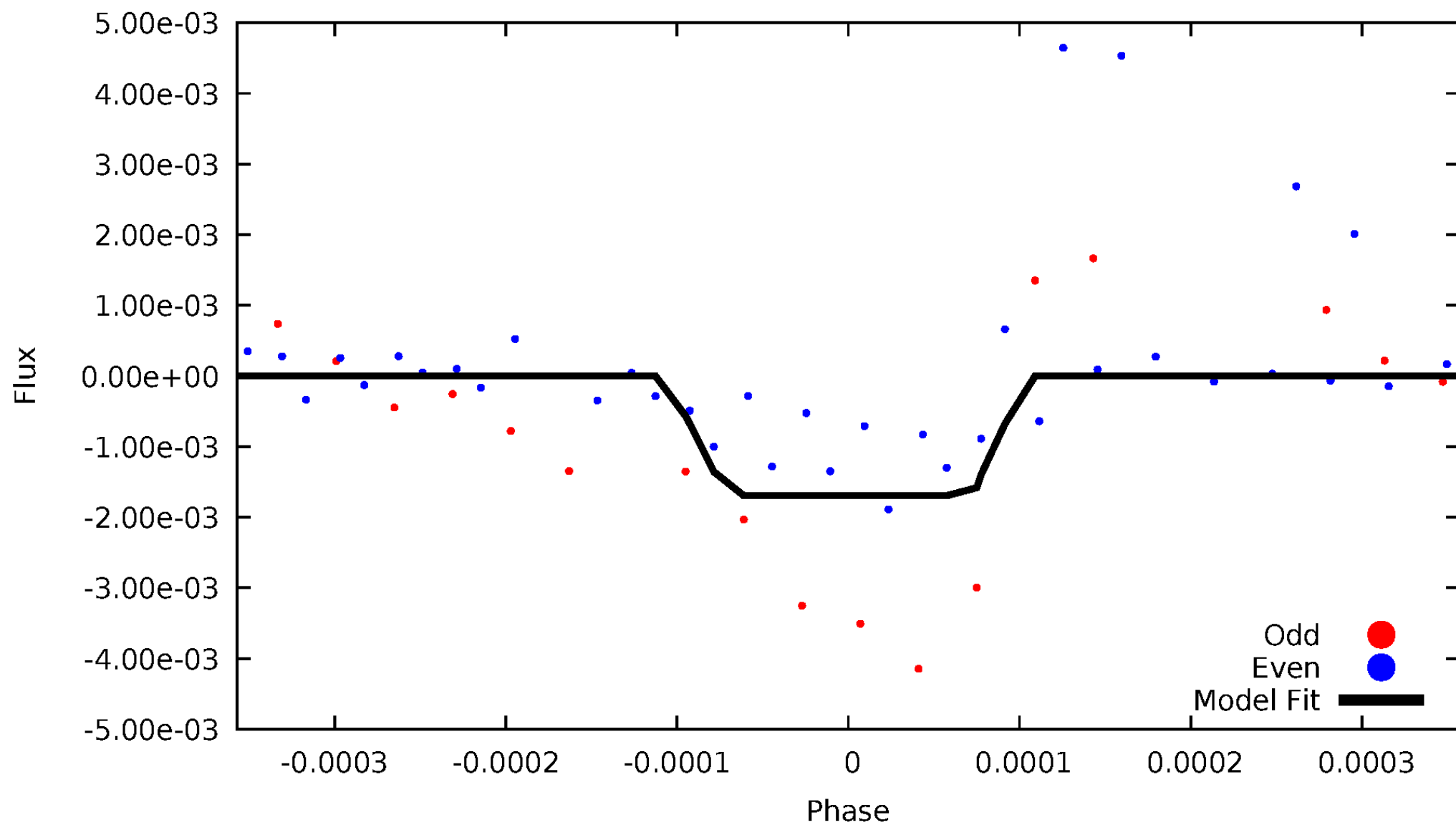
DV Odd/Even

TCE 007369224-01



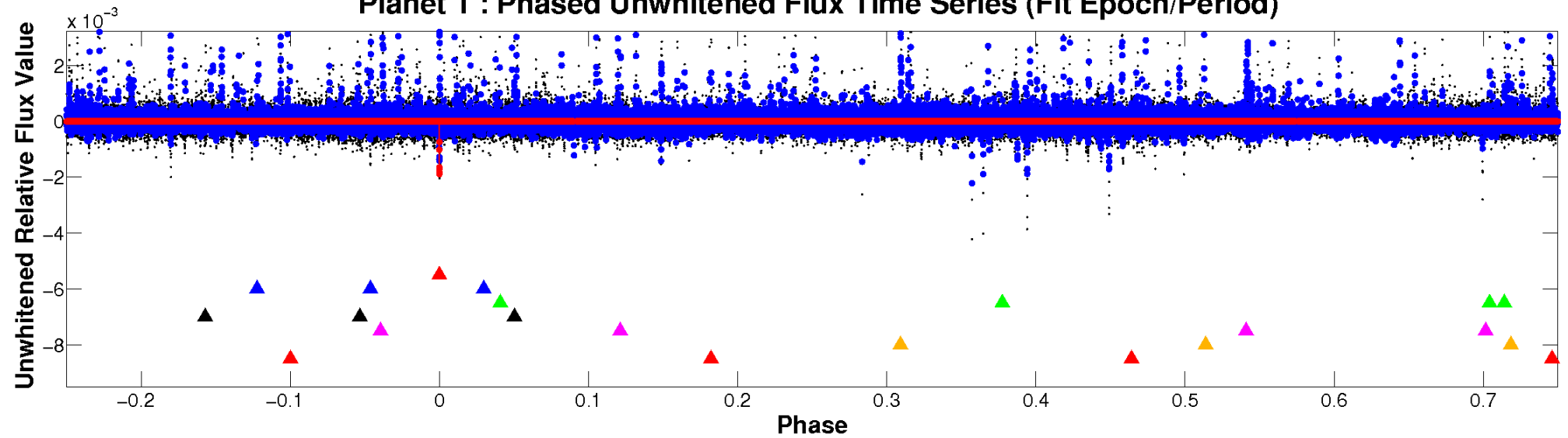
ALT Odd/Even

TCE 007369224-01

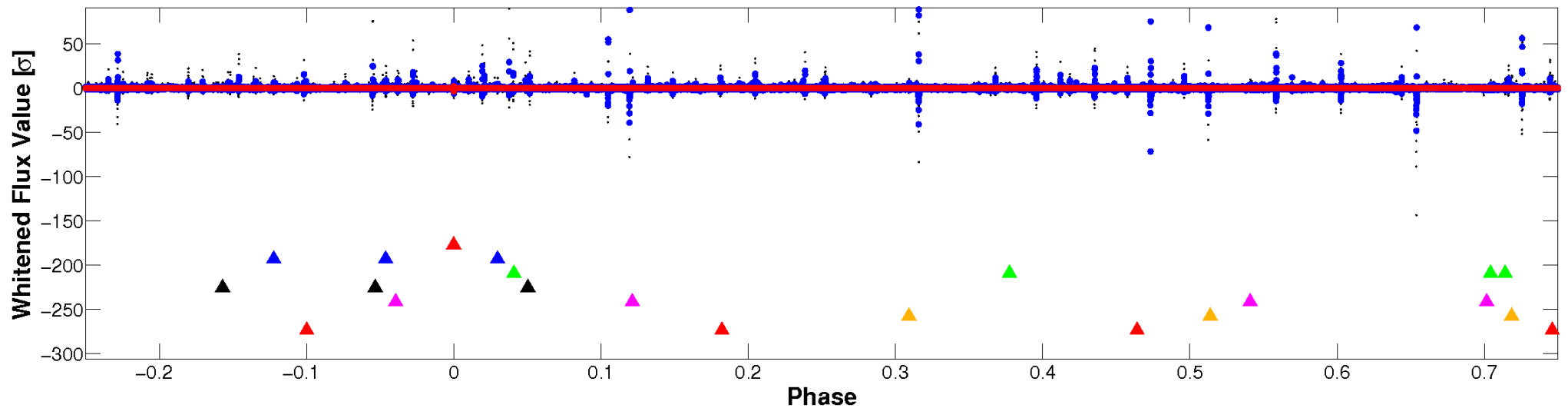


Non-Whitened Vs. Whitened Light Curve

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

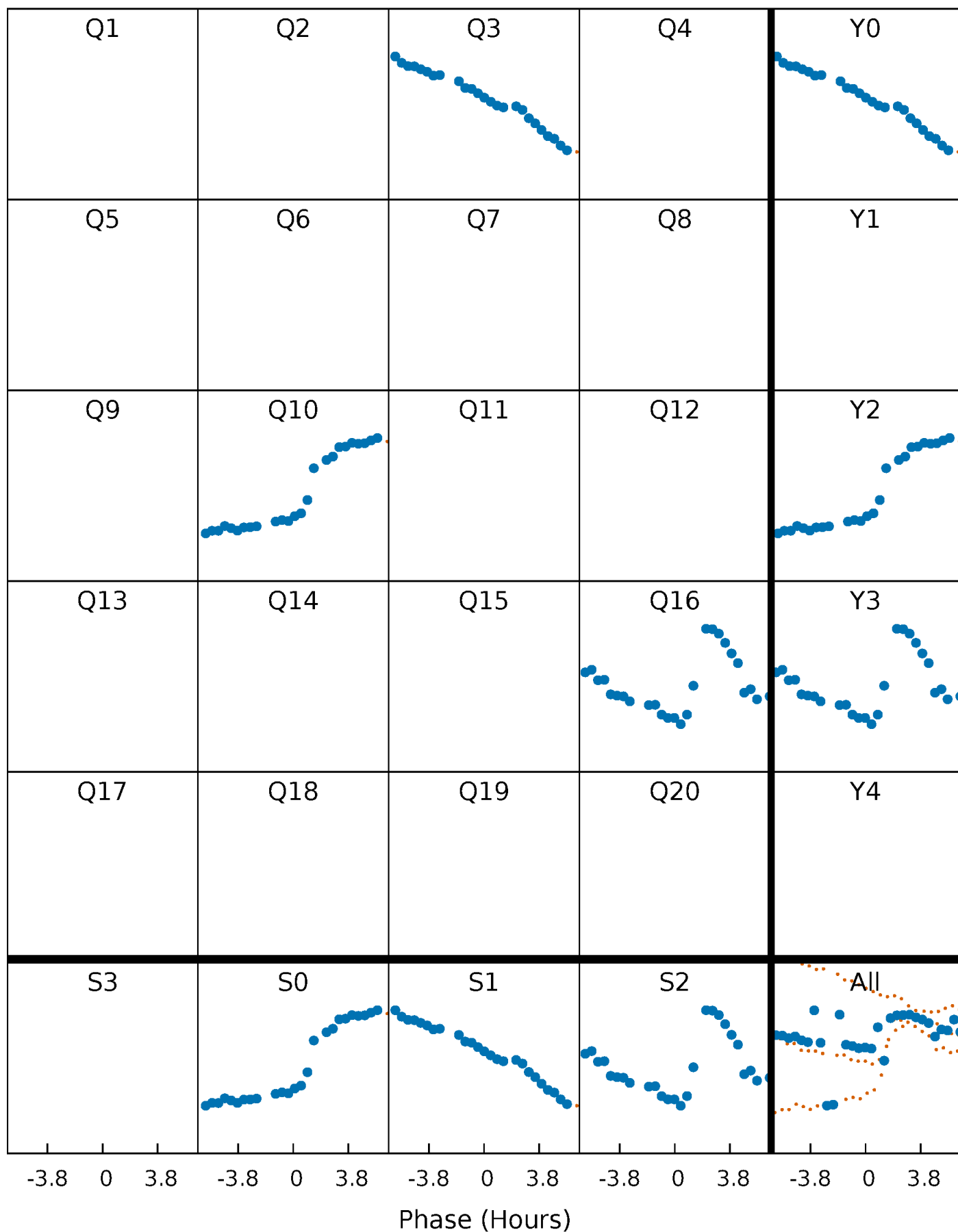


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



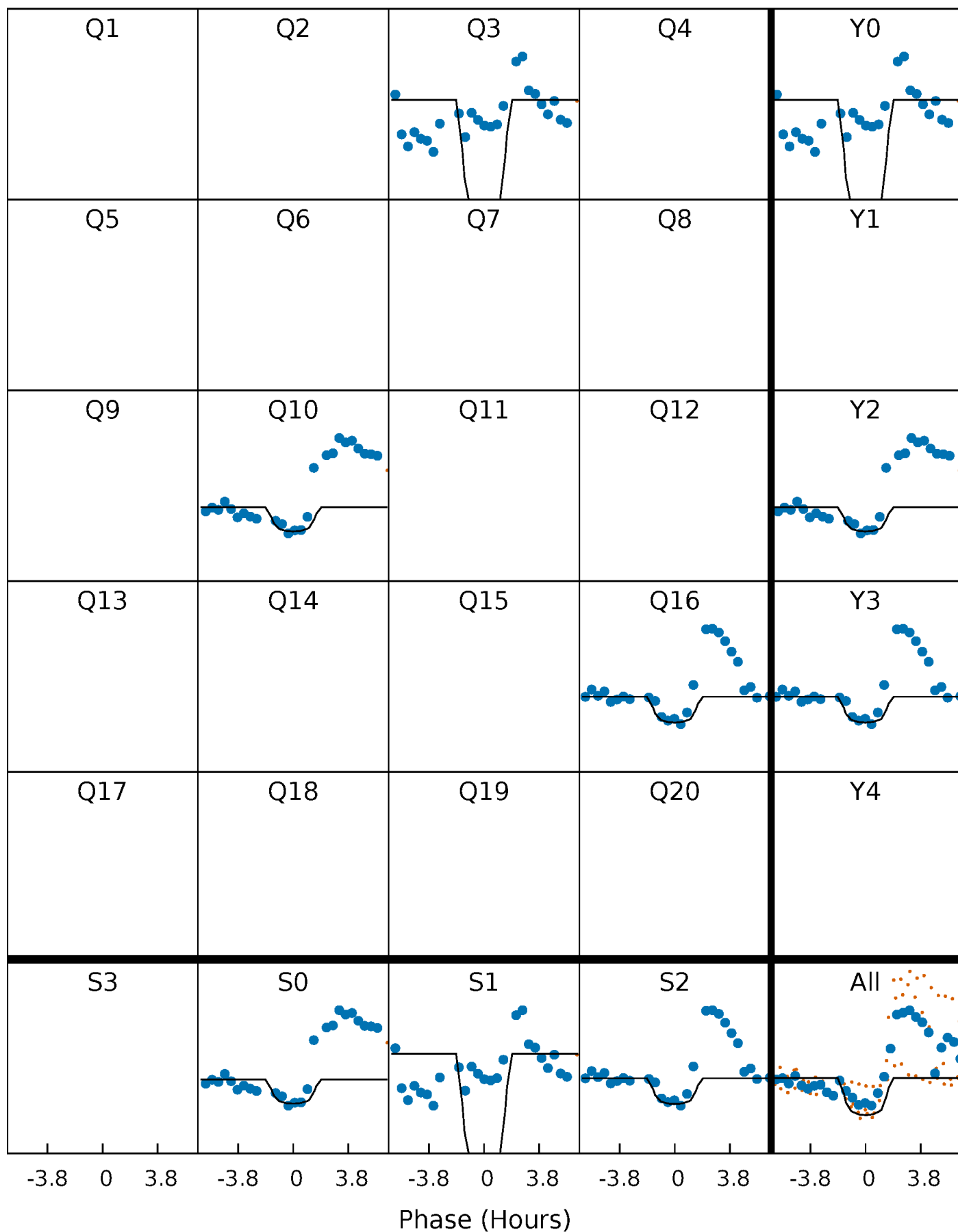
PDC Quarter-Phased Transit Curves

TCE 007369224-01 P=600.585081 Days $T_0=345.428100$ (BKJD)



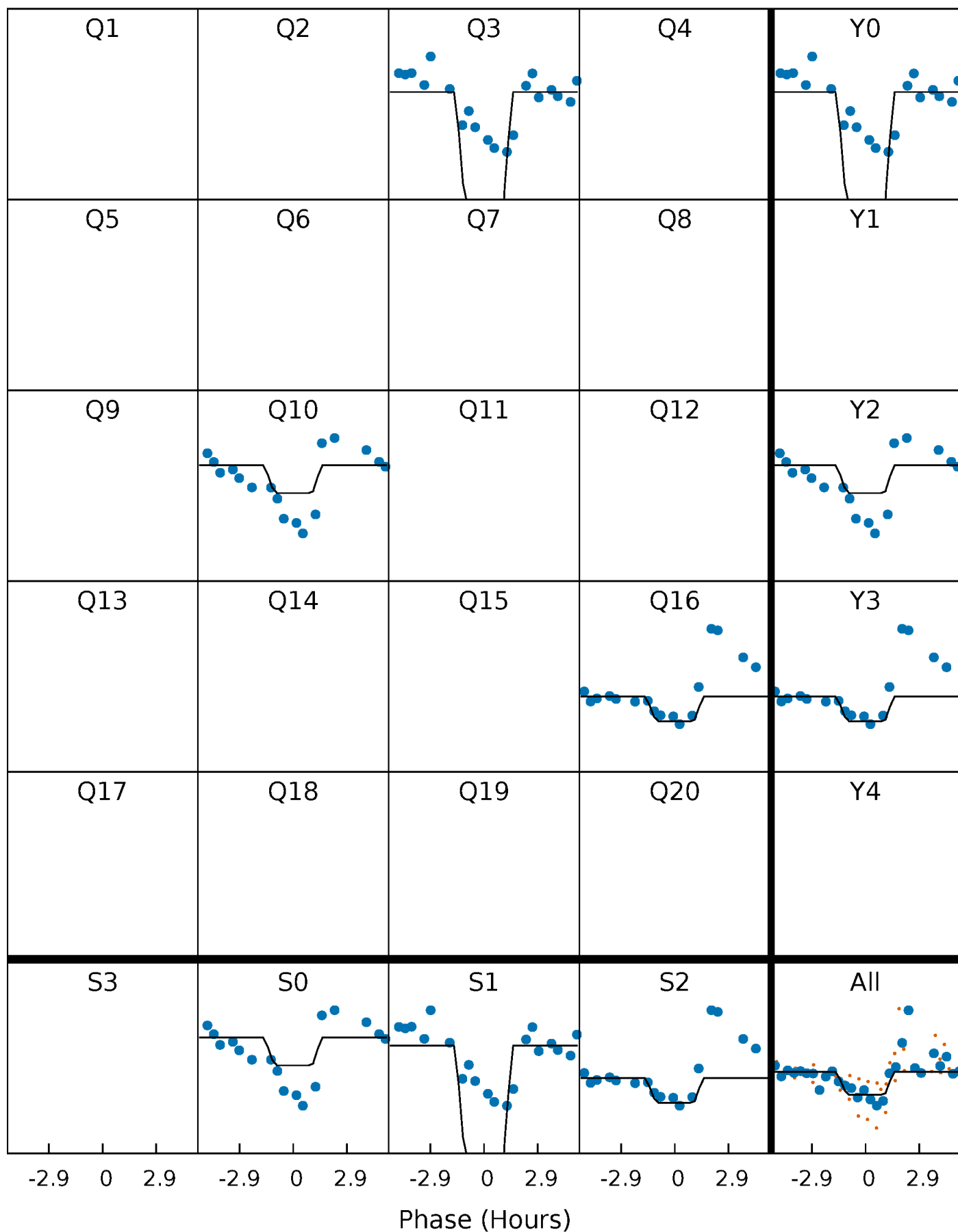
DV Quarter-Phased Transit Curves

TCE 007369224-01 P=600.585081 Days $T_0=345.428100$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

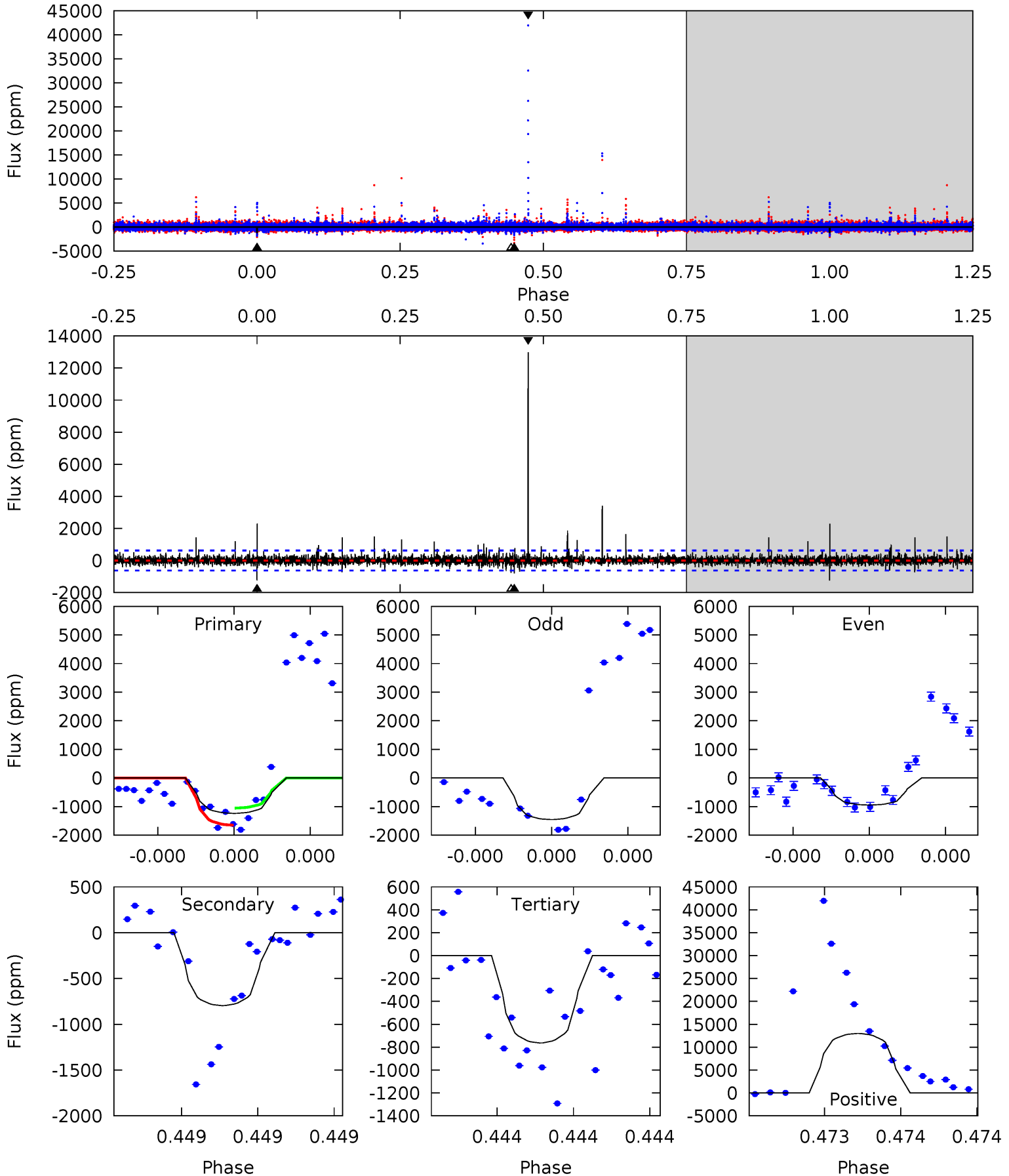
TCE 007369224-01 P=600.590007 Days $T_0=345.423848$ (BKJD)



DV Model-Shift Uniqueness Test

007369224-01, P = 600.585081 Days, E = 345.428100 Days

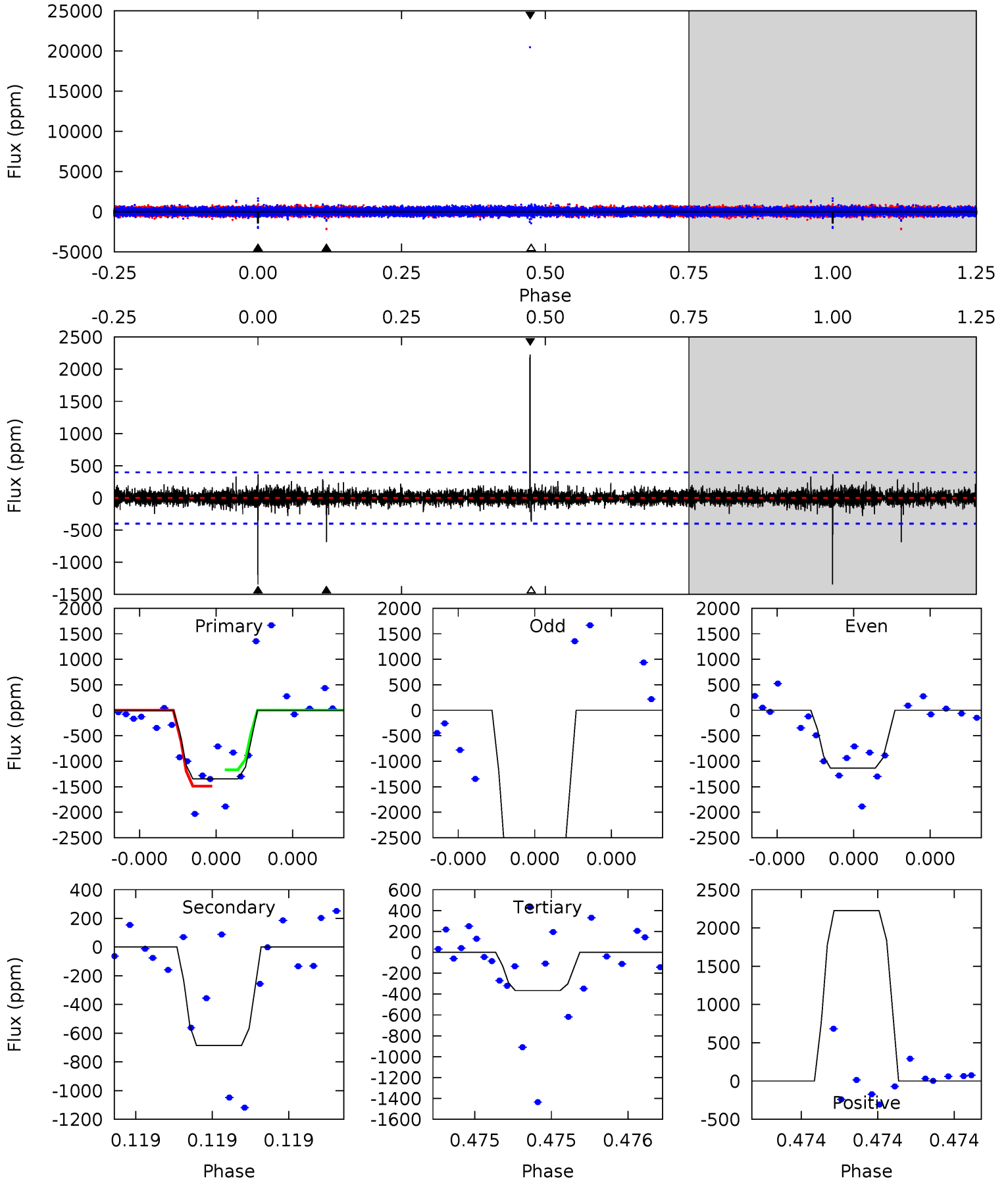
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.4	7.33	7.03	119.5	5.72	3.71	2.30	4.37	-108.1	0.30	-112.2	0.88	0.77	0.91	2.69



Alt Model-Shift Uniqueness Test

007369224-01, P = 600.590007 Days, E = 345.423848 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	9.86	5.26	32.0	5.73	3.72	0.79	14.1	-12.7	4.60	-22.2	15.2	1.32	0.62	2.31



Stellar Parameters For KIC 007369224

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5427^{+161}_{-161}	$4.551^{+0.099}_{-0.081}$	$-0.720^{+0.300}_{-0.300}$	$0.725^{+0.088}_{-0.079}$	$0.682^{+0.085}_{-0.034}$	$2.518^{+0.970}_{-0.644}$
	+3%/-3%	+2%/-2%	+42%/-42%	+12%/-11%	+12%/-5%	+39%/-26%
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 007369224-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-796 ± 109	$9.44^{+9.78}_{-6.23}$	257^{+12}_{-11}	3228^{+1440}_{-592}	7605^{+54949}_{-5775}
Alt.	-686 ± 70	$9.07^{+8.94}_{-6.39}$	257^{+11}_{-11}	3188^{+1646}_{-557}	7133^{+72870}_{-5394}

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 $A_{obs} \gg 1.0$

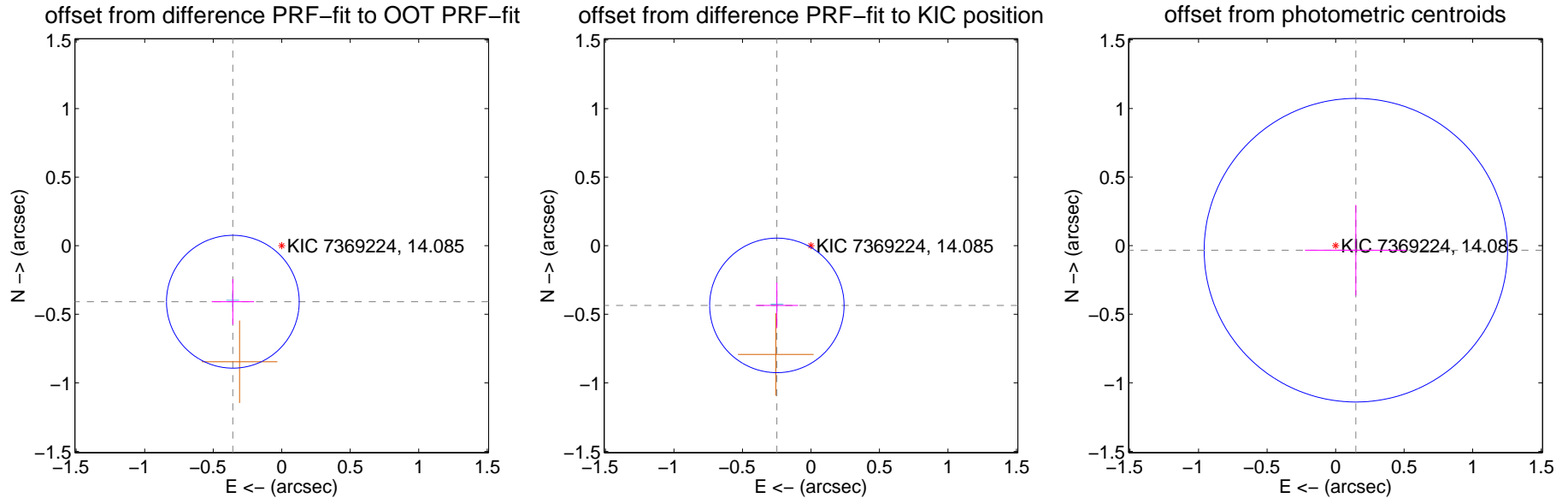
DV Centroid Data

Supplemental centroid analysis for 007369224-01. Kepler magnitude: 14.09. Transit SNR 12.05

There are 1 quarters with good PRF difference image offsets

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

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.542 ± 0.161	3.36	0.357 ± 0.155	-0.408 ± 0.166
PRF-fit source offset from KIC position	0.501 ± 0.163	3.07	0.249 ± 0.155	-0.435 ± 0.166
photometric centroid source offset	0.15 ± 0.37	0.41	-0.15 ± 0.37	-0.03 ± 0.33



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



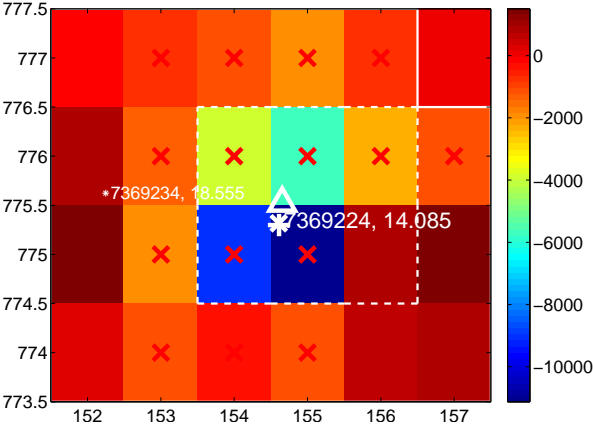
Q2 no difference image



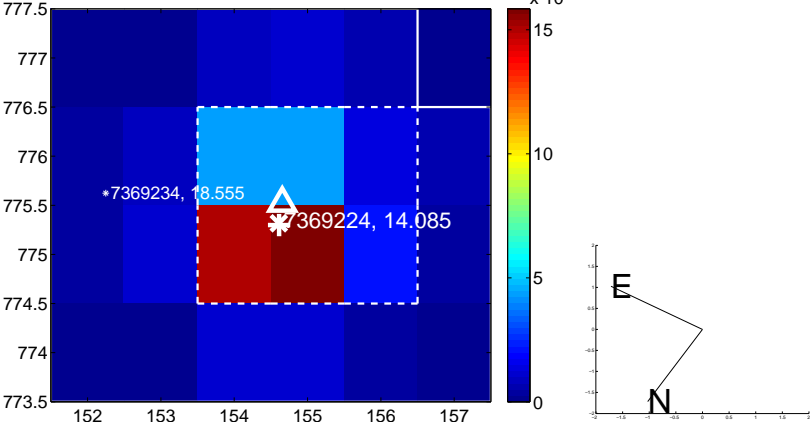
Q2 no OOT image



Q3 difference image. Poor Quality



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.

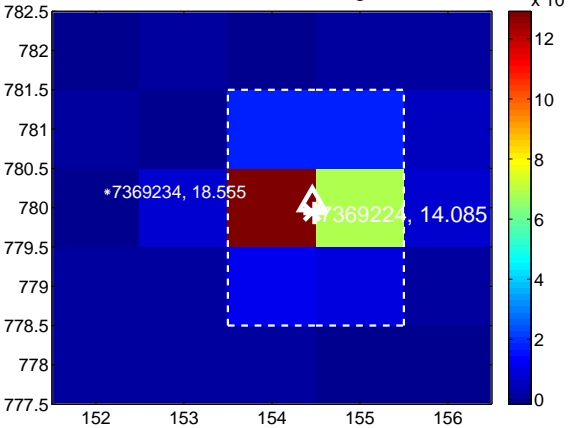
Q9 no difference image



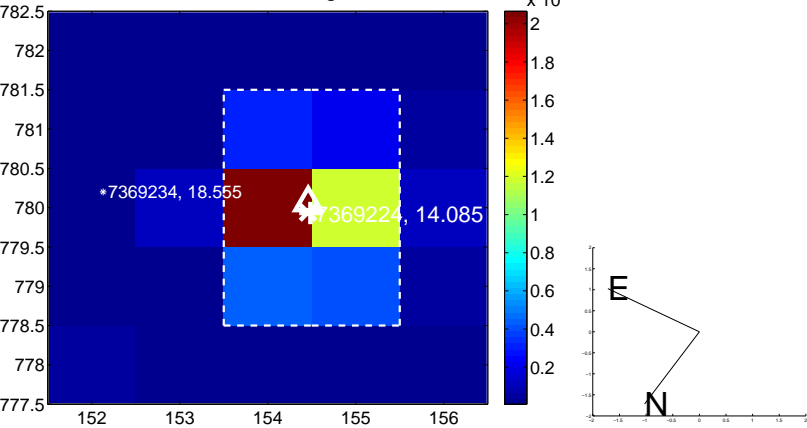
Q9 no OOT image



Q10 difference image



Q10 OOT image



Q11 no difference image



Q11 no OOT image



Q12 no difference image



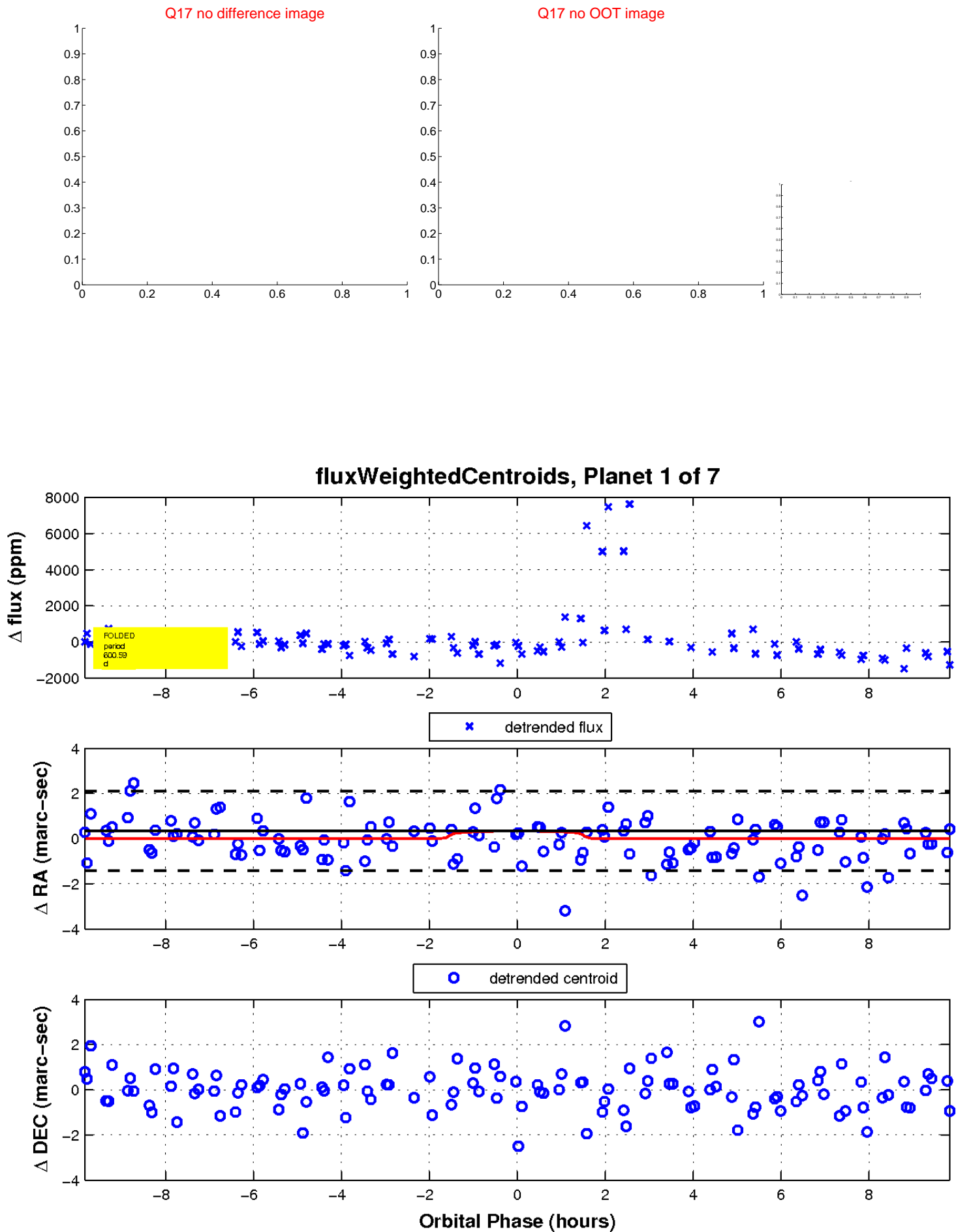
Q12 no OOT image



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

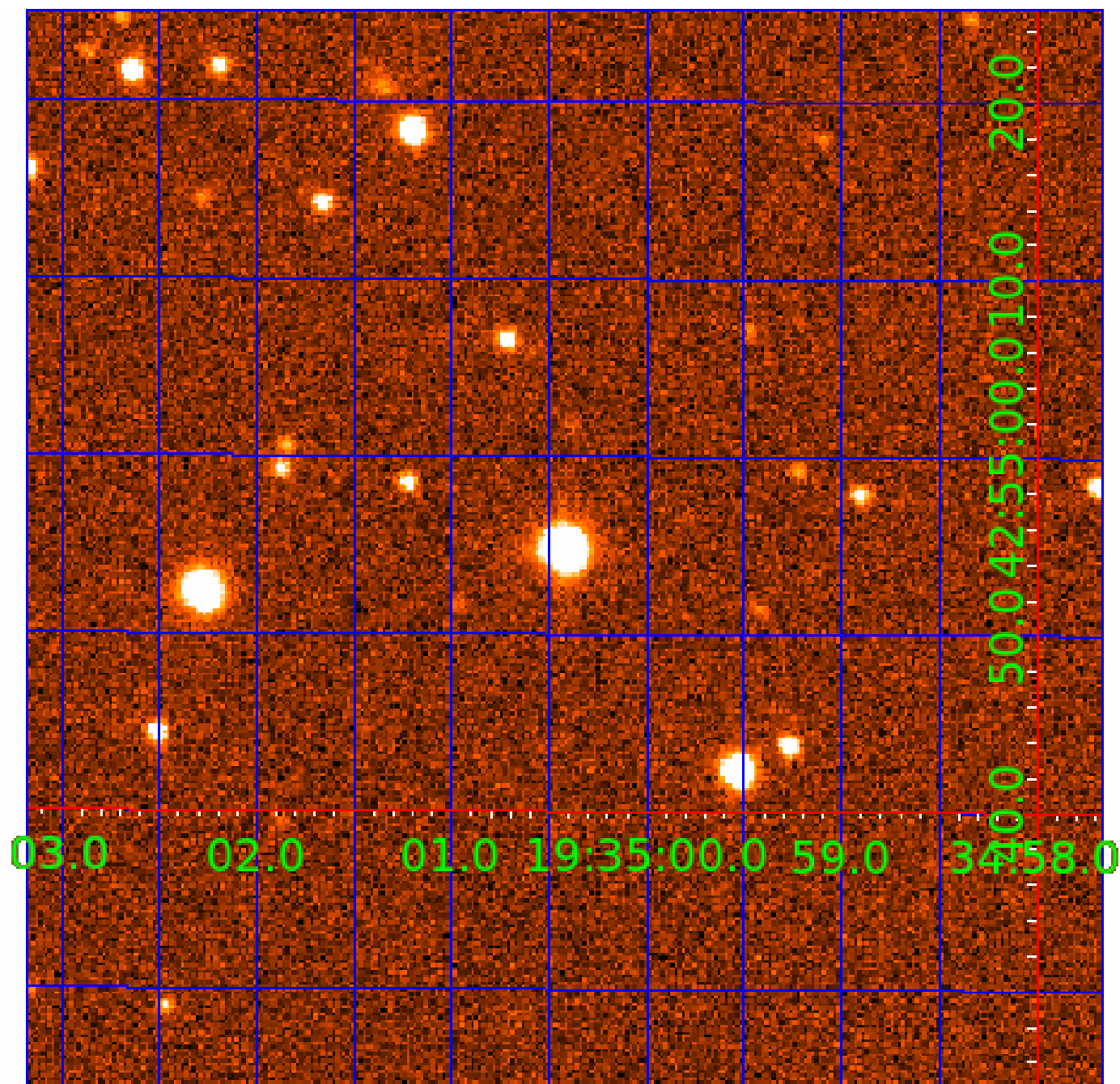


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 007369224

Q1-17 DR25 TCE Parameters

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Robovetter Results

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007369224-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
007369224-04	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—CENT_FEW_DIFFS
007369224-05	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS
007369224-06	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_SKYE_ZUMA—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
007369224-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS

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

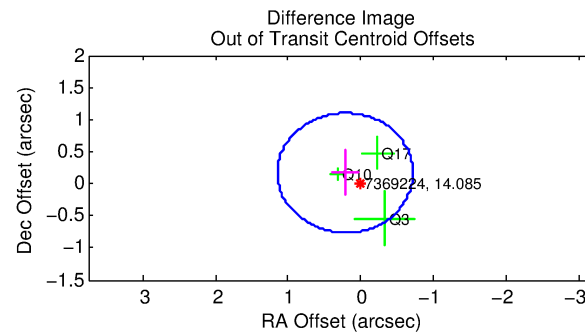
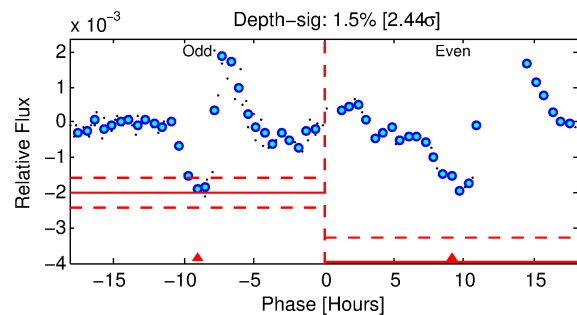
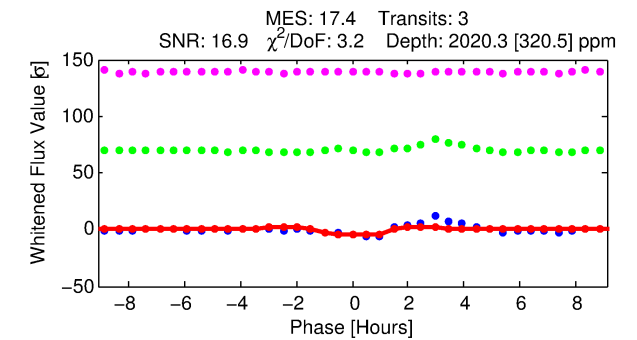
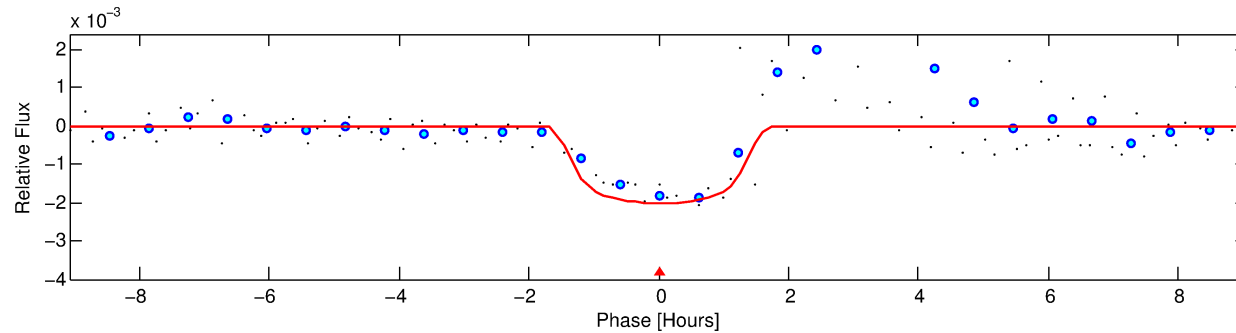
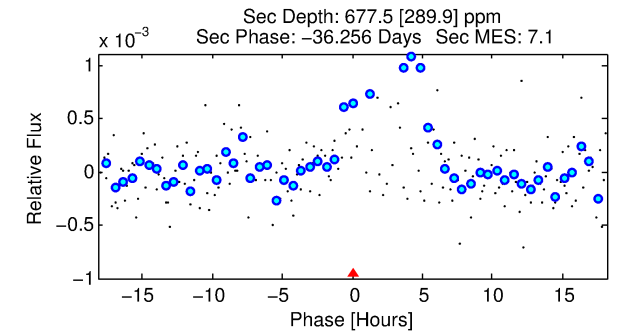
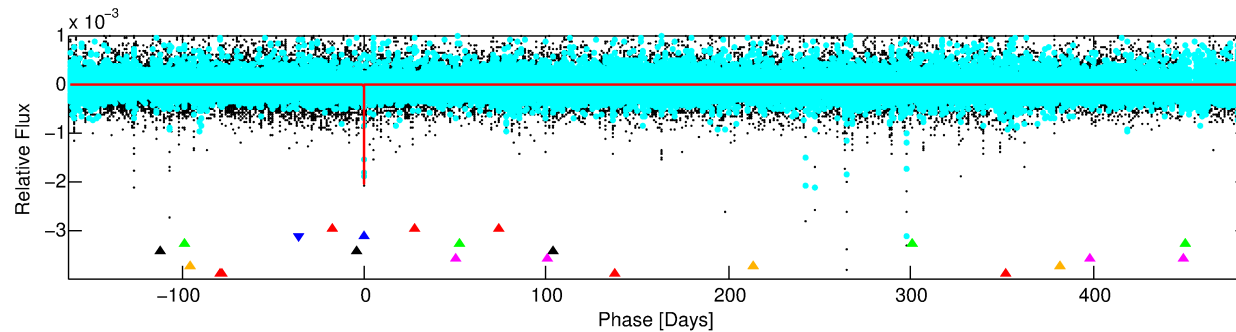
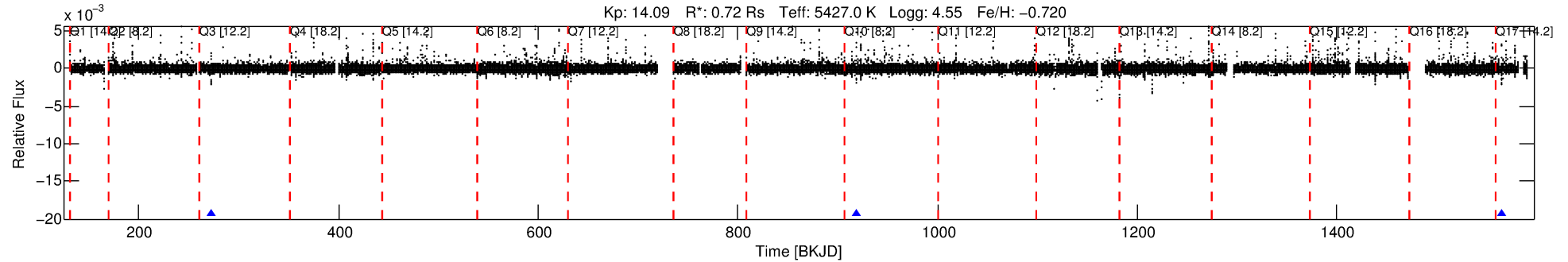
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007369224-02

No Significant Match Found

DV One-Page Summary

KIC: 7369224 Candidate: 2 of 7 Period: 646.244 d



DV Fit Results:

Period = 646.24444 [0.00449] d
Epoch = 272.0036 [0.0059] BKJD
Rp/R* = 0.0431 [0.0417]
a/R* = 1372.04 [5753.74]
b = 0.62 [4.23]
Seff = 0.25 [0.05]
Teq = 180 [9] K
Rp = 3.41 [3.33] Re
a = 1.2878 [0.1430] AU
Ag = 53222.68 [105974.86] [0.50 σ]
Teffp = 4219 [2096] K [1.93 σ]

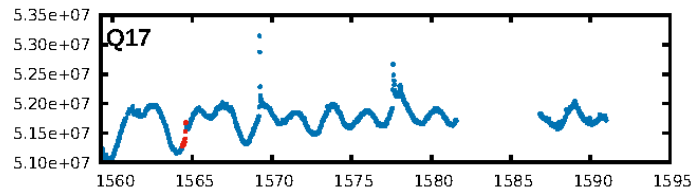
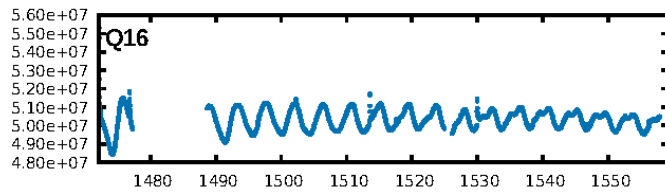
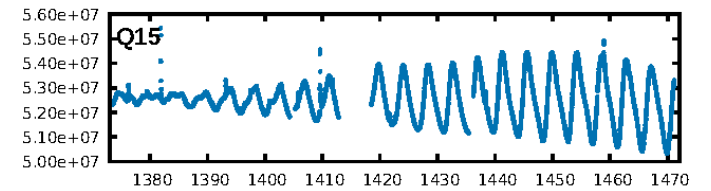
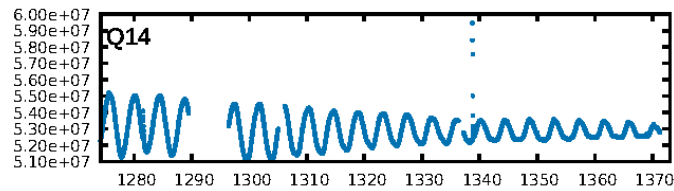
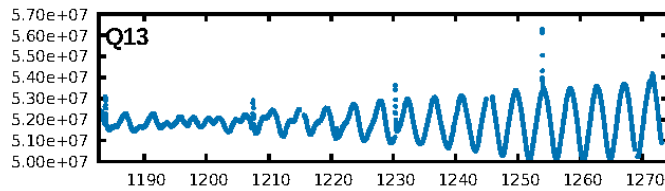
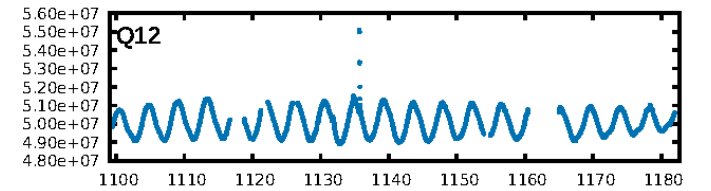
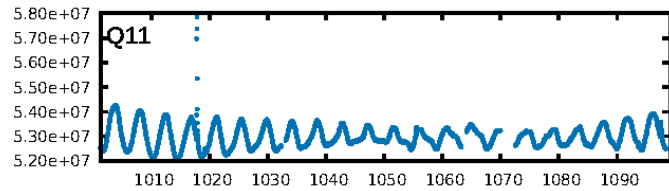
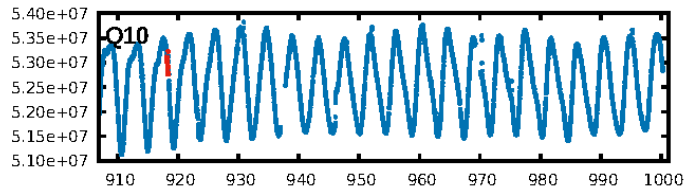
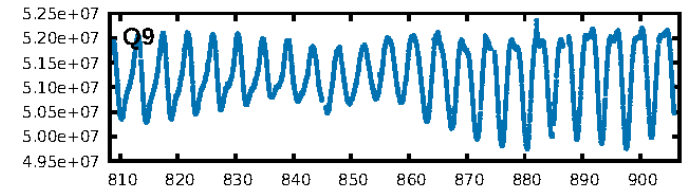
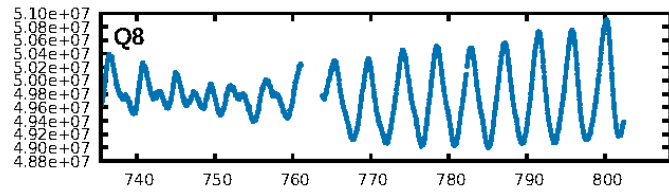
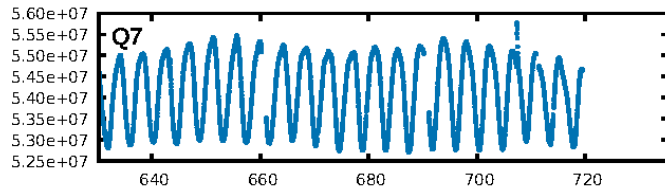
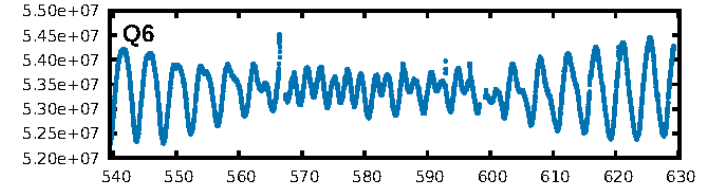
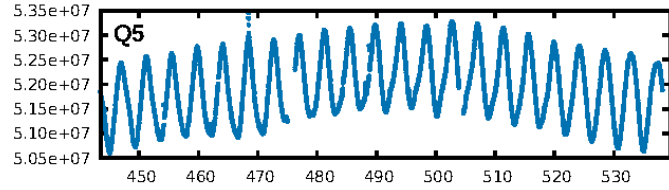
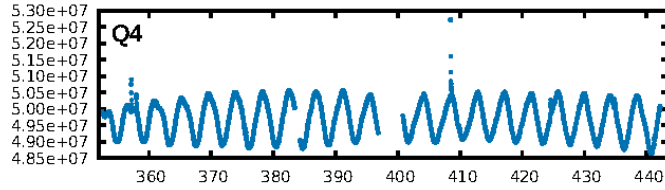
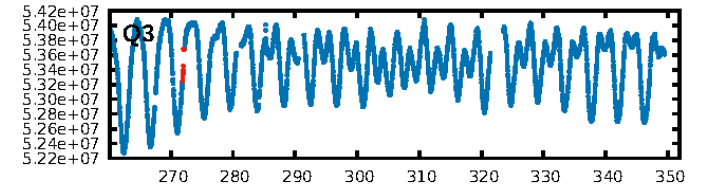
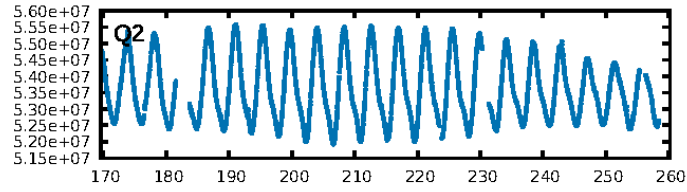
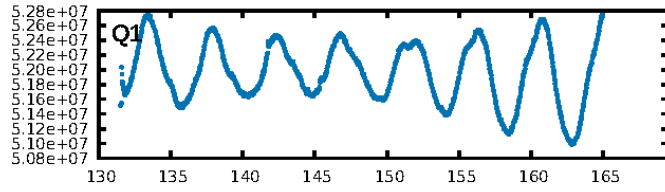
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [245.22 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 55.0%
ModelChiSquareGof-sig: 12.4%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [2/2]
GhostDiagnostic-chr: 4.492
Centroid-sig: N/A
Centroid-so: 0.285 arcsec [0.81 σ]
OotOffset-rm: 0.272 arcsec [0.88 σ]
OotOffset-st: 1/1/0/1 [3]
KicOffset-rm: 0.187 arcsec [0.67 σ]
KicOffset-st: 1/1/0/1 [3]
DiffImageQuality-fgm: 1.00 [3/3]
DiffImageOverlap-fno: 1.00 [3/3]

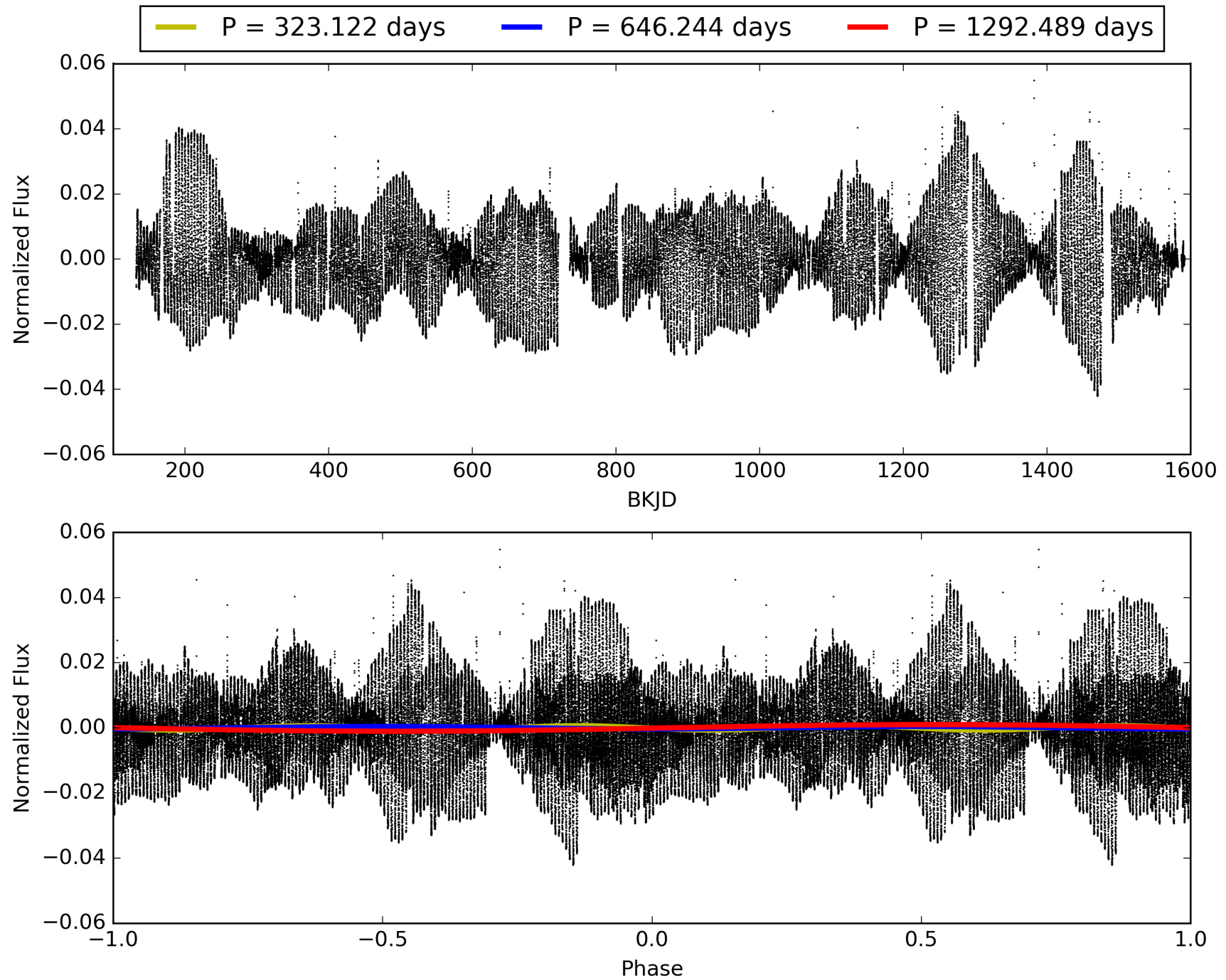
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 12:58:50 Z

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

TCE 007369224-02, PDC Light Curves

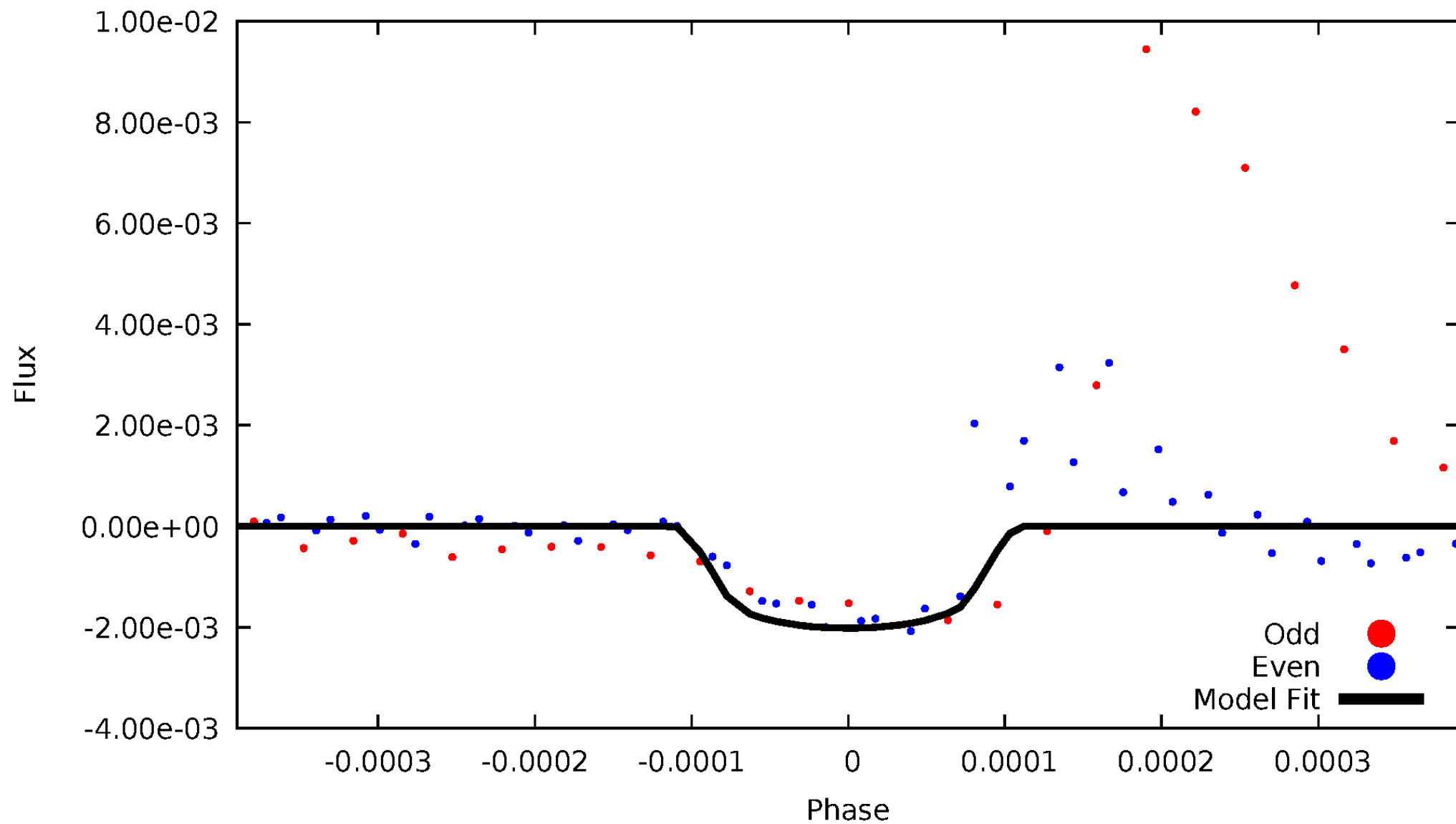


TCE 007369224-02



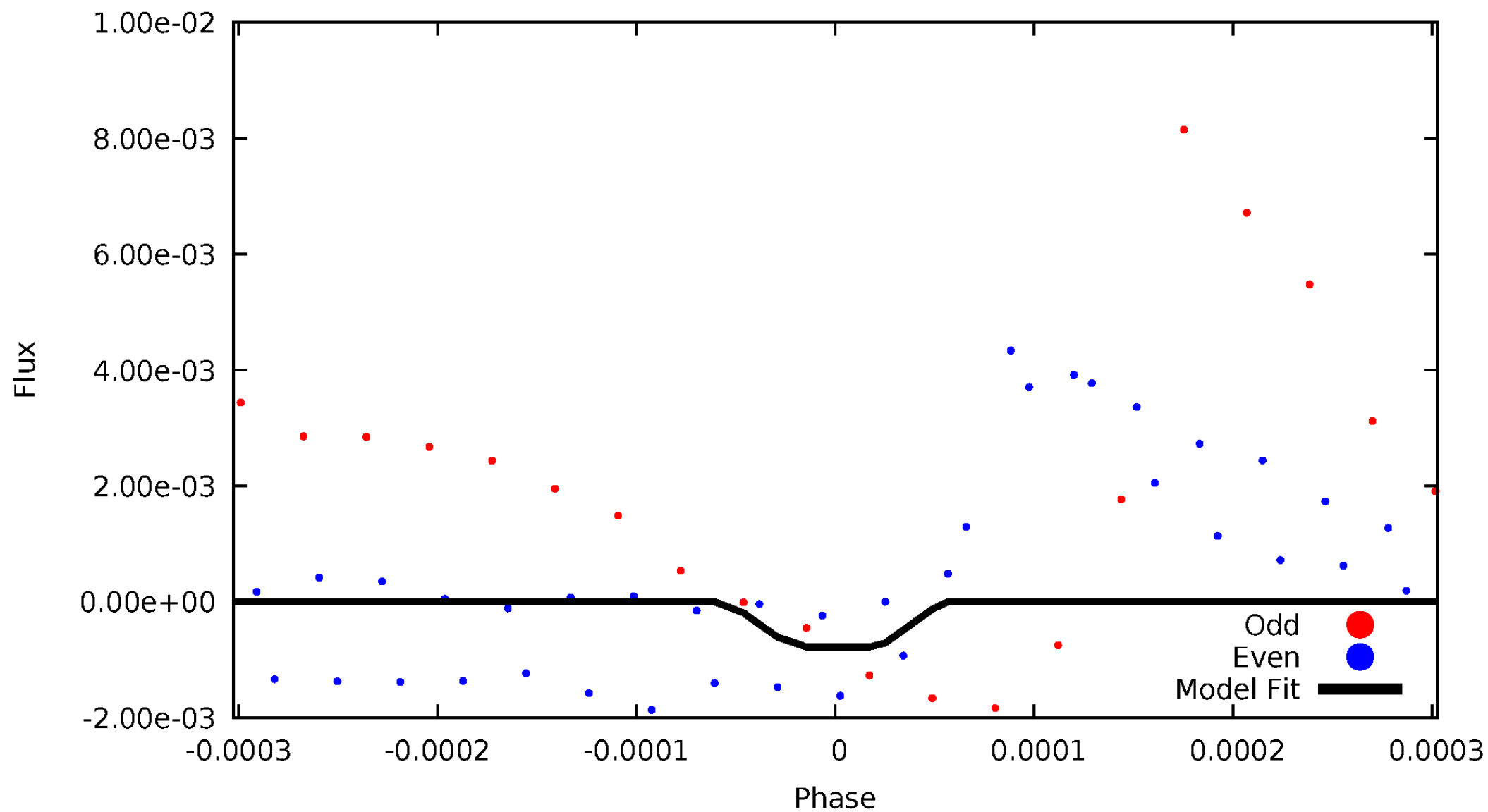
DV Odd/Even

TCE 007369224-02



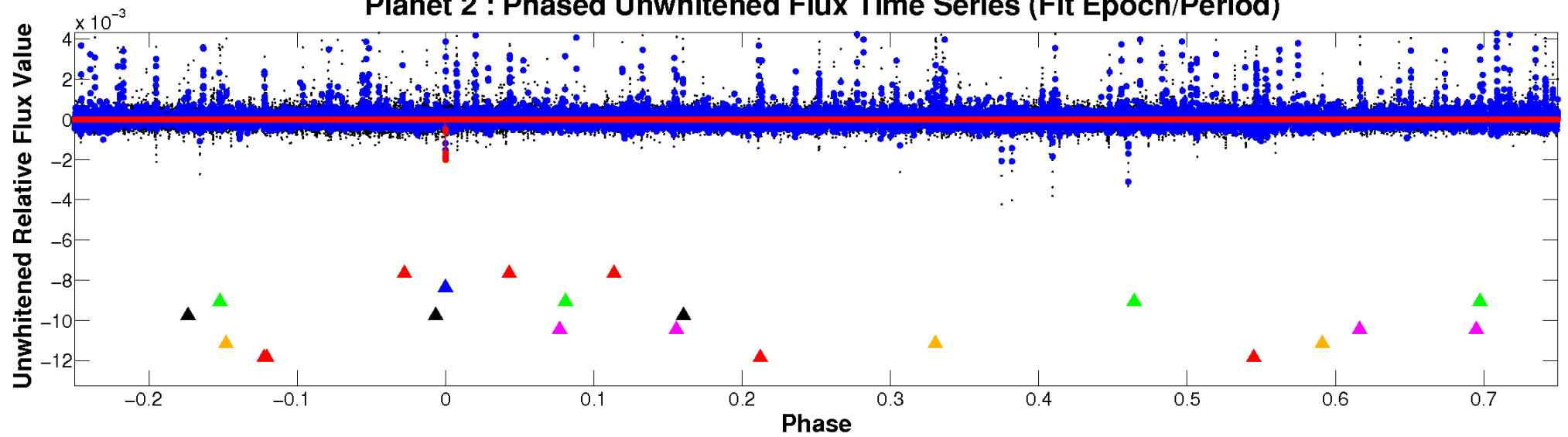
ALT Odd/Even

TCE 007369224-02

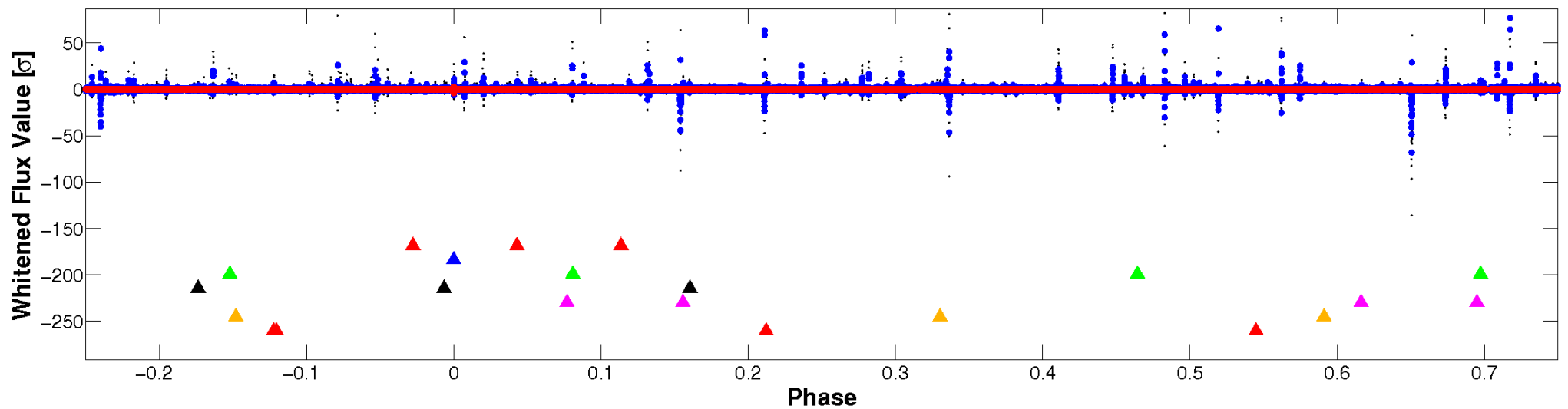


Non-Whitened Vs. Whitened Light Curve

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

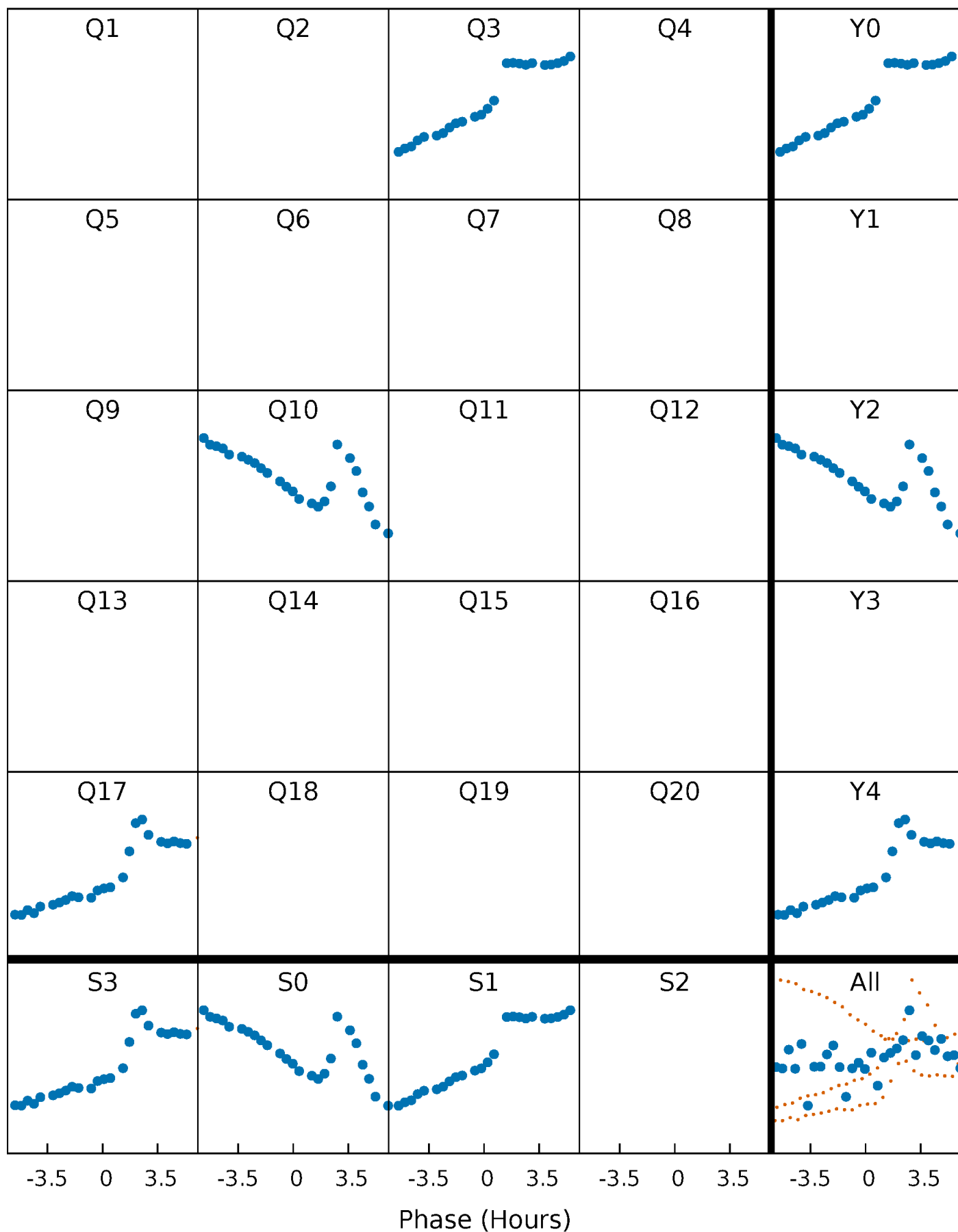


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



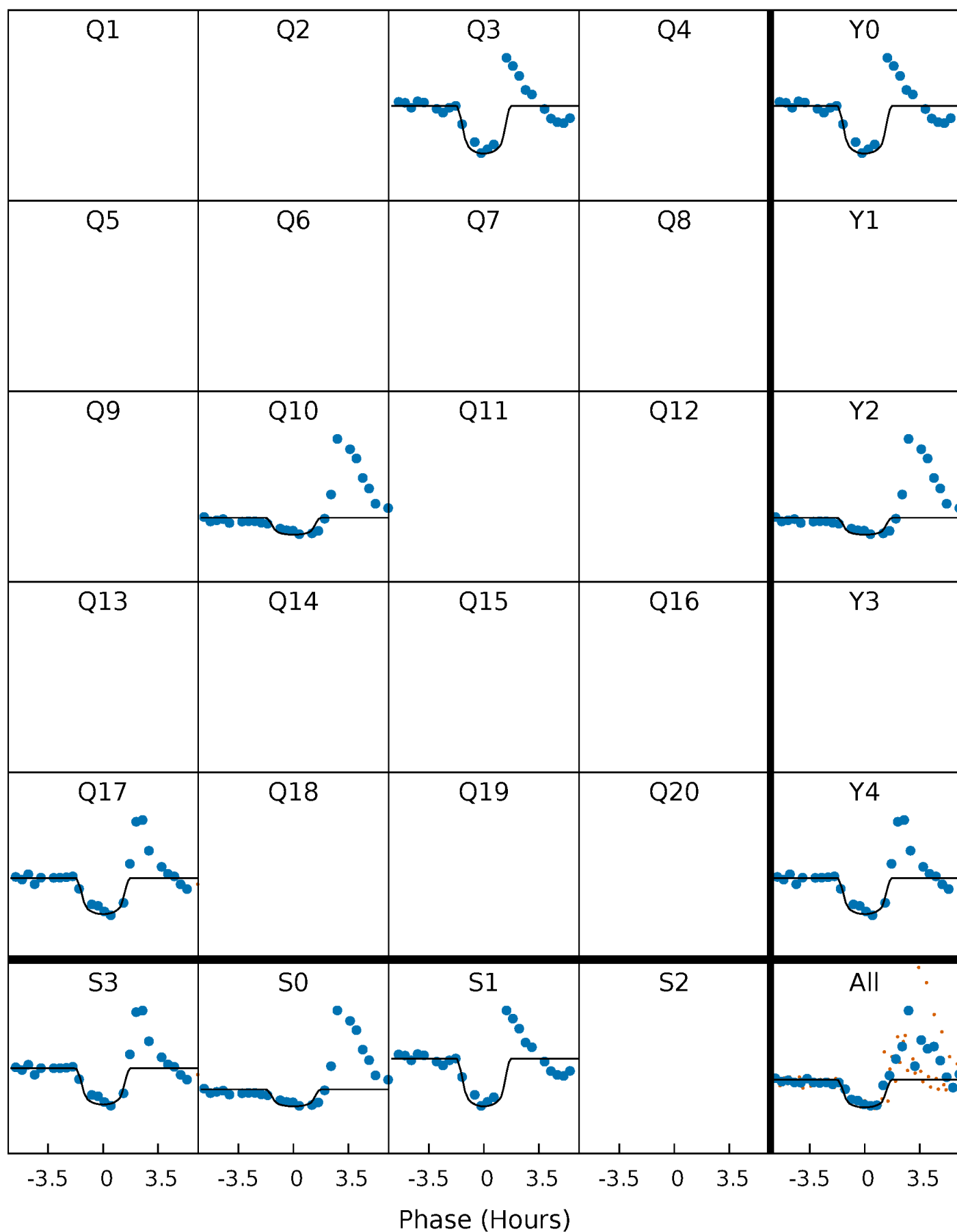
PDC Quarter-Phased Transit Curves

TCE 007369224-02 $P=646.244436$ Days $T_0=272.003648$ (BKJD)



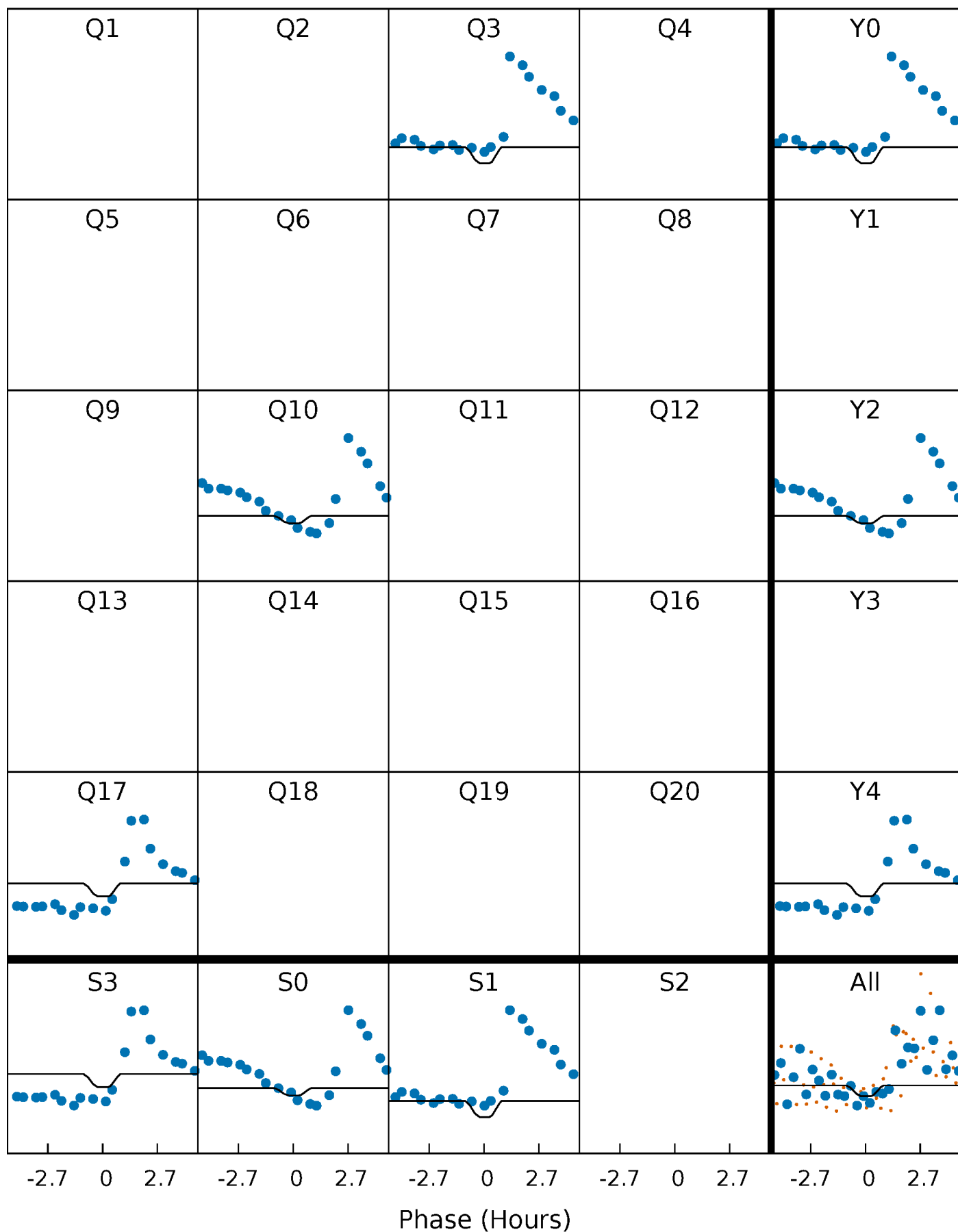
DV Quarter-Phased Transit Curves

TCE 007369224-02 $P=646.244436$ Days $T_0=272.003648$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

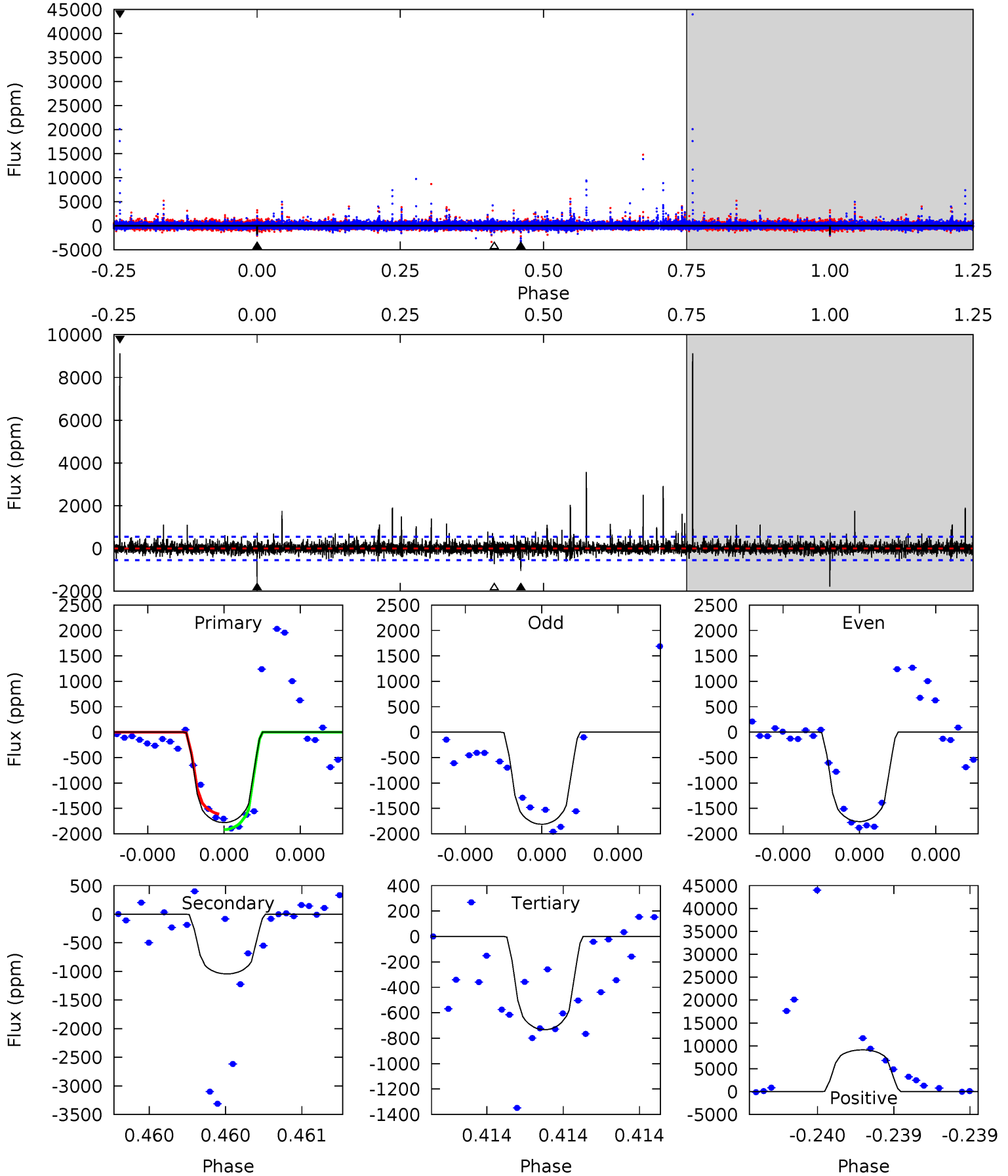
TCE 007369224-02 P=646.259013 Days $T_0=271.998603$ (BKJD)



DV Model-Shift Uniqueness Test

007369224-02, P = 646.244436 Days, E = 272.003648 Days

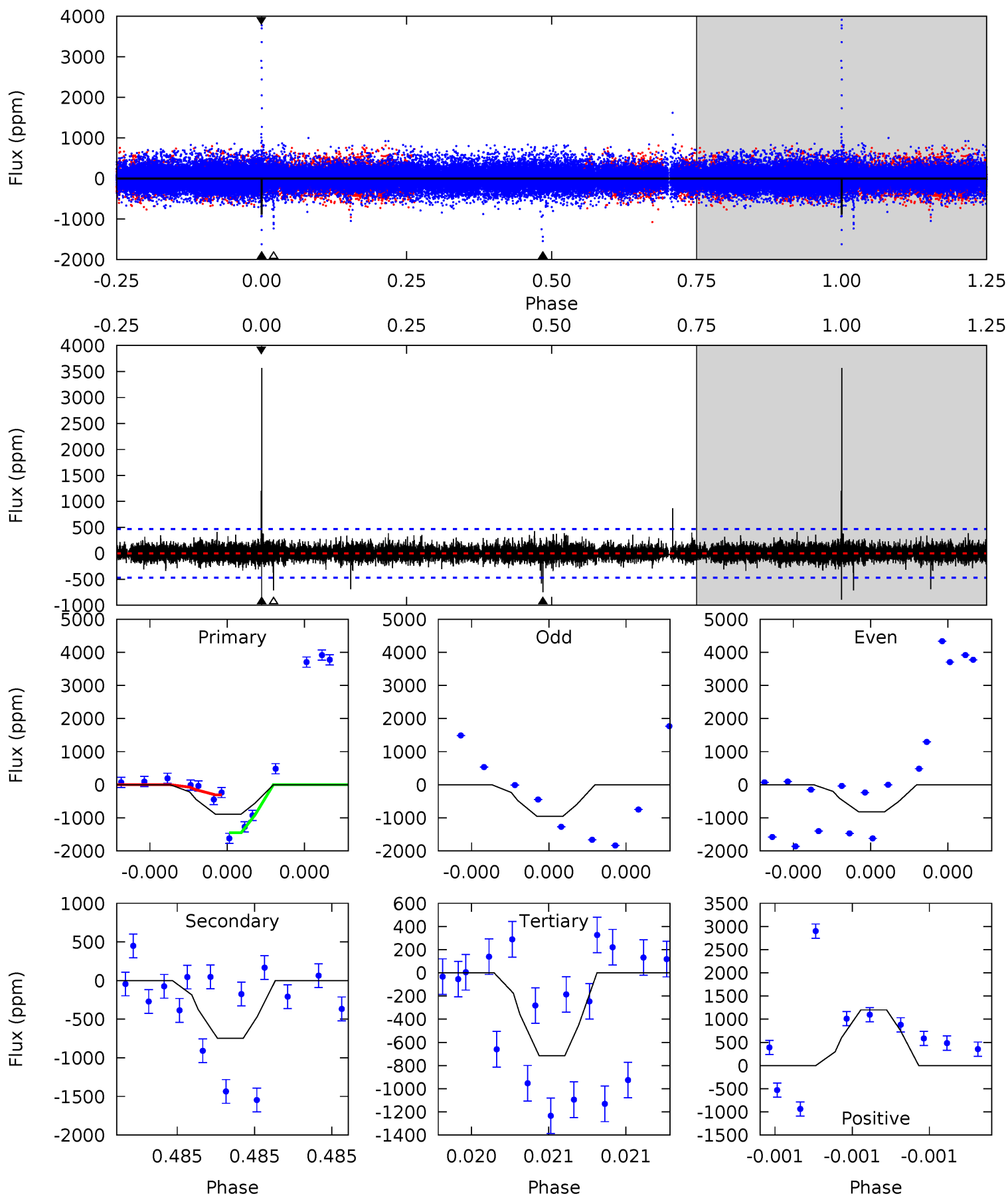
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
18.6	10.9	7.66	95.4	5.71	3.69	2.28	10.9	-76.8	3.24	-84.5	0.09	0.92	0.84	1.61



Alt Model-Shift Uniqueness Test

007369224-02, P = 646.259013 Days, E = 271.998603 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.1	9.35	8.94	15.0	5.86	3.90	1.05	2.18	-3.90	0.41	-5.67	0.68	0.96	0.80	7.19



Stellar Parameters For KIC 007369224

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5427^{+161}_{-161}	$4.551^{+0.099}_{-0.081}$	$-0.720^{+0.300}_{-0.300}$	$0.725^{+0.088}_{-0.079}$	$0.682^{+0.085}_{-0.034}$	$2.518^{+0.970}_{-0.644}$
	+3%/-3%	+2%/-2%	+42%/-42%	+12%/-11%	+12%/-5%	+39%/-26%
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 007369224-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-1044 ± 96	$4.09^{+3.08}_{-2.50}$	251^{+11}_{-11}	4428^{+2445}_{-762}	$57197^{+343415}_{-38315}$
Alt.	-747 ± 80	$3.15^{+2.97}_{-2.08}$	251^{+11}_{-11}	4604^{+3143}_{-930}	$70219^{+535731}_{-51383}$

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 $A_{obs} \gg 1.0$

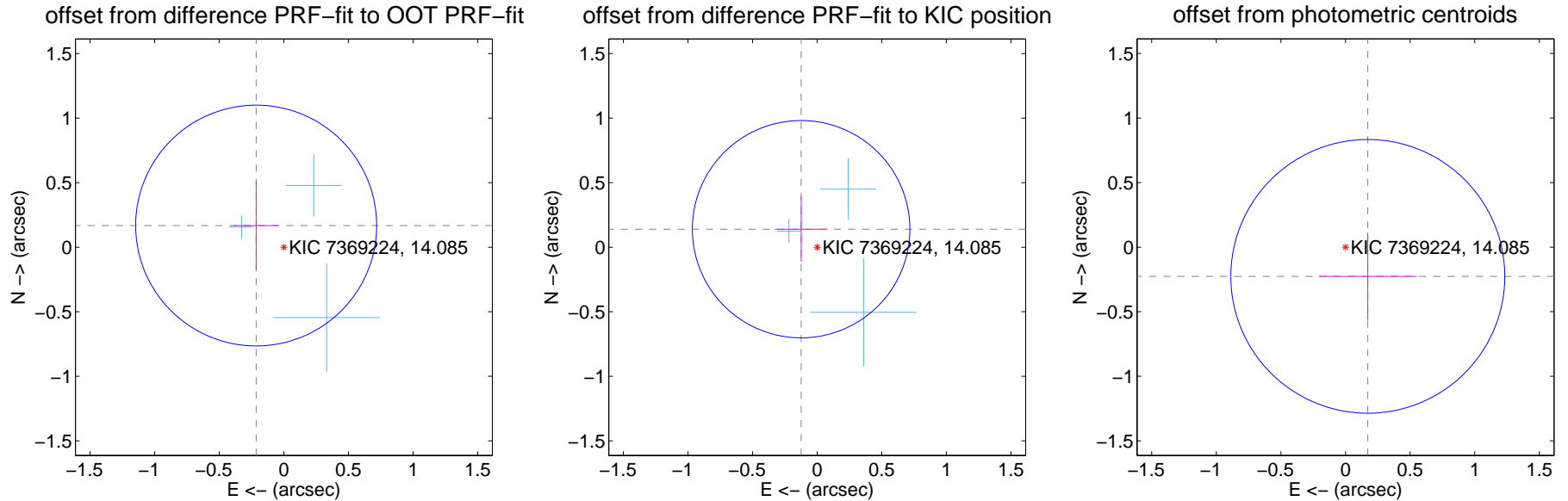
DV Centroid Data

Supplemental centroid analysis for 007369224-02. Kepler magnitude: 14.09. Transit SNR 16.90

There are 3 quarters with good PRF difference image offsets

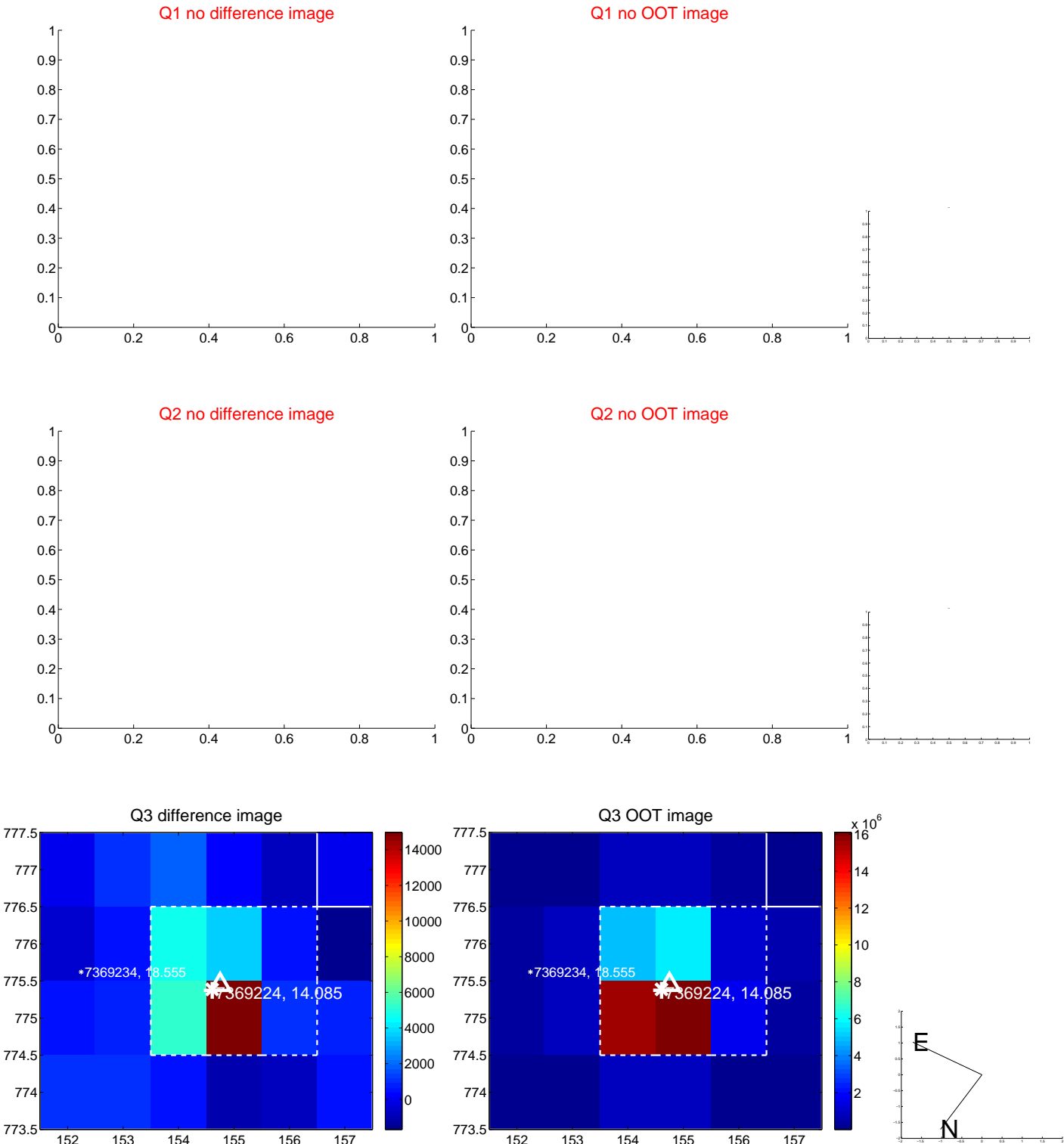
The direct PRF centroid is offset from the target star catalog position by about 0.03 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.272 ± 0.311	0.88	0.214 ± 0.171	0.168 ± 0.345
PRF-fit source offset from KIC position	0.187 ± 0.281	0.67	0.124 ± 0.202	0.140 ± 0.252
photometric centroid source offset	0.28 ± 0.35	0.81	-0.17 ± 0.38	-0.23 ± 0.34



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

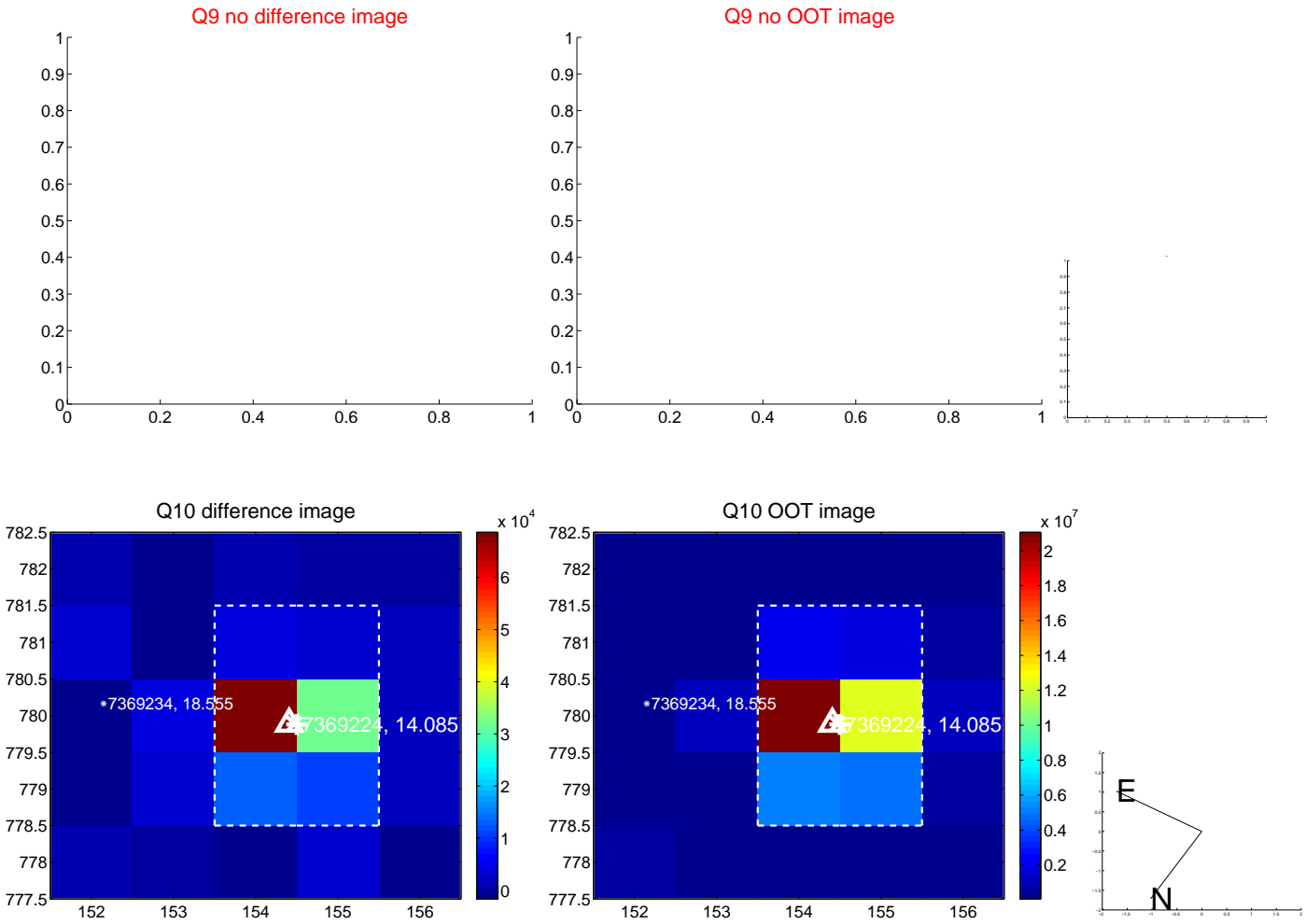
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



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



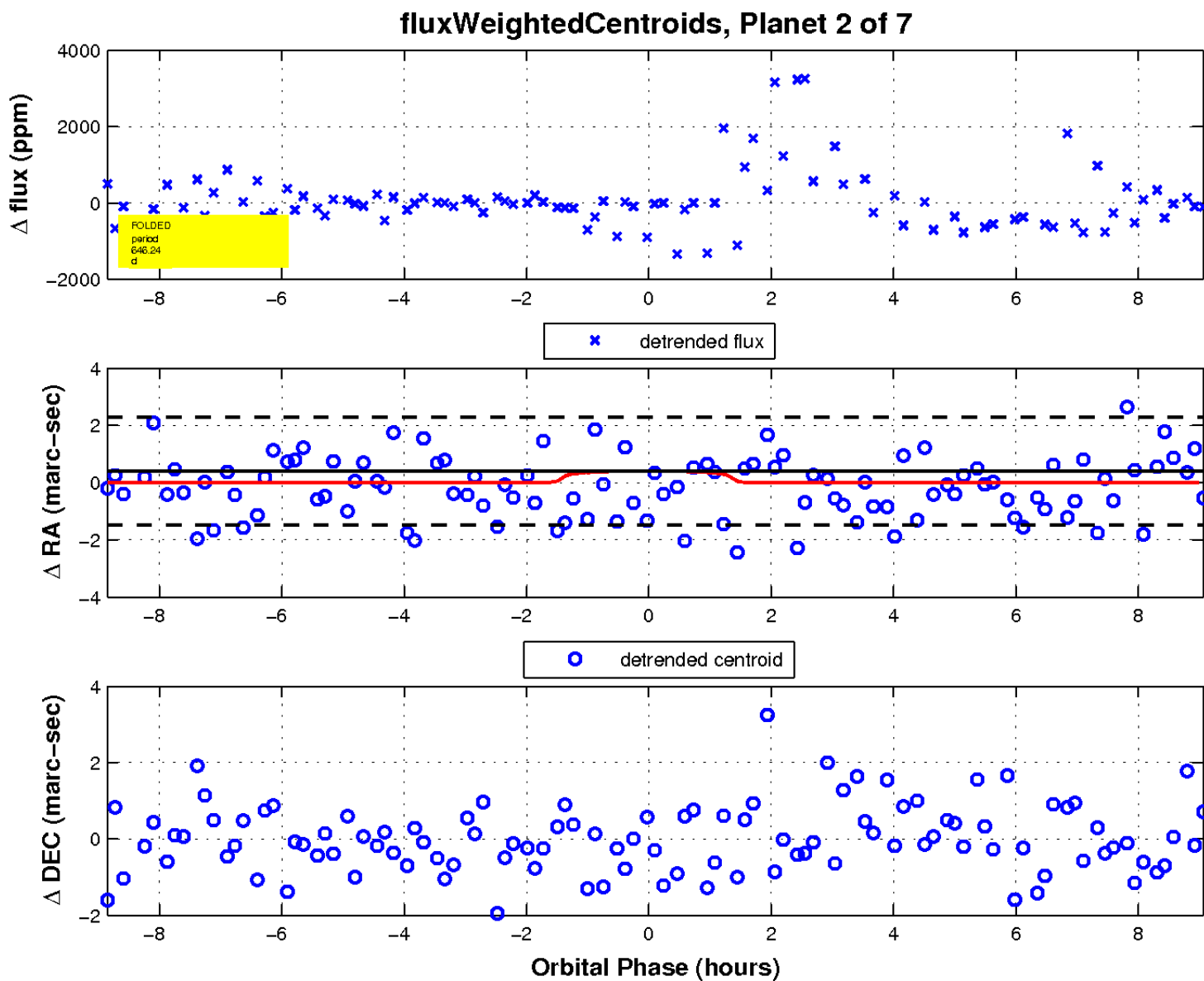
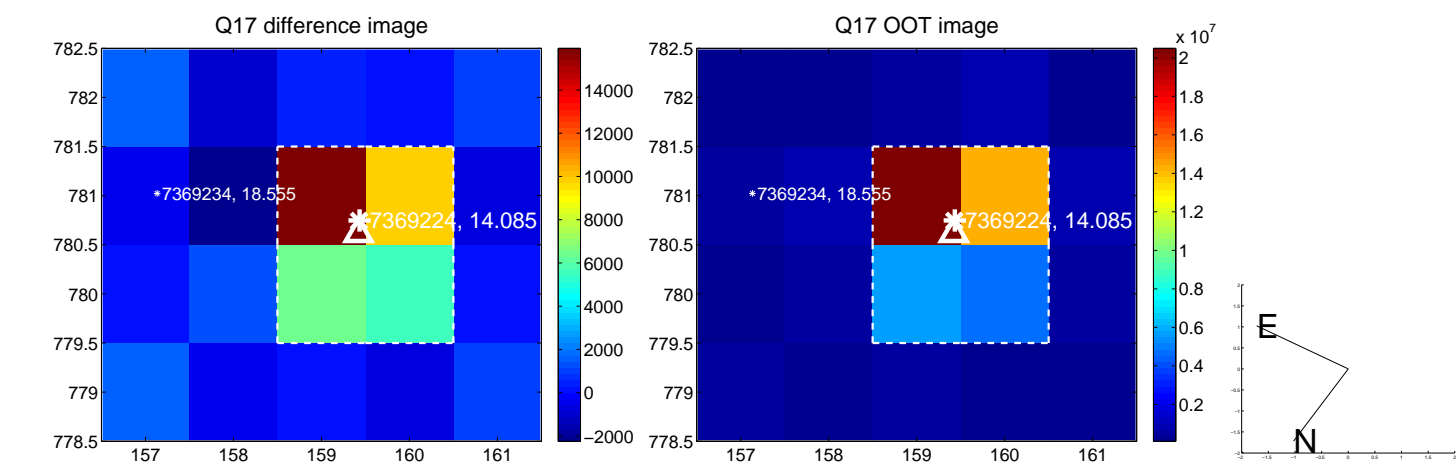
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

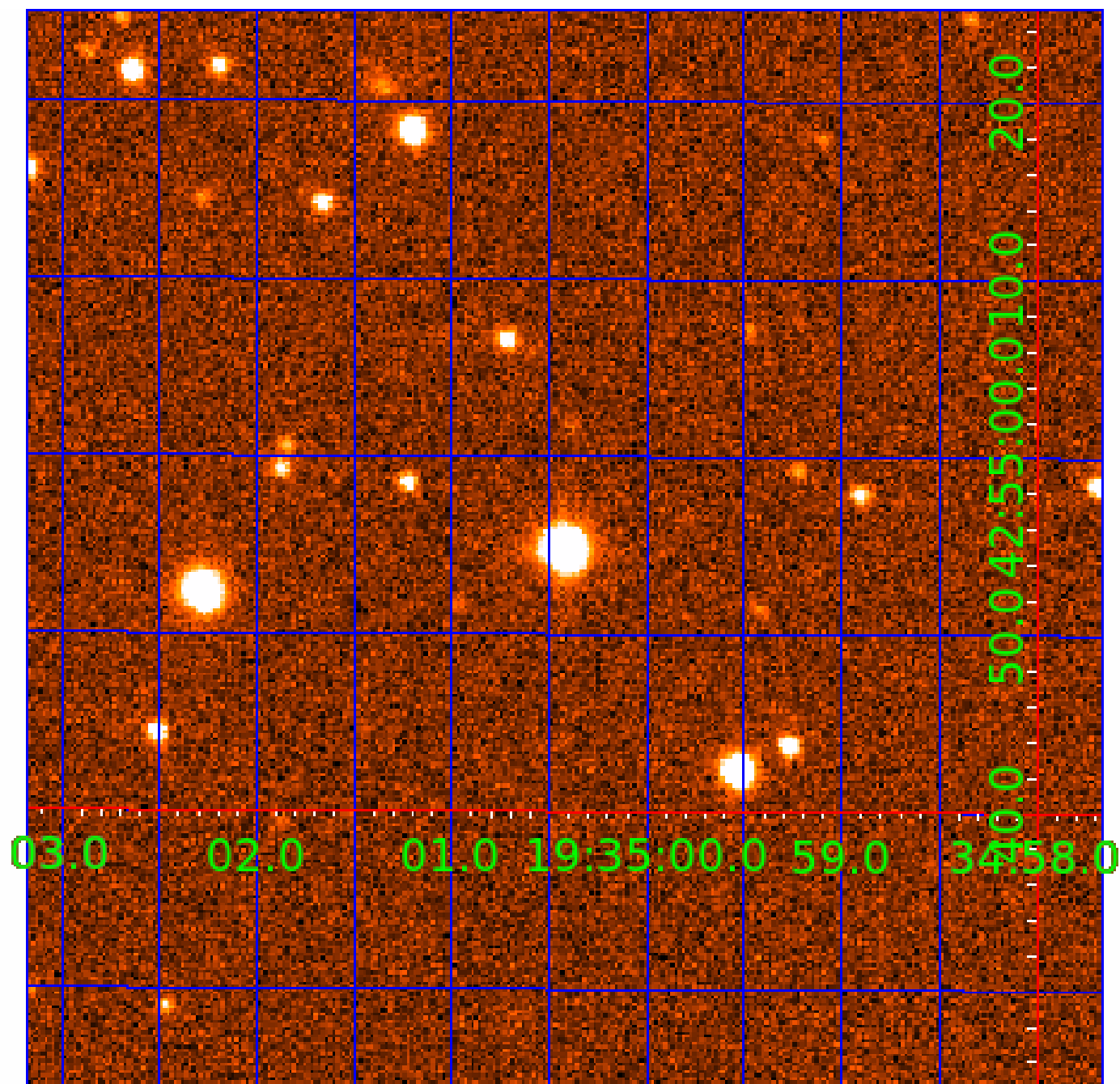


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 007369224

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})
007369224-01	OBS	No	600.585081	345.428100	1887.9	3.290	25.8	12.0	0.72	5427	3.24	0.27
007369224-02	OBS	No	646.244436	272.003648	2020.3	3.024	17.4	16.9	0.72	5427	3.41	0.25
007369224-03	OBS	No	398.412126	173.735645	534.2	8.363	16.9	3.7	0.72	5427	1.70	0.47
007369224-04	OBS	No	538.312423	375.689869	1200.7	4.213	12.5	9.2	0.72	5427	2.55	0.31
007369224-05	OBS	No	348.548227	321.755669	757.6	9.331	14.3	5.1	0.72	5427	2.11	0.56
007369224-06	OBS	No	477.666047	176.378270	1223.2	8.633	13.7	6.7	0.72	5427	3.69	0.37
007369224-07	OBS	No	431.223783	192.974688	1059.0	3.904	16.4	8.2	0.72	5427	2.56	0.42

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007369224-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
007369224-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_POS_DV—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS
007369224-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
007369224-04	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—CENT_FEW_DIFFS
007369224-05	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS
007369224-06	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_SKYE_ZUMA—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
007369224-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS

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

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

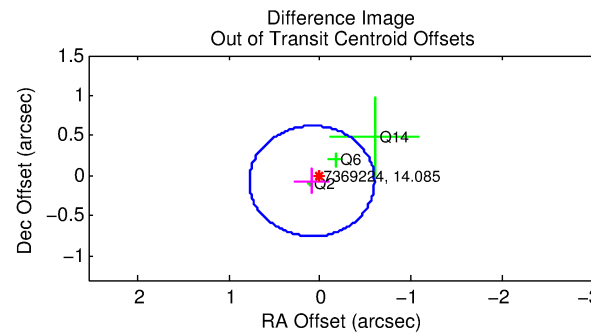
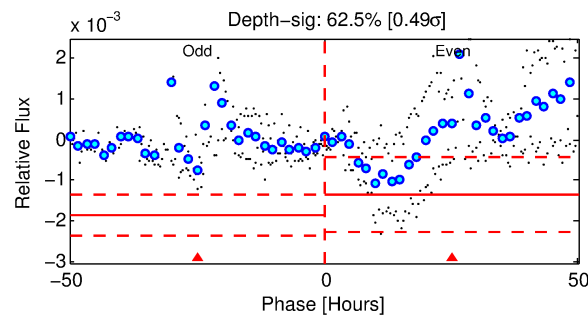
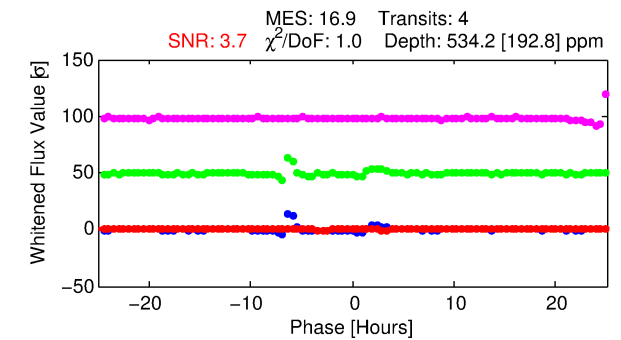
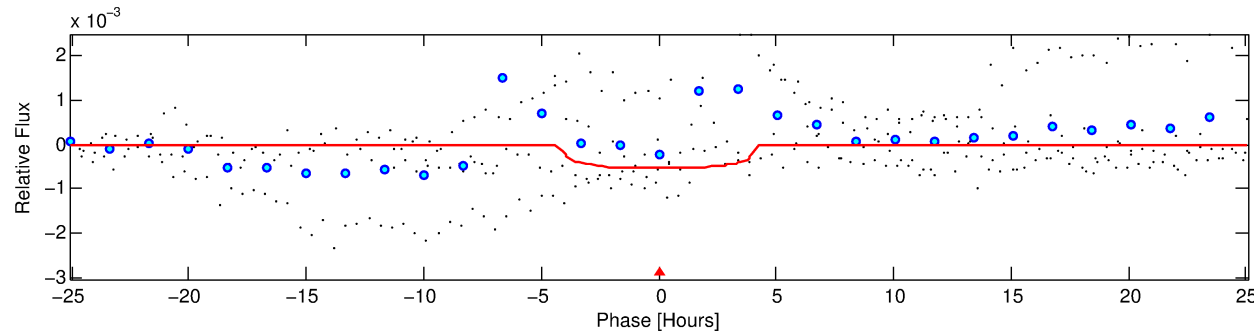
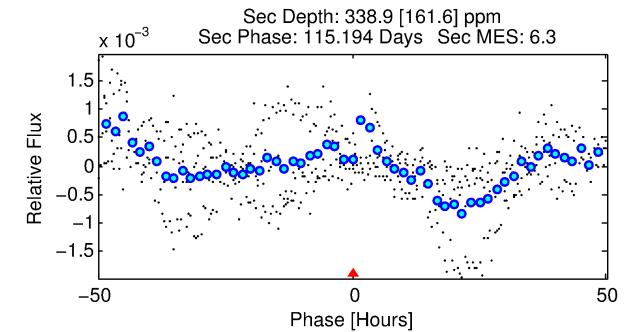
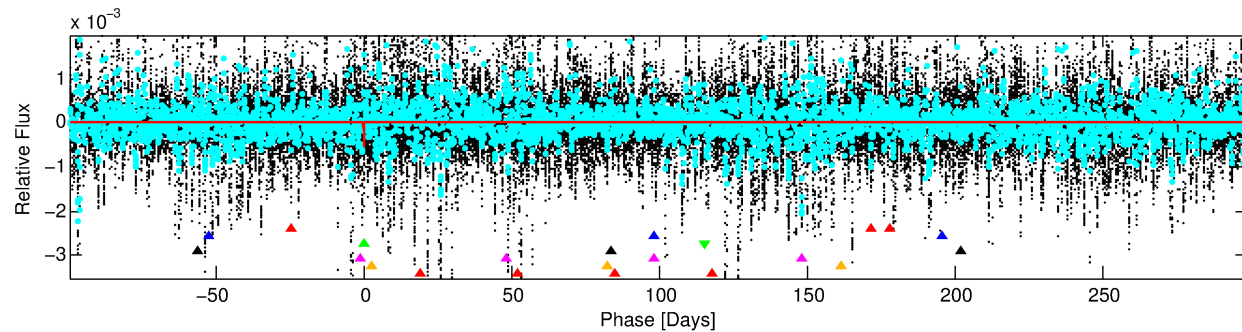
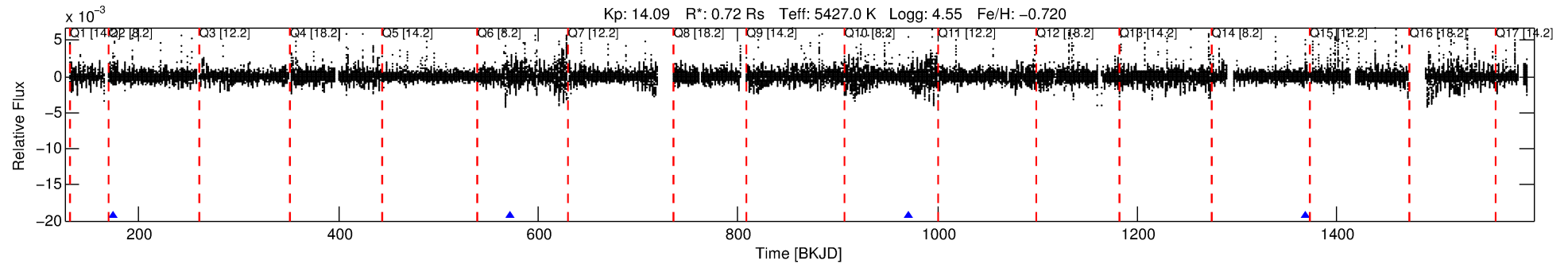
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007369224-03

No Significant Match Found

DV One-Page Summary

KIC: 7369224 Candidate: 3 of 7 Period: 398.412 d



DV Fit Results:

Period = 398.41213 [0.00702] d
Epoch = 173.7356 [0.0150] BKJD
Rp/R* = 0.0215 [0.0290]
a/R* = 331.83 [1915.08]
b = 0.46 [9.95]
Seff = 0.47 [0.10]
Teq = 211 [11] K
Rp = 1.70 [2.30] Re
a = 0.9328 [0.1035] AU
Ag = 55887.04 [152912.97] [0.37 σ]
Teffp = 5018 [3429] K [1.40 σ]

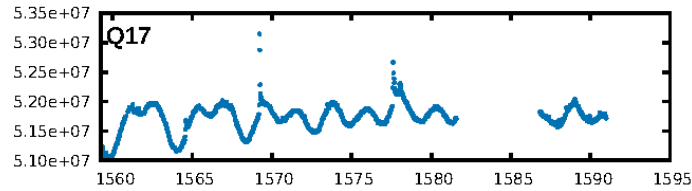
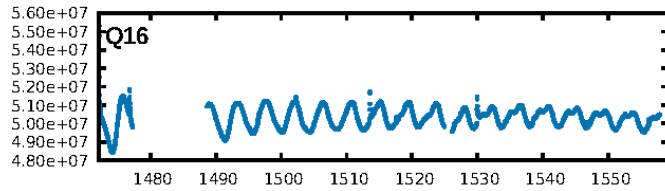
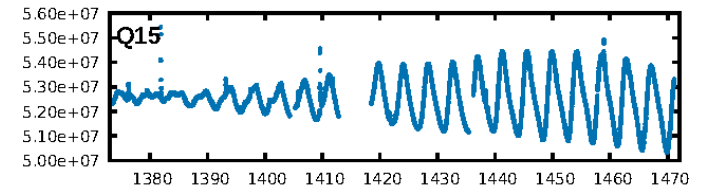
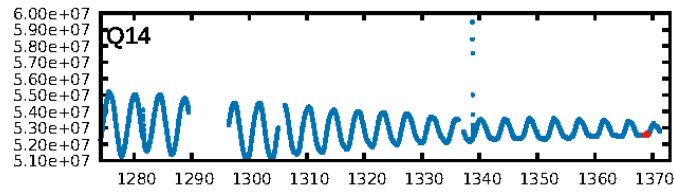
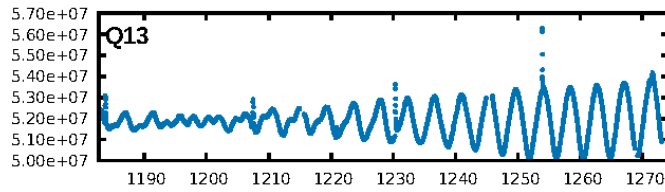
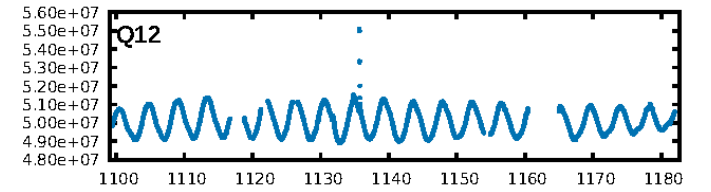
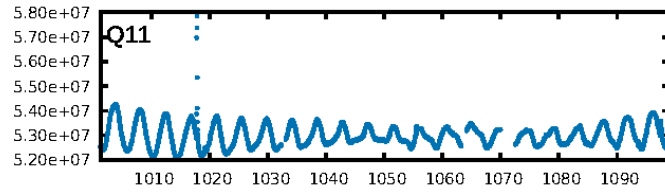
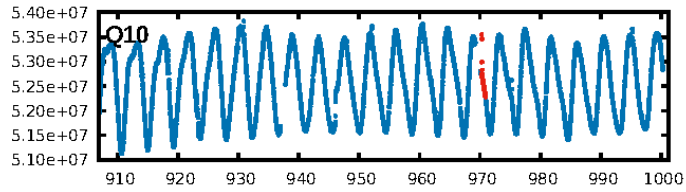
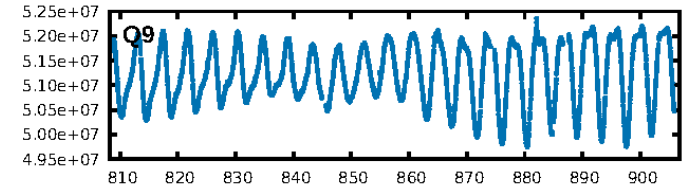
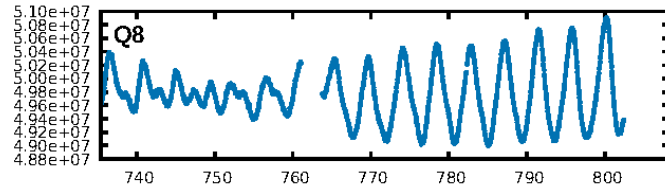
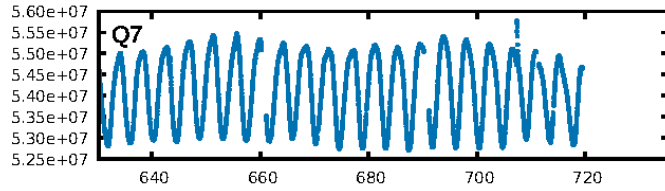
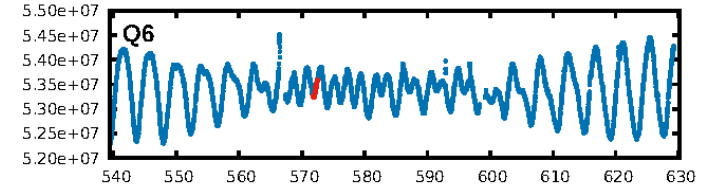
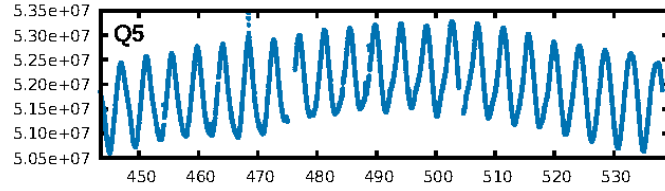
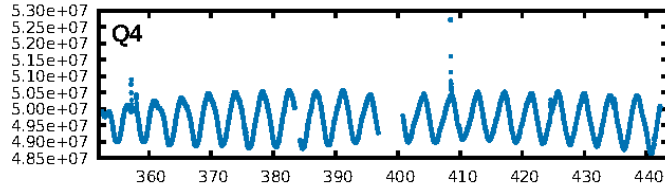
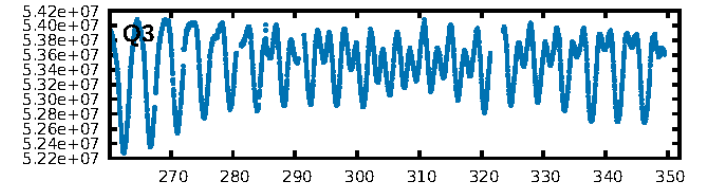
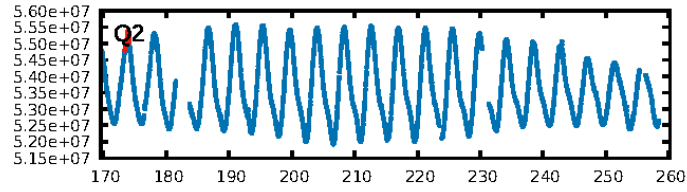
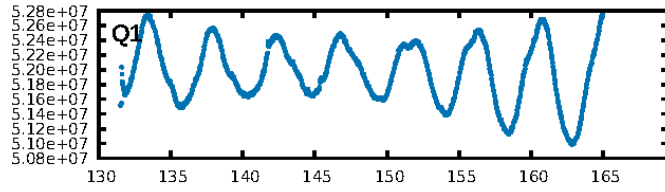
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [95.51 σ]
LongPeriod-sig: 100.0% [85.32 σ]
ModelChiSquare2-sig: 16.5%
ModelChiSquareGof-sig: 90.2%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: -0.07638
Centroid-sig: N/A
Centroid-so: 0.178 arcsec [0.18 σ]
OotOffset-rm: 0.111 arcsec [0.48 σ]
OotOffset-st: 3/0/0/0 [3]
KicOffset-rm: 0.044 arcsec [0.22 σ]
KicOffset-st: 3/0/0/0 [3]
DiffImageQuality-fgm: 0.67 [2/3]
DiffImageOverlap-fno: 1.00 [3/3]

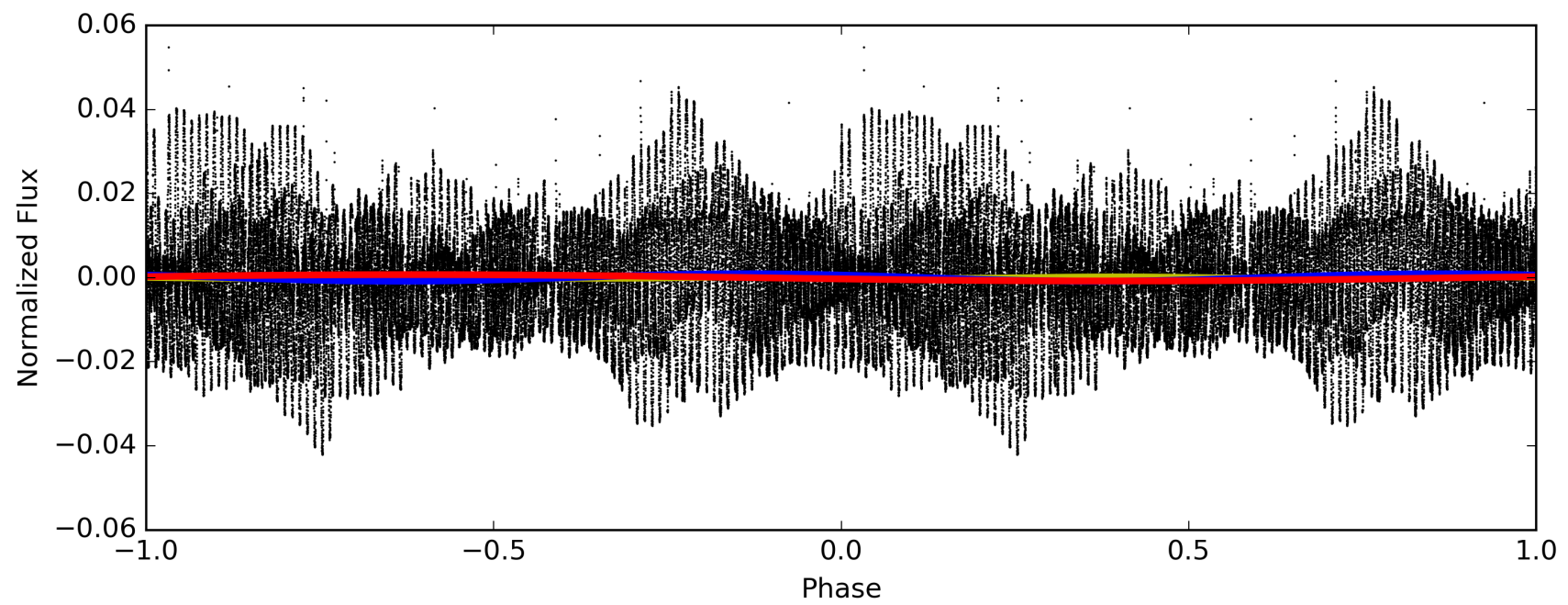
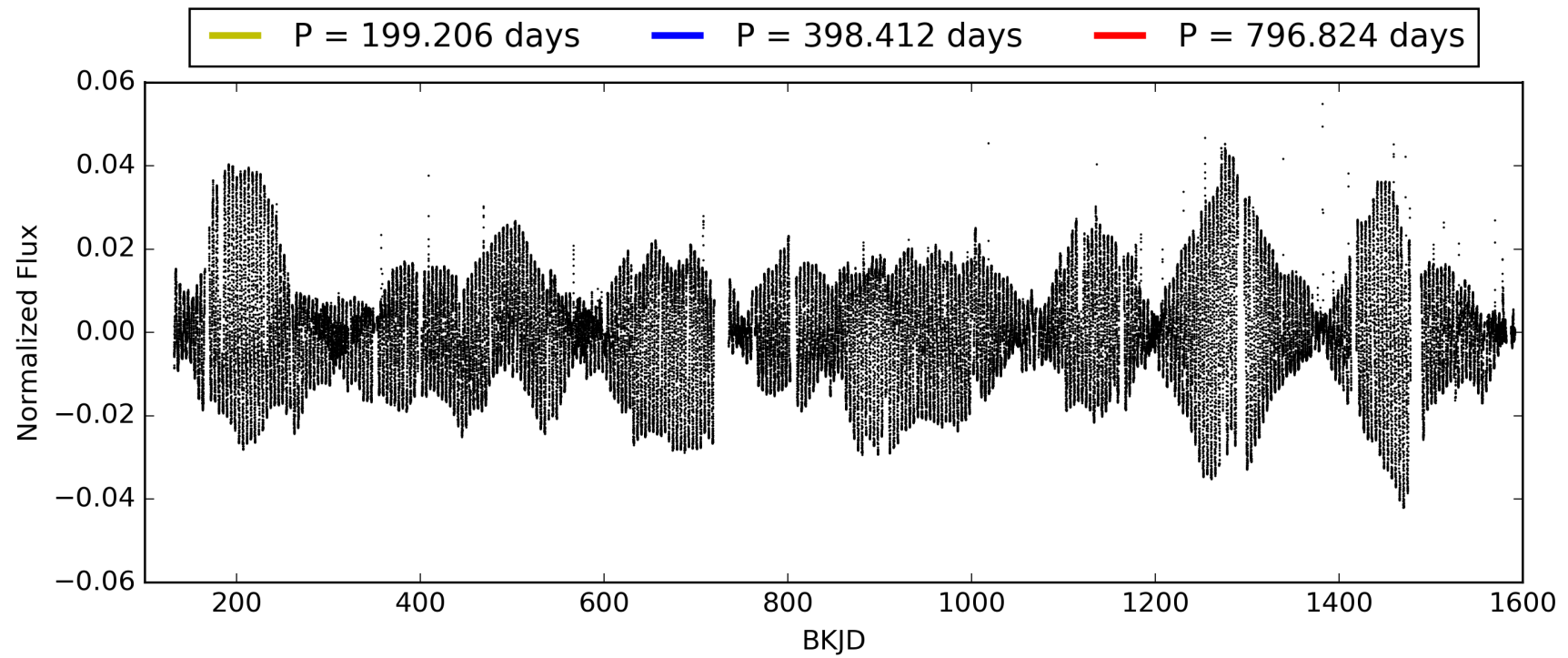
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 12:59:00 Z

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

TCE 007369224-03, PDC Light Curves

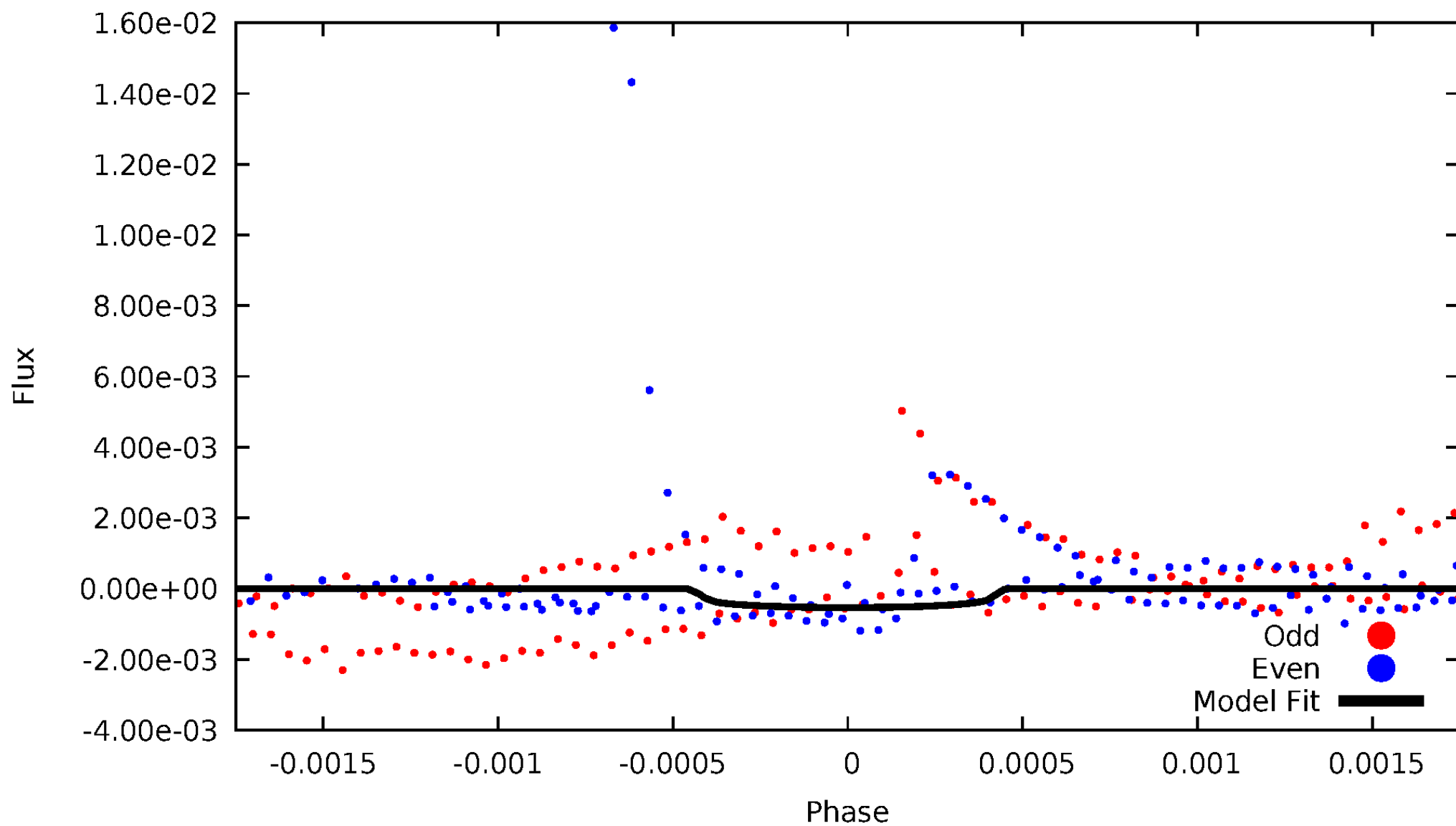


TCE 007369224-03



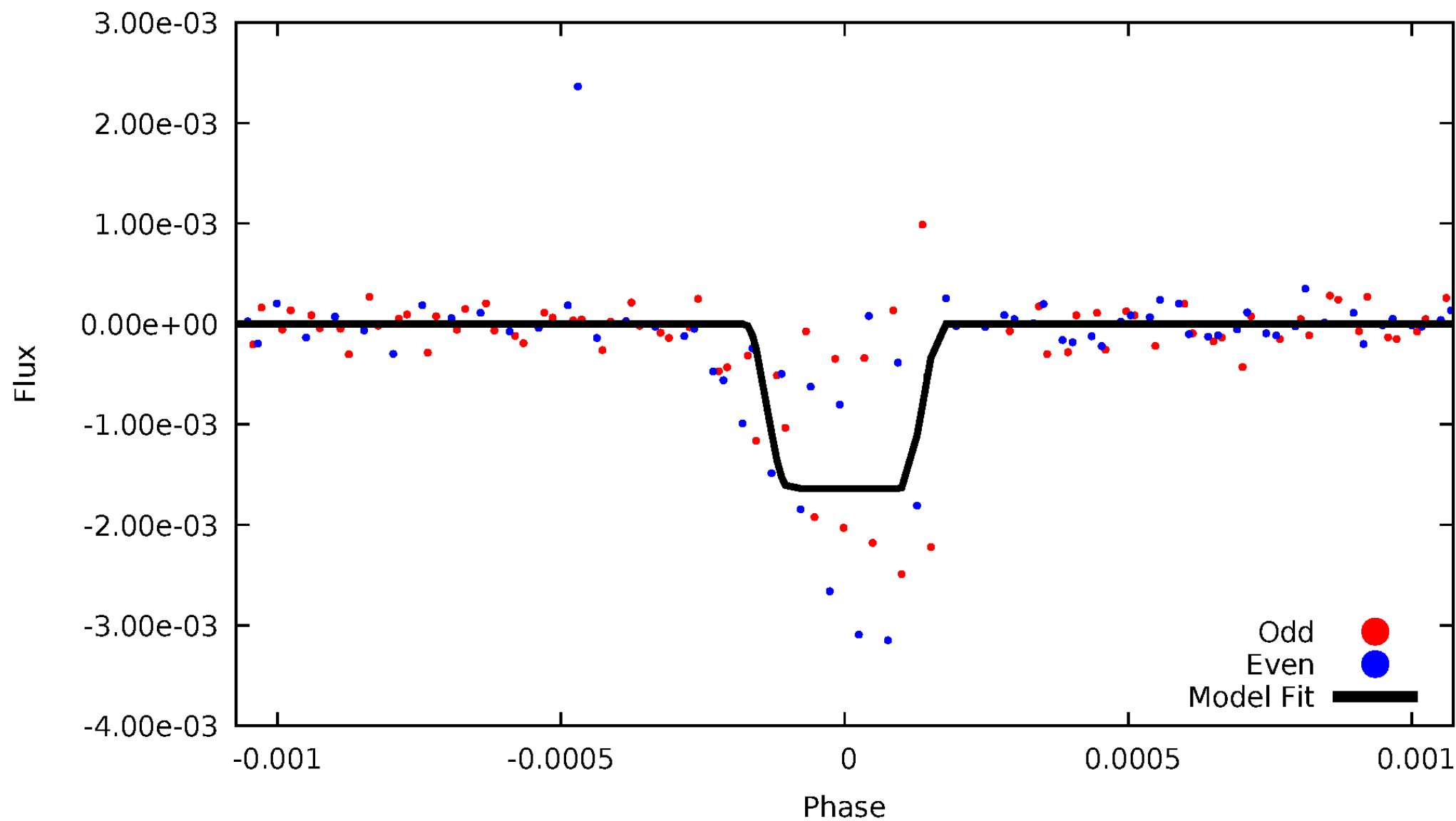
DV Odd/Even

TCE 007369224-03



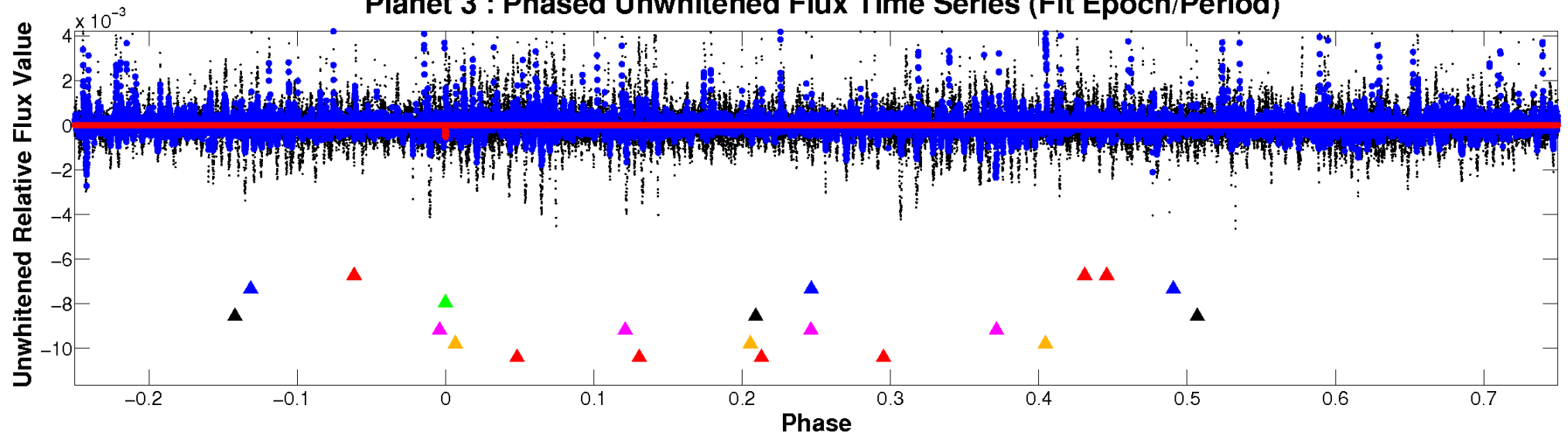
ALT Odd/Even

TCE 007369224-03

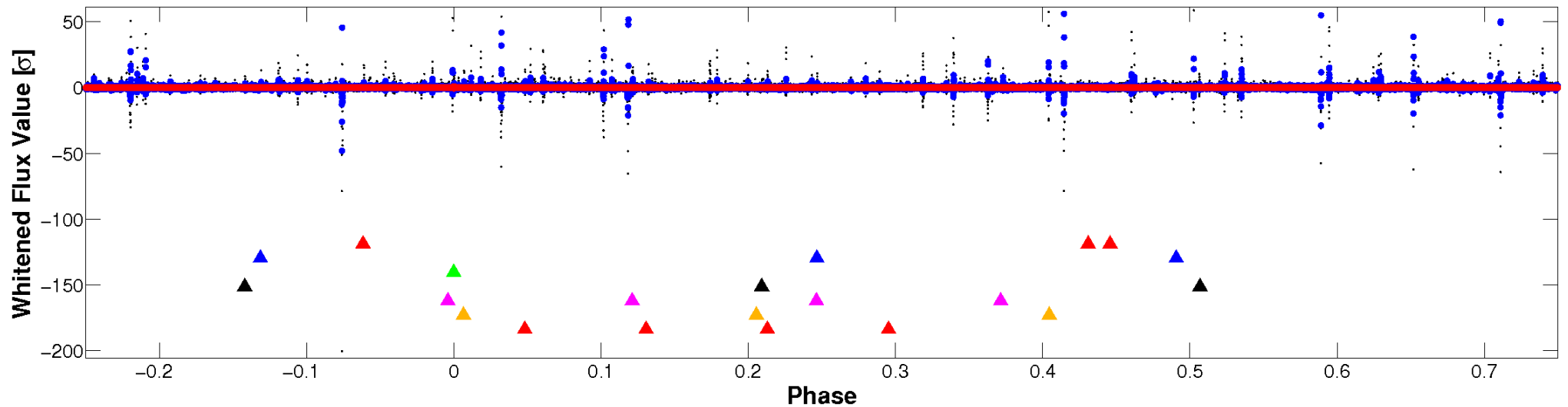


Non-Whitened Vs. Whitened Light Curve

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

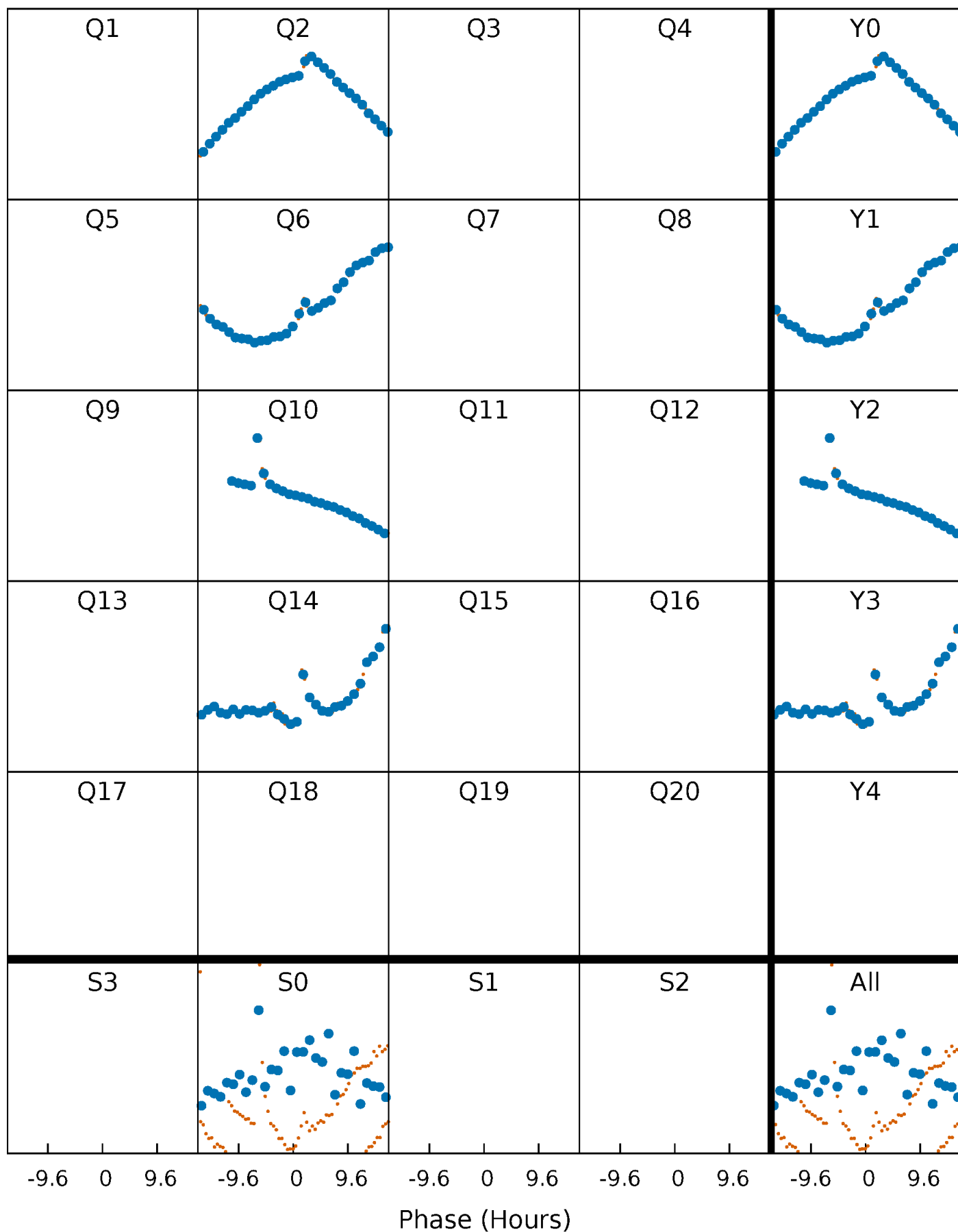


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



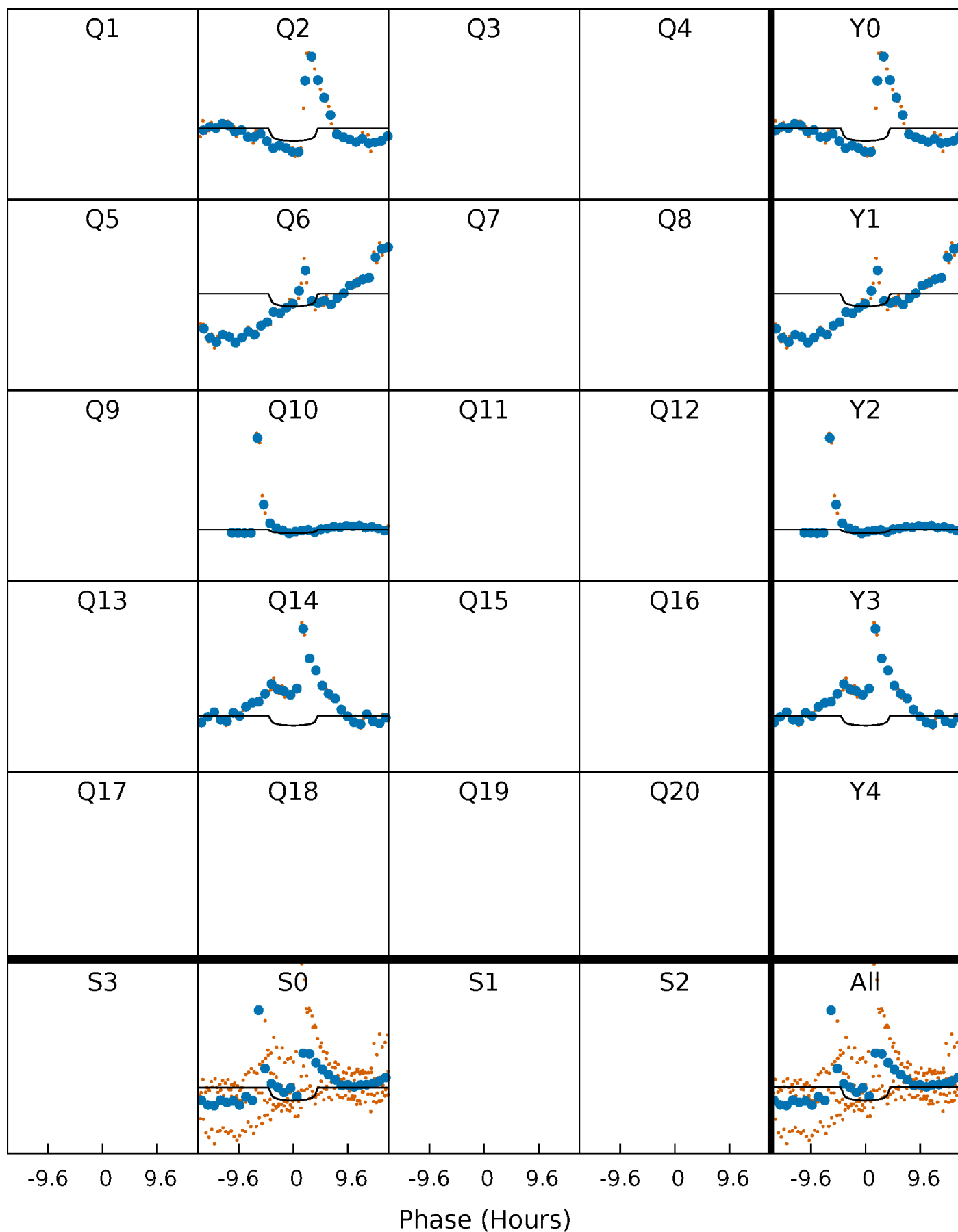
PDC Quarter-Phased Transit Curves

TCE 007369224-03 P=398.412126 Days $T_0=173.735645$ (BKJD)



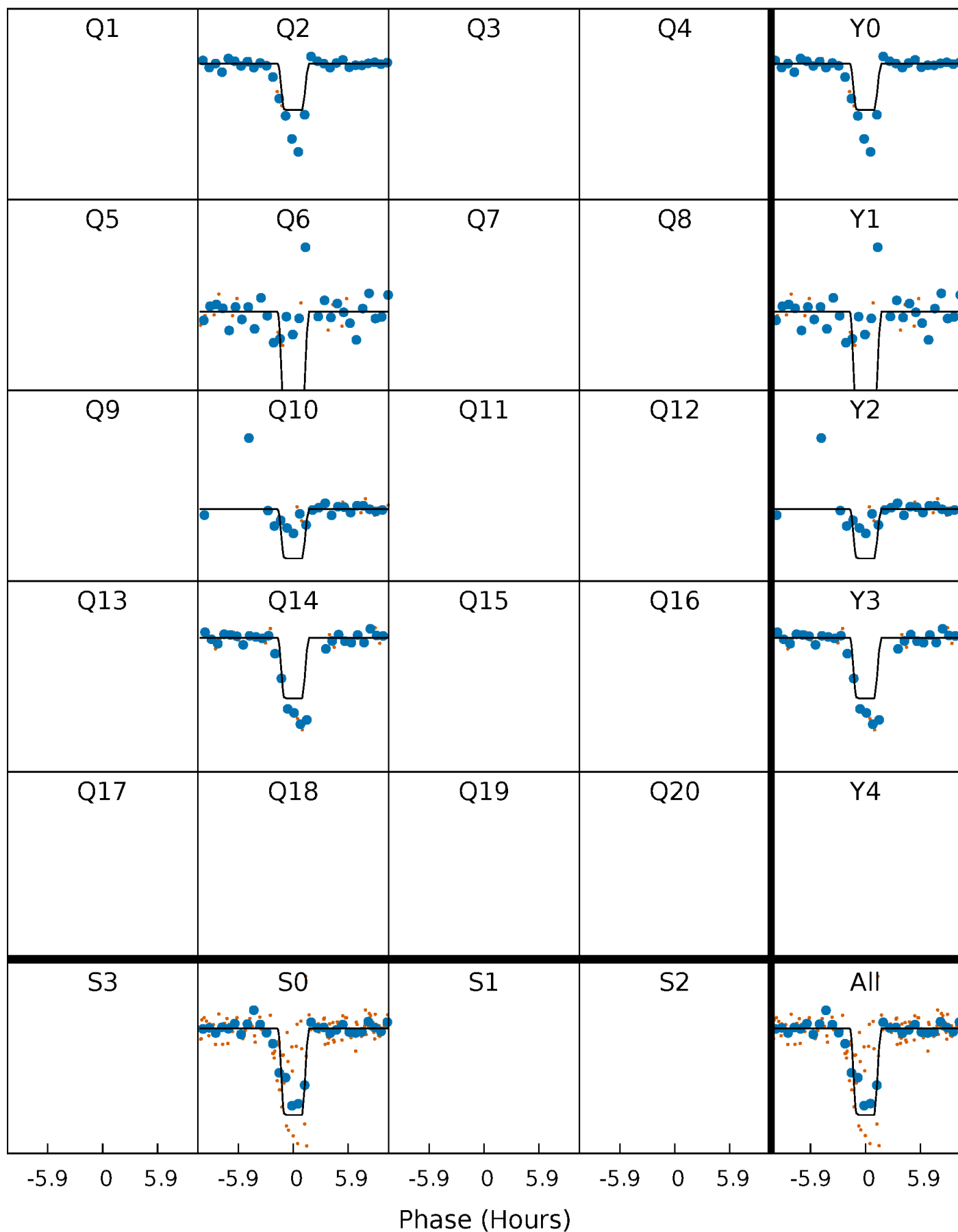
DV Quarter-Phased Transit Curves

TCE 007369224-03 P=398.412126 Days $T_0=173.735645$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

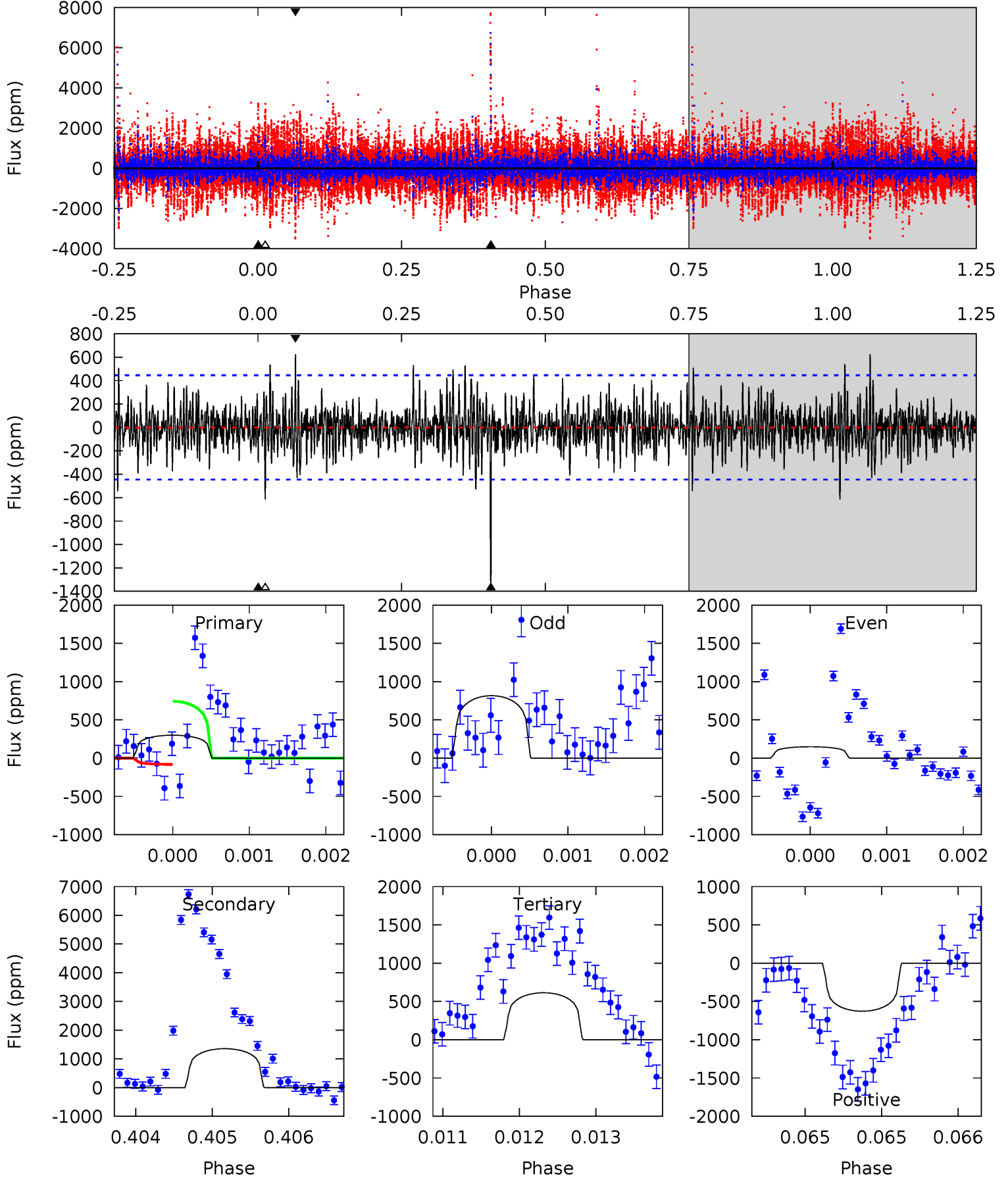
TCE 007369224-03 P=398.390695 Days $T_0=173.760453$ (BKJD)



DV Model-Shift Uniqueness Test

007369224-03, P = 398.412126 Days, E = 173.735645 Days

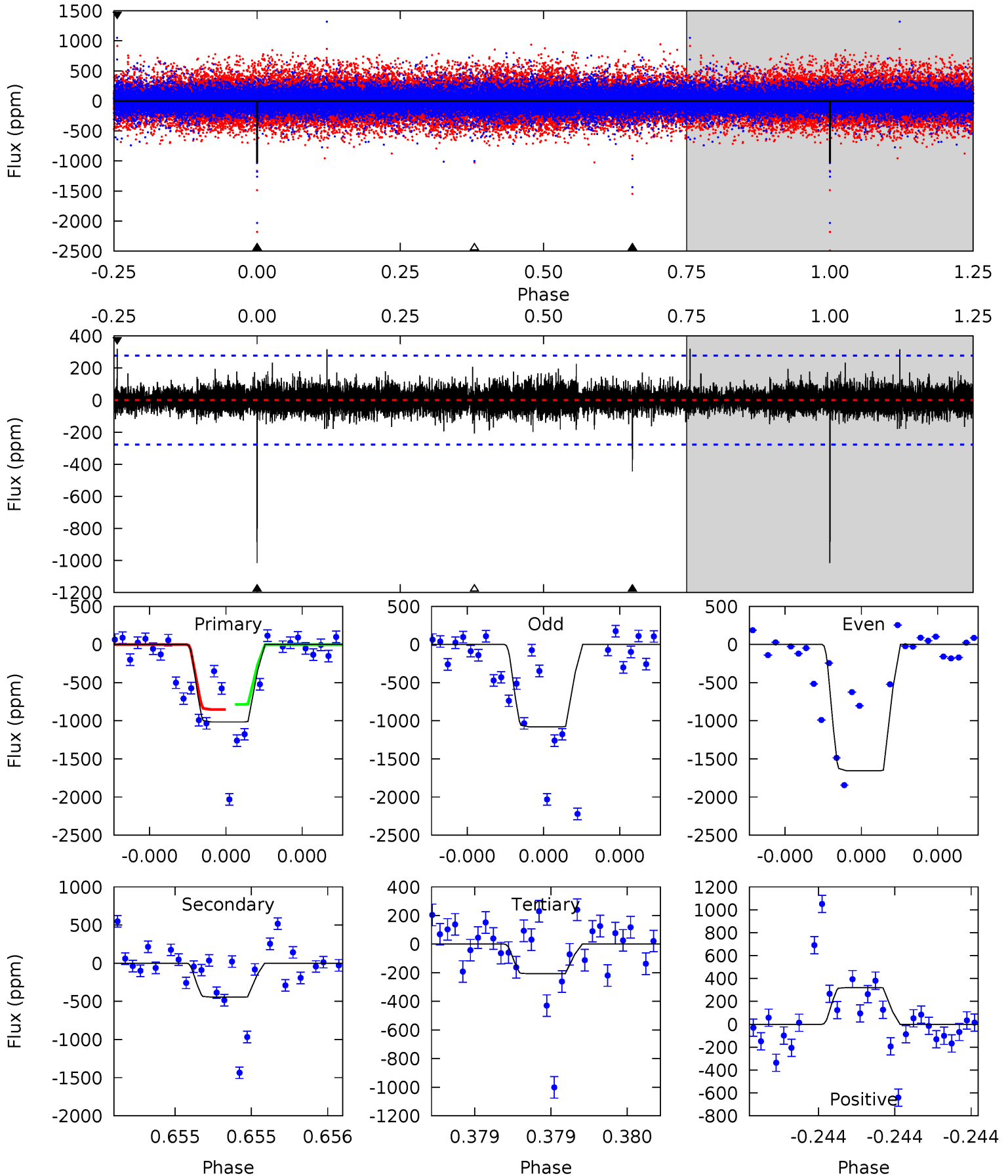
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3.68	16.6	7.53	7.70	5.47	3.32	1.74	-3.85	-4.02	9.10	8.93	3.43	-14.7	0.32	4.09



Alt Model-Shift Uniqueness Test

007369224-03, P = 398.390695 Days, E = 173.760453 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
20.7	9.02	4.20	6.51	5.64	3.58	0.90	16.4	14.1	4.81	2.50	6.28	1.05	0.24	0.59



Stellar Parameters For KIC 007369224

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5427^{+161}_{-161}	$4.551^{+0.099}_{-0.081}$	$-0.720^{+0.300}_{-0.300}$	$0.725^{+0.088}_{-0.079}$	$0.682^{+0.085}_{-0.034}$	$2.518^{+0.970}_{-0.644}$
	+3%/-3%	+2%/-2%	+42%/-42%	+12%/-11%	+12%/-5%	+39%/-26%
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 007369224-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-1355 ± 81	$2.21^{+2.02}_{-1.51}$	294^{+13}_{-13}	6232^{+7048}_{-1588}	$136803^{+1197898}_{-99402}$
Alt.	-443 ± 49	$3.39^{+2.06}_{-1.93}$	294^{+14}_{-13}	4052^{+1721}_{-579}	18788^{+84106}_{-11787}

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 $A_{obs} \gg 1.0$

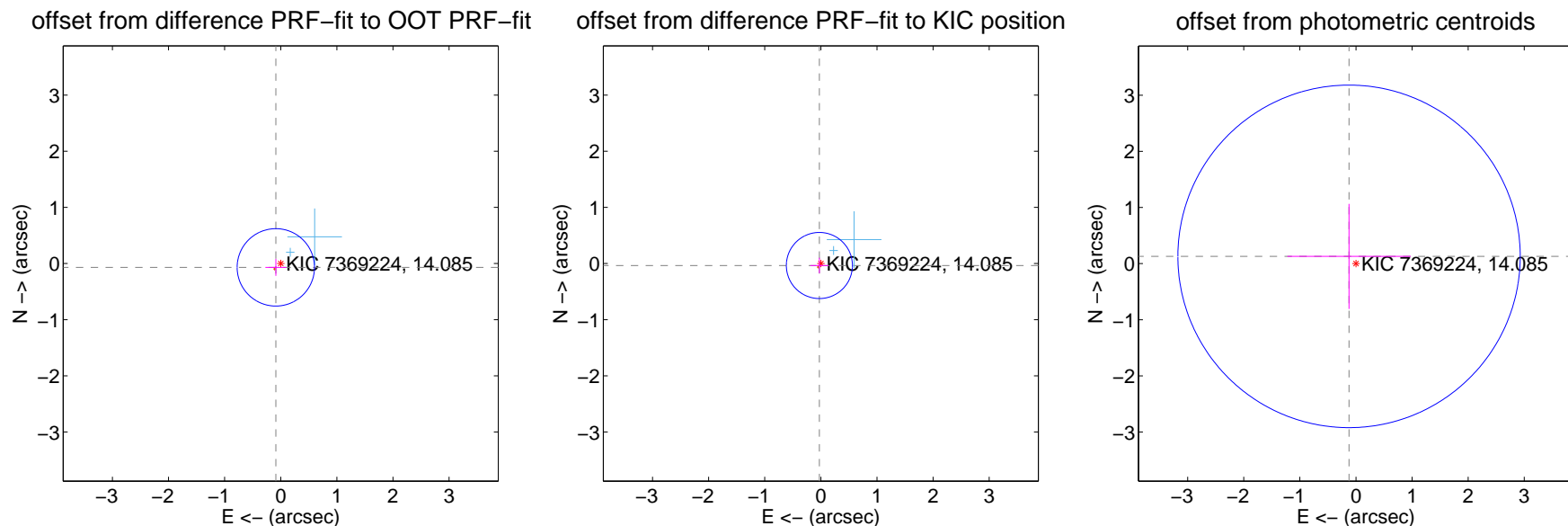
DV Centroid Data

Supplemental centroid analysis for 007369224-03. Kepler magnitude: 14.09. Transit SNR 3.72

There are 2 quarters with good PRF difference image offsets

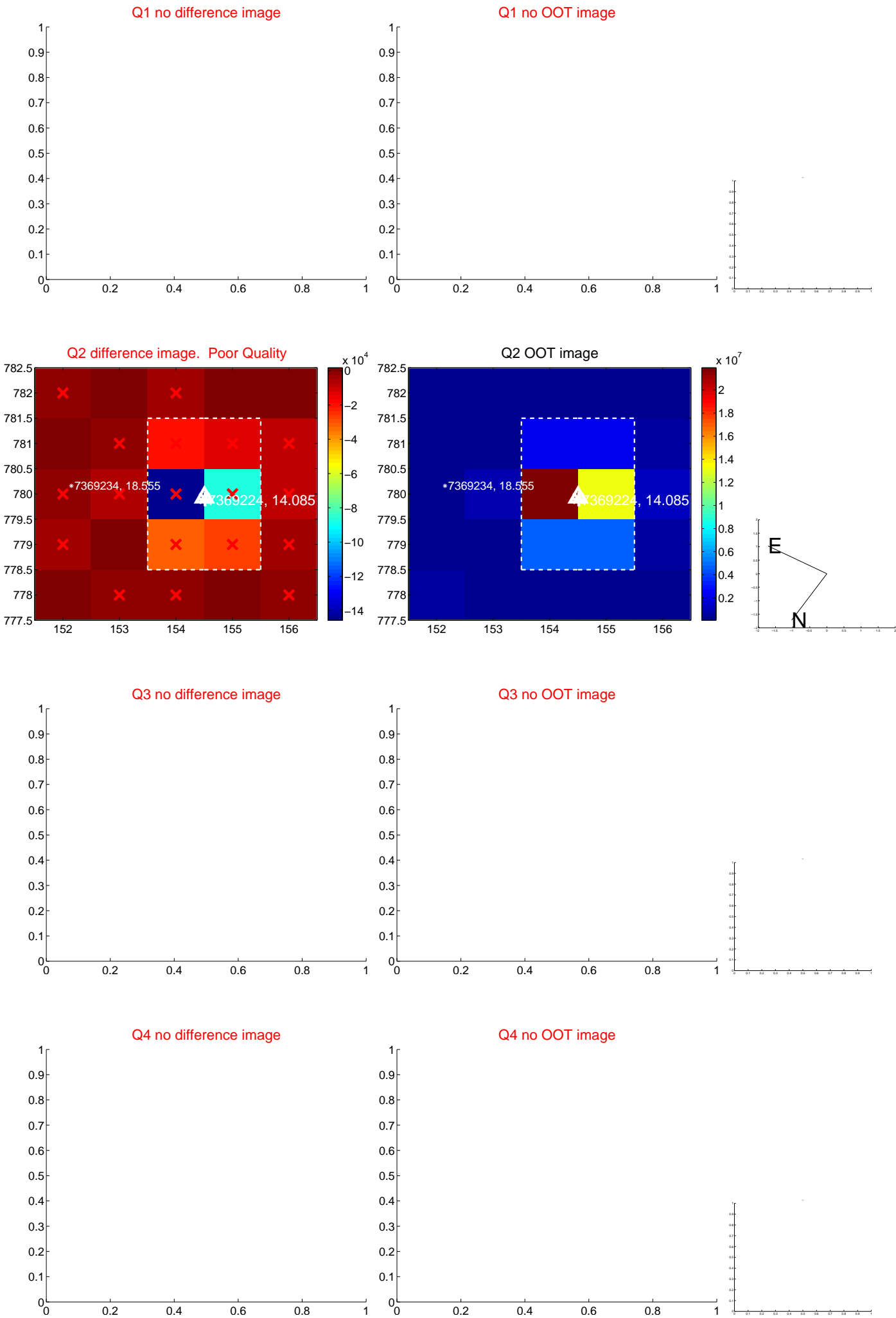
The direct PRF centroid is offset from the target star catalog position by about 0.05 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.111 ± 0.230	0.48	0.088 ± 0.186	-0.068 ± 0.151
PRF-fit source offset from KIC position	0.044 ± 0.196	0.22	0.026 ± 0.162	-0.035 ± 0.138
photometric centroid source offset	0.18 ± 1.02	0.18	0.12 ± 1.10	0.13 ± 0.94



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

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



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

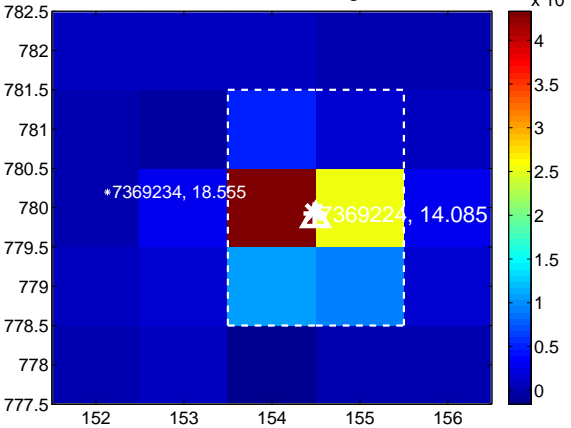
Q5 no difference image



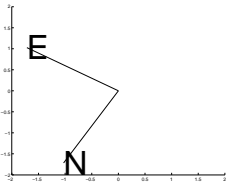
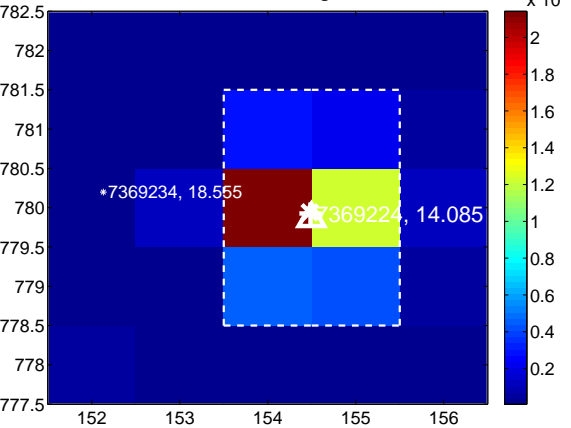
Q5 no OOT image



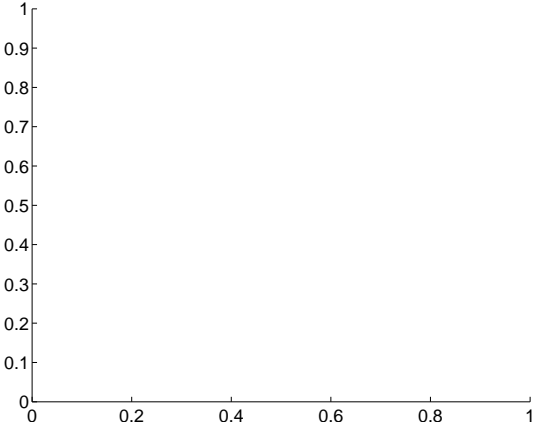
Q6 difference image



Q6 OOT image



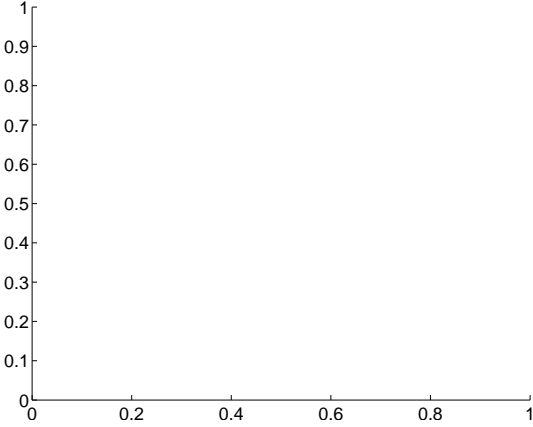
Q7 no difference image



Q7 no OOT image



Q8 no difference image



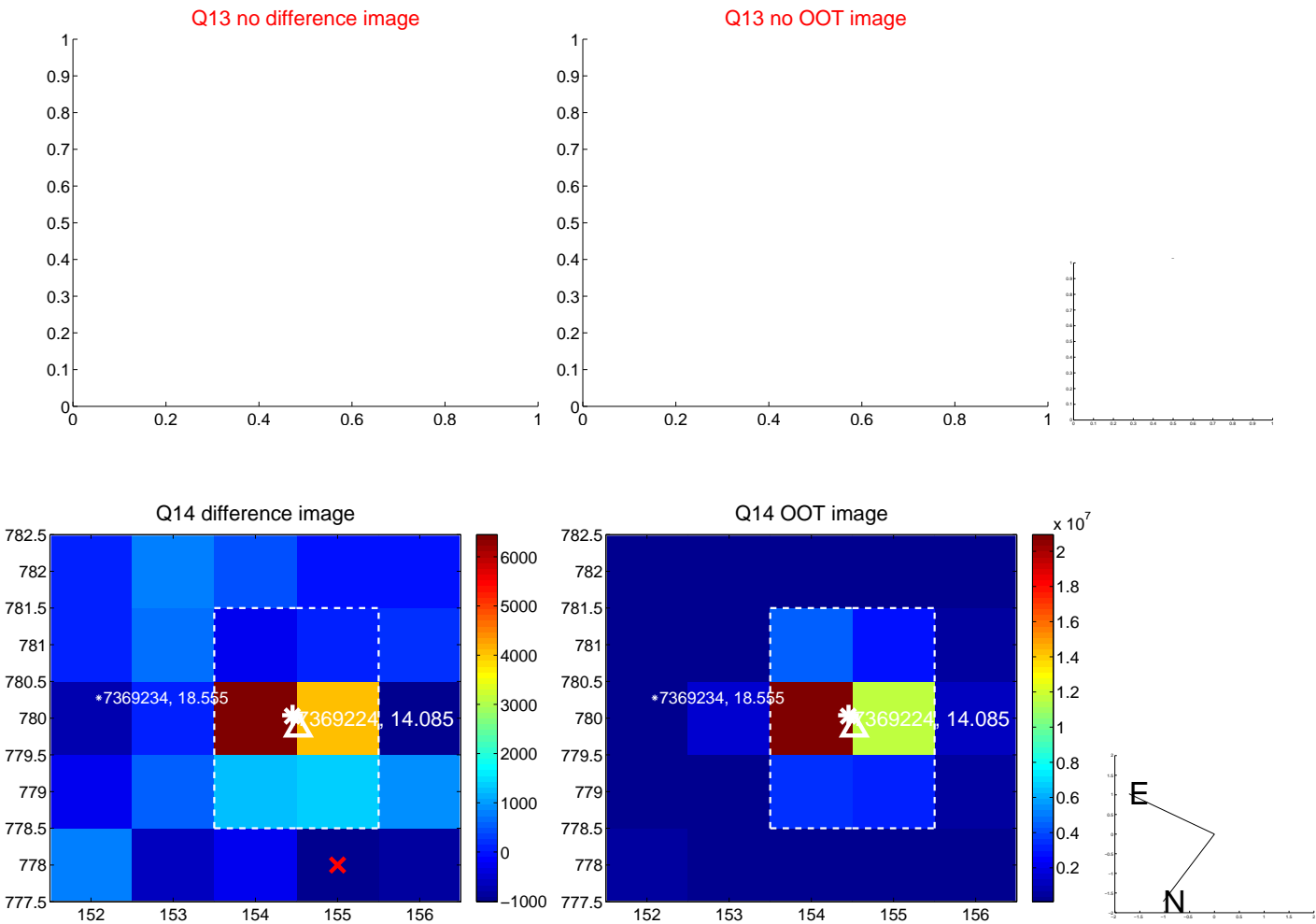
Q8 no OOT image



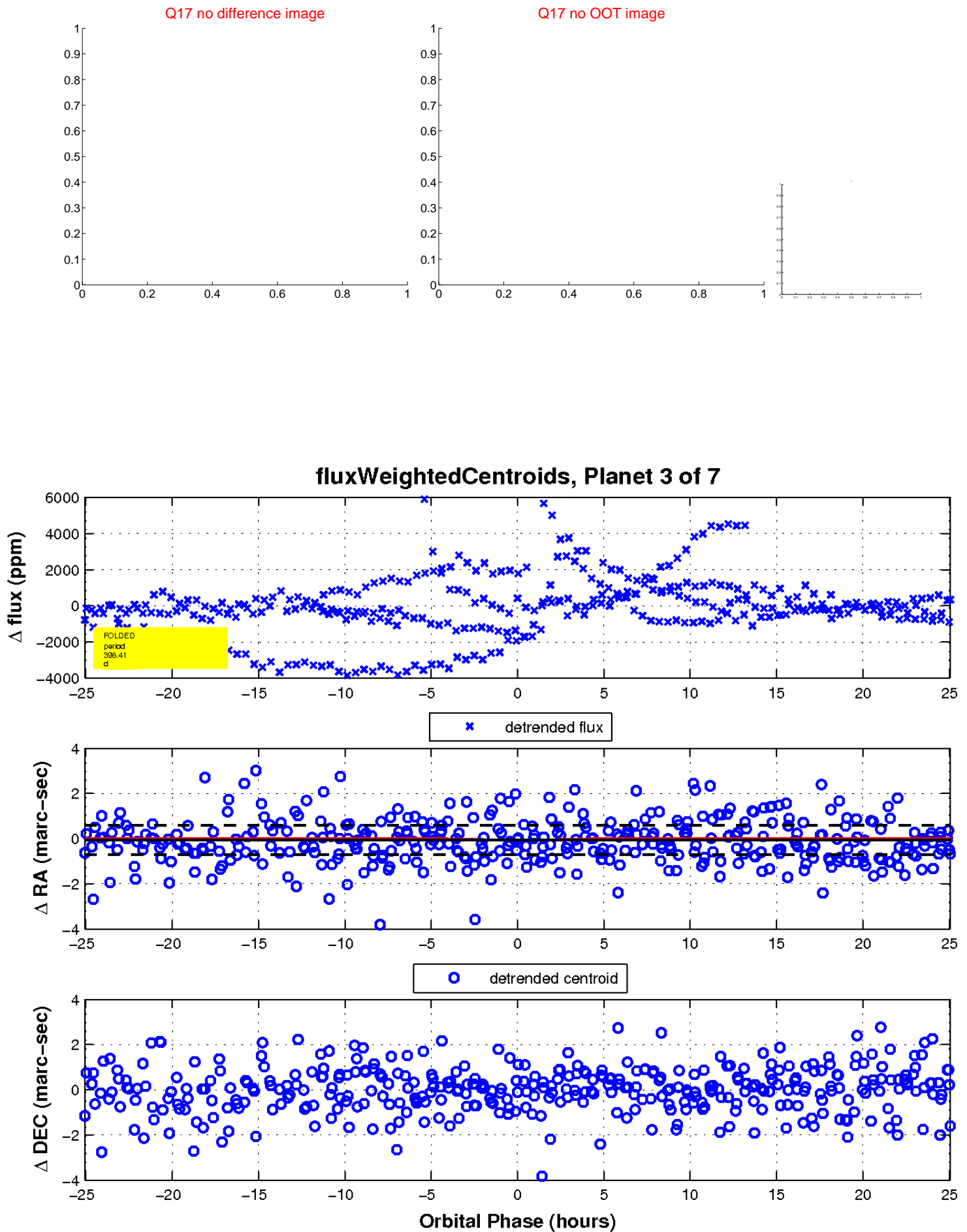
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

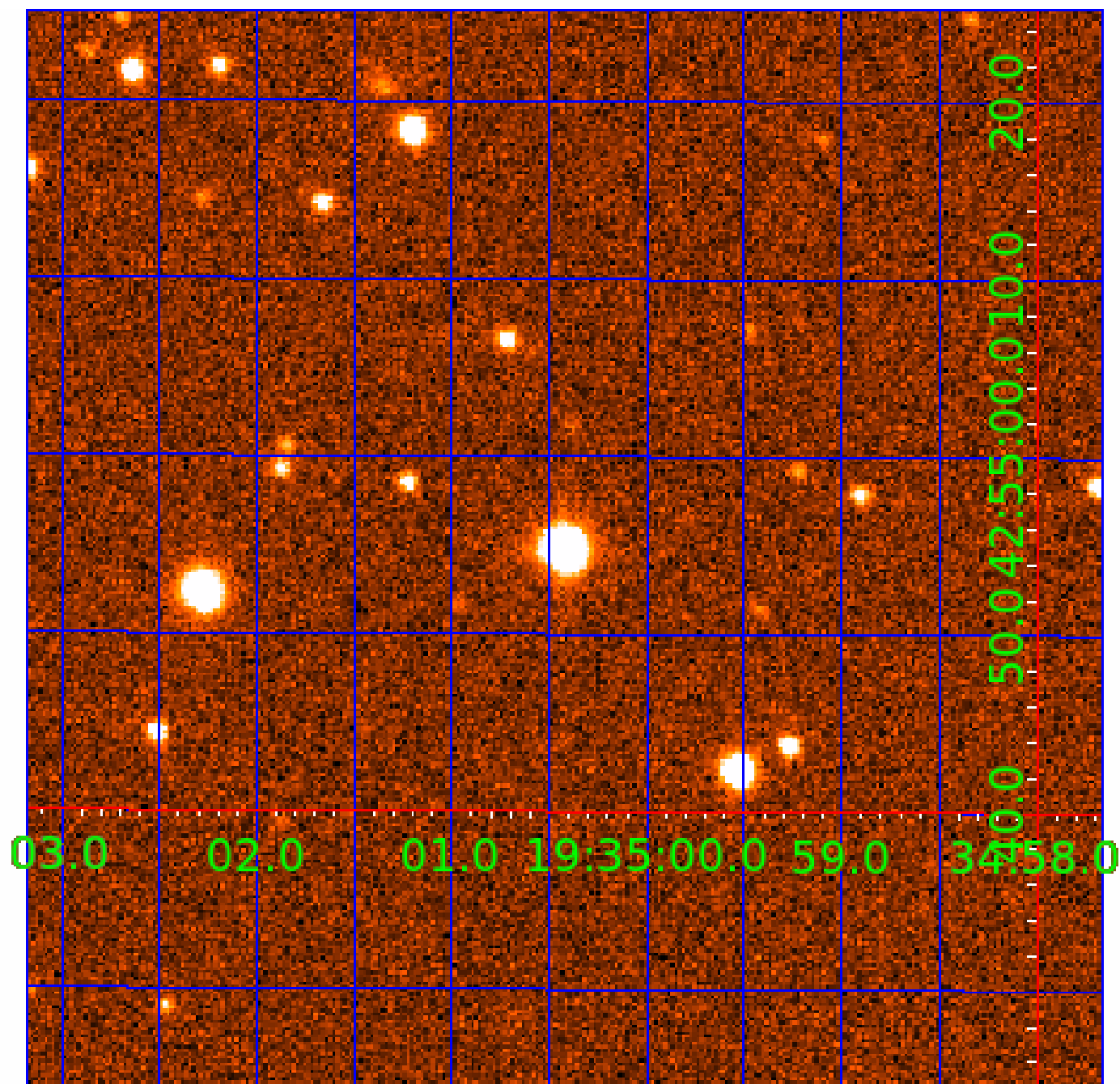


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 007369224

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})
007369224-01	OBS	No	600.585081	345.428100	1887.9	3.290	25.8	12.0	0.72	5427	3.24	0.27
007369224-02	OBS	No	646.244436	272.003648	2020.3	3.024	17.4	16.9	0.72	5427	3.41	0.25
007369224-03	OBS	No	398.412126	173.735645	534.2	8.363	16.9	3.7	0.72	5427	1.70	0.47
007369224-04	OBS	No	538.312423	375.689869	1200.7	4.213	12.5	9.2	0.72	5427	2.55	0.31
007369224-05	OBS	No	348.548227	321.755669	757.6	9.331	14.3	5.1	0.72	5427	2.11	0.56
007369224-06	OBS	No	477.666047	176.378270	1223.2	8.633	13.7	6.7	0.72	5427	3.69	0.37
007369224-07	OBS	No	431.223783	192.974688	1059.0	3.904	16.4	8.2	0.72	5427	2.56	0.42

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007369224-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
007369224-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_POS_DV—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS
007369224-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
007369224-04	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—CENT_FEW_DIFFS
007369224-05	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS
007369224-06	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_SKYE_ZUMA—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
007369224-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS

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

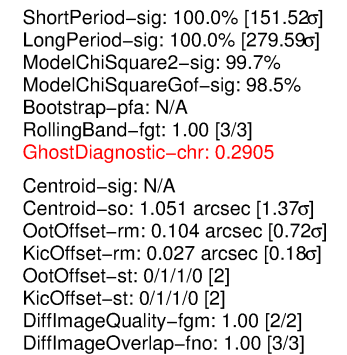
N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

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

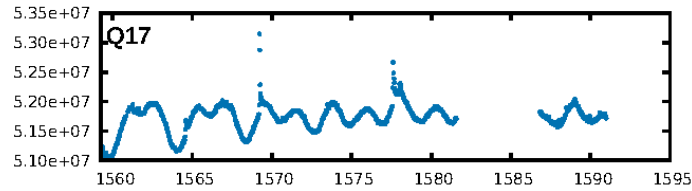
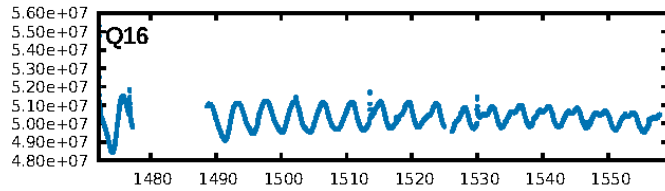
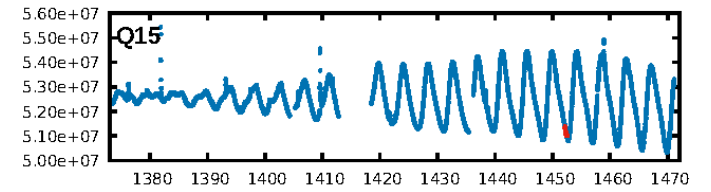
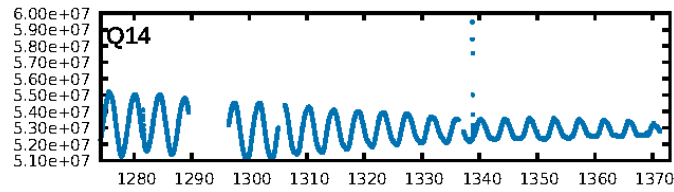
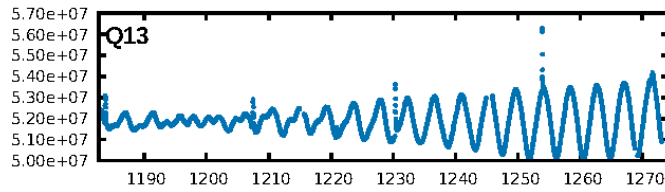
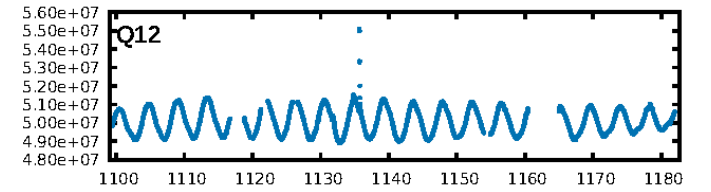
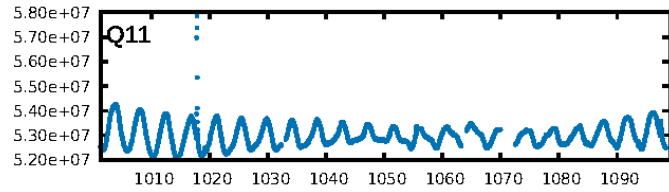
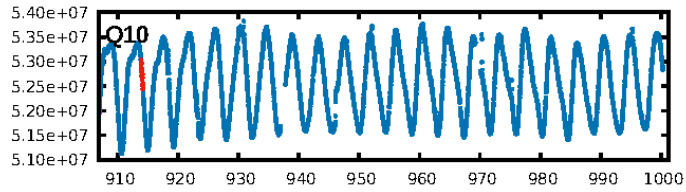
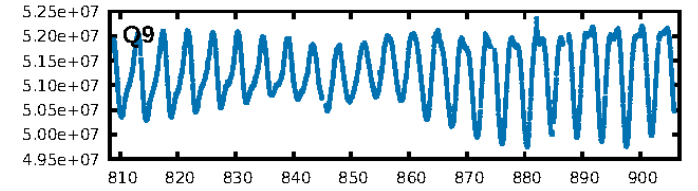
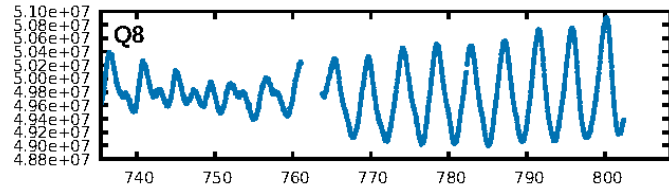
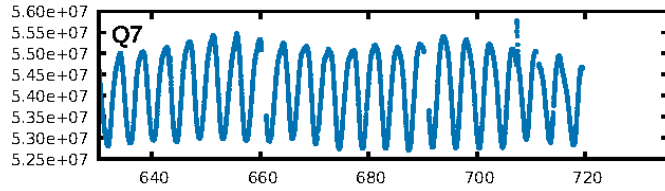
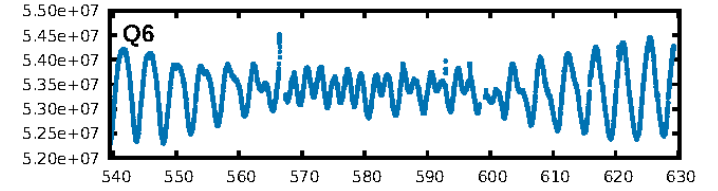
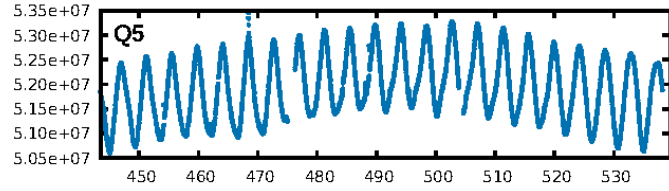
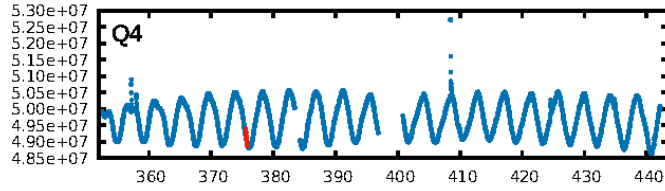
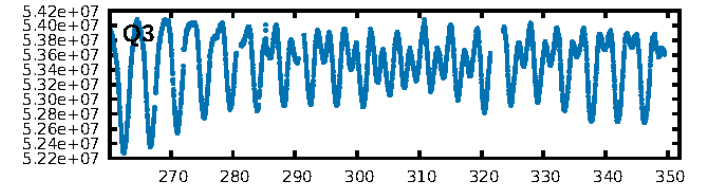
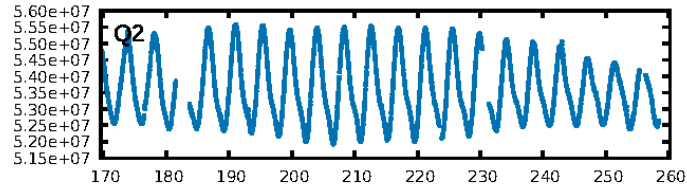
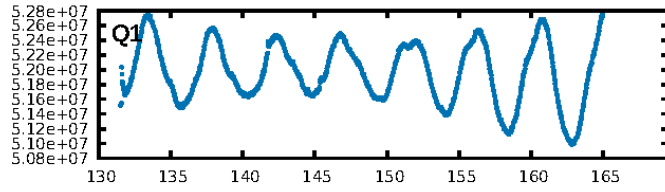
Ephemeris Match Information For 007369224-04

No Significant Match Found

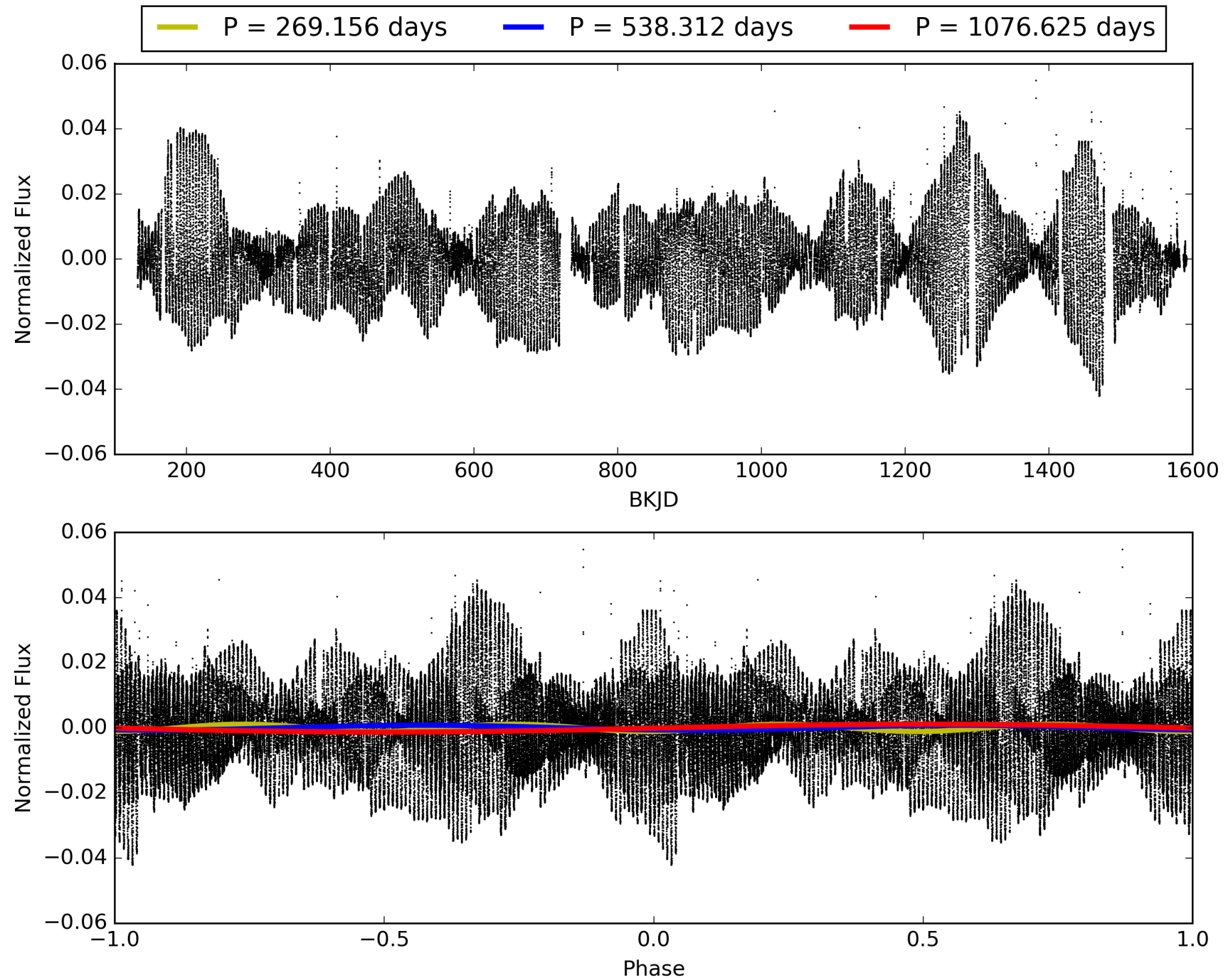
KIC: 7369224 Candidate: 4 of 7 Period: 538.312 d



TCE 007369224-04, PDC Light Curves

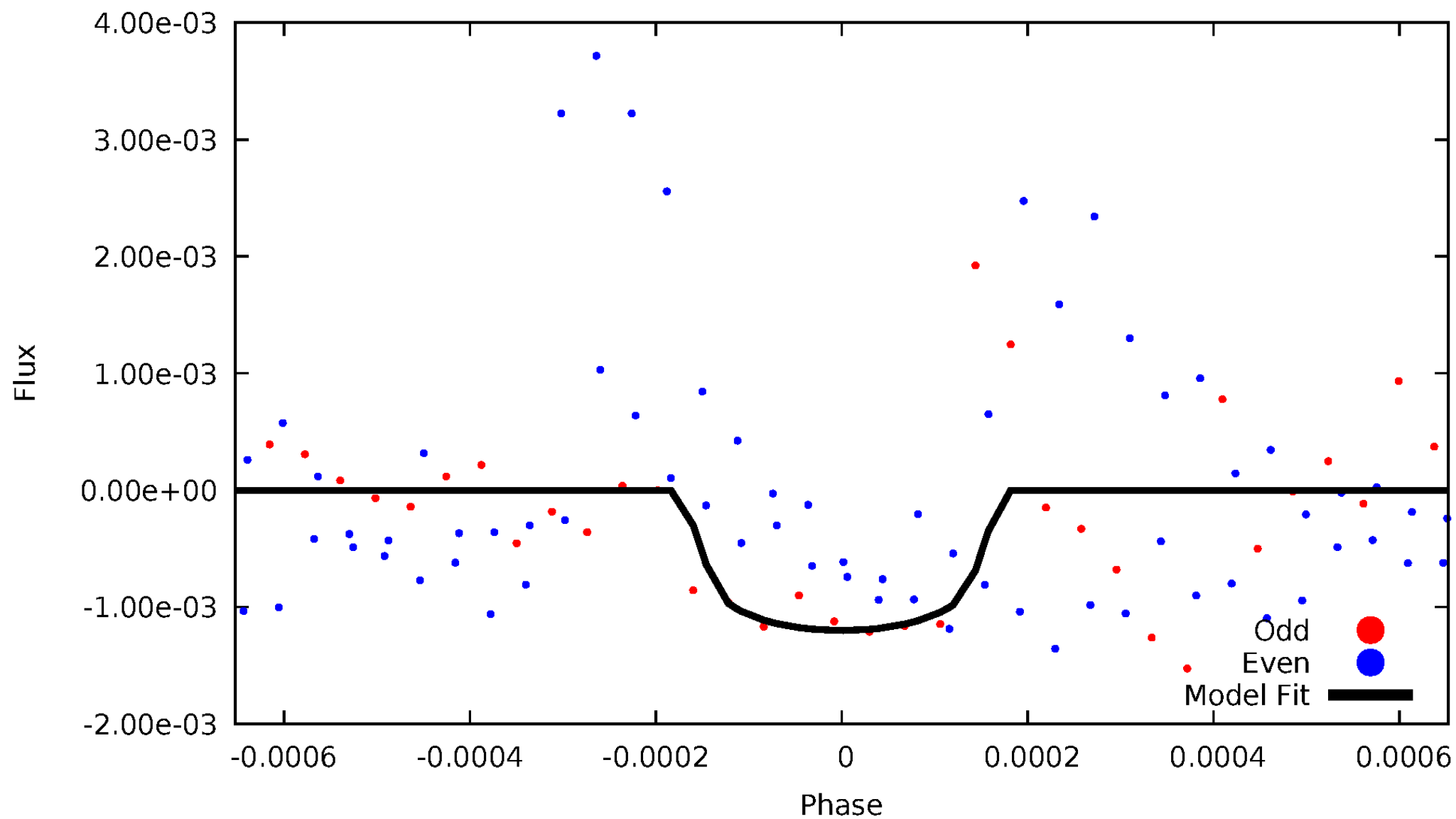


TCE 007369224-04



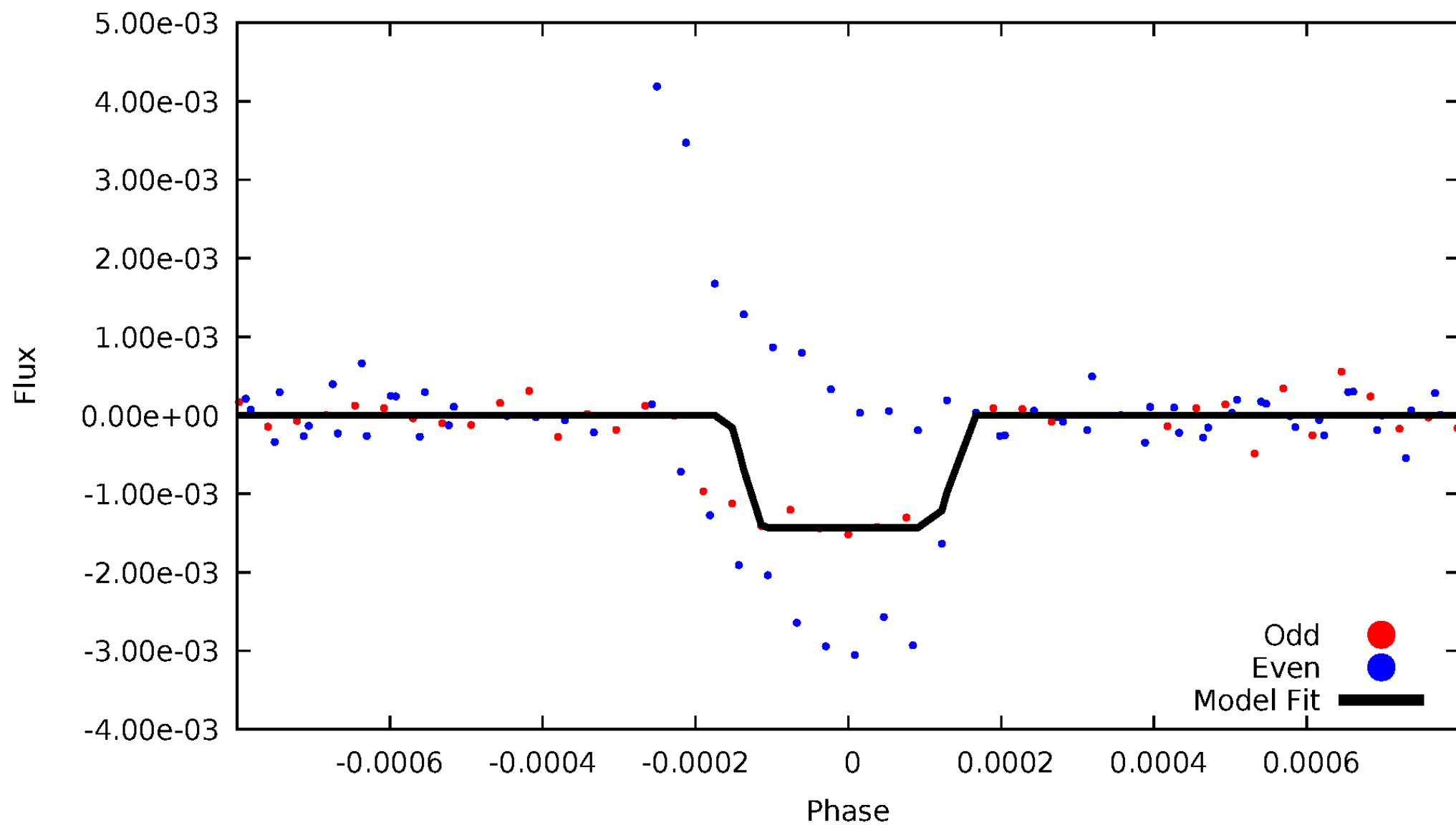
DV Odd/Even

TCE 007369224-04



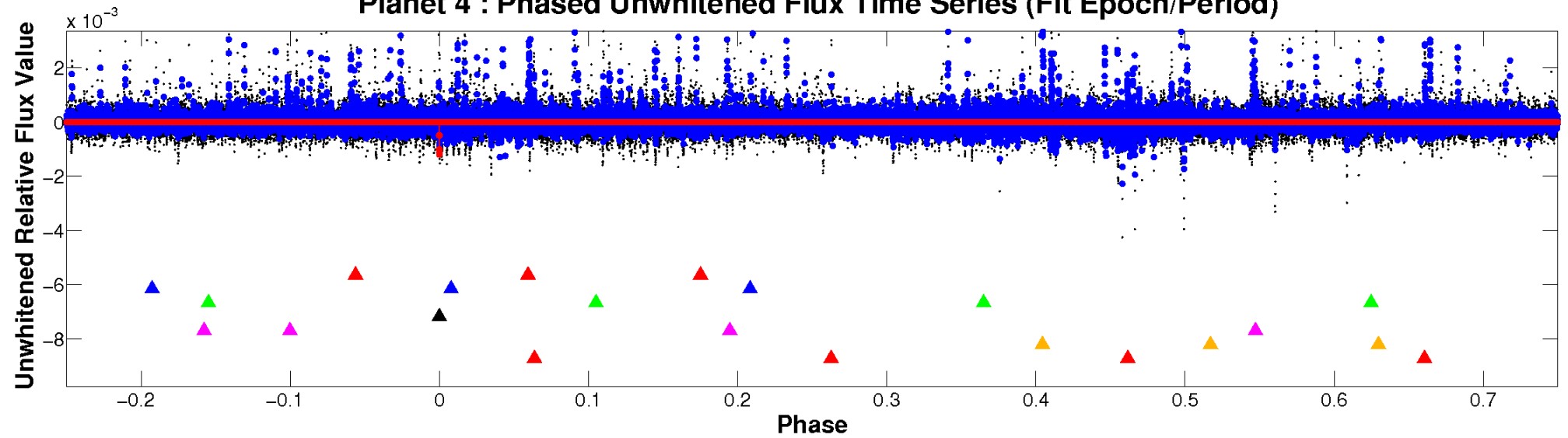
ALT Odd/Even

TCE 007369224-04

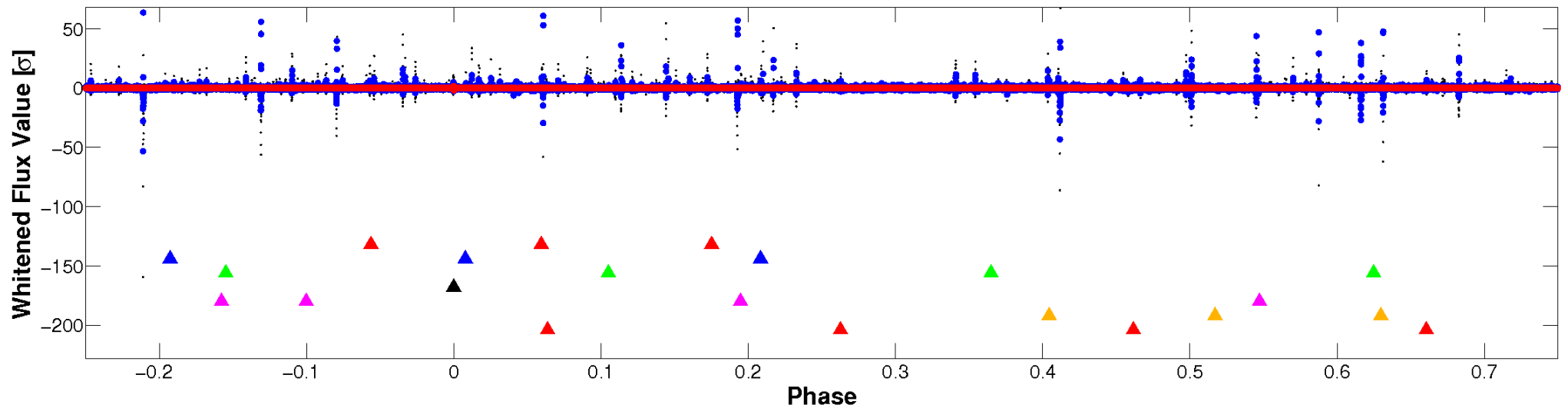


Non-Whitened Vs. Whitened Light Curve

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

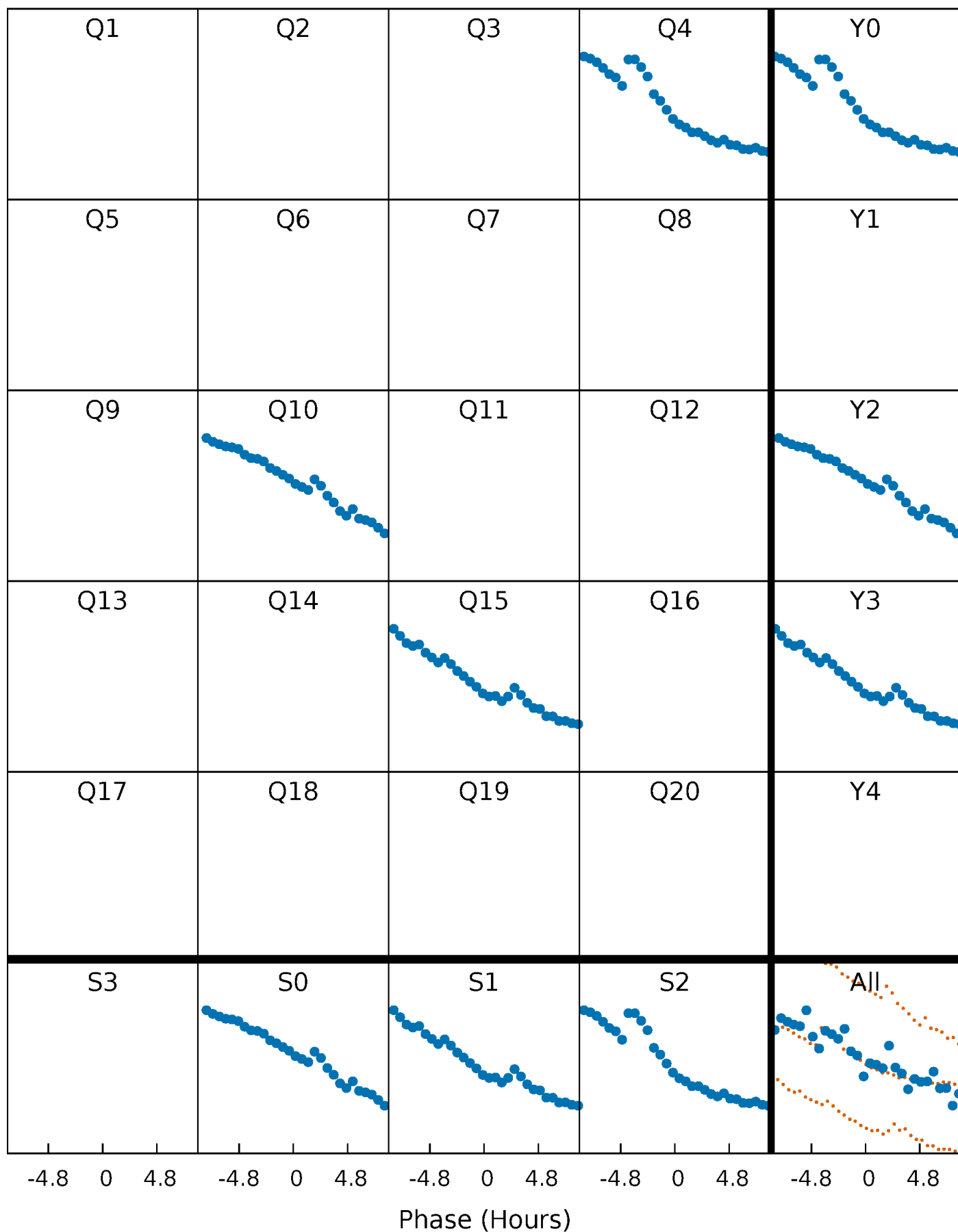


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



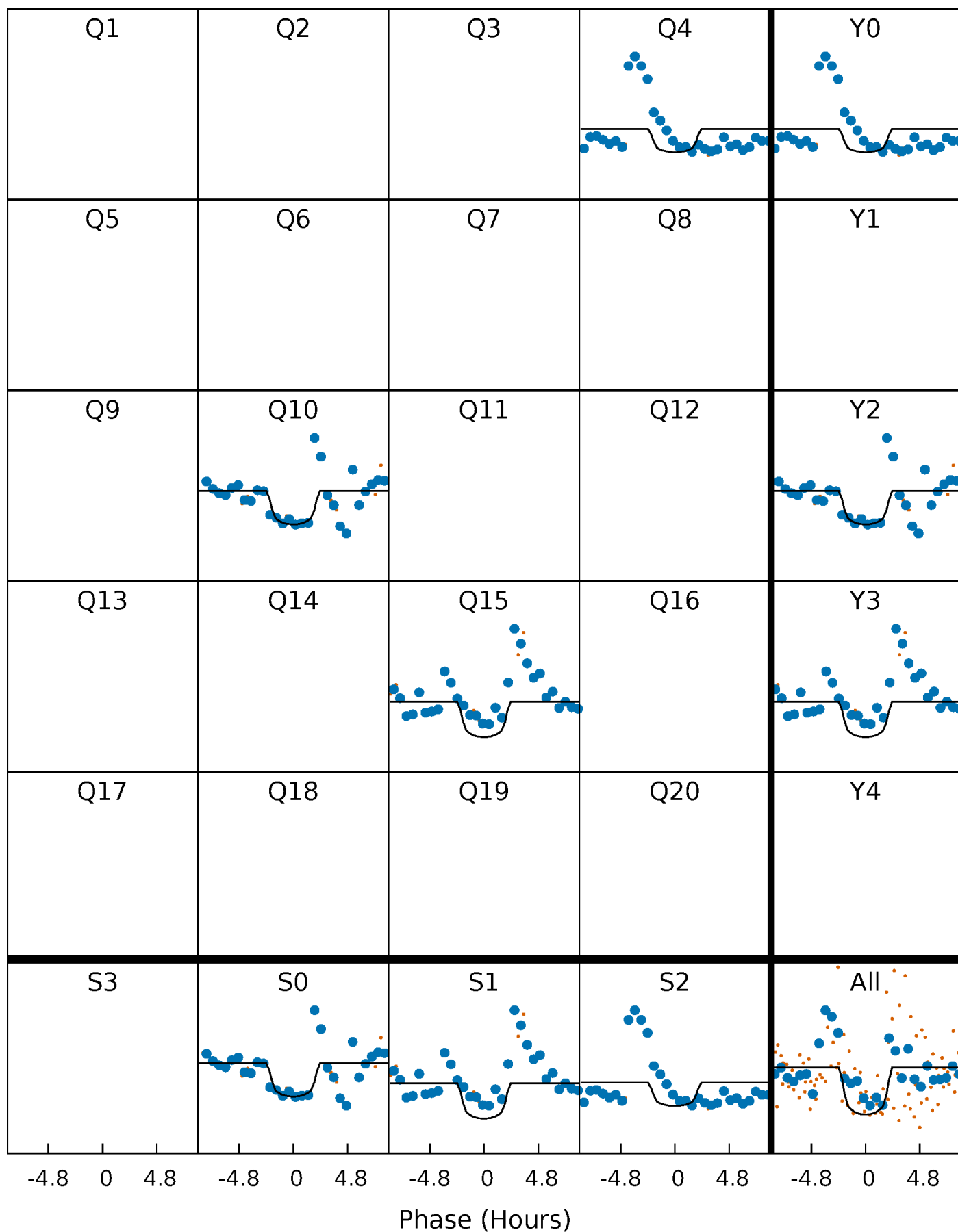
PDC Quarter-Phased Transit Curves

TCE 007369224-04 P=538.312423 Days $T_0=375.689869$ (BKJD)



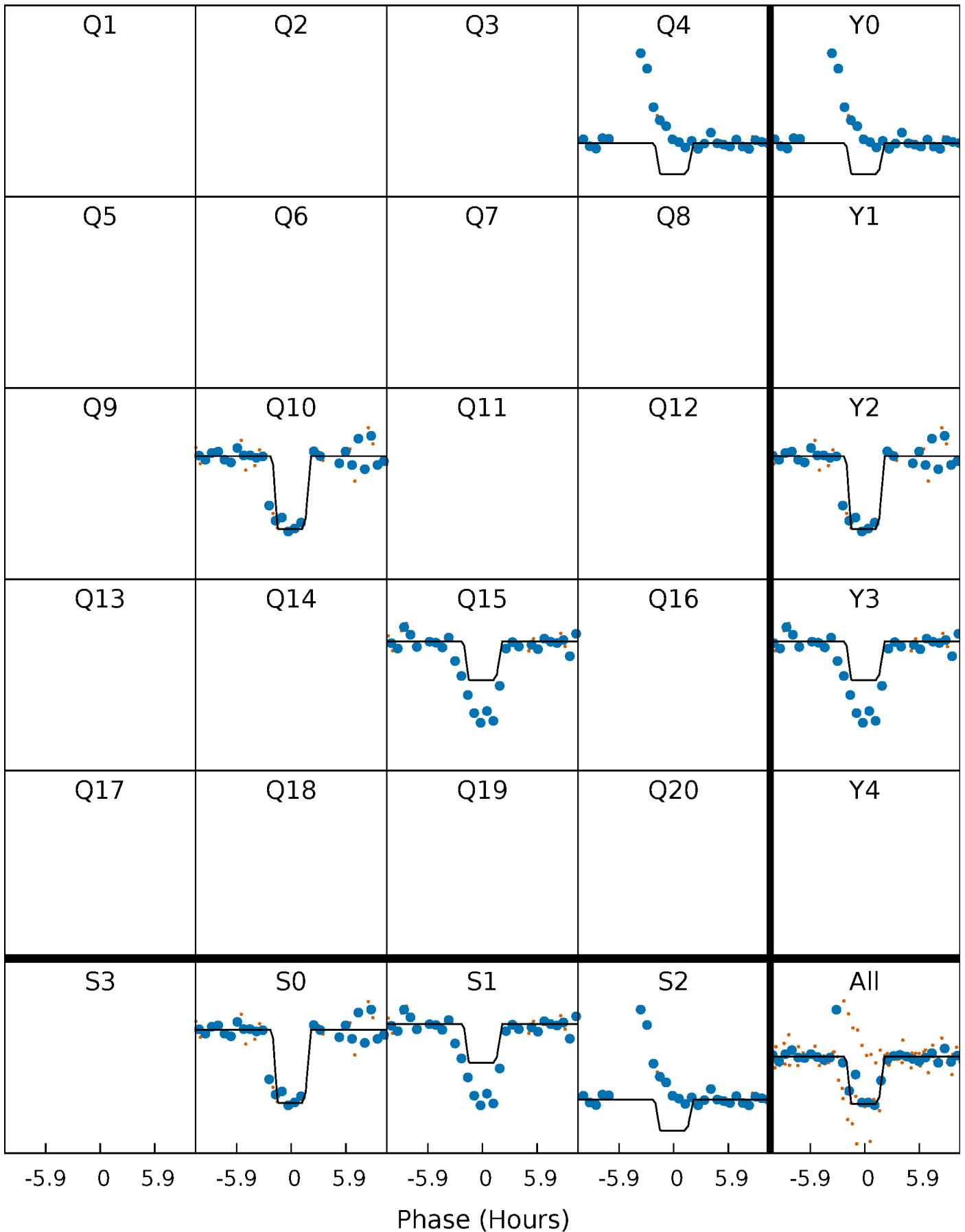
DV Quarter-Phased Transit Curves

TCE 007369224-04 $P=538.312423$ Days $T_0=375.689869$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

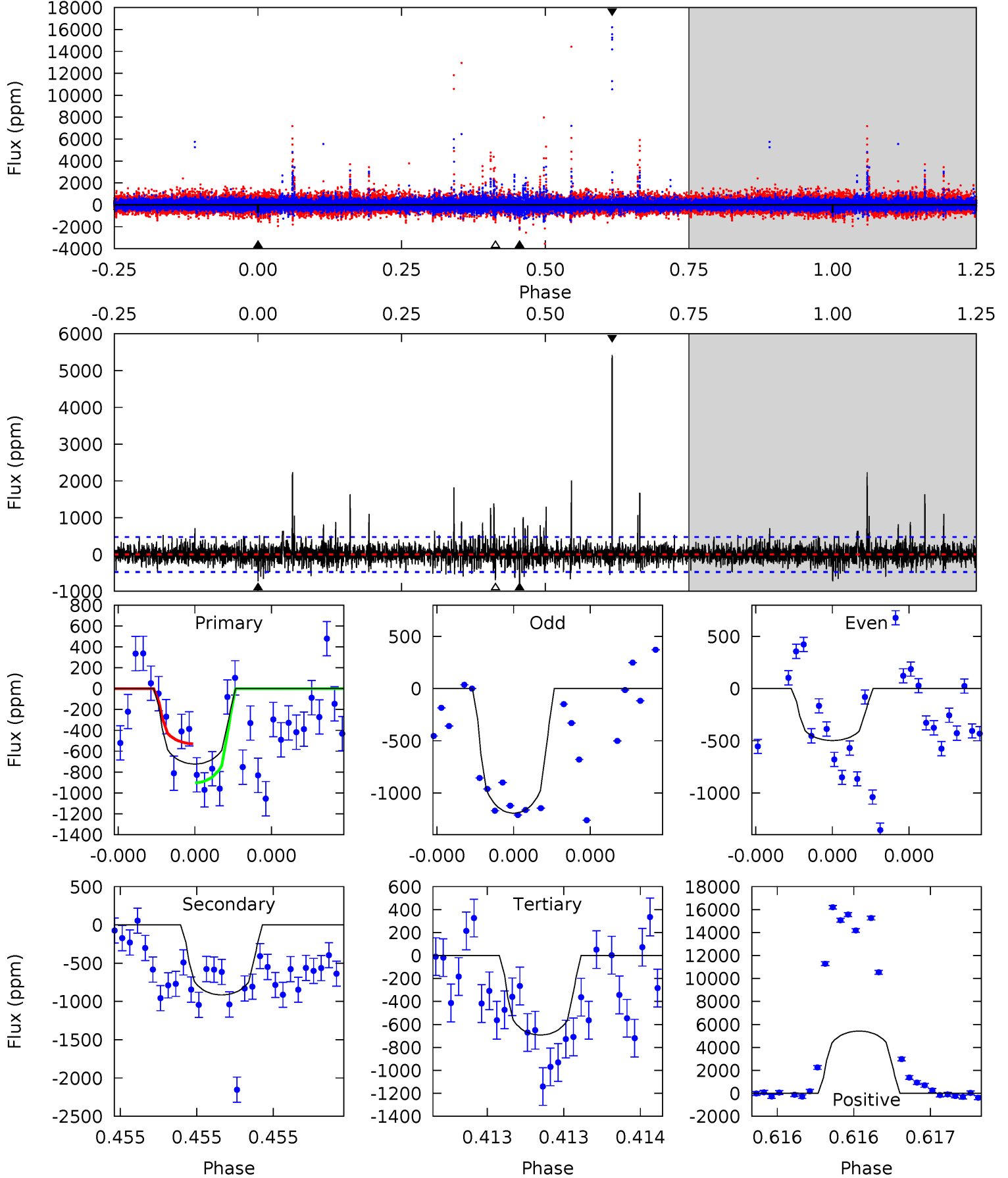
TCE 007369224-04 P=538.315327 Days $T_0=375.703096$ (BKJD)



DV Model-Shift Uniqueness Test

007369224-04, $P = 538.312423$ Days, $E = 375.689869$ Days

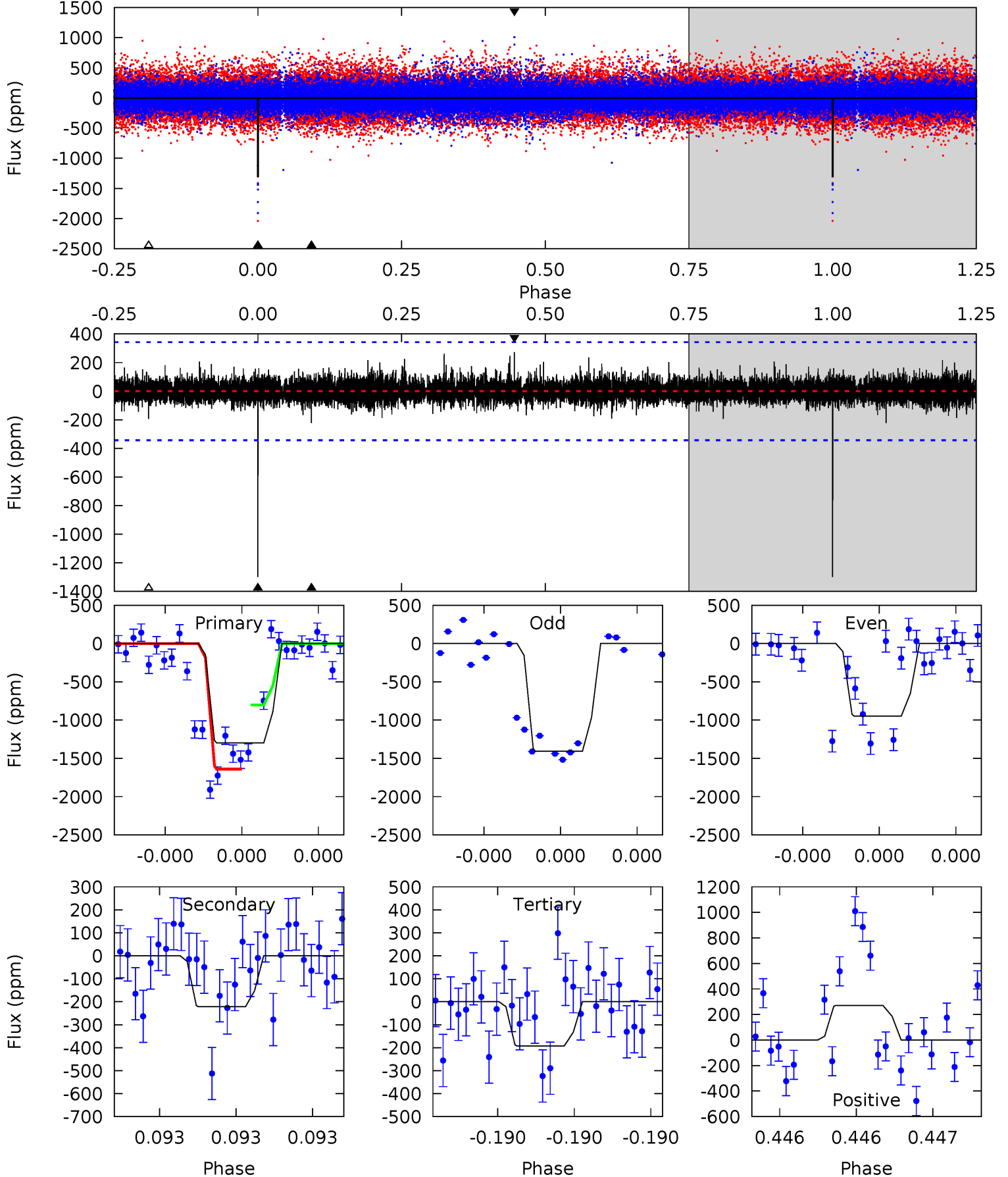
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.60	10.9	8.24	64.5	5.64	3.58	2.45	0.36	-55.9	2.64	-53.6	1.37	1.28	0.86	2.25



Alt Model-Shift Uniqueness Test

007369224-04, P = 538.315327 Days, E = 375.703096 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
21.4	3.66	3.18	4.47	5.65	3.60	0.70	18.2	16.9	0.48	-0.81	4.84	0.87	0.17	6.66



Stellar Parameters For KIC 007369224

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5427^{+161}_{-161}	$4.551^{+0.099}_{-0.081}$	$-0.720^{+0.300}_{-0.300}$	$0.725^{+0.088}_{-0.079}$	$0.682^{+0.085}_{-0.034}$	$2.518^{+0.970}_{-0.644}$
	+3%/-3%	+2%/-2%	+42%/-42%	+12%/-11%	+12%/-5%	+39%/-26%
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 007369224-04 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-915 ± 84	$11.78^{+10.86}_{-8.10}$	267^{+11}_{-13}	3098^{+1452}_{-516}	4856^{+43458}_{-3560}
Alt.	-222 ± 61	$11.96^{+12.89}_{-8.48}$	266^{+12}_{-12}	2534^{+1058}_{-393}	1124^{+11096}_{-869}

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

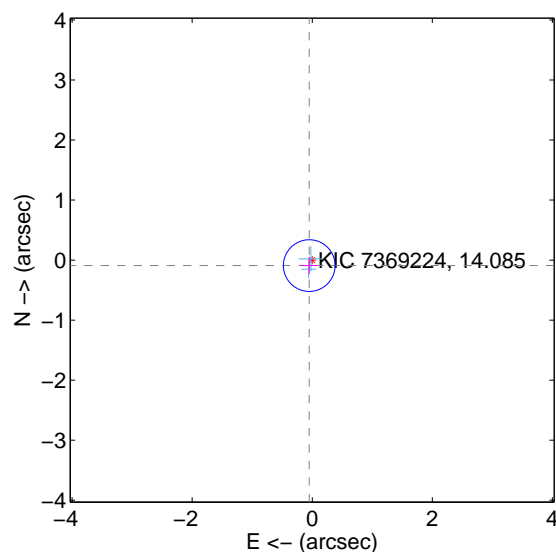
Supplemental centroid analysis for 007369224-04. Kepler magnitude: 14.09. Transit SNR 9.20

There are 2 quarters with good PRF difference image offsets

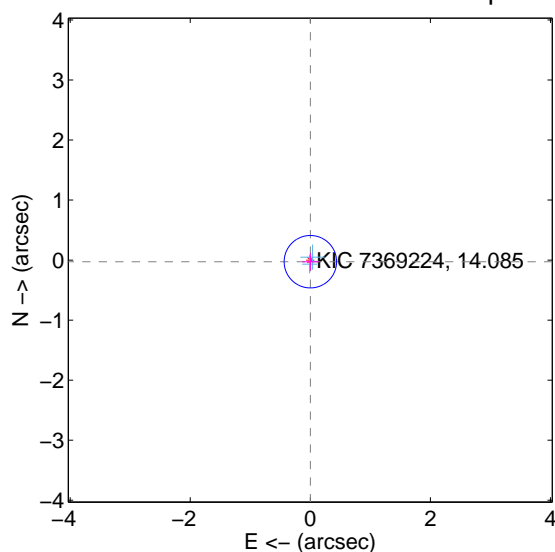
The direct PRF centroid is offset from the target star catalog position by about 0.10 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.104 ± 0.143	0.72	0.050 ± 0.136	-0.091 ± 0.146
PRF-fit source offset from KIC position	0.027 ± 0.146	0.18	-0.001 ± 0.136	-0.027 ± 0.146
photometric centroid source offset	1.05 ± 0.77	1.37	1.04 ± 0.77	-0.17 ± 0.65

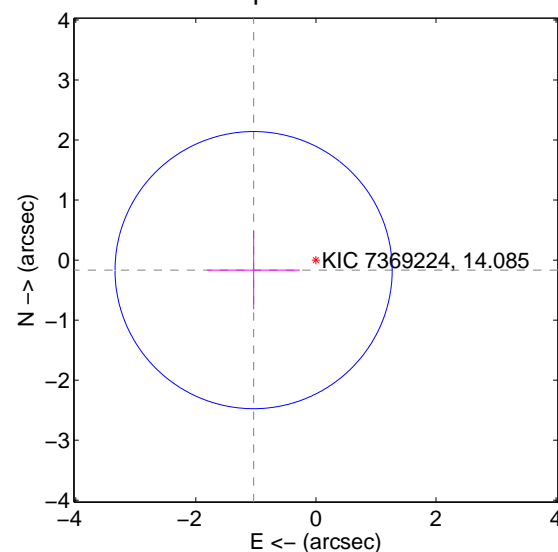
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

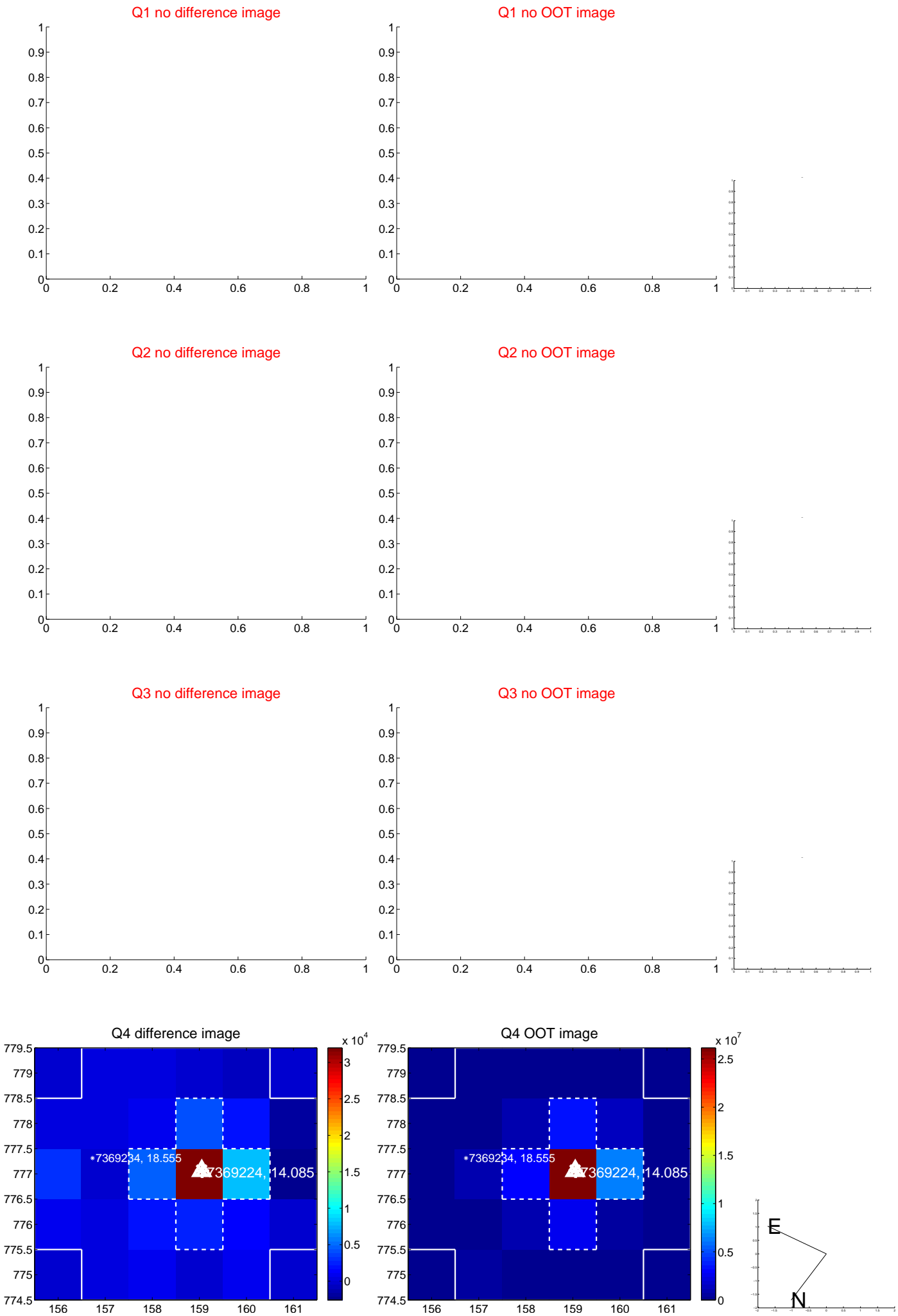


offset from photometric centroids



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.

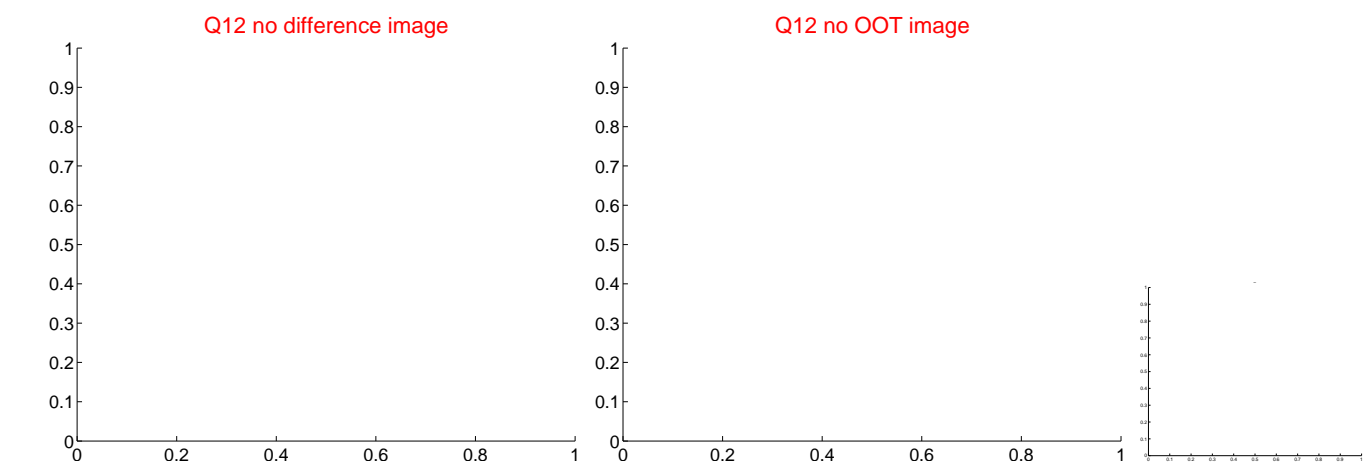
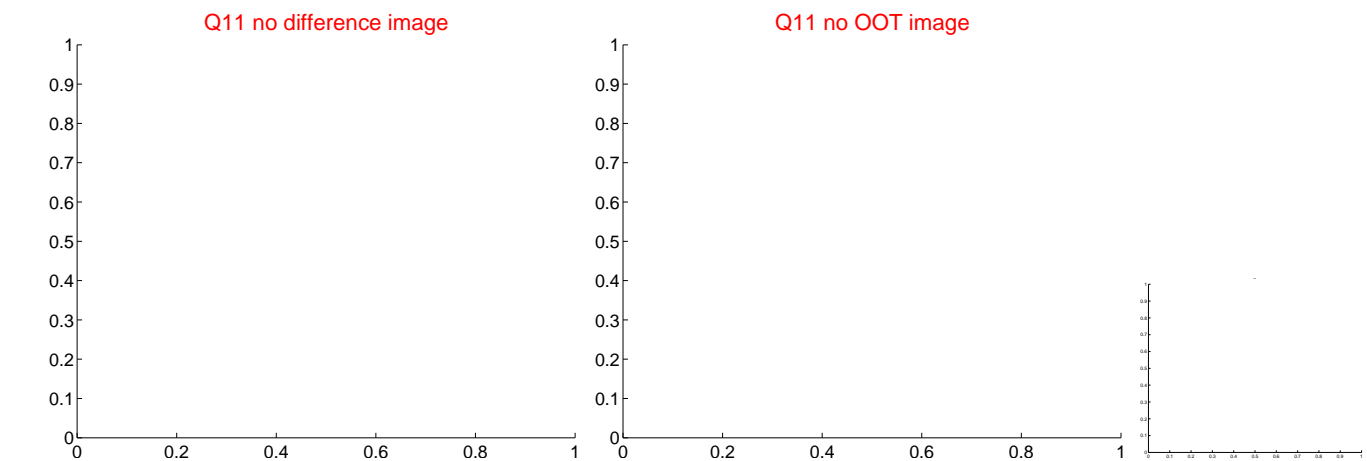
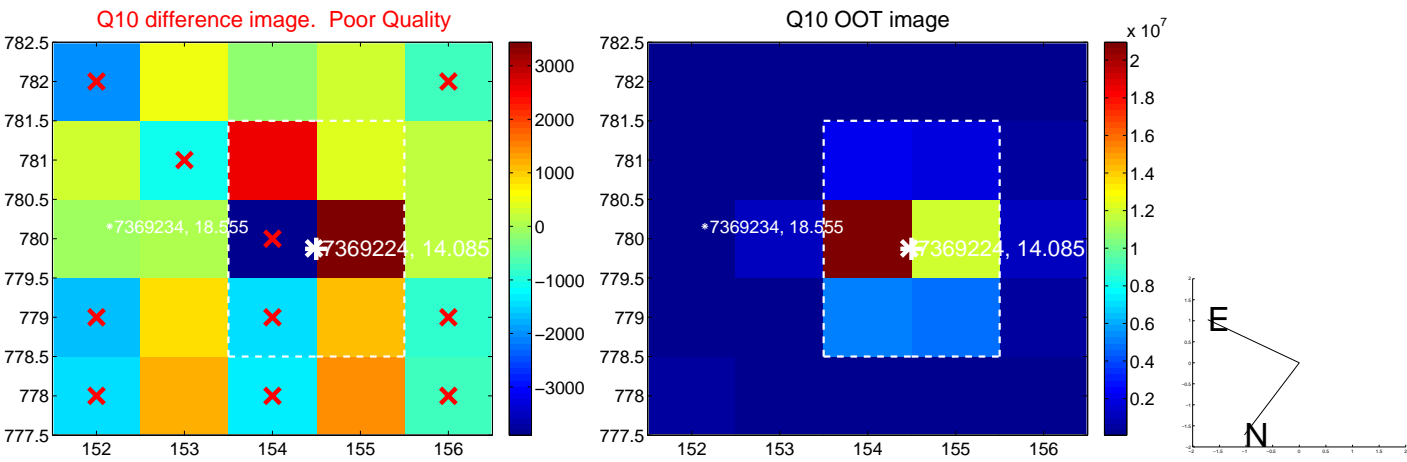
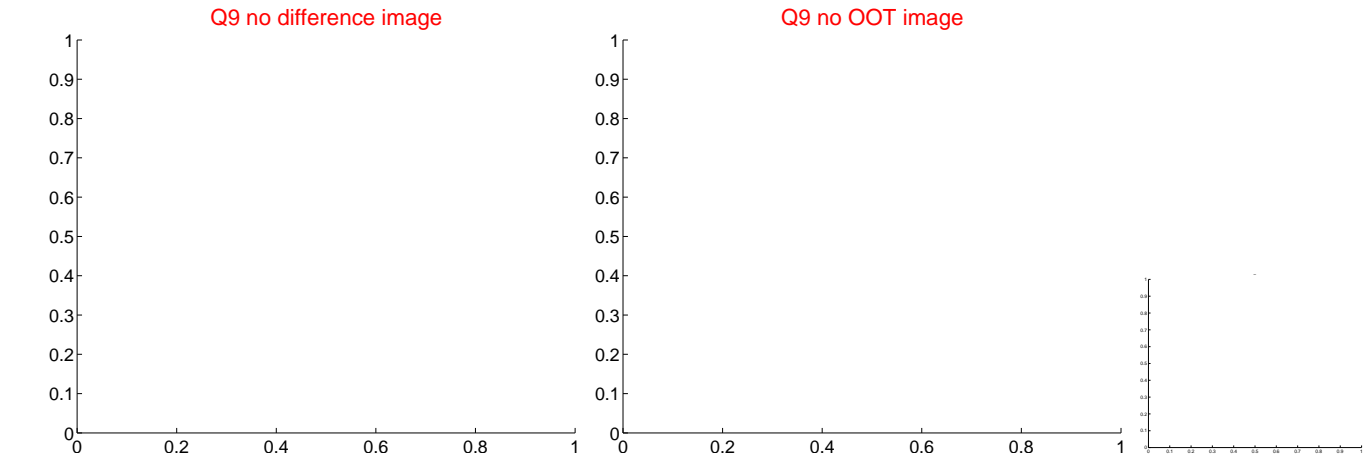
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



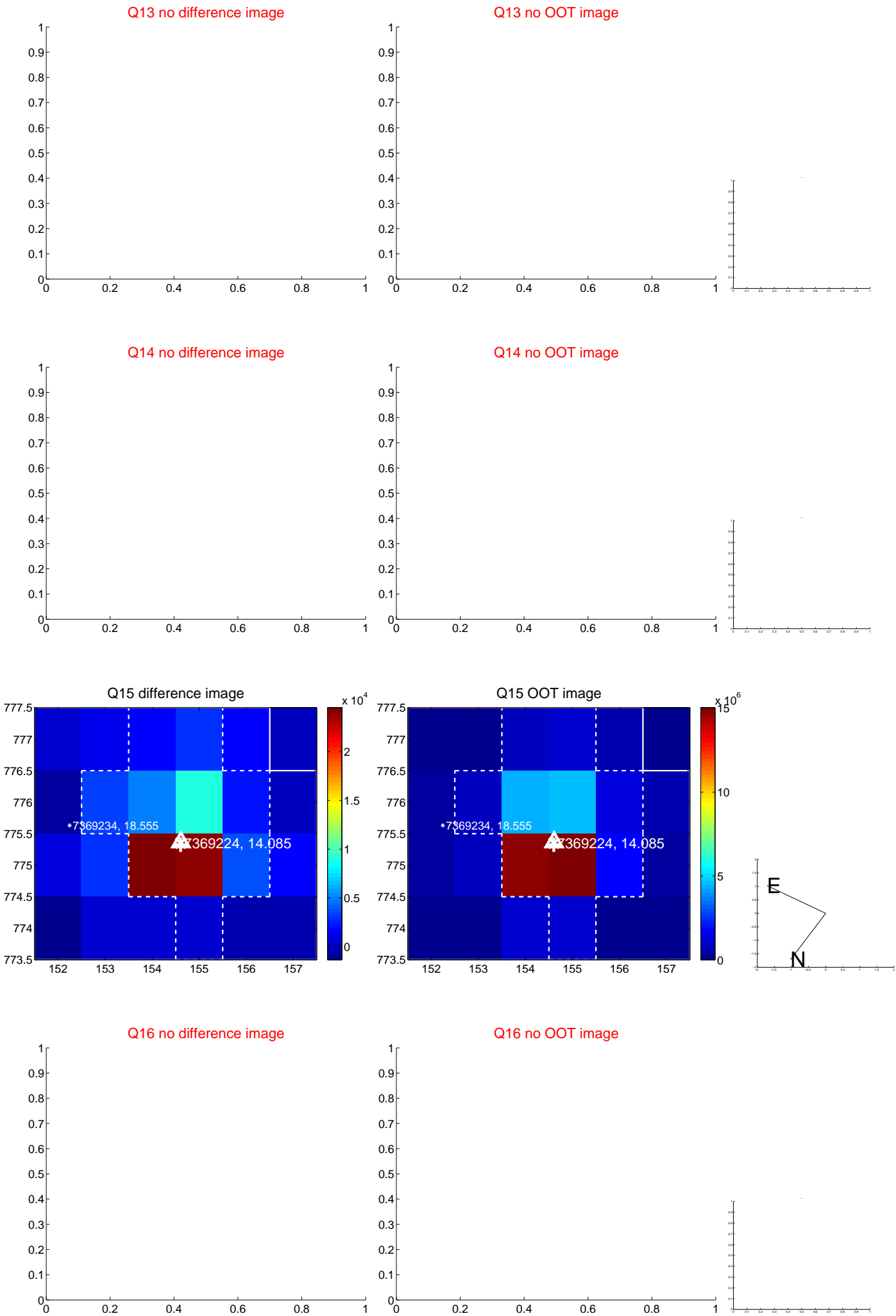
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



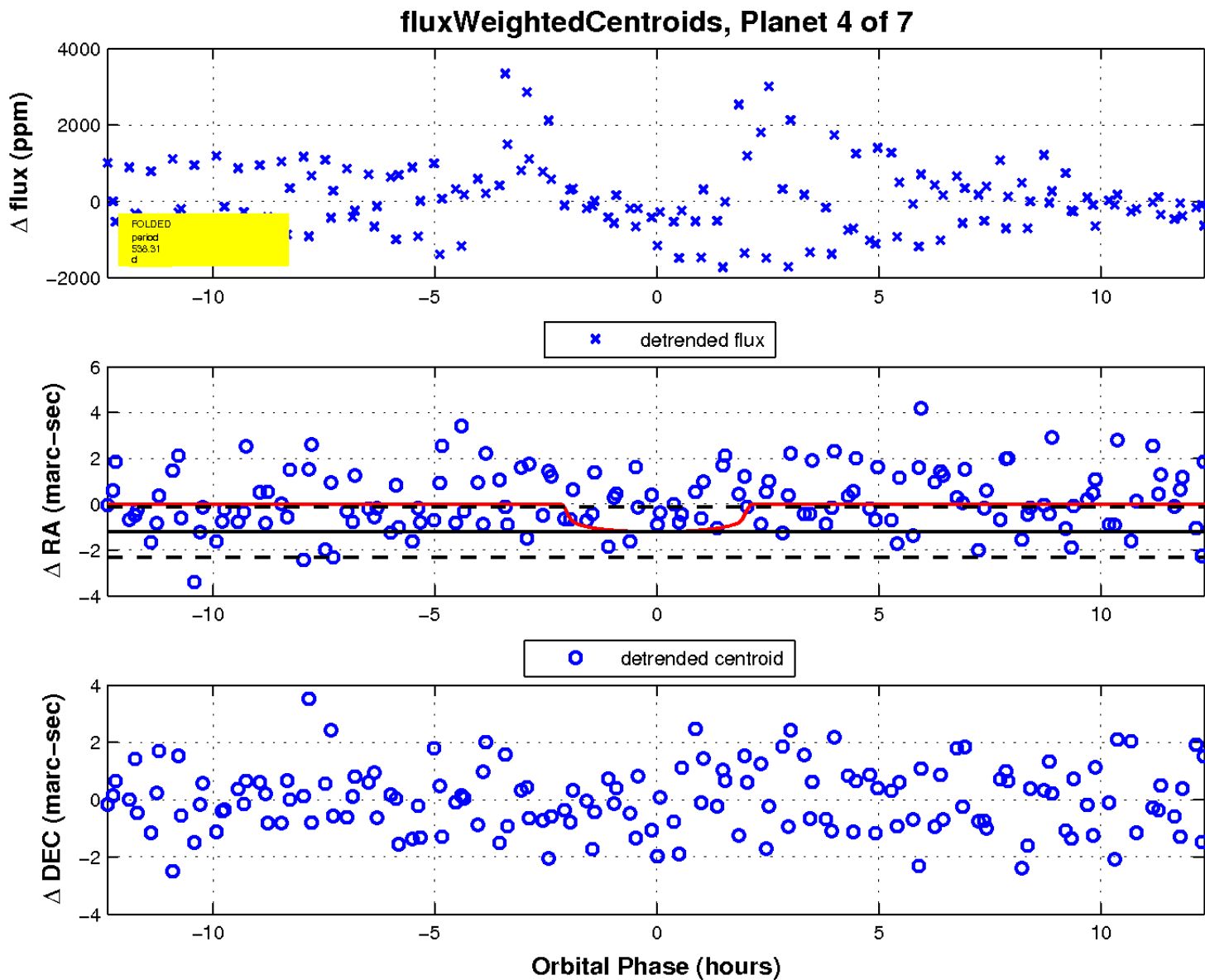
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



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

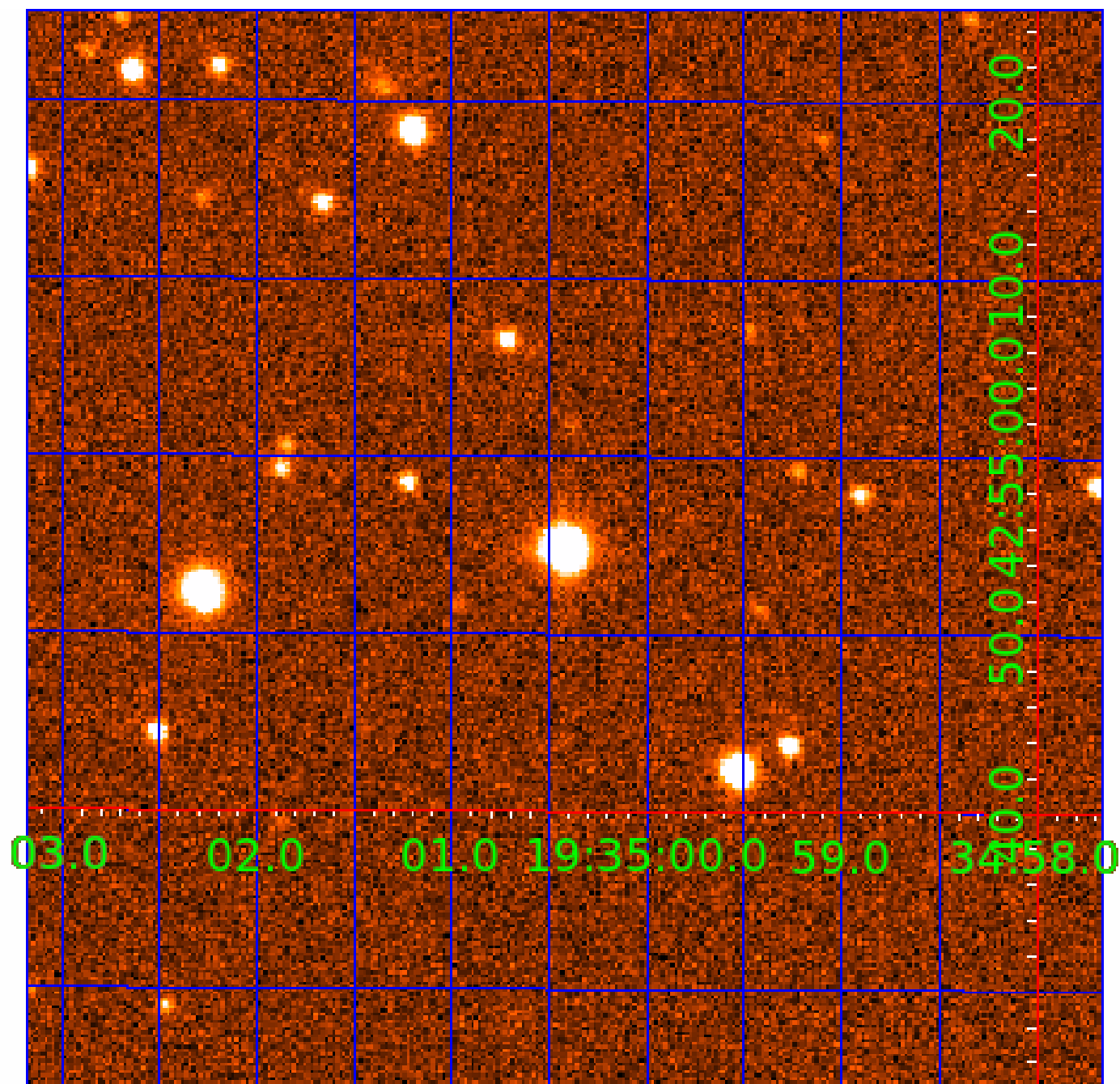


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 007369224

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})
007369224-01	OBS	No	600.585081	345.428100	1887.9	3.290	25.8	12.0	0.72	5427	3.24	0.27
007369224-02	OBS	No	646.244436	272.003648	2020.3	3.024	17.4	16.9	0.72	5427	3.41	0.25
007369224-03	OBS	No	398.412126	173.735645	534.2	8.363	16.9	3.7	0.72	5427	1.70	0.47
007369224-04	OBS	No	538.312423	375.689869	1200.7	4.213	12.5	9.2	0.72	5427	2.55	0.31
007369224-05	OBS	No	348.548227	321.755669	757.6	9.331	14.3	5.1	0.72	5427	2.11	0.56
007369224-06	OBS	No	477.666047	176.378270	1223.2	8.633	13.7	6.7	0.72	5427	3.69	0.37
007369224-07	OBS	No	431.223783	192.974688	1059.0	3.904	16.4	8.2	0.72	5427	2.56	0.42

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007369224-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
007369224-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_POS_DV—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS
007369224-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
007369224-04	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—CENT_FEW_DIFFS
007369224-05	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS
007369224-06	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_SKYE_ZUMA—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
007369224-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS

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

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

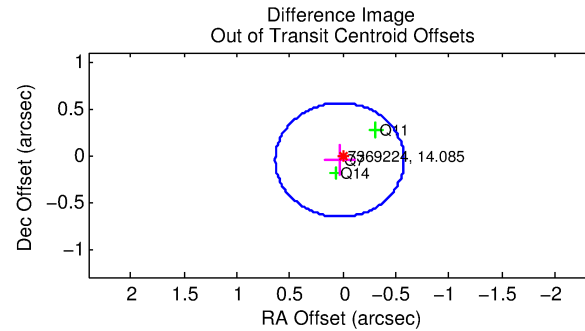
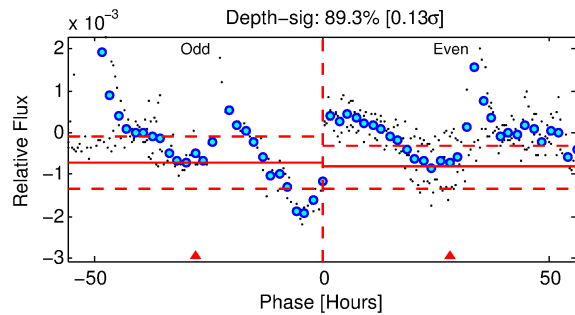
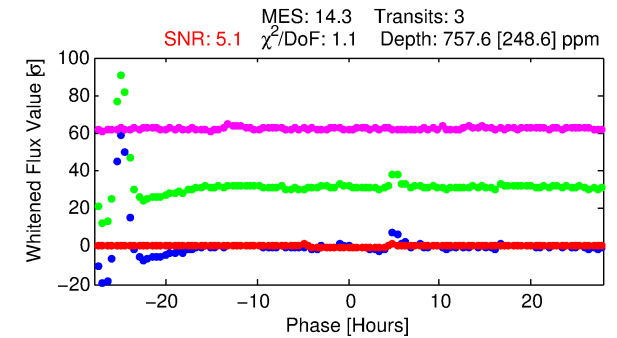
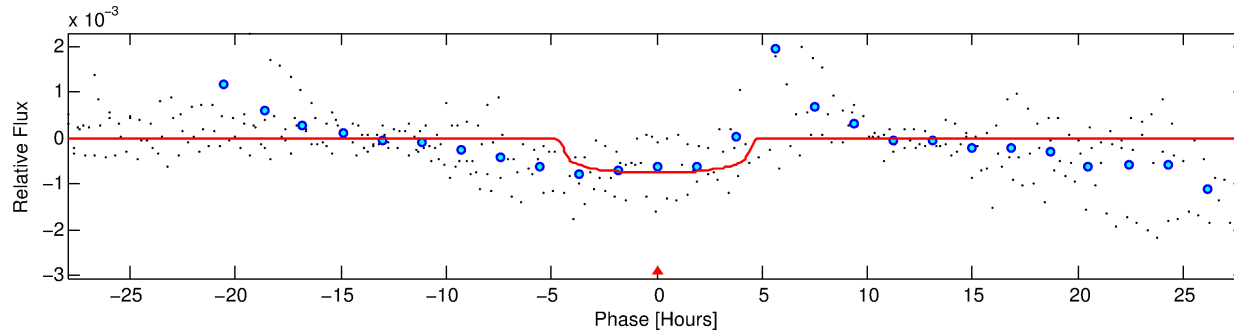
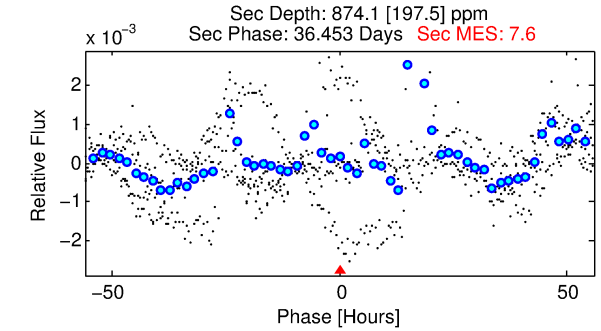
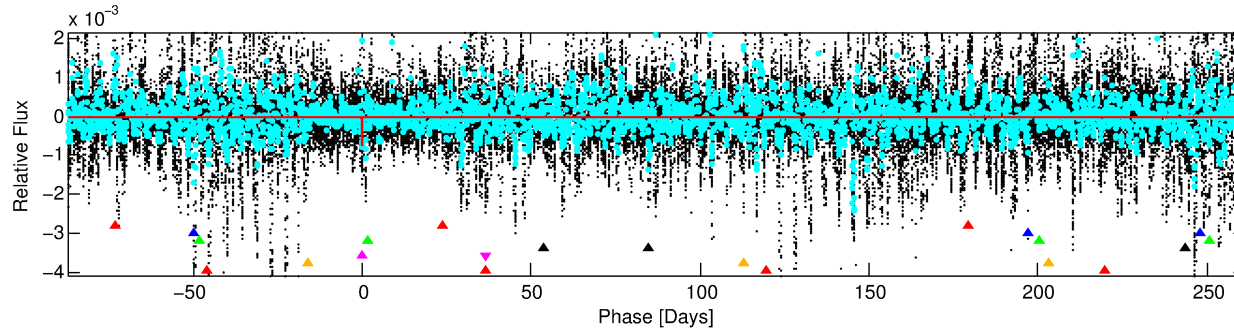
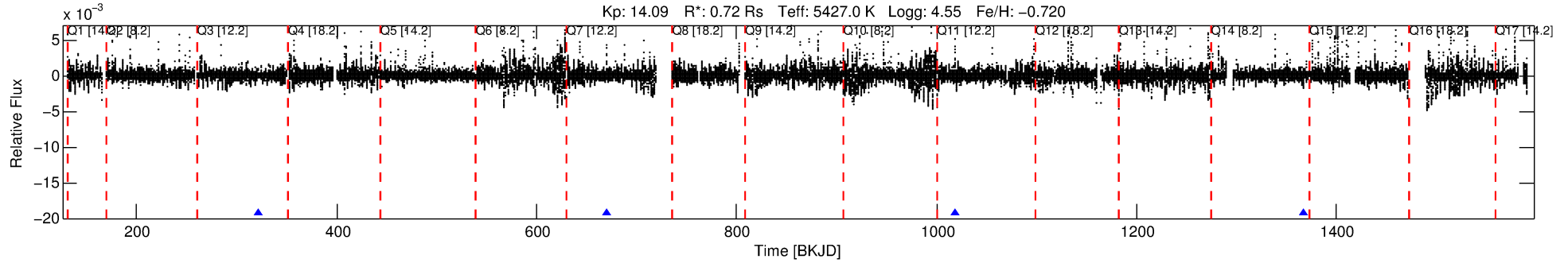
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007369224-05

No Significant Match Found

DV One-Page Summary

KIC: 7369224 Candidate: 5 of 7 Period: 348.548 d



DV Fit Results:

Period = 348.54823 [0.01013] d
Epoch = 321.7557 [0.0222] BKJD
Rp/R* = 0.0266 [0.0178]
a/R* = 224.01 [630.11]
b = 0.66 [2.41]
Seff = 0.56 [0.12]
Teq = 221 [12] K
Rp = 2.11 [1.43] Re
a = 0.8533 [0.0947] AU
Ag = 78895.23 [108017.10] [0.73 σ]
Teffp = 5718 [1949] K [2.82 σ]

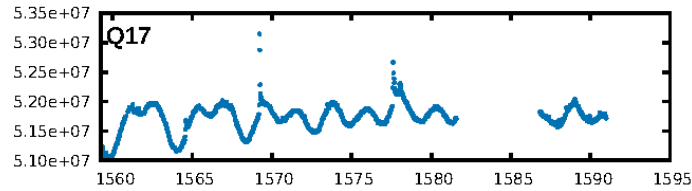
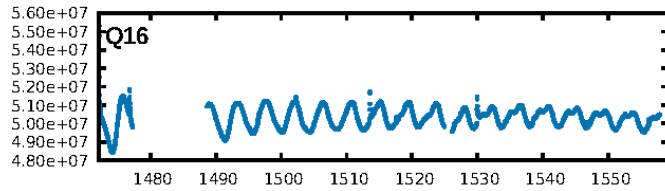
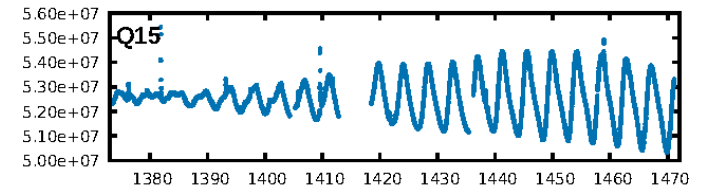
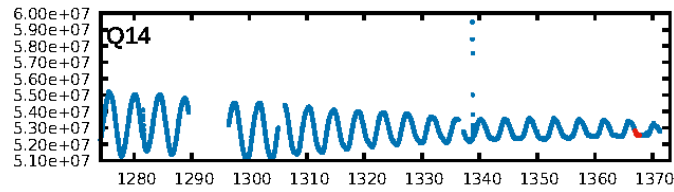
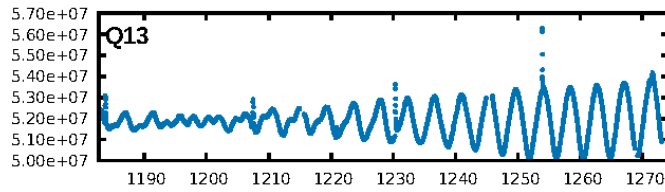
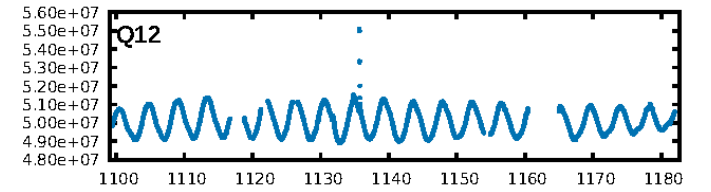
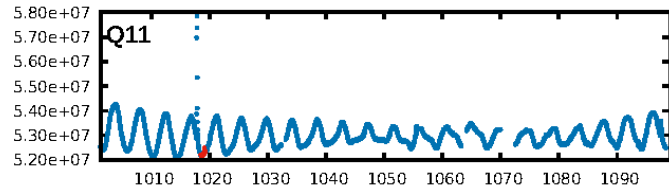
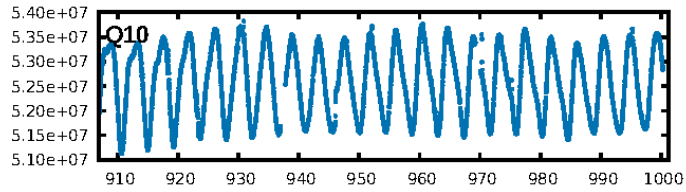
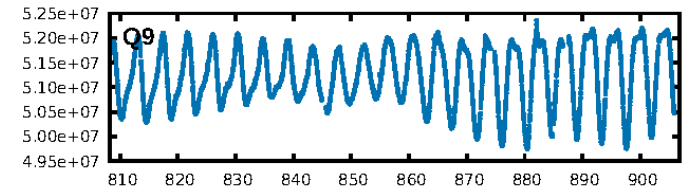
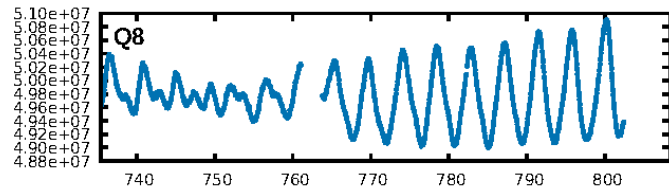
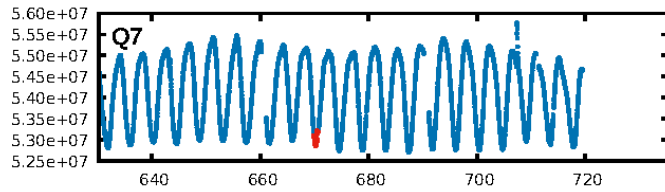
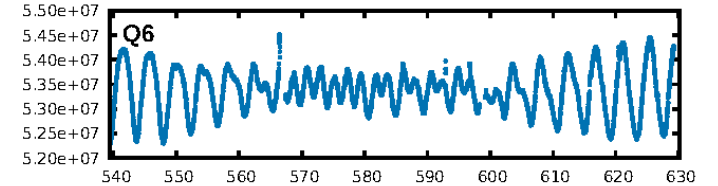
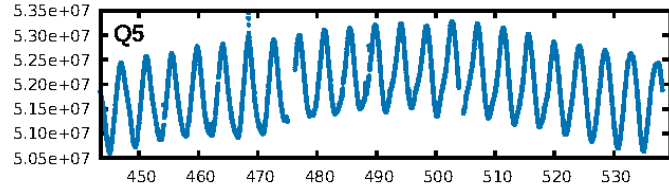
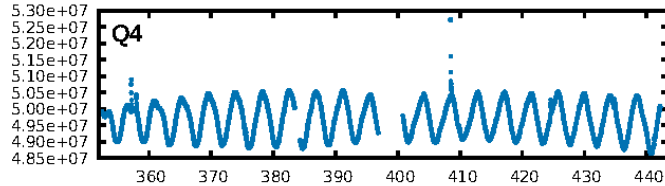
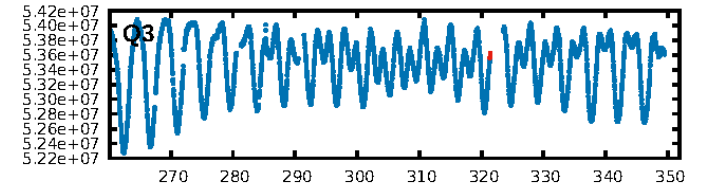
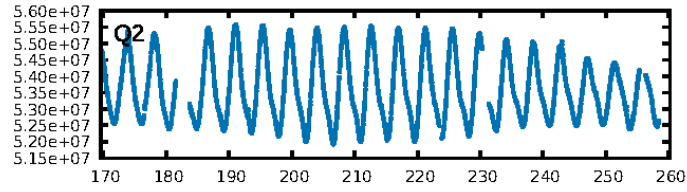
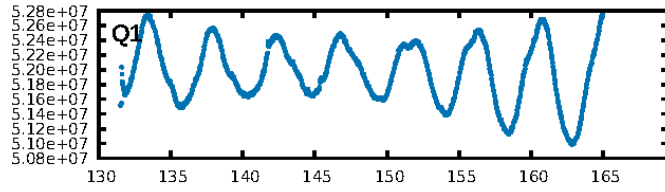
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [95.51 σ]
ModelChiSquare2-sig: 43.7%
ModelChiSquareGof-sig: 97.6%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 0.5449
Centroid-sig: N/A
Centroid-so: 0.491 arcsec [0.77 σ]
OotOffset-rm: 0.057 arcsec [0.28 σ]
OotOffset-st: 1/2/0/0 [3]
KicOffset-rm: 0.024 arcsec [0.22 σ]
KicOffset-st: 1/2/0/0 [3]
DiffImageQuality-fgm: 1.00 [3/3]
DiffImageOverlap-fno: 1.00 [3/3]

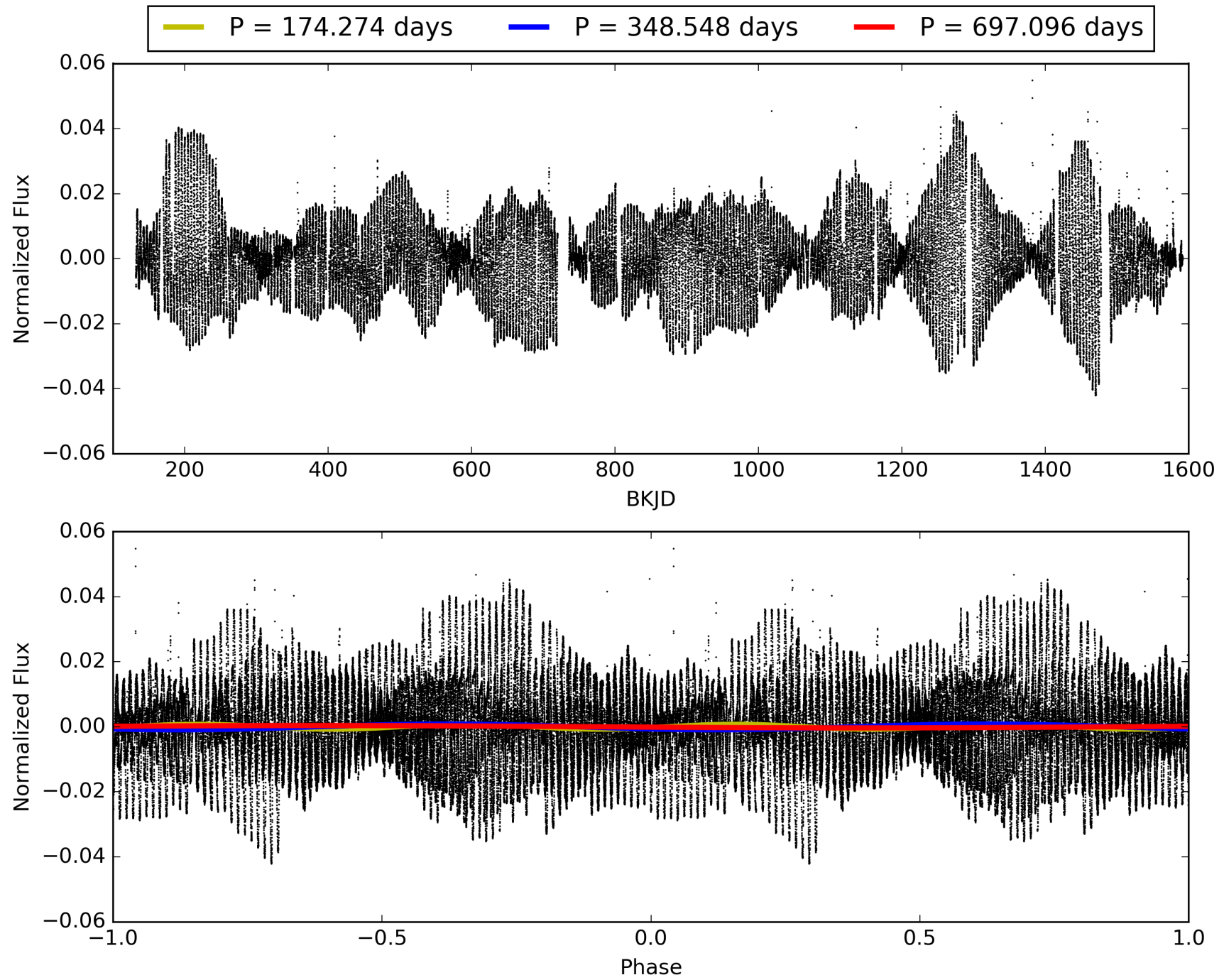
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 12:59:28 Z

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

TCE 007369224-05, PDC Light Curves

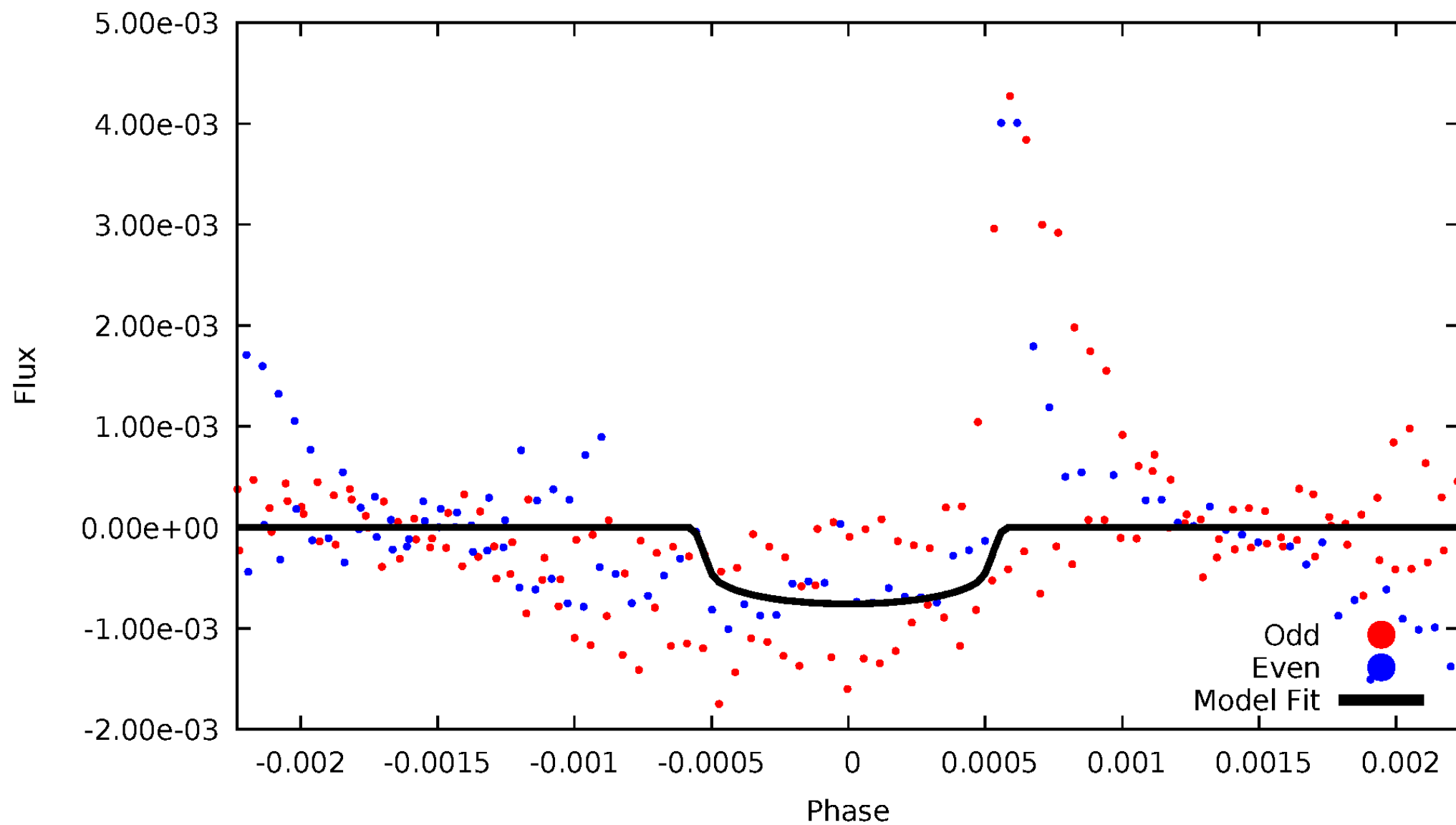


TCE 007369224-05



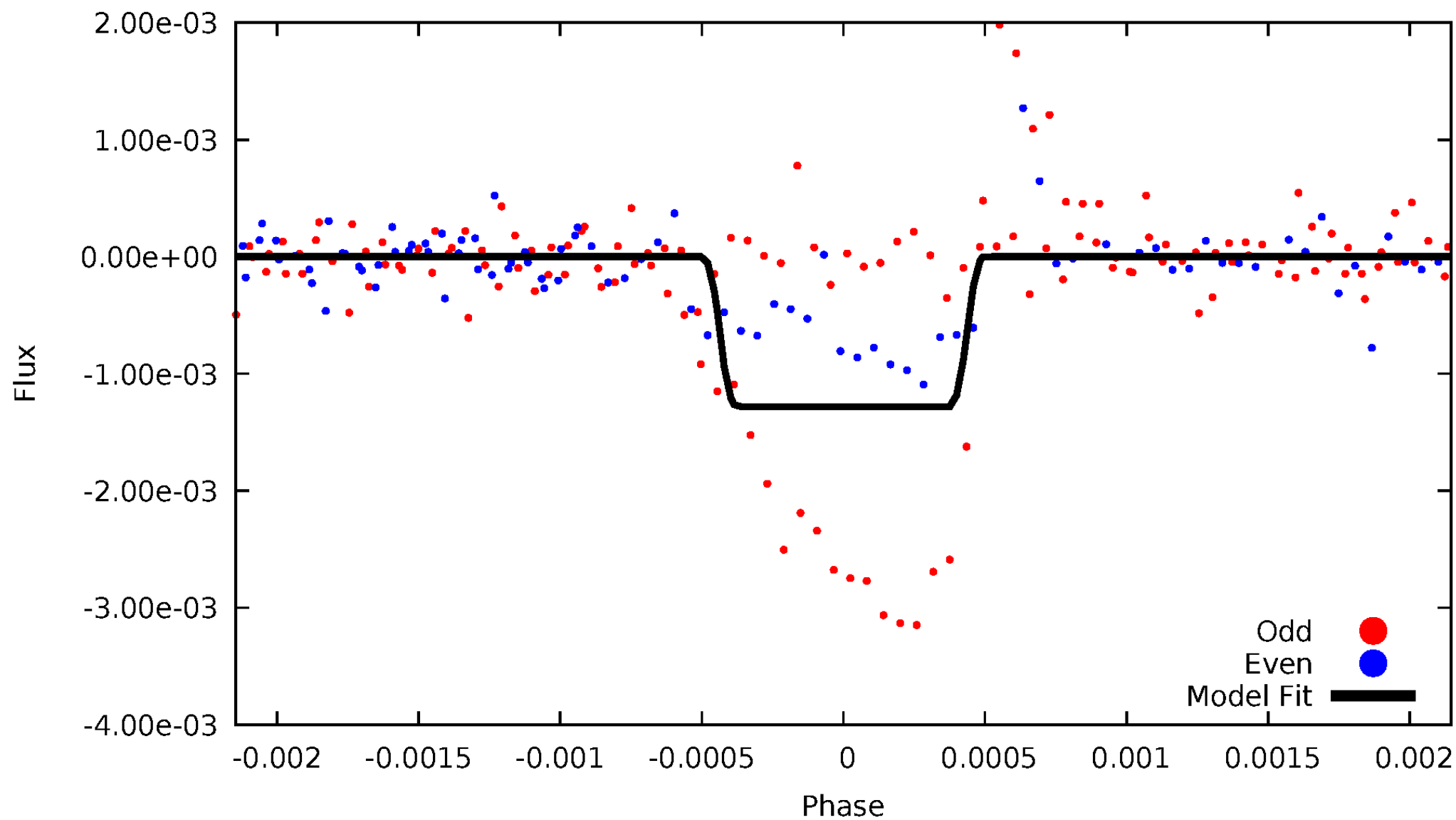
DV Odd/Even

TCE 007369224-05



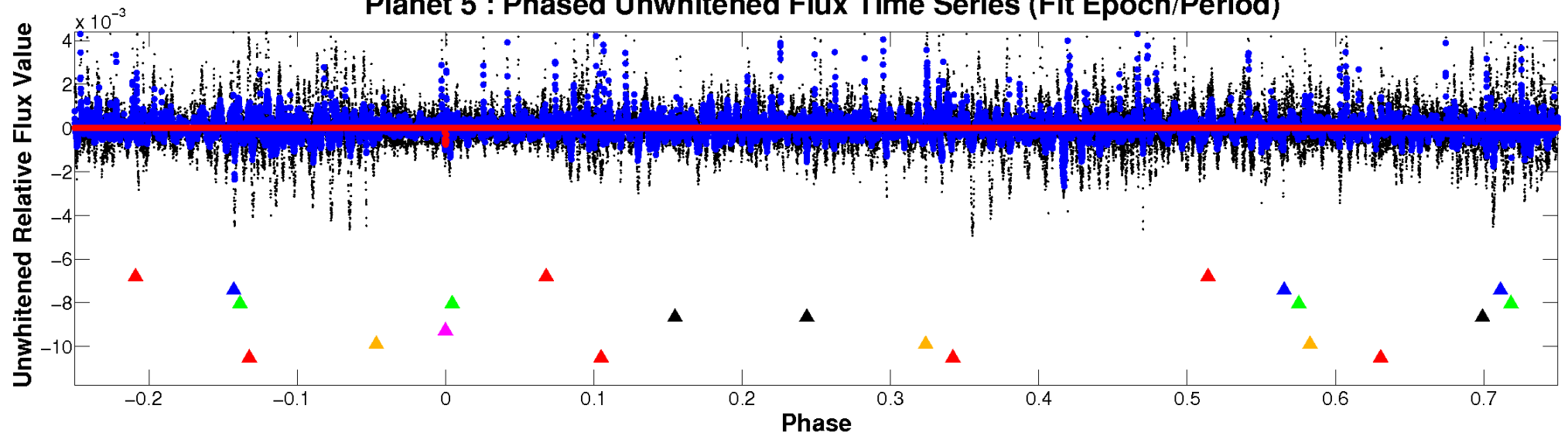
ALT Odd/Even

TCE 007369224-05

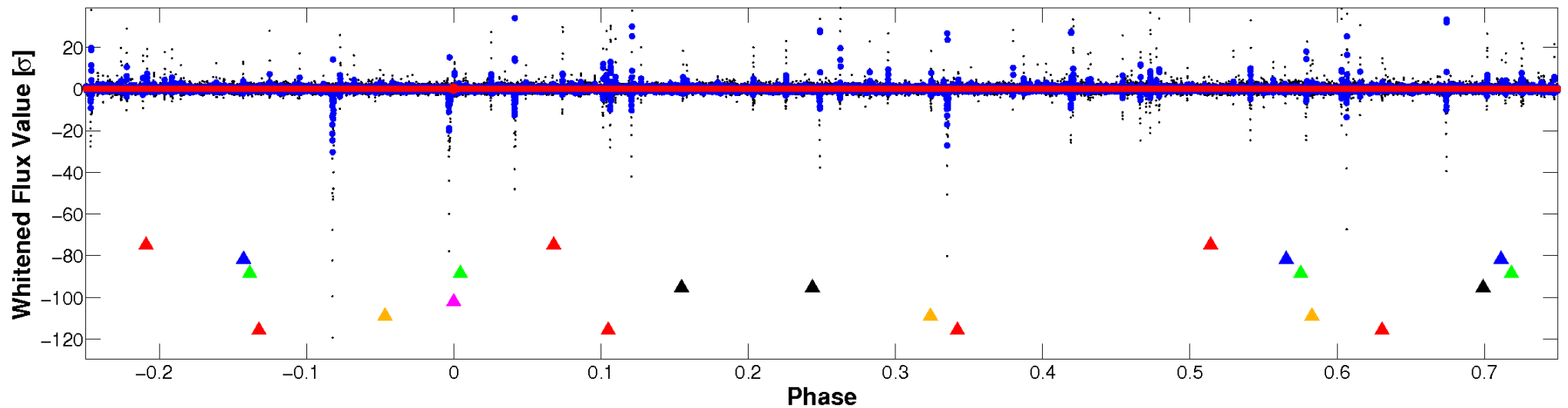


Non-Whitened Vs. Whitened Light Curve

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

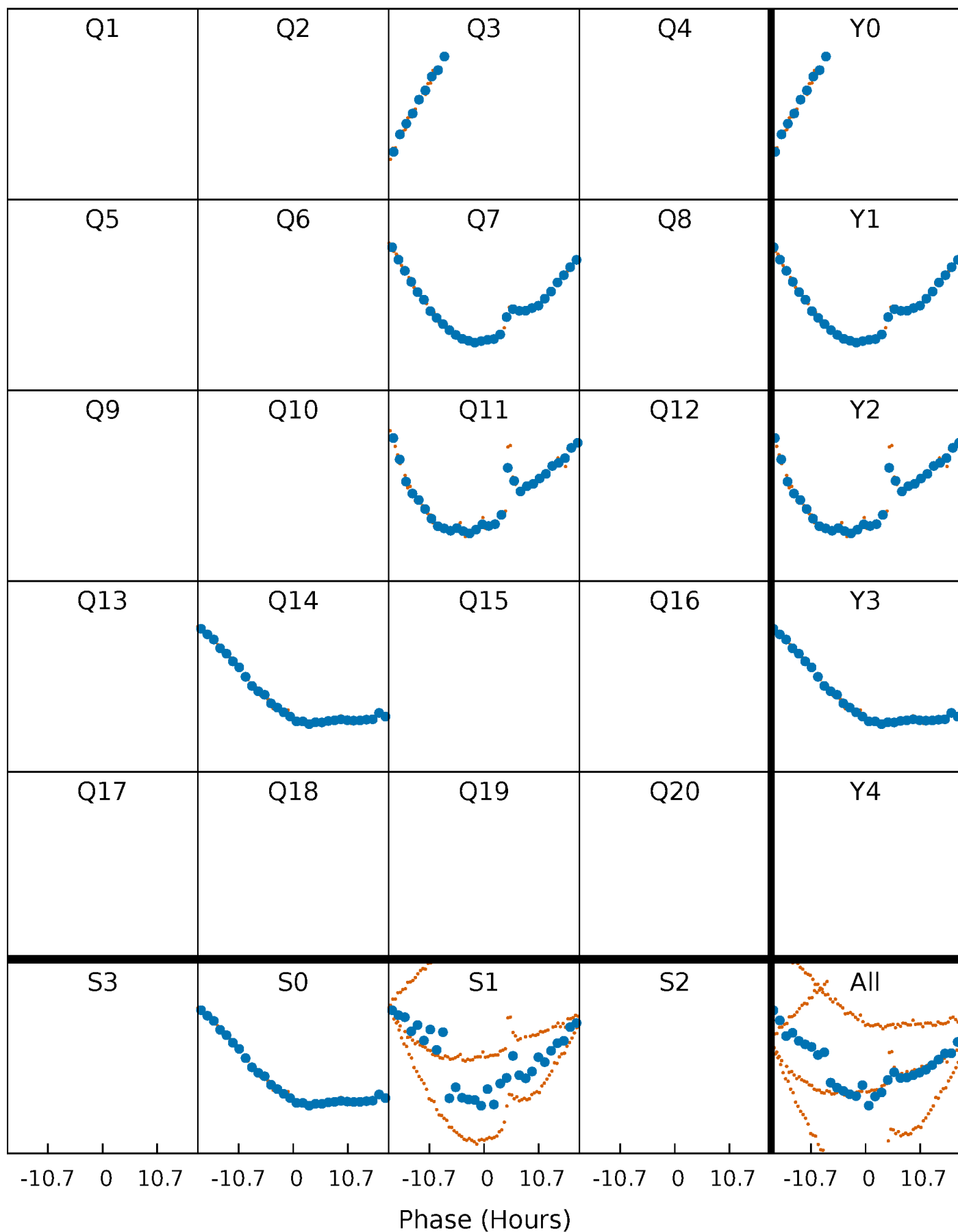


Planet 5 : Phased Whitened Flux Time Series (Fit Epoch/Period)



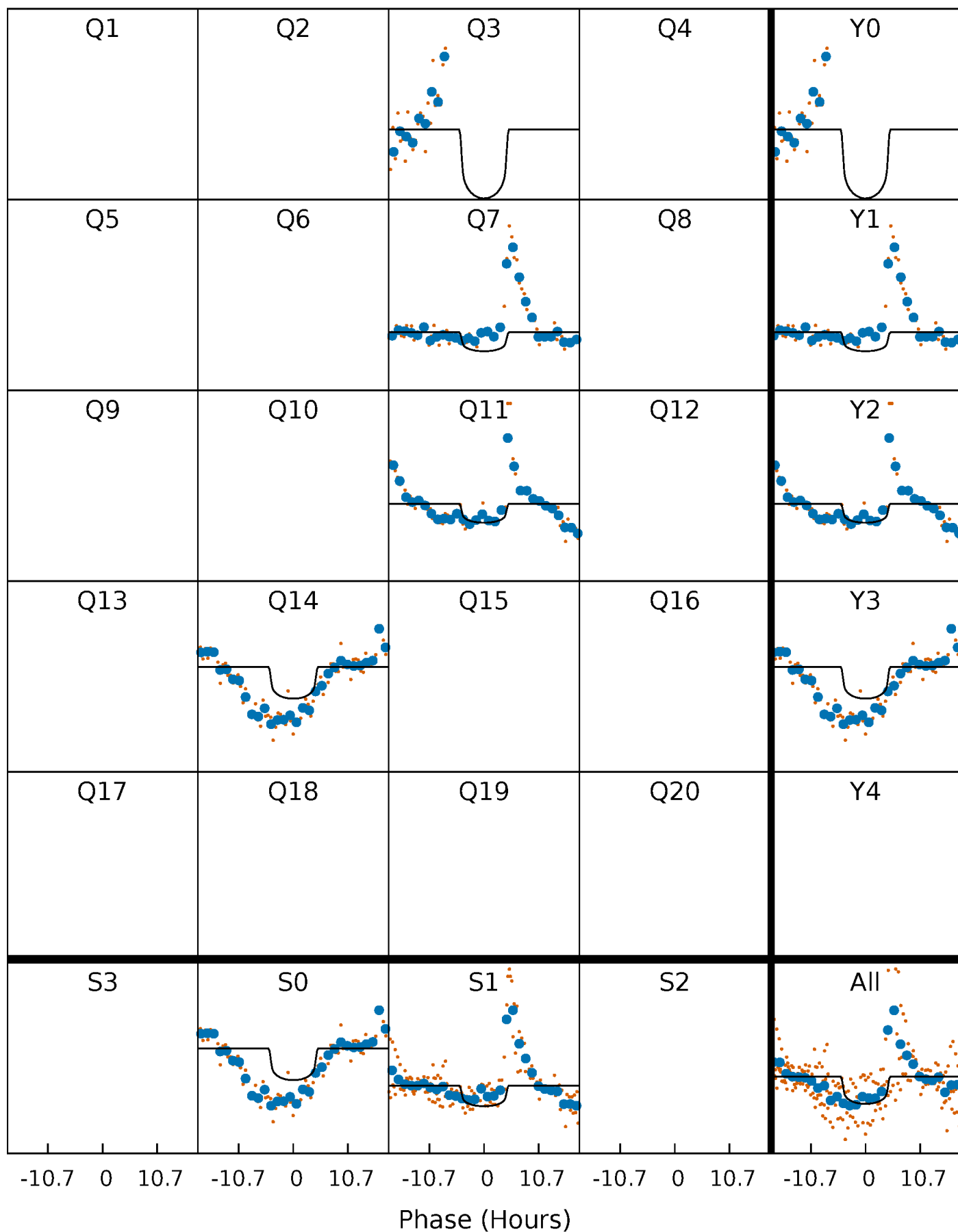
PDC Quarter-Phased Transit Curves

TCE 007369224-05 $P=348.548227$ Days $T_0=321.755669$ (BKJD)



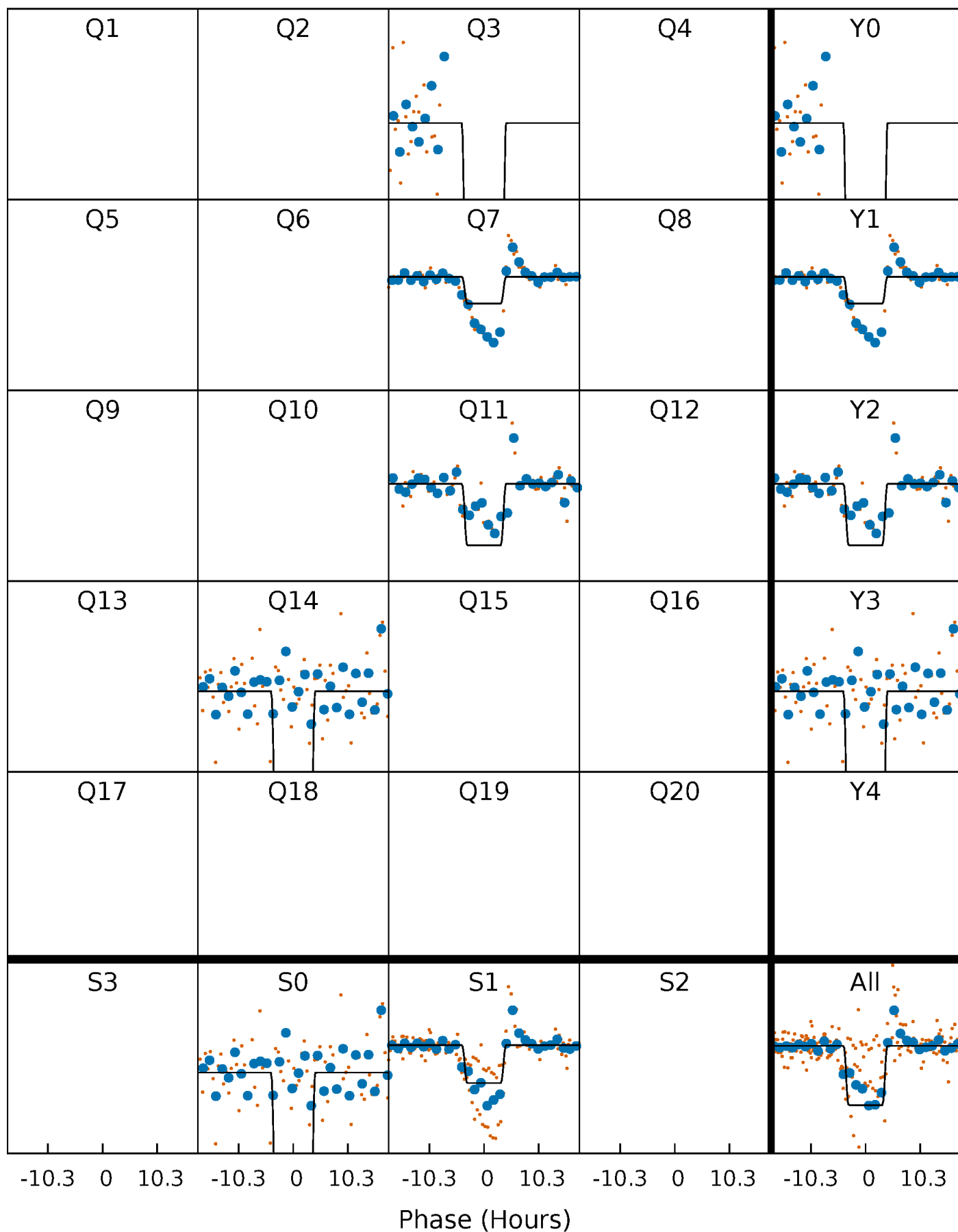
DV Quarter-Phased Transit Curves

TCE 007369224-05 $P=348.548227$ Days $T_0=321.755669$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

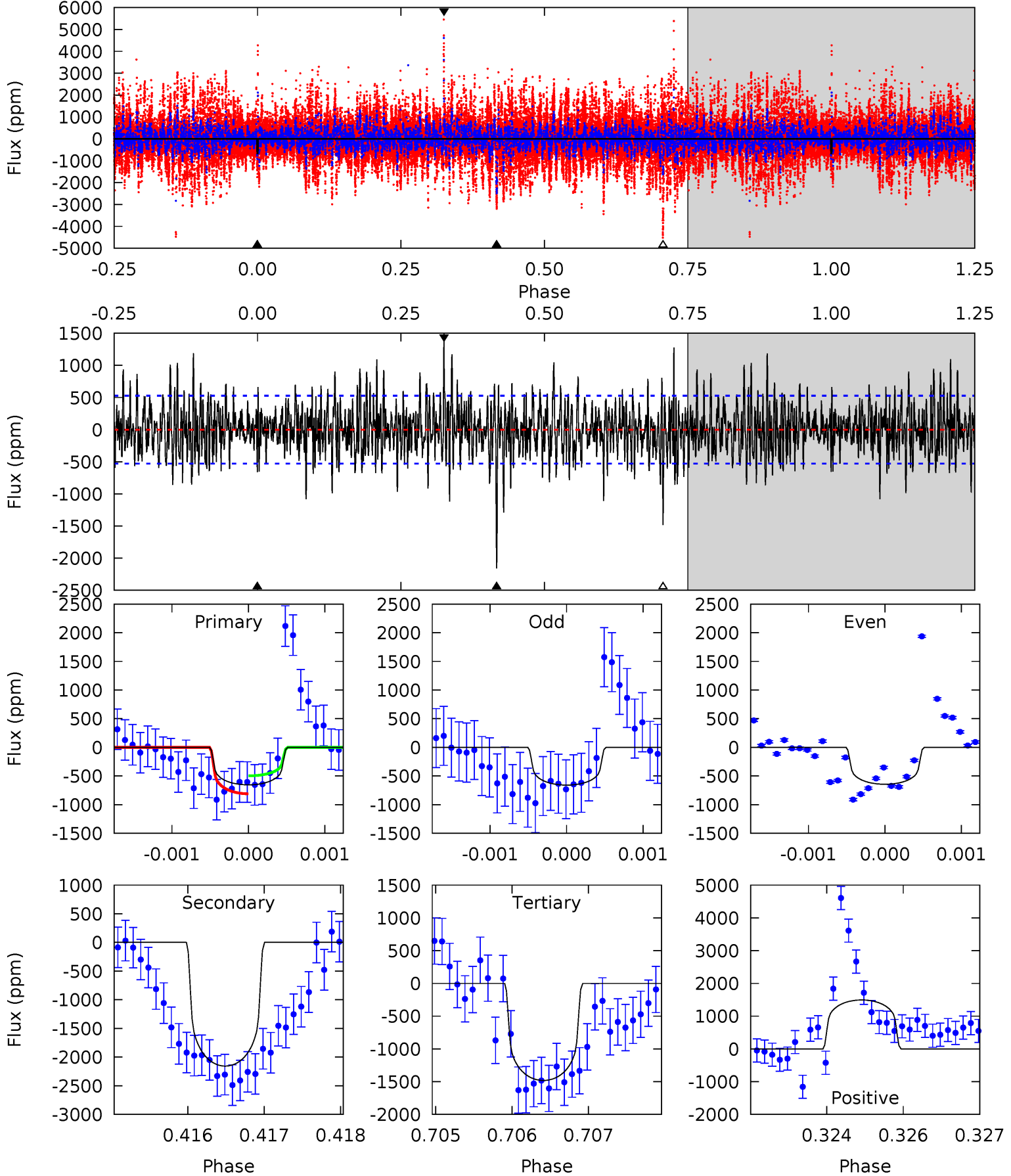
TCE 007369224-05 $P=348.548855$ Days $T_0=321.768498$ (BKJD)



DV Model-Shift Uniqueness Test

007369224-05, $P = 348.548227$ Days, $E = 321.755669$ Days

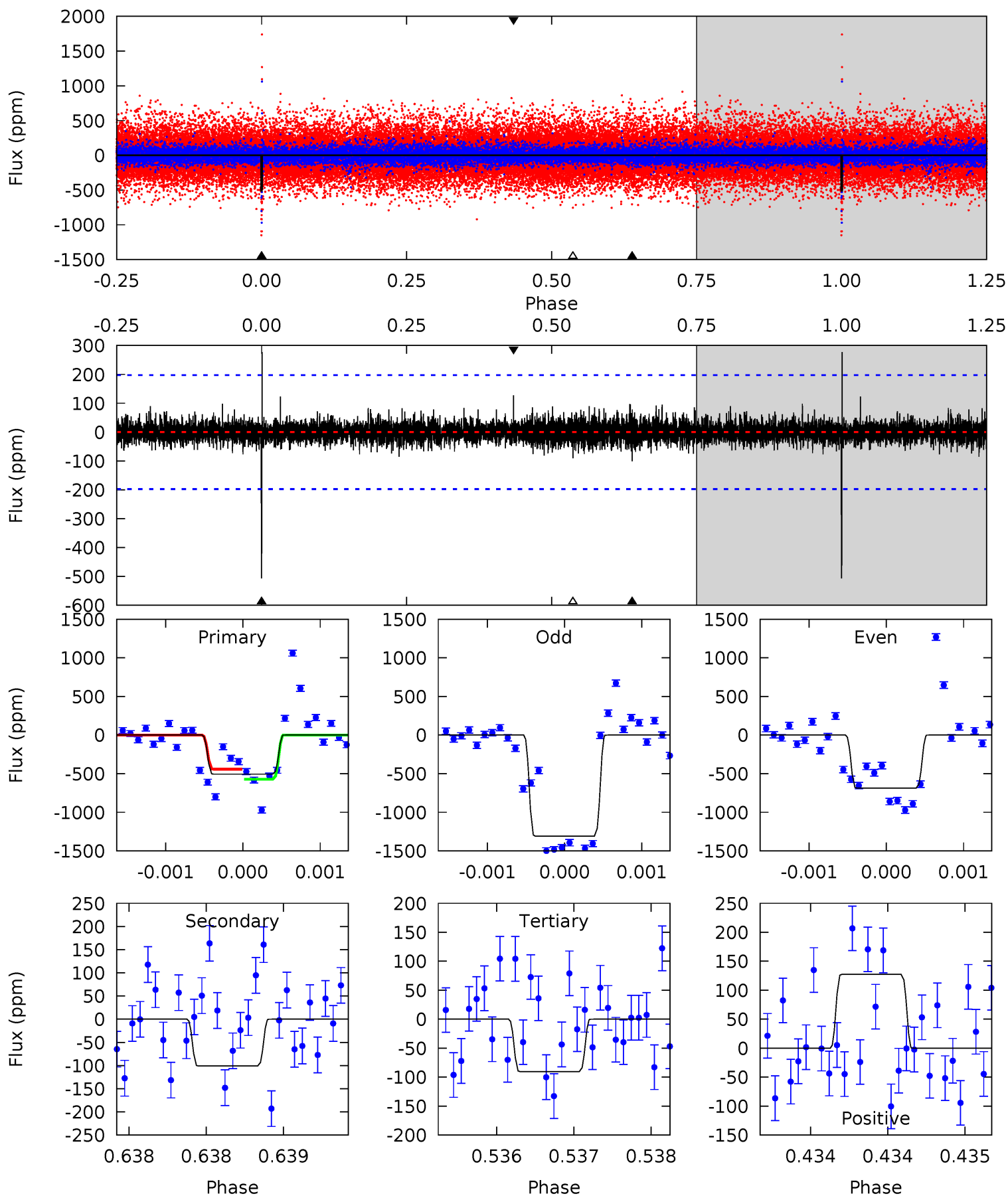
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.71	22.1	15.2	15.3	5.43	3.25	3.44	-8.48	-8.61	6.93	6.81	0.06	1.01	0.41	1.63



Alt Model-Shift Uniqueness Test

007369224-05, $P = 348.548855$ Days, $E = 321.768498$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14.0	2.79	2.50	3.53	5.46	3.31	0.62	11.5	10.5	0.29	-0.73	10.3	1.52	0.35	1.82



Stellar Parameters For KIC 007369224

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5427^{+161}_{-161}	$4.551^{+0.099}_{-0.081}$	$-0.720^{+0.300}_{-0.300}$	$0.725^{+0.088}_{-0.079}$	$0.682^{+0.085}_{-0.034}$	$2.518^{+0.970}_{-0.644}$
	+3%/-3%	+2%/-2%	+42%/-42%	+12%/-11%	+12%/-5%	+39%/-26%
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 007369224-05 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-2157 ± 97	$2.23^{+1.46}_{-1.16}$	309^{+13}_{-14}	7020^{+4430}_{-1569}	$177868^{+575192}_{-112625}$
Alt.	-101 ± 36	$2.91^{+1.36}_{-1.40}$	308^{+14}_{-12}	3347^{+860}_{-425}	4807^{+14057}_{-3009}

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

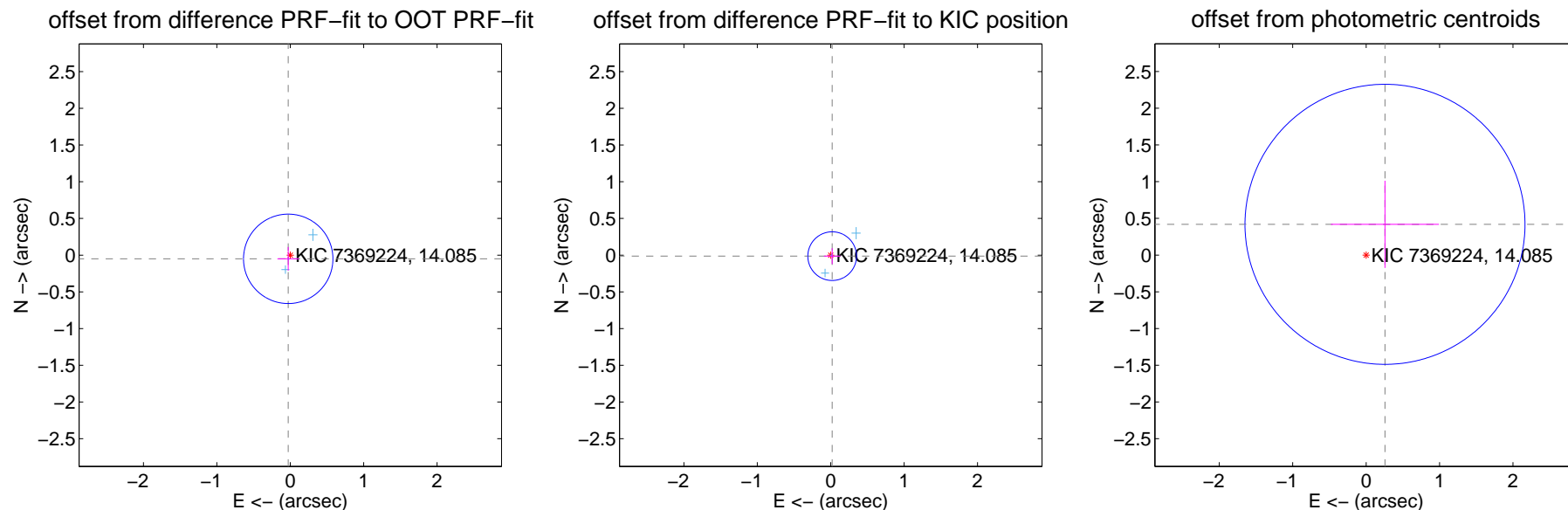
DV Centroid Data

Supplemental centroid analysis for 007369224-05. Kepler magnitude: 14.09. Transit SNR 5.13

There are 3 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.05 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.057 ± 0.203	0.28	0.028 ± 0.147	-0.050 ± 0.161
PRF-fit source offset from KIC position	0.024 ± 0.111	0.22	-0.020 ± 0.111	-0.013 ± 0.109
photometric centroid source offset	0.49 ± 0.64	0.77	-0.26 ± 0.74	0.42 ± 0.59

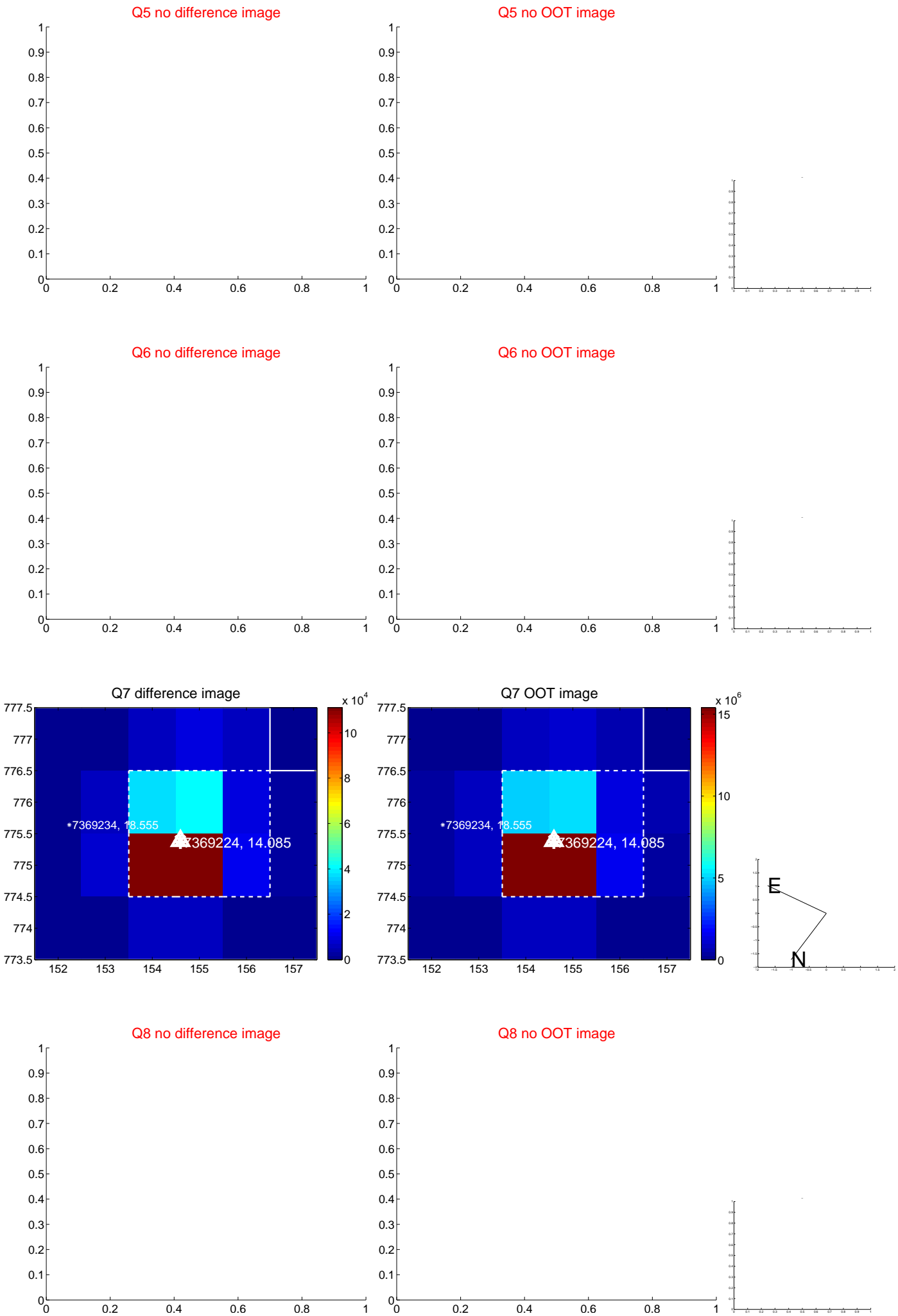


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

Q9 no difference image



Q9 no OOT image



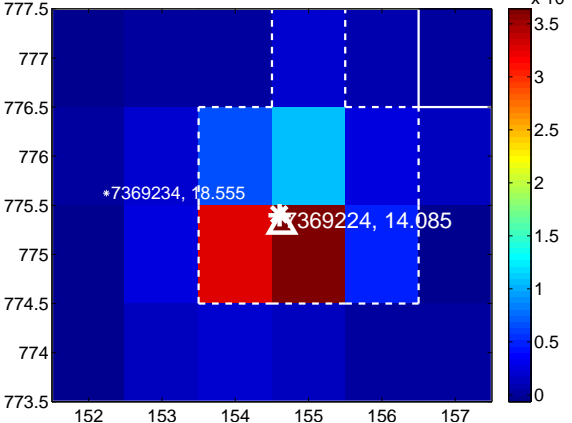
Q10 no difference image



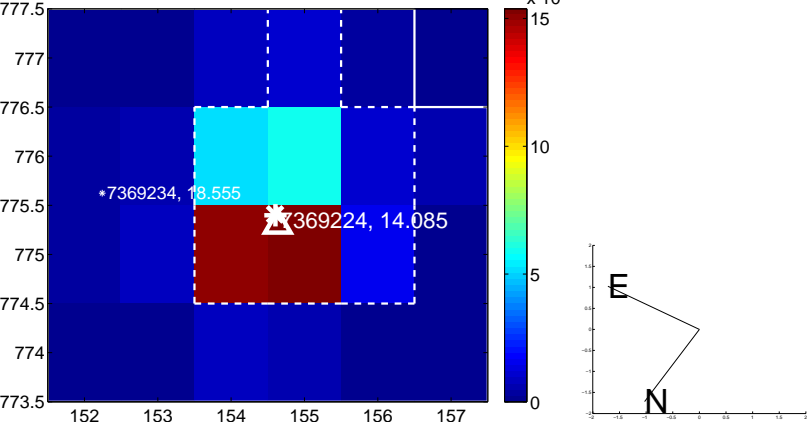
Q10 no OOT image



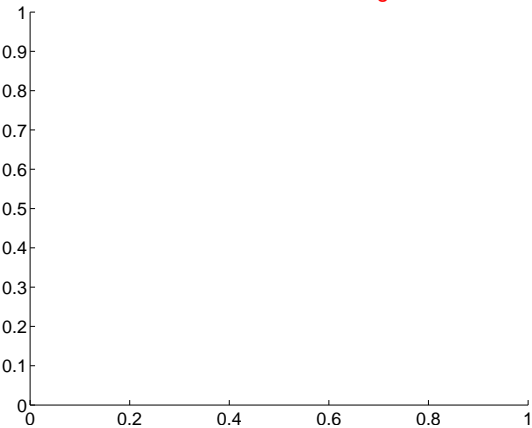
Q11 difference image



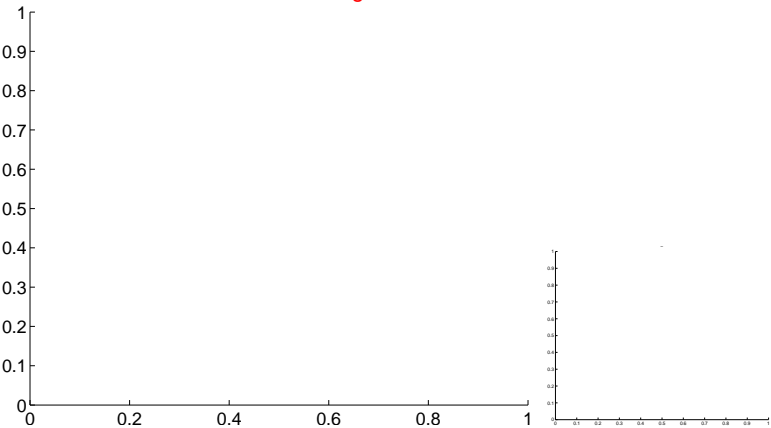
Q11 OOT image



Q12 no difference image



Q12 no OOT image



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

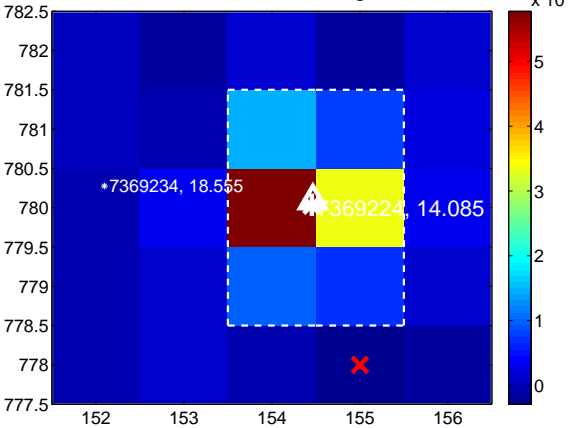
Q13 no difference image



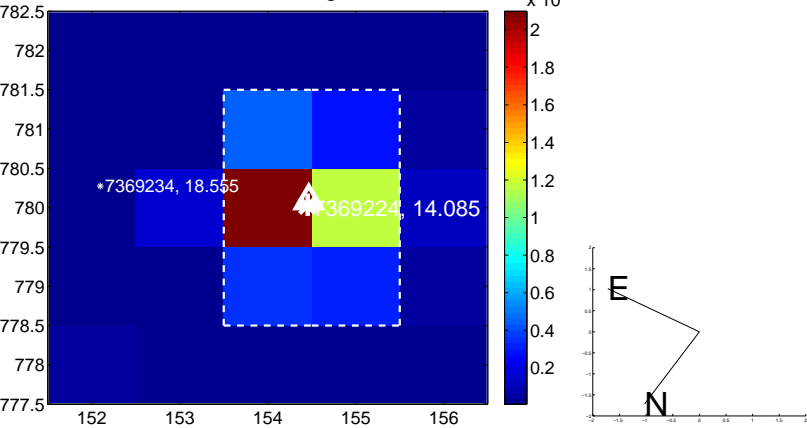
Q13 no OOT image



Q14 difference image



Q14 OOT image



Q15 no difference image



Q15 no OOT image



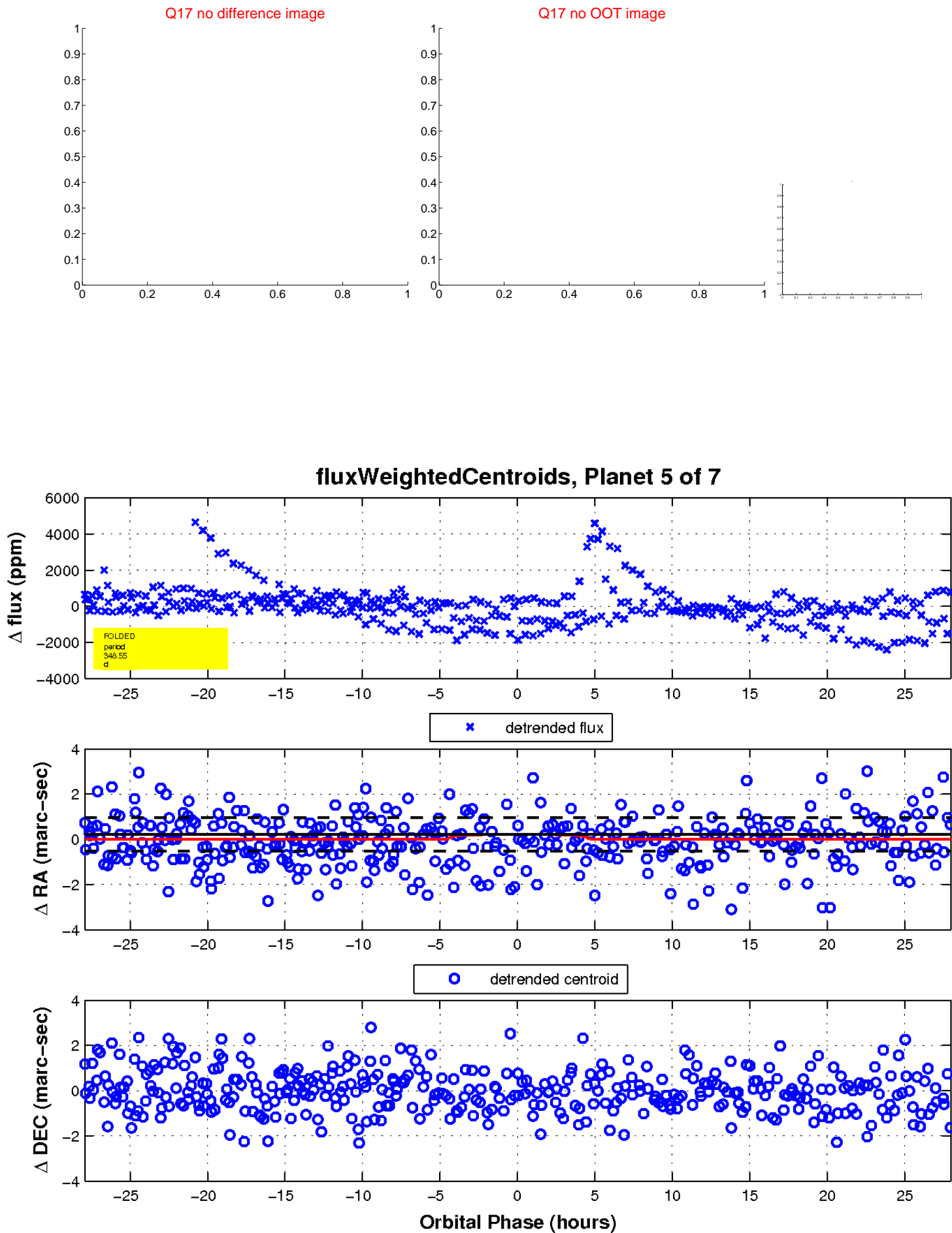
Q16 no difference image



Q16 no OOT image

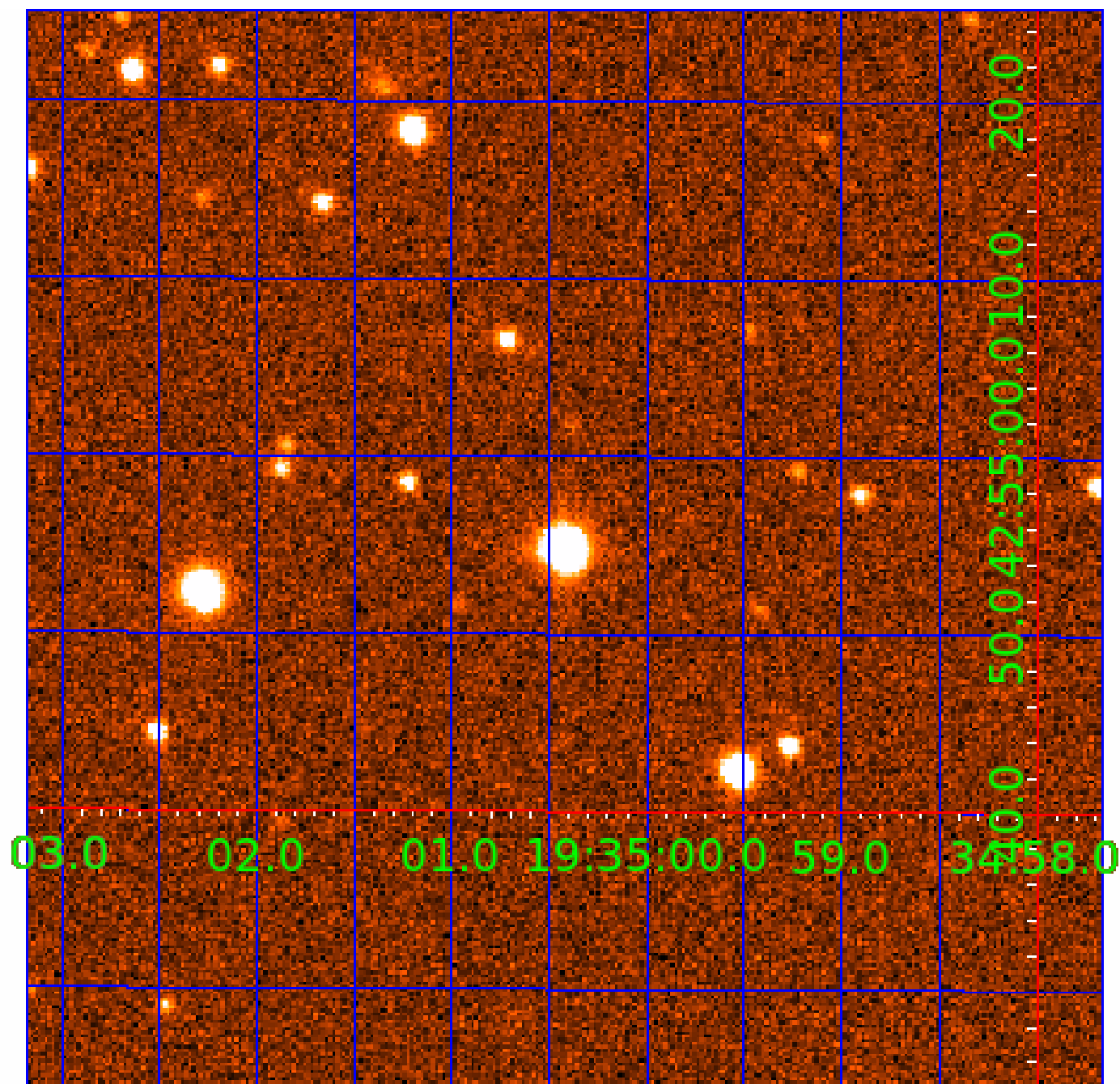


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 007369224

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})
007369224-01	OBS	No	600.585081	345.428100	1887.9	3.290	25.8	12.0	0.72	5427	3.24	0.27
007369224-02	OBS	No	646.244436	272.003648	2020.3	3.024	17.4	16.9	0.72	5427	3.41	0.25
007369224-03	OBS	No	398.412126	173.735645	534.2	8.363	16.9	3.7	0.72	5427	1.70	0.47
007369224-04	OBS	No	538.312423	375.689869	1200.7	4.213	12.5	9.2	0.72	5427	2.55	0.31
007369224-05	OBS	No	348.548227	321.755669	757.6	9.331	14.3	5.1	0.72	5427	2.11	0.56
007369224-06	OBS	No	477.666047	176.378270	1223.2	8.633	13.7	6.7	0.72	5427	3.69	0.37
007369224-07	OBS	No	431.223783	192.974688	1059.0	3.904	16.4	8.2	0.72	5427	2.56	0.42

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007369224-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
007369224-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_POS_DV—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS
007369224-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
007369224-04	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—CENT_FEW_DIFFS
007369224-05	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS
007369224-06	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_SKYE_ZUMA—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
007369224-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS

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

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

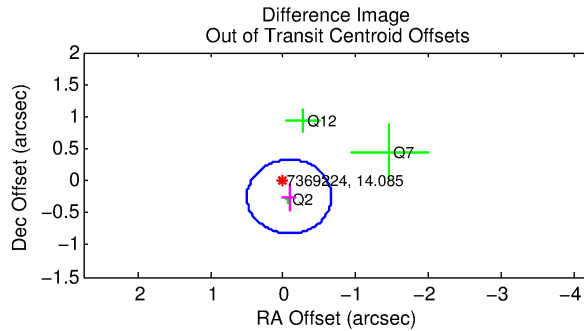
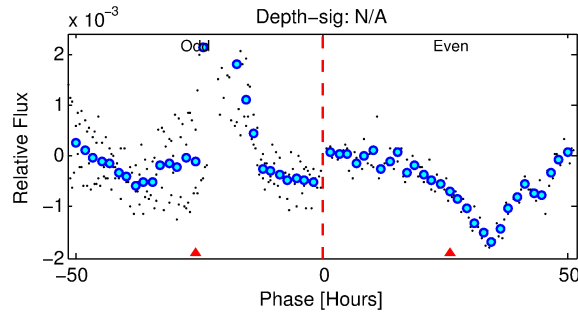
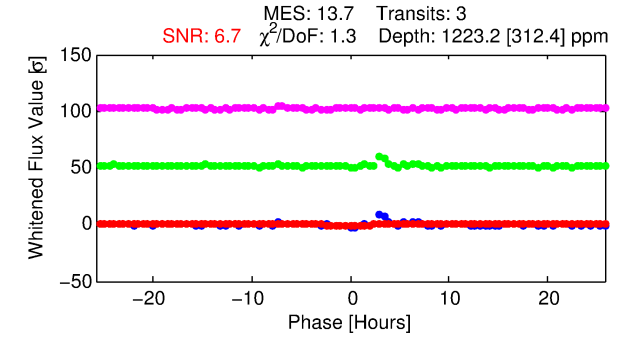
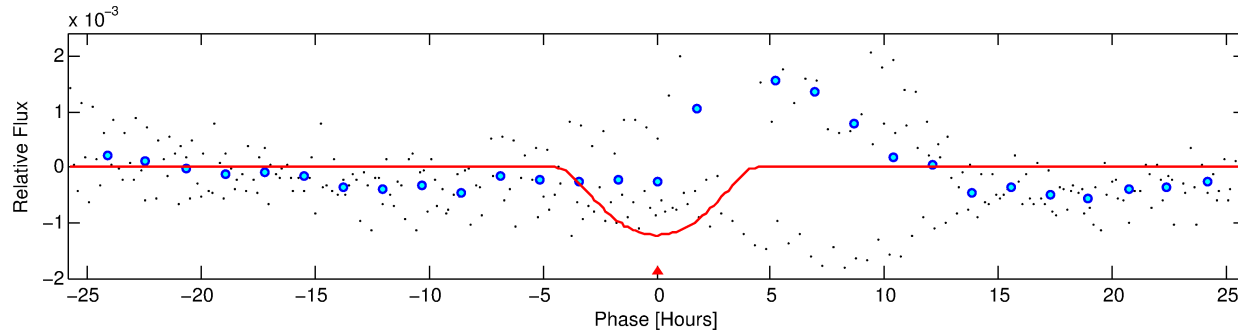
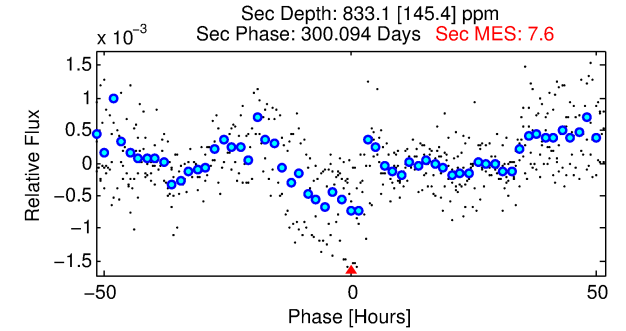
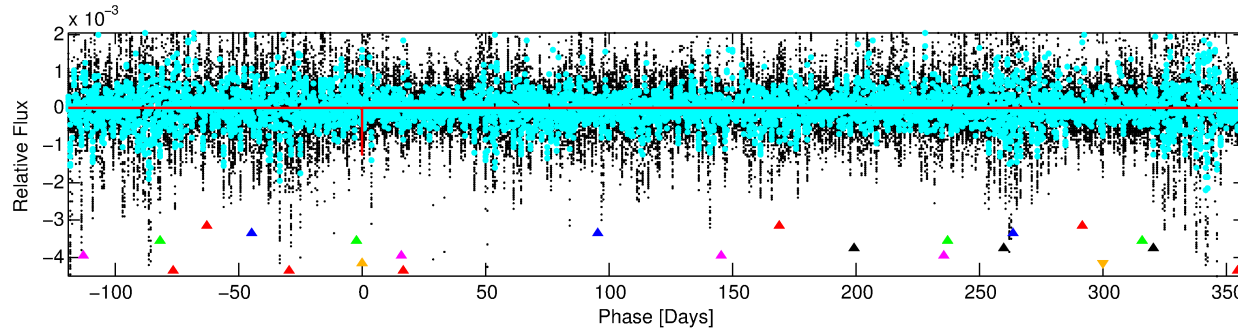
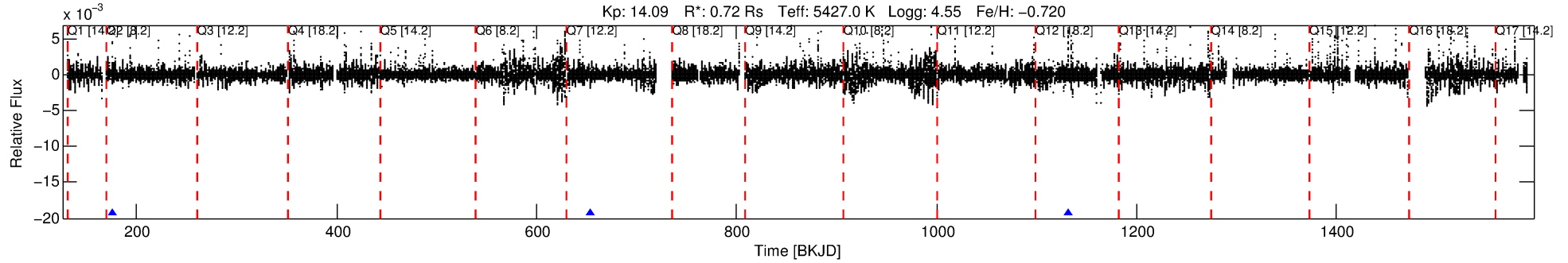
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007369224-06

No Significant Match Found

DV One-Page Summary

KIC: 7369224 Candidate: 6 of 7 Period: 477.666 d



DV Fit Results:

Period = 477.66605 [0.01516] d
Epoch = 176.3783 [0.0165] BKJD
Rp/R* = 0.0466 [0.0352]
a/R* = 162.77 [54.71]
b = 0.97 [0.07]
Seff = 0.37 [0.08]
Teq = 199 [10] K
Rp = 3.69 [2.82] Re
a = 1.0528 [0.1169] AU
Ag = 37349.18 [57182.71] [0.65] σ
Teffp = 4270 [1629] K [2.50] σ

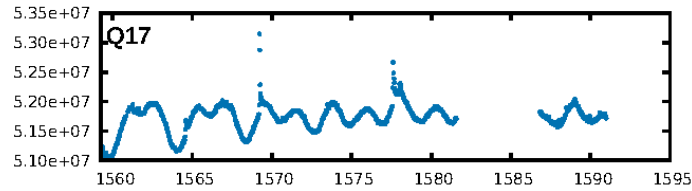
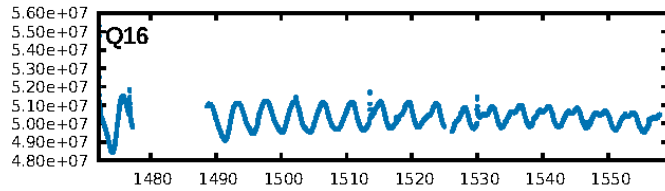
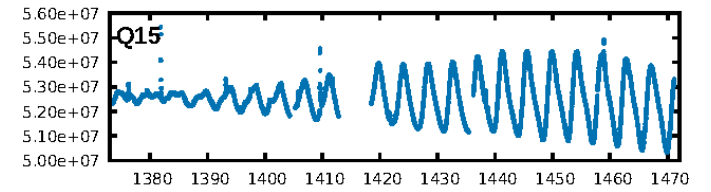
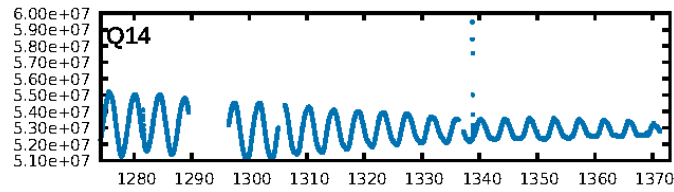
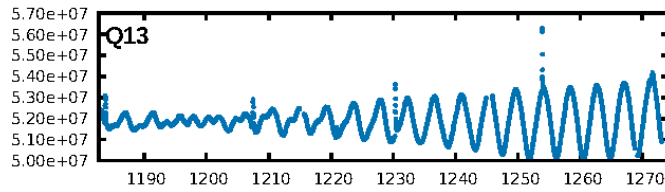
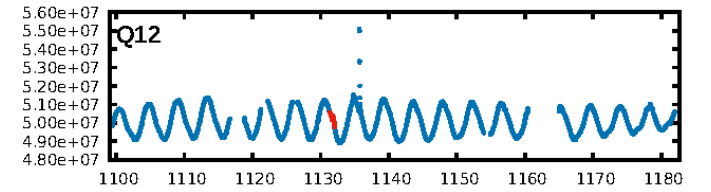
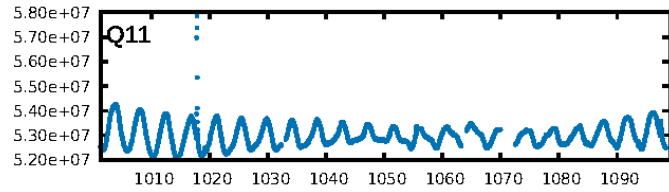
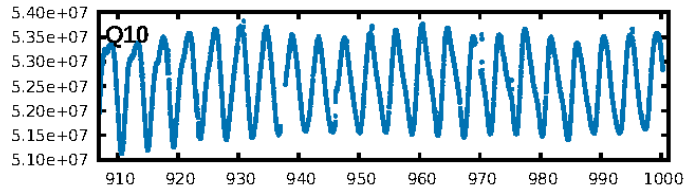
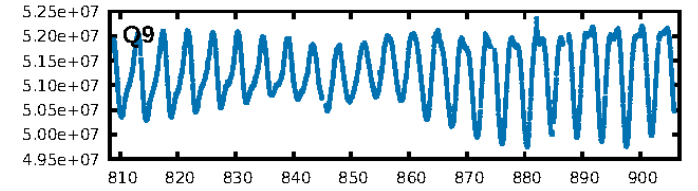
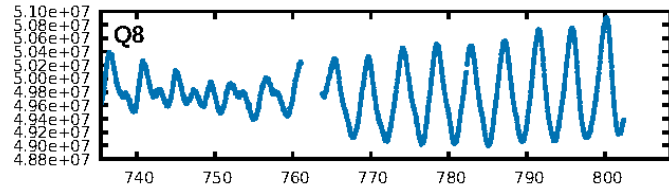
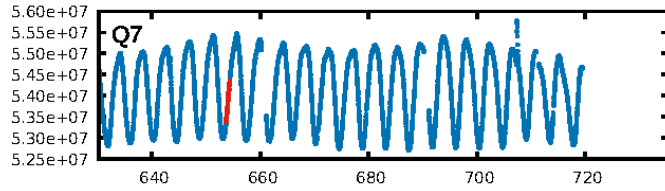
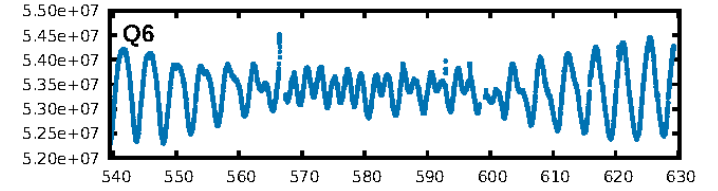
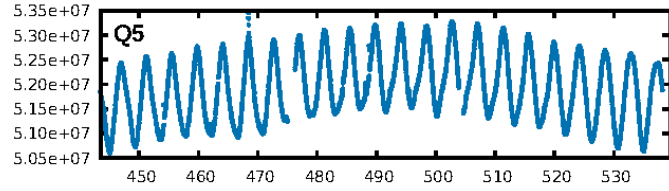
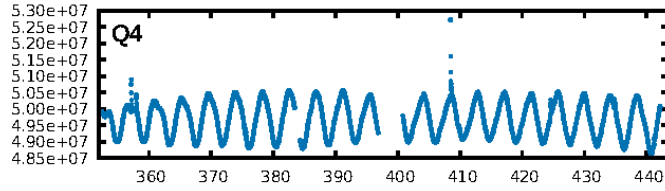
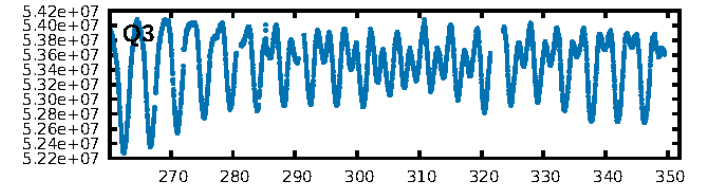
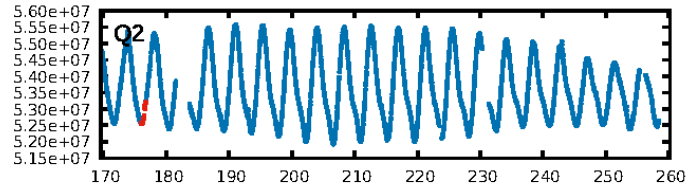
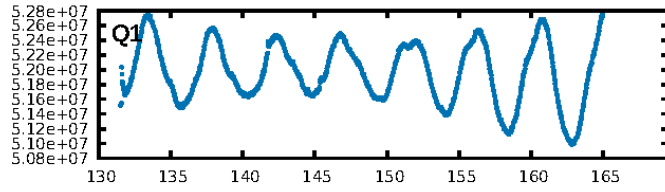
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [117.64] σ
LongPeriod-sig: 100.0% [151.52] σ
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 62.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: -0.04735
Centroid-sig: N/A
Centroid-so: 0.583 arcsec [0.91] σ
OotOffset-rm: 0.263 arcsec [1.37] σ
OotOffset-st: 1/1/1/0 [3]
KicOffset-rm: 0.263 arcsec [0.98] σ
KicOffset-st: 1/1/1/0 [3]
DiffImageQuality-fgm: 0.67 [2/3]
DiffImageOverlap-fno: 1.00 [3/3]

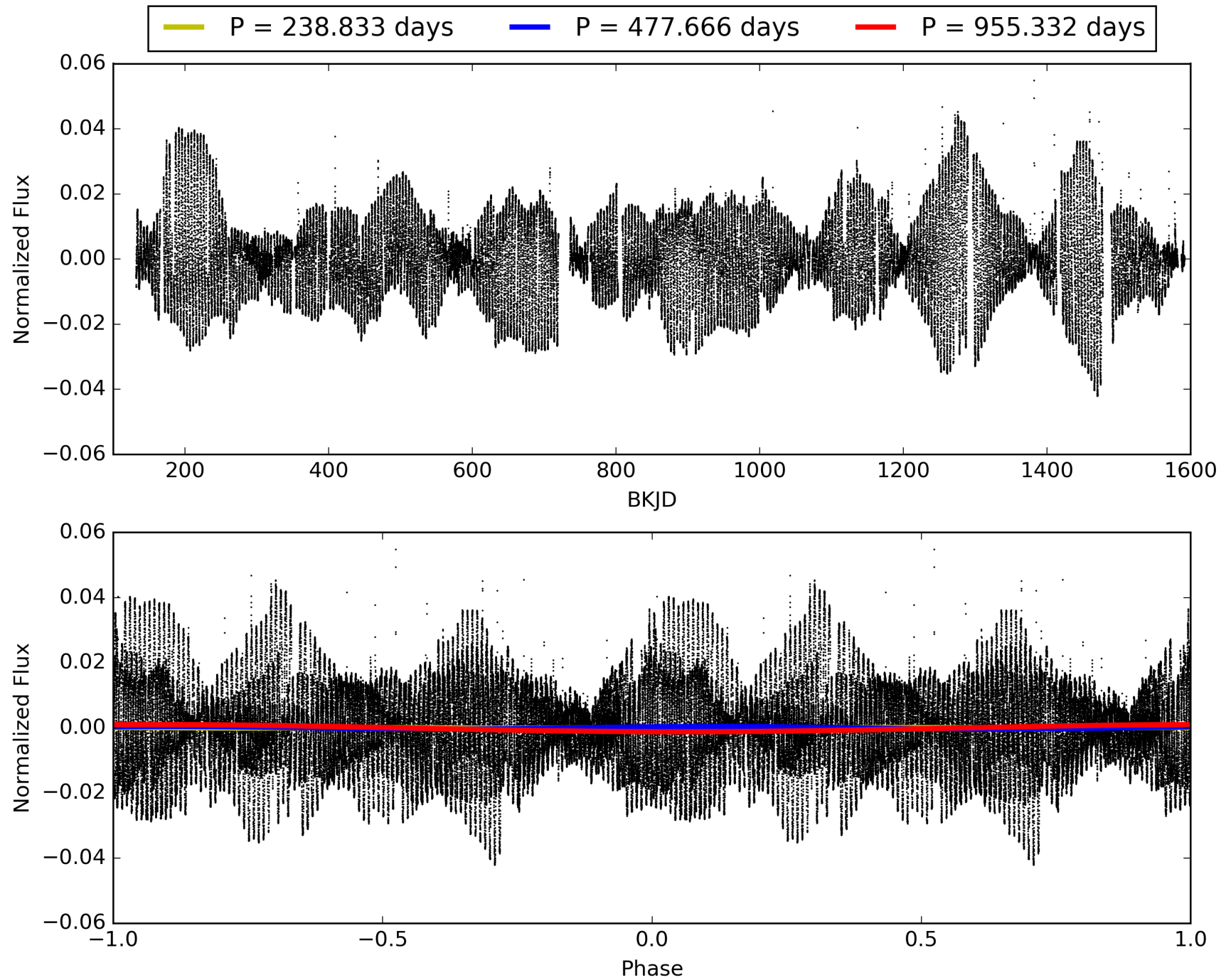
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 12:59:39 Z

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

TCE 007369224-06, PDC Light Curves

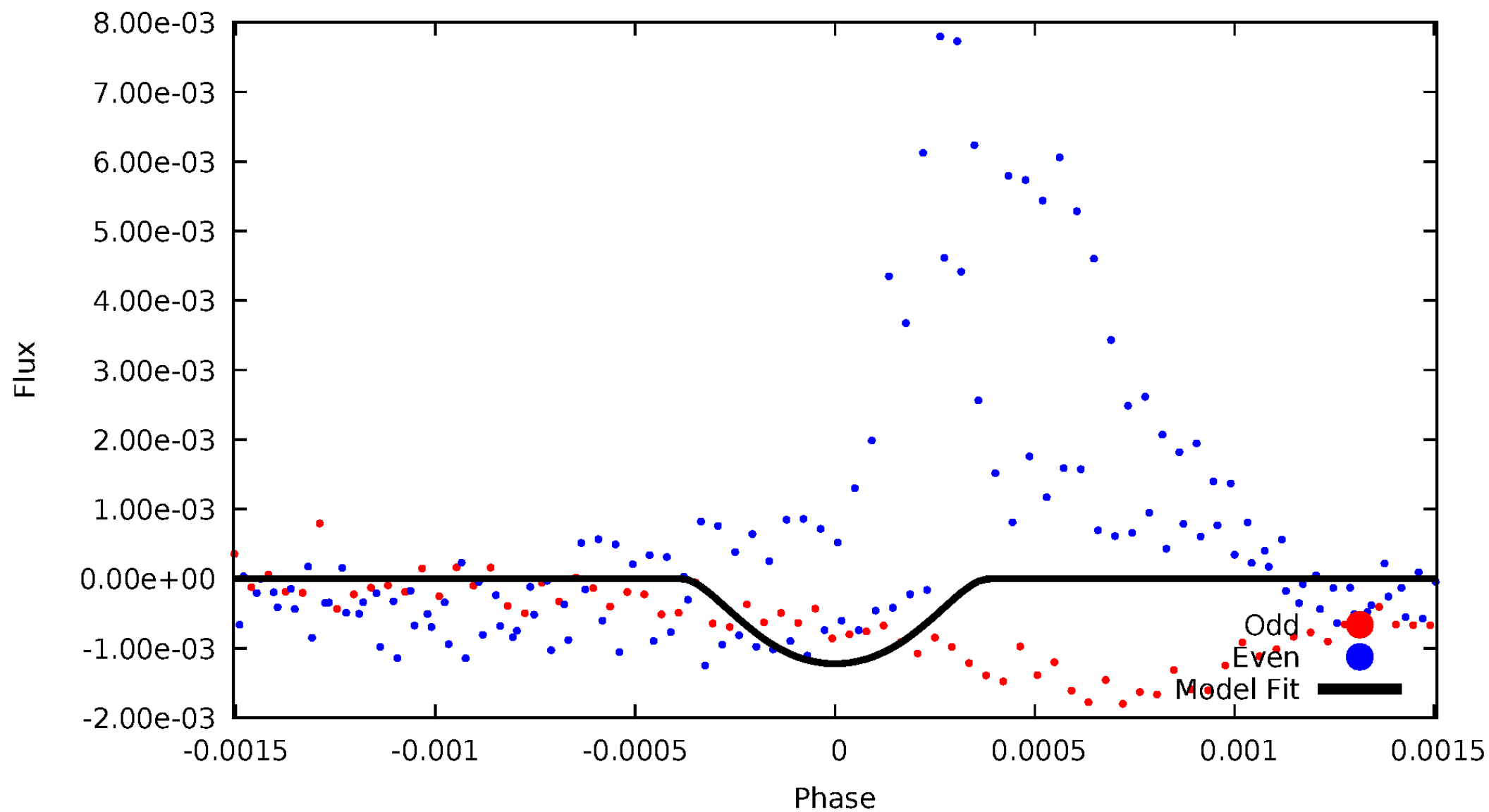


TCE 007369224-06



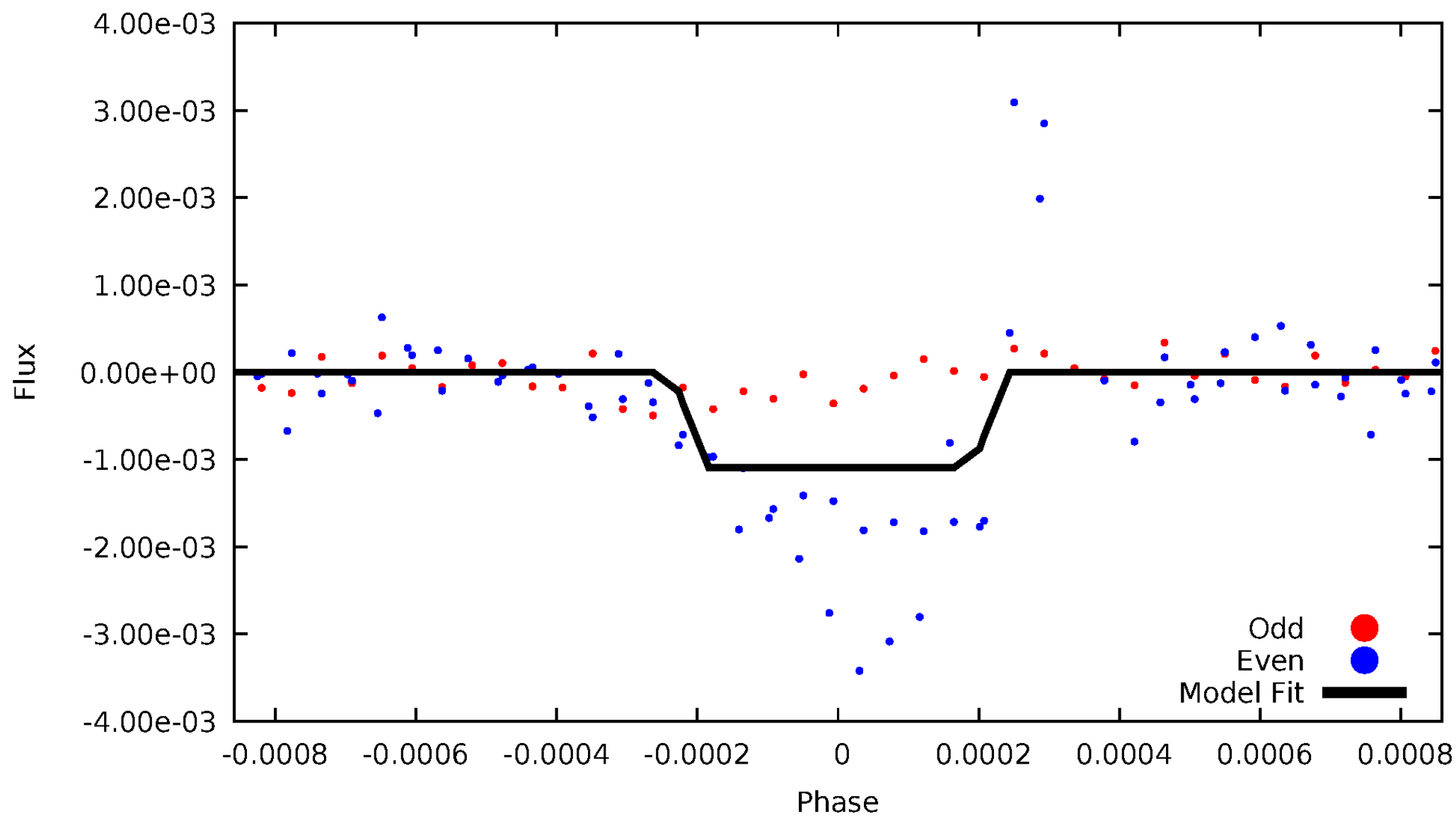
DV Odd/Even

TCE 007369224-06



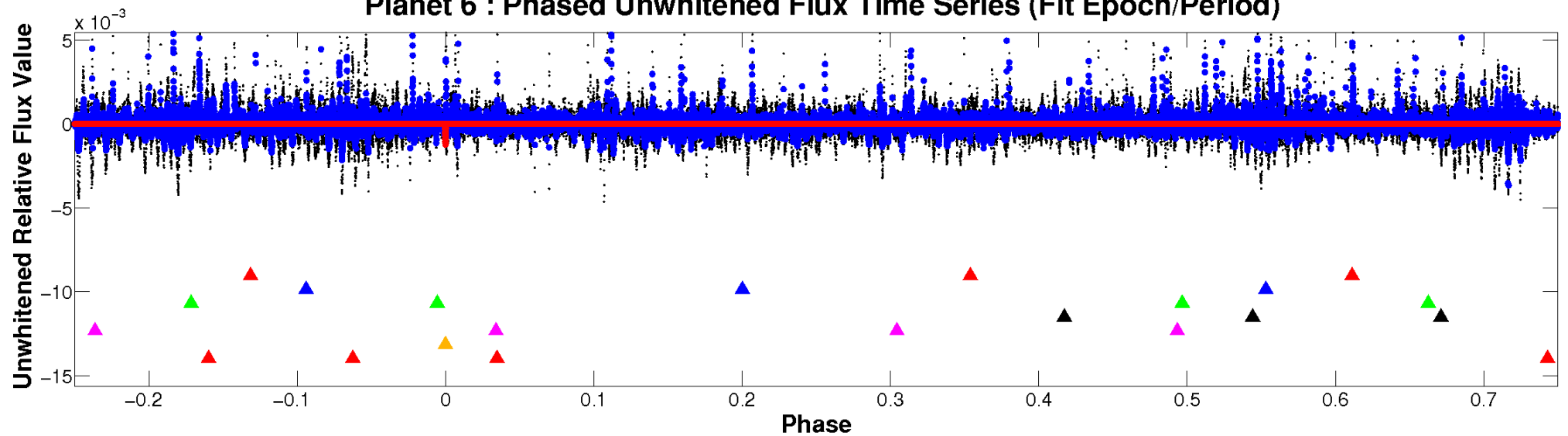
ALT Odd/Even

TCE 007369224-06

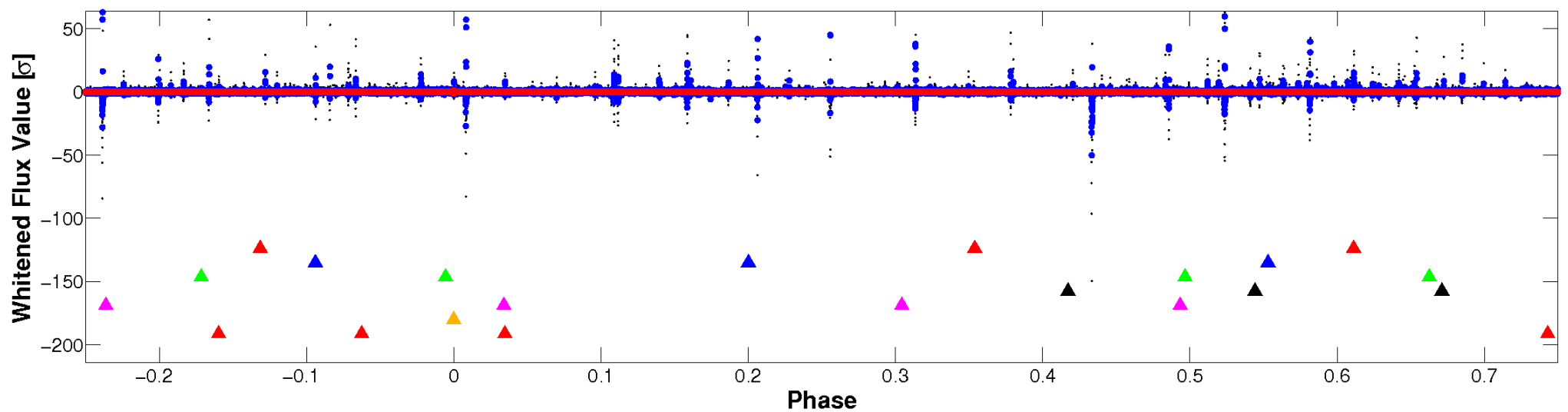


Non-Whitened Vs. Whitened Light Curve

Planet 6 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

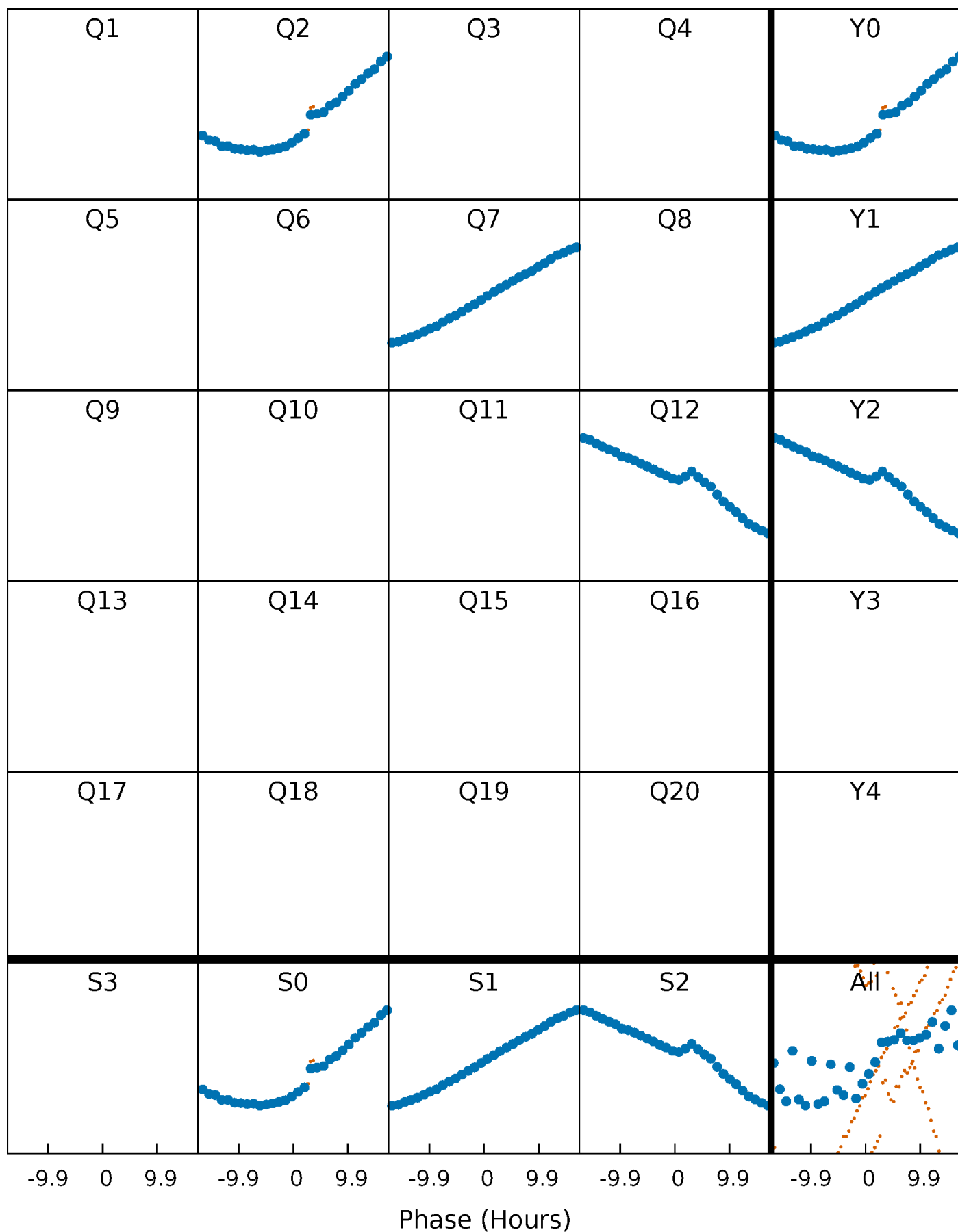


Planet 6 : Phased Whitened Flux Time Series (Fit Epoch/Period)



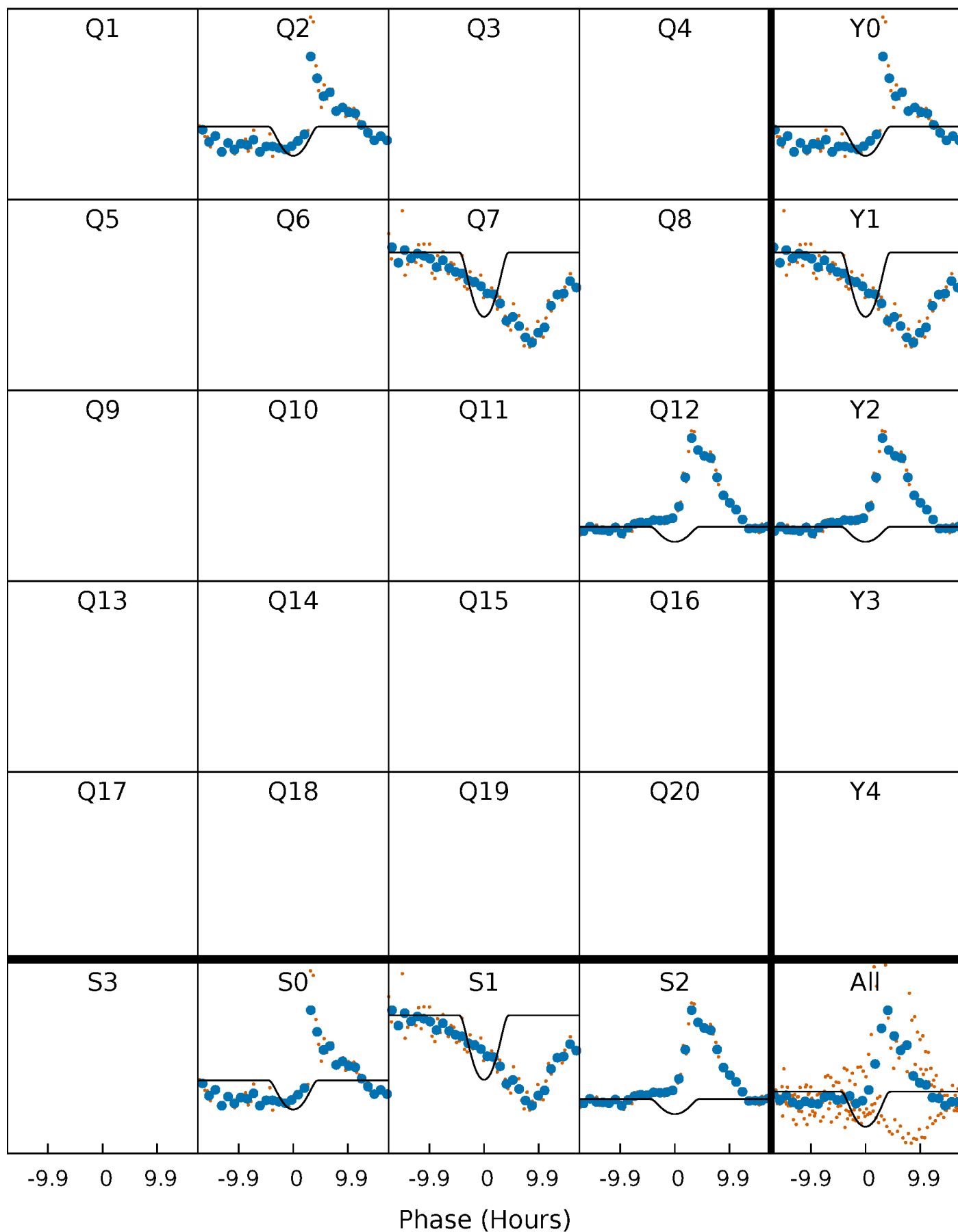
PDC Quarter-Phased Transit Curves

TCE 007369224-06 P=477.666047 Days $T_0=176.378269$ (BKJD)



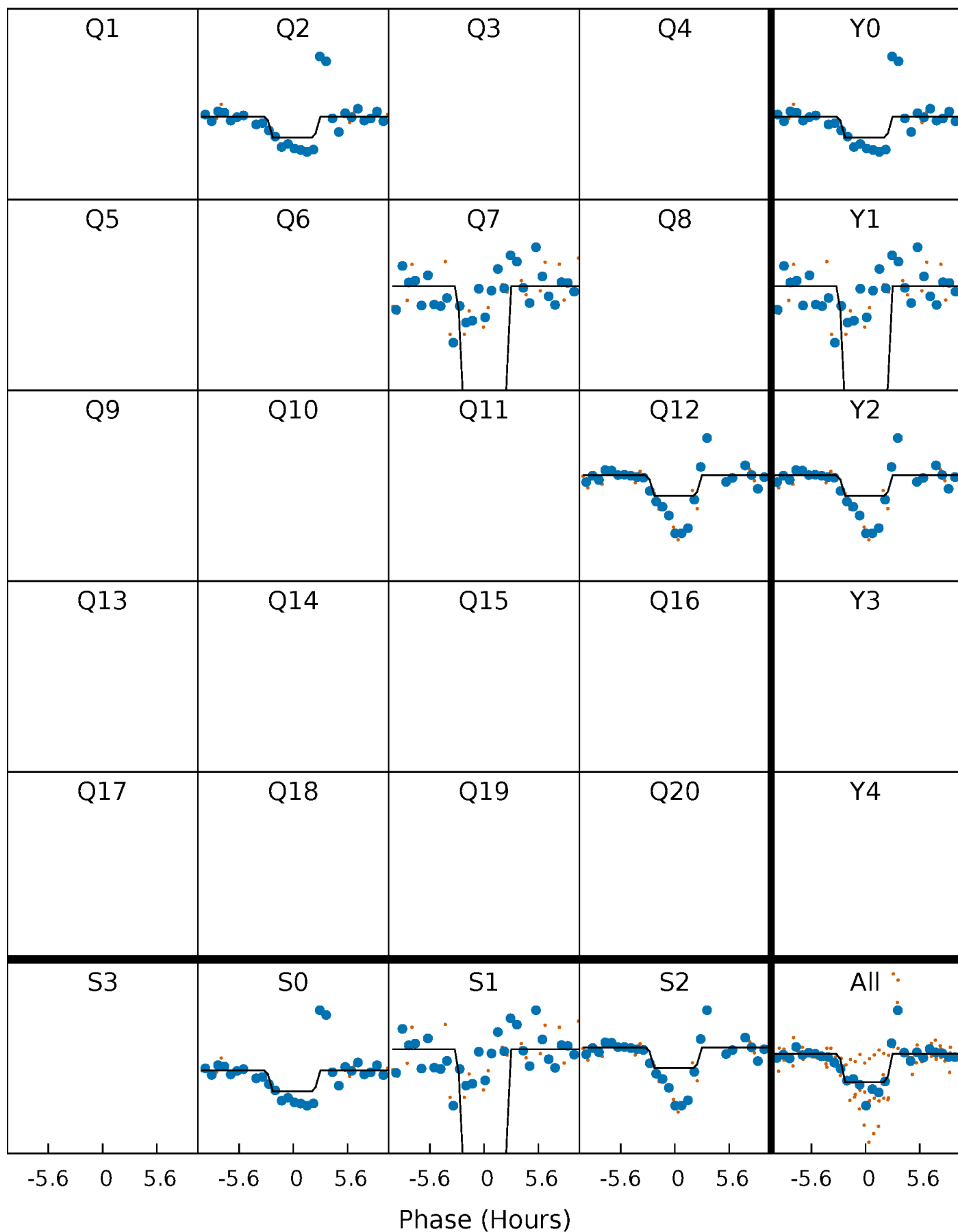
DV Quarter-Phased Transit Curves

TCE 007369224-06 P=477.666047 Days $T_0=176.378269$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

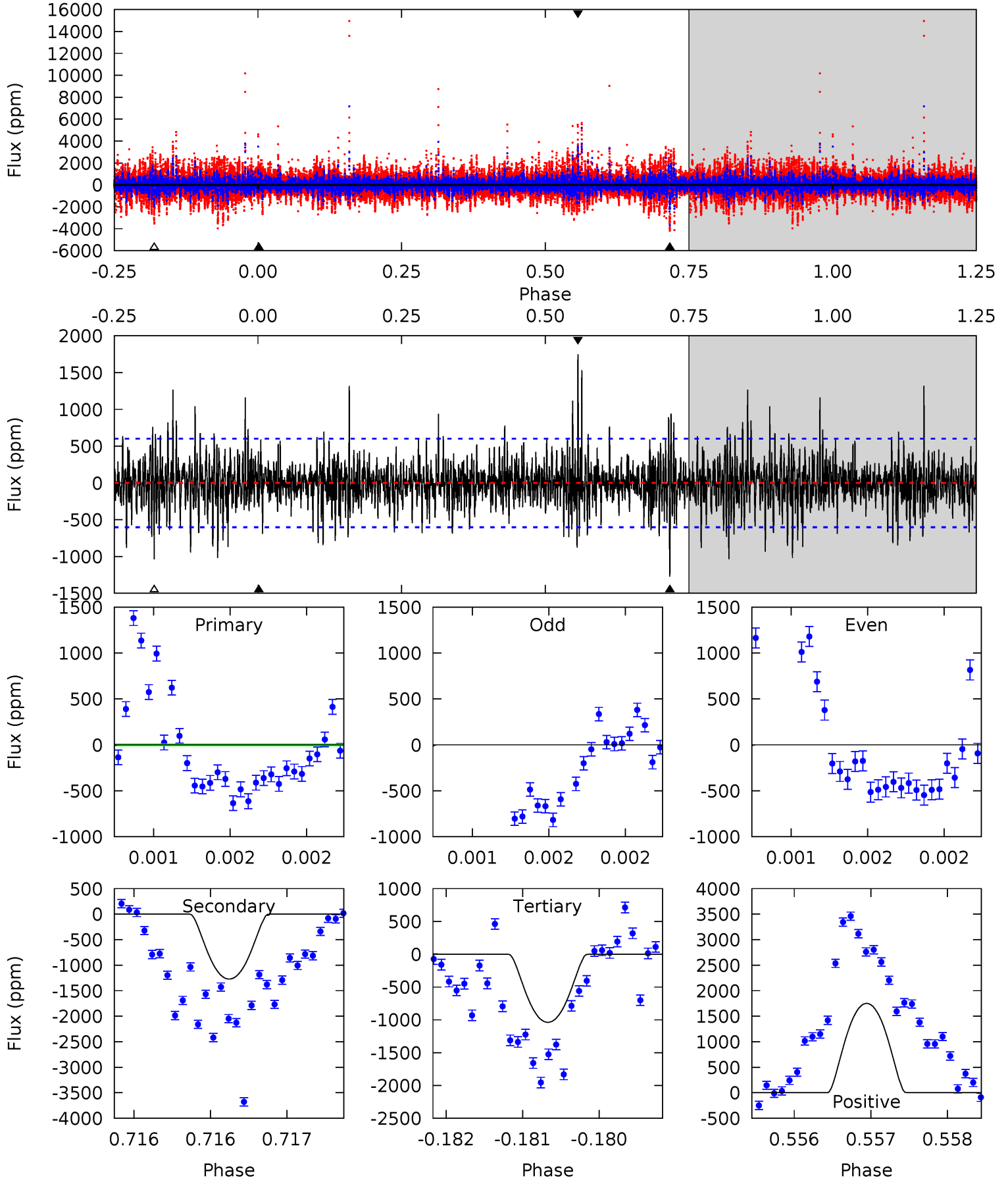
TCE 007369224-06 P=477.654899 Days $T_0=176.389113$ (BKJD)



DV Model-Shift Uniqueness Test

007369224-06, P = 477.666047 Days, E = 176.378269 Days

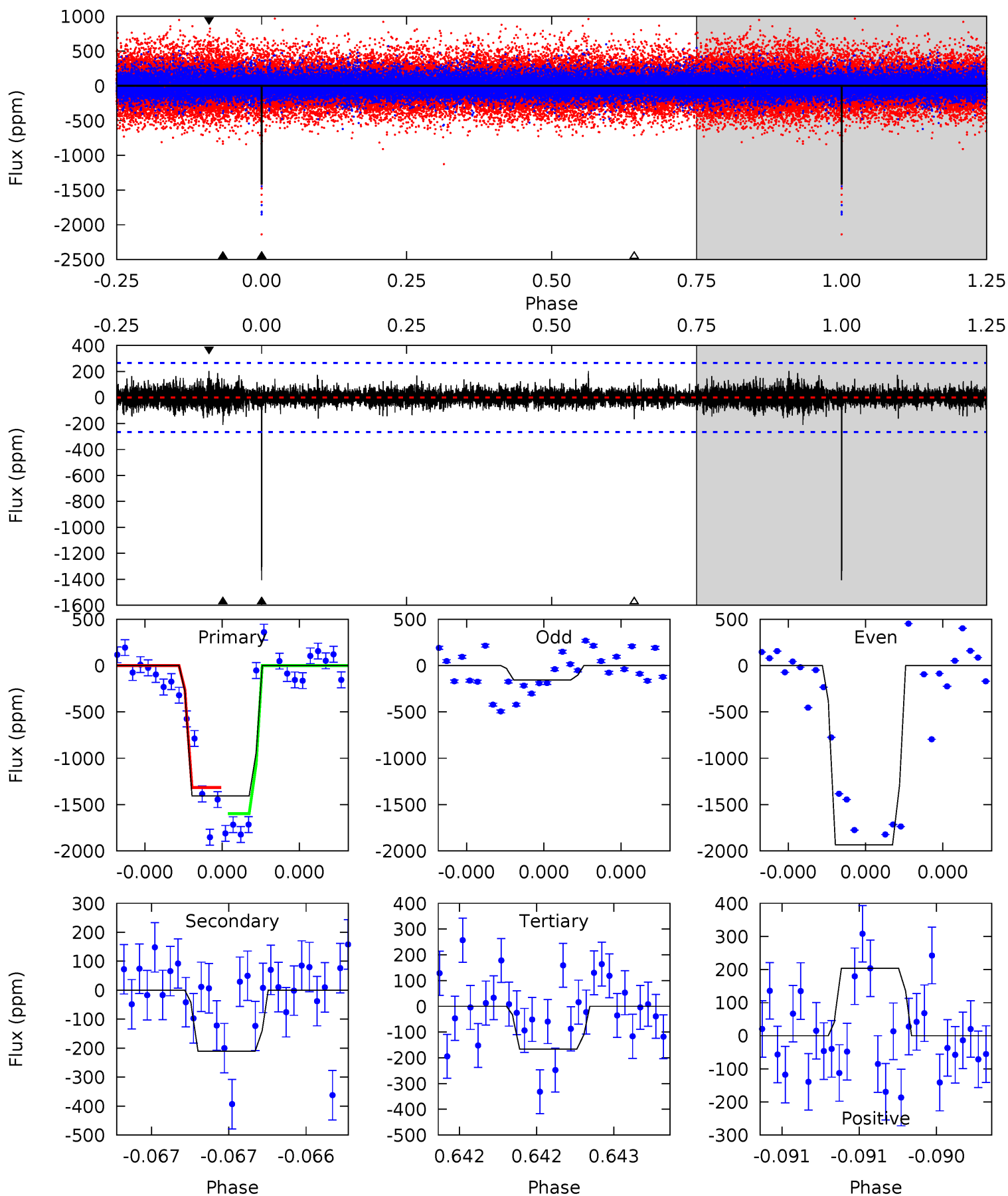
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2.80	11.6	9.48	16.0	5.50	3.37	2.32	-6.68	-13.2	2.14	-4.37	0.97	-0.64	0.58	0.93



Alt Model-Shift Uniqueness Test

007369224-06, P = 477.654899 Days, E = 176.389113 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
29.6	4.42	3.49	4.28	5.58	3.50	0.73	26.1	25.3	0.92	0.13	23.3	0.83	0.13	0



Stellar Parameters For KIC 007369224

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5427^{+161}_{-161}	$4.551^{+0.099}_{-0.081}$	$-0.720^{+0.300}_{-0.300}$	$0.725^{+0.088}_{-0.079}$	$0.682^{+0.085}_{-0.034}$	$2.518^{+0.970}_{-0.644}$
	+3%/-3%	+2%/-2%	+42%/-42%	+12%/-11%	+12%/-5%	+39%/-26%
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 007369224-06 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-1272 ± 109	$3.94^{+2.80}_{-2.19}$	276^{+13}_{-12}	4679^{+2237}_{-832}	$50559^{+205990}_{-33311}$
Alt.	-210 ± 48	$3.35^{+2.44}_{-2.15}$	277^{+13}_{-12}	3623^{+1765}_{-615}	11719^{+89676}_{-8165}

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

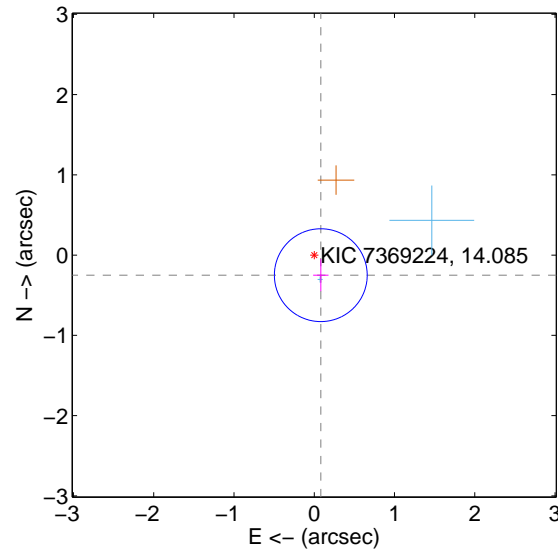
Supplemental centroid analysis for 007369224-06. Kepler magnitude: 14.09. Transit SNR 6.65

There are 2 quarters with good PRF difference image offsets

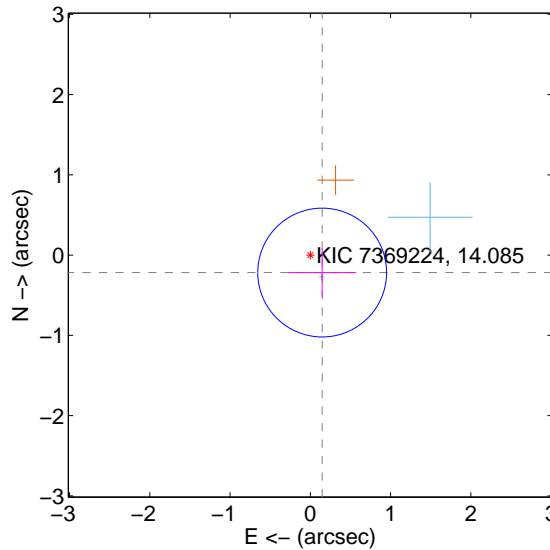
The direct PRF centroid is offset from the target star catalog position by about 0.04 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.263 ± 0.193	1.37	-0.082 ± 0.095	-0.250 ± 0.200
PRF-fit source offset from KIC position	0.263 ± 0.267	0.98	-0.148 ± 0.424	-0.218 ± 0.303
photometric centroid source offset	0.58 ± 0.64	0.91	-0.50 ± 0.67	0.31 ± 0.56

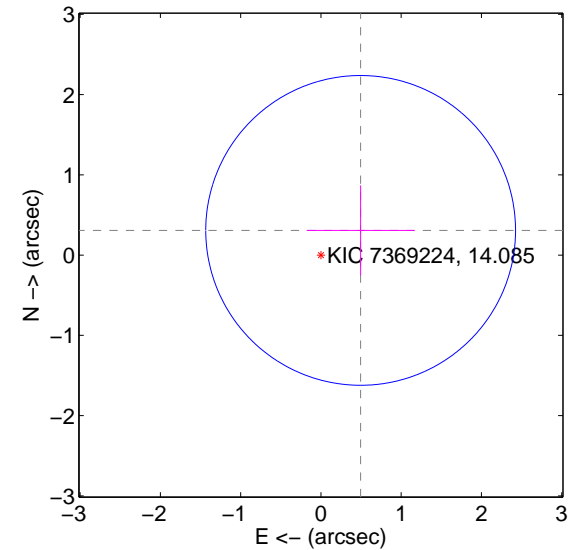
offset from difference PRF-fit to OOT PRF-fit



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.

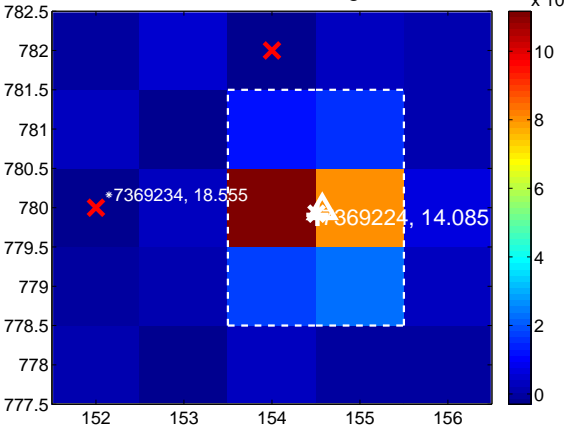
Q1 no difference image



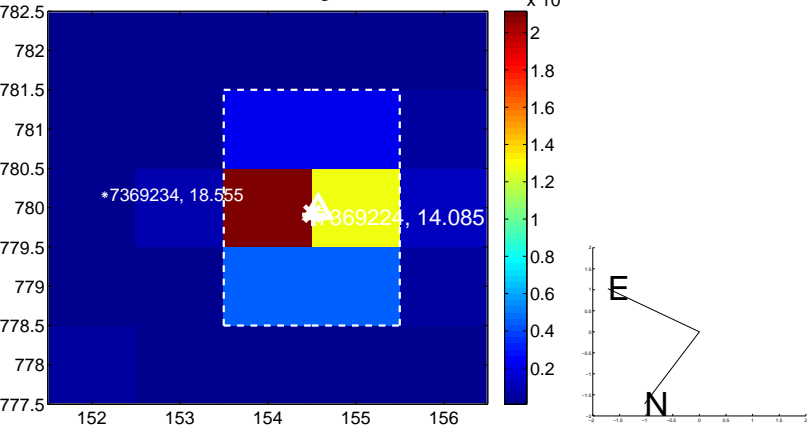
Q1 no OOT image



Q2 difference image



Q2 OOT image



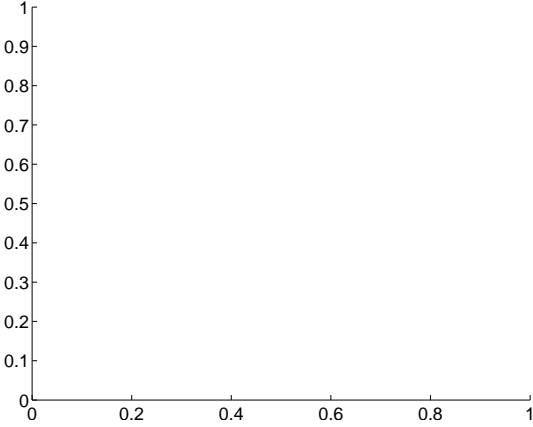
Q3 no difference image



Q3 no 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.

Q5 no difference image



Q5 no OOT image



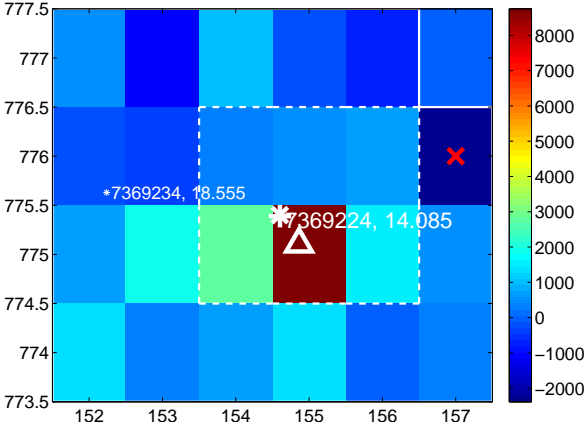
Q6 no difference image



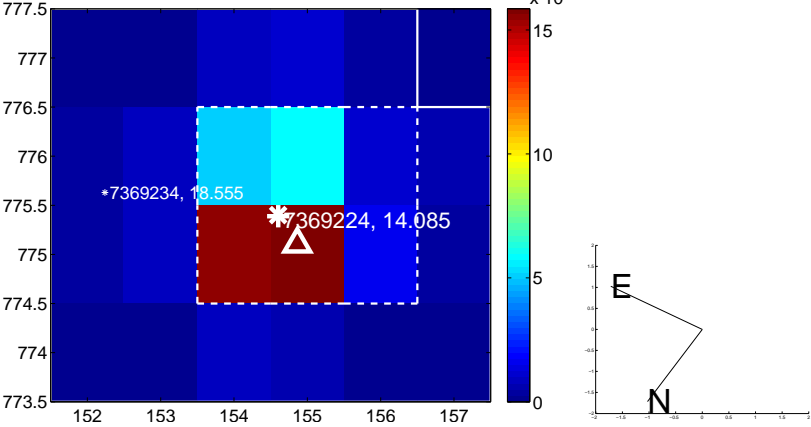
Q6 no OOT image



Q7 difference image



Q7 OOT image



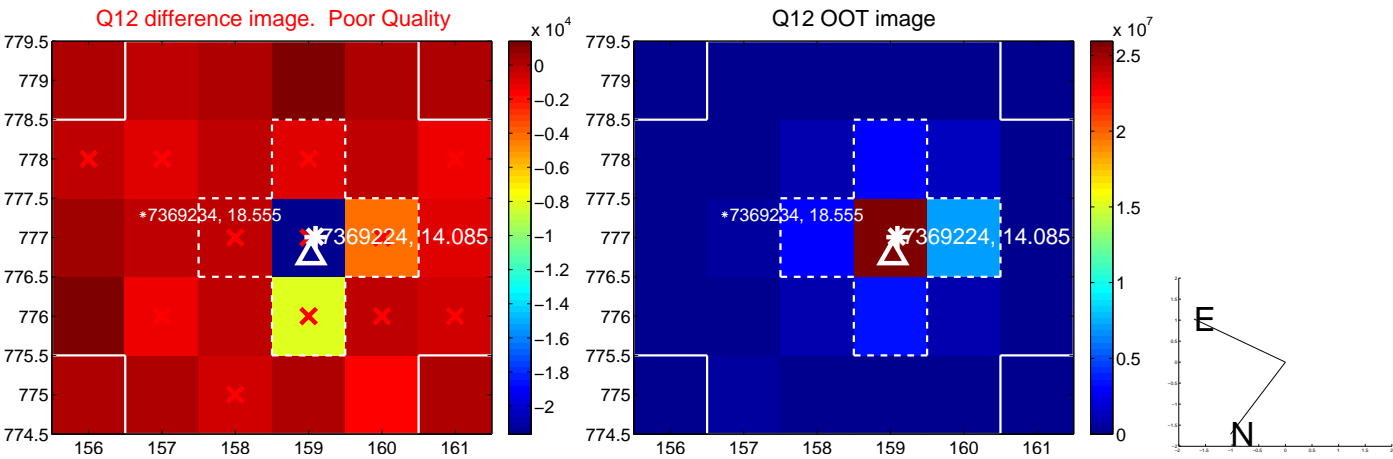
Q8 no difference image



Q8 no OOT image



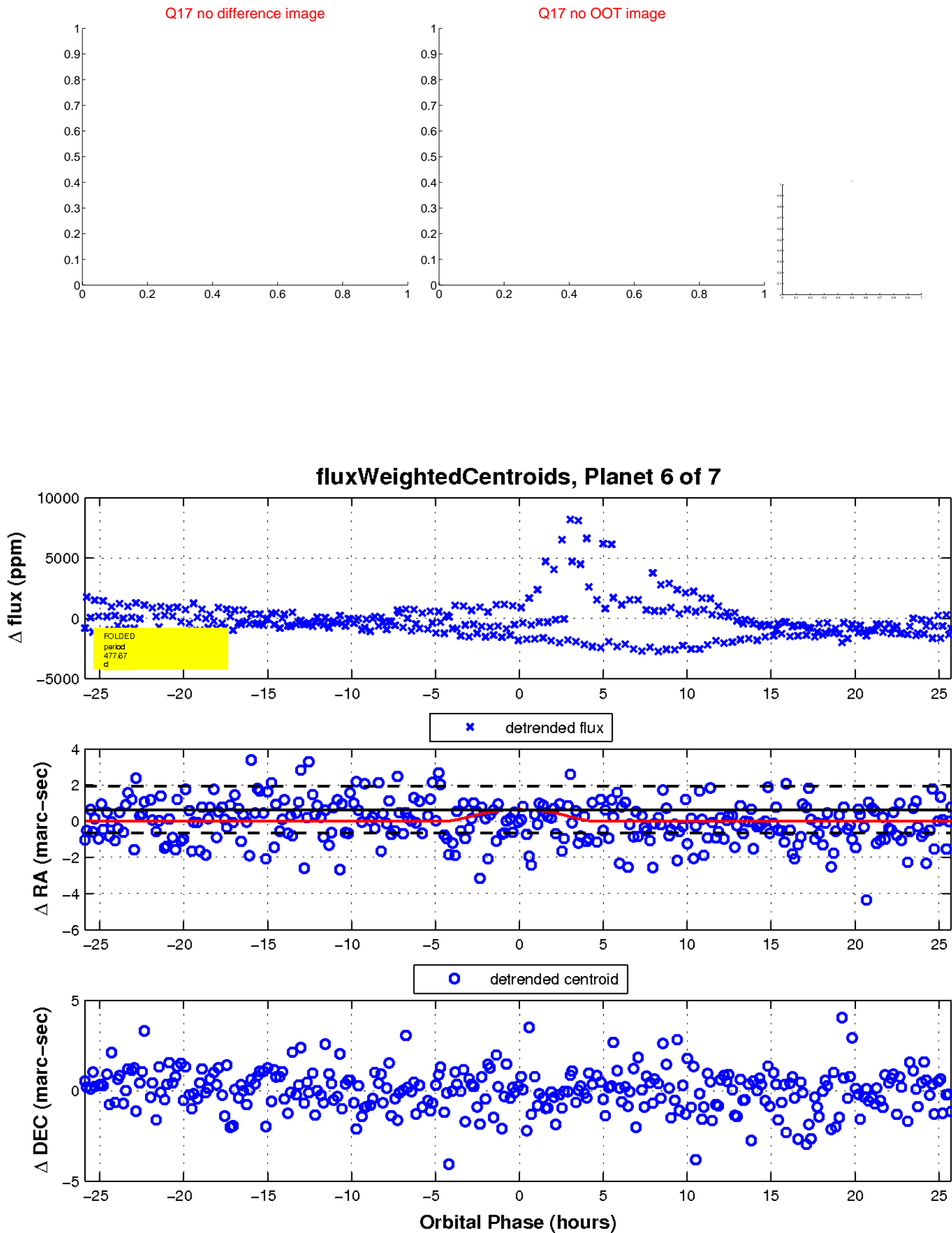
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

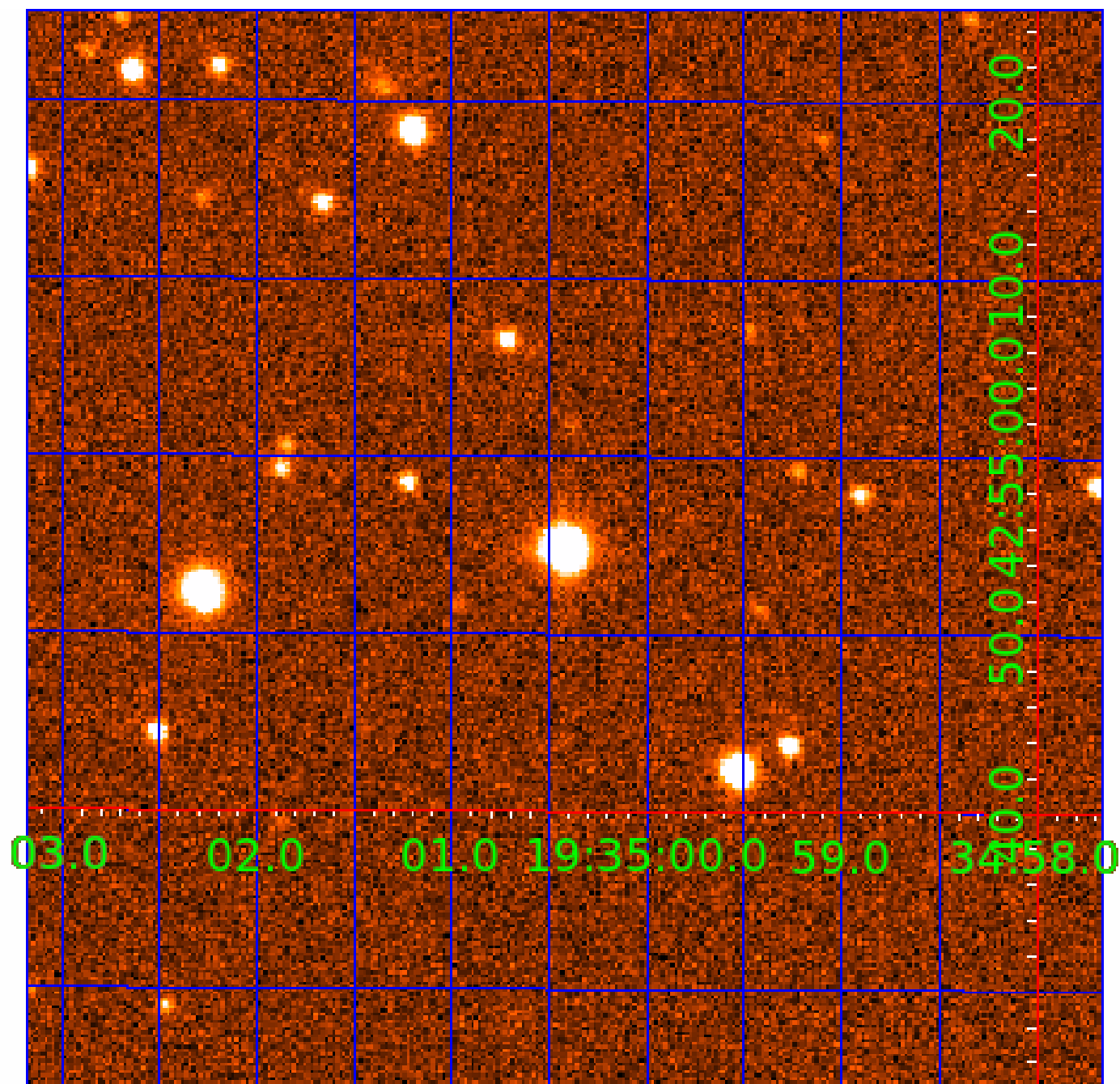


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 007369224

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})
007369224-01	OBS	No	600.585081	345.428100	1887.9	3.290	25.8	12.0	0.72	5427	3.24	0.27
007369224-02	OBS	No	646.244436	272.003648	2020.3	3.024	17.4	16.9	0.72	5427	3.41	0.25
007369224-03	OBS	No	398.412126	173.735645	534.2	8.363	16.9	3.7	0.72	5427	1.70	0.47
007369224-04	OBS	No	538.312423	375.689869	1200.7	4.213	12.5	9.2	0.72	5427	2.55	0.31
007369224-05	OBS	No	348.548227	321.755669	757.6	9.331	14.3	5.1	0.72	5427	2.11	0.56
007369224-06	OBS	No	477.666047	176.378270	1223.2	8.633	13.7	6.7	0.72	5427	3.69	0.37
007369224-07	OBS	No	431.223783	192.974688	1059.0	3.904	16.4	8.2	0.72	5427	2.56	0.42

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007369224-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
007369224-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_POS_DV—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS
007369224-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
007369224-04	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—CENT_FEW_DIFFS
007369224-05	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS
007369224-06	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_SKYE_ZUMA—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
007369224-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS

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

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

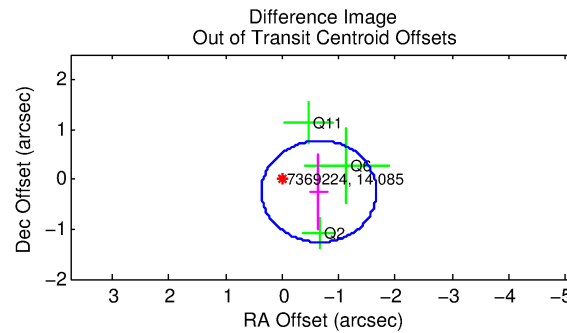
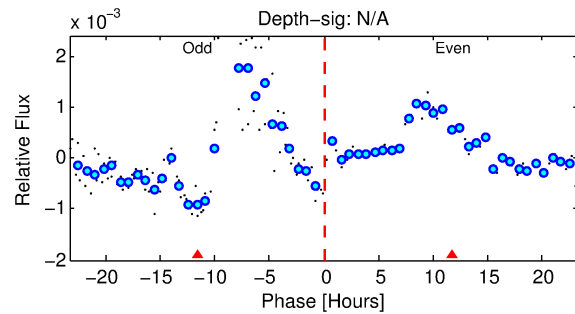
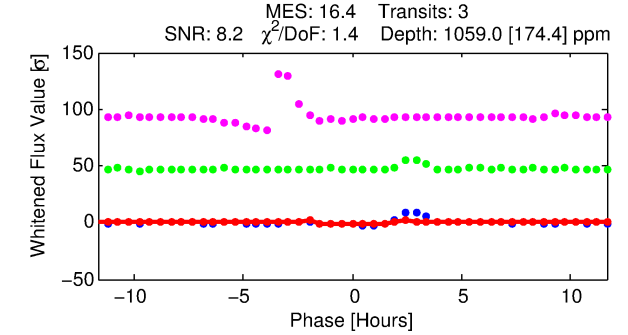
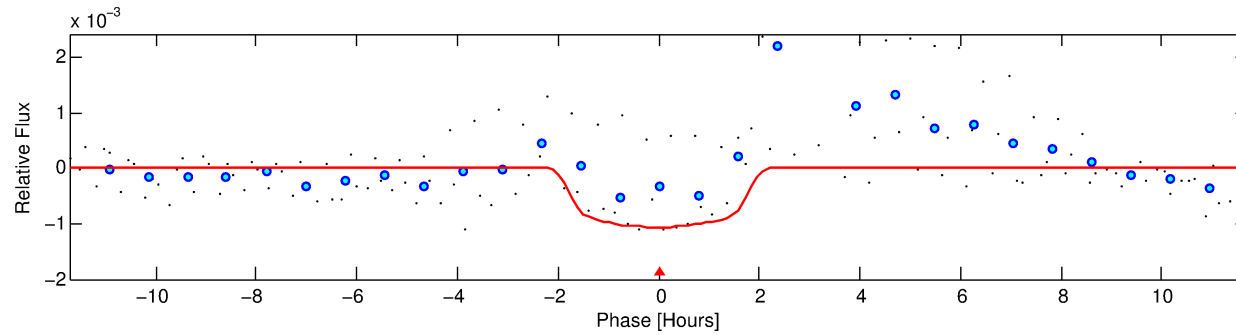
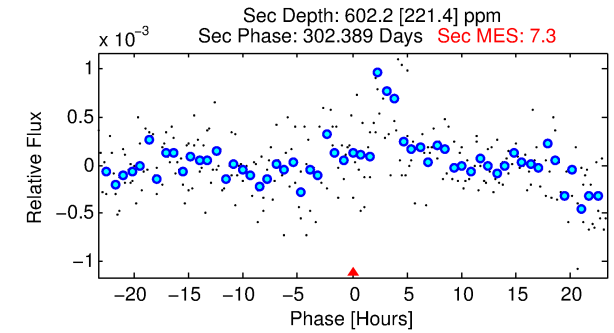
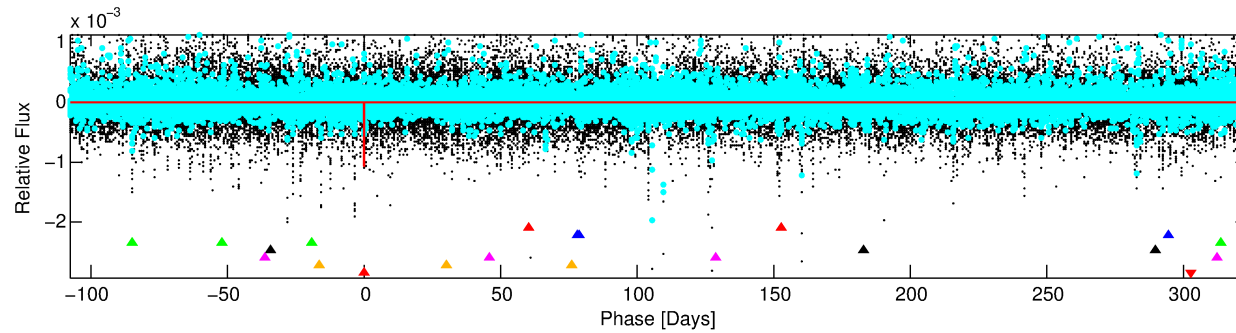
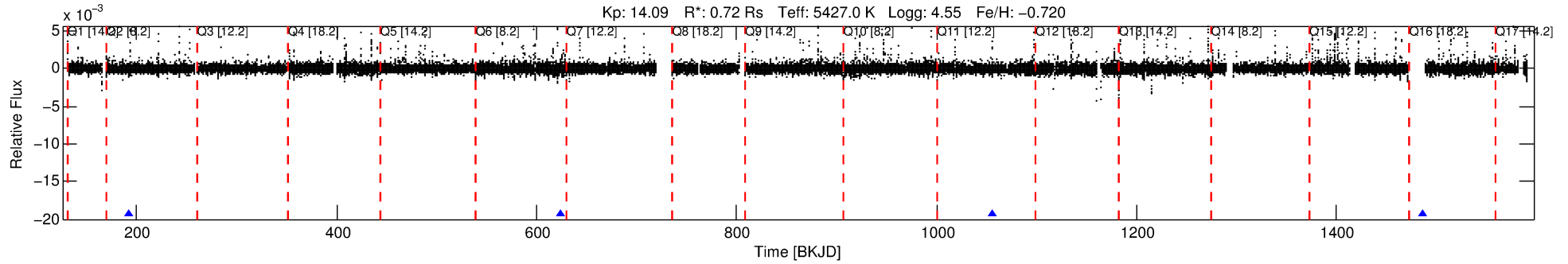
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007369224-07

No Significant Match Found

DV One-Page Summary

KIC: 7369224 Candidate: 7 of 7 Period: 431.224 d



DV Fit Results:

Period = 431.22378 [0.00555] d
Epoch = 192.9747 [0.0072] BKJD
Rp/R* = 0.0323 [0.0159]
a/R* = 602.46 [1269.97]
b = 0.75 [1.27]
Seff = 0.42 [0.09]
Teq = 206 [11] K
Rp = 2.56 [1.30] Re
a = 0.9834 [0.1092] AU
Ag = 48949.44 [52094.06] [0.94 σ]
Teffp = 4728 [1249] K [3.62 σ]

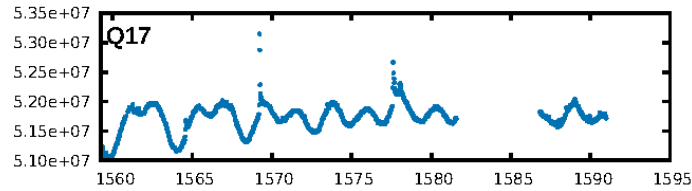
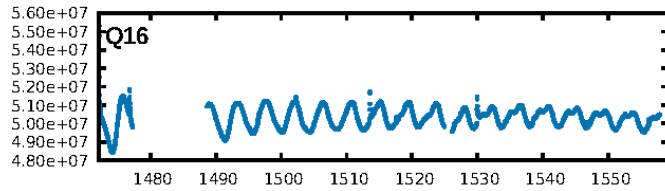
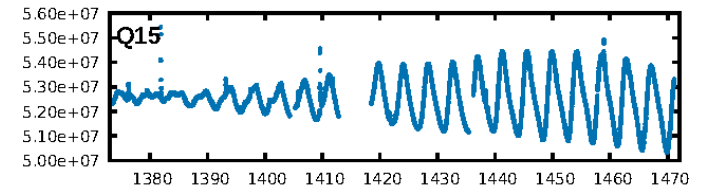
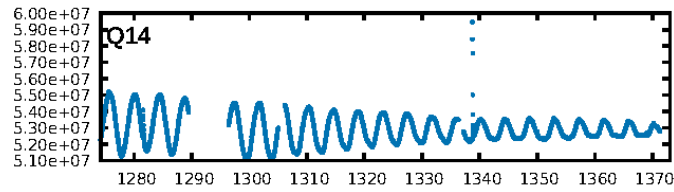
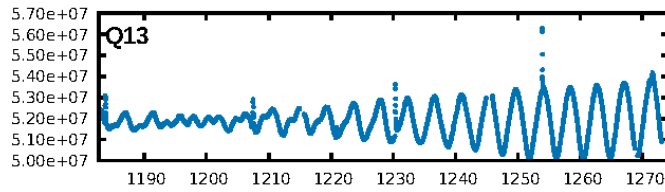
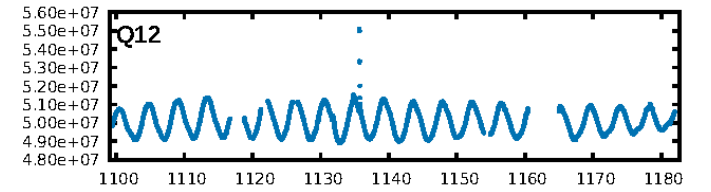
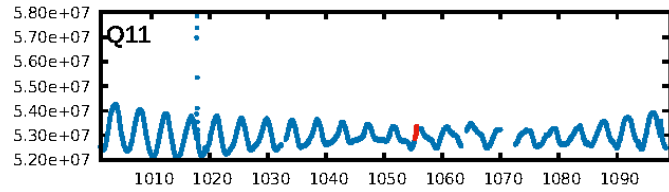
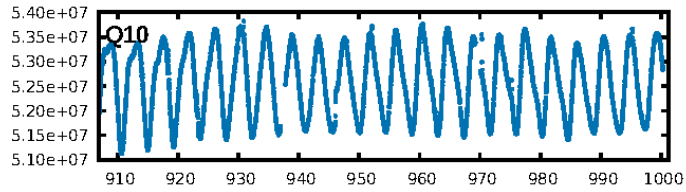
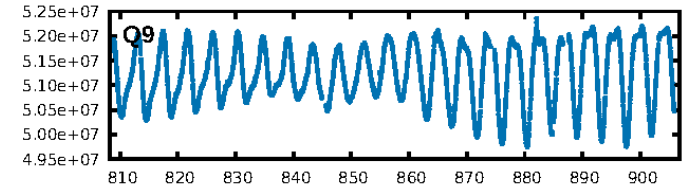
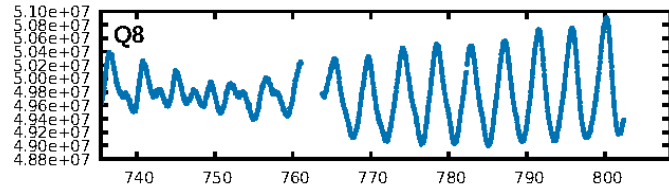
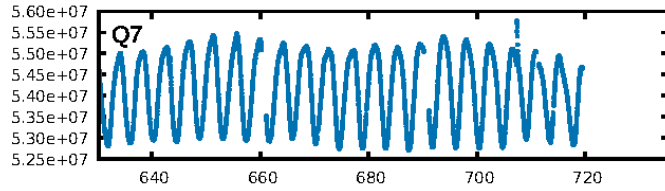
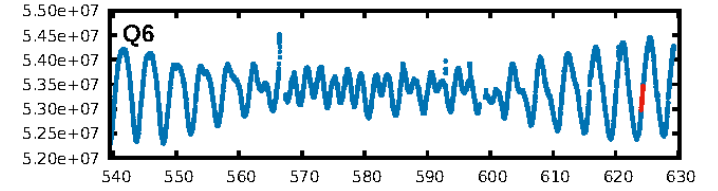
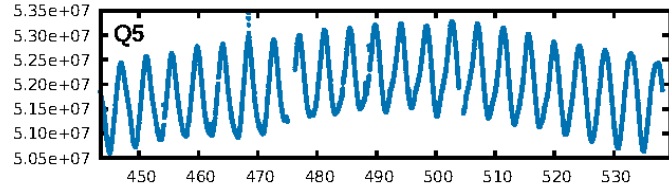
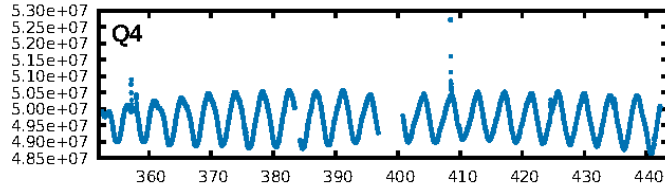
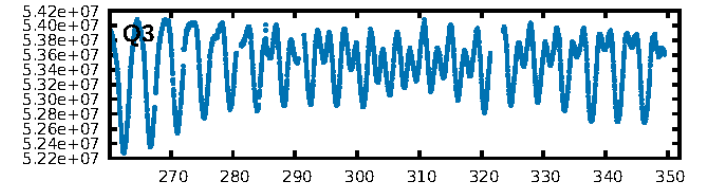
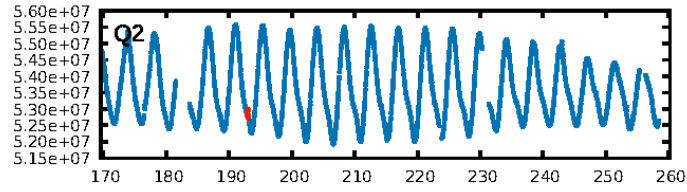
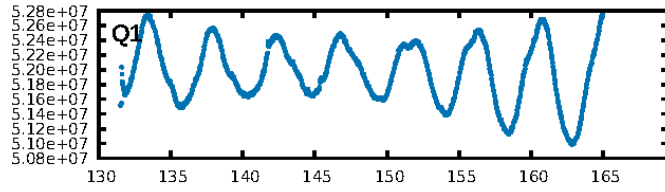
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [85.32 σ]
LongPeriod-sig: 100.0% [117.64 σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 5.1%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 2.747
Centroid-sig: N/A
Centroid-so: 0.614 arcsec [0.84 σ]
OotOffset-rm: 0.695 arcsec [2.05 σ]
OotOffset-st: 2/1/0/0 [3]
KicOffset-rm: 0.745 arcsec [2.41 σ]
KicOffset-st: 2/1/0/0 [3]
DiffImageQuality-fgm: 0.33 [1/3]
DiffImageOverlap-fno: 1.00 [3/3]

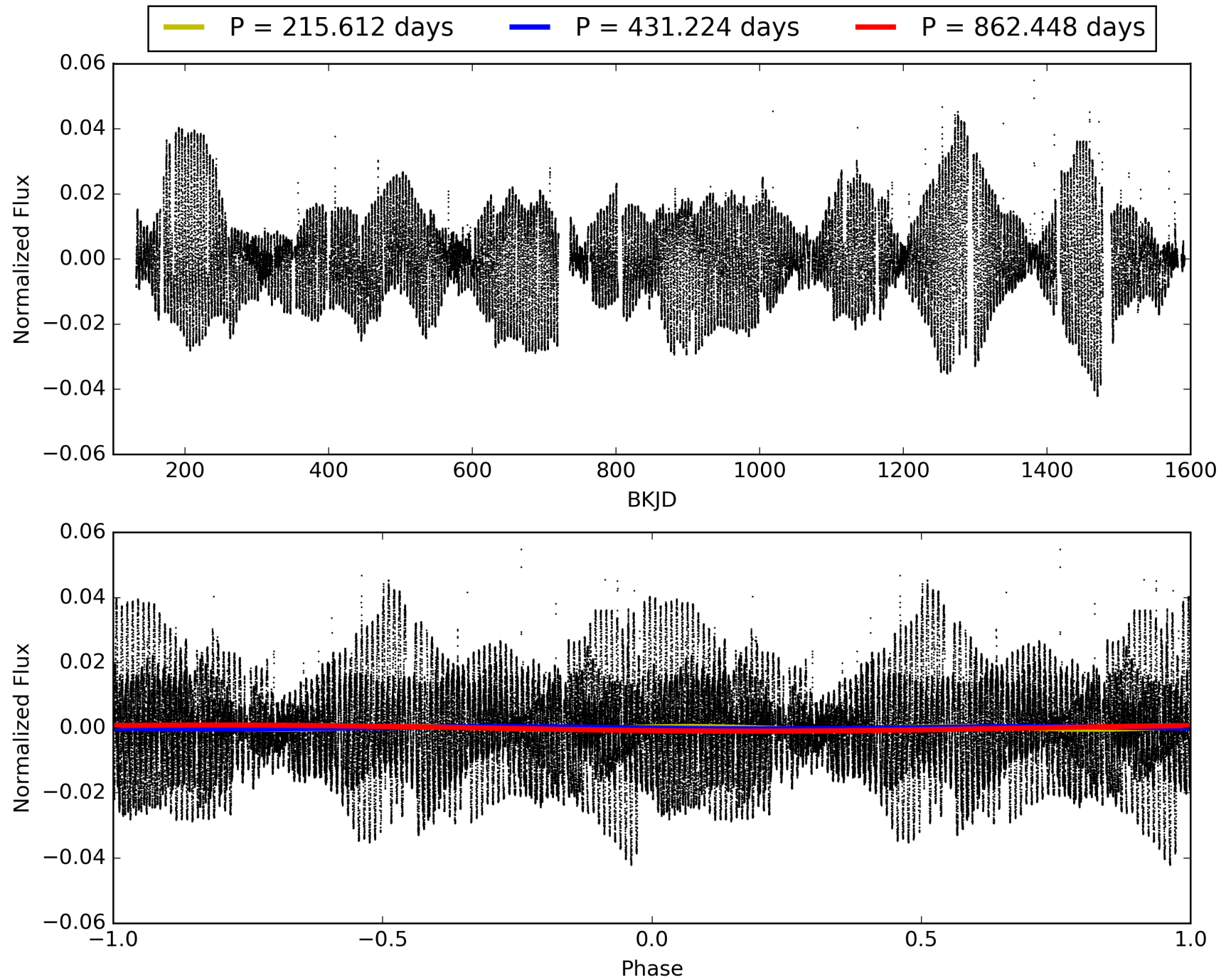
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 12:59:55 Z

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

TCE 007369224-07, PDC Light Curves

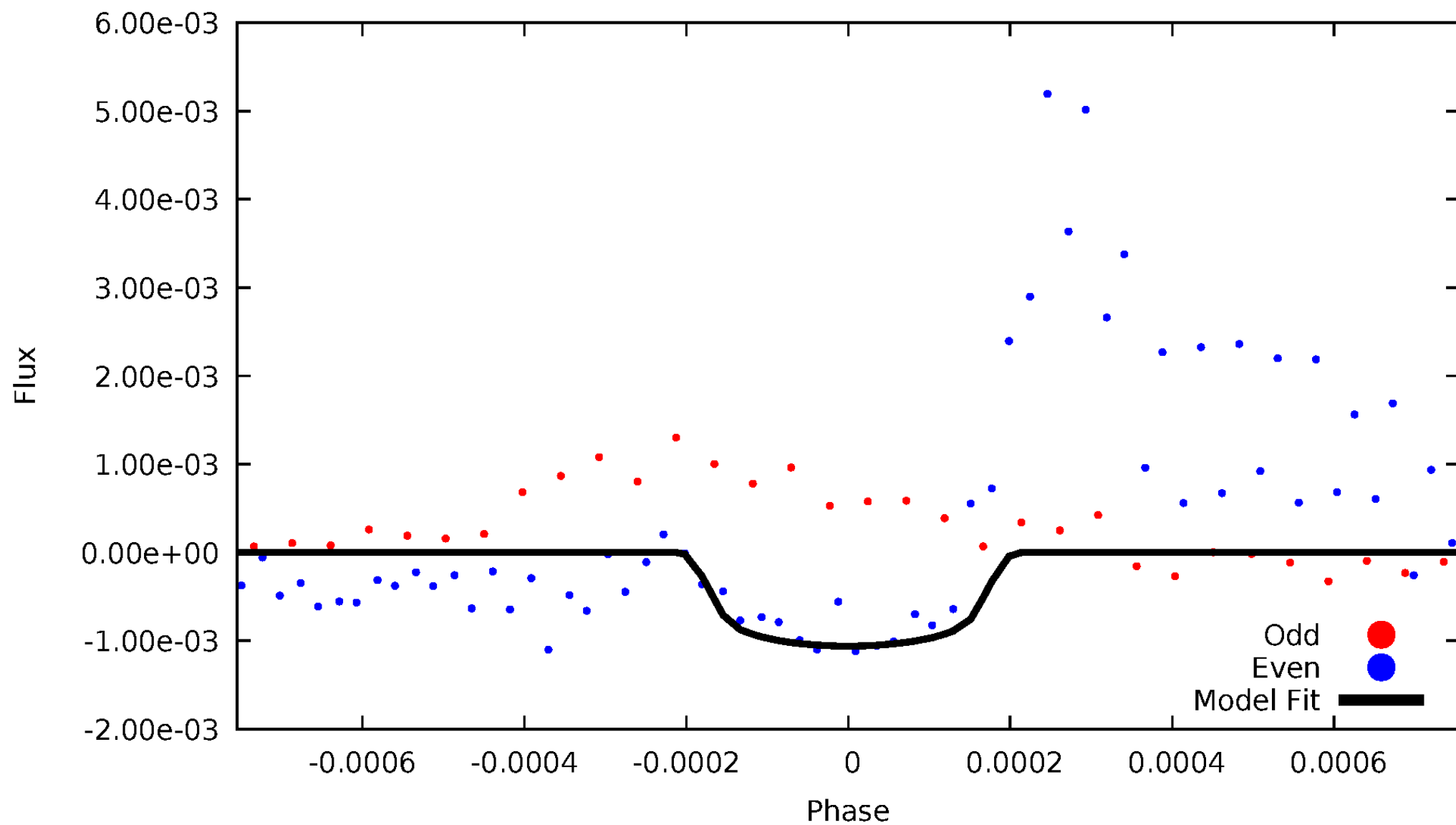


TCE 007369224-07



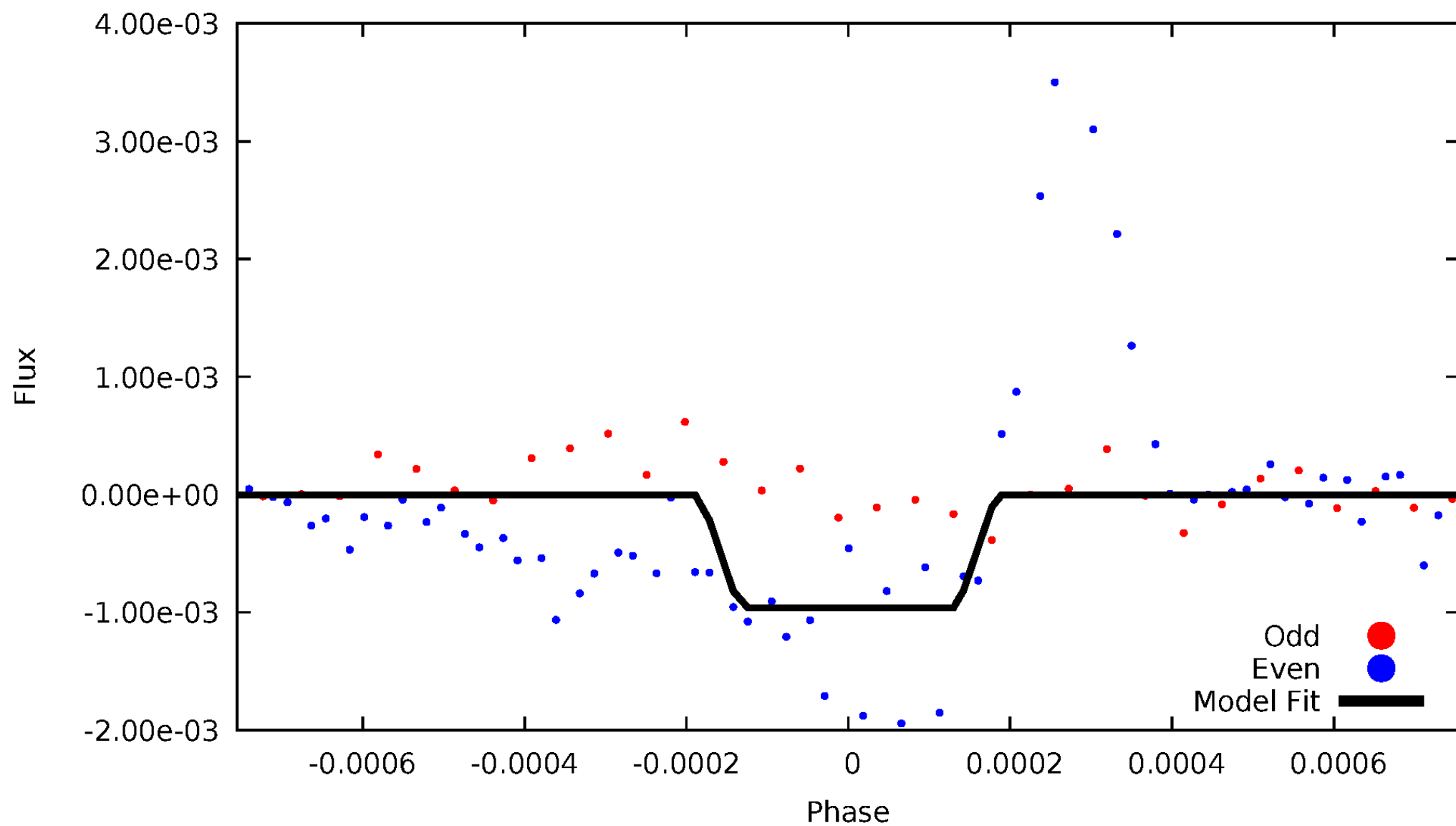
DV Odd/Even

TCE 007369224-07



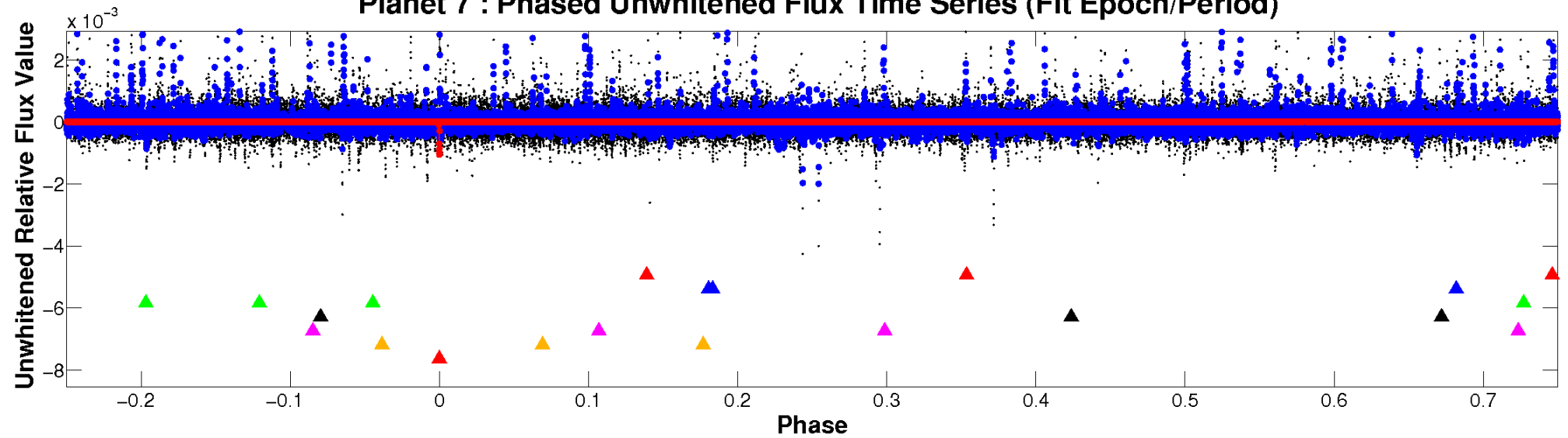
ALT Odd/Even

TCE 007369224-07

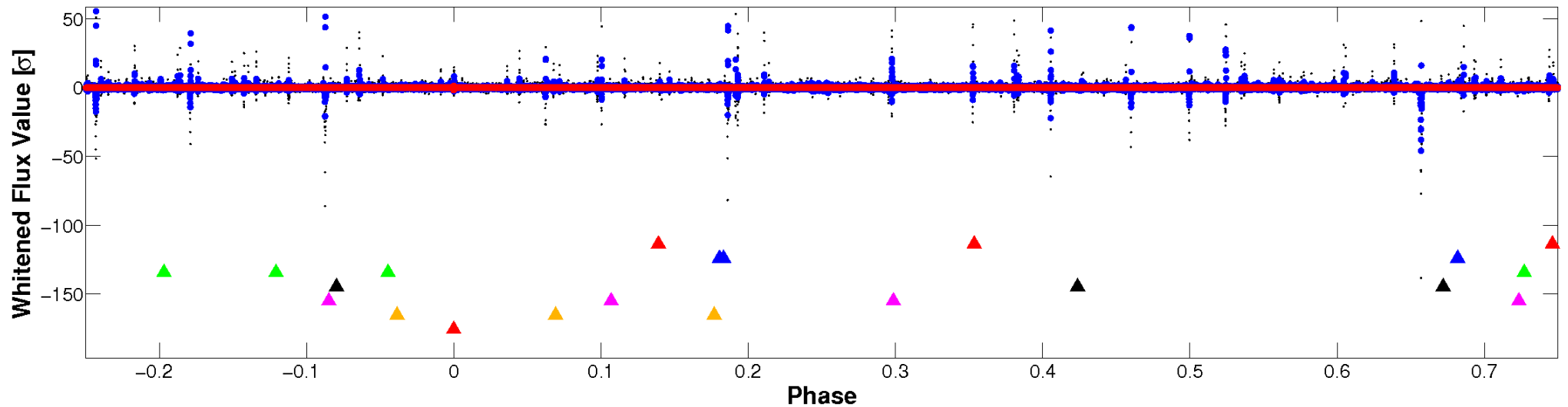


Non-Whitened Vs. Whitened Light Curve

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

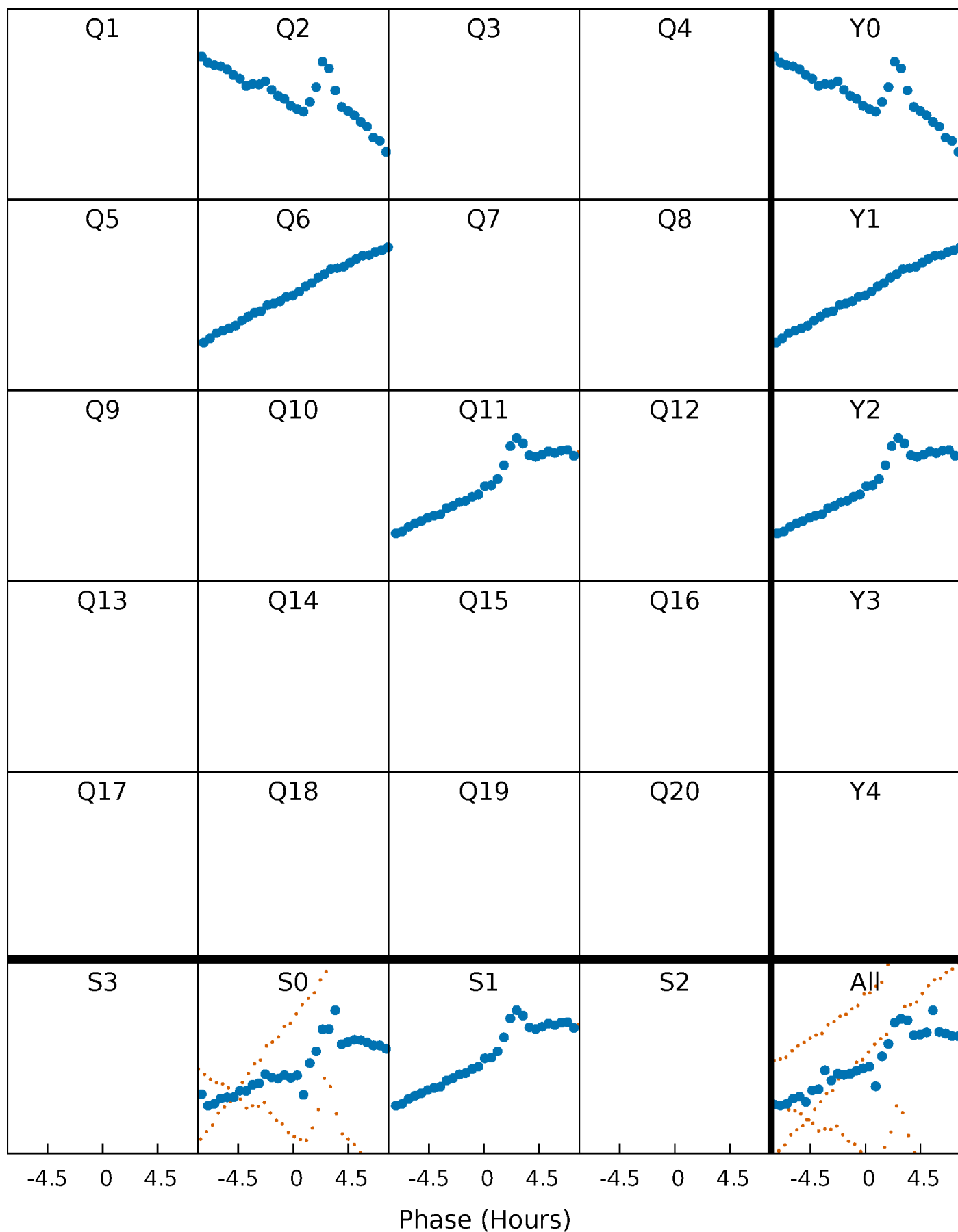


Planet 7 : Phased Whitened Flux Time Series (Fit Epoch/Period)



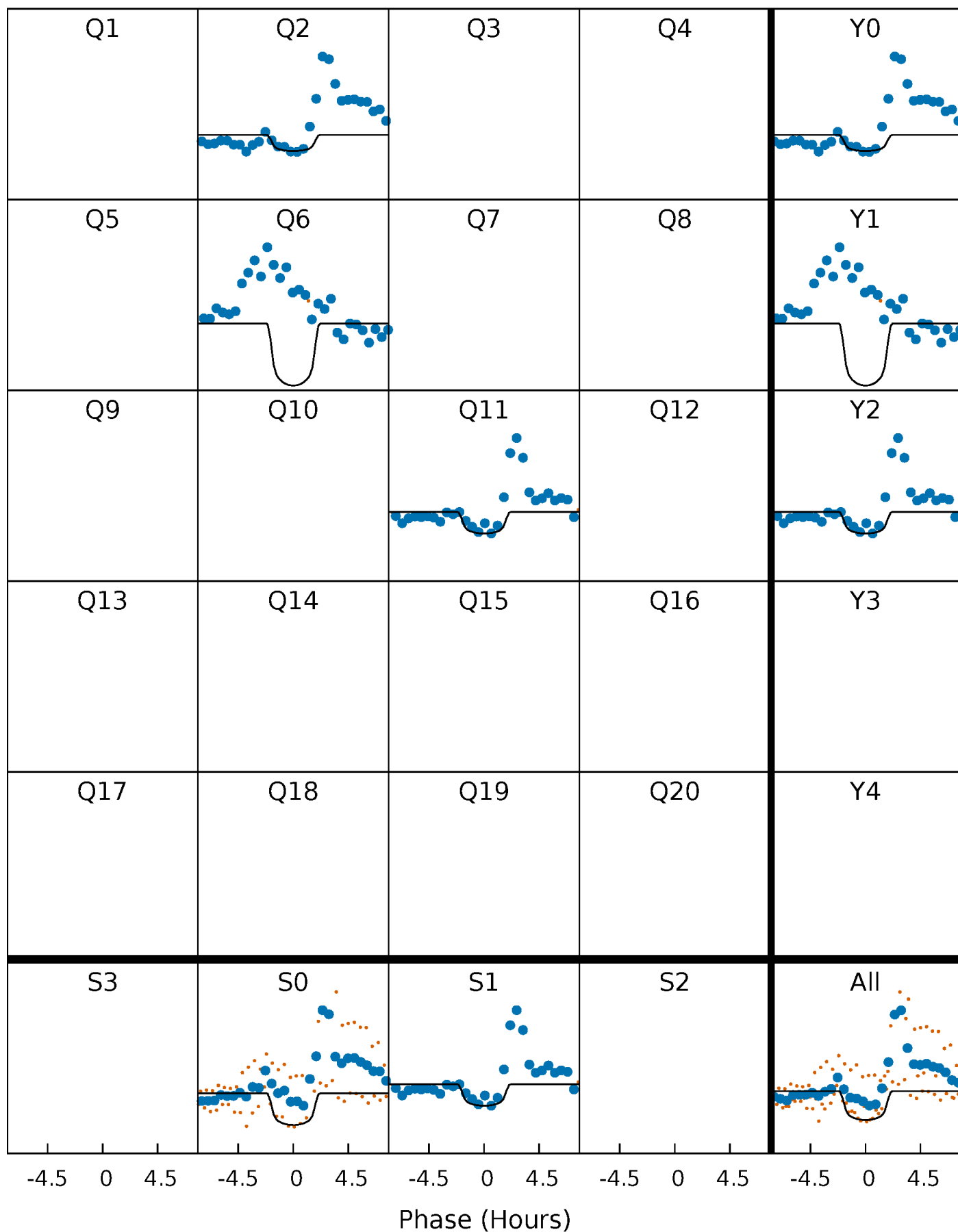
PDC Quarter-Phased Transit Curves

TCE 007369224-07 $P=431.223783$ Days $T_0=192.974688$ (BKJD)



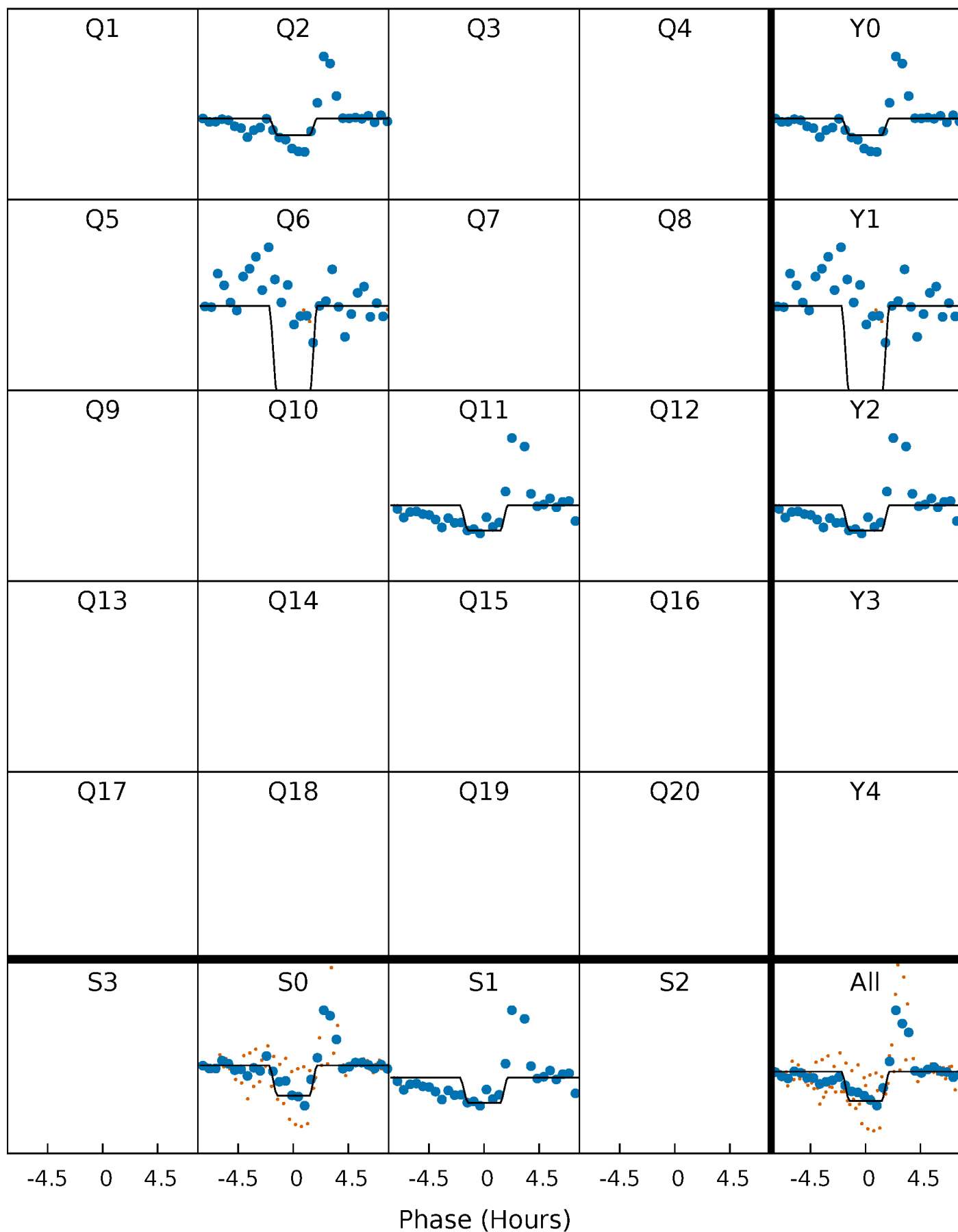
DV Quarter-Phased Transit Curves

TCE 007369224-07 P=431.223783 Days $T_0=192.974688$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

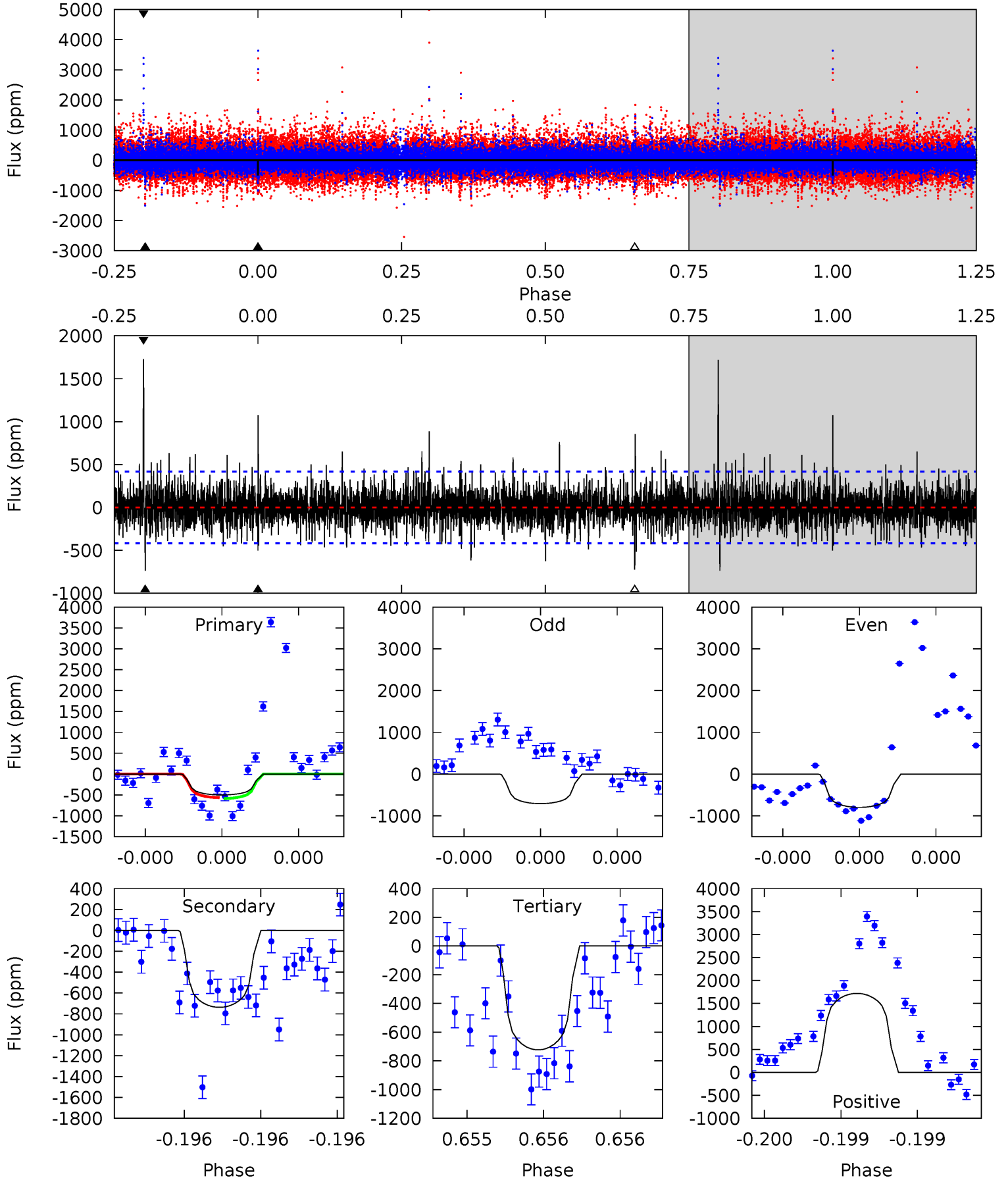
TCE 007369224-07 P=431.223039 Days $T_0=192.970700$ (BKJD)



DV Model-Shift Uniqueness Test

007369224-07, P = 431.223783 Days, E = 192.974688 Days

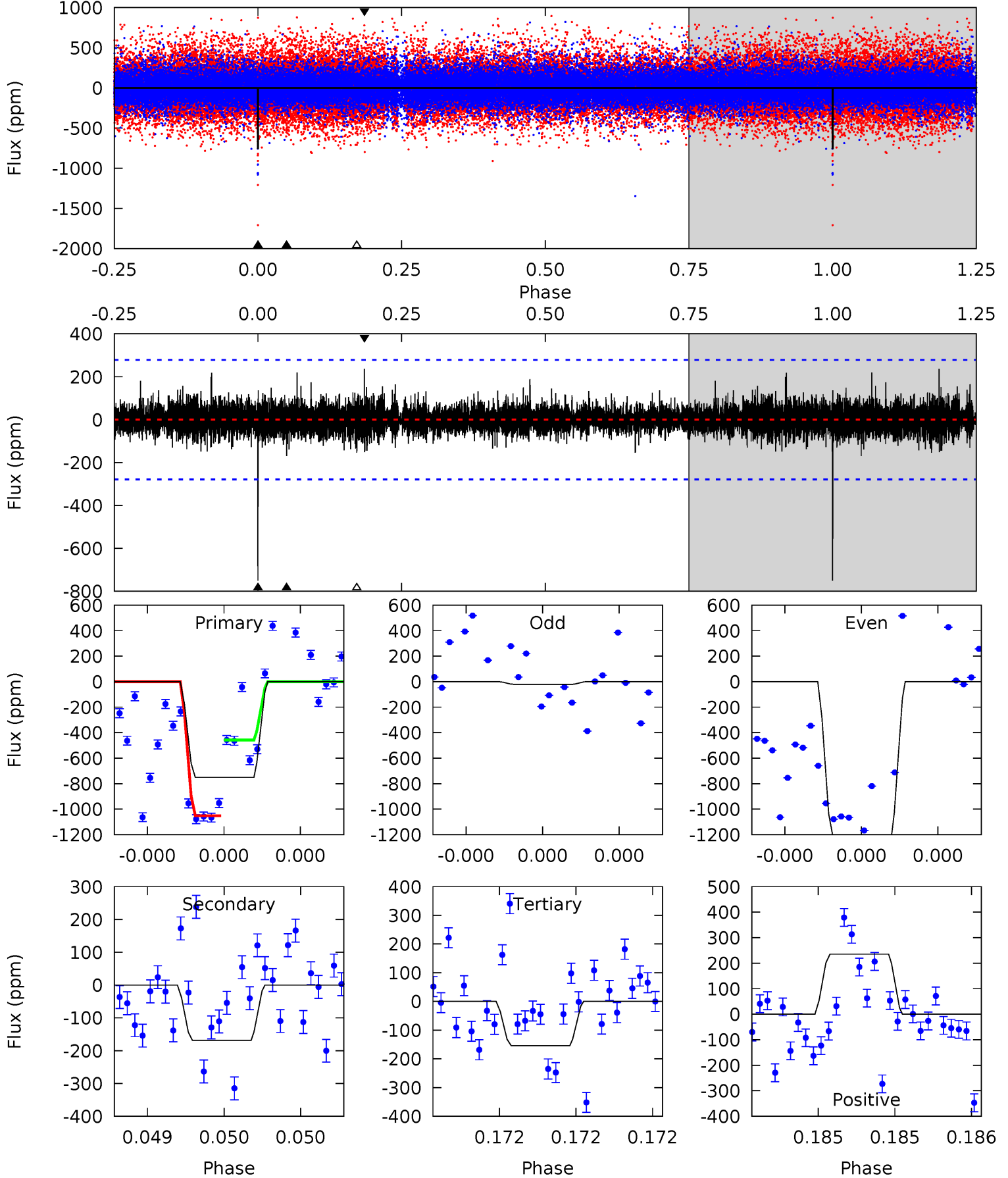
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.73	9.91	9.72	23.1	5.61	3.54	2.01	-2.99	-16.4	0.19	-13.2	0.46	0.39	0.70	0.15



Alt Model-Shift Uniqueness Test

007369224-07, P = 431.223039 Days, E = 192.970700 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.2	3.42	3.13	4.77	5.64	3.59	0.75	12.1	10.4	0.29	-1.35	12.6	1.00	0.24	6.04



Stellar Parameters For KIC 007369224

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5427^{+161}_{-161}	$4.551^{+0.099}_{-0.081}$	$-0.720^{+0.300}_{-0.300}$	$0.725^{+0.088}_{-0.079}$	$0.682^{+0.085}_{-0.034}$	$2.518^{+0.970}_{-0.644}$
	+3%/-3%	+2%/-2%	+42%/-42%	+12%/-11%	+12%/-5%	+39%/-26%
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 007369224-07 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-737 ± 74	$2.64^{+1.18}_{-1.26}$	286^{+13}_{-12}	4954^{+1858}_{-700}	$57719^{+153632}_{-30738}$
Alt.	-169 ± 49	$2.59^{+1.20}_{-1.26}$	287^{+12}_{-12}	3797^{+1053}_{-496}	13677^{+36059}_{-7905}

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 $A_{obs} \gg 1.0$

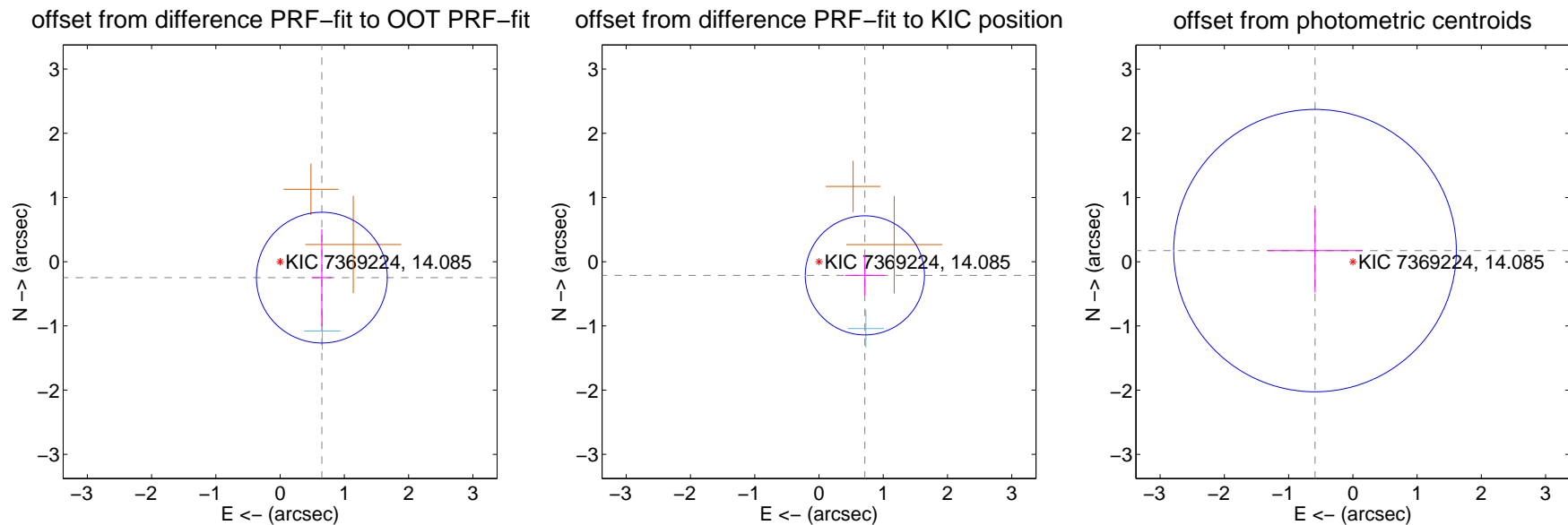
DV Centroid Data

Supplemental centroid analysis for 007369224-07. Kepler magnitude: 14.09. Transit SNR 8.19

There are 1 quarters with good PRF difference image offsets

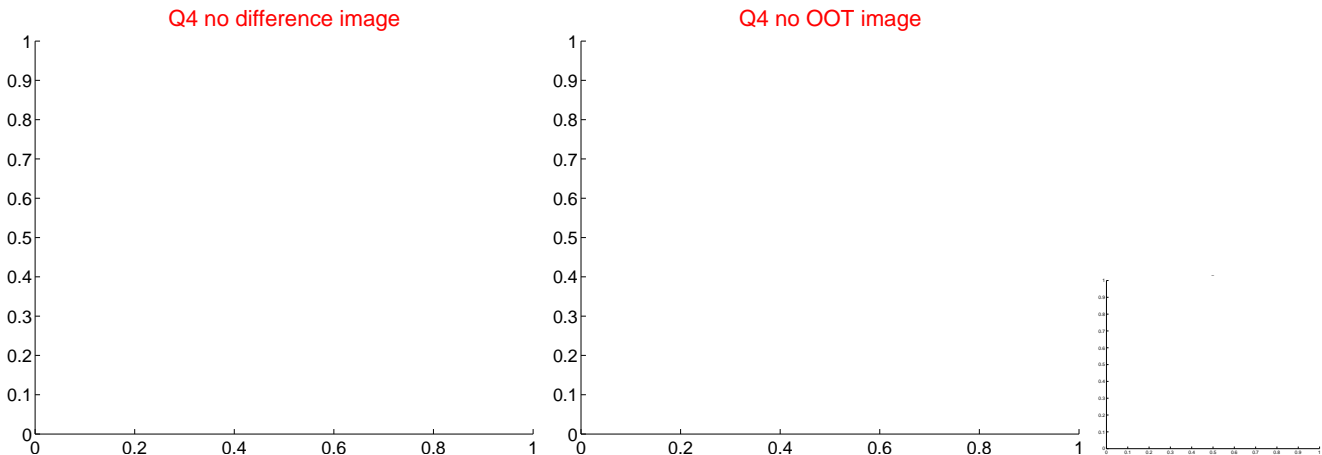
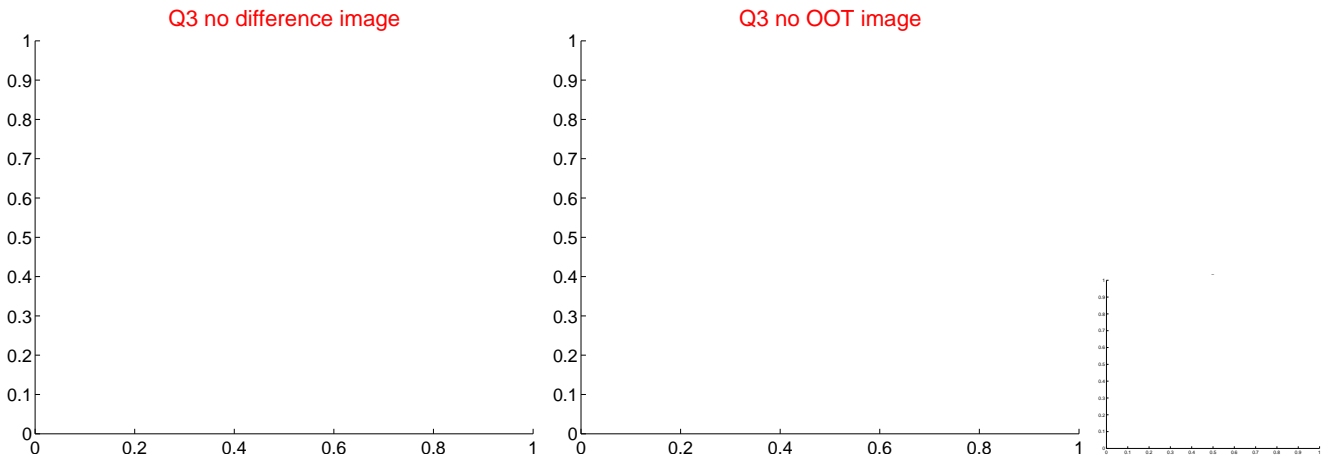
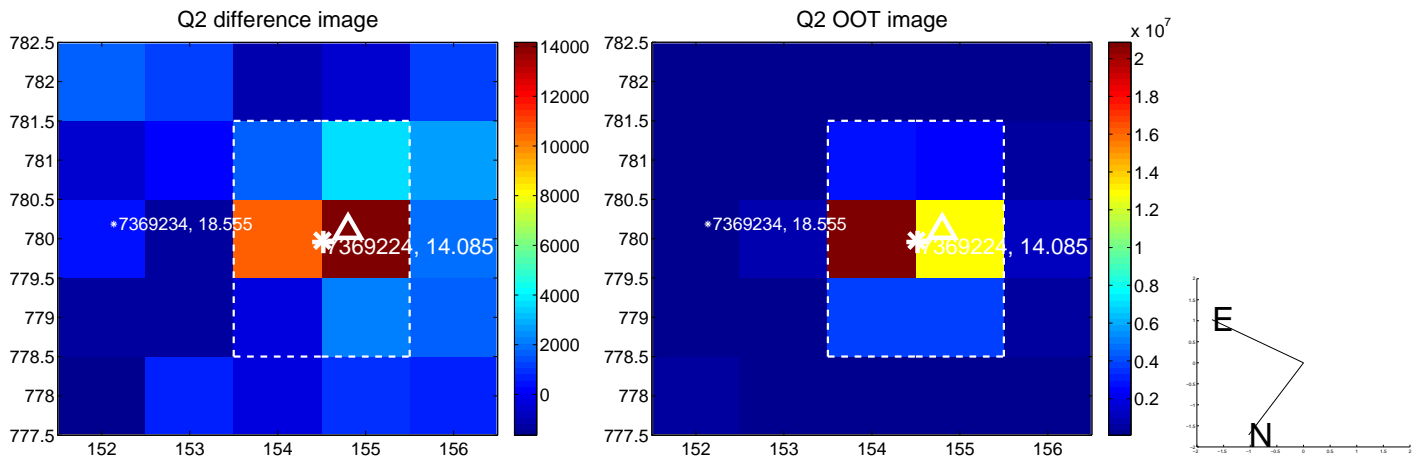
The direct PRF centroid is offset from the target star catalog position by about 0.07 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.695 ± 0.339	2.05	-0.650 ± 0.159	-0.248 ± 0.754
PRF-fit source offset from KIC position	0.745 ± 0.309	2.41	-0.714 ± 0.309	-0.213 ± 0.309
photometric centroid source offset	0.61 ± 0.73	0.84	0.59 ± 0.74	0.17 ± 0.66

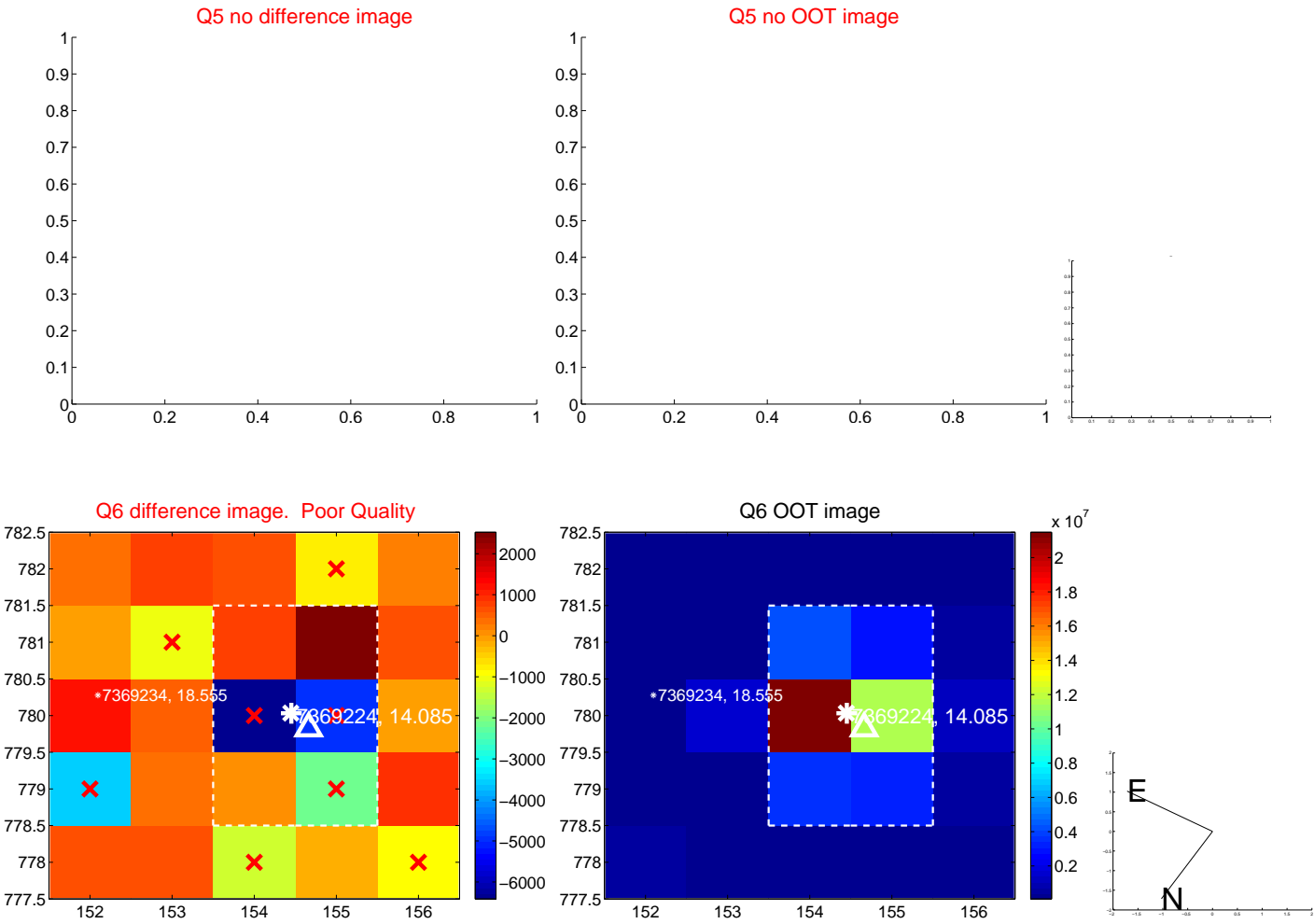


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

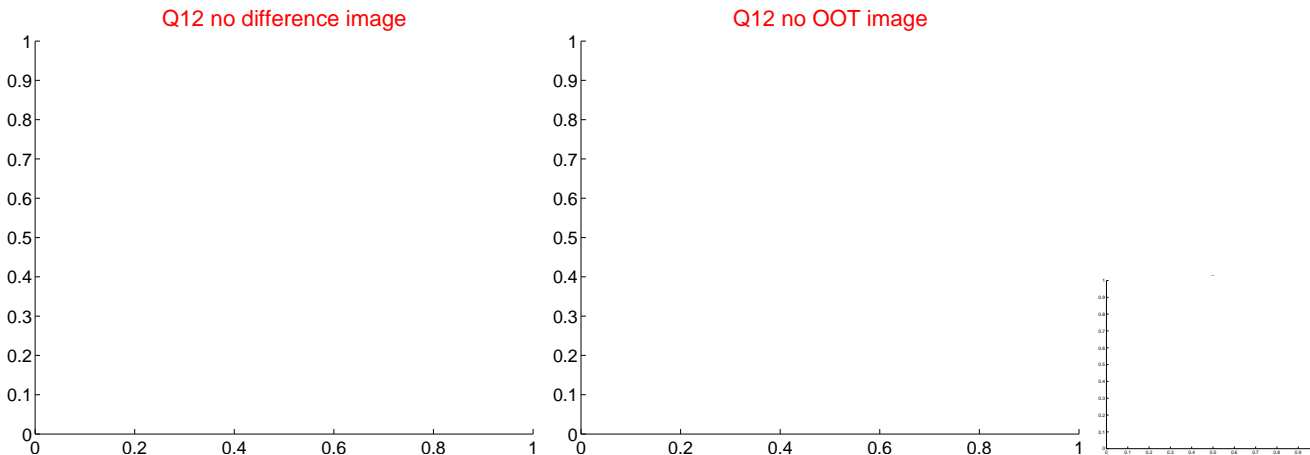
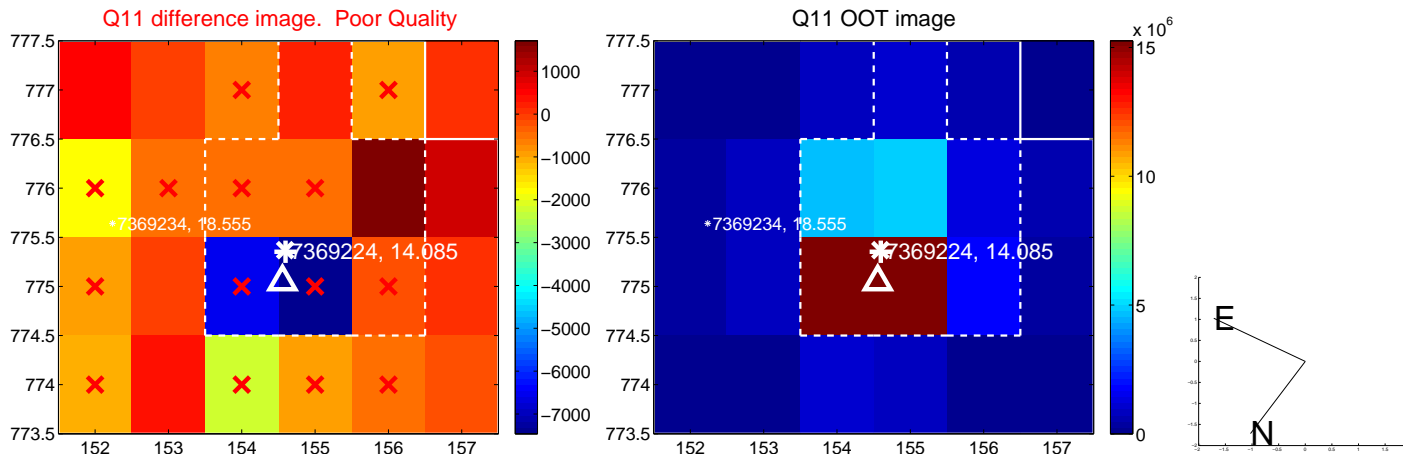
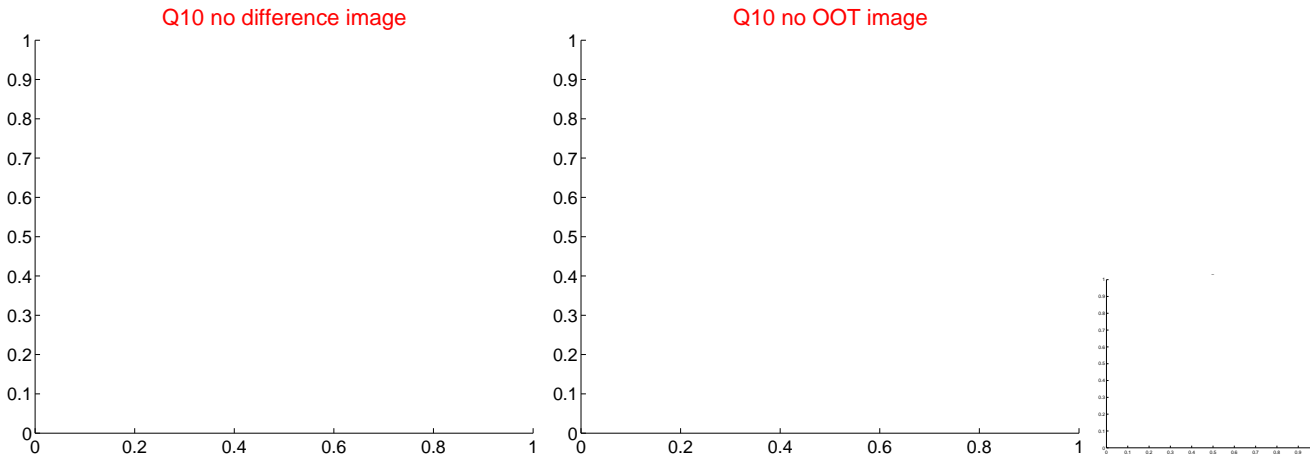
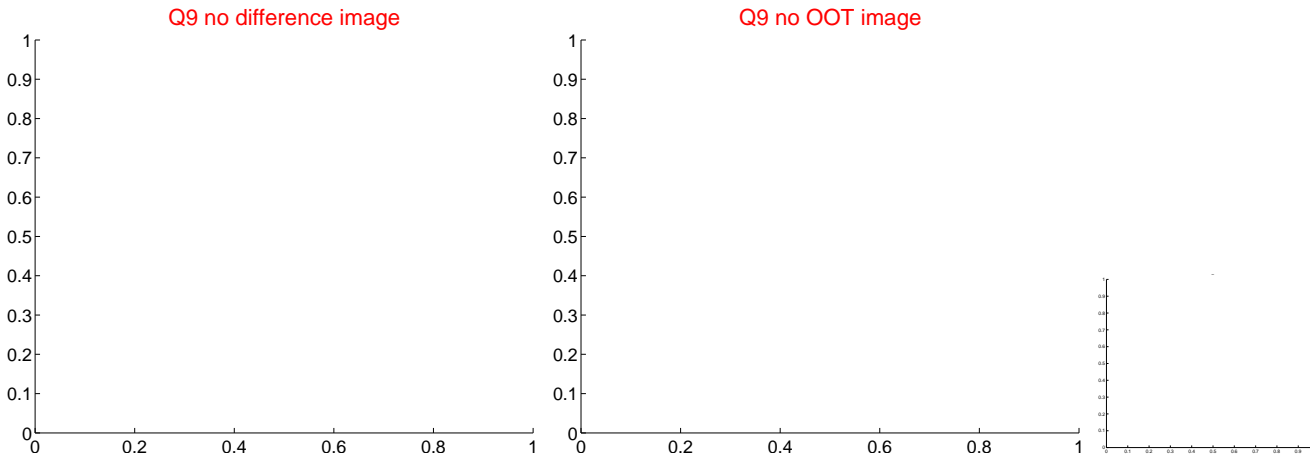
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



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



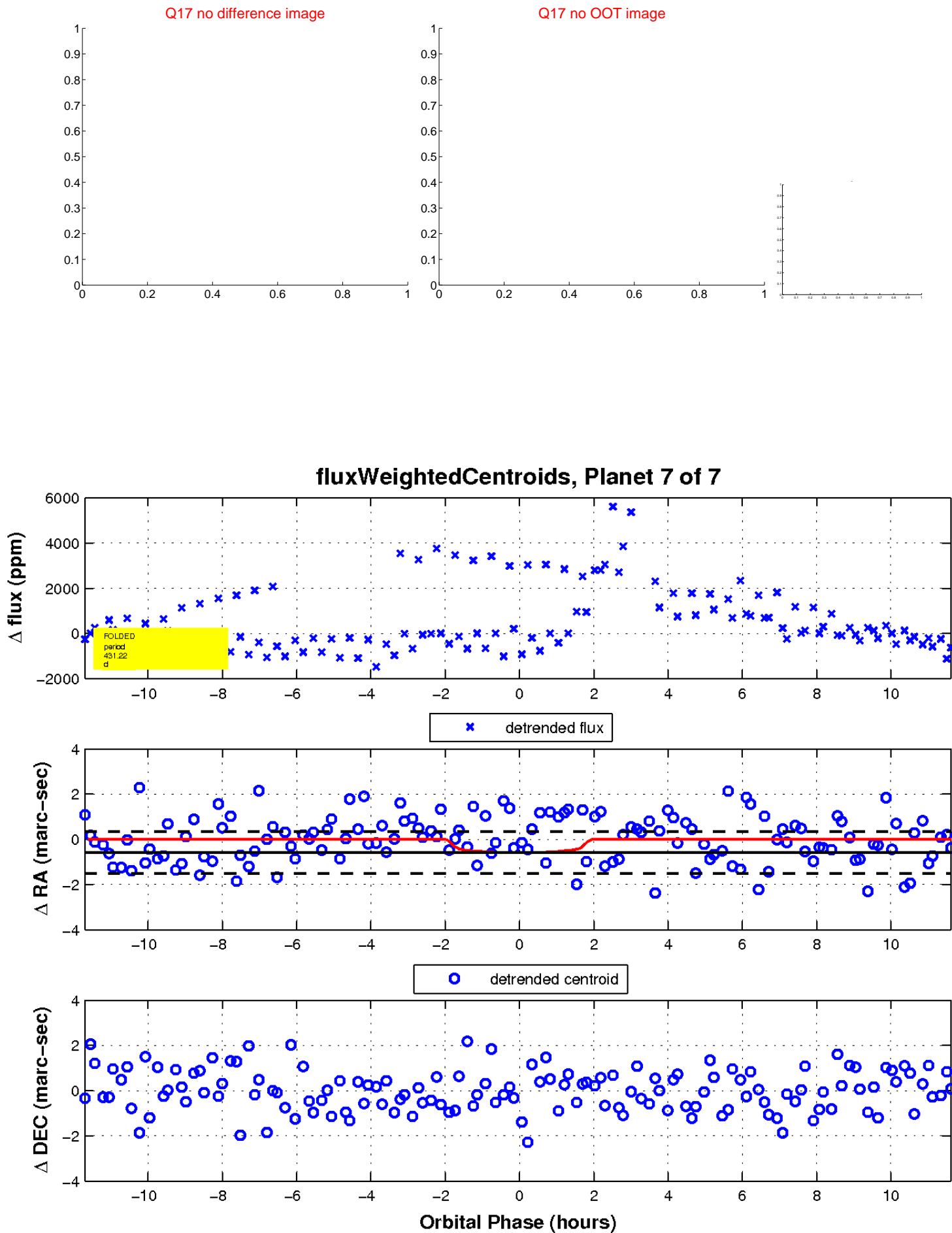
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



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



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



UKIRT Image

Declination

